

HT Series™  
MTX Series™  
PRO Series™

Professional Series  
Two-Way Portable Radios

Detailed Service Manual



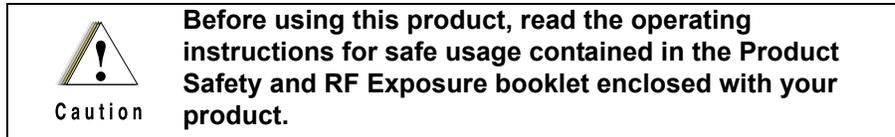
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# Foreword

This manual covers all models of the radio, unless otherwise specified. It includes all the information necessary to maintain peak product performance and maximum working time, using levels 1 and 2 maintenance procedures. This level of service goes down to the board replacement level and is typical of some local service centers, Motorola Authorized Dealers, self-maintained customers, and distributors.

For details on repeater operation or component-level troubleshooting, refer to the applicable manuals available separately. A list of related publications is provided in the section, "Related Publications" on page xv.

## Product Safety and RF Exposure Compliance



### ATTENTION!

This radio is restricted to occupational use only to satisfy FCC RF energy exposure requirements. Before using this product, read the RF energy awareness information and operating instructions in the Product Safety and RF Exposure booklet enclosed with your product (Motorola Publication part number 6881095C99) to ensure compliance with RF energy exposure limits.

For a list of Motorola-approved antennas, and other accessories, visit the following web site which lists approved accessories: <http://www.motorola.com/governmentandenterprise>

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## Document History

The following major changes have been implemented in this manual since the previous edition:

Edition	Description	Date
6881088C46-F	<p>The Theory of Operation section has been divided into the following six sections:</p> <ul style="list-style-type: none"> <li>- Distribution</li> <li>- Keypad</li> <li>- UHF Band 1</li> <li>- UHF Band 2</li> <li>- VHF</li> <li>- Lowband, 800 MHz, PassPort, and 900 MHz</li> </ul> <p>Troubleshooting Flow Charts in the Maintenance section have updated.</p> <p>Added 8480587Z05, 8480450Z14, 8486458Z02, 8486458Z03 and 8415234H01 to UHF Band 1</p> <p>Added 8485677Z03, 8486686Z01, 8486686Z02 and 8415235H01 to UHF Band 2</p> <p>Added 8486062B16, 8486062B17, 8486101B11, 8486473Z03, 8486473Z04 and 8415112H01 to VHF</p>	July, 2005
6881088C46-G	<p>Changed address.</p> <p>Added latest information on Chapter 1.</p>	Aug. 2006
6881088C46-H	<p>Updated the following chapters to include information for PCB No. 8471827L03 for 800 MHz and PCB No. 8471203M01 for 900 MHz.</p> <p>Chapter 7: Low Band, 800 MHz, PassPort &amp; 900 MHz Theory of Operation</p> <p>Chapter 8: Maintenance</p> <p>Chapter 9: Schematic Diagrams, Overlays and Parts Lists</p>	May 2007
6881088C46-J	<p>Updated the following chapter to include information for PCB Nos. 8415234H02, 8415234H05, 8415234H08 for UHF Band 1, and PCB No. 8415235H05 for UHF Band 2.</p> <p>Chapter 9: Schematic Diagrams, Overlays and Parts Lists</p>	July 2007
6881088C46-K	<p>Added Sematics Diagrams, Overlays and Parts Lists for UHF B1 – PCB 841234H01, UHF B2 – PCB 8415235H01 and VHF – PCB 8415112H01</p>	Nov 2007

## Notes

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# Related Publications

Professional Series Two-Way Portable Radios Basic Service Manual .....6881088C45\_

## Notes

# Intrinsically Safe Radio Information

## FMRC Approved Equipment

Anyone intending to use a radio in a location where hazardous concentrations of flammable materials exist (hazardous atmosphere) is advised to become familiar with the subject of intrinsic safety and with the National Electric Code NFPA 70 (National Fire Protection Association) Article 500 (hazardous [classified] locations).

An Approval Guide, issued by Factory Mutual Research Corporation (FMRC), lists manufacturers and the products approved by FMRC for use in such locations. FMRC has also issued a voluntary approval standard for repair service ("Class Number 3605").

FMRC Approval labels are attached to the radio to identify the unit as being FM Approved for specified hazardous atmospheres. This label specifies the hazardous Class/Division/Group along with the part number of the battery that must be used. Depending on the design of the portable unit, this FM label can be found on the back or the bottom of the radio housing. The FM Approval mark is shown below.



- **Do not operate radio communications equipment in a hazardous atmosphere unless it is a type especially qualified (for example, FMRC Approved) for such use. An explosion or fire may result.**
- **Do not operate an FMRC Approved Product in a hazardous atmosphere if it has been physically damaged (for example, cracked housing). An explosion or fire may result.**
- **Do not replace or charge batteries in a hazardous atmosphere. Contact sparking may occur while installing or removing batteries and cause an explosion or fire.**
- **Do not replace or change accessories in a hazardous atmosphere. Contact sparking may occur while installing or removing accessories and cause an explosion or fire.**
- **Turn a radio off before removing or installing a battery or accessory.**
- **Do not disassemble an FMRC Approved Product unit in any way that exposes the internal electrical circuits of the unit.**

Radios must ship from the Motorola manufacturing facility with the Intrinsically Safe, hazardous atmosphere capability and FM Approval labeling. Radios will not be "upgraded" or converted to Intrinsically safe, and or labeled in the field, after it has been shipped from the manufacturing location.

Modifications can only be made by the original product manufacturer (Motorola) at one of its FM audited manufacturing facilities.



- **Failure to use an FMRC Approved portable radio unit with an FMRC Approved battery or FMRC Approved accessories specifically Agency approved for that product may result in the dangerously unsafe condition of an unapproved radio combination being used in a hazardous location.**
- **Unauthorized or incorrect modification of an FMRC Approved Product unit will negate the Approval rating of the product.**

## Repair of FMRC Approved Products

REPAIRS FOR MOTOROLA PRODUCTS WITH FMRC APPROVAL ARE THE RESPONSIBILITY OF THE USER.

You should not repair or relabel any Motorola- manufactured communication equipment bearing the FMRC Approval label ("FMRC Approved Product") unless you are familiar with the current FMRC Approval standard for repairs and service ("Class Number 3605"). Repairs and service to be done FM audited locations.



- **Incorrect repair or relabeling of any FMRC Approved Product unit could adversely affect the Approval rating of the unit.**
- **Use of a radio that is not intrinsically safe in a hazardous atmosphere could result in serious injury or death.**

The following are key definitions, from the FMRC's Approval Standard Class Number 3605, 1994.

### Repair

A repair constitutes something done internally to the unit that would bring it back to its original condition-Approved by FMRC. A repair should be done in an FMRC audited facility. Items not considered as repairs are those in which an action is performed on a unit which does not require the outer casing of the unit to be opened in a manner which exposes the internal electrical. You do not have to be an FMRC audited Repair Facility to perform these actions.

### Relabeling

The repair facility shall have a method by which the replacement of FMRC Approval labels are controlled to ensure that any relabeling is limited to units that were originally shipped from the Manufacturer with an FM Approval label in place. FMRC Approval labels shall not be stocked by the repair facility. An FMRC Approval label shall be ordered from the original manufacturer, as needed, to repair a specific unit. Replacement labels may be obtained and applied by the repair facility, provided there is satisfactory evidence that the unit being relabeled was originally an FMRC Approved unit. Verification may include, but is not limited to: a unit with a damaged Approval label, a unit with a defective housing displaying an Approval label, or a customer invoice indicating the serial number of the unit and purchase of an FMRC Approved model.

## **Do Not Substitute Options or Accessories**

The Motorola communications equipment certified by Factory Mutual is tested as a system and consists of the FM Approved portable, FM Approved battery, and FM Approved accessories or options, or both. This FM Approved portable and battery combination must be strictly observed. There must be no substitution of items, even if the substitute has been previously Approved with a different Motorola communications equipment unit. Approved configurations are listed in the FM Approval Guide published by FMRC, or in the product FM product listing. This FM product listing is shipped from the manufacturer with the FM Approved radio and battery combination.

## Notes



# Chapter 1 Introduction

## 1.1 Scope of Manual

This manual is intended for use by service technicians familiar with similar types of equipment. It contains service information required for the equipment described and is current as of the printing date. Changes which occur after the printing date may be incorporated by a complete Manual revision or alternatively as additions.

**Notes:** Before operating or testing these units, please read the Product Safety and RF Exposure Compliance section in the front of this manual.

## 1.2 Warranty and Service Support

Motorola offers long term support for its products. This support includes full exchange and/or repair of the product during the warranty period, and service/ repair or spare parts support out of warranty. Any “return for exchange” or “return for repair” by an authorized Motorola Dealer must be accompanied by a Warranty Claim Form. Warranty Claim Forms are obtained by contacting an Authorized Motorola Dealer.

### 1.2.1 Warranty Period and Return Instructions

The terms and conditions of warranty are defined fully in the Motorola Dealer, Distributor, or Reseller contract. These conditions may change from time to time and the following notes are for guidance purposes only.

In instances where the product is covered under a “return for replacement” or “return for repair” warranty, a check of the product should be performed prior to shipping the unit back to Motorola. This is to ensure that the product has been correctly programmed or has not been subjected to damage outside the terms of the warranty.

Prior to shipping any radio back to the appropriate Motorola warranty depot, please contact Customer Resources . All returns must be accompanied by a Warranty Claim Form, available from your Customer Services representative. Products should be shipped back in the original packaging, or correctly packaged to ensure no damage occurs in transit.

### 1.2.2 After Warranty Period

After the Warranty period, Motorola continues to support its products in two ways.

1. Motorola's Radio Products Services Division (RPSD)\* offers a repair service to both end users and dealers at competitive prices.
2. Radio Products Services Division (RPSD) supplies individual parts and modules that can be purchased by dealers who are technically capable of performing fault analysis and repair.

\* The Radio Products Services Division (RPSD) was formerly known as the Accessories and Aftermarket Division (AAD)

### 1.3 Piece Parts

Some replacement parts, spare parts, and/or product information can be ordered directly. If a complete Motorola part number is assigned to the part, it is available from Motorola's Managed Technical Services (MTS). If no part number is assigned, the part is not normally available from Motorola. If the part number is appended with an asterisk, the part is serviceable by Motorola Depot only. If a parts list is not included, this generally means that no user-serviceable parts are available for that kit or assembly.

All orders for parts/information should include the complete Motorola identification number. All part orders should be directed to your local MTS office. Please refer to your latest price pages.

### 1.4 Technical Support

Technical support is available to assist the dealer/distributor in resolving any malfunction which may be encountered. Initial contact should be by telephone wherever possible. When contacting Motorola Technical Support, be prepared to provide the product model number and the unit's serial number.

### 1.5 Further Assistance From Motorola

You can also contact the Customer Help Desk through the following web address.

<http://www.motorola.com/governmentandenterprise>

**Notes:** Only Motorola Service Centers or Approved Motorola Service Dealers can perform these functions. Any tampering by non-authorized Motorola Service Centers voids the warranty of your radio. To find out more about Motorola and its approved Service Centers, please visit <http://www.motorola.com/businessandgovernment/public/functions/home/home.aspx>

## 1.6 Radio Model Chart and Specification

The radio model charts and specifications are located in the Basic Service Manual listed under the Related Documents paragraph of this chapter.

## 1.7 Radio Model Information

The model number and serial number are located on a label attached to the back of your radio. You can determine the RF output power, frequency band, protocols, and physical packages from these numbers. The example in [Table 1-1 on page 1-3](#) shows one portable radio model number and its specific characteristics..

Table 1-1. Radio Model Number

Example: AAH25KCC9AA2 and LAH25KDC9AA3

	Type of Unit	Model Series	Freq. Band	Power Level	Physical Packages	Channel Spacing	Protocol	Feature Level	Model Revision	Model Package
AA or LA = Motorola Internal Use ↑ H = Portable	H	25	K VHF (136-174 MHz)	C 2.5W	C No Display	9 Program- mable	AA Conven- tional	2 2F for AA 4F for LA	A	N
			R UHF1 (403-470 MHz)	D 4-5W	D Keypad	6 25 kHz	DU LTR	3 16F		
			S UHF2 (450-527 MHz)	E 6W	H 1-Line Display		CK MPT	5 256F LTR for AA only		
			B Low Band, R1 (29.7- 42.0 MHz)				GB Privacy Plus	6 128F 256F LTR		
			C Low Band, R2 (35.0- 50.0 MHz)				GE Privacy Plus Roaming	8 160F		
			U 800 MHz (806-824) (851-869 MHz)				DP PassPort and LTR	7 256F LTR		
						FC Smart Zone	9 256F LTR			

## Notes

## Chapter 2 Radio Power Distribution

A block diagram of the DC power distribution throughout the radio board is shown in [Figure 2-1](#). A 7.5V battery supplies the basic radio power (UNSWB) directly to the electronic on/off control, audio power amplifier, 3.5V regulator, power amplifier automatic level control (ALC), and low battery detect circuit. When the radio on/off/volume control is turned on, the switched SWB+ is applied to the various radio power regulators, antenna switch, accessories 20-pin connector, keypad/option board, and transmit LED. The Vdda signal from the 3.3V Vdda regulator supplies the microprocessor with operating power. The Vdd regulator scheme is listed by band in [Table 2-1 on page 2-2](#). Data is then sent to the controller ASFIC to turn on a DAC which takes over the momentary-on path within 12ms. The SWB+ signal supplies power until the radio is turned off. Jumpers for configuring the Vdda and Vddd regulators are shown in [Figure 2-1](#) and described in [Table 2-2 on page 2-2](#).

The radio turns off when either of the two following conditions occur:

- Radio on/off/volume control is turned off.
- Low battery condition is detected.

If a low battery level is detected by the microprocessor through either of the above conditions, the radio personality data is stored to EEPROM prior to turning off.

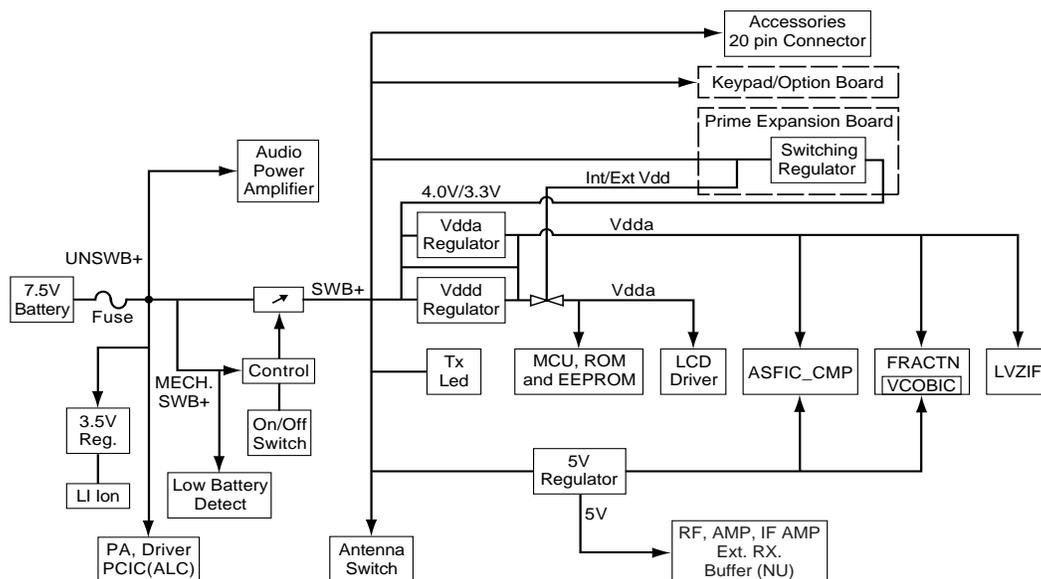


Figure 2-1. DC Power Distribution Block Diagram

Table 2-1. VDD Regulator Scheme by Band

Band	Vdd Regulator Scheme
Low Band	Dual
VHF	Dual
UHF	Dual
800 MHz	Dual
900 MHz	Dual

Table 2-2. Radio Jumpers

Jumpers	Dual Vdd Regulator Scheme	Single Vdd Regulator Scheme
R401	Y	Y
R402	N	N
R403	N	Y
R404	N	N
R405	Y	N

*R = Regulator Jumper*

## Chapter 3 Keypad

The keypad block diagram is shown in [Figure 3-1](#). The comparator compares the voltage when any one of the keypad row or keypad column keys is pressed. Pressing a key sends a message to the microprocessor through the output (KEY\_INT) line signifying that a key has been pressed. The microprocessor then samples the analog to digital voltages at the keypad row and keypad column, then makes a comparison with a map table to identify the key pressed. Once the key is identified, a corresponding message is displayed.

The LED\_EN is set by the codeplug. When the value is set to low, the LED lights up during power up. A high codeplug setting disables this feature.

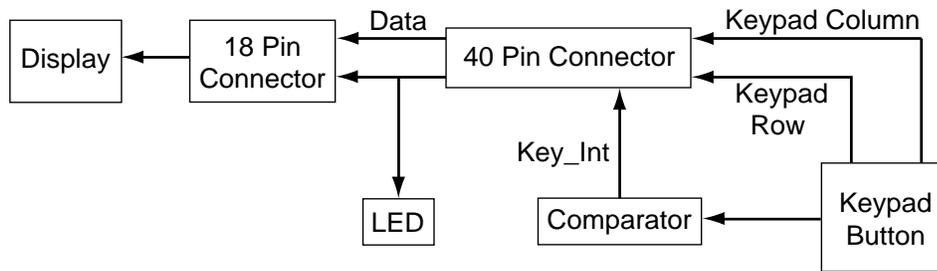


Figure 3-1. Keypad Block Diagram

### 3.1 Controller Board

The controller board is the central interface between the various radio functions. It is separated into MCU digital and audio/signalling functions as shown in Figure 3-2.

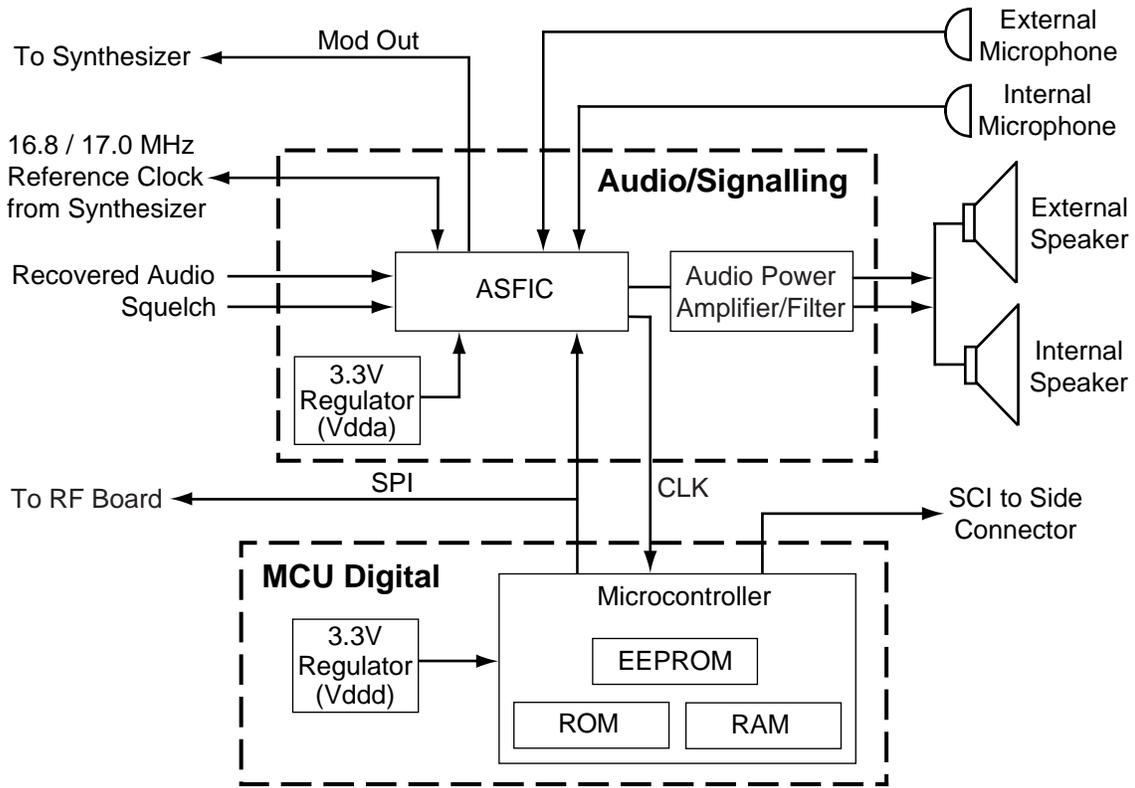


Figure 3-2. Controller Block Diagram

#### 3.1.1 MCU Digital

The digital portion of the controller consists of a microcontroller and associated EEPROM, RAM, and ROM memories. Combinations of different size RAM and ROM are available to support various application software. RAM supports 8KB and 32KB sizes. ROM supports 128KB, 256KB, and 512KB sizes. Table 3-1 lists the ROM, RAM and EEPROM requirements for different radios.

Table 3-1. Radio Memory Requirements

PROTOCOL	FEATURE LEVEL	ROM (KB)	EXT RAM (KB)	EEPROM (KB)
AA,DU	2 or 3	128	-	8
AA,DU	6	128	-	16
CK, GB, GE, FC	-	512	32	16



### 3.1.2 Real Time Clock

Radios with displays support a real time clock (RTC) module for purposes of message time stamping and time keeping. The RTC module resides in the microcontroller. The clock uses a back-up lithium-ion battery for operating power when the primary battery is removed.

### 3.1.3 Circuit Description

The RTC module circuit, shown in [Figure 3-3](#), is powered by the MODB/VSTBY pin and PI6/PI7 from the crystal oscillator circuit. A clock frequency of 38.4 kHz from a crystal oscillator provides the reference signal which is divided down to 1 Hz in the processor.

As the RTC module is powered separately from the processor Vdd, the RTC is kept active through the MODB/VSTBY pin which provides the lithium-ion battery back-up power when the radio is switched off.

A MOSFET transistor (Q416) switches in the battery supply when Vdd is removed. Q416 also provides isolation from BOOT\_CTRL function. The 3.3 V regulator charges the lithium-ion battery.

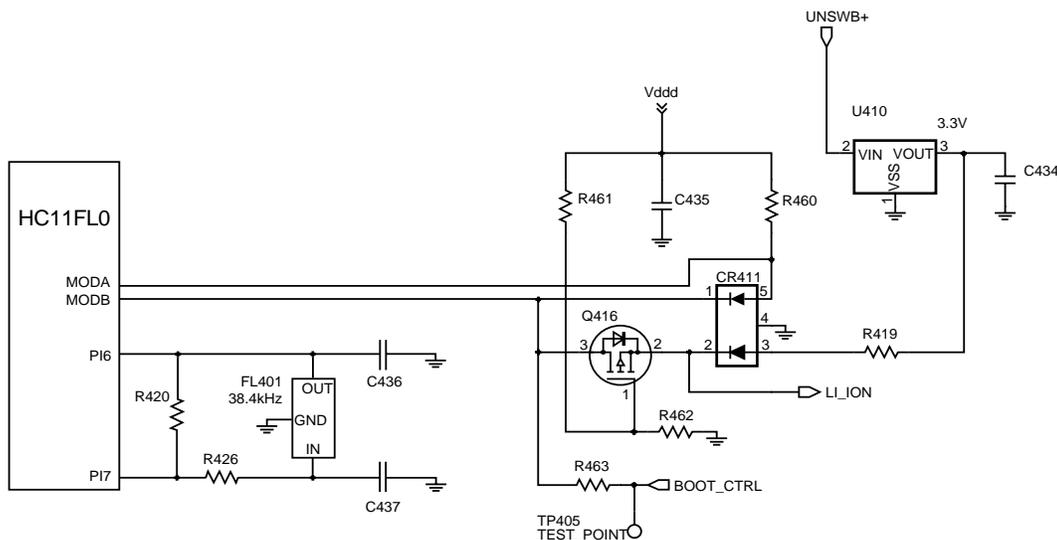


Figure 3-3. RTC Circuit

### 3.1.4 MODB/VSTBY Supply

The supply to the MODB/VSTBY pin varies depending on the conditions listed in [Table 3-2](#).

Table 3-2. MODB/VSTBY Supply Modes

Condition	Circuit Operation
Radio On	Vddd supply voltage via CR411
Radio Off	<ul style="list-style-type: none"> <li>• Vddd turned off</li> <li>• Q416 gate pulled low by R462</li> <li>• Q416 switched on</li> <li>• U410 supplies 3.2V to MODB_VSTBY</li> </ul>
Primary battery removed	<ul style="list-style-type: none"> <li>• Vddd turned off</li> <li>• Q416 gate pulled low by R462</li> <li>• Q416 switched on</li> <li>• Lithium-ion battery provides 3.2V to MODB_VSTBY</li> </ul>

### 3.1.5 Audio/Signaling

The audio/signalling/filter/companing IC (ASFIC) and the audio power amplifier ([Figure 3-2 on page 3-2](#)) form the main components of the audio/signalling section of the controller board. Inputs include a 16.8 MHz clock from the synthesizer, recovered audio and squelch, MCU control signals, and external or internal microphones. Outputs include a microprocessor clock (CLK), modulator output to the synthesizer, and amplified audio signals to an internal or external speaker.

## Chapter 4 UHF Band 1 Theory of Operation

### 4.1 Transmitter

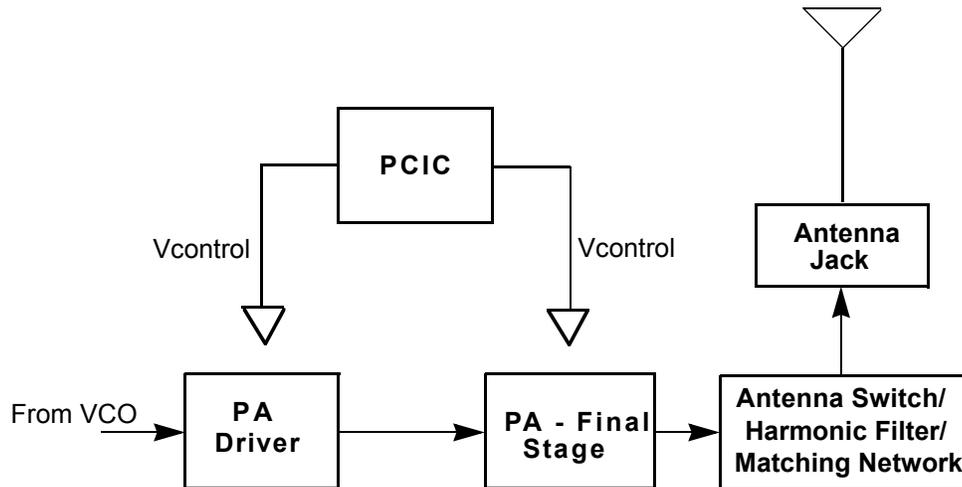


Figure 4-1. Transmitter Block Diagram

#### 4.1.1 General

(Refer to [Figure 4-1.](#))

The UHF transmitter contains five basic circuits:

- Power amplifier
- Antenna switch
- Harmonic filter
- Antenna matching network
- Power control integrated circuit (PCIC)

#### 4.1.2 Power Amplifier

The power amplifier consists of two devices:

- 9Z67 LDMOS driver IC (U101)
- PRF1507 LDMOS PA (Q110)

The 9Z67 LDMOS driver IC contains a two-stage amplification with a supply voltage of 7.3 V.

This RF power amplifier is capable of supplying an output power of 0.3 W (pin 6 and 7) with an input signal of 2 mW (3 dBm) (pin16). The current drain would typically be 160mA while operating in the frequency range of 403-470MHz.

The PRF1507 LDMOS PA is capable of supplying an output power of 7 W with an input signal of 0.3 W. The current drain would typically be 1300mA while operating in the frequency range of 403-470 MHz. The power output can be varied by changing the biasing voltage.

### 4.1.3 Antenna Switch

The antenna switch circuit consists of two PIN diodes (CR101 and CR102), a pi network (C107, L104 and C106), and two current limiting resistors (R101, R170). In the transmit mode, B+ at PCIC (U102) pin 23 will go low and turn on Q111 where a B+ bias is applied to the antenna switch circuit to bias the diodes "on". The shunt diode (CR102) shorts out the receiver port, and the pi network, which operates as a quarter wave transmission line, transforms the low impedance of the shunt diode to a high impedance at the input of the harmonic filter. In the receive mode, the diodes are both off, and hence, there exists a low attenuation path between the antenna and receiver ports.

### 4.1.4 Harmonic Filter

The harmonic filter consists of C104, L102, C103, L101 and C102. The design of the harmonic filter for UHF is that of a modified Zolotarev design. It has been optimized for efficiency of the power module. This type of filter has the advantage that it can give a greater attenuation in the stop-band for a given ripple level. The harmonic filter insertion loss is typically less than 1.2dB.

### 4.1.5 Antenna Matching Network

A matching network which is made up of L116 is used to match the antenna's impedance to the harmonic filter. This will optimize the performance of the transmitter and receiver into an antenna.

### 4.1.6 Power Control Integrated Circuit (PCIC)

The transmitter uses the Power Control IC (PCIC), U102 to regulate the power output of the radio. The current to the final stage of the power module is supplied through R101, which provides a voltage proportional to the current drain. This voltage is then fed back to the Automatic Level Control (ALC) within the PCIC to regulate the output power of the transmitter.

The PCIC has internal digital to analog converters (DACs) which provide the reference voltage of the control loop. The reference voltage level is programmable through the SPI line of the PCIC.

There are resistors and integrators within the PCIC, and external capacitors (C133, C134 and C135) in controlling the transmitter rising and falling time. These are necessary in reducing the power splatter into adjacent channels.

CR105 and its associated components are part of the temperature cut-back circuitry. It senses the printed circuit board temperature around the transmitter circuits and output a DC voltage to the PCIC. If the DC voltage produced exceeds the set threshold in the PCIC, the transmitter output power will be reduced so as to reduce the transmitter temperature.

## 4.2 Receiver

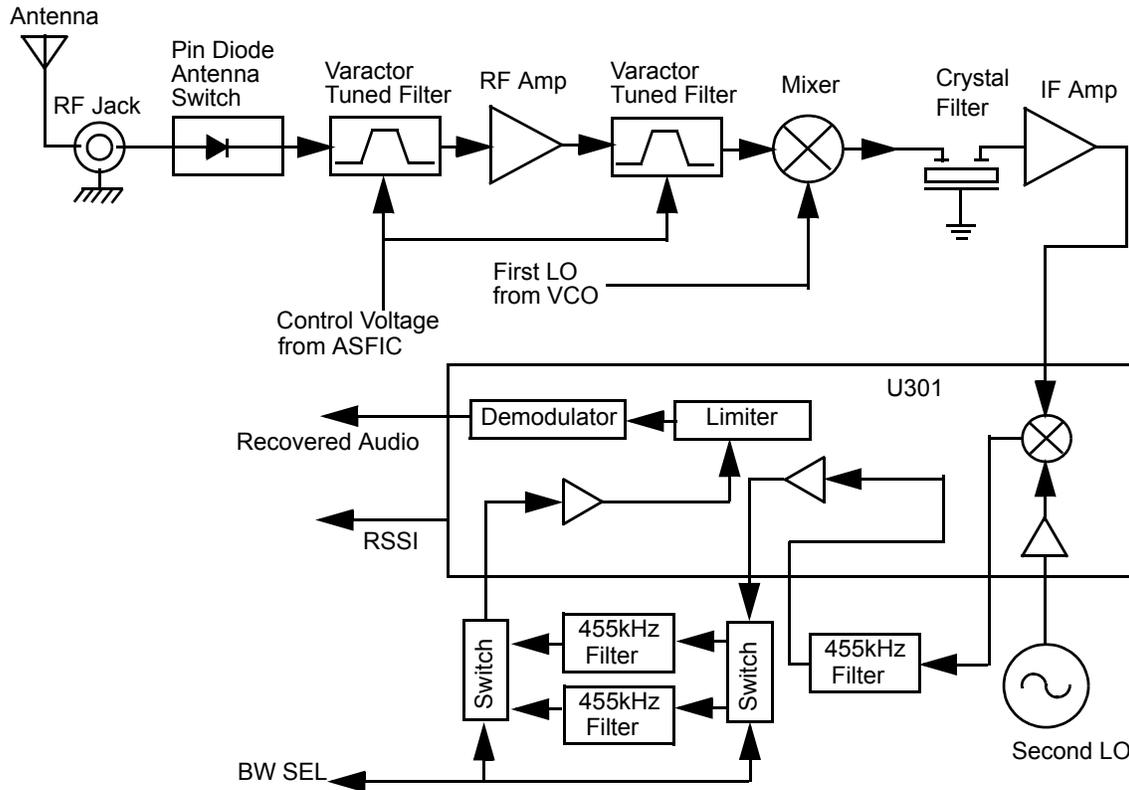


Figure 4-2. UHF Receiver Block Diagram

### 4.2.1 Receiver Front-End

(Refer to the *UHF Receiver Front-End Schematic Diagram* on page 9-84 and the *UHF Transmitter Schematic Diagram* on page 9-89.)

The RF signal is received by the antenna and applied to a low-pass filter. For UHF, the filter consists of L101, L102, C102, C103, C104. The filtered RF signal is passed through the antenna switch. The antenna switch circuit consists of two PIN diodes (CR101 and CR102) and a pi network (C106, L104 and C107). The signal is then applied to a varactor tuned bandpass filter. The UHF bandpass filter comprises of L301, L302, C302, C303, C304, CR301 and CR302. The bandpass filter is tuned by applying a control voltage to the varactor diodes (CR301 and CR302) in the filter.

The bandpass filter is electronically tuned by the DACRx from IC404 which is controlled by the microprocessor. Depending on the carrier frequency, the DACRx will supply the tuned voltage to the varactor diodes in the filter. Wideband operation of the filter is achieved by shifting the bandpass filter across the band.

The output of the bandpass filter is coupled to the RF amplifier transistor Q301 via C307. After being amplified by the RF amplifier, the RF signal is further filtered by a second varactor tuned bandpass filter, consisting of L306, L307, C313, C317, CR304 and CR305.

Both the pre and post-RF amplifier varactor tuned filters have similar responses. The 3 dB bandwidth of the filter is about 50 MHz. This enables the filters to be electronically controlled by using a single control voltage which is DACRx.

The output of the post-RF amplifier filter which is connected to the passive double balanced mixer consists of T301, T302 and CR306. Matching of the filter to the mixer is provided by C381. After mixing with the first LO signal from the voltage controlled oscillator (VCO) using low side injection, the RF signal is down-converted to the 44.85 MHz IF signal.

The IF signal coming out of the mixer is transferred to the crystal filter (FL301) through a resistor pad and a diplexer (C322 and L310). Matching to the input of the crystal filter is provided by C324 and L311. The crystal filter provides the necessary selectivity and intermodulation protection.

## 4.2.2 Receiver Back-End

(Refer to *UHF Receiver Back-End Schematic Diagram* on page 9-85.)

The output of crystal filter FL301 is matched to the input of first IF amplifier transistor Q302 by L330. Voltage supply to the IF amplifier is taken from the receive 5 volts (R5). The IF amplifier provides a gain of about 16dB. The amplified first IF signal is then coupled into U301 (pin 1) via C360 and L332 which provides the matching for the first IF amplifier and U301.

Within U301, the first IF 44.85 MHz signal mixes with the 44.395 MHz second local oscillator (2nd LO) to produce the second IF signal at 455 kHz. The second LO signal frequency is determined by crystal Y300. The second IF signal (455 kHz) is then filtered by an external ceramic filter FL302 before being amplified by the second IF amplifier within U301. Again, the signal is filtered by a second external ceramic filter FL303 or FL304 depending on the selected channel spacing. FL303 is used for 20/25 kHz channel spacing whereas FL304, for 12.5 kHz channel spacing. The simple circuit consisting of U302, CR312, CR313 and resistors R345, R360, R321 and R324 divert the second IF signal according to the BW\_SEL line. The filtered output of the second IF signal is applied to the limiter input pin of U301.

The IF IC (U301) contains a quadrature detector using a ceramic phase-shift element (Y301) to provide audio detection. Internal amplification provides an audio output level around 120mVrms (@60% deviation) from pin 8 of U301. This demodulated audio is fed to the ASFIC\_CMP IC (U404) in the controller section.

The IF IC (U301) also performs several other functions. It provides a received signal-strength indicator (RSSI) with a dynamic range of 70 dB. The RSSI is a dc voltage monitored by the microprocessor, and used as a peak indicator during the bench tuning of the receiver front-end varactor filter.

## 4.3 Frequency Generation Circuitry

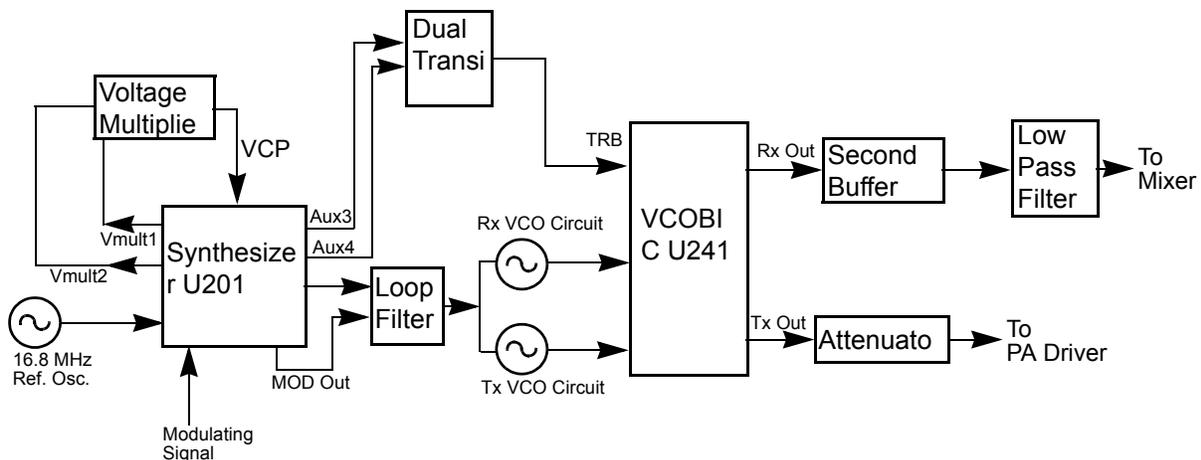


Figure 4-3. Frequency Generation Unit Block Diagram

The Frequency Generation Circuitry is composed of two main ICs:

- Fractional-N synthesizer (U201)
- VCO/Buffer IC (U241)

Designed in conjunction to maximize compatibility, the two ICs provide many of the functions that normally would require additional circuitry. The synthesizer block diagram illustrates the interconnect and support circuitry used in the region. Refer to the relevant schematics for the reference designators.

The synthesizer is powered by regulated 5 V and 3.3 V which come from U247 and U248 respectively. The synthesizer in turn generates a super-filtered 4.5 V which powers U241.

In addition to the VCO, the synthesizer must interface with the logic and ASFIC circuitry. Programming for the synthesizer is accomplished through the data, clock and chip select lines from the microprocessor. A 3.3 V dc signal from the synthesizer lock detect line indicates to the microprocessor that the synthesizer is locked.

Transmit modulation from the ASFIC is supplied to pin 10 of U201. Internally the audio is digitized by the Fractional-N and applied to the loop divider to provide the low-port modulation. The audio runs through an internal attenuator for modulation balancing purposes before going out to the VCO.

### 4.4 Synthesizer

(Refer to *UHF Synthesizer Schematic Diagram* on page 9-86.)

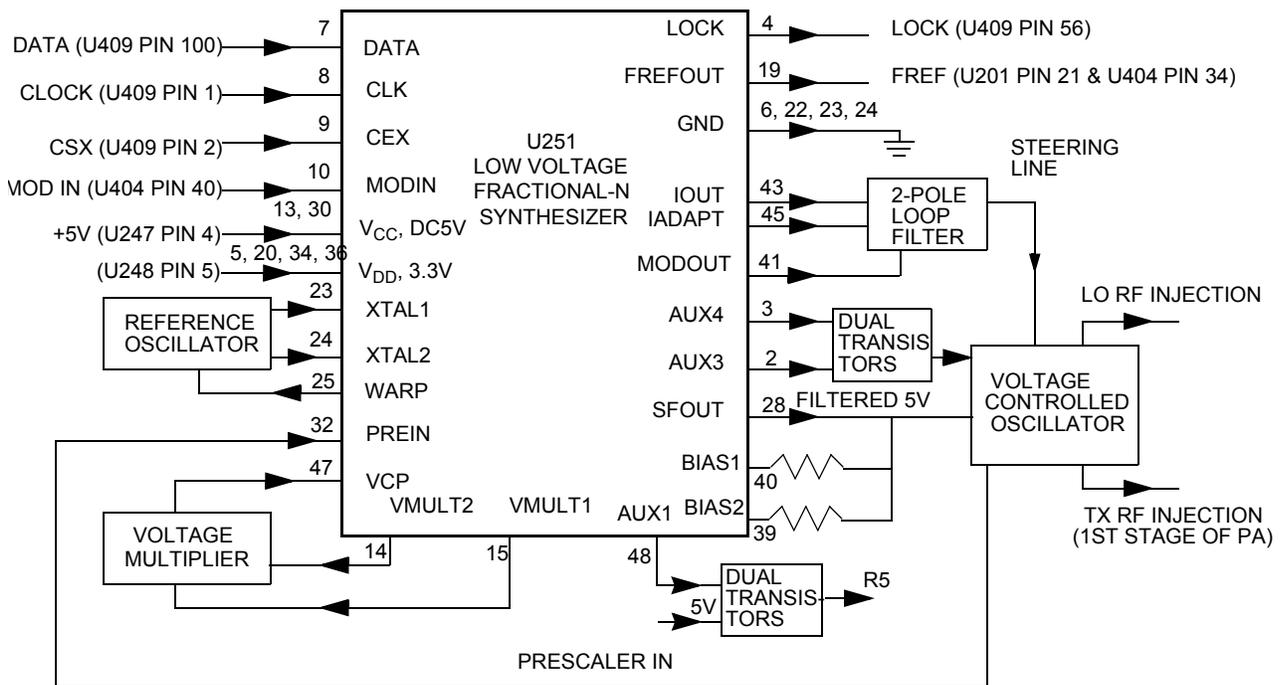


Figure 4-4. Synthesizer Block Diagram

The Fractional-N Synthesizer uses a 16.8MHz crystal (FL201) to provide a reference for the system. The LVFractN IC (U201) further divides this to 2.1 MHz, 2.225 MHz, and 2.4 MHz as reference frequencies. Together with C206, C207, C208, R204 and CR203, they build up the reference oscillator which is capable of 2.5ppm stability over temperatures of -30 to 85°C. It also provides 16.8 MHz at pin 19 of U201 to be used by the ASFIC.

The loop filter which consist of C231, C232, C233, R231, R232 and R233 provides the necessary dc steering voltage for the VCO and determines the amount of noise and spur passing through.

In achieving fast locking for the synthesizer, an internal adapt charge pump provides higher current at pin 45 of U201 to put synthesizer within the lock range. The required frequency is then locked by normal mode charge pump at pin 43.

Both the normal and adapt charge pumps get their supply from the capacitive voltage multiplier which is made up of C258, C259, C228, triple diode CR201 and level shifters U210 and U211. Two 3.3V square waves (180 degrees out of phase) are first shifted to 5V, then along with regulated 5V, put through arrays of diodes and capacitors to build up 13.3V at pin 47 of U201.

### 4.5 Voltage-Controlled Oscillator (VCO)

(Refer to the UHF Voltage-Controlled Oscillator Schematic Diagram on page 9-87.)

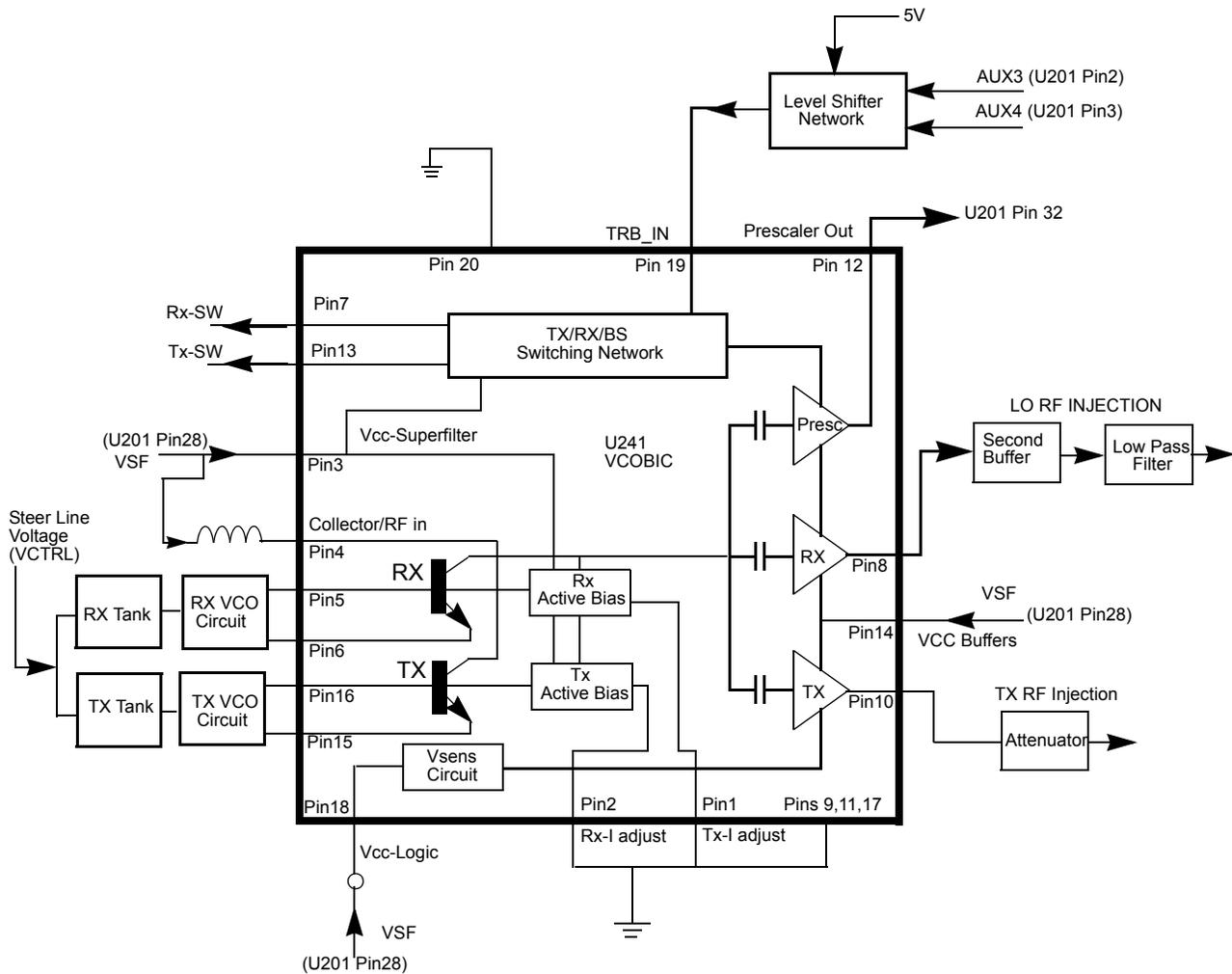


Figure 4-5. VCO Block Diagram



The VCOBIC (U241) in conjunction with the Fractional-N synthesizer (U201) generates RF in both the receive and the transmit modes of operation. The TRB line (U241 pin 19) determines which oscillator and buffer will be enabled. A sample of the RF signal from the enabled oscillator is routed from U241 pin 12, through a low pass filter, to the prescaler input (U201 pin 32). After frequency comparison in the synthesizer, a resultant CONTROL VOLTAGE is received at the VCO. This voltage is a dc voltage between 3.5 V and 9.5 V when the PLL is locked on frequency.

The VCOBIC (U241) is operated at 4.54 V (VSF) and Fractional-N synthesizer (U201) at 3.3 V. This difference in operating voltage requires a level shifter consisting of Q260 and Q261 on the TRB line.

The operation logic is shown in [Table 4-1](#).

*Table 4-1. Level Shifter Logic*

Desired Mode	AUX 4	AUX 3	TRB
Tx	Low	High (@3.2V)	High (@4.8V)
Rx	High	Low	Low
Battery Saver	Low	Low	Hi-Z/Float (@2.5V)

In receive mode, U241 pin 19 is low or grounded. This activates the receive VCO by enabling the receive oscillator and the receive buffer of U241. The RF signal at U241 pin 8 is run through a second buffer to improve mixer to receive VCO isolation. The resulting RF signal is LO RF INJECTION and it is applied to the mixer at T302. (Refer to the *UHF Receiver Front-End Schematic Diagram* on page 9-84.)

During the transmit condition, when PTT is depressed, a five-volt current is applied to U241 pin 19. This activates the transmit VCO by enabling the transmit oscillator and the transmit buffer of U241. The RF signal at U241 pin 10 is injected into the input of the PA module (U101 pin16). This RF signal is the TX RF INJECTION. Also in transmit mode, the audio signal to be frequency modulated onto the carrier is received through the U201 pin 41.

When a high impedance is applied to U241 pin 19, the VCO is operating in BATTERY SAVER mode. In this case, both the receive and transmit oscillators as well as the receive transmit and prescaler buffer are turned off.

## Notes

## Chapter 5 UHF Band 2 Theory of Operation

### 5.1 Transmitter

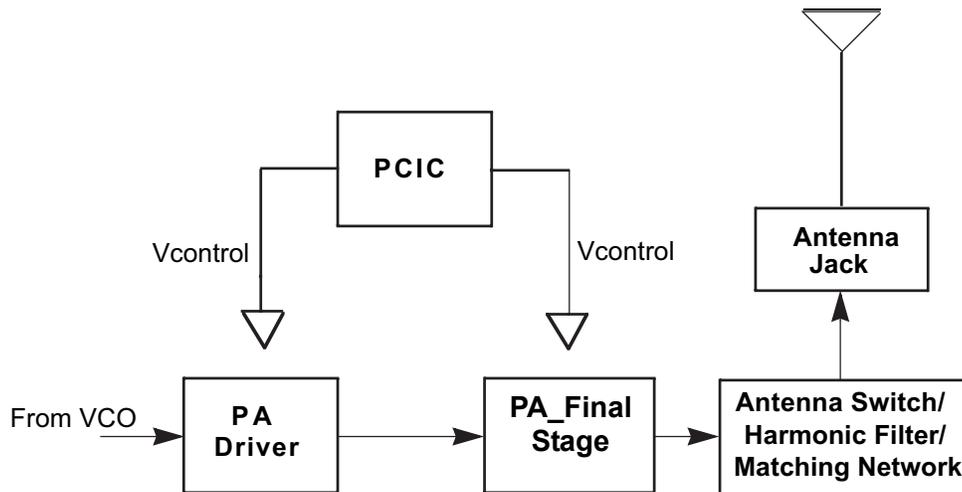


Figure 5-1. Transmitter Block Diagram

#### 5.1.1 General

(Refer to [Figure 5-1](#))

The UHF transmitter contains five basic circuits:

- power amplifier
- antenna switch
- harmonic filter
- antenna matching network
- power control integrated circuit (PCIC)

#### 5.1.2 Power Amplifier

The power amplifier consists of two devices:

- 9Z67 LDMOS driver IC (U101)
- PRF1507 LDMOS PA (Q110)

The 9Z67 LDMOS driver IC contains a 2 stage amplification with a supply voltage of 7.3 V.

This RF power amplifier is capable of supplying an output power of 0.3 W (pin 6 and 7) with an input signal of 2 mW (3 dBm) (pin16). The current drain would typically be 160 mA while operating in the frequency range of 450-527 MHz.

The PRF1507 LDMOS PA is capable of supplying an output power of 7 W with an input signal of 0.3 W. The current drain would typically be 1300 mA while operating in the frequency range of 450-527 MHz. The power output can be varied by changing the biasing voltage.

### 5.1.3 Antenna Switch

The antenna switch circuit consists of two PIN diodes (CR101 and CR102), a pi network (C107, L104 and C106), and two current limiting resistors (R101, R170). In the transmit mode, B+ at PCIC (U102) pin 23 will go low and turn on Q111 where a B+ bias is applied to the antenna switch circuit to bias the diodes "on." The shunt diode (CR102) shorts out the receiver port, and the pi network, which operates as a quarter wave transmission line, transforms the low impedance of the shunt diode to a high impedance at the input of the harmonic filter. In the receive mode, the diodes are both off, and hence, there exists a low attenuation path between the antenna and receiver ports.

### 5.1.4 Harmonic Filter

The harmonic filter consists of C104, L102, C103, L101 and C102. The design of the harmonic filter for UHF is that of a modified Zolotarev design. It has been optimized for efficiency of the power module. This type of filter has the advantage that it can give a greater attenuation in the stop-band for a given ripple level. The harmonic filter insertion loss is typically less than 1.2 dB.

### 5.1.5 Antenna Matching Network

A matching network which is made up of L116 is used to match the antenna's impedance to the harmonic filter. This will optimize the performance of the transmitter and receiver into an antenna.

### 5.1.6 Power Control Integrated Circuit (PCIC)

The transmitter uses the Power Control IC (PCIC), U102 to regulate the power output of the radio. The current to the final stage of the power module is supplied through R101, which provides a voltage proportional to the current drain. This voltage is then fed back to the Automatic Level Control (ALC) within the PCIC to regulate the output power of the transmitter.

The PCIC has internal digital to analog converters (DACs) which provide the reference voltage of the control loop. The reference voltage level is programmable through the SPI line of the PCIC.

There are resistors and integrators within the PCIC, and external capacitors (C133, C134 and C135) in controlling the transmitter rising and falling time. These are necessary in reducing the power splatter into adjacent channels.

CR105 and its associated components are part of the temperature cut back circuitry. It senses the printed circuit board temperature around the transmitter circuits and output a DC voltage to the PCIC. If the DC voltage produced exceeds the set threshold in the PCIC, the transmitter output power will be reduced so as to reduce the transmitter temperature.

## 5.2 Receiver

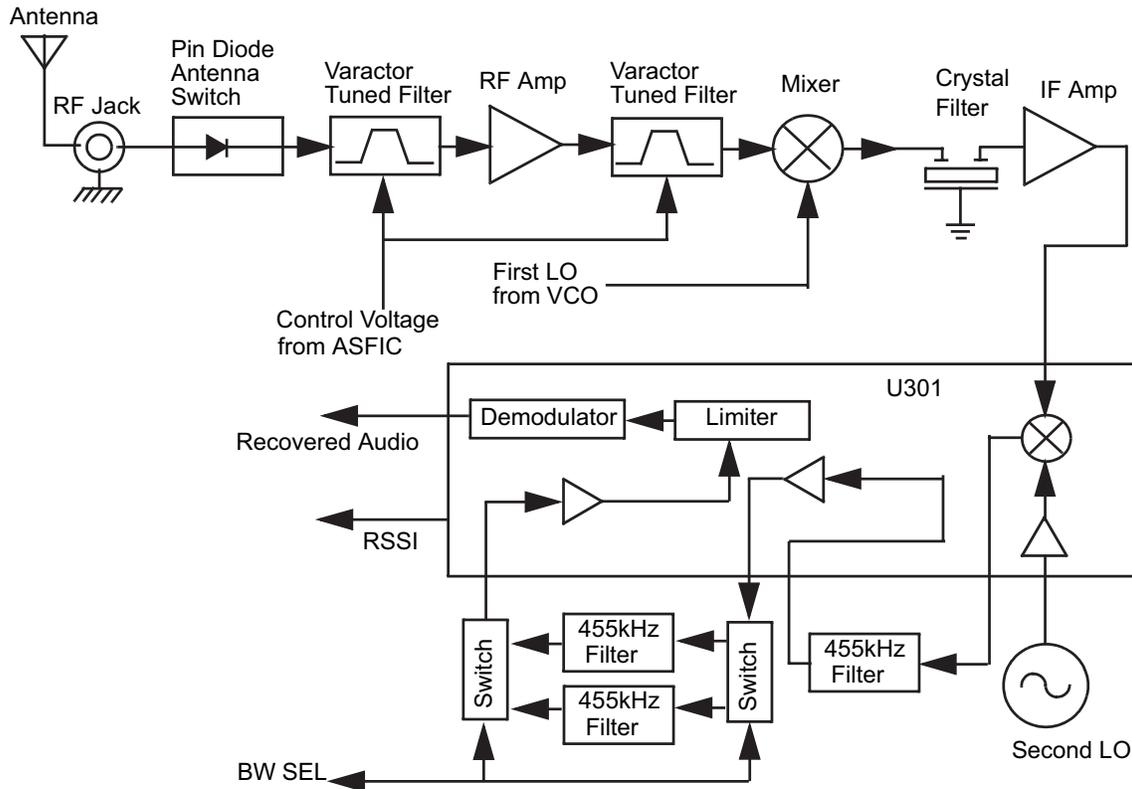


Figure 5-2. UHF Receiver Block Diagram

### 5.2.1 Receiver Front-End

(Refer to the *UHF Receiver Front End Schematic Diagram* on page 9-218 and the *UHF Transmitter Schematic Diagram* on page 9-223.

The RF signal is received by the antenna and applied to a low-pass filter. For UHF, the filter consists of L101, L102, C102, C103, C104. The filtered RF signal is passed through the antenna switch. The antenna switch circuit consists of two PIN diodes (CR101 and CR102) and a pi network (C106, L104 and C107). The signal is then applied to a varactor tuned bandpass filter. The UHF bandpass filter comprises L301, L302, C302, C303, C304, CR301, and CR302. The bandpass filter is tuned by applying a control voltage to the varactor diodes (CR301 and CR302) in the filter.

The bandpass filter is electronically tuned by the DACRx from IC404, which is controlled by the microprocessor. Depending on the carrier frequency, the DACRx will supply the tuned voltage to the varactor diodes in the filter. Wideband operation of the filter is achieved by shifting the bandpass filter across the band.

The output of the bandpass filter is coupled to the RF amplifier transistor Q301 via C307. After being amplified by the RF amplifier, the RF signal is further filtered by a second varactor tuned bandpass filter, consisting of L306, L307, C313, C317, CR304, and CR305.

Both the pre- and post-RF amplifier varactor tuned filters have similar responses. The 3 dB bandwidth of the filter is about 50 MHz. This enables the filters to be electronically controlled by using a single control voltage which is DACRx.

The output of the post-RF amplifier filter which is connected to the passive double balanced mixer consists of T301, T302, and CR306. Matching of the filter to the mixer is provided by C381. After mixing with the first LO signal from the voltage controlled oscillator (VCO) using low side injection, the RF signal is down-converted to the 44.85 MHz IF signal.

The IF signal coming out of the mixer is transferred to the crystal filter (FL301) through a resistor pad and a diplexer (C322 and L310). Matching to the input of the crystal filter is provided by C324 and L311. The crystal filter provides the necessary selectivity and intermodulation protection.

## 5.2.2 Receiver Back-End

(Refer to the *UHF Receiver Back End Schematic Diagram* on page 9-219.)

The output of crystal filter FL301 is matched to the input of first IF amplifier transistor Q302 by L330. Voltage supply to the IF amplifier is taken from the receive 5 volts (R5). The IF amplifier provides a gain of about 16 dB. The amplified first IF signal is then coupled into U301 (pin 1) via C360 and L332, which provides the matching for the first IF amplifier and U301.

Within U301, the first IF 44.85 MHz signal mixes with the 44.395 MHz second local oscillator (2nd LO) to produce the second IF signal at 455 kHz. The 2nd LO signal frequency is determined by crystal Y300. The second IF signal (455 kHz) is then filtered by an external ceramic filter FL302 before being amplified by the second IF amplifier within U301. Again, the signal is filtered by a second external ceramic filter FL303 or FL304, depending on the selected channel spacing. FL303 is used for 20/25 kHz channel spacing whereas FL304 is used for 12.5 kHz channel spacing. The simple circuit consisting of U302, CR312, CR313 and resistors R345, R360, R321, and R324 divert the second IF signal according to the BW\_SEL line. The filtered output of the second IF signal is applied to the limiter input pin of U301.

The IF IC (U301) contains a quadrature detector using a ceramic phase-shift element (Y301) to provide audio detection. Internal amplification provides an audio output level around 120 mVrms (@60% deviation) from pin 8 of U301. This demodulated audio is fed to the ASFIC\_CMP IC (U404) in the controller section.

The IF IC (U301) also performs several other functions. It provides a received signal-strength indicator (RSSI) with a dynamic range of 70 dB. The RSSI is a DC voltage monitored by the microprocessor, and is used as a peak indicator during the bench tuning of the receiver front-end varactor filter.

## 5.3 Frequency Generation Circuitry

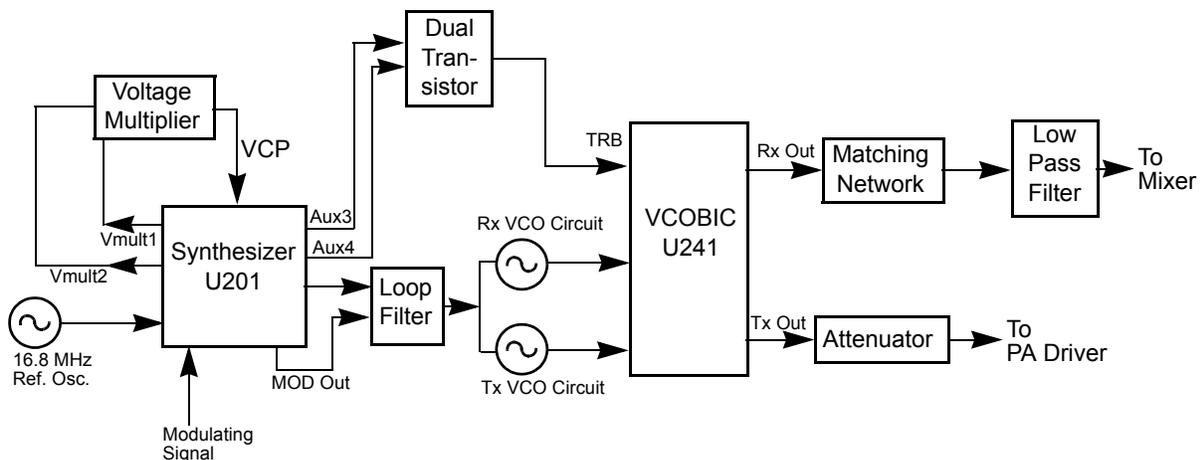


Figure 5-3. Frequency Generation Unit Block Diagram

The Frequency Generation Circuitry is composed of two main ICs:

- Fractional-N synthesizer (U201)
- VCO/Buffer IC (U241)

Designed in conjunction to maximize compatibility, the two ICs provide many of the functions that normally would require additional circuitry. The synthesizer block diagram illustrates the interconnect and support circuitry used in the region. Refer to the relevant schematics for the reference designators.

The synthesizer is powered by regulated 5 V and 3.3 V, which come from U247 and U248, respectively. The synthesizer in turn generates a superfiltered 4.5 V which powers U241.

In addition to the VCO, the synthesizer must interface with the logic and ASFIC circuitry. Programming for the synthesizer is accomplished through the data, clock and chip select lines from the microprocessor. A 3.3 V DC signal from synthesizer lock detect line indicates to the microprocessor that the synthesizer is locked.

Transmit modulation from the ASFIC is supplied to pin 10 of U201. Internally, the audio is digitized by the Fractional-N and applied to the loop divider to provide the low-port modulation. The audio runs through an internal attenuator for modulation balancing purposes before going out to the VCO.

## 5.4 Synthesizer

(Refer to the *UHF Synthesizer Schematic Diagram* on page 9-220.)

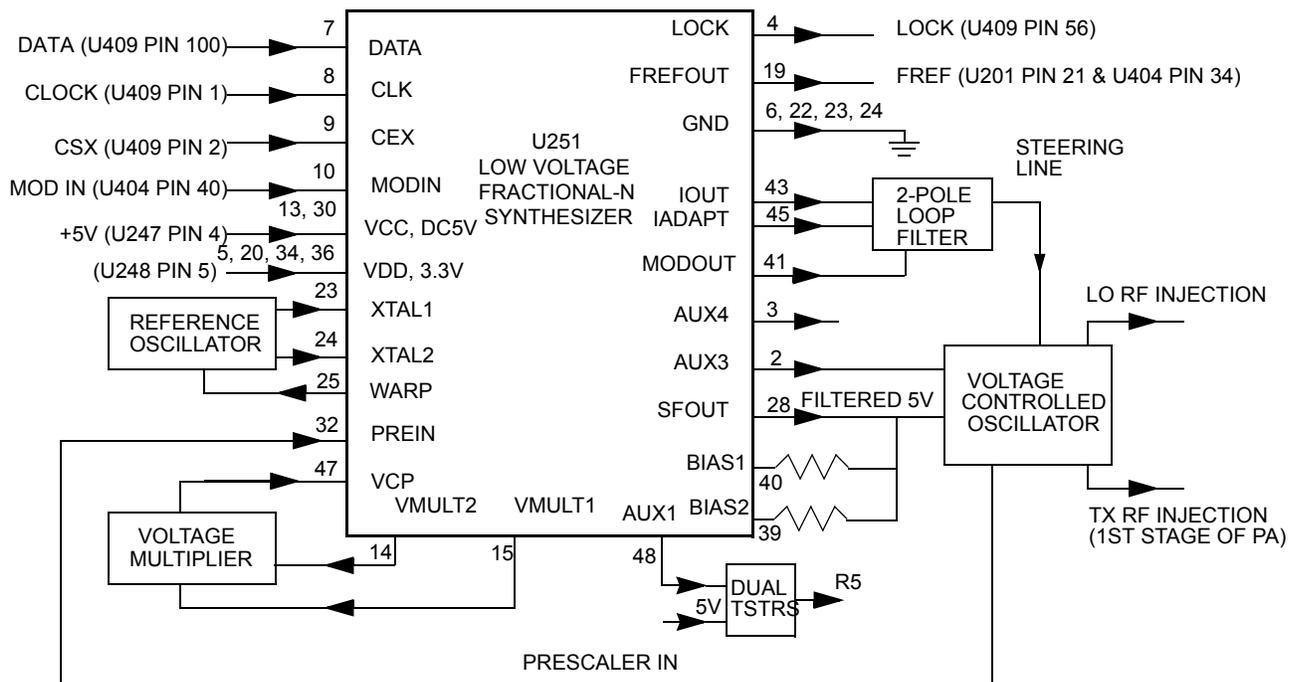


Figure 5-4. Synthesizer Block Diagram

The Fractional-N Synthesizer uses a 16.8 MHz crystal (FL201) to provide a reference for the system. The LVFractN IC (U201) further divides this to 2.1 MHz, 2.225 MHz, and 2.4 MHz as reference frequencies. Together with C206, C207, C208, R204, and CR203, they build up the reference oscillator which is capable of 2.5 ppm stability over temperatures of  $-30$  to  $85^{\circ}\text{C}$ . It also provides 16.8 MHz at pin 19 of U201 to be used by ASFIC.

The loop filter, which consists of C231, C232, C233, R231, R232, and R233, provides the necessary DC steering voltage for the VCO and determines the amount of noise and spur passing through.

In achieving fast locking for the synthesizer, an internal adapt charge pump provides higher current at pin 45 of U201 to put the synthesizer within the lock range. The required frequency is then locked by normal mode charge pump at pin 43.

Both the normal and adapt charge pumps get their supply from the capacitive voltage multiplier, which is made up of C258, C259, C228, triple diode CR201 and level shifters U210 and U211. Two 3.3 V square waves (180 deg out of phase) are first shifted to 5 V, then along with regulated 5 V, put through arrays of diodes and capacitors to build up 13.3 V at pin 47 of U201.

### 5.5 Voltage-Controlled Oscillator (VCO)

(Refer to the *UHF Voltage Controlled Oscillator Schematic Diagram* on page 9-221.

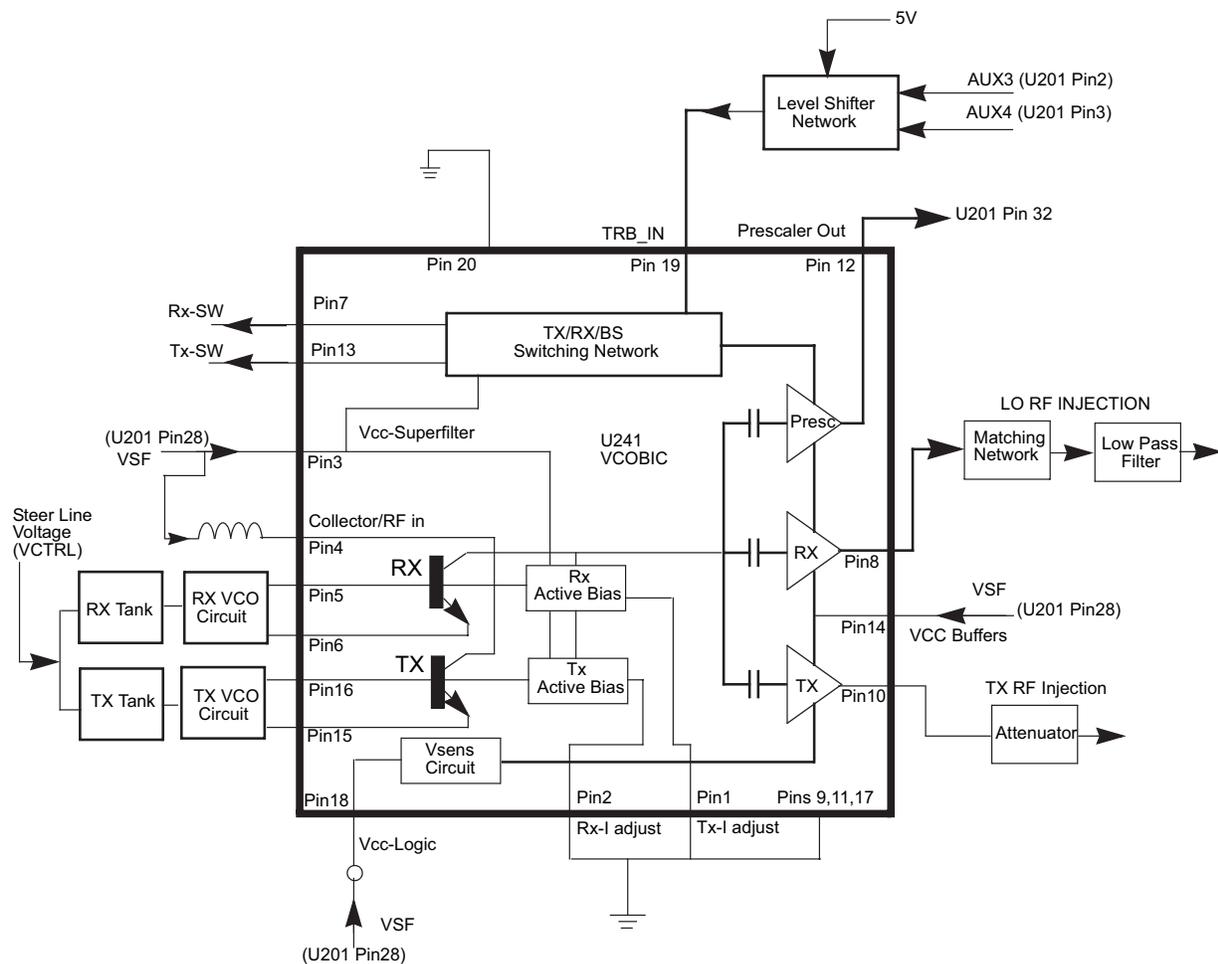


Figure 5-5. VCO Block Diagram



The VCOBIC (U241), in conjunction with the Fractional-N synthesizer (U201), generates RF in both the receive and the transmit modes of operation. The TRB line (U241 pin 19) determines which oscillator and buffer will be enabled. A sample of the RF signal from the enabled oscillator is routed from U241 pin 12, through a low pass filter, to the prescaler input (U201 pin 32). After frequency comparison in the synthesizer, a resultant CONTROL VOLTAGE is received at the VCO. This voltage is a DC voltage between 3.5 V and 9.5 V when the PLL is locked on frequency.

The VCOBIC (U241) is operated at 4.54 V (VSF) and Fractional-N synthesizer (U201) at 3.3 V. This difference in operating voltage requires a level shifter consisting of Q260 and Q261 on the TRB line.

The operation logic is shown in [Table 5-1](#).

*Table 5-1. Level Shifter Logic*

Desired Mode	AUX 4	AUX 3	TRB
Tx	Low	High (@3.2V)	High (@4.8V)
Rx	High	Low	Low
Battery Saver	Low	Low	Hi-Z/Float (@2.5V)

In the receive mode, U241 pin 19 is low or grounded. This activates the receive VCO by enabling the receive oscillator and the receive buffer of U241. The RF signal at U241 pin 8 is run through a matching network. The resulting RF signal is the LO RF INJECTION, and it is applied to the mixer at T302 (refer to the *UHF Receiver Front End Schematic Diagram* on page 9-218).

During the transmit condition, when PTT is depressed, five volts is applied to U241 pin 19. This activates the transmit VCO by enabling the transmit oscillator and the transmit buffer of U241. The RF signal at U241 pin 10 is injected into the input of the PA module (U101 pin16). This RF signal is the TX RF INJECTION. Also in transmit mode, the audio signal to be frequency modulated onto the carrier is received through the U201 pin 41.

When a high impedance is applied to U241 pin 19, the VCO is operating in BATTERY SAVER mode. In this case, both the receive and transmit oscillators as well as the receive transmit and prescaler buffer are turned off.

## Notes

## Chapter 6 VHF Theory of Operation

### 6.1 Transmitter

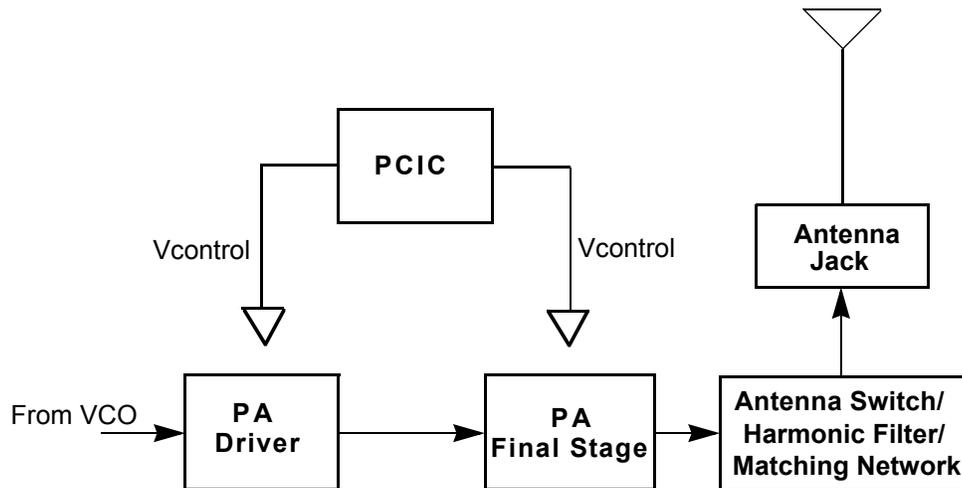


Figure 6-1. Transmitter Block Diagram

#### 6.1.1 General

(Refer to Figure 6-1.)

The VHF transmitter contains five basic circuits:

- Power amplifier
- Antenna switch
- Harmonic filter
- Antenna matching network
- Power control integrated circuit (PCIC)

#### 6.1.2 Power Amplifier

The power amplifier consists of two devices:

- 9Z67 LDMOS driver IC (U3501)
- PRF1507 LDMOS PA (Q3501)

The 9Z67 LDMOS driver IC contains a two-stage amplification with a supply voltage of 7.3 V.

This RF power amplifier is capable of supplying an output power of 0.3 W (pin 6 and 7) with an input signal of 2 mW (3 dBm) (pin16). The current drain would typically be 130 mA while operating in the frequency range of 136-174 MHz.

The PRF1507 LDMOS PA is capable of supplying an output power of 7 W with an input signal of 0.3W. The current drain would typically be 1800 mA while operating in the frequency range of 136-174 MHz. The power output can be varied by changing the biasing voltage.

### 6.1.3 Antenna Switch

The antenna switch circuit consists of two PIN diodes (D3521 and D3551), a pi network (C3531, L3551 and C3550), and three current limiting resistors (R3571, R3572, R3573). In the transmit mode, B+ at PCIC (U3502) pin 23 will go low and turn on Q3561 where a B+ bias is applied to the antenna switch circuit to bias the diodes "on." The shunt diode (D3551) shorts out the receiver port, and the pi network, which operates as a quarter wave transmission line, transforms the low impedance of the shunt diode to a high impedance at the input of the harmonic filter. In the receive mode, the diodes are both off, and hence, there exists a low attenuation path between the antenna and receiver ports.

### 6.1.4 Harmonic Filter

The harmonic filter consists of C3532 to C3536, L3531 and L3532. This network forms a low-pass filter to attenuate harmonic energy of the transmitter to specifications level. The harmonic filter insertion loss should be less than 1.2 dB.

### 6.1.5 Antenna Matching Network

A matching network which is made up of L3538 and C3537 is used to match the antenna's impedance to the harmonic filter. This will optimize the performance of the transmitter and receiver into an antenna.

### 6.1.6 Power Control Integrated Circuit (PCIC)

The transmitter uses the Power Control IC (PCIC), U3502 to control the power output of the radio by maintaining the radio current drain. The current to the final stage of the power module is supplied through R3519 (0.1ohms), which provides a voltage proportional to the current drain. This voltage is then fed back to the Automatic Level Control (ALC) within the PCIC to keep the whole loop stable.

The PCIC has internal digital to analog converters (DACs) which provide the reference voltage of the control loop. The voltage level is controlled by the microprocessor through the data line of the PCIC.

There are resistors and integrators within the PCIC, and external capacitors (C3562, C3563 and C3565) in controlling the transmitter rising and falling time. These are necessary in reducing the power splatter into adjacent channels.

U3503 and its associated circuitry acts as a temperature cut back circuitry. This circuitry provides the necessary voltage to the PCIC to cut the transmitter power when the radio temperature gets too high.

## 6.2 Receiver (for all models except those with PCB 8486473Z04)

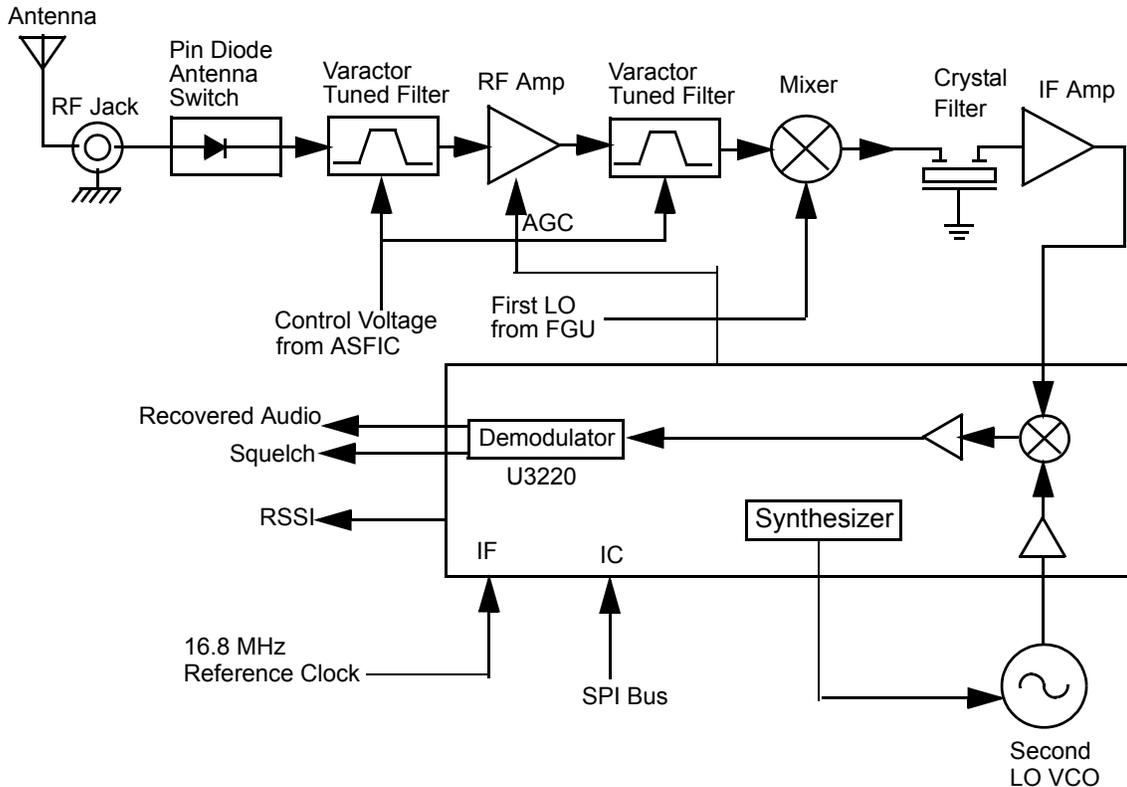


Figure 6-2. VHF Receiver Block Diagram

### 6.2.1 Receiver Front-End

(Refer to *VHF Receiver Front End Schematic Diagram* on page 9-326, *VHF Receiver Back End Schematic Diagram* on page 9-327, and *VHF Transmitter Schematic Diagram* on page 9-330).

The RF signal is received by the antenna and applied to a low-pass filter. For VHF, the filter consists of L3531, L3532, C3532 to C3563. The filtered RF signal is passed through the antenna switch. The antenna switch circuit consists of two PIN diodes (D3521 and D3551) and a pi network (C3531, L3551 and C3550). The signal is then applied to a varactor tuned bandpass filter. The VHF bandpass filter comprises of L3301, L3303, C3301 to C3304 and D3301. The bandpass filter is tuned by applying a control voltage to the varactor diode (D3301) in the filter.

The bandpass filter is electronically tuned by the DACRx from IC404 which is controlled by the microprocessor. Depending on the carrier frequency, the DACRx will supply the tuned voltage to the varactor diodes in the filter. Wideband operation of the filter is achieved by shifting the bandpass filter across the band.

The output of the bandpass filter is coupled to the RF amplifier transistor Q3302 via C3306. After being amplified by the RF amplifier, the RF signal is further filtered by a second varactor tuned bandpass filter, consisting of L3305, L3306, C3311 to C3314 and D3302.

Both the pre and post-RF amplifier varactor tuned filters have similar responses. The 3 dB bandwidth of the filter is about 12 MHz. This enables the filters to be electronically controlled by using a single control voltage which is DACRx.

The output of the post-RF amplifier filter is connected to the passive double balanced mixer which consists of T3301, T3302 and CR3301. Matching of the filter to the mixer is provided by C3317, C3318 and L3308. After mixing with the first LO signal from the voltage controlled oscillator (VCO) using high side injection, the RF signal is down-converted to the 45.1 MHz IF signal.

The IF signal coming out of the mixer is transferred to the crystal filter (Y3200) through a resistor pad (R3321 - R3323) and a diplexer (C3320 and L3309). Matching to the input of the crystal filter is provided by C3200 and L3200. The crystal filter provides the necessary selectivity and intermodulation protection.

## 6.2.2 Receiver Back-End

(Refer to *VHF Receiver Back End Schematic Diagram* on page 9-327).

The output of crystal filter Y3200 is matched to the input of IF amplifier transistor Q3200 by capacitor C3203. Voltage supply to the IF amplifier is taken from the receive 5 volts (R5). The gain controlled IF amplifier provides a maximum gain of about 10dB. The amplified IF signal is then coupled into U3220 (pin 3) via L3202, C3207, and C3230 which provides the matching for the IF amplifier and U3220.

The IF signal applied to pin 3 of U3220 is amplified, down-converted, filtered, and demodulated, to produce the recovered audio at pin 27 of U3220. This IF IC is electronically programmable, and the amount of filtering (which is dependent on the radio channel spacing) is controlled by the microprocessor. Additional filtering, once externally provided by the conventional ceramic filters, is replaced by internal filters in the IF module (U3220).

The IF IC uses a type of direct conversion process, whereby the externally generated second LO frequency is divided by two in U3220 so that it is very close to the first IF frequency. The IF IC (U3220) synthesizes the second LO and phase-locks the VCO to track the first IF frequency. The second LO is designed to oscillate at twice the first IF frequency because of the divide-by-two function in the IF IC.

In the absence of an IF signal, the VCO will "search" for a frequency, or its frequency will vary close to twice the IF frequency. When an IF signal is received, the VCO will lock onto the IF signal. The second LO/VCO is a Colpitts oscillator built around transistor Q3270. The VCO has a varactor diode, D3270, to adjust the VCO frequency. The control signal for the varactor is derived from a loop filter consisting of C3278 to C3280, R3274 and R3275.

The IF IC (U3220) also performs several other functions. It provides a received signal-strength indicator (RSSI) and a squelch output. The RSSI is a dc voltage monitored by the microprocessor, and used as a peak indicator during the bench tuning of the receiver front-end varactor filter. The RSSI voltage is also used to control the automatic gain control (AGC) circuit at the front-end.

The demodulated signal on pin 27 of U3220 is also used for squelch control. The signal is routed to U404 (ASFIC) where squelch signal shaping and detection takes place. The demodulated audio signal is also routed to U404 for processing before going to the audio amplifier for amplification.

## 6.2.3 Automatic Gain Control Circuit

(Refer to *VHF Receiver Front End Schematic Diagram* on page 9-326 and *VHF Receiver Back End Schematic Diagram* on page 9-327).

The front end automatic gain control circuit provides automatic reduction of gain, of the front end RF amplifier via feedback. This action is necessary to prevent overloading of backend circuits. This is achieved by drawing some of the output power from the RF amplifier output. At high radio frequencies, capacitor C3327 provides the low impedance path to ground for this purpose. CR3302 is a PIN diode used for switching the path on or off. A certain amount of forward biasing current is needed to turn the PIN diode on. Transistor Q3301 provides this current.

Radio signal strength indicator, RSSI, a voltage signal, is used to drive Q3301 to saturation i.e. turned on. RSSI is produced by U3220 and is proportional to the gain of the RF amplifier and the input power to the radio.

Resistors R3304 and R3305 are voltage dividers designed to turn on Q3301 at certain RSSI levels. In order to turn on Q3301 the voltage across R3305 must be greater or equal to the voltage across R3324, plus the base-emitter voltage ( $V_{be}$ ) present at Q3301. Capacitor C3209 is used to dampen any instability while the AGC is turning on. The current flowing into the collector of Q3301, a high current gain NPN transistor, will be drawn through the PIN diode to turn it on. Maximum current flowing through the PIN is limited by the resistors R3316, R3313, R3306 and R3324. C3326 is a feedback capacitor used to provide some stability to this high gain stage.

An additional gain control circuit is formed by Q3201 and its associated circuitry. Resistors R3206 and R3207 are voltage dividers designed to turn on Q3201 at a significantly higher RSSI level than the level required to turn on PIN diode control transistor Q3301. In order to turn on Q3201 the voltage across R3207 must be greater or equal to the voltage across R3208, plus the base-emitter voltage ( $V_{be}$ ) present at Q3201. As current starts flowing into the collector of Q3201, it reduces the bias voltage at the base of IF amplifier transistor Q3200 and in turn, the gain of the IF amplifier. The gain can be controlled in a range of -30 dB up to +10 dB.

### 6.3 Receiver (for models with PCB 8486473Z04)

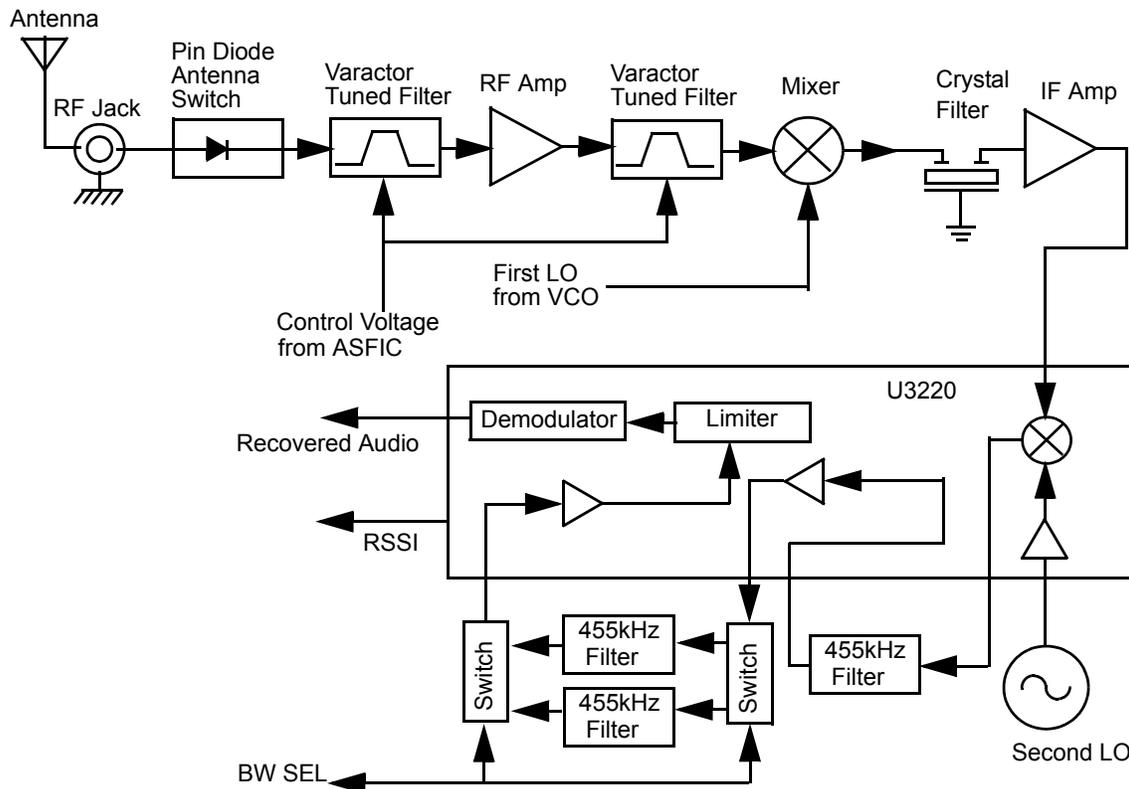


Figure 6-3. VHF Receiver Block Diagram

### 6.3.1 Receiver Front-End

(Refer to *VHF Receiver Front-End Schematic Diagram* on page 9-340, *VHF Receiver Back-End Schematic Diagram* on page 9-341, and *VHF Transmitter Schematic Diagram* on page 9-344.)

The RF signal is received by the antenna and applied to a low-pass filter. For VHF, the filter consists of L3531, L3532, C3532 to C3563. The filtered RF signal is passed through the antenna switch. The antenna switch circuit consists of two PIN diodes (D3521 and D3551) and a pi network (C3531, L3551 and C3550). The signal is then applied to a varactor tuned bandpass filter. The VHF bandpass filter comprises of L3301, L3303, C3301 to C3304 and D3301. The bandpass filter is tuned by applying a control voltage to the varactor diode (D3301) in the filter.

The bandpass filter is electronically tuned by the DACRx from IC404 which is controlled by the microprocessor. Depending on the carrier frequency, the DACRx will supply the tuned voltage to the varactor diodes in the filter. Wideband operation of the filter is achieved by shifting the bandpass filter across the band.

The output of the bandpass filter is coupled to the RF amplifier transistor Q3302 via C3306. After being amplified by the RF amplifier, the RF signal is further filtered by a second varactor tuned bandpass filter, consisting of L3305, L3306, C3311 to C3314 and D3302.

Both the pre and post-RF amplifier varactor tuned filters have similar responses. The 3 dB bandwidth of the filter is about 12 MHz. This enables the filters to be electronically controlled by using a single control voltage which is DACRx.

The output of the post-RF amplifier filter is connected to the passive double balanced mixer which consists of T3301, T3302 and CR3301. Matching of the filter to the mixer is provided by C3317, C3318 and L3308. After mixing with the first LO signal from the voltage controlled oscillator (VCO) using high side injection, the RF signal is down-converted to the 44.85 MHz IF signal.

The IF signal coming out of the mixer is transferred to the crystal filter (Y3200) through a resistor pad (R3321 - R3323) and a diplexer (C3320 and L3309). Matching to the input of the crystal filter is provided by C3201 and L3200. The crystal filter provides the necessary selectivity and intermodulation protection.

### 6.3.2 Receiver Back-End

(Refer to *VHF Receiver Back-End Schematic Diagram* on page 9-341.)

The output of crystal filter Y3200 is matched to the input of IF amplifier transistor Q3200 by L3203. Voltage supply to the IF amplifier is taken from the receive 5 volts (R5). The IF amplifier Q3200 is actively biased by a collector base feedback provided by R3202 and R3203. The gain controlled IF amplifier provides a maximum gain of about 16dB. A dual hot carrier diode (CR3201) limits the filter output voltage swing to reduce overdrive effects at RF levels above -27dBm. The amplified IF signal is then coupled into U3220 (pin 1) via L3202, C3207, and C3200 which provides the matching for the IF amplifier and U3220.

The IF signal applied to pin 1 of U3220 is amplified, down-converted, filtered, and demodulated, to produce the recovered audio at pin 7 of U3220.

Within U3220, the first IF 44.85 MHz signal mixes with the 44.395 MHz second local oscillator (2nd LO) to produce the second IF signal at 455 kHz. The 2nd LO signal frequency is determined by crystal Y3201. The second IF signal (455 kHz) is then filtered by an external ceramic filter Y3205 before being amplified by the second IF amplifier within U3220. Again, the signal is filtered by a second external ceramic filter Y3203 or Y3204 depending on the selected channel spacing. Y3203 is used for 20/25 kHz channel spacing whereas Y3204, for 12.5 kHz channel spacing. The simple circuit consisting of U3221, CR3202, CR3203 and resistors R3209, R3212, R3211 and R3205 divert the second IF signal according to the BW\_SEL line. The filtered output of the second IF signal is applied to the limiter input pin of U3220 (Pin 14).



The IF IC (U3220) contains a quadrature detector using a ceramic phase-shift element (Y3202) to provide audio detection. Internal amplification provides an audio output level around 120mVrms (@60% deviation) from pin 8 of U3220. This demodulated audio is fed to the ASFIC\_CMP IC (U404) in the controller section.

The IF IC (U3220) also performs several other functions. It provides a received signal-strength indicator (RSSI) with a dynamic range of 70 dB. The RSSI is a dc voltage monitored by the microprocessor, and used as a peak indicator during the bench tuning of the receiver front-end varactor filter.

### 6.3.3 Automatic Gain Control Circuit

(Refer to *VHF Receiver Front-End Schematic Diagram* on page 9-340 and *VHF Receiver Back-End Schematic Diagram* on page 9-341.)

The front-end automatic gain control circuit provides automatic reduction of gain, of the front-end RF amplifier via feedback. This action is necessary to prevent overloading of back-end circuits. This is achieved by drawing some of the output power from the RF amplifier output. At high radio frequencies, capacitor C3327 provides the low impedance path to ground for this purpose. CR3302 is a PIN diode used for switching the path on or off. A certain amount of forward biasing current is needed to turn the PIN diode on. Transistor Q3301 provides this current.

Radio signal strength indicator, RSSI, a voltage signal, is used to drive Q3301 to saturation i.e. turned on. RSSI is produced by U3220 and is proportional to the gain of the RF amplifier and the input power to the radio.

Resistors R3304 and R3305 are voltage dividers designed to turn on Q3301 at certain RSSI levels. In order to turn on Q3301 the voltage across R3305 must be greater or equal to the voltage across R3324, plus the base-emitter voltage ( $V_{be}$ ) present at Q3301. Capacitor C3209 is used to dampen any instability while the AGC is turning on. The current flowing into the collector of Q3301, a high current gain NPN transistor, will be drawn through the PIN diode to turn it on. Maximum current flowing through the PIN is limited by the resistors R3316, R3313, R3306 and R3324. C3326 is a feedback capacitor used to provide some stability to this high gain stage.

An additional gain control circuit is formed by Q3201 and its associated circuitry. Resistors R3206 and R3207 are voltage dividers designed to turn on Q3201 at a significantly higher RSSI level than the level required to turn on PIN diode control transistor Q3301. In order to turn on Q3201 the voltage across R3207 must be greater or equal to the voltage across R3208, plus the base-emitter voltage ( $V_{be}$ ) present at Q3201. As current starts flowing into the collector of Q3201, it reduces the bias voltage at the base of IF amplifier transistor Q3200 and in turn, the gain of the IF amplifier. The gain can be controlled in a range of -30 dB up to +10 dB.

## 6.4 Frequency Generation Circuitry

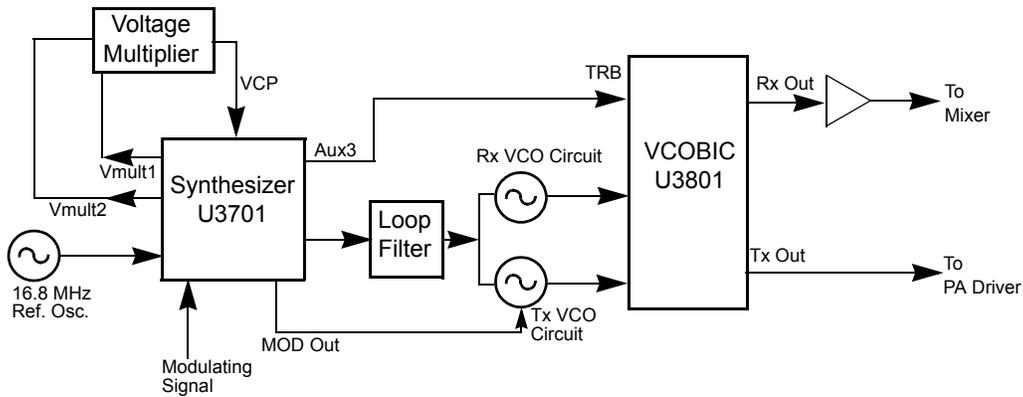


Figure 6-4. Frequency Generation Unit Block Diagram

The Frequency Generation Circuitry is composed of two main ICs, the Fractional-N synthesizer (U3701), and the VCO/Buffer IC (U3801). Designed in conjunction to maximize compatibility, the two ICs provide many of the functions that normally would require additional circuitry. The synthesizer block diagram illustrates the interconnect and support circuitry used in the region. Refer to the relevant schematics for the reference designators.

The synthesizer is powered by regulated 5 V and 3.3 V which come from U3711 and U3201 respectively. The synthesizer in turn generates a superfiltered 4.5 V which powers U3801.

In addition to the VCO, the synthesizer must interface with the logic and ASFIC circuitry. Programming for the synthesizer is accomplished through the data, clock and chip select lines from the microprocessor. A 3.3 V dc signal from synthesizer lock detect line indicates to the microprocessor that the synthesizer is locked.

Transmit modulation from the ASFIC is supplied to pin10 of U3701. Internally the audio is digitized by the Fractional-N and applied to the loop divider to provide the low-port modulation. The audio runs through an internal attenuator for modulation balancing purposes before going out to the VCO.

## 6.5 Synthesizer

(Refer to the *VHF Synthesizer Schematic Diagram* on page 9-342.)

The Fractional-N Synthesizer uses a 16.8MHz crystal (Y3761) to provide a reference for the system. The LVFractN IC (U3701) further divides this to 2.1MHz, 2.225 MHz, and 2.4 MHz as reference frequencies. Together with C3761, C3762, C3763, R3761 and D3761, they build up the reference oscillator which is capable of 2.5ppm stability over temperatures of -30 to 85°C. It also provides 16.8 MHz at pin 19 of U3701 to be used by ASFIC.

The loop filter which consist of C3721, C3722, R3721, R3722 and R3723 provides the necessary dc steering voltage for the VCO and determines the amount of noise and spur passing through.

In achieving fast locking for the synthesizer, an internal adapt charge pump provides higher current at pin 45 of U3701 to put synthesizer within the lock range. The required frequency is then locked by normal mode charge pump at pin 43.

Both the normal and adapt charge pumps get their supply from the capacitive voltage multiplier which is made up of C3701 to C3704 and triple diodes D3701, D3702. Two 3.3 V square waves (180 deg out of phase) are first multiplied by four and then shifted, along with regulated 5 V, to build up 13.5 V at pin 47 of U3701.

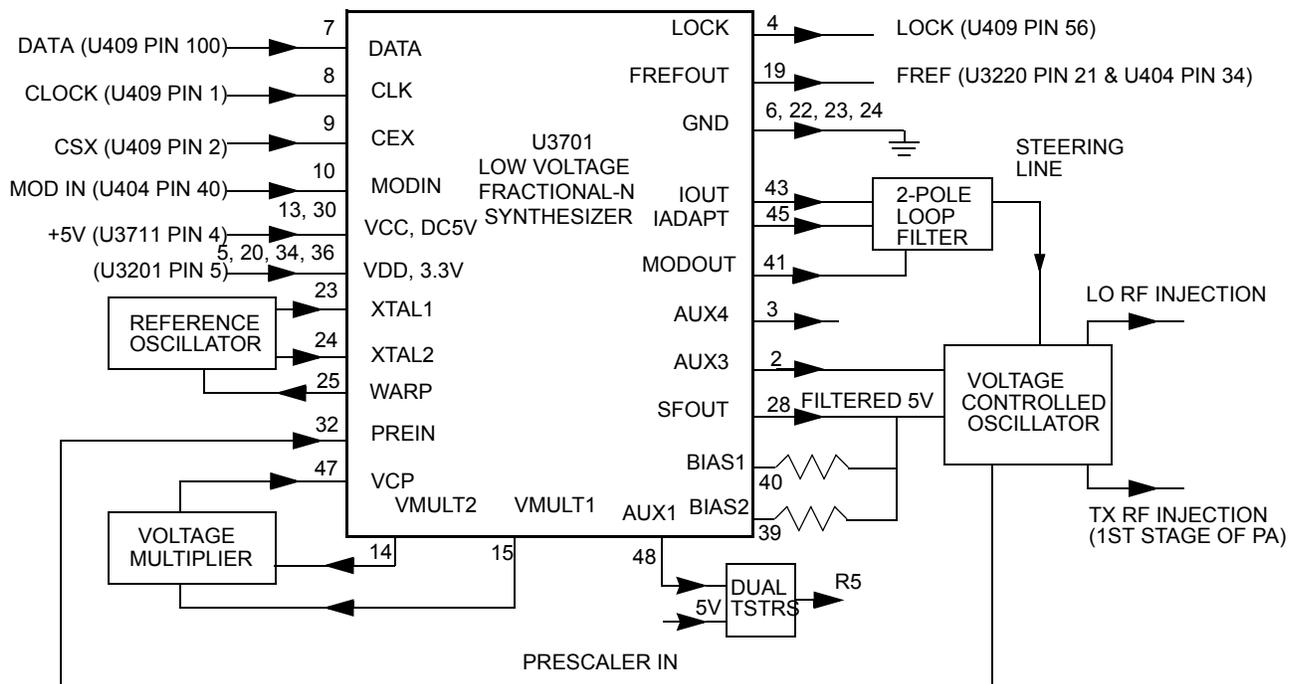


Figure 6-5. Synthesizer Block Diagram

## 6.6 Voltage-Controlled Oscillator (VCO)

(Refer to the VHF Voltage-Controlled Oscillator Schematic Diagram on page 9-343.)

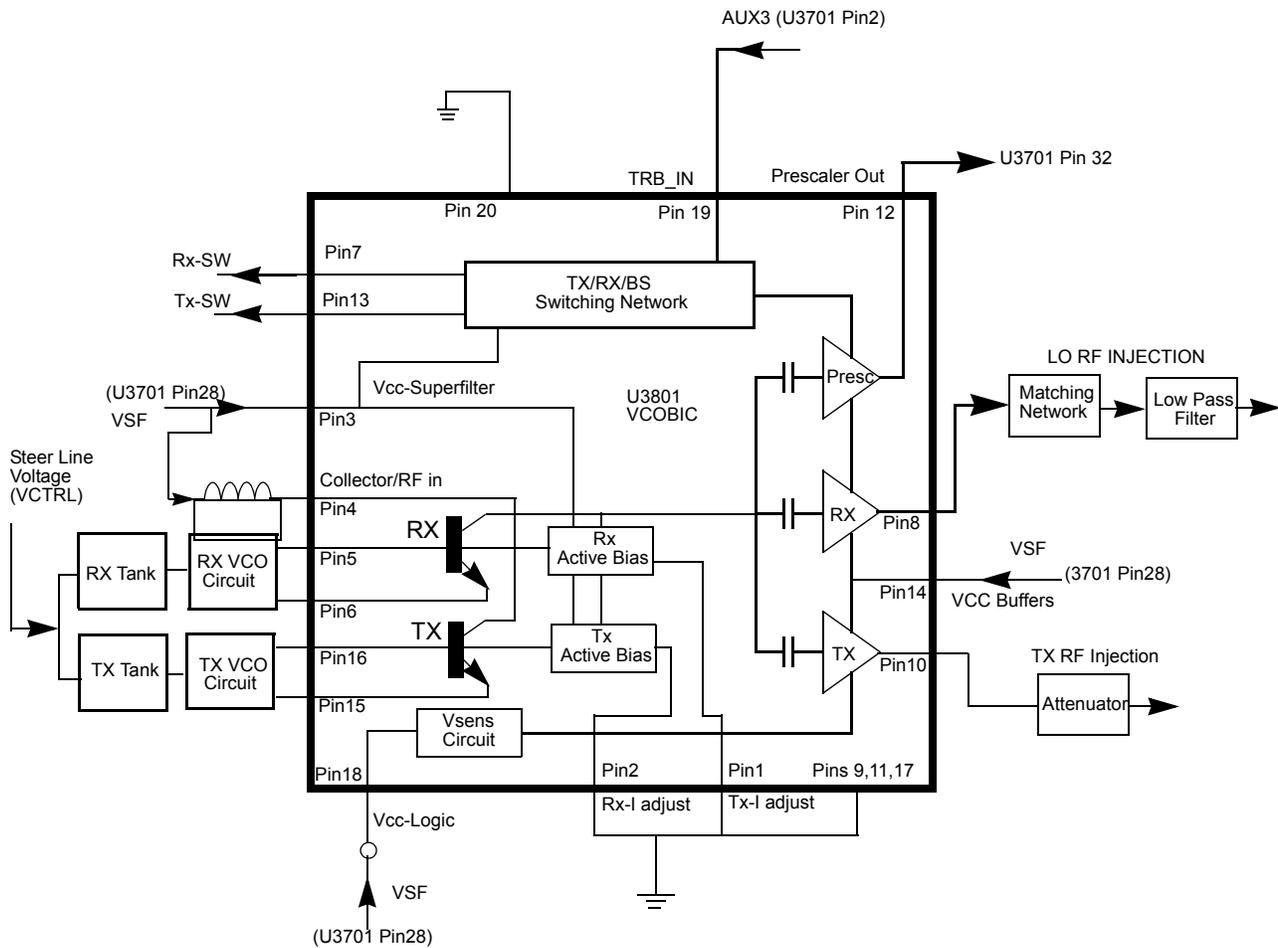


Figure 6-6. VCO Block Diagram

The VCOBIC (U3801) in conjunction with the Fractional-N synthesizer (U3701) generates RF in both the receive and the transmit modes of operation. The TRB line (U3801 pin 19) determines which oscillator and buffer will be enabled. A sample of the RF signal from the enabled oscillator is routed from U3801 pin 12, through a low pass filter, to the prescaler input (U3701 pin 32). After frequency comparison in the synthesizer, a resultant CONTROL VOLTAGE is received at the VCO. This voltage is a DC voltage typically between 3.5 V and 9.5 V when the PLL is locked on frequency.

The RF section of the VCOBIC(U3801) is operated at 4.54 V (VSF), while the control section of the VCOBIC and Fractional-N synthesizer (U3701) is operated at 3.3 V. The operation logic is shown in Table 6-1.

*Table 6-1. VCO Control Logic*

<b>Desired Mode</b>	<b>AUX 4</b>	<b>AUX 3</b>	<b>TRB</b>
Tx	n.u.	High (@3.2V)	High (@3.2V)
Rx	n.u.	Low	Low
Battery Saver	n.u.	Hi-Z/Float (@1.6V)	Hi-Z/Float (@1.6V)

In receive mode, U3801 pin 19 is low or grounded. This activates the receive VCO by enabling the receive oscillator and the receive buffer of U3801. The RF signal at U3801 pin 8 is run through a matching network. The resulting RF signal is the LO RF INJECTION and it is applied to the mixer at T3302.

During the transmit condition, when PTT is depressed, 3.2 volts is applied to U3801 pin 19. This activates the transmit VCO by enabling the transmit oscillator and the transmit buffer of U3801. The RF signal at U3801 pin 10 is injected into the input of the PA module (U3501 pin16). This RF signal is the TX RF INJECTION. Also in transmit mode, the audio signal to be frequency modulated onto the carrier is received through U3701 pin 41.

When a high impedance is applied to U3801 pin 19, the VCO is operating in BATTERY SAVER mode. In this case, both the receive and transmit oscillators as well as the receive transmit and prescaler buffer are turned off.

## Notes

## Chapter 7 Low Band, 800 MHz, PassPort & 900 MHz Theory of Operation

### 7.1 Introduction

This chapter provides a detailed theory of operation for the radio components. Schematic diagrams for the circuits described in the following paragraphs are located in Figures 9-238 through 9-284.

### 7.2 Low Band Transmitter

The low band transmitter consists of the following basic circuits as shown in Figure 7-1.

- Power amplifier (PA).
- Antenna switch/harmonic filter.
- Antenna matching network.
- Power control integrated circuit (PCIC).

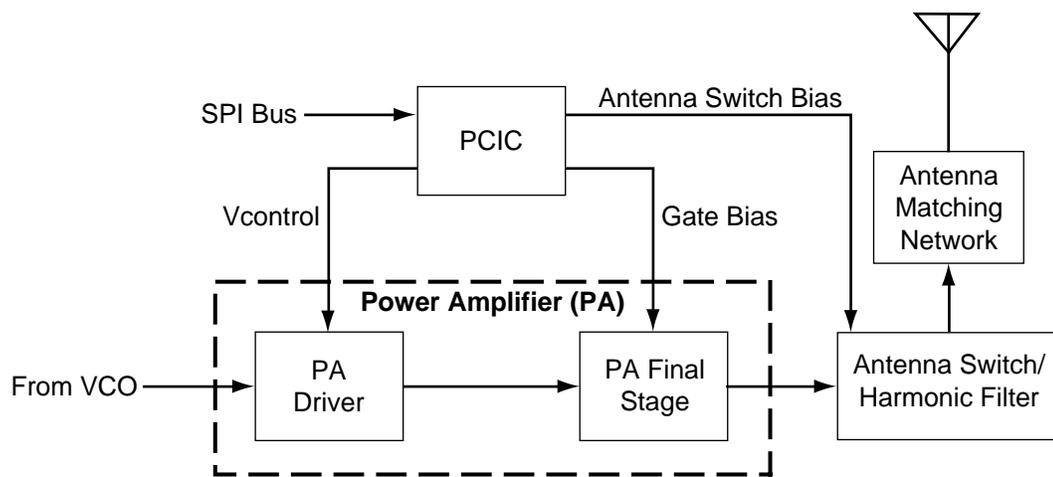


Figure 7-1. Low Band Transmitter Block Diagram

#### 7.2.1 Power Amplifier (PA)

The PA consists of two LDMOS devices:

- PA driver, U101.
- PA final stage, Q100.

The LDMOS driver (U101) provides 2-stage amplification using a supply voltage of 7.3V. The amplifier is capable of supplying an output power of 0.3 W (pins 6 and 7) with an input signal of 2mW at (pin16). The current drain is typically 120 mA while operating in the frequency range of 29.7–50 MHz. The power output of this stage is varied by the power control loop which controls the voltage on pin 1.

The LDMOS PA is capable of supplying an output power of 8W with an input signal of 0.3 W. The current drain is typically 2000 mA while operating in the frequency range of 29.7 – 50 MHz. The final stage gate is bias by a voltage from PCIC, pin 24. This voltage is the output of a programmable DAC inside the PCIC and the output is adjustable with the radio tuner.

### **7.2.2 Antenna Switch**

The antenna switch circuit consists of two pin diodes (D100 and D101), a RF network (C147 and L103), and a DC feed network (L104, C144, and current limiting resistor R101). In the transmit mode, PCIC (U102) pin 32 goes high supplying current via the feed network to bias the diodes “on”. The shunt diode (D101) shorts out the receiver port and L103 is connected from the RF path to ground. L103 and the input capacitance of the lowpass filter form a parallel resonant circuit, effectively disconnecting the receiver port from the antenna while not loading the transmit path. In the receive mode, pin 32 goes low and the diodes are off. D100 looks like a high impedance effectively disconnecting the transmitter from the antenna while L103 and C147 form a series resonant circuit effectively connect the receiver to the antenna.

### **7.2.3 Harmonic Filter**

The harmonic filter consists of components C103, C106, C103, C107, C110, C111, C114, C115 and inductors L100, L101, and L102 which are a part of the SH100 assembly. The harmonic filter for lowband is pole zero design. This feature gives greater attenuation in low frequencies where the harmonic energy of the transmitter is the greatest and less attenuation in high frequencies where there is less harmonic energy. The harmonic filter insertion loss is typically less than 0.8 dB.

### **7.2.4 Antenna Matching Transformer**

The antenna matching transformer (T100) matches the antenna impedance with the harmonic filter to optimize the performance of the transmitter and receiver.

### **7.2.5 Power Control Integrated Circuit (PCIC)**

The transmitter uses the PCIC (U102) to regulate the power output of the radio. To accomplish this, the voltage across R102 is sensed. This voltage drop is directly proportional to the current drawn in the final stage of the transmitter. This voltage is compared to a programmable reference inside the PCIC and the voltage on PCIC pin 4 adjusted. Pin 4 connects to the PA driver IC (U101) pin 1 via resistor R100 and varies RF output power of the driver. This controls the current drain of the final stage and sets the output power.

### **7.2.6 Temperature Cut Back Circuit**

Temperature sensor VR101 and associated components are part of a temperature cut back circuit. This circuit senses the printed circuit board temperature around the transmitter circuits and outputs a DC voltage to the PCIC. If the DC voltage produced exceeds the set threshold of the PCIC, the transmitter output power decreases to reduce the transmitter temperature.

### **7.2.7 Electrostatic Discharge (ESD) Protection Circuit**

The LDMOS PA device (Q100) is very sensitive to static discharge. To protect the device from ESD, a protection circuit consisting of single high-speed Schottky Diode (D104) is connected from the Antenna Nut (J102) to ground. This diode effectively shorts ESD energy to ground, but looks like an open circuit to normal RF energy. The diode turns on when the voltage at the antenna nut exceeds 150V.



## 7.3 Low Band Receiver

The low band receiver consists of a front end, back end, and automatic gain control circuits. A block diagram of the receiver is shown in Figure 7-2. Detailed descriptions of these stages are contained in the paragraphs that follow.

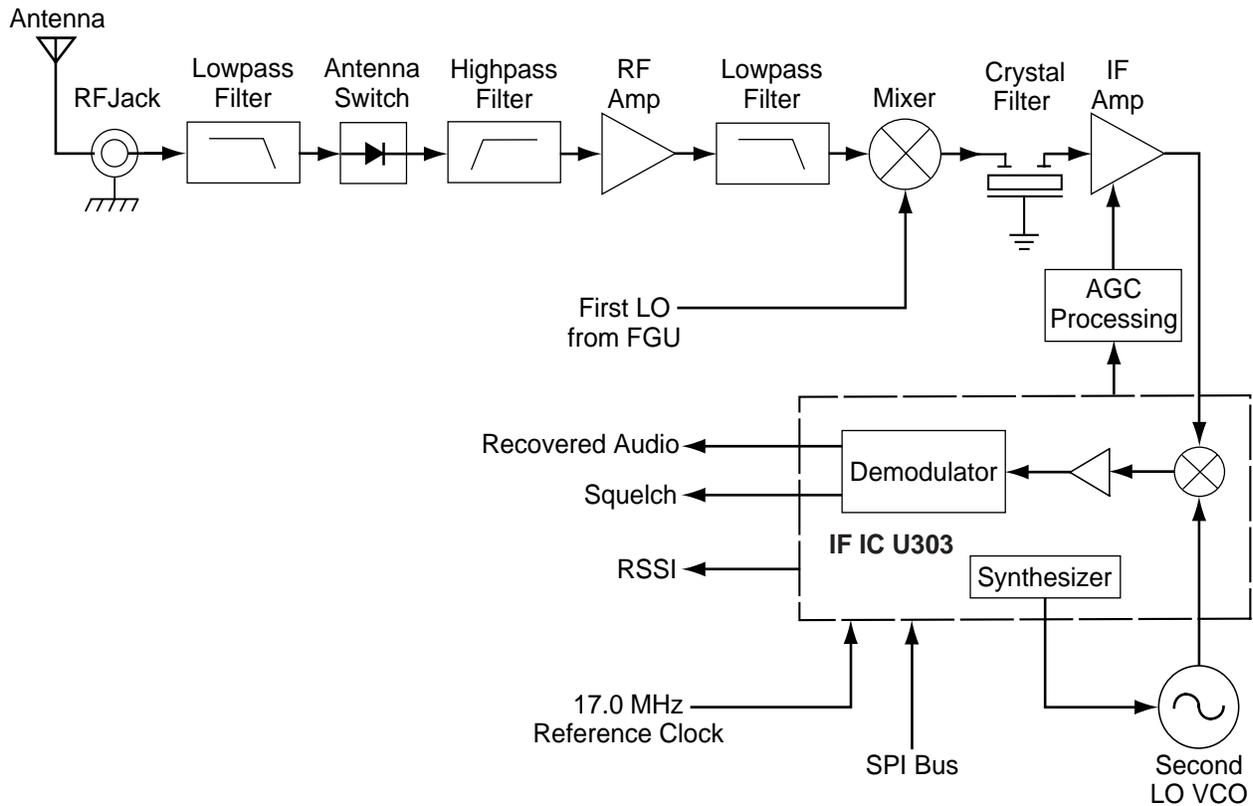


Figure 7-2. Low Band Receiver Block Diagram

### 7.3.1 Receiver Front-End

The RF signal received by the antenna is routed through the transmitter lowpass filter and antenna switch. These circuits are described in the transmitter section. The signal next passes through a highpass filter consisting of L501, L502, C538, C533 and C504. This filter serves to reject below band signals and has a 3 dB corner frequency of 27 MHz.

The output of the highpass filter is connected to an RF amp consisting of Q509 and associated biasing components. This is a BJT amplifier powered off 5 volts and has 13 dB of gain. The amplifier drives a lowpass filter consisting of L503, L504, L507, C534, C535, C536, C537 and C515. This filter is a pole zero design that filters off harmonic components from the RF amp. The 3 dB corner of this filter is at 56 MHz.

The output of the lowpass filter is connected to the passive double balanced mixer consisting of components T501, T502, and D501. After mixing with the first local oscillator up-converted to a 109.65 MHz IF signal.

The IF signal coming out of the mixer is transferred to the crystal filter (FL301) through a resistor pad (R507, R508 and R509) and a diplexer (C516 and L508). Matching to the input of the crystal filter is provided by L301, L302, C301 and C302. The 3 pole crystal filter provides the necessary selectivity and intermodulation protection.

### 7.3.2 Receiver Back-End

The output of crystal filter FL301 is connected to the input of IF amplifier transistor U301. Components L303 and C348 and R301 form the termination for the crystal filter and the signal is coupled to one gate of U301 by C303. The IF amplifier is a dual gate MOSFET powered off of the 5 volt supply. The first gate receives the IF signal as indicated previously. The second gate receives a DC voltage from U302 which serves as an AGC control signal. This signal reduces the gain of the IF amplifier to prevent overload of the IF IC, U303. The gain can be varied from a maximum of 13 dB to an attenuation of 55 dB. The output IF signal from U301 is coupled into U303 (pin 3) via C306, R304 and L304 which provides matching for the IF amplifier and U303.

The IF signal applied to pin 3 of U303 is amplified, down-converted, filtered, and demodulated, to produce recovered audio at pin 27 of U303. This IF IC is electronically programmable, and the amount of filtering, which is dependent on the radio channel spacing, is controlled by the microprocessor. Additional filtering, once externally provided by the conventional ceramic filters, is replaced by internal filters in IF IC U303.

The IF IC uses a type of direct conversion process, whereby the externally generated second LO frequency is divided by two in U303 so that it is very close to the first IF frequency. The IF IC (U303) synthesizes the second LO and phase-locks the VCO to track the first IF frequency. The second LO is designed to oscillate at twice the first IF frequency because of the divide-by-two function in the IF IC.

In the absence of an IF signal, the VCO searches for a frequency, or its frequency will vary close to twice the IF frequency. When an IF signal is received, the VCO locks onto the IF signal. The second LO/VCO is a Colpitts oscillator built around transistor Q301. The VCO has a varactor diode, CR301, to adjust the VCO frequency. The control signal for the varactor is derived from a loop filter consisting of components C308, C309, and R310.

The IF IC (U303) also performs several other functions. It provides a received signal-strength indicator (RSSI) and a squelch output. The RSSI voltage is also used to control the automatic gain control (AGC) circuit at the back end.

The demodulated signal on pin 27 of U303 is also used for squelch control. The signal is routed to U404 (ASFIC) where squelch signal shaping and detection takes place. The demodulated audio signal is also routed to U404 for processing before going to the audio amplifier for amplification.

### 7.3.3 Automatic Gain Control (AGC)

The automatic gain control circuit provides automatic reduction of gain to prevent overloading of backend circuits. This is achieved by lowering the voltage on one gate of U301 which will reduce the drain current in that part and lower its gain.

The Radio Signal Strength Indicator (RSS I) voltage signal for the IF IC (U303) is used to drive the AGC processing circuitry consisting of R306, R307, R308, R309 C307 and U302. As the received signal gets stronger, the RSSI line will rise. When the RSSI line passes a certain threshold, the voltage at the output of U302 will begin to drop. This voltage is connected to one gate of IF amplifier U301 through resistor R305. As this voltage decreases, it will lower the drain current in U301 and reduce the gain of the stage. This will limit the power incident on the IF IC, U303.

### 7.3.4 Frequency Generation Circuit

The frequency generation circuit, shown in [Figure 7-3 on page 7-5](#), is composed of Low Voltage Fractional-N (LV FracN) synthesizer U205 and discrete RX VCO, TX VCO, and buffers as well as other supporting circuitry. The synthesizer block diagram illustrates the interconnect and support circuitry used in the region. Refer to the schematic for the reference designators.

The synthesizer is powered by regulated 5V and 3.3 V. The 5 volt signal to the synthesizer as well as the rest of the radio is provided by U204. The 3.3 V signal is provided by U200 in the controller. The 5V signal goes to pins 13 and 30 while the 3.3 V signal goes to pins 5, 20, 34 and 36 of U201. The synthesizer in turn generates a superfiltered 4.3 V which powers the VCOs and buffers.

In addition to the VCO, the synthesizer also interfaces with the logic and ASFIC circuitry. Programming for the synthesizer is accomplished through the data, clock and chip select lines (pins 7, 8 and 9) from the microprocessor, U409. A 3.3 V dc signal from pin 4 indicates to the microprocessor that the synthesizer is locked.

Transmit modulation from the ASFIC is supplied to pin10 of U205. Internally the audio is digitized by the LV FracN IC and applied to the loop divider to provide the low-port modulation. The audio runs through an internal attenuator for modulation balancing purposes before going out at pin 41 to the VCO.

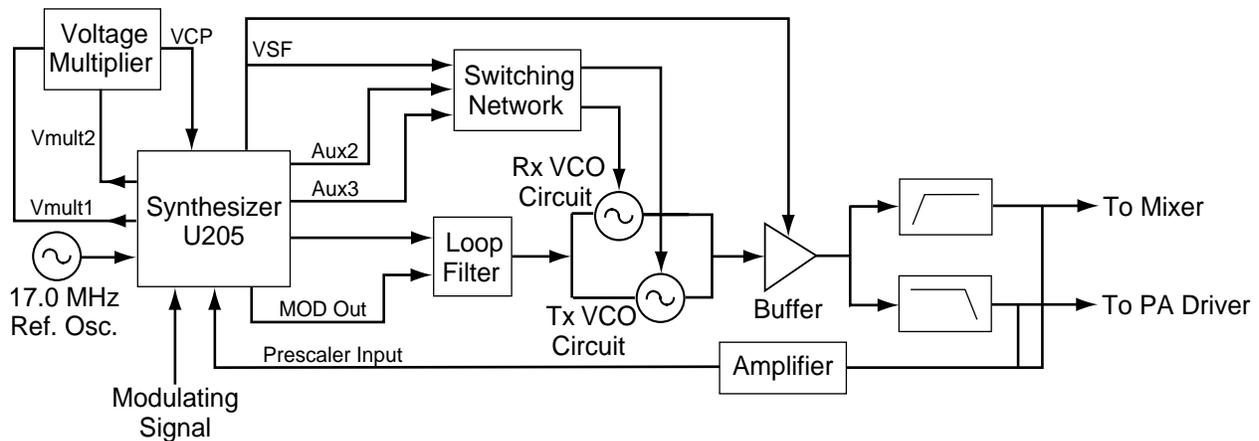


Figure 7-3. Low Band Frequency Generation Unit Block Diagram

## 7.4 Synthesizer

The Low Voltage Fractional-N (LV FracN) synthesizer, shown in [Figure 7-4 on page 7-6](#), uses a 17.0 MHz crystal (Y201) to provide a reference for the system. Along with being used in the LV FracN synthesizer, the 17.0 MHz signal is provided at pin 19 of U205 for use by the ASFIC and LVZIF.

The LV FracN IC (U205) further divides this by 8 internally to give 2.125 MHz to be used as the reference frequency in the frequency synthesis. While UHF and VHF can use other references, (divide by 7 or divide by 7/8), only the divide by 8 function is valid for lowband.

The internal oscillator device in the LV FracN IC together with C236, C237, C242, R219, CR211 and Y201 comprise the reference oscillator. This oscillator is temperature compensated and is capable of 2.5 ppm stability over temperatures of  $-30^{\circ}$  to  $85^{\circ}\text{C}$ . There is temperature compensation information that is unique to each crystal contained on Y201 that is programmed into the radio when built.

The loop filter consists of components C256, C257, C259, R224, R225 and R228. This circuit provides the necessary dc steering voltage for the VCO and determines the amount of noise and spur passing through.

To achieve fast locking for the synthesizer, an internal adapt charge pump provides higher current at pin 45 of U205 to put the synthesizer within lock range. The required frequency is then locked by normal mode charge pump at pin 43.

Both the normal and adapt charge pumps get their supply from the capacitive voltage multiplier made up of C247, C283, C284, C285, C286, and triple diodes D210 and D211. This circuit provides 13.3V at U205, pin 47.

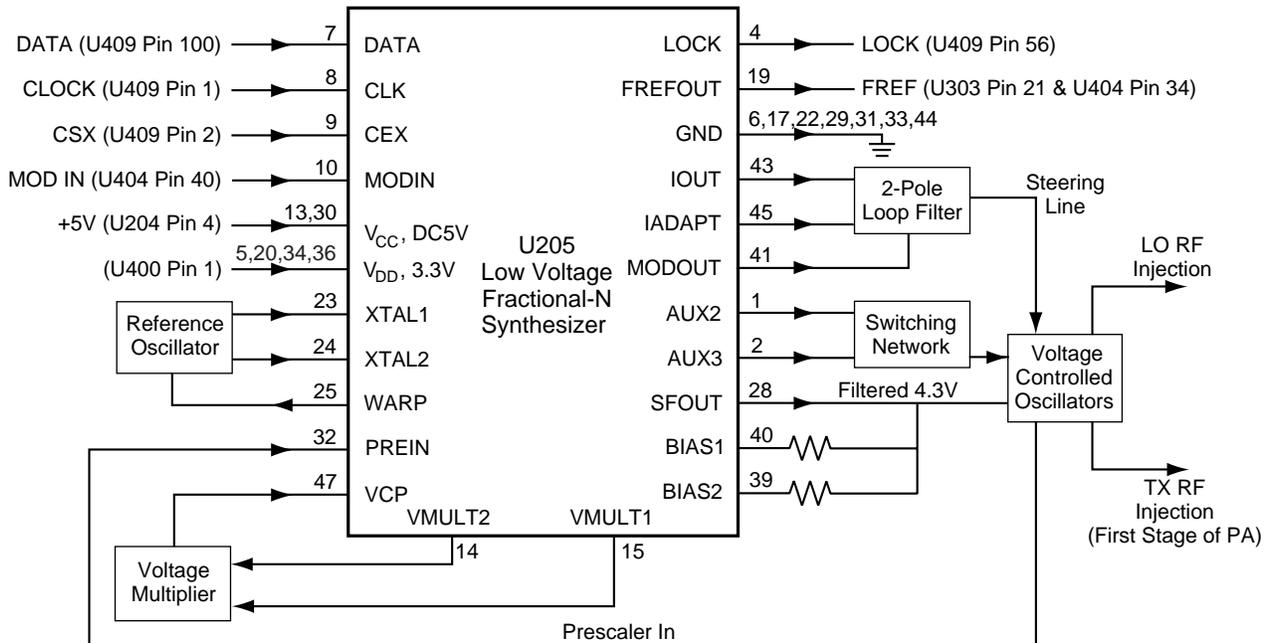


Figure 7-4. Low Band Synthesizer Block Diagram

## 7.5 Voltage Control Oscillators (VCO)

### 7.5.1 Receive VCO

The receive VCO is a Colpitts type design and using two active devices in parallel, Q202 and Q204. The oscillator is powered off of the 4.3 volt super filter supply when the AUX3 line goes low. The oscillator operates from 139 to 152 MHz for range 1 and 145 to 160 MHz for range 2. The frequency is tuned by varactor diodes CR201 and CR202.

### 7.5.2 Transmit VCO

The transmit VCO is a Hartley-type design with active devices Q203. The oscillator is powered off of the 4.3 volt super filter supply when the AUX2 line goes low. The oscillator operates from 29.7 to 42 MHz for Range 1 and 35 to 50 MHz for Range 2. The frequency is tuned by varactor diodes in U203. Note that the values of the inductive tap, L208 and L209, and the capacitor C215 which couples the varactor to the oscillator tank vary between the ranges.

### 7.5.3 Buffer

Both the receive and transmit VCO are fed to a buffer amplifier Q201. This is a BJT amplifier that boosts the signal levels to +4 dBm and provides reverse isolation to the oscillators. The amplifier is powered off the 4.3 volt super filter supply and the feed network is combined with the transmit filter.

## 7.5.4 Diplexer/Output Filters

The output of the buffer drives a pair of parallel filters forming a diplexer. One filter is a lowpass filter in the TX pass that passes 29.7 – 50 MHz signals for the transmitter into the power amplifier while rejecting the receive LO injection signals at 139 – 160 MHz. This filter is comprised of L204, L211, L212, C230 and C231.

The other filter is a highpass filter which passes 139 – 160 MHz signals for the receive LO into the mixer while rejecting the transmit injection signals at 29.7 – 50 MHz. This filter is comprised of C228, C229, C235 and L215.

## 7.5.5 Prescaler Feedback

The prescaler input signal for receive and transmit is tapped off of the outputs of each filter by resistors R234 and R238. This signal is routed to the buffer amplifier consisting of components C287, Q288, R287, R288, and R289. The output of this buffer feeds U205, pin 32. After frequency comparison in the synthesizer, current is transferred in the loop filter and a control voltage is generated at the output of the loop filter to adjust the frequency of the VCO. This voltage is a DC voltage between 3.5V and 9.5V when the PLL is locked on frequency.

## 7.6 800 MHz Transmitter

The 800 MHz transmitter contains four basic circuits as shown in [Figure 7-5](#):

- Power Amplifier (PA)
- Antenna Switch
- Harmonic Filter
- Power Control Integrated Circuit (PCIC).

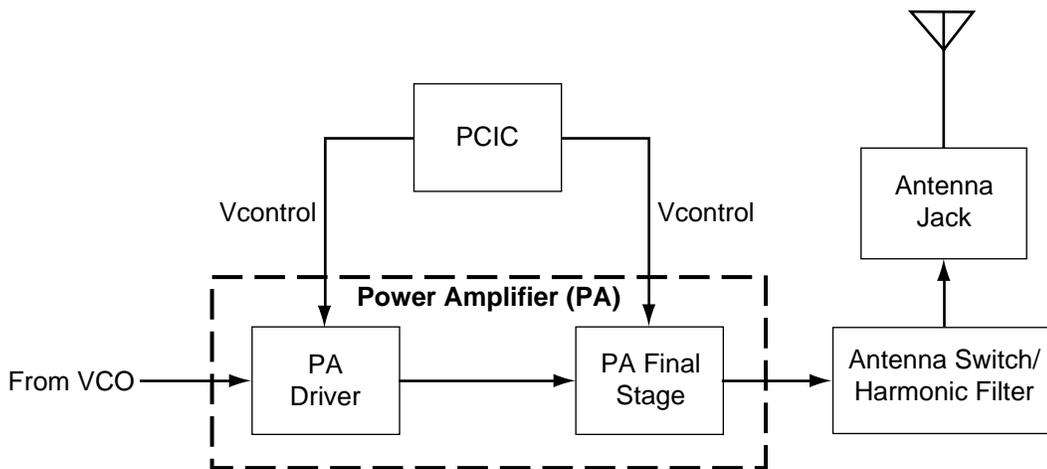


Figure 7-5. 800 MHz Transmitter Block Diagram

### 7.6.1 Power Amplifier

The power amplifier consists of two devices:

- 63J66 driver IC (U101) and
- 85Y73 LDMOS PA (Q101).

The 63J66 driver IC contains a 2 stage amplification with a supply voltage of 7.5V.

This RF driver IC is capable of supplying an output power of 0.3 W (pin 13 and 14) with an input signal of 2.5 mW (4 dBm) (pin16). The current drain would typically be 200 mA while operating in the frequency range of 806–870 MHz.

The 85Y73 LDMOS PA is capable of supplying an output power of 4.5 W with an input signal of 0.3W. The current drain would typically be 1100mA while operating in the frequency range of 806–870 MHz. The power out can be varied by changing the biasing voltage and the drive level from the driver IC.

For PCB 8471827L03, the U101 (63J66) driver IC has been replaced with 78H01. Q101 (85Y73) PA has been replaced with 98H01 MOSFET.

### 7.6.2 Antenna Switch

The antenna switch circuit consists of two PIN diodes (CR101 and CR102), a pi network (C109, L103 and C110), and three current limiting resistors (R101, R102, R103). In the transmit mode, B+ at PCIC (U102) pin32 will go high, applying a B+ bias to the antenna switch circuit to bias the diodes “on”. The shunt diode (CR102) shorts out the receiver port, and the pi network, which operates as a quarter wave transmission line, transforms the low impedance of the shunt diode to a high impedance at the input of the harmonic filter. In the receive mode, the diodes are both off, and hence, there exists a low attenuation path between the antenna and receiver ports.

### 7.6.3 Harmonic Filter

The harmonic filter consists of C104, L102, C105, C106,C107, L101 and C109. It has been optimized for efficiency of the power amplifier. This type of filter has the advantage that it can give a greater attenuation in the stop-band for a given ripple level. The harmonic filter insertion loss is typically less than 1.2 dB.

### 7.6.4 Power Control Integrated Circuit (PCIC)

The transmitter uses the Power Control IC (PCIC), U102 to regulate the power output of the radio. The current to the final stage of the power module is supplied through R104, which provides a voltage proportional to the current drain. This voltage is then fed back to the Automatic Level Control (ALC) within the PCIC to regulate the output power of the transmitter.

The PCIC has internal digital to analog converters (DACs) which provide the reference voltage of the control loop. The reference voltage level is programmable through the SPI line of the PCIC.

There are resistors and integrators within the PCIC, and external capacitors (C126, C130 and C132) in controlling the transmitter rising and falling time. These are necessary in reducing the power splatter into adjacent channels.

U103 and its associated components are part of the temperature cut back circuitry. It senses the printed circuit board temperature around the transmitter circuits and provides a DC voltage to the PCIC. If the DC voltage produced exceeds the set threshold in the PCIC, the transmitter output power will be reduced so as to reduce the transmitter temperature.

## 7.7 800 MHz Receiver

The receiver functions shown in Figure 7-6 and Figure 7-7 are described in the paragraphs that follow.

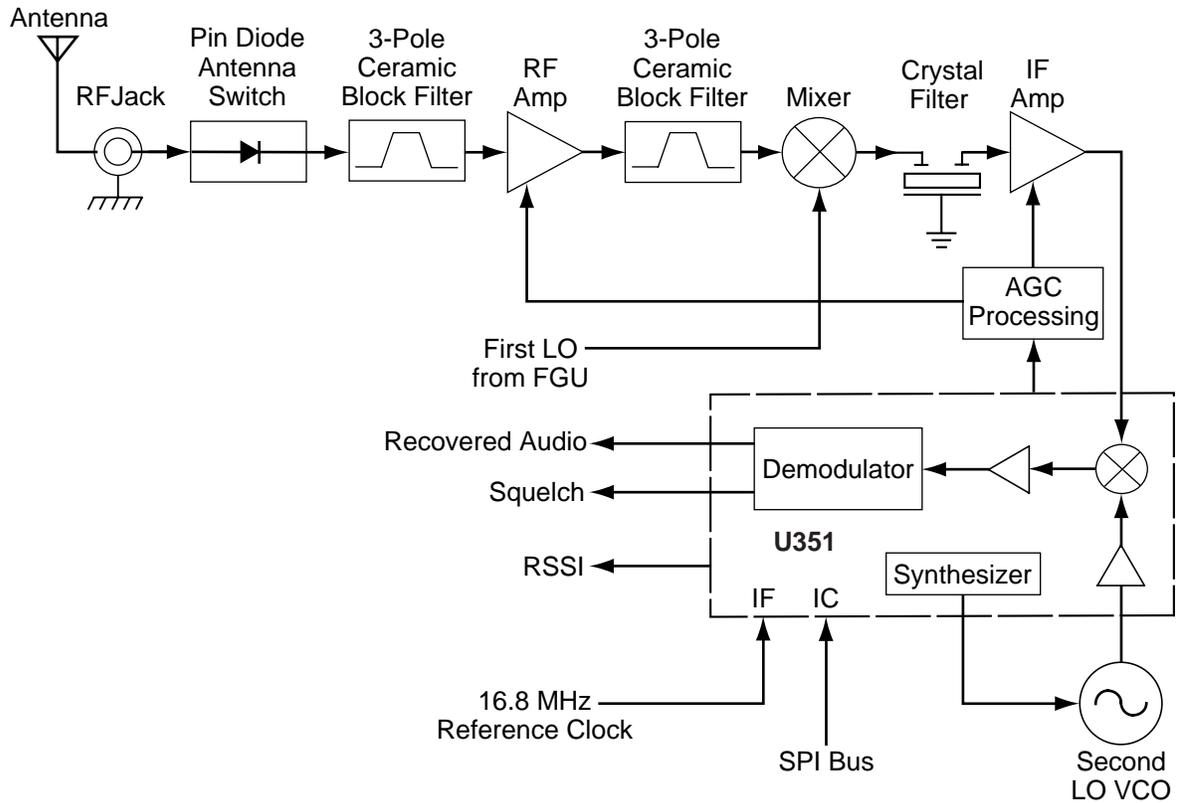


Figure 7-6. 800 MHz Receiver Block Diagram (for PCB No. 8480641Z02/8480641Z03)

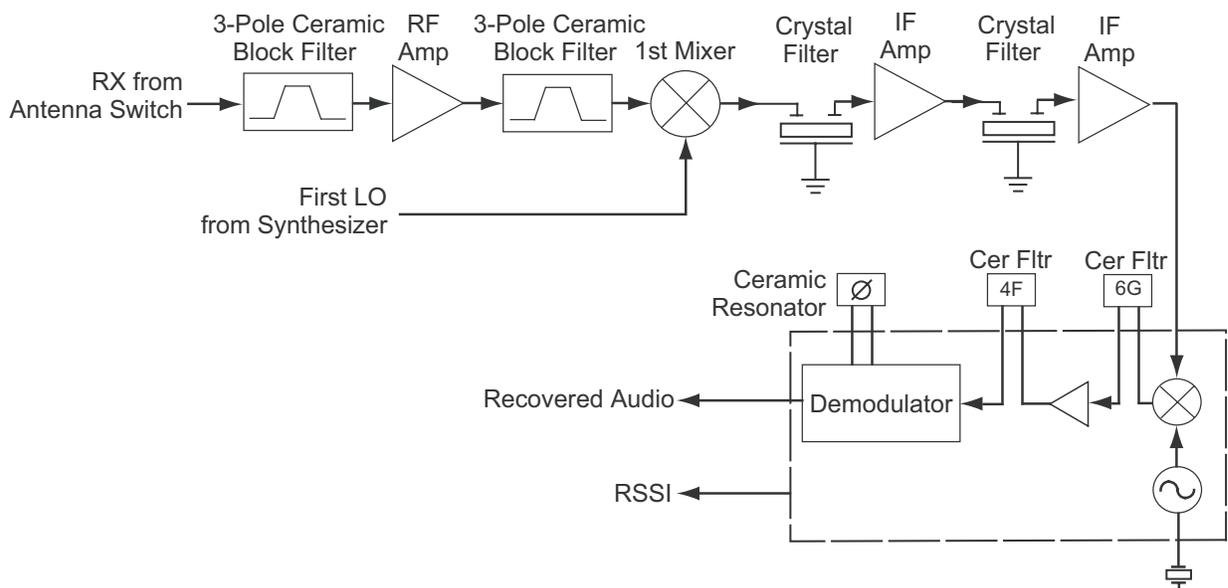


Figure 7-7. 800 MHz Receiver Block Diagram (for PCB No. 8471827L03)

### 7.7.1 Receiver Front-End

The RF signal is received by the antenna and applied to a low-pass filter. For 800 MHz, the filter consists of L101, L102, C104, C105, C106, C107, C109. The filtered RF signal is passed through the antenna switch. The antenna switch circuit consists of two PIN diodes (CR101 and CR102) and a pi network (C109, L103 and C110). The signal is then applied to a fixed tuned ceramic bandpass filter, FL300.

The output of the bandpass filter is coupled to the RF amplifier transistor Q302 via C300. The RF amplifier provides a gain of approximately 12 dB. After being amplified by the RF amplifier, the RF signal is further filtered by a second fixed tuned ceramic bandpass filter, FL301.

Both the pre and post-RF amplifier ceramic filters have similar responses. The insertion loss of each filter across the 851–870 MHz band is typically 1.8 dB.

The output of the post-RF amplifier filter is connected to the passive double balanced mixer, U301. After mixing with the first LO signal from the voltage controlled oscillator (VCO) using low side injection, the RF signal is down-converted to the 109.65MHz IF signal for PCB No. 8480641Z02/8480641Z03 and 73.35MHz IF signal for PCB No. 8471827L03.

The IF signal coming out of the mixer is transferred to the crystal filter (FL350) through a resistive pad and a diplexer (C312 and L306). For PCB No. 8480641Z02/8480641Z03, the matching to the input of the crystal filter is provided by L353, L354, C377, and C378. For PCB 8471827L03\_C, the matching to the input of the crystal filter is provided by C350, C351 and L350. The crystal filter provides the necessary selectivity and intermodulation protection.

### 7.7.2 Receiver Back-End (for PCB No. 8480641Z02/8480641Z03)

The output of crystal filter FL350 is matched to the input of the dual gate MOSFET IF amplifier transistor U352 by components L355, R359 and C376. Voltage supply to the IF amplifier is taken from the receive 5 volts (R5). AGC voltage is applied to the second gate of U352. The IF amplifier provides a gain of about 11 dB. The amplified IF signal is then coupled into U351 (pin 3) via L352, R356 and C365 which provides the matching for the IF amplifier and U351.

The IF signal applied to pin 3 of U351 is amplified, down-converted, filtered, and demodulated, to produce the recovered audio at pin 27 of U351. This IF IC is electronically programmable, and the amount of filtering (which is dependent on the radio channel spacing) is controlled by the microprocessor. Additional filtering, once externally provided by the conventional ceramic filters, is replaced by internal filters in the IF module (U351).

The IF IC uses a type of direct conversion process, whereby the externally generated second LO frequency is divided by two in U351 so that it is very close to the first IF frequency. The IF IC (U351) synthesizes the second LO and phase-locks the VCO to track the first IF frequency. The second LO is designed to oscillate at twice the first IF frequency because of the divide-by-two function in the IF IC.

In the absence of an IF signal, the VCO will “search” for a frequency, or its frequency will vary close to twice the IF frequency. When an IF signal is received, the VCO will lock onto the IF signal. The second LO/VCO is a Colpitts oscillator built around transistor Q350. The VCO has a varactor diode, CR350, to adjust the VCO frequency. The control signal for the varactor is derived from a loop filter consisting of R365, C391, and C392.

The IF IC (U351) also performs several other functions. It provides a received signal-strength indicator (RSSI) and a squelch output. The RSSI is a dc voltage monitored by the microprocessor, and used to control the automatic gain control (AGC) circuit in both the front-end and the IF.

The demodulated signal on pin 27 of U351 is also used for squelch control. The signal is routed to U404 (ASFIC) where squelch signal shaping and detection takes place. The demodulated audio signal is also routed to U404 for processing before going to the audio amplifier for amplification.



### 7.7.3 Receiver Back-End (for PCB No. 8471827L03)

The receiver back end is a dual conversion design. The 73.35 MHz high IF consists of 2-pole crystal filter FL350, IF amp Q350, 4-pole crystal filter FL351 and IF amp Q351. Each crystal filter has a 3 dB bandwidth of 6.0 kHz and a maximum insertion loss of 4 dB. The output of Q351 is applied to the input of the receiver IFIC U350. Diode D350 prevents overdriving the IFIC.

The IFIC is a low-voltage monolithic FM IF system incorporating a mixer/oscillator, two limiting IF amplifiers, quadrature detector, logarithmic received signal strength indicator (RSSI), voltage regulator and audio and RSSI op amps. The second LO frequency is determined by Y350. Additional IF selectivity is provided by two ceramic filters, FL352 (between the second mixer and IF amp) and FL353 (between the IF amp and the limiter input). FL352 is a 6 element filter with a BW6 = 9 kHz. FL353 is a 4 element filter with a BW6 = 12 kHz. These bandwidths are optimum for 25 kHz channel spacing systems. Ceramic resonator Y351 provides phase vs. frequency characteristic required by the quadrature detector, with 90 degree phase shift occurring at 455 kHz. Buffer Q352 provides a lower driving impedance from the limiter to the resonator, improving the IF waveform and lowering distortion.

### 7.7.4 Automatic Gain Control Circuit

The automatic gain control circuit provides automatic gain reduction of both the low noise amplifier in the receiver front end and the IF amplifier in the receiver backend. This action is necessary to prevent overloading of the backend IF IC.

For PCB No. 8471827L03, the AGC circuit is disabled.

The IF automatic gain control circuit provides approximately 50 dB of attenuation range. The signal strength indicator (RSSI) output of the IF IC produces a voltage that is proportional to the RF level at the IF input to the IF IC. This voltage is inverted by U350, R351, R353, R352, R354 and C355 and it determines the RF level at which the backend end AGC is activated as well as the slope of the voltage at the output of U350 vs. the strength of the incoming RF at the antenna. The inverted output of U350 is applied to the second gate of the IF amplifier U352 via R355. As the RF signal into the IF IC increases the following occurs:

- The RSSI voltage increases,
- The output of inverter U350 decreases, and
- The voltage applied to the second gate of the FET is reduced thus reducing the gain of the IF amplifier.

The output of inverter U350 is also used to control the receiver front end AGC.

The receiver front end automatic gain control circuit provides an additional 20 dB of gain reduction. The output of the receiver backend inverter U350 is fed into the receiver front end AGC inverter U302. The components R317, R314, and C318 determine:

- The RF level at which the front end AGC is activated, and
- The slope of the voltage at the output of U302 vs. the strength of the incoming RF at the antenna.

As the RF into the antenna increases the following occurs:

- The output voltage of the receiver backend inverter U350 decreases.
- The voltage at the output of the front end inverter U302 increases.
- The result is the forward biasing of pin diode CR301.

As the diode becomes more and more forward biased the following occurs:

- C310 loads the output of the low noise amplifier Q302 thus reducing the gain of the low noise amplifier.

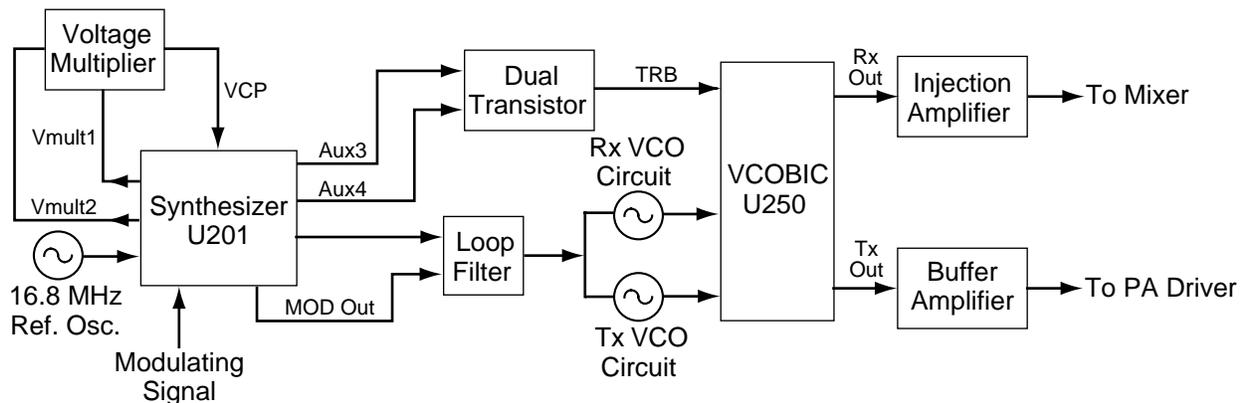
- R315 and R318 provide a DC path for CR301 and also limit the current through CR301.

The blocking capacitor C317 prevents DC from the AGC stage from appearing at the input of the filter FL301.

### 7.7.5 Frequency Generation Circuit

The frequency generation circuit is shown in [Figure 7-8](#). The circuit is composed of the two main ICs:

- Low Voltage Fractional-N Synthesizer, U201
- VCO/Buffer IC, U250



*Figure 7-8. 800 MHz Frequency Generation Unit Block Diagram*

Designed in conjunction to maximize compatibility, the two ICs provide many of the functions that normally would require additional circuitry. The synthesizer block diagram illustrates the interconnect and support circuitry used in the region. Refer to the relevant schematics for the reference designators.

The synthesizer is powered by regulated 5 V and 3.3 V which come from U247 and U248 respectively. The synthesizer in turn generates a superfiltered 4.5 V which powers U250.

In addition to the VCO, the synthesizer must interface with the logic and ASFIC circuitry. Programming for the synthesizer is accomplished through the data, clock and chip select lines from the microprocessor. A 3.3 V dc signal from synthesizer lock detect line indicates to the microprocessor that the synthesizer is locked.

Transmit modulation from the ASFIC is supplied to pin10 of U201. Internally the audio is digitized by the Low Voltage Fractional-N synthesizer and applied to the loop divider to provide the low-port modulation. The audio runs through an internal attenuator for modulation balancing purposes before going out to the VCO.

## 7.8 Synthesizer

The Low Voltage Fractional-N (LV FracN) synthesizer (U201) shown in [Figure 7-9 on page 7-13](#) uses a 16.8 MHz crystal (FL201) to provide a reference for the system. The LV FracN IC further divides this to 2.1 MHz, 2.225 MHz, and 2.4 MHz as reference frequencies. Together with C235, C236, C237, R211 and CR203, they comprise the reference oscillator which is capable of 2.5ppm stability over temperatures of -30° to 85°C. It also provides 16.8 MHz at pin 19 of U201 to be used by ASFIC and LVZIF.

Some models are equipped with a packaged 1.5ppm reference oscillator, Y200. On these models components C235, C236, C237, CR203, FL201, and R211 are not placed. Components C238, C239, C241, R212, R213, R214 and Y200 are placed instead.

The loop filter which consists of C220, C225, C226, R204, R209 and R210 provides the necessary dc steering voltage for the VCO and provides filtering of noise and spurs from U201.

In achieving fast locking for the synthesizer, an internal adapt charge pump provides higher current at pin 45 of U201 to put the synthesizer within the lock range. The required frequency is then locked by the normal mode charge pump at pin 43.

Both the normal and adapt charge pumps get their supply from the capacitive multiplier which is made up of D201, D202, C244, C245, C246, C247, R200, R218, C208, C243, R219, and R220. Two 3.3 V square waves (180 degrees out of phase) are applied to R219 and R220. These square waves switch alternate sets of diodes from D201 and D202, which in turn charge C244, C245, C246, and C247 in a bucket brigade fashion. The resulting output voltage that is applied to pin 47 of U201 is typically 12.8 V and allows the steering line voltage (VCO control voltage) to reach 11 V.

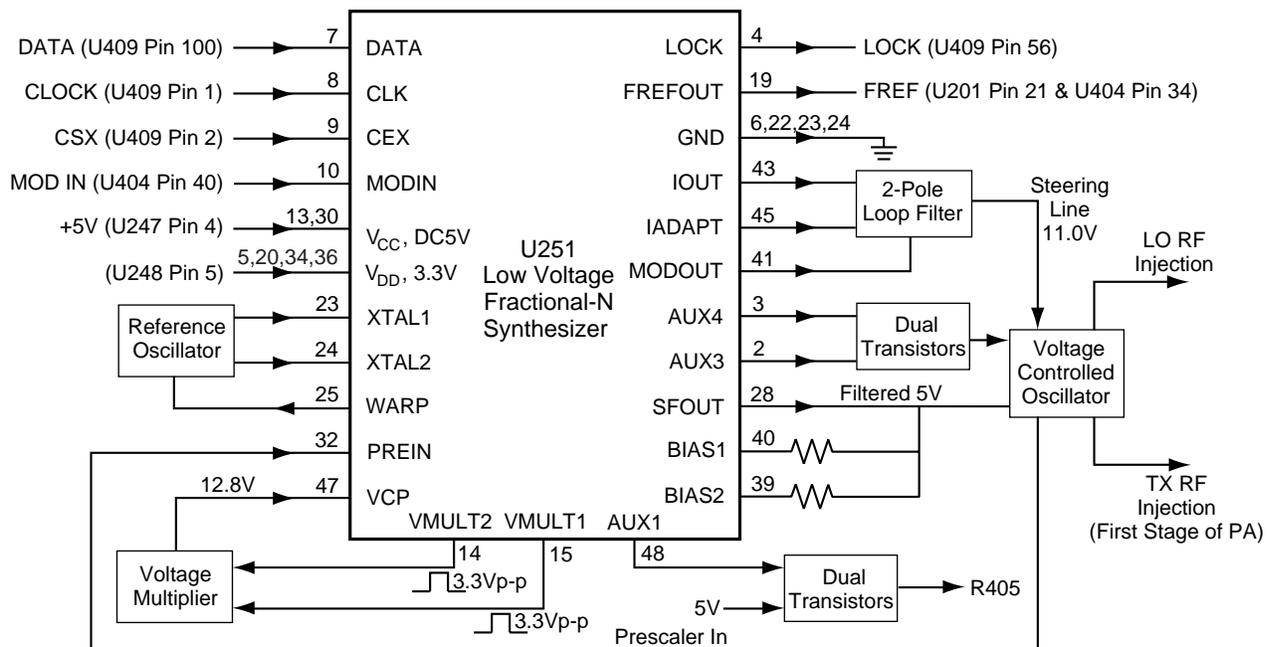


Figure 7-9. 800 MHz Synthesizer Block Diagram

### 7.8.1 Voltage Control Oscillator (VCO)

The voltage controlled oscillator block diagram is shown in [Figure 7-10](#).

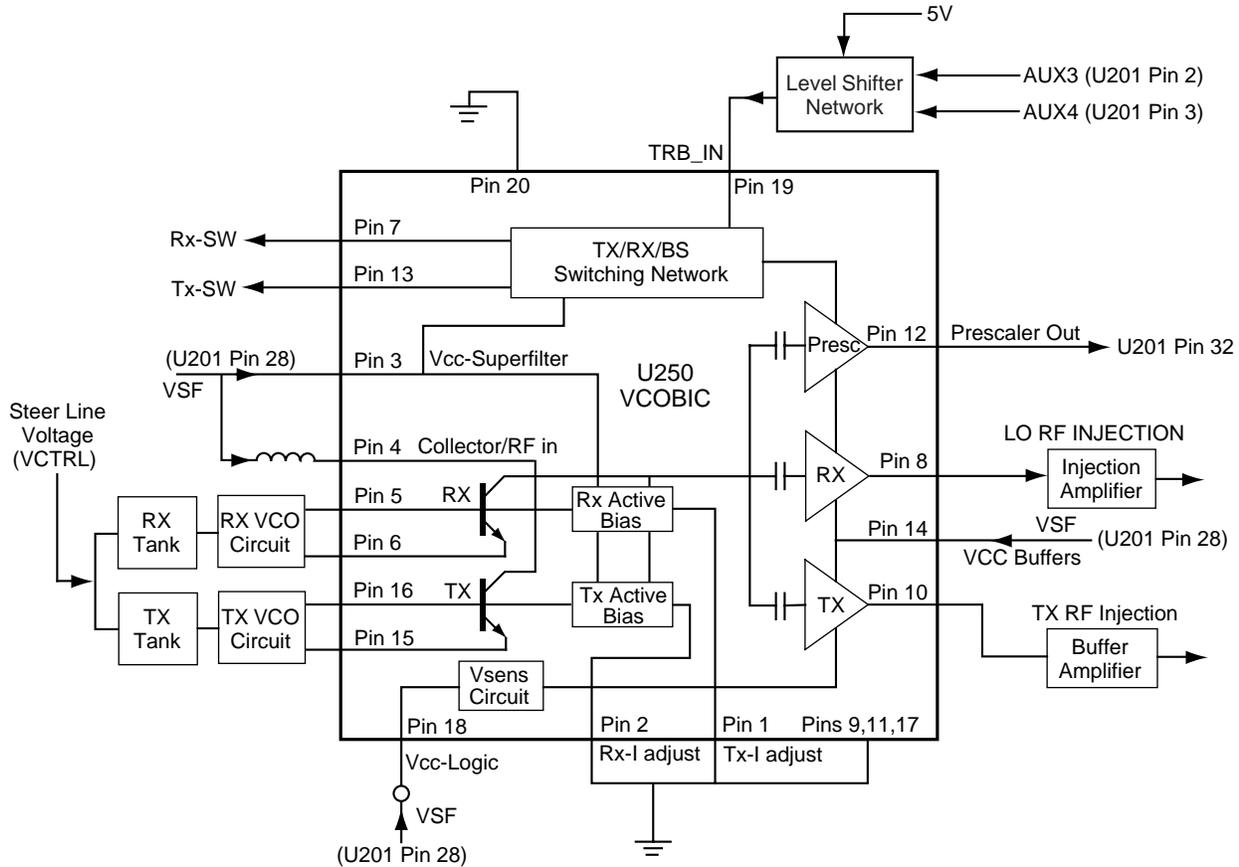


Figure 7-10. 800 MHz VCO Block Diagram

The VCOBIC (U250) in conjunction with the Low Voltage Fractional-N (LV FracN) synthesizer (U201) generates RF in both the receive and the transmit modes of operation. The TRB line (U250 pin 19) determines which oscillator and buffer will be enabled. A sample of the RF signal from the enabled oscillator is routed from U250 pin 12, through a low pass filter, to the prescaler input (U201 pin 32). After frequency comparison in the synthesizer, a resultant CONTROL VOLTAGE is received at the VCO. This voltage is a DC voltage between 2.0 V (low frequency) and 11.0 V (high frequency) when the PLL is locked on frequency.

The VCOBIC (U250) is operated at 4.54 V (VSF) and LV FracN synthesizer (U201) at 3.3 V. This difference in operating voltage requires a level shifter consisting of Q200 and Q252 on the TRB line.

The operation logic is shown in [Table 7-1](#).

Table 7-1. Level Shifter Logic

Desired Mode	AUX 4	AUX 3	TRB
Tx	Low	High (@3.2V)	High (@4.8V)
Rx	High	Low	Low
Battery Saver	Low	Low	Hi-Z/Float (@2.5V)

In the receive mode, U250 pin 19 is low or grounded. This activates the receive VCO by enabling the receive oscillator and the receive buffer of U250. The RF signal at U250 pin 8 is run through an injection amplifier, Q304. The resulting RF signal is the LO RF INJECTION and it is applied to the mixer at U301 (refer to *800 MHz Receiver Front End Schematic Diagram* on page 9-418).

During the transmit condition, when PTT is depressed, five volts is applied to U250 pin 19. This activates the transmit VCO by enabling the transmit oscillator and the transmit buffer of U250. The RF signal at U250 pin 10 is amplified by Q251 and injected into the input of the PA module (U101 pin1). This RF signal is the TX RF INJECTION. Also in transmit mode, the audio signal to be frequency modulated onto the carrier is received through the U201 pin 41.

When a high impedance is applied to U250 pin19, the VCO is operating in BATTERY SAVER mode. In this case, both the receive and transmit oscillators as well as the receive transmit and prescaler buffer are turned off.

## 7.9 Trunked Radio Systems

Trunked systems allow a large number of users to share a relatively small number of frequencies or repeaters without interfering with each other. The airtime of all the repeaters in a trunked system is pooled, which maximizes the amount of airtime available to any one radio and minimizes channel congestion. A benefit of trunking is that the user is not required to monitor the system before transmitting.

### 7.9.1 Privacy Plus Trunked Systems

Privacy Plus is a proprietary trunking protocol developed by Motorola which allows a large number of users to share small amounts of frequencies without interfering with each other. The Privacy Plus configuration consists of shared multiple channel repeaters. The Privacy Plus Trunked system includes a Central Controller, which directs the users to the open channels. This kind of Trunked system requires no monitoring of the channel as in conventional systems. The Central Controller places the user in a queue to wait for a free channel. The Central Controller does the monitoring and channels selection for the user.

### 7.9.2 LTR™ Trunked Systems

LTR is a transmission based trunking protocol developed by the E. F. Johnson Company for primarily single site trunking applications. In transmission trunking, a repeater is used for only the duration of a single transmission. Once a transmission is completed, that repeater becomes available to other users.

### 7.9.3 MPT Trunked Systems

MPT (Ministry of Post and Telecommunications) developed a signalling standard (MPT1327) for trunked private land mobile radio systems. This standard defines the protocol rules for communication between a trunking system controller (TSC) and user's radio units. The protocol offers a broad range of options which can be implemented in subsets according to user requirements. Also, there is scope for customization for special requirements, and provision made to further standardized features to be added to the protocol in the future. The standard defines only the over-air signalling and imposes only minimum constraints on system design.

## 7.9.4 PassPort™ Trunked Systems

PassPort is an enhanced trunking protocol developed by Trident Microsystems that supports wide area dispatch networking. A network is formed by linking several trunked sites together to form a single system. This offers users an extended communication coverage area. Additionally, users with PassPort can seamlessly roam among all sites within the network. Seamless roaming means that the radio user does not have to manually change the position on the radio when roaming from site-to-site.

For models which feature PassPort Trunking operation, the standard keypad board is replaced with the PassPort Trunking Controller Board (PTCB). This board also provides advanced voice storage features. Refer to the *PassPort Controller Schematic Diagram* on page 9-446 for connector and signal routing from, to and through the Radio, PTCB and Liquid Crystal Display (LCD) sub-systems.

### 7.9.4.1 Power Supplies

The radio supplies regulated Vdd of 3.3 Vdc. This is used to power the Low Speed Data Filter and Voice Storage circuits. The radio also supplies Switched Battery Voltage (SWB+). U612 regulates the SWB+ to 3.3 V which is applied to the PTCB microcontroller U601. A filtered voltage (Vdda) of  $\frac{1}{2}$  Vdd is developed by U603-4 and is used to supply a clean reference bias for the Low Speed Data filter and Voice Storage circuits. The circuit of Q607 which can limit the voltage applied to the Voice Storage chip is not used in portable applications and is disabled by 0 Ohm resistor R614.

### 7.9.4.2 Microcontroller (MCU)

PassPort Trunking operation is managed by the reprogrammable FLASH ROM based microcontroller (U601). The MCU clock oscillator uses 8 MHz crystal Y601 as a stable resonator. The PTCB communicates with the main radio microcontroller by attaching to the same Serial Peripheral (SPI) bus that passes through the PTCB to the LCD on the CLK, DATA, RDY, and MISO lines. The OPT\_EN line is strobed low only for communications with U601.

The MCU includes an on-chip Analog to Digital Converter (ADC). The received and filtered sub-audible low speed trunking data waveform is applied to one of the ADC inputs. The software in the MCU decodes and acts upon the trunking data.

The MCU includes a Digital to Analog Converter (DAC). As required, the MCU software generates appropriate PassPort Low Speed Trunking Data waveforms. These are applied to the Low Speed Data Filter and then to the radio transmitter modulation point. The amplitude of this waveform and the resulting transmitted deviation is controlled by software.

### 7.9.4.3 Low Speed Data Filter

This analog circuitry is a 4 pole, 150 Hz cutoff low pass filter comprised of U603-1, U603-2 and associated passive components. In receive mode, it removes noise and voice band signals leaving only the low speed data waveform which is applied to the ADC input of the MCU. U608-4 isolates the receive signal from the filter in transmit mode. When the radio is transmitting PassPort data, the MCU DAC low speed data waveform is applied to the input of the filter which removes harmonics that would interfere with voice and applies the resulting sub-audible data to the radio transmitter modulation point.

### 7.9.4.4 Keyboard Circuit

The keyboard consists of a matrix of key switches and resistors as described in Chapter 3. U605-2 monitors the column voltage and applies an interrupt signal to the radio microcontroller when any key is pressed.

### 7.9.4.5 BackLight Driver and LED's

The logic level signal from the radio microcontroller is translated via Q611 and applied to Q610 which uses Switched Battery Voltage (SWB+) to operate the keypad backlight LED's.

### 7.9.4.6 Voice Storage

The Voice Storage (VS) can be used to store audio signals coming from the receiver or from the microphone. Any stored audio signal can be played back over the radio's speaker or sent out via the radio's transmitter.

The PTCB hosts the Voice Storage circuitry. Voice Storage IC U611 provides all the required functionality and is powered from the regulated 5 volts. The mP controls U611 via SPI bus lines CLK (U611-8), DATA (U611-10) and MISO (U611-11). To transfer data, the mP first selects the U611 via line VS CS and U611 pin 9. Then the mP sends data through line DATA and receives data through line MISO. Pin 2 (RAC) of U611 indicates the end of a message row by a low state for 12.5 ms and connects to mP pin 65. A low at pin 5 (INT), which is connected to mP pin 55, indicates that the Voice Storage IC requires service from the mP.

Audio, either from the radio's receiver or from one of the microphone inputs, emerges from the ASFIC CMP (U404) at pin 43, through switch U608-1 that is selected by the mP via ASFIC CMP pin 5 (DACR) and then enters the voice storage IC U611 at pin 25. During playback, the stored audio emerges from U611 at pin 20. To transmit the audio signal, it is fed through resistive divider R657 / R658, through switch U608-3 and through line EXT MIC. When this path is selected, the audio signal enters the ASFIC CMP at pin 48 and is processed like normal transmit audio. To play the stored audio over the radio's speaker, the audio from U611 pin 20 is buffered by op-amp U605-1, through switch U608-2 and fed via line FLAT RX SND to ASFIC CMP pin 10 (UIO). In this case, this ASFIC CMP pin is programmed as input and feeds the audio signal through the normal receiver audio path to the speaker or handset. Switches U608-2 and U608-3 are controlled by the mP via ASFIC CMP pin 6 (DACG) and feed the stored audio only to the ASFIC CMP port UIO when it is programmed as input.

## 7.10 900 MHz Transmitter

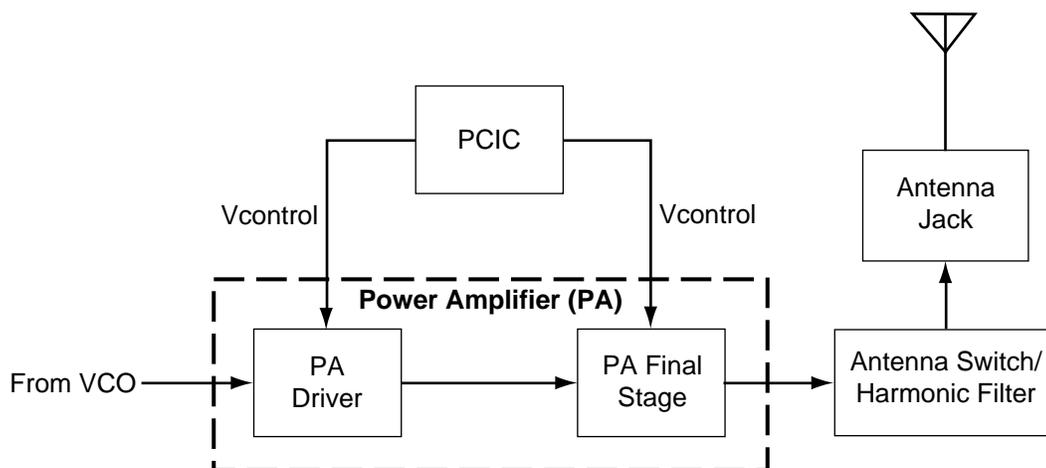


Figure 7-11. Transmitter Block Diagram

The 900 MHz transmitter shown in [Figure 7-11 on page 7-17](#) contains the following basic circuits:

- Power amplifier
- Antenna switch
- Harmonic filter
- Power control integrated circuit (PCIC).

### 7.10.1 Power Amplifier

The power amplifier consists of two devices:

- 5185130C65 driver IC (U101) and
- 4813828A09 LDMOS PA (Q101).

The 30C65 driver IC contains a 2 stage amplification with a supply voltage of 7.5 V.

This RF driver IC is capable of supplying an output power of 0.3W (pin 6 and 7) with an input signal of 2.5mW (4dBm) (pin16). The current drain would typically be 200mA while operating in the frequency range of 896–941 MHz.

The 28A09 LDMOS PA is capable of supplying an output power of 4.5 W with an input signal of 0.3 W. The current drain would typically be 1100mA while operating in the frequency range of 896–941 MHz. The power out can be varied by changing the biasing voltage and the drive level from the driver IC.

### 7.10.2 Antenna Switch

The antenna switch circuit consists of two PIN diodes (CR101 and CR102), a pi network (C115, L109 and C138), and three current limiting resistors (R102, R103, R106). In the transmit mode, B+ at PCIC (U102) pin32 will go high, applying a B+ bias to the antenna switch circuit to bias the diodes “on”. The shunt diode (CR102) shorts out the receiver port, and the pi network, which operates as a quarter wave transmission line, transforms the low impedance of the shunt diode to a high impedance at the input of the harmonic filter. In the receive mode, the diodes are both off, and hence, there exists a low attenuation path between the antenna and receiver ports.

### 7.10.3 Harmonic Filter

The harmonic filter consists of L104, L105, C114, C115, C124,C125, and C126. It has been optimized for efficiency of the power amplifier. This type of filter has the advantage that it can give a greater attenuation in the stop-band for a given ripple level. The harmonic filter insertion loss is typically 0.9 dB, and less than 1.2 dB.

### 7.10.4 Power Control Integrated Circuit (PCIC)

The transmitter uses the Power Control IC (PCIC), U102 to regulate the power output of the radio. The current to the final stage of the power module is supplied through R101, which provides a voltage proportional to the current drain. This voltage is then fed back to the Automatic Level Control (ALC) within the PCIC to regulate the output power of the transmitter.

The PCIC has internal digital to analog converters (DACs) which provide the reference voltage of the control loop. The reference voltage level is programmable through the SPI line of the PCIC.

There are resistors and integrators within the PCIC, and external capacitors (C156, C157, and C158) in controlling the transmitter rising and falling time. These are necessary in reducing the power splatter into adjacent channels.



U103 and its associated components are part of the temperature cut back circuitry. It senses the printed circuit board temperature around the transmitter circuits and output a DC voltage to the PCIC. If the DC voltage produced exceeds the set threshold in the PCIC, the transmitter output power will be reduced so as to reduce the transmitter temperature.

### 7.11 900 MHz Receiver

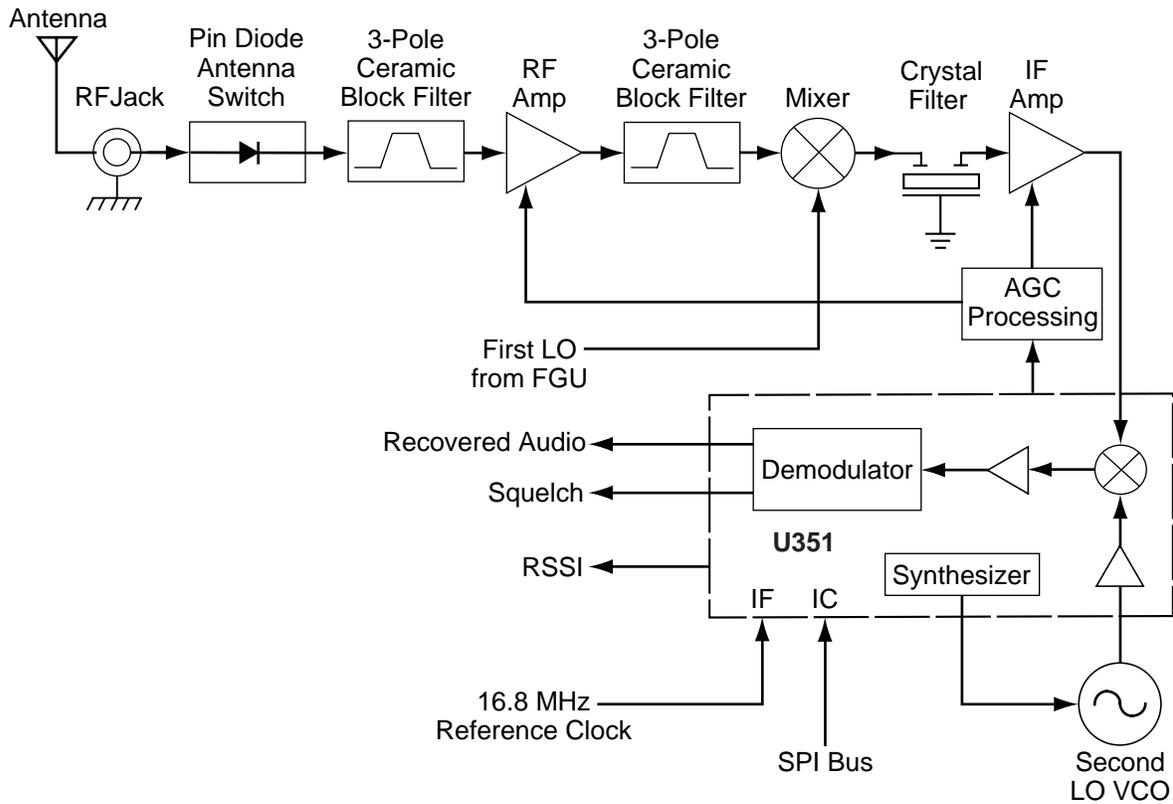


Figure 7-12. 900 MHz Receiver Block Diagram (for PCB No. 8485910Z01)

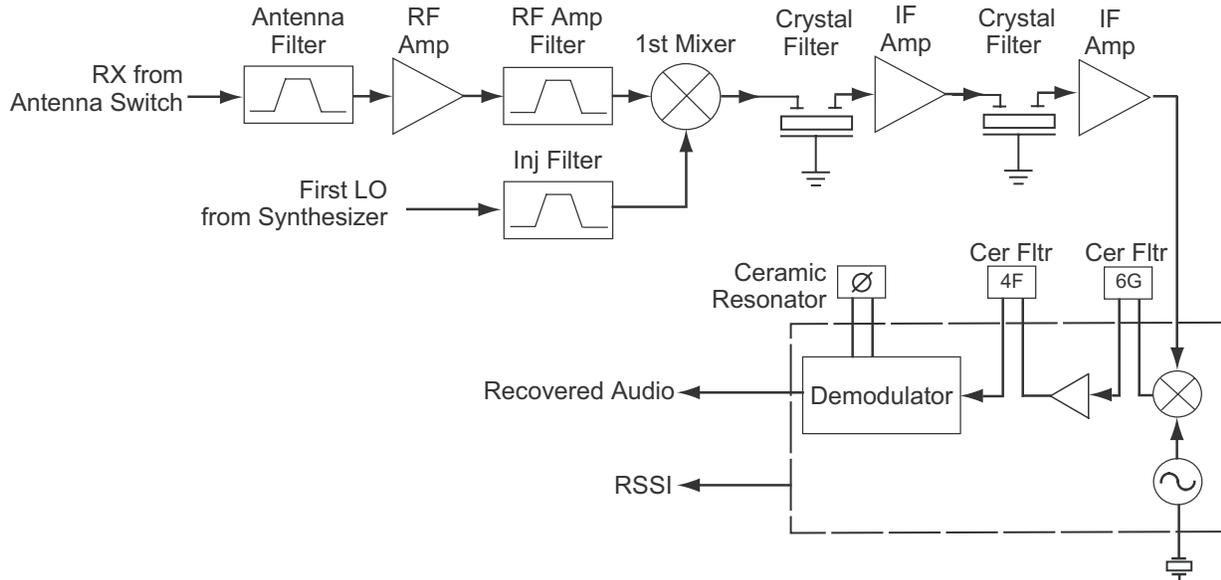


Figure 7-13. 900 MHz Receiver Block Diagram (for PCB No. 8471203M01)

### 7.11.1 Receiver Front-End

The RF signal is received by the antenna and applied to a low-pass filter. For 900 MHz, the filter consists of L104, L105, C114, C115, C124, C125, and C126. The filtered RF signal is passed through the antenna switch. The antenna switch circuit consists of two PIN diodes (CR101, and CR102) and a pi network (C115, L109, and C138). The signal is then applied to a fixed tuned ceramic bandpass filter, FL300.

The output of the bandpass filter is coupled to the RF amplifier transistor Q302 via C300. The RF amplifier provides a gain of approximately 14 dB. After being amplified by the RF amplifier, the RF signal is further filtered by a second fixed tuned ceramic bandpass filter, FL301.

Both the pre and post-RF amplifier ceramic filters have similar responses. The insertion loss of each filter across the 935–941 MHz band is less than 2 dB.

The output of the post-RF amplifier filter is connected to the passive double balanced mixer, U301, through matching components C321, and L311. After mixing with the first LO signal from the voltage controlled oscillator (VCO) using low side injection, the RF signal is down-converted to the 109.65 MHz IF signal for PCB No. 8485910Z01. For PCB No. 8471203M01, the RF signal will down-converted to 73.35MHz.

The IF signal coming out of the mixer is transferred to the crystal filter (FL350) through a resistor pad and a diplexer (C312, and L306). For PCB No. 8485910Z01, the matching to the input of the crystal filter is provided by L353, L354, C377, and C378. For PCB No. 8471203M01, the matching to the input of the crystal filter is provided by C350, C351 and L351. The crystal filter provides some of the necessary selectivity, and intermodulation protection.

### 7.11.2 Receiver Back-End (For PCB No. 8485910Z01)

The output of crystal filter FL350 is matched to the input of the dual gate MOSFET IF amplifier transistor U352 by components L355, R359, and C376. Voltage supply to the IF amplifier is taken from the receive 5 volts (R5). AGC voltage is applied to the second gate of U352. The IF amplifier provides a gain of about 11 dB. The amplified IF signal is then coupled into U351 (pin 3) via L352, R356 and C365 which provides the matching for the IF amplifier and U351.

The IF signal applied to pin 3 of U351 is amplified, down-converted, filtered, and demodulated, to produce the recovered audio at pin 27 of U351. This IF IC is electronically programmable, and the amount of filtering (which is dependent on the radio channel spacing) is controlled by the microprocessor. Additional filtering, once externally provided by the conventional ceramic filters, is replaced by internal filters in the IF module (U351).

The IF IC uses a type of direct conversion process, whereby the externally generated second LO frequency is divided by two in U351 so that it is very close to the first IF frequency. The IF IC (U351) synthesizes the second LO and phase-locks the VCO to track the first IF frequency. The second LO is designed to oscillate at twice the first IF frequency because of the divide-by-two function in the IF IC.

In the absence of an IF signal, the VCO will “search” for a frequency, or its frequency will vary close to twice the IF frequency. When an IF signal is received, the VCO will lock onto the IF signal. The second LO/VCO is a Colpitts oscillator built around transistor Q350. The VCO has a varactor diode, CR350, to adjust the VCO frequency. The control signal for the varactor is derived from a loop filter consisting of R365, C391, and C392.

The IF IC (U351) also performs several other functions. It provides a received signal-strength indicator (RSSI) and a squelch output. The RSSI is a dc voltage monitored by the microprocessor, and used to control the automatic gain control (AGC) circuit in both the front-end and the IF.

The demodulated signal on pin 27 of U351 is also used for squelch control. The signal is routed to U851 where a “flutter fighter” process is implemented. The signal leaves U851 via pin F4 and is then routed to U404 (ASFIC) where squelch signal shaping and detection takes place. The demodulated audio signal is also routed to U404 for processing before going to the audio amplifier for amplification.

### 7.11.3 Receiver Back-End (For PCB No. 8471203M01)

The receiver back end is a dual conversion design. The 73.35 MHz high IF consists of 4-pole crystal filter FL350, IF amp Q350, 4-pole crystal filter FL351 and IF amp Q351. Each crystal filter has a 3 dB bandwidth of 6.0 kHz and a maximum insertion loss of 4 dB. The output of Q351 is applied to the input of the receiver IFIC U350. Diode D350 prevents overdriving the IFIC.

The IFIC is a low-voltage monolithic FM IF system incorporating a mixer/oscillator, two limiting IF amplifiers, quadrature detector, logarithmic received signal strength indicator (RSSI), voltage regulator and audio and RSSI op amps. The second LO frequency is determined by Y350.

Additional IF selectivity is provided by two ceramic filters, FL352 (between the second mixer and IF amp) and FL353 (between the IF amp and the limiter input). FL352 is a 6 element filter with a 6dB bandwidth of 9 kHz. FL353 is a 4 element filter with a 6dB bandwidth of 12 kHz. These bandwidths are optimum for 12.5 kHz channel spacing systems. Ceramic resonator Y351 provides phase vs. frequency characteristic required by the quadrature detector, with 90 degree phase shift occurring at 455 kHz. Buffer Q352 provides a lower driving impedance from the limiter to the resonator, improving the IF waveform and lowering distortion.

### 7.11.4 Hear Clear IC

Hear Clear (HC) IC is typically used for 900 MHz radios. The HC IC comprises three main internal circuit blocks:

- Compressor,
- Flutter Fighter
- Expander Circuits.

Only the Flutter Fighter section of this IC is used by this radio. The Compressor and the Expander are included in the ASFIC. There are six enable/control lines on the Hear Clear IC which determine the ICs mode of operation. The Flutter Fighter Enable line (U851-E3) is controlled by ASFIC DACRX line (U404-4). The logic control and the IC status is summarized in [Table 7-2 on page 7-22](#).

*Table 7-2. Hear Clear Logic and IC Status*

Name	Ref. Des	Set By	RX1*	RX2**
IC Enable	U851-C4	SWB+	1	1
Flutter Fighter Enable	U851-E3	DACRX	1	0
LO Clamp Disable	U851-A5	SWB+	1	1
LO Clamp Disable	U851-C2	GND	0	0
HCI Disable	U851-B6	SWB+	1	1
LO Clamp Disable	U851-D1	GND	0	0

\*RX1: receive voice with carrier squelch, PL or DPL (Flutter Fighter can be on or off).

\*\*RX2: refers to receive mode with all other data HST/MDC/DTMF (Flutter Fighter must be off).

#### 7.11.4.1 Receive Path for Radios with Hear Clear

The audio signal enters Hear Clear controller from DEMOD\_OUT signal on DISC. The detected audio "DISC" enters the Hear Clear Flutter Fighter through C857 and C859. C857 connects the signal to FF IN (U851-E4). C859 is a beginning of a noise sampling circuit consisting of components – C859, R853, C860, R854, C861, R855 and C862; and Hear Clear Ports Ref, Noise Filter In, and Noise Filter Out, Noise Hold.

After exiting Hear Clear at the "FF OUT" (U851-F4), the signal enters ASFIC at DISC (U404-2). Within the ASFIC, the signal passes through a low pass filter and high pass filter limiting the audio bandwidth to 300 Hz–3 kHz. It then goes through de-emphasis and exits the ASFIC at AUDIO (U404-41). The audio is then routed to the Audio PA in the same manner as the standard receive audio.

The purpose of the Flutter Fighter is to sample the amount of Noise in the receive audio between 10–20 kHz using the Noise Filter (U851-B5), Noise Filter Out (U851-C6), and Noise Hold (U851-D5). In addition, it monitors the rate of change of RSSI (Receive Signal Strength In) (U303-1). The detected audio DISC enters into the Hear Clear IC at "FF IN" (U851-E4). The circuit then reduces the amount of popping Noise associated with fading. The improved audio exits the IC at "FF OUT" (U851-F4).

#### 7.11.4.2 Hear Clear Routing of Data/Signaling

While receiving, sub-audible signals PL/DPL go through the Flutter Fighter along with the audio, and is unaffected by the Flutter Fighter operation. On entering the ASFIC, the sub-audible signaling is separated from the voice and decoded.

While receiving other signals HST/MDC (not sub-audible), the Flutter Fighter is set to the "pass through mode". In this mode, the Flutter Fighter is routed from "FF IN" to "FF OUT" without any processing.

### 7.11.5 Automatic Gain Control Circuit

The automatic gain control circuit provides automatic gain reduction of both the low noise amplifier in the receiver front end and the IF amplifier in the receiver backend. This action is necessary to prevent overloading of the backend IF IC.

For PCB No. 8471203M01, the AGC circuit is disabled.

The IF automatic gain control circuit provides approximately 50 dB of attenuation range. The signal strength indicator (RSSI) output of the IF IC produces a voltage that is proportional to the RF level at the IF input to the IF IC. This voltage is inverted by U350, R351, R353, R352, R354 and C355 and it determines the RF level at which the backend end AGC is activated as well as the slope of the voltage at the output of U350 vs. the strength of the incoming RF at the antenna. The inverted output of U350 is applied to the second gate of the IF amplifier U352 via R355. As the RF signal into the IF IC increases the following occurs:

- The RSSI voltage increases,
- The output of inverter U350 decreases, and
- The voltage applied to the second gate of the FET is reduced thus reducing the gain of the IF amplifier.

The output of inverter U350 is also used to control the receiver front end AGC.

The receiver front end automatic gain control circuit provides and additional 20 dB of gain reduction. The output of the receiver back end inverter U350 is fed into the receiver front end AGC inverter U302. The components R317, R314, and C318 determine:

- The RF level at which the front end AGC is activated, and
- The slope of the voltage at the output of U302 vs. the strength of the incoming RF at the antenna.

As the RF into the antenna increases the following occurs:

- The output voltage of the receiver back end inverter U350 decreases.
- The voltage at the output of the front end inverter U302 increases.
- The result is the forward biasing of pin diode CR301.

As the diode becomes more and more forward biased the following occurs:

- C310 loads the output of the low noise amplifier Q302 thus reducing the gain of the low noise amplifier.
- R315 and R318 provide a DC path for CR301 and also limit the current through CR301.

The blocking capacitor C317 prevents DC from the AGC stage from appearing at the input of the filter FL301.

## 7.12 Frequency Generation Circuitry

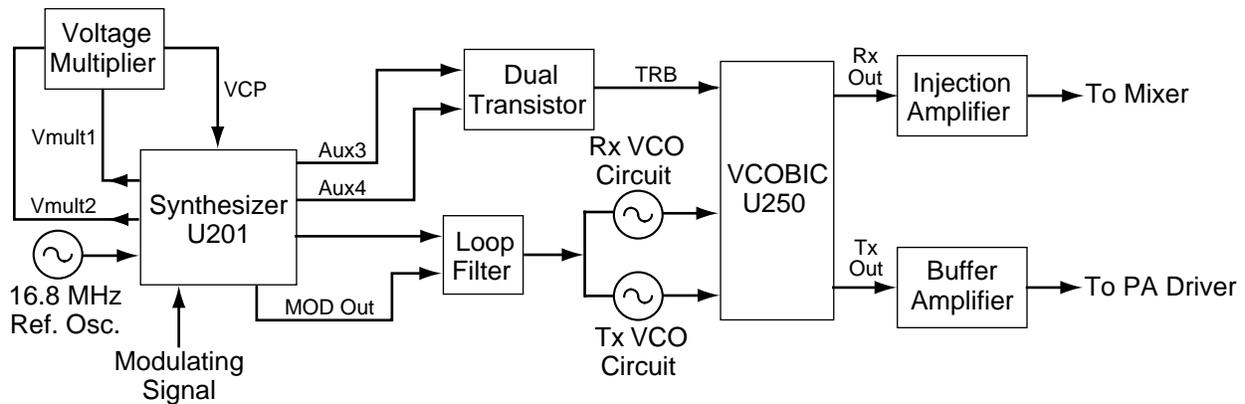


Figure 7-14. Frequency Generation Unit Block Diagram

The Frequency Generation circuitry is comprised of two main ICs, the Low Voltage Fractional-N (LV FracN) synthesizer (U201), and the VCO/Buffer IC (U250). Designed in conjunction to maximize compatibility, the two ICs provide many of the functions that normally would require additional circuitry. The synthesizer block diagram illustrates the interconnect and support circuitry used in the region. Refer to the relevant schematics for the reference designators.

The synthesizer is powered by regulated 5 V and 3.3 V which come from U247 and U248 respectively. The synthesizer in turn generates a superfiltered 4.5 V which powers U250.

In addition to the VCO, the synthesizer must interface with the logic and ASFIC circuitry. Programming for the synthesizer is accomplished through the data, clock and chip select lines from the microprocessor. A 3.3 V dc signal from synthesizer lock detect line indicates to the microprocessor that the synthesizer is locked.

Transmit modulation from the ASFIC is supplied to pin10 of U201. Internally the audio is digitized by the LV FracN IC and applied to the loop divider to provide the low-port modulation. The audio runs through an internal attenuator for modulation balancing purposes before going out to the VCO.

## 7.13 900 MHz Synthesizer

The Low Voltage Fractional-N (LV FracN) synthesizer (U201) uses a 16.8 MHz packaged 1.5 ppm reference oscillator (Y200) to provide a reference for the system. The LV FracN IC further divides the 16.8 MHz to 2.1 MHz, 2.225 MHz, and 2.4 MHz. Y200, together with C238, C239, C241, R212, R213, and R214 comprise the reference oscillator which is capable of 1.5 ppm stability over temperatures of -30° to 85°C. It also provides 16.8 MHz at pin 19 of U201 to be used by ASFIC and LVZIF.

The loop filter which consists of C801, C802, C803, C804, C805, C225, C226, R204, R209, and R210 provides the necessary dc steering voltage for the VCO and provides filtering of noise and spurs from U201.

In achieving fast locking for the synthesizer, an internal adapt charge pump provides higher current at pin 45 of U201 to put the synthesizer within the lock range. The required frequency is then locked by the normal mode charge pump at pin 43.

Both the normal and adapt charge pumps get their supply from the capacitive multiplier which is made up of CR201, CR202, C244, C245, C246, C247, R200, R218, C208, C243, R219, and R220. Two 3.3 V square waves (180 degrees out of phase) are applied to R219 and R220. These square waves switch alternate sets of diodes from CR201 and CR202, which in turn charge C244, C245, C246, and C247 in a bucket brigade fashion. The resulting output voltage that is applied to pin 47 of U201 is typically 12.8 V and allows the steering line voltage (VCO control voltage) to reach 11 V.

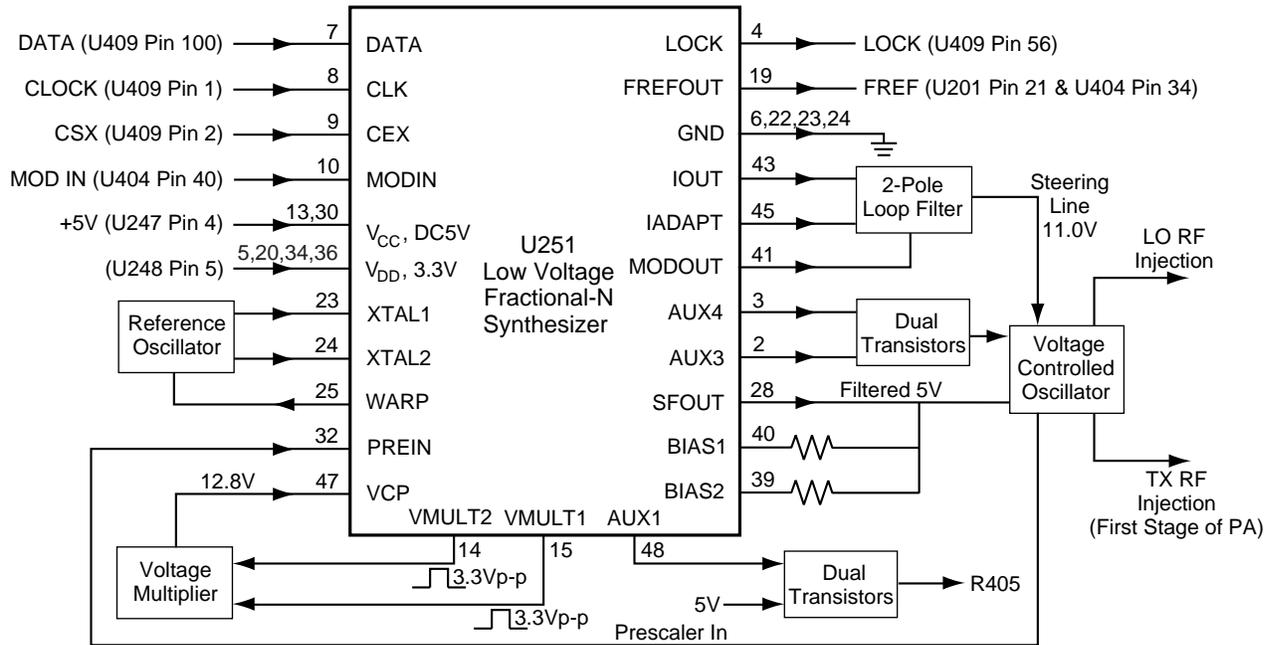


Figure 7-15. Synthesizer Block Diagram

### 7.14 900 MHz Voltage Control Oscillator (VCO)

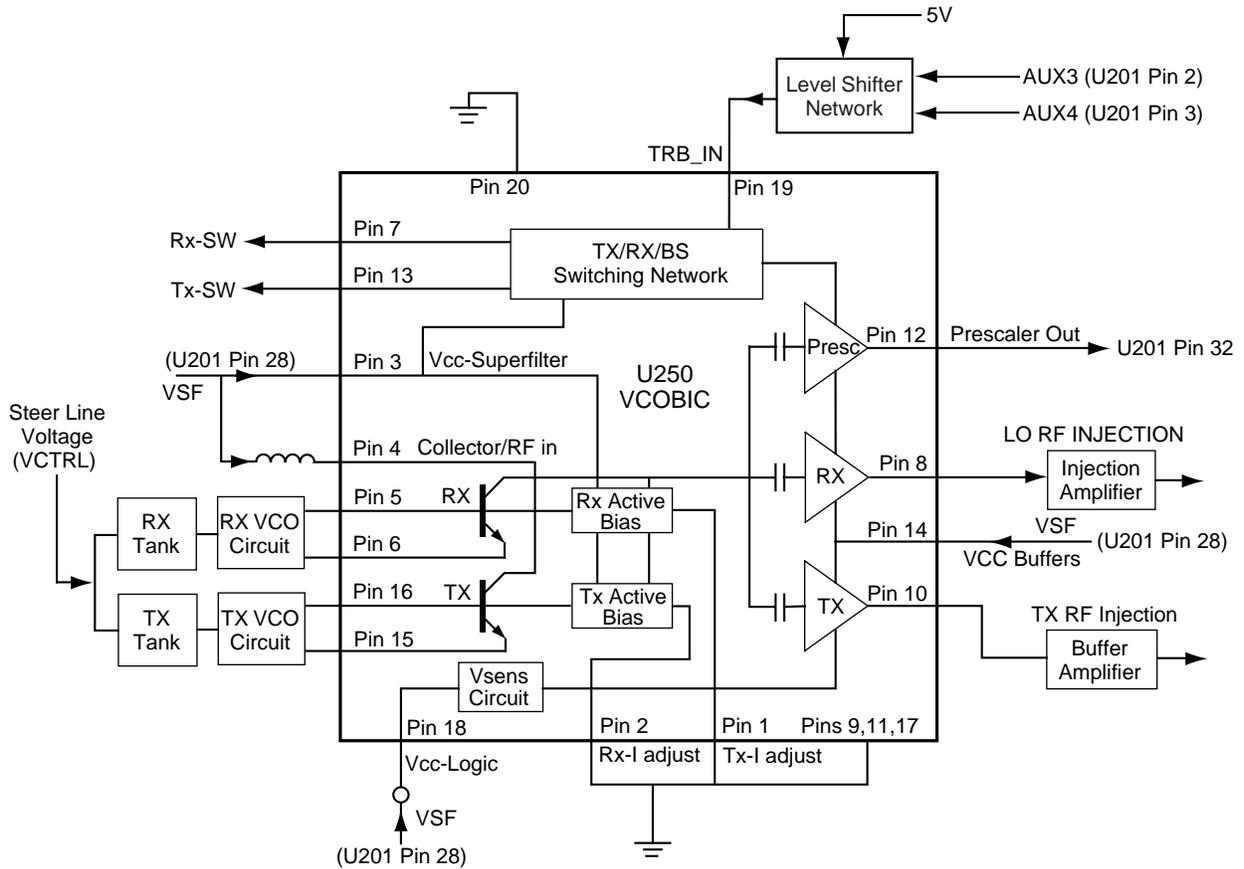


Figure 7-16. VCO Block Diagram

The VCOBIC (U250) in conjunction with the LV FracN synthesizer (U201) generates RF in both the receive and the transmit modes of operation. The TRB line (U250 pin 19) determines which oscillator and buffer will be enabled. A sample of the RF signal from the enabled oscillator is routed from U250 pin 12, through a low pass filter, to the prescaler input (U201 pin 32). After frequency comparison in the synthesizer, a resultant CONTROL VOLTAGE is received at the VCO. This voltage is a DC voltage between 2.0 V (low frequency) and 11.0 V (high frequency) when the PLL is locked on frequency.

The VCOBIC (U250) is operated at 4.54 V (VSF) and LV FracN synthesizer (U201) at 3.3 V. This difference in operating voltage requires a level shifter consisting of Q200 and Q252 on the TRB line.

The operation logic is shown in Table 7-3.

Table 7-3. Level Shifter Logic

Desired Mode	AUX 4	AUX 3	TRB
Tx	Low	High (@3.2V)	High (@4.8V)
Rx	High	Low	Low
Battery Saver	Low	Low	Hi-Z/Float (@2.5V)



In the receive mode, U250 pin 19 is low or grounded. This activates the receive VCO by enabling the receive oscillator and the receive buffer of U250. The RF signal at U250 pin 8 is run through an injection amplifier, Q304. The resulting RF signal is the LO RF INJECTION and it is applied to the mixer at U301.

During the transmit condition, when PTT is depressed, five volts is applied to U250 pin 19. This activates the transmit VCO by enabling the transmit oscillator and the transmit buffer of U250. The RF signal at U250 pin 10 is amplified by Q251 and injected into the input of the PA module (U101 pin1). This RF signal is the TX RF INJECTION. Also in transmit mode, the audio signal to be frequency modulated onto the carrier is received through the U201 pin 41.

When a high impedance is applied to U250 pin19, the VCO is operating in BATTERY SAVER mode. In this case, both the receive and transmit oscillators as well as the receive transmit and prescaler buffer are turned off.

## **Notes**

## Chapter 8 Maintenance

### 8.1 Introduction

This chapter of the manual describes:

- Preventive maintenance
- Safe handling of CMOS devices
- Repair procedures and techniques

### 8.2 Preventive Maintenance

The radios do not require a scheduled preventive maintenance program; however, periodic visual inspection and cleaning is recommended.

### 8.3 Inspection

Check that the external surfaces of the radio are clean, and that all external controls and switches are functional. It is not recommended to inspect the interior electronic circuitry.

#### 8.3.1 Cleaning

The following procedures describe the recommended cleaning agents and the methods to be used when cleaning the external and internal surfaces of the radio. External surfaces include the front cover, housing assembly, and battery case. These surfaces should be cleaned whenever a periodic visual inspection reveals the presence of smudges, grease, and/or grime.

**NOTE:** Internal surfaces should be cleaned only when the radio is disassembled for servicing or repair.

The only recommended agent for cleaning the external radio surfaces is a 0.5% solution of a mild dishwashing detergent in water. The only factory recommended liquid for cleaning the printed circuit boards and their components is isopropyl alcohol (70% by volume).



**CAUTION:** The effects of certain chemicals and their vapors can have harmful results on certain plastics. Aerosol sprays, tuner cleaners, and other chemicals should be avoided.

1. **Cleaning External Plastic Surfaces**

The detergent-water solution should be applied sparingly with a stiff, non-metallic, short-bristled brush to work all loose dirt away from the radio. A soft, absorbent, lintless cloth or tissue should be used to remove the solution and dry the radio. Make sure that no water remains entrapped near the connectors, cracks, or crevices.

2. **Cleaning Internal Circuit Boards and Components**

Isopropyl alcohol may be applied with a stiff, non-metallic, short-bristled brush to dislodge embedded or caked materials located in hard-to-reach areas. The brush stroke should direct the dislodged material out and away from the inside of the radio. Make sure that controls or tunable components are not soaked with alcohol. Do not use high-pressure air to hasten the drying process since this could cause the liquid to collect in unwanted places. Upon completion of the cleaning process, use a soft, absorbent, lintless cloth to dry the area. Do not brush or apply any isopropyl alcohol to the frame, front cover, or back cover.

**NOTE:** Always use a fresh supply of alcohol and a clean container to prevent contamination by dissolved material (from previous usage).

## 8.4 Safe Handling of CMOS and LDMOS

Complementary metal-oxide semiconductor (CMOS) and lateral diffusion metal oxide semiconductor (LDMOS) devices are used in this family of radios. Their characteristics make them susceptible to damage by electrostatic or high voltage charges. Damage can be latent, resulting in failures occurring weeks or months later. Therefore, special precautions must be taken to prevent device damage during disassembly, troubleshooting, and repair.

Handling precautions are mandatory for the circuits and are especially important in low humidity conditions. DO NOT attempt to disassemble the radio without first referring to the CMOS CAUTION paragraph in the Disassembly and Reassembly section of the basic manual.

## 8.5 General Repair Procedures and Techniques

- **Parts Replacement and Substitution**

When damaged parts are replaced, identical parts should be used. If the identical replacement component is not locally available, check the parts list for the proper Motorola part number and order the component from the nearest Motorola Communications parts center listed in the "Piece Parts" section of this manual (See Chapter 1).

- **Rigid Circuit Boards**

The family of radios uses bonded, multi-layer, printed circuit boards. Since the inner layers are not accessible, some special considerations are required when soldering and unsoldering components. The printed-through holes may interconnect multiple layers of the printed circuit. Therefore, care should be exercised to avoid pulling the plated circuit out of the hole.

When soldering near the connector pins:

- Avoid accidentally getting solder in the connector.
- Be careful not to form solder bridges between the connector pins.
- Closely examine your work for shorts due to solder bridges.

- **Flexible Circuits**

The flexible circuits are made from a different material than the rigid boards and different techniques must be used when soldering. Excessive prolonged heat on the flexible circuit can damage the material. Avoid excessive heat and excessive bending.

For parts replacement, use the ST-1087 Temperature-Controlled Solder Station with a 600-700 degree tip, and use small diameter solder such as ST-633. The smaller size solder will melt faster and require less heat to be applied to the circuit.

To replace a component on a flexible circuit:

1. Grasp the edge of the flexible circuit with seizers (hemostats) near the part to be removed.
2. Pull gently.
3. Apply the tip of the soldering iron to the component connections while pulling with the seizers.

Do not attempt to puddle out components. Prolonged application of heat may damage the flexible circuit.

- **Chip Components**

Use either the RLN-4062 Hot-Air Repair Station for chip component replacement. Adjust the temperature control to 390 °C. (735 °F), and adjust the airflow to a minimum setting. Airflow can vary due to component density.

To remove a chip component:

1. Use a hot-air hand piece and position the nozzle of the hand piece approximately 1/8" (0.3 cm) above the component to be removed.
2. Begin applying the hot air. Once the solder reflows, remove the component using a pair of tweezers.
3. Using a solder wick and a soldering iron or a power desoldering station, remove the excess solder from the pads.

To replace a chip component using a soldering iron:

1. Select the appropriate micro-tipped soldering iron and apply fresh solder to one of the solder pads.
2. Using a pair of tweezers, position the new chip component in place while heating the fresh solder.
3. Once solder wicks onto the new component, remove the heat from the solder.
4. Heat the remaining pad with the soldering iron and apply solder until it wicks to the component. If necessary, touch up the first side. All solder joints should be smooth and shiny.

To replace a chip component using hot air:

1. Use the hot-air hand piece and reflow the solder on the solder pads to smooth it.
2. Apply a drop of solder paste flux to each pad.
3. Using a pair of tweezers, position the new component in place.
4. Position the hot-air hand piece approximately 1/8" (0.3 cm) above the component and begin applying heat.
5. Once the solder wicks to the component, remove the heat and inspect the repair. All joints should be smooth and shiny.

- **Shields**

Removing and replacing shields are recommended to be done with the Air Blower, BOSCH GHG 603 or equivalent.

To remove the shield:

1. Place the circuit board in the circuit board holder.
2. Add solder paste flux around the base of the shield.
3. Position the heat-focus head onto the shield.
4. Turn on the heater and wait until the shield lifts off the circuit board.
5. Once the shield is off, turn off the heat, and grab the part with a pair of tweezers.
6. Remove the circuit board from the circuit board holder.

To replace the shield:

1. Add solder to the shield if necessary, using a micro-tipped soldering iron.
2. Next, rub the soldering iron tip along the edge of the shield to smooth out any excess solder. Use solder wick and a soldering iron to remove excess solder from the solder pads on the circuit board.
3. Place the circuit board back in the circuit board holder.
4. Place the shield on the circuit board using a pair of tweezers.
5. Position the heat-focus head over the shield .
6. Turn on the heater and wait for the solder to reflow.

7. Once complete, turn off the heat, raise the heat-focus head and wait approximately one minute for the part to cool.
8. Remove the circuit board and inspect the repair. No cleaning should be necessary.

## 8.6 Recommended Test Tools

Table 8-1 lists the recommended tools used for maintaining this family of radios. These tools are also available from Motorola.

Table 8-1. Recommended Test Tools

Motorola Part Number	Description	Application
RSX4043	Torx Driver	Tighten and remove chassis screws.
6680387A70	T-6 Torx Bit	Removable Torx driver bit.
R1453A	Digital readout solder station	Digitally controlled soldering iron.
0180386A78	Illuminated magnifying glass with lens attachment.	
0180386A82 6684253C72 6680384A98 1010041A86  1080303E45	Anti-static grounding kit Straight prober Brush Solder (RMA type), 63/37, 0.5mm diameter 1 lb. spool SMD tool kit (included with R1319A)	Used during all radio assembly and disassembly procedures.
R1319A (110V)  or R1321A(220V)	ChipMaster Surface Mount  Rework Station	Removal and assembly of surface-mounted integrated circuits and shields includes 5 nozzles.
R1364A	Digital Heated Tweezer System	Chip component removal.
R1427A	Board Preheater	Reduces heatsink on multi level boards.
8880309B53	Rework Equipment Catalog	Contains application notes, procedures and technical rework equipment.

## 8.7 Replacing the Circuit Board Fuse

In cases where the radio fails to turn on when power is applied, the circuit board fuse should always be checked as a probable cause of the failure. The radio must be disassembled to replace the fuses as described in the Basic Service Manual (see [section Table 1-1. on page 1-3](#)), then the circuit board separated from the radio chassis as described in the paragraphs that follow.

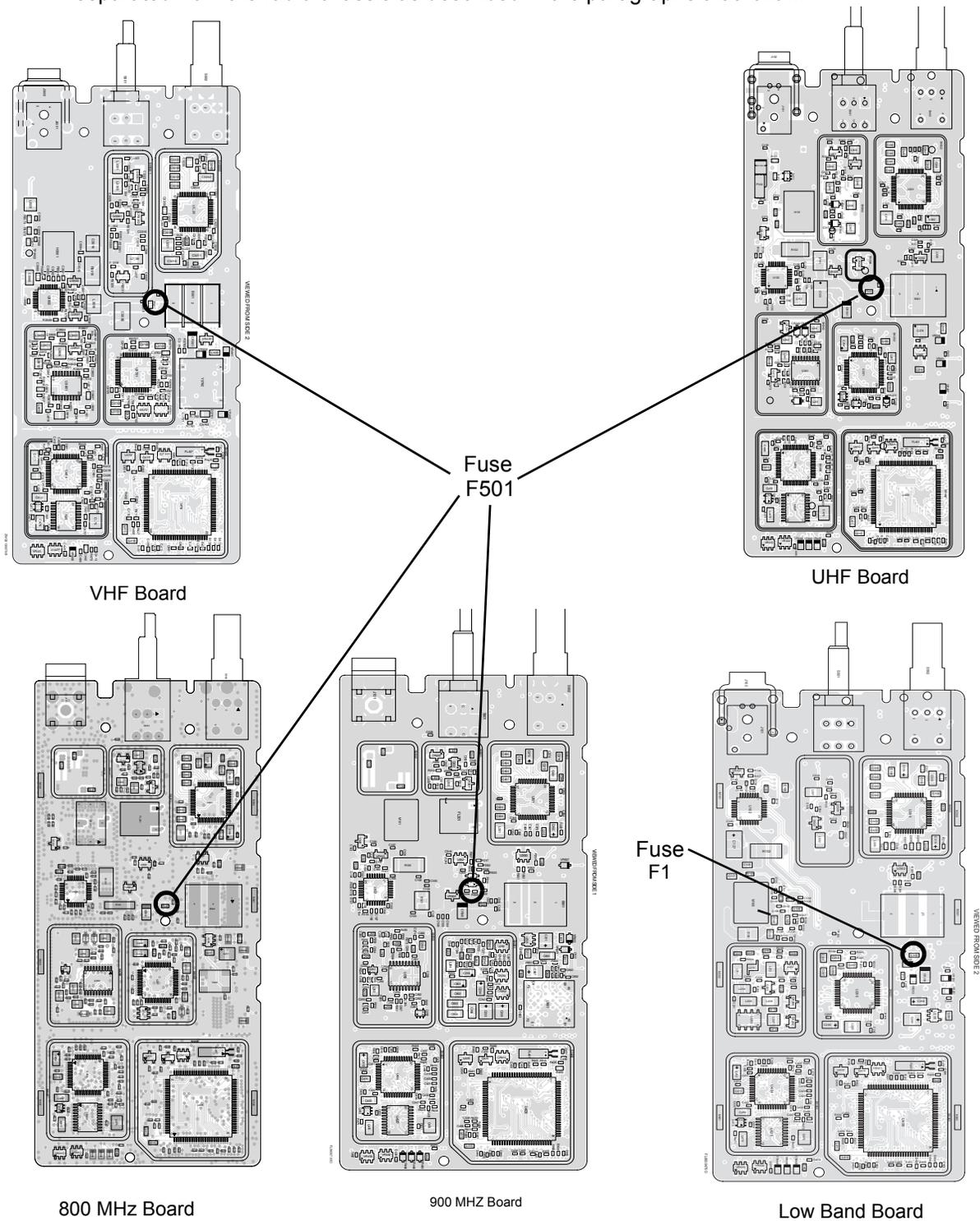


Figure 8-1. UHF/VHF/Low Band/800 MHz/900 MHz Circuit Board Fuse Locations

## 8.8 Removing and Reinstalling the Circuit Board

Both the UHF and VHF circuit boards are removed from the radio chassis in the following manner:

1. Refer to the Basic Service Manual for radio disassembly, then use a Torx driver and a T-6 bit to remove the four Torx screws shown in [Figure 8-2](#).
2. Lift the circuit board out of the radio chassis, then remove and discard the thermal pad located between the circuit board and chassis.
3. After repairs, replace the thermal pad (Motorola P/N 7580556Z01) then reinstall the circuit board into the radio chassis.
4. Reinstall and tighten the four Torx screws to secure the circuit board to the chassis.
5. Refer to the Basic Service Manual to reassemble the radio.

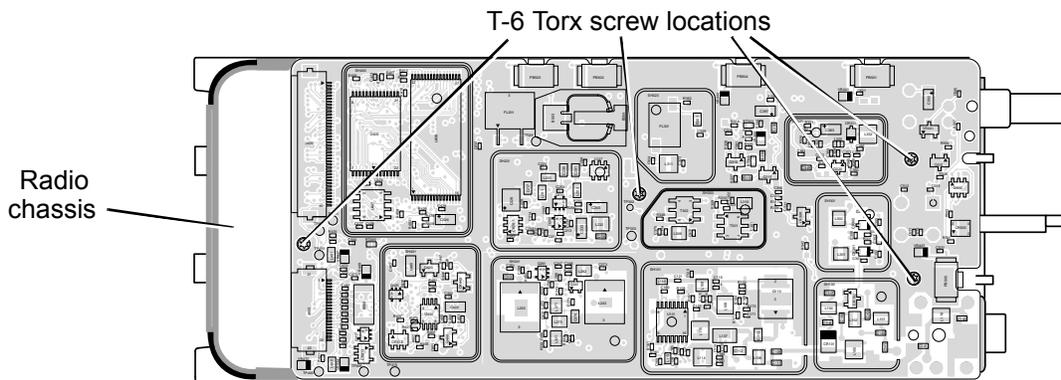


Figure 8-2. Circuit Board Removal and Reinstallation



## 8.9 Power Up Self-Test Error Codes

Turning on the radio starts a self-test routine that checks the RAM, ROM checksum, EEPROM hardware and EEPROM checksum. If these checks are successful, the radio generates two high-pitched self-test pass tones. If the self-test is not successful, one low-pitched tone is heard. Radios with displays are able to display the error codes. The displayed error codes and related corrections are as follows:

*Table 8-2. Power Up Self-Test Error Codes*

<b>If the error code displayed is ...</b>	<b>Then, there is a ...</b>	<b>To correct the problem ...</b>
"RAM TST ERROR"	RAM test failure.	retest the radio by turning it off and turning it on again. If message reoccurs, replace RAM (U405).
"ROM CS ERROR"	wrong ROM checksum.	replace ROM (U406).
"EEPROM HW ERROR"	codeplug structure mismatch or non existence of codeplug.	reprogram codeplug with correct version and retest radio. If message reoccurs, replace EEPROM (U407).
"EEPROM CS ERROR"	wrong codeplug checksum.	reprogram codeplug.
No Display	improperly connected display module or damaged display module.	check connection between main board and display module or replace with new display module.

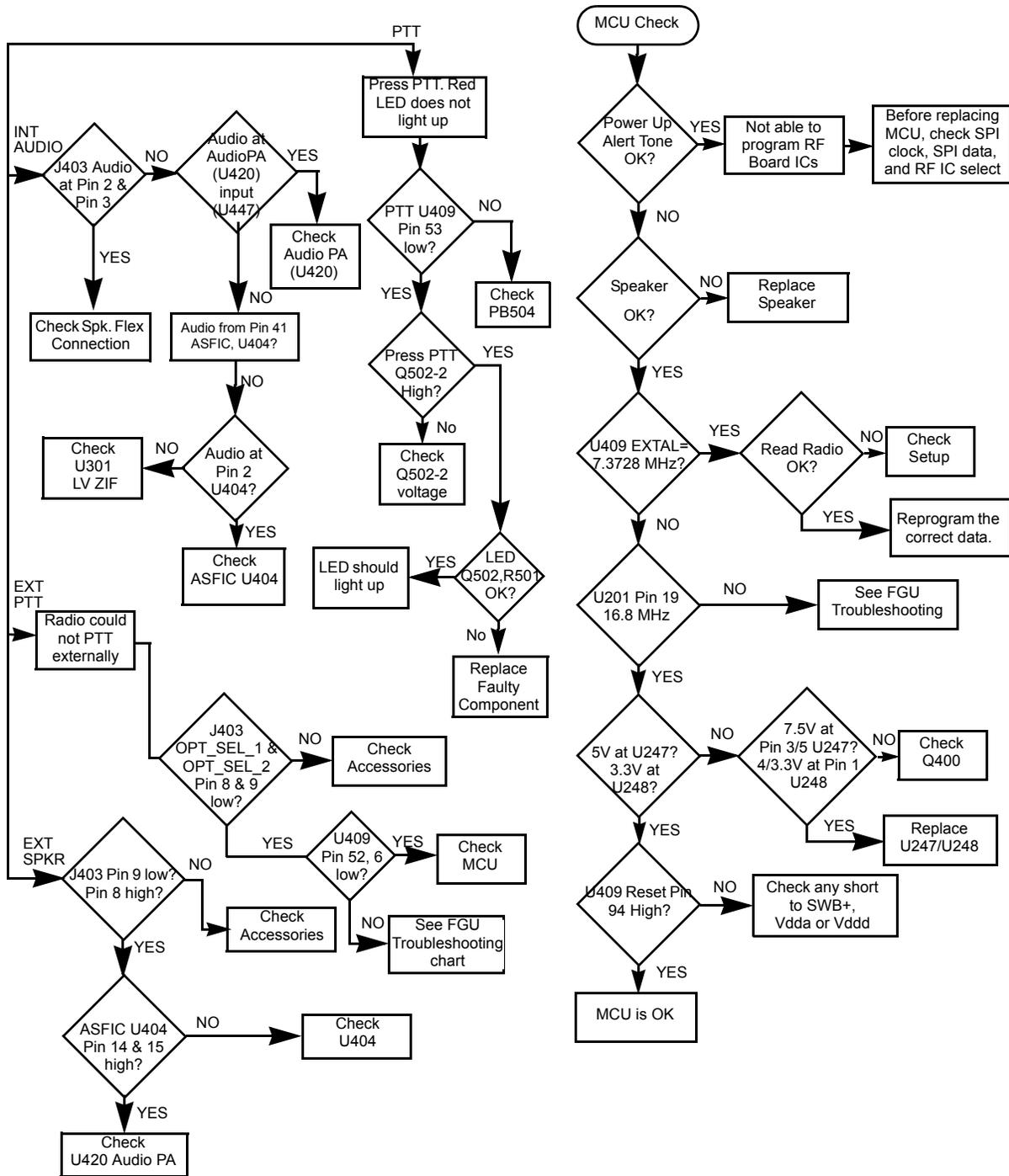
For LTR Models:

*Table 8-3. Power Up Self-Test Error Codes (LTR Models)*

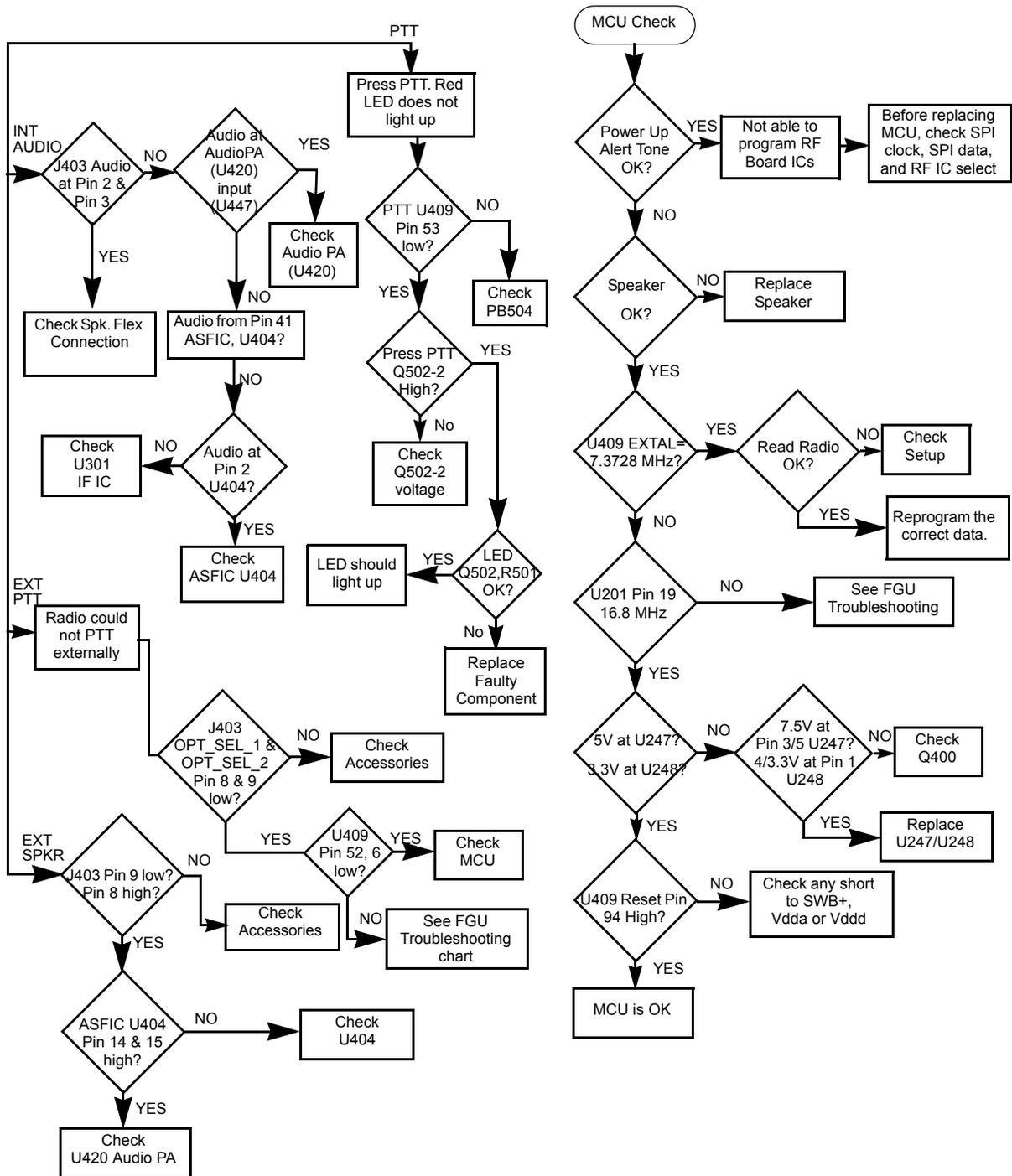
<b>If the error code displayed is ...</b>	<b>Then, there is a ...</b>	<b>To correct the problem ...</b>
ESN BAD	defective PTCB	return to factory for PTCB replacement.
AppCode Fail	defective PTCB firmware	reflash PTCB firmware.
EER: Watchdog	firmware failure	restart radio
Unprogrammed	programming error	use CPS to properly program radio and PTCB.
ERROR: NO PTG	no primary talk group	use CPS to program zone with a Primary Talk Group.
Backdoor	---	turn radio off and restart.

## 8.10 UHF Band 1 Troubleshooting Charts

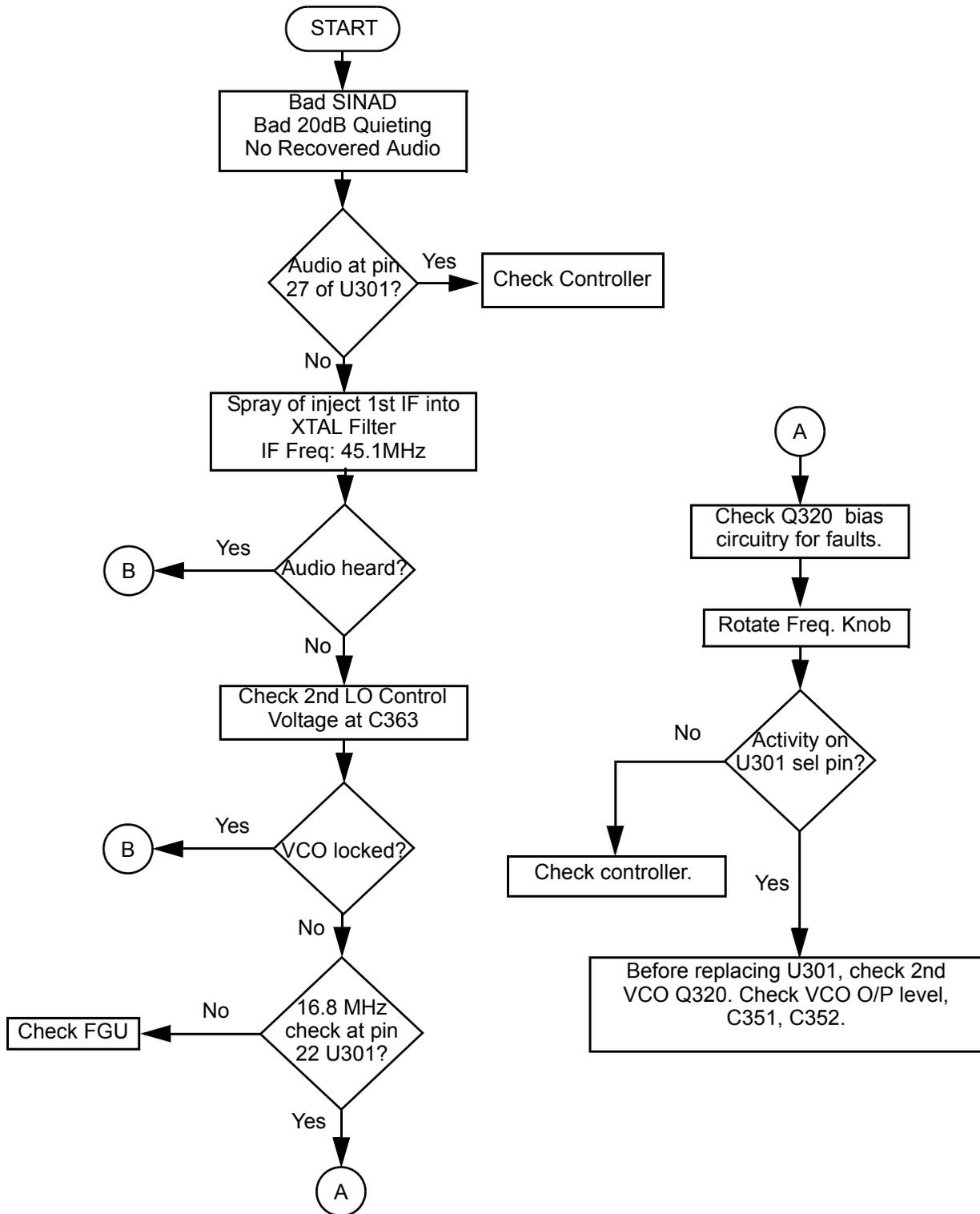
### 8.10.1 Troubleshooting Flow Chart for Controller for all models except PCB 8486458Z03



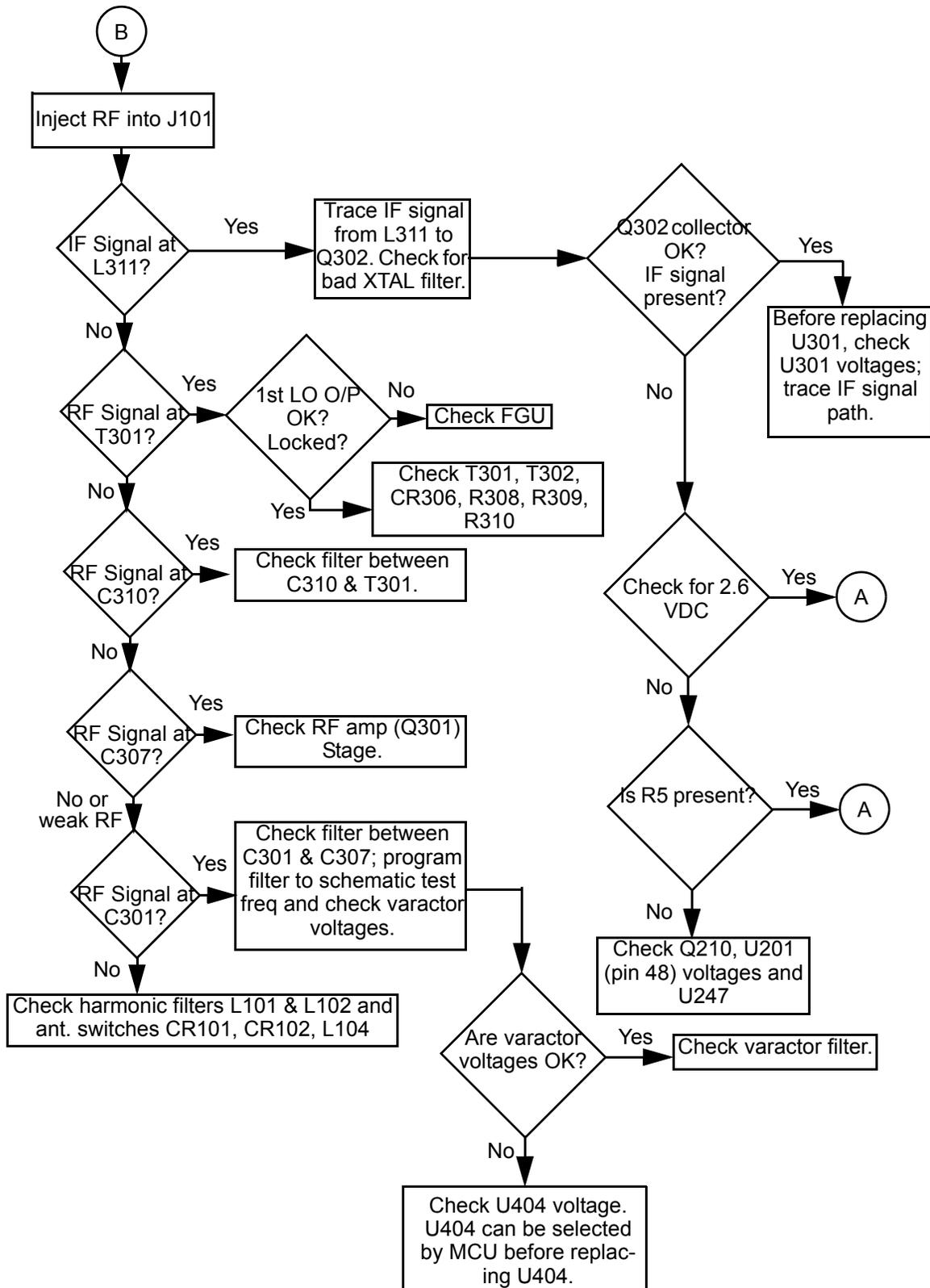
### 8.10.2 Troubleshooting Flow Chart for Controller for models with PCB 8486458Z03



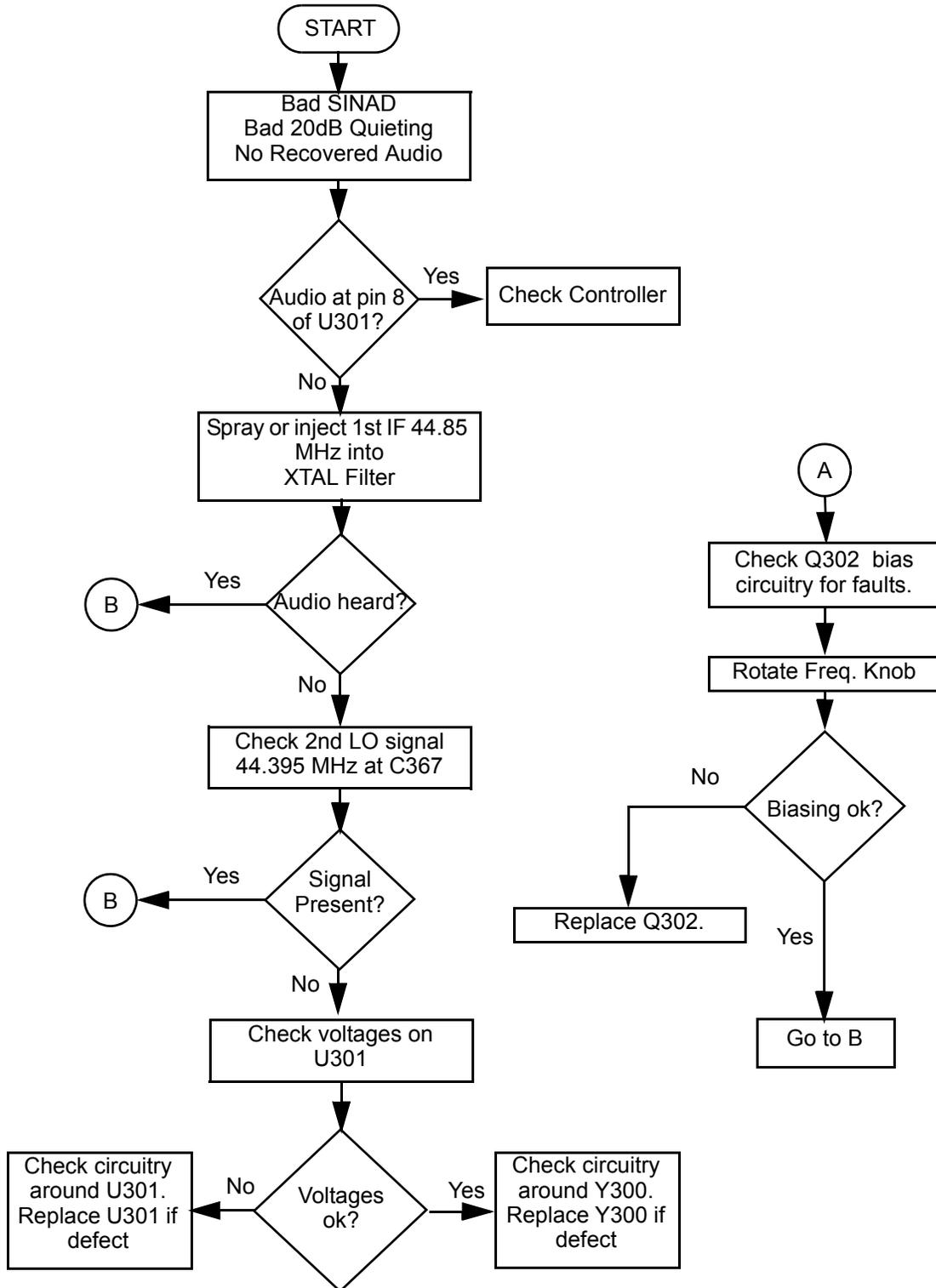
### 8.10.3 Troubleshooting Flow Chart for Receiver for all models except PCB 8486458Z03 (Sheet 1 of 2)



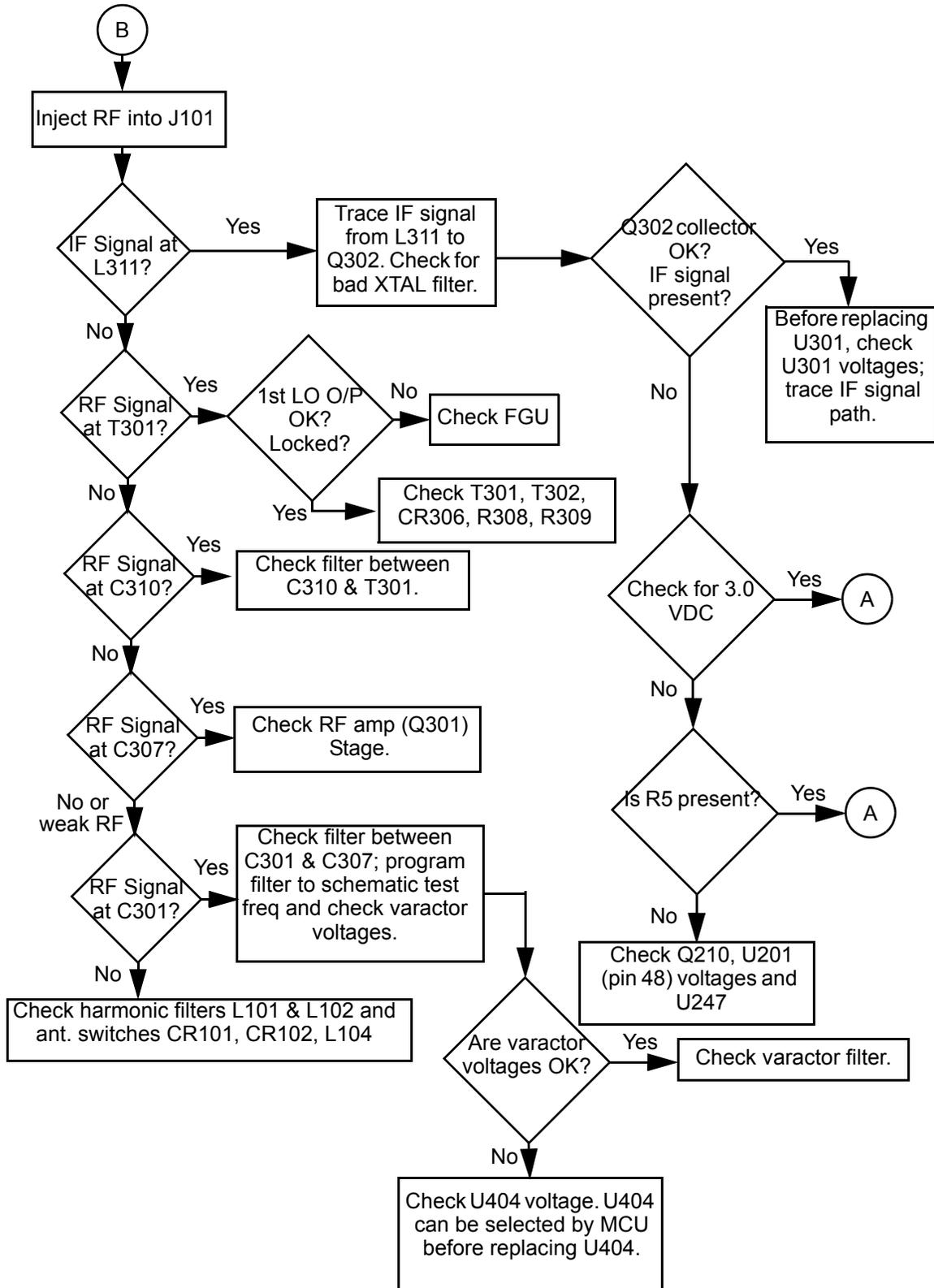
### 8.10.4 Troubleshooting Flow Chart for Receiver for all models except PCB 8486458Z03 (Sheet 2 of 2)



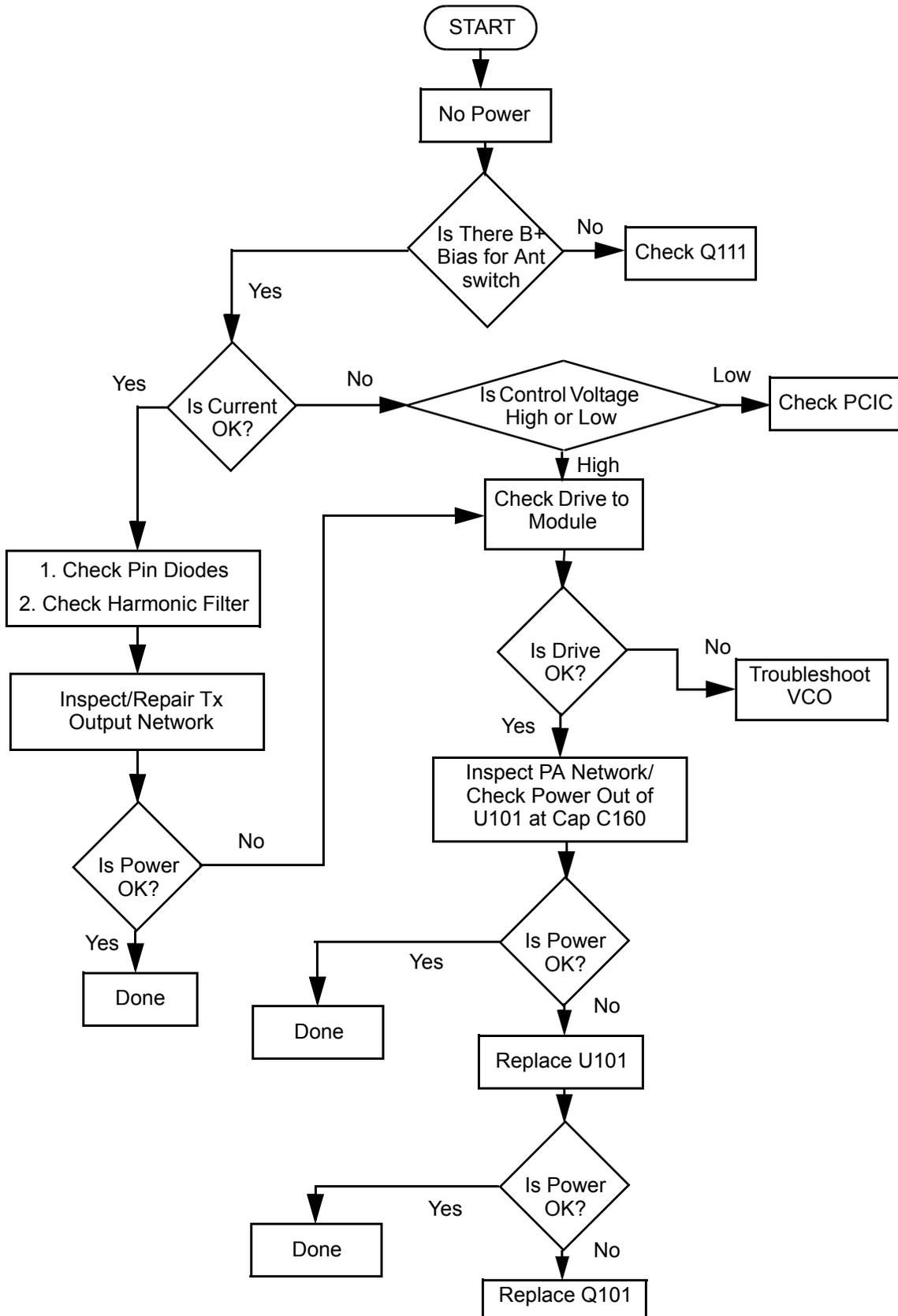
**8.10.5 Troubleshooting Flow Chart for Receiver, for models with PCB 8486458Z03 (Sheet 1 of 2)**



### 8.10.6 Troubleshooting Flow Chart for Receiver, for models with PCB 8486458Z03 (Sheet 2 of 2)



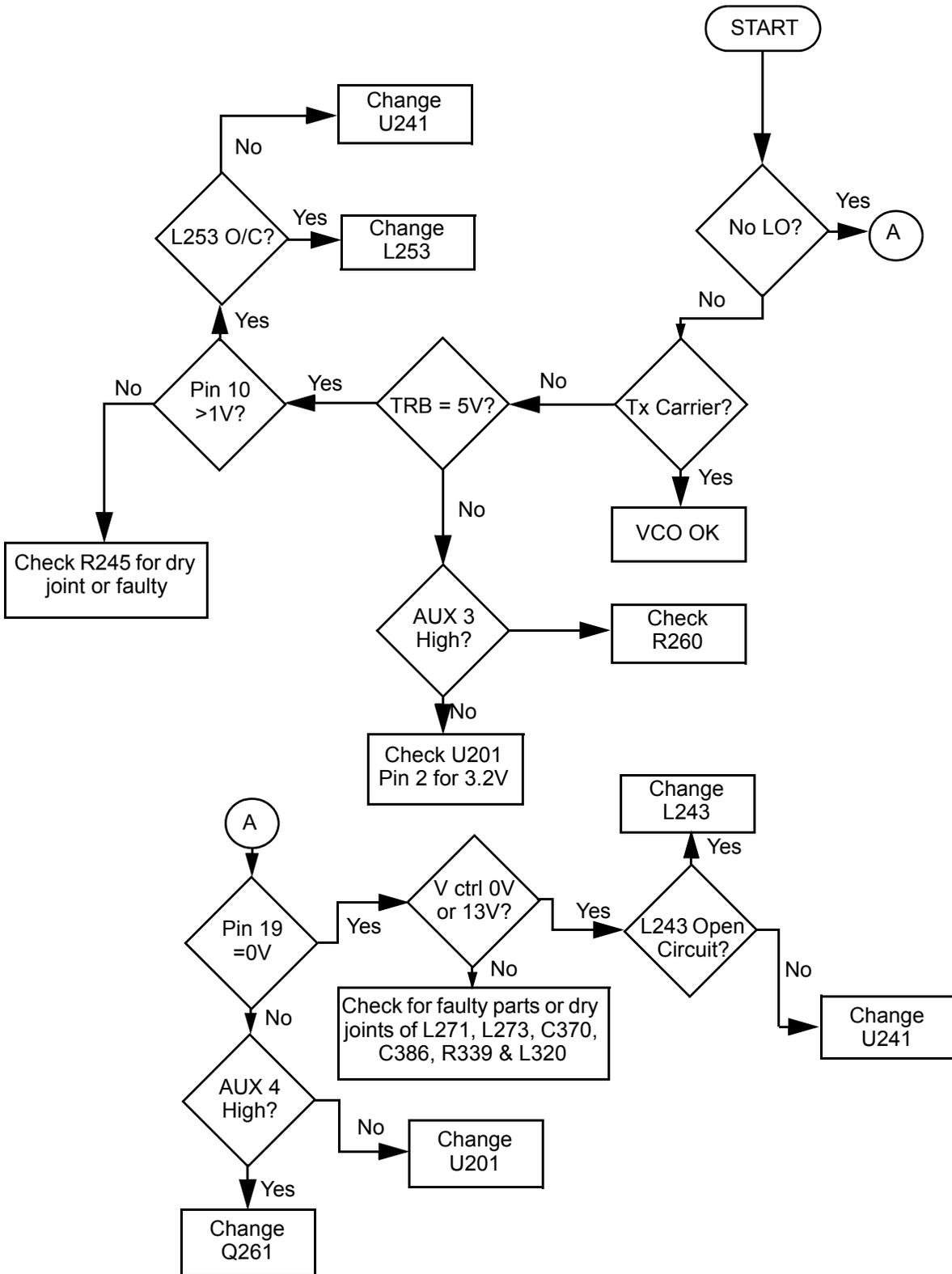
### 8.10.7 Troubleshooting Flow Chart for Transmitter





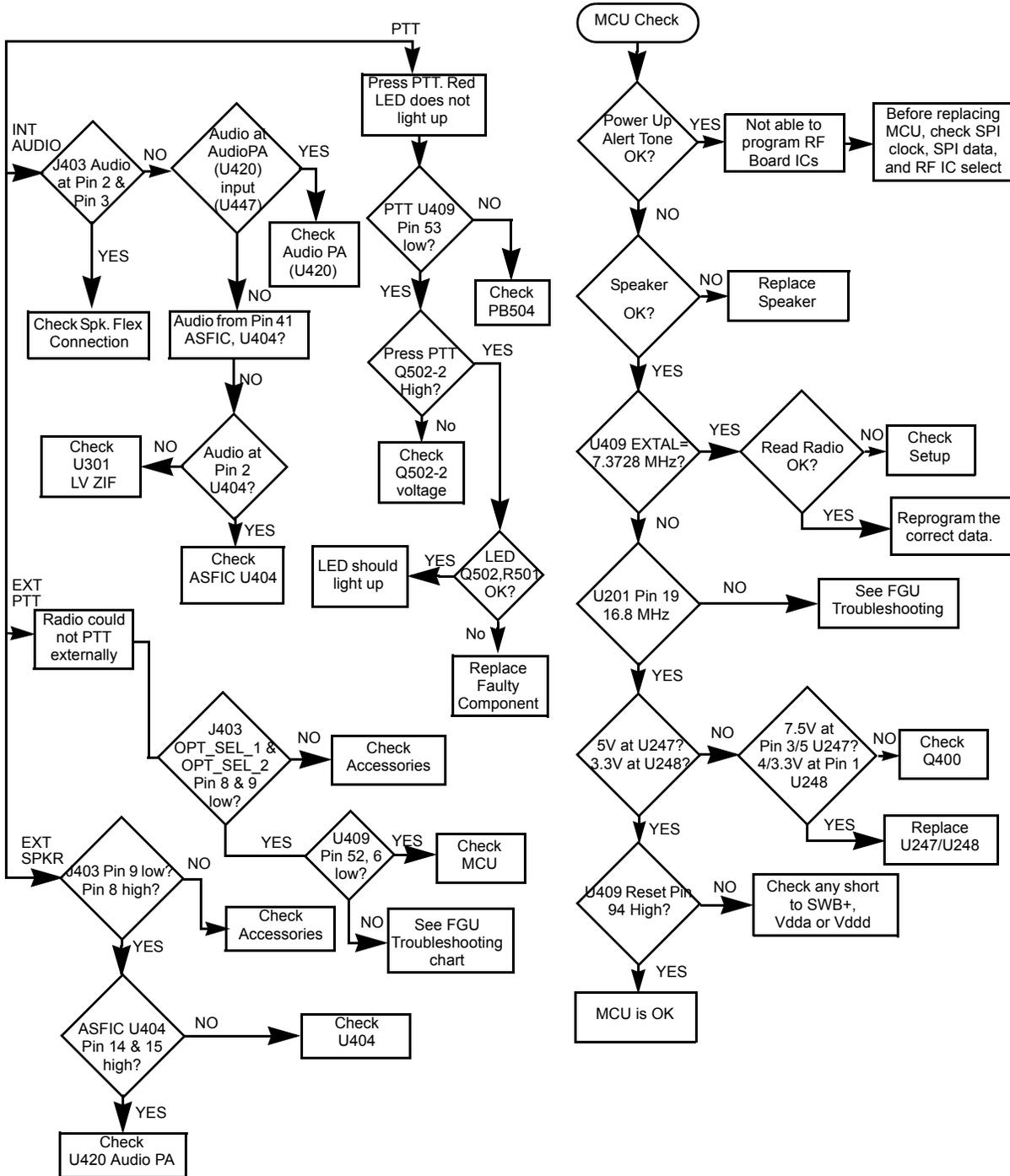


### 8.10.9 Troubleshooting Flow Chart for VCO



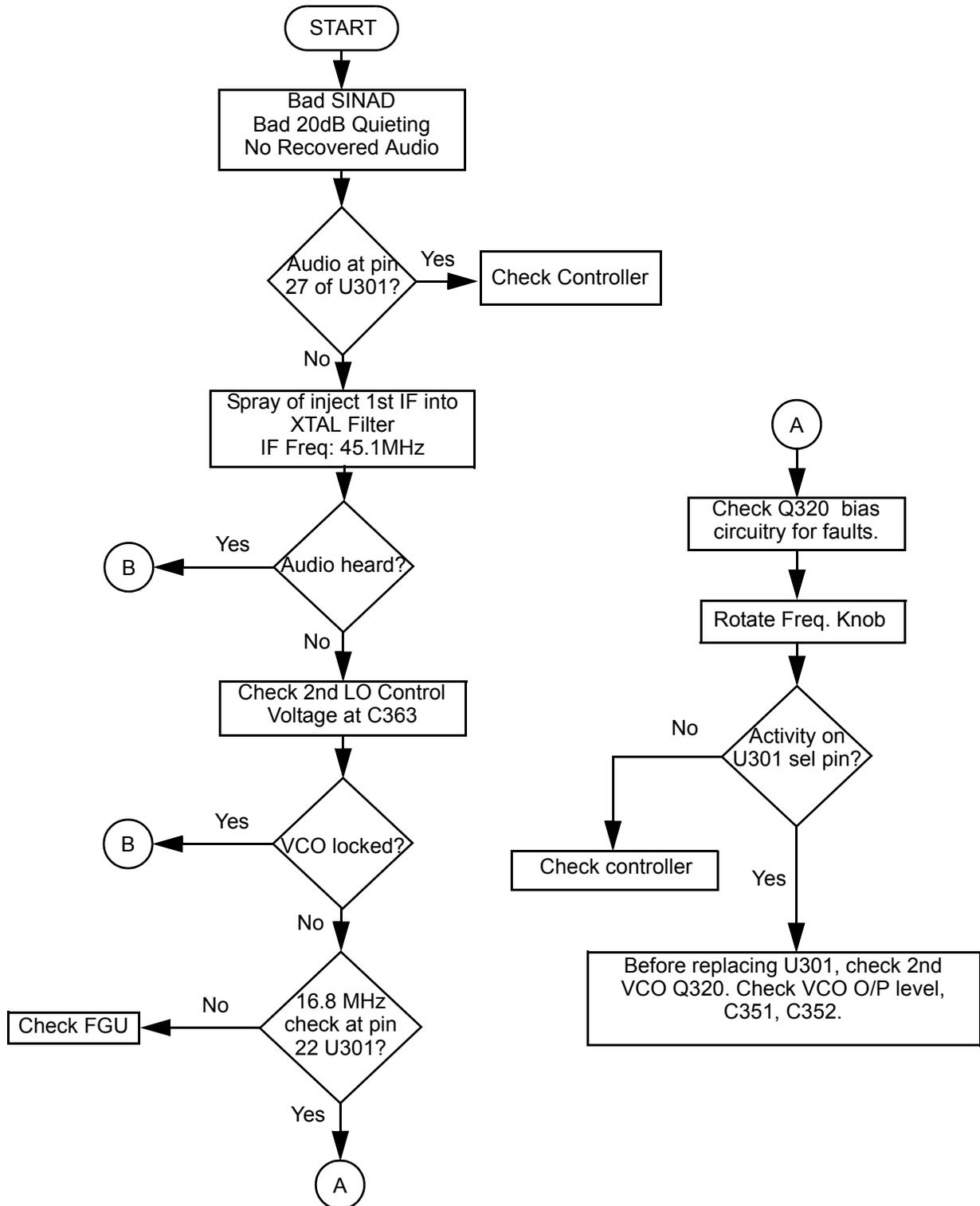
## 8.11 UHF Band 2 Troubleshooting Charts

### 8.11.1 Troubleshooting Flow Chart for Controller for all models except those with PCB 8486686Z02

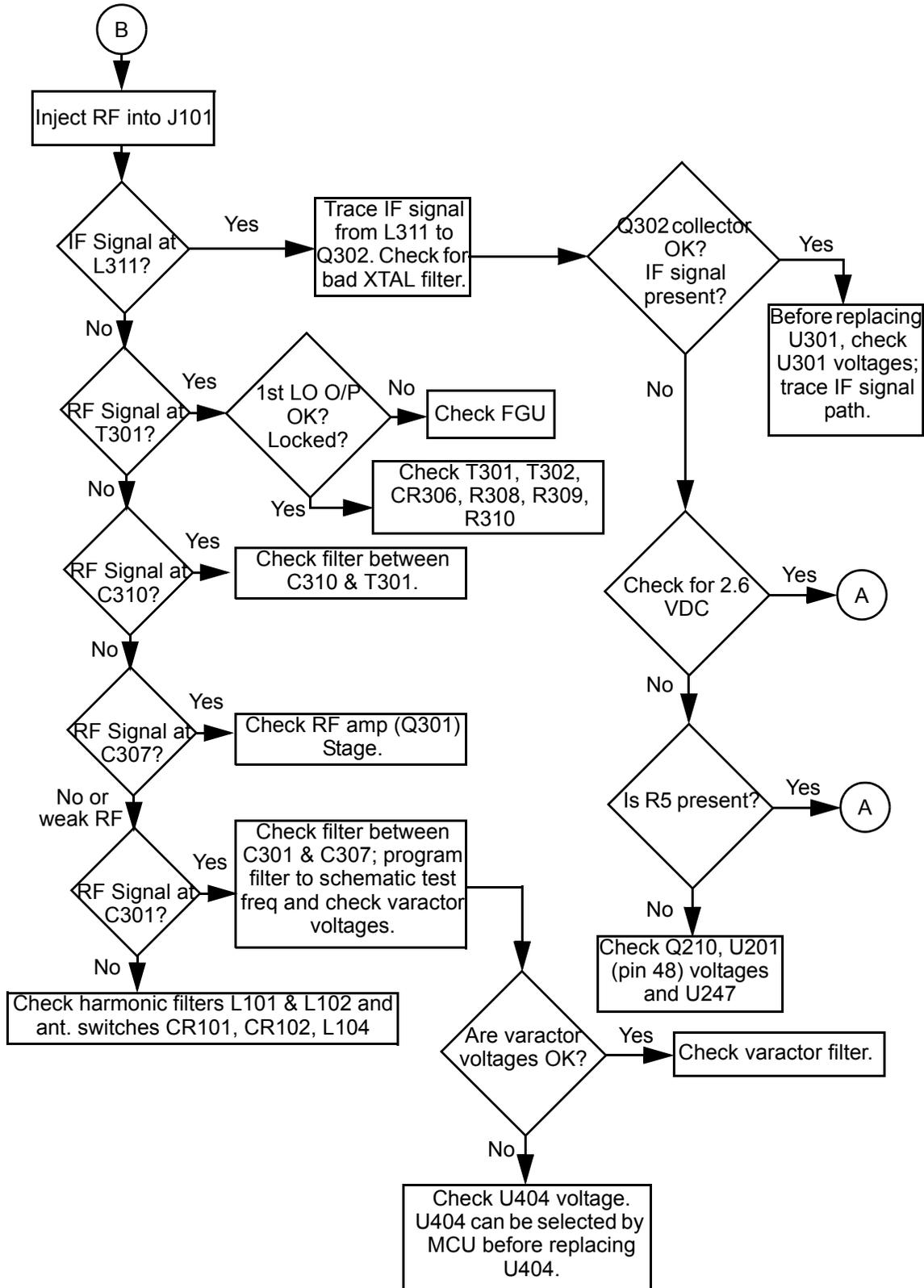




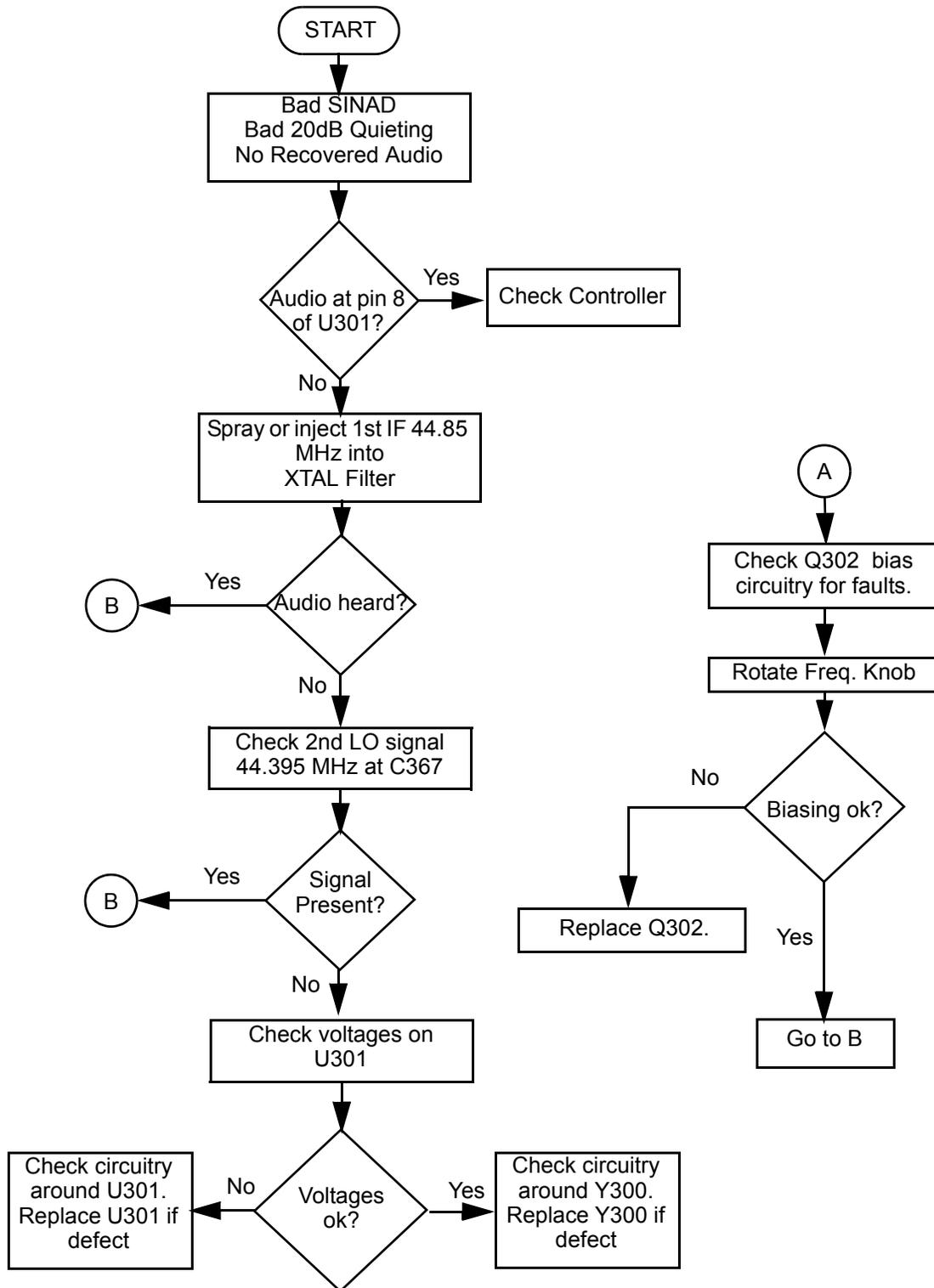
**8.11.3 Troubleshooting Flow Chart for Receiver, for all models except those with PCB 8486686Z02 (Sheet 1 of 2)**



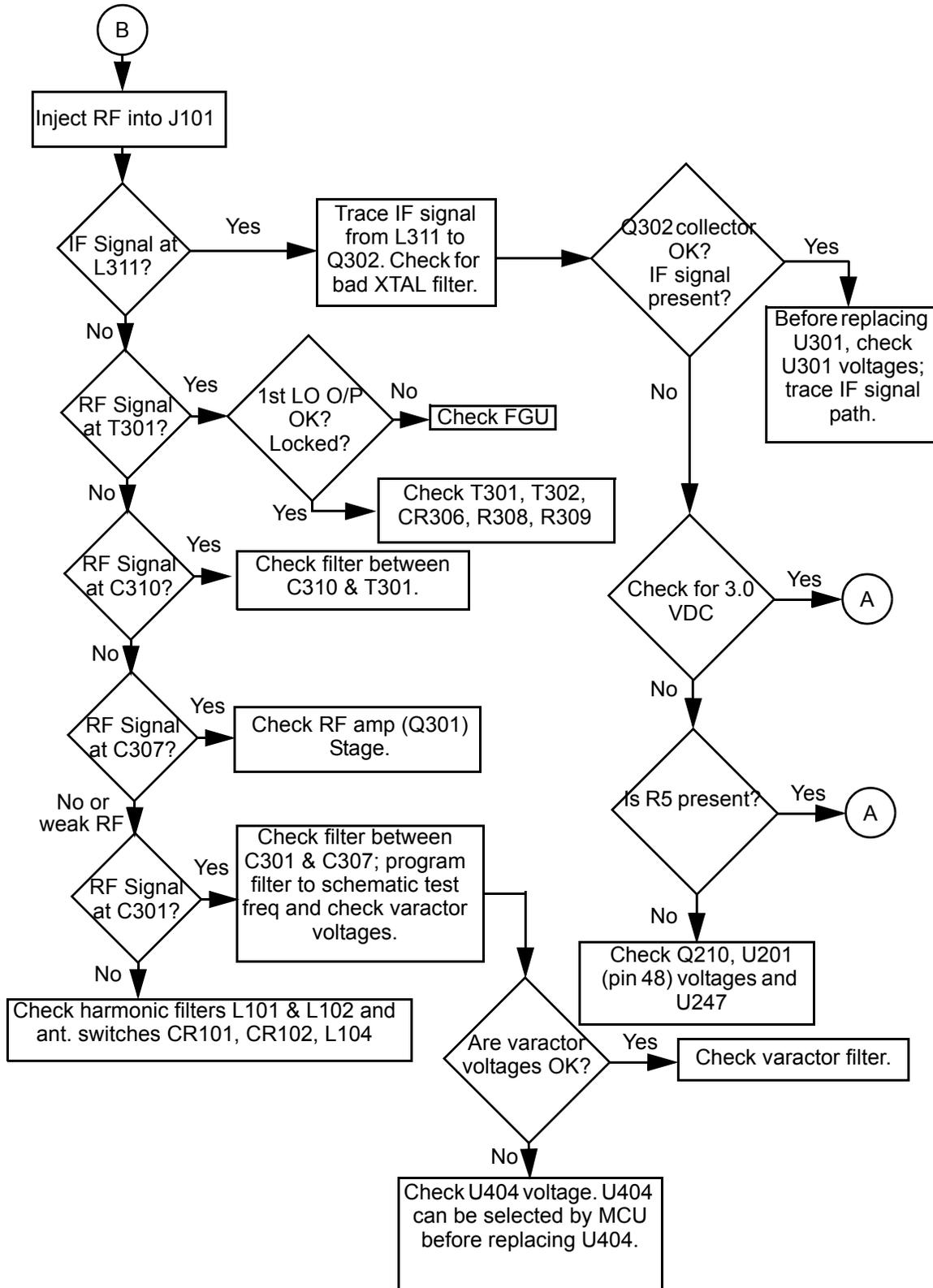
### 8.11.4 Troubleshooting Flow Chart for Receiver, for all models except those with PCB 8486686Z02 (Sheet 2 of 2)



**8.11.5 Troubleshooting Flow Chart for Receiver, for models with PCB 8486686Z02 (Sheet 1 of 2)**

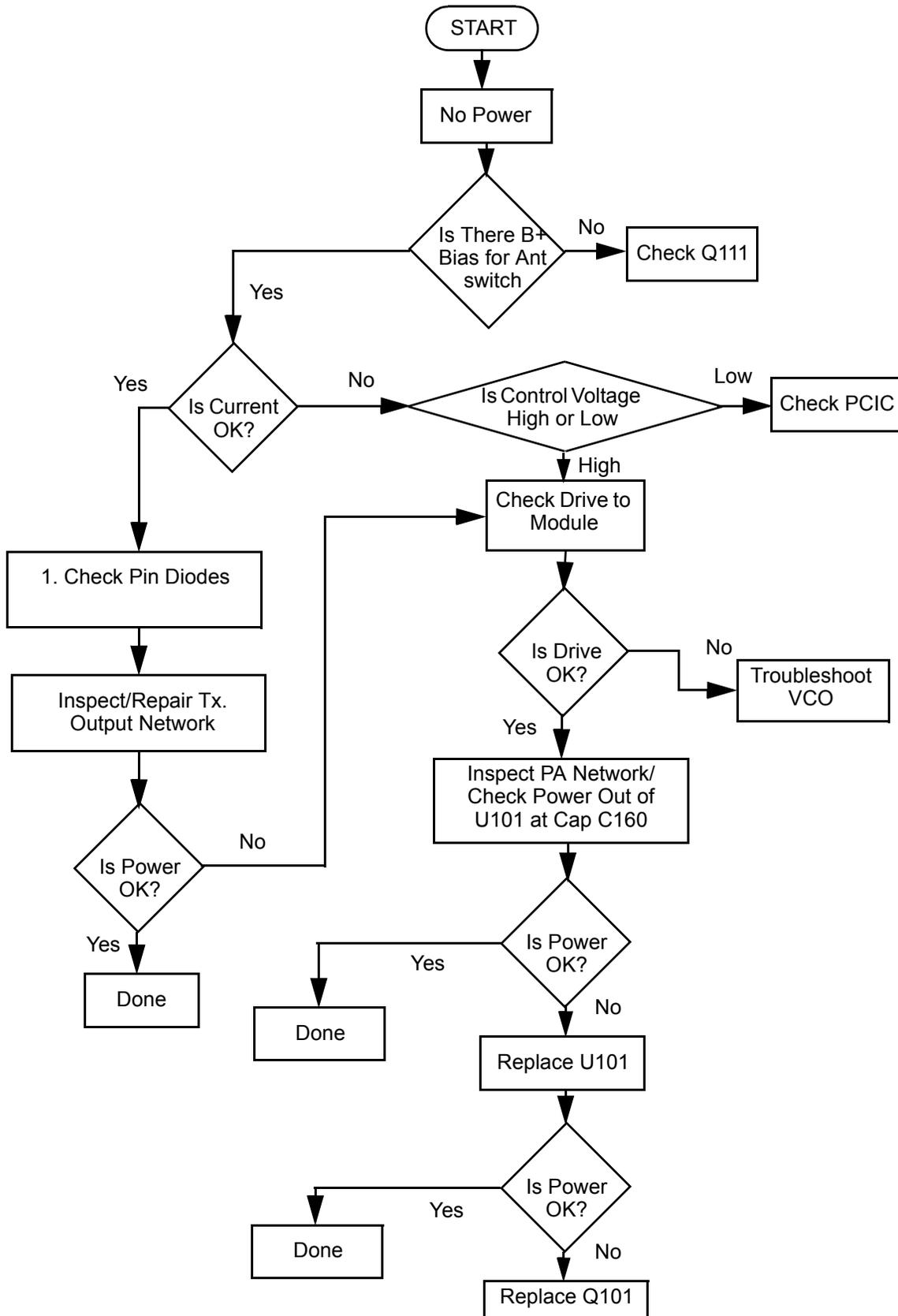


### 8.11.6 Troubleshooting Flow Chart for Receiver, for models with PCB 8486686Z02 (Sheet 2 of 2)



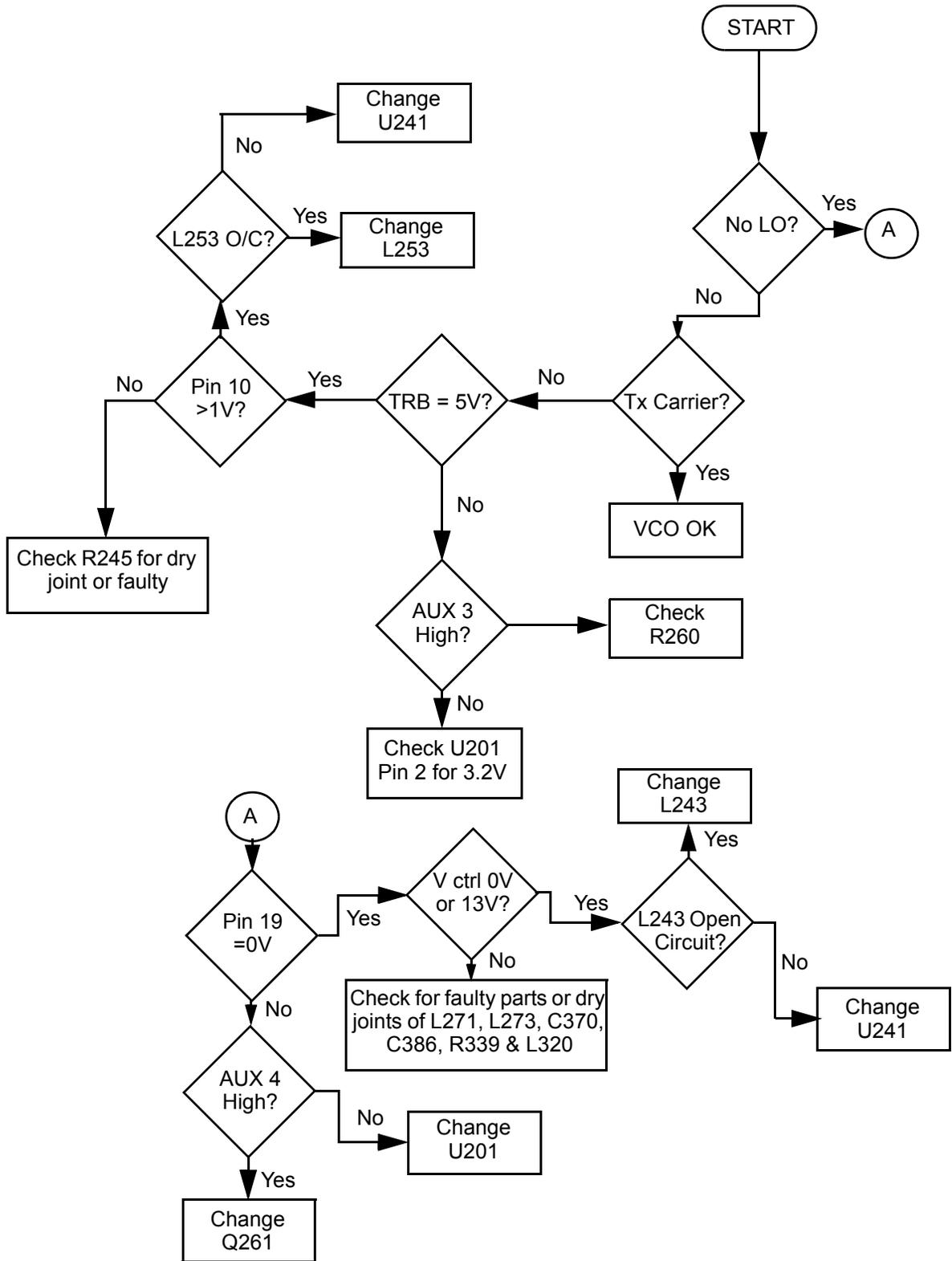


### 8.11.7 Troubleshooting Flow Chart for Transmitter



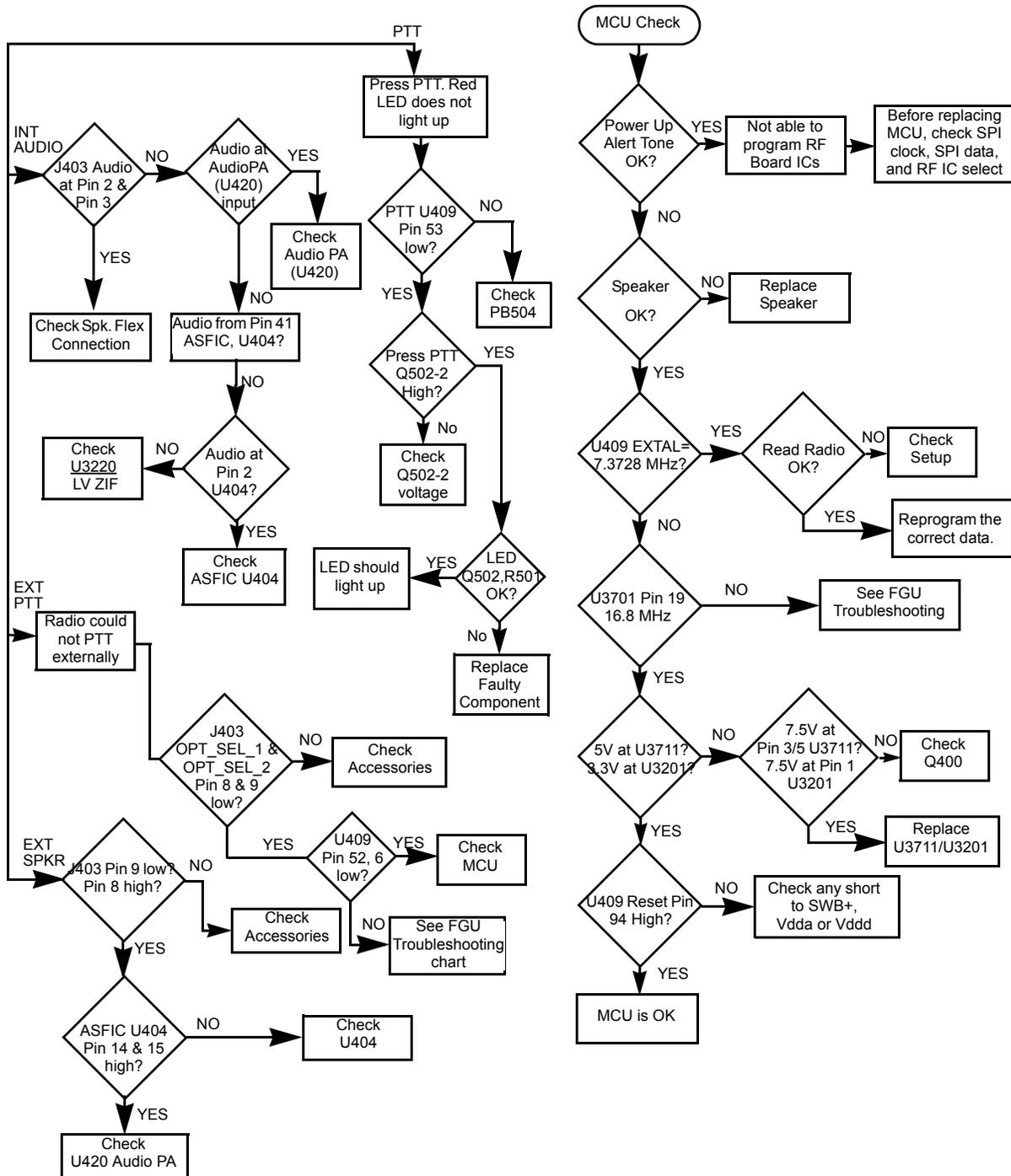


### 8.11.9 Troubleshooting Flow Chart for VCO

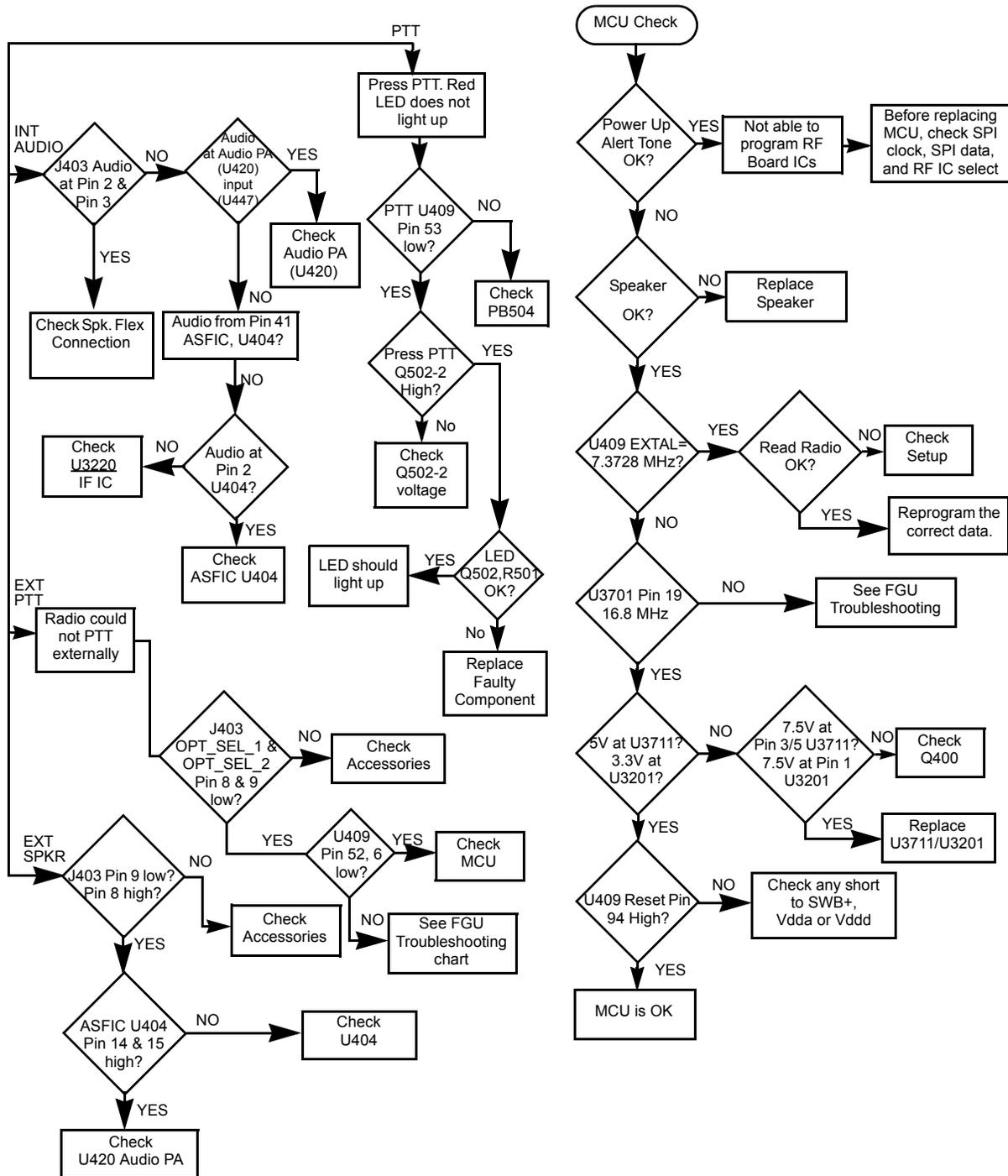


## 8.12 VHF Troubleshooting Charts

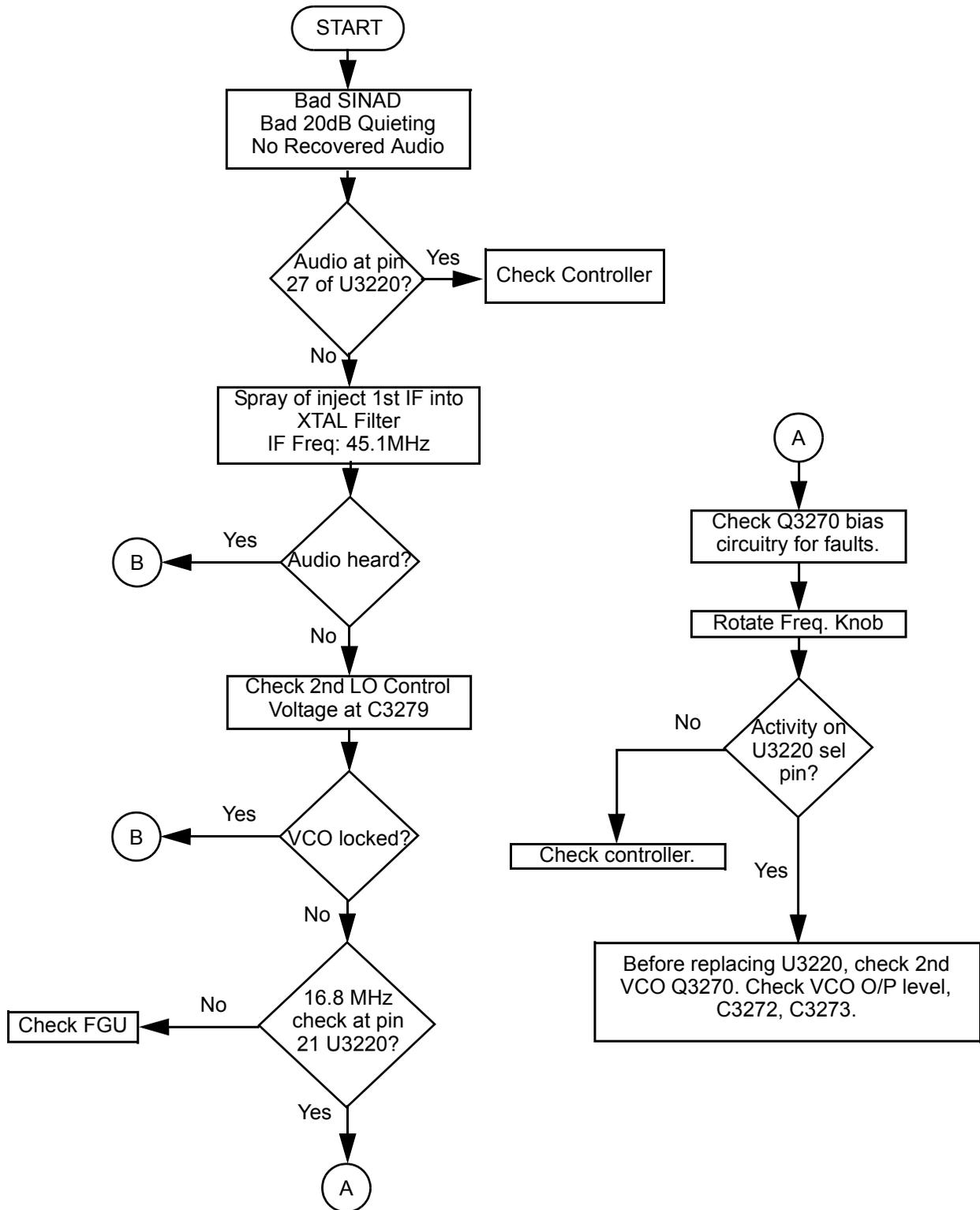
### 8.12.1 Troubleshooting Flow Chart for Controller for all models except those with PCB 8486473Z04



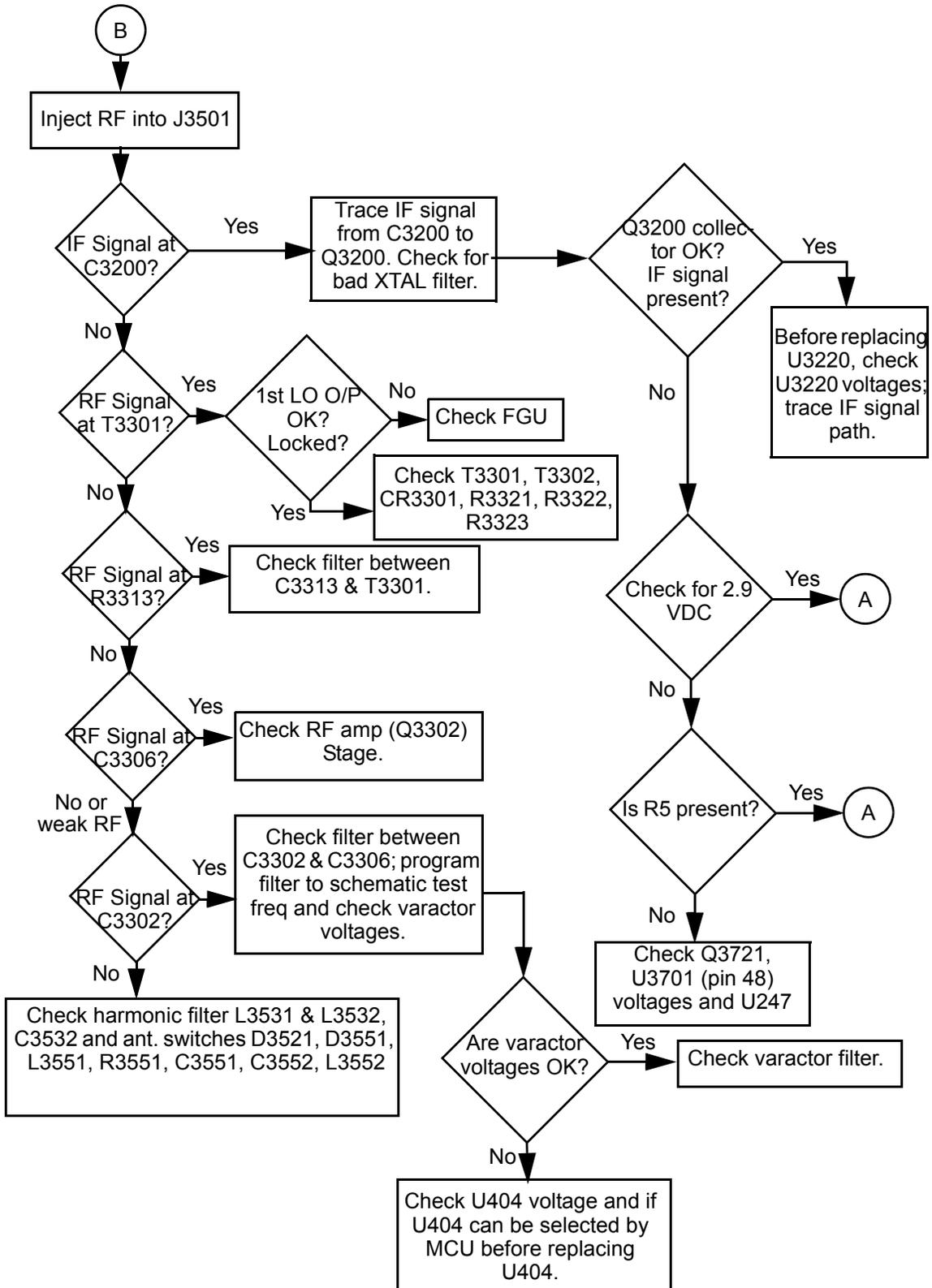
### 8.12.2 Troubleshooting Flow Chart for Controller for models with PCB 8486473Z04



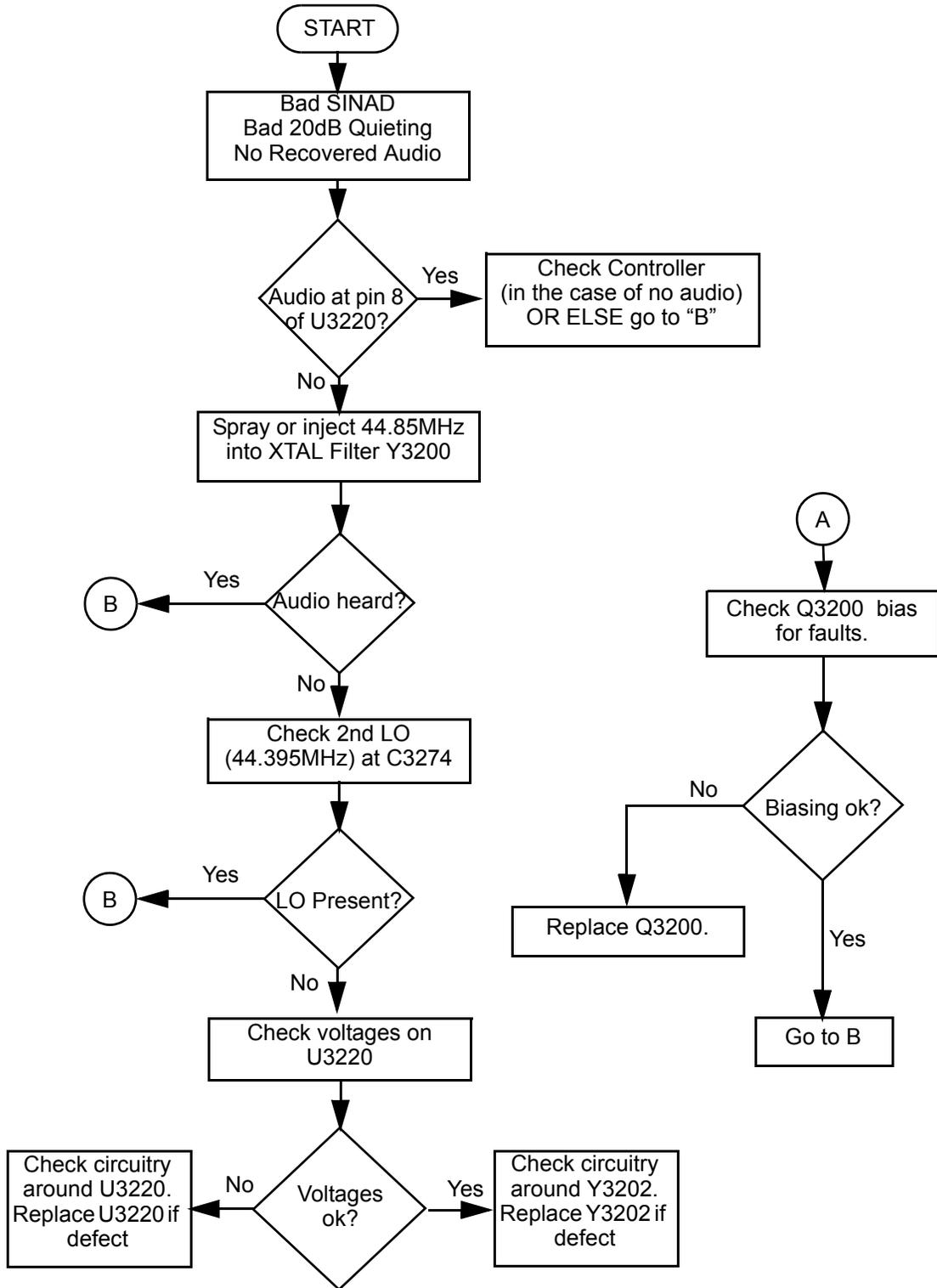
### 8.12.3 Troubleshooting Flow Chart for Receiver, for all models except those with PCB 8486473Z04 (Sheet 1 of 2)



### 8.12.4 Troubleshooting Flow Chart for Receiver, for all models except those with PCB 8486473Z04 (Sheet 2 of 2)

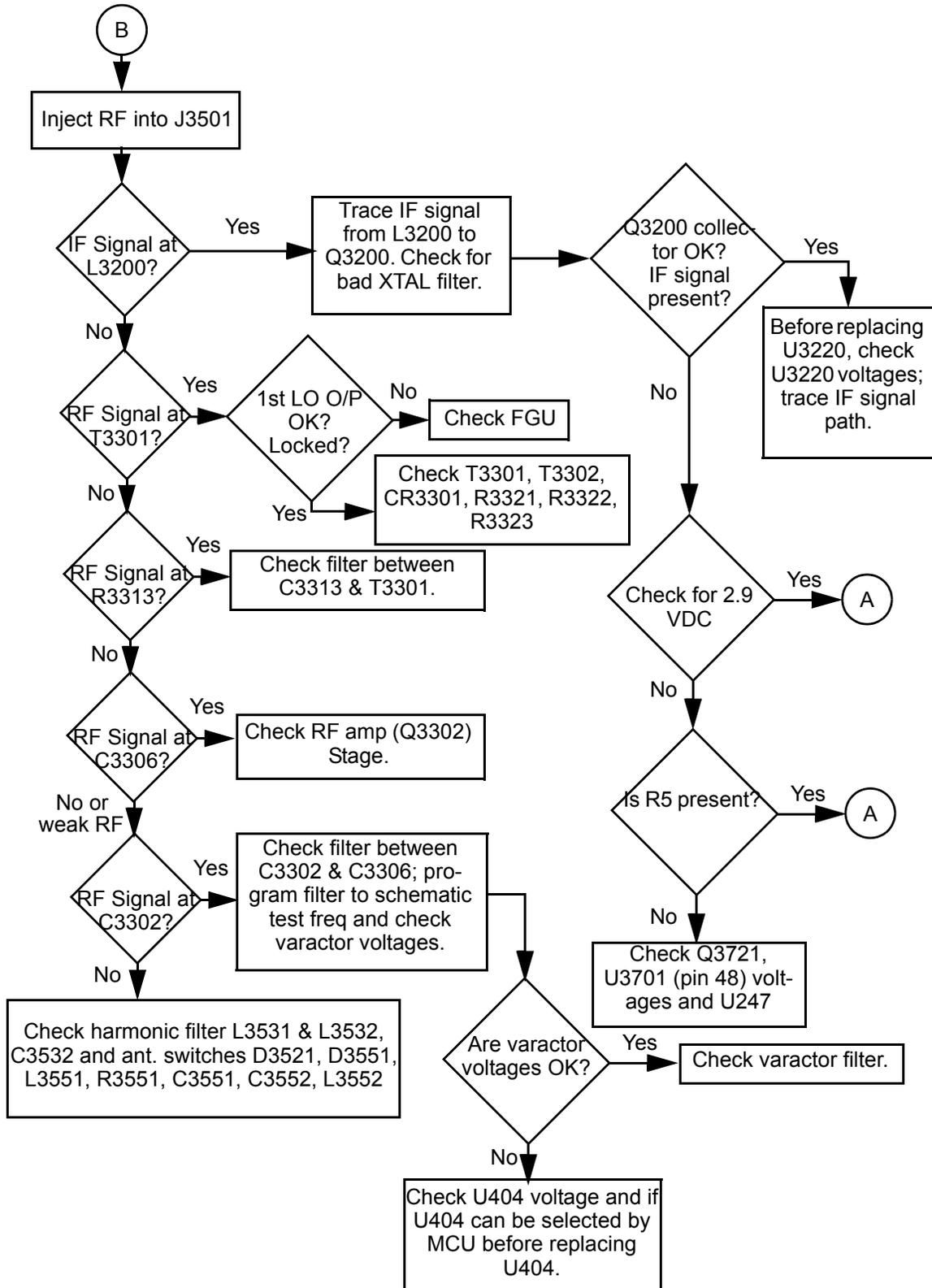


### 8.12.5 Troubleshooting Flow Chart for Receiver for models with PCB 8486473Z04 (Sheet 1 of 2)

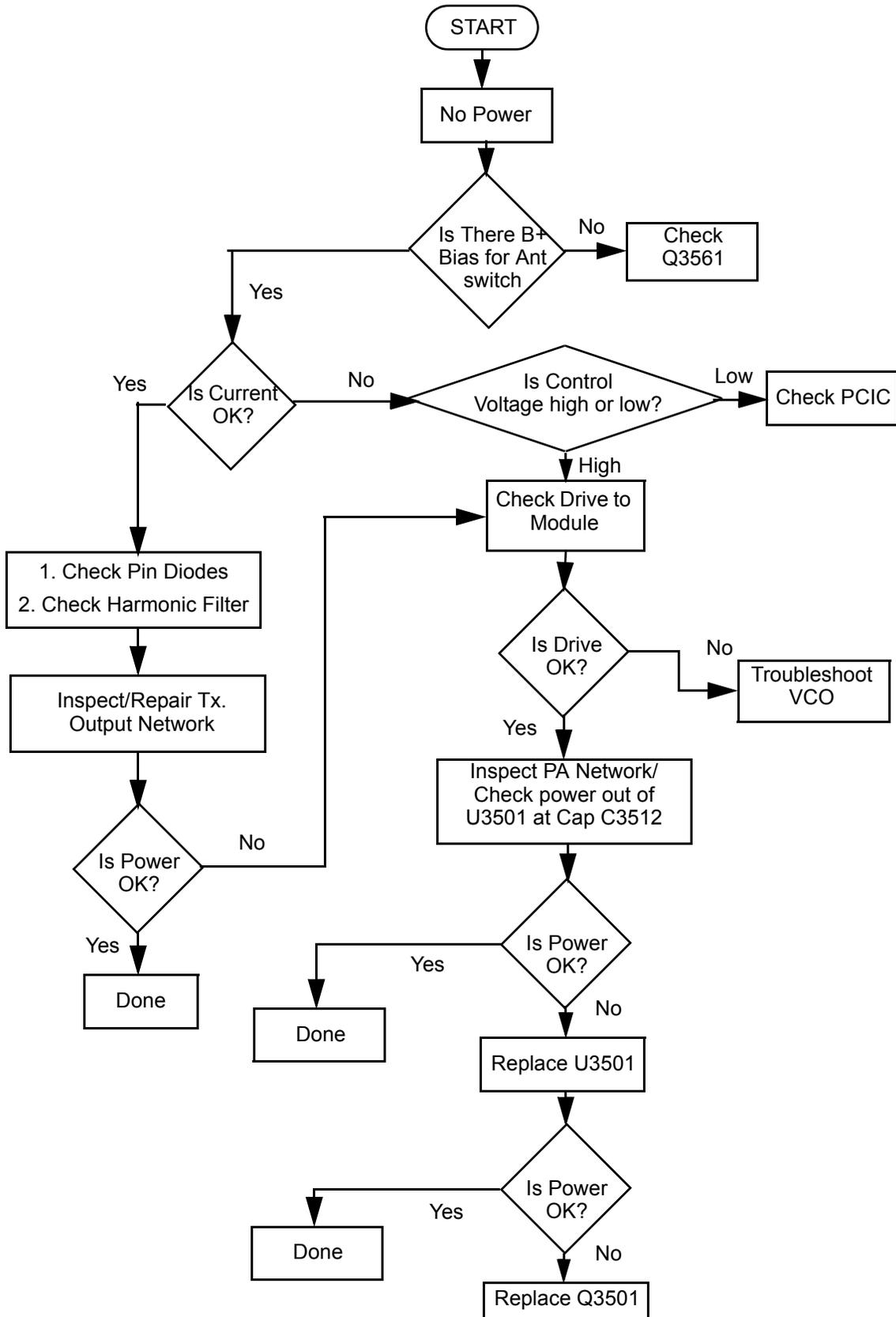




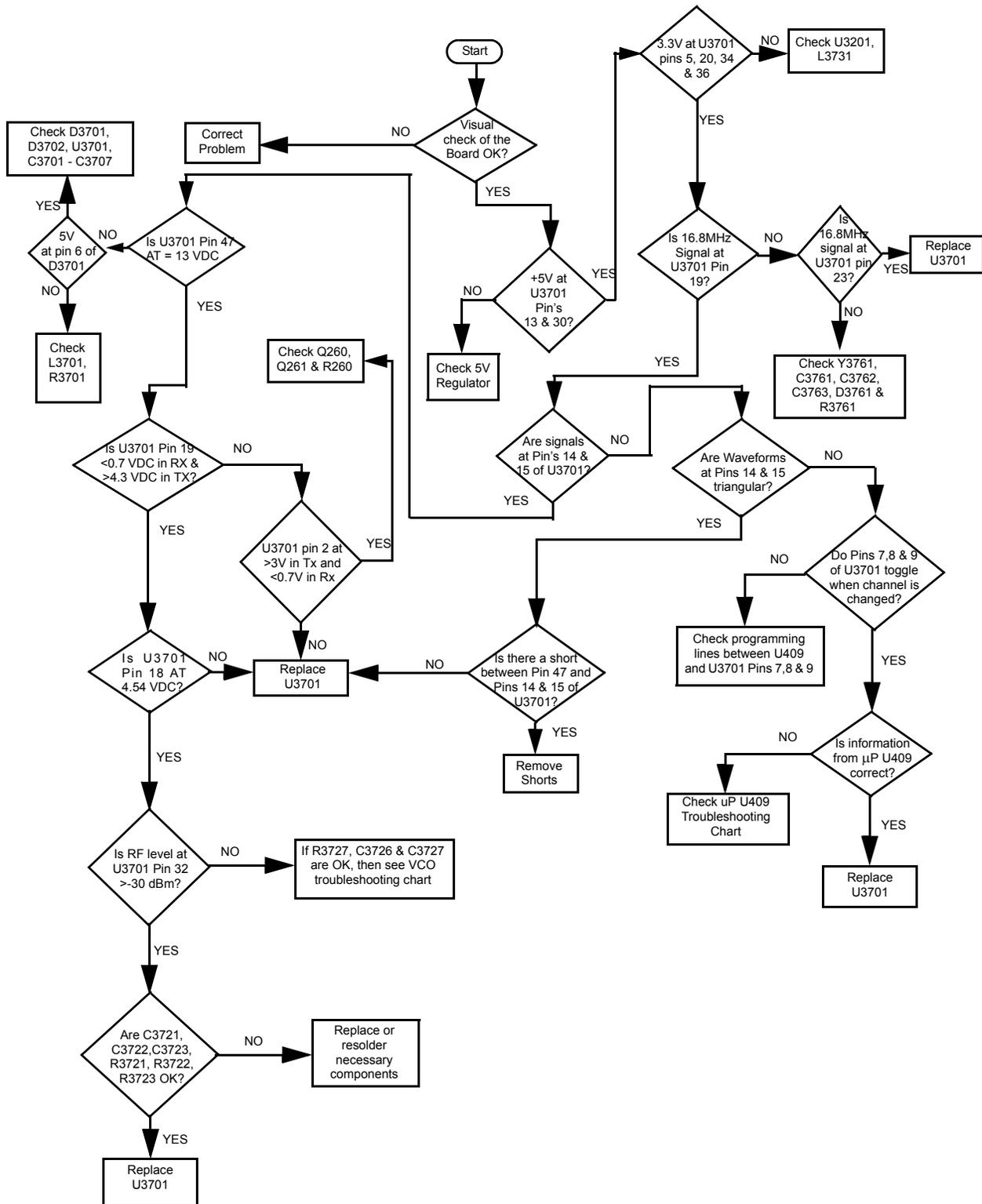
### 8.12.6 Troubleshooting Flow Chart for Receiver for models with PCB 8486473Z04 (Sheet 2 of 2)



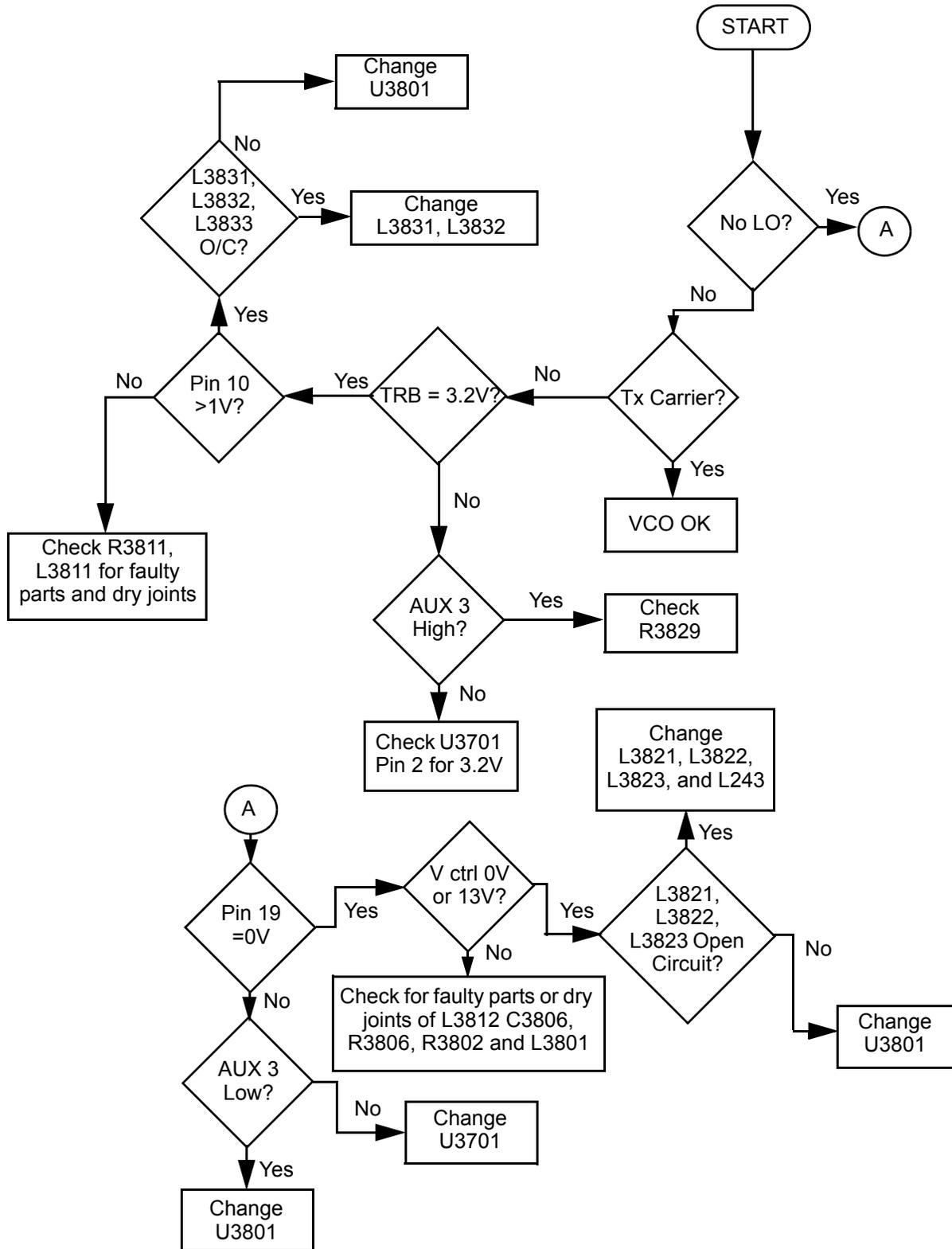
### 8.12.7 Troubleshooting Flow Chart for Transmitter



### 8.12.8 Troubleshooting Flow Chart for Synthesizer

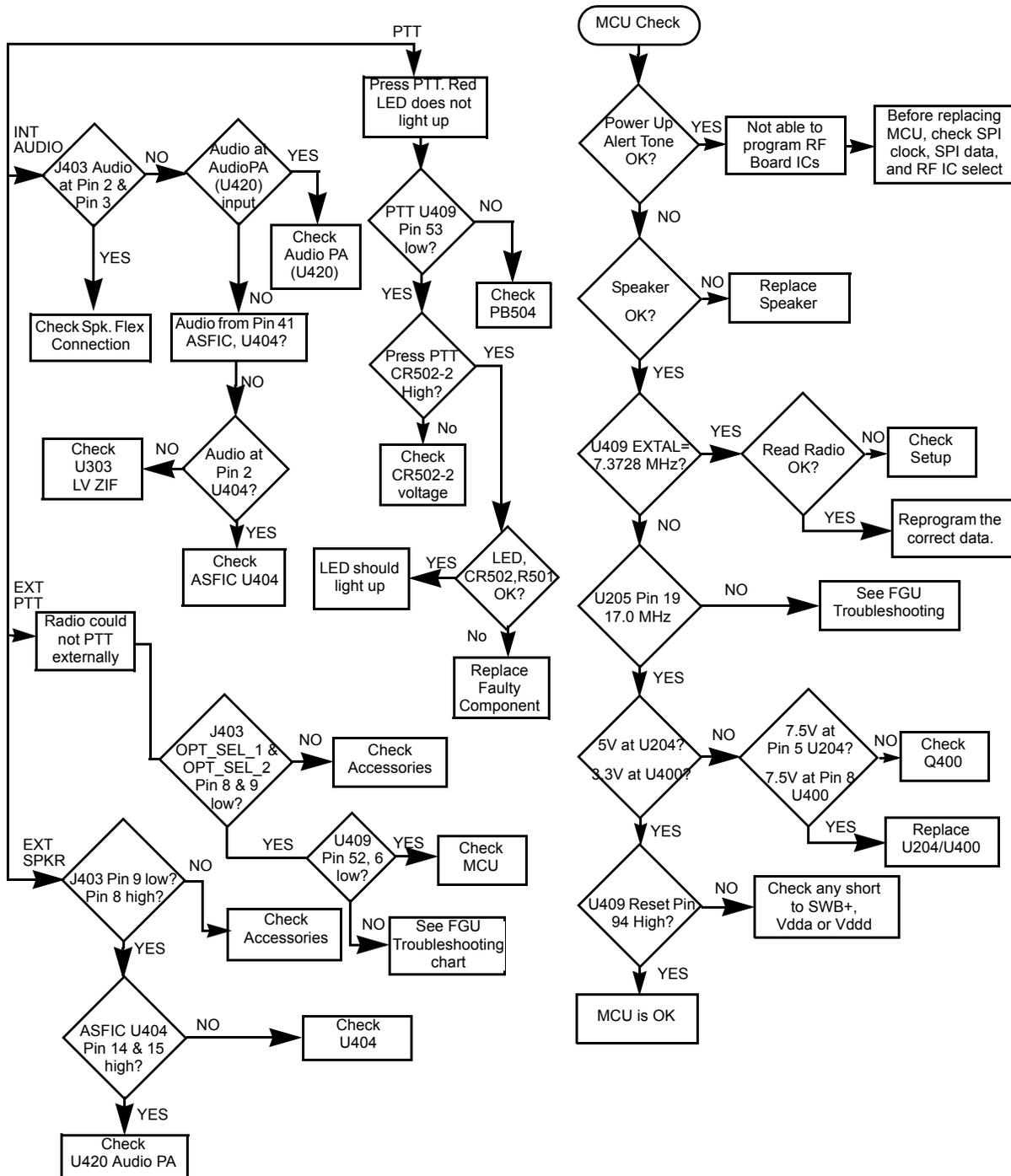


### 8.12.9 Troubleshooting Flow Chart for VCO

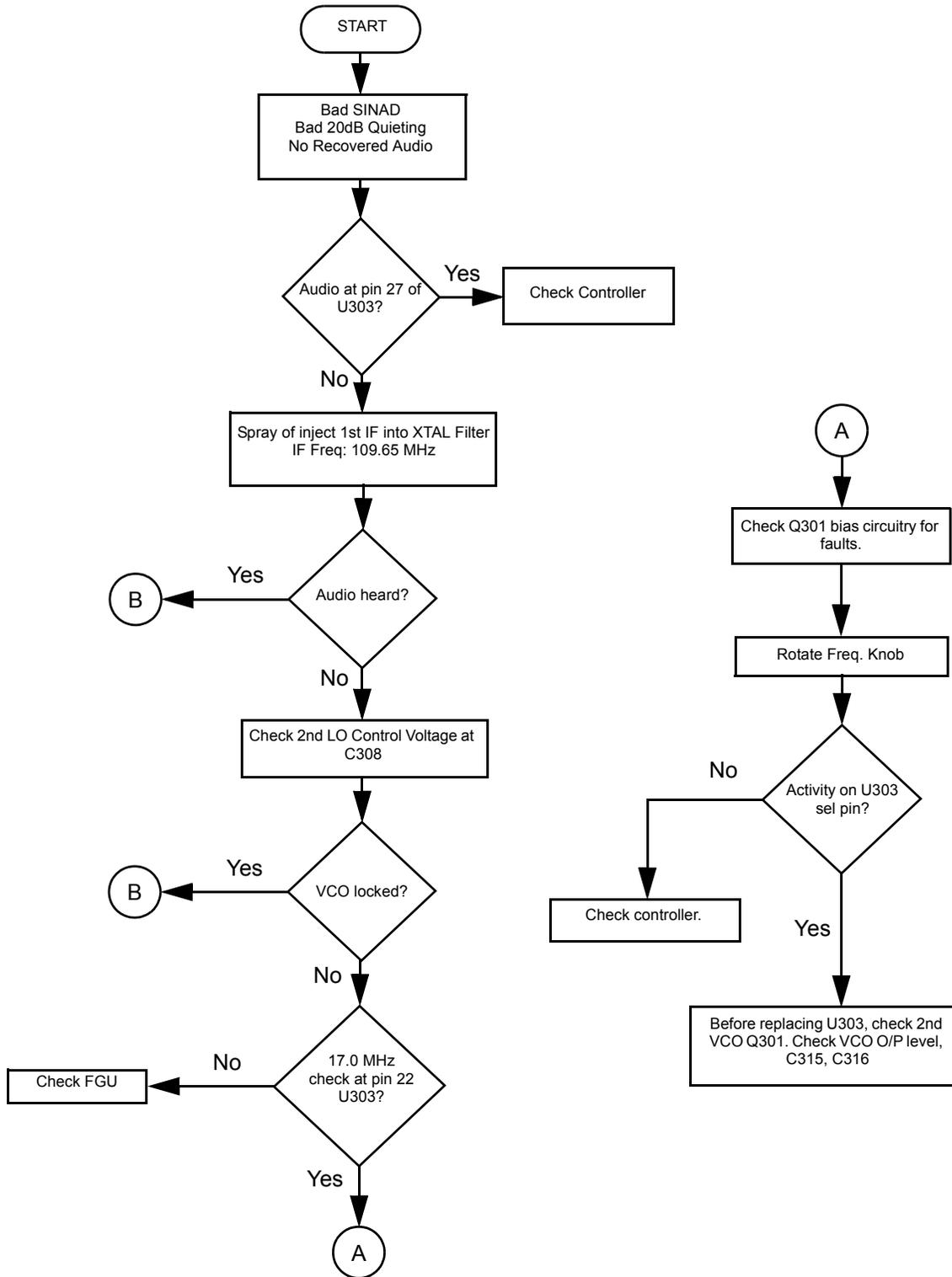


## 8.13 Low Band Troubleshooting Charts

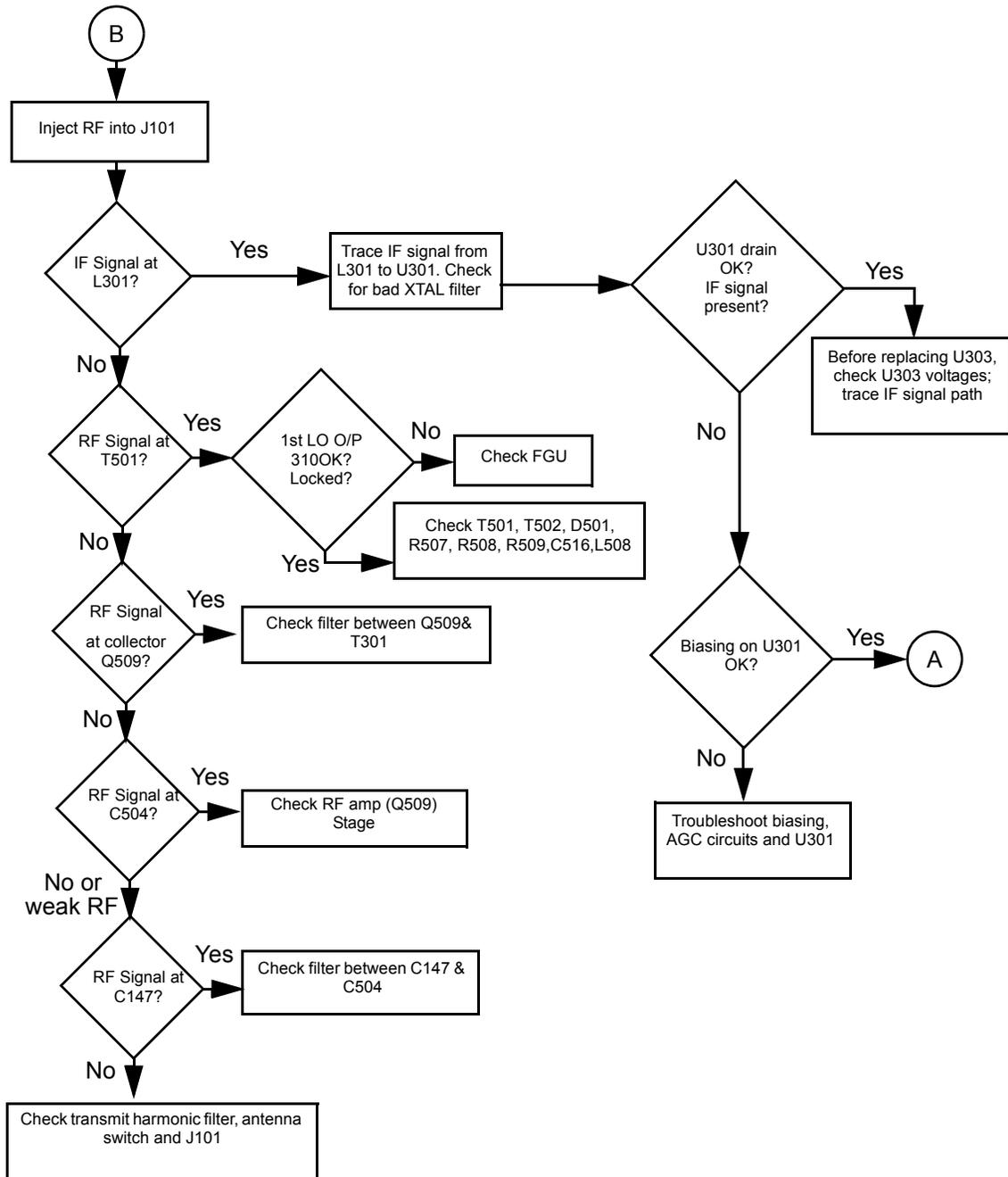
### 8.13.1 Troubleshooting Flow Chart for Controller



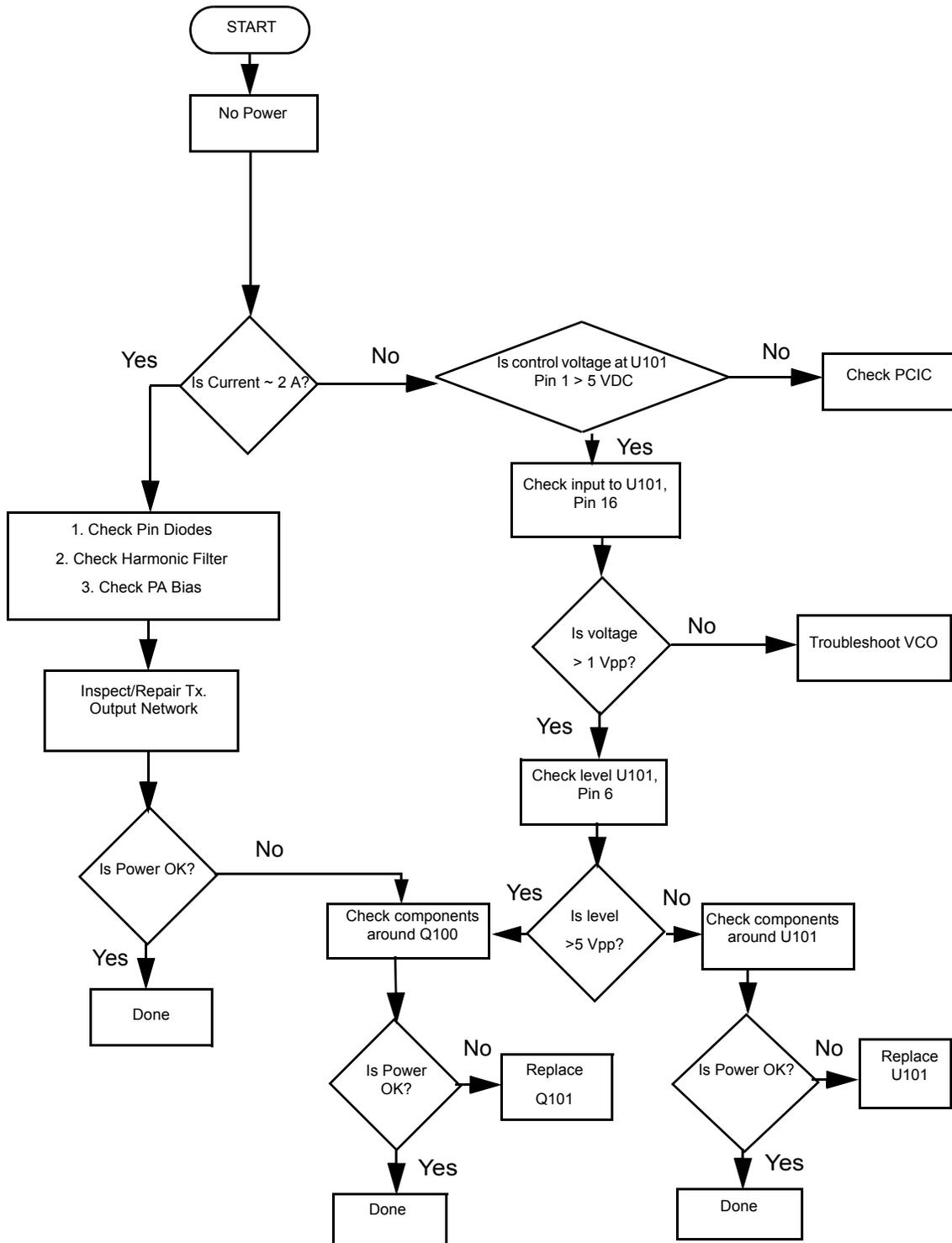
### 8.13.2 Troubleshooting Flow Chart for Receiver (Sheet 1 of 2)



### 8.13.3 Troubleshooting Flow Chart for Receiver (Sheet 2 of 2)

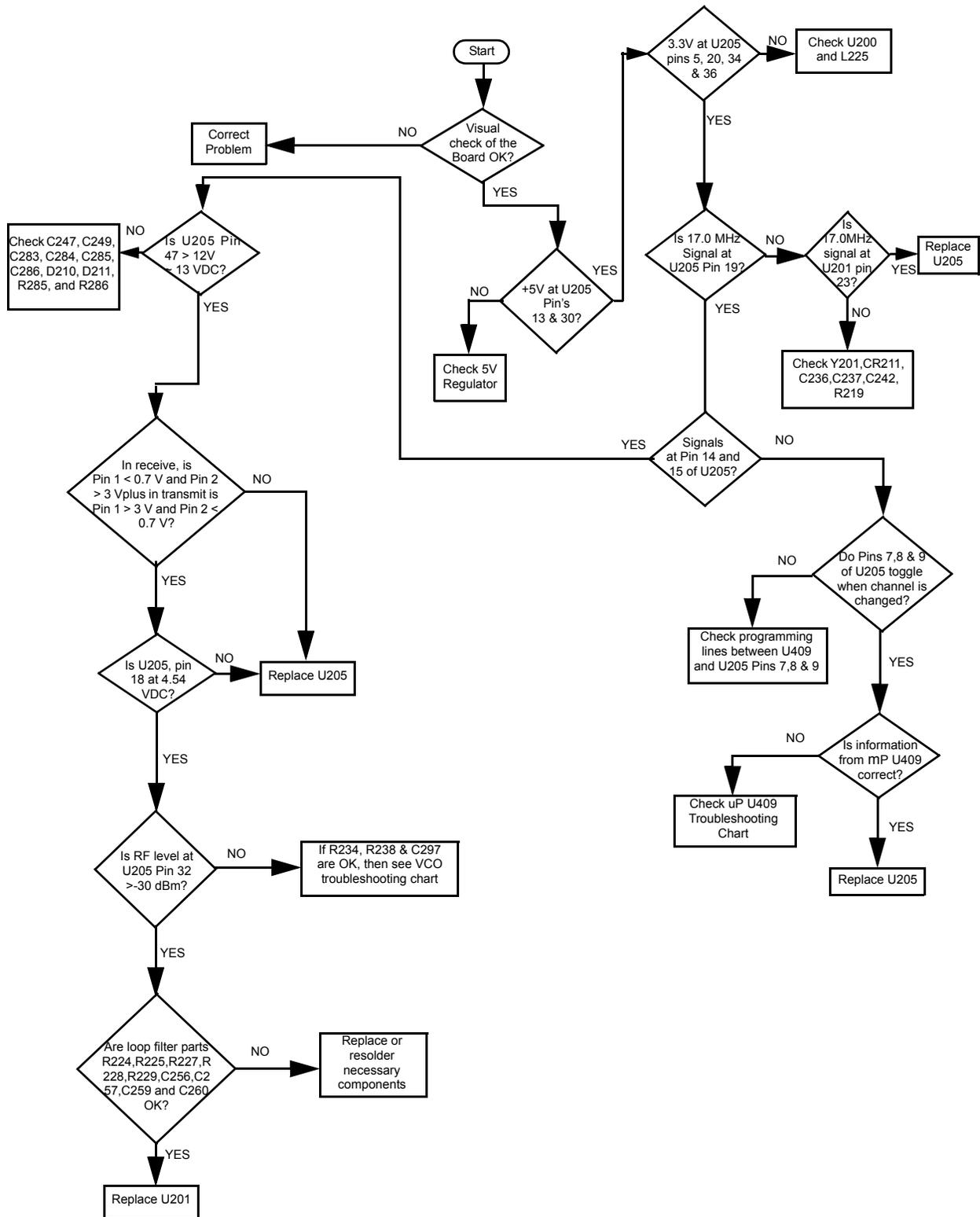


### 8.13.4 Troubleshooting Flow Chart for Transmitter

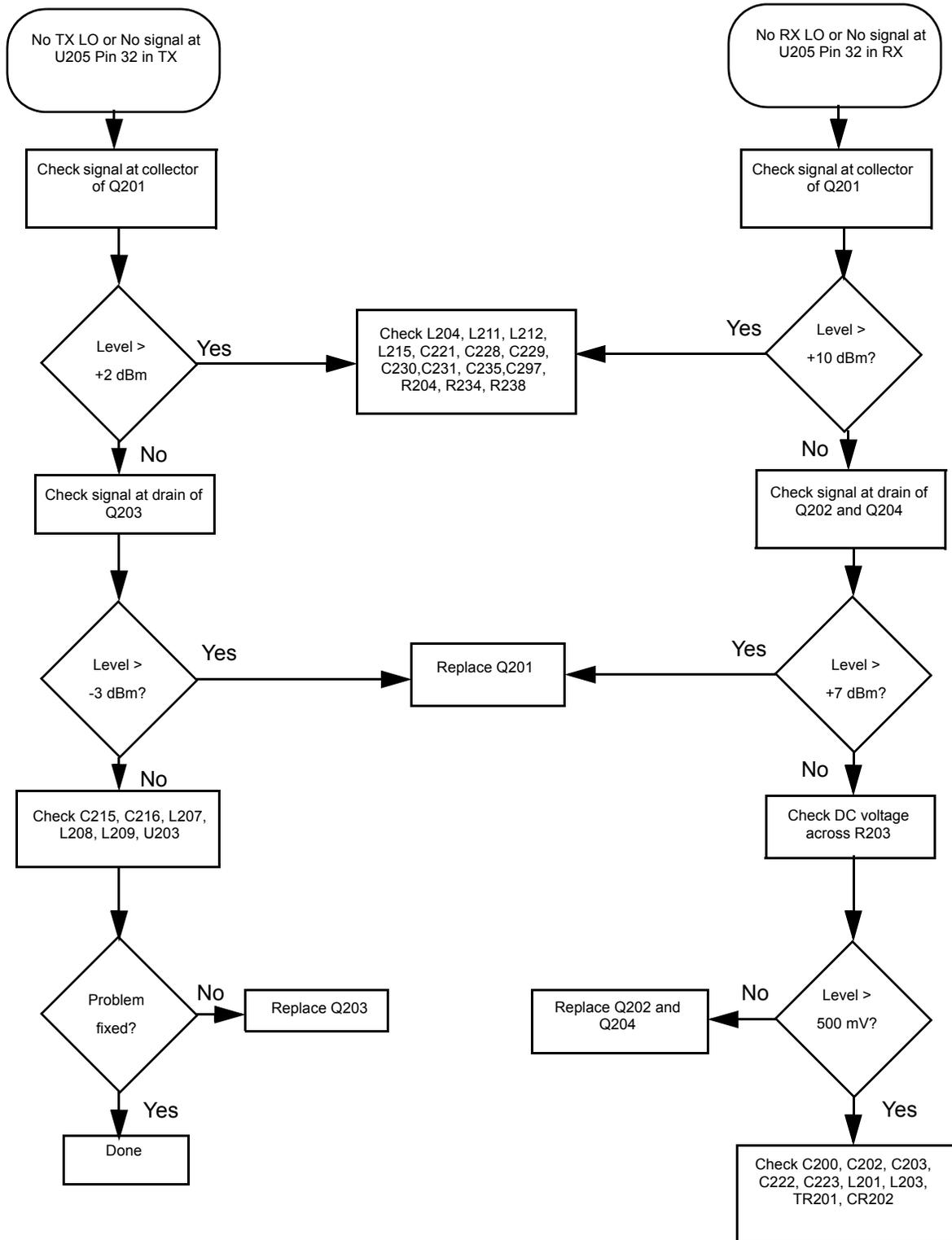




### 8.13.5 Troubleshooting Flow Chart for Synthesizer

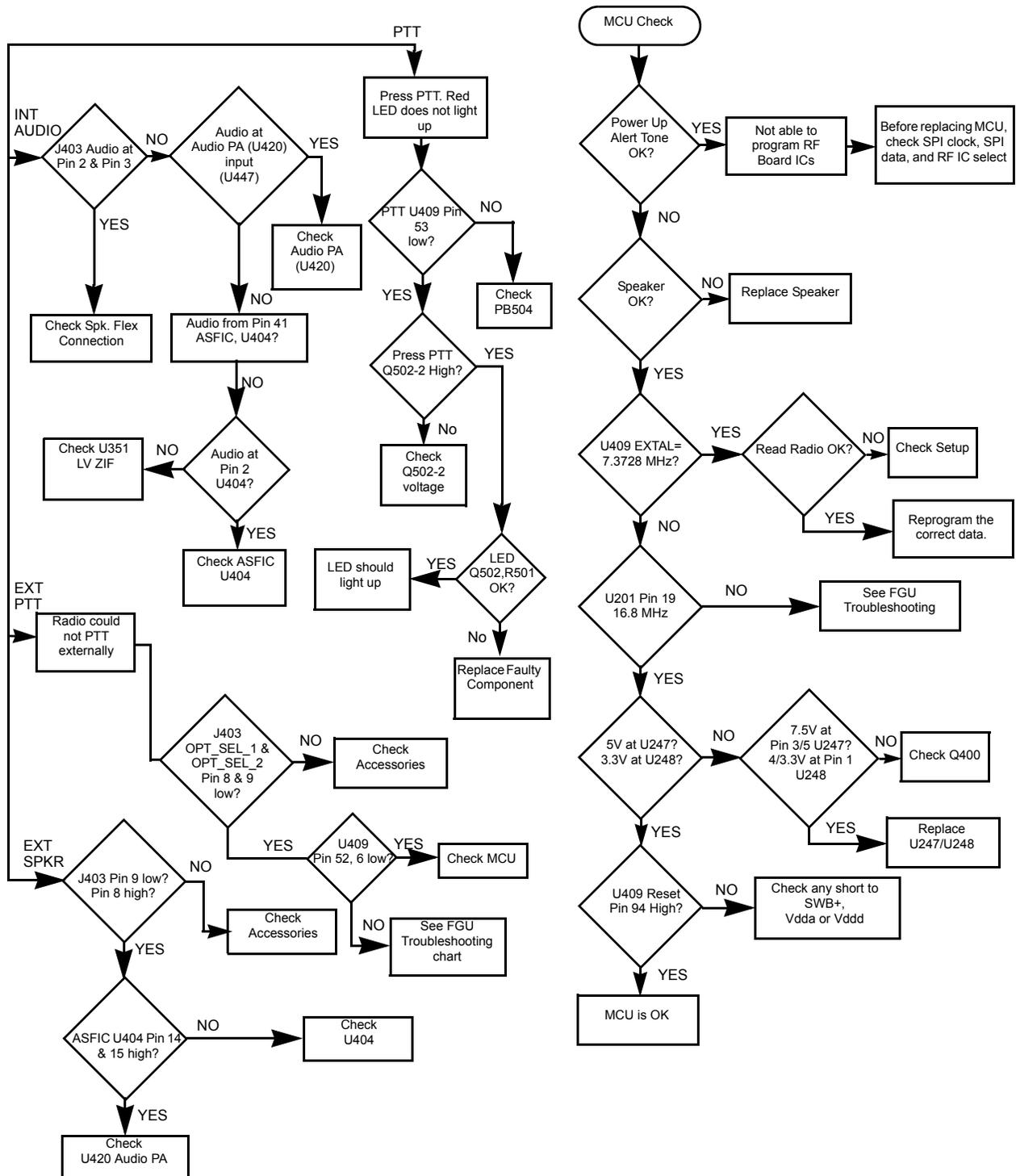


### 8.13.6 Troubleshooting Flow Chart for VCO

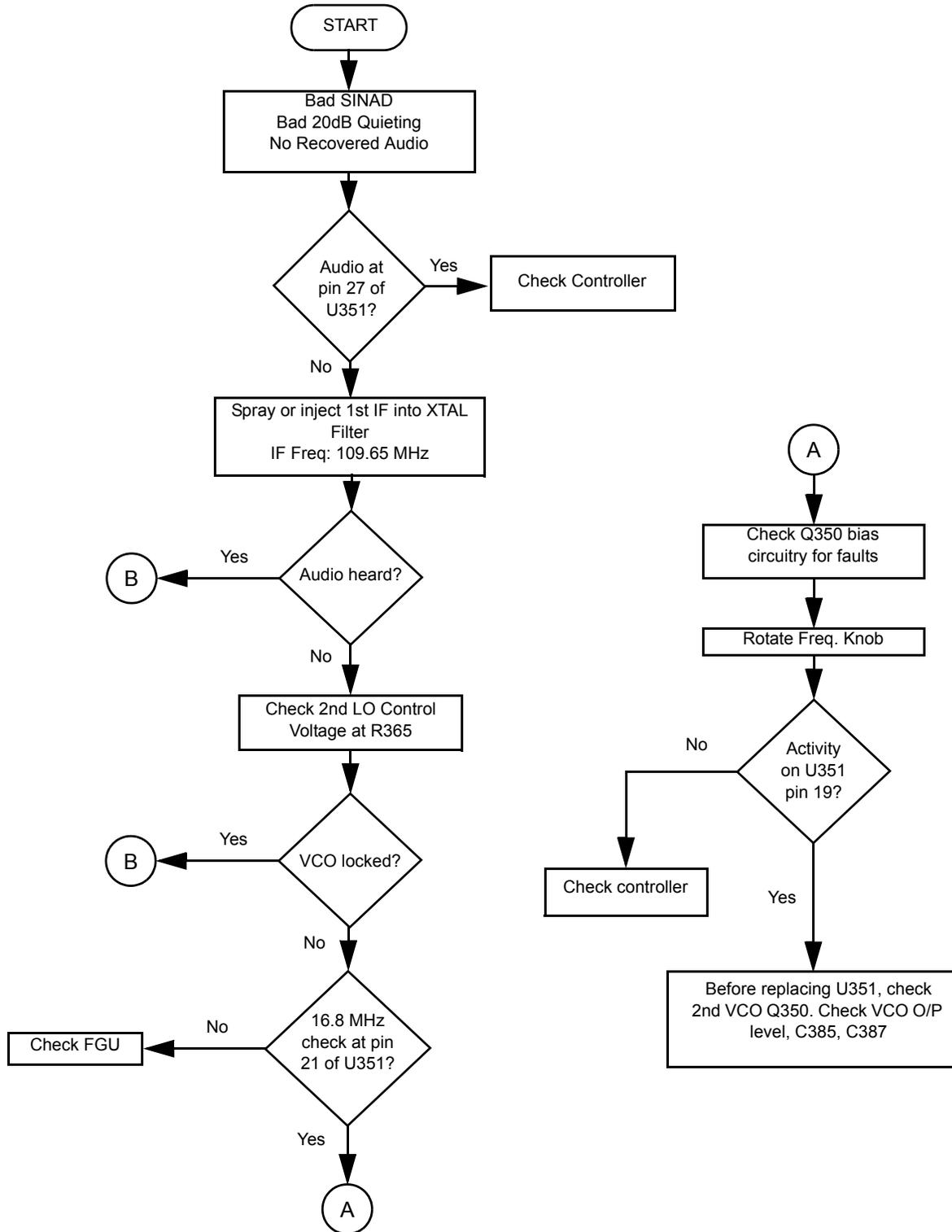


## 8.14 800 MHz Troubleshooting Charts

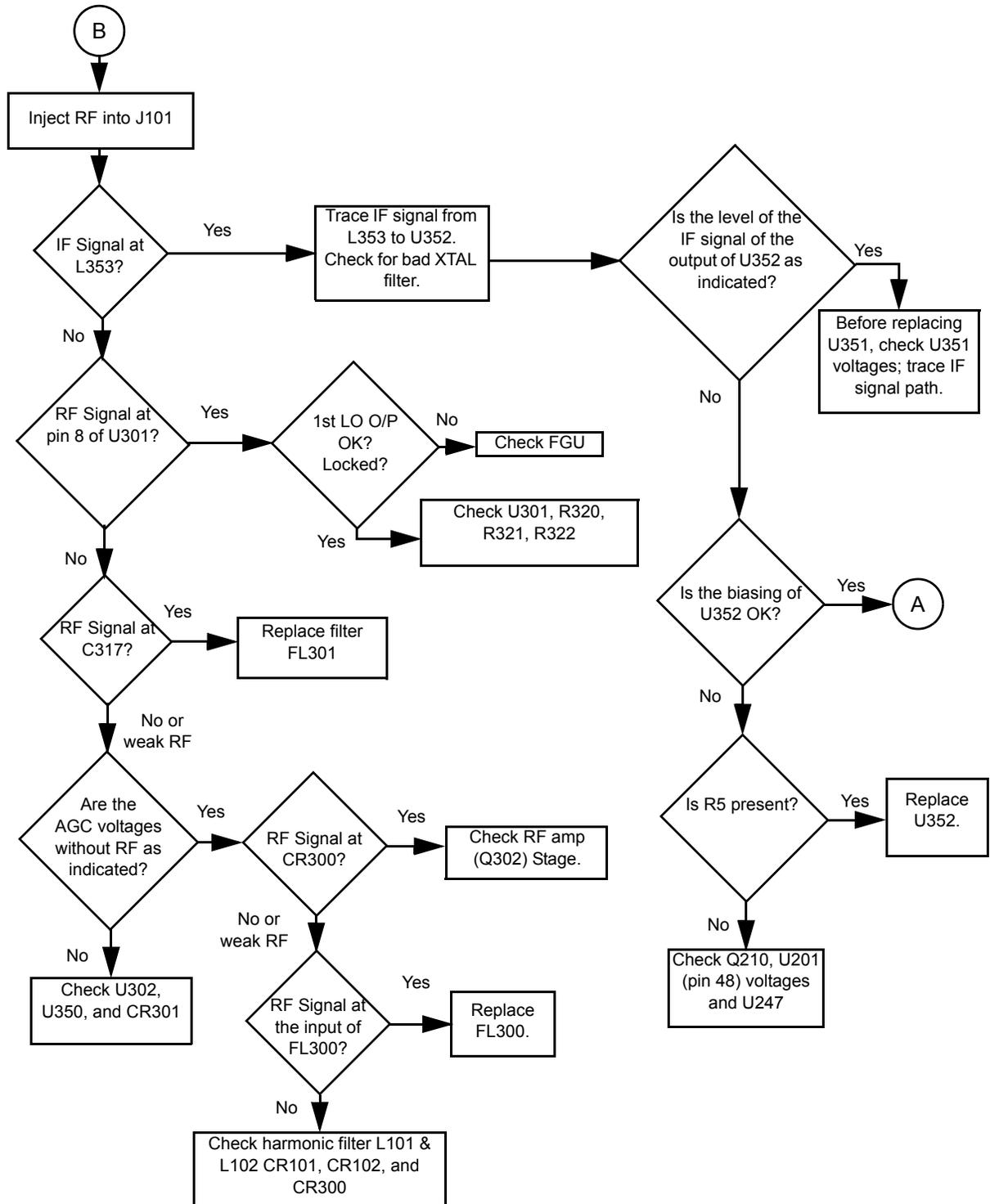
### 8.14.1 Troubleshooting Flow Chart for Controller



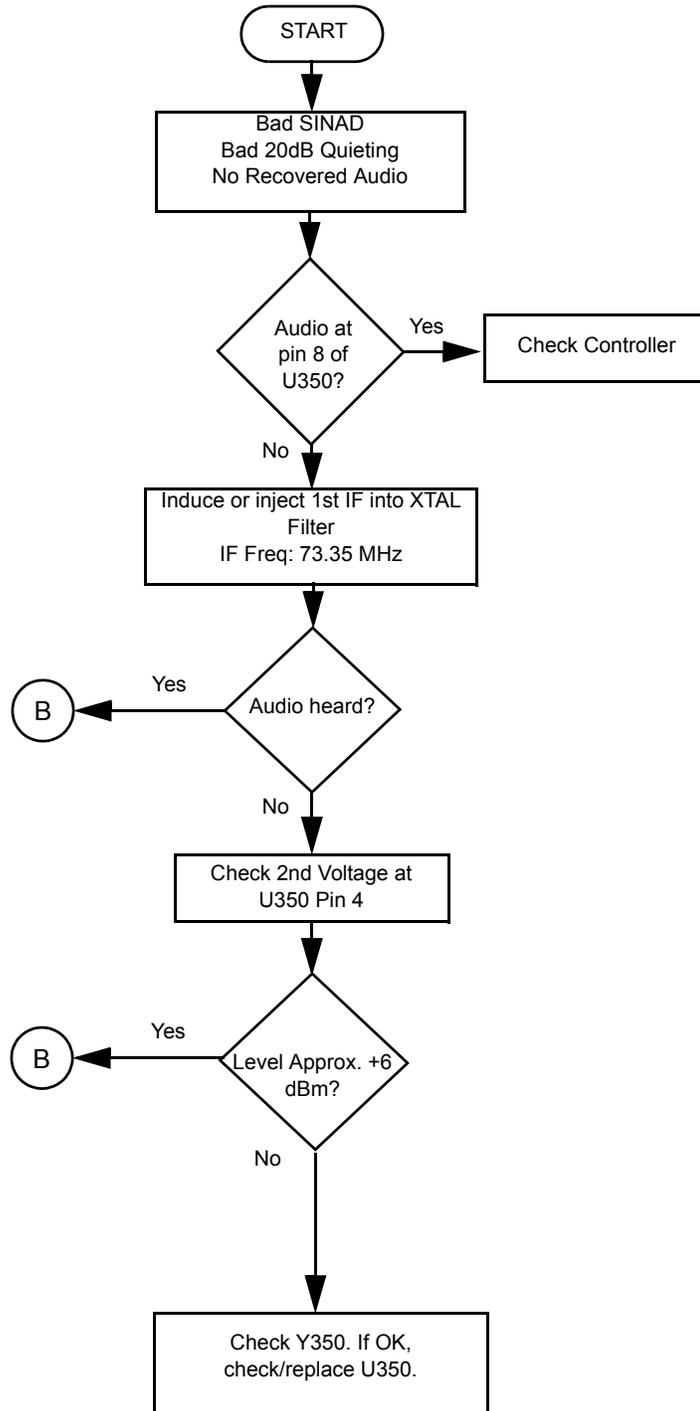
### 8.14.2 Troubleshooting Flow Chart for Receiver (for PCB No. 8480641Z02/ 8480641Z03) (Sheet 1 of 2)



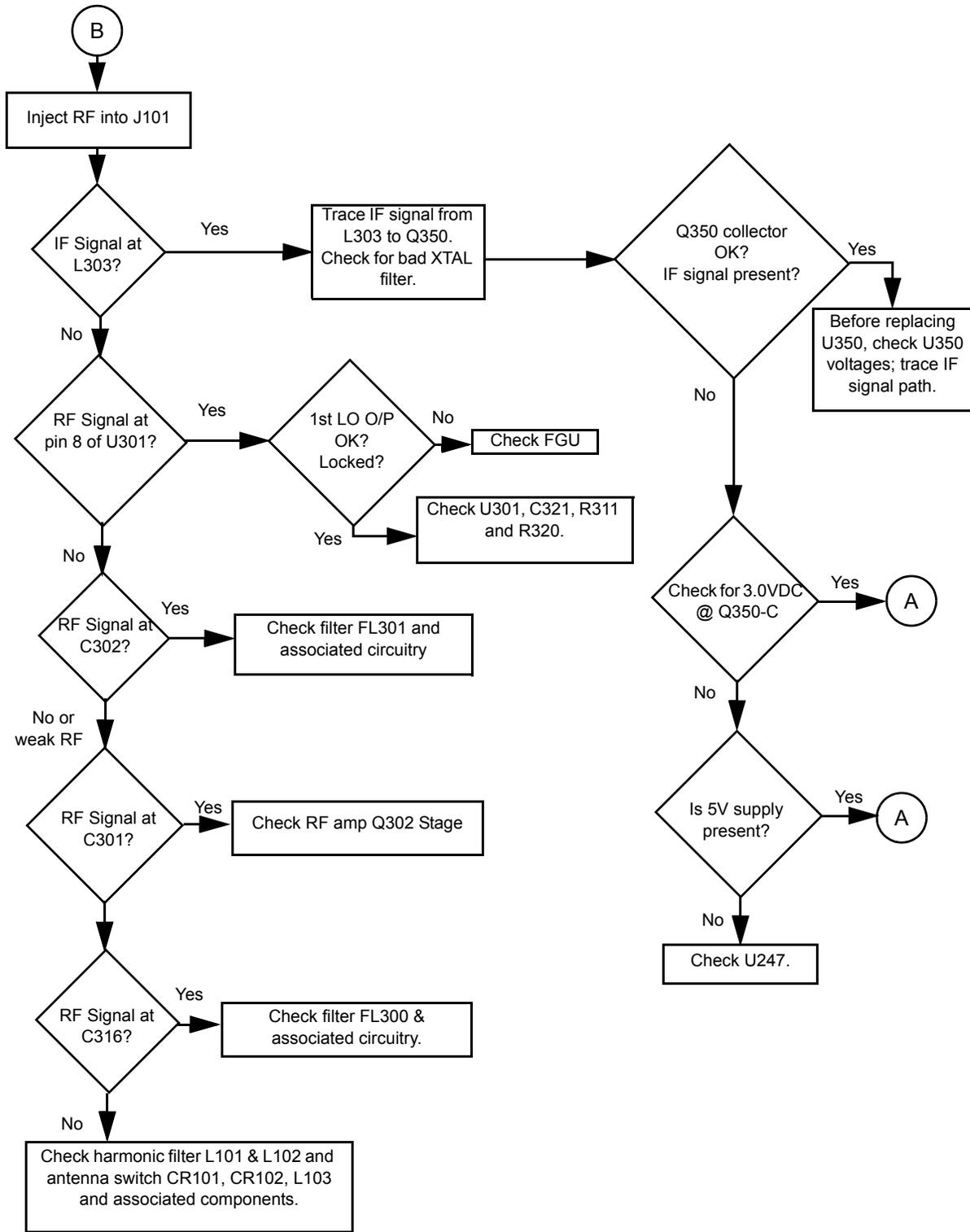
### 8.14.3 Troubleshooting Flow Chart for Receiver (for PCB No. 8480641Z02/ 8480641Z03) (Sheet 2 of 2)



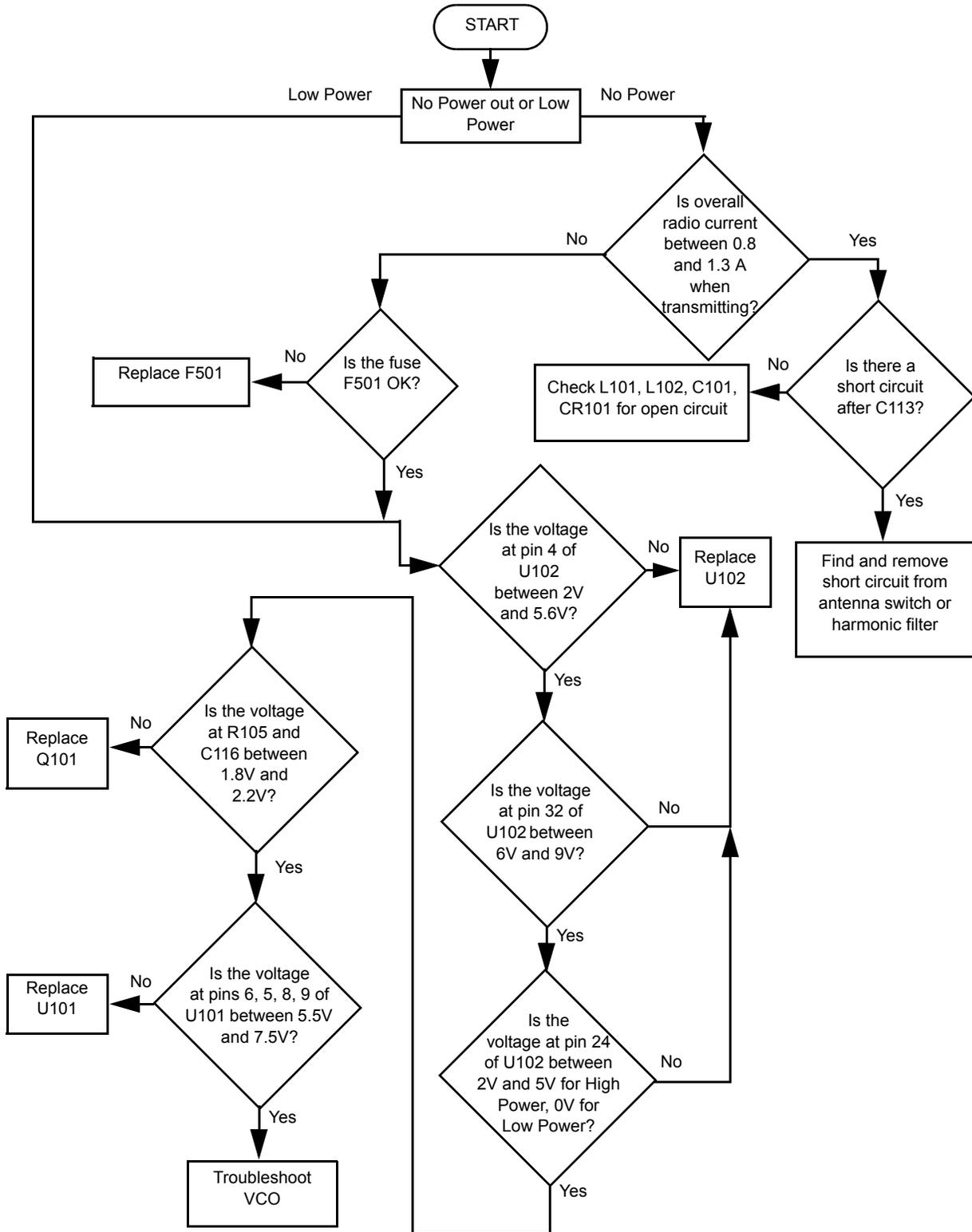
### 8.14.4 Troubleshooting Flow Chart for Receiver (for PCB No. 8471827L03) (Sheet 1 of 2)



### 8.14.5 Troubleshooting Flow Chart for Receiver (for PCB No. 8471827L03) (Sheet 2 of 2)

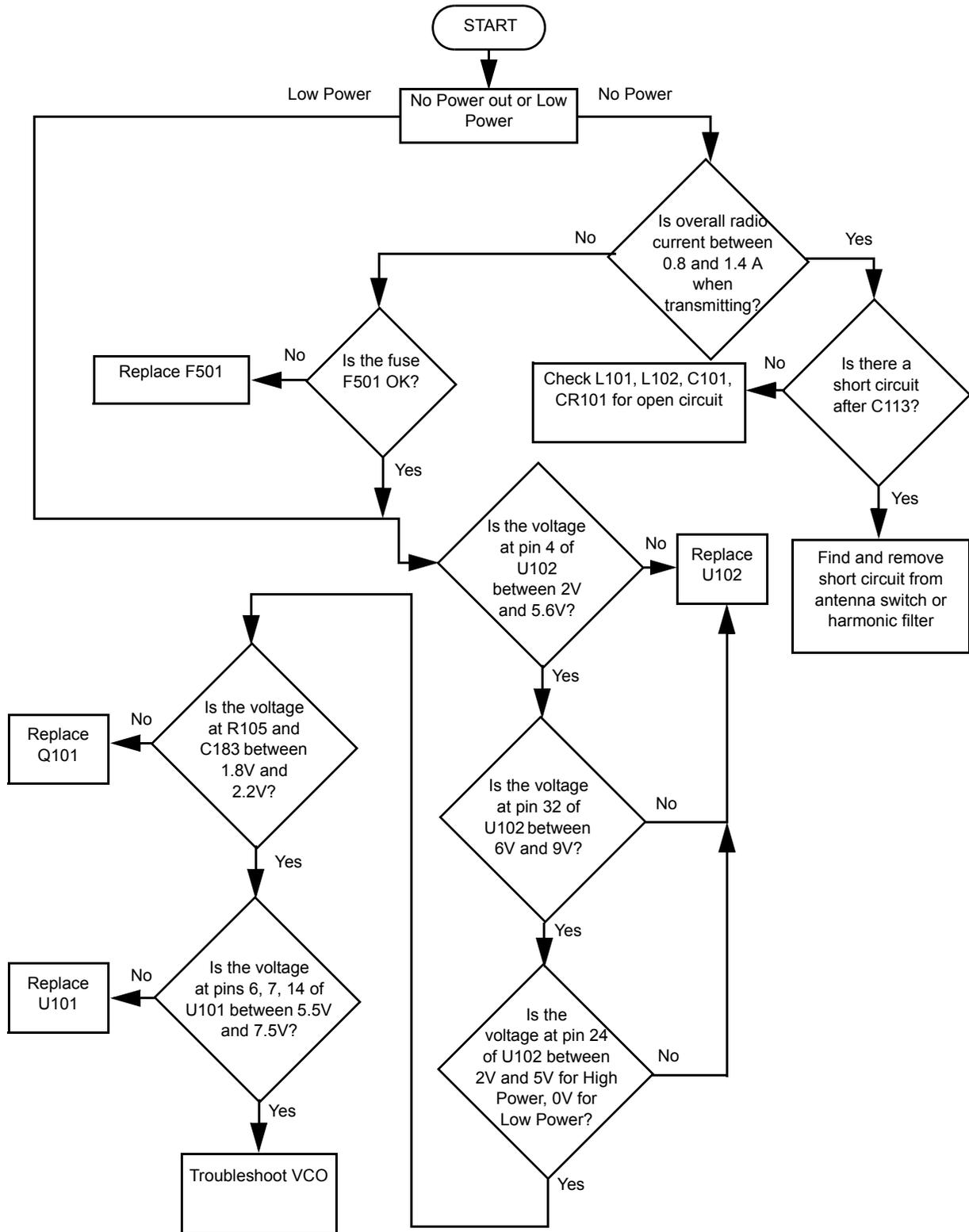


### 8.14.6 Troubleshooting Flow Chart for Transmitter (for PCB No. 8480641Z02/8480641Z03)

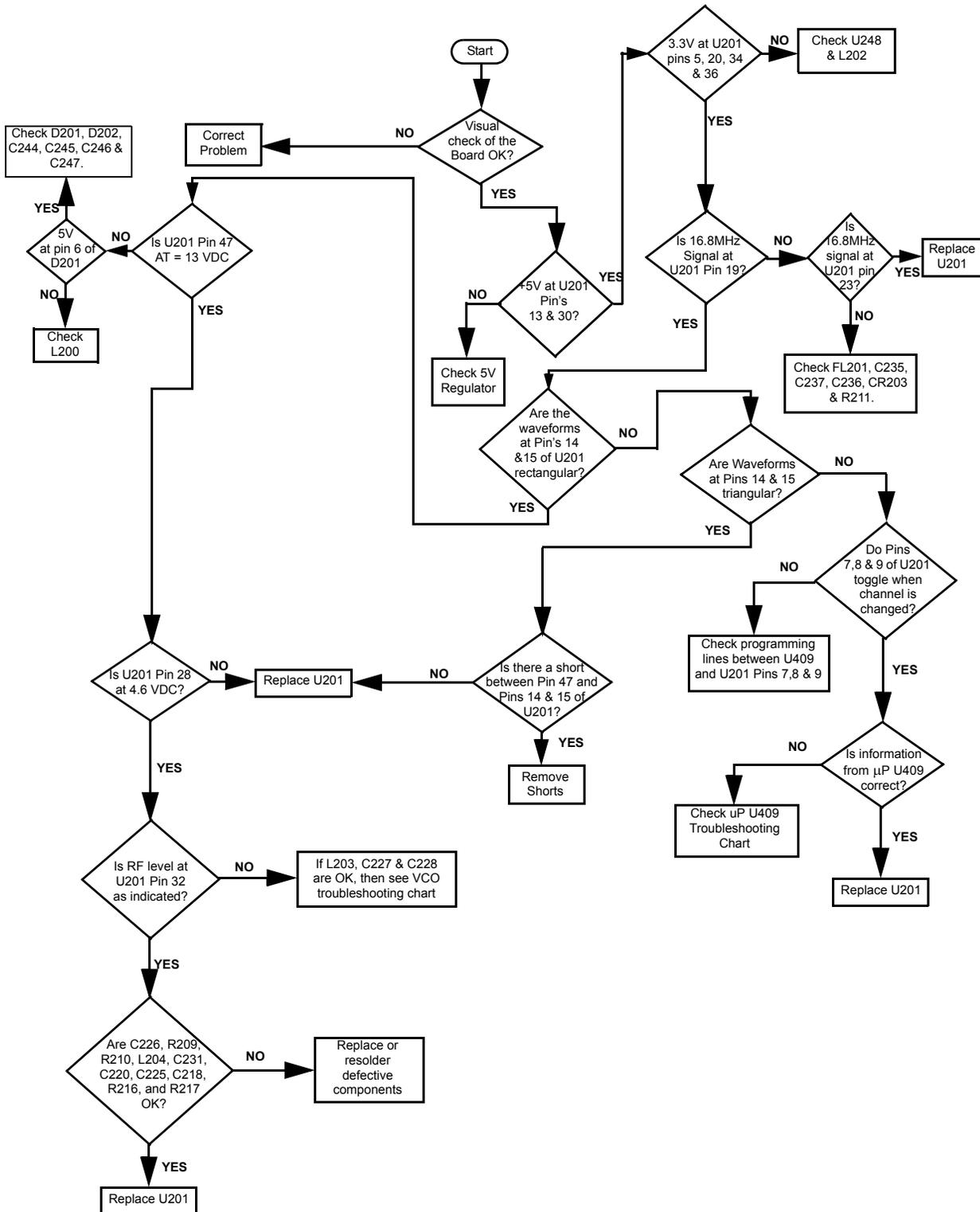




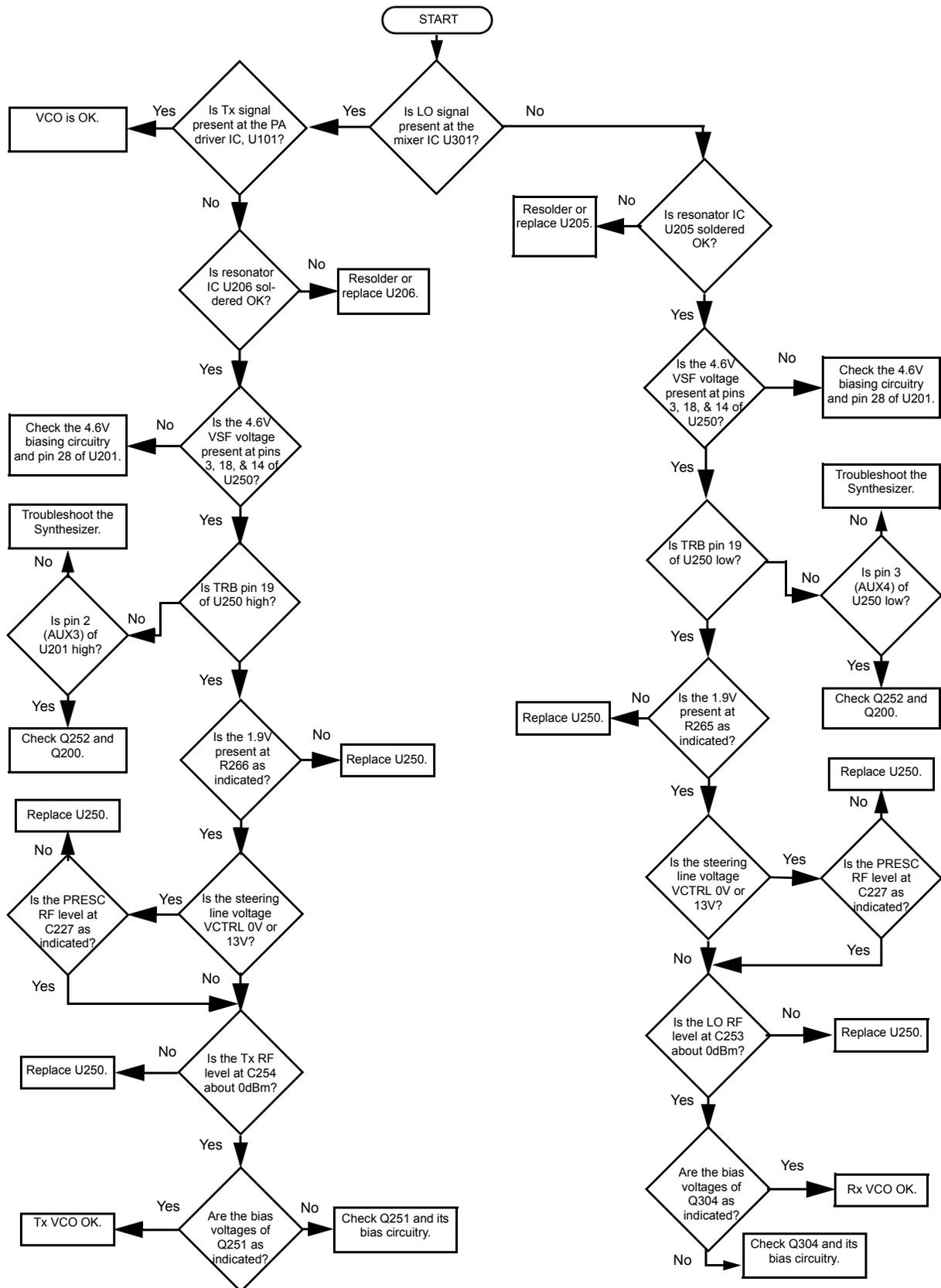
### 8.14.7 Troubleshooting Flow Chart for Transmitter (for PCB 8471827L03)



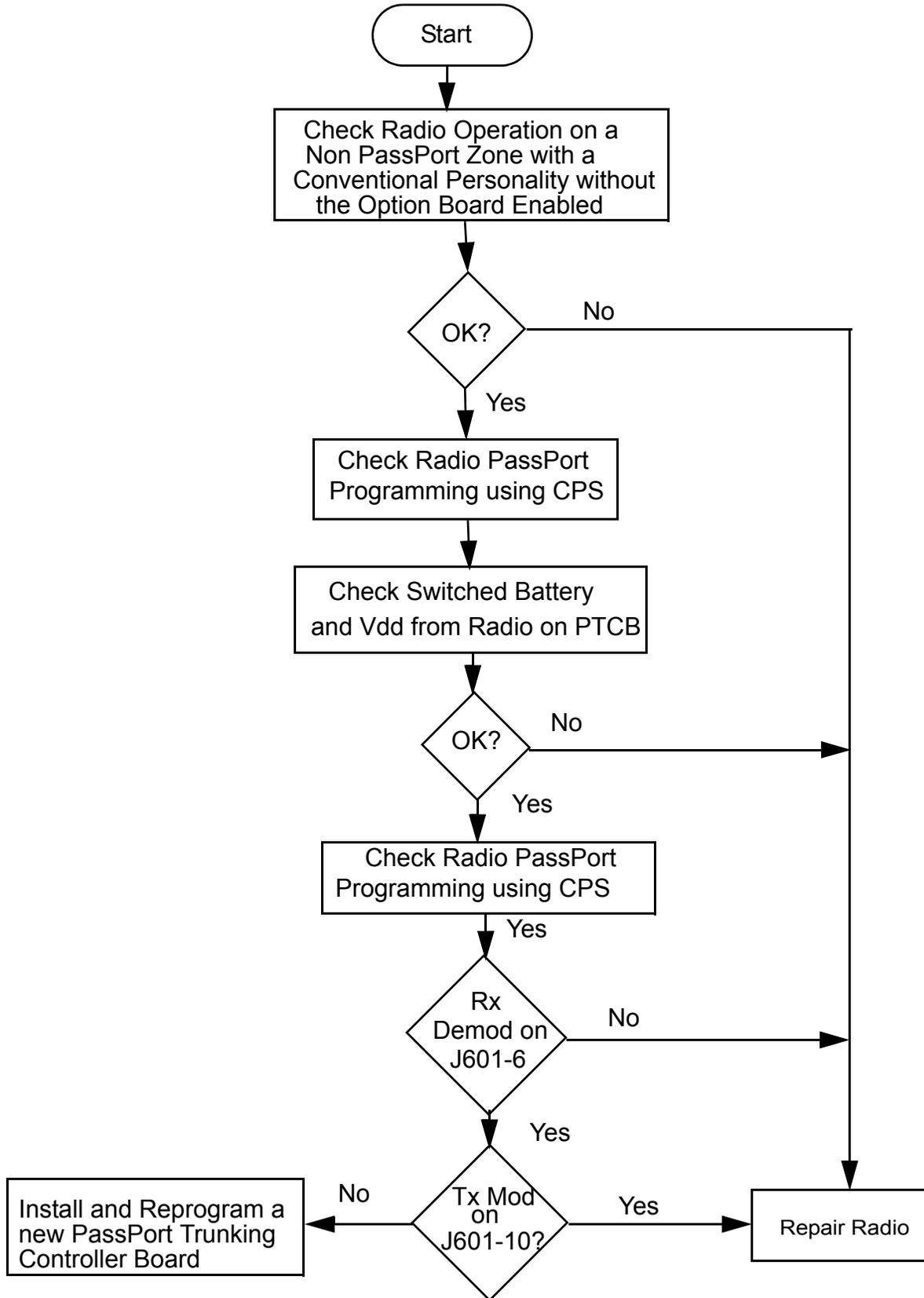
### 8.14.8 Troubleshooting Flow Chart for Synthesizer



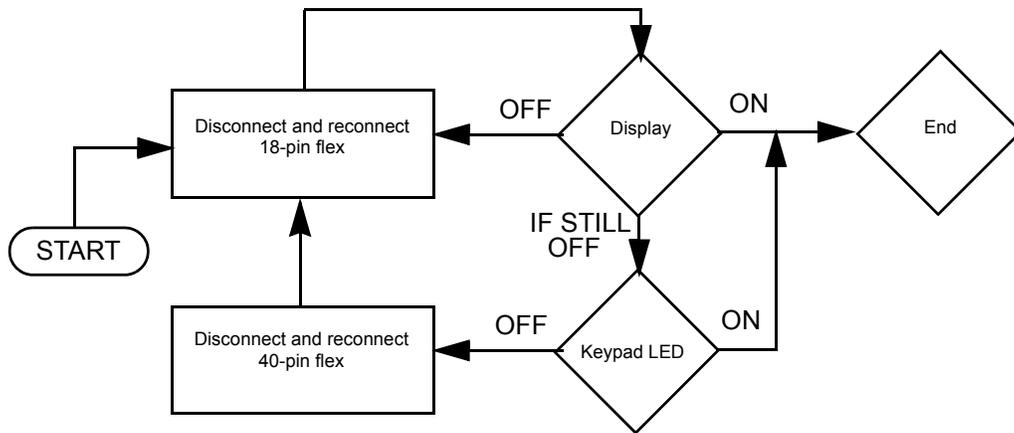
### 8.14.9 Troubleshooting Flow Chart for VCO



### 8.15 PassPort Trunking Troubleshooting Chart

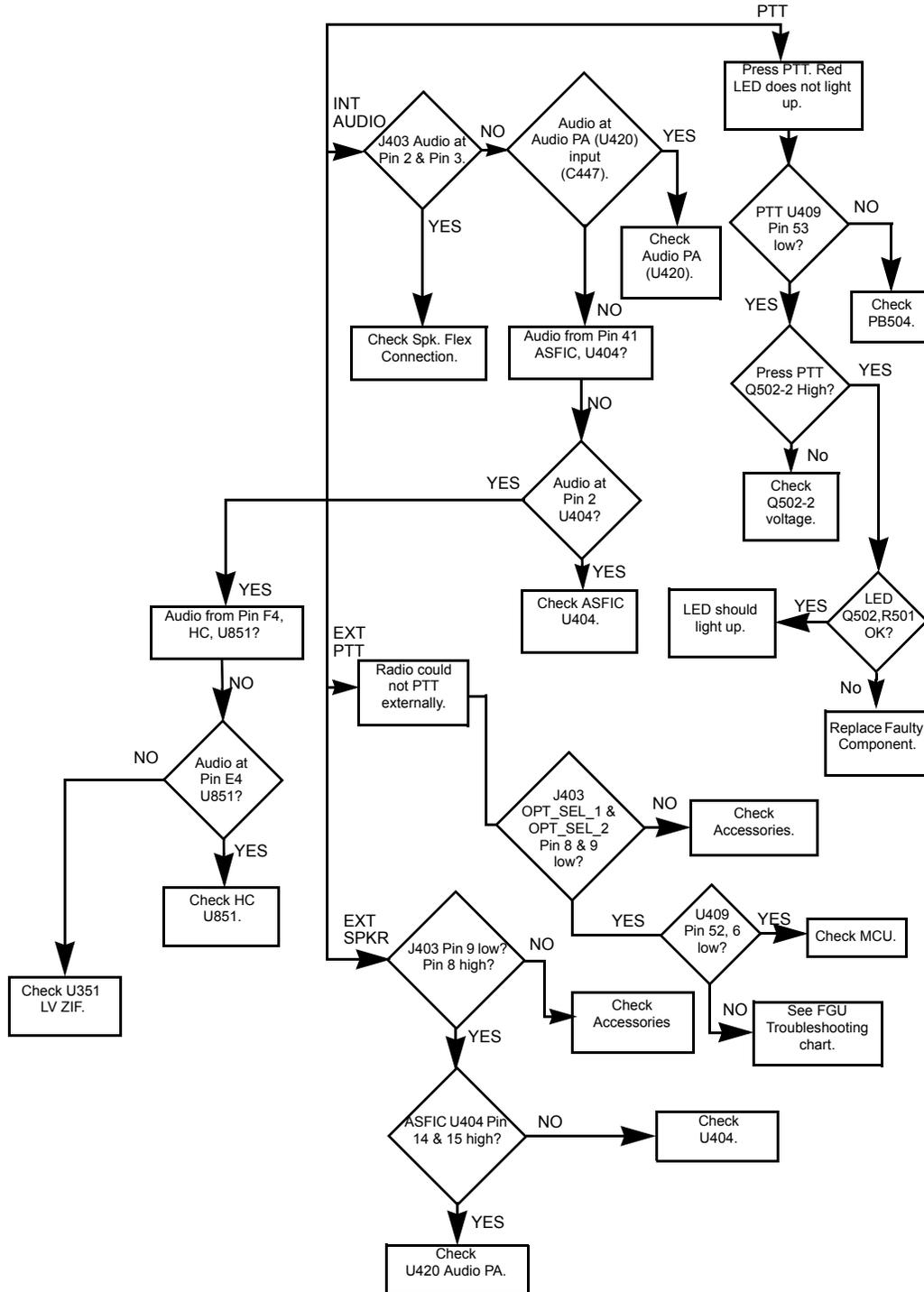


### 8.16 Keypad Troubleshooting Chart

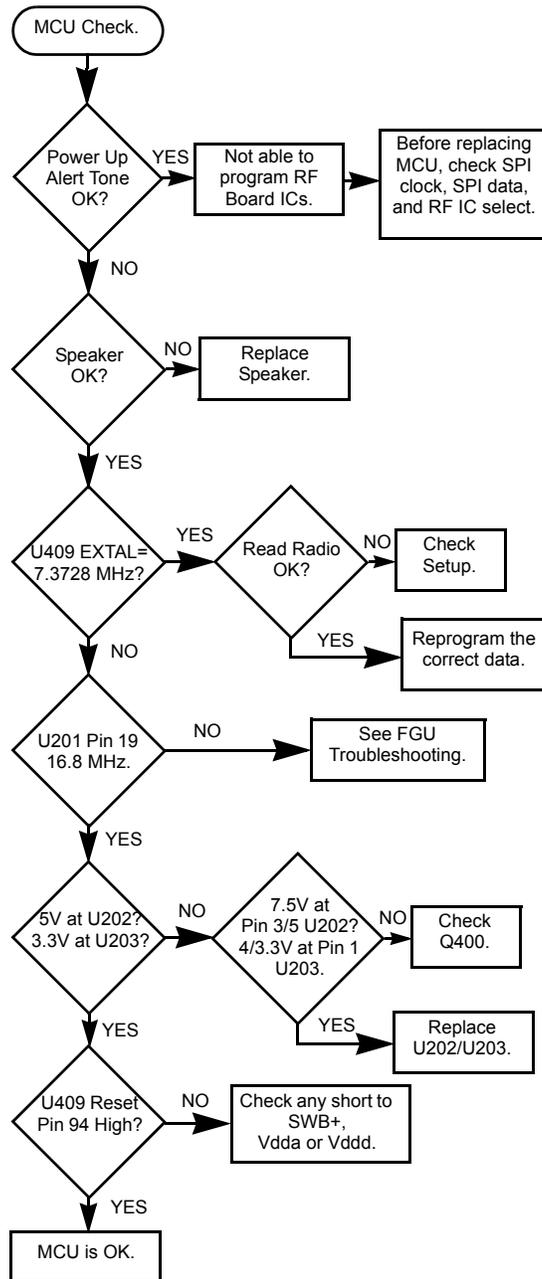


## 8.17 900 MHz Troubleshooting Charts

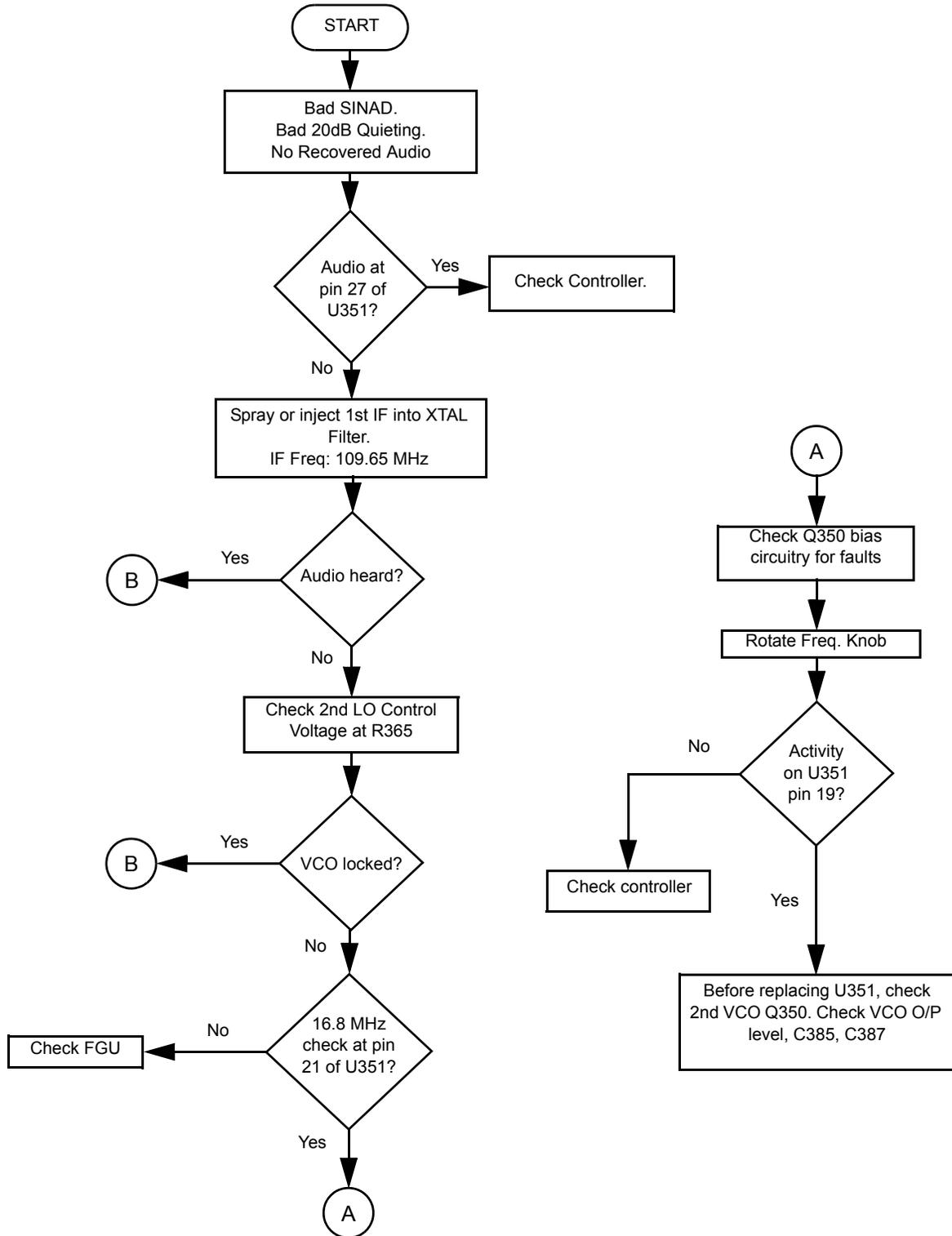
### 8.17.1 Troubleshooting Flow Chart for Controller (Sheet 1 of 2)



### 8.17.2 Troubleshooting Flow Chart for Controller (Sheet 2 of 2)

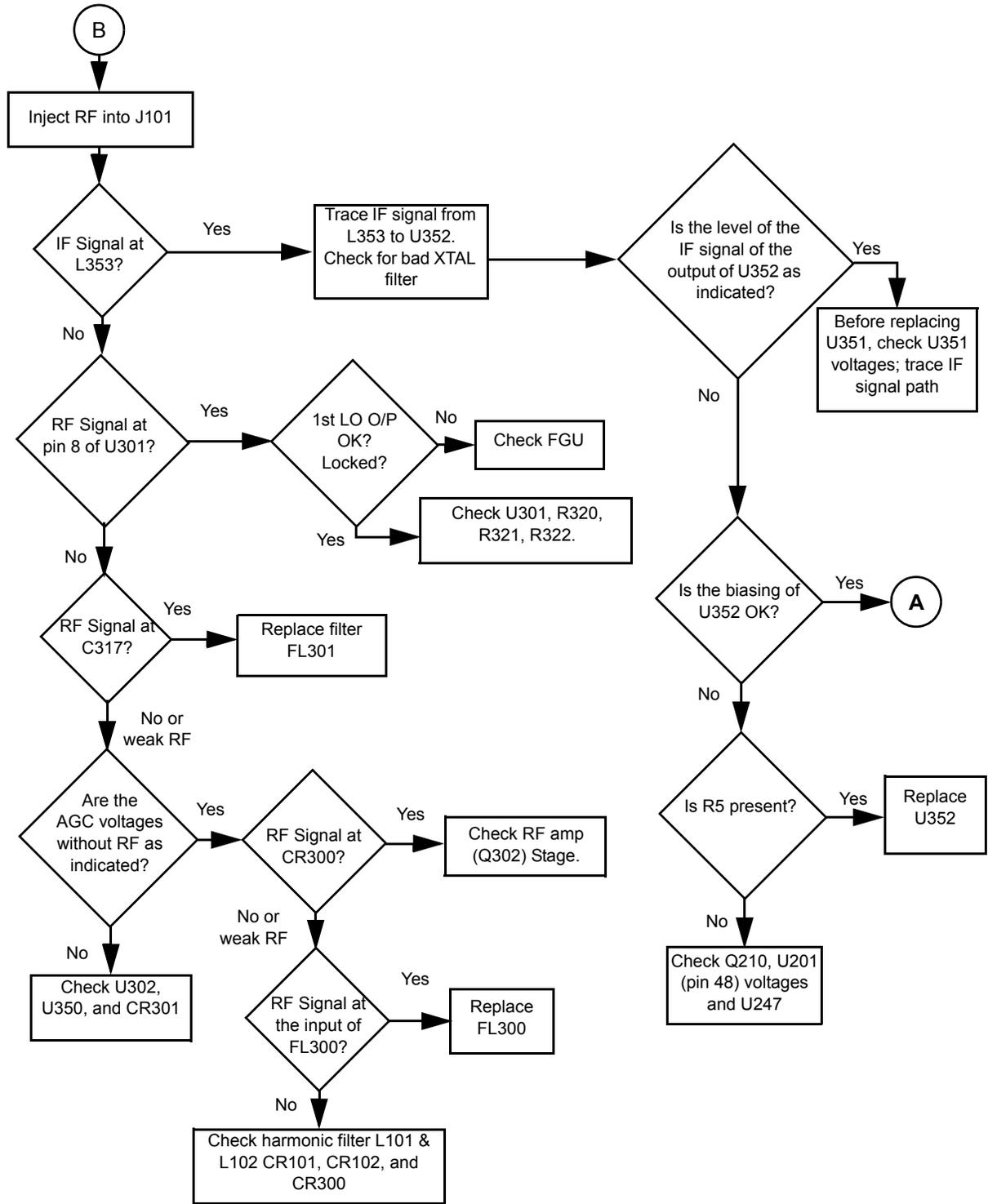


### 8.17.3 Troubleshooting Flow Chart for Receiver (for PCB 8485910Z01) (Sheet 1 of 2)

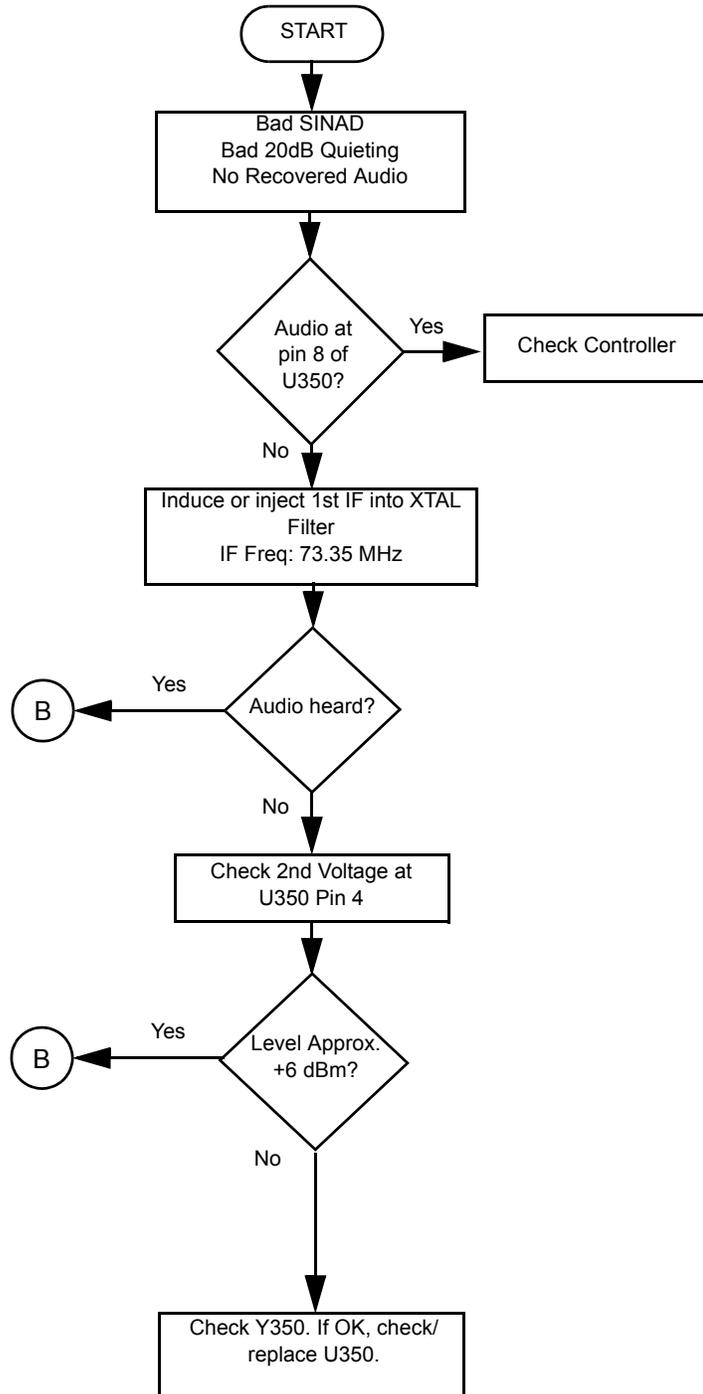




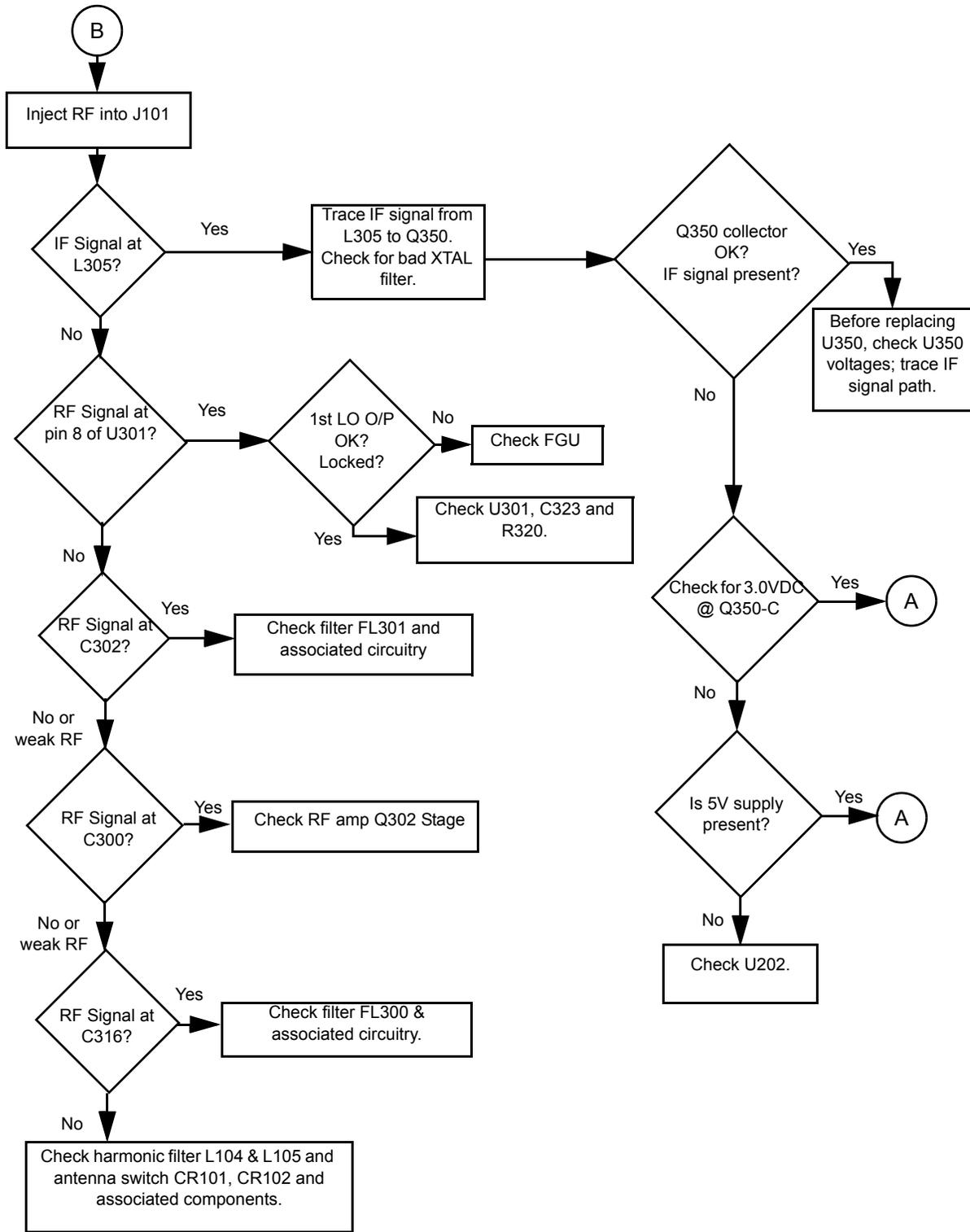
8.17.4 Troubleshooting Flow Chart for Receiver (for PCB 8485910Z01) (Sheet 2 of 2)



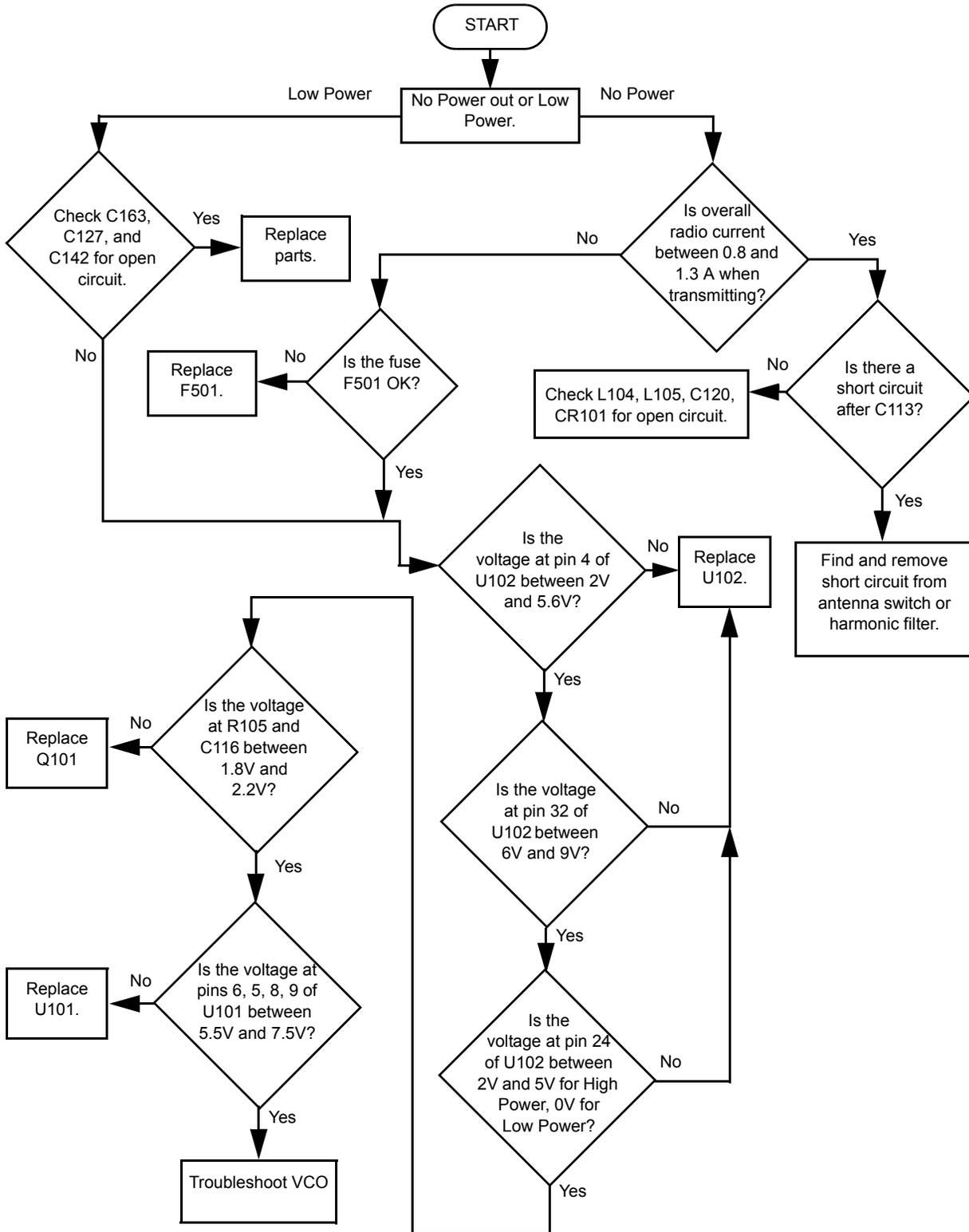
### 8.17.5 Troubleshooting Flow Chart for Receiver (for PCB No. 8471203M01) (Sheet 1 of 2)



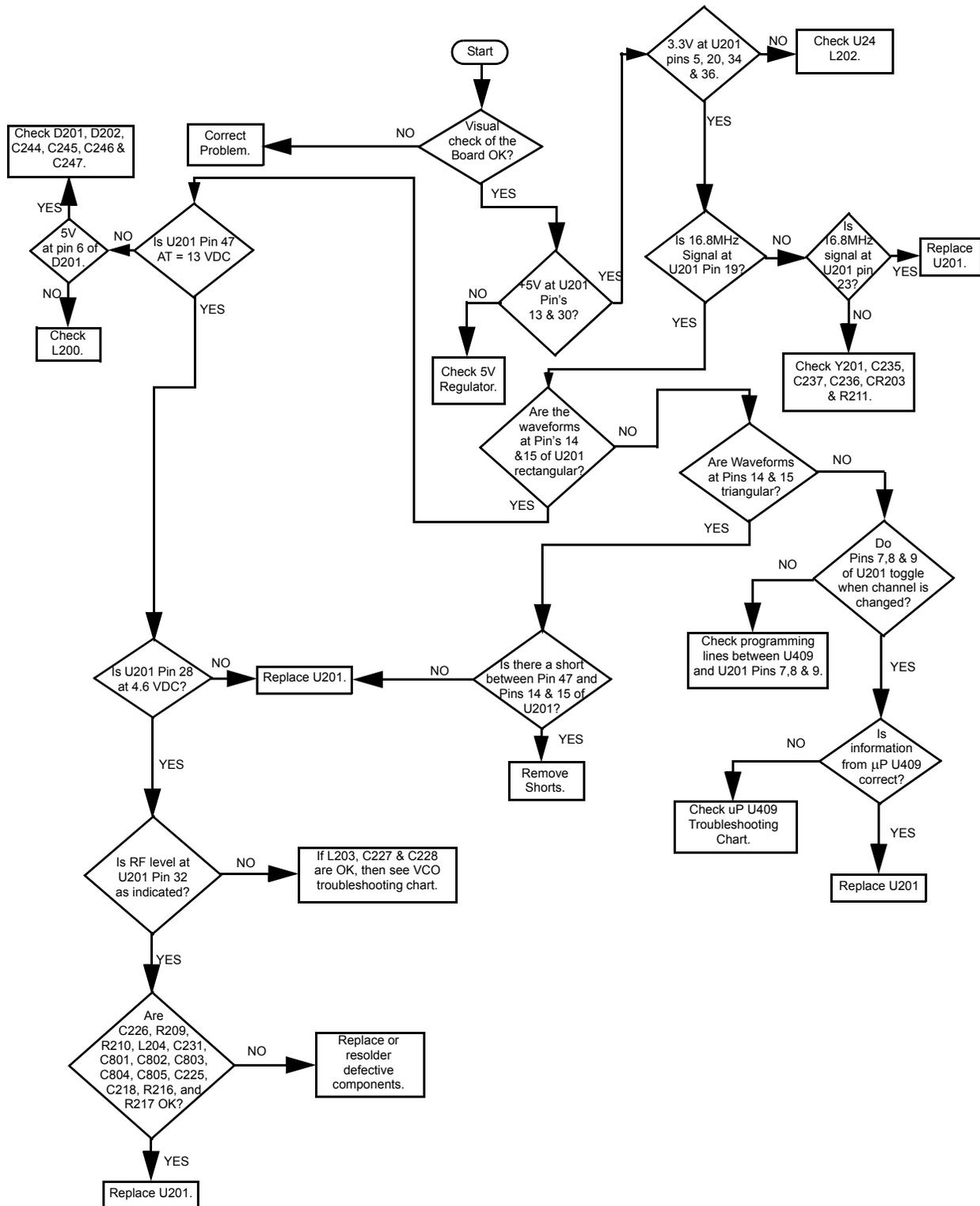
### 8.17.6 Troubleshooting Flow Chart for Receiver (for PCB No. 8471203M01) (Sheet 2 of 2)



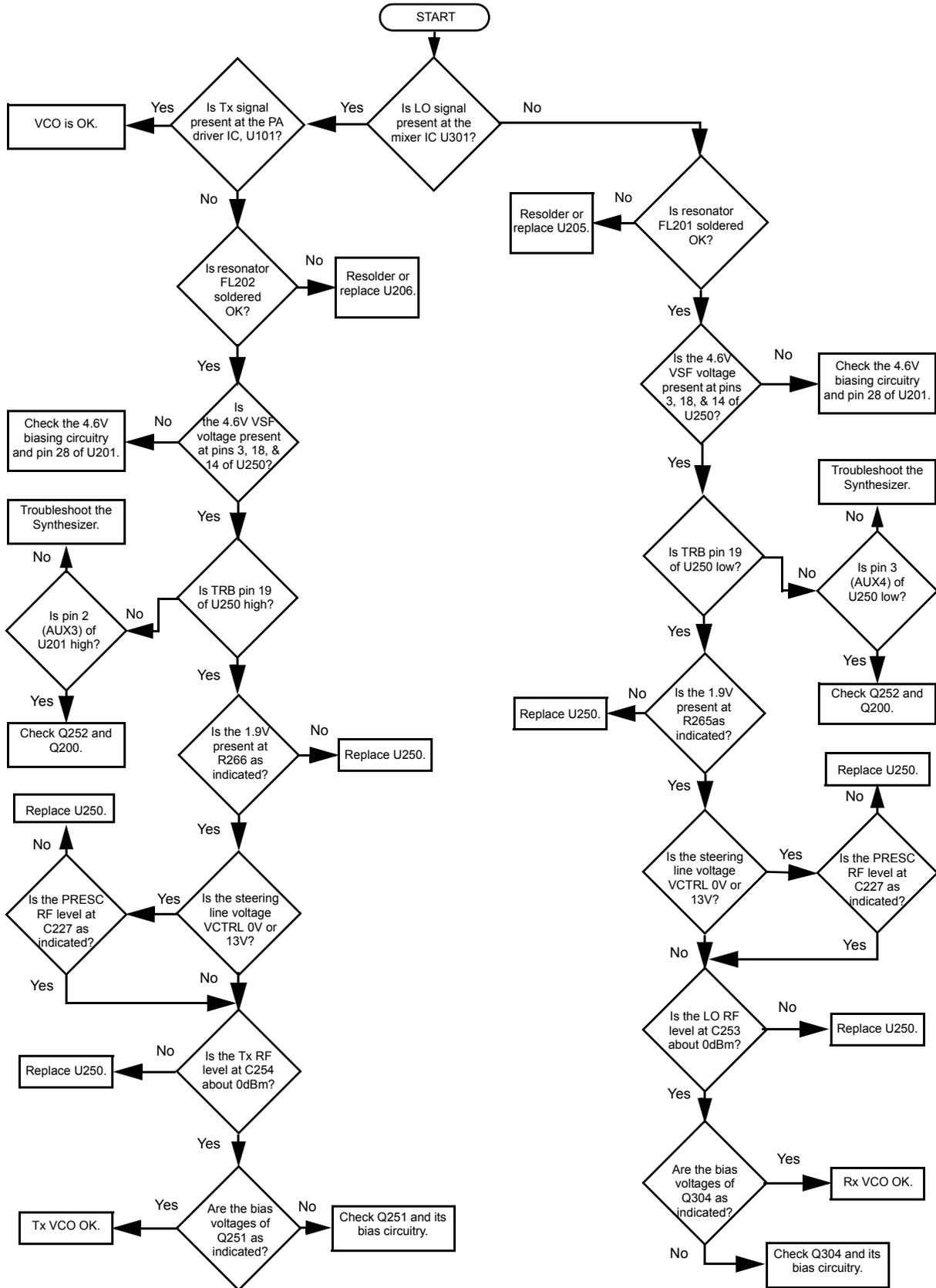
### 8.17.7 Troubleshooting Flow Chart for Transmitter



### 8.17.8 Troubleshooting Flow Chart for Synthesizer



### 8.17.9 Troubleshooting Flow Chart for VCO



# Chapter 9 Schematic Diagrams, Overlays, and Parts Lists

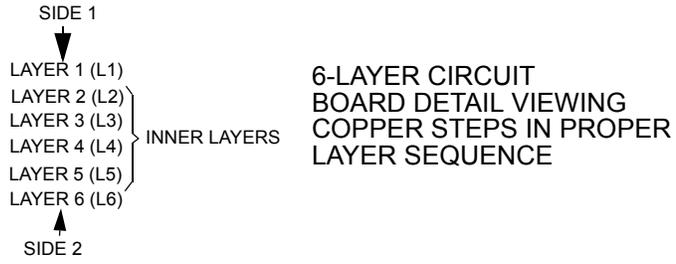
## 9.1 Introduction

This chapter provides schematic diagrams, overlays, and parts lists for the radio circuit boards and interface connections.

### 9.1.1 Notes For All Schematics and Circuit Boards

\* Component is frequency sensitive. Refer to the Electrical Parts List for value and usage.

1. Unless otherwise stated, resistances are in Ohms ( $k = 1000$ ), and capacitances are in picofarads (pF) or microfarads ( $\mu F$ ).
2. DC voltages are measured from point indicated to chassis ground using a Motorola DC multimeter or equivalent. Transmitter measurements should be made with a  $1.2 \mu H$  choke in series with the voltage probe to prevent circuit loading.
3. Reference Designators are assigned in the following manner:
  - 100 Series = Transmitter
  - 200 Series = Frequency Generation
  - 300 Series = Receiver
  - 400/500 Series = Controller and Low-Band Receiver Front End
  - 600 Series = Keypad Board
4. Interconnect Tie Point Legend:
  - UNSWB+ = Unswitched Battery Voltage (7.5 V)
  - SWB+ = Switched Battery Voltage (7.5 V)
  - R5 = Receiver Five Volts
  - CLK = Clock
  - Vdda = Regulated 3.3 Volts (for analog)
  - Vddd = Regulated 3.3 Volts (for digital)
  - CSX = Chip Select Line (not for LVZIF)
  - SYN = Synthesizer
  - DACRX = Digital to Analog Voltage (For Receiver Front End Filter)
  - VSF = Voltage Super Filtered (5 V)
  - VR = Voltage Regulator



## 9.2 Flex Layout

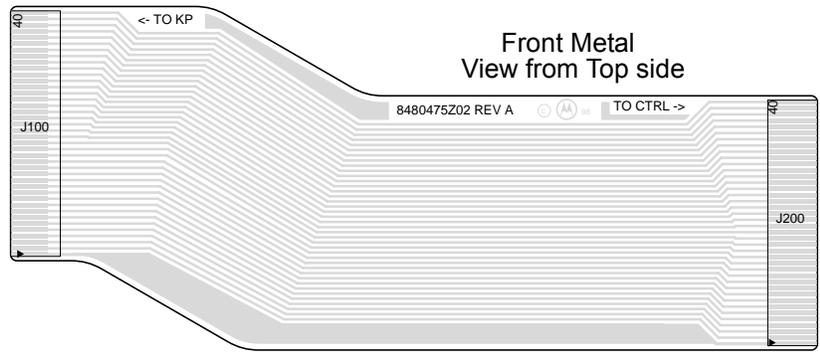
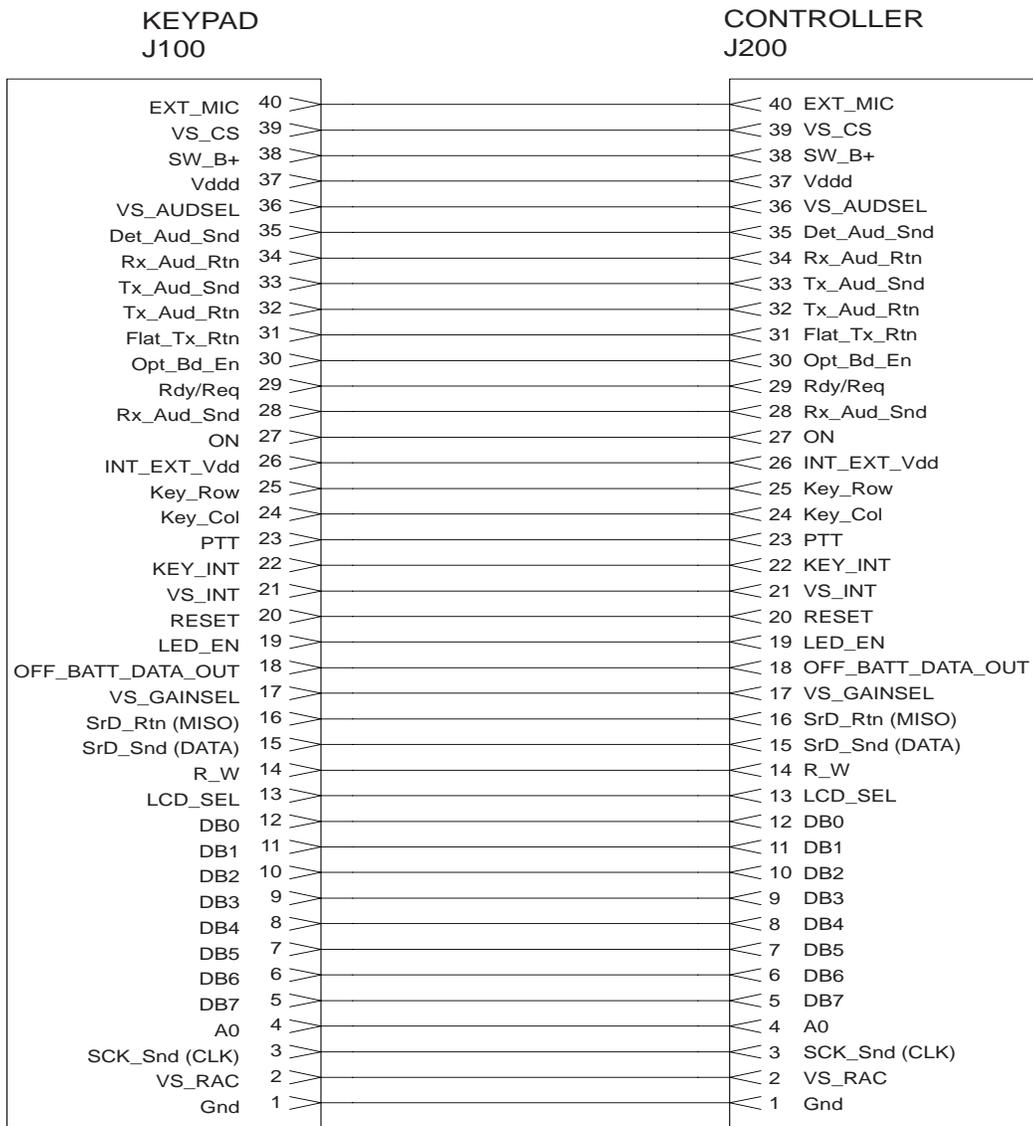


Figure 9-1. Keypad-Controller Interconnect Flex



## 9.2.1 Keypad-Controller Interconnect Flex Schematic



FL0830765O

Figure 9-2. Keypad-Controller Interconnect Flex Schematic Diagram

## 9.2.2 Keypad-Controller Interconnect Flex Parts List

Reference Symbol	Motorola Part No.	Description
J100	0980521Z01	Connector, 40 pin
J200	0905505Y04	Speaker, 20 ohm

### 9.2.3 Universal Flex Connector

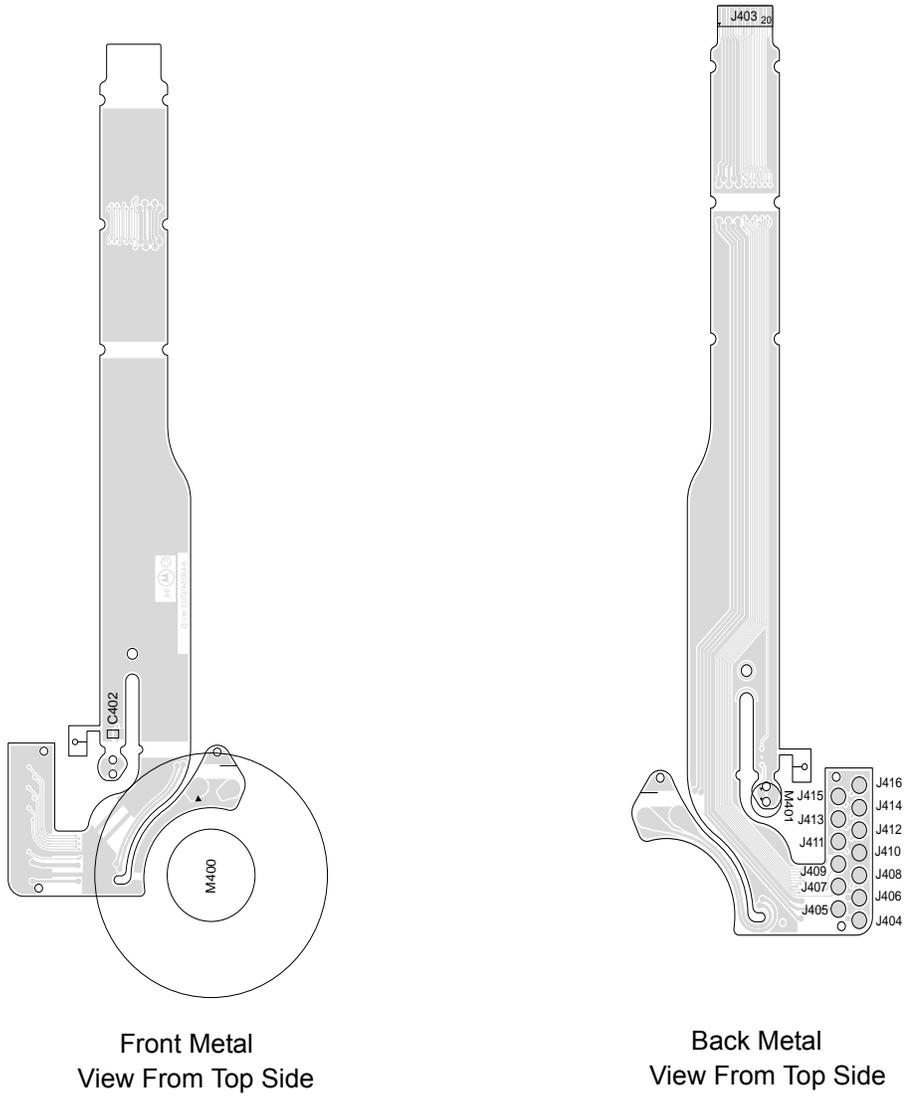


Figure 9-3. Universal Flex Connector

### 9.2.4 Universal Connector Flex Schematic

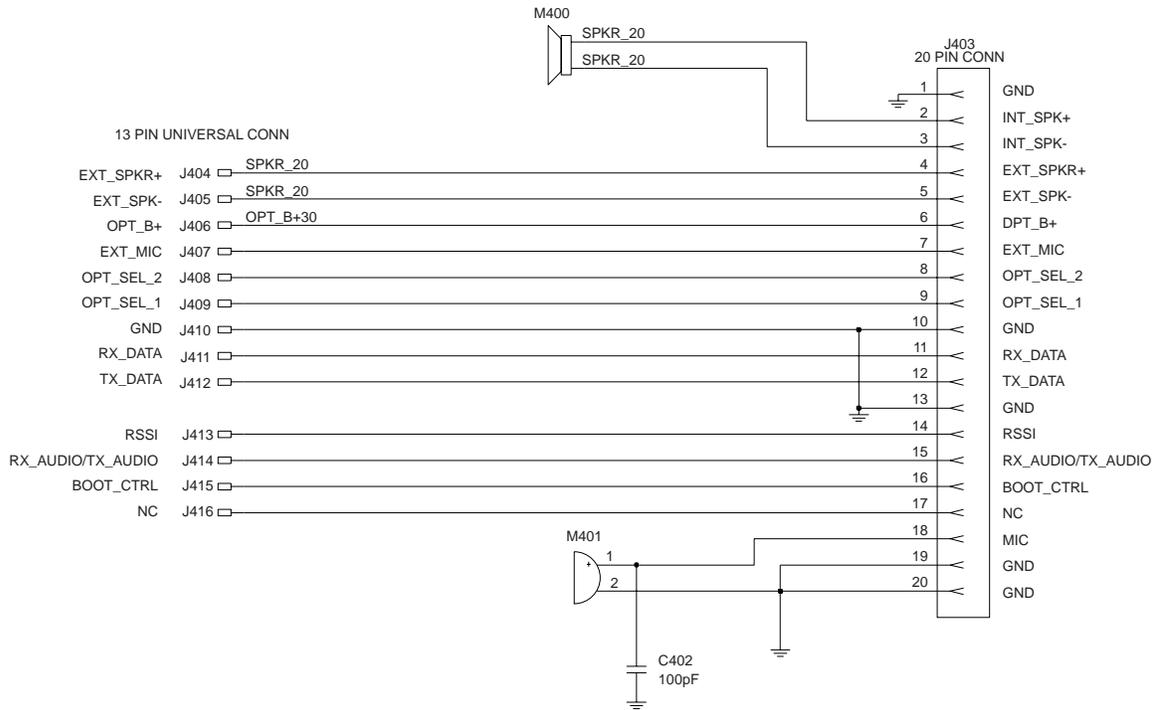
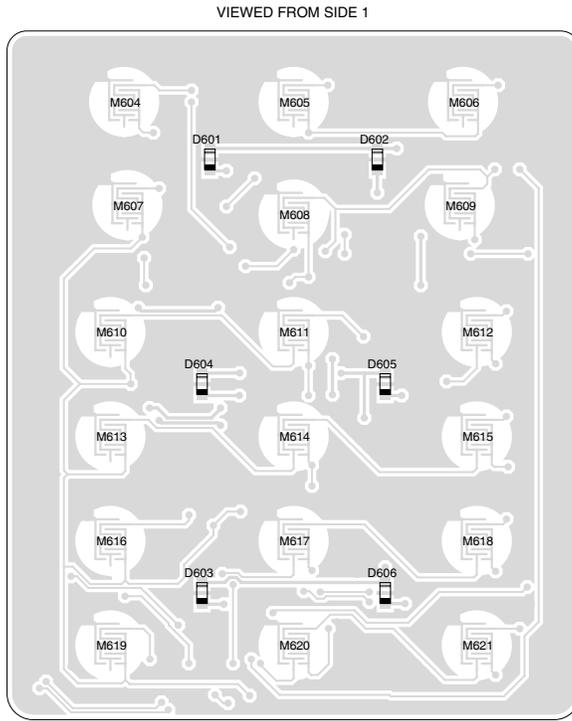


Figure 9-4. Universal Flex Connector Schematic Diagram

### 9.2.5 Universal Flex Connector Parts List

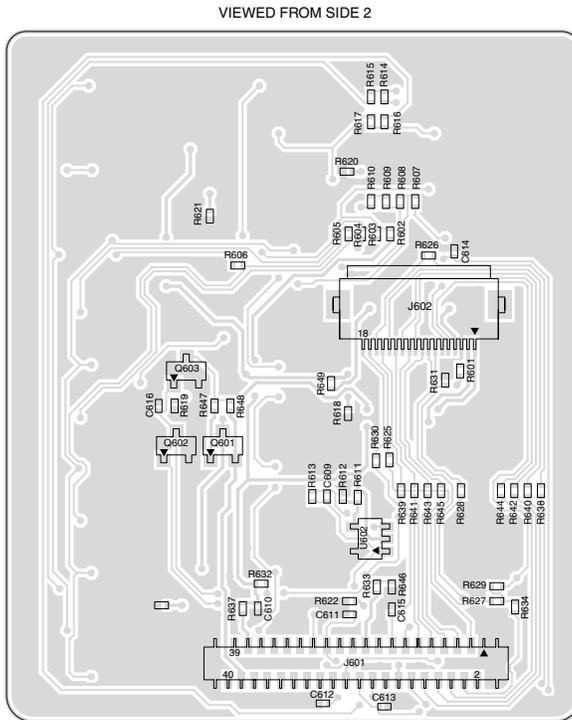
Reference Symbol	Motorola Part No.	Description
C402	2113740A55	Cap, 100pF
M400	5085962A02	Speaker, 20 ohm
M401	5013920A04	Microphone for 5000 and 7000 Series
M401	5005227J08	Microphone for 9000 Series
	8480549Z01	Flex, Speaker Microphone

### 9.3 Keypad Top and Bottom Overlays



FL08307190

Top View



FL0830720A

Bottom View

Figure 9-5. Keypad Top and Bottom Board Overlays

### 9.4 Keypad Circuit Board/Schematic Diagrams and Parts List

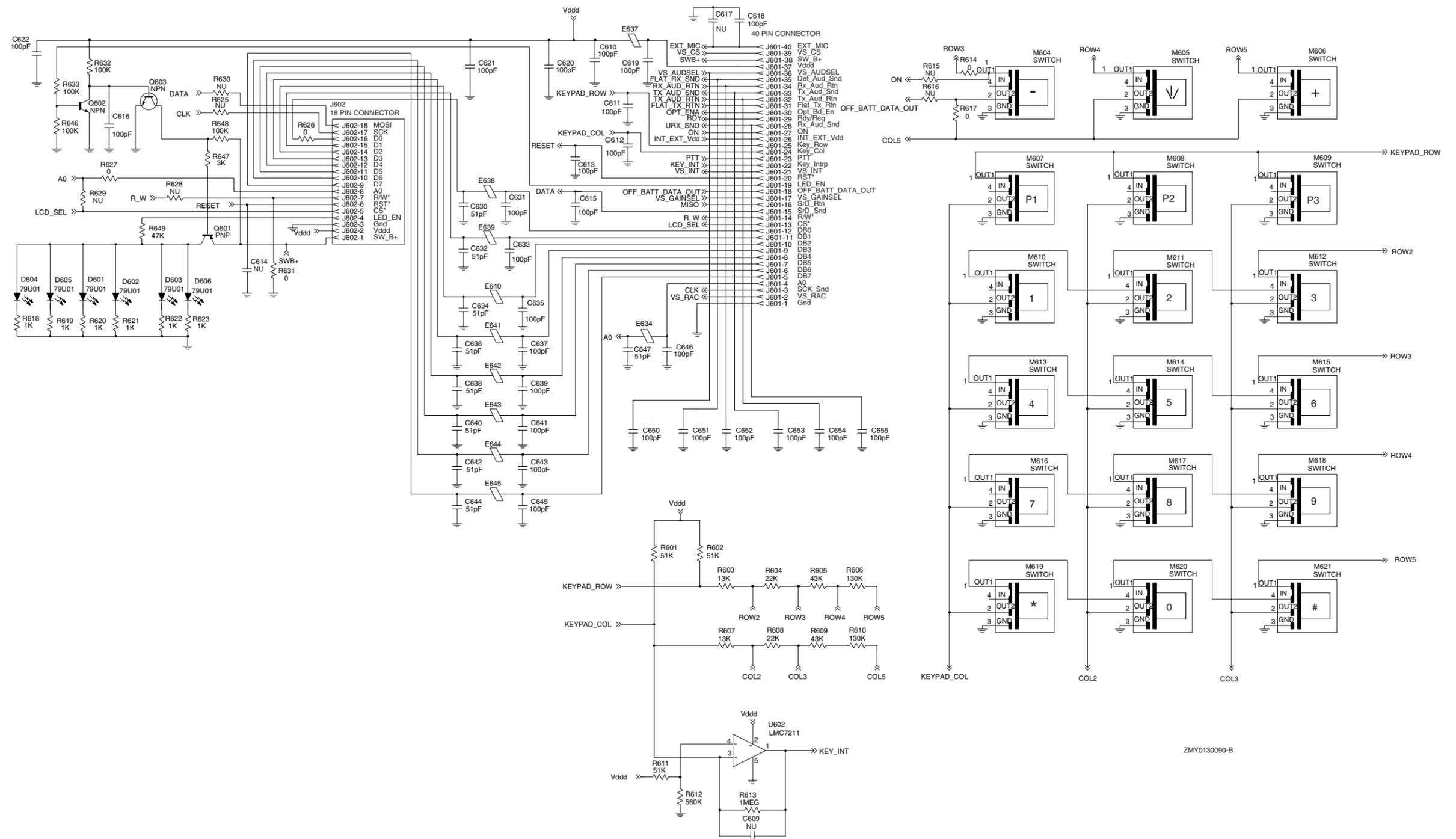
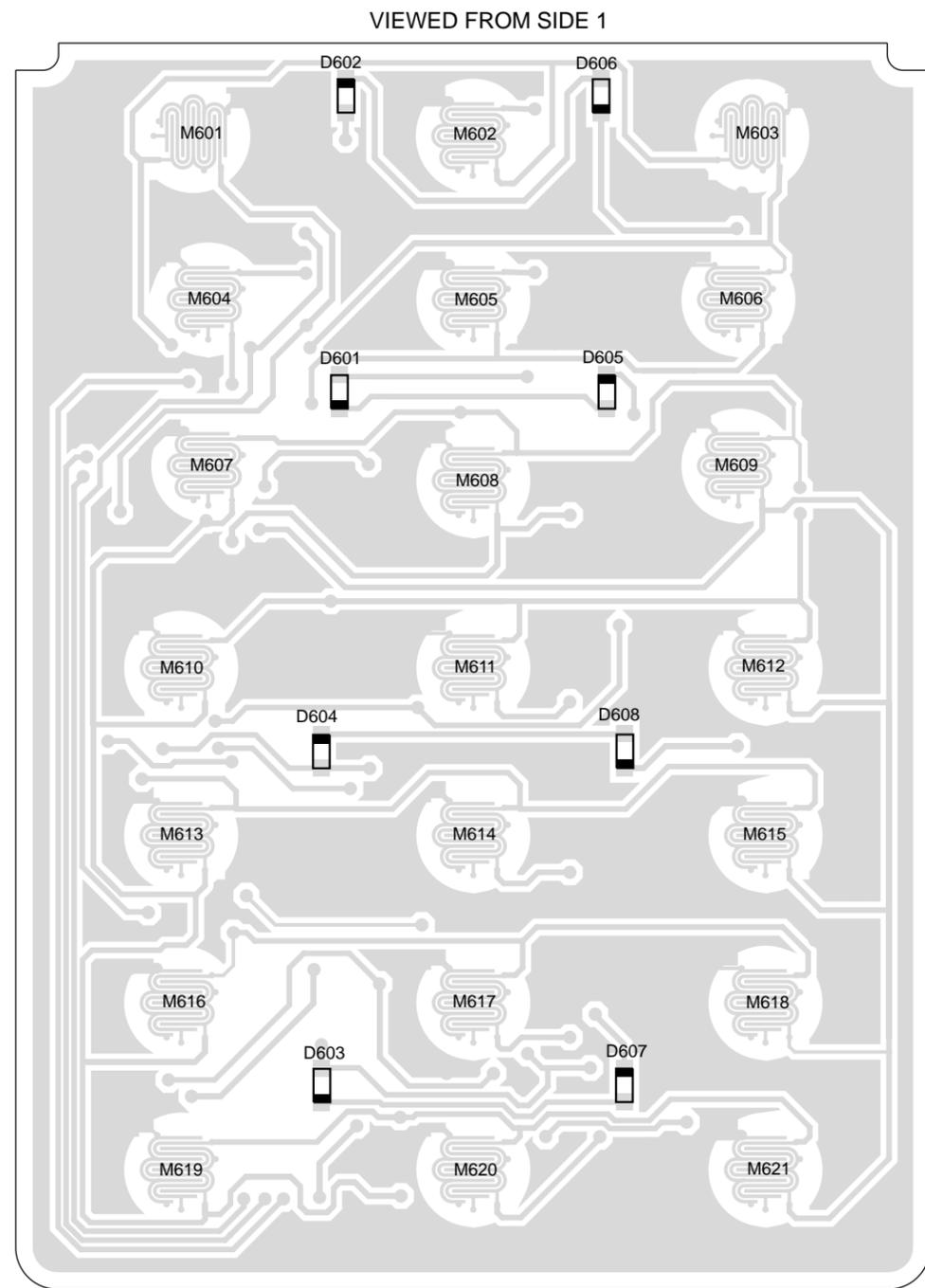


Figure 9-6. Keypad Board (5000 and 7000 Series) Schematic Diagram

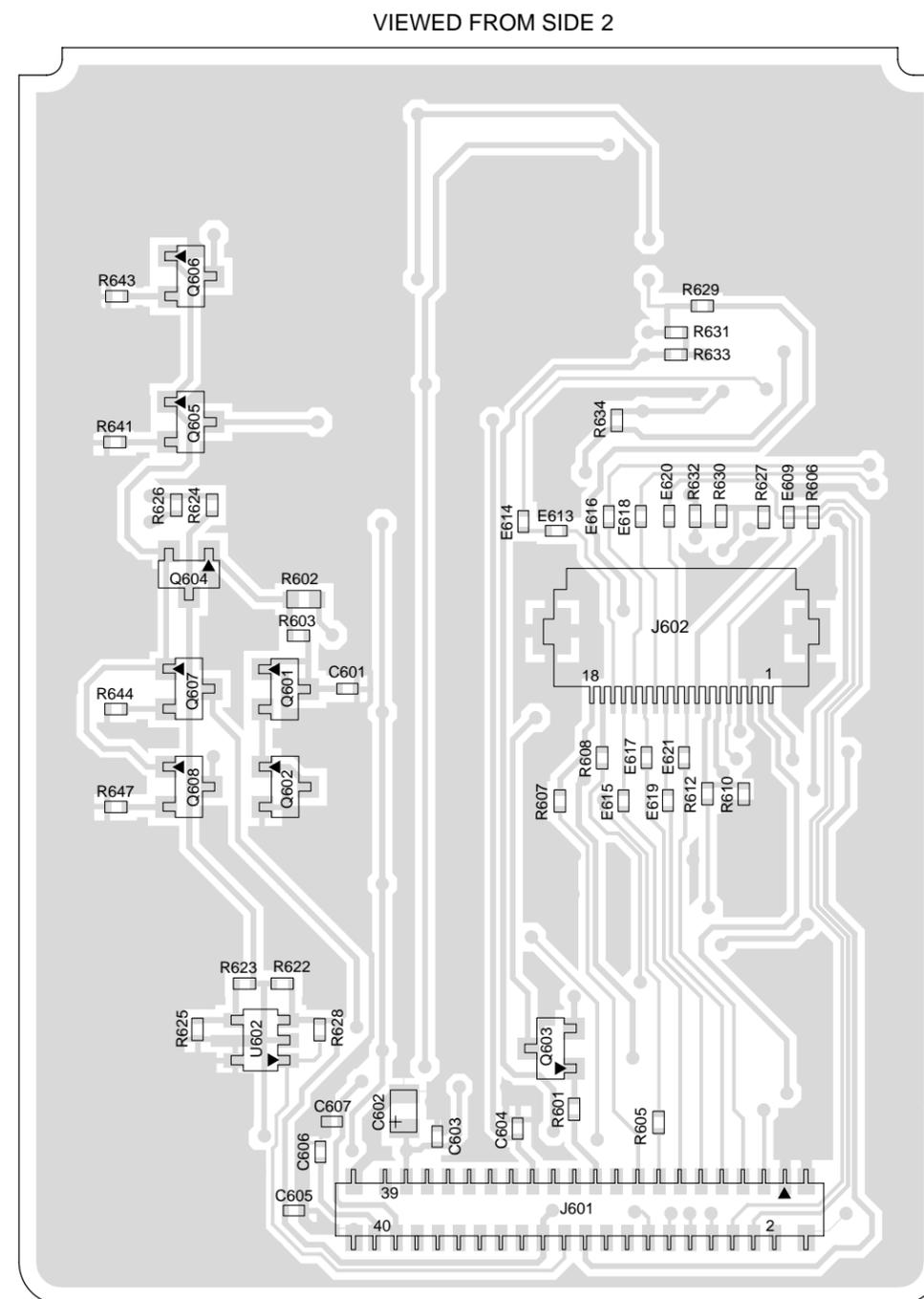
**Keypad Board Parts List (5000 and 7000 Series)**

Circuit Ref.	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C610	2113743N50	100 pF
C613	2113743N50	100 pF
C615	2113743N50	100 pF
C616	2113743N50	100 pF
D601	4880479U01	79U01
D602	4880479U01	79U01
D603	4880479U01	79U01
D604	4880479U01	79U01
D605	4880479U01	79U01
D606	4880479U01	79U01
J601	0980521Z01	44 pin connector
J602	0905505Y03	18 pin connector
Q601	4805128M67	MMBT3906 transistor (PNP)
Q602	4880214G02	MMBT3904 transistor (NPN)
Q603	4880214G02	MMBT3904 transistor (NPN)
R601	0662057V20	51K
R602	0662057V20	51K
R603	0662057V05	13K
R604	0662057V11	22K
R605	0662057V18	43K
R606	0662057V30	130K
R607	0662057V05	13K
R608	0662057V11	22K
R609	0662057V18	43K
R610	0662057V30	130K
R611	0662057N16	51K
R612	0662057N41	560K
R613	0662057N47	1M
R614	0662057M01	0 ohm
R617	0662057M01	0 ohm
R618	0662057M74	1K
R619	0662057M74	1K
R620	0662057M74	1K
R621	0662057M74	1K
R622	0662057M74	1K
R623	0662057M74	1K
R626	0662057M01	0 ohm
R627	0662057M01	0 ohm
R631	0662057M01	0 ohm
R632	0662057N23	100K
R633	0662057N23	100K
R634	0662057M01	0 ohm
R637	0662057M01	0 ohm
R638	0662057M01	0 ohm
R639	0662057M01	0 ohm
R640	0662057M01	0 ohm
R641	0662057M01	0 ohm

Circuit Ref.	Motorola Part No.	Description
R642	0662057M01	0 ohm
R643	0662057M01	0 ohm
R644	0662057M01	0 ohm
R645	0662057M01	0 ohm
R646	0662057N23	100K
R647	0662057M85	3K
R648	0662057N23	100K
R649	0662057N15	47K
U602	5102463J49	LMC7211 comparator



ZMY0130334-O



ZMY0130335-O

Figure 9-7. 9000 Series Keypad Top and Bottom Board Overlays

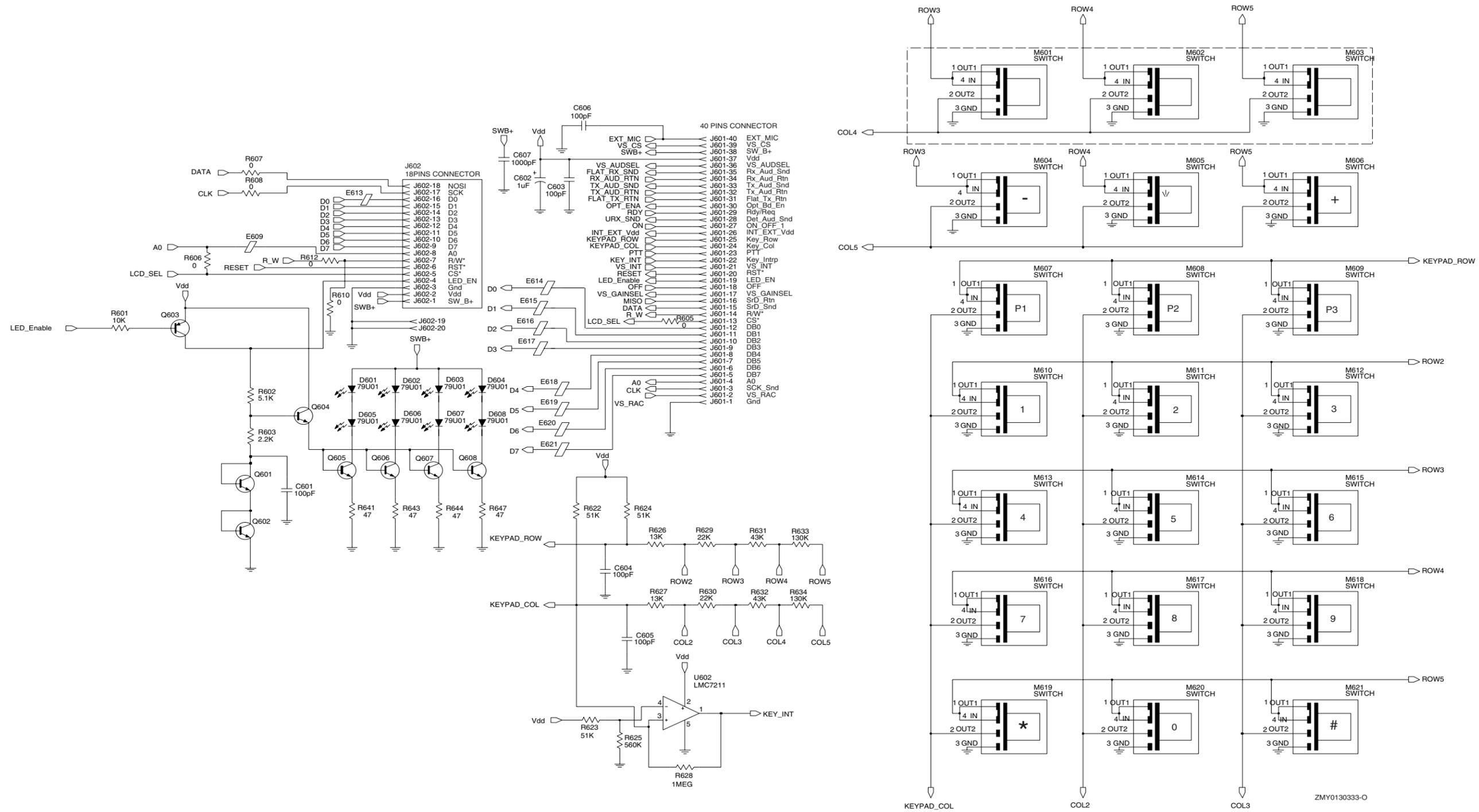


Figure 9-8. 9000 Series Keypad Board Schematic Diagram



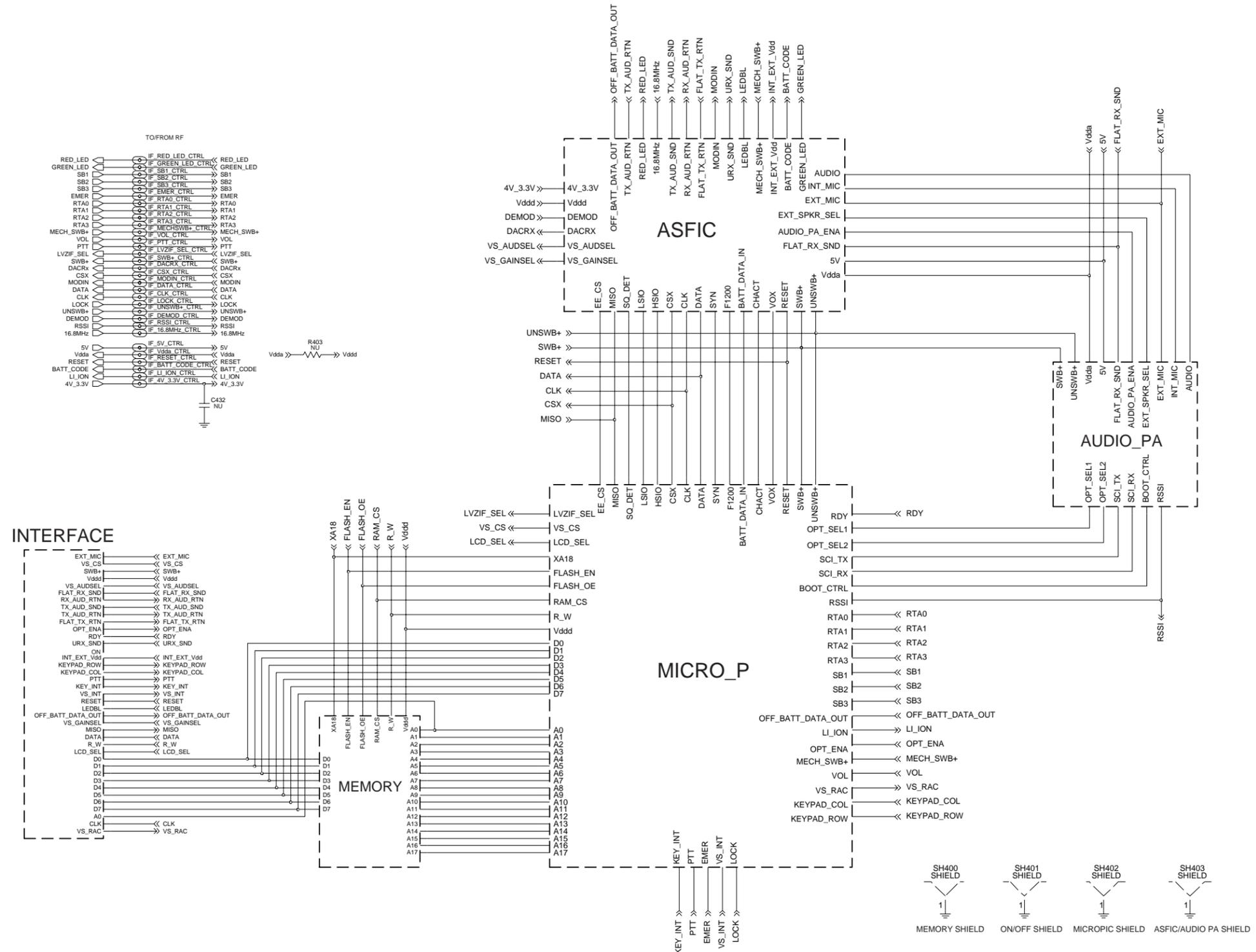
**Keypad Board Parts List (9000 Series)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C601	2113743N50	100 pF
C602	2311049A86	1 uF
C603	2113743N50	100 pF
C604	2113743N50	100 pF
C605	2113743N50	100 pF
C606	2113743N50	100 pF
C607	2113743L17	1000 pF
C608	2113743N50	100 pF
C609	2113743N50	100 pF
C610	2113743N50	100 pF
C611	2113743N50	100 pF
C612	2113743N50	100 pF
C613	2113743N50	100 pF
D601	4880479U01	LED
D602	4880479U01	LED
D603	4880479U01	LED
D604	4880479U01	LED
D605	4880479U01	LED
D606	4880479U01	LED
D607	4880479U01	LED
D608	4880479U01	LED
E609	2480640Z01	IND BEAD
E613	2480640Z01	IND BEAD
E614	2480640Z01	IND BEAD
E615	2480640Z01	IND BEAD
E616	2480640Z01	IND BEAD
E617	2480640Z01	IND BEAD
E618	2480640Z01	IND BEAD
E619	2480640Z01	IND BEAD
E620	2480640Z01	IND BEAD
E621	2480640Z01	IND BEAD
J601	0980521Z01	44 pin connector
J602	0905505Y03	18 pin connector
Q601	4813824A10	40V.2A NPN TRANSISTOR
Q602	4813824A10	40V.2A NPN TRANSISTOR
Q603	4813824A17	40V.2A PNP TRANSISTOR
Q604	4813824A10	40V.2A NPN TRANSISTOR
Q605	4813824A10	40V.2A NPN TRANSISTOR
Q606	4813824A10	40V.2A NPN TRANSISTOR
Q607	4813824A10	40V.2A NPN TRANSISTOR
Q608	4813824A10	40V.2A NPN TRANSISTOR
R601	0662057M98	10 K
R602	0662057A66	51K

Circuit Ref	Motorola Part No.	Description
R603	0662057M82	2.2K
R605	0662057M01	0 ohm
R610	0662057M01	0 ohm
R622	0662057V20	51K
R623	0662057N16	51K
R624	0662057V20	51K
R625	0662057N41	560K
R626	0662057V05	13K
R627	0662057V05	13K
R628	0662057N47	1.0MEG
R629	0662057V11	22K
R630	0662057V11	22K
R631	0662057V18	43K
R632	0662057V18	43K
R633	0662057V30	130K
R634	0662057V30	130K
R641	0662057M42	47K
R643	0662057M42	47K
R644	0662057M42	47K
R647	0662057M42	47K
U602	5102463J49	LMC7211 comparator
	8480574Z05	PC Board, Keypad

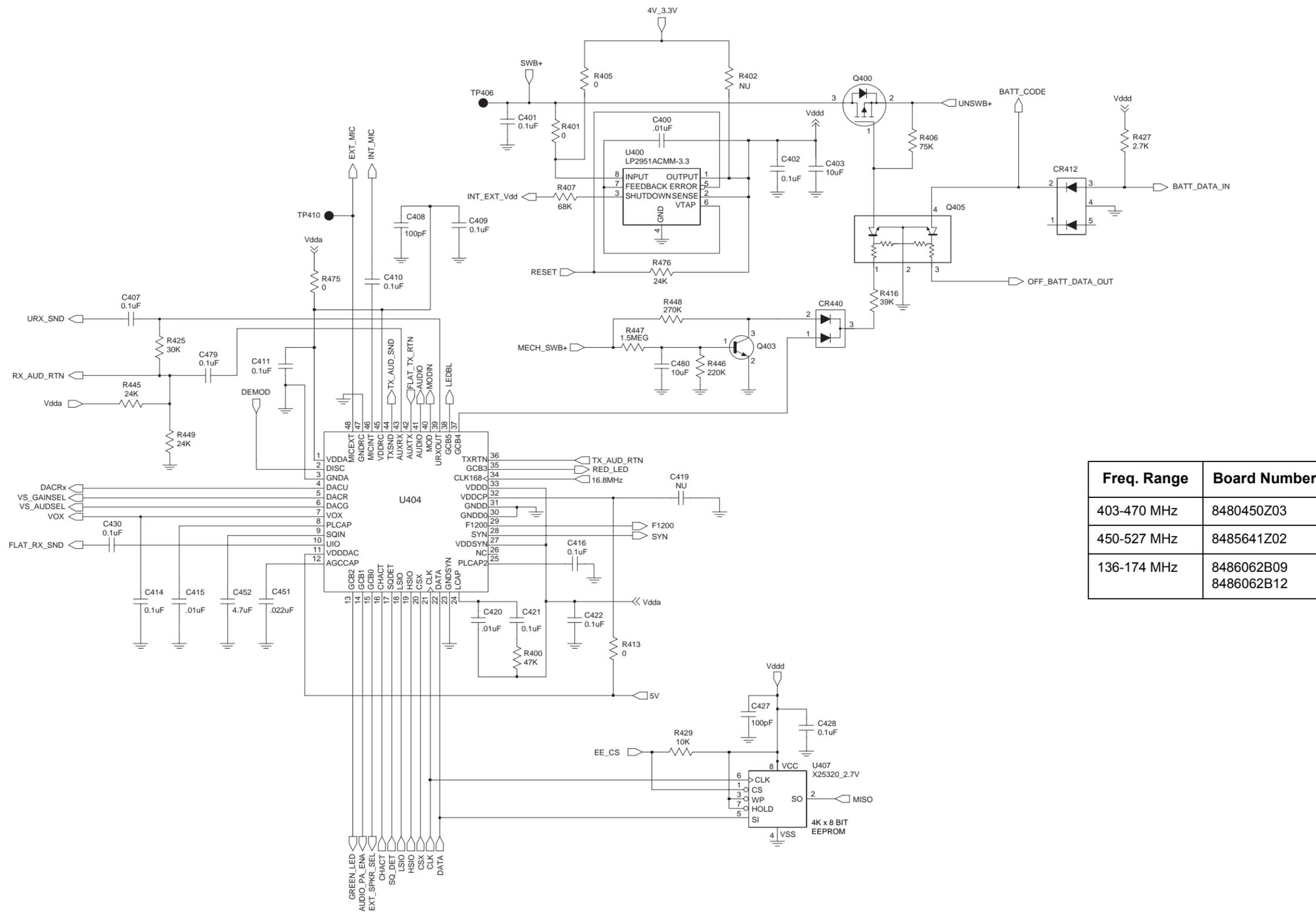
## Notes

### 9.5 Controller Circuit Board/Schematic Diagrams and Parts List



FL08307340

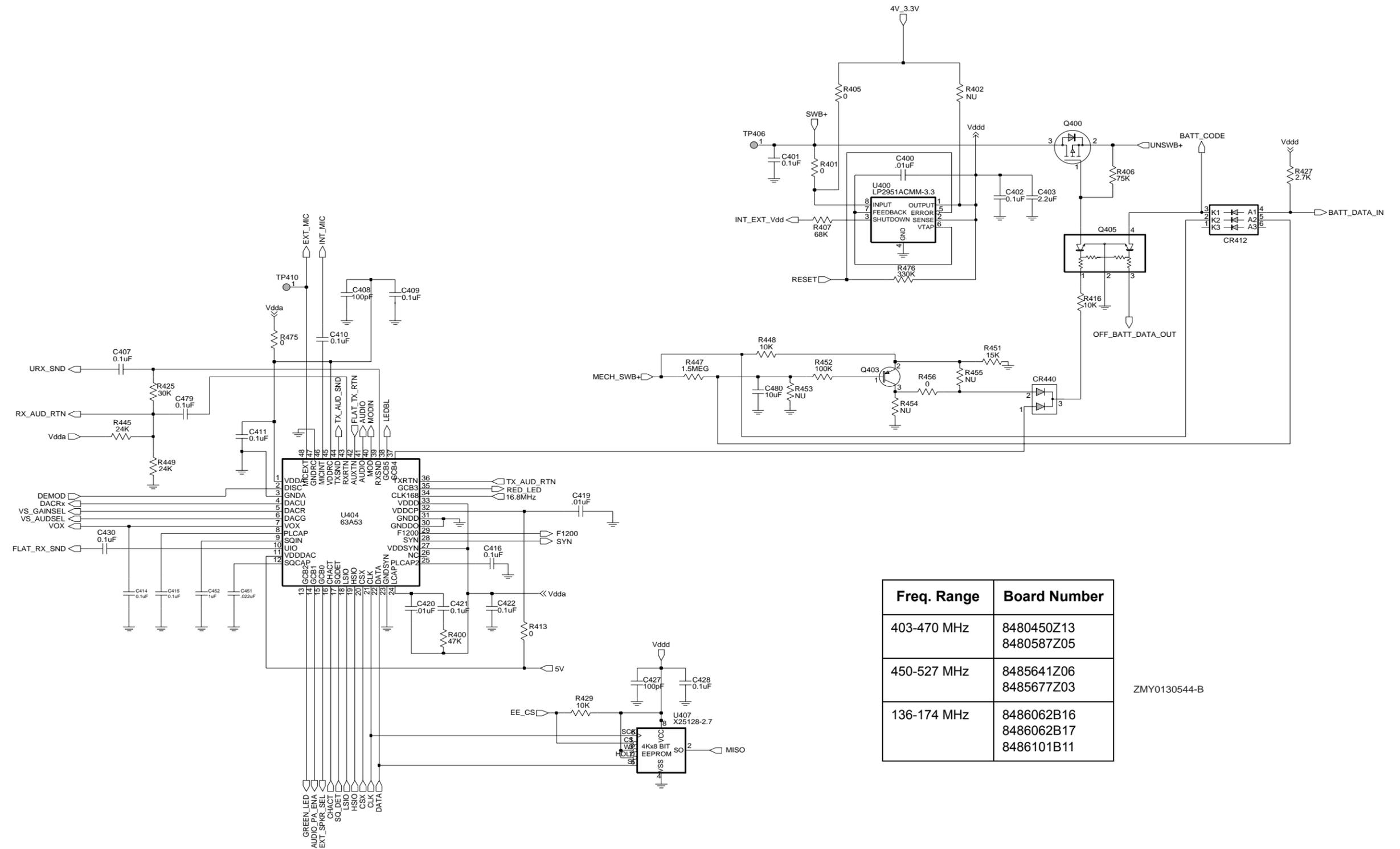
Figure 9-9. VHF/UHF Complete Controller Schematic Diagram



Freq. Range	Board Number
403-470 MHz	8480450Z03
450-527 MHz	8485641Z02
136-174 MHz	8486062B09 8486062B12

FL08307350

Figure 9-10. VHF/UHF Controller ASFIC/ON\_OFF Schematic Diagram

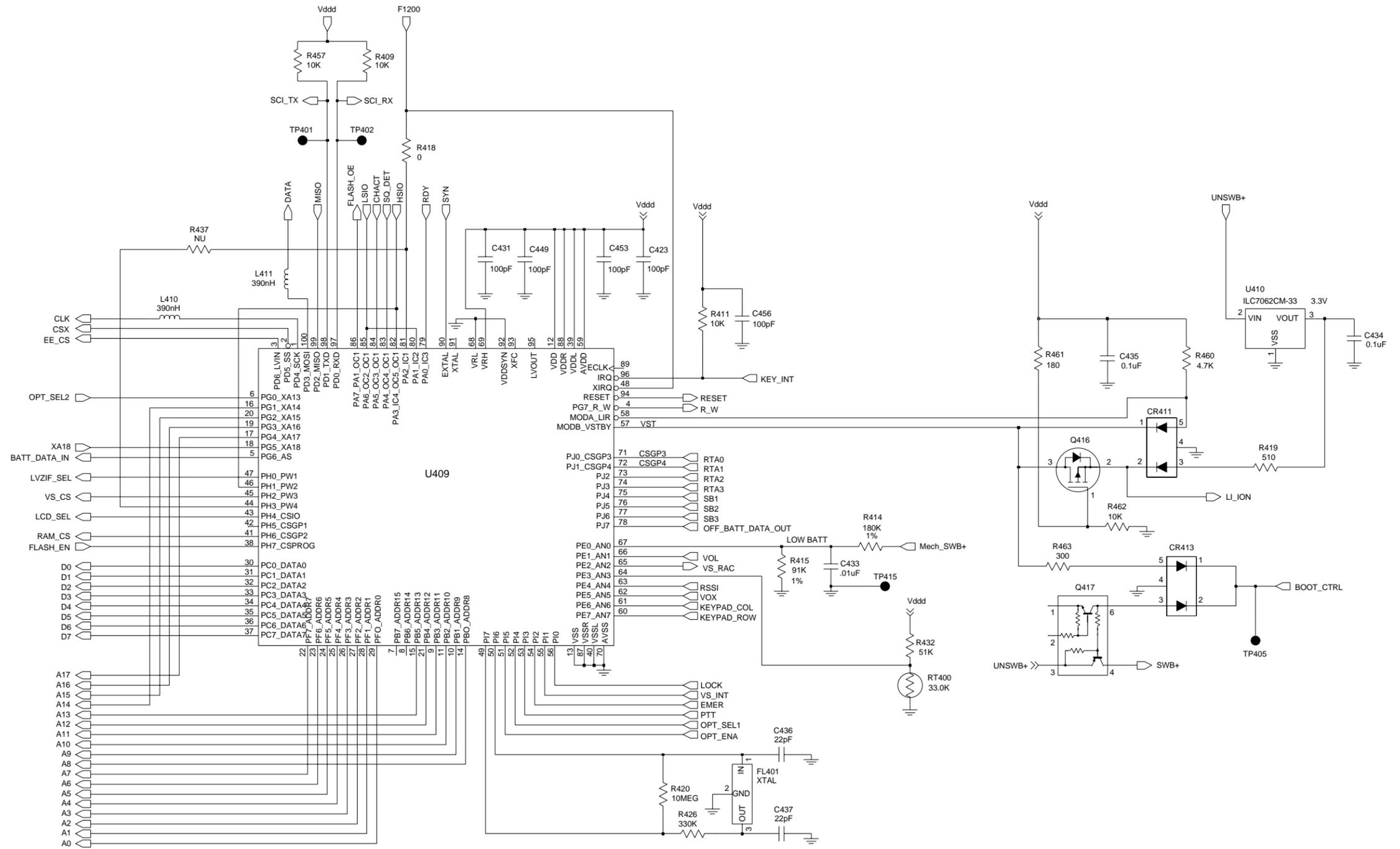


Freq. Range	Board Number
403-470 MHz	8480450Z13 8480587Z05
450-527 MHz	8485641Z06 8485677Z03
136-174 MHz	8486062B16 8486062B17 8486101B11

ZMY0130544-B

Figure 9-11. VHF/UHF Controller ASFIC/ON\_OFF Schematic Diagram

Freq. Range	Board Number
403-470 MHz	8480450Z03
450-527 MHz	8485641Z02
136-174 MHz	8486062B09 8486062B12



FL08307360

Figure 9-12. VHF/UHF Controller Microprocessor Schematic Diagram



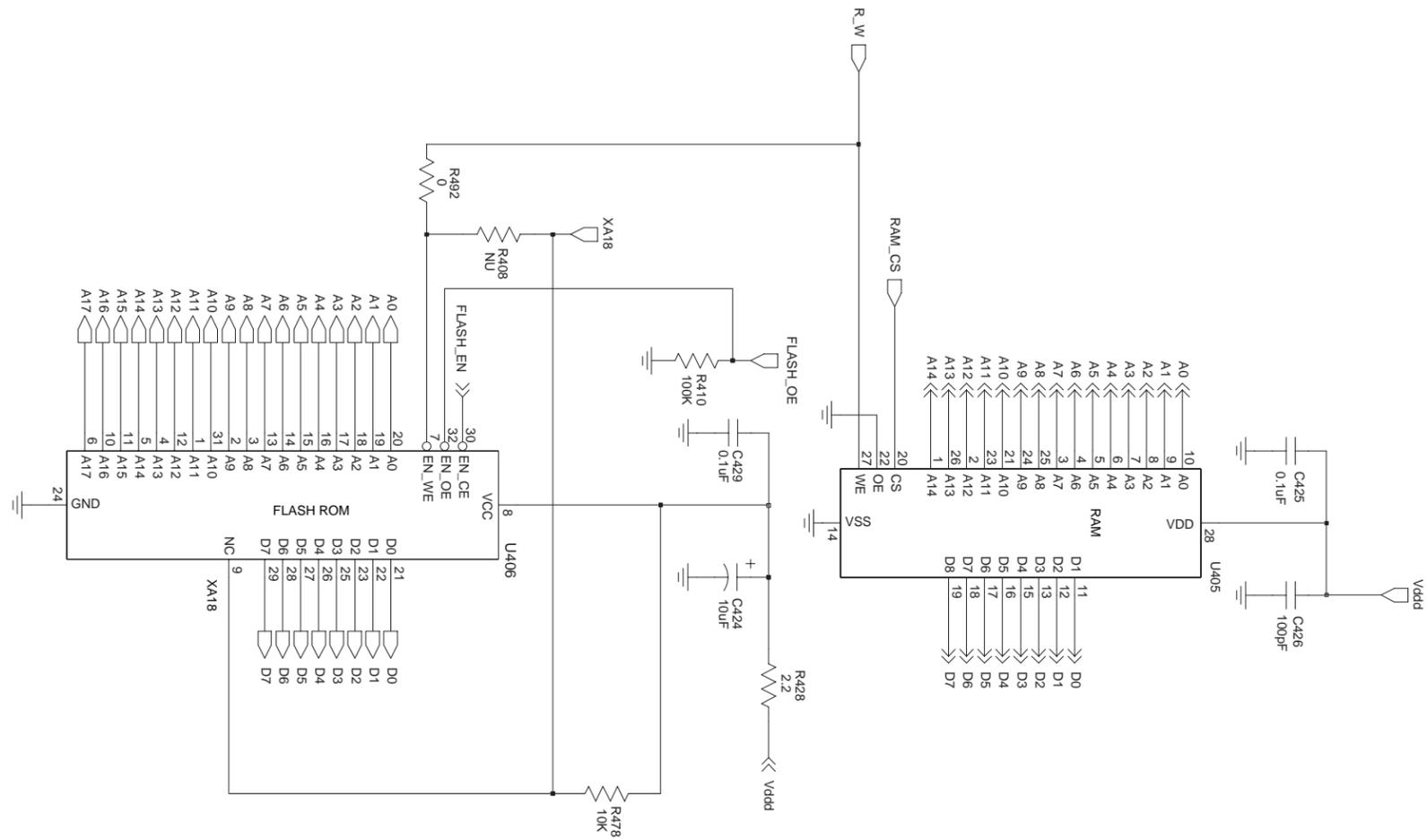
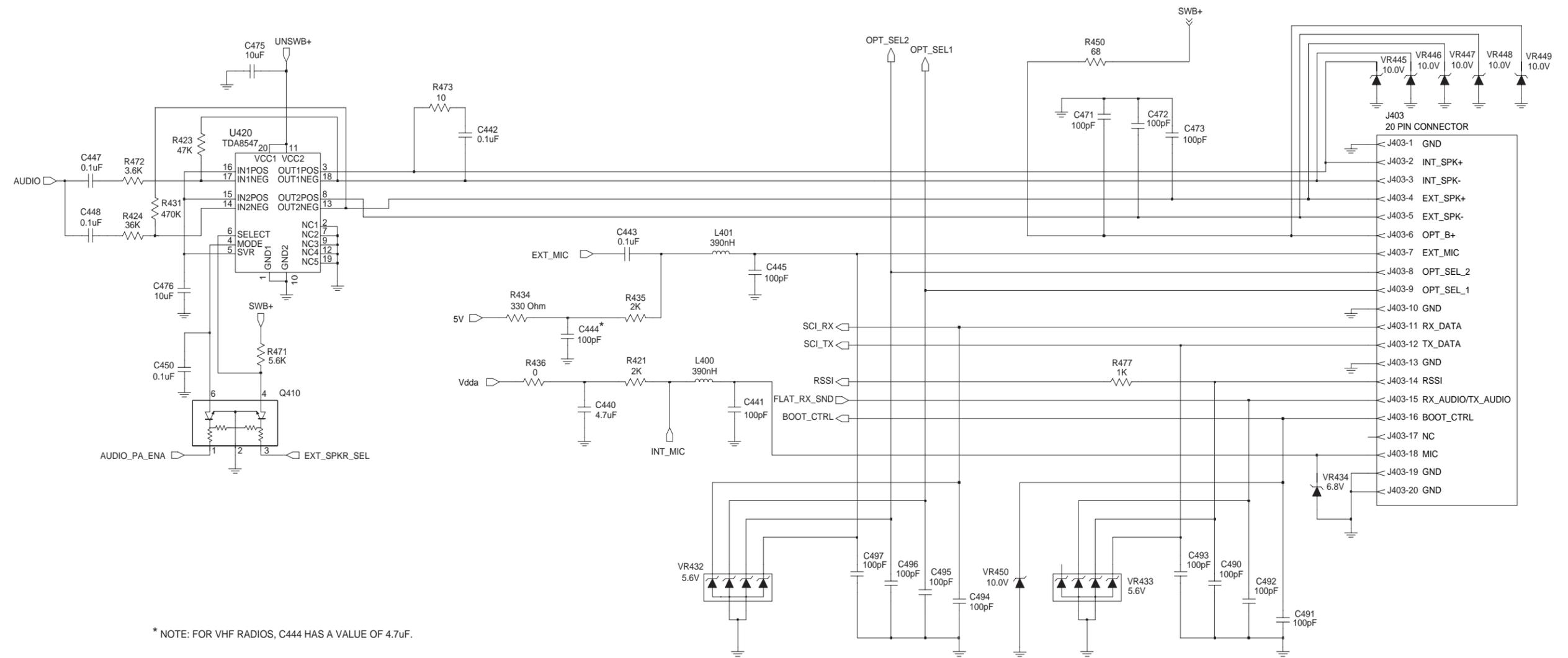


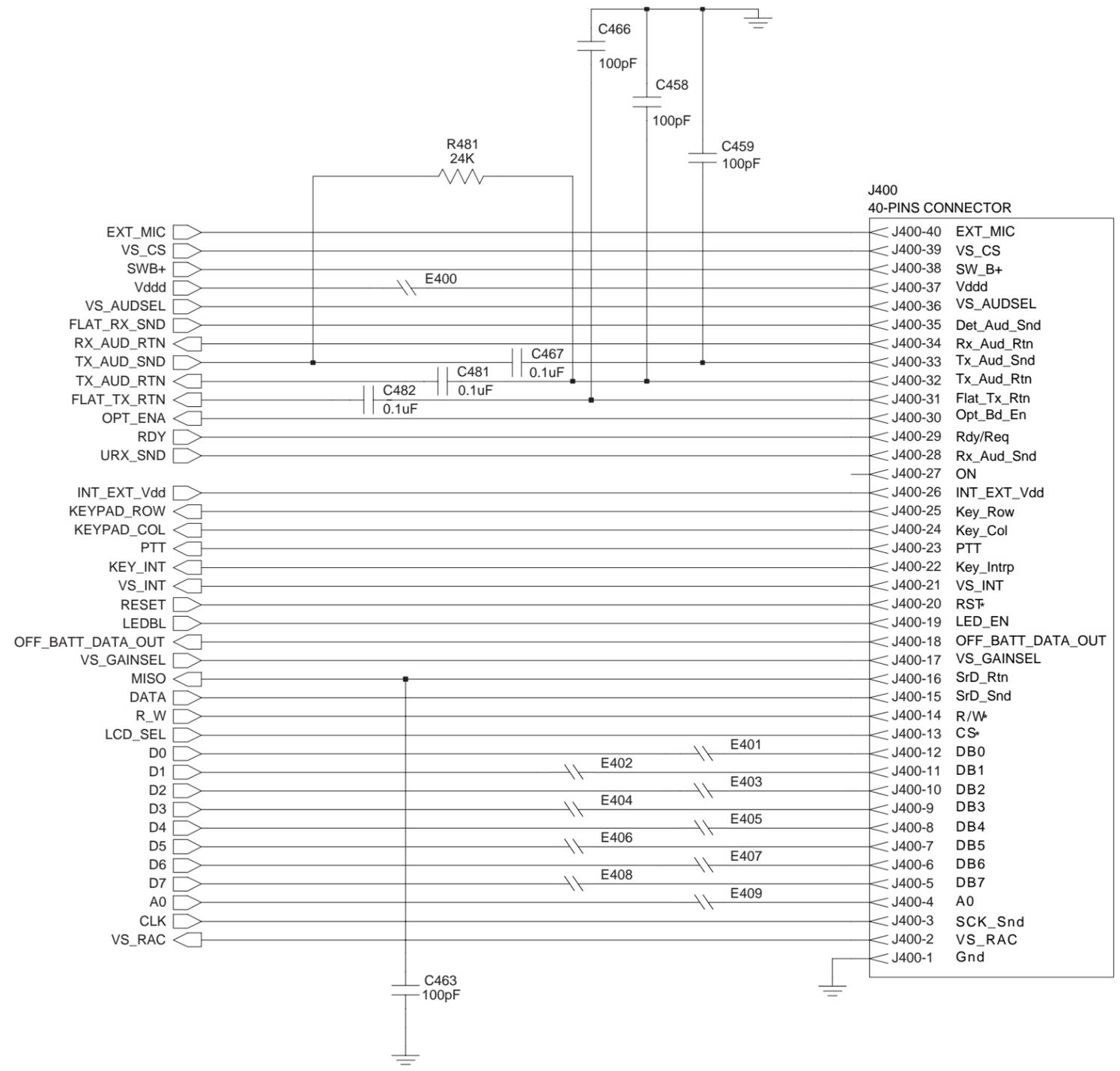
Figure 9-14. Controller Memory Schematic Diagram





FL08307210

Figure 9-15. Controller Audio Power Amplifier Schematic Diagram

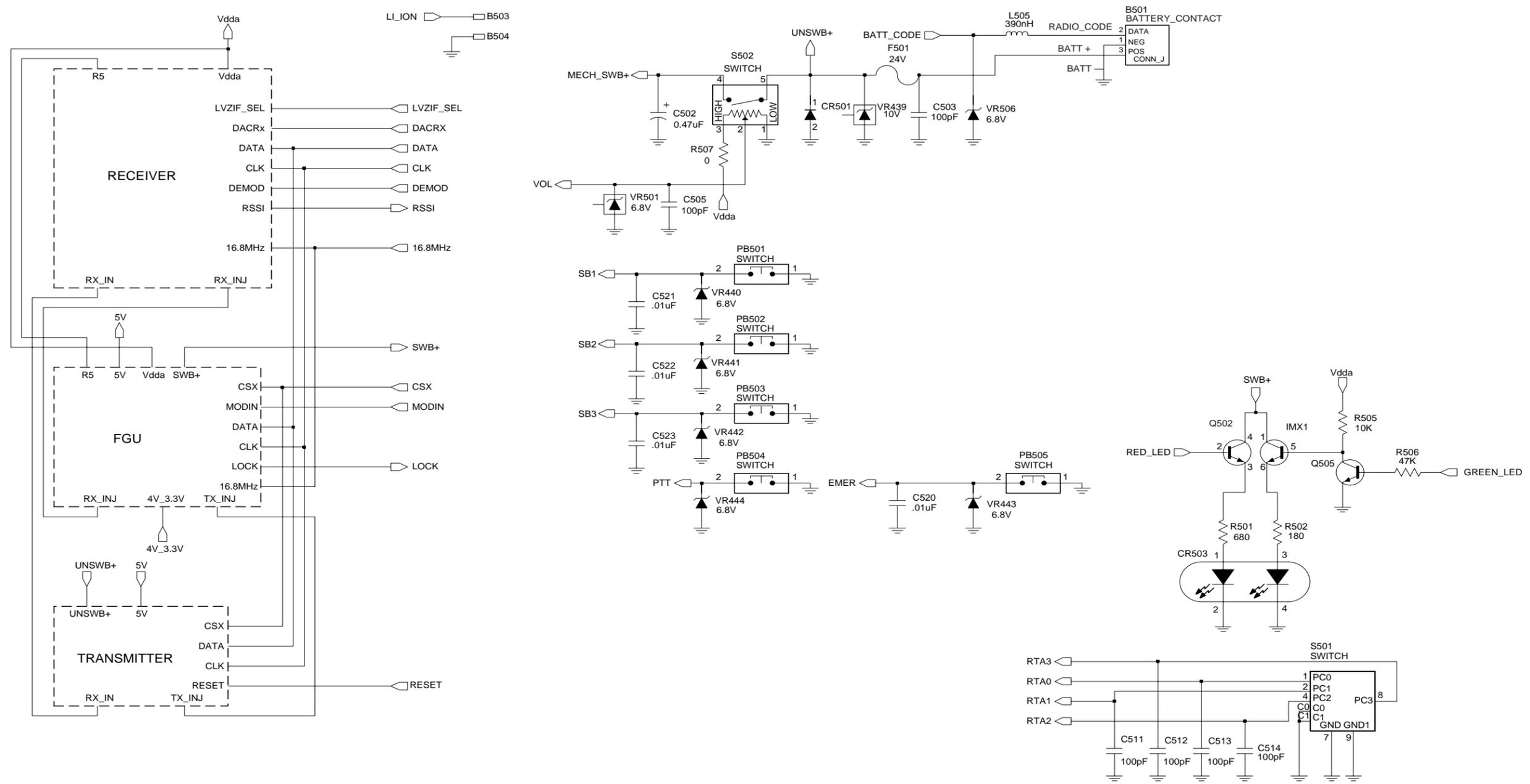


FL08307380

Figure 9-16. Controller Interface Schematic Diagram

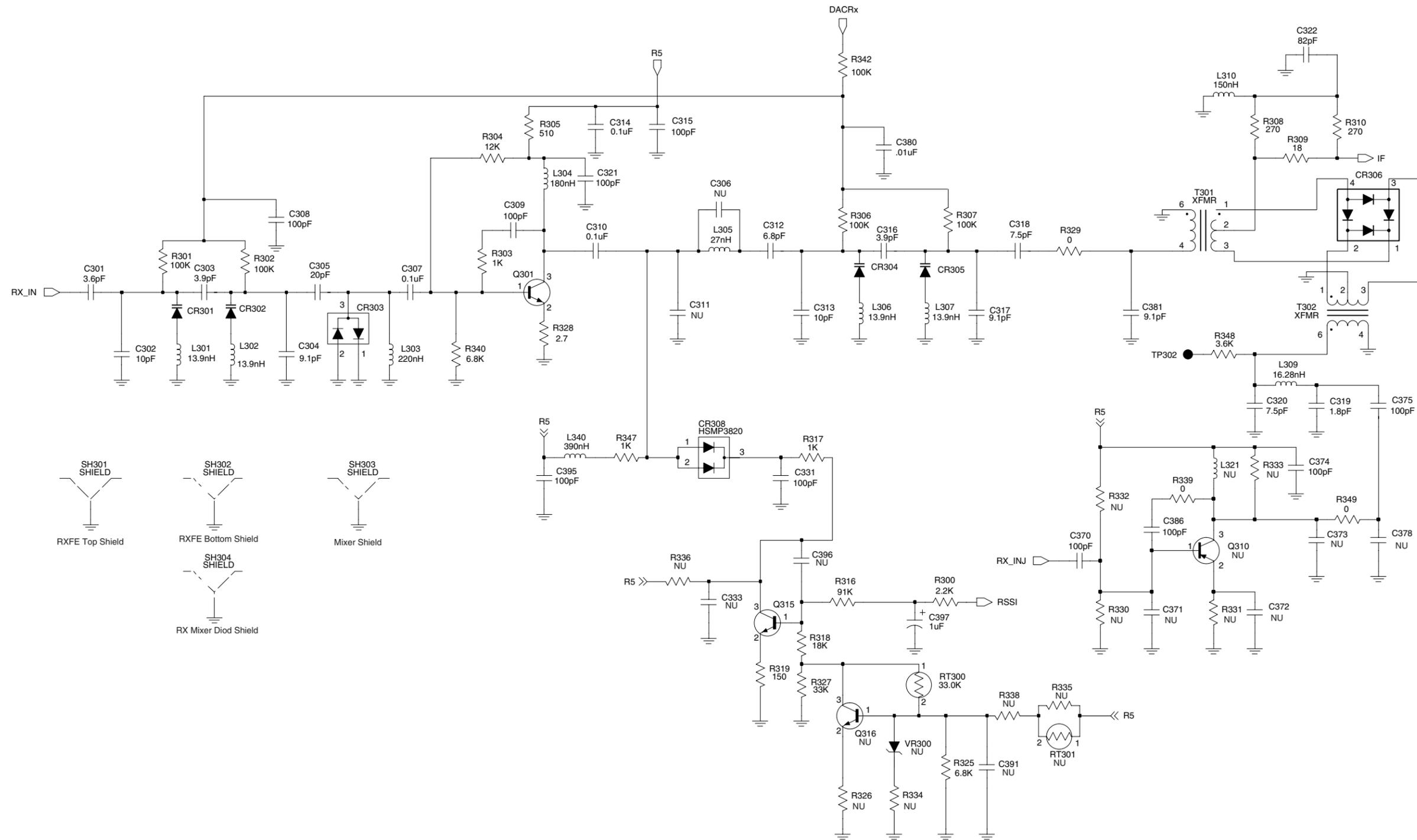






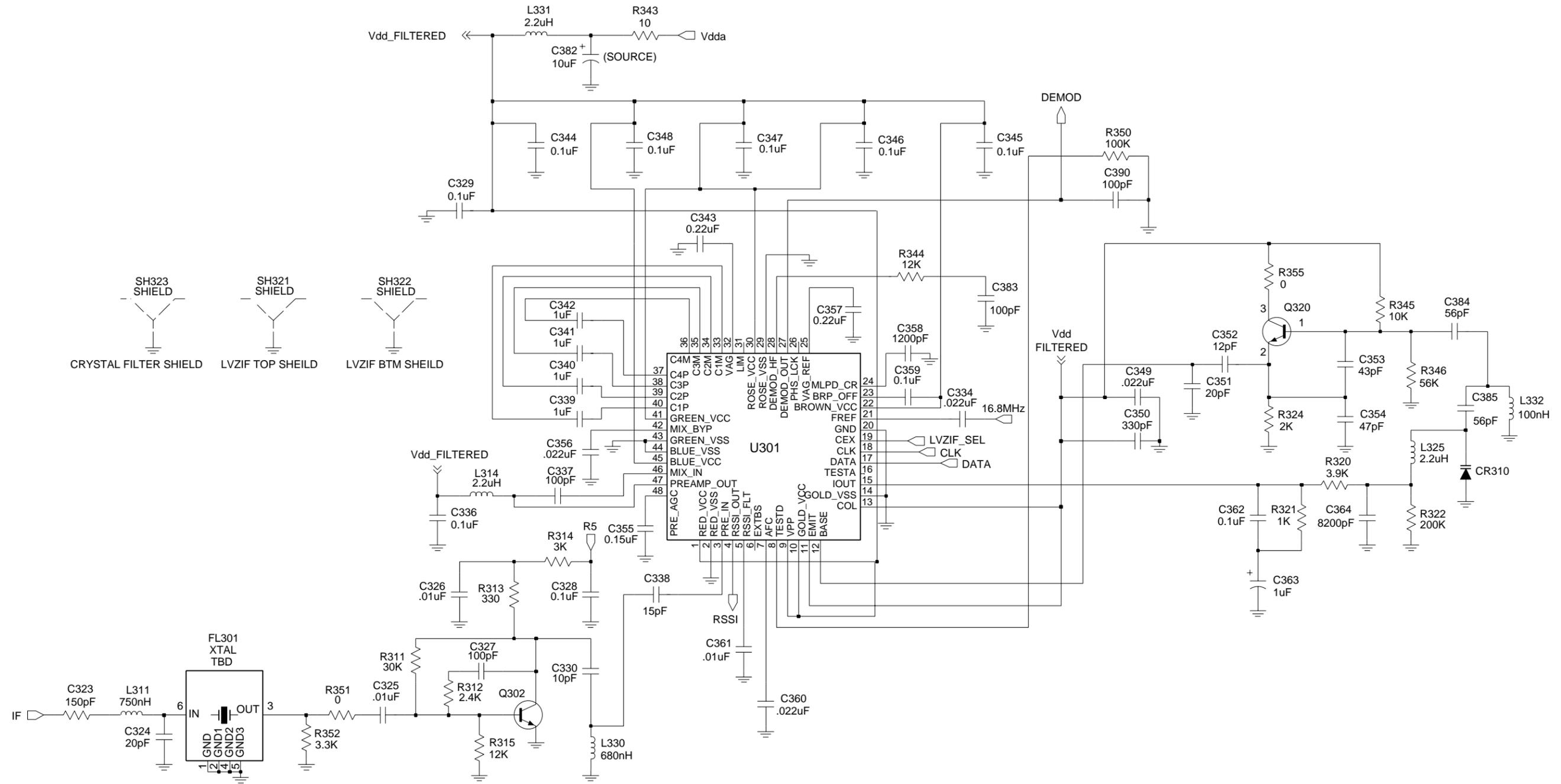
FL08307410

Figure 9-19. UHF (403-470 MHz) Controls and Switches Schematic Diagram



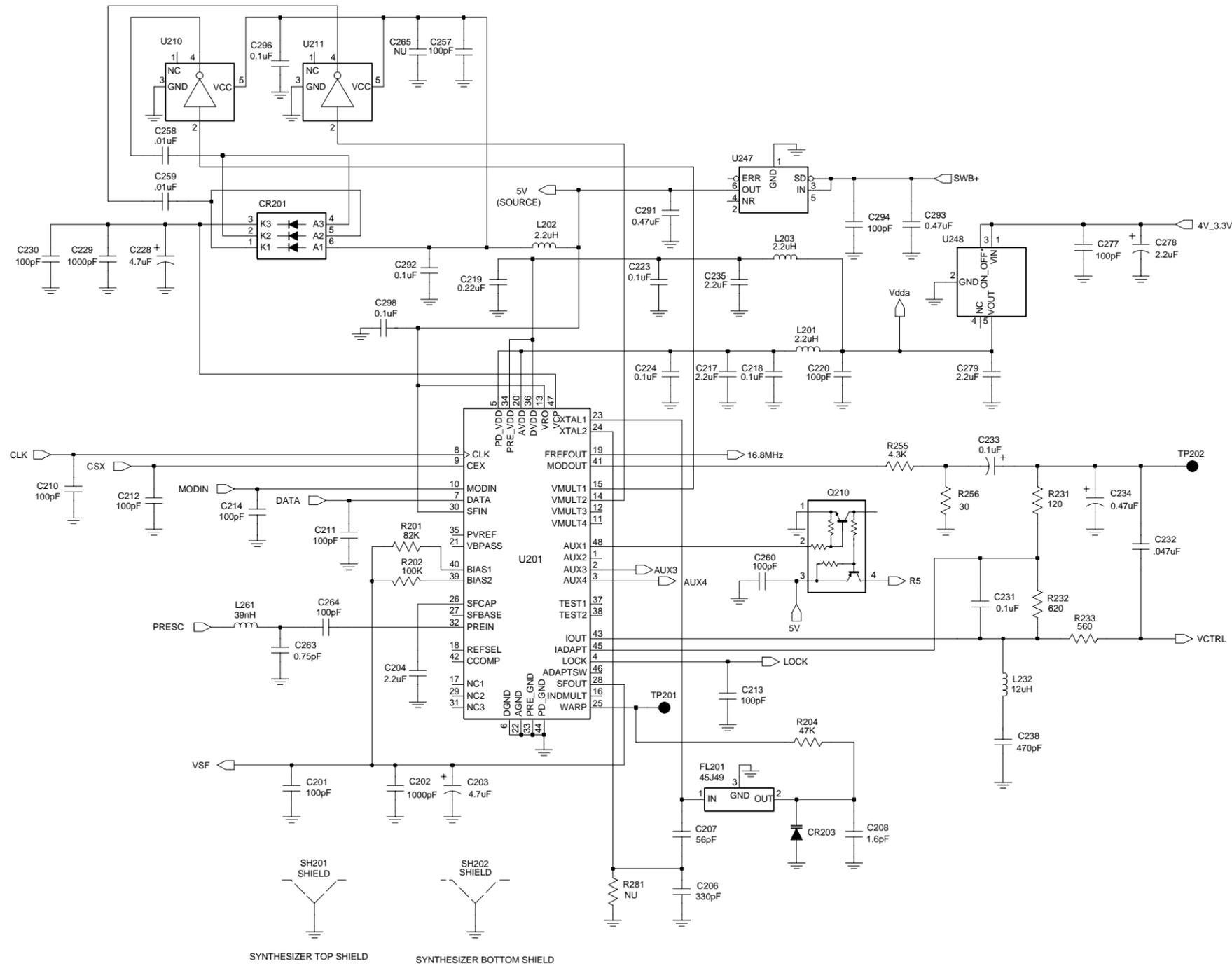
FL08307420

Figure 9-20. UHF (403-470 MHz) Receiver Front End Schematic Diagram



FL08307430

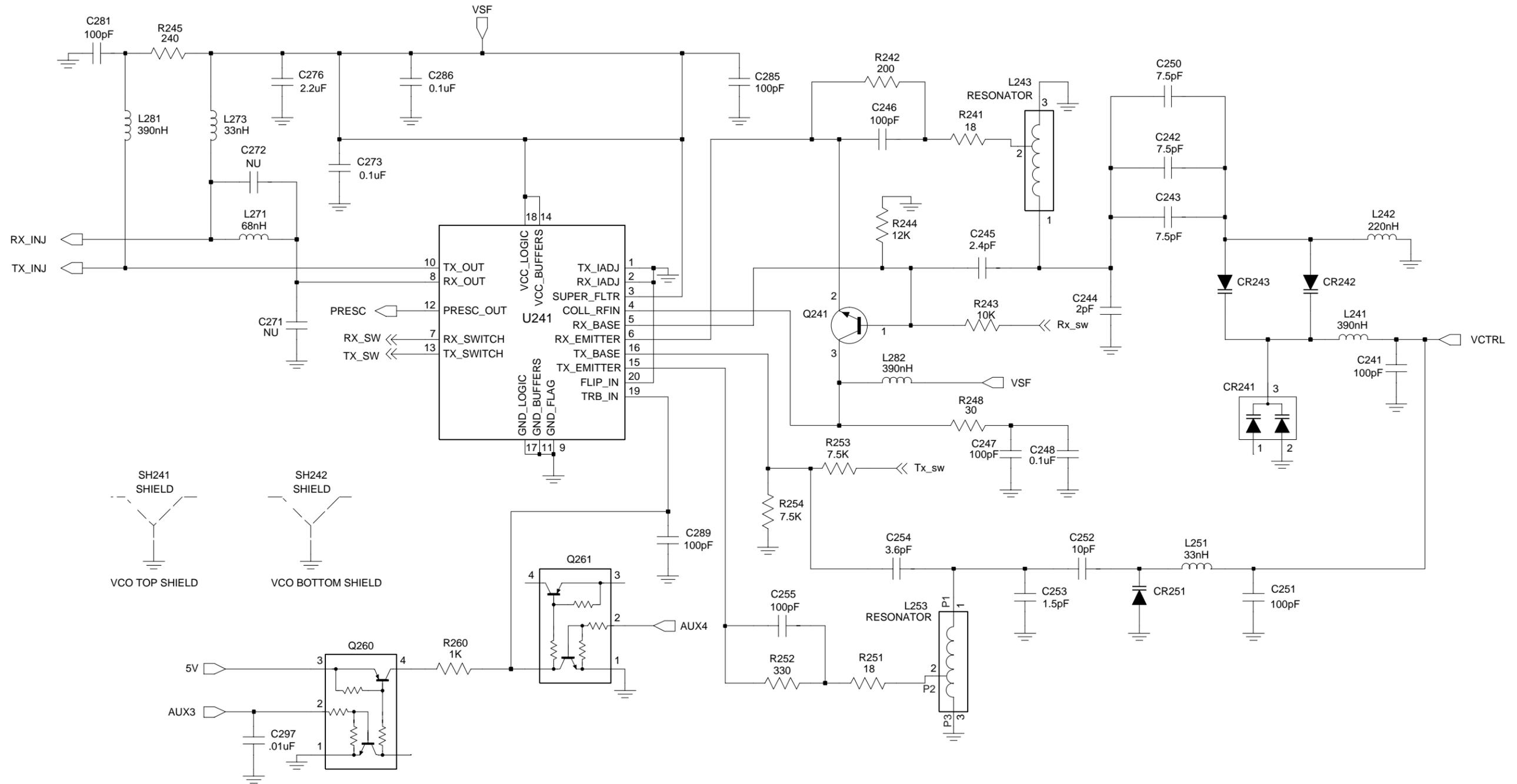
Figure 9-21. UHF (403-470 MHz) Receiver Back End Schematic Diagram



FL08307440

Figure 9-22. UHF (403-470 MHz) Synthesizer Schematic Diagram





FL08307450

Figure 9-23. UHF (403-470 MHz) Voltage Controlled Oscillator Schematic Diagram



**UHF (403-470 MHz) Radio Parts List (PCB 8480450Z03)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C101	2113740F51	100pF
C102	2113740F27	6.2pF, 0.1
C103	2113740F22	10pF
C104	2113740F22	6.2pF, 0.1
C105	2113743N50	100pF
C106	2113740F19	4.7pF, 0.1
C107	2113740F15	3.3pF, 0.1
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2113740F30	13pF
C112	2180605Z32	47pF
C113	2180605Z16	10pF
C114	2113743N50	100pF
C115	2113743N30	15pF
C116	2113743N38	33pF
C117	2113743N37	30pF
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N26	10pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A18	10uF, 10%; 16V
C125	2113743N50	100pF
C126	2113743M24	0.1uF, +80%/-20%
C127	2113743L17	1000pF, 10%
C128	2113743M08	.022uF, +80%/-20%
C129	2113743N23	7.5pF, 0.5
C130	2113743N50	100pF
C131	2113743M08	.022uF, +80%/-20%
C132	2113743N50	100pF
C133	2113743L17	1000pF, 10%
C134	2113743L29	3300pF, 10%
C135	2113743M08	.022uF, +80%/-20%
C138	2113743N50	100pF
C140	Not Placed	-
C141	Not Placed	-
C150	2113743M08	.022uF, +80%/-20%
C151	2113743N50	100pF
C152	2113743M08	.022uF, +80%/-20%
C160	2113743N50	100pF
C161	2113743M24	0.1uF, +80%/-20%
C165	2113743N50	100pF
C166	2113743N50	100pF
C169	2113743N16	3.9pF, 0.25
C170	2113743N50	100pF
C171	2113743N50	100pF
C172	2113743E20	0.1uF, 10%
C173	2113743M08	.022uF, +80%/-20%
C174	2113743N50	100pF
C201	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C202	2113743L17	1000pF, 10%
C203	2311049A56	4.7uF, 20%; 10V
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N44	56pF
C208	2113743N08	1.6pF
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	0.1uF, +80%/-20%
C219	2113743K16	0.22uF, +80%/-20%
C220	2113743N50	100pF
C223	2113743M24	0.1uF, +80%/-20%
C224	2113743M24	0.1uF, +80%/-20%
C228	2311049J11	4.7uF, 10%; 16V
C229	2113743L17	1000pF, 10%
C230	2113743N50	100pF
C231	2113743M24	0.1uF, +80%/-20%
C232	2113743E12	.047uF, 10%
C233	2311049A01	0.1uF, 10%; 35V
C234	2311049A05	0.47uF, 10%; 25V
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N23	7.5pF, 0.5
C243	2113743N23	7.5pF, 0.5
C244	2113740F10	2pF, 0.25
C245	2113743N11	2.4pF, 0.25
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	0.1uF, +80%/-20%
C250	2113743N23	7.5pF, 0.5
C251	2113743N50	100pF
C252	2113743N26	10pF
C253	2113740F07	1.5pF, 0.25
C254	2113743N15	3.6pF, 0.25
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	.01uF, 10%
C259	2113743L41	.01uF, 10%
C260	2113743N50	100pF
C263	2113743N02	0.75pF, 0.25
C264	2113743N50	100pF
C265	Not Placed	-
C271	Not Placed	-
C272	Not Placed	-
C273	2113743M24	0.1uF, +80%/-20%
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A09	2.2uF, 10%; 20V
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C285	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C286	2113743M24	0.1uF, +80%/-20%
C289	2113743N50	100pF
C291	2113743A27	0.47uF, 10%
C292	2113743M24	0.1uF, +80%/-20%
C293	2113743A27	0.47uF, 10%
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	0.1uF, +80%/-20%
C297	2113743L41	.01uF, 10%
C298	2113743M24	0.1uF, +80%/-20%
C301	2113743N15	3.6pF, 0.25
C302	2113743N26	10pF
C303	2113740L08	3.9pF, 0.1
C304	2113743N25	9.1pF, 0.5
C305	2113743N33	20pF
C306	Not Placed	-
C307	2113743M24	0.1uF, +80%/-20%
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743M24	0.1uF, +80%/-20%
C311	Not Placed	-
C312	2113743N22	6.8pF, 0.5
C313	2113743N26	10pF
C314	2113743M24	0.1uF, +80%/-20%
C315	2113743N50	100pF
C316	2113740L08	3.9pF, 0.1
C317	2113743N25	9.1pF, 0.5
C318	2113743N23	7.5pF, 0.5
C319	2113743N69	1.8pF, 0.5
C320	2113743N23	7.5pF, 0.5
C321	2113743N50	100pF
C322	2113743N48	82pF
C323	2113743N54	150pF
C324	2113743N33	20pF
C325	2113743L41	.01uF, 10%
C326	2113743L41	.01uF, 10%
C327	2113743N50	100pF
C328	2113743M24	0.1uF, +80%/-20%
C329	2113743M24	0.1uF, +80%/-20%
C330	2113743N26	10pF
C331	2113743N50	100pF
C333	Not Placed	-
C334	2113743M08	.022uF, +80%/-20%
C336	2113743M24	0.1uF, +80%/-20%
C337	2113743N50	100pF
C338	2113743N30	15pF
C339	2180478Z20	1.0uF, 10%
C340	2180478Z20	1.0uF, 10%
C341	2180478Z20	1.0uF, 10%
C342	2180478Z20	1.0uF, 10%
C343	2113743A23	0.22uF, 10%
C344	2113743M24	0.1uF, +80%/-20%
C345	2113743M24	0.1uF, +80%/-20%
C346	2113743M24	0.1uF, +80%/-20%
C347	2113743M24	0.1uF, +80%/-20%
C348	2113743M24	0.1uF, +80%/-20%

Circuit Ref	Motorola Part No.	Description
C349	2113743E07	.022uF, 10%
C350	2113743L05	330pF, 10%
C351	2113743N33	20pF
C352	2113743N28	12pF
C353	2113743N41	43pF
C354	2113743N42	47pF
C355	2113743A21	0.15uF, 10%
C356	2113743M08	.022uF, +80%/-20%
C357	2113743A23	0.22uF, 10%
C358	2113741A23	1200pF
C359	2109720D14	0.1uF
C360	2113743E07	.022uF, 10%
C361	2113741F49	0.1uF, 10%
C362	2113928N01	0.5pF, 0.25
C363	2311049A07	1uF, 10%; 16V
C364	2113743L39	8200 pF
C370	2113743N50	100pF
C371	Not Placed	-
C372	Not Placed	-
C373	Not Placed	-
C374	2113743N50	100pF
C375	2113743N50	100pF
C378	Not Placed	-
C380	2113743L41	.01uF, 10%
C381	2113743N25	9.1pF, 0.5
C382	2311049A59	10uF, 10%; 6V
C383	2113743N50	100pF
C384	2113743N44	56pF
C385	2113743N44	56pF
C386	2113743N50	100pF
C390	2113743N50	100pF
C391	Not Placed	-
C395	2113743N50	100pF
C396	Not Placed	-
C397	2311049A07	1uF, 10%; 16V
C400	2113743L41	.01uF, 10%
C401	2113743M24	0.1uF, +80%/-20%
C402	2113743M24	0.1uF, +80%/-20%
C403	2113928D08	10uF, +80%/-20%
C407	2113928N01	0.1uF, 10%
C408	2113743N50	100pF
C409	2113743M24	0.1uF, +80%/-20%
C410	2113928N01	0.1uF, 10%
C411	2113743M24	0.1uF, +80%/-20%
C414	2113743M24	0.1uF, +80%/-20%
C415	2109720D01	.01uF, 10%
C416	2113928N01	0.1uF, 10%
C419	Not Placed	-
C420	2113743L41	.01uF, 10%
C421	2113928N01	0.1uF, 10%
C422	2113743M24	0.1uF, +80%/-20%
C423	2113743N50	100pF
C424	2311049A59	10uF, 10%; 6V
C425	2113743M24	0.1uF, +80%/-20%
C426	2113743N50	100pF
C427	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C428	2113743M24	0.1uF, +80%/-20%
C429	2113743M24	0.1uF, +80%/-20%
C430	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS+ Models Only)
C431	2113743N50	100pF
C432	Not Placed	-
C433	2113743L41	.01uF, 10%
C434	2113743M24	0.1uF, +80%/-20%
C435	2113743M24	0.1uF, +80%/-20%
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF, +80%/-20%
C441	2113743N50	100pF
C442	2113743E20	0.1uF, 10%
C443	2113928N01	0.1uF, 10%
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113928N01	0.1uF, 10%
C448	2113928N01	0.1uF, 10%
C449	2113743N50	100pF
C450	2113743M24	0.1uF, +80%/-20%
C451	2113743M08	.022uF, +80%/-20%
C452	2113743G26	4.7uF, +80%/-20%
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF, 10%
C471	2113743N50	100pF
C472	2113743N50	100pF
C473	2113743N50	100pF
C475	2113743H14	10uF, +80%/-20%
C476	2113928D08	10uF, +80%/-20%
C479	2113928N01	0.1uF, 10%
C480	2113928D08	10uF, +80%/-20%
C481	2113928N01	0.1uF, 10%
C482	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS+ Models Only)
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47uF, 10%; 25V
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	.01uF, 10%

Circuit Ref	Motorola Part No.	Description
C521	2113743L41	.01uF, 10%
C522	2113743L41	.01uF, 10%
C523	2113743L41	.01uF, 10%
CR101	4880973Z02	Pin Diode
CR102	4802245J41	Pin Diode
CR105	5185963A15	Temperature Sense
CR201	4802233J09	Triple Diode
CR203	4862824C03	Varactor
CR241	4805649Q13	Dual Varactor
CR242	4862824C01	Varactor
CR243	4862824C01	Varactor
CR251	4802245J22	Varactor
CR301	4862824C01	Varactor
CR302	4862824C01	Varactor
CR303	4880154K03	Dual Common Anode-Cathode
CR304	4862824C01	Varactor
CR305	4862824C01	Varactor
CR306	4802245J42	Ring Quad Diode
CR308	4802245J41	Pin Diode
CR310	4862824C01	Varactor
CR411	4802245J47	Schottky Diode
CR412	4802245J47	Schottky Diode
CR413	4802245J47	Schottky Diode
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
E101	2484657R01	Ferrite Bead
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL201	4802245J49	16.8 MHz Xtal Clip (not field serviceable)
FL301	4802245J43	Xtal Filter 45.1 MHz
FL401	4870368G02	Osc Xtal 38.4 kHz
H101	2680499Z01	Heat Spreader
J101	0180117S05	RF Jack Assembly
J102	0280519Z02	Antenna Nut
J400	0905505Y04	40-pins Connector
J403	0905505Y02	20-pins Connector
L101	2460591B80	19.61nH, 10%
L102	2460591B80	19.61nH, 10%
L104	2460591B80	19.61nH, 10%
L105	2462587N22	390nH, 10%
L106	2460591A11	7.66nH, 10%
L107	2460591G24	33.47nH, 10%
L108	2460591A01	4.22nH, 10%
L109	2460591B04	11.03nH, 10%
L112	2462587N22	390nH, 10%

Circuit Ref	Motorola Part No.	Description
L113	2413926H09	5.6nH, 5%
L114	2462587N22	390nH, 10%
L115	2462587N22	390nH, 10%
L116	2460591A50	9.75nH, 10%
L160	2413926H14	15.0nH, 5%
L201	2462587Q20	2.2uH, 20%
L202	2462587Q20	2.2uH, 20%
L203	2462587Q20	2.2uH, 20%
L232	2462587P25	12uH, 5%
L241	2462587V41	390nH, 10%
L242	2462587V38	220nH, 5%
L243	2460593C01	Teflon Resonator
L251	2462587V28	33nH, 5%
L253	2460593C02	Teflon Resonator
L261	2462587V29	39nH, 5%
L271	2462587V32	68nH, 5%
L273	2462587V28	33nH, 5%
L281	2462587V41	390nH, 10%
L282	2462587V41	390nH, 10%
L301	2460591C04	13.9nH, 10%
L302	2460591C04	13.9nH, 10%
L303	2462587V38	220nH, 5%
L304	2462587V37	180nH, 5%
L305	2462587V27	27nH, 5%
L306	2460591C04	13.9nH, 10%
L307	2460591C04	13.9nH, 10%
L309	2460591C16	16.28nH, 10%
L310	2462587V36	150nH, 5%
L311	2462587N65	750nH, 5%
L314	2462587N72	2.2uH, 5%
L321	Not Placed	-
L325	2480646Z20	2.2uH
L330	2462587N64	680nH, 5%
L331	2480646Z20	2.2uH
L332	2462587N53	100nH, 5%
L340	2462587V41	390nH, 10%
L400	2462587Q42	390nH, 10%
L401	2462587Q42	390nH, 10%
L410	2462587Q42	390nH, 10%
L411	2462587Q42	390nH, 10%
L505	2462587Q42	390nH, 10%
P100	3905643V01	Gnd Contact Finger
PB501	4080523Z01	Tactile, Pushbutton
PB502	4080523Z01	Tactile, Pushbutton
PB503	4080523Z01	Tactile, Pushbutton
PB504	4080523Z01	Tactile, Pushbutton
PB505	4080523Z01	Tactile, Pushbutton
Q110	4802245J55	RF Power FET
Q111	4802245J50	Dual NPN/PNP
Q210	4802245J50	Dual NPN/PNP
Q241	4805218N63	NPN
Q260	4802245J50	Dual NPN/PNP
Q261	4802245J50	Dual NPN/PNP
Q301	4802245J44	NPN
Q302	4802245J44	NPN
Q310	Not Placed	-

Circuit Ref	Motorola Part No.	Description
Q315	4880214G02	NPN
Q316	Not Placed	-
Q320	4805218N63	NPN
Q400	4809579E18	MOSFET P-Chan
Q403	4880214G02	NPN
Q405	4802245J54	Dual NPN
Q410	4802245J54	Dual NPN
Q416	4809579E18	MOSFET P-Chan
Q417	4802245J50	Dual NPN/PNP
Q502	5180159R01	Dual NPN
Q505	4880214G02	NPN
R101	0662057A34	240
R102	0680539Z01	0.1, 1%
R103	0662057M41	43
R104	0662057M81	2K
R106	0662057M26	10
R107	Not Placed	-
R108	Not Placed	-
R109	0662057N30	200K
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057M01	0
R130	0662057M98	10K
R131	0662057M98	10K
R132	0662057N39	470K
R133	Not Placed	-
R161	0662057M57	200
R170	0662057A34	240
R171	0662057M92	5.6K
R172	0662057A32	200
R173	0662057N47	1MEG
R201	0662057N21	82K
R202	0662057N23	100K
R204	0662057N15	47K
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18
R242	0662057M57	200
R243	0662057M98	10K
R244	0662057N01	12K
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M32	18
R252	0662057M62	330
R253	0662057M95	7.5K
R254	0662057M95	7.5K
R255	0662057M89	4.3K
R256	0662057M37	30
R260	0662057M74	1K
R281	0662057M01	0
R300	0662057M82	2.2K
R301	0662057N23	100K
R302	0662057N23	100K
R303	0662057M74	1K

Circuit Ref	Motorola Part No.	Description
R304	0662057N01	12K
R305	0662057M67	510
R306	0662057N23	100K
R307	0662057N23	100K
R308	0662057M60	270
R309	0662057M32	18
R310	0662057M60	270
R311	0662057N10	30K
R312	0662057M83	2.4K
R313	0662057M62	330
R314	0662057M85	3K
R315	0662057N01	12K
R316	0662057A96	36K
R317	0662057M74	1K
R318	0662057A79	18K
R319	0662057A29	150
R320	0662057M88	3.9K
R321	0662057M74	1K
R322	0662057N30	200K
R324	0662057M81	2K
R325	0662057M94	6.8K
R326	Not Placed	-
R327	0662057N11	33K
R328	0662057M12	2.7
R329	0662057M01	0
R330	Not Placed	-
R331	Not Placed	-
R332	Not Placed	-
R333	Not Placed	-
R334	Not Placed	-
R335	Not Placed	-
R336	Not Placed	-
R338	Not Placed	-
R339	0662057M01	0
R340	0662057M94	6.8K
R342	0662057N23	100K
R343	0662057M26	10
R344	0662057N01	12K
R345	0662057M98	10K
R346	0662057N17	56K
R347	0662057M74	1K
R348	0662057M87	3.6K
R349	0662057C01	0
R350	0662057N23	100K
R351	0662057C01	0
R352	0662057M86	3.3K
R355	0662057M01	0
R400	0662057N15	47K
R401	0662057M01	0
R402	Not Placed	-
R403	Not Placed	-
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	Not Placed	-
R409	0662057M98	10K

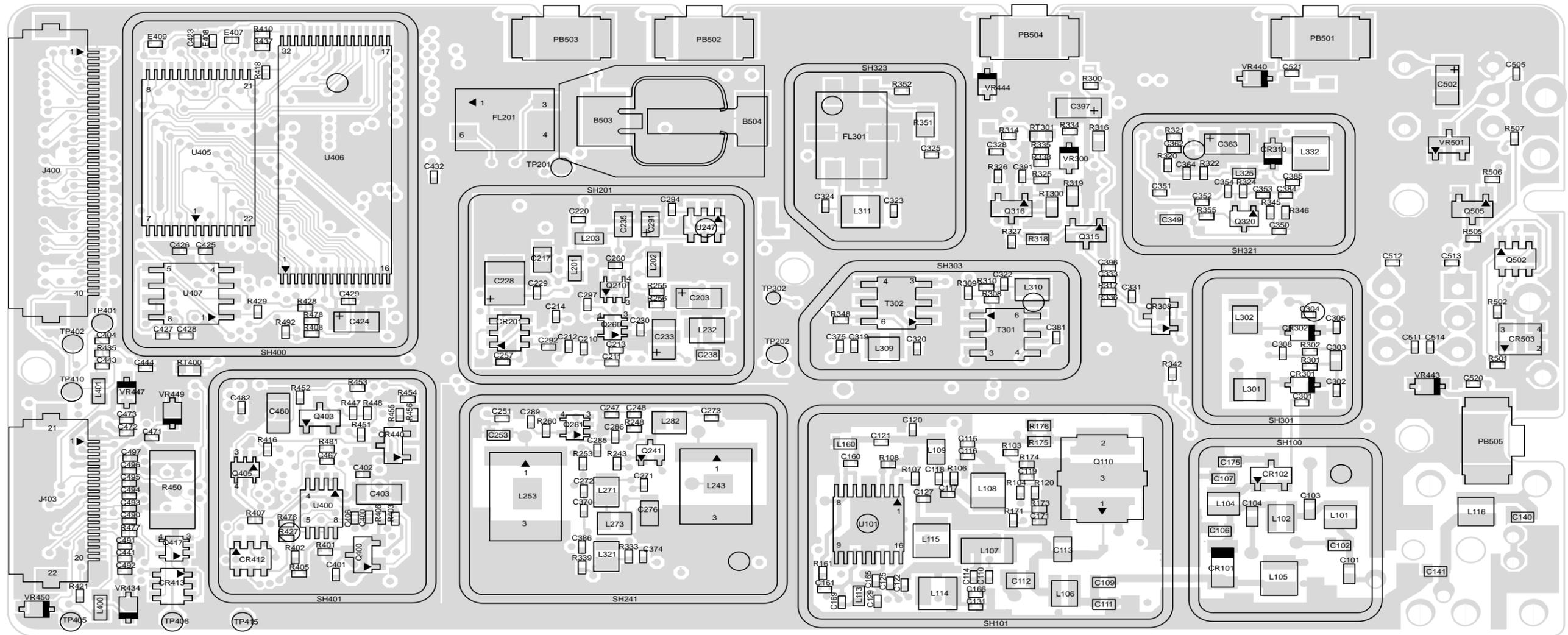
Circuit Ref	Motorola Part No.	Description
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K, 1%
R415	0662057V26	91K, 1%
R416	0662057N13	39K
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10MEG
R421	0662057M81	2K
R423	0662057N15	47K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2.7K
R428	0662057M10	2.2
R429	0662057M98	10K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330 Ohm
R435	0662057M81	2K Ohm
R436	0662057M01	0
R437	Not Placed	-
R445	0662057N08	24K
R446	0662057N31	220K
R447	0662057N50	1.3M
R448	0662057N33	270K
R449	0662057N08	24K
R450	0683962T45	68, 1W
R457	0662057M98	10K
R460	0662057M90	4.7K
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057M92	5.6K
R472	0662057M87	3.6K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
RT300	0680590Z01	Thermistor 33K
RT301	Not Placed	-
RT400	0680590Z01	Thermistor 33K
S501	4080502B03	Channel Switch
S502	1880619Z01	Volume Switch
SH100	2680507Z01	Harmonic Filter Shield
SH101	2680510Z01	PA Shield
SH201	2680511Z01	Synthesizer Top Shield

Circuit Ref	Motorola Part No.	Description
SH202	2680511Z01	Synthesizer Bottom Shield
SH241	2680513Z01	VCO Top Shield
SH242	2680514Z01	VCO Bottom Shield
SH301	2680554Z01	Rx Pre-filter shield\
SH302	2680555Z01	Rx Post-filter/RF Amp Shield
SH303	2680509Z01	Mixer Shield
SH304	2680624Z01	Mixer Diode Shield
SH321	2680508Z01	Zif 2nd LO Shield
SH322	2680514Z01	ZIF Shield
SH323	2680553Z01	Xtal Filter Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On/Off Shield
SH402	2680515Z01	Controller Microprocessor Shield
SH403	2680516Z01	Controller AsficCmp/Audi PA Shield
T301	2580541Z01	Transformer Coil
T302	2580541Z01	Transformer Coil
U101	5105109Z67	LD MOS Driver
U102	5185765B01	Power Control IC
U201	5185963A27	Low Voltage FRACN IC
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO Buffer
U247	5105739X05	Regulator Linear
U248	5102463J58	3.3V Regulator
U301	5109632D83	Low Voltage ZIF
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC (LTR Models Only)
U405	Not Placed	-
U406	5102463J36	RAM 32Kx8
U406	*5102463J59	ROM 256K
U406	*5102463J60	ROM 512Kx8
U407	*5102463J64	EEPROM 16Kx8
U409	5102226J55	Microcontroller
U409	or 5102226J56	
U410	5102463J57	3.3V Reg
U420	5102463J44	Audio PA
VR300	Not Placed	-
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J51	6.8V Zener
VR439	4880140L15	10V Zener
VR440	4802245J51	6.8V Zener
VR441	4802245J51	6.8V Zener
VR442	4802245J51	6.8V Zener
VR443	4802245J51	6.8V Zener
VR444	4802245J51	6.8V Zener
VR445	4802245J53	10V Zener
VR446	4802245J53	10V Zener
VR447	4802245J53	10V Zener
VR448	4802245J53	10V Zener
VR449	4802245J53	10V Zener
VR450	4802245J53	10V Zener
VR501	4813830A18	6.8V Zener
VR506	4802245J51	6.8V Zener

\* Motorola Depot Servicing only

## Notes

### 9.7 UHF Band 1 Circuit Board/Schematic Diagrams and Parts List (PCB 8480450Z13 / 8480587Z05)



ZMY0130183-B

Figure 9-25. UHF (403-470 MHz) 5000/7000 Series Main Board Top Side PCB 8480450Z13

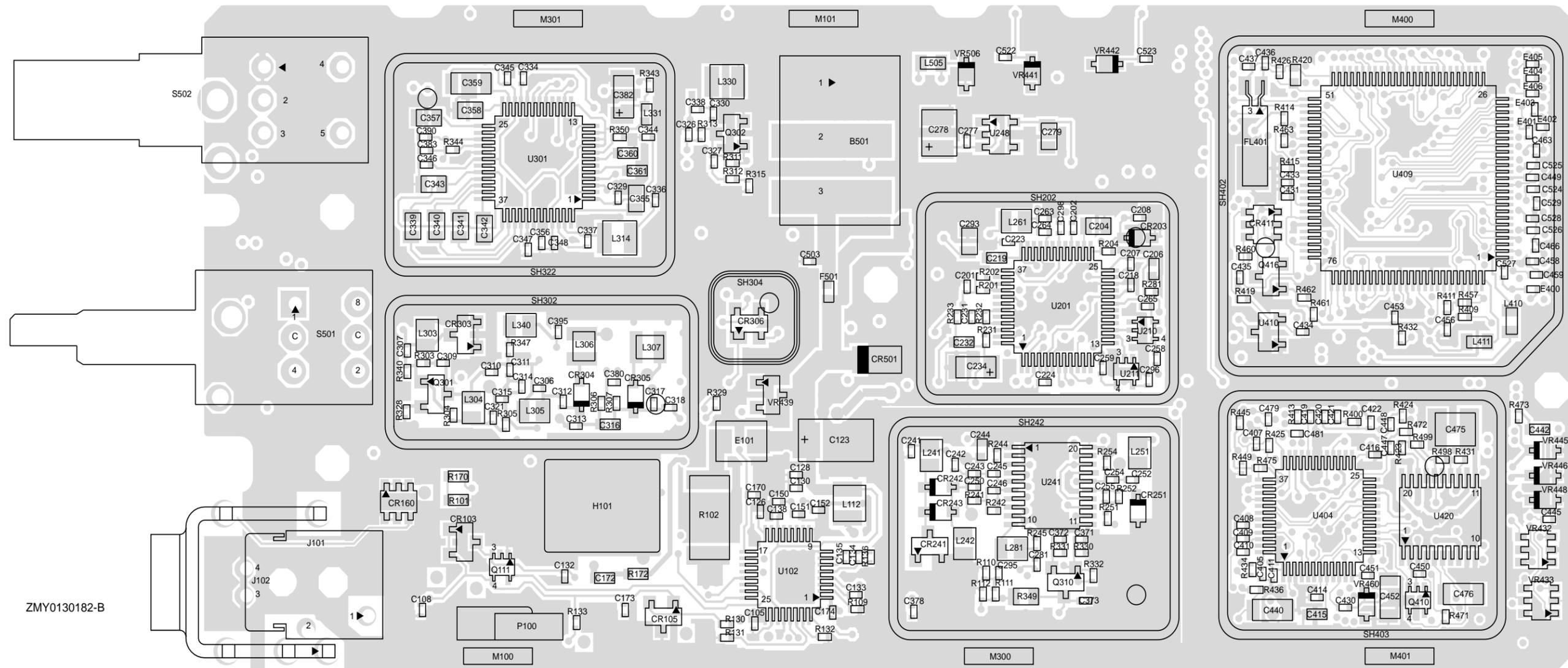
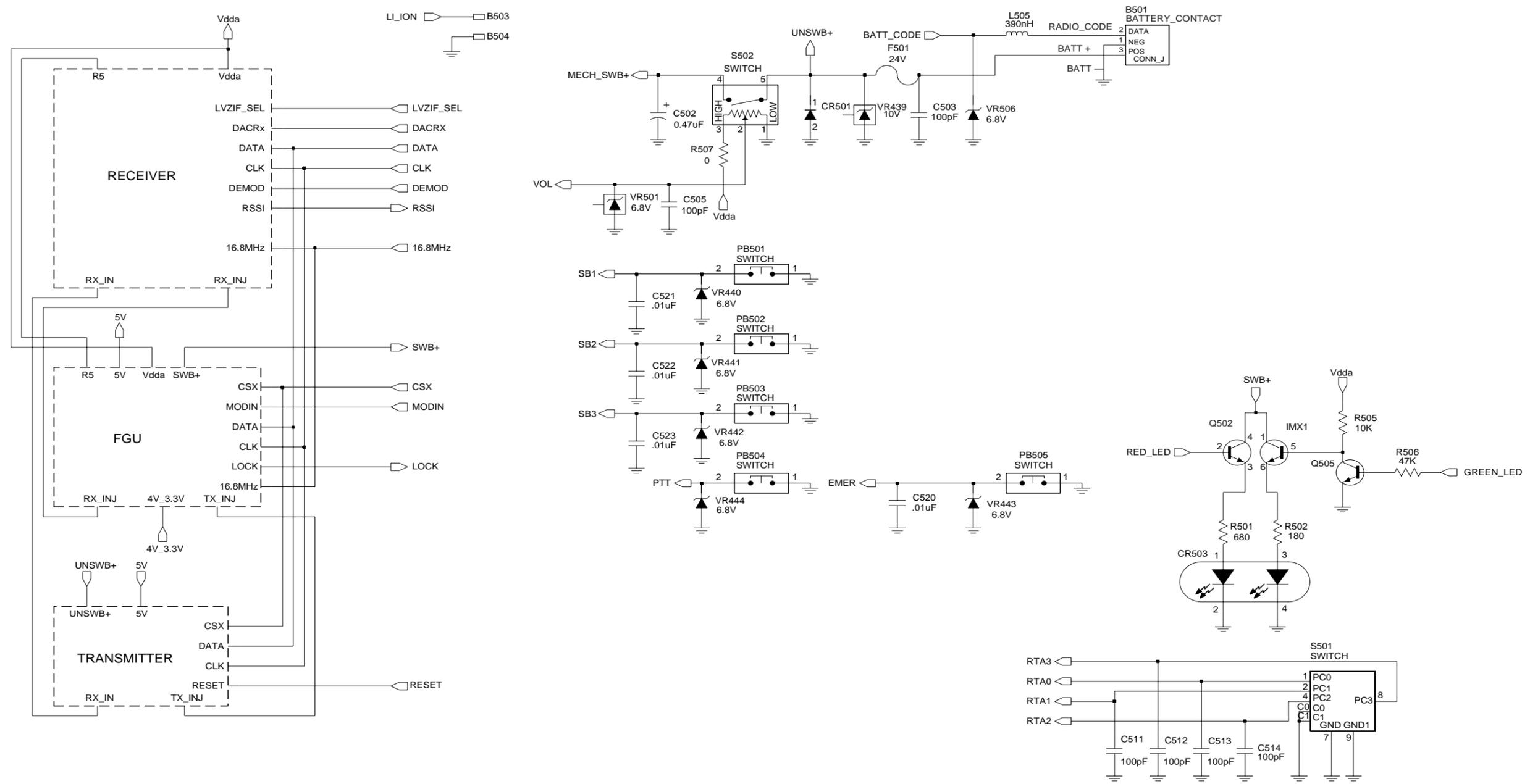


Figure 9-26. UHF (403-470 MHz) 5000/7000 Series Main Board Bottom Side PCB 8480450Z13



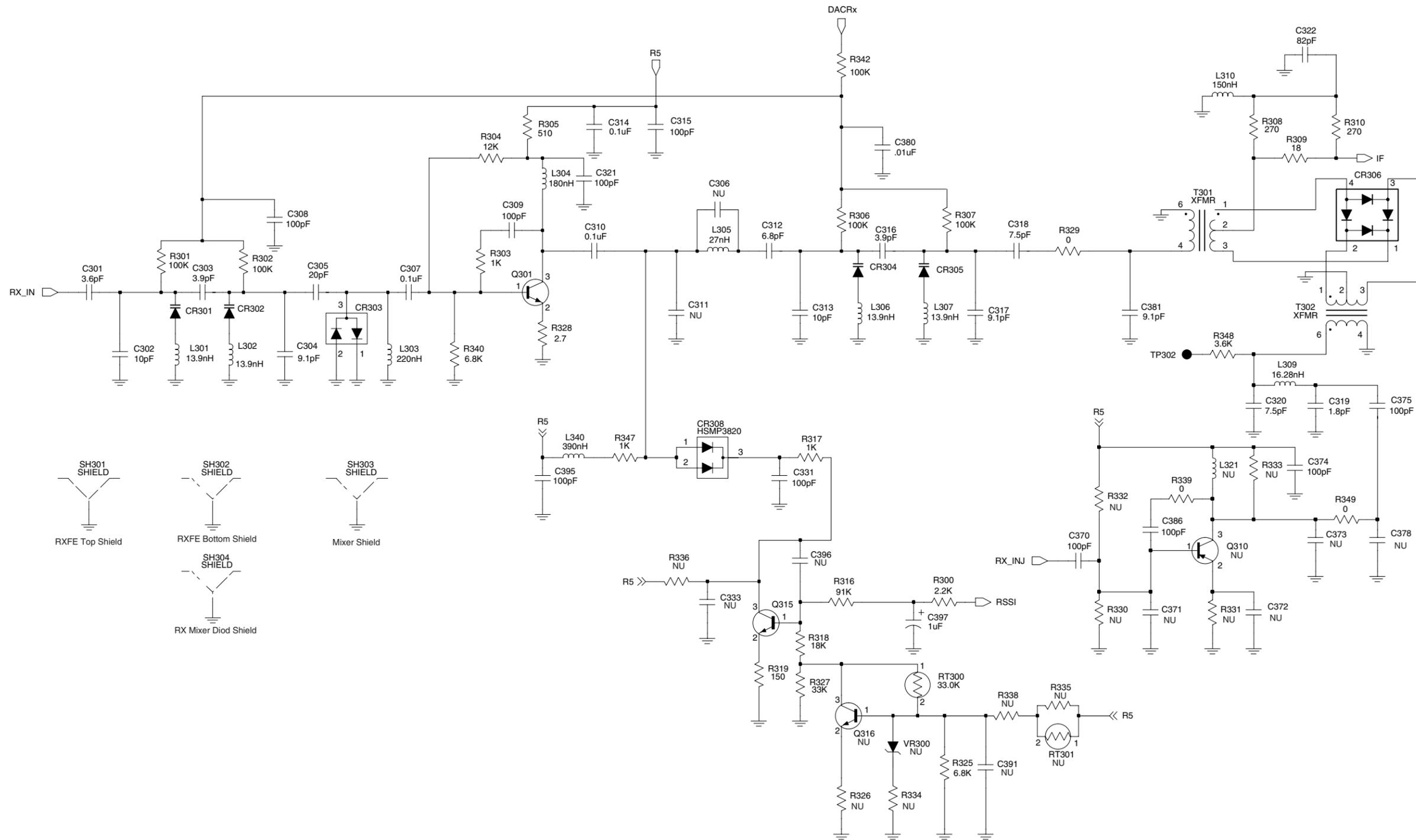






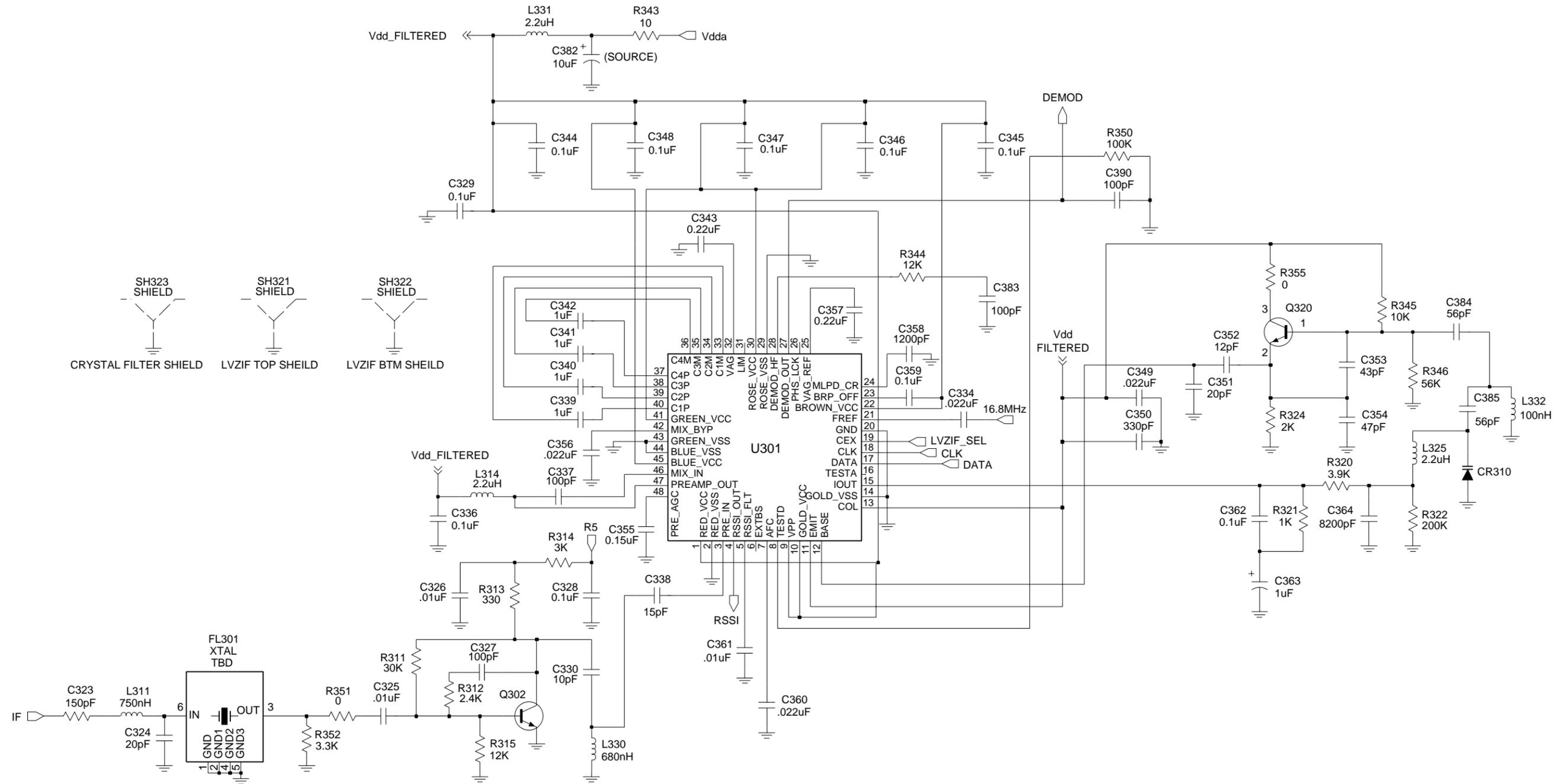
FL08307410

Figure 9-29. UHF (403-470 MHz) Controls and Switches Schematic Diagram



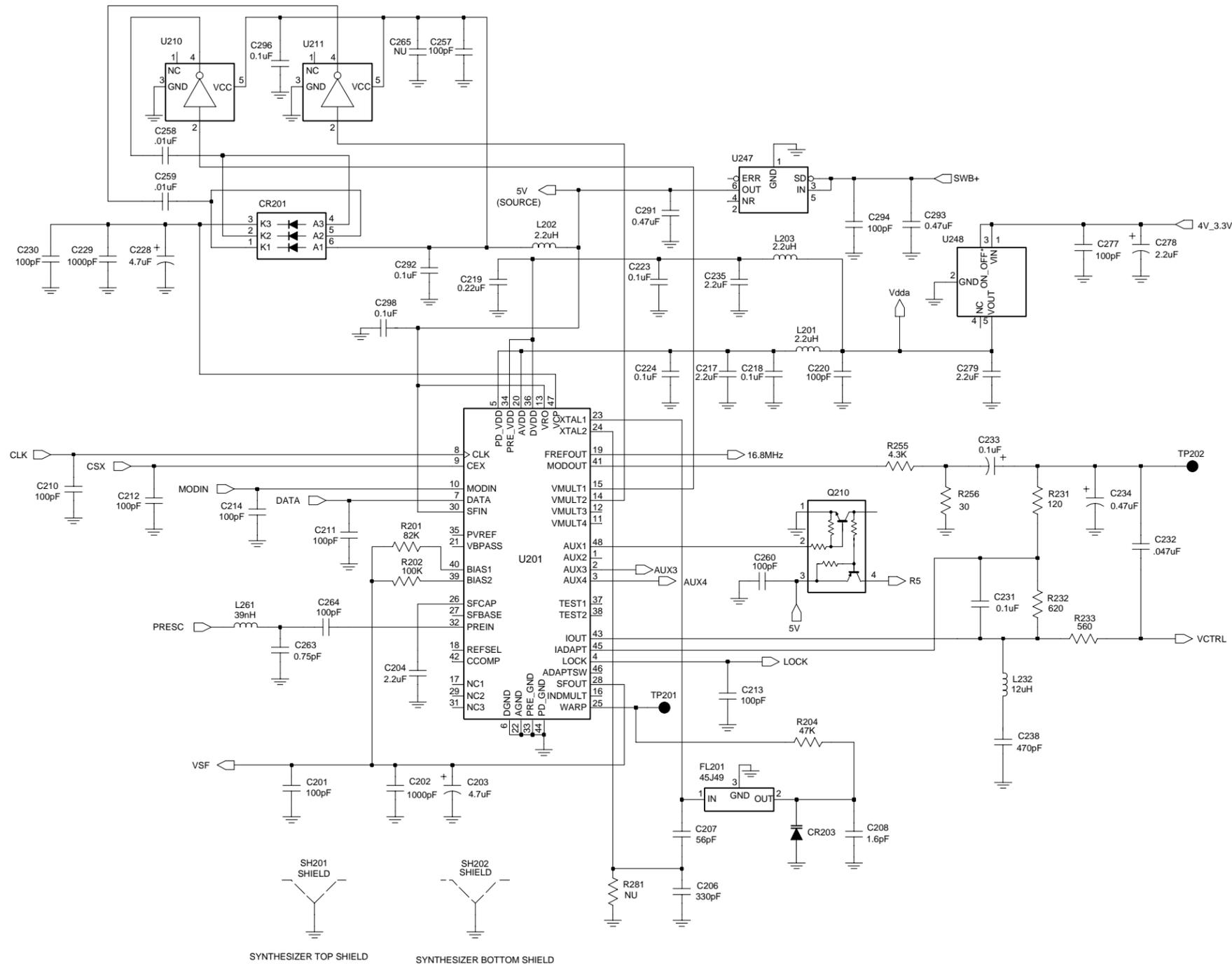
FL08307420

Figure 9-30. UHF (403-470 MHz) Receiver Front End Schematic Diagram



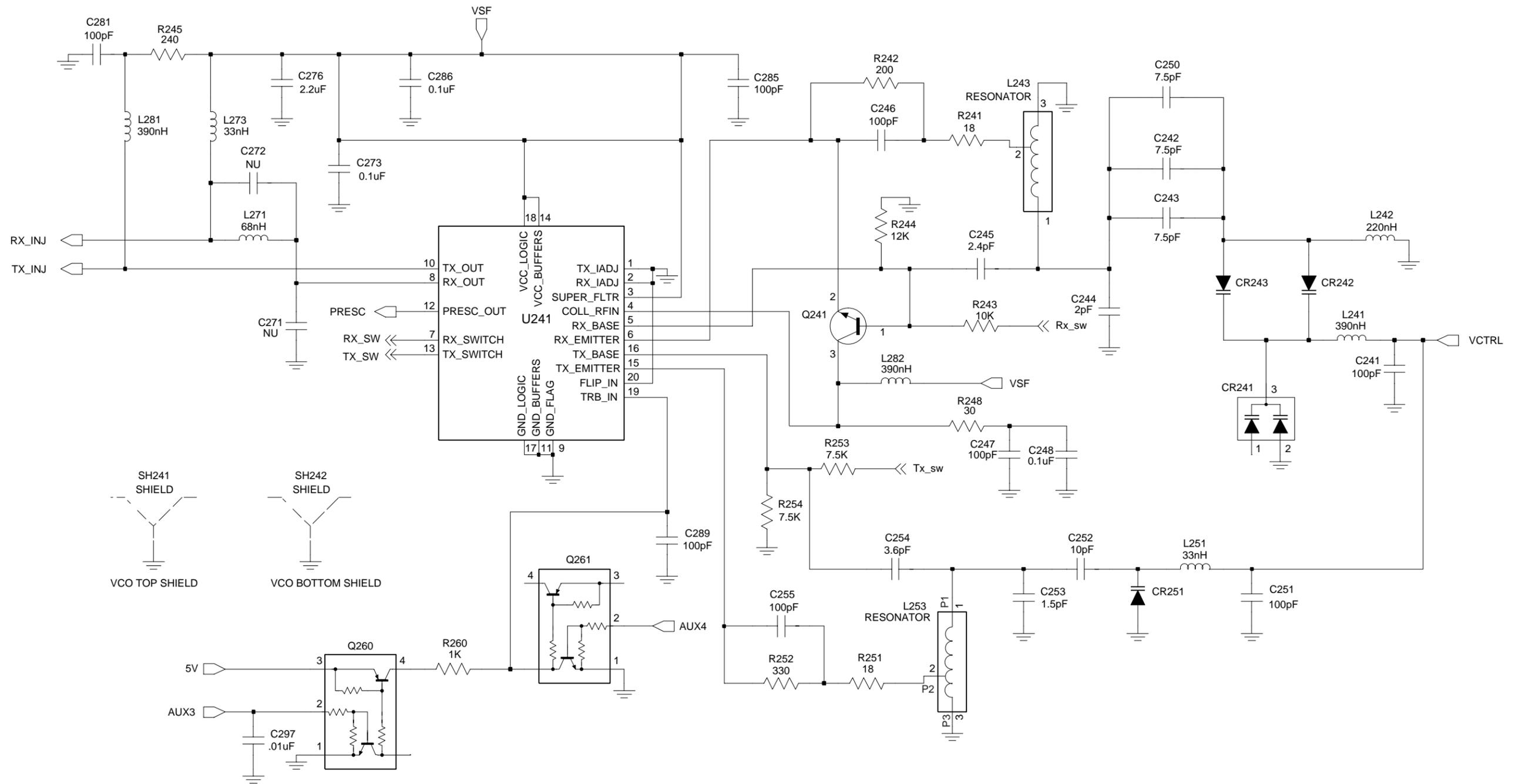
FL08307430

Figure 9-31. UHF (403-470 MHz) Receiver Back End Schematic Diagram



FL08307440

Figure 9-32. UHF (403-470 MHz) Synthesizer Schematic Diagram



FL08307450

Figure 9-33. UHF (403-470 MHz) Voltage Controlled Oscillator Schematic Diagram

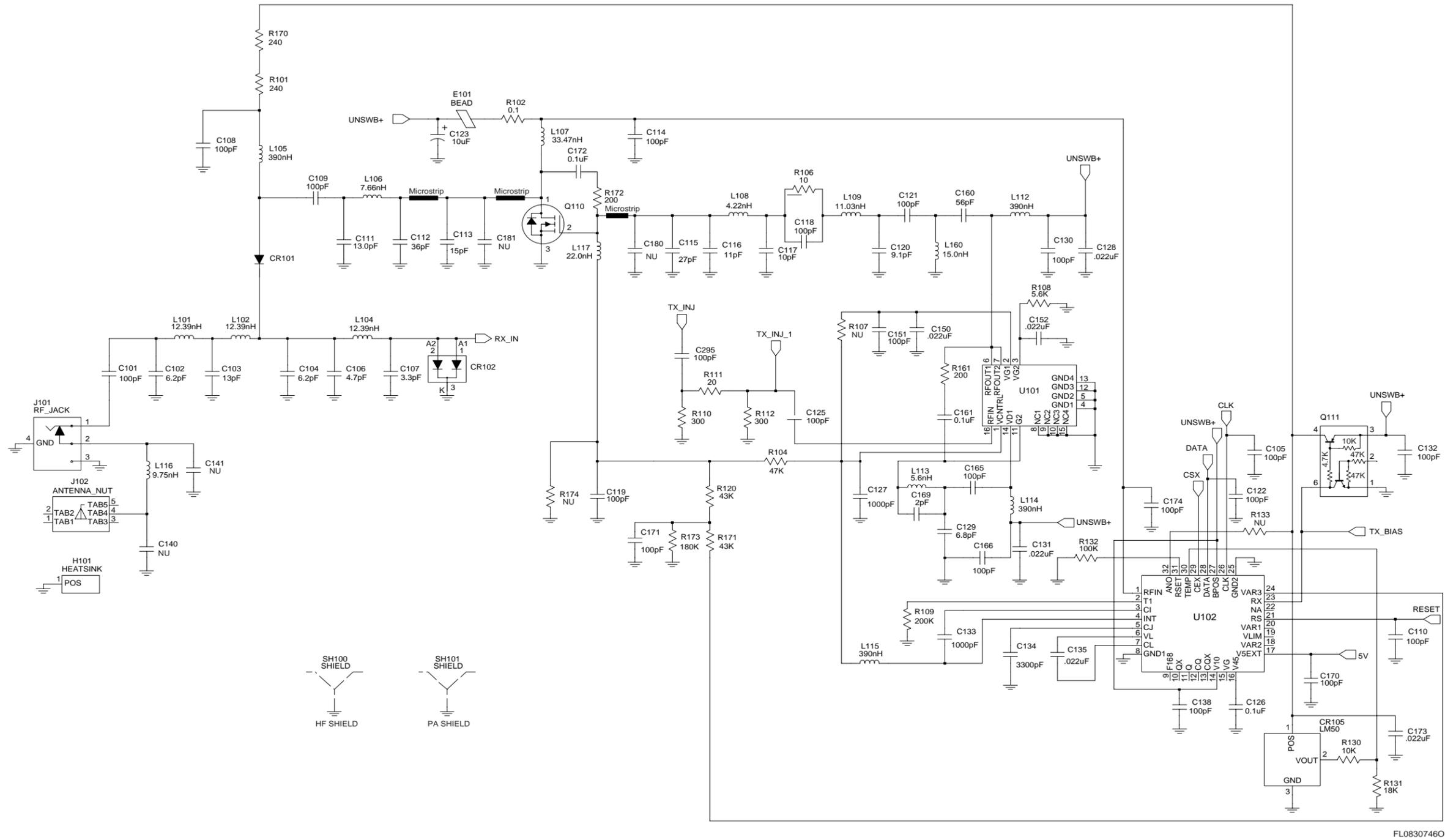


Figure 9-34. UHF (403-470 MHz) Transmitter Schematic Diagram



**UHF (403-470 MHz) Radio Parts List (PCB # 8480450Z13 / 8480587Z05)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F27	10pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2113740F30	13pF
C112	2180605Z32	47pF
C113	2180605Z16	10pF
C114	2113743N50	100pF
C115	2113743N30	15pF
C116	2113743N38	33pF
C117	2113743N37	30pF
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	NOT PLACED	-
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A18	10uF
C125	2113743N50	100pF
C126	2113743M24	100000pF
C127	2113743L17	1000pF
C128	2113743M08	22000pF
C129	2113743N23	7.5pF
C130	2113743N50	100pF
C131	2113743M08	22000pF
C132	2113743N50	100pF
C133	2113743L17	1000pF
C134	2113743L29	3300pF
C135	2113743M08	22000pF
C138	2113743N50	100pF
C140	NOT PLACED	-
C141	NOT PLACED	-
C150	2113743M08	22000pF
C151	2113743N50	100pF
C152	2113743M08	22000pF
C160	2113743N50	100pF
C161	2113743M24	100000pF
C165	2113743N50	100pF
C166	2113743N50	100pF
C169	2113743N20	5.6 pF
C170	2113743N50	100pF
C171	2113743N50	100pF
C172	2113740F51	100pF
C173	2113743M08	22000pF
C174	2113743N50	100pF
C175	2113740L25	20pF

Circuit Ref	Motorola Part No.	Description
C201	2113743N50	100pF
C202	2113743L17	1000pF
C203	2311049A56	4.7uF
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N40	39pF
C208	NOT PLACED	-
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	100000pF
C219	2113743K16	0.220uF
C220	2113743N50	100pF
C223	2113743M24	100000pF
C224	2113743M24	100000pF
C228	2311049J11	4.7uF
C229	2113743L17	1000pF
C230	2113743N50	100pF
C231	2113743M24	100000pF
C232	2113743E12	0.047uF
C233	2311049A01	0.1uF
C234	2311049A05	0.47uF
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N23	7.5pF
C243	2113743N23	7.5pF
C244	2113740F10	2.0pF
C245	2113743N11	2.4pF
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	100000pF
C250	2113743N23	7.5pF
C251	2113743N50	100pF
C252	2113743N26	10pF
C253	2113740F09	1.8pF
C254	2113743N15	3.6pF
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	10000pF
C259	2113743L41	10000pF
C260	2113743N50	100pF
C263	2113743N02	0.75pF
C264	2113743N50	100pF
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	NOT PLACED	-
C273	2113743M24	100000pF
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A57	10uF
C279	2104993J02	2.2uF
C281	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C285	2113743N50	100pF
C286	2113743M24	100000pF
C289	2113743N50	100pF
C291	2311049A69	10uF
C292	2113743M24	100000pF
C293	2113743A27	0.470uF
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	100000pF
C297	2113743L41	10000pF
C298	2113743M24	100000pF
C301	2113743N15	3.6pF
C302	2113743N26	10pF
C303	2113740L08	3.9pF
C304	2113743N26	10pF
C305	2113743N33	20pF
C306	NOT PLACED	-
C307	2113743M24	100000pF
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743M24	100000pF
C311	NOT PLACED	-
C312	2113743N25	9.1pF
C313	2113743N26	10pF
C314	2113743M24	100000pF
C315	2113743N50	100pF
C316	2113740L08	3.9pF
C317	2113743N25	9.1pF
C318	2113743N23	7.5pF
C319	2113743N69	1.8pF
C320	2113743N23	7.5pF
C321	2113743N50	100pF
C322	2113743N48	82pF
C323	2113743N54	150pF
C324	2113743N33	20pF
C325	2113743L41	10000pF
C326	2113743L41	10000pF
C327	2113743N50	100pF
C328	2113743M24	100000pF
C329	2113743M24	100000pF
C330	2113743N26	10pF
C331	2113743N50	100pF
C333	NOT PLACED	-
C334	2113743M08	22000pF
C336	2113743M24	100000pF
C337	2113743N50	100pF
C338	2113743N30	15pF
C339	2180478Z20	1uF
C340	2180478Z20	1uF
C341	2180478Z20	1uF
C342	2180478Z20	1uF
C343	2113743A23	0.220uF
C344	2113743M24	100000pF
C345	2113743M24	100000pF
C346	2113743M24	100000pF
C347	2113743M24	100000pF

Circuit Ref	Motorola Part No.	Description
C348	2113743M24	100000pF
C349	2113743E07	0.022uF
C350	2113743L05	330pF
C351	2113743N33	20pF
C352	2113743N28	12pF
C353	2113743N41	43pF
C354	2113743N42	47pF
C355	2113743A24	0.330uF
C356	2113743M08	22000pF
C357	2113743A23	0.220uF
C358	2113741A23	1200pF
C359	2109720D14	0.1uF
C360	2113743E07	0.022uF
C361	2113741F49	10nF
C362	2113743M08	22000pF
C363	2311049A40	2.2uF
C364	2113743L41	10000pF
C370	2113743N50	100pF
C371	NOT PLACED	-
C372	NOT PLACED	-
C373	NOT PLACED	-
C374	2113743N50	100pF
C375	2113743N50	100pF
C378	NOT PLACED	-
C380	2113743L41	10000pF
C381	2113743N21	6.2pF
C382	2311049A59	10uF
C383	2113743N50	100pF
C384	2113743N44	56pF
C385	2113743N44	56pF
C386	2113743N50	100pF
C390	2113743N50	100pF
C391	NOT PLACED	-
C395	2113743N50	100pF
C396	NOT PLACED	-
C397	2311049A05	0.47uF
C400	2113743L41	10000pF
C401	2113743M24	100000pF
C402	2113743M24	100000pF
C403	2113743G24	2.2uF
C404	NOT PLACED	-
C405	NOT PLACED	-
C406	NOT PLACED	-
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	100000pF
C410	2113928N01	0.1uF
C411	2113743M24	100000pF
C414	2113743M24	100000pF
C415	2185895Z01	0.01uF
C416	2113928N01	0.1uF
C419	NOT PLACED	-
C420	2113743L41	10000pF
C421	2113928N01	0.1uF
C422	2113743M24	100000pF
C423	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C424	2311049A59	10uF
C425	2113743M24	100000pF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	100000pF
C429	2113743M24	100000pF
C430	2113928N01	0.1uF
	0662057M01	0 (SUB on LS <sup>+</sup> Models Only)
C431	2113743N50	100pF
C432	NOT PLACED	-
C433	2113743L41	10000pF
C434	2113928N01	0.1uF
C435	2113743M24	100000pF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7F
C441	2113743N50	100pF
C442	2113743E20	0.10uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	22000pF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOT PLACED	-
C451	2113743M08	22000pF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743N50	100pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF
	0662057M01	0 (SUB on LS <sup>+</sup> Models Only)
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF
C521	2113743L41	10000pF
C522	2113743L41	10000pF
C523	2113743L41	10000pF
C524	2113743N50	100pF
C525	2113743N50	100pF
C526	2113743N50	100pF
C527	2113743N50	100pF
C528	2113743N50	100pF
C529	2113743N50	100pF
CR101	4880973Z02	Pin diode
CR102	4802245J41	Pin diode
CR103	4802245J41	Pin diode
CR105	5185963A15	Temperature sensor
CR160	NOT PLACED	-
CR201	4802233J09	Triple diode (SOT 25)
CR203	4862824C03	Varactor
CR241	4805649Q13	Varactor
CR242	4862824C08	Varactor
CR243	4862824C08	Varactor
CR251	4802245J22	Varactor
CR301	4862824C08	Varactor
CR302	4862824C08	Varactor
CR303	4880154K03	Dual common anode-cathode diode
CR304	4862824C08	Varactor
CR305	4862824C08	Varactor
CR306	4802245J42	Ring Quad diode (SOT-143)
CR308	4802245J41	Pin diode
CR310	4862824C08	Varactor
CR411	4802245J62	Diode Schottky
CR412	4802245J62	Diode Schottky
CR413	4802245J62	Diode Schottky
CR440	4813833C02	Dual common cathode diode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
E101	2484657R01	Ferrite bead
E400	2480640Z01	Ferrite bead
E401	2480640Z01	Ferrite bead
E402	2480640Z01	Ferrite bead
E403	2480640Z01	Ferrite bead
E404	2480640Z01	Ferrite bead
E405	2480640Z01	Ferrite bead
E406	2480640Z01	Ferrite bead
E407	2480640Z01	Ferrite bead
E408	2480640Z01	Ferrite bead
E409	2480640Z01	Ferrite bead
F501	6580542Z01	3A fuse
FL201	4805875Z04	16.8 MHz Xtal oscillator (not field serviceable)
FL301	4802245J43	Xtal Filter 45.1 MHz
FL401	4870368G02	Xtal Oscillator 38.4 kHz
H101	2680499Z01	Heat spreader

Circuit Ref	Motorola Part No.	Description
J101	0985613Z01	RF Jack
J102	0280519Z02	Antenna nut
J400	0905505Y04	40-pin connector
J403	0905505Y02	20-pin connector
L101	2479990B02	19.61nH
L102	2479990B02	19.61nH
L104	2479990B02	19.61nH
L105	2462587N22	390nH
L106	2479990A02	7.66nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L109	0662057C01	0
L112	2462587N45	22nH
L113	2413926H09	5.6nH
L114	2462587N45	22nH
L115	2462587N22	390nH
L116	2479990A03	9.75nH
L160	2413926H14	15nH
L201	2462587Q20	2200nH
L202	2462587Q20	2200nH
L203	2462587Q20	2200nH
L232	2462587P25	12000nH
L241	2462587V41	390nH
L242	2462587V38	220nH
L243	2460593C01	Multi-layered Teflon resonator, Rx
L251	2462587V28	33nH
L253	2460593C02	Multi-layered Teflon resonator, Tx
L261	2462587V29	39nH
L271	2462587V32	68nH
L273	2462587V28	33nH
L281	2462587V41	390nH
L282	2462587V41	390nH
L301	2479990C01	13.9nH
L302	2479990C01	13.9nH
L303	2462587V26	22nH
L304	2462587V37	180nH
L305	2462587V26	22nH
L306	2479990C01	13.9nH
L307	2479990C01	13.9nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH
L311	2462587N65	750nH
L314	2462587N72	2200nH
L321	NOT PLACED	-
L325	2480646Z20	2.2uH
L330	2462587N64	680nH
L331	2480646Z20	2.2uH
L332	2462587N53	100nH
L340	2462587V41	390nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
P100	3905643V01	Ground contact finger
PB501	4080523Z01	Tactile switch, pushbutton

Circuit Ref	Motorola Part No.	Description
PB502	4080523Z01	Tactile switch, pushbutton
PB503	4080523Z01	Tactile switch, pushbutton
PB504	4080523Z01	Tactile switch, pushbutton
PB505	4080523Z01	Tactile switch, pushbutton
Q110	4813828A09	RF PA
Q111	4802245J50	Dual NPN/PNP transistor
Q210	4802245J50	Dual NPN/PNP transistor
Q241	4805218N63	RF NPN transistor
Q260	4802245J50	Dual NPN/PNP transistor
Q261	4802245J50	Dual NPN/PNP transistor
Q301	4802245J44	NPN Transistor
Q302	4802245J44	NPN Transistor
Q310	NOT PLACED	-
Q315	4880214G02	NPN
Q316	NOT PLACED	-
Q320	4805218N63	RF NPN transistor
Q400	4809579E18	Mosfet P - channel
Q403	4813824A17	Bipolar Transistor, PNP
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	Mosfet P - channel
Q417	4802245J50	Dual NPN/PNP transistor
Q502	5180159R01	DUAL TRANS NPNS
Q505	4880214G02	NPN
R101	0662057A34	240
R102	0680539Z01	0.1
R103	0662057M41	43
R104	0662057N15	47k
R106	0662057M26	10
R107	NOT PLACED	-
R108	0662057M92	5600
R109	0662057N30	200k
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43k
R130	0662057M98	10k
R131	0662057N05	18k
R132	0662057N33	270k
R133	NOT PLACED	-
R136	0662057N47	1M
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43k
R172	0662057A32	200
R173	0662057N29	180k
R174	0662057N15	47k
R175	0662057B67	6.2
R176	0662057B67	6.2
R201	0662057N21	82k
R202	0662057N23	100k
R204	0662057N15	47k
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18

Circuit Ref	Motorola Part No.	Description
R242	0662057M57	200
R243	0662057M98	10k
R244	0662057N01	12k
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M32	18
R252	0662057M62	330
R253	0662057M95	7500
R254	0662057M95	7500
R255	0662057M89	4300
R256	0662057M37	30
R260	0662057M74	1000
R281	NOT PLACED	-
R300	0662057M82	2200
R301	0662057N23	100k
R302	0662057N23	100k
R303	0662057M74	1000
R304	0662057N01	12k
R305	0662057M67	510
R306	0662057N23	100k
R307	0662057N23	100k
R308	0662057M60	270
R309	0662057M32	18
R310	0662057M60	270
R311	0662057N10	30k
R312	0662057M83	2400
R313	0662057M62	330
R314	0662057M85	3000
R315	0662057N01	12k
R316	0662057A96	91K
R317	0662057M74	1000
R318	0662057A79	18
R319	0662057A29	150
R320	0662057M74	1000
R321	0662057M83	2400
R322	0662057N30	200k
R324	0662057M81	2000
R325	0662057M94	6800
R326	NOT PLACED	-
R327	0662057N11	33k
R328	0662057M12	2.7
R329	0662057M01	0
R330	NOT PLACED	-
R331	NOT PLACED	-
R332	NOT PLACED	-
R333	NOT PLACED	-
R334	NOT PLACED	-
R335	NOT PLACED	-
R336	NOT PLACED	-
R338	NOT PLACED	-
R339	0662057M01	0
R340	0662057M94	6800
R342	0662057N23	100k
R343	0662057M26	10
R344	0662057N01	12k
R345	0662057M98	10k

Circuit Ref	Motorola Part No.	Description
R346	0662057N17	56k
R347	0662057M74	1000
R348	0662057M87	3600
R349	0662057C01	0
R350	0662057N23	100k
R351	0662057C01	0
R352	0662057M86	3300
R355	0662057M01	0
R400	0662057N15	47k
R401	0662057M01	0
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0662057M01	0
R406	0662057N20	75k
R407	0662057N19	68k
R408	NOT PLACED	-
R409	0662057M98	10k
R410	0662057N23	100k
R411	0662057M98	10k
R413	0662057M01	0
R414	0662057V34	180k
R415	0662057V26	91k
R416	0662057M98	10k
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2000
R423	0662057N39	470k
R424	0662057N12	36k
R425	0662057N10	30k
R426	0662057N35	330k
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057M98	10k
R431	0662057N39	470k
R432	0662057N16	51k
R434	0662057M62	330 Ohm
R435	0662057M81	2k Ohm
R436	0662057M01	0
R445	0662057N08	24k
R447	0662057N23	100k
R448	0662057M98	10k
R449	0662057N08	24k
R450	0683962T45	68 ohms, 1W
R451	0662057N03	15k
R452	0662057N23	100k
R453	NOT PLACED	-
R454	NOT PLACED	-
R455	NOT PLACED	-
R456	0662057M01	0
R457	0662057M98	10k
R460	0662057M90	4700
R461	0662057M56	180
R462	0662057M98	10k
R463	0662057M61	300
R471	0662057N06	20k

Circuit Ref	Motorola Part No.	Description
R472	0662057N12	36k
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330k
R477	0662057M74	1000
R478	0662057M98	10k
R481	0662057N08	24k
R492	0662057M01	0
R498	0662057M98	10k
R499	0662057M98	10k
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10k
R506	0662057N15	47k
R507	0662057M01	0
RT300	0680590Z01	THERMISTOR_33K
RT301	NOT PLACED	-
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z01	Frequency switch
S502	1880619Z02	Volumic/on-off switch
SH100	2680507Z01	Harmonic Filter shield
SH101	2680510Z01	RF PA shield
SH201	2680511Z01	Synthesizer top shield
SH202	2680511Z01	Synthesizer bottom shield
SH241	2680513Z01	Resonators shield
SH242	2680514Z01	VCO Buffer IC shield
SH301	2680554Z01	Receiver front end shield
SH302	2680555Z01	Receiver front end bottom shield
SH303	2680509Z01	Mixer shield
SH304	2680624Z01	Mixer diode shield
SH321	2680508Z01	LVZIF 2nd LO shield
SH322	2680514Z01	LVZIF shield
SH323	2680553Z01	Crystal Filter shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller on-off shield
SH402	2680515Z01	Microprocessor shield
SH403	2680516Z01	Asfic_Cmp/Audio PA shield
T301	2580541Z01	Balun transformer
T302	2580541Z01	Balun transformer
U101	5185130C65	VHF/UHF/800 MHZ LDMOS DRIVER
U102	5185765B28	PCIC
U201	5185963A27	LVFRACN Synthesizer IC
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO BUFFER IC
U247	5105739X05	SOT 5V Regulator
U248	5102463J58	3.3V Regulator
U301	5109632D83	LVZIF IC
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC_CMP IC
U405	NOT PLACED	-
U406	*5102463J59	Flash ROM 128K x 8
U407	*5102463J64	16K x 8 EEPROM
U409	5102226J56	Microprocessor
U410	5102463J57	3.3V Regulator

Circuit Ref	Motorola Part No.	Description
U420	5102463J44	Audio PA
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J73	ZENER DIODE-6.8V
VR439	4880140L17	Zener diode-12V
VR440	4802245J73	ZENER DIODE-6.8V
VR441	4802245J73	ZENER DIODE-6.8V
VR442	4802245J73	ZENER DIODE-6.8V
VR443	4802245J73	ZENER DIODE-6.8V
VR444	4802245J73	ZENER DIODE-6.8V
VR445	4802245J53	ZENER_DIODE-10V
VR446	4802245J74	ZENER DIODE-10V
VR447	4802245J74	ZENER DIODE-10V
VR448	4802245J74	ZENER DIODE-10V
VR449	4802245J74	ZENER DIODE-10V
VR450	4802245J75	ZENER DIODE-12V
VR460	4802245J73	ZENER DIODE-6.8V
VR501	4813830A18	6.8V Zener
VR506	4802245J73	ZENER DIODE-6.8V
	1485777Z01	INSULATOR (KAPTON)
	8480450Z13	UHF B1 main PC board

\* Motorola Depot Servicing only

## Notes



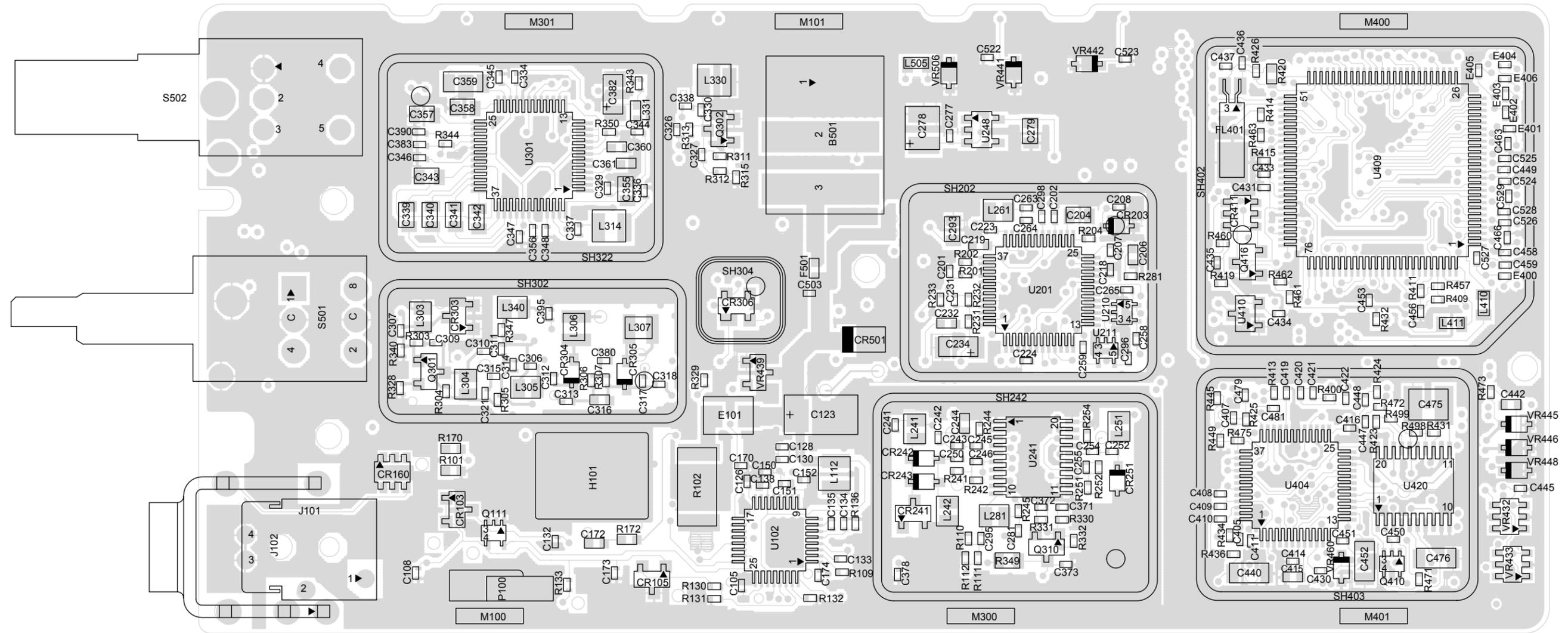


Figure 9-36. UHF (403-470 MHz) 5000/7000 Series Main Board Bottom Side PCB No. 8480450Z14

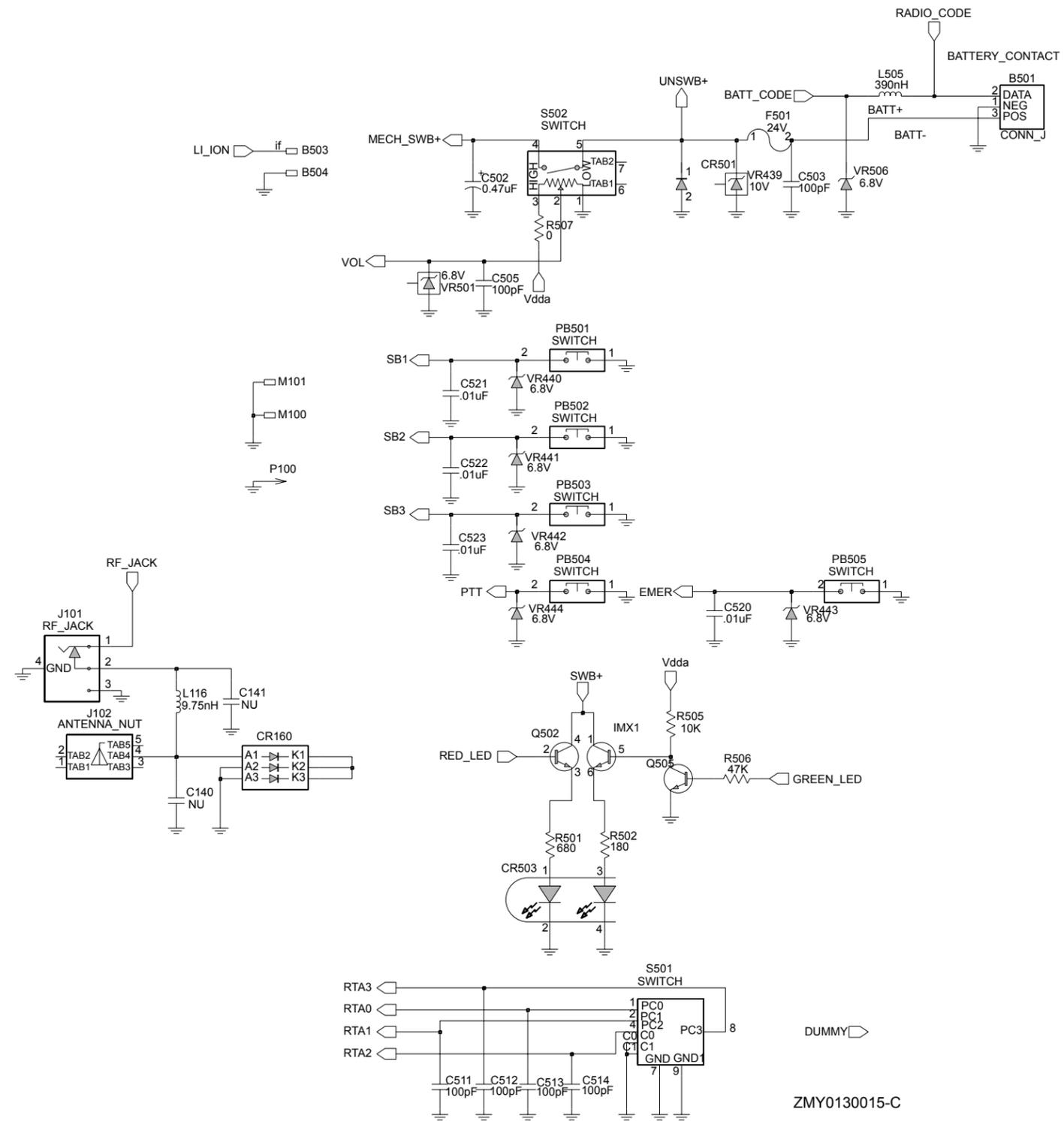


Figure 9-37. UHF (403-470 MHz) Controls And Switches Schematic Diagram

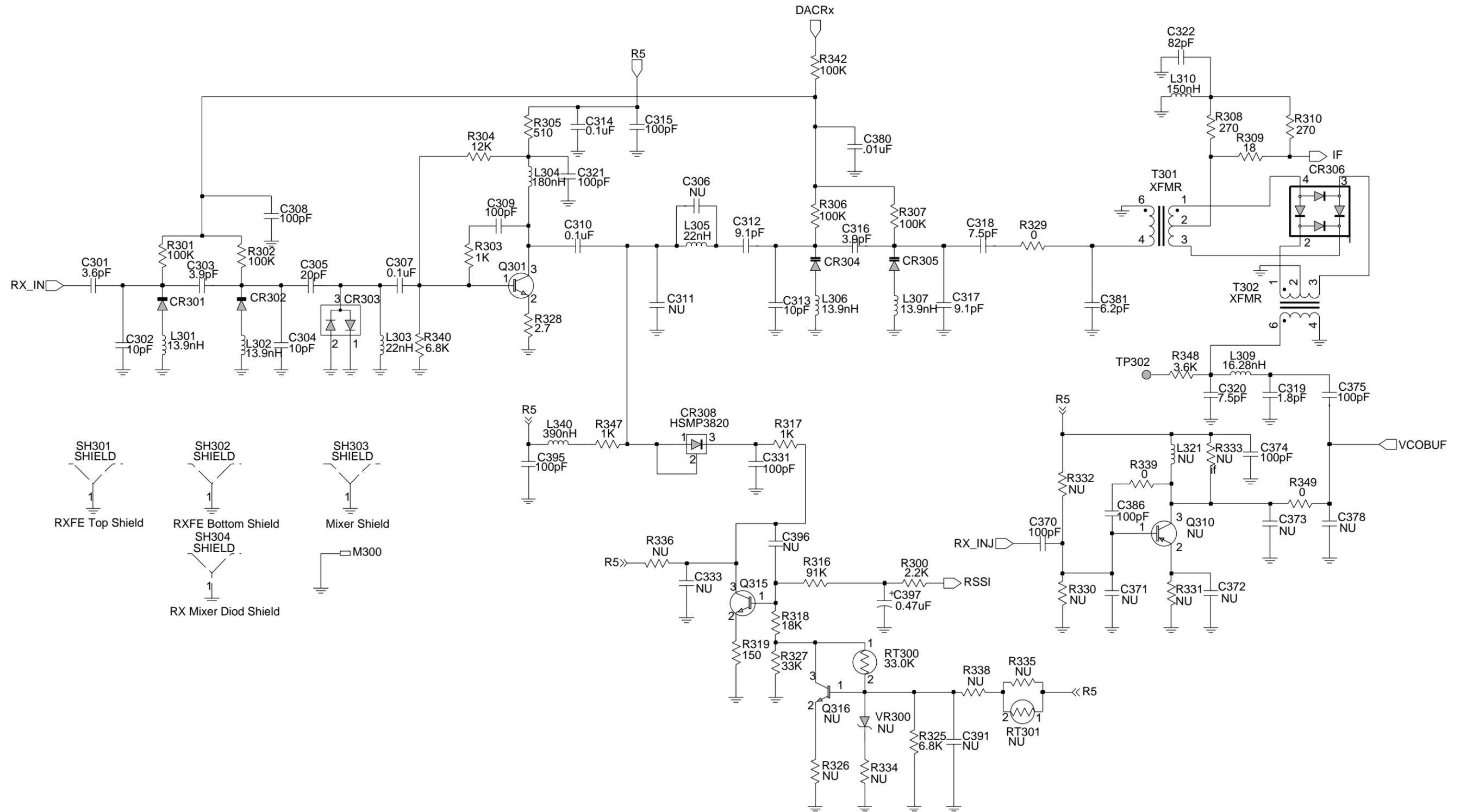


Figure 9-38. UHF (403-470 MHz) Receiver Front End Schematic Diagram





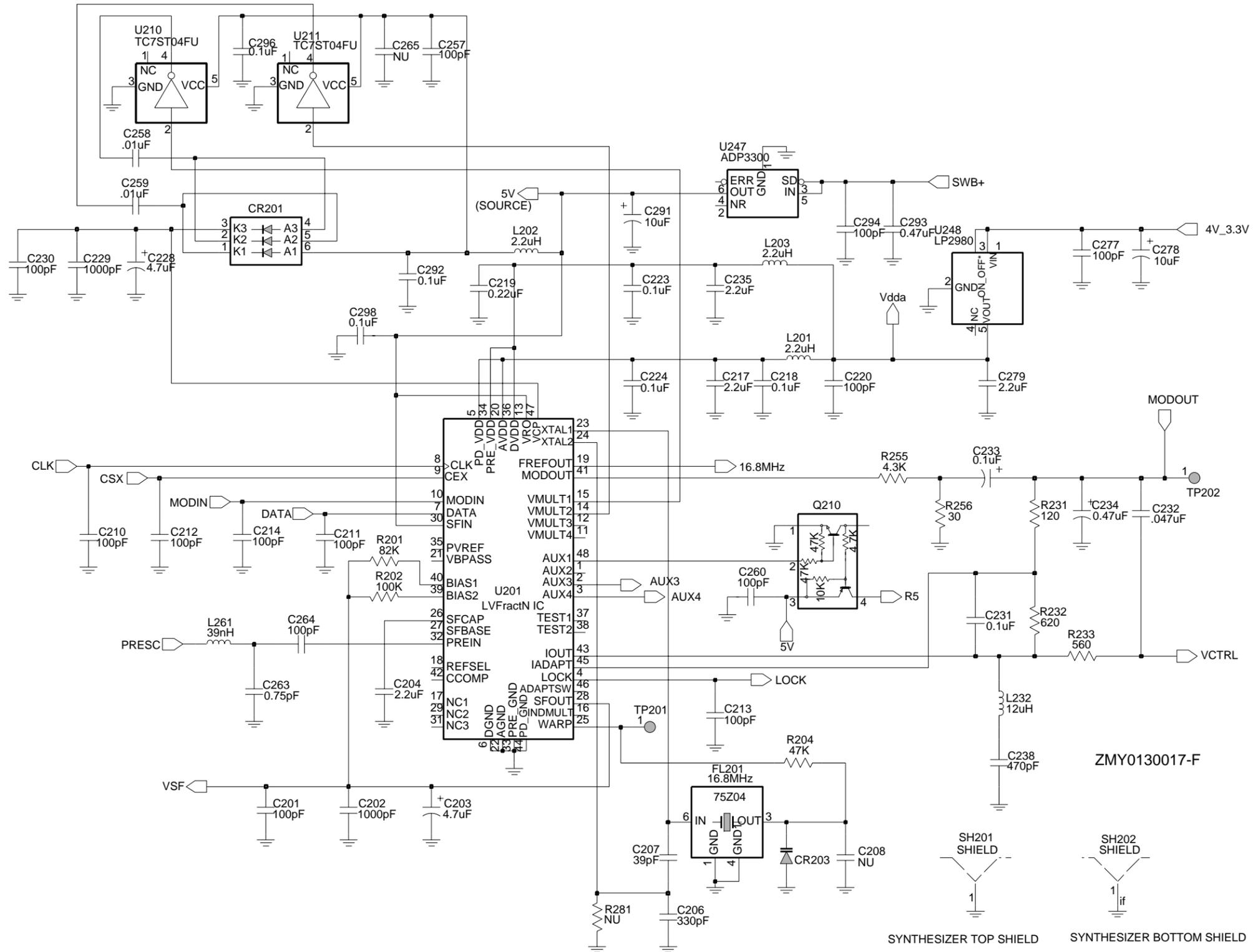


Figure 9-40. UHF (403-470 MHz) Synthesizer Schematic Diagram

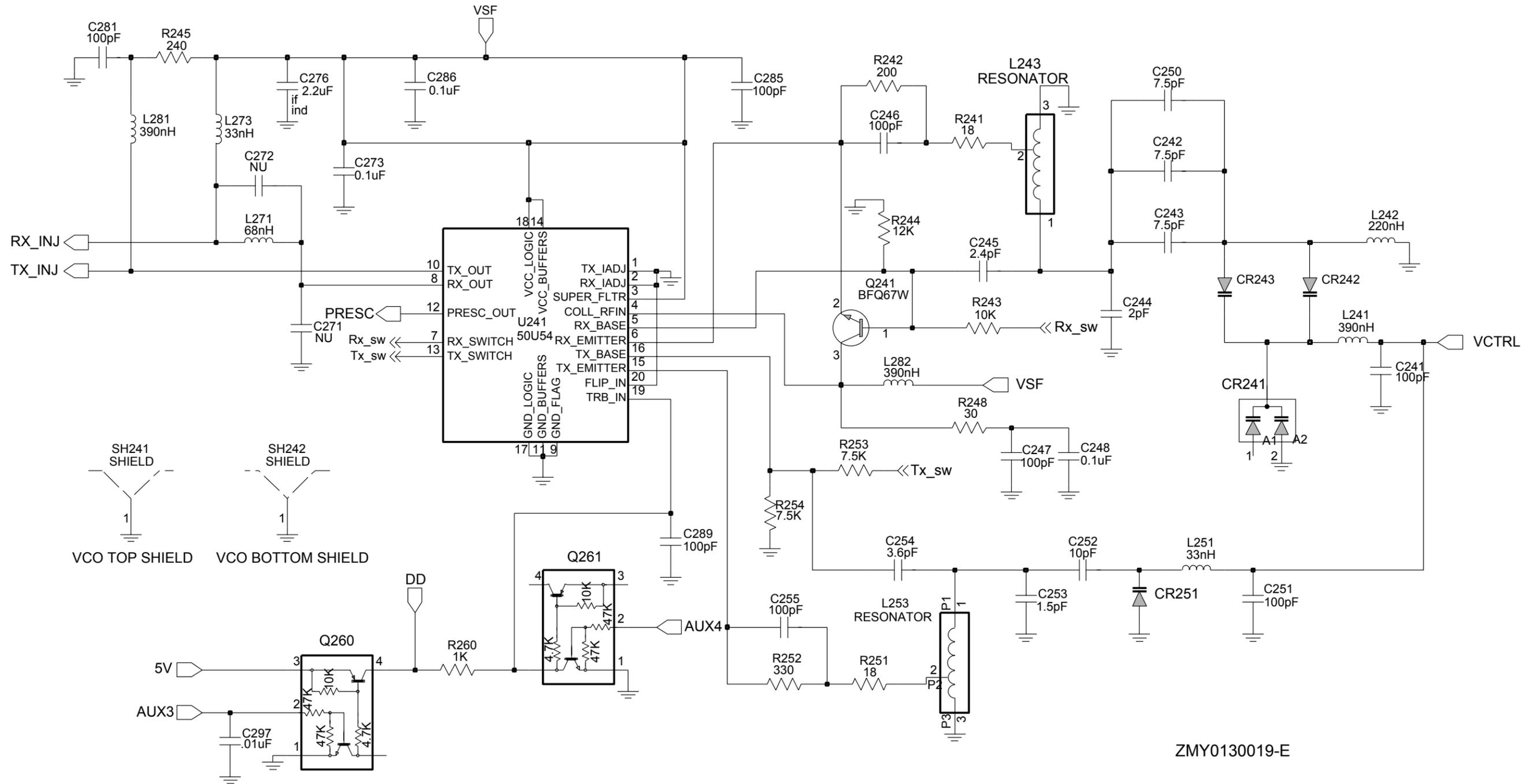


Figure 9-41. UHF (403-470 MHz) Voltage Controlled Oscillator Schematic Diagram

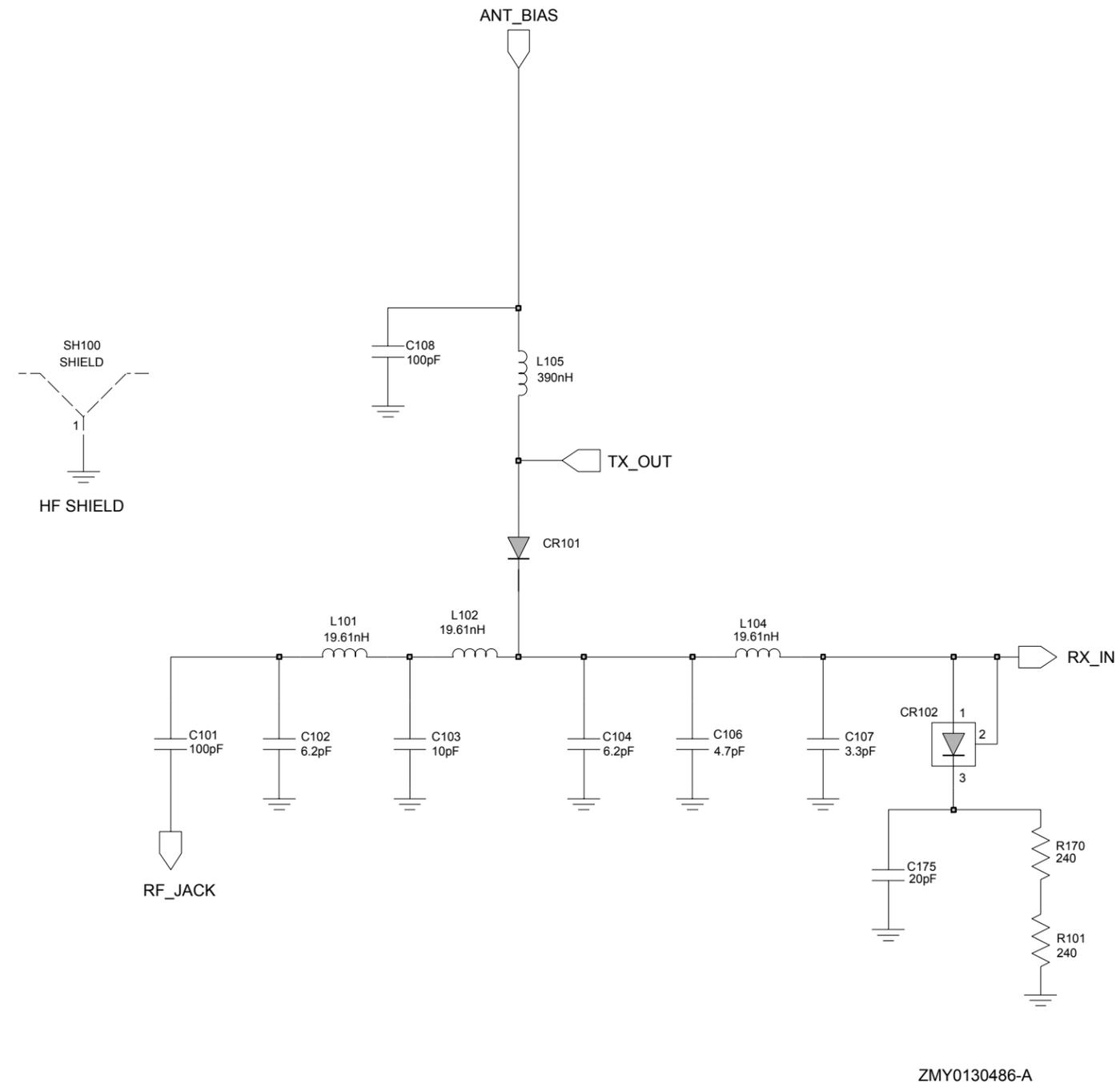


Figure 9-42. UHF (403-470 MHz) Harmonic Filter Schematic Diagram

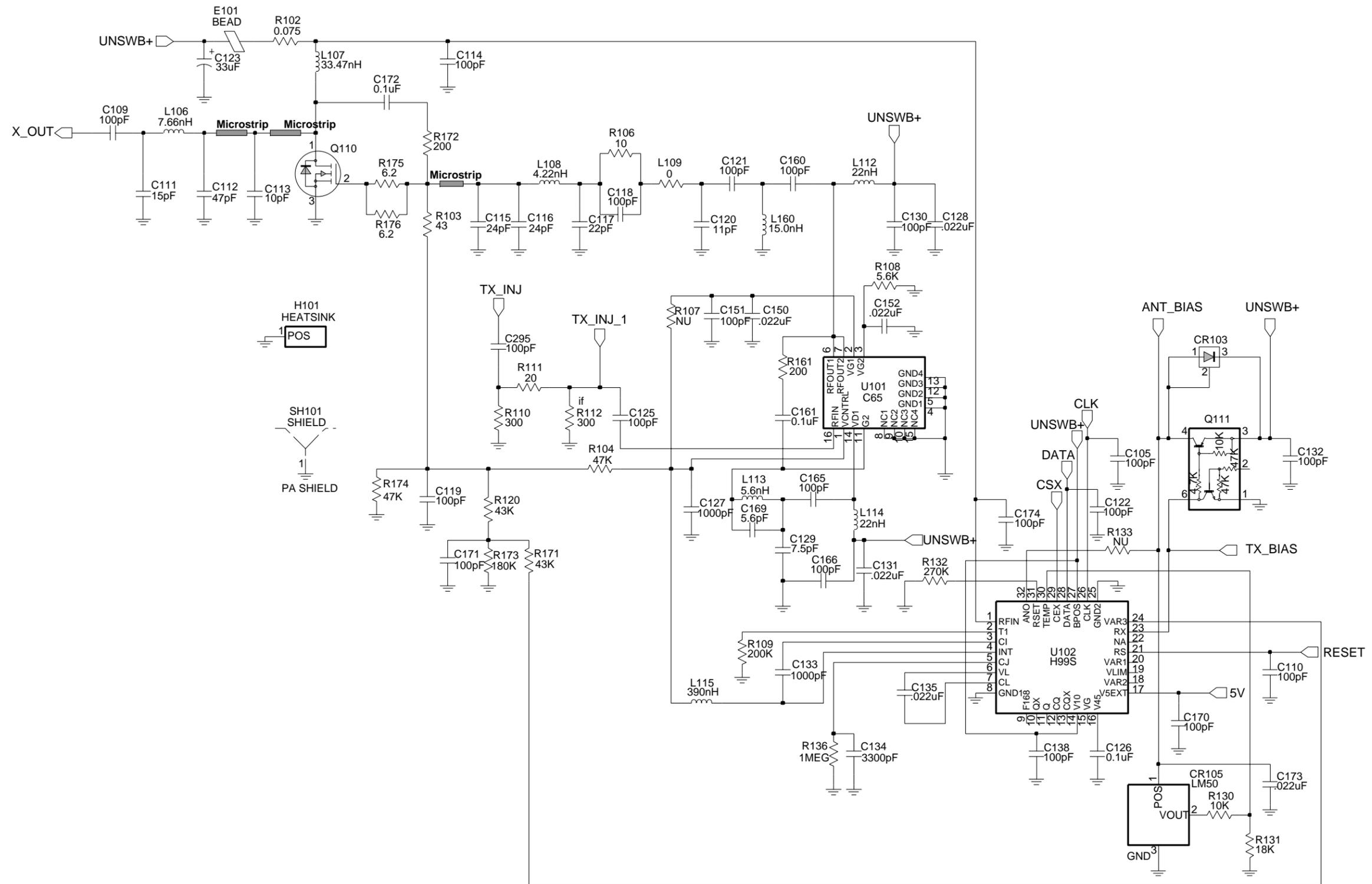


Figure 9-43. UHF (403-470 MHz) Transmitter Schematic Diagram

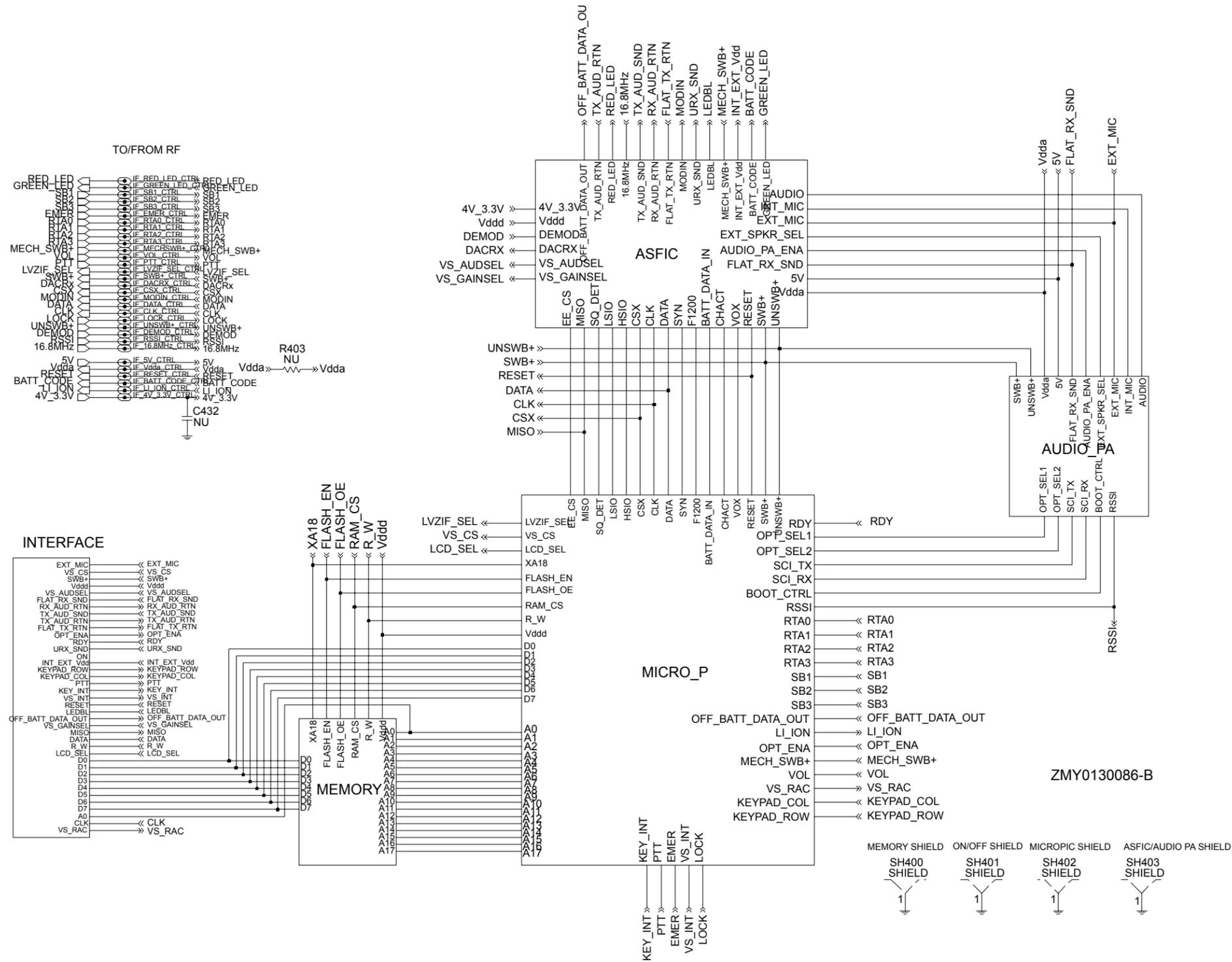
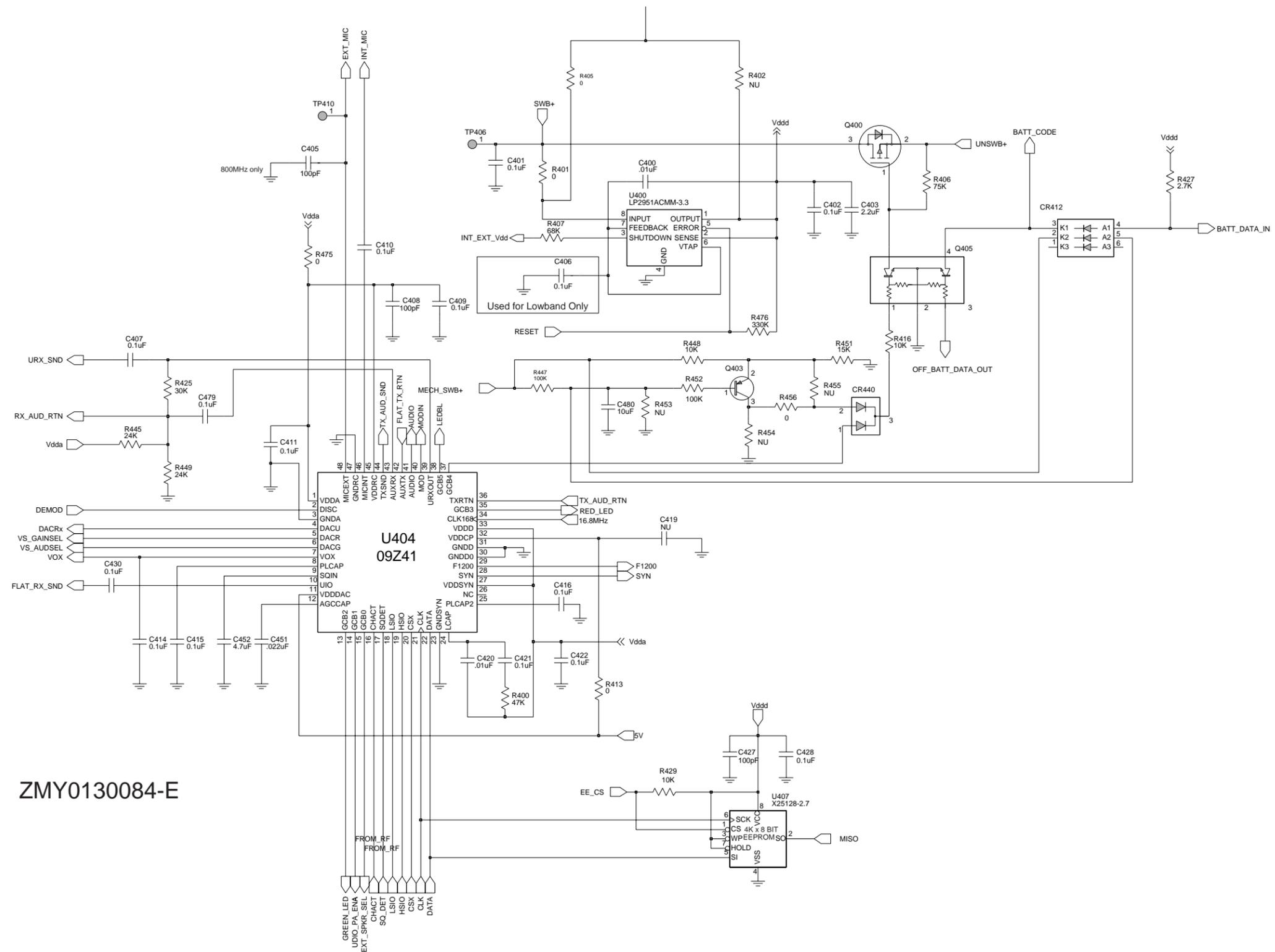


Figure 9-44. UHF (403-470 MHz) Complete Controller Schematic Diagram



ZMY0130084-E

Figure 9-45. UHF (403-470 MHz) Controller ASFC/ON\_OFF Schematic Diagram

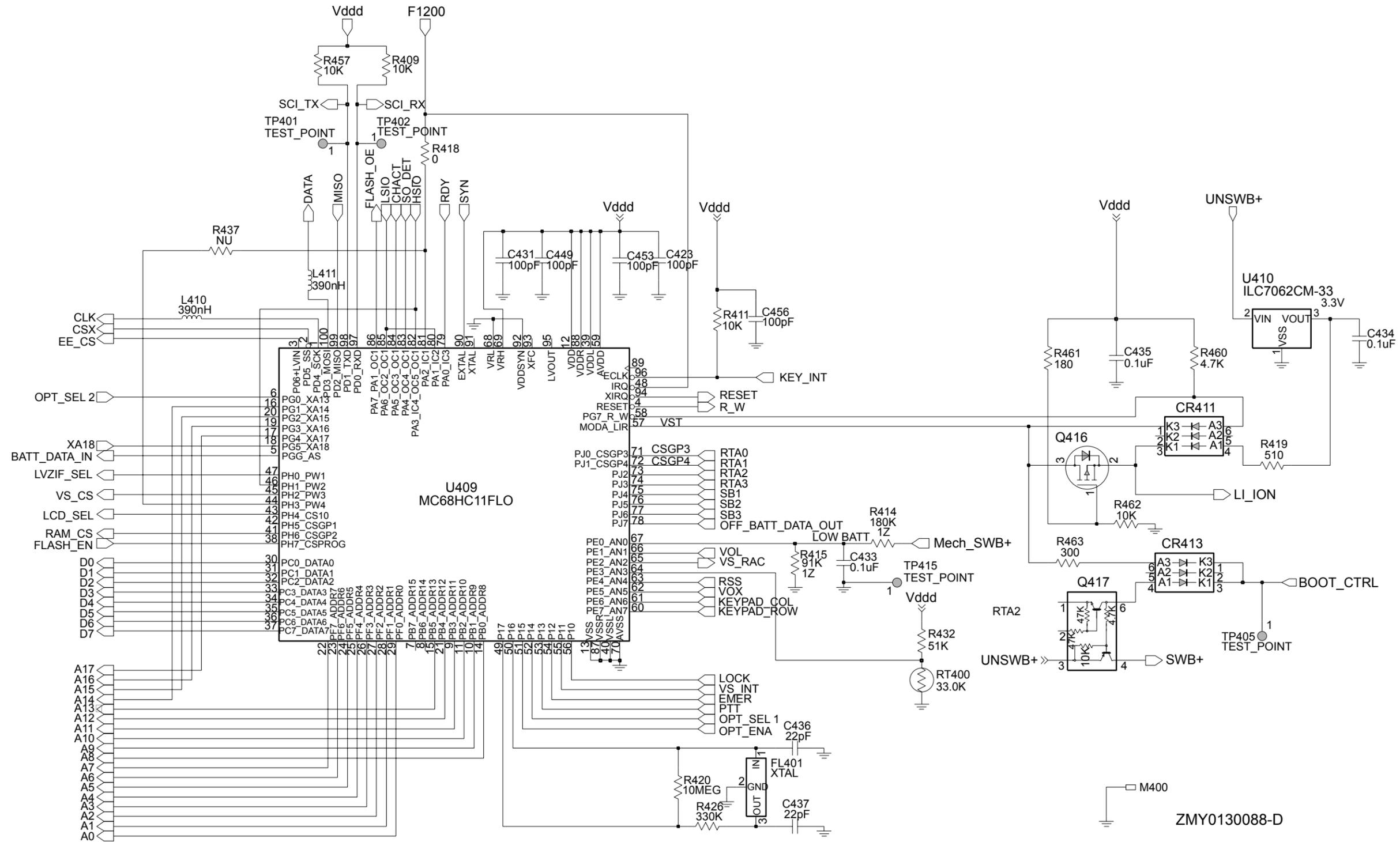


Figure 9-46. UHF (403-470 MHz) Controller Microprocessor Schematic Diagram





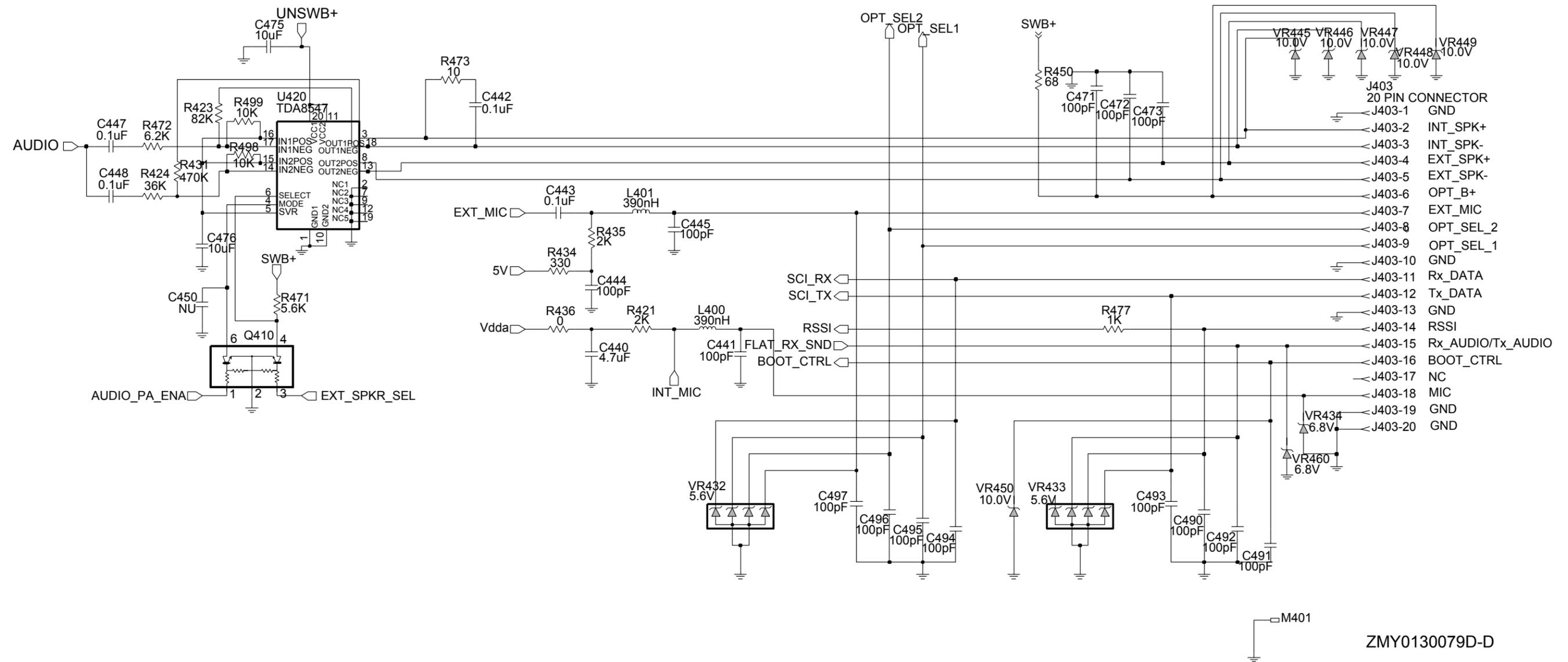


Figure 9-48. UHF (403-470 MHz) Controller Audio Power Amplifier Schematic Diagram

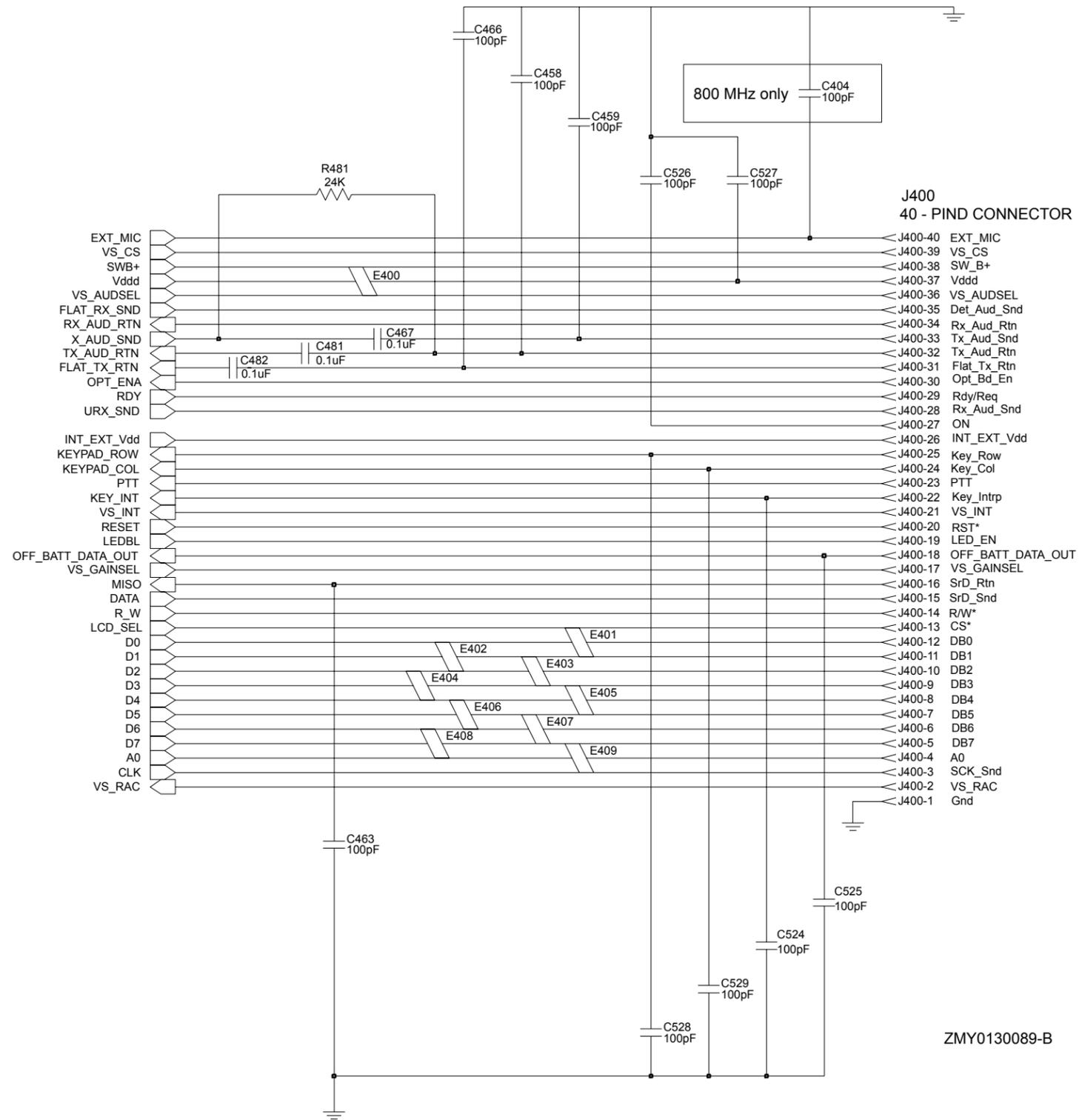


Figure 9-49. UHF (403-470 MHz) Controller Interface Schematic Diagram

**UHF (403-470 MHz) Radio Parts List (PCB 8480450Z14)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+ (not placed in HT750 or PRO5150)
B504	3980501Z01	Backup battery B- (not placed in HT750 or PRO5150)
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F27	10pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2113740F31	15pF
C112	2180605Z32	47pF
C113	2180605Z16	10pF
C114	2113743N50	100pF
C115	2113743N35	24pF
C116	2113743N35	24pF
C117	2113743N34	22pF
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N27	11pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A96	33uF
C125	2113743N50	100pF
C126	2113743M24	100000pF
C127	2113743L17	1000pF
C128	2113743M08	22000pF
C129	2113743N23	7.5pF
C130	2113743N50	100pF
C131	2113743M08	22000pF
C132	2113743N50	100pF
C133	2113743L17	1000pF
C134	2113743L29	3300pF
C135	2113743M08	22000pF
C138	2113743N50	100pF
C140	NOT PLACED	-
C141	NOT PLACED	-
C150	2113743M08	22000pF
C151	2113743N50	100pF
C152	2113743M08	22000pF
C160	2113743N50	100pF
C161	2113743M24	100000pF
C165	2113743N50	100pF
C166	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C169	2113743N20	5.6 pF
C170	2113743N50	100pF
C171	2113743N50	100pF
C172	2113740F51	100pF
C173	2113743M08	22000pF
C174	2113743N50	100pF
C175	2113740L25	20pF
C201	2113743N50	100pF
C202	2113743L17	1000pF
C203	2311049A56	4.7uF
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N40	39pF
C208	NOT PLACED	-
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	100000pF
C219	2113743K16	0.220uF
C220	2113743N50	100pF
C223	2113743M24	100000pF
C224	2113743M24	100000pF
C228	2311049J11	4.7uF
C229	2113743L17	1000pF
C230	2113743N50	100pF
C231	2113743M24	100000pF
C232	2113743E12	0.047uF
C233	2311049A01	0.1uF
C234	2311049A05	0.47uF
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N23	7.5pF
C243	2113743N23	7.5pF
C244	2113740F10	2.0pF
C245	2113743N11	2.4pF
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	100000pF
C250	2113743N23	7.5pF
C251	2113743N50	100pF
C252	2113743N26	10pF
C253	2113740F09	1.8pF
C254	2113743N15	3.6pF
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	10000pF
C259	2113743L41	10000pF

Circuit Ref	Motorola Part No.	Description
C260	2113743N50	100pF
C263	2113743N02	0.75pF
C264	2113743N50	100pF
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	NOT PLACED	-
C273	2113743M24	100000pF
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A57	10uF
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C285	2113743N50	100pF
C286	2113743M24	100000pF
C289	2113743N50	100pF
C291	2311049A69	10uF
C292	2113743M24	100000pF
C293	2113743A27	0.470uF
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	100000pF
C297	2113743L41	10000pF
C298	2113743M24	100000pF
C301	2113743N15	3.6pF
C302	2113743N26	10pF
C303	2113740L08	3.9pF
C304	2113743N26	10pF
C305	2113743N33	20pF
C306	NOT PLACED	-
C307	2113743M24	100000pF
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743M24	100000pF
C311	NOT PLACED	-
C312	2113743N25	9.1pF
C313	2113743N26	10pF
C314	2113743M24	100000pF
C315	2113743N50	100pF
C316	2113740L08	3.9pF
C317	2113743N25	9.1pF
C318	2113743N23	7.5pF
C319	2113743N69	1.8pF
C320	2113743N23	7.5pF
C321	2113743N50	100pF
C322	2113743N48	82pF
C323	2113743N54	150pF
C324	2113743N33	20pF
C325	2113743L41	10000pF
C326	2113743L41	10000pF
C327	2113743N50	100pF
C328	2113743M24	100000pF

Circuit Ref	Motorola Part No.	Description
C329	2113743M24	100000pF
C330	2113743N26	10pF
C331	2113743N50	100pF
C333	NOT PLACED	-
C334	2113743M08	22000pF
C336	2113743M24	100000pF
C337	2113743N50	100pF
C338	2113743N30	15pF
C339	2180478Z20	1uF
C340	2180478Z20	1uF
C341	2180478Z20	1uF
C342	2180478Z20	1uF
C343	2113743A23	0.220uF
C344	2113743M24	100000pF
C345	2113743M24	100000pF
C346	2113743M24	100000pF
C347	2113743M24	100000pF
C348	2113743M24	100000pF
C349	2113743E07	0.022uF
C350	2113743L05	330pF
C351	2113743N33	20pF
C352	2113743N28	12pF
C353	2113743N41	43pF
C354	2113743N42	47pF
C355	2113743A24	0.330uF
C356	2113743M08	22000pF
C357	2113743A23	0.220uF
C358	2113741A23	1200pF
C359	2109720D14	0.1uF
C360	2113743E07	0.022uF
C361	2113741F49	10nF
C362	2113743M08	22000pF
C363	2311049A40	2.2uF
C364	2113743L41	10000pF
C370	2113743N50	100pF
C371	NOT PLACED	-
C372	NOT PLACED	-
C373	NOT PLACED	-
C374	2113743N50	100pF
C375	2113743N50	100pF
C378	NOT PLACED	-
C380	2113743L41	10000pF
C381	2113743N21	6.2pF
C382	2311049A59	10uF
C383	2113743N50	100pF
C384	2113743N44	56pF
C385	2113743N44	56pF
C386	2113743N50	100pF
C390	2113743N50	100pF
C391	NOT PLACED	-
C395	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C396	NOT PLACED	-
C397	2311049A05	0.47uF
C400	2113743L41	10000pF
C401	2113743M24	100000pF
C402	2113743M24	100000pF
C403	2113743G24	2.2uF
C404	NOT PLACED	-
C405	NOT PLACED	-
C406	NOT PLACED	-
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	100000pF
C410	2113928N01	0.1uF
C411	2113743M24	100000pF
C414	2113743M24	100000pF
C415	2185895Z01	0.01uF
C416	2113928N01	0.1uF
C419	NOT PLACED	-
C420	2113743L41	10000pF
C421	2113928N01	0.1uF
C422	2113743M24	100000pF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	100000pF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	100000pF
C429	2113743M24	100000pF
C430	2113928N01	0.1uF
C431	2113743N50	100pF
C432	NOT PLACED	-
C433	2113743L41	10000pF
C434	2113928N01	0.1uF (not placed in HT750 or PRO5150)
C435	2113743M24	100000pF
C436	2113743N34	22pF (not placed in HT750 or PRO5150)
C437	2113743N34	22pF (not placed in HT750 or PRO5150)
C440	2113743G26	4.7F
C441	2113743N50	100pF
C442	2113743E20	0.10uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	22000pF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOT PLACED	-
C451	2113743M08	22000pF
C452	2113743B29	1uF

Circuit Ref	Motorola Part No.	Description
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743N50	100pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF
C521	2113743L41	10000pF
C522	2113743L41	10000pF
C523	2113743L41	10000pF
C524	2113743N50	100pF
C525	2113743N50	100pF
C526	2113743N50	100pF
C527	2113743N50	100pF
C528	2113743N50	100pF
C529	2113743N50	100pF
CR101	4880973Z02	Pin diode
CR102	4802245J41	Pin diode
CR103	4802245J41	Pin diode
CR105	5185963A15	Temperature sensor
CR160	NOT PLACED	-
CR201	4802233J09	Triple diode (SOT 25)
CR203	4862824C03	Varactor
CR241	4805649Q13	Varactor
CR242	4862824C08	Varactor
CR243	4862824C08	Varactor

Circuit Ref	Motorola Part No.	Description
CR251	4802245J22	Varactor
CR301	4862824C08	Varactor
CR302	4862824C08	Varactor
CR303	4880154K03	Dual common anode-cathode diode
CR304	4862824C08	Varactor
CR305	4862824C08	Varactor
CR306	4802245J42	Ring Quad diode (SOT-143)
CR308	4802245J41	Pin diode
CR310	4862824C08	Varactor
CR411	4802245J62	Diode Schottky
CR412	4802245J62	Diode Schottky
CR413	4802245J62	Diode Schottky
CR440	4813833C02	Dual common cathode diode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
E101	2484657R01	Ferrite bead
E400	2480640Z01	Ferrite bead
E401	2480640Z01	Ferrite bead
E402	2480640Z01	Ferrite bead
E403	2480640Z01	Ferrite bead
E404	2480640Z01	Ferrite bead
E405	2480640Z01	Ferrite bead
E406	2480640Z01	Ferrite bead
E407	2480640Z01	Ferrite bead
E408	2480640Z01	Ferrite bead
E409	2480640Z01	Ferrite bead
F501	6580542Z01	3A fuse
FL201	**4805875Z04	16.8MHz Xtal oscillator
FL301	4802245J43	Xtal Filter 45.1MHz
FL401	4870368G02	Xtal Oscillator 38.4kHz (not placed in HT750 or PRO5150)
H101	2680499Z01	Heat spreader
J101	0985613Z01	RF Jack
J102	0280519Z02	Antenna nut
J102	**0280519Z04	
J400	0905505Y04	40-pin connector
J403	0905505Y02	20-pin connector
L101	2479990B02	19.61nH
L102	2479990B02	19.61nH
L104	2479990B02	19.61nH
L105	2462587N22	390nH
L106	2479990A02	7.66nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L109	0662057C01	0
L112	2462587N45	22nH
L113	2413926H09	5.6nH
L114	2462587N45	22nH
L115	2462587N22	390nH
L116	2479990A03	9.75nH

Circuit Ref	Motorola Part No.	Description
L160	2413926H14	15nH
L201	2462587Q20	2200nH
L202	2462587Q20	2200nH
L203	2462587Q20	2200nH
L232	2462587P25	12000nH
L241	2462587V41	390nH
L242	2462587V38	220nH
L243	2460593C01	Multi-layered Teflon resonator, Rx
L251	2462587V28	33nH
L253	2460593C02	Multi-layered Teflon resonator, Tx
L261	2462587V29	39nH
L271	2462587V32	68nH
L273	2462587V28	33nH
L281	2462587V41	390nH
L282	2462587V41	390nH
L301	2479990C01	13.9nH
L302	2479990C01	13.9nH
L303	2462587V26	22nH
L304	2462587V37	180nH
L305	2462587V26	22nH
L306	2479990C01	13.9nH
L307	2479990C01	13.9nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH
L311	2462587N65	750nH
L314	2462587N72	2200nH
L321	NOT PLACED	-
L325	2480646Z20	2.2uH
L330	2462587N64	680nH
L331	2480646Z20	2.2uH
L332	2462587N53	100nH
L340	2462587V41	390nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
P100	3905643V01	Ground contact finger
PB501	4080523Z01	Tactile switch, pushbutton
PB502	4080523Z01	Tactile switch, pushbutton
PB503	4080523Z01	Tactile switch, pushbutton
PB504	4080523Z01	Tactile switch, pushbutton
PB505	4080523Z01	Tactile switch, pushbutton
Q110	4813828A09	RF PA
Q111	4802245J50	Dual NPN/PNP transistor
Q210	4802245J50	Dual NPN/PNP transistor
Q241	4805218N63	RF NPN transistor
Q260	4802245J50	Dual NPN/PNP transistor
Q261	4802245J50	Dual NPN/PNP transistor

Circuit Ref	Motorola Part No.	Description
Q301	4802245J44	NPN Transistor
Q302	4802245J44	NPN Transistor
Q310	NOT PLACED	-
Q315	4880214G02	NPN
Q316	NOT PLACED	-
Q320	4805218N63	RF NPN transistor
Q400	4809579E18	Mosfet P - channel
Q403	4813824A17	Bipolar Transistor, PNP
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	Mosfet P - channel (not placed in HT750 or PRO5150)
Q417	4802245J50	Dual NPN/PNP transistor
Q502	5180159R01	DUAL TRANS NPNS
Q505	4880214G02	NPN
R101	0662057A34	240
R102	0680539Z01	0.1
R103	0662057M41	43
R104	0662057N15	47k
R106	0662057M26	10
R107	NOT PLACED	-
R108	0662057M92	5600
R109	0662057N30	200k
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43k
R130	0662057M98	10k
R131	0662057N05	18k
R132	0662057N33	270k
R133	NOT PLACED	-
R136	0662057N47	1M
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43k
R172	0662057A32	200
R173	0662057N29	180k
R174	0662057N15	47k
R175	0662057B67	6.2
R176	0662057B67	6.2
R201	0662057N21	82k
R202	0662057N23	100k
R204	0662057N15	47k
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18
R242	0662057M57	200
R243	0662057M98	10k
R244	0662057N01	12k
R245	0662057M59	240

Circuit Ref	Motorola Part No.	Description
R248	0662057M37	30
R251	0662057M32	18
R252	0662057M62	330
R253	0662057M95	7500
R254	0662057M95	7500
R255	0662057M89	4300
R256	0662057M37	30
R260	0662057M74	1000
R281	NOT PLACED	-
R300	0662057M82	2200
R301	0662057N23	100k
R302	0662057N23	100k
R303	0662057M74	1000
R304	0662057N01	12k
R305	0662057M67	510
R306	0662057N23	100k
R307	0662057N23	100k
R308	0662057M60	270
R309	0662057M32	18
R310	0662057M60	270
R311	0662057N10	30k
R312	0662057M83	2400
R313	0662057M62	330
R314	0662057M85	3000
R315	0662057N01	12k
R316	0662057A96	91K
R317	0662057M74	1000
R318	0662057A79	18
R319	0662057A29	150
R320	0662057M74	1000
R321	0662057M83	2400
R322	0662057N30	200k
R324	0662057M81	2000
R325	0662057M94	6800
R326	NOT PLACED	-
R327	0662057N11	33k
R328	0662057M12	2.7
R329	0662057M01	0
R330	NOT PLACED	-
R331	NOT PLACED	-
R332	NOT PLACED	-
R333	NOT PLACED	-
R334	NOT PLACED	-
R335	NOT PLACED	-
R336	NOT PLACED	-
R338	NOT PLACED	-
R339	0662057M01	0
R340	0662057M94	6800
R342	0662057N23	100k
R343	0662057M26	10
R344	0662057N01	12k

Circuit Ref	Motorola Part No.	Description
R345	0662057M98	10k
R346	0662057N17	56k
R347	0662057M74	1000
R348	0662057M87	3600
R349	0662057C01	0
R350	0662057N23	100k
R351	0662057C01	0
R352	0662057M86	3300
R355	0662057M01	0
R400	0662057N15	47k
R401	0662057M01	0
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0662057M01	0
R406	0662057N20	75k
R407	0662057N19	68k
R408	NOT PLACED	-
R409	0662057M98	10k
R410	0662057N23	100k
R411	0662057M98	10k
R413	0662057M01	0
R414	0662057V34	180k
R415	0662057V26	91k
R416	0662057M98	10k
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M (not placed in HT750 or PRO5150)
R421	0662057M81	2000
R423	0662057N39	470k
R424	0662057N12	36k
R425	0662057N10	30k
R426	0662057N35	330k (not placed in HT750 or PRO5150)
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057M98	10k
R431	0662057N39	470k
R432	0662057N16	51k
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R445	0662057N08	24k
R447	0662057N23	100k
R448	0662057M98	10k
R449	0662057N08	24k
R450	0683962T45	68 ohms, 1W
R451	0662057N03	15k
R452	0662057N23	100k
R453	NOT PLACED	-
R454	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
R455	NOT PLACED	-
R456	0662057M01	0
R457	0662057M98	10k
R460	0662057M90	4700
R461	0662057M56	180 (not placed in HT750 or PRO5150)
R462	0662057M98	10k (not placed in HT750 or PRO5150)
R463	0662057M61	300
R471	0662057N06	20k
R472	0662057N12	36k
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330k
R477	0662057M74	1000
R478	0662057M98	10k
R481	0662057N08	24k
R492	0662057M01	0
R498	0662057M98	10k
R499	0662057M98	10k (not placed in HT750 or PRO5150)
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10k
R506	0662057N15	47k
R507	0662057M01	0
RT300	0680590Z01	THERMISTOR_33K
RT301	NOT PLACED	-
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z01	Frequency switch
	**4080710Z09	
S502	1880619Z02	Volume/on-off switch
SH100	2680507Z01	Harmonic Filter shield
SH101	2680510Z01	RF PA shield
SH201	2680511Z01	Synthesizer top shield
SH202	2680511Z01	Synthesizer bottom shield
SH241	2680513Z01	Resonators shield
SH242	2680514Z01	VCO Buffer IC shield
SH301	2680554Z01	Receiver front end shield
SH302	2680555Z01	Receiver front end bottom shield
SH303	2680509Z01	Mixer shield
SH304	2680624Z01	Mixer diode shield
SH321	2680508Z01	LVZIF 2nd LO shield
SH322	2680514Z01	LVZIF shield
SH323	2680553Z01	Crystal Filter shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller on-off shield
SH402	2680515Z01	Microprocessor shield
SH403	2680516Z01	Asfic_Cmp/Audio PA shield
T301	2580541Z01	Balun transformer

Circuit Ref	Motorola Part No.	Description
T302	2580541Z01	Balun transformer
U101	5185130C65	VHF/UHF/800 MHZ LDMOS DRIVER
U102	5185765B28	PCIC
U201	**5185963A27	LVFRACN Synthesizer IC
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO BUFFER IC
U247	5105739X05	SOT 5V Regulator
U248	5102463J58	3.3V Regulator
U301	5109632D83	LVZIF IC
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC_CMP IC
U405	NOT PLACED	-
U406	*5102463J59	Flash ROM 128K x 8
U407	**5102463J64	16K x 8 EEPROM
U409	5102226J56	Microprocessor
U410	5102463J57	3.3V Regulator (not placed in HT750 or PRO5150)
U420	5102463J44	Audio PA
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J73	ZENER DIODE-6.8V
VR439	4880140L17	Zener diode-12V
VR440	4802245J73	ZENER DIODE-6.8V
VR441	4802245J73	ZENER DIODE-6.8V
VR442	4802245J73	ZENER DIODE-6.8V
VR443	4802245J73	ZENER DIODE-6.8V
VR444	4802245J73	ZENER DIODE-6.8V
VR445	4802245J53	ZENER_DIODE-10V
VR446	4802245J74	ZENER DIODE-10V
VR447	4802245J74	ZENER DIODE-10V
VR448	4802245J74	ZENER DIODE-10V
VR449	4802245J74	ZENER DIODE-10V
VR450	4802245J75	ZENER DIODE-12V
VR460	4802245J73	ZENER DIODE-6.8V
VR501	4813830A18	6.8V Zener
VR506	4802245J73	ZENER DIODE-6.8V
	1485777Z01	INSULATOR (KAPTON)
	8480450Z14	UHF B1 main PC board

\* Motorola Depot Servicing only

## Notes







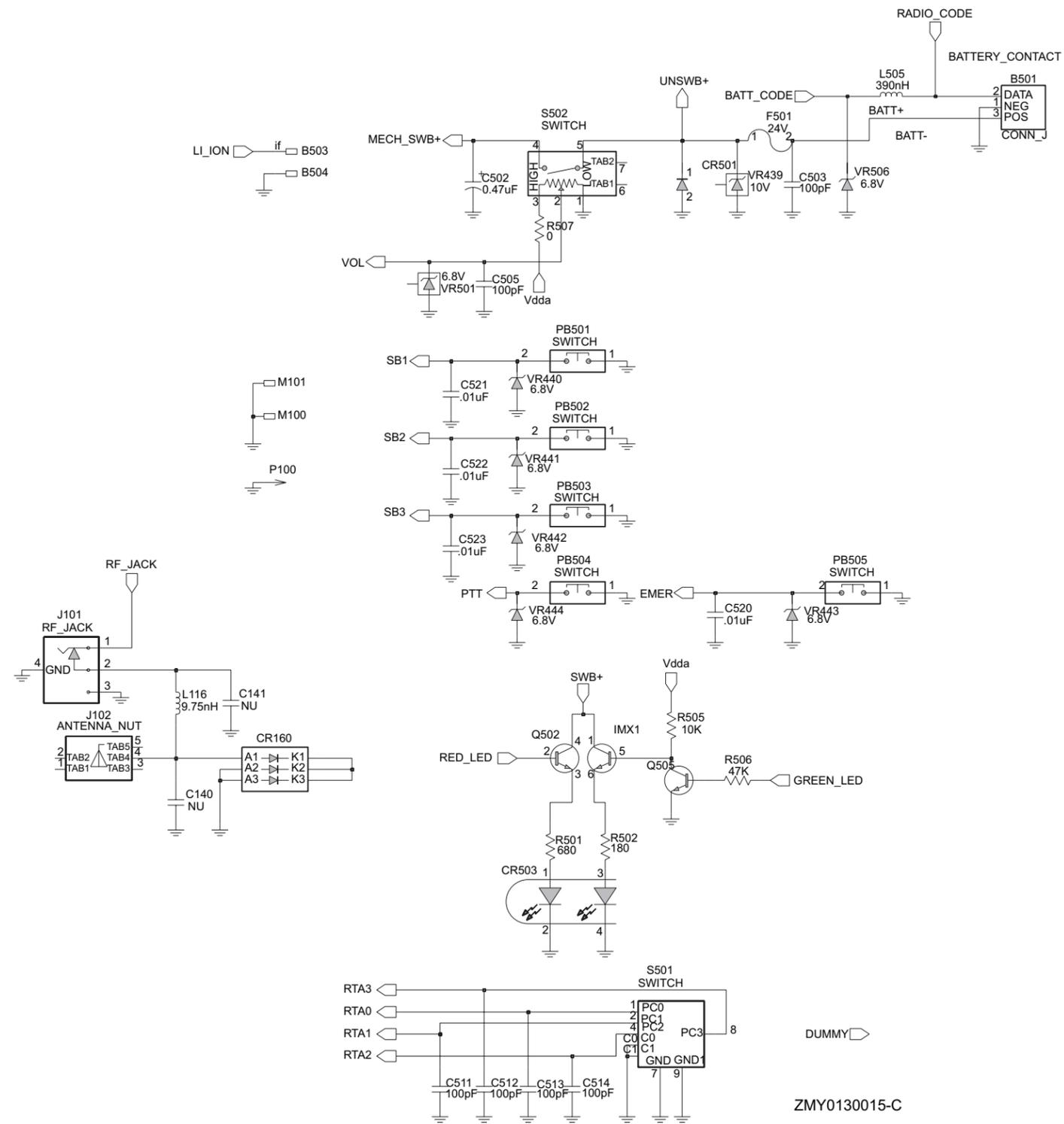


Figure 9-52. UHF (403-470 MHz) Controls And Switches Schematic Diagram

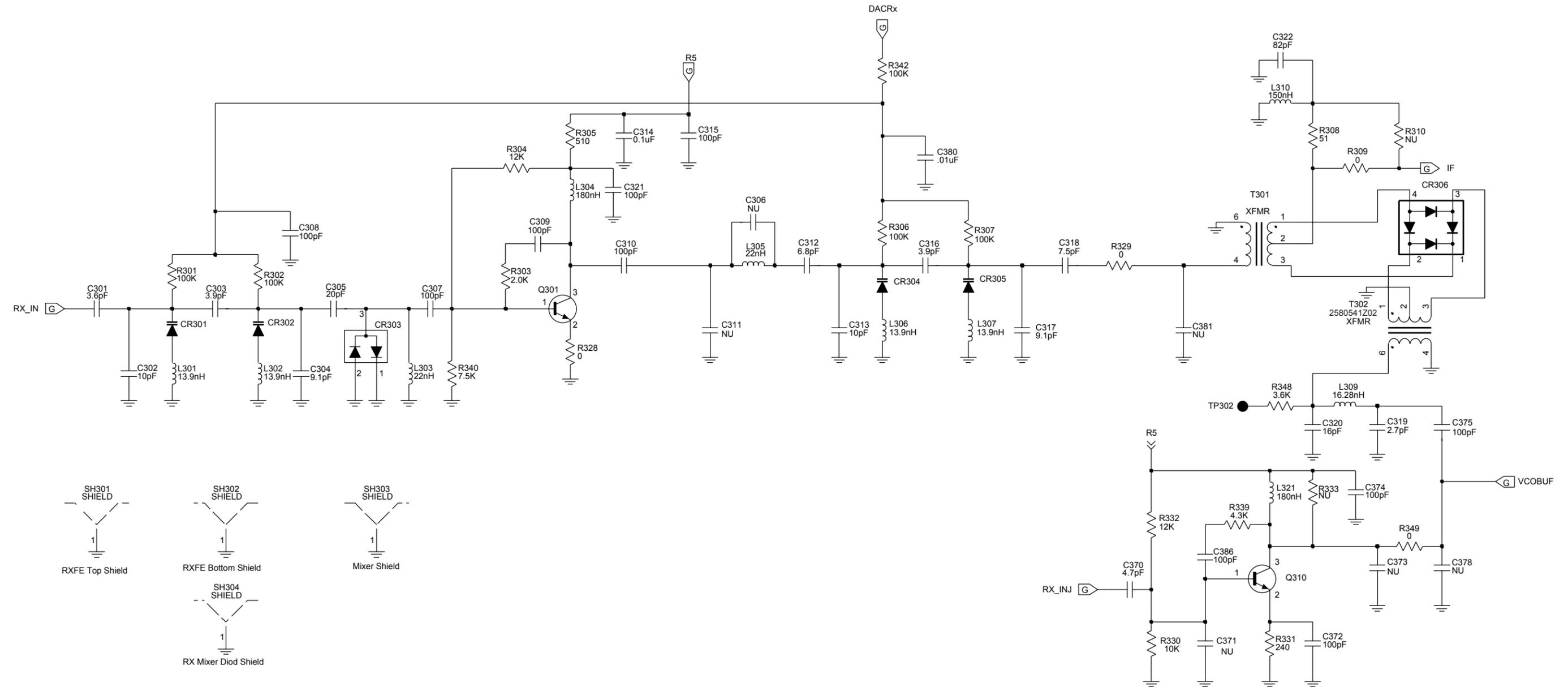


Figure 9-53. UHF (403-470 MHz) Receiver Front-End Schematic Diagram

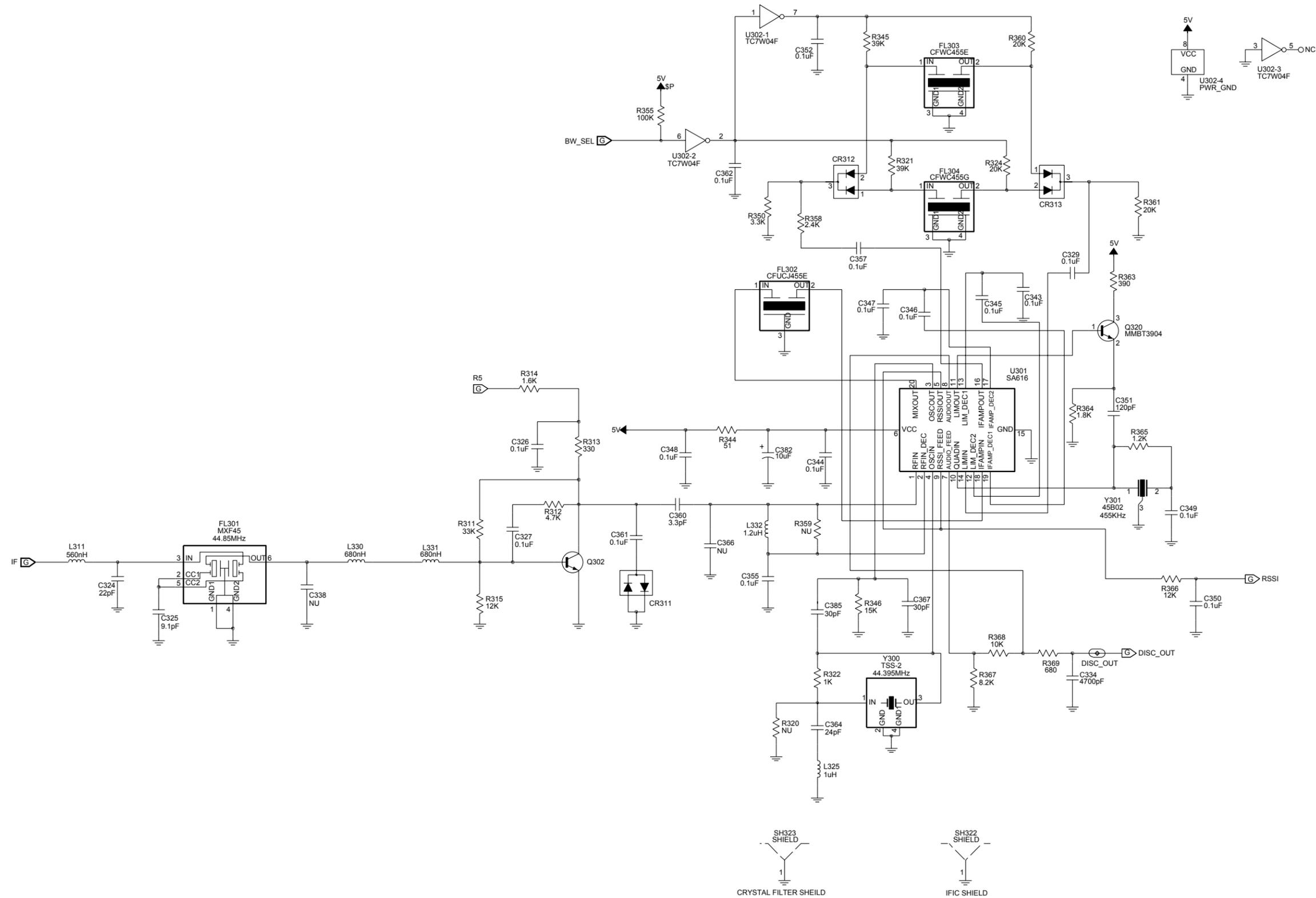


Figure 9-54. UHF (403-470 MHz) Receiver Back-End Schematic Diagram

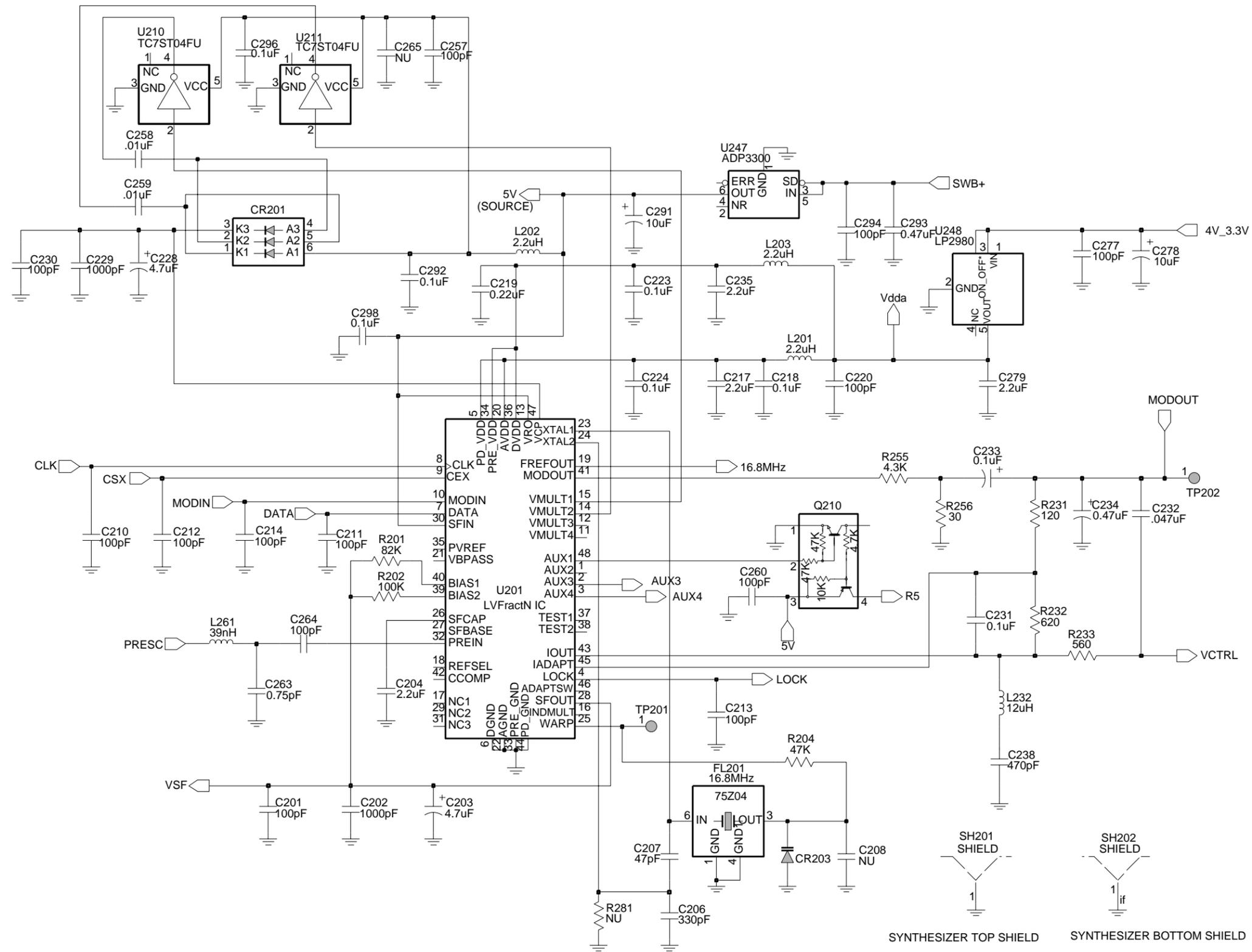


Figure 9-55. UHF (403-470 MHz) Synthesizer Schematic Diagram

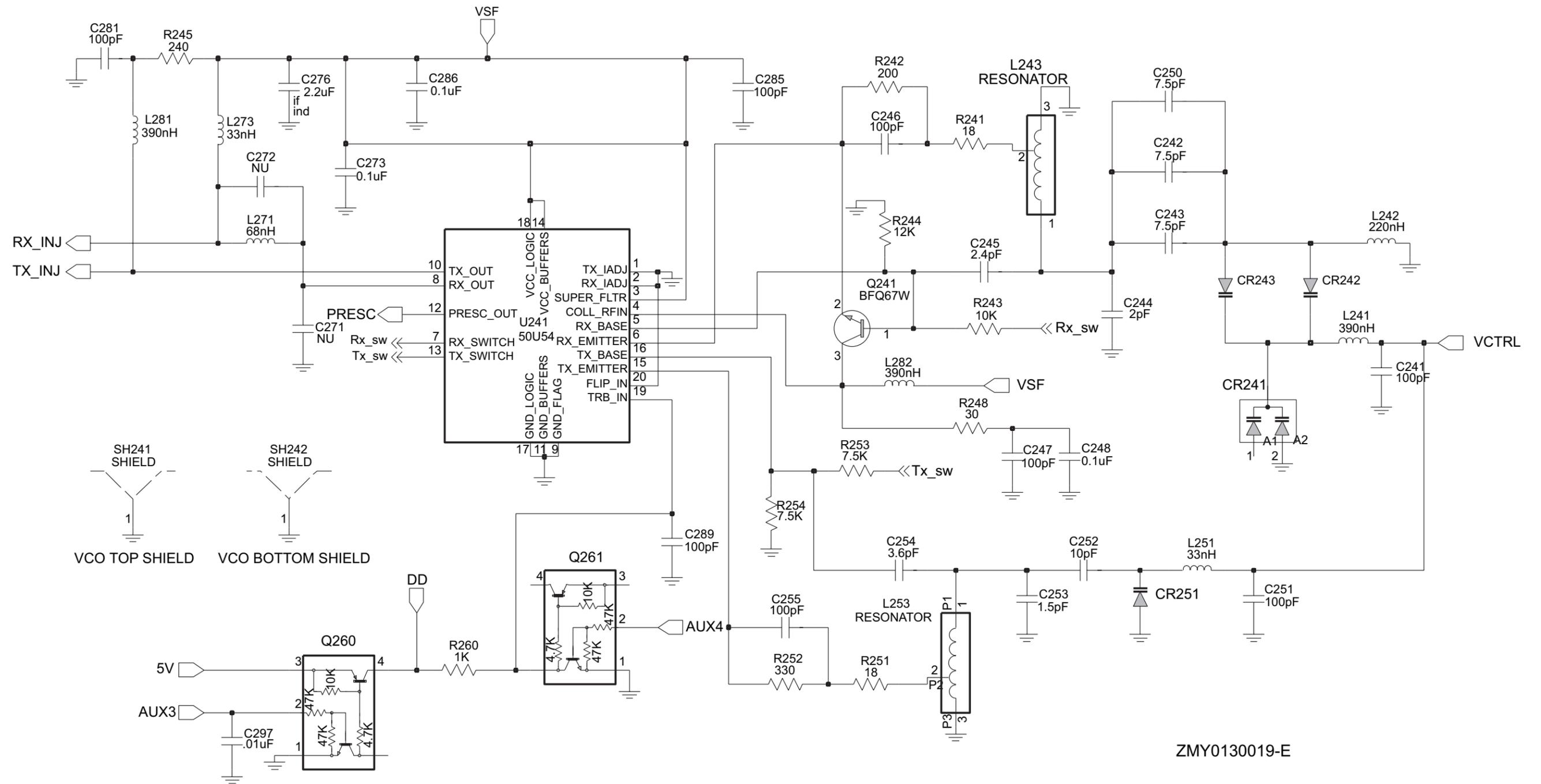


Figure 9-56. UHF (403-470 MHz) Voltage Controlled Oscillator Schematic Diagram

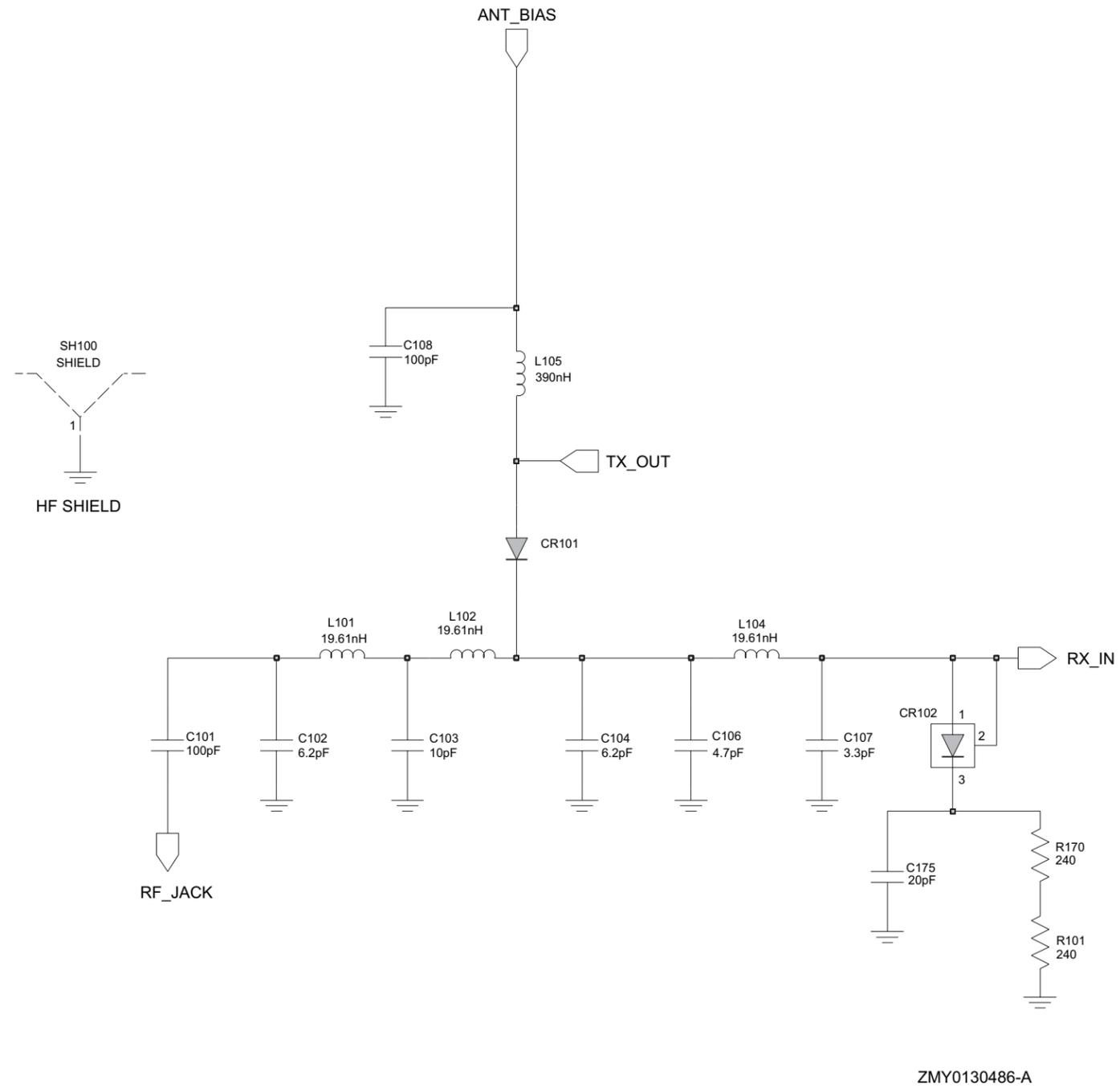


Figure 9-57. UHF (403-470 MHz) Harmonic Filter Schematic Diagram



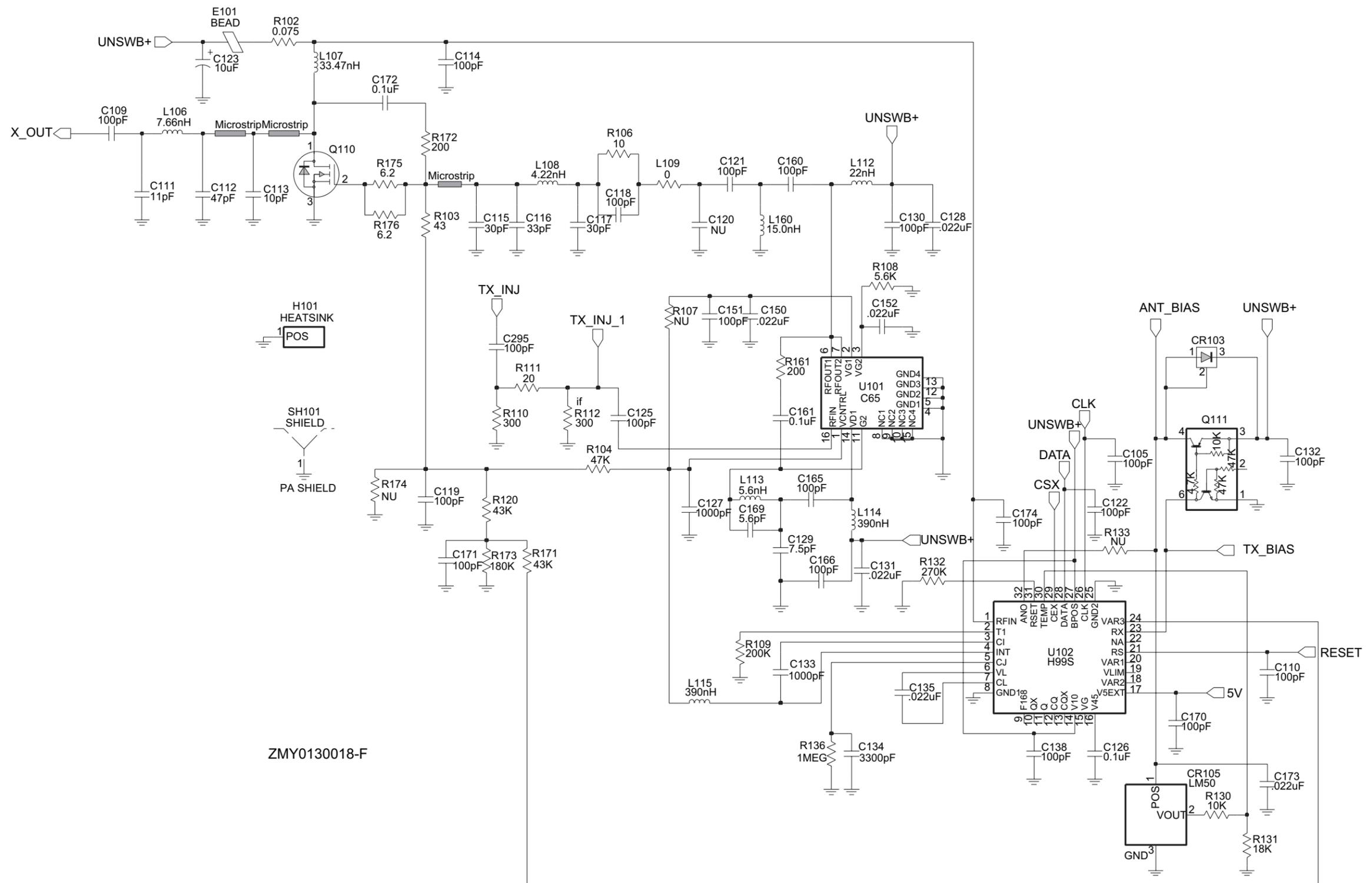


Figure 9-58. UHF (403-470 MHz) Transmitter Schematic Diagram

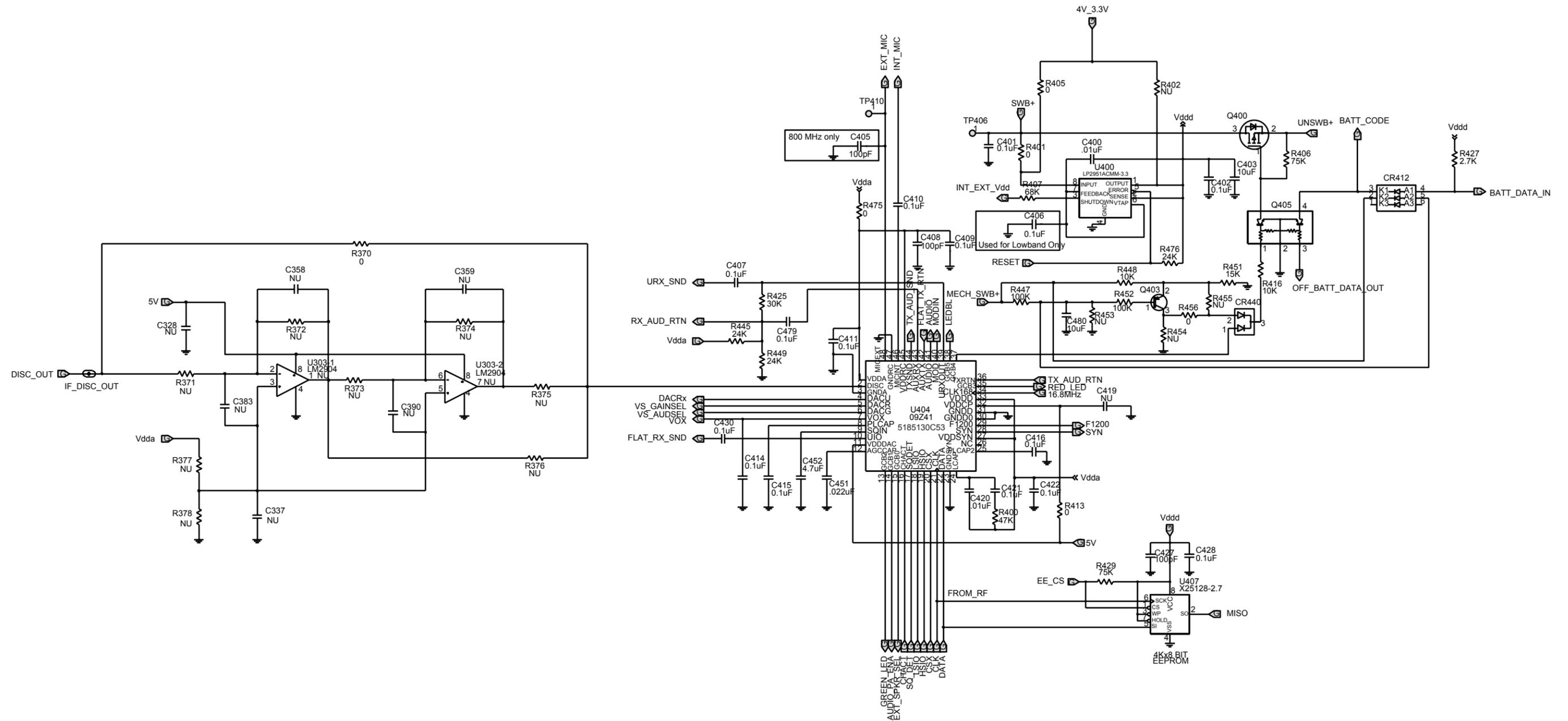


Figure 9-59. UHF (403-470 MHz) Controller ASFIC/ON\_OFF Schematic Diagram

**UHF (403-470 MHz) Radio Parts List  
(PCB 8486458Z02)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F27	10pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2113740F31	15pF
C112	2180605Z32	47pF
C113	2180605Z16	10pF
C114	2113743N50	100pF
C115	2113743N35	24pF
C116	2113743N35	24pF
C117	2113743N34	22pF
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N27	11pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A96	33uF
C125	2113743N50	100pF
C126	2113743M24	100000pF
C127	2113743L17	1000pF
C128	2113743M08	22000pF
C129	2113743N23	7.5pF
C130	2113743N50	100pF
C131	2113743M08	22000pF
C132	2113743N50	100pF
C133	2113743L17	1000pF
C134	2113743L29	3300pF
C135	2113743M08	22000pF
C138	2113743N50	100pF
C140	0662057A67	5600
C141	NOT PLACED	-
C150	2113743M08	22000pF
C151	2113743N50	100pF
C152	2113743M08	22000pF
C160	2113743N50	100pF
C161	2113743M24	100000pF
C165	2113743N50	100pF
C166	2113743N50	100pF
C169	2113743N20	5.6 pF
C170	2113743N50	100pF
C171	2113743N50	100pF
C172	2113740F51	100pF
C173	2113743M08	22000pF
C174	2113743N50	100pF
C175	2113740F51	100pF

Circuit Ref	Motorola Part No.	Description
C201	2113743N50	100pF
C202	2113743L17	1000pF
C203	2113928L05	4.7uF
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N42	47pF
C208	NOT PLACED	-
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	100000pF
C219	2113743K16	0.220uF
C220	2113743N50	100pF
C223	2113743M24	100000pF
C224	2113743M24	100000pF
C228	2311049J11	4.7uF
C229	2113743L17	1000pF
C230	2113743N50	100pF
C231	2113743M24	100000pF
C232	2113743E12	0.047uF
C233	2311049A01	0.1uF
C234	2311049A05	0.47uF
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N23	7.5pF
C243	2113743N23	7.5pF
C244	2113740F10	2.0pF
C245	2113743N11	2.4pF
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	100000pF
C250	2113743N23	7.5pF
C251	2113743N50	100pF
C252	2113743N26	10pF
C253	2113740F09	1.8pF
C254	2113743N15	3.6pF
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	10000pF
C259	2113743L41	10000pF
C260	2113743N50	100pF
C263	2113743N02	0.75pF
C264	2113743N50	100pF
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	NOT PLACED	-
C273	2113743M24	100000pF
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A57	10uF
C279	2104993J02	2.2uF
C281	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C285	2113743N50	100pF
C286	2113743M24	100000pF
C289	2113743N50	100pF
C291	2311049A69	10uF
C292	2113743M24	100000pF
C293	2113743A27	0.470uF
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	100000pF
C297	2113743L41	10000pF
C298	2113743M24	100000pF
C301	2113743N15	3.6pF
C302	2113743N26	10pF
C303	2113740L08	3.9pF
C304	2113743N26	10pF
C305	2113743N33	20pF
C306	NOT PLACED	-
C307	2113743N50	100pF
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743N50	100pF
C311	NOT PLACED	-
C312	2113743N25	9.1pF
C313	2113743N26	10pF
C314	2113743M24	100000pF
C315	2113743N50	100pF
C316	2113740L08	3.9pF
C317	2113743N25	9.1pF
C318	2113743N23	7.5pF
C319	2113743N12	2.7pF
C320	2113743N31	16pF
C321	2113743N50	100pF
C322	2113743N48	82pF
C324	2113743N34	22pF
C325	2109445U26	9.1pF
C326	2113743M24	0.1pF
C327	2113743M24	0.1pF
C328	2113743M24	100000pF
C329	2113743M24	100000pF
C334	2113743L33	4700pF
C337	NOT PLACED	-
C338	NOT PLACED	-
C343	2113743M24	100000pF
C344	2113743E20	0.1uF
C345	2113743M24	100000pF
C346	2113743M24	100000pF
C347	2113743M24	100000pF
C348	2113743M24	100000pF
C349	2113743E20	0.1uF
C350	2113743M24	100000pF
C351	2113743N52	120pF
C352	2113743M24	100000pF
C355	2113743M24	100000pF
C357	2113743M24	100000pF
C358	NOT PLACED	-
C359	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
C360	2113743N14	3.3pF
C361	2113743M24	100000pF
C362	2113743M24	100000pF
C364	2113743N35	24pF
C366	NOT PLACED	-
C367	2113743N37	30pF
C370	2113743N18	4.7pF
C371	NOT PLACED	-
C372	2113743N50	100pF
C373	NOT PLACED	-
C374	2113743N50	100pF
C375	2113743N50	100pF
C378	NOT PLACED	-
C380	2113743L41	10000pF
C381	NOT PLACED	-
C382	2311049A59	10uF
C383	NOT PLACED	-
C385	2113743N37	30pF
C386	2113743N50	100pF
C390	NOT PLACED	-
C400	2113743L41	10000pF
C401	2113743M24	100000pF
C402	2113743M24	100000pF
C403	2113743G24	2.2uF
C404	NOT PLACED	-
C405	2113743N50	100pF
C406	NOT PLACED	-
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	100000pF
C410	2113928N01	0.1uF
C411	2113743M24	100000pF
C414	2113743M24	100000pF
C415	2185895Z01	0.01uF
C416	2113928N01	0.1uF
C419	NOT PLACED	-
C420	2113743L41	10000pF
C421	2113928N01	0.1uF
C422	2113743M24	100000pF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	100000pF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	100000pF
C429	2113743M24	100000pF
C430	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS+ Models Only)
C431	2113743N50	100pF
C432	NOT PLACED	-
C433	2113743L41	10000pF
C434	2113928N01	0.1uF
C435	2113743M24	100000pF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7F

Circuit Ref	Motorola Part No.	Description
C441	2113743N50	100pF
C442	2113743E20	0.10uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	22000pF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOT PLACED	-
C451	2113743M08	22000pF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743N50	100pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01 0662057M01	0.1uF, 10% 0 (SUB on LS+ Models Only)
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF
C521	2113743L41	10000pF
C522	2113743L41	10000pF
C523	2113743L41	10000pF
C524	2113743N50	100pF
C525	2113743N50	100pF
C526	2113743N50	100pF
C527	2113743N50	100pF
C528	2113743N50	100pF
C529	2113743N50	100pF
CR101	4880973Z02	Pin diode
CR102	4802245J41	Pin diode
CR103	4802245J41	Pin diode

Circuit Ref	Motorola Part No.	Description
CR105	5185963A15	Temperature sensor
CR160	NOT PLACED	-
CR201	4802233J09	Triple diode (SOT 25)
CR203	4862824C03	Varactor
CR241	4805649Q13	Varactor
CR242	4862824C08	Varactor
CR243	4862824C08	Varactor
CR251	4802245J22	Varactor
CR301	4862824C08	Varactor
CR302	4862824C08	Varactor
CR303	4880154K03	Dual common anode-cathode diode
CR304	4862824C08	Varactor
CR305	4862824C08	Varactor
CR306	4802245J42	Ring Quad diode (SOT-143)
CR311	4813825A19	Diode Schottky
CR312	4802245J97	Switch Diode
CR313	4802245J97	Switch Diode
CR411	4802245J62	Diode Schottky
CR412	4802245J62	Diode Schottky
CR413	4802245J62	Diode Schottky
CR440	4813833C02	Dual common cathode diode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
E101	2484657R01	Ferrite bead
E400	2480640Z01	Ferrite bead
E401	2480640Z01	Ferrite bead
E402	2480640Z01	Ferrite bead
E403	2480640Z01	Ferrite bead
E404	2480640Z01	Ferrite bead
E405	2480640Z01	Ferrite bead
E406	2480640Z01	Ferrite bead
E407	2480640Z01	Ferrite bead
E408	2480640Z01	Ferrite bead
E409	2480640Z01	Ferrite bead
F501	6580542Z01	3A fuse
FL201	4805875Z04	16.8MHz Xtal oscillator
FL301	9180022M11	Xtal Filter 44.85MHz
FL302	9180468V05	455kHz 4-pole ceramic filter
FL303	9180469V05	455kHz 6-pole ceramic filter
FL304	9180469V03	455kHz 6-pole ceramic filter
FL401	4870368G02	Xtal Oscillator 38.4kHz
H101	2680499Z01	Heat spreader
J101	0985613Z01	RF Jack
J102	0280519Z04	Nut, Antenna
J400	0905505Y04	40-pin connector
J403	0905505Y02	20-pin connector
L101	2479990B02	19.61nH
L102	2479990B02	19.61nH
L104	2479990B02	19.61nH
L105	2462587N22	390nH
L106	2479990A02	7.66nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L109	2479990B01	11.03nH
L112	2462587N45	22nH

Circuit Ref	Motorola Part No.	Description
L113	2413926H09	5.6nH
L114	2462587N45	22nH
L115	2462587N22	390nH
L116	2479990A03	9.75nH
L160	2413926H14	15nH
L201	2462587Q20	2200nH
L202	2462587Q20	2200nH
L203	2462587Q20	2200nH
L232	2462587P25	12000nH
L241	2462587V41	390nH
L242	2462587V38	220nH
L243	2485776Z01	Multi-layered Teflon resonator, Rx
L251	2462587V28	33nH
L253	2460593C02	Multi-layered Teflon resonator, Tx
L261	2462587V29	39nH
L271	2462587V32	68nH
L273	2462587V28	33nH
L281	2462587V41	390nH
L282	2462587V41	390nH
L301	2479990C01	13.9nH
L302	2479990C01	13.9nH
L303	2462587V26	22nH
L304	2462587V37	180nH
L305	2462587V26	22nH
L306	2479990C01	13.9nH
L307	2479990C01	13.9nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH
L311	2413926K32	560nH
L321	2462587V37	180nH
L325	2462587N68	1uH
L330	0662057C01	0
L331	2413926K33	680nH
L332	2413923A25	1.2uH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
P100	3905643V01	Ground contact finger
PB501	4086470Z01	Tactile switch, pushbutton
PB502	4086470Z01	Tactile switch, pushbutton
PB503	4086470Z01	Tactile switch, pushbutton
PB504	4086470Z01	Tactile switch, pushbutton
PB505	4086470Z01	Tactile switch, pushbutton
Q110	4813828A09	RF PA
Q111	4809939C05	TSTR Dual NPN/PNP UMH 5
Q210	4809939C05	TSTR Dual NPN/PNP UMH 5
Q241	4805218N63	RF NPN transistor
Q260	4809939C05	TSTR Dual NPN/PNP UMH 5
Q261	4809939C05	TSTR Dual NPN/PNP UMH 5
Q301	4802245J44	NPN Transistor
Q302	4802197J95	NPN Transistor
Q310	4802245J44	NPN Transistor
Q320	4813824A10	RF NPN transistor
Q400	4809579E18	Mosfet P - channel

Circuit Ref	Motorola Part No.	Description
Q403	4813824A17	Bipolar Transistor, PNP
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	Mosfet P - channel
Q417	4809939C05	TSTR Dual NPN/PNP UMH 5
Q502	5180159R01	DUAL TRANS NPNS
Q505	4880214G02	NPN
R101	0662057A34	240
R102	0680539Z01	0.1
R103	0662057M41	43
R104	0662057N15	47k
R106	0662057M26	10
R107	NOT PLACED	-
R108	0662057M92	5600
R109	0662057N30	200k
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43k
R130	0662057M98	10k
R131	0662057N05	18k
R132	0662057N33	270k
R133	NOT PLACED	-
R136	NOT PLACED	-
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43k
R172	0662057A32	200
R173	0662057N29	180k
R174	0662057N15	47k
R175	0662057B59	3.0
R176	0662057B59	3.0
R201	0662057N21	82k
R202	0662057N23	100k
R204	0662057N15	47k
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18
R242	0662057M57	200
R243	0662057M98	10k
R244	0662057N01	12k
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M32	18
R252	0662057M62	330
R253	0662057M95	7500
R254	0662057M95	7500
R255	0662057M89	4300
R256	0662057M37	30
R260	0662057M74	1000
R281	NOT PLACED	-
R301	0662057N23	100k
R302	0662057N23	100k
R303	0662057M81	2K
R304	0662057N01	12k

Circuit Ref	Motorola Part No.	Description
R305	0662057M67	510
R306	0662057N23	100k
R307	0662057N23	100k
R308	0662057M43	51
R309	0662057M01	0
R310	NOT PLACED	-
R311	0662057N11	33k
R312	0662057M90	4.7K
R313	0662057M62	330
R314	0662057M79	1600
R315	0662057M01	12k
R320	NOT PLACED	-
R321	0662057N13	39K
R322	0662057M74	1000
R324	0662057N06	20K
R328	0662057M01	0
R329	0662057M01	0
R330	0662057M98	10K
R331	0662057M57	200
R332	0662057N01	12K
R333	NOT PLACED	-
R339	0662057M89	4.3K
R340	0662057M95	7.5K
R342	0662057N23	100k
R344	0662057M43	51
R345	0662057N13	39k
R346	0662057N03	15k
R348	0662057M87	3600
R349	0662057C01	0
R350	0662057M86	3300
R355	0662057N23	100k
R358	0662057M83	2400
R359	NOT PLACED	-
R360	0662057N06	20k
R361	0662057N06	20k
R363	0662057M64	390
R364	0662057M80	1800
R365	0662057M76	1200
R366	0662057N01	12k
R367	0662057V04	12k
R368	0662057V02	10k
R369	0662057M70	680
R370	0662057M01	0
R371	NOT PLACED	-
R372	NOT PLACED	-
R373	NOT PLACED	-
R374	NOT PLACED	-
R375	NOT PLACED	-
R376	NOT PLACED	-
R377	NOT PLACED	-
R378	NOT PLACED	-
R400	0662057N15	47k
R401	0662057M01	0
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0662057M01	0

Circuit Ref	Motorola Part No.	Description
R406	0662057N20	75k
R407	0662057N19	68k
R408	NOT PLACED	-
R409	0662057M98	10k
R410	0662057N23	100k
R411	0662057M98	10k
R413	0662057M01	0
R414	0662057V34	180k
R415	0662057V26	91k
R416	0662057M98	10k
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2000
R423	0662057N39	470k
R424	0662057N12	36k
R425	0662057N10	30k
R426	0662057N35	330k
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057N20	75k
R431	0662057N39	470k
R432	0662057N16	51k
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R437	NOT PLACED	-
R445	0662057N08	24k
R447	0662057N23	100k
R448	0662057M98	10k
R449	0662057N08	24k
R450	0683962T45	68 ohms, 1W
R451	0662057N03	15k
R452	0662057N23	100k
R453	NOT PLACED	-
R454	NOT PLACED	-
R455	NOT PLACED	-
R456	0662057M01	0
R457	0662057M98	10k
R460	0662057M90	4700
R461	0662057M56	180
R462	0662057M98	10k
R463	0662057M61	300
R471	0662057N06	20k
R472	0662057N12	36k
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330k
R477	0662057M74	1000
R478	0662057M98	10k
R481	0662057N08	24k
R492	0662057M01	0
R498	0662057M98	10k
R499	0662057M98	10k
R501	0662057M70	680
R502	0662057M56	180

Circuit Ref	Motorola Part No.	Description
R505	0662057M98	10k
R506	0662057N15	47k
R507	0662057M01	0
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z09	Switch
S502	1880619Z02	Volume/on-off switch
SH100	2680507Z01	Harmonic Filter shield
SH101	2680510Z01	RF PA shield
SH201	2680511Z01	Synthesizer top shield
SH202	2680511Z01	Synthesizer bottom shield
SH241	2680513Z01	Resonators shield
SH242	2680514Z01	VCO Buffer IC shield
SH301	2686583Z01	Receiver front-end shield
SH302	2680555Z01	Receiver front-end bottom shield
SH303	2680509Z01	Mixer shield
SH304	2680624Z01	Mixer diode shield
SH322	2686528Z01	IF section shield
SH323	2686527Z01	Crystal Filter shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller on-off shield
SH402	2680515Z01	Microprocessor shield
SH403	2680516Z01	Asfic_Cmp/Audio PA shield
T301	2580541Z02	Balun transformer (new)
T302	2580541Z02	Balun transformer (new)
U101	5185130C65	VHF/UHF/800 MHZ LDMOS DRIVER
U102	5185765B26	IC PWR CTRL IN MOS20
U201	5185130C18	IC LV FRAC-N IN 48-PIN TQFP PA
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO BUFFER IC
U247	5105739X05	SOT 5V Regulator
U248	5102463J58	3.3V Regulator
U301	5186144B01	FM IFIC SA616
U302	5109522E10	LMOS Inverter
U303	NOT PLACED	-
U400	5102463J40	3.3V Regulator
U404	5185130C53	IC ASFIC_CMP_R1
U405	NOT PLACED	-
U406	*5102463J59	Flash ROM 128K x 8
U407	*5102463J64	16K x 8 EEPROM
U409	5102226J56	Microprocessor
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J73	ZENER DIODE-6.8V
VR439	4880140L17	ZENER DIODE-12V
VR440	4802245J73	ZENER DIODE-6.8V
VR441	4802245J73	ZENER DIODE-6.8V
VR442	4802245J73	ZENER DIODE-6.8V
VR443	4802245J73	ZENER DIODE-6.8V
VR444	4802245J73	ZENER DIODE-6.8V
VR445	4802245J74	ZENER DIODE-10V
VR446	4802245J74	ZENER DIODE-10V
VR447	4802245J74	ZENER DIODE-10V

Circuit Ref	Motorola Part No.	Description
VR448	4802245J74	ZENER DIODE-10V
VR449	4802245J74	ZENER DIODE-10V
VR450	4802245J75	ZENER DIODE-12V
VR460	4802245J73	ZENER DIODE-6.8V
VR501	4813830A18	6.8V ZENER
VR506	4802245J73	ZENER DIODE-6.8V
Y300	4802245J84	Xtal Oscillator 33.395MHz
Y301	9186145B02	455kHz Ceramic Discriminator
	1485777Z01	INSULATOR (KAPTON)
	8486458Z01	UHF B1 main PC board

\* Motorola Depot Servicing only

## Notes



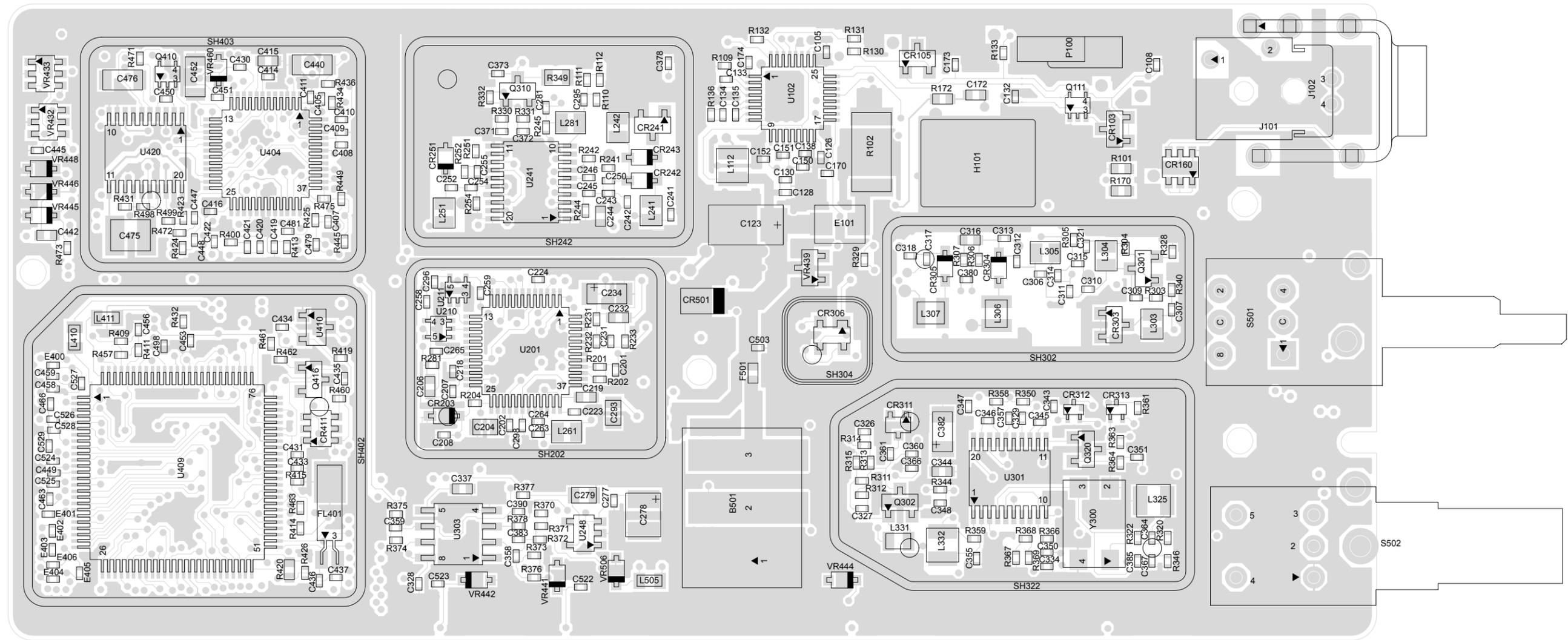


Figure 9-61. UHF (403-470 MHz) 5000/7000 Series Main Board Bottom Side PCB No. 8486458Z03



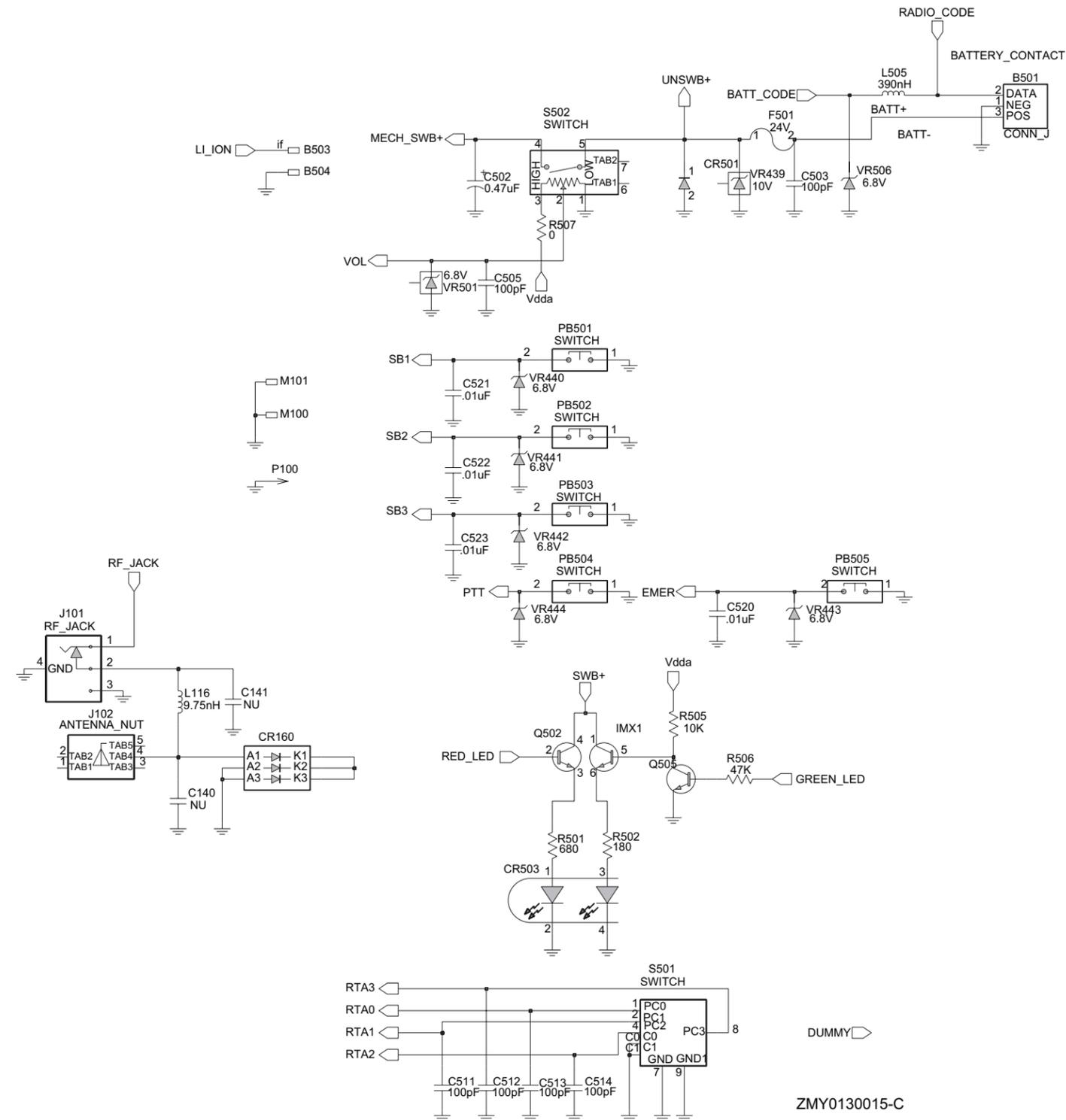


Figure 9-62. UHF (403-470 MHz) Controls And Switches Schematic Diagram

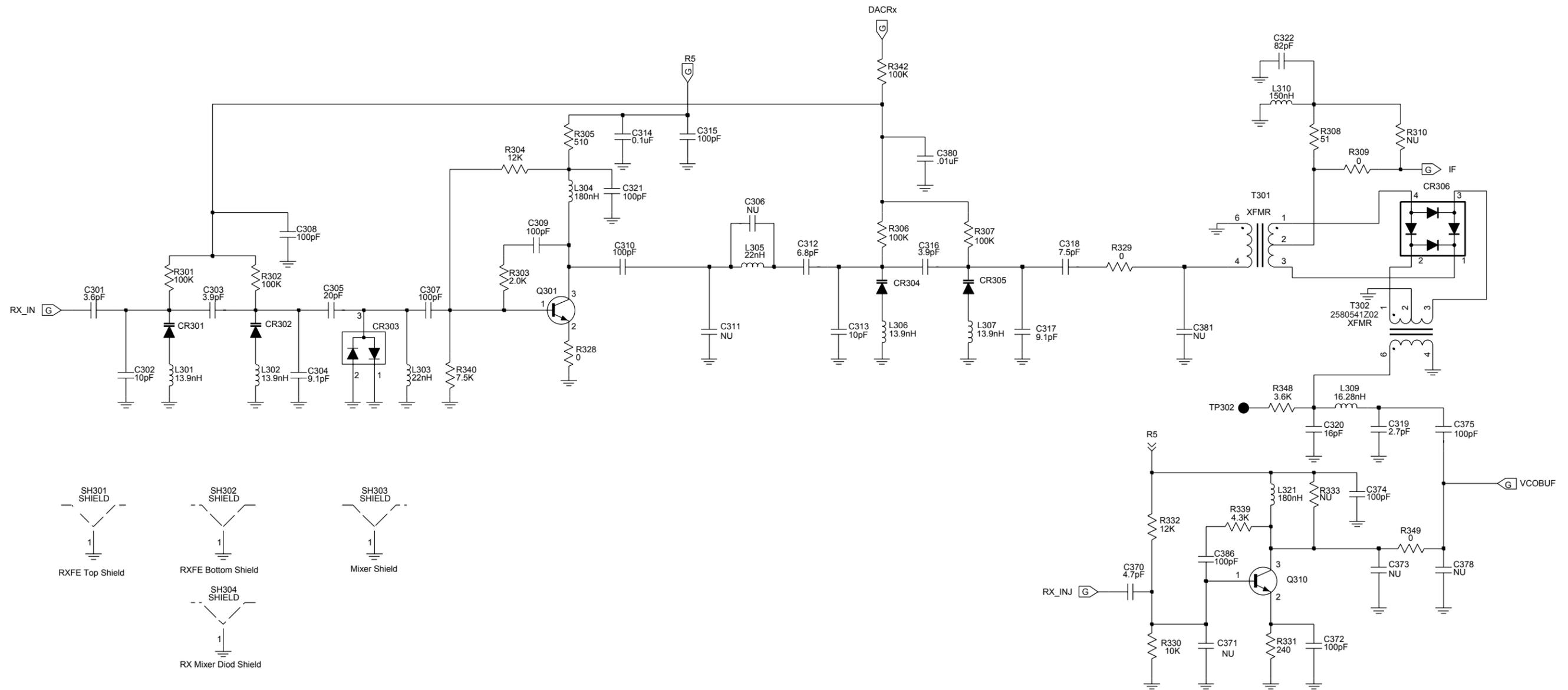


Figure 9-63. UHF (403-470 MHz) Receiver Front End Schematic Diagram

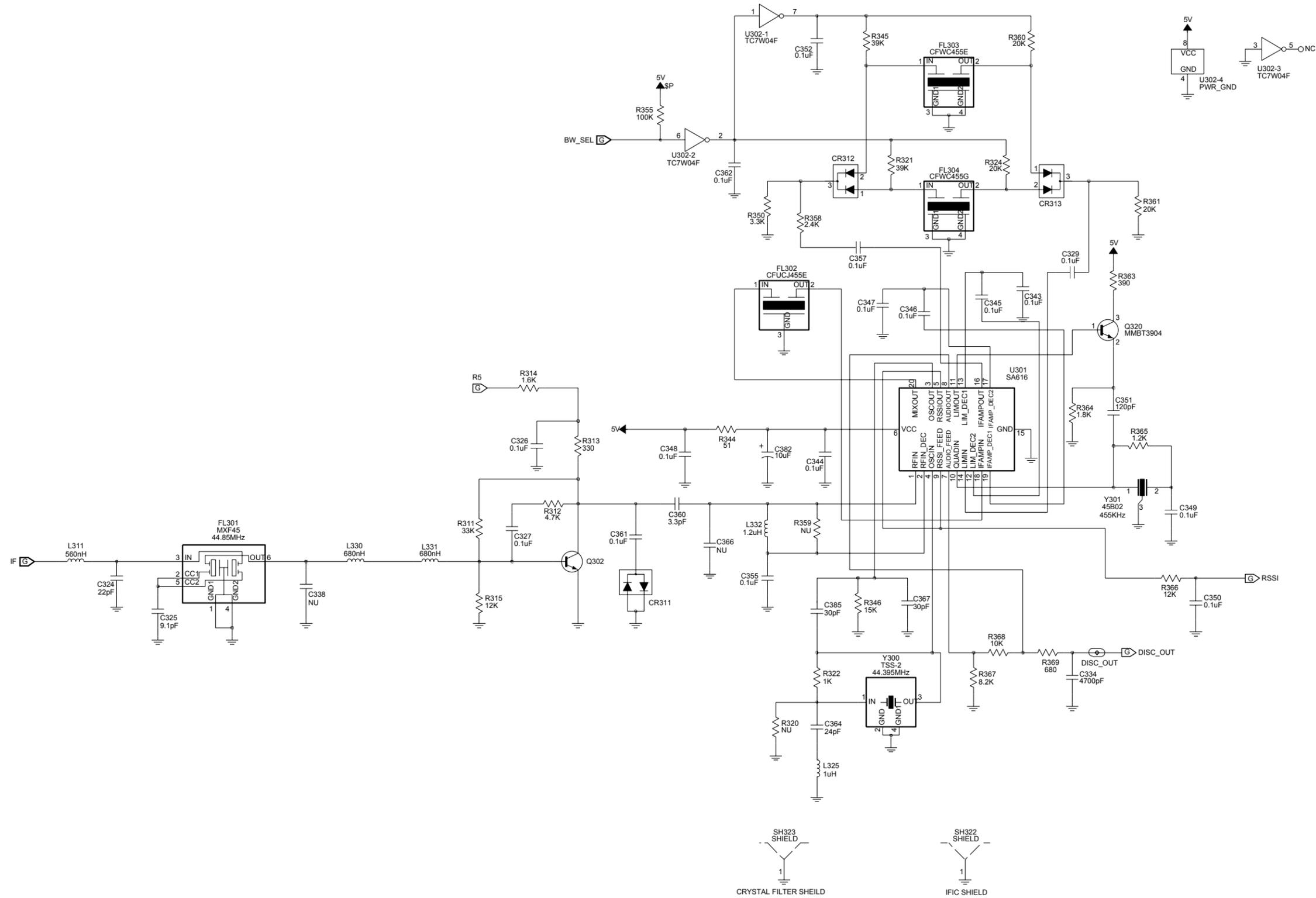


Figure 9-64. UHF (403-470 MHz) Receiver Back End Schematic Diagram

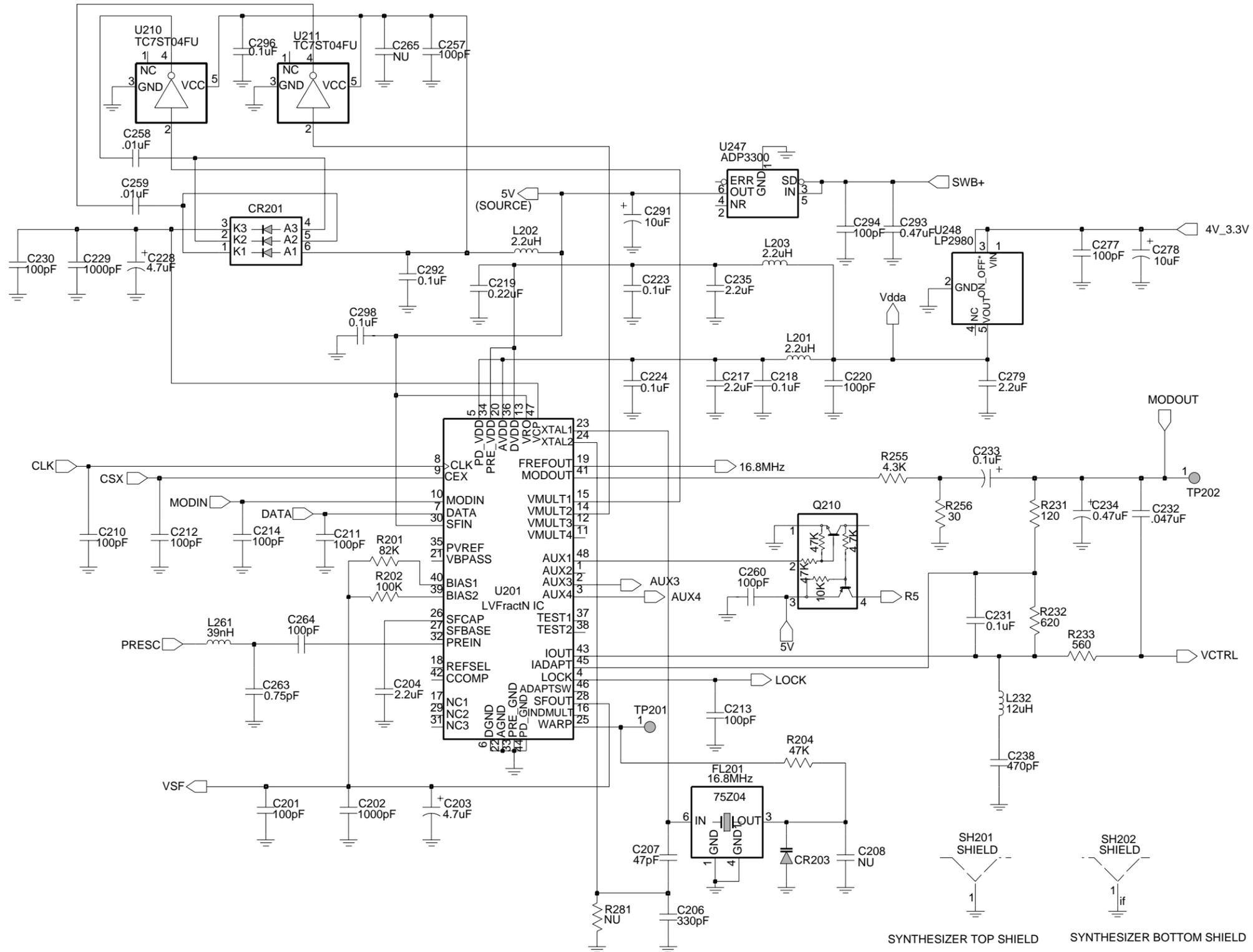
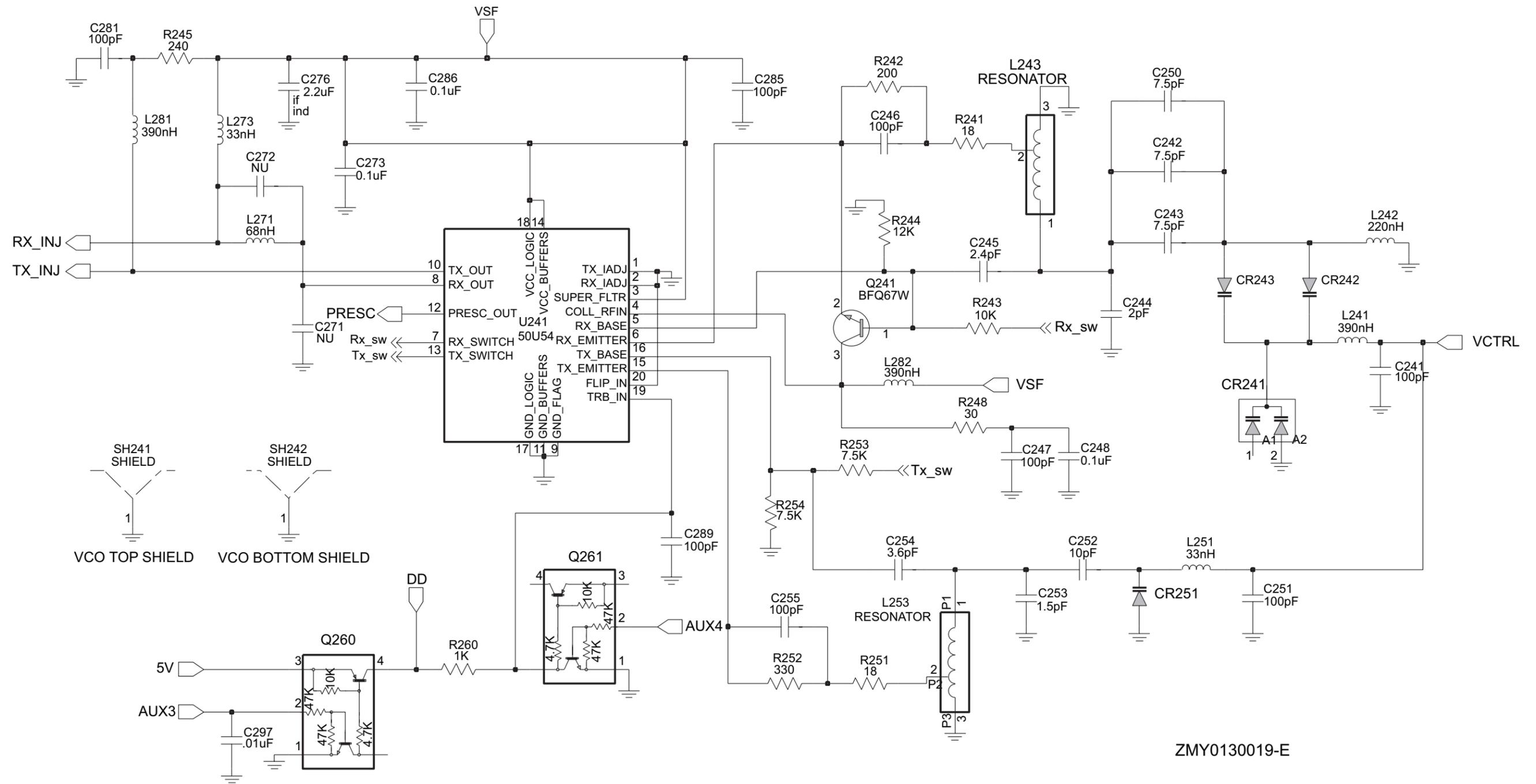


Figure 9-65. UHF (403-470 MHz) Synthesizer Schematic Diagram



ZMY0130019-E

Figure 9-66. UHF (403-470 MHz) Voltage Controlled Oscillator Schematic Diagram

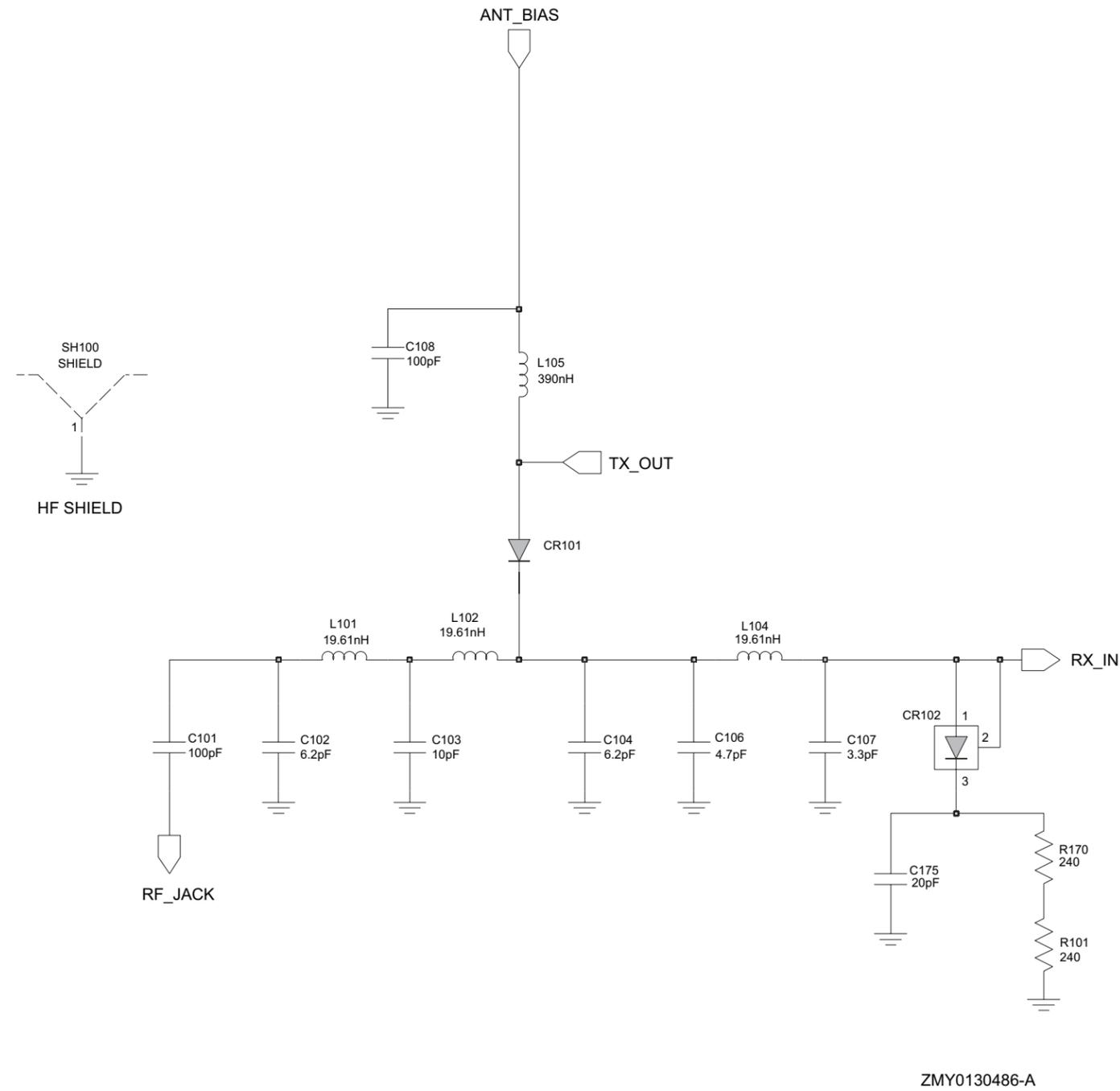


Figure 9-67. UHF (403-470 MHz) Harmonic Filter Schematic Diagram



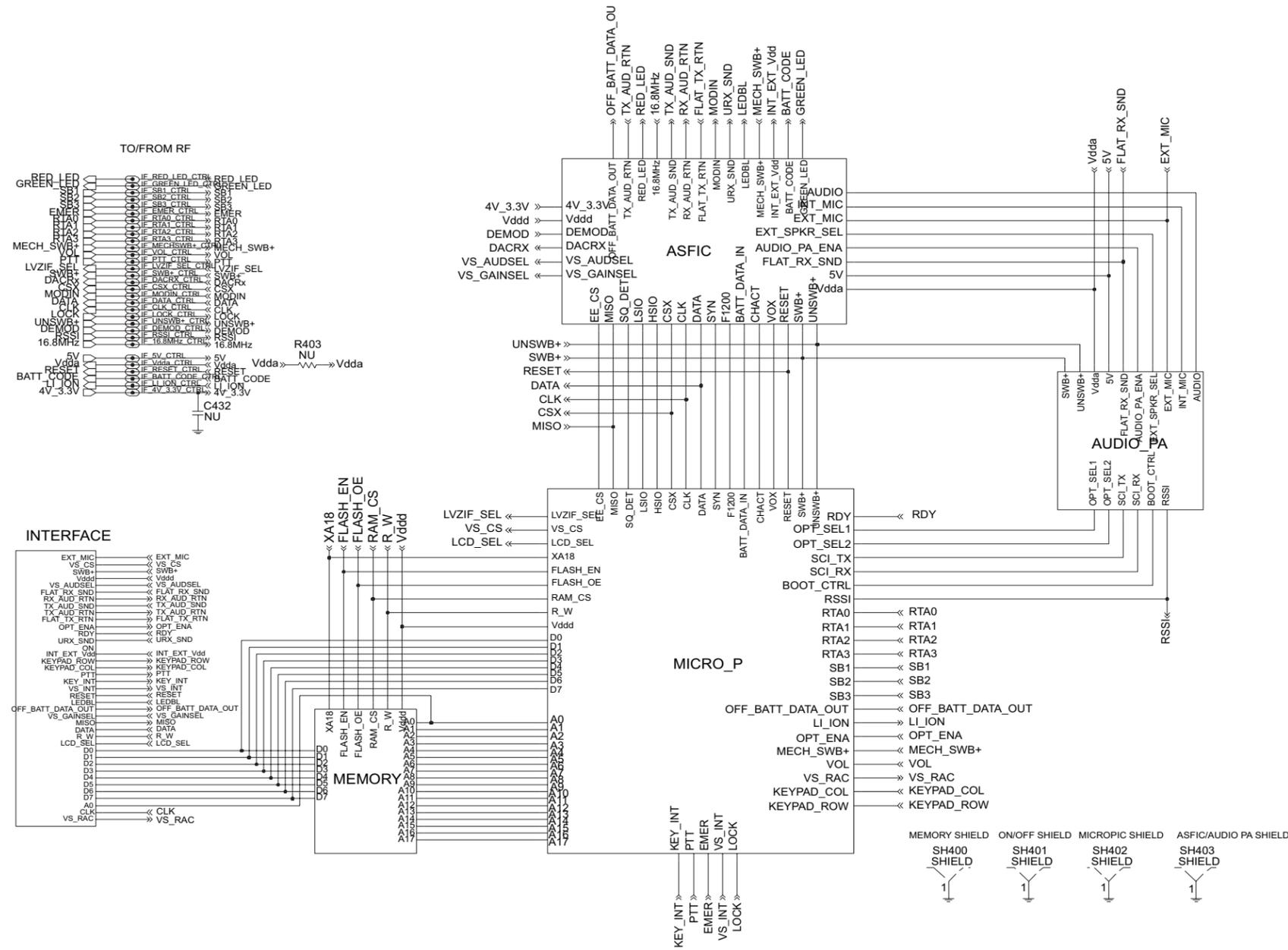


Figure 9-69. UHF (403-470 MHz) Complete Controller Schematic Diagram

Dual Vdd  
1 Pin: 03P05  
Single Vdd  
Dual: 1A1P 03P05



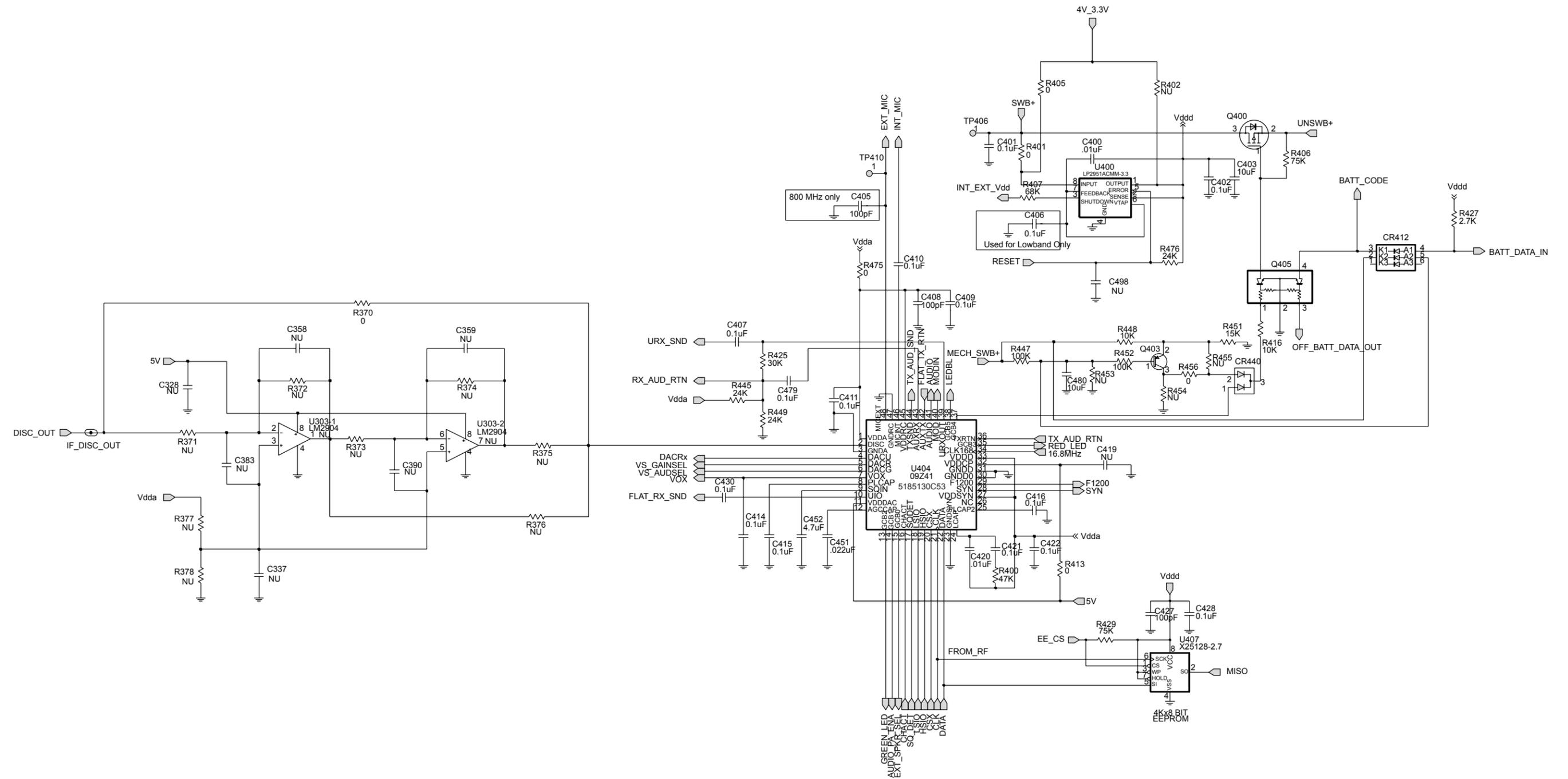


Figure 9-70. UHF (403-470 MHz) Controller ASFIC/ON\_OFF Schematic Diagram

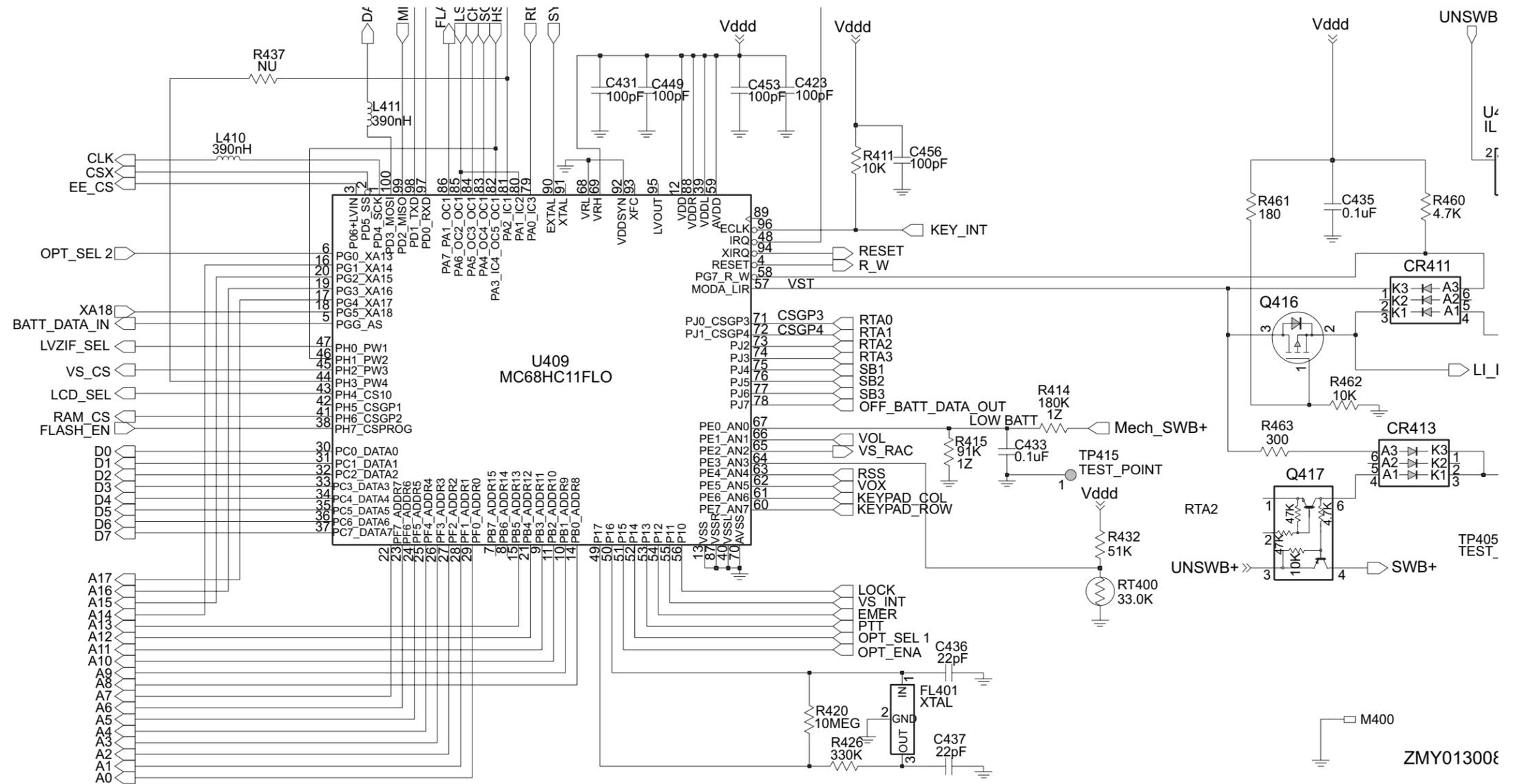
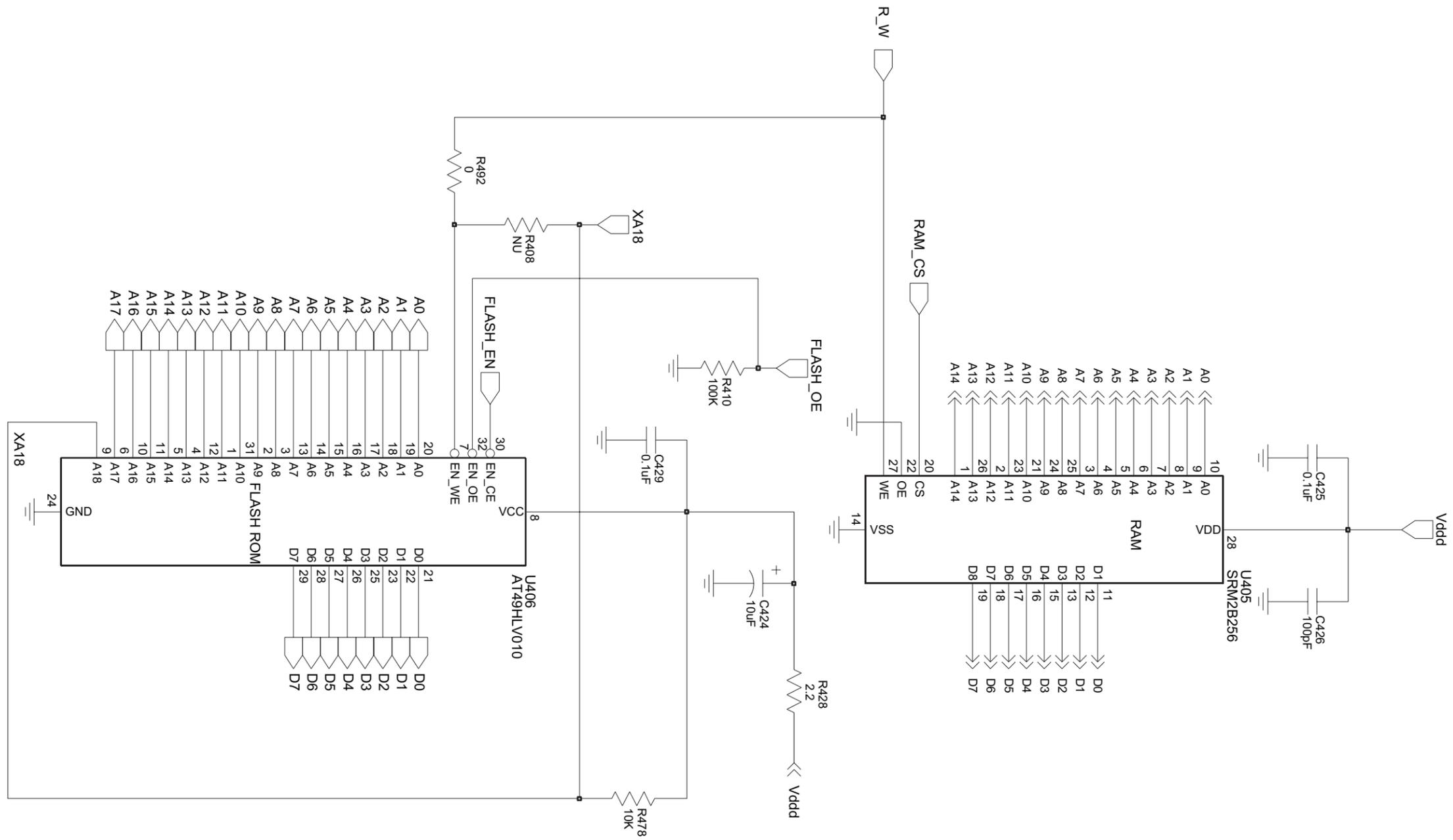


Figure 9-71. UHF (403-470 MHz) Controller Microprocessor Schematic Diagram



ZMY0130087-B

Figure 9-72. UHF (403-430 MHz) Controller Memory Schematic Diagram

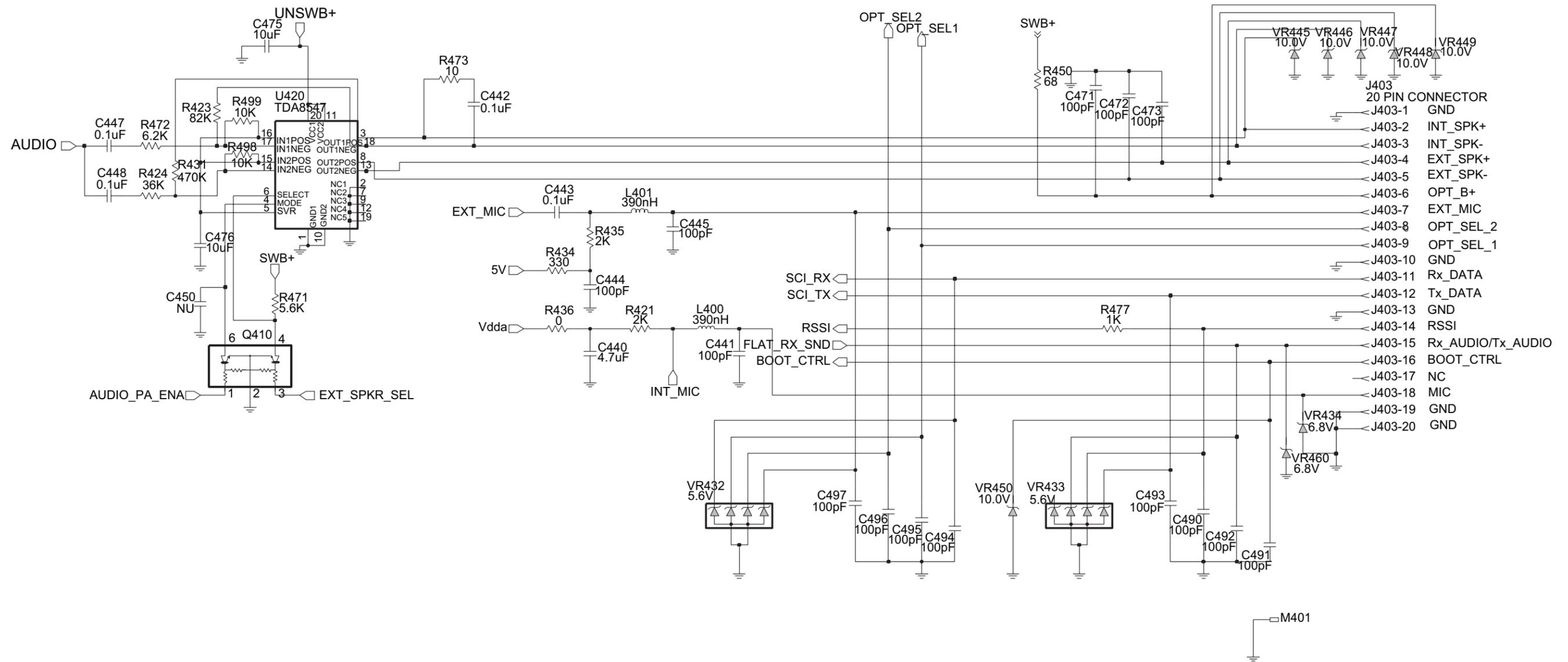


Figure 9-73. UHF (403-470 MHz) Controller Audio Power Amplifier Schematic Diagram

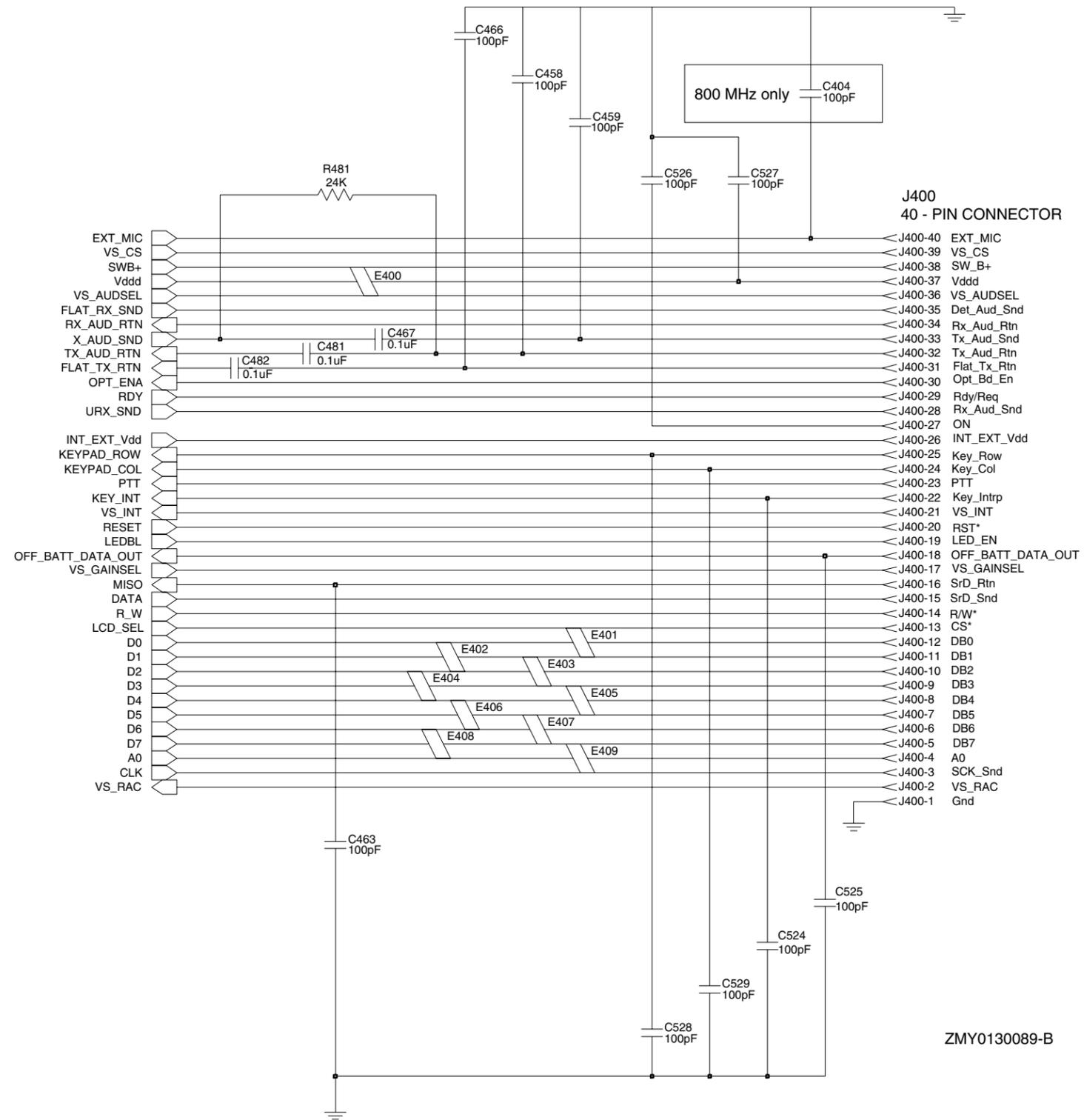


Figure 9-74. UHF (403-470 MHz) Controller Interface Schematic Diagram

**UHF (403-470 MHz) Radio Parts List (PCB 8486458Z03)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup Contact, B +
B504	3980501Z01	Backup Contact, B -
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F27	10pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2113740F31	15pF
C112	2180605Z32	47pF
C113	2180605Z16	10pF
C114	2113743N50	100pF
C115	2113743N35	24pF
C116	2113743N35	24pF
C117	2113743N34	22pF
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N27	11pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A96	33uF
C125	2113743N50	100pF
C126	2113743M24	100000pF
C127	2113743L17	1000pF
C128	2113743M08	22000pF
C129	2113743N23	7.5pF
C130	2113743N50	100pF
C131	2113743M08	22000pF
C132	2113743N50	100pF
C133	2113743L17	1000pF
C134	2113743L29	3300pF
C135	2113743M08	22000pF
C138	2113743N50	100pF
C140	0662057A67	5600
C141	NOT PLACED	-
C150	2113743M08	22000pF
C151	2113743N50	100pF
C152	2113743M08	22000pF
C160	2113743N50	100pF
C161	2113743M24	100000pF
C165	2113743N50	100pF
C166	2113743N50	100pF
C169	2113743N20	5.6pF
C170	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C171	2113743N50	100pF
C172	2113740F51	100pF
C173	2113743M08	22000pF
C174	2113743N50	100pF
C175	2113740F51	100pF
C201	2113743N50	100pF
C202	2113743L17	1000pF
C203	2113928L05	4.7uF
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N42	47pF
C208	NOT PLACED	-
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	100000pF
C219	2113743K16	0.22uF
C220	2113743N50	100pF
C223	2113743M24	100000pF
C224	2113743M24	100000pF
C228	2311049J11	4.7uF
C229	2113743L17	1000pF
C230	2113743N50	100pF
C231	2113743M24	100000pF
C232	2113743E12	0.047uF
C233	2311049A01	0.1uF
C234	2311049A05	0.47uF
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N23	7.5pF
C243	2113743N23	7.5pF
C244	2113740F10	2.0pF
C245	2113743N11	2.4pF
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	100000pF
C250	2113743N23	7.5pF
C251	2113743N50	100pF
C252	2113743N26	10pF
C253	2113740F09	1.8pF
C254	2113743N15	3.6pF
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	10000pF
C259	2113743L41	10000pF
C260	2113743N50	100pF
C263	2113743N02	0.75pF

Circuit Ref	Motorola Part No.	Description
C264	2113743N50	100pF
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	NOT PLACED	-
C273	2113743M24	100000pF
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A57	10uF
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C285	2113743N50	100pF
C286	2113743M24	100000pF
C289	2113743N50	100pF
C291	2311049A69	10uF
C292	2113743M24	100000pF
C293	2113743A27	0.47uF
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	100000pF
C297	2113743L41	10000pF
C298	2113743M24	100000pF
C301	2113743N15	3.6pF
C302	2113743N26	10pF
C303	2113740L08	3.9pF
C304	2113743N26	10pF
C305	2113743N33	20pF
C306	NOT PLACED	-
C307	2113743N50	100pF
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743N50	100pF
C311	NOT PLACED	-
C312	2113743N25	9.1pF
C313	2113743N26	10pF
C314	2113743M24	100000pF
C315	2113743N50	100pF
C316	2113740L08	3.9pF
C317	2113743N25	9.1pF
C318	2113743N23	7.5pF
C319	2113743N12	2.7pF
C320	2113743N31	16pF
C321	2113743N50	100pF
C322	2113743N48	82pF
C324	2113743N34	22pF
C325	2109445U26	9.1pF
C326	2113743M24	100000pF
C327	2113743M24	100000pF
C328	2113743M24	100000pF
C329	2113743M24	100000pF
C334	2113743L33	4700pF
C337	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
C338	NOT PLACED	-
C343	2113743M24	100000pF
C344	2113743E20	0.1uF
C345	2113743M24	100000pF
C346	2113743M24	100000pF
C347	2113743M24	100000pF
C348	2113743M24	100000pF
C349	2113743E20	0.1uF
C350	2113743M24	100000pF
C351	2113743N52	120pF
C352	2113743M24	100000pF
C355	2113743M24	100000pF
C357	2113743M24	100000pF
C358	NOT PLACED	-
C359	NOT PLACED	-
C360	2113743N14	3.3pF
C361	2113743M24	100000pF
C362	2113743M24	100000pF
C364	2113743N35	24pF
C366	NOT PLACED	-
C367	2113743N37	30pF
C370	2113743N18	4.7pF
C371	NOT PLACED	-
C372	2113743N50	100pF
C373	NOT PLACED	-
C374	2113743N50	100pF
C375	2113743N50	100pF
C378	NOT PLACED	-
C380	2113743L41	10000pF
C381	NOT PLACED	-
C382	2311049A59	10uF
C383	NOT PLACED	-
C385	2113743N37	30pF
C386	2113743N50	100pF
C390	NOT PLACED	-
C400	2113743L41	10000pF
C401	2113743M24	100000pF
C402	2113743M24	100000pF
C403	2113743G24	2.2uF
C404	NOT PLACED	-
C405	2113743N50	100pF
C406	NOT PLACED	-
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	100000pF
C410	2113928N01	0.1uF
C411	2113743M24	100000pF
C414	2113743M24	100000pF
C415	2185895Z01	0.01uF
C416	2113928N01	0.1uF
C419	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
C420	2113743L41	10000pF
C421	2113928N01	0.1uF
C422	2113743M24	100000pF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	100000pF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	100000pF
C429	2113743M24	100000pF
C430	2113928N01	0.1uF
C431	2113743N50	100pF
C432	NOT PLACED	-
C433	2113743L41	10000pF
C434	2113928N01	0.1uF
C435	2113743M24	100000pF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF
C441	2113743N50	100pF
C442	2113743E20	0.1uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	22000pF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOT PLACED	-
C451	2113743M08	22000pF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743N50	100pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C498	NOT PLACED	-
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF
C521	2113743L41	10000pF
C522	2113743L41	10000pF
C523	2113743L41	10000pF
C524	2113743N50	100pF
C525	2113743N50	100pF
C526	2113743N50	100pF
C527	2113743N50	100pF
C528	2113743N50	100pF
C529	2113743N50	100pF
CR101	4880973Z02	Pin Diode
CR102	4802245J41	Pin Diode
CR103	4802245J41	Pin Diode
CR105	5185963A15	Temperature Sensor
CR160	NOT PLACED	-
CR201	4802233J09	Triple Diode
CR203	4862824C03	Varactor
CR241	4805649Q13	Varactor
CR242	4862824C08	Varactor
CR243	4862824C08	Varactor
CR251	4802245J22	Varactor
CR301	4862824C08	Varactor
CR302	4862824C08	Varactor
CR303	4880154K03	Dual Schottky Diode
CR304	4862824C08	Varactor
CR305	4862824C08	Varactor
CR306	4802245J42	Ring Quad Diode
CR311	4813825A19	Diode Schottky
CR312	4802245J97	Switch Diode
CR313	4802245J97	Switch Diode
CR411	4802245J62	Diode Schottky
CR412	4802245J62	Diode Schottky
CR413	4802245J62	Diode Schottky
CR440	4813833C02	Dual Common Cathode Diode
CR501	4880107R01	Rectifier
CR503	4805729G49	Red/Yellow LED
E101	2484657R01	Ferrite Bead
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead

Circuit Ref	Motorola Part No.	Description
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL201	4805875Z04	16.8 MHz Xtal Filter
FL301	9180022M11	Xtal Filter 44.85MHz
FL302	9180468V05	455kHz 4-pole ceramic filter
FL303	9180469V05	455kHz 6-pole ceramic filter
FL304	9180469V03	455kHz 6-pole ceramic filter
FL401	4870368G02	Real Time Clock Xtal Oscillator 38.4kHz (not placed in PRO5450)
H101	2680499Z01	Heat Spreader
J101	0985613Z01	RF Jack
J102	0280519Z02	Antenna Nut
J400	0905505Y04	40-Pin Connector
J403	0905505Y02	20-Pin Connector
L101	2479990B02	19.61nH
L102	2479990B02	19.61nH
L104	2479990B02	19.61nH
L105	2462587N22	390nH
L106	2479990A02	7.66nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L109	2479990B01	11.03nH
L112	2462587N45	22nH
L113	2413926H09	5.6nH
L114	2462587N45	22nH
L115	2462587N22	390nH
L116	2479990A03	9.75nH
L160	2413926H14	15nH
L201	2462587Q20	2200nH
L202	2462587Q20	2200nH
L203	2462587Q20	2200nH
L232	2462587P25	12000nH
L241	2462587V41	390nH
L242	2462587V38	220nH
L243	2485776Z01	Multi-layered Teflon resonator, Rx
L251	2462587V28	33nH
L253	2460593C02	Multi-layered Teflon resonator, Tx
L261	2462587V29	39nH
L271	2462587V32	68nH
L273	2462587V28	33nH
L281	2462587V41	390nH
L282	2462587V41	390nH

Circuit Ref	Motorola Part No.	Description
L301	2479990C01	13.9nH
L302	2479990C01	13.9nH
L303	2462587V26	22nH
L304	2462587V37	180nH
L305	2462587V26	22nH
L306	2479990C01	13.9nH
L307	2479990C01	13.9nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH
L311	2413926K32	560nH
L321	2462587V37	180nH
L325	2462587N68	1000nH
L330	0662057C01	0
L331	2413926K33	680nH
L332	2413923A25	1200nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
P100	3905643V01	Ground Contact Finger
PB501	4086470Z01	Tactile Switch
PB502	4086470Z01	Tactile Switch
PB503	4086470Z01	Tactile Switch
PB504	4086470Z01	Tactile Switch
PB505	4086470Z01	Tactile Switch
Q110	4813828A09	RF PA
Q111	4809939C05	Dual NPN/PNP Transistor
Q210	4809939C05	Dual NPN/PNP Transistor
Q241	4805218N63	RF NPN Transistor
Q260	4809939C05	Dual NPN/PNP Transistor
Q261	4809939C05	Dual NPN/PNP Transistor
Q301	4802245J44	NPN Transistor
Q302	4802197J95	NPN Transistor
Q310	4802245J44	NPN Transistor
Q320	4813824A10	RF NPN transistor
Q400	4809579E18	MOSFET P-Channel
Q403	4813824A17	PNP Transistor
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	MOSFET P-Channel
Q417	4809939C05	Dual NPN/PNP Transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor
R101	0662057A34	240
R102	0680539Z01	0.1
R103	0662057M41	43
R104	0662057N15	47K
R106	0662057M26	10
R107	NOT PLACED	-
R108	0662057M92	5600

Circuit Ref	Motorola Part No.	Description
R109	0662057N30	200K
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43K
R130	0662057M98	10K
R131	0662057N05	18K
R132	0662057N33	270K
R133	NOT PLACED	-
R136	NOT PLACED	-
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43K
R172	0662057A32	200
R173	0662057N29	180K
R174	0662057N15	47K
R175	0662057B59	3
R176	0662057B59	3
R201	0662057N21	82K
R202	0662057N23	100K
R204	0662057N15	47K
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18
R242	0662057M57	200
R243	0662057M98	10K
R244	0662057N01	12K
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M32	18
R252	0662057M62	330
R253	0662057M95	7500
R254	0662057M95	7500
R255	0662057M89	4300
R256	0662057M37	30
R260	0662057M74	1000
R281	NOT PLACED	-
R301	0662057N23	100K
R302	0662057N23	100K
R303	0662057M81	2000
R304	0662057N01	12K
R305	0662057M67	510
R306	0662057N23	100K
R307	0662057N23	100K
R308	0662057M43	51
R309	0662057M01	0
R310	NOT PLACED	-
R311	0662057N11	33K
R312	0662057M90	4700
R313	0662057M62	330

Circuit Ref	Motorola Part No.	Description
R314	0662057M79	1600
R315	0662057N01	12K
R320	NOT PLACED	-
R321	0662057N13	39K
R322	0662057M74	1000
R324	0662057N06	20K
R328	0662057M01	0
R329	0662057M01	0
R330	0662057M98	10K
R331	0662057M57	200
R332	0662057N01	12K
R333	NOT PLACED	-
R339	0662057M89	4300
R340	0662057M95	7500
R342	0662057N23	100K
R344	0662057M43	51
R345	0662057N13	39K
R346	0662057N03	15K
R348	0662057M87	3600
R349	0662057C01	0
R350	0662057M86	3300
R355	0662057N23	100K
R358	0662057M83	2400
R359	NOT PLACED	-
R360	0662057N06	20K
R361	0662057N06	20K
R363	0662057M64	390
R364	0662057M80	1800
R365	0662057M76	1200
R366	0662057N01	12K
R367	0662057V04	12K
R368	0662057V02	10K
R369	0662057M70	680
R370	0662057M01	0
R371	NOT PLACED	-
R372	NOT PLACED	-
R373	NOT PLACED	-
R374	NOT PLACED	-
R375	NOT PLACED	-
R376	NOT PLACED	-
R377	NOT PLACED	-
R378	NOT PLACED	-
R400	0662057N15	47K
R401	0662057M01	0
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	NOT PLACED	-
R409	0662057M98	10K

Circuit Ref	Motorola Part No.	Description
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057M98	10K
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2000
R423	0662057N39	470K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057N20	75K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R437	NOT PLACED	-
R445	0662057N08	24K
R447	0662057N23	100K
R448	0662057M98	10K
R449	0662057N08	24K
R450	0683962T45	68
R451	0662057N03	15K
R452	0662057N23	100K
R453	NOT PLACED	-
R454	NOT PLACED	-
R455	NOT PLACED	-
R456	0662057M01	0
R457	0662057M98	10K
R460	0662057M90	4700
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057N06	20K
R472	0662057N12	36K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330K
R477	0662057M74	1000
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R498	0662057M98	10K
R499	0662057M98	10K
R501	0662057M70	680

Circuit Ref	Motorola Part No.	Description
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
RT400	0680590Z01	Thermistor_33K
S501	4080710Z01	Frequency Switch
S501	4080710Z02	Frequency Switch
S502	1880619Z02	Volume / On-off Switch
SH100	2680507Z01	Harmonic Filter Shield
SH101	2680510Z01	PA Shield
SH201	2680511Z01	Synthesizer Top Shield
SH202	2680511Z01	Synthesizer Bottom Shield
SH241	2680513Z01	VCO Resonators Shield
SH242	2680514Z01	VCO Buffer IC Shield
SH301	2686583Z01	Receiver Front-End Shield
SH302	2680555Z01	Receiver Back-End Bottom Shield
SH303	2680509Z01	Mixer Shield
SH304	2680624Z01	Mixer Diode Shield
SH322	2686528Z01	IFIC Shield
SH323	2686527Z01	Crystal Filter Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On-off Shield
SH402	2680515Z01	Microprocessor Shield
SH403	2680516Z01	Asfic_Cmp, Audio PA Shield
T301	2580541Z02	Balun Transformer
T302	2580541Z02	Balun Transformer
U101	5185130C65	LDMOS PA Driver
U102	5185765B26	PCIC
U201	5185963A27	LVFRACN Synthesizer IC
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO Buffer IC
U247	5105739X05	5V Regulator
U248	5102463J58	3.3V Regulator
U301	5186144B01	FM IFIC SA616
U302	5109522E10	LMOS Inverter
U303	NOT PLACED	-
U400	5102463J40	3.3V Regulator
U404	5185130C53	ASFIC_CMP IC
U405	5102463J36	Static RAM 32K X 8
U406	*5102463J60	Flash ROM 512K X 8
U407	*5102495J05	EEPROM 16K X 8
U409	5102226J56	Micro Processor
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J73	Zener Diode 6.8V
VR439	4880140L17	Zener Diode 12V
VR440	4802245J73	Zener Diode 6.8V



<b>Circuit Ref</b>	<b>Motorola Part No.</b>	<b>Description</b>
VR441	4802245J73	Zener Diode 6.8V
VR442	4802245J73	Zener Diode 6.8V
VR443	4802245J73	Zener Diode 6.8V
VR444	4802245J73	Zener Diode 6.8V
VR445	4802245J74	Zener Diode 10V
VR446	4802245J74	Zener Diode 10V
VR447	4802245J74	Zener Diode 10V
VR448	4802245J74	Zener Diode 10V
VR449	4802245J74	Zener Diode 10V
VR450	4802245J75	Zener Diode 12V
VR460	4802245J73	Zener Diode 6.8V
VR501	4813830A18	Diode 6.8V
VR506	4802245J73	Zener Diode 6.8V
Y300	4802245J84	Xtal Oscillator 44.395MHz
Y301	9186145B02	455kHz Ceramic Discriminator
	1485777Z01	Insulator (KAPTON)
	8486458Z03	UHF B1 PC Board

\* Motorola Depot Servicing only

## Notes



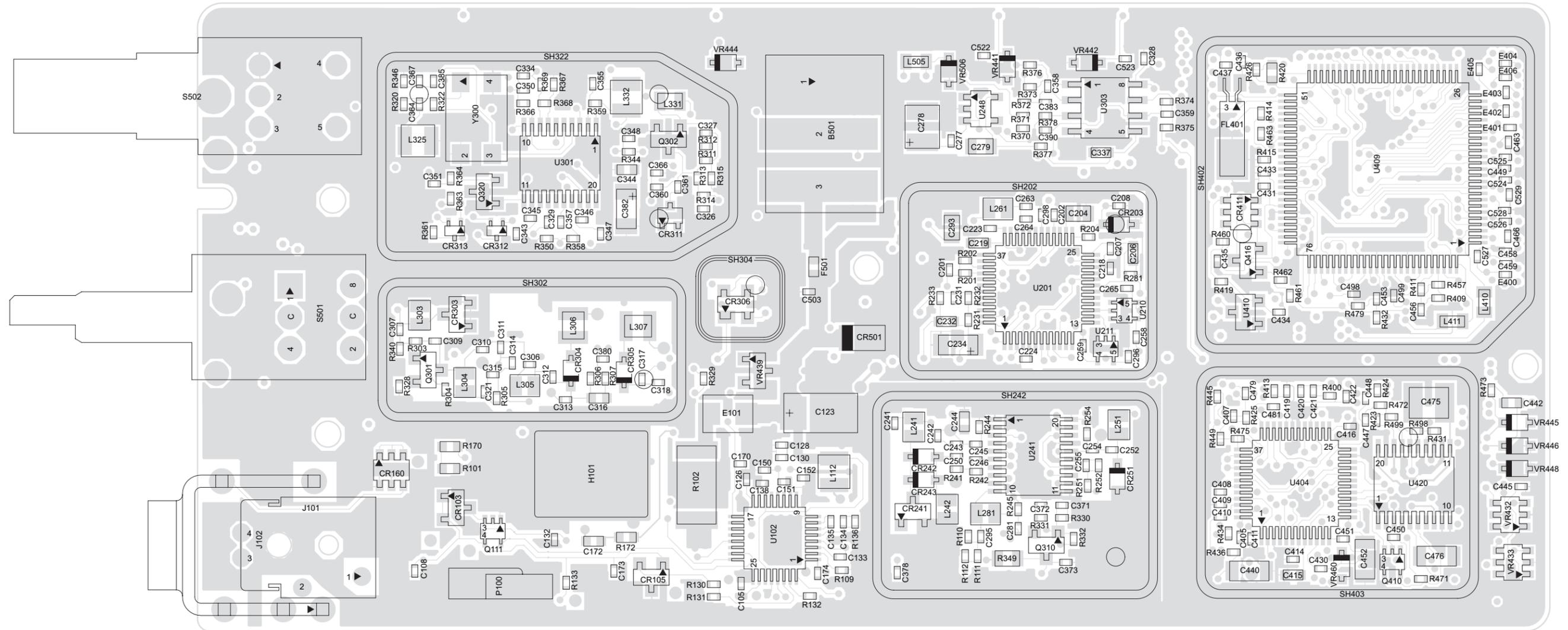


Figure 9-76. UHF (403-470 MHz) Main Board Bottom Side PCB No. 8415234H01



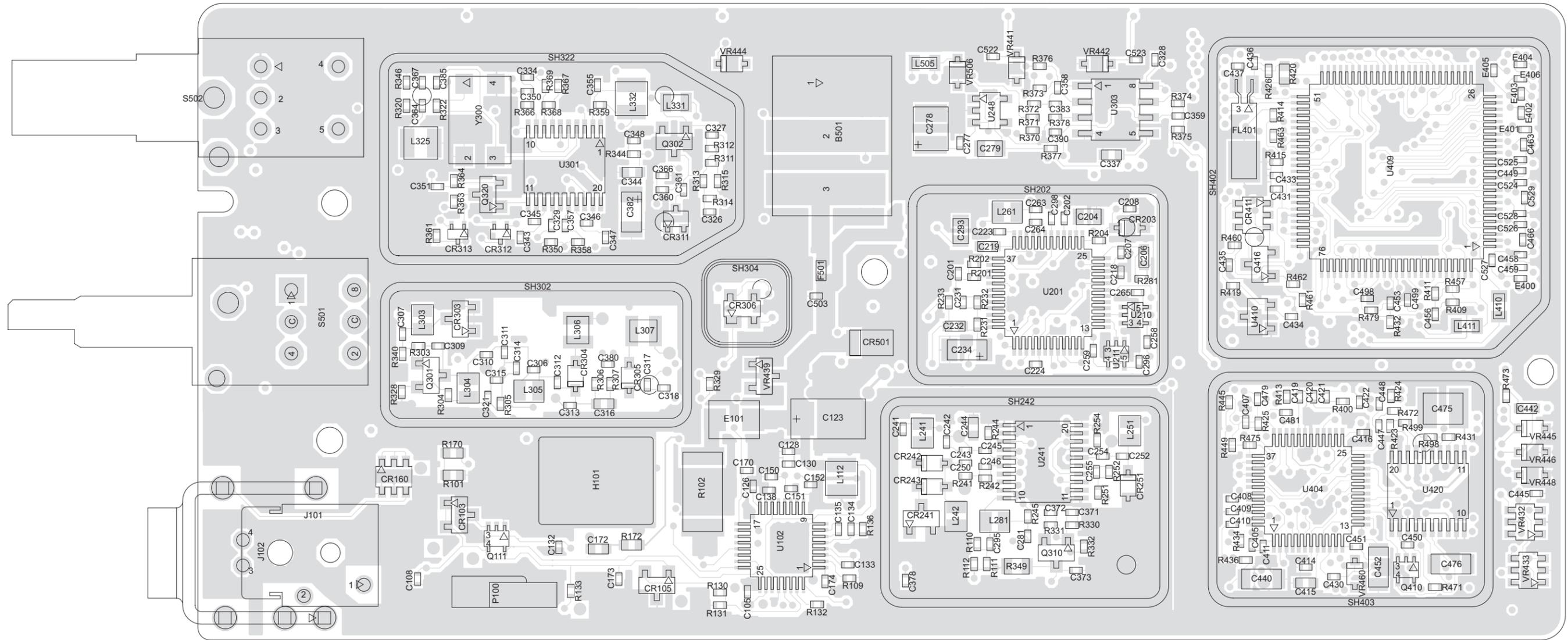


Figure 9-78. UHF (403-470 MHz) Main Board Bottom Side PCB No. 8415234H02

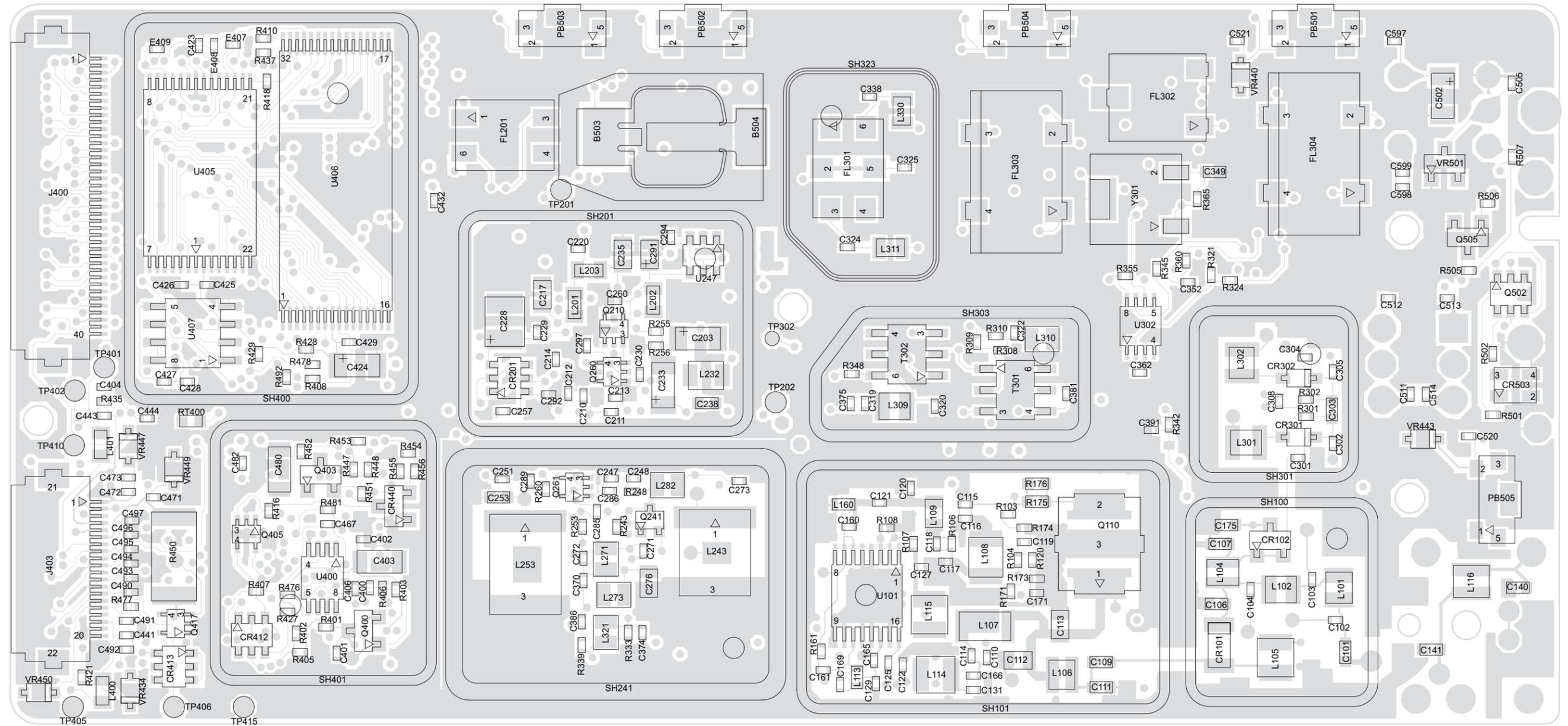


Figure 9-79. UHF (403-470 MHz) Main Board Top Side PCB No. 8415234H05

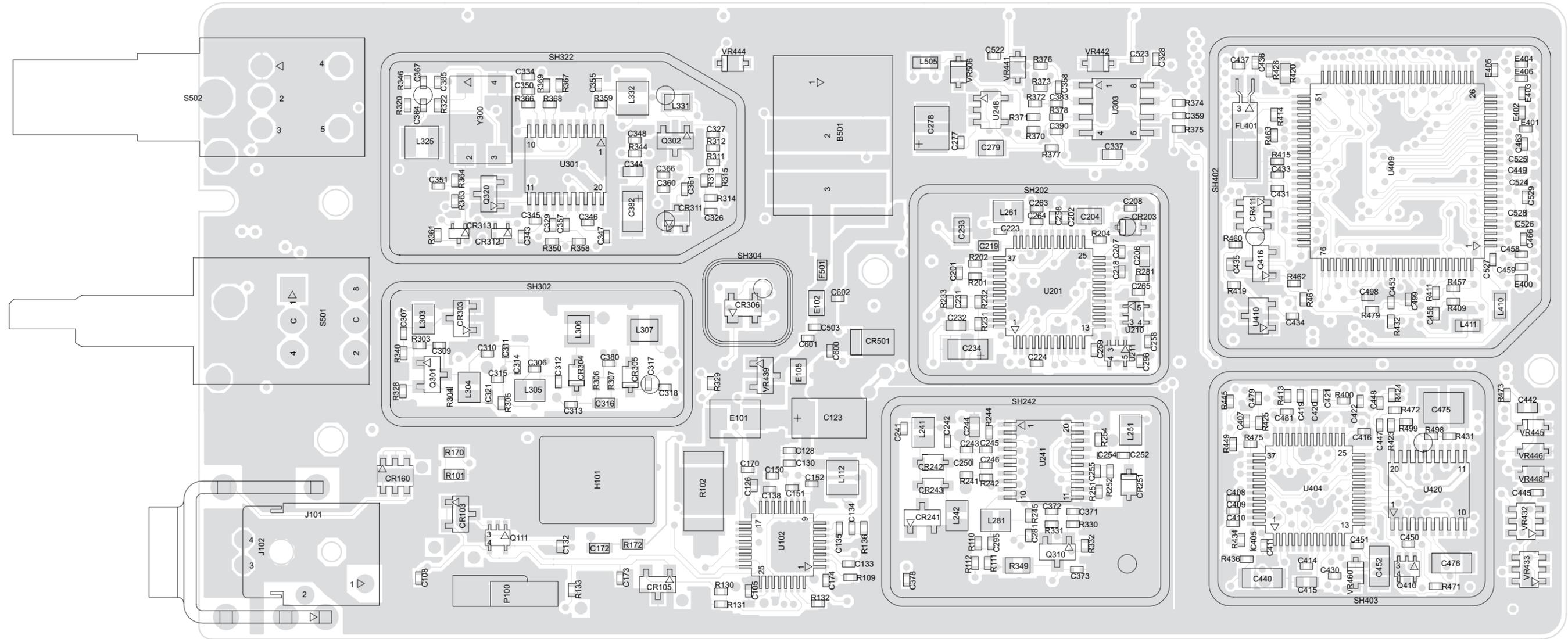


Figure 9-80. UHF (403-470 MHz) Main Board Bottom Side PCB No. 8415234H05



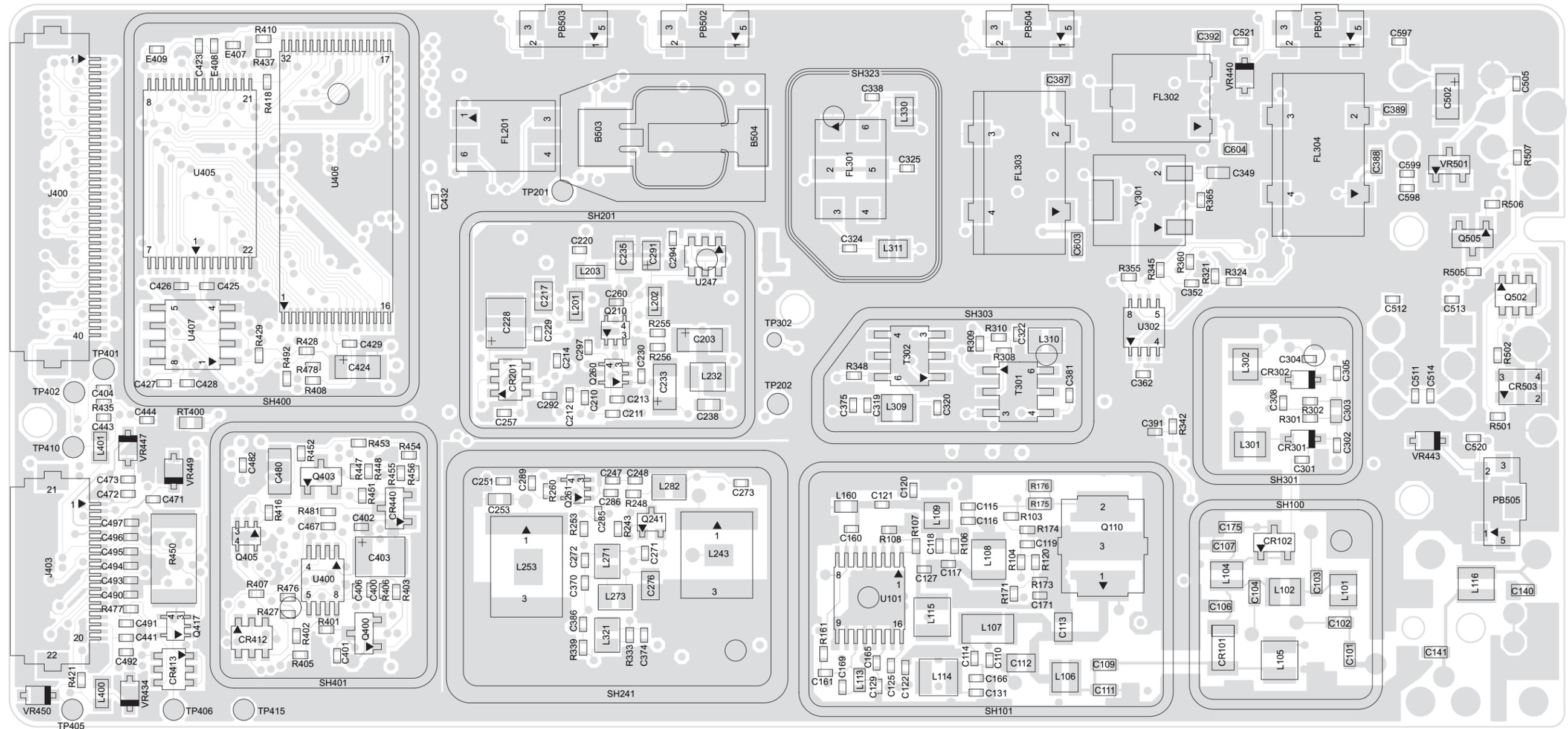


Figure 9-81. UHF (403-470 MHz) Main Board Top Side PCB No. 8415234H08

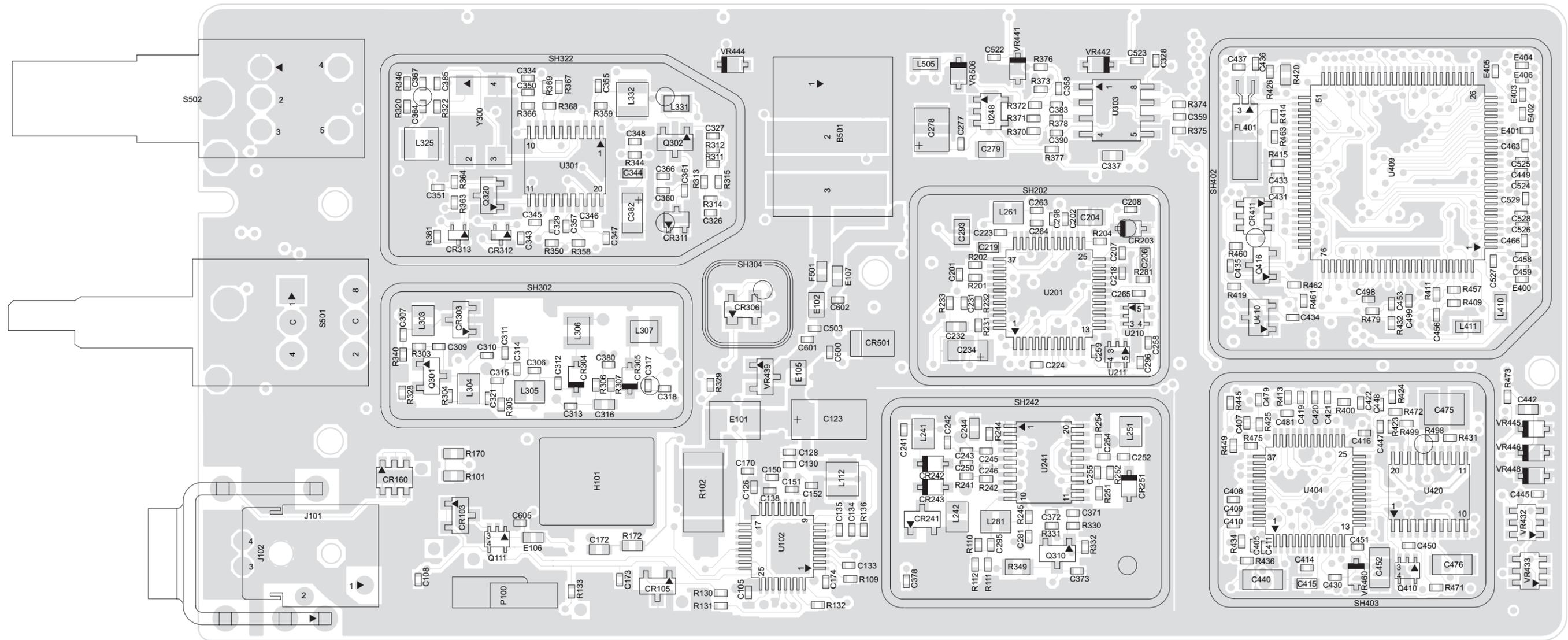


Figure 9-82. UHF (403-470 MHz) Main Board Bottom Side PCB No. 8415234H08

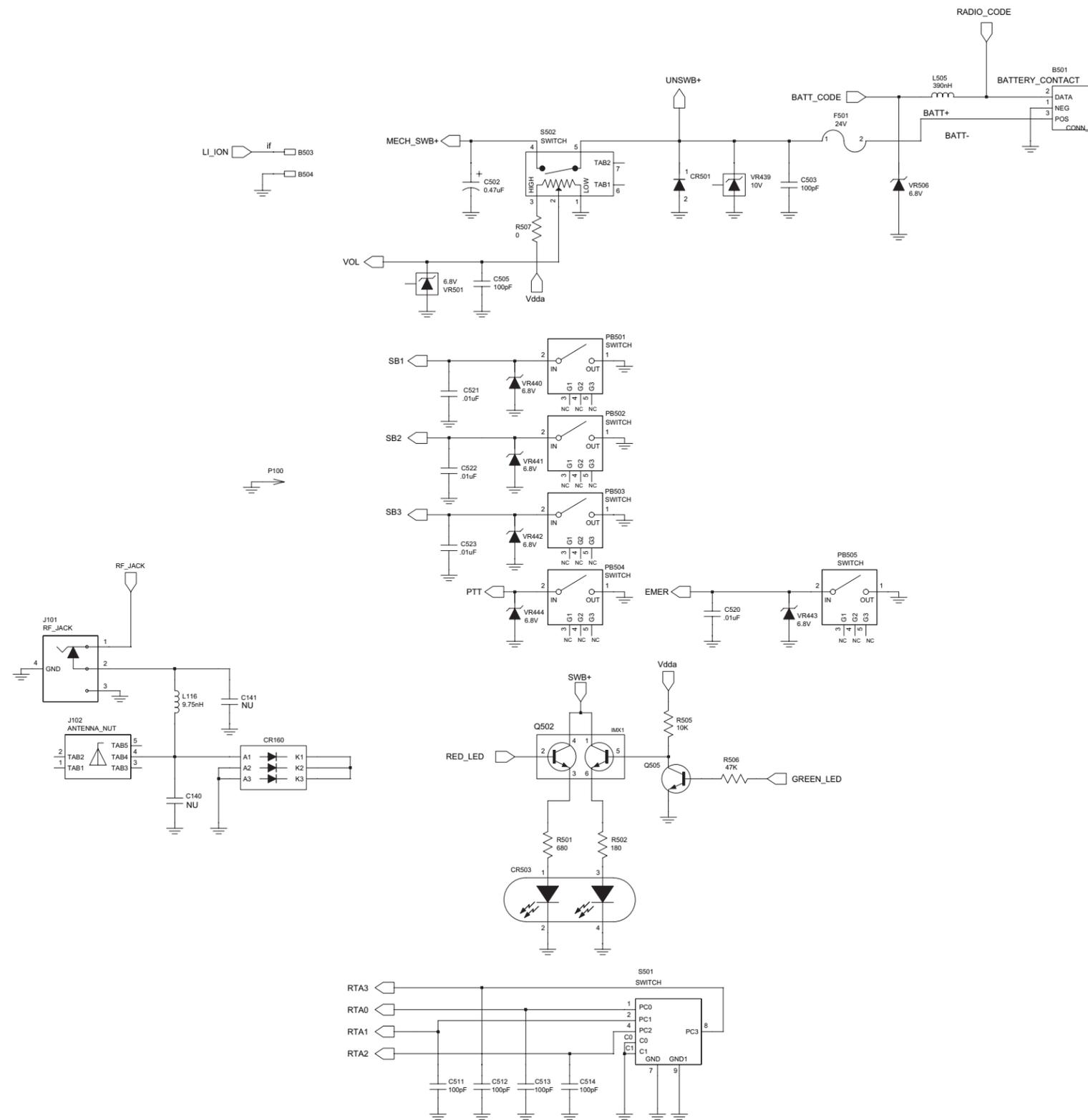


Figure 9-83. UHF Controls And Switches Schematic Diagram for (403-470MHz for 8415234H01)

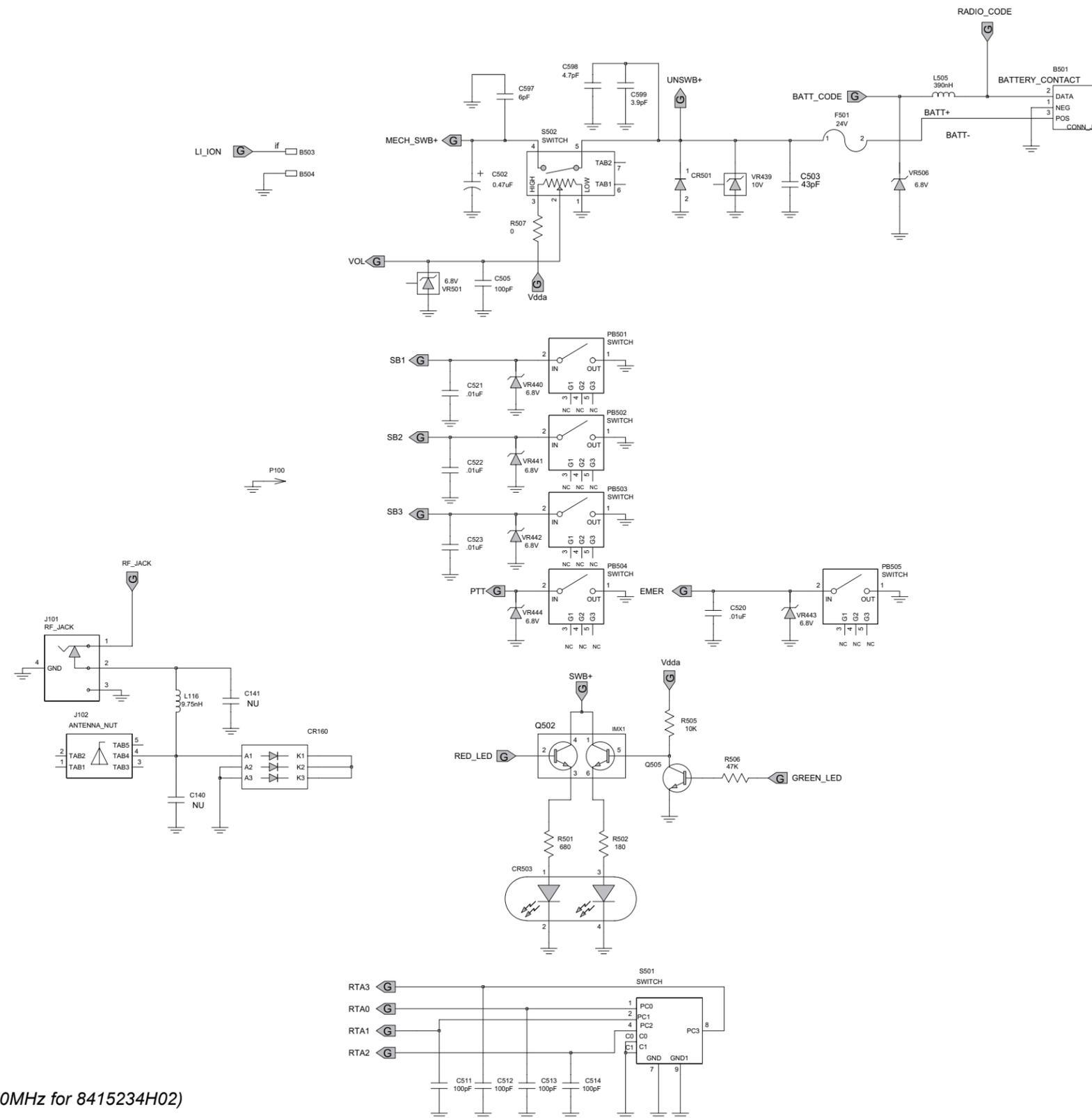


Figure 9-84. UHF Controls And Switches Schematic Diagram for (403-470MHz for 8415234H02)

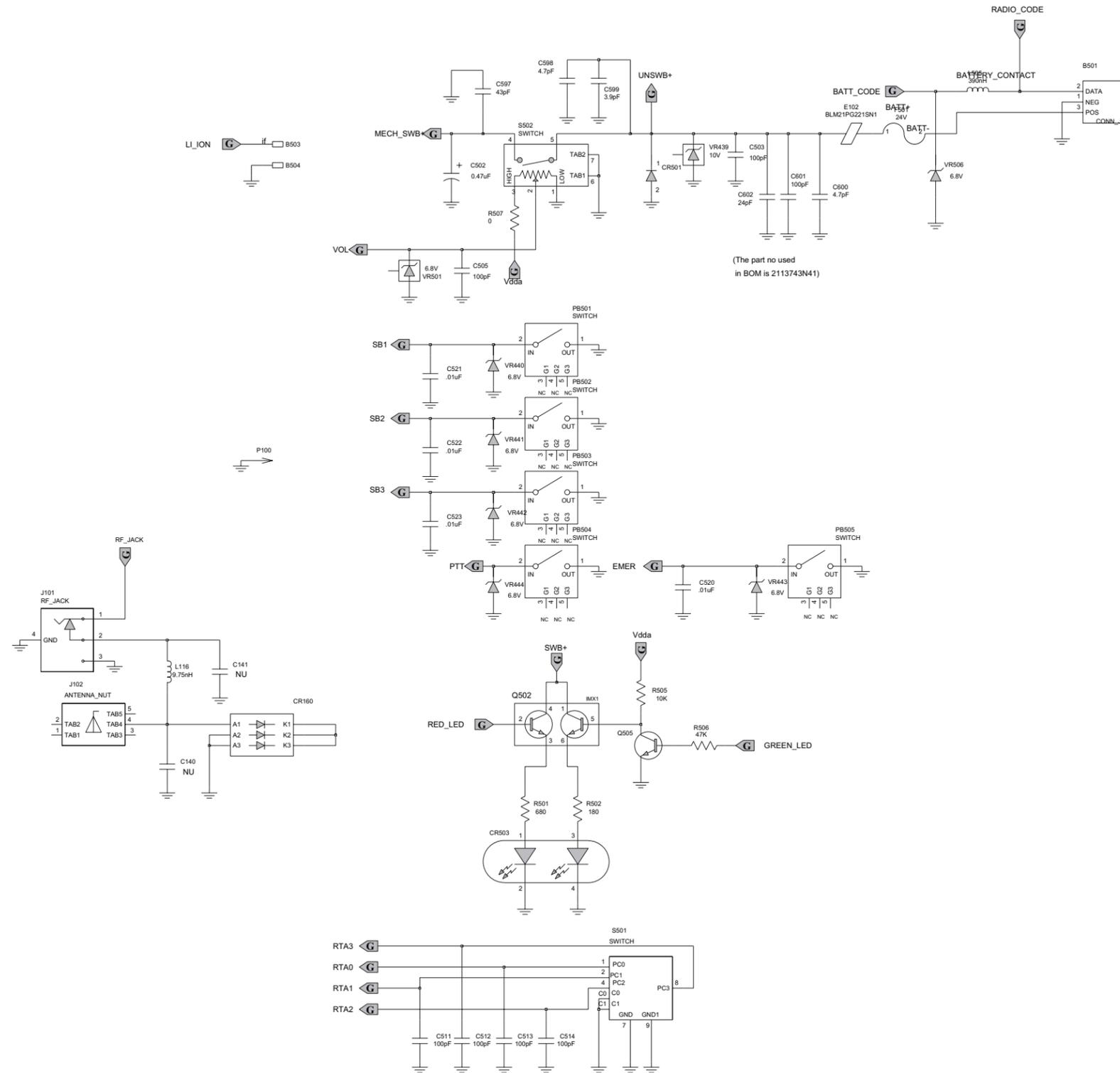


Figure 9-85. UHF Controls And Switches Schematic Diagram for (403-470MHz for 8415234H05)

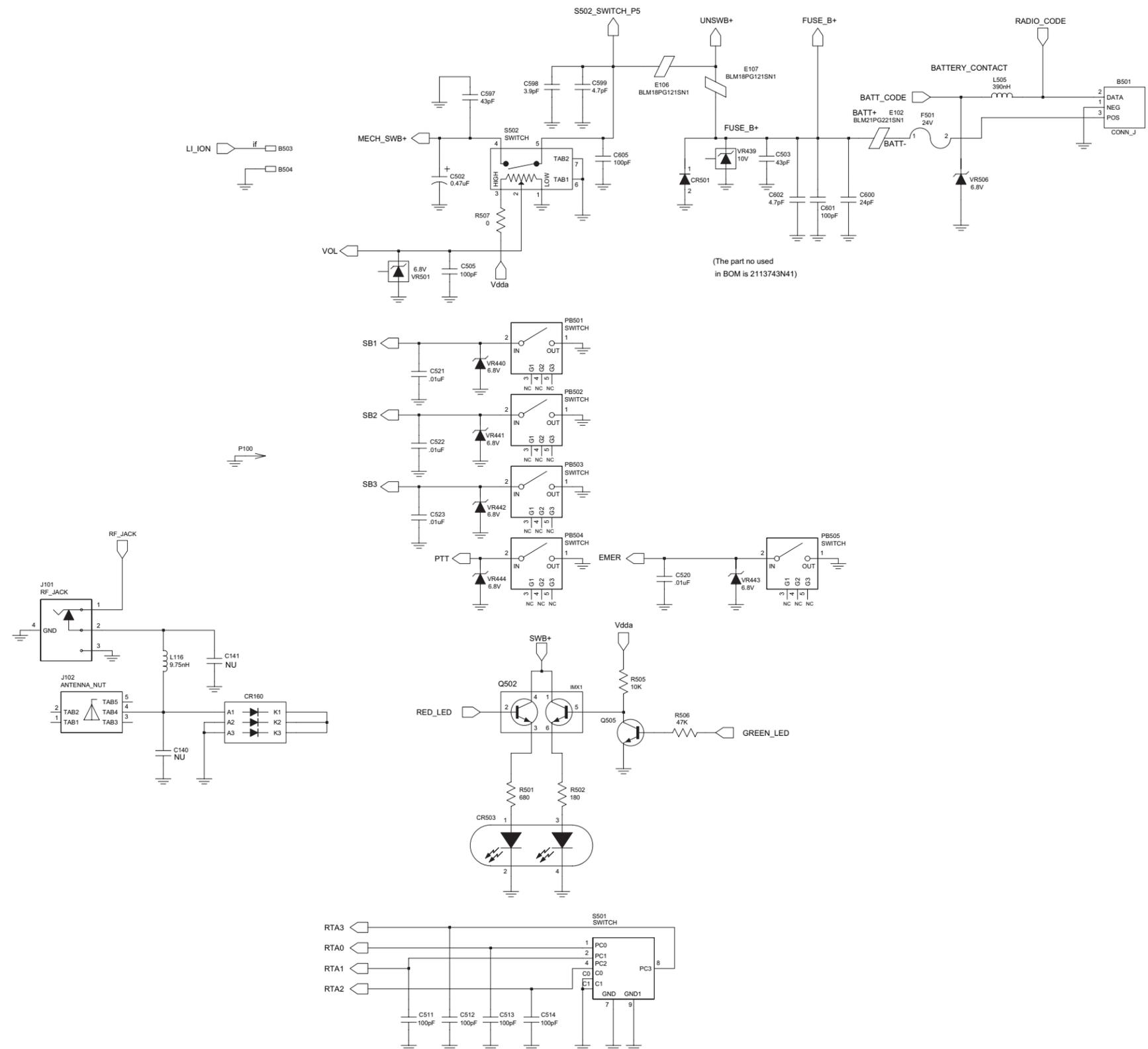


Figure 9-86. UHF Controls And Switches Schematic Diagram for (403-470MHz for 8415234H08)

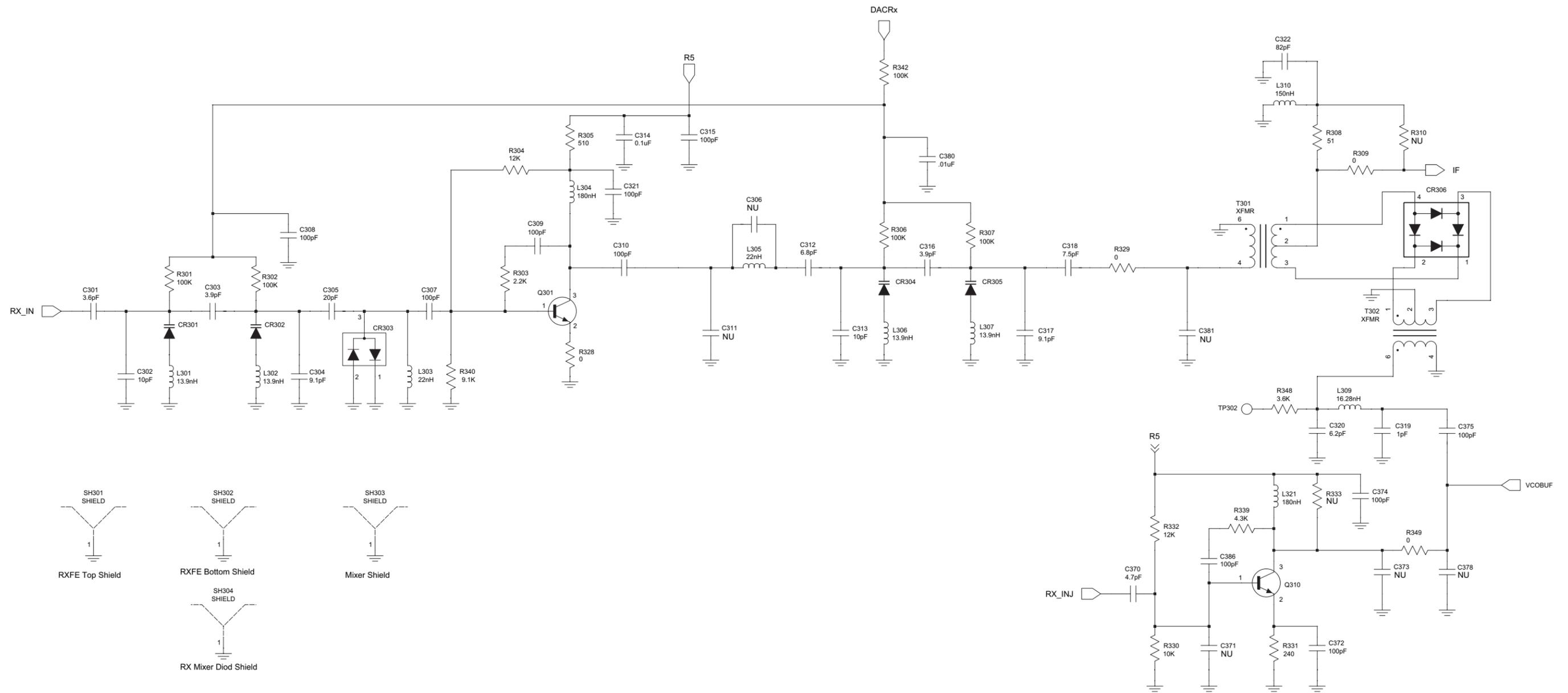


Figure 9-87. UHF Receiver Front End Schematic Diagram for (403-470MHz for 8415234H01)





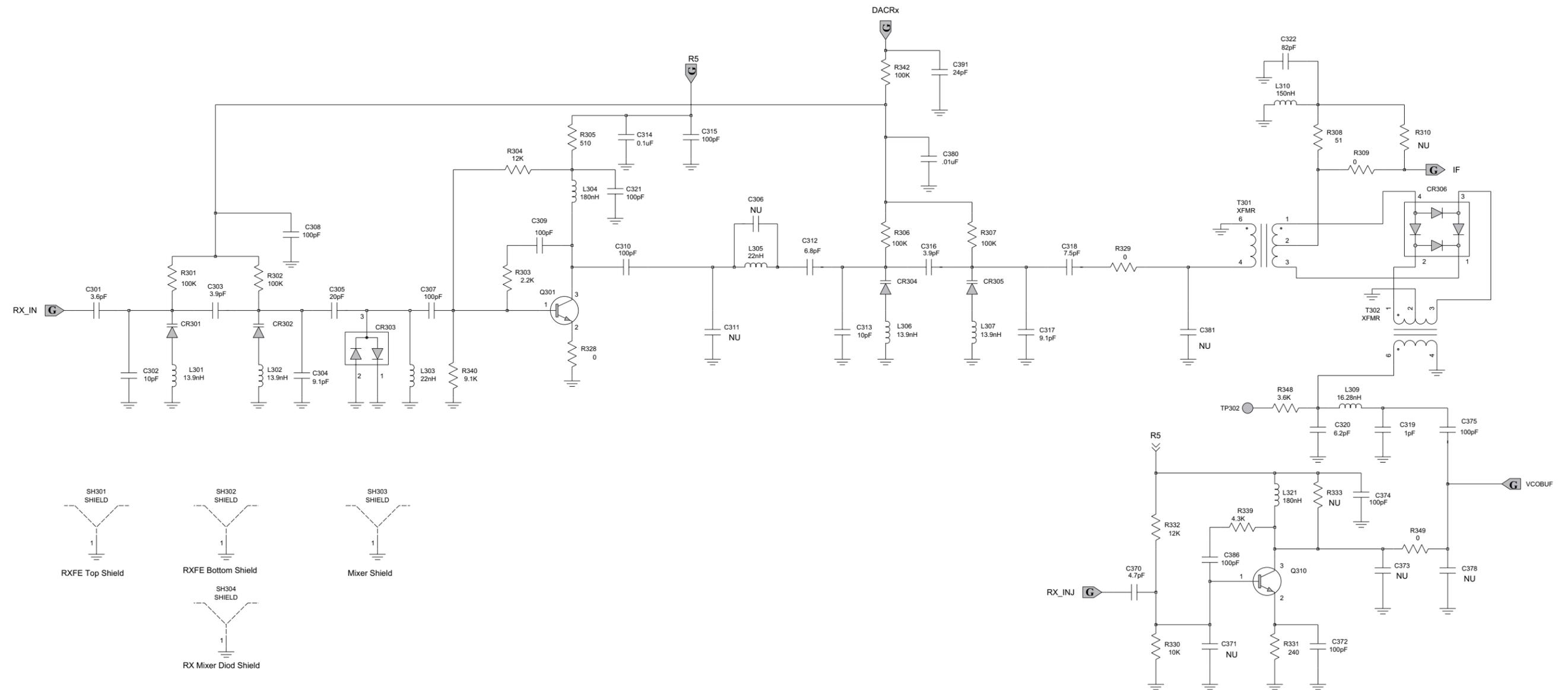


Figure 9-89. UHF Receiver Front End Schematic Diagram for (403-470MHz for 8415234H05)



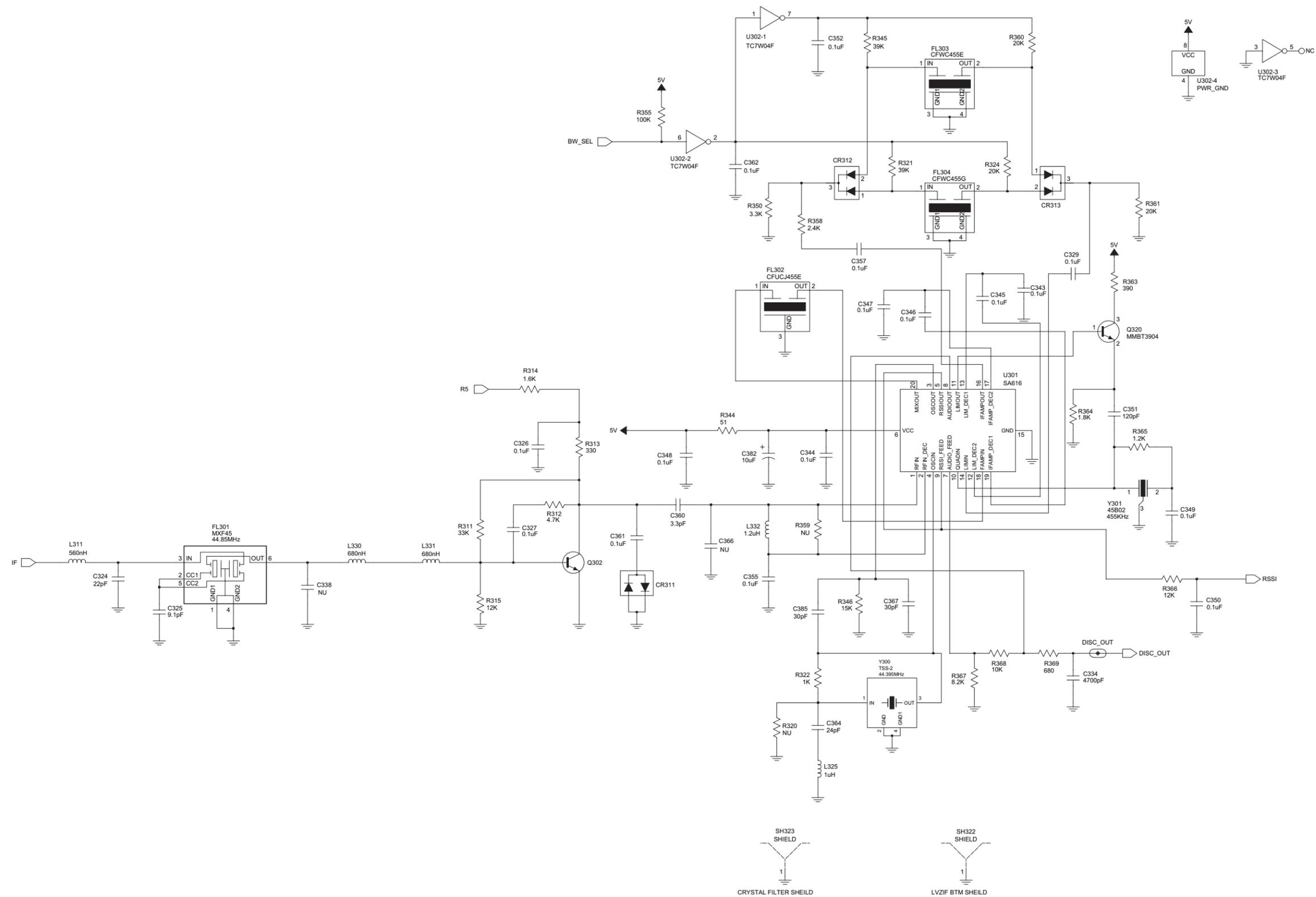


Figure 9-91. UHF Receiver Back End Schematic Diagram for (403-470MHz for 8415234H01)

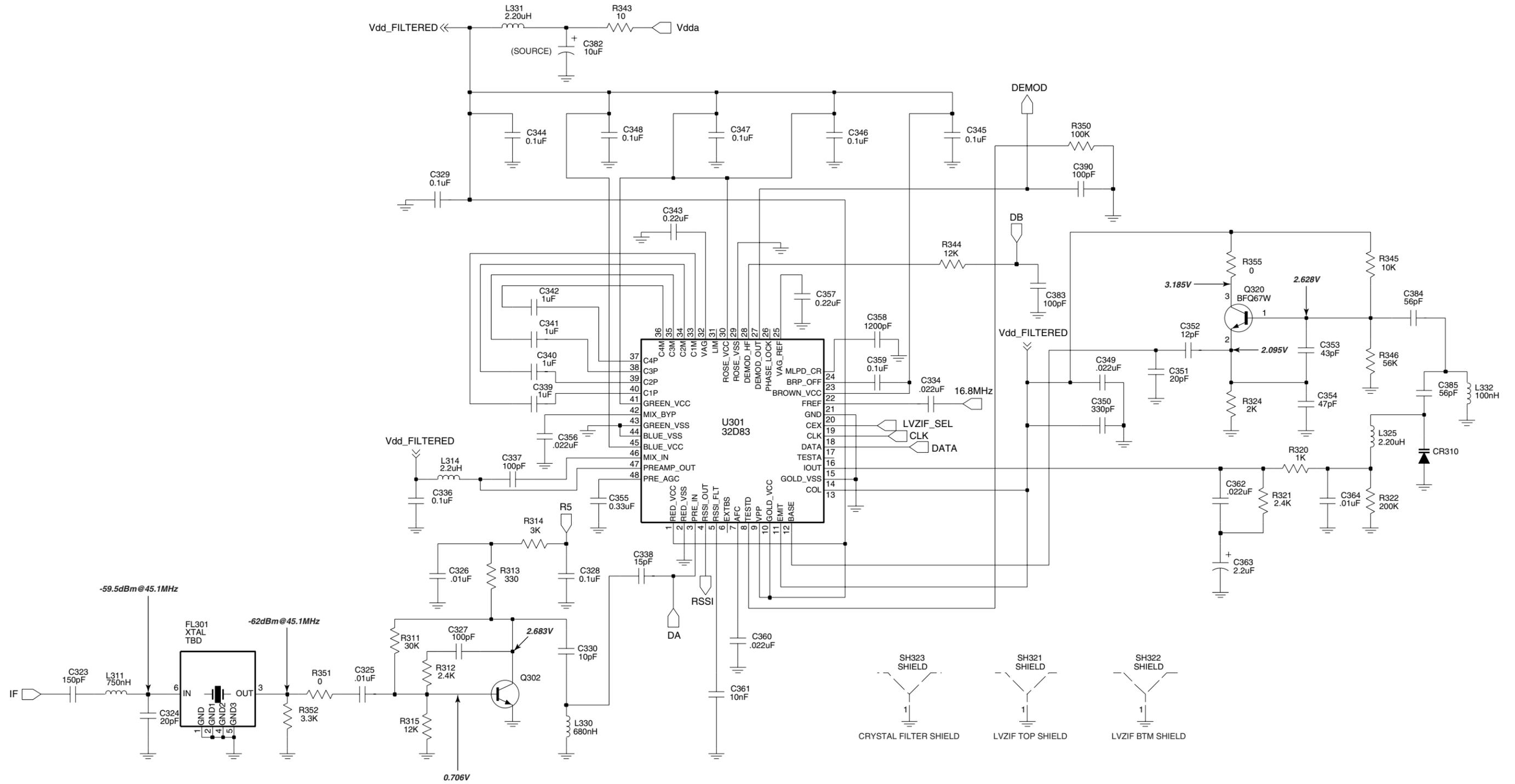


Figure 9-92. UHF Receiver Back End Schematic Diagram for (403-470MHz for 8415234H02)

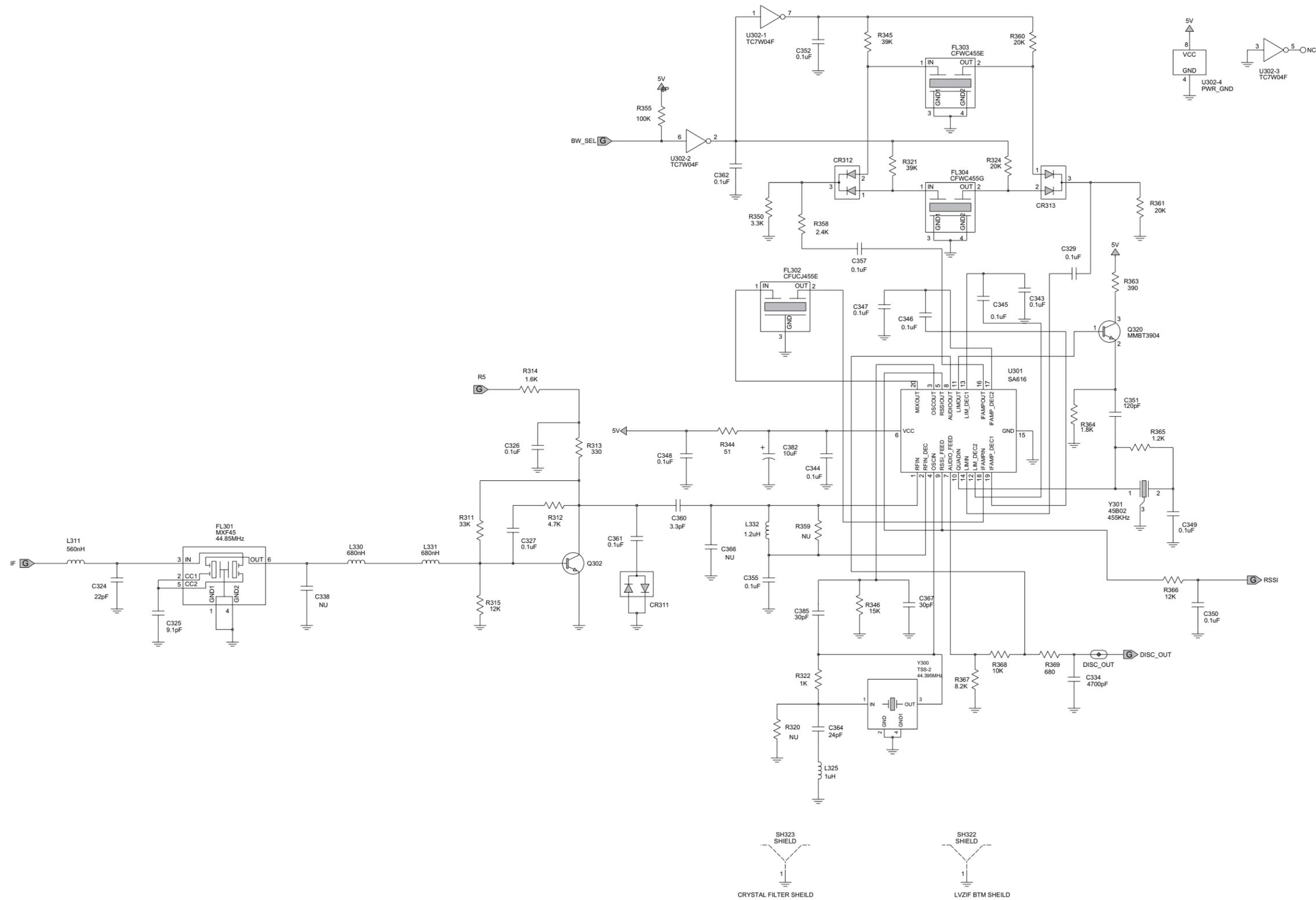


Figure 9-93. UHF Receiver Back End Schematic Diagram for (403-470MHz for 8415234H05)

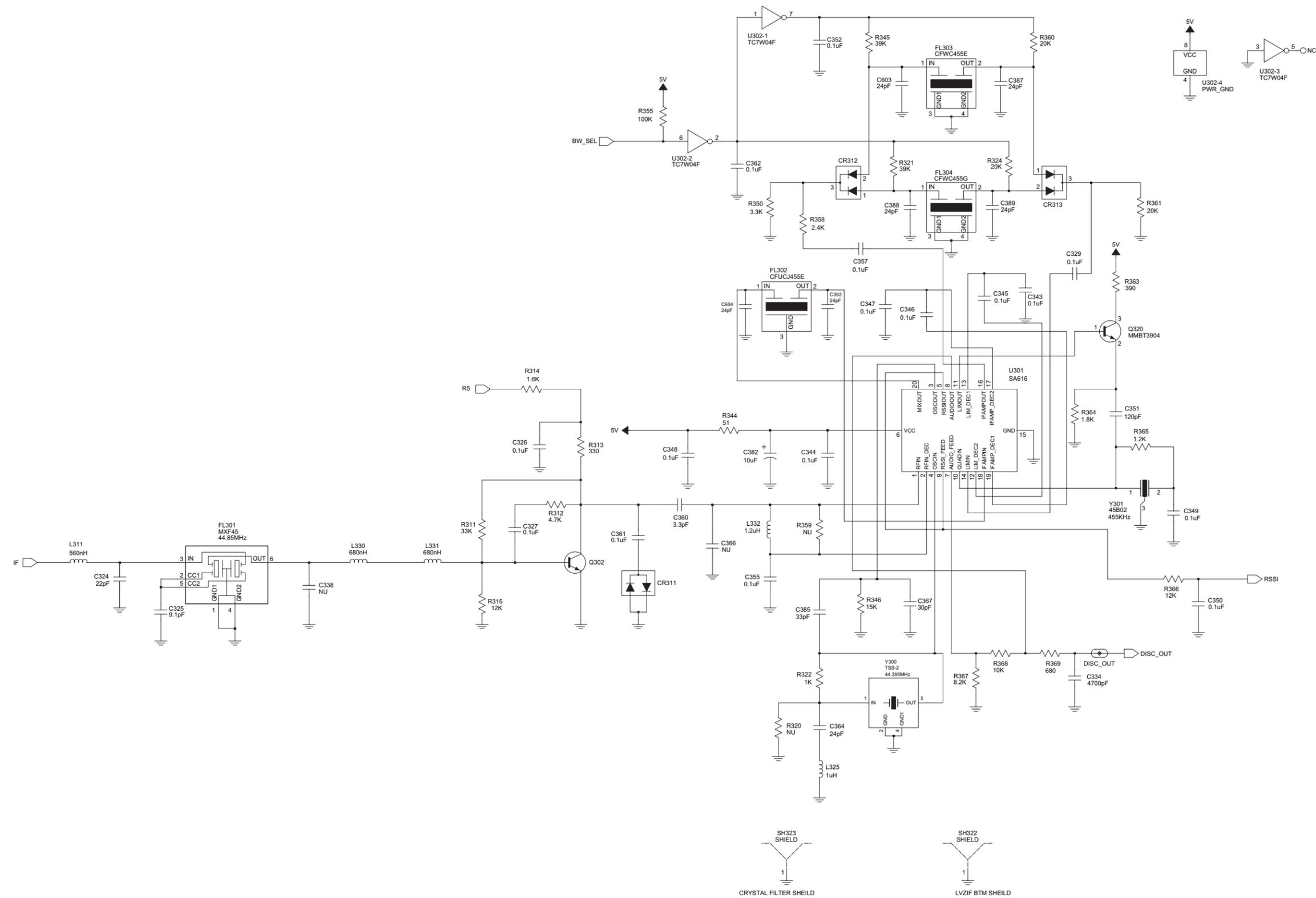


Figure 9-94. UHF Receiver Back End Schematic Diagram for (403-470MHz for 8415234H08)

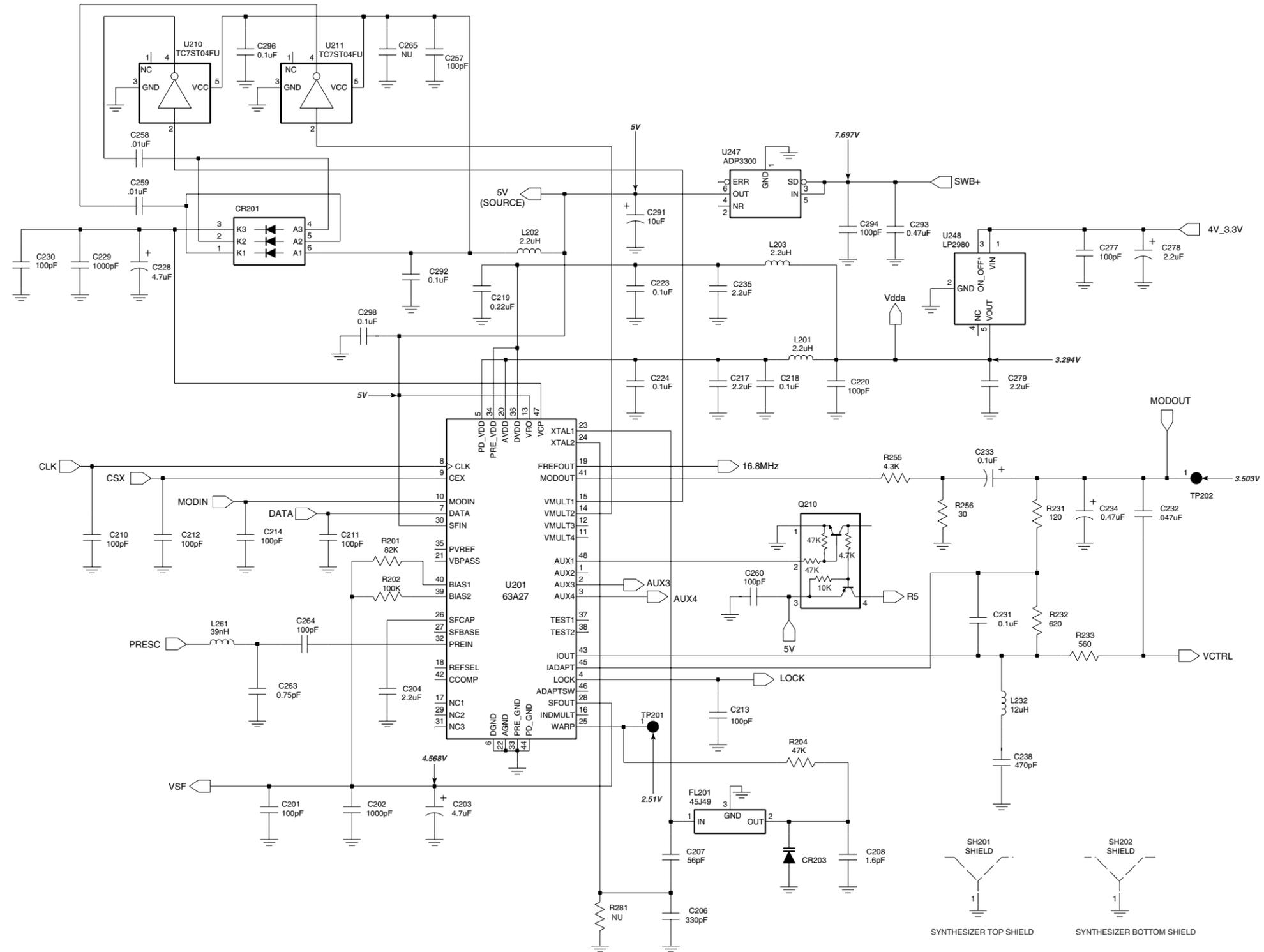


Figure 9-95. UHF Synthesizer Schematic Diagram

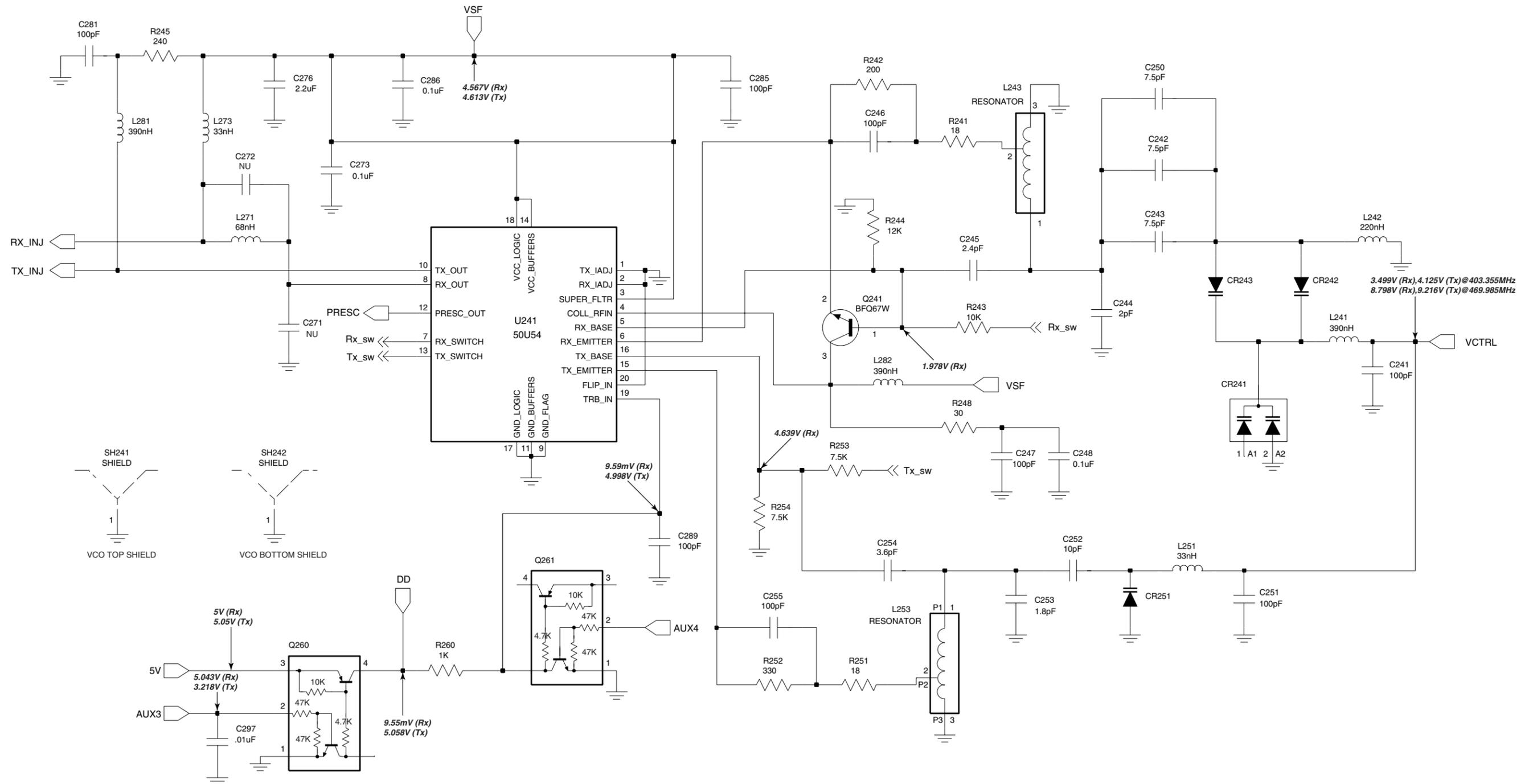


Figure 9-96. UHF Voltage Controlled Oscillator Schematic Diagram



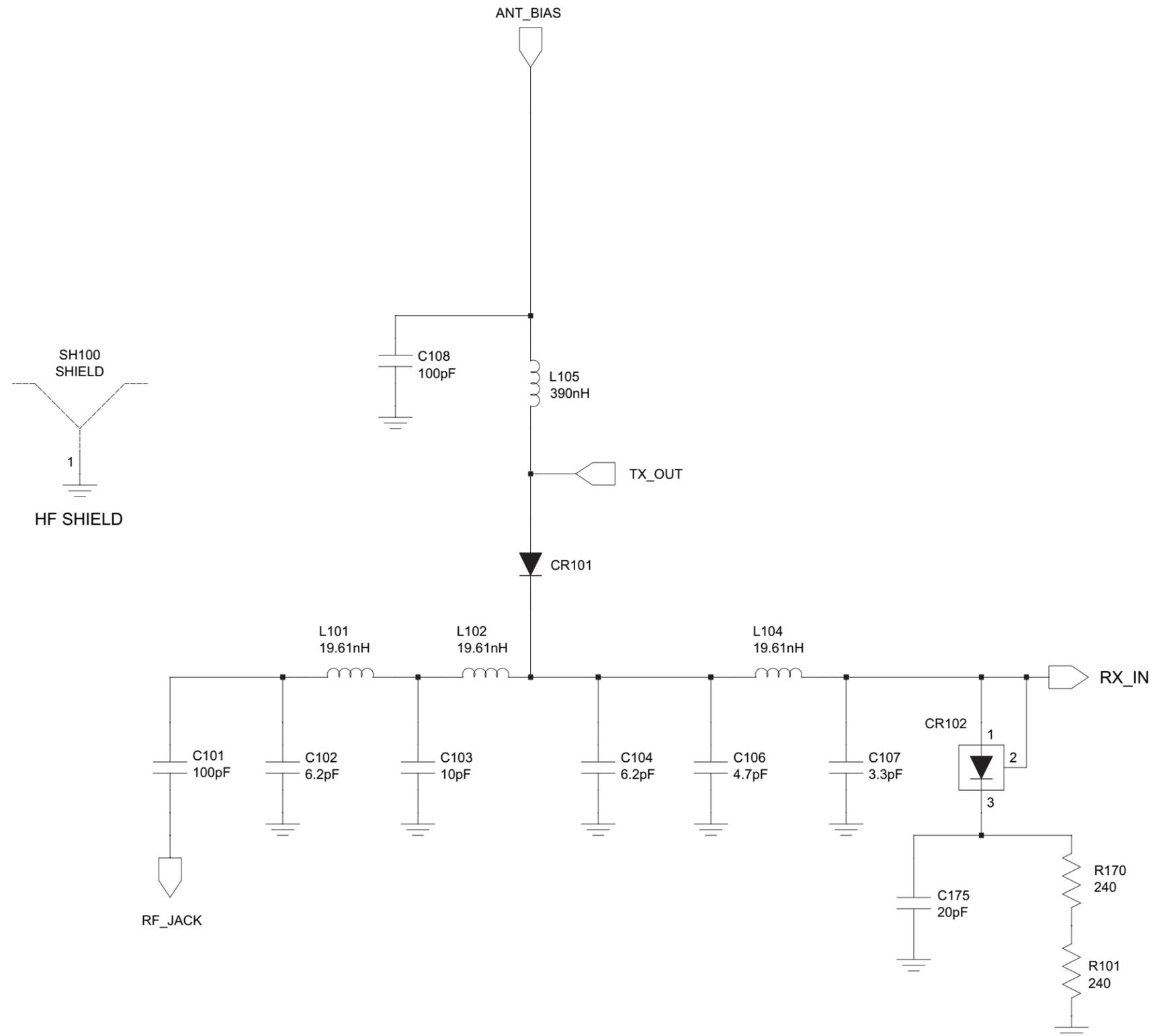


Figure 9-97. UHF Harmonic Filter Schematic Diagram for (403-470MHz for 8415234H01)

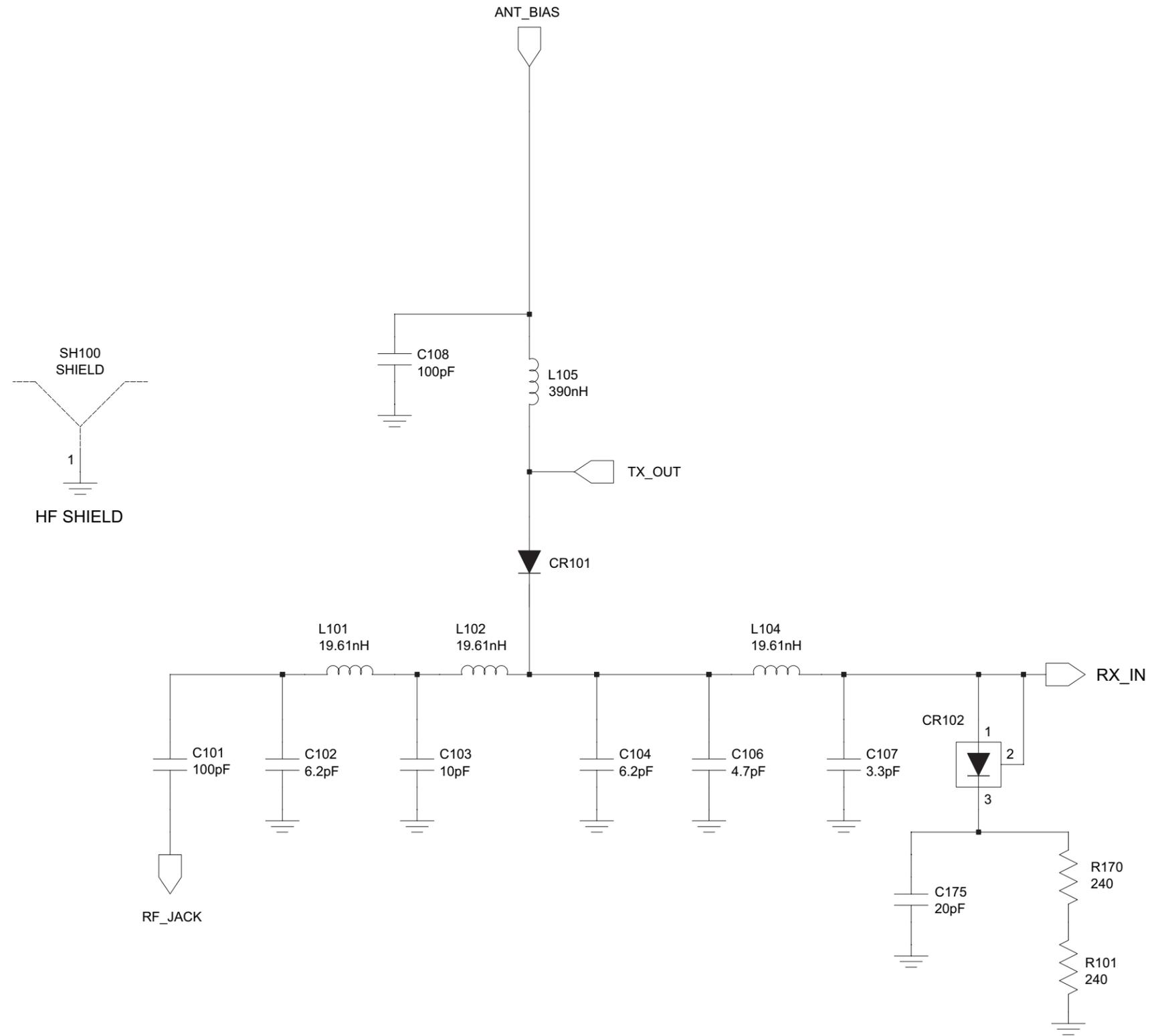


Figure 9-98. UHF Harmonic Filter Schematic Diagram for (403-470MHz for 8415234H02)

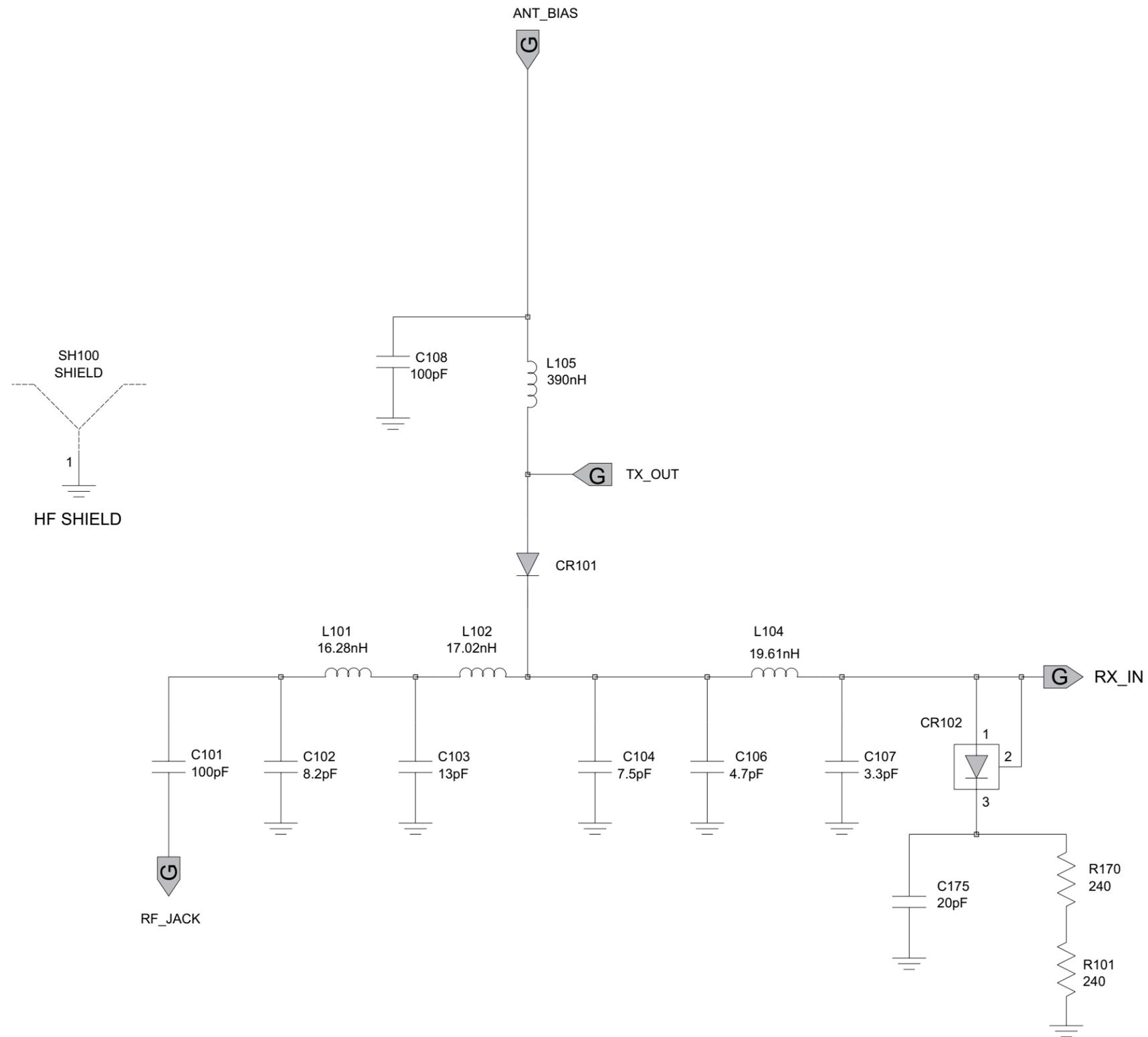


Figure 9-99. UHF Harmonic Filter Schematic Diagram for (403-470MHz for 8415234H05)

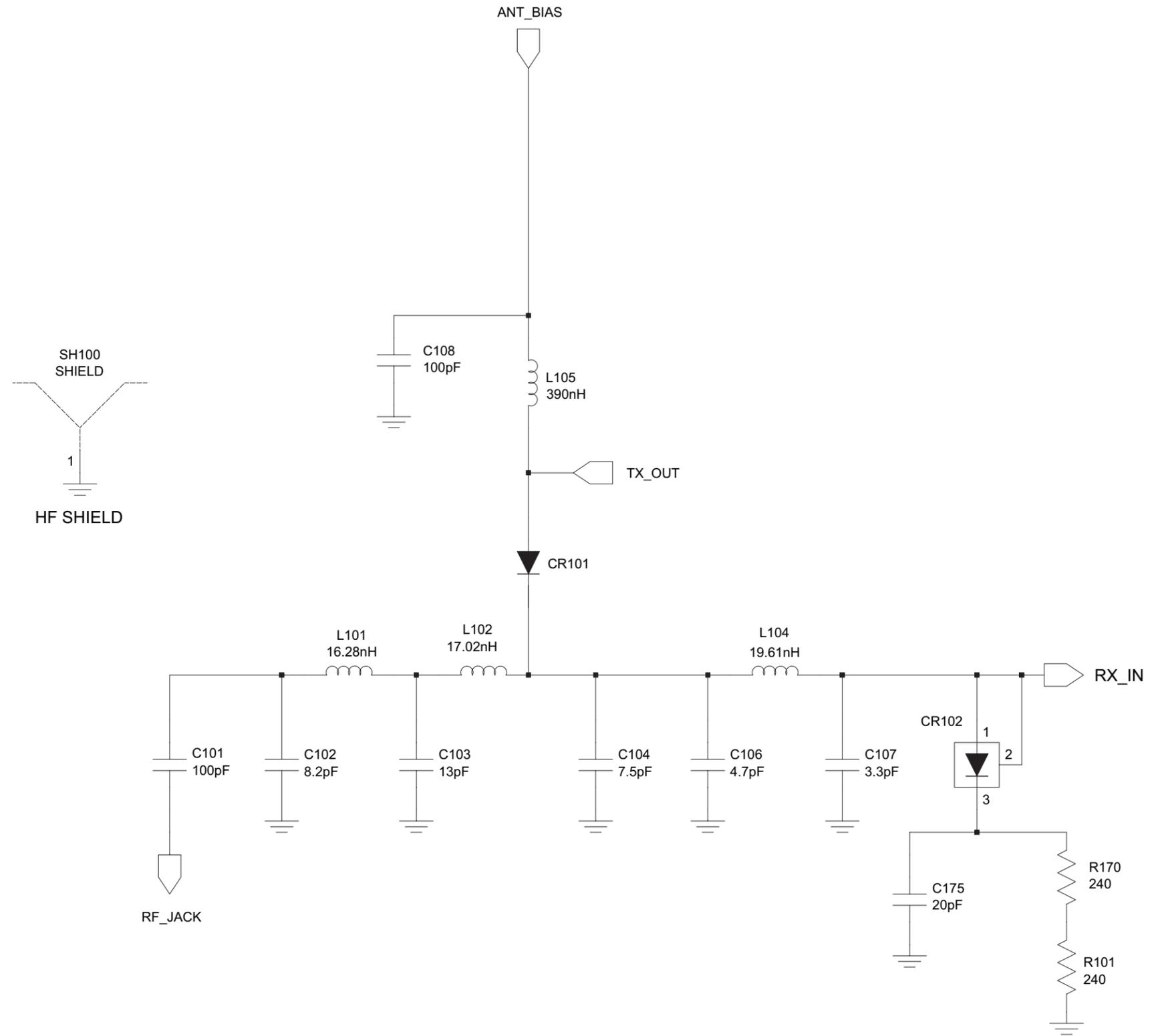


Figure 9-100. UHF Harmonic Filter Schematic Diagram for (403-470MHz for 8415234H08)

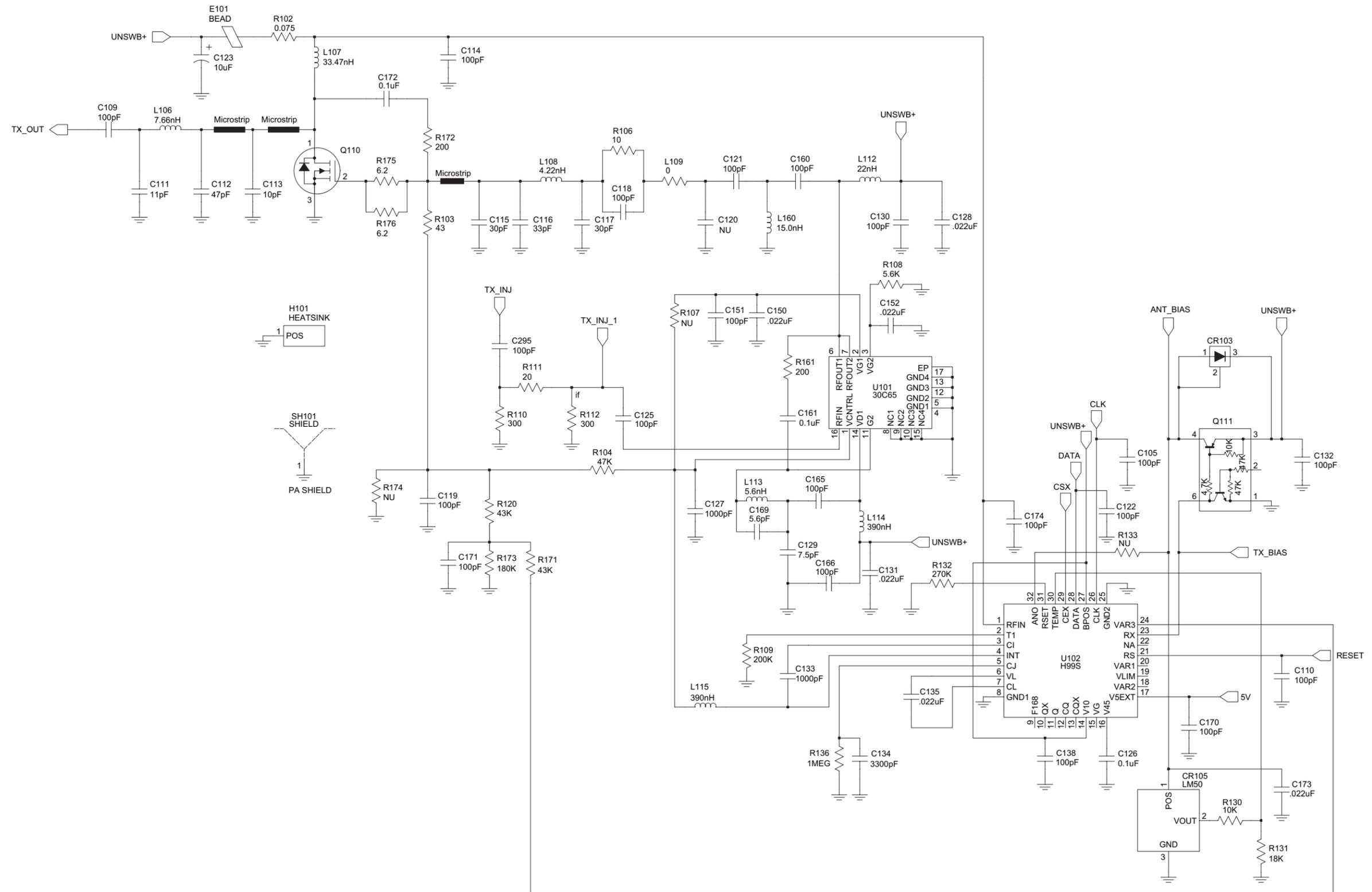


Figure 9-101. UHF Transmitter Schematic Diagram for (403-470MHz for 8415234H01)



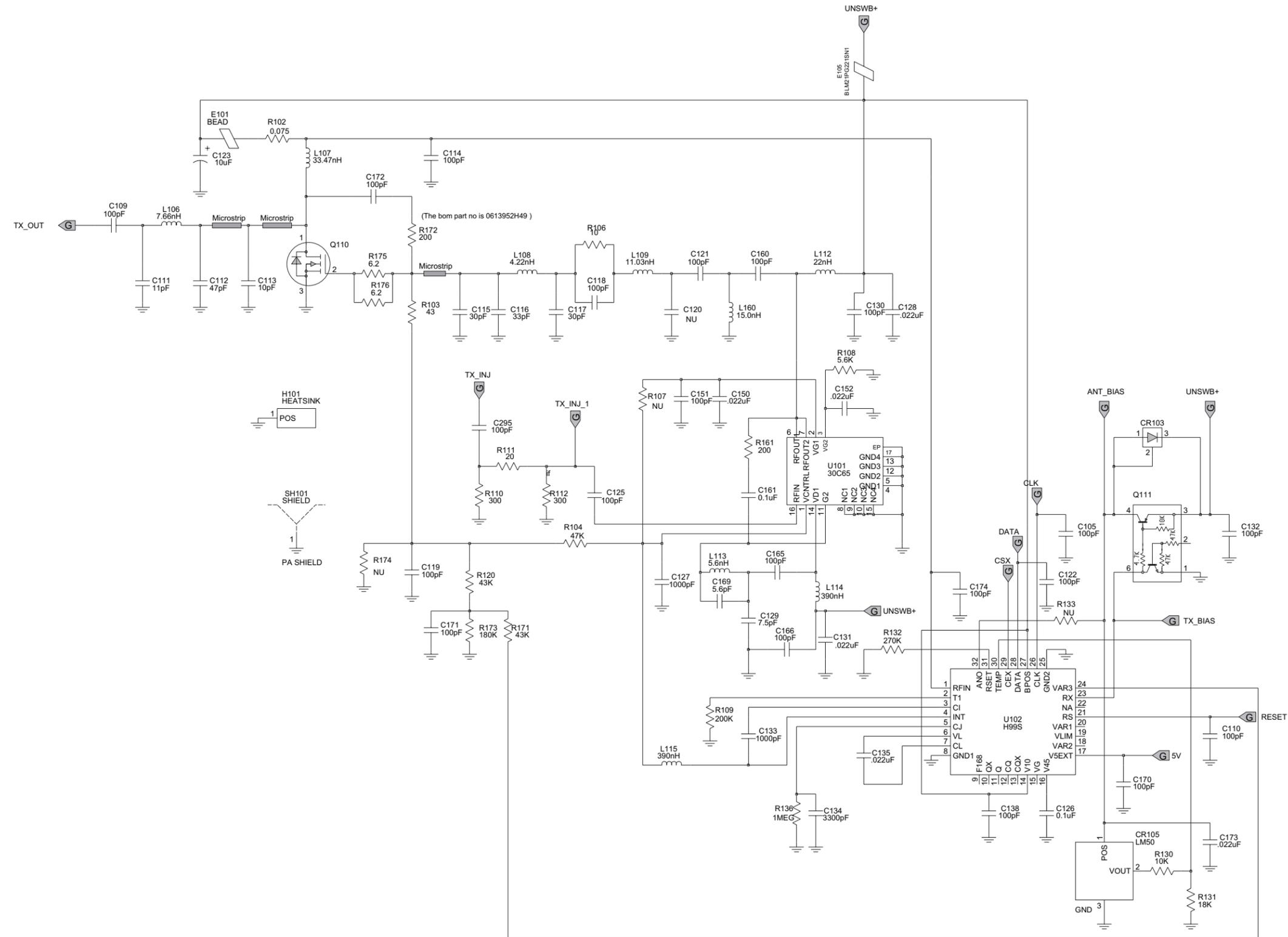


Figure 9-103. UHF Transmitter Schematic Diagram for (403-470MHz for 8415234H05)

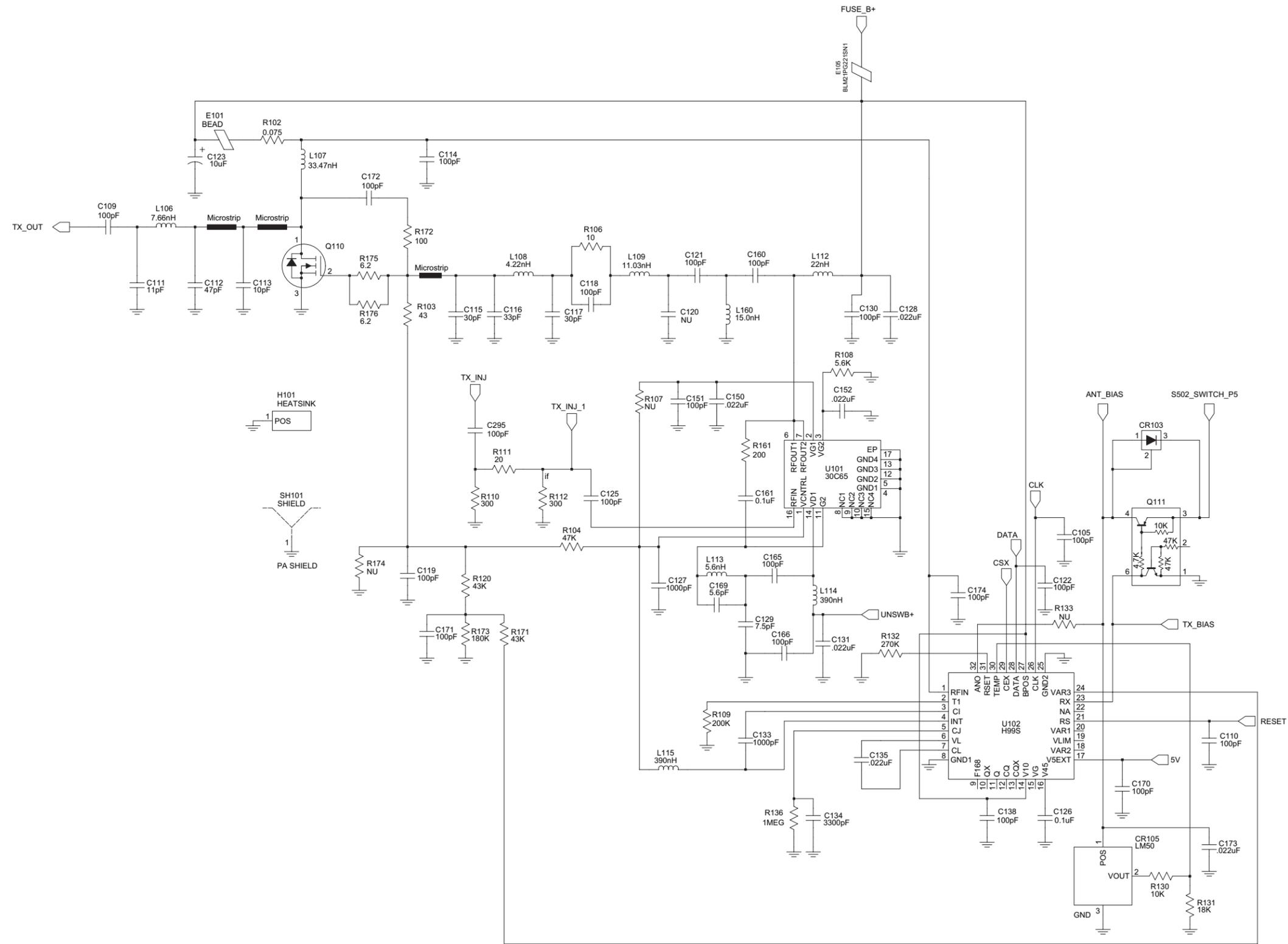


Figure 9-104. UHF Transmitter Schematic Diagram for (403-470MHz for 8415234H08)



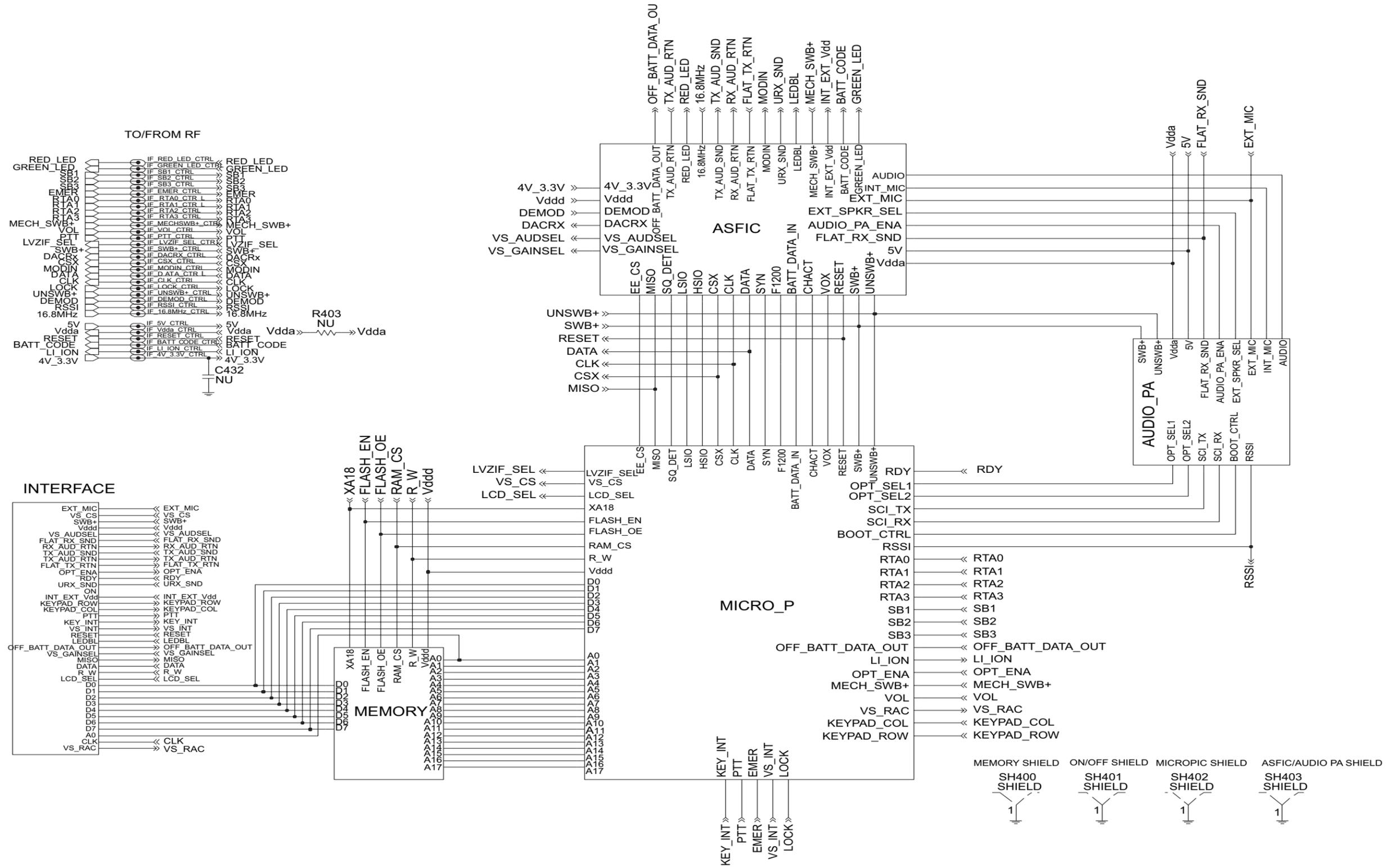


Figure 9-105. Complete Controller Schematic Diagram for (403-470MHz for 8415234H01, 8415234H05, 8415234H08)

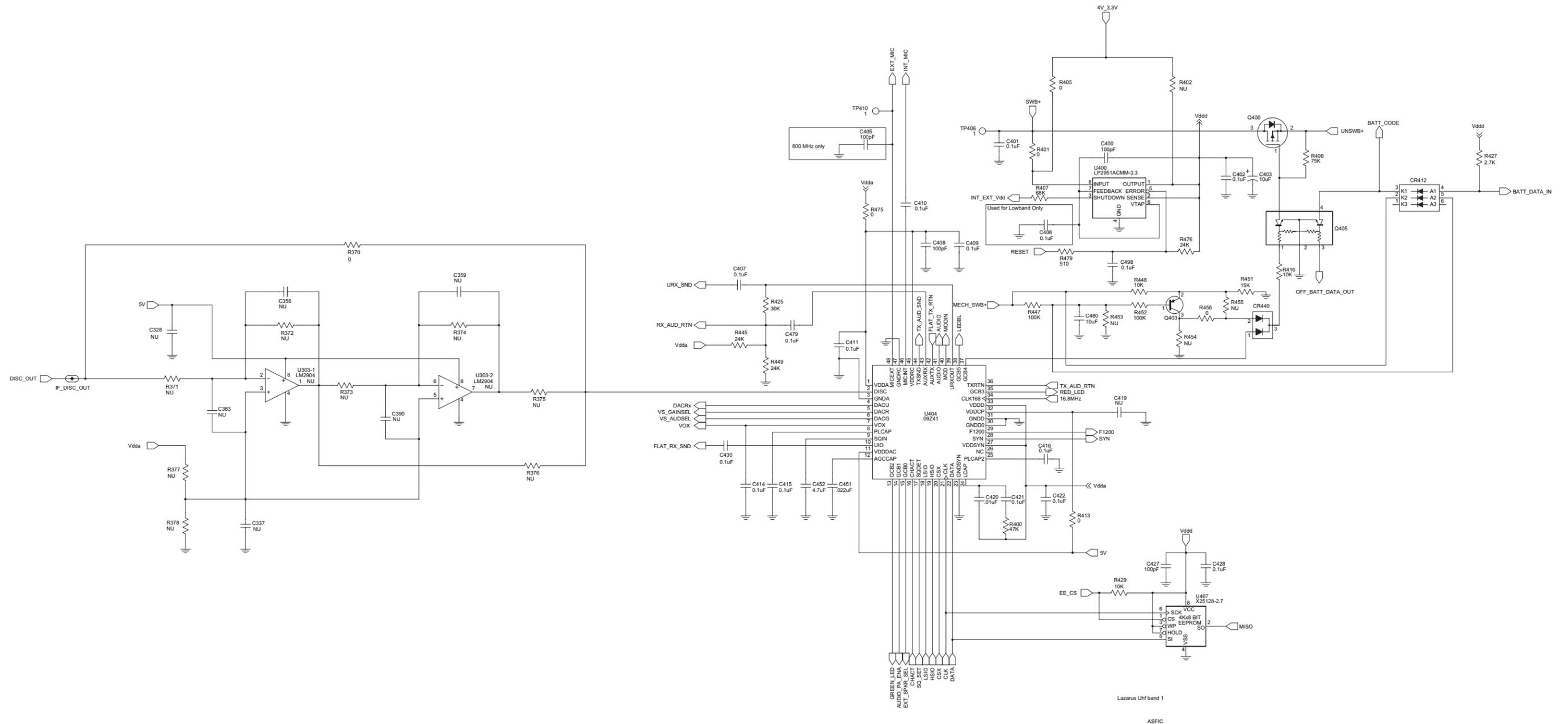


Figure 9-106. Controller ASFIC/ON\_OFF Schematic Diagram for (403-470MHz for 8415234H01, 8415234H05, 8415234H08)

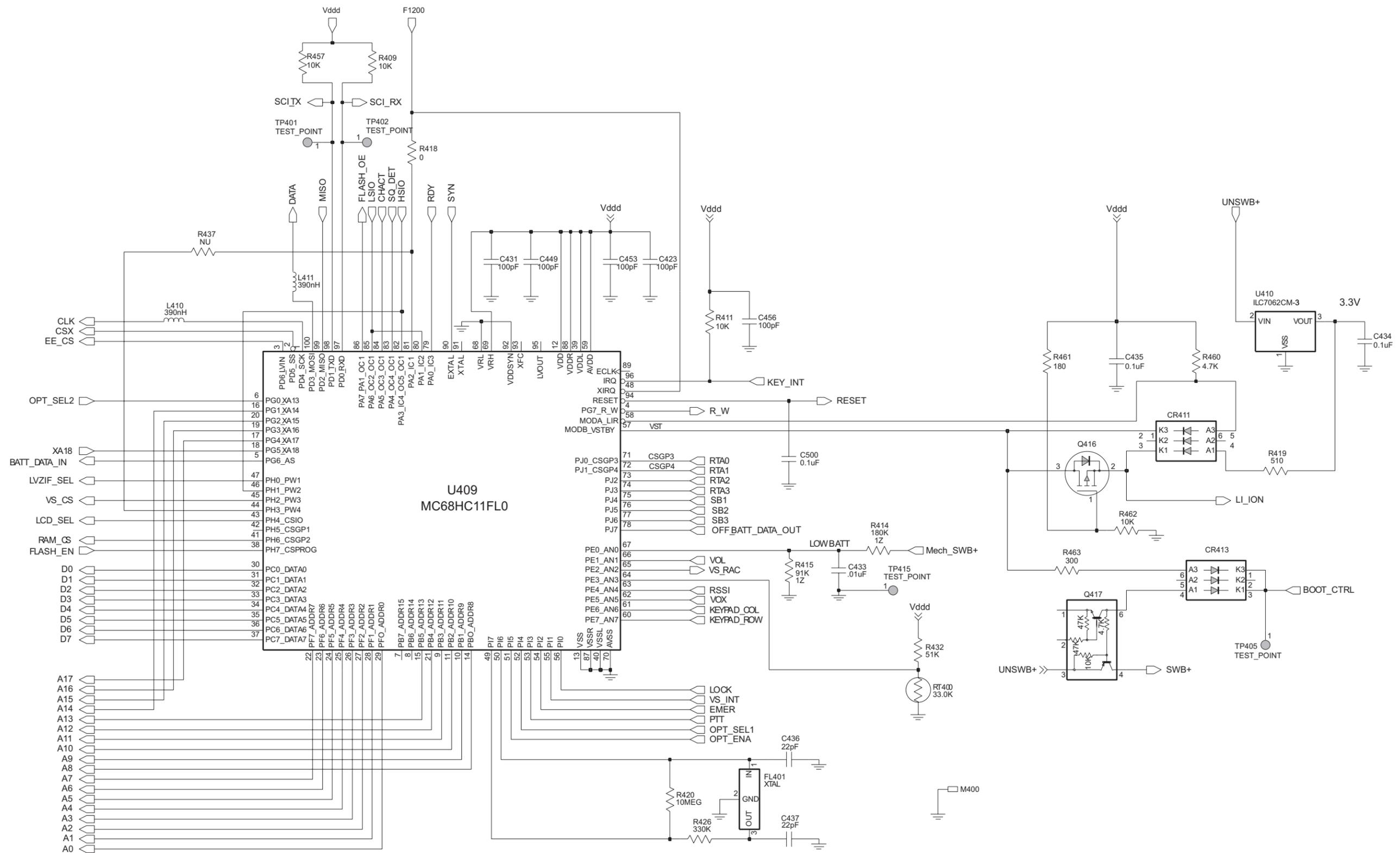


Figure 9-107. Controller Microprocessor Schematic Diagram for (403-470MHz for 8415234H01, 8415234H05, 8415234H08)

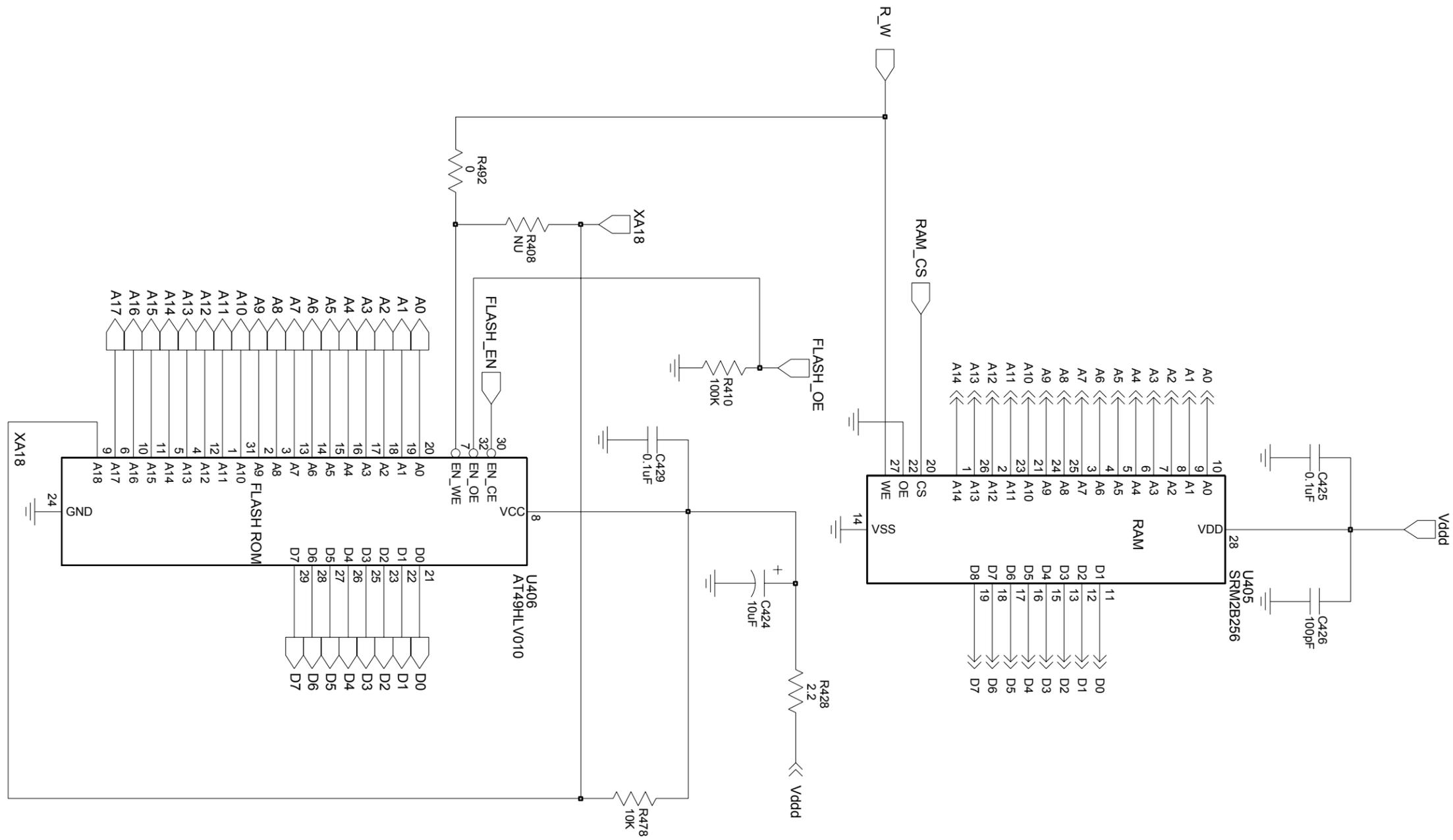


Figure 9-108. Controller Memory Schematic Diagram for (403-470MHz for 8415234H01, 8415234H05, 8415234H08)

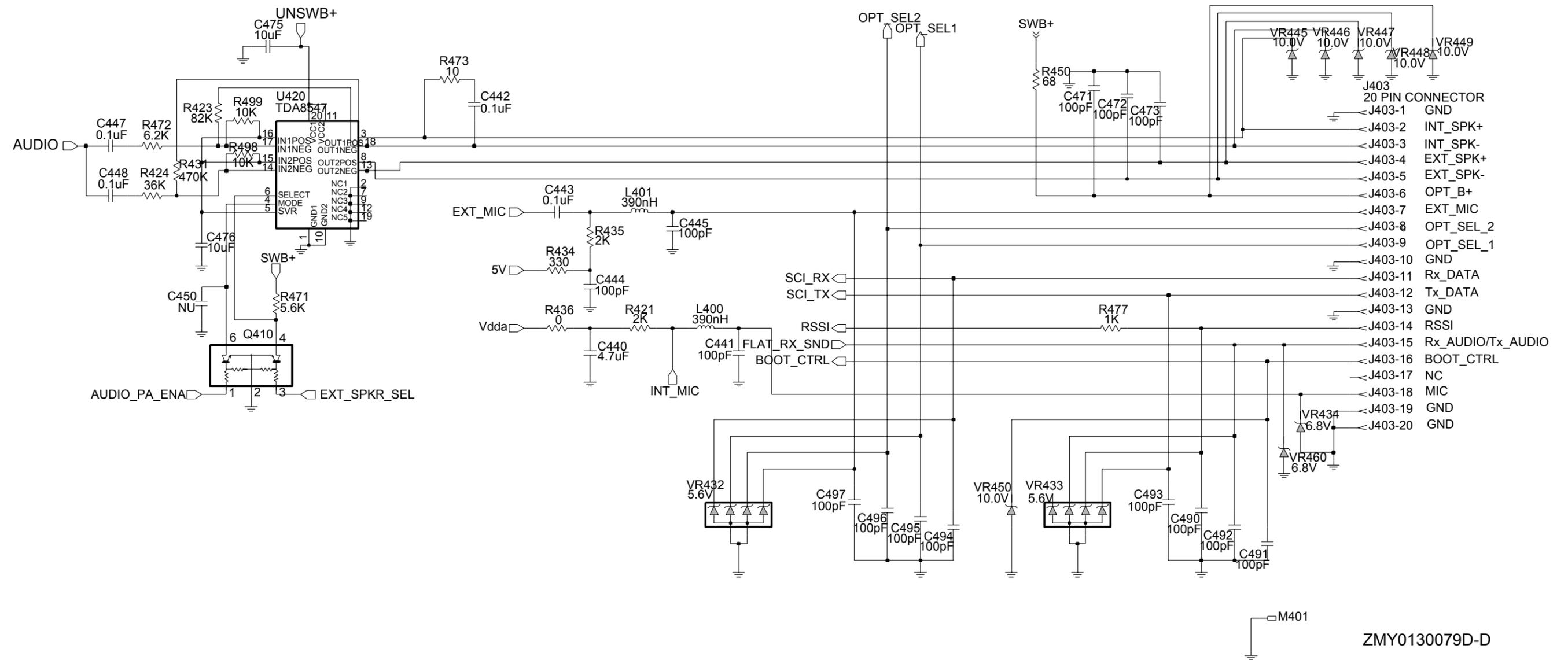


Figure 9-109. Controller Audio Power Amplifier Schematic Diagram for (403-470MHz for 8415234H01, 8415234H05, 8415234H08)

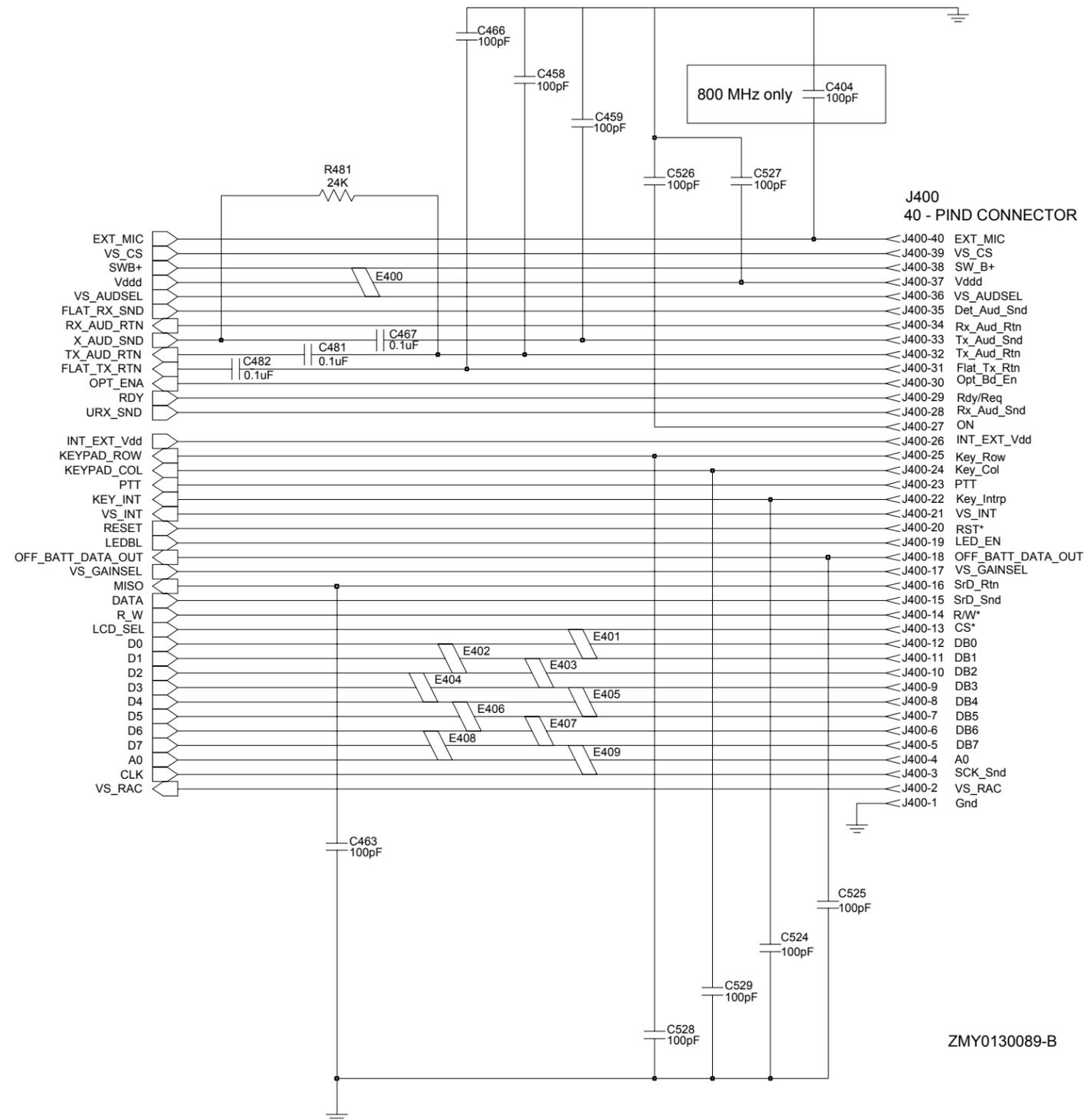


Figure 9-110. Controller Interface Schematic Diagram for (403-470MHz for 8415234H01, 8415234H05, 8415234H08)

**UHF (403-470 MHz) Radio Parts List (PCB 8415234H01)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	CONNECTOR (CONTACT BATTERY)
B503	3980502Z01	CONTACT, BACKUP B+
B504	3980501Z01	CONTACT, BACKUP B-
C101	2113944C45	CAP CER CHP 100.0PF 50V 5%
C102	2113944C72	CAP,FXD,6.2PF,.25PF+/-,50V-DC,
C103	2113944C30	CAP CER CHP 10.0PF 50V +/- 0.5
C104	2113944C72	CAP,FXD,6.2PF,.25PF+/-,50V-DC,
C105	2113944A40	CAP CER CHP 100.0PF 50V 5%
C106	2113944C22	CAP CER CHP 4.7PF 50V +/- 0.25
C107	2113944C18	CAP CER CHP 3.3PF 50V +/- 0.25
C108	2113944A40	CAP CER CHP 100.0PF 50V 5%
C109	2113944C45	CAP CER CHP 100.0PF 50V 5%
C110	2113944A40	CAP CER CHP 100.0PF 50V 5%
C111	2113944C32	CAP CER CHP 15.0PF 50V 5%
C112	2115937H04	HIGH Q CHIP CAPACITOR, 47PF
C113	2115937H01	HIGH Q CHIP CAPACITOR, 10PF
C114	2113944A40	CAP CER CHP 100.0PF 50V 5%
C115	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,04
C116	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,04
C117	2113944A29	CAP CER CHP 22.0PF 50V 5%
C118	2113944A40	CAP CER CHP 100.0PF 50V 5%
C119	2113944A40	CAP CER CHP 100.0PF 50V 5%
C120	2113944A77	CAP,FXD,11PF,+5%,-5%,50V-DC,04
C121	2113944A40	CAP CER CHP 100.0PF 50V 5%
C122	2113944A40	CAP CER CHP 100.0PF 50V 5%
C123	2313960F04	CAP,FXD,33UF,+10%,-10%, 16V-DC,

Circuit Ref	Motorola Part No.	Description
C125	2113944A40	CAP CER CHP 100.0PF 50V 5%
C126	2113946K02	CAP CER CHP 0.10UF 16V
C127	2113945A09	CAP CER CHP 1000PF 50V 10%
C128	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-D
C129	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C130	2113944A40	CAP CER CHP 100.0PF 50V 5%
C131	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-D
C132	2113944A40	CAP CER CHP 100.0PF 50V 5%
C133	2113945A09	CAP CER CHP 1000PF 50V 10%
C134	2113945A12	CAP CER CHP 3300PF 50V 10%
C135	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-D
C138	2113944A40	CAP CER CHP 100.0PF 50V 5%
C140	0613952H91	CER CHIP RES 5600 OHM 5 0603
C141	NOT PLACED	-
C150	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-D
C151	2113944A40	CAP CER CHP 100.0PF 50V 5%
C152	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C160	2113944A40	CAP CER CHP 100.0PF 50V 5%
C161	2113946K02	CAP CER CHP 0.10UF 16V
C165	2113944A40	CAP CER CHP 100.0PF 50V 5%
C166	2113944A40	CAP CER CHP 100.0PF 50V 5%
C169	2113944A19	CAP CER CHP 5.6PF 50V +/- 0.5P
C170	2113944A40	CAP CER CHP 100.0PF 50V 5%
C171	2113944A40	CAP CER CHP 100.0PF 50V 5%
C172	2113944C45	CAP CER CHP 100.0PF 50V 5%
C173	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-D
C174	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description
C175	2113944C45	CAP CER CHP 100.0PF 50V 5%
C201	2113944A40	CAP CER CHP 100.0PF 50V 5%
C202	2113945A09	CAP CER CHP 1000PF 50V 10%
C203	2113946H01	CAP CER CHP 4.7UF 10V 10%
C204	2113946N03	CAP CER CHP 2.2UF 16V
C206	2113944C04	CAP CER CHP 330.0PF 50V 5%
C207	2113944A33	CAP CER CHP 47.0PF 50V 5%
C208	NOT PLACED	-
C210	2113944A40	CAP CER CHP 100.0PF 50V 5%
C211	2113944A40	CAP CER CHP 100.0PF 50V 5%
C212	2113944A40	CAP CER CHP 100.0PF 50V 5%
C213	2113944A40	CAP CER CHP 100.0PF 50V 5%
C214	2113944A40	CAP CER CHP 100.0PF 50V 5%
C217	2113946N03	CAP CER CHP 2.2UF 16V
C218	2113946K02	CAP CER CHP 0.10UF 16V
C219	2113946L03	CAP CER CHP 0.22UF 16V
C220	2113944A40	CAP CER CHP 100.0PF 50V 5%
C223	2113946K02	CAP CER CHP 0.10UF 16V
C224	2113946K02	CAP CER CHP 0.10UF 16V
C228	2313960D05	CAP,FXD,4.7UF,+10%,-10%, 16V-DC
C229	2113945A09	CAP CER CHP 1000PF 50V 10%
C230	2113944A40	CAP CER CHP 100.0PF 50V 5%
C231	2113946K02	CAP CER CHP 0.10UF 16V
C232	2113945D02	CAP CER CHP 47,000PF 25V 10%
C233	2313960A26	CAP,FXD,.1UF,+10%,-10%, 35V-DC,
C234	2313960A55	CAP,FXD,.47UF,+10%,-10%, 25V-DC
C235	2113946N03	CAP CER CHP 2.2UF 16V
C238	2113945L17	CAP,FXD,470PF,+5%,-5%,50V-DC,0
C241	2113944A40	CAP CER CHP 100.0PF 50V 5%
C242	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P

Circuit Ref	Motorola Part No.	Description
C243	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C244	2113944C13	CAP CER CHP 2.0PF 50V +/- 0.25
C245	2113944A10	CAP CER CHP 2.4PF 50V +/- 0.25
C246	2113944A40	CAP CER CHP 100.0PF 50V 5%
C247	2113944A40	CAP CER CHP 100.0PF 50V 5%
C248	2113946K02	CAP CER CHP 0.10UF 16V
C250	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C251	2113944A40	CAP CER CHP 100.0PF 50V 5%
C252	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5
C253	2113944C12	CAP CER CHP 1.8PF 50V +/- 0.25
C254	2113944A14	CAP CER CHP 3.6PF 50V +/- 0.25
C255	2113944A40	CAP CER CHP 100.0PF 50V 5%
C257	2113944A40	CAP CER CHP 100.0PF 50V 5%
C258	2113945B02	CAP CER CHP 10,000PF 25V 10%
C259	2113945B02	CAP CER CHP 10,000PF 25V 10%
C260	2113944A40	CAP CER CHP 100.0PF 50V 5%
C263	2113944A62	CAP,FXD,.75PF,.25PF+/-,50V-DC,
C264	2113944A40	CAP CER CHP 100.0PF 50V 5%
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	NOT PLACED	-
C273	2113946K02	CAP CER CHP 0.10UF 16V
C276	2113946N03	CAP CER CHP 2.2UF 16V
C277	2113944A40	CAP CER CHP 100.0PF 50V 5%
C278	2313960D07	CAP,FXD,10UF,+10%,-10%, 16V-DC,
C279	2113946N03	CAP CER CHP 2.2UF 16V
C281	2113944A40	CAP CER CHP 100.0PF 50V 5%
C285	2113944A40	CAP CER CHP 100.0PF 50V 5%
C286	2113946K02	CAP CER CHP 0.10UF 16V

Circuit Ref	Motorola Part No.	Description
C289	2113944A40	CAP CER CHP 100.0PF 50V 5%
C291	2313960M51	CAP,FXD,10UF,+10%,-10%,6.3V-DC
C292	2113946K02	CAP CER CHP 0.10UF 16V
C293	2113945G98	CAP,FXD,.47UF,+10%,-10%,50V-DC
C294	2113944A40	CAP CER CHP 100.0PF 50V 5%
C295	2113944A40	CAP CER CHP 100.0PF 50V 5%
C296	2113946K02	CAP CER CHP 0.10UF 16V
C297	2113945B02	CAP CER CHP 10,000PF 25V 10%
C298	2113946K02	CAP CER CHP 0.10UF 16V
C301	2113944A14	CAP CER CHP 3.6PF 50V +/-0.25
C302	2113944A25	CAP CER CHP 10.0PF 50V +/-0.5
C303	2113944C20	CAP CER CHP 3.9PF 50V +/-0.25
C304	2113944A25	CAP CER CHP 10.0PF 50V +/-0.5
C305	2113944A80	CAP,FXD,20PF,+5%,-5%,50V-DC,04
C306	NOT PLACED	-
C307	2113944A40	CAP CER CHP 100.0PF 50V 5%
C308	2113944A40	CAP CER CHP 100.0PF 50V 5%
C309	2113944A40	CAP CER CHP 100.0PF 50V 5%
C310	2113944A40	CAP CER CHP 100.0PF 50V 5%
C311	NOT PLACED	-
C312	2113944A24	CAP CER CHP 9.1PF 50V +/-0.5P
C313	2113944A25	CAP CER CHP 10.0PF 50V +/-0.5
C314	2113946K02	CAP CER CHP 0.10UF 16V
C315	2113944A40	CAP CER CHP 100.0PF 50V 5%
C316	2113944C20	CAP CER CHP 3.9PF 50V +/-0.25
C317	2113944A24	CAP CER CHP 9.1PF 50V +/-0.5P
C318	2113944A22	CAP CER CHP 7.5PF 50V +/-0.5P
C319	2113944A11	CAP CER CHP 2.7PF 50V +/-0.25

Circuit Ref	Motorola Part No.	Description
C320	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,04
C321	2113944A40	CAP CER CHP 100.0PF 50V 5%
C322	2113944A38	CAP CER CHP 82.0PF 50V 5%
C324	2113944A29	CAP CER CHP 22.0PF 50V 5%
C325	2115153H26	CAP, CERAMIC, COG
C326	2113946K02	CAP CER CHP 0.10UF 16V
C327	2113946K02	CAP CER CHP 0.10UF 16V
C328	2113946K02	CAP CER CHP 0.10UF 16V
C329	2113946K02	CAP CER CHP 0.10UF 16V
C334	2113945A13	CAP CER CHP 4700PF 50V 10%
C337	2113946D02	CAP CER CHP 1.0UF 6.3V 10%
C338	NOT PLACED	-
C343	2113946K02	CAP CER CHP 0.10UF 16V
C344	2113945D04	CAP CER CHP 100,000PF 25V 10%
C345	2113946K02	CAP CER CHP 0.10UF 16V
C346	2113946K02	CAP CER CHP 0.10UF 16V
C347	2113946K02	CAP CER CHP 0.10UF 16V
C348	2113946K02	CAP CER CHP 0.10UF 16V
C349	2113945D04	CAP CER CHP 100,000PF 25V 10%
C350	2113946K02	CAP CER CHP 0.10UF 16V
C351	2113944A41	CAP CER CHP 120.0PF 50V 5%
C352	2113946K02	CAP CER CHP 0.10UF 16V
C355	2113946K02	CAP CER CHP 0.10UF 16V
C357	2113946K02	CAP CER CHP 0.10UF 16V
C358	2113944A21	CAP CER CHP 6.8PF 50V +/-0.5PF
C359	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,0402
C360	2113944A13	CAP CER CHP 3.3PF 50V +/-0.25
C361	2113946K02	CAP CER CHP 0.10UF 16V
C362	2113946K02	CAP CER CHP 0.10UF 16V
C364	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,04
C366	NOT PLACED	-
C367	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,04
C370	2113944A17	CAP CER CHP 4.7PF 50V +/-0.25
C371	NOT PLACED	-
C372	2113944A40	CAP CER CHP 100.0PF 50V 5%
C373	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
C374	2113944A40	CAP CER CHP 100.0PF 50V 5%
C375	2113944A40	CAP CER CHP 100.0PF 50V 5%
C378	NOT PLACED	-
C380	2113945B02	CAP CER CHP 10,000PF 25V 10%
C381	NOT PLACED	-
C382	2313960B57	CAP,FXD,10UF,+10%,-10%,6.3V-DC
C383	2113944A85	CAP,FXD,51PF,+5%,-5%,50V-DC,0402
C385	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,04
C386	2113944A40	CAP CER CHP 100.0PF 50V 5%
C390	2113944A85	CAP,FXD,51PF,+5%,-5%,50V-DC,0402
C400	2113945B02	CAP CER CHP 10,000PF 25V 10%
C401	2113946K02	CAP CER CHP 0.10UF 16V
C402	2113946K02	CAP CER CHP 0.10UF 16V
C403	2113955D33	CAP,FXD,2.2UF,+10%,-10%,16V-DC
C404	NOT PLACED	-
C405	2113944A40	CAP CER CHP 100.0PF 50V 5%
C406	NOT PLACED	-
C407	2113946B04	CAP CER CHP 0.10UF 10V 10%
C408	2113944A40	CAP CER CHP 100.0PF 50V 5%
C409	2113946K02	CAP CER CHP 0.10UF 16V
C410	2113946B04	CAP CER CHP 0.10UF 10V 10%
C411	2113946K02	CAP CER CHP 0.10UF 16V
C414	2113946K02	CAP CER CHP 0.10UF 16V
C415	2185895Z01	CAPACITOR CER LOW DIST .01UF
C416	2113946B04	CAP CER CHP 0.10UF 10V 10%
C419	NOT PLACED	-
C420	2113945B02	CAP CER CHP 10,000PF 25V 10%
C421	2113946B04	CAP CER CHP 0.10UF 10V 10%
C422	2113946K02	CAP CER CHP 0.10UF 16V
C423	2113944A40	CAP CER CHP 100.0PF 50V 5%
C424	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
C425	2113946K02	CAP CER CHP 0.10UF 16V
C426	2113944A40	CAP CER CHP 100.0PF 50V 5%
C427	2113944A40	CAP CER CHP 100.0PF 50V 5%
C428	2113946K02	CAP CER CHP 0.10UF 16V
C429	2113946K02	CAP CER CHP 0.10UF 16V
C430	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
C431	2113944A40	CAP CER CHP 100.0PF 50V 5%
C432	NOT PLACED	-
C433	2113945B02	CAP CER CHP 10,000PF 25V 10%
C434	2113946B04	CAP CER CHP 0.10UF 10V 10%
C435	2113946K02	CAP CER CHP 0.10UF 16V
C436	2113944A29	CAP CER CHP 22.0PF 50V 5%
C437	2113944A29	CAP CER CHP 22.0PF 50V 5%
C440	2113946Q01	CAP CER CHP 4.7UF 16V
C441	2113944A40	CAP CER CHP 100.0PF 50V 5%
C442	2113945D04	CAP CER CHP 100,000PF 25V 10%
C443	2113946B04	CAP CER CHP 0.10UF 10V 10%
C444	2113944A40	CAP CER CHP 100.0PF 50V 5%
C445	2113944A40	CAP CER CHP 100.0PF 50V 5%
C447	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C448	2113946B04	CAP CER CHP 0.10UF 10V 10%
C449	2113944A40	CAP CER CHP 100.0PF 50V 5%
C450	NOT PLACED	-
C451	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C452	2113955D31	CAP,FXD,1UF,+10%,-10%,16V-DC,1
C453	2113944A40	CAP CER CHP 100.0PF 50V 5%
C456	2113944A40	CAP CER CHP 100.0PF 50V 5%
C458	2113944A40	CAP CER CHP 100.0PF 50V 5%
C459	2113944A40	CAP CER CHP 100.0PF 50V 5%



Circuit Ref	Motorola Part No.	Description
C463	2113944A40	CAP CER CHP 100.0PF 50V 5%
C466	2113944A40	CAP CER CHP 100.0PF 50V 5%
C467	2113946B04	CAP CER CHP 0.10UF 10V 10%
C471	2113944A40	CAP CER CHP 100.0PF 50V 5%
C472	2113945A05	CAP CER CHP 470PF 50V 10%
C473	2113945A05	CAP CER CHP 470PF 50V 10%
C475	2113956E91	CAP,FXD,10UF,+10%,-10%,16V-DC,
C476	2113946R01	CAP CER CHP 10.0UF 10V
C479	2113946B04	CAP CER CHP 0.10UF 10V 10%
C480	2113946R01	CAP CER CHP 10.0UF 10V
C481	2113946B04	CAP CER CHP 0.10UF 10V 10%
C482	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
C490	2113944A40	CAP CER CHP 100.0PF 50V 5%
C491	2113944A40	CAP CER CHP 100.0PF 50V 5%
C492	2113944A40	CAP CER CHP 100.0PF 50V 5%
C493	2113944A40	CAP CER CHP 100.0PF 50V 5%
C494	2113944A40	CAP CER CHP 100.0PF 50V 5%
C495	2113944A40	CAP CER CHP 100.0PF 50V 5%
C496	2113944A40	CAP CER CHP 100.0PF 50V 5%
C497	2113944A40	CAP CER CHP 100.0PF 50V 5%
C498	NOT PLACED	-
C499	2113946B04	CAP CER CHP 0.10UF 10V 10%
C502	2313960A55	CAP,FXD,.47UF,+10%,-10%,25V-DC
C503	2113944A84	CAP,FXD,43PF,+5%,-5%,50V-DC,04
C505	2113944A40	CAP CER CHP 100.0PF 50V 5%
C511	2113944A40	CAP CER CHP 100.0PF 50V 5%
C512	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description
C513	2113944A40	CAP CER CHP 100.0PF 50V 5%
C514	2113944A40	CAP CER CHP 100.0PF 50V 5%
C520	2113945B02	CAP CER CHP 10,000PF 25V 10%
C521	2113945B02	CAP CER CHP 10,000PF 25V 10%
C522	2113945B02	CAP CER CHP 10,000PF 25V 10%
C523	2113945B02	CAP CER CHP 10,000PF 25V 10%
C524	2113944A40	CAP CER CHP 100.0PF 50V 5%
C525	2113944A40	CAP CER CHP 100.0PF 50V 5%
C526	2113944A40	CAP CER CHP 100.0PF 50V 5%
C527	2113944A40	CAP CER CHP 100.0PF 50V 5%
C528	2113944A40	CAP CER CHP 100.0PF 50V 5%
C529	2113944A40	CAP CER CHP 100.0PF 50V 5%
C597	NOT PLACED	-
C610	2113944A40	CAP CER CHP 100.0PF 50V 5%
C611	2113944A40	CAP CER CHP 100.0PF 50V 5%
C612	2113944A40	CAP CER CHP 100.0PF 50V 5%
C613	2113944A40	CAP CER CHP 100.0PF 50V 5%
C615	2113944A40	CAP CER CHP 100.0PF 50V 5%
C616	2113944A40	CAP CER CHP 100.0PF 50V 5%
C618	2113944A40	CAP CER CHP 100.0PF 50V 5%
C619	2113944A40	CAP CER CHP 100.0PF 50V 5%
C620	2113944A40	CAP CER CHP 100.0PF 50V 5%
C621	2113944A40	CAP CER CHP 100.0PF 50V 5%
C622	2113944A40	CAP CER CHP 100.0PF 50V 5%
CR101	4880973Z02	PIN DIODE
CR102	4815257H01	SURFACE MOUNT PIN DIODES

Circuit Ref	Motorola Part No.	Description
CR103	4815257H01	SURFACE MOUNT PIN DIODES
CR105	5115022H01	IC TEMPERATURE SENSOR
CR160	NOT PLACED	-
CR201	4815011H01	DIODE TRIPLE
CR203	4815072H01	DIODE VARACTOR
CR241	4885094Y01	DIODE VARACTOR ISV228 W18
CR242	4815279H01	BBY5503WE6327 FROM INFINEON
CR243	4815279H01	BBY5503WE6327 FROM INFINEON
CR251	4815322H01	VHF VARIABLE CAPACITANCE DIODE
CR301	4815279H01	BBY5503WE6327 FROM INFINEON
CR302	4815279H01	BBY5503WE6327 FROM INFINEON
CR303	4815048H01	SOT MMBD353 DIODE DUAL SCHT
CR304	4815279H01	BBY5503WE6327 FROM INFINEON
CR305	4815279H01	BBY5503WE6327 FROM INFINEON
CR306	4815923H02	SCHOTTKY DIODE-NEW LEADFREE
CR311	4813974A19	DIODE ARRAY,MXR,SM,SOT-323,7V,
CR312	4815047H01	BAND SWITCHIND DIODE,ROHM DAN
CR313	4815047H01	BAND SWITCHIND DIODE,ROHM DAN
CR411	4815067H01	DIODE SCHOTTKY, RB731U
CR412	4815067H01	DIODE SCHOTTKY, RB731U
CR413	4815067H01	DIODE SCHOTTKY, RB731U
CR440	4813978C02	PB FREE, NOT COMPLETELY ENRICH
CR501	4815155H01	RECTIFIER
CR503	4805729G49	DIODE RED/YEL
D601	4880479U01	LED
D602	4880479U01	LED
D603	4880479U01	LED
D604	4880479U01	LED
D605	4880479U01	LED
D606	4880479U01	LED
E101	2415954H01	INDUCTOR BEAD CHIP
E400	2480640Z01	SURFACE MOUNT FERRITE BEAD
E401	2480640Z01	SURFACE MOUNT FERRITE BEAD

Circuit Ref	Motorola Part No.	Description
E402	2480640Z01	SURFACE MOUNT FERRITE BEAD
E403	2480640Z01	SURFACE MOUNT FERRITE BEAD
E404	2480640Z01	SURFACE MOUNT FERRITE BEAD
E405	2480640Z01	SURFACE MOUNT FERRITE BEAD
E406	2480640Z01	SURFACE MOUNT FERRITE BEAD
E407	2480640Z01	SURFACE MOUNT FERRITE BEAD
E408	2480640Z01	SURFACE MOUNT FERRITE BEAD
E409	2480640Z01	SURFACE MOUNT FERRITE BEAD
E634	2480640Z01	SURFACE MOUNT FERRITE BEAD
E637	2480640Z01	SURFACE MOUNT FERRITE BEAD
E638	2480640Z01	SURFACE MOUNT FERRITE BEAD
E639	2480640Z01	SURFACE MOUNT FERRITE BEAD
E640	2480640Z01	SURFACE MOUNT FERRITE BEAD
E641	2480640Z01	SURFACE MOUNT FERRITE BEAD
E642	2480640Z01	SURFACE MOUNT FERRITE BEAD
E643	2480640Z01	SURFACE MOUNT FERRITE BEAD
E644	2480640Z01	SURFACE MOUNT FERRITE BEAD
E645	2480640Z01	SURFACE MOUNT FERRITE BEAD
F501	6515076H01	FUSE CHIP SMT TR/1608FF 3A
FL201	4805875Z04	CRYSTAL 16.8 MHZ
FL301	9180022M11	XTAL FILTER 44.85MHZ
FL302	9180468V05	SMD455KHZ 4 ELEMENT CER FLTR
FL303	9115811H03	SMD455KHZ 6 ELEMENT
FL304	9115811H01	SMD455KHZ 6 ELEMENT
FL401	4870368G02	REFLOWABLE CLOCK OSC XTAL
H101	2680499Z02	HEAT SPREADER
J101	0985613Z01	JACK, RF
J102	0280519Z06	NUT, ANTENNA
J400	0915064H03	CONNECTOR, ZIF (40 PINS)

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
J403	0915064H02	ZIF (20 PINS)	L271	2414032F32	IDCTR,FXD,68NH,5%,500MA,.38OHM	PB503	4086470Z01	TACT SWITCH	R110	0613952Q60	CER CHIP RES 300 OHM 5 0402
J601	0980521Z03	CONN, ZIF VERTICAL, 40PINS	L273	2414032F28	IDCTR,WW,33NH,5%,500MA,.27OHM,	PB504	4086470Z01	TACT SWITCH	R111	0613952Q32	CER CHIP RES 20.0 OHM 5 0402
J602	0915064H01	ZIF (18 PINS)	L281	2414032F41	IDCTR,WW,390NH,10%,200M A,1.5OH	PB505	4086470Z01	TACT SWITCH	R112	0613952Q60	CER CHIP RES 300 OHM 5 0402
L101	2479990B02	AIR WND COIL/GREEN COLOR 19.61	L282	2414032F41	IDCTR,WW,390NH,10%,200M A,1.5OH	Q110	4813976A03	450MHZ 8W 7.5V PLD-1.5 T&R	R120	0613952R16	CER CHIP RES 43K OHM 5 0402
L102	2479990B02	AIR WND COIL/GREEN COLOR 19.61	L301	2479990C01	AIR WND COIL/GREEN COLOR13.9NH	Q111	4815055H01	TSTR DUAL NPN/PNP UMH 5	R130	0613952R01	CER CHIP RES 10K OHM 5% 0402
L104	2479990B02	AIR WND COIL/GREEN COLOR 19.61	L302	2479990C01	AIR WND COIL/GREEN COLOR13.9NH	Q210	4815055H01	TSTR DUAL NPN/PNP UMH 5	R131	0613952R07	CER CHIP RES 18K OHM 5% 0402
L105	2414032B22	IDCTR,WW,390NH,10%,620M A,1.120	L303	2414032F26	IDCTR,WW,22NH,5%,500MA,.22OHM,	Q241	4805218N63	RF TRANS SOT 323 BFQ67W	R132	0613952R35	CER CHIP RES 270K OHM 5% 0402
L106	2479990A02	AIR WND COIL/GREEN COLOR7.66NH	L304	2414032F37	IDCTR,WW,180NH,5%,400MA,.64OHM	Q260	4815055H01	TSTR DUAL NPN/PNP UMH 5	R133	NOT PLACED	-
L107	2479990G01	AIR WND COIL/GREEN COLOR 33.47	L305	2414032F26	IDCTR,WW,22NH,5%,500MA,.22OHM,	Q301	4816531H01	NPN SILICON BIPOLAR TRANSISTOR	R136	NOT PLACED	-
L108	2479990A01	AIR WND COIL/GREEN COLOR4.22NH	L306	2479990C01	AIR WND COIL/GREEN COLOR13.9NH	Q302	4802197J95	RF TRANSISTOR PBR941	R161	0613952Q56	CER CHIP RES 200 OHM 5 0402
L109	2479990B01	AIR WND COIL/GREEN COLOR 11.03	L307	2479990C01	AIR WND COIL/GREEN COLOR13.9NH	Q310	4816531H01	NPN SILICON BIPOLAR TRANSISTOR	R170	0613952H58	CER CHIP RES 240 OHM 5 0603
L112	2414032B45	IDCTR,WW,22NH,5%,1A,.120 HM,CER	L309	2479990C02	AIR WND COIL/GREEN COLOR 16.28	Q320	4813973M07	XSTR,BIP GP SS,NPN,T3904,SM,SO	R171	0613952R16	CER CHIP RES 43K OHM 5 0402
L113	2414017N09	IDCTR,CHIP,5.6NH,600MA,.20 HM,C	L310	2414032F36	IDCTR,WW,150NH,5%,400MA,.56OHM	Q400	4815069H02	TSTR MOSFET P-CHAN	R172	0613952H49	CER CHIP RES 100 OHM 5% 0603
L114	2414032B45	IDCTR,WW,22NH,5%,1A,.120 HM,CER	L311	2414017K32	IDCTR,CHIP,560NH,5%,50MA,5OHM,	Q403	4813973A13	XSTR,BIP GP SS,PNP,T3906,SM,SO	R173	0613952R31	CER CHIP RES 180K OHM 5% 0402
L115	2414032B22	IDCTR,WW,390NH,10%,620M A,1.120	L321	2414032F37	IDCTR,WW,180NH,5%,400MA,.64OHM	Q405	4815066H01	UMG5N DIGITAL TRANSISTOR	R174	0613952R17	CER CHIP RES 47K OHM 5% 0402
L116	2479990A03	AIR WND COIL/GREEN COLOR9.75NH	L325	2414032B68	IDCTR,WW,1UH,5%,460MA,1.75OHM,	Q410	4815066H01	UMG5N DIGITAL TRANSISTOR	R175	0613952H12	CER CHIP RES 3.0 OHM 5 0603
L160	2414017N14	IDCTR,CHIP,15NH,5%,600MA,.4OHM	L330	0613958J74	CER CHIP RES 0.0 OHM JMP 0805	Q416	4815069H02	TSTR MOSFET P-CHAN	R176	0613952H12	CER CHIP RES 3.0 OHM 5 0603
L201	2414017Q20	IDCTR,FXD,2.2UH,20%,30MA,.65OH	L331	2414017K33	IDCTR,CHIP,680NH,5%,50MA,5.5OH	Q417	4815055H01	TSTR DUAL NPN/PNP UMH 5	R201	0613952R23	CER CHIP RES 82K OHM 5% 0402
L202	2414017Q20	IDCTR,FXD,2.2UH,20%,30MA,.65OH	L332	2414015A25	IDCTR,CHIP,1.2UH,2%,440MA,2OHM	Q502	4815154H01	DUAL TRANS NPN	R202	0613952R25	CER CHIP RES 100K OHM 5% 0402
L203	2414017Q20	IDCTR,FXD,2.2UH,20%,30MA,.65OH	L400	2414017Q42	IDCTR,FXD,390NH,10%,200M A,.65O	Q505	4813973M07	XSTR,BIP GP SS,NPN,T3904,SM,SO	R204	0613952R17	CER CHIP RES 47K OHM 5% 0402
L232	2414032L25	IDCTR,WW,12UH,5%,150MA,3.8OHM,	L401	2414017Q42	IDCTR,FXD,390NH,10%,200M A,.65O	Q601	4815125H01	SOT STR RH LOW PROFILE MMBT	R231	0613952Q51	CER CHIP RES 120 OHM 5 0402
L241	2414032F41	IDCTR,WW,390NH,10%,200M A,1.5OH	L410	2414017Q42	IDCTR,FXD,390NH,10%,200M A,.65O	Q602	4813973M07	XSTR,BIP GP SS,NPN,T3904,SM,SO	R232	0613952Q68	CER CHIP RES 620 OHM 5 0402
L242	2414032F38	IDCTR,WW,220NH,5%,400MA,.7OHM,	L411	2414017Q42	IDCTR,FXD,390NH,10%,200M A,.65O	Q603	4813973M07	XSTR,BIP GP SS,NPN,T3904,SM,SO	R233	0613952Q67	CER CHIP RES 560 OHM 5 0402
L243	2485776Z01	COIL TEFLON RESONATOR (KAPTON)	L505	2414017Q42	IDCTR,FXD,390NH,10%,200M A,.65O	R101	0613952H58	CER CHIP RES 240 OHM 5 0603	R241	0613952Q31	CER CHIP RES 18.0 OHM 5 0402
L251	2414032F28	IDCTR,WW,33NH,5%,500MA,.27OHM,	P100	3905643V01	CONTACT ANT GRD	R102	0615043C01	RES POWER METAL STRIP W18 COMP	R242	0613952Q56	CER CHIP RES 200 OHM 5 0402
L253	2460593C02	COIL MULT LAYERED TAP TEF RESN	PB501	4086470Z01	TACT SWITCH	R103	0613952Q40	CER CHIP RES 43.0 OHM 5 0402	R243	0613952R01	CER CHIP RES 10K OHM 5% 0402
L261	2414032F29	IDCTR,WW,39NH,5%,500MA,.29OHM,	PB502	4086470Z01	TACT SWITCH	R104	0613952R17	CER CHIP RES 47K OHM 5% 0402			
						R106	0613952Q25	CER CHIP RES 10.0 OHM 5 0402			
						R107	NOT PLACED	-			
						R108	0613952Q91	CER CHIP RES 5600 OHM 5 0402			
						R109	0613952R32	CER CHIP RES 200K OHM 5 0402			

Circuit Ref	Motorola Part No.	Description
R244	0613952R03	CER CHIP RES 12K OHM 5% 0402
R245	0613952Q58	CER CHIP RES 240 OHM 5 0402
R248	0613952Q36	CER CHIP RES 30.0 OHM 5 0402
R251	0613952Q31	CER CHIP RES 18.0 OHM 5 0402
R252	0613952Q61	CER CHIP RES 330 OHM 5 0402
R253	0613952Q94	CER CHIP RES 7500 OHM 5 0402
R254	0613952Q94	CER CHIP RES 7500 OHM 5 0402
R255	0613952Q88	CER CHIP RES 4300 OHM 5 0402
R256	0613952Q36	CER CHIP RES 30.0 OHM 5 0402
R260	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R281	NOT PLACED	-
R301	0613952R25	CER CHIP RES 100K OHM 5% 0402
R302	0613952R25	CER CHIP RES 100K OHM 5% 0402
R303	0613952Q80	CER CHIP RES 2000 OHM 5 0402
R304	0613952R03	CER CHIP RES 12K OHM 5% 0402
R305	0613952Q66	CER CHIP RES 510 OHM 5 0402
R306	0613952R25	CER CHIP RES 100K OHM 5% 0402
R307	0613952R25	CER CHIP RES 100K OHM 5% 0402
R308	0613952Q42	CER CHIP RES 51.0 OHM 5 0402
R309	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R310	NOT PLACED	-
R311	0613952R13	CER CHIP RES 33K OHM 5% 0402
R312	0613952Q89	CER CHIP RES 4700 OHM 5 0402
R313	0613952Q61	CER CHIP RES 330 OHM 5 0402
R314	0613952Q78	CER CHIP RES 1600 OHM 5 0402
R315	0613952R03	CER CHIP RES 12K OHM 5% 0402
R320	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
R321	0613952R15	CER CHIP RES 39K OHM 5% 0402
R322	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R324	0613952R08	CER CHIP RES 20K OHM 5 0402
R328	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R329	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R330	0613952R01	CER CHIP RES 10K OHM 5% 0402
R331	0613952Q56	CER CHIP RES 200 OHM 5 0402
R332	0613952R03	CER CHIP RES 12K OHM 5% 0402
R333	NOT PLACED	-
R339	0613952Q88	CER CHIP RES 4300 OHM 5 0402
R340	0613952Q94	CER CHIP RES 7500 OHM 5 0402
R342	0613952R25	CER CHIP RES 100K OHM 5% 0402
R344	0613952Q42	CER CHIP RES 51.0 OHM 5 0402
R345	0613952R15	CER CHIP RES 39K OHM 5% 0402
R346	0613952R05	CER CHIP RES 15K OHM 5% 0402
R348	0613952Q86	CER CHIP RES 3600 OHM 5 0402
R349	0613958J74	CER CHIP RES 0.0 OHM JMP 0805
R350	0613952Q85	CER CHIP RES 3300 OHM 5 0402
R355	0613952R25	CER CHIP RES 100K OHM 5% 0402
R358	0613952Q82	CER CHIP RES 2400 OHM 5 0402
R359	NOT PLACED	-
R360	0613952R08	CER CHIP RES 20K OHM 5 0402
R361	0613952R08	CER CHIP RES 20K OHM 5 0402
R363	0613952Q63	CER CHIP RES 390 OHM 5 0402
R364	0613952Q79	CER CHIP RES 1800 OHM 5 0402
R365	0613952Q75	CER CHIP RES 1200 OHM 5 0402

Circuit Ref	Motorola Part No.	Description
R366	0613952R03	CER CHIP RES 12K OHM 5% 0402
R367	0613952N09	CER CHIP RES 12.1K OHM 1 0402
R368	0613952N01	CER CHIP RES 10.0K OHM 1 0402
R369	0613952Q69	CER CHIP RES 680 OHM 5 0402
R370	NOT PLACED	-
R371	0613952R25	CER CHIP RES 100K OHM 5% 0402
R372	0613952R30	CER CHIP RES 160K OHM 5 0402
R373	0613952R25	CER CHIP RES 100K OHM 5% 0402
R374	0613952R25	CER CHIP RES 100K OHM 5% 0402
R375	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R376	NOT PLACED	-
R377	0613952R25	CER CHIP RES 100K OHM 5% 0402
R378	0613952R25	CER CHIP RES 100K OHM 5% 0402
R400	0613952R17	CER CHIP RES 47K OHM 5% 0402
R401	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R406	0613952R22	CER CHIP RES 75K OHM 5 0402
R407	0613952R21	CER CHIP RES 68K OHM 5% 0402
R408	NOT PLACED	-
R409	0613952R01	CER CHIP RES 10K OHM 5% 0402
R410	0613952R25	CER CHIP RES 100K OHM 5% 0402
R411	0613952R01	CER CHIP RES 10K OHM 5% 0402
R413	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R414	0613952P25	CER CHIP RES 178K OHM 1 0402
R415	0613952N93	CER CHIP RES 90.9K OHM 1 0402
R416	0613952R01	CER CHIP RES 10K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R418	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R419	0613952Q66	CER CHIP RES 510 OHM 5 0402
R420	0613952J73	CER CHIP RES 10.0M OHM 5% 0603
R421	0613952Q80	CER CHIP RES 2000 OHM 5 0402
R423	0613952R41	CER CHIP RES 470K OHM 5% 0402
R424	0613952R14	CER CHIP RES 36K OHM 5 0402
R425	0613952R12	CER CHIP RES 30K OHM 5 0402
R426	0613952R37	CER CHIP RES 330K OHM 5% 0402
R427	0613952Q83	CER CHIP RES 2700 OHM 5 0402
R428	0613952Q09	CER CHIP RES 2.2 OHM 5 0402
R429	0613952R22	CER CHIP RES 75K OHM 5 0402
R431	0613952R41	CER CHIP RES 470K OHM 5% 0402
R432	0613952R18	CER CHIP RES 51K OHM 5 0402
R434	0613952Q61	CER CHIP RES 330 OHM 5 0402
R435	0613952Q80	CER CHIP RES 2000 OHM 5 0402
R436	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R437	NOT PLACED	-
R445	0613952R10	CER CHIP RES 24K OHM 5 0402
R447	0613952R25	CER CHIP RES 100K OHM 5% 0402
R448	0613952R01	CER CHIP RES 10K OHM 5% 0402
R449	0613952R10	CER CHIP RES 24K OHM 5 0402
R450	0613959Y45	CER CHIP RES OHM 5% 2512
R451	0613952R05	CER CHIP RES 15K OHM 5% 0402
R452	0613952R25	CER CHIP RES 100K OHM 5% 0402
R453	NOT PLACED	-
R454	NOT PLACED	-
R455	NOT PLACED	-
R456	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM

Circuit Ref	Motorola Part No.	Description
R457	0613952R01	CER CHIP RES 10K OHM 5% 0402
R460	0613952Q89	CER CHIP RES 4700 OHM 5 0402
R461	0613952Q55	CER CHIP RES 180 OHM 5 0402
R462	0613952R01	CER CHIP RES 10K OHM 5% 0402
R463	0613952Q60	CER CHIP RES 300 OHM 5 0402
R471	0613952R08	CER CHIP RES 20K OHM 5 0402
R472	0613952R14	CER CHIP RES 36K OHM 5 0402
R473	0613952Q25	CER CHIP RES 10.0 OHM 5 0402
R475	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R476	0613952R37	CER CHIP RES 330K OHM 5% 0402
R477	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R478	0613952R01	CER CHIP RES 10K OHM 5% 0402
R479	0613952Q66	CER CHIP RES 510 OHM 5 0402
R481	0613952R10	CER CHIP RES 24K OHM 5 0402
R492	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R498	0613952R01	CER CHIP RES 10K OHM 5% 0402
R499	0613952R01	CER CHIP RES 10K OHM 5% 0402
R501	0613952Q69	CER CHIP RES 680 OHM 5 0402
R502	0613952Q55	CER CHIP RES 180 OHM 5 0402
R505	0613952R01	CER CHIP RES 10K OHM 5% 0402
R506	0613952R17	CER CHIP RES 47K OHM 5% 0402
R507	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R601	0613952Z67	RES,MF,51KOHM,1%,.0625W, SM,040
R602	0613952Z67	RES,MF,51KOHM,1%,.0625W, SM,040
R603	0613952N12	CER CHIP RES 13.0K OHM 1 0402

Circuit Ref	Motorola Part No.	Description
R604	0613952Z58	RES,MF,22KOHM,1%,.0625W, SM,040
R605	0613952N62	CER CHIP RES 43.2K OHM 1 0402
R606	0613952P12	CER CHIP RES 130K OHM 1 0402
R607	0613952N12	CER CHIP RES 13.0K OHM 1 0402
R608	0613952Z58	RES,MF,22KOHM,1%,.0625W, SM,040
R609	0613952N62	CER CHIP RES 43.2K OHM 1 0402
R610	0613952P12	CER CHIP RES 130K OHM 1 0402
R611	0613952R18	CER CHIP RES 51K OHM 5 0402
R612	0613952R43	CER CHIP RES 560K OHM 5% 0402
R613	0613952R49	CER CHIP RES 1.0M OHM 5% 0402
R614	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R617	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R618	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R619	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R620	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R621	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R622	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R623	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R626	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R627	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R631	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R632	0613952R25	CER CHIP RES 100K OHM 5% 0402
R633	0613952R25	CER CHIP RES 100K OHM 5% 0402
R646	0613952R25	CER CHIP RES 100K OHM 5% 0402
R647	0613952Q84	CER CHIP RES 3000 OHM 5 0402

Circuit Ref	Motorola Part No.	Description
R648	0613952R25	CER CHIP RES 100K OHM 5% 0402
R649	0613952R17	CER CHIP RES 47K OHM 5% 0402
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z21	SWITCH, FREQUENCY
S502	1880619Z06	POTENTIOMETER, VOLUME
SH100	2680507Z02	SHIELD, HARMONIC FILTER
SH101	2680510Z02	SHIELD, PA
SH201	2680511Z02	SHIELD, SYNTHESIZER
SH202	2680511Z02	SHIELD, SYNTHESIZER
SH241	2604120G02	AOBA VCO SHIELD
SH242	2680514Z02	SHIELD, VCO BOTTOM/LVZIF
SH301	2686583Z02	SHIELD, RECEIVER FRONT END TOP
SH302	2680555Z02	SHIELD, RECEIVER F/END BOTTOM
SH303	2680509Z02	SHIELD, MIXER
SH304	2680624Z02	SHIELD, MIXER DIODE
SH322	2686528Z02	SHIELD, IF SECTION
SH323	2686527Z02	SHIELD, RFI/EMI, CRS, TIN
SH400	2680505Z02	SHIELD, CONTROLLER TOP LEFT
SH401	2680506Z02	SHIELD, CONTROLLER TOP RIGHT
SH402	2680515Z02	SHIELD, CONTROLLER BOTTOM LEFT
SH403	2680516Z02	SHIELD, CONTROLLER BTM RIGHT
T301	2515121H01	BALUN, TRANSFORMER W18 COMP
T302	2515121H01	BALUN, TRANSFORMER W18 COMP
U101	5115678H01	VHF/UHF/800/900 MHZ LDMOS DRIV
U102	5185765B26	IC PWR CTRL IN MOS20
U201	5185177Y01	IC TESTED AT25016 48 PIN W18
U210	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
U211	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
U241	5171121L01	CUSTOM LOW VOLTAGE VCO BUFFER
U247	5115026H01	MAX SUPPLY VOL 16V
U248	5115019H01	3.3V REGULATOR IN SOT23-5 PKG
U301	5115281H01	FM IF IC SA616 FROM PHILIPS
U302	5115070H01	IC 3-INV LMOS TC7W04FU

Circuit Ref	Motorola Part No.	Description
U303	5114005A01	IC LOW COST SING SPLY LM2904DR
U400	5115012H01	MAX SUPPLY VOL 30V
U404	5115062H01	IC ASFIC_CMP
U405	NOT PLACED	-
U406	5115034H01	IC FLASH 4MBIT
U407	5115033H01	16K X 8 SPI SERIAL ROM
U409	5185143E03	HC11FL0 (3V) ASIC MICRO-P
U410	5115044H01	REGULATOR 3.3V,ILC7062CM-33
U420	5115280H01	AUDIO AMPLIFIER TDA8547TS
U602	5115014H01	CMOS,MAX SUPPLY VOL 15.5V
VR432	4813979P10	DIODE ARRAY,TRANSIENT PROTECTI
VR433	4813979P10	DIODE ARRAY,TRANSIENT PROTECTI
VR434	4815038H01	ZENER DIODE-6.8V
VR439	4813977M21	DIODE,ZEN,MBZ5242,SM,SO T-23,12
VR440	4815038H01	ZENER DIODE-6.8V
VR441	4815038H01	ZENER DIODE-6.8V
VR442	4815038H01	ZENER DIODE-6.8V
VR443	4815038H01	ZENER DIODE-6.8V
VR444	4815038H01	ZENER DIODE-6.8V
VR445	4813977A54	DIODE,ZEN,MM3Z10V,SM,SO D-323,1
VR446	4813977A54	DIODE,ZEN,MM3Z10V,SM,SO D-323,1
VR447	4813977A54	DIODE,ZEN,MM3Z10V,SM,SO D-323,1
VR448	4813977A54	DIODE,ZEN,MM3Z10V,SM,SO D-323,1
VR449	4813977A54	DIODE,ZEN,MM3Z10V,SM,SO D-323,1
VR450	4815040H01	ZENER DIODE-12V
VR460	4815038H01	ZENER DIODE-6.8V
VR501	4813977M14	DIODE,ZEN,MBZ5235,SM,SO T-23,6.
VR506	4815038H01	ZENER DIODE-6.8V
Y300	4802245J84	XTAL 44.395MHZ, 3RD OT, SMD
Y301	9186145B02	CER.DISCR. CDBCA455CX36-TC
	8415234H01	PC BOARD, UHF BAND 1
	0104018J52	RADIO RT CLOCK (EPP)

**UHF (403-470 MHz) Radio Parts List (PCB 8415234H02)**

Circuit Ref.	Motorola Part No.	Description
B501	0986237A02	CONNECTOR (CONTACT BATTERY)
B503	3980502Z01	CONTACT, BACKUP B+
B504	3980501Z01	CONTACT, BACKUP B-
C101	2113944C45	CAP CER CHP 100.0PF 50V 5%
C102	2113944C72	CAP,FXD,6.2PF,.25PF+/-,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX
C103	2113944C30	CAP CER CHP 10.0PF 50V +/- 0.5PF
C104	2113944C72	CAP,FXD,6.2PF,.25PF+/-,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX
C105	2113944A40	CAP CER CHP 100.0PF 50V 5%
C106	2113944C22	CAP CER CHP 4.7PF 50V +/- 0.25PF
C107	2113944C18	CAP CER CHP 3.3PF 50V +/- 0.25PF
C108	2113944A40	CAP CER CHP 100.0PF 50V 5%
C109	2113944C45	CAP CER CHP 100.0PF 50V 5%
C110	2113944A40	CAP CER CHP 100.0PF 50V 5%
C111	2113944C32	CAP CER CHP 15.0PF 50V 5%
C112	2115937H04	HIGH Q CHIP CAPACITOR, 47PF
C113	2115937H01	HIGH Q CHIP CAPACITOR, 10PF
C114	2113944A40	CAP CER CHP 100.0PF 50V 5%
C115	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB
C116	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB
C117	2113944A29	CAP CER CHP 22.0PF 50V 5%
C118	2113944A40	CAP CER CHP 100.0PF 50V 5%
C119	2113944A40	CAP CER CHP 100.0PF 50V 5%
C120	2113944A77	CAP,FXD,11PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB

Circuit Ref.	Motorola Part No.	Description
C121	2113944A40	CAP CER CHP 100.0PF 50V 5%
C122	2113944A40	CAP CER CHP 100.0PF 50V 5%
C123	2313960F04	CAP TANT 33 UF 10% 16V 6032-28
C125	2113944A40	CAP CER CHP 100.0PF 50V 5%
C126	2113946K02	CAP CER CHP 0.10UF 16V
C127	2113945A09	CAP CER CHP 1000PF 50V 10%
C128	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,0402,X7R,-55DEG CMIN,125DEG CMA
C129	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF
C130	2113944A40	CAP CER CHP 100.0PF 50V 5%
C131	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,0402,X7R,-55DEG CMIN,125DEG CMA
C132	2113944A40	CAP CER CHP 100.0PF 50V 5%
C133	2113945A09	CAP CER CHP 1000PF 50V 10%
C134	2113945A12	CAP CER CHP 3300PF 50V 10%
C135	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,0402,X7R,-55DEG CMIN,125DEG CMA
C138	2113944A40	CAP CER CHP 100.0PF 50V 5%
C140	0613952H91	CER CHIP RES 5600 OHM 5 0603
C141	NOT PLACED	-
C150	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,0402,X7R,-55DEG CMIN,125DEG CMA
C151	2113944A40	CAP CER CHP 100.0PF 50V 5%
C152	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,0402,X7R,-55DEG CMIN,125DEG CMA
C160	2113944A40	CAP CER CHP 100.0PF 50V 5%
C161	2113946K02	CAP CER CHP 0.10UF 16V
C165	2113944A40	CAP CER CHP 100.0PF 50V 5%
C166	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref.	Motorola Part No.	Description
C169	2113944A19	CAP CER CHP 5.6PF 50V +/- 0.5PF
C170	2113944A40	CAP CER CHP 100.0PF 50V 5%
C171	2113944A40	CAP CER CHP 100.0PF 50V 5%
C172	2113944C45	CAP CER CHP 100.0PF 50V 5%
C173	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,0402,X7R,-55DEG CMIN,125DEG CMA
C174	2113944A40	CAP CER CHP 100.0PF 50V 5%
C175	2113944C45	CAP CER CHP 100.0PF 50V 5%
C201	2113944A40	CAP CER CHP 100.0PF 50V 5%
C202	2113945A09	CAP CER CHP 1000PF 50V 10%
C203	2113946H01	CAP CER CHP 4.7UF 10V 10%
C204	2113946N03	CAP CER CHP 2.2UF 16V
C206	2113944C04	CAP CER CHP 330.0PF 50V 5%
C207	2113944A33	CAP CER CHP 47.0PF 50V 5%
C208	NOT PLACED	-
C210	2113944A40	CAP CER CHP 100.0PF 50V 5%
C211	2113944A40	CAP CER CHP 100.0PF 50V 5%
C212	2113944A40	CAP CER CHP 100.0PF 50V 5%
C213	2113944A40	CAP CER CHP 100.0PF 50V 5%
C214	2113944A40	CAP CER CHP 100.0PF 50V 5%
C217	2113946N03	CAP CER CHP 2.2UF 16V
C218	2113946K02	CAP CER CHP 0.10UF 16V
C219	2113946L03	CAP CER CHP 0.22UF 16V
C220	2113944A40	CAP CER CHP 100.0PF 50V 5%
C223	2113946K02	CAP CER CHP 0.10UF 16V
C224	2113946K02	CAP CER CHP 0.10UF 16V
C228	2313960D05	CAP,FXD,4.7UF,+10%,-10%,16V-DC,SM,-55DEG CMIN,125DEG CMAX,156MA
C229	2113945A09	CAP CER CHP 1000PF 50V 10%
C230	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref.	Motorola Part No.	Description
C231	2113946K02	CAP CER CHP 0.10UF 16V
C232	2113945D02	CAP CER CHP 47,000PF 25V 10%
C233	2313960A26	CAP,FXD,.1UF,+10%,-10%,35V-DC,SM,-55DEG CMIN,125DEG CMAX,61MA,E
C234	2313960A55	CAP TANT 0.47 UF 10% 25V 3216-18
C235	2113946N03	CAP CER CHP 2.2UF 16V
C238	2113945L17	CAP,FXD,470PF,+5%,-5%,50V-DC,0603,X7R,-55DEG CMIN,125DEG CMAX,P
C241	2113944A40	CAP CER CHP 100.0PF 50V 5%
C242	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF
C243	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF
C244	2113944C13	CAP CER CHP 2.0PF 50V +/- 0.25PF
C245	2113944A10	CAP CER CHP 2.4PF 50V +/- 0.25PF
C246	2113944A40	CAP CER CHP 100.0PF 50V 5%
C247	2113944A40	CAP CER CHP 100.0PF 50V 5%
C248	2113946K02	CAP CER CHP 0.10UF 16V
C250	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF
C251	2113944A40	CAP CER CHP 100.0PF 50V 5%
C252	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5PF
C253	2113944C12	CAP CER CHP 1.8PF 50V +/- 0.25PF
C254	2113944A14	CAP CER CHP 3.6PF 50V +/- 0.25PF
C255	2113944A40	CAP CER CHP 100.0PF 50V 5%
C257	2113944A40	CAP CER CHP 100.0PF 50V 5%
C258	2113945B02	CAP CER CHP 10,000PF 25V 10%
C259	2113945B02	CAP CER CHP 10,000PF 25V 10%
C260	2113944A40	CAP CER CHP 100.0PF 50V 5%
C263	2113944A62	CAP,FXD,.75PF,.25PF+/-,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX

Circuit Ref.	Motorola Part No.	Description
C264	2113944A40	CAP CER CHP 100.0PF 50V 5%
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	NOT PLACED	-
C273	2113946K02	CAP CER CHP 0.10UF 16V
C276	2113946N03	CAP CER CHP 2.2UF 16V
C277	2113944A40	CAP CER CHP 100.0PF 50V 5%
C278	2313960D07	CAP,FXD,10,+10,-10,16,SM,-55MIN,125MAX,174,EPXY,PB-FREE
C279	2113946N03	CAP CER CHP 2.2UF 16V
C281	2113944A40	CAP CER CHP 100.0PF 50V 5%
C285	2113944A40	CAP CER CHP 100.0PF 50V 5%
C286	2113946K02	CAP CER CHP 0.10UF 16V
C289	2113944A40	CAP CER CHP 100.0PF 50V 5%
C291	2313960M51	CAP,FXD,10UF,+10%,-10%,6.3V-DC,SM,-55DEG CMIN,125DEG CMAX,96MA
C292	2113946K02	CAP CER CHP 0.10UF 16V
C293	2113945G98	CAP,FXD,.47UF,+10%,-10%,50V-DC,0805,X7R,-55DEG CMIN,125DEG CMAX
C294	2113944A40	CAP CER CHP 100.0PF 50V 5%
C295	2113944A40	CAP CER CHP 100.0PF 50V 5%
C296	2113946K02	CAP CER CHP 0.10UF 16V
C297	2113945B02	CAP CER CHP 10,000PF 25V 10%
C298	2113946K02	CAP CER CHP 0.10UF 16V
C301	2113944A14	CAP CER CHP 3.6PF 50V +/-0.25PF
C302	2113944A25	CAP CER CHP 10.0PF 50V +/-0.5PF
C303	2113944C20	CAP CER CHP 3.9PF 50V +/-0.25PF
C304	2113944A25	CAP CER CHP 10.0PF 50V +/-0.5PF
C305	2113944A80	CAP,FXD,20PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB
C306	NOT PLACED	-
C307	2113944A40	CAP CER CHP 100.0PF 50V 5%
C308	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref.	Motorola Part No.	Description
C309	2113944A40	CAP CER CHP 100.0PF 50V 5%
C310	2113944A40	CAP CER CHP 100.0PF 50V 5%
C311	NOT PLACED	-
C312	2113944A24	CAP CER CHP 9.1PF 50V +/-0.5PF
C313	2113944A25	CAP CER CHP 10.0PF 50V +/-0.5PF
C314	2113946K02	CAP CER CHP 0.10UF 16V
C315	2113944A40	CAP CER CHP 100.0PF 50V 5%
C316	2113944C20	CAP CER CHP 3.9PF 50V +/-0.25PF
C317	2113944A24	CAP CER CHP 9.1PF 50V +/-0.5PF
C318	2113944A22	CAP CER CHP 7.5PF 50V +/-0.5PF
C319	2113944A11	CAP CER CHP 2.7PF 50V +/-0.25PF
C320	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB
C321	2113944A40	CAP CER CHP 100.0PF 50V 5%
C322	2113944A38	CAP CER CHP 82.0PF 50V 5%
C324	2113944A29	CAP CER CHP 22.0PF 50V 5%
C325	2115153H26	CAP, CERAMIC, COG
C326	2113946K02	CAP CER CHP 0.10UF 16V
C327	2113946K02	CAP CER CHP 0.10UF 16V
C328	2113946K02	CAP CER CHP 0.10UF 16V
C329	2113946K02	CAP CER CHP 0.10UF 16V
C334	2113945A13	CAP CER CHP 4700PF 50V 10%
C337	NOT PLACED	-
C338	NOT PLACED	-
C343	2113946K02	CAP CER CHP 0.10UF 16V
C344	2113945D04	CAP CER CHP 100,000PF 25V 10%
C345	2113946K02	CAP CER CHP 0.10UF 16V
C346	2113946K02	CAP CER CHP 0.10UF 16V
C347	2113946K02	CAP CER CHP 0.10UF 16V
C348	2113946K02	CAP CER CHP 0.10UF 16V
C349	2113945D04	CAP CER CHP 100,000PF 25V 10%
C350	2113946K02	CAP CER CHP 0.10UF 16V
C351	2113944A41	CAP CER CHP 120.0PF 50V 5%

Circuit Ref.	Motorola Part No.	Description
C352	2113946K02	CAP CER CHP 0.10UF 16V
C355	2113946K02	CAP CER CHP 0.10UF 16V
C357	2113946K02	CAP CER CHP 0.10UF 16V
C358	NOT PLACED	-
C359	NOT PLACED	-
C360	2113944A13	CAP CER CHP 3.3PF 50V +/-0.25PF
C361	2113946K02	CAP CER CHP 0.10UF 16V
C362	2113946K02	CAP CER CHP 0.10UF 16V
C364	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB
C366	NOT PLACED	-
C367	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB
C370	2113944A17	CAP CER CHP 4.7PF 50V +/-0.25PF
C371	NOT PLACED	-
C372	2113944A40	CAP CER CHP 100.0PF 50V 5%
C373	NOT PLACED	-
C374	2113944A40	CAP CER CHP 100.0PF 50V 5%
C375	2113944A40	CAP CER CHP 100.0PF 50V 5%
C378	NOT PLACED	-
C380	2113945B02	CAP CER CHP 10,000PF 25V 10%
C381	NOT PLACED	-
C382	2313960B57	CAP,TANTALUM,10UF,+10%,-10%,4V-DC,S
C383	NOT PLACED	-
C385	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB
C386	2113944A40	CAP CER CHP 100.0PF 50V 5%
C390	NOT PLACED	-
C404	NOT PLACED	-
C406	NOT PLACED	-
C432	NOT PLACED	-
C502	2313960A55	CAP TANT 0.47 UF 10% 25V 3216-18
C503	2113743N41	CAP CHIP 43.0 PF 5% COG
C505	2113944A40	CAP CER CHP 100.0PF 50V 5%
C511	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref.	Motorola Part No.	Description
C512	2113944A40	CAP CER CHP 100.0PF 50V 5%
C513	2113944A40	CAP CER CHP 100.0PF 50V 5%
C514	2113944A40	CAP CER CHP 100.0PF 50V 5%
C520	2113945B02	CAP CER CHP 10,000PF 25V 10%
C521	2113945B02	CAP CER CHP 10,000PF 25V 10%
C522	2113945B02	CAP CER CHP 10,000PF 25V 10%
C523	2113945B02	CAP CER CHP 10,000PF 25V 10%
C525	2113944A40	CAP CER CHP 100.0PF 50V 5%
C526	2113944A40	CAP CER CHP 100.0PF 50V 5%
C527	2113944A40	CAP CER CHP 100.0PF 50V 5%
C528	2113944A40	CAP CER CHP 100.0PF 50V 5%
C529	2113944A40	CAP CER CHP 100.0PF 50V 5%
C530	2113944A40	CAP CER CHP 100.0PF 50V 5%
C531	2113944A40	CAP CER CHP 100.0PF 50V 5%
C532	2113944A40	CAP CER CHP 100.0PF 50V 5%
C533	2113944A40	CAP CER CHP 100.0PF 50V 5%
C534	2113944A40	CAP CER CHP 100.0PF 50V 5%
C535	2113944A40	CAP CER CHP 100.0PF 50V 5%
C536	2113944A40	CAP CER CHP 100.0PF 50V 5%
C537	2113944A40	CAP CER CHP 100.0PF 50V 5%
C538	2113944A40	CAP CER CHP 100.0PF 50V 5%
C539	NOT PLACED	-
C540	NOT PLACED	-
C541	NOT PLACED	-
C542	NOT PLACED	-
C543	NOT PLACED	-
C544	2113944A40	CAP CER CHP 100.0PF 50V 5%
C545	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref.	Motorola Part No.	Description
C546	2113944A40	CAP CER CHP 100.0PF 50V 5%
C547	2113944A40	CAP CER CHP 100.0PF 50V 5%
C548	NOT PLACED	-
C549	2113944A40	CAP CER CHP 100.0PF 50V 5%
C550	2113944A40	CAP CER CHP 100.0PF 50V 5%
C551	2113944A40	CAP CER CHP 100.0PF 50V 5%
C552	2113944A40	CAP CER CHP 100.0PF 50V 5%
C553	2113944A40	CAP CER CHP 100.0PF 50V 5%
C555	2113944A40	CAP CER CHP 100.0PF 50V 5%
C597	NOT PLACED	CAP CER CHP 6.0PF
C598	2113944A17	CAP CER CHP 4.7PF 50V +/- 0.25PF
C599	2113944A15	CAP CER CHP 3.9PF 50V +/- 0.25PF
CR101	4880973Z02	PIN DIODE
CR102	4815257H01	SURFACE MOUNT PIN DIODES
CR103	4815257H01	SURFACE MOUNT PIN DIODES
CR105	5115022H01	IC, TEMP SENS,LM50C,SM,SOT-23
CR160	NOT PLACED	-
CR201	4815011H01	DIODE TRIPLE
CR203	4815072H01	DIODE VARACTOR
CR241	4885094Y01	DIODE VARACTOR ISV228 W18
CR242	4815279H01	BBY5503WE6327 FROM INFINEON
CR243	4815279H01	BBY5503WE6327 FROM INFINEON
CR251	4815322H01	VHF VARIABLE CAPACITANCE DIODE
CR301	4815279H01	BBY5503WE6327 FROM INFINEON
CR302	4815279H01	BBY5503WE6327 FROM INFINEON
CR303	4815048H01	SOT MMBD353 DIODE DUAL SHT
CR304	4815279H01	BBY5503WE6327 FROM INFINEON
CR305	4815279H01	BBY5503WE6327 FROM INFINEON

Circuit Ref.	Motorola Part No.	Description
CR306	4815923H02	SCHOTTKY DIODE-NEW LEADFREE
CR311	4813974A19	DIODE ARRAY,MXR, SM,SOT-323, 7V,.2W,SHTK, 2,PB-FREE
CR312	4815047H01	DIODE,SWG,DAN235EFTL,3 5V
CR313	4815047H01	DIODE,SWG,DAN235EFTL,3 5V
CR501	4815155H01	RECTIFIER
CR503	4805729G49	DIODE RED/YEL
D101	4813978C06	DIODE DUAL 75V A2X MMBD2836LT1
E101	2415954H02	INDUCTOR BEAD CHIP EPP WITH EPOXY
F501	6515076H01	FUSE CHIP SMT TR/1608FF 3A
FL201	4805875Z04	CRYSTAL 16.8 MHZ
FL301	9180022M11	XTAL FILTER 44.85MHZ
FL302	9180468V04	SMD455KHZ 4 ELEMENT CER FLTR
FL303	9115811H03	SMD455KHZ 6 ELEMENT
FL304	9115811H01	SMD455KHZ 6 ELEMENT
H101	2680499Z02	HEAT SPREADER
J101	0985613Z01	JACK, RF
J102	0280519Z06	NUT, ANTENNA
J200	0915064H03	CONNECTOR, ZIF (40 PINS)
L101	2460591C52	COIL AIR WOUND INDUC 21.93
L102	2479990B02	AIR WOUND COIL/GREEN COLOR 19.61NH
L104	2479990B02	AIR WOUND COIL/GREEN COLOR 19.61NH
L105	2414032B22	IDCTR,WW,390NH,10%,620 MA,1.12OHM,CER,30Q,465MHZSRF,SM,LEAD-F
L106	2479990A02	AIR WND COIL/GREEN COLOR7.66NH
L107	2479990G01	AIR WOUND COIL/GREEN COLOR 33.47NH
L108	2479990A01	AIR WOUND COIL/GREEN COLOR 4.22NH
L109	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L112	2414032B45	IDCTR,WW,22NH,5%,1A,.12 OHM,CER,5
L113	2414017N09	IDCTR,CHIP,5.6NH,600MA,.2 OHM,CER,12Q,3GHZSRF,SM,0603,PB-FRE
L114	2414032B45	IDCTR,WW,22NH,5%,1A,.12 OHM,CER,5

Circuit Ref.	Motorola Part No.	Description
L115	2414032B22	IDCTR,WW,390NH,10%,620 MA,1.12OHM,CER,30Q,465MHZSRF,SM,LEAD-F
L116	2479990A03	AIR WOUND COIL/GREEN COLOR 9.75NH
L160	2414017N14	IDCTR,CHIP,15NH,5%,600MA,.4OHM,CER,13Q,1.8GHZSRF,SM,0603,PB-F
L201	2414017Q20	IDCTR,FXD,2.2UH,20%,30MA,.65OHM,FER
L202	2414017Q20	IDCTR,FXD,2.2UH,20%,30MA,.65OHM,FER
L203	2414017Q20	IDCTR,FXD,2.2UH,20%,30MA,.65OHM,FER
L232	2414032L25	IDCTR,WW,12UH,5%,150MA,3.8OHM,FERR,25 Q,23MHZ SRF,SM,LEAD-F
L241	2414032F41	IDCTR,WW,390NH,10%,200 MA,1.5OHM,CER,40 Q,730MHZ SRF,SM,LEAD
L242	2414032F38	IDCTR,WW,220NH,5%,400MA,.7OHM,CER,30 Q,630MHZ SRF,SM,LEAD-F
L243	2485776Z01	COIL TEFLON RESONATOR (KAPTAN)
L251	2414032F28	IDCTR,WW,33NH,5%,500MA,.27OHM,CER,40 Q,1.8GHZ SRF,SM,LEAD-F
L253	2460593C02	COIL MULT LAYERED TAP TEF RESN
L261	2414032F29	IDCTR,WW,39NH,5%,500MA,.29OHM,CER,40 Q,1.6GHZ SRF,SM,LEAD-F
L271	2414032F32	IDCTR,WW,68NH,5%,500MA,.38OHM,CER,40 Q,1.2GHZ SRF,SM,LEAD-F
L273	2414032F28	IDCTR,WW,33NH,5%,500MA,.27OHM,CER,40 Q,1.8GHZ SRF,SM,LEAD-F
L281	2414032F41	IDCTR,WW,390NH,10%,200 MA,1.5OHM,CER,40 Q,730MHZ SRF,SM,LEAD
L282	2414032F41	IDCTR,WW,390NH,10%,200 MA,1.5OHM,CER,40 Q,730MHZ SRF,SM,LEAD
L301	2479990C01	AIR WOUND COIL/GREEN COLOR 13.9NH
L302	2479990C01	AIR WOUND COIL/GREEN COLOR 13.9NH

Circuit Ref.	Motorola Part No.	Description
L303	2414032F26	IDCTR,WW,22NH,5%,500MA,.22OHM,CER,45 Q,2.2GHZ SRF,SM,LEAD-F
L304	2414032F37	IDCTR,WW,180NH,5%,400MA,.64OHM,CER,35 Q,710MHZ SRF,SM,LEAD-F
L305	2414032F26	IDCTR,WW,22NH,5%,500MA,.22OHM,CER,45 Q,2.2GHZ SRF,SM,LEAD-F
L306	2479990C01	AIR WOUND COIL/GREEN COLOR 13.9NH
L307	2479990C01	AIR WOUND COIL/GREEN COLOR 13.9NH
L309	2479990C02	AIR WOUND COIL/GREEN COLOR 16.28NH
L310	2414032F36	IDCTR,WW,150NH,5%,400MA,.56OHM,CER,35 Q,780MHZ SRF,SM,LEAD-F
L311	2414017K32	IDCTR,CHIP,560NH,5%,50MA,5OHM,CER,11Q,150MHZSRF,SM,0805,PB-F
L321	2414032F37	IDCTR,WW,180NH,5%,400MA,.64OHM,CER,35 Q,710MHZ SRF,SM,LEAD-F
L325	2414032B68	IDCTR,WW,1UH,5%,460MA,1.75OHM,CER,33Q,290MHZSRF,SM,LEAD-FRE
L330	0613958J74	CER CHIP RES 0.0 OHM JMP 0805
L331	2414017K33	IND CER CHIP 680.0 NH 5%
L332	2414015A25	IDCTR,CHIP,1.2UH,2%,440MA,2OHM,CER,
L505	2414017Q42	IDCTR,FXD,390NH,10%,200 MA,.65OHM,FERR,25Q,135MHZSRF,SM,0805
P100	3905643V01	CONTACT ANT GRD
PB501	4070354A01	LIGHT TOUCH SWITCH-SMD
PB502	4070354A01	LIGHT TOUCH SWITCH-SMD
PB504	4070354A01	LIGHT TOUCH SWITCH-SMD
PB505	4070354A01	LIGHT TOUCH SWITCH-SMD
Q110	4813976A03	TSTR, 450 MHZ, 8W, 7.5V, PLD 1.5
Q111	4815055H01	TSTR DUAL NPN/PNP UMH 5
Q210	4815055H01	TSTR DUAL NPN/PNP UMH 5

Circuit Ref.	Motorola Part No.	Description
Q241	4805218N63	RF TRANS SOT 323 BFQ67W
Q260	4815055H01	TSTR DUAL NPN/PNP UMH 5
Q261	4815055H01	TSTR DUAL NPN/PNP UMH 5
Q301	4816531H01	NPN SILICON BIPOLAR TRANSISTOR
Q302	4802197J95	RF TRANSISTOR PBR941
Q310	4816531H01	NPN SILICON BIPOLAR TRANSISTOR
Q320	4813973M07	XSTR,BIP GP SS,NPN,TO-236,SMT,40V,.225W,200MA,300MHZ,PB-FREE
Q502	4815154H01	DUAL TRANS NPN
Q505	4813973M07	XSTR,BIP GP SS,NPN,TO-236,SMT,40V,.225W,200MA,300MHZ,PB-FREE
R101	0613952H58	CER CHIP RES 240 OHM 5% 0603
R102	0680539Z01	POWER METAL STRIP RESISTORS
R103	0613952Q40	CER CHIP RES 43.0 OHM 5 0402
R104	0613952R17	CER CHIP RES 47K OHM 5% 0402
R106	0613952Q25	CER CHIP RES 10.0 OHM 5 0402
R107	NOT PLACED	-
R108	0613952Q91	CER CHIP RES 5600 OHM 5 0402
R109	0613952R32	CER CHIP RES 200K OHM 5% 0402
R110	0613952Q60	CER CHIP RES 300 OHM 5 0402
R111	0613952Q32	CER CHIP RES 20.0 OHM 5% 0402
R112	0613952Q60	CER CHIP RES 300 OHM 5 0402
R120	0613952R16	CER CHIP RES 43K OHM 5 0402
R130	0613952R01	CER CHIP RES 10K OHM 5% 0402
R131	0613952R07	CER CHIP RES 18K OHM 5% 0402
R132	0613952R35	CER CHIP RES 270K OHM 5% 0402
R133	NOT PLACED	-
R136	NOT PLACED	-
R161	0613952Q56	CER CHIP RES 200 OHM 5% 0402

Circuit Ref.	Motorola Part No.	Description
R170	0613952H58	CER CHIP RES 240 OHM 5% 0603
R171	0613952R16	CER CHIP RES 43K OHM 5 0402
R172	0613952H56	CER CHIP RES 200 OHM 5 0603
R172	0613952H49	CER CHIP RES 200 OHM 5% 0603
R173	0613952R31	CER CHIP RES 180K OHM 5% 0402
R174	0613952R17	CER CHIP RES 47K OHM 5% 0402
R175	0613952H12	CER CHIP RES 3.0 OHM 5% 0603
R176	0613952H12	CER CHIP RES 3.0 OHM 5% 0603
R201	0613952R23	CER CHIP RES 82K OHM 5% 0402
R202	0613952R25	CER CHIP RES 100K OHM 5% 0402
R204	0613952R17	CER CHIP RES 47K OHM 5% 0402
R231	0613952Q51	CER CHIP RES 120 OHM 5% 0402
R232	0613952Q68	CER CHIP RES 620 OHM 5% 0402
R233	0613952Q67	CER CHIP RES 560 OHM 5 0402
R241	0613952Q31	CER CHIP RES 18.0 OHM 5% 0402
R242	0613952Q56	CER CHIP RES 200 OHM 5% 0402
R243	0613952R01	CER CHIP RES 10K OHM 5% 0402
R244	0613952R03	CER CHIP RES 12K OHM 5% 0402
R245	0613952Q58	CER CHIP RES 240 OHM 5% 0402
R248	0613952Q36	CER CHIP RES 30.0 OHM 5% 0402
R251	0613952Q31	CER CHIP RES 18.0 OHM 5% 0402
R252	0613952Q61	CER CHIP RES 330 OHM 5% 0402
R253	0613952Q94	CER CHIP RES 7500 OHM 5% 0402
R254	0613952Q94	CER CHIP RES 7500 OHM 5% 0402
R255	0613952Q88	CER CHIP RES 4300 OHM 5 0402

Circuit Ref.	Motorola Part No.	Description
R256	0613952Q36	CER CHIP RES 30.0 OHM 5% 0402
R260	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R281	NOT PLACED	-
R301	0613952R25	CER CHIP RES 100K OHM 5% 0402
R302	0613952R25	CER CHIP RES 100K OHM 5% 0402
R303	0613952Q80	CER CHIP RES 2000 OHM 5% 0402
R304	0613952R03	CER CHIP RES 12K OHM 5% 0402
R305	0613952Q66	CER CHIP RES 510 OHM 5% 0402
R306	0613952R25	CER CHIP RES 100K OHM 5% 0402
R307	0613952R25	CER CHIP RES 100K OHM 5% 0402
R308	0613952Q42	CER CHIP RES 51.0 OHM 5% 0402
R309	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R310	NOT PLACED	-
R311	0613952R13	CER CHIP RES 33K OHM 5% 0402
R312	0613952Q89	CER CHIP RES 4700 OHM 5 0402
R313	0613952Q61	CER CHIP RES 330 OHM 5% 0402
R314	0613952Q78	CER CHIP RES 1600 OHM 5% 0402
R315	0613952R03	CER CHIP RES 12K OHM 5% 0402
R320	NOT PLACED	-
R321	0613952R15	CER CHIP RES 39K OHM 5% 0402
R322	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R324	0613952R08	CER CHIP RES 20K OHM 5 0402
R328	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R329	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R330	0613952R01	CER CHIP RES 10K OHM 5% 0402
R331	0613952Q56	CER CHIP RES 200 OHM 5% 0402
R332	0613952R03	CER CHIP RES 12K OHM 5% 0402

Circuit Ref.	Motorola Part No.	Description
R333	NOT PLACED	-
R339	0613952Q88	CER CHIP RES 4300 OHM 5 0402
R340	0613952Q94	CER CHIP RES 7500 OHM 5% 0402
R342	0613952R25	CER CHIP RES 100K OHM 5% 0402
R344	0613952Q42	CER CHIP RES 51.0 OHM 5% 0402
R345	0613952R15	CER CHIP RES 39K OHM 5% 0402
R346	0613952R05	CER CHIP RES 15K OHM 5% 0402
R348	0613952Q86	CER CHIP RES 3600 OHM 5 0402
R349	0613958J74	CER CHIP RES 0.0 OHM JMP 0805
R350	0613952Q85	CER CHIP RES 3300 OHM 5% 0402
R355	0613952R25	CER CHIP RES 100K OHM 5% 0402
R358	0613952Q82	CER CHIP RES 2400 OHM 5 0402
R359	NOT PLACED	-
R360	0613952R08	CER CHIP RES 20K OHM 5 0402
R361	0613952R08	CER CHIP RES 20K OHM 5 0402
R363	0613952Q63	CER CHIP RES 390 OHM 5 0402
R364	0613952Q79	CER CHIP RES 1800 OHM 5 0402
R365	0613952Q75	CER CHIP RES 1200 OHM 5 0402
R366	0613952R03	CER CHIP RES 12K OHM 5% 0402
R367	0613952N09	CER CHIP RES 12.1K OHM 1% 0402
R368	0613952N01	CER CHIP RES 10.0K OHM 1 0402
R369	0613952Q69	CER CHIP RES 680 OHM 5% 0402
R370	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R371	NOT PLACED	-
R372	NOT PLACED	-
R373	NOT PLACED	-
R374	NOT PLACED	-
R375	NOT PLACED	-
R376	NOT PLACED	-
R377	NOT PLACED	-



Circuit Ref.	Motorola Part No.	Description
R378	NOT PLACED	-
R402	NOT PLACED	-
R501	0613952Q69	CER CHIP RES 680 OHM 5% 0402
R502	0613952Q55	CER CHIP RES 180 OHM 5% 0402
R505	0613952R01	CER CHIP RES 10K OHM 5% 0402
R506	0613952R17	CER CHIP RES 47K OHM 5% 0402
R507	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R509	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R510	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R511	NOT PLACED	-
S501	4080710Z19	SWITCH, FREQUENCY
S502	1880619Z04	VOL POTENTIOMETER WITH HI TEMP CAM
SH100	2680507Z02	SHIELD, HARMONIC FILTER
SH101	2680510Z02	SHIELD, PA
SH201	2680511Z02	SHIELD, SYNTHESIZER
SH202	2680511Z02	SHIELD, SYNTHESIZER
SH241	2604120G02	AOBA VCO SHIELD
SH242	2680514Z02	SHIELD, VCO BOTTOM/ LVZIF
SH301	2686583Z02	SHIELD, RECEIVER FRONT END TOP
SH302	2680555Z02	SHIELD, RECEIVER F/END BOTTOM
SH303	2680509Z02	SHIELD, MIXER
SH304	2680624Z02	SHIELD, MIXER DIODE
SH322	2686528Z02	SHIELD, IF SECTION
SH323	2615924H01	SHIELD, CRYSTAL FILTER
T301	2515121H01	BALUN, TRANSFORMER W18 COMP
T302	2515121H01	BALUN, TRANSFORMER W18 COMP
U101	5115678H01	VHF/UHF/800/900 MHZ LDMOS DRIVER IC
U102	5185765B26	IC PWR CTRL IN MOS20
U201	5185177Y01	IC TESTED AT25016 48 PIN W18
U210	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
U211	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
U241	5105750U56	IC PKG DIE VCO BUFFER

Circuit Ref.	Motorola Part No.	Description
U247	5115026H01	IC,LOW DROPOUT,SM,SOT-23/6,P
U248	5115019H01	3.3V REGULATOR IN SOT23-5 PKG
U301	5115281H01	FM IF IC SA616 FROM PHILIPS
U302	5115070H01	IC 3-INV LMOS TC7W04FU
U303	NOT PLACED	-
VR439	4813977M21	DIODE,ZEN,MBZ5242,SM,SOT-23,12V,10MA,.225W,ZEN,PB-FREE
VR440	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR441	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR443	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR444	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR501	4813977M14	DIODE,ZEN,MBZ5235,SM,SOT-23,6.8V,10MA,.225W,ZEN,PB-FREE
VR506	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
Y300	4802245J84	XTAL 44.395MHz, 3RD OT, SMD
Y301	9186145B02	CER.DISCR. CDBCA455CX36-TC
	8415563H03	BOARD, PC, UHF1 RF

**UHF (403-470 MHz) Radio Parts List (PCB 8415234H05)**

Circuit Ref	Motorola Part No.	Description
B501	8415234H05 0986237A02	PC BOARD, UHF BAND 1 CONNECTOR (CONTACT BATTERY)
B503	3980502Z01	CONTACT, BACKUP B+
B504	3980501Z01	CONTACT, BACKUP B-
C101	2113944C45	CAP CER CHP 100.0PF 50V 5%
C102	2113944M16	CAP,FXD,8.2PF,.1PF+/-,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX
C103	2113944M21	CAP,FXD,13PF,+2%,-2%,50V-DC,0603,C
C104	2113944M15	CAP,FXD,7.5PF,.1PF+/-,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX
C105	2113944A40	CAP CER CHP 100.0PF 50V 5%
C106	2113944C22	CAP CER CHP 4.7PF 50V +/- 0.25
C107	2113944C18	CAP CER CHP 3.3PF 50V +/- 0.25
C108	2113944A40	CAP CER CHP 100.0PF 50V 5%
C109	2113944C45	CAP CER CHP 100.0PF 50V 5%
C110	2113944A40	CAP CER CHP 100.0PF 50V 5%
C111	2113944C32	CAP CER CHP 15.0PF 50V 5%
C112	2115937H04	HIGH Q CHIP CAPACITOR, 47PF
C113	2115937H01	HIGH Q CHIP CAPACITOR, 10PF
C114	2113944A40	CAP CER CHP 100.0PF 50V 5%
C115	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,04
C116	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,04
C117	2113944A29	CAP CER CHP 22.0PF 50V 5%
C118	2113944A40	CAP CER CHP 100.0PF 50V 5%
C119	2113944A40	CAP CER CHP 100.0PF 50V 5%
C120	2113944A77	CAP,FXD,11PF,+5%,-5%,50V-DC,04
C121	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description
C122	2113944A40	CAP CER CHP 100.0PF 50V 5%
C123	2313960F04	CAP TANT 33 UF 10% 16V 6032-28
C125	2113944A40	CAP CER CHP 100.0PF 50V 5%
C126	2113946K02	CAP CER CHP 0.10UF 16V
C127	2113945A09	CAP CER CHP 1000PF 50V 10%
C128	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C129	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C130	2113944A40	CAP CER CHP 100.0PF 50V 5%
C131	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C132	2113944A40	CAP CER CHP 100.0PF 50V 5%
C133	2113945A09	CAP CER CHP 1000PF 50V 10%
C134	2113945A12	CAP CER CHP 3300PF 50V 10%
C135	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C138	2113944A40	CAP CER CHP 100.0PF 50V 5%
C140	0613952H91	CER CHIP RES 5600 OHM 5 0603
C141	NOT PLACED	-
C150	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C151	2113944A40	CAP CER CHP 100.0PF 50V 5%
C152	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C160	2113944A40	CAP CER CHP 100.0PF 50V 5%
C161	2113946K02	CAP CER CHP 0.10UF 16V
C165	2113944A40	CAP CER CHP 100.0PF 50V 5%
C166	2113944A40	CAP CER CHP 100.0PF 50V 5%
C169	2113944A19	CAP CER CHP 5.6PF 50V +/- 0.5P
C170	2113944A40	CAP CER CHP 100.0PF 50V 5%
C171	2113944A40	CAP CER CHP 100.0PF 50V 5%
C172	2113944C45	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description
C173	2113945B04	CAP,FXD,.022UF,+10%, -10%,25V-D
C174	2113944A40	CAP CER CHP 100.0PF 50V 5%
C175	2113944C45	CAP CER CHP 100.0PF 50V 5%
C201	2113944A40	CAP CER CHP 100.0PF 50V 5%
C202	2113945A09	CAP CER CHP 1000PF 50V 10%
C203	2113946H01	CAP CER CHP 4.7UF 10V 10%
C204	2113946N03	CAP CER CHP 2.2UF 16V
C206	2113944C04	CAP CER CHP 330.0PF 50V 5%
C207	2113944A33	CAP CER CHP 47.0PF 50V 5%
C208	NOT PLACED	-
C210	2113944A40	CAP CER CHP 100.0PF 50V 5%
C211	2113944A40	CAP CER CHP 100.0PF 50V 5%
C212	2113944A40	CAP CER CHP 100.0PF 50V 5%
C213	2113944A40	CAP CER CHP 100.0PF 50V 5%
C214	2113944A40	CAP CER CHP 100.0PF 50V 5%
C217	2113946N03	CAP CER CHP 2.2UF 16V
C218	2113946K02	CAP CER CHP 0.10UF 16V
C219	2113946L03	CAP CER CHP 0.22UF 16V
C220	2113944A40	CAP CER CHP 100.0PF 50V 5%
C223	2113946K02	CAP CER CHP 0.10UF 16V
C224	2113946K02	CAP CER CHP 0.10UF 16V
C228	2313960D05	CAP,FXD,4.7UF,+10%,-10%,16V-DC
C229	2113945A09	CAP CER CHP 1000PF 50V 10%
C230	2113944A40	CAP CER CHP 100.0PF 50V 5%
C231	2113946K02	CAP CER CHP 0.10UF 16V
C232	2113945D02	CAP CER CHP 47,000PF 25V 10%
C233	2313960A26	CAP,FXD,.1UF,+10%,-10%,35V-DC,
C234	2313960A55	CAP,FXD,.47UF,+10%,-10%,25V-DC
C235	2113946N03	CAP CER CHP 2.2UF 16V
C238	2113945L17	CAP,FXD,470PF,+5%,-5%,50V-DC,0

Circuit Ref	Motorola Part No.	Description
C241	2113944A40	CAP CER CHP 100.0PF 50V 5%
C242	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C243	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C244	2113944C13	CAP CER CHP 2.0PF 50V +/- 0.25
C245	2113944A10	CAP CER CHP 2.4PF 50V +/- 0.25
C246	2113944A40	CAP CER CHP 100.0PF 50V 5%
C247	2113944A40	CAP CER CHP 100.0PF 50V 5%
C248	2113946K02	CAP CER CHP 0.10UF 16V
C250	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C251	2113944A40	CAP CER CHP 100.0PF 50V 5%
C252	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5
C253	2113944C12	CAP CER CHP 1.8PF 50V +/- 0.25
C254	2113944A14	CAP CER CHP 3.6PF 50V +/- 0.25
C255	2113944A40	CAP CER CHP 100.0PF 50V 5%
C257	2113944A40	CAP CER CHP 100.0PF 50V 5%
C258	2113945B02	CAP CER CHP 10,000PF 25V 10%
C259	2113945B02	CAP CER CHP 10,000PF 25V 10%
C260	2113944A40	CAP CER CHP 100.0PF 50V 5%
C263	2113944A62	CAP,FXD,.75PF,.25PF+/-,50V-DC,
C264	2113944A40	CAP CER CHP 100.0PF 50V 5%
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	NOT PLACED	-
C273	2113946K02	CAP CER CHP 0.10UF 16V
C276	2113946N03	CAP CER CHP 2.2UF 16V
C277	2113944A40	CAP CER CHP 100.0PF 50V 5%
C278	2313960D07	CAP,FXD,10,+10,-10,16,SM,-55M
C279	2113946N03	CAP CER CHP 2.2UF 16V
C281	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
C285	2113944A40	CAP CER CHP 100.0PF 50V 5%	C319	2113944A11	CAP CER CHP 2.7PF 50V +/- 0.25	C374	2113944A40	CAP CER CHP 100.0PF 50V 5%	C426	2113944A40	CAP CER CHP 100.0PF 50V 5%
C286	2113946K02	CAP CER CHP 0.10UF 16V	C320	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,04	C375	2113944A40	CAP CER CHP 100.0PF 50V 5%	C427	2113944A40	CAP CER CHP 100.0PF 50V 5%
C289	2113944A40	CAP CER CHP 100.0PF 50V 5%	C321	2113944A40	CAP CER CHP 100.0PF 50V 5%	C378	NOT PLACED	-	C428	2113946K02	CAP CER CHP 0.10UF 16V
C291	2313960M51	CAP,FXD,10UF,+10%,-10%,6.3V-DC	C322	2113944A38	CAP CER CHP 82.0PF 50V 5%	C380	2113945B02	CAP CER CHP 10,000PF 25V 10%	C429	2113946K02	CAP CER CHP 0.10UF 16V
C292	2113946K02	CAP CER CHP 0.10UF 16V	C324	2113944A29	CAP CER CHP 22.0PF 50V 5%	C381	NOT PLACED	-	C430	2113946B04	CAP CER CHP 0.10UF 10V 10%
C293	2113945G98	CAP,FXD,.47UF,+10%,-10%,50V-DC	C325	2115153H26	CAP, CERAMIC, COG	C382	2313960B57	CAP,FXD,10UF,+10%,-10%,6.3V-DC	C431	2113944A40	CAP CER CHP 100.0PF 50V 5%
C294	2113944A40	CAP CER CHP 100.0PF 50V 5%	C326	2113946K02	CAP CER CHP 0.10UF 16V	C383	NOT PLACED	-	C432	NOT PLACED	-
C295	2113944A40	CAP CER CHP 100.0PF 50V 5%	C327	2113946K02	CAP CER CHP 0.10UF 16V	C385	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,04	C433	2113945B02	CAP CER CHP 10,000PF 25V 10%
C296	2113946K02	CAP CER CHP 0.10UF 16V	C328	2113946K02	CAP CER CHP 0.10UF 16V	C386	2113944A40	CAP CER CHP 100.0PF 50V 5%	C434	2113946B04	CAP CER CHP 0.10UF 10V 10%
C297	2113945B02	CAP CER CHP 10,000PF 25V 10%	C329	2113946K02	CAP CER CHP 0.10UF 16V	C390	NOT PLACED	-	C435	2113946K02	CAP CER CHP 0.10UF 16V
C298	2113946K02	CAP CER CHP 0.10UF 16V	C334	2113945A13	CAP CER CHP 4700PF 50V 10%	C391	2113944A81	CAP CHIP 24.0 PF 5% COG	C436	2113944A29	CAP CER CHP 22.0PF 50V 5%
C301	2113944A14	CAP CER CHP 3.6PF 50V +/- 0.25	C337	NOT PLACED	-	C400	2113945B02	CAP CER CHP 10,000PF 25V 10%	C437	2113944A29	CAP CER CHP 22.0PF 50V 5%
C302	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5	C338	NOT PLACED	-	C401	2113946K02	CAP CER CHP 0.10UF 16V	C440	2113946Q01	CAP CER CHP 4.7UF 16V
C303	2113944C20	CAP CER CHP 3.9PF 50V +/- 0.25	C343	2113946K02	CAP CER CHP 0.10UF 16V	C402	2113946K02	CAP CER CHP 0.10UF 16V	C441	2113944A40	CAP CER CHP 100.0PF 50V 5%
C304	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5	C344	2113945D04	CAP CER CHP 100,000PF 25V 10%	C403	2113955D33	CAP,FXD,2.2UF,+10%,-10%,16V-DC	C442	2113945D04	CAP CER CHP 100,000PF 25V 10%
C305	2113944A80	CAP,FXD,20PF,+5%,-5%,50V-DC,04	C345	2113946K02	CAP CER CHP 0.10UF 16V	C404	NOT PLACED	-	C443	2113946B04	CAP CER CHP 0.10UF 10V 10%
C306	NOT PLACED	-	C346	2113946K02	CAP CER CHP 0.10UF 16V	C405	2113944A40	CAP CER CHP 100.0PF 50V 5%	C444	2113944A40	CAP CER CHP 100.0PF 50V 5%
C307	2113944A40	CAP CER CHP 100.0PF 50V 5%	C347	2113946K02	CAP CER CHP 0.10UF 16V	C406	NOT PLACED	-	C445	2113944A40	CAP CER CHP 100.0PF 50V 5%
C308	2113944A40	CAP CER CHP 100.0PF 50V 5%	C348	2113946K02	CAP CER CHP 0.10UF 16V	C407	2113946B04	CAP CER CHP 0.10UF 10V 10%	C447	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C309	2113944A40	CAP CER CHP 100.0PF 50V 5%	C349	2113945D04	CAP CER CHP 100,000PF 25V 10%	C408	2113944A40	CAP CER CHP 100.0PF 50V 5%	C448	2113946B04	CAP CER CHP 0.10UF 10V 10%
C310	2113944A40	CAP CER CHP 100.0PF 50V 5%	C350	2113946K02	CAP CER CHP 0.10UF 16V	C409	2113946K02	CAP CER CHP 0.10UF 16V	C449	2113944A40	CAP CER CHP 100.0PF 50V 5%
C311	NOT PLACED	-	C351	2113944A41	CAP CER CHP 120.0PF 50V 5%	C410	2113946B04	CAP CER CHP 0.10UF 10V 10%	C450	NOT PLACED	-
C312	2113944A24	CAP CER CHP 9.1PF 50V +/- 0.5P	C352	2113946K02	CAP CER CHP 0.10UF 16V	C411	2113946K02	CAP CER CHP 0.10UF 16V	C451	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-D
C313	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5	C355	2113946K02	CAP CER CHP 0.10UF 16V	C414	2113946K02	CAP CER CHP 0.10UF 16V	C452	2113955D31	CAP,FXD,1UF,+10%,-10%,16V-DC,
C314	2113946K02	CAP CER CHP 0.10UF 16V	C357	2113946K02	CAP CER CHP 0.10UF 16V	C415	2185895Z01	CAPACITOR CER LOW DIST .01UF	C453	2113944A40	CAP CER CHP 100.0PF 50V 5%
C315	2113944A40	CAP CER CHP 100.0PF 50V 5%	C358	NOT PLACED	-	C416	2113946B04	CAP CER CHP 0.10UF 10V 10%	C456	2113944A40	CAP CER CHP 100.0PF 50V 5%
C316	2113944C20	CAP CER CHP 3.9PF 50V +/- 0.25	C359	NOT PLACED	-	C419	NOT PLACED	-	C458	2113944A40	CAP CER CHP 100.0PF 50V 5%
C317	2113944A24	CAP CER CHP 9.1PF 50V +/- 0.5P	C360	2113944A13	CAP CER CHP 3.3PF 50V +/- 0.25	C420	2113945B02	CAP CER CHP 10,000PF 25V 10%	C459	2113944A40	CAP CER CHP 100.0PF 50V 5%
C318	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P	C361	2113946K02	CAP CER CHP 0.10UF 16V	C421	2113946B04	CAP CER CHP 0.10UF 10V 10%			
			C362	2113946K02	CAP CER CHP 0.10UF 16V	C422	2113946K02	CAP CER CHP 0.10UF 16V			
			C364	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,04	C423	2113944A40	CAP CER CHP 100.0PF 50V 5%			
			C366	NOT PLACED	-	C424	2313960B57	CAP,FXD,10UF,+10%,-10%,6.3V-DC			
			C367	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,04	C425	2113946K02	CAP CER CHP 0.10UF 16V			
			C370	2113944A17	CAP CER CHP 4.7PF 50V +/- 0.25						
			C371	NOT PLACED	-						
			C372	2113944A40	CAP CER CHP 100.0PF 50V 5%						
			C373	NOT PLACED	-						

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
C463	2113944A40	CAP CER CHP 100.0PF 50V 5%	C513	2113944A40	CAP CER CHP 100.0PF 50V 5%	C620	2113944A40	CAP CER CHP 100.0PF 50V 5%	D602	4880479U01	LED
C466	2113944A40	CAP CER CHP 100.0PF 50V 5%	C514	2113944A40	CAP CER CHP 100.0PF 50V 5%	C621	2113944A40	CAP CER CHP 100.0PF 50V 5%	D603	4880479U01	LED
C467	2113946B04	CAP CER CHP 0.10UF 10V 10%	C520	2113945B02	CAP CER CHP 10,000PF 25V 10%	C622	2113944A40	CAP CER CHP 100.0PF 50V 5%	D604	4880479U01	LED
C471	2113944A40	CAP CER CHP 100.0PF 50V 5%	C521	2113945B02	CAP CER CHP 10,000PF 25V 10%	CR101	4880973Z02	PIN DIODE	D605	4880479U01	LED
C472	2113945A05	CAP CER CHP 470PF 50V 10%	C522	2113945B02	CAP CER CHP 10,000PF 25V 10%	CR102	4815257H01	SURFACE MOUNT PIN DIODES	D606	4880479U01	LED
C473	2113945A05	CAP CER CHP 470PF 50V 10%	C523	2113945B02	CAP CER CHP 10,000PF 25V 10%	CR103	4815257H01	SURFACE MOUNT PIN DIODES	E101	2415954H01	INDUCTOR BEAD CHIP
C475	2113956E91	CAP,FXD,10UF,+10%,-10%,16V-DC,	C524	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR105	5115022H01	IC TEMPERATURE SENSOR	E102	7686949J14	FLTR,FERRITE BEAD,2A,SM
C476	2113946R01	CAP CER CHP 10.0UF 10V	C525	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR160	NOT PLACED	-	E105	7686949J14	FLTR,FERRITE BEAD,2A,SM,0805
C479	2113946B04	CAP CER CHP 0.10UF 10V 10%	C526	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR201	4815011H01	DIODE TRIPLE	E400	2480640Z01	SURFACE MOUNT FERRITE BEAD
C480	2113946R01	CAP CER CHP 10.0UF 10V	C527	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR203	4815072H01	DIODE VARACTOR	E401	2480640Z01	SURFACE MOUNT FERRITE BEAD
C481	2113946B04	CAP CER CHP 0.10UF 10V 10%	C528	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR241	4885094Y01	DIODE VARACTOR ISV228 W18	E402	2480640Z01	SURFACE MOUNT FERRITE BEAD
C482	2113946B04	CAP CER CHP 0.10UF 10V 10%	C529	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR242	4815279H01	BBY5503WE6327 FROM INFINEON	E403	2480640Z01	SURFACE MOUNT FERRITE BEAD
C490	2113944A40	CAP CER CHP 100.0PF 50V 5%	C597	2113944A84	CAP,FXD,43PF,+5%,-5%,50V-DC,0402,C0	CR243	4815279H01	BBY5503WE6327 FROM INFINEON	E404	2480640Z01	SURFACE MOUNT FERRITE BEAD
C491	2113944A40	CAP CER CHP 100.0PF 50V 5%	C598	2113944A17	CAP CER CHP 4.7PF 50V +/-0.25	CR251	4815322H01	VHF VARIABLE CAPACITANCE DIODE	E405	2480640Z01	SURFACE MOUNT FERRITE BEAD
C492	2113944A40	CAP CER CHP 100.0PF 50V 5%	C599	2113944A15	CAP CER CHP 3.9PF 50V +/-0.25	CR301	4815279H01	BBY5503WE6327 FROM INFINEON	E406	2480640Z01	SURFACE MOUNT FERRITE BEAD
C493	2113944A40	CAP CER CHP 100.0PF 50V 5%	C600	2113944A81	CAP CHIP 24.0 PF 5% COG	CR302	4815279H01	BBY5503WE6327 FROM INFINEON	E407	2480640Z01	SURFACE MOUNT FERRITE BEAD
C494	2113944A40	CAP CER CHP 100.0PF 50V 5%	C601	2113944A40	CAP CHIP 100 PF 5% COG	CR303	4815048H01	SOT MMBD353 DIODE DUAL SCHK	E408	2480640Z01	SURFACE MOUNT FERRITE BEAD
C495	2113944A40	CAP CER CHP 100.0PF 50V 5%	C602	2113944A17	CAP CHIP 4.7 PF +/-0.25PF COG	CR304	4815279H01	BBY5503WE6327 FROM INFINEON	E409	2480640Z01	SURFACE MOUNT FERRITE BEAD
C496	2113944A40	CAP CER CHP 100.0PF 50V 5%	C610	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR305	4815279H01	BBY5503WE6327 FROM INFINEON	E634	2480640Z01	SURFACE MOUNT FERRITE BEAD
C497	2113944A40	CAP CER CHP 100.0PF 50V 5%	C611	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR306	4815923H02	SCHOTTKY DIODE-NEW LEADFREE	E637	2480640Z01	SURFACE MOUNT FERRITE BEAD
C498	NOT PLACED	-	C612	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR311	4813974A19	DIODE ARRAY,MXR,SM,SOT-323,7V,	E638	2480640Z01	SURFACE MOUNT FERRITE BEAD
C499	2113946B04	CAP CER CHP 0.10UF 10V 10%	C613	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR312	4815047H01	BAND SWITCHIND DIODE,ROHM DAN	E639	2480640Z01	SURFACE MOUNT FERRITE BEAD
C502	2313960A55	CAP,FXD,.47UF,+10%,-10%,25V-DC	C615	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR313	4815047H01	BAND SWITCHIND DIODE,ROHM DAN	E640	2480640Z01	SURFACE MOUNT FERRITE BEAD
C503	2113944A84	CAP,FXD,43PF,+5%,-5%,50V-DC,04	C616	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR411	4815067H01	DIODE SCHOTTKY, RB731U	E642	2480640Z01	SURFACE MOUNT FERRITE BEAD
C505	2113944A40	CAP CER CHP 100.0PF 50V 5%	C618	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR412	4815067H01	DIODE SCHOTTKY, RB731U	E643	2480640Z01	SURFACE MOUNT FERRITE BEAD
C511	2113944A40	CAP CER CHP 100.0PF 50V 5%	C619	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR413	4815067H01	DIODE SCHOTTKY, RB731U	E644	2480640Z01	SURFACE MOUNT FERRITE BEAD
C512	2113944A40	CAP CER CHP 100.0PF 50V 5%				CR440	4813978C02	PB FREE, NOT COMPLETELY ENRICH	E645	2480640Z01	SURFACE MOUNT FERRITE BEAD
						CR501	4815155H01	RECTIFIER			
						CR503	4805729G49	DIODE RED/YEL			
						D601	4880479U01	LED			



Circuit Ref	Motorola Part No.	Description
R176	0613952H12	CER CHIP RES 3.0 OHM 5 0603
R201	0613952R23	CER CHIP RES 82K OHM 5% 0402
R202	0613952R25	CER CHIP RES 100K OHM 5% 0402
R204	0613952R17	CER CHIP RES 47K OHM 5% 0402
R231	0613952Q51	CER CHIP RES 120 OHM 5 0402
R232	0613952Q68	CER CHIP RES 620 OHM 5 0402
R233	0613952Q67	CER CHIP RES 560 OHM 5 0402
R241	0613952Q31	CER CHIP RES 18.0 OHM 5 0402
R242	0613952Q56	CER CHIP RES 200 OHM 5 0402
R243	0613952R01	CER CHIP RES 10K OHM 5% 0402
R244	0613952R03	CER CHIP RES 12K OHM 5% 0402
R245	0613952Q58	CER CHIP RES 240 OHM 5 0402
R248	0613952Q36	CER CHIP RES 30.0 OHM 5 0402
R251	0613952Q31	CER CHIP RES 18.0 OHM 5 0402
R252	0613952Q61	CER CHIP RES 330 OHM 5 0402
R253	0613952Q94	CER CHIP RES 7500 OHM 5 0402
R254	0613952Q94	CER CHIP RES 7500 OHM 5 0402
R255	0613952Q88	CER CHIP RES 4300 OHM 5 0402
R256	0613952Q36	CER CHIP RES 30.0 OHM 5 0402
R260	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R281	NOT PLACED	-
R301	0613952R25	CER CHIP RES 100K OHM 5% 0402
R302	0613952R25	CER CHIP RES 100K OHM 5% 0402
R303	0613952Q80	CER CHIP RES 2000 OHM 5 0402
R304	0613952R03	CER CHIP RES 12K OHM 5% 0402
R305	0613952Q66	CER CHIP RES 510 OHM 5 0402

Circuit Ref	Motorola Part No.	Description
R306	0613952R25	CER CHIP RES 100K OHM 5% 0402
R307	0613952R25	CER CHIP RES 100K OHM 5% 0402
R308	0613952Q42	CER CHIP RES 51.0 OHM 5 0402
R309	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R310	NOT PLACED	-
R311	0613952R13	CER CHIP RES 33K OHM 5% 0402
R312	0613952Q89	CER CHIP RES 4700 OHM 5 0402
R313	0613952Q61	CER CHIP RES 330 OHM 5 0402
R314	0613952Q78	CER CHIP RES 1600 OHM 5 0402
R315	0613952R03	CER CHIP RES 12K OHM 5% 0402
R320	NOT PLACED	-
R321	0613952R15	CER CHIP RES 39K OHM 5% 0402
R322	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R324	0613952R08	CER CHIP RES 20K OHM 5 0402
R328	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R329	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R330	0613952R01	CER CHIP RES 10K OHM 5% 0402
R331	0613952Q56	CER CHIP RES 200 OHM 5 0402
R332	0613952R03	CER CHIP RES 12K OHM 5% 0402
R333	NOT PLACED	-
R339	0613952Q88	CER CHIP RES 4300 OHM 5 0402
R340	0613952Q94	CER CHIP RES 7500 OHM 5 0402
R342	0613952R25	CER CHIP RES 100K OHM 5% 0402
R344	0613952Q42	CER CHIP RES 51.0 OHM 5 0402
R345	0613952R15	CER CHIP RES 39K OHM 5% 0402
R346	0613952R05	CER CHIP RES 15K OHM 5% 0402
R348	0613952Q86	CER CHIP RES 3600 OHM 5 0402

Circuit Ref	Motorola Part No.	Description
R349	0613958J74	CER CHIP RES 0.0 OHM JMP 0805
R350	0613952Q85	CER CHIP RES 3300 OHM 5 0402
R355	0613952R25	CER CHIP RES 100K OHM 5% 0402
R358	0613952Q82	CER CHIP RES 2400 OHM 5 0402
R359	NOT PLACED	-
R360	0613952R08	CER CHIP RES 20K OHM 5 0402
R361	0613952R08	CER CHIP RES 20K OHM 5 0402
R363	0613952Q63	CER CHIP RES 390 OHM 5 0402
R364	0613952Q79	CER CHIP RES 1800 OHM 5 0402
R365	0613952Q75	CER CHIP RES 1200 OHM 5 0402
R366	0613952R03	CER CHIP RES 12K OHM 5% 0402
R367	0613952N09	CER CHIP RES 12.1K OHM 1 0402
R368	0613952N01	CER CHIP RES 10.0K OHM 1 0402
R369	0613952Q69	CER CHIP RES 680 OHM 5 0402
R370	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R371	NOT PLACED	-
R372	NOT PLACED	-
R373	NOT PLACED	-
R374	NOT PLACED	-
R375	NOT PLACED	-
R376	NOT PLACED	-
R377	NOT PLACED	-
R378	NOT PLACED	-
R400	0613952R17	CER CHIP RES 47K OHM 5% 0402
R401	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R406	0613952R22	CER CHIP RES 75K OHM 5 0402
R407	0613952R21	CER CHIP RES 68K OHM 5% 0402
R408	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
R409	0613952R01	CER CHIP RES 10K OHM 5% 0402
R410	0613952R25	CER CHIP RES 100K OHM 5% 0402
R411	0613952R01	CER CHIP RES 10K OHM 5% 0402
R413	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R414	0613952P25	CER CHIP RES 178K OHM 1 0402
R415	0613952N93	CER CHIP RES 90.9K OHM 1 0402
R416	0613952R01	CER CHIP RES 10K OHM 5% 0402
R418	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R419	0613952Q66	CER CHIP RES 510 OHM 5 0402
R420	0613952J73	CER CHIP RES 10.0M OHM 5% 0603
R421	0613952Q80	CER CHIP RES 2000 OHM 5 0402
R423	0613952R41	CER CHIP RES 470K OHM 5% 0402
R424	0613952R14	CER CHIP RES 36K OHM 5 0402
R425	0613952R12	CER CHIP RES 30K OHM 5 0402
R426	0613952R37	CER CHIP RES 330K OHM 5% 0402
R427	0613952Q83	CER CHIP RES 2700 OHM 5 0402
R428	0613952Q09	CER CHIP RES 2.2 OHM 5 0402
R429	0613952R22	CER CHIP RES 75K OHM 5 0402
R431	0613952R41	CER CHIP RES 470K OHM 5% 0402
R432	0613952R18	CER CHIP RES 51K OHM 5 0402
R434	0613952Q61	CER CHIP RES 330 OHM 5 0402
R435	0613952Q80	CER CHIP RES 2000 OHM 5 0402
R436	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R437	NOT PLACED	-
R445	0613952R10	CER CHIP RES 24K OHM 5 0402
R447	0613952R25	CER CHIP RES 100K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
R448	0613952R01	CER CHIP RES 10K OHM 5% 0402	R502	0613952Q55	CER CHIP RES 180 OHM 5 0402	R626	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	U101	5115678H01	VHF/UHF/800/900 MHZ LDMOS DRIV
R449	0613952R10	CER CHIP RES 24K OHM 5 0402	R505	0613952R01	CER CHIP RES 10K OHM 5% 0402	R627	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	U102	5185765B26	IC PWR CTRL IN MOS20
R450	0613959Y45	CER CHIP RES OHM 5% 2512	R506	0613952R17	CER CHIP RES 47K OHM 5% 0402	R631	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	U201	5185177Y01	IC TESTED AT25016 48 PIN W18
R451	0613952R05	CER CHIP RES 15K OHM 5% 0402	R507	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R632	0613952R25	CER CHIP RES 100K OHM 5% 0402	U210	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
R452	0613952R25	CER CHIP RES 100K OHM 5% 0402	R601	0613952Z67	RES,MF,51KOHM,1%,.0625 W,SM,040	R633	0613952R25	CER CHIP RES 100K OHM 5% 0402	U211	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
R453	NOT PLACED	-	R602	0613952Z67	RES,MF,51KOHM,1%,.0625 W,SM,040	R646	0613952R25	CER CHIP RES 100K OHM 5% 0402	U241	5105750U56	IC PKG DIE VCO BUFFER
R454	NOT PLACED	-	R603	0613952N12	CER CHIP RES 13.0K OHM 1 0402	R647	0613952Q84	CER CHIP RES 3000 OHM 5 0402	U247	5115026H01	MAX SUPPLY VOL 16V
R455	NOT PLACED	-	R604	0613952Z58	RES,MF,22KOHM,1%,.0625 W,SM,040	R648	0613952R25	CER CHIP RES 100K OHM 5% 0402	U248	5115019H01	3.3V REGULATOR IN SOT23-5 PKG
R456	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R605	0613952N62	CER CHIP RES 43.2K OHM 1 0402	R649	0613952R17	CER CHIP RES 47K OHM 5% 0402	U301	5115281H01	FM IF IC SA616 FROM PHILIPS
R457	0613952R01	CER CHIP RES 10K OHM 5% 0402	R606	0613952P12	CER CHIP RES 130K OHM 1 0402	RT400	0680590Z01	THERMISTOR_33K	U302	5115070H01	IC 3-INV LMOS TC7W04FU
R460	0613952Q89	CER CHIP RES 4700 OHM 5 0402	R607	0613952N12	CER CHIP RES 13.0K OHM 1 0402	S501	4080710Z21	SWITCH, FREQUENCY	U303	NOT PLACED	-
R461	0613952Q55	CER CHIP RES 180 OHM 5 0402	R608	0613952Z58	RES,MF,22KOHM,1%,.0625 W,SM,040	S502	1880619Z06	POTENTIOMETER, VOLUME	U400	5115012H01	MAX SUPPLY VOL 30V
R462	0613952R01	CER CHIP RES 10K OHM 5% 0402	R609	0613952N62	CER CHIP RES 43.2K OHM 1 0402	SH100	2680507Z02	SHIELD, HARMONIC FILTER	U404	5115062H01	IC ASFIC_CMP
R463	0613952Q60	CER CHIP RES 300 OHM 5 0402	R610	0613952P12	CER CHIP RES 130K OHM 1 0402	SH101	2680510Z02	SHIELD, PA	U405	NOT PLACED	-
R471	0613952R08	CER CHIP RES 20K OHM 5 0402	R611	0613952R18	CER CHIP RES 51K OHM 5 0402	SH201	2680511Z02	SHIELD, SYNTHESIZER	U406	5115250H02	NEED CGISS DESCRIPTION IN ICCS
R472	0613952R14	CER CHIP RES 36K OHM 5 0402	R612	0613952R43	CER CHIP RES 560K OHM 5% 0402	SH202	2680511Z02	SHIELD, SYNTHESIZER	U407	5115033H01	16K X 8 SPI SERIAL ROM
R473	0613952Q25	CER CHIP RES 10.0 OHM 5 0402	R613	0613952R49	CER CHIP RES 1.0M OHM 5% 0402	SH241	2604120G02	AOBA VCO SHIELD	U409	5185143E03	HC11FL0 (3V) ASIC MICRO-P
R475	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R614	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	SH242	2680514Z02	SHIELD, VCO BOTTOM/ LVZIF	U410	5115044H01	REGULATOR 3.3V,ILC7062CM-33
R476	0613952R37	CER CHIP RES 330K OHM 5% 0402	R617	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	SH301	2686583Z02	SHIELD, RECEIVER FRONT END TOP	U420	5115280H01	AUDIO AMPLIFIER TDA8547TS
R477	0613952Q73	CER CHIP RES 1000 OHM 5 0402	R618	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH302	2680555Z02	SHIELD, RECEIVER F/END BOTTOM	U602	5115014H01	CMOS,MAX SUPPLY VOL 15.5V
R478	0613952R01	CER CHIP RES 10K OHM 5% 0402	R619	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH303	2680509Z02	SHIELD, MIXER	VR432	4813979P10	DIODE ARRAY,TRANSIENT PROTECTI
R479	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R620	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH304	2680624Z02	SHIELD, MIXER DIODE	VR433	4813979P10	DIODE ARRAY,TRANSIENT PROTECTI
R481	0613952R10	CER CHIP RES 24K OHM 5 0402	R621	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH322	2686528Z02	SHIELD, IF SECTION	VR434	4815038H01	ZENER DIODE-6.8V
R492	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R622	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH323	2686527Z02	SHIELD, RFI/EMI, CRS, TIN	VR439	4813977M21	DIODE,ZEN,MBZ5242,SM,S OT-23,12
R498	0613952R01	CER CHIP RES 10K OHM 5% 0402	R623	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH400	2680505Z02	SHIELD, CONTROLLER TOP LEFT	VR440	4815038H01	ZENER DIODE-6.8V
R499	0613952R01	CER CHIP RES 10K OHM 5% 0402				SH401	2680506Z02	SHIELD, CONTROLLER TOP RIGHT	VR441	4815038H01	ZENER DIODE-6.8V
R501	0613952Q69	CER CHIP RES 680 OHM 5 0402				SH402	2680515Z02	SHIELD, CONTROLLER BOTTOM LEFT	VR442	4815038H01	ZENER DIODE-6.8V
						SH403	2680516Z02	SHIELD, CONTROLLER BTM RIGHT	VR443	4815038H01	ZENER DIODE-6.8V
						T301	2515121H01	BALUN, TRANSFORMER W18 COMP	VR444	4815038H01	ZENER DIODE-6.8V
						T302	2515121H01	BALUN, TRANSFORMER W18 COMP	VR445	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1
									VR446	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1
									VR447	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1
									VR448	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1

Circuit Ref	Motorola Part No.	Description
VR449	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1
VR450	4815040H01	ZENER DIODE-12V
VR460	4815038H01	ZENER DIODE-6.8V
VR501	4813977M14	DIODE,ZEN,MBZ5235,SM,S OT-23,6.
VR506	4815038H01	ZENER DIODE-6.8V
Y300	4802245J84	XTAL 44.395MHZ, 3RD OT, SMD
Y301	9186145B02	CER.DISCR. CDBCA455CX36-TC



**UHF (403-470 MHz) Radio Parts List (PCB 8415234H08)**

Circuit Ref	Motorola Part No.	Description
B501	8415234H08 0986237A02	PC BOARD, UHF BAND 1 CONNECTOR (CONTACT BATTERY)
B503	3980502Z01	CONTACT, BACKUP B+
B504	3980501Z01	CONTACT, BACKUP B-
C101	2113944C45	CAP CER CHP 100.0PF 50V 5%
C102	2113944M16	CAP,FXD,8.2PF,.1PF+/-,50V- DC,0603,C0G,-55DEG CMIN,125DEG CMAX
C103	2113944M21	CAP,FXD,13PF,+2%,- 2%,50V-DC,0603,C
C104	2113944M15	CAP,FXD,7.5PF,.1PF+/-,50V- DC,0603,C0G,-55DEG CMIN,125DEG CMAX
C105	2113944A40	CAP CER CHP 100.0PF 50V 5%
C106	2113944C22	CAP CER CHP 4.7PF 50V +/- 0.25
C107	2113944C18	CAP CER CHP 3.3PF 50V +/- 0.25
C108	2113944A40	CAP CER CHP 100.0PF 50V 5%
C109	2113944C45	CAP CER CHP 100.0PF 50V 5%
C110	2113944A40	CAP CER CHP 100.0PF 50V 5%
C111	2113944C32	CAP CER CHP 15.0PF 50V 5%
C112	2115937H04	HIGH Q CHIP CAPACITOR, 47PF
C113	2115937H01	HIGH Q CHIP CAPACITOR, 10PF
C114	2113944A40	CAP CER CHP 100.0PF 50V 5%
C115	2113944A81	CAP,FXD,24PF,+5%,-5%, 50V-DC,04
C116	2113944A81	CAP,FXD,24PF,+5%,-5%, 50V-DC,04
C117	2113944A29	CAP CER CHP 22.0PF 50V 5%
C118	2113944A40	CAP CER CHP 100.0PF 50V 5%
C119	2113944A40	CAP CER CHP 100.0PF 50V 5%
C120	2113944A77	CAP,FXD,11PF,+5%,- 5%,50V-DC,04
C121	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description
C122	2113944A40	CAP CER CHP 100.0PF 50V 5%
C123	2313960F04	CAP TANT 33 UF 10% 16V 6032-28
C125	2113944A40	CAP CER CHP 100.0PF 50V 5%
C126	2113946K02	CAP CER CHP 0.10UF 16V
C127	2113945A09	CAP CER CHP 1000PF 50V 10%
C128	2113945B04	CAP,FXD,.022UF,+10%,- 10%,25V-D
C129	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C130	2113944A40	CAP CER CHP 100.0PF 50V 5%
C131	2113945B04	CAP,FXD,.022UF,+10%,- 10%,25V-D
C133	2113945A09	CAP CER CHP 1000PF 50V 10%
C134	2113945A12	CAP CER CHP 3300PF 50V 10%
C135	2113945B04	CAP,FXD,.022UF,+10%,- 10%,25V-D
C138	2113944A40	CAP CER CHP 100.0PF 50V 5%
C140	0613952H91	CER CHIP RES 5600 OHM 5 0603
C141	NOT PLACED	-
C150	2113945B04	CAP,FXD,.022UF,+10%,- 10%, 25V-D
C151	2113944A40	CAP CER CHP 100.0PF 50V 5%
C152	2113945B04	CAP,FXD,.022UF,+10%,- 10%,25V-D
C160	2113944A40	CAP CER CHP 100.0PF 50V 5%
C161	2113946K02	CAP CER CHP 0.10UF 16V
C165	2113944A40	CAP CER CHP 100.0PF 50V 5%
C166	2113944A40	CAP CER CHP 100.0PF 50V 5%
C169	2113944A19	CAP CER CHP 5.6PF 50V +/- 0.5P
C170	2113944A40	CAP CER CHP 100.0PF 50V 5%
C171	2113944A40	CAP CER CHP 100.0PF 50V 5%
C172	2113944C45	CAP CER CHP 100.0PF 50V 5%
C173	2113945B04	CAP,FXD,.022UF,+10%,- 10%, 25V-D

Circuit Ref	Motorola Part No.	Description
C174	2113944A40	CAP CER CHP 100.0PF 50V 5%
C175	2113944C45	CAP CER CHP 100.0PF 50V 5%
C201	2113944A40	CAP CER CHP 100.0PF 50V 5%
C202	2113945A09	CAP CER CHP 1000PF 50V 10%
C203	2113946H01	CAP CER CHP 4.7UF 10V 10%
C204	2113946N03	CAP CER CHP 2.2UF 16V
C206	2113944C04	CAP CER CHP 330.0PF 50V 5%
C207	2113944A33	CAP CER CHP 47.0PF 50V 5%
C208	NOT PLACED	-
C210	2113944A40	CAP CER CHP 100.0PF 50V 5%
C211	2113944A40	CAP CER CHP 100.0PF 50V 5%
C212	2113944A40	CAP CER CHP 100.0PF 50V 5%
C213	2113944A40	CAP CER CHP 100.0PF 50V 5%
C214	2113944A40	CAP CER CHP 100.0PF 50V 5%
C217	2113946N03	CAP CER CHP 2.2UF 16V
C218	2113946K02	CAP CER CHP 0.10UF 16V
C219	2113946L03	CAP CER CHP 0.22UF 16V
C220	2113944A40	CAP CER CHP 100.0PF 50V 5%
C223	2113946K02	CAP CER CHP 0.10UF 16V
C224	2113946K02	CAP CER CHP 0.10UF 16V
C228	2313960D05	CAP,FXD,4.7UF,+10%,- 10%,16V-DC
C229	2113945A09	CAP CER CHP 1000PF 50V 10%
C230	2113944A40	CAP CER CHP 100.0PF 50V 5%
C231	2113946K02	CAP CER CHP 0.10UF 16V
C232	2113945D02	CAP CER CHP 47,000PF 25V 10%
C233	2313960A26	CAP,FXD,.1UF,+10%,- 10%,35V-DC,
C234	2313960A55	CAP,FXD,.47UF,+10%,- 10%,25V-DC
C235	2113946N03	CAP CER CHP 2.2UF 16V
C238	2113945L17	CAP,FXD,470PF,+5%,- 5%,50V-DC,0
C241	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description
C242	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C243	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C244	2113944C13	CAP CER CHP 2.0PF 50V +/- 0.25
C245	2113944A10	CAP CER CHP 2.4PF 50V +/- 0.25
C246	2113944A40	CAP CER CHP 100.0PF 50V 5%
C247	2113944A40	CAP CER CHP 100.0PF 50V 5%
C248	2113946K02	CAP CER CHP 0.10UF 16V
C250	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P
C251	2113944A40	CAP CER CHP 100.0PF 50V 5%
C252	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5
C253	2113944C12	CAP CER CHP 1.8PF 50V +/- 0.25
C254	2113944A14	CAP CER CHP 3.6PF 50V +/- 0.25
C255	2113944A40	CAP CER CHP 100.0PF 50V 5%
C257	2113944A40	CAP CER CHP 100.0PF 50V 5%
C258	2113945B02	CAP CER CHP 10,000PF 25V 10%
C259	2113945B02	CAP CER CHP 10,000PF 25V 10%
C260	2113944A40	CAP CER CHP 100.0PF 50V 5%
C263	2113944A62	CAP,FXD,.75PF,.25PF+/- 50V-DC,
C264	2113944A40	CAP CER CHP 100.0PF 50V 5%
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	NOT PLACED	-
C273	2113946K02	CAP CER CHP 0.10UF 16V
C276	2113946N03	CAP CER CHP 2.2UF 16V
C277	2113944A40	CAP CER CHP 100.0PF 50V 5%
C278	2313960D07	CAP,FXD,10,+10,-10,16,SM,- 55M
C279	2113946N03	CAP CER CHP 2.2UF 16V
C281	2113944A40	CAP CER CHP 100.0PF 50V 5%
C285	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
C286	2113946K02	CAP CER CHP 0.10UF 16V	C320	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,04	C375	2113944A40	CAP CER CHP 100.0PF 50V 5%	C420	2113945B02	CAP CER CHP 10,000PF 25V 10%
C289	2113944A40	CAP CER CHP 100.0PF 50V 5%	C321	2113944A40	CAP CER CHP 100.0PF 50V 5%	C378	NOT PLACED	-	C421	2113946B04	CAP CER CHP 0.10UF 10V 10%
C291	2313960M51	CAP,FXD,10UF,+10%,-10%,6.3V-DC	C322	2113944A38	CAP CER CHP 82.0PF 50V 5%	C380	2113945B02	CAP CER CHP 10,000PF 25V 10%	C422	2113946K02	CAP CER CHP 0.10UF 16V
C292	2113946K02	CAP CER CHP 0.10UF 16V	C324	2113944A29	CAP CER CHP 22.0PF 50V 5%	C381	NOT PLACED	-	C423	2113944A40	CAP CER CHP 100.0PF 50V 5%
C293	2113945G98	CAP,FXD,.47UF,+10%,-10%,50V-DC	C325	2115153H26	CAP, CERAMIC, COG	C382	2313960B57	CAP,FXD,10UF,+10%,-10%,6.3V-DC	C424	2313960B57	CAP,FXD,10UF,+10%,-10%,6.3V-DC
C294	2113944A40	CAP CER CHP 100.0PF 50V 5%	C326	2113946K02	CAP CER CHP 0.10UF 16V	C383	NOT PLACED	-	C425	2113946K02	CAP CER CHP 0.10UF 16V
C295	2113944A40	CAP CER CHP 100.0PF 50V 5%	C327	2113946K02	CAP CER CHP 0.10UF 16V	C385	2113944A31	CAP CER CHP 33.0PF 50V 5%	C426	2113944A40	CAP CER CHP 100.0PF 50V 5%
C296	2113946K02	CAP CER CHP 0.10UF 16V	C328	2113946K02	CAP CER CHP 0.10UF 16V	C386	2113944A40	CAP CER CHP 100.0PF 50V 5%	C427	2113944A40	CAP CER CHP 100.0PF 50V 5%
C297	2113945B02	CAP CER CHP 10,000PF 25V 10%	C329	2113946K02	CAP CER CHP 0.10UF 16V	C387	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX,PB	C428	2113946K02	CAP CER CHP 0.10UF 16V
C298	2113946K02	CAP CER CHP 0.10UF 16V	C334	2113945A13	CAP CER CHP 4700PF 50V 10%	C388	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX,PB	C429	2113946K02	CAP CER CHP 0.10UF 16V
C301	2113944A14	CAP CER CHP 3.6PF 50V +/- 0.25	C337	NOT PLACED	-	C389	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX,PB	C430	2113946B04	CAP CER CHP 0.10UF 10V 10%
C302	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5	C338	NOT PLACED	-	C390	NOT PLACED	-	C431	2113944A40	CAP CER CHP 100.0PF 50V 5%
C303	2113944C20	CAP CER CHP 3.9PF 50V +/- 0.25	C343	2113946K02	CAP CER CHP 0.10UF 16V	C391	2113944A81	CAP CHIP 24.0 PF 5% COG	C432	NOT PLACED	-
C304	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5	C344	2113945D04	CAP CER CHP 100,000PF 25V 10%	C392	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX,PB	C433	2113945B02	CAP CER CHP 10,000PF 25V 10%
C305	2113944A80	CAP,FXD,20PF,+5%,-5%,50V-DC,04	C345	2113946K02	CAP CER CHP 0.10UF 16V	C400	2113944A40	CAP CER CHP 100.0PF 50V 5%	C434	2113946B04	CAP CER CHP 0.10UF 10V 10%
C306	NOT PLACED	-	C346	2113946K02	CAP CER CHP 0.10UF 16V	C401	2113946K02	CAP CER CHP 0.10UF 16V	C435	2113946K02	CAP CER CHP 0.10UF 16V
C307	2113944A40	CAP CER CHP 100.0PF 50V 5%	C347	2113946K02	CAP CER CHP 0.10UF 16V	C402	2113946K02	CAP CER CHP 0.10UF 16V	C436	2113944A29	CAP CER CHP 22.0PF 50V 5%
C308	2113944A40	CAP CER CHP 100.0PF 50V 5%	C348	2113946K02	CAP CER CHP 0.10UF 16V	C403	2316410H03	EPP POSCAP,10UF, +20%,-20%	C437	2113944A29	CAP CER CHP 22.0PF 50V 5%
C309	2113944A40	CAP CER CHP 100.0PF 50V 5%	C349	2113945D04	CAP CER CHP 100,000PF 25V 10%	C404	NOT PLACED	-	C440	2113946Q01	CAP CER CHP 4.7UF 16V
C310	2113944A40	CAP CER CHP 100.0PF 50V 5%	C350	2113946K02	CAP CER CHP 0.10UF 16V	C405	2113944A40	CAP CER CHP 100.0PF 50V 5%	C441	2113944A40	CAP CER CHP 100.0PF 50V 5%
C311	NOT PLACED	-	C351	2113944A41	CAP CER CHP 120.0PF 50V 5%	C406	NOT PLACED	-	C442	2113945D04	CAP CER CHP 100,000PF 25V 10%
C312	2113944A24	CAP CER CHP 9.1PF 50V +/- 0.5P	C352	2113946K02	CAP CER CHP 0.10UF 16V	C407	2113946B04	CAP CER CHP 0.10UF 10V 10%	C443	2113946B04	CAP CER CHP 0.10UF 10V 10%
C313	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5	C355	2113946K02	CAP CER CHP 0.10UF 16V	C408	2113944A40	CAP CER CHP 100.0PF 50V 5%	C444	2113944A40	CAP CER CHP 100.0PF 50V 5%
C314	2113946K02	CAP CER CHP 0.10UF 16V	C357	2113946K02	CAP CER CHP 0.10UF 16V	C409	2113946K02	CAP CER CHP 0.10UF 16V	C445	2113944A40	CAP CER CHP 100.0PF 50V 5%
C315	2113944A40	CAP CER CHP 100.0PF 50V 5%	C358	NOT PLACED	-	C410	2113946B04	CAP CER CHP 0.10UF 10V 10%	C447	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-D
C316	2113944C20	CAP CER CHP 3.9PF 50V +/- 0.25	C359	NOT PLACED	-	C411	2113946K02	CAP CER CHP 0.10UF 16V	C448	2113946B04	CAP CER CHP 0.10UF 10V 10%
C317	2113944A24	CAP CER CHP 9.1PF 50V +/- 0.5P	C360	2113944A13	CAP CER CHP 3.3PF 50V +/- 0.25	C414	2113946K02	CAP CER CHP 0.10UF 16V	C449	2113944A40	CAP CER CHP 100.0PF 50V 5%
C318	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5P	C361	2113946K02	CAP CER CHP 0.10UF 16V	C415	2185895Z01	CAPACITOR CER LOW DIST .01UF	C450	NOT PLACED	-
C319	2113944A11	CAP CER CHP 2.7PF 50V +/- 0.25	C362	2113946K02	CAP CER CHP 0.10UF 16V	C416	2113946B04	CAP CER CHP 0.10UF 10V 10%	C451	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-D
			C364	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,04	C419	NOT PLACED	-			
			C366	NOT PLACED	-						
			C367	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,04						
			C370	2113944A17	CAP CER CHP 4.7PF 50V +/- 0.25						
			C371	NOT PLACED	-						
			C372	2113944A40	CAP CER CHP 100.0PF 50V 5%						
			C373	NOT PLACED	-						
			C374	2113944A40	CAP CER CHP 100.0PF 50V 5%						

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
C452	2113955D31	CAP,FXD,1UF,+10%,-10%,16V-DC,	C502	2313960A55	CAP,FXD,.47UF,+10%,-10%,25V-DC	C605	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR305	4815279H01	BBY5503WE6327 FROM INFINEON
C453	2113944A40	CAP CER CHP 100.0PF 50V 5%	C503	2113944A84	CAP,FXD,43PF,+5%,-5%,50V-DC,04	C610	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR306	4815923H02	SCHOTTKY DIODE-NEW LEADFREE
C456	2113944A40	CAP CER CHP 100.0PF 50V 5%	C505	2113944A40	CAP CER CHP 100.0PF 50V 5%	C611	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR311	4813974A19	DIODE ARRAY,MXR, SM,SOT-323,7V,
C458	2113944A40	CAP CER CHP 100.0PF 50V 5%	C511	2113944A40	CAP CER CHP 100.0PF 50V 5%	C612	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR312	4815047H01	BAND SWITCHIND DIODE,ROHM DAN
C459	2113944A40	CAP CER CHP 100.0PF 50V 5%	C512	2113944A40	CAP CER CHP 100.0PF 50V 5%	C613	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR313	4815047H01	BAND SWITCHIND DIODE,ROHM DAN
C463	2113944A40	CAP CER CHP 100.0PF 50V 5%	C513	2113944A40	CAP CER CHP 100.0PF 50V 5%	C615	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR411	4815067H01	DIODE SCHOTTKY, RB731U
C466	2113944A40	CAP CER CHP 100.0PF 50V 5%	C514	2113944A40	CAP CER CHP 100.0PF 50V 5%	C616	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR412	4815067H01	DIODE SCHOTTKY, RB731U
C467	2113946B04	CAP CER CHP 0.10UF 10V 10%	C520	2113945B02	CAP CER CHP 10,000PF 25V 10%	C618	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR413	4815067H01	DIODE SCHOTTKY, RB731U
C471	2113944A40	CAP CER CHP 100.0PF 50V 5%	C521	2113945B02	CAP CER CHP 10,000PF 25V 10%	C619	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR440	4813978C02	PB FREE, NOT COMPLETELY ENRICH
C472	2113945A05	CAP CER CHP 470PF 50V 10%	C522	2113945B02	CAP CER CHP 10,000PF 25V 10%	C620	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR501	4815155H01	RECTIFIER
C473	2113945A05	CAP CER CHP 470PF 50V 10%	C523	2113945B02	CAP CER CHP 10,000PF 25V 10%	C621	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR503	4805729G49	DIODE RED/YEL
C475	2113956E91	CAP,FXD,10UF,+10%,-10%,16V-DC,	C524	2113944A40	CAP CER CHP 100.0PF 50V 5%	C622	2113944A40	CAP CER CHP 100.0PF 50V 5%	D601	4880479U01	LED
C476	2113946R01	CAP CER CHP 10.0UF 10V	C525	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR101	4880973Z02	PIN DIODE	D602	4880479U01	LED
C479	2113946B04	CAP CER CHP 0.10UF 10V 10%	C526	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR102	4815257H01	SURFACE MOUNT PIN DIODES	D603	4880479U01	LED
C480	2113946R01	CAP CER CHP 10.0UF 10V	C527	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR103	4815257H01	SURFACE MOUNT PIN DIODES	D604	4880479U01	LED
C481	2113946B04	CAP CER CHP 0.10UF 10V 10%	C528	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR105	5115022H01	IC TEMPERATURE SENSOR	D605	4880479U01	LED
C482	2113946B04	CAP CER CHP 0.10UF 10V 10%	C529	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR160	NOT PLACED	-	D606	4880479U01	LED
C490	2113944A40	CAP CER CHP 100.0PF 50V 5%	C597	2113944A84	CAP,FXD,43PF,+5%,-5%,50V-DC,0402,C0	CR201	4815011H01	DIODE TRIPLE	E101	2415954H01	INDUCTOR BEAD CHIP
C491	2113944A40	CAP CER CHP 100.0PF 50V 5%	C598	2113944A15	CAP CER CHP 3.9PF 50V +/-0.25	CR203	4815072H01	DIODE VARACTOR	E102	7686949J14	FLTR,FERRITE BEAD,2A,SM
C492	2113944A40	CAP CER CHP 100.0PF 50V 5%	C599	2113944A17	CAP CER CHP 4.7PF 50V +/-0.25	CR241	4885094Y01	DIODE VARACTOR ISV228 W18	E105	7686949J14	FLTR,FERRITE BEAD,2A,SM,0805
C493	2113944A40	CAP CER CHP 100.0PF 50V 5%	C600	2113944A81	CAP CHIP 24.0 PF 5% COG	CR242	4815279H01	BBY5503WE6327 FROM INFINEON	E106	7686949J15	FLTR,FERR,2A,SM,0603
C494	2113944A40	CAP CER CHP 100.0PF 50V 5%	C601	2113944A40	CAP CHIP 100 PF 5% COG	CR243	4815279H01	BBY5503WE6327 FROM INFINEON	E107	7686949J15	FLTR,FERR,2A,SM,0603
C495	2113944A40	CAP CER CHP 100.0PF 50V 5%	C602	2113944A17	CAP CHIP 4.7 PF +/-25PF COG	CR251	4815322H01	VHF VARIABLE CAPACITANCE DIODE	E400	2480640Z01	SURFACE MOUNT FERRITE BEAD
C496	2113944A40	CAP CER CHP 100.0PF 50V 5%	C603	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX,PB	CR301	4815279H01	BBY5503WE6327 FROM INFINEON	E401	2480640Z01	SURFACE MOUNT FERRITE BEAD
C497	2113944A40	CAP CER CHP 100.0PF 50V 5%	C604	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX,PB	CR302	4815279H01	BBY5503WE6327 FROM INFINEON	E402	2480640Z01	SURFACE MOUNT FERRITE BEAD
C498	NOT PLACED	-				CR303	4815048H01	SOT MMBD353 DIODE DUAL SCHT	E403	2480640Z01	SURFACE MOUNT FERRITE BEAD
C499	2113946B04	CAP CER CHP 0.10UF 10V 10%				CR304	4815279H01	BBY5503WE6327 FROM INFINEON	E404	2480640Z01	SURFACE MOUNT FERRITE BEAD
									E405	2480640Z01	SURFACE MOUNT FERRITE BEAD
									E406	2480640Z01	SURFACE MOUNT FERRITE BEAD
									E407	2480640Z01	SURFACE MOUNT FERRITE BEAD
									E408	2480640Z01	SURFACE MOUNT FERRITE BEAD
									E409	2480640Z01	SURFACE MOUNT FERRITE BEAD



Circuit Ref	Motorola Part No.	Description
R130	0613952R01	CER CHIP RES 10K OHM 5% 0402
R131	0613952R07	CER CHIP RES 18K OHM 5% 0402
R132	0613952R35	CER CHIP RES 270K OHM 5% 0402
R133	NOT PLACED	-
R136	NOT PLACED	-
R161	0613952Q56	CER CHIP RES 200 OHM 5 0402
R170	0613952H58	CER CHIP RES 240 OHM 5 0603
R171	0613952R16	CER CHIP RES 43K OHM 5 0402
R172	0613952H49	CER CHIP RES 100 OHM 5% 0603
R173	0613952R31	CER CHIP RES 180K OHM 5% 0402
R174	0613952R17	CER CHIP RES 47K OHM 5% 0402
R175	0613952H12	CER CHIP RES 3.0 OHM 5 0603
R176	0613952H12	CER CHIP RES 3.0 OHM 5 0603
R201	0613952R23	CER CHIP RES 82K OHM 5% 0402
R202	0613952R25	CER CHIP RES 100K OHM 5% 0402
R204	0613952R17	CER CHIP RES 47K OHM 5% 0402
R231	0613952Q51	CER CHIP RES 120 OHM 5 0402
R232	0613952Q68	CER CHIP RES 620 OHM 5 0402
R233	0613952Q67	CER CHIP RES 560 OHM 5 0402
R241	0613952Q31	CER CHIP RES 18.0 OHM 5 0402
R242	0613952Q56	CER CHIP RES 200 OHM 5 0402
R243	0613952R01	CER CHIP RES 10K OHM 5% 0402
R244	0613952R03	CER CHIP RES 12K OHM 5% 0402
R245	0613952Q58	CER CHIP RES 240 OHM 5 0402
R248	0613952Q36	CER CHIP RES 30.0 OHM 5 0402
R251	0613952Q31	CER CHIP RES 18.0 OHM 5 0402

Circuit Ref	Motorola Part No.	Description
R252	0613952Q61	CER CHIP RES 330 OHM 5 0402
R253	0613952Q94	CER CHIP RES 7500 OHM 5 0402
R254	0613952Q94	CER CHIP RES 7500 OHM 5 0402
R255	0613952Q88	CER CHIP RES 4300 OHM 5 0402
R256	0613952Q36	CER CHIP RES 30.0 OHM 5 0402
R260	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R281	NOT PLACED	-
R301	0613952R25	CER CHIP RES 100K OHM 5% 0402
R302	0613952R25	CER CHIP RES 100K OHM 5% 0402
R303	0613952Q80	CER CHIP RES 2000 OHM 5 0402
R304	0613952R03	CER CHIP RES 12K OHM 5% 0402
R305	0613952Q66	CER CHIP RES 510 OHM 5 0402
R306	0613952R25	CER CHIP RES 100K OHM 5% 0402
R307	0613952R25	CER CHIP RES 100K OHM 5% 0402
R308	0613952Q42	CER CHIP RES 51.0 OHM 5 0402
R309	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R310	NOT PLACED	-
R311	0613952R13	CER CHIP RES 33K OHM 5% 0402
R312	0613952Q89	CER CHIP RES 4700 OHM 5 0402
R313	0613952Q61	CER CHIP RES 330 OHM 5 0402
R314	0613952Q78	CER CHIP RES 1600 OHM 5 0402
R315	0613952R03	CER CHIP RES 12K OHM 5% 0402
R320	NOT PLACED	-
R321	0613952R15	CER CHIP RES 39K OHM 5% 0402
R322	0613952Q73	CER CHIP RES 1000 OHM 5 0402
R324	0613952R08	CER CHIP RES 20K OHM 5 0402
R328	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM

Circuit Ref	Motorola Part No.	Description
R329	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R330	0613952R01	CER CHIP RES 10K OHM 5% 0402
R331	0613952Q56	CER CHIP RES 200 OHM 5 0402
R332	0613952R03	CER CHIP RES 12K OHM 5% 0402
R333	NOT PLACED	-
R339	0613952Q88	CER CHIP RES 4300 OHM 5 0402
R340	0613952Q94	CER CHIP RES 7500 OHM 5 0402
R342	0613952R25	CER CHIP RES 100K OHM 5% 0402
R344	0613952Q42	CER CHIP RES 51.0 OHM 5 0402
R345	0613952R15	CER CHIP RES 39K OHM 5% 0402
R346	0613952R05	CER CHIP RES 15K OHM 5% 0402
R348	0613952Q86	CER CHIP RES 3600 OHM 5 0402
R349	0613958J74	CER CHIP RES 0.0 OHM JMP 0805
R350	0613952Q85	CER CHIP RES 3300 OHM 5 0402
R355	0613952R25	CER CHIP RES 100K OHM 5% 0402
R358	0613952Q82	CER CHIP RES 2400 OHM 5 0402
R359	NOT PLACED	-
R360	0613952R08	CER CHIP RES 20K OHM 5 0402
R361	0613952R08	CER CHIP RES 20K OHM 5 0402
R363	0613952Q63	CER CHIP RES 390 OHM 5 0402
R364	0613952Q79	CER CHIP RES 1800 OHM 5 0402
R365	0613952Q75	CER CHIP RES 1200 OHM 5 0402
R366	0613952R03	CER CHIP RES 12K OHM 5% 0402
R367	0613952N09	CER CHIP RES 12.1K OHM 1 0402
R368	0613952N01	CER CHIP RES 10.0K OHM 1 0402
R369	0613952Q69	CER CHIP RES 680 OHM 5 0402

Circuit Ref	Motorola Part No.	Description
R370	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R371	NOT PLACED	-
R372	NOT PLACED	-
R373	NOT PLACED	-
R374	NOT PLACED	-
R375	NOT PLACED	-
R376	NOT PLACED	-
R377	NOT PLACED	-
R378	NOT PLACED	-
R400	0613952R17	CER CHIP RES 47K OHM 5% 0402
R401	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R406	0613952R22	CER CHIP RES 75K OHM 5 0402
R407	0613952R21	CER CHIP RES 68K OHM 5% 0402
R408	NOT PLACED	-
R409	0613952R01	CER CHIP RES 10K OHM 5% 0402
R410	0613952R25	CER CHIP RES 100K OHM 5% 0402
R411	0613952R01	CER CHIP RES 10K OHM 5% 0402
R413	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R414	0613952P25	CER CHIP RES 178K OHM 1 0402
R415	0613952N93	CER CHIP RES 90.9K OHM 1 0402
R416	0613952R01	CER CHIP RES 10K OHM 5% 0402
R418	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R419	0613952Q66	CER CHIP RES 510 OHM 5 0402
R420	0613952J73	CER CHIP RES 10.0M OHM 5% 0603
R421	0613952Q80	CER CHIP RES 2000 OHM 5 0402
R423	0613952R41	CER CHIP RES 470K OHM 5% 0402
R424	0613952R14	CER CHIP RES 36K OHM 5 0402
R425	0613952R12	CER CHIP RES 30K OHM 5 0402

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
R426	0613952R37	CER CHIP RES 330K OHM 5% 0402	R472	0613952R14	CER CHIP RES 36K OHM 5 0402	R610	0613952P12	CER CHIP RES 130K OHM 1 0402	SH241	2604120G02	AOBA VCO SHIELD
R427	0613952Q83	CER CHIP RES 2700 OHM 5 0402	R473	0613952Q25	CER CHIP RES 10.0 OHM 5 0402	R611	0613952R18	CER CHIP RES 51K OHM 5 0402	SH242	2680514Z02	SHIELD, VCO BOTTOM/LVZIF
R428	0613952Q09	CER CHIP RES 2.2 OHM 5 0402	R475	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R612	0613952R43	CER CHIP RES 560K OHM 5% 0402	SH301	2686583Z02	SHIELD, RECEIVER FRONT END TOP
R429	0613952R22	CER CHIP RES 75K OHM 5 0402	R476	0613952R37	CER CHIP RES 330K OHM 5% 0402	R613	0613952R49	CER CHIP RES 1.0M OHM 5% 0402	SH302	2680555Z02	SHIELD, RECEIVER F/END BOTTOM
R431	0613952R41	CER CHIP RES 470K OHM 5% 0402	R477	0613952Q73	CER CHIP RES 1000 OHM 5 0402	R614	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	SH303	2680509Z02	SHIELD, MIXER
R432	0613952R18	CER CHIP RES 51K OHM 5 0402	R478	0613952R01	CER CHIP RES 10K OHM 5% 0402	R617	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	SH304	2680624Z02	SHIELD, MIXER DIODE
R434	0613952Q61	CER CHIP RES 330 OHM 5 0402	R479	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R618	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH322	2686528Z02	SHIELD, IF SECTION
R435	0613952Q80	CER CHIP RES 2000 OHM 5 0402	R481	0613952R10	CER CHIP RES 24K OHM 5 0402	R619	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH323	2686527Z02	SHIELD, RFI/EMI, CRS, TIN
R436	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R492	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R620	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH400	2680505Z02	SHIELD, CONTROLLER TOP LEFT
R437	NOT PLACED	-	R498	0613952R01	CER CHIP RES 10K OHM 5% 0402	R621	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH401	2680506Z02	SHIELD, CONTROLLER TOP RIGHT
R445	0613952R10	CER CHIP RES 24K OHM 5 0402	R499	0613952R01	CER CHIP RES 10K OHM 5% 0402	R622	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH402	2680515Z02	SHIELD, CONTROLLER BOTTOM LEFT
R447	0613952R25	CER CHIP RES 100K OHM 5% 0402	R501	0613952Q69	CER CHIP RES 680 OHM 5 0402	R623	0613952Q73	CER CHIP RES 1000 OHM 5 0402	SH403	2680516Z02	SHIELD, CONTROLLER BTM RIGHT
R448	0613952R01	CER CHIP RES 10K OHM 5% 0402	R502	0613952Q55	CER CHIP RES 180 OHM 5 0402	R626	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	T301	2515121H01	BALUN, TRANSFORMER W18 COMP
R449	0613952R10	CER CHIP RES 24K OHM 5 0402	R505	0613952R01	CER CHIP RES 10K OHM 5% 0402	R627	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	T302	2515121H01	BALUN, TRANSFORMER W18 COMP
R450	0613959Y45	CER CHIP RES OHM 5% 2512	R506	0613952R17	CER CHIP RES 47K OHM 5% 0402	R631	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	U101	5115678H01	VHF/UHF/800/900 MHZ LDMOS DRIV
R451	0613952R05	CER CHIP RES 15K OHM 5% 0402	R507	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R632	0613952R25	CER CHIP RES 100K OHM 5% 0402	U102	5185765B26	IC PWR CTRL IN MOS20
R452	0613952R25	CER CHIP RES 100K OHM 5% 0402	R601	0613952Z67	RES,MF,51KOHM,1%,.0625 W,SM,040	R633	0613952R25	CER CHIP RES 100K OHM 5% 0402	U201	5185177Y01	IC TESTED AT25016 48 PIN W18
R453	NOT PLACED	-	R602	0613952Z67	RES,MF,51KOHM,1%,.0625 W,SM,040	R646	0613952R25	CER CHIP RES 100K OHM 5% 0402	U210	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
R454	NOT PLACED	-	R603	0613952N12	CER CHIP RES 13.0K OHM 1 0402	R647	0613952Q84	CER CHIP RES 3000 OHM 5 0402	U211	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
R455	NOT PLACED	-	R604	0613952Z58	RES,MF,22KOHM,1%,.0625 W,SM,040	R648	0613952R25	CER CHIP RES 100K OHM 5% 0402	U241	5171121L01	CUSTOM LOW VOLTAGE VCO BUFFER IC
R456	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R605	0613952N62	CER CHIP RES 43.2K OHM 1 0402	R649	0613952R17	CER CHIP RES 47K OHM 5% 0402	U247	5115026H01	MAX SUPPLY VOL 16V
R457	0613952R01	CER CHIP RES 10K OHM 5% 0402	R606	0613952P12	CER CHIP RES 130K OHM 1 0402	RT400	0680590Z01	THERMISTOR_33K	U248	5115019H01	3.3V REGULATOR IN SOT23-5 PKG
R460	0613952Q89	CER CHIP RES 4700 OHM 5 0402	R607	0613952N12	CER CHIP RES 13.0K OHM 1 0402	S501	4080710Z21	SWITCH, FREQUENCY	U301	5115281H01	FM IF IC SA616 FROM PHILIPS
R461	0613952Q55	CER CHIP RES 180 OHM 5 0402	R608	0613952Z58	RES,MF,22KOHM,1%,.0625 W,SM,040	S502	1880619Z06	POTENTIOMETER, VOLUME	U302	5115070H01	IC 3-INV LMOS TC7W04FU
R462	0613952R01	CER CHIP RES 10K OHM 5% 0402	R609	0613952N62	CER CHIP RES 43.2K OHM 1 0402	SH100	2680507Z02	SHIELD, HARMONIC FILTER	U303	NOT PLACED	-
R463	0613952Q60	CER CHIP RES 300 OHM 5 0402				SH101	2680510Z02	SHIELD, PA	U400	5115012H01	MAX SUPPLY VOL 30V
R471	0613952R08	CER CHIP RES 20K OHM 5 0402				SH201	2680511Z02	SHIELD, SYNTHESIZER	U404	5115062H01	IC ASFIC_CMP
						SH202	2680511Z02	SHIELD, SYNTHESIZER	U405	NOT PLACED	-
									U406	5115250H02	NEED CGISS DESCRIPTION IN ICSS
									U407	5115033H01	16K X 8 SPI SERIAL ROM
									U409	5185143E03	HC11FL0 (3V) ASIC MICRO-P
									U410	5115044H01	REGULATOR 3.3V,ILC7062CM-33

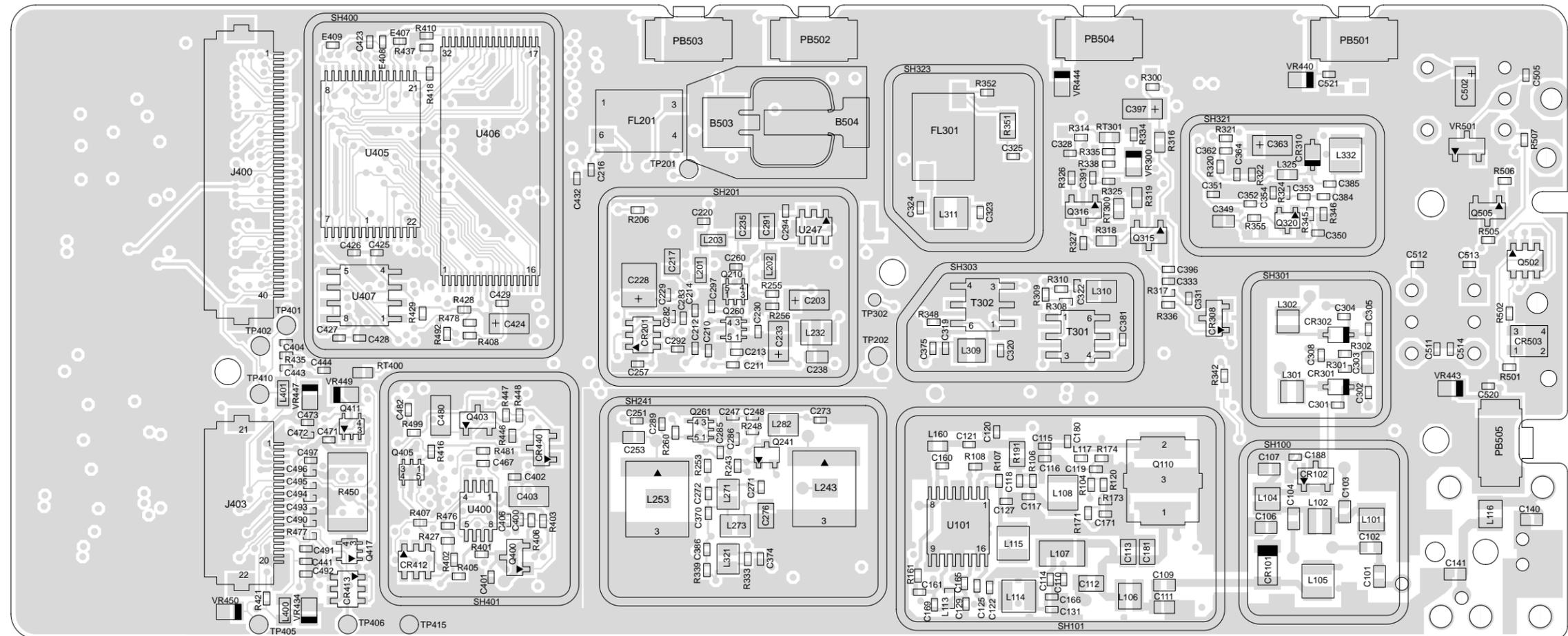
Circuit Ref	Motorola Part No.	Description
U420	5115280H01	AUDIO AMPLIFIER TDA8547TS
U602	5115014H01	CMOS,MAX SUPPLY VOL 15.5V
VR432	4813979P10	DIODE ARRAY,TRANSIENT PROTECTI
VR433	4813979P10	DIODE ARRAY,TRANSIENT PROTECTI
VR434	4815038H01	ZENER DIODE-6.8V
VR439	4813977M21	DIODE,ZEN,MBZ5242,SM,S OT-23,12
VR440	4815038H01	ZENER DIODE-6.8V
VR441	4815038H01	ZENER DIODE-6.8V
VR442	4815038H01	ZENER DIODE-6.8V
VR443	4815038H01	ZENER DIODE-6.8V
VR444	4815038H01	ZENER DIODE-6.8V
VR445	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1
VR446	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1
VR447	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1
VR448	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1
VR449	4813977A54	DIODE,ZEN,MM3Z10V,SM,S OD-323,1
VR450	4815040H01	ZENER DIODE-12V
VR460	4815038H01	ZENER DIODE-6.8V
VR501	4813977M14	DIODE,ZEN,MBZ5235,SM,S OT-23,6.
VR506	4815038H01	ZENER DIODE-6.8V
Y300	4802245J84	XTAL 44.395MHZ, 3RD OT, SMD
Y301	9186145B02	CER.DISCR. CDBCA455CX36-TC

## Notes



### 9.12 UHF Band 1 Circuit Board/Schematic Diagrams and Parts List

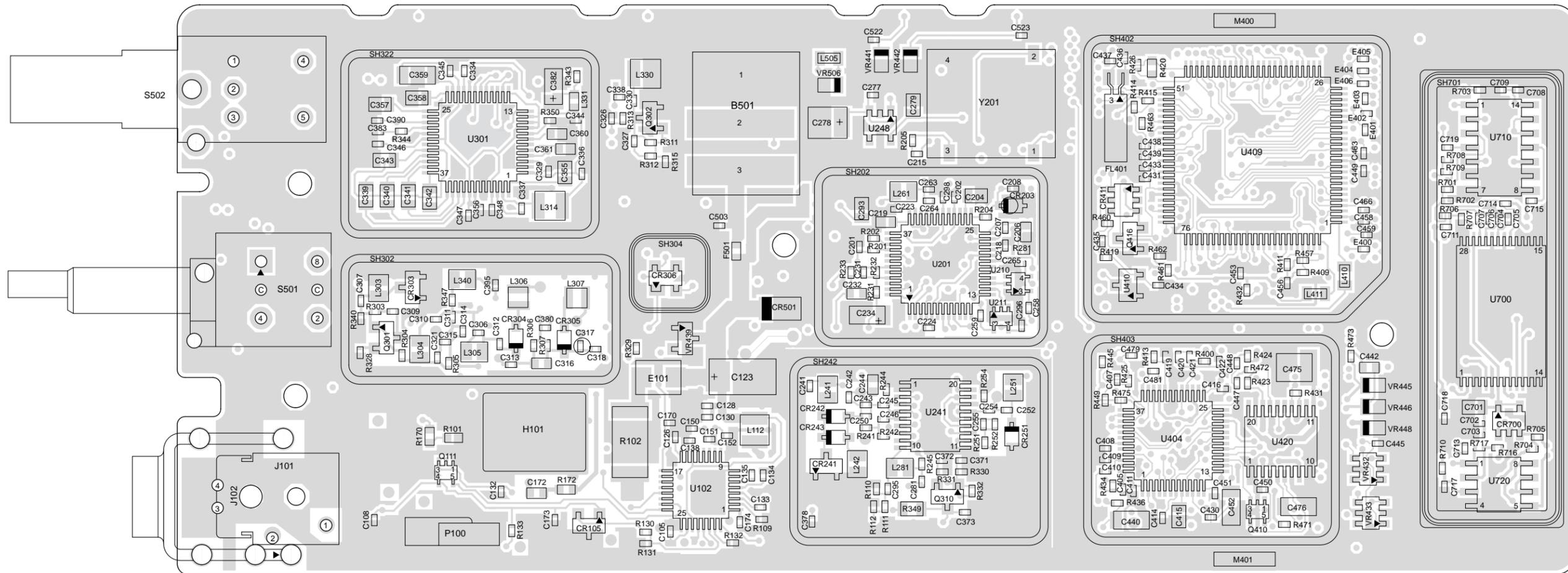
VIEWED FROM SIDE 1



ZMY0130258-O

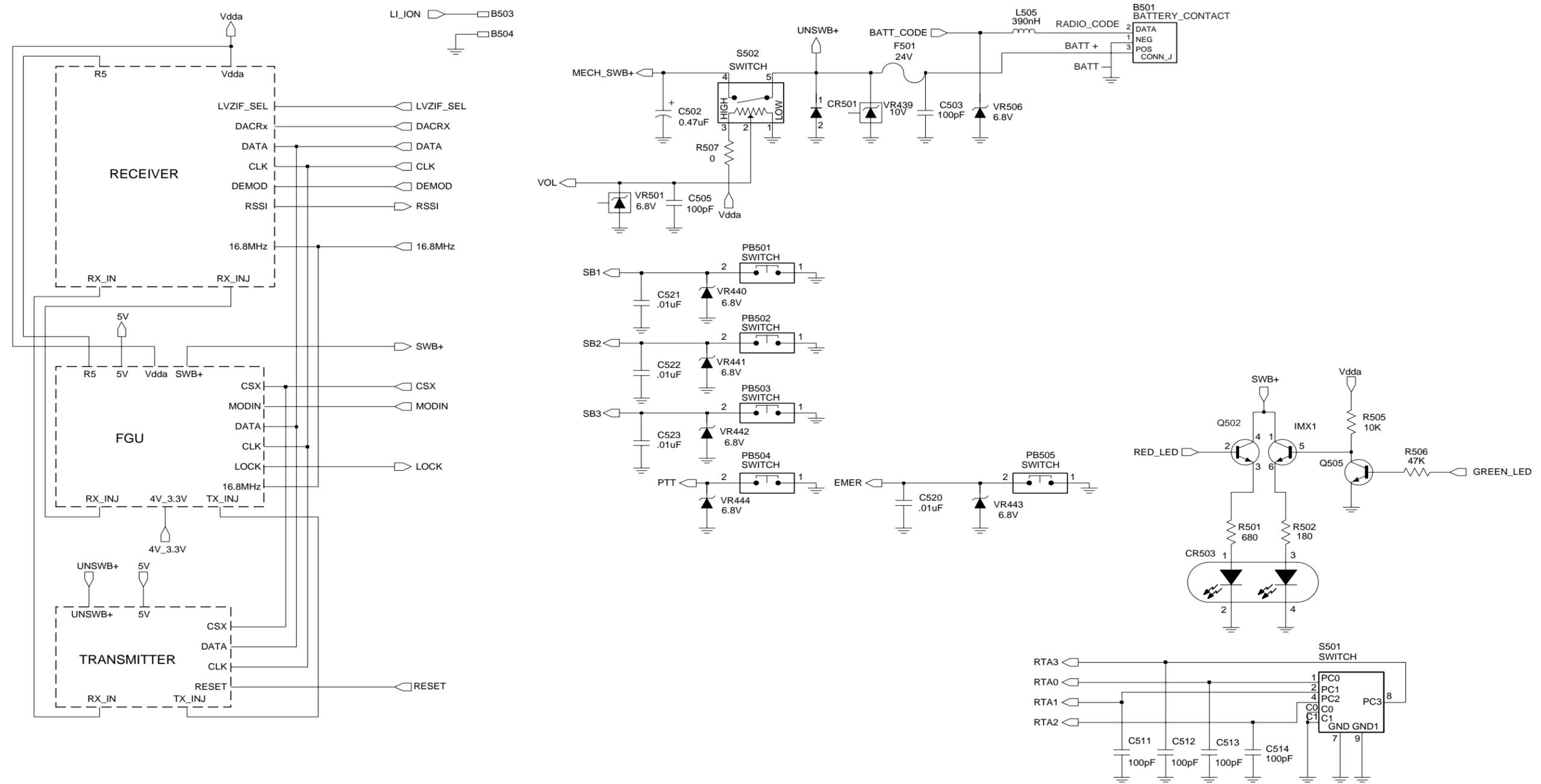
Figure 9-90. UHF (403-470 MHz) 9000 Series Main Board Top Side PCB

VIEWED FROM SIDE 2



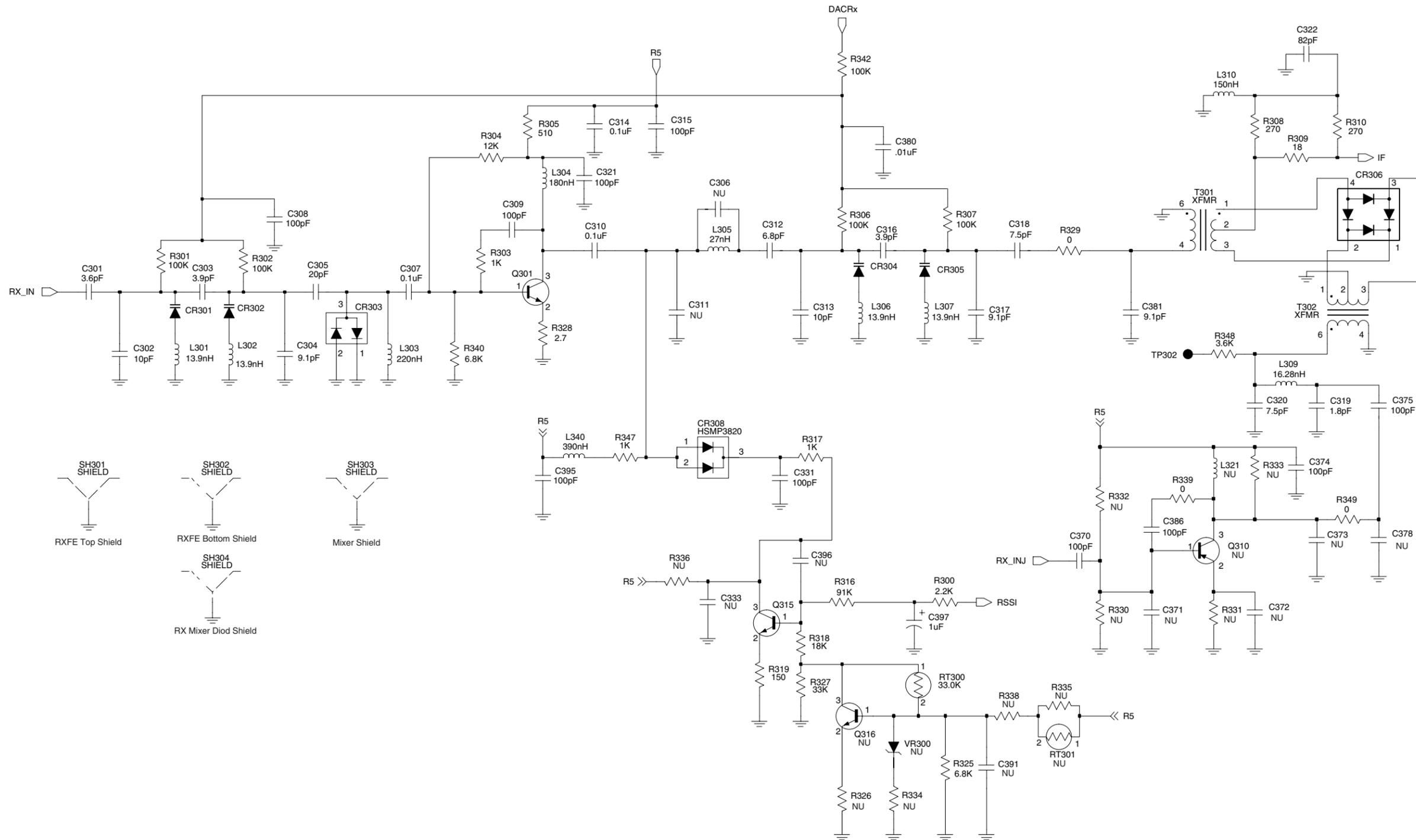
ZMY0130259-O

Figure 9-91. UHF (403-470 MHz) 9000 Series Main Board Bottom Side PCB



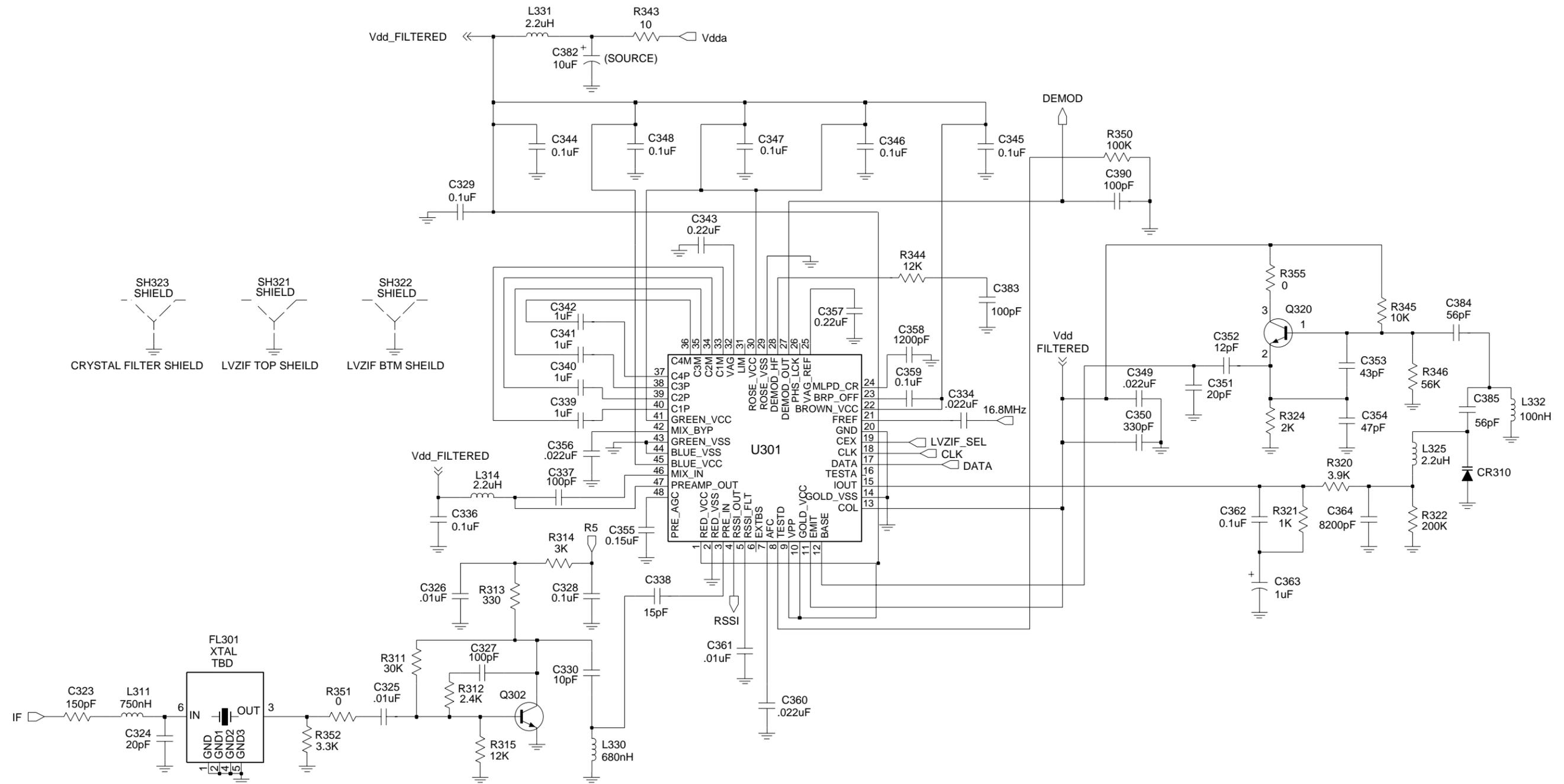
FL08307410

Figure 9-92. UHF (403-470 MHz) Controls and Switches Schematic Diagram



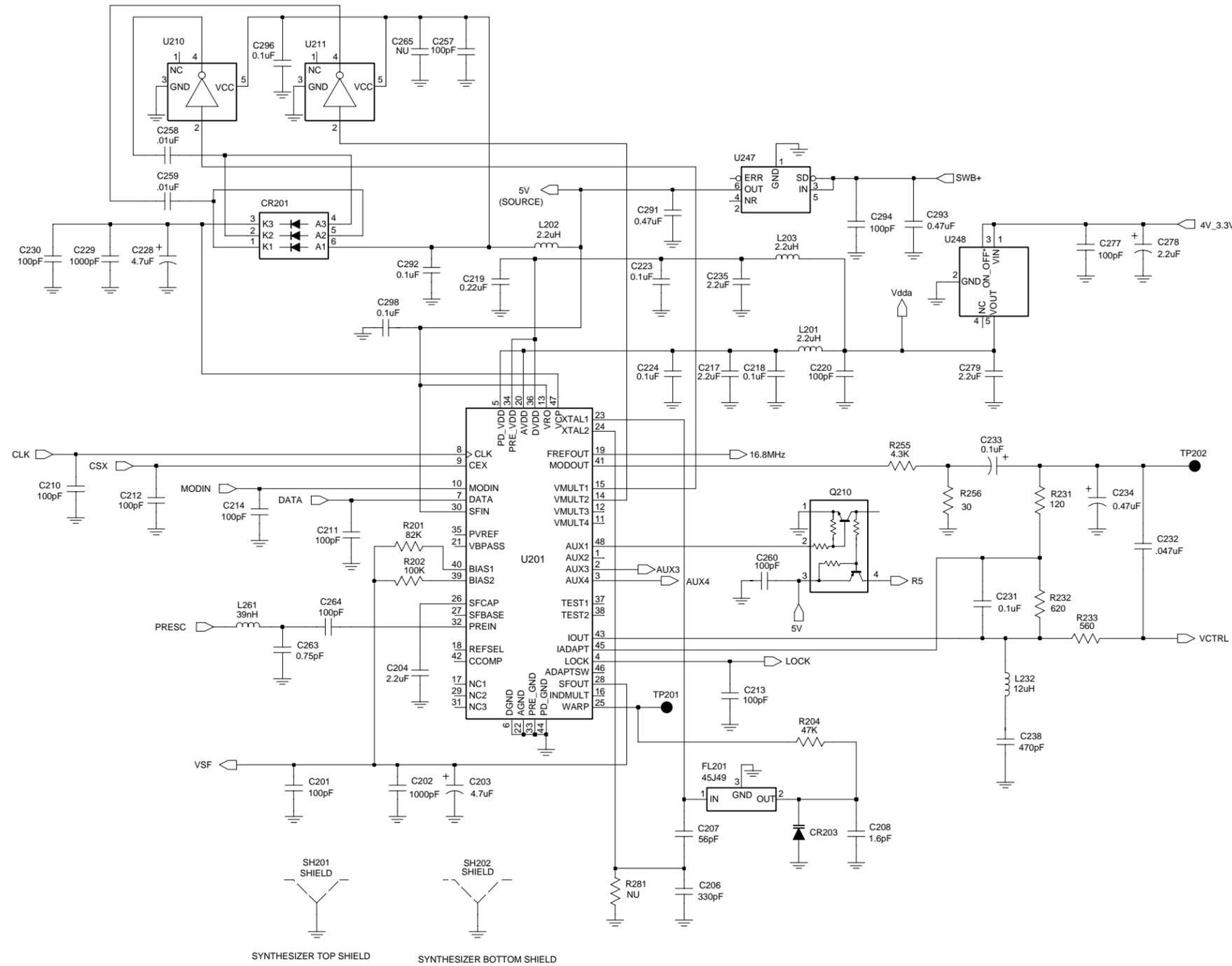
FL08307420

Figure 9-93. UHF (403-470 MHz) Receiver Front End Schematic Diagram



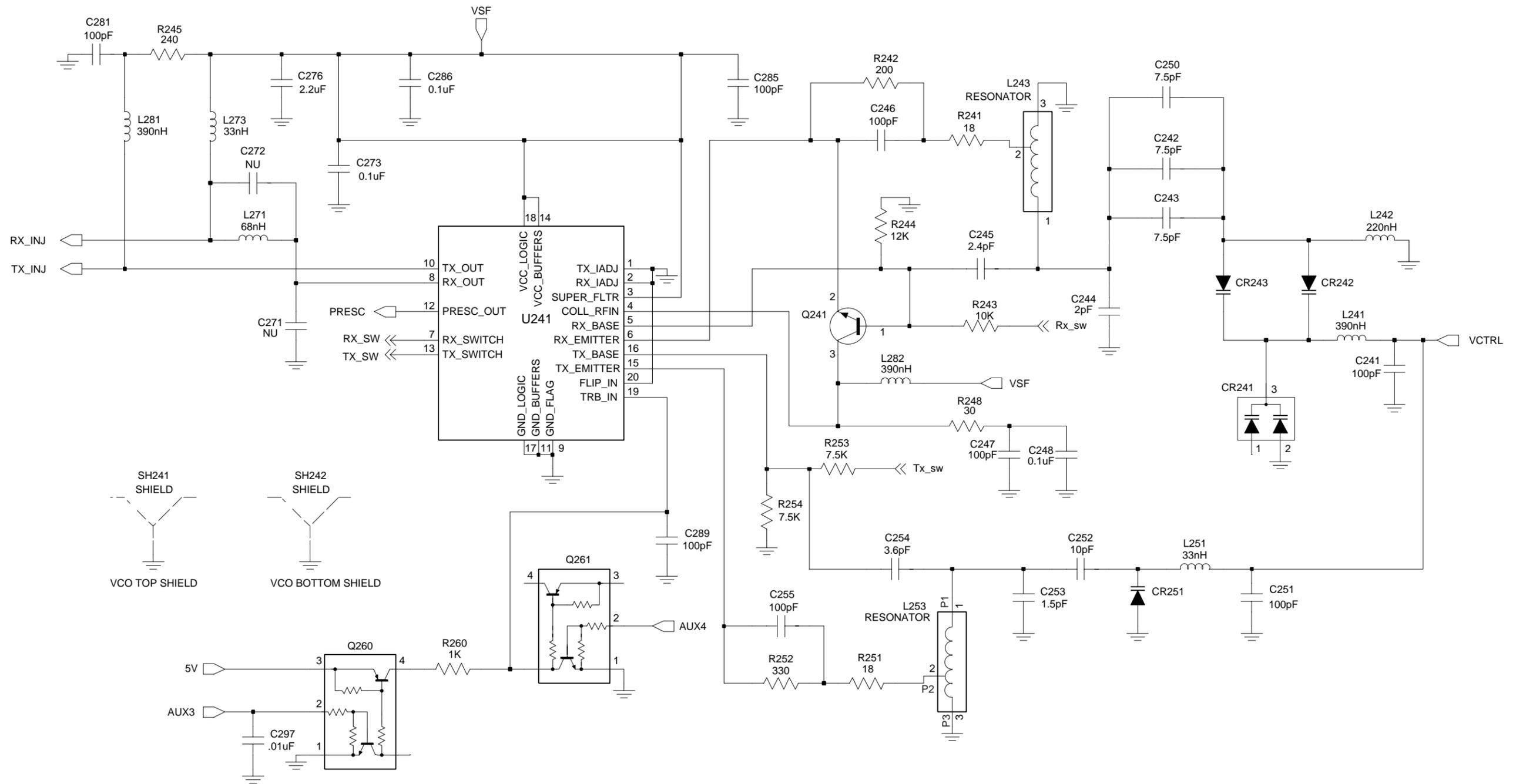
FL08307430

Figure 9-94. UHF (403-470 MHz) Receiver Back End Schematic Diagram



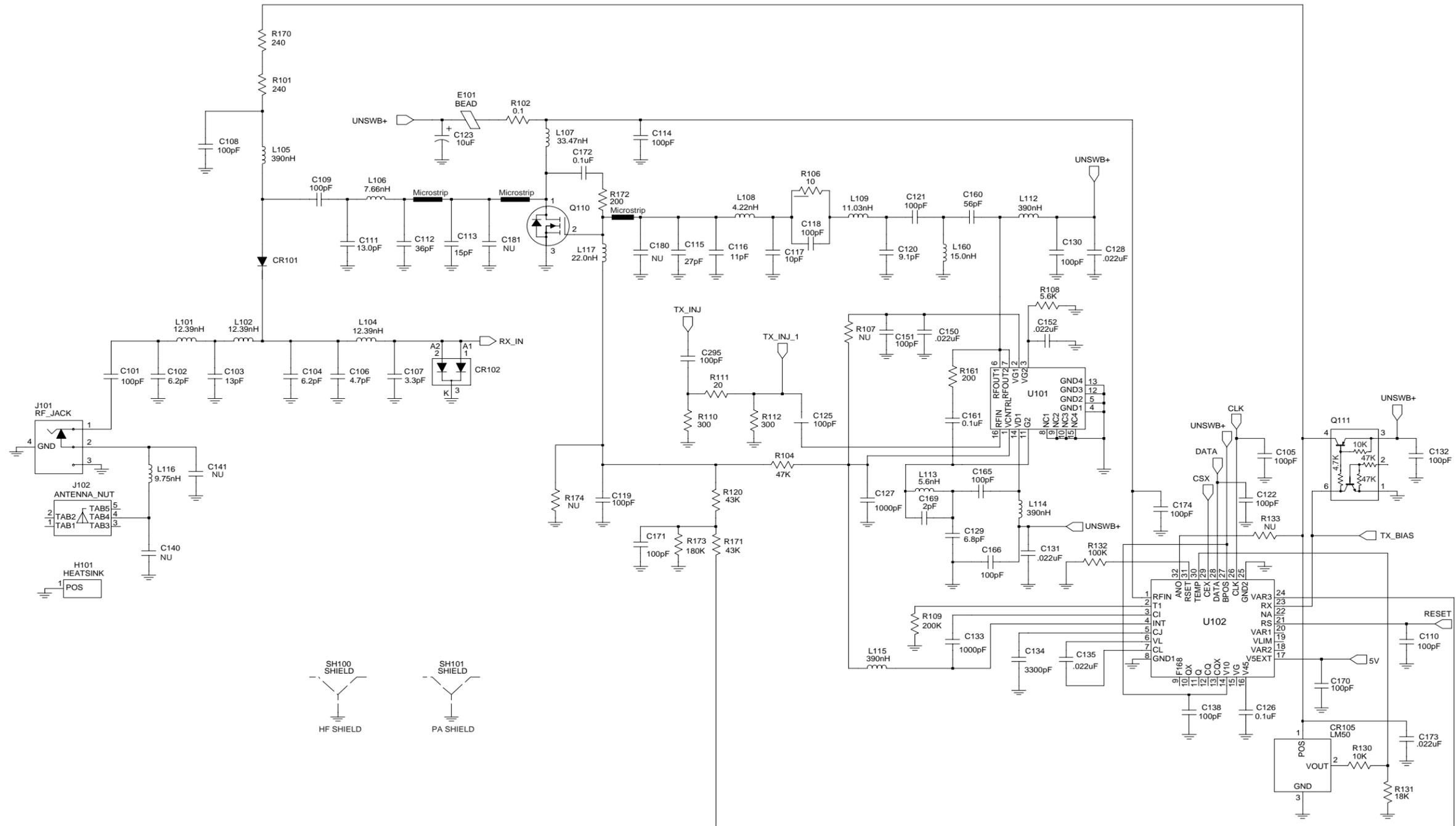
FL08307440

Figure 9-95. UHF (403-470 MHz) Synthesizer Schematic Diagram



FL08307450

Figure 9-96. UHF (403-470 MHz) Voltage Controlled Oscillator Schematic Diagram



FL08307460

Figure 9-97. UHF (403-470 MHz) Transmitter Schematic Diagram



**UHF (403-470 MHz) 9000 Series Radio Parts List**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C101	2113740F51	100pF
C102	2113740F22	6.2pF, 0.1
C103	2113740F27	10pF
C104	2113740F22	6.2pF, 0.1
C105	2113743N50	100pF
C106	2113740F19	4.7pF, 0.1
C107	2113740F15	3.3pF, 0.1
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2113740F30	13pF
C112	2180605Z32	47pF
C113	2180605Z16	10pF
C114	2113743N50	100pF
C115	2113743N30	15pF
C116	2113743N38	33pF
C117	2113743N37	30pF
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N26	10pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A18	10uF, 10%; 16V
C125	2113743N50	100pF
C126	2113743M24	0.1uF, +80%/-20%
C127	2113743L17	1000pF, 10%
C128	2113743M08	.022uF, +80%/-20%
C129	2113743N23	7.5pF, 0.5
C130	2113743N50	100pF
C131	2113743M08	.022uF, +80%/-20%
C132	2113743N50	100pF
C133	2113743L17	1000pF, 10%
C134	2113743L29	3300pF, 10%
C135	2113743M08	.022uF, +80%/-20%
C138	2113743N50	100pF
C140	Not Placed	-
C141	Not Placed	-
C150	2113743M08	.022uF, +80%/-20%
C151	2113743N50	100pF
C152	2113743M08	.022uF, +80%/-20%
C160	2113743N50	100pF
C161	2113743M24	0.1uF, +80%/-20%
C165	2113743N50	100pF
C166	2113743N50	100pF
C169	2113743N16	3.9pF, 0.25
C170	2113743N50	100pF
C171	2113743N50	100pF
C172	2113743E20	0.1uF, 10%
C173	2113743M08	.022uF, +80%/-20%

Circuit Ref	Motorola Part No.	Description
C174	2113743N50	100pF
C201	2113743N50	100pF
C202	2113743L17	1000pF, 10%
C203	2311049A56	4.7uF, 20%; 10V
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N44	56pF
C208	2113743N08	1.6pF
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	0.1uF, +80%/-20%
C219	2113743K16	0.22uF, +80%/-20%
C220	2113743N50	100pF
C223	2113743M24	0.1uF, +80%/-20%
C224	2113743M24	0.1uF, +80%/-20%
C228	2311049J11	4.7uF, 10%; 16V
C229	2113743L17	1000pF, 10%
C230	2113743N50	100pF
C231	2113743M24	0.1uF, +80%/-20%
C232	2113743E12	.047uF, 10%
C233	2311049A01	0.1uF, 10%; 35V
C234	2311049A05	0.47uF, 10%; 25V
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N23	7.5pF, 0.5
C243	2113743N23	7.5pF, 0.5
C244	2113740F10	2pF, 0.25
C245	2113743N11	2.4pF, 0.25
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	0.1uF, +80%/-20%
C250	2113743N23	7.5pF, 0.5
C251	2113743N50	100pF
C252	2113743N26	10pF
C253	2113740F07	1.5pF, 0.25
C254	2113743N15	3.6pF, 0.25
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	.01uF, 10%
C259	2113743L41	.01uF, 10%
C260	2113743N50	100pF
C263	2113743N02	0.75pF, 0.25
C264	2113743N50	100pF
C265	Not Placed	-
C271	Not Placed	-
C272	Not Placed	-
C273	2113743M24	0.1uF, +80%/-20%
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A09	2.2uF, 10%; 20V

Circuit Ref	Motorola Part No.	Description
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C285	2113743N50	100pF
C286	2113743M24	0.1uF, +80%/-20%
C289	2113743N50	100pF
C291	2113743A27	0.47uF, 10%
C292	2113743M24	0.1uF, +80%/-20%
C293	2113743A27	0.47uF, 10%
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	0.1uF, +80%/-20%
C297	2113743L41	.01uF, 10%
C298	2113743M24	0.1uF, +80%/-20%
C301	2113743N15	3.6pF, 0.25
C302	2113743N26	10pF
C303	2113740L08	3.9pF, 0.1
C304	2113743N25	9.1pF, 0.5
C305	2113743N33	20pF
C306	Not Placed	-
C307	2113743M24	0.1uF, +80%/-20%
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743M24	0.1uF, +80%/-20%
C311	Not Placed	-
C312	2113743N22	6.8pF, 0.5
C313	2113743N26	10pF
C314	2113743M24	0.1uF, +80%/-20%
C315	2113743N50	100pF
C316	2113740L08	3.9pF, 0.1
C317	2113743N25	9.1pF, 0.5
C318	2113743N23	7.5pF, 0.5
C319	2113743N69	1.8pF, 0.5
C320	2113743N23	7.5pF, 0.5
C321	2113743N50	100pF
C322	2113743N48	82pF
C323	2113743N54	150pF
C324	2113743N33	20pF
C325	2113743L41	.01uF, 10%
C326	2113743L41	.01uF, 10%
C327	2113743N50	100pF
C328	2113743M24	0.1uF, +80%/-20%
C329	2113743M24	0.1uF, +80%/-20%
C330	2113743N26	10pF
C331	2113743N50	100pF
C333	Not Placed	-
C334	2113743M08	.022uF, +80%/-20%
C336	2113743M24	0.1uF, +80%/-20%
C337	2113743N50	100pF
C338	2113743N30	15pF
C339	2180478Z20	1.0uF, 10%
C340	2180478Z20	1.0uF, 10%
C341	2180478Z20	1.0uF, 10%
C342	2180478Z20	1.0uF, 10%
C343	2113743A23	0.22uF, 10%
C344	2113743M24	0.1uF, +80%/-20%

Circuit Ref	Motorola Part No.	Description
C345	2113743M24	0.1uF, +80%/-20%
C346	2113743M24	0.1uF, +80%/-20%
C347	2113743M24	0.1uF, +80%/-20%
C348	2113743M24	0.1uF, +80%/-20%
C349	2113743E07	.022uF, 10%
C350	2113743L05	330pF, 10%
C351	2113743N33	20pF
C352	2113743N28	12pF
C353	2113743N41	43pF
C354	2113743N42	47pF
C355	2113743A21	0.15uF, 10%
C356	2113743M08	.022uF, +80%/-20%
C357	2113743A23	0.22uF, 10%
C358	2113741A23	1200pF
C359	2109720D14	0.1uF
C360	2113743E07	.022uF, 10%
C361	2113741F49	0.1uF, 10%
C362	2113928N01	0.5pF, 0.25
C363	2311049A07	1uF, 10%; 16V
C364	2113743L39	8200 pF
C370	2113743N50	100pF
C371	Not Placed	-
C372	Not Placed	-
C373	Not Placed	-
C374	2113743N50	100pF
C375	2113743N50	100pF
C378	Not Placed	-
C380	2113743L41	.01uF, 10%
C381	2113743N25	9.1pF, 0.5
C382	2311049A59	10uF, 10%; 6V
C383	2113743N50	100pF
C384	2113743N44	56pF
C385	2113743N44	56pF
C386	2113743N50	100pF
C390	2113743N50	100pF
C391	Not Placed	-
C395	2113743N50	100pF
C396	Not Placed	-
C397	2311049A07	1uF, 10%; 16V
C400	2113743L41	.01uF, 10%
C401	2113743M24	0.1uF, +80%/-20%
C402	2113743M24	0.1uF, +80%/-20%
C403	2113928D08	10uF, +80%/-20%
C407	2113928N01	0.1uF, 10%
C408	2113743N50	100pF
C409	2113743M24	0.1uF, +80%/-20%
C410	2113928N01	0.1uF, 10%
C411	2113743M24	0.1uF, +80%/-20%
C414	2113743M24	0.1uF, +80%/-20%
C415	2109720D01	.01uF, 10%
C416	2113928N01	0.1uF, 10%
C419	Not Placed	-
C420	2113743L41	.01uF, 10%
C421	2113928N01	0.1uF, 10%
C422	2113743M24	0.1uF, +80%/-20%

Circuit Ref	Motorola Part No.	Description
C423	2113743N50	100pF
C424	2311049A59	10uF, 10%; 6V
C425	2113743M24	0.1uF, +80%/-20%
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	0.1uF, +80%/-20%
C429	2113743M24	0.1uF, +80%/-20%
C430	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS+ Models Only)
C431	2113743N50	100pF
C432	Not Placed	-
C433	2113743L41	.01uF, 10%
C434	2113743M24	0.1uF, +80%/-20%
C435	2113743M24	0.1uF, +80%/-20%
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF, +80%/-20%
C441	2113743N50	100pF
C442	2113743E20	0.1uF, 10%
C443	2113928N01	0.1uF, 10%
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113928N01	0.1uF, 10%
C448	2113928N01	0.1uF, 10%
C449	2113743N50	100pF
C450	2113743M24	0.1uF, +80%/-20%
C451	2113743M08	.022uF, +80%/-20%
C452	2113743G26	4.7uF, +80%/-20%
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF, 10%
C471	2113743N50	100pF
C472	2113743N50	100pF
C473	2113743N50	100pF
C475	2113743H14	10uF, +80%/-20%
C476	2113928D08	10uF, +80%/-20%
C479	2113928N01	0.1uF, 10%
C480	2113928D08	10uF, +80%/-20%
C481	2113928N01	0.1uF, 10%
C482	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS+ Models Only)
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47uF, 10%; 25V
C503	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	.01uF, 10%
C521	2113743L41	.01uF, 10%
C522	2113743L41	.01uF, 10%
C523	2113743L41	.01uF, 10%
CR101	4880973Z02	Pin Diode
CR102	4802245J41	Pin Diode
CR105	5185963A15	Temperature Sense
CR201	4802233J09	Triple Diode
CR203	4862824C03	Varactor
CR241	4805649Q13	Dual Varactor
CR242	4862824C01	Varactor
CR243	4862824C01	Varactor
CR251	4802245J22	Varactor
CR301	4862824C01	Varactor
CR302	4862824C01	Varactor
CR303	4880154K03	Dual Common Anode-Cathode
CR304	4862824C01	Varactor
CR305	4862824C01	Varactor
CR306	4802245J42	Ring Quad Diode
CR308	4802245J41	Pin Diode
CR310	4862824C01	Varactor
CR411	4802245J47	Schottky Diode
CR412	4802245J47	Schottky Diode
CR413	4802245J47	Schottky Diode
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
E101	2484657R01	Ferrite Bead
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL201	4802245J49	16.8 MHz Xtal Clip (not field serviceable)
FL301	4802245J43	Xtal Filter 45.1 MHz
FL401	4870368G02	Osc Xtal 38.4 kHz
H101	2680499Z01	Heat Spreader
J101	0180117S05	RF Jack Assembly
J102	0280519Z02	Antenna Nut
J400	0905505Y04	40-pins Connector
J403	0905505Y02	20-pins Connector
L101	2460591B80	19.61nH, 10%
L102	2460591B80	19.61nH, 10%

Circuit Ref	Motorola Part No.	Description
L104	2460591B80	19.61nH, 10%
L105	2462587N22	390nH, 10%
L106	2460591A11	7.66nH, 10%
L107	2460591G24	33.47nH, 10%
L108	2460591A01	4.22nH, 10%
L109	2460591B04	11.03nH, 10%
L112	2462587N22	390nH, 10%
L113	2413926H09	5.6nH, 5%
L114	2462587N22	390nH, 10%
L115	2462587N22	390nH, 10%
L116	2460591A50	9.75nH, 10%
L160	2413926H14	15.0nH, 5%
L201	2462587Q20	2.2uH, 20%
L202	2462587Q20	2.2uH, 20%
L203	2462587Q20	2.2uH, 20%
L232	2462587P25	12uH, 5%
L241	2462587V41	390nH, 10%
L242	2462587V38	220nH, 5%
L243	2460593C01	Teflon Resonator
L251	2462587V28	33nH, 5%
L253	2460593C02	Teflon Resonator
L261	2462587V29	39nH, 5%
L271	2462587V32	68nH, 5%
L273	2462587V28	33nH, 5%
L281	2462587V41	390nH, 10%
L282	2462587V41	390nH, 10%
L301	2460591C04	13.9nH, 10%
L302	2460591C04	13.9nH, 10%
L303	2462587V38	220nH, 5%
L304	2462587V37	180nH, 5%
L305	2462587V27	27nH, 5%
L306	2460591C04	13.9nH, 10%
L307	2460591C04	13.9nH, 10%
L309	2460591C16	16.28nH, 10%
L310	2462587V36	150nH, 5%
L311	2462587N65	750nH, 5%
L314	2462587N72	2.2uH, 5%
L321	Not Placed	-
L325	2480646Z20	2.2uH
L330	2462587N64	680nH, 5%
L331	2480646Z20	2.2uH
L332	2462587N53	100nH, 5%
L340	2462587V41	390nH, 10%
L400	2462587Q42	390nH, 10%
L401	2462587Q42	390nH, 10%
L410	2462587Q42	390nH, 10%
L411	2462587Q42	390nH, 10%
L505	2462587Q42	390nH, 10%
P100	3905643V01	Gnd Contact Finger
PB501	4080523Z01	Tactile, Pushbutton
PB502	4080523Z01	Tactile, Pushbutton
PB503	4080523Z01	Tactile, Pushbutton
PB504	4080523Z01	Tactile, Pushbutton
PB505	4080523Z01	Tactile, Pushbutton
Q110	4802245J55	RF Power FET

Circuit Ref	Motorola Part No.	Description
Q111	4802245J50	Dual NPN/PNP
Q210	4802245J50	Dual NPN/PNP
Q241	4805218N63	NPN
Q260	4802245J50	Dual NPN/PNP
Q261	4802245J50	Dual NPN/PNP
Q301	4802245J44	NPN
Q302	4802245J44	NPN
Q310	Not Placed	-
Q315	4880214G02	NPN
Q316	Not Placed	-
Q320	4805218N63	NPN
Q400	4809579E18	MOSFET P-Chan
Q403	4880214G02	NPN
Q405	4802245J54	Dual NPN
Q410	4802245J54	Dual NPN
Q416	4809579E18	MOSFET P-Chan
Q417	4802245J50	Dual NPN/PNP
Q502	5180159R01	Dual NPN
Q505	4880214G02	NPN
R101	0662057A34	240
R102	0680539Z01	0.1, 1%
R103	0662057M41	43
R104	0662057M81	2K
R106	0662057M26	10
R107	Not Placed	-
R108	Not Placed	-
R109	0662057N30	200K
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057M01	0
R130	0662057M98	10K
R131	0662057M98	10K
R132	0662057N39	470K
R133	Not Placed	-
R161	0662057M57	200
R170	0662057A34	240
R171	0662057M92	5.6K
R172	0662057A32	200
R173	0662057N47	1MEG
R201	0662057N21	82K
R202	0662057N23	100K
R204	0662057N15	47K
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18
R242	0662057M57	200
R243	0662057M98	10K
R244	0662057N01	12K
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M32	18
R252	0662057M62	330
R253	0662057M95	7.5K

Circuit Ref	Motorola Part No.	Description
R254	0662057M95	7.5K
R255	0662057M89	4.3K
R256	0662057M37	30
R260	0662057M74	1K
R281	0662057M01	0
R300	0662057M82	2.2K
R301	0662057N23	100K
R302	0662057N23	100K
R303	0662057M74	1K
R304	0662057N01	12K
R305	0662057M67	510
R306	0662057N23	100K
R307	0662057N23	100K
R308	0662057M60	270
R309	0662057M32	18
R310	0662057M60	270
R311	0662057N10	30K
R312	0662057M83	2.4K
R313	0662057M62	330
R314	0662057M85	3K
R315	0662057N01	12K
R316	0662057A96	36K
R317	0662057M74	1K
R318	0662057A79	18K
R319	0662057A29	150
R320	0662057M88	3.9K
R321	0662057M74	1K
R322	0662057N30	200K
R324	0662057M81	2K
R325	0662057M94	6.8K
R326	Not Placed	-
R327	0662057N11	33K
R328	0662057M12	2.7
R329	0662057M01	0
R330	Not Placed	-
R331	Not Placed	-
R332	Not Placed	-
R333	Not Placed	-
R334	Not Placed	-
R335	Not Placed	-
R336	Not Placed	-
R338	Not Placed	-
R339	0662057M01	0
R340	0662057M94	6.8K
R342	0662057N23	100K
R343	0662057M26	10
R344	0662057N01	12K
R345	0662057M98	10K
R346	0662057N17	56K
R347	0662057M74	1K
R348	0662057M87	3.6K
R349	0662057C01	0
R350	0662057N23	100K
R351	0662057C01	0
R352	0662057M86	3.3K

Circuit Ref	Motorola Part No.	Description
R355	0662057M01	0
R400	0662057N15	47K
R401	0662057M01	0
R402	Not Placed	-
R403	Not Placed	-
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	Not Placed	-
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K, 1%
R415	0662057V26	91K, 1%
R416	0662057N13	39K
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10MEG
R421	0662057M81	2K
R423	0662057N15	47K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2.7K
R428	0662057M10	2.2
R429	0662057M98	10K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M93	6.2K
R435	0662057M81	2K
R436	0662057M01	0
R437	Not Placed	-
R445	0662057N08	24K
R446	0662057N31	220K
R447	0662057N50	1.3M
R448	0662057N33	270K
R449	0662057N08	24K
R450	0683962T45	68, 1W
R457	0662057M98	10K
R460	0662057M90	4.7K
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057M92	5.6K
R472	0662057M87	3.6K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R501	0662057M70	680
R502	0662057M56	180

Circuit Ref	Motorola Part No.	Description
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
RT300	0680590Z01	Thermistor 33K
RT301	Not Placed	-
RT400	0680590Z01	Thermistor 33K
S501	4080502B03	Channel Switch
S502	1880619Z01	Volume Switch
SH100	2680507Z01	Harmonic Filter Shield
SH101	2680510Z01	PA Shield
SH201	2680511Z01	Synthesizer Top Shield
SH202	2680511Z01	Synthesizer Bottom Shield
SH241	2680513Z01	VCO Top Shield
SH242	2680514Z01	VCO Bottom Shield
SH301	2680554Z01	Rx Pre-filter shield\
SH302	2680555Z01	Rx Post-filter/RF Amp Shield
SH303	2680509Z01	Mixer Shield
SH304	2680624Z01	Mixer Diode Shield
SH321	2680508Z01	Zif 2nd LO Shield
SH322	2680514Z01	ZIF Shield
SH323	2680553Z01	Xtal Filter Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On/Off Shield
SH402	2680515Z01	Controller Microprocessor Shield
SH403	2680516Z01	Controller AsficCmp/Audi PA Shield
T301	2580541Z01	Transformer Coil
T302	2580541Z01	Transformer Coil
U101	5105109Z67	LDMOS Driver
U102	5185765B01	Power Control IC
U201	5185963A27	Low Voltage FRACN IC
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO Buffer
U247	5105739X05	Regulator Linear
U248	5102463J58	3.3V Regulator
U301	5109632D83	Low Voltage ZIF
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC
U405	Not Placed	-
U406	*5102463J59	ROM 256K
U407	*5102463J64	EEPROM 16Kx8
U409	5102226J55	Microcontroller
U410	5102463J57	3.3V Reg
U420	5102463J44	Audio PA
VR300	Not Placed	-
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J51	6.8V Zener
VR439	4880140L15	10V Zener
VR440	4802245J51	6.8V Zener
VR441	4802245J51	6.8V Zener
VR442	4802245J51	6.8V Zener
VR443	4802245J51	6.8V Zener
VR444	4802245J51	6.8V Zener

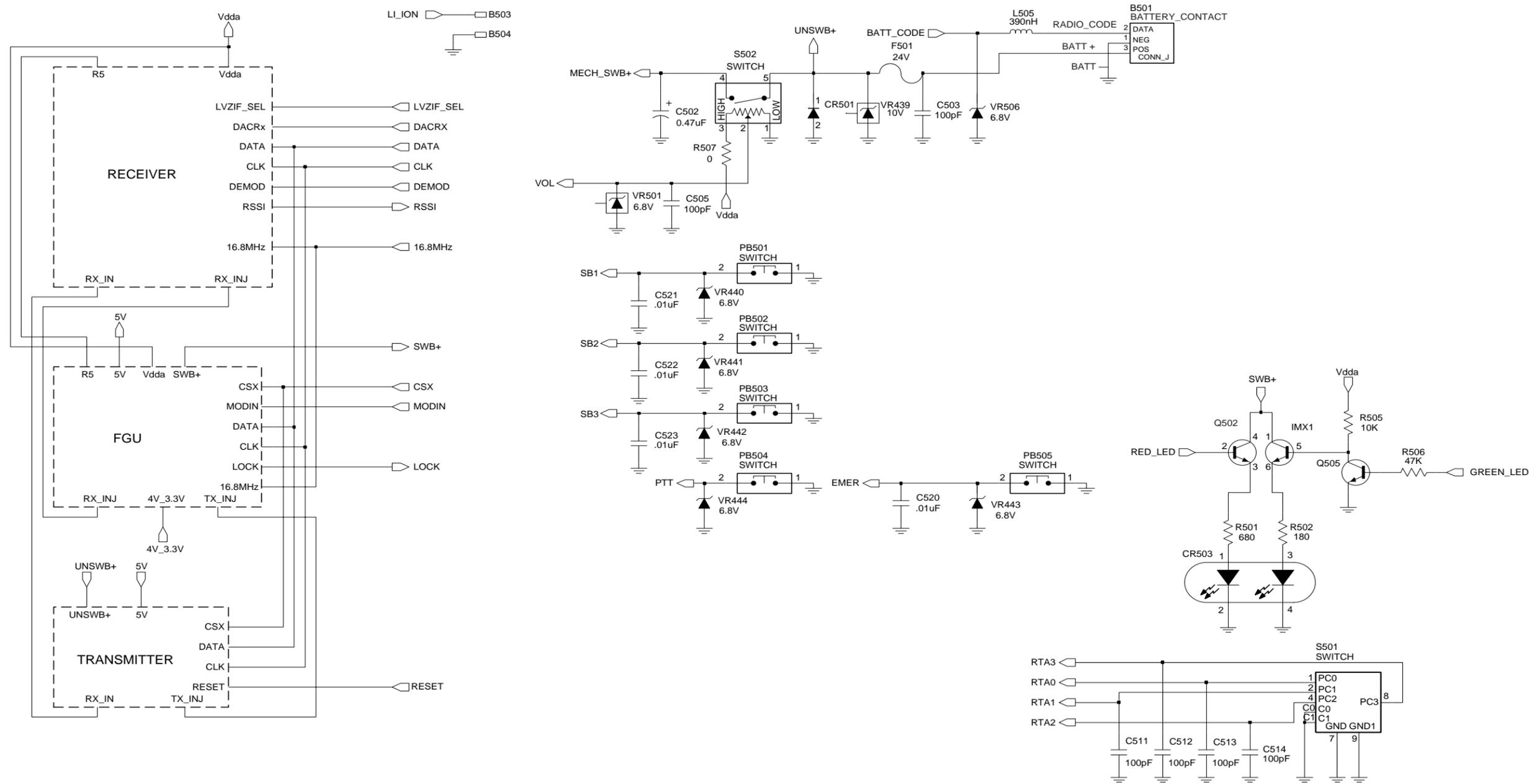
Circuit Ref	Motorola Part No.	Description
VR445	4802245J53	10V Zener
VR446	4802245J53	10V Zener
VR447	4802245J53	10V Zener
VR448	4802245J53	10V Zener
VR449	4802245J53	10V Zener
VR450	4802245J53	10V Zener
VR501	4813830A18	6.8V Zener
VR506	4802245J51	6.8V Zener

\* Motorola Depot Servicing only

## Notes

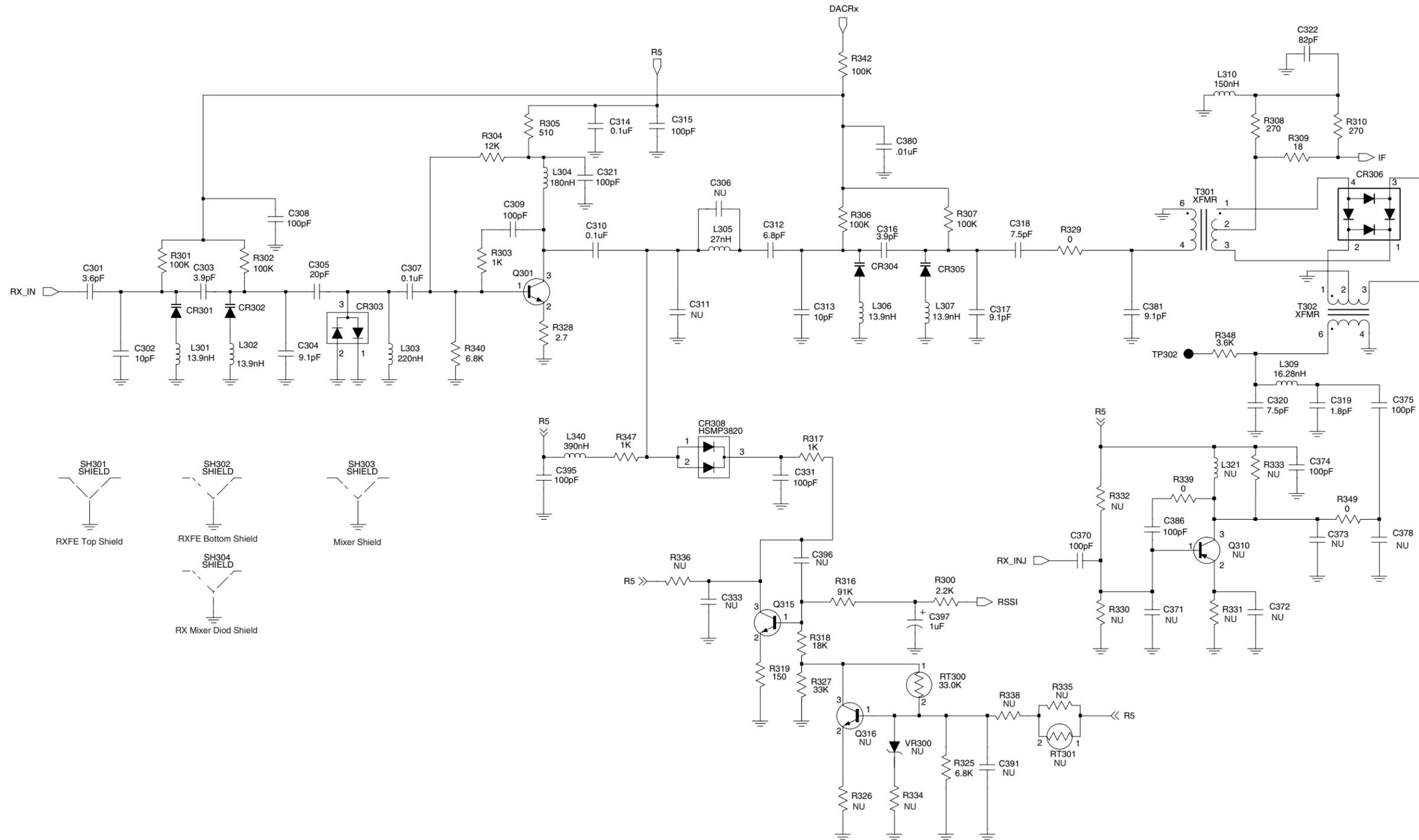




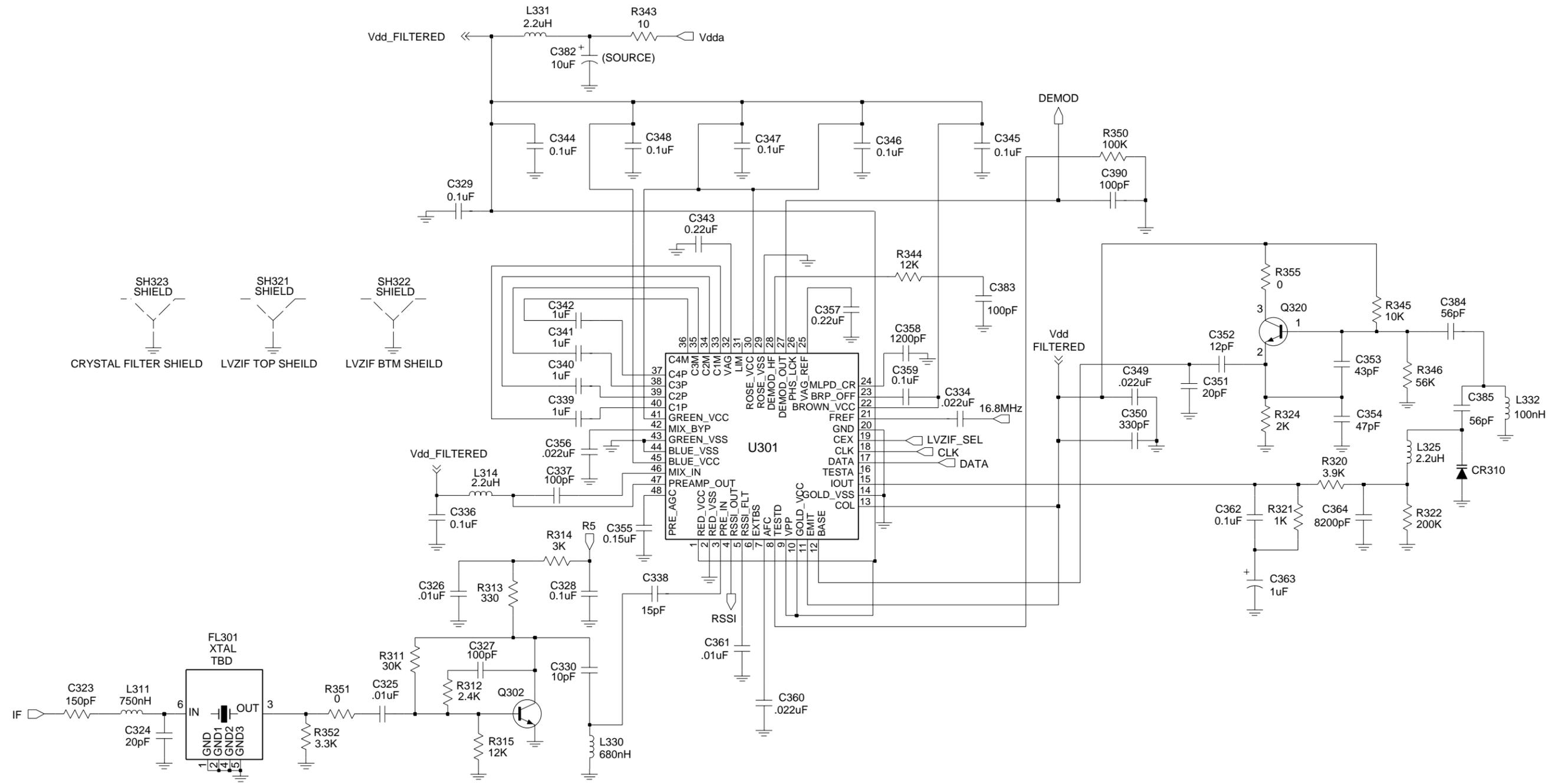


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Figure 9-100. UHF (450-527 MHz) Controls and Switches Schematic Diagram

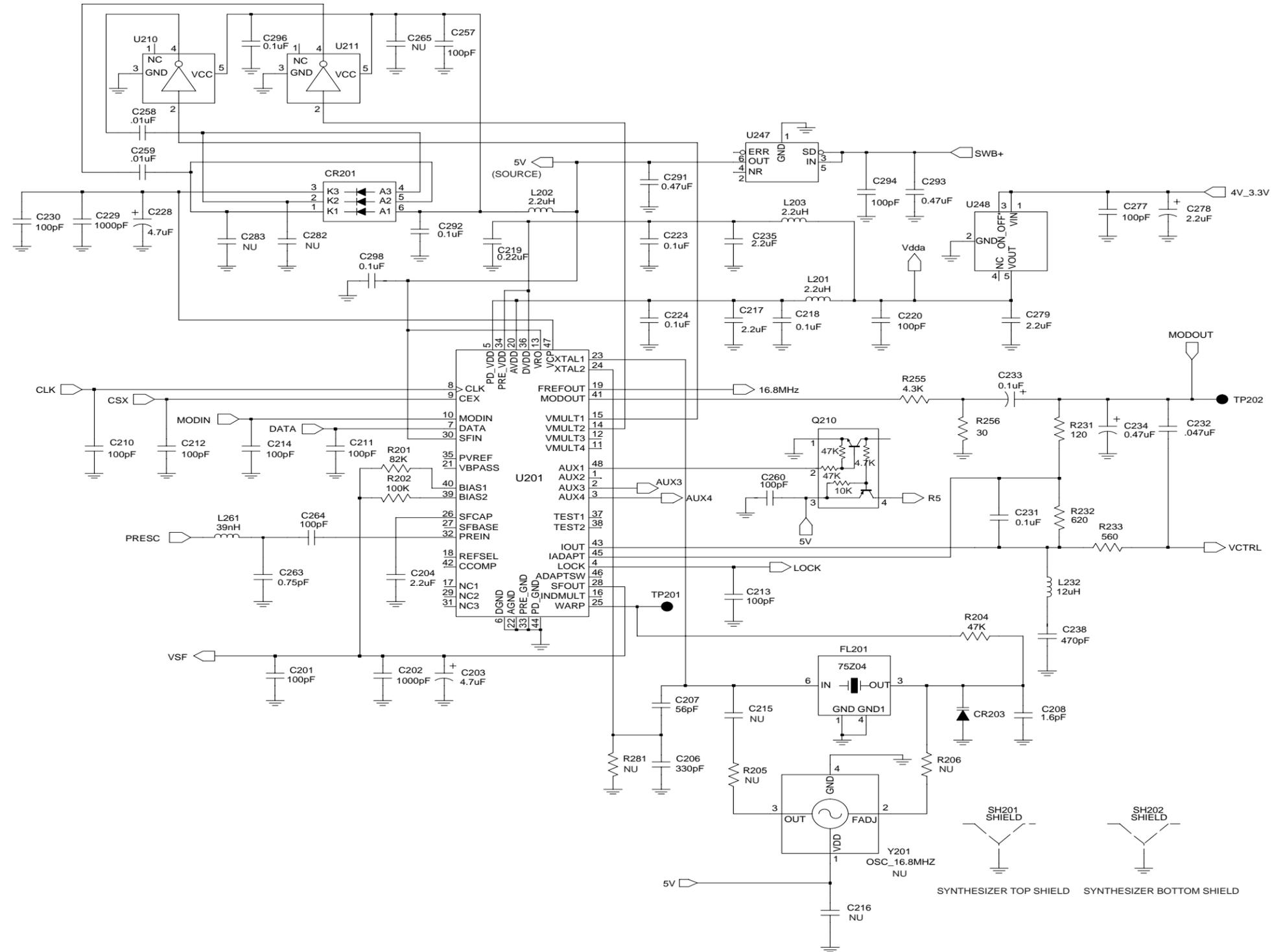






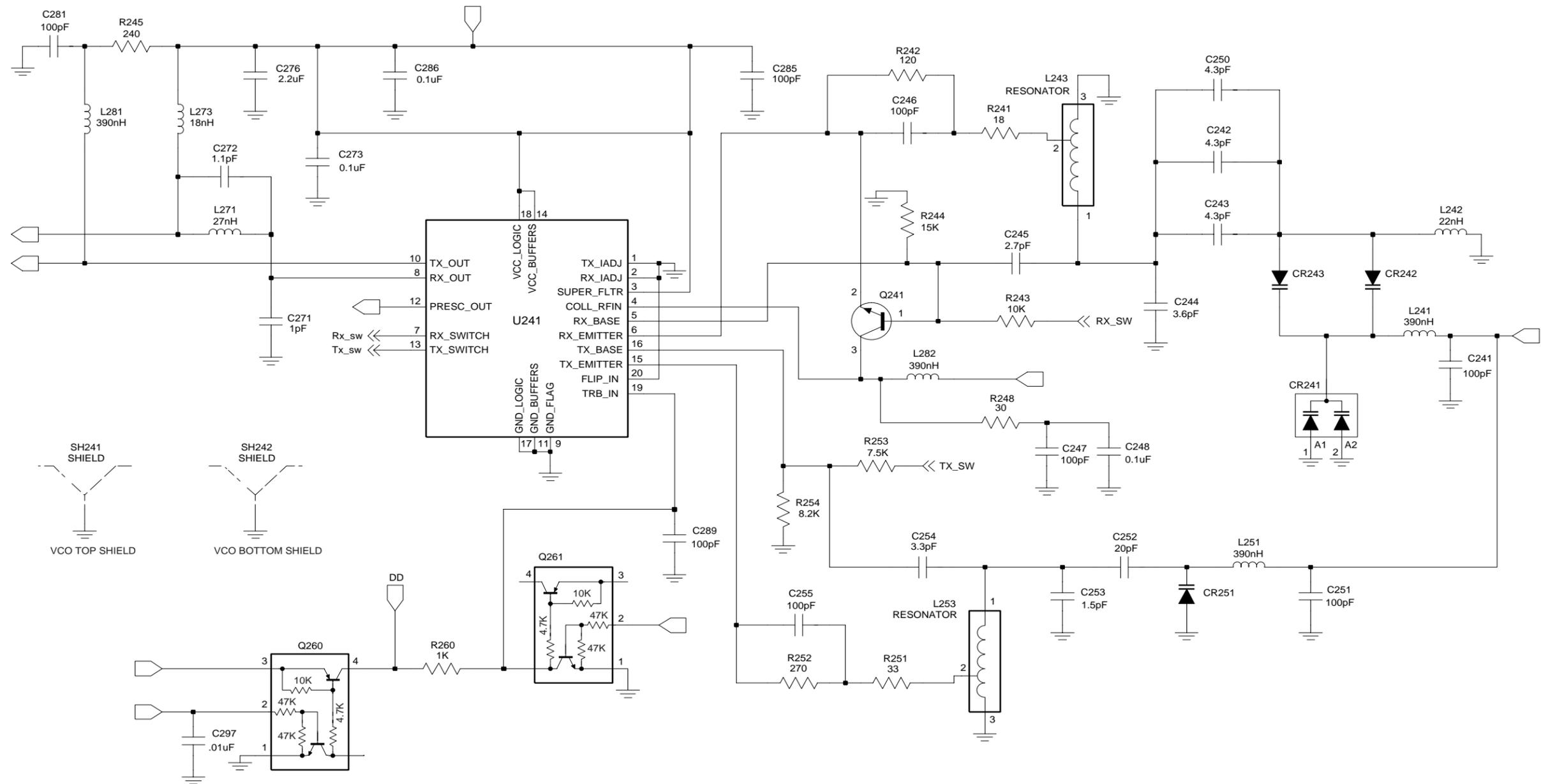
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Figure 9-102. UHF (450-527 MHz) Receiver Back End Schematic Diagram



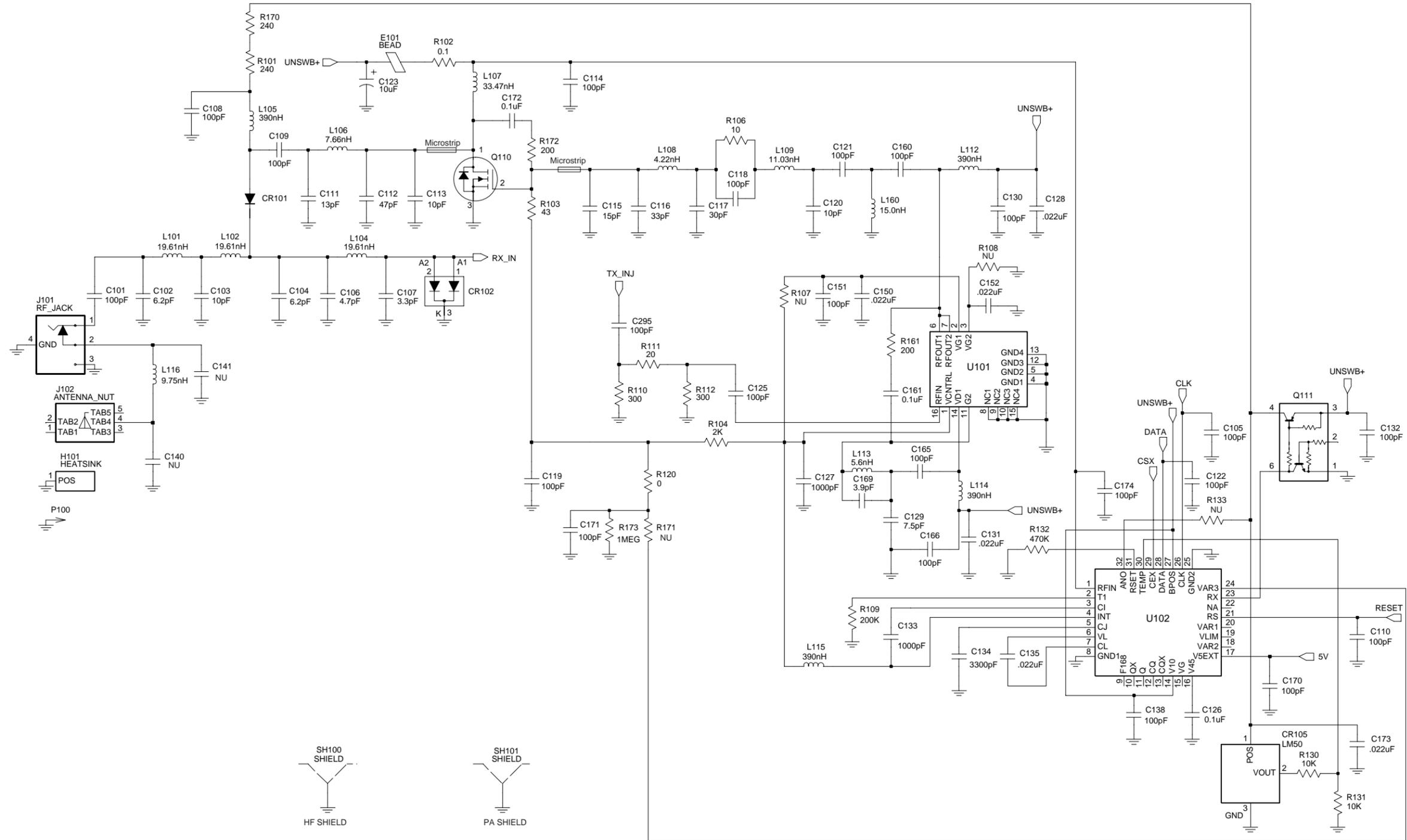
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Figure 9-103. UHF (450-527 MHz) Synthesizer Schematic Diagram



FL08307520

Figure 9-104. UHF (450-527 MHz) Voltage Controlled Oscillator Schematic Diagram



FL08307530

Figure 9-105. UHF (450-527 MHz) Transmitter Schematic Diagram

**UHF (450-527 MHz) Radio Parts List (PCB 8485641Z02)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F27	10pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2113740F30	13pF
C112	2180605Z32	47pF
C113	2180605Z16	10pF
C114	2113743N50	100pF
C115	2113743N30	15.0pF
C116	2113743N38	33.0pF
C117	2113743N37	30.0pF
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N26	10pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A18	10uF
C125	2113743N50	100pF
C126	2113743M24	0.1uF
C127	2113743L17	1000pF
C128	2113743M08	0.022uF
C129	2113743N23	7.5pF
C130	2113743N50	100pF
C131	2113743M08	0.022uF
C132	2113743N50	100pF
C133	2113743L17	1000pF
C134	2113743L29	3300pF
C135	2113743M08	0.022uF
C138	2113743N50	100pF
C150	2113743M08	0.022uF
C151	2113743N50	100pF
C152	2113743M08	0.022uF
C160	2113743N50	100pF
C161	2113743M24	0.1uF
C165	2113743N50	100pF
C166	2113743N50	100pF
C169	2113743N20	5.6pF
C170	2113743N50	100pF
C171	2113743N50	100pF
C172	2113740F51	100pF
C173	2113743M08	0.022uF
C174	2113743N50	100pF
C201	2113743N50	100pF
C202	2113743L17	1000pF
C203	2311049A56	4.7pF

Circuit Ref	Motorola Part No.	Description
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N44	56.0pF
C208	2113743N08	1.6pF
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	0.1uF
C219	2113743K16	0.220uF
C220	2113743N50	100pF
C223	2113743M24	0.1uF
C224	2113743M24	0.1uF
C228	2311049J11	4.7uF
C229	2113743L17	1000pF
C230	2113743N50	100pF
C231	2113743M24	0.1uF
C232	2113743E12	0.047uF
C233	2311049A01	0.1pF
C234	2311049A05	0.47pF
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N23	7.5pF
C243	2113743N23	7.5pF
C244	2113740F10	2.0pF
C245	2113743N11	2.4pF
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	0.1uF
C250	2113743N23	7.5pF
C251	2113743N50	100pF
C252	2113743N26	10pF
C253	2113740F09	1.8pF
C254	2113743N15	3.6pF
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	0.01uF
C259	2113743L41	0.01uF
C260	2113743N50	100pF
C263	2113743N02	0.75pF
C264	2113743N50	100pF
C273	2113743M24	0.1uF
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A09	2.2uF
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C285	2113743N50	100pF
C286	2113743M24	0.1uF
C289	2113743N50	100pF
C291	2311049A69	10.0uF
C292	2113743M24	0.1uF
C293	2113743A27	0.470uF

Circuit Ref	Motorola Part No.	Description
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	0.1uF
C297	2113743L41	0.01uF
C298	2113743M24	0.1uF
C301	2113743N15	3.6pF
C302	2113743N26	10pF
C303	2113740L08	3.9pF
C304	2113743N26	10pF
C305	2113743N33	20.0pF
C307	2113743M24	0.1uF
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743M24	0.1uF
C312	2113743N25	9.1pF
C313	2113743N26	10pF
C314	2113743M24	0.1uF
C315	2113743N50	100pF
C316	2113740L08	3.9pF
C317	2113743N25	9.1pF
C318	2113743N23	7.5pF
C319	2113743N69	1.8pF
C320	2113743N23	7.5pF
C321	2113743N50	100pF
C322	2113743N48	82.0pF
C323	2113743N54	150pF
C324	2113743N33	20.0pF
C325	2113743L41	0.01uF
C326	2113743L41	0.01uF
C327	2113743N50	100pF
C328	2113743M24	0.1uF
C329	2113743M24	0.1uF
C330	2113743N26	10pF
C331	2113743N50	100pF
C334	2113743M08	0.022uF
C336	2113743M24	0.1uF
C337	2113743N50	100pF
C338	2113743N30	15.0pF
C339	2180478Z20	1.0uF
C340	2180478Z20	1.0uF
C341	2180478Z20	1.0uF
C342	2180478Z20	1.0uF
C343	2113743A23	0.220uF
C344	2113743M24	0.1uF
C345	2113743M24	0.1uF
C346	2113743M24	0.1uF
C347	2113743M24	0.1uF
C348	2113743M24	0.1uF
C349	2113743E07	0.022uF
C350	2113743L05	330pF
C351	2113743N33	20.0pF
C352	2113743N28	12.0pF
C353	2113743N41	43.0pF
C354	2113743N42	47.0pF
C355	2113743A24	0.330uF
C356	2113743M08	0.022uF

Circuit Ref	Motorola Part No.	Description
C357	2113743A23	0.220uF
C358	2113741A23	1200pF
C359	2109720D14	0.1uF
C360	2113743E07	0.022uF
C361	2113741F49	10NF
C362	2113743M08	0.022uF
C363	2311049A40	2.2uF
C364	2113743L41	0.01uF
C370	2113743N50	100pF
C374	2113743N50	100pF
C375	2113743N50	100pF
C380	2113743L41	0.01uF
C381	2113743N21	6.2pF
C382	2311049A59	10uF
C383	2113743N50	100pF
C384	2113743N44	56.0pF
C385	2113743N44	56.0pF
C386	2113743N50	100pF
C390	2113743N50	100pF
C395	2113743N50	100pF
C397	2311049A05	0.47pF
C400	2113743L41	0.01uF
C401	2113743M24	0.1uF
C402	2113743M24	0.1uF
C403	2113928D08	10.0uF
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	0.1uF
C410	2113928N01	0.1uF
C411	2113743M24	0.1uF
C414	2113743M24	0.1uF
C415	2109720D01	0.01uF
C416	2113928N01	0.1uF
C420	2113743L41	0.01uF
C421	2113928N01	0.1uF
C422	2113743M24	0.1uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	0.1uF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	0.1uF
C429	2113743M24	0.1uF
C430	2113928N01	0.1uF, 10% 0662057M01 (SUB on Models LS <sup>+</sup> Only)
C431	2113743N50	100pF
C433	2113743L41	0.01uF
C434	2113743M24	0.1uF (not used in HT750 or PRO5150)
C435	2113743M24	0.1uF
C436	2113743N34	22.0pF (not used in HT750 or PRO5150)
C437	2113743N34	22.0pF (not used in HT750 or PRO5150)
C440	2113743G26	4.7uF
C441	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C442	2113743E20	10uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	0.022uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C451	2113743M08	0.022uF
C452	2113743G26	4.7uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743N50	100pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C475	2113743H14	10.0uF
C476	2113928D08	10.0uF
C479	2113928N01	0.1uF
C480	2113928D08	10.0uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on Models LS <sup>+</sup> Only)
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47pF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	0.01uF
C521	2113743L41	0.01uF
C522	2113743L41	0.01uF
C523	2113743L41	0.01uF
CR101	4880973Z02	Pin Diode
CR102	4802245J41	Pin Diodes
CR105	5185963A15	Temperature Sense
CR201	4802233J09	Diode Triple
CR203	4862824C03	Varactor
CR241	4805649Q13	Dual Varactor
CR242	4862824C01	Varactor
CR243	4862824C01	Varactor
CR251	4802245J22	Varactor
CR301	4862824C01	Varactor
CR302	4862824C01	Varactor

Circuit Ref	Motorola Part No.	Description
CR303	4880154K03	Dual Common Anode-cathode
CR304	4862824C01	Varactor
CR305	4862824C01	Varactor
CR306	4802245J42	Ring Quad Diode
CR308	4802245J41	Pin Diodes
CR310	4862824C01	Varactor
CR411	4802245J47	Diode Schottky
CR412	4802245J47	Diode Schottky
CR413	4802245J47	Diode Schottky
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	Led Red/yellow
E101	2484657R01	Ferrite Bead
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL201	4802245J49	16.8 MHz Xtal Clip (not field serviceable)
FL301	4802245J43	Crystal Filter 45.1 MHz
FL401	4870368G02	Clock Oscillator Crystal (not used in HT750 or PRO5150)
H101	2680499Z01	Heat Spreader
J101	0180117S05	RF Jack Assembly
J102	0280519Z02	Nut, Antenna
J400	0905505Y04	40 Pin Connector
J403	0905505Y02	20 Pin Connector
L101	2479990B02	19.61nH
L102	2479990B02	19.61nH
L104	2479990B02	19.61nH
L105	2462587N22	390nH
L106	2479990A02	7.66nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L109	2479990B01	11.03nH
L112	2462587N45	22nH
L113	2413926H09	5.6nH
L114	2462587N22	390nH
L115	2462587N22	390nH
L116	2479990A03	9.75nH
L160	2413926H14	15.0nH
L201	2462587Q20	2.2uH
L202	2462587Q20	2.2uH
L203	2462587Q20	2.2uH
L232	2462587P25	12uH
L241	2462587V41	390nH
L242	2462587V38	220nH
L243	2460593C01	Teflon Resonator
L251	2462587V28	33nH

Circuit Ref	Motorola Part No.	Description
L253	2460593C02	Teflon Resonator
L261	2462587V29	39nH
L271	2462587V32	68nH
L273	2462587V28	33nH
L281	2462587V41	390nH
L282	2462587V41	390nH
L301	2479990C01	13.9nH
L302	2479990C01	13.9nH
L303	2462587V26	22nH
L304	2462587V37	180nH
L305	2462587V26	22nH
L306	2479990C01	13.9nH
L307	2479990C01	13.9nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH
L311	2462587N65	750nH
L314	2462587N72	2.2uH
L325	2480646Z20	2.20uH
L330	2462587N64	680nH
L331	2480646Z20	2.20uH
L332	2462587N53	100nH
L340	2462587V41	390nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
P100	3905643V01	Ground Contact Finger
PB501	4080523Z01	Tactile Push Button
PB502	4080523Z01	Tactile Push Button
PB503	4080523Z01	Tactile Push Button
PB504	4080523Z01	Tactile Push Button
PB505	4080523Z01	Tactile Push Button
Q110	4802245J55	RF Power Fet
Q111	4802245J50	Dual NPN/PNP
Q210	4802245J50	Dual NPN/PNP
Q241	4805218N63	NPN
Q260	4802245J50	Dual NPN/PNP
Q261	4802245J50	Dual NPN/PNP
Q301	4802245J44	NPN
Q302	4802245J44	NPN
Q315	4880214G02	NPN
Q320	4805218N63	NPN
Q400	4809579E18	MOSFET P-Chan
Q403	4880214G02	NPN
Q405	4802245J54	Dual NPN
Q410	4802245J54	dual NPN
Q416	4809579E18	MOSFET P-Chan
Q417	4802245J50	Dual NPN/PNP
Q502	5180159R01	Dual NPN
Q505	4880214G02	NPN
R101	0662057A34	240
R102	0680735Z01	0.075
R103	0662057M41	43
R104	0662057N15	47K
R106	0662057M26	10

Circuit Ref	Motorola Part No.	Description
R108	0662057M92	5.6K
R109	0662057N30	200K
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43K
R130	0662057M98	10K
R131	0662057N05	18K
R132	0662057N33	270K
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43K
R172	0662057A32	200
R173	0662057N29	180K
R201	0662057N21	82K
R202	0662057N23	100K
R204	0662057N15	47K
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18
R242	0662057M57	200
R243	0662057M98	10K
R244	0662057N01	12K
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M32	18
R252	0662057M62	330
R253	0662057M95	7.5K
R254	0662057M95	6.8K
R255	0662057M89	4.3K
R256	0662057M37	30
R260	0662057M74	1K
R300	0662057M82	2.2K
R301	0662057N23	100K
R302	0662057N23	100K
R303	0662057M74	1K
R304	0662057N01	12K
R305	0662057M67	0
R306	0662057N23	100K
R307	0662057N23	100K
R308	0662057M60	270
R309	0662057M32	18
R310	0662057M60	270
R311	0662057N10	30K
R312	0662057M83	2.4K
R313	0662057M62	330
R314	0662057M85	3K
R315	0662057N01	12K
R316	0662057A96	91K
R317	0662057M74	1K
R318	0662057A79	18K
R319	0662057A29	150
R320	0662057M74	1K
R321	0662057M83	2.4K
R322	0662057N30	200K

Circuit Ref	Motorola Part No.	Description
R324	0662057M81	2K
R325	0662057M94	6.8K
R327	0662057N11	33K
R328	0662057M12	2.7
R329	0662057M01	0
R339	0662057M01	0
R340	0662057M94	6.8K
R342	0662057N23	100K
R343	0662057M26	10
R344	0662057N01	12K
R345	0662057M98	10K
R346	0662057N17	56K
R347	0662057M74	1K
R348	0662057M87	3.6K
R349	0662057C01	0
R350	0662057N23	100K
R351	0662057C01	0
R352	0662057M86	3.3K
R355	0662057M01	0
R400	0662057N15	47K
R401	0662057M01	0
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057N13	39K
R418	0662057M01	0
R419	0662057M67	0 (not used in HT750 or PRO5150)
R420	0662057B46	10.0 MEG (not used in HT750 or PRO5150)
R421	0662057M81	2K
R423	0662057N39	470K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K (not used in HT750 or PRO5150)
R427	0662057M84	2.7K
R428	0662057M10	2.2
R429	0662057M98	10K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2K
R436	0662057M01	0
R445	0662057N08	24K
R446	0662057N31	220K
R447	0662057N51	1.5MEG
R448	0662057N33	270K
R449	0662057N08	24K
R450	0683962T45	68
R457	0662057M98	10K

Circuit Ref	Motorola Part No.	Description
R460	0662057M90	4.7K
R461	0662057M56	180 (not used in HT750 or PRO5150)
R462	0662057M98	10K (not used in HT750 or PRO5150)
R463	0662057M61	300
R471	0662057M92	5.6K
R472	0662057N12	36K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
RT300	0680590Z01	Thermistor 33K
RT400	0680590Z01	Thermistor 33K
S501	4080710Z01	Channel Switch
S502	1880619Z01	Volume Switch
SH100	2680507Z01	Shield, Harmonic Filter
SH101	2680510Z01	Shield, Pa
SH201	2680511Z01	Synthesizer Top Shield
SH202	2680511Z01	Synthesizer Bottom Shield
SH241	2680513Z01	Shield, VCO Top
SH242	2680514Z01	Shield, VCO Bottom/LVZIF
SH301	2680554Z01	RX Pre Filter Shield
SH302	2680555Z01	RX Post Filter/RX Amp
SH303	2680509Z01	Shield, Mixer
SH304	2680624Z01	Shield, Mixer Diode
SH321	2680508Z01	Shield, LVZIF 2nd LO
SH322	2680514Z01	ZIF Shield
SH323	2680553Z01	Shield, Crystal Filter
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	On/off Controller Shield
SH402	2680515Z01	Microprocessor Controlled Shield
SH403	2680516Z01	ASFIC CMP/Audio PA Controller Shield
T301	2580541Z01	Transformer Coil
T302	2580541Z01	Transformer Coil
U101	5105109Z67	LDMOS Driver UHF IC
U102	5185765B01	Power Control IC
U201	5185963A27	LVFRACN
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO Buffer
U247	5105739X05	Regulator Linear
U248	5102463J58	3.3v Regulator
U301	5109632D83	LVZIF 2.2
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC CMP
U405	5102463J36	Static RAM 32Kx8

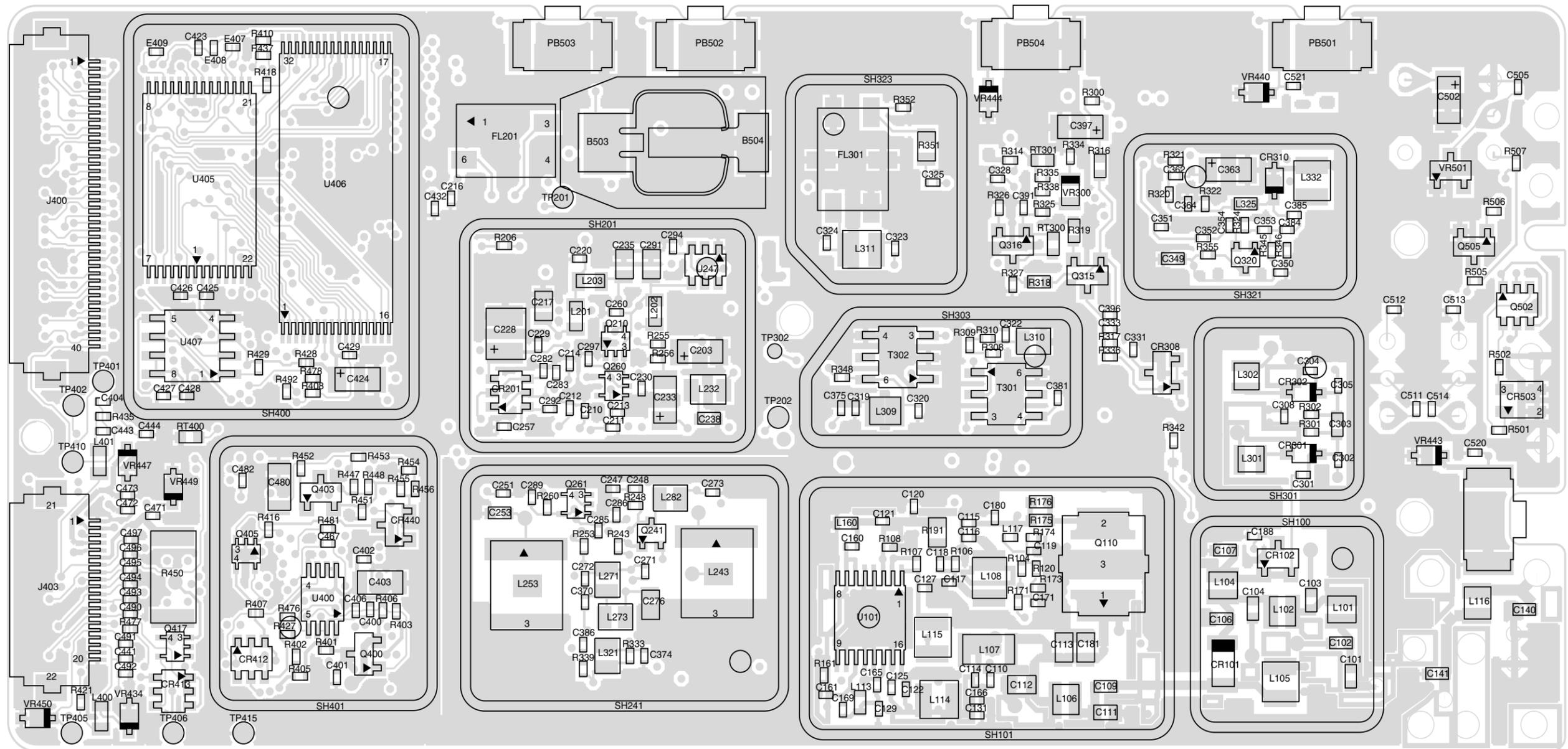
Circuit Ref	Motorola Part No.	Description
U406	*5102463J59	Flash ROM 128Kx8
	*5102463J60	ROM 512Kx8
U407	*5102463J64	16K X 8 EEPROM (not used in HT750 or PRO5150)
U409	5102226J56	Microprocessor HC11FLO
U410	5102463J57	Regulator 3.3V (not used in HT750 or PRO5150)
U420	5102463J44	Audio PA
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J51	Zener 6.8V
VR439	4880140L15	10V Zener
VR440	4802245J51	Zener 6.8V
VR441	4802245J51	Zener 6.8V
VR442	4802245J51	Zener 6.8V
VR443	4802245J51	Zener 6.8V
VR444	4802245J51	Zener 6.8V
VR445	4802245J53	Zener 10V
VR446	4802245J53	Zener 10V
VR447	4802245J53	Zener 10V
VR448	4802245J53	Zener 10V
VR449	4802245J53	Zener 10V
VR450	4802245J53	Zener 10V
VR501	4813830A18	6.8V Zener
VR506	4802245J51	Zener 6.8V
	7580671Z01	Pad (Flexible Circuit)
	7580671Z01	Pad (Flexible Circuit)

\* Motorola Depot Servicing only

## Notes

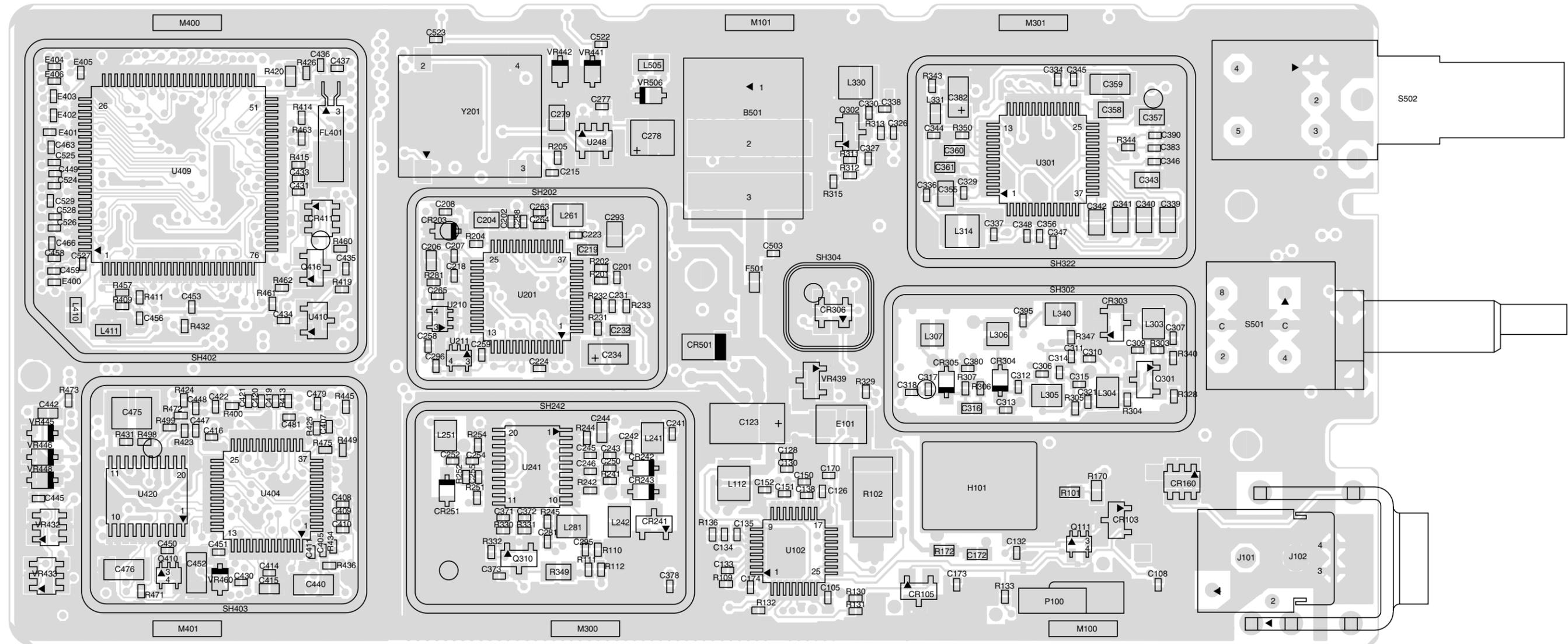


### 9.14 UHF Band 2 Circuit Board/Schematic Diagrams and Parts List (PCB 8485641Z06 / 8485677Z03)



ZMY0130258-A

Figure 9-106. UHF (450-527 MHz) 5000/7000 Series Main Board Top Side PCB 8485641Z06



ZMY0130259 -A

Figure 9-107. UHF (450-527 MHz) 5000/7000 Series Main Board Bottom Side PCB 8485641Z06

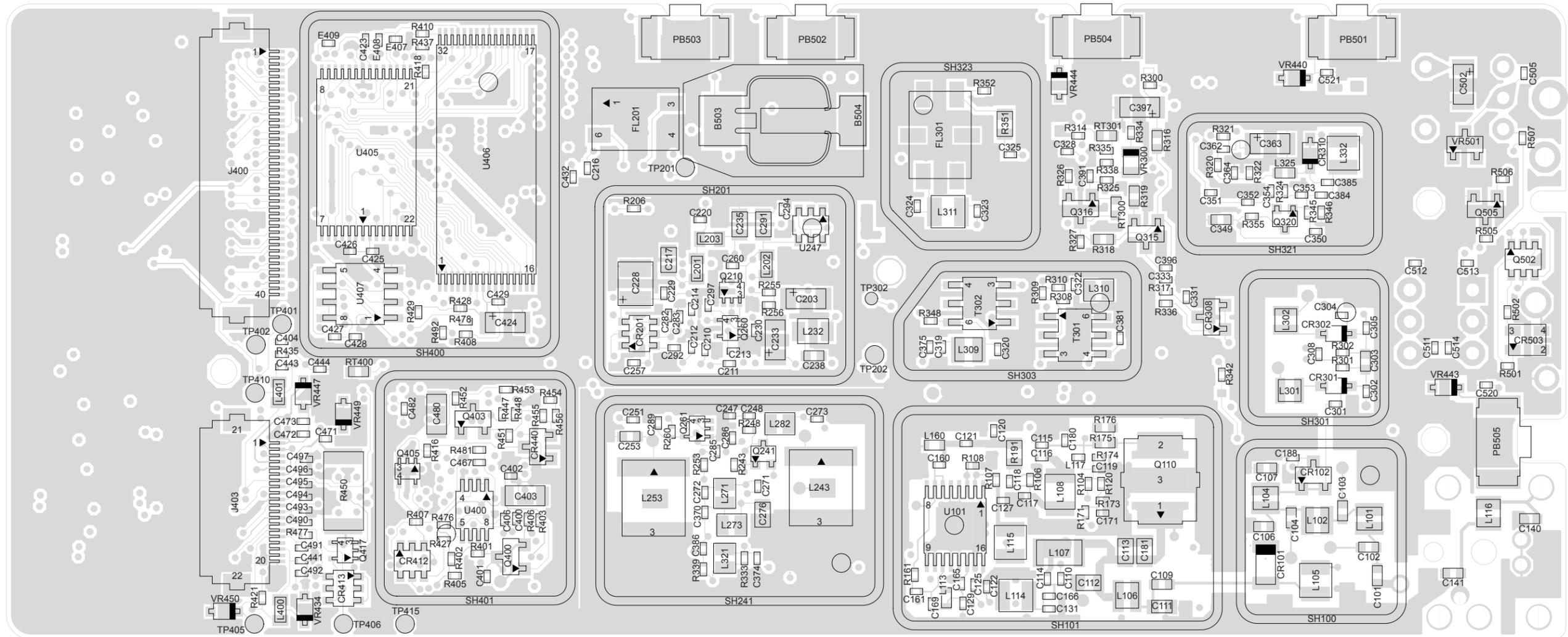


Figure 9-108. UHF (450-527 MHz) 5000/7000 Series Main Board Top Side PCB 8485677Z03

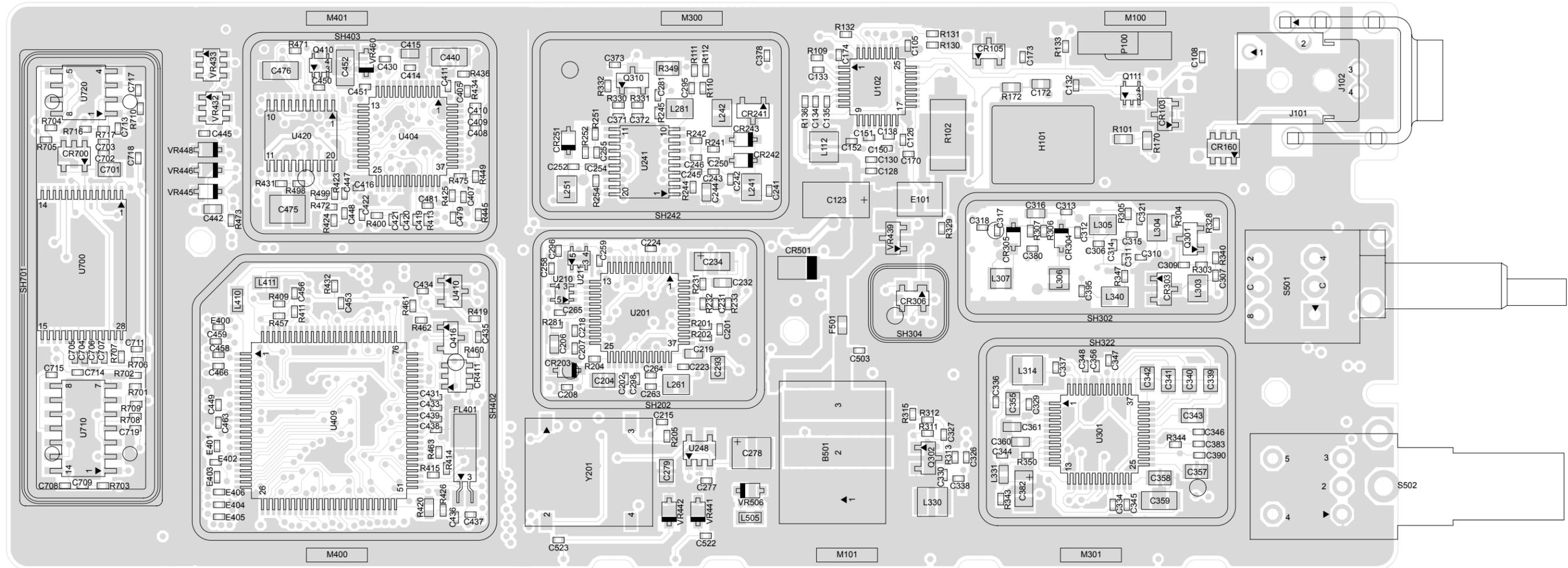
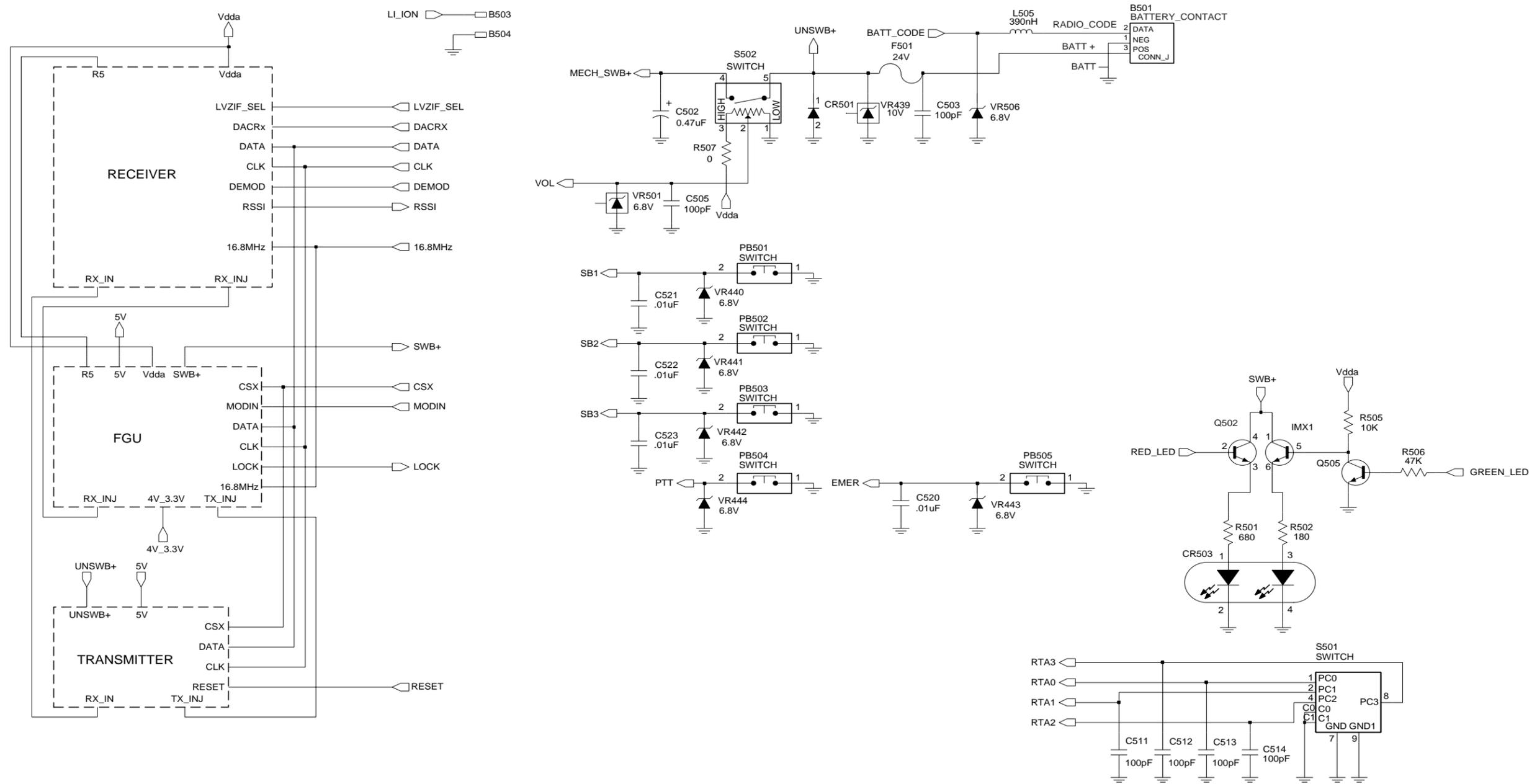
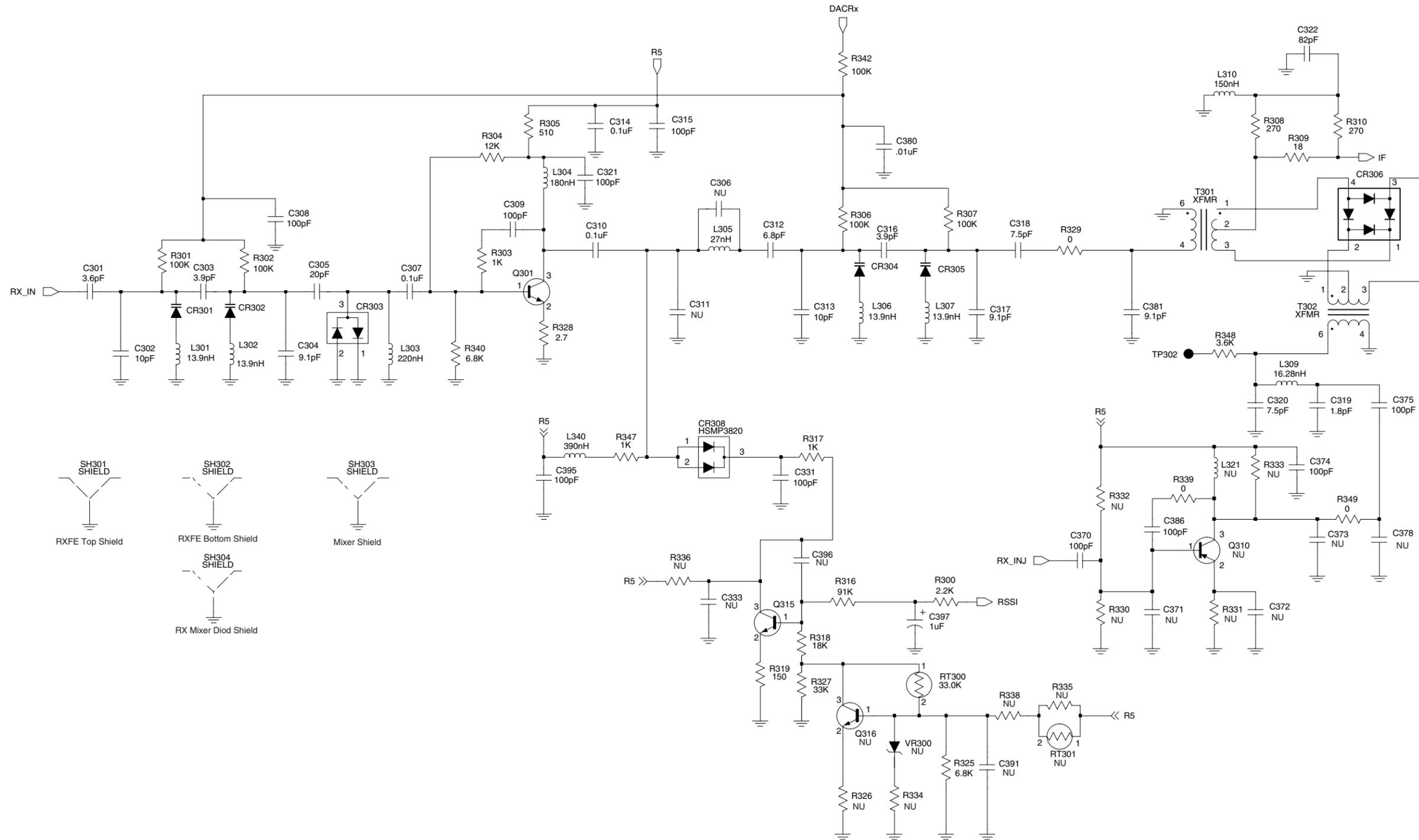


Figure 9-109. UHF (450-527 MHz) 5000/7000 Series Main Board Bottom Side PCB 8486677Z03



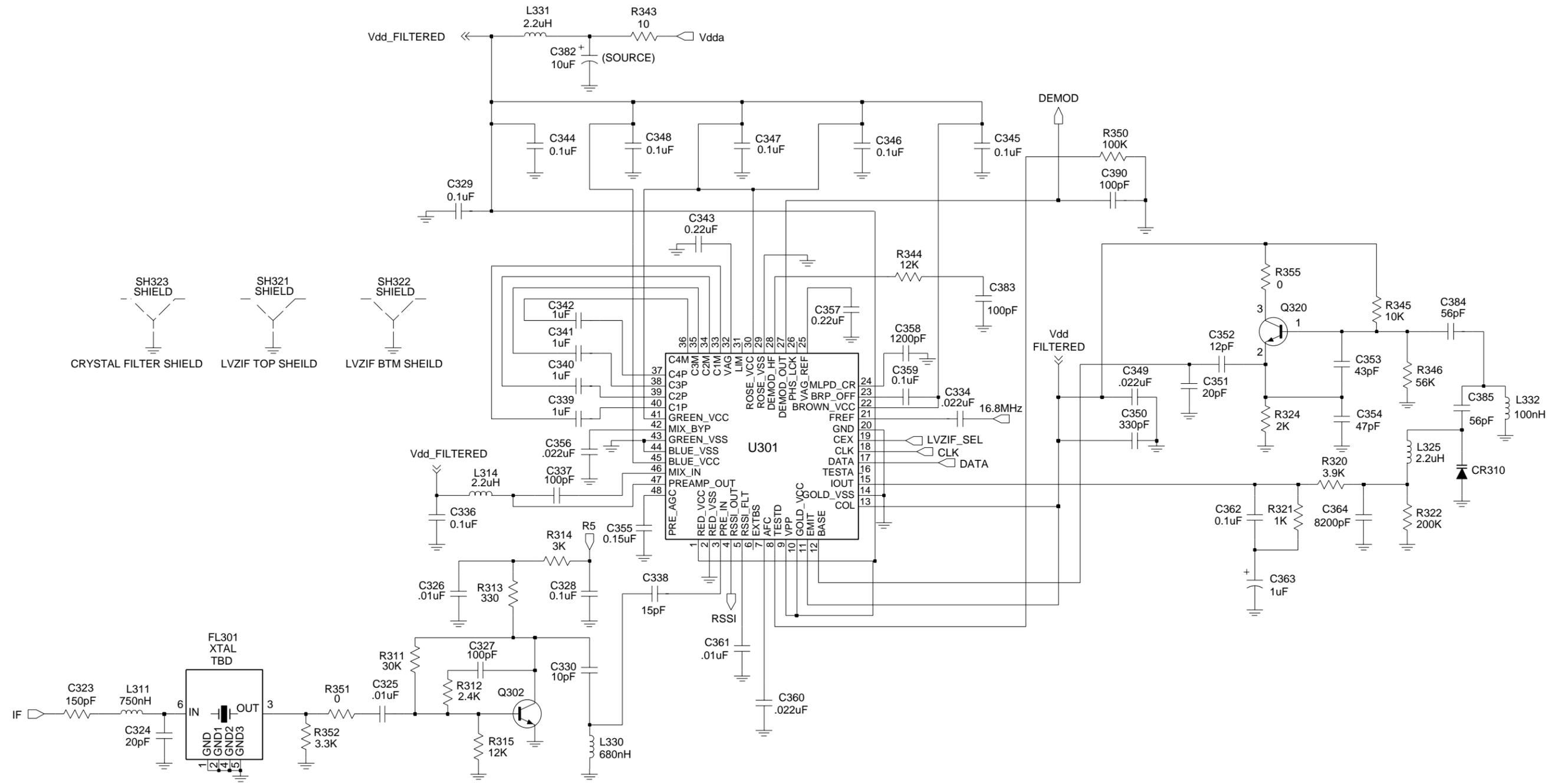
FL08307410

Figure 9-110. UHF (450-527 MHz) Controls and Switches Schematic Diagram



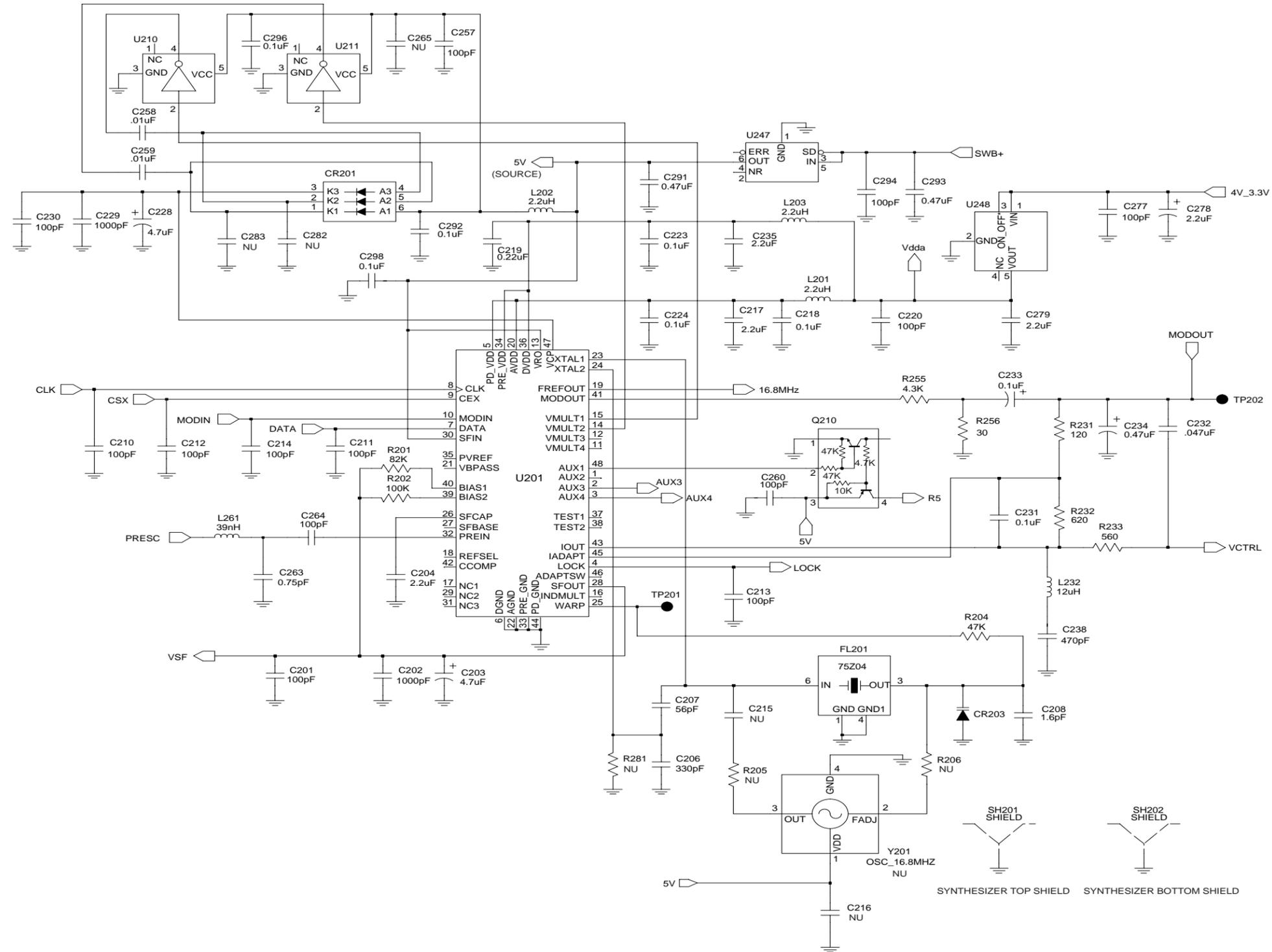
FL08307420

Figure 9-111. UHF (450-527 MHz) Receiver Front End Schematic Diagram



FL08307430

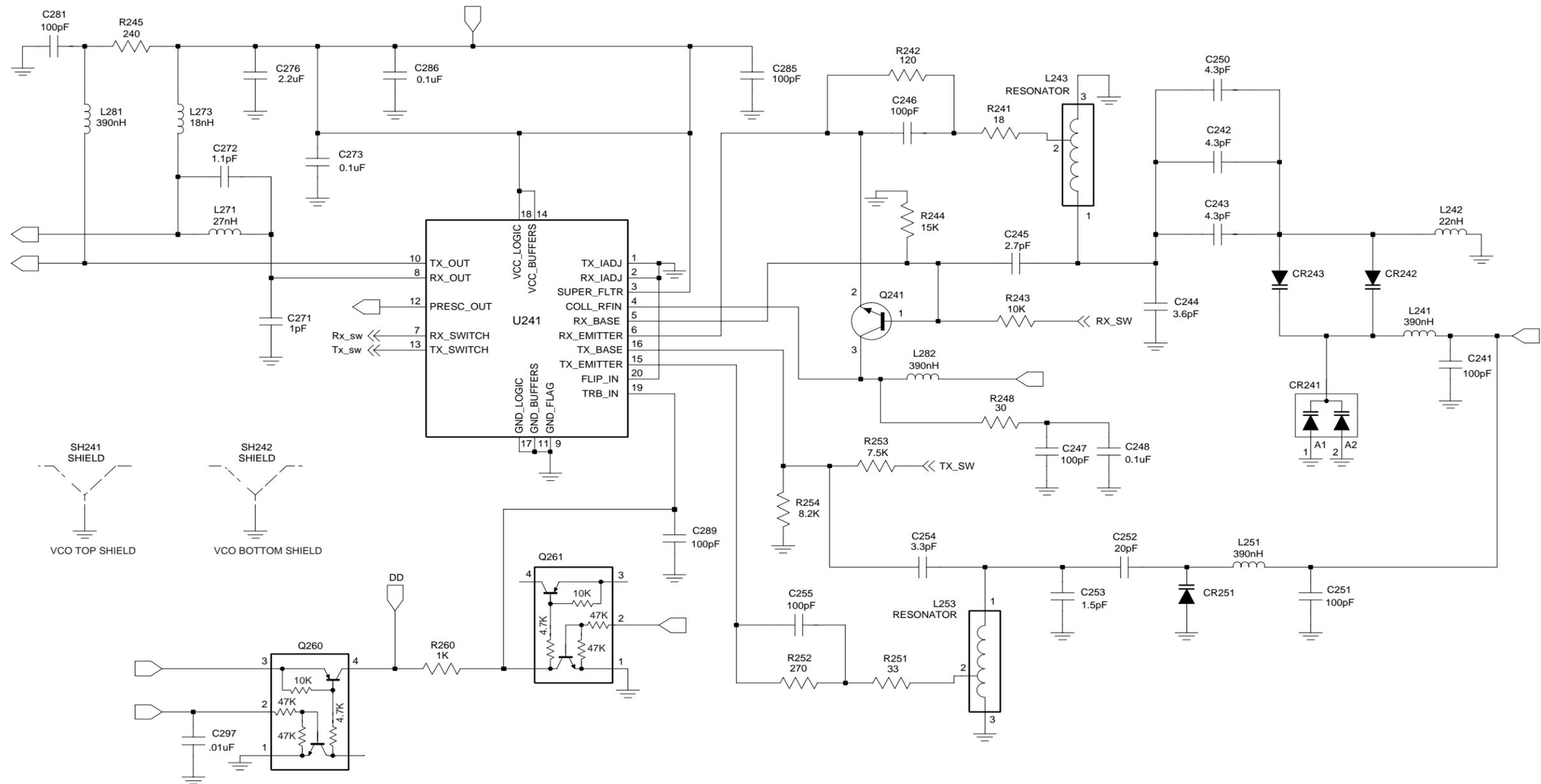
Figure 9-112. UHF (450-527 MHz) Receiver Back End Schematic Diagram



FL0830751O

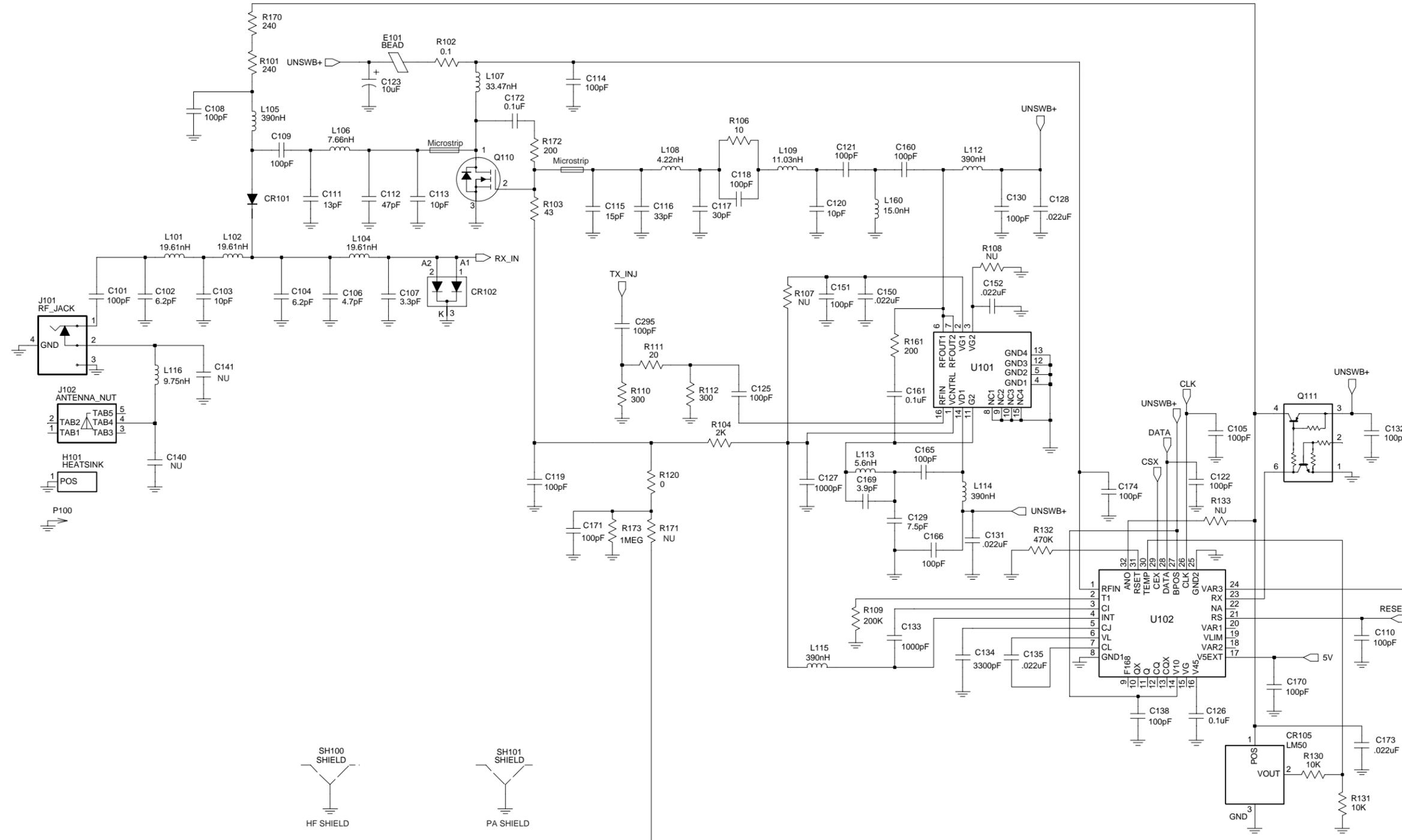
Figure 9-113. UHF (450-527 MHz) Synthesizer Schematic Diagram





FL08307520

Figure 9-114. UHF (450-527 MHz) Voltage Controlled Oscillator Schematic Diagram



FL08307530

Figure 9-115. UHF (450-527 MHz) Transmitter Schematic Diagram

**UHF (450-527 MHz) Radio Parts List (PCB 8485641Z06 / 8485677Z03)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F28	11pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2103689A22	11pF
C112	2180605Z28	33pF
C113	2180605Z22	18pF
C114	2113743N50	100pF
C115	2113743N36	27pF
C116	2113743N27	11pF
C117	NOT PLACED	-
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N23	7.5pF, 0.5
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A18	10uF, 10%, 16V
C125	2113743N50	100pF
C126	2113743M24	100000pF, +80%/-20%
C127	2113743L17	1000pF, 10%
C128	2113743M08	22000pF, +80%/-20%
C129	2113743N22	6.8pF, 0.5
C130	2113743N50	100pF
C131	2113743M08	22000pF, +80%/-20%
C132	2113743N50	100pF
C133	2113743L17	1000pF, 10%
C134	2113743L29	3300pF, 10%
C135	2113743M08	22000pF, +80%/-20%
C138	2113743N50	100pF
C140	NOT PLACED	-
C141	2113740F25	8.2pF
C150	2113743M08	22000pF, +80%/-20%
C151	2113743N50	100pF
C152	2113743M08	22000pF, +80%/-20%
C160	2113743N44	56pF
C161	2113743M24	100000pF, +80%/-20%
C165	2113743N50	100pF
C166	2113743N50	100pF
C169	2113743N09	2.0pF, 0.25
C170	2113743N50	100pF
C171	2113743N50	100pF
C172	2113743E20	0.10uF, 10%
C173	2113743M08	22000pF, +80%/-20%
C174	2113743N50	100pF
C180	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
C181	NOT PLACED	-
C188	2113743N39	36pF
C201	2113743N50	100pF
C202	2113743L17	1000pF, 10%
C203	2311049A56	4.7uF, 20%, 10V
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N40	39pF
C208	NOT PLACED	-
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C215	NOT PLACED	-
C216	NOT PLACED	-
C217	2104993J02	2.2uF
C218	2113743M24	100000pF, +80%/-20%
C219	2113743K16	0.220uF, +80%/-20%
C220	2113743N50	100pF
C223	2113743M24	100000pF, +80%/-20%
C224	2113743M24	100000pF, +80%/-20%
C228	2311049J11	4.7uF, 10%, 16V
C229	2113743L17	1000pF, 10%
C230	2113743N50	100pF
C231	2113743M24	100000pF, +80%/-20%
C232	2113743E12	0.047uF, 10%
C233	2311049A01	0.1uF, 10%, 35V
C234	2311049A05	0.47uF, 10%, 25V
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N17	4.3pF, 0.25
C243	2113743N17	4.3pF, 0.25
C244	2113740F14	3.0pF
C245	2113743N12	2.7pF, 0.25
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	100000pF, +80%/-20%
C250	2113743N17	4.3pF, 0.25
C251	2113743N50	100pF
C252	2113743N33	20pF
C253	2113740F07	1.5pF
C254	2113743N14	3.3pF, 0.25
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	10000pF, 10%
C259	2113743L41	10000pF, 10%
C260	2113743N50	100pF
C263	2113743N02	0.75pF, 0.25
C264	2113743N50	100pF
C265	NOT PLACED	-
C271	2113743N03	1.0pF, 0.25
C272	2113743N04	1.1pF, 0.25
C273	2113743M24	100000pF, +80%/-20%
C276	2104993J02	2.2uF

Circuit Ref	Motorola Part No.	Description
C277	2113743N50	100pF
C278	2311049A57	10uF, 10%, 20V
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C282	NOT PLACED	-
C283	NOT PLACED	-
C285	2113743N50	100pF
C286	2113743M24	100000pF, +80%/-20%
C289	2113743N50	100pF
C291	2311049A69	10uF, 20%, 6.3V
C292	2113743M24	100000pF, +80%/-20%
C293	2113743A27	0.470uF, 10%
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	100000pF, +80%/-20%
C297	2113743L41	10000pF, 10%
C298	2113743M24	100000pF, +80%/-20%
C301	2113743N24	8.2pF, 0.5
C302	2113743N28	12pF
C303	2113740L09	4.3pF, 0.1
C304	2113743N27	11pF
C305	2113743N24	8.2pF, 0.5
C306	NOT PLACED	-
C307	2113743M24	100000pF, +80%/-20%
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743M24	100000pF, +80%/-20%
C311	NOT PLACED	-
C312	2113743N23	7.5pF, 0.5
C313	2113743N27	11pF
C314	2113743M24	100000pF, +80%/-20%
C315	2113743N50	100pF
C316	2113740L09	4.3pF, 0.1
C317	2113743N27	11pF
C318	2113743N23	7.5pF, 0.5
C319	2113743N15	3.6pF, 0.25
C320	2113743N23	7.5pF, 0.5
C321	2113743N50	100pF
C322	2113743N48	82pF
C323	2113743N54	150pF
C324	2113743N33	20pF
C325	2113743L41	10000pF, 10%
C326	2113743L41	10000pF, 10%
C327	2113743N50	100pF
C328	2113743M24	100000pF, +80%/-20%
C329	2113743M24	100000pF, +80%/-20%
C330	2113743N26	10pF
C331	2113743N50	100pF
C333	NOT PLACED	-
C334	2113743M08	22000pF, +80%/-20%
C336	2113743M24	100000pF, +80%/-20%
C337	2113743N50	100pF
C338	2113743N30	15pF
C339	2180478Z20	1uF
C340	2180478Z20	1uF
C341	2180478Z20	1uF

Circuit Ref	Motorola Part No.	Description
C342	2180478Z20	1uF
C343	2113743A23	0.220uF, 10%
C344	2113743M24	100000pF, +80%/-20%
C345	2113743M24	100000pF, +80%/-20%
C346	2113743M24	100000pF, +80%/-20%
C347	2113743M24	100000pF, +80%/-20%
C348	2113743M24	100000pF, +80%/-20%
C349	2113743E07	0.022uF
C350	2113743L05	330pF, 10%
C351	2113743N33	20pF
C352	2113743N28	12pF
C353	2113743N41	43pF
C354	2113743N42	47pF
C355	2113743A24	0.330uF, 10%
C356	2113743M08	22000pF, +80%/-20%
C357	2113743A23	0.220uF, 10%
C358	2113741A23	1200pF
C359	2109720D14	0.1uF, low distortion
C360	2113743E07	0.022uF
C361	2113741F49	10nF
C362	2113743M08	22000pF, +80%/-20%
C363	2311049A40	2.2uF, 10%, 10V
C364	2113743L41	10000pF, 10%
C370	2113743N50	100pF
C371	NOT PLACED	-
C372	NOT PLACED	-
C373	NOT PLACED	-
C374	2113743N50	100pF
C375	2113743N50	100pF
C378	NOT PLACED	-
C380	2113743L41	10000pF, 10%
C381	2113743N18	4.7pF, 0.25
C382	2311049A59	10uF, 10%, 6V
C383	2113743N50	100pF
C384	2113743N44	56pF
C385	2113743N44	56pF
C386	2113743N50	100pF
C390	2113743N50	100pF
C391	NOT PLACED	-
C395	2113743N50	100pF
C396	NOT PLACED	-
C397	2311049A07	1uF, 10%, 16V
C400	2113743L41	10000pF, 10%
C401	2113743M24	100000pF, +80%/-20%
C402	2113743M24	100000pF, +80%/-20%
C403	2113743G24	2.2uF, +/-80%/-20%
C404	NOT PLACED	-
C405	NOT PLACED	-
C406	NOT PLACED	-
C407	2113928N01	0.1uF, 10%
C408	2113743N50	100pF
C409	2113743M24	100000pF, +80%/-20%
C410	2113928N01	0.1uF, 10%
C411	2113743M24	100000pF, +80%/-20%
C414	2113743M24	100000pF, +80%/-20%
C415	2185895Z01	0.01uF, low distortion

Circuit Ref	Motorola Part No.	Description
C416	2113928N01	0.1uF, 10%
C419	NOT PLACED	-
C420	2113743L41	10000pF, 10%
C421	2113928N01	0.1uF, 10%
C422	2113743M24	100000pF, +80%/-20%
C423	2113743N50	100pF
C424	2311049A59	10uF, 10%, 6V
C425	2113743M24	100000pF, +80%/-20%
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	100000pF, +80%/-20%
C429	2113743M24	100000pF, +80%/-20%
C430	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on Models LS <sup>+</sup> Only)
C431	2113743N50	100pF
C432	NOT PLACED	-
C433	2113743L41	10000pF, 10%
C434	2113928N01	0.1uF, 10%
C435	2113743M24	100000pF, +80%/-20%
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF, +80%/-20%
C441	2113743N50	100pF
C442	2113743E20	0.10uF, 10%
C443	2113928N01	0.1uF, 10%
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	22000pF, +80%/-20%
C448	2113928N01	0.1uF, 10%
C449	2113743N50	100pF
C450	NOT PLACED	-
C451	2113743M08	22000pF, +80%/-20%
C452	2113743B29	1uF, 10%
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF, 10%
C471	2113743N50	100pF
C472	2113743L09	470pF, 10%
C473	2113743L09	470pF, 10%
C475	2113743H14	10uF, +80%/-20%
C476	2113928D08	10uF, +/-80%/-20%
C479	2113928N01	0.1uF, 10%
C480	2113928D08	10uF, +/-80%/-20%
C481	2113928N01	0.1uF, 10%
C482	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on Models LS <sup>+</sup> Only)
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47uF, 10%, 25V
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF, 10%
C521	2113743L41	10000pF, 10%
C522	2113743L41	10000pF, 10%
C523	2113743L41	10000pF, 10%
C524	2113743N50	100pF
C525	2113743N50	100pF
C526	2113743N50	100pF
C527	2113743N50	100pF
C528	2113743N50	100pF
C529	NOT PLACED	-
CR101	4880973Z02	Pin diode
CR102	4802245J41	Pin diode
CR103	4802245J41	Pin diode
CR105	5185963A15	Temperature sensor
CR160	NOT PLACED	-
CR201	4802233J09	Triple diode (SOT 25)
CR203	4862824C03	Varactor
CR241	4805649Q13	Varactor
CR242	4862824C01	Varactor
CR243	4862824C01	Varactor
CR251	4862824C01	Varactor
CR301	4862824C01	Varactor
CR302	4862824C01	Varactor
CR303	4880154K03	Dual common anode-cathode diode
CR304	4862824C01	Varactor
CR305	4862824C01	Varactor
CR306	4802245J42	Ring Quad diode (SOT-143)
CR308	4802245J41	Pin diode
CR310	4862824C01	Varactor
CR411	4802245J62	Diode Schottky
CR412	4802245J62	Diode Schottky
CR413	4802245J62	Diode Schottky
CR440	4813833C02	Dual common cathode diode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
E101	2484657R01	Ferrite bead
E400	2480640Z01	Ferrite bead
E401	2480640Z01	Ferrite bead
E402	2480640Z01	Ferrite bead
E403	2480640Z01	Ferrite bead
E404	2480640Z01	Ferrite bead
E405	2480640Z01	Ferrite bead
E406	2480640Z01	Ferrite bead
E407	2480640Z01	Ferrite bead
E408	2480640Z01	Ferrite bead
E409	2480640Z01	Ferrite bead

Circuit Ref	Motorola Part No.	Description
F501	6580542Z01	3A fuse
FL201	4805875Z04	16.8 MHz Xtal oscillator (not field serviceable)
FL301	4802245J43	Xtal Filter 45.1 MHz
FL401	4870368G02	Xtal Oscillator 38.4 kHz
H101	2680499Z01	Heat spreader
J101	0985613Z01	RF Jack
J102	0280519Z02	Antenna nut
J403	0905505Y02	20-pin connector
L101	2460591B28	13.37nH
L102	2460591B28	13.37nH
L104	2460591B48	15.22nH
L105	2462587N22	390nH
L106	2460591A19	8.71nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L112	2462587N42	12nH, 5%
L113	2413926H09	5.6nH, 0.3
L114	2462587N42	12nH, 5%
L115	2462587N22	390nH
L116	2479990C02	16.28nH
L117	2409154M17	22nH
L160	2413926H14	15nH, 5%
L201	2462587Q20	2200nH, 20%
L202	2462587Q20	2200nH, 20%
L203	2462587Q20	2200nH, 20%
L232	2462587P25	12000nH, 5%
L241	2462587V41	390nH
L242	2462587V26	22nH, 5%
L243	2460593C03	Multi-layered Teflon resonator, Rx
L251	2462587V41	390nH
L253	2460593C03	Multi-layered Teflon resonator, Tx
L261	2462587V29	39nH, 5%
L271	2462587V27	27nH, 5%
L273	2462587V25	18nH, 5%
L281	2462587V41	390nH
L282	2462587V41	390nH
L301	2479990B01	11.03nH
L302	2479990B01	11.03nH
L303	2462587V26	22nH, 5%
L304	2462587V37	180nH, 5%
L305	2462587V23	12nH, 5%
L306	2479990B01	11.03nH
L307	2479990B01	11.03nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH, 5%
L311	2462587N65	750nH, 5%
L314	2462587N72	2200nH, 5%
L321	NOT PLACED	-
L325	2480646Z20	2.2uH
L330	2462587N64	680nH, 5%
L331	2480646Z20	2.2uH
L332	2462587N53	100nH, 5%
L340	2462587V41	390nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH

Circuit Ref	Motorola Part No.	Description
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
P100	3905643V01	Ground contact finger
PB501	4080523Z01	Tactile switch, pushbutton
PB502	4080523Z01	Tactile switch, pushbutton
PB503	4080523Z01	Tactile switch, pushbutton
PB504	4080523Z01	Tactile switch, pushbutton
PB505	4080523Z01	Tactile switch, pushbutton
Q110	4813828A09	RF Power Amplifier
Q111	4802245J50	Dual NPN/PNP transistor
Q210	4802245J50	Dual NPN/PNP transistor
Q241	4805218N63	RF NPN transistor
Q260	4802245J50	Dual NPN/PNP transistor
Q261	4802245J50	Dual NPN/PNP transistor
Q301	4802245J44	NPN Transistor
Q302	4802245J44	NPN Transistor
Q310	NOT PLACED	-
Q315	4880214G02	NPN Transistor
Q316	NOT PLACED	-
Q320	4805218N63	RF NPN transistor
Q400	4809579E18	Mosfet P - channel
Q403	4813824A17	Bipolar Transistor, PNP
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	Mosfet P - channel
Q417	4802245J50	Dual NPN/PNP transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor
R101	0662057A34	240
R102	0680539Z01	0.1
R104	0662057N15	47K
R106	0662057M26	10
R107	NOT PLACED	-
R108	0662057M92	5600
R109	0662057N30	200K
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43K
R130	0662057M98	10K
R131	0662057N05	18K
R132	0662057N33	270K
R133	NOT PLACED	-
R136	0662057N47	1M
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43K
R172	0662057A32	200
R173	0662057N29	180K
R174	0662057N15	47K
R175	0662057B59	3
R176	0662057B59	3
R191	0662057C01	0
R201	0662057N21	82K
R202	0662057N23	100K

Circuit Ref	Motorola Part No.	Description
R204	0662057N15	47K
R205	NOT PLACED	-
R206	NOT PLACED	-
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18
R242	0662057M52	120
R243	0662057M98	10K
R244	0662057N03	15K
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M38	33
R252	0662057M60	270
R253	0662057M95	7500
R254	0662057M96	8200
R255	0662057M89	4300
R256	0662057M37	30
R260	0662057M74	1000
R281	NOT PLACED	-
R300	0662057M82	2200
R301	0662057N23	100K
R302	0662057N23	100K
R303	0662057M78	1500
R304	0662057N01	12K
R305	0662057M66	470
R306	0662057N23	100K
R307	0662057N23	100K
R308	0662057M60	270
R309	0662057M32	18
R310	0662057M60	270
R311	0662057N10	30K
R312	0662057M83	2400
R313	0662057M62	330
R314	0662057M85	3000
R315	0662057N01	12K
R316	0662057A96	91K
R317	0662057M74	1000
R318	0662057A79	18K
R319	0662057A29	150
R320	0662057M74	1000
R321	0662057M83	2400
R322	0662057N30	200K
R324	0662057M81	2000
R325	0662057M94	6800
R326	NOT PLACED	-
R327	0662057N11	33K
R328	0662057M12	2.7
R329	0662057M01	0
R330	NOT PLACED	-
R331	NOT PLACED	-
R332	NOT PLACED	-
R333	NOT PLACED	-
R334	NOT PLACED	-
R335	NOT PLACED	-
R336	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
R338	NOT PLACED	-
R339	0662057M01	0
R340	0662057M96	8200
R342	0662057N23	100K
R343	0662057M26	10
R344	0662057N01	12K
R345	0662057M98	10K
R346	0662057N17	56K
R347	0662057M74	1000
R348	0662057M87	3600
R349	0662057C01	0
R350	0662057N23	100K
R351	0662057C01	0
R352	0662057M86	3300
R355	0662057M01	0
R400	0662057N15	47K
R401	0662057M01	0
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	NOT PLACED	-
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K, 1%
R415	0662057V26	91K, 1%
R416	0662057M98	10K
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2000
R423	0662057N39	470K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057M98	10K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R437	NOT PLACED	-
R445	0662057N08	24K
R447	0662057N23	100K
R448	0662057M98	10K
R449	0662057N08	24K
R450	0683962T45	68 ohms, 1W
R451	0662057N03	15K
R452	0662057N23	100K
R453	NOT PLACED	-
R454	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
R455	NOT PLACED	-
R456	0662057M01	0
R457	0662057M98	10K
R460	0662057M90	4700
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057N06	20K
R472	0662057N12	36K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330K
R477	0662057M74	1000
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
RT300	0680590Z01	THERMISTOR_33K
RT301	NOT PLACED	-
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z01	Frequency switch
S502	1880619Z02	Volume/on-off switch
SH100	2680507Z01	Harmonic Filter shield
SH101	2680510Z01	RF PA shield
SH201	2680511Z01	Synthesizer top shield
SH202	2680511Z01	Synthesizer bottom shield
SH241	2680513Z01	Resonators shield
SH242	2680514Z01	VCO Buffer IC shield
SH301	2680554Z01	Receiver front end shield
SH302	2680555Z01	Receiver front end bottom shield
SH303	2680509Z01	Mixer shield
SH304	2680624Z01	Mixer diode shield
SH321	2680508Z01	LVZIF 2nd LO shield
SH322	2680514Z01	LVZIF shield
SH323	2680553Z01	Crystal Filter shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller on-off shield
SH402	2680515Z01	Microprocessor shield
SH403	2680516Z01	Asfic_Cmp/Audio PA shield
T301	2580541Z02	Balun transformer
T302	2580541Z02	Balun transformer
U101	5185130C65	IC VHF/UHF/800 MHZ LDMOS DRIVER
U102	5185765B28	PCIC
U201	5185963A27	LVFRACN Synthesizer IC
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO BUFFER IC
U247	5105739X05	SOT 5V Regulator
U248	5102463J58	3.3V Regulator
U301	5109632D83	LVZIF IC
U400	5102463J40	3.3V Regulator

Circuit Ref	Motorola Part No.	Description
U404	5185963A53	ASFIC_CMP IC
U405	NOT PLACED	-
U406	*5102463J59	128K x 8 Flash Memory
U407	*5102463J64	16K x 8 EEPROM
U409	5102226J56	Microprocessor
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
VR300	NOT PLACED	-
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J73	ZENER DIODE-6.8V
VR439	4880140L17	Zener diode-12V
VR440	4802245J73	ZENER DIODE-6.8V
VR441	4802245J73	ZENER DIODE-6.8V
VR442	4802245J73	ZENER DIODE-6.8V
VR443	4802245J73	ZENER DIODE-6.8V
VR444	4802245J73	ZENER DIODE-6.8V
VR445	4802245J53	ZENER DIODE-10V
VR446	4802245J74	ZENER DIODE-10V
VR447	4802245J74	ZENER DIODE-10V
VR448	4802245J74	ZENER DIODE-10V
VR449	4802245J74	ZENER DIODE-10V
VR450	4802245J75	ZENER DIODE-12V
VR460	4802245J73	ZENER DIODE-6.8V
VR501	4813830A18	6.8V Zener
VR506	4802245J73	ZENER DIODE-6.8V
Y201	NOT PLACED	-
	8485641Z06	UHF B2 main PC board

\* Motorola Depot Servicing only

**Note:** Tolerance  
 Capacitor - 5% unless specified otherwise  
 Inductor - 10% unless specified otherwise  
 Resistor - 5% unless specified otherwise

## Notes

**9.15 UHF Band 2 Circuit Board/Schematic Diagrams and Parts List (PCB 8486686Z01)**

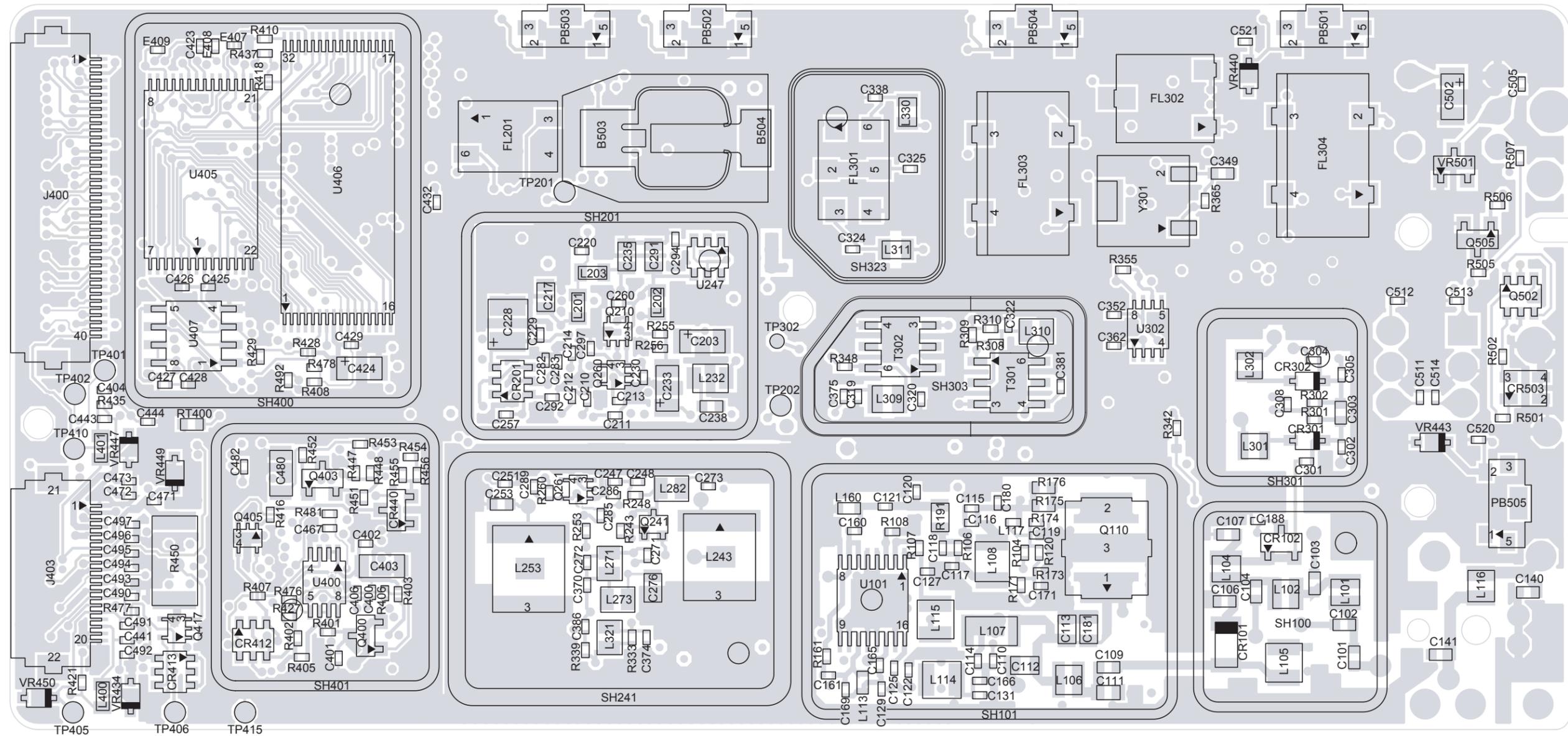


Figure 9-116. UHF (450-527 MHz) 5000/7000 Series Main Board Top Side PCB No. 8486686Z01

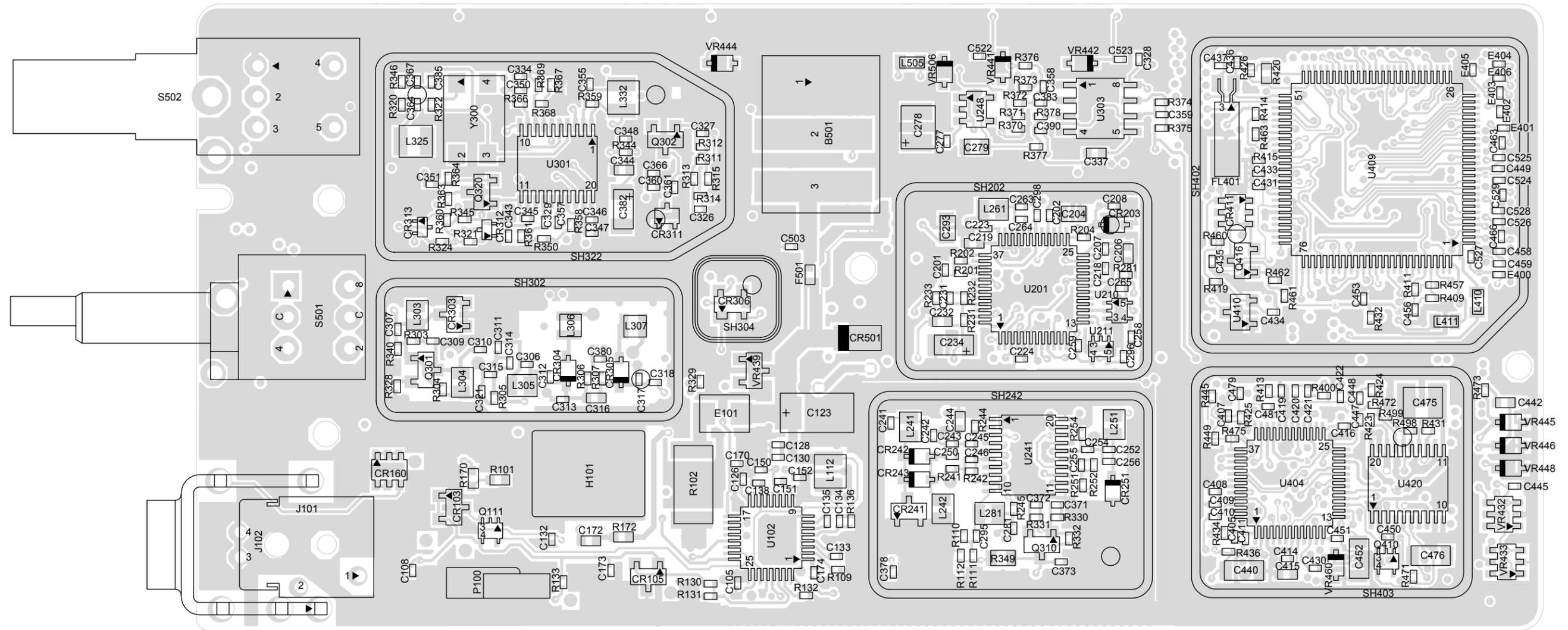


Figure 9-117. UHF (450-527 MHz) 5000/7000 Series Main Board Bottom Side PCB No. 8486686Z01



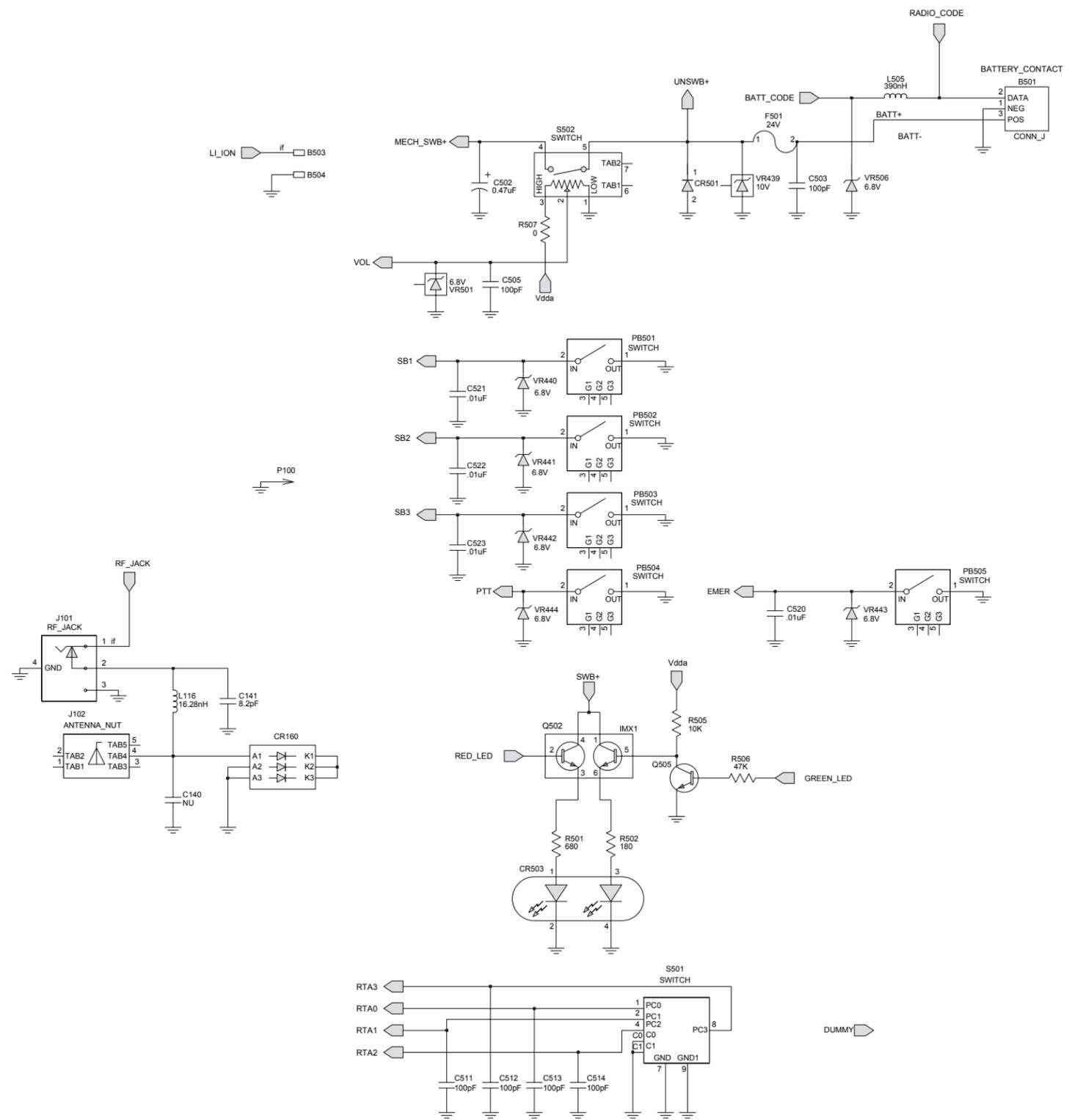


Figure 9-118. UHF (450-527 MHz) Controls and Switches Schematic Diagram

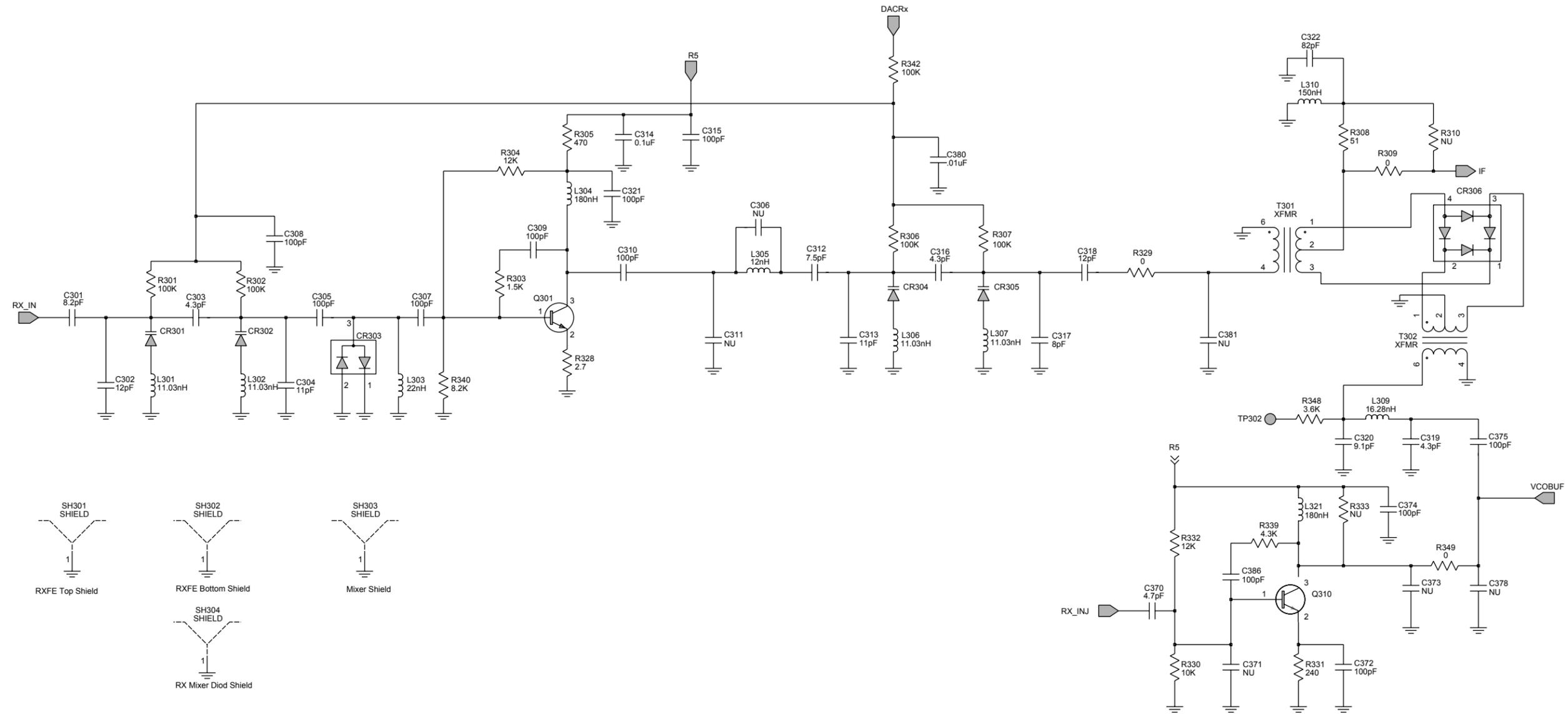


Figure 9-119. UHF (450-527 MHz) Receiver Front End Schematic Diagram

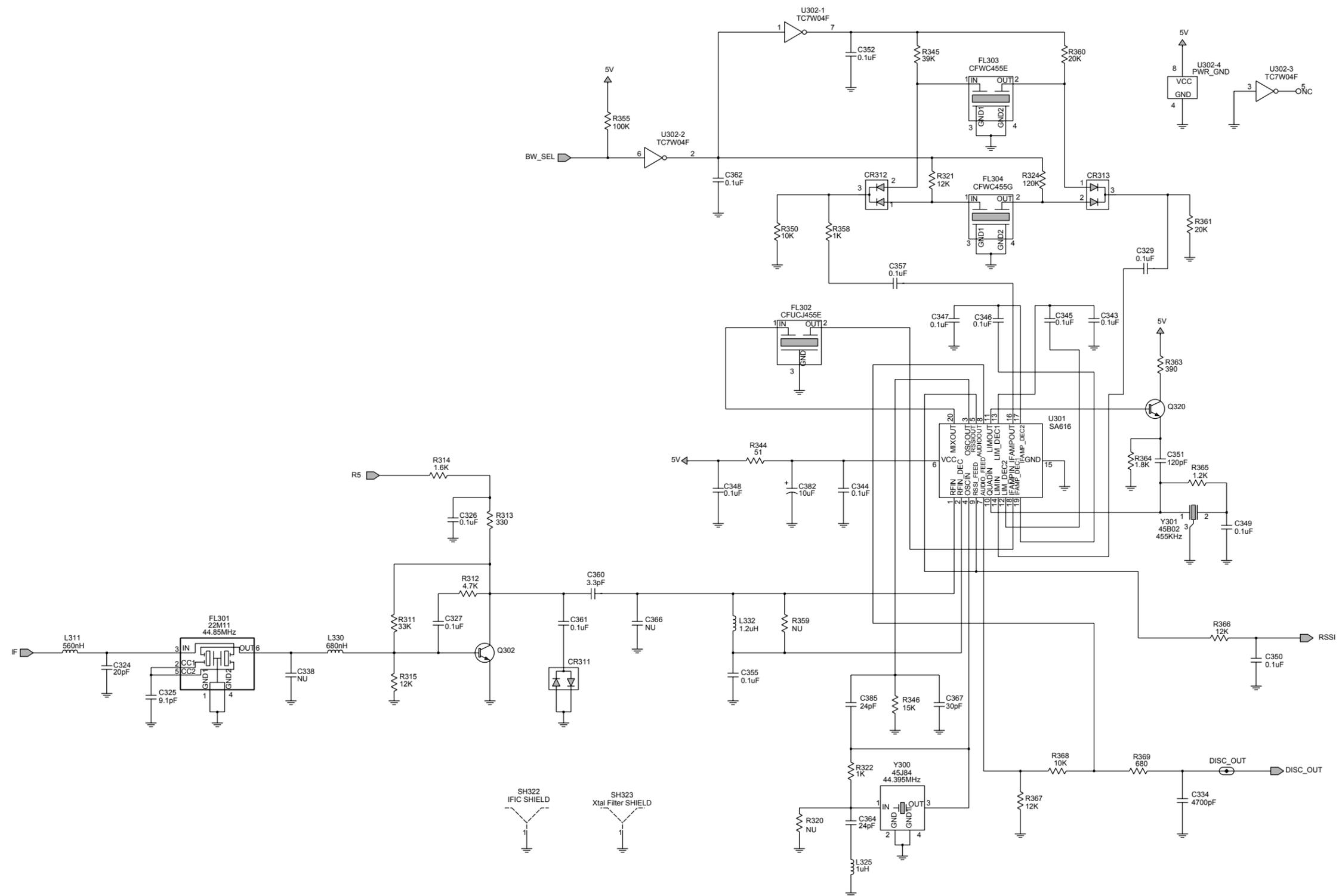


Figure 9-120. UHF (450-527 MHz) Receiver Back End Schematic Diagram

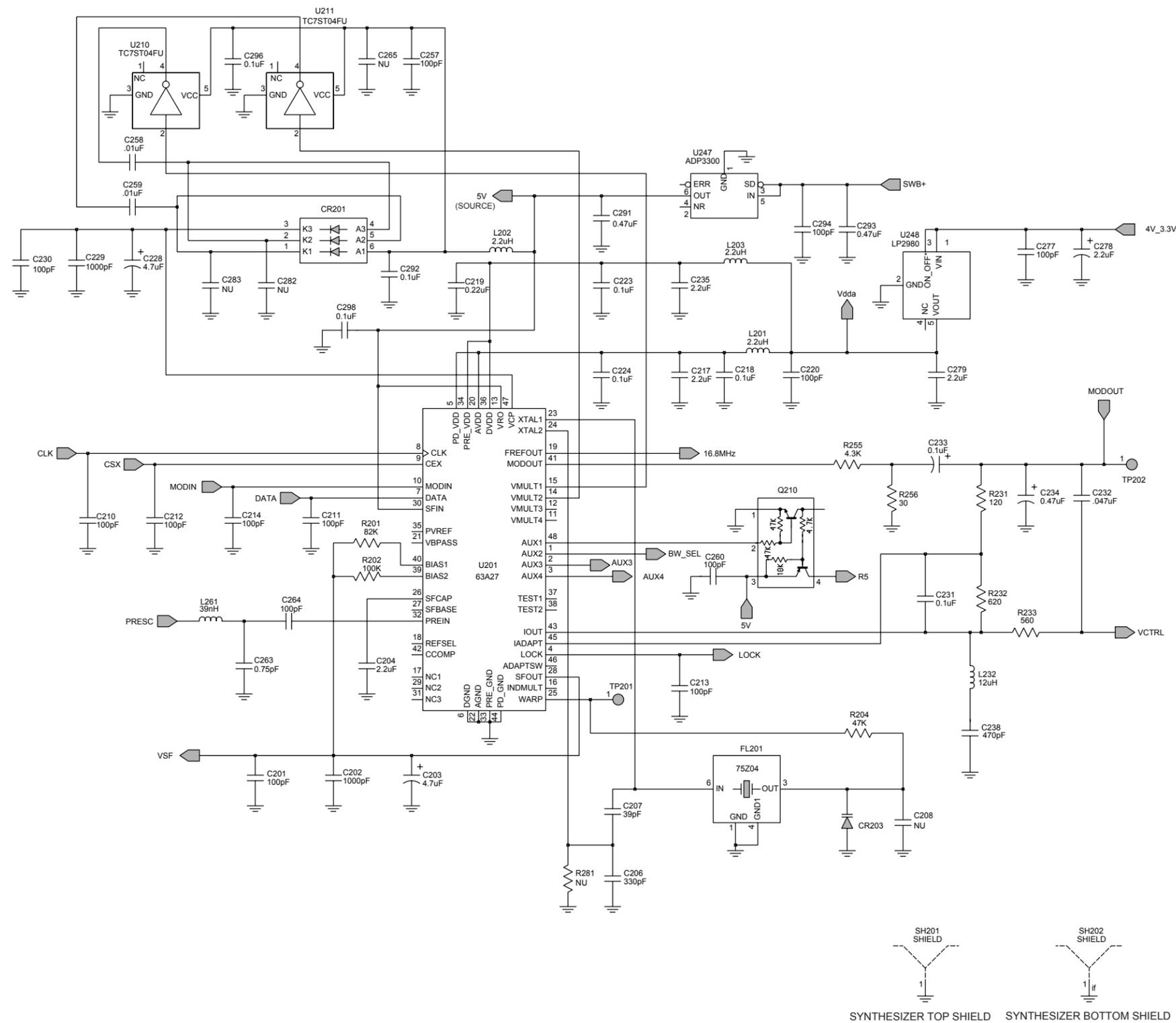


Figure 9-121. UHF (450-527 MHz) Synthesizer Schematic Diagram

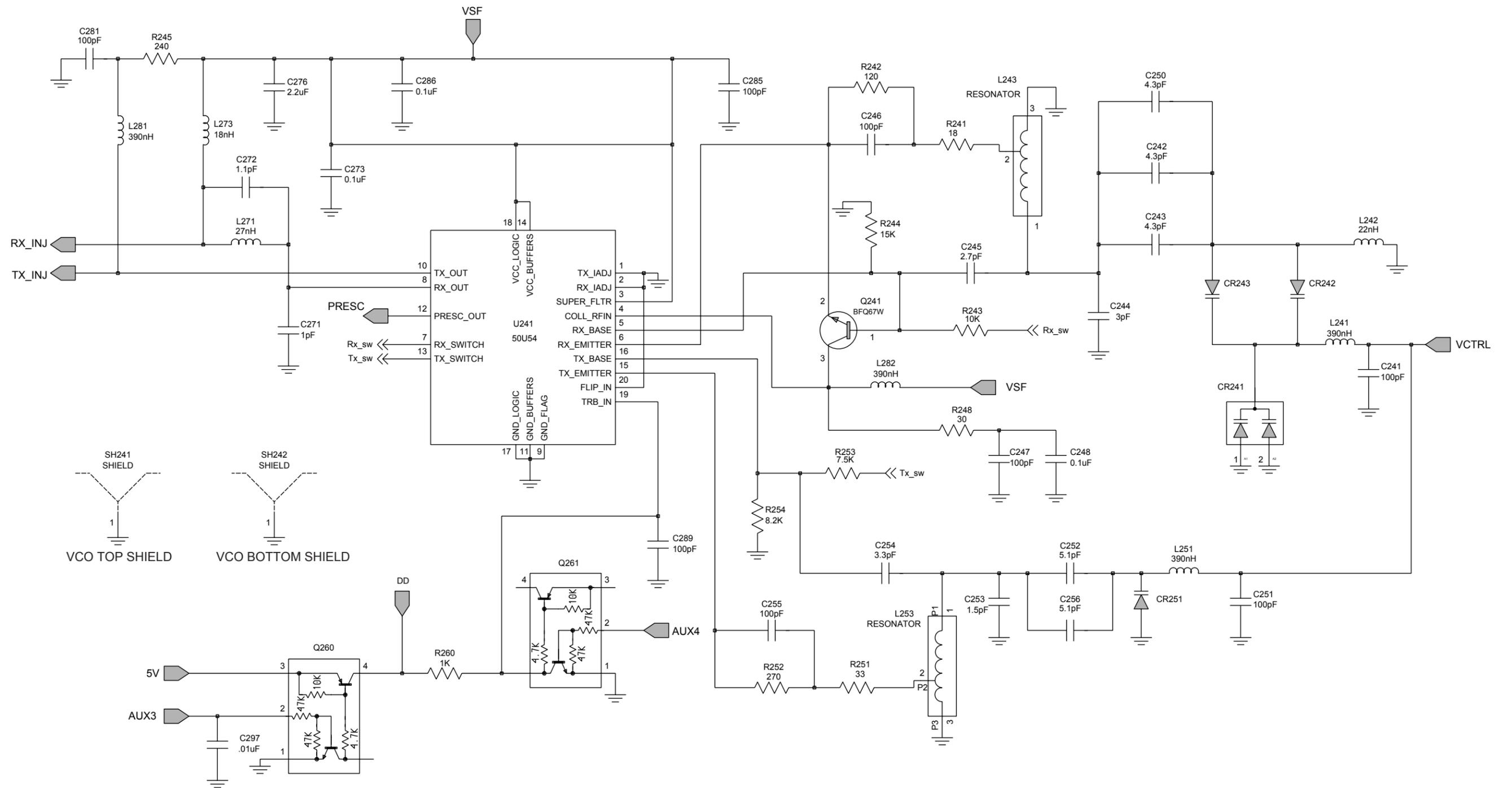


Figure 9-122. UHF (450-527 MHz) Voltage Controlled Oscillator Schematic Diagram

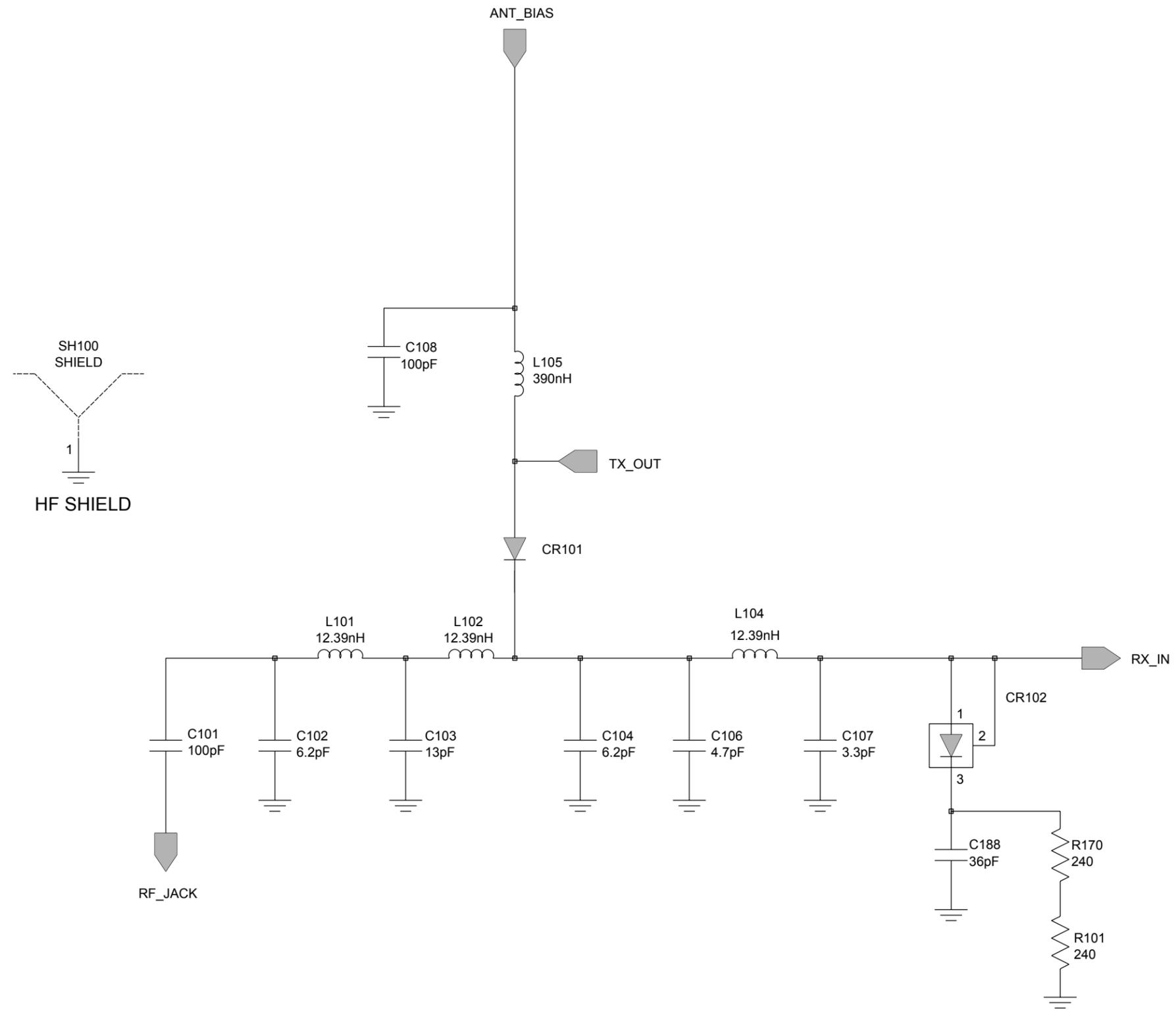


Figure 9-123. UHF (450-527 MHz) Harmonic Filter Schematic Diagram

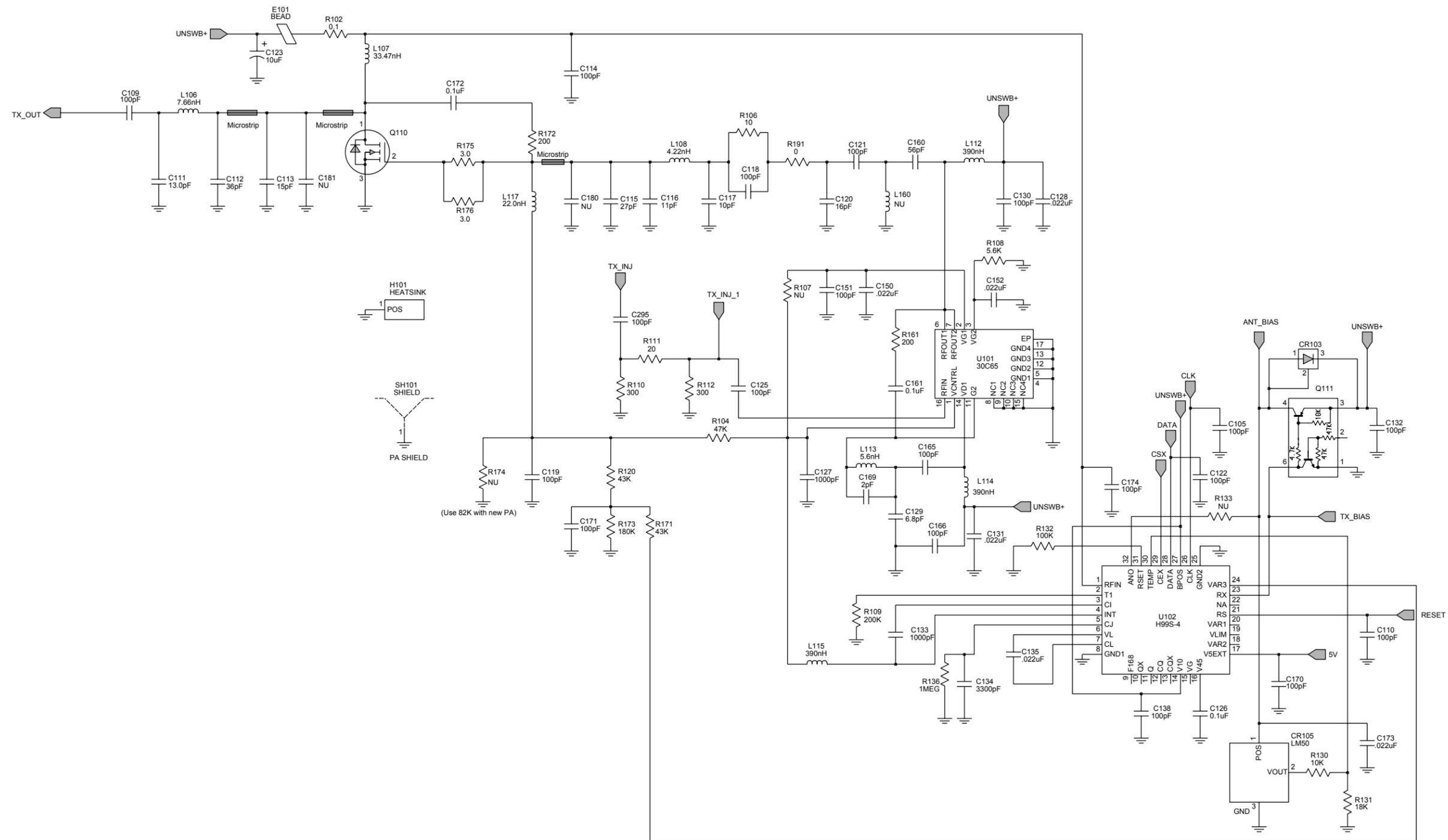


Figure 9-124. UHF (450-527 MHz) Transmitter Schematic Diagram

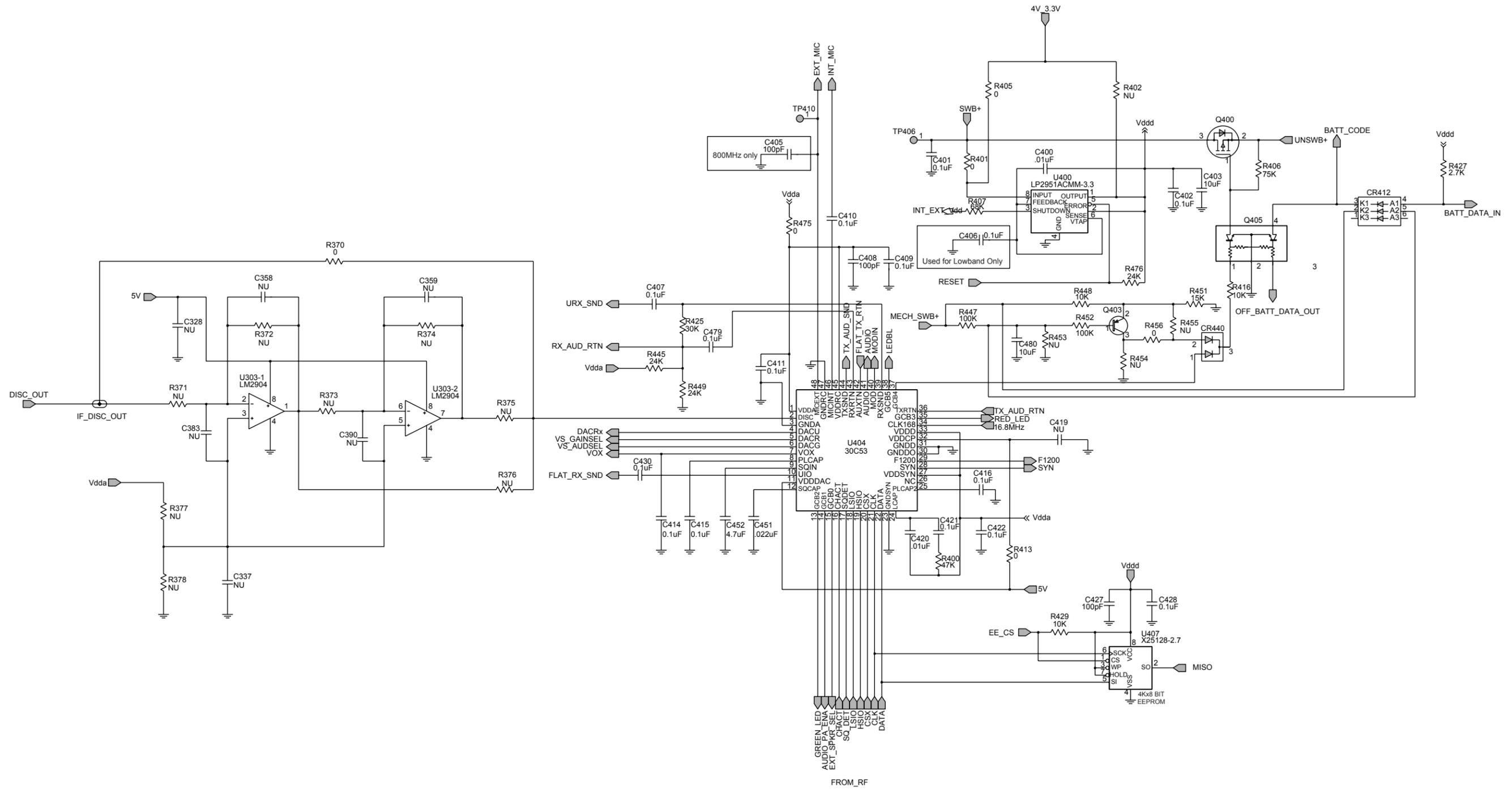


Figure 9-125. UHF (450-527 MHz) Controller ASFIC/ON\_OFF Schematic Diagram



**UHF (450-527 MHz) Radio Parts List  
(PCB 8486686Z01)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F28	11pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2103689A22	11pF
C112	2180605Z28	33pF
C113	2180605Z20	15pF
C114	2113743N50	100pF
C115	2113743N31	16pF
C116	2113743N27	11pF
C117	NOT PLACED	-
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N23	7.5pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A96	33uF
C125	2113743N50	100pF
C126	2113743M24	0.1uF
C127	2113743L17	1000pF
C128	2113743M08	0.022uF
C129	2113743N23	7.5pF
C130	2113743N50	100pF
C131	2113743M08	0.022uF
C132	2113743N50	100pF
C133	2113743L17	1000pF
C134	2113743L29	3300pF
C135	2113743M08	0.022uF
C138	2113743N50	100pF
C140	0662057A67	5.6K
C141	2113740F25	8.2pF
C150	2113743M08	0.022uF
C151	2113743N50	100pF
C152	2113743M08	0.022uF
C160	2113743N44	56pF
C161	2113743M24	0.1uF
C165	2113743N44	56pF
C166	2113743N50	100pF
C169	2113743N09	2pF
C170	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C171	2113743N50	100pF
C172	2113743E20	0.1uF
C173	2113743M08	0.022uF
C174	2113743N50	100pF
C180	NOT PLACED	-
C181	NOT PLACED	-
C188	2113743N39	36pF
C201	2113743N50	100pF
C202	2113743L17	1000pF
C203	2311049A56	4.7uF
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N40	39pF
C208	NOT PLACED	-
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	0.1uF
C219	2113743K16	0.22uF
C220	2113743N50	100pF
C223	2113743M24	0.1uF
C224	2113743M24	0.1uF
C228	2311049J11	4.7uF
C229	2113743L17	1000pF
C230	2113743N50	100pF
C231	2113743M24	0.1uF
C232	2113743E12	0.047uF
C233	2311049A01	0.1uF
C234	2311049A05	0.47uF
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N17	4.3pF
C243	2113743N17	4.3pF
C244	2113740F14	3pF
C245	2113743N12	2.7pF
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	0.1uF
C250	2113743N17	4.3pF
C251	2113743N50	100pF
C252	2113743N19	5.1pF
C253	2113740F09	1.8pF
C254	2113743N26	10pF
C255	2113743N50	100pF
C256	2113743N19	5.1pF
C257	2113743N50	100pF
C258	2113743L41	0.01uF
C259	2113743L41	0.01uF

Circuit Ref	Motorola Part No.	Description
C260	2113743N50	100pF
C263	2113743N02	0.75pF
C264	2113743N50	100pF
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	2109445U01	0.5pF 1%
C273	2113743M24	0.1uF
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A57	10uF
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C282	NOT PLACED	-
C283	NOT PLACED	-
C285	2113743N50	100pF
C286	2113743M24	0.1uF
C289	2113743N50	100pF
C291	2311049A69	10uF
C292	2113743M24	0.1uF
C293	2113743A27	0.47uF
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	0.1uF
C297	2113743L41	0.01uF
C298	2113743M24	0.1uF
C301	2113743N24	8.2pF
C302	2113743N28	12pF
C303	2113740L09	4.3pF
C304	2113743N27	11pF
C305	2113743N50	100pF
C306	NOT PLACED	-
C307	2113743N50	100pF
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743N50	100pF
C311	NOT PLACED	-
C312	2113743N23	7.5pF
C313	2113743N27	11pF
C314	2113743M24	0.1uF
C315	2113743N50	100pF
C316	2113740L09	4.3pF
C317	2113743N65	8pF
C318	2113743N28	12pF
C319	2113743N17	4.3pF
C320	2113743N25	9.1pF
C321	2113743N50	100pF
C322	2113743N48	82pF
C324	2109445U40	20pF 1%
C325	2109445U26	9.1pF
C326	2113743M24	0.1uF
C327	2113743M24	0.1uF
C328	2113743M24	0.1uF

Circuit Ref	Motorola Part No.	Description
C329	2113743M24	0.1uF
C334	2113743L33	4700pF
C337	NOT PLACED	-
C338	NOT PLACED	-
C343	2113743M24	0.1uF
C344	2113743E20	0.1uF
C345	2113743M24	0.1uF
C346	2113743M24	0.1uF
C347	2113743M24	0.1uF
C348	2113743M24	0.1uF
C349	2113743E20	0.1uF
C350	2113743M24	0.1uF
C351	2113743N52	120pF
C352	2113743M24	0.1uF
C355	2113743M24	0.1uF
C357	2113743M24	0.1uF
C358	NOT PLACED	-
C359	NOT PLACED	-
C360	2113743N14	3.3pF
C361	2113743M24	0.1uF
C362	2113743M24	0.1uF
C364	2113743N35	24pF
C366	NOT PLACED	-
C367	2113743N37	30pF
C370	2109445U18	4.3pF 1%
C371	NOT PLACED	-
C372	2113743N50	100pF
C373	NOT PLACED	-
C374	2113743N50	100pF
C375	2113743N50	100pF
C378	NOT PLACED	-
C380	2113743L41	0.01uF
C381	NOT PLACED	-
C382	2311049A59	10uF
C383	NOT PLACED	-
C385	2113743N35	24pF
C386	2113743N50	100pF
C390	NOT PLACED	-
C400	2113743L41	0.01uF
C401	2113743M24	0.1uF
C402	2113743M24	0.1uF
C403	2113743G24	2.2uF
C404	NOT PLACED	-
C405	2113743N50	100pF
C406	NOT PLACED	-
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	0.1uF
C410	2113928N01	0.1uF
C411	2113743M24	0.1uF
C414	2113743M24	0.1uF
C415	2185895Z01	0.01uF

Circuit Ref	Motorola Part No.	Description
C416	2113928N01	0.1uF
C419	NOT PLACED	
C420	2113743L41	0.01uF
C421	2113928N01	0.1uF
C422	2113743M24	0.1uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	0.1uF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	0.1uF
C429	2113743M24	0.1uF
C430	2113928N01	0.1uF
	0662057M01	0 (SUB on LS <sup>+</sup> Models Only)
C431	2113743N50	100pF
C432	NOT PLACED	-
C433	2113743L41	0.01uF
C434	2113928N01	0.1uF
C435	2113743M24	0.1uF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF
C441	2113743N50	100pF
C442	2113743E20	0.1uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	0.022uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOT PLACED	-
C451	2113743M08	0.022uF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743N50	100pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS <sup>+</sup> Models Only)
C490	2113743N50	100pF
C491	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	0.01uF
C521	2113743L41	0.01uF
C522	2113743L41	0.01uF
C523	2113743L41	0.01uF
C524	2113743N50	100pF
C525	2113743N50	100pF
C526	2113743N50	100pF
C527	2113743N50	100pF
C528	2113743N50	100pF
C529	2113743N50	100pF
CR101	4880973Z02	Pin diode
CR102	4802245J41	Pin diode
CR103	4802245J41	Pin diode
CR105	5185963A15	Temperature sensor
CR160	NOT PLACED	-
CR201	4802233J09	Triple diode (SOT 25)
CR203	4862824C03	Varactor
CR241	4805649Q13	Varactor
CR242	4862824C01	Varactor
CR243	4862824C01	Varactor
CR251	4802245J22	Varactor
CR301	4862824C01	Varactor
CR302	4862824C01	Varactor
CR303	4880154K03	Dual common anode-cathode
CR304	4862824C01	Varactor
CR305	4862824C01	Varactor
CR306	4802245J42	Ring Quad diode (SOT- 143)
CR311	4813825A19	Diode Schottky
CR312	4802245J97	Switch Diode
CR313	4802245J97	Switch Diode
CR411	4802245J62	Diode Schottky
CR412	4802245J62	Diode Schottky
CR413	4802245J62	Diode Schottky
CR440	4813833C02	Dual common cathode diode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
E101	2484657R01	Ferrite bead
E400	2480640Z01	Ferrite bead
E401	2480640Z01	Ferrite bead

Circuit Ref	Motorola Part No.	Description
E402	2480640Z01	Ferrite bead
E403	2480640Z01	Ferrite bead
E404	2480640Z01	Ferrite bead
E405	2480640Z01	Ferrite bead
E406	2480640Z01	Ferrite bead
E407	2480640Z01	Ferrite bead
E408	2480640Z01	Ferrite bead
E409	2480640Z01	Ferrite bead
F501	6580542Z01	3A fuse
FL201	4805875Z04	16.8MHz Xtal oscillator
FL301	9180022M11	Xtal Filter 44. 85MHz
FL302	9180468V05	455kHz 4- pole ceramic filter
FL303	9180469V05	455kHz 6- pole ceramic filter
FL304	9180469V03	455kHz 6- pole ceramic filter
FL401	4870368G02	Xtal Oscillator 38.4kHz
H101	2680499Z01	Heat spreader
J101	0985613Z01	RF Jack
J102	0280519Z02	Antenna nut
J400	0905505Y04	40-pin connector
J403	0905505Y02	20-pin connector
L101	2460591B28	13.37nH
L102	2460591B28	13.37nH
L104	2460591B48	15.22nH
L105	2462587N22	390nH
L106	2460591A19	8.71nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L112	2462587N42	12nH
L113	2413926H09	5.6nH
L114	2462587N42	12nH
L115	2462587N22	390nH
L116	2479990C02	16.28nH
L117	2409154M17	22nH
L160	2413926H14	15.0nH
L201	2462587Q20	2.2uH
L202	2462587Q20	2.2uH
L203	2462587Q20	2.2uH
L232	2462587P25	12uH
L241	2462587V41	390nH
L242	2462587V26	22nH
L243	2485776Z02	Resonator (Kapton), Rx
L251	2462587V41	390nH
L253	2460593C03	Resonator, Tx
L261	2462587V29	39nH
L271	2462587V27	27nH
L273	2462587V32	68nH
L281	2462587V41	390nH
L282	2462587V41	390nH
L301	2479990B01	11.03nH
L302	2479990B01	11.03nH
L303	2462587V26	22nH
L304	2462587V37	180nH

Circuit Ref	Motorola Part No.	Description
L305	2462587V23	12nH
L306	2479990B01	11.03nH
L307	2479990B01	11.03nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH
L311	2413926K32	560nH
L321	2462587V37	180nH
L325	2462587N68	1uH
L330	2413926K33	680nH
L332	2413923A25	1.2uH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
P100	3905643V01	Ground contact finger
PB501	4086470Z01	Tactile switch, pushbutton
PB502	4086470Z01	Tactile switch, pushbutton
PB503	4086470Z01	Tactile switch, pushbutton
PB504	4086470Z01	Tactile switch, pushbutton
PB505	4086470Z01	Tactile switch, pushbutton
Q110	4813828A09	RF PA
Q111	4809939C05	Dual NPN/ PNP transistor
Q210	4809939C05	Dual NPN/ PNP transistor
Q241	4805218N63	RF NPN transistor
Q260	4809939C05	Dual NPN/ PNP transistor
Q261	4809939C05	Dual NPN/ PNP transistor
Q301	4802245J44	NPN Transistor
Q302	4802197J95	NPN Transistor
Q310	4802245J44	NPN Transistor
Q320	4813824A10	RF NPN transistor
Q400	4809579E18	Mosfet P - channel
Q403	4813824A17	Bipolar Transistor, PNP
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	Mosfet P-channel
Q417	4809939C05	Dual NPN/ PNP transistor
Q502	5180159R01	Dual Trans NPNS
Q505	4880214G02	NPN Transistor
R101	0662057A34	240
R102	0680539Z01	0.1
R104	0662057N15	47K
R106	0662057M26	10
R107	NOT PLACED	-
R108	0662057M92	5.6K
R109	0662057N30	200K
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43K
R130	0662057M98	10K
R131	0662057N05	18K

Circuit Ref	Motorola Part No.	Description
R132	0662057N33	270K
R133	NOT PLACED	-
R136	NOT PLACED	-
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43K
R172	0662057A32	200
R173	0662057N29	180K
R174	0662057N15	47K
R175	0662057B59	3
R176	0662057B59	3
R191	0662057C01	0
R201	0662057N21	82K
R202	0662057N23	100K
R204	0662057N15	47K
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M34	22
R242	0662057M52	120
R243	0662057M98	10K
R244	0662057N03	15K
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M38	33
R252	0662057M60	270
R253	0662057M95	7.5K
R254	0662057M96	8.2K
R255	0662057M89	4.3K
R256	0662057M37	30
R260	0662057M74	1K
R281	NOT PLACED	-
R301	0662057N23	100K
R302	0662057N23	100K
R303	0662057M78	1.5K
R304	0662057N01	12K
R305	0662057M66	470
R306	0662057N23	100K
R307	0662057N23	100K
R308	0662057M43	51
R309	0662057M01	0
R310	NOT PLACED	-
R311	0662057N11	33K
R312	0662057M90	4.7K
R313	0662057M62	330
R314	0662057M79	1.6K
R315	0662057N01	12K
R320	NOT PLACED	-
R321	0662057N01	12K
R322	0662057M74	1K
R324	0662057N25	120K
R328	0662057M12	2.7

Circuit Ref	Motorola Part No.	Description
R329	0662057M01	0
R330	0662057M98	10K
R331	0662057M57	200
R332	0662057N01	12K
R333	NOT PLACED	-
R339	0662057M89	4.3K
R340	0662057M96	8.2K
R342	0662057N23	100K
R344	0662057M43	51
R345	0662057N13	39K
R346	0662057N03	15K
R348	0662057M87	3.6K
R349	0662057C01	0
R350	0662057M98	10K
R355	0662057N23	100K
R358	0662057M74	1K
R359	NOT PLACED	-
R360	0662057N06	20K
R361	0662057N06	20K
R363	0662057M64	390
R364	0662057M80	1.8K
R365	0662057M76	1.2K
R366	0662057N01	12K
R367	0662057V04	12K
R368	0662057V02	10K
R369	0662057M70	680
R370	0662057M01	0
R371	NOT PLACED	-
R372	NOT PLACED	-
R373	NOT PLACED	-
R374	NOT PLACED	-
R375	NOT PLACED	-
R376	NOT PLACED	-
R377	NOT PLACED	-
R378	NOT PLACED	-
R400	0662057N15	47K
R401	0662057M01	0
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	NOT PLACED	-
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057M98	10K
R418	0662057M01	0
R419	0662057M67	510

Circuit Ref	Motorola Part No.	Description
R420	0662057B46	10M
R421	0662057M81	2K
R423	0662057N39	470K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2.7K
R428	0662057M10	2.2
R429	0662057N20	75K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2K
R436	0662057M01	0
R437	NOT PLACED	-
R445	0662057N08	24K
R447	0662057N23	100K
R448	0662057M98	10K
R449	0662057N08	24K
R450	0683962T45	68
R451	0662057N03	15K
R452	0662057N23	100K
R453	NOT PLACED	-
R454	NOT PLACED	-
R455	NOT PLACED	-
R456	0662057M01	0
R457	0662057M98	10K
R460	0662057M90	4.7K
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057N06	20K
R472	0662057N12	36K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R498	0662057M98	10K
R499	0662057M98	10K
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
RT400	0680590Z01	Thermistor 33K
S501	4080710Z01	Frequency switch
S502	1880619Z02	Volume/ on- off switch
SH100	2680507Z01	Harmonic Filter shield
SH101	2680510Z01	RF PA shield

Circuit Ref	Motorola Part No.	Description
SH201	2680511Z01	Synthesizer top shield
SH202	2680511Z01	Synthesizer bottom shield
SH241	2604120G01	Resonators shield
SH242	2680514Z01	VCO Buffer IC shield
SH301	2686583Z01	Receiver front end shield
SH302	2680555Z01	Receiver front end bottom
SH303	2680509Z01	Mixer shield
SH304	2680624Z01	Mixer diode shield
SH322	2686528Z01	IF section shield
SH323	2686527Z01	Crystal Filter shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller on-off shield
SH402	2680515Z01	Microprocessor shield
SH403	2680516Z01	Asfic_Cmp/ Audio PA shield
T301	2580541Z02	Balun transformer
T302	2580541Z02	Balun transformer
U101	5185130C65	VHF/ UHF/ 800 MHZ LDMOS
U102	5185765B26	PCIC
U201	5185963A27	LVFRACN Synthesizer IC
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO Buffer IC
U247	5105739X05	SOT 5V Regulator
U248	5102463J58	3. 3V Regulator
U301	5186144B01	FM IFIC SA616
U302	5109522E10	LMOS Inverter
U303	NOT PLACED	-
U400	5102463J40	3. 3V Regulator
U404	5185130C53	ASFIC_CMP IC
U405	NOT PLACED	-
U406	*5102463J59	Flash ROM 128K x 8
U407	*5102463J64	16K x 8 EEPROM
U409	5102226J56	Microprocessor
U410	5102463J57	3. 3V Regulator
U420	5102463J44	Audio PA
VR432	4805656W08	5. 6V Zener
VR433	4805656W08	5. 6V Zener
VR434	4802245J73	Zener Diode - 6.8V
VR439	4880140L17	Zener Diode - 12V
VR440	4802245J73	Zener Diode - 6.8V
VR441	4802245J73	Zener Diode - 6.8V
VR442	4802245J73	Zener Diode - 6.8V
VR443	4802245J73	Zener Diode - 6.8V
VR444	4802245J73	Zener Diode - 6.8V
VR445	4802245J74	Zener Diode - 10V
VR446	4802245J74	Zener Diode - 10V
VR447	4802245J74	Zener Diode - 10V
VR448	4802245J74	Zener Diode - 10V
VR449	4802245J74	Zener Diode - 10V
VR450	4802245J75	Zener Diode - 12V
VR460	4802245J73	Zener Diode - 6.8V
VR501	4813830A18	6.8V Zener

Circuit Ref	Motorola Part No.	Description
VR506	4802245J73	Zener Diode - 6.8V
Y300	4802245J84	Xtal Oscillator 33. 395MHz
Y301	9186145B02	455kHz Ceramic Discriminator
	*8486686Z01	UHF B2 Main PC Board

\* Motorola Depot Servicing only

\*\* Not Field Serviceable

**Note:** Tolerance

Capacitor - 5% unless specified otherwise

Inductor - 10% unless specified otherwise

Resistor - 5% unless specified otherwise



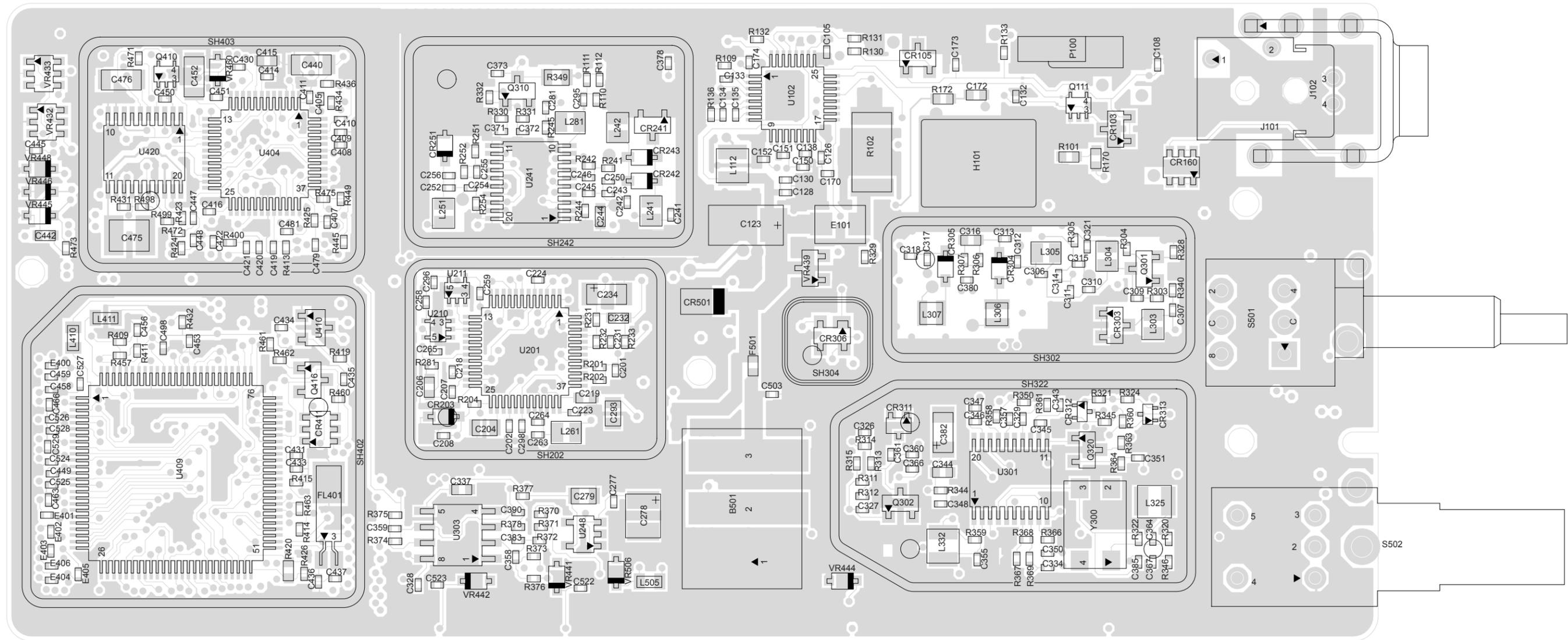


Figure 9-127. UHF (450-527 MHz) 5000/7000 Series Main Board Bottom Side PCB No. 8486686Z02

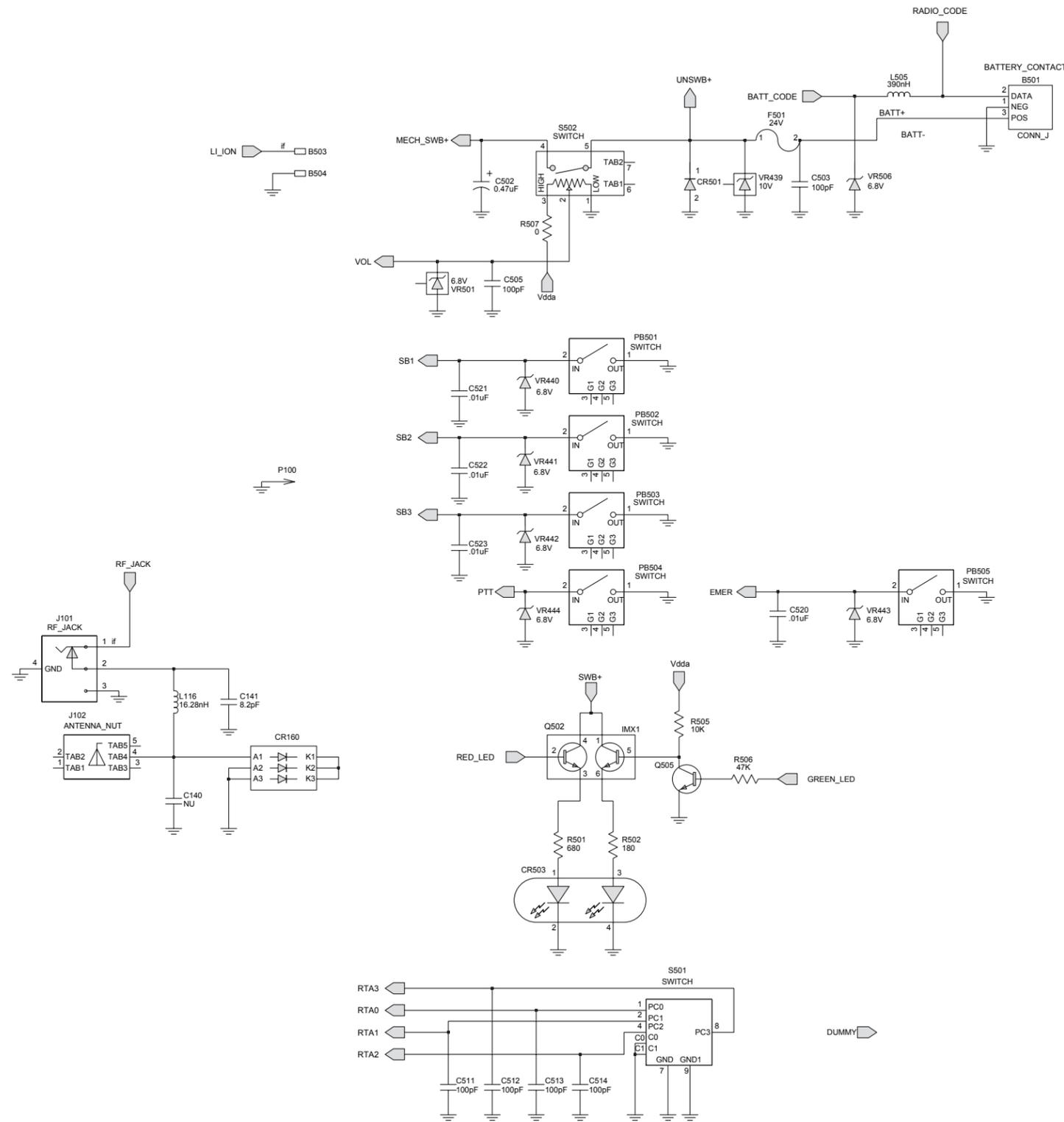


Figure 9-128. UHF (450-527 MHz) Controls And Switches Schematic Diagram

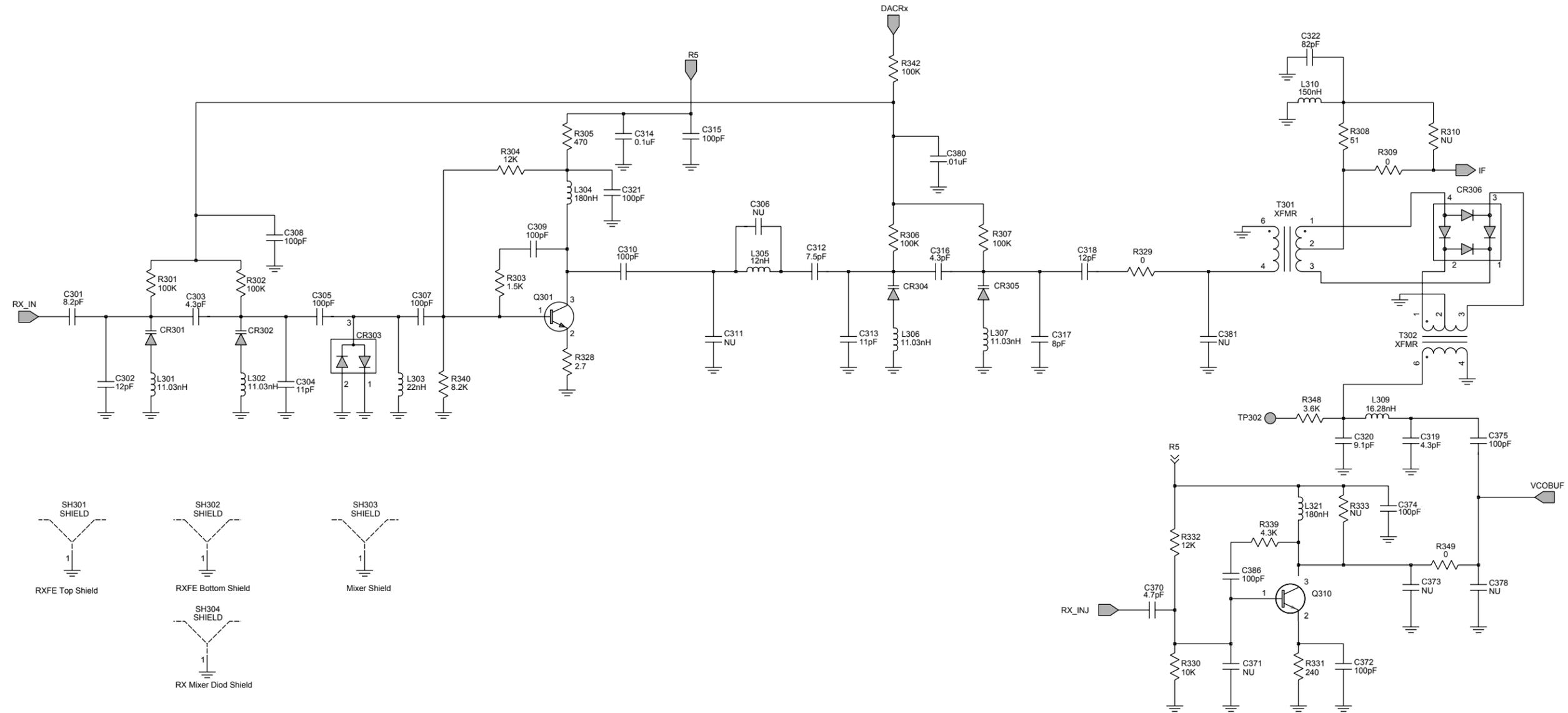


Figure 9-129. UHF (450-527 MHz) Receiver Front End Schematic Diagram



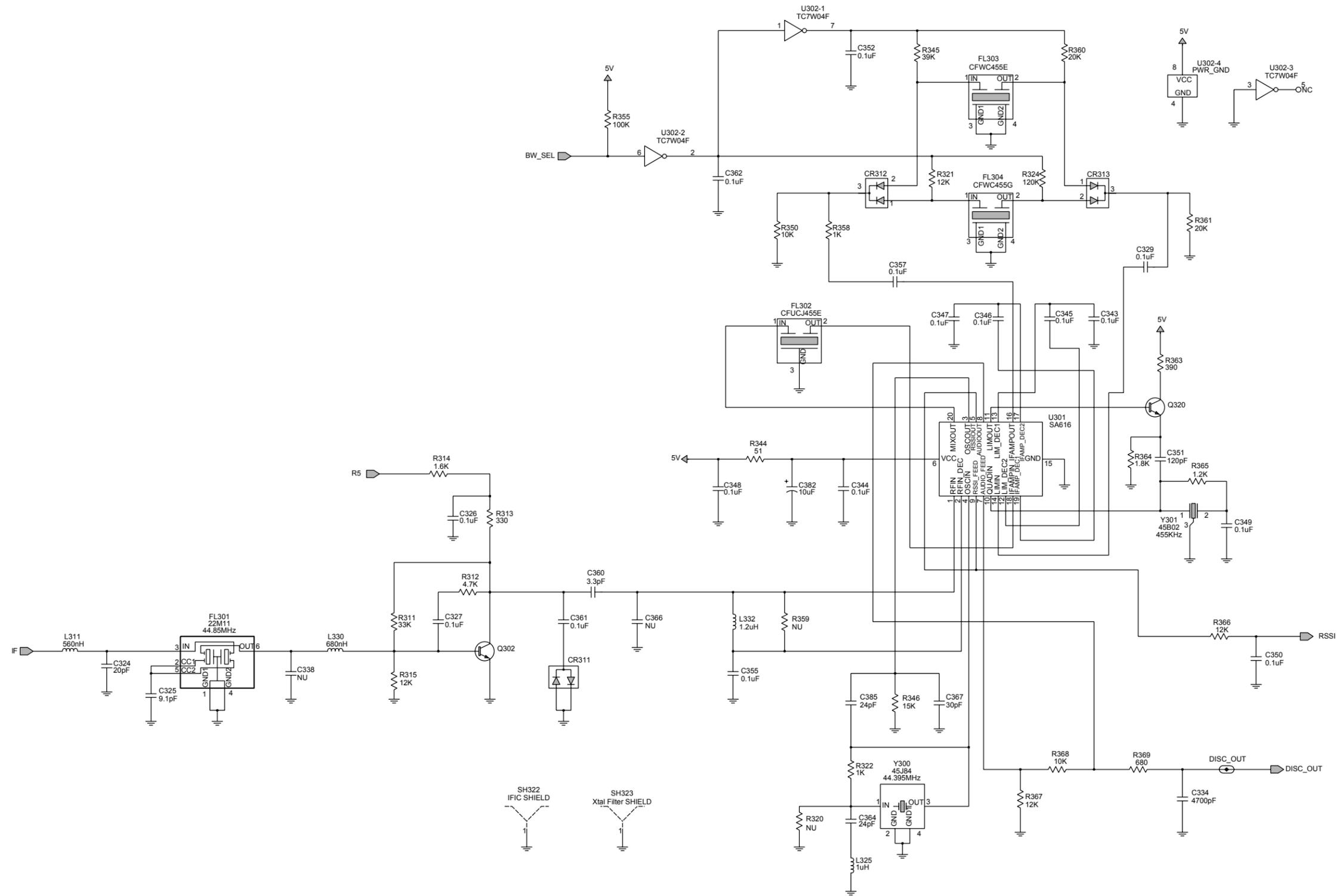


Figure 9-130. UHF (450-527 MHz) Receiver Back End Schematic Diagram

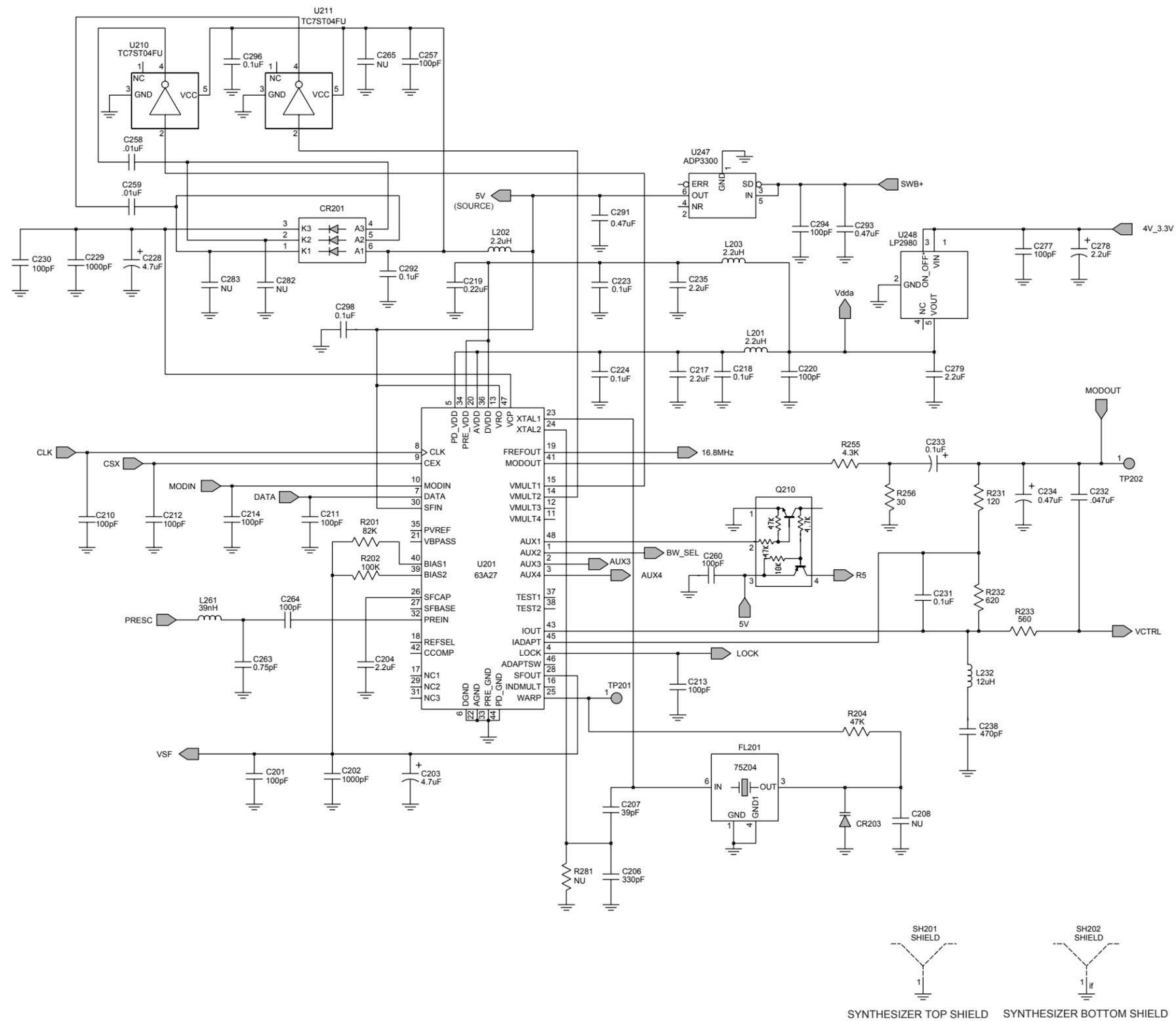


Figure 9-131. UHF (450-527 MHz) Synthesizer Schematic Diagram

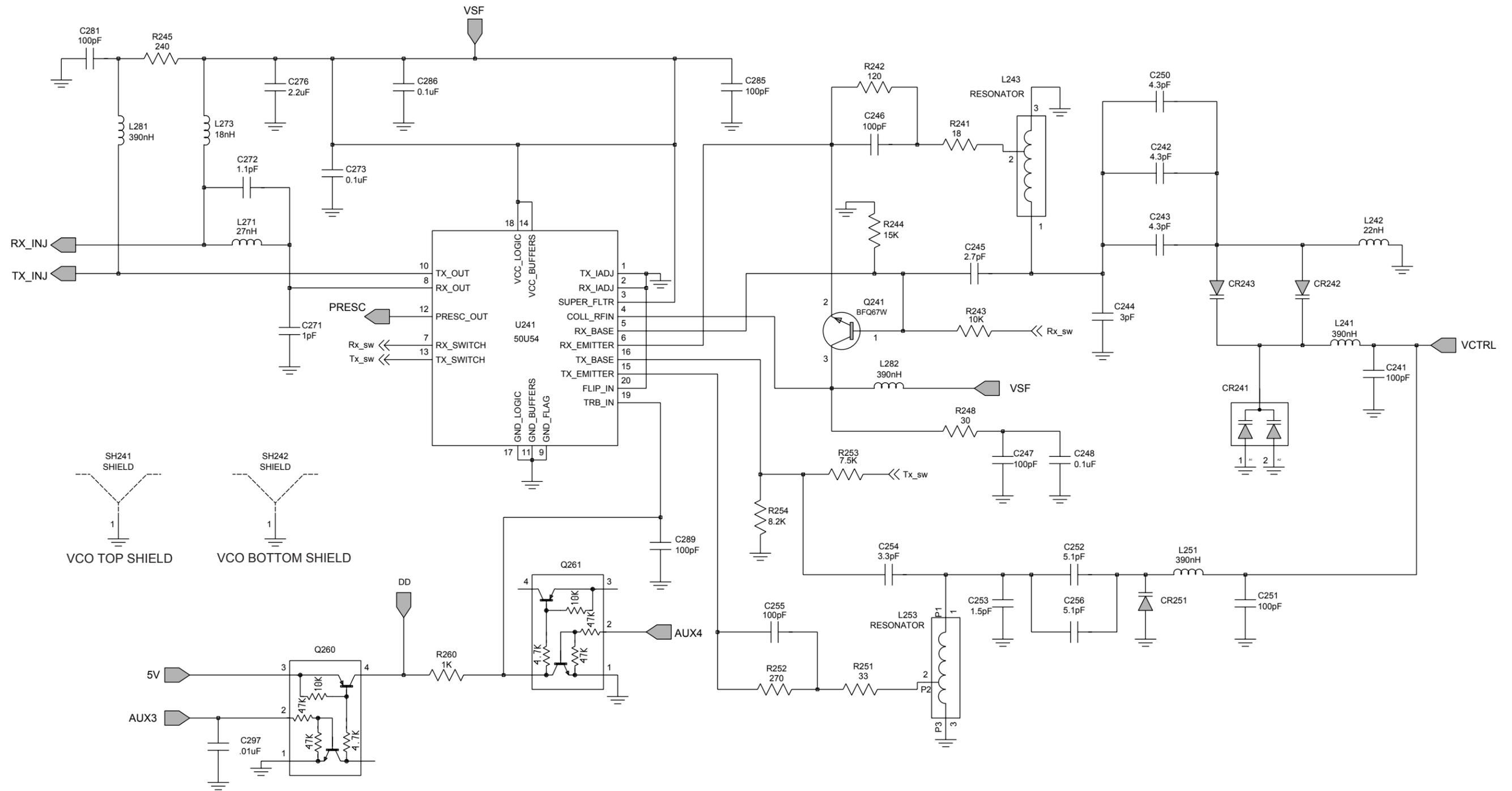


Figure 9-132. UHF (450-527 MHz) Voltage Controlled Oscillator Schematic Diagram

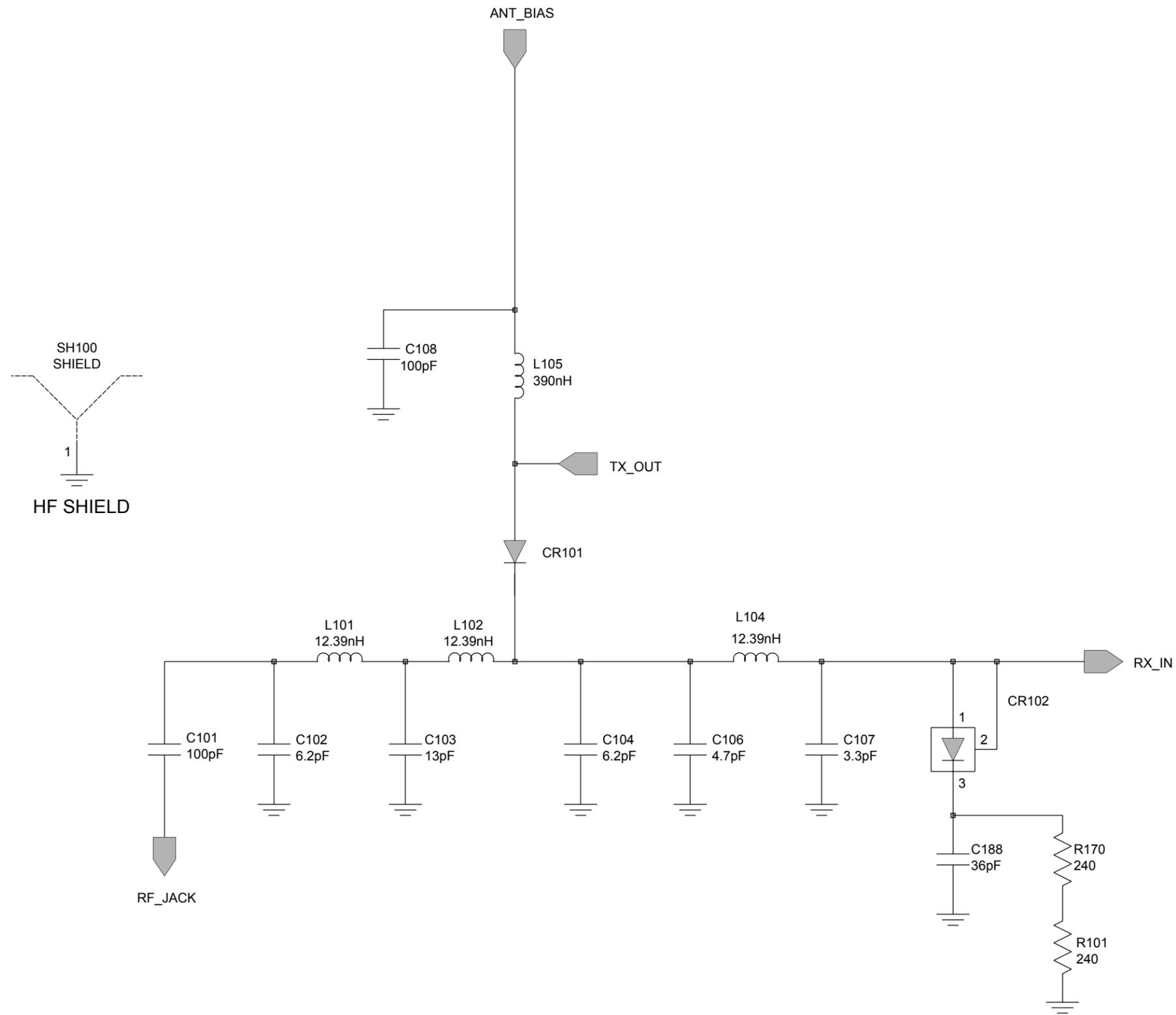


Figure 9-133. UHF (450-527 MHz) Harmonic Filter Schematic Diagram

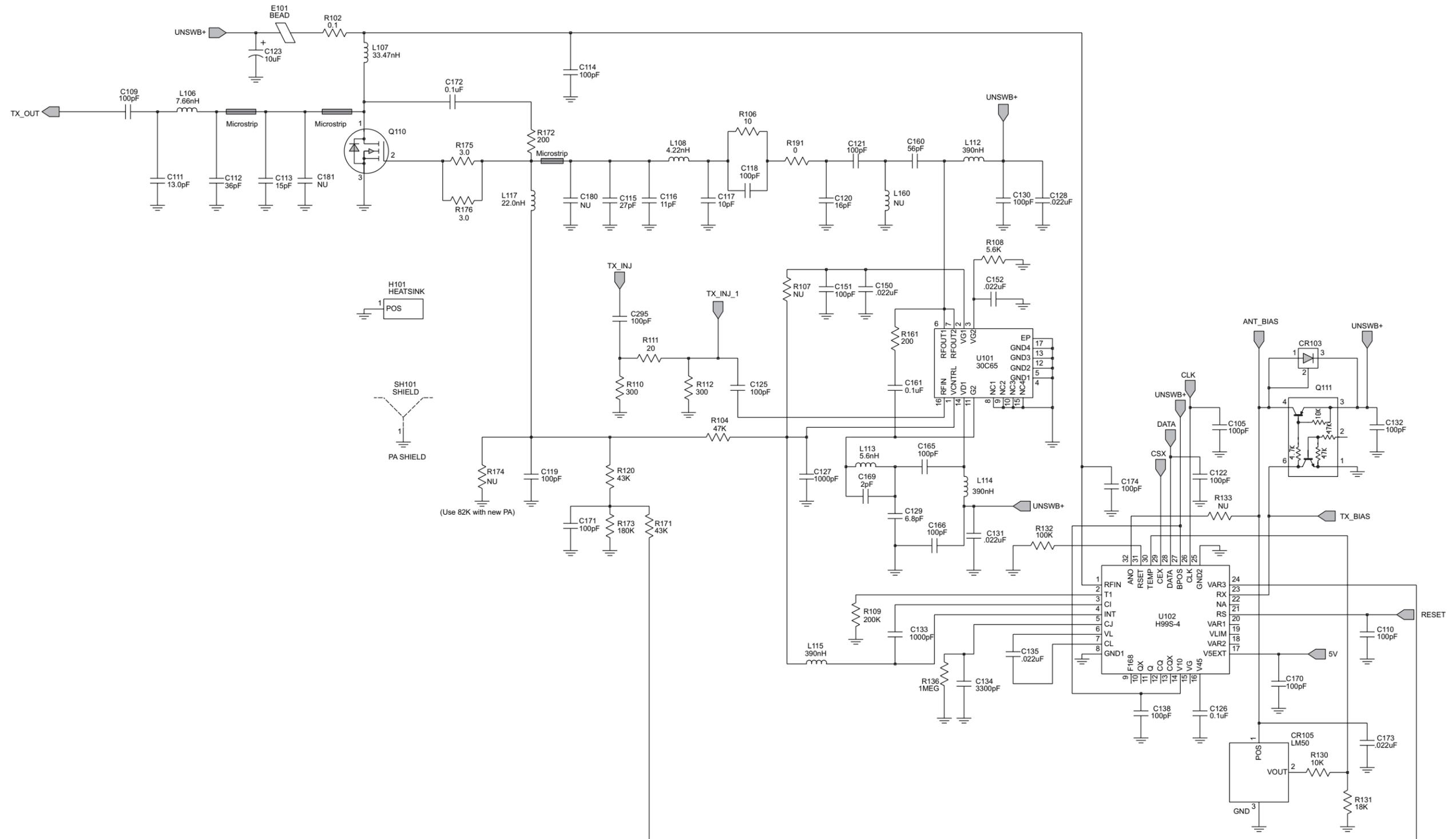


Figure 9-134. UHF (450-527 MHz) Transmitter Schematic Diagram

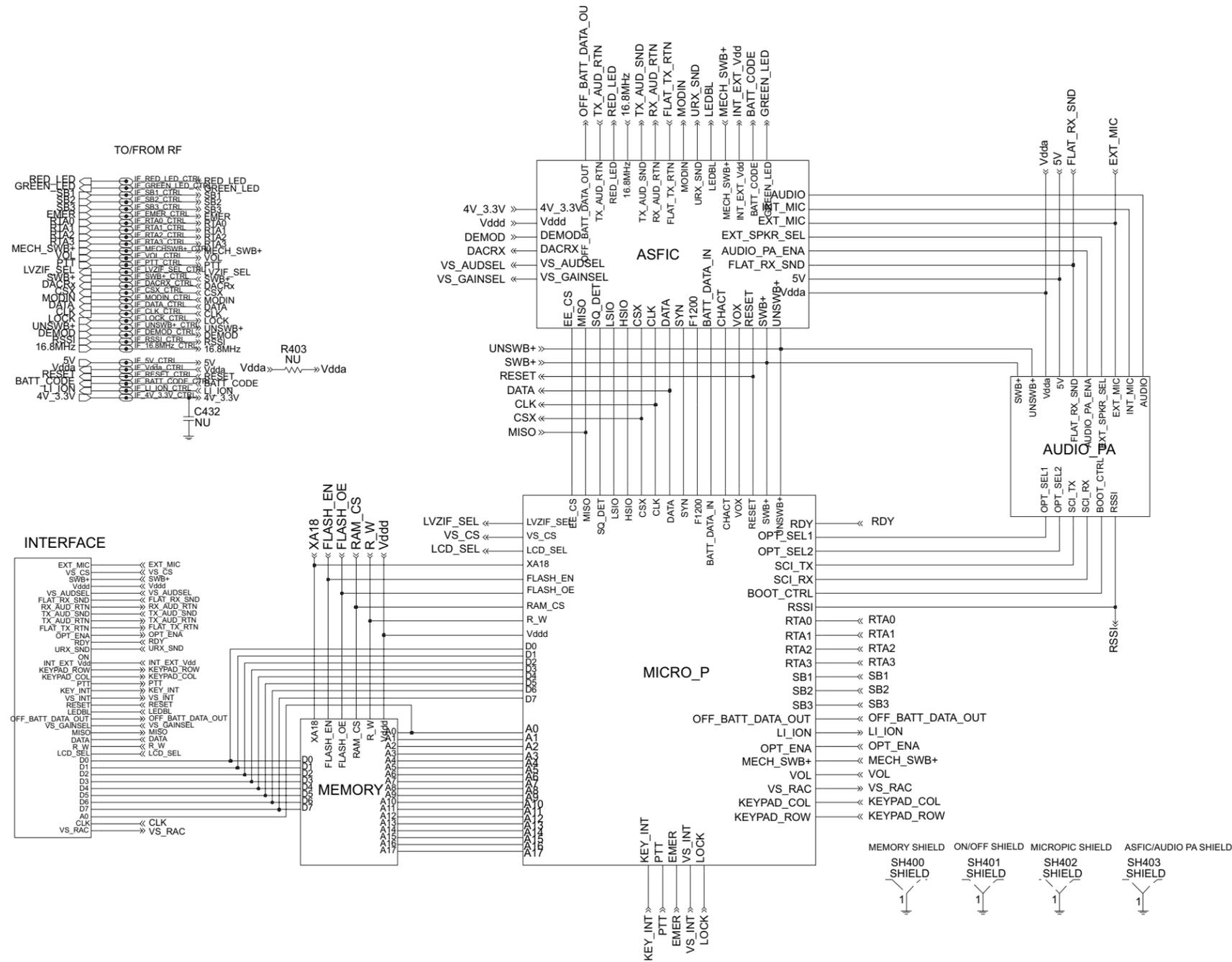


Figure 9-135. UHF (450-527 MHz) Complete Controller Schematic Diagram



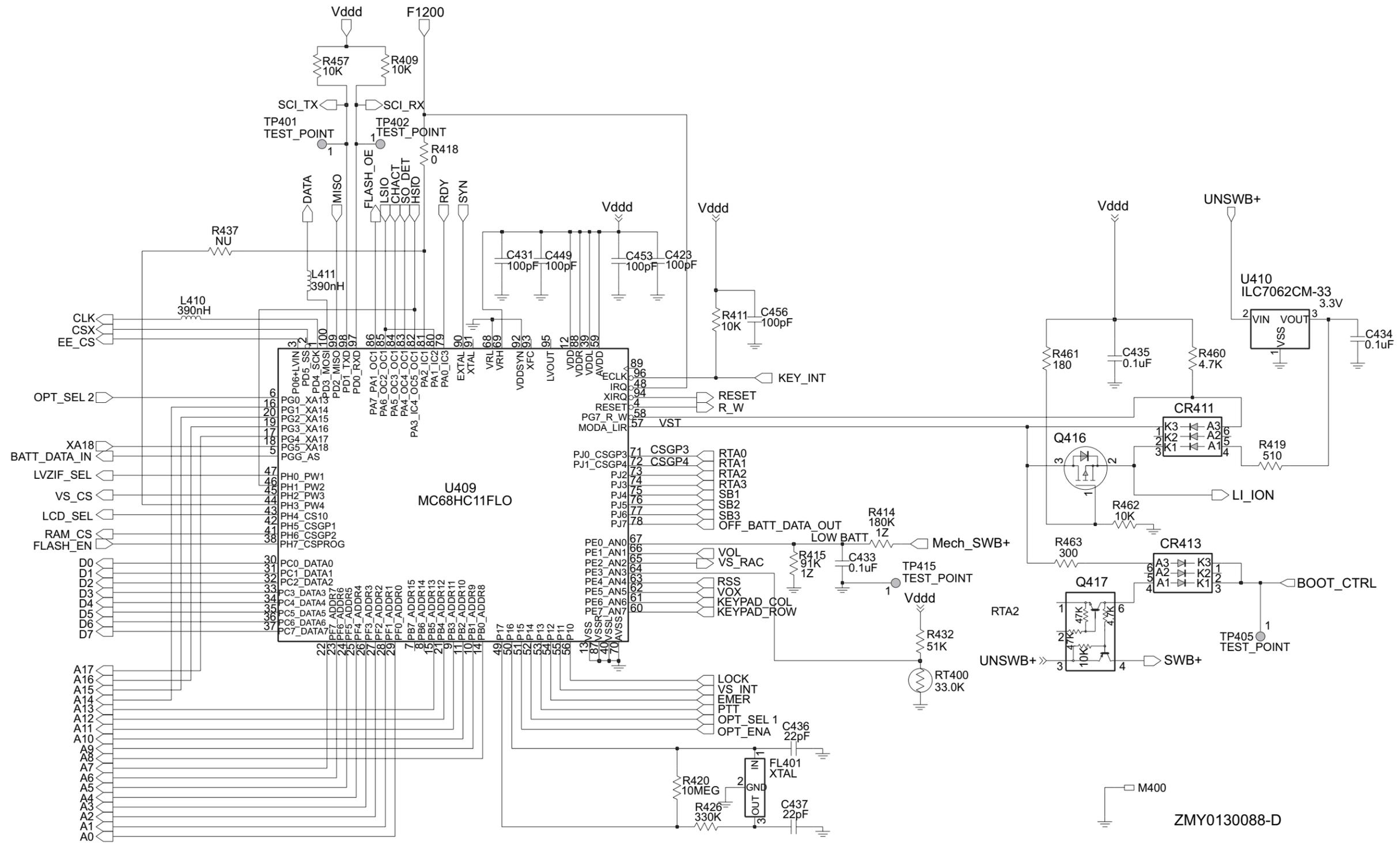


Figure 9-137. UHF (450-527 MHz) Controller Microprocessor Schematic Diagram



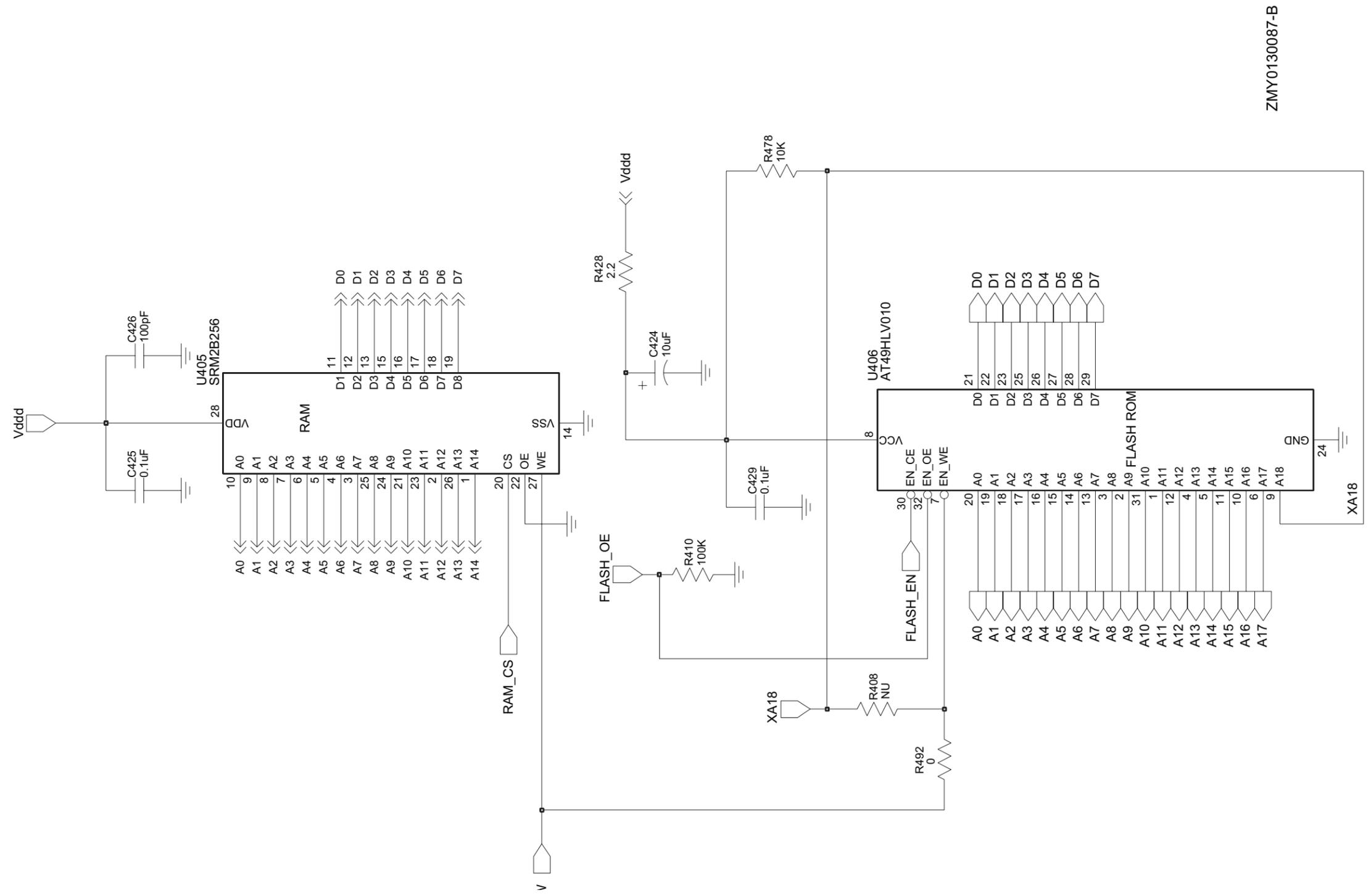


Figure 9-138. UHF (450-527 MHz) Controller Memory Schematic Diagram

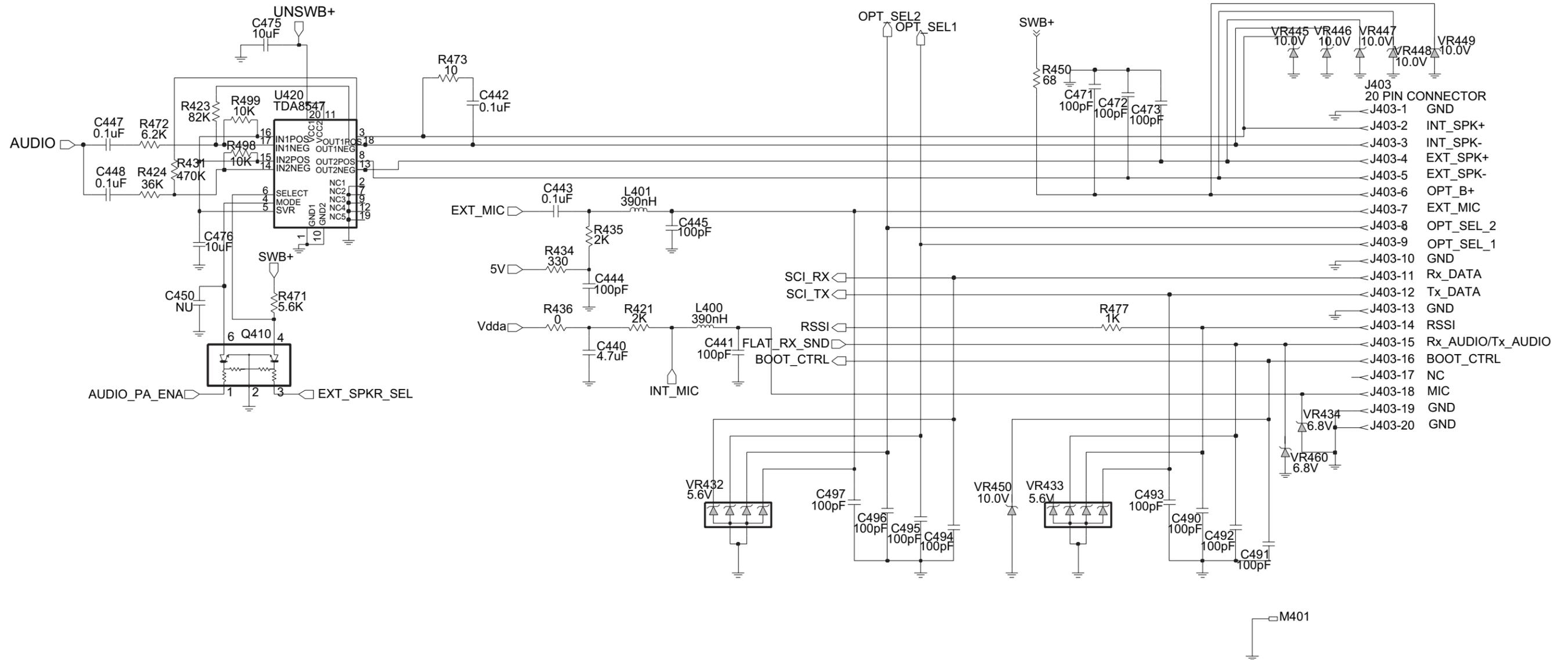


Figure 9-139. UHF (450-527 MHz) Controller Audio Power Amplifier Schematic Diagram

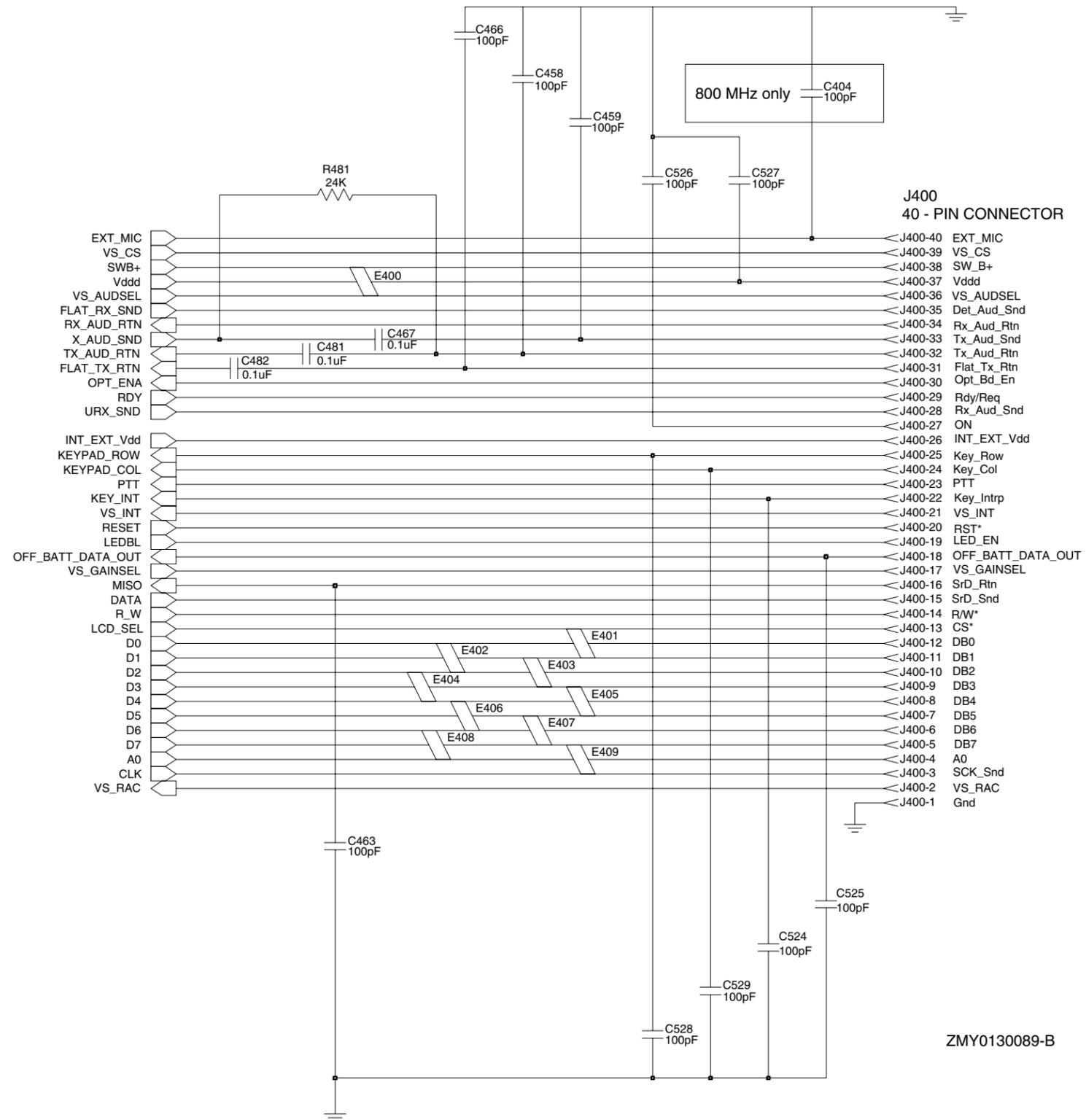


Figure 9-140. UHF (450-527 MHz) Controller Interface Schematic Diagram

**UHF (450-527 MHz) Radio Parts List  
(PCB 8486686Z02)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup Contact, B +
B504	3980501Z01	Backup Contact, B -
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F28	11pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2103689A22	11pF
C112	2180605Z28	33pF
C113	2180605Z20	15pF
C114	2113743N50	100pF
C115	2113743N31	16pF
C116	2113743N27	11pF
C117	NOT PLACED	-
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N23	7.5pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A96	33uF
C125	2113743N50	100pF
C126	2113743M24	100000pF
C127	2113743L17	1000pF
C128	2113743M08	22000pF
C129	2113743N23	7.5pF
C130	2113743N50	100pF
C131	2113743M08	22000pF
C132	2113743N50	100pF
C133	2113743L17	1000pF
C134	2113743L29	3300pF
C135	2113743M08	22000pF
C138	2113743N50	100pF
C140	0662057A67	5600
C141	2113740F25	8.2pF
C150	2113743M08	22000pF
C151	2113743N50	100pF
C152	2113743M08	22000pF
C160	2113743N44	56pF
C161	2113743M24	100000pF
C165	2113743N44	56pF
C166	2113743N50	100pF
C169	2113743N09	2pF
C170	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C171	2113743N50	100pF
C172	2113743E20	0.1uF
C173	2113743M08	22000pF
C174	2113743N50	100pF
C180	NOT PLACED	-
C181	NOT PLACED	-
C188	2113743N39	36pF
C201	2113743N50	100pF
C202	2113743L17	1000pF
C203	2311049A56	4.7uF
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N40	39pF
C208	NOT PLACED	-
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	100000pF
C219	2113743K16	0.22uF
C220	2113743N50	100pF
C223	2113743M24	100000pF
C224	2113743M24	100000pF
C228	2311049J11	4.7uF
C229	2113743L17	1000pF
C230	2113743N50	100pF
C231	2113743M24	100000pF
C232	2113743E12	0.047uF
C233	2311049A01	0.1uF
C234	2311049A05	0.47uF
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N17	4.3pF
C243	2113743N17	4.3pF
C244	2113740F14	3pF
C245	2113743N12	2.7pF
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	100000pF
C250	2113743N17	4.3pF
C251	2113743N50	100pF
C252	2113743N19	5.1pF
C253	2113740F09	1.8pF
C254	2113743N26	10pF
C255	2113743N50	100pF
C256	2113743N19	5.1pF
C257	2113743N50	100pF
C258	2113743L41	10000pF

Circuit Ref	Motorola Part No.	Description
C259	2113743L41	10000pF
C260	2113743N50	100pF
C263	2113743N02	0.75pF
C264	2113743N50	100pF
C265	NOT PLACED	-
C271	NOT PLACED	-
C272	2109445U01	0.5pF
C273	2113743M24	100000pF
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A57	10uF
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C282	NOT PLACED	-
C283	NOT PLACED	-
C285	2113743N50	100pF
C286	2113743M24	100000pF
C289	2113743N50	100pF
C291	2311049A69	10uF
C292	2113743M24	100000pF
C293	2113743A27	0.47uF
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	100000pF
C297	2113743L41	10000pF
C298	2113743M24	100000pF
C301	2113743N24	8.2pF
C302	2113743N28	12pF
C303	2113740L09	4.3pF
C304	2113743N27	11pF
C305	2113743N50	100pF
C306	NOT PLACED	-
C307	2113743N50	100pF
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743N50	100pF
C311	NOT PLACED	-
C312	2113743N23	7.5pF
C313	2113743N27	11pF
C314	2113743M24	100000pF
C315	2113743N50	100pF
C316	2113740L09	4.3pF
C317	2113743N65	8pF
C318	2113743N28	12pF
C319	2113743N17	4.3pF
C320	2113743N25	9.1pF
C321	2113743N50	100pF
C322	2113743N48	82pF
C324	2109445U40	20pF
C325	2109445U26	9.1pF
C326	2113743M24	100000pF

Circuit Ref	Motorola Part No.	Description
C327	2113743M24	100000pF
C328	2113743M24	100000pF
C329	2113743M24	100000pF
C334	2113743L33	4700pF
C337	NOT PLACED	-
C338	NOT PLACED	-
C343	2113743M24	100000pF
C344	2113743E20	0.1uF
C345	2113743M24	100000pF
C346	2113743M24	100000pF
C347	2113743M24	100000pF
C348	2113743M24	100000pF
C349	2113743E20	0.1uF
C350	2113743M24	100000pF
C351	2113743N52	120pF
C352	2113743M24	100000pF
C355	2113743M24	100000pF
C357	2113743M24	100000pF
C358	NOT PLACED	-
C359	NOT PLACED	-
C360	2113743N14	3.3pF
C361	2113743M24	100000pF
C362	2113743M24	100000pF
C364	2113743N35	24pF
C366	NOT PLACED	-
C367	2113743N37	30pF
C370	2109445U18	4.3pF
C371	NOT PLACED	-
C372	2113743N50	100pF
C373	NOT PLACED	-
C374	2113743N50	100pF
C375	2113743N50	100pF
C378	NOT PLACED	-
C380	2113743L41	10000pF
C381	NOT PLACED	-
C382	2311049A59	10uF
C383	NOT PLACED	-
C385	2113743N35	24pF
C386	2113743N50	100pF
C390	NOT PLACED	-
C400	2113743L41	10000pF
C401	2113743M24	100000pF
C402	2113743M24	100000pF
C403	2113743G24	2.2uF
C404	NOT PLACED	-
C405	2113743N50	100pF
C406	NOT PLACED	-
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	100000pF
C410	2113928N01	0.1uF

Circuit Ref	Motorola Part No.	Description
C411	2113743M24	100000pF
C414	2113743M24	100000pF
C415	2185895Z01	0.01uF
C416	2113928N01	0.1uF
C419	NOT PLACED	-
C420	2113743L41	10000pF
C421	2113928N01	0.1uF
C422	2113743M24	100000pF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	100000pF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	100000pF
C429	2113743M24	100000pF
C430	2113928N01	0.1uF
C431	2113743N50	100pF
C432	NOT PLACED	-
C433	2113743L41	10000pF
C434	2113928N01	0.1uF
C435	2113743M24	100000pF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF
C441	2113743N50	100pF
C442	2113743E20	0.1uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	22000pF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOT PLACED	-
C451	2113743M08	22000pF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743N50	100pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF

Circuit Ref	Motorola Part No.	Description
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C498	NOT PLACED	-
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF
C521	2113743L41	10000pF
C522	2113743L41	10000pF
C523	2113743L41	10000pF
C524	2113743N50	100pF
C525	2113743N50	100pF
C526	2113743N50	100pF
C527	2113743N50	100pF
C528	2113743N50	100pF
C529	2113743N50	100pF
CR101	4880973Z02	Pin Diode
CR102	4802245J41	Pin Diode
CR103	4802245J41	Pin Diode
CR105	5185963A15	Temperature Sensor
CR160	NOT PLACED	-
CR201	4802233J09	Triple Diode
CR203	4862824C03	Varactor
CR241	4805649Q13	Varactor
CR242	4862824C01	Varactor
CR243	4862824C01	Varactor
CR251	4802245J22	Varactor
CR301	4862824C01	Varactor
CR302	4862824C01	Varactor
CR303	4880154K03	Dual Schottky Diode
CR304	4862824C01	Varactor
CR305	4862824C01	Varactor
CR306	4802245J42	Ring Quad Diode
CR311	4813825A19	Diode Schottky
CR312	4802245J97	Switch Diode
CR313	4802245J97	Switch Diode
CR411	4802245J62	Diode Schottky
CR412	4802245J62	Diode Schottky
CR413	4802245J62	Diode Schottky
CR440	4813833C02	Dual Common Cathode Diode
CR501	4880107R01	Rectifier

Circuit Ref	Motorola Part No.	Description
CR503	4805729G49	Red/Yellow LED
E101	2484657R01	Ferrite Bead
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL201	4805875Z04	16.8 MHz Xtal Filter
FL301	9180022M11	Xtal Filter 44.85MHz
FL302	9180468V05	455kHz 4-pole ceramic filter
FL303	9180469V05	455kHz 6-pole ceramic filter
FL304	9180469V03	455kHz 6-pole ceramic filter
FL401	4870368G02	Real Time Clock Xtal Oscillator 38.4kHz (not placed in PRO5450)
H101	2680499Z01	Heat Spreader
J101	0985613Z01	RF Jack
J102	0280519Z02	Antenna Nut
J400	0905505Y04	40-Pin Connector
J403	0905505Y02	20-Pin Connector
L101	2460591B28	13.37nH
L102	2460591B28	13.37nH
L104	2460591B48	15.22 nH
L105	2462587N22	390nH
L106	2460591A19	8.71nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L112	2462587N42	12nH
L113	2413926H09	5.6nH
L114	2462587N42	12nH
L115	2462587N22	390nH
L116	2479990C02	16.28nH
L117	2409154M17	22nH
L160	2413926H14	15nH
L201	2462587Q20	2200nH
L202	2462587Q20	2200nH
L203	2462587Q20	2200nH
L232	2462587P25	12000nH
L241	2462587V41	390nH
L242	2462587V26	22nH
L243	2485776Z02	Multi-layered Teflon resonator, Rx
L251	2462587V41	390nH
L253	2460593C03	Multi-layered Teflon resonator, Tx

Circuit Ref	Motorola Part No.	Description
L261	2462587V29	39nH
L271	2462587V27	27nH
L273	2462587V32	68nH
L281	2462587V41	390nH
L282	2462587V41	390nH
L301	2479990B01	11.03nH
L302	2479990B01	11.03nH
L303	2462587V26	22nH
L304	2462587V37	180nH
L305	2462587V23	12nH
L306	2479990B01	11.03nH
L307	2479990B01	11.03nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH
L311	2413926K32	560nH
L321	2462587V37	180nH
L325	2462587N68	1000nH
L330	2413926K33	680nH
L332	2413923A25	1200nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
P100	3905643V01	Ground Contact Finger
PB501	4086470Z01	Tactile Switch
PB502	4086470Z01	Tactile Switch
PB503	4086470Z01	Tactile Switch
PB504	4086470Z01	Tactile Switch
PB505	4086470Z01	Tactile Switch
Q110	4813828A09	RF PA
Q111	4809939C05	Dual NPN/PNP Transistor
Q210	4809939C05	Dual NPN/PNP Transistor
Q241	4805218N63	RF NPN Transistor
Q260	4809939C05	Dual NPN/PNP Transistor
Q261	4809939C05	Dual NPN/PNP Transistor
Q301	4802245J44	NPN Transistor
Q302	4802197J95	NPN Transistor
Q310	4802245J44	NPN Transistor
Q320	4813824A10	RF NPN transistor
Q400	4809579E18	MOSFET P-Channel
Q403	4813824A17	PNP Transistor
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	MOSFET P-Channel (not placed in PRO5450)
Q417	4809939C05	DUAL NPN/PNP Transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor
R101	0662057A34	240
R102	0680539Z01	0.1

Circuit Ref	Motorola Part No.	Description
R104	0662057N15	47K
R106	0662057M26	10
R107	NOT PLACED	-
R108	0662057M92	5600
R109	0662057N30	200K
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43K
R130	0662057M98	10K
R131	0662057N05	18K
R132	0662057N33	270K
R133	NOT PLACED	-
R136	NOT PLACED	-
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43K
R172	0662057A32	200
R173	0662057N29	180K
R174	0662057N15	47K
R175	0662057B59	3
R176	0662057B59	3
R191	0662057C01	0
R201	0662057N21	82K
R202	0662057N23	100K
R204	0662057N15	47K
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M34	22
R242	0662057M52	120
R243	0662057M98	10K
R244	0662057N03	15K
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M38	33
R252	0662057M60	270
R253	0662057M95	7500
R254	0662057M96	8200
R255	0662057M89	4300
R256	0662057M37	30
R260	0662057M74	1000
R281	NOT PLACED	-
R301	0662057N23	100K
R302	0662057N23	100K
R303	0662057M78	1500
R304	0662057N01	12K
R305	0662057M66	470
R306	0662057N23	100K
R307	0662057N23	100K
R308	0662057M43	51

Circuit Ref	Motorola Part No.	Description
R309	0662057M01	0
R310	NOT PLACED	-
R311	0662057N11	33K
R312	0662057M90	4700
R313	0662057M62	330
R314	0662057M79	1600
R315	0662057N01	12K
R320	NOT PLACED	-
R321	0662057N01	12K
R322	0662057M74	1000
R324	0662057N25	120K
R328	0662057M12	2.7
R329	0662057M01	0
R330	0662057M98	10K
R331	0662057M57	200
R332	0662057N01	12K
R333	NOT PLACED	-
R339	0662057M89	4300
R340	0662057M96	8200
R342	0662057N23	100K
R344	0662057M43	51
R345	0662057N13	39K
R346	0662057N03	15K
R348	0662057M87	3600
R349	0662057C01	0
R350	0662057M98	10K
R355	0662057N23	100K
R358	0662057M74	1000
R359	NOT PLACED	-
R360	0662057N06	20K
R361	0662057N06	20K
R363	0662057M64	390
R364	0662057M80	1800
R365	0662057M76	1200
R366	0662057N01	12K
R367	0662057V04	12K
R368	0662057V02	10K
R369	0662057M70	680
R370	0662057M01	0
R371	NOT PLACED	-
R372	NOT PLACED	-
R373	NOT PLACED	-
R374	NOT PLACED	-
R375	NOT PLACED	-
R376	NOT PLACED	-
R377	NOT PLACED	-
R378	NOT PLACED	-
R400	0662057N15	47K
R401	0662057M01	0
R402	NOT PLACED	-
R403	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	NOT PLACED	-
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057M98	10K
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2000
R423	0662057N39	470K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057N20	75K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R437	NOT PLACED	-
R445	0662057N08	24K
R447	0662057N23	100K
R448	0662057M98	10K
R449	0662057N08	24K
R450	0683962T45	68
R451	0662057N03	15K
R452	0662057N23	100K
R453	NOT PLACED	-
R454	NOT PLACED	-
R455	NOT PLACED	-
R456	0662057M01	0
R457	0662057M98	10K
R460	0662057M90	4700
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057N06	20K
R472	0662057N12	36K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330K
R477	0662057M74	1000
R478	0662057M98	10K

Circuit Ref	Motorola Part No.	Description
R481	0662057N08	24K
R492	0662057M01	0
R498	0662057M98	10K
R499	0662057M98	10K
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
RT400	0680590Z01	Thermistor_33K
S501	4080710Z01	Frequency Switch
S501	4080710Z02	Frequency Switch
S502	1880619Z02	Volume / On-off Switch
SH100	2680507Z01	Harmonic Filter Shield
SH101	2680510Z01	PA Shield
SH201	2680511Z01	Synthesizer Top Shield
SH202	2680511Z01	Synthesizer Bottom Shield
SH241	2604120G01	VCO Resonators Shield
SH242	2680514Z01	VCO Buffer IC Shield
SH301	2686583Z01	Receiver Front-End Shield
SH302	2680555Z01	Receiver Back-End Bottom Shield
SH303	2680509Z01	Mixer Shield
SH304	2680624Z01	Mixer Diode Shield
SH322	2686528Z01	IFIC Shield
SH323	2686527Z01	Crystal Filter Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On-off Shield
SH402	2680515Z01	Microprocessor Shield
SH403	2680516Z01	Asfic_Cmp, Audio PA Shield
T301	2580541Z02	Balun Transformer
T302	2580541Z02	Balun Transformer
U101	5185130C65	LDMOS PA Driver
U102	5185765B26	PCIC
U201	5185963A27	LVFRACN Synthesizer IC
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO Buffer IC
U247	5105739X05	5V Regulator
U248	5102463J58	3.3V Regulator
U301	5186144B01	FM IFIC SA616
U302	5109522E10	LMOS Inverter
U303	NOT PLACED	-
U400	5102463J40	3.3V Regulator
U404	5185130C53	ASFIC_CMP IC
U405	5102463J36	Static RAM 32K X 8
U406	*5102463J60	Flash ROM 512K X 8
U407	*5102495J05	EEPROM 16K X 8
U409	5102226J56	Micro Processor
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA

Circuit Ref	Motorola Part No.	Description
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J73	Zener Diode 6.8V
VR439	4880140L17	Zener Diode 12V
VR440	4802245J73	Zener Diode 6.8V
VR441	4802245J73	Zener Diode 6.8V
VR442	4802245J73	Zener Diode 6.8V
VR443	4802245J73	Zener Diode 6.8V
VR444	4802245J73	Zener Diode 6.8V
VR445	4802245J74	Zener Diode 10V
VR446	4802245J74	Zener Diode 10V
VR447	4802245J74	Zener Diode 10V
VR448	4802245J74	Zener Diode 10V
VR449	4802245J74	Zener Diode 10V
VR450	4802245J75	Zener Diode 12V
VR460	4802245J73	Zener Diode 6.8V
VR501	4813830A18	Diode 6.8V
VR506	4802245J73	Zener Diode 6.8V
Y300	4802245J84	Xtal Oscillator 44.395MHz
Y301	9186145B02	455kHz Ceramic Discriminator
	1485777Z01	Insulator (KAPTON)
	8486686Z02	UHF B2 PC Board

\* Motorola Depot Servicing only

\*\* Not Field Serviceable

Tolerance

Capacitor - 5% unless specified otherwise

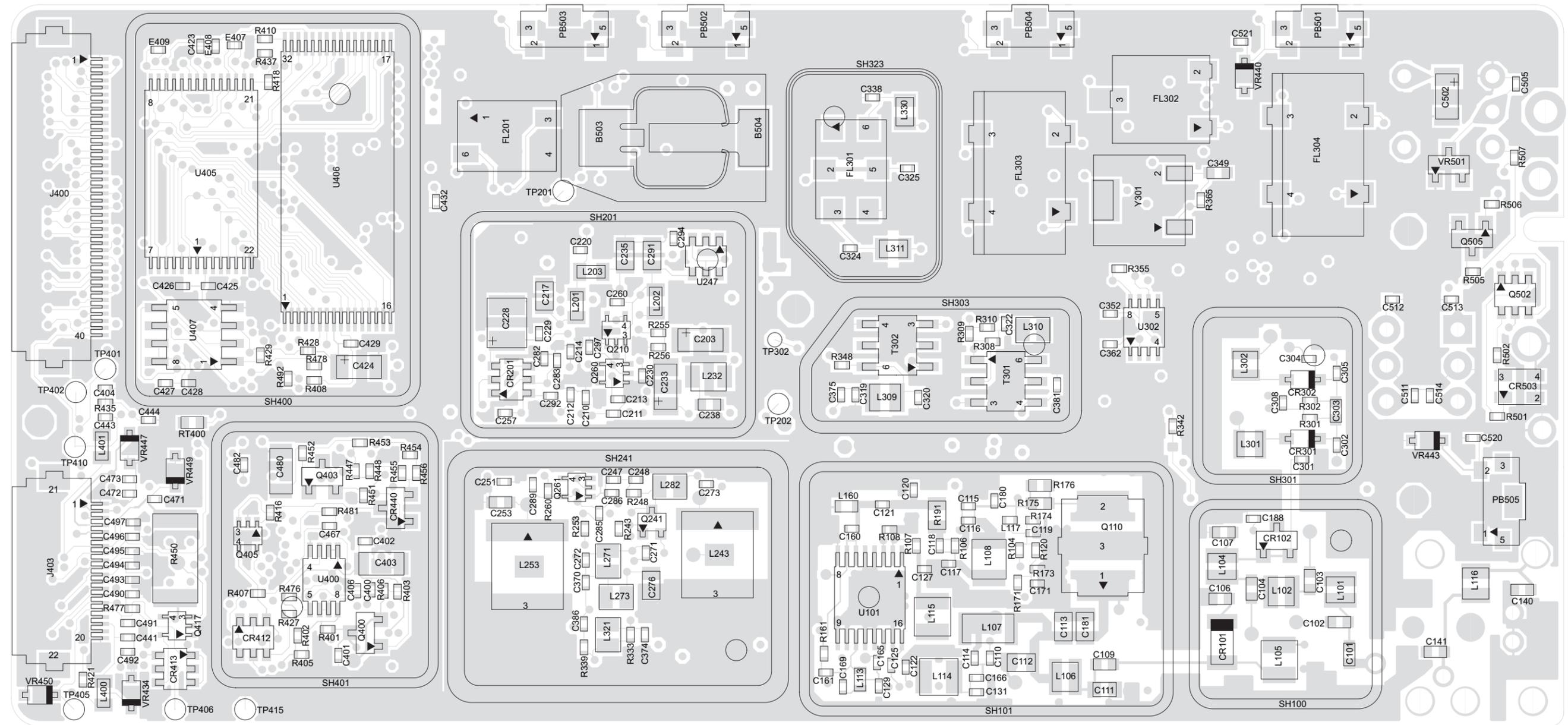
Inductor - 10% unless specified otherwise

Resistor - 5% unless specified otherwise

## Notes

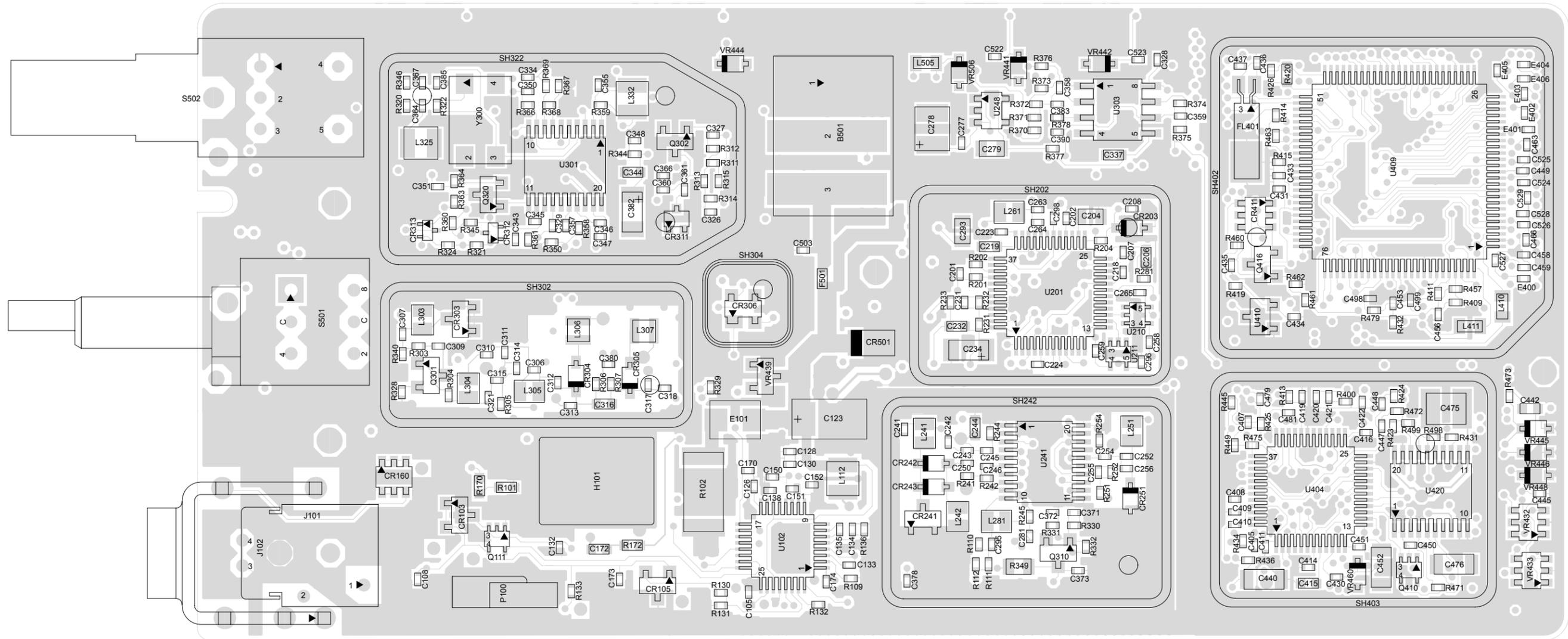


### 9.17 UHF Band 2 Circuit Board/Schematic Diagrams and Parts List (PCB 8415235H01, 8415235H05)



ZMY30006-O

Figure 9-141. UHF Band 2 (450-527 MHz) Main Board Top Side PCB No. 8415235H01



ZMY30007-O

Figure 9-142. UHF Band 2 (450-527 MHz) Main Board Bottom Side PCB No. 8415235H01





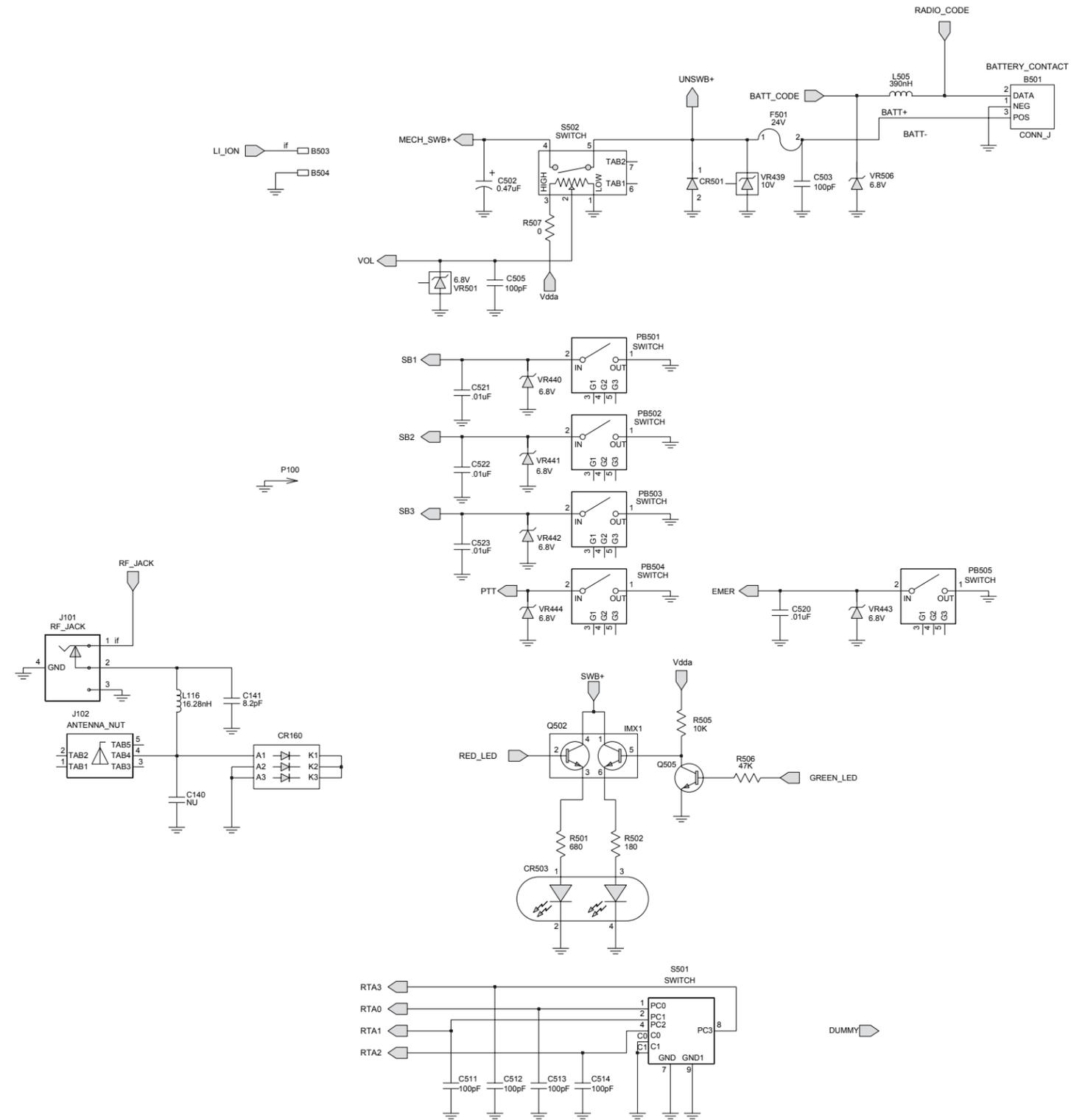


Figure 9-145. UHF Band 2 Controls And Switches Schematic Diagram (PCB No. 8415235H01)

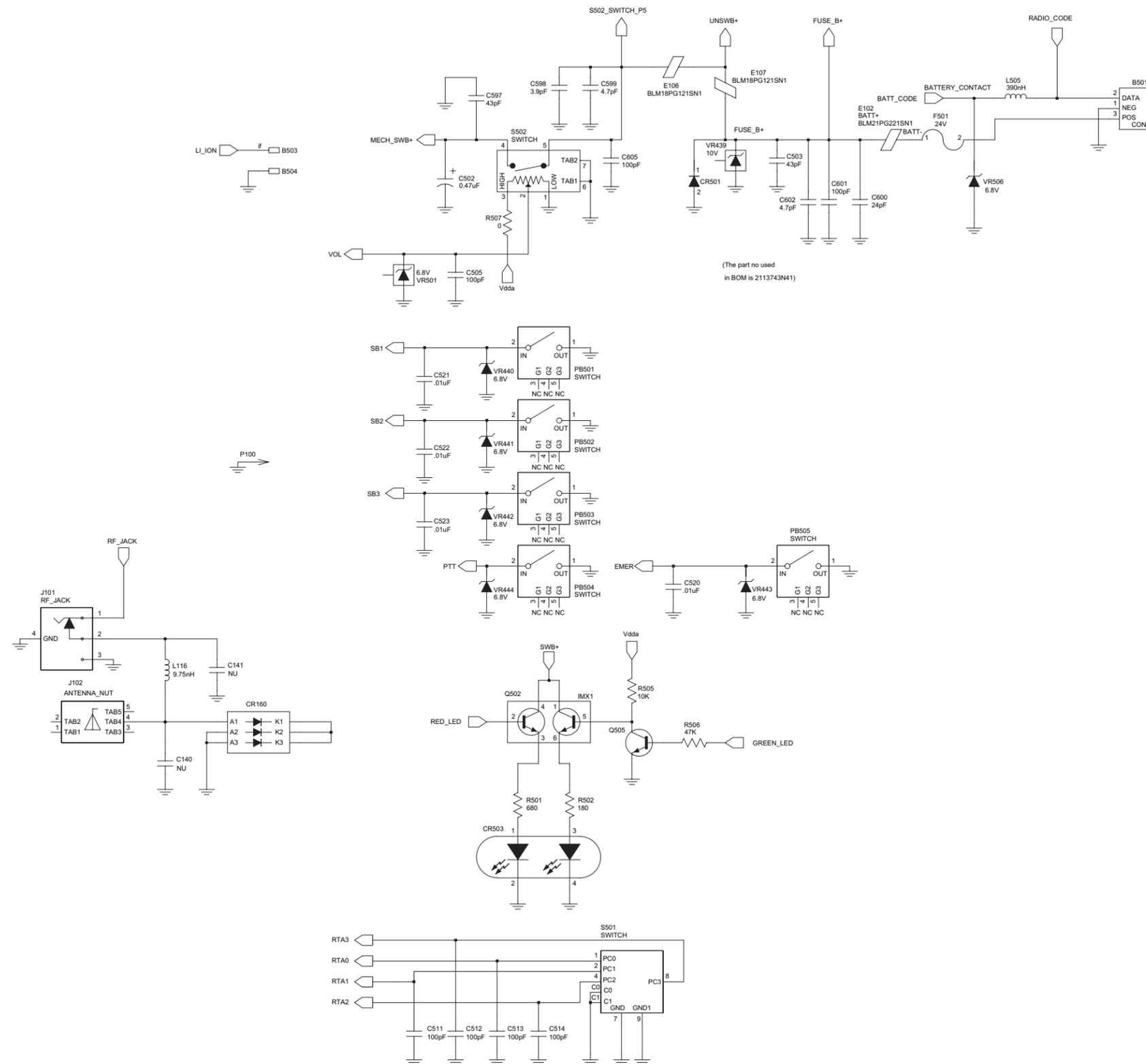


Figure 9-146. UHF Band 2 Controls And Switches Schematic Diagram (PCB No. 8415235H05)

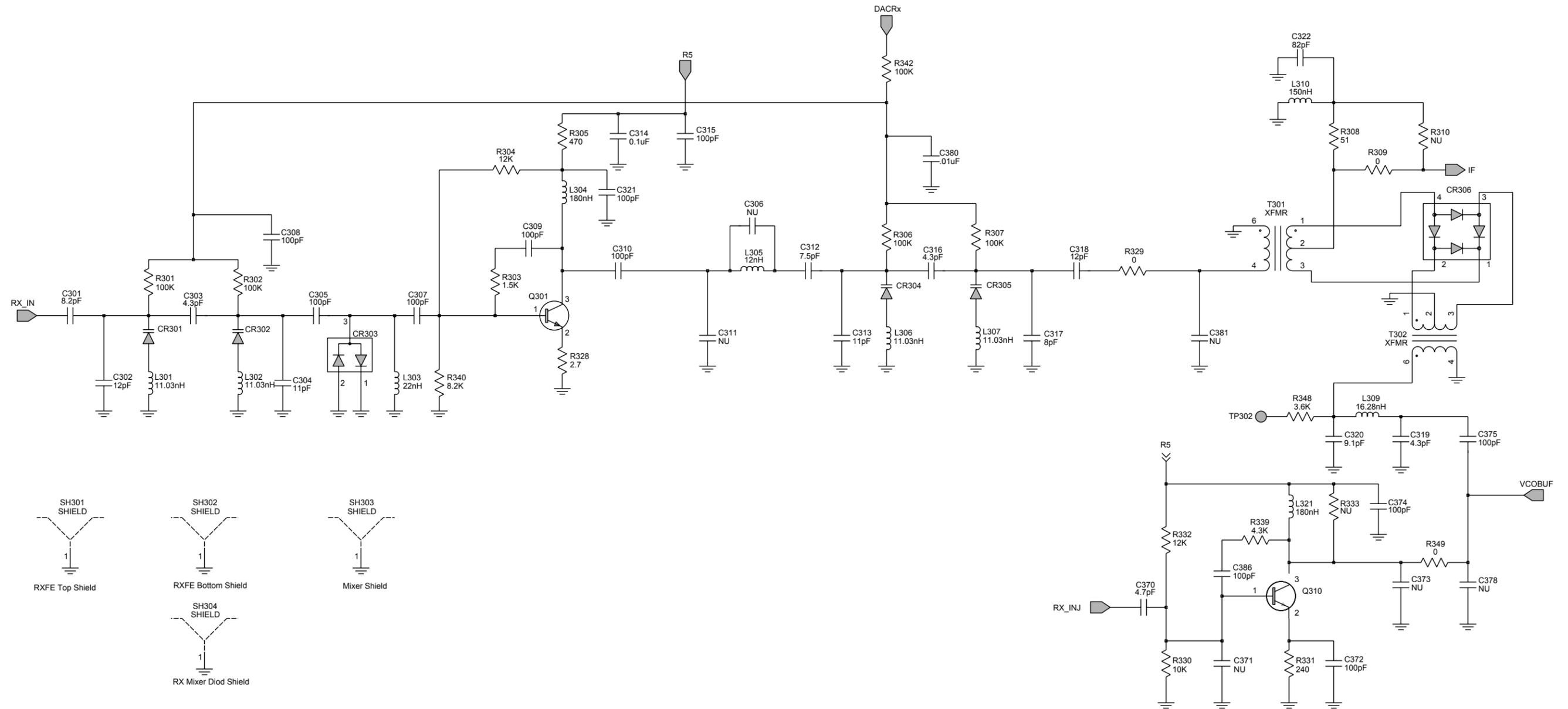


Figure 9-147. UHF Band 2 Receiver Front End Schematic Diagram (PCB No. 8415235H01)

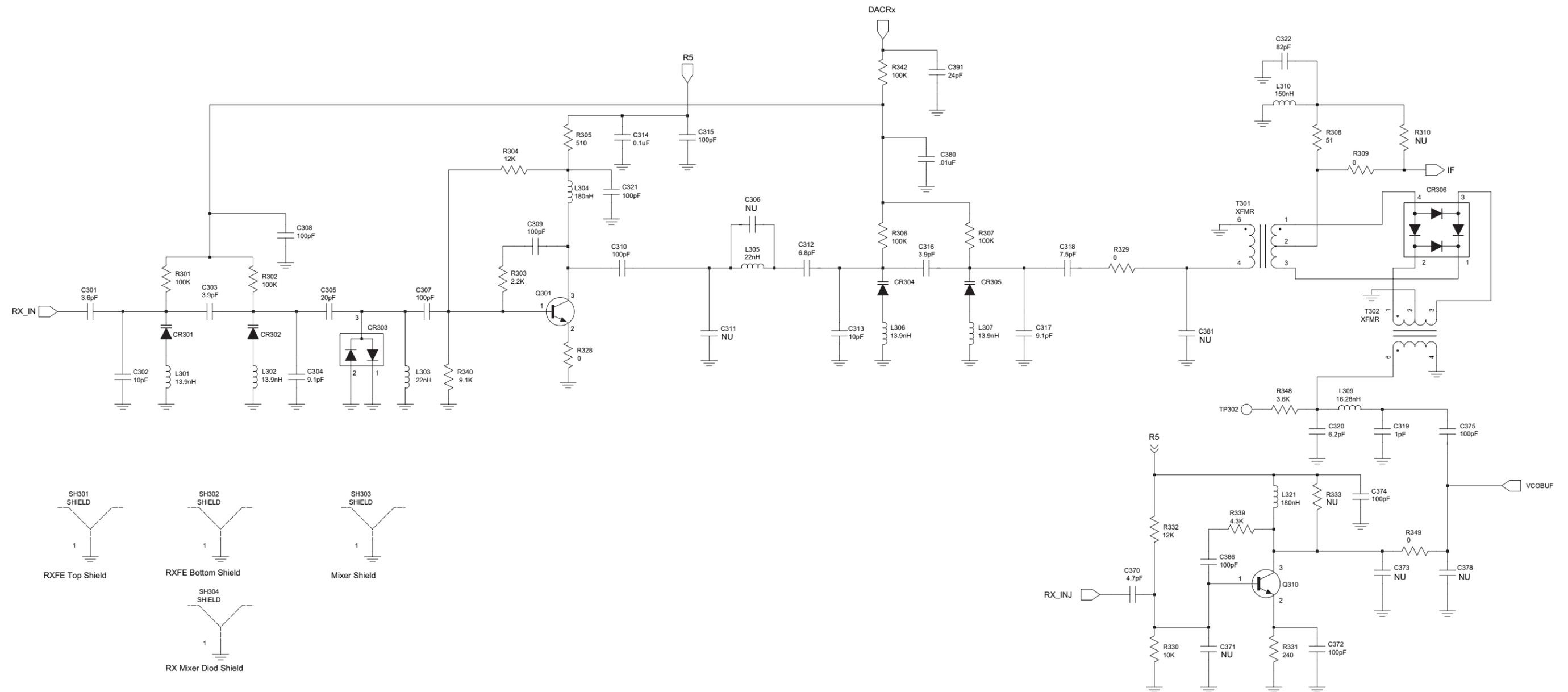


Figure 9-148. UHF Band 2 Receiver Front End Schematic Diagram (PCB No. 8415235H05)





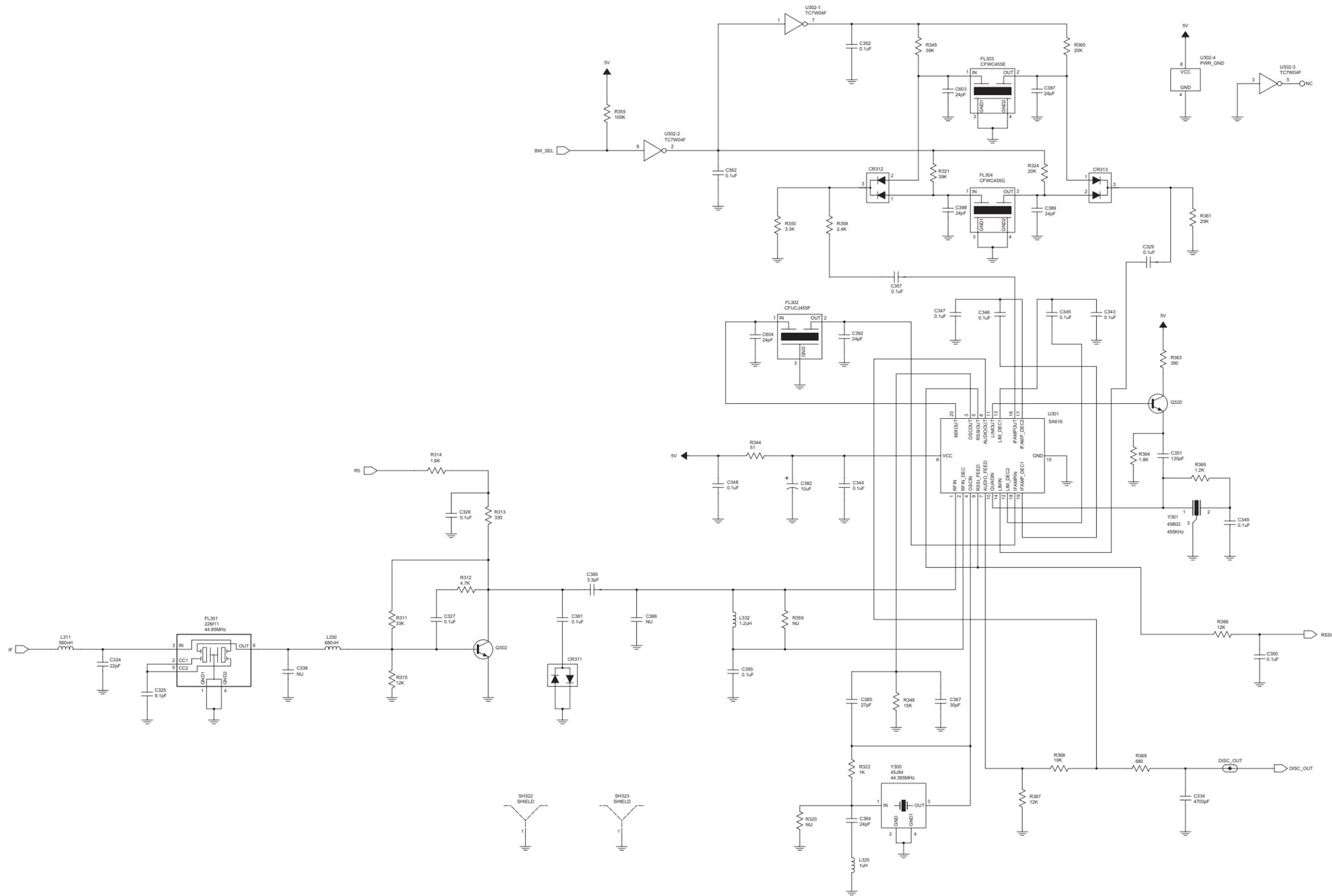


Figure 9-150. UHF Band 2 Receiver Back End Schematic Diagram (PCB No. 8415235H05)

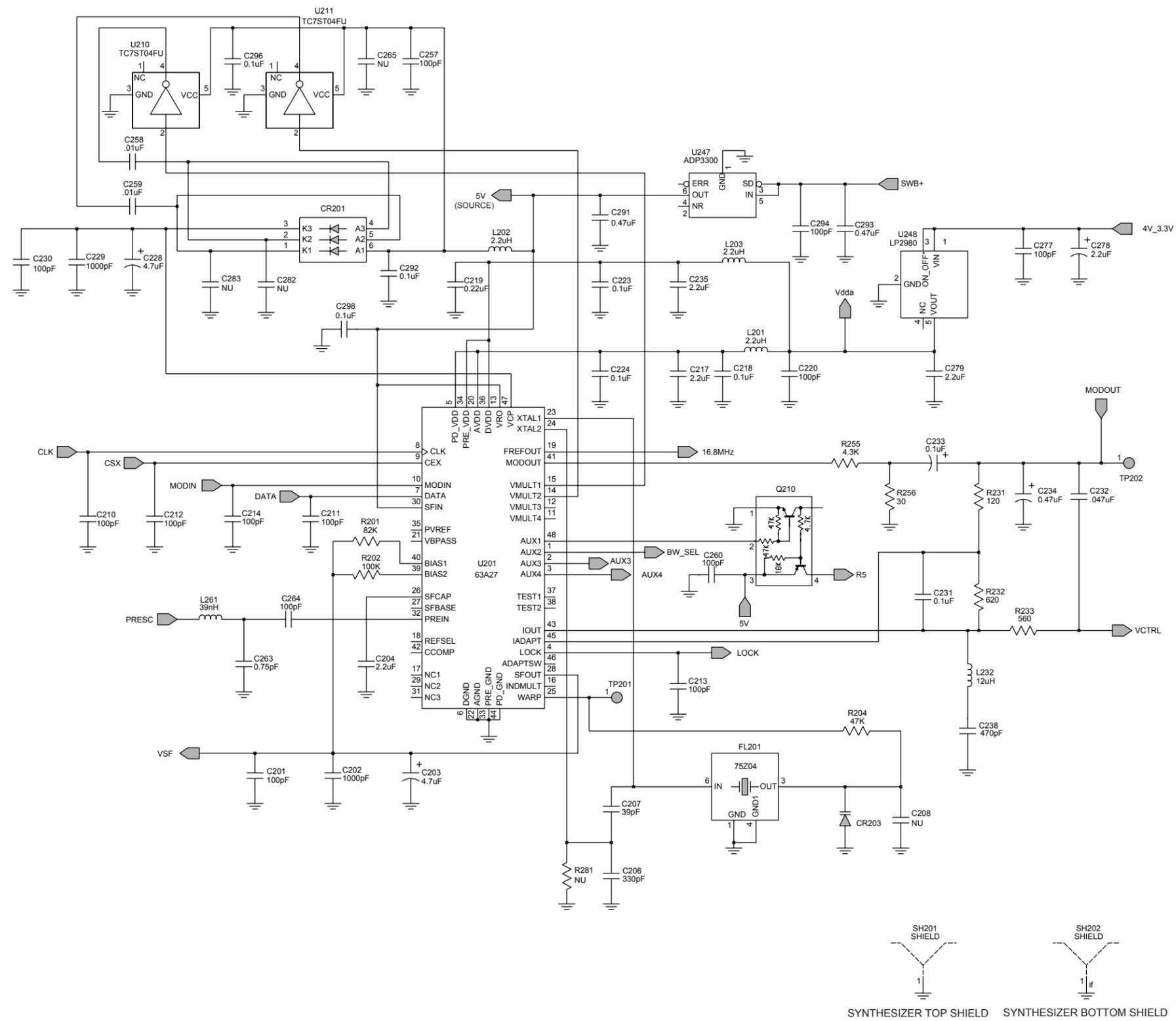


Figure 9-151. UHF Band 2 Synthesizer Schematic Diagram



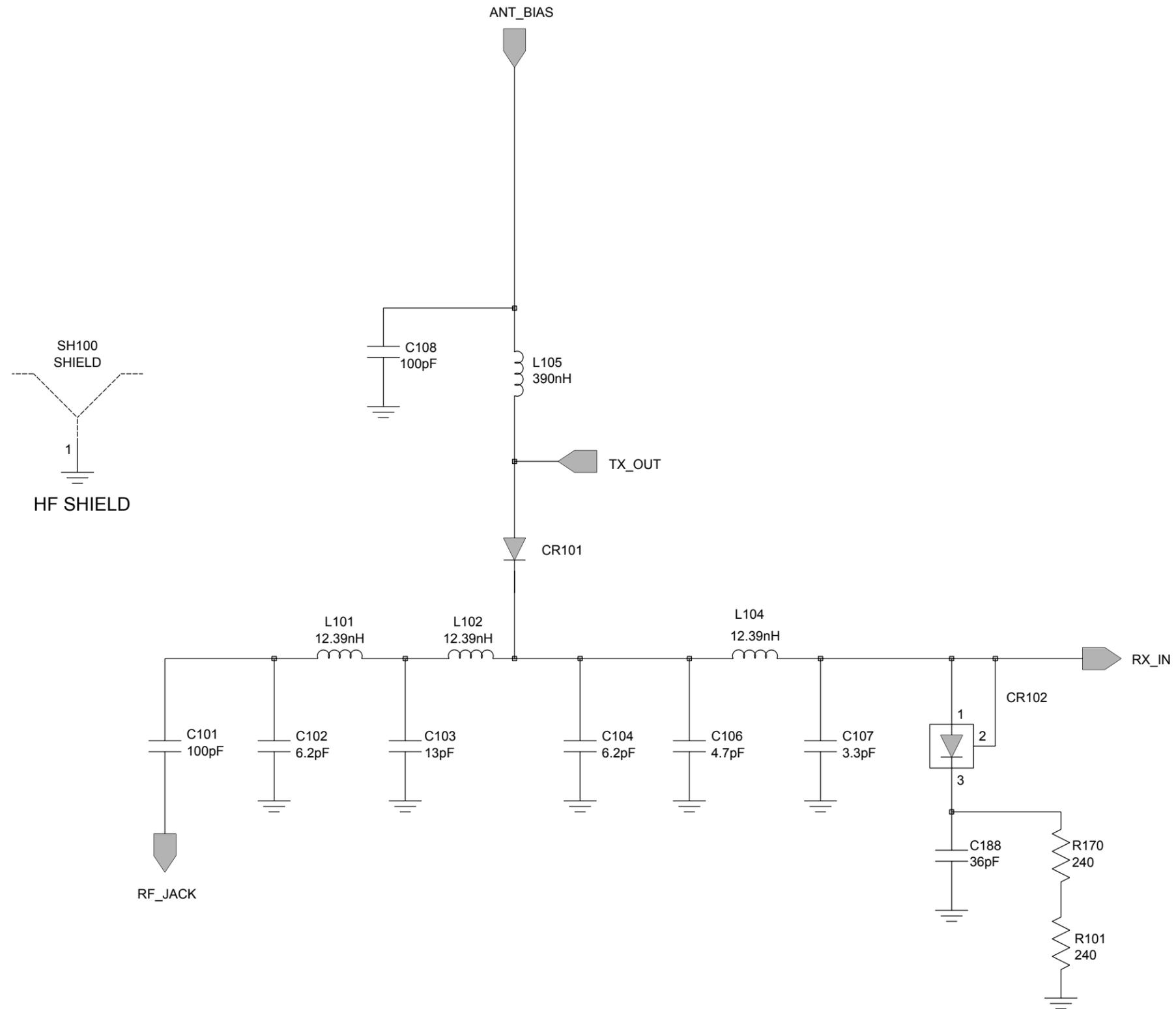


Figure 9-153. UHF Band 2 Harmonic Filter Schematic Diagram (PCB No. 8415235H01)

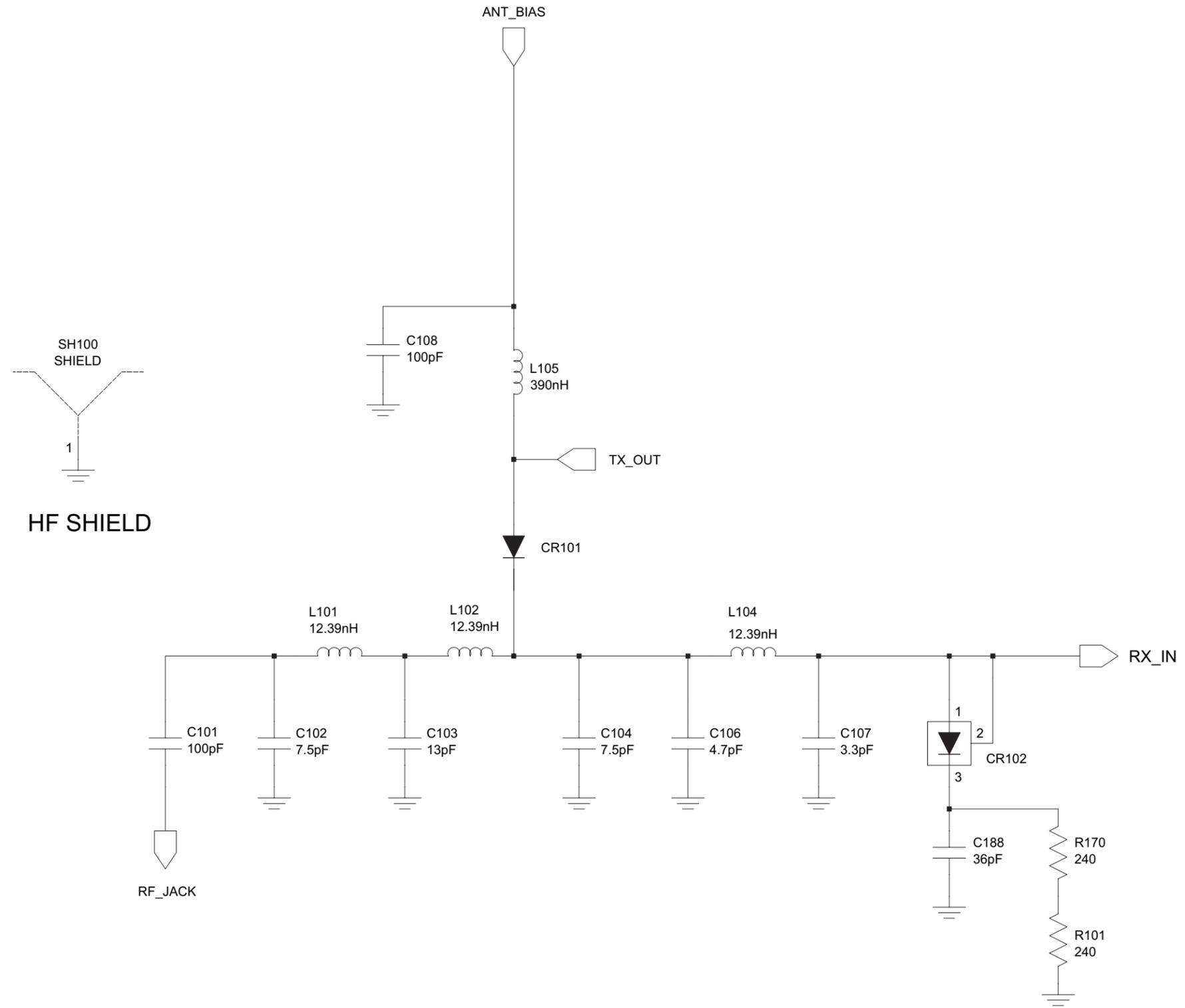


Figure 9-154. UHF Band 2 Harmonic Filter Schematic Diagram (PCB No. 8415235H05)

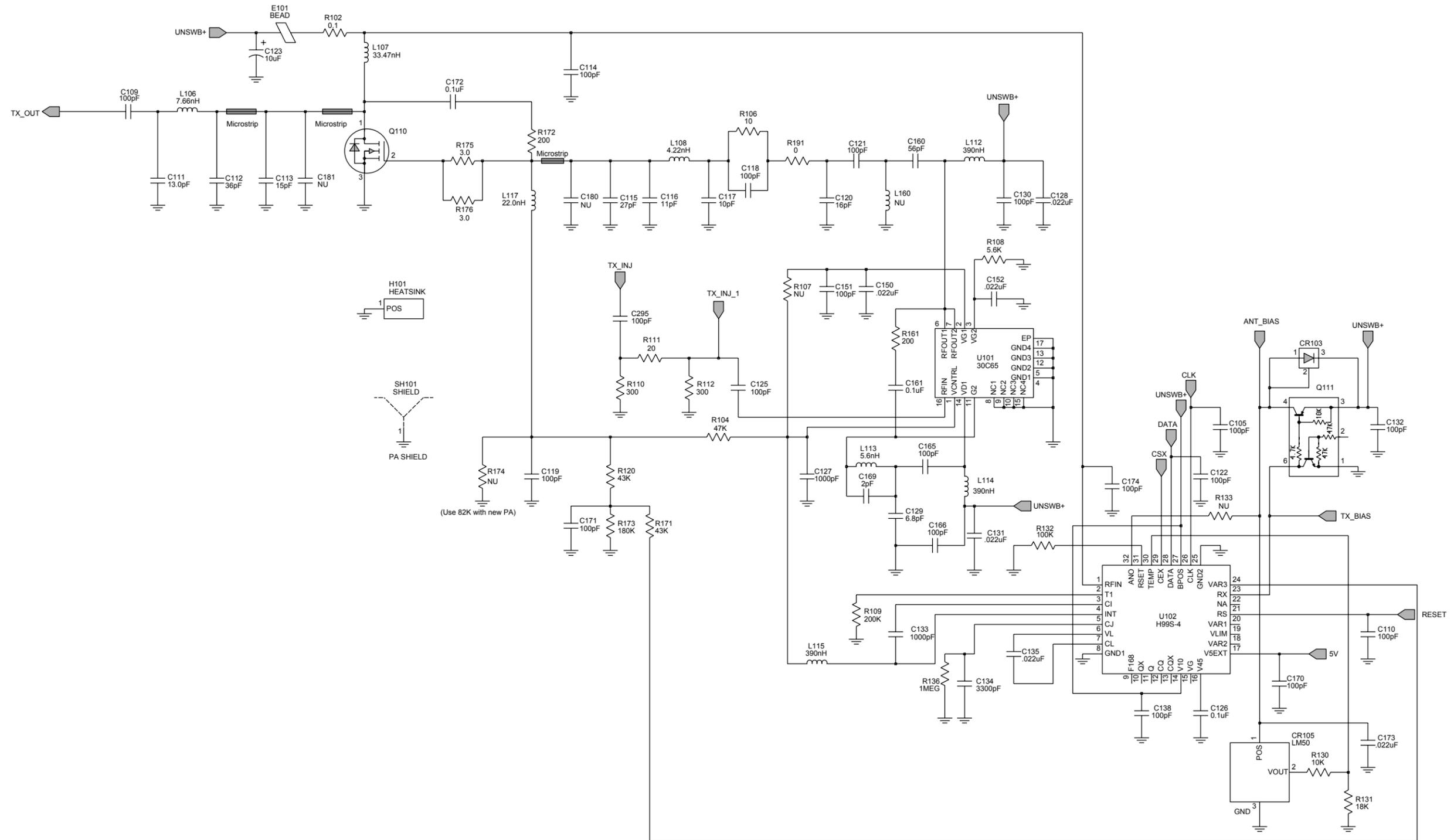


Figure 9-155. UHF Band 2 Transmitter Schematic Diagram (PCB No. 8415235H01)

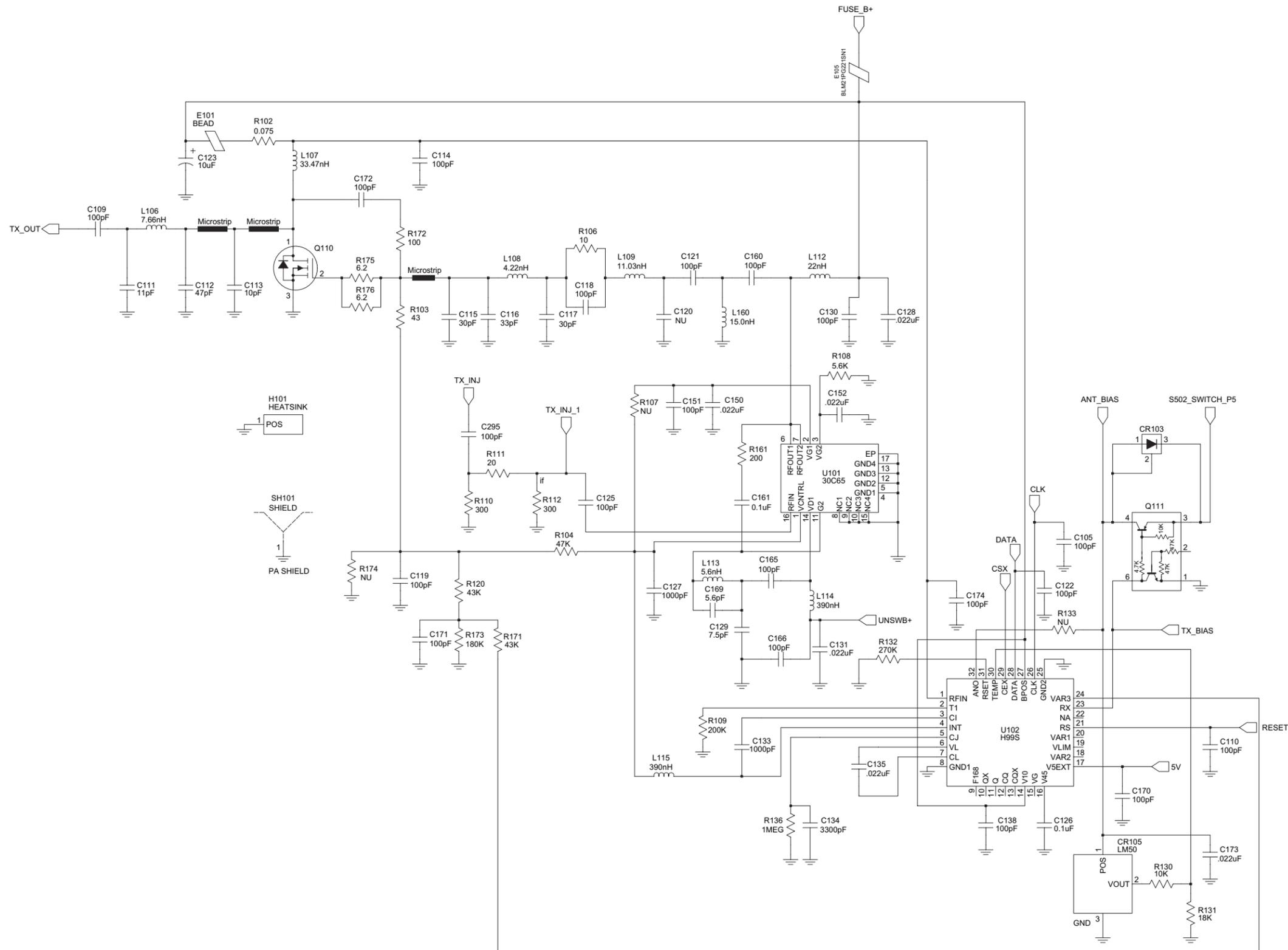


Figure 9-156. UHF Band 2 Transmitter Schematic Diagram (PCB No. 8415235H05)



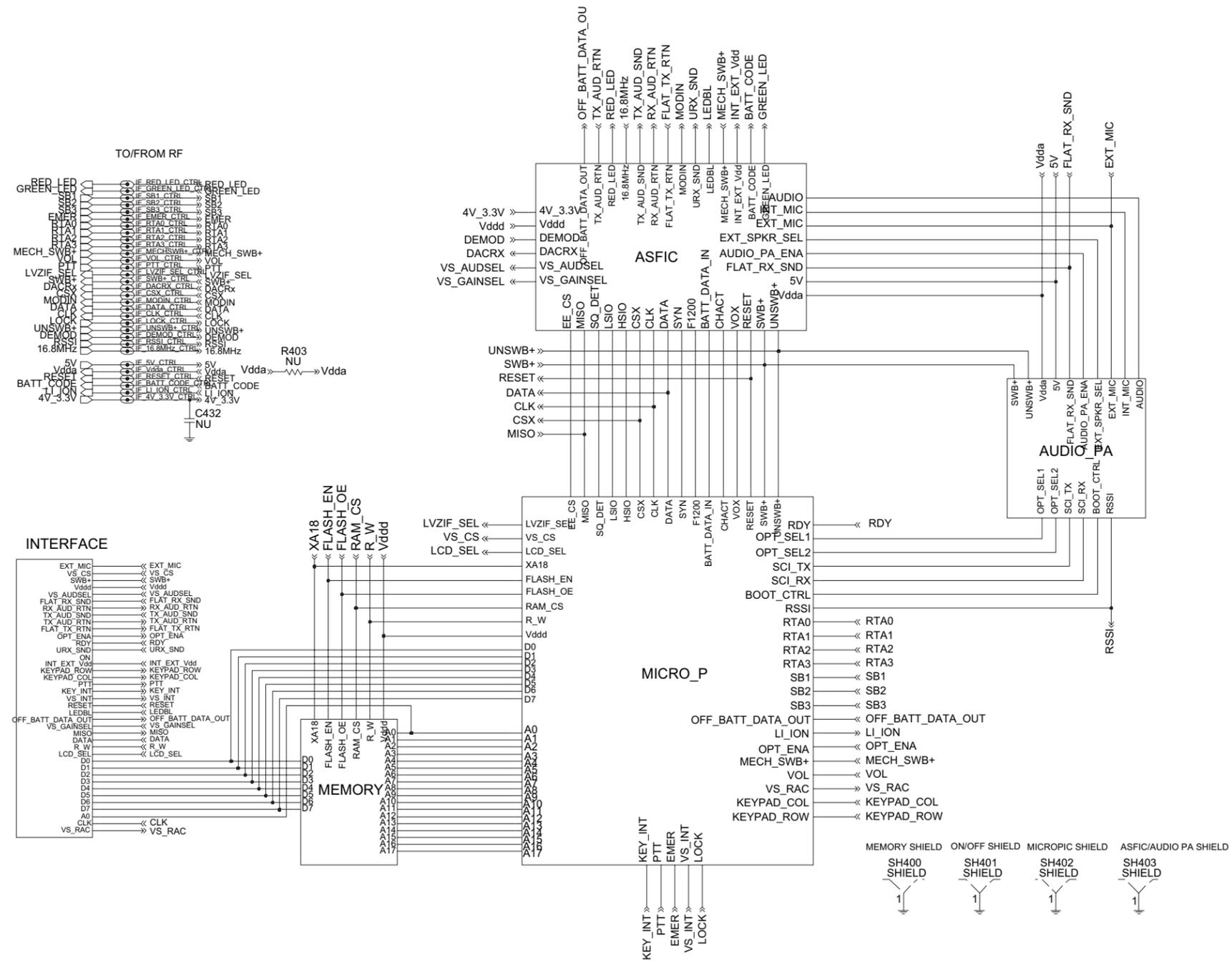


Figure 9-157. Complete Controller Schematic Diagram

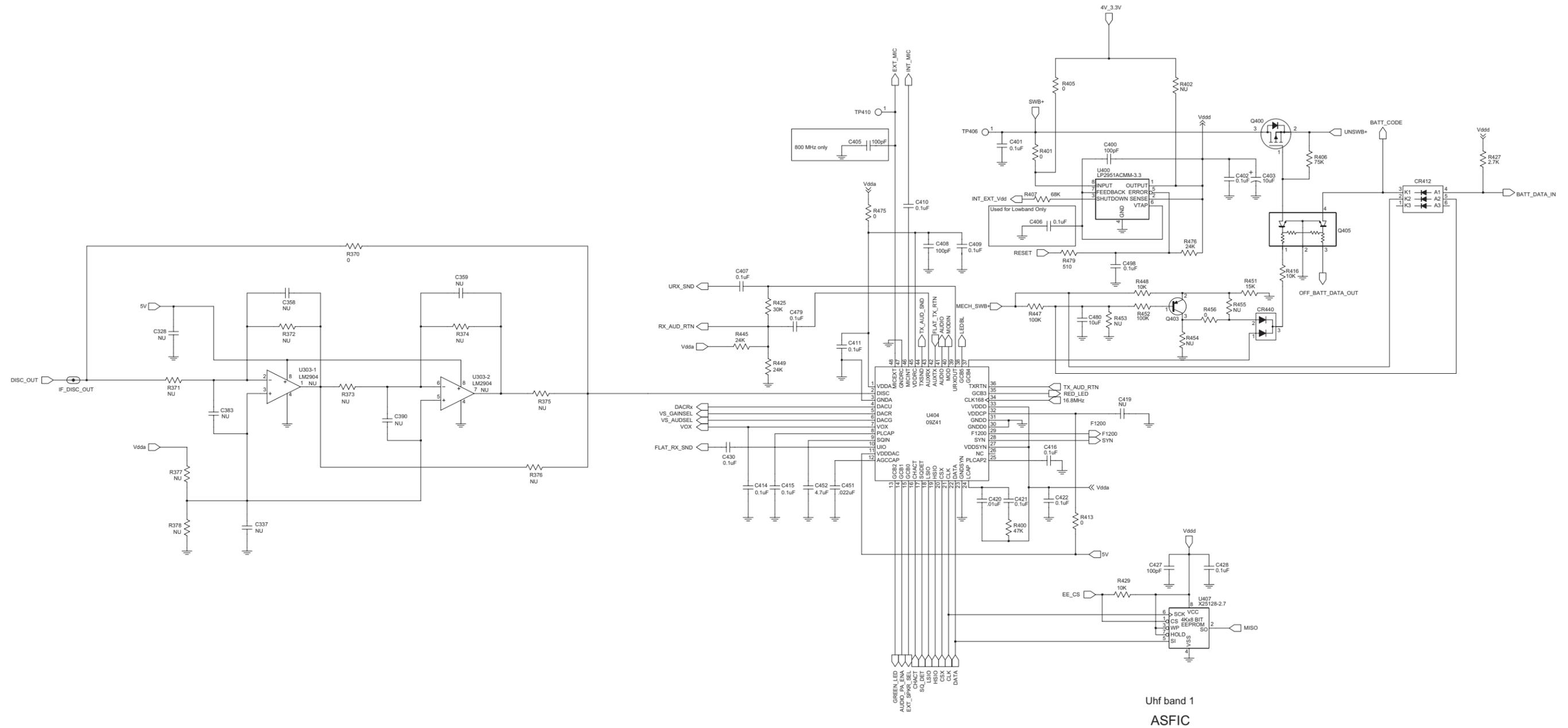


Figure 9-158. Controller ASFIC/ON\_OFF Schematic Diagram

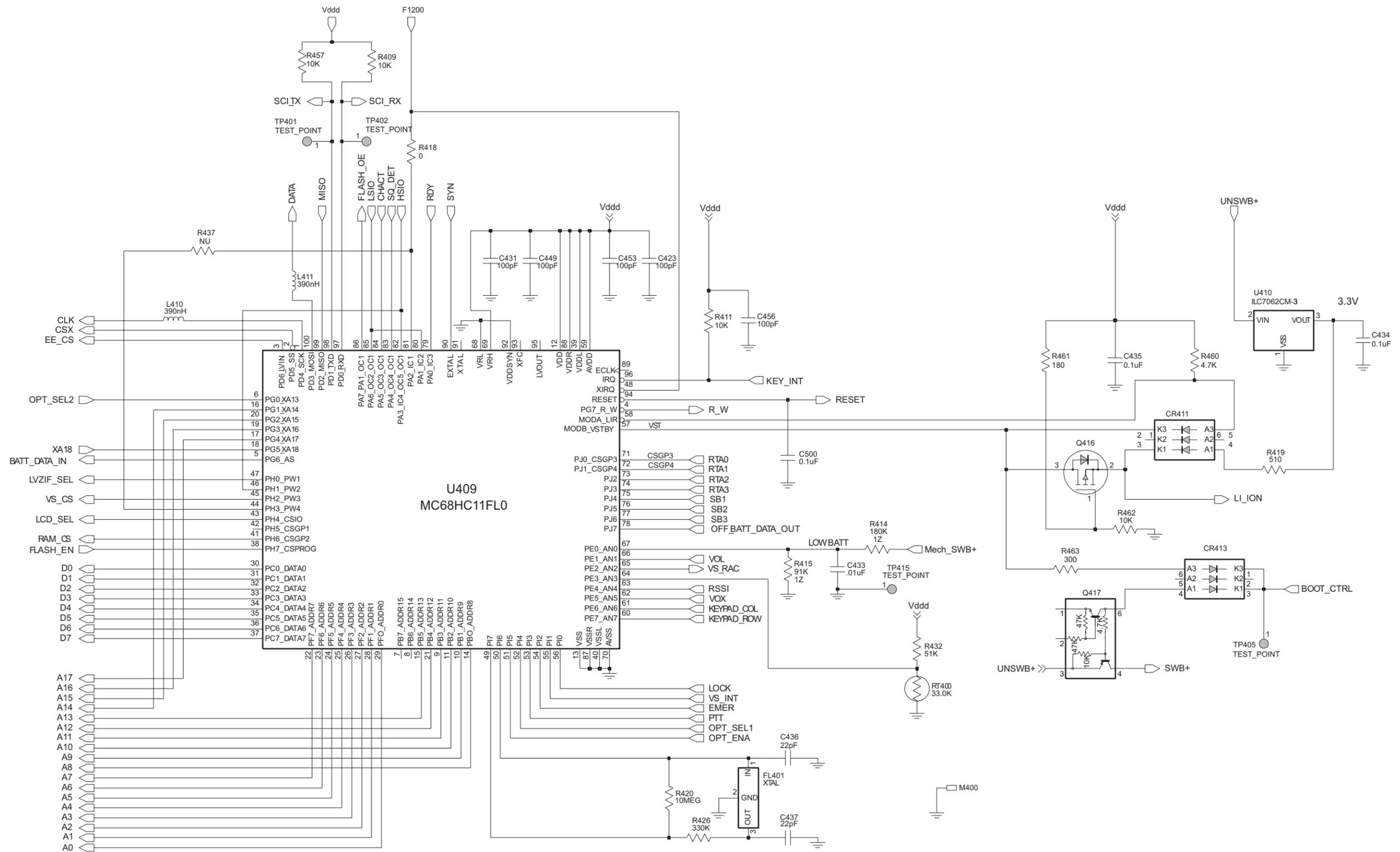


Figure 9-159. Controller Microprocessor Schematic Diagram

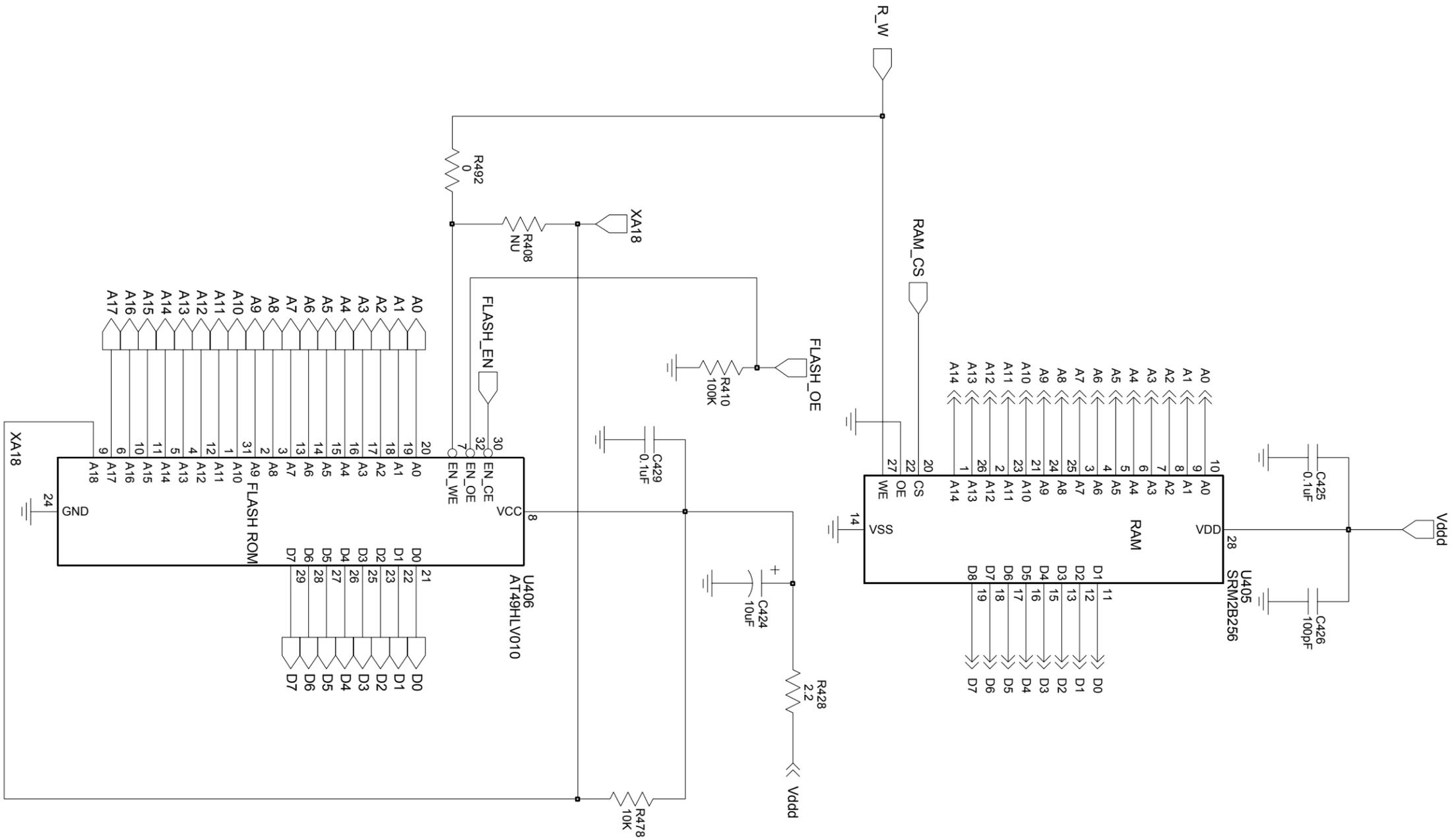


Figure 9-160. Controller Memory Schematic Diagram

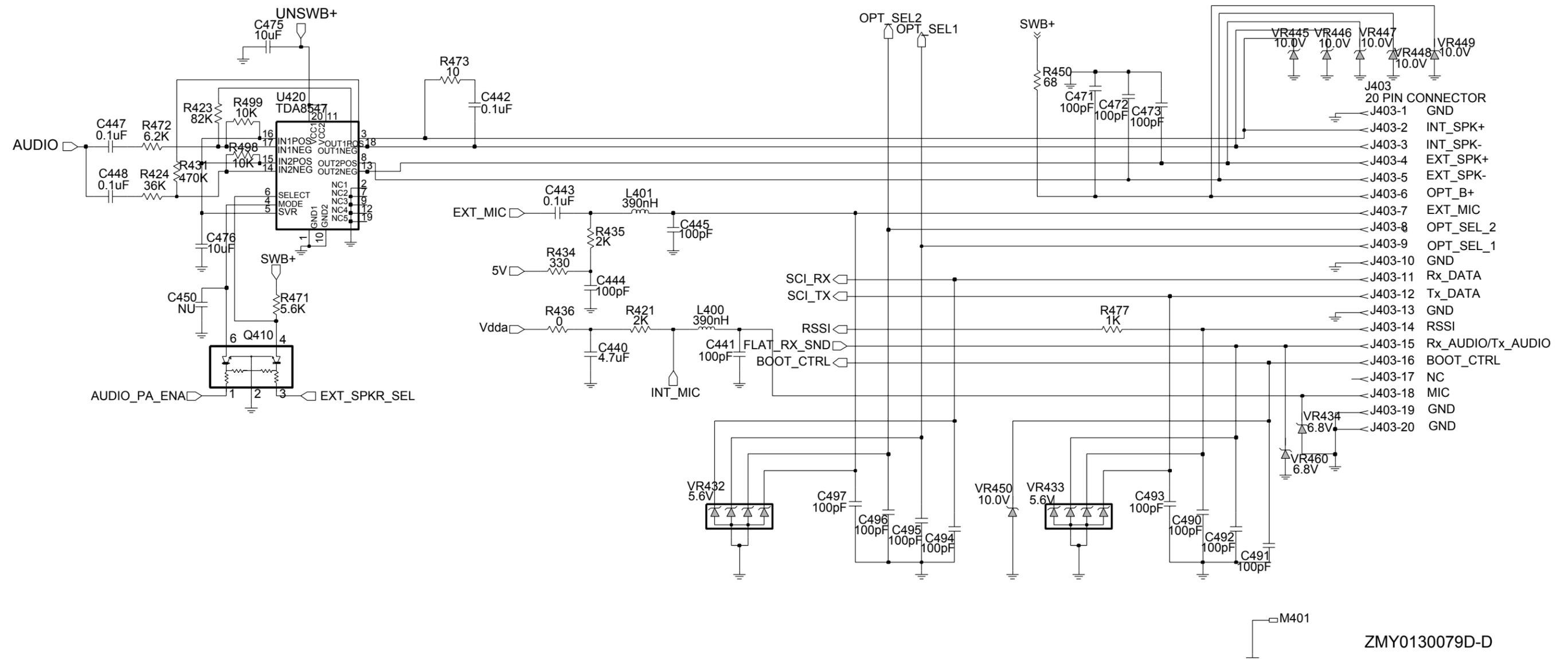


Figure 9-161. Controller Audio Power Amplifier Schematic Diagram

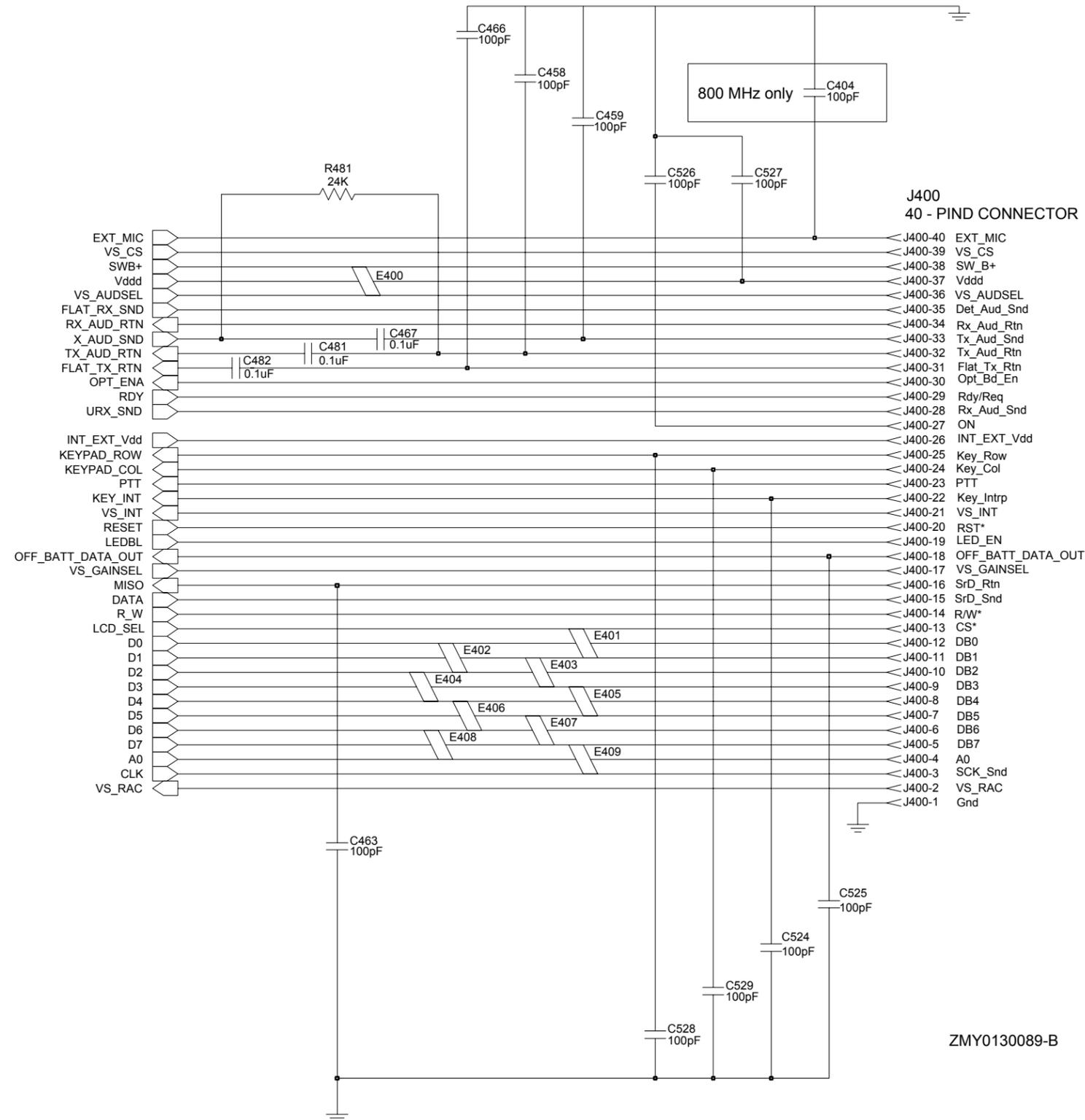


Figure 9-162. Controller Interface Schematic Diagram

**UHF (450-527 MHz) Radio Parts List (PCB 8415235H01)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	CONNECTOR (CONTACT BATTERY)
B503	3980502Z01	CONTACT, BACKUP B+
B504	3980501Z01	CONTACT, BACKUP B-
C101	2113944C45	CAP CER CHP 100.0PF 50V 5%
C102	2113944C72	CAP,FXD,6.2PF,.25PF+/-,50V-DC,060
C103	2113944C77	CAP,FXD,11PF,+5%,-5%,50V-DC,0603,C
C104	2113944C72	CAP,FXD,6.2PF,.25PF+/-,50V-DC,060
C105	2113944A40	CAP CER CHP 100.0PF 50V 5%
C106	2113944C22	CAP CER CHP 4.7PF 50V +/- 0.25PF
C107	2113944C18	CAP CER CHP 3.3PF 50V +/- 0.25PF
C108	2113944A40	CAP CER CHP 100.0PF 50V 5%
C109	2113944C45	CAP CER CHP 100.0PF 50V 5%
C110	2113944A40	CAP CER CHP 100.0PF 50V 5%
C111	2115938H01	CAP CHIP CL1 11.0 +/-0.05 PF
C112	2115937H03	HIGH Q CHIP CAPACITOR, 33PF
C113	2115937H02	HIGH Q CHIP CAPACITOR, 15PF
C114	2113944A40	CAP CER CHP 100.0PF 50V 5%
C115	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,0402,C
C116	2113944A77	CAP,FXD,11PF,+5%,-5%,50V-DC,0402,C
C117	NOT PLACED	
C118	2113944A40	CAP CER CHP 100.0PF 50V 5%
C119	2113944A40	CAP CER CHP 100.0PF 50V 5%
C120	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF
C121	2113944A40	CAP CER CHP 100.0PF 50V 5%
C122	2113944A40	CAP CER CHP 100.0PF 50V 5%
C123	2313960F04	CAP TANT 33 UF 10% 16V 6032-28

Circuit Ref	Motorola Part No.	Description
C125	2113944A40	CAP CER CHP 100.0PF 50V 5%
C126	2113946K02	CAP CER CHP 0.10UF 16V
C127	2113945A09	CAP CER CHP 1000PF 50V 10%
C128	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C129	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF
C130	2113944A40	CAP CER CHP 100.0PF 50V 5%
C131	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C132	2113944A40	CAP CER CHP 100.0PF 50V 5%
C133	2113945A09	CAP CER CHP 1000PF 50V 10%
C134	2113945A12	CAP CER CHP 3300PF 50V 10%
C135	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C138	2113944A40	CAP CER CHP 100.0PF 50V 5%
C140	0613952H91	CER CHIP RES 5600 OHM 5% 0603
C141	2113944C28	CAP CER CHP 8.2PF 50V +/- 0.5PF
C150	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C151	2113944A40	CAP CER CHP 100.0PF 50V 5%
C152	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C160	2113944A34	CAP CER CHP 56.0PF 50V 5%
C161	2113946K02	CAP CER CHP 0.10UF 16V
C165	2113944A34	CAP CER CHP 56.0PF 50V 5%
C166	2113944A40	CAP CER CHP 100.0PF 50V 5%
C169	2113944A08	CAP CER CHP 2.0PF 50V +/- 0.25PF
C170	2113944A40	CAP CER CHP 100.0PF 50V 5%
C171	2113944A40	CAP CER CHP 100.0PF 50V 5%
C172	2113945D04	CAP CER CHP 100,000PF 25V 10%
C173	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04

Circuit Ref	Motorola Part No.	Description
C174	2113944A40	CAP CER CHP 100.0PF 50V 5%
C180	NOT PLACED	
C181	NOT PLACED	
C188	2113944A83	CAP,FXD,36PF,+5%,-5%,50V-DC,0402,C
C201	2113944A40	CAP CER CHP 100.0PF 50V 5%
C202	2113945A09	CAP CER CHP 1000PF 50V 10%
C203	2313960B30	CAP TANT 4.7 UF 10% 10V 3216-18
C204	2113946N03	CAP CER CHP 2.2UF 16V
C206	2113944C04	CAP CER CHP 330.0PF 50V 5%
C207	2113944A32	CAP CER CHP 39.0PF 50V 5%
C208	NOT PLACED	
C210	2113944A40	CAP CER CHP 100.0PF 50V 5%
C211	2113944A40	CAP CER CHP 100.0PF 50V 5%
C212	2113944A40	CAP CER CHP 100.0PF 50V 5%
C213	2113944A40	CAP CER CHP 100.0PF 50V 5%
C214	2113944A40	CAP CER CHP 100.0PF 50V 5%
C217	2113946N03	CAP CER CHP 2.2UF 16V
C218	2113946K02	CAP CER CHP 0.10UF 16V
C219	2113946L03	CAP CER CHP 0.22UF 16V
C220	2113944A40	CAP CER CHP 100.0PF 50V 5%
C223	2113946K02	CAP CER CHP 0.10UF 16V
C224	2113946K02	CAP CER CHP 0.10UF 16V
C228	2313960D05	CAP TANT 4.7 UF 10% 16V 3528-21
C229	2113945A09	CAP CER CHP 1000PF 50V 10%
C230	2113944A40	CAP CER CHP 100.0PF 50V 5%
C231	2113946K02	CAP CER CHP 0.10UF 16V
C232	2113945D02	CAP CER CHP 47,000PF 25V 10%
C233	2313960A26	CAP TANT 0.1 UF 10% 35V 3216-18
C234	2313960A55	CAP TANT 0.47 UF 10% 25V 3216-18
C235	2113946N03	CAP CER CHP 2.2UF 16V
C238	2113945L17	CAP,FXD,470PF,+5%,-5%,50V-DC,0603,

Circuit Ref	Motorola Part No.	Description
C241	2113944A40	CAP CER CHP 100.0PF 50V 5%
C242	2113944A16	CAP CER CHP 4.3PF 50V +/- 0.25PF
C243	2113944A16	CAP CER CHP 4.3PF 50V +/- 0.25PF
C244	2113944C17	CAP CER CHP 3.0PF 50V +/- 0.25PF
C245	2113944A11	CAP CER CHP 2.7PF 50V +/- 0.25PF
C246	2113944A40	CAP CER CHP 100.0PF 50V 5%
C247	2113944A40	CAP CER CHP 100.0PF 50V 5%
C248	2113946K02	CAP CER CHP 0.10UF 16V
C250	2113944A16	CAP CER CHP 4.3PF 50V +/- 0.25PF
C251	2113944A40	CAP CER CHP 100.0PF 50V 5%
C252	2113944A18	CAP CER CHP 5.1PF 50V +/- 0.5PF
C253	2113944C12	CAP CER CHP 1.8PF 50V +/- 0.25PF
C254	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5PF
C255	2113944A40	CAP CER CHP 100.0PF 50V 5%
C256	2113944A18	CAP CER CHP 5.1PF 50V +/- 0.5PF
C257	2113944A40	CAP CER CHP 100.0PF 50V 5%
C258	2113945B02	CAP CER CHP 10,000PF 25V 10%
C259	2113945B02	CAP CER CHP 10,000PF 25V 10%
C260	2113944A40	CAP CER CHP 100.0PF 50V 5%
C263	2113944A62	CAP,FXD,.75PF,.25PF+/-,50V-DC,040
C264	2113944A40	CAP CER CHP 100.0PF 50V 5%
C265	NOT PLACED	
C271	NOT PLACED	
C272	2115153H01	CAP, CERAMIC, COG
C273	2113946K02	CAP CER CHP 0.10UF 16V
C276	2113946N03	CAP CER CHP 2.2UF 16V
C277	2113944A40	CAP CER CHP 100.0PF 50V 5%
C278	2313960D07	CAP TANT 10 UF 10% 16V 3528-21
C279	2113946N03	CAP CER CHP 2.2UF 16V

Circuit Ref	Motorola Part No.	Description
C281	2113944A40	CAP CER CHP 100.0PF 50V 5%
C282	NOT PLACED	
C283	NOT PLACED	
C285	2113944A40	CAP CER CHP 100.0PF 50V 5%
C286	2113946K02	CAP CER CHP 0.10UF 16V
C289	2113944A40	CAP CER CHP 100.0PF 50V 5%
C291	2313960M51	CAP TANT 10 UF 10% 6.3V 2012-12
C292	2113946K02	CAP CER CHP 0.10UF 16V
C293	2113945G98	CAP,FXD,.47UF,+10%,-10%, 50V-DC,080
C294	2113944A40	CAP CER CHP 100.0PF 50V 5%
C295	2113944A40	CAP CER CHP 100.0PF 50V 5%
C296	2113946K02	CAP CER CHP 0.10UF 16V
C297	2113945B02	CAP CER CHP 10,000PF 25V 10%
C298	2113946K02	CAP CER CHP 0.10UF 16V
C301	2113944A23	CAP CER CHP 8.2PF 50V +/- 0.5PF
C302	2113944A26	CAP CER CHP 12.0PF 50V 5%
C303	2113944C21	CAP CER CHP 4.3PF 50V +/- 0.25PF
C304	2113944A77	CAP,FXD,11PF,+5%,-5%,50V-DC,0402,C
C305	2113944A40	CAP CER CHP 100.0PF 50V 5%
C306	NOT PLACED	
C307	2113944A40	CAP CER CHP 100.0PF 50V 5%
C308	2113944A40	CAP CER CHP 100.0PF 50V 5%
C309	2113944A40	CAP CER CHP 100.0PF 50V 5%
C310	2113944A40	CAP CER CHP 100.0PF 50V 5%
C311	NOT PLACED	
C312	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF
C313	2113944A77	CAP,FXD,11PF,+5%,-5%,50V-DC,0402,C
C314	2113946K02	CAP CER CHP 0.10UF 16V
C315	2113944A40	CAP CER CHP 100.0PF 50V 5%
C316	2113944C21	CAP CER CHP 4.3PF 50V +/- 0.25PF

Circuit Ref	Motorola Part No.	Description
C317	2113944A73	CAP,FXD,8PF,.5PF+/-,50V-DC,0402,C
C318	2113944A26	CAP CER CHP 12.0PF 50V 5%
C319	2113944A16	CAP CER CHP 4.3PF 50V +/- 0.25PF
C320	2113944A24	CAP CER CHP 9.1PF 50V +/- 0.5PF
C321	2113944A40	CAP CER CHP 100.0PF 50V 5%
C322	2113944A38	CAP CER CHP 82.0PF 50V 5%
C324	2115153H40	CAP, CERAMIC, COG
C325	2115153H26	CAP, CERAMIC, COG
C326	2113946K02	CAP CER CHP 0.10UF 16V
C327	2113946K02	CAP CER CHP 0.10UF 16V
C328	2113946K02	CAP CER CHP 0.10UF 16V
C329	2113946K02	CAP CER CHP 0.10UF 16V
C334	2113945A13	CAP CER CHP 4700PF 50V 10%
C337	2113946D02	CAP CER CHP 1.0UF 6.3V 10%
C338	NOT PLACED	
C343	2113946K02	CAP CER CHP 0.10UF 16V
C344	2113945D04	CAP CER CHP 100,000PF 25V 10%
C345	2113946K02	CAP CER CHP 0.10UF 16V
C346	2113946K02	CAP CER CHP 0.10UF 16V
C347	2113946K02	CAP CER CHP 0.10UF 16V
C348	2113946K02	CAP CER CHP 0.10UF 16V
C349	2113945D04	CAP CER CHP 100,000PF 25V 10%
C350	2113946K02	CAP CER CHP 0.10UF 16V
C351	2113944A41	CAP CER CHP 120.0PF 50V 5%
C352	2113946K02	CAP CER CHP 0.10UF 16V
C355	2113946K02	CAP CER CHP 0.10UF 16V
C357	2113946K02	CAP CER CHP 0.10UF 16V
C358	2113944A21	CAP CER CHP 6.8PF 50V +/- 0.5PF
C359	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,0402
C360	2113944A13	CAP CER CHP 3.3PF 50V +/- 0.25PF
C361	2113946K02	CAP CER CHP 0.10UF 16V
C362	2113946K02	CAP CER CHP 0.10UF 16V
C364	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,0402,C
C366	NOT PLACED	
C367	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,0402,C

Circuit Ref	Motorola Part No.	Description
C370	2115153H18	CAP, CERAMIC, COG
C371	NOT PLACED	
C372	2113944A40	CAP CER CHP 100.0PF 50V 5%
C373	NOT PLACED	
C374	2113944A40	CAP CER CHP 100.0PF 50V 5%
C375	2113944A40	CAP CER CHP 100.0PF 50V 5%
C378	NOT PLACED	
C380	2113945B02	CAP CER CHP 10,000PF 25V 10%
C381	NOT PLACED	
C382	2313960B57	CAP,TANTALUM,10UF,+10%,-10%,4V-DC,S
C383	2113944A85	CAP,FXD,51PF,+5%,-5%,50V-DC,0402
C385	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,0402,C
C386	2113944A40	CAP CER CHP 100.0PF 50V 5%
C390	2113944A85	CAP,FXD,51PF,+5%,-5%,50V-DC,0402
C400	2113945B02	CAP CER CHP 10,000PF 25V 10%
C401	2113946K02	CAP CER CHP 0.10UF 16V
C402	2113946K02	CAP CER CHP 0.10UF 16V
C403	2113743G24	CAP CHIP 2.2 UF 16V+80-20%
C404	NOT PLACED	
C405	2113944A40	CAP CER CHP 100.0PF 50V 5%
C406	NOT PLACED	
C407	2113946B04	CAP CER CHP 0.10UF 10V 10%
C408	2113944A40	CAP CER CHP 100.0PF 50V 5%
C409	2113946K02	CAP CER CHP 0.10UF 16V
C410	2113946B04	CAP CER CHP 0.10UF 10V 10%
C411	2113946K02	CAP CER CHP 0.10UF 16V
C414	2113946K02	CAP CER CHP 0.10UF 16V
C415	2185895Z01	CAPACITOR CER LOW DIST .01UF
C416	2113946B04	CAP CER CHP 0.10UF 10V 10%
C419	NOT PLACED	
C420	2113945B02	CAP CER CHP 10,000PF 25V 10%
C421	2113946B04	CAP CER CHP 0.10UF 10V 10%

Circuit Ref	Motorola Part No.	Description
C422	2113946K02	CAP CER CHP 0.10UF 16V
C423	2113944A40	CAP CER CHP 100.0PF 50V 5%
C424	NOT PLACED	
C425	2113946K02	CAP CER CHP 0.10UF 16V
C426	2113944A40	CAP CER CHP 100.0PF 50V 5%
C427	2113944A40	CAP CER CHP 100.0PF 50V 5%
C428	2113946K02	CAP CER CHP 0.10UF 16V
C429	2113946K02	CAP CER CHP 0.10UF 16V
C430	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
C431	2113944A40	CAP CER CHP 100.0PF 50V 5%
C432	NOT PLACED	
C433	2113945B02	CAP CER CHP 10,000PF 25V 10%
C434	2113946B04	CAP CER CHP 0.10UF 10V 10%
C435	2113946K02	CAP CER CHP 0.10UF 16V
C436	2113944A29	CAP CER CHP 22.0PF 50V 5%
C437	2113944A29	CAP CER CHP 22.0PF 50V 5%
C440	2113946Q01	CAP CER CHP 4.7UF 16V
C441	2113944A40	CAP CER CHP 100.0PF 50V 5%
C442	2113945D04	CAP CER CHP 100,000PF 25V 10%
C443	2113946B04	CAP CER CHP 0.10UF 10V 10%
C444	2113944A40	CAP CER CHP 100.0PF 50V 5%
C445	2113944A40	CAP CER CHP 100.0PF 50V 5%
C447	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-DC,04
C448	2113946B04	CAP CER CHP 0.10UF 10V 10%
C449	2113944A40	CAP CER CHP 100.0PF 50V 5%
C450	NOT PLACED	
C451	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-DC,04
C452	2113743B29	CAP CHIP 1.00 UF 10% 16V
C453	2113944A40	CAP CER CHP 100.0PF 50V 5%
C456	2113944A40	CAP CER CHP 100.0PF 50V 5%



Circuit Ref	Motorola Part No.	Description
C458	2113944A40	CAP CER CHP 100.0PF 50V 5%
C459	2113944A40	CAP CER CHP 100.0PF 50V 5%
C463	2113944A40	CAP CER CHP 100.0PF 50V 5%
C466	2113944A40	CAP CER CHP 100.0PF 50V 5%
C467	2113946B04	CAP CER CHP 0.10UF 10V 10%
C471	2113944A40	CAP CER CHP 100.0PF 50V 5%
C472	2113945A05	CAP CER CHP 470PF 50V 10%
C473	2113945A05	CAP CER CHP 470PF 50V 10%
C475	2113743H14	CAP CHIP 10.0 UF 16V +80-20%
C476	2113946R01	CAP CER CHP 10.0UF 10V
C479	2113946B04	CAP CER CHP 0.10UF 10V 10%
C480	2113946R01	CAP CER CHP 10.0UF 10V
C481	2113946B04	CAP CER CHP 0.10UF 10V 10%
C482	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
C490	2113944A40	CAP CER CHP 100.0PF 50V 5%
C491	2113944A40	CAP CER CHP 100.0PF 50V 5%
C492	2113944A40	CAP CER CHP 100.0PF 50V 5%
C493	2113944A40	CAP CER CHP 100.0PF 50V 5%
C494	2113944A40	CAP CER CHP 100.0PF 50V 5%
C495	2113944A40	CAP CER CHP 100.0PF 50V 5%
C496	2113944A40	CAP CER CHP 100.0PF 50V 5%
C497	2113944A40	CAP CER CHP 100.0PF 50V 5%
C498	NOT PLACED	
C499	2113946B04	CAP CER CHP 0.10UF 10V 10%
C502	2313960A55	CAP TANT 0.47 UF 10% 25V 3216-18
C503	2113944A40	CAP CER CHP 100.0PF 50V 5%
C505	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description
C511	2113944A40	CAP CER CHP 100.0PF 50V 5%
C512	2113944A40	CAP CER CHP 100.0PF 50V 5%
C513	2113944A40	CAP CER CHP 100.0PF 50V 5%
C514	2113944A40	CAP CER CHP 100.0PF 50V 5%
C520	2113945B02	CAP CER CHP 10,000PF 25V 10%
C521	2113945B02	CAP CER CHP 10,000PF 25V 10%
C522	2113945B02	CAP CER CHP 10,000PF 25V 10%
C523	2113945B02	CAP CER CHP 10,000PF 25V 10%
C524	2113944A40	CAP CER CHP 100.0PF 50V 5%
C525	2113944A40	CAP CER CHP 100.0PF 50V 5%
C526	2113944A40	CAP CER CHP 100.0PF 50V 5%
C527	2113944A40	CAP CER CHP 100.0PF 50V 5%
C528	2113944A40	CAP CER CHP 100.0PF 50V 5%
C529	2113944A40	CAP CER CHP 100.0PF 50V 5%
C610	2113944A40	CAP CER CHP 100.0PF 50V 5%
C611	2113944A40	CAP CER CHP 100.0PF 50V 5%
C612	2113944A40	CAP CER CHP 100.0PF 50V 5%
C613	2113944A40	CAP CER CHP 100.0PF 50V 5%
C615	2113944A40	CAP CER CHP 100.0PF 50V 5%
C616	2113944A40	CAP CER CHP 100.0PF 50V 5%
C618	2113944A40	CAP CER CHP 100.0PF 50V 5%
C619	2113944A40	CAP CER CHP 100.0PF 50V 5%
C620	2113944A40	CAP CER CHP 100.0PF 50V 5%
C621	2113944A40	CAP CER CHP 100.0PF 50V 5%
C622	2113944A40	CAP CER CHP 100.0PF 50V 5%
CR101	4880973Z02	PIN DIODE

Circuit Ref	Motorola Part No.	Description
CR102	4815257H01	SURFACE MOUNT PIN DIODES
CR103	4815257H01	SURFACE MOUNT PIN DIODES
CR105	5115022H01	IC,TEMP SENS,LM50C, SM,SOT-23
CR160	NOT PLACED	
CR201	4815011H01	DIODE,SWG,300MA,80V
CR203	4815072H01	DIODE,VCTR,1SV232,30V
CR241	4885094Y01	DIODE VARACTOR ISV228 W18
CR242	4885055Y01	DIODE VARACTOR PB-FREE
CR243	4885055Y01	DIODE VARACTOR PB-FREE
CR251	4815322H01	VHF VARIABLE CAPACITANCE DIODE
CR301	4885055Y01	DIODE VARACTOR PB-FREE
CR302	4885055Y01	DIODE VARACTOR PB-FREE
CR303	4815048H01	DIODE,SHTK,MMBD353LT1, SM,7V
CR304	4885055Y01	DIODE VARACTOR PB-FREE
CR305	4885055Y01	DIODE VARACTOR PB-FREE
CR306	4802245J42	RING QUAD DIODE SOT-143 PKG
CR311	4813974A19	DIODE SCHOTTKY BARRIER SERIES
CR312	4815047H01	DIODE,SWG,DAN235EFTL,35 V
CR313	4815047H01	DIODE,SWG,DAN235EFTL,35 V
CR411	4815067H01	DIODE ARRAY,SWG, RB731UFT108,SMD,1M
CR412	4815067H01	DIODE ARRAY,SWG, RB731UFT108,SMD,1M
CR413	4815067H01	DIODE ARRAY,SWG, RB731UFT108,SMD,1M
CR440	4813978C02	PB FREE, NOT COMPLETELY ENRICHED RECTIFIER
CR501	4815155H01	DIODE RED/YEL
CR503	4805729G49	LED
D601	4880479U01	LED
D602	4880479U01	LED
D603	4880479U01	LED
D604	4880479U01	LED
D605	4880479U01	LED
D606	4880479U01	LED
E101	2415954H01	INDUCTOR BEAD CHIP
E400	2480640Z01	SURFACE MOUNT FERRITE BEAD
E401	2480640Z01	SURFACE MOUNT FERRITE BEAD

Circuit Ref	Motorola Part No.	Description
E402	2480640Z01	SURFACE MOUNT FERRITE BEAD
E403	2480640Z01	SURFACE MOUNT FERRITE BEAD
E404	2480640Z01	SURFACE MOUNT FERRITE BEAD
E405	2480640Z01	SURFACE MOUNT FERRITE BEAD
E406	2480640Z01	SURFACE MOUNT FERRITE BEAD
E407	2480640Z01	SURFACE MOUNT FERRITE BEAD
E408	2480640Z01	SURFACE MOUNT FERRITE BEAD
E409	2480640Z01	SURFACE MOUNT FERRITE BEAD
E634	2480640Z01	SURFACE MOUNT FERRITE BEAD
E637	2480640Z01	SURFACE MOUNT FERRITE BEAD
E638	2480640Z01	SURFACE MOUNT FERRITE BEAD
E639	2480640Z01	SURFACE MOUNT FERRITE BEAD
E640	2480640Z01	SURFACE MOUNT FERRITE BEAD
E641	2480640Z01	SURFACE MOUNT FERRITE BEAD
E642	2480640Z01	SURFACE MOUNT FERRITE BEAD
E643	2480640Z01	SURFACE MOUNT FERRITE BEAD
E644	2480640Z01	SURFACE MOUNT FERRITE BEAD
E645	2480640Z01	SURFACE MOUNT FERRITE BEAD
F501	6515076H01	FUSE,FST BLW,3A,24V,FUSE CHIP SMT T
FL201	4805875Z04	CRYSTAL 16.8 MHZ
FL301	9180022M11	XTAL FILTER 44.85MHZ
FL302	9180468V05	SMD455KHZ 4 ELEMENT CER FLTR
FL303	9115811H03	SMD455KHZ 6 ELEMENT
FL304	9115811H01	SMD455KHZ 6 ELEMENT
FL401	4870368G02	REFLOWABLE CLOCK OSC XTAL
H101	2680499Z02	HEAT SPREADER
J101	0985613Z01	JACK,RF
J102	0280519Z02	NUT, ANTENNA
J400	0915064H03	CONNECTOR, ZIF (40 PINS)

Circuit Ref	Motorola Part No.	Description
J403	0915064H02	CONN,CONN,F,20CONT,CONNECTOR, ZIF
J601	0980521Z03	CONN, ZIF VERTICAL, 40PINS
J602	0915064H01	CONN,CONN,F,18CONT,CONNECTOR, ZIF
L101	2460591B28	COIL AIR WOUND INDUC 13.37
L102	2460591B28	COIL AIR WOUND INDUC 13.37
L104	2460591B48	COIL AIR WOUND INDUC 15.22
L105	2462587N22	CHIP IND 390 NH 10%
L106	2460591A19	COIL AIR WOUND INDUC 8.71
L107	2479990G01	AIR WOUND COIL/GREEN COLOR 33.47NH
L108	2479990A01	AIR WOUND COIL/GREEN COLOR 4.22NH
L112	2462587N42	CHIP IND 12 NH 5%
L113	2414017H09	IND CHIP 5.6 NH +/- 0.3NH
L114	2462587N42	CHIP IND 12 NH 5%
L115	2462587N22	CHIP IND 390 NH 10%
L116	2479990C02	AIR WOUND COIL/GREEN COLOR 16.28NH
L117	2414017P17	IND CER CHIP 22.0 NH 5%
L160	2414017H14	IND CHIP 15.0 NH 5%
L201	2462587Q20	IND CHIP 2,200NH 20%
L202	2462587Q20	IND CHIP 2,200NH 20%
L203	2462587Q20	IND CHIP 2,200NH 20%
L232	2415844H01	CHIP IND 12000 NH 5%
L241	2462587V41	IND CHIP 390 NH 10%
L242	2462587V26	CHIP IND 22 NH 5% 0805
L243	2485776Z02	COIL TEFLON RESONATOR (KAPTAN)
L251	2462587V41	IND CHIP 390 NH 10%
L253	2460593C03	COIL MULT LAYERED TAP TEF RESN
L261	2462587V29	CHIP IND 39 NH 5% 0805
L271	2415043H01	FIXED INDUCTOR,RF, 27NH,5%,CER,
L273	2415043H03	FIXED INDUCTOR,RF,68NH, 5%,CER,
L281	2462587V41	IND CHIP 390 NH 10%
L282	2462587V41	IND CHIP 390 NH 10%
L301	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L302	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L303	2462587V26	CHIP IND 22 NH 5% 0805
L304	2462587V37	CHIP IND 180 NH 5% 0805

Circuit Ref	Motorola Part No.	Description
L305	2462587V23	CHIP IND 12 NH 5% 0805
L306	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L307	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L309	2479990C02	AIR WOUND COIL/GREEN COLOR 16.28NH
L310	2462587V36	CHIP IND 150NH 5% 0805
L311	2414017K32	IND CER CHIP 560.0 NH 5%
L321	2462587V37	CHIP IND 180 NH 5% 0805
L325	2462587N68	CHIP IND 1000 NH 5%
L330	2414017K33	IND CER CHIP 680.0 NH 5%
L332	2414015A25	IDCTR,CHIP,1.2UH,2%,440M A,2OHM,CER,
L400	2462587Q42	IND CHIP 390NH 10%
L401	2462587Q42	IND CHIP 390NH 10%
L410	2462587Q42	IND CHIP 390NH 10%
L411	2462587Q42	IND CHIP 390NH 10%
L505	2462587Q42	IND CHIP 390NH 10%
P100	3905643V01	CONTACT ANT GRD
PB501	4086470Z01	TACT SWITCH
PB502	4086470Z01	TACT SWITCH
PB503	4086470Z01	TACT SWITCH
PB504	4086470Z01	TACT SWITCH
PB505	4086470Z01	TACT SWITCH
Q110	4813976A03	TSTR, 450 MHZ, 8W, 7.5V, PLD 1.5
Q111	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q210	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q241	4805218N63	RF TRANS SOT 323 BFQ67W
Q260	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q261	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q301	4802245J44	NPN SILICON BIPOLAR TRANSISTOR
Q302	4802197J95	RF TRANSISTOR PBR941
Q310	4802245J44	NPN SILICON BIPOLAR TRANSISTOR
Q320	4813973M07	TSTR NPN 40V .2A GEN PURP
Q400	4815069H02	TSTR MOSFET P-CHAN
Q403	4813973A13	XSTR,BIP GP SS,PNP,TO-236,SOT-23,
Q405	4815066H01	XSTR,OTHR,UMG5NFTR,250 MHZ
Q410	4815066H01	XSTR,OTHR,UMG5NFTR,250 MHZ
Q416	4815069H02	TSTR MOSFET P-CHAN

Circuit Ref	Motorola Part No.	Description
Q417	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q502	4815154H01	DUAL TRANS NPN
Q505	4813973M07	TSTR NPN 40V .2A GEN PURP
Q601	4815125H01	SOT STR RH LOW PROFILE MMBT
Q602	4813973M07	TSTR NPN 40V .2A GEN PURP
Q603	4813973M07	TSTR NPN 40V .2A GEN PURP
R101	0613952H58	CER CHIP RES 240 OHM 5% 0603
R102	0680539Z01	POWER METAL STRIP RESISTORS
R104	0613952R17	CER CHIP RES 47K OHM 5% 0402
R106	0613952Q25	CER CHIP RES 10.0 OHM 5% 0402
R107	NOT PLACED	
R108	0613952Q91	CER CHIP RES 5600 OHM 5% 0402
R109	0613952R32	CER CHIP RES 200K OHM 5% 0402
R110	0613952Q60	CER CHIP RES 300 OHM 5% 0402
R111	0613952Q32	CER CHIP RES 20.0 OHM 5% 0402
R112	0613952Q60	CER CHIP RES 300 OHM 5% 0402
R120	0613952R16	CER CHIP RES 43K OHM 5% 0402
R130	0613952R01	CER CHIP RES 10K OHM 5% 0402
R131	0613952R07	CER CHIP RES 18K OHM 5% 0402
R132	0613952R35	CER CHIP RES 270K OHM 5% 0402
R133	NOT PLACED	
R136	NOT PLACED	
R161	0613952Q56	CER CHIP RES 200 OHM 5% 0402
R170	0613952H58	CER CHIP RES 240 OHM 5% 0603
R171	0613952R16	CER CHIP RES 43K OHM 5% 0402
R172	0613952H56	CER CHIP RES 200 OHM 5% 0603
R173	0613952R31	CER CHIP RES 180K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R174	0613952R17	CER CHIP RES 47K OHM 5% 0402
R175	0613952H12	CER CHIP RES 3.0 OHM 5% 0603
R176	0613952H12	CER CHIP RES 3.0 OHM 5% 0603
R191	0613958J74	CER CHIP RES 0.0 OHM JMP 0805
R201	0613952R23	CER CHIP RES 82K OHM 5% 0402
R202	0613952R25	CER CHIP RES 100K OHM 5% 0402
R204	0613952R17	CER CHIP RES 47K OHM 5% 0402
R231	0613952Q51	CER CHIP RES 120 OHM 5% 0402
R232	0613952Q68	CER CHIP RES 620 OHM 5% 0402
R233	0613952Q67	CER CHIP RES 560 OHM 5% 0402
R241	0613952Q33	CER CHIP RES 22.0 OHM 5% 0402
R242	0613952Q51	CER CHIP RES 120 OHM 5% 0402
R243	0613952R01	CER CHIP RES 10K OHM 5% 0402
R244	0613952R05	CER CHIP RES 15K OHM 5% 0402
R245	0613952Q58	CER CHIP RES 240 OHM 5% 0402
R248	0613952Q36	CER CHIP RES 30.0 OHM 5% 0402
R251	0613952Q37	CER CHIP RES 33.0 OHM 5% 0402
R252	0613952Q59	CER CHIP RES 270 OHM 5% 0402
R253	0613952Q94	CER CHIP RES 7500 OHM 5% 0402
R254	0613952Q95	CER CHIP RES 8200 OHM 5% 0402
R255	0613952Q88	CER CHIP RES 4300 OHM 5% 0402
R256	0613952Q36	CER CHIP RES 30.0 OHM 5% 0402
R260	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R281	NOT PLACED	
R301	0613952R25	CER CHIP RES 100K OHM 5% 0402
R302	0613952R25	CER CHIP RES 100K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R303	0613952Q77	CER CHIP RES 1500 OHM 5% 0402
R304	0613952R03	CER CHIP RES 12K OHM 5% 0402
R305	0613952Q65	CER CHIP RES 470 OHM 5% 0402
R306	0613952R25	CER CHIP RES 100K OHM 5% 0402
R307	0613952R25	CER CHIP RES 100K OHM 5% 0402
R308	0613952Q42	CER CHIP RES 51.0 OHM 5% 0402
R309	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R310	NOT PLACED	
R311	0613952R13	CER CHIP RES 33K OHM 5% 0402
R312	0613952Q89	CER CHIP RES 4700 OHM 5% 0402
R313	0613952Q61	CER CHIP RES 330 OHM 5% 0402
R314	0613952Q78	CER CHIP RES 1600 OHM 5% 0402
R315	0613952R03	CER CHIP RES 12K OHM 5% 0402
R320	NOT PLACED	
R321	0613952R03	CER CHIP RES 12K OHM 5% 0402
R322	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R324	0613952R27	CER CHIP RES 120K OHM 5% 0402
R328	0613952Q11	CER CHIP RES 2.7 OHM 5% 0402
R329	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R330	0613952R01	CER CHIP RES 10K OHM 5% 0402
R331	0613952Q56	CER CHIP RES 200 OHM 5% 0402
R332	0613952R03	CER CHIP RES 12K OHM 5% 0402
R333	NOT PLACED	
R339	0613952Q88	CER CHIP RES 4300 OHM 5% 0402
R340	0613952Q95	CER CHIP RES 8200 OHM 5% 0402
R342	0613952R25	CER CHIP RES 100K OHM 5% 0402
R344	0613952Q42	CER CHIP RES 51.0 OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R345	0613952R15	CER CHIP RES 39K OHM 5% 0402
R346	0613952R05	CER CHIP RES 15K OHM 5% 0402
R348	0613952Q86	CER CHIP RES 3600 OHM 5% 0402
R349	0613958J74	CER CHIP RES 0.0 OHM JMP 0805
R350	0613952R01	CER CHIP RES 10K OHM 5% 0402
R355	0613952R25	CER CHIP RES 100K OHM 5% 0402
R358	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R359	NOT PLACED	
R360	0613952R08	CER CHIP RES 20K OHM 5% 0402
R361	0613952R08	CER CHIP RES 20K OHM 5% 0402
R363	0613952Q63	CER CHIP RES 390 OHM 5% 0402
R364	0613952Q79	CER CHIP RES 1800 OHM 5% 0402
R365	0613952Q75	CER CHIP RES 1200 OHM 5% 0402
R366	0613952R03	CER CHIP RES 12K OHM 5% 0402
R367	0613952N09	CER CHIP RES 12.1K OHM 1% 0402
R368	0613952N01	CER CHIP RES 10.0K OHM 1% 0402
R369	0613952Q69	CER CHIP RES 680 OHM 5% 0402
R370	NOT PLACED	
R371	0613952R25	CER CHIP RES 100K OHM 5% 0402
R372	0613952R30	CER CHIP RES 160K OHM 5% 0402
R373	0613952R25	CER CHIP RES 100K OHM 5% 0402
R374	0613952R25	CER CHIP RES 100K OHM 5% 0402
R375	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R376	NOT PLACED	
R377	0613952R25	CER CHIP RES 100K OHM 5% 0402
R378	0613952R25	CER CHIP RES 100K OHM 5% 0402
R400	0613952R17	CER CHIP RES 47K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R401	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R402	NOT PLACED	
R403	NOT PLACED	
R405	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R406	0613952R22	CER CHIP RES 75K OHM 5% 0402
R407	0613952R21	CER CHIP RES 68K OHM 5% 0402
R408	NOT PLACED	
R409	0613952R01	CER CHIP RES 10K OHM 5% 0402
R410	0613952R25	CER CHIP RES 100K OHM 5% 0402
R411	0613952R01	CER CHIP RES 10K OHM 5% 0402
R413	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R414	0613952P25	CER CHIP RES 178K OHM 1% 0402
R415	0613952N93	CER CHIP RES 90.9K OHM 1% 0402
R416	0613952R01	CER CHIP RES 10K OHM 5% 0402
R418	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R419	0613952Q66	CER CHIP RES 510 OHM 5% 0402
R420	0613952J73	CER CHIP RES 10.0M OHM 5% 0603
R421	0613952Q80	CER CHIP RES 2000 OHM 5% 0402
R423	0613952R41	CER CHIP RES 470K OHM 5% 0402
R424	0613952R14	CER CHIP RES 36K OHM 5% 0402
R425	0613952R12	CER CHIP RES 30K OHM 5% 0402
R426	0613952R37	CER CHIP RES 330K OHM 5% 0402
R427	0613952Q83	CER CHIP RES 2700 OHM 5% 0402
R428	0613952Q09	CER CHIP RES 2.2 OHM 5% 0402
R429	0613952R22	CER CHIP RES 75K OHM 5% 0402
R431	0613952R41	CER CHIP RES 470K OHM 5% 0402
R432	0613952R18	CER CHIP RES 51K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R434	0613952Q61	CER CHIP RES 330 OHM 5% 0402
R435	0613952Q80	CER CHIP RES 2000 OHM 5% 0402
R436	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R437	NOT PLACED	
R445	0613952R10	CER CHIP RES 24K OHM 5% 0402
R447	0613952R25	CER CHIP RES 100K OHM 5% 0402
R448	0613952R01	CER CHIP RES 10K OHM 5% 0402
R449	0613952R10	CER CHIP RES 24K OHM 5% 0402
R450	0613959Y45	CER CHIP RES 68.0 OHM 5% 2512
R451	0613952R05	CER CHIP RES 15K OHM 5% 0402
R452	0613952R25	CER CHIP RES 100K OHM 5% 0402
R453	NOT PLACED	
R454	NOT PLACED	
R455	NOT PLACED	
R456	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R457	0613952R01	CER CHIP RES 10K OHM 5% 0402
R460	0613952Q89	CER CHIP RES 4700 OHM 5% 0402
R461	0613952Q55	CER CHIP RES 180 OHM 5% 0402
R462	0613952R01	CER CHIP RES 10K OHM 5% 0402
R463	0613952Q60	CER CHIP RES 300 OHM 5% 0402
R471	0613952R08	CER CHIP RES 20K OHM 5% 0402
R472	0613952R14	CER CHIP RES 36K OHM 5% 0402
R473	0613952Q25	CER CHIP RES 10.0 OHM 5% 0402
R475	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R476	0613952R37	CER CHIP RES 330K OHM 5% 0402
R477	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R478	0613952R01	CER CHIP RES 10K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R479	0613952Q66	CER CHIP RES 510 OHM 5% 0402
R481	0613952R10	CER CHIP RES 24K OHM 5% 0402
R492	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R498	0613952R01	CER CHIP RES 10K OHM 5% 0402
R499	0613952R01	CER CHIP RES 10K OHM 5% 0402
R501	0613952Q69	CER CHIP RES 680 OHM 5% 0402
R502	0613952Q55	CER CHIP RES 180 OHM 5% 0402
R505	0613952R01	CER CHIP RES 10K OHM 5% 0402
R506	0613952R17	CER CHIP RES 47K OHM 5% 0402
R507	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R601	0613952Z67	RES,MF,51KOHM,1%,.0625W,SM,0402,200
R602	0613952Z67	RES,MF,51KOHM,1%,.0625W,SM,0402,200
R603	0613952N12	CER CHIP RES 13.0K OHM 1% 0402
R604	0613952Z58	RES,MF,22KOHM,1%,.0625W,SM,0402,200
R605	0613952N62	CER CHIP RES 43.2K OHM 1% 0402
R606	0613952P12	CER CHIP RES 130K OHM 1% 0402
R607	0613952N12	CER CHIP RES 13.0K OHM 1% 0402
R608	0613952Z58	RES,MF,22KOHM,1%,.0625W,SM,0402,200
R609	0613952N62	CER CHIP RES 43.2K OHM 1% 0402
R610	0613952P12	CER CHIP RES 130K OHM 1% 0402
R611	0613952R18	CER CHIP RES 51K OHM 5% 0402
R612	0613952R43	CER CHIP RES 560K OHM 5% 0402
R613	0613952R49	CER CHIP RES 1.0M OHM 5% 0402
R614	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R617	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM

Circuit Ref	Motorola Part No.	Description
R618	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R619	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R620	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R621	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R622	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R623	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R626	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R627	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R631	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R632	0613952R25	CER CHIP RES 100K OHM 5% 0402
R633	0613952R25	CER CHIP RES 100K OHM 5% 0402
R646	0613952R25	CER CHIP RES 100K OHM 5% 0402
R647	0613952Q84	CER CHIP RES 3000 OHM 5% 0402
R648	0613952R25	CER CHIP RES 100K OHM 5% 0402
R649	0613952R17	CER CHIP RES 47K OHM 5% 0402
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z19	SWITCH, FREQUENCY
S502	1880619Z04	VOL POTENTIOMETER with hi temp cam
SH100	2680507Z02	SHIELD, HARMONIC FILTER
SH101	2680510Z02	SHIELD, PA
SH201	2680511Z02	SHIELD, SYNTHESIZER
SH202	2680511Z02	SHIELD, SYNTHESIZER
SH241	2604120G02	AOBA VCO SHIELD
SH242	2680514Z02	SHIELD, VCO BOTTOM/LVZIF
SH301	2686583Z02	SHIELD, RECEIVER FRONT END TOP
SH302	2680555Z02	SHIELD, RECEIVER F/END BOTTOM
SH303	2680509Z02	SHIELD, MIXER
SH304	2680624Z02	SHIELD, MIXER DIODE
SH322	2686528Z01	SHIELD,RFI/EMI,CRS,TIN
SH323	2686527Z02	SHIELD, RFI/EMI, CRS, TIN
SH400	2680505Z02	SHIELD, CONTROLLER TOP LEFT

Circuit Ref	Motorola Part No.	Description
SH401	2680506Z02	SHIELD, CONTROLLER TOP RIGHT
SH402	2680515Z02	SHIELD, CONTROLLER BOTTOM LEFT
SH403	2680516Z02	SHIELD, CONTROLLER BTM RIGHT
T301	2515121H01	BALUN, TRANSFORMER
T302	2515121H01	BALUN, TRANSFORMER
U101	5115678H01	VHF/UHF/800/900 MHZ LD MOS DRIVER IC
U102	5185765B26	IC PWR CTRL IN MOS20
U201	5115060H01	IC,FREQ SYN,AT24701-OT4X
U210	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
U211	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
U241	5105750U56	IC PKG DIE VCO BUFFER
U247	5115026H01	IC,LOW DROPOUT,SM,SOT-23/6,P
U248	5115019H01	IC,LOW DROPOUT,SOT-23,SOT-23
U301	5115281H01	FM IF IC SA616 FROM PHILIPS
U302	5115070H01	IC,INVTR,TC7W04FU,SSOP
U303	5114005A01	IC LOW COST SING SPLY LM2904DR
U400	5115012H01	IC,ADJ LOW DROPOUT,SM,POS P
U404	5115062H01	IC,CUST,TQFP48
U405	5115020H01	IC,SRAM,32K X 8,SOIC,3.6V
U406	* 5115286H01	IC 4M FLASH ROM- NON SHRINK+EPP
U407	* 5115033H01	IC,EEPROM,16K X 8,SM
U409	5185143E03	IC,MICROP,QFP,QFP100,3.7 MHZ
U410	5115044H01	IC,LOW DROPOUT,SM,3.3V POS
U420	5115280H01	AUDIO AMPLIFIER TDA8547TS
U602	5115014H01	IC,COMPTR,SM,SOT-23/5
VR432	4813979P10	TRANS SUP 5.6V QUAD
VR433	4813979P10	TRANS SUP 5.6V QUAD
VR434	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR439	4813977M21	DIODE 12V ZENER _5242_
VR440	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR441	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR442	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,

Circuit Ref	Motorola Part No.	Description
VR443	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR444	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR445	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR446	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR447	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR448	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR449	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR450	4815040H01	DIODE ARRAY ,ZEN,MM3Z12VT1G,SM,12
VR460	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR501	4813977M14	DIODE,ZEN,SOT-23,6.8V,.225W,PB
VR506	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
Y300	4802245J84	XTAL 44.395MHZ, 3RD OT, SMD
Y301	9186145B02	CER.DISCR. CDBCA455CX36-TC

\* Motorola Depot Servicing only

**UHF (450-527 MHz) Radio Parts List (PCB 8415235H05)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	CONNECTOR (CONTACT BATTERY)
B503	3980502Z01	CONTACT, BACKUP B+
B504	3980501Z01	CONTACT, BACKUP B-
C101	2113944C45	CAP CER CHP 100.0PF 50V 5%
C102	2113944C27	CAP CER CHP 7.5PF 50V +/- 0.5PF
C103	2113944C78	CAP,FXD,13PF,+5%,-5%,50V-DC,0603,COG,-55DEG CMIN,125DEG CMAX,PB
C104	2113944C27	CAP CER CHP 7.5PF 50V +/- 0.5PF
C105	2113944A40	CAP CER CHP 100.0PF 50V 5%
C106	2113944C22	CAP CER CHP 4.7PF 50V +/- 0.25PF
C107	2113944C18	CAP CER CHP 3.3PF 50V +/- 0.25PF
C108	2113944A40	CAP CER CHP 100.0PF 50V 5%
C109	2113944C45	CAP CER CHP 100.0PF 50V 5%
C110	2113944A40	CAP CER CHP 100.0PF 50V 5%
C111	2115938H01	CAP CHIP CL1 11.0 +/-0.05 PF
C112	2115937H03	HIGH Q CHIP CAPACITOR, 33PF
C113	2115937H02	HIGH Q CHIP CAPACITOR, 15PF
C114	2113944A40	CAP CER CHP 100.0PF 50V 5%
C115	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,0402,C
C116	2113944A77	CAP,FXD,11PF,+5%,-5%,50V-DC,0402,C
C117	NOT PLACED	
C118	2113944A40	CAP CER CHP 100.0PF 50V 5%
C119	2113944A40	CAP CER CHP 100.0PF 50V 5%
C120	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF
C121	2113944A40	CAP CER CHP 100.0PF 50V 5%
C122	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description
C123	2313960F04	CAP TANT 33 UF 10% 16V 6032-28
C125	2113944A40	CAP CER CHP 100.0PF 50V 5%
C126	2113946K02	CAP CER CHP 0.10UF 16V
C127	2113945A09	CAP CER CHP 1000PF 50V 10%
C128	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-DC,04
C129	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF
C130	2113944A40	CAP CER CHP 100.0PF 50V 5%
C131	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-DC,04
C132	2113944A40	CAP CER CHP 100.0PF 50V 5%
C133	2113945A09	CAP CER CHP 1000PF 50V 10%
C134	2113945A12	CAP CER CHP 3300PF 50V 10%
C135	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-DC,04
C138	2113944A40	CAP CER CHP 100.0PF 50V 5%
C140	0613952H91	CER CHIP RES 5600 OHM 5% 0603
C141	2113944C28	CAP CER CHP 8.2PF 50V +/- 0.5PF
C150	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-DC,04
C151	2113944A40	CAP CER CHP 100.0PF 50V 5%
C152	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-DC,04
C160	2113944A34	CAP CER CHP 56.0PF 50V 5%
C161	2113946K02	CAP CER CHP 0.10UF 16V
C165	2113944A34	CAP CER CHP 56.0PF 50V 5%
C166	2113944A40	CAP CER CHP 100.0PF 50V 5%
C169	2113944A08	CAP CER CHP 2.0PF 50V +/- 0.25PF
C170	2113944A40	CAP CER CHP 100.0PF 50V 5%
C171	2113944A40	CAP CER CHP 100.0PF 50V 5%
C172	2113945D04	CAP CER CHP 100,000PF 25V 10%

Circuit Ref	Motorola Part No.	Description
C173	2113945B04	CAP,FXD,.022UF,+10%,-10%, 25V-DC,04
C174	2113944A40	CAP CER CHP 100.0PF 50V 5%
C180	NOT PLACED	
C181	NOT PLACED	
C188	2113944A83	CAP,FXD,36PF,+5%,-5%,50V-DC,0402,C
C201	2113944A40	CAP CER CHP 100.0PF 50V 5%
C202	2113945A09	CAP CER CHP 1000PF 50V 10%
C203	2313960B30	CAP TANT 4.7 UF 10% 10V 3216-18
C204	2113946N03	CAP CER CHP 2.2UF 16V
C206	2113944C04	CAP CER CHP 330.0PF 50V 5%
C207	2113944A32	CAP CER CHP 39.0PF 50V 5%
C208	NOT PLACED	
C210	2113944A40	CAP CER CHP 100.0PF 50V 5%
C211	2113944A40	CAP CER CHP 100.0PF 50V 5%
C212	2113944A40	CAP CER CHP 100.0PF 50V 5%
C213	2113944A40	CAP CER CHP 100.0PF 50V 5%
C214	2113944A40	CAP CER CHP 100.0PF 50V 5%
C217	2113946N03	CAP CER CHP 2.2UF 16V
C218	2113946K02	CAP CER CHP 0.10UF 16V
C219	2113946L03	CAP CER CHP 0.22UF 16V
C220	2113944A40	CAP CER CHP 100.0PF 50V 5%
C223	2113946K02	CAP CER CHP 0.10UF 16V
C224	2113946K02	CAP CER CHP 0.10UF 16V
C228	2313960D05	CAP TANT 4.7 UF 10% 16V 3528-21
C229	2113945A09	CAP CER CHP 1000PF 50V 10%
C230	2113944A40	CAP CER CHP 100.0PF 50V 5%
C231	2113946K02	CAP CER CHP 0.10UF 16V
C232	2113945D02	CAP CER CHP 47,000PF 25V 10%
C233	2313960A26	CAP TANT 0.1 UF 10% 35V 3216-18
C234	2313960A55	CAP TANT 0.47 UF 10% 25V 3216-18
C235	2113946N03	CAP CER CHP 2.2UF 16V

Circuit Ref	Motorola Part No.	Description
C238	2113945L17	CAP,FXD,470PF,+5%,-5%, 50V-DC,0603,
C241	2113944A40	CAP CER CHP 100.0PF 50V 5%
C242	2113944A16	CAP CER CHP 4.3PF 50V +/- 0.25PF
C243	2113944A16	CAP CER CHP 4.3PF 50V +/- 0.25PF
C244	2113944C17	CAP CER CHP 3.0PF 50V +/- 0.25PF
C245	2113944A11	CAP CER CHP 2.7PF 50V +/- 0.25PF
C246	2113944A40	CAP CER CHP 100.0PF 50V 5%
C247	2113944A40	CAP CER CHP 100.0PF 50V 5%
C248	2113946K02	CAP CER CHP 0.10UF 16V
C250	2113944A16	CAP CER CHP 4.3PF 50V +/- 0.25PF
C251	2113944A40	CAP CER CHP 100.0PF 50V 5%
C252	2113944A18	CAP CER CHP 5.1PF 50V +/- 0.5PF
C253	2113944C12	CAP CER CHP 1.8PF 50V +/- 0.25PF
C254	2113944A25	CAP CER CHP 10.0PF 50V +/- 0.5PF
C255	2113944A40	CAP CER CHP 100.0PF 50V 5%
C256	2113944A18	CAP CER CHP 5.1PF 50V +/- 0.5PF
C257	2113944A40	CAP CER CHP 100.0PF 50V 5%
C258	2113945B02	CAP CER CHP 10,000PF 25V 10%
C259	2113945B02	CAP CER CHP 10,000PF 25V 10%
C260	2113944A40	CAP CER CHP 100.0PF 50V 5%
C263	2113944A62	CAP,FXD,.75PF,.25PF+/-, 50V-DC,040
C264	2113944A40	CAP CER CHP 100.0PF 50V 5%
C265	NOT PLACED	
C271	NOT PLACED	
C272	2115153H01	CAP, CERAMIC, COG
C273	2113946K02	CAP CER CHP 0.10UF 16V
C276	2113946N03	CAP CER CHP 2.2UF 16V
C277	2113944A40	CAP CER CHP 100.0PF 50V 5%

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
C278	2313960D07	CAP TANT 10 UF 10% 16V 3528-21	C315	2113944A40	CAP CER CHP 100.0PF 50V 5%	C367	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,0402,C	C408	2113944A40	CAP CER CHP 100.0PF 50V 5%
C279	2113946N03	CAP CER CHP 2.2UF 16V	C316	2113944C21	CAP CER CHP 4.3PF 50V +/- 0.25PF	C370	2115153H18	CAP, CERAMIC, COG	C409	2113946K02	CAP CER CHP 0.10UF 16V
C281	2113944A40	CAP CER CHP 100.0PF 50V 5%	C317	2113944A73	CAP,FXD,8PF,.5PF+/-,50V-DC,0402,C	C371	NOT PLACED		C410	2113946B04	CAP CER CHP 0.10UF 10V 10%
C282	NOT PLACED		C318	2113944A26	CAP CER CHP 12.0PF 50V 5%	C372	2113944A40	CAP CER CHP 100.0PF 50V 5%	C411	2113946K02	CAP CER CHP 0.10UF 16V
C283	NOT PLACED		C319	2113944A16	CAP CER CHP 4.3PF 50V +/- 0.25PF	C373	NOT PLACED		C414	2113946K02	CAP CER CHP 0.10UF 16V
C285	2113944A40	CAP CER CHP 100.0PF 50V 5%	C320	2113944A24	CAP CER CHP 9.1PF 50V +/- 0.5PF	C374	2113944A40	CAP CER CHP 100.0PF 50V 5%	C415	2185895Z01	CAPACITOR CER LOW DIST .01UF
C286	2113946K02	CAP CER CHP 0.10UF 16V	C321	2113944A40	CAP CER CHP 100.0PF 50V 5%	C375	2113944A40	CAP CER CHP 100.0PF 50V 5%	C416	2113946B04	CAP CER CHP 0.10UF 10V 10%
C289	2113944A40	CAP CER CHP 100.0PF 50V 5%	C322	2113944A38	CAP CER CHP 82.0PF 50V 5%	C378	NOT PLACED		C419	NOT PLACED	
C291	2313960M51	CAP TANT 10 UF 10% 6.3V 2012-12	C324	2115153H40	CAP, CERAMIC, COG	C380	2113945B02	CAP CER CHP 10,000PF 25V 10%	C420	2113945B02	CAP CER CHP 10,000PF 25V 10%
C292	2113946K02	CAP CER CHP 0.10UF 16V	C325	2115153H26	CAP, CERAMIC, COG	C381	NOT PLACED		C421	2113946B04	CAP CER CHP 0.10UF 10V 10%
C293	2113945G98	CAP,FXD,.47UF,+10%,-10%, 50V-DC,080	C326	2113946K02	CAP CER CHP 0.10UF 16V	C382	2313960B57	CAP,TANTALUM,10UF,+10%,-10%,4V-DC,S	C422	2113946K02	CAP CER CHP 0.10UF 16V
C294	2113944A40	CAP CER CHP 100.0PF 50V 5%	C327	2113946K02	CAP CER CHP 0.10UF 16V	C383	NOT PLACED		C423	2113944A40	CAP CER CHP 100.0PF 50V 5%
C295	2113944A40	CAP CER CHP 100.0PF 50V 5%	C328	2113946K02	CAP CER CHP 0.10UF 16V	C385	2113944A30	CAP CER CHP 27.0PF 50V 5%	C424	NOT PLACED	
C296	2113946K02	CAP CER CHP 0.10UF 16V	C329	2113946K02	CAP CER CHP 0.10UF 16V	C386	2113944A40	CAP CER CHP 100.0PF 50V 5%	C425	2113946K02	CAP CER CHP 0.10UF 16V
C297	2113945B02	CAP CER CHP 10,000PF 25V 10%	C334	2113945A13	CAP CER CHP 4700PF 50V 10%	C387	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN, 125DEG CMAX,PB	C426	2113944A40	CAP CER CHP 100.0PF 50V 5%
C298	2113946K02	CAP CER CHP 0.10UF 16V	C337	NOT PLACED		C388	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN, 125DEG CMAX,PB	C427	2113944A40	CAP CER CHP 100.0PF 50V 5%
C301	2113944A23	CAP CER CHP 8.2PF 50V +/- 0.5PF	C338	NOT PLACED		C389	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN, 125DEG CMAX,PB	C428	2113946K02	CAP CER CHP 0.10UF 16V
C302	2113944A26	CAP CER CHP 12.0PF 50V 5%	C343	2113946K02	CAP CER CHP 0.10UF 16V	C390	NOT PLACED		C429	2113946K02	CAP CER CHP 0.10UF 16V
C303	2113944C21	CAP CER CHP 4.3PF 50V +/- 0.25PF	C344	2113945D04	CAP CER CHP 100,000PF 25V 10%	C391	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN, 125DEG CMAX,PB	C430	2113946B04	CAP CER CHP 0.10UF 10V 10%
C304	2113944A77	CAP,FXD,11PF,+5%,-5%,50V-DC,0402,C	C345	2113946K02	CAP CER CHP 0.10UF 16V	C392	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN, 125DEG CMAX,PB	C431	2113944A40	CAP CER CHP 100.0PF 50V 5%
C305	2113944A40	CAP CER CHP 100.0PF 50V 5%	C346	2113946K02	CAP CER CHP 0.10UF 16V	C400	2113944A40	CAP CER CHP 100.0PF 50V 5%	C432	NOT PLACED	
C306	NOT PLACED		C347	2113946K02	CAP CER CHP 0.10UF 16V	C401	2113946K02	CAP CER CHP 0.10UF 16V	C433	2113945B02	CAP CER CHP 10,000PF 25V 10%
C307	2113944A40	CAP CER CHP 100.0PF 50V 5%	C348	2113946K02	CAP CER CHP 0.10UF 16V	C402	2113946K02	CAP CER CHP 0.10UF 16V	C434	2113946B04	CAP CER CHP 0.10UF 10V 10%
C308	2113944A40	CAP CER CHP 100.0PF 50V 5%	C349	2113945D04	CAP CER CHP 100,000PF 25V 10%	C403	2316410H03	EPP POSCAP,10UF, +20%, -20%	C435	2113946K02	CAP CER CHP 0.10UF 16V
C309	2113944A40	CAP CER CHP 100.0PF 50V 5%	C350	2113946K02	CAP CER CHP 0.10UF 16V	C404	NOT PLACED		C436	2113944A29	CAP CER CHP 22.0PF 50V 5%
C310	2113944A40	CAP CER CHP 100.0PF 50V 5%	C351	2113944A41	CAP CER CHP 120.0PF 50V 5%	C405	2113944A40	CAP CER CHP 100.0PF 50V 5%	C437	2113944A29	CAP CER CHP 22.0PF 50V 5%
C311	NOT PLACED		C352	2113946K02	CAP CER CHP 0.10UF 16V	C406	NOT PLACED		C440	2113946Q01	CAP CER CHP 4.7UF 16V
C312	2113944A22	CAP CER CHP 7.5PF 50V +/- 0.5PF	C355	2113946K02	CAP CER CHP 0.10UF 16V	C407	2113946B04	CAP CER CHP 0.10UF 10V 10%	C441	2113944A40	CAP CER CHP 100.0PF 50V 5%
C313	2113944A77	CAP,FXD,11PF,+5%,-5%,50V-DC,0402,C	C357	2113946K02	CAP CER CHP 0.10UF 16V				C442	2113945D04	CAP CER CHP 100,000PF 25V 10%
C314	2113946K02	CAP CER CHP 0.10UF 16V	C358	NOT PLACED					C443	2113946B04	CAP CER CHP 0.10UF 10V 10%
			C359	NOT PLACED					C444	2113944A40	CAP CER CHP 100.0PF 50V 5%
			C360	2113944A13	CAP CER CHP 3.3PF 50V +/- 0.25PF						
			C361	2113946K02	CAP CER CHP 0.10UF 16V						
			C362	2113946K02	CAP CER CHP 0.10UF 16V						
			C364	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,0402,C						
			C366	NOT PLACED							

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
C445	2113944A40	CAP CER CHP 100.0PF 50V 5%	C494	2113944A40	CAP CER CHP 100.0PF 50V 5%	C599	2113944A17	CAP CER CHP 4.7PF 50V +/- 0.25PF	CR251	4815322H01	VHF VARIABLE CAPACITANCE DIODE
C447	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04	C495	2113944A40	CAP CER CHP 100.0PF 50V 5%	C600	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB	CR301	4885055Y01	DIODE VARACTOR PB-FREE
C448	2113946B04	CAP CER CHP 0.10UF 10V 10%	C496	2113944A40	CAP CER CHP 100.0PF 50V 5%	C601	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR302	4885055Y01	DIODE VARACTOR PB-FREE
C449	2113944A40	CAP CER CHP 100.0PF 50V 5%	C497	2113944A40	CAP CER CHP 100.0PF 50V 5%	C602	2113944A17	CAP CER CHP 4.7PF 50V +/- 0.25PF	CR303	4815048H01	DIODE,SHTK,MMBD353LT1,SM,7V
C450	NOT PLACED		C498	NOT PLACED		C603	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX,PB	CR304	4885055Y01	DIODE VARACTOR PB-FREE
C451	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04	C499	2113946B04	CAP CER CHP 0.10UF 10V 10%	C604	2113944C81	CAP,FXD,24PF,+5%,-5%,50V-DC,0603,C0G,-55DEG CMIN,125DEG CMAX,PB	CR305	4885055Y01	DIODE VARACTOR PB-FREE
C452	2113743B29	CAP CHIP 1.00 UF 10% 16V	C502	2313960A55	CAP TANT 0.47 UF 10% 25V 3216-18	C610	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR306	4802245J42	RING QUAD DIODE SOT-143 PKG
C453	2113944A40	CAP CER CHP 100.0PF 50V 5%	C503	2113944A84	CAP,FXD,43PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB	C611	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR311	4813974A19	DIODE SCHOTTKY BARRIER SERIES
C456	2113944A40	CAP CER CHP 100.0PF 50V 5%	C505	2113944A40	CAP CER CHP 100.0PF 50V 5%	C612	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR312	4815047H01	DIODE,SWG,DAN235EFTL,3 5V
C458	2113944A40	CAP CER CHP 100.0PF 50V 5%	C511	2113944A40	CAP CER CHP 100.0PF 50V 5%	C613	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR313	4815047H01	DIODE,SWG,DAN235EFTL,3 5V
C459	2113944A40	CAP CER CHP 100.0PF 50V 5%	C512	2113944A40	CAP CER CHP 100.0PF 50V 5%	C615	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR411	4815067H01	DIODE ARRAY,SWG, RB731UFT108,SMD,1M
C463	2113944A40	CAP CER CHP 100.0PF 50V 5%	C513	2113944A40	CAP CER CHP 100.0PF 50V 5%	C616	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR412	4815067H01	DIODE ARRAY,SWG, RB731UFT108,SMD,1M
C466	2113944A40	CAP CER CHP 100.0PF 50V 5%	C514	2113944A40	CAP CER CHP 100.0PF 50V 5%	C618	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR413	4815067H01	DIODE ARRAY,SWG ,RB731UFT108,SMD,1M
C467	2113946B04	CAP CER CHP 0.10UF 10V 10%	C520	2113945B02	CAP CER CHP 10,000PF 25V 10%	C619	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR440	4813978C02	PB FREE, NOT COMPLETELY ENRICHED
C471	2113944A40	CAP CER CHP 100.0PF 50V 5%	C521	2113945B02	CAP CER CHP 10,000PF 25V 10%	C620	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR501	4815155H01	RECTIFIER
C472	2113945A05	CAP CER CHP 470PF 50V 10%	C522	2113945B02	CAP CER CHP 10,000PF 25V 10%	C621	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR503	4805729G49	DIODE RED/YEL
C473	2113945A05	CAP CER CHP 470PF 50V 10%	C523	2113945B02	CAP CER CHP 10,000PF 25V 10%	C622	2113944A40	CAP CER CHP 100.0PF 50V 5%	D601	4880479U01	LED
C475	2113743H14	CAP CHIP 10.0 UF 16V +80-20%	C524	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR101	4880973Z02	PIN DIODE	D602	4880479U01	LED
C476	2113946R01	CAP CER CHP 10.0UF 10V	C525	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR102	4815257H01	SURFACE MOUNT PIN DIODES	D603	4880479U01	LED
C479	2113946B04	CAP CER CHP 0.10UF 10V 10%	C526	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR103	4815257H01	SURFACE MOUNT PIN DIODES	D604	4880479U01	LED
C480	2113946R01	CAP CER CHP 10.0UF 10V	C527	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR105	5115022H01	IC,TEMP SENS,LM50C,SM,SOT-23	D605	4880479U01	LED
C481	2113946B04	CAP CER CHP 0.10UF 10V 10%	C528	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR160	NOT PLACED		D606	4880479U01	LED
C482	2113946B04	CAP CER CHP 0.10UF 10V 10%	C529	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR201	4815011H01	DIODE,SWG,300MA,80V	E101	2415954H01	INDUCTOR BEAD CHIP
C488	2113946B04	CAP CER CHP 0.10UF 10V 10%	C597	2113944A84	CAP,FXD,43PF,+5%,-5%,50V-DC,0402,C0G,-55DEG CMIN,125DEG CMAX,PB	CR203	4815072H01	DIODE,VCTR,1SV232,30V	E102	7686949J14	FLTR,FERRITE BEAD,2A,SM,0805
C490	2113944A40	CAP CER CHP 100.0PF 50V 5%	C598	2113944A15	CAP CER CHP 3.9PF 50V +/- 0.25PF	CR241	4885094Y01	DIODE VARACTOR ISV228 W18	E105	7686949J14	FLTR,FERRITE BEAD,2A, SM, 0805,CHIP,220OHM
C491	2113944A40	CAP CER CHP 100.0PF 50V 5%				CR242	4885055Y01	DIODE VARACTOR PB-FREE	E400	2480640Z01	SURFACE MOUNT FERRITE BEAD
C492	2113944A40	CAP CER CHP 100.0PF 50V 5%				CR243	4885055Y01	DIODE VARACTOR PB-FREE	E401	2480640Z01	SURFACE MOUNT FERRITE BEAD
C493	2113944A40	CAP CER CHP 100.0PF 50V 5%							E402	2480640Z01	SURFACE MOUNT FERRITE BEAD
									E403	2480640Z01	SURFACE MOUNT FERRITE BEAD
									E404	2480640Z01	SURFACE MOUNT FERRITE BEAD
									E405	2480640Z01	SURFACE MOUNT FERRITE BEAD
									E406	2480640Z01	SURFACE MOUNT FERRITE BEAD

Circuit Ref	Motorola Part No.	Description
E407	2480640Z01	SURFACE MOUNT FERRITE BEAD
E408	2480640Z01	SURFACE MOUNT FERRITE BEAD
E409	2480640Z01	SURFACE MOUNT FERRITE BEAD
E634	2480640Z01	SURFACE MOUNT FERRITE BEAD
E637	2480640Z01	SURFACE MOUNT FERRITE BEAD
E638	2480640Z01	SURFACE MOUNT FERRITE BEAD
E639	2480640Z01	SURFACE MOUNT FERRITE BEAD
E640	2480640Z01	SURFACE MOUNT FERRITE BEAD
E641	2480640Z01	SURFACE MOUNT FERRITE BEAD
E642	2480640Z01	SURFACE MOUNT FERRITE BEAD
E643	2480640Z01	SURFACE MOUNT FERRITE BEAD
E644	2480640Z01	SURFACE MOUNT FERRITE BEAD
E645	2480640Z01	SURFACE MOUNT FERRITE BEAD
F501	6515076H01	FUSE,FST BLW,3A,24V, FUSE CHIP SMT T
FL201	4805875Z04	CRYSTAL 16.8 MHZ
FL301	9180022M11	XTAL FILTER 44.85MHZ
FL302	9180468V04	SMD455KHZ 4 ELEMENT CER FLTR
FL303	9115811H03	SMD455KHZ 6 ELEMENT
FL304	9115811H01	SMD455KHZ 6 ELEMENT
FL401	4870368G02	REFLOWABLE CLOCK OSC XTAL
H101	2680499Z02	HEAT SPREADER
J101	0985613Z01	JACK,RF
J102	0280519Z02	NUT, ANTENNA
J400	0915064H03	CONNECTOR, ZIF (40 PINS)
J403	0915064H02	CONN,CONN,F,20CONT,CO NNECTOR, ZIF
J601	0980521Z03	CONN, ZIF VERTICAL, 40PINS
J602	0915064H01	CONN,CONN,F,18CONT,CO NNECTOR, ZIF
L101	2460591B28	COIL AIR WOUND INDUC 13.37
L102	2460591B28	COIL AIR WOUND INDUC 13.37

Circuit Ref	Motorola Part No.	Description
L104	2460591B48	COIL AIR WOUND INDUC 15.22
L105	2462587N22	CHIP IND 390 NH 10%
L106	2460591A19	COIL AIR WOUND INDUC 8.71
L107	2479990G01	AIR WOUND COIL/GREEN COLOR 33.47NH
L108	2479990A01	AIR WOUND COIL/GREEN COLOR 4.22NH
L112	2462587N42	CHIP IND 12 NH 5%
L113	2414017H09	IND CHIP 5.6 NH +/- 0.3NH
L114	2462587N42	CHIP IND 12 NH 5%
L115	2462587N22	CHIP IND 390 NH 10%
L116	2479990C02	AIR WOUND COIL/GREEN COLOR 16.28NH
L117	2414017P17	IND CER CHIP 22.0 NH 5%
L160	2414017H14	IND CHIP 15.0 NH 5%
L201	2462587Q20	IND CHIP 2,200NH 20%
L202	2462587Q20	IND CHIP 2,200NH 20%
L203	2462587Q20	IND CHIP 2,200NH 20%
L232	2415844H01	CHIP IND 12000 NH 5%
L241	2462587V41	IND CHIP 390 NH 10%
L242	2462587V26	CHIP IND 22 NH 5% 0805
L243	2485776Z02	COIL TEFLON RESONATOR (KAPTON)
L251	2462587V41	IND CHIP 390 NH 10%
L253	2460593C03	COIL MULT LAYERED TAP TEF RESN
L261	2462587V29	CHIP IND 39 NH 5% 0805
L271	2415043H01	FIXED INDUCTOR, RF, 27NH,5%,CER,
L273	2415043H03	FIXED INDUCTOR,RF,68NH,5%,CE R,
L281	2462587V41	IND CHIP 390 NH 10%
L282	2462587V41	IND CHIP 390 NH 10%
L301	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L302	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L303	2462587V26	CHIP IND 22 NH 5% 0805
L304	2462587V37	CHIP IND 180 NH 5% 0805
L305	2462587V23	CHIP IND 12 NH 5% 0805
L306	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L307	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L309	2479990C02	AIR WOUND COIL/GREEN COLOR 16.28NH
L310	2462587V36	CHIP IND 150NH 5% 0805
L311	2414017K32	IND CER CHIP 560.0 NH 5%

Circuit Ref	Motorola Part No.	Description
L321	2462587V37	CHIP IND 180 NH 5% 0805
L325	2462587N68	CHIP IND 1000 NH 5%
L330	2414017K33	IND CER CHIP 680.0 NH 5%
L332	2414015A25	IDCTR,CHIP,1.2UH,2%,440M A,2OHM,CER,
L400	2462587Q42	IND CHIP 390NH 10%
L401	2462587Q42	IND CHIP 390NH 10%
L410	2462587Q42	IND CHIP 390NH 10%
L411	2462587Q42	IND CHIP 390NH 10%
L505	2462587Q42	IND CHIP 390NH 10%
P100	3905643V01	CONTACT ANT GRD
PB501	4086470Z01	TACT SWITCH
PB502	4086470Z01	TACT SWITCH
PB503	4086470Z01	TACT SWITCH
PB504	4086470Z01	TACT SWITCH
PB505	4086470Z01	TACT SWITCH
Q110	4813976A03	TSTR, 450 MHZ, 8W, 7.5V, PLD 1.5
Q111	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q210	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q241	4805218N63	RF TRANS SOT 323 Bfq67w
Q260	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q261	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q301	4802245J44	NPN SILICON BIPOLAR TRANSISTOR
Q302	4802197J95	RF TRANSISTOR PBR941
Q310	4802245J44	NPN SILICON BIPOLAR TRANSISTOR
Q320	4813973M07	TSTR NPN 40V .2A GEN PURP
Q400	4815069H02	TSTR MOSFET P-CHAN
Q403	4813973A13	XSTR,BIP GP SS,PNP,TO-236,SOT-23,
Q405	4815066H01	XSTR,OTHR,UMG5NFTR,25 0MHZ
Q410	4815066H01	XSTR,OTHR,UMG5NFTR,25 0MHZ
Q416	4815069H02	TSTR MOSFET P-CHAN
Q417	4815055H01	XSTR,GEN PURPOSE SMALL SIG,NPN AND
Q502	4815154H01	DUAL TRANS NPN
Q505	4813973M07	TSTR NPN 40V .2A GEN PURP
Q601	4815125H01	SOT STR RH LOW PROFILE MMBT

Circuit Ref	Motorola Part No.	Description
Q602	4813973M07	TSTR NPN 40V .2A GEN PURP
Q603	4813973M07	TSTR NPN 40V .2A GEN PURP
R101	0613952H58	CER CHIP RES 240 OHM 5% 0603
R102	0680539Z01	POWER METAL STRIP RESISTORS
R104	0613952R17	CER CHIP RES 47K OHM 5% 0402
R106	0613952Q25	CER CHIP RES 10.0 OHM 5% 0402
R107	NOT PLACED	
R108	0613952Q91	CER CHIP RES 5600 OHM 5% 0402
R109	0613952R32	CER CHIP RES 200K OHM 5% 0402
R110	0613952Q60	CER CHIP RES 300 OHM 5% 0402
R111	0613952Q32	CER CHIP RES 20.0 OHM 5% 0402
R112	0613952Q60	CER CHIP RES 300 OHM 5% 0402
R120	0613952R16	CER CHIP RES 43K OHM 5% 0402
R130	0613952R01	CER CHIP RES 10K OHM 5% 0402
R131	0613952R07	CER CHIP RES 18K OHM 5% 0402
R132	0613952R35	CER CHIP RES 270K OHM 5% 0402
R133	NOT PLACED	
R136	NOT PLACED	
R161	0613952Q56	CER CHIP RES 200 OHM 5% 0402
R170	0613952H58	CER CHIP RES 240 OHM 5% 0603
R171	0613952R16	CER CHIP RES 43K OHM 5% 0402
R172	0613952H49	CER CHIP RES 100 OHM 5% 0603
R173	0613952R31	CER CHIP RES 180K OHM 5% 0402
R174	0613952R17	CER CHIP RES 47K OHM 5% 0402
R175	0613952H12	CER CHIP RES 3.0 OHM 5% 0603
R176	0613952H12	CER CHIP RES 3.0 OHM 5% 0603
R191	0613958J74	CER CHIP RES 0.0 OHM JMP 0805



Circuit Ref	Motorola Part No.	Description
R201	0613952R23	CER CHIP RES 82K OHM 5% 0402
R202	0613952R25	CER CHIP RES 100K OHM 5% 0402
R204	0613952R17	CER CHIP RES 47K OHM 5% 0402
R231	0613952Q51	CER CHIP RES 120 OHM 5% 0402
R232	0613952Q68	CER CHIP RES 620 OHM 5% 0402
R233	0613952Q67	CER CHIP RES 560 OHM 5% 0402
R241	0613952Q33	CER CHIP RES 22.0 OHM 5% 0402
R242	0613952Q51	CER CHIP RES 120 OHM 5% 0402
R243	0613952R01	CER CHIP RES 10K OHM 5% 0402
R244	0613952R05	CER CHIP RES 15K OHM 5% 0402
R245	0613952Q58	CER CHIP RES 240 OHM 5% 0402
R248	0613952Q36	CER CHIP RES 30.0 OHM 5% 0402
R251	0613952Q37	CER CHIP RES 33.0 OHM 5% 0402
R252	0613952Q59	CER CHIP RES 270 OHM 5% 0402
R253	0613952Q94	CER CHIP RES 7500 OHM 5% 0402
R254	0613952Q95	CER CHIP RES 8200 OHM 5% 0402
R255	0613952Q88	CER CHIP RES 4300 OHM 5% 0402
R256	0613952Q36	CER CHIP RES 30.0 OHM 5% 0402
R260	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R281	NOT PLACED	
R301	0613952R25	CER CHIP RES 100K OHM 5% 0402
R302	0613952R25	CER CHIP RES 100K OHM 5% 0402
R303	0613952Q77	CER CHIP RES 1500 OHM 5% 0402
R304	0613952R03	CER CHIP RES 12K OHM 5% 0402
R305	0613952Q65	CER CHIP RES 470 OHM 5% 0402
R306	0613952R25	CER CHIP RES 100K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R307	0613952R25	CER CHIP RES 100K OHM 5% 0402
R308	0613952Q42	CER CHIP RES 51.0 OHM 5% 0402
R309	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R310	NOT PLACED	
R311	0613952R13	CER CHIP RES 33K OHM 5% 0402
R312	0613952Q89	CER CHIP RES 4700 OHM 5% 0402
R313	0613952Q61	CER CHIP RES 330 OHM 5% 0402
R314	0613952Q78	CER CHIP RES 1600 OHM 5% 0402
R315	0613952R03	CER CHIP RES 12K OHM 5% 0402
R320	NOT PLACED	
R321	0613952R03	CER CHIP RES 12K OHM 5% 0402
R322	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R324	0613952R27	CER CHIP RES 120K OHM 5% 0402
R328	0613952Q11	CER CHIP RES 2.7 OHM 5% 0402
R329	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R330	0613952R01	CER CHIP RES 10K OHM 5% 0402
R331	0613952Q56	CER CHIP RES 200 OHM 5% 0402
R332	0613952R03	CER CHIP RES 12K OHM 5% 0402
R333	NOT PLACED	
R339	0613952Q88	CER CHIP RES 4300 OHM 5% 0402
R340	0613952Q95	CER CHIP RES 8200 OHM 5% 0402
R342	0613952R25	CER CHIP RES 100K OHM 5% 0402
R344	0613952Q42	CER CHIP RES 51.0 OHM 5% 0402
R345	0613952R15	CER CHIP RES 39K OHM 5% 0402
R346	0613952R05	CER CHIP RES 15K OHM 5% 0402
R348	0613952Q86	CER CHIP RES 3600 OHM 5% 0402
R349	0613958J74	CER CHIP RES 0.0 OHM JMP 0805

Circuit Ref	Motorola Part No.	Description
R350	0613952R01	CER CHIP RES 10K OHM 5% 0402
R355	0613952R25	CER CHIP RES 100K OHM 5% 0402
R358	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R359	NOT PLACED	
R360	0613952R08	CER CHIP RES 20K OHM 5% 0402
R361	0613952R08	CER CHIP RES 20K OHM 5% 0402
R363	0613952Q63	CER CHIP RES 390 OHM 5% 0402
R364	0613952Q79	CER CHIP RES 1800 OHM 5% 0402
R365	0613952Q75	CER CHIP RES 1200 OHM 5% 0402
R366	0613952R03	CER CHIP RES 12K OHM 5% 0402
R367	0613952N09	CER CHIP RES 12.1K OHM 1% 0402
R368	0613952N01	CER CHIP RES 10.0K OHM 1% 0402
R369	0613952Q69	CER CHIP RES 680 OHM 5% 0402
R370	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R371	NOT PLACED	
R372	NOT PLACED	
R373	NOT PLACED	
R374	NOT PLACED	
R375	NOT PLACED	
R376	NOT PLACED	
R377	NOT PLACED	
R378	NOT PLACED	
R400	0613952R17	CER CHIP RES 47K OHM 5% 0402
R401	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R402	NOT PLACED	
R403	NOT PLACED	
R405	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R406	0613952R22	CER CHIP RES 75K OHM 5% 0402
R407	0613952R21	CER CHIP RES 68K OHM 5% 0402
R408	NOT PLACED	
R409	0613952R01	CER CHIP RES 10K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R410	0613952R25	CER CHIP RES 100K OHM 5% 0402
R411	0613952R01	CER CHIP RES 10K OHM 5% 0402
R413	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R414	0613952P25	CER CHIP RES 178K OHM 1% 0402
R415	0613952N93	CER CHIP RES 90.9K OHM 1% 0402
R416	0613952R01	CER CHIP RES 10K OHM 5% 0402
R418	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R419	0613952Q66	CER CHIP RES 510 OHM 5% 0402
R420	0613952J73	CER CHIP RES 10.0M OHM 5% 0603
R421	0613952Q80	CER CHIP RES 2000 OHM 5% 0402
R423	0613952R41	CER CHIP RES 470K OHM 5% 0402
R424	0613952R14	CER CHIP RES 36K OHM 5% 0402
R425	0613952R12	CER CHIP RES 30K OHM 5% 0402
R426	0613952R37	CER CHIP RES 330K OHM 5% 0402
R427	0613952Q83	CER CHIP RES 2700 OHM 5% 0402
R428	0613952Q09	CER CHIP RES 2.2 OHM 5% 0402
R429	0613952R22	CER CHIP RES 75K OHM 5% 0402
R431	0613952R41	CER CHIP RES 470K OHM 5% 0402
R432	0613952R18	CER CHIP RES 51K OHM 5% 0402
R434	0613952Q61	CER CHIP RES 330 OHM 5% 0402
R435	0613952Q80	CER CHIP RES 2000 OHM 5% 0402
R436	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R437	NOT PLACED	
R445	0613952R10	CER CHIP RES 24K OHM 5% 0402
R447	0613952R25	CER CHIP RES 100K OHM 5% 0402
R448	0613952R01	CER CHIP RES 10K OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R449	0613952R10	CER CHIP RES 24K OHM 5% 0402
R450	0613959Y45	CER CHIP RES 68.0 OHM 5% 2512
R451	0613952R05	CER CHIP RES 15K OHM 5% 0402
R452	0613952R25	CER CHIP RES 100K OHM 5% 0402
R453	NOT PLACED	
R454	NOT PLACED	
R455	NOT PLACED	
R456	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R457	0613952R01	CER CHIP RES 10K OHM 5% 0402
R460	0613952Q89	CER CHIP RES 4700 OHM 5% 0402
R461	0613952Q55	CER CHIP RES 180 OHM 5% 0402
R462	0613952R01	CER CHIP RES 10K OHM 5% 0402
R463	0613952Q60	CER CHIP RES 300 OHM 5% 0402
R471	0613952R08	CER CHIP RES 20K OHM 5% 0402
R472	0613952R14	CER CHIP RES 36K OHM 5% 0402
R473	0613952Q25	CER CHIP RES 10.0 OHM 5% 0402
R475	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R476	0613952R37	CER CHIP RES 330K OHM 5% 0402
R477	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R478	0613952R01	CER CHIP RES 10K OHM 5% 0402
R479	0613952Q66	CER CHIP RES 510 OHM 5% 0402
R481	0613952R10	CER CHIP RES 24K OHM 5% 0402
R492	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R498	0613952R01	CER CHIP RES 10K OHM 5% 0402
R499	0613952R01	CER CHIP RES 10K OHM 5% 0402
R501	0613952Q69	CER CHIP RES 680 OHM 5% 0402
R502	0613952Q55	CER CHIP RES 180 OHM 5% 0402

Circuit Ref	Motorola Part No.	Description
R505	0613952R01	CER CHIP RES 10K OHM 5% 0402
R506	0613952R17	CER CHIP RES 47K OHM 5% 0402
R507	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R601	0613952Z67	RES,MF,51KOHM,1%,.0625 W,SM,0402,200
R602	0613952Z67	RES,MF,51KOHM,1%,.0625 W,SM,0402,200
R603	0613952N12	CER CHIP RES 13.0K OHM 1% 0402
R604	0613952Z58	RES,MF,22KOHM,1%,.0625 W,SM,0402,200
R605	0613952N62	CER CHIP RES 43.2K OHM 1% 0402
R606	0613952P12	CER CHIP RES 130K OHM 1% 0402
R607	0613952N12	CER CHIP RES 13.0K OHM 1% 0402
R608	0613952Z58	RES,MF,22KOHM,1%,.0625 W,SM,0402,200
R609	0613952N62	CER CHIP RES 43.2K OHM 1% 0402
R610	0613952P12	CER CHIP RES 130K OHM 1% 0402
R611	0613952R18	CER CHIP RES 51K OHM 5% 0402
R612	0613952R43	CER CHIP RES 560K OHM 5% 0402
R613	0613952R49	CER CHIP RES 1.0M OHM 5% 0402
R614	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R617	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R618	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R619	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R620	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R621	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R622	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R623	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R626	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM

Circuit Ref	Motorola Part No.	Description
R627	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R631	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R632	0613952R25	CER CHIP RES 100K OHM 5% 0402
R633	0613952R25	CER CHIP RES 100K OHM 5% 0402
R646	0613952R25	CER CHIP RES 100K OHM 5% 0402
R647	0613952Q84	CER CHIP RES 3000 OHM 5% 0402
R648	0613952R25	CER CHIP RES 100K OHM 5% 0402
R649	0613952R17	CER CHIP RES 47K OHM 5% 0402
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z19	SWITCH, FREQUENCY
S502	1880619Z04	VOL POTENTIOMETER with hi temp cam
SH100	2680507Z02	SHIELD, HARMONIC FILTER
SH101	2680510Z02	SHIELD, PA
SH201	2680511Z02	SHIELD, SYNTHESIZER
SH202	2680511Z02	SHIELD, SYNTHESIZER
SH241	2604120G02	AOBA VCO SHIELD
SH242	2680514Z02	SHIELD, VCO BOTTOM/ LVZIF
SH301	2686583Z02	SHIELD, RECEIVER FRONT END TOP
SH302	2680555Z02	SHIELD, RECEIVER F/END BOTTOM
SH303	2680509Z02	SHIELD, MIXER
SH304	2680624Z02	SHIELD, MIXER DIODE
SH322	2686528Z01	SHIELD,RFI/EMI,CRS,TIN
SH323	2686527Z02	SHIELD, RFI/EMI, CRS, TIN
SH400	2680505Z02	SHIELD, CONTROLLER TOP LEFT
SH401	2680506Z02	SHIELD, CONTROLLER TOP RIGHT
SH402	2680515Z02	SHIELD, CONTROLLER BOTTOM LEFT
SH403	2680516Z02	SHIELD, CONTROLLER BTM RIGHT
T301	2515121H01	BALUN, TRANSFORMER
T302	2515121H01	BALUN, TRANSFORMER
U101	5115678H01	VHF/UHF/800/900 MHZ LD MOS DRIVER IC
U102	5185765B26	IC PWR CTRL IN MOS20
U201	5115060H01	IC,FREQ SYN,AT24701-OT4X

Circuit Ref	Motorola Part No.	Description
U210	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
U211	5115266H01	INVERTER TC7ST04FU SS0P5-P-A
U241	5171121L01	CUSTOM LOW VOLTAGE VCO BUFFER IC
U247	5115026H01	IC,LOW DROPOUT,SM,SOT-23/6,P
U248	5115019H01	IC,LOW DROPOUT,SOT-23,SOT-23
U301	5115281H01	FM IF IC SA616 FROM PHILIPS
U302	5115070H01	IC,INVTR,TC7W04FU,SSOP
U303	NOT PLACED	
U400	5115012H01	IC,ADJ LOW DROPOUT,SM,POS P
U404	5115062H01	IC,CUST,TQFP48
U405	5115020H01	IC,SRAM,32K X 8,SOIC,3.6V
U406	* 5115286H01	IC 4M FLASH ROM- NON SHRINK+EPP
U407	* 5115033H01	IC,EEPROM,16K X 8,SM
U409	5185143E03	IC,MICROP,QFP,QFP100,3.7 MHZ
U410	5115044H01	IC,LOW DROPOUT,SM,3.3V POS
U420	5115280H01	AUDIO AMPLIFIER TDA8547TS
U602	5115014H01	IC,COMPTR,SM,SOT-23/5
VR432	4813979P10	TRANS SUP 5.6V QUAD
VR433	4813979P10	TRANS SUP 5.6V QUAD
VR434	4815038H01	DIODE ARRAY,ZEN, SM,SOD-323,6.93V,
VR439	4813977M21	DIODE 12V ZENER_5242_
VR440	4815038H01	DIODE ARRAY,ZEN, SM,SOD-323,6.93V,
VR441	4815038H01	DIODE ARRAY,ZEN,S M,SOD-323,6.93V,
VR442	4815038H01	DIODE ARRAY,ZEN, SM,SOD-323,6.93V,
VR443	4815038H01	DIODE ARRAY,ZEN, SM,SOD-323,6.93V,
VR444	4815038H01	DIODE ARRAY,ZEN, SM,SOD-323,6.93V,
VR445	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR446	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR447	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR448	4813977A54	DIODE ZENER 0.2W SOD-323 10V

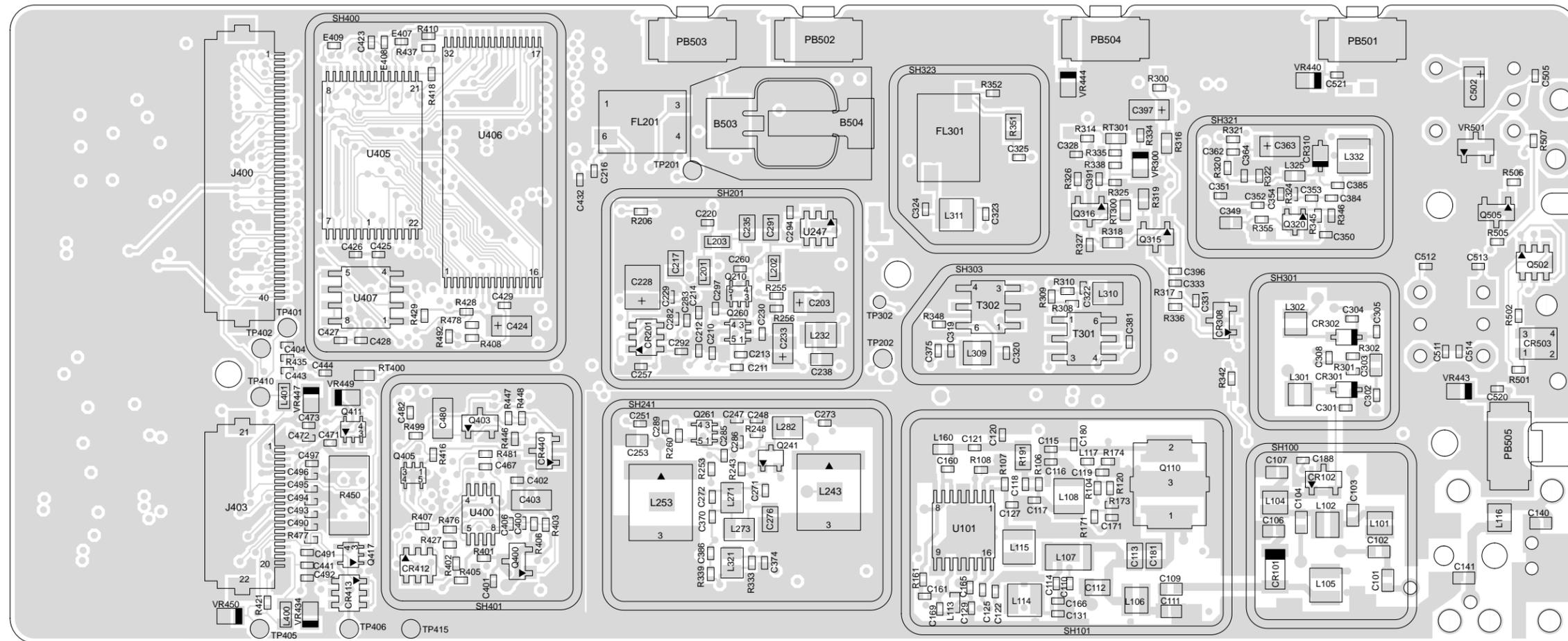
Circuit Ref	Motorola Part No.	Description
VR449	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR450	4815040H01	DIODE ARRAY ,ZEN, MM3Z12VT1G,SM,12
VR460	4815038H01	DIODE ARRAY,ZEN, SM,SOD-323,6.93V,
VR501	4813977M14	DIODE,ZEN,SOT-23, 6.8V,.225W,PB
VR506	4815038H01	DIODE ARRAY,ZEN, SM, SOD-323,6.93V,
Y300	4802245J84	XTAL 44.395MHz, 3RD OT, SMD
Y301	9186145B02	CER.DISCR. CDBCA455CX36-TC

\* Motorola Depot Servicing only

## Notes

### 9.18 UHF Band 2 Circuit Board/Schematic Diagrams and Parts List

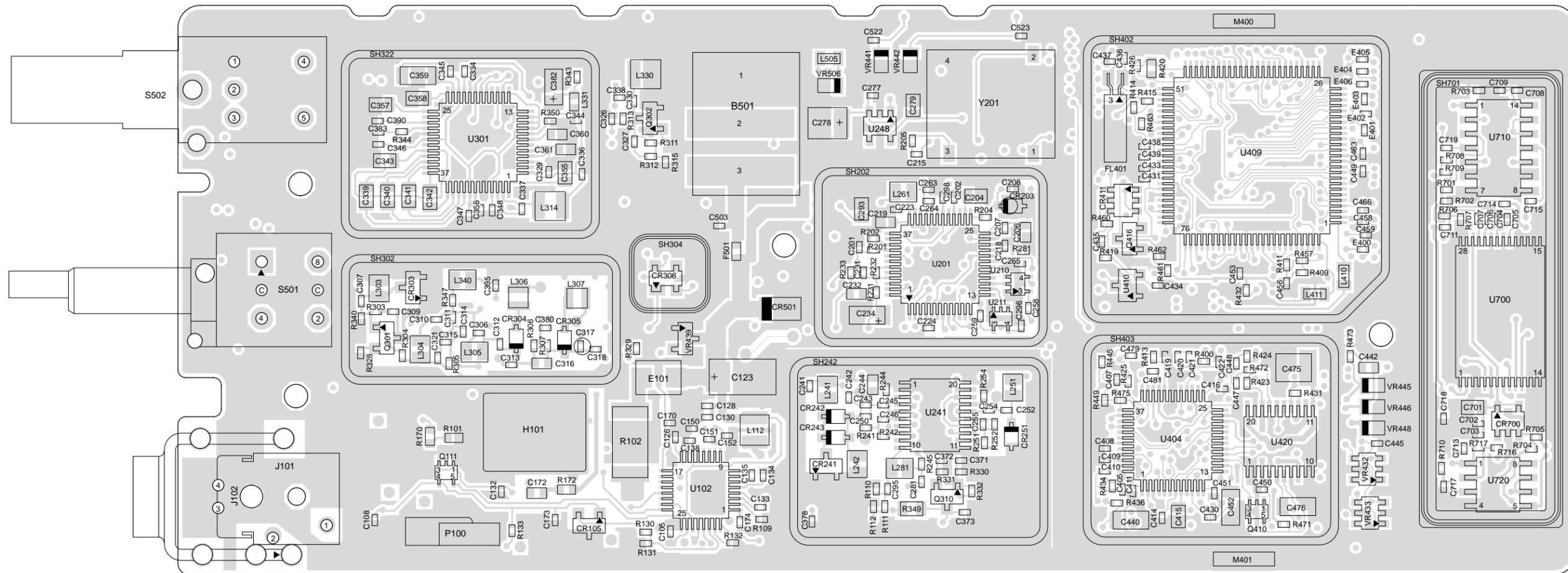
VIEWED FROM SIDE 1



ZMY0130258-O

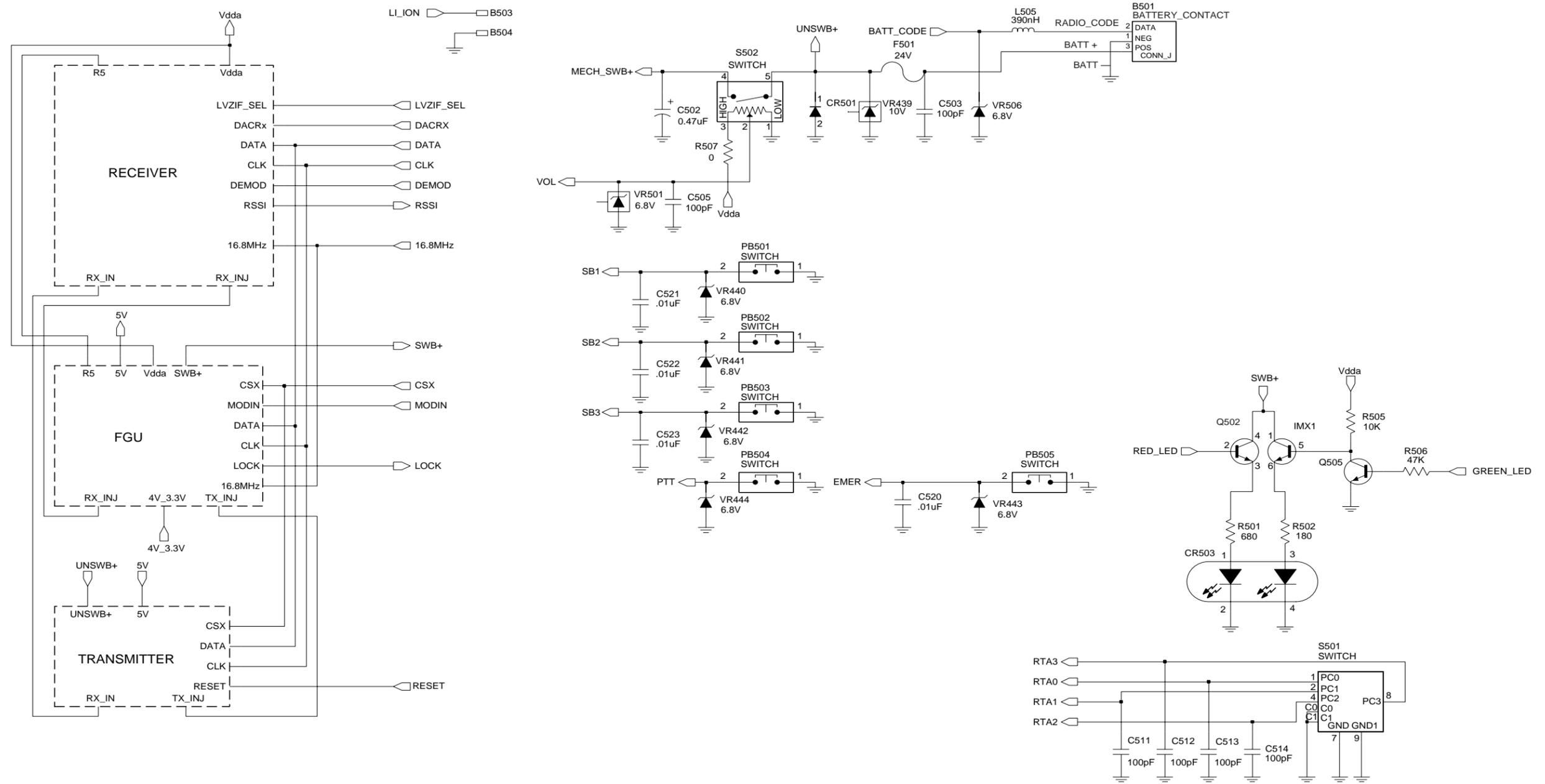
Figure 9-156. UHF (450-527 MHz) 9000 Series Main Board Top Side PCB

VIEWED FROM SIDE 2



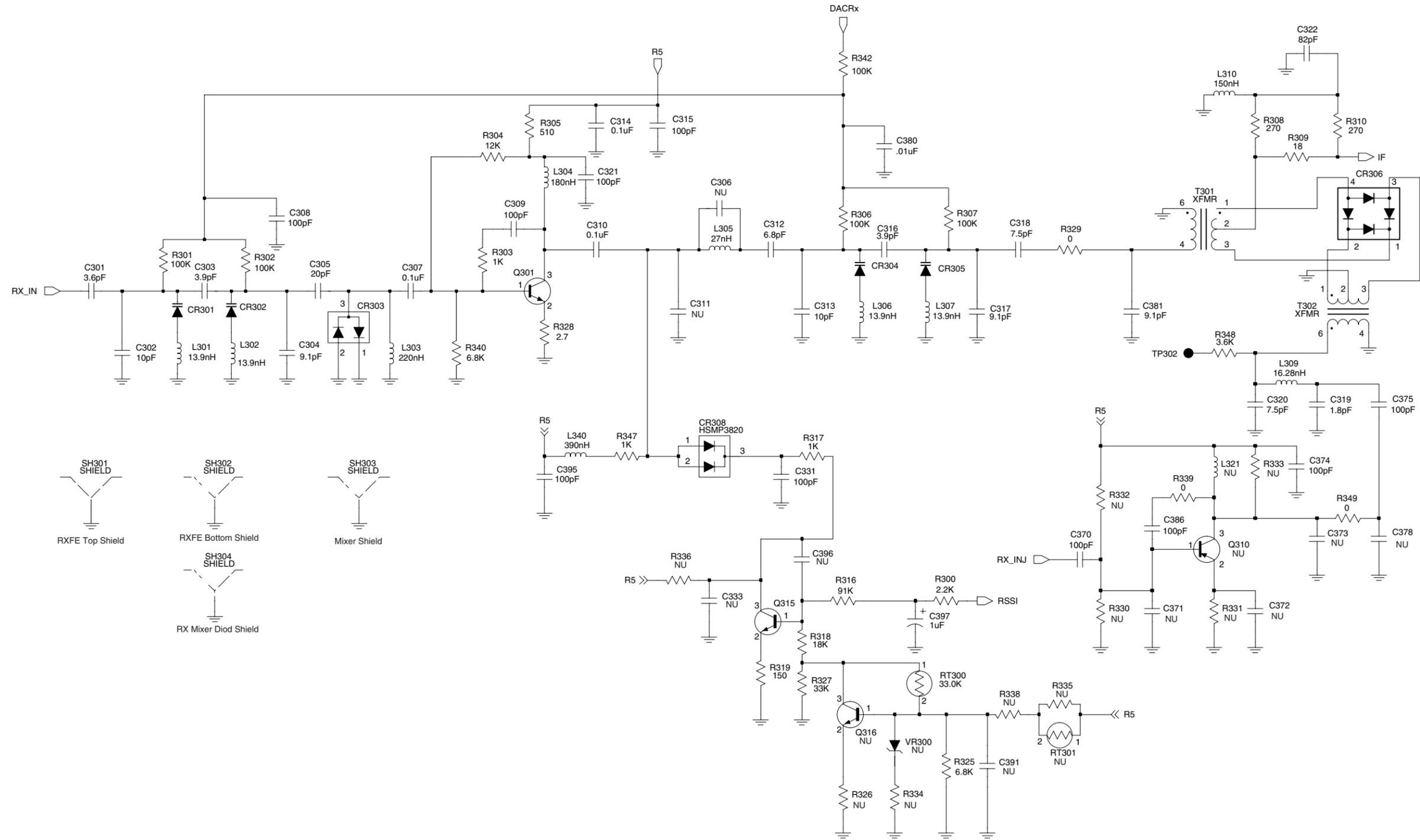
ZMY0130259-O

Figure 9-157. UHF (450-527 MHz) 9000 Series Main Board Bottom Side PCB



FL08307410

Figure 9-158. UHF (450-527 MHz) Controls and Switches Schematic Diagram



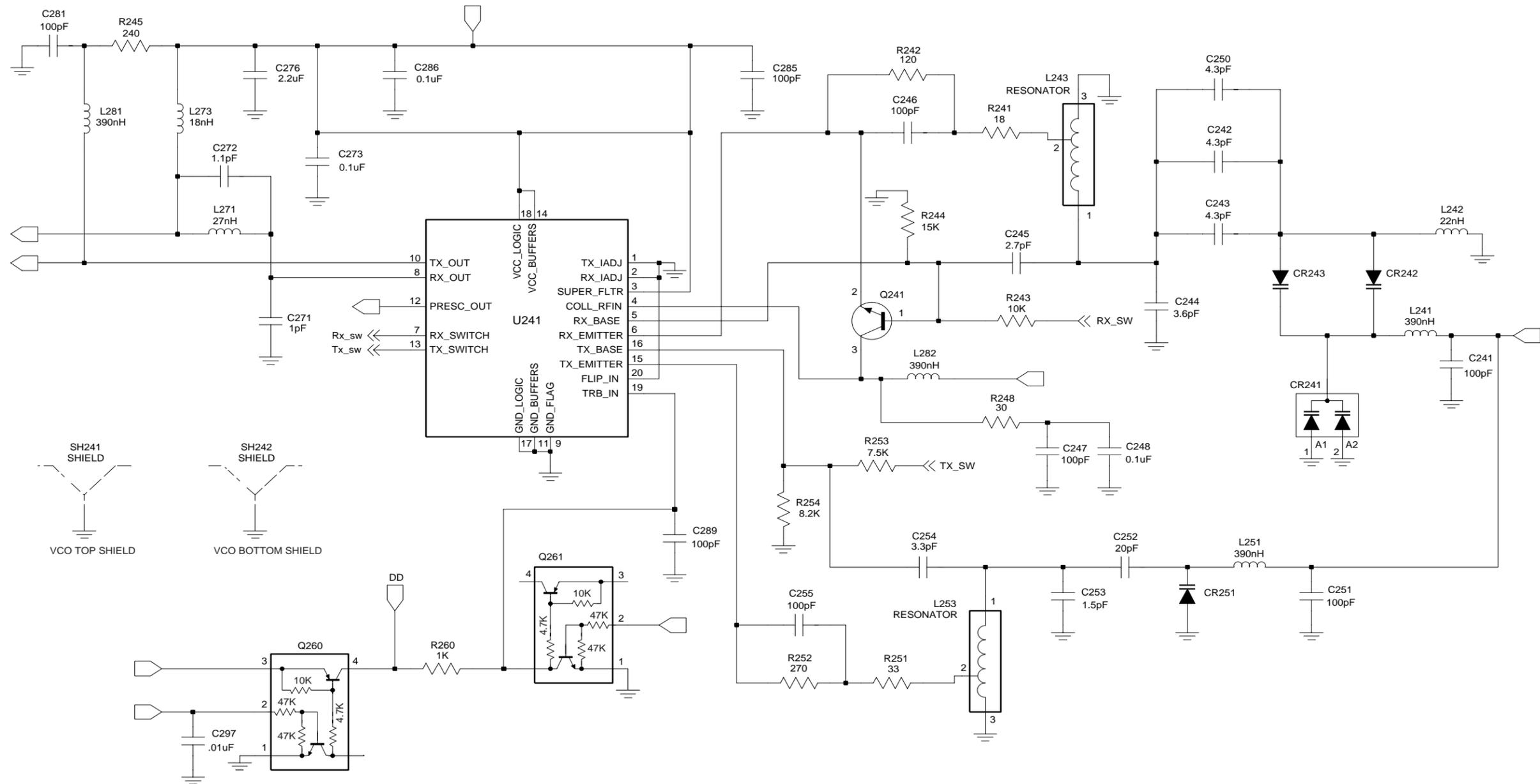
FL08307420

Figure 9-159. UHF (450-527 MHz) Receiver Front End Schematic Diagram



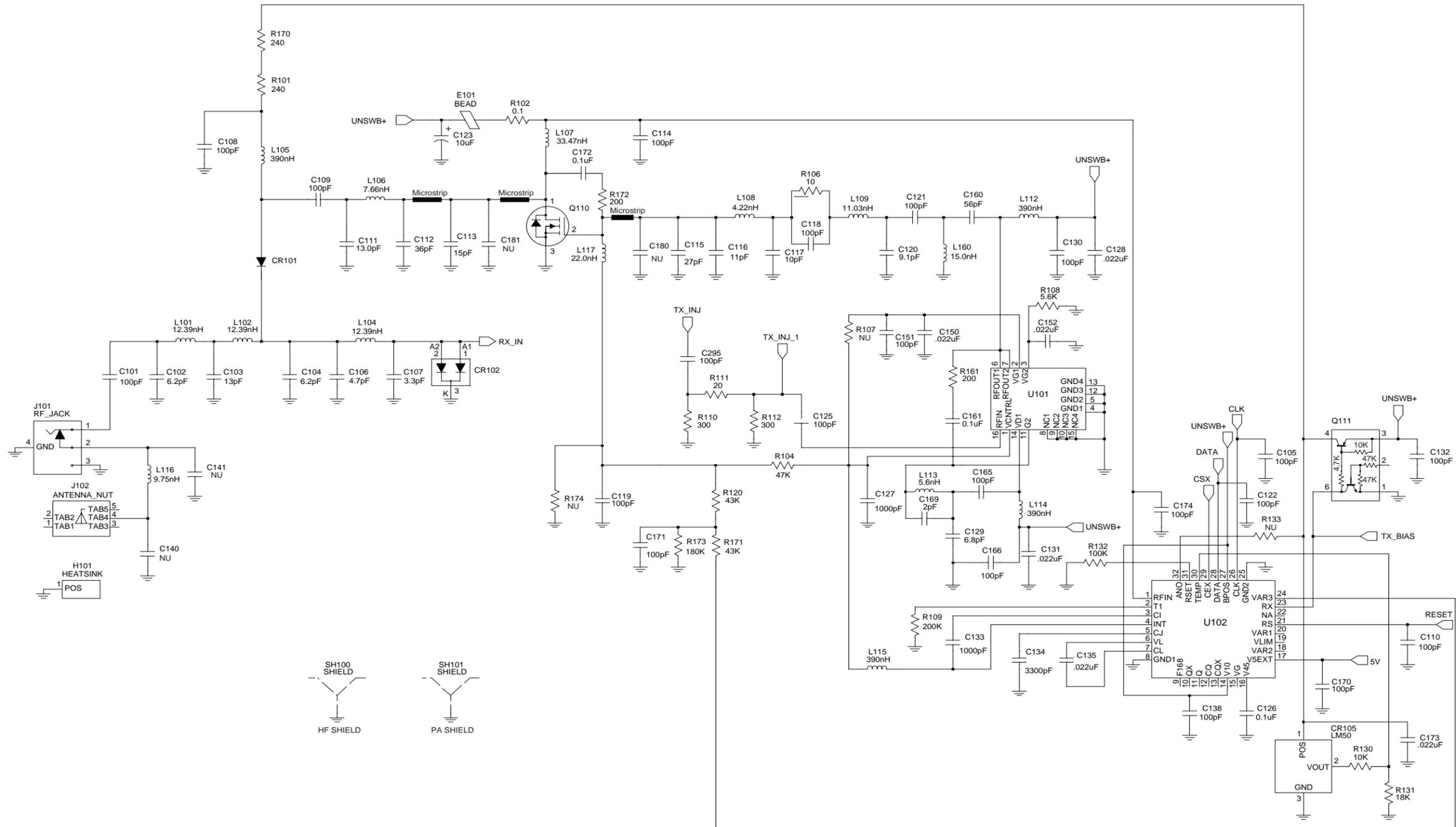






FL08307520

Figure 9-162. UHF (450-527 MHz) Voltage Controlled Oscillator Schematic Diagram



FL08307460

Figure 9-163. UHF (450-527 MHz) Transmitter Schematic Diagram

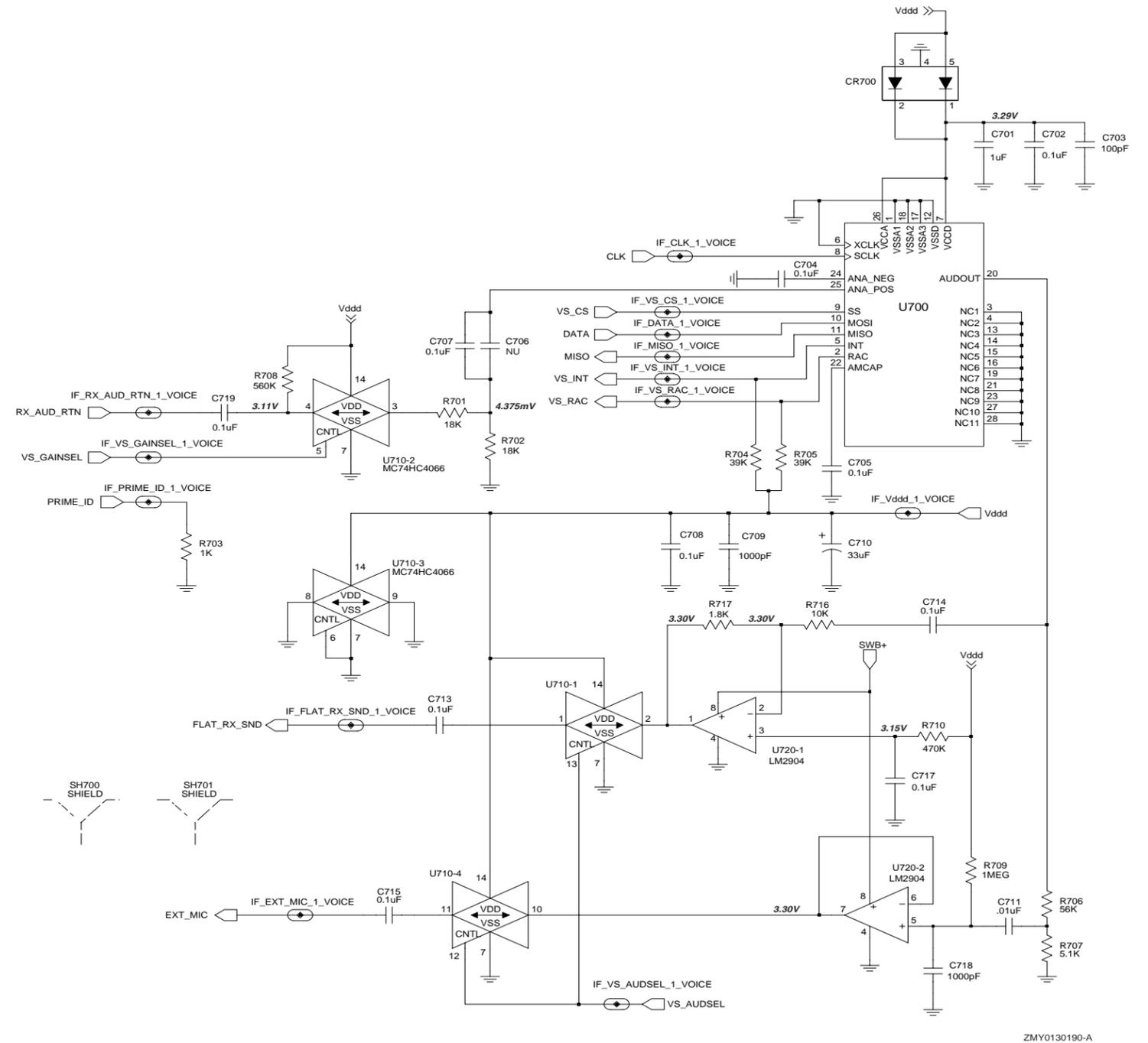


Figure 9-164. UHF (450-527 MHz) Voice Storage Schematic Diagram

**UHF (450-527 MHz) 9000 Series Radio Parts List**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C101	2113740F51	100pF
C102	2113740F22	6.2pF
C103	2113740F27	10pF
C104	2113740F22	6.2pF
C105	2113743N50	100pF
C106	2113740F19	4.7pF
C107	2113740F15	3.3pF
C108	2113743N50	100pF
C109	2113740F51	100pF
C110	2113743N50	100pF
C111	2113740F30	13pF
C112	2180605Z32	47pF
C113	2180605Z16	10pF
C114	2113743N50	100pF
C115	2113743N30	15.0pF
C116	2113743N38	33.0pF
C117	2113743N37	30.0pF
C118	2113743N50	100pF
C119	2113743N50	100pF
C120	2113743N26	10pF
C121	2113743N50	100pF
C122	2113743N50	100pF
C123	2311049A18	10uF
C125	2113743N50	100pF
C126	2113743M24	0.1uF
C127	2113743L17	1000pF
C128	2113743M08	0.022uF
C129	2113743N23	7.5pF
C130	2113743N50	100pF
C131	2113743M08	0.022uF
C132	2113743N50	100pF
C133	2113743L17	1000pF
C134	2113743L29	3300pF
C135	2113743M08	0.022uF
C138	2113743N50	100pF
C150	2113743M08	0.022uF
C151	2113743N50	100pF
C152	2113743M08	0.022uF
C160	2113743N50	100pF
C161	2113743M24	0.1uF
C165	2113743N50	100pF
C166	2113743N50	100pF
C169	2113743N20	5.6pF
C170	2113743N50	100pF
C171	2113743N50	100pF
C172	2113740F51	100pF
C173	2113743M08	0.022uF
C174	2113743N50	100pF
C201	2113743N50	100pF
C202	2113743L17	1000pF
C203	2311049A56	4.7pF

Circuit Ref	Motorola Part No.	Description
C204	2104993J02	2.2uF
C206	2113740F63	330pF
C207	2113743N44	56.0pF
C208	2113743N08	1.6pF
C210	2113743N50	100pF
C211	2113743N50	100pF
C212	2113743N50	100pF
C213	2113743N50	100pF
C214	2113743N50	100pF
C217	2104993J02	2.2uF
C218	2113743M24	0.1uF
C219	2113743K16	0.220uF
C220	2113743N50	100pF
C223	2113743M24	0.1uF
C224	2113743M24	0.1uF
C228	2311049J11	4.7uF
C229	2113743L17	1000pF
C230	2113743N50	100pF
C231	2113743M24	0.1uF
C232	2113743E12	0.047uF
C233	2311049A01	0.1pF
C234	2311049A05	0.47pF
C235	2104993J02	2.2uF
C238	2113741F17	470pF
C241	2113743N50	100pF
C242	2113743N23	7.5pF
C243	2113743N23	7.5pF
C244	2113740F10	2.0pF
C245	2113743N11	2.4pF
C246	2113743N50	100pF
C247	2113743N50	100pF
C248	2113743M24	0.1uF
C250	2113743N23	7.5pF
C251	2113743N50	100pF
C252	2113743N26	10pF
C253	2113740F09	1.8pF
C254	2113743N15	3.6pF
C255	2113743N50	100pF
C257	2113743N50	100pF
C258	2113743L41	0.01uF
C259	2113743L41	0.01uF
C260	2113743N50	100pF
C263	2113743N02	0.75pF
C264	2113743N50	100pF
C273	2113743M24	0.1uF
C276	2104993J02	2.2uF
C277	2113743N50	100pF
C278	2311049A09	2.2uF
C279	2104993J02	2.2uF
C281	2113743N50	100pF
C285	2113743N50	100pF
C286	2113743M24	0.1uF
C289	2113743N50	100pF
C291	2311049A69	10.0uF
C292	2113743M24	0.1uF
C293	2113743A27	0.470uF

Circuit Ref	Motorola Part No.	Description
C294	2113743N50	100pF
C295	2113743N50	100pF
C296	2113743M24	0.1uF
C297	2113743L41	0.01uF
C298	2113743M24	0.1uF
C301	2113743N15	3.6pF
C302	2113743N26	10pF
C303	2113740L08	3.9pF
C304	2113743N26	10pF
C305	2113743N33	20.0pF
C307	2113743M24	0.1uF
C308	2113743N50	100pF
C309	2113743N50	100pF
C310	2113743M24	0.1uF
C312	2113743N25	9.1pF
C313	2113743N26	10pF
C314	2113743M24	0.1uF
C315	2113743N50	100pF
C316	2113740L08	3.9pF
C317	2113743N25	9.1pF
C318	2113743N23	7.5pF
C319	2113743N69	1.8pF
C320	2113743N23	7.5pF
C321	2113743N50	100pF
C322	2113743N48	82.0pF
C323	2113743N54	150pF
C324	2113743N33	20.0pF
C325	2113743L41	0.01uF
C326	2113743L41	0.01uF
C327	2113743N50	100pF
C328	2113743M24	0.1uF
C329	2113743M24	0.1uF
C330	2113743N26	10pF
C331	2113743N50	100pF
C334	2113743M08	0.022uF
C336	2113743M24	0.1uF
C337	2113743N50	100pF
C338	2113743N30	15.0pF
C339	2180478Z20	1.0uF
C340	2180478Z20	1.0uF
C341	2180478Z20	1.0uF
C342	2180478Z20	1.0uF
C343	2113743A23	0.220uF
C344	2113743M24	0.1uF
C345	2113743M24	0.1uF
C346	2113743M24	0.1uF
C347	2113743M24	0.1uF
C348	2113743M24	0.1uF
C349	2113743E07	0.022uF
C350	2113743L05	330pF
C351	2113743N33	20.0pF
C352	2113743N28	12.0pF
C353	2113743N41	43.0pF
C354	2113743N42	47.0pF
C355	2113743A24	0.330uF
C356	2113743M08	0.022uF

Circuit Ref	Motorola Part No.	Description
C357	2113743A23	0.220uF
C358	2113741A23	1200pF
C359	2109720D14	0.1uF
C360	2113743E07	0.022uF
C361	2113741F49	10NF
C362	2113743M08	0.022uF
C363	2311049A40	2.2uF
C364	2113743L41	0.01uF
C370	2113743N50	100pF
C374	2113743N50	100pF
C375	2113743N50	100pF
C380	2113743L41	0.01uF
C381	2113743N21	6.2pF
C382	2311049A59	10uF
C383	2113743N50	100pF
C384	2113743N44	56.0pF
C385	2113743N44	56.0pF
C386	2113743N50	100pF
C390	2113743N50	100pF
C395	2113743N50	100pF
C397	2311049A05	0.47pF
C400	2113743L41	0.01uF
C401	2113743M24	0.1uF
C402	2113743M24	0.1uF
C403	2113928D08	10.0uF
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	0.1uF
C410	2113928N01	0.1uF
C411	2113743M24	0.1uF
C414	2113743M24	0.1uF
C415	2109720D01	0.01uF
C416	2113928N01	0.1uF
C420	2113743L41	0.01uF
C421	2113928N01	0.1uF
C422	2113743M24	0.1uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	0.1uF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	0.1uF
C429	2113743M24	0.1uF
C430	2113928N01	0.1uF
	0662057M01	0 (SUB on Models LS+ Only)
C431	2113743N50	100pF
C433	2113743L41	0.01uF
C434	2113743M24	0.1uF (not used in HT750 or PRO5150)
C435	2113743M24	0.1uF
C436	2113743N34	22.0pF (not used in HT750 or PRO5150)
C437	2113743N34	22.0pF (not used in HT750 or PRO5150)
C440	2113743G26	4.7uF
C441	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C442	2113743E20	10uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	0.022uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C451	2113743M08	0.022uF
C452	2113743G26	4.7uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743N50	100pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C475	2113743H14	10.0uF
C476	2113928D08	10.0uF
C479	2113928N01	0.1uF
C480	2113928D08	10.0uF
C481	2113928N01	0.1uF
C482	2113928N01 0662057M01	0.1uF, 10% 0 (SUB on Models LS <sup>+</sup> Only)
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47pF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	0.01uF
C521	2113743L41	0.01uF
C522	2113743L41	0.01uF
C523	2113743L41	0.01uF
CR101	4880973Z02	Pin Diode
CR102	4802245J41	Pin Diodes
CR105	5185963A15	Temperature Sense
CR201	4802233J09	Diode Triple
CR203	4862824C03	Varactor
CR241	4805649Q13	Dual Varactor
CR242	4862824C01	Varactor
CR243	4862824C01	Varactor
CR251	4802245J22	Varactor
CR301	4862824C01	Varactor
CR302	4862824C01	Varactor

Circuit Ref	Motorola Part No.	Description
CR303	4880154K03	Dual Common Anode-cathode
CR304	4862824C01	Varactor
CR305	4862824C01	Varactor
CR306	4802245J42	Ring Quad Diode
CR308	4802245J41	Pin Diodes
CR310	4862824C01	Varactor
CR411	4802245J47	Diode Schottky
CR412	4802245J47	Diode Schottky
CR413	4802245J47	Diode Schottky
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	Led Red/yellow
E101	2484657R01	Ferrite Bead
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL201	4802245J49	16.8 MHz Xtal Clip (not field serviceable)
FL301	4802245J43	Crystal Filter 45.1 MHz
FL401	4870368G02	Clock Oscillator Crystal (not used in HT750 or PRO5150)
H101	2680499Z01	Heat Spreader
J101	0180117S05	RF Jack Assembly
J102	0280519Z02	Nut, Antenna
J400	0905505Y04	40 Pin Connector
J403	0905505Y02	20 Pin Connector
L101	2479990B02	19.61nH
L102	2479990B02	19.61nH
L104	2479990B02	19.61nH
L105	2462587N22	390nH
L106	2479990A02	7.66nH
L107	2479990G01	33.47nH
L108	2479990A01	4.22nH
L109	2479990B01	11.03nH
L112	2462587N45	22nH
L113	2413926H09	5.6nH
L114	2462587N22	390nH
L115	2462587N22	390nH
L116	2479990A03	9.75nH
L160	2413926H14	15.0nH
L201	2462587Q20	2.2uH
L202	2462587Q20	2.2uH
L203	2462587Q20	2.2uH
L232	2462587P25	12uH
L241	2462587V41	390nH
L242	2462587V38	220nH
L243	2460593C01	Teflon Resonator
L251	2462587V28	33nH

Circuit Ref	Motorola Part No.	Description
L253	2460593C02	Teflon Resonator
L261	2462587V29	39nH
L271	2462587V32	68nH
L273	2462587V28	33nH
L281	2462587V41	390nH
L282	2462587V41	390nH
L301	2479990C01	13.9nH
L302	2479990C01	13.9nH
L303	2462587V26	22nH
L304	2462587V37	180nH
L305	2462587V26	22nH
L306	2479990C01	13.9nH
L307	2479990C01	13.9nH
L309	2479990C02	16.28nH
L310	2462587V36	150nH
L311	2462587N65	750nH
L314	2462587N72	2.2uH
L325	2480646Z20	2.20uH
L330	2462587N64	680nH
L331	2480646Z20	2.20uH
L332	2462587N53	100nH
L340	2462587V41	390nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
P100	3905643V01	Ground Contact Finger
PB501	4080523Z01	Tactile Push Button
PB502	4080523Z01	Tactile Push Button
PB503	4080523Z01	Tactile Push Button
PB504	4080523Z01	Tactile Push Button
PB505	4080523Z01	Tactile Push Button
Q110	4802245J55	RF Power Fet
Q111	4802245J50	Dual NPN/PNP
Q210	4802245J50	Dual NPN/PNP
Q241	4805218N63	NPN
Q260	4802245J50	Dual NPN/PNP
Q261	4802245J50	Dual NPN/PNP
Q301	4802245J44	NPN
Q302	4802245J44	NPN
Q315	4880214G02	NPN
Q320	4805218N63	NPN
Q400	4809579E18	MOSFET P-Chan
Q403	4880214G02	NPN
Q405	4802245J54	Dual NPN
Q410	4802245J54	dual NPN
Q416	4809579E18	MOSFET P-Chan
Q417	4802245J50	Dual NPN/PNP
Q502	5180159R01	Dual NPN
Q505	4880214G02	NPN
R101	0662057A34	240
R102	0680735Z01	0.075
R103	0662057M41	43
R104	0662057N15	47K
R106	0662057M26	10

Circuit Ref	Motorola Part No.	Description
R108	0662057M92	5.6K
R109	0662057N30	200K
R110	0662057M61	300
R111	0662057M33	20
R112	0662057M61	300
R120	0662057N14	43K
R130	0662057M98	10K
R131	0662057N05	18K
R132	0662057N33	270K
R161	0662057M57	200
R170	0662057A34	240
R171	0662057N14	43K
R172	0662057A32	200
R173	0662057N29	180K
R201	0662057N21	82K
R202	0662057N23	100K
R204	0662057N15	47K
R231	0662057M52	120
R232	0662057M69	620
R233	0662057M68	560
R241	0662057M32	18
R242	0662057M57	200
R243	0662057M98	10K
R244	0662057N01	12K
R245	0662057M59	240
R248	0662057M37	30
R251	0662057M32	18
R252	0662057M62	330
R253	0662057M95	7.5K
R254	0662057M95	6.8K
R255	0662057M89	4.3K
R256	0662057M37	30
R260	0662057M74	1K
R300	0662057M82	2.2K
R301	0662057N23	100K
R302	0662057N23	100K
R303	0662057M74	1K
R304	0662057N01	12K
R305	0662057M67	0
R306	0662057N23	100K
R307	0662057N23	100K
R308	0662057M60	270
R309	0662057M32	18
R310	0662057M60	270
R311	0662057N10	30K
R312	0662057M83	2.4K
R313	0662057M62	330
R314	0662057M85	3K
R315	0662057N01	12K
R316	0662057A96	91K
R317	0662057M74	1K
R318	0662057A79	18K
R319	0662057A29	150
R320	0662057M74	1K
R321	0662057M83	2.4K
R322	0662057N30	200K

Circuit Ref	Motorola Part No.	Description
R324	0662057M81	2K
R325	0662057M94	6.8K
R327	0662057N11	33K
R328	0662057M12	2.7
R329	0662057M01	0
R339	0662057M01	0
R340	0662057M94	6.8K
R342	0662057N23	100K
R343	0662057M26	10
R344	0662057N01	12K
R345	0662057M98	10K
R346	0662057N17	56K
R347	0662057M74	1K
R348	0662057M87	3.6K
R349	0662057C01	0
R350	0662057N23	100K
R351	0662057C01	0
R352	0662057M86	3.3K
R355	0662057M01	0
R400	0662057N15	47K
R401	0662057M01	0
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057N13	39K
R418	0662057M01	0
R419	0662057M67	0 (not used in HT750 or PRO5150)
R420	0662057B46	10.0 MEG (not used in HT750 or PRO5150)
R421	0662057M81	2K
R423	0662057N39	470K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K (not used in HT750 or PRO5150)
R427	0662057M84	2.7K
R428	0662057M10	2.2
R429	0662057M98	10K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2K
R436	0662057M01	0
R445	0662057N08	24K
R446	0662057N31	220K
R447	0662057N51	1.5MEG
R448	0662057N33	270K
R449	0662057N08	24K
R450	0683962T45	68
R457	0662057M98	10K

Circuit Ref	Motorola Part No.	Description
R460	0662057M90	4.7K
R461	0662057M56	180 (not used in HT750 or PRO5150)
R462	0662057M98	10K (not used in HT750 or PRO5150)
R463	0662057M61	300
R471	0662057M92	5.6K
R472	0662057N12	36K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
RT300	0680590Z01	Thermistor 33K
RT400	0680590Z01	Thermistor 33K
S501	4080710Z01	Channel Switch
S502	1880619Z01	Volume Switch
SH100	2680507Z01	Shield, Harmonic Filter
SH101	2680510Z01	Shield, Pa
SH201	2680511Z01	Synthesizer Top Shield
SH202	2680511Z01	Synthesizer Bottom Shield
SH241	2680513Z01	Shield, VCO Top
SH242	2680514Z01	Shield, VCO Bottom/LVZIF
SH301	2680554Z01	RX Pre Filter Shield
SH302	2680555Z01	RX Post Filter/RX Amp
SH303	2680509Z01	Shield, Mixer
SH304	2680624Z01	Shield, Mixer Diode
SH321	2680508Z01	Shield, LVZIF 2nd LO
SH322	2680514Z01	ZIF Shield
SH323	2680553Z01	Shield, Crystal Filter
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	On/off Controller Shield
SH402	2680515Z01	Microprocessor Controlled Shield
SH403	2680516Z01	Audio PA Controller Shield
T301	2580541Z01	Transformer Coil
T302	2580541Z01	Transformer Coil
U101	5105109Z67	LDMOS Driver UHF IC
U102	5185765B01	Power Control IC
U201	5185963A27	LVFRACN
U210	5102463J61	Inverter
U211	5102463J61	Inverter
U241	5105750U54	VCO Buffer
U247	5105739X05	Regulator Linear
U248	5102463J58	3.3v Regulator
U301	5109632D83	LVZIF 2.2
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC CMP
U405	5102463J36	Static RAM 32KX8 I
U406	*5102463J59	Flash ROM 128KX8

Circuit Ref	Motorola Part No.	Description
U407	*5102463J64	16K X 8 EEPROM (not used in HT750 or PRO5150)
	*5102463J62	8KX 8 EEPROM (not used in HT1250 or PRO7150)
U409	5102226J56	Microprocessor HC11FLO
U410	5102463J57	Regulator 3.3V (not used in HT750 or PRO5150)
U420	5102463J44	Audio PA
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J51	Zener 6.8V
VR439	4880140L15	10V Zener
VR440	4802245J51	Zener 6.8V
VR441	4802245J51	Zener 6.8V
VR442	4802245J51	Zener 6.8V
VR443	4802245J51	Zener 6.8V
VR444	4802245J51	Zener 6.8V
VR445	4802245J53	Zener 10V
VR446	4802245J53	Zener 10V
VR447	4802245J53	Zener 10V
VR448	4802245J53	Zener 10V
VR449	4802245J53	Zener 10V
VR450	4802245J53	Zener 10V
VR501	4813830A18	6.8V Zener
VR506	4802245J51	Zener 6.8V
	7580671Z01	Pad (Flexible Circuit)
	7580671Z01	Pad (Flexible Circuit)
Voice Storage Parts List		
C601	2311049A57	10uF
C602	2113743L41	0.01uF
C603	2311049C07	100uF
C701	2180478Z20	1uF
C702	2311049N01	0.1uF
C703	2311049A57	10uF
C704	2311049N01	0.1uF
C705	2311049N01	0.1uF
C706	2311049N01	0.1uF
C707	2311049N01	0.1uF
C708	2311049N01	0.1uF
C709	2311049A57	10uF
C710	2311049A30	33uF
C711	2311049N01	0.1uF
C712	2311049N01	0.1uF
C713	2311049N01	0.1uF
C714	2311049N01	0.1uF
C715	2311049N01	0.1uF
C716	2311049N01	0.1uF
C717	2180478Z20	1uF
C718	2180478Z20	1uF
CR601	4805129M76	
CR700	4802245J47	
L601	2480570Z01	68uH
R625	0662057M01	
R626	0662057M83	
R627	0662057M74	
R701	0662057N10	

Circuit Ref	Motorola Part No.	Description
R702	0662057M91	
R703	0662057N15	
R704	0662057N23	
R705	0662057N23	
R706	0662057N17	
R707	0662057M91	
R716	0662057N15	
R717	0662057N15	
U601	5105109Z74	
U700	5102463J53	
U710	5102463J52	
U720	5180932W01	

\* Motorola Depot Servicing only







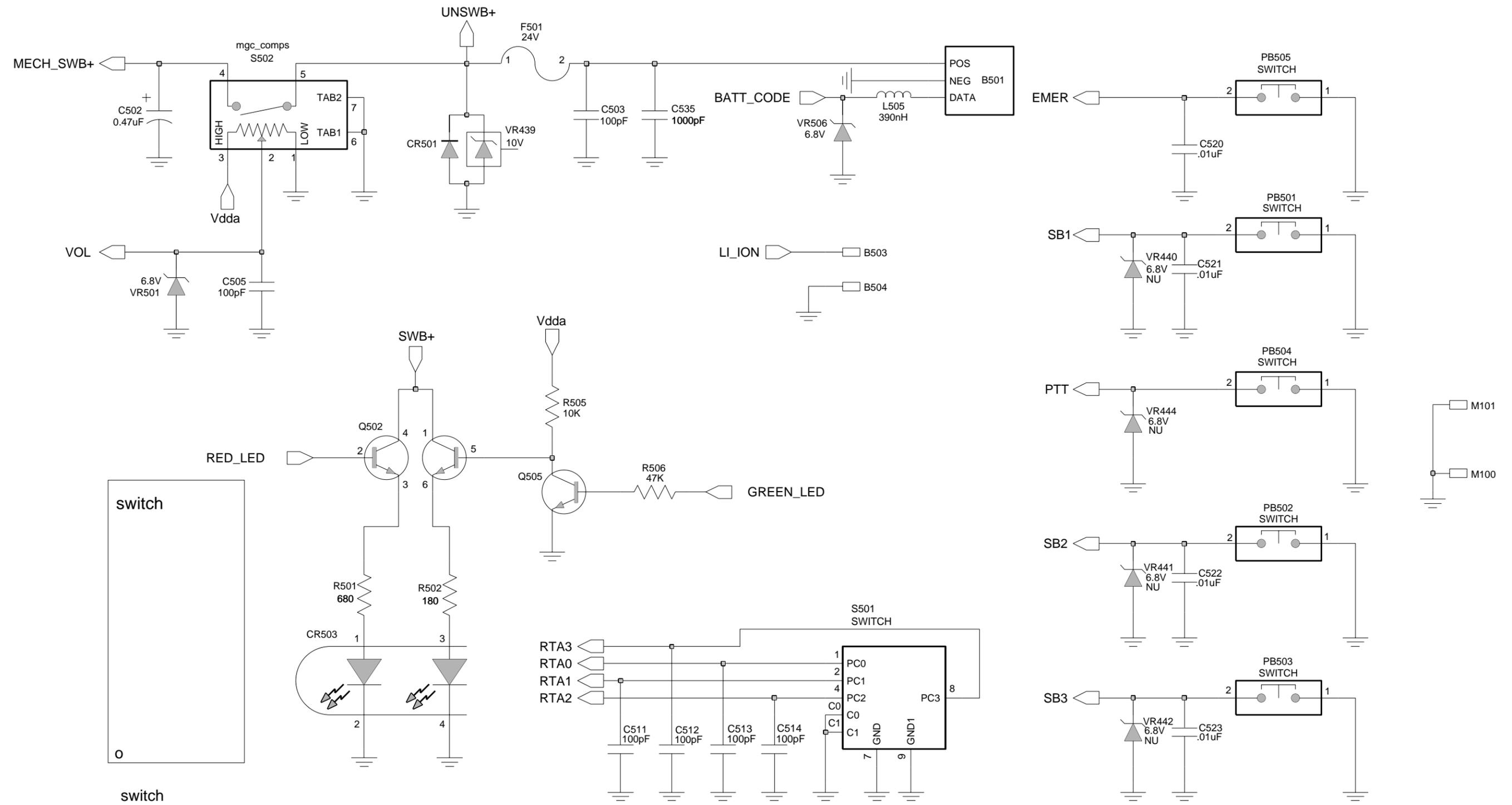
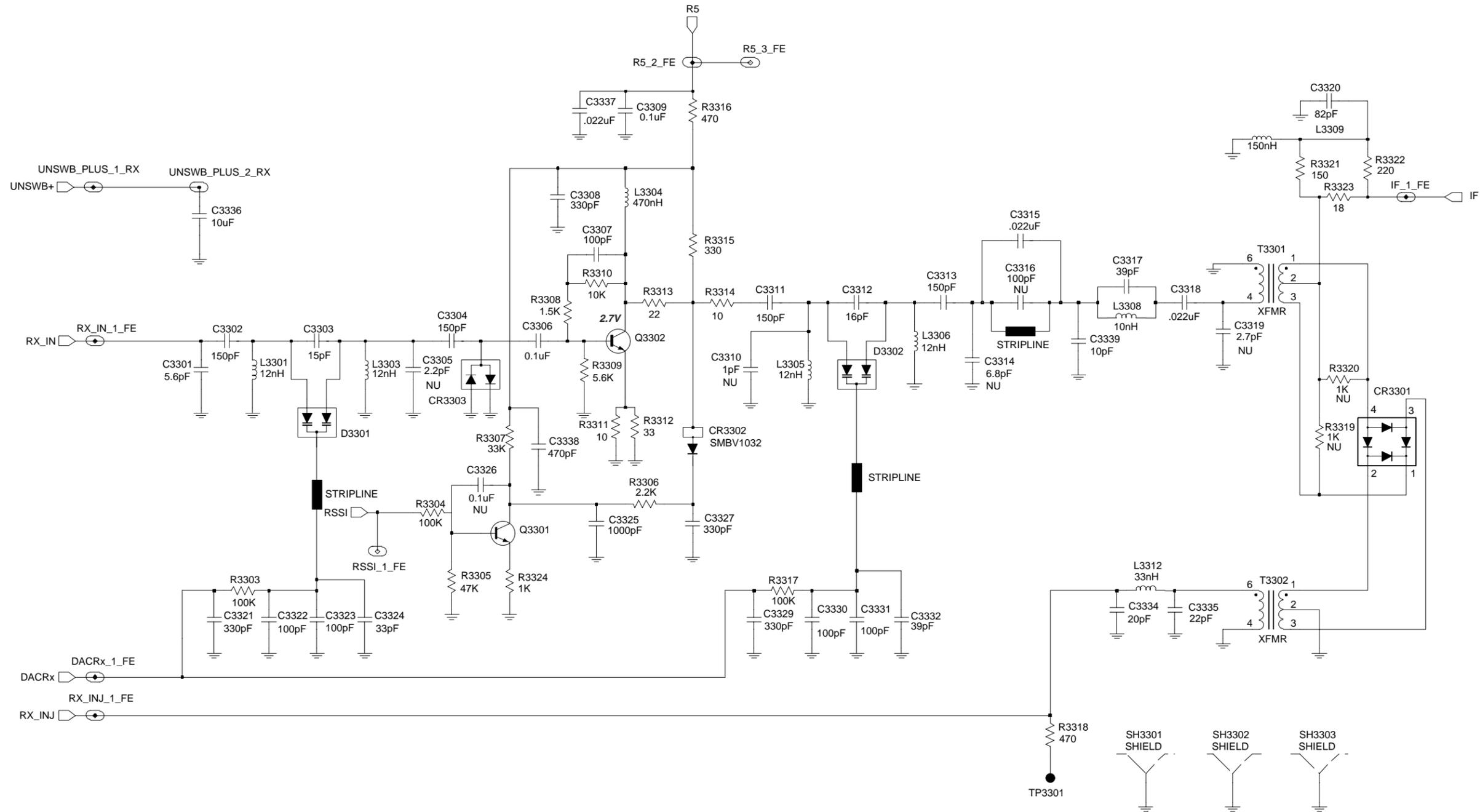


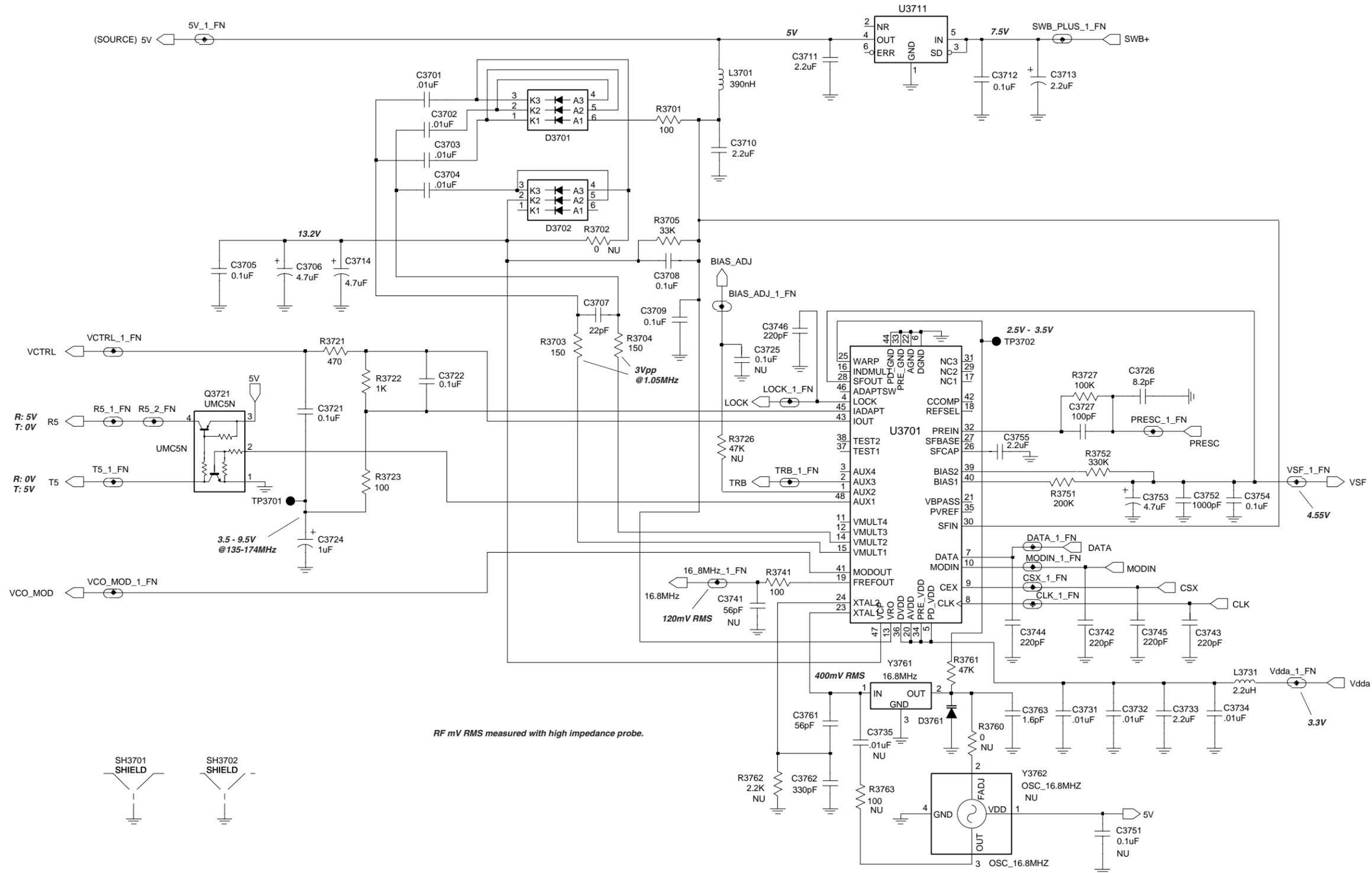
Figure 9-167. VHF (136-174 MHz) Controls and Switches Schematic Diagram



ZWG0130023-A

Figure 9-168. VHF (136-174 MHz) Receiver Front End Schematic Diagram

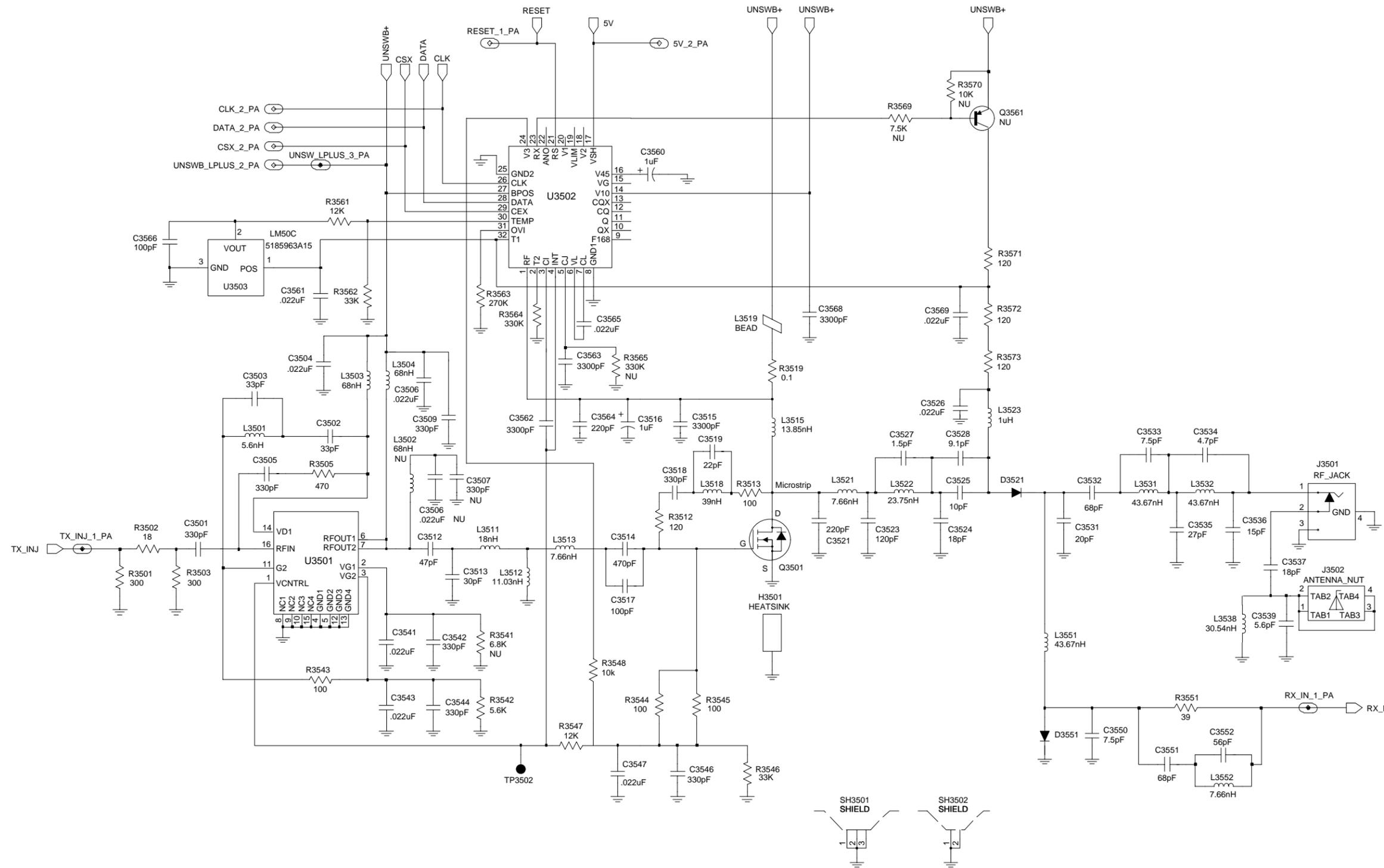




ZWG0130022-A

Figure 9-170. VHF (136-174 MHz) Synthesizer Schematic Diagram





ZWG0130021-A

Figure 9-172. VHF (136-174 MHz) Transmitter Schematic Diagram



**VHF (136-174 MHz) Radio Parts List (PCB 8486062B09)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C3200	2113743N31	16pF
C3203	2113743N50	100pF
C3204	2113743L41	.01uF
C3205	2113928N01	0.1uF
C3206	2113743L41	.01uF
C3207	2113743N10	2.2pF
C3209	2311049A07	1uF
C3210	2113743L17	1000pF
C3211	2311049A56	4.7uF
C3212	2311049A07	1uF
C3213	2311049A56	4.7uF
C3214	2113928N01	0.1uF
C3215	2113743N26	10pF
C3218	2311049A56	4.7uF
C3219	2113928N01	0.1uF
C3220	2113743N26	10pF
C3221	2113743L41	.01uF
C3222	2113928N01	0.1uF
C3223	2113928N01	0.1uF
C3224	2113928N01	0.1uF
C3225	2113928N01	0.1uF
C3226	2113928N01	0.1uF
C3227	2113743L41	.01uF
C3228	2113743L41	.01uF
C3229	2113743N50	100pF
C3230	2113740F51	100pF
C3231	2180478Z20	1uF
C3232	2180478Z20	1uF
C3233	2180478Z20	1uF
C3234	2180478Z20	1uF
C3235	2113743A23	0.22uF
C3238	2113743A21	0.15uF
C3239	2113743E07	.022uF
C3240	2113743A23	0.22uF
C3241	2113743L19	1200pF
C3242	2109720D14	0.1uF
C3243	2113743E07	.022uF
C3244	2113743L41	.01uF
C3270	2113743E07	.022uF
C3271	2113743L05	330pF
C3272	2113743N18	4.7pF
C3273	2113743N26	10pF
C3274	2113743N38	33pF
C3275	2113743N44	56pF
C3276	2113743N42	47pF
C3277	2113743N48	82pF
C3278	2113743E20	0.1uF
C3279	2311049A07	1uF
C3280	2113743L39	8200pF
C3301	2113743N20	5.6pF
C3302	2113743N54	150pF

Circuit Ref	Motorola Part No.	Description
C3303	2113743N30	15pF
C3304	2113743N54	150pF
C3306	2113743M24	0.1uF
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113743M24	0.1uF
C3311	2113743N54	150pF
C3312	2113743N31	16pF
C3313	2113743N54	150pF
C3315	2113743N26	10pF
C3316	2113743N14	3.3pF
C3317	2113743N40	39pF
C3318	2113743M08	.022uF
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A18	10uF
C3337	2113743M08	.022uF
C3338	2113743L09	470pF
C3339	2113743N26	10pF
C3501	2113743L05	330pF
C3502	2113743N38	33pF
C3503	2113743N38	33pF
C3504	2113743M08	.022uF
C3505	2113743L05	330pF
C3508	2113743M08	.022uF
C3509	2113743L05	330pF
C3512	2113740F43	47pF
C3513	2113740F38	30pF
C3514	2113740F67	470pF
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F51	100pF
C3518	2113740F63	330pF
C3519	2113740F35	22pF
C3521	2111078B51	220pF
C3523	2111078B44	120pF
C3524	2113740F33	18pF
C3525	2113740F27	10pF
C3526	2113743M08	.022uF
C3528	2113740F26	9.1pF
C3531	2113740F34	20pF
C3532	2113740F47	68pF
C3533	2113740F24	7.5pF
C3534	2113740F19	4.7pF
C3535	2113740F37	27pF

Circuit Ref	Motorola Part No.	Description
C3536	2113740F31	15pF
C3537	2113740F33	18pF
C3539	2113740F21	5.6pF
C3541	2113743M08	.022uF
C3542	2113743L05	330pF
C3543	2113743M08	.022uF
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	.022uF
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1uF
C3561	2113743M08	.022uF
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF
C3564	2113743L01	220pF
C3565	2113743M08	.022uF
C3566	2113743N50	100pF
C3568	2113743L29	3300pF
C3569	2113743M08	.022uF
C3701	2113743L41	.01uF
C3702	2113743L41	.01uF
C3703	2113743L41	.01uF
C3704	2113743L41	.01uF
C3705	2113743E20	0.1uF
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113743M24	0.1uF
C3709	2113743M24	0.1uF
C3710	2104993J02	2.2uF
C3711	2104993J02	2.2uF
C3712	2113743M24	0.1uF
C3713	2311049A09	2.2uF
C3714	2311049J11	4.7uF
C3721	2113743E20	0.1uF
C3722	2113743E20	0.1uF
C3724	2311049A08	1uF
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	.01uF
C3732	2113743L41	.01uF
C3733	2104993J02	2.2uF
C3734	2113743L41	.01uF
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3752	2113743L17	1000pF
C3753	2311049A56	4.7uF
C3754	2113743M24	0.1uF
C3755	2104993J02	2.2uF
C3761	2113743N44	56pF
C3762	2113740F63	330pF
C3763	2113743N08	1.6pF

Circuit Ref	Motorola Part No.	Description
C3801	2113743N18	4.7pF
C3803	2113743L17	1000pF
C3804	2113743E20	0.1uF
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3811	2113743M24	0.1uF
C3812	2113743M24	0.1uF
C3813	2113743L41	.01uF
C3815	2113743L17	1000pF
C3816	2113743N22	6.8pF
C3818	2113743E07	.022uF
C3821	2113743L41	.01uF
C3822	2113743L17	1000pF
C3823	2113743L41	.01uF
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	.022uF
C3828	2113741A45	.01uF
C3829	2113741A45	.01uF
C3830	2113743N46	68pF
C3832	2113743L17	1000pF
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF
C3836	2113743N30	15pF
C3842	2113743L17	1000pF
C400	2113743L41	.01uF, 10%
C401	2113743M24	0.1uF, +80%/-20%
C402	2113743M24	0.1uF, +80%/-20%
C403	2113928D08	10uF, +80%/-20%
C407	2113928N01	0.1uF, 10%
C408	2113743N50	100pF
C409	2113743M24	0.1uF, +80%/-20%
C410	2113928N01	0.1uF, 10%
C411	2113743M24	0.1uF, +80%/-20%
C414	2113743M24	0.1uF, +80%/-20%
C415	2109720D01	.01uF, 10%
C416	2113928N01	0.1uF, 10%
C419	2113743L41	.01uF, 10%
C420	2113743L41	.01uF, 10%
C421	2113928N01	0.1uF, 10%
C422	2113743M24	0.1uF, +80%/-20%
C423	2113743N50	100pF
C424	2311049A59	10uF, 10%; 6V
C425	2113743M24	0.1uF, +80%/-20%
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	0.1uF, +80%/-20%
C429	2113743M24	0.1uF, +80%/-20%
C430	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS+ Models Only)
C431	2113743N50	100pF
C432	Not Placed	-

Circuit Ref	Motorola Part No.	Description
C433	2113743L41	.01uF, 10%
C434	2113743M24	0.1uF, +80%/-20%
C435	2113743M24	0.1uF, +80%/-20%
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF, +80%/-20%
C441	2113743N50	100pF
C442	2113743E20	0.1uF, 10%
C443	2113928N01	0.1uF, 10%
C444	2113743N50	100pF (for UHF only)
	2311049A56	4.7uF, 20%, 10V (for VHF only)
C445	2113743N50	100pF
C447	2113928N01	0.1uF, 10%
C448	2113928N01	0.1uF, 10%
C449	2113743N50	100pF
C450	2113743M24	0.1uF, +80%/-20%
C451	2113743M08	.022uF, +80%/-20%
C452	2113743G26	4.7uF, +80%/-20%
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF, 10%
C471	2113743N50	100pF
C472	2113743N50	100pF
C473	2113743N50	100pF
C475	2113743H14	10uF, +80%/-20%
C476	2113928D08	10uF, +80%/-20%
C479	2113928N01	0.1uF, 10%
C480	2113928D08	10uF, +80%/-20%
C481	2113928N01	0.1uF, 10%
C482	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS <sup>+</sup> Models Only)
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C502	2311049A05	0.47uF, 10%; 25V
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	.01uF, 10%
C521	2113743L41	.01uF, 10%
C522	2113743L41	.01uF, 10%
C523	2113743L41	.01uF, 10%
CR3301	4802245J42	Ring Quad Diode
CR3302	4805129M96	SMBV1032

Circuit Ref	Motorola Part No.	Description
CR3303	4880154K03	Dual Common Anode Cathode
CR411	4802245J47	Schottky Diode
CR412	4802245J47	Schottky Diode
CR413	4802245J47	Schottky Diode
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
D3270	4862824C01	Varactor
D3301	4802081B58	Diode Dual
D3302	4802081B58	Diode Dual
D3521	4880973Z02	Pin Diode
D3551	4880973Z02	Pin Diode
D3701	4802233J09	Triple Diode
D3702	4802233J09	Triple Diode
D3761	4862824C03	Varactor
D3821	4805649Q13	Dual Varactor
D3831	4805649Q13	Dual Varactor
D3832	4862824C01	Varactor
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL401	4870368G02	Osc Xtal 38.4 kHz
H3501	2680499Z01	HEATSINK
J3501	0180117S05	RF JACK
J3502	0280519Z02	ANTENNA_NUT
J400	0905505Y04	40-pins Connector
J403	0905505Y02	20-pins Connector
L3200	2462587N68	1uH
L3202	2462587N68	1uH
L3221	2462587N68	1uH
L3270	2462587T15	100nH
L3271	2462587Q20	2.2uH
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH
L3501	2413926H09	5.6nH
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH
L3512	2460591B04	11.03nH
L3513	2460591A11	7.66nH
L3515	2460591C23	13.85nH
L3518	2462587N48	39nH

Circuit Ref	Motorola Part No.	Description
L3519	2484657R01	BEAD
L3521	2460591A11	7.66nH
L3522	2460591E24	23.75nH
L3523	2462587N68	1uH
L3531	2460591N36	43.67nH
L3532	2460591N36	43.67nH
L3538	2460591M36	30.54nH
L3551	2460591N36	43.67nH
L3552	2460591A11	7.66nH
L3701	2462587Q42	390nH
L3731	2462587Q20	2.2uH
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1uH
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1uH
L3825	2462587V34	100nH
L3826	2462587N68	1uH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1uH
L400	2462587Q42	390nH, 10%
L401	2462587Q42	390nH, 10%
L410	2462587Q42	390nH, 10%
L411	2462587Q42	390nH, 10%
L505	2462587Q42	390nH, 10%
PB501	4080523Z01	Tactile, Pushbutton
PB502	4080523Z01	Tactile, Pushbutton
PB503	4080523Z01	Tactile, Pushbutton
PB504	4080523Z01	Tactile, Pushbutton
PB505	4080523Z01	Tactile, Pushbutton
Q3200	4813827A07	MMBR941
Q3201	4880214G02	NPN
Q3202	4880214G02	NPN
Q3270	4805218N63	BFQ67W
Q3301	4880214G02	NPN
Q3302	4813827A07	NPN
Q3501	4802245J55	RF Power FET
Q3721	4802245J50	UMC5N
Q3801	4813827A07	NPN
Q400	4809579E18	MOSFET P-Chan
Q403	4880214G02	NPN
Q405	4802245J54	Dual NPN
Q410	4802245J54	Dual NPN
Q416	4809579E18	MOSFET P-Chan
Q417	4802245J50	Dual NPN/PNP
Q502	5180159R01	Dual NPN
Q505	4880214G02	NPN
R3200	0662057M54	150
R3201	0662057M82	2.2K

Circuit Ref	Motorola Part No.	Description
R3202	0662057M90	4.7K
R3203	0662057M98	10K
R3204	0662057M34	22
R3205	0662057M74	1K
R3206	0662057N23	100K
R3207	0662057N13	39K
R3208	0662057M50	100
R3209	0662057M74	1K
R3210	0662057M82	2.2K
R3211	0662057M82	2.2K
R3212	0662057M90	4.7K
R3213	0662057M82	2.2K
R3214	0662057M50	100
R3215	0662057M50	100
R3218	0662057M26	10
R3219	0662057M50	100
R3220	0662057M90	4.7K
R3221	0662057M50	100
R3224	0662057M26	10
R3225	0662057M74	1K
R3226	0662057M26	10
R3270	0662057M74	1K
R3271	0662057M42	47
R3272	0662057N15	47K
R3273	0662057N15	47K
R3274	0662057M74	1K
R3275	0662057M88	3.9K
R3276	0662057N30	200K
R3303	0662057N23	100K
R3304	0662057N23	100K
R3305	0662057N15	47K
R3306	0662057M82	2.2K
R3307	0662057N11	33K
R3308	0662057M78	1.5K
R3309	0662057M92	5.6K
R3310	0662057M98	10K
R3311	0662057M26	10
R3312	0662057M38	33
R3313	0662057M34	22
R3314	0662057M26	10
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3321	0662057M54	150
R3322	0662057M58	220
R3323	0662057M32	18
R3324	0662057M74	1K
R3501	0662057M61	300
R3502	0662057M32	18
R3503	0662057M61	300
R3505	0662057M66	470
R3512	0662057A27	120
R3513	0662057A25	100
R3519	0680539Z01	0.1
R3542	0662057M92	5.6K

Circuit Ref	Motorola Part No.	Description
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N11	33K
R3547	0662057N01	12K
R3548	0662057M98	10K
R3551	0662057M40	39
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3572	0662057A27	120
R3573	0662057A27	120
R3701	0662057M50	100
R3702	0662057M01	0 NU
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R3721	0662057M66	470
R3722	0662057M74	1K
R3723	0662057M50	100
R3727	0662057N23	100K
R3741	0662057M50	100
R3751	0662057N30	200K
R3752	0662057N35	330K
R3760	0662057M01	0 NU
R3761	0662057N15	47K
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10K
R3805	0662057N08	24K
R3806	0662057M34	22
R3808	0662057M26	10
R3811	0662057M50	100
R3816	0662057M74	1K
R3817	0662057M01	0
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100
R3829	0662057M01	0
R3831	0662057M98	10K
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47
R3835	0662057N15	47K
R3836	0662057M98	10K
R400	0662057N15	47K
R401	0662057M01	0
R402	Not Placed	-
R403	Not Placed	-
R405	0662057M01	0
R406	0662057N20	75K

Circuit Ref	Motorola Part No.	Description
R407	0662057N19	68K
R408	Not Placed	-
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K, 1%
R415	0662057V26	91K, 1%
R416	0662057N13	39K
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10MEG
R421	0662057M81	2K
R423	0662057N15	47K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2.7K
R428	0662057M10	2.2
R429	0662057M98	10K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M93	6.2K
R435	0662057M81	2K
R436	0662057M01	0
R437	Not Placed	-
R445	0662057N08	24K
R446	0662057N31	220K
R447	0662057N50	1.3M
R448	0662057N33	270K
R449	0662057N08	24K
R450	0683962T45	68, 1W
R457	0662057M98	10K
R460	0662057M90	4.7K
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057M92	5.6K
R472	0662057M87	3.6K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
R507	0662057M01	0
RT400	0680590Z01	Thermistor 33K
S501	4080502B03	Channel Switch
	4080710Z02	Channel Switch (LS models- MDC in conventional)
S502	1880619Z01	Volume Switch

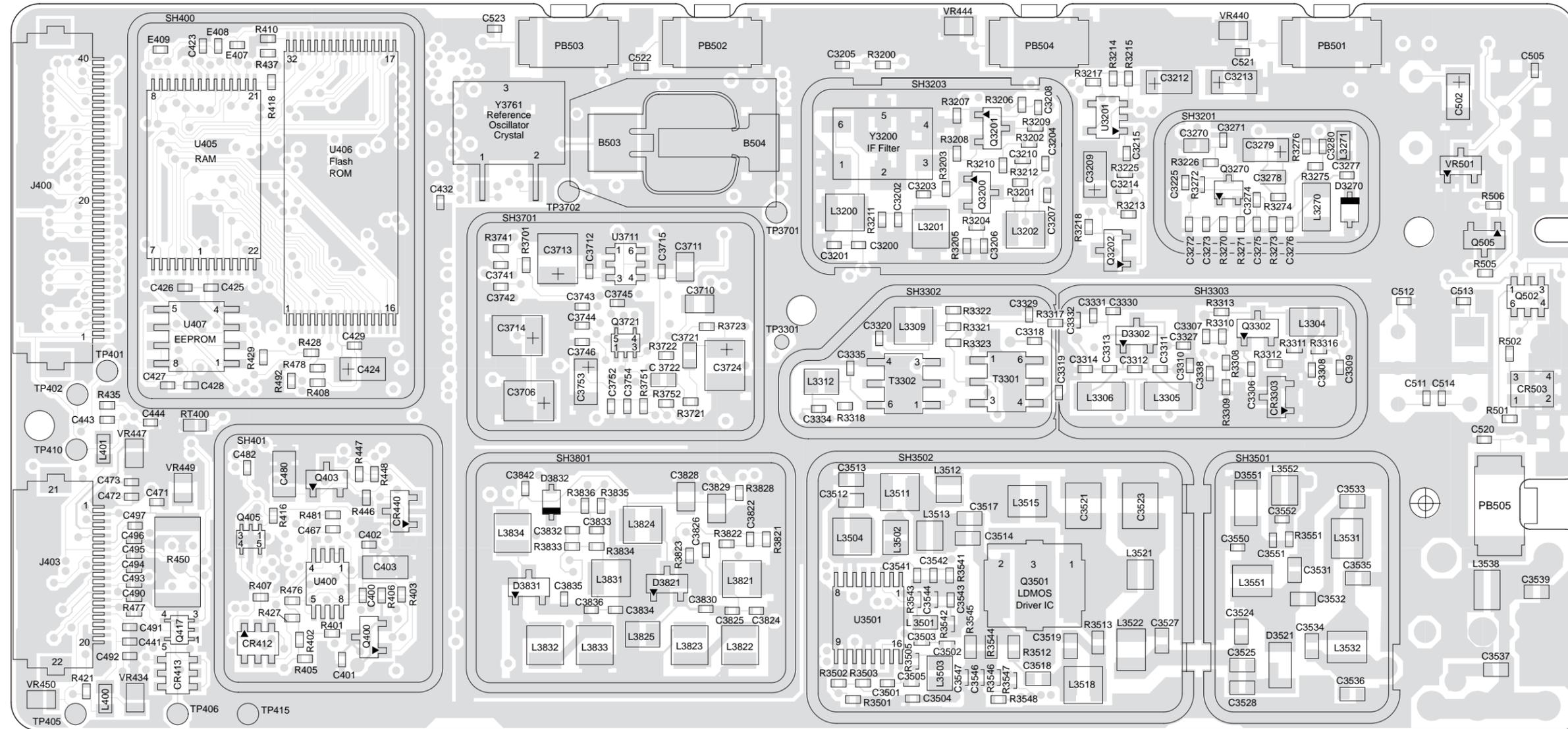
Circuit Ref	Motorola Part No.	Description
SH3201	2602023X08	SHIELD
SH3202	2686081B02	SHIELD
SH3203	2686081B03	SHIELD NU
SH3301	2686081B01	SHIELD
SH3302	2686081B05	SHIELD
SH3303	2686081B06	SHIELD
SH3501	2686081B03	SHIELD
SH3502	2686081B04	SHIELD
SH3702	2680511Z01	SHIELD
SH3801	2680513Z01	SHIELD
SH3802	2680514Z01	SHIELD
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On/Off Shield
SH402	2680515Z01	Controller Microprocessor Shield
SH403	2680516Z01	Controller AsficCmp/Audi PA Shield
T3301	2580541Z01	mgc_comps
T3302	2580541Z01	mgc_comps
U3201	5102463J58	LP2980
U3220	5109632D83	mgc_comps
U3501	5105109Z67	09Z67
U3502	5185765B01	H99S-4
U3503	5185963A15	Temperature Sense
U3701	5185963A27	mgc_comps
U3711	5105739X05	mgc_comps
U3801	5105750U54	50U54
U400	5102463J40	3.3V Reg
U404	5185963A53	AsficCmp
U405	Not Placed	-
U406	*5102463J59	ROM 256K
U407	*5102463J64	EEPROM 16Kx8
U409	5102226J55	Microcontroller
U410	5102463J57	3.3V Reg
U420	5102463J44	Audio PA
VR300	Not Placed	-
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J51	6.8V Zener
VR439	4880140L15	10V Zener
VR440	4802245J51	6.8V Zener
VR441	4802245J51	6.8V Zener
VR442	4802245J51	6.8V Zener
VR443	4802245J51	6.8V Zener
VR444	4802245J51	6.8V Zener
VR445	4802245J53	10V Zener
VR446	4802245J53	10V Zener
VR447	4802245J53	10V Zener
VR448	4802245J53	10V Zener
VR449	4802245J53	10V Zener
VR450	4802245J53	10V Zener
VR501	4813830A18	6.8V Zener
VR506	4802245J51	6.8V Zener
Y3200	4802245J43	XTAL
Y3761	4802245J49	mgc_comps

\* Motorola Depot Servicing only

## Notes

### 9.20 VHF Circuit Board/Schematic Diagrams and Parts List (PCB 8486062B12)

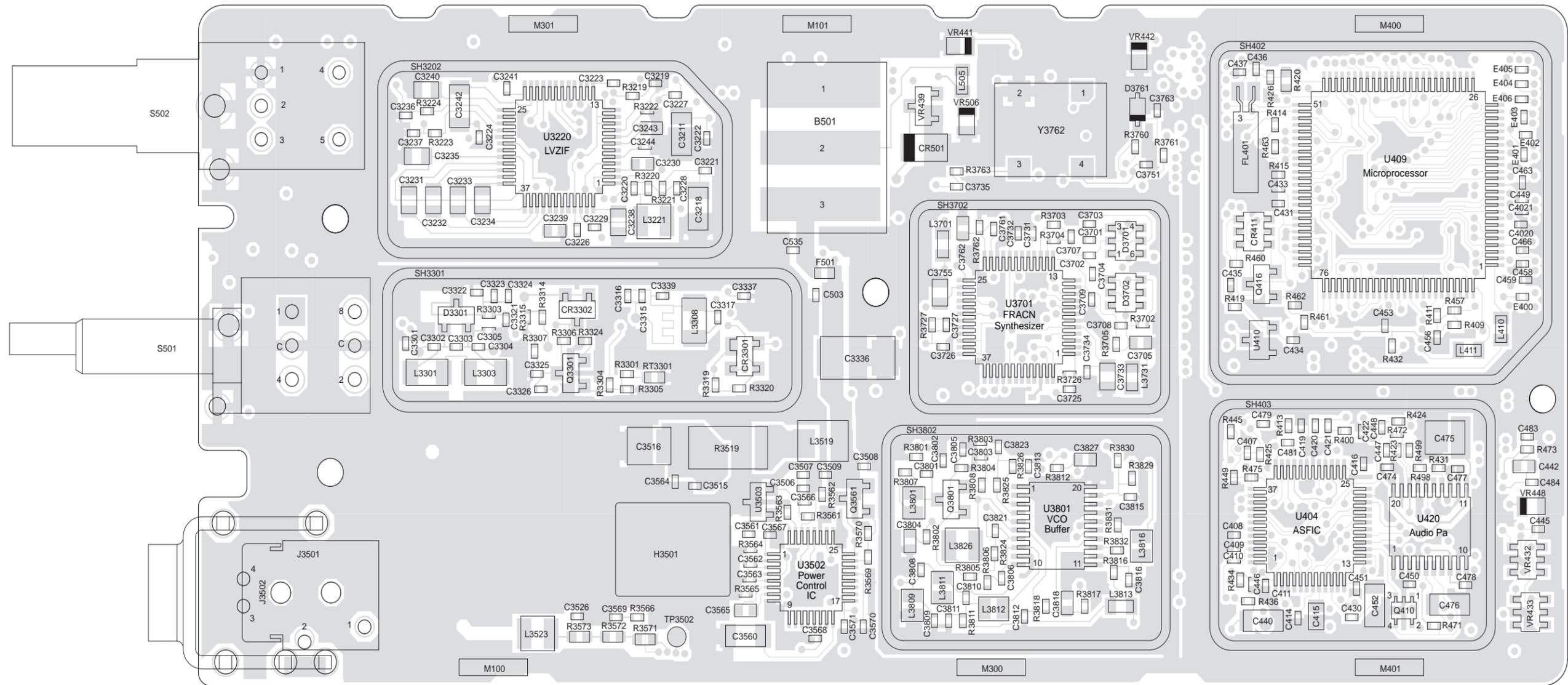
VIEWED FROM SIDE 1



ZWG0130072-E

Figure 9-173. VHF (136-174 MHz) 5000/7000 Series Main Board Top Side PCB 8486062B12

VIEWED FROM SIDE 2



ZWG0130073-D

Figure 9-174. VHF (136-174 MHz) 5000/7000 Series Main Board Bottom Side PCB 8486062B12

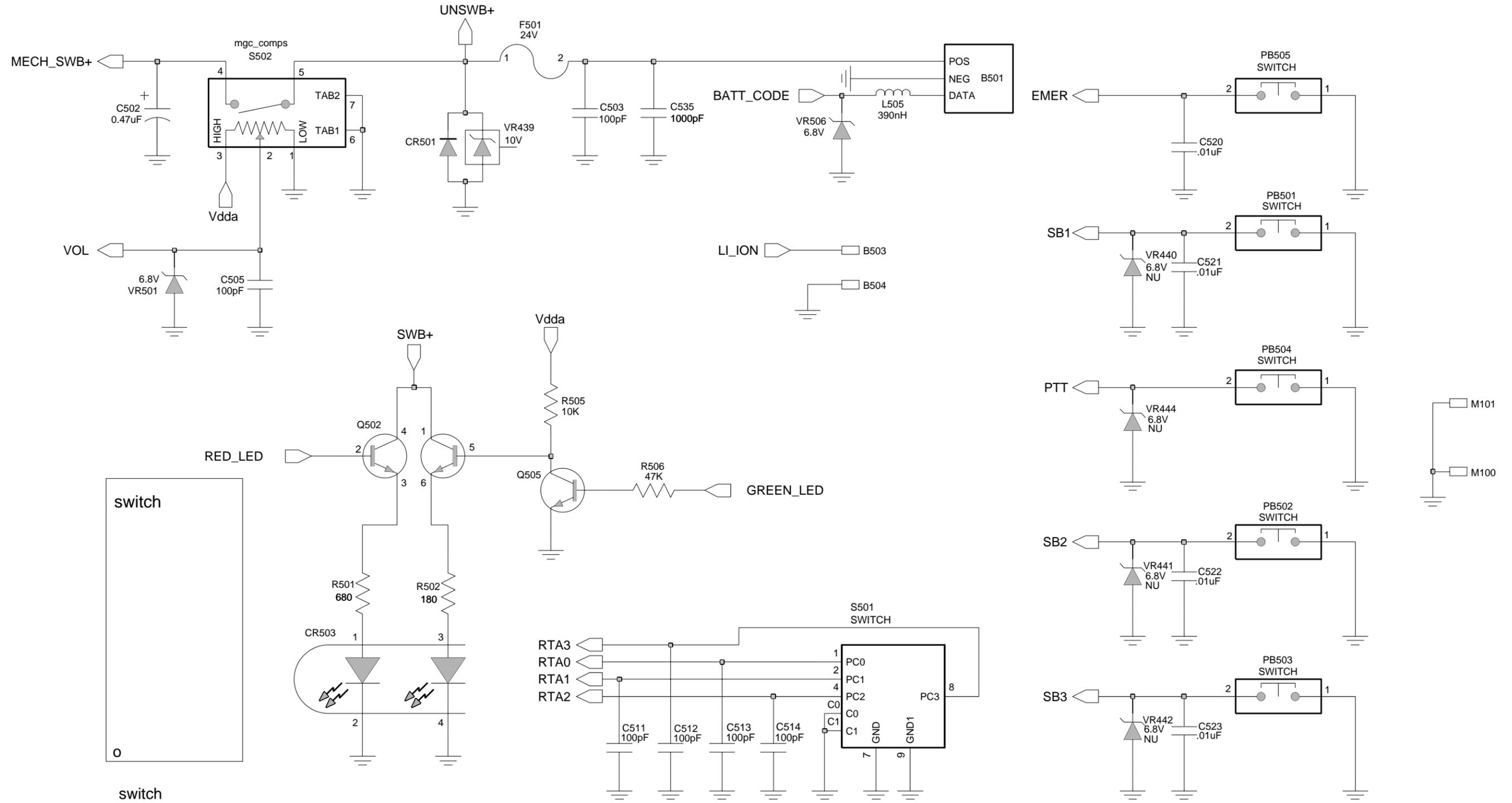
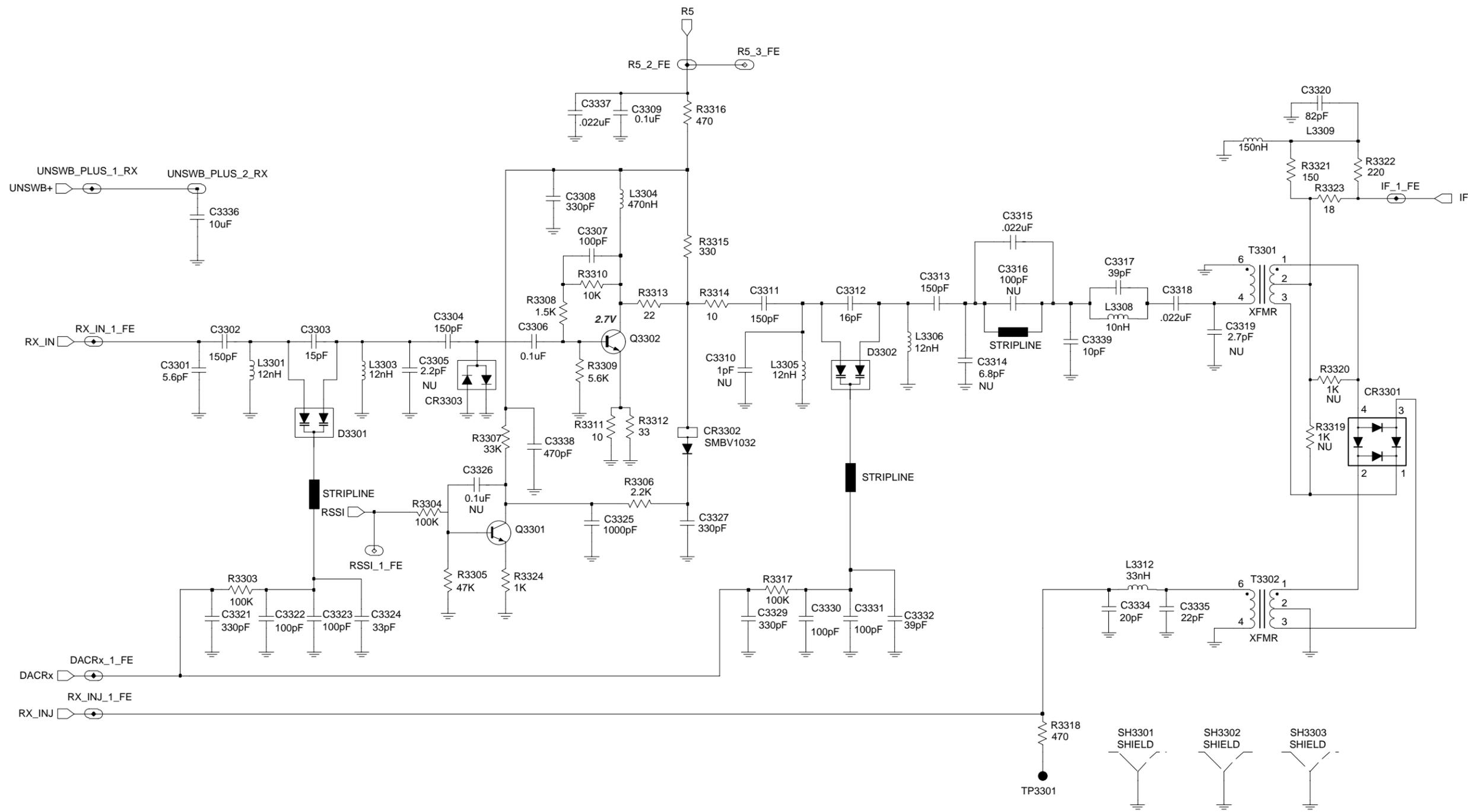


Figure 9-175. VHF (136-174 MHz) Controls and Switches Schematic Diagram

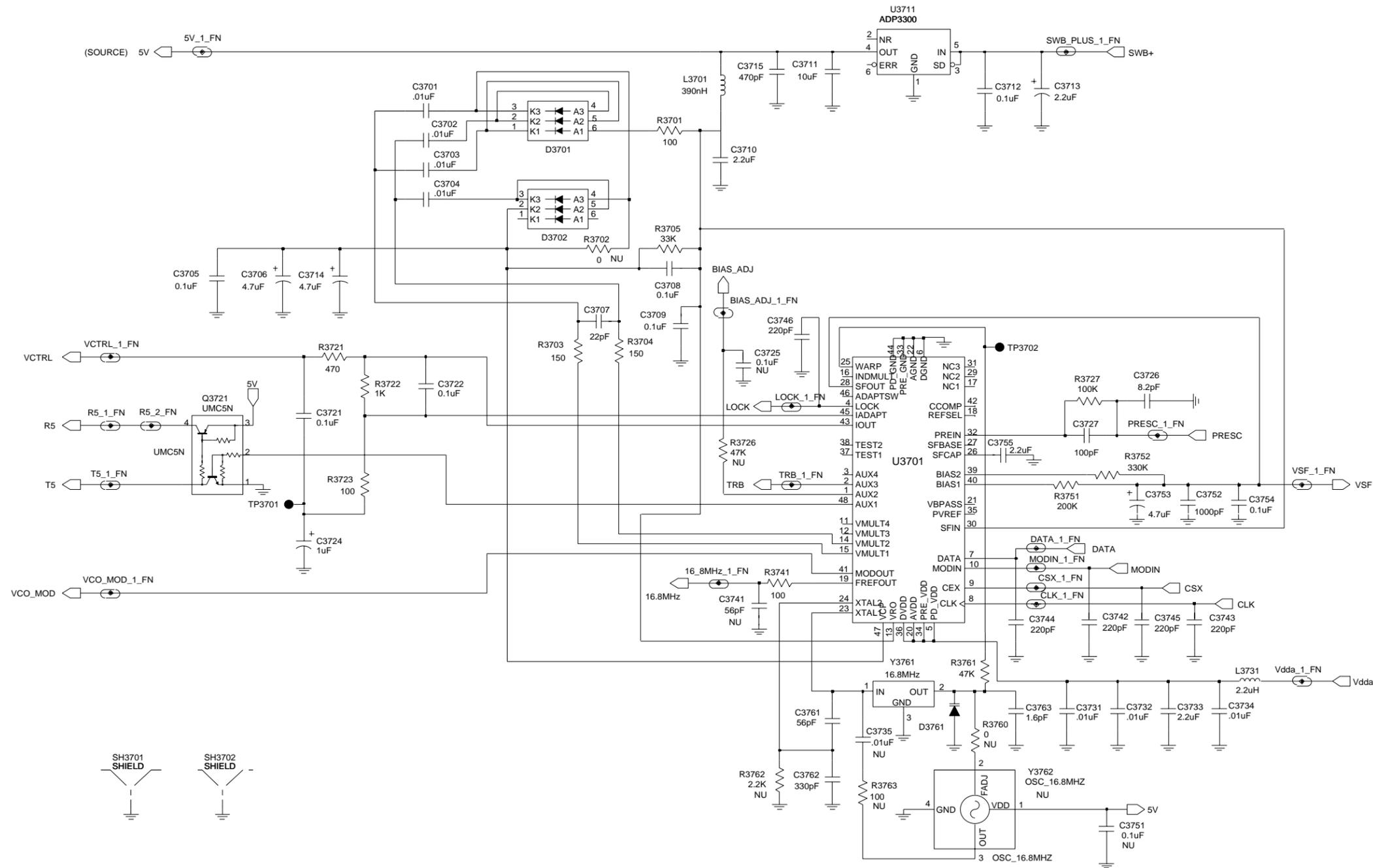


ZWG0130023-A

Figure 9-176. VHF (136-174 MHz) Receiver Front End Schematic Diagram

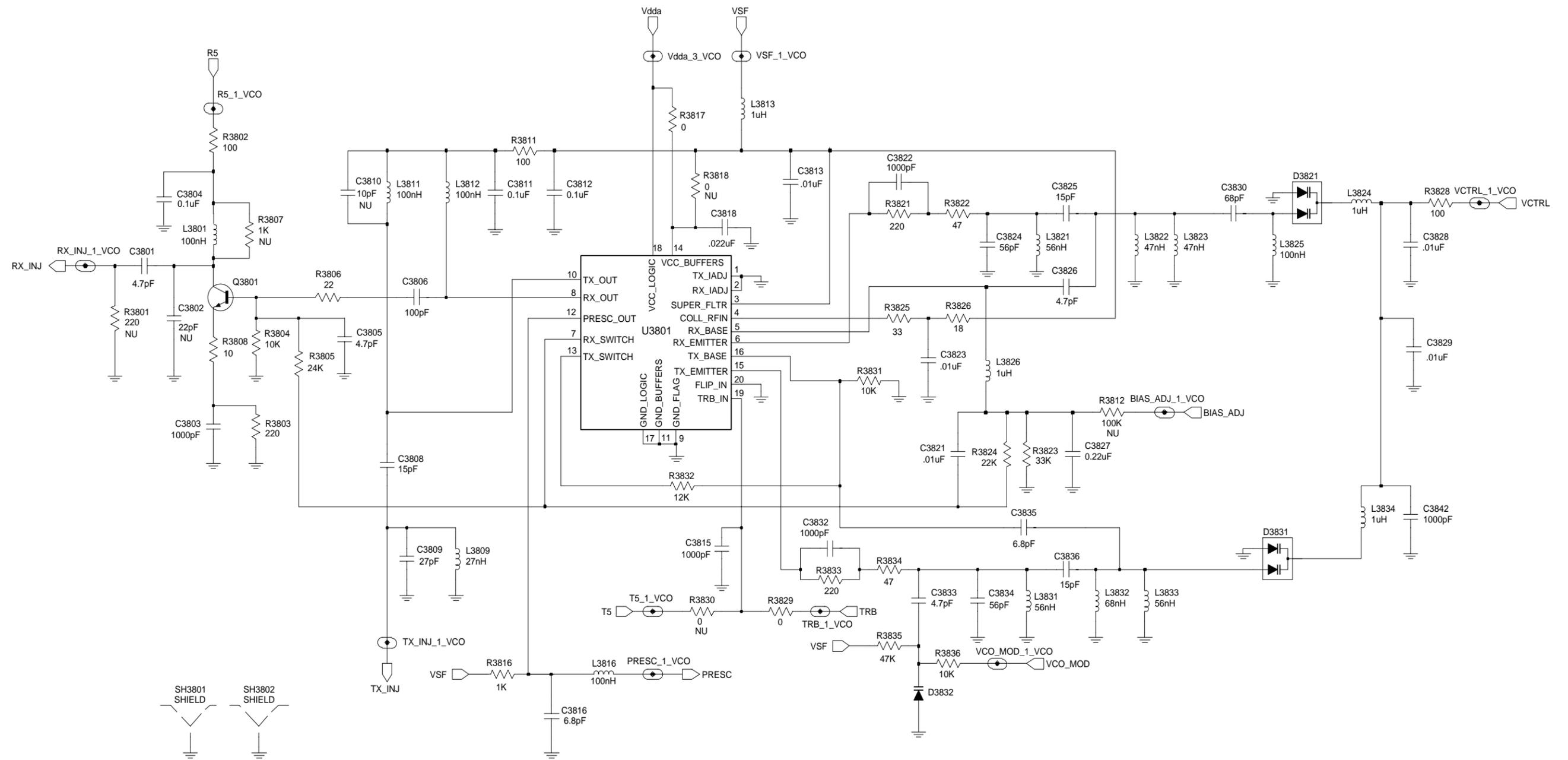






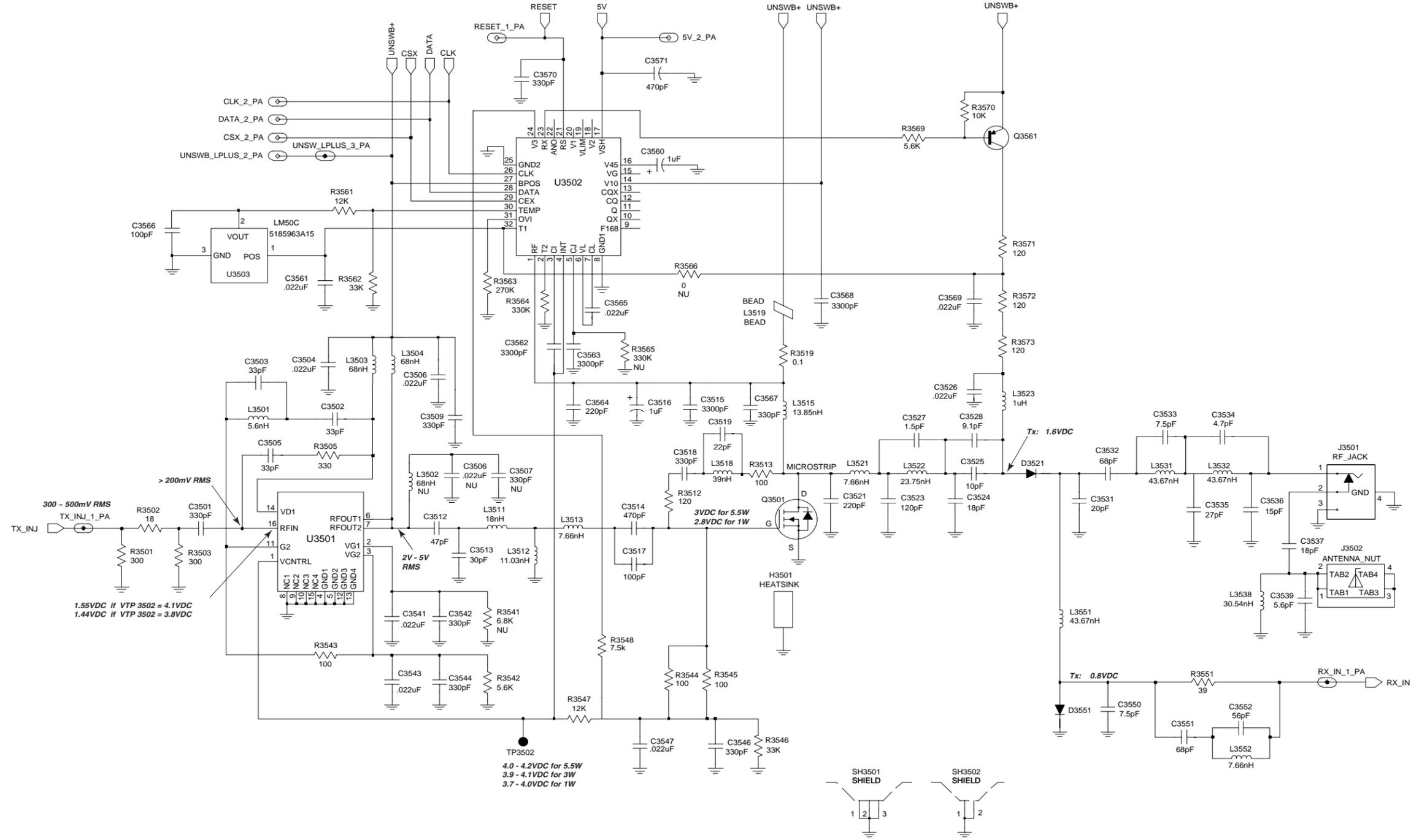
ZWG0130022-C

Figure 9-178. VHF (136-174 MHz) Synthesizer Schematic Diagram



ZWG0130020-B

Figure 9-179. VHF (136-174 MHz) Voltage Controlled Oscillator Schematic Diagram



ZWG0130021-D

Figure 9-180. VHF (136-174 MHz) Transmitter Schematic Diagram

**VHF (136-174 MHz) 5000/7000 Series Radio  
Parts List (PCB 8486062B12)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C3200	2113743N31	16pF
C3203	2113743N50	100pF
C3204	2113743L41	0.01uF
C3205	2113928N01	0.1uF
C3206	2113743L41	0.01uF
C3207	2113743N10	2.2pF
C3209	2311049A07	1uF
C3210	2113743L17	1000pF
C3211	2311049A56	4.7uF
C3212	2311049A07	1uF
C3213	2311049A56	4.7uF
C3214	2113928N01	0.1uF
C3215	2113743N26	10pF
C3218	2311049A56	4.7uF
C3219	2113928N01	0.1uF
C3220	2113743N26	10pF
C3221	2113743L41	0.01uF
C3222	2113928N01	0.1uF
C3223	2113928N01	0.1uF
C3224	2113928N01	0.1uF
C3225	2113928N01	0.1uF
C3226	2113928N01	0.1uF
C3227	2113743L41	0.01uF
C3228	2113743L41	0.01uF
C3229	2113743N50	100pF
C3230	2113740F51	100pF
C3231	2180478Z20	1uF
C3232	2180478Z20	1uF
C3233	2180478Z20	1uF
C3234	2180478Z20	1uF
C3235	2113743A23	0.220uF
C3238	2113743A24	.0.330uF
C3239	2113743E07	0.022uF
C3240	2113743A23	0.220uF
C3241	2113743L19	1200pF
C3242	2109720D14	0.1uF
C3243	2113743E07	0.022uF
C3244	2113743L41	0.01uF
C3270	2113743E07	0.022uF
C3271	2113743L05	330pF
C3272	2113743N18	4.7pF
C3273	2113743N26	10.0pF
C3274	2113743N38	33.0pF
C3275	2113743N44	56.0pF
C3276	2113743N42	47.0pF
C3277	2113743N48	82.0pF
C3278	2113743E07	0.022uF
C3279	2311049A40	2.2uF
C3280	2113743L41	0.01uF
C3301	2113743N20	5.6pF
C3302	2113743N54	150pF

Circuit Ref	Motorola Part No.	Description
C3303	2113743N30	15.0pF
C3304	2113743N54	150pF
C3306	2113928N01	0.1uF
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113928N01	0.1uF
C3311	2113743N54	150pF
C3312	2113743N31	16.0pF
C3313	2113743N54	150pF
C3315	2113743N26	10.0pF
C3316	2113743N14	3.3pF
C3317	2113743N40	39pF
C3318	2113743M08	0.022uF
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A18	10uF
C3337	2113743M08	0.022pF
C3338	2113743L09	470pF
C3339	2113743N26	10pF
C3501	2113743L05	330pF
C3502	2113743N38	33pF
C3503	2113743N38	33pF
C3504	2113743M08	0.022pF
C3505	2113743N38	33pF
C3508	2113743M08	0.022pF
C3509	2113743L05	330pF
C3512	2113740F43	47pF
C3513	2113740F38	30pF
C3514	2113740F67	470pF
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F51	100pF
C3518	2113740F63	330pF
C3519	2113740F35	22pF
C3521	2111078B51	220pF
C3523	2111078B44	120pF
C3524	2113740F33	18pF
C3525	2113740F27	10pF
C3526	2113743M08	0.022pF
C3528	2113740F26	9.1pF
C3531	2113740F34	20pF
C3532	2113740F47	68pF
C3533	2113740F24	7.5pF
C3534	2113740F19	4.7pF
C3535	2113740F37	27

Circuit Ref	Motorola Part No.	Description
C3536	2113740F31	15
C3537	2113740F33	18
C3539	2113740F21	5.6
C3541	2113743M08	0.022pF
C3542	2113743L05	330pF
C3543	2113743M08	0.022pF
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	0.022pF
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1.0uF
C3561	2113743M08	0.022pF
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF
C3564	2113743L01	220pF
C3565	2113743E07	0.022uF
C3566	2113743N50	100pF
C3567	2113743L05	330pF
C3568	2113743L29	3300pF
C3569	2113743M08	0.022pF
C3570	2113743L05	330pF
C3571	2113743L09	470pF
C3701	2113743L41	0.01uF
C3702	2113743L41	0.01uF
C3703	2113743L41	0.01uF
C3704	2113743L41	0.01uF
C3705	2113743E20	10 uF
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113743M24	0.1uF
C3709	2113743M24	0.1uF
C3710	2104993J02	2.2uF
C3711	2311049A69	10uF
C3712	2113743M24	0.1uF
C3713	2311049A09	2.2 uF
C3714	2311049J11	4.7uF
C3715	2113743L09	470pF
C3721	2113743E20	10 uF
C3722	2113743E20	10 uF
C3724	2311049A08	1uF
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	0.01uF
C3732	2113743L41	0.01uF
C3733	2104993J02	2.2uF
C3734	2113743L41	0.01uF
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3752	2113743L17	1000pF
C3753	2311049A56	4.7uF
C3754	2113743M24	0.1uF

Circuit Ref	Motorola Part No.	Description
C3755	2104993J02	2.2uF
*C3761	2113743N44	56.0pF
*C3762	2113740F63	330pF
*C3763	2113743N08	1.6pF
C3801	2113743N18	4.7pF
C3803	2113743L17	1000pF
C3804	2113743E20	10uF
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3811	2113743M24	0.1uF
C3812	2113743M24	0.1uF
C3813	2113743L41	0.01uF
C3815	2113743L17	1000pF
C3816	2113743N22	6.8pF
C3818	2113743E07	0.022uF
C3821	2113743L41	0.01uF
C3822	2113743L17	1000pF
C3823	2113743L41	0.01uF
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	0.022uF
C3828	2109720D01	0.01uF
C3829	2109720D01	0.01uF
C3830	2113743N46	68.0pF
C3832	2113743L17	1000pF
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF
C3836	2113743N30	15.0pF
C3842	2113743L17	1000pF
C400	2113743L41	0.01uF
C401	2113743M24	0.1uF
C402	2113743M24	0.1uF
C403	2113928D08	10uF
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	0.01uF
C410	2113928N01	0.1uF
C411	2113743M24	0.01uF
C414	2113743M24	0.01uF
C415	2109720D01	0.01uF
C416	2113928N01	0.1uF
C419	2113743L41	0.01uF
C420	2113743L41	0.01uF
C421	2113928N01	0.1uF
C422	2113743M24	0.01uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	0.01uF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	0.01uF
C429	2113743M24	0.01uF

Circuit Ref	Motorola Part No.	Description
C430	2113928N01 0662057M01	0.1uF, 10% 0 (SUB on LS+ Models Only)
C431	2113743N50	100pF
C433	2113743L41	0.01uF
C434	2113743M24	0.01uF
C435	2113743M24	0.01uF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF
C441	2113743L09	470pF
C442	2113743E20	10 uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743L09	470pF
C446	2113743L09	470pF
C447	2113928N01	0.1uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C451	2113743M08	0.022pF
C452	2113743G26	4.7uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743L09	470pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C474	2113743L41	0.01uF
C475	2113743H14	10uF
C476	2113928D08	10.0uF
C477	2113743L17	1000pF
C478	2113743L17	1000pF
C479	2113928N01	0.1uF
C480	2113928D08	10.0uF
C481	2113928N01	0.1uF
C482	2113928N01 0662057M01	0.1uF, 10% 0 (SUB on LS+ Models Only)
C483	2113743L09	470pF
C484	2113743L09	470pF
C490	2113743L09	470pF
C491	2113743L09	470pF
C492	2113743L09	470pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743L09	470pF
C496	2113743L09	470pF
C497	2113743L09	470pF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C514	2113743N50	100pF
C520	2113743L41	0.01uF
C521	2113743L41	0.01uF
C522	2113743L41	0.01uF
C523	2113743L41	0.01uF
C535	2113743L17	0.01uF
CR330	4802245J42	Ring Quad Diode
CR330	4805129M96	SMBV1032
CR330	4880154K03	Dual Common Anode Cathode
CR411	4802245J47	Schottky Diode
CR412	4802245J62	Schottky Diode
CR413	4802245J62	Schottky Diode
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
D3270	4862824C01	Varactor
D3301	4802081B58	Dual Diode
D3302	4802081B58	Dual Diode
D3521	4880973Z02	Pin Diode
D3551	4880973Z02	Pin Diode
D3701	4802233J09	Triple Diode
D3702	4802233J09	Triple Diode
D3761	4862824C03	Varactor
D3821	4805649Q13	Dual Varactor
D3831	4805649Q13	Dual Varactor
D3832	4862824C01	Varactor
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL401	4870368G02	Crystal Oscillator 38.4 kHz
H3501	2680499Z01	Heatsink
J3501	0180117S05	RF Jack
J3502	0280519Z02	Antenna Nut
J400	0905505Y04	40-Pin Connector
J403	0905505Y02	20-Pin Connector
L3200	2462587N68	1uH
L3202	2462587N68	1uH
L3221	2462587N68	1uH
L3270	2462587T15	100nH
L3271	2462587Q20	2.2uH
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH

Circuit Ref	Motorola Part No.	Description
L3501	2413926H09	5.6nH
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH
L3512	2479990B01	11.03nH
L3513	2479990A02	7.66nH
L3515	2479990C03	13.85nH
L3518	2462587N48	39nH
L3519	2484657R01	Bead
L3521	2479990A02	7.66nH
L3522	2479990E01	23.75nH
L3523	2462587N68	1uH
L3531	2479990N01	43.67nH
L3532	2479990N01	43.67nH
L3538	2479990N01	30.54nH
L3551	2479990N01	43.67nH
L3552	2479990A02	7.66nH
L3701	2462587Q42	390nH
L3731	2462587Q20	2.2uH
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1uH
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1uH
L3825	2462587V34	100nH
L3826	2462587N68	1uH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1uH
L400	2462587Q42	390nH
L401	2462587Q42	390uH
L410	2462587Q42	390uH
L411	2462587Q42	390uH
L505	2462587Q42	390uH
PB501	4080523Z01	Tactile, Pushbutton
PB502	4080523Z01	Tactile, Pushbutton
PB503	4080523Z01	Tactile, Pushbutton
PB504	4080523Z01	Tactile, Pushbutton
PB505	4080523Z01	Tactile, Pushbutton
Q3200	4813827A07	NPN
Q3201	4880214G02	NPN
Q3202	4880214G02	NPN
Q3270	4805218N63	BFQ67W
Q3301	4880214G02	NPN
Q3302	4813827A07	NPN
Q3501	4802245J55	RF Power FET
Q3561	4813824A17	PNP
Q3721	4802245J50	Dual NPN/PNP
Q3801	4813827A07	NPN
Q400	4809579E18	MOSFET P-Chan

Circuit Ref	Motorola Part No.	Description
Q403	4880214G02	NPN
Q405	4802245J54	Dual NPN
Q410	4802245J54	Dual NPN
Q416	4809579E18	MOSFET p-CHAN
Q417	4802245J50	Dual NPN/PNP
Q502	5180159R01	NPN
Q505	4880214G02	TSTR MMBT3904
R3200	0662057M54	150
R3201	0662057M82	2.2K
R3202	0662057M90	4.7K
R3203	0662057M98	10K 5
R3204	0662057M26	10
R3205	0662057M74	1K
R3206	0662057N23	100K
R3207	0662057N13	39K
R3208	0662057M50	100
R3209	0662057M74	1K
R3210	0662057M82	2.2K
R3211	0662057M82	2.2K
R3212	0662057M90	4.7K
R3213	0662057M82	2.2K
R3214	0662057M34	22
R3219	0662057M50	100
R3220	0662057M90	4.7K
R3221	0662057M50	100
R3224	0662057M26	10
R3225	0662057M74	1K
R3226	0662057M26	10
R3270	0662057M74	1KK
R3271	0662057M42	47 K
R3272	0662057N15	47KK
R3273	0662057N15	47K K
R3274	0662057M83	2.4K
R3275	0662057M74	1K
R3276	0662057N30	200K
R3303	0662057N23	100K
R3304	0662057N23	100K
R3305	0662057N19	68K
R3306	0662057M82	2.2K
R3307	0662057N11	33K
R3308	0662057M78	1.5K
R3309	0662057M92	5.6K
R3310	0662057M98	10K
R3311	0662057M26	10
R3312	0662057M38	33
R3313	0662057M34	22
R3314	0662057M26	10
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3321	0662057M54	150
R3322	0662057M58	220
R3323	0662057M32	18
R3324	0662057M58	220
R3501	0662057M61	300

Circuit Ref	Motorola Part No.	Description
R3502	0662057M32	18
R3503	0662057M61	300
R3505	0662057M62	330
R3512	0662057A27	120
R3513	0662057A25	100
R3519	0680539Z01	0.1
R3542	0662057M92	5.6K
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N11	33K
R3547	0662057N01	12K
R3548	0662057M95	7.5K
R3551	0662057M40	39
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3569	0662057M92	5600
R3570	0662057M98	10K
R3571	0662057A27	5.6K
R3572	0662057A27	120
R3573	0662057A27	120
R3701	0662057M50	100
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R3721	0662057M66	470
R3722	0662057M74	1000
R3723	0662057M50	100
R3727	0662057N23	100K
R3741	0662057M50	100
R3751	0662057N30	200K
R3752	0662057N35	330K
R3761	0662057N15	47K
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10K
R3805	0662057N08	24K
R3806	0662057M34	22
R3808	0662057M26	10
R3811	0662057M50	100
R3816	0662057M74	1K
R3817	0662057M01	0
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100
R3829	0662057M01	0
R3831	0662057M98	10K
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47

Circuit Ref	Motorola Part No.	Description
R3835	0662057N15	47K
R3836	0662057M98	10K
R400	0662057N15	47K
R401	0662057M01	0
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057N13	39K
R418	0662057M01	0
R419	0662057M67	0
R420	0662057B46	10M
R421	0662057M81	2K
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057M98	10K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2K
R436	0662057M01	0
R445	0662057N08	24K
R446	0662057N31	220K
R447	0662057N51	1.5M
R448	0662057N33	270K
R449	0662057N08	24K
R450	0683962T45	68
R457	0662057M98	10K
R460	0662057M90	4.7K
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057M92	5.6K
R472	0662057M93	6.2K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
RT400	0680590Z01	33K
S501	4080710Z02	Frequency Switch

Circuit Ref	Motorola Part No.	Description
S502	1880619Z01	Volume Potentiometer
SH3201	2602023X08	Shield
SH3202	2686081B02	Shield
SH3203	2686081B03	Shield
SH3301	2686081B01	Shield
SH3302	2686081B05	Shield
SH3303	2686081B06	Shield
SH3501	2686081B03	Shield
SH3502	2686081B04	Shield
SH3701	2680511Z01	Shield, Synthesizer
SH3702	2680511Z01	Shield
SH3801	2680513Z01	Shield, VCO Top
SH3802	2680514Z01	Shield, VCO Bottom/LVZIF
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On/Off Shield
SH402	2680515Z01	Controller Microprocessor Shield
SH403	2680516Z01	Controller ASFIC Compander/Audio PA Shield
T3301	2580541Z01	Transformer Coil
T3302	2580541Z01	Transformer Coil
U3201	5102463J58	3.3V Regulator
U3220	5109632D83	Low Voltage ZIF
U3501	5105109Z67	LDMOS Driver
U3502	5185765B01	Power Control IC
U3503	5185963A15	Temperature Sense
U3701	5185963A27	Low Voltage FracN
U3711	5105739X05	Regulator, Linear
U3801	5105750U54	VCO Buffer
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC
U405	5102463J36	Static RAM
U406	5102463J60	512KX8 Flash ROM
U407	5102463J64	16KX8 EEPROM
U409	5102226J56	Microcontroller
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J51	6.8V Zener
VR439	4880140L15	10V Zener
VR447	4802245J53	10V Zener
VR448	4802245J53	10V Zener
VR449	4802245J53	10V Zener
VR450	4802245J53	10V Zener
VR501	4813830A18	6.8V Zener
VR506	4802245J51	6.8V Zener
Y3200	9186153B01	Crystal Filter
Y3761	4802245J49	Crystal 16.8 MHz

\* Motorola Depot Servicing only

## Notes







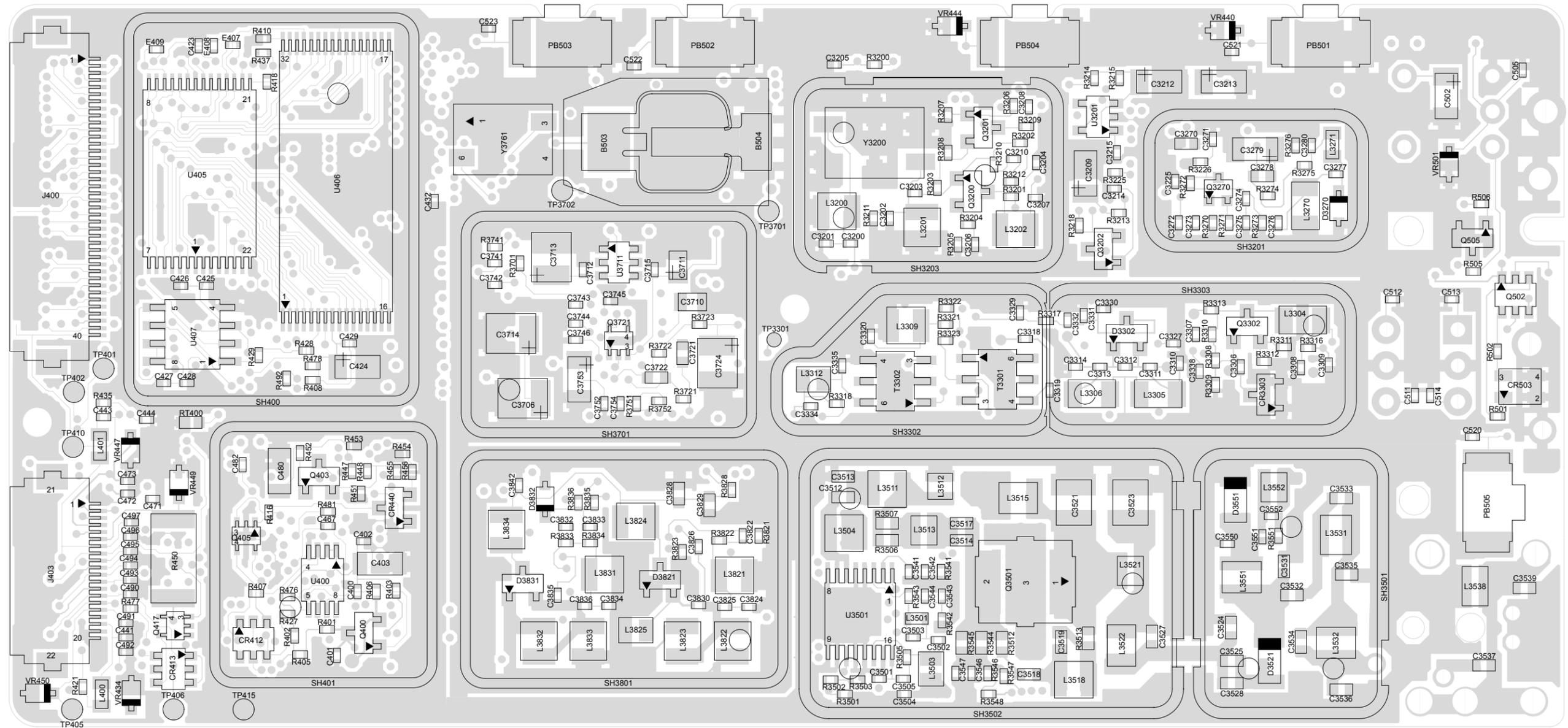
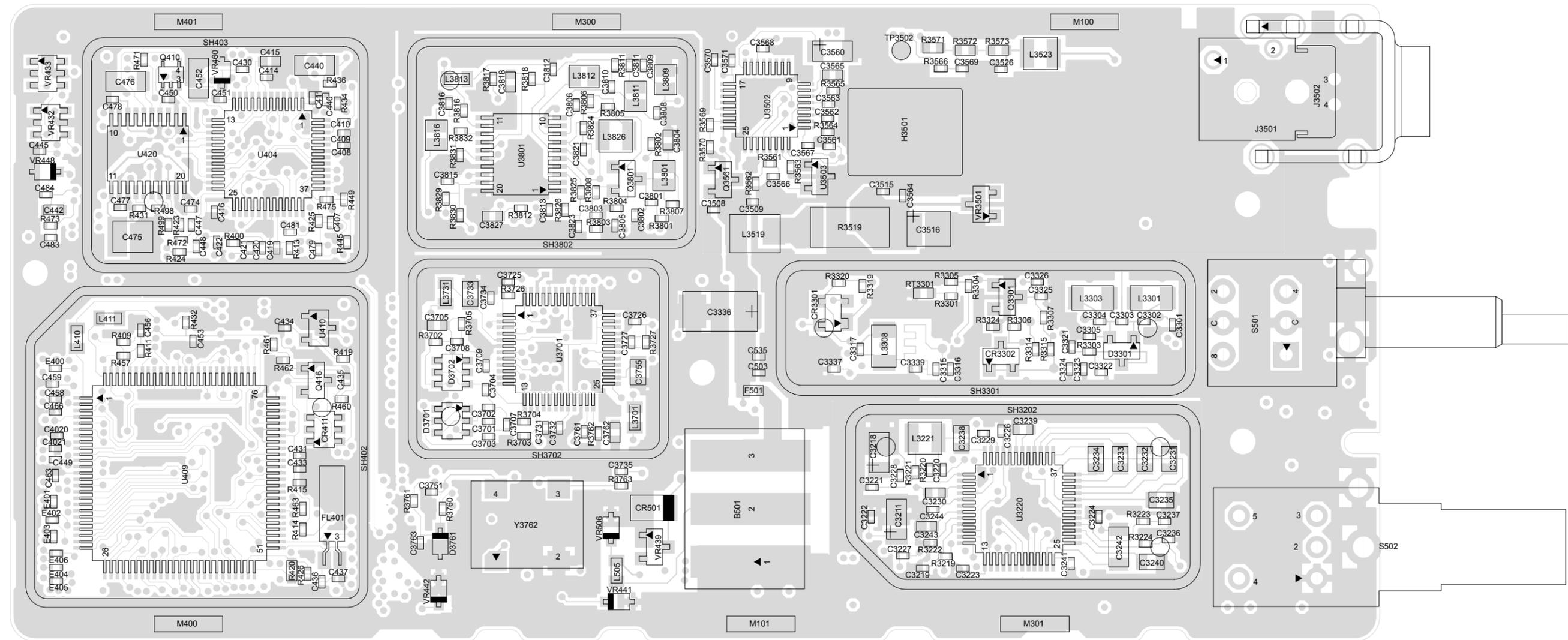


Figure 9-183. VHF (136-174 MHz) 5000/7000 Series Main Board Top Side PCB 8486062B17





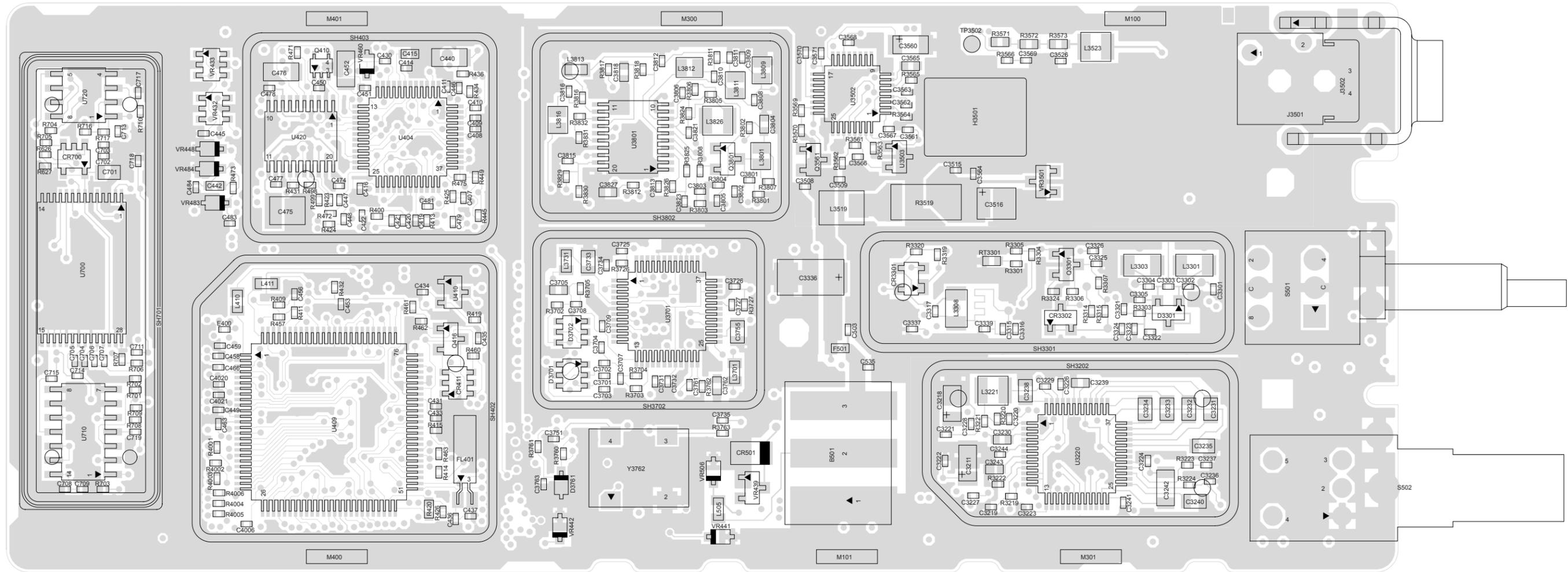


Figure 9-186. VHF (136-174 MHz) 5000/7000 Series Main Board Bottom Side PCB 8486101B11

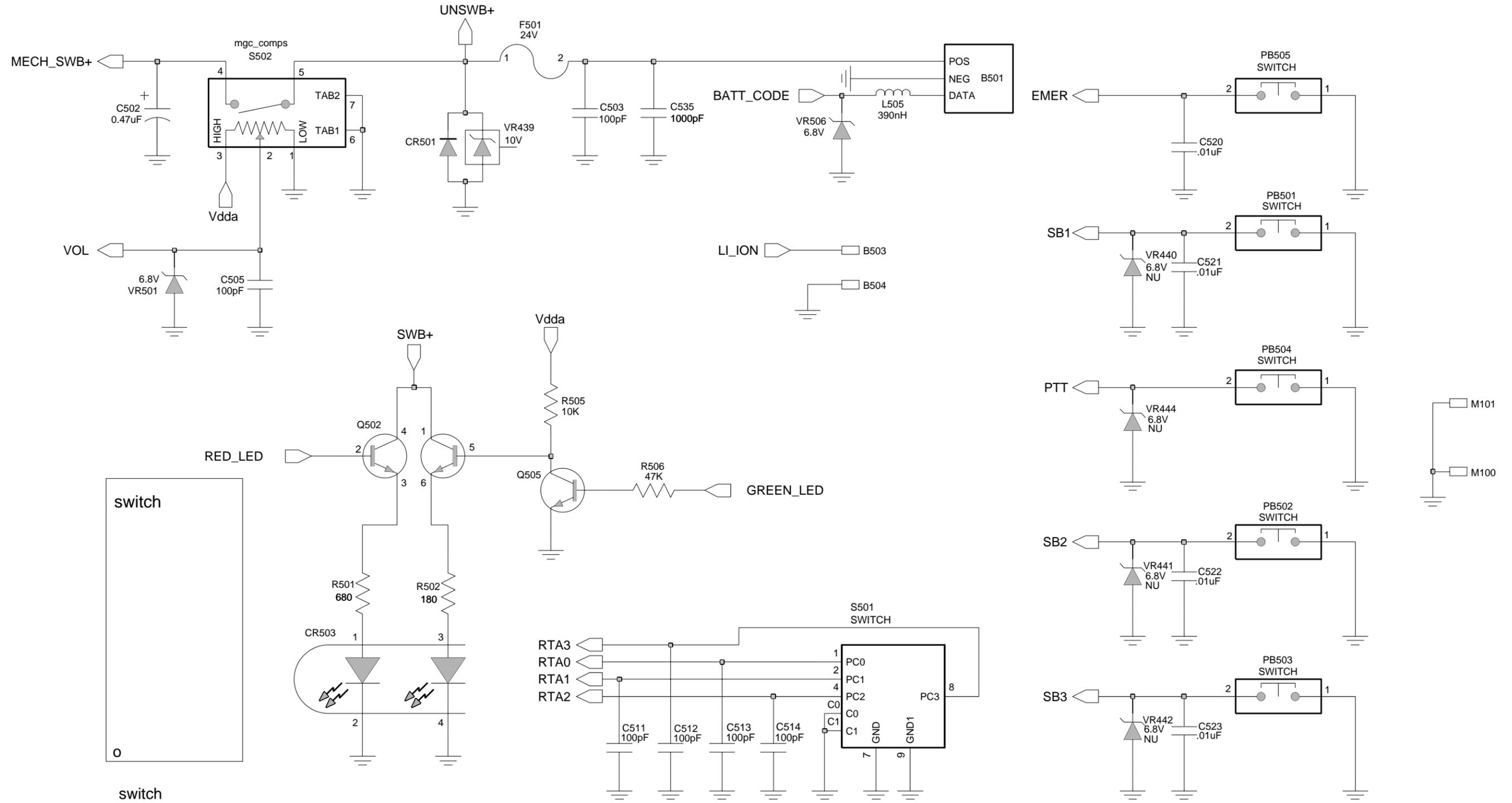
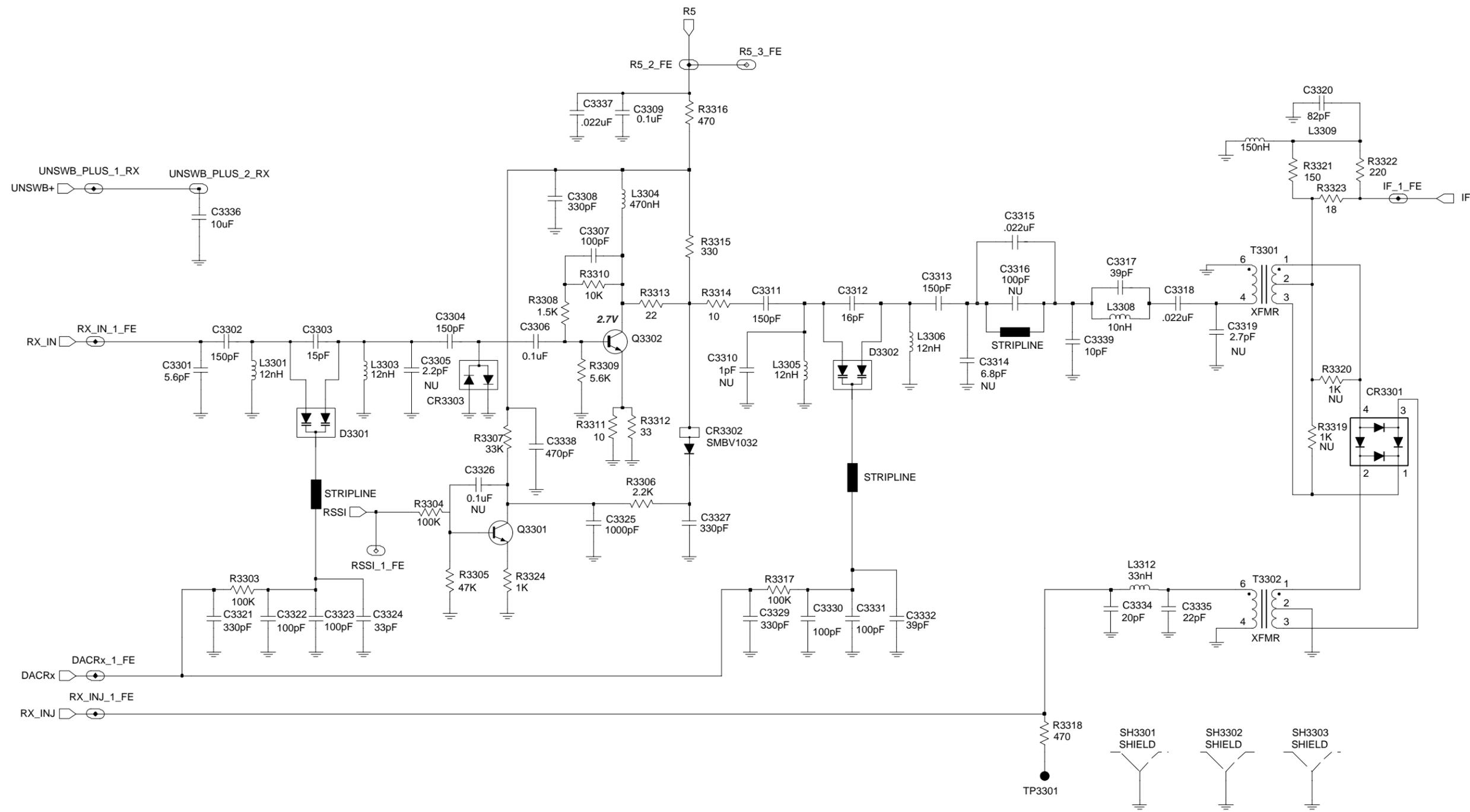


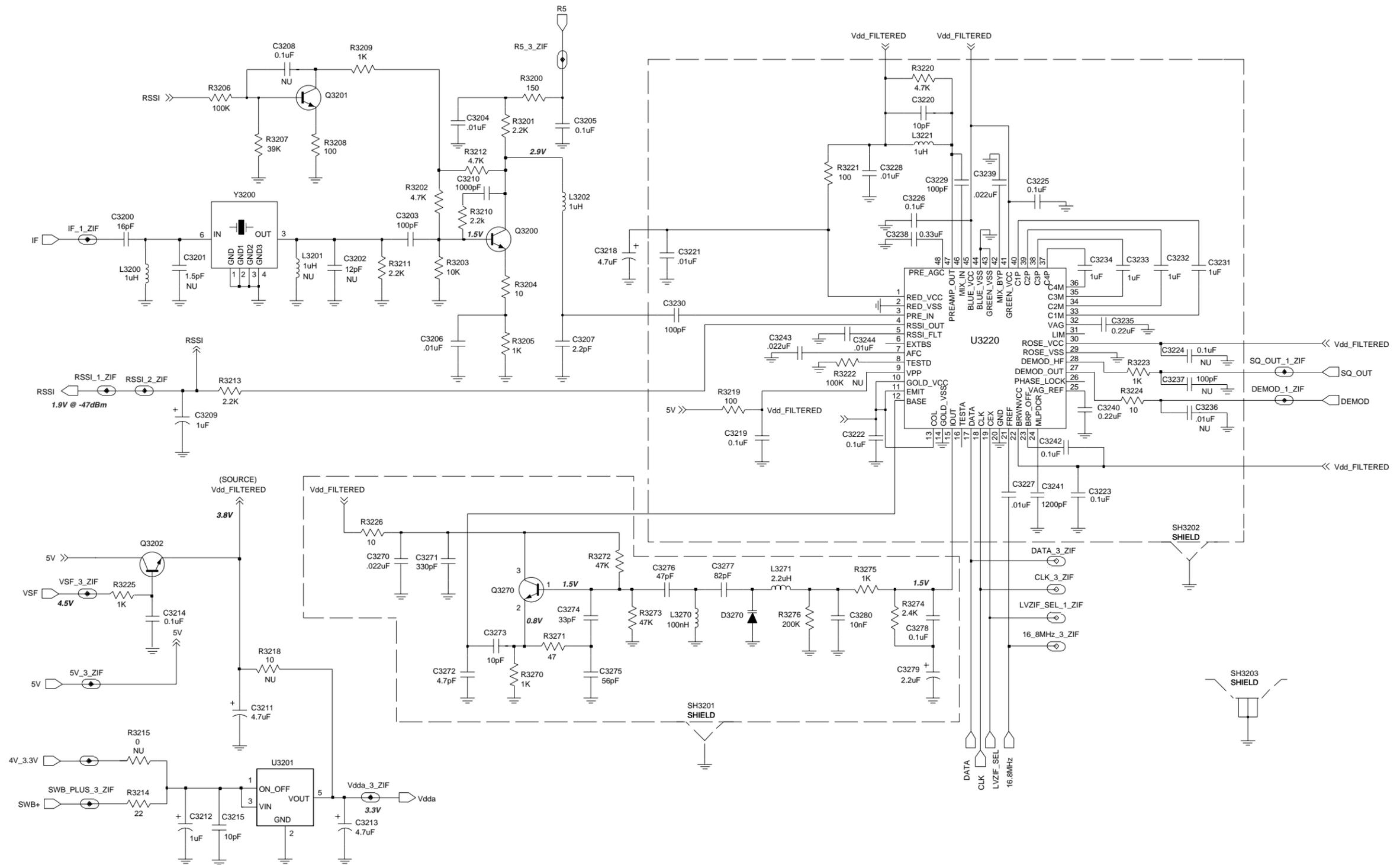
Figure 9-187. VHF (136-174 MHz) Controls and Switches Schematic Diagram



ZWG0130023-A

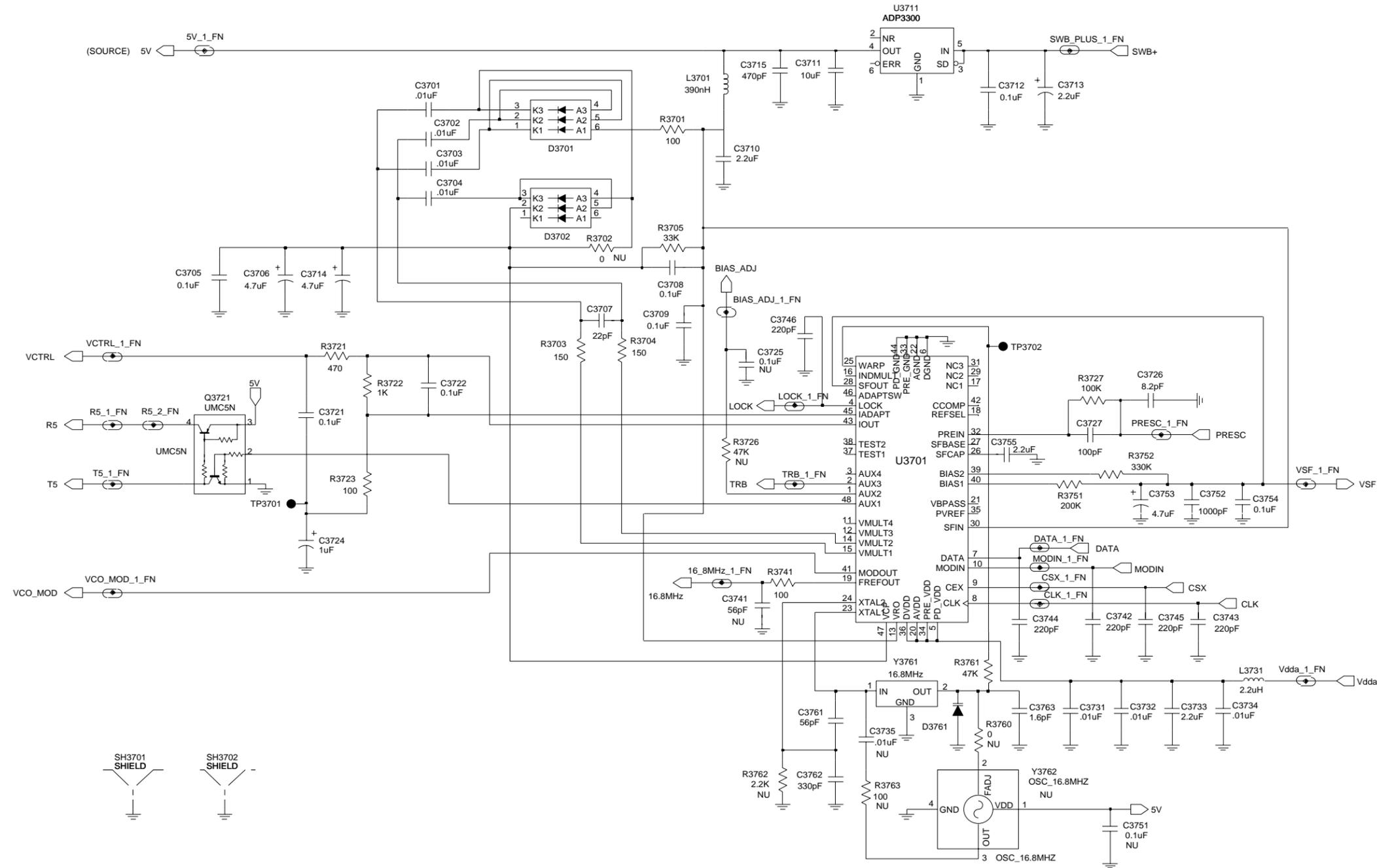
Figure 9-188. VHF (136-174 MHz) Receiver Front End Schematic Diagram





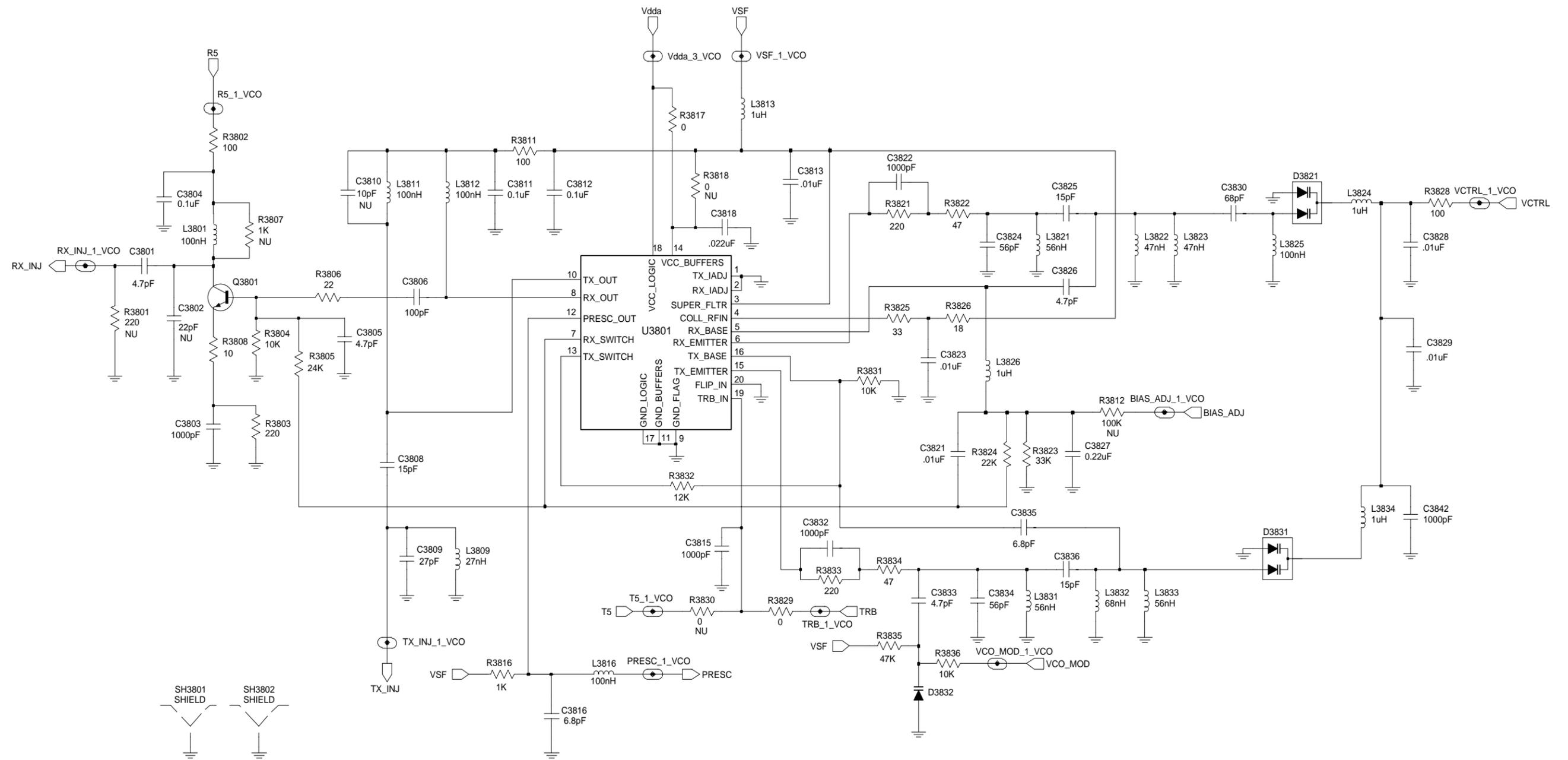
ZWG0130025-B

Figure 9-189. VHF (136-174 MHz) Receiver Back End Schematic Diagram



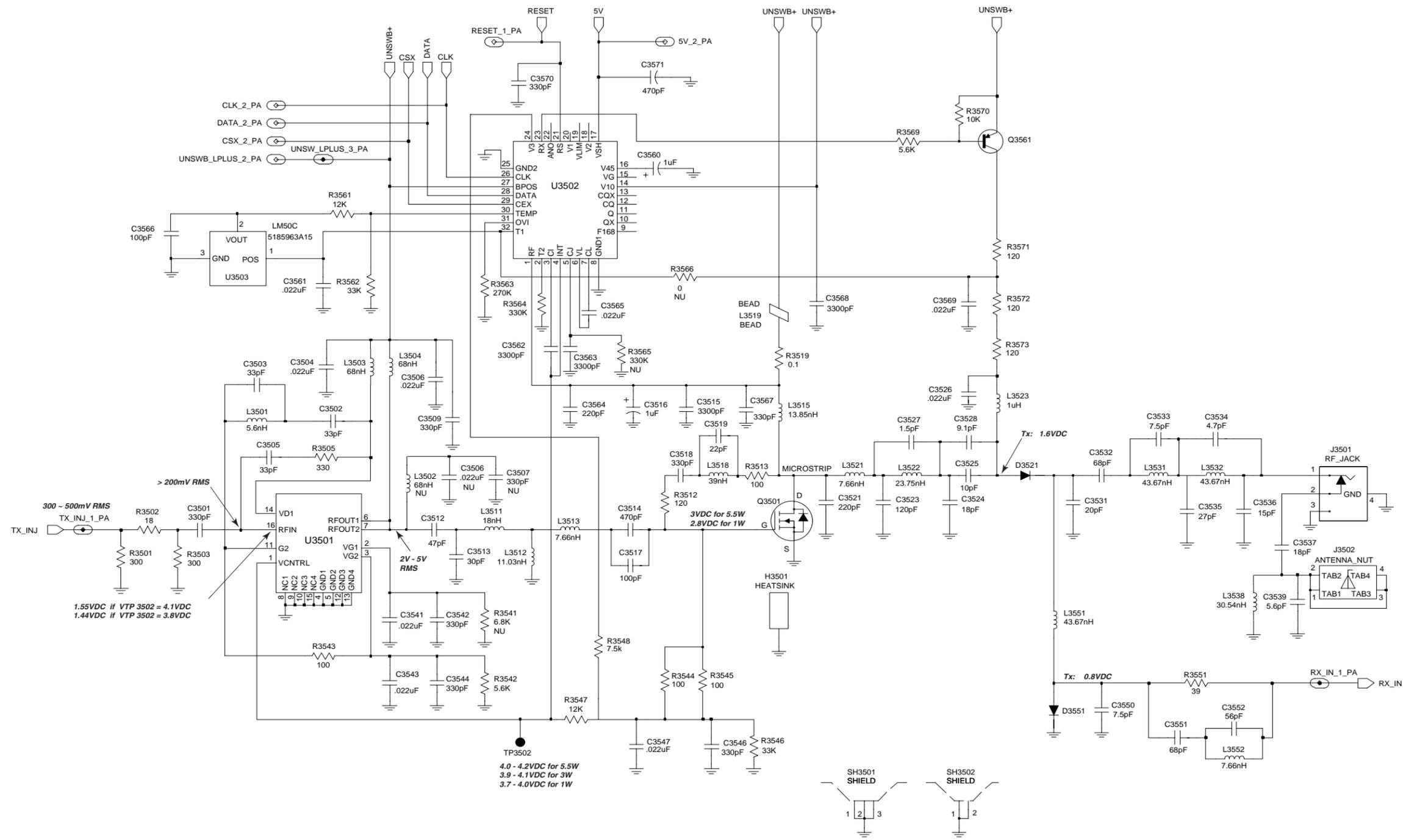
ZWG0130022-C

Figure 9-190. VHF (136-174 MHz) Synthesizer Schematic Diagram



ZWG0130020-B

Figure 9-191. VHF (136-174 MHz) Voltage Controlled Oscillator Schematic Diagram



ZWG0130021-D

Figure 9-192. VHF (136-174 MHz) Transmitter Schematic Diagram

**VHF (136-174 MHz) 5000/7000 Series Radio  
Parts List (PCB 8486062B16 / 8486062B17 /  
8486101B11)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C3200	2113743N31	16pF
C3203	2113743N50	100pF
C3204	2113743L41	10000pF, 10%
C3205	2113928N01	0.1uF, 10%
C3206	2113743L41	10000pF, 10%
C3207	2113743N10	2.2pF
C3209	2311049A07	1uF
C3210	2113743L17	1000pF, 10%
C3211	2311049A56	4.7uF, 20%, 10V
C3212	2311049A57	10uF
C3213	2311049A56	4.7uF, 20%, 10V
C3214	2113928N01	0.1uF, 10%
C3215	2113743N26	10pF
C3218	2311049A56	4.7uF, 20%, 10V
C3219	2113928N01	0.1uF, 10%
C3220	2113743N26	10pF
C3221	2113743L41	10000pF, 10%
C3222	2113928N01	0.1uF, 10%
C3223	2113928N01	0.1uF, 10%
C3224	2113928N01	0.1uF, 10%
C3225	2113928N01	0.1uF, 10%
C3226	2113928N01	0.1uF, 10%
C3227	2113743L41	10000pF, 10%
C3228	2113743L41	10000pF, 10%
C3229	2113743N50	100pF
C3230	2113740F51	100pF
C3231	2180478Z20	1uF
C3232	2180478Z20	1uF
C3233	2180478Z20	1uF
C3234	2180478Z20	1uF
C3235	2113743A23	0.220uF
C3238	2113743A24	0.330uF
C3239	2113743E07	0.022uF
C3240	2113743A23	0.220uF
C3241	2113743L19	1200pF
C3242	2109720D14	0.1uF
C3243	2113743E07	0.022uF
C3244	2113743L41	10000pF, 10%
C3270	2113743E07	0.022uF
C3271	2113743L05	330pF
C3272	2113743N18	4.7pF
C3273	2113743N26	10pF
C3274	2113743N38	33pF
C3275	2113743N44	56pF
C3276	2113743N42	47pF
C3277	2113743N48	82pF
C3278	2113743E07	0.022uF
C3279	2311049A40	2.2uF, 10%, 16V
C3280	2113743L41	10000pF, 10%
C3301	2113743N20	5.6pF

Circuit Ref	Motorola Part No.	Description
C3302	2113743N54	150pF
C3303	2113743N30	15pF
C3304	2113743N54	150pF
C3306	2113928N01	0.1uF, 10%
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113928N01	0.1uF, 10%
C3311	2113743N54	150pF
C3312	2113743N31	16pF
C3313	2113743N54	150pF
C3315	2113743N26	10pF
C3316	2113743N14	3.3pF
C3317	2113743N40	39pF
C3318	2113743M08	22000pF, +80/-20%
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF, 10%
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A18	10uF
C3337	2113743M08	22000pF, +80/-20%
C3338	2113743L09	470pF, 10%
C3339	2113743N26	10pF
C3501	2113743L05	330pF
C3502	2113743N38	33pF
C3503	2113743N38	33pF
C3504	2113743M08	22000pF, +80/-20%
C3505	2113743N38	33pF
C3508	2113743M08	22000pF, +80/-20%
C3509	2113743L05	330pF
C3512	2113740F43	47pF
C3513	2113740F38	30pF
C3514	2113740F47	68pF
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F47	68pF
C3521	2111078B51	220pF
C3523	2111078B44	120pF
C3524	2113740F33	18pF
C3525	2113740F27	10pF
C3526	2113743M08	22000pF, +80/-20%
C3528	2113740F27	10pF
C3531	2113740F34	20pF
C3532	2113740F47	68pF
C3533	2113740F24	7.5pF
C3534	2113740F19	4.7pF
C3535	2113740F37	27pF
C3536	2113740F31	15pF

Circuit Ref	Motorola Part No.	Description
C3537	2113740F33	18pF
C3539	2113740F29	12pF
C3541	2113743M08	22000pF, +80/-20%
C3542	2113743L05	330pF
C3543	2113743M08	22000pF, +80/-20%
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	22000pF, +80/-20%
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1uF
C3561	2113743M08	22000pF, +80/-20%
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF
C3564	2113743L01	220pF
C3565	2113743E07	0.022uF
C3566	2113743N50	100pF
C3567	2113743L05	330pF
C3568	2113743L29	3300pF
C3569	2113743M08	22000pF, +80/-20%
C3570	2113743L05	330pF
C3571	2113743L09	470pF, 10%
C3701	2113743L41	10000pF, 10%
C3702	2113743L41	10000pF, 10%
C3703	2113743L41	10000pF, 10%
C3704	2113743L41	10000pF, 10%
C3705	2113743E20	0.10uF, 10%
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113928N01	0.1uF, 10%
C3709	2113928N01	0.1uF, 10%
C3710	2104993J02	2.2uF
C3711	2311049A69	10uF
C3712	2113928N01	0.1uF, 10%
C3713	2311049A09	2.2uF
C3714	2311049J11	4.7uF
C3715	2113743L09	470pF, 10%
C3721	2113743E20	0.10uF, 10%
C3722	2113743E20	0.10uF, 10%
C3724	2311049A08	1uF
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	10000pF, 10%
C3732	2113743L41	10000pF, 10%
C3733	2104993J02	2.2uF
C3734	2113743L41	10000pF, 10%
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3752	2113743L17	1000pF, 10%
C3753	2311049A56	4.7uF, 20%, 10V
C3754	2113928N01	0.1uF, 10%
C3755	2104993J02	2.2uF

Circuit Ref	Motorola Part No.	Description
C3761	2113743N44	56pF
C3762	2113740F63	330pF
C3763	2113743N08	1.6pF
C3801	2113743N18	4.7pF
C3803	2113743L17	1000pF, 10%
C3804	2113743E20	0.10uF, 10%
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3811	2113928N01	0.1uF, 10%
C3812	2113928N01	0.1uF, 10%
C3813	2113743L41	10000pF, 10%
C3815	2113743L17	1000pF, 10%
C3816	2113743N22	6.8pF
C3818	2113743E07	0.022uF
C3821	2113743L41	10000pF, 10%
C3822	2113743L17	1000pF, 10%
C3823	2113743L41	10000pF, 10%
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	0.022uF
C3828	2185895Z01	0.01uF, 10%
C3829	2185895Z01	0.01uF, 10%
C3830	2113743N46	68pF
C3832	2113743L17	1000pF, 10%
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF
C3836	2113743N30	15pF
C3842	2113743L17	1000pF, 10%
C400	2113743L41	10000pF, 10%
C401	2113928N01	0.1uF, 10%
C402	2113928N01	0.1uF, 10%
C4020	2113743L17	1000pF, 10%
C4021	2113743L17	1000pF, 10%
C403	2113743G24	2.2uF, +/-80%/-20%
C407	2113928N01	0.1uF, 10%
C408	2113743N50	100pF
C409	2113928N01	0.1uF, 10%
C410	2113928N01	0.1uF, 10%
C411	2113928N01	0.1uF, 10%
C414	2113928N01	0.1uF, 10%
C415	2185895Z01	0.01uF, 10%
C416	2113928N01	0.1uF, 10%
C419	2113743L41	10000pF, 10%
C420	2113743L41	10000pF, 10%
C421	2113928N01	0.1uF, 10%
C422	2113928N01	0.1uF, 10%
C423	2113743N50	100pF
C424	2311049A59	10uF, 10%, 6V
C425	2113928N01	0.1uF, 10%
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113928N01	0.1uF, 10%

Circuit Ref	Motorola Part No.	Description
C429	2113928N01	0.1uF, 10%
C430	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS <sup>+</sup> Models Only)
C431	2113743N50	100pF
C433	2113743L41	10000pF, 10%
C434	2113928N01	0.1uF, 10% (not placed in HT750 or PRO5150)
C435	2113928N01	0.1uF, 10%
C436	2113743N34	22pF (not placed in HT750 or PRO5150)
C437	2113743N34	22pF (not placed in HT750 or PRO5150)
C440	2113743G26	4.7F, + 80/-20%
C441	2113743L09	470pF, 10%
C442	2113743E20	0.10uF, 10%
C443	2113928N01	0.1uF, 10%
C444	2113743N50	100pF
C445	2113743L09	470pF, 10%
C446	2113743L09	470pF, 10%
C447	2113928N01	0.1uF, 10%
C448	2113928N01	0.1uF, 10%
C449	2113743N50	100pF
C451	2113743M08	22000pF, +80/-20%
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF, 10%
C471	2113743L09	470pF, 10%
C472	2113743L09	470pF, 10%
C473	2113743L09	470pF, 10%
C474	2113743L41	10000pF, 10%
C475	2113743H14	10uF, +80/-20%
C476	2113928D08	10uF, +/-80%/-20%
C477	2113743L17	1000pF, 10%
C478	2113743L17	1000pF, 10%
C479	2113928N01	0.1uF, 10%
C480	2113928D08	10uF, +/-80%/-20%
C481	2113928N01	0.1uF, 10%
C482	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS <sup>+</sup> Models Only)
C483	2113743L09	470pF, 10%
C484	2113743L09	470pF, 10%
C490	2113743L09	470pF, 10%
C491	2113743L09	470pF, 10%
C492	2113743L09	470pF, 10%
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743L09	470pF, 10%
C496	2113743L09	470pF, 10%
C497	2113743L09	470pF, 10%
C502	2311049A05	0.47uF, 10%, 25V
C503	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF, 10%
C521	2113743L41	10000pF, 10%
C522	2113743L41	10000pF, 10%
C523	2113743L41	10000pF, 10%
C535	2113743L17	1000pF, 10%
CR3301	4802245J42	Ring Quad diode
CR3302	4805129M96	Dual Bonds Pin Diode, RH Reeled
CR3303	4880154K03	Dual common anode-cathode diode
CR411	4802245J62	Schottky diode
CR412	4802245J62	Schottky diode
CR413	4802245J62	Schottky diode
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
D3270	4862824C01	Varactor
D3301	4802081B58	Dual Diode
D3302	4802081B58	Dual Diode
D3521	4880973Z02	Pin diode
D3551	4880973Z02	Pin diode
D3701	4802233J09	Triple diode
D3702	4802233J09	Triple diode
D3761	4862824C03	Varactor
D3821	4805649Q13	Varactor
D3831	4805649Q13	Varactor
D3832	4862824C01	Varactor
E400	2480640Z01	Ferrite bead
E401	2480640Z01	Ferrite bead
E402	2480640Z01	Ferrite bead
E403	2480640Z01	Ferrite bead
E404	2480640Z01	Ferrite bead
E405	2480640Z01	Ferrite bead
E406	2480640Z01	Ferrite bead
E407	2480640Z01	Ferrite bead
E408	2480640Z01	Ferrite bead
E409	2480640Z01	Ferrite bead
F501	6580542Z01	3A Fuse
FL401	4870368G02	Real Time Clock Oscillator XTAL
H3501	2680499Z01	Heat spreader
J3501	0985613Z01	RF Jack
J3502	0280519Z02	Antenna_Nut
J400	0905505Y04	40-pin connector
J403	0905505Y02	20-pin connector
L3200	2462587N68	1uH
L3202	2462587N68	1uH
L3221	2462587N68	1uH
L3270	2462587T15	100nH
L3271	2462587Q20	2.2uF
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH

Circuit Ref	Motorola Part No.	Description
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH
L3501	2413926H09	5.6nH
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH
L3512	2479990B01	11.03nH
L3513	2479990A02	7.66nH, 10%
L3515	2479990C03	13.85nH
L3519	2484657R01	Ferrite bead
L3521	2479990A02	7.66nH, 10%
L3522	2479990E01	23.75nH
L3523	2462587N68	1uH
L3531	2479990N01	43.67nH
L3532	2479990N01	43.67nH
L3538	2479990M01	30.54nH
L3551	2479990N01	43.67nH
L3552	2479990A02	7.66nH, 10%
L3701	2462587Q42	390nH, 10%
L3731	2462587Q20	2.2uF
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1000nH, 10%, QF45
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1uH
L3825	2462587V34	100nH
L3826	2462587N68	1uH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1uH
L400	2462587Q42	390nH, 10%
L401	2462587Q42	390nH, 10%
L410	2462587Q42	390nH, 10%
L411	2462587Q42	390nH, 10%
L505	2462587Q42	390nH, 10%
PB501	4080523Z01	Tactile, Pushbutton
PB502	4080523Z01	Tactile, Pushbutton
PB503	4080523Z01	Tactile, Pushbutton
PB504	4080523Z01	Tactile, Pushbutton
PB505	4080523Z01	Tactile, Pushbutton
Q3200	4813827A07	NPN Transistor
Q3201	4880214G02	NPN Transistor
Q3202	4880214G02	NPN Transistor
Q3270	4805218N63	RF Transistor
Q3301	4880214G02	NPN Transistor
Q3302	4813827A07	NPN Transistor
Q3501	4813828A08	FET

Circuit Ref	Motorola Part No.	Description
Q3561	4813824A17	PNP Transistor
Q3721	4802245J50	Dual NPN/PNP Transistor
Q3801	4813827A07	NPN Transistor
Q400	4809579E18	Mosfet P - channel
Q403	4813824A17	PNP Transistor
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	Mosfet P - channel
Q417	4802245J50	Dual NPN/PNP Transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor
R3200	0662057M54	150
R3201	0662057M82	2200
R3202	0662057M90	4700
R3203	0662057M98	10k
R3204	0662057M26	10
R3205	0662057M74	1000
R3206	0662057N23	100K
R3207	0662057N13	39K
R3208	0662057M50	100
R3209	0662057M74	1000
R3210	0662057M82	2200
R3211	0662057M82	2200
R3212	0662057M90	4700
R3213	0662057M82	2200
R3214	0662057M34	22
R3219	0662057M50	100
R3220	0662057M90	4700
R3221	0662057M50	100
R3224	0662057M26	10
R3225	0662057M74	1000
R3226	0662057M26	10
R3270	0662057M74	1000
R3271	0662057M42	47
R3272	0662057N15	47K
R3273	0662057N15	47K
R3274	0662057M83	2400
R3275	0662057M74	1000
R3276	0662057N30	200K
R3303	0662057N23	100K
R3304	0662057N23	100K
R3305	0662057N19	68K
R3306	0662057M82	2200
R3307	0662057N11	33K
R3308	0662057M78	1500
R3309	0662057M92	5600
R3310	0662057M98	10k
R3311	0662057M26	10
R3312	0662057M38	33
R3313	0662057M34	22
R3314	0662057M26	10
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3321	0662057M54	150

Circuit Ref	Motorola Part No.	Description
R3322	0662057M58	220
R3323	0662057M32	18
R3324	0662057M58	220
R3501	0662057M61	300
R3502	0662057M32	18
R3503	0662057M61	300
R3505	0662057M62	330
R3506	0662057B62	3.9
R3507	0662057B62	3.9
R3519	0680539Z01	0.1
R3541	0662057N13	39K
R3542	0662057M92	5600
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N01	12K
R3547	0662057N11	33K
R3548	0662057N07	22K
R3551	0662057M40	39
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3569	0662057M92	5600
R3570	0662057M98	10k
R3571	0662057A27	120
R3572	0662057A27	120
R3573	0662057A27	120
R3701	0662057M50	100
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R3721	0662057M66	470
R3722	0662057M74	1000
R3723	0662057M50	100
R3727	0662057N23	100K
R3741	0662057M50	100
R3751	0662057N30	200K
R3752	0662057N35	330K
R3761	0662057N15	47K
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10k
R3805	0662057N08	24K
R3806	0662057M34	22
R3808	0662057M26	10
R3811	0662057M50	100
R3816	0662057M74	1000
R3817	0662057M01	0
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100

Circuit Ref	Motorola Part No.	Description
R3829	0662057M01	0
R3831	0662057M98	10k
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47
R3835	0662057N15	47K
R3836	0662057M98	10k
R400	0662057N15	47K
R401	0662057M01	0
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R409	0662057M98	10k
R410	0662057N23	100K
R411	0662057M98	10k
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057M98	10k
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2000
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057M98	10k
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R445	0662057N08	24K
R447	0662057N51	1.5M
R448	0662057M98	10k
R449	0662057N08	24K
R450	0683962T45	68 ohms, 1W
R451	0662057N03	15K
R452	0662057N23	100K
R456	0662057M01	0
R457	0662057M98	10k
R460	0662057M90	4700
R461	0662057M56	180
R462	0662057M98	10k
R463	0662057M61	300
R471	0662057M92	5600
R472	0662057M93	6200
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330K
R477	0662057M74	1000
R478	0662057M98	10k
R481	0662057N08	24K

Circuit Ref	Motorola Part No.	Description
R492	0662057M01	0
R498	0662057M98	10k
R499	0662057M98	10k
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10k
R506	0662057N15	47K
RT400	0680590Z01	THERMISTOR 33K
S501	4080710Z02	Frequency Switch
S502	1880619Z02	Volume Switch
SH3201	2602023X08	Rx Backend Top Shield
SH3202	2686081B02	LVZIF shields
SH3203	2686081B03	45.1 MHz Xtal Filter Shield
SH3301	2686081B01	Rx Frontend Bottom Shield
SH3302	2686081B05	Mixer Shield
SH3303	2686081B06	Rx Frontend Top Shield
SH3501	2686081B03	Harmonic Filter Shield
SH3502	2686081B04	PA driver Shield
SH3701	2680511Z01	Synthesizer top shield
SH3702	2680511Z01	Synthesizer bottom shield
SH3801	2680513Z01	VCO Top Shield
SH3802	2680514Z01	VCO Bottom Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller on-off shield
SH402	2680515Z01	Controller Microprocessor shield
SH403	2680516Z01	Controller Asfic_Cmp/Audio PA shield
T3301	2580541Z01	Balun transformer
T3302	2580541Z01	Balun transformer
U3201	5102463J58	3.3V Regulator
U3220	5109632D83	LVZIF IC
U3501	5185130C65	VHF/UHF/800 MHZ LDMOS Driver
U3502	5185765B28	PCIC
U3503	5185963A15	Temperature Sense
U3701	5185963A27	LVFRACN Synthesizer IC
U3711	5105739X05	5V Regulator
U3801	5105750U54	VCO BUFFER IC
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC_CMP
U405	NOT PLACED	-
U406	*5102463J59	128K x 8 Flash Memory
U407	*5102463J64	16K x 8 EEPROM
U409	5102226J56	Microprocessor IC
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
VR3501	4880140L17	Zener diode-12V
VR432	4805656W08	5.6V Zener diode
VR433	4805656W08	5.6V Zener diode
VR434	4802245J73	ZENER DIODE-6.8V
VR439	4880140L17	Zener diode-12V
VR447	4802245J74	ZENER DIODE-10V
VR448	4802245J74	ZENER DIODE-10V
VR449	4802245J74	ZENER DIODE-10V
VR450	4802245J74	ZENER DIODE-10V
VR460	4802245J73	ZENER DIODE-6.8V
VR501	4802245J73	ZENER DIODE-6.8V

Circuit Ref	Motorola Part No.	Description
VR506	4802245J73	ZENER DIODE-6.8V
Y3200	9186153B01	Crystal Filter
Y3761	4805875Z04	16.8MHz Xtal oscillator (SMD)
	5480678Z01	PCB Bar Code Label
	8486062B16	VHF main PC Board

\* Motorola Depot Servicing only

## Notes



### 9.22 VHF Circuit Board/Schematic Diagrams and Parts List (PCB 8486473Z03)



Figure 9-193. VHF (136-174 MHz) 5000/7000 Series Main Board Top Side PCB No. 8486473Z03



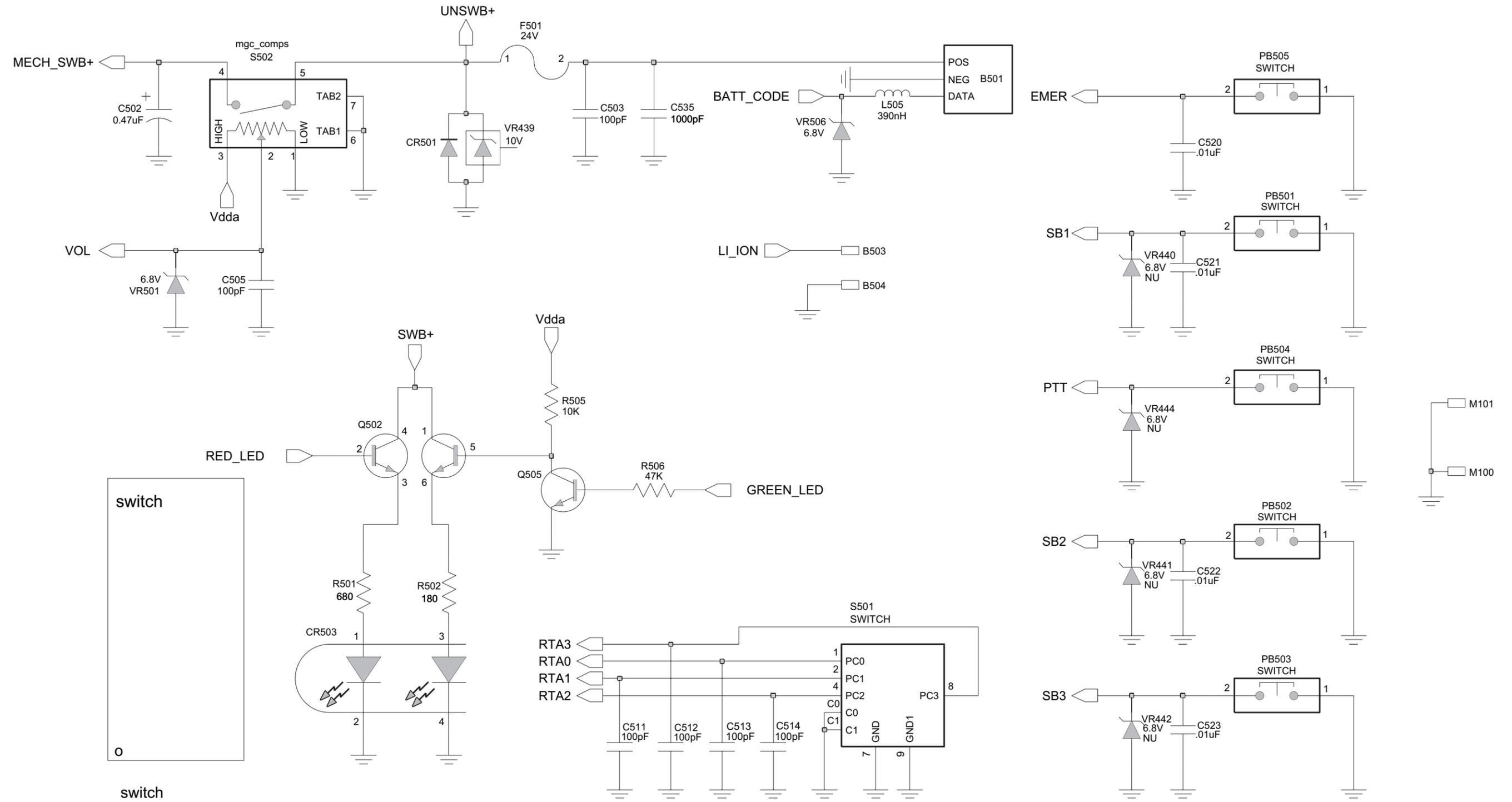


Figure 9-195. VHF (136-174 MHz) Controls And Switches Schematic Diagram

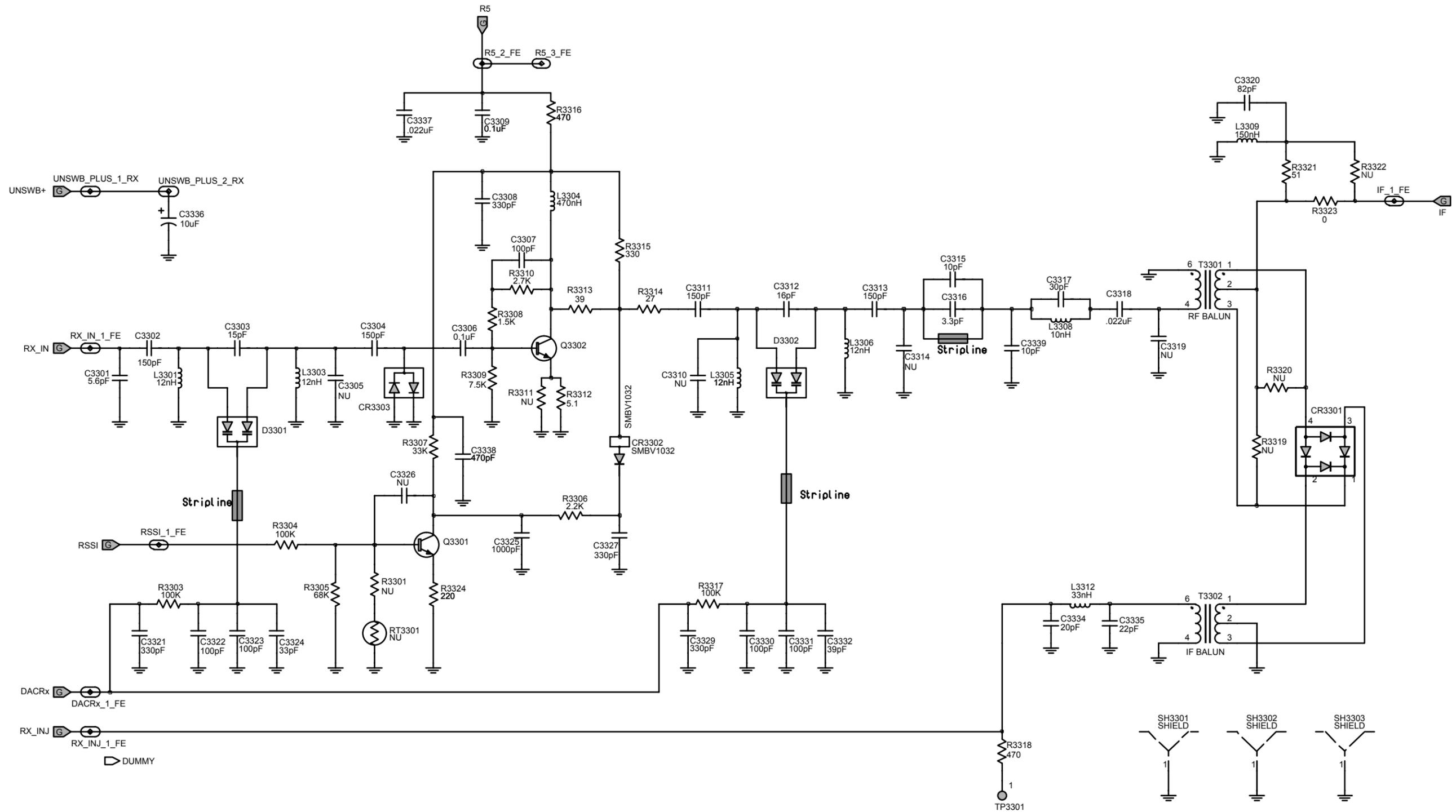


Figure 9-196. VHF (136-174 MHz) Receiver Front-End Schematic Diagram

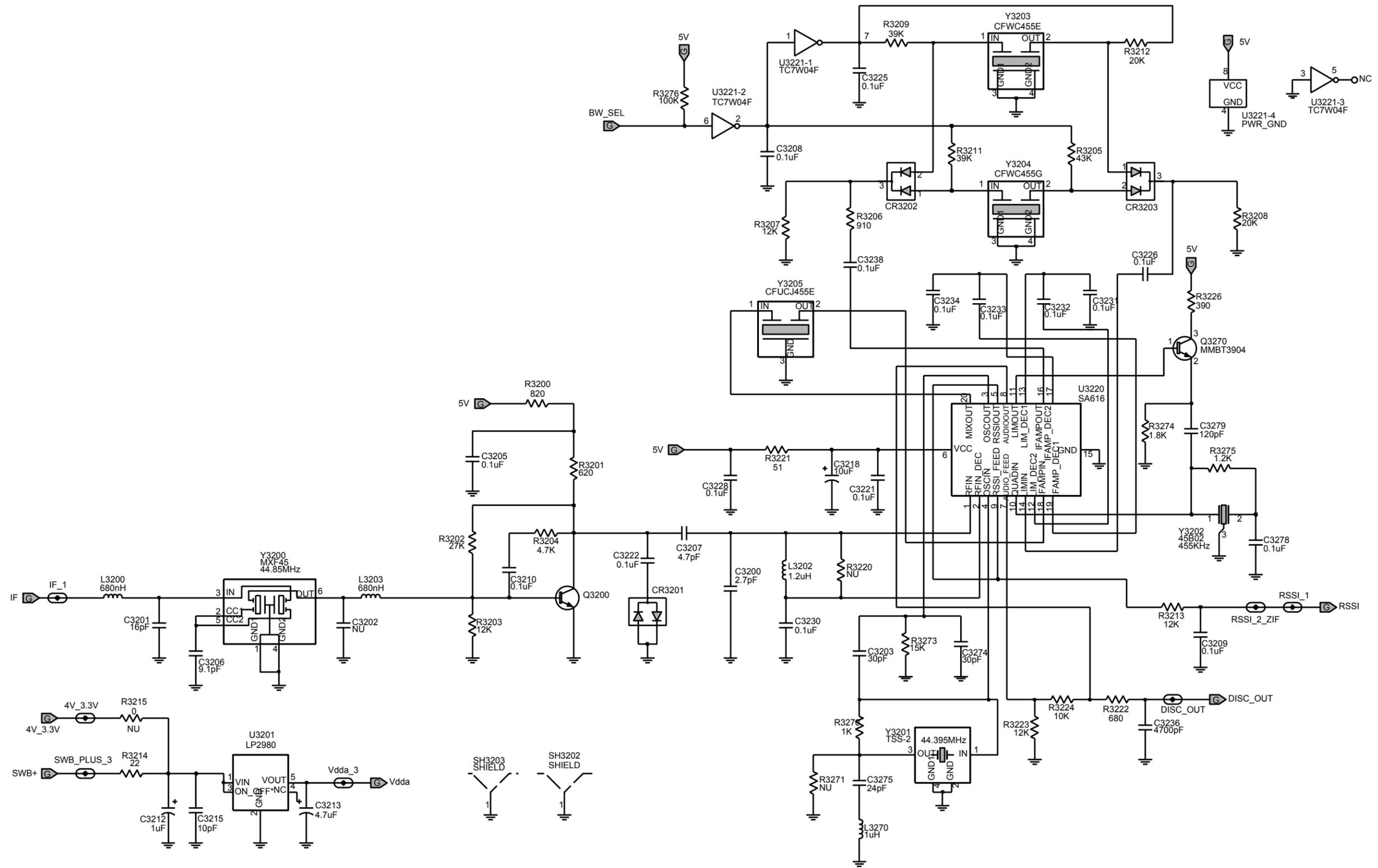
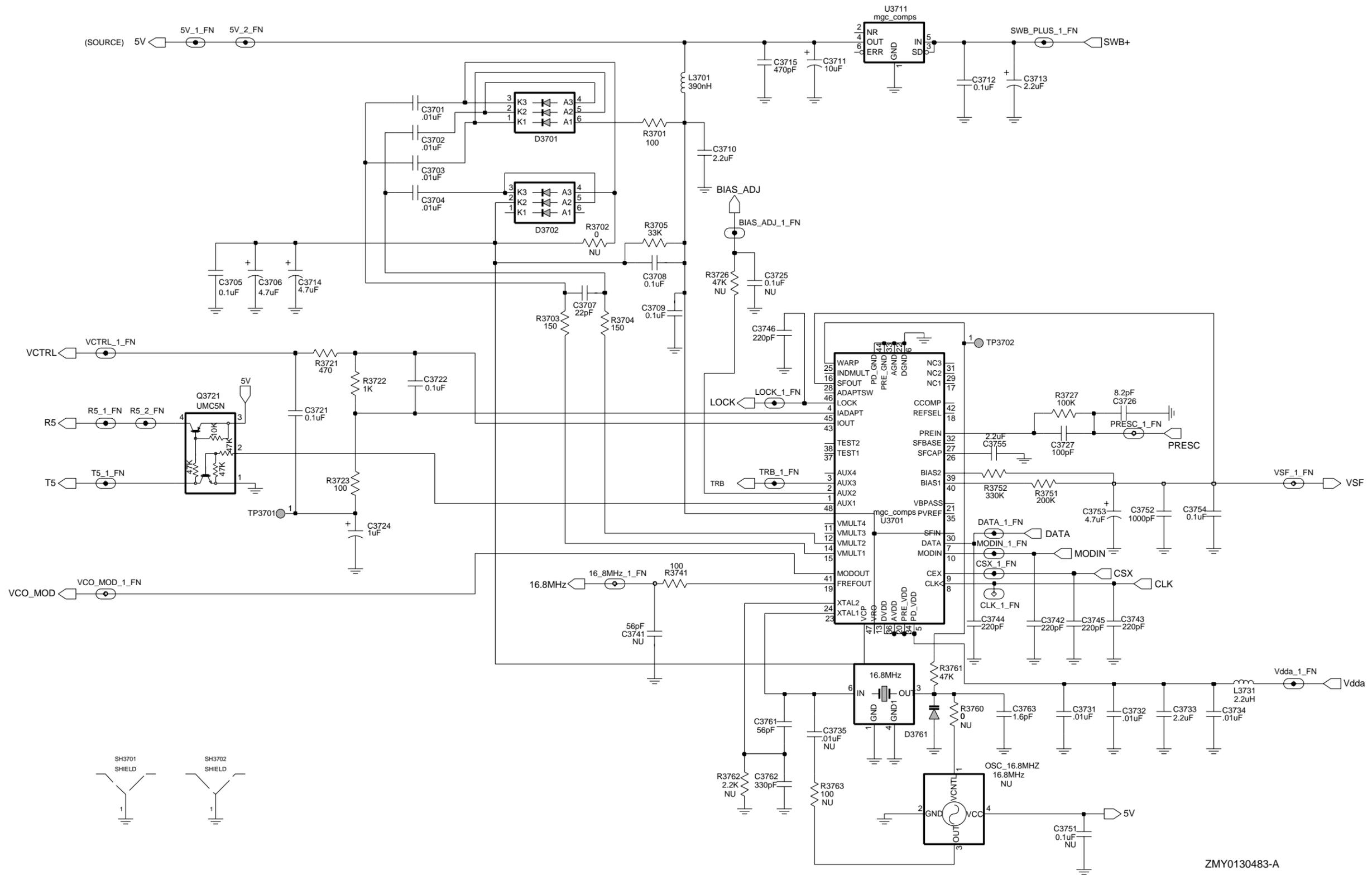


Figure 9-197. VHF (136-174 MHz) Receiver Back-End Schematic Diagram



ZMY0130483-A

Figure 9-198. VHF (136-174 MHz) Synthesizer Schematic Diagram



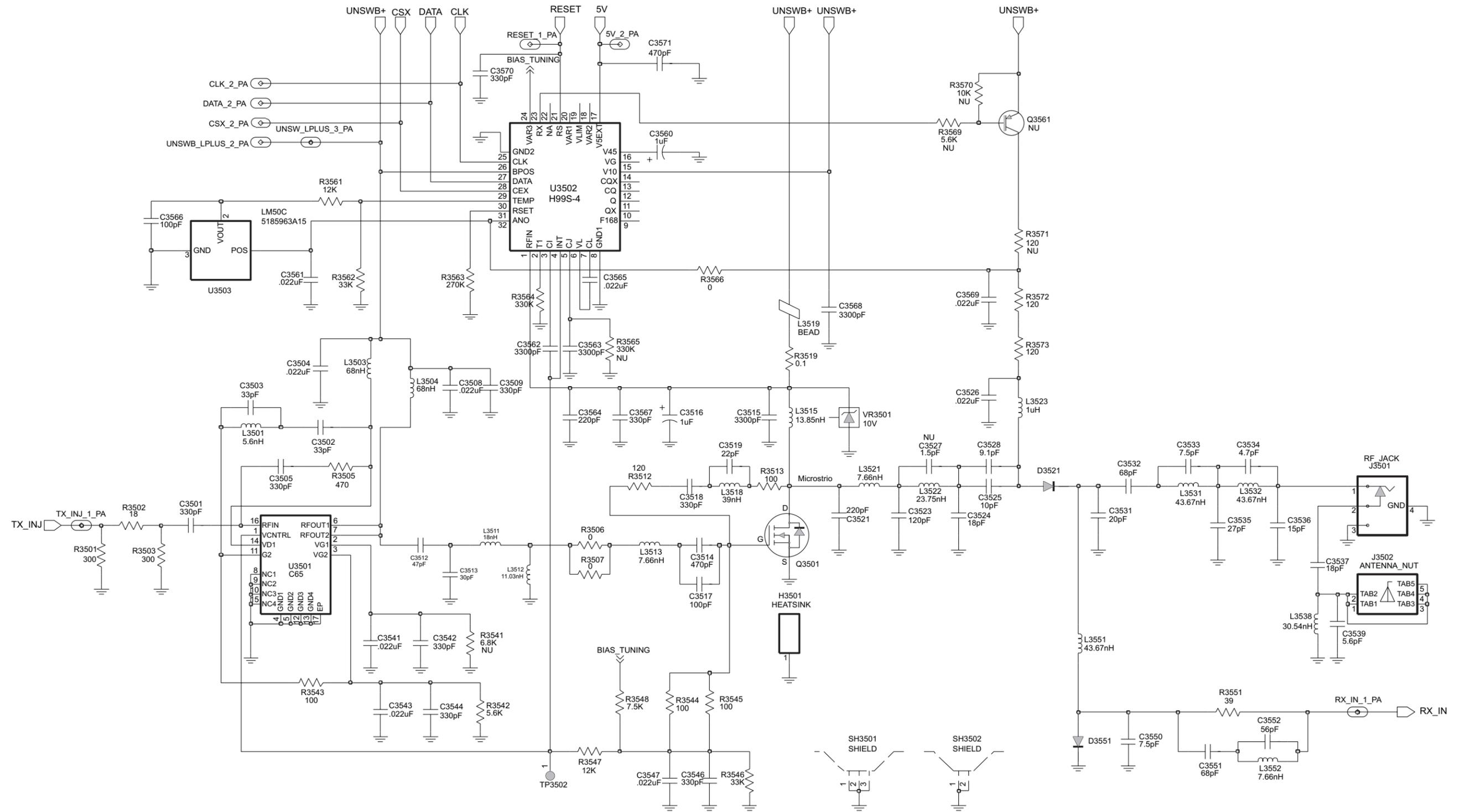


Figure 9-200. VHF (136-174 MHz) Transmitter Schematic Diagram



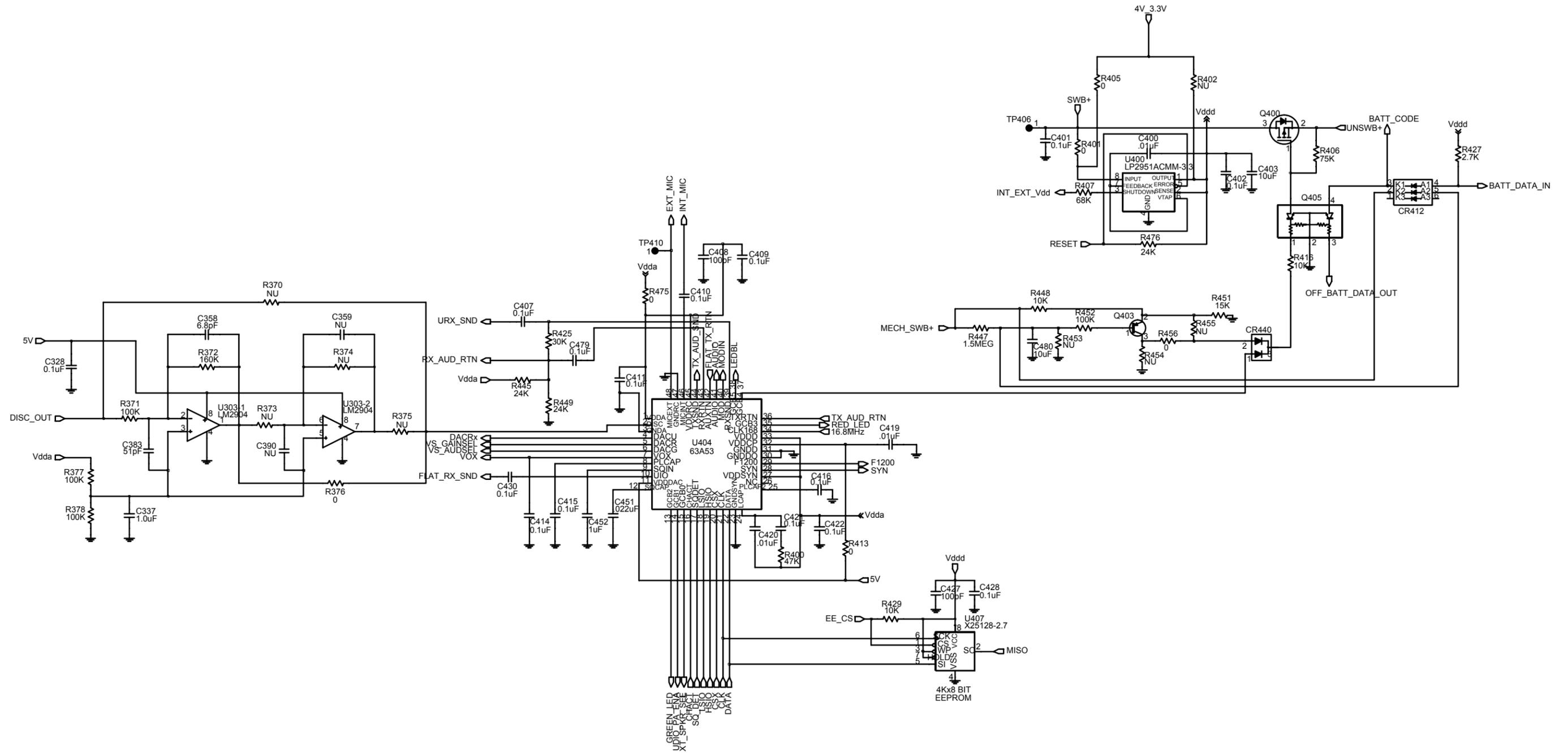


Figure 9-201. VHF (136-174 MHz) Controller ASFIC/ON\_OFF Schematic Diagram

**VHF (136-174 MHz) Radio Parts List (PCB 8486473Z03)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Connector (Contact Battery)
B503	3980502Z01	Backup Contact, B+
B504	3980501Z01	Backup Contact, B-
C3200	2113743N12	2.7pF
C3201	2113743N31	16pF
C3202	NOT PLACED	-
C3203	2113743N37	30pF
C3205	2113743M24	100nF
C3206	2109445U26	9.1pF 1%
C3207	2113743N18	4.7pF
C3208	2113743M24	100nF
C3209	2113743M24	100nF
C3210	2113743M24	100nF
C3212	2311049A07	1uF
C3213	2311049A56	4.7uF
C3215	2113743N26	10pF
C3218	2311049A59	4.7uF
C3221	2113743E20	0.1uF
C3222	2113743M24	100nF
C3225	2113743M24	100nF
C3226	2113743M24	100nF
C3228	2113743M24	100nF
C3230	2113743M24	100nF
C3231	2113743M24	100nF
C3232	2113743M24	100nF
C3233	2113743M24	100nF
C3234	2113743M24	100nF
C3236	2113743L33	4700pF
C3238	2113743M24	100nF
C3274	2113743N37	30pF
C3275	2113743N35	24pF
C3278	2113743E20	0.1uF
C3279	2113743N52	120pF
C328	2113743M24	100nF
C3301	2113743N20	5.6pF
C3302	2113743N54	150pF
C3303	2113743N30	15pF

Circuit Ref	Motorola Part No.	Description
C3304	2113743N54	150pF
C3305	NOT PLACED	-
C3306	2113928N01	0.1uF
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113928N01	0.1uF
C3310	NOT PLACED	-
C3311	2113743N54	150pF
C3312	2113743N31	16pF
C3313	2113743N54	150pF
C3314	NOT PLACED	-
C3315	2113743N26	10pF
C3316	2113743N14	3.3pF
C3317	2113743N37	30pF
C3318	2113743M08	22000pF
C3319	NOT PLACED	-
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF
C3326	NOT PLACED	-
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A96	33uF
C3337	2113743M08	22000pF
C3338	2113743L09	470pF
C3339	2113743N26	10pF
C337	2113928P04	1uF
C3501	2113743L05	330pF
C3502	2113743N38	33pF
C3503	2113743N38	33pF
C3504	2113743M08	22000pF

Circuit Ref	Motorola Part No.	Description
C3505	2113743N38	33pF
C3508	2113743M08	22000pF
C3509	2113743L05	330pF
C3512	2113740F43	47pF
C3513	2113740F38	30pF
C3514	2113740F47	68pF
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F47	68pF
C3518	NOT PLACED	
C3519	NOT PLACED	
C3521	2111078B51	220pF
C3523	2111078B44	120pF
C3524	2113740F34	20pF
C3525	2113740F27	10pF
C3526	2113743M08	22000pF
C3527	NOT PLACED	
C3528	2113740F27	10pF
C3531	2113740F34	20pF
C3532	2113740F47	68pF
C3533	2113740F24	7.5pF
C3534	2113740F19	4.7pF
C3535	2113740F37	27pF
C3536	2113740F31	15pF
C3537	2113740F33	18pF
C3539	2113740F29	12pF
C3541	2113743M08	22000pF
C3542	2113743L05	330pF
C3543	2113743M08	22000pF
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	22000pF
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1uF
C3561	2113743M08	22000pF
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF

Circuit Ref	Motorola Part No.	Description
C3564	2113743L01	220pF
C3565	2113743E07	0.022uF
C3566	2113743N50	100pF
C3567	2113743L05	330pF
C3568	2113743L29	3300pF
C3569	2113743M08	22000pF
C3570	2113743L05	330pF
C3571	2113743L09	470pF
C358	2113743N22	6.8pF
C359	2113743N31	16pF
C3701	2113743L41	10000pF
C3702	2113743L41	10000pF
C3703	2113743L41	10000pF
C3704	2113743L41	10000pF
C3705	2113743E20	0.1uF
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113928N01	0.1uF
C3709	2113928N01	0.1uF
C3710	2104993J02	2.2uF
C3711	2311049A69	10uF
C3712	2113928N01	0.1uF
C3713	2311049A09	2.2uF
C3714	2311049J11	4.7uF
C3715	2113743L09	470pF
C3721	2113743E20	0.1uF
C3722	2113743E20	0.1uF
C3724	2311049A08	1uF
C3725	NOT PLACED	
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	10000pF
C3732	2113743L41	10000pF
C3733	2104993J02	2.2uF
C3734	2113743L41	10000pF
C3741	NOT PLACED	
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF

Circuit Ref	Motorola Part No.	Description
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3752	2113743L17	1000pF
C3753	2311049A56	4.7uF
C3754	2113928N01	0.1uF
C3755	2104993J02	2.2uF
C3761	2113743N42	47pF
C3762	2113740F63	330pF
C3763	NOT PLACED	-
C3801	2113743N18	4.7pF
C3802	NOT PLACED	-
C3803	2113743L17	1000pF
C3804	2113743E20	0.1uF
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3810	NOT PLACED	-
C3811	2113928N01	0.1uF
C3812	2113928N01	0.1uF
C3813	2113743L41	10000pF
C3815	2113743L17	1000pF
C3816	2113743N22	6.8pF
C3818	2113743E07	0.022uF
C3821	2113743L41	10000pF
C3822	2113743L17	1000pF
C3823	2113743L41	10000pF
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	0.022uF
C3828	2185895Z01	0.01uF
C3829	2185895Z01	0.01uF
C383	2113743N43	51pF
C3830	2113743N46	68pF
C3832	2113743L17	1000pF
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF

Circuit Ref	Motorola Part No.	Description
C3836	2113743N30	15pF
C3842	2113743L17	1000pF
C390	2113743N43	51pF
C400	2113743L41	10000pF
C401	2113928N01	0.1uF
C402	2113928N01	0.1uF
C4020	NOT PLACED	-
C4021	NOT PLACED	-
C403	2113743G24	2.2uF
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113928N01	0.1uF
C410	2113928N01	0.1uF
C411	2113928N01	0.1uF
C414	2113928N01	0.1uF
C415	2185895Z01	0.01uF
C416	2113928N01	0.1uF
C419	2113743L41	10000pF
C420	2113743L41	10000pF
C421	2113928N01	0.1uF
C422	2113928N01	0.1uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113928N01	0.1uF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113928N01	0.1uF
C429	2113928N01	0.1uF
C430	2113928N01 0662057M01	0.1uF, 10% 0 (SUB on LS <sup>+</sup> Models Only)
C431	2113743N50	100pF
C432	NOT PLACED	-
C433	2113743N34	22pF
C434	2113928N01	0.1uF
C435	2113928N01	0.1uF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF
C441	2113743L09	470pF

Circuit Ref	Motorola Part No.	Description
C442	2113743E20	0.1uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743L09	470pF
C446	2113743L09	470pF
C447	2113928N01	0.1uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOT PLACED	-
C451	2113743M08	22000pF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743L09	470pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C474	2113743L41	10000pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C477	2113743L17	1000pF
C478	2113743L17	1000pF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01 0662057M01	0.1uF, 10% 0 (SUB on LS <sup>+</sup> Models Only)
C483	2113743L09	470pF
C484	2113743L09	470pF
C490	2113743L09	470pF
C491	2113743L09	470pF
C492	2113743L09	470pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743L09	470pF

Circuit Ref	Motorola Part No.	Description
C496	2113743L09	470pF
C497	2113743L09	470pF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF
C521	2113743L41	10000pF
C522	2113743L41	10000pF
C523	2113743L41	10000pF
C535	2113743L17	1000pF
CR3201	4813825A19	Schottky Diode
CR3202	4802245J97	Band Switching Diode
CR3203	4802245J97	Band Switching Diode
CR3301	4802245J42	Ring Quad Diode
CR3302	4805129M96	Dual Diode
CR3303	4880154K03	Dual Diode
CR411	4802245J62	Schottkt Diode
CR412	4802245J62	Schottkt Diode
CR413	4802245J62	Schottkt Diode
CR440	4813833C02	Dual Diode
CR501	4880107R01	Rectifier
CR503	4805729G49	Red / Yellow LED
D3301	4802081B58	Dual Diode
D3302	4802081B58	Dual Diode
D3521	4880973Z02	Pin Diode
D3551	4880973Z02	Pin Diode
D3701	4802233J09	Triple Diode
D3702	4802233J09	Triple Diode
D3761	4862824C03	Varactor Diode
D3821	4805649Q13	Varactor Diode
D3831	4805649Q13	Varactor Diode
D3832	4862824C01	Varactor Diode
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead

Circuit Ref	Motorola Part No.	Description
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL401	4870368G02	Real Time Clock Crystal Oscillator
H3501	2680499Z01	Heat Spreader
J3501	0985613Z01	RF Jack
J3502	0280519Z04	Antenna Nut
J400	0905505Y04	40-Pin Connector
J403	0905505Y02	20-Pin Connector
L3200	2413926K33	680nH
L3202	2413923A25	1200nH
L3203	2413926K33	680nH
L3270	2462587N68	1000nH
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH
L3501	2413926H09	5.6nH
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH
L3512	2479990B01	11.03nH
L3513	2479990A02	7.6nH
L3515	2479990C03	13.85nH
L3518	NOT PLACED	-
L3519	2484657R01	Ferrite Bead
L3521	2479990A02	7.6nH
L3522	2479990E01	23.75nH
L3523	2462587N68	1000nH

Circuit Ref	Motorola Part No.	Description
L3531	2479990N01	43.67nH
L3532	2479990N01	43.67nH
L3538	2479990M01	30.54nH
L3551	2479990N01	43.67nH
L3552	2479990A02	7.6nH
L3701	2462587Q42	390nH
L3731	2462587Q20	2,200nH
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1000nH
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1000nH
L3825	2462587V34	100nH
L3826	2462587N68	1000nH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1000nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
PB501	4086470Z01	Tactile Switch
PB502	4086470Z01	Tactile Switch
PB503	4086470Z01	Tactile Switch
PB504	4086470Z01	Tactile Switch
PB505	4086470Z01	Tactile Switch
Q3200	4802197J95	NPN Transistor
Q3270	4813824A10	NPN Transistor
Q3301	4880214G02	NPN Transistor
Q3302	4802197J95	NPN Transistor
Q3501	4813828A08	RF Power Amplifier
Q3561	4813824A17	PNP Transistor

Circuit Ref	Motorola Part No.	Description
Q3721	4809939C05	Dual NPN/PNP Transistor
Q3801	4802197J95	NPN Transistor
Q400	4809579E18	MOSFET P-chan Transistor
Q403	4813824A17	PNP Transistor
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	MOSFET P-chan Transistor
Q417	4809939C05	Dual NPN/PNP Transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor
R3200	0662057M72	820
R3201	0662057M69	620
R3202	0662057N09	27K
R3203	0662057N01	12K
R3204	0662057M90	4700
R3205	0662057N06	20K
R3206	0662057M73	910
R3207	0662057N01	12K
R3208	0662057N06	20K
R3209	0662057N13	39K
R3211	0662057N13	39K
R3212	0662057N06	20K
R3213	0662057N01	12K
R3214	0662057M34	22
R3215	0662057M01	0
R3220	NOT PLACED	-
R3221	0662057M43	51
R3222	0662057M70	680
R3223	0662057V04	12K 1%
R3224	0662057V02	10K 1%
R3226	0662057M64	390
R3270	0662057M74	1000
R3271	NOT PLACED	-
R3273	0662057N03	15K
R3274	0662057M80	1800
R3275	0662057M76	1200
R3276	0662057N23	100K
R3301	NOT PLACED	-
R3303	0662057N23	100K

Circuit Ref	Motorola Part No.	Description
R3304	0662057N23	100K
R3305	0662057N19	68K
R3306	0662057M82	2200
R3307	0662057N11	33K
R3308	0662057M78	1500
R3309	0662057M95	7500
R3310	0662057M84	2700
R3311	NOT PLACED	-
R3312	0662057M19	5.1
R3313	0662057M40	39
R3314	0662057M35	24
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3319	NOT PLACED	-
R3320	NOT PLACED	-
R3321	0662057M43	51
R3322	NOT PLACED	-
R3323	0662057M01	0
R3324	0662057M58	220
R3501	0662057M61	300
R3502	0662057M32	18
R3503	0662057M61	300
R3505	0662057M62	330
R3506	0662057B62	3.9
R3507	0662057B62	3.9
R3512	NOT PLACED	-
R3513	NOT PLACED	-
R3519	0680539Z01	0.1
R3541	0662057N13	39K
R3542	0662057M92	5600
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N01	12K
R3547	0662057N11	33K
R3548	0662057N07	22K
R3551	0662057M40	39

Circuit Ref	Motorola Part No.	Description
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3565	NOT PLACED	-
R3566	NOT PLACED	-
R3569	0662057M92	5600
R3570	0662057M98	10K
R3571	0662057A27	120
R3572	0662057A27	120
R3573	0662057A27	120
R370	NOT PLACED	-
R3701	0662057M50	100
R3702	NOT PLACED	-
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R371	0662057N23	100K
R372	0662057N28	160K
R3721	0662057M66	470
R3722	0662057M68	560
R3723	0662057M50	100
R3726	NOT PLACED	-
R3727	0662057N23	100K
R373	NOT PLACED	-
R374	0662057N23	100K
R3741	0662057M50	100
R375	NOT PLACED	-
R3751	0662057N30	200K
R3752	0662057N29	180K
R376	0662057M01	0
R3761	0662057N15	47K
R3762	NOT PLACED	-
R377	0662057N23	100K
R378	0662057N23	100K
R3801	NOT PLACED	-
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10K

Circuit Ref	Motorola Part No.	Description
R3805	0662057N08	24K
R3806	0662057M34	22
R3807	NOT PLACED	-
R3808	0662057M26	10
R3811	0662057M50	100
R3812	NOT PLACED	-
R3816	0662057M74	1000
R3817	0662057M01	0
R3818	NOT PLACED	-
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100
R3829	0662057M01	0
R3830	NOT PLACED	-
R3831	0662057M98	10K
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47
R3835	0662057N15	47K
R3836	0662057M98	10K
R400	0662057N15	47K
R401	0662057M01	0
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0662057M01	0
R406	0662057N20	'75K
R407	0662057N19	68K
R408	NOT PLACED	-
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K 1%
R415	0662057V26	91K 1%
R416	0662057M98	10K

Circuit Ref	Motorola Part No.	Description
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2000
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2700
R428	0662057M10	2.2'
R429	0662057N20	'75K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R437	NOT PLACED	-
R445	0662057N08	24K
R447	0662057N23	100K
R448	0662057M98	10K
R449	0662057N08	24K
R450	0683962T45	68
R451	0662057N03	15K
R452	0662057N23	100K
R453	NOT PLACED	-
R454	NOT PLACED	-
R455	NOT PLACED	-
R456	0662057M01	0
R457	0662057M98	10K
R460	0662057M90	4700
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057N06	20K
R472	0662057M93	6200
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330K
R477	0662057M74	1000

Circuit Ref	Motorola Part No.	Description
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R498	0662057M98	10K
R499	0662057M98	10K
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
RT3301	NOT PLACED	-
RT400	0680590Z01	Thermistor 33K
S501	4080710Z09	Frequency Switch
S502	1880619Z02	Volume/on-off Switch
SH3202	2686539Z01	IFIC Shield
SH3203	2686527Z01	Crystal Filter Shield
SH3301	2686081B01	RX Frontend bottom Shield
SH3302	2686081B05	Mixer Shield
SH3303	2686081B06	RX Frontend top Shield
SH3501	2686081B03	Harmonic Filter Shield
SH3502	2686081B04	PA Driver Shield
SH3701	2680511Z01	Synthesizer top Shield
SH3702	2680511Z01	Synthesizer bottom Shield
SH3801	2680513Z01	VCO top shield
SH3802	2680514Z01	VCO Bottom Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller on-off Shield
SH402	2680515Z01	Controller Microprocessor Shield
SH403	2680516Z01	Controller Asfic Shield
T3301	2580541Z02	Transformer
T3302	2580541Z02	Transformer
U303	5113818A01	Dual Op Amp
U3201	5102463J58	3.3V Regulator
U3220	5186144B01	IF IC
U3221	5109522E10	Inverter IC
U3501	5185130C65	LD MOS Driver IC
U3502	5185765B26	PCIC
U3503	5185963A15	Temperature Sensor
U3701	5185130C18	LV FRAC-N IC

Circuit Ref	Motorola Part No.	Description
U3711	5105739X05	5V Regulator
U3801	5105750U54	VCO BUFFER IC
U400	5102463J40	3.3V Regulator
U404	5185130C53	ASFIC CMP IC
U405	NOT PLACED	-
U406	*5102463J59	128K X 8 FLASH ROM
U407	*5102463J64	16K X 8 EEPROM
U409	5102226J56	Microprocessor IC
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
VR3501	4880140L17	Zener Diode
VR432	4805656W08	Zener Diode
VR433	4805656W08	Zener Diode
VR434	4802245J73	Zener Diode 6.8V
VR439	4880140L17	Zener Diode
VR440	NOT PLACED	-
VR441	NOT PLACED	-
VR442	NOT PLACED	-
VR444	NOT PLACED	-
VR447	4802245J74	Zener Diode 10V
VR448	4802245J74	Zener Diode 10V
VR449	4802245J74	Zener Diode 10V
VR450	4802245J75	Zener Diode 12V
VR460	4802245J73	Zener Diode 6.8V
VR501	4802245J73	Zener Diode 6.8V
VR506	4802245J73	Zener Diode 6.8V
Y3200	9180022M11	44.85MHZ Crystal Filter
Y3201	4802245J84	44.395MHz Crystal Oscillator
Y3202	9186145B02	455KHZ Discriminator
Y3203	9180469V05	455KHz 6-Pole Ceramic Filter
Y3204	9180469V03	455KHz 6-Pole Ceramic Filter
Y3205	9180468V05	455KHz 4-Pole Ceramic Filter
Y3761	4805875Z04	16.8 MHZ Crystal Oscillator
	8486473Z01	VHF main PC Board

\* Motorola Depot Servicing only

### 9.23 VHF Circuit Board/Schematic Diagrams and Parts List (PCB 8486473Z04)

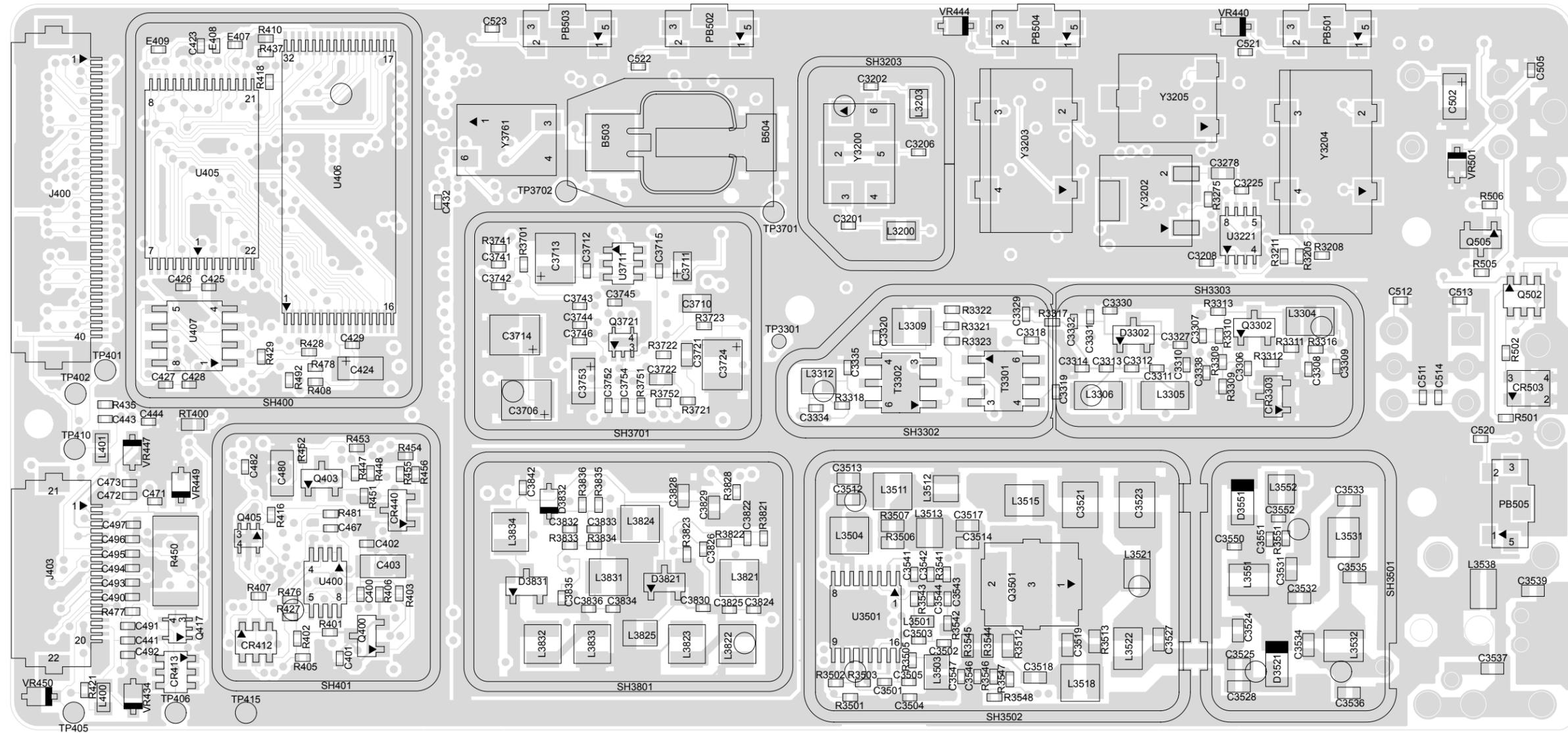


Figure 9-202. VHF (136-174 MHz) 5000/7000 Series Main Board Top Side PCB No. 8486473Z04





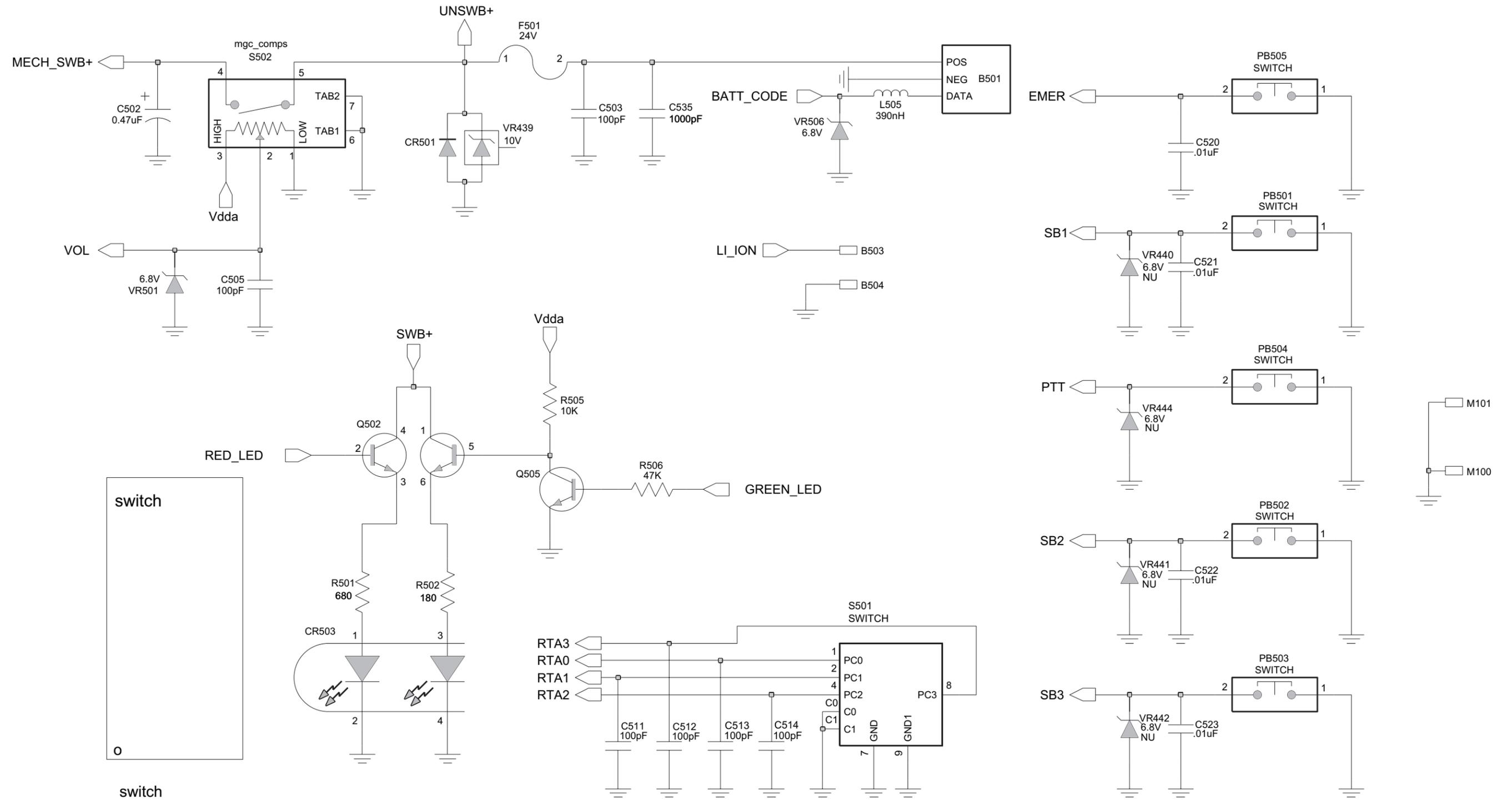


Figure 9-204. VHF (136-174 MHz) Controls And Switches Schematic Diagram

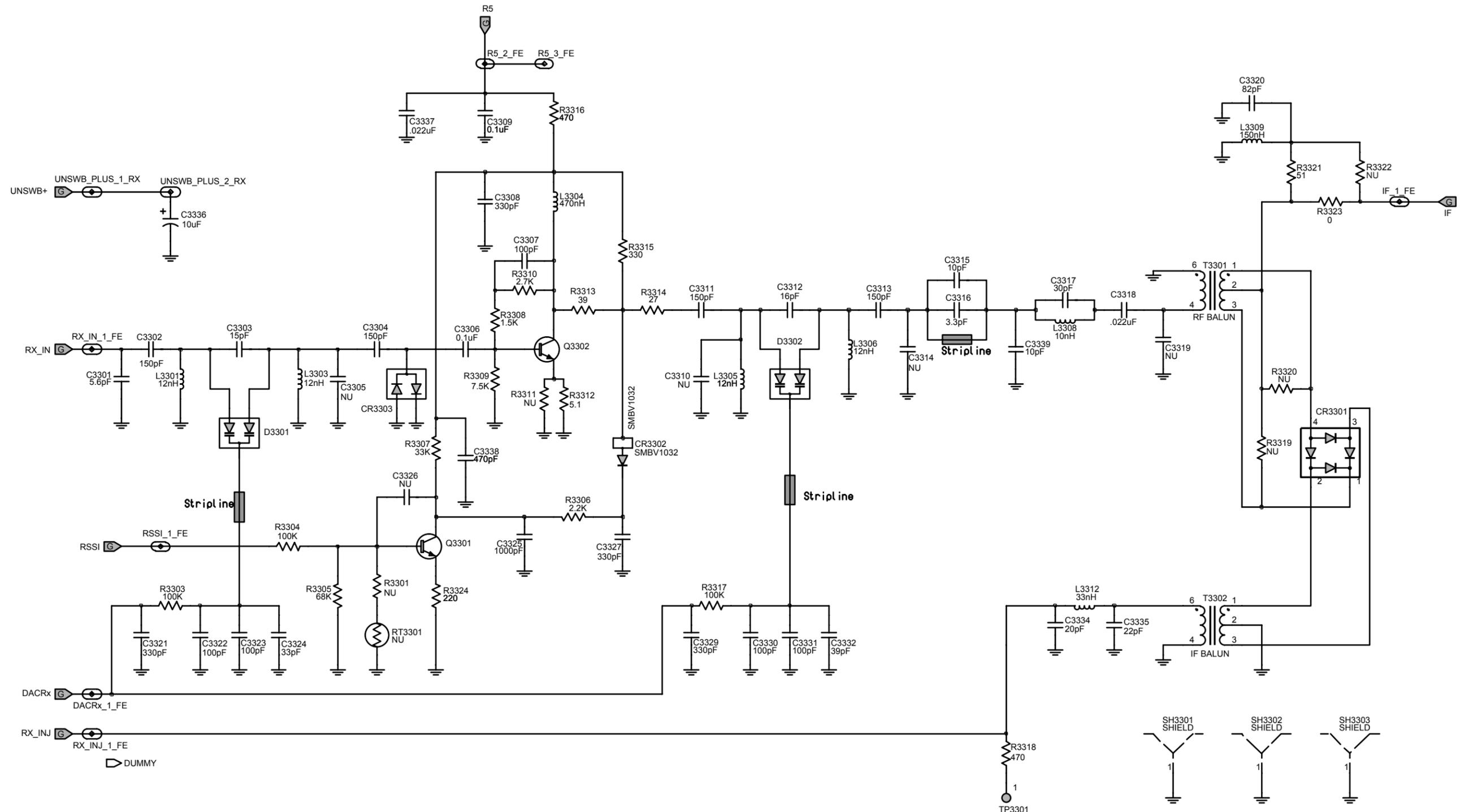


Figure 9-205. VHF (136-174 MHz) Receiver Front End Schematic Diagram

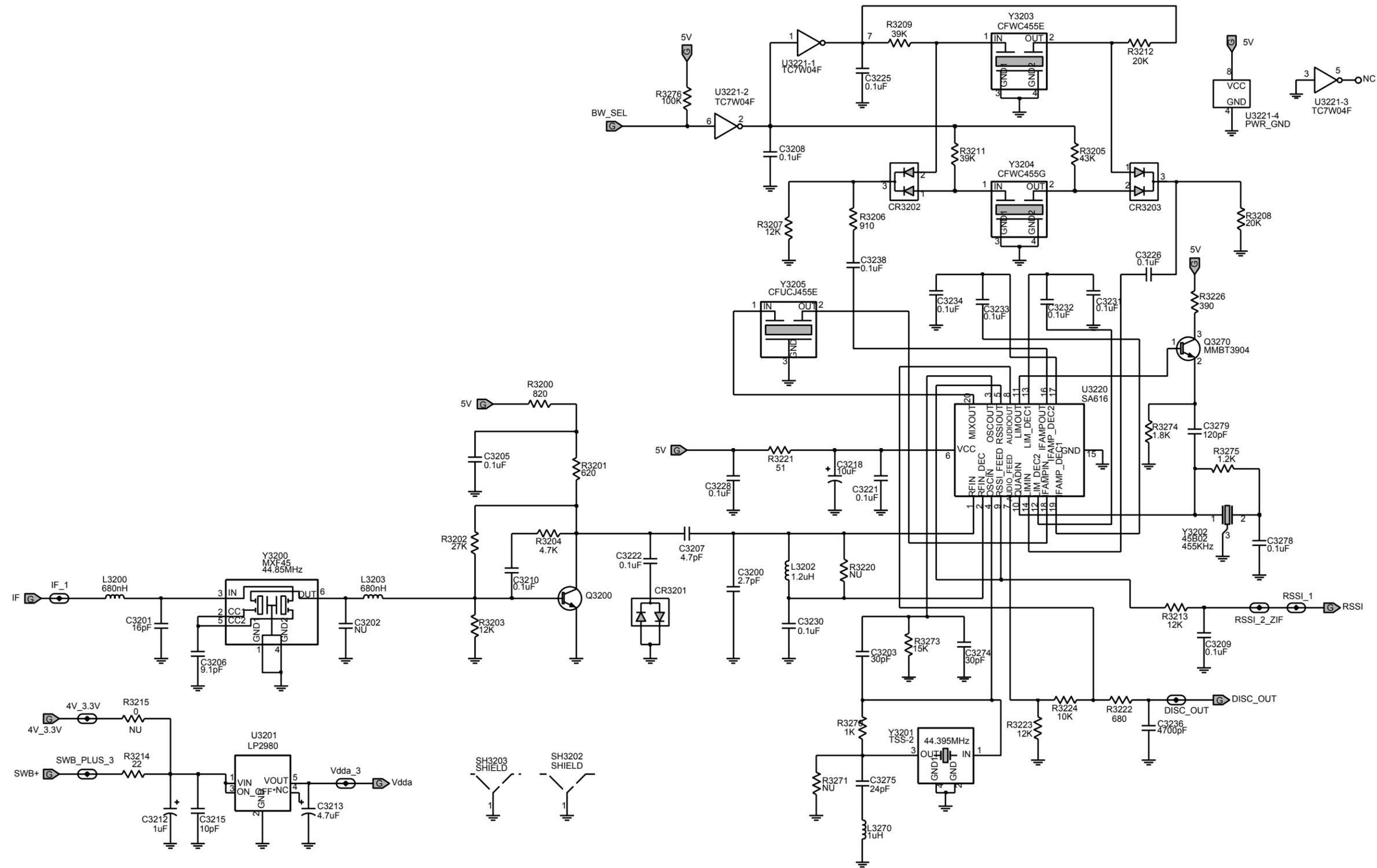
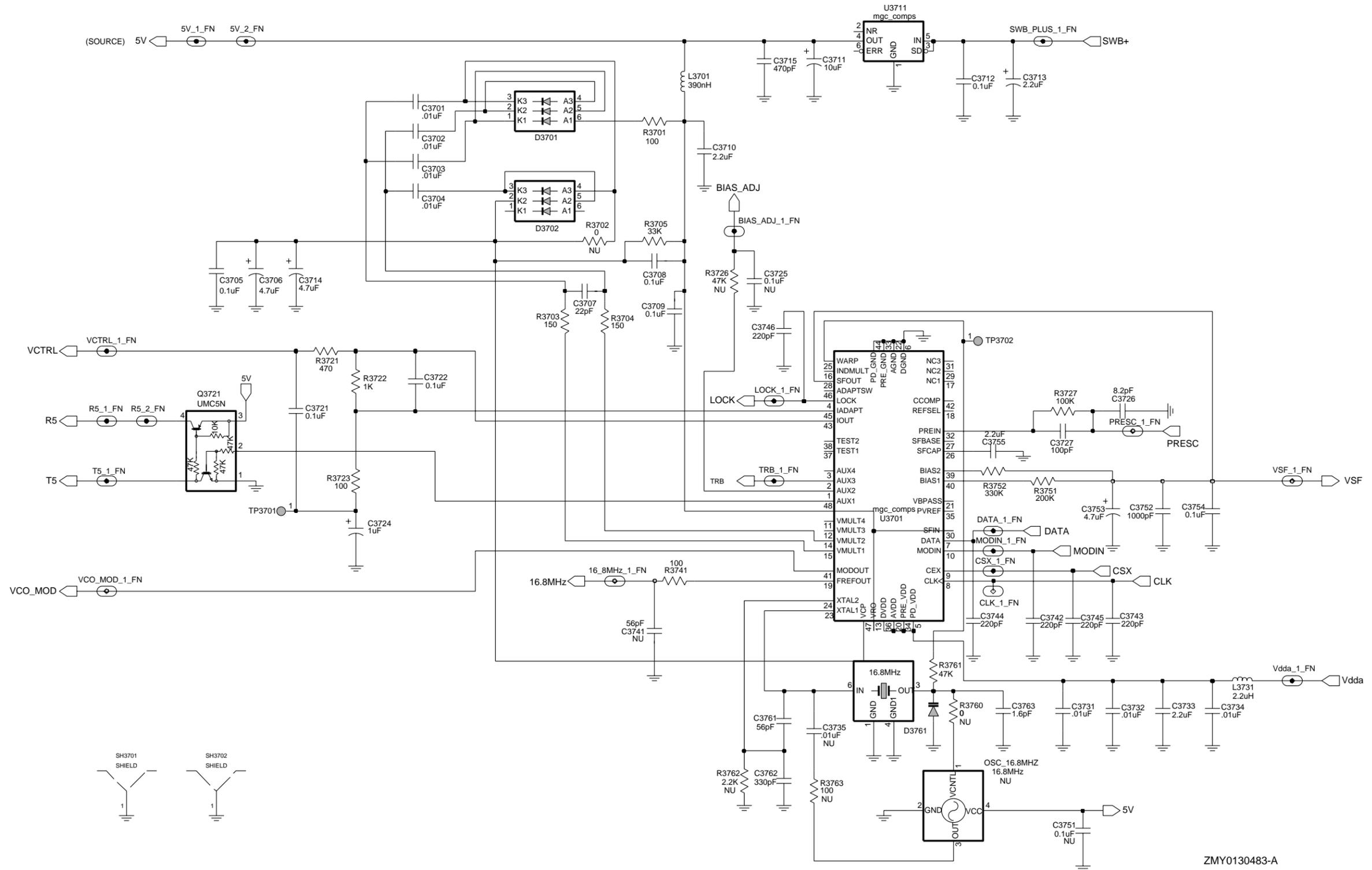


Figure 9-206. VHF (136-174 MHz) Receiver Back End Schematic Diagram



ZMY0130483-A

Figure 9-207. VHF (136-174 MHz) Synthesizer Schematic Diagram

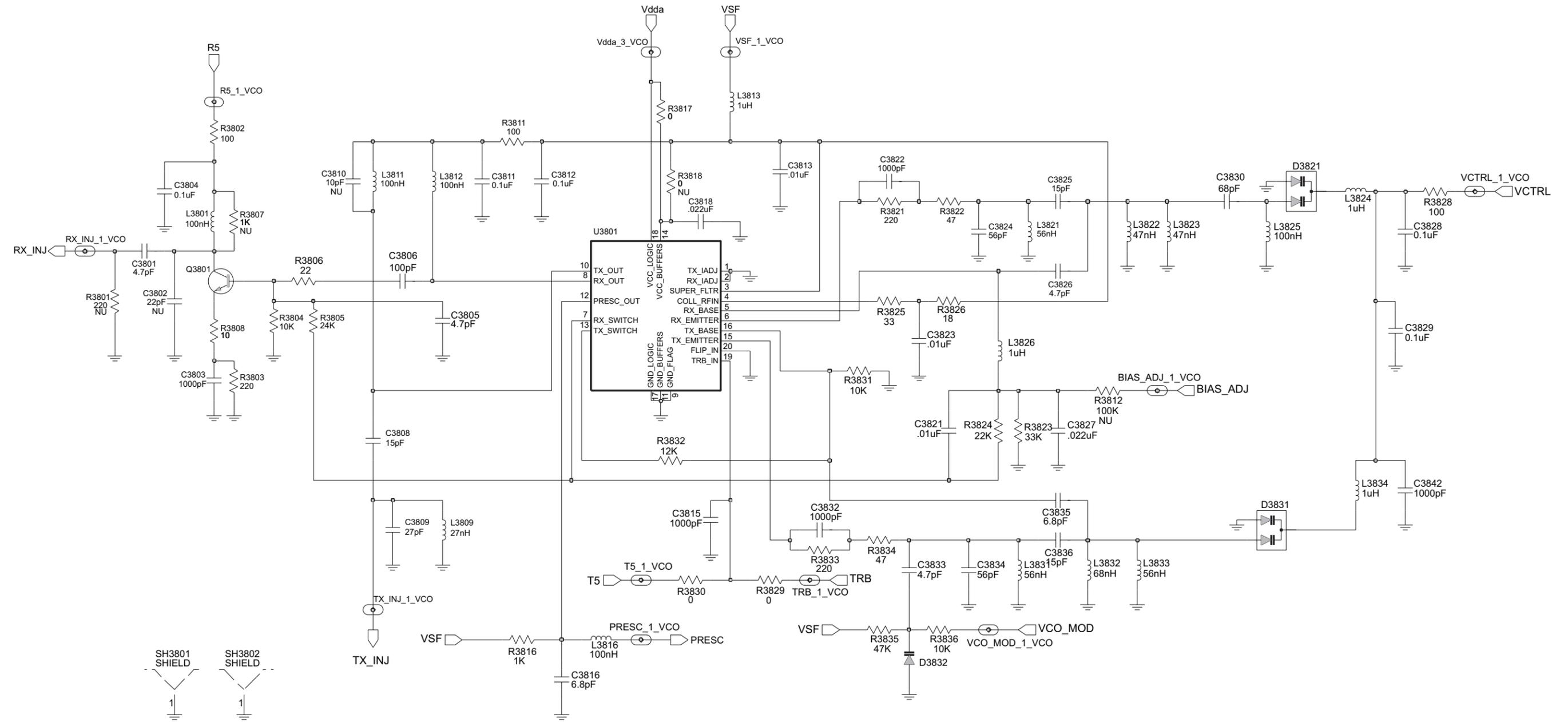


Figure 9-208. VHF (136-174 MHz) Voltage Controlled Oscillator Schematic Diagram

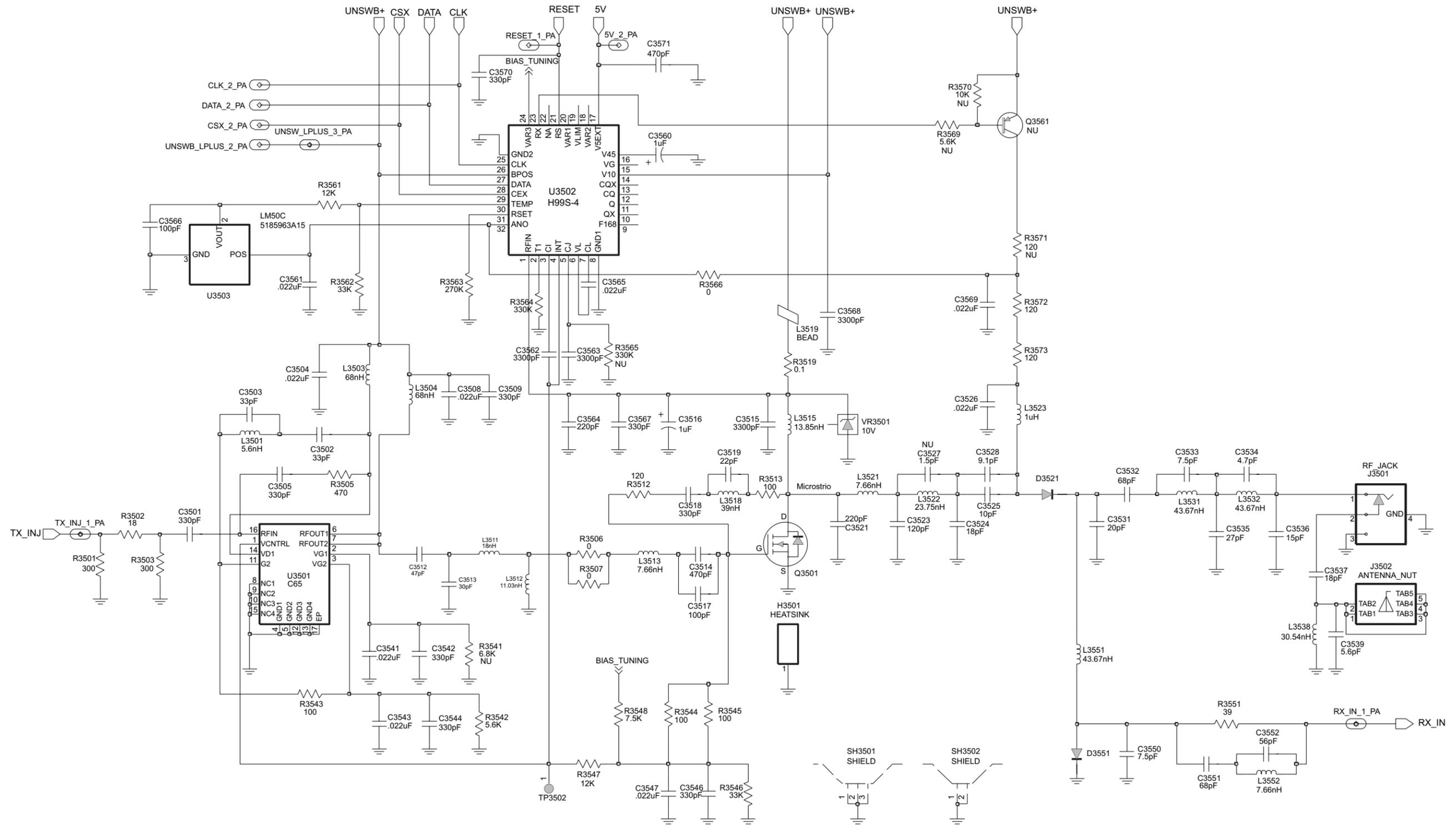


Figure 9-209. VHF (136-174 MHz) Transmitter Schematic Diagram

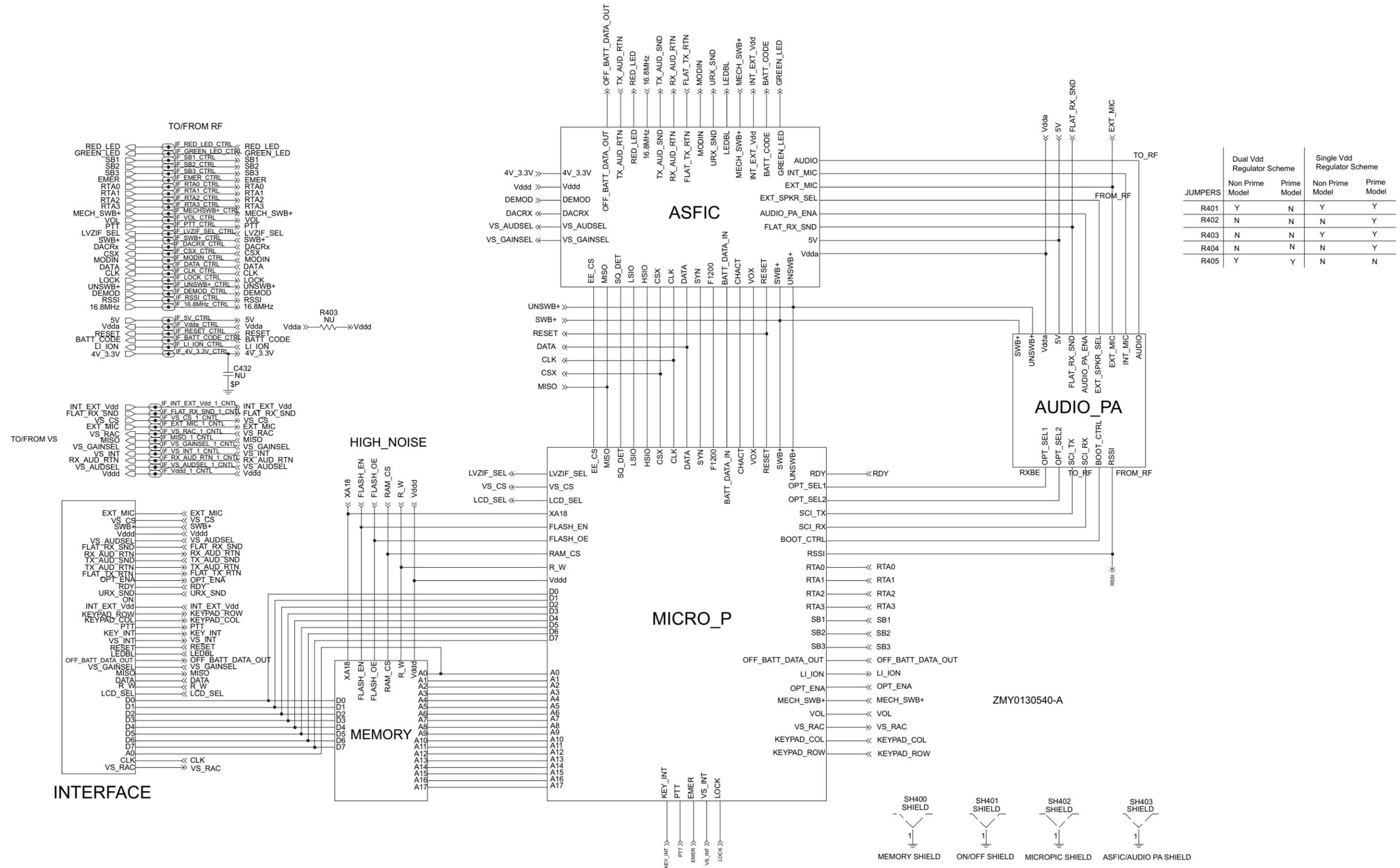


Figure 9-210. VHF (136-174 MHz) Complete Controller Schematic Diagram





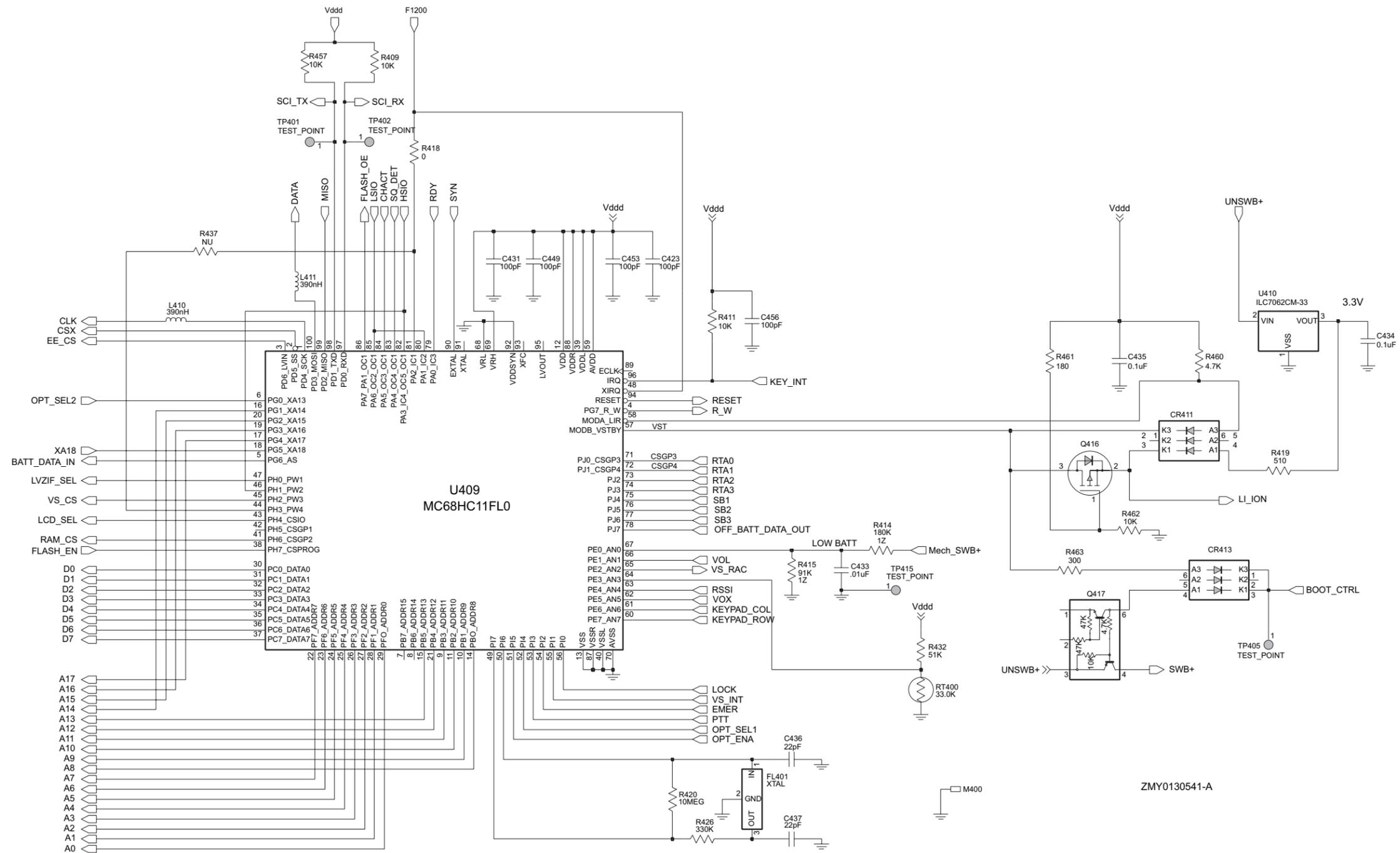
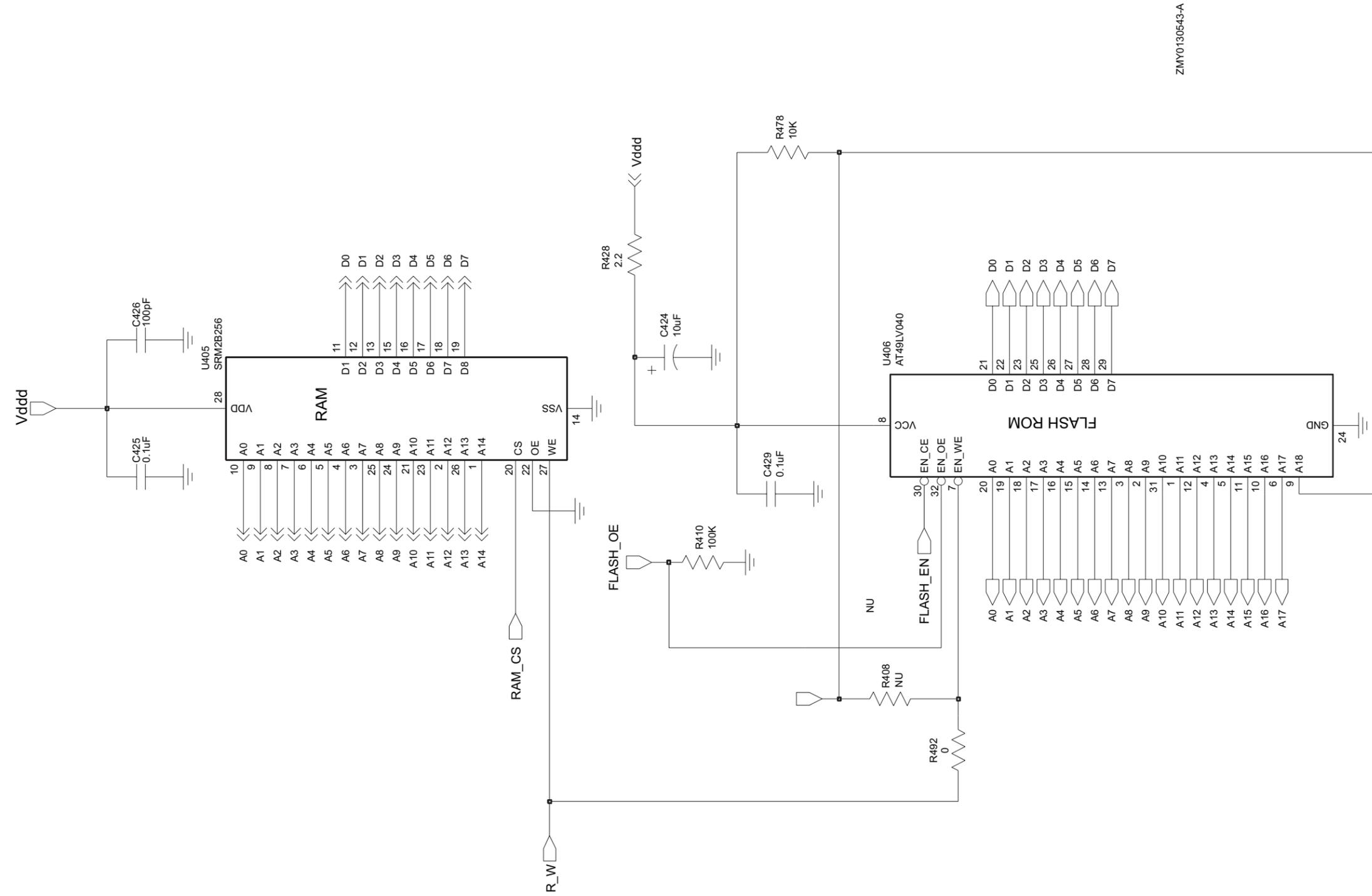


Figure 9-212. VHF (136-174 MHz) Controller Microprocessor Schematic Diagram



ZMY0130543-A

Figure 9-213. VHF (136-174 MHz) Controller Memory Schematic Diagram

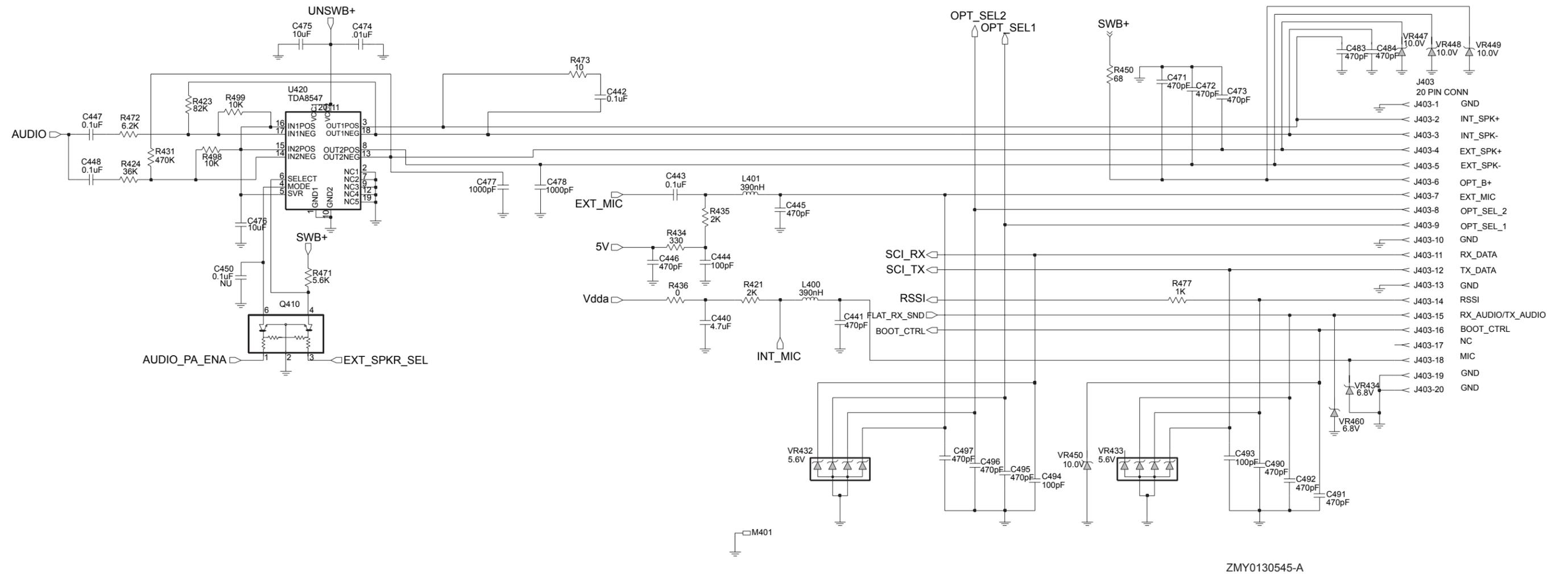


Figure 9-214. VHF (136-174 MHz) Controller Audio Power Amplifier Schematic Diagram

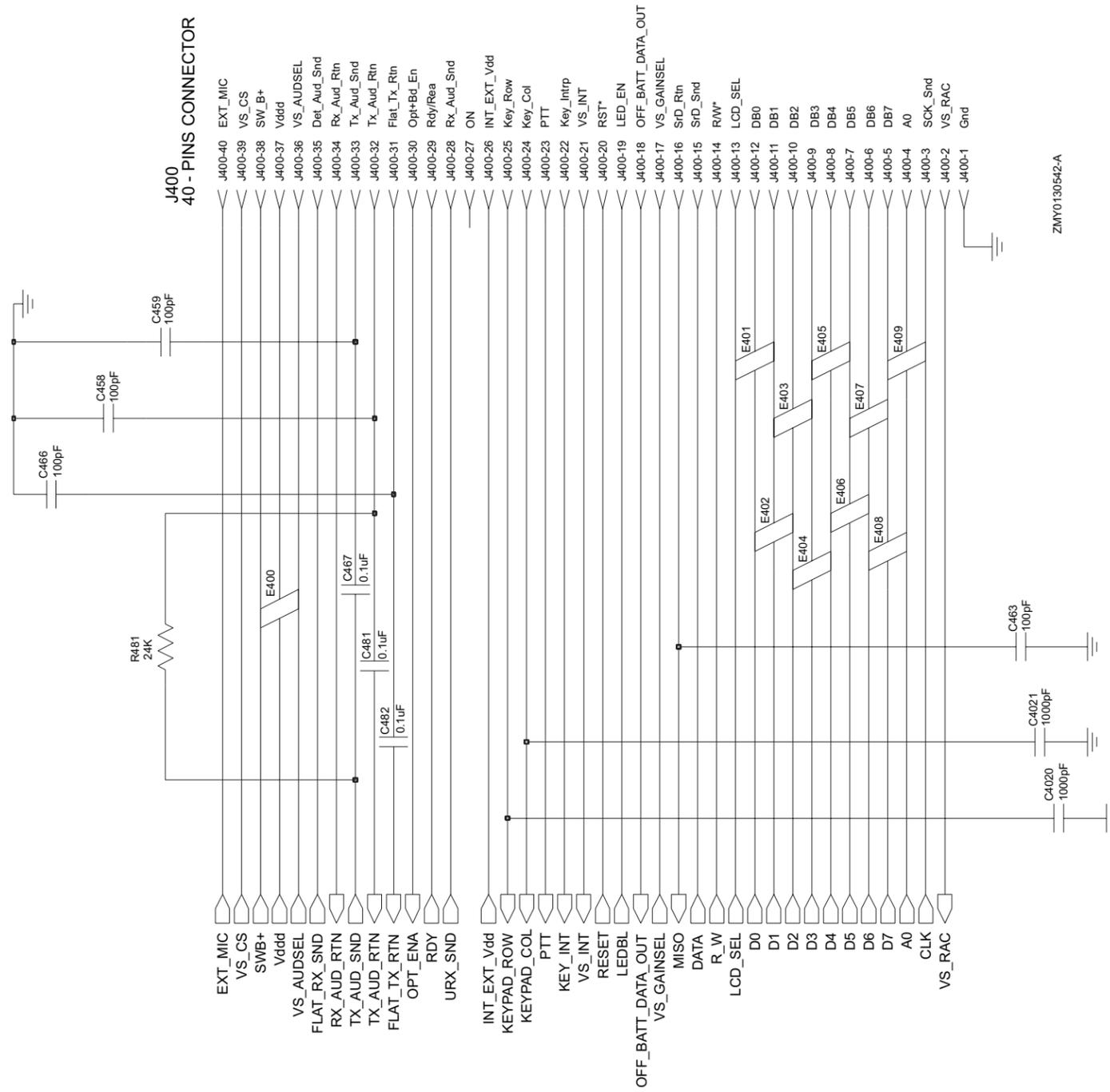


Figure 9-215. VHF (136-174 MHz) Controller Interface Schematic Diagram

**VHF (136-174 MHz) Radio Parts List (PCB 8486473Z04)**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup Contact, B +
B504	3980501Z01	Backup Contact, B -
C3200	2113743N12	2.7pF
C3201	2113743N31	16pF
C3202	NOT PLACED	-
C3203	2113743N37	30pF
C3205	2113743M24	100000pF
C3206	2109445U26	9.1
C3207	2113743N18	4.7pF
C3208	2113743M24	100000pF
C3209	2113743M24	100000pF
C3210	2113743M24	100000pF
C3212	2311049A07	1uF
C3213	2311049A56	4.7uF
C3215	2113743N26	10pF
C3218	2311049A59	10uF
C3221	2113743E20	0.1uF
C3222	2113743M24	100000pF
C3225	2113743M24	100000pF
C3226	2113743M24	100000pF
C3228	2113743M24	100000pF
C3230	2113743M24	100000pF
C3231	2113743M24	100000pF
C3232	2113743M24	100000pF
C3233	2113743M24	100000pF
C3234	2113743M24	100000pF
C3236	2113743L33	4700pF
C3238	2113743M24	100000pF
C3274	2113743N37	30pF
C3275	2113743N35	24pF
C3278	2113743E20	0.1uF
C3279	2113743N52	120pF
C328	2113743M24	100000pF
C3301	2113743N20	5.6pF
C3302	2113743N54	150pF

Circuit Ref	Motorola Part No.	Description
C3303	2113743N30	15pF
C3304	2113743N54	150pF
C3305	NOT PLACED	-
C3306	2113928N01	0.1uF
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113928N01	0.1uF
C3310	NOT PLACED	-
C3311	2113743N54	150pF
C3312	2113743N31	16pF
C3313	2113743N54	150pF
C3314	NOT PLACED	-
C3315	2113743N26	10pF
C3316	2113743N14	3.3pF
C3317	2113743N37	30pF
C3318	2113743M08	22000pF
C3319	NOT PLACED	-
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF
C3326	NOT PLACED	-
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A96	33uF
C3337	2113743M08	22000pF
C3338	2113743L09	470pF
C3339	2113743N26	10pF
C337	2113928P04	1uF
C3501	2113743L05	330pF
C3502	2113743N38	33pF

Circuit Ref	Motorola Part No.	Description
C3503	2113743N38	33pF
C3504	2113743M08	22000pF
C3505	2113743N38	33pF
C3508	2113743M08	22000pF
C3509	2113743L05	330pF
C3512	2113740F43	47pF
C3513	2113740F38	30pF
C3514	2113740F47	68pF
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F47	68pF
C3518	NOT PLACED	-
C3519	NOT PLACED	-
C3521	2111078B51	220pF
C3523	2111078B44	120pF
C3524	2113740F34	20pF
C3525	2113740F27	10pF
C3526	2113743M08	22000pF
C3527	NOT PLACED	-
C3528	2113740F27	10pF
C3531	2113740F34	20pF
C3532	2113740F47	68pF
C3533	2113740F24	7.5pF
C3534	2113740F19	4.7pF
C3535	2113740F37	27pF
C3536	2113740F31	15pF
C3537	2113740F33	18pF
C3539	2113740F29	12pF
C3541	2113743M08	22000pF
C3542	2113743L05	330pF
C3543	2113743M08	22000pF
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	22000pF
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1uF

Circuit Ref	Motorola Part No.	Description
C3561	2113743M08	22000pF
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF
C3564	2113743L01	220pF
C3565	2113743E07	0.022uF
C3566	2113743N50	100pF
C3567	2113743L05	330pF
C3568	2113743L29	3300pF
C3569	2113743M08	22000pF
C3570	2113743L05	330pF
C3571	2113743L09	470pF
C358	2113743N22	6.8pF
C359	2113743N31	16pF
C3701	2113743L41	10000pF
C3702	2113743L41	10000pF
C3703	2113743L41	10000pF
C3704	2113743L41	10000pF
C3705	2113743E20	0.1uF
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113928N01	0.1uF
C3709	2113928N01	0.1uF
C3710	2104993J02	2.2uF
C3711	2311049A69	10uF
C3712	2113928N01	0.1uF
C3713	2311049A09	2.2uF
C3714	2311049J11	4.7uF
C3715	2113743L09	470pF
C3721	2113743E20	0.1uF
C3722	2113743E20	0.1uF
C3724	2311049A08	1uF
C3725	NOT PLACED	-
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	10000pF
C3732	2113743L41	10000pF
C3733	2104993J02	2.2uF
C3734	2113743L41	10000pF

Circuit Ref	Motorola Part No.	Description
C3741	NOT PLACED	-
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3752	2113743L17	1000pF
C3753	2311049A56	4.7uF
C3754	2113928N01	0.1uF
C3755	2104993J02	2.2uF
C3761	2113743N42	47pF
C3762	2113740F63	330pF
C3763	NOT PLACED	-
C3801	2113743N18	4.7pF
C3802	NOT PLACED	-
C3803	2113743L17	1000pF
C3804	2113743E20	0.1uF
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3810	NOT PLACED	-
C3811	2113928N01	0.1uF
C3812	2113928N01	0.1uF
C3813	2113743L41	10000pF
C3815	2113743L17	1000pF
C3816	2113743N22	6.8pF
C3818	2113743E07	0.022uF
C3821	2113743L41	10000pF
C3822	2113743L17	1000pF
C3823	2113743L41	10000pF
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	0.022uF
C3828	2185895Z01	0.01uF
C3829	2185895Z01	0.01uF
C383	2113743N43	51pF

Circuit Ref	Motorola Part No.	Description
C3830	2113743N46	68pF
C3832	2113743L17	1000pF
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF
C3836	2113743N30	15pF
C3842	2113743L17	1000pF
C390	2113743N43	51pF
C400	2113743L41	10000pF
C401	2113928N01	0.1uF
C402	2113928N01	0.1uF
C4020	NOT PLACED	-
C4021	NOT PLACED	-
C403	2113743G24	2.2uF
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113928N01	0.1uF
C410	2113928N01	0.1uF
C411	2113928N01	0.1uF
C414	2113928N01	0.1uF
C415	2185895Z01	0.01uF
C416	2113928N01	0.1uF
C419	2113743L41	10000pF
C420	2113743L41	10000pF
C421	2113928N01	0.1uF
C422	2113928N01	0.1uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113928N01	0.1uF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113928N01	0.1uF
C429	2113928N01	0.1uF
C430	2113928N01	0.1uF
C431	2113743N50	100pF
C432	NOT PLACED	-
C433	2113743L41	10000pF
C434	2113928N01	0.1uF

Circuit Ref	Motorola Part No.	Description
C435	2113928N01	0.1uF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF
C441	2113743L09	470pF
C442	2113743E20	0.1uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743L09	470pF
C446	2113743L09	470pF
C447	2113928N01	0.1uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOT PLACED	-
C451	2113743M08	22000pF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743L09	470pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C474	2113743L41	10000pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C477	2113743L17	1000pF
C478	2113743L17	1000pF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF
C483	2113743L09	470pF
C484	2113743L09	470pF
C490	2113743L09	470pF

Circuit Ref	Motorola Part No.	Description
C491	2113743L09	470pF
C492	2113743L09	470pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743L09	470pF
C496	2113743L09	470pF
C497	2113743L09	470pF
C498	NOT PLACED	-
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF
C521	2113743L41	10000pF
C522	2113743L41	10000pF
C523	2113743L41	10000pF
C535	2113743L17	1000pF
CR3201	4813825A19	Schottky Diode
CR3202	4802245J97	Band Switching Diode
CR3203	4802245J97	Band Switching Diode
CR3301	4802245J42	Ring Quad Diode
CR3302	4805129M96	Dual Diode
CR3303	4880154K03	Dual Diode
CR411	4802245J62	Schottkt Diode
CR412	4802245J62	Schottkt Diode
CR413	4802245J62	Schottkt Diode
CR440	4813833C02	Dual Diode
CR501	4880107R01	Rectifier
CR503	4805729G49	Red / Yellow LED
D3301	4802081B58	Dual Diode
D3302	4802081B58	Dual Diode
D3521	4880973Z02	Pin Diode
D3551	4880973Z02	Pin Diode
D3701	4802233J09	Triple Diode
D3702	4802233J09	Triple Diode

Circuit Ref	Motorola Part No.	Description
D3761	4862824C03	Varactor Diode
D3821	4805649Q13	Varactor Diode
D3831	4805649Q13	Varactor Diode
D3832	4862824C01	Varactor Diode
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL401	4870368G02	Real Time Clock Xtal Oscillator 38.4kHz
H3501	2680499Z01	Heat Spreader
J3501	0985613Z01	RF Jack
J3502	0280519Z02	Antenna Nut
J400	0905505Y04	40-Pin Connector
J403	0905505Y02	20-Pin Connector
L3200	2413926K33	680nH
L3202	2413923A25	1200nH
L3203	2413926K33	680nH
L3270	2462587N68	1000nH
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH
L3501	2413926H09	5.6nH
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH

Circuit Ref	Motorola Part No.	Description
L3512	2479990B01	11.03nH
L3513	2479990A02	7.66nH
L3515	2479990C03	1385nH
L3518	NOT PLACED	-
L3519	2484657R01	Ferrite Bead
L3521	2479990A02	7.66nH
L3522	2479990E01	23.75nH
L3523	2462587N68	1000nH
L3531	2479990N01	43.67nH
L3532	2479990N01	43.67nH
L3538	2479990M01	30.54nH
L3551	2479990N01	43.67nH
L3552	2479990A02	7.66nH
L3701	2462587Q42	390nH
L3731	2462587Q20	2200nH
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1000nH
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1000nH
L3825	2462587V34	100nH
L3826	2462587N68	1000nH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1000nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L505	2462587Q42	390nH
PB501	4086470Z01	Tactile Switch
PB502	4086470Z01	Tactile Switch

Circuit Ref	Motorola Part No.	Description
PB503	4086470Z01	Tactile Switch
PB504	4086470Z01	Tactile Switch
PB505	4086470Z01	Tactile Switch
Q3200	4802197J95	NPN Transistor
Q3270	4813824A10	NPN Transistor
Q3301	4880214G02	NPN Transistor
Q3302	4802197J95	NPN Transistor
Q3501	4813828A08	RF Power Amplifier
Q3561	4813824A17	PNP Transistor
Q3721	4809939C05	Dual NPN/PNP Transistor
Q3801	4802197J95	NPN Transistor
Q400	4809579E18	MOSFET P-chan Transistor
Q403	4813824A17	PNP Transistor
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	MOSFET P-chan Transistor
Q417	4809939C05	Dual NPN/PNP Transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor
R3200	0662057M72	820
R3201	0662057M69	620
R3202	0662057N09	27K
R3203	0662057N01	12K
R3204	0662057M90	4700
R3205	0662057N06	20K
R3206	0662057M73	910
R3207	0662057N01	12K
R3208	0662057N06	20K
R3209	0662057N13	39K
R3211	0662057N13	39K
R3212	0662057N06	20K
R3213	0662057N01	12K
R3214	0662057M34	22
R3215	0662057M01	0
R3220	NOT PLACED	-
R3221	0662057M43	51
R3222	0662057M70	680
R3223	0662057V04	12K

Circuit Ref	Motorola Part No.	Description
R3224	0662057V02	10K
R3226	0662057M64	390
R3270	0662057M74	1000
R3271	NOT PLACED	-
R3273	0662057N03	15K
R3274	0662057M80	1800
R3275	0662057M76	1200
R3276	0662057N23	100K
R3301	NOT PLACED	-
R3303	0662057N23	100K
R3304	0662057N23	100K
R3305	0662057N18	62K
R3306	0662057M82	2200
R3307	0662057N11	33K
R3308	0662057M78	1500
R3309	0662057M95	7500
R3310	0662057M84	2700
R3311	NOT PLACED	-
R3312	0662057M19	5.1
R3313	0662057M40	39
R3314	0662057M35	24
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3319	NOT PLACED	-
R3320	NOT PLACED	-
R3321	0662057M43	51
R3322	NOT PLACED	-
R3323	0662057M01	0
R3324	0662057M58	220
R3501	0662057M61	300
R3502	0662057M32	18
R3503	0662057M61	300
R3505	0662057M62	330
R3506	0662057B62	3.9
R3507	0662057B62	3.9
R3512	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
R3513	NOT PLACED	-
R3519	0680539Z01	0.1
R3541	0662057N13	39K
R3542	0662057M92	5600
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N01	12K
R3547	0662057N11	33K
R3548	0662057N07	22K
R3551	0662057M40	39
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3565	NOT PLACED	-
R3566	NOT PLACED	-
R3569	0662057M92	5600
R3570	0662057M98	10K
R3571	0662057A27	120
R3572	0662057A27	120
R3573	0662057A27	120
R370	NOT PLACED	-
R3701	0662057M50	100
R3702	NOT PLACED	-
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R371	0662057N23	100K
R372	0662057N28	160K
R3721	0662057M66	470
R3722	0662057M68	560
R3723	0662057M50	100
R3726	NOT PLACED	-
R3727	0662057N23	100K
R373	NOT PLACED	-
R374	0662057N23	100K
R3741	0662057M50	100

Circuit Ref	Motorola Part No.	Description
R375	NOT PLACED	-
R3751	0662057N30	200K
R3752	0662057N29	180K
R376	0662057M01	0
R3761	0662057N15	47K
R3762	NOT PLACED	-
R377	0662057N23	100K
R378	0662057N23	100K
R3801	NOT PLACED	-
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10K
R3805	0662057N08	24K
R3806	0662057M34	22
R3807	NOT PLACED	-
R3808	0662057M26	10
R3811	0662057M50	100
R3812	NOT PLACED	-
R3816	0662057M74	1000
R3817	0662057M01	0
R3818	NOT PLACED	-
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100
R3829	0662057M01	0
R3830	NOT PLACED	-
R3831	0662057M98	10K
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47
R3835	0662057N15	47K
R3836	0662057M98	10K
R400	0662057N15	47K
R401	0662057M01	0

Circuit Ref	Motorola Part No.	Description
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	NOT PLACED	-
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057M98	10K
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2000
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057N20	75K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R437	NOT PLACED	-
R445	0662057N08	24K
R447	0662057N23	100K
R448	0662057M98	10K
R449	0662057N08	24K
R450	0683962T45	68
R451	0662057N03	15K
R452	0662057N23	100K
R453	NOT PLACED	-

Circuit Ref	Motorola Part No.	Description
R454	NOT PLACED	-
R455	NOT PLACED	-
R456	0662057M01	0
R457	0662057M98	10K
R460	0662057M90	4700
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057N06	20K
R472	0662057M93	6200
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330K
R477	0662057M74	1000
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R498	0662057M98	10K
R499	0662057M98	10K
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
RT3301	NOT PLACED	-
RT400	0680590Z01	Thermistor_33K
S501	4080710Z01	Frequency Switch
S501	4080710Z02	Frequency Switch
S502	1880619Z02	Volume / On-off Switch
SH3202	2686539Z01	IFIC Shield
SH3203	2686527Z01	Crystal Filter Shield
SH3301	2686081B01	Receiver Back-End Bottom Shield
SH3302	2686081B05	Mixer Diode Shield
SH3303	2686081B06	Receiver Front-End Shield
SH3501	2686081B03	Harmonic Filter Shield
SH3502	2686081B04	PA Shield
SH3701	2680511Z01	Synthesizer Top Shield
SH3702	2680511Z01	Synthesizer Bottom Shield



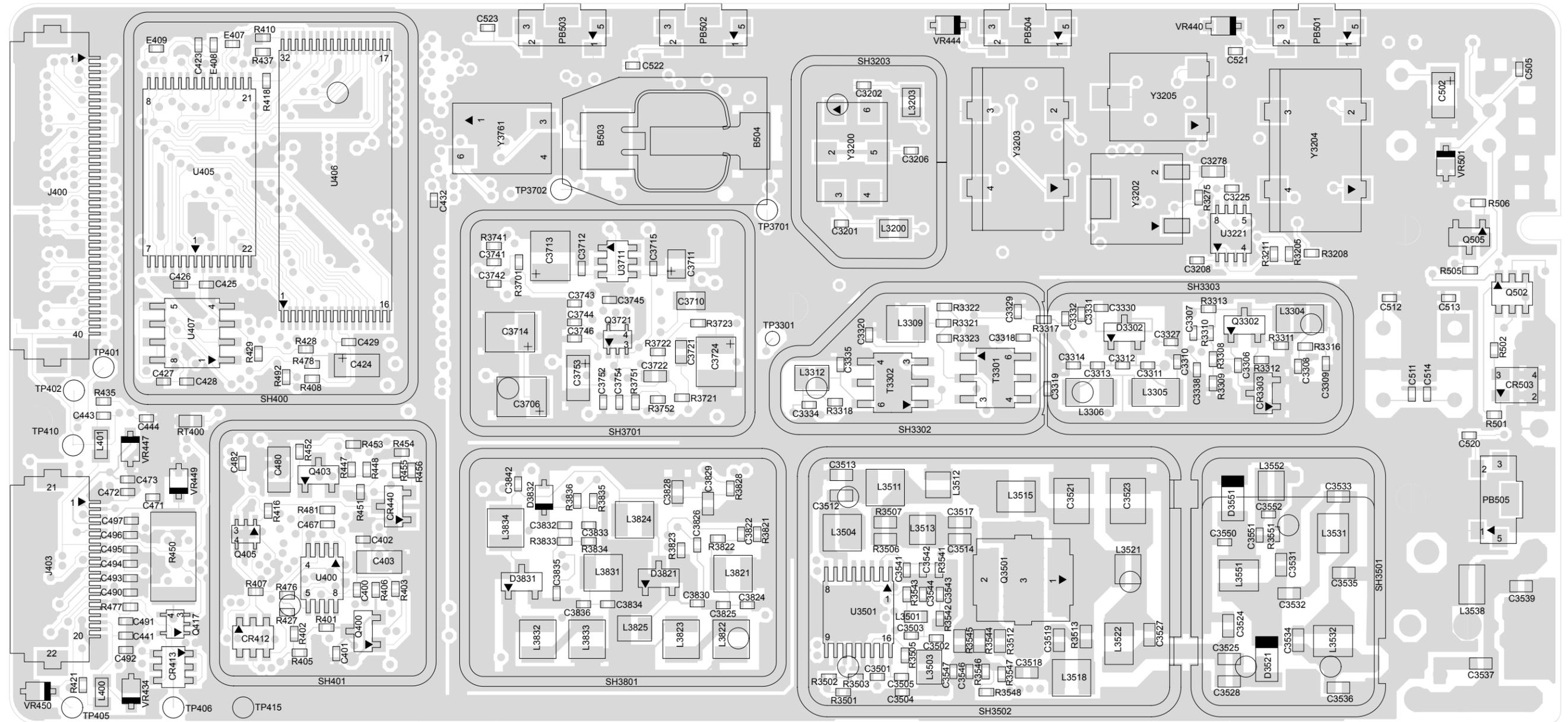
Circuit Ref	Motorola Part No.	Description
SH3801	2680513Z01	VCO Top Shield
SH3802	2680514Z01	VCO Buffer IC Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On-off Shield
SH402	2680515Z01	Microprocessor Shield
SH403	2680516Z01	Asfic_Cmp, Audio PA Shield
T3301	2580541Z02	Balun Transformer
T3302	2580541Z02	Balun Transformer
U303	5113818A01	IC Sing Supply
U3201	5102463J58	3.3V Regulator
U3220	5186144B01	IF IC
U3221	5109522E10	Inverter IC
U3501	5185130C65	ASFIC CMP IC
U3502	5185765B26	LDMOS Driver IC
U3503	5185963A15	PCIC
U3701	5185963A27	Temperature Sensor
U3711	5105739X05	5V Regulator
U3801	5105750U54	VCO Buffer IC
U400	5102463J40	3.3V Regulator
U404	5185130C53	LV FRAC-N IC
U405	5102463J36	Static RAM 32K X 8
U406	*5102463J60	Flash ROM 512K X 8
U407	*5102495J05	EEPROM 16K X 8
U409	5102226J56	Microprocessor IC
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
VR3501	4880140L17	Zener Diode
VR432	4805656W08	Zener Diode
VR433	4805656W08	Zener Diode
VR434	4802245J73	Zener Diode 6.8V
VR439	4880140L17	Zener Diode
VR440	NOT PLACED	-
VR441	NOT PLACED	-
VR442	NOT PLACED	-
VR444	NOT PLACED	-
VR447	4802245J74	Zener Diode 10V
VR448	4802245J74	Zener Diode 10V
VR449	4802245J74	Zener Diode 10V

Circuit Ref	Motorola Part No.	Description
VR450	4802245J75	Zener Diode 12V
VR460	4802245J73	Zener Diode 6.8V
VR501	4802245J73	Zener Diode 6.8V
VR506	4802245J73	Zener Diode 6.8V
Y3200	9180022M11	44.85MHZ Crystal Filter
Y3201	4802245J84	44.395MHz Crystal Oscillator
Y3202	9186145B02	455KHZ Discriminator
Y3203	9180469V05	455KHz 6-Pole Ceramic Filter
Y3204	9180469V03	455KHz 6-Pole Ceramic Filter
Y3205	9180468V05	455KHz 4-Pole Ceramic Filter
Y3761	4805875Z04	16.8 MHz Crystal Oscillator
	8486473Z04	VHF PC Board

\* Motorola Depot Servicing only

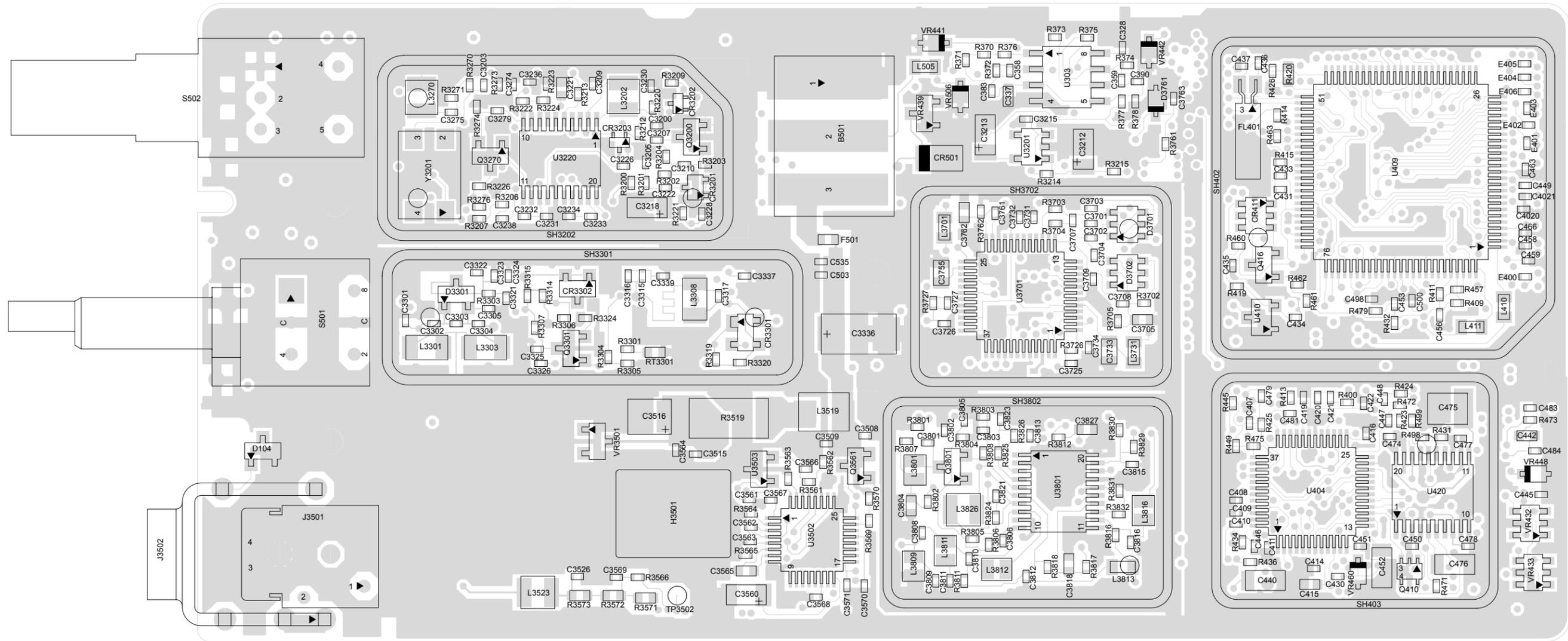
## Notes

### 9.24 VHF Circuit Board/Schematic Diagrams and Parts List (PCB 8415112H01)



ZMY30008-O

Figure 9-216. VHF (136-174 MHz) Main Board Top Side PCB No. 8415112H01



ZMY30009-O

Figure 9-217. VHF (136-174 MHz) Main Board Bottom Side PCB No. 8415112H01

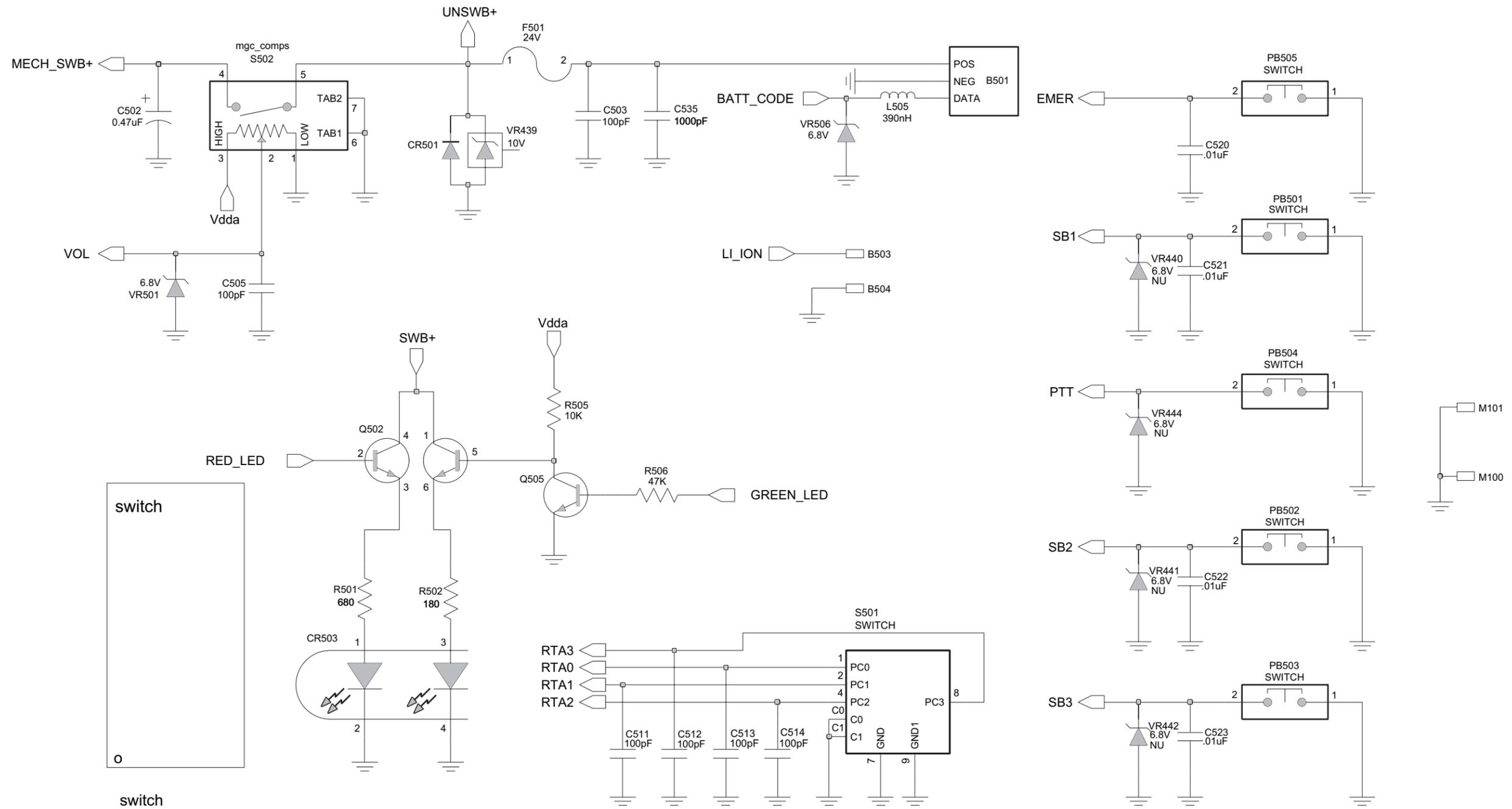


Figure 9-218. VHF Controls And Switches Schematic Diagram

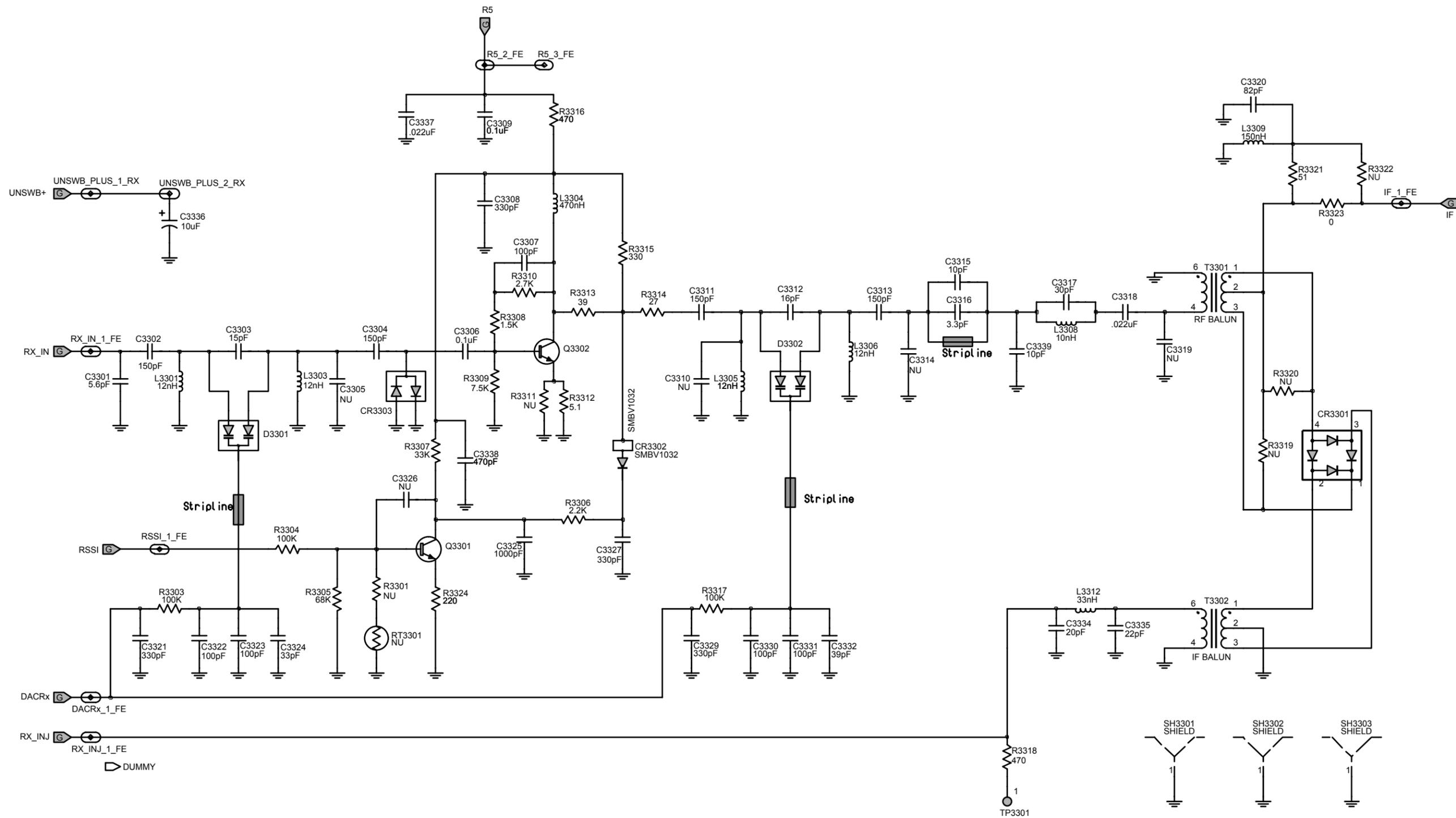


Figure 9-219. VHF Receiver Front End Schematic Diagram

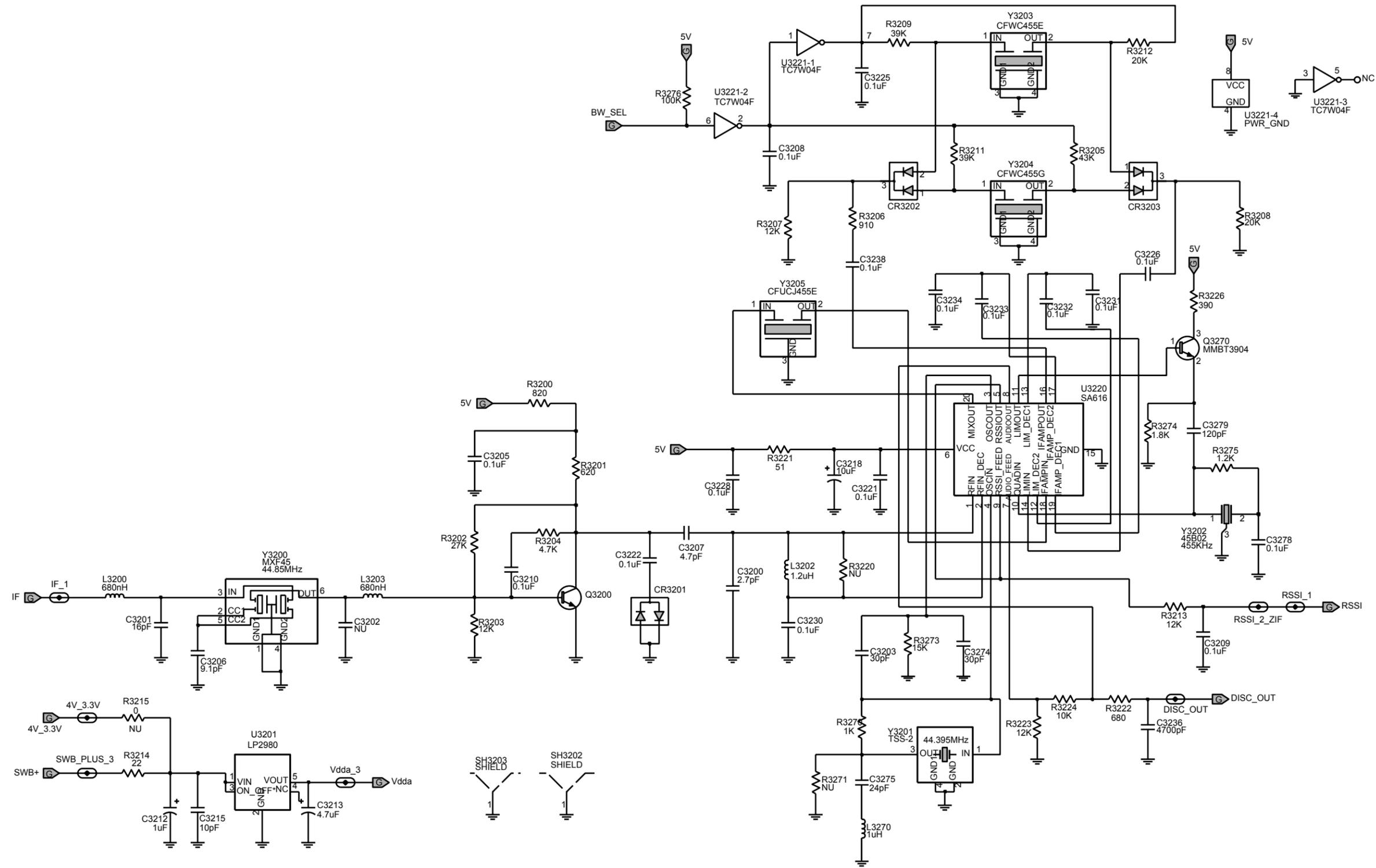


Figure 9-220. VHF Receiver Back End Schematic Diagram

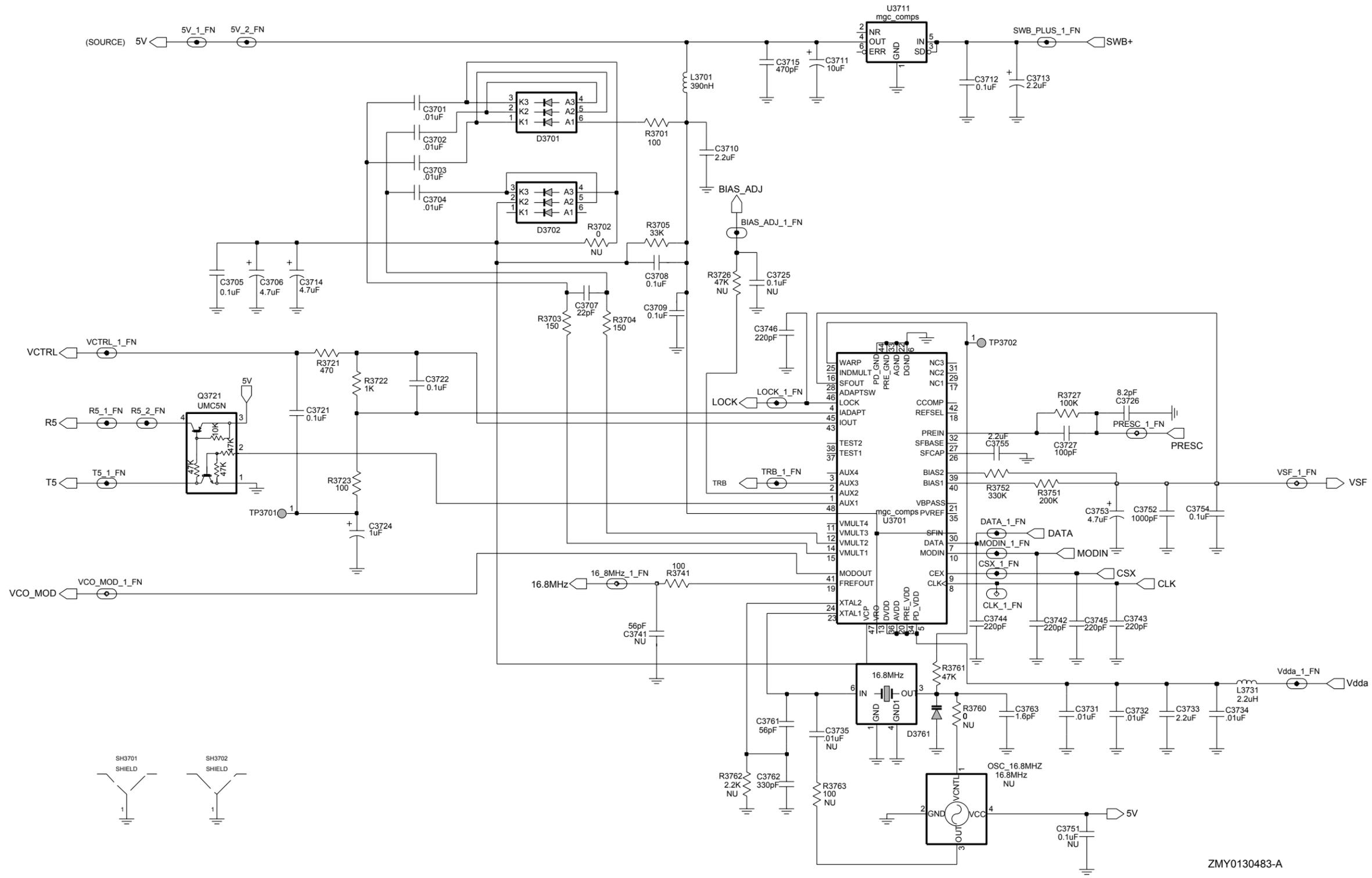


Figure 9-221. VHF Synthesizer Schematic Diagram



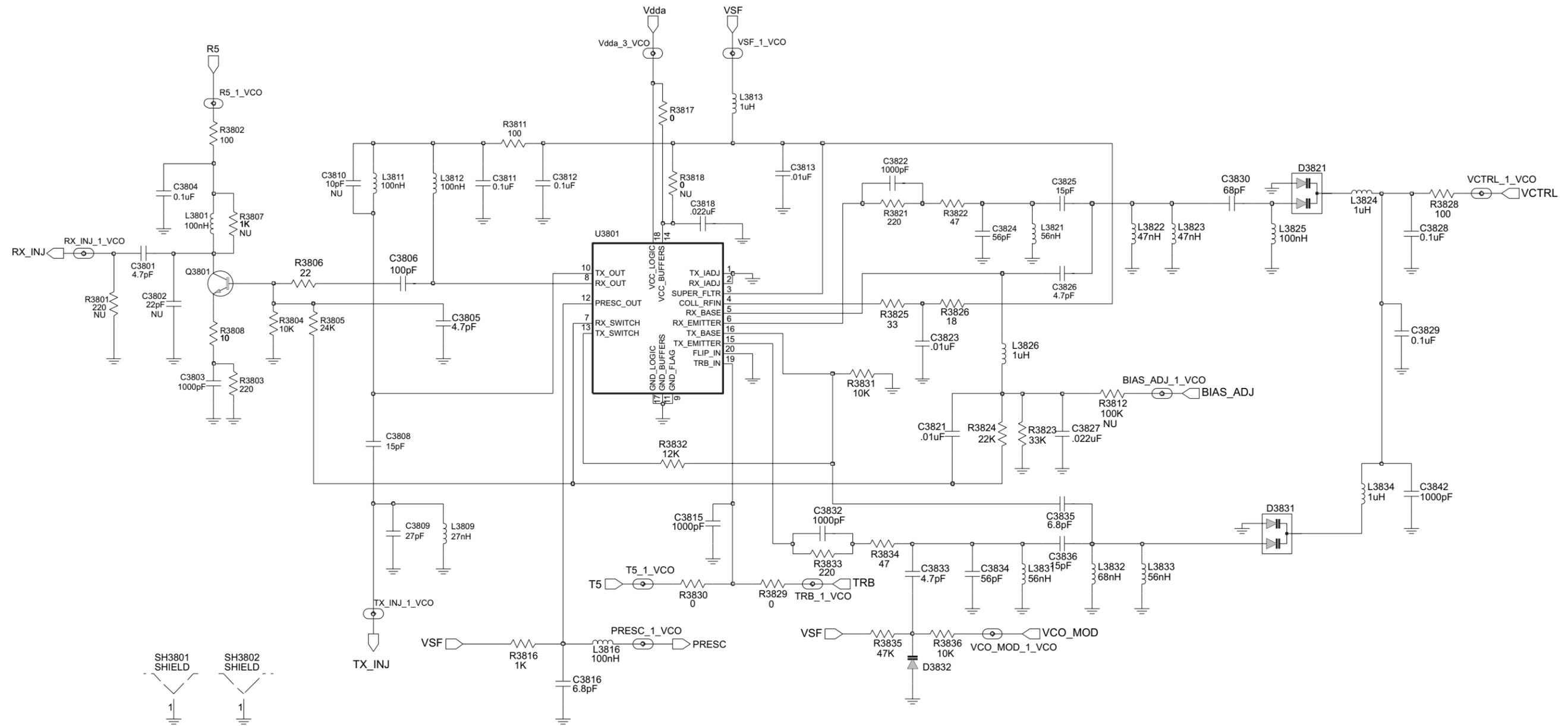


Figure 9-222. VHF Voltage Controlled Oscillator Schematic Diagram

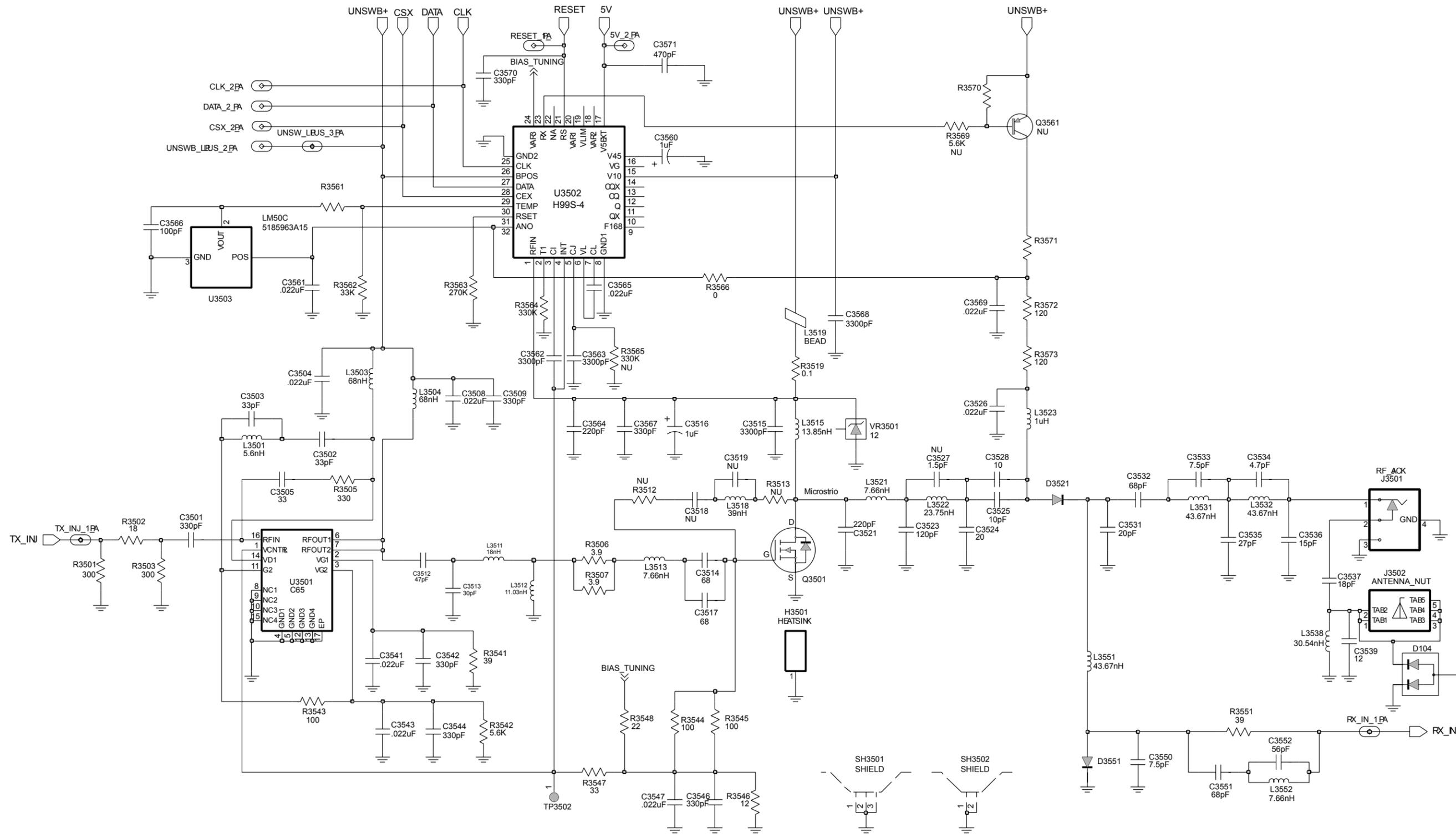


Figure 9-223. VHF Transmitter Schematic Diagram

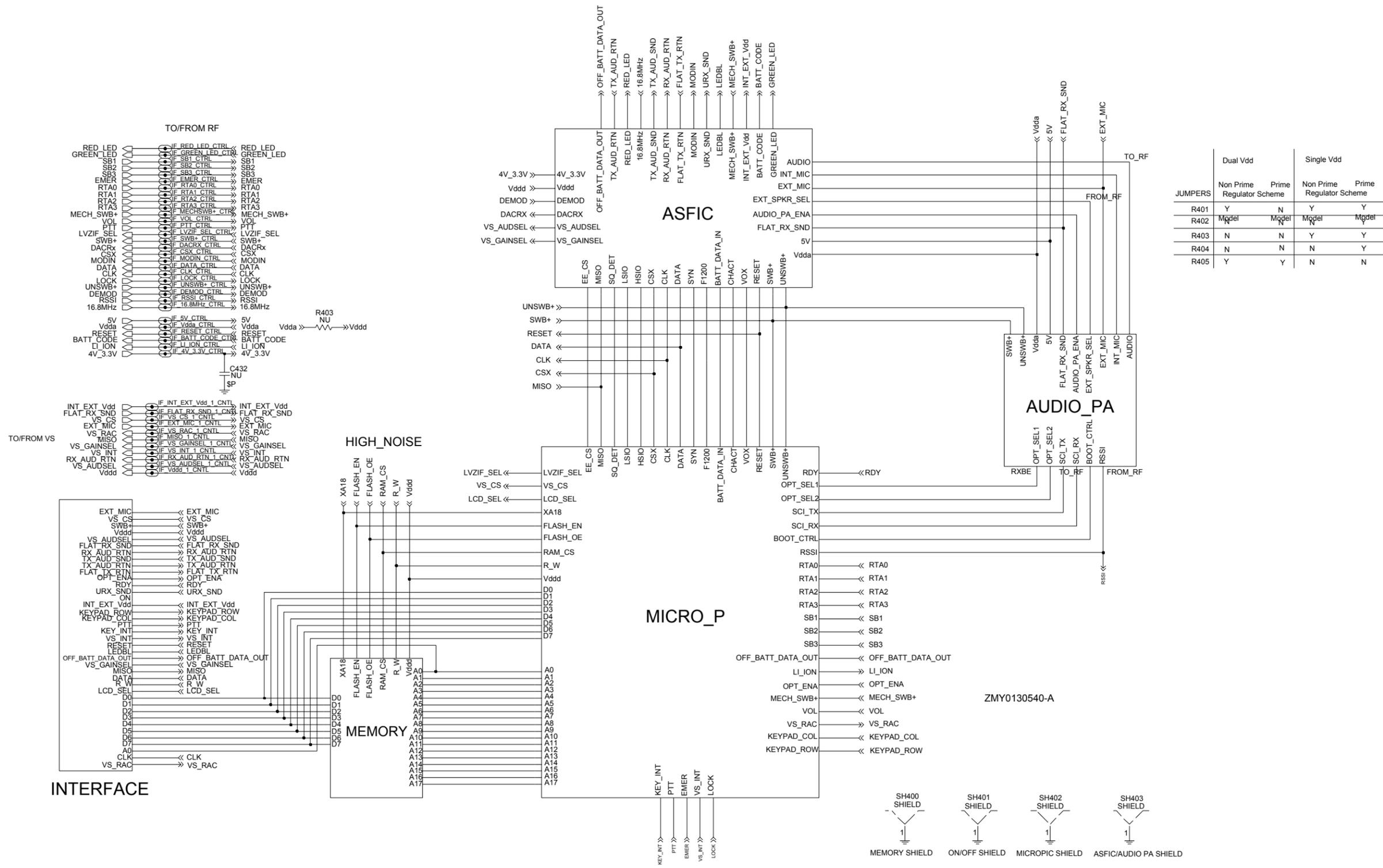
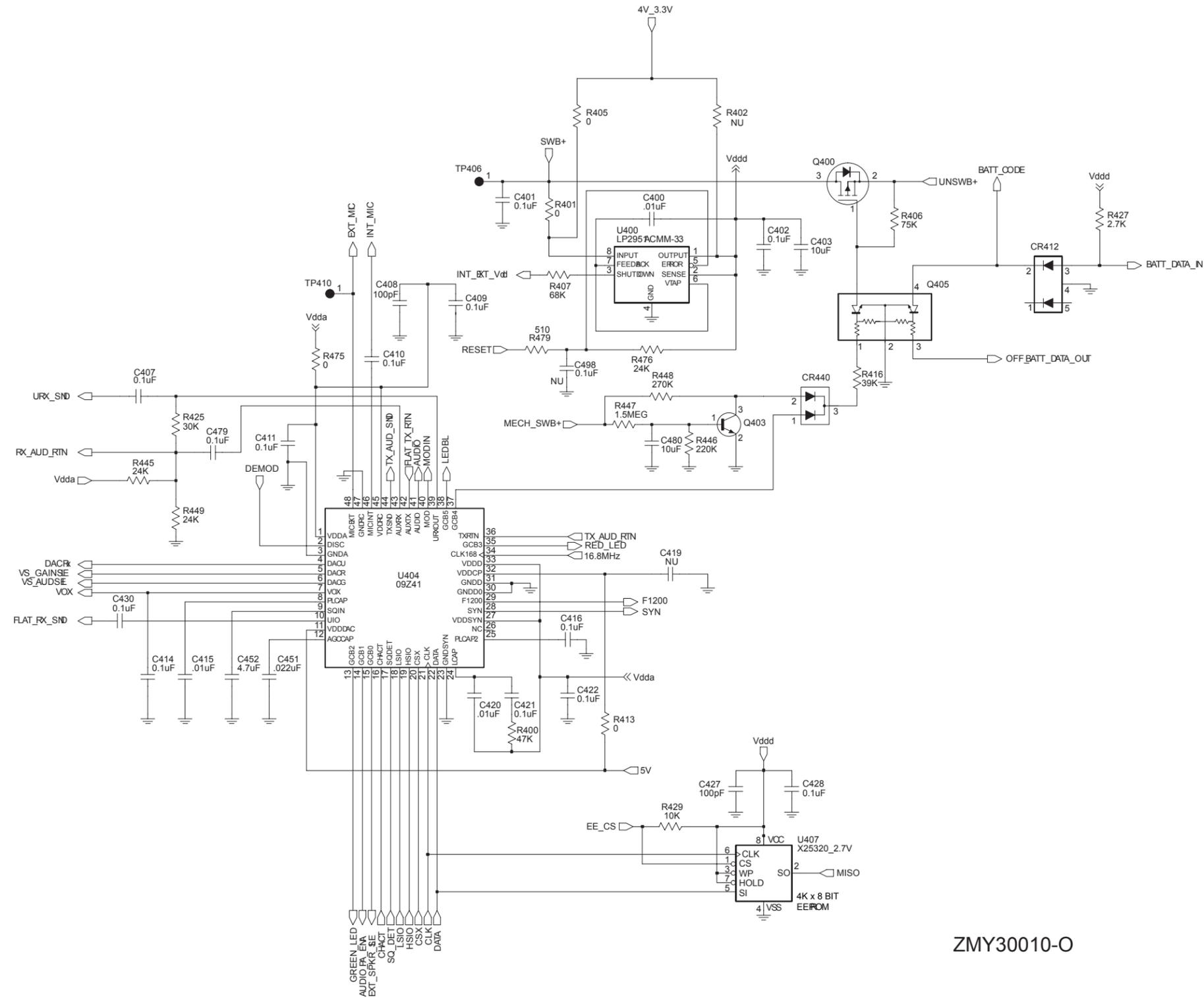


Figure 9-224. Complete Controller Schematic Diagram



ZMY30010-O

Figure 9-225. Controller ASFIC/ON\_OFF Schematic Diagram

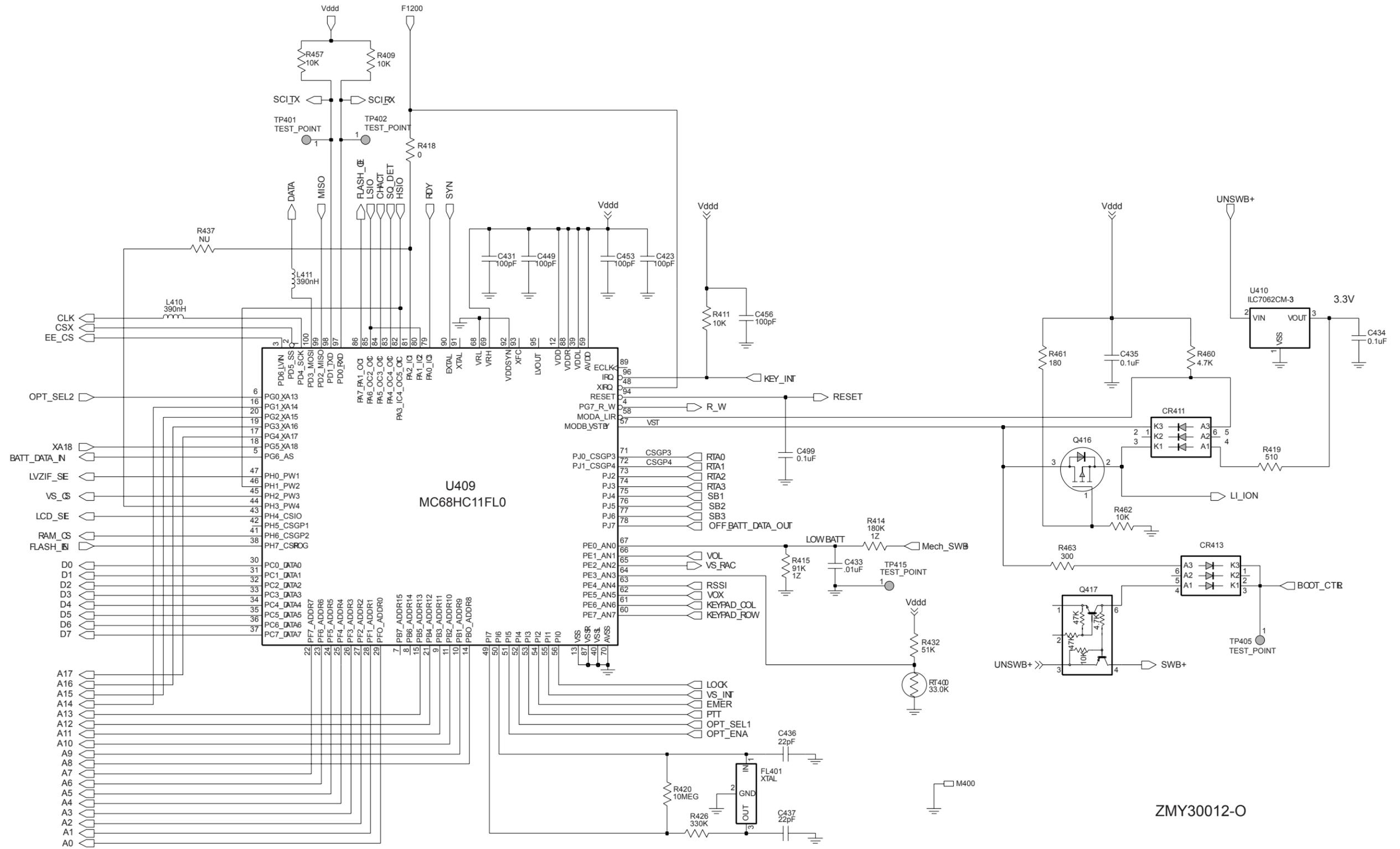


Figure 9-226. Controller Microprocessor Schematic Diagram

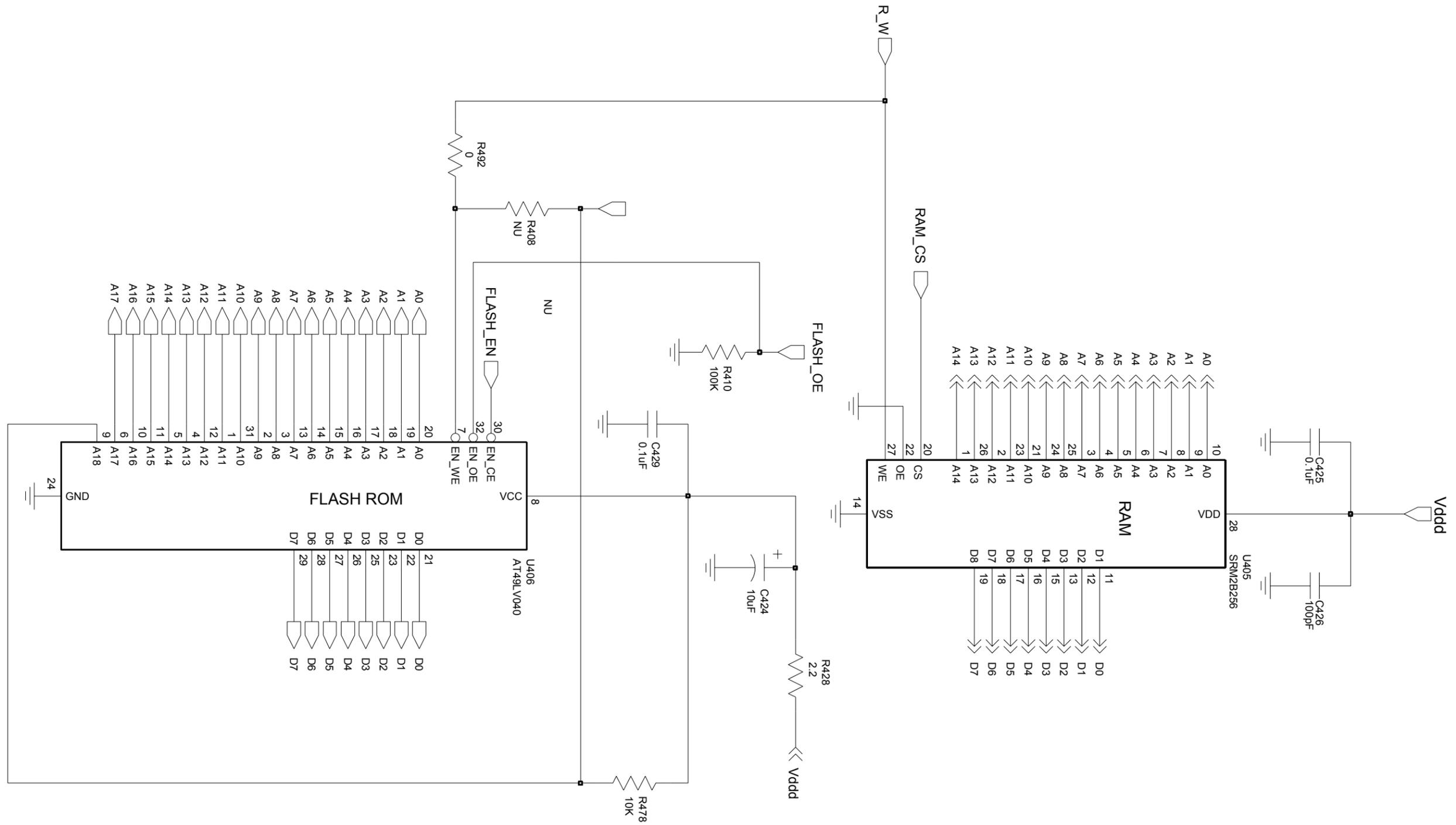


Figure 9-227. Controller Memory Schematic Diagram

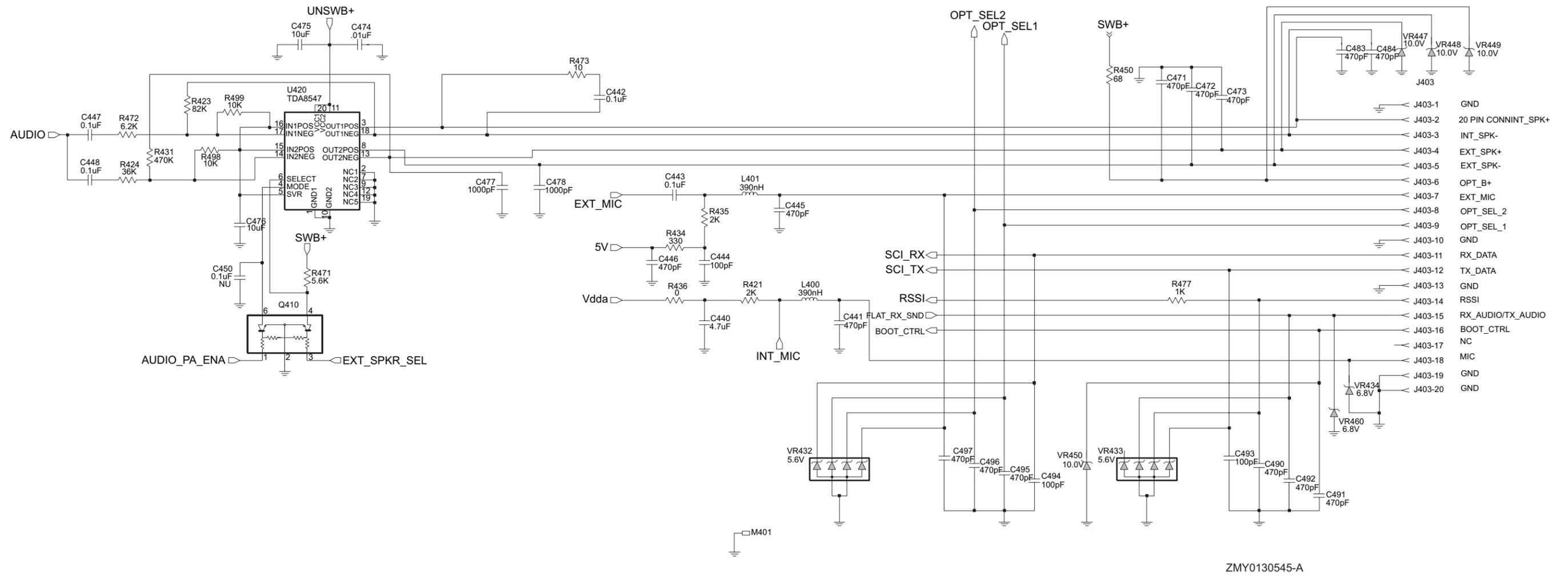


Figure 9-228. Controller Audio Power Amplifier Schematic Diagram

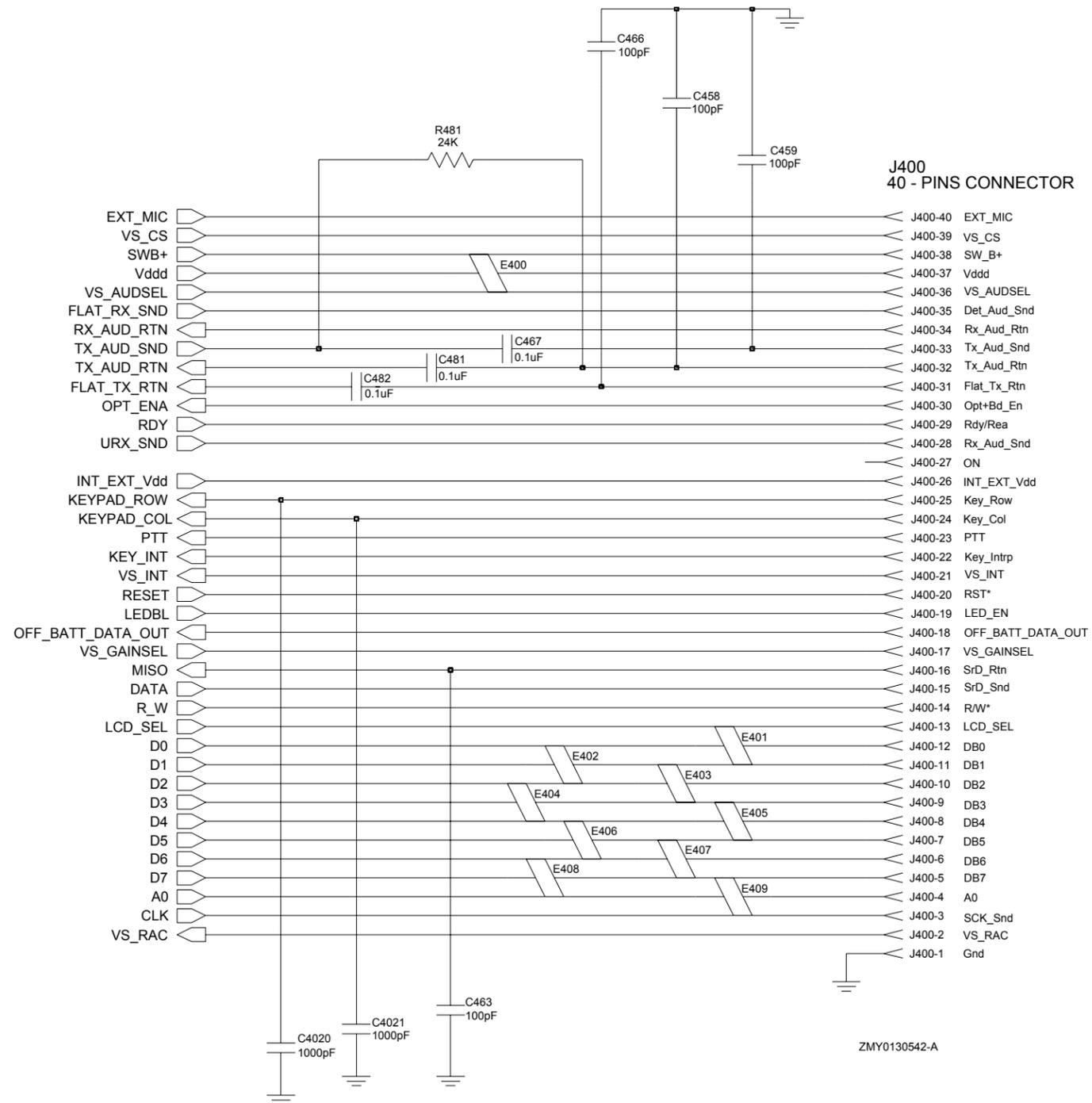


Figure 9-229. Controller Interface Schematic Diagram



**VHF (136-174 MHz) Radio Parts List (PCB 8415112H01)**

B501	0986237A02	CONNECTOR (CONTACT BATTERY)
B503	3980502Z01	CONTACT, BACKUP B+
B504	3980501Z01	CONTACT, BACKUP B-
C328	2113946K02	CAP CER CHP 0.10UF 16V
C337	2113946D02	CAP CER CHP 1.0UF 6.3V 10%
C358	2113944A21	CAP CER CHP 6.8PF 50V +/- 0.5PF
C359	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,0402,C
C383	2113944A85	CAP,FXD,51PF,+5%,-5%,50V-DC,0402,C
C390	2113944A85	CAP,FXD,51PF,+5%,-5%,50V-DC,0402,C
C400	2113945B02	CAP CER CHP 10,000PF 25V 10%
C401	2113946B04	CAP CER CHP 0.10UF 10V 10%
C402	2113946B04	CAP CER CHP 0.10UF 10V 10%
C403	2113743G24	CAP CHIP 2.2 UF 16V+80-20%
C407	2113946B04	CAP CER CHP 0.10UF 10V 10%
C408	2113944A40	CAP CER CHP 100.0PF 50V 5%
C409	2113946B04	CAP CER CHP 0.10UF 10V 10%
C410	2113946B04	CAP CER CHP 0.10UF 10V 10%
C411	2113946B04	CAP CER CHP 0.10UF 10V 10%
C414	2113946B04	CAP CER CHP 0.10UF 10V 10%
C415	2185895Z01	CAPACITOR CER LOW DIST .01UF
C416	2113946B04	CAP CER CHP 0.10UF 10V 10%
C419	2113945B02	CAP CER CHP 10,000PF 25V 10%
C420	2113945B02	CAP CER CHP 10,000PF 25V 10%
C421	2113946B04	CAP CER CHP 0.10UF 10V 10%
C422	2113946B04	CAP CER CHP 0.10UF 10V 10%
C423	2113944A40	CAP CER CHP 100.0PF 50V 5%
C424	NOT PLACED	-

C425	2113946B04	CAP CER CHP 0.10UF 10V 10%
C426	2113944A40	CAP CER CHP 100.0PF 50V 5%
C427	2113944A40	CAP CER CHP 100.0PF 50V 5%
C428	2113946B04	CAP CER CHP 0.10UF 10V 10%
C429	2113946B04	CAP CER CHP 0.10UF 10V 10%
C430	2113946B04	CAP CER CHP 0.10UF 10V 10%
C431	2113944A40	CAP CER CHP 100.0PF 50V 5%
C432	NOT PLACED	-
C433	2113945B02	CAP CER CHP 10,000PF 25V 10%
C434	2113946B04	CAP CER CHP 0.10UF 10V 10%
C435	2113946B04	CAP CER CHP 0.10UF 10V 10%
C436	2113944A29	CAP CER CHP 22.0PF 50V 5%
C437	2113944A29	CAP CER CHP 22.0PF 50V 5%
C440	2113946Q01	CAP CER CHP 4.7UF 16V
C441	2113945A05	CAP CER CHP 470PF 50V 10%
C442	2113945D04	CAP CER CHP 100,000PF 25V 10%
C443	2113946B04	CAP CER CHP 0.10UF 10V 10%
C444	2113944A40	CAP CER CHP 100.0PF 50V 5%
C445	2113945A05	CAP CER CHP 470PF 50V 10%
C446	2113945A05	CAP CER CHP 470PF 50V 10%
C447	2113946B04	CAP CER CHP 0.10UF 10V 10%
C448	2113946B04	CAP CER CHP 0.10UF 10V 10%
C449	2113944A40	CAP CER CHP 100.0PF 50V 5%
C450	NOT PLACED	-
C451	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C452	2113743B29	CAP CHIP 1.00 UF 10% 16V
C453	2113944A40	CAP CER CHP 100.0PF 50V 5%
C456	2113944A40	CAP CER CHP 100.0PF 50V 5%
C458	2113944A40	CAP CER CHP 100.0PF 50V 5%

C459	2113944A40	CAP CER CHP 100.0PF 50V 5%
C463	2113944A40	CAP CER CHP 100.0PF 50V 5%
C466	2113944A40	CAP CER CHP 100.0PF 50V 5%
C467	2113946B04	CAP CER CHP 0.10UF 10V 10%
C471	2113945A05	CAP CER CHP 470PF 50V 10%
C472	2113945A05	CAP CER CHP 470PF 50V 10%
C473	2113945A05	CAP CER CHP 470PF 50V 10%
C474	2113945B02	CAP CER CHP 10,000PF 25V 10%
C475	2113743H14	CAP CHIP 10.0 UF 16V +80-20%
C476	2113946R01	CAP CER CHP 10.0UF 10V
C477	2113945A09	CAP CER CHP 1000PF 50V 10%
C478	2113945A09	CAP CER CHP 1000PF 50V 10%
C479	2113946B04	CAP CER CHP 0.10UF 10V 10%
C480	2113946R01	CAP CER CHP 10.0UF 10V
C481	2113946B04	CAP CER CHP 0.10UF 10V 10%
C482	2113946B04	CAP CER CHP 0.10UF 10V 10%
C483	2113945A05	CAP CER CHP 470PF 50V 10%
C484	2113945A05	CAP CER CHP 470PF 50V 10%
C490	2113945A05	CAP CER CHP 470PF 50V 10%
C491	2113945A05	CAP CER CHP 470PF 50V 10%
C492	2113945A05	CAP CER CHP 470PF 50V 10%
C493	2113944A40	CAP CER CHP 100.0PF 50V 5%
C494	2113944A40	CAP CER CHP 100.0PF 50V 5%
C495	2113945A05	CAP CER CHP 470PF 50V 10%
C496	2113945A05	CAP CER CHP 470PF 50V 10%
C497	2113945A05	CAP CER CHP 470PF 50V 10%
C498	NOT PLACED	-
C498	NOT PLACED	-
C500	2113946B04	CAP CER CHP 0.10UF 10V 10%

C502	2313960A55	CAP TANT 0.47 UF 10% 25V 3216-18
C503	2113944A40	CAP CER CHP 100.0PF 50V 5%
C505	2113944A40	CAP CER CHP 100.0PF 50V 5%
C511	2113944A40	CAP CER CHP 100.0PF 50V 5%
C512	2113944A40	CAP CER CHP 100.0PF 50V 5%
C513	2113944A40	CAP CER CHP 100.0PF 50V 5%
C514	2113944A40	CAP CER CHP 100.0PF 50V 5%
C520	2113945B02	CAP CER CHP 10,000PF 25V 10%
C521	2113945B02	CAP CER CHP 10,000PF 25V 10%
C522	2113945B02	CAP CER CHP 10,000PF 25V 10%
C523	2113945B02	CAP CER CHP 10,000PF 25V 10%
C535	2113945A09	CAP CER CHP 1000PF 50V 10%
C610	2113944A40	CAP CER CHP 100.0PF 50V 5%
C611	2113944A40	CAP CER CHP 100.0PF 50V 5%
C612	2113944A40	CAP CER CHP 100.0PF 50V 5%
C613	2113944A40	CAP CER CHP 100.0PF 50V 5%
C615	2113944A40	CAP CER CHP 100.0PF 50V 5%
C616	2113944A40	CAP CER CHP 100.0PF 50V 5%
C618	2113944A40	CAP CER CHP 100.0PF 50V 5%
C619	2113944A40	CAP CER CHP 100.0PF 50V 5%
C620	2113944A40	CAP CER CHP 100.0PF 50V 5%
C621	2113944A40	CAP CER CHP 100.0PF 50V 5%
C622	2113944A40	CAP CER CHP 100.0PF 50V 5%
C3200	2113944A11	CAP CER CHP 2.7PF 50V +/- 0.25PF
C3201	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,0402,C
C3202	NOT PLACED	-
C3203	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,0402,C
C3205	2113946K02	CAP CER CHP 0.10UF 16V

C3206	2115153H26	CAP, CERAMIC, COG
C3207	2113944A17	CAP CER CHP 4.7PF 50V +/-0.25PF
C3208	2113946K02	CAP CER CHP 0.10UF 16V
C3209	2113946K02	CAP CER CHP 0.10UF 16V
C3210	2113946K02	CAP CER CHP 0.10UF 16V
C3212	2313960B01	CAP TANT 1.0 UF 10% 16V 3216-18
C3213	2313960B30	CAP TANT 4.7 UF 10% 10V 3216-18
C3215	2113944A25	CAP CER CHP 10.0PF 50V +/-0.5PF
C3218	2313960B57	CAP,TANTALUM,10UF,+10%,-10%,4V-DC,S
C3221	2113945D04	CAP CER CHP 100,000PF 25V 10%
C3222	2113946K02	CAP CER CHP 0.10UF 16V
C3225	2113946K02	CAP CER CHP 0.10UF 16V
C3226	2113946K02	CAP CER CHP 0.10UF 16V
C3228	2113946K02	CAP CER CHP 0.10UF 16V
C3230	2113946K02	CAP CER CHP 0.10UF 16V
C3231	2113946K02	CAP CER CHP 0.10UF 16V
C3232	2113946K02	CAP CER CHP 0.10UF 16V
C3233	2113946K02	CAP CER CHP 0.10UF 16V
C3234	2113946K02	CAP CER CHP 0.10UF 16V
C3236	2113945A13	CAP CER CHP 4700PF 50V 10%
C3238	2113946K02	CAP CER CHP 0.10UF 16V
C3274	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,0402,C
C3275	2113944A81	CAP,FXD,24PF,+5%,-5%,50V-DC,0402,C
C3278	2113945D04	CAP CER CHP 100,000PF 25V 10%
C3279	2113944A41	CAP CER CHP 120.0PF 50V 5%
C3301	2113944A19	CAP CER CHP 5.6PF 50V +/-0.5PF
C3302	2113944A42	CAP CER CHP 150.0PF 50V 5%
C3303	2113944A27	CAP CER CHP 15.0PF 50V 5%
C3304	2113944A42	CAP CER CHP 150.0PF 50V 5%
C3305	NOT PLACED	-
C3306	2113946B04	CAP CER CHP 0.10UF 10V 10%
C3307	2113944A40	CAP CER CHP 100.0PF 50V 5%
C3308	2113945A03	CAP CER CHP 330PF 50V 10%
C3309	2113946B04	CAP CER CHP 0.10UF 10V 10%
C3310	NOT PLACED	-
C3311	2113944A42	CAP CER CHP 150.0PF 50V 5%
C3312	2113944A79	CAP,FXD,16PF,+5%,-5%,50V-DC,0402,C
C3313	2113944A42	CAP CER CHP 150.0PF 50V 5%
C3314	NOT PLACED	-
C3315	2113944A25	CAP CER CHP 10.0PF 50V +/-0.5PF
C3316	2113944A13	CAP CER CHP 3.3PF 50V +/-0.25PF
C3317	2113944A82	CAP,FXD,30PF,+5%,-5%,50V-DC,0402,C
C3318	2113945B04	CAP,FXD,0.022UF,+10%,-10%,25V-DC,04
C3319	NOT PLACED	-
C3320	2113944A38	CAP CER CHP 82.0PF 50V 5%
C3321	2113945A03	CAP CER CHP 330PF 50V 10%
C3322	2113944A40	CAP CER CHP 100.0PF 50V 5%
C3323	2113944A40	CAP CER CHP 100.0PF 50V 5%
C3324	2113944A31	CAP CER CHP 33.0PF 50V 5%
C3325	2113945A09	CAP CER CHP 1000PF 50V 10%
C3326	NOT PLACED	-
C3327	2113945A03	CAP CER CHP 330PF 50V 10%
C3329	2113945A03	CAP CER CHP 330PF 50V 10%
C3330	2113944A40	CAP CER CHP 100.0PF 50V 5%
C3331	2113944A40	CAP CER CHP 100.0PF 50V 5%
C3332	2113944A32	CAP CER CHP 39.0PF 50V 5%
C3334	2113944A80	CAP,FXD,20PF,+5%,-5%,50V-DC,0402,C
C3335	2113944A29	CAP CER CHP 22.0PF 50V 5%
C3336	2313960F04	CAP TANT 33 UF 10% 16V 6032-28
C3337	2113945B04	CAP,FXD,0.022UF,+10%,-10%,25V-DC,04
C3338	2113945A05	CAP CER CHP 470PF 50V 10%
C3339	2113944A25	CAP CER CHP 10.0PF 50V +/-0.5PF
C3501	2113945A03	CAP CER CHP 330PF 50V 10%
C3502	2113944A31	CAP CER CHP 33.0PF 50V 5%
C3503	2113944A31	CAP CER CHP 33.0PF 50V 5%
C3504	2113945B04	CAP,FXD,0.022UF,+10%,-10%,25V-DC,04
C3505	2113944A31	CAP CER CHP 33.0PF 50V 5%
C3508	2113945B04	CAP,FXD,0.022UF,+10%,-10%,25V-DC,04
C3509	2113945A03	CAP CER CHP 330PF 50V 10%
C3512	2113944C38	CAP CER CHP 47.0PF 50V 5%
C3513	2113944C82	CAP,FXD,30PF,+5%,-5%,50V-DC,0603,C
C3514	2113944C41	CAP CER CHP 68.0PF 50V 5%
C3515	2113945A12	CAP CER CHP 3300PF 50V 10%
C3516	2313960C26	CAP TANT 1.0 UF 10% 35V 3528-21
C3517	2113944C41	CAP CER CHP 68.0PF 50V 5%
C3518	NOT PLACED	-
C3519	NOT PLACED	-
C3521	2111078B51	CAP CHIP RF 220 5 NPO 100V
C3523	2111078B44	CAP CHIP RF 120 5 NPO 100V
C3524	2113944C80	CAP,FXD,20PF,+5%,-5%,50V-DC,0603,C
C3525	2113944C30	CAP CER CHP 10.0PF 50V +/-0.5PF
C3526	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C3527	NOT PLACED	-
C3528	2113944C30	CAP CER CHP 10.0PF 50V +/-0.5PF
C3531	2113944C80	CAP,FXD,20PF,+5%,-5%,50V-DC,0603,C
C3532	2113944C41	CAP CER CHP 68.0PF 50V 5%
C3533	2113944C27	CAP CER CHP 7.5PF 50V +/-0.5PF
C3534	2113944C22	CAP CER CHP 4.7PF 50V +/-0.25PF
C3535	2113944C35	CAP CER CHP 27.0PF 50V 5%
C3536	2113944C32	CAP CER CHP 15.0PF 50V 5%
C3537	2113944C33	CAP CER CHP 18.0PF 50V 5%
C3539	2113944C31	CAP CER CHP 12.0PF 50V 5%
C3541	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C3542	2113945A03	CAP CER CHP 330PF 50V 10%
C3543	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C3544	2113945A03	CAP CER CHP 330PF 50V 10%
C3546	2113945A03	CAP CER CHP 330PF 50V 10%
C3547	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C3550	2113944A22	CAP CER CHP 7.5PF 50V +/-0.5PF
C3551	2113944A36	CAP CER CHP 68.0PF 50V 5%
C3552	2113944A34	CAP CER CHP 56.0PF 50V 5%
C3560	2313960B01	CAP TANT 1.0 UF 10% 16V 3216-18
C3561	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C3562	2113945A12	CAP CER CHP 3300PF 50V 10%
C3563	2113945A12	CAP CER CHP 3300PF 50V 10%
C3564	2113945A01	CAP CER CHP 220PF 50V 10%
C3565	2113945C04	CAP CER CHP 22,000PF 50V 10%
C3566	2113944A40	CAP CER CHP 100.0PF 50V 5%
C3567	2113945A03	CAP CER CHP 330PF 50V 10%
C3568	2113945A12	CAP CER CHP 3300PF 50V 10%
C3569	2113945B04	CAP,FXD,.022UF,+10%,-10%,25V-DC,04
C3570	2113945A03	CAP CER CHP 330PF 50V 10%
C3571	2113945A05	CAP CER CHP 470PF 50V 10%
C3701	2113945B02	CAP CER CHP 10,000PF 25V 10%
C3702	2113945B02	CAP CER CHP 10,000PF 25V 10%
C3703	2113945B02	CAP CER CHP 10,000PF 25V 10%
C3704	2113945B02	CAP CER CHP 10,000PF 25V 10%
C3705	2113945D04	CAP CER CHP 100,000PF 25V 10%

C3706	2313960D05	CAP TANT 4.7 UF 10% 16V 3528-21	C3755	2113946N03	CAP CER CHP 2.2UF 16V	C3832	2113945A09	CAP CER CHP 1000PF 50V 10%	D3761	4815072H01	DIODE,VCTR,1SV232,30V
C3707	2113944A29	CAP CER CHP 22.0PF 50V 5%	C3761	2113944A33	CAP CER CHP 47.0PF 50V 5%	C3833	2113944A17	CAP CER CHP 4.7PF 50V +/- 0.25PF	D3821	4885094Y01	DIODE VARACTOR ISV228 W18
C3708	2113946B04	CAP CER CHP 0.10UF 10V 10%	C3762	2113944C04	CAP CER CHP 330.0PF 50V 5%	C3834	2113944A34	CAP CER CHP 56.0PF 50V 5%	D3831	4885094Y01	DIODE VARACTOR ISV228 W18
C3709	2113946B04	CAP CER CHP 0.10UF 10V 10%	C3763	NOT PLACED	-	C3835	2113944A21	CAP CER CHP 6.8PF 50V +/- 0.5PF	D3832	4885055Y01	DIODE VARACTOR PB-FREE
C3710	2113946N03	CAP CER CHP 2.2UF 16V	C3801	2113944A17	CAP CER CHP 4.7PF 50V +/- 0.25PF	C3836	2113944A27	CAP CER CHP 15.0PF 50V 5%	E400	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3711	2313960M51	CAP TANT 10 UF 10% 6.3V 2012-12	C3802	NOT PLACED	-	C3842	2113945A09	CAP CER CHP 1000PF 50V 10%	E401	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3712	2113946B04	CAP CER CHP 0.10UF 10V 10%	C3803	2113945A09	CAP CER CHP 100,000PF 25V 10%	C4020	NOT PLACED	-	E402	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3713	2313960C78	CAP TANT 2.2 UF 10% 20V 3528-21	C3804	2113945D04	CAP CER CHP 100,000PF 25V 10%	C4021	NOT PLACED	-	E403	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3714	2313960D05	CAP TANT 4.7 UF 10% 16V 3528-21	C3805	2113944A17	CAP CER CHP 4.7PF 50V +/- 0.25PF	CR411	4815067H01	DIODE ARRAY,SWG,RB731UFT108,SM,1M	E404	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3715	2113945A05	CAP CER CHP 470PF 50V 10%	C3806	2113944A40	CAP CER CHP 100.0PF 50V 5%	CR412	4815067H01	DIODE ARRAY,SWG,RB731UFT108,SM,1M	E405	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3721	2113945D04	CAP CER CHP 100,000PF 25V 10%	C3808	2113944A27	CAP CER CHP 15.0PF 50V 5%	CR413	4815067H01	DIODE ARRAY,SWG,RB731UFT108,SM,1M	E406	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3722	2113945D04	CAP CER CHP 100,000PF 25V 10%	C3809	2113944A30	CAP CER CHP 27.0PF 50V 5%	CR440	4813978C02	PB FREE, NOT COMPLETELY ENRICHED	E407	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3724	2313960C26	CAP TANT 1.0 UF 10% 35V 3528-21	C3810	NOT PLACED	-	CR501	4815155H01	RECTIFIER	E408	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3725	NOT PLACED	-	C3811	2113946B04	CAP CER CHP 0.10UF 10V 10%	CR503	4805729G49	DIODE RED/YEL	E409	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3726	2113944A23	CAP CER CHP 8.2PF 50V +/- 0.5PF	C3812	2113946B04	CAP CER CHP 0.10UF 10V 10%	CR3201	4813974A19	DIODE SCHOTTKY BARRIER SERIES	E634	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3727	2113944A40	CAP CER CHP 100.0PF 50V 5%	C3813	2113945B02	CAP CER CHP 10,000PF 25V 10%	CR3202	4815047H01	DIODE,SWG,DAN235EFTL,35V	E637	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3731	2113945B02	CAP CER CHP 10,000PF 25V 10%	C3815	2113945A09	CAP CER CHP 1000PF 50V 10%	CR3203	4815047H01	DIODE,SWG,DAN235EFTL,35V	E638	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3732	2113945B02	CAP CER CHP 10,000PF 25V 10%	C3816	2113944A21	CAP CER CHP 6.8PF 50V +/- 0.5PF	CR3301	4802245J42	RING QUAD DIODE SOT-143 PKG	E639	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3733	2113946N03	CAP CER CHP 2.2UF 16V	C3818	2113945C04	CAP CER CHP 22,000PF 50V 10%	CR3302	4815129H01	DIODE DUAL BONDS RH	E640	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3734	2113945B02	CAP CER CHP 10,000PF 25V 10%	C3821	2113945B02	CAP CER CHP 10,000PF 25V 10%	CR3303	4815048H01	DIODE,SHTK,MMBD353LT1,SM,7V	E641	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3741	NOT PLACED	-	C3822	2113945A09	CAP CER CHP 1000PF 50V 10%	D104	4813978C06	DIODE DUAL 75V A2X MMBD2836LT1	E642	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3742	2113945A01	CAP CER CHP 220PF 50V 10%	C3823	2113945B02	CAP CER CHP 10,000PF 25V 10%	D601	4880479U01	LED	E643	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3743	2113945A01	CAP CER CHP 220PF 50V 10%	C3824	2113944A34	CAP CER CHP 56.0PF 50V 5%	D602	4880479U01	LED	E644	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3744	2113945A01	CAP CER CHP 220PF 50V 10%	C3825	2113944A27	CAP CER CHP 15.0PF 50V 5%	D603	4880479U01	LED	E645	2480640Z01	SURFACE MOUNT FERRITE BEAD
C3745	2113945A01	CAP CER CHP 220PF 50V 10%	C3826	2113944A17	CAP CER CHP 4.7PF 50V +/- 0.25PF	D604	4880479U01	LED	F501	6515076H01	FUSE,FST BLW,3A,24V,FUSE CHIP SMT T
C3746	2113945A01	CAP CER CHP 220PF 50V 10%	C3827	2113945C04	CAP CER CHP 22,000PF 50V 10%	D605	4880479U01	LED	FL401	4870368G02	REFLOWABLE CLOCK OSC XTAL
C3752	2113945A09	CAP CER CHP 1000PF 50V 10%	C3828	2185895Z01	CAPACITOR CER LOW DIST .01UF	D606	4880479U01	LED	H3501	2680499Z02	HEAT SPREADER
C3753	2313960B30	CAP TANT 4.7 UF 10% 10V 3216-18	C3829	2185895Z01	CAPACITOR CER LOW DIST .01UF	D3301	4815276H01	VARACTOR DIODE FROM INFINEON	J400	0915064H03	CONNECTOR, ZIF (40 PINS)
C3754	2113946B04	CAP CER CHP 0.10UF 10V 10%	C3830	2113944A36	CAP CER CHP 68.0PF 50V 5%	D3302	4815276H01	VARACTOR DIODE FROM INFINEON	J403	0915064H02	CONN,CONN,F,20CONT,CONNECTOR, ZIF
						D3521	4880973Z02	PIN DIODE			
						D3551	4880973Z02	PIN DIODE			
						D3701	4815011H01	DIODE,SWG,300MA,80V			
						D3702	4815011H01	DIODE,SWG,300MA,80V			

J601	0980521Z03	CONN, ZIF VERTICAL, 40PINS
J602	0915064H01	CONN,CONN,F,18CONT,CON NECTOR, ZIF
J3501	0985613Z01	JACK,RF
J3502	0280519Z02	NUT, ANTENNA
L400	2462587Q42	IND CHIP 390NH 10%
L401	2462587Q42	IND CHIP 390NH 10%
L410	2462587Q42	IND CHIP 390NH 10%
L411	2462587Q42	IND CHIP 390NH 10%
L505	2462587Q42	IND CHIP 390NH 10%
L3200	2414017K33	IND CER CHIP 680.0 NH 5%
L3202	2414015A25	IDCTR,CHIP,1.2UH,2%,440MA ,2OHM,CER,
L3203	2414017K33	IND CER CHIP 680.0 NH 5%
L3270	2462587N68	CHIP IND 1000 NH 5%
L3301	2415013H02	FIXED INDUCTOR,CHIP,120NH,5%,8 50MA,
L3303	2415013H02	FIXED INDUCTOR,CHIP,120NH,5%,8 50MA,
L3304	2462587T23	IND CHIP 470NH 5% LOW PRO
L3305	2415013H02	FIXED INDUCTOR,CHIP,120NH,5%,8 50MA,
L3306	2415013H02	FIXED INDUCTOR,CHIP,120NH,5%,8 50MA,
L3308	2415013H01	FIXED INDUCTOR,CHIP,100NH,5%,8 50MA,
L3309	2462587N55	CHIP IND 150 NH 5%
L3312	2415043H02	FIXED INDUCTOR,RF,33NH,5%,S
L3501	2414017H09	IND CHIP 5.6 NH +/- 0.3NH
L3503	2415043H03	FIXED INDUCTOR,RF,68NH,5%,CER
L3504	2415015H02	IDCTR,CHIP,6.8NH,5%,1A,.16 OHM,CER
L3511	2415042H01	FIXED INDUCTOR,RF,18NH,5%,CER
L3512	2479990B01	AIR WOUND COIL/GREEN COLOR 11.03NH
L3513	2479990A02	AIR WOUND COIL/GREEN COLOR 7.66NH
L3515	2479990C03	AIR WOUND COIL/GREEN COLOR 13.85NH
L3518	NOT PLACED	-
L3519	2415954H01	INDUCTOR BEAD CHIP
L3521	2479990A02	AIR WOUND COIL/GREEN COLOR 7.66NH
L3522	2.48E+07	COIL AIR WOUND/GREEN COLOR 23.75
L3523	2462587N68	CHIP IND 1000 NH 5%
L3531	2479990N01	AIR WOUND COIL/GREEN COLOR 43.67NH
L3532	2479990N01	AIR WOUND COIL/GREEN COLOR 43.67NH
L3538	2479990M01	AIR WOUND COIL/GREEN COLOR 30.54NH
L3551	2479990N01	AIR WOUND COIL/GREEN COLOR 43.67NH
L3552	2479990A02	AIR WOUND COIL/GREEN COLOR 7.66NH
L3701	2462587Q42	IND CHIP 390NH 10%
L3731	2462587Q20	IND CHIP 2,200NH 20%
L3801	2415043H04	IDCTR,CHIP,100NH,5%,500M A,CER
L3809	2415043H01	FIXED INDUCTOR,RF,27NH,5%,CER
L3811	2415043H04	IDCTR,CHIP,100NH,5%,500M A,CER
L3812	2415043H04	IDCTR,CHIP,100NH,5%,500M A,CER
L3813	2462587Q47	IND CHIP 1000 NH 10%
L3816	2415043H04	IDCTR,CHIP,100NH,5%,500M A,CER
L3821	2415042H02	FIXED INDUCTOR,RF,56NH,CER
L3822	2415015H01	IDCTR,CHIP,47NH,5%,1A,.16 OHM,CER
L3823	2415015H01	IDCTR,CHIP,47NH,5%,1A,.16 OHM,CER
L3824	2462587N68	CHIP IND 1000 NH 5%
L3825	2415043H04	IDCTR,CHIP,100NH,5%,500M A,CER
L3826	2462587N68	CHIP IND 1000 NH 5%
L3831	2415042H02	FIXED INDUCTOR,RF,56NH,CER
L3832	2415015H02	IDCTR,CHIP,6.8NH,5%,1A,0.1 6OHM,CER
L3833	2415042H02	FIXED INDUCTOR,RF,56NH,CER
L3834	2462587N68	CHIP IND 1000 NH 5%
PB501	4086470Z01	TACT SWITCH
PB502	4086470Z01	TACT SWITCH
PB503	4086470Z01	TACT SWITCH
PB504	4086470Z01	TACT SWITCH
PB505	4086470Z01	TACT SWITCH
Q400	4815069H02	TSTR MOSFET P-CHAN
Q403	4813973A13	XSTR,BIP GP SS,PNP,TO- 236,SOT-23,
Q405	4815066H01	XSTR,OTHR,UMG5NFTR,250 MHZ
Q410	4815066H01	XSTR,OTHR,UMG5NFTR,250 MHZ
Q416	4815069H02	TSTR MOSFET P-CHAN
Q417	4815055H01	XSTR,GENPURPOSE SMALL SIG,NPN AND
Q502	4815154H01	DUAL TRANS NPN
Q505	4813973M07	TSTR NPN 40V .2A GEN PURP
Q601	4815125H01	SOT STR RH LOW PROFILE MMBT
Q602	4813973M07	TSTR NPN 40V .2A GEN PURP
Q603	4813973M07	TSTR NPN 40V .2A GEN PURP
Q3200	4802197J95	RF TRANSISTOR PBR941
Q3270	4813973M07	TSTR NPN 40V .2A GEN PURP
Q3301	4813973M07	TSTR NPN 40V .2A GEN PURP
Q3302	4802197J95	RF TRANSISTOR PBR941
Q3501	4813976A01	TSTR, 175 MHZ, 8W, 7.5V, PLD 1.5
Q3561	4813973A13	XSTR,BIP GP SS,PNP,TO- 236,SOT-23,
Q3721	4815055H01	XSTR,GENPURPOSE SMALL SIG,NPN AND
Q3801	4802197J95	RF TRANSISTOR PBR941
R370	NOT PLACED	-
R371	0613952R25	CER CHIP RES 100K OHM 5% 0402
R372	0613952R30	CER CHIP RES 160K OHM 5% 0402
R373	NOT PLACED	-
R374	0613952R25	CER CHIP RES 100K OHM 5% 0402
R375	NOT PLACED	-
R376	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R377	0613952R25	CER CHIP RES 100K OHM 5% 0402
R378	0613952R25	CER CHIP RES 100K OHM 5% 0402
R400	0613952R17	CER CHIP RES 47K OHM 5% 0402
R401	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R402	NOT PLACED	-
R403	NOT PLACED	-
R405	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R406	0613952R22	CER CHIP RES 75K OHM 5% 0402
R407	0613952R21	CER CHIP RES 68K OHM 5% 0402
R408	NOT PLACED	-
R409	0613952R01	CER CHIP RES 10K OHM 5% 0402
R410	0613952R25	CER CHIP RES 100K OHM 5% 0402
R411	0613952R01	CER CHIP RES 10K OHM 5% 0402
R413	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R414	0613952P25	CER CHIP RES 178K OHM 1% 0402
R415	0613952N93	CER CHIP RES 90.9K OHM 1% 0402
R416	0613952R01	CER CHIP RES 10K OHM 5% 0402
R418	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R419	0613952Q66	CER CHIP RES 510 OHM 5% 0402
R420	0613952J73	CER CHIP RES 10.0M OHM 5% 0603
R421	0613952Q80	CER CHIP RES 2000 OHM 5% 0402
R423	0613952R23	CER CHIP RES 82K OHM 5% 0402
R424	0613952R14	CER CHIP RES 36K OHM 5% 0402
R425	0613952R12	CER CHIP RES 30K OHM 5% 0402
R426	0613952R37	CER CHIP RES 330K OHM 5% 0402
R427	0613952Q83	CER CHIP RES 2700 OHM 5% 0402
R428	0613952Q09	CER CHIP RES 2.2 OHM 5% 0402
R429	0613952R22	CER CHIP RES 75K OHM 5% 0402
R431	0613952R41	CER CHIP RES 470K OHM 5% 0402
R432	0613952R18	CER CHIP RES 51K OHM 5% 0402
R434	0613952Q61	CER CHIP RES 330 OHM 5% 0402
R435	0613952Q80	CER CHIP RES 2000 OHM 5% 0402
R436	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R437	NOT PLACED	-
R445	0613952R10	CER CHIP RES 24K OHM 5% 0402
R447	0613952R25	CER CHIP RES 100K OHM 5% 0402
R448	0613952R01	CER CHIP RES 10K OHM 5% 0402

R449	0613952R10	CER CHIP RES 24K OHM 5% 0402
R450	0613959Y45	CER CHIP RES 68.0 OHM 5% 2512
R451	0613952R05	CER CHIP RES 15K OHM 5% 0402
R452	0613952R25	CER CHIP RES 100K OHM 5% 0402
R453	NOT PLACED	-
R454	NOT PLACED	-
R455	NOT PLACED	-
R456	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R457	0613952R01	CER CHIP RES 10K OHM 5% 0402
R460	0613952Q89	CER CHIP RES 4700 OHM 5% 0402
R461	0613952Q55	CER CHIP RES 180 OHM 5% 0402
R462	0613952R01	CER CHIP RES 10K OHM 5% 0402
R463	0613952Q60	CER CHIP RES 300 OHM 5% 0402
R471	0613952R08	CER CHIP RES 20K OHM 5% 0402
R472	0613952Q92	CER CHIP RES 6200 OHM 5% 0402
R473	0613952Q25	CER CHIP RES 10.0 OHM 5% 0402
R475	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R476	0613952R37	CER CHIP RES 330K OHM 5% 0402
R477	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R478	0613952R01	CER CHIP RES 10K OHM 5% 0402
R479	0613952Q66	CER CHIP RES 510 OHM 5% 0402
R481	0613952R10	CER CHIP RES 24K OHM 5% 0402
R492	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R498	0613952R01	CER CHIP RES 10K OHM 5% 0402
R499	0613952R01	CER CHIP RES 10K OHM 5% 0402
R501	0613952Q69	CER CHIP RES 680 OHM 5% 0402
R502	0613952Q55	CER CHIP RES 180 OHM 5% 0402
R505	0613952R01	CER CHIP RES 10K OHM 5% 0402
R506	0613952R17	CER CHIP RES 47K OHM 5% 0402
R601	0613952Z67	RES,MF,51KOHM,1%,.0625W, SM,0402,200
R602	0613952Z67	RES,MF,51KOHM,1%,.0625W, SM,0402,200
R603	0613952N12	CER CHIP RES 13.0K OHM 1% 0402
R604	0613952Z58	RES,MF,22KOHM,1%,.0625W, SM,0402,200
R605	0613952N62	CER CHIP RES 43.2K OHM 1% 0402
R606	0613952P12	CER CHIP RES 130K OHM 1% 0402
R607	0613952N12	CER CHIP RES 13.0K OHM 1% 0402
R608	0613952Z58	RES,MF,22KOHM,1%,.0625W, SM,0402,200
R609	0613952N62	CER CHIP RES 43.2K OHM 1% 0402
R610	0613952P12	CER CHIP RES 130K OHM 1% 0402
R611	0613952R18	CER CHIP RES 51K OHM 5% 0402
R612	0613952R43	CER CHIP RES 560K OHM 5% 0402
R613	0613952R49	CER CHIP RES 1.0M OHM 5% 0402
R614	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R617	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R618	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R619	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R620	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R621	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R622	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R623	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R626	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R627	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R631	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R632	0613952R25	CER CHIP RES 100K OHM 5% 0402
R633	0613952R25	CER CHIP RES 100K OHM 5% 0402
R646	0613952R25	CER CHIP RES 100K OHM 5% 0402
R647	0613952Q84	CER CHIP RES 3000 OHM 5% 0402
R648	0613952R25	CER CHIP RES 100K OHM 5% 0402
R649	0613952R17	CER CHIP RES 47K OHM 5% 0402
R3200	0613952Q71	CER CHIP RES 820 OHM 5% 0402
R3201	0613952Q68	CER CHIP RES 620 OHM 5% 0402
R3202	0613952R11	CER CHIP RES 27K OHM 5% 0402
R3203	0613952R03	CER CHIP RES 12K OHM 5% 0402
R3204	0613952Q89	CER CHIP RES 4700 OHM 5% 0402
R3205	0613952R08	CER CHIP RES 20K OHM 5% 0402
R3206	0613952Q72	CER CHIP RES 910 OHM 5% 0402
R3207	0613952R03	CER CHIP RES 12K OHM 5% 0402
R3208	0613952R08	CER CHIP RES 20K OHM 5% 0402
R3209	0613952R15	CER CHIP RES 39K OHM 5% 0402
R3211	0613952R15	CER CHIP RES 39K OHM 5% 0402
R3212	0613952R08	CER CHIP RES 20K OHM 5% 0402
R3213	0613952R03	CER CHIP RES 12K OHM 5% 0402
R3214	0613952Q33	CER CHIP RES 22.0 OHM 5% 0402
R3215	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R3220	NOT PLACED	-
R3221	0613952Q42	CER CHIP RES 51.0 OHM 5% 0402
R3222	0613952Q69	CER CHIP RES 680 OHM 5% 0402
R3223	0613952N09	CER CHIP RES 12.1K OHM 1% 0402
R3224	0613952N01	CER CHIP RES 10.0K OHM 1% 0402
R3226	0613952Q63	CER CHIP RES 390 OHM 5% 0402
R3270	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R3271	NOT PLACED	-
R3273	0613952R05	CER CHIP RES 15K OHM 5% 0402
R3274	0613952Q79	CER CHIP RES 1800 OHM 5% 0402
R3275	0613952Q75	CER CHIP RES 1200 OHM 5% 0402
R3276	0613952R25	CER CHIP RES 100K OHM 5% 0402
R3301	NOT PLACED	-
R3303	0613952R25	CER CHIP RES 100K OHM 5% 0402
R3304	0613952R25	CER CHIP RES 100K OHM 5% 0402
R3305	0613952R17	CER CHIP RES 47K OHM 5% 0402
R3306	0613952Q81	CER CHIP RES 2200 OHM 5% 0402
R3307	0613952R13	CER CHIP RES 33K OHM 5% 0402
R3308	0613952Q77	CER CHIP RES 1500 OHM 5% 0402
R3309	0613952Q94	CER CHIP RES 7500 OHM 5% 0402
R3310	0613952Q83	CER CHIP RES 2700 OHM 5% 0402
R3311	NOT PLACED	-
R3312	0613952Q18	CER CHIP RES 5.1 OHM 5% 0402
R3313	0613952Q39	CER CHIP RES 39.0 OHM 5% 0402
R3314	0613952Q34	CER CHIP RES 24.0 OHM 5% 0402
R3315	0613952Q61	CER CHIP RES 330 OHM 5% 0402
R3316	0613952Q65	CER CHIP RES 470 OHM 5% 0402
R3317	0613952R25	CER CHIP RES 100K OHM 5% 0402
R3318	0613952Q65	CER CHIP RES 470 OHM 5% 0402
R3319	NOT PLACED	-
R3320	NOT PLACED	-
R3321	0613952Q42	CER CHIP RES 51.0 OHM 5% 0402
R3322	NOT PLACED	-
R3323	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R3324	0613952Q57	CER CHIP RES 220 OHM 5% 0402
R3501	0613952Q60	CER CHIP RES 300 OHM 5% 0402
R3502	0613952Q31	CER CHIP RES 18.0 OHM 5% 0402
R3503	0613952Q60	CER CHIP RES 300 OHM 5% 0402

R3505	0613952Q61	CER CHIP RES 330 OHM 5% 0402
R3506	0613952H15	CER CHIP RES 3.9 OHM 5% 0603
R3507	0613952H15	CER CHIP RES 3.9 OHM 5% 0603
R3512	NOT PLACED	-
R3513	NOT PLACED	-
R3519	0680539Z01	POWER METAL STRIP RESISTORS
R3541	0613952R15	CER CHIP RES 39K OHM 5% 0402
R3542	0613952Q91	CER CHIP RES 5600 OHM 5% 0402
R3543	0613952Q49	CER CHIP RES 100 OHM 5% 0402
R3544	0613952H49	CER CHIP RES 100 OHM 5% 0603
R3545	0613952H49	CER CHIP RES 100 OHM 5% 0603
R3546	0613952R03	CER CHIP RES 12K OHM 5% 0402
R3547	0613952R13	CER CHIP RES 33K OHM 5% 0402
R3548	0613952R09	CER CHIP RES 22K OHM 5% 0402
R3551	0613952Q39	CER CHIP RES 39.0 OHM 5% 0402
R3561	0613952R03	CER CHIP RES 12K OHM 5% 0402
R3562	0613952R13	CER CHIP RES 33K OHM 5% 0402
R3563	0613952R35	CER CHIP RES 270K OHM 5% 0402
R3564	0613952R37	CER CHIP RES 330K OHM 5% 0402
R3565	NOT PLACED	-
R3566	NOT PLACED	-
R3569	0613952Q91	CER CHIP RES 5600 OHM 5% 0402
R3570	0613952R01	CER CHIP RES 10K OHM 5% 0402
R3571	0613952H51	CER CHIP RES 120 OHM 5% 0603
R3572	0613952H51	CER CHIP RES 120 OHM 5% 0603
R3573	0613952H51	CER CHIP RES 120 OHM 5% 0603
R3701	0613952Q49	CER CHIP RES 100 OHM 5% 0402
R3702	NOT PLACED	-
R3703	0613952Q53	CER CHIP RES 150 OHM 5% 0402

R3704	0613952Q53	CER CHIP RES 150 OHM 5% 0402
R3705	0613952R13	CER CHIP RES 33K OHM 5% 0402
R3721	0613952Q65	CER CHIP RES 470 OHM 5% 0402
R3722	0613952Q67	CER CHIP RES 560 OHM 5% 0402
R3723	0613952Q49	CER CHIP RES 100 OHM 5% 0402
R3726	NOT PLACED	-
R3727	0613952R25	CER CHIP RES 100K OHM 5% 0402
R3741	0613952Q49	CER CHIP RES 100 OHM 5% 0402
R3751	0613952R32	CER CHIP RES 200K OHM 5% 0402
R3752	0613952R31	CER CHIP RES 180K OHM 5% 0402
R3761	0613952R17	CER CHIP RES 47K OHM 5% 0402
R3762	NOT PLACED	-
R3801	NOT PLACED	-
R3802	0613952Q49	CER CHIP RES 100 OHM 5% 0402
R3803	0613952Q57	CER CHIP RES 220 OHM 5% 0402
R3804	0613952R01	CER CHIP RES 10K OHM 5% 0402
R3805	0613952R10	CER CHIP RES 24K OHM 5% 0402
R3806	0613952Q33	CER CHIP RES 22.0 OHM 5% 0402
R3807	NOT PLACED	-
R3808	0613952Q25	CER CHIP RES 10.0 OHM 5% 0402
R3811	0613952Q49	CER CHIP RES 100 OHM 5% 0402
R3812	NOT PLACED	-
R3816	0613952Q73	CER CHIP RES 1000 OHM 5% 0402
R3817	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R3818	NOT PLACED	-
R3821	0613952Q57	CER CHIP RES 220 OHM 5% 0402
R3822	0613952Q41	CER CHIP RES 47.0 OHM 5% 0402
R3823	0613952R13	CER CHIP RES 33K OHM 5% 0402
R3824	0613952R09	CER CHIP RES 22K OHM 5% 0402
R3825	0613952Q37	CER CHIP RES 33.0 OHM 5% 0402

R3826	0613952Q31	CER CHIP RES 18.0 OHM 5% 0402
R3828	0613952Q49	CER CHIP RES 100 OHM 5% 0402
R3829	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM
R3830	NOT PLACED	-
R3831	0613952R01	CER CHIP RES 10K OHM 5% 0402
R3832	0613952R03	CER CHIP RES 12K OHM 5% 0402
R3833	0613952Q57	CER CHIP RES 220 OHM 5% 0402
R3834	0613952Q41	CER CHIP RES 47.0 OHM 5% 0402
R3835	0613952R17	CER CHIP RES 47K OHM 5% 0402
R3836	0613952R01	CER CHIP RES 10K OHM 5% 0402
RT400	0680590Z01	THERMISTOR_33K
RT3301	NOT PLACED	-
S501	4080710Z19	SWITCH, FREQUENCY
S502	1880619Z04	VOL POTENTIOMETER with hi temp cam
SH400	2680505Z02	SHIELD, CONTROLLER TOP LEFT
SH401	2680506Z02	SHIELD, CONTROLLER TOP RIGHT
SH402	2680515Z02	SHIELD, CONTROLLER BOTTOM LEFT
SH403	2680516Z02	SHIELD, CONTROLLER BTM RIGHT
SH3202	2686539Z02	IF SECTION SHIELD
SH3203	2686527Z02	SHIELD, RF/EMI, CRS, TIN
SH3301	2615144H01	SHIELD FOR GSM PLACEMENT
SH3302	2615144H05	SHIELD FOR GSM PLACEMENT
SH3303	2615144H06	SHIELD FOR GSM PLACEMENT
SH3501	2615144H03	SHIELD FOR GSM PLACEMENT
SH3502	2615144H04	SHIELD FOR GSM PLACEMENT
SH3701	2680511Z02	SHIELD, SYNTHESIZER
SH3702	2680511Z02	SHIELD, SYNTHESIZER
SH3801	2680513Z02	SHIELD, VCO TOP
SH3802	2680514Z02	SHIELD, VCO BOTTOM/LVZIF
T3301	2515121H01	BALUN, TRANSFORMER
T3302	2515121H01	BALUN, TRANSFORMER
U303	5114005A01	IC LOW COST SING SPLY LM2904DR
U400	5115012H01	IC,ADJ LOW DROPOUT,SM,POS P

U404	5115062H01	IC,CUST,TQFP48
U405	5115020H01	IC,SRAM,32K X 8,SOIC,3.6V
U406	* 5115286H01	IC 4M FLASH ROM- NON SHRINK+EPP
U407	* 5115033H01	IC,EEPROM,16K X 8,SM
U409	5185143E03	IC,MICROP,QFP,QFP100,3.7MHZ
U410	5115044H01	IC,LOW DROPOUT,SM,3.3V POS
U420	5115280H01	AUDIO AMPLIFIER TDA8547TS
U602	5115014H01	IC,COMPTR,SM,SOT-23/5
U3201	5115019H01	IC,LOW DROPOUT,SOT-23,SOT-23
U3220	5115281H01	FM IF IC SA616 FROM PHILIPS
U3221	5115070H01	IC,INVTR,TC7W04FU,SSOP
U3501	5115678H01	VHF/UHF/800/900 MHZ LD MOS DRIVER IC
U3502	5185765B26	IC PWR CTRL IN MOS20
U3503	5115022H01	IC,TEMP SENS,LM50C,SM,SOT-23
U3701	5115060H01	IC,FREQ SYN,AT24701-OT4X
U3711	5115026H01	IC,LOW DROPOUT,SM,SOT-23/6,P
U3801	5105750U56	IC PKG DIE VCO BUFFER
VR432	4813979P10	TRANS SUP 5.6V QUAD
VR433	4813979P10	TRANS SUP 5.6V QUAD
VR434	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V
VR439	4813977M21	DIODE 12V ZENER_5242_
VR440	NOT PLACED	-
VR441	NOT PLACED	-
VR442	NOT PLACED	-
VR444	NOT PLACED	-
VR447	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR448	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR449	4813977A54	DIODE ZENER 0.2W SOD-323 10V
VR450	4815040H01	DIODE ARRAY ,ZEN,MM3Z12VT1G,SM,12
VR460	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR501	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR506	4815038H01	DIODE ARRAY,ZEN,SM,SOD-323,6.93V,
VR3501	4813977M21	DIODE 12V ZENER_5242_
Y3200	9180022M11	XTAL FILTER 44.85MHZ
Y3201	4802245J84	XTAL 44.395MHz, 3RD OT, SMD

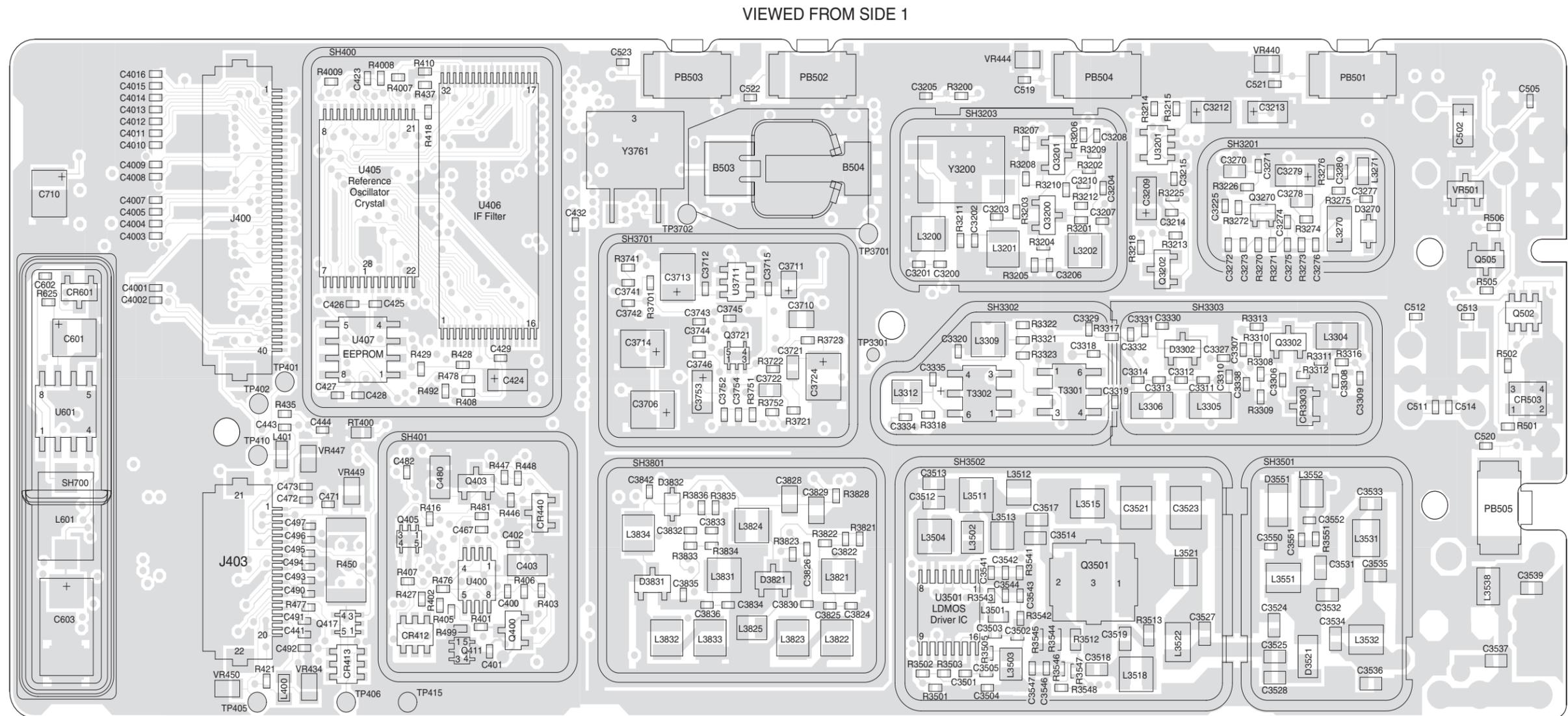
Y3202	9186145B02	CER.DISCR. CDBCA455CX36-TC
Y3203	9115811H03	SMD455KHZ 6 ELEMENT
Y3204	9115811H01	SMD455KHZ 6 ELEMENT
Y3205	9180468V05	SMD455KHZ 4 ELEMENT CER FLTR
Y3761	4805875Z04	CRYSTAL 16.8 MHZ

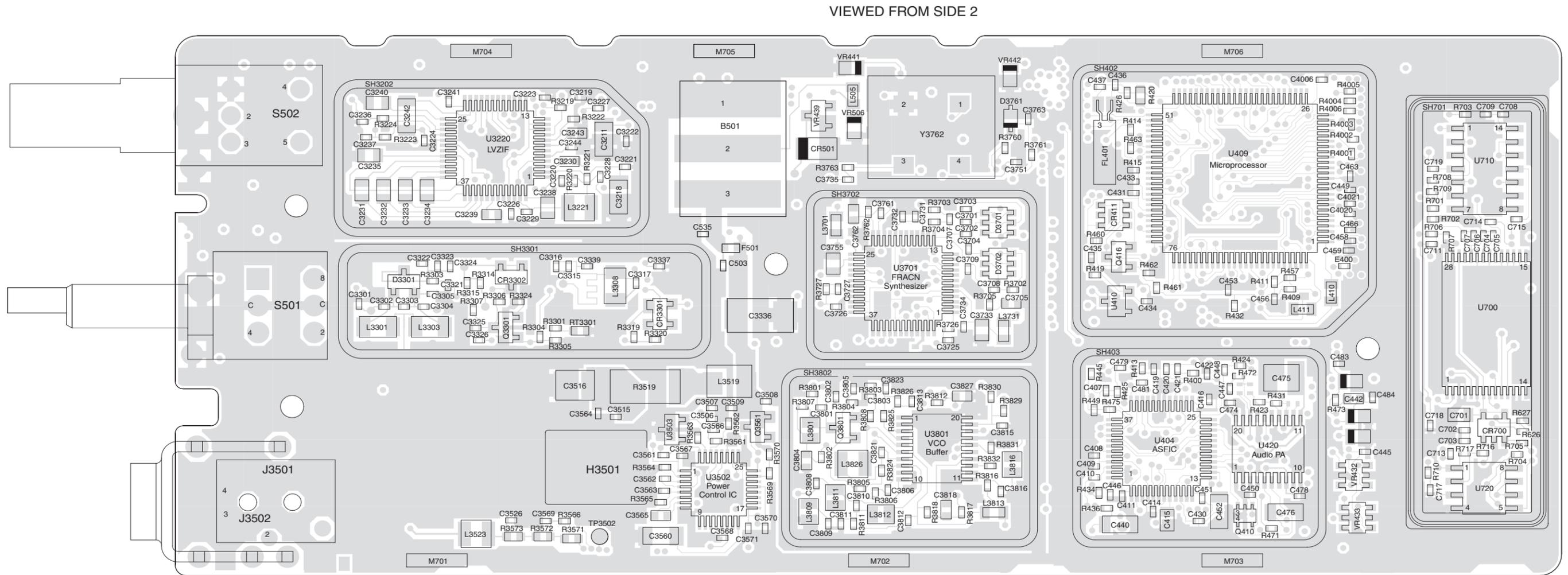
\* Motorola Depot Servicing only

## Notes



### 9.25 VHF Circuit Board/Schematic Diagrams and Parts List





ZWG0130097-B

Figure 9-231. VHF (136-174 MHz) 9000 Series Main Board Bottom Side PCB

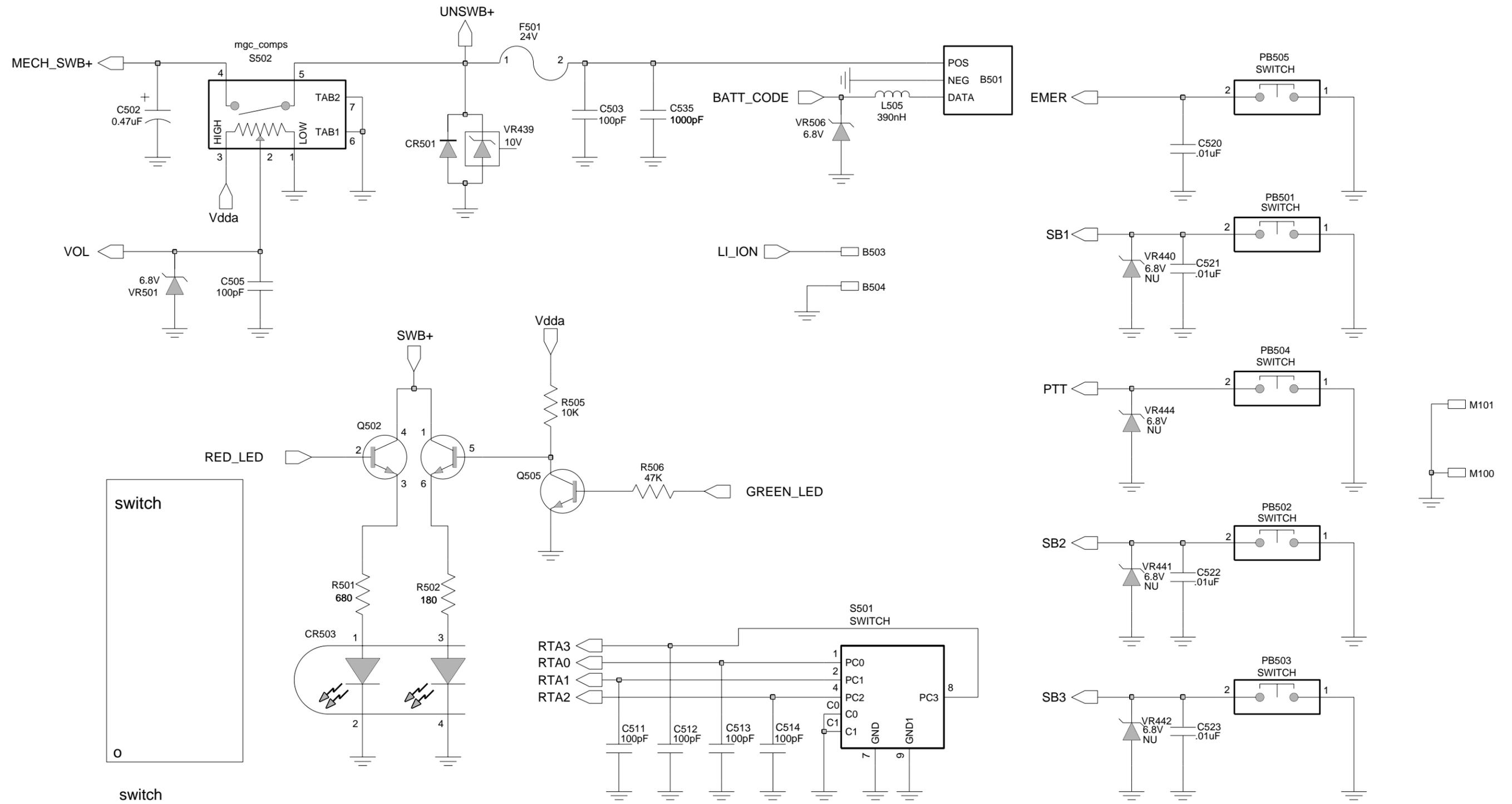
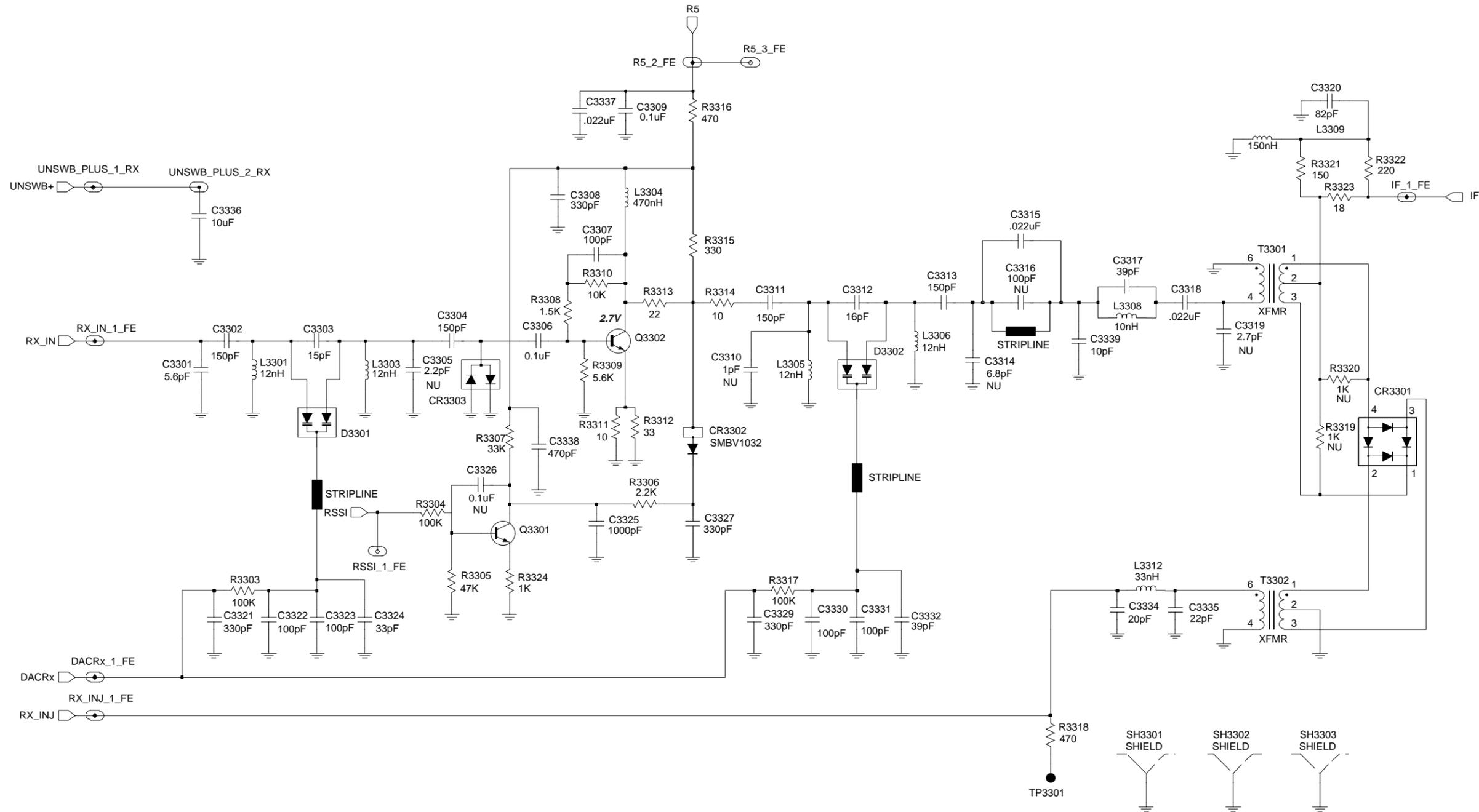
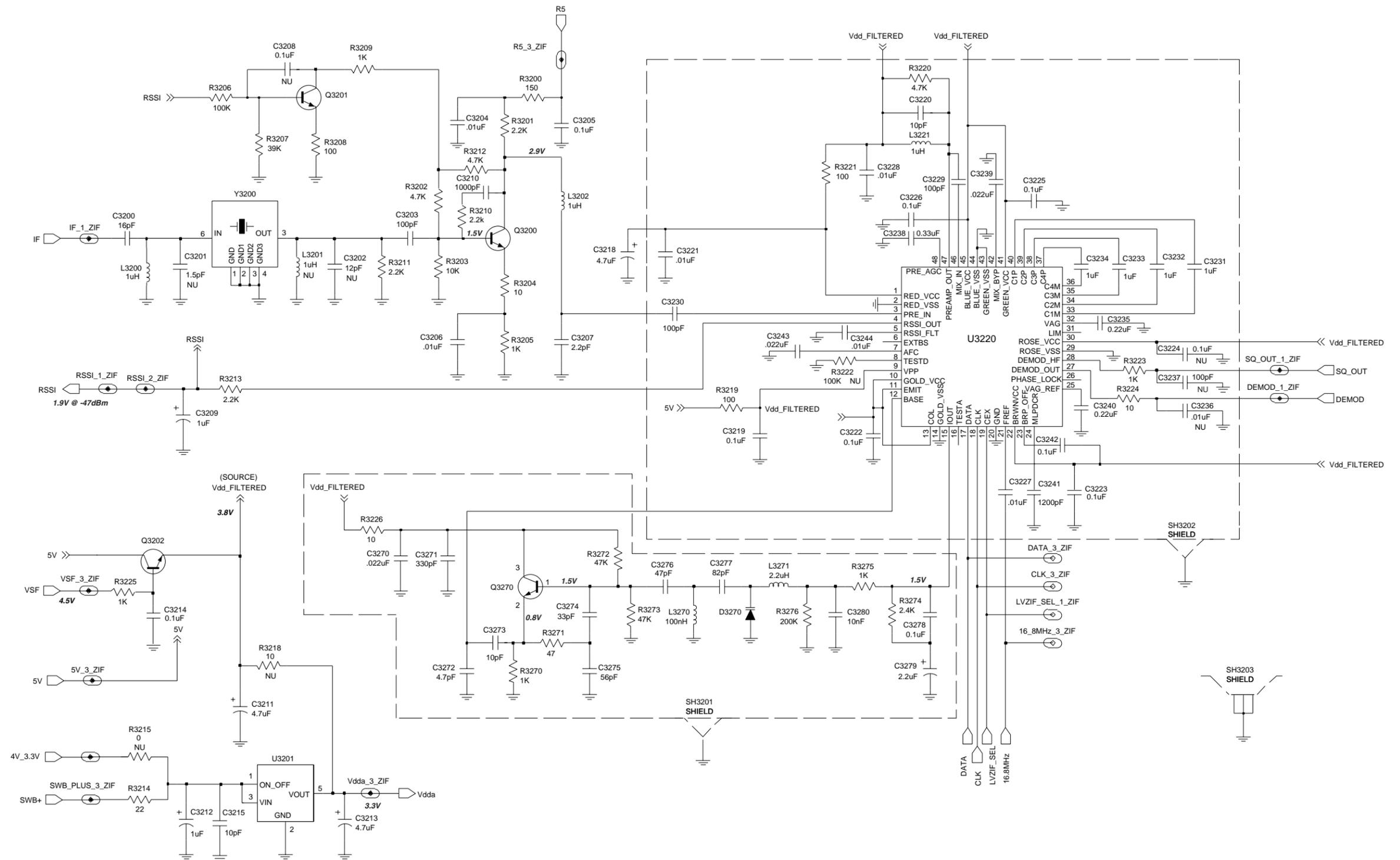


Figure 9-232. VHF (136-174 MHz) Controls and Switches Schematic Diagram



ZWG0130023-A

Figure 9-233. VHF (136-174 MHz) Receiver Front End Schematic Diagram



ZWG0130025-B

Figure 9-234. VHF (136-174 MHz) Receiver Back End Schematic Diagram

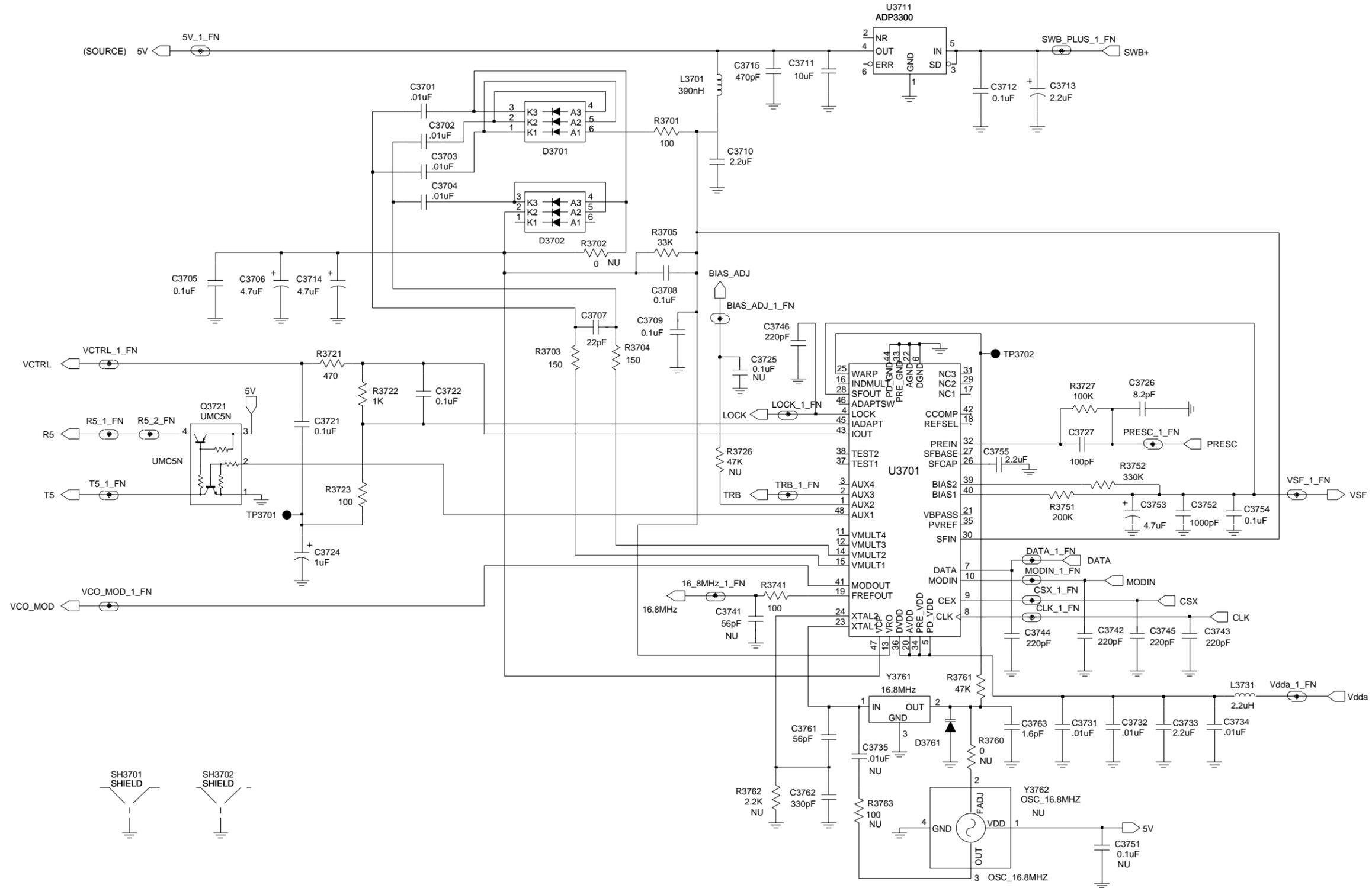
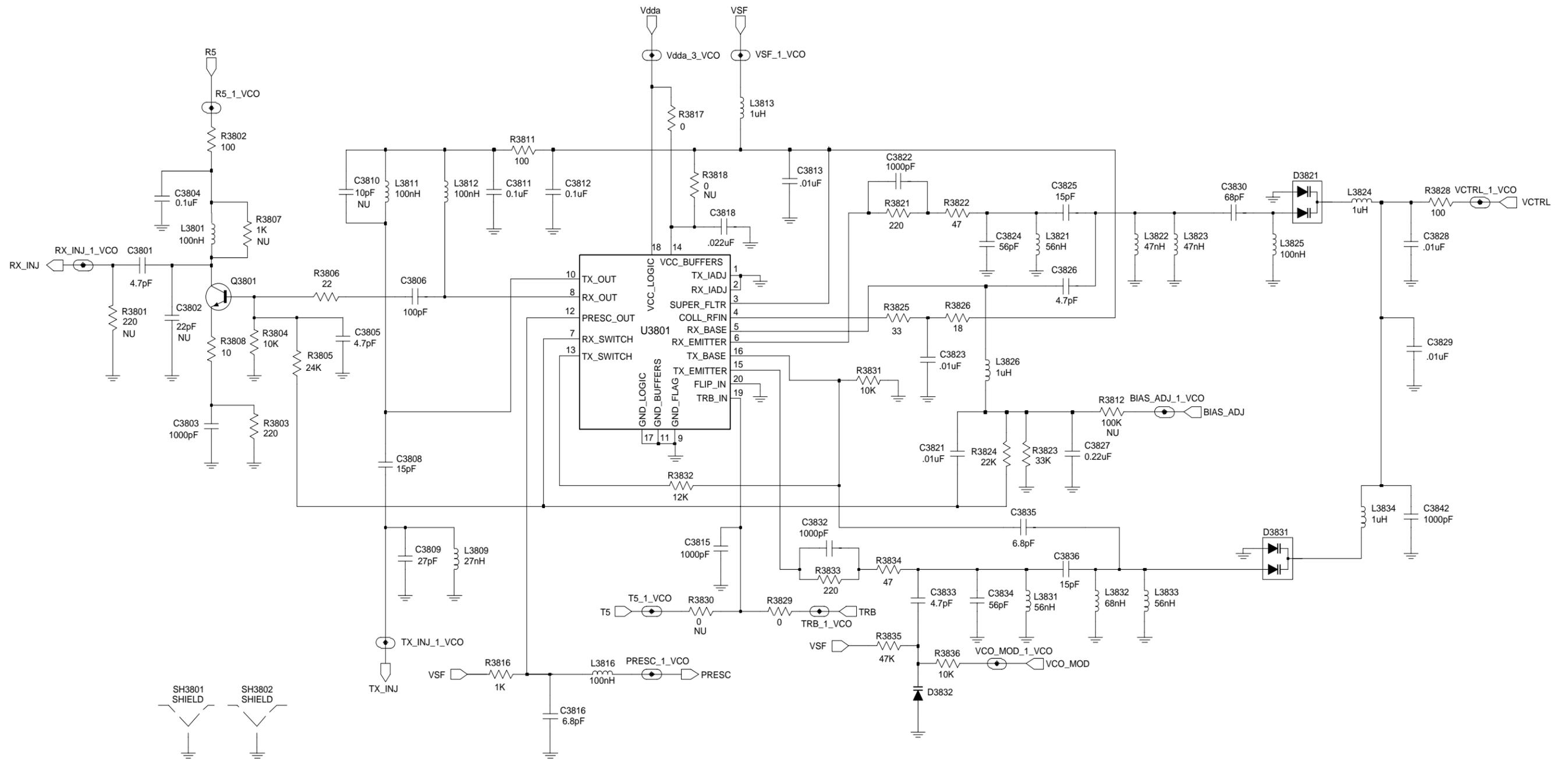
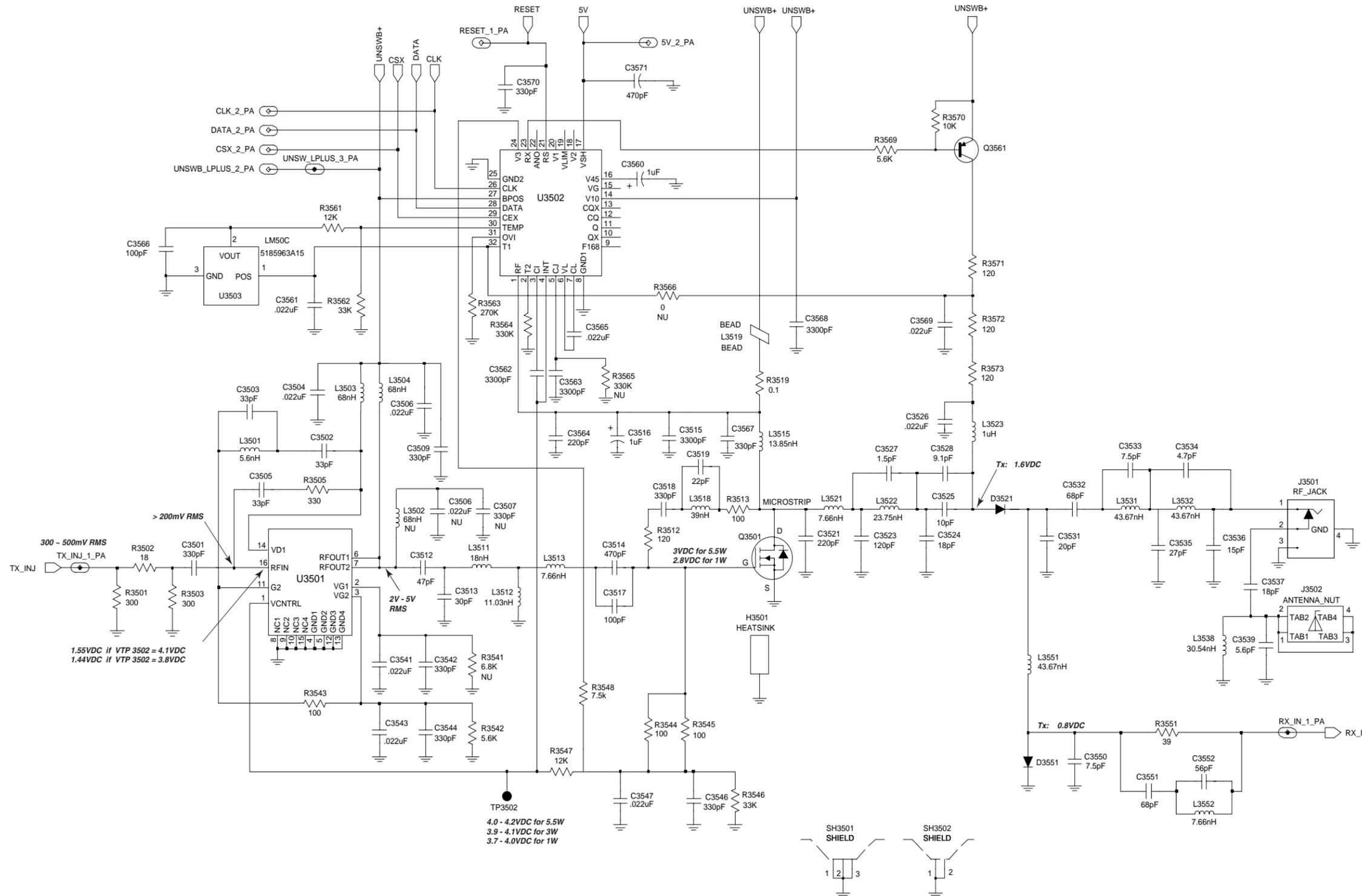


Figure 9-235. VHF (136-174 MHz) Synthesizer Schematic Diagram



ZWG0130020-B

Figure 9-236. VHF (136-174 MHz) Voltage Controlled Oscillator Schematic Diagram



ZWG0130021-D

Figure 9-237. VHF (136-174 MHz) Transmitter Schematic Diagram



**VHF (136-174 MHz) 9000 Series Radio Parts List**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C3200	2113743N31	16pF
C3203	2113743N50	100pF
C3204	2113743L41	0.01uF
C3205	2113928N01	0.1uF
C3206	2113743L41	0.01uF
C3207	2113743N10	2.2pF
C3209	2311049A07	1uF
C3210	2113743L17	1000pF
C3211	2311049A56	4.7uF
C3212	2311049A07	1uF
C3213	2311049A56	4.7uF
C3214	2113928N01	0.1uF
C3215	2113743N26	10pF
C3218	2311049A56	4.7uF
C3219	2113928N01	0.1uF
C3220	2113743N26	10pF
C3221	2113743L41	0.01uF
C3222	2113928N01	0.1uF
C3223	2113928N01	0.1uF
C3224	2113928N01	0.1uF
C3225	2113928N01	0.1uF
C3226	2113928N01	0.1uF
C3227	2113743L41	0.01uF
C3228	2113743L41	0.01uF
C3229	2113743N50	100pF
C3230	2113740F51	100pF
C3231	2180478Z20	1uF
C3232	2180478Z20	1uF
C3233	2180478Z20	1uF
C3234	2180478Z20	1uF
C3235	2113743A23	0.220uF
C3238	2113743A24	.0.330uF
C3239	2113743E07	0.022uF
C3240	2113743A23	0.220uF
C3241	2113743L19	1200pF
C3242	2109720D14	0.1uF
C3243	2113743E07	0.022uF
C3244	2113743L41	0.01uF
C3270	2113743E07	0.022uF
C3271	2113743L05	330pF
C3272	2113743N18	4.7pF
C3273	2113743N26	10.0pF
C3274	2113743N38	33.0pF
C3275	2113743N44	56.0pF
C3276	2113743N42	47.0pF
C3277	2113743N48	82.0pF
C3278	2113743E07	0.022uF
C3279	2311049A40	2.2uF
C3280	2113743L41	0.01uF
C3301	2113743N20	5.6pF
C3302	2113743N54	150pF

Circuit Ref	Motorola Part No.	Description
C3303	2113743N30	15.0pF
C3304	2113743N54	150pF
C3306	2113928N01	0.1uF
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113928N01	0.1uF
C3311	2113743N54	150pF
C3312	2113743N31	16.0pF
C3313	2113743N54	150pF
C3315	2113743N26	10.0pF
C3316	2113743N14	3.3pF
C3317	2113743N40	39pF
C3318	2113743M08	0.022uF
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A18	10uF
C3337	2113743M08	0.022pF
C3338	2113743L09	470pF
C3339	2113743N26	10pF
C3501	2113743L05	330pF
C3502	2113743N38	33pF
C3503	2113743N38	33pF
C3504	2113743M08	0.022pF
C3505	2113743N38	33pF
C3508	2113743M08	0.022pF
C3509	2113743L05	330pF
C3512	2113740F43	47pF
C3513	2113740F38	30pF
C3514	2113740F67	470pF
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F51	100pF
C3518	2113740F63	330pF
C3519	2113740F35	22pF
C3521	2111078B51	220pF
C3523	2111078B44	120pF
C3524	2113740F33	18pF
C3525	2113740F27	10pF
C3526	2113743M08	0.022pF
C3528	2113740F26	9.1pF
C3531	2113740F34	20pF
C3532	2113740F47	68pF
C3533	2113740F24	7.5pF
C3534	2113740F19	4.7pF
C3535	2113740F37	27

Circuit Ref	Motorola Part No.	Description
C3536	2113740F31	15
C3537	2113740F33	18
C3539	2113740F21	5.6
C3541	2113743M08	0.022pF
C3542	2113743L05	330pF
C3543	2113743M08	0.022pF
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	0.022pF
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1.0uF
C3561	2113743M08	0.022pF
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF
C3564	2113743L01	220pF
C3565	2113743E07	0.022uF
C3566	2113743N50	100pF
C3567	2113743L05	330pF
C3568	2113743L29	3300pF
C3569	2113743M08	0.022pF
C3570	2113743L05	330pF
C3571	2113743L09	470pF
C3701	2113743L41	0.01uF
C3702	2113743L41	0.01uF
C3703	2113743L41	0.01uF
C3704	2113743L41	0.01uF
C3705	2113743E20	10 uF
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113743M24	0.1uF
C3709	2113743M24	0.1uF
C3710	2104993J02	2.2uF
C3711	2311049A69	10uF
C3712	2113743M24	0.1uF
C3713	2311049A09	2.2 uF
C3714	2311049J11	4.7uF
C3715	2113743L09	470pF
C3721	2113743E20	10 uF
C3722	2113743E20	10 uF
C3724	2311049A08	1uF
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	0.01uF
C3732	2113743L41	0.01uF
C3733	2104993J02	2.2uF
C3734	2113743L41	0.01uF
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3752	2113743L17	1000pF
C3753	2311049A56	4.7uF
C3754	2113743M24	0.1uF

Circuit Ref	Motorola Part No.	Description
C3755	2104993J02	2.2uF
*C3761	2113743N44	56.0pF
*C3762	2113740F63	330pF
*C3763	2113743N08	1.6pF
C3801	2113743N18	4.7pF
C3803	2113743L17	1000pF
C3804	2113743E20	10uF
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3811	2113743M24	0.1uF
C3812	2113743M24	0.1uF
C3813	2113743L41	0.01uF
C3815	2113743L17	1000pF
C3816	2113743N22	6.8pF
C3818	2113743E07	0.022uF
C3821	2113743L41	0.01uF
C3822	2113743L17	1000pF
C3823	2113743L41	0.01uF
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	0.022uF
C3828	2109720D01	0.01uF
C3829	2109720D01	0.01uF
C3830	2113743N46	68.0pF
C3832	2113743L17	1000pF
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF
C3836	2113743N30	15.0pF
C3842	2113743L17	1000pF
C400	2113743L41	0.01uF
C401	2113743M24	0.1uF
C402	2113743M24	0.1uF
C403	2113928D08	10uF
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	0.01uF
C410	2113928N01	0.1uF
C411	2113743M24	0.01uF
C414	2113743M24	0.01uF
C415	2109720D01	0.01uF
C416	2113928N01	0.1uF
C419	2113743L41	0.01uF
C420	2113743L41	0.01uF
C421	2113928N01	0.1uF
C422	2113743M24	0.01uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	0.01uF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	0.01uF
C429	2113743M24	0.01uF

Circuit Ref	Motorola Part No.	Description
C430	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS <sup>+</sup> Models Only)
C431	2113743N50	100pF
C433	2113743L41	0.01uF
C434	2113743M24	0.01uF
C435	2113743M24	0.01uF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF
C441	2113743L09	470pF
C442	2113743E20	10 uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743L09	470pF
C446	2113743L09	470pF
C447	2113928N01	0.1uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C451	2113743M08	0.022pF
C452	2113743G26	4.7uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743L09	470pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C474	2113743L41	0.01uF
C475	2113743H14	10uF
C476	2113928D08	10.0uF
C477	2113743L17	1000pF
C478	2113743L17	1000pF
C479	2113928N01	0.1uF
C480	2113928D08	10.0uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF, 10%
	0662057M01	0 (SUB on LS <sup>+</sup> Models Only)
C483	2113743L09	470pF
C484	2113743L09	470pF
C490	2113743L09	470pF
C491	2113743L09	470pF
C492	2113743L09	470pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743L09	470pF
C496	2113743L09	470pF
C497	2113743L09	470pF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C514	2113743N50	100pF
C520	2113743L41	0.01uF
C521	2113743L41	0.01uF
C522	2113743L41	0.01uF
C523	2113743L41	0.01uF
C535	2113743L17	0.01uF
CR330	4802245J42	Ring Quad Diode
CR330	4805129M96	SMBV1032
CR330	4880154K03	Dual Common Anode Cathode
CR411	4802245J47	Schottky Diode
CR412	4802245J62	Schottky Diode
CR413	4802245J62	Schottky Diode
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
D3270	4862824C01	Varactor
D3301	4802081B58	Dual Diode
D3302	4802081B58	Dual Diode
D3521	4880973Z02	Pin Diode
D3551	4880973Z02	Pin Diode
D3701	4802233J09	Triple Diode
D3702	4802233J09	Triple Diode
D3761	4862824C03	Varactor
D3821	4805649Q13	Dual Varactor
D3831	4805649Q13	Dual Varactor
D3832	4862824C01	Varactor
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL401	4870368G02	Crystal Oscillator 38.4 kHz
H3501	2680499Z01	Heatsink
J3501	0180117S05	RF Jack
J3502	0280519Z02	Antenna Nut
J400	0905505Y04	40-Pin Connector
J403	0905505Y02	20-Pin Connector
L3200	2462587N68	1uH
L3202	2462587N68	1uH
L3221	2462587N68	1uH
L3270	2462587T15	100nH
L3271	2462587Q20	2.2uH
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH

Circuit Ref	Motorola Part No.	Description
L3501	2413926H09	5.6nH
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH
L3512	2479990B01	11.03nH
L3513	2479990A02	7.66nH
L3515	2479990C03	13.85nH
L3518	2462587N48	39nH
L3519	2484657R01	Bead
L3521	2479990A02	7.66nH
L3522	2479990E01	23.75nH
L3523	2462587N68	1uH
L3531	2479990N01	43.67nH
L3532	2479990N01	43.67nH
L3538	2479990N01	30.54nH
L3551	2479990N01	43.67nH
L3552	2479990A02	7.66nH
L3701	2462587Q42	390nH
L3731	2462587Q20	2.2uH
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1uH
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1uH
L3825	2462587V34	100nH
L3826	2462587N68	1uH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1uH
L400	2462587Q42	390nH
L401	2462587Q42	390uH
L410	2462587Q42	390uH
L411	2462587Q42	390uH
L505	2462587Q42	390uH
PB501	4080523Z01	Tactile, Pushbutton
PB502	4080523Z01	Tactile, Pushbutton
PB503	4080523Z01	Tactile, Pushbutton
PB504	4080523Z01	Tactile, Pushbutton
PB505	4080523Z01	Tactile, Pushbutton
Q3200	4813827A07	NPN
Q3201	4880214G02	NPN
Q3202	4880214G02	NPN
Q3270	4805218N63	BFQ67W
Q3301	4880214G02	NPN
Q3302	4813827A07	NPN
Q3501	4802245J55	RF Power FET
Q3561	4813824A17	PNP
Q3721	4802245J50	Dual NPN/PNP
Q3801	4813827A07	NPN
Q400	4809579E18	MOSFET P-Chan

Circuit Ref	Motorola Part No.	Description
Q403	4880214G02	NPN
Q405	4802245J54	Dual NPN
Q410	4802245J54	Dual NPN
Q416	4809579E18	MOSFET p-CHAN
Q417	4802245J50	Dual NPN/PNP
Q502	5180159R01	NPN
Q505	4880214G02	TSTR MMBT3904
R3200	0662057M54	150
R3201	0662057M82	2.2K
R3202	0662057M90	4.7K
R3203	0662057M98	10K 5
R3204	0662057M26	10
R3205	0662057M74	1K
R3206	0662057N23	100K
R3207	0662057N13	39K
R3208	0662057M50	100
R3209	0662057M74	1K
R3210	0662057M82	2.2K
R3211	0662057M82	2.2K
R3212	0662057M90	4.7K
R3213	0662057M82	2.2K
R3214	0662057M34	22
R3219	0662057M50	100
R3220	0662057M90	4.7K
R3221	0662057M50	100
R3224	0662057M26	10
R3225	0662057M74	1K
R3226	0662057M26	10
R3270	0662057M74	1KK
R3271	0662057M42	47 K
R3272	0662057N15	47KK
R3273	0662057N15	47K K
R3274	0662057M83	2.4K
R3275	0662057M74	1K
R3276	0662057N30	200K
R3303	0662057N23	100K
R3304	0662057N23	100K
R3305	0662057N19	68K
R3306	0662057M82	2.2K
R3307	0662057N11	33K
R3308	0662057M78	1.5K
R3309	0662057M92	5.6K
R3310	0662057M98	10K
R3311	0662057M26	10
R3312	0662057M38	33
R3313	0662057M34	22
R3314	0662057M26	10
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3321	0662057M54	150
R3322	0662057M58	220
R3323	0662057M32	18
R3324	0662057M58	220
R3501	0662057M61	300

Circuit Ref	Motorola Part No.	Description
R3502	0662057M32	18
R3503	0662057M61	300
R3505	0662057M62	330
R3512	0662057A27	120
R3513	0662057A25	100
R3519	0680539Z01	0.1
R3542	0662057M92	5.6K
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N11	33K
R3547	0662057N01	12K
R3548	0662057M95	7.5K
R3551	0662057M40	39
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3569	0662057M92	5600
R3570	0662057M98	10K
R3571	0662057A27	5.6K
R3572	0662057A27	120
R3573	0662057A27	120
R3701	0662057M50	100
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R3721	0662057M66	470
R3722	0662057M74	1000
R3723	0662057M50	100
R3727	0662057N23	100K
R3741	0662057M50	100
R3751	0662057N30	200K
R3752	0662057N35	330K
R3761	0662057N15	47K
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10K
R3805	0662057N08	24K
R3806	0662057M34	22
R3808	0662057M26	10
R3811	0662057M50	100
R3816	0662057M74	1K
R3817	0662057M01	0
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100
R3829	0662057M01	0
R3831	0662057M98	10K
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47

Circuit Ref	Motorola Part No.	Description
R3835	0662057N15	47K
R3836	0662057M98	10K
R400	0662057N15	47K
R401	0662057M01	0
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057N13	39K
R418	0662057M01	0
R419	0662057M67	0
R420	0662057B46	10M
R421	0662057M81	2K
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057M98	10K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2K
R436	0662057M01	0
R445	0662057N08	24K
R446	0662057N31	220K
R447	0662057N51	1.5M
R448	0662057N33	270K
R449	0662057N08	24K
R450	0683962T45	68
R457	0662057M98	10K
R460	0662057M90	4.7K
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057M92	5.6K
R472	0662057M93	6.2K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
RT400	0680590Z01	33K
S501	4080710Z02	Frequency Switch

Circuit Ref	Motorola Part No.	Description
S502	1880619Z01	Volume Potentiometer
SH3201	2602023X08	Shield
SH3202	2686081B02	Shield
SH3203	2686081B03	Shield
SH3301	2686081B01	Shield
SH3302	2686081B05	Shield
SH3303	2686081B06	Shield
SH3501	2686081B03	Shield
SH3502	2686081B04	Shield
SH3701	2680511Z01	Shield, Synthesizer
SH3702	2680511Z01	Shield
SH3801	2680513Z01	Shield, VCO Top
SH3802	2680514Z01	Shield, VCO Bottom/LVZIF
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On/Off Shield
SH402	2680515Z01	Controller Microprocessor Shield
SH403	2680516Z01	Controller ASFIC Compander/ Audio PA Shield
T3301	2580541Z01	Transformer Coil
T3302	2580541Z01	Transformer Coil
U3201	5102463J58	3.3V Regulator
U3220	5109632D83	Low Voltage ZIF
U3501	5105109Z67	LDMOS Driver
U3502	5185765B01	Power Control IC
U3503	5185963A15	Temperature Sense
U3701	5185963A27	Low Voltage FracN
U3711	5105739X05	Regulator, Linear
U3801	5105750U54	VCO Buffer
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC
U405	5102463J36	Static RAM
U406	5102463J60	512KX8 Flash ROM
U407	5102463J64	16KX8 EEPROM
U409	5102226J56	Microcontroller
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J51	6.8V Zener
VR439	4880140L15	10V Zener
VR447	4802245J53	10V Zener
VR448	4802245J53	10V Zener
VR449	4802245J53	10V Zener
VR450	4802245J53	10V Zener
VR501	4813830A18	6.8V Zener
VR506	4802245J51	6.8V Zener
Y3200	9186153B01	Crystal Filter
Y3761	4802245J49	Crystal 16.8 MHz

\* Motorola Depot Servicing only

## Notes

### 9.26 Low Band Circuit Board/Schematic Diagrams and Parts List

VIEWED FROM SIDE 1

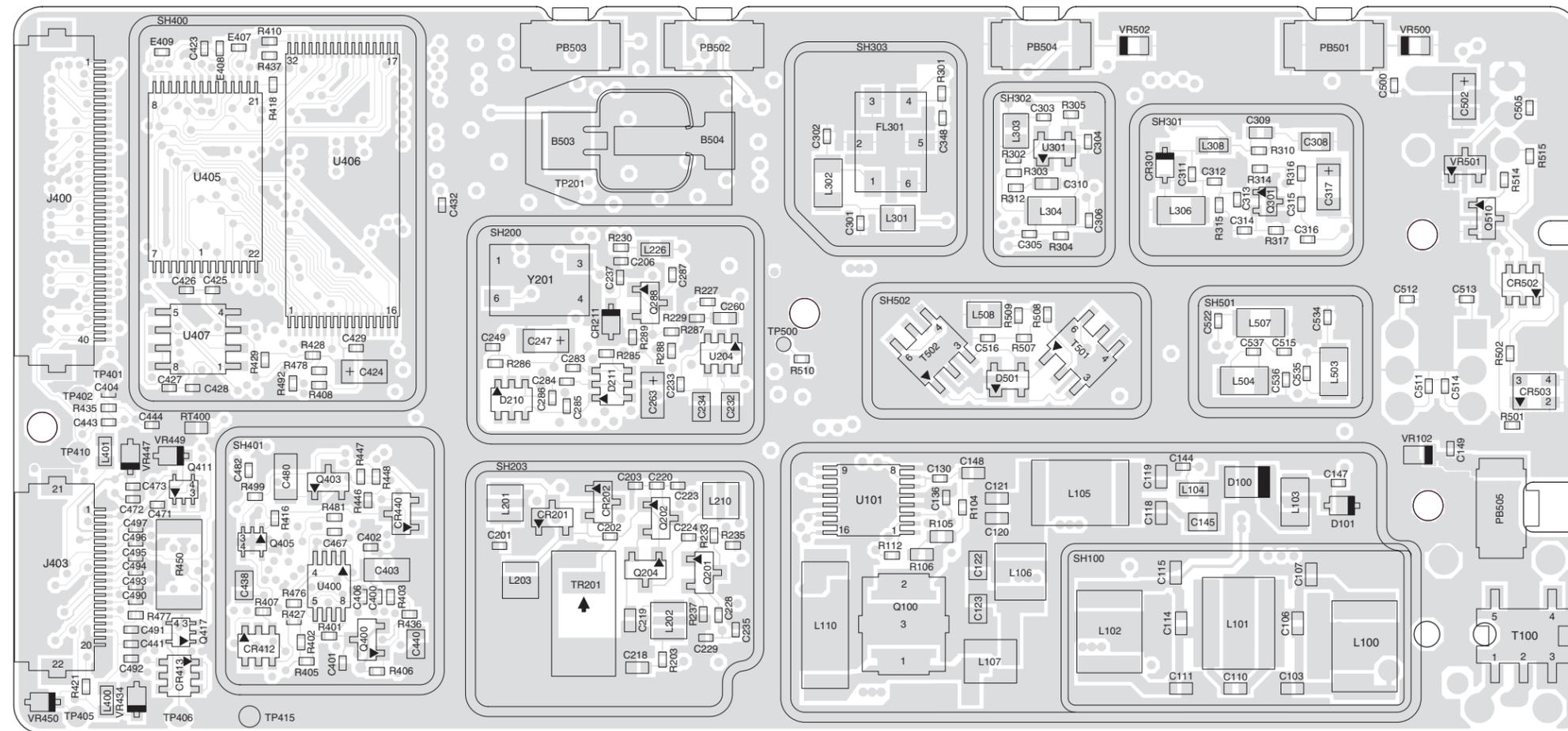


Figure 9-238. Low Band (29.7-42/35-50 MHz) Main Board Top Side PCB

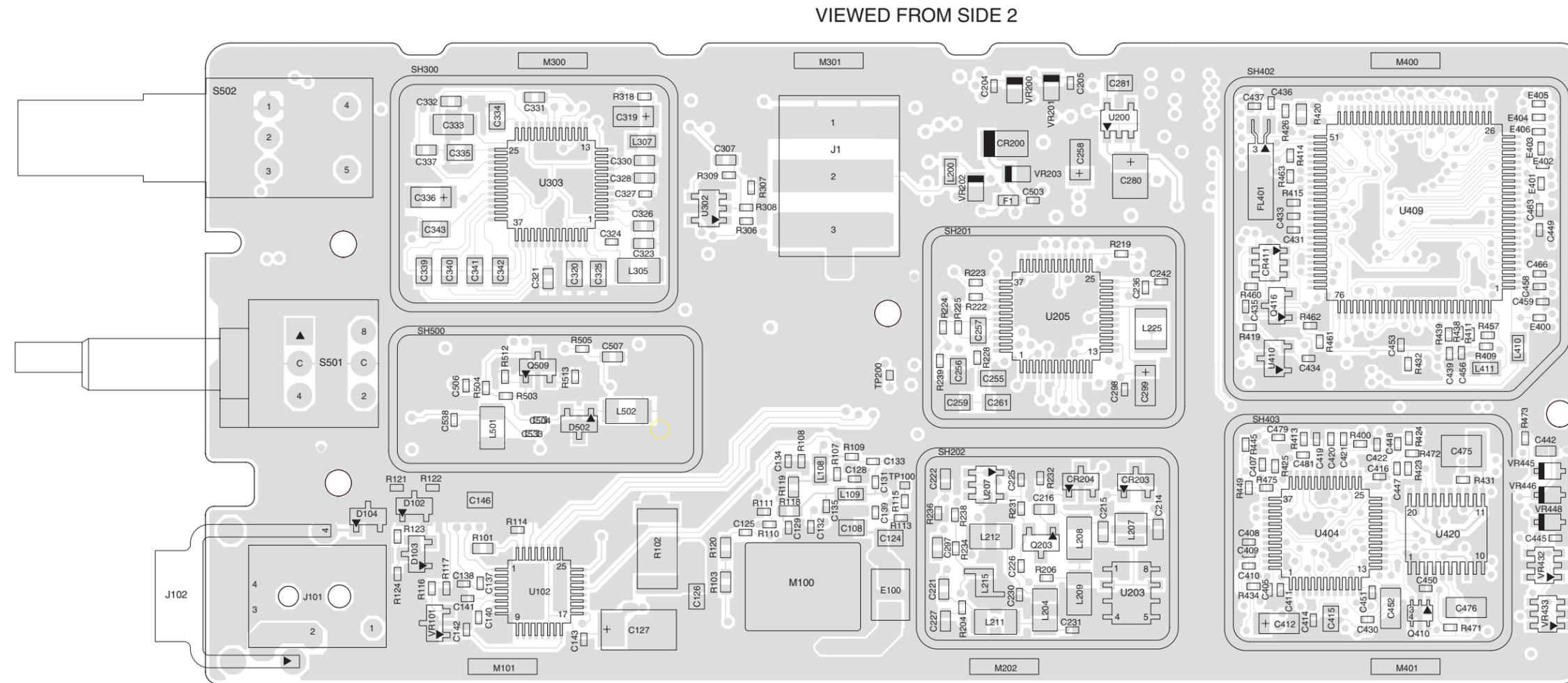
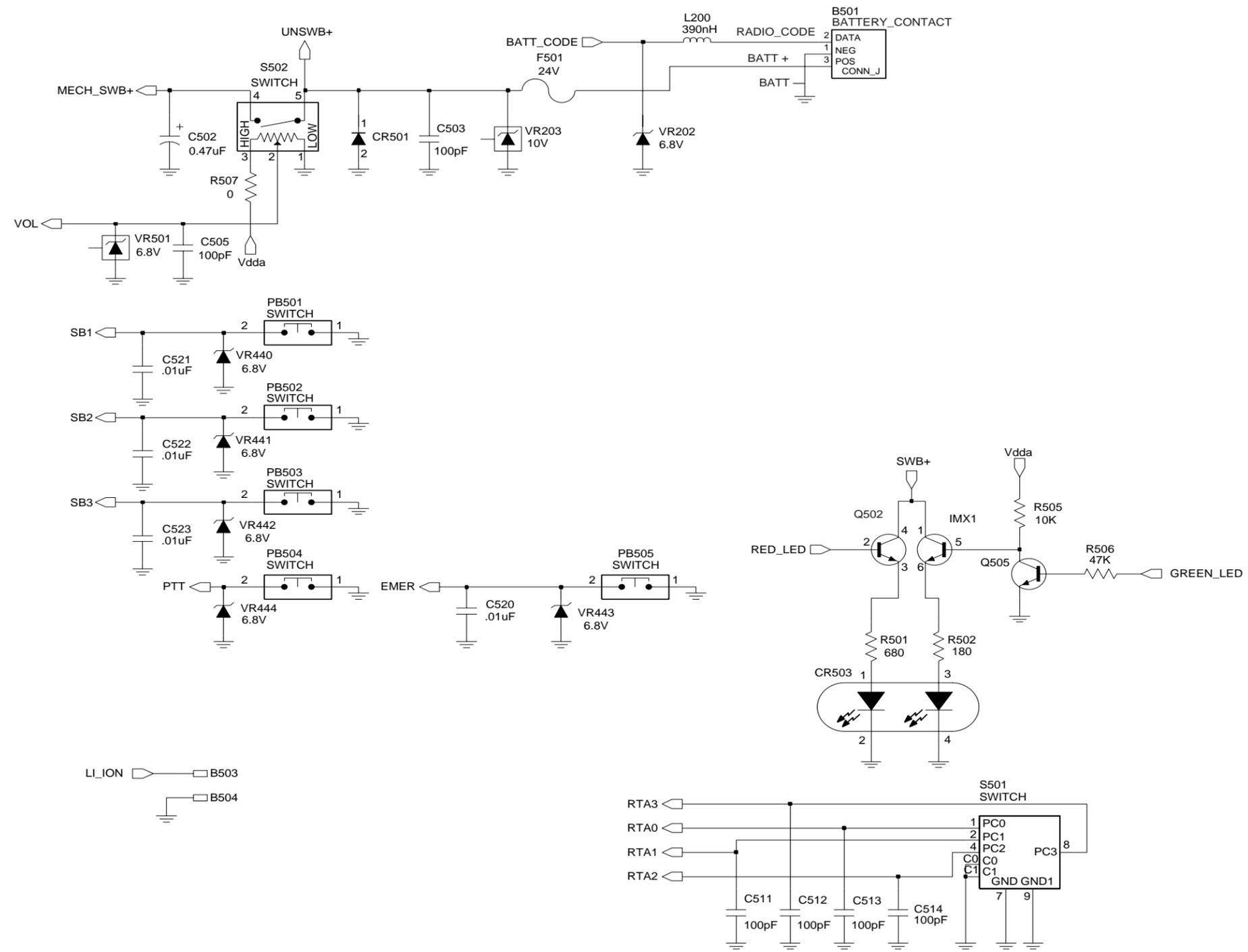


Figure 9-239. Low Band (29.7-42/35-50 MHz) Main Board Bottom Side PCB



FL0830467O

Figure 9-240. Low Band (30-50 MHz) Controls and Switches Diagram

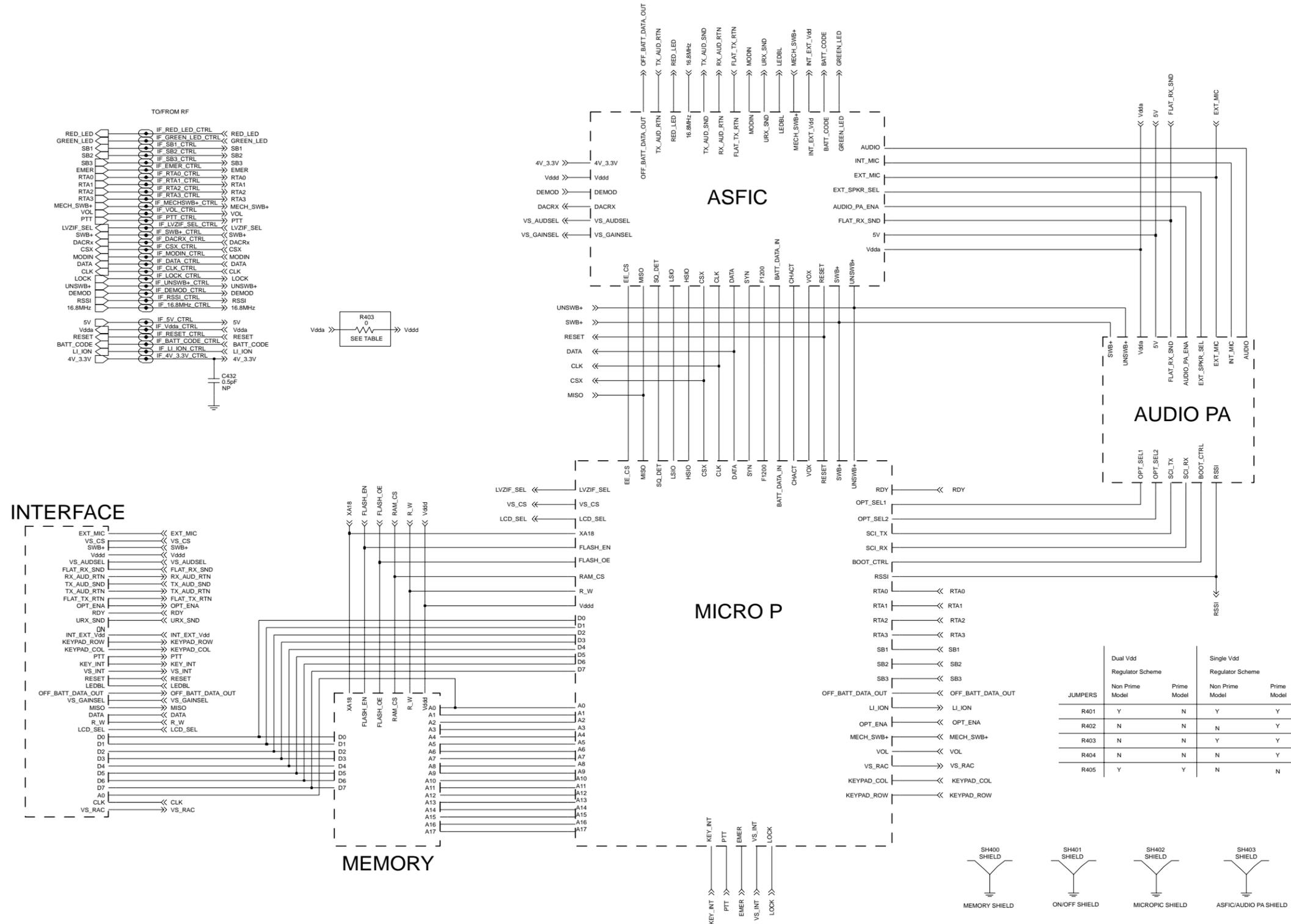
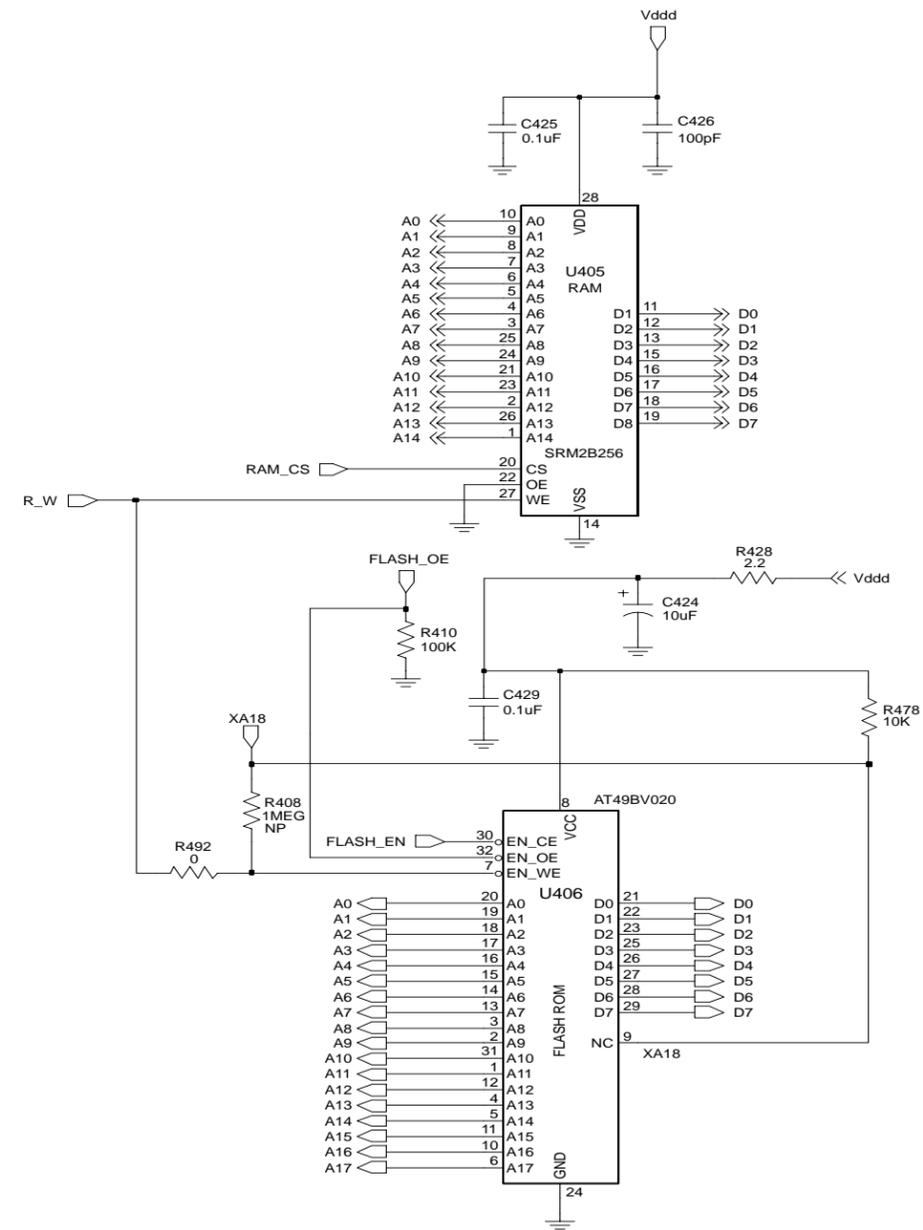


Figure 9-241. Low Band (29.7-42/35-50 MHz) Controller Overall Schematic Diagram

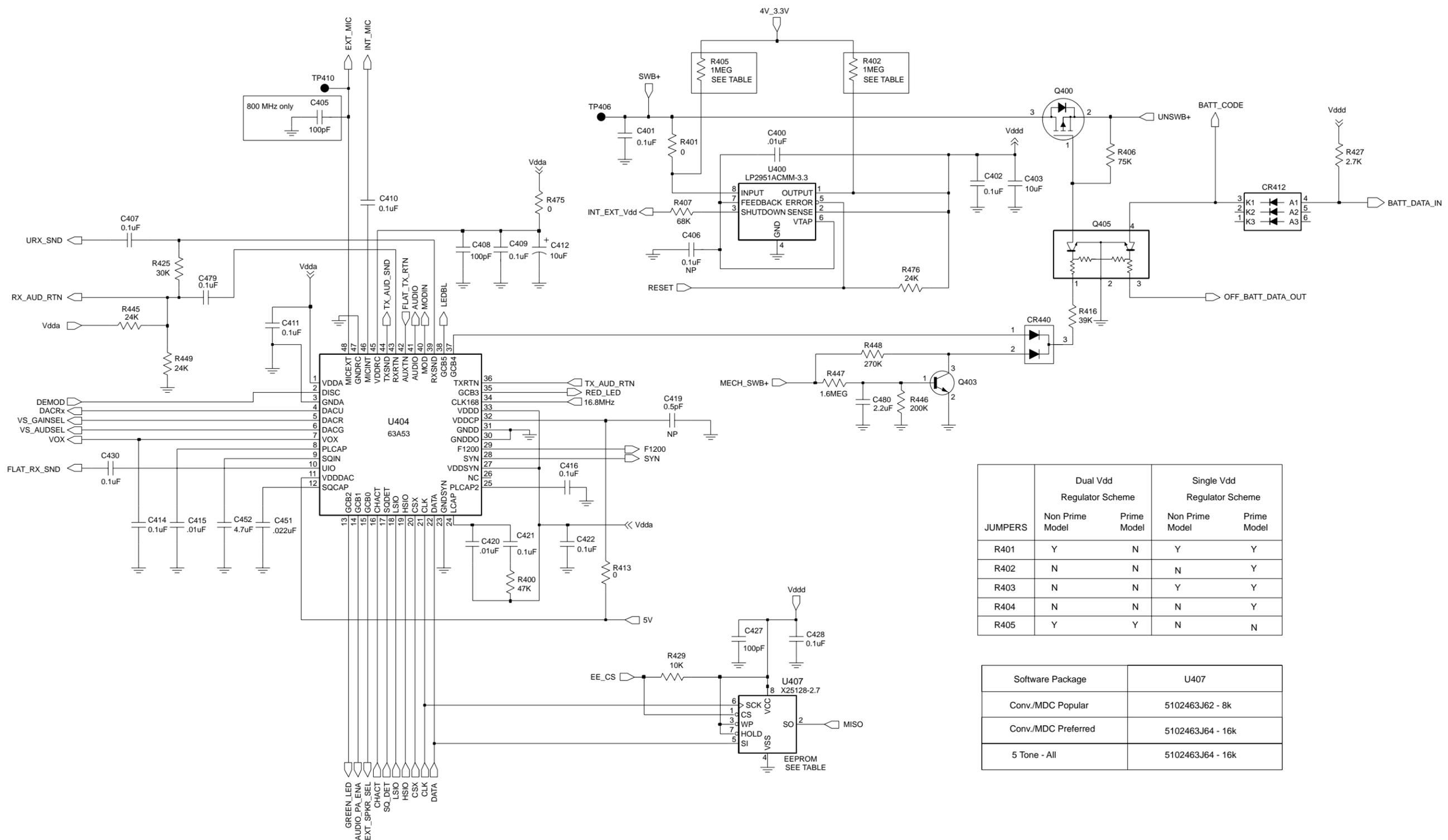




Software Package	U406	U405
Conventional/MDC	5102463J59 - 128k	Not used
5 Tone	5102463J60 - 512k	5102463J36 - 32k

FL0830464O

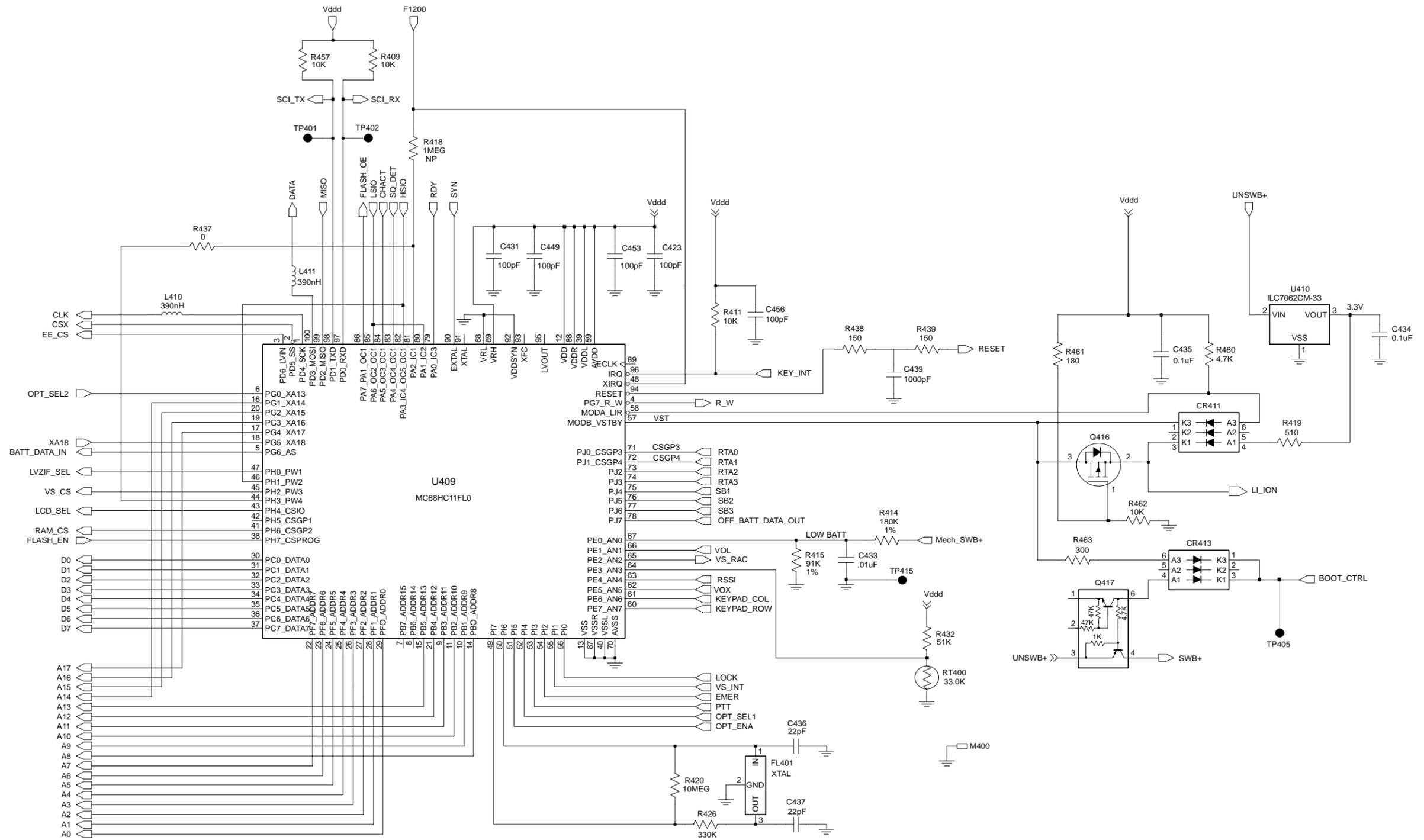
Figure 9-242. Low Band (29.7-42/35-50 MHz) Controller Memory Schematic Diagram



JUMPERS	Dual Vdd Regulator Scheme		Single Vdd Regulator Scheme	
	Non Prime Model	Prime Model	Non Prime Model	Prime Model
R401	Y	N	Y	Y
R402	N	N	N	Y
R403	N	N	Y	Y
R404	N	N	N	Y
R405	Y	Y	N	N

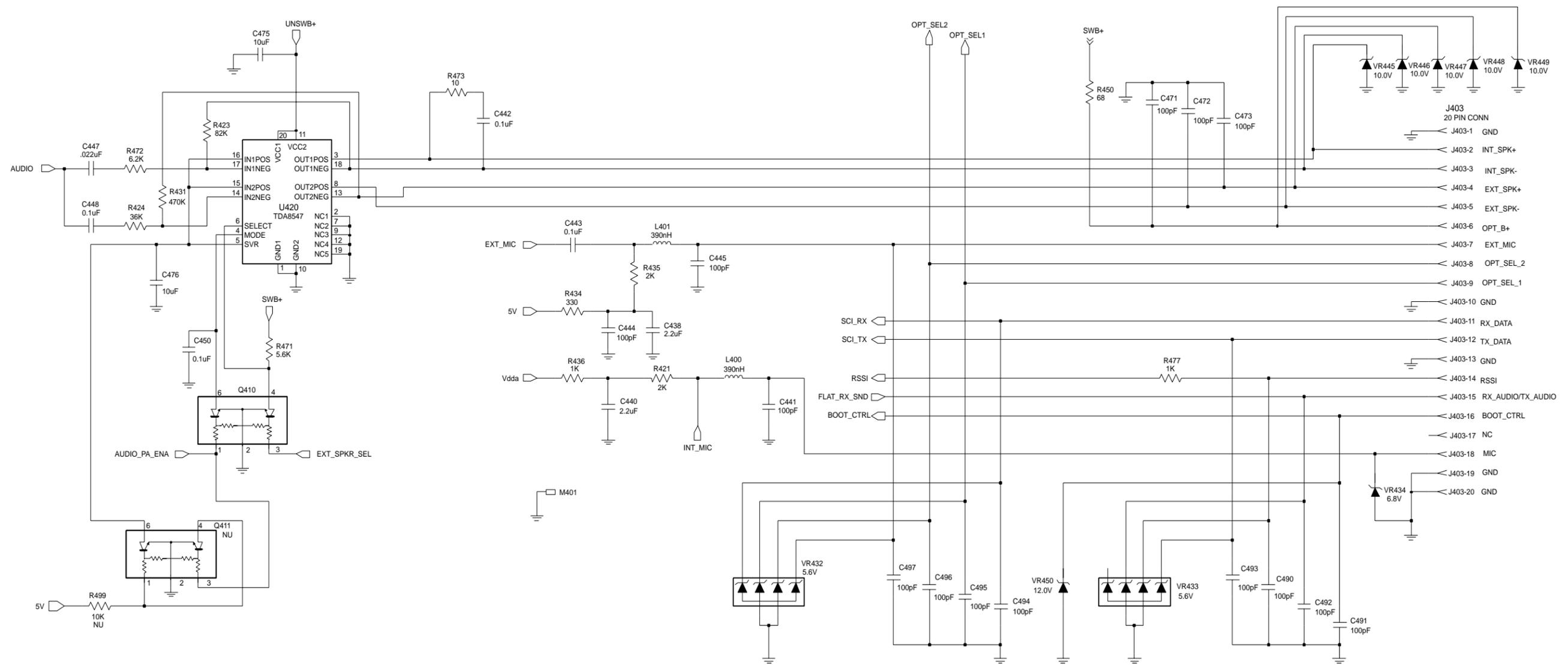
Software Package	U407
Conv./MDC Popular	5102463J62 - 8k
Conv./MDC Preferred	5102463J64 - 16k
5 Tone - All	5102463J64 - 16k

Figure 9-243. Low Band (29.7-42/35-50 MHz) Controller AFSIC Schematic Diagram



FL0830465O

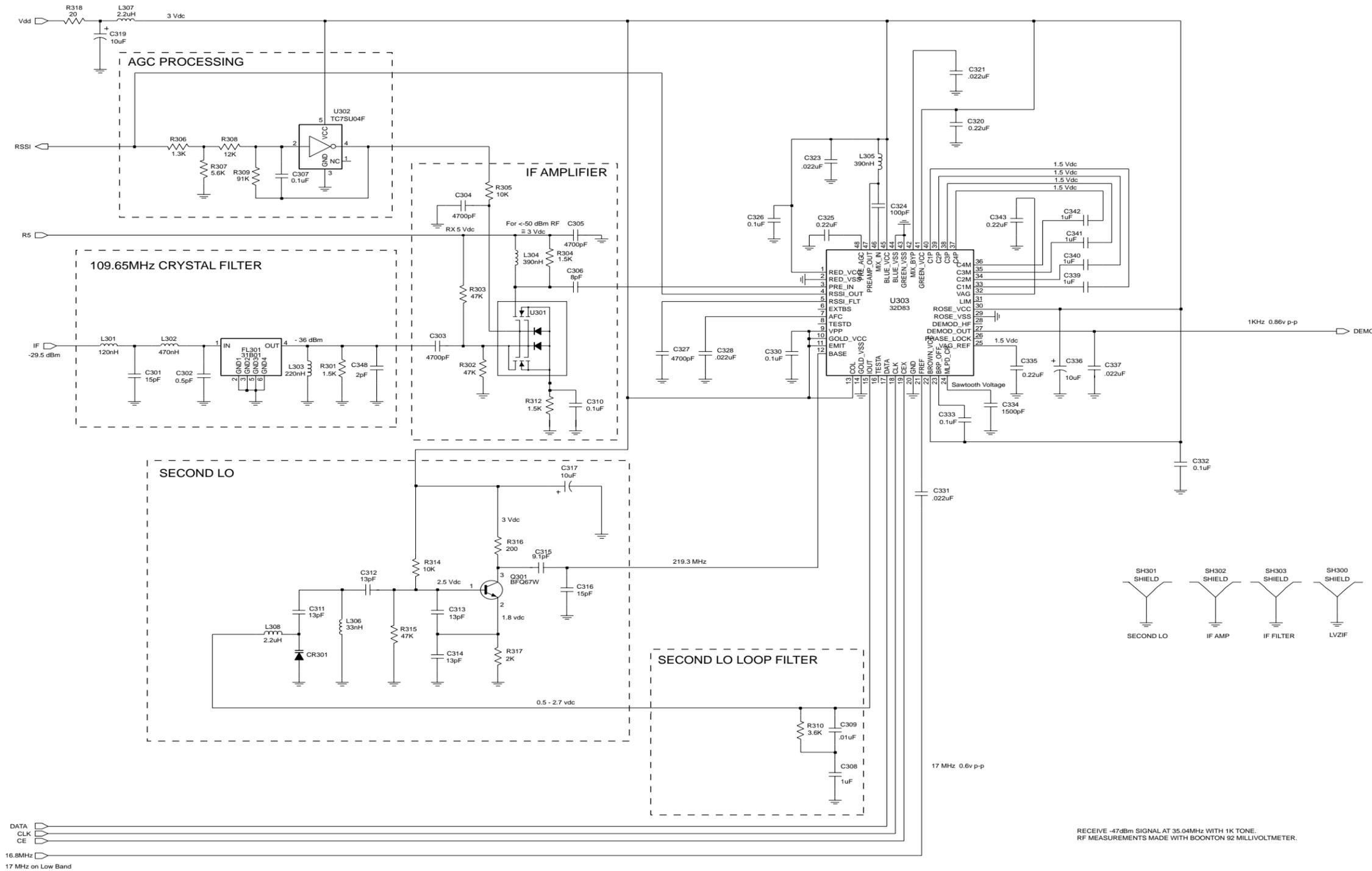
Figure 9-244. Low Band (29.7-42/35-50 MHz) Controller Microprocessor Schematic Diagram



FL08304620

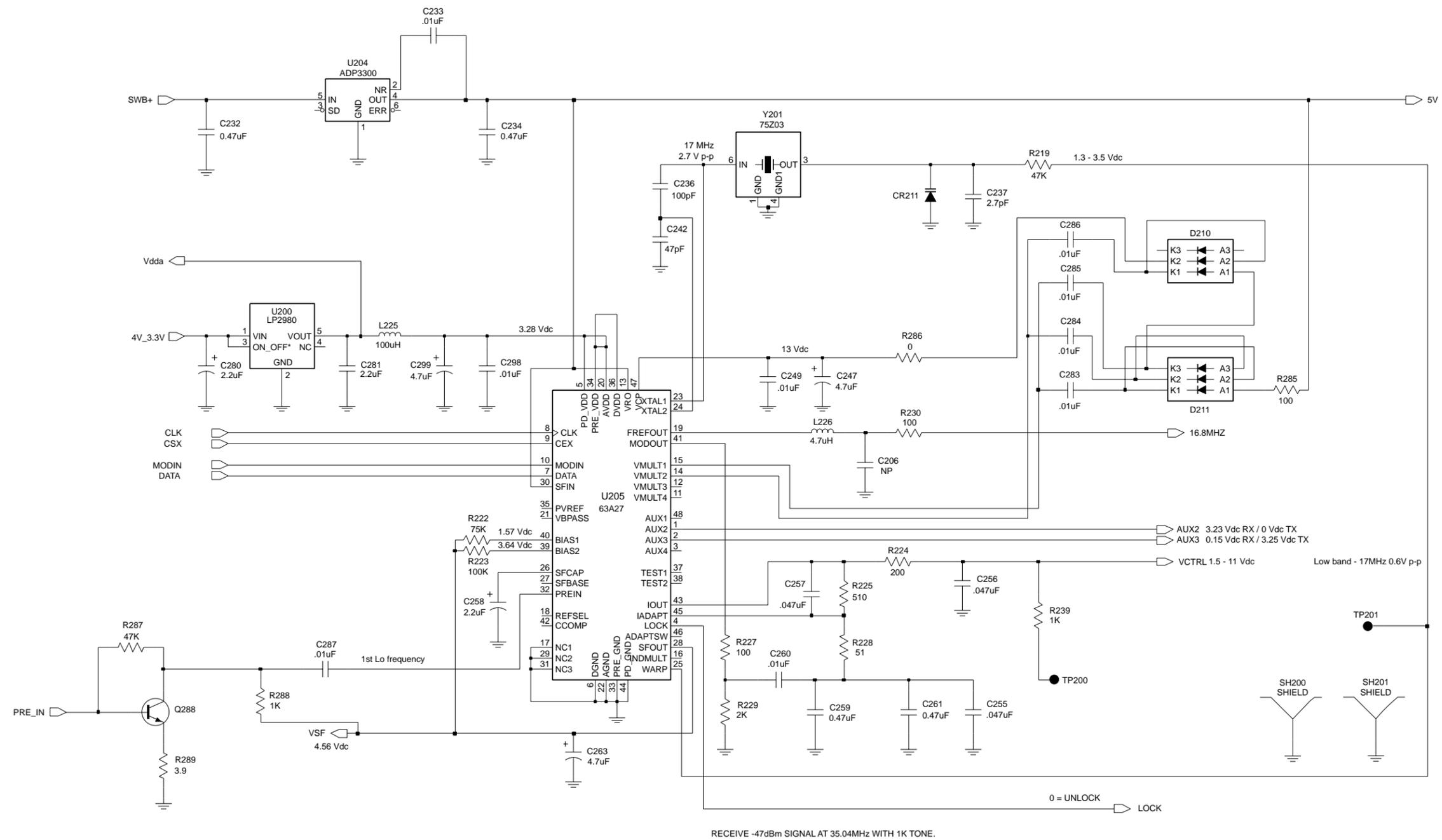
Figure 9-245. Low Band (29.7-42/35-50 MHz) Controller Audio PA Schematic Diagram





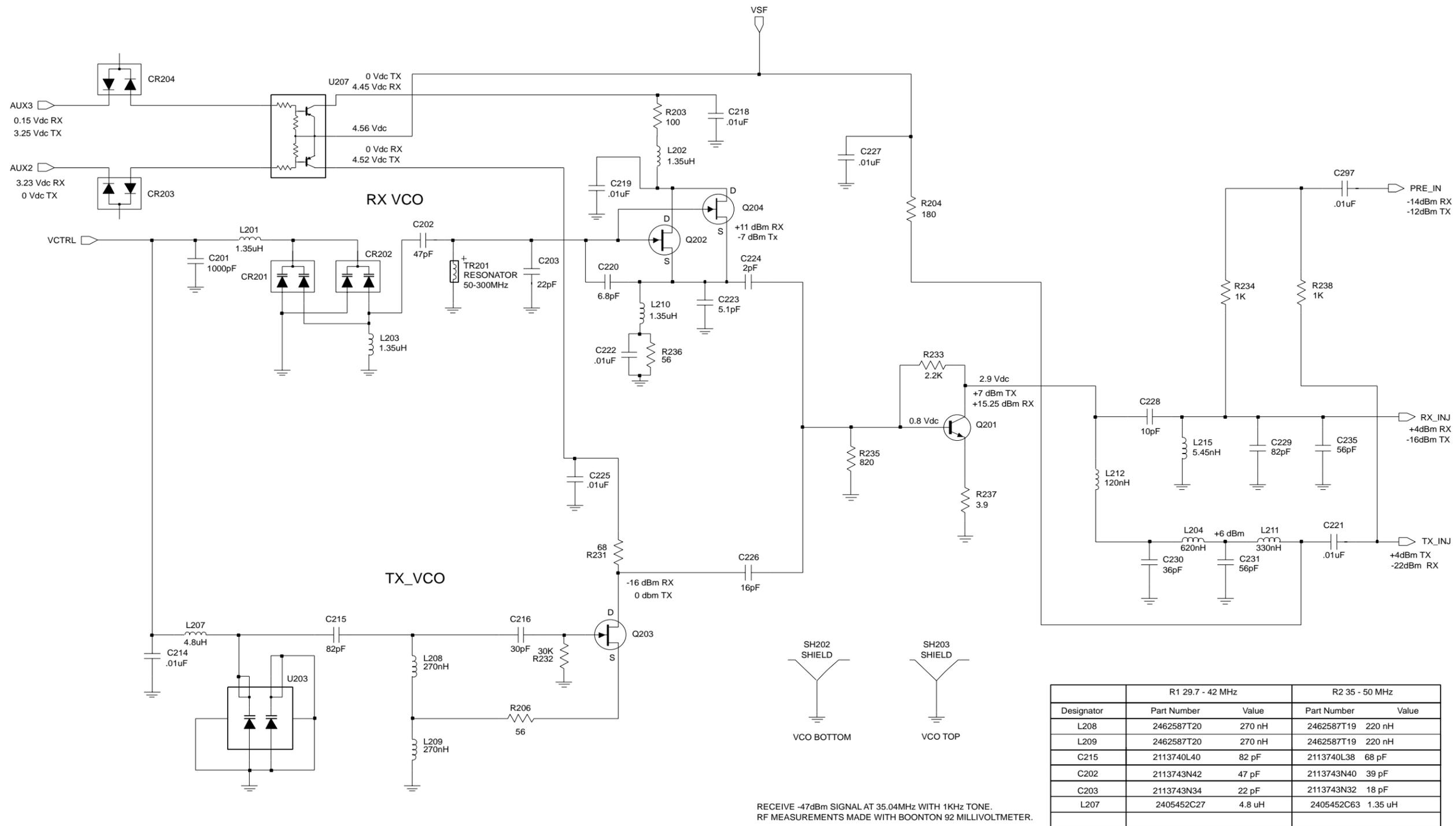
FL08304720

Figure 9-247. Low Band (29.7-42/35-50 MHz) Receiver Back End Schematic Diagram



FL08304680

Figure 9-248. Low Band (29.7-42/35-50 MHz) Frequency Generation Unit Synthesizer

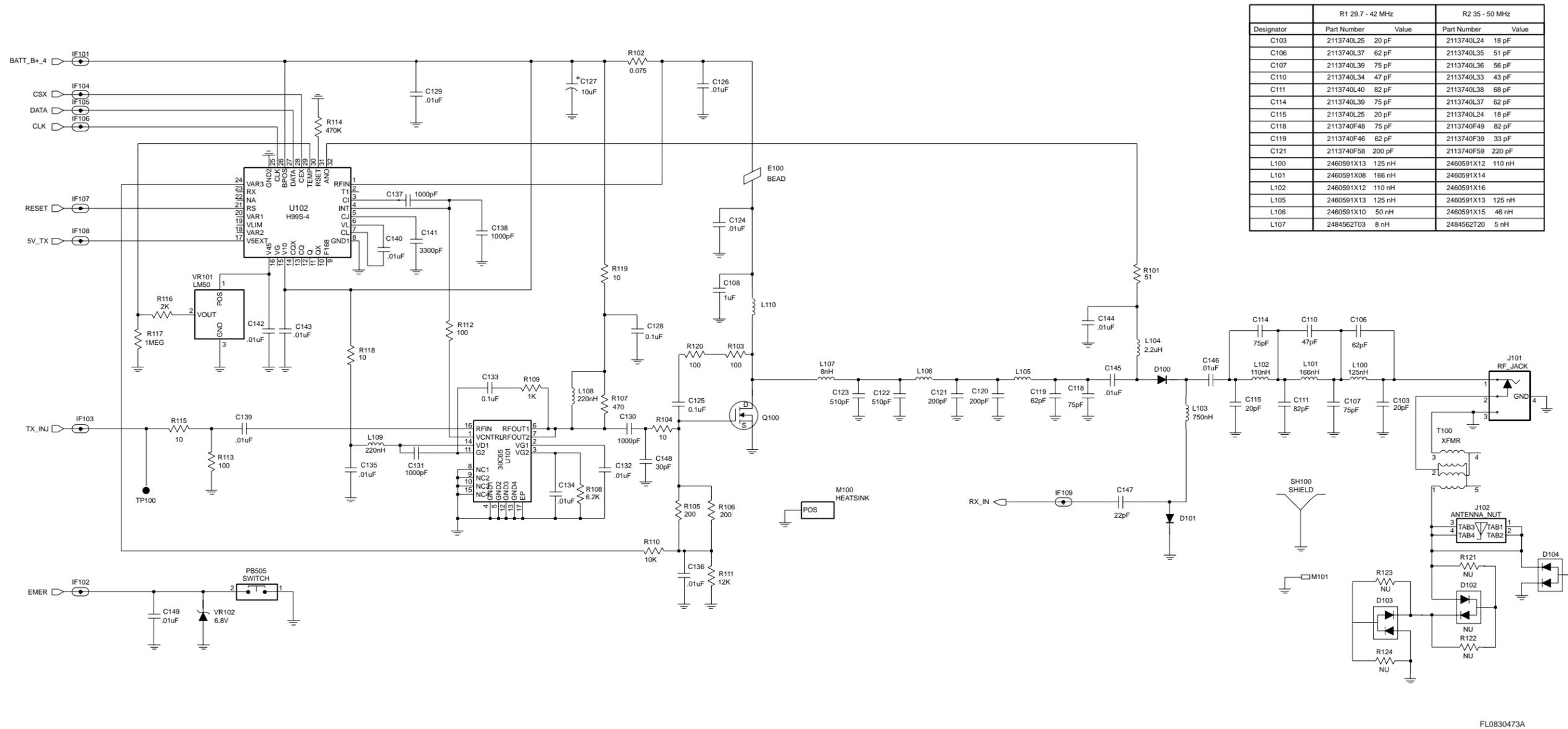


Designator	R1 29.7 - 42 MHz		R2 35 - 50 MHz	
	Part Number	Value	Part Number	Value
L208	2462587T20	270 nH	2462587T19	220 nH
L209	2462587T20	270 nH	2462587T19	220 nH
C215	2113740L40	82 pF	2113740L38	68 pF
C202	2113743N42	47 pF	2113743N40	39 pF
C203	2113743N34	22 pF	2113743N32	18 pF
L207	2405452C27	4.8 uH	2405452C63	1.35 uH

FL08304690

Figure 9-249. Low Band (29.7-42/35-50 MHz) Frequency Generation Unit VCO Diagram





Designator	R1 29.7 - 42 MHz		R2 35 - 50 MHz	
	Part Number	Value	Part Number	Value
C103	2113740L25	20 pF	2113740L24	18 pF
C106	2113740L37	62 pF	2113740L35	51 pF
C107	2113740L39	75 pF	2113740L36	56 pF
C110	2113740L34	47 pF	2113740L33	43 pF
C111	2113740L40	82 pF	2113740L38	68 pF
C114	2113740L39	75 pF	2113740L37	62 pF
C115	2113740L25	20 pF	2113740L24	18 pF
C118	2113740F48	75 pF	2113740F49	82 pF
C119	2113740F46	62 pF	2113740F39	33 pF
C121	2113740F58	200 pF	2113740F59	220 pF
L100	2460591X13	125 nH	2460591X12	110 nH
L101	2460591X08	166 nH	2460591X14	
L102	2460591X12	110 nH	2460591X16	
L105	2460591X13	125 nH	2460591X13	125 nH
L106	2460591X10	50 nH	2460591X15	46 nH
L107	2484562T03	8 nH	2484562T20	5 nH

Figure 9-250. Low Band (29.7-42/35-50 MHz) Transmitter Schematic Diagram

FL0830473A

**Low Band (29.7-42/35-50 MHz) Radio Parts List**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C103	2113740L25	20pF
C103*	2113740L24	18pF
C106	2113740L37	62pF
C106*	2113740L35	51pF
C107	2113740L39	75pF
C107*	2113740L36	56pF
C108	2113743F16	1.0uF
C110	2113740L34	47pF
C110*	2113740L33	43pF
C111	2113740L40	82pF
C111*	2113740L38	68pF
C114	2113740L39	75pF
C114*	2113740L37	62pF
C115	2113740L25	20pF
C115*	2113740L24	18pF
C118	2113740F48	47pF
C118*	2113740F49	82pF
C119	2113740F46	62pF
C119	2113740F39	33pF
C120	2113740F58	200pF
C121	2113740F58	200pF
C121*	2113740F59	220pF
C122	2113740A72	510pF
C123	2113740A72	510pF
C124	2113741A45	56pF
C125	2113743M24	0.01uF
C126	2113741A45	56pF
C127	2311049A18	10uF
C128	2113743M24	0.01uF
C129	2113743L41	0.01uF
C130	2113743L17	1000pF
C131	2113743L17	1000pF
C132	2113743L41	0.01uF
C133	2113743M24	0.01uF
C134	2113743L41	0.01uF
C135	2113743L41	0.01uF
C136	2113743L41	0.01uF
C137	2113743L17	1000pF
C138	2113743L17	1000pF
C139	2113743L41	0.01uF
C140	2113743L41	0.01uF
C141	2113743L29	3300pF
C142	2113743L41	0.01uF
C143	2113743L41	0.01uF
C144	2113743L41	0.01uF
C145	2113741A45	56pF
C146	2113741A45	56pF
C147	2113743N34	22pF
C148	2113740F38	30pF
C149	2113743L41	0.01uF
C201	2113743L17	1000pF

Circuit Ref	Motorola Part No.	Description
C202	2113743N42	47pF
C203*	2113743N34	18pF (Range 2 only)
C204	2113743L41	0.01uF
C205	2113743L41	0.01uF
C206	2113743N42	47pF
C214	2113741F49	0.1uF
C215*	2113740L38	68pF (Range 2 only)
C216	2113740F38	30pF
C218	2113741F49	0.1uF
C219	2113741F49	0.1uF
C220	2113743N22	15pF
C221	2113741F49	0.1uF
C222	2113741F49	0.1uF
C223	2113743N19	5.1pF
C224	2113743N09	2pF
C225	2113743L41	0.1uF
C226	2113743N31	16pF
C227	2113741F49	0.1uF
C228	2113743N26	10pF
C229	2113743N48	82pF
C230	2113743N39	36pF
C231	2113743N44	56pF
C232	2113743A27	0.47uF
C233	2113743L41	0.01uF
C234	2113743A27	0.47uF
C235	2113932N44	56pF
C236	2113743N50	100pF
C237	2113743N12	2.7pF
C242	2113743N42	47pF
C247	2311049A56	4.7uF
C249	2113743L41	0.01uF
C255	2113741A61	0.047uF
C256	2113741A61	0.047uF
C257	2113741A61	0.047uF
C258	2311049F16	2.2uF
C259	2113743A27	0.47uF
C260	2113741F49	0.01uF
C261	2113741A27	0.47uF
C263	2311049A56	4.7uF
C280	2311049A09	2.2uF
C281	2104993J02	2.2uF
C283	2113743L41	0.01uF
C284	2113743L41	0.01uF
C285	2113743L41	0.01uF
C286	2113743L41	0.01uF
C287	2113743L41	0.01uF
C297	2113741F49	0.1uF
C298	2113743L41	0.01uF
C299	2311049A56	4.7uF
C301	2113743N30	15pF
C302	2113743N01	0.5pF
C303	2113743R33	4700pF
C304	2113743R33	4700pF
C305	2113743R33	4700pF
C306	2113743N65	8pF
C307	2113743E20	0.1uF

Circuit Ref	Motorola Part No.	Description
C308	2180478Z20	1uF
C309	2113741F49	0.1uF
C310	2113743E20	0.1uF
C311	2113743N29	13pF
C312	2113743N29	13pF
C313	2113743N29	13pF
C314	2113743N29	13pF
C315	2113743N25	9.1pF
C316	2113743N30	15pF
C317	2311049A59	10uF
C319	2311049A59	10uF
C320	2113743A23	0.22uF
C321	2113743E07	0.022uF
C323	2113743E07	0.022uF
C324	2113743N50	100pF
C325	2113743A23	0.22uF
C326	2113743E20	0.1uF
C327	2113743R33	4700pF
C328	2113743E07	0.022uF
C330	2113743E20	0.1uF
C331	2113743E07	0.022uF
C332	2113743E20	0.1uF
C333	2109720D14	0.1uF
C334	2113740A82	1500pF
C335	2113743A23	0.22uF
C336	2311049A59	10uF
C337	2113743E07	0.022uF
C339	2113743F16	1uF
C340	2113743F16	1uF
C341	2113743F16	1uF
C342	2113743F16	1uF
C343	2113743A23	0.22uF
C348	2113743N09	2pF
C400	2113743L41	.01uF
C401	2113743M24	0.1uF
C402	2113743M24	0.1uF
C403	2113928D08	10uF
C404	Not Placed	-
C405	Not Placed	-
C406	Not Placed	-
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113743M24	0.1uF
C410	2113928N01	0.1uF
C411	2113743M24	0.1uF
C412	2311049A59	10uF
C414	2113743M24	0.1uF
C415	2109720D01	0.1uF
C416	2113928N01	0.1uF
C419	Not Placed	-
C420	2113743L41	.01uF
C421	2113928N01	0.1uF
C422	2113743M24	0.1uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113743M24	0.1uF

Circuit Ref	Motorola Part No.	Description
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113743M24	0.1uF
C429	2113743M24	0.1uF
C430	2113928N01	0.1uF
C431	2113743N50	100pF
C432	Not Placed	-
C433	2113743L41	.01uF
C434	2113928N01	0.1uF
C435	2113743M24	0.1uF
C436	2113743N34	22pF
C437	2113743N34	22pF
C438	2113743F18	2.2pF
C439	2113743L17	1000pF
C440	2113743F18	2.2pF
C441	2113743N50	100pF
C442	2113743E20	0.1uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743N50	100pF
C447	2113743M08	0.022uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	Not Placed	-
C451	2113743M08	0.022uF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743N50	100pF
C472	2113743N50	100pF
C473	2113743N50	100pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C479	2113928N01	0.1uF
C480	2113743G24	2.2uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF
C490	2113743N50	100pF
C491	2113743N50	100pF
C492	2113743N50	100pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743N50	100pF
C496	2113743N50	100pF
C497	2113743N50	100pF
C500	2113743L41	0.01uF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C504	2113743N43	51pF
C505	2113743N50	100pF
C506	2113743N50	100pF

Circuit Ref	Motorola Part No.	Description
C507	2113743K15	0.1uF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C515	2113743N44	56pF
C516	211374N37	30pF
C522	2113743L41	0.01uF
C533	2113743N40	100pF
C534	2113743N24	8.2pF
C535	2113743N09	2pF
C536	2113743N36	27pF
C537	2113743N16	3.9pF
C538	2113743N48	82pF
CR200	4880107R01	Varactor
CR201	4805649Q13	Dual Varactor
CR202	4805649Q13	Dual Varactor
CR203	4813833C07	Varactor
CR204	4813833C07	Varactor
CR211	4813833C03	Varactor
CR301	4813833C01	Varactor
CR411	4802245J62	Schottky Diode
CR412	4802245J62	Schottky Diode
CR413	4802245J62	Schottky Diode
CR440	4813833C02	Dual Diode Common Cathode
CR502	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
D100	4802482J02	Pin Diode
D101	4809948D23	Pin Diode
D102	NOT PLACED	-
D103	NOT PLACED	-
D104	4813833C06	Dual Schottky Diode
D210	4802233J09	Triple Diode
D211	4802233J09	Triple Diode
D501	4802245J42	Ring Quad Diode
D502	4805129M06	Dual Diode
E100	2484657R01	Ferrite Bead
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F1	6580542Z01	Fuse 3A
FL301	4885631B01	109.65 MHz Crystal Filter
FL401	4870368G02	38.4 kHz Crystal Oscillator
J1	0986237A02	Connector
J101	0985613Z01	RF Jack
J102	0280519Z01	Antenna Nut
J400	0905505Y04	40-pins Connector
J403	0905505Y02	20-pins Connector
L100	2460591X13	125nH

Circuit Ref	Motorola Part No.	Description
L100*	2460591X12	110nH
L101	2460591X08	166nH
L101*	2460591X14	-
L102	2460591X12	110nH
L102*	2460591X16	-
L103	2462587T27	750nH
L104	2462587Q20	2.2uH
L105	2460591X13	125nH
L106	2460591X10	50nH
L106*	2460591X15	46nH
L107	2484562T03	8nH
L107*	2484562T20	5nH
L108	2462587Q08	220nH
L109	2462587Q08	220nH
L110	2460591X11	100nH
L200	2462587Q42	390nH
L201	2405452C63	1.35uH
L202	2405452C63	1.35uH
L203	2405452C63	1.35uH
L204	2462587T25	620nH
L207	2405452C27	4.7uH
L207*	2405452C63	1.35uH
L208	2462587T20	270nH
L208*	2462587T19	220nH
L209	2462587T20	270nH
L209*	2462587T19	220nH
L210	2405452C63	1.35uH
L211	2462587T21	330nH
L212	2462587T16	5.45nH
L215	2409348J04	13.85nH
L225	2462587L50	100uH
L226	2462587Q20	2.2uH
L301	2462587V35	120nH
L302	2462587T23	470nH
L303	2462587V38	220nH
L304	2462587T22	390nH
L305	2462587T22	390nH
L306	2462587T44	33nH 2%
L307	2462587Q20	2.2uH
L308	2462587Q20	2.2uH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH
L501	2462587T17	150nH
L502	2462587T20	270nH
L503	2462587T30	1nH
L504	2462587T24	560nH
L507	2462587T17	150nH
L508	2462587V32	68nH
PB501	4080523Z01	Tactile, Push-button
PB502	4080523Z01	Tactile, Push-button
PB503	4080523Z01	Tactile, Push-button
PB504	4080523Z01	Tactile, Push-button
PB505	4080523Z01	Tactile, Push-button
Q100	4813828A08	FET

Circuit Ref	Motorola Part No.	Description
Q201	4802245J44	NPN
Q202	4805218N82	FET
Q203	4805218N82	FET
Q204	4805218N82	FET
Q288	4802245J44	NPN
Q301	4805218N63	NPN
Q400	4809579E18	MOSFET P-Channel
Q403	4880214G02	NPN
Q405	4802245J54	Dual NPN
Q410	4802245J54	Dual NPN
Q411	Not Placed	-
Q416	4809579E18	MOSFET P-Chan
Q417	4802245J50	Dual NPN/PNP
Q509	4802245J44	NPN
Q510	4880214G02	NPN
R101	0662057A18	51
R102	0680735Z01	0.075
R103	0662057A25	100
R104	0662057M26	10
R105	0662057A32	200
R106	0662057A32	200
R107	0662057M66	470
R108	0662057M93	6.2K
R109	0662057M74	1K
R110	0662057M98	10K
R111	0662057N01	12K
R112	0662057M50	100
R113	0662057M50	100
R114	0662057N39	470K
R115	0662057M26	10
R116	0662057M81	2K
R117	0662057N47	1M
R118	0662057A01	10
R119	0662057A01	10
R120	0662057A25	100
R121	NOT PLACED	-
R122	NOT PLACED	-
R123	NOT PLACED	-
R124	NOT PLACED	-
R203	0662057M50	100
R204	0662057M56	180
R206	0662057U45	56
R219	0662057N15	47K
R222	0662057N20	75K
R223	0662057N23	100K
R224	0662057M57	200
R225	0662057M67	510
R227	0662057M50	100
R228	0662057M43	51
R229	0662057M81	2K
R230	0662057M50	100
R231	0662057M46	68
R232	0662057N10	30K
R233	0662057M82	2.2K
R234	0662057M74	1000
R235	0662057M72	820

Circuit Ref	Motorola Part No.	Description
R236	0662057M44	56
R237	0662057M16	3.9
R238	0662057M74	1K
R239	0662057M74	1K
R285	0662057M50	100
R286	0662057M01	0
R287	0662057N15	47K
R288	0662057M74	1K
R289	0662057M16	3.9
R301	0662057M78	1.5K
R302	0662057N15	47K
R303	0662057N15	47K
R304	0662057M78	1.5K
R305	0662057M98	10K
R306	0662057M77	1.3K
R307	0662057M92	5.6K
R308	0662057N01	12K
R309	0662057N22	91K
R310	0662057M87	3.6K
R312	0662057M78	1.5K
R314	0662057M98	10K
R315	0662057N15	47K
R316	0662057M57	200
R317	0662057M81	2K
R318	0662057M33	20
R400	0662057N15	47K
R401	0662057M01	0
R402	Not Placed	-
R403	Not Placed	-
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	Not Placed	-
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057N13	39K
R418	Not Placed	-
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2K
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057M35	330
R427	0662057M84	2.7K
R428	0662057M10	2.2
R429	0662057M98	10K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2K
R436	0662057M74	1K

Circuit Ref	Motorola Part No.	Description
R437	0662057M01	0
R438	0662057M54	150
R439	0662057M54	150
R445	0662057N08	24K
R446	0662057N30	220K
R447	0662057N52	1.6M
R448	0662057N33	270K
R449	0662057N08	24K
R450	0662057T45	68
R457	0662057M98	10K
R460	0662057M90	4.7K
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057N06	20K
R472	0662057M93	6.2K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R499	Not Placed	-
R501	0662057M70	680
R502	0662057M56	180
R503	0662057M74	1K
R504	0662057N01	12K
R505	0662057M68	10K
R507	0662057M60	270
R508	0662057M32	18
R509	0662057M60	270
R510	0662057M87	3.6K
R512	0662057M90	4.7K
R513	0662057M26	10
R514	0662057N15	47K
R515	0662057M98	10K
RT400	0680590Z01	Thermistor 33K
S501	4080710Z01	Channel Switch
S502	1880619Z02	Volume Switch
SH100	2686076A01	Shield
SH200	2685709B02	Shield
SH201	2680511Z01	Shield
SH202	2680511Z01	Shield
SH203	2686079A01	Shield
SH300	2680516Z01	Shield
SH301	2680508Z01	Shield
SH302	2680697Z01	Shield
SH303	2680553Z01	Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On/Off Shield
SH402	2680515Z01	Controller Microprocessor Shield
SH403	2680516Z01	Controller ASFIC Cmp/Audi PA Shield
SH500	2680555Z01	Shield
SH501	2680697Z01	Shield

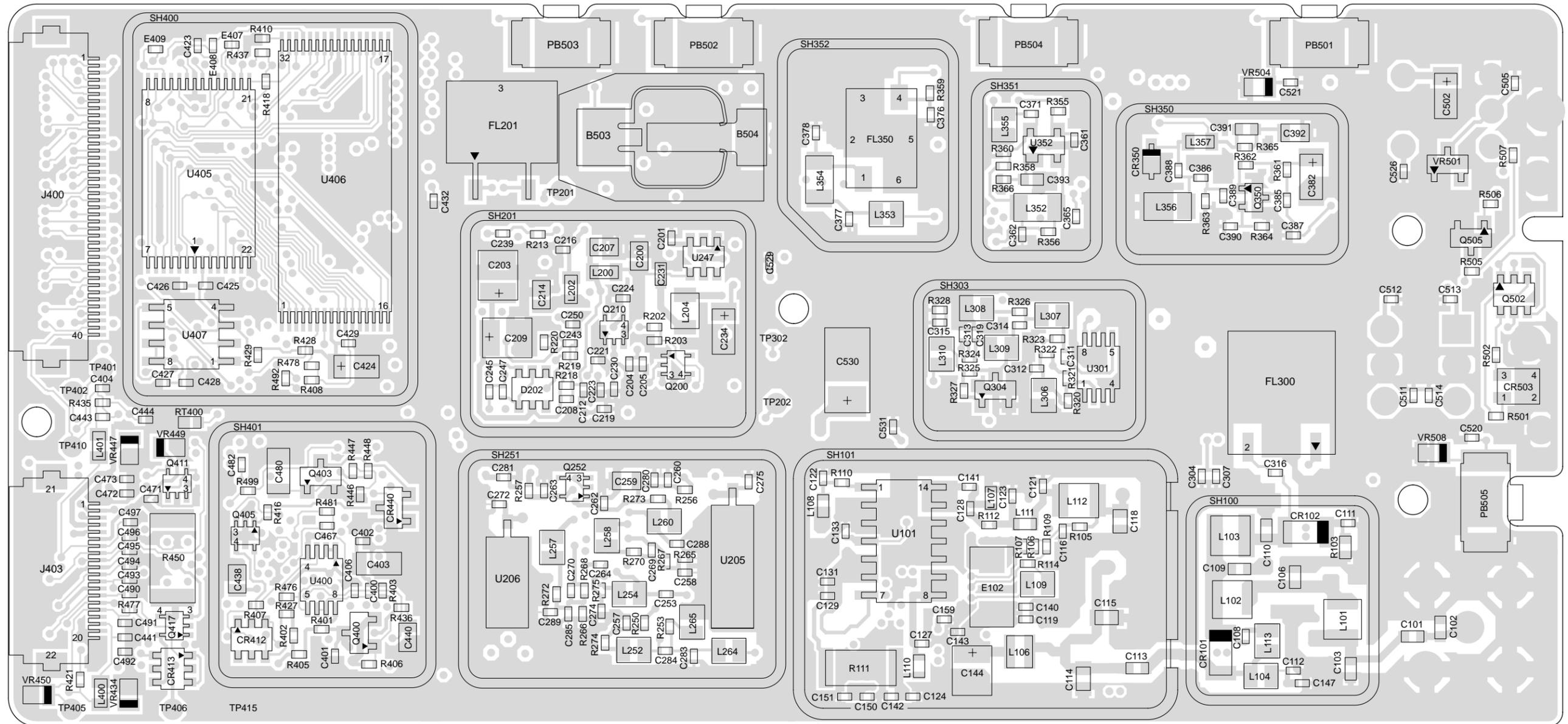
Circuit Ref	Motorola Part No.	Description
SH502	2680696Z01	Shield
T100	2505515V03	Transformer Coil
T501	2580541Z01	Transformer Coil
T502	2580541Z01	Transformer Coil
TR201	2460593D01	Resonator, 50-300MHz
U101	5185130C65	LDMOS Driver
U102	5185765B26	Power Control
U200	5102463J58	3.3V Regulator
U203	4805649Q14	Varactor Diode
U204	5105739X05	Linear Regulator
U205	5185963A27	LV Fractional N Synthesizer
U207	4805921T06	Dual PNP
U301	4885622B01	Dual Gate MOSFET
U302	5185623B01	3.3V Regulator
U303	5109632D83	Low Voltage ZIF
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC
U405	Not Placed	-
U406**	5102463J59	ROM 128K
U407**	5102463J62	EEPROM 8Kx8
U409	5102226J56	Microcontroller
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
VR101	5185963A15	Temperature Sense
VR102	4802245J73	6.8V Zener
VR200	4802245J73	6.8V Zener
VR201	4802245J73	6.8V Zener
VR202	4802245J73	6.8V Zener
VR203	4802245J74	6.8V Zener
VR432	4805656W08	5.6V Zener
VR433	4805656W08	5.6V Zener
VR434	4802245J73	6.8V Zener
VR445	4802245J53	10V Zener
VR446	4802245J74	10V Zener
VR447	4802245J74	10V Zener
VR448	4802245J74	10V Zener
VR449	4802245J74	10V Zener
VR450	4802245J75	12V Zener
VR500	4802245J73	6.8V Zener
VR501	4802245J73	6.8V Zener
VR502	4802245J51	6.8V Zener
Y201	4805875Z03	Crystal Oscillator

\*\* Motorola depot servicing only

\* Range 2 only

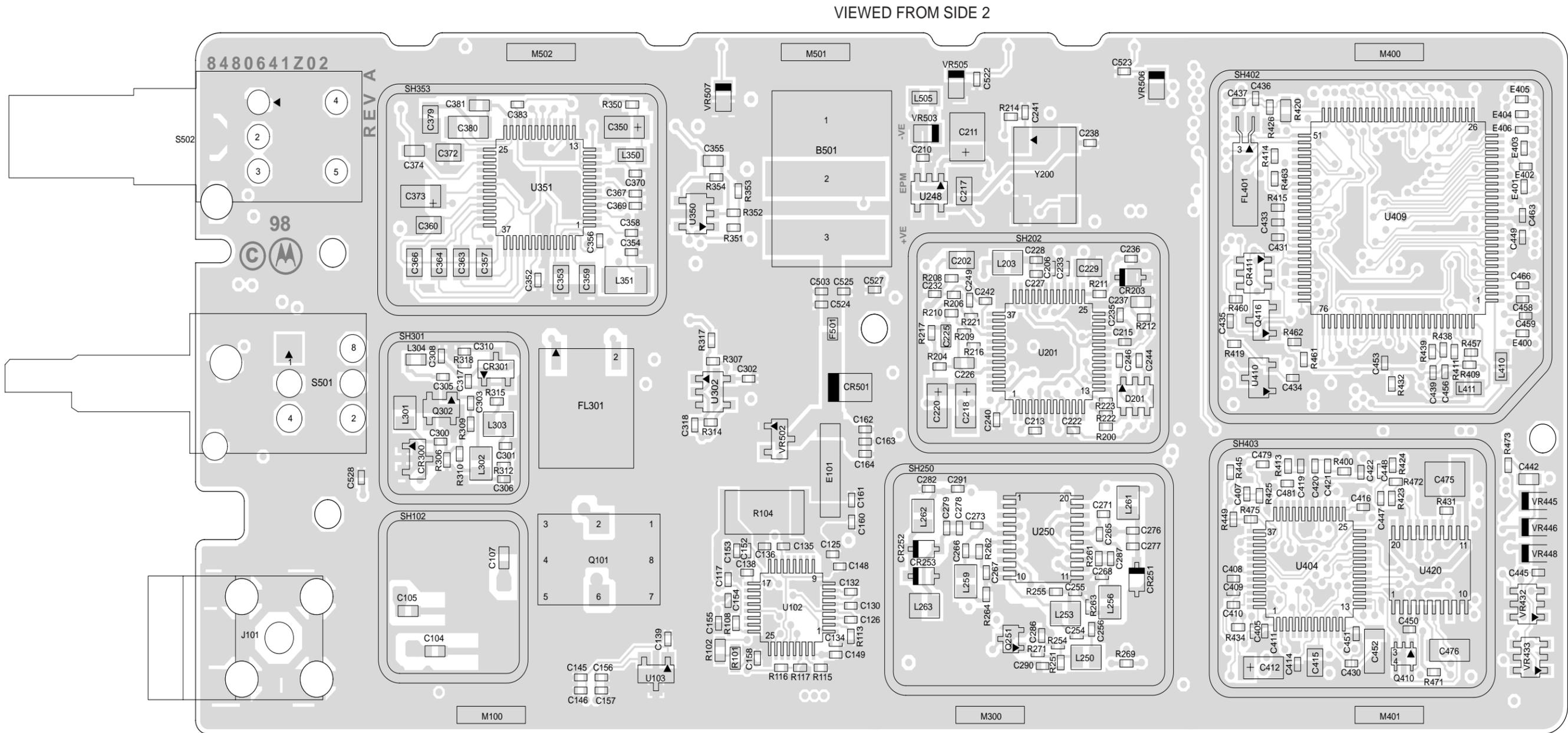
9.27 800 MHz Circuit Board/Schematic Diagrams and Parts List (PCB 84860641Z02 / 8480641Z03 (Rev B)

VIEWED FROM SIDE 1



FL08307260

Figure 9-251. 800 MHz (806-870 MHz) Main Board Top Side PCB 84860641Z02



FL08307270

Figure 9-252. 800 MHz (806-870 MHz) Main Board Bottom Side PCB 84860641Z02



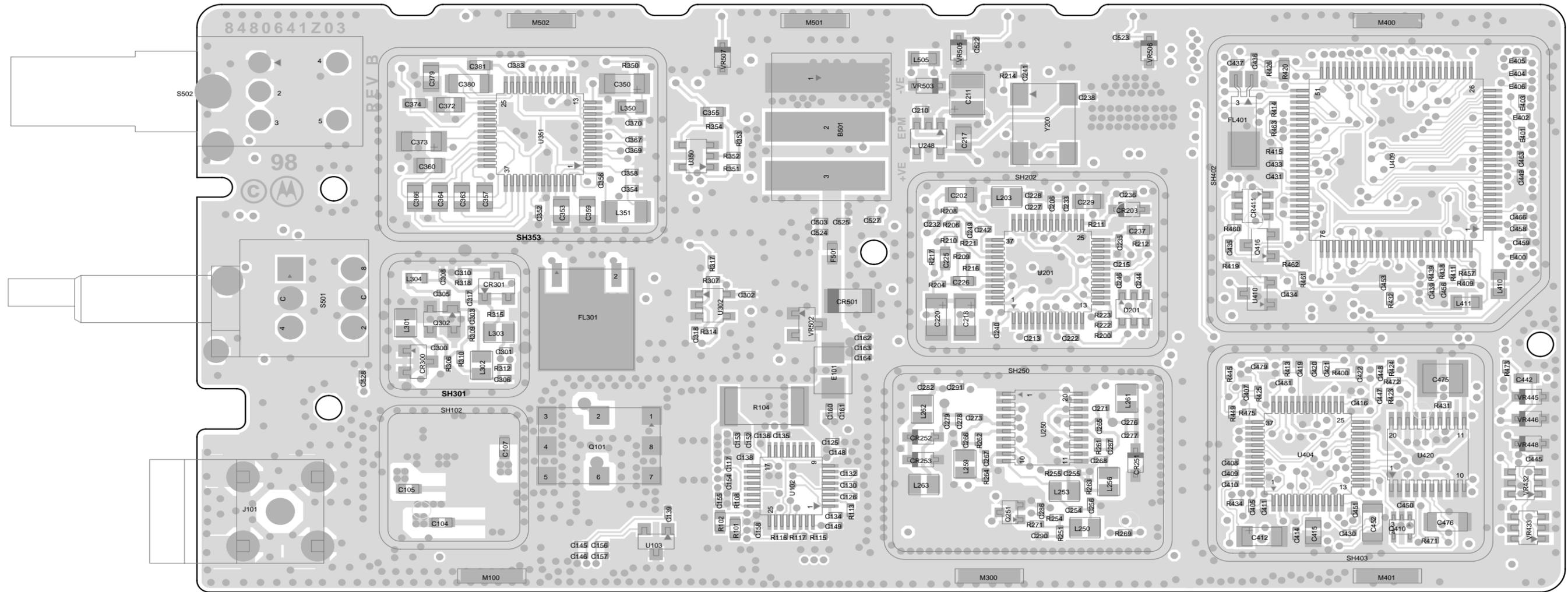
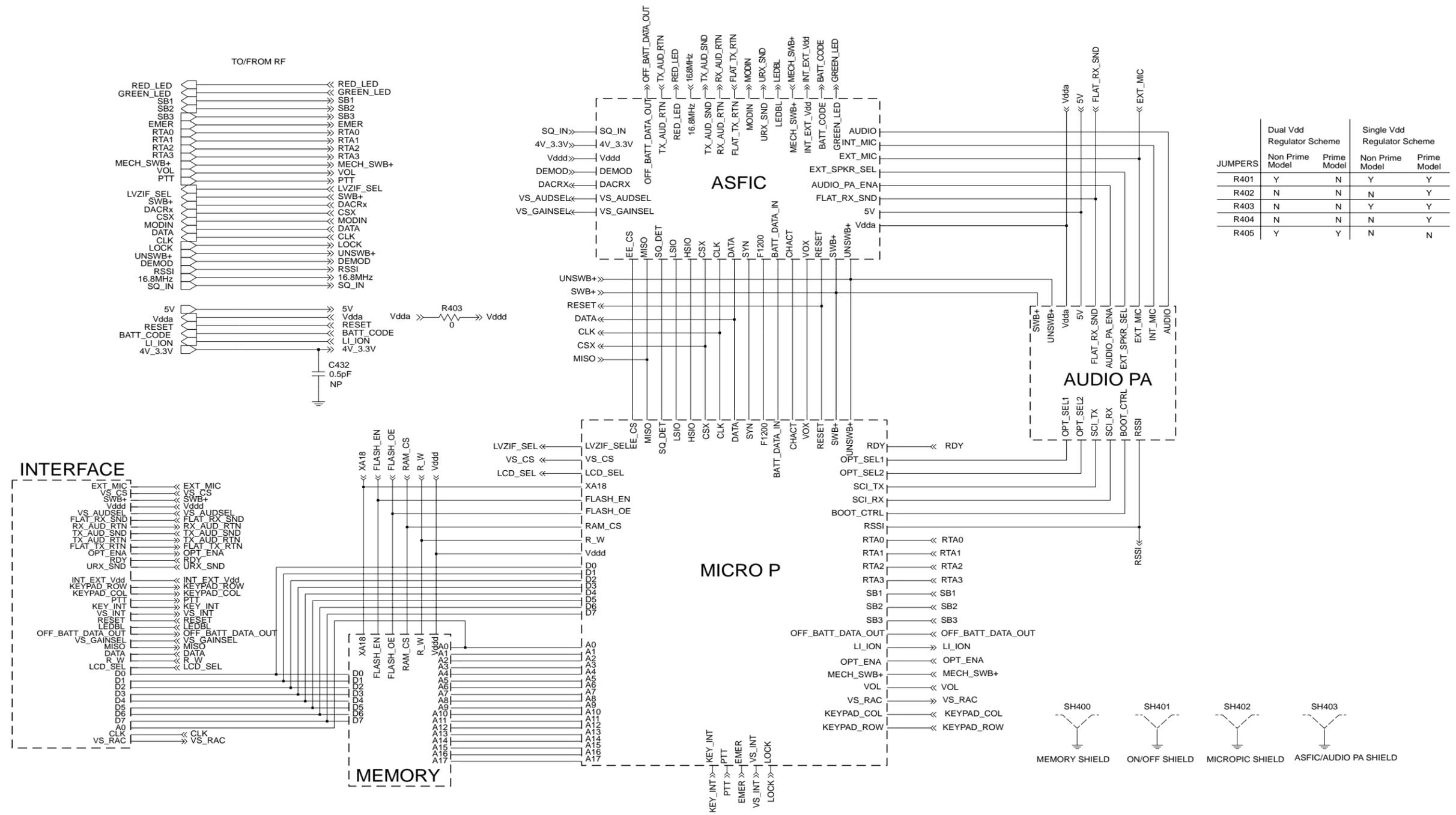


Figure 9-254. 800 MHz Popular/Preferred (806-870 MHz) Main Board Bottom Side PCB 8480641Z03 (Rev B)





FL08307130

Figure 9-255. 800 MHz Complete Controller

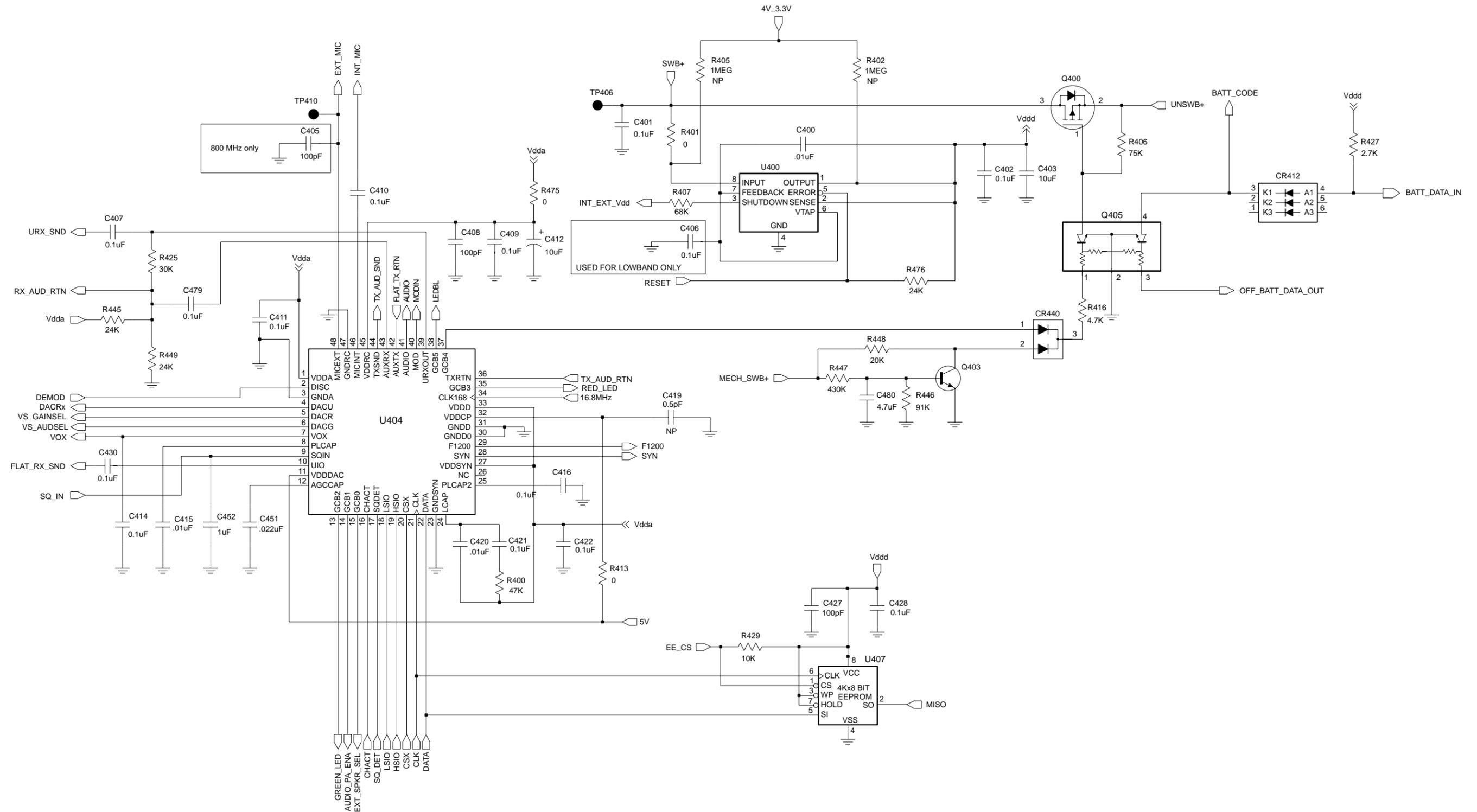
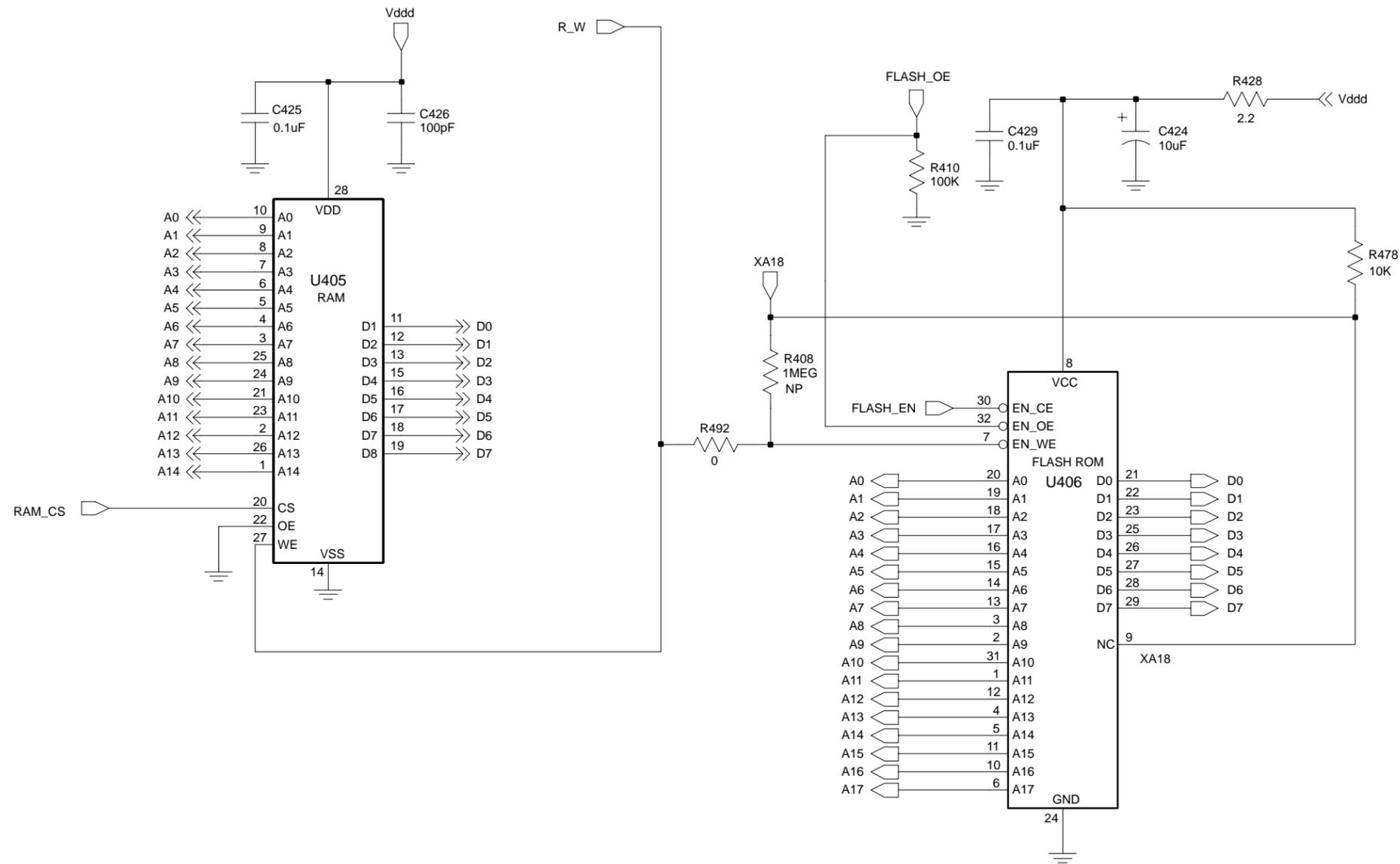


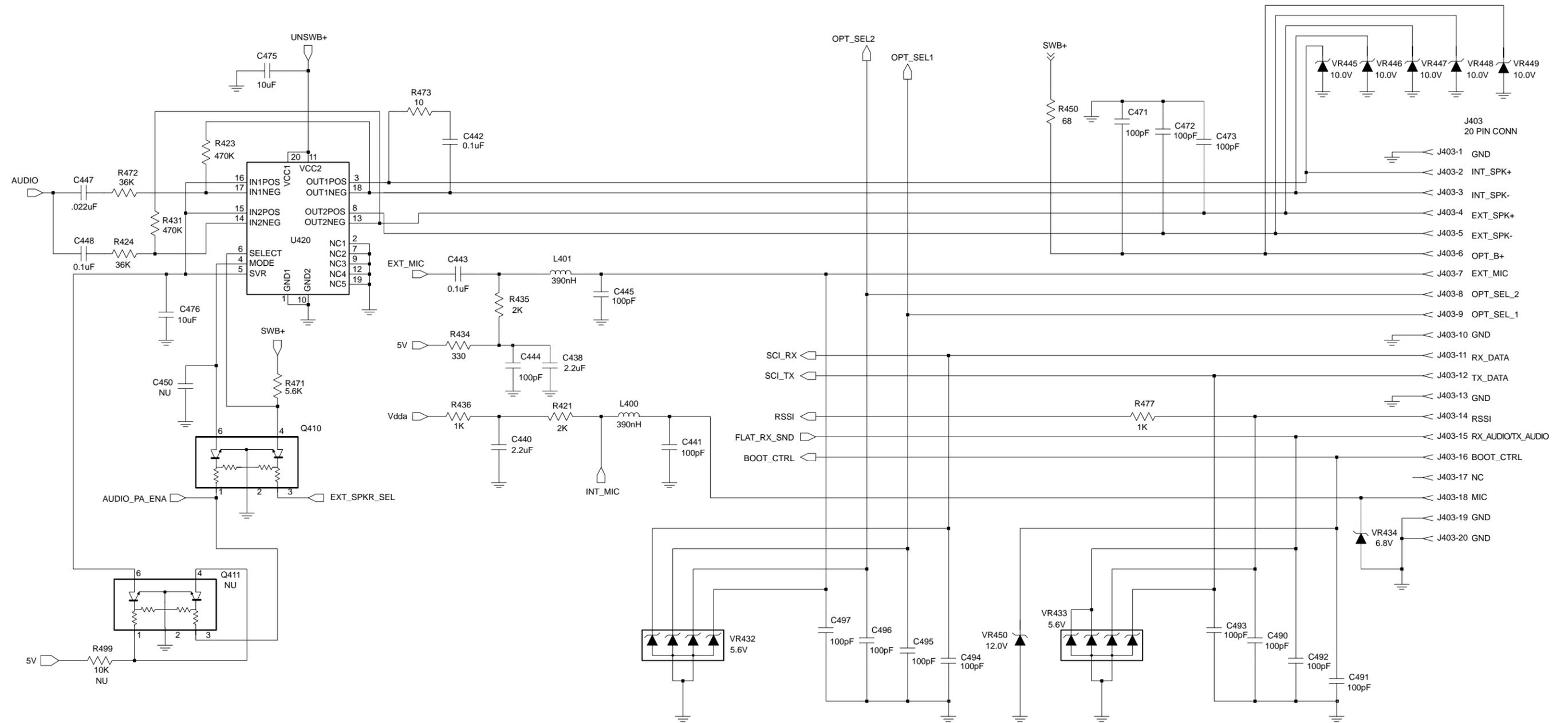
Figure 9-256. 800 MHz Controller ASFIC/ON\_OFF





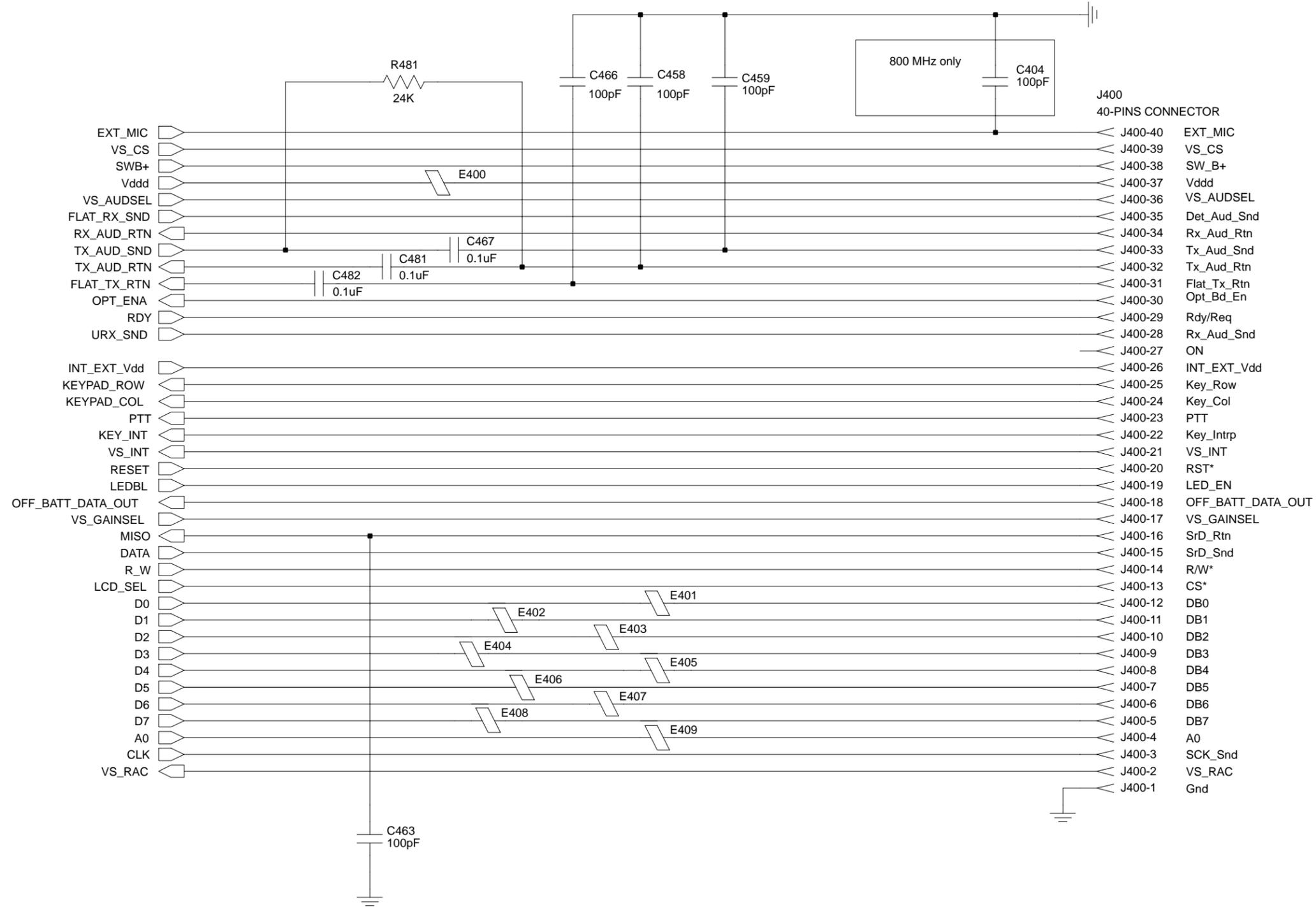
FL08307150

Figure 9-258. 800 MHz Controller Memory



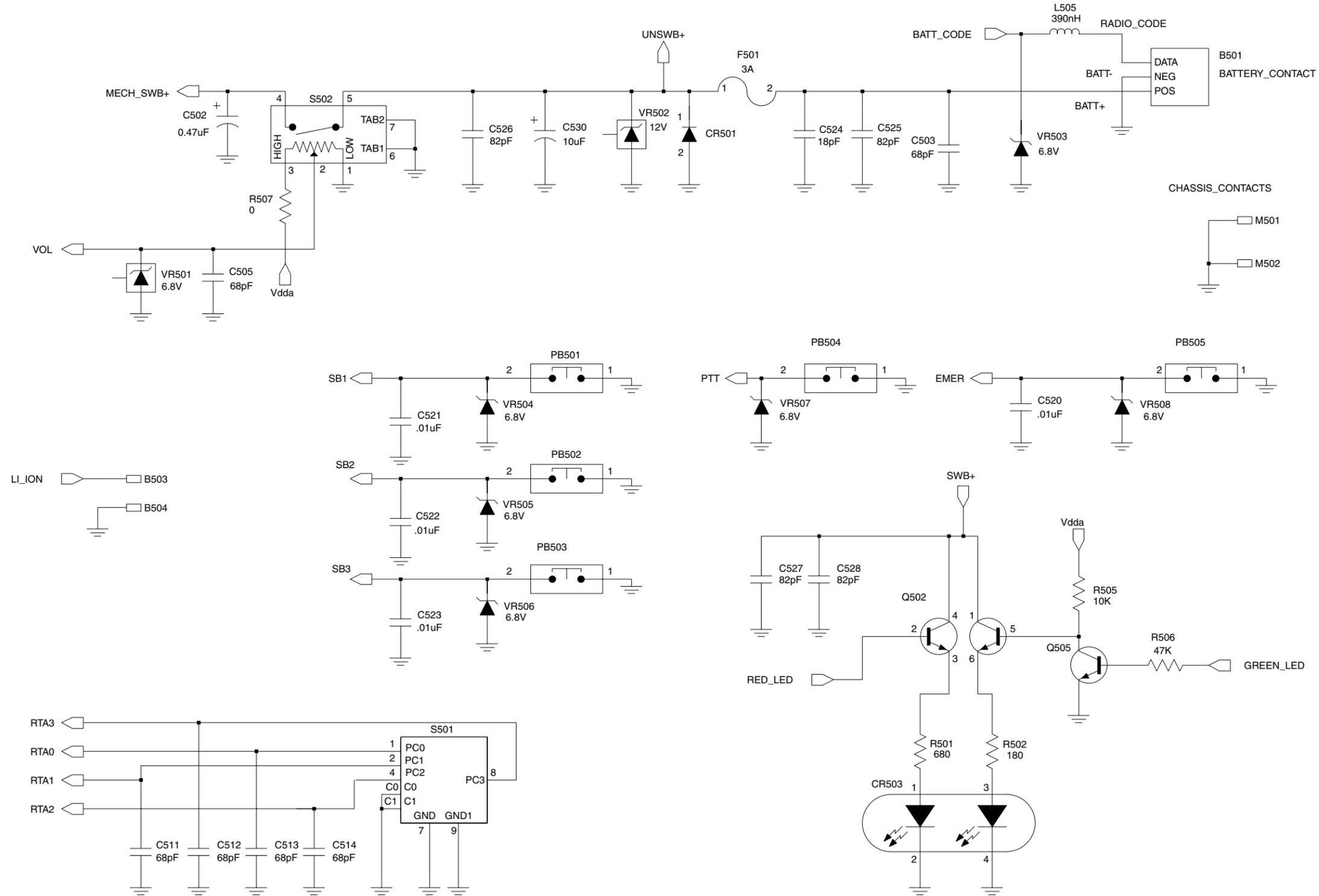
FL08307120

Figure 9-259. 800 MHz Controller Audio Power Amplifier



FL08307140

Figure 9-260. 800 MHz Controller Interface



FL08307280

Figure 9-261. 800 MHz Controls and Switches Schematic Diagram

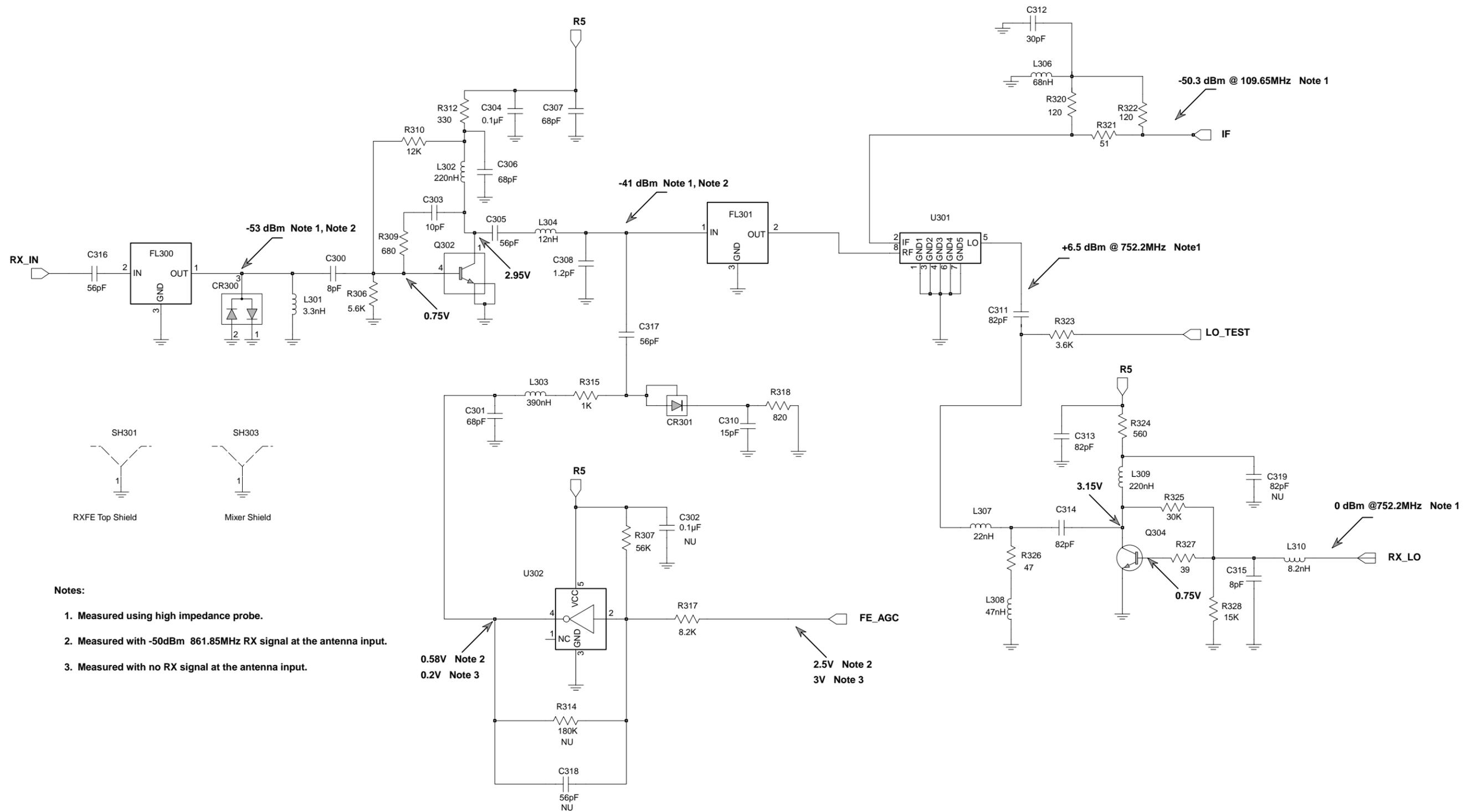


Figure 9-262. 800 MHz Receiver Front End Schematic Diagram





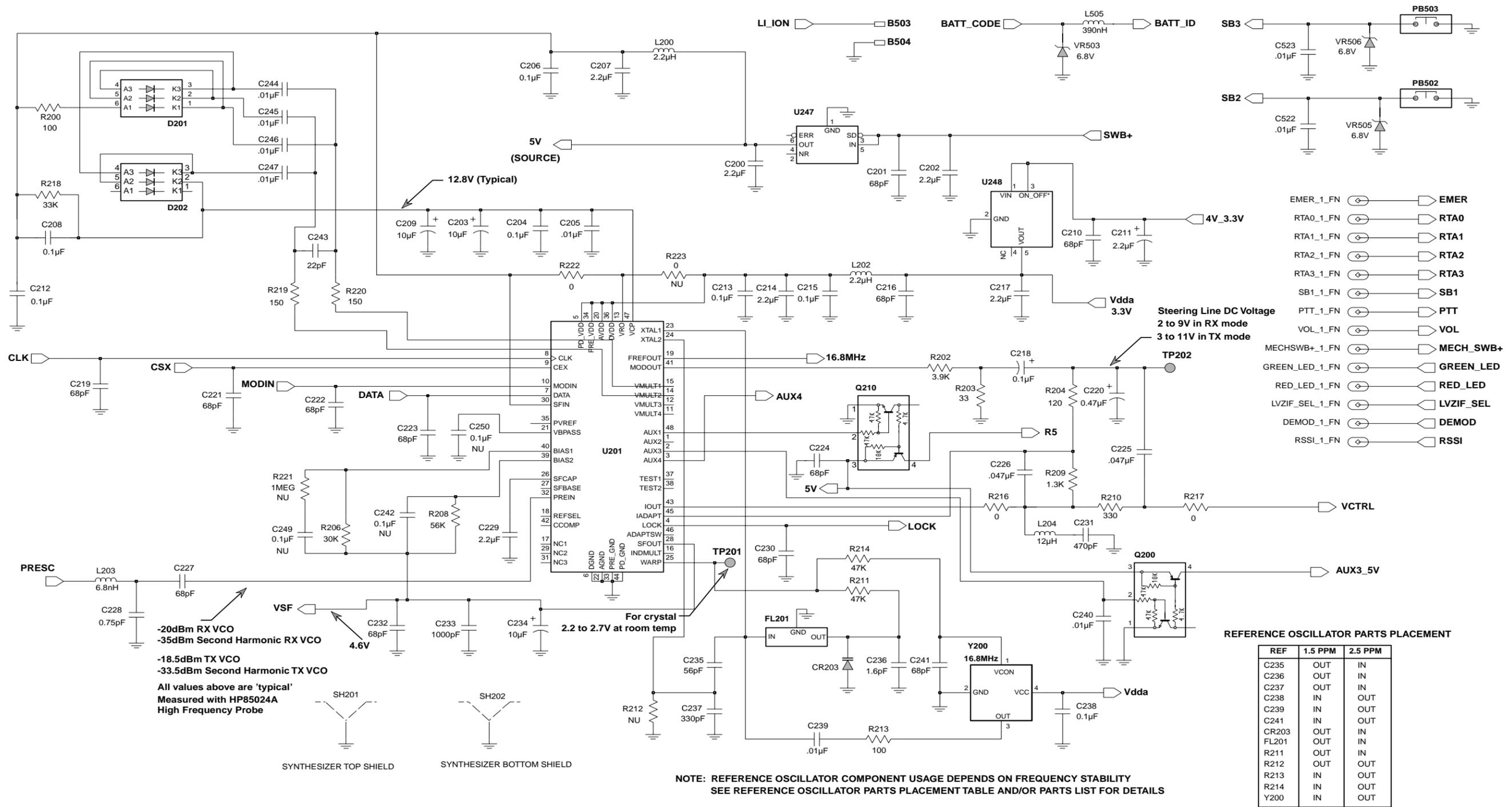
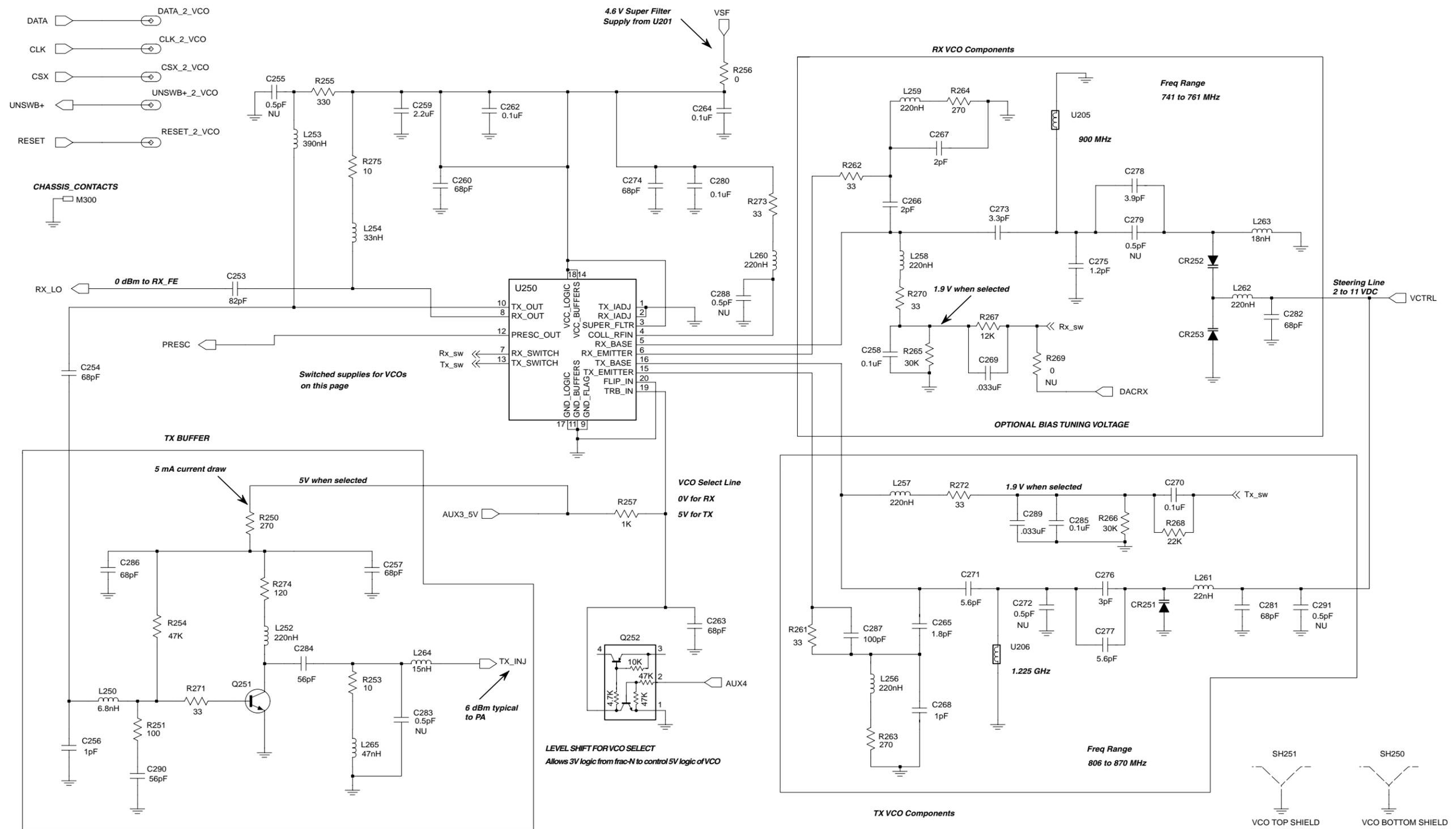


Figure 9-264. 800 MHz Synthesizer Schematic Diagram



FL08307320

Figure 9-265. 800 MHz Voltage Controlled Oscillator Schematic Diagram

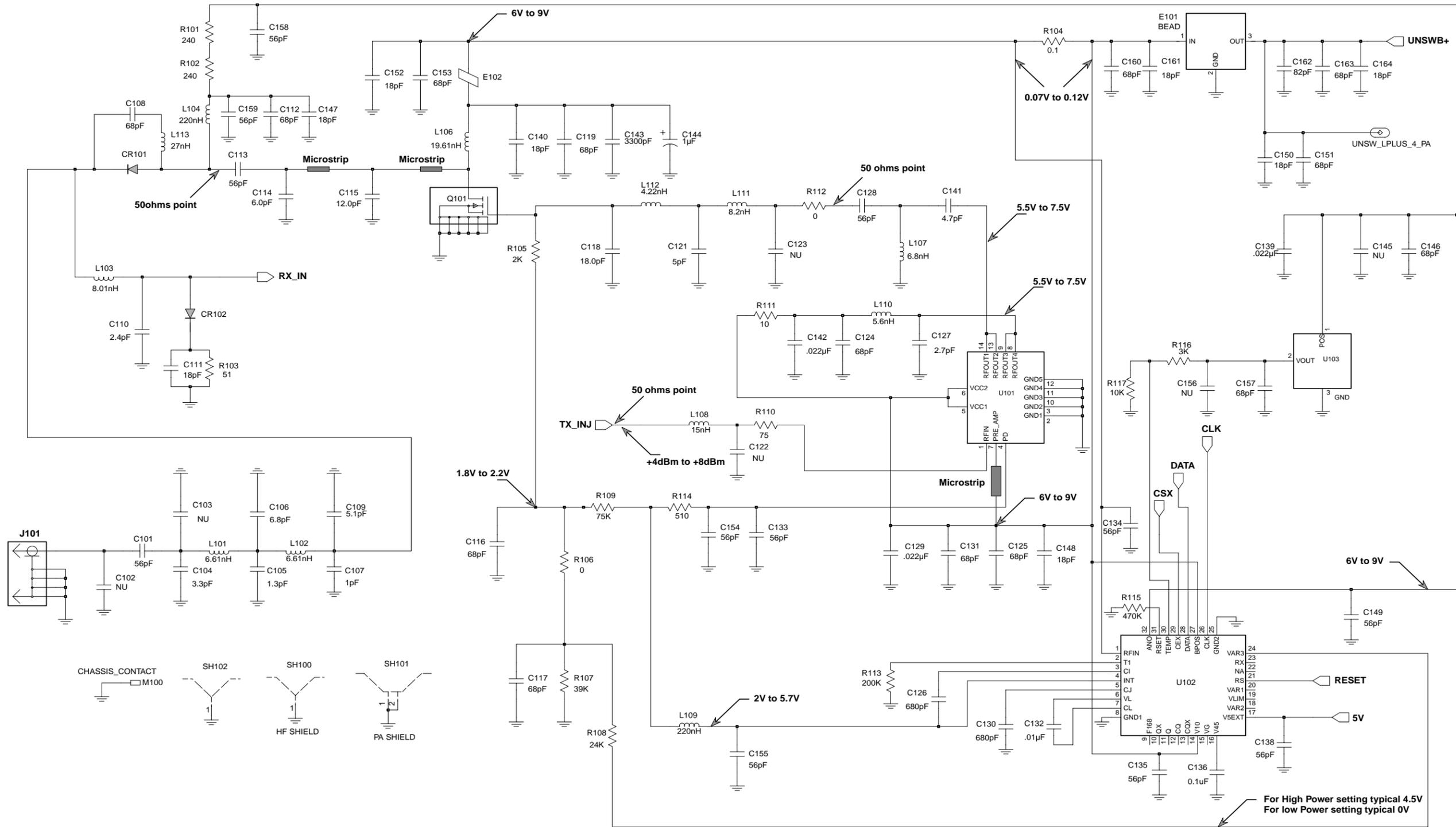


Figure 9-266. 800 MHz Transmitter Schematic Diagram (Rev A)

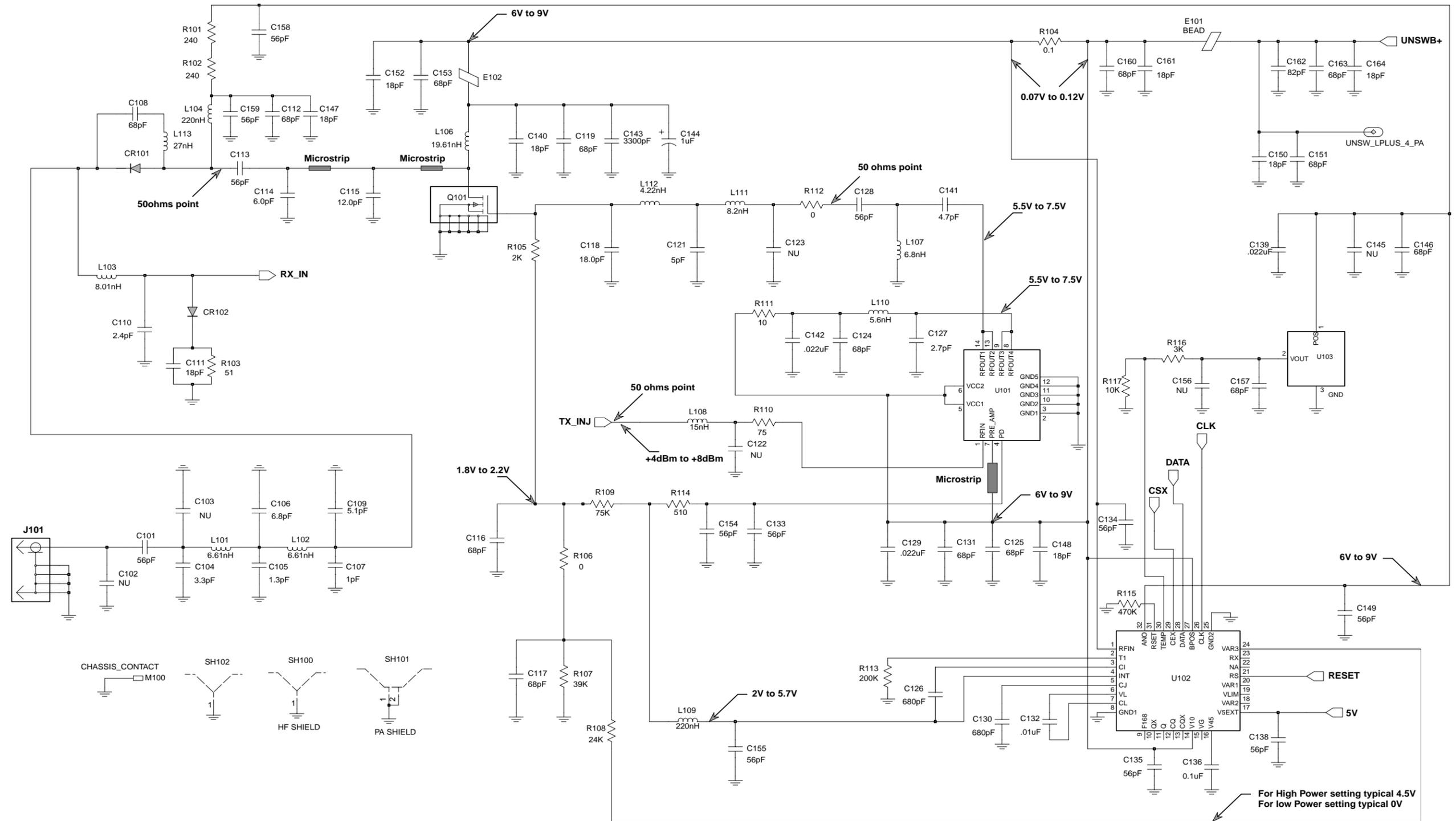


Figure 9-267. 800MHz Transmitter Schematic Diagram (Rev B)

**800 MHz Parts List**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
C101	2113740F45	Capacitor Chip 56pF
C104	2113740F15	Capacitor Chip 3.3pF
C105	2113740F06	Capacitor Chip 1.3pF
C106	2113740F23	Capacitor Chip 6.8pF
C107	2113740F03	Capacitor Chip 1pF
C108	2113743N46	Capacitor Chip 68pF
C109	2113740F20	Capacitor Chip 5.1pF
C110	2113740F12	Capacitor Chip 2.4pF
C111	2113743N32	Capacitor Chip 18pF
C112	2113743N46	Capacitor Chip 68pF
C113	2113740F45	Capacitor Chip 56pF
C114	2103689A19	Capacitor Chip 6.0pF
C115	2103689A05	Capacitor Chip 12.0pF
C116 to C117	2113743N46	Capacitor Chip 68pF
C118	2103689A08	Capacitor Chip 18.0pF
C119	2113743N46	Capacitor Chip 68pF
C121	2113743N60	Capacitor Chip 5pF
C124 to C125	2113743N46	Capacitor Chip 68pF
C126	2113743L13	Capacitor Chip 680pF
C127	2113743N12	Capacitor Chip 2.7pF
C128	2113743N44	Capacitor Chip 56pF
C129	2113743M08	Capacitor Chip 0.022μF
C130	2113743L13	Capacitor Chip 680pF
C131	2113743N46	Capacitor Chip 68pF
C132	2113743L41	Capacitor Chip 0.01μF
C133 to C135	2113743N44	Capacitor Chip 56pF
C136	2113743M24	Capacitor Chip 0.1μF
C138	2113743N44	Capacitor Chip 56pF
C139	2113743M08	Capacitor Chip 0.022μF
C140	2113743N32	Capacitor Chip 18pF
C141	2113743N18	Capacitor Chip 4.7pF
C142	2113743M08	Capacitor Chip 0.022μF
C143	2113743L29	Capacitor Chip 3300pF
C144	2311049A08	Capacitor Tantalum 1μF
C146	2113743N46	Capacitor Chip 68pF
C147 to C148	2113743N32	Capacitor Chip 18pF
C149	2113743N44	Capacitor Chip 56pF
C150	2113743N32	Capacitor Chip 18pF
C151	2113743N46	Capacitor Chip 68pF
C152	2113743N32	Capacitor Chip 18pF
C153	2113743N46	Capacitor Chip 68pF
C154 to C155	2113743N44	Capacitor Chip 56pF
C157	2113743N46	Capacitor Chip 68pF
C158 to C159	2113743N44	Capacitor Chip 56pF
C160	2113743N46	Capacitor Chip 68pF
C161	2113743N32	Capacitor Chip 18pF
C162	2113743N48	Capacitor Chip 82pF
C163	2113743N46	Capacitor Chip 68pF
C164	2113743N32	Capacitor Chip 18pF
C200	2113743F18	Capacitor Chip 2.2μF
C201	2113743N46	Capacitor Chip 68pF
C202	2113743F18	Capacitor Chip 2.2μF

Circuit Ref	Motorola Part No.	Description
C203	2311049A57	Capacitor Tantalum 10μF
C204	2113743M24	Capacitor Chip 0.1μF
C205	2113743L41	Capacitor Chip 0.01μF
C206	2113743M24	Capacitor Chip 0.1μF
C207	2113743F18	Capacitor Chip 2.2μF
C208	2113743M24	Capacitor Chip 0.1μF
C209	2311049A57	Capacitor Tantalum 10μF
C210	2113743N46	Capacitor Chip 68pF
C211	2311049A09	Capacitor Tantalum 2.2μF
C212 to C213	2113743M24	Capacitor Chip 0.1μF
C214	2113743F18	Capacitor Chip 2.2μF
C215	2113743M24	Capacitor Chip 0.1μF
C216	2113743N46	Capacitor Chip 68pF
C217	2113743F18	Capacitor Chip 2.2μF
C218	2311049A01	Capacitor Tantalum 0.1μF
C219	2113743N46	Capacitor Chip 68pF
C220	2311049A05	Capacitor Tantalum 0.47μF
C221 to C224	2113743N46	Capacitor Chip 68pF
C225 to C226	2113743E12	Capacitor Chip 0.047μF
C227	2113743N46	Capacitor Chip 68pF
C228	2113743N02	Capacitor Chip 0.75pF
C229	2113743F18	Capacitor Chip 2.2μF
C230	2113743N46	Capacitor Chip 68pF
C231	2113741F17	Capacitor Chip 470pF
C232	2113743N46	Capacitor Chip 68pF
C233	2113743L17	Capacitor Chip 1000pF
C234	2311049A59	Capacitor Tantalum 10μF
C235	2113743N44	Capacitor Chip 56pF
C236	2113743N08	Capacitor Chip 1.6pF
C237	2113740F63	Capacitor Chip 330pF
C238	2113743M24	Capacitor Chip 0.1μF
C239	2113743L41	Capacitor Chip 0.01μF
C240	2113743L41	Capacitor Chip 0.01μF
C241	2113743N46	Capacitor Chip 68pF
C243	2113743N34	Capacitor Chip 22pF
C244 to C247	2113743L41	Capacitor Chip 0.01μF
C253	2113743N48	Capacitor Chip 82pF
C254	2113743N46	Capacitor Chip 68pF
C256	2113743N03	Capacitor Chip 1pF
C257	2113743N46	Capacitor Chip 68pF
C258	2113743M24	Capacitor Chip 0.1μF
C259	2113743F18	Capacitor Chip 2.2μF
C260	2113743N46	Capacitor Chip 68pF
C262	2113743M24	Capacitor Chip 0.1μF
C263	2113743N46	Capacitor Chip 68pF
C264	2113743M24	Capacitor Chip 0.1μF
C265	2113743N69	Capacitor Chip 1.8pF
C266 to C267	2113743N09	Capacitor Chip 2pF
C268	2113743N03	Capacitor Chip 1pF
C269	2113743M12	Capacitor Chip 0.033μF
C270	2113743M24	Capacitor Chip 0.1μF
C271	2113743N20	Capacitor Chip 5.6pF
C273	2113743N14	Capacitor Chip 3.3pF
C274	2113743N46	Capacitor Chip 68pF
C275	2113743N05	Capacitor Chip 1.2pF
C276	2113743N13	Capacitor Chip 3pF

Circuit Ref	Motorola Part No.	Description
C277	2113743N20	Capacitor Chip 5.6pF
C278	2113743N16	Capacitor Chip 3.9pF
C280	2113743M24	Capacitor Chip 0.1μF
C281 to C282	2113743N46	Capacitor Chip 68pF
C284	2113743N44	Capacitor Chip 56pF
C285	2113743M24	Capacitor Chip 0.1μF
C286	2113743N46	Capacitor Chip 68pF
C287	2113743N50	Capacitor Chip 100pF
C289	2113743M12	Capacitor Chip 0.033μF
C290	2113743N44	Capacitor Chip 56pF
C300	2113743N65	Capacitor Chip 8pF
C301	2113743N46	Capacitor Chip 68pF
C303	2113743N26	Capacitor Chip 10pF
C304	2113743M24	Capacitor Chip 0.1μF
C305	2113743N44	Capacitor Chip 56pF
C306 to C307	2113743N46	Capacitor Chip 68pF
C308	2113743N05	Capacitor Chip 1.2pF
C310	2113743N30	Capacitor Chip 15pF
C311	2113743N48	Capacitor Chip 82pF
C312	2113743N37	Capacitor Chip 30pF
C313 C314	2113743N48	Capacitor Chip 82pF
C315	2113743N65	Capacitor Chip 8pF
C316 to C317	2113743N44	Capacitor Chip 56pF
C350	2311049A59	Capacitor Tantalum 10μF
C352	2113743M08	Capacitor Chip 0.022μF
C353	2113743A23	Capacitor Chip 0.22μF
C354	2113743M08	Capacitor Chip 0.022μF
C355	2113743E20	Capacitor Chip 0.1μF
C356	2113743N50	Capacitor Chip 100pF
C357	2113743F16	Capacitor Chip 1μF
C358	2113743M24	Capacitor Chip 0.1μF
C359 to C360	2113743A23	Capacitor Chip 0.22μF
C361 to C362	2113743R33	Capacitor Chip 4700pF
C363 to C364	2113743F16	Capacitor Chip 1μF
C365	2113743N65	Capacitor Chip 8pF
C366	2113743F16	Capacitor Chip 1μF
C367	2113743M08	Capacitor Chip 0.022μF
C369	2113743R33	Capacitor Chip 4700pF
C370	2113743M24	Capacitor Chip 0.1μF
C371	2113743R33	Capacitor Chip 4700pF
C372	2113743A23	Capacitor Chip 0.22μF
C373	2311049A59	Capacitor Tantalum 10μF
C374	2113743E07	Capacitor Chip 0.022μF
C376	2113743N09	Capacitor Chip 2pF
C377	2113743N34	Capacitor Chip 22pF
C378	2113743N11	Capacitor Chip 2.4pF
C379	2113740A82	Capacitor Chip 1500pF
C380	2109720D14	Capacitor Chip 0.1μF
C381	2113743E20	Capacitor Chip 0.1μF
C382	2311049A59	Capacitor Tantalum 10μF
C383	2113743M08	Capacitor Chip 0.022μF
C385	2113743N25	Capacitor Chip 9.1pF
C386	2113743N29	Capacitor Chip 13pF
C387	2113743N30	Capacitor Chip 15pF
C388 to C390	2113743N29	Capacitor Chip 13pF
C391	2113741F49	Capacitor Chip 0.01μF

Circuit Ref	Motorola Part No.	Description
C392	2113743F16	Capacitor Chip 1μF
C393	2113743E20	Capacitor Chip 0.1μF
C400	2113743L41	Capacitor Chip 0.01μF
C401 to C402	2113743M24	Capacitor Chip 0.1μF
C403	2113928D08	Capacitor Chip 10μF
C404	2113743N46	Capacitor Chip 68pF
C405	2113743N46	Capacitor Chip 68pF
C407	2113928N01	Capacitor Chip 0.1μF
C408	2113743N46	Capacitor Chip 68pF
C409	2113743M24	Capacitor Chip 0.1μF
C410	2113928N01	Capacitor Chip 0.1μF
C411	2113743M24	Capacitor Chip 0.1μF
C412	2311049A59	Capacitor Tantalum 10μF
C414	2113743M24	Capacitor Chip 0.1μF
C415	2109720D01	Capacitor Chip 0.01μF
C416	2113928N01	Capacitor Chip 0.1μF
C420	2113743L41	Capacitor Chip 0.01μF
C421	2113928N01	Capacitor Chip 0.1μF
C422	2113743M24	Capacitor Chip 0.1μF
C423	2113743N46	Capacitor Chip 68pF
C424	2311049A59	Capacitor Tantalum 10μF
C425	2113743M24	Capacitor Chip 0.1μF
C426 to C427	2113743N46	Capacitor Chip 68pF
C428 to C429	2113743M24	Capacitor Chip 0.1μF
C430	2113928N01	Capacitor Chip 0.1μF
C431	2113743N46	Capacitor Chip 68pF
C433	2113743L41	Capacitor Chip 0.01μF
C434 to C435	2113743M24	Capacitor Chip 0.1μF
C436 to C437	2113743N34	Capacitor Chip 22pF
C438	2113743F18	Capacitor Chip 2.2μF
C439	2113743L17	Capacitor Chip 1000pF
C440	2113743F18	Capacitor Chip 2.2μF
C441	2113743N46	Capacitor Chip 68pF
C442	2113743E20	Capacitor Chip 0.1μF
C443	2113928N01	Capacitor Chip 0.1μF
C444 to C445	2113743N46	Capacitor Chip 68pF
C447	2113743M08	Capacitor Chip 0.022μF
C448	2113928N01	Capacitor Chip 0.1μF
C449	2113743N46	Capacitor Chip 68pF
C451	2113743M08	Capacitor Chip 0.022μF
C452	2113743B29	Capacitor Chip 1μF
C453	2113743N46	Capacitor Chip 68pF
C456	2113743N46	Capacitor Chip 68pF
C458 to C459	2113743N46	Capacitor Chip 68pF
C463	2113743N46	Capacitor Chip 68pF
C466	2113743N46	Capacitor Chip 68pF
C467	2113928N01	Capacitor Chip 0.1μF
C471 to C473	2113743N46	Capacitor Chip 68pF
C475	2113743H14	Capacitor Chip 10μF
C476	2113928D08	Capacitor Chip 10μF
C479	2113928N01	Capacitor Chip 0.1μF
C480	2113743G26	Capacitor Chip 4.7μF
C481 to C482	2113928N01	Capacitor Chip 0.1μF
C490 to C497	2113743N46	Capacitor Chip 68pF
C502	2311049A05	Capacitor Tantalum 0.47μF
C503	2113743N46	Capacitor Chip 68pF

Circuit Ref	Motorola Part No.	Description
C505	2113743N46	Capacitor Chip 68pF
C511 to C514	2113743N46	Capacitor Chip 68pF
C520 to C523	2113743L41	Capacitor Chip 0.01µF
C524	2113743N32	Capacitor Chip 18pF
C525 to C529	2113743N48	Capacitor Chip 82pF
C530	2311049A18	Capacitor Tantalum 10µF
C531	2113743N48	Capacitor Chip 82pF
CR101 to CR102	4880973Z02	Diode PIN MA4PH261
CR203	4862824C03	Diode Varactor 1SV232
CR251 to CR253	4862824C01	Diode Varactor 1SV229
CR300	4880154K03	Diode Schottky MMBD353LT1
CR301	4802245J41	Diode Switching HSMP3820
CR350	4862824C01	Diode Varactor 1SV229
CR411 to CR413	4802245J62	Diode Array RB731U
CR440	4813833C02	Diode Dual Common Cathode MMBD6100LT1
CR501	4880107R01	Diode Rectifier BYD17D
CR503	4805729G49	Opto-Device LED BRPY1204W
D201 to D202	4802233J09	Diode Array IMN10
E101	9162002U03	Filter, EMI (for PCB No. 8480641Z02 Rev A only)
E101	2484657R01	2743019447 (for PCB No. 8480641Z03 Rev B only)
E102	2405688Z01	2744044446
E400 to E409	2480640Z01	BK1005HM471
F501	6580542Z01	Protector 1608FF
FL201	4802245J49	16.8 MHz Xtal Clip (not field serviceable)
FL300 to FL301	9180657Z01	Filter
FL350	4885631B01	Filter 31B01
FL401	4870368G02	Oscillator Crystal 68G02
J101	2880658Z02	Connector
J400	0905505Y04	Connector Multi_pin FH12-40S-0.5SH
J403	0905505Y02	Connector Multi_pin CL586-0524-9
L101 to L102	2460591A29	Inductor Airwound 6.61nH
L103	2460591A49	Inductor Airwound 8.01nH
L104	2462587V38	Inductor 220nH
L106	2479990B02	Inductor Airwound 19.61nH
L107	2413926G05	Inductor 6.8nH
L108	2413926G09	Inductor 15nH
L109	2462587V38	Inductor 220nH
L110	2413926G04	Inductor 5.6nH
L111	2413926G06	Inductor 8.2nH
L112	2479990A01	Inductor Airwound 4.22nH
L113	2462587V27	Inductor 27nH
L200	2462587Q20	Inductor 2.2µH
L202	2462587Q20	Inductor 2.2µH

Circuit Ref	Motorola Part No.	Description
L203	2462587V21	Inductor 6.8nH
L204	2462587P25	Inductor 12µH
L250	2462587V21	Inductor 6.8nH
L252	2462587V38	Inductor 220nH
L253	2462587V41	Inductor 390nH
L254	2462587V28	Inductor 33nH
L256 to L260	2462587V38	Inductor 220nH
L261	2462587V26	Inductor 22nH
L262	2462587V38	Inductor 220nH
L263	2462587V25	Inductor 18nH
L264	2462587V24	Inductor 15nH
L265	2462587V30	Inductor 47nH
L301	2462587V20	Inductor 3.3nH
L302	2462587V38	Inductor 220nH
L303	2462587V41	Inductor 390nH
L304	2413926G08	Inductor 12nH
L306	2462587V32	Inductor 68nH
L307	2462587V26	Inductor 22nH
L308	2462587V30	Inductor 47nH
L309	2462587V38	Inductor 220nH
L310	2462587V22	Inductor 8.2nH
L350	2462587Q20	Inductor 2.2µH
L351 to L352	2462587T22	Inductor 390nH
L353	2462587V35	Inductor 120nH
L354	2462587T23	Inductor 470nH
L355	2462587V38	Inductor 220nH
L356	2462587T40	Inductor 33nH
L357	2462587Q20	Inductor 2.2µH
L400 to L401	2462587Q42	Inductor 390nH
L410 to L411	2462587Q42	Inductor 390nH
L505	2462587Q42	Inductor 390nH
M100	7585651Z01	Mechanical (for PCB No. 8480641Z02 Rev A only)
M300	7585651Z01	Mechanical (for PCB No. 8480641Z02 Rev A only)
M400 to M401	7585651Z01	Mechanical (for PCB No. 8480641Z02 Rev A only)
M501 to M502	7585651Z01	Mechanical (for PCB No. 8480641Z02 Rev A only)
PB501 to PB505	4080523Z01	Mechanical KSS223G
Q101	5105385Y73	Transistor 85Y73
Q200	4802245J50	Transistor Bipolar
Q210	4802245J50	Transistor Bipolar
Q251	4805218N63	Transistor Bipolar BFQ67W
Q252	4802245J50	Transistor Bipolar
Q302	4802245J56	Transistor Bipolar QSBT0048
Q304	4802245J44	Transistor Bipolar HP415
Q350	4805218N63	Transistor Bipolar BFQ67W
Q400	4809579E18	Transistor FET TP0101T
Q403	4880214G02	Transistor Bipolar MMBT3904L

Circuit Ref	Motorola Part No.	Description
Q405	4802245J54	Transistor Bipolar UMG5N
Q410	4802245J54	Transistor Bipolar UMG5N
Q416	4809579E18	Transistor FET TP0101T
Q417	4802245J50	Transistor Bipolar
Q502	5180159R01	Transistor Bipolar IMX1
Q505	4880214G02	Transistor Bipolar MMBT3904L
R101 to R102	0662057A34	Resistor Chip 240
R103	0662057A18	Resistor Chip 51
R104	0680539Z01	Resistor Chip 0.1
R105	0662057M81	Resistor Chip 2K
R106	0662057M01	Resistor Chip 0
R107	0662057N13	Resistor Chip 39K
R108	0662057N08	Resistor Chip 24K
R109	0662057N20	Resistor Chip 75K
R110	0662057M47	Resistor Chip 75
R111	0680195M01	Resistor Chip 10
R112	0662057M01	Resistor Chip 0
R113	0662057N30	Resistor Chip 200K
R114	0662057M67	Resistor Chip 510
R115	0662057N39	Resistor Chip 470K
R116	0662057M85	Resistor Chip 3K
R117	0662057M98	Resistor Chip 10K
R200	0662057M50	Resistor Chip 100
R202	0662057M88	Resistor Chip 3.9K
R203	0662057M38	Resistor Chip 33
R204	0662057M52	Resistor Chip 120
R206	0662057N10	Resistor Chip 30K
R208	0662057N17	Resistor Chip 56K
R209	0662057M77	Resistor Chip 1.3K
R210	0662057M62	Resistor Chip 330
R211	0662057N15	Resistor Chip 47K
R213	0662057M50	Resistor Chip 100
R214	0662057N15	Resistor Chip 47K
R216 to R217	0662057M01	Resistor Chip 0
R218	0662057N11	Resistor Chip 33K
R219 to R220	0662057M54	Resistor Chip 150
R222	0662057M01	Resistor Chip 0
R250	0662057M60	Resistor Chip 270
R251	0662057M50	Resistor Chip 100
R253	0662057M26	Resistor Chip 10
R254	0662057N15	Resistor Chip 47K
R255	0662057M62	Resistor Chip 330
R256	0662057M01	Resistor Chip 0
R257	0662057M74	Resistor Chip 1K
R261 to R262	0662057M38	Resistor Chip 33
R263 to R264	0662057M60	Resistor Chip 270
R265 to R266	0662057N10	Resistor Chip 30K
R267	0662057N01	Resistor Chip 12K
R268	0662057N07	Resistor Chip 22K
R270 to R273	0662057M38	Resistor Chip 33
R274	0662057M52	Resistor Chip 120
R275	0662057M26	Resistor Chip 10
R306	0662057M92	Resistor Chip 5.6K
R307	0662057N17	Resistor Chip 56K
R309	0662057M70	Resistor Chip 680

Circuit Ref	Motorola Part No.	Description
R310	0662057N01	Resistor Chip 12K
R312	0662057M62	Resistor Chip 330
R315	0662057M74	Resistor Chip 1K
R317	0662057M96	Resistor Chip 8.2K
R318	0662057M72	Resistor Chip 820
R320	0662057M52	Resistor Chip 120
R321	0662057M43	Resistor Chip 51
R322	0662057M52	Resistor Chip 120
R323	0662057M87	Resistor Chip 3.6K
R324	0662057M68	Resistor Chip 560
R325	0662057N10	Resistor Chip 30K
R326	0662057M42	Resistor Chip 47
R327	0662057M40	Resistor Chip 39
R328	0662057N03	Resistor Chip 15K
R350	0662057M33	Resistor Chip 20
R351	0662057M52	Resistor Chip 120
R352 to R353	0662057N01	Resistor Chip 12K
R355	0662057M98	Resistor Chip 10K
R356	0662057M78	Resistor Chip 1.5K
R358	0662057N15	Resistor Chip 47K
R359	0662057M78	Resistor Chip 1.5K
R360	0662057N15	Resistor Chip 47K
R361	0662057M57	Resistor Chip 200
R362	0662057M98	Resistor Chip 10K
R363	0662057N15	Resistor Chip 47K
R364	0662057M81	Resistor Chip 2K
R365	0662057M87	Resistor Chip 3.6K
R366	0662057M78	Resistor Chip 1.5K
R400	0662057N15	Resistor Chip 47K
R401	0662057M01	Resistor Chip 0
R405	0662057M01	Resistor Chip 0
R406	0662057N20	Resistor Chip 75K
R407	0662057N19	Resistor Chip 68K
R409	0662057M98	Resistor Chip 10K
R410	0662057N23	Resistor Chip 100K
R411	0662057M98	Resistor Chip 10K
R413	0662057M01	Resistor Chip 0
R414	0662057V34	Resistor Chip 180K
R415	0662057V26	Resistor Chip 91K
R416	0662057M90	Resistor Chip 4.7K
R419	0662057M67	Resistor Chip 510
R420	0662057B46	Resistor Chip 10MEG
R421	0662057M81	Resistor Chip 2K
R423	0662057N39	Resistor Chip 470K
R424	0662057N12	Resistor Chip 36K
R425	0662057N10	Resistor Chip 30K
R426	0662057N35	Resistor Chip 330K
R427	0662057M84	Resistor Chip 2.7K
R428	0662057M10	Resistor Chip 2.2
R429	0662057M98	Resistor Chip 10K
R431	0662057N39	Resistor Chip 470K
R432	0662057N16	Resistor Chip 51K
R434	0662057M62	Resistor Chip 330
R435	0662057M81	Resistor Chip 2K
R436	0662057M74	Resistor Chip 1K
R437	0662057M01	Resistor Chip 0

Circuit Ref	Motorola Part No.	Description
R438 to R439	0662057M54	Resistor Chip 150
R445	0662057N08	Resistor Chip 24K
R446	0662057N22	Resistor Chip 91K
R447	0662057N38	Resistor Chip 430K
R448	0662057N06	Resistor Chip 20K
R449	0662057N08	Resistor Chip 24K
R450	0683962T45	Resistor Chip 68
R457	0662057M98	Resistor Chip 10K
R460	0662057M90	Resistor Chip 4.7K
R461	0662057M56	Resistor Chip 180
R462	0662057M98	Resistor Chip 10K
R463	0662057M61	Resistor Chip 300
R471	0662057M92	Resistor Chip 5.6K
R472	0662057N12	Resistor Chip 36K
R473	0662057M26	Resistor Chip 10
R475	0662057M01	Resistor Chip 0
R476	0662057N08	Resistor Chip 24K
R477	0662057M74	Resistor Chip 1K
R478	0662057M98	Resistor Chip 10K
R481	0662057N08	Resistor Chip 24K
R492	0662057M01	Resistor Chip 0
R501	0662057M70	Resistor Chip 680
R502	0662057M56	Resistor Chip 180
R505	0662057M98	Resistor Chip 10K
R506	0662057N15	Resistor Chip 47K
R507	0662057M01	Resistor Chip 0
RT400	0680590Z01	Resistor Thermal 33.0K
S501	4080710Z01	Mechanical Rotary Switch
S501	4080710Z02	Mechanical Rotary Switch
S502	1880619Z01	Mechanical
SH100	2680507Z01	Mechanical Shield 07Z01
SH101	2686081B04	Mechanical Shield 81B04
SH102	2680554Z01	Mechanical Shield 54Z01
SH201	2680511Z01	Mechanical Shield 11Z01
SH202	2680511Z01	Mechanical Shield 11Z01
SH250	2680514Z01	Mechanical Shield 14Z01
SH251	2680513Z01	Mechanical Shield 13Z01
SH301	2680554Z01	Mechanical Shield 54Z01
SH303	2680508Z01	Mechanical Shield 08Z01
SH350	2680508Z01	Mechanical Shield 08Z01
SH351	2680697Z01	Mechanical Shield 97Z01
SH352	2680553Z01	Mechanical Shield 53Z01
SH353	2680514Z01	Mechanical Shield 14Z01
SH400	2680505Z01	Mechanical Shield 05Z01
SH401	2680506Z01	Mechanical Shield 06Z01
SH402	2680515Z01	Mechanical Shield 15Z01
SH403	2680516Z01	Mechanical Shield 16Z01
U101	5102463J66	Analog IC Amp RF2103P
U102	5185765B28	Custom IC H99S-4
U103	5185963A15	Analog IC LM50CIM3X
U201	5185963A27	Custom IC ASIC 63A27
U205	4802245J58	Oscillator DRR030KER900TCT
U206	4802245J57	Oscillator DRR030KE1R225TC
U247	5105739X05	Analog IC ADP3300

Circuit Ref	Motorola Part No.	Description
U248	5102463J58	Analog IC Voltage Regulator LP2980AIM5
U250	5105750U54	Custom IC Buffer/Driver 50U54
U301	5185963A43	Analog IC MA4EX900L-1226
U302	5185623B01	Digital IC Gate TC7SU04FTE85L
U350	5185623B01	Digital IC Gate TC7SU04FTE85L
U351	5109632D83	Custom IC 32D83
U352	4885622B01	Transistor BF904
U400	5102463J40	Analog IC Voltage Regulator LP2951ACMM-3.3
U404	5185963A53	Custom IC 63A53
U405	5102463J36	Digital IC Memory
U406	5102463J60	Digital IC Memory AT49LV040-90T1
U407	5102463J64	Digital IC Memory X25128-2.7
U409	5102226J56	Digital IC Microprocessor MC68HC11FL0PU1
U410	5102463J57	Analog IC Voltage Regulator ILC7062
U420	5102463J44	Analog IC Amp TDA8547TS
VR432 to VR433	4805656W08	Diode MMQA5V6T1
VR434	4802245J73	Diode Zener UDZSTE17
VR445 to VR449	4802245J74	Diode Zener UDZSTE17
VR450	4802245J75	Diode Zener UDZSTE17
VR501	4813830A18	Diode Zener MMBZ5235BLT1
VR502	4880140L17	Diode Zener MMBZ5242B
VR503 to VR508	4802245J73	Diode Zener UDZSTE17
Y200	4802245J68	Oscillator Crystal TTS12V
B501	0986237A01	Connector Multi_Pin 37A01
B503	3980502Z01	Mechanical
B504	3980501Z01	Mechanical
C101	2113740F45	Capacitor Chip 56pF
C104	2113740F15	Capacitor Chip 3.3pF
C105	2113740F06	Capacitor Chip 1.3pF
C106	2113740F23	Capacitor Chip 6.8pF
C107	2113740F03	Capacitor Chip 1pF
C108	2113743N46	Capacitor Chip 68pF
C109	2113740F20	Capacitor Chip 5.1pF
C110	2113740F12	Capacitor Chip 2.4pF

**Note:**For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number

\* Motorola Depot Servicing only



### 9.28 800 MHz Circuit Board/Schematic Diagrams and Parts List (PCB 8471827L03)

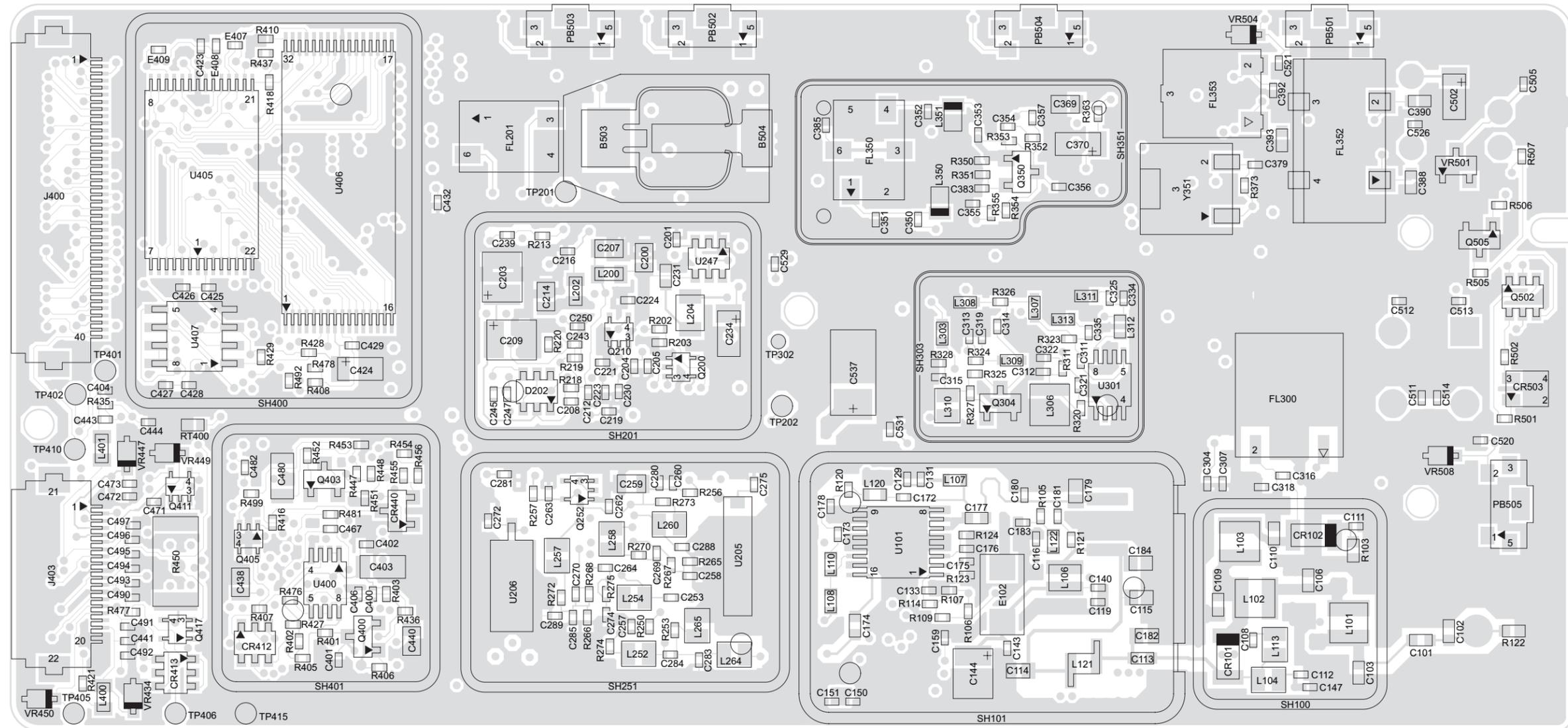


Figure 9-251. 800 MHz Main Board Top Side PCB 8471827L03

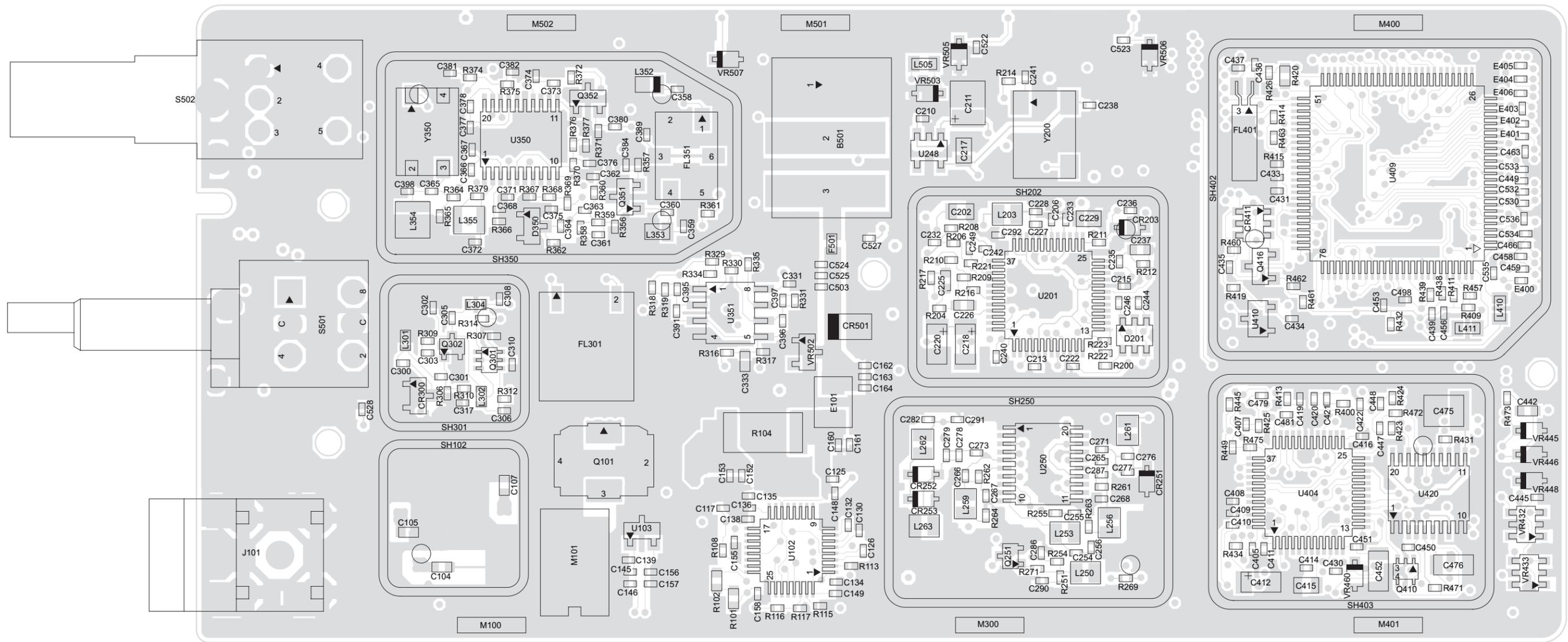
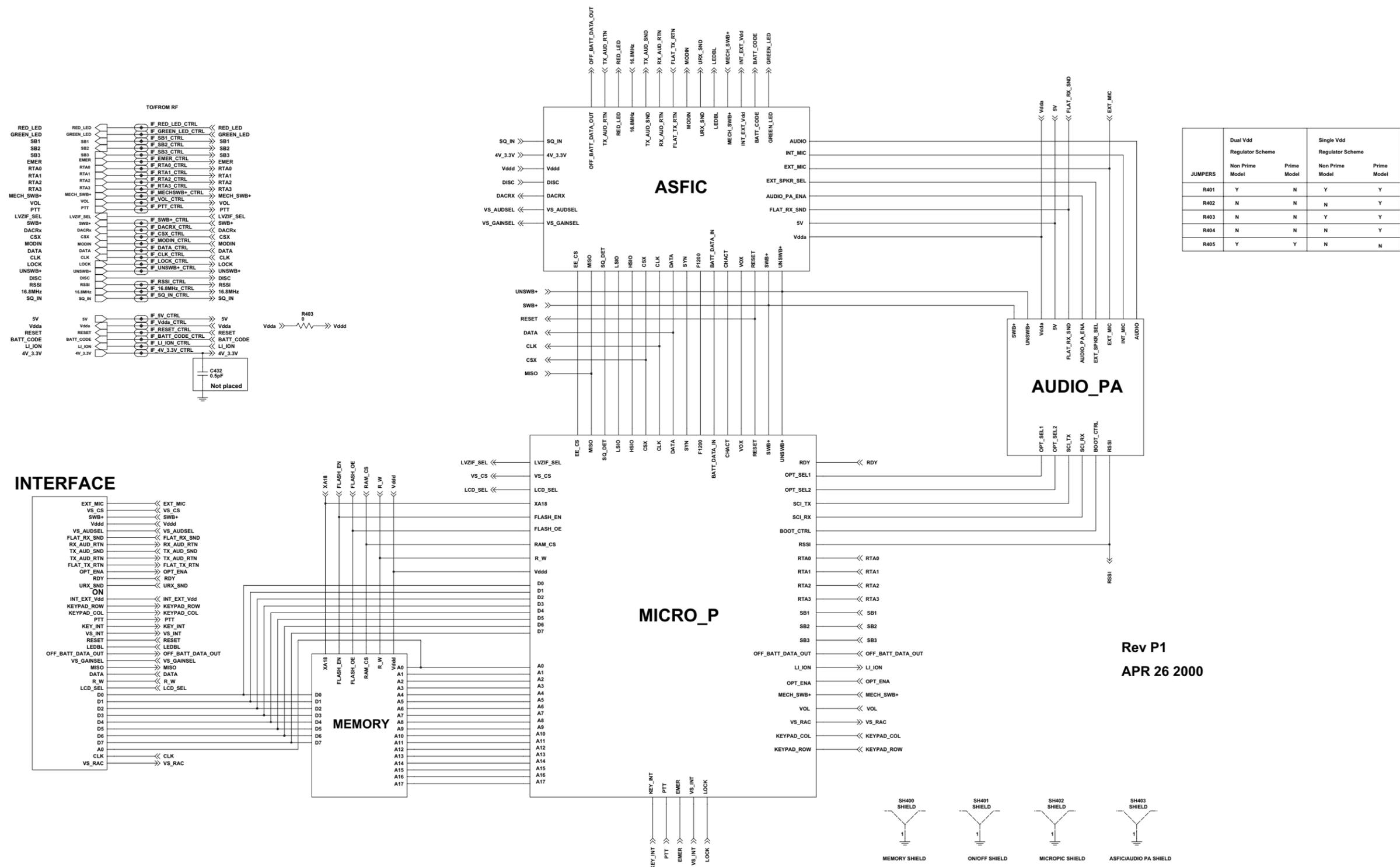
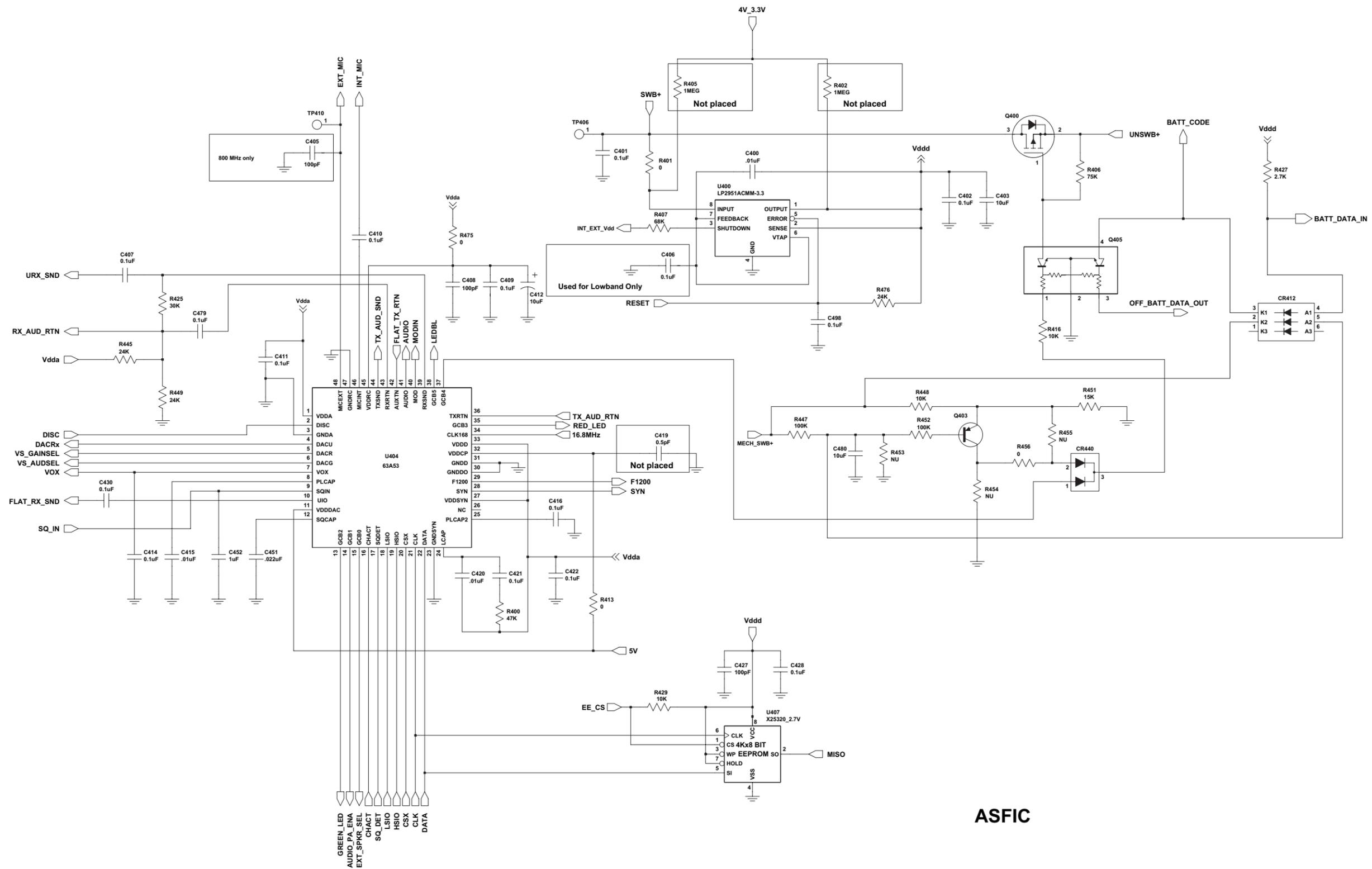


Figure 9-252. 800 MHz Main Board Bottom Side PCB 8471827L03



Rev P1  
APR 26 2000

Figure 9-253. 800 MHz Complete Controller

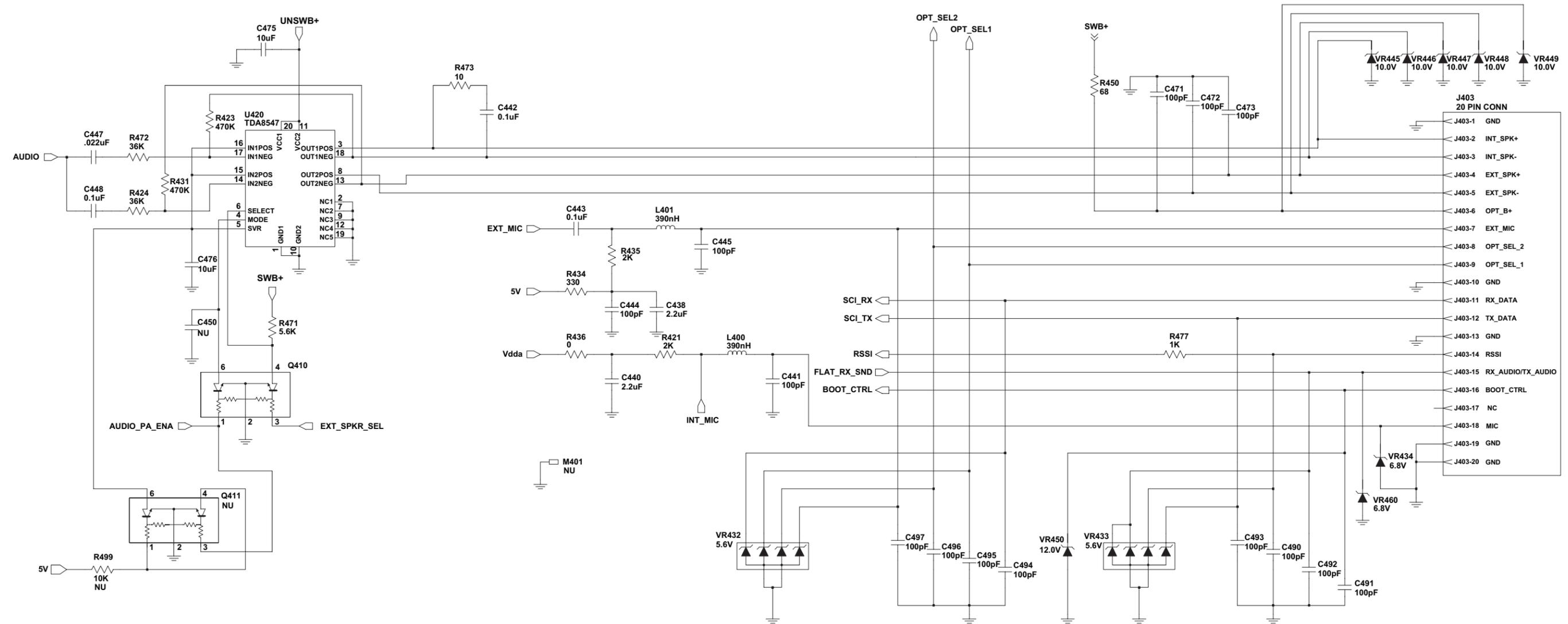


ASFIC

Figure 9-254. 800 MHz Controller ASFIC/ON\_OFF

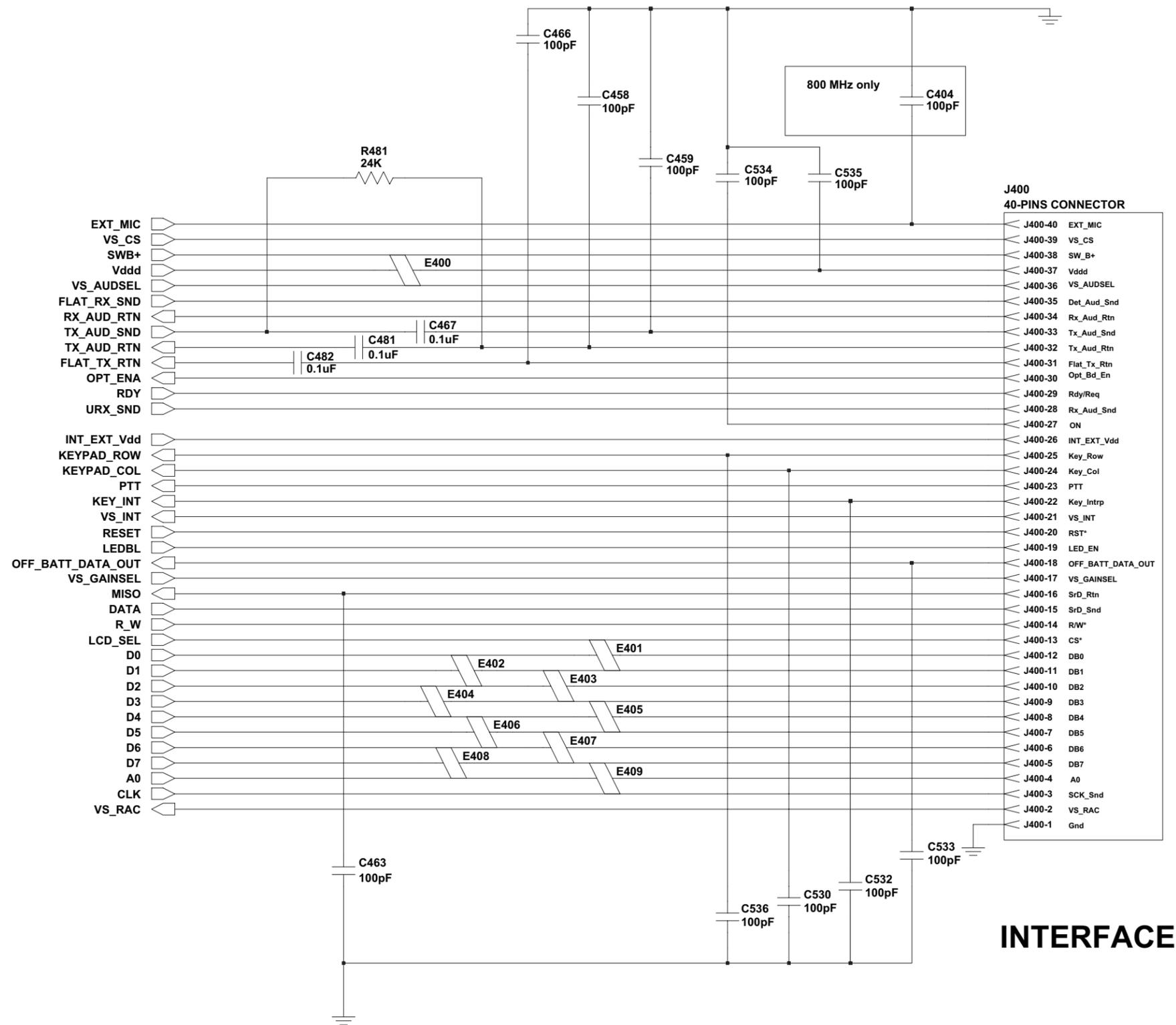






**AUDIO\_PA**

Figure 9-257. 800 MHz Controller Audio Power Amplifier



**INTERFACE**

Figure 9-258. 800 MHz Controller Interface



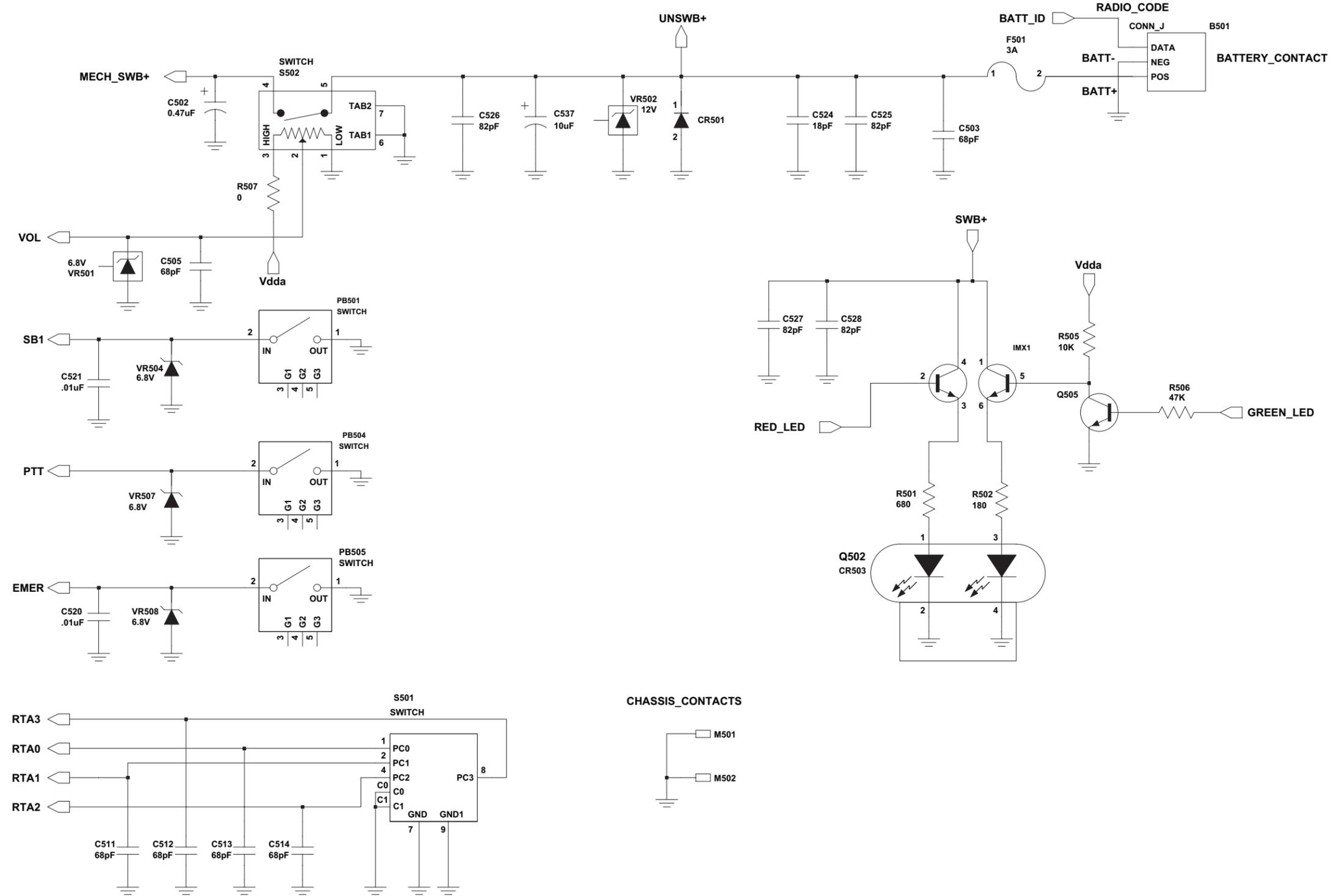


Figure 9-259. 800 MHz Controls and Switches Schematic Diagram

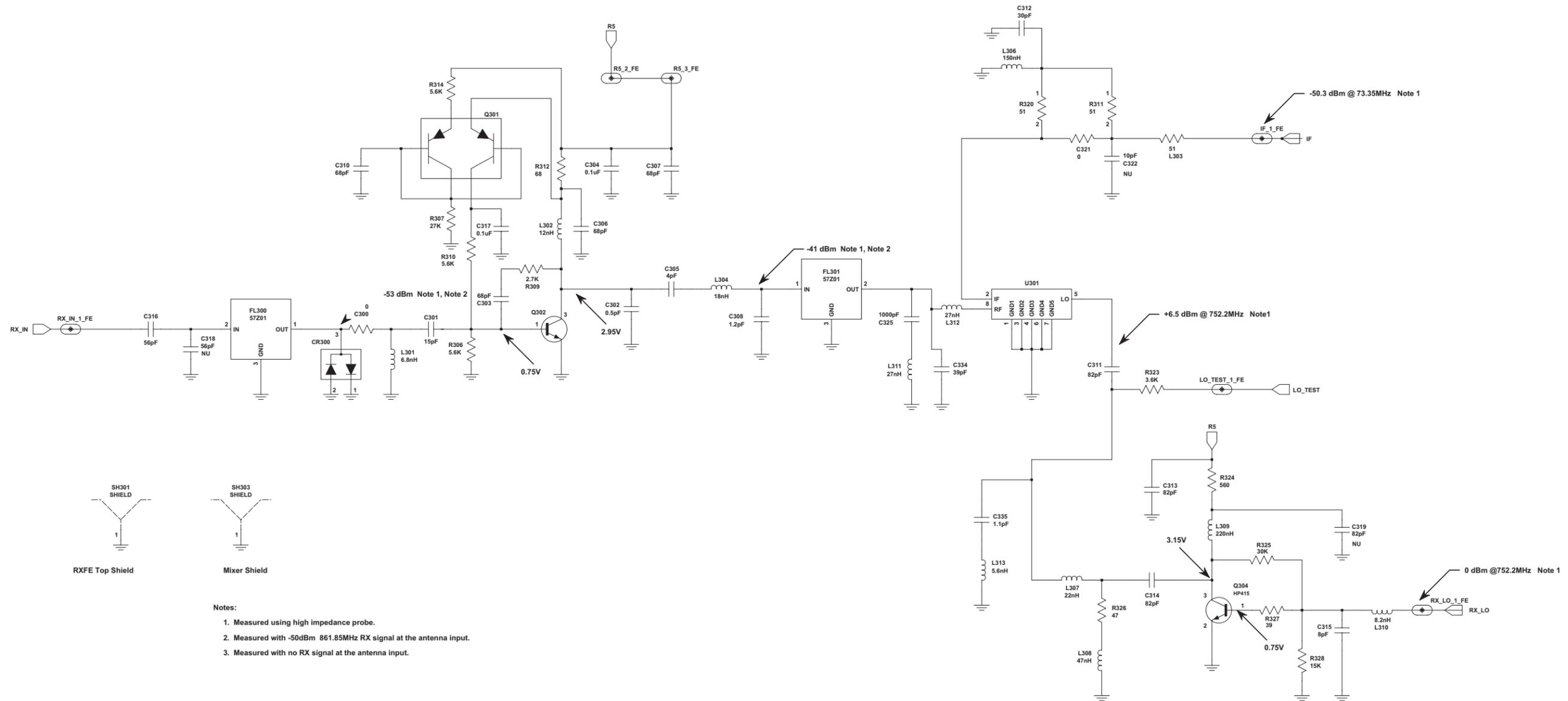


Figure 9-260. 800 MHz Receiver Front End Schematic Diagram



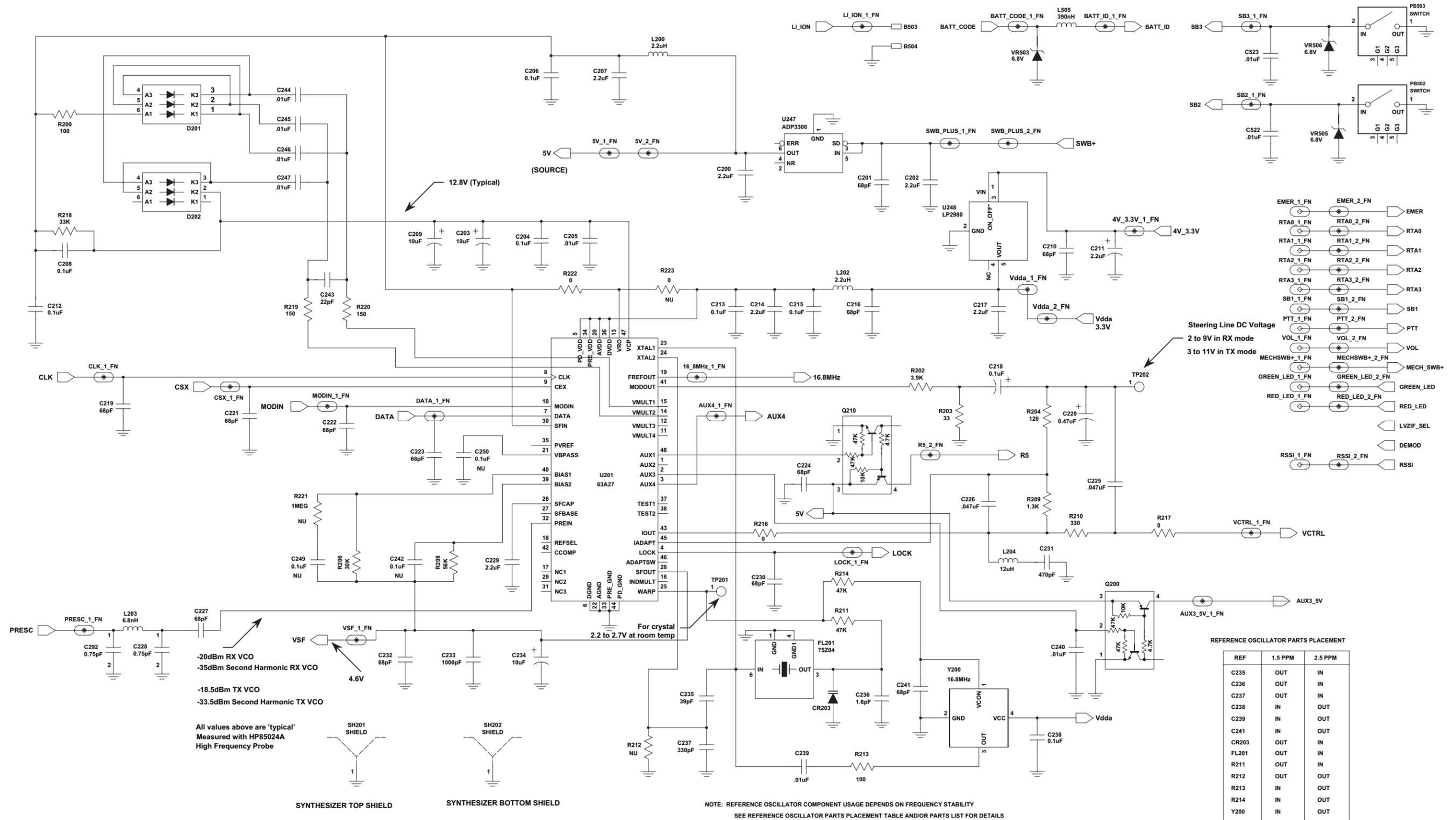


Figure 9-262. 800 MHz Synthesizer Schematic Diagram

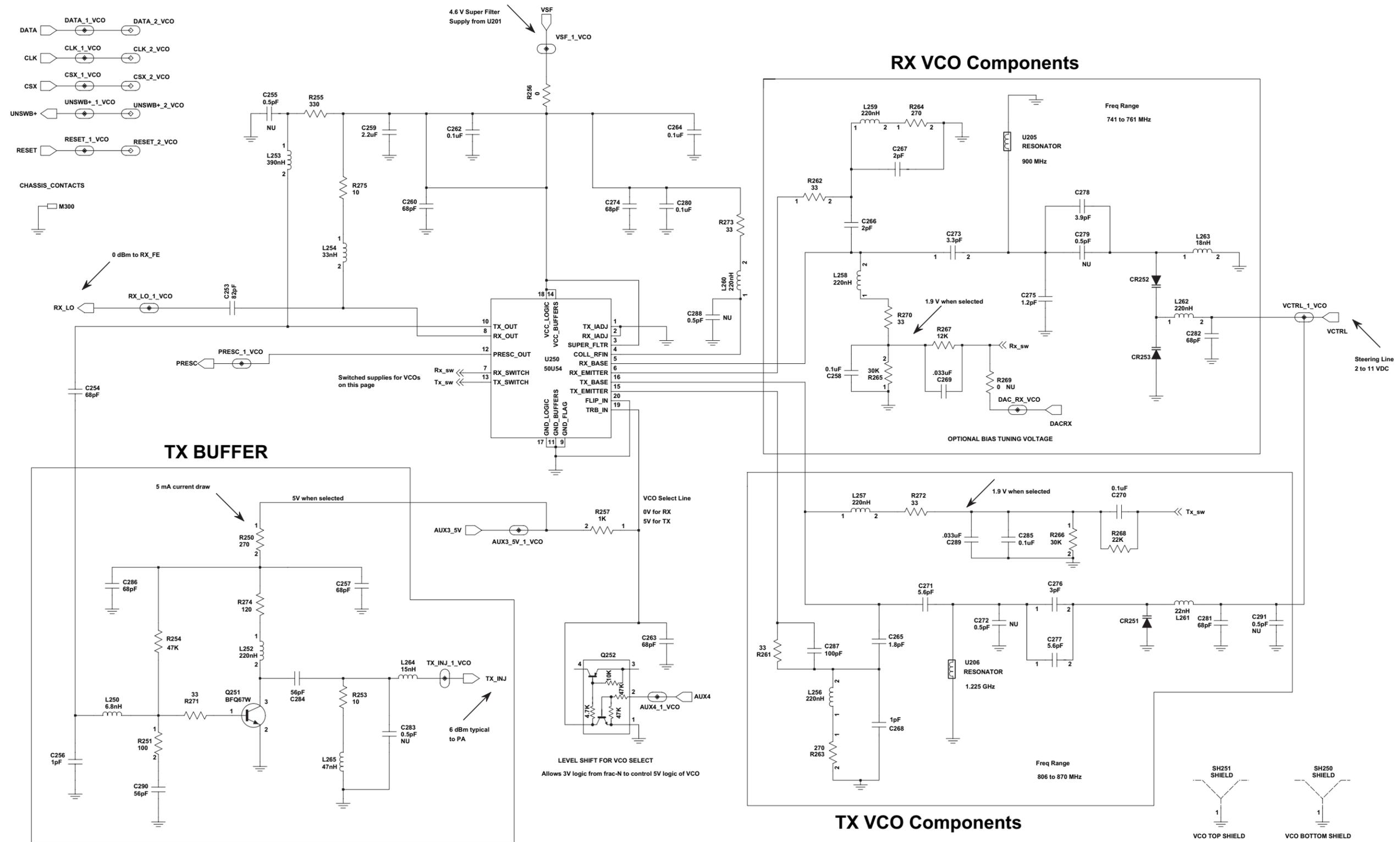


Figure 9-263. 800 MHz Voltage Controlled Oscillator Schematic Diagram



**800 MHz Parts List for PCB 8471827L03**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	CONN CONTACT BATT
B503	3980502Z01	CONTACT BACKUP B+
B504	3980501Z01	CONTACT BACKUP B-
C101	2113944C39	CAPACITOR 56 PF
C102	NOT PLACED	NOT PLACED
C103	NOT PLACED	NOT PLACED
C104	2113944C18	CAPACITOR 3.3 PF
C105	2113944C66	CAPACITOR 1.3 PF
C106	2113944C22	CAPACITOR 4.7 PF
C107	2113944C61	CAPACITOR 0.5 PF
C108	2113944A36	CAPACITOR 68 PF
C109	2113944C61	CAPACITOR 0.5 PF
C110	2113944C61	CAPACITOR 0.5 PF
C111	2113944A28	CAPACITOR 18 PF
C112	2113944A36	CAPACITOR 68 PF
C113	2113944M28	CAPACITOR 27 PF
C114	2103689A19	CAPACITOR 6 PF
C115	2103689A08	CAPACITOR 18 PF
C116	2113944A36	CAPACITOR 68 PF
C117	2113944A36	CAPACITOR 68 PF
C119	2113944A36	CAPACITOR 68 PF
C125	2113944A36	CAPACITOR 68 PF
C126	2113945A07	CAPACITOR 680 PF
C129	2113945B04	CAPACITOR 0.022 UF
C130	2113945A07	CAPACITOR 680 PF
C131	2113944A36	CAPACITOR 68 PF
C132	2113945B02	CAPACITOR 10000 PF
C133	2113944A34	CAPACITOR 56 PF
C134	2113944A34	CAPACITOR 56 PF
C135	2113944A34	CAPACITOR 56 PF
C136	2113946K02	CAPACITOR 0.10 UF
C138	2113944A34	CAPACITOR 56 PF
C139	2113945B04	CAPACITOR 0.022 UF
C140	2113944A28	CAPACITOR 18 PF
C143	2113945A12	CAPACITOR 3300 PF
C144	2313960C26	CAPACITOR 1 UF
C145	NOT PLACED	NOT PLACED
C146	2113944A36	CAPACITOR 68 PF
C147	2113944A28	CAPACITOR 18 PF
C148	2113944A28	CAPACITOR 18 PF
C149	2113944A34	CAPACITOR 56 PF
C150	2113944A28	CAPACITOR 18 PF
C151	2113944A36	CAPACITOR 68 PF
C152	2113944A28	CAPACITOR 18 PF
C153	2113944A36	CAPACITOR 68 PF
C155	2113944A34	CAPACITOR 56 PF
C156	NOT PLACED	NOT PLACED
C157	2113944A36	CAPACITOR 68 PF
C158	2113944A34	CAPACITOR 56 PF
C159	2113944A34	CAPACITOR 56 PF

Circuit Ref	Motorola Part No.	Description
C160	2113944A36	CAPACITOR 68 PF
C161	2113944A28	CAPACITOR 18 PF
C162	2113944A38	CAPACITOR 82 PF
C163	2113944A36	CAPACITOR 68 PF
C164	2113944A28	CAPACITOR 18 PF
C172	2113946K02	CAPACITOR 0.10 UF
C173	2113944A40	CAPACITOR 100 PF
C174	2113944C37	CAPACITOR 39 PF
C175	2113945B02	CAPACITOR 10000 PF
C176	2113945B02	CAPACITOR 10000 PF
C177	2113944M25	CAPACITOR 20 PF
C178	2113944A24	CAPACITOR 9.1 PF
C179	2116069H01	CAPACITOR 27 PF
C180	2113944A25	CAPACITOR 10 PF
C181	2113944A40	CAPACITOR 100 PF
C182	2116636H05	CAPACITOR 0.5 PF
C183	2113944A36	CAPACITOR 68 PF
C184	2103689A05	CAPACITOR 12 PF
C200	2113946N03	CAPACITOR 2.2 UF
C201	2113944A36	CAPACITOR 68 PF
C202	2113946N03	CAPACITOR 2.2 UF
C203	2313960D07	CAPACITOR 10 UF
C204	2113946K02	CAPACITOR 0.10 UF
C205	2113945B02	CAPACITOR 10000 PF
C206	2113946K02	CAPACITOR 0.10 UF
C207	2113946N03	CAPACITOR 2.2 UF
C208	2113946K02	CAPACITOR 0.10 UF
C209	2313960D07	CAPACITOR 10 UF
C210	2113944A36	CAPACITOR 68 PF
C211	2313960D07	CAPACITOR 10 UF
C212	2113946K02	CAPACITOR 0.10 UF
C213	2113946K02	CAPACITOR 0.10 UF
C214	2113946N03	CAPACITOR 2.2 UF
C215	2113946K02	CAPACITOR 0.10 UF
C216	2113944A36	CAPACITOR 68 PF
C217	2113946N03	CAPACITOR 2.2 UF
C218	2313960A26	CAPACITOR 0.1 UF
C219	2113944A36	CAPACITOR 68 PF
C220	2313960A55	CAPACITOR 0.47 UF
C221	2113944A36	CAPACITOR 68 PF
C222	2113944A36	CAPACITOR 68 PF
C223	2113944A36	CAPACITOR 68 PF
C224	2113944A36	CAPACITOR 68 PF
C225	2113945C04	CAPACITOR 22000 PF
C226	2113945C27	CAPACITOR 0.047 UF
C227	2113944A36	CAPACITOR 68 PF
C228	2113944A61	CAPACITOR 0.5PF
C229	2113946N03	CAPACITOR 2.2 UF
C230	2113944A36	CAPACITOR 68 PF
C231	2113945L17	CAPACITOR 470 PF
C232	2113944A36	CAPACITOR 68 PF

Circuit Ref	Motorola Part No.	Description
C233	2113945A09	CAPACITOR 1000 PF
C234	2313960B57	CAPACITOR 10 UF
C235	2113944A32	CAPACITOR 39 PF
C236	2113944A06	CAPACITOR 1.6 PF
C237	2113944C04	CAPACITOR 330 PF
C238	2113946K02	CAPACITOR 0.1 UF
C239	2113945B02	CAPACITOR 10000 PF
C240	2113945B02	CAPACITOR 10000 PF
C241	2113944A36	CAPACITOR 68 PF
C242	NOT PLACED	NOT PLACED
C243	2113944A29	CAPACITOR 22 PF
C244	2113945B02	CAPACITOR 10000 PF
C245	2113945B02	CAPACITOR 10000 PF
C246	2113945B02	CAPACITOR 10000 PF
C247	2113945B02	CAPACITOR 10000 PF
C249	NOT PLACED	NOT PLACED
C250	NOT PLACED	NOT PLACED
C253	2113944A38	CAPACITOR 82 PF
C254	2113944A36	CAPACITOR 68 PF
C255	NOT PLACED	NOT PLACED
C256	2113944A63	CAPACITOR 1 PF
C257	2113944A36	CAPACITOR 68 PF
C258	2113946K02	CAPACITOR 0.10 UF
C259	2113946N03	CAPACITOR 2.2 UF
C260	2113944A36	CAPACITOR 68 PF
C262	2113946K02	CAPACITOR 0.10 UF
C263	2113944A36	CAPACITOR 68 PF
C264	2113946K02	CAPACITOR 0.10 UF
C265	2113944A07	CAPACITOR 1.8 PF
C266	2113944A08	CAPACITOR 2 PF
C267	2113944A08	CAPACITOR 2 PF
C268	2113944A63	CAPACITOR 1 PF
C269	2113945B05	CAPACITOR 0.033 UF
C270	2113946K02	CAPACITOR 0.10 UF
C271	2113944A17	CAPACITOR 4.7 PF
C272	NOT PLACED	NOT PLACED
C273	2113944A13	CAPACITOR 3.3 PF
C274	2113944A36	CAPACITOR 68 PF
C275	NOT PLACED	NOT PLACED
C276	2113944A18	CAPACITOR 5.1 PF
C277	2113944A17	CAPACITOR 4.7 PF
C278	2113944A15	CAPACITOR 3.9 PF
C279	NOT PLACED	NOT PLACED
C280	2113946K02	CAPACITOR 0.10 UF
C281	2113944A36	CAPACITOR 68 PF
C282	2113944A36	CAPACITOR 68 PF
C283	NOT PLACED	NOT PLACED
C284	2113944A34	CAPACITOR 56 PF
C285	2113946K02	CAPACITOR 0.10 UF
C286	2113944A36	CAPACITOR 68 PF
C287	NOT PLACED	NOT PLACED

Circuit Ref	Motorola Part No.	Description
C288	NOT PLACED	NOT PLACED
C289	2113945B05	CAPACITOR 0.033 UF
C290	2113944A34	CAPACITOR 56 PF
C291	NOT PLACED	NOT PLACED
C292	2113944A15	CAPACITOR 3.9 PF
C300	0613952R66	RESISTOR 0 OHM
C301	2113944A27	CAPACITOR 15 PF
C302	2113944A61	CAPACITOR 0.5PF
C303	0613952R11	RESISTOR 27K OHM
C304	2113946K02	CAPACITOR 0.10 UF
C305	2113944A66	CAPACITOR 4 PF
C306	2113944A36	CAPACITOR 68 PF
C307	2113944A36	CAPACITOR 68 PF
C308	2113944A02	CAPACITOR 1.2 PF
C310	2113944A36	CAPACITOR 68 PF
C311	2113944A38	CAPACITOR 82 PF
C312	2113944A82	CAPACITOR 30 PF
C313	2113944A38	CAPACITOR 82 PF
C314	2113944A38	CAPACITOR 82 PF
C315	2113944A73	CAPACITOR 8 PF
C316	2113944A34	CAPACITOR 56 PF
C317	2113946K02	CAPACITOR 0.10 UF
C318	NOT PLACED	NOT PLACED
C319	NOT PLACED	NOT PLACED
C320	NOT PLACED	NOT PLACED
C321	0613952R66	RESISTOR 0 OHM
C322	NOT PLACED	NOT PLACED
C325	2115153H42	CAPACITOR 24 PF
C331	NOT PLACED	NOT PLACED
C333	NOT PLACED	NOT PLACED
C334	NOT PLACED	NOT PLACED
C335	2114036F35	CER CAP 1.4 PF
C350	2113944A32	CER CAP 39 PF
C351	2113944A24	CER CAP 9.1 PF
C352	2113944A22	CAPACITOR 7.5 PF
C353	2113944A37	CAPACITOR 75 PF
C354	2113946K02	CAPACITOR 0.10 UF
C355	2113946K02	CAPACITOR 0.10 UF
C356	2113944A21	CAPACITOR 6.8 PF
C357	2113944A81	CAPACITOR 24 PF
C358	NOT PLACED	NOT PLACED
C359	2113944A19	CAPACITOR 5.6 PF
C360	2113944A78	CAPACITOR 13 PF
C361	2113946K02	CAPACITOR 0.10 UF
C362	2113946K02	CAPACITOR 0.10 UF
C363	2113945B05	CAPACITOR 0.033 UF
C364	2113945B05	CAPACITOR 0.033 UF
C365	2113944A78	CAPACITOR 13 PF
C366	2113944A31	CAPACITOR 33 PF
C367	2113944A27	CAPACITOR 15 PF
C368	NOT PLACED	NOT PLACED

Circuit Ref	Motorola Part No.	Description
C369	2113946N03	CAPACITOR 2.2 UF
C370	2313960B57	CAPACITOR 10 UF
C371	2113946B04	CAPACITOR 0.10 UF
C372	2113945B05	CAPACITOR 0.033 UF
C373	2113946B04	CAPACITOR 0.10 UF
C374	2113946B04	CAPACITOR 0.10 UF
C375	2113945A14	CAPACITOR 4700 PF
C376	2113946B04	CAPACITOR 0.10 UF
C377	2113946B04	CAPACITOR 0.10 UF
C378	2113946B04	CAPACITOR 0.10 UF
C379	2113946B04	CAPACITOR 0.10 UF
C380	2113944A41	CAPACITOR 120 PF
C381	2113946B04	CAPACITOR 0.10 UF
C382	NOT PLACED	NOT PLACED
C383	NOT PLACED	NOT PLACED
C384	NOT PLACED	NOT PLACED
C385	2113944A24	CAPACITOR 9.1 PF
C388	NOT PLACED	NOT PLACED
C389	2113944A24	CAPACITOR 9.1 PF
C390	NOT PLACED	NOT PLACED
C391	NOT PLACED	NOT PLACED
C392	NOT PLACED	NOT PLACED
C393	NOT PLACED	NOT PLACED
C395	NOT PLACED	NOT PLACED
C396	NOT PLACED	NOT PLACED
C397	NOT PLACED	NOT PLACED
C400	2113945B02	CAPACITOR 10000 PF
C401	2113946K02	CAPACITOR 0.10 UF
C402	2113946K02	CAPACITOR 0.10 UF
C403	2113955D33	CAPACITOR 2.2 UF
C404	2113944A36	CAPACITOR 68 PF
C405	2113944A36	CAPACITOR 68 PF
C406	NOT PLACED	NOT PLACED
C407	2113946B04	CAPACITOR 0.10 UF
C408	2113944A36	CAPACITOR 68 PF
C409	2113946K02	CAPACITOR 0.10 UF
C410	2113946B04	CAPACITOR 0.10 UF
C411	2113946K02	CAPACITOR 0.10 UF
C412	2313960B57	CAPACITOR 10 UF
C414	2113946K02	CAPACITOR 0.10 UF
C415	2113944F13	CAPACITOR 0.01 UF
C416	2113946B04	CAPACITOR 0.10 UF
C419	NOT PLACED	NOT PLACED
C420	2113945B02	CAPACITOR 10000 PF
C421	2113946B04	CAPACITOR 0.10 UF
C422	2113946K02	CAPACITOR 0.10 UF
C423	2113944A36	CAPACITOR 68 PF
C424	2313960B57	CAPACITOR 10 UF
C425	2113946K02	CAPACITOR 0.10 UF
C426	2113944A36	CAPACITOR 68 PF
C427	2113944A36	CAPACITOR 68 PF

Circuit Ref	Motorola Part No.	Description
C428	2113946K02	CAPACITOR 0.10 UF
C429	2113946K02	CAPACITOR 0.10 UF
C430	2113946B04	CAPACITOR 0.10 UF
C431	2113944A36	CAPACITOR 68 PF
C432	NOT PLACED	NOT PLACED
C433	2113945B02	CAPACITOR 10000 PF
C434	2113946B04	CAPACITOR 0.10 UF
C435	2113946K02	CAPACITOR 0.10 UF
C436	2113944A29	CAPACITOR 22 PF
C437	2113944A29	CAPACITOR 22 PF
C438	2113946N03	CAPACITOR 2.2 UF
C439	2113946K02	CAPACITOR 0.10 UF
C440	2113946N03	CAPACITOR 2.2 UF
C441	2113944A36	CAPACITOR 68 PF
C442	2113945C31	CAPACITOR 0.1 UF
C443	2113946B04	CAPACITOR 0.10 UF
C444	2113944A36	CAPACITOR 68 PF
C445	2113944A36	CAPACITOR 68 PF
C447	2113945B04	CAPACITOR 0.022 UF
C448	2113946B04	CAPACITOR 0.10 UF
C449	2113944A36	CAPACITOR 68 PF
C450	NOT PLACED	NOT PLACED
C451	2113945B04	CAPACITOR 0.022 UF
C452	2113955D31	CAPACITOR 1 UF
C453	2113944A36	CAPACITOR 68 PF
C456	2113944A36	CAPACITOR 68 PF
C458	2113944A36	CAPACITOR 68 PF
C459	2113944A36	CAPACITOR 68 PF
C463	2113944A36	CAPACITOR 68 PF
C466	2113944A36	CAPACITOR 68 PF
C467	2113946B04	CAPACITOR 0.10 UF
C471	2113944A36	CAPACITOR 68 PF
C472	2113944A36	CAPACITOR 68 PF
C473	2113944A36	CAPACITOR 68 PF
C475	2113956E91	CAPACITOR 10 UF
C476	2113946R01	CAPACITOR 10 UF
C479	2113946B04	CAPACITOR 0.10 UF
C480	2113946R01	CAPACITOR 10 UF
C481	2113946B04	CAPACITOR 0.10 UF
C482	2113946B04	CAPACITOR 0.10 UF
C490	2113944A36	CAPACITOR 68 PF
C491	2113944A36	CAPACITOR 68 PF
C492	2113944A36	CAPACITOR 68 PF
C493	2113944A36	CAPACITOR 68 PF
C494	2113944A36	CAPACITOR 68 PF
C495	2113944A36	CAPACITOR 68 PF
C496	2113944A36	CAPACITOR 68 PF
C497	2113944A36	CAPACITOR 68 PF
C498	2113946K02	CAPACITOR 0.10 UF
C502	2313960A55	CAPACITOR 0.47 UF
C503	2113944A36	CAPACITOR 68 PF

Circuit Ref	Motorola Part No.	Description
C505	2113944A36	CAPACITOR 68 PF
C511	2113944A36	CAPACITOR 68 PF
C512	2113944A36	CAPACITOR 68 PF
C513	2113944A36	CAPACITOR 68 PF
C514	2113944A36	CAPACITOR 68 PF
C520	2113945B02	CAPACITOR 10000 PF
C521	2113945B02	CAPACITOR 10000 PF
C522	2113945B02	CAPACITOR 10000 PF
C523	2113945B02	CAPACITOR 10000 PF
C524	2113944A28	CAPACITOR 18 PF
C525	2113944A38	CAPACITOR 82 PF
C526	2113944A38	CAPACITOR 82 PF
C527	2113944A38	CAPACITOR 82 PF
C528	2113944A38	CAPACITOR 82 PF
C529	2113944A38	CAPACITOR 82 PF
C530	2113944A40	CAPACITOR 100 PF
C531	2113944A38	CAPACITOR 82 PF
C532	2113944A40	CAPACITOR 100 PF
C533	2113944A40	CAPACITOR 100 PF
C534	2113944A40	CAPACITOR 100 PF
C535	2113944A40	CAPACITOR 100 PF
C536	2113944A40	CAPACITOR 100 PF
C537	2313960F04	CAPACITOR 33 UF
CR101	4880973Z02	PIN DIODE
CR102	4880973Z02	PIN DIODE
CR203	4815072H01	DIODE VARACTOR 1SV232
CR251	4885055Y01	DIODE VARACTOR 15V
CR252	4885055Y01	DIODE VARACTOR 15V
CR253	4885055Y01	DIODE VARACTOR 15V
CR300	4815048H01	DIODE DUAL MMBD353
CR411	4815067H01	DIODE RB731UFT108
CR412	4815067H01	DIODE RB731UFT108
CR413	4815067H01	DIODE RB731UFT108
CR440	4813978C02	DIODE SWITCHING
CR501	4815155H01	DIODE GL34D/32-LF
CR503	4805729G49	DIODE RED/YELLOW
D201	4815011H01	DIODE SWITCHING TRIPLE
D202	4815011H01	DIODE SWITCHING TRIPLE
D350	4815048H01	DIODE DUAL MMBD353
E101	2415954H02	INDUCTOR BEAD CHIP
E102	2405688Z01	INDUCTOR FERRITE BEAD
E400	2480640Z01	FERRITE BEAD
E401	2480640Z01	FERRITE BEAD
E402	2480640Z01	FERRITE BEAD
E403	2480640Z01	FERRITE BEAD
E404	2480640Z01	FERRITE BEAD
E405	2480640Z01	FERRITE BEAD
E406	2480640Z01	FERRITE BEAD
E407	2480640Z01	FERRITE BEAD
E408	2480640Z01	FERRITE BEAD
E409	2480640Z01	FERRITE BEAD

Circuit Ref	Motorola Part No.	Description
F501	6515076H01	FUSE CHIP TR/1608FF 3A
FL201	4805875Z04	CRYSTAL 16.8 MHZ
FL300	9180657Z01	FLTR RX 3-POLE CERAMIC
FL301	9180657Z01	FLTR RX 3-POLE CERAMIC
		FLTR 73.35 MHZ 4
FL350	9116854H01	ELEMENT
		FLTR 73.35 MHZ 4
FL351	9116854H01	ELEMENT
		FLTR SMD455KHZ 6
FL352	9115811H04	ELEMENT
		FLTR SMD455KHZ 4
FL353	9180468V06	ELEMENT
FL401	4870368G02	RESONATOR 38.4KHZ
J101	2880658Z06	CONN RF
J400	0915064H03	CONN ZIF 40 PINS
J403	0915064H02	CONN ZIF 20 PINS
L101	2460591A29	INDUCTOR 6.61 NH
L102	2460591A29	INDUCTOR 6.61 NH
L103	2460591A49	INDUCTOR 8.01 NH
L104	2414032F38	INDUCTOR 220 NH
L106	2479990B02	INDUCTOR 19.61 NH
L107	2414017G19	INDUCTOR 100 NH
L108	2414017G18	INDUCTOR 82 NH
L110	2414017G05	INDUCTOR 6.8 NH
L113	2414032F27	INDUCTOR 27 NH
L120	2414017G12	INDUCTOR 27 NH
L121	2415428H03	INDUCTOR 3.85 UH
L122	2414017G18	INDUCTOR 82 NH
L200	2414017Q20	INDUCTOR 2.2 UH
L202	2414017Q20	INDUCTOR 2.2 UH
L203	2414032F21	INDUCTOR 6.8 NH
L204	2414032L25	INDUCTOR 12 UH
L250	2414032F21	INDUCTOR 6.8 NH
L252	2414032F38	INDUCTOR 220 NH
L253	2414032F41	INDUCTOR 390 NH
L254	2414032F28	INDUCTOR 33 NH
L256	2414032F38	INDUCTOR 220 NH
L257	2414032F38	INDUCTOR 220 NH
L258	2414032F38	INDUCTOR 220 NH
L259	2414032F38	INDUCTOR 220 NH
L260	2414032F38	INDUCTOR 220 NH
L261	2414032F26	INDUCTOR 22 NH
L262	2414032F38	INDUCTOR 220 NH
L263	2414032F25	INDUCTOR 18 NH
L264	2414032F24	INDUCTOR 15 NH
L265	2414032F30	INDUCTOR 47 NH
L301	2414017N10	INDUCTOR 6.8 NH
L302	2414017N13	INDUCTOR 12 NH
L303	2415429H47	INDUCTOR 390 NH
L304	2414017G10	INDUCTOR 18 NH
L306	2414032B55	INDUCTOR 150 NH



Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
L307	2415429H21	INDUCTOR 22 NH	R108	0613952R10	RESISTOR 24K OHM	R273	0613952Q37	RESISTOR 33 OHM	R375	0613952Q82	RESISTOR 2400 OHM
L308	2415429H30	INDUCTOR 47 NH	R109	0613952R15	RESISTOR 39K OHM	R274	0613952Q51	RESISTOR 120 OHM	R376	0613952R66	RESISTOR 0 OHM
L309	2415429H43	INDUCTOR 220 NH	R113	0613952R32	RESISTOR 200K OHM	R275	0613952Q25	RESISTOR 10 OHM	R377	NOT PLACED	NOT PLACED
L310	2414032F57	INDUCTOR 4.7NH	R114	0613952R66	RESISTOR 0 OHM	R306	0613952Q91	RESISTOR 5600 OHM	R379	NOT PLACED	NOT PLACED
L311	2414017N10	INDUCTOR 6.8 NH	R115	0613952R41	RESISTOR 470K OHM	R307	0613952R11	RESISTOR 27K OHM	R400	0613952R17	RESISTOR 47K OHM
L312	0613952R66	RESISTOR 0 OHM	R116	0613952Q84	RESISTOR 3000 OHM	R309	2113944A36	CAPACITOR 68 PF	R401	0613952R66	RESISTOR 0 OHM
L313	2414017N06	INDUCTOR 3.3 NH	R117	0613952R01	RESISTOR 10K OHM	R310	0613952Q91	RESISTOR 5600 OHM	R402	NOT PLACED	NOT PLACED
L350	NOT PLACED	NOT PLACED	R120	0613952Q53	RESISTOR 150 OHM	R311	NOT PLACED	NOT PLACED	R403	NOT PLACED	NOT PLACED
L351	2414017K29	INDUCTOR 330 NH	R121	0613952Z22	RESISTOR 220 OHM	R312	0613952Q45	RESISTOR 68 OHM	R405	0613952R66	RESISTOR 0 OHM
L352	2414017K29	INDUCTOR 330 NH	R122	0613952H73	RESISTOR 1000 OHM	R314	0613952Q91	RESISTOR 5600 OHM	R406	0613952R22	RESISTOR 75K OHM
L353	2414017K30	INDUCTOR 390 NH	R123	NOT PLACED	NOT PLACED	R316	NOT PLACED	NOT PLACED	R407	0613952R21	RESISTOR 68K OHM
L354	2414015A13	INDUCTOR 560 NH	R124	NOT PLACED	NOT PLACED	R317	NOT PLACED	NOT PLACED	R408	NOT PLACED	NOT PLACED
L355	NOT PLACED	NOT PLACED	R200	0613952Q49	RESISTOR 100 OHM	R318	NOT PLACED	NOT PLACED	R409	0613952R01	RESISTOR 10K OHM
L400	2414017Q42	INDUCTOR 390 NH	R202	0613952Q87	RESISTOR 3900 OHM	R319	NOT PLACED	NOT PLACED	R410	0613952R25	RESISTOR 100K OHM
L401	2414017Q42	INDUCTOR 390 NH	R203	0613952Q37	RESISTOR 33 OHM	R320	0613952Q42	RESISTOR 51 OHM	R411	0613952R01	RESISTOR 10K OHM
L410	2414017Q42	INDUCTOR 390 NH	R204	0613952Q51	RESISTOR 120 OHM	R323	0613952R66	RESISTOR 0 OHM	R413	0613952R66	RESISTOR 0 OHM
L411	2414017Q42	INDUCTOR 390 NH	R206	0613952R12	RESISTOR 30K OHM	R324	0613952Q67	RESISTOR 560 OHM	R414	0613952Z75	RESISTOR 180K OHM
L505	2414017Q42	INDUCTOR 390 NH	R208	0613952R19	RESISTOR 56K OHM	R325	0613952R12	RESISTOR 30K OHM	R415	0613952Z72	RESISTOR 910K OHM
M101	3916333H01	GROUND CONTACT	R209	0613952Q76	RESISTOR 1300 OHM	R326	0613952Q41	RESISTOR 47 OHM	R416	0613952R01	RESISTOR 10K OHM
PB501	4086470Z01	TACTILE SWITCH	R210	0613952Q61	RESISTOR 330 OHM	R327	0613952Q39	RESISTOR 39 OHM	R418	NOT PLACED	NOT PLACED
PB502	4086470Z01	TACTILE SWITCH	R211	0613952R17	RESISTOR 47K OHM	R328	0613952R05	RESISTOR 15K OHM	R419	0613952Q66	RESISTOR 510 OHM
PB503	4086470Z01	TACTILE SWITCH	R212	NOT PLACED	NOT PLACED	R329	0613952R66	RESISTOR 0 OHM	R420	0613952J73	RESISTOR 10M OHM
PB504	4086470Z01	TACTILE SWITCH	R213	0613952Q49	RESISTOR 100 OHM	R330	NOT PLACED	NOT PLACED	R421	0613952Q80	RESISTOR 2000 OHM
PB505	4086470Z01	TACTILE SWITCH	R214	0613952R17	RESISTOR 47K OHM	R331	NOT PLACED	NOT PLACED	R423	0613952R41	RESISTOR 470K OHM
Q101	4816698H01	TSTR RD05MMP1-T112	R216	0613952R66	RESISTOR 0 OHM	R334	NOT PLACED	NOT PLACED	R424	0613952R14	RESISTOR 36K OHM
Q200	4815055H01	TSTR UMC5NT2	R217	0613952R66	RESISTOR 0 OHM	R335	NOT PLACED	NOT PLACED	R425	0613952R12	RESISTOR 30K OHM
Q210	4815055H01	TSTR UMC5NT2	R218	0613952R13	RESISTOR 33K OHM	R350	0613952R03	RESISTOR 12K OHM	R426	0613952R37	RESISTOR 330K OHM
Q251	4805218N63	TSTR BFQ67W	R219	0613952Q53	RESISTOR 150 OHM	R351	0613952Q25	RESISTOR 10 OHM	R427	0613952Q83	RESISTOR 2700 OHM
Q252	4815055H01	TSTR UMC5NT2	R220	0613952Q53	RESISTOR 150 OHM	R352	0613952Q93	RESISTOR 6800 OHM	R428	0613952Q09	RESISTOR 2.2 OHM
Q301	4815267H01	TSTR SOT-363/SC-88	R221	NOT PLACED	NOT PLACED	R353	0613952R02	RESISTOR 11K OHM	R429	0613952R22	RESISTOR 75K OHM
Q302	4802247J01	TSTR BFS505	R222	0613952R66	RESISTOR 0 OHM	R354	0613952Q68	RESISTOR 620 OHM	R431	0613952R41	RESISTOR 470K OHM
Q304	4816531H01	TSTR QSBT-0038-TRIG	R223	NOT PLACED	NOT PLACED	R355	0613952Q49	RESISTOR 100 OHM	R432	0613952R18	RESISTOR 51K OHM
Q350	4802197J95	TSTR PBR941	R250	0613952Q59	RESISTOR 270 OHM	R356	0613952R03	RESISTOR 12K OHM	R434	0613952Q61	RESISTOR 330 OHM
Q351	4802197J95	TSTR PBR941	R251	0613952Q49	RESISTOR 100 OHM	R357	0613952R66	RESISTOR 0 OHM	R435	0613952Q80	RESISTOR 2000 OHM
Q352	4813973M07	TSTR T3906	R253	0613952Q25	RESISTOR 10 OHM	R358	0613952Q93	RESISTOR 6800 OHM	R436	0613952Q73	RESISTOR 1000 OHM
Q400	4815069H02	TSTR MOSFET	R254	0613952R17	RESISTOR 47K OHM	R359	0613952R02	RESISTOR 11K OHM	R436	0613952R66	RESISTOR 0 OHM
Q403	4813973A13	TSTR T3906	R255	0613952Q61	RESISTOR 330 OHM	R360	0613952Q61	RESISTOR 330 OHM	R437	0613952R66	RESISTOR 0 OHM
Q405	4815066H01	TSTR UMG5NFTR	R256	0613952R66	RESISTOR 0 OHM	R361	0613952Q63	RESISTOR 390 OHM	R438	0613952R66	RESISTOR 0 OHM
Q410	4815066H01	TSTR UMG5NFTR	R257	0613952Q73	RESISTOR 1000 OHM	R362	0613952Q61	RESISTOR 330 OHM	R439	0613952Q53	RESISTOR 150 OHM
Q411	NOT PLACED	NOT PLACED	R261	0613952Q37	RESISTOR 33 OHM	R363	0613952Q42	RESISTOR 51 OHM	R445	0613952R10	RESISTOR 24K OHM
Q416	4815069H02	TSTR MOSFET	R262	0613952Q37	RESISTOR 33 OHM	R364	0613952Q71	RESISTOR 820 OHM	R447	0613952R25	RESISTOR 100K OHM
Q417	4815055H01	TSTR UMC5NT2	R263	0613952Q53	RESISTOR 150 OHM	R365	NOT PLACED	NOT PLACED	R448	0613952R01	RESISTOR 10K OHM
Q502	4815154H01	TSTR DUAL SMT6	R264	0613952Q59	RESISTOR 270 OHM	R366	0613952Q79	RESISTOR 1800 OHM	R449	0613952R10	RESISTOR 24K OHM
Q505	4813973M07	TSTR T3906	R265	0613952R12	RESISTOR 30K OHM	R367	0613952R03	RESISTOR 12K OHM	R450	0613959Y45	RESISTOR 68 OHM
R101	0613952H58	RESISTOR 240 OHM	R266	0613952R18	RESISTOR 51K OHM	R368	0613952R01	RESISTOR 10K OHM	R451	0613952R05	RESISTOR 15K OHM
R102	0613952H58	RESISTOR 240 OHM	R267	0613952R03	RESISTOR 12K OHM	R369	0613952Q69	RESISTOR 680 OHM	R452	0613952R25	RESISTOR 100K OHM
R103	0613952H42	RESISTOR 51 OHM	R268	0613952R09	RESISTOR 22K OHM	R370	0613952R03	RESISTOR 12K OHM	R453	NOT PLACED	NOT PLACED
R104	0615043C01	RESISTOR METAL STRIP	R269	NOT PLACED	NOT PLACED	R371	0613952Q79	RESISTOR 1800 OHM	R454	NOT PLACED	NOT PLACED
R105	0613952Q80	RESISTOR 2000 OHM	R270	0613952Q37	RESISTOR 33 OHM	R372	0613952Q63	RESISTOR 390 OHM	R455	NOT PLACED	NOT PLACED
R106	0613952R66	RESISTOR 0 OHM	R271	0613952Q37	RESISTOR 33 OHM	R373	0613952Q75	RESISTOR 1200 OHM	R456	0613952R66	RESISTOR 0 OHM
R107	0613952R15	RESISTOR 39K OHM	R272	0613952Q37	RESISTOR 33 OHM	R374	0613952Q85	RESISTOR 3300 OHM	R457	0613952R01	RESISTOR 10K OHM

Circuit Ref	Motorola Part No.	Description
R460	0613952Q89	RESISTOR 4700 OHM
R461	0613952Q55	RESISTOR 180 OHM
R462	0613952R01	RESISTOR 10K OHM
R463	0613952Q60	RESISTOR 300 OHM
R471	0613952R08	RESISTOR 20K OHM
R472	0613952R14	RESISTOR 36K OHM
R473	0613952Q25	RESISTOR 10 OHM
R475	0613952R66	RESISTOR 0 OHM
R476	0613952R37	RESISTOR 330K OHM
R477	0613952Q73	RESISTOR 1000 OHM
R478	0613952R01	RESISTOR 10K OHM
R481	0613952R10	RESISTOR 24K OHM
R492	0613952R66	RESISTOR 0 OHM
R499	NOT PLACED	NOT PLACED
R501	0613952Q69	RESISTOR 680 OHM
R502	0613952Q55	RESISTOR 180 OHM
R505	0613952R01	RESISTOR 10K OHM
R506	0613952R17	RESISTOR 47K OHM
R507	0613952R66	RESISTOR 0 OHM
RT400	0680590Z01	THERMISTOR 33K OHM
S501	4080710Z21	FREQUENCY SWITCH
S501	4080710Z19	FREQUENCY SWITCH
S502	1880619Z06	POTENTIOMETER VOLUME
SH100	2680507Z02	SHIELD HARMONIC FILTER
SH101	2615144H04	SHIELD TRANSMITTER
SH102	2680554Z02	SHIELD RECEIVER FE
SH201	2680511Z02	SHIELD SYNTHESIZER
SH202	2680511Z02	SHIELD SYNTHESIZER
SH250	2680514Z02	SHIELD VCO
SH251	2680513Z02	SHIELD VCO
SH301	2680554Z02	SHIELD RECEIVER FE
SH303	2686708Z03	SHIELD COUPLER
SH350	2686528Z02	SHIELD RECEIVER BE
SH351	2686707Z02	SHIELD RECEIVER BE
SH400	2680505Z02	SHIELD CONTROLLER
SH401	2680506Z02	SHIELD CONTROLLER
SH402	2680515Z02	SHIELD CONTROLLER
SH403	2680516Z02	SHIELD CONTROLLER
		IC RF AMPLIFIER
U101	5115678H01	TSSOP16EP
U102	5185765B26	IC PWR CTRL TQFP32
U103	5115022H01	IC TEMP SENSOR LM50C
U201	5185177Y01	IC AT25016 48 PIN
U205	4802245J82	RESONATOR 930MHZ
U206	4802245J57	RESONATOR 1225MHZ
U247	5115026H01	VOLTAGE REG SOT-23/6
U248	5115019H01	VOLTAGE REG SOT-23
U250	5171121L01	IC VCO BUFFER
U301	5171756L01	IC MIXER 700 1000 MHZ
U350	5115281H01	IC FM IF SSOP20 SA616
U351	NOT PLACED	NOT PLACED

Circuit Ref	Motorola Part No.	Description
U400	5115012H01	VOLTAGE REG 30V
U404	5115062H01	IC ASFIC_CMP TQFP48
U405	5115020H01	IC STATIC RAM 2M
		IC 4M FLASH ROM
U406	5115286H01	AT49LV040
U407	5115033H01	IC EEPROM 16K X 8
U409	5185143E03	IC MICRO-P HC11FL0
		VOLTAGE REG ILC7062CM-33
U410	5115044H01	
U420	5115280H01	IC AMPLIFIER TDA8547TS
		DIODE TRANS.
VR432	4813979P10	PROTECTION
		DIODE TRANS.
VR433	4813979P10	PROTECTION
VR434	4815038H01	DIODE ZENER SOD-323
VR445	4813977A54	DIODE MM3Z10V
VR446	4813977A54	DIODE MM3Z10V
VR447	4813977A54	DIODE MM3Z10V
VR448	4813977A54	DIODE MM3Z10V
VR449	4813977A54	DIODE MM3Z10V
		DIODE ZENER
VR450	4815040H01	MM3Z12VT1G
VR460	4815038H01	DIODE ZENER SOD-323
VR501	4813977M14	DIODE MBZ5235
VR502	4813977M21	DIODE MBZ5235
VR503	4815038H01	DIODE ZENER SOD-323
VR504	4815038H01	DIODE ZENER SOD-323
VR505	4815038H01	DIODE ZENER SOD-323
VR506	4815038H01	DIODE ZENER SOD-323
VR507	4815038H01	DIODE ZENER SOD-323
VR508	4815038H01	DIODE ZENER SOD-323
Y200	4802245J68	REF OSC 16.8MHZ
Y350	4880606B10	CRYSTAL OCS 72.9MHZ
Y351	9186145B02	CERAMIC DISCRIMINATOR

\* Motorola Depot Servicing only

### 9.29 PassPort Circuit Board/Schematic Diagram

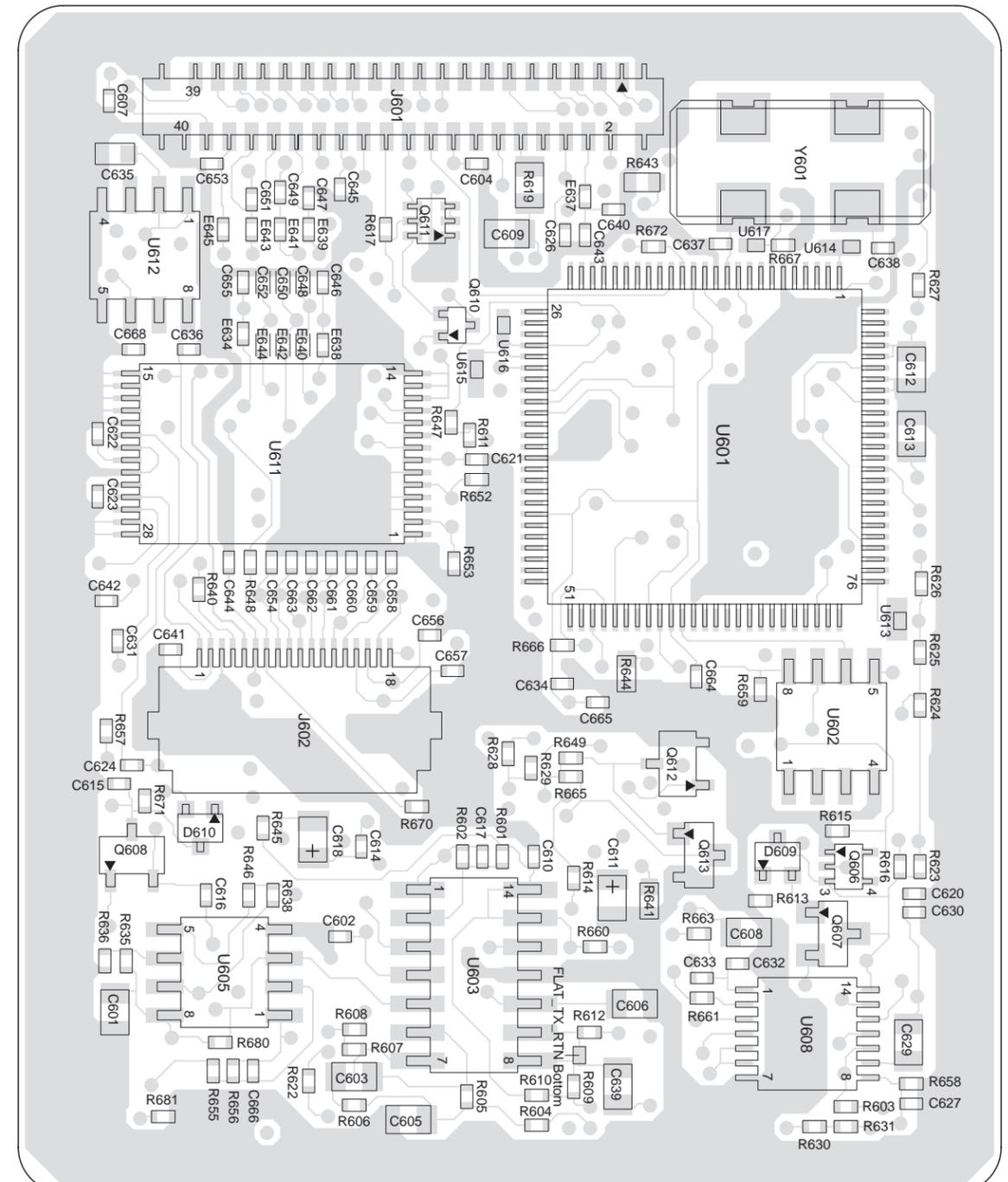
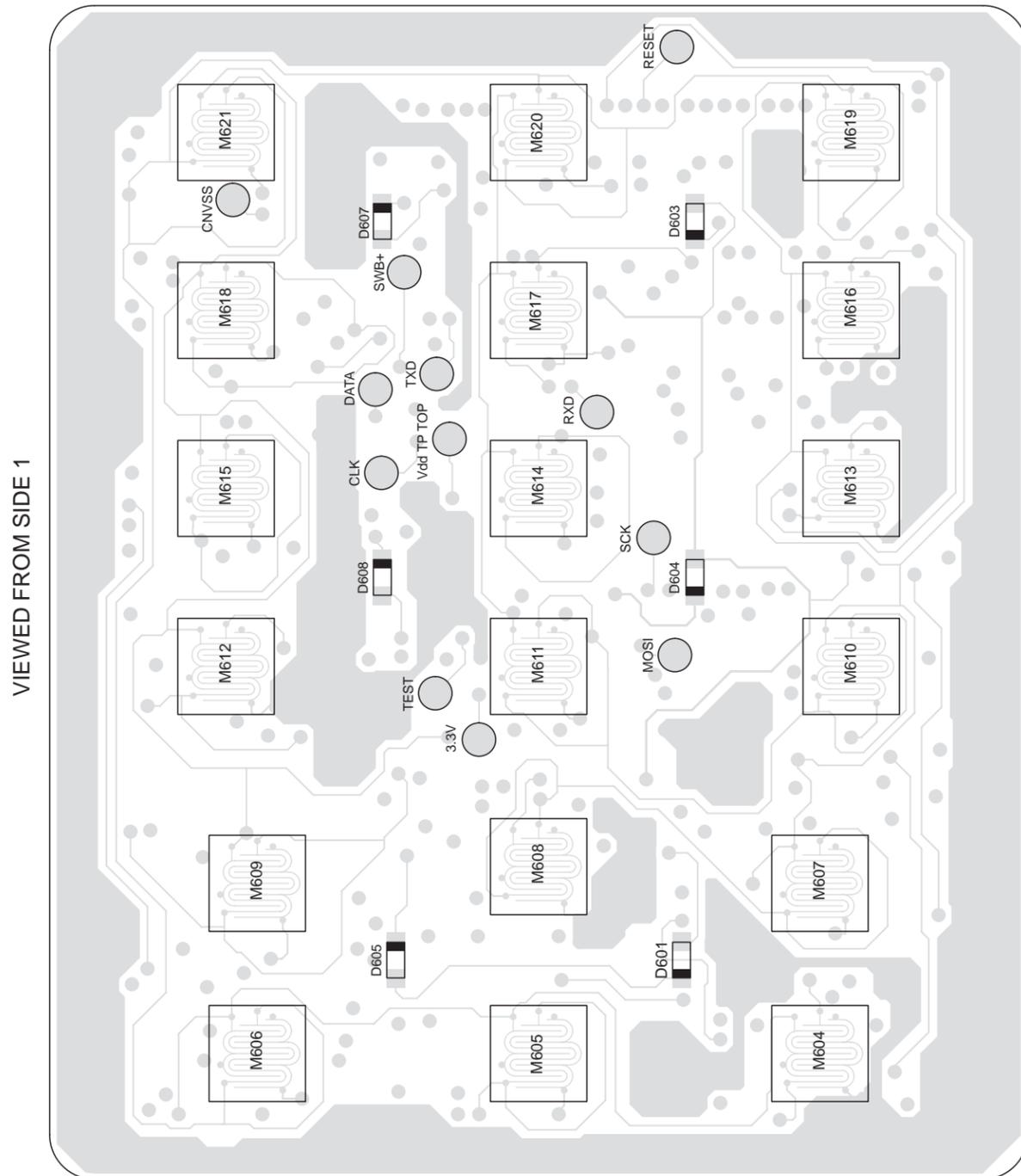
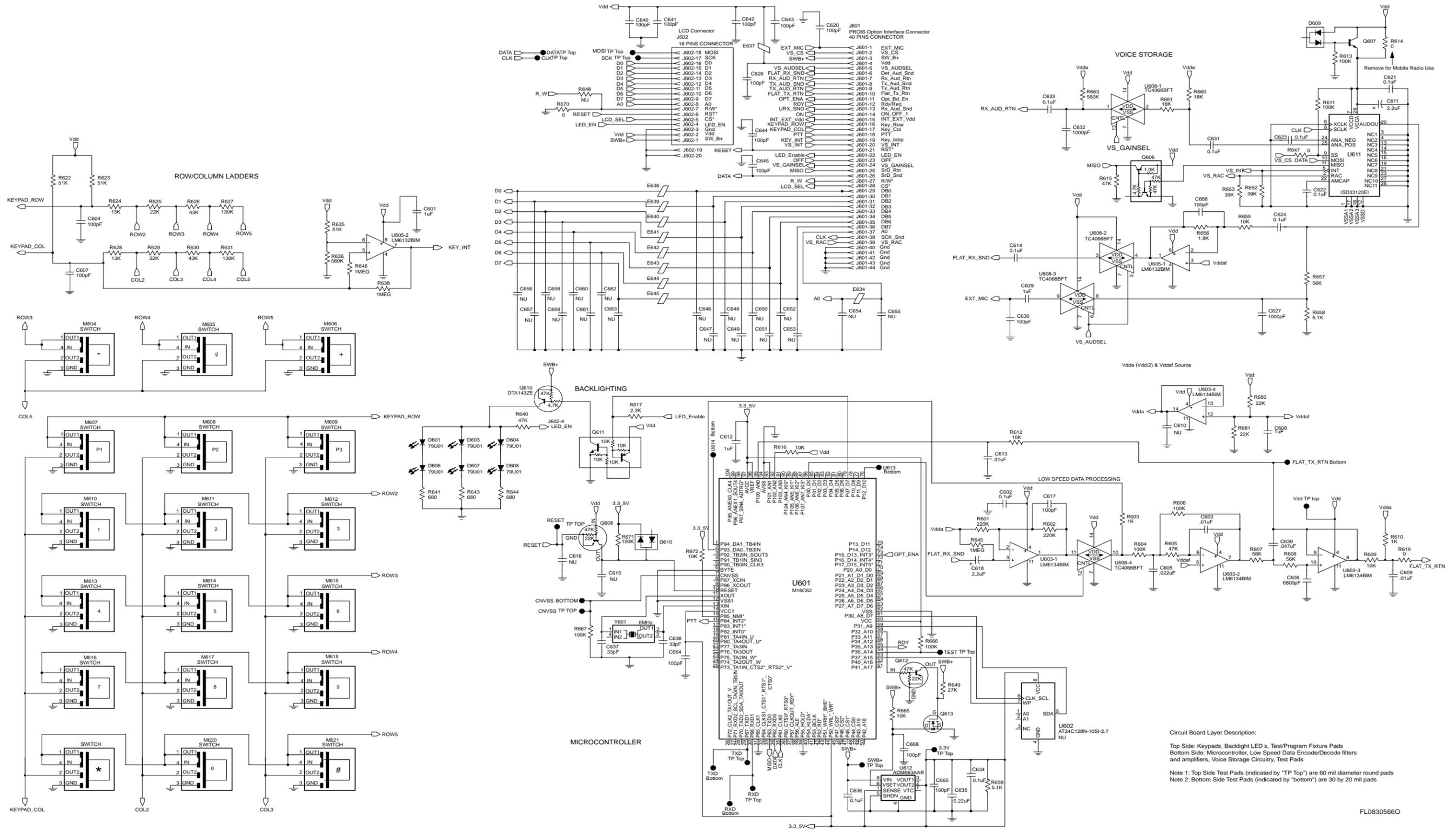


Figure 9-268. PassPort Trunking Controller PCB Board Side 1 & 2



Circuit Board Layer Description:  
 Top Side: Keypads, Backlight LEDs, Test/Program Fixture Pads  
 Bottom Side: Microcontroller, Low Speed Data Encode/Decode filters and amplifiers, Voice Storage Circuitry, Test Pads

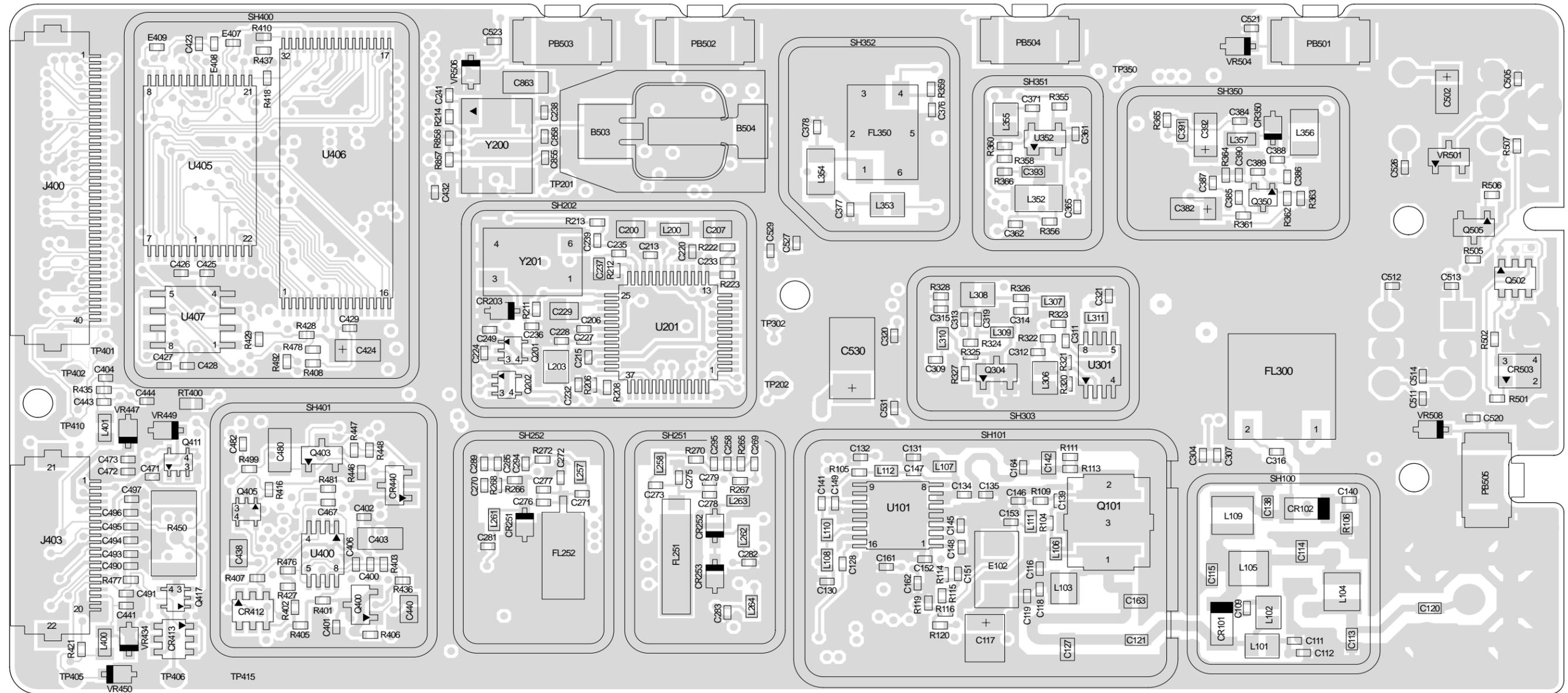
Note 1: Top Side Test Pads (indicated by "TP Top") are 60 mil diameter round pads  
 Note 2: Bottom Side Test Pads (indicated by "bottom") are 30 by 20 mil pads

FL08305660

Figure 9-269. PassPort Controller Schematic Diagram

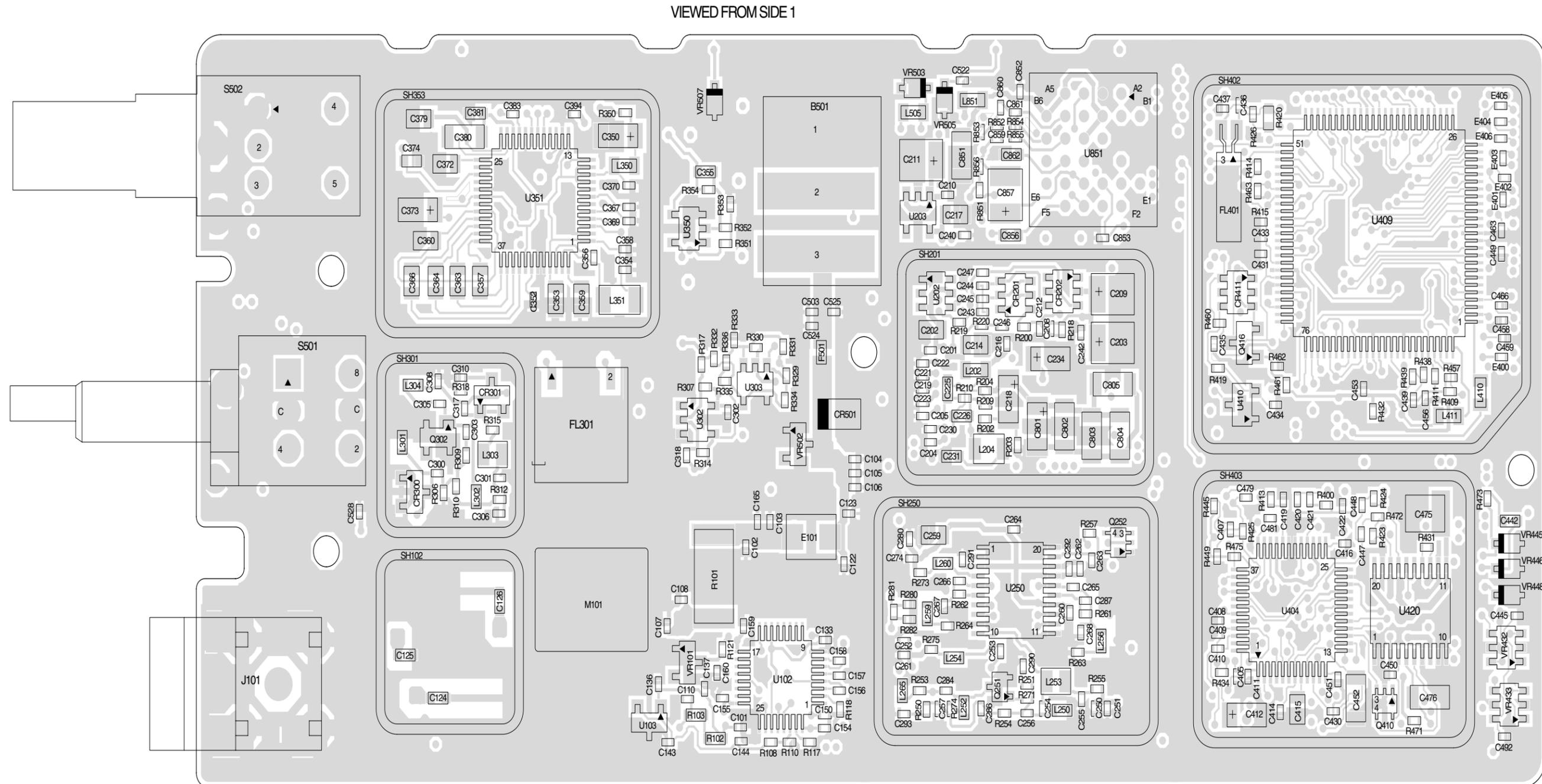
### 9.30 900 MHz Circuit Board/Schematic Diagrams and Parts List (PCB 8485910Z01)

VIEWED FROM SIDE 1



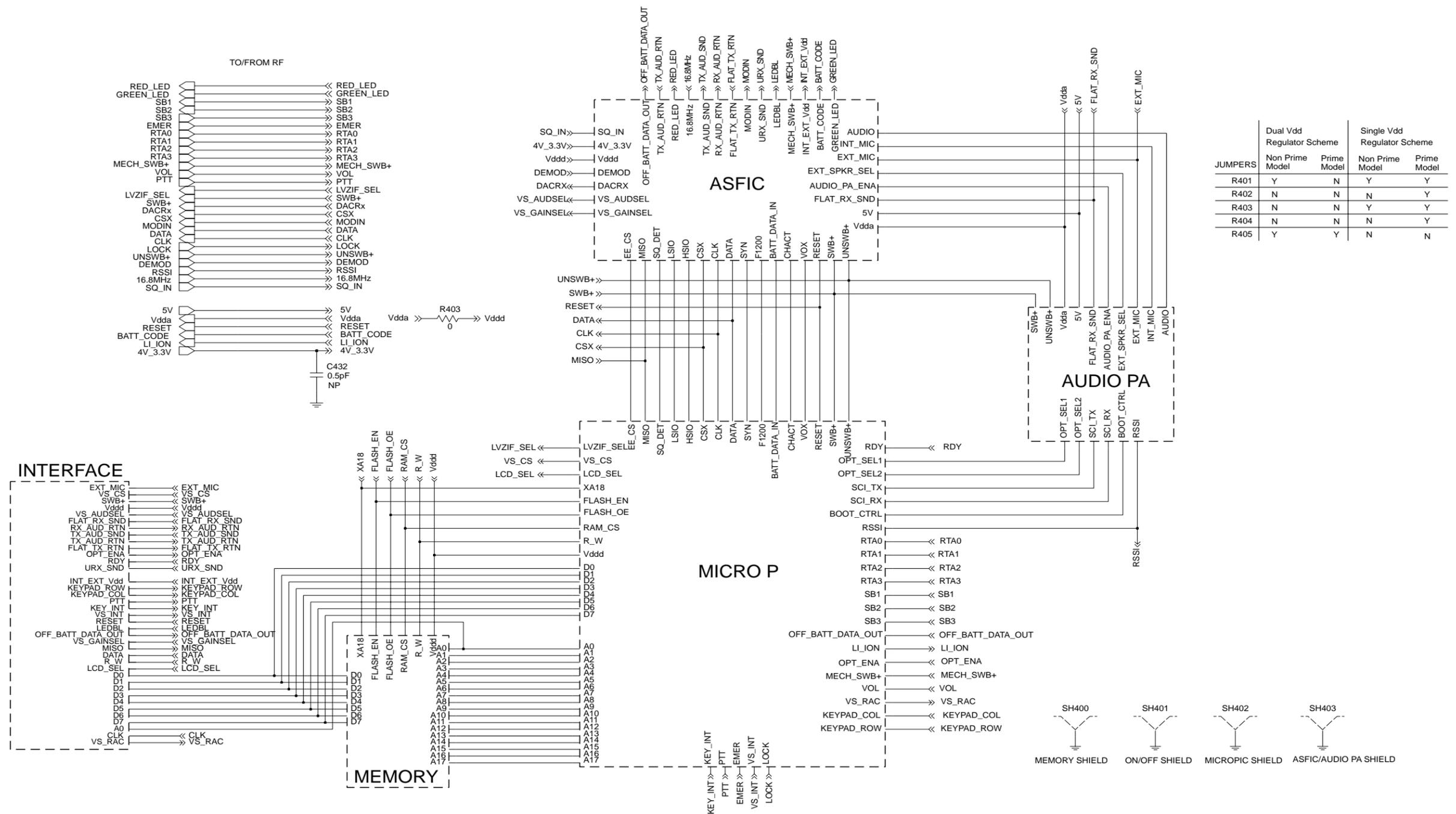
FL08307020

Figure 9-270. 900 MHz (896-941 MHz) Main Board Top Side PCB 8485910Z01



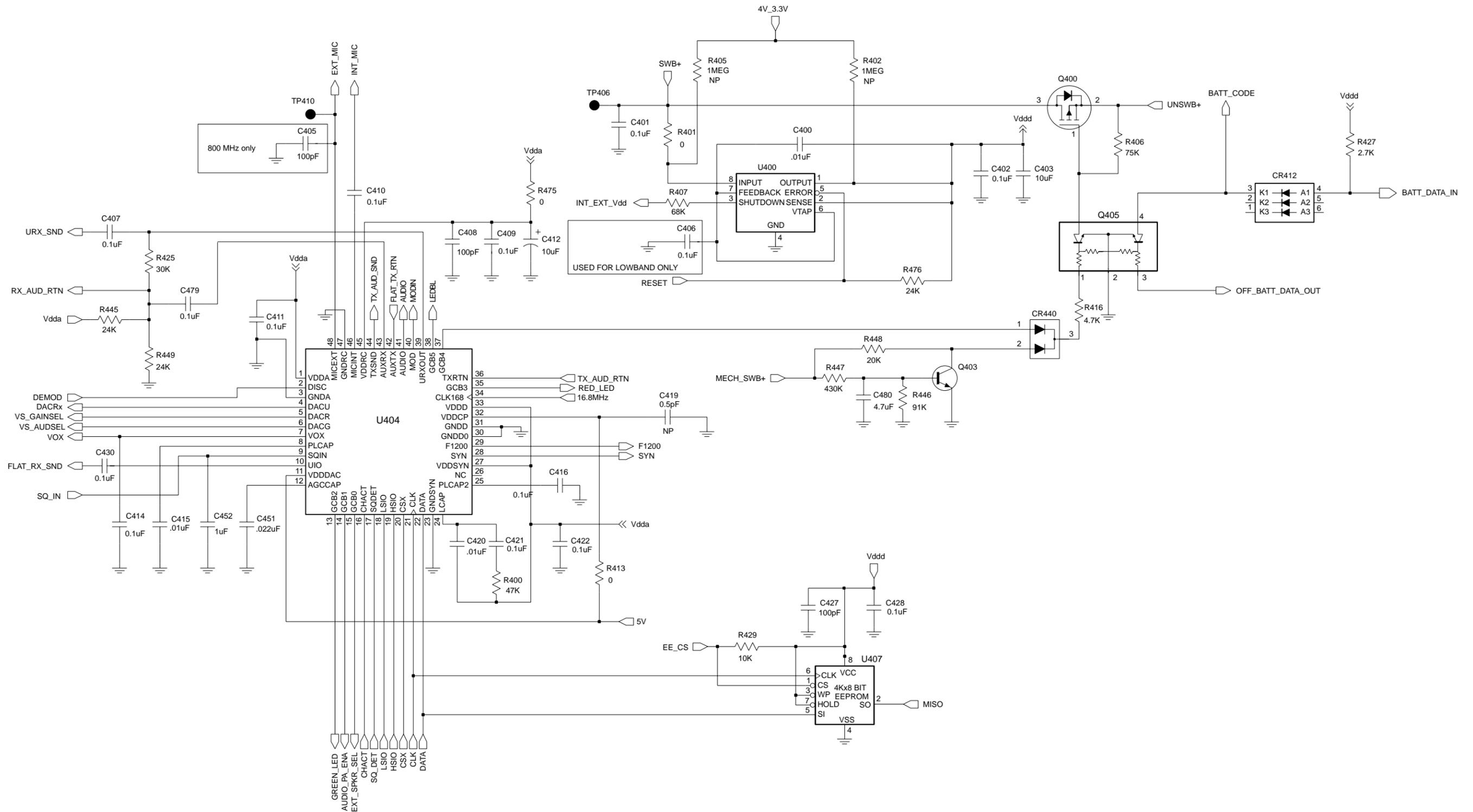
FL08307030

Figure 9-271. 900 MHz (896-941 MHz) Main Board Bottom Side PCB 8485910Z01



FL08307130

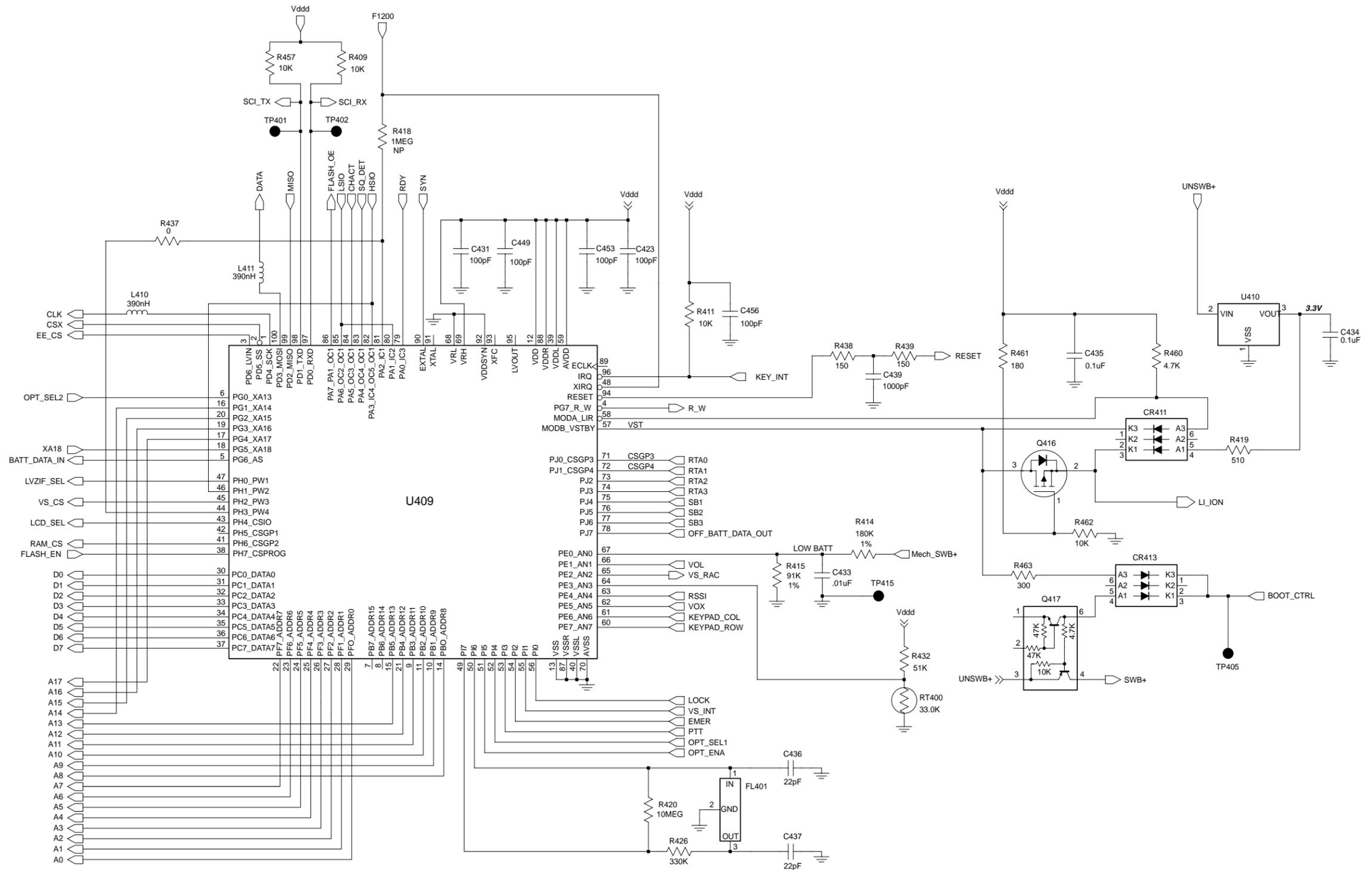
Figure 9-272. 900 MHz Complete Controller



FL08307110

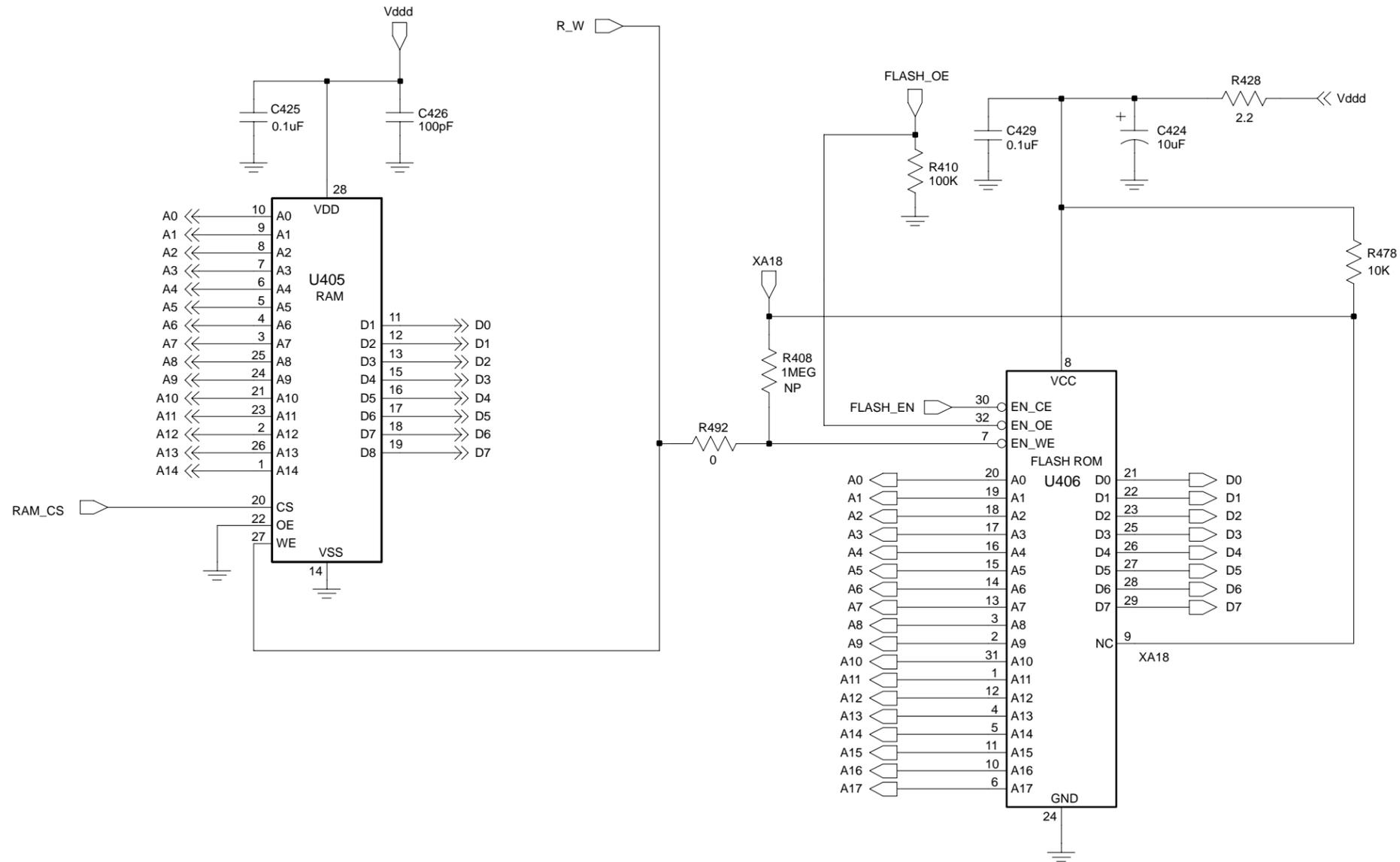
Figure 9-273. 900 MHz Controller ASFIC/ON\_OFF





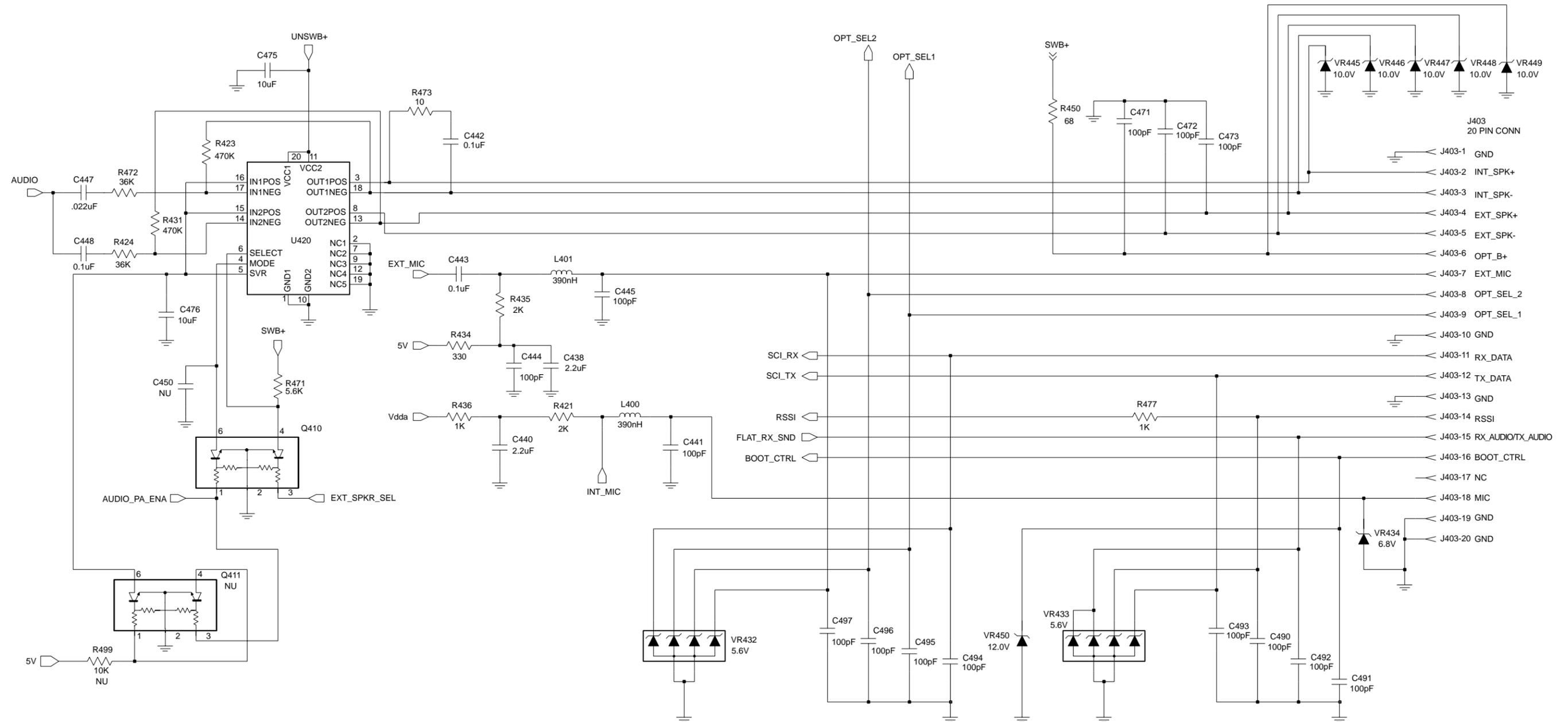
FL08307160

Figure 9-274. 900 MHz Controller Microprocessor



FL08307150

Figure 9-275. 900 MHz Controller Memory



FL08307120

Figure 9-276. 900 MHz Controller Audio Power Amplifier

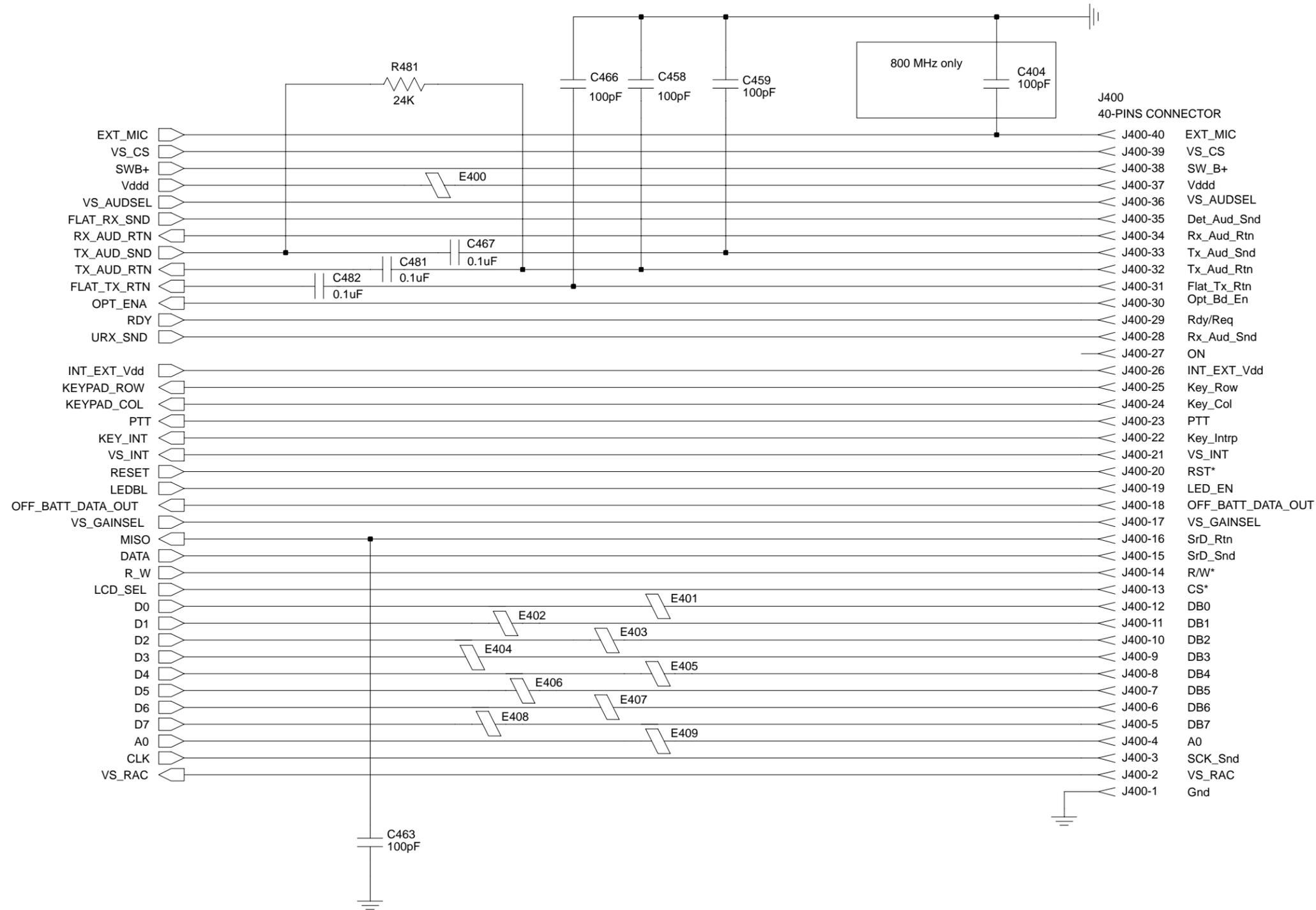
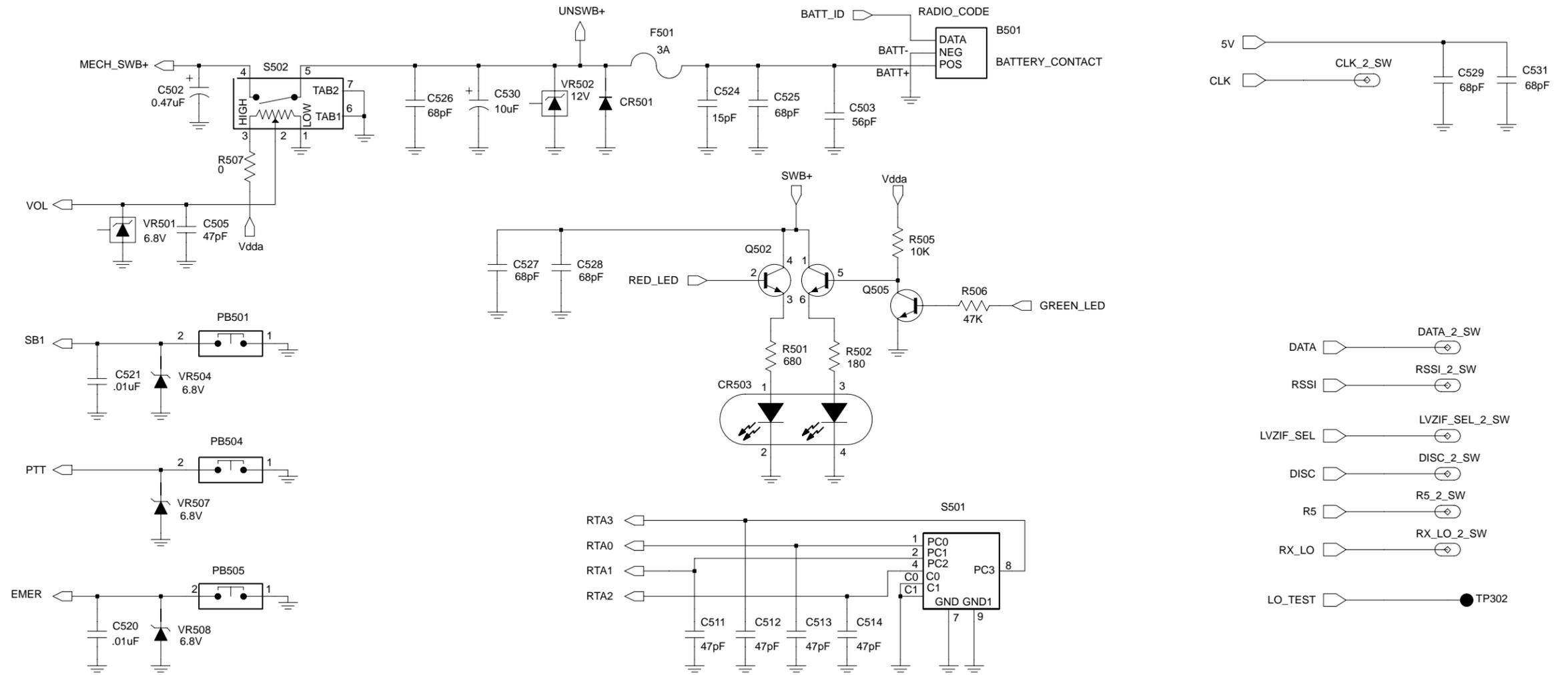


Figure 9-277. 900 MHz Controller Interface



FL08307080

Figure 9-278. 900 MHz Controls and Switches Schematic Diagram

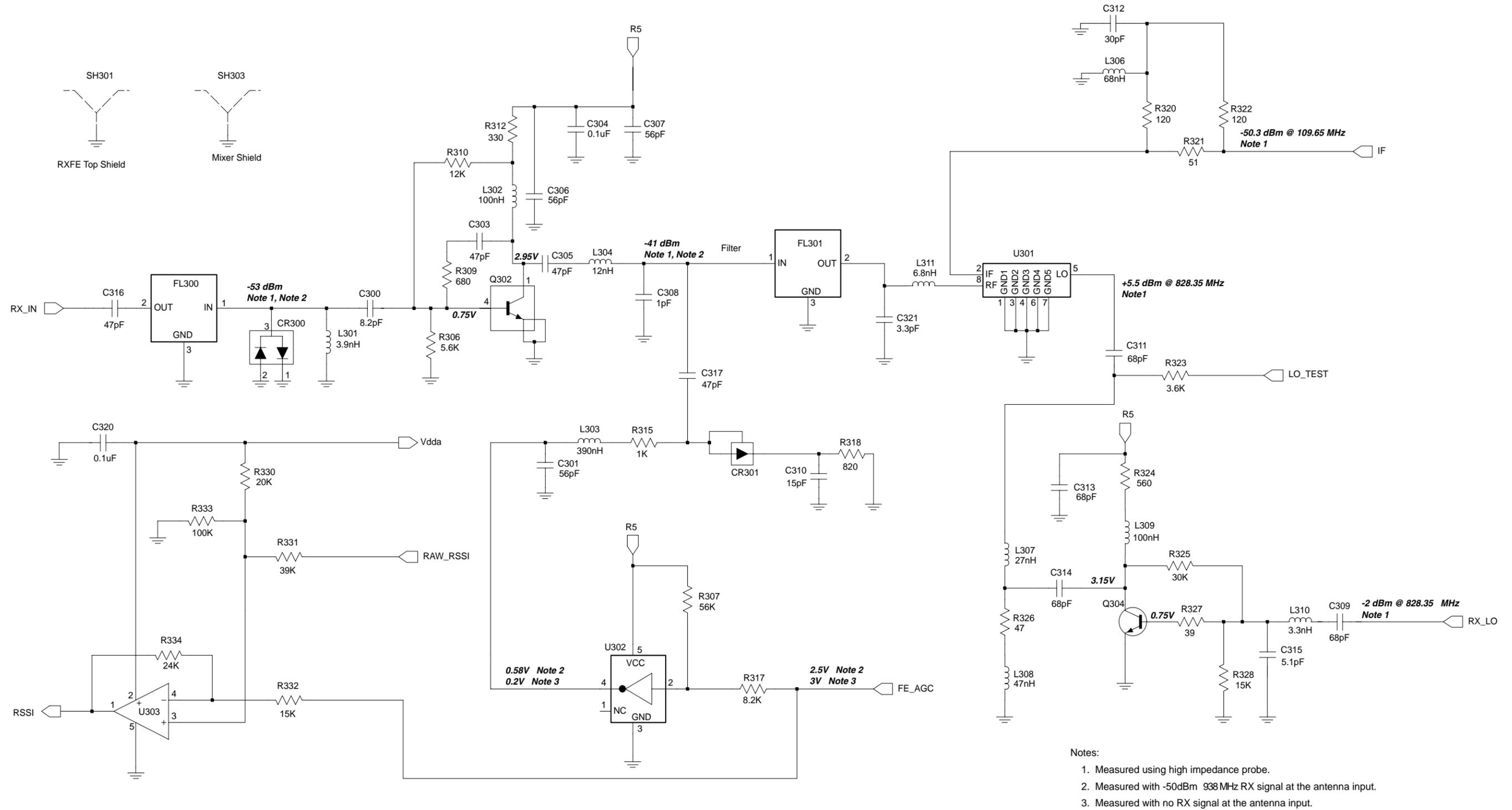


Figure 9-279. 900 MHz Receiver Front End Schematic Diagram

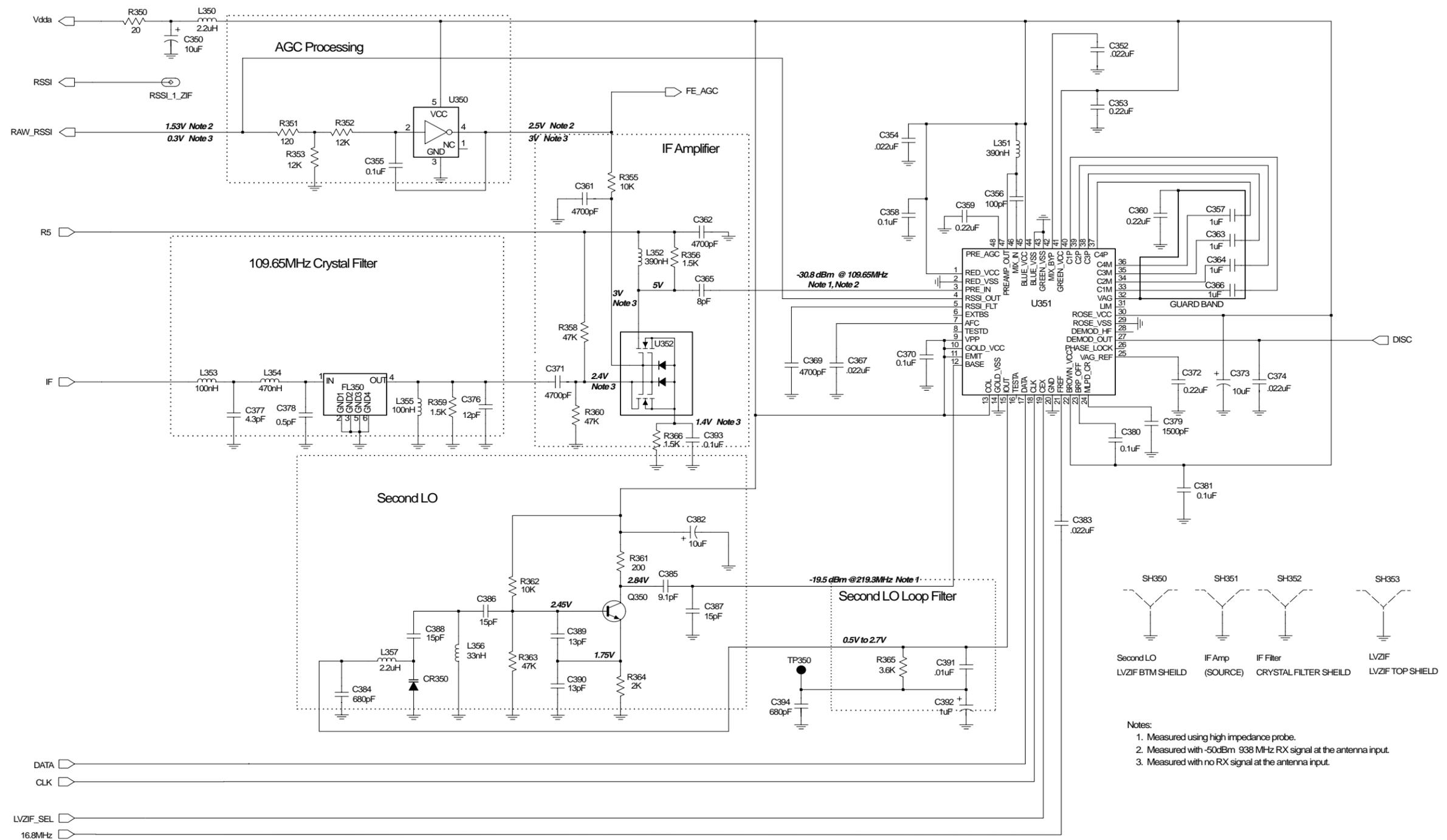
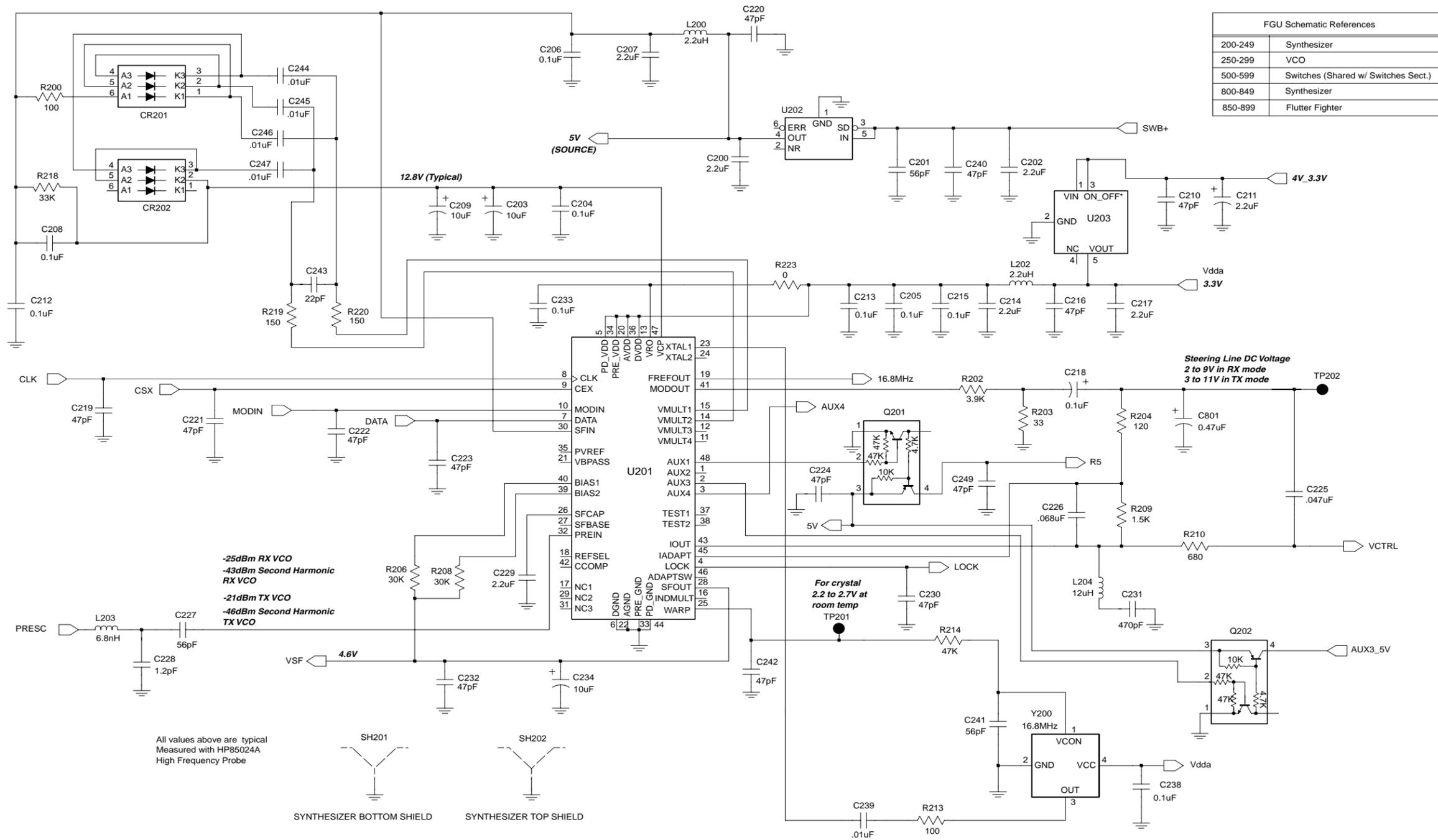


Figure 9-280. 900 MHz Receiver Back End Schematic Diagram

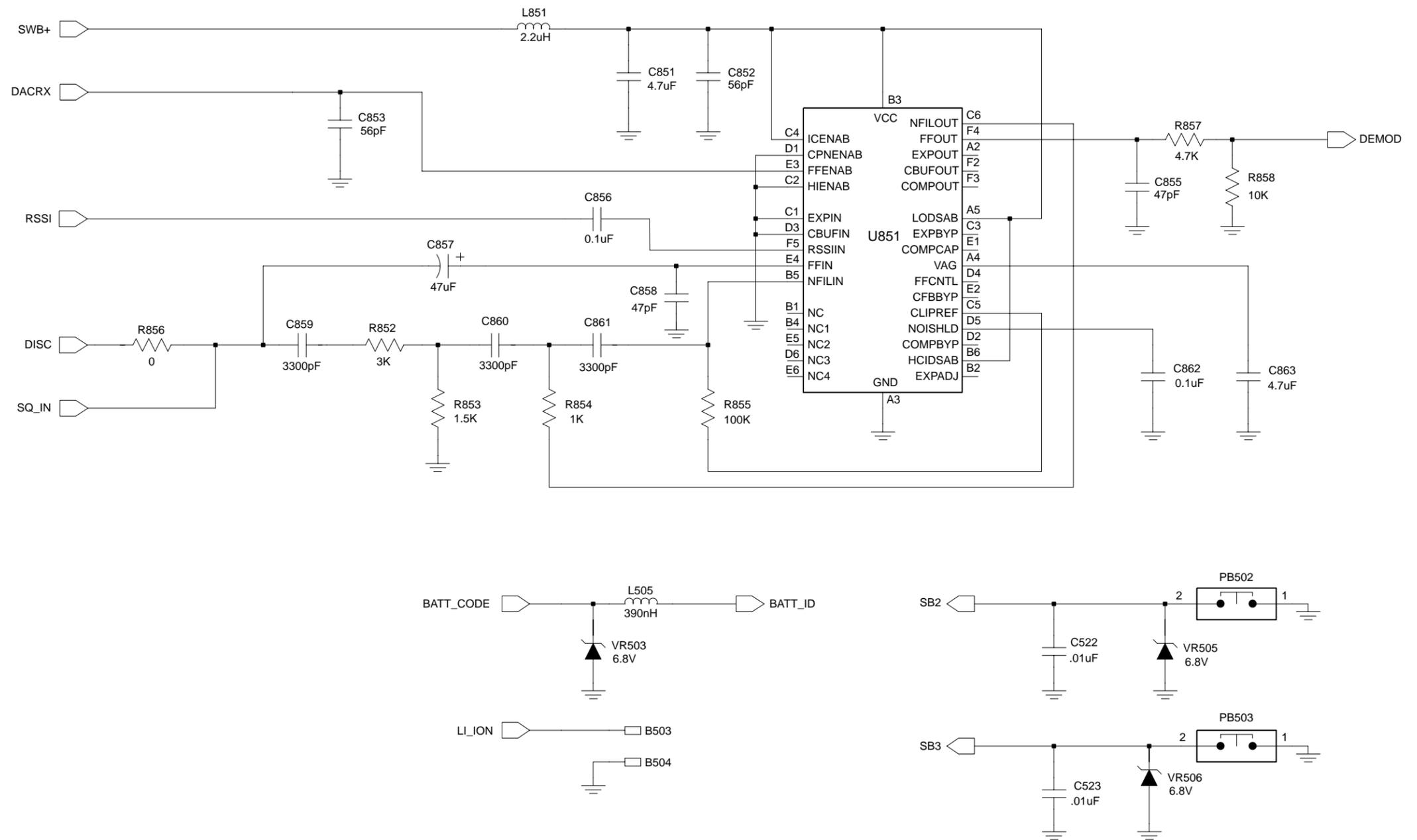
FL08307100



FL08307040

Figure 9-281. 900 MHz Synthesizer Schematic Diagram





FL08307050

Figure 9-282. 900 MHz Hear/Clear Schematic Diagram



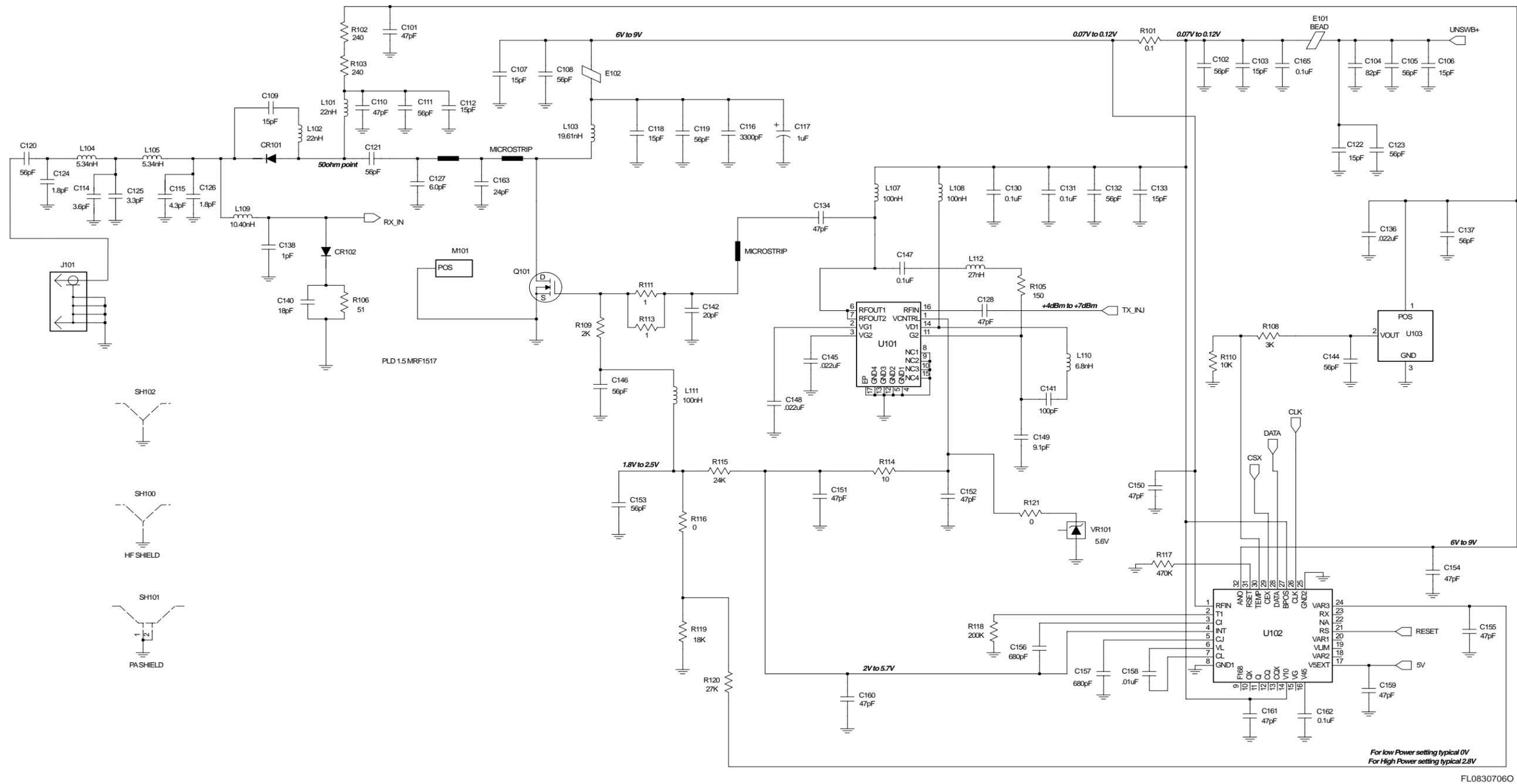


Figure 9-284. 900 MHz Transmitter Schematic Diagram

**900 MHz Radio Parts List for PMUF1059A, and PMUF1060A**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup battery B+
B504	3980501Z01	Backup battery B-
<b>CAPACITOR, FIXED</b>		
C101	2113743N42	Capacitor Chip 47pF
C102	2113743N44	Capacitor Chip 56pF
C103	2113743N30	Capacitor Chip 15pF
C104	2113743N48	Capacitor Chip 82pF
C105	2113743N44	Capacitor Chip 56pF
C106 to C107	2113743N30	Capacitor Chip 15pF
C108	2113743N44	Capacitor Chip 56pF
C109	2113743N30	Capacitor Chip 15pF
C110	2113743N42	Capacitor Chip 47pF
C111	2113743N44	Capacitor Chip 56pF
C112	2113743N30	Capacitor Chip 15pF
C113	2113740F01	Capacitor Chip 0.5pF
C114	2113740F16	Capacitor Chip 3.6pF
C115	2113740F18	Capacitor Chip 4.3pF
C116	2113743L29	Capacitor Chip 3300pF
C117	2311049A08	Capacitor Tantalum 1μF
C118	2113743N30	Capacitor Chip 15pF
C119	2113743N44	Capacitor Chip 56pF
C120 to C121	2113740F45	Capacitor Chip 56pF
C122	2113743N30	Capacitor Chip 15pF
C123	2113743N44	Capacitor Chip 56pF
C124	2113740F09	Capacitor Chip 1.8pF
C125	2113740F15	Capacitor Chip 3.3pF
C126	2113740F09	Capacitor Chip 1.8pF
C127	2103689A19	Capacitor Chip 6.0pF
C128	2113743N42	Capacitor Chip 47pF
C130 to C131	2113743M24	Capacitor Chip 0.1μF
C132	2113743N44	Capacitor Chip 56pF
C133	2113743N30	Capacitor Chip 15pF
C134	2113743N42	Capacitor Chip 47pF
C135	2113743N10	Capacitor Chip 2.2μF
C136	2113743M08	Capacitor Chip 0.022μF
C137	2113743N44	Capacitor Chip 56pF
C138	2113740F03	Capacitor Chip 1pF
C139	2113743M24	Capacitor Chip 0.1μF
C140	2113743N32	Capacitor Chip 18pF
C141	2113743N50	Capacitor Chip 100pF
C142	2103689A45	Capacitor Chip 20pF
C144	2113743N44	Capacitor Chip 56pF
C145	2113743M08	Capacitor Chip 0.022μF
C146	2113743N44	Capacitor Chip 56pF
C147	2113743M24	Capacitor Chip 0.1μF
C148	2113743M08	Capacitor Chip 0.022μF
C149	2113743N25	Capacitor Chip 9.1pF
C150 to C152	2113743N42	Capacitor Chip 47pF
C153	2113743N44	Capacitor Chip 56pF

Circuit Ref	Motorola Part No.	Description
C154 to C155	2113743N42	Capacitor Chip 47pF
C156	2113743L13	Capacitor Chip 680pF
C157	2113743L13	Capacitor Chip 680pF
C158	2113743L41	Capacitor Chip 0.01μF
C159 to C161	2113743N42	Capacitor Chip 47pF
C162	2113743M24	Capacitor Chip 0.1μF
C163	2103689A47	Capacitor Chip 24pF
C164	2113743N26	Capacitor Chip 10pF
C165	2113743M24	Capacitor Chip 0.1μF
C200	2113743F18	Capacitor Chip 2.2μF
C201	2113743N44	Capacitor Chip 56pF
C202	2113743F18	Capacitor Chip 2.2μF
C203	2311049A57	Capacitor Tantalum 10μF
C204 to C206	2113743M24	Capacitor Chip 0.1μF
C207	2113743F18	Capacitor Chip 2.2μF
C208	2113743M24	Capacitor Chip 0.1μF
C209	2311049A57	Capacitor Tantalum 10μF
C210	2113743N42	Capacitor Chip 47pF
C211	2311049A09	Capacitor Tantalum 2.2μF
C212 to C213	2113743M24	Capacitor Chip 0.1μF
C214	2113743F18	Capacitor Chip 2.2μF
C215	2113743M24	Capacitor Chip 0.1μF
C216	2113743N42	Capacitor Chip 47pF
C217	2113743F18	Capacitor Chip 2.2μF
C218	2109720D14	Capacitor Chip 0.1μF
C219 to C224	2113743N42	Capacitor Chip 47pF
C225	2113743E12	Capacitor Chip 0.047μF
C226	2113743E13	Capacitor Chip 0.068μF
C227	2113743N44	Capacitor Chip 56pF
C228	2113743N05	Capacitor Chip 1.2pF
C229	2113743F18	Capacitor Chip 2.2μF
C230	2113743N42	Capacitor Chip 47pF
C231	2113741F17	Capacitor Chip 470pF
C232	2113743N42	Capacitor Chip 47pF
C233	2113743M24	Capacitor Chip 0.1μF
C234	2311049A59	Capacitor Tantalum 10μF
C235	2113743N44	Capacitor Chip 56pF
C236	2113743N08	Capacitor Chip 1.6pF
C237	2113740F63	Capacitor Chip 330pF
C238	2113743M24	Capacitor Chip 0.1μF
C239	2113743L41	Capacitor Chip 0.01μF
C240	2113743N42	Capacitor Chip 47pF
C241	2113743N44	Capacitor Chip 56pF
C242	2113743N42	Capacitor Chip 47pF
C243	2113743N34	Capacitor Chip 22pF
C244 to C247	2113743L41	Capacitor Chip 0.01μF
C249	2113743N42	Capacitor Chip 47pF
C250	2113743M24	Capacitor Chip 0.1μF
C251	2113743N44	Capacitor Chip 56pF
C252	2113743M24	Capacitor Chip 0.1μF

Circuit Ref	Motorola Part No.	Description
C253	2113743N46	Capacitor Chip 68pF
C254	2113743N44	Capacitor Chip 56pF
C255	2113743N01	Capacitor Chip 0.5pF
C256	2113743N22	Capacitor Chip 6.8pF
C257	2113743N44	Capacitor Chip 56pF
C258	2113743M24	Capacitor Chip 0.1μF
C259	2113743F18	Capacitor Chip 2.2μF
C260	2113743N44	Capacitor Chip 56pF
C261	2113743N46	Capacitor Chip 68pF
C262	2113743M24	Capacitor Chip 0.1μF
C263	2113743N44	Capacitor Chip 56pF
C264	2113743M24	Capacitor Chip 0.1μF
C265 to C267	2113743N09	Capacitor Chip 2pF
C268	2113743N03	Capacitor Chip 1pF
C269	2113743M12	Capacitor Chip 0.033μF
C270	2113743M24	Capacitor Chip 0.1μF
C271	2113743N20	Capacitor Chip 5.6pF
C272	2113743N01	Capacitor Chip 0.5pF
C273	2113743N13	Capacitor Chip 3pF
C274	2113743N44	Capacitor Chip 56pF
C275	2113743N02	Capacitor Chip 0.75pF
C276	2113743N17	Capacitor Chip 4.3pF
C277	2113743N15	Capacitor Chip 3.6pF
C278	2113743N13	Capacitor Chip 3pF
C279	2113743N12	Capacitor Chip 2.7pF
C280	2113743M24	Capacitor Chip 0.1μF
C281	2113743N44	Capacitor Chip 56pF
C282	2113743N46	Capacitor Chip 68pF
C283	2113743N03	Capacitor Chip 1pF
C284	2113743N42	Capacitor Chip 47pF
C285	2113743M24	Capacitor Chip 0.1μF
C286	2113743N44	Capacitor Chip 56pF
C287	2113743N50	Capacitor Chip 100pF
C289	2113743M12	Capacitor Chip 0.033μF
C290	2113743N42	Capacitor Chip 47pF
C291 to C292	2113743N44	Capacitor Chip 56pF
C293	2113743M24	Capacitor Chip 0.1μF
C294	2113743N44	Capacitor Chip 56pF
C295	2113743N46	Capacitor Chip 68pF
C300	2113743N24	Capacitor Chip 8.2pF
C301	2113743N44	Capacitor Chip 56pF
C302	2113743M24	Capacitor Chip 0.1μF
C303	2113743N42	Capacitor Chip 47pF
C304	2113743M24	Capacitor Chip 0.1μF
C305	2113743N42	Capacitor Chip 47pF
C306 to C307	2113743N44	Capacitor Chip 56pF
C308	2113743N03	Capacitor Chip 1pF
C309	2113743N46	Capacitor Chip 68pF
C310	2113743N30	Capacitor Chip 15pF
C311	2113743N46	Capacitor Chip 68pF
C312	2113743N37	Capacitor Chip 30pF
C313 to C314	2113743N46	Capacitor Chip 68pF

Circuit Ref	Motorola Part No.	Description
C315	2113743N19	Capacitor Chip 5.1pF
C316 to C317	2113743N42	Capacitor Chip 47pF
C318	2113743N44	Capacitor Chip 56pF
C319	2113743N46	Capacitor Chip 68pF
C320	2113743M24	Capacitor Chip 0.1μF
C321	2113743N14	Capacitor Chip 3.3pF
C350	2311049A59	Capacitor Tantalum 10μF
C352	2113743M08	Capacitor Chip 0.022μF
C353	2113743A23	Capacitor Chip 0.22μF
C354	2113743M08	Capacitor Chip 0.022μF
C355	2113743E20	Capacitor Chip 0.1μF
C356	2113743N50	Capacitor Chip 100pF
C357	2113743F16	Capacitor Chip 1μF
C358	2113743M24	Capacitor Chip 0.1μF
C359 to C360	2113743A23	Capacitor Chip 0.22μF
C361 to C362	2113743R33	Capacitor Chip 4700pF
C363 to C364	2113743F16	Capacitor Chip 1μF
C365	2113743N65	Capacitor Chip 8pF
C366	2113743F16	Capacitor Chip 1μF
C367	2113743M08	Capacitor Chip 0.022μF
C369	2113743R33	Capacitor Chip 4700pF
C370	2113743M24	Capacitor Chip 0.1μF
C371	2113743R33	Capacitor Chip 4700pF
C372	2113743A23	Capacitor Chip 0.22μF
C373	2311049A59	Capacitor Tantalum 10μF
C374	2113743E07	Capacitor Chip 0.022μF
C376	2113743N28	Capacitor Chip 12pF
C377	2113743N17	Capacitor Chip 4.3pF
C378	2113743N01	Capacitor Chip 0.5pF
C379	2113740A82	Capacitor Chip 1500pF
C380	2109720D14	Capacitor Chip 0.1μF
C381	2113743E20	Capacitor Chip 0.1μF
C382	2311049A59	Capacitor Tantalum 10μF
C383	2113743M08	Capacitor Chip 0.022μF
C384	2113743L13	Capacitor Chip 680pF
C385	2113743N25	Capacitor Chip 9.1pF
C386 to C388	2113743N30	Capacitor Chip 15pF
C389 to C390	2113743N29	Capacitor Chip 13pF
C391	2113741F49	Capacitor Chip 0.01μF
C392	2311049A07	Capacitor Tantalum 1μF
C393	2113743E20	Capacitor Chip 0.1μF
C394	2113743L13	Capacitor Chip 680pF
C400	2113743L41	Capacitor Chip 0.01μF
C401 to C402	2113743M24	Capacitor Chip 0.1μF
C403	2113928D08	Capacitor Chip 10μF
C404 to C405	2113743N50	Capacitor Chip 100pF
C406 to C407	2113928N01	Capacitor Chip 0.1μF

Circuit Ref	Motorola Part No.	Description
C408	2113743N50	Capacitor Chip 100pF
C409	2113743M24	Capacitor Chip 0.1µF
C410	2113928N01	Capacitor Chip 0.1µF
C411	2113743M24	Capacitor Chip 0.1µF
C412	2311049A59	Capacitor Tantalum 10µF
C414	2113743M24	Capacitor Chip 0.1µF
C415	2109720D01	Capacitor Chip 0.01µF
C416	2113928N01	Capacitor Chip 0.1µF
C419	2113928N01	Capacitor Chip 0.1µF
C420	2113743L41	Capacitor Chip 0.01µF
C421	2113928N01	Capacitor Chip 0.1µF
C422	2113743M24	Capacitor Chip 0.1µF
C423	2113743N50	Capacitor Chip 100pF
C424	2311049A59	Capacitor Tantalum 10µF
C425	2113743M24	Capacitor Chip 0.1µF
C426 to C427	2113743N50	Capacitor Chip 100pF
C428	2113743M24	Capacitor Chip 0.1µF
C429	2113743M24	Capacitor Chip 0.1µF
C430	2113928N01	Capacitor Chip 0.1µF
C431	2113743N50	Capacitor Chip 100pF
C432	2113743N01	Capacitor Chip 0.5pF
C433	2113743L41	Capacitor Chip 0.01µF
C434 to C435	2113743M24	Capacitor Chip 0.1µF
C436 to C437	2113743N34	Capacitor Chip 22pF
C438	2113743F18	Capacitor Chip 2.2µF
C439	2113743L17	Capacitor Chip 1000pF
C440	2113743F18	Capacitor Chip 2.2µF
C441	2113743N50	Capacitor Chip 100pF
C442	2113743E20	Capacitor Chip 0.1µF
C443	2113928N01	Capacitor Chip 0.1µF
C444 to C445	2113743N50	Capacitor Chip 100pF
C447	2113743M08	Capacitor Chip 0.022µF
C448	2113928N01	Capacitor Chip 0.1µF
C449	2113743N50	Capacitor Chip 100pF
C450	2113743M24	Capacitor Chip 0.1µF
C451	2113743M08	Capacitor Chip 0.022µF
C452	2113743B29	Capacitor Chip 1µF
C453	2113743N50	Capacitor Chip 100pF
C456	2113743N50	Capacitor Chip 100pF
C458 to C459	2113743N50	Capacitor Chip 100pF
C463	2113743N50	Capacitor Chip 100pF
C466	2113743N50	Capacitor Chip 100pF
C467	2113928N01	Capacitor Chip 0.1µF
C471 to C473	2113743N50	Capacitor Chip 100pF
C475	2113743H14	Capacitor Chip 10µF
C476	2113928D08	Capacitor Chip 10µF
C479	2113928N01	Capacitor Chip 0.1µF
C480	2113743G26	Capacitor Chip 4.7µF
C481 to C482	2113928N01	Capacitor Chip 0.1µF

Circuit Ref	Motorola Part No.	Description
C490 to C497	2113743N50	Capacitor Chip 100pF
C502	2311049A05	Capacitor Tantalum 0.47µF
C503	2113743N44	Capacitor Chip 56pF
C505	2113743N42	Capacitor Chip 47pF
C511 to C514	2113743N42	Capacitor Chip 47pF
C520	2113743L41	Capacitor Chip 0.01µF
C521 to C523	2113743L41	Capacitor Chip 0.01µF
C524	2113743N30	Capacitor Chip 15pF
C525 to C529	2113743N46	Capacitor Chip 68pF
C530	2311049A18	Capacitor Tantalum 10µF
C531	2113743N46	Capacitor Chip 68pF
C801	2111049A05	Capacitor Tantalum 0.47µF
C802 to C805	2109720D14	Capacitor Chip 0.1µF
C851	2113743G26	Capacitor Chip 4.7µF
C852 to C853	2113743N44	Capacitor Chip 56pF
C854	2113743F16	Capacitor Chip 1µF
C855	2113743N42	Capacitor Chip 47pF
C856	2113743E20	Capacitor Chip 0.1µF
C857	2113743F16	Capacitor Chip 1µF
C858	2113743N42	Capacitor Chip 47pF
C859 to C861	2113743L29	Capacitor Chip 3300pF
C862	2113743E20	Capacitor Chip 0.1µF
C863	2113743G26	Capacitor Chip 4.7µF
<b>DIODE (SEE NOTE)</b>		
CR101 to CR102	4880973Z02	Diode Pin MA4PH261
CR201 to CR202	4802233J09	Diode Array IMN10
CR203	4802233J22	Diode Array 1T363
CR251 to CR253	4862824C01	Diode Varactor 1SV229
CR300	4880154K03	Diode Schottky MMBD353LT1
CR301	4802245J41	Diode Switching HSMP3820
CR350	4862824C01	Diode VARACTOR 1SV229
CR411 to CR413	4802245J62	Diode Array RB731U
CR412 to CR413	4802245J62	Diode Array RB731U
CR440	4813833C02	Diode Dual Common Cathode MMBD6100LT1
CR501	4880107R01	Diode Rectifier BYD17D
CR503	4805729G49	Opto-Device LED BRPY1204W
<b>FERRITE BEADS</b>		
E101	2484657R01	2743019447
E102	2405688Z01	2744044446
E400 to E409	2480640Z01	BK1005HM471
<b>FUSE</b>		
F501	6580542Z01	Protector 1608FF

Circuit Ref	Motorola Part No.	Description
<b>OSCILLATOR</b>		
FL251	PT48PNGA33	Resonator
FL252	4802245J57	Resonator DRR030KE1R225TC
<b>FILTER</b>		
FL300 to FL301	4802245J78	FILTER A0-L177-01
FL350	4885631B01	FILTER 31B01
FL401	4870368G02	Crystal
<b>CONNECTOR</b>		
J101	2880658Z02	CONNECTOR
J400	0905505Y04	Connector Multi_pin FH12-40S-0.5SH
J403	0905505Y02	CONNECTOR MULTI_PIN CL586-0524-9
<b>COIL, INDUCTOR</b>		
L101	2462587V26	Inductor 22nH
L102	2462587V26	Inductor 22nH
L103	2460591B80	Inductor Airwound 19.61nH
L104	2460591A13	Inductor Airwound 5.34nH
L105	2460591A13	Inductor Airwound 5.34nH
L106	2413926G12	Inductor 27nH
L107 to L108	2413926G19	Inductor 100nH
L109	2460591A77	Inductor Airwound 10.40nH
L110	2413926G05	Inductor 6.8nH
L111	2413926G19	Inductor 100nH
L112	2413926G12	Inductor 27nH
L200	2462587Q20	Inductor 2.2µH
L202	2462587Q20	Inductor 2.2µH
L203	2462587V21	Inductor 6.8nH
L204	2462587P25	Inductor 12µH
L250	2413926G03	Inductor 4.7nH
L252	2413926G19	Inductor 100nH
L253	2462587V41	Inductor 390nH
L254	2413926G13	Inductor 33nH
L256 to L260	2413926G19	Inductor 100nH
L261	2413926G09	Inductor 15nH
L262	2413926G19	Inductor 100nH
L263	2413926G11	Inductor 22nH
L264	2413926G06	Inductor 8.2nH
L265	2413926G15	Inductor 47nH
L301	2413926G02	Inductor 3.9nH
L302	2413926G19	Inductor 100nH
L303	2462587V41	Inductor 390nH
L304	2413926G08	Inductor 12nH
L306	2462587V32	Inductor 68nH
L307	2413926G12	Inductor 27nH
L308	2462587V30	Inductor 47nH
L309	2413926G19	Inductor 100nH
L310	2413926G01	Inductor 3.3nH
L311	2413926G05	Inductor 6.8nH
L350	2462587Q20	Inductor 2.2µH
L351 to L352	2462587T22	Inductor 390nH
L353	2462587V34	Inductor 100nH

Circuit Ref	Motorola Part No.	Description
L354	2462587T23	Inductor 470nH
L355	2413923B04	Inductor 100nH
L356	2462587T44	Inductor 33nH
L357	2462587Q20	Inductor 2.2µH
L400 to L401	2462587Q42	Inductor 390nH
L410 to L411	2462587Q42	Inductor 390nH
L505	2462587Q42	Inductor 390nH
L851	2462587Q20	Inductor 2.2µH
M101	2680499Z01	Mechanical
<b>PUSH BUTTON SWITCH</b>		
PB501 to PB505	4080523Z01	Mechanical Switch KSS223G
<b>TRANSISTOR (SEE NOTE)</b>		
Q101	4813828A09	Transistor FET MRF1517T1
Q201 to Q202	4802245J50	Transistor Bipolar UMC5N
Q251	4805218N63	Transistor Bipolar BFQ67W
Q252	4802245J50	Transistor Bipolar UMC5N
Q302	4802245J56	Transistor Bipolar QSBT0048
Q304	4802245J44	Transistor Bipolar HP415
Q350	4805218N63	Transistor Bipolar BFQ67W
Q400	4809579E18	Transistor FET TP0101T
Q403	4880214G02	Transistor Bipolar MMBT3904L
Q405	4802245J54	Transistor Bipolar UMG5N
Q410 to Q411	4802245J54	Transistor Bipolar UMG5N
Q416	4809579E18	Transistor FET TP0101T
Q417	4802245J50	Transistor Bipolar UMC5N
Q502	5180159R01	Transistor Bipolar IMX1
Q505	4880214G02	Transistor Bipolar MMBT3904L
<b>RESISTOR, FIXED</b>		
R101	0680539Z01	Resistor Chip 0.1
R102 to R103	0662057A34	Resistor Chip 240
R104	0662057M50	Resistor Chip 100
R105	0662057M54	Resistor Chip 150
R106	0662057A18	Resistor Chip 51
R108	0662057M85	Resistor Chip 3K
R109	0662057M81	Resistor Chip 2K
R110	0662057M98	Resistor Chip 10K
R111	0662057M02	Resistor Chip 1
R113	0662057M02	Resistor Chip 1
R114	0662057M26	Resistor Chip 10
R115	0662057N08	Resistor Chip 24K
R116	0662057M01	Resistor Chip 0
R117	0662057N39	Resistor Chip 470K
R118	0662057N30	Resistor Chip 200K
R119	0662057N05	Resistor Chip 18K
R120	0662057N09	Resistor Chip 27K
R121	0662057M01	Resistor Chip 0
R200	0662057M50	Resistor Chip 100
R202	0662057M88	Resistor Chip 3.9K
R203	0662057M38	Resistor Chip 33
R204	0662057M52	Resistor Chip 120

Circuit Ref	Motorola Part No.	Description
R206	0662057N10	Resistor Chip 30K
R208	0662057N10	Resistor Chip 30K
R209	0662057M78	Resistor Chip 1.5K
R210	0662057M70	Resistor Chip 680
R211	0662057N15	Resistor Chip 47K
R212	0662057N47	Resistor Chip 1MEG
R213	0662057M50	Resistor Chip 100
R214	0662057N15	Resistor Chip 47K
R218	0662057N11	Resistor Chip 33K
R219 to R220	0662057M54	Resistor Chip 150
R222	0662057M01	Resistor Chip 0
R223	0662057M01	Resistor Chip 0
R250	0662057M60	Resistor Chip 270
R251	0662057M50	Resistor Chip 100
R253	0662057M26	Resistor Chip 10
R254	0662057N15	Resistor Chip 47K
R255	0662057M62	Resistor Chip 330
R257	0662057M74	Resistor Chip 1K
R261 to R262	0662057M38	Resistor Chip 33
R263 to R264	0662057M60	Resistor Chip 270
R265	0662057N05	Resistor Chip 18K
R266	0662057N09	Resistor Chip 27K
R267	0662057N01	Resistor Chip 12K
R268	0662057N07	Resistor Chip 22K
R270 to R273	0662057M38	Resistor Chip 33
R274	0662057M52	Resistor Chip 120
R275	0662057M26	Resistor Chip 10
R280	0662057M41	Resistor Chip 43
R281	0662057M01	Resistor Chip 0
R282	0662057M41	Resistor Chip 43
R306	0662057M92	Resistor Chip 5.6K
R307	0662057N17	Resistor Chip 56K
R309	0662057M70	Resistor Chip 680
R310	0662057N01	Resistor Chip 12K
R312	0662057M62	Resistor Chip 330
R314	0662057N29	Resistor Chip 180K
R315	0662057M74	Resistor Chip 1K
R317	0662057M96	Resistor Chip 8.2K
R318	0662057M72	Resistor Chip 820
R320	0662057M52	Resistor Chip 120
R321	0662057M43	Resistor Chip 51
R322	0662057M52	Resistor Chip 120
R323	0662057M87	Resistor Chip 3.6K
R324	0662057M68	Resistor Chip 560
R325	0662057N10	Resistor Chip 30K
R326	0662057M42	Resistor Chip 47
R327	0662057M40	Resistor Chip 39
R328	0662057N03	Resistor Chip 15K
R329	0662057N47	Resistor Chip 1MEG
R330	0662057N06	Resistor Chip 20K
R331	0662057N13	Resistor Chip 39K
R332	0662057N03	Resistor Chip 15K

Circuit Ref	Motorola Part No.	Description
R333	0662057N23	Resistor Chip 100K
R334	0662057N08	Resistor Chip 24K
R335 to R336	0662057N47	Resistor Chip 1MEG
R350	0662057M33	Resistor Chip 20
R351	0662057M52	Resistor Chip 120
R352 to R353	0662057N01	Resistor Chip 12K
R354	0662057N22	Resistor Chip 91K
R355	0662057M98	Resistor Chip 10K
R356	0662057M78	Resistor Chip 1.5K
R358	0662057N15	Resistor Chip 47K
R359	0662057M78	Resistor Chip 1.5K
R360	0662057N15	Resistor Chip 47K
R361	0662057M57	Resistor Chip 200
R362	0662057M98	Resistor Chip 10K
R363	0662057N15	Resistor Chip 47K
R364	0662057M81	Resistor Chip 2K
R365	0662057M87	Resistor Chip 3.6K
R366	0662057M78	Resistor Chip 1.5K
R400	0662057N15	Resistor Chip 47K
R401	0662057M01	Resistor Chip 0
R402	0662057N47	Resistor Chip 1MEG
R403	0662057M01	Resistor Chip 0
R405	0662057N47	Resistor Chip 1MEG
R406	0662057N20	Resistor Chip 75K
R407	0662057N19	Resistor Chip 68K
R408	0662057N47	Resistor Chip 1MEG
R409	0662057M98	Resistor Chip 10K
R410	0662057N23	Resistor Chip 100K
R411	0662057M98	Resistor Chip 10K
R413	0662057M01	Resistor Chip 0
R414	0662057V34	Resistor Chip 180K
R415	0662057V26	Resistor Chip 91K
R416	0662057M90	Resistor Chip 4.7K
R418	0662057N47	Resistor Chip 1MEG
R419	0662057M67	Resistor Chip 510
R420	0662057B46	Resistor Chip 10MEG
R421	0662057M81	Resistor Chip 2K
R423	0662057N39	Resistor Chip 470K
R424	0662057N12	Resistor Chip 36K
R425	0662057N10	Resistor Chip 30K
R426	0662057N35	Resistor Chip 330K
R427	0662057M84	Resistor Chip 2.7K
R428	0662057M10	Resistor Chip 2.2
R429	0662057M98	Resistor Chip 10K
R431	0662057N39	Resistor Chip 470K
R432	0662057N16	Resistor Chip 51K
R434	0662057M62	Resistor Chip 330
R435	0662057M81	Resistor Chip 2K
R436	0662057M74	Resistor Chip 1K
R437	0662057M01	Resistor Chip 0
R438 to R439	0662057M54	Resistor Chip 150
R445	0662057N08	Resistor Chip 24K
R446	0662057N22	Resistor Chip 91K

Circuit Ref	Motorola Part No.	Description
R447	0662057N38	Resistor Chip 430K
R448	0662057N06	Resistor Chip 20K
R449	0662057N08	Resistor Chip 24K
R450	0683962T45	Resistor Chip 68
R457	0662057M98	Resistor Chip 10K
R460	0662057M90	Resistor Chip 4.7K
R461	0662057M56	Resistor Chip 180
R462	0662057M98	Resistor Chip 10K
R463	0662057M61	Resistor Chip 300
R471	0662057M92	Resistor Chip 5.6K
R472	0662057N12	Resistor Chip 36K
R473	0662057M26	Resistor Chip 10
R475	0662057M01	Resistor Chip 0
R476	0662057N08	Resistor Chip 24K
R477	0662057M74	Resistor Chip 1K
R478	0662057M98	Resistor Chip 10K
R481	0662057N08	Resistor Chip 24K
R492	0662057M01	Resistor Chip 0
R499	0662057M98	Resistor Chip 10K
R501	0662057M70	Resistor Chip 680
R502	0662057M56	Resistor Chip 180
R505	0662057M98	Resistor Chip 10K
R506	0662057N15	Resistor Chip 47K
R507	0662057M01	Resistor Chip 0
R851	0662057M01	Resistor Chip 0
R852	0662057M85	Resistor Chip 3K
R853	0662057M78	Resistor Chip 1.5K
R854	0662057M74	Resistor Chip 1K
R855	0662057N23	Resistor Chip 100K
R856	0662057M01	Resistor Chip 0
R857	0662057M90	Resistor Chip 4.7K
R858	0662057M98	Resistor Chip 10K
<b>THERMISTOR</b>		
RT400	0680590Z01	Resistor Thermal 33.0K
<b>SWITCH</b>		
S501	4080710Z01	Mechanical Rotary Switch
S502	1880619Z01	Switch
<b>SHIELD:</b>		
SH100	2680507Z01	Mechanical Shield 07Z01
SH101	2686081B04	Mechanical Shield 81B04
SH102	2680554Z01	Mechanical Shield 54Z01
SH201 to SH202	2680511Z01	Mechanical Shield 11Z01
SH250	2680514Z01	Mechanical Shield 14Z01
SH251 to SH252	2680508Z01	Mechanical Shield 08Z01
SH301	2680554Z01	Mechanical Shield 54Z01
SH303	2680508Z01	Mechanical Shield 08Z01
SH350	2680508Z01	Mechanical Shield 08Z01
SH351	2605547X01	Mechanical Shield 47X01
SH352	2680553Z01	Mechanical Shield 53Z01
SH353	2680514Z01	Mechanical Shield 14Z01
SH400	2680505Z01	Mechanical Shield 05Z01
SH401	2680506Z01	Mechanical Shield 06Z01
SH402	2680515Z01	Mechanical Shield 15Z01
SH403	2680516Z01	Mechanical Shield 16Z01

Circuit Ref	Motorola Part No.	Description
<b>INTEGRATED CIRCUIT (SEE NOTE)</b>		
U101	5185130C65	Analog IC
U102	5185765B01	Custom IC H99S-4
U103	5185963A15	Analog IC LM50CIM3X
U201	5185963A27	Custom IC ASIC 63A27
U202	5105739X05	Analog IC ADP3300
U203	5102463J58	Analog IC Voltage RegulatorLP2980AIM5
U250	5105750U54	Custom IC Buffer/Driver 50U54
U301	5185963A43	Analog IC MA4EX900L-1226
U302	5185623B01	Digital IC Gate TC7SU04FTE85L
U303	5185963A60	Analog IC OP Amp LMC7101BIM5X
U350	5185623B01	Digital IC Gate TC7SU04FTE85L
U351	5109632D83	Custom IC 32D83
U352	4885622B01	Transistor BF904
U400	5102463J40	Analog IC Voltage Regulator LP2951ACMM-3.3
U404	5105109Z41	Custom IC 09Z41
U405	5102463J36	Digital IC Memory
U406	5102463J42	Digital IC Memory AT49BV020
U407	5102463J47	Digital IC Memory X25320_2.7V
U409	5102226J56	Digital IC MICROPROCESSOR MC68HC11FL0PU1
U410	5102463J57	ILC7062CM-33
U420	5102463J44	Analog IC AMP TDA8547TS
U851	5105835U50	Custom IC 35U50
<b>ZENER DIODE (SEE NOTE)</b>		
VR101	4813830A15	Diode Zener MMBZ5232B
VR432 to VR433	4805656W08	Diode MMQA5V6T1
VR434	4802245J73	Diode Zener UDZSTE17
VR445 to VR449	4802245J74	Diode Zener UDZSTE17
VR450	4802245J75	Diode Zener UDZSTE17
VR501	4813830A18	Diode Zener MMBZ5235BLT1
VR502	4880140L17	Diode Zener MMBZ5242B
VR503 to VR508	4802245J73	Diode Zener UDZSTE17
<b>CRYSTAL (SEE NOTE)</b>		
Y200	4802245J68	Oscillator Crystal TTS12V
Y201	4805875Z04	Oscillator Crystal 75Z04

*Note: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.*

*\* Motorola Depot Servicing only*

### 9.31 900 MHz Circuit Board/Schematic Diagrams and Parts List (PCB 8471203M01)

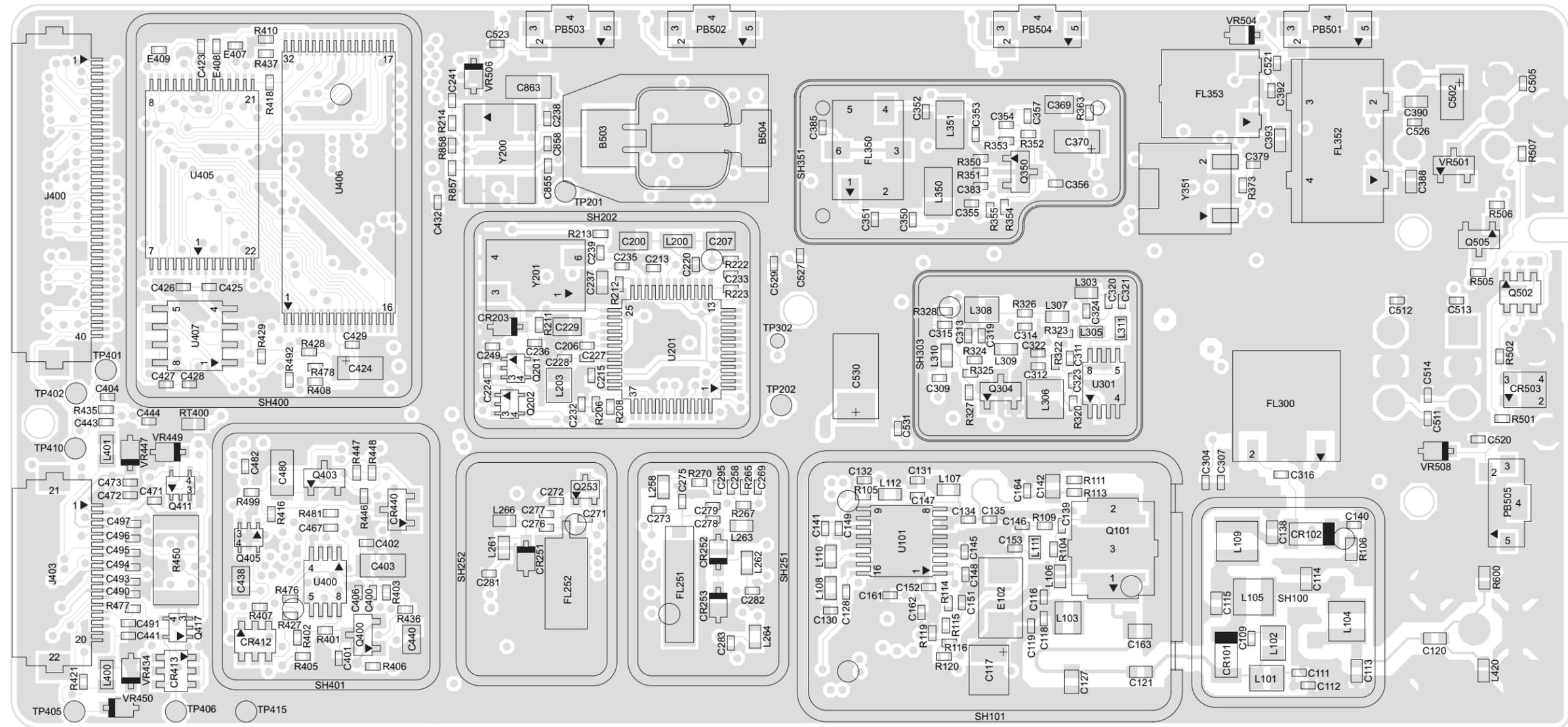


Figure 9-270. 900 MHz Main Board Top Side PCB 8471203M01

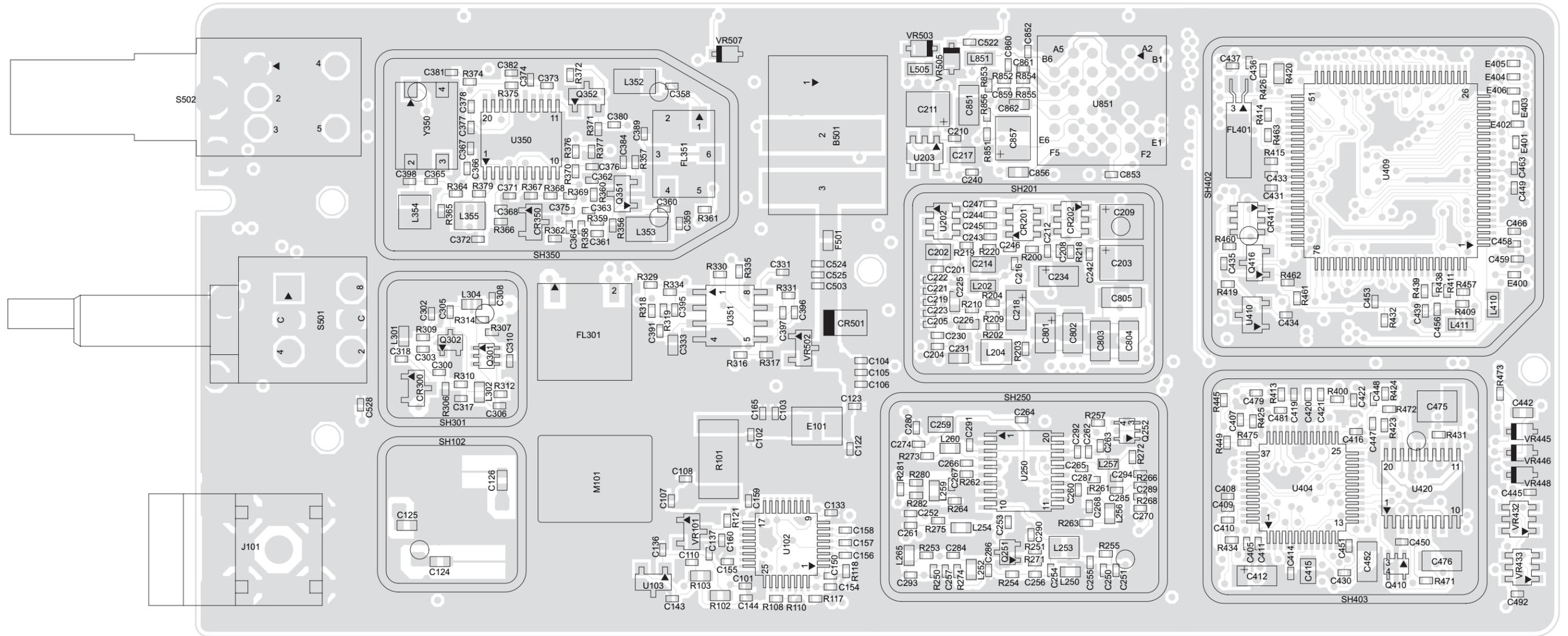
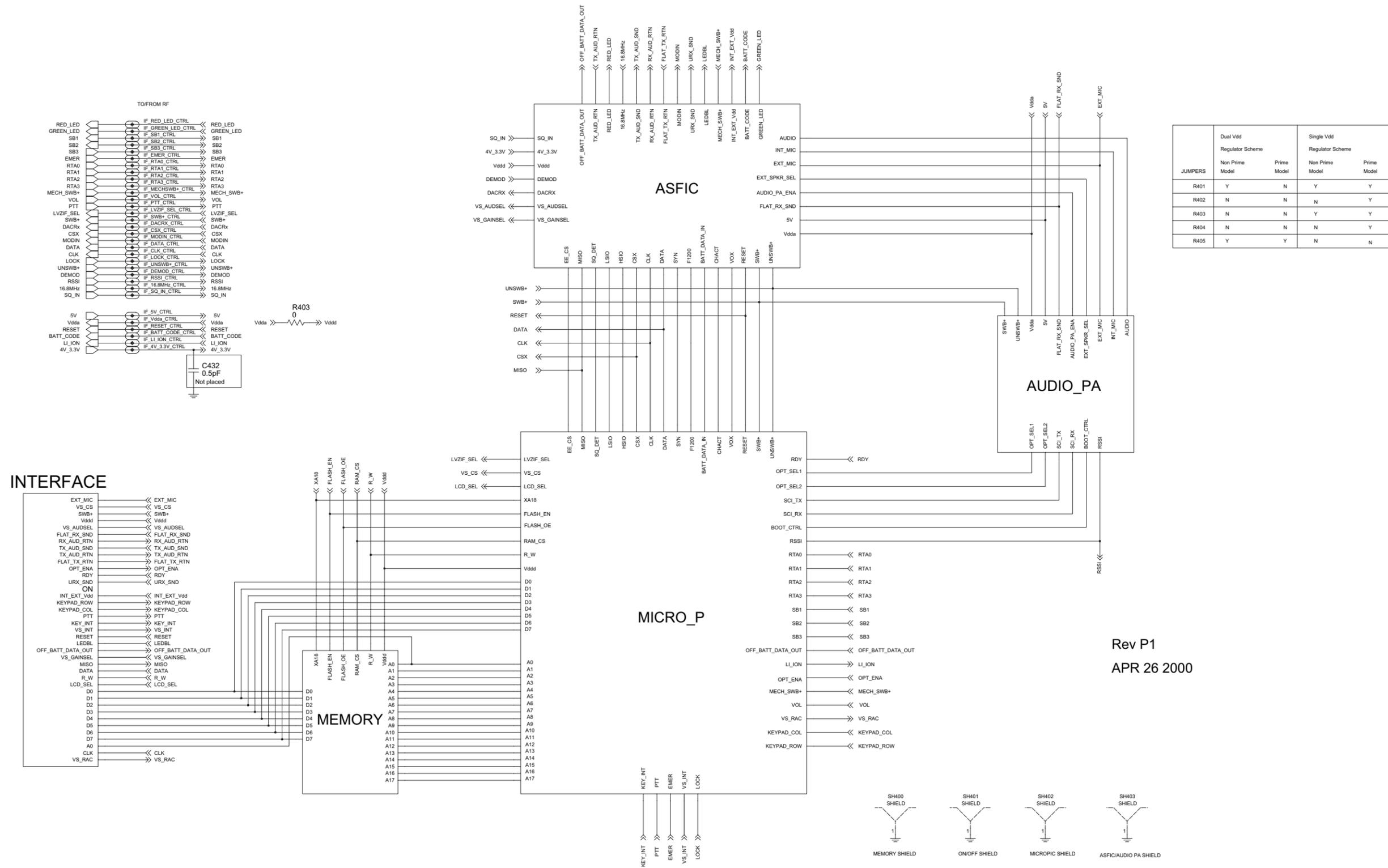


Figure 9-271. 900 MHz Main Board Bottom Side PCB 8471203M01





JUMPERS	Dual Vdd Regulator Scheme		Single Vdd Regulator Scheme	
	Non Prime Model	Prime Model	Non Prime Model	Prime Model
R401	Y	N	Y	Y
R402	N	N	N	Y
R403	N	N	Y	Y
R404	N	N	N	Y
R405	Y	Y	N	N

Rev P1  
APR 26 2000

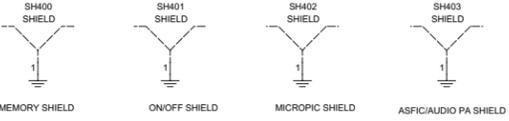
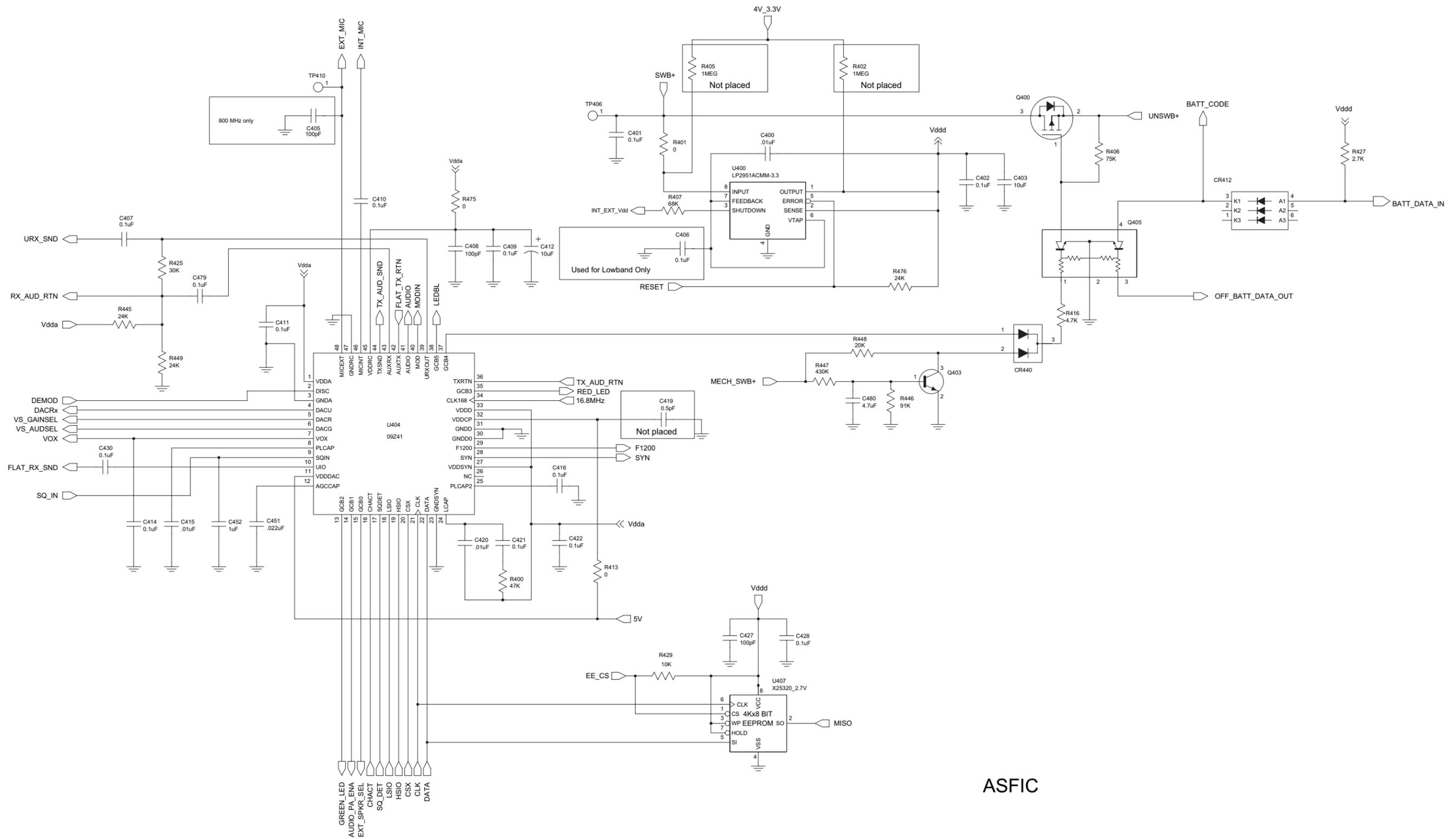
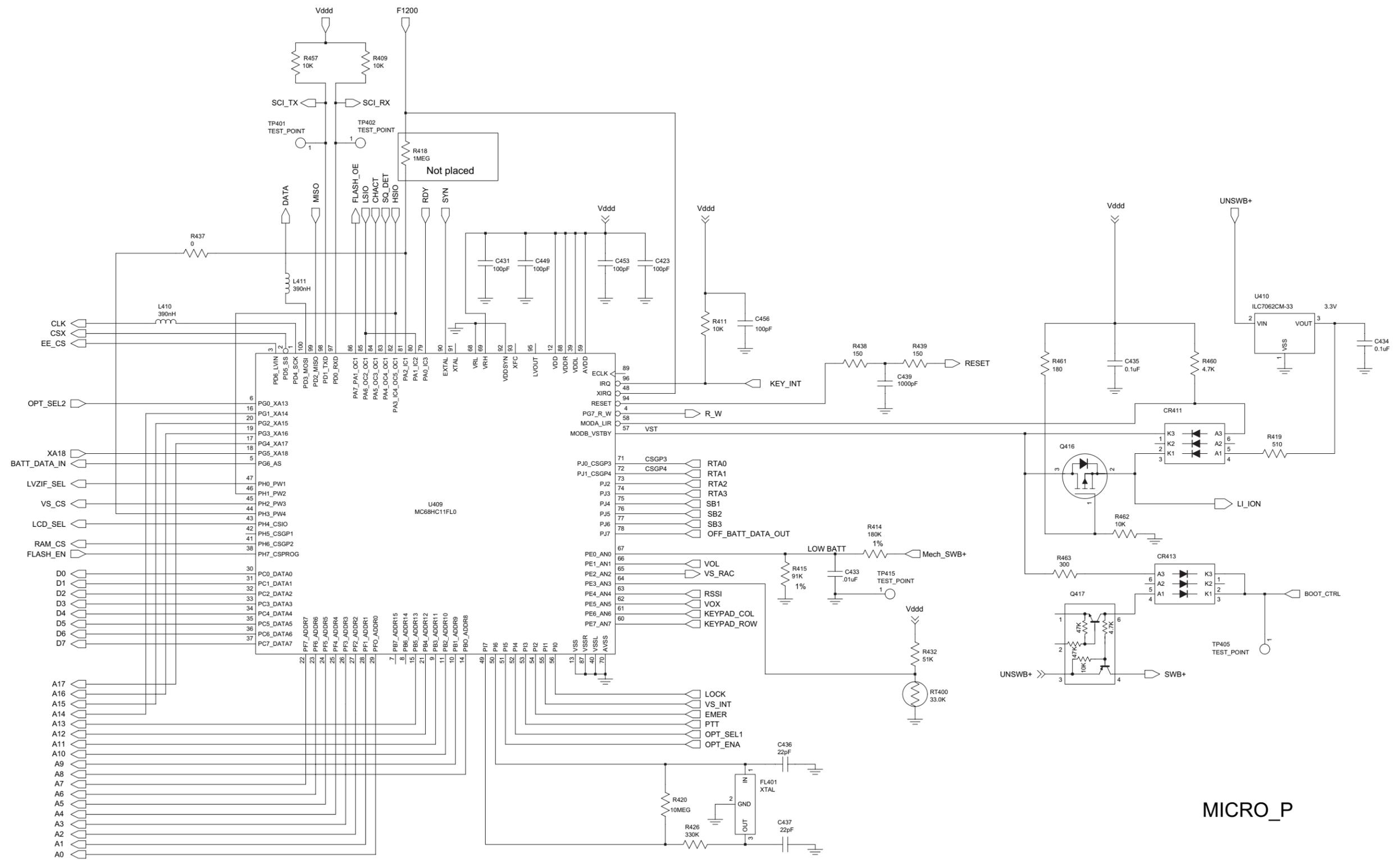


Figure 9-272. 900 MHz Complete Controller



ASFIC

Figure 9-273. 900 MHz Controller ASFIC/ON\_OFF



MICRO\_P

Figure 9-274. 900 MHz Controller Microprocessor

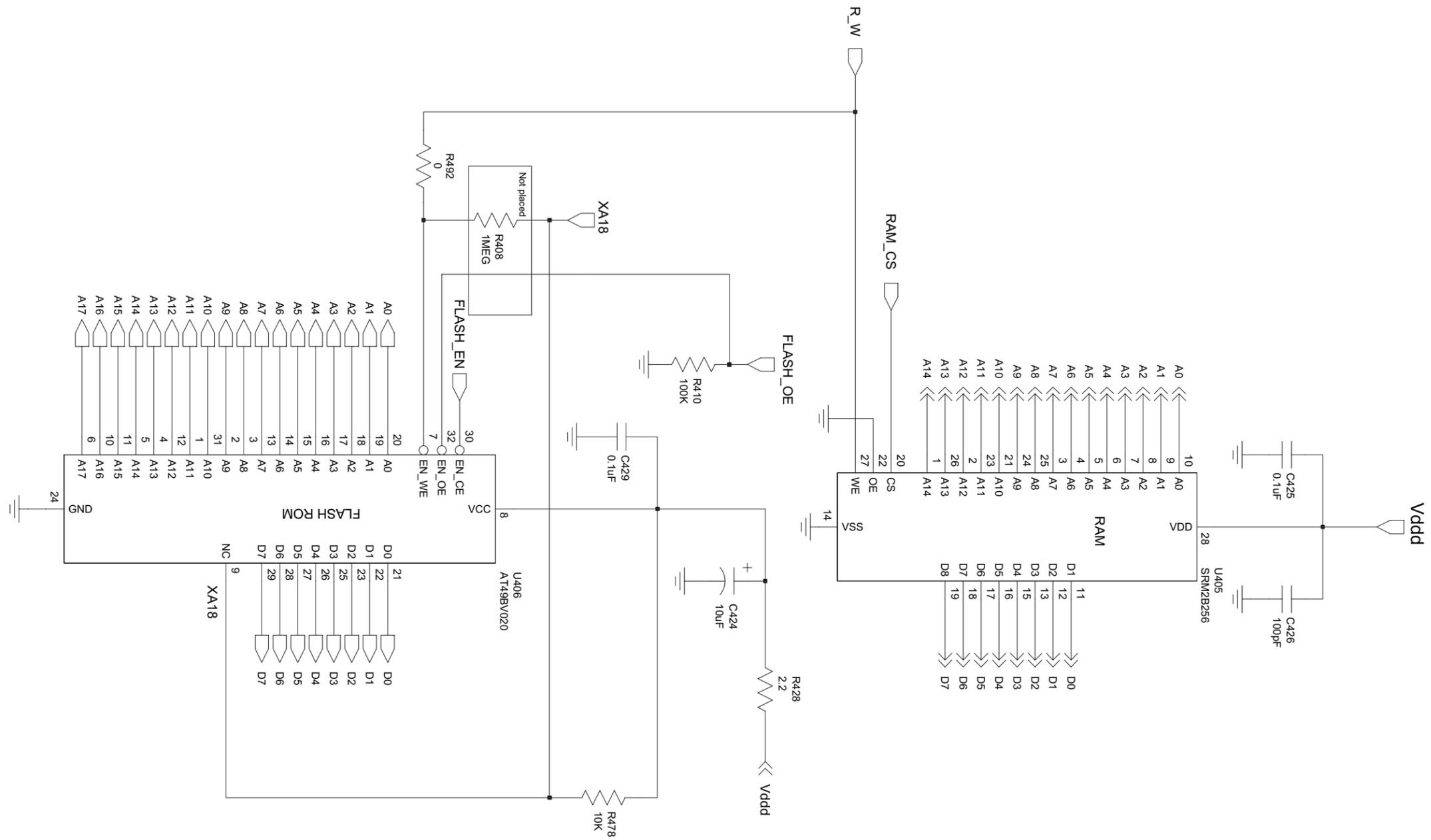


Figure 9-275. 900 MHz Controller Memory

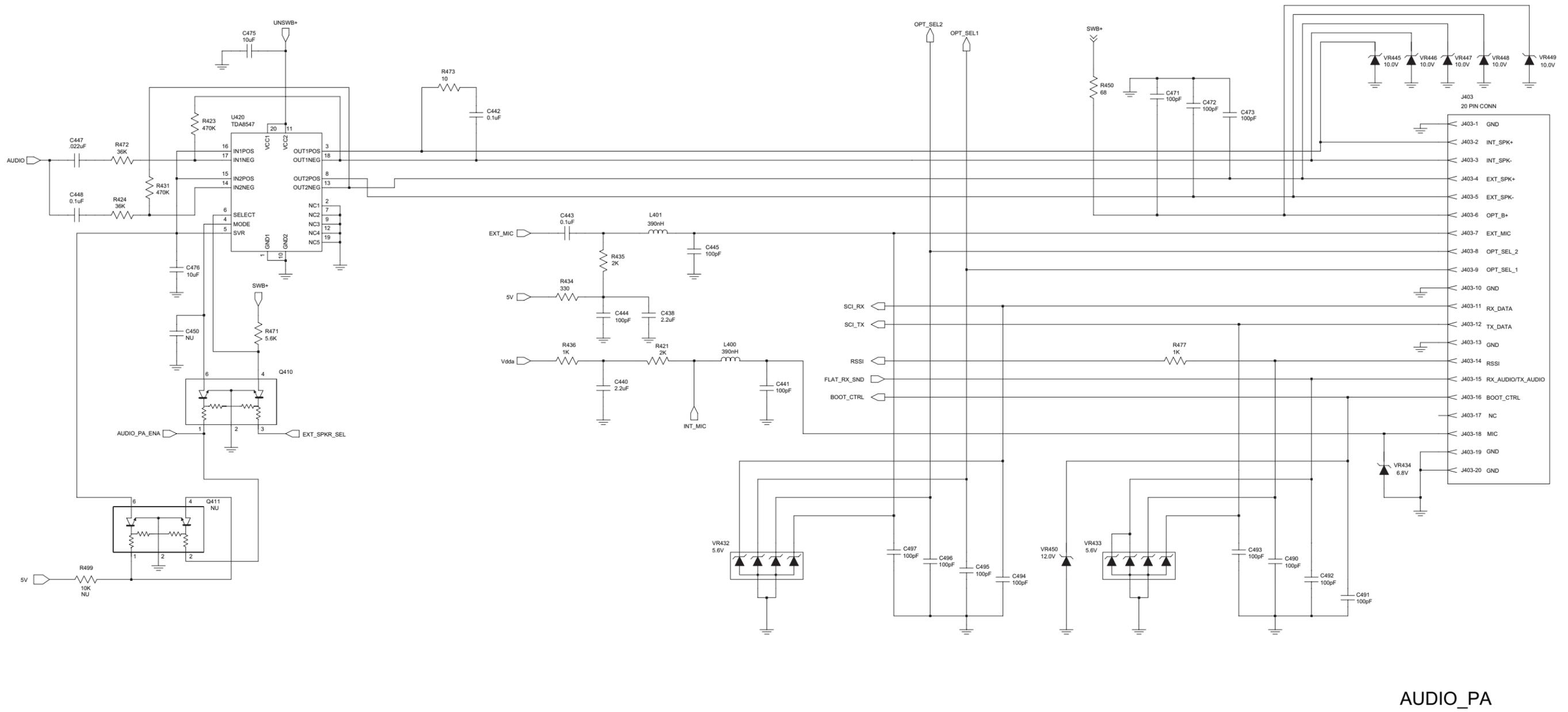


Figure 9-276. 900 MHz Controller Audio Power Amplifier

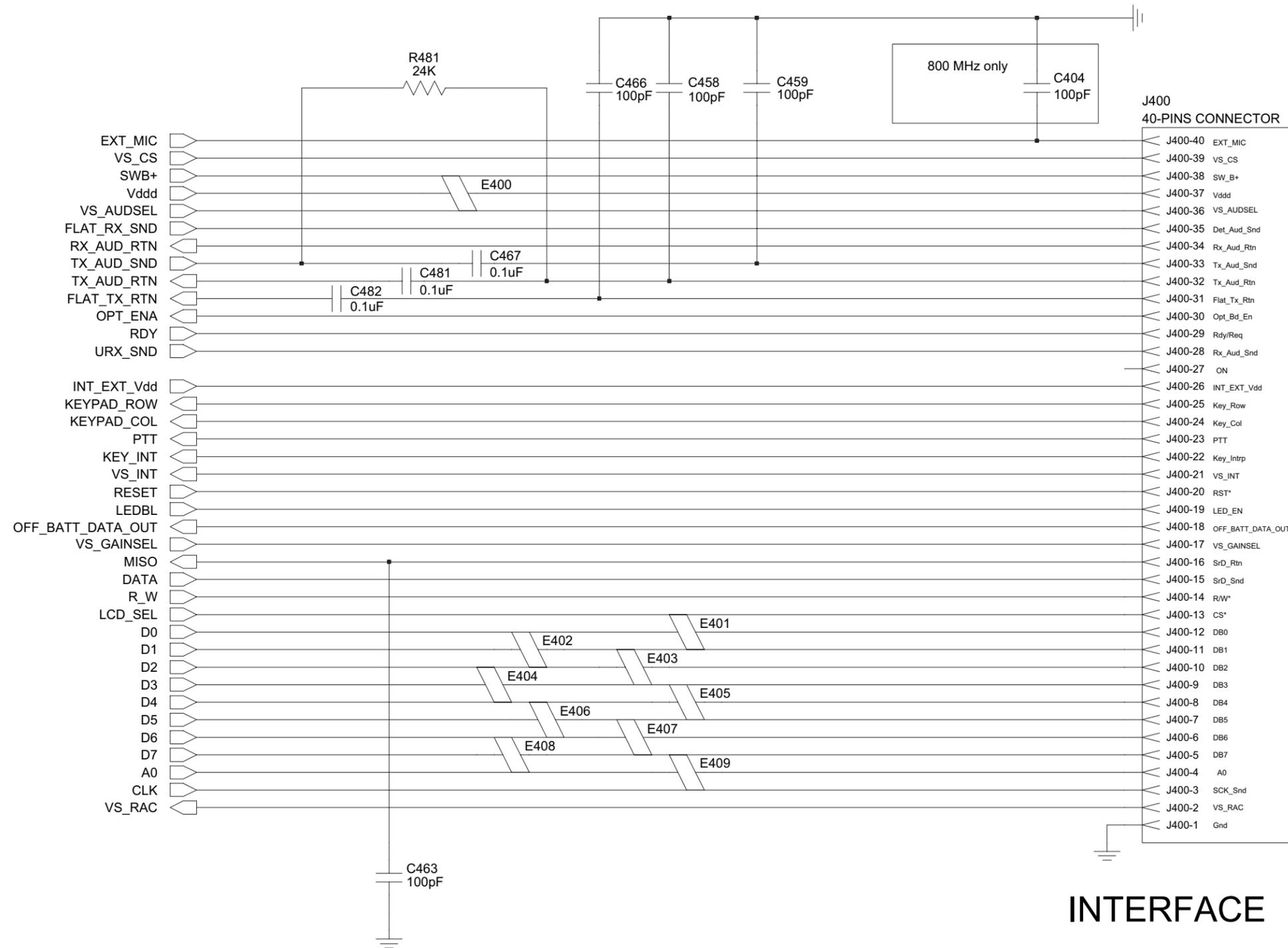
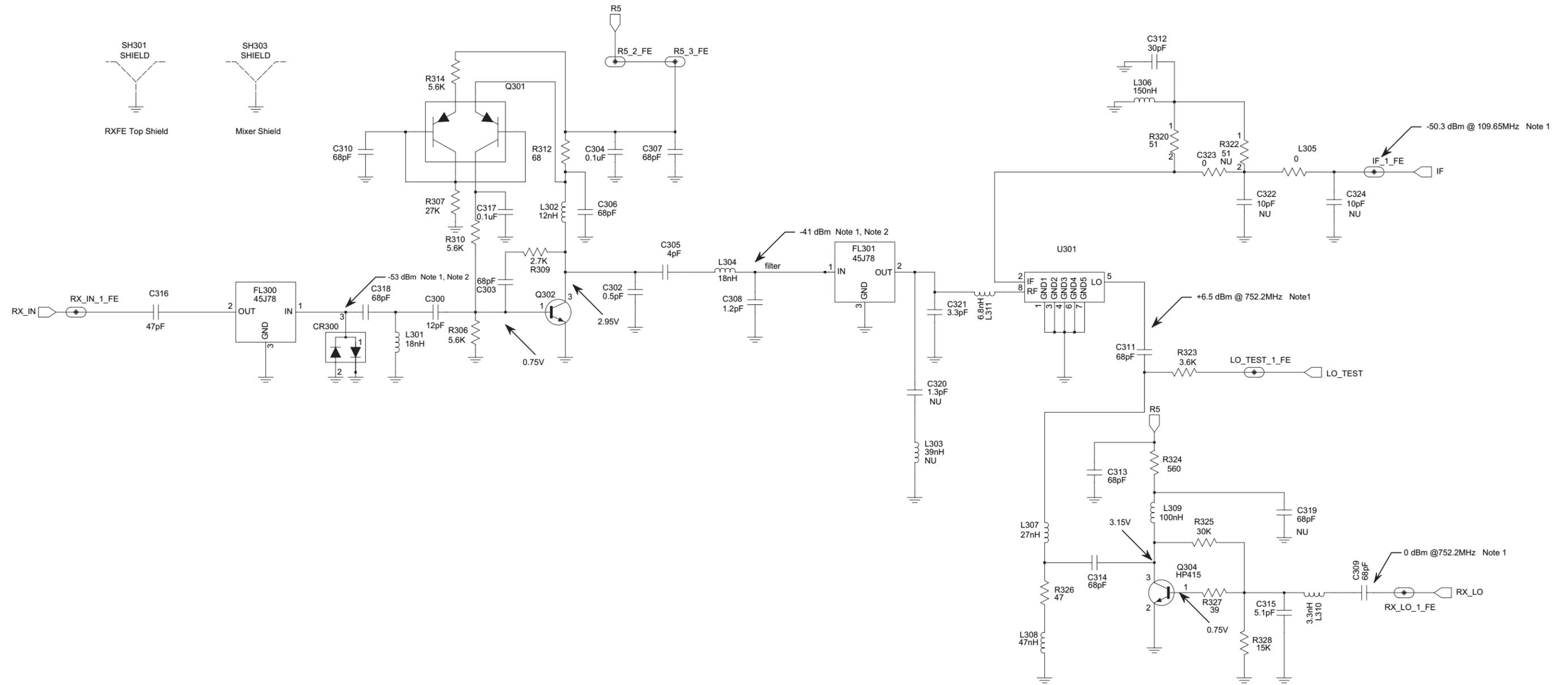


Figure 9-277. 900 MHz Controller Interface





- Notes:
1. Measured using high impedance probe.
  2. Measured with -50dBm 861.85MHz RX signal at the antenna input.
  3. Measured with no RX signal at the antenna input.

Figure 9-279. 900 MHz Receiver Front End Schematic Diagram



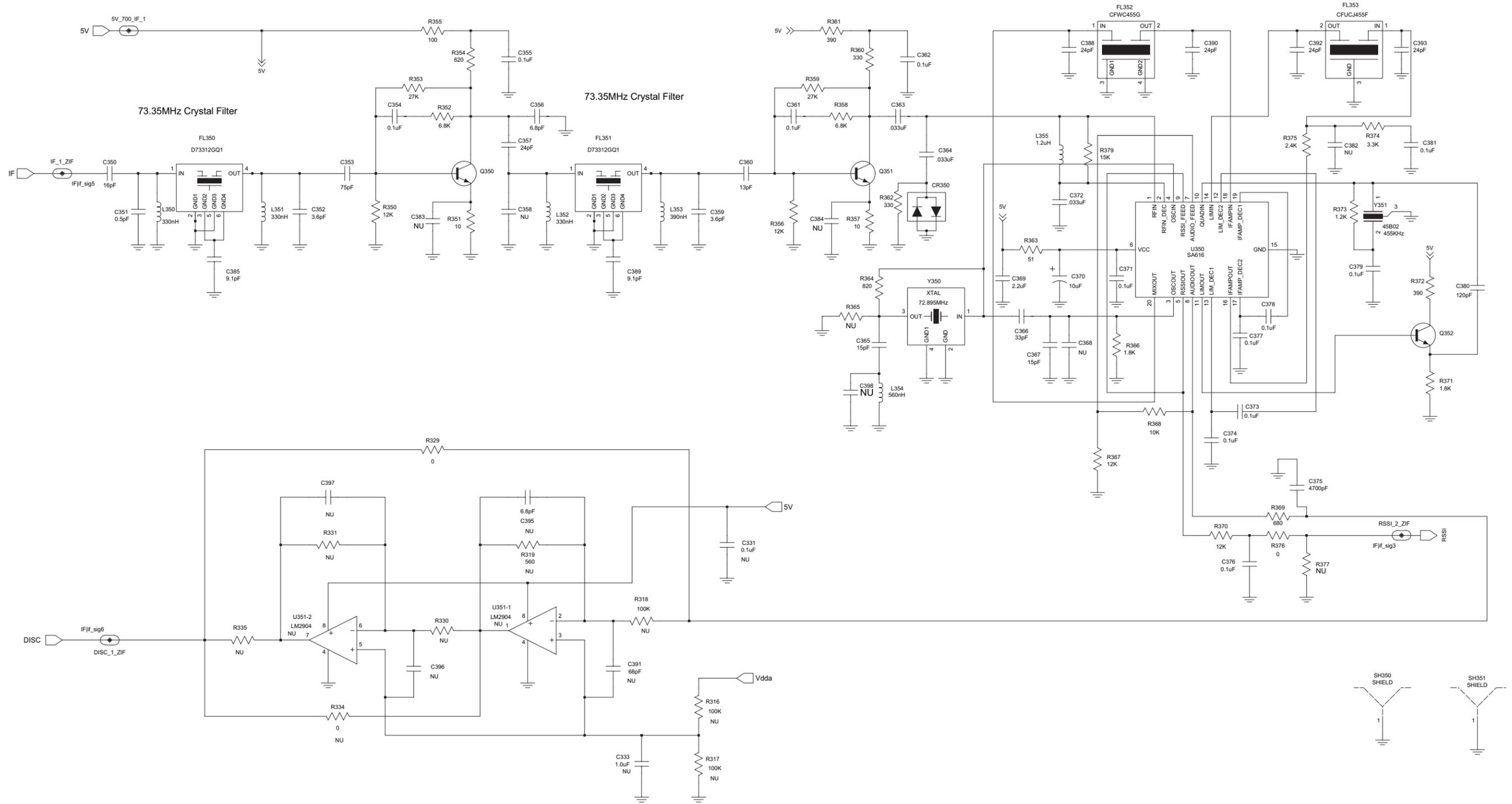


Figure 9-280. 900 MHz Receiver Back End Schematic Diagram

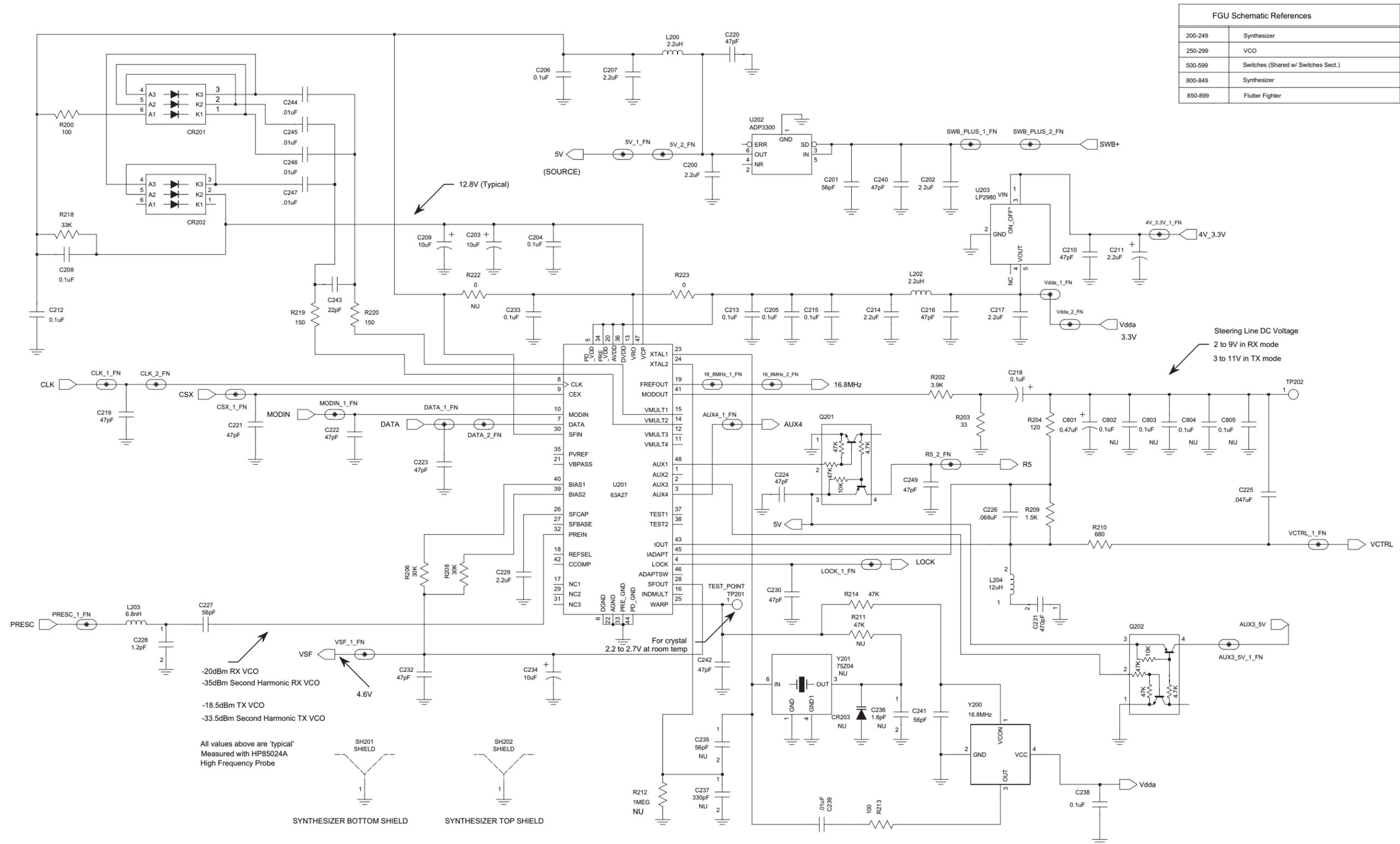


Figure 9-281. 900 MHz Synthesizer Schematic Diagram

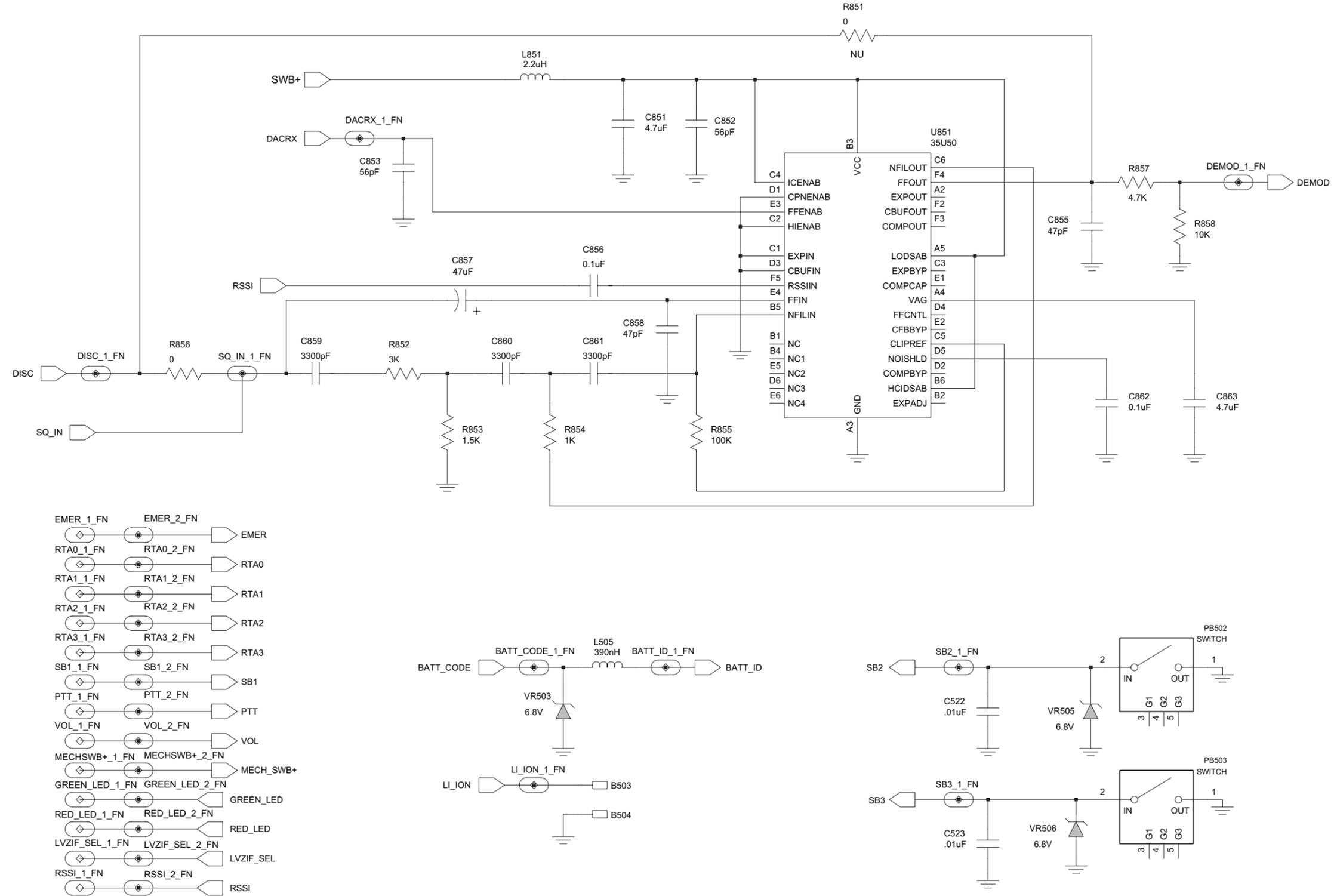


Figure 9-282. 900 MHz Hear/Clear Schematic Diagram

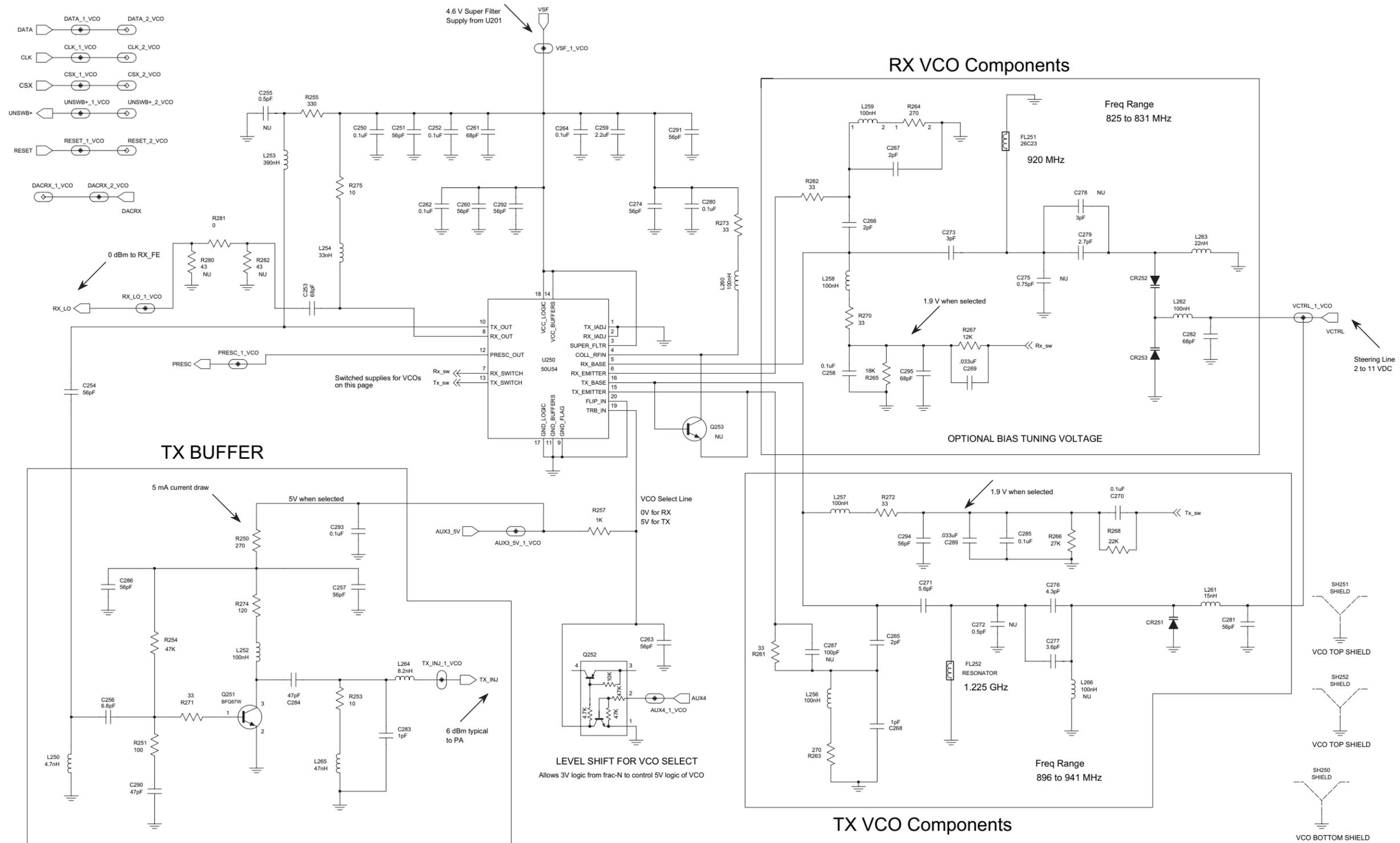


Figure 9-283. 900 MHz Voltage Controlled Oscillator Schematic Diagram



**900 MHz Radio Parts List for PCB  
8471203M01**

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	BATTERY CONNECTOR
C101	2113944A33	CAP CER CHP 47.0PF 5%
C102	2113944A34	CAP CER CHP 56.0PF 5%
C103	2113944A27	CAP CER CHP 15.0PF 5%
C104	2113944A38	CAP CER CHP 82.0PF 5%
C105	2113944A34	CAP CER CHP 56.0PF 5%
C106	2113944A27	CAP CER CHP 15.0PF 5%
C107	2113944A27	CAP CER CHP 15.0PF 5%
C108	2113944A34	CAP CER CHP 56.0PF 5%
C109	2113944A27	CAP CER CHP 15.0PF 5%
C110	2113944A33	CAP CER CHP 47.0PF 5%
C111	2113944A34	CAP CER CHP 56.0PF 5%
C112	2113944A27	CAP CER CHP 15.0PF 5%
C113	NOT PLACED	-
C114	2113944C19	CAP CER CHP 3.6PF
C115	2113944C21	CAP CER CHP 4.3PF
C116	2113945A12	CAP CER CHP 3300PF 10%
C117	2313960C26	CAP,FXD, 1UF, 10%
C118	2113944A27	CAP CER CHP 15.0PF 5%
C119	2113944A34	CAP CER CHP 56.0PF 5%
C120	2113944C39	CAP CER CHP 56.0PF 5%
C121	2113944C39	CAP CER CHP 56.0PF 5%
C122	2113944A27	CAP CER CHP 15.0PF 5%
C123	2113944A34	CAP CER CHP 56.0PF 5%
C124	2113944C69	CAP,FXD,1.8PF, +/-0.1PF
C125	2113944C18	CAP CER CHP 3.3PF
C126	2113944C69	CAP,FXD,1.8PF, +/-0.1PF
C127	2103689A19	CAP CHIP CL1 6.0 +/-0.50 PF
C128	2113944A33	CAP CER CHP 47.0PF 5%
C130	2113946K02	CAP CER CHP 0.10UF
C131	2113946K02	CAP CER CHP 0.10UF
C132	2113944A34	CAP CER CHP 56.0PF 5%
C133	2113944A27	CAP CER CHP 15.0PF 5%
C134	2113944A33	CAP CER CHP 47.0PF 5%
C135	NOT PLACED	-
C136	2113945B04	CAP,FXD, 0.022UF, 10%
C137	2113944A34	CAP CER CHP 56.0PF 5%
C138	2113944C63	CAP,FXD,1PF, +/-0.1PF
C139	NOT PLACED	-
C140	2113944A28	CAP CER CHP 18.0PF 5%
C141	2113944A40	CAP CER CHP 100.0PF 5%
C142	2103689A45	CAP CHIP CL1 20PF 5%
C143	NOT PLACED	-
C144	2113944A34	CAP CER CHP 56.0PF 5%

Circuit Ref	Motorola Part No.	Description
C145	2113945B04	CAP,FXD, 0.022UF, 10%
C146	2113944A34	CAP CER CHP 56.0PF 5%
C147	2113946K02	CAP CER CHP 0.10UF
C148	2113945B04	CAP,FXD, 0.022UF, 10%
C149	2113944A24	CAP CER CHP 9.1PF
C150	2113944A33	CAP CER CHP 47.0PF 5%
C151	2113944A33	CAP CER CHP 47.0PF 5%
C152	2113944A33	CAP CER CHP 47.0PF 5%
C153	2113944A34	CAP CER CHP 56.0PF 5%
C154	2113944A33	CAP CER CHP 47.0PF 5%
C155	2113944A33	CAP CER CHP 47.0PF 5%
C156	2113945A07	CAP CER CHP 680PF 10%
C157	2113945A07	CAP CER CHP 680PF 10%
C158	2113945B02	CAP CER CHP 10,000PF 10%
C159	2113944A33	CAP CER CHP 47.0PF 5%
C160	2113944A33	CAP CER CHP 47.0PF 5%
C161	2113944A33	CAP CER CHP 47.0PF 5%
C162	2113946K02	CAP CER CHP 0.10UF
C163	2103689A47	CAP CHIP CL1 24PF 5%
C164	NOT PLACED	-
C165	2113946K02	CAP CER CHP 0.10UF
C200	2113946N03	CAP CER CHP 2.2UF
C201	2113944A34	CAP CER CHP 56.0PF 5%
C202	2113946N03	CAP CER CHP 2.2UF
C203	2313960D07	CAP,FXD, 10UF, 10%
C204	2113946K02	CAP CER CHP 0.10UF
C205	2113946K02	CAP CER CHP 0.10UF
C206	2113946K02	CAP CER CHP 0.10UF
C207	2113946N03	CAP CER CHP 2.2UF
C208	2113946K02	CAP CER CHP 0.10UF
C209	2313960D07	CAP,FXD, 10UF, 10%
C210	2113944A33	CAP CER CHP 47.0PF 5%
C211	2313960C78	CAP,FXD, 2.2UF,10%
C212	2113946K02	CAP CER CHP 0.10UF
C213	2113946K02	CAP CER CHP 0.10UF
C214	2113946N03	CAP CER CHP 2.2UF
C215	2113946K02	CAP CER CHP 0.10UF
C216	2113944A33	CAP CER CHP 47.0PF 5%
C217	2113946N03	CAP CER CHP 2.2UF CAP,CER, 0.1UF,+5%,- 5%,50V-DC
C218	2189705V01	5%,50V-DC
C219	2113944A33	CAP CER CHP 47.0PF 5%
C220	2113944A33	CAP CER CHP 47.0PF 5%
C221	2113944A33	CAP CER CHP 47.0PF 5%
C222	2113944A33	CAP CER CHP 47.0PF 5%
C223	2113944A33	CAP CER CHP 47.0PF 5%
C224	2113944A33	CAP CER CHP 47.0PF 5%

Circuit Ref	Motorola Part No.	Description
C225	2113945C27	CAP,FXD, 0.047UF, 10%
C226	2113945C29	CAP,FXD, 0.068UF, 10%
C227	2113944A34	CAP CER CHP 56.0PF 5%
C228	2113944A02	CAP CER CHP 1.2PF
C229	2113946N03	CAP CER CHP 2.2UF
C230	2113944A33	CAP CER CHP 47.0PF 5%
C231	2113944C06	CAP CER CHP 470.0PF 5%
C232	2113944A33	CAP CER CHP 47.0PF 5%
C233	2113946K02	CAP CER CHP 0.10UF
C234	2313960B57	CAP,FXD, 10UF,10%
C235	NOT PLACED	-
C236	NOT PLACED	-
C237	NOT PLACED	-
C238	2113946K02	CAP CER CHP 0.10UF
C239	2113945B02	CAP CER CHP 10,000PF 10%
C240	2113944A33	CAP CER CHP 47.0PF 5%
C241	2113944A34	CAP CER CHP 56.0PF 5%
C242	2113944A33	CAP CER CHP 47.0PF 5%
C243	2113944A29	CAP CER CHP 22.0PF 5%
C244	2113945B02	CAP CER CHP 10,000PF 10%
C245	2113945B02	CAP CER CHP 10,000PF 10%
C246	2113945B02	CAP CER CHP 10,000PF 10%
C247	2113945B02	CAP CER CHP 10,000PF 10%
C249	2113944A33	CAP CER CHP 47.0PF 5%
C250	2113946K02	CAP CER CHP 0.10UF
C251	2113944A34	CAP CER CHP 56.0PF 5%
C252	2113946K02	CAP CER CHP 0.10UF
C253	2113944A36	CAP CER CHP 68.0PF 5%
C254	2113944A34	CAP CER CHP 56.0PF 5%
C255	NOT PLACED	-
C256	2113944A21	CAP CER CHP 6.8PF
C257	2113944A34	CAP CER CHP 56.0PF 5%
C258	2113946K02	CAP CER CHP 0.10UF
C259	2113946N03	CAP CER CHP 2.2UF
C260	2113944A34	CAP CER CHP 56.0PF 5%
C261	2113944A36	CAP CER CHP 68.0PF 5%
C262	2113946K02	CAP CER CHP 0.10UF
C263	2113944A34	CAP CER CHP 56.0PF 5%
C264	2113946K02	CAP CER CHP 0.10UF
C265	2113944A08	<b>CAP CER CHP 2.0PF</b>
C266	2113944A08	<b>CAP CER CHP 2.0PF</b>
C267	2113944A08	<b>CAP CER CHP 2.0PF</b>
C268	2113944A63	CAP,FXD, 1PF, +/-0.25PF
C269	2113945B05	CAP,FXD, 0.033UF, 10%
C270	2113946K02	CAP CER CHP 0.10UF
C271	2113944A19	CAP CER CHP 5.6PF

Circuit Ref	Motorola Part No.	Description
C272	NOT PLACED	-
C273	2113944A08	CAP CER CHP 2.0PF
C274	2113944A34	CAP CER CHP 56.0PF 5%
C275	NOT PLACED	-
C276	2113944A11	CAP CER CHP 2.7PF
C277	2113944A13	CAP CER CHP 3.3PF
C278	NOT PLACED	-
C279	2113944A08	<b>CAP CER CHP 2.0PF</b>
C280	2113946K02	CAP CER CHP 0.10UF
C281	2113944A34	CAP CER CHP 56.0PF 5%
C282	2113944A36	CAP CER CHP 68.0PF 5%
C283	2113944A63	CAP,FXD, 1PF, +/-0.25PF
C284	2113944A33	CAP CER CHP 47.0PF 5%
C285	2113946K02	CAP CER CHP 0.10UF
C286	2113944A34	CAP CER CHP 56.0PF 5%
C287	NOT PLACED	-
C289	2113945B05	CAP,FXD, 0.033UF, 10%
C290	2113944A33	CAP CER CHP 47.0PF 5%
C291	2113944A34	CAP CER CHP 56.0PF 5%
C292	2113944A34	CAP CER CHP 56.0PF 5%
C293	2113946K02	CAP CER CHP 0.10UF
C294	2113944A34	CAP CER CHP 56.0PF 5%
C295	2113944A36	CAP CER CHP 68.0PF 5%
C300	2113944A26	CAP CER CHP 12.0PF 5%
C302	2113944A61	CAP,FXD, 0.5PF, +/-0.25PF
C303	0613952Q83	CER CHIP RES 2700 OHM 5%
C304	2113946K02	CAP CER CHP 0.10UF
C305	2113944A66	CAP,FXD, 4PF, +/-0.25PF
C306	2113944A36	CAP CER CHP 68.0PF 5%
C307	2113944A36	CAP CER CHP 68.0PF 5%
C308	2113944A02	CAP CER CHP 1.2PF
C309	2113944A36	CAP CER CHP 68.0PF 5%
C310	2113944A36	CAP CER CHP 68.0PF 5%
C311	2113944A36	CAP CER CHP 68.0PF 5%
C312	2113944A82	CAP,FXD,30PF, 5%
C313	2113944A36	CAP CER CHP 68.0PF 5%
C314	2113944A36	CAP CER CHP 68.0PF 5%
C315	2113944A18	CAP CER CHP 5.1PF
C316	2113944A33	CAP CER CHP 47.0PF 5%
C317	2113946K02	CAP CER CHP 0.10UF
C318	2113944A36	CAP CER CHP 68.0PF 5%
C319	NOT PLACED	-
C320	NOT PLACED	-
C321	2113944A13	CAP CER CHP 3.3PF
C322	NOT PLACED	-
C323	0613952R66	CER CHIP RES 0.0 OHM

Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
C324	NOT PLACED	-	C393	2113944C81	CAP,FXD,24PF, 5%	C441	2113944A34	CAP CER CHP 56.0PF 5%	C525	2113944A36	CAP CER CHP 68.0PF 5%
C331	2113944C51	CAP CER CHP 1000.OPF 50V CAP,FXD, 0.1UF,+10%, -10%,50V-DC	C395	2113944A21	CAP CER CHP 6.8PF 50V +/- 0.5PF	C442	2113945C31	CAP,FXD, 0.1UF, 10%	C526	2113944A36	CAP CER CHP 68.0PF 5%
C333	2113945C31		C396	2113944A44	CAP CER CHP 220.0 PF 50V 5%	C443	2113946B04	CAP CER CHP 0.10UF 10%	C527	2113944A36	CAP CER CHP 68.0PF 5%
C350	2113944A32	<b>CAP CER CHP 39.0PF 5%</b>	C397	2113944A79	CAP,FXD,16PF,+5%,-5%,50V- DC,0402	C444	2113944A34	CAP CER CHP 56.0PF 5%	C528	2113944A36	CAP CER CHP 68.0PF 5%
C351	2113944A24	CAP CER CHP 9.1PF	C398	NOT PLACED	-	C445	2113944A34	CAP CER CHP 56.0PF 5%	C529	2113944A36	CAP CER CHP 68.0PF 5%
C352	2113944A22	<b>CAP CER CHP 7.5PF</b>	C400	2113945B02	CAP CER CHP 10,000PF 10%	C447	2113945B04	CAP,FXD,0.022UF, 10%	C530	2313960F04	CAP,FXD, 33UF, 10%
C353	2113944A37	CAP CER CHP 75.0PF 5%	C401	2113946K02	CAP CER CHP 0.10UF	C448	2113946B04	CAP CER CHP 0.10UF 10%	C531	2113944A36	CAP CER CHP 68.0PF 5%
C354	2113946K02	CAP CER CHP 0.10UF	C402	2113946K02	CAP CER CHP 0.10UF	C449	2113944A34	CAP CER CHP 56.0PF 5%	C801	2313960A55	CAP,FXD, 0.47UF, 10%
C355	2113946K02	CAP CER CHP 0.10UF	C403	2113946R01	CAP CER CHP 10.0UF	C450	NOT PLACED	-	C802	NOT PLACED	-
C356	2113944A21	CAP CER CHP 6.8PF	C404	2113944A34	CAP CER CHP 56.0PF 5%	C451	2113945B04	CAP,FXD,0.022UF, 10%	C803	NOT PLACED	-
C357	2113944A81	CAP,FXD,24PF, 5%	C405	2113944A34	CAP CER CHP 56.0PF 5%	C452	NOT PLACED	-	C804	NOT PLACED	-
C358	NOT PLACED	-	C406	NOT PLACED	-	C453	2113944A34	CAP CER CHP 56.0PF 5%	C805	NOT PLACED	-
C359	2113944A19	<b>CAP CER CHP 5.6PF</b>	C407	2113946B04	CAP CER CHP 0.10UF 10%	C456	2113944A34	CAP CER CHP 56.0PF 5%	C851	2113946Q01	CAP CER CHP 4.7UF
C360	2113944A78	CAP,FXD,13PF, 5%	C408	2113944A34	CAP CER CHP 56.0PF 5%	C458	2113944A34	CAP CER CHP 56.0PF 5%	C852	2113944A34	CAP CER CHP 56.0PF 5%
C361	2113946K02	CAP CER CHP 0.10UF	C409	2113946K02	CAP CER CHP 0.10UF	C459	2113944A34	CAP CER CHP 56.0PF 5%	C853	2113944A34	CAP CER CHP 56.0PF 5%
C362	2113946K02	CAP CER CHP 0.10UF	C410	2113946B04	CAP CER CHP 0.10UF 10%	C463	2113944A34	CAP CER CHP 56.0PF 5%	C855	2113944A33	CAP CER CHP 47.0PF 5%
C363	2113945B05	CAP,FXD, 0.033UF, 10%	C411	2113946K02	CAP CER CHP 0.10UF	C466	2113944A34	CAP CER CHP 56.0PF 5%	C856	2113945C31	CAP,FXD, 0.1UF, 10%
C364	2113945B05	CAP,FXD, 0.033UF, 10%	C412	2313960B57	CAP,FXD,10UF, 10%	C467	2113946B04	CAP CER CHP 0.10UF 10%	C857	2313960D80	CAP,FXD, 47UF, 10%
C365	2113944A78	CAP,FXD,13PF, 5%	C414	2113946K02	CAP CER CHP 0.10UF	C471	2113944A34	CAP CER CHP 56.0PF 5%	C858	2113944A33	CAP CER CHP 47.0PF 5%
C366	2113944A31	CAP CER CHP 33.0PF 5%	C415	2185895Z01	CAP CER LOW DIST .01UF	C472	2113944A34	CAP CER CHP 56.0PF 5%	C859	2113945A12	CAP CER CHP 3300PF 10%
C367	2113944A27	CAP CER CHP 15.0PF 5%	C416	2113946B04	CAP CER CHP 0.10UF 10%	C473	2113944A34	CAP CER CHP 56.0PF 5%	C860	2113945A12	CAP CER CHP 3300PF 10%
C368	NOT PLACED	-	C419	NOT PLACED	-	C475	2113956E91	CAP,FXD,10UF, 10%	C861	2113945A12	CAP CER CHP 3300PF 10%
C369	2113946N03	CAP CER CHP 2.2UF	C420	2113945B02	CAP CER CHP 10,000PF 10%	C476	2113946R01	CAP CER CHP 10.0UF	C862	2113945C31	CAP,FXD, 0.1UF, 10%
C370	2313960B57	CAP,FXD, 10UF,10%	C421	2113946B04	CAP CER CHP 0.10UF 10%	C479	2113946B04	CAP CER CHP 0.10UF 10%	C863	2113946Q01	CAP CER CHP 4.7UF
C371	2113946B04	CAP CER CHP 0.10UF 10%	C422	2113946K02	CAP CER CHP 0.10UF	C480	2113946Q01	CAP CER CHP 4.7UF	CR101	4880973Z02	PIN DIODE
C372	2113945B05	CAP,FXD, 0.033UF, 10%	C423	2113944A34	CAP CER CHP 56.0PF 5%	C481	2113946B04	CAP CER CHP 0.10UF 10%	CR102	4880973Z02	PIN DIODE
C373	2113946B04	CAP CER CHP 0.10UF 10%	C424	2313960B57	CAP,FXD,10UF, 10%	C482	2113946B04	CAP CER CHP 0.10UF 10%	CR201	4815011H01	DIODE TRIPLE
C374	2113946B04	CAP CER CHP 0.10UF 10%	C425	2113946K02	CAP CER CHP 0.10UF	C490	2113944A34	CAP CER CHP 56.0PF 5%	CR202	4815011H01	DIODE TRIPLE
C375	2113945A14	CAP,FXD,4700PF, 5%	C426	2113944A34	CAP CER CHP 56.0PF 5%	C491	2113944A34	CAP CER CHP 56.0PF 5%	CR203	NOT PLACED	-
C376	2113946B04	CAP CER CHP 0.10UF 10%	C427	2113944A34	CAP CER CHP 56.0PF 5%	C492	2113944A34	CAP CER CHP 56.0PF 5%	CR251	4885055Y01	DIODE VARACTOR
C377	2113946B04	CAP CER CHP 0.10UF 10%	C428	2113946K02	CAP CER CHP 0.10UF	C493	2113944A34	CAP CER CHP 56.0PF 5%	CR252	4885055Y01	DIODE VARACTOR
C378	2113946B04	CAP CER CHP 0.10UF 10%	C429	2113946K02	CAP CER CHP 0.10UF	C494	2113944A34	CAP CER CHP 56.0PF 5%	CR253	4885055Y01	DIODE VARACTOR
C379	2113946B04	CAP CER CHP 0.10UF 10%	C430	2113946B04	CAP CER CHP 0.10UF 10%	C495	2113944A34	CAP CER CHP 56.0PF 5%	CR300	4815048H01	SOT MMBD353 DIODE
C380	2113944A41	CAP CER CHP 120.0PF 5%	C431	2113944A34	CAP CER CHP 56.0PF 5%	C496	2113944A34	CAP CER CHP 56.0PF 5%	CR350	4815048H01	SOT MMBD353 DIODE
C381	2113946B04	CAP CER CHP 0.10UF 10%	C432	NOT PLACED	-	C497	2113944A34	CAP CER CHP 56.0PF 5%	CR411	4815067H01	DIODE SCHOTTKY, RB731U
C382	NOT PLACED	-	C433	2113945B02	CAP CER CHP 10,000PF 10%	C502	2313960A55	CAP,FXD, 0.47UF, 10%	CR412	4815067H01	DIODE SCHOTTKY, RB731U
C383	NOT PLACED	-	C434	NOT PLACED	-	C503	2113944A34	CAP CER CHP 56.0PF 5%	CR413	4815067H01	DIODE SCHOTTKY, RB731U
C384	NOT PLACED	-	C435	2113946K02	CAP CER CHP 0.10UF	C505	2113944A33	CAP CER CHP 47.0PF 5%	CR440	4813978C02	DISCRETE RECTIFIERS
C385	2113944A24	CAP CER CHP 9.1PF	C436	NOT PLACED	-	C511	2113944A33	CAP CER CHP 47.0PF 5%	CR501	4815155H01	RECTIFIER
C388	2113944C81	CAP,FXD,24PF, 5%	C437	NOT PLACED	-	C512	2113944A33	CAP CER CHP 47.0PF 5%	CR503	4805729G49	DIODE RED/YEL
C389	2113944A24	CAP CER CHP 9.1PF	C438	2113946N03	CAP CER CHP 2.2UF	C513	2113944A33	CAP CER CHP 47.0PF 5%	E101	2415954H01	INDUCTOR BEAD CHIP
C390	2113944C81	CAP,FXD,24PF, 5%	C439	2113945A09	CAP CER CHP 1000PF 10%	C514	2113944A33	CAP CER CHP 47.0PF 5%	E102	2405688Z01	FERRITE BEAD
		CAP CER CHP 220.0 PF 50V 5%	C440	2113946N03	CAP CER CHP 2.2UF	C520	2113945B02	CAP CER CHP 10,000PF 10%	E400	2480640Z01	FERRITE BEAD
C391	2113944A44					C521	2113945B02	CAP CER CHP 10,000PF 10%	E401	2480640Z01	FERRITE BEAD
C392	2113944A81	<b>CAP,FXD,24PF, 5%</b>				C522	2113945B02	CAP CER CHP 10,000PF 10%	E402	2480640Z01	FERRITE BEAD
						C523	2113945B02	CAP CER CHP 10,000PF 10%	E403	2480640Z01	FERRITE BEAD
						C524	2113944A27	CAP CER CHP 15.0PF 5%			

Circuit Ref	Motorola Part No.	Description
E404	2480640Z01	FERRITE BEAD
E405	2480640Z01	FERRITE BEAD
E406	2480640Z01	FERRITE BEAD
E407	2480640Z01	FERRITE BEAD
E408	2480640Z01	FERRITE BEAD
E409	2480640Z01	FERRITE BEAD
F501	6515076H01	FUSE CHIP 3A
FL251	4885426C23	CER RESONATOR 960 MHZ COAXIAL CERAMIC
FL252	4802245J57	INDUCTOR
FL300	4802245J78	RX 3-POLE BANDPASS FLTR
FL301	4802245J78	RX 3-POLE BANDPASS FLTR <b>73.35 MHZ 4 POLE XTAL FLTR</b>
FL350	9116854H01	<b>73.35 MHZ 4 POLE XTAL FLTR</b>
FL351	9116854H01	<b>FLTR</b>
FL352	9115811H01	SMD455KHZ 6 ELEMENT 455KHZ 4 ELEMENT CER FLTR
FL353	9180468V04	FLTR
FL401	NOT PLACED	-
J101	2880658Z06	CONN,SMA,RCPT
J400	0915064H03	CONNECTOR, ZIF (40 PINS)
J403	0915064H02	ZIF (20 PINS)
L101	2414032F26	IDCTR,WW,22NH,5%
L102	2414032F26	IDCTR,WW,22NH,5%
L103	2479990B02	COIL AIR WND IDCTR 19.61
L104	2460591A13	COIL AIR WND IDCTR 5.34
L105	2460591A13	COIL AIR WND IDCTR 5.35
L106	NOT PLACED	-
L107	2414017G19	IDCTR,CHIP,100NH,5%
L108	2414017G19	IDCTR,CHIP,100NH,5%
L109	2460591A77	COIL AIR WND IDCTR 10.40
L110	2414017G05	IDCTR,CHIP,6.8NH,5%
L111	2414017G19	IDCTR,CHIP,100NH,5%
L112	2414017G12	IDCTR,CHIP,27NH,5%
L200	2414017Q20	IDCTR,FXD,2.2UH,20%
L202	2414017Q20	IDCTR,FXD,2.2UH,20%
L203	2414032F21	IDCTR,WW,6.8NH,5%
L204	2414032L25	IDCTR,WW,12UH,5%
L250	2414017G03	IDCTR,CHIP,4.7NH
L252	2414017G19	IDCTR,CHIP,100NH,5%
L253	2414032F41	IDCTR,WW,390NH,10%
L254	2414017G08	IDCTR,CHIP,12NH,5%
L256	2414017G19	IDCTR,CHIP,100NH,5%
L257	2414017G19	IDCTR,CHIP,100NH,5%
L258	2414017G19	IDCTR,CHIP,100NH,5%
L259	2414017G19	IDCTR,CHIP,100NH,5%

Circuit Ref	Motorola Part No.	Description
L260	2414017G19	IDCTR,CHIP,100NH,5%
L261	2414017G09	IDCTR,CHIP,15NH,5%
L262	2414017G19	IDCTR,CHIP,100NH,5%
L263	2414017G11	IDCTR,CHIP,22NH,5%
L264	2414017G06	IDCTR,CHIP,8.2NH,5%
L265	2414017G15	IDCTR,CHIP,47NH,5%
L266	NOT PLACED	-
L301	2414017N11	IDCTR,CHIP,8.2NH,5%
L302	2414017N13	IDCTR,CHIP,12NH,5%
L303	NOT PLACED	-
L304	2414017G10	IDCTR,CHIP,18NH,5%
L305	2415429H47	<b>CHIP IDCTR, WW, 390NH, 5%</b>
L306	2414032B55	IDCTR,WW,150NH,5%
L307	2414017G11	IDCTR,CHIP,22NH,5%
L308	2414032F28	IDCTR,WW,33NH,5%
L309	2414017G19	IDCTR,CHIP,100NH,5%
L310	2414017G01	IDCTR,CHIP,3.3NH
L311	2414017G05	IDCTR,CHIP,6.8NH,5%
L350	NOT PLACED	-
L351	2414032D21	IDCTR,WW,330NH,5%
L352	2414032D21	IDCTR,WW,330NH,5%
L353	2414032D22	IDCTR,WW,390NH,5%
L354	2414015A13	IDCTR,FXD,560NH,2%
L355	NOT PLACED	-
L400	2414017Q42	IDCTR,FXD,390NH,10%
L401	2414017Q42	IDCTR,FXD,390NH,10%
L410	2414017Q42	IDCTR,FXD,390NH,10%
L411	2414017Q42	IDCTR,FXD,390NH,10%
L420	2415429H26	CHIP IDCTR, 33NH, 5%
L505	2414017Q42	IDCTR,FXD,390NH,10%
L851	2414017Q20	IDCTR,FXD,2.2UH,20%
M101	2680499Z02	HEAT SPREADER
PB501	4086470Z01	TACT SWITCH
PB502	4086470Z01	TACT SWITCH
PB503	4086470Z01	TACT SWITCH
PB504	4086470Z01	TACT SWITCH
PB505	4086470Z01	TACT SWITCH
Q101	4813976A03	450MHZ 8W 7.5V PLD-1.5 T&R
Q201	4815055H01	TSTR DUAL NPN/PNP
Q202	4815055H01	TSTR DUAL NPN/PNP
Q251	4805218N63	RF TRANS SOT 323 BFQ67W
Q252	4815055H01	TSTR DUAL NPN/PNP
Q253	NOT PLACED	-
Q301	4815267H01	DBRT UMT1NFTN
Q302	4802247J01	BJT, RF AMP, BFS505
Q304	4816531H01	NPN BIPOLAR TRANSISTOR

Circuit Ref	Motorola Part No.	Description
Q350	4802197J95	<b>RF TRANSISTOR PBR941</b>
Q351	4802197J95	<b>RF TRANSISTOR PBR941</b>
Q352	4813973M07	XSTR,BIP GP SS,NPN,T3904
Q400	4815069H02	TSTR MOSFET P-CHAN
Q403	4813973M07	XSTR,BIP GP SS,NPN,T3904
Q405	4815066H01	UMG5N DIGITAL TRANSISTOR
Q410	4815066H01	UMG5N DIGITAL TRANSISTOR
Q411	NOT PLACED	-
Q416	NOT PLACED	-
Q417	4815055H01	TSTR DUAL NPN/PNP UMH 5
Q502	4815154H01	DUAL TRANS NPN
Q505	4813973M07	XSTR,BIP GP SS,NPN,T3904
R101	0615043C01	RES POWER METAL STRIP
R102	0613952H58	CER CHIP RES 240 OHM 5%
R103	0613952H58	CER CHIP RES 240 OHM 5%
R104	NOT PLACED	-
R105	0613952Q53	CER CHIP RES 150 OHM 5%
R106	0613952H42	CER CHIP RES 51.0 OHM 5%
R108	0613952Q84	CER CHIP RES 3000 OHM 5%
R109	0613952Q80	CER CHIP RES 2000 OHM 5%
R110	0613952R01	CER CHIP RES 10K OHM 5%
R111	0613952Q01	CER CHIP RES 1.0 OHM 5%
R113	0613952Q01	CER CHIP RES 1.0 OHM 5%
R114	0613952Q25	CER CHIP RES 10.0 OHM 5%
R115	0613952R10	CER CHIP RES 24K OHM 5%
R116	0613952R66	CER CHIP RES 0.0 OHM
R117	0613952R41	CER CHIP RES 470K OHM 5%
R118	0613952R32	CER CHIP RES 200K OHM 5%
R119	0613952R07	CER CHIP RES 18K OHM 5%
R120	0613952R11	CER CHIP RES 27K OHM 5%
R121	0613952R66	CER CHIP RES 0.0 OHM
R200	0613952Q49	CER CHIP RES 100 OHM 5%
R202	0613952Q87	CER CHIP RES 3900 OHM 5%
R203	0613952Q37	CER CHIP RES 33.0 OHM 5%
R204	0613952Q51	CER CHIP RES 120 OHM 5%
R206	0613952R12	CER CHIP RES 30K OHM 5%
R208	0613952R12	CER CHIP RES 30K OHM 5%
R209	0613952Q77	CER CHIP RES 1500 OHM 5%
R210	0613952Q69	CER CHIP RES 680 OHM 5%
R211	NOT PLACED	-
R212	NOT PLACED	-
R213	0613952Q49	CER CHIP RES 100 OHM 5%
R214	0613952R17	CER CHIP RES 47K OHM 5%
R218	0613952R13	CER CHIP RES 33K OHM 5%

Circuit Ref	Motorola Part No.	Description
R219	0613952Q53	CER CHIP RES 150 OHM 5%
R220	0613952Q53	CER CHIP RES 150 OHM 5%
R222	NOT PLACED	-
R223	0613952R66	CER CHIP RES 0.0 OHM
R250	0613952Q59	CER CHIP RES 270 OHM 5%
R251	0613952Q49	CER CHIP RES 100 OHM 5%
R253	0613952Q25	CER CHIP RES 10.0 OHM 5%
R254	0613952R17	CER CHIP RES 47K OHM 5%
R255	0613952Q61	CER CHIP RES 330 OHM 5%
R257	0613952Q73	CER CHIP RES 1000 OHM 5%
R261	0613952Q37	CER CHIP RES 33.0 OHM 5%
R262	0613952Q37	CER CHIP RES 33.0 OHM 5%
R263	0613952Q59	CER CHIP RES 270 OHM 5%
R264	0613952Q59	CER CHIP RES 270 OHM 5%
R265	0613952R07	CER CHIP RES 18K OHM 5%
R266	0613952R11	CER CHIP RES 27K OHM 5%
R267	0613952R03	CER CHIP RES 12K OHM 5%
R268	0613952R09	CER CHIP RES 22K OHM 5%
R270	0613952Q37	CER CHIP RES 33.0 OHM 5%
R271	0613952Q37	CER CHIP RES 33.0 OHM 5%
R272	0613952Q37	CER CHIP RES 33.0 OHM 5%
R273	0613952Q37	CER CHIP RES 33.0 OHM 5%
R274	0613952Q51	CER CHIP RES 120 OHM 5%
R275	0613952Q25	CER CHIP RES 10.0 OHM 5%
R280	NOT PLACED	-
R281	0613952R66	CER CHIP RES 0.0 OHM
R282	NOT PLACED	-
R306	0613952Q91	CER CHIP RES 5600 OHM 5%
R307	0613952R11	CER CHIP RES 27K OHM 5%
R309	2113944A36	CAP CER CHP 68.0PF 5%
R310	0613952Q91	CER CHIP RES 5600 OHM 5%
R312	0613952Q45	CER CHIP RES 68.0 OHM 5%
R314	0613952Q91	CER CHIP RES 5600 OHM 5%
R316	0613952R19	CER CHIP RES 56K OHM 5%
R317	0613952R25	CER CHIP RES 100K OHM 5%
R318	0613952R25	CER CHIP RES 100K OHM 5%
R319	0613952R29	CER CHIP RES 150K OHM 5%
R320	0613952Q42	CER CHIP RES 51.0 OHM 5%
R322	NOT PLACED	-
R323	0613952Q86	CER CHIP RES 3600 OHM 5%
R324	0613952Q67	CER CHIP RES 560 OHM 5%
R325	0613952R12	CER CHIP RES 30K OHM 5%
R326	0613952Q25	CER CHIP RES 10.0 OHM 5%
R327	0613952Q39	CER CHIP RES 39.0 OHM 5%
R328	0613952R05	CER CHIP RES 15K OHM 5%
R329	NOT PLACED	-



Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description	Circuit Ref	Motorola Part No.	Description
R330	0613952R25	CER CHIP RES 100K OHM 5%	R414	0613952Z75	RES,MF,180KOHM	R506	0613952R17	CER CHIP RES 47K OHM 5%	U407	5115033H01	16K X 8 SPI SERIAL ROM
R331	0613952R29	CER CHIP RES 150K OHM 5%	R415	0613952Z72	RES,MF,91KOHM	R507	0613952R66	CER CHIP RES 0.0 OHM	U409	5185143E03	HC11FL0 (3V) ASIC MICRO-P
R334	NOT PLACED	-	R416	0613952Q89	CER CHIP RES 4700 OHM	R600	0613952J02	CER CHIP RES 11K OHM	U410	NOT PLACED	-
R335	0613952R66	CER CHIP RES 0.0 +/-0.050 OHM	R418	NOT PLACED	-	R851	NOT PLACED	-			AUDIO AMPLIFIER
R350	0613952R03	CER CHIP RES 12K OHM 5%	R419	NOT PLACED	-	R852	0613952Q84	CER CHIP RES 3000 OHM 5%	U420	5115280H01	TDA8547TS
R351	0613952Q25	CER CHIP RES 10.0 OHM 5%	R420	NOT PLACED	-	R853	0613952Q77	CER CHIP RES 1500 OHM 5%	U851	5105835U50	HEAR CLEAR IC
R352	0613952Q93	CER CHIP RES 6800 OHM 5%	R421	0613952Q80	CER CHIP RES 2000 OHM	R854	0613952Q73	CER CHIP RES 1000 OHM 5%	VR101	4813977M11	ZENER DIODE,MBZ5232
R353	0613952R11	CER CHIP RES 27K OHM 5%	R423	0613952R41	CER CHIP RES 470K OHM	R855	0613952R25	CER CHIP RES 100K OHM 5%	VR432	4813979P10	DIODE ARRAY
R354	0613952Q68	CER CHIP RES 620 OHM 5%	R424	0613952R14	CER CHIP RES 36K OHM	R856	0613952R66	CER CHIP RES 0.0 OHM	VR433	4813979P10	DIODE ARRAY
R355	0613952Q49	CER CHIP RES 100 OHM 5%	R425	0613952R12	CER CHIP RES 30K OHM	R857	0613952Q89	CER CHIP RES 4700 OHM 5%	VR434	4815038H01	ZENER DIODE-6.8V
R356	0613952R03	CER CHIP RES 12K OHM 5%	R426	NOT PLACED	-	R858	0613952R01	CER CHIP RES 10K OHM 5%	VR445	4813977A54	<b>ZENER DIODE, MM3Z10V</b>
R357	0613952Q25	CER CHIP RES 10.0 OHM 5%	R427	0613952Q83	CER CHIP RES 2700 OHM	RT400	0680590Z01	THERMISTOR_33K	VR446	4813977A54	<b>ZENER DIODE, MM3Z10V</b>
R358	0613952Q93	CER CHIP RES 6800 OHM 5%	R428	0613952Q09	CER CHIP RES 2.2 OHM	S501	4080710Z21	SWITCH, FREQUENCY	VR447	4813977A54	<b>ZENER DIODE, MM3Z10V</b>
R359	0613952R02	CER CHIP RES 11K OHM 5%	R429	0613952R01	CER CHIP RES 10K OHM	S502	1880619Z06	POTENTIOMETER, VOLUME	VR448	4813977A54	<b>ZENER DIODE, MM3Z10V</b>
R360	0613952Q61	CER CHIP RES 330 OHM 5%	R431	0613952R41	CER CHIP RES 470K OHM	SH100	2680507Z02	SHIELD, HARMONIC FILTER	VR449	4813977A54	<b>ZENER DIODE, MM3Z10V</b>
R361	0613952Q63	CER CHIP RES 390 OHM 5%	R432	0613952R18	CER CHIP RES 51K OHM	SH101	2615144H04	SHIELD, TRANSMITTER	VR450	4815040H01	ZENER DIODE-12V
R362	0613952Q61	CER CHIP RES 330 OHM 5%	R434	0613952Q61	CER CHIP RES 330 OHM	SH102	2680554Z02	SHIELD, RX FRONT END TOP	VR501	4813977M14	ZENER DIODE,MBZ5235
R363	0613952Q42	CER CHIP RES 51.0 OHM 5%	R435	0613952Q80	CER CHIP RES 2000 OHM	SH201	2680511Z02	SHIELD, SYNTHESIZER	VR502	4813977M21	<b>ZENER DIODE,MBZ5242</b>
R364	0613952Q71	CER CHIP RES 820 OHM 5%	R436	0613952Q73	CER CHIP RES 1000 OHM	SH202	2680511Z02	SHIELD, SYNTHESIZER	VR503	4815038H01	ZENER DIODE-6.8V
R365	NOT PLACED	-	R437	0613952R66	CER CHIP RES 0.0 OHM	SH250	2680514Z02	SHIELD, VCO BOTTOM/LVZIF	VR504	4815038H01	ZENER DIODE-6.8V
R366	0613952Q79	CER CHIP RES 1800 OHM 5%	R438	0613952Q53	CER CHIP RES 150 OHM	SH251	2680508Z02	SHIELD, LVZIF 2ND LO	VR505	4815038H01	ZENER DIODE-6.8V
R367	0613952R03	CER CHIP RES 12K OHM 5%	R439	0613952Q53	CER CHIP RES 150 OHM	SH252	2680508Z02	SHIELD, LVZIF 2ND LO	VR506	4815038H01	ZENER DIODE-6.8V
R368	0613952R01	CER CHIP RES 10K OHM 5%	R445	0613952R10	CER CHIP RES 24K OHM	SH301	2680554Z02	SHIELD, RX FRONT END TOP	VR507	4815038H01	ZENER DIODE-6.8V
R369	0613952Q69	CER CHIP RES 680 OHM 5%	R446	0613952R24	CER CHIP RES 91K OHM	SH303	2686708Z03	SHIELD, COUPLER	VR508	4815038H01	ZENER DIODE-6.8V
R370	0613952R03	CER CHIP RES 12K OHM 5%	R447	0613952R40	CER CHIP RES 430K OHM	SH350	2686528Z02	<b>SHIELD, IF SECTION</b>	Y200	4802245J68	OSC, REF 16.8 MHZ 1.5 PPM
R371	0613952Q79	CER CHIP RES 1800 OHM 5%	R448	0613952R08	CER CHIP RES 20K OHM	SH351	2686707Z02	SHIELD, SM SLDRD	Y201	NOT PLACED	-
R372	0613952Q63	CER CHIP RES 390 OHM 5%	R449	0613952R10	CER CHIP RES 24K OHM	SH400	2680505Z02	SHIELD, CTRL TOP LEFT	Y350	4880606B10	2ND OSC XTAL 72.895 MHZ
R373	0613952Q75	CER CHIP RES 1200 OHM 5%	R450	0613959Y45	CER CHIP RES 68 OHM	SH401	2680506Z02	SHIELD, CTRL TOP RIGHT			CER.DISCR. CDBCA455CX36-
R374	0613952Q85	CER CHIP RES 3300 OHM 5%	R457	0613952R01	CER CHIP RES 10K OHM			<b>SHIELD, CTRL BOTTOM LEFT</b>	Y351	9186145B02	TC
R375	0613952Q82	CER CHIP RES 2400 OHM 5%	R460	0613952Q89	CER CHIP RES 4700 OHM	SH402	2680515Z02	SHIELD, CTRL BTM RIGHT			
R376	0613952R66	CER CHIP RES 0.0 OHM	R461	NOT PLACED	-	SH403	2680516Z02	SHIELD, CTRL BTM RIGHT			
R377	NOT PLACED	-	R462	NOT PLACED	-	U101	5115678H01	LD MOS DRIVER IC			
R379	NOT PLACED	-	R463	0613952Q60	CER CHIP RES 300 OHM	U102	5185765B26	IC PWR CTRL IN MOS20			
R400	0613952R17	CER CHIP RES 47K OHM	R471	0613952R08	CER CHIP RES 20K OHM	U103	5115022H01	IC TEMPERATURE SENSOR			
R401	0613952R66	CER CHIP RES 0.0 OHM	R472	0613952R14	CER CHIP RES 36K OHM	U201	5185177Y01	IC TESTED AT25016 48 PIN			
R402	NOT PLACED	-	R473	0613952Q25	CER CHIP RES 10.0 OHM	U202	5115026H01	MAX SUPPLY VOL 16V			
R403	NOT PLACED	-	R475	0613952R66	CER CHIP RES 0.0 OHM	U203	5115019H01	3.3V REGULATOR			
R405	0613952R66	CER CHIP RES 0.0 OHM	R476	0613952R10	CER CHIP RES 24K OHM			LOW VOLTAGE VCO BUFFER			
R406	0613952R22	CER CHIP RES 75K OHM	R477	0613952Q73	CER CHIP RES 1000 OHM	U250	5171121L01	IC			
R407	0613952R21	CER CHIP RES 68K OHM	R478	0613952R01	CER CHIP RES 10K OHM	U301	5171756L01	HMIC MIXER IC			
R408	NOT PLACED	-	R481	0613952R10	CER CHIP RES 24K OHM	U350	5115281H01	FM IF IC SA616			
R409	0613952R01	CER CHIP RES 10K OHM	R492	0613952R66	CER CHIP RES 0.0 OHM			IC,OP AMP,2PER			
R410	0613952R25	CER CHIP RES 100K OHM	R499	NOT PLACED	-	U351	5114005A01	PKG,GP,SM,SO-8,PB-FREE			
R411	0613952R01	CER CHIP RES 10K OHM	R501	0613952Q69	CER CHIP RES 680 OHM 5%	U400	5115012H01	MAX SUPPLY VOL 30V			
R413	0613952R66	CER CHIP RES 0.0 OHM	R502	0613952Q55	CER CHIP RES 180 OHM 5%	U404	5115062H01	IC ASFIC_CMP			
			R505	0613952R01	CER CHIP RES 10K OHM 5%	U405	5115020H01	STATIC_RAM_32KX8			
						U406	5115034H01	IC FLASH 4MBIT			

\* Motorola Depot Servicing only

## Notes

## Appendix A Replacement Parts Ordering

### A.1 Basic Ordering Information

When ordering replacement parts or equipment information, the complete identification number should be included. This applies to all components, kits, and chassis. If the component part number is not known, the order should include the number of the chassis or kit of which it is a part, and sufficient description of the desired component to identify it.

Crystal orders should specify the crystal type number, crystal and carrier frequency, and the model number in which the part is used.

### A.2 Transceiver Board and VOCON Board Ordering Information

When ordering a replacement Transceiver Board or VOCON Board, refer to the applicable Model Chart in the front of this manual, read the Transceiver Board or VOCON Board note, and include the proper information with your order.

### A.3 Motorola Online

Motorola Online users can access our online catalog at

<https://www.motorola.com/businessonline>

To register for online access, please call 1-800-814-0601.

### A.4 Mail Orders

Send written orders to the following addresses:

**Replacement Parts/ Test  
Equipment/Manuals/ Crystal  
Service Items** (United States and  
Canada):

Motorola Inc.  
Customer Care and Services  
Division\*  
Attention: Order Processing  
1307 E. Algonquin Road  
Schaumburg, IL 60196  
U.S.A.

**Federal Government Orders:**

Motorola Inc.  
U.S. Federal Government Markets  
Division  
Attention: Order Processing  
7230 Parkway Drive  
Landover, MD 21076

**International Orders:**

Motorola Inc.  
Customer Care and Services  
Division\*  
Attention: Order Processing  
1307 E. Algonquin Road  
Schaumburg, IL 60196  
U.S.A.

## **A.5 Telephone Orders**

Customer Care and Services Division\*  
(United States and Canada)  
7:00 AM to 7:00 PM (Central Standard Time)  
Monday through Friday (Chicago, U.S.A.)  
1-800-422-4210  
(International Orders)  
1-847-538-8023

U.S. Federal Government Markets Division (USFGMD)  
1-800-826-1913 Federal Government Parts - Credit Cards Only  
8:30 AM to 5:00 PM (Eastern Standard Time)

## **A.6 Fax Orders**

Customer Care and Services Division\*  
(United States and Canada)  
1-800-622-6210  
(International)  
847-576-3023

USFGMD  
(Federal Government Orders)  
1-800-526-8641 (For Parts and Equipment Purchase Orders)

## **A.7 Parts Identification**

Customer Care and Services Division\*  
(United States and Canada)  
1-800-422-4210, menu 3

## **A.8 Product Customer Service**

Customer Response Center  
(Non-technical Issues)  
1-800-247-2346  
FAX:1-800-247-2347

\* Customer Care and Services Division (CCSD) was formerly known as Accessories and Aftermarket Division (AAD).





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**6881088C46-K**



**HT Series™ / MTX Series™ / PRO Series™  
Professional Series  
Two-Way Portable Radios  
Detailed Service Manual**



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