Colour Television

Chassis

LC4.8A

AA

Service
Service
Service

Service Manual

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PHILIPS

1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:

Notes:

- Figures can deviate due to the different set executions.
- Specifications are indicative (subject to change).

1.1 Technical Specifications

1.1.1 Vision

Display type	:	LCD, IPS
Screen size	:	37" (94 cm), 16:9
	:	42" (107 cm), 16:9
Resolution (HxV pixels)	:	1366 x 768
Contrast ratio	:	800:1 (37 inch)
	:	700:1 (42 inch)
Light output (cd/m^2)	:	550
Response time (ms)	:	8
Viewing angle (HxV degrees)	:	176x176
Tuning system	:	PLL
TV Colour systems	:	PAL B/G, D/K, I
	:	SECAM B/G, D/K, L/L'
	:	NTSC M/N 3.58
Video playback	:	NTSC M/N 3.58, 4.43
	:	PAL B/G
	:	SECAM L/L'
Supported computer formats	:	VGA (640x480)
	:	MAC (640x480)
	:	SVGA (800x600)
	:	XVGA (1024x768)
	:	WXGA (1280x768)
Supported video formats	:	640x480i - 1fH
	:	720x576i - 1fH
	:	640x480p - 2fH
	:	720x576p - 2fH
	:	1920x1080i - 2fH
Presets/channels	:	100/125 presets
Tuner bands	:	VHF
	:	UHF
	:	S-band
	:	Hyper-band

1.1.2 Sound

Sound systems	:	FM-mono
	:	FM-stereo B/G
	:	NICAM B/G, D/K, I, L
	:	AV Stereo
Maximum power (W_{RMS})	:	2 x 15

1.1.3 Miscellaneous

Power supply:		
- Mains voltage (V_{AC})	:	220 - 240 (/79 / 98)
	:	90 - 276 (/93)
- Mains frequency (Hz)	:	50 / 60
Ambient conditions:		
- Temperature range (°C)	:	+5 to +40
- Maximum humidity	:	90% R.H.
Power consumption		
- Normal operation (W)	:	≈ 185 (37 inch)
	:	≈ 246 (42 inch)
- Stand-by (W)	:	< 2
Dimensions (WxHxD cm)	:	110.5 x 61 x 9.7 (37")
	:	124 x 68 x 10.4 (42")
Weight (kg)	:	27 (42 inch)
	:	24 (37 inch)

1.2 Connection Overview

Note: The following connector colour abbreviations are used (acc. to DIN/IEC 757): Bk= Black, Bu= Blue, Gn= Green, Gy= Grey, Rd= Red, Wh= White, and Ye= Yellow.

1.2.1 Side I/O connections

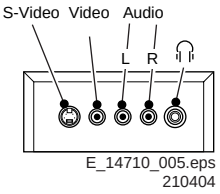

Figure 1-1 Side I/O connections

S-Video 3(Hosiden): Video Y/C - In

1	- Ground Y	Gnd
2	- Ground C	Gnd
3	- Video Y	1 V_{PP} / 75 ohm
4	- Video C	0.3 V_{PP} / 75 ohm

Cinch: Video CVBS - In, Audio - In

Ye	- Video CVBS	1 V_{PP} / 75 ohm
Wh	- Audio L	0.5 V_{RMS} / 10 kohm
Rd	- Audio R	0.5 V_{RMS} / 10 kohm

Mini Jack: Audio Head phone - Out

Bk	- Head phone	32 - 600 ohm / 10 mW

1.2.2 Rear Connections

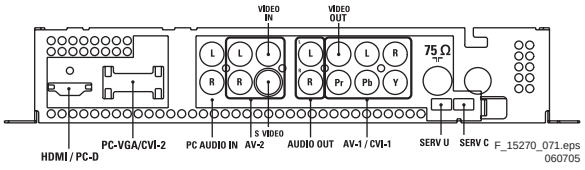

Figure 1-2 Rear I/O

Aerial - In

-	- IEC-type (EU)	Coax, 75 ohm

Cinch: Video CVBS - In, Audio - In

Ye	- Video CVBS	1 V_{PP} / 75 ohm
Wh	- Audio L	0.5 V_{RMS} / 10 kohm
Rd	- Audio R	0.5 V_{RMS} / 10 kohm

Cinch: Video CVBS - Out, Audio - Out

Ye	- Video CVBS	1 V_{PP} / 75 ohm
Wh	- Audio L	0.5 V_{RMS} /10 kohm
Rd	- Audio R	0.5 V_{RMS} / 10 kohm

Cinch: CVI-1 Video YPbPr - In

Gn	- Video Y	1 V_{PP} / 75 ohm
Bu	- Video Pb	0.7 V_{PP} / 75 ohm

Rd - Video Pr 0.7 V_{PP} / 75 ohm

Cinch: CVI-1 Audio - In

Rd - Audio - R 0.5 V_{RMS} / 10 kohm
Wh - Audio - L 0.5 V_{RMS} / 10 kohm

Cinch: PC Audio - In

Rd - Audio - R 0.5 V_{RMS} / 10 kohm
Wh - Audio - L 0.5 V_{RMS} / 10 kohm

S-Video (Hosiden): Video Y/C - In

1 - Ground Y Gnd
2 - Ground C Gnd
3 - Video Y 1 V_{PP} / 75 ohm
4 - Video C 0.3 V_{PP}P / 75 ohm

Service connector (ComPair)

1 - SDA-S I^2C Data (0 - 5 V)
2 - SCL-S I^2C Clock (0 - 5 V)
3 - Ground Gnd

Service connector (UART)

1 - UART_TX Transmit
2 - Ground Gnd
3 - UART_RX Receive

HDMI/PC-D: Digital Video, Digital Audio - In

Figure 1-3 HDMI (type A) connector

1 - D2+ Data channel
2 - Shield Gnd
3 - D2- Data channel
4 - D1+ Data channel
5 - Shield Gnd
6 - D1- Data channel
7 - D0+ Data channel
8 - Shield Gnd
9 - D0- Data channel
10 - CLK+ Data channel
11 - Shield Gnd
12 - CLK- Data channel
13 - n.c.
14 - n.c.
15 - DDC_SCL DDC clock
16 - DDC_SDA DDC data
17 - Ground Gnd
18 - +5V
19 - HPD Hot Plug Detect
20 - Ground Gnd

PC VGA/DVI-2: Video 2fH RGB/YPbPr - In

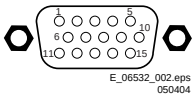

Figure 1-4 VGA Connector

1 - Video Red/Pr 0.7 V_{PP} / 75 ohm
2 - Video Green/Y 0.7 V_{PP} / 75 ohm
3 - Video Blue/Pb 0.7 V_{PP} / 75 ohm
4 - n.c.
5 - Ground Gnd
6 - Ground Red Gnd
7 - Ground Green Gnd
8 - Ground Blue Gnd
9 - +5V_{DC} +5 V
10 - Ground Sync Gnd
11 - n.c.
12 - DDC_SDA DDC data
13 - H-sync 0 - 5 V
14 - V-sync 0 - 5 V
15 - DDC_SCL DDC clock

1.3 Chassis Overview

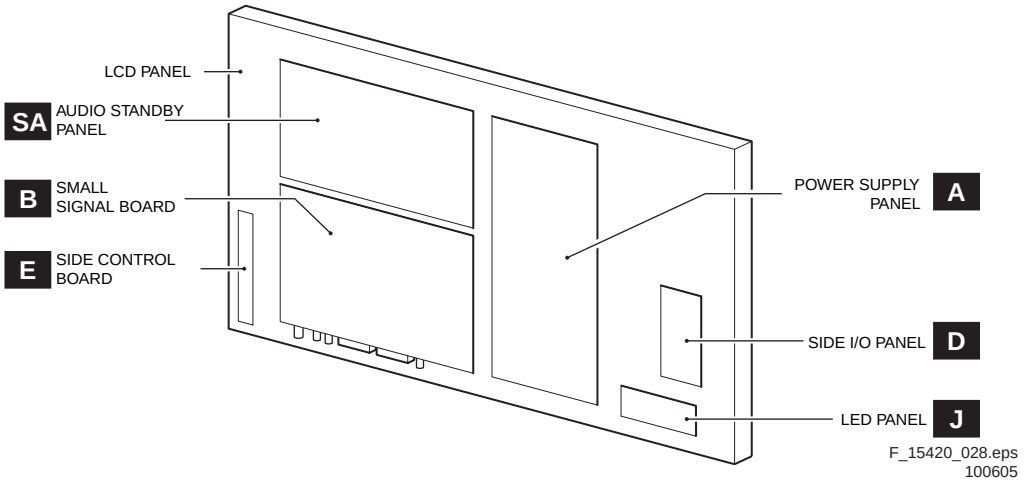

Figure 1-5 Chassis overview

2. Safety Instructions, Warnings, and Notes

Index of this chapter:

2.1 Safety Instructions

Safety regulations require the following **during** a repair:

- Connect the set to the Mains (AC Power) via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the Mains (AC Power) lead for external damage.
- Check the strain relief of the Mains (AC Power) cord for proper function.
- Check the electrical DC resistance between the Mains (AC Power) plug and the secondary side (only for sets that have a Mains (AC Power) isolated power supply):
  1. Unplug the Mains (AC Power) cord and connect a wire between the two pins of the Mains (AC Power) plug.
  2. Set the Mains (AC Power) switch to the "on" position (keep the Mains (AC Power) cord unplugged!).
  3. Measure the resistance value between the pins of the Mains (AC Power) plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
  4. Switch "off" the set, and remove the wire between the two pins of the Mains (AC Power) plug.
- Check the cabinet for defects, to prevent touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
  – Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  – Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⏚), or hot ground (⏚), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).
- Where necessary, measure the waveforms and voltages with (⏊) and without (⏊) aerial signal. Measure the voltages in the power supply section both in normal operation (⏻) and in stand-by (⏻). These values are indicated by means of the appropriate symbols.
- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

2.3.2 Schematic Notes

- All resistor values are in ohms, and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are given in micro-farads (μ= x10^{-6}), nano-farads (n= x10^{-9}), or pico-farads (p= x10^{-12}).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.3.3 Rework on BGA (Ball Grid Array) ICs

General

Although (LF)BGA assembly yields are very high, there may still be a requirement for component rework. By rework, we mean the process of removing the component from the PWB and replacing it with a new component. If an (LF)BGA is removed from a PWB, the solder balls of the component are deformed drastically so the removed (LF)BGA has to be discarded.

Device Removal

As is the case with any component that, is being removed, it is essential when removing an (LF)BGA, that the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature.
A uniform temperature reduces the risk of warping the PWB. To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area Preparation

When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.
Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent.

After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the (LF)BGA.
Note: Do not apply solder paste, as this has been shown to result in problems during re-soldering.

Device Replacement
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

More Information
For more information on how to handle BGA devices, visit this URL: *www.atyourservice.ce.philips.com* (needs subscription, not available for all regions). After login, select “Magazine”, then go to “Workshop Information”. Here you will find Information on how to deal with BGA-ICs.

2.3.4 Lead-free Solder

Philips CE is producing lead-free sets (PBF) from 1.1.2005 onwards.

Identification: The bottom line of a type plate gives a 14-digit serial number. Digits 5 and 6 refer to the production year, digits 7 and 8 refer to production week (in example below it is 1991 week 18).

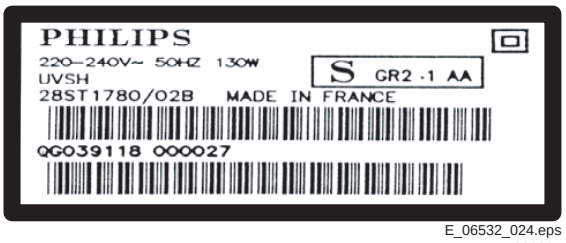

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Figure 2-1 Serial number example

Regardless of the special lead-free logo (which is not always indicated), one must treat all sets from this date onwards according to the rules as described below.

Figure 2-2 Lead-free logo

Due to lead-free technology some rules have to be respected by the workshop during a repair:
- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able:
  - To reach a solder-tip temperature of at least 400°C.
  - To stabilise the adjusted temperature at the solder-tip.
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature of around 360°C - 380°C is reached and stabilised at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will increase drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch “off” unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly **to avoid** mixed regimes. If this cannot be avoided, carefully clear the solder-joint from old tin and re-solder with new tin.
- Use only original spare-parts listed in the Service-Manuals. Not listed standard material (commodities) has to be purchased at external companies.
- Special information for lead-free BGA ICs: these ICs will be delivered in so-called "dry-packaging" to protect the IC against moisture. This packaging may only be opened shortly before it is used (soldered). Otherwise the body of the IC gets "wet" inside and during the heating time the structure of the IC will be destroyed due to high (steam-) pressure inside the body. If the packaging was opened before usage, the IC has to be heated up for some hours (around 90°C) for drying (think of ESD-protection!).
  Do not re-use BGAs at all!
- For sets produced before 1.1.2005, containing leaded soldering tin and components, all needed spare parts will be available till the end of the service period. For the repair of such sets nothing changes.

In case of doubt whether the board is lead-free or not (or with mixed technologies), you can use the following method:
- Always use the highest temperature to solder, when using SAC305 (see also instructions below).
- De-solder thoroughly (clean solder joints to avoid the mixing of two alloys).

Caution: For BGA-ICs, you **must** use the correct temperature profile, which is coupled to the 12NC. For an overview of these profiles, visit the website *www.atyourservice.ce.philips.com* (needs subscription, but is not available for all regions).
You will find this and more technical information within the "Magazine", chapter "Workshop information".
For additional questions please contact your local repair help desk.

2.3.5 Practical Service Precautions

- **It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- **Always respect voltages**. While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

3. Directions for Use

You can download this information from the following websites:
http://www.philips.com/support
http://www.p4c.philips.com

4. Mechanical Instructions

Index of this chapter:

Notes:

- Figures below can deviate slightly from the actual situation, due to the different set executions.
- Follow the disassembling instructions in described order.

4.1 Cable Dressing

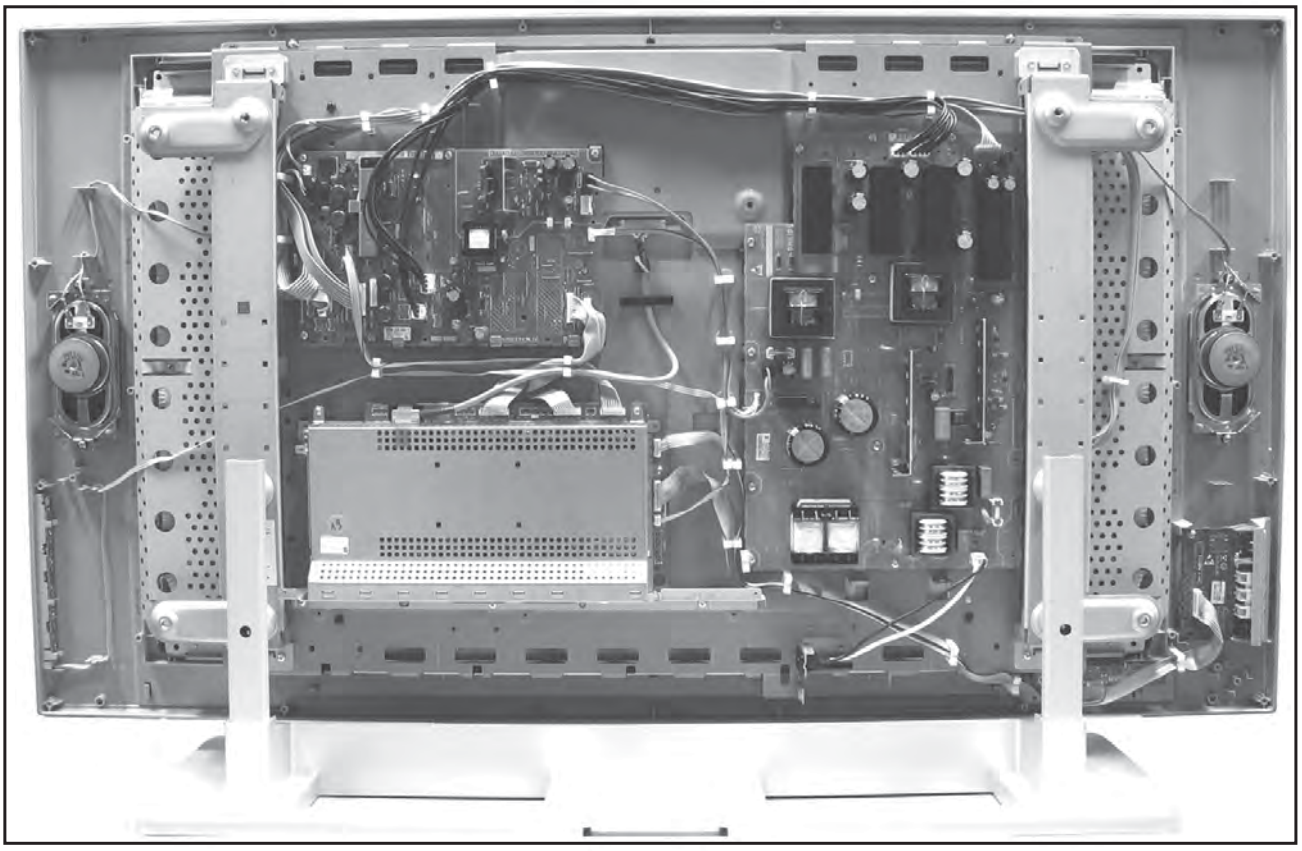

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Figure 4-1 Cable dressing

4.2 Service Positions

For easy servicing of this set, there are a few possibilities created:

- The buffers from the packaging (see figure "Rear cover").
- Foam bars (created for service).
- Aluminium service stands (created for Service).

4.2.1 Foam Bars

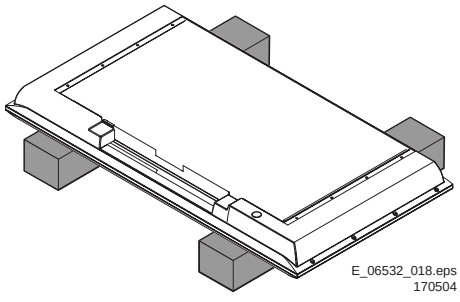

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Figure 4-2 Foam bars

The foam bars (order code 3122 785 90580 for two pieces) can be used for all types and sizes of Flat TVs. By laying the TV face down on the (ESD protective) foam bars, a stable situation is created to perform measurements and alignments.
By placing a mirror under the TV, you can monitor the screen.

4.2.2 Aluminium Stands

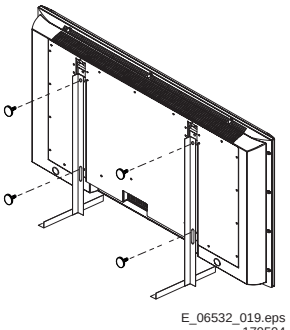

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Figure 4-3 Aluminium stands (drawing of MkI)

The aluminium stands (order code 3122 785 90480) can be mounted with the back cover removed or still left on. So, the stand can be used to store products or to do measurements. It is also very suitable to perform duration tests without taking much space, without having the risk of overheating, or the risk of products falling. The stands can be mounted and removed quick and easy with use of the delivered screws that can be tightened and loosened manually without the use of tools. See figure above.

Note: Only use the delivered screws to mount the monitor to the stands.

4.3 Assy/Panel Removal

4.3.1 Rear Cover

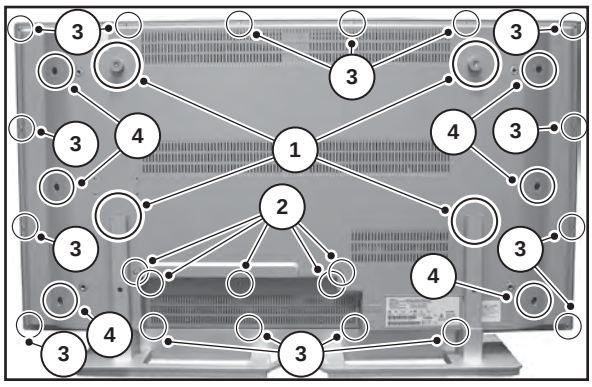

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Figure 4-4 Rear cover

Warning: Disconnect the mains power cord before you remove the rear cover.

1. Remove the screws that secure the rear cover (see Figure “Rear cover screws”); these are:
   a) 4 x big torx screws (1) for securing the stand/wall mount;
   b) 5 x small torx screws (2) near the rear I/O panel;
   c) 22 x small torx screws (3) that secure the loudspeaker compartments [6 of these screws are in sunken holes (4)] and along the edges of the rear cover.
2. Lift the rear cover from the cabinet cautiously. Make sure that wires and other internal components are not damaged during cover removal.

4.3.2 Side I/O Panel

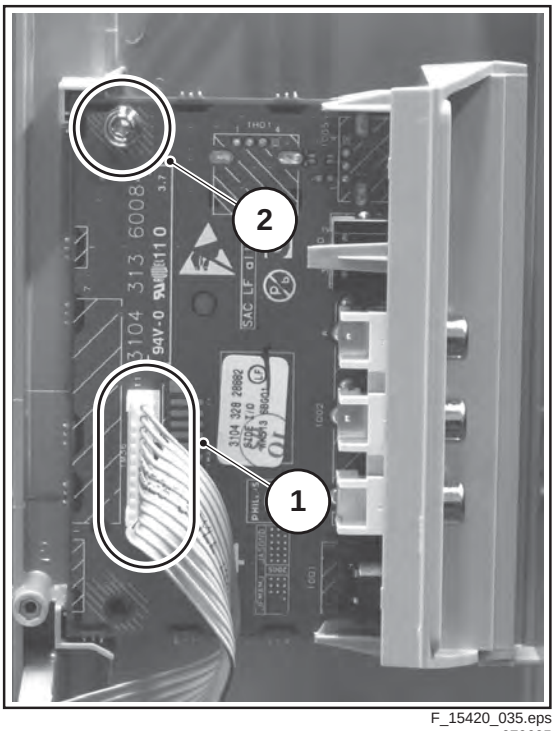

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Figure 4-5 Side I/O panel

1. Disconnect the cable (1) from the panel.
2. Remove the fixation screw (2) and lift the panel out of its brackets.

4.3.3 LED Panel

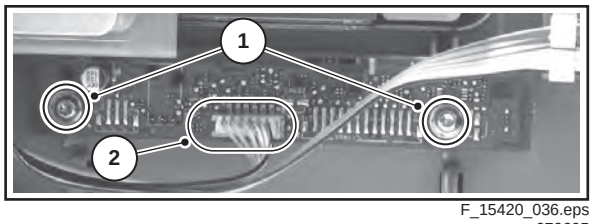

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Figure 4-6 LED panel

1. Remove the fixation screws (1) and take the panel out of its brackets.
2. Disconnect the cable (2) from the panel.

4.3.4 Keyboard Control Panel

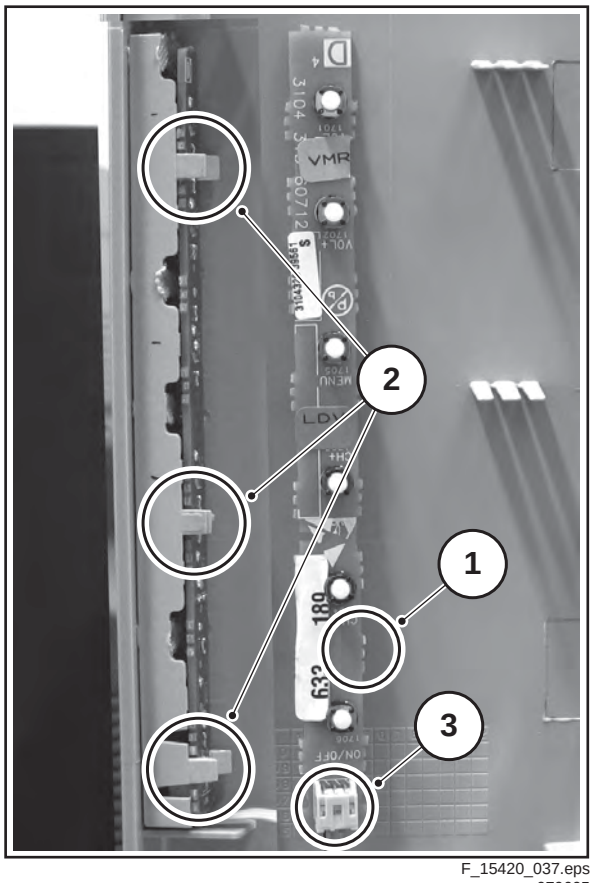

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Figure 4-7 Keyboard control panel

1. Remove the panel (1) from its brackets (2).
2. Disconnect the cable (3) from the panel.

4.3.5 SSB Board Cover Shield

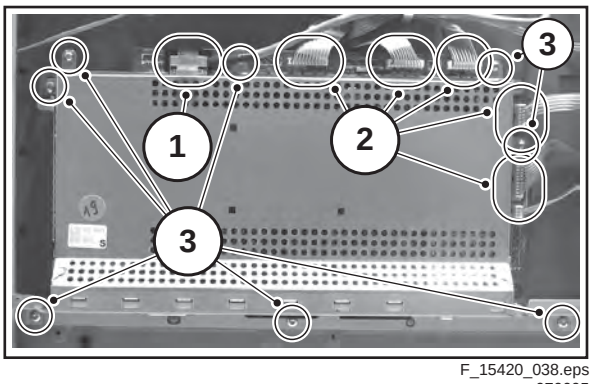

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Figure 4-8 SSB cover shield

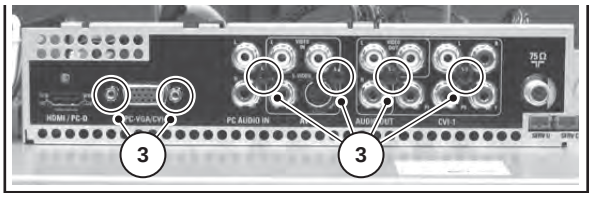

Figure 4-9 VGA connector and rear I/O panel screws

1. Very **cautiously** disconnect the LVDS cable (1) from the SSB panel (see Figure “SSB board cover shield”). Notice that this cable is very fragile.
2. Remove all other cables (2) from the SSB board (see Figure “SSB board cover shield”).
3. Remove the fixation screws (3), see Figure “SSB board cover shield” and remove the SSB shield with the SSB board inside, and the rear I/O panel still attached to it.
4. Remove the fixation screws (3) from the VGA connector and from the rear panel, see Figure “VGA connector and rear panel screws”, and remove the rear I/O panel from the SSB board.
5. Remove the upper part of the shield from the SSB panel, by unhooking it from its brackets. Be careful not to damage the LVDS connector on the SSB board, see Figure “SSB board cover shield”.

4.3.6 SSB

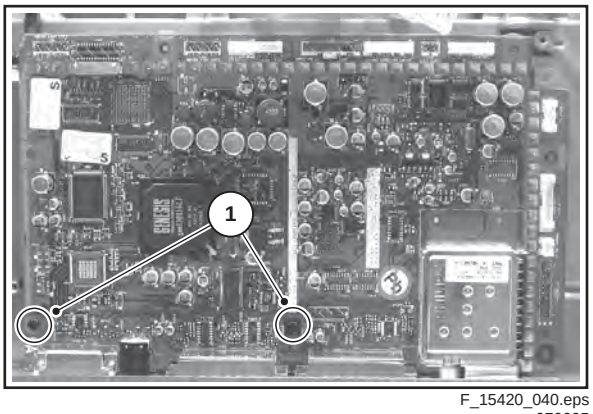

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Figure 4-10 SSB

1. Remove the two fixation screws (1) that secure the SSB board on the lower part of the SSB shielding, see Figure “SSB”.
2. Remove the SSB panel.

4.3.7 Power Supply Panel

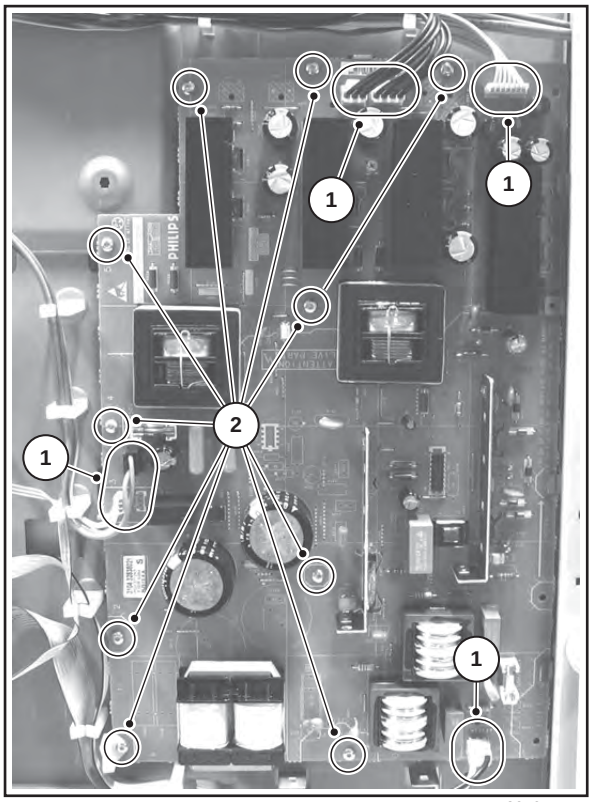

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Figure 4-11 Power supply panel

1. Disconnect all cables (1) from the panel.
2. Remove the fixation screws (2) from the panel.
3. Take the panel out of its brackets.

4.3.8 Class D Audio Amplifier/STBY Power Supply Panel

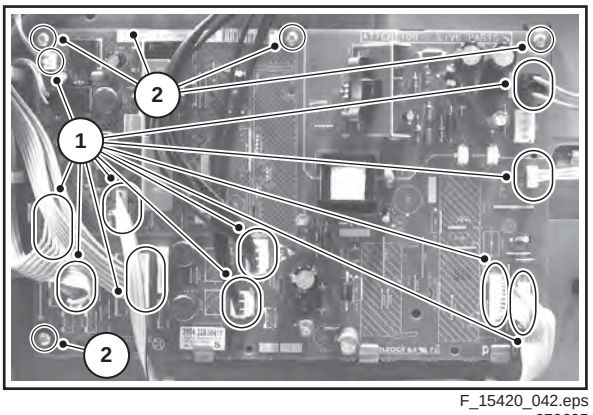

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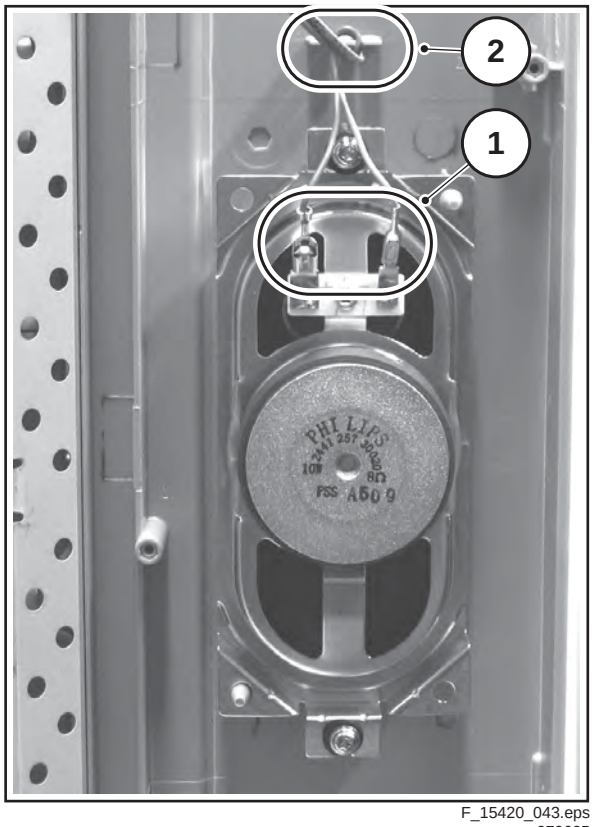
Figure 4-12 Class D audio amplifier/STBY power supply panel

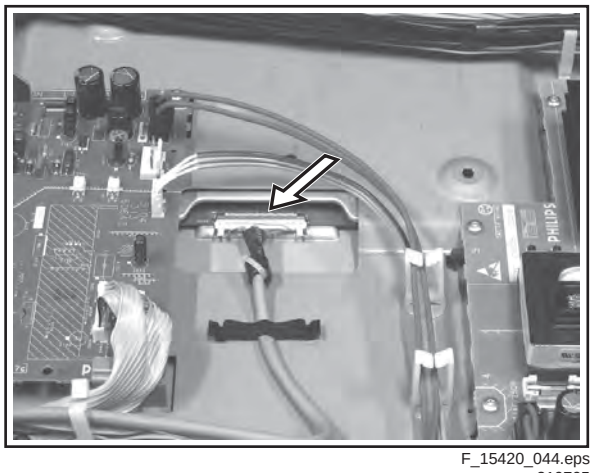
1. Disconnect all cables (1) from the panel.
2. Remove the fixation screws (2) from the panel.
3. Take the panel out of its brackets.

4.3.9 LCD Panel



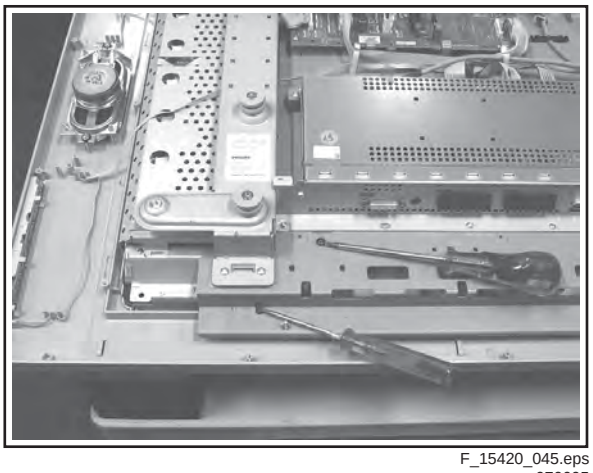
F_15420_043.eps
070605

Figure 4-13 “L” and “R” loudspeaker cables and cable clamps



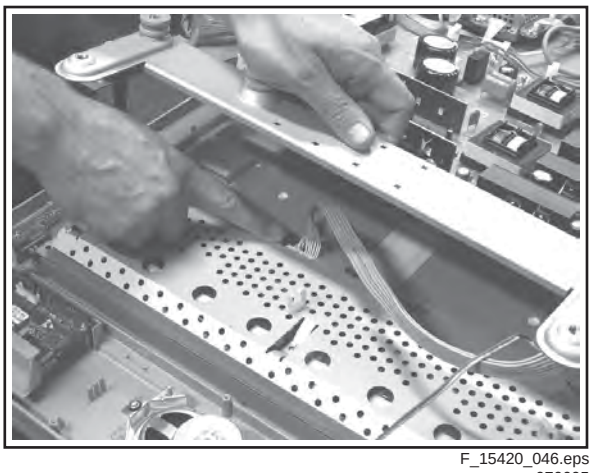
F_15420_044.eps
210705

Figure 4-14 LVDS connector



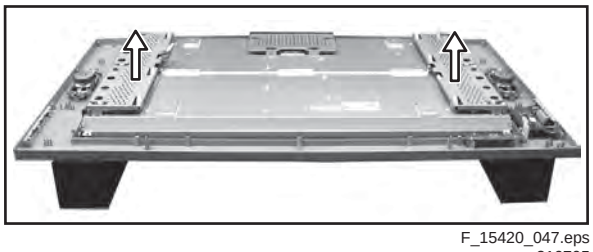
F_15420_045.eps
070605

Figure 4-15 LCD panel fixation screws



F_15420_046.eps
070605

Figure 4-16 LCD panel connector



F_15420_047.eps
210705

Figure 4-17 LCD panel

To remove the LCD-panel, carry out the following steps:

1. Disconnect the cables (1) from the “L” and the “R” loudspeakers and remove the cables from their cable clamps (1, see Figure “L” and “R” loudspeaker cables and cable clamps”).
2. **Important:** Unplug the LVDS connector (1) on the LCD panel (see Figure “LVDS connector”).
   Be careful, as this is a very fragile connector!
3. Unplug the connectors (1) from the Side I/O panel and from the LED panel and remove the cables from their cable clamps (see Figures “Side I/O panel” and “LED panel” at the beginning of this chapter).
4. Take the Keyboard Control panel out of its brackets and remove the Keyboard Control cable from its cable clamp (see Figure “Keyboard Control panel” at the beginning of this chapter).
5. Remove the fixation screws from the LCD panel (see Figure “LCD panel fixation screws”; the two types of torx screws, 6 small ones and 4 large ones, are indicated by the two screwdrivers).
6. Unplug the connector of the LCD panel flatcable, at the “R” speaker side of the TV set, from connector 1316 on the lower left side of the Class D audio amplifier/STBY power supply panel (see Figure “Class D audio amplifier/STBY power supply panel”).
7. Lift the “L” speaker side of the metal frame 10 cm from the LCD panel and hold it in this position. Now, loosen the LCD flatcable and the “L” loudspeaker cable from their clamps, and disconnect the LCD flatcable connector from the LCD panel (see Figure “LCD panel connector”).
8. Lift the metal frame (together with all PWBs) from the LCD panel.
   Take care not to damage the fragile LVDS cable.
9. After removal of the metal frame, you can lift the LCD panel (1) from its plastic frame (see Figure “LCD panel”).
10. If the plastic frame is damaged, replace it by a new frame, after removing the loudspeakers, the Side I/O panel, the Keyboard Control panel, and the LED panel.

4.4 Set Re-assembly

To re-assemble the whole set, execute all processes in reverse order.

Notes:

- While re-assembling, make sure that all cables are placed and connected in their original positions. See Figure "Cable dressing". Be careful with the fragile LVDS cable.

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

5.1 Test Points

This chassis is equipped with test points in the service printing. In the schematics test points are identified with a rectangle box around Fxxx or Ixxx.
Perform measurements under the following conditions:

- Television set in Service Default Alignment Mode.
- Video input: Colour bar signal.
- Audio input: 3 kHz left channel, 1 kHz right channel.

5.2 Service Modes

Service Default mode (SDM) and Service Alignment Mode (SAM) offers several features for the service technician, while the Customer Service Mode (CSM) is used for communication between the call centre and the customer.

This chassis also offers the option of using ComPair, a hardware interface between a computer and the TV chassis. It offers the possibilities of structured troubleshooting, error code reading, and software version readout for all chassis.
Minimum requirements for ComPair: a Pentium processor, a Windows OS, and a CD-ROM drive (see also paragraph "ComPair").

5.2.1 Service Default Mode (SDM)

Purpose

- To create a predefined setting for measurements to be made.
- To override software protections.
- To start the blinking LED procedure.
- To inspect the error buffer.
- To check the life timer.

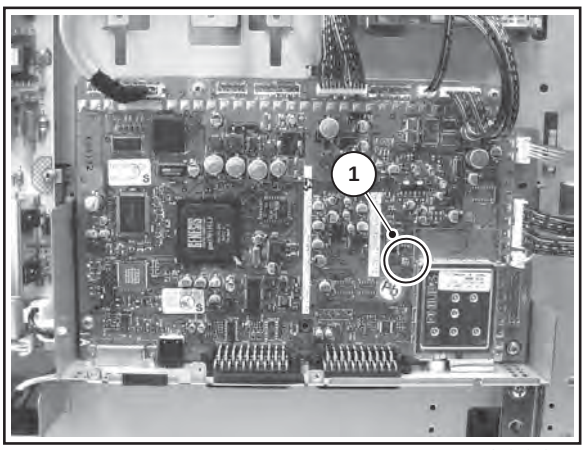
Specifications

- Tuning frequency: 61.25 MHz.
- Colour system: NTSC.
- All picture settings at 50% (brightness, colour contrast, hue).
- Bass, treble, and balance at 50 %; volume at 25 %.
- All service-unfriendly modes (if present) are disabled. The service unfriendly modes are:
  - Timer / Sleep timer.
  - Child / parental lock.
  - Blue mute.
  - Hotel / hospital mode.
  - Auto shut off (when no “IDENT” video signal is received for 15 minutes).
  - Skipping of non-favourite presets / channels.
  - Auto-storage of personal presets.
  - Auto user menu time-out.
  - Auto Volume Levelling (AVL).

How to Enter

To enter SDM, use one of the following methods:

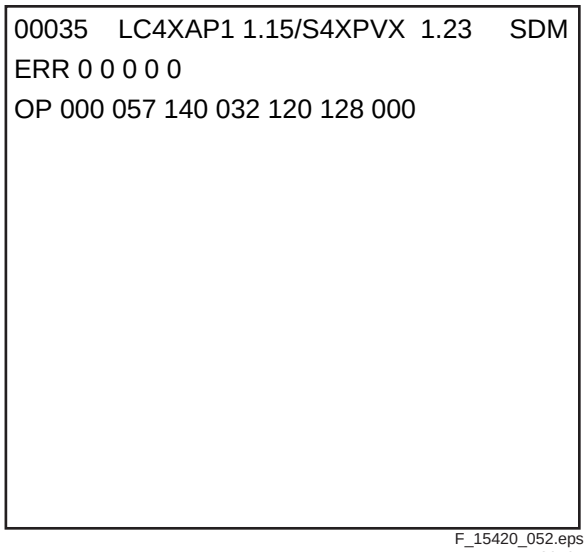
- Press the following key sequence on the remote control transmitter: “**062596**” directly followed by the MENU button (do not allow the display to time out between entries while keying the sequence).
- Short "Service" jumpers on the TV board during cold start and apply mains (see Figure "Service jumpers"). Then press the mains button (remove the short after start-up). **Caution**: Entering SDM by shorting "Service" jumpers will override the +8V-protection. Do this only for a short period. When doing this, the service-technician must know exactly what he is doing, as it could damage the television set.
- Or via ComPair.



F_15270_053.eps
180505

Figure 5-1 Service jumpers

After entering SDM, the following screen is visible, with SDM in the upper right corner of the screen to indicate that the television is in Service Default Mode.



F_15420_052.eps
180705

Figure 5-2 SDM menu

How to Navigate

Use one of the following methods:

- When you press the MENU button on the remote control, the set will switch on the normal user menu in the SDM mode.
- On the TV, press and hold the VOLUME DOWN and press the CHANNEL DOWN for a few seconds, to switch from SDM to SAM and reverse.

How to Exit

Switch the set to STANDBY by pressing the mains button on the remote control transmitter or the television set.
If you turn the television set off by removing the mains (i.e., unplugging the television) without using the mains button, the television set will remain in SDM when mains is re-applied, and the error buffer is not cleared.

5.2.2 Service Alignment Mode (SAM)

Purpose

- To change option settings.
- To display / clear the error code buffer.
- To perform alignments.

Specifications

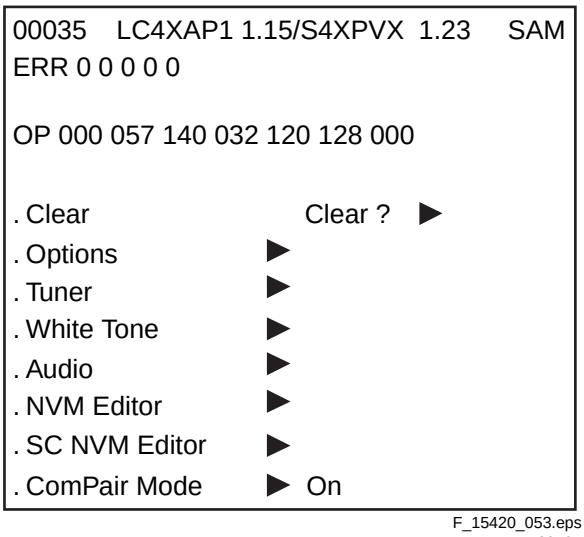
- Operation hours counter (maximum five digits displayed).
- Software version, Error codes, and Option settings display.
- Error buffer clearing.
- Option settings.
- AKB switching.
- Software alignments (Tuner, White Tone, Geometry & Audio).
- NVM Editor.
- ComPair Mode switching.

How to Enter

To enter SAM, use one of the following methods:

- Press the following key sequence on the remote control transmitter: "**062596**" directly followed by the OSD/ STATUS/INFO(I+) button (do not allow the display to time out between entries while keying the sequence).
- Or via ComPair.

After entering SAM, the following screen is visible, with SAM in the upper right corner of the screen to indicate that the television is in Service Alignment Mode.



F_15420_053.eps
180705

Figure 5-3 SAM menu

Menu Explanation

1. **LLLLL.** This represents the run timer. The run timer counts normal operation hours, but does not count standby hours.
2. **AAABCD-X.Y.** This is the software identification of the main microprocessor:
   - **A**= the project name (LC04.x).
   - **B**= the region: E= Europe, A= Asia Pacific, U= NAFTA, L= LATAM.
   - **C**= the software diversity:
     - **Europe:** T= 1 page TXT, F= Full TXT, V= Voice control.
     - **LATAM and NAFTA:** N= Stereo non-dBx, S= Stereo dBx.
     - **Asian Pacific:** T= TXT, N= non-TXT, C= NTSC.
     - **ALL regions:** M= mono, D= DVD, Q= Mk2.
   - **D**= the language cluster number.
   - **X**= the main software version number (updated with a major change that is incompatible with previous versions).
   - **Y**= the sub software version number (updated with a minor change that is compatible with previous versions).
3. **EEEEE-F.GG.** This is the software identification of the Scaler:
   - **EEEEEE**= the scaler sw cluster
   - **F**= the main sw version no.
   - **GG**= the sub-version no.
4. **SAM.** Indication of the Service Alignment Mode.
5. **Error Buffer.** Shows all errors detected since the last time the buffer was erased. Five errors possible.
6. **Option Bytes.** Used to set the option bytes. See "Options" in the Alignments section for a detailed description. Seven codes are possible.
7. **Clear.** Erases the contents of the error buffer. Select the CLEAR menu item and press the MENU RIGHT key. The content of the error buffer is cleared.
8. **Options.** Used to set the option bits. See "Options" in the Alignments section for a detailed description.
9. **Tuner.** Used to align the tuner. See "Tuner" in the Alignments section for a detailed description.
10. **White Tone.** Used to align the white tone. See "White Tone" in the Alignments section for a detailed description.
11. **Audio.** No audio alignment is necessary for this television set.
12. **NVM Editor.** Can be used to change the NVM data in the television set. See table "NVM data" further on.
13. **SC NVM Editor.** Can be used to edit Scaler NVM.
14. **ComPalr.** Can be used to switch on the television to In System Programming (ISP) mode, for software uploading via ComPair.
    Caution: When this mode is selected without ComPair connected, the TV will be blocked. Remove the AC power to reset the TV.

How to Navigate

- In SAM, select menu items with the MENU UP/DOWN keys on the remote control transmitter. The selected item will be highlighted. When not all menu items fit on the screen, use the MENU UP/DOWN keys to display the next / previous menu items.
- With the MENU LEFT/RIGHT keys, it is possible to:
  - Activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected submenu.
- In SAM, when you press the MENU button twice, the set will switch to the normal user menus (with the SAM mode still active in the background). To return to the SAM menu press the MENU or STATUS/EXIT button.
- When you press the MENU key in while in a submenu, you will return to the previous menu.

How to Store SAM Settings
To store the settings changed in SAM mode, leave the top level SAM menu by using the POWER button on the remote control transmitter or the television set.

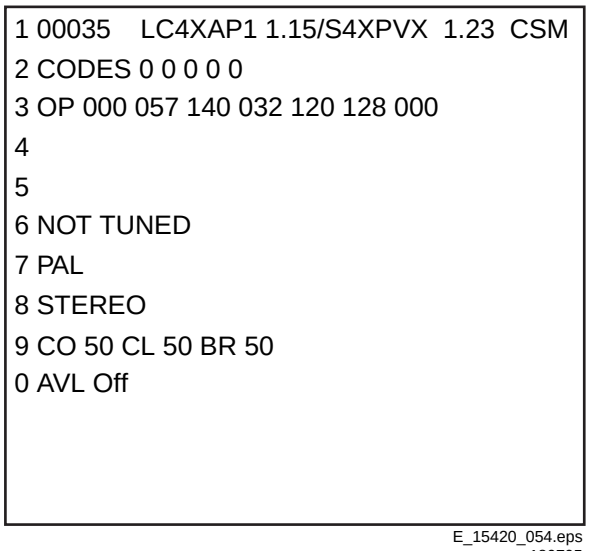
How to Exit
Switch the set to STANDBY by pressing the mains button on the remote control transmitter or the television set.
If you turn the television set "off" by removing the mains (i.e., unplugging the television) without using the mains button, the television set will remain in SAM when mains is re-applied, and the error buffer is not cleared.

5.2.3 Customer Service Mode (CSM)

Purpose
The Customer Service Mode shows error codes and information on the TV's operation settings. The call centre can instruct the customer (by telephone) to enter CSM in order to identify the status of the set. This helps the call centre to diagnose problems and failures in the TV set before making a service call.
The CSM is a read-only mode; therefore, modifications are not possible in this mode.

How to Enter
To enter CSM, press the following key sequence on the remote control transmitter: "**123654**" (do not allow the display to time out between entries while keying the sequence).

Upon entering the Customer Service Mode, the following screen will appear:



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180705

Figure 5-4 CSM menu

Menu Explanation
1. Indication of the decimal value of the operation hours counter, Software identification of the main microprocessor (see "Service Default or Alignment Mode" for an explanation), and the service mode (CSM = Customer Service Mode).
2. Displays the last five errors detected in the error code buffer.
3. Displays the option bytes.
4. Displays the type number version of the set.
5. Reserved item for P3C call centres (AKBS stands for Advanced Knowledge Base System).
6. Indicates the television is receiving an "IDENT" signal on the selected source. If no "IDENT" signal is detected, the display will read "NOT TUNED"
7. Displays the detected Colour system (e.g. PAL/NTSC).
8. Displays the detected Audio (e.g. stereo/mono).
9. Displays the picture setting information.
10. Displays the sound setting information.

How to Exit
To exit CSM, use one of the following methods:
- Press the MENU, STATUS/EXIT, or POWER button on the remote control transmitter.
- Press the POWER button on the television set.

5.3 Problems and Solving Tips Related to CSM

5.3.1 Picture Problems

Note: The problems described below are all related to the TV settings. The procedures used to change the value (or status) of the different settings are described.

Picture too Dark or too Bright

If:
- The picture improves when you press the AUTO PICTURE button on the remote control transmitter, or
- The picture improves when you enter the Customer Service Mode,

Then:
1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys (if necessary) to select BRIGHTNESS.
6. Press the MENU LEFT/RIGHT keys to increase or decrease the BRIGHTNESS value.
7. Use the MENU UP/DOWN keys to select PICTURE.
8. Press the MENU LEFT/RIGHT keys to increase or decrease the PICTURE value.
9. Press the MENU button on the remote control transmitter twice to exit the user menu.
10. The new PERSONAL preference values are automatically stored.

White Line around Picture Elements and Text

If:
The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:
1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys to select SHARPNESS.
6. Press the MENU LEFT key to decrease the SHARPNESS value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

Snowy Picture

Check CSM line 6. If this line reads “Not Tuned”, check the following:

- Antenna not connected. Connect the antenna.
- No antenna signal or bad antenna signal. Connect a proper antenna signal.
- The tuner is faulty (in this case line 2, the Error Buffer line, will contain error number 10). Check the tuner and replace/ repair the tuner if necessary.

Black and White Picture

If:

- The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys to select COLOR.
6. Press the MENU RIGHT key to increase the COLOR value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

Menu Text not Sharp Enough

If:

- The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys to select PICTURE.
6. Press the MENU LEFT key to decrease the PICTURE value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

5.4 Service Tools

5.4.1 ComPair

Introduction

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control), which allows faster and more accurate diagnostics. ComPair has three big advantages:

1. ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
2. ComPair allows very detailed diagnostics (on I^2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I^2C commands yourself because ComPair takes care of this.
3. ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the Force/SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

Specifications

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial (or RS-232) cable.
For this chassis, the ComPair interface box and the TV communicate via a bi-directional service cable via the service connector(s).

The ComPair faultfinding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:

- Automatically (by communicating with the television): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I^2C/UART level. ComPair can access the I^2C/UART bus of the television. ComPair can send and receive I^2C/UART commands to the microcontroller of the television. In this way, it is possible for ComPair to communicate (read and write) to devices on the I^2C/UART buses of the TV-set.
- Manually (by asking questions to you): Automatic diagnosis is only possible if the microcontroller of the television is working correctly and only to a certain extent. When this is not the case, ComPair will guide you through the faultfinding tree by asking you questions *(e.g. Does the screen give a picture? Click on the correct answer: YES / NO)* and showing you examples *(e.g. Measure test-point I7 and click on the correct oscillogram you see on the oscilloscope)*. You can answer by clicking on a link *(e.g. text or a waveform picture)* that will bring you to the next step in the faultfinding process.

By a combination of automatic diagnostics and an interactive question / answer procedure, ComPair will enable you to find most problems in a fast and effective way.

How to Connect

This is described in the chassis faultfinding database in ComPair.

Caution: It is compulsory to connect the TV to the PC as shown in the picture below (with the ComPair interface in between), as the ComPair interface acts as a level shifter. If one connects the TV directly to the PC (via UART), ICs will be blown!

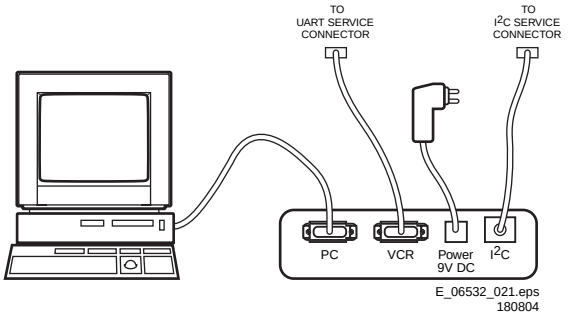


Figure 5-5 ComPair interface connection

How to Order

- ComPair order codes (EU/AP/LATAM):

- Starter kit ComPair32/SearchMan32 software and ComPair interface (excl. transformer): 3122 785 90450.
- ComPair interface (excl. transformer): 4822 727 21631.
- Starter kit ComPair32 software (registration version): 3122 785 60040.
- Starter kit SearchMan32 software: 3122 785 60050.
- ComPair32 CD (update): 3122 785 60070 (year 2002), 3122 785 60110 (year 2003 onwards).
- SearchMan32 CD (update): 3122 785 60080 (year 2002), 3122 785 60120 (year 2003), 3122 785 60130 (year 2004).
- ComPair firmware upgrade IC: 3122 785 90510.
- Transformer (non-UK): 4822 727 21632.
- Transformer (UK): 4822 727 21633.
- ComPair interface cable: 3122 785 90004.
- ComPair interface extension cable: 3139 131 03791.
- ComPair UART interface cable: 3122 785 90630.

Note: If you encounter any problems, contact your local support desk.

5.4.2 LVDS Tool

Introduction
This service tool (also called “ComPair Assistant 1“) may help you to identify, in case the TV does not show any picture, whether the Small Signal Board (SSB) **or** the display of a Flat TV is defective.
Furthermore it is possible to program EPLDs with this tool (Byteblaster). Read the user manual for an explanation of this feature.

Since 2004, the LVDS output connectors in our Flat TV models are standardised (with some exceptions). With the two delivered LVDS interface cables (31p and 20p) you can cover most chassis (in special cases, an extra cable will be offered).

When operating, the tool will show a small (scaled) picture on a VGA monitor. Due to a limited memory capacity, it is not possible to increase the size when processing high-resolution LVDS signals (>= 1280x768). Generally this tool is intended to determine if the SSB is working or not. Thus to determine if LVDS, RGB, and sync signals are okay.

How to Connect
Connections are explained in the user manual, which is delivered with the tool.

Note: To use the LVDS tool, you must have ComPair release 2004-1 (or later) on your PC (engine version >= 2.2.05).
For every TV type number and screen size, one must choose the proper settings via ComPair. The ComPair file will be updated regularly with new introduced chassis information.

How to Order
- LVDS tool (incl. two LVDS cables: 31p and 20p): 3122 785 90671.
- Service Manual LVDS tool: 3122 785 00810.
- LVDS cable 20p (for Telra 14-inch): 3122 785 90810.
- LVDS cable 30p (for LC4.3): 3122 785 90820.
- LVDS cable 41p-to-31p for CA1 (dual -> single LVDS): 3122 785 90830.

5.5 Error Codes

The error code buffer contains all errors detected since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is displayed at the left side and all other errors shift one position to the right.

5.5.1 How to Read the Error Buffer

You can read the error buffer in 3 ways:
- On screen via the SAM (if you have a picture).
  Examples:
  - ERROR: 0 0 0 0 0 : No errors detected
  - ERROR: 6 0 0 0 0 : Error code 6 is the last and only detected error
  - ERROR: 9 6 0 0 0 : Error code 6 was detected first and error code 9 is the last detected (newest) error
- Via the blinking LED procedure (when you have no picture). See “The Blinking LED Procedure”.
- Via ComPair.

5.5.2 How to Clear the Error Buffer

The error code buffer is cleared in the following cases:
- By using the CLEAR command in the SAM menu:
  - To enter SAM, press the following key sequence on the remote control transmitter: “**062596**” directly followed by the OSD/STATUS button (do not allow the display to time out between entries while keying the sequence).
  - Make sure the menu item CLEAR is highlighted. Use the MENU UP/DOWN buttons, if necessary.
  - Press the MENU RIGHT button to clear the error buffer. The text on the right side of the “CLEAR” line will change from “CLEAR?” to “CLEARED”
- If the contents of the error buffer have not changed for 50 hours, the error buffer resets automatically.

Note: If you exit SAM by disconnecting the mains from the television set, the error buffer is not reset.

5.5.3 Error Codes

In case of non-intermittent faults, write down the errors present in the error buffer and clear the error buffer before you begin the repair. This ensures that old error codes are no longer present.
If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error and not the actual cause of the problem (for example, a fault in the protection detection circuitry can also lead to a protection).

Table 5-1 Error code overview

Error	Device	Error Description	Check Item	Diagram
0	Not applicable	No Error		
1	Not applicable	Mis-match of TV Hercules SW and Scaler SW	-	-
2	Not applicable	-	-	-
3	Not applicable	-	-	-
4	Genesis Scaler Flash-ROM	I^2C error while communicating with the Genesis Scaler and/or Flash-ROM is faulty/empty	7801 7B01	B7 + B8 B10
5	Scaler supply 7752	+5V protection	7752	B6
6	Not applicable	General I^2C error	1102, 7L04, 7M00	B1 + B18 + B19
7	ADC	I^2C error	7L04	B18
8	Scaler EEPROM	I^2C error while communicating with the Scaler EEPROM	7C01	B11
9	Hercules EEPROM	I^2C error while communicating with the Hercules EEPROM (NVM for TV). **Remark:** when the Hercules EEPROM is defective, the Hercules should operate with its default values.	7207	B2
10	Tuner	I^2C error while communicating with the PLL tuner	1102, F102, F104, F107	B1
11	Columbus	I^2C error while communicating with the 2D/3D combfilter Columbus	7M00	B19
12	Not applicable	-	-	-
13	HDMI Panellink Receiver/ Decoder	I^2C error while communicating with the iBoard HDMI Panellink Receiver/ Decoder (only in NAFTA and AP sets)	7D03	B12 (only in NAFTA and AP sets)
14	Scaler SDRAM	Read-write error with the Scaler SDRAM	7B01	B10
15	Not applicable	-	-	-
16	EPLD	I^2C error while communicating with EPLD	7N02	B20 + B21
17	Digital Module (only on Digital sets)	I^2C error while communicating with the Digital Module (only on Digital sets)	Digital Module (only on Digital sets)	
18	Not applicable	-	-	-

5.6 The Blinking LED Procedure

Using this procedure, you can make the contents of the error buffer visible via the front LED. This is especially useful when there is no picture.

When the SDM is entered, the front LED will blink the contents of the error-buffer:
- The LED blinks with as many pulses as the error code number, followed by a time period of 1.5 seconds, in which the LED is off.
- Then this sequence is repeated.

Any RC5 command terminates this sequence.

Example of error buffer: **12 9 6 0 0**
After entering SDM, the following occurs:
- 1 long blink of 5 seconds to start the sequence,
- 12 short blinks followed by a pause of 1.5 seconds,
- 9 short blinks followed by a pause of 1.5 seconds,
- 6 short blinks followed by a pause of 1.5 seconds,
- 1 long blink of 1.5 seconds to finish the sequence,
- The sequence starts again with 12 short blinks.

5.7 Fault Finding and Repair Tips

Notes:
- It is assumed that the components are mounted correctly with correct values and no bad solder joints.
- Before any fault finding actions, check if the correct options are set.

5.7.1 NVM Editor

In some cases, it can be handy if one directly can change the NVM contents. This can be done with the “NVM Editor” in SAM mode. With this option, single bytes can be changed.

Caution:
- **Do not change the NVM settings without understanding the function of each setting, because incorrect NVM settings may seriously hamper the correct functioning of the TV set!**
- **Do not change the Scaler NVM settings, as this will hamper the DVI functionality of the TV set!**
- Always note down the existing NVM settings, before changing the settings. This will enable you to return to the orgininal settings, if the new settings turn out to be incorrect.

Table 5-2 NVM editor overview

	Hex	Dec	Description
.ADR	0x000A	10	Existing value
.VAL	0x0000	0	New value
.Store	Store?		

Table 5-3 NVM Default values (option bit settings through NVM Editor in SAM Mode)

Byte Nr.	Bit	Feature/Mode	Description	37PF7320/69 /79 /93 /98	42PF7420/69 /79 /93 /98
Byte 0 174(dec)	0	QSS (LSB)	Mode of quasi split sound amplifier	1	1
	1	FMI	Connection of output of QSS amplifier	1	1
	2	HCO	EHT tracking mode	0	0
	3	HP2	Synchronization of OSD/Text display	1	1
	4	FSL	Forced slicing level for vertical sync	1	1
	5	TFR	DC transfer ratio of luminance signal	1	1
	6	OSVE	Black current measuring in overscan	0	0
	7	MVK (MSB)	(For Future Usage, as defined by software)	0	0
		Total Dec Values		59	59
		Total Hex Values		3B	3B
Byte 1 175(dec)	0	PSE	PSE	0	0
	1	OPC	OPC	0	0
	2	PRIS	PRIS	0	0
	3	CONTINUOUS FACTORY	Continuous factory mode	0	0
	4	WHITE PATTERN ON	Last color pattern status in factory mode	0	0
	5	SDM MODE	Service default mode on/off	0	0
	6	SAM MODE	Service Align mode on/off	0	0
	7	SVMA	Scavm On / Off	0	0
		Total Dec Values		0	0
		Total Hex Values		00	00
Byte 2 176(dec)	0	MUTE STATUS	Mute status	0	0
	1	TUNER AUTO MODE	Auto mode	1	1
	2	CABLE MODE	Cable/Antenna mode	0	0
	3	LAST POWER MODE	Last power status of the set	1	1
	4	CHILD LOCK MODE	Child lock enabled	0	0
	5	SURF MODE	Surf mode on/off	0	0
	6	FACTORY MODE	Factory mode on	0	0
	7	PSNS	For PAL color enhancement in ES4	1	1
		Total Dec Values		138	138
		Total Hex Values		8A	8A
Byte 3 177(dec)	0	RADIO/TV MODE	Radio mode or TV mode	0	0
	1	WAKE-UP MODE	WAKE-UP MODE	0	0
	2	HOTEL MODE	TV in Hotel mode	0	0
	3	HOTEL KBD LOCK	Keyboard locked	0	0
	4	HBL	HBL	0	0
	5	BLS	Blue stretch mode	1	1
	6	SL	SL	0	0
	7	CFA0	Comb filter On/Off	1	1
		Total Dec Values		160	160
		Total Hex Values		A0	A0

Byte Nr.	Bit	Feature/Mode	Description	37PF7320/69 /79 /93 /98	42PF7420/69 /79 /93 /98
Byte 4 178(dec)	0	Signal Strength	Signal Strength Switch in MK2	0	0
	1	LPG	LPG	0	0
	2	DVD TRAY LOCK	Lock/Unlock DVD tray	0	0
	3	SCRSAVER MODE	Screen saver mode	1	1
	4	BKS	Black Stretch Mode	1	1
	5	BSD	Black Stretch Depth	1	1
	6	CRA0	Coring on SVM	1	1
	7	PIP QSS	PIP QSS	0	0
		Total Dec Values		120	120
		Total Hex Values		78	78
Byte 5 179(dec)	0	FFI	Fast Filter	0	0
	1	NNR	No red reduction during blue stretch	1	1
	2	MUS	NTSC matrix	1	1
	3	GAM	Gamma control	1	1
	4	CBS	Control sequence of beam current limiting	0	0
	5	LLB	Low level of beam current limiter	0	0
	6	DSA	Dynamic skin tone angle area	1	1
	7	DSK	Dynamic skin tone angle on/ off	0	0
		Total Dec Values		78	78
		Total Hex Values		4E	4E
Byte 6 180(dec)	0	LTI status	LTI last status	1	1
	1	Inc_Life_Time	Inc_Life_Time	0	0
	2	PC_Mode	PC_Mode	0	0
	3	HD_Mode	HD_Mode	0	0
	4	Tact_Switch	Tact_Switch	0	0
	5	Set_In_Special_Stby	Set_In_Special_Stby	0	0
	6	Hotel_OSDDisplay	Hotel_OSDDisplay	0	0
	7	Hotel_MonitorOut	Hotel_MonitorOut	0	0
		Total Dec Values		1	1
		Total Hex Values		01	01
Byte 7 181(dec)	0	Hotel_IconMode	Hotel_IconMode	0	0
	1	DBE	DBE	1	1
	2	SD	SD	0	0
	3	Set_in_PC_Sleep_Mode	Set_in_PC_Sleep_Mode	0	0
	4	Reserved	Reserved	0	0
	5	Reserved	Reserved	0	0
	6	Reserved	Reserved	0	0
	7	Reserved	Reserved	0	0
		Total Dec Values		2	2
		Total Hex Values		02	02

5.7.2 Load Default NVM Values

In case a blank NVM is placed or when the NVM content is corrupted, default values can be downloaded into the NVM. (For empty NVM replacement, short the SDM with a jumper and apply the mains voltage. Remember to remove the jumper after the reload is completed). After the default values are downloaded, it will be possible to start up and to start aligning the TV set. This is no longer initiated automatically; to initiate the download the following action has to be performed:

1. Switch “off” the TV set by disconnecting the AC Power plug.
2. Short circuit the SDM jumpers (keep short-circuited).
3. Press P+ or Ch+ on the local keyboard (and keep it pressed).
4. Switch on the TV set via the AC Power plug.
5. Keep pressing the P+/Ch+ button until the set has started up and the SDM is shown.

Alternative method:

1. Go to SAM.
2. Select NVM Editor (not SC NVM Editor).
3. Select ADR (address) to 1 (dec).
4. Change the VAL (value) to 170 (dec).
5. Store the value.
6. Disconnect the mains plug and wait for a few seconds.
7. Reconnect the mains plug and wait until the set goes into its standby mode (red LED lights up).
8. Restart the set.

5.7.3 Tuner and IF

No Picture in RF Mode, but there is a Noise Raster

1. Check whether picture is present in AV. If not, go to Video processing troubleshooting section.
2. If present, check if the Option settings are correct.
3. Check if all the supply voltages are present (3.3/5/8/12/33 V).
4. Check if the I^2C lines are working correctly (3.3 V).
5. Manually store a known channel and check if there is IF output at Tuner pin 11.
6. Check the tuning DC voltage at pin 2 of the Tuner. The DC voltage should vary according to the frequency/channel being chosen.
7. If the tuning voltage is OK, check the tuner output, pin 11.
8. If it has no output, the Tuner may have a defect. Change the Tuner.

Sound in Picture Problem for L' System (rolling horizontal lines)

1. Check whether AGC L' in SAM mode is set to 0.
2. If yes, align the set to correct value.

Required System is not Selected Correctly

Check whether a Service jumper (#4204 & 4205, 0805 size) is present. If yes, remove it.

5.7.4 Video Processing

No Power

1. Check +12 V and 3V3 at position 1J02.
2. If no supply, check the connector 1J02.
3. If it is correct, check the power supply board.

Power Supply is Correct, but no Green LED

1. Check if the connectors 1K00 are properly inserted.
2. If they are inserted correctly, check if the 3V3 is present.

No Picture Display (blank screen with correct sound output)

1. Check whether the user menu is visible.
2. If the user menu is OK, activate teletext mode.
3. If teletext is OK, the problem is in the ADC (B18) & Columbus 3D combfilter (B19), if present (depending on model, see also paragraph “Teletext Path” in chapter 9).
4. If the user menu is not visible, check if the LCD panel backlight is ON.
5. If the backlight is OFF, the problem is in the power supply board or LCD panel. Also check pin 12 (LAMP_ON_OFF) of 1J02. It should be HIGH during normal operation.

Note: For faultfinding purposes, it is important to know the following: in Pixel Plus and Digital Crystal Clear models, which have an ADC (B18) and Columbus 3D combfilter (B19), the digital input of the scaler is used for the digital video path (Hercules output), whereas the analogue RGB input (analogue input of the scaler) is only used for teletext. This means that no mixed mode (video plus teletext simultaneously) is possible. If there is sound and teletext, but no video and user menu (blank screen), the digital path (Hercules - ADC - Columbus - Scaler) is faulty. If there is sound but no teletext, the back-end part (Scaler - LCD panel) is faulty. In Crystal Clear models, which do not have an ADC and Columbus, the RGB path (analogue input of scaler) is used for both video and teletext.

No TV, but PC is Present

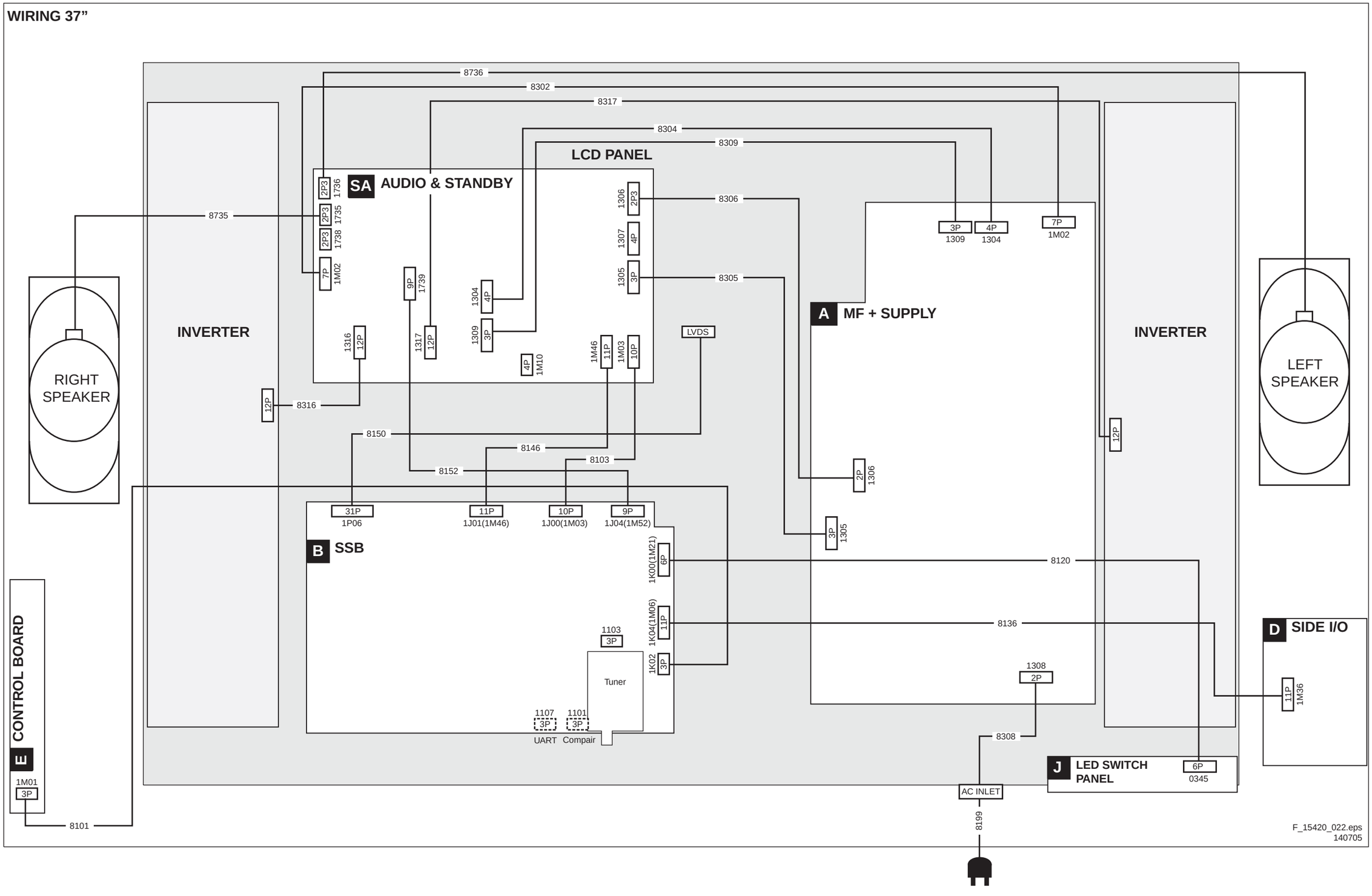
1. Check if Hsync_SDTV and Vsync_SDTV are present at pin 1 & pin13 of 7E03.
2. If they are present, check teletext output.
3. If there is no teletext output, the IC TDA150xx may be defect.

5.7.5 Power Supply

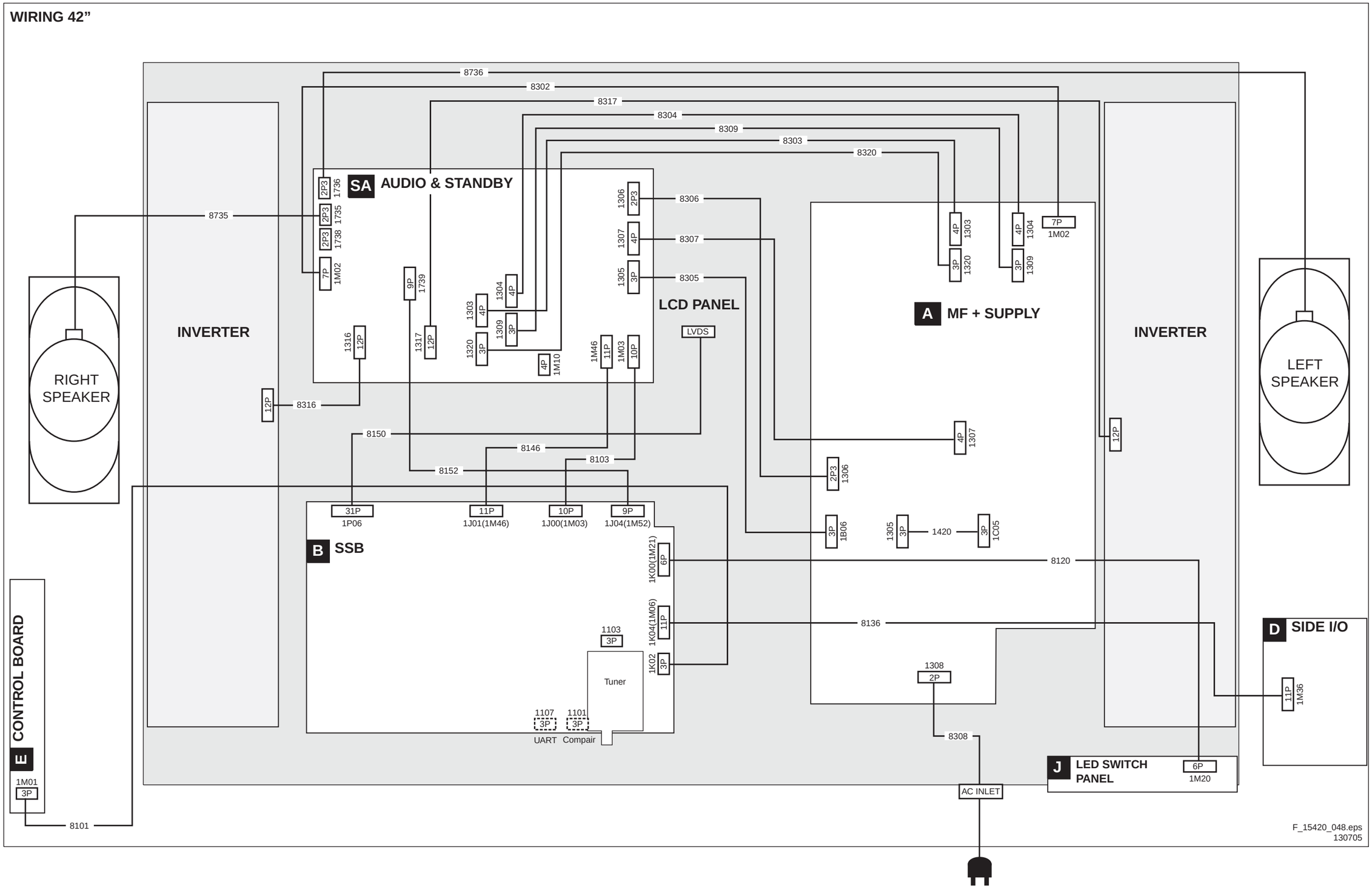
In case the power supply does not work, check (apart from the obvious fuse-check) if the oscillators in IC7001 (in TV sets with 37 inch screens) or in IC7001 and IC7U01 (in TV sets with 42 inch screens) are working. If not, replace the ICs.

6. Block Diagrams, Testpoint Overviews, and Waveforms

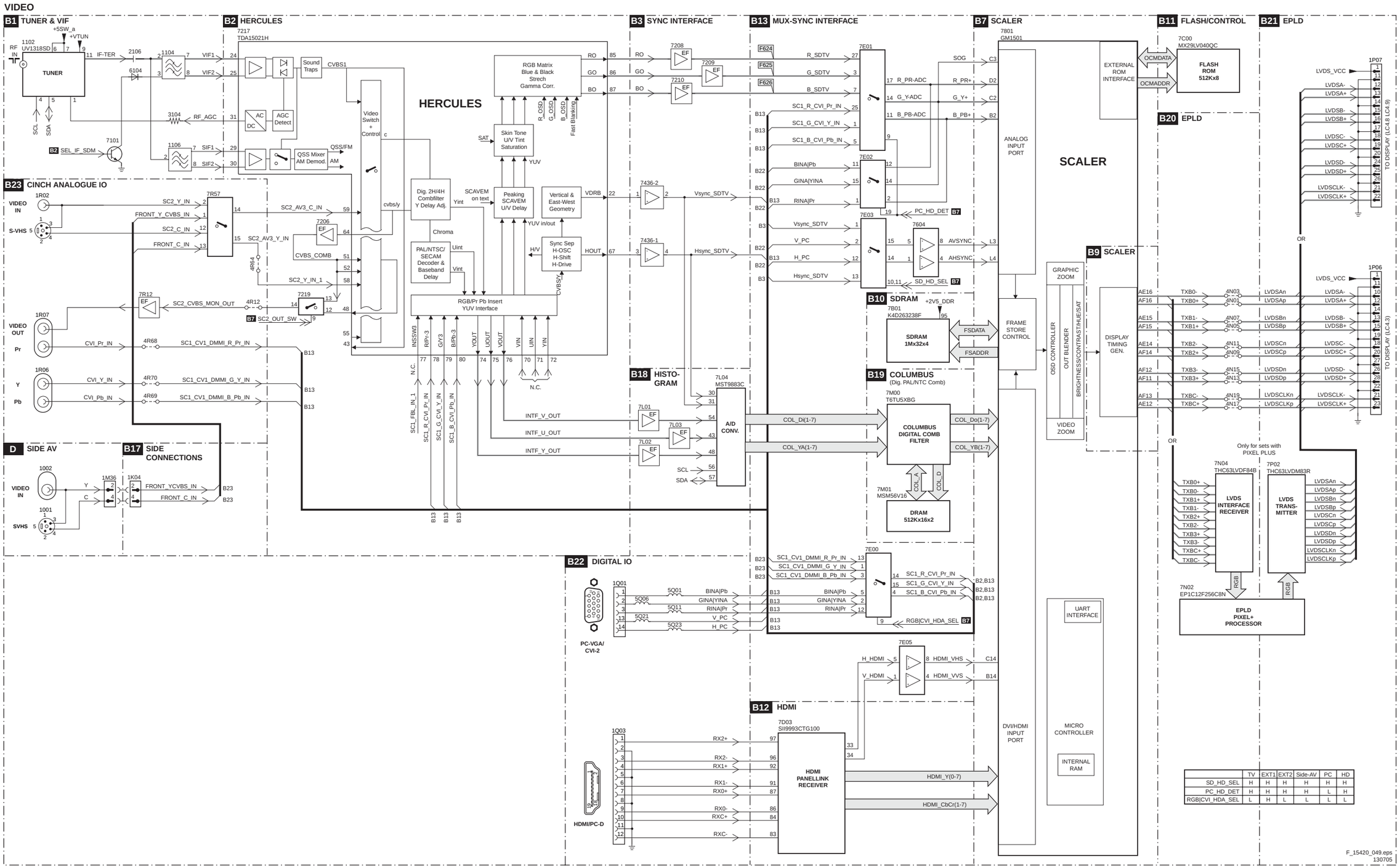
Wiring Diagram 37” LCD



Wiring Diagram 42” LCD



Block Diagram Video



	TV	EXT1	EXT2	Side-AV	PC	HD
SD_HD_SEL	H	H	H	H	H	H
PC_HD_DET	H	H	H	H	L	H
RGB|CVI_HDA_SEL	L	H	L	L	L	L

Block Diagram Audio

AUDIO

B1 TUNER & IF

1102 UV1316E/A I H-4
RF IN
RF OUT
Only on DVB Sets
TUNER
IFOUT 11
F108 IF-TER
2106
4110
1106
SIF1
SIF2
6104
7101
B2 SEL_IF_SDM
SCL
SDA

B2 HERCULES

7217 TDA15021H
QSS Mixer AM Demod.
AM
QSS/FM
AD Conv. Std Stereo Decoder
AUDIO CONTROL Vol/Treb/ Bass Features DACs
AUDIO SELECT ADC/DAC
I2S Processor

B5 AUDIO PROCESSING

4212 AUDOUTLSL
4211 AUDOUTLSR
4618 AUDIO-L
4219 AUDIO-R
SOUND-ENABLE_1
POR_AUDIO B5

B16

1J04 (1M52)

SA3 AUDIO

1739
7700 TDA7490
+16V+19V
4,22
PWM
stby-mute
OSC
2,24
-16V-19V
5701
5731
1736
3718
5702
5730
1735
3717
Speaker L 15W/8Ω
Speaker R 15W/8Ω
7701:7707
SOUND ENABLE
PROT1
DCPROT
1M02
TO 1002 SA SUPPLY
7709/7710
AUDIO SUPPLY PROT, CIRCUIT
6703 3764 -16 V-19V
6702 3761 +16 V+19V
+16 V+19V
-16 V-19V
SOUND-ENABLE
POR-CLASSD
PROT_AUDIOSUPPLY
N.C.

B23 CINCH ANALOGUE

1R06
CVI-1 AUDIO IN L/R
SC1_COMP_AV1_L_IN
SC1_COMP_AV1_R_IN
1R03
AV AUDIO IN L/R
SC2_L_IN
SC2_R_IN
PC AUDIO IN L/R
AV3_L
AV3_R
3Q30
3Q31
AV3_LEFT
AV3_RIGHT

B22 DIGITAL IO

B12 HDMI

7D05
AudioIN2L
AudioIN2R
10,11 AV3_HDMI-AUDIO_SEL B7
7D03 SII9993CT
HDMI PANELINK RECEIVER
1Q03
HDMI
RX2+
RX2-
RX1+
RX1-
RX0+
RX0-
RXC+
RXC-

B17 SIDE CONNECTORS

D SIDE I/O

7601 TS482ID
7606 MUTE
OUT_MUTE
1K04
1M36
HP_LOUT
HP_ROUT
N.C.
SOUND L-HEADPHONE-OUT
SOUND R-HEADPHONE-OUT
DETECT
1010
HEADPHONE

7602 74HC08PW
SOUND_ENABLE B2
POWER_DOWN B16
EXT_MUTE B2
OUT_MUTE
POR_AUDIO B16
3628 +5V
3629

B23 CINCH ANALOGUE

SC2_L_MON_OUT
SC2_R_MON_OUT
1R07
AUDIO OUT L/R

7202 MUTE
OUT_MUTE
SC2_L
SC2_R

D SIDE AV

1302
AUDIO L/R IN
L_FRONT_IN
R_FRONT_IN
1M36
1K04
FRONT_L_IN
FRONT_R_IN
SC1_L_RF_OUT
SC1_R_RF_OUT
N.C.

CONTROL

E CONTROL BOARD

Channel+ 1703
Channel- 1704
Menu 1705
Volume+ 1702
Volume- 1701
Power 1706
KEYBOARD
1M01
1K02 (1M01)

B17 SIDE CONNECTORS

B2 HERCULES

7217 TDA15021H
HERCULES
SEL_IF_SDM B1
4022
SERVICE SDM
STATUS_1 B3
STATUS_2 B3
EXT_MUTE B5
SOUND-ENABLE B5
SC_STANDBY B6 B15
AV2_DMMI_SW B15

J LED PANEL

1040
+5V2-STBY
VS
GND
OUT
RC
0345
1K00
IR
LIGHT-SENSOR
6070
6050 Green
6051 Red
7052
7062
7051
3061
3051
3063
LED1
LED2
LED_SEL
PC-TV-LED

B3 SYNC INTERFACE

3431 +3v3STBY
7430
6F00 +5VSW
3432 RES
ITV_IR_SW_RESET
+3V3STBY
1202

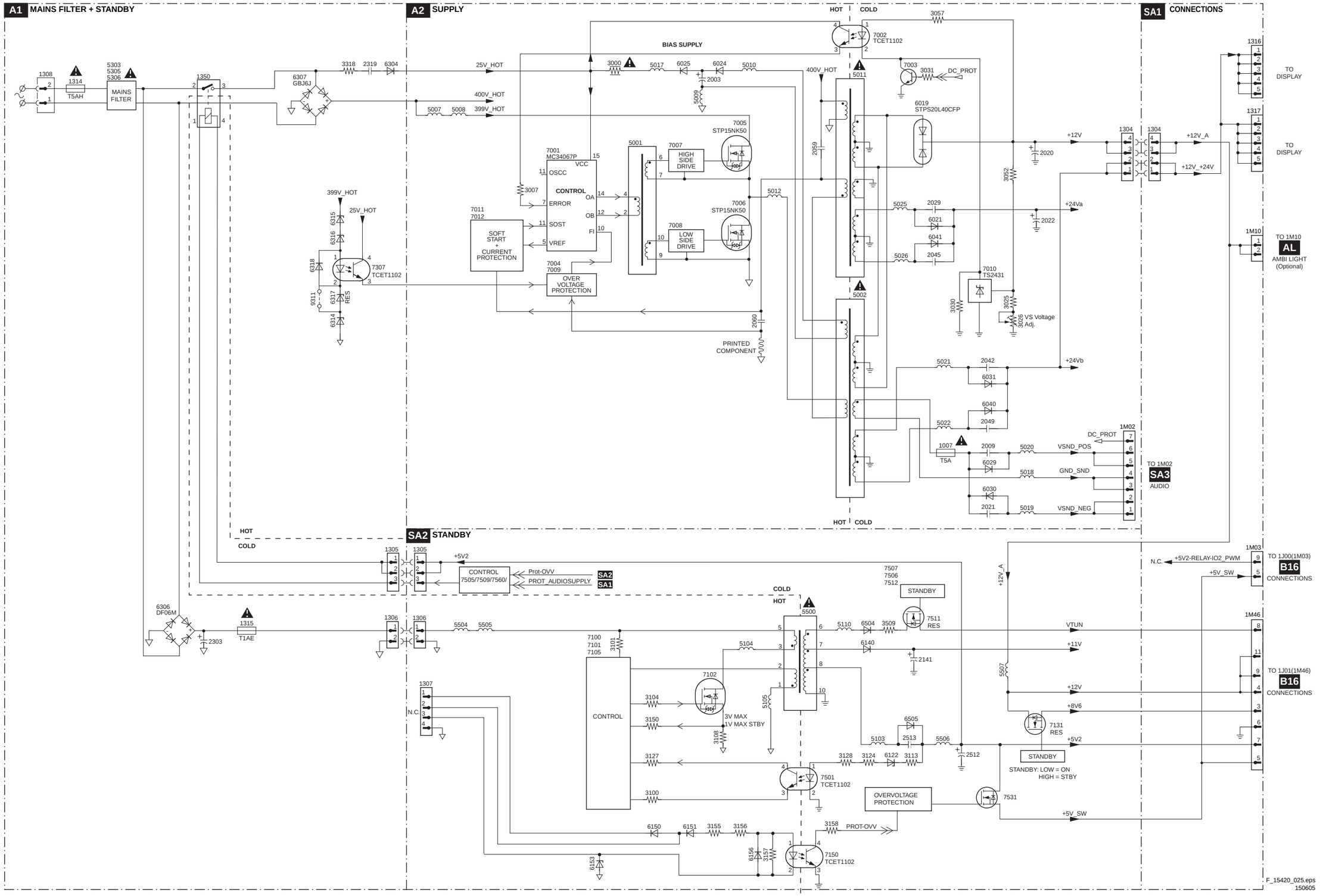
B6 DC-DC CONVERTER

+12VSW
5756
7754
5754
LVDS_VCC
PAN_VCC
3758
3755
7755
PANEL-PWR-CTL B8
+3V3STBY
7758
+3V3SW
3759
3750
7756
SC_STANDBY B2

F_15420_050.eps
130705

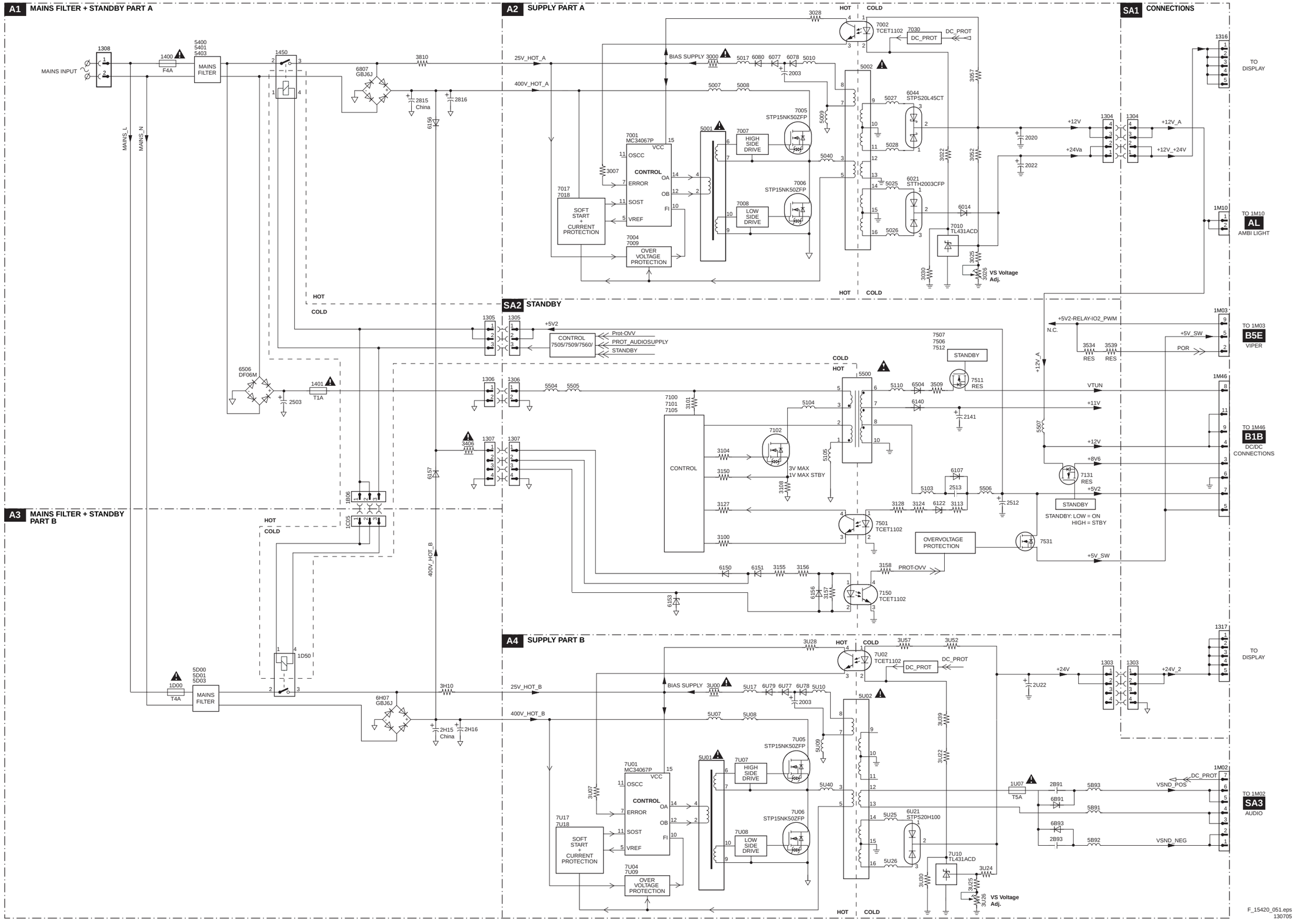
Block Diagram Supply 37”

SUPPLY 37"



Block Diagram Supply 42”

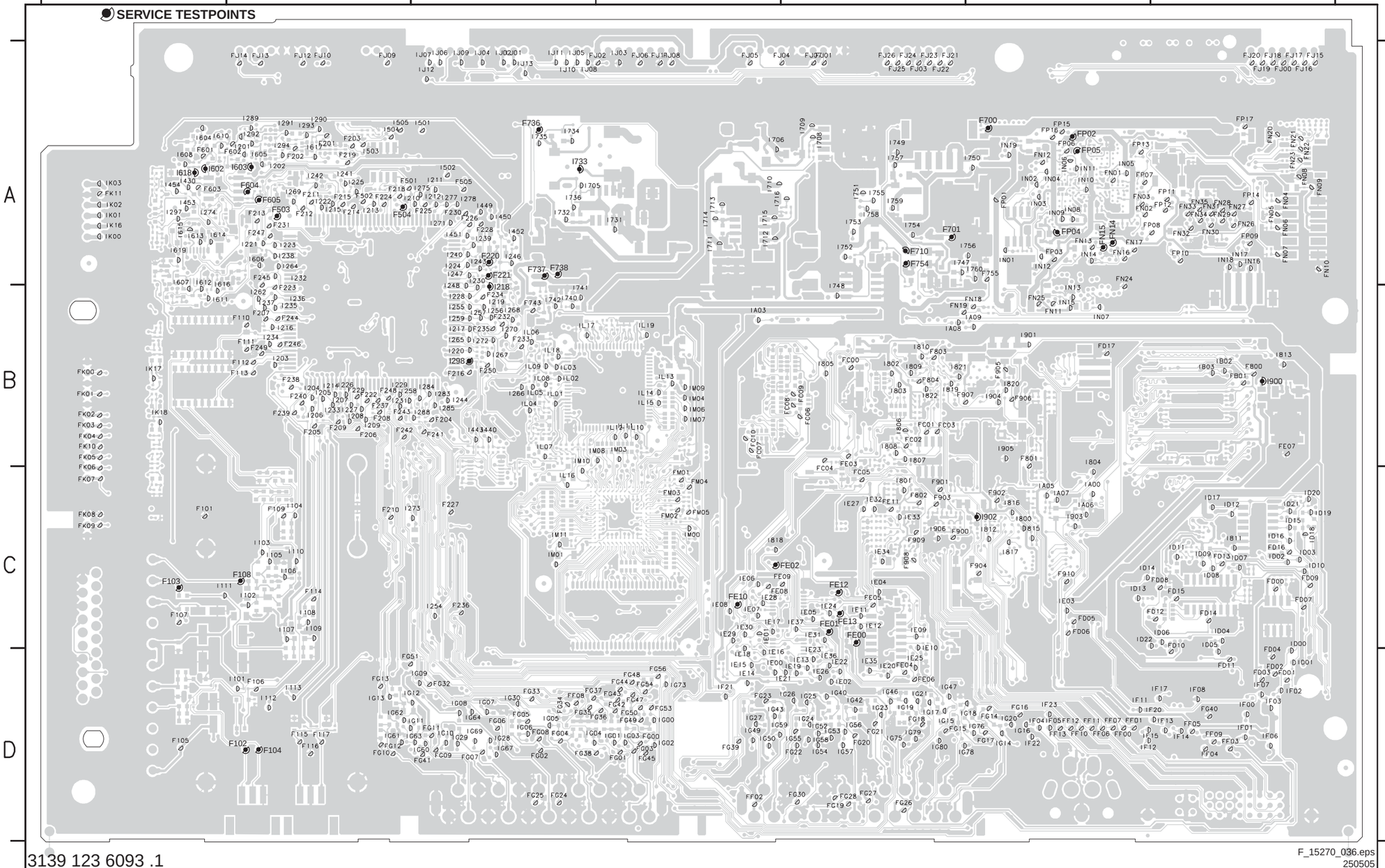
SUPPLY 42"



F_15420_051.eps
130705

Testpoint Overview Small Signal Board

F101 C1 F117 D2 F216 B3 F233 B3 F249 B2 ***F737 A3*** F906 B6 FC10 B4 FD15 C7 ***FE13 C5*** FG01 D4 FG17 D6 FG35 D3 FG53 D4 FJ13 A2 FK02 B1 FN02 A6 FN18 B6 FN34 A7 FP15 A6 I201 A2 I217 B3 I233 B2 I255 B3 I274 A1 I430 A1 I604 A1 I706 A4 I740 B3 IE15 D4 IG69 D3
F102 D2 F201 A2 F218 A2 F234 B3 F250 B3 ***F738 A3*** F907 B5 FD00 C7 FD16 C7 FF00 D6 FG02 D3 FG18 D5 FG36 D4 FG54 D4 FJ14 A2 FK03 B1 FN03 A6 FN19 B5 FN35 A7 FP16 A6 I202 A2 ***I218 A3*** I234 B2 I256 B3 I275 A3 I440 B3 I605 A2 I708 A5 I741 B3 IE16 C4 IG73 D4
F103 C1 F202 A2 F219 A2 F235 B3 F501 A2 F743 B3 F908 C5 FD01 D7 FD17 B6 FF01 D6 FG03 D4 FG19 D5 FG37 D3 FG56 D4 FJ15 A7 FK04 B1 FN04 A7 FN20 A7 FP01 A6 FP17 A7 I203 B2 I219 B3 I235 B2 I257 B3 I277 A3 I443 B3 I606 A2 I709 A5 I742 B3 IE17 C4 IG75 D5
F104 D2 F203 A2 ***F220 A3*** F236 C3 F502 A2 ***F754 A5*** F909 C5 FD02 D7 ***FE00 C5*** FF02 D4 FG04 D3 FG20 D5 FG38 D3 FJ00 A7 FJ16 A7 FK05 B1 FN05 A7 FN21 A7 ***FP02 A6*** I101 D2 I204 B2 I220 B3 I236 B2 I258 B2 I278 A3 I449 A3 I607 A1 I710 A4 I747 A5 IE18 C4 IG76 D6
F105 D1 F204 B3 ***F221 A3*** F237 B2 ***F503 A2*** F755 A6 F910 C6 FD03 D7 ***FE01 C5*** FF03 D7 FG05 D3 FG21 D5 FG39 D4 FJ01 A5 FJ17 A7 FK06 B1 FN06 A7 FN22 A7 FP03 A6 I102 C2 I205 B2 I221 A2 I237 B2 I259 B3 I283 B3 I450 A3 I608 A1 I711 A4 I748 A5 IE19 D5 IG78 D5
F106 D2 F205 B2 F222 B2 F238 B2 ***F504 A2*** F800 B7 FB01 B7 FD04 C7 ***FE02 C4*** FF04 D7 FG06 D3 FG22 D5 FG40 D7 FJ02 A4 FJ18 A7 FK07 C1 FN07 A7 FN23 A7 ***FP04 A6*** I103 C2 I206 B2 I222 A2 I238 A2 I262 B2 I284 B3 I451 A3 I610 A1 I712 A4 I749 A5 IE20 D5 IG79 D5
F107 C1 F206 B2 F223 B2 F239 B2 F505 A3 F801 B6 FC00 B5 FD05 C6 FE03 B5 FF05 D7 FG07 D3 FG23 D4 FG41 D3 FJ03 A5 FJ19 A7 FK08 C1 FN08 A7 FN24 A6 ***FP05 A6*** I104 C2 I207 B2 I223 A2 I239 A3 I264 A2 I285 B3 I452 A3 I611 B1 I713 A4 I750 A6 IE21 D5 IG80 D5
F108 C2 F207 B2 F224 A2 F240 B2 F601 A1 F802 C5 FC01 B5 FD06 C6 FE04 D5 FF06 D6 FG08 D3 FG24 D3 FG42 D4 FJ04 A5 FJ20 A7 FK09 C1 FN09 A7 FN25 B6 FP06 A6 I105 C2 I208 B2 I224 A3 I240 A3 I265 B3 I288 B3 I453 A1 I612 A1 I714 A4 I751 A5 IE22 D5 IJ01 A3
F109 C2 F208 B2 F225 A3 F241 B3 F602 A2 F803 B5 FC02 B5 FD07 C7 FE05 C5 FF07 D6 FG09 D3 FG25 D3 FG43 D4 FJ05 A4 FJ21 A5 FK10 B1 FN10 A7 FN26 A7 FP07 A6 I106 C2 I209 B2 I225 A2 I241 A2 I266 B3 I289 A2 I454 A1 I613 A1 I715 A4 I752 A5 IE23 C5 IJ02 A3
F110 B2 F209 B2 F226 A3 F242 B2 F603 A1 F804 B5 FC03 B5 FD08 C7 FE06 D5 FF08 D3 FG10 D2 FG26 D5 FG44 D4 FJ06 A4 FJ22 A5 FK11 A1 FN11 B6 FN27 A7 FP08 A7 I107 C2 I210 A3 I226 B2 I242 A2 I267 B3 I290 A2 I501 A3 I614 A1 I716 A4 I753 A5 IE24 C5 IJ03 A4
F111 B2 F210 C2 F227 C3 F243 B2 F604 A2 F900 C5 FC04 B5 FD09 C7 FE07 B7 FF09 D7 FG11 D3 FG27 D5 FG45 D4 FJ07 A5 FJ23 A5 FM01 C4 FN12 A6 FN28 A7 FP09 A7 I108 C2 I211 A3 I227 B2 I243 A3 I268 B3 I291 A2 I502 A3 I615 A1 I731 A4 I754 A5 IE25 D5 IJ04 A3
F112 B2 F211 A2 F228 A3 F244 B2 F605 A2 F901 C5 FC05 C5 FD10 C7 FE08 C4 FF10 D6 FG12 D2 FG28 D5 FG47 D4 FJ08 A4 FJ24 A5 FM02 C4 FN13 A6 FN29 A7 FP10 A7 I109 C2 I212 A3 I228 B3 I244 B3 I269 A2 I292 A2 I503 A2 I616 A1 I732 A3 I755 A5 IE26 D5 IJ05 A3
F113 B2 F212 A2 F229 B2 F245 A2 F700 A6 F902 C6 FC06 B5 FD11 D7 FE09 C5 FF11 D6 FG13 D2 FG30 D5 FG48 D4 FJ09 A2 FJ25 A5 FM03 C4 ***FN14 A6*** FN30 A7 FP11 A7 I110 C2 I213 A2 I229 B2 I246 A3 I270 B3 I293 A2 I504 A2 I617 A2 ***I733 A3*** I756 A6 IE27 C5 IJ06 A3
F114 C2 F213 A2 ***F230 A3*** F246 B2 F701 A5 F903 C5 FC07 B4 FD12 C7 ***FE10 C4*** FF12 D6 FG14 D6 FG32 D3 FG49 D4 FJ10 A2 FJ26 A5 FM04 C4 ***FN15 A6*** FN31 A7 FP12 A7 I111 C1 I214 B2 I230 A3 I247 A3 I271 A3 I294 A2 I505 A2 ***I618 A1*** I734 A3 I757 A5 IE28 C4 IJ07 A3
F115 D2 F214 A2 F231 A2 F247 A2 F710 A5 F904 C6 FC08 B5 FD13 C7 FE11 C5 FF13 D6 FG15 D5 FG33 D3 FG50 D4 FJ11 A4 FK00 B1 FM05 C4 FN16 A6 FN32 A7 FP13 A6 I112 D2 I215 A2 I231 B2 I248 A3 I272 B3 I297 A1 ***I602 A1*** I619 A1 I735 A3 I758 A5 IE29 C4 IJ08 A3
F116 D2 F215 A2 F232 B3 F248 B2 F736 A3 F905 B6 FC09 B5 FD14 C7 ***FE12 C5*** FG00 D4 FG16 D6 FG34 D3 FG51 C2 FJ12 A2 FK01 B1 FN01 A6 FN17 A6 FN33 A7 FP14 A7 I113 D2 I216 B2 I232 A2 I254 C3 I273 C3 ***I298 B3*** ***I603 A2*** I705 A3 I736 A3 I759 A5 IE30 C4 IJ09 A3
I760 A6 IE31 C5 IJ10 A3
I800 C6 IE32 C5 IJ11 A3
I801 C5 IE33 C5 IJ12 A3
I802 B5 IE34 C5 IJ13 A3
I803 B5 IE35 D5 IK00 A1
I804 B6 IE36 C5 IK01 A1
I805 B5 IE37 C5 IK02 A1
I806 B5 IF00 D7 IK03 A1
I807 B5 IF01 D7 IK16 A1
I808 B5 IF02 D7 IK17 B1
I809 B5 IF03 D7 IK18 B1
I810 B5 IF04 D6 IL01 B3
I811 C7 IF05 D6 IL02 B3
I812 C6 IF06 D7 IL03 B3
I813 B7 IF07 D7 IL04 B3
I815 C6 IF08 D7 IL05 B3
I816 C6 IF11 D6 IL06 B3
I817 C6 IF12 D6 IL07 B3
I818 C4 IF13 D7 IL08 B3
I819 B5 IF14 D7 IL09 B3
I820 B6 IF15 D6 IL10 B4
I821 B5 IF17 D7 IL11 B4
I822 B5 IF20 D7 IL12 B4
I900 B7 IF21 D4 IL13 B4
I901 B6 IF22 D6 IL14 B4
I902 C6 IF23 D6 IL15 B4
I903 C6 IG00 D4 IL16 C3
I904 B6 IG01 D4 IL17 B3
I905 B6 IG02 D4 IL18 B3
I906 C5 IG03 D4 IL19 B4
IA00 C6 IG04 D3 IM00 C4
IA03 B4 IG05 D3 IM01 C3
IA05 C6 IG06 D3 IM03 B4
IA06 C6 IG07 D3 IM04 B4
IA07 C6 IG08 D3 IM06 B4
IA08 B5 IG09 D3 IM07 B4
IA09 B6 IG10 D3 IM08 B4
IB02 B7 IG11 D3 IM09 B4
IB03 B7 IG12 D3 IM10 B3
ID00 C7 IG13 D2 IM11 C3
ID01 D7 IG14 D6 IN01 A6
ID02 C7 IG15 D5 IN02 A6
ID03 C7 IG16 D6 IN03 A6
ID04 C7 IG17 D5 IN04 A6
ID05 C7 IG18 D6 IN05 A6
ID06 C7 IG19 D5 IN06 A6
ID07 C7 IG20 D6 IN07 B6
ID08 C7 IG21 D5 IN08 A6
ID09 C7 IG23 D5 IN09 A6
ID10 C7 IG24 D5 IN10 A6
ID11 C7 IG25 D5 IN11 A6
ID12 C7 IG26 D5 IN12 A6
ID13 C6 IG27 D4 IN13 B6
ID14 C6 IG28 D3 IN14 A6
ID15 C7 IG29 D3 IN15 B6
ID16 C7 IG30 D3 IN16 A7
ID17 C7 IG40 D5 IN17 A7
ID18 C7 IG42 D5 IN18 A7
ID19 C7 IG43 D4 IN19 A6
ID20 C7 IG46 D5
ID21 C7 IG47 D5
ID22 C6 IG49 D4
IE00 D4 IG50 D4
IE01 C4 IG52 D5
IE02 D5 IG53 D5
IE03 C6 IG54 D5
IE04 C5 IG55 D5
IE05 C5 IG56 D5
IE06 C4 IG57 D5
IE07 C4 IG58 D5
IE08 C4 IG59 D4
IE09 C5 IG60 D3
IE10 C5 IG61 D2
IE11 C5 IG62 D2
IE12 C5 IG63 D3
IE13 D5 IG64 D3
IE14 D4 IG67 D3



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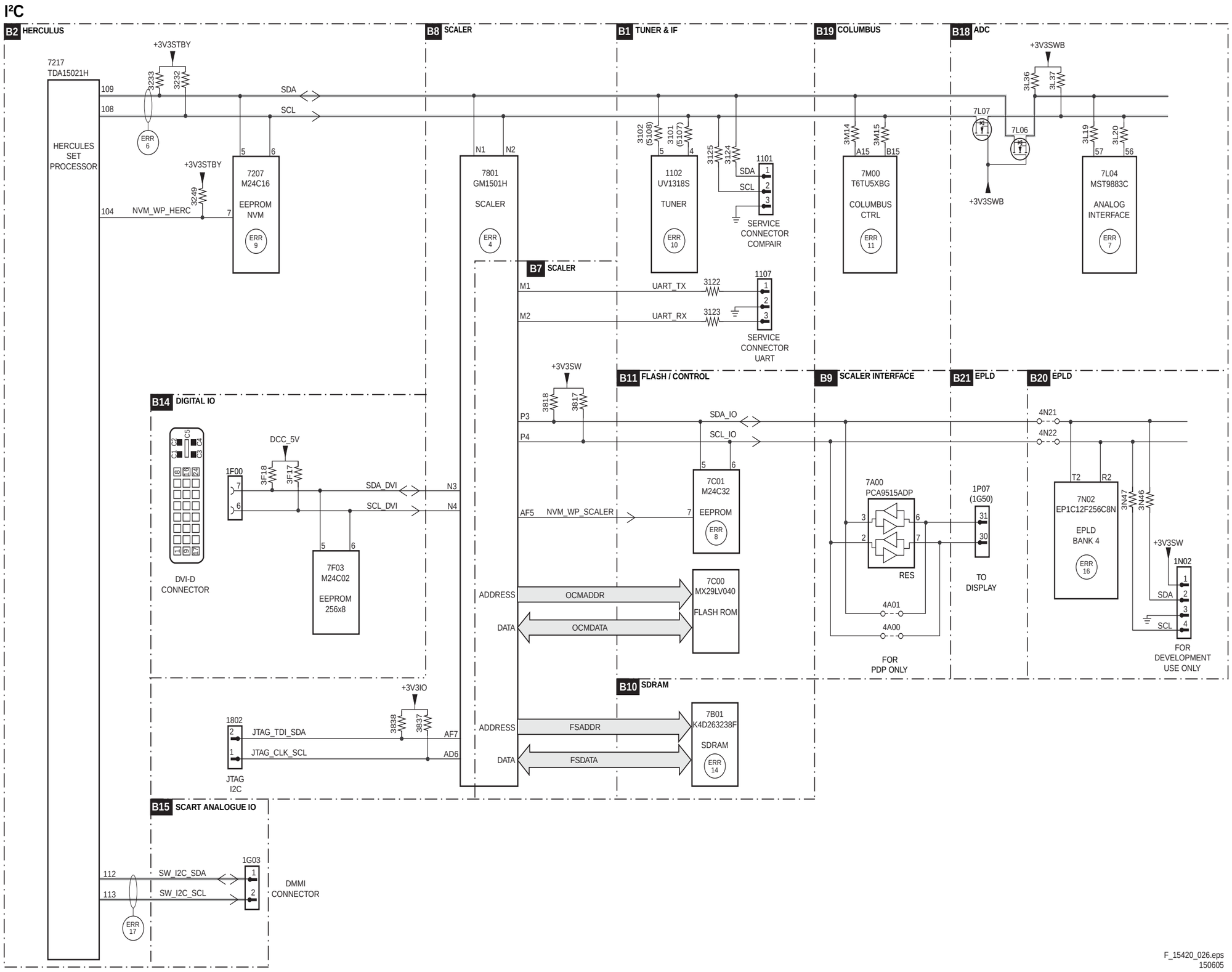
I²C Overview



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Supply Voltage Overview

SUPPLY LINE OVERVIEW

SA1 CONNECTIONS

B16 TOP CONNECTORS

UFD SUPPY

1M46 — 1J01 (1M46)

+12V — 1J07 — +12VUFD — 5J03 — +12VUNREG — B6

+5V2 — 1J08 — +5V_UFD — 5J04 — +5V — B5,B6,B9

+24V_2 — 1303 — 1316 — To Display (42")

+12V_A — 1304 — 1316 (1317) — To Display (37",42")

+12V_+24V

UFD CONTROL

1M03 — 1J08 (1M03)

BACKLIGHT_CTRL
LAMP_ON_OFF
FAN_SPEED
STANDBY
PROTECT_AUD
POWER_UP_OK

SA1 SA1

A MF + SUPPLY

TO 1304 A2 SUPPLY — +12V — 1304

TO 1303 A4 SUPPLY (42") — +24V — 1303

+24Vb

See also Block Diagram Supply

SA2 STANDBY

CONTROL — 7511 — RES — VTUN

5500 — 5110 — 6504 — 6140 — +11V — +12V_A — SA1

STANDBY — 5110 — 7131 — RES — +12V — SA1

+8V6

2513 — 6107 — +5V2 — SA1

7531 — CONTROL — +5V_SW

TO 1306 A1 MAINS FILTER — 1306

TO 1305 A1 MAINS FILTER — +5V2 — 1305

SA3 AUDIO

TO 1M02 A2 SUPPLY or TO 1M02 A1 SUPPLY — VSND_POS / VSND_NEG — 1M02

+16V+19V — -16V-19V — -Vf21 — -Vf11 — -Vf1

3759 — 6710 — 6711 — 3760 — 2797 — 2798 — 7712 — Vp — 7713 — Vm

B1 TUNER & IF

+5VSW — 5102 — +5VSW_a — 5103 — +5VSW_b — +3V3STBY

B2 HERCULES

+3V3STBY — 3265 — 7215 — +1V8_A — 3264 — 7216-1 — 3263 — 7217 — +1V8_B — 3262 — 7216-2 — HERCULES

+5VSW — +8VSW_TV

B3 SYNC INTERFACE

+3V3STBY — +3V3SW — +5VSW

B4 AUDIO DELAY LINE (RESERVED)

+5VSWI — 5501 — +5VD

B5 AUDIO PROCESSING

+3V3SW — +3V3STBY — +5VSW — +5V (Only UFD)

B6 DC-DC CONVERTER

+12VUNREG — +12VSW — 7738 — +8VSW_TV — 6708 — 7752 — DC/DC Converter — 5753 — 5754 — +5VSWI — 5709 — 7730 — PWR REG — 5733 — 6735 — +VTUN — 5737 — +5VSW

(Only LCD) — 7754 — 5757 — PAN_VCC — 5700 — LVDS_VCC — PANEL-PWR-CTL

(Only UFD) — 7710 — 5712 — 5704 — 7708 — +3V3STBY

N.C. — +3V3STBY — 7758 — +3V3SW — SC_STANDBY

B7 SCALER

+1V8_CORE — +2V5_DDR — +3V3SW — +3V3_IO — +3V3_PLL

B8 SCALER

+3V3SW — 5900 — 3V3_PLL — 5901 — 3V3_ADC — 5902 — 3V3_DVI — 5903 — 3V3_IO — 5904 — 3V3_LBADC — 5905 — 3V3_LVDSA — 5906 — 3V3_LVDSB — 5907 — 3V3_LVDS — 7900 — 5908 — +2V5_DDR — 7901 — +1V8 — 5909 — +1V8_ADC — 5910 — +1V8_DV1 — 5911 — +1V8_CORE

B9 SCALER INTERFACE

+3V3SW — +3V3STBY — +5VSWI — +5V

B10 SDRAM

+2V5_DDR — 3B01 — FSVREF

B11 FLASH / CONTROL

+3V3_IO — +3V3SW

B12 HDMI (Not for EUR Sets)

+3V3SW — +5VHDMI

B13 MUX-SYNC INTERFACE

+3V3SW — +5VSWI

B14 DIGITAL IO (Only for EUR Sets)

+5VSWI — 6F00 — 5F03 — DDC_5V — 3F20 — 6F01 — 1F00 — DVI_5V

B15 SCART ANALOGUE IO (Only for EUR Sets)

+5VSW

B17 SIDE CONNECTORS

+3V3STBY — 5K00 — +3V3STBY_1 — 1K00 — 1540 J

+5VSW — 5K01 — +5VSW_1 — 1K01 — 1304 D

B18 ADC

+5VSWIA — 7K05 — +5VSWB

B19 COLUMBUS

+3V3SW — 5M03 — +3V3SWA

+5VSWI — 5M04 — +5VSWIA

B20 EPLD

+3V3SW — +3V3-IO

B21 EPLD

+3V3SW — 5P01 — +3V3-IO — 7P01 — 1V5 — 5P02 — 1V5-PLL — 5P03 — 1V5-INT

LVDS_VCC

B22 DIGITAL IO (Not for EUR Sets)

1Q03 — HDMI — +5VSW

1870 — VGA — 3Q16 — 6Q16 — 5Q16 — DDC_5V — 3Q17 — 3Q18 — +5VSWI

B23 CINCH ANALOGUE (Not for EUR Sets)

+5VSW

D SIDE I/O

1M36 — +5VSW

J LED PANEL

0345 — +5V2-STBY

B18

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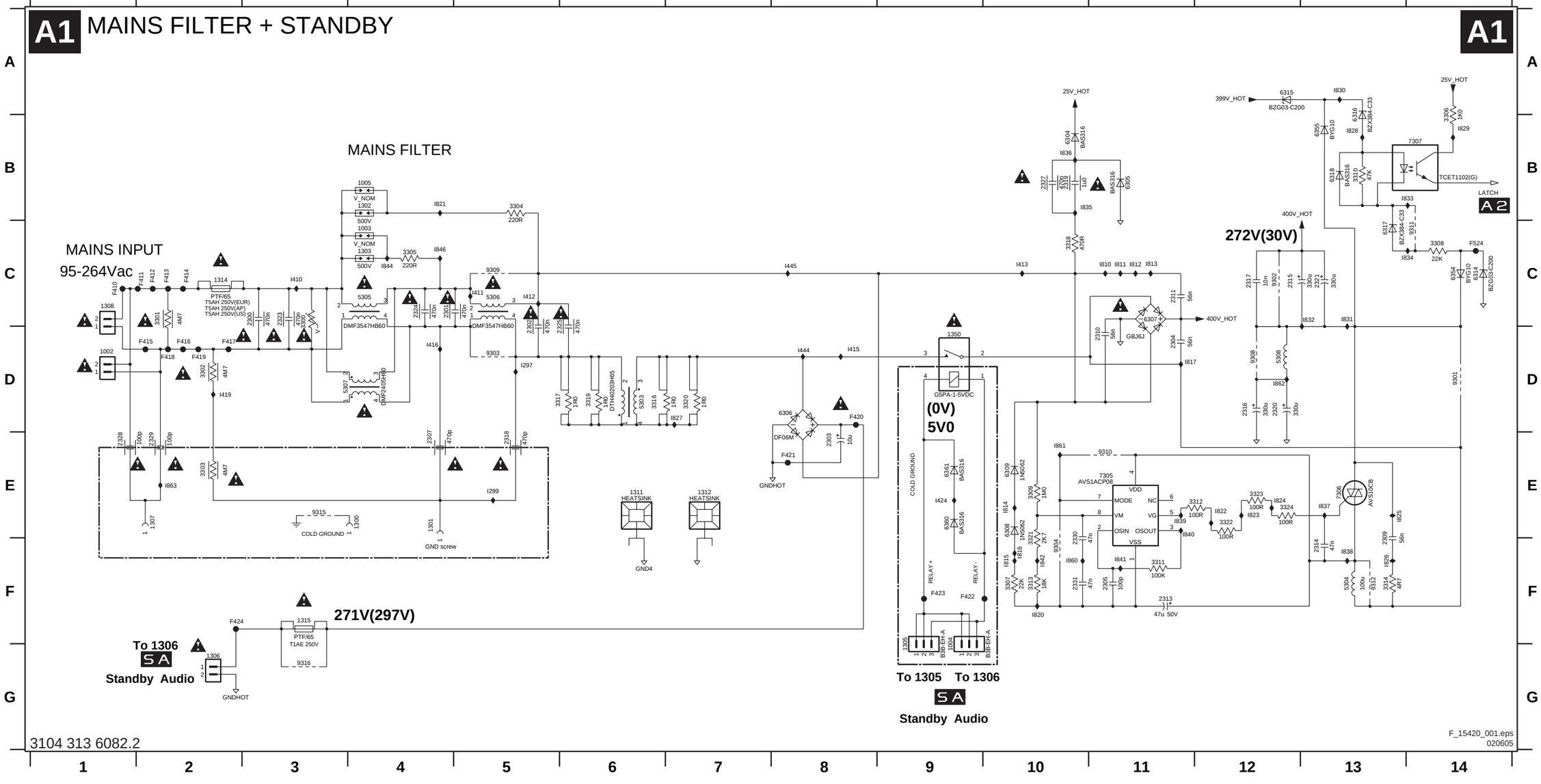
7. Circuit Diagrams and PWB Layouts

LCD Supply 37”: Mains Filter + Standby

1002 D1	1302 B4	1311 E6	2301 C4	2309 F13	2316 D12	2323 C3	2330 F10	3304 B5	3310 B13	3317 D6	3323 E12	5307 D3	6308 E10	6318 B13	7306 E13	9308 D12	9316 G3	F415 D2	F421 E8	I299 E5	I416 D4	I811 C11	I817 D11	I825 E13	I831 C13	I837 E13	I844 C4
1003 C4	1303 C4	1312 E7	2302 D5	2310 D11	2317 C12	2324 C4	2331 F10	3305 C4	3311 F11	3318 C10	3324 E12	5308 D12	6309 E10	6354 C14	7307 B14	9309 C5	F410 C1	F416 D2	F422 F9	I410 C3	I419 D2	I812 C11	I820 F10	I826 F13	I832 C13	I838 F13	I846 C4
1004 G9	1305 G9	1314 C2	2303 E8	2311 C11	2318 E5	2325 D6	3300 C3	3306 B14	3312 E12	3319 D6	5303 C4	5304 F13	6304 B10	6355 B13	9301 D14	9310 E11	F411 C2	F417 D2	F423 F9	I411 C5	I424 E9	I813 C11	I821 B4	I827 D7	I833 B14	I839 E11	I860 F10
1005 B4	1306 G2	1315 F3	2304 D11	2313 F11	2319 B10	2327 B10	3301 C2	3307 F10	3313 F10	3320 D7	5305 C4	5306 F13	6305 B11	6315 A12	9302 C12	9311 C14	F412 C2	F418 D2	F424 F2	I412 C5	I444 D8	I814 E10	I822 E12	I828 B13	I834 C14	I840 E11	I861 E10
1300 E4	1307 E2	1350 D9	2305 F11	2314 F13	2320 D12	2328 E1	3302 D2	3308 C14	3314 F13	3321 F10	5305 C4	5306 C5	6306 D8	6316 B13	9303 D5	9312 F13	F413 C2	F419 D2	F524 C14	I413 C10	I445 C8	I815 F10	I823 E12	I829 B14	I835 B10	I841 F11	I862 D12
1301 E4	1308 C1	2300 C3	2307 E4	2315 C12	2321 C13	2329 E2	3303 E2	3309 E10	3316 D6	3322 E12	5306 C5	6307 C11	6317 C13	7305 E11	9304 F10	9315 E3	F414 C2	F420 D8	I297 D5	I415 D8	I810 C11	I816 F10	I824 E12	I830 A13	I836 B10	I842 F10	I863 E2



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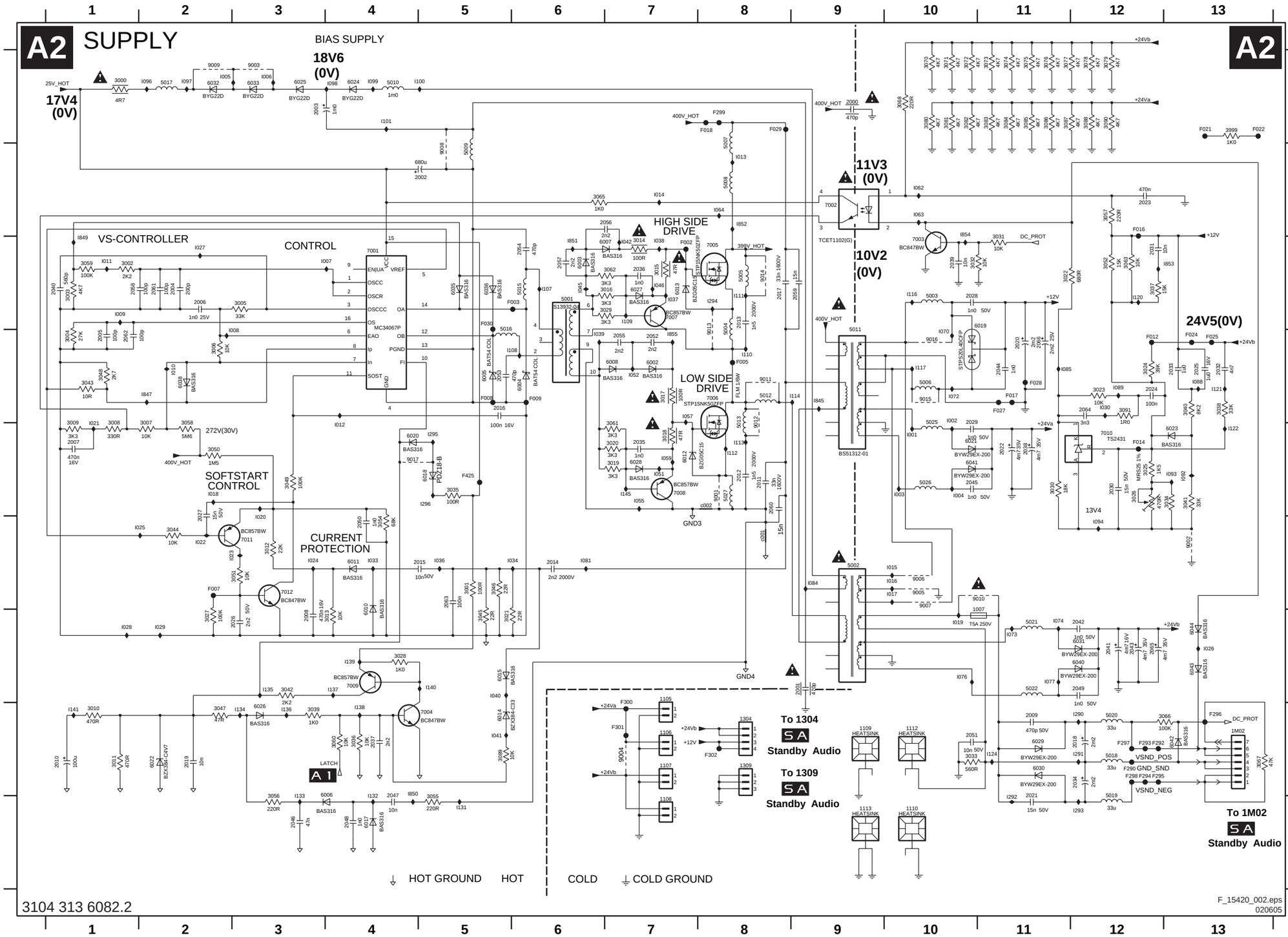
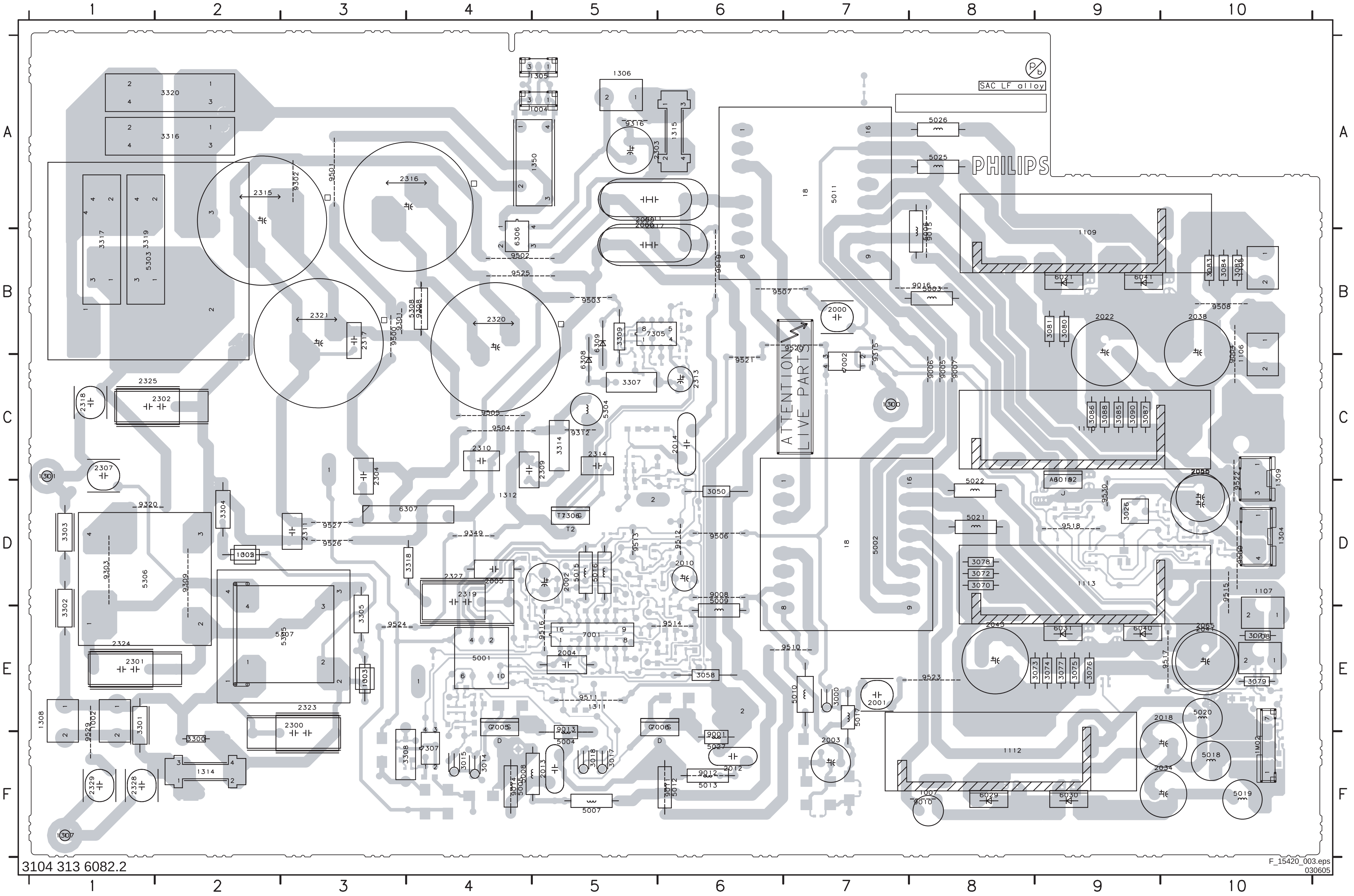
LCD Supply 37”: Supply



1007 G11	3035 E5	6042 H13	I072 D10				
1105 G7	3036 H4	6043 G13	I073 G11				
1106 H7	3037 C12	6044 G13	I074 G11				
1107 H7	3038 D13	7001 C4	I076 G10				
1108 I7	3039 H3	7002 B9	I077 G11				
1109 H9	3040 D13	7003 C10	I081 F6				
1110 I10	3041 E13	7004 H5	I084 F9				
1112 H10	3042 G3	7005 C8	I085 D11				
1113 I9	3043 D1	7006 D8	I088 D13				
1304 H8	3044 F2	7007 C7	I089 D12				
1309 H8	3045 G5	7008 E7	I092 E13				
1M02 H13	3046 F5	7009 G4	I093 E13				
2000 A9	3047 H2	7010 E12	I094 F12				
2001 G9	3048 D1	7011 F3	I096 A2				
2002 B5	3049 E3	7012 F3	I097 A2				
2003 A3	3050 E2	9001 E8	I098 A4				
2004 C2	3051 F3	9002 F13	I099 A4				
2005 D1	3052 C12	9003 A3	I100 A5				
2006 C2	3054 F4	9004 H7	I101 A4				
2007 E1	3055 I5	9005 F10	I107 C6				
2008 G3	3056 I3	9006 F10	I108 D6				
2009 H11	3057 B12	9007 F10	I109 C7				
2010 H1	3058 E2	9008 B5	I110 D8				
2011 E8	3059 C1	9009 A2	I111 C8				
2012 E8	3060 H4	9010 F11	I112 E8				
2013 C8	3061 E7	9011 D8	I113 E8				
2014 F6	3062 C7	9012 D8	I114 D9				
2015 F5	3063 C12	9013 C8	I116 C10				
2016 D5	3065 B6	9014 C8	I117 D10				
2017 C8	3066 H13	9015 D10	I120 C12				
2018 H12	3067 H13	9016 D10	I121 D13				
2019 H2	3068 A10	9017 E4	I122 E13				
2020 D11	3070 A10	F002 C7	I124 H11				
2021 I11	3071 A10	F003 C6	I131 I5				
2022 E11	3072 A10	F005 D8	I132 I4				
2023 B12	3073 A11	F007 F2	I133 I3				
2024 D12	3074 A11	F008 D5	I134 H3				
2025 D13	3075 A11	F009 D6	I135 G3				
2026 G3	3076 A11	F012 D12	I136 H3				
2027 E2	3077 A11	F014 E12	I137 G4				
2028 C10	3078 A12	F016 B12	I138 H4				
2029 E10	3079 A12	F017 D11	I139 G4				
2030 E12	3080 A10	F018 A8	I140 G5				
2031 C12	3081 A10	F022 A13	I141 H1				
2032 D13	3082 A10	F022 A13	I145 E7				
2033 D13	3083 A11	F024 D13	I290 H12				
2034 H12	3084 A11	F025 D13	I291 H12				
2035 E7	3085 A11	F027 D11	I292 I11				
2036 C7	3086 A11	F028 D11	I293 I12				
2037 H4	3087 A11	F029 A8	I294 C8				
2038 E11	3088 A12	F030 C5	I295 E5				
2039 C10	3089 H5	F290 H12	I296 E5				
2040 C1	3090 A12	F292 H12	I845 D9				
2041 G12	3091 D12	F293 H12	I847 D2				
2042 G12	3999 A13	F294 H12	I849 C1				
2043 G12	5001 C6	F295 H12	I850 H4				
2044 D11	5002 F9	F296 H13	I851 C6				
2045 E10	5003 C10	F297 H12	I852 B8				
2046 I3	5004 C8	F298 H12	I853 C13				
2047 I4	5005 C8	F299 A8	I854 B10				
2048 I4	5006 D10	F300 H7	I855 D7				
2049 G12	5007 A8	F301 H7	c001 F8				
2050 F4	5008 B8	F302 H8	c002 E8				
2051 H10	5009 B5	F425 E5					
2052 D7	5010 A4	I001 E10					
2053 D5	5011 D9	I002 D10					
2054 C6	5012 D8	I003 E10					
2055 D7	5013 D8	I004 E10					
2056 B7	5015 C6	I005 A2					
2057 C6	5016 D5	I006 A3					
2058 C1	5017 A2	I007 C4					
2059 C9	5018 H12	I008 D3					
2060 E8	5019 I12	I009 C1					
2061 C2	5020 H12	I010 D2					
2062 D1	5021 G11	I011 C1					
2063 F5	5022 G11	I012 E4					
2064 D12	5025 E10	I013 B8					
2065 G12	5026 E10	I014 B7					
2066 D11	5027 E8	I015 F10					
3000 A1	6002 D7	I016 F10					
3001 F5	6003 C6	I017 F10					
3002 C1	6004 D6	I018 E2					
3003 C1	6005 D5	I019 G10					
3004 D1	6006 I4	I020 F3					
3005 C3	6007 C7	I021 E1					
3006 D2	6008 D7	I022 F2					
3007 E2	6010 G4	I023 F2					
3008 E1	6011 F4	I024 F3					
3009 E1	6012 E7	I025 F2					
3010 H1	6013 C7	I026 G13					
3011 H1	6014 H5	I027 C2					
3012 F3	6015 G5	I028 G1					
3013 G4	6017 I4	I029 G2					
3014 C7	6018 E5	I030 D12					
3015 C7	6019 C10	I033 F4					
3016 C7	6020 E4	I034 F6					
3017 D7	6021 E10	I036 F5					
3018 E7	6022 H2	I037 C7					
3019 E7	6023 E13	I038 C7					
3020 E7	6024 A4	I039 D6					
3021 G5	6025 A3	I040 G5					
3022 C11	6026 H3	I041 H5					
3023 D12	6027 C7	I042 C7					
3024 D12	6028 E7	I045 C6					
3025 E12	6029 H11	I046 C7					
3026 E12	6030 H11	I051 E7					
3027 G2	6031 G12	I052 D7					
3028 G4	6032 A2	I055 E7					
3029 C7	6033 A3	I057 D7					
3030 E11	6035 C5	I059 E7					
3031 C11	6036 C5	I062 B10					
3032 C10	6038 D2	I063 B10					
3033 H10	6040 G12	I064 B8					
3034 E13	6041 E10	I070 D10					

Layout LCD Supply 37” (Top Side)

1002 E1	1109 B8	1305 A5	1350 A5	2011 A5	2038 B10	2302 C2	2315 A2	2325 C2	3026 D9	3076 E9	3085 C9	3304 D2	3319 B2	5008 F4	5018 F10	5304 C5	6031 E9	7005 F4	9007 C8	9301 B4	9349 D4	9508 B10	9517 E10	9526 D3
1003 E3	1110 C8	1306 A5	1M02 F10	2012 F6	2041 E10	2303 A5	2316 A3	2327 E4	3050 D6	3077 E9	3086 C9	3305 E3	3320 A1	5009 E6	5019 F10	5305 E2	6040 E9	7006 F5	9008 D6	9302 A3	9500 B3	9509 D10	9518 D9	9527 D3
1004 A5	1112 F8	1307 F1	2000 B7	2013 F5	2043 E8	2304 C3	2317 B3	2328 F1	3058 E6	3078 D8	3087 C9	3307 C5	5001 E4	5010 E7	5020 E10	5306 D1	6041 B9	7305 B5	9010 F7	9303 D1	9501 A3	9510 E7	9519 B6	9529 F1
1005 D2	1113 E8	1308 E1	2001 E7	2014 C6	2059 A5	2307 C1	2318 C1	2329 F1	3070 D8	3079 E10	3088 C9	3308 F3	5002 D8	5011 A7	5021 D8	5307 D3	6306 B4	7306 D5	9011 F6	9308 B4	9502 B5	9511 E5	9520 B6	9530 D9
1007 F8	1300 C7	1309 C10	2002 D5	2017 A5	2060 A5	2309 C4	2319 D4	3000 E7	3071 E10	3080 B9	3090 C9	3309 B5	5003 B8	5012 F5	5022 C8	5308 B4	6307 D3	7307 F4	9012 F6	9309 D2	9503 B5	9512 D6	9521 B6	
1105 B10	1301 C1	1311 E4	2003 F7	2018 E10	2065 E10	2310 C4	2320 B5	3014 F4	3072 D8	3081 B9	3300 E2	3314 C5	5004 E5	5013 F6	5025 A8	6019 D9	6308 B5	9001 F6	9013 F5	9312 C5	9504 C4	9513 D5	9522 C10	
1106 B10	1302 D2	1312 D3	2004 E5	2020 D10	2066 C10	2311 D2	2321 B3	3015 F4	3073 E8	3082 B10	3301 E2	3316 A1	5005 F4	5015 D5	5026 A8	6021 B9	6309 B5	9004 C10	9014 F4	9315 B7	9505 C4	9514 E6	9523 E8	
1107 D10	1303 E3	1314 F2	2005 D4	2022 B9	2300 E3	2313 C6	2323 E3	3017 F5	3074 E9	3083 B10	3302 E1	3317 B1	5006 B7	5016 D5	5027 E6	6029 F8	7001 E5	9005 C8	9015 B8	9316 A5	9506 D6	9515 D10	9524 E3	
1108 E10	1304 D10	1315 A6	2010 D6	2034 F10	2301 E2	2314 C5	2324 E2	3018 F5	3075 E9	3084 B10	3303 D1	3318 D4	5007 F5	5017 E7	5303 A1	6030 F9	7002 B7	9006 C8	9016 B8	9320 D2	9507 B6	9516 E5	9525 B4	



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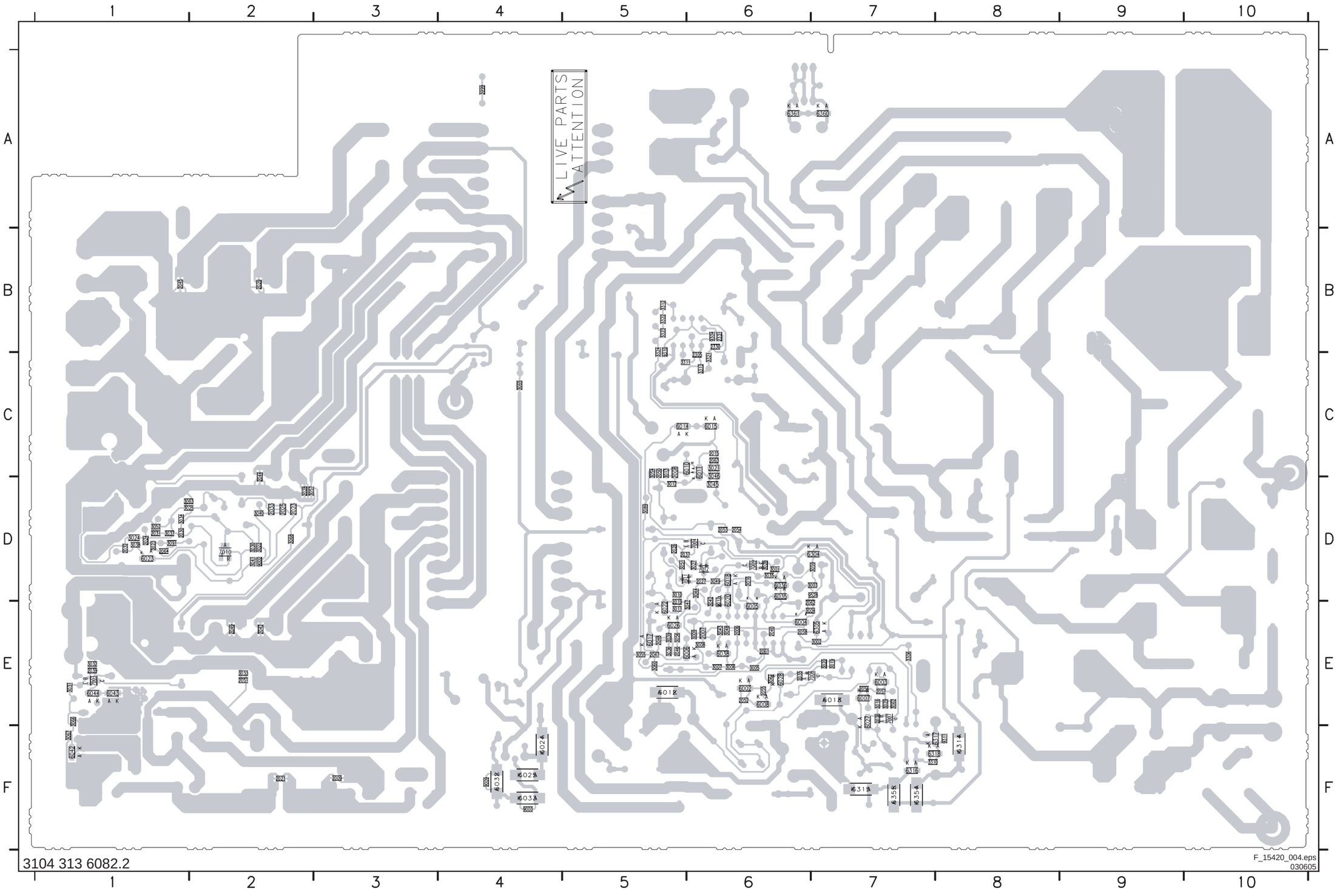
Layout LCD Supply 37” (Bottom Side)

2006 E6 2007 E6 2008 C5 2009 F3 2015 C6 2016 D6 2019 E5
2021 F2 2023 D2 2024 D1 2025 D2 2026 D5 2027 D6 2028 D2
2029 B2 2030 D1 2031 D1 2032 D1 2033 D2 2035 E6 2036 E7
2037 D5 2039 E1 2040 E6 2042 E2 2044 D2 2045 B1 2046 E5
2047 E5 2048 E5 2049 E2 2050 C5 2051 E2 2052 E6 2053 D6
2054 D6 2055 E6 2056 E7 2057 E7 2058 E6 2061 E6 2062 E6
2063 C6 2064 D1 2305 C6 2330 B6 2331 B6 3001 D6 3002 E7
3003 D7 3004 E6 3005 E6 3006 E6 3007 E6 3008 E6 3009 E6
3010 D5 3011 E5 3012 D5 3013 C5 3016 E7 3019 E7 3020 E7
3021 C6 3022 D2 3023 D1 3024 D1 3025 D1 3027 D6 3028 D6
3029 E7 3030 D2 3031 E1 3032 E1 3033 E2 3034 D1 3035 D6
3036 E5 3037 D1 3038 D1 3039 E5 3040 D2 3041 D2 3042 E6
3043 E6 3044 D6 3045 D6 3046 C6 3047 E6 3048 E6 3049 D6
3051 D5 3052 D1 3054 C5 3055 E5 3056 E5 3057 D2 3059 D7
3060 E5 3061 E6 3062 E7 3063 D1 3065 C4 3066 E1 3067 F1
3068 D2 3089 D5 3091 D1 3306 E7 3310 F7 3311 C5 3312 B5
3313 C6 3321 C6 3322 B5 3323 B5 3324 B5 3999 A4 6002 E6
6003 E7 6004 E6 6005 E6 6006 E5 6007 E7 6008 E6 6010 C6
6011 C6 6012 E5 6013 E7 6014 C5 6015 C6 6017 E5 6018 D6
6020 D6 6022 E5 6023 D1 6024 F4 6025 F4 6026 E5 6027 E7
6028 E6 6032 F4 6033 F4 6035 E6 6036 D6 6038 E6 6042 F1
6043 E1 6044 E1 6304 D7 6305 E7 6314 F8 6315 F7 6316 F7
6317 F8 6318 F7 6354 F7 6355 F7 6360 A7 6361 A6 7003 E1
7004 D6 7007 E7 7008 E7 7009 D6 7010 D2 7011 D5 7012 D6
9002 D2 9003 F4 9009 F4 9017 E6 9304 B6 9310 B5 9311 F8
9528 D7



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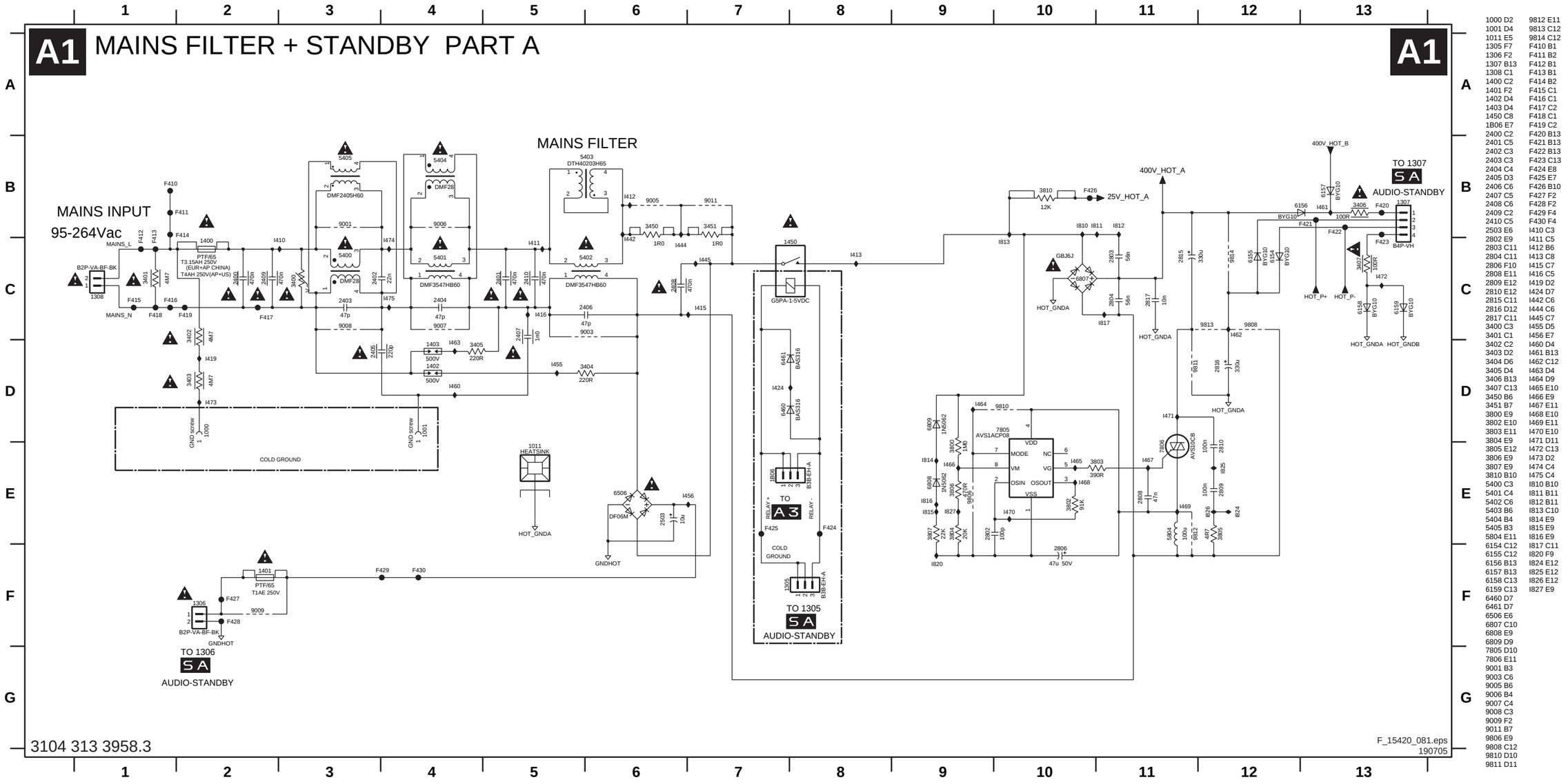
030605

LCD Supply 42”: Mains Filter + Stdby A



1000 D2 9812 E11
1001 D4 9813 C12
1011 E5 9814 C12
1305 F7 I410 B1
1306 F2 I411 B2
1307 B13 I412 B1
1308 C1 I413 B1
1400 C2 I414 B2
1401 F2 I415 C1
1402 D4 I416 C1
1403 D4 I417 C2
1450 C8 I418 C1
1B06 E7 I419 C2
2400 C2 I420 B13
2401 C5 I421 B13
2402 C3 I422 B13
2403 C3 I423 C13
2404 C4 I424 E8
2405 D3 I425 E7
2406 C6 I426 B10
2407 C5 I427 F2
2408 C6 I428 F2
2409 C2 I429 F4
2410 C5 I430 F4
2503 E6 I410 C3
2802 E9 I411 C5
2803 C11 I412 B6
2804 C11 I413 C8
2806 F10 I415 C7
2808 E11 I416 C5
2809 E12 I419 D2
2810 E12 I424 D7
2815 C11 I442 C6
2816 D12 I444 C6
2817 C11 I445 C7
3400 C3 I455 D5
3401 C1 I456 E7
3402 C2 I460 D4
3403 D2 I461 B13
3404 D6 I462 C12
3405 D4 I463 D4
3406 B13 I464 D9
3407 C13 I465 E10
3450 B6 I466 E9
3451 B7 I467 E11
3800 E9 I468 E10
3802 E10 I469 E11
3803 E11 I470 E10
3804 E9 I471 D11
3805 E12 I472 C13
3806 E9 I473 D2
3807 E9 I474 C4
3810 B10 I475 C4
5400 C3 I810 B10
5401 C4 I811 B11
5402 C6 I812 B11
5403 B6 I813 C10
5404 B4 I814 E9
5405 B3 I815 E9
5804 E11 I816 E9
6154 C12 I817 C11
6155 C12 I820 F9
6156 B13 I824 E12
6157 B13 I825 E12
6158 C13 I826 E12
6159 C13 I827 E9
6460 D7
6461 D7
6506 E6
6807 C10
6808 E9
6809 D9
7805 D10
7806 E11
9001 B3
9003 C6
9005 B6
9006 B4
9007 C4
9008 C3
9009 F2
9011 B7
9806 E9
9808 C12
9810 D10
9811 D11

LCD Supply 42”: Supply A

A2 SUPPLY PART A

BIAS SUPPLY

CONTROL

VS-CONTROLLER

CURRENT PROTECTION

SOFTSTART CONTROL

HIGH SIDE DRIVE

LOW SIDE DRIVE

HOT GROUND

COLD GROUND

TO 1304 SA AUDIO - STBY

TO 1309 SA AUDIO - STBY

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LCD Supply 42”: Mains Filter + Stdby B

A3 MAINS FILTER + STANDBY PART B

A3

MAINS FILTER

MAINS INPUT
95-264Vac

MAINS_L
MAINS_N
FD10 FD11 FD12 FD13 FD14 FD15 FD16 FD17 FD18 FD19
1D00 PTF/65 T3.15AH 250V (EUR+AP CHINA) T5AH 250V(AP+US)
2D00 470n 2D09 470n 3D00 1R
ID10 ID46 ID47
5D05 DMF2405H60 9U01
5D00 DMF28 9U08 2D05 220p
5D04 DMF28 9U06
5D01 DMF3547HB60 9U07
DTH40203H65
5D03 9U05 9U10
5D02 DMF3547HB60 9U03
ID11 ID12 ID42 ID44 ID45 ID15 ID16
3D50 1R0 3D51 1R0
2D01 470n 2D10 470n 2D08 470n 2D07 1n0
1D02 500V ID48 ID55 3D04 220R
COLD GROUND
GND screw 1U01
1U11 HEATSINK
HOT_GNDB
1D50 GSPA-1-5VDC ID13
6D61 BAS316 6D60 BAS316 ID24
RELAY+ RELAY- FD24 FD25
LC05 B3B-EH-A
TO A1
COLD GROUND

400V_HOT_B
3H10 12K FD26 25V_HOT_B
IH13 IH10 IH11 IH12
GBJ6J 9H07
HOT_GNDB
2H03 56n 2H04 56n 2H17 10n IH17
HOT_GNDB
2H15 330u 9H14 6A55 BYG10 6A54 BYG10
HOT_P+ HOT_P-
9H13 9H08 ID62 9H11 2H16 330u HOT_GNDB
ID61 7H06 AVS1ACB 100n 2H10 IH25 100n 2H09 IH26 IH24
2H08 47n ID69 5H04 100u 9H12 4R7 3H05
ID64 9H10 6H09 1N5062 3H00 1M0 IH14 ID66
7H05 AVS1ACP08 VDD MODE VM OSIN VSS NC VG OSOUT
ID65 3H03 390R ID67 ID68 3H02 91K ID70
6H08 1N5062 9H06 IH15 IH16
9H07 2V2 22K 3H04 1M 2H02 100p IH20
2H06 47u 50V

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1C05 E8 ID15 C7
1D00 C2 ID16 C6
1D02 D5 ID24 D8
1D03 D5 ID42 C6
1D50 C8 ID44 C7
1U01 E4 ID45 C7
1U11 E5 ID46 C4
2D00 C2 ID47 C4
2D01 C5 ID48 D5
2D03 C4 ID55 D6
2D04 C5 ID61 D12
2D05 D4 ID62 D12
2D06 C6 ID63 D5
2D07 D6 ID64 D10
2D08 C7 ID65 E11
2D09 C3 ID66 E10
2D10 C6 ID67 E11
2H02 F10 ID68 E11
2H03 C11 ID69 E12
2H04 C11 ID70 E10
2H06 F10 IH10 C11
2H08 E11 IH11 C11
2H09 E12 IH12 C11
2H10 E12 IH13 C10
2H15 C12 IH14 E9
2H16 D12 IH15 E9
2H17 C11 IH16 E9
3D00 C3 IH17 C11
3D04 D6 IH20 F9
3D05 D5 IH24 E12
3D50 C7 IH25 E12
3D51 C7 IH26 E12
3H00 E9
3H02 E11
3H03 E11
3H04 F9
3H05 F12
3H07 F9
3H10 B10
5D00 C4
5D01 C5
5D02 C6
5D03 B6
5D05 B4
5DO4 B5
5H04 F12
6A54 C13
6A55 C12
6D60 D8
6D61 D8
6H07 C11
6H08 E9
6H09 D9
7H05 E10
7H06 E11
9H06 E10
9H08 D12
9H10 D10
9H11 D12
9H12 F12
9H13 D12
9H14 C12
9U01 C4
9U03 D6
9U05 B7
9U06 C5
9U07 D5
9U08 D4
9U10 B7
FD10 B2
FD11 B2
FD12 C1
FD13 C2
FD14 C2
FD15 C1
FD16 C2
FD17 C2
FD18 C2
FD19 C2
FD24 E8
FD25 E8
FD26 B11
ID10 C3
ID11 C6
ID12 C7
ID13 C8

LCD Supply 42”: Supply B

A4 SUPPLY PART B

A4

BIAS SUPPLY

HOT GROUND

COLD GROUND

CONTROL

VS-CONTROLLER

HIGH SIDE DRIVE

LOW SIDE DRIVE

SOFTSTART CONTROL

CURRENT PROTECTION

17V (7V6)

5V1 (0V5)

7V3 (0V3)

7V3 (0V3)

0V01 (0V)

0V6 (5V)

2V (0V7)

4V9 (1V2)

4V9 (0V7)

4V9 (0V)

399V

17V3

13V4

+24Vb

Vs Voltage Adj.

TO 1M02

SA

AUDIO - STBY

TO 1303

SA

AUDIO - STBY

TO 1320

SA

AUDIO - STBY

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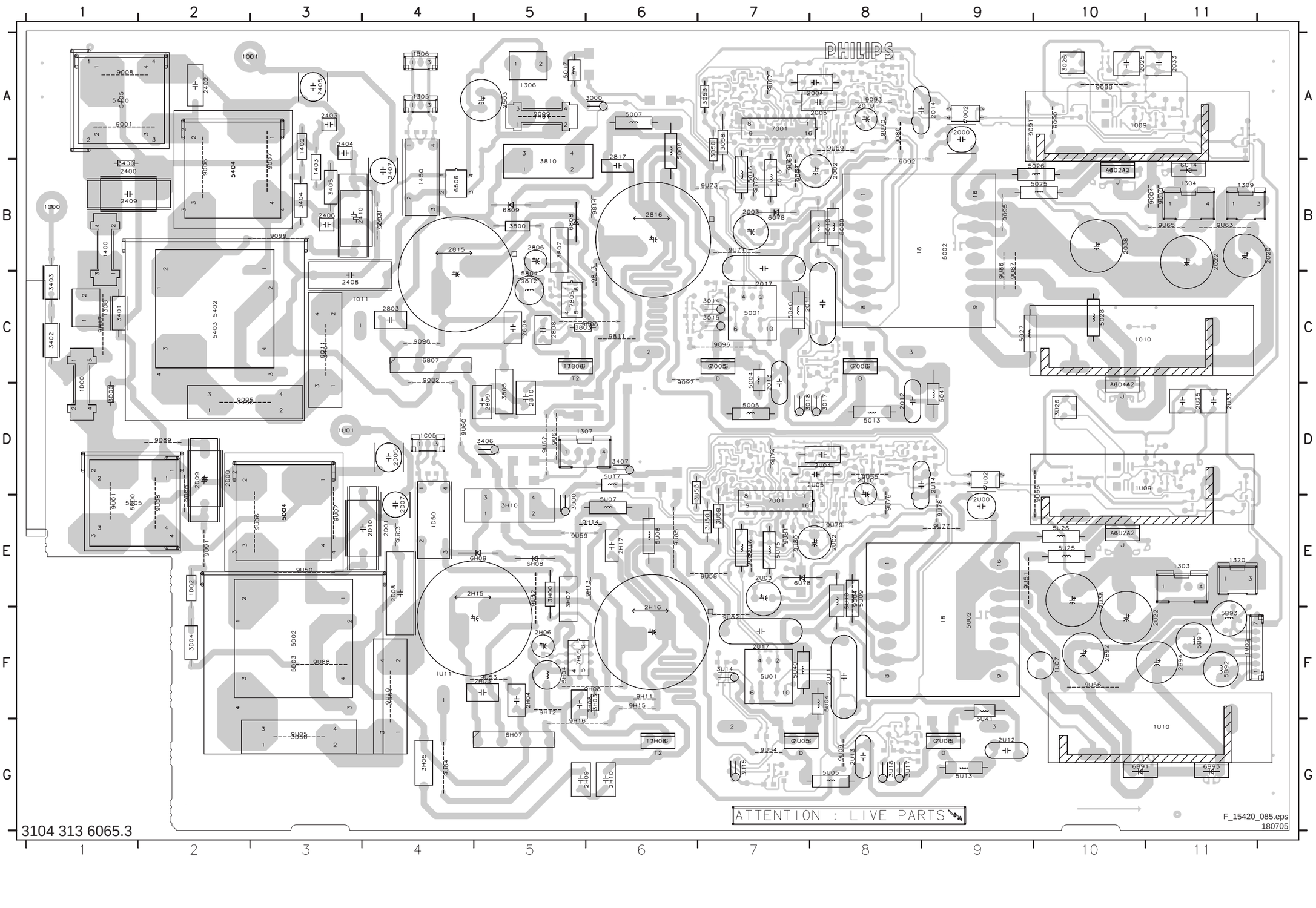
1303 I12	3U70 H4	IA32 I5
1320 I12	3U71 H5	IA33 I4
1M02 H14	3U75 G5	IA34 I3
1U07 G11	3U89 H7	IA35 H3
1U09 I9	5B91 G13	IA36 H4
1U10 I10	5B92 H13	IA37 H5
2B90 G11	5B93 G13	IA38 H5
2B91 G11	5U01 C7	IA39 G5
2B92 G12	5U02 D10	IA40 H6
2B93 H11	5U04 D9	IA42 H1
2B94 H12	5U05 C9	IA43 G1
2U00 F10	5U07 B9	IA44 C14
2U02 B3	5U08 B9	IA45 E8
2U03 A4	5U09 B5	IA46 B9
2U04 C2	5U10 A5	IA47 C9
2U05 D2	5U13 E9	IA48 C7
2U06 C3	5U15 C7	IA49 C12
2U07 E2	5U16 D6	IA50 D9
2U08 G4	5U17 A3	IA51 I5
2U09 D2	5U25 E11	IB90 G12
2U10 H2	5U26 F11	IB91 G12
2U11 E10	5U40 D10	IB92 H11
2U12 E9	5U41 E9	IB93 H12
2U13 D9	6B91 G11	IB94 C9
2U14 F7	6B93 H11	IU05 A4
2U15 F5	6U01 D3	IU06 B2
2U16 E6	6U02 D8	IU07 C3
2U17 D10	6U03 C8	IU08 C3
2U19 H3	6U04 D7	IU09 D2
2U21 C2	6U05 D6	IU10 D3
2U22 E12	6U06 I4	IU12 E5
2U23 B14	6U07 C8	IU18 E3
2U24 E13	6U08 D8	IU20 F4
2U25 E14	6U09 H2	IU21 E2
2U26 G4	6U10 G5	IU22 F3
2U27 F3	6U11 F5	IU23 F3
2U29 E12	6U12 E9	IU24 F4
2U30 F13	6U13 C9	IU25 F3
2U32 E14	6U15 H7	IU27 C3
2U33 E14	6U16 G7	IU28 C2
2U34 C2	6U17 I5	IU29 G3
2U38 E12	6U20 H1	IU33 F5
2U39 C12	6U21 E11	IU34 F6
2U40 C1	6U22 H3	IU36 F6
2U45 F12	6U23 F14	IU37 C8
2U46 I4	6U27 C8	IU38 C8
2U47 I5	6U28 E8	IU39 D8
2U48 I5	6U51 H4	IU41 H2
2U50 E4	6U77 A4	IU42 C8
2U60 C7	6U78 A5	IU45 C8
2U61 C8	6U79 A4	IU46 C8
2U62 D8	6U81 B2	IU51 E8
2U63 C7	7U01 C4	IU52 D8
2U64 D7	7U02 B10	IU55 F9
2U65 D8	7U04 H5	IU57 E9
2U71 E8	7U05 C9	IU59 E9
2U72 C8	7U06 D9	IU62 B11
2U77 H5	7U07 D8	IU63 C11
3B92 G11	7U08 E8	IU64 C9
3U00 A3	7U09 G5	IU73 E11
3U01 F6	7U10 F13	IU74 E11
3U02 C2	7U17 F4	IU76 F11
3U03 C1	7U18 G4	IU77 F11
3U04 D1	7U30 C11	IU79 B9
3U05 C3	9U02 G13	IU80 G11
3U06 D3	9U04 B5	IU81 F8
3U07 E3	FB90 H13	IU82 H7
3U08 E2	FB92 G13	IU83 H7
3U09 E2	FB93 G13	IU84 F10
3U10 H2	FB94 H13	IU85 E13
3U11 H2	FB95 H13	IU86 D13
3U12 F4	FB96 G14	IU88 E14
3U13 G5	FB97 G13	IU89 E13
3U14 C8	FB98 H13	IU92 F14
3U15 C8	FC00 F9	IU93 F14
3U16 C8	FU02 C9	IU94 G13
3U17 D8	FU03 C6	IU96 A3
3U18 E8	FU04 D6	IU97 A3
3U19 E8	FU05 D9	IU98 A5
3U20 E8	FU06 E6	IU99 A5
3U21 G6	FU07 F3	cU01 F10
3U22 D13	FU08 D6	cU02 F9
3U23 E13	FU09 D7	
3U24 E13	FU10 E6	
3U25 F13	FU12 E13	
3U26 G13	FU14 F13	
3U27 G3	FU17 D12	
3U28 B9	FU18 B9	
3U29 C8	FU23 F9	
3U30 G12	FU24 E13	
3U31 C12	FU25 E13	
3U32 C12	FU27 E12	
3U33 B11	FU28 D12	
3U34 F14	FU29 C10	
3U38 E14	FU30 I12	
3U39 D13	FU32 I12	
3U40 E14	FU99 A9	
3U41 F14	IA00 A5	
3U43 D2	IA01 A5	
3U45 G6	IA03 C1	
3U46 F6	IA04 D2	
3U47 H3	IA05 E3	
3U48 D2	IA07 C7	
3U50 E3	IA08 D7	
3U52 D13	IA09 D8	
3U53 E4	IA10 D9	
3U55 I6	IA11 C9	
3U56 I4	IA12 E9	
3U57 C13	IA13 E9	
3U58 E3	IA14 E10	
3U61 E4	IA20 E13	
3U64 F4	IA21 E14	
3U65 E5	IA22 F14	
3U66 F3	IA23 F11	
3U67 G1	IA24 G11	
3U68 H4	IA31 I6	

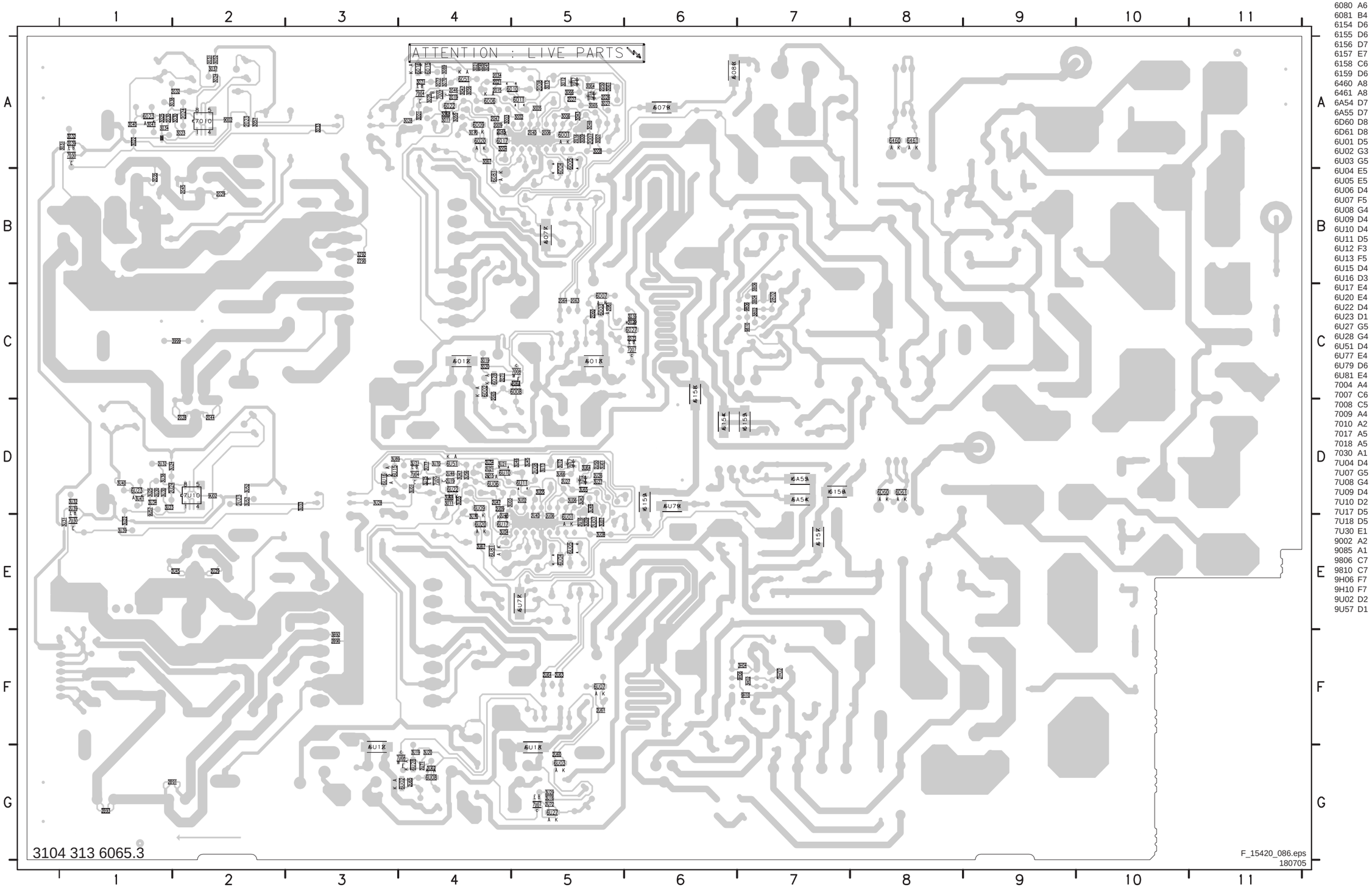
Layout LCD Supply 42” (Top Side)

1000 B1 1001 A2 1009 B10 1010 C10 1011 C4 1303 E11 1304 B11 1305 A4
1306 A5 1307 D5 1308 C1 1309 B11 1320 E11 1400 B1 1401 A5 1402 A3
1403 A3 1450 B4 1B06 A4 1C05 D4 1D00 D1 1D02 F2 1D50 E4 1M02 F11
1U01 D3 1U07 F10 1U09 E10 1U10 G10 1U11 G4 2000 A9 2002 B8 2003 B7
2004 A8 2005 A9 2010 A8 2011 C7 2012 D9 2013 C7 2014 A9 2017 B7
2020 C11 2022 B11 2025 A10 2033 A11 2038 B10 2400 B1 2401 B4 2402 A2
2403 A3 2404 A3 2405 A3 2406 B3 2407 B4 2408 C3 2409 B1 2410 B4
2503 A5 2803 C4 2804 C5 2806 B5 2808 C5 2809 D4 2810 D5 2815 B4
2816 B6 2817 A6 2B92 F10 2B94 F10 2D00 E2 2D01 E4 2D05 D4 2D07 E4
2D08 E4 2D09 E2 2D10 E4 2H03 F5 2H04 F5 2H06 F5 2H08 F5 2H09 G5
2H10 G6 2H15 E5 2H16 E6 2H17 E6 2U00 E9 2U02 E8 2U03 E7 2U04 D7
2U05 D7 2U10 D8 2U11 F8 2U12 G9 2U13 G8 2U14 D8 2U17 F7 2U22 F11
2U25 D11 2U33 D11 2U38 E10 3000 A6 3014 C7 3017 D8 3018 D7
3026 A10 3050 A7 3053 A7 3058 A7 3400 B2 3401 C1 3402 C1 3403 C5
3404 B3 3405 B3 3406 D5 3407 D6 3450 C2 3451 C3 3800 B5 3803 C5
3805 C5 3807 B5 3810 B5 3D00 D1 3D04 F2 3D50 G2 3D51 G4 3H00 E5
3H03 F6 3H05 G4 3H07 E5 3H10 E5 3U00 D5 3U14 F7 3U15 G7 3U17 G8
3U18 G8 3U26 D10 3U50 E7 3U53 D6 3U58 E7 5002 B9 5004 A7 5006 B8
5007 D7 5008 A6 5009 B8 5010 B7 5013 D8 5015 B7 5016 B7 5040 C7
5402 B9 5403 D2 5404 B3 5D00 D1 5D01 D3 5D02 F3 5D03 F2 5D04 E3
5017 A5 5025 B10 5026 B10 5028 C10 5040 C7 5041 D9 5400 A1 5401 A2
5402 C3 5403 D2 5404 B3 5804 C5 5D05 E2 5D08 E6 5D09 E8 5D10 E8
5B93 F11 5B91 F11 5D04 E3 5H04 F5 5U01 F7 5U02 F9 5U04 F7 5U05 G8
5U07 E6 5U08 E6 5U09 E8 5U10 E8 5U13 G9 5U15 E7 5U16 E7 5U17 D6
5U25 E10 5U26 E10 5U41 G9 6014 A11 6021 B10 6044 D10 6078 B7
6506 B4 6807 C4 6808 B5 6809 B5 6B91 G10 6B93 G11 6H07 G5 6H08 E5
6H09 E5 6U21 E10 6U78 E7 7001 A7 7002 A9 7005 D7 7006 C8 7805 B5
7H05 F6 7H06 G6 7U01 E7 7U02 D9 7U05 G7 7U06 G9 8A02A2 J5
9001 A1 9003 B4 9004 B11 9005 D2 9006 B2 9007 B3 9008 A1 9009 A5
9010 B11 9011 C3 9080 A8 9082 C4 9088 A10 9089 D2 9090 A10 9091 A9
9092 B8 9093 A8 9094 B7 9095 B9 9096 C7 9097 D6 9098 C4 9099 B3
9808 C6 9811 C6 9812 C5 9813 C6 9814 B6 9H08 F6 9H11 F6 9H12 F5
9H13 E6 9H14 E6 9H15 F6 9H16 G5 9H17 C1 9U01 E1 9U03 E4 9U04 E8
9U05 G3 9U06 E3 9U07 E3 9U08 E2 9U09 G8 9U10 F4 9U50 E3 9U51 E9
9U52 E5 9U53 F5 9U54 G7 9U55 D8 9U56 F10 9U58 E7 9U59 E5 9U60 D4
9U61 D5 9U62 D5 9U63 B11 9U65 B11 9U66 D10 9U67 A7 9U68 B7 9U69 A8
9U70 A8 9U71 B7 9U72 B7 9U73 B7 9U74 D7 9U76 E8 9U77 E9 9U78 E9
9U79 E8 9U80 E7 9U81 E7 9U82 F7 9U83 E7 9U84 G4 9U85 E6 9U86 B9
9U87 B9 9U88 F3 9U90 E2 9U91 E2



Layout LCD Supply 42” (Bottom Side)

2006 A5 2007 A5 2008 A5 2009 A4 2015 A4 2016 A5 2019 A4
2021 A4 2023 A2 2024 A2 2026 A5 2027 A5 2028 D2 2029 B2
2030 A1 2031 A2 2032 A2 2034 A4 2035 B1 2039 A1 2040 A5
2044 D2 2045 B2 2046 A4 2047 A4 2048 A4 2050 A5 2060 C5
2061 C5 2062 C5 2063 C5 2064 C5 2065 C4 2071 C4 2072 C6
2077 A4 2290 B3 2802 C7 2B90 F3 2B91 G1 2B93 G1 2H02 F7
2U06 E5 2U07 E5 2U08 D5 2U09 D4 2U15 D4 2U16 E5 2U19 D4
2U21 D4 2U23 D2 2U24 D1 2U26 D5 2U27 D5 2U29 E2 2U30 D1
2U32 D1 2U34 D4 2U39 D1 2U40 E5 2U45 E2 2U46 D4 2U47 D4
2U48 E4 2U50 D5 2U60 G5 2U61 F5 2U62 G4 2U63 F5 2U64 F5
2U65 G4 2U71 G4 2U72 G5 2U77 D4 3001 A4 3002 A5 3003 A4
3004 A4 3005 A5 3006 A5 3007 A5 3008 A5 3009 A5 3010 A4
3011 A4 3012 A5 3013 A5 3016 C6 3019 C4 3020 C4 3021 A4
3022 A1 3023 A2 3024 A2 3025 A1 3027 A5 3028 A4 3029 C6
3030 A2 3031 A1 3032 A1 3033 A3 3034 A1 3037 A2 3038 A1
3040 A1 3041 A1 3043 A5 3045 A4 3046 A4 3047 A4 3048 A5
3052 A2 3055 A4 3056 A4 3057 A2 3061 A5 3064 A5 3065 A5
3066 A5 3067 A4 3068 A4 3070 A4 3071 A4 3075 A4 3089 A4
3292 B3 3802 C7 3804 C7 3806 C7 3999 C2 3B92 F3 3H02 F7
3H04 F7 3U01 D4 3U02 D5 3U03 D4 3U04 E4 3U05 D5 3U06 D5
3U07 E5 3U08 E5 3U09 E5 3U10 E4 3U11 D4 3U12 D5 3U13 D5
3U16 G5 3U19 G4 3U20 G4 3U21 D4 3U22 E1 3U23 D1 3U24 D1
3U25 D1 3U27 D5 3U28 D3 3U29 G5 3U30 D1 3U31 E1 3U32 D1
3U33 D3 3U34 D1 3U38 D1 3U39 E1 3U40 D1 3U41 D1 3U43 D5
3U45 D5 3U46 D5 3U47 D4 3U48 D5 3U52 D2 3U55 D4 3U56 D4
3U57 D2 3U61 D5 3U64 D5 3U65 D5 3U66 D5 3U67 E4 3U68 D4
3U70 D4 3U71 D4 3U75 D4 3U89 D3 6001 A5 6002 C4 6003 C5
6004 B5 6005 A5 6006 A4 6007 C5 6008 C5 6009 A4 6010 A5
6011 A5 6012 C4 6013 C5 6015 A4 6016 A4 6017 A4 6020 A4
6022 A4 6023 A1 6027 C6 6028 C4 6051 A4 6077 B5 6079 A6
6080 A6 6081 B4 6154 D6 6155 D6 6156 D7 6157 E7 6158 C6
6159 D6 6460 A8 6461 A8 6A54 D7 6A55 D7 6D60 D8 6D61 D8
6U01 D5 6U02 G3 6U03 G5 6U04 E5 6U05 E5 6U06 D4 6U07 F5
6U08 G4 6U09 D4 6U10 D4 6U11 D5 6U12 F3 6U13 F5 6U15 D4
6U16 D3 6U17 E4 6U20 E4 6U22 D4 6U23 D1 6U27 G5 6U28 G4
6U51 D4 6U77 E4 6U79 D6 6U81 E4 7004 A4 7007 C6 7008 C5
7009 A4 7010 A2 7017 A5 7018 A5 7030 A1 7U04 D4 7U07 G5
7U08 G4 7U09 D4 7U10 D2 7U17 D5 7U18 D5 7U30 E1 9002 A2
9085 A1 9806 C7 9810 C7 9H06 F7 9H10 F7 9U02 D2 9U57 D1



SSB: Tuner and VIF

B1 TUNER & IF

1102 UV1318ST/AIH-MK3
PRE-FIL
BOOSTER SPLITTER
RF IN
RF OUT
TRACK FILTER
GAIN CTRL PRE-AMP
TRACK FILTER
INTMED FILTER
MIX-OSC
IF AMP
AGC DET
PLL
IFOUT
MT
F101
AGC TU NC1 NC2 33V 5V AS SCL SDA ADC NC
1V7 10 0V 33V 5V3 5V3 2V6 2V6
SERVICE COMPAIR 1101
F102 3124 100R
F104 3125 100R
5VSW_a
F103
I112 SCL SDA
I113
5107 RES
5108 RES
3102 100R
3101 100R
6101 BZX384-C6V8
6102 BZX384-C6V8
RF_AGC
F106
+VTUN
3105 1K0
F107
B6
2107 47n
2108 2u2 50V
3106 RES
For ITV Only 1103
SCL 3126 100R
SDA 3127 100R
+3V3STBY
SEL_IF_SDM
F105
5VSW_a
I101
2104 22p
2105 22p
6103 BAS316
3103 10K
3104 10K
2109 22u 16V
11 0V
F108
IF-TER
5101 390n
15 4115 RES
16 4116 RES
17
F109
3111 22K
I104 0V
3112 18K
7101 BC847BW
I105 0V
+5VSW
5102 6u8
2101 100u 16V
2102 10n
5103 6u8
2113 100u 16V
2103 10n
5VSW_a
5VSW_b
I102
3107 6K8
3108 2K2
6104 1SS356
2106 10n
I103
3109 2K2
3110 2K2
6105 1SS356
3113 22K
I106
7102 BC847BW
I110
2114 1u0
3114 47K
FOR -/93 ONLY
+5VSW
3116 100K
3117 820R
I108
2111 1n0
3115
I111
2110 1n0
I107
7103 BFS20
I109
3118 150K
3119 560R
2112 1n0
4114
F114
FOR FM RADIO ONLY
SSIF
+3V3STBY
B7
FROM SCALER
3120 10K
3121 10K
SERVICE UART 1107
UART_TX 3122 100R
UART_RX 3123 100R
F115
F116
F117
6106 BZX384-C6V8
6107 BZX384-C6V8
B2
1104 OFWK3953L
I1
I2
O1
O2
38M9
GND
NC
4102
4103
4104
4105
4106
4107
4108
5105 RES
VIF1
VIF2
F110
F111
1105 OFWK3955L
38M
1106 OFWK9656L
ISWI
40M4
4109
4110
4111
4112
4113
5106 RES
SIF1
SIF2
F112
F113
EUROPE & AP PAL-MUTLI ONLY

1101 C1 F106 D2
1102 A1 F107 D3
1103 E2 F108 B4
1104 C9 F109 E5
1105 D8 F110 C10
1106 E9 F111 C10
1107 F3 F112 E10
2101 A6 F113 F10
2102 A6 F114 G7
2103 B6 F115 F3
2104 D3 F116 G3
2105 D3 F117 G3
2106 D5 I101 D3
2107 E2 I102 C6
2108 E3 I103 D6
2109 D4 I104 E5
2110 F6 I105 D6
2111 F7 I106 D7
2112 F7 I107 F6
2113 B6 I108 F7
2114 E7 I109 F7
3101 D2 I110 D7
3102 D2 I111 F6
3103 D3 I112 C1
3104 D4 I113 D2
3105 D2
3106 E3
3107 C6
3108 C6
3109 D6
3110 C7
3111 E5
3112 E5
3113 D7
3114 E7
3115 F5
3116 F6
3117 F7
3118 F6
3119 F6
3120 F3
3121 F3
3122 F2
3123 G2
3124 C1
3125 C1
3126 E1
3127 E1
4102 C8
4103 C8
4104 C8
4105 C8
4106 C8
4107 D9
4108 D10
4109 E8
4110 F8
4111 F8
4112 F8
4113 F8
4114 F7
4115 B4
4116 C4
5101 B5
5102 A6
5103 B6
5105 C9
5106 E9
5107 D2
5108 D2
6101 D1
6102 D2
6103 D4
6104 C6
6105 C7
6106 G2
6107 G3
7101 D6
7102 D7
7103 F6
F101 B1
F102 C1
F103 C2
F104 C1
F105 C4

3139 123 6093.1
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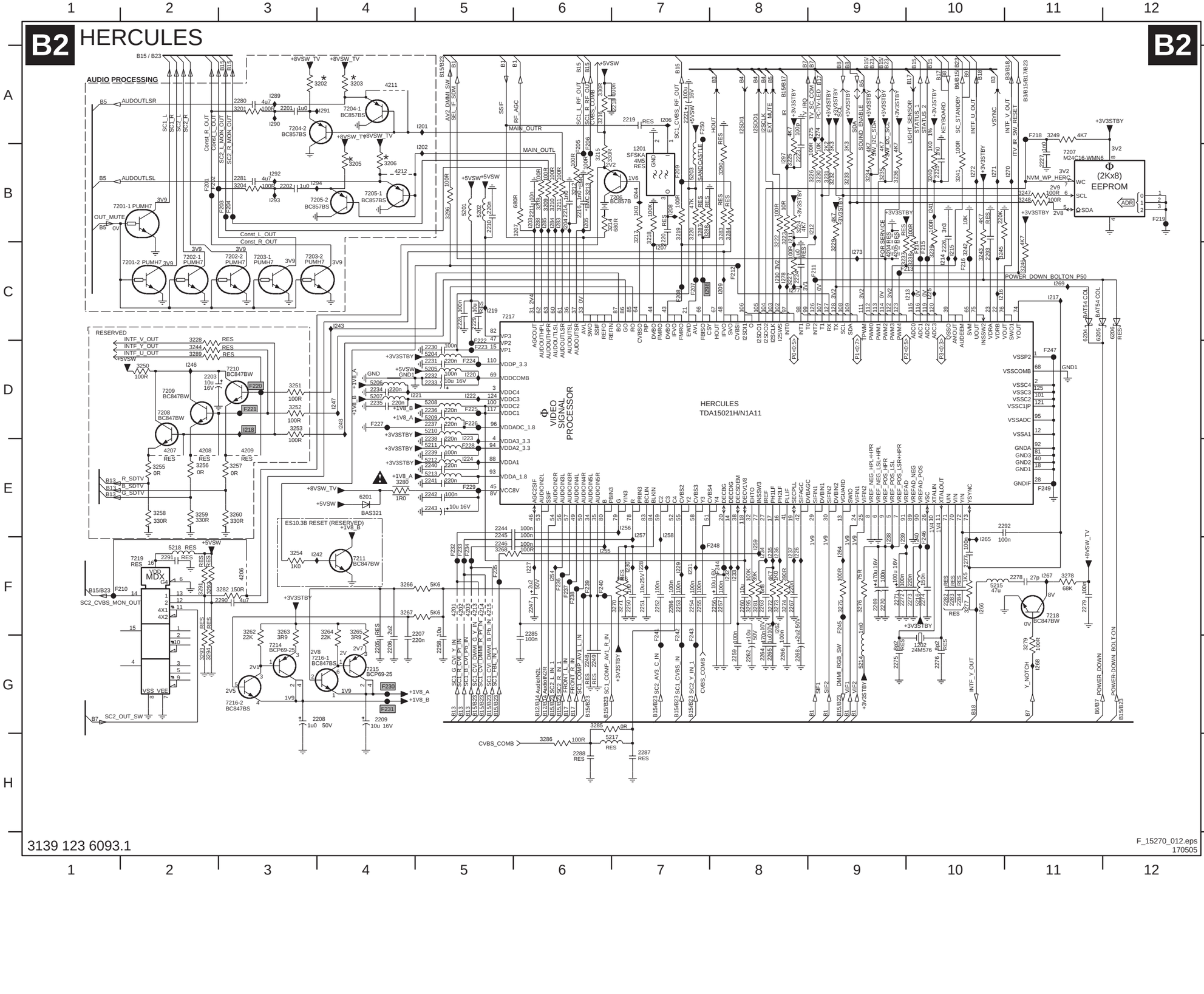
SSB: Hercules



1201 B7	3215 B6	5209 D5	I216 C10
1202 G10	3216 A6	5210 D5	I217 C11
2201 A3	3217 B7	5211 E5	I218 D3
2202 B3	3218 B7	5212 E5	I219 C5
2203 D2	3219 B7	5213 E5	I220 D5
2205 G4	3220 B7	5214 G9	I221 D5
2206 G4	3222 B8	5215 F10	I222 D5
2207 F5	3223 B8	5216 F10	I223 D5
2208 G4	3224 B8	5217 H7	I224 E5
2209 G4	3225 B8	5218 F2	I225 C10
2210 B5	3226 B9	6201 E4	I226 F8
2211 B6	3227 C8	6204 C11	I227 F6
2214 B6	3228 D2	6205 C11	I228 F7
2216 B6	3229 C9	6206 C12	I229 F7
2218 A7	3230 B9	7201-1 B1	I230 F7
2219 A7	3231 B9	7201-2 C2	I231 F7
2220 B7	3232 B9	7202-1 C2	I232 F8
2221 A7	3233 B9	7202-2 C3	I233 F8
2223 B8	3234 B9	7203-1 C3	I234 F8
2224 C8	3235 B9	7203-2 C3	I235 F8
2225 B10	3236 B9	7204-1 A4	I236 F8
2226 C10	3237 C9	7204-2 A3	I237 F8
2227 B11	3238 C10	7205-1 B4	I238 F9
2228 C5	3239 C10	7205-2 B4	I239 F9
2229 C5	3240 B10	7206 B6	I240 F10
2230 D5	3241 B10	7207 B11	I241 B10
2231 D5	3242 C10	7208 D2	I242 F4
2232 D5	3243 C10	7209 D2	I243 C4
2233 D5	3244 D2	7210 D3	I244 B7
2234 D4	3245 C10	7211 F4	I246 D2
2235 D4	3246 C11	7214 G3	I247 D4
2236 D5	3247 B11	7215 G4	I248 D4
2237 D5	3248 B11	7216-1 G3	I254 F6
2238 E5	3249 A11	7216-2 G3	I255 F6
2239 E5	3250 D2	7217 C6	I256 E7
2240 E5	3251 D3	7218 F11	I257 E7
2241 E5	3252 D3	7219 F2	I258 E7
2242 E5	3253 D3	F201 B2	I259 F8
2243 E5	3254 F3	F202 B2	I262 F8
2244 E5	3255 E2	F203 B3	I264 F9
2245 E5	3256 E2	F204 B3	I265 F10
2246 F5	3257 E3	F205 B6	I266 F10
2247 F6	3258 E2	F206 B6	I267 F11
2248 G6	3259 E2	F207 C7	I268 G11
2249 G6	3260 E3	F208 C7	I269 C11
2250 F7	3262 F3	F209 B7	I270 B11
2251 F7	3263 F3	F210 F1	I271 B10
2252 F7	3264 F4	F211 C9	I272 B10
2253 F7	3265 F4	F212 C8	I273 C9
2254 F7	3266 F4	F213 C10	I274 A9
2255 F7	3267 F4	F214 C10	I275 A9
2256 F8	3268 F5	F215 C10	I277 C8
2257 F8	3270 F7	F216 C10	I278 C8
2258 G5	3271 F7	F218 A11	I283 B6
2259 G8	3272 F8	F219 B12	I284 B6
2260 F8	3273 F8	F220 D3	I285 B6
2262 G8	3274 F8	F221 D3	I288 B6
2263 F8	3275 F9	F222 D5	I289 A3
2264 G8	3276 F9	F223 D5	I290 A3
2265 G8	3277 F10	F224 D5	I291 A4
2266 G8	3278 F11	F225 D5	I292 B3
2267 F8	3279 G11	F226 D5	I293 B3
2268 G8	3280 E4	F227 D4	I294 B3
2269 F9	3281 F8	F228 E5	I297 B8
2270 F9	3282 F3	F229 E5	I298 C7
2271 F9	3283 B8	F230 G4	
2272 F9	3284 B8	F231 G4	
2273 F10	3285 G6	F232 F5	
2274 F10	3286 H6	F233 F5	
2275 G9	3287 B7	F234 F5	
2276 G10	3288 B7	F235 F5	
2277 F10	3289 D2	F236 F6	
2278 F11	3290 B8	F237 F6	
2279 F11	3291 F2	F238 F6	
2280 A3	3292 F2	F239 F6	
2281 B3	3293 G2	F240 F6	
2282 F10	3294 G2	F241 G7	
2283 F10	3295 F8	F242 G7	
2284 F10	3296 B5	F243 G7	
2285 F6	4201 F5	F244 F8	
2286 F7	4202 F5	F245 F9	
2287 H7	4203 F5	F246 F10	
2288 H6	4204 C9	F247 D11	
2290 F3	4205 C9	F248 F8	
2291 F2	4206 F3	F249 E11	
2292 E11	4207 E2	F250 A7	
2293 C10	4208 E2	I201 A5	
3201 A3	4209 E3	I202 B5	
3202 A4	4211 A4	I203 B6	
3203 A4	4212 B4	I204 B6	
3204 B3	4213 F5	I205 B6	
3205 B4	4214 F5	I206 A7	
3206 B4	4215 F5	I207 C7	
3207 B6	5201 B5	I208 B7	
3208 B6	5202 B5	I209 C8	
3209 B6	5203 B7	I210 C8	
3210 B6	5204 D5	I211 B8	
3211 B6	5205 D5	I212 B9	
3212 B6	5206 D4	I213 C10	
3213 B6	5207 D4	I214 C10	
3214 B7	5208 D5	I215 C10	

SSB: Sync Interface

B3 SYNC INTERFACE

B3

B 1 7
TO SIDE CONNECTORS

+3V3STBY
+5VSW
3431
1K0
6430
BZX384-C2V7
I453
6431
1N4148
I430
LED_SEL
I454
0V
7430
PDTC114ET
3V1
3432
RES
ITV_IR_SW_RESET

B 2

HOUT
I443
+3V3STBY
3451
4K7
4436
RES
+3V3SW
7436-1
74LVC14APW
3453
100R
3454
100R
Hsync_SDTV

B 1 9
B 1 8
B 1 3

VSYNC
I440
4437
RES
+3V3SW
7436-2
74LVC14APW
3455
100R
3456
100R
Vsync_SDTV

B 1 8

B 7

3463
RES
+3V3SW
7436-3
74LVC14APW
7436-4
74LVC14APW
COL_HREF
4440
3458
100R
H_DELAY
4438
RES
3459
100R
H_1FH

B 1 9

+3V3SW
7436-6
74LVC14APW
7436-5
74LVC14APW
2449
100n
COL_VA
4441
3461
100R
Vsync_SDTV
4439
RES
3462
100R
V_1FH

B 1 3

SC1_CVBS_RF_OUT

B 2 &
B 1 5

1440
I449
I450
BM05B-SRSS-TBT

+12VSW
5431
I451
I452
1441
(NC)
2447
10p
2448
10p
S3B-PH-SM4-TB

FOR ITV ONLY

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1440 D9
1441 E9
2447 E8
2448 E9
2449 E4
3431 A3
3432 B3
3451 A5
3453 B6
3454 B7
3455 C6
3456 C7
3458 D2
3459 D4
3461 E2
3462 E4
3463 C4
4436 A6
4437 B6
4438 D2
4439 E2
4440 D2
4441 E2
5431 E8
6430 A3
6431 B3
7430 B3
7436-1 A6
7436-2 C7
7436-3 D3
7436-4 D4
7436-5 E4
7436-6 E3
I430 B3
I440 C6
I443 B5
I449 D8
I450 D8
I451 E9
I452 E9
I453 B3
I454 B2

SSB: Audio Delay Line (Reserved)

B4 AUDIO DELAY LINE (RESERVED)

3139 123 6093.1

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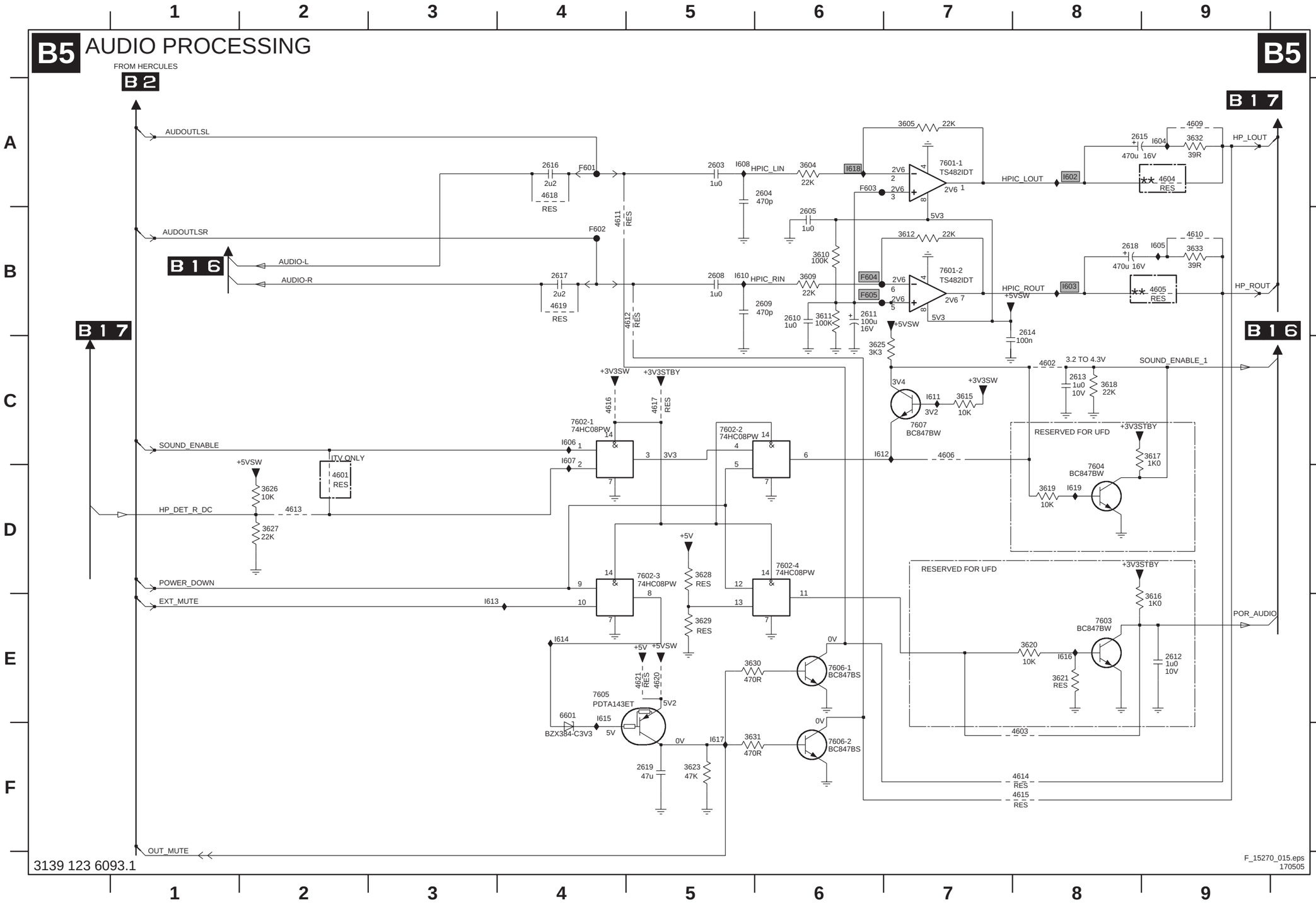
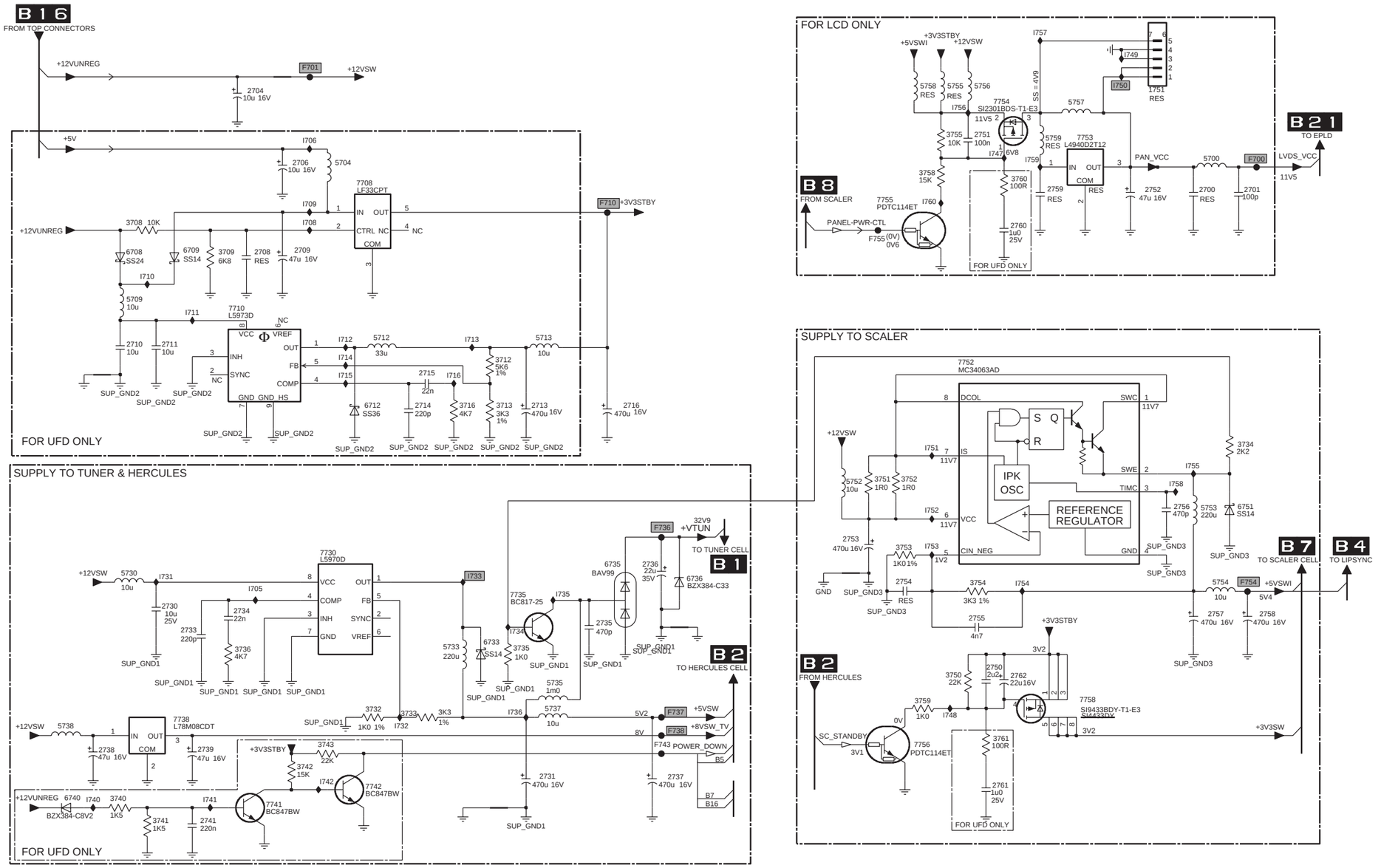
240505

SSB: Audio Processing



SSB: DC-DC Converter

B6 DC-DC CONVERTER



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3139 123 6093.1

1751	A10	7738	F2
2700	B11	7741	G3
2701	B11	7742	G4
2704	A3	7752	D9
2706	B3	7753	B10
2708	C3	7754	A9
2709	C3	7755	B8
2710	C2	7756	G8
2711	C2	7758	F10
2713	D5	F700	B11
2714	D4	F701	A3
2715	D4	F710	B6
2716	D6	F736	E6
2730	E2	F737	F6
2731	G5	F738	F6
2733	F2	F743	G6
2734	E3	F754	E11
2735	F6	F755	C8
2736	E6	I705	E3
2737	G6	I706	B3
2738	G2	I708	B3
2739	G3	I709	B3
2741	G3	I710	C2
2750	F9	I711	C2
2751	B9	I712	C4
2752	B10	I713	C5
2753	E8	I714	C4
2754	E8	I715	D4
2755	F9	I716	D5
2756	E10	I731	E2
2757	E11	I732	F4
2758	E11	I733	E5
2759	B9	I734	F5
2760	B9	I735	E5
2761	G9	I736	F5
2762	F9	I740	G2
3708	B2	I741	G3
3709	C3	I742	G4
3712	D5	I747	B9
3713	D5	I748	F8
3716	D5	I749	A10
3732	F4	I750	A10
3733	F4	I751	D8
3734	D11	I752	E8
3735	F5	I753	E8
3736	F3	I754	E9
3740	G2	I755	D10
3741	G2	I756	B9
3742	G3	I757	A9
3743	G4	I758	D10
3750	F9	I759	B9
3751	D8	I760	B8
3752	D8		
3753	E8		
3754	E9		
3755	B9		
3758	B8		
3759	F8		
3760	B9		
3761	F9		
5700	B11		
5704	B4		
5709	C2		
5712	C4		
5713	C5		
5730	E2		
5733	F5		
5735	F5		
5737	F5		
5738	F1		
5752	D8		
5753	E11		
5754	E11		
5755	A9		
5756	A9		
5757	A9		
5758	A8		
5759	B9		
6708	C2		
6709	C2		
6712	D4		
6733	F5		
6735	E6		
6736	E6		
6740	G2		
6751	E11		
7708	B4		
7710	C3		
7730	E3		
7735	E5		

SSB: Diversity Tables B1-B6

B1 TUNER & IF

Item	AP - non China	Europe	NAFTA/LT	AP - DVB	Europe - DVB	China	Description
1102						V	TUN V+U PLL IEC BGDKM B
1102		V					TUN V+U PLL IEC BGHIL B
1102			V				TUNER UV1338/A F S H-4
1102	V						TUNER UV1316E/A I H-4
1102				V	V		TUNER UV1318SD/A CP H N-4
1104		V			V		FIL SAW SM 38MHZ9 OFWK3953L R
1104						V	FIL SAW SM 38MHZ OFWM3956L R
1104			V				FIL SAW SM 45MHZ75 OFWM1967L R
1104	V			V			FIL SAW SM 38MHZ9 OFWK7265L R
1105						V	FIL SAW SM 38MHZ OFWK3955L R
1106		V			V		FIL SAW SM 38MHZ9 OFWK9656L R
1106						V	FIL SAW SM 38MHZ OFWK9352L R
1106	V			V			FIL SAW SM 38MHZ9 OFWK9361L R
3101	V		V			V	RST SM 0603 100R PM5 COL
3102	V		V			V	RST SM 0603 100R PM5 COL
3104		V			V		RST SM 0603 10K PM5COL
3104	V		V	V		V	RST SM 0603 JUMP. 0R05 COL
3107	V	V		V	V	V	RST SM 0603 6K8 PM5 COL
3108	V	V		V	V	V	RST SM 0603 2K2 PM5 COL
3109	V	V		V	V	V	RST SM 0603 2K2 PM5 COL
3110						V	RST SM 0603 2K2 PM5 COL
3111	V	V		V	V	V	RST SM 0603 22K PM5 COL
3112	V	V		V	V	V	RST SM 0603 18K PM5 COL
3113						V	RST SM 0603 22K PM5 COL
3114						V	RST SM 0603 47K PM5 COL
4102	V	V	V	V	V		RST SM 0603 JUMP. 0R05 COL
4103						V	RST SM 0603 JUMP. 0R05 COL
4104	V			V			RST SM 0603 JUMP. 0R05 COL
4106		V	V		V	V	RST SM 0603 JUMP. 0R05 COL
4107						V	RST SM 0603 JUMP. 0R05 COL
4108						V	RST SM 0603 JUMP. 0R05 COL
4110	V	V		V	V	V	RST SM 0603 JUMP. 0R05 COL
4111		V			V		RST SM 0603 JUMP. 0R05 COL
4113	V			V		V	RST SM 0603 JUMP. 0R05 COL
5101	V	V		V	V	V	FXDIND SM 0805 0U39 PM10 COL R
5101			V				FXDIND SM 0805 0U68 PM10 COL R
5102	V	V	V	V		V	FXDIND SM 0805 12U PM10 COL R
5102					V		FXDIND SM 1008 6U8 PM5 COL R
5107				V	V		FXDIND 0603 100MHZ 600R COL R
5107		V					RST SM 0603 100R PM5 COL
5108				V	V		FXDIND 0603 100MHZ 600R COL R
5108		V					RST SM 0603 100R PM5 COL
6103		V			V		DIO SIG SM BAS316 (COL) R
6105						V	DIO SIG SM 1SS356 (RHM0) R
7101	V	V		V	V	V	TRA SIG SM BC847BW (COL) R
7102						V	TRA SIG SM BC847BW (COL) R

B2 HERCULES

Item	LC4.3A AB (DVB-T)	LC4.3E AB/LC4.8E AB/LC4.9E AB (DVB-T)	LC4.3U/L	LC4.3E/LC4.8E/LC4.9E	LC4.3E W/O 3D COMB FILTER	LC4.3A - CHINA	LC4.3A - AP (non-China)	Description
2203	V	V		V	V	V	V	ELCAP SM 16V 10U PM20 COL R
2229			V					CER2 0805 X5R 6V3 10U PM10 R
2244	V	V		V	V			CER2 0402 Y5V 16V 100N COL
2245	V	V		V	V			CER2 0402 Y5V 16V 100N COL
2246	V	V		V	V			CER2 0402 Y5V 16V 100N COL
2255	V	V	V	V		V	V	CER2 0402 Y5V 16V 100N COL
2286	V	V	V	V		V	V	CER2 0402 Y5V 16V 100N COL
2289	V							CER2 0805 Y5V 10V 4U7 P8020 R
2289				V				RST SM 0603 150R PM5 COL
2290	V	V		V	V			CER2 0805 Y5V 10V 4U7 P8020 R
2291	V	V		V				CER2 0402 Y5V 16V 100N COL
2292		V						CER2 0402 Y5V 16V 100N COL
3250		V		V	V	V	V	RST SM 0402 100R PM5 COL
3251		V		V	V	V	V	RST SM 0402 100R PM5 COL
3252		V		V	V	V	V	RST SM 0402 100R PM5 COL
3253		V		V	V	V	V	RST SM 0402 100R PM5 COL
3255		V		V	V	V	V	RST SM 0402 JUMP. 0R05 COL
3256		V		V	V	V	V	RST SM 0402 JUMP. 0R05 COL
3257		V		V	V	V	V	RST SM 0402 JUMP. 0R05 COL
3258		V		V	V	V	V	RST SM 0402 1K PM5 COL
3259		V		V	V	V	V	RST SM 0402 1K PM5 COL
3260		V		V	V	V	V	RST SM 0402 1K PM5 COL
3270								RST SM 0402 10K PM5 COL
3282		V						RST SM 0603 150R PM5 COL
3285	V	V	V	V		V	V	RST SM 0402 JUMP. 0R05 COL
3286	V	V	V	V		V	V	RST SM 0402 100R PM5 COL
3291	V							RST SM 0402 47K PM5 COL
3292		V		V				RST SM 0402 12K PM5 COL
3292	V							RST SM 0402 47K PM5 COL
3293	V							RST SM 0402 47K PM5 COL
3294	V	V		V				RST SM 0402 47K PM5 COL
3295	V	V		V	V	V	V	RST SM 0402 100K PM5 COL
3296	V	V						RST SM 0402 100R PM5 COL
4206			V		V	V	V	RST SM 0805 JUMP. 0R05 COL R
4213	V	V						RST SM 0402 JUMP. 0R05 COL
4214	V	V						RST SM 0402 JUMP. 0R05 COL
4215	V	V						RST SM 0402 JUMP. 0R05 COL
5218	V	V		V				IND FXD 1206 EMI 100MHZ 120R R
6206	V	V						DIO SIG SM BAT54 SOD323 COL R
7208		V		V	V	V	V	TRA SIG SM BC847BW (COL) R
7209		V		V	V	V	V	TRA SIG SM BC847BW (COL) R
7210		V		V	V	V	V	TRA SIG SM BC847BW (COL) R
7217			V			V		IC SM TDA15011H/N1BD0 (PHSE) Y
7217	V	V		V	V		V	IC SM TDA15021H/N1B91 (PHSE) Y
7219	V	V		V				IC SM 74HC4053D (PHSE) R

B3 SYNC INTERFACE

Item	26/32PFxxxx - AP/NAFTA/LT	EU & AP DVB sets	LC4.3E/LC4.9x/LC4.8x/LC4.3A-China	26PF4310/10	Description
2449	V	V	V		CER2 0402 Y5V 16V 100N COL
3432		V			RST SM 0402 2K7 PM5 COL
3458	V	V	V		RST SM 0402 100R PM5 COL
3459	V	V	V		RST SM 0402 100R PM5 COL
3461	V	V	V		RST SM 0402 100R PM5 COL
3462	V	V	V		RST SM 0402 100R PM5 COL
4436				V	RST SM 0402 JUMP. 0R05 COL
4437				V	RST SM 0402 JUMP. 0R05 COL
4440	V	V	V		RST SM 0402 JUMP. 0R05 COL
4441	V	V	V		RST SM 0402 JUMP. 0R05 COL
6430	V		V	V	DIO REG SM PDZ2.4B (PHSE) R
6431	V		V	V	DIO SIG SM 1N4148WS (VISH) R
7436	V	V	V		IC SM 74LVC14APW (PHSE) R

B5 AUDIO WITHOUT AMPLIFIER

Item	26/32PF	37/42/50PF	Description
2612		V	CER2 0603 Y5V 10V 1U COL
2613	V		CER2 0603 Y5V 10V 1U COL
2616	V		CER2 0603 X5R 6V3 2U2 PM10 R
2617	V		CER2 0603 X5R 6V3 2U2 PM10 R
3615	V		RST SM 0402 10K PM5 COL
3616		V	RST SM 0402 1K PM5 COL
3617		V	RST SM 0402 1K PM5 COL
3618	V		RST SM 0402 22K PM5 COL
3619		V	RST SM 0402 10K PM5 COL
3620		V	RST SM 0402 10K PM5 COL
3623	V		RST SM 0402 47K PM5 COL
3625	V		RST SM 0402 3K3 PM5 COL
3627	V		RST SM 0402 22K PM5 COL
3628		V	RST SM 0402 10K PM5 COL
3629		V	RST SM 0402 22K PM5 COL
3630	V		RST SM 0402 330R PM5 COL
3630		V	RST SM 0402 470R PM5 COL
3631	V		RST SM 0402 330R PM5 COL
3631		V	RST SM 0402 470R PM5 COL
3632		V	RST SM 0402 RC31 39R PM5 R
3633		V	RST SM 0402 RC31 39R PM5 R
4601		V	RST SM 0603 JUMP. 0R05 COL
4602	V		RST SM 0603 JUMP. 0R05 COL
4603	V		RST SM 0603 JUMP. 0R05 COL
4606		V	RST SM 0603 JUMP. 0R05 COL
4609	V		RST SM 0603 JUMP. 0R05 COL
4610	V		RST SM 0603 JUMP. 0R05 COL
4611	V		RST SM 0603 JUMP. 0R05 COL
4612	V		RST SM 0603 JUMP. 0R05 COL
4613	V		RST SM 0603 JUMP. 0R05 COL
4614		V	RST SM 0603 JUMP. 0R05 COL
4615		V	RST SM 0603 JUMP. 0R05 COL
4616	V		RST SM 0603 JUMP. 0R05 COL
4617		V	RST SM 0603 JUMP. 0R05 COL
4618		V	RST SM 0603 JUMP. 0R05 COL
4619		V	RST SM 0603 JUMP. 0R05 COL
4620	V		RST SM 0603 JUMP. 0R05 COL
4621		V	RST SM 0603 JUMP. 0R05 COL
7603		V	TRA SIG SM BC847BW (COL) R
7604		V	TRA SIG SM BC847BW (COL) R
7607	V		TRA SIG SM BC847BW (COL) R

B6 DC DC CONVERTER

Item	26/32PF LCD	37/42PF LCD	42/50PF PDP	DVB PDP 42PF	DVB LCD 37PF	Description
2701	V	V			V	CER1 0402 NP0 50V 100P COL
2706		V	V	V	V	ELCAP SM 16V 10U PM20 COL R
2709		V	V	V	V	ELCAP SM 16V 47U PM20 COL R
2710		V	V	V	V	CER2 1210 Y5V 25V 10U P8020 R
2711		V	V	V	V	CER2 1210 Y5V 25V 10U P8020 R
2713		V	V	V	V	ELCAP SM SEV 16V 470U PM20 R
2714		V	V	V	V	CER2 0402 X7R 50V 220P COL
2715		V	V	V	V	CER2 0402 X7R 16V 22N PM10 R
2741		V	V	V	V	CER2 0603 X7R 10V 220N COL
2751	V	V			V	CER2 0402 Y5V 16V 100N COL
2752	V	V			V	ELCAP SM 16V 47U PM20 COL R
2760	V	V			V	CER2 1206 X7R 25V 1U PM10 R
2761		V	V	V	V	CER2 1206 X7R 25V 1U PM10 R
3708		V	V	V	V	RST SM 0402 10K PM5 COL
3709		V	V	V	V	RST SM 0402 6K8 PM5 COL
3712		V	V	V	V	RST SM 0603 RC22H 5K6 PM1 R
3713		V	V	V	V	RST SM 0603 RC22H 3K3 PM1 R
3716		V	V	V	V	RST SM 0402 4K7 PM5 COL
3740		V	V	V	V	RST SM 0402 1K5 PM5 COL
3741		V	V	V	V	RST SM 0402 1K5 PM5 COL
3742		V	V	V	V	RST SM 0402 15K PM5 COL
3743		V	V	V	V	RST SM 0402 22K PM5 COL
3755	V	V			V	RST SM 0402 10K PM5 COL
3758	V	V			V	RST SM 0402 15K PM5 COL
3760	V	V			V	RST SM 0402 100R PM5 COL
3761		V	V	V	V	RST SM 0402 100R PM5 COL
5700	V	V			V	IND FXD 1206 EMI 100MHZ 120R R
5704		V	V	V	V	IND FXD SM 1206 10U PM20 R
5709		V	V	V	V	IND FXD SM 7032 10U PM20 R
5712		V	V	V	V	IND FXD SM 12565 33U PM20 R
5713		V	V	V	V	INDFXD SM 10145 10U PM20 R
5756	V	V			V	IND FXD 1206 EMI 100MHZ 120R R
5757	V	V			V	IND FXD 1206 EMI 100MHZ 120R R
6708		V	V	V	V	DIO REC SS24 COL R
6709		V	V	V	V	DIO REC SS14 COL R
6712		V	V	V	V	DIO REC SS36 COL R
6740		V	V	V	V	DIO REG SM PDZ8.2B (PHSE) R
7708		V	V	V	V	IC SM LF33CPT (ST00) R
7710		V	V	V	V	IC SM E-L5973D (ST00) R
7741		V	V	V	V	TRA SIG SM BC847BW (COL) R
7742		V	V	V	V	TRA SIG SM BC847BW (COL) R
7754	V	V			V	FET POW SM SI2301BDS-E3(VISH)R
7755	V	V			V	TRA SIG SM PDTC114ET (COL) R

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SSB: Scaler

B7 SCALER

B7

FROM SDRAM → B11
FROM SDRAM → B10
TO SDRAM ← B10
FROM HDMI → B12
FROM SYNC INTERFACE → B3
FROM MUX-SYNC INTF → B13
TO COLUMBUS ← B19
TO SCALER INTRF ← B9
TO FLASH CONTROL ← B11
TO HDMI ← B12
TO EPLD ← B20
TO TUNER ← B1
TO DC-DC CONVERTER ← B6
TO MUX-SYNC INTF ← B13
TO FLASH / CONTROL ← B11
TO COLUMBUS ← B19
TO ANALOG-IO (SCART) / (CINCH) ← B15/B23
TO HERCULES ← B2
TO DIGITAL-IO (SCART) ← B14
FROM DIGITAL-IO (CINCH) ← B22
FROM ANALOG-IO (CINCH) ← B23

1801 B12	7801-12 A4
1802 G14	7801-4 C11
2800 A1	7801-5 E11
2801 A1	7801-6 F4
2802 A1	7801-9 G11
2803 A1	F800 A1
2804 A2	F801 B3
2805 A2	F802 A9
2806 A2	F803 G14
2807 A2	F804 G14
2808 A2	I800 G2
2809 A3	I801 B12
2810 A3	I802 F10
2811 A3	I803 F10
2812 A3	I804 E12
2813 B2	I805 E12
2814 B3	I806 F12
2815 A9	I807 F12
2816 A9	I808 F12
2817 A10	I809 G12
2818 A10	I810 G12
2819 A10	I811 G14
2820 A12	I812 F3
2821 A12	I813 A1
2822 A12	I815 G3
2823 A10	I816 G2
2824 A12	I817 H5
3800 B3	I818 F3
3801-1 C1	I819 I10
3801-2 C1	I820 I10
3801-3 C1	I821 I10
3801-4 C1	I822 G12
3802-1 C1	
3802-2 C1	
3802-3 C1	
3802-4 C1	
3803-1 D1	
3803-2 D1	
3803-3 C1	
3803-4 C1	
3804-1 D1	
3804-2 D1	
3804-3 D1	
3804-4 D1	
3805-1 D1	
3805-2 D1	
3805-3 D1	
3805-4 D1	
3806-1 D1	
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3806-3 E1	
3806-4 E1	
3807-1 E1	
3807-2 E1	
3807-3 E1	
3807-4 E1	
3808-1 E1	
3808-2 E1	
3808-3 E1	
3808-4 E1	
3809-1 B6	
3809-2 B6	
3809-3 B6	
3809-4 B6	
3810-1 B6	
3810-2 B6	
3810-3 B6	
3810-4 B6	
3811-1 C6	
3811-2 C6	
3811-3 C6	
3811-4 C6	
3812-1 C6	
3812-2 C6	
3812-3 C6	
3812-4 C6	
3813-1 C6	
3813-2 D6	
3813-3 D6	
3813-4 D6	
3814 D6	
3815 D6	
3816 D6	
3817 D6	
3818 E6	
3819 F2	
3820 F1	
3822 G5	
3823 F5	
3824 B12	
3825-1 F9	
3825-2 F9	
3825-3 F9	
3825-4 F9	
3826-1 F9	
3826-2 F9	
3826-3 F9	
3826-4 F9	
3827 F13	
3828 F13	
3829 F13	
3830 H10	
3831 I9	
3832 I9	
3833 I9	
3834 G13	
3835 G13	
3836 G13	
3837 G14	
3838 G14	
3839 G3	
3840 I3	
3841 H14	
4801 H5	
7801-11 A11	

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SSB: Scaler

B8 SCALER

B8

SUPPLY FOR SCALER

+3V3SW
5900 → +3V3_PLL
5901 → +3V3_ADC
5902 → +3V3_DVI
5903 → +3V3_IO
5904 F900 → +3V3_LBADC
5905 → +3V3_LVDSA
5906 → +3V3_LVDSB
5907 → +3V3_LVDS

+3V3SW — 7900 LF25CDT (IN, OUT, COM) — I900 — 5908 → +2V5_DDR
2900 100n; 2901 1n0; + 2902 470u 16V

+3V3SW — 7901 LD1086D2T18 (IN, OUT, COM) — I901 — I902 +1V8
2903 100n; + 2904 47u 16V
5909 → +1V8_ADC
5910 → +1V8_DVI
5911 → +1V8_CORE

+3V3_IO — F901 — 2905 100u 16V; 2906–2916 100n
+1V8_CORE — F902 — 2917 100u 16V; 2918–2929 100n

+3V3_IO: AC10 AC8 AC6 AC4 AB4 AA4 Y4 W4 D23 D22 D17
+1V8_CORE: U17 U16 U11 U10 T7 T6 T1 L16 L11 K17 K16 K11 K10
7801-13 GM1501-LF-BD SUPPLY (IO_3.3, CORE_1.8)
D_GND D_GND D_GND
A13 B13 K12 K13 K14 K15 L10 L12 L13 L14 L15 L17 M10 M11 M12 M13 M14 M15 M16 M17 N10 N11 N12 N13 N14 N15 N16 N17 P10 P11 P12 P13 P14 P15 P16 P17 R10 R11 R12 R13 R14 R15 R16 R17 T10 T12 T13 T14 T15 U12 U13 U14 U15 AD16
I905

F903 — 2930–2933 100n — +1V8_DVI
F904 — 2934 47u 16V; 2935–2939 100n — +3V3_DVI

B14 TO DIGITAL-IO (SCART ONLY)
SCL_DVI N4 — DVI_SCL|GPI_07
SDA_DVI N3 — DVI_SDA|GPI_08
RXC+IN A6, RXC-IN B6 — RXCp RXCn
RX0+IN A8, RX0-IN B8 — RX0p RX0n
RX1+IN A9, RX1-IN B9 — RX1p RX1n
RX2+IN A10, RX2-IN B10 — RX2p RX2n
B11 — REXT
7801-2 GM1501-LF-BD DVI (DVI_1.8, DVI_3.3)
DVI_GND: A7 A11 B5 B7 C7 D7 D11
I906

7801-14 GM1501-LF-BD NC: NC A1, AC17 NC; NC C5, K3 NC; NC D5, F1 NC

+3V3_LBADC
+ 2940 47u 16V; 2941 100n
7801-3 GM1501-LF-BD ADC (C13)
B2 KEYBOARD 4900 RES
C12 LBADC_IN1
(RES) B12 LBADC_IN2
(RES) A12 LBADC_IN3
D12 LBADC_RETURN
LBADC_GND (D13)
LBADC_33
2942 100n

7801-10 GM1501-LF-BD DISPLAY PWR
AD19 LVDSA_GND_1; AC19 LVDSA_GND_2; AC20 LVDSA_GND_3
AC13 LVDSB_GND_1; AC14 LVDSB_GND_2; AC15 LVDSB_GND_3; AD17 VSSD33_LVDS
VDDD33_LVDS AE17 — F905 — +3V3_LVDS
LVDSA_3.3_3 AC22 — F906 — +3V3_LVDSA
LVDSA_3.3_2 AC21
LVDSA_3.3_1 AD20
+ 2945 22u 16V; 2946–2948 100n; 2949 100n
LVDSB_3.3_3 AC12 — F907 — +3V3_LVDSB
LVDSB_3.3_2 AD13
LVDSB_3.3_1 AD12
+ 2950 22u 16V; 2951 100n; 2952 100n

B13 TO MUX-SYNC INTERFACE
B18 ADC
B19 & B2 TO COLUMBUS / HERCULES
B16 TO TOP CONN.
B6 FROM DC-DC CONVERTER

7801-7 GM1501-LF-BD CTRL
3900 3K3 I904 AC16 OEXTR
FAN_SPEED C26 PWM0|GPIO_10
HD_FILTER C25 PWM1|GPIO_11
PPWR|GPIO_08 A26 PANEL-PWR-CTL
PBIAS|GPIO_09 B26 LAMP_ON_OFF
DCLK|GPIO_17 AC7 NC
PWM2|GPIO_12 D26 I903 BU_LHT_ADJ2 (RES)

+3V3STBY
3901 RES; 3902 RES; 2953 100n; 2954 100n
F908 — +1V8_ADC
+3V3_ADC
F909 — + 2955 22u 16V; 2956–2959 100n

7801-1 GM1501-LF-BD ANA-IN (ADC_1.8, ADC_3.3)
AVSYNC L3
AHSYNC L4
SCL SDA — 3903 100R N2; 3904 100R N1 — VGA_SCL|GPI_05 VGA_SDA|GPI_06
SOG C3
R_PR+ D2, R_PR- D1 — REDp REDn
G_Y+ C2, G_Y- C1 — GREENp GREENn
B_PB+ B2, B_PB- B1 — BLUEp BLUEn
ADC_AGND ADC_DGND
C4 D4 E1 E2 E4 A5 B4
F910

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2900 D1 F906 D10
2901 D2 F907 D10
2902 D2 F908 E9
2903 E1 F909 E10
2904 E2 F910 G9
2905 A4 I900 C2
2906 A4 I901 E1
2907 A4 I902 E2
2908 A4 I903 G6
2909 A4 I904 F4
2910 A5 I905 C4
2911 A5 I906 E6
2912 A5
2913 A5
2914 A6
2915 A6
2916 A6
2917 A7
2918 A7
2919 A7
2920 A7
2921 A7
2922 A8
2923 A8
2924 A8
2925 A8
2926 A9
2927 A9
2928 A9
2929 A9
2930 C5
2931 C5
2932 C5
2933 C5
2934 C7
2935 C7
2936 C7
2937 C8
2938 C8
2939 C8
2940 B9
2941 B10
2942 C9
2945 D10
2946 D11
2947 D11
2948 D11
2949 D11
2950 D10
2951 D11
2952 D11
2953 E8
2954 E8
2955 E10
2956 E10
2957 E10
2958 E11
2959 E11
3900 F4
3901 E8
3902 E8
3903 F8
3904 F8
4900 B9
5900 A1
5901 B1
5902 B1
5903 B1
5904 B1
5905 C1
5906 C1
5907 C1
5908 C2
5909 D2
5910 E2
5911 E2
7801-1 F9
7801-10 C9
7801-13 B6
7801-14 A10
7801-2 C6
7801-3 B10
7801-7 F5
7900 C1
7901 D1
F900 B2
F901 A4
F902 A7
F903 C5
F904 C7
F905 D10

SSB: Scaler Interface

B9 SCALER INTERFACE

B9

7801-8
GM1501-LF-BD

ACp|GPIO_G06_B6|DORED8 AE20
ACn|GPIO_G06_B7|DORED9 AF20
A3p|GPIO_G06_B4|DORED6 AE19
A3n|GPIO_G06_B5|DORED7 AF19
A2p|GPIO_G05_B1|DOGRN3 AE21
A2n|GPIO_G05_B2|DOGRN4 AF21
A1p|GPIO_G05_B4|DOGRN6 AE22
A1n|GPIO_G05_B5|DOGRN7 AF22
A0p|GPIO_G05_B6|DOGRN8 AE23
A0n|GPIO_G05_B7|DOGRN9 AF23
NC
SHIELD5|DEBLU5 AD14
SHIELD4|DEBLU2 AE13
SHIELD3|DEGRN5 AE11
SHIELD2|DEGRN4 AD11
SHIELD1|DEGRN3 AC11
SHIELD0|DEGRN2 AF10
BCp|DEGRN8 AE12
BCn|DEGRN9 AF13
B3p|DEGRN6 AF11
B3n|DEGRN7 AF12
B2p|DEBLU3 AF14
B2n|DEBLU4 AE14
B1p|DEBLU6 AF15
B1n|DEBLU7 AE15
B0p|DEBLU8 AF16
B0n|DEBLU9 AE16
LVDS

TXBC+ TXBC-
TXB3+ TXB3-
TXB2+ TXB2-
TXB1+ TXB1-
TXB0+ TXB0-

B20 TO EPLD

B7 TO SCALER

BU_LHT_ADJ1
3A02 1K0

RESERVED
IA07
4A02 RES
IA05
BACKLIGHT_DIM
B20 FROM EPLD

RES +5VSWI
3A03 RES
3A05 RES
7A01 SI2301DS-T1
IA06
3A06 10K
IA00
2A03 1u0
3A04 1K0
BACKLIGHT_CTRL
B16 TO TOP CONNECTORS
4A03

FOR PDP ONLY
+3V3SW
3A07 10K
3A08 10K
2A00 100n
5A00
7A00 PCA9515ADP
VCC
SDA_DMA_BUS1_DISP
SCL_DMA_BUS1_DISP
3A00 68R
3A01 68R
IA08
IA09
SDA1
SCL1
SDA0
SCL0
EN
NC
GND
SDA_IO
SCL_IO
2A01 100p
2A02 100p
4A04 (PDP)
BUF_ENABLE
4A00_RES
4A01_RES
B21 TO EPLD

FOR UFD ONLY
+3V3STBY
2A13 100n
3A13 10K
3A11 4K7
+5V
3A14 4K7
7A03 BC847BW
B2 FROM HERCULES
SC_STANDBY
3A10 10K
IA03
7A02 BC847BW
2A12 10n
6A01 BZX384-C3V9
STANDBY
4A05
4A06

2A00 E3
2A01 F2
2A02 F2
2A03 C7
2A12 F6
2A13 E8
3A00 E2
3A01 E2
3A02 C5
3A03 C6
3A04 C6
3A05 C6
3A06 C7
3A07 E2
3A08 E2
3A10 F6
3A11 E7
3A13 E8
3A14 E9
4A00 F3
4A01 F3
4A02 B6
4A03 D6
4A04 F4
4A05 F6
4A06 F8
5A00 E3
6A01 F8
7801-8 A2
7A00 E4
7A01 C6
7A02 F6
7A03 E8
IA00 C7
IA03 F6
IA05 B8
IA06 C7
IA07 B6
IA08 E3
IA09 E3

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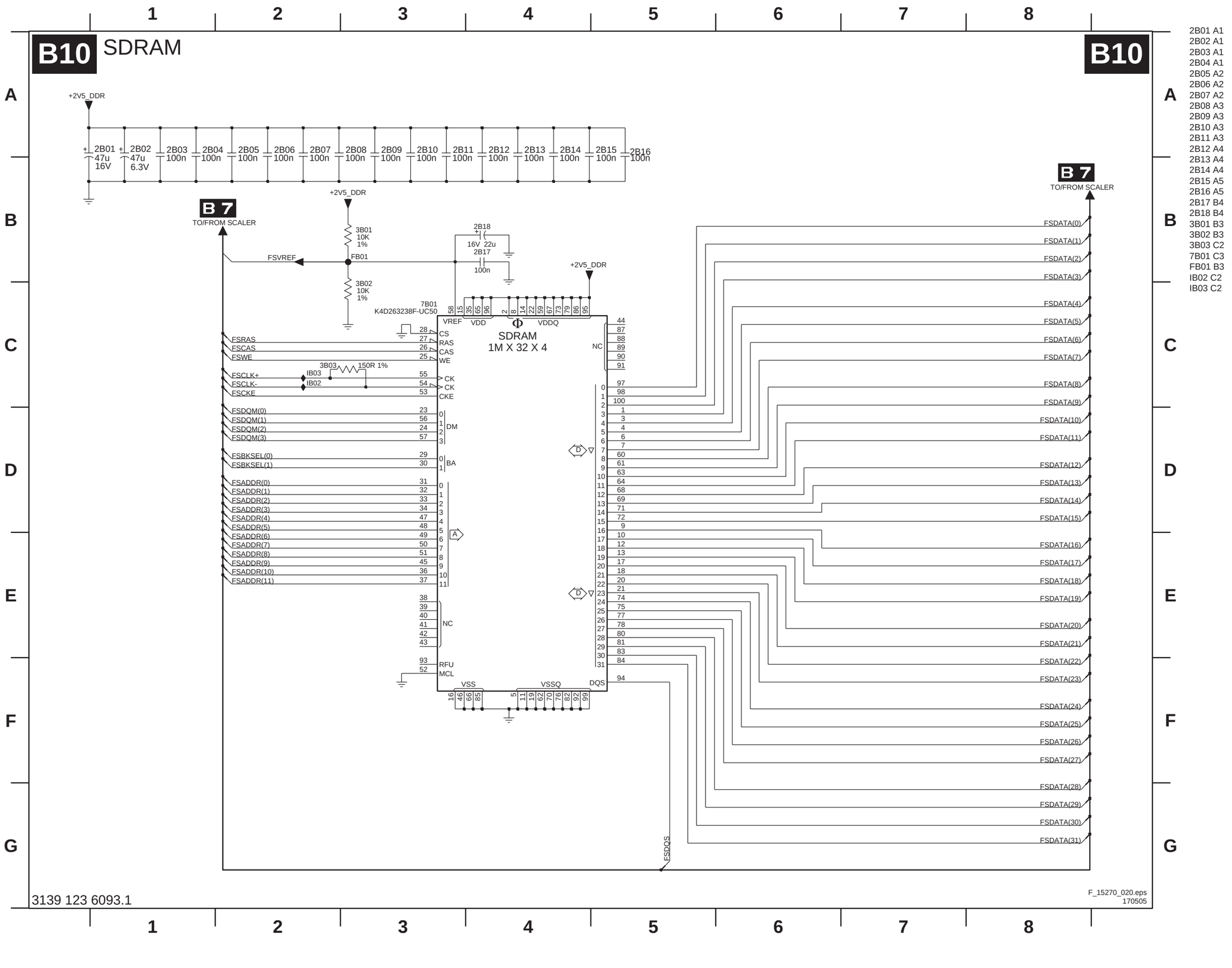
SSB: SDRAM


B10 SDRAM
B10
+2V5_DDR
2B01 47u 16V
2B02 47u 6.3V
2B03 100n
2B04 100n
2B05 100n
2B06 100n
2B07 100n
2B08 100n
2B09 100n
2B10 100n
2B11 100n
2B12 100n
2B13 100n
2B14 100n
2B15 100n
2B16 100n
B 7
TO/FROM SCALER
3B01 10K 1%
3B02 10K 1%
FSVREF
FB01
2B18 16V 22u
2B17 100n
7B01
K4D263238F-UC50
VREF
VDD
VDDQ
SDRAM
1M X 32 X 4
NC
CS
RAS
CAS
WE
CK
CKE
DM
BA
A
RFU
MCL
VSS
VSSQ
DQS
FSRAS
FSCAS
FSWE
FSCLK+
FSCLK-
FSCKE
3B03 150R 1%
IB03
IB02
FSDQM(0)
FSDQM(1)
FSDQM(2)
FSDQM(3)
FSBKSEL(0)
FSBKSEL(1)
FSADDR(0)
FSADDR(1)
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FSADDR(9)
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FSDATA(26)
FSDATA(27)
FSDATA(28)
FSDATA(29)
FSDATA(30)
FSDATA(31)
FSDQS
2B01 A1
2B02 A1
2B03 A1
2B04 A1
2B05 A2
2B06 A2
2B07 A2
2B08 A3
2B09 A3
2B10 A3
2B11 A3
2B12 A4
2B13 A4
2B14 A4
2B15 A5
2B16 A5
2B17 B4
2B18 B4
3B01 B3
3B02 B3
3B03 C2
7B01 C3
FB01 B3
IB02 C2
IB03 C2
3139 123 6093.1
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SSB: Flash / Control

B11 FLASH / CONTROL

B 7 TO SCALER

+3V3_IO
5C00
FC00
2C00
100n
2C01
10u 16V

7C00
M29W040B-55K1
ROM
512Kx8
[FLASH]
A 0 512K-1
DQ 0 7

OCMADDR(0) 12
OCMADDR(1) 11
OCMADDR(2) 10
OCMADDR(3) 9
OCMADDR(4) 8
OCMADDR(5) 7
OCMADDR(6) 6
OCMADDR(7) 5
OCMADDR(8) 27
OCMADDR(9) 26
OCMADDR(10) 23
OCMADDR(11) 25
OCMADDR(12) 4
OCMADDR(13) 28
OCMADDR(14) 29
OCMADDR(15) 3
OCMADDR(16) 2
OCMADDR(17) 30
OCMADDR(18) 1

#OCM_RE 24 OE
#OCM_WE 31 WE
#ROM_CS 22 CE
32
16

OCMDATA(0) 13
OCMDATA(1) 14
OCMDATA(2) 15
OCMDATA(3) 17
OCMDATA(4) 18
OCMDATA(5) 19
OCMDATA(6) 20
OCMDATA(7) 21

B 7 TO SCALER

OCMADDR(0:19)
OCMDATA(0:7)

+3V3_IO
3C04-1 1 8 10K
3C04-2 2 7 10K
3C04-3 3 6 10K
3C04-4 4 5 10K
3C05 10K

3C11 RES
3C12 RES
3C13 RES
3C14 RES
3C15 RES

3C06-1 1 8 10K
3C06-2 2 7 10K
3C06-3 3 6 10K
3C06-4 4 5 10K
OCMADDR(0)
OCMADDR(1)
OCMADDR(2)
OCMADDR(3)

+3V3_IO
3C16-4 5 4
3C17 10K
3C16-3 6 3 10K
3C16-1 8 1 10K
3C16-2 7 2 10K
3C18 10K

3C07-1 1 8 10K
3C07-2 2 7 10K
3C07-3 3 6 10K
3C07-4 4 5 10K
OCMADDR(4)
OCMADDR(5)
OCMADDR(6)
OCMADDR(7)

3C08-2 2 7 10K
3C08-1 1 8 10K
3C08-3 3 6 10K
3C08-4 4 5 10K
OCMADDR(8)
OCMADDR(9)
OCMADDR(10)
OCMADDR(11)

FC09
FC10
FC08

3C09-1 1 8 10K
3C09-2 2 7 10K
3C09-3 3 6 10K
3C09-4 4 5 10K
OCMADDR(12)
OCMADDR(15)
OCMADDR(16)
OCMADDR(18)

FC07

3C10-1 1 8 10K
3C10-2 2 7 10K
3C10-3 3 6 10K
3C10-4 4 5 10K
OCMADDR(17)
OCMADDR(14)
OCMADDR(13)
OCMADDR(19)

FC06

3C19 RES
3C20 RES
3C21 RES

+3V3SW
3C00 10K
2C02 100n
3V2
7C01 M24C32-WMN6
Φ (4Kx8) EEPROM
WC
SCL
SDA
ADR 0 1 2
4

NVM_WP_SCALER 0V FC01 7
SCL_IO 3V2 FC02 6
SDA_IO 3V2 FC03 5

+3V3SW
3V2
2C03 100n
3C02 1K0
1C00 SKQR
For Software Development only - (RES)
FC04
3C01 10K
7C02 PST596J
MR SUB VCC GND VOUT
FC05
3V2
#RESET
3C03 RES

B 7 & B 1 2 TO SCALER TO HDMI
& B 1 9 TO COLUMBUS

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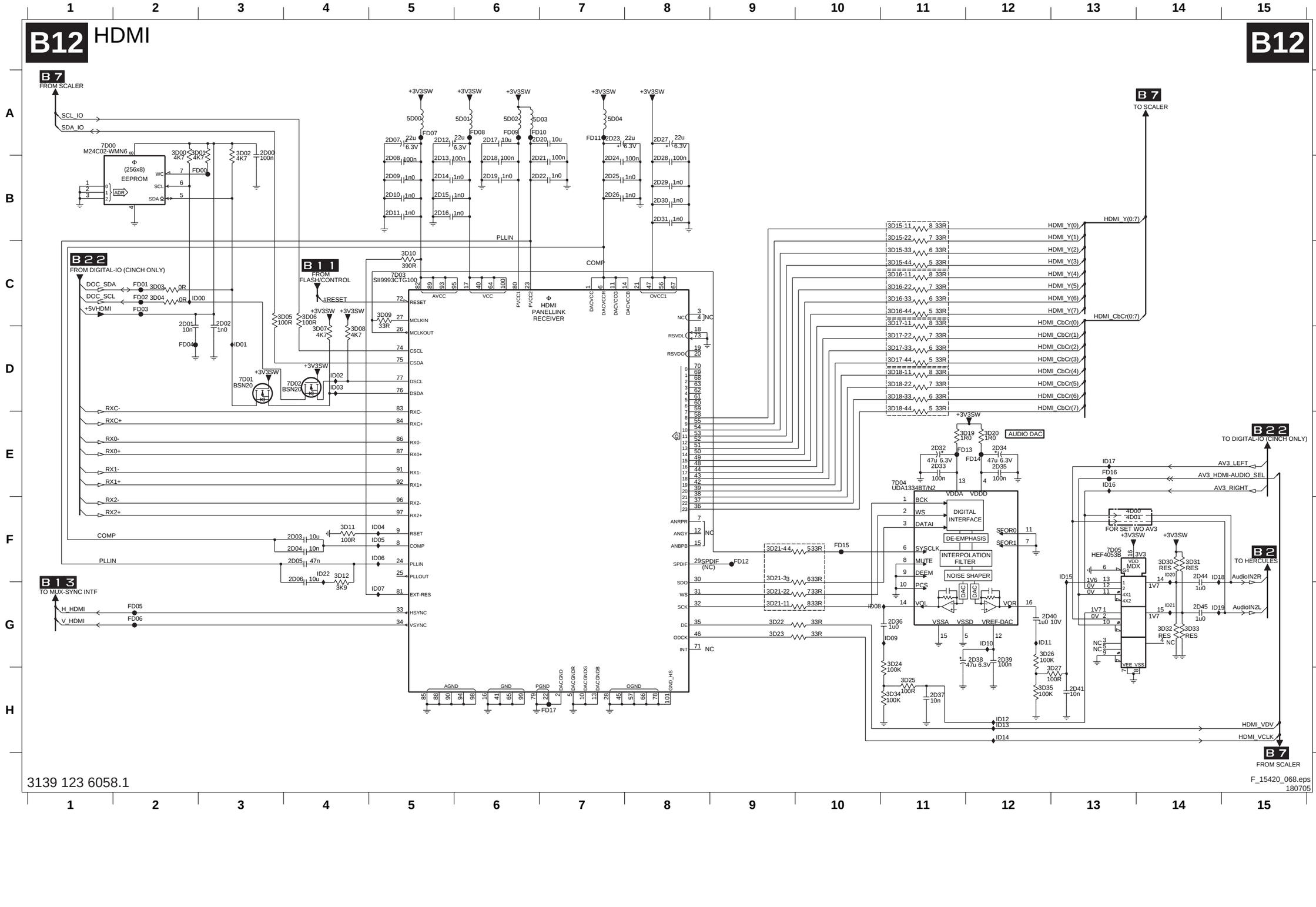
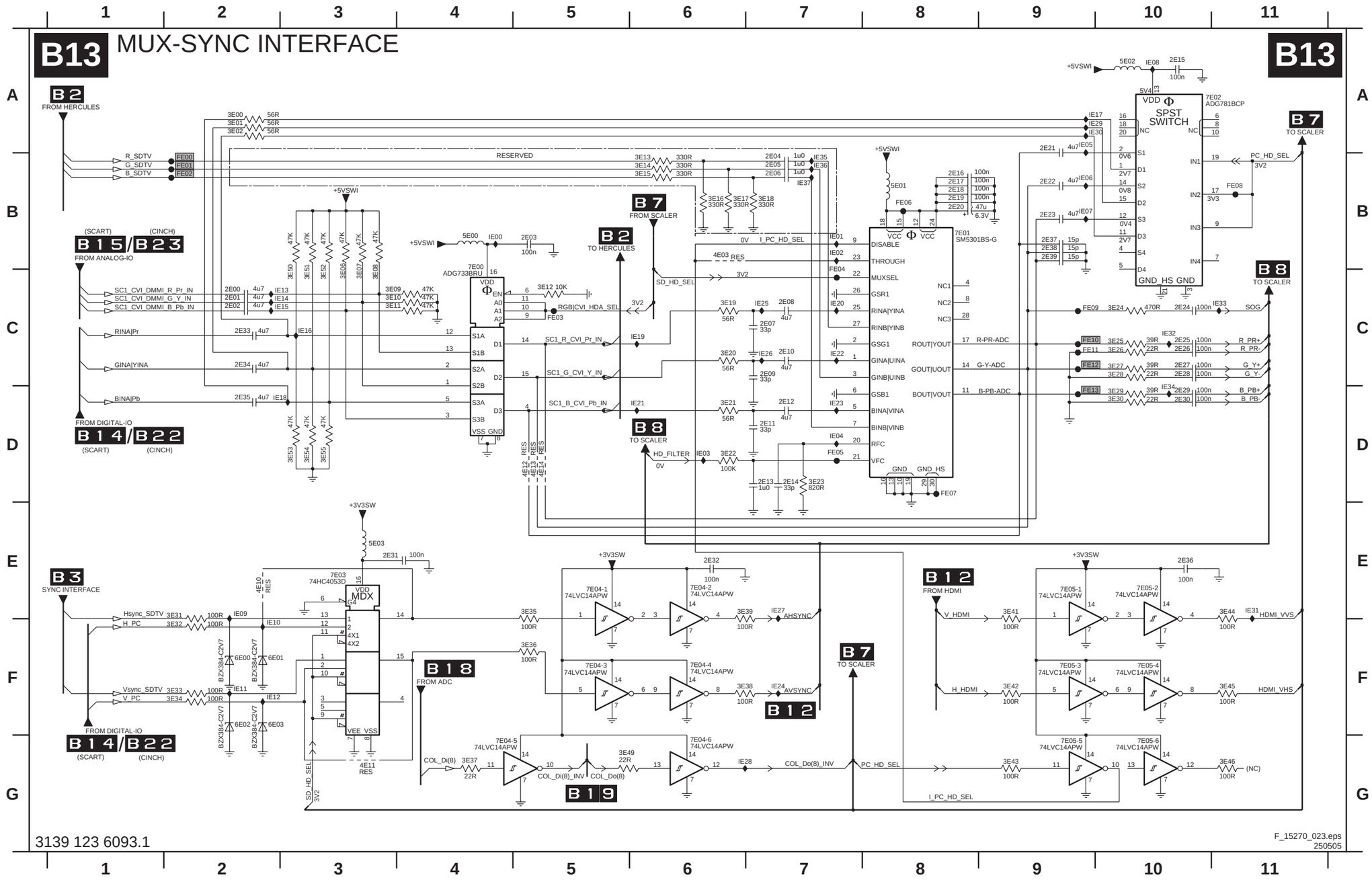
1C00 E4
2C00 A3
2C01 A3
2C02 E2
2C03 E5
3C00 E2
3C01 E5
3C02 E6
3C03 E6
3C04-1 A6
3C04-2 A6
3C04-3 A6
3C04-4 A6
3C05 A6
3C06-1 B5
3C06-2 B5
3C06-3 B5
3C06-4 B5
3C07-1 B5
3C07-2 B5
3C07-3 B5
3C07-4 B5
3C08-1 B5
3C08-2 B5
3C08-3 C5
3C08-4 C5
3C09-1 C5
3C09-2 C5
3C09-3 C5
3C09-4 C5
3C10-1 C5
3C10-2 C5
3C10-3 C5
3C10-4 C5
3C11 A6
3C12 A6
3C13 A6
3C14 B6
3C15 B6
3C16-1 B7
3C16-2 B7
3C16-3 B6
3C16-4 B6
3C17 B6
3C18 B7
3C19 C6
3C20 C7
3C21 C7
5C00 A3
7C00 A2
7C01 E3
7C02 E5
FC00 A3
FC01 E2
FC02 E2
FC03 E2
FC04 E4
FC05 E6
FC06 C6
FC07 C6
FC08 C7
FC09 B7
FC10 B7

SSB: HDMI

2D00 A3 2D01 C2 2D02 C3 2D03 F4 2D04 F4 2D05 F4 2D06 F4 2D07 A5 2D08 B5 2D09 B5 2D10 B5 2D11 B5 2D12 A5 2D13 B5 2D14 B5 2D15 B5 2D16 B5 2D17 A6 2D18 B6 2D19 B6 2D20 A7 2D21 B6 2D22 B6 2D23 A7 2D24 B7 2D25 B7 2D26 B7 2D27 A8 2D28 B8 2D29 B8 2D30 B8 2D31 B8 2D32 E11 2D33 E11 2D34 E12 2D35 E12 2D36 G11 2D37 H11 2D38 G12 2D39 G12 2D40 G12 2D41 H13 2D44 F14 2D45 G14 3D00 A2 3D01 A3 3D02 A3 3D03 C2 3D04 C2 3D05 C4 3D06 C4 3D07 D4 3D08 D4 3D09 C5 3D10 C5 3D11 F4 3D12 F4 3D15-1 B11 3D15-2 B11 3D15-3 C11 3D15-4 C11 3D16-1 C11 3D16-2 C11 3D16-3 C11 3D16-4 C11 3D17-1 C11 3D17-2 D11 3D17-3 D11 3D17-4 D11 3D18-1 D11 3D18-2 D11 3D18-3 D11 3D18-4 D11 3D19 E12 3D20 E12 3D21-1 G9 3D21-2 G9 3D21-3 F9 3D21-4 F9 3D22 G9 3D23 G9 3D24 G11 3D25 H11 3D26 G12 3D27 H13 3D30 F14 3D31 F14 3D32 G14 3D33 G14 3D34 H11 3D35 H12 4D00 F13 4D01 F13 5D00 A5 5D01 A6 5D02 A6 5D03 C5 5D04 A7 7D00 A2 7D01 D3 7D02 D4 7D03 C5 7D04 E11 7D05 F13 FD00 B3 FD01 C2 FD02 C2 FD03 C2 FD04 D2 FD05 G2 FD06 G2 FD07 A5 FD08 A6 FD09 A6 FD10 A6 FD11 A7 FD12 F9 FD13 E11 FD14 E12 FD15 F10 FD16 E13 FD17 H7 ID00 C3 ID01 D3 ID02 D4 ID03 D4 ID04 F5 ID05 F5 ID06 F5 ID07 G5 ID08 G10 ID09 G11 ID10 G12 ID11 G12 ID12 H12 ID13 H12 ID14 H12 ID15 F13 ID16 E13 ID17 E13 ID18 F14 ID19 G14 ID20 F14 ID21 G14 ID22 F4



SSB: MUX-Sync Interface



2E00 C2	3E50 C3	IE34 D10
2E01 C2	3E51 C3	IE35 B7
2E02 C2	3E52 C3	IE36 B7
2E03 B5	3E53 D3	IE37 B7
2E04 B7	3E54 D3	
2E05 B7	3E55 D3	
2E06 B7	4E03 B6	
2E07 C7	4E10 E2	
2E08 C7	4E11 G3	
2E09 C7	4E12 D5	
2E10 C7	4E13 D5	
2E11 D7	4E14 D5	
2E12 D7	5E00 B4	
2E13 D7	5E01 B8	
2E14 D7	5E02 A10	
2E15 A10	5E03 E3	
2E16 B8	6E00 F2	
2E17 B8	6E01 F2	
2E18 B8	6E02 F2	
2E19 B8	6E03 F2	
2E20 B8	7E00 B4	
2E21 A9	7E01 B8	
2E22 B9	7E02 A10	
2E23 B9	7E03 E3	
2E24 C10	7E04-1 E5	
2E25 C10	7E04-2 E6	
2E26 C10	7E04-3 F5	
2E27 C10	7E04-4 F6	
2E28 C10	7E04-5 G5	
2E29 D10	7E04-6 G6	
2E30 D10	7E05-1 E9	
2E31 E3	7E05-2 E10	
2E32 E6	7E05-3 F9	
2E33 C2	7E05-4 F10	
2E34 C2	7E05-5 G9	
2E35 D2	7E05-6 G10	
2E36 E10	FE00 B2	
2E37 B9	FE01 B2	
2E38 B9	FE02 B2	
2E39 B9	FE03 C5	
3E00 A2	FE04 C7	
3E01 A2	FE05 D7	
3E02 A2	FE06 B8	
3E06 C3	FE07 D8	
3E07 C3	FE08 B11	
3E08 C3	FE09 C9	
3E09 C3	FE10 C9	
3E10 C3	FE11 C9	
3E11 C3	FE12 C9	
3E12 C5	FE13 D9	
3E13 B6	IE00 B4	
3E14 B6	IE01 B7	
3E15 B6	IE02 B7	
3E16 B6	IE03 D6	
3E17 B6	IE04 D7	
3E18 B7	IE05 A9	
3E19 C6	IE06 B9	
3E20 C6	IE07 B9	
3E21 D6	IE08 A10	
3E22 D6	IE09 E2	
3E23 D7	IE10 F2	
3E24 C10	IE11 F2	
3E25 C10	IE12 F2	
3E26 C10	IE13 C3	
3E27 C10	IE14 C3	
3E28 C10	IE15 C3	
3E29 D10	IE16 C3	
3E30 D10	IE17 A10	
3E31 E2	IE18 D2	
3E32 F2	IE19 C6	
3E33 F2	IE20 C7	
3E34 F2	IE21 D6	
3E35 E5	IE22 C7	
3E36 F5	IE23 D7	
3E37 G4	IE24 F7	
3E38 F6	IE25 C7	
3E39 E6	IE26 C7	
3E41 E9	IE27 E7	
3E42 F9	IE28 G6	
3E43 G9	IE29 A10	
3E44 E11	IE30 A10	
3E45 F11	IE31 E11	
3E46 G11	IE32 C10	
3E49 G5	IE33 C11	

SSB: Top Connectors

B16 TOP CONNECTORS

B16

FOR UFD ONLY

UFD CONTROL

(1M03) 1J00

IJ01 POR (NC)
IJ02 LAMP_ON_OFF_1
IJ03
IJ04
TEMP_SENSOR (NC)
IJ05 STANDBY_1
IJ06 NC
IJ07 POWER_UP_OK_1

5J05 RES
FAN_SPEED
PROTECT_AUD
3J06 RES
POWER_UP_OK
IJ12

4J02 RES
2J16 RES
2J33 RES
2J20 RES
2J34 RES

FROM SCALER INTERFACE B6
FROM SCALER B8
FROM SCALER B7

PROTECT_AUD

FROM AUDIO B5

AUDIO-L
AUDIO-R
5J01
5J02
FJ10
FJ12
FJ11
AUDIO-SW (NC)
3V3 SOUND_ENABLE_1
3V3 POR_AUDIO
FJ13
FJ14

(1M52) 1J04
B9B-PH-K-S(LF)

2J26 100p
2J27 100p
2J28 100p
2J29 100p
2J36 1n0

TO/FROM 1002 OF CLASS-D AUDIO AMPLIFIER C

UFD SUPPLY

(1M46) 1J01

FJ00
FJ01 (NC)
FJ02 5V(NC)
FJ03
FJ04 +33V_TUN(NC)
FJ05 NC

1J07 +12V_UFD
3A T
1J08 +5V_UFD
4J01

5J04 +5V

2J31 1n0

TO DC-DC CONVERTER B6

FROM EPLD B20

1J05
B_LT_PWM FJ15
G_LT_PWM FJ16
R_LT_PWM FJ17
B_RT_PWM FJ18
G_RT_PWM FJ19
R_RT_PWM FJ20
B7B-PH-K-S(LF)
AMBIENT LIGHT (TOP)

2J04 100p
2J05 100p
2J06 100p
2J07 100p
2J08 100p
2J09 100p

1J06
B_LB_PWM FJ21
G_LB_PWM FJ22
R_LB_PWM FJ23
B_RB_PWM FJ24
G_RB_PWM FJ25
R_RB_PWM FJ26
B7B-PH-K-S(LF)
AMBIENT LIGHT (BOTTOM)

2J10 100p
2J11 100p
2J12 100p
2J13 100p
2J14 100p
2J15 100p

RESERVED

TO/FROM PSU (SUPPLY FOR LCD)

1J02
VP
GND_AUDIO
FJ06
3V2 +3V3STBY
FJ07
IJ08
IJ09
IJ10
IJ11
B12P-PH-K-S(LF)

5J03 +12VUNREG 11V6
POWER_DOWN
3J05 68R STANDBY 3V1
3J03 68R BACKLIGHT_CTRL
3J04 68R LAMP_ON_OFF 3V2
IJ13

FROM SCALER INTERFACE B9
FROM SCALER B8

2J30 1n0
2J02 1n0
2J35 1n0
2J18 100p
2J19 100p
2J17 100p
2J22 100p
2J23 100p
2J21 100p

TO/FROM 1003 OF CLASS-D AUDIO AMP (+18V / +24V) C

1J03
B3B-PH-K-S(LF)
FJ08 VP
FJ09
GND_AUDIO

2J03 1n0
GND_AUDIO

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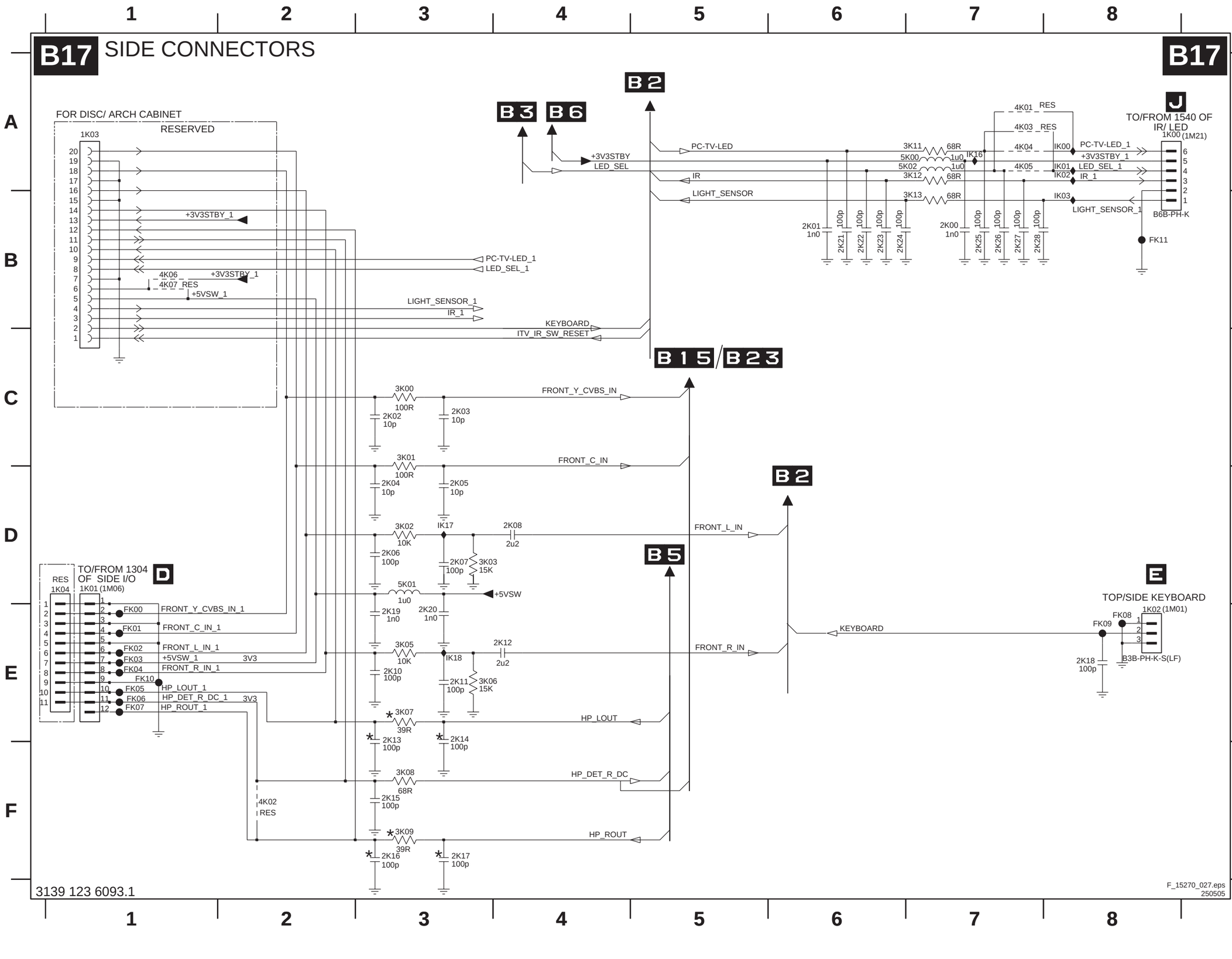
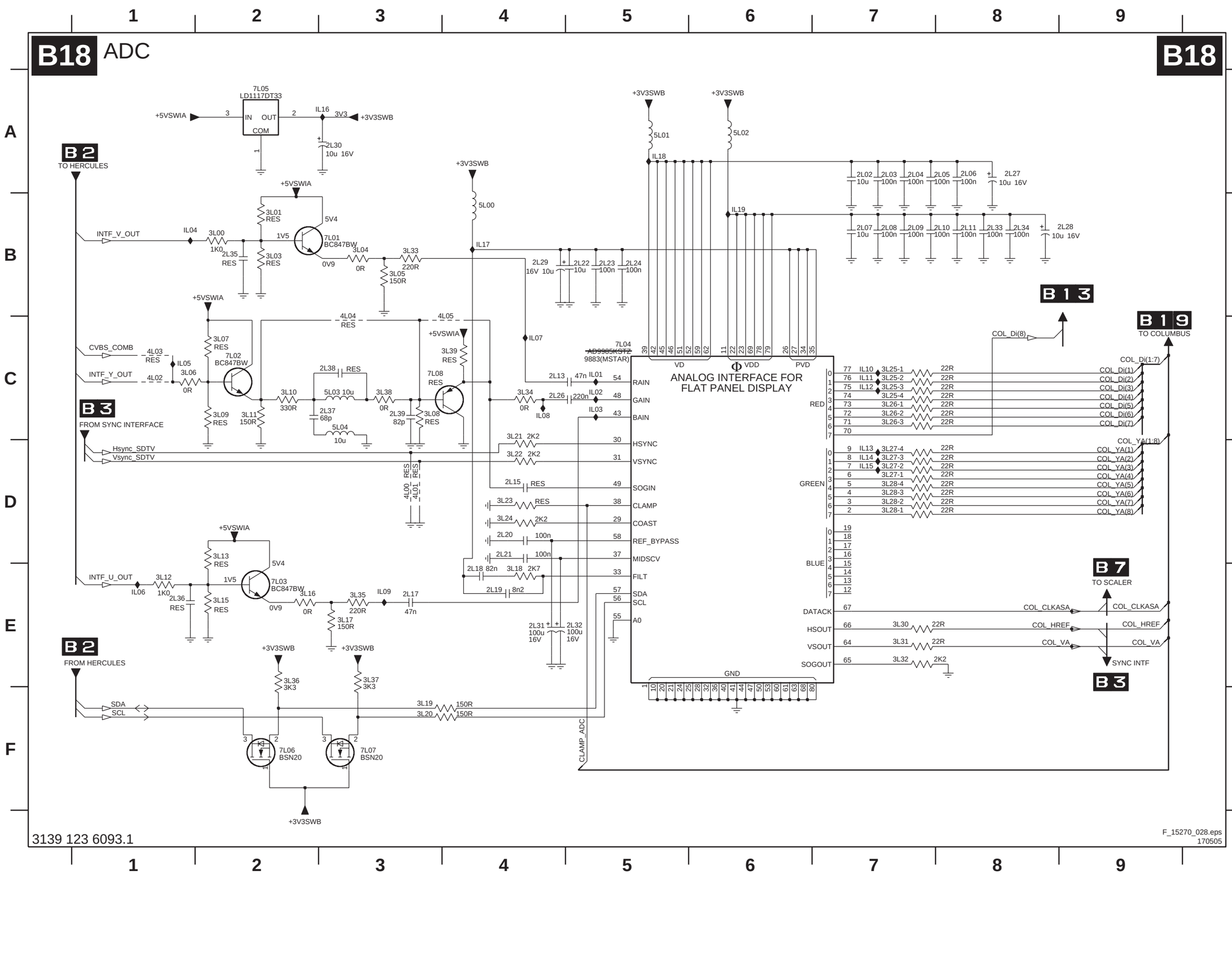
1J00 B1 FJ25 E7
1J01 C1 FJ26 E7
1J02 D1 IJ01 B1
1J03 F1 IJ02 B1
1J04 B8 IJ03 B1
1J05 C8 IJ04 B1
1J06 E8 IJ05 B1
1J07 C2 IJ06 B1
1J08 C2 IJ07 B1
2J02 F2 IJ08 E2
2J03 F2 IJ09 E2
2J04 D6 IJ10 E2
2J05 D7 IJ11 E2
2J06 D7 IJ12 B4
2J07 D7 IJ13 E4
2J08 D7
2J09 D7
2J10 E6
2J11 E7
2J12 E7
2J13 E7
2J14 E7
2J15 E7
2J16 C2
2J17 F3
2J18 F2
2J19 F3
2J20 C3
2J21 F3
2J22 F3
2J23 F3
2J26 C6
2J27 C7
2J28 C7
2J29 C7
2J30 F2
2J31 D2
2J33 C2
2J34 C3
2J35 F2
2J36 C7
3J03 E3
3J04 E3
3J05 E3
3J06 B3
4J01 D2
4J02 C2
5J01 B7
5J02 B7
5J03 E2
5J04 C2
5J05 B3
FJ00 C1
FJ01 C1
FJ02 C1
FJ03 C1
FJ04 C1
FJ05 D1
FJ06 E2
FJ07 E2
FJ08 F1
FJ09 F2
FJ10 B7
FJ11 B8
FJ12 B7
FJ13 B7
FJ14 C7
FJ15 C7
FJ16 C7
FJ17 D7
FJ18 D7
FJ19 D7
FJ20 D7
FJ21 E7
FJ22 E7
FJ23 E7
FJ24 E7

SSB: Side Connectors



1K00 A8
1K01 D1
1K02 E8
1K03 A1
1K04 D1
2K00 B7
2K01 B6
2K02 C3
2K03 C3
2K04 D3
2K05 D3
2K06 D3
2K07 D3
2K08 D4
2K10 E3
2K11 E3
2K12 E4
2K13 F3
2K14 E3
2K15 F3
2K16 F3
2K17 F3
2K18 E8
2K19 E3
2K20 E3
2K21 B6
2K22 B6
2K23 B6
2K24 B6
2K25 B7
2K26 B7
2K27 B7
2K28 B7
3K00 C3
3K01 C3
3K02 D3
3K03 D3
3K05 E3
3K06 E3
3K07 E3
3K08 F3
3K09 F3
3K11 A7
3K12 A7
3K13 B7
4K01 A7
4K02 F2
4K03 A7
4K04 A7
4K05 A7
4K06 B1
4K07 B1
5K00 A7
5K01 D3
5K02 A7
FK00 E1
FK01 E1
FK02 E1
FK03 E1
FK04 E1
FK05 E1
FK06 E1
FK07 E1
FK08 E8
FK09 E8
FK10 E1
FK11 B8
IK00 A8
IK01 A8
IK02 A8
IK03 B8
IK16 A7
IK17 D3
IK18 E3

SSB: ADC



2L02 A7	3L37 E3
2L03 A7	3L38 C3
2L04 A7	3L39 C4
2L05 A8	4L00 D3
2L06 A8	4L01 D3
2L07 B7	4L02 C1
2L08 B7	4L03 C1
2L09 B7	4L04 C3
2L10 B8	4L05 C4
2L11 B8	5L00 B4
2L13 C4	5L01 A5
2L15 D4	5L02 A6
2L17 E3	5L03 C3
2L18 E4	5L04 C3
2L19 E4	7L01 B3
2L20 D4	7L02 C2
2L21 D4	7L03 E2
2L22 B5	7L04 C5
2L23 B5	7L05 A2
2L24 B5	7L06 F2
2L26 C4	7L07 F3
2L27 A8	7L08 C3
2L28 B9	IL01 C5
2L29 B4	IL02 C5
2L30 A3	IL03 C5
2L31 E4	IL04 B1
2L32 E5	IL05 C1
2L33 B8	IL06 E1
2L34 B8	IL07 C4
2L35 B2	IL08 C4
2L36 E1	IL09 E3
2L37 C3	IL10 C7
2L38 C3	IL11 C7
2L39 C3	IL12 C7
3L00 B2	IL13 D7
3L01 B2	IL14 D7
3L03 B2	IL15 D7
3L04 B3	IL16 A3
3L05 B3	IL17 B4
3L06 C1	IL18 A5
3L07 C2	IL19 B6
3L08 C3	
3L09 C2	
3L10 C2	
3L11 C2	
3L12 E1	
3L13 D2	
3L15 E2	
3L16 E2	
3L17 E3	
3L18 E4	
3L19 F3	
3L20 F3	
3L21 C4	
3L22 D4	
3L23 D4	
3L24 D4	
3L25-1 C7	
3L25-2 C7	
3L25-3 C7	
3L25-4 C7	
3L26-1 C7	
3L26-2 C7	
3L26-3 C7	
3L27-1 D7	
3L27-2 D7	
3L27-3 D7	
3L27-4 D7	
3L28-1 D7	
3L28-2 D7	
3L28-3 D7	
3L28-4 D7	
3L30 E7	
3L31 E7	
3L32 E7	
3L33 B3	
3L34 C4	
3L35 E3	
3L36 E2	

SSB: Columbus

B19 COLUMBUS

B19

+3V3SW 5M03 3V2 +3V3SWA
2M65 100n 2M66 100u 16V
+5VSWI 5M04 5V3 +5VSWIA
2M67 100n 2M68 100u 16V

+3V3SWA 3M79 3K3 7M17 RES 3M00 RES
+3V3SWA 3M86 RES
3M87 0R
7M00-1 COLUMBUS
COLUMBUS_IO

COL_DQM L14
COL_RAS K15
COL_CAS K14
COL_CLK J14
COL_WE J15
COL_A0 P6
COL_A1 R6
COL_A2 P5
COL_A3 R5
COL_A4 R1
COL_A5 R2
COL_A6 R3
COL_A7 P3
COL_A8 R4
COL_A9 P4
COL_A10 R7
COL_A11 P7
COL_CLKASA 3M89 22R H1 B13
COL_YA(1:8)
COL_YA(1) 3M26 0R IM03 B7
COL_YA(2) IM04 B9
COL_YA(3) IM06 A9
COL_YA(4) IM07 B10
COL_YA(5) A10
COL_YA(6) B11
COL_YA(7) A11
COL_YA(8) B12
COL_VA A12
COL_HREF A13
COL_Di(1:7) A14
COL_Di(1) 3M27 0R IM08 A2
COL_Di(2) B3
COL_Di(3) A3
COL_Di(4) B4
COL_Di(5) A4
COL_Di(6) B5
COL_Di(7) A5
COL_Di(8)_INV B6 3M90 22R A6

FROM ADC B18
B13

DQM RAS_ CAS_ CLK WE_
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
Memory Interface
DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15 DQ16
CLKASA WEA / DAVA
YA0 / Di9 YA1 YA2 YA3 YA4 YA5 YA6 YA7 YA8
VA HREF
3D Comb
SWAN 3D Noise Reduct
MUX
656 Decod
656 Encod
YB0 / Do9 YB1 YB2 YB3 YB4 YB5 YB6 YB7 YB8
UVA0 / Di0 UVA1 / Di1 UVA2 / Di2 UVA3 / Di3 UVA4 / Di4 UVA5 / Di5 UVA6 / Di6 UVA7 / Di7 UVA8 / Di8
UVB0 / Do0 UVB1 / Do1 UVB2 / Do2 UVB3 / Do3 UVB4 / Do4 UVB5 / Do5 UVB6 / Do6 UVB7 / Do7 UVB8 / Do8
CLKASB WEB / DAVB

P12 3M01-1 1 8 68R COL_DQ1
R12 3M01-2 2 7 68R COL_DQ2
P11 3M01-3 3 6 68R COL_DQ3
P10 3M01-4 4 5 68R COL_DQ4
R10 3M02-1 1 8 68R COL_DQ5
P9 3M02-2 2 7 68R COL_DQ6
P8 3M02-3 3 6 68R COL_DQ7
R8 3M02-4 4 5 68R COL_DQ8
R13 3M03-4 4 5 68R COL_DQ9
R14 3M03-3 3 6 68R COL_DQ10
R15 3M03-2 2 7 68R COL_DQ11
P15 3M03-1 1 8 68R COL_DQ12
N15 3M04-4 4 5 68R COL_DQ13
M14 3M04-3 3 6 68R COL_DQ14
M15 3M04-2 2 7 68R COL_DQ15
L15 3M04-1 1 8 68R COL_DQ16

G1 3M88 22R COL_CLKASB
A1 IM10 IM00
G2 3M28 RES
F2 3M06-1 1 8 22R COL_YB(1)
E2 3M06-2 2 7 22R COL_YB(2)
E1 3M06-3 3 6 22R COL_YB(3)
D2 3M06-4 4 5 22R COL_YB(4)
D1 3M07-1 1 8 22R COL_YB(5)
C2 3M07-2 2 7 22R COL_YB(6)
C1 3M07-3 3 6 22R COL_YB(7)
B1 3M07-4 4 5 22R COL_YB(8)
M2 3M29 RES
M1 3M08-1 1 8 22R COL_Do(1)
L2 3M08-2 2 7 22R COL_Do(2)
L1 3M08-3 3 6 22R COL_Do(3)
K2 3M08-4 4 5 22R COL_Do(4)
K1 3M09-1 1 8 22R COL_Do(5)
J2 3M09-2 2 7 22R COL_Do(6)
J1 3M09-3 3 6 22R COL_Do(7)
H2 COL_Do(8)

B7 TO SCALER
COL_DE
B13
B3 TO/FROM SYNC INTERFACE

+3V3SWA 5M05
2M32 100u 16V 2M25 2M26 2M27 2M28 100n 2M29 2M30 100n
VDD VDDQ 7M01
DRAM 512K X 16 X 2
MSM56V16160F-7T3
512K-1
COL_A0 21
COL_A1 22
COL_A2 23
COL_A3 24
COL_A4 27
COL_A5 28
COL_A6 29
COL_A7 30
COL_A8 31
COL_A9 32
COL_A10 20
COL_A11 19
A11
+3V3SWA
COL_CLK 3M16 4K7 35 CLK
34 CKE
18 CS
COL_RAS 17 RAS
COL_CAS 16 CAS
COL_WE 15 WE
4M10
VSS VSSQ
DQM
COL_DQ1 2
COL_DQ2 3
COL_DQ3 5
COL_DQ4 6
COL_DQ5 8
COL_DQ6 9
COL_DQ7 11
COL_DQ8 12
COL_DQ9 39
COL_DQ10 40
COL_DQ11 42
COL_DQ12 43
COL_DQ13 45
COL_DQ14 46
COL_DQ15 48
COL_DQ16 49
COL_DQM 36 14

7M03 LF15ABDT
IM01 3V2 3 OUT IN 1 1V5
COM 2
IM09 5M00 +3V3SWA
2M22 100n 2M23 100u 16V
5M01

B11 FROM FLASH/ CONTROL
B7 FROM SCALER
COL_RST 4M17
#RESET 4M04 RES G15
+3V3SWA 2M33 100n 3M10 RES H15
4M05
3M11 4K7 H14
10K 10K 10K
4M06 RES 4M16 G14
A7
FM01 3M53 47R D15
FM02 3M54 47R F15
FM03 3M55 47R E15
FM04 3M57 47R E14
FM05 3M59 47R F14
3M58 10K 3M51 10K
A8 F1 H3
B8
+3V3SWA 3M12 RES 3M13 4K7

7M00-2 COLUMBUS
C4 C12 G3 G13 L3 L13 M3 M13 N5 N8 N11 N14 P13
VDDS
C8 C7 D3 C11 E13 E3 L13 N6 N9 K3
VDDC
COLUMBUS_CTRL
RESET CLKSEL CLKEXT AOIIC 656SEL TCK TDI TDO TMS TRST TST1 TST2 TST3 BISTEN
AVD N1 IM11 2M24 100n
AVS P1
SNDA C14 3M78 1K0 +3V3SWA
SNCL D14 4M08
SNRST C15 4M09
SDA A15 3M14 100R SDA
SCL B15 3M15 100R SCL
NC_2 D4
NC_3 N2
VSS
B2 C3 C5 C6 C13 D13 D3 M13 C10 N4 N12 N13 P2 P14 B14 E3 F13 J3 J13 K13 L3 N5 N7 N10 R9 R11

B2 FROM HERCULES

+5VSWIA 5M02
2M00 2M01 2M02 2M03 2M04 2M05 2M06 2M07 2M08 2M09 2M10 2M31 100n 100u 16V
2M11 2M12 2M13 2M14 2M15 2M16 2M17 2M18 2M19 100n 2M56 100u 16V 2M20 100n 2M21 2u2

+5VSWIA 3M68 15K 7M14-1 74HCT221D
Hsync_SDTV
2M60 1n0
+5VSWIA 3M69 10K 7M14-2 74HCT221D
2M61 1n0
H_DELAY
+5VSWIA 3M71 2K7 7M15-1 74HCT221D
2M62 1n0
CLAMP_ADC
TO ADC B18

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2M00 E2 2M01 E2 2M02 E3 2M03 E3 2M04 E3 2M05 E3 2M06 E3 2M07 E3 2M08 E3 2M09 E4 2M10 E4 2M11 E5 2M12 E5 2M13 E6 2M14 E6 2M15 E6 2M16 E6 2M17 E6 2M18 E7 2M19 E7 2M20 E7 2M21 E7 2M22 E8 2M23 E8 2M24 F7 2M25 A9 2M26 A10 2M27 A10 2M28 A10 2M29 A11 2M30 A11 2M31 E4 2M32 A9 2M33 F3 2M56 E7 2M60 F9 2M61 F11 2M62 G9 2M65 A2 2M66 A2 2M67 B2 2M68 B2 3M00 A4 3M01-1 B7 3M01-2 B7 3M01-3 B7 3M01-4 B7 3M02-1 B7 3M02-2 B7 3M02-3 B7 3M02-4 B7 3M03-1 B7 3M03-2 B7 3M03-3 B7 3M03-4 B7 3M04-1 C7 3M04-2 C7 3M04-3 C7 3M04-4 C7 3M06-1 C7 3M06-2 C7 3M06-3 C7 3M06-4 C7 3M07-1 C7 3M07-2 D7 3M07-3 D7 3M07-4 D7 3M08-1 D7 3M08-2 D7 3M08-3 D7 3M08-4 D7 3M09-1 D7 3M09-2 D7 3M09-3 E7 3M10 F3 3M11 F3 3M12 G3 3M13 H3 3M14 G7 3M15 G7 3M16 C9 3M26 C4 3M27 D4 3M28 C7 3M29 D7 3M50 G3 3M51 G3 3M52 G3 3M53 G2 3M54 G2 3M55 G2 3M56 G2 3M57 G2 3M58 G2 3M59 G2 3M68 E9 3M69 E11 3M71 F9 3M78 F7 3M79 A5 3M86 A6 3M87 A5 3M88 C8 3M89 C5 3M90 E4 4M00 B5 4M01 B5 4M02 B5 4M03 B5 4M04 F3 4M05 F3 4M06 F3 4M08 F7 4M09 F7 4M10 D10 4M16 F3 4M17 F3 5M00 E8 5M01 F7 5M02 E2 5M03 A10 5M04 A10 5M05 A10 7M00-1 A7 7M00-2 F4 7M01 B11 7M03 E8 7M14-1 E10 7M14-2 E11 7M15-1 F10 7M17 A4 FM01 G2 FM02 G2 FM03 G2 FM04 G2 FM05 G2 IM00 C8 IM01 E7 IM03 C5 IM04 C5 IM06 C5 IM07 C5 IM08 D5 IM09 E8 IM10 C8 IM11 F7

SSB: EPLD

B20 EPLD

B20

+3V3-IO
2N01 100n
7N01 EPCS4SI8
VCC
SCD
CS_
DATA
DCLK
ASDI
GND
3N01 10K
3N02 10K
3N03 10K
IN01
IN02
IN03
IN04
3N04 10K
3N05 10K
3N06 10K
7N02-1 EP1C12F256C8
CONTROL
DATA0
DCLK
CSO
ASDO
MSEL
CONF_DONE
STATUS
CONFIG
CE
SCAN
TDI
TDO
TCK
TMS
CEO
CLK
CLK_REF
FN01
FN02
IN05
IN10
IN11
3N09 1K0
3N12 10K
3N13 10K
3N14 10K
3N15 47R
3N16 47R
3N17 47R
3N18 47R
2N11 RES
2N12 RES
2N13 RES
2N14 RES
FN04
FN05
FN06
FN07
5N01
FOR DEBUGGING
1N01 RES
FN08
FN09
FN10
2N15 100p
2N02 100n
3N07 33K
2N03 1u0
3N08 10K
IN06
IN08
3N10 33K
IN09
2N04 1u0
7N03-1 BC847BS
7N03-2 BC847BS
3N11 47R
IN12
3N19 10K
FN03
3N20 47R
5N05
OC
1N05 14M31818
2N10 100n
B21
TO EPLD
LVDSAp
LVDSAn
LVDSBp
LVDSBn
LVDSCp
LVDSCn
LVDSDp
LVDSDn
LVDSCLKp
LVDSCLKn
FOR NON-PIXEL+ SETS
4N02
4N04
4N06
4N08
4N10
4N12
4N14
4N16
4N18
4N20
FN26
FN27
FN28
FN29
FN30
FN31
FN32
FN33
FN34
FN35
4N01
4N03
4N05
4N07
4N09
4N11
4N13
4N15
4N17
4N19
B9
TO SCALER INTERFACE
LVDS IN
+3V3SW
5N02
5N03
5N04
IN14
IN13
2N05 100n
2N06 100n
2N07 100n
2N08 100n
2N09 100n
3N26 4K7
IN07
7N04 THC63LVDF84B
VCC
LVDSVCC
PLLVCC
LVDSGND
GND
PLLGND
TXB0+
TXB0-
TXB1+
TXB1-
TXB2+
TXB2-
TXB3+
TXB3-
TXBC+
TXBC-
3N21 100R
3N22 100R
3N23 100R
3N24 100R
3N25 100R
RA+
RA-
RB+
RB-
RC+
RC-
RD+
RD-
RCLK+
RCLK-
PDWN
CLKOUT
FN25
LCD PANEL INTERFACE RECEIVER
R_IN(0)
R_IN(1)
R_IN(2)
R_IN(3)
R_IN(4)
R_IN(5)
G_IN(0)
G_IN(1)
G_IN(2)
G_IN(3)
G_IN(4)
G_IN(5)
B_IN(0)
B_IN(1)
B_IN(2)
B_IN(3)
B_IN(4)
B_IN(5)
HS_IN
VS_IN
DE_IN
B_IN(6)
B_IN(7)
PARITY_IN
FN11
FN12
FN13
FN14
FN15
FN16
FN17
7N02-2 EP1C12F256C8
BANK 1
IO_40
IO_39
IO_38
IO_37
IO_36
IO_35
IO_34
IO_33
IO_32
IO_31
IO_30
IO_29
IO_28
IO_27
IO_26
IO_25
IO_24
IO_23
IO_22
IO_21
IO_20
IO_19
IO_18
IO_17
IO_16
IO_15
IO_14
IO_13
IO_12
IO_11
IO_10
IO_9
IO_8
IO_7
IO_6
IO_5
IO_4
IO_3
IO_2
IO_1
CLKUSR
INIT_DONE
B7
TO SCALER
SDA_IO FN18
SCL_IO FN19
4N21
4N22
+3V3SW
1N02 B4B-PH-SM4-TBT(LF)
IN15
IN16
IN17
IN18
FOR DEVELOPMENT USE ONLY
3N46 100R
3N47 100R
7N02-5 EP1C12F256C8
BANK 4
CONTROL SIGNALS
LVDS_PWR_DWN
+3V3-IO
PIXEL+_RESET
IN19
3N28 180R
6N01 TLMG3100
LED_OUT
FN20
3N29 100R
BACKLIGHT_DIM
2N16 100p
B16
TO TOP CONN.
B_LT_PWM
G_LT_PWM
R_LT_PWM
B_RT_PWM
G_RT_PWM
R_RT_PWM
B_LB_PWM
G_LB_PWM
R_LB_PWM
B_RB_PWM
G_RB_PWM
R_RB_PWM
1N03 BM05B-SRSS-TBT RES
FN21
FN22
FN23
FN24
2N17 100p
2N18 100p
2N19 100p
2N20 100p

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1N01 A9
1N02 D11
1N03 F12
1N05 D5
2N01 A2
2N02 C1
2N03 C2
2N04 C2
2N05 D4
2N06 D4
2N07 D5
2N08 D5
2N09 D5
2N10 D6
2N11 B7
2N12 B7
2N13 B7
2N14 B7
2N15 B8
2N16 E11
2N17 F11
2N18 F11
2N19 F11
2N20 F11
3N01 A3
3N02 A3
3N03 A3
3N04 A3
3N05 A3
3N06 A3
3N07 C2
3N08 C2
3N09 B4
3N10 C2
3N11 C4
3N12 A5
3N13 A5
3N14 A5
3N15 B6
3N16 B6
3N17 B6
3N18 B6
3N19 C5
3N20 C5
3N21 E3
3N22 E3
3N23 E3
3N24 F3
3N25 F3
3N26 D4
3N27 D6
3N28 F8
3N29 E11
3N30 E11
3N31 E11
3N32 E11
3N33 E11
3N34 E11
3N35 E11
3N36 E11
3N37 E11
3N38 F11
3N39 F11
3N40 F11
3N41 F11
3N42 F11
3N43 F11
3N44 F11
3N45 F11
3N46 D10
3N47 D10
4N01 D2
4N02 D2
4N03 D2
4N04 D2
4N05 D2
4N06 D2
4N07 D2
4N08 D2
4N09 D2
4N10 D2
4N11 D2
4N12 D2
4N13 D2
4N14 D2
4N15 D3
4N16 D3
4N17 D3
4N18 D3
4N19 D3
4N20 D3
4N21 D9
4N22 D9
5N01 A8
5N02 D4
5N03 D4
5N04 D5
5N05 C6
6N01 F9
7N01 A2
7N02-1 A4
7N02-2 D7
7N02-5 D10
7N03-1 C3
7N03-2 C2
7N04 D5
FN01 B4
FN02 B6
FN03 C5
FN04 A8
FN05 B8
FN06 B8
FN07 B8
FN08 B8
FN09 B8
FN10 B8
FN11 D5
FN12 E5
FN13 E5
FN14 F5
FN15 F5
FN16 F5
FN17 G5
FN18 D9
FN19 D9
FN20 F9
FN21 F11
FN22 F11
FN23 F11
FN24 F12
FN25 F4
FN26 D2
FN27 D2
FN28 D2
FN29 D2
FN30 D2
FN31 D2
FN32 D2
FN33 D3
FN34 D3
FN35 D3
IN01 B3
IN02 B3
IN03 B3
IN04 B3
IN05 B3
IN06 C2
IN07 D4
IN08 C2
IN09 C2
IN10 B3
IN11 B4
IN12 C5
IN13 D5
IN14 D4
IN15 D11
IN16 D11
IN17 D11
IN18 D11
IN19 F9

SSB: EPLD

B21 EPLD

B21

EAGLE INTERFACE

7N02-3
EP1C12F256C8

BANK 2

LVDS TRANSMITTER

LVDS OUT

7N02-4
EP1C12F256C8

BANK 3

7N02-6
EP1C12F256C8

POWER

BANK1 BANK2 BANK3 BANK4 VCCIO GND VCCINT GNDA GNDG VCCA

FROM MFD ONLY

TO LCD PANEL (TIMING CONTROL)

FROM UFD ONLY

TO PLASMA PANEL (TIMING CONTROL)

B9 FROM SCALER INTERFACE

B20 FROM EPLD

FROM DC-DC CONVERTER B6 FOR LCD ONLY

1P01	E8	FP09	E4
1P02	E8	FP10	F4
1P03	F8	FP11	F4
1P04	F8	FP12	F4
1P05	G8	FP13	F4
1P06	A11	FP14	G4
1P07	D11	FP15	D11
2P01	B3	FP16	D11
2P02	B3	FP17	E11
2P03	B3		
2P04	B3		
2P05	B3		
2P06	B3		
2P07	B4		
2P08	B4		
2P09	B4		
2P10	B4		
2P11	B4		
2P12	B4		
2P13	B4		
2P14	B5		
2P15	B1		
2P16	B1		
2P17	B2		
2P18	B3		
2P19	B3		
2P20	B3		
2P21	B3		
2P22	C3		
2P23	C3		
2P24	C3		
2P25	C3		
2P26	C3		
2P27	C3		
2P28	C4		
2P29	C4		
2P30	C4		
2P31	C5		
2P32	D5		
2P33	D5		
2P34	D6		
2P35	D7		
2P36	D8		
2P37	E8		
2P38	E8		
2P39	E8		
2P40	F8		
2P41	F8		
2P42	F8		
2P43	F8		
2P44	G8		
2P45	G8		
3P01	D5		
3P03	E5		
3P04	D9		
3P05	D9		
4P01	F10		
4P02	F10		
4P03	F10		
4P04	F10		
4P05	F10		
4P06	F10		
4P07	F10		
4P08	F10		
4P09	D9		
4P10	E9		
5P01	A3		
5P02	B3		
5P03	C3		
5P04	D6		
5P05	D6		
5P06	D7		
7N02-3	A6		
7N02-4	E2		
7N02-6	A8		
7P01	B2		
7P02	D7		
FP01	A1		
FP02	A4		
FP03	B2		
FP04	B3		
FP05	C4		
FP06	D4		
FP07	E4		
FP08	E4		

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SSB: Diversity Tables B9-B21

B9 MUX-SYNC INTERFACE

Item	LC4.3x	LC4.8x	LC4.9x	Description
2A00			V	CER2 0603 X7R 16V 100N COL
2A01			V	CER1 0402 NP0 50V 100P COL
2A02			V	CER1 0402 NP0 50V 100P COL
2A03		V		CER2 0603 Y5V 10V 1U COL
2A12		V	V	CER2 0402 X7R 16V 10N COL
2A13		V	V	CER2 0402 Y5V 16V 100N COL
3A00			V	RST SM 0402 68R PM5 COL
3A01			V	RST SM 0402 68R PM5 COL
3A02	V	V		RST SM 0402 1K PM5 COL
3A06		V		RST SM 0603 10K PM5COL
3A06	V			RST SM 0603 JUMP. 0R05 COL
3A07			V	RST SM 0402 10K PM5 COL
3A07				RST SM 0402 68R PM5 COL
3A08			V	RST SM 0402 10K PM5 COL
3A10		V	V	RST SM 0402 10K PM5 COL
3A11		V	V	RST SM 0402 10K PM5 COL
3A13		V	V	RST SM 0402 10K PM5 COL
3A14		V	V	RST SM 0402 560R PM5 COL
4A03	V	V		RST SM 0603 JUMP. 0R05 COL
4A04			V	RST SM 0402 JUMP. 0R05 COL
4A05	V			RST SM 0402 JUMP. 0R05 COL
4A06	V			RST SM 0402 JUMP. 0R05 COL
5A00			V	FXDIND 0805 100MHZ 30R COL R
6A01		V	V	DIO REG SM BZX384-C3V9 COL R
7A00			V	IC SM PCA9515ADP (PHSE) R
7A02		V	V	TRA SIG SM BC847BW (COL) R
7A03		V	V	TRA SIG SM BC847BW (COL) R

B13 MUX-SYNC INTERFACE

ITEM	AP/EU/AP-DVB (with Teletext)	EU-DVB (with Teletext)	NAFTA/LT & China (non-Teletext)	DESCRIPTION
2E00	V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2E01	V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2E02	V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2E04	V	V		CER2 0402 X5R 6V3 1U PM20 R
2E05	V	V		CER2 0402 X5R 6V3 1U PM20 R
2E06	V	V		CER2 0402 X5R 6V3 1U PM20 R
3E06	V		V	RST SM 0402 47K PM5 COL
3E07	V		V	RST SM 0402 47K PM5 COL
3E08	V		V	RST SM 0402 47K PM5 COL
3E13	V	V		RST SM 0402 330R PM5 COL
3E14	V	V		RST SM 0402 330R PM5 COL
3E15	V	V		RST SM 0402 330R PM5 COL
3E16	V	V		RST SM 0402 330R PM5 COL
3E17	V	V		RST SM 0402 330R PM5 COL
3E18	V	V		RST SM 0402 330R PM5 COL

B15 ANALOG I/O SCART

Item	26/32PF	DVB.T 26/32PF	37/42PF	DVB.T 37/42PF	Description
1G01	V	V			SOC EURO H 21P F BK R-GRND B
1G01			V	V	SOC EURO H 21P F SHD R-GRND Y
1G02	V	V			SOC EURO H 21P F BK R-GRND B
1G02			V	V	SOC EURO H 21P F SHD R-GRND Y
1G03		V		V	CON H 32P F 0.50 SM FPC 0.3 R
2G29		V		V	ELCAP SM 16V 10U PM20 COL R
2G30		V		V	CER2 0603 X7R 16V 100N COL
2G31		V		V	CER2 0603 X7R 16V 100N COL
2G32				V	CER2 0603 Y5V 25V 100N COL
2G33		V		V	CER2 0603 Y5V 16V 220N COL
2G34		V		V	ELCAP SM 16V 10U PM20 COL R
2G35		V		V	CER2 0603 Y5V 25V 100N COL
2G36		V		V	CER2 0603 Y5V 10V 1U COL
2G37		V		V	RST SM 0603 330R PM5 COL
2G38		V		V	CER2 0603 Y5V 10V 1U COL
2G39		V		V	CER2 0603 Y5V 10V 1U COL
2G40		V		V	RST SM 0603 JUMP. 0R05 COL
2G41		V		V	RST SM 0603 330R PM5 COL
2G43		V		V	CER2 0603 X7R 50V 1N COL
2G45		V		V	CER2 0603 X7R 50V 1N COL
2G46		V		V	CER2 0603 X7R 50V 1N COL
2G63		V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2G64		V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2G65		V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2G65		V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2G66		V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2G66		V		V	CER2 0603 X5R 6V3 4U7 PM10 R
3G63		V		V	RST SM 0603 10K PM5COL
3G64		V		V	RST SM 0603 10K PM5COL
3G65		V		V	RST SM 0603 10K PM5COL
3G66				V	RST SM 0603 150R PM5 COL
3G67		V		V	RST SM 0603 15K PM5 COL
3G68		V		V	RST SM 0603 15K PM5 COL
3G69		V		V	RST SM 0603 47K PM5 COL
3G70		V		V	RST SM 0603 47K PM5 COL
3G71		V		V	RST SM 0603 560R PM5 COL
3G72		V		V	RST SM 0603 10K PM5COL
3G73		V		V	RST SM 0603 47K PM5 COL
3G75		V		V	RST SM 0603 100R PM5 COL
3G76		V		V	RST SM 0603 100R PM5 COL
3G77		V		V	RST SM 0603 47K PM5 COL
3G79		V		V	RST SM 0603 47K PM5 COL
3G81		V		V	RST SM 0603 47K PM5 COL
3G83		V		V	RST SM 0603 100R PM5 COL
3G84		V		V	RST SM 0603 100R PM5 COL
3G86		V		V	RST SM 0603 47K PM5 COL
3G88		V		V	RST SM 0603 75R PM5 COL
3G89		V		V	RST SM 0603 47K PM5 COL
3G92		V		V	RST SM 0603 47K PM5 COL
3G93		V		V	RST SM 0603 47K PM5 COL
3G94		V		V	RST SM 0603 47K PM5 COL
3G95		V		V	RST SM 0603 47K PM5 COL
4G09		V		V	RST SM 0603 JUMP. 0R05 COL
4G11	V		V		RST SM 0603 JUMP. 0R05 COL
4G12	V		V		RST SM 0603 JUMP. 0R05 COL
4G13	V		V		RST SM 0603 JUMP. 0R05 COL
4G14	V		V		RST SM 0603 JUMP. 0R05 COL
4G15	V		V		RST SM 0603 JUMP. 0R05 COL
4G16	V		V		RST SM 0603 JUMP. 0R05 COL
4G17	V		V		RST SM 0603 JUMP. 0R05 COL
4G18	V		V		RST SM 0603 JUMP. 0R05 COL
4G19	V		V		RST SM 0603 JUMP. 0R05 COL
4G22		V		V	RST SM 0603 JUMP. 0R05 COL
5G01		V		V	FXDIND 0603 100MHZ 120R COL R
6G02		V		V	DIO SIG SM BAS316 (COL) R
7G07		V		V	IC SM 74HC4053D (PHSE) R
7G08		V		V	TRA SIG SM BC847B (COL) R
7G09		V		V	IC SM ADG734BRUZ (ANA0) R

B16 SIDE CONNECTORS

Item	LC4.3x - CINCH	LC4.3E - SCART	LC4.9x - PDP	LC4.8x - LCD	Description
1J00			V	V	CON V 10P M 2.00 PH B
1J01			V	V	CON V 11P M 2.00 PH B
1J02	V	V			CON V 12P M 2.00 PH B
1J03	V	V			CON V 3P M 2.00 PH B
1J07			V	V	FUSE SM T 3A 125V UL R
1J08			V	V	FUSE SM F 630MA 50V UL R
2J31			V	V	CER1 0402 NP0 50V 100P COL
3J03	V	V		V	RST SM 0402 68R PM5 COL
3J04	V	V		V	RST SM 0402 68R PM5 COL
4J01			V	V	RST SM 0402 JUMP. 0R05 COL
5J04			V	V	IND FXD 1206 EMI 100MHZ 120R R

B17 SIDE CONNECTORS

Item	LC4.3x - ME5 styling	LC4.3x - Arch Styling	LC4.8x - LCD	LC4.9x - PDP	Description
1K00	V		V	V	CON V 6P M 2.00 PH B
1K01	V				CON V 12P M 2.00 PH B
1K03		V			CON V 20P F 1.25 FFC 0.3 B
1K04			V	V	CON V 11P M 2.00 PH B
2K15	V	V			CER1 0402 NP0 50V 100P COL
3K08	V	V			RST SM 0402 68R PM5 COL
4K02			V	V	RST SM 0603 JUMP. 0R05 COL
4K06		V			RST SM 0402 JUMP. 0R05 COL
5K01	V	V		V	FXDIND SM 0603 1U PM10 COL R

B18 ADC

Item	non-DVB sets with 3D Comb Filter	DVB sets with 3D Comb Filter	Description
3L38		V	RST SM 0402 JUMP. 0R05 COL
4L05		V	RST SM 0402 JUMP. 0R05 COL
5L04		V	RST SM 0603 JUMP. 0R05 COL

B20 & B21 PIXEL PLUS

Item	LC4.3 non PIXEL+	LC4.3 with PIXEL+	42PF7320/28	LC4.8/LC4.9 non PIXEL+	LC4.8/LC4.9 with PIXEL+	Description
1N02		V	V		V	CON V 4P M 2.00 SM PH R
1N05		V	V		V	OSC XTL SM 14M31818 15P OC R
1P06	V	V				CON V 30P M 1.25 SM 1453230 R
1P07			V	V	V	CON H 31P F 1.25 SM FI-WE R
2N01		V	V		V	CER2 0402 Y5V 16V 100N COL
2N02		V	V		V	CER2 0402 Y5V 16V 100N COL
2N03		V	V		V	CER2 0402 X5R 6V3 1U PM20 R
2N04		V	V		V	CER2 0402 X7R 50V 1N COL
2N05		V	V		V	CER2 0402 Y5V 16V 100N COL
2N06		V	V		V	CER2 0402 Y5V 16V 100N COL
2N07		V	V		V	CER2 0402 Y5V 16V 100N COL
2N08		V	V		V	CER2 0402 Y5V 16V 100N COL
2N09		V	V		V	CER2 0402 Y5V 16V 100N COL
2N10		V	V		V	CER2 0402 Y5V 16V 100N COL
2N11		V	V		V	CER1 0402 NP0 50V 100P COL
2N12		V	V		V	CER1 0402 NP0 50V 100P COL
2N13		V	V		V	CER1 0402 NP0 50V 100P COL
2N14		V	V		V	CER1 0402 NP0 50V 100P COL
2N15		V	V		V	CER1 0402 NP0 50V 100P COL
2N16		V	V		V	CER1 0402 NP0 50V 100P COL
2P01		V	V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2P02		V	V		V	CER2 0402 Y5V 16V 100N COL
2P03		V	V		V	CER2 0402 Y5V 16V 100N COL
2P04		V	V		V	CER2 0402 Y5V 16V 100N COL
2P05		V	V		V	CER2 0402 Y5V 16V 100N COL
2P06		V	V		V	CER2 0402 Y5V 16V 100N COL
2P07		V	V		V	CER2 0402 Y5V 16V 100N COL
2P08		V	V		V	CER2 0402 Y5V 16V 100N COL
2P09		V	V		V	CER2 0402 Y5V 16V 100N COL
2P10		V	V		V	CER2 0402 Y5V 16V 100N COL
2P11		V	V		V	CER2 0402 Y5V 16V 100N COL
2P12		V	V		V	CER2 0402 Y5V 16V 100N COL
2P13		V	V		V	CER2 0402 Y5V 16V 100N COL
2P14		V	V		V	CER2 0402 Y5V 16V 100N COL
2P15		V	V		V	ELCAP SM 16V 100U PM20 COL R
2P16		V	V		V	CER2 0402 Y5V 16V 100N COL
2P17		V	V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2P18		V	V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2P19		V	V		V	CER2 0402 Y5V 16V 100N COL
2P20		V	V		V	CER2 0402 Y5V 16V 100N COL
2P21		V	V		V	CER2 0402 Y5V 16V 100N COL
2P22		V	V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2P23		V	V		V	CER2 0402 Y5V 16V 100N COL
2P24		V	V		V	CER2 0402 Y5V 16V 100N COL
2P25		V	V		V	CER2 0402 Y5V 16V 100N COL
2P26		V	V		V	CER2 0402 Y5V 16V 100N COL
2P27		V	V		V	CER2 0402 Y5V 16V 100N COL
2P28		V	V		V	CER2 0402 Y5V 16V 100N COL
2P29		V	V		V	CER2 0402 Y5V 16V 100N COL
2P30		V	V		V	CER2 0402 Y5V 16V 100N COL
2P31		V	V		V	CER2 0402 Y5V 16V 100N COL
2P32		V	V		V	CER2 0402 Y5V 16V 100N COL
2P33		V	V		V	CER2 0402 Y5V 16V 100N COL
2P34		V	V		V	CER2 0402 Y5V 16V 100N COL
2P35		V	V		V	CER2 0402 Y5V 16V 100N COL
3N01		V	V		V	RST SM 0402 10K PM5 COL
3N02		V	V		V	RST SM 0402 10K PM5 COL
3N03		V	V		V	RST SM 0402 10K PM5 COL
3N04		V	V		V	RST SM 0402 10K PM5 COL
3N05		V	V		V	RST SM 0402 10K PM5 COL
3N06		V	V		V	RST SM 0402 10K PM5 COL
3N07		V	V		V	RST SM 0603 33K PM5 COL
3N08		V	V		V	RST SM 0402 10K PM5 COL
3N09		V	V		V	RST SM 0402 1K PM5 COL
3N10		V	V		V	RST SM 0402 33K PM5 COL
3N11		V	V		V	RST SM 0402 47R PM5 COL
3N12		V	V		V	RST SM 0402 10K PM5 COL
3N13		V	V		V	RST SM 0402 10K PM5 COL
3N14		V	V		V	RST SM 0402 10K PM5 COL
3N15		V	V		V	RST SM 0402 47R PM5 COL
3N16		V	V		V	RST SM 0402 47R PM5 COL

Item	LC4.3 non PIXEL+	LC4.3 with PIXEL+	42PF7320/28	LC4.8/LC4.9 non PIXEL+	LC4.8/LC4.9 with PIXEL+	Description
3N17		V	V		V	RST SM 0402 47R PM5 COL
3N18		V	V		V	RST SM 0402 47R PM5 COL
3N19		V	V		V	RST SM 0402 10K PM5 COL
3N20		V	V		V	RST SM 0402 47R PM5 COL
3N21		V	V		V	RST SM 0402 100R PM5 COL
3N22		V	V		V	RST SM 0402 100R PM5 COL
3N23		V	V		V	RST SM 0402 100R PM5 COL
3N24		V	V		V	RST SM 0402 100R PM5 COL
3N25		V	V		V	RST SM 0402 100R PM5 COL
3N26		V	V		V	RST SM 0402 4K7 PM5 COL
3N27		V	V		V	RST SM 0402 47R PM5 COL
3N28		V	V		V	RST SM 0603 180R PM5 COL
3N29		V	V		V	RST SM 0402 100R PM5 COL
3N30		V	V		V	RST SM 0402 100R PM5 COL
3N31		V	V		V	RST SM 0402 100R PM5 COL
3N32		V	V		V	RST SM 0402 100R PM5 COL
3N33		V	V		V	RST SM 0402 100R PM5 COL
3N34		V	V		V	RST SM 0402 100R PM5 COL
3N35		V	V		V	RST SM 0402 100R PM5 COL
3N46		V	V		V	RST SM 0402 100R PM5 COL
3N47		V	V		V	RST SM 0402 100R PM5 COL
3P01		V	V		V	RST SM 0402 4K7 PM5 COL
3P03		V	V		V	RST SM 0402 47R PM5 COL
3P04				V		RST SM 0402 100R PM5 COL
3P04					V	RST SM 0402 JUMP. 0R05 COL
3P05				V		RST SM 0402 100R PM5 COL
3P05					V	RST SM 0402 JUMP. 0R05 COL
4N01	V			V		RST SM 0402 JUMP. 0R05 COL
4N02	V			V		RST SM 0402 JUMP. 0R05 COL
4N03	V			V		RST SM 0402 JUMP. 0R05 COL
4N04	V			V		RST SM 0402 JUMP. 0R05 COL
4N05	V			V		RST SM 0402 JUMP. 0R05 COL
4N06	V			V		RST SM 0402 JUMP. 0R05 COL
4N07	V			V		RST SM 0402 JUMP. 0R05 COL
4N08	V			V		RST SM 0402 JUMP. 0R05 COL
4N09	V			V		RST SM 0402 JUMP. 0R05 COL
4N10	V			V		RST SM 0402 JUMP. 0R05 COL
4N11	V			V		RST SM 0402 JUMP. 0R05 COL
4N12	V			V		RST SM 0402 JUMP. 0R05 COL
4N13	V			V		RST SM 0402 JUMP. 0R05 COL
4N14	V			V		RST SM 0402 JUMP. 0R05 COL
4N15	V			V		RST SM 0402 JUMP. 0R05 COL
4N16	V			V		RST SM 0402 JUMP. 0R05 COL
4N17	V			V		RST SM 0402 JUMP. 0R05 COL
4N18	V			V		RST SM 0402 JUMP. 0R05 COL
4N19	V			V		RST SM 0402 JUMP. 0R05 COL
4N20	V			V		RST SM 0402 JUMP. 0R05 COL
4N21		V	V		V	RST SM 0402 JUMP. 0R05 COL
4N22		V	V		V	RST SM 0402 JUMP. 0R05 COL
4P01						RST SM 0402 JUMP. 0R05 COL
4P02						RST SM 0402 JUMP. 0R05 COL
4P07				V		RST SM 0402 JUMP. 0R05 COL
5N01		V	V		V	FXDIND 0805 100MHZ 30R COL R
5N02		V	V		V	FXDIND 0805 100MHZ 30R COL R
5N03		V	V		V	FXDIND 0805 100MHZ 30R COL R
5N04		V	V		V	FXDIND 0805 100MHZ 30R COL R
5N05		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P01		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P02		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P03		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P04		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P05		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P06		V	V		V	FXDIND 0805 100MHZ 30R COL R
6N01		V	V		V	LED VS SM TLMG3100 (VISH) R
7N01		V	V		V	IC SM EPCS4SI8N (ALT0) R
7N02		V	V		V	IC SM EP1C12F256C8N (ALT0) Y
7N03		V	V		V	TRA SIG SM BC847BS (PHSE) R
7N04		V	V		V	IC SM THC63LVDF84B (THIN) R
7P01		V	V		V	IC SM LF15ABDT (ST00) R
7P02		V	V		V	IC SM THC63LVDM83R (THIN) R

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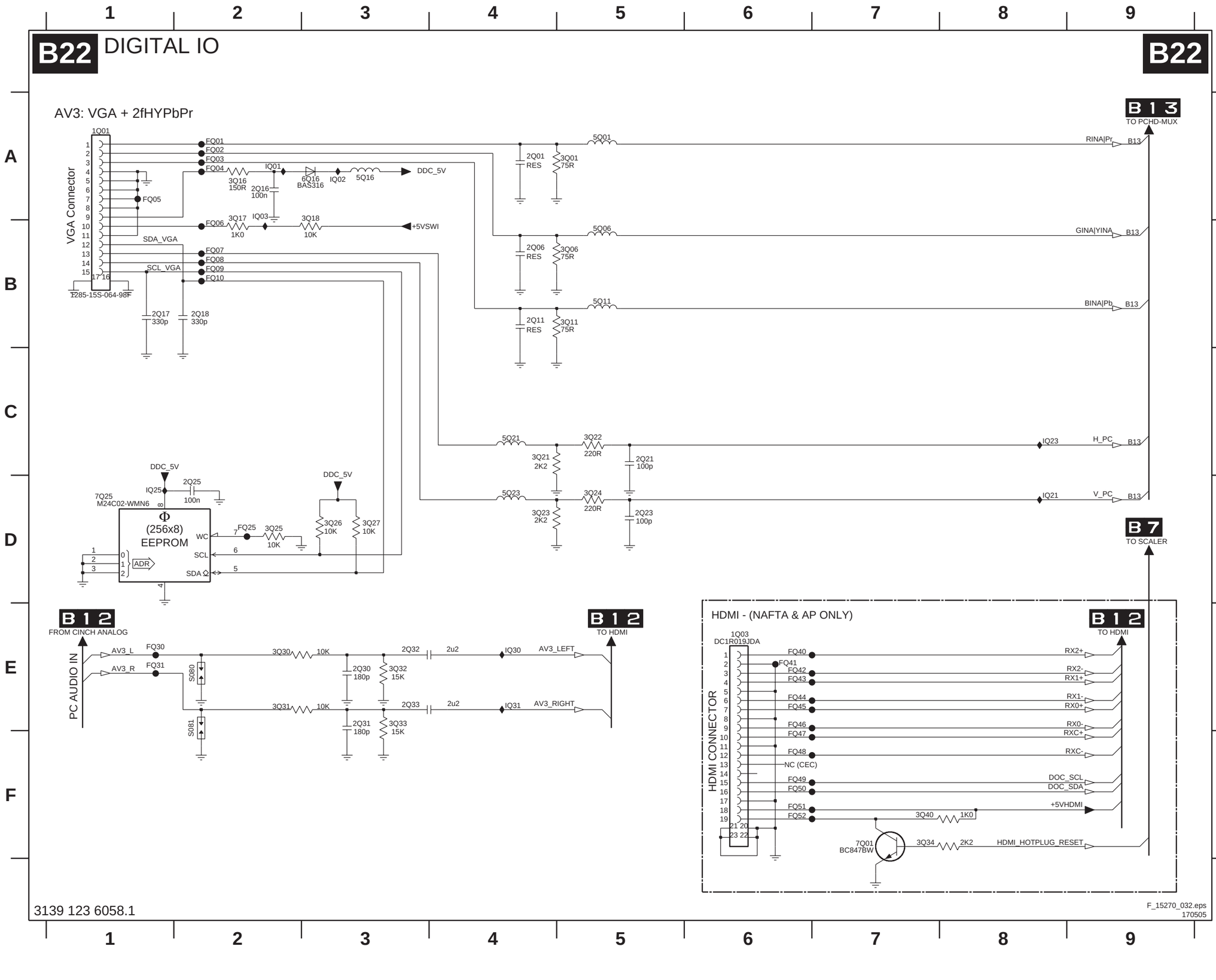
SSB: Digital I/O



1Q01 A1
1Q03 E6
2Q01 A4
2Q06 B4
2Q11 B4
2Q16 A2
2Q17 B1
2Q18 B2
2Q21 C5
2Q23 D5
2Q25 D2
2Q30 E3
2Q31 E3
2Q32 E3
2Q33 E3
3Q01 A5
3Q06 B5
3Q11 B5
3Q16 A2
3Q17 B2
3Q18 B3
3Q21 C4
3Q22 C5
3Q23 D4
3Q24 D5
3Q25 D2
3Q26 D3
3Q27 D3
3Q30 E2
3Q31 E2
3Q32 E3
3Q33 E3
3Q34 F7
3Q40 F7
5Q01 A5
5Q06 B5
5Q11 B5
5Q16 A3
5Q21 C4
5Q23 D4
6Q16 A3
7Q01 F7
7Q25 D1
FQ01 A2
FQ02 A2
FQ03 A2
FQ04 A2
FQ05 A1
FQ06 B2
FQ07 B2
FQ08 B2
FQ09 B2
FQ10 B2
FQ25 D2
FQ30 E1
FQ31 E1
FQ40 E6
FQ41 E6
FQ42 E6
FQ43 E6
FQ44 E6
FQ45 E6
FQ46 E6
FQ47 F6
FQ48 F6
FQ49 F6
FQ50 F6
FQ51 F6
FQ52 F6
IQ01 A2
IQ02 A3
IQ03 A2
IQ21 D8
IQ23 C8
IQ25 D1
IQ30 E4
IQ31 E4
S080 E2
S081 E2

SSB: Cinch Analog I/O (1FH)

B23 CINCH ANALOGUE IO (1FH)

B23

AV1:CVBS+YPbPr+Audio L/R

AV2: SVHS+CVBS+Audio L/R

RESERVED FOR DMMI

RESERVED FOR SET WITH DMMI ONLY

RESERVED FOR DMMI

DMMI CONNECTOR (V11) K5

TO/FROM 1500 OF (AP ONLY)

TO HERCULES B2

TO MUX-SYNC INTF B13

FROM SCALER B7

FROM SIDE CONNECTOR B17

TO CINCH DIGITAL B22

1R01 G14	3R98 J8
1R02-1 G1	4R01 F7
1R02-2 H1	4R02 E13
1R02-3 H1	4R03 E13
1R03 I1	4R06 D3
1R06 E1	4R12 E4
1R07 A1	4R13 G8
2R00 F3	4R14 H9
2R01 E4	4R15 J9
2R03 F4	4R16 J10
2R04 F3	4R41 H1
2R13 D2	4R42 H2
2R14 H8	4R60 B10
2R15 J8	4R61 B10
2R33 H3	4R62 C11
2R35 G4	4R63 C11
2R41 H4	4R64 C11
2R42 H3	4R68 E8
2R46 I2	4R69 F10
2R47 I2	4R70 F10
2R50 J3	5R57 H10
2R51 I4	5R68 D9
2R54 J4	6R60 B12
2R55 J3	6R61 F1
2R57 H10	6R62 F1
2R58 H8	6R63 G2
2R59 I8	6R64 F2
2R60 A10	6R65 I2
2R61 A11	6R66 J2
2R62 B10	6R67 J2
2R63 C10	6R68 J2
2R64 B12	7R12 E3
2R65 B10	7R47 I3
2R66 B10	7R57 I10
2R68 D10	7R60 A11
2R69 D10	7R61 B13
2R70 E9	7R68 D10
2R71 E9	FQ32 J1
2R72 F11	FR00 E2
2R73 E12	FR03 F2
2R74 E12	FR06 D2
2R75 E12	FR07 G14
2R78 I13	FR08 F14
2R79 G12	FR09 F14
2R80 I13	FR10 G14
2R81 A4	FR11 G14
2R82 A4	FR12 G14
2R83 A3	FR13 G14
2R84 A3	FR14 G14
2R85 A5	FR15 H14
2R86 A5	FR16 C1
3R00 E2	FR17 H14
3R02 F3	FR18 H14
3R03 F2	FR19 H14
3R05 F3	FR20 H14
3R06 D2	FR21 H14
3R07 D2	FR22 C1
3R08 G8	FR23 H14
3R09 H9	FR24 H14
3R10 I9	FR25 I14
3R11 I9	FR26 I14
3R12 E3	FR27 I14
3R13 E3	FR28 B1
3R14 E3	FR29 I14
3R15 E3	FR34 G2
3R16 C2	FR40 H2
3R17 C2	FR41 G2
3R18 J9	FR42 H2
3R19 D3	FR46 I1
3R20 E3	FR47 I2
3R22 D2	FR50 I2
3R23 C2	FR54 J2
3R28 B2	FR83 B1
3R29 B2	FR84 B1
3R34 G3	FR85 E1
3R35 G3	IR00 E3
3R36 G4	IR01 E4
3R37 H4	IR02 F3
3R40 G3	IR03 F4
3R41 H2	IR04 B1
3R42 H3	IR06 D3
3R43 I4	IR16 C2
3R46 H4	IR18 H4
3R47 I2	IR20 H7
3R49 H3	IR21 H8
3R50 I2	IR22 C2
3R51 I2	IR24 I7
3R53 J3	IR25 I8
3R54 J2	IR28 B2
3R56 J3	IR34 G3
3R57 I1	IR40 H1
3R58 H8	IR47 I2
3R60 B9	IR48 I3
3R61 B9	IR50 I3
3R62 C9	IR51 I4
3R63 C9	IR54 J3
3R64 C9	IR55 J4
3R65 B10	IR58 E11
3R66 A12	IR59 E11
3R67 B12	IR60 E11
3R68 D9	IR61 E11
3R69 D9	IR62 E11
3R70 D10	IR63 E11
3R71 D11	IR64 E10
3R72 D12	IR65 E10
3R73 D12	IR66 E10
3R74 D12	IR67 E10
3R75 E9	IR68 E10
3R76 E9	IR69 D9
3R77 I8	IR81 E12
3R78 F9	IR82 G4
3R79 F10	IR83 H9
3R80 E12	S051 F2
3R81 E12	S052 F2
3R82 F11	S053 B1
3R83 F12	S054 C1
3R84 F12	S055 D1
3R85 F12	S056 D1
3R86 I13	S057 A2
3R87 A3	S058 A2
3R88 A3	S059 H2
3R89 A4	S060 H2
3R90 A4	S061 J2
3R91 B13	S062 J2
3R92 A2	S063 H1
3R93 A2	
3R94 I13	
3R95 I13	
3R96 I8	

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Layout Small Signal Board (Top Side Overview)

1102 C6	1J04 A6	2203 A5	2230 B6	2248 B6	2269 A6	2448 A5	2716 A3	2903 C4	2D05 C1	2D38 C1	2E15 C4	2F08 D1	2G33 D3	2J02 A4	2J19 A5	2L04 B5	2M05 C4	2M22 B4	2P37 A1	3223 A5	3266 B6	3292 C5	3807 C1	3A13 B3	3E00 C4	3E22 C3
1103 B6	1J05 A1	2205 B6	2231 A6	2249 B6	2270 A6	2501 A5	2731 A4	2904 C3	2D06 D1	2D41 C1	2E16 C3	2F09 D1	2G34 D5	2J03 A6	2J20 A5	2L05 B5	2M06 C4	2M23 B4	2P38 A1	3224 A5	3267 B6	3293 B5	3808 C1	3A14 B3	3E06 D4	3E23 C3
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3F25 D2	4900 B3	5J02 A6
3F26 D2	4A00 B3	5J03 A4
3F27 D2	4A01 B3	5J04 A4
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3G64 D3	4E12 C3	5L02 B4
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3G66 D3	4E14 C4	5M05 C4
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3G78 D5	4G21 D3	6G05 D5
3G79 D5	4G22 D3	6G06 D5
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3G88 D5	4N04 A1	7503 A6
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4205 C5	5900 B3	
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4215 B5	5D02 C1	
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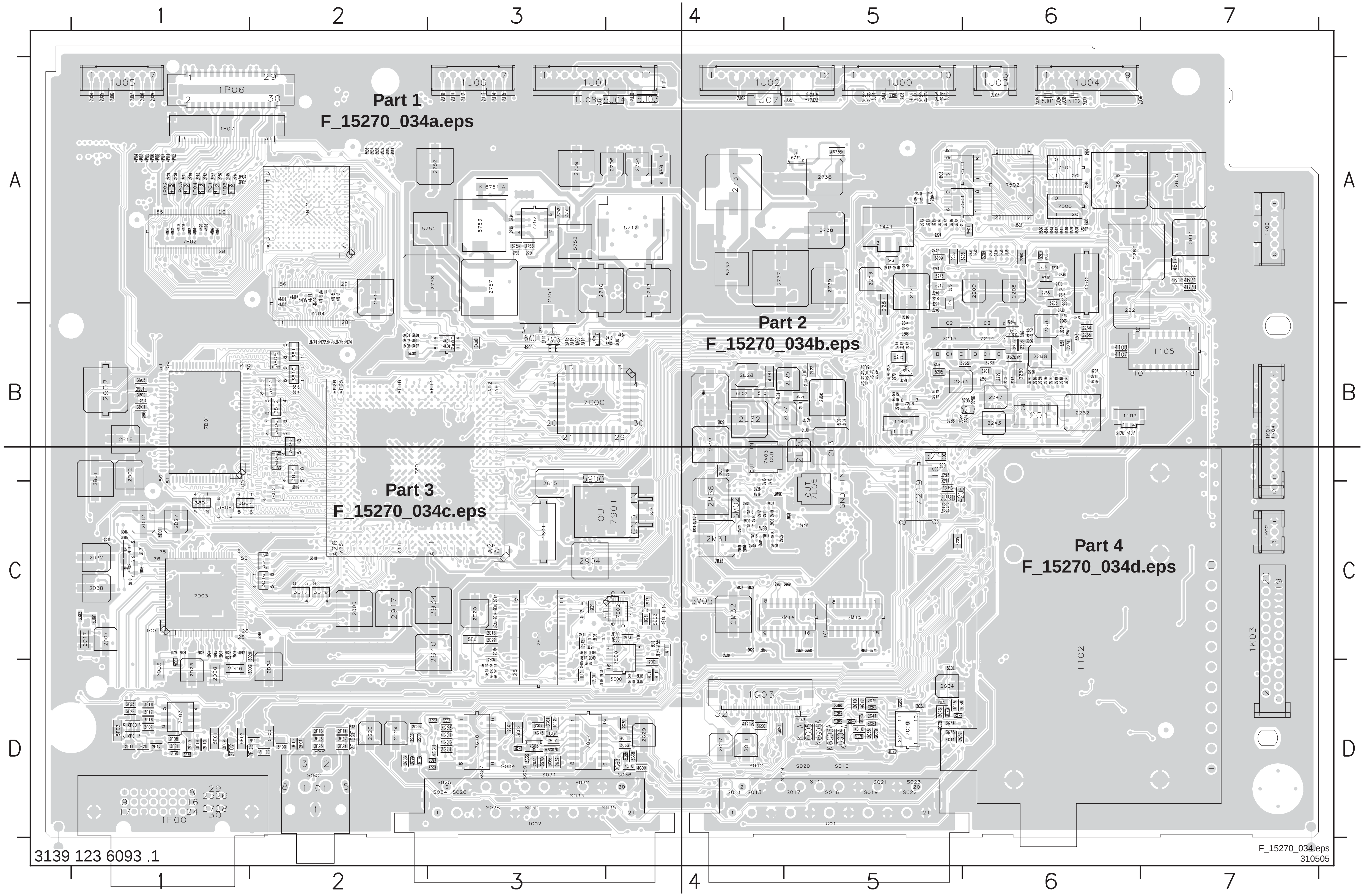
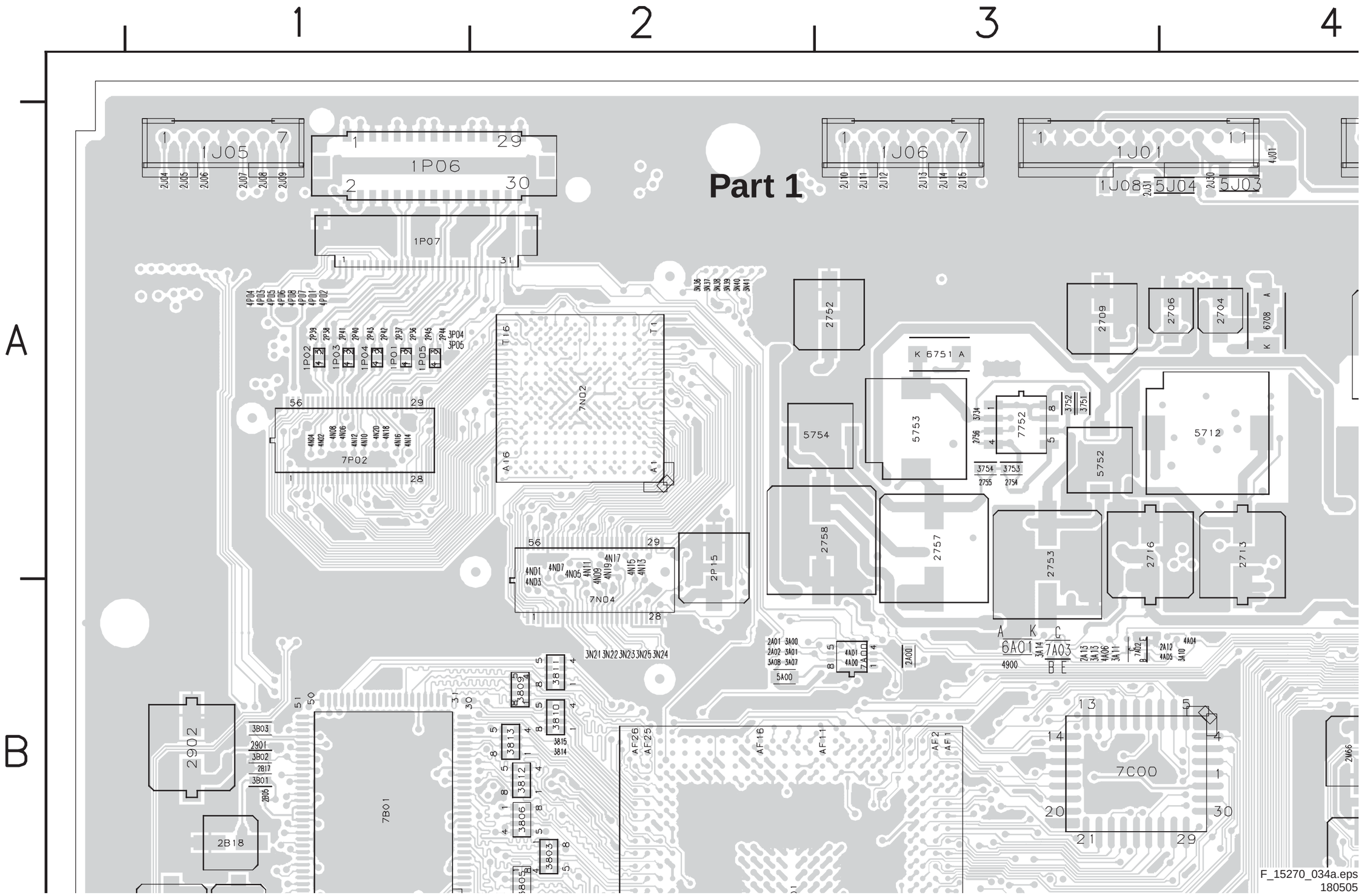
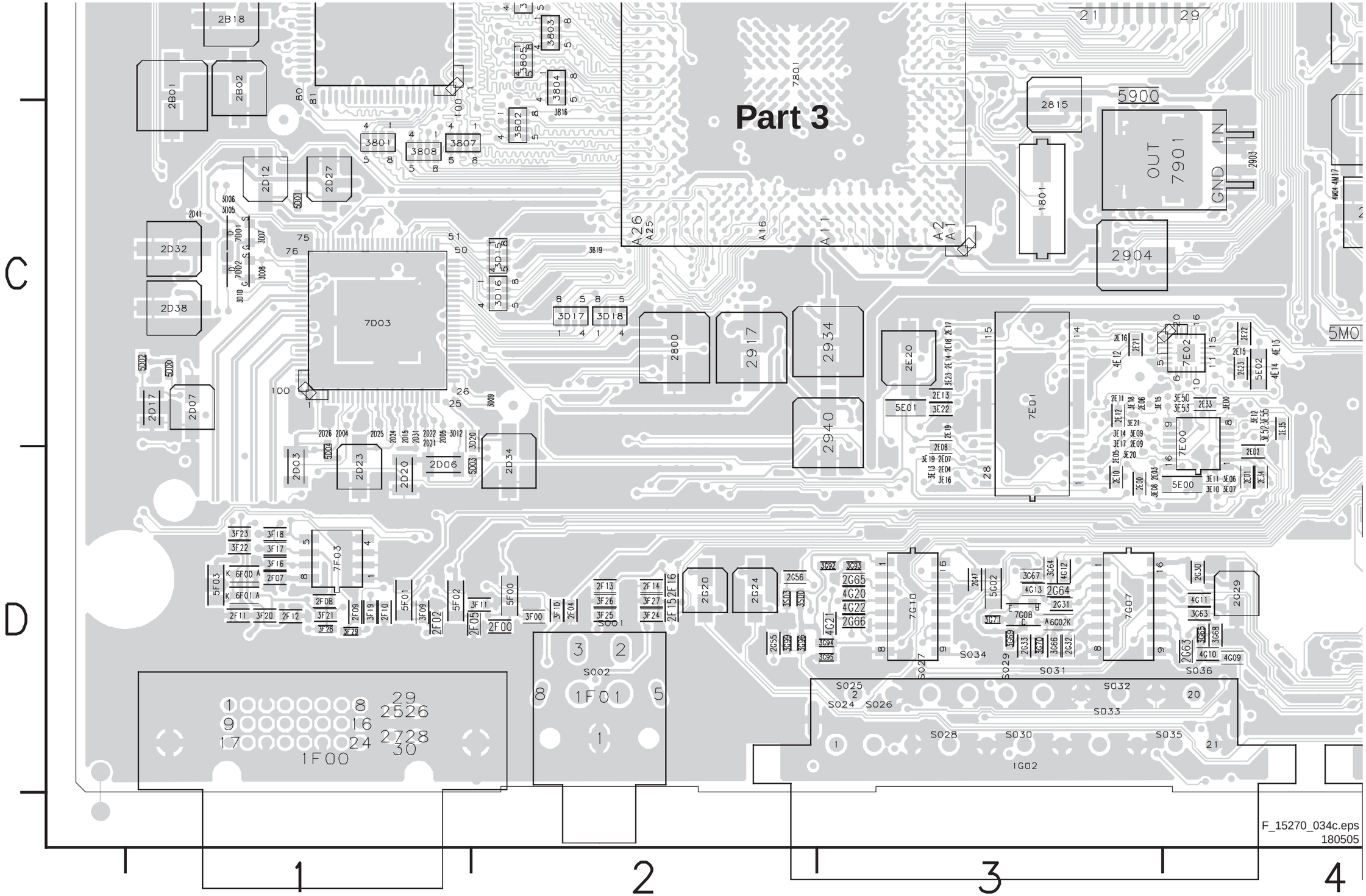


Layout Small Signal Board (Top Side Part 1)

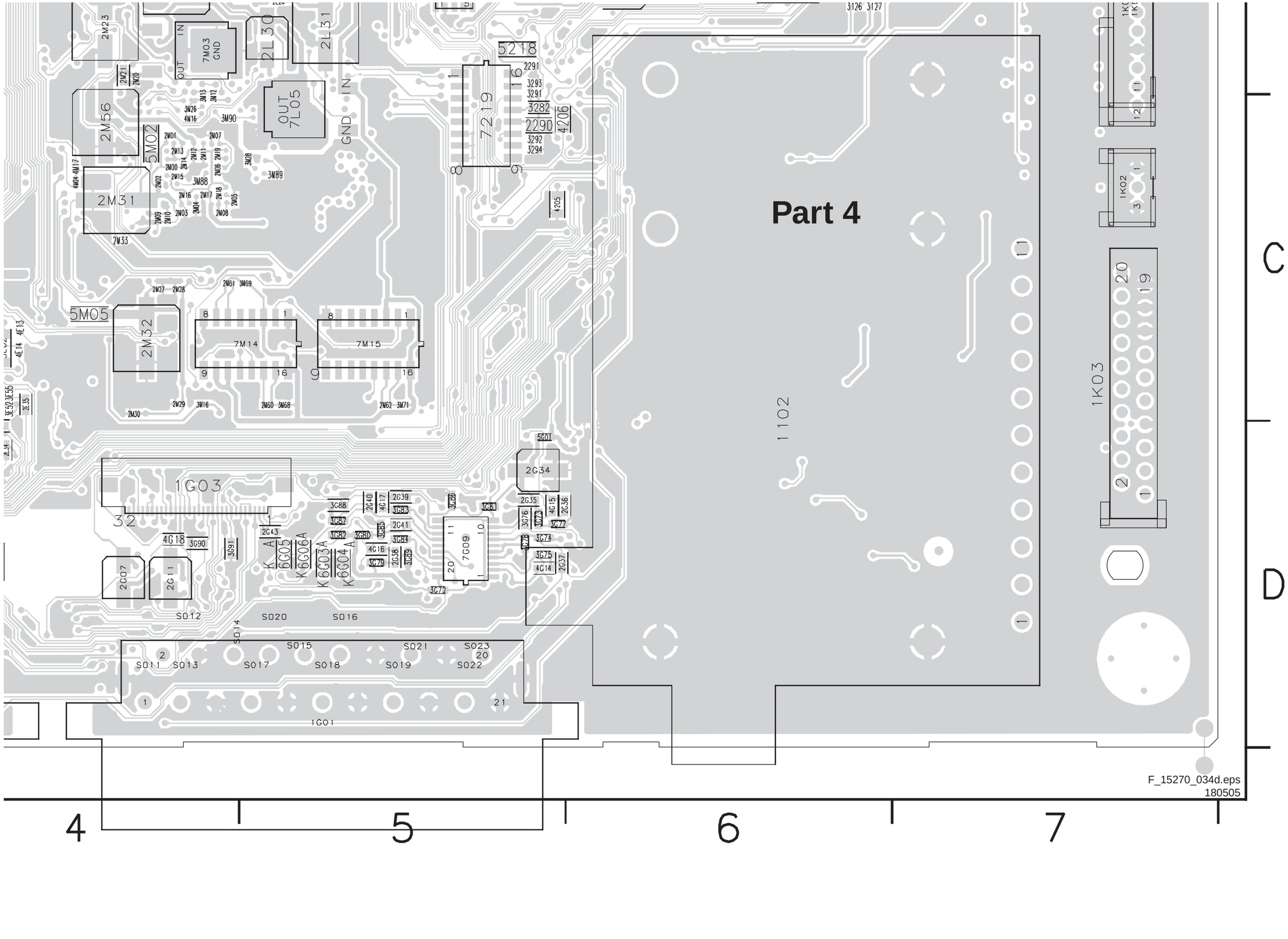


Layout Small Signal Board (Top Side Part 2)

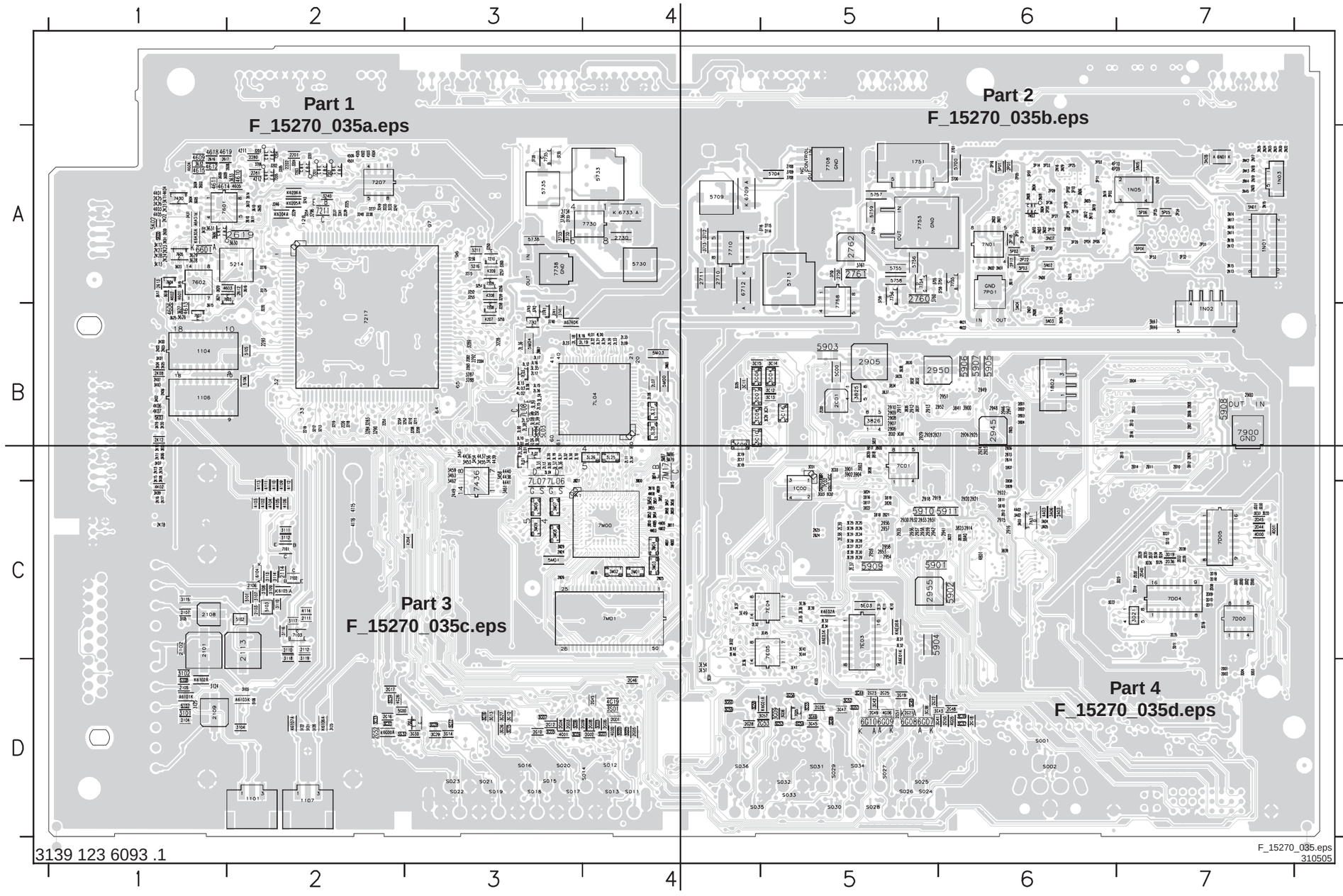
Layout Small Signal Board (Top Side Part 3)



Layout Small Signal Board (Top Side Part 4)



Layout Small Signal Board (Bottom Side Overview)



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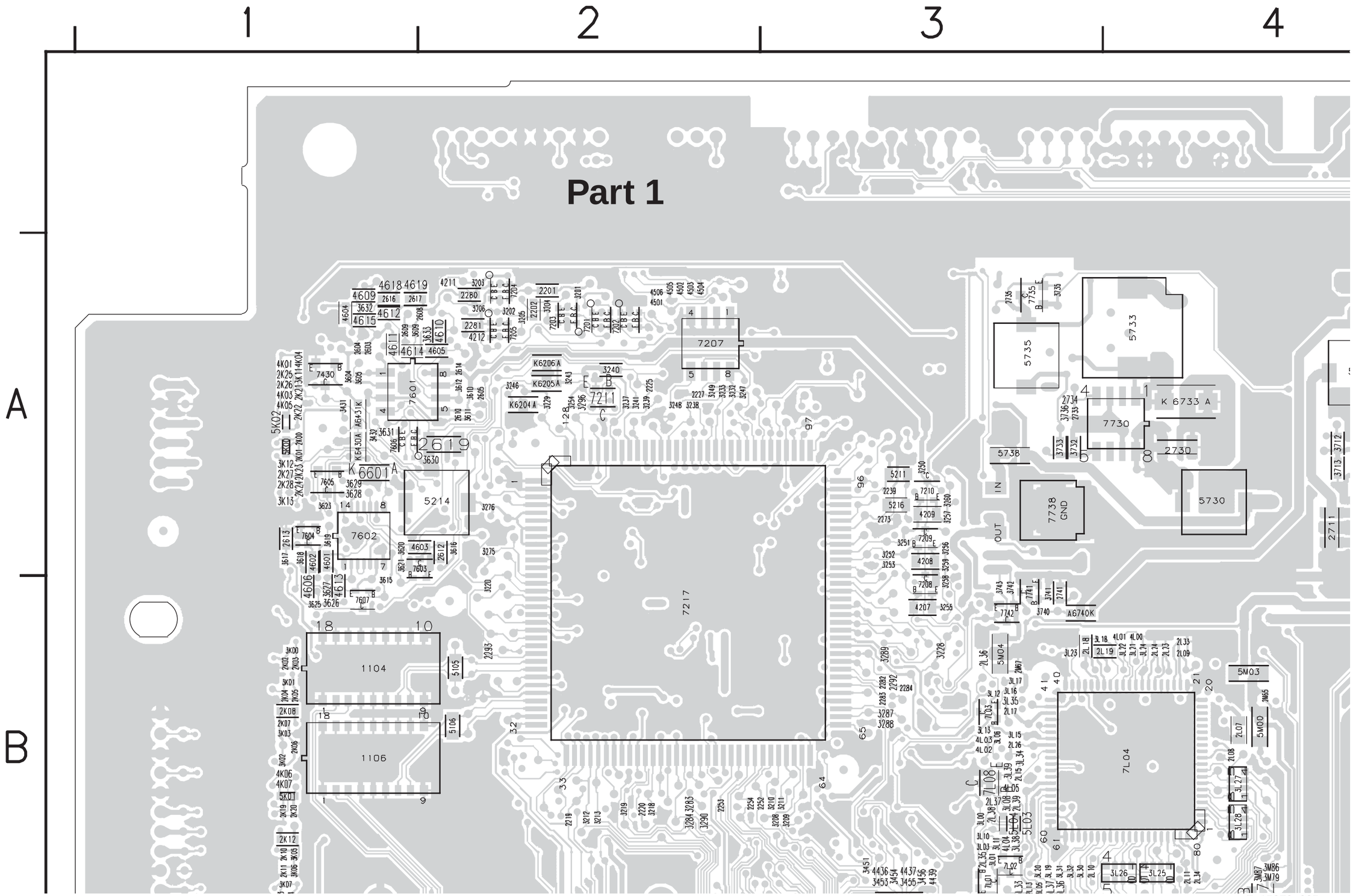
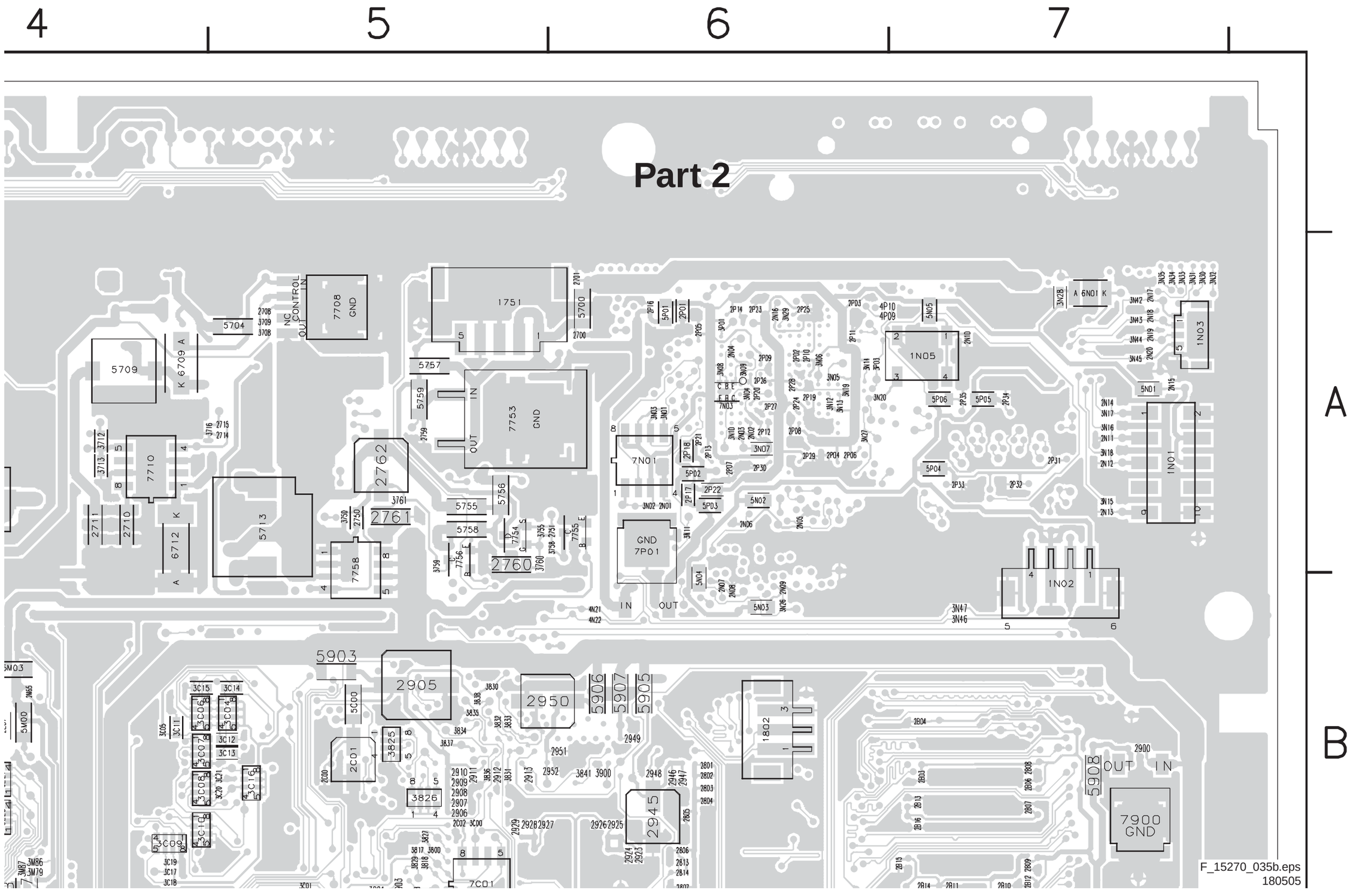
3L28 B4 4212 A2 5907 B6 7D05 C7
3L30 B3 4436 B3 5908 B7 7E03 C5
3L31 B3 4437 B3 5909 C5 7E04 C5
3L32 B3 4438 B3 5910 C5 7E05 C5
3L33 B3 4439 B3 5911 C6 7G03 D3
3L34 B3 4440 B3 5C00 B5 7G05 D5
3L35 B3 4441 C3 5E03 C5 7L01 B3
3L36 B3 4501 A2 5G00 D2 7L02 B3
3L37 B3 4502 A2 5K00 A1 7L03 B3
3L38 B3 4503 A2 5K01 B1 7L04 B4
3L39 B3 4504 A2 5K02 A1 7L06 C3
3M00 B4 4505 A2 5L03 B3 7L07 C3
3M01 C4 4506 A2 5L04 B3 7L08 B3
3M02 C4 4601 A1 5M00 B4 7M00 C4
3M03 C4 4602 A1 5M01 C3 7M01 C4
3M04 C4 4603 A2 5M03 B4 7M17 B4
3M06 C3 4604 A1 5M04 B3 7N01 A6
3M07 C3 4605 A2 5N01 A7 7N03 A6
3M08 C3 4606 B1 5N02 A6 7P01 A6
3M09 C3 4609 A1 5N03 B6
3M10 C4 4610 A2 5N04 B6
3M11 C4 4611 A1 5N05 A7
3M14 B4 4612 A1 5P01 A6
3M15 C4 4613 B1 5P02 A6
3M27 B3 4614 A1 5P03 A6
3M29 C3 4615 A1 5P04 A7
3M50 C4 4618 A1 5P05 A7
3M51 C4 4619 A1 5P06 A7
3M52 C4 4801 C6 6101 D1
3M53 C4 4A02 C6 6102 D1
3M54 C4 4A03 C6 6103 D2
3M55 C4 4D00 C7 6104 C2
3M56 C4 4D01 C7 6105 C2
3M57 C4 4E03 D5 6106 D2
3M58 C4 4E10 C5 6107 D2
3M59 C4 4E11 C5 6204 A2
3M78 C4 4G00 D4 6205 A2
3M79 B4 4G01 D3 6206 A2
3M86 B4 4G05 D6 6430 A1
3M87 B4 4G06 D5 6431 A1
3N01 A6 4G19 D4 6601 A1
3N02 A6 4G26 D2 6709 A4
3N03 A6 4K01 A1 6712 A4
3N04 A6 4K02 C1 6733 A4
3N05 A6 4K03 A1 6740 B3
3N06 A6 4K04 A1 6E00 C5
3N07 A6 4K05 A1 6E01 C5
3N08 A6 4K06 B1 6E02 C5
3N09 A6 4K07 B1 6E03 C5
3N10 A6 4L00 B4 6G00 D2
3N11 A6 4L01 B4 6G01 D5
3N12 A6 4L02 B3 6G07 D5
3N13 A6 4L03 B3 6G08 D5
3N14 A6 4L04 B3 6G09 D5
3N15 A7 4L05 B3 6G10 D5
3N16 A7 4M00 C4 6N01 A7
3N17 A7 4M01 C4 7101 C2
3N18 A7 4M02 C4 7102 C2
3N19 A6 4M03 C4 7103 C2
3N20 A6 4M05 C4 7201 A2
3N26 B6 4M06 C4 7202 A2
3N27 A6 4M08 C4 7203 A2
3N28 A7 4M09 C4 7204 A2
3N29 A6 4M10 C4 7205 A2
3N30 A7 4N21 B6 7207 A2
3N31 A7 4N22 B6 7208 B3
3N32 A7 4P09 A6 7209 A3
3N33 A7 4P10 A6 7210 A3
3N34 A7 5101 C2 7211 A2
3N35 A7 5102 C2 7217 B2
3N42 A7 5103 C2 7430 A1
3N43 A7 5105 B2 7436 C3
3N44 A7 5106 B2 7601 A1

Layout Small Signal Board (Bottom Side Part 1)



F_15270_035a.eps
180505

Layout Small Signal Board (Bottom Side Part 2)



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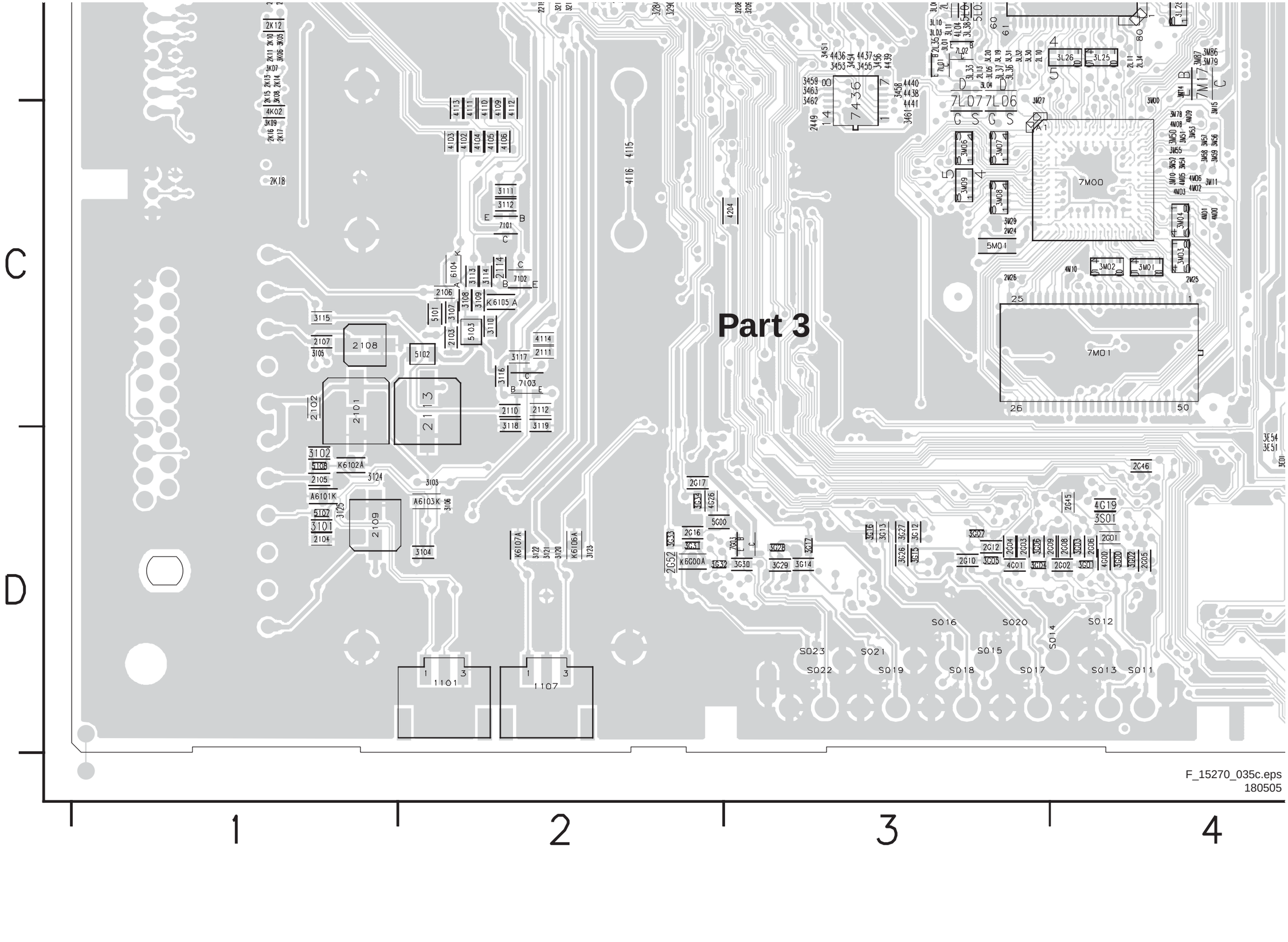
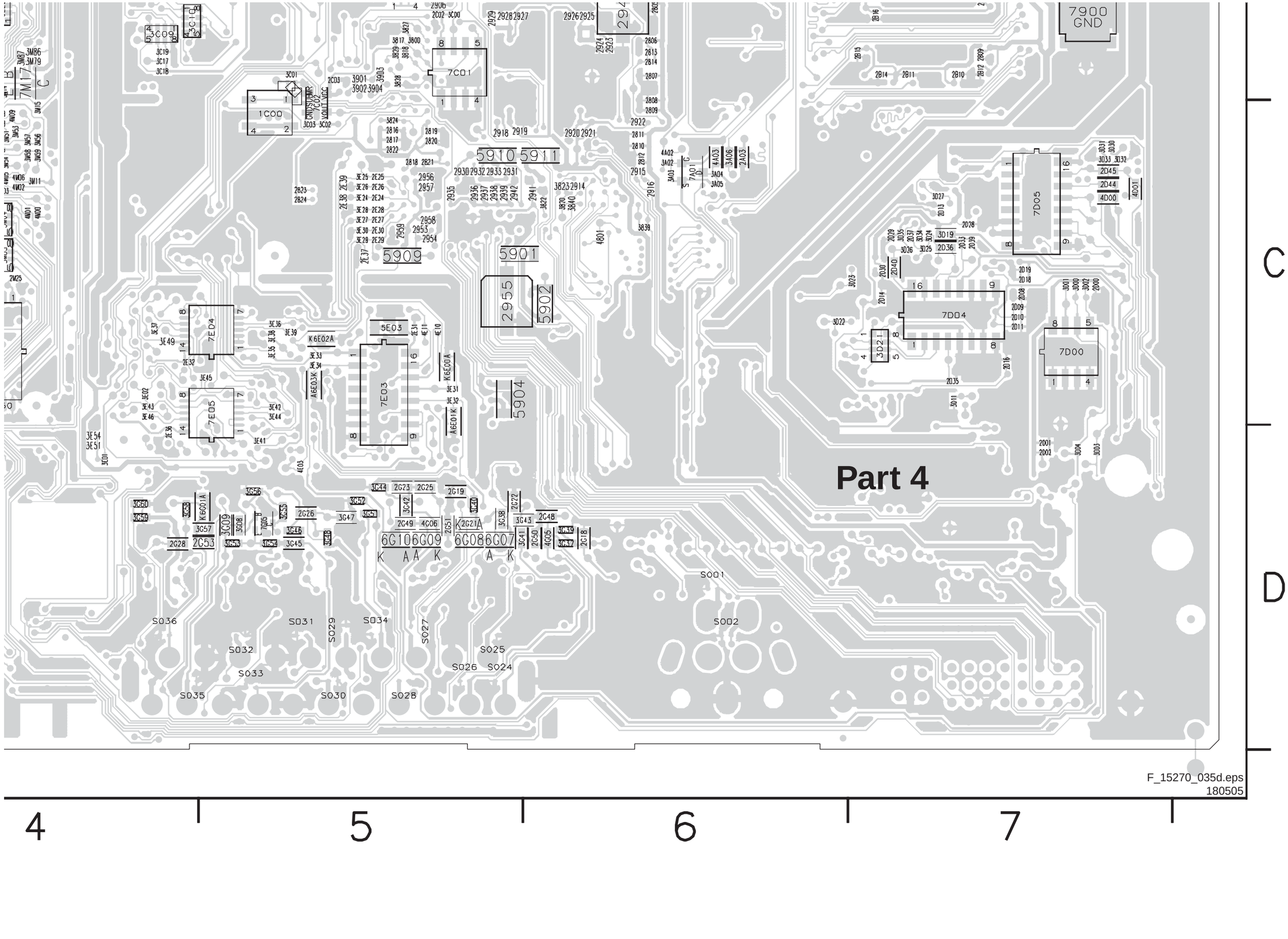
180505

Layout Small Signal Board (Bottom Side Part 3)



Layout Small Signal Board (Bottom Side Part 4)



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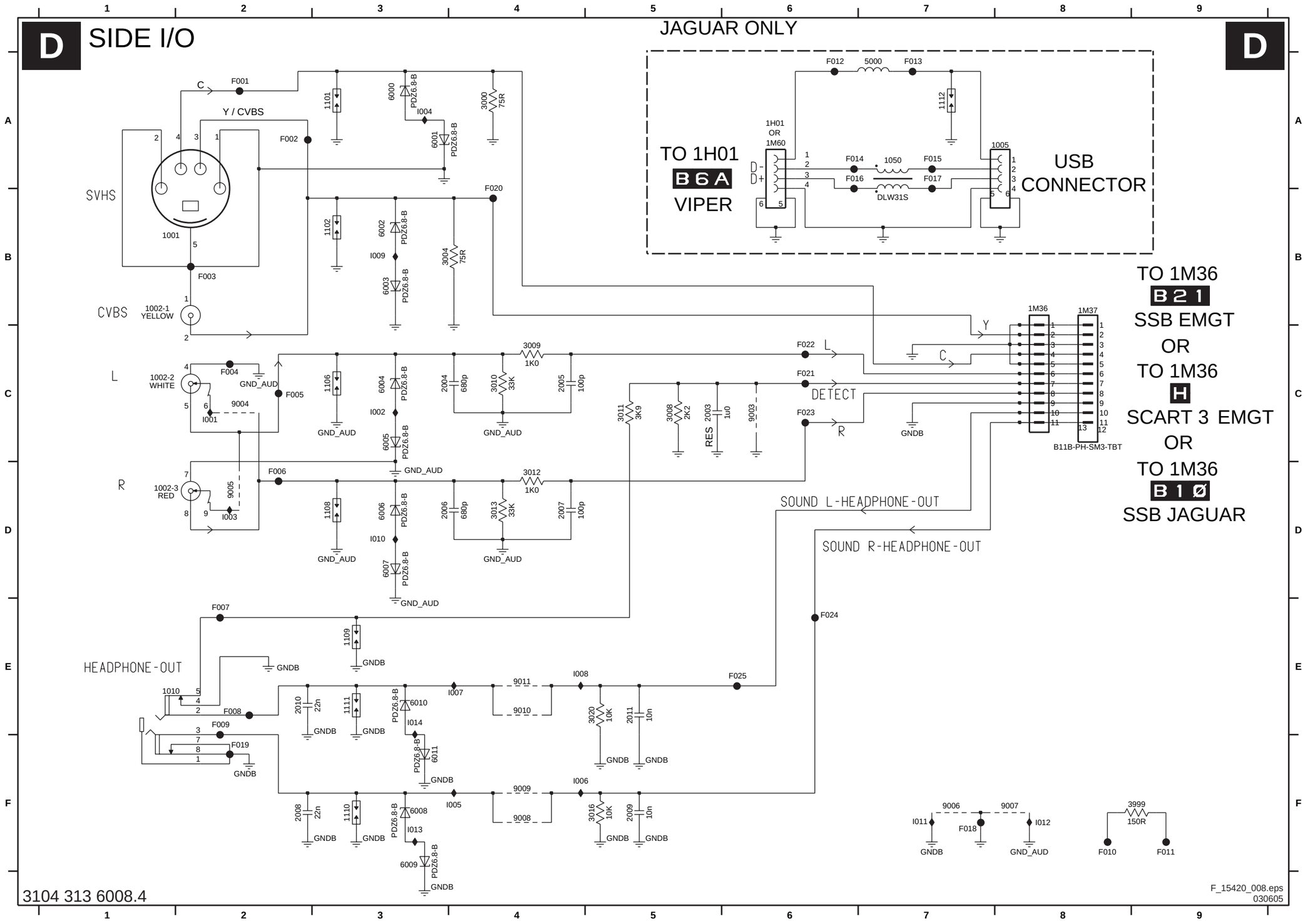
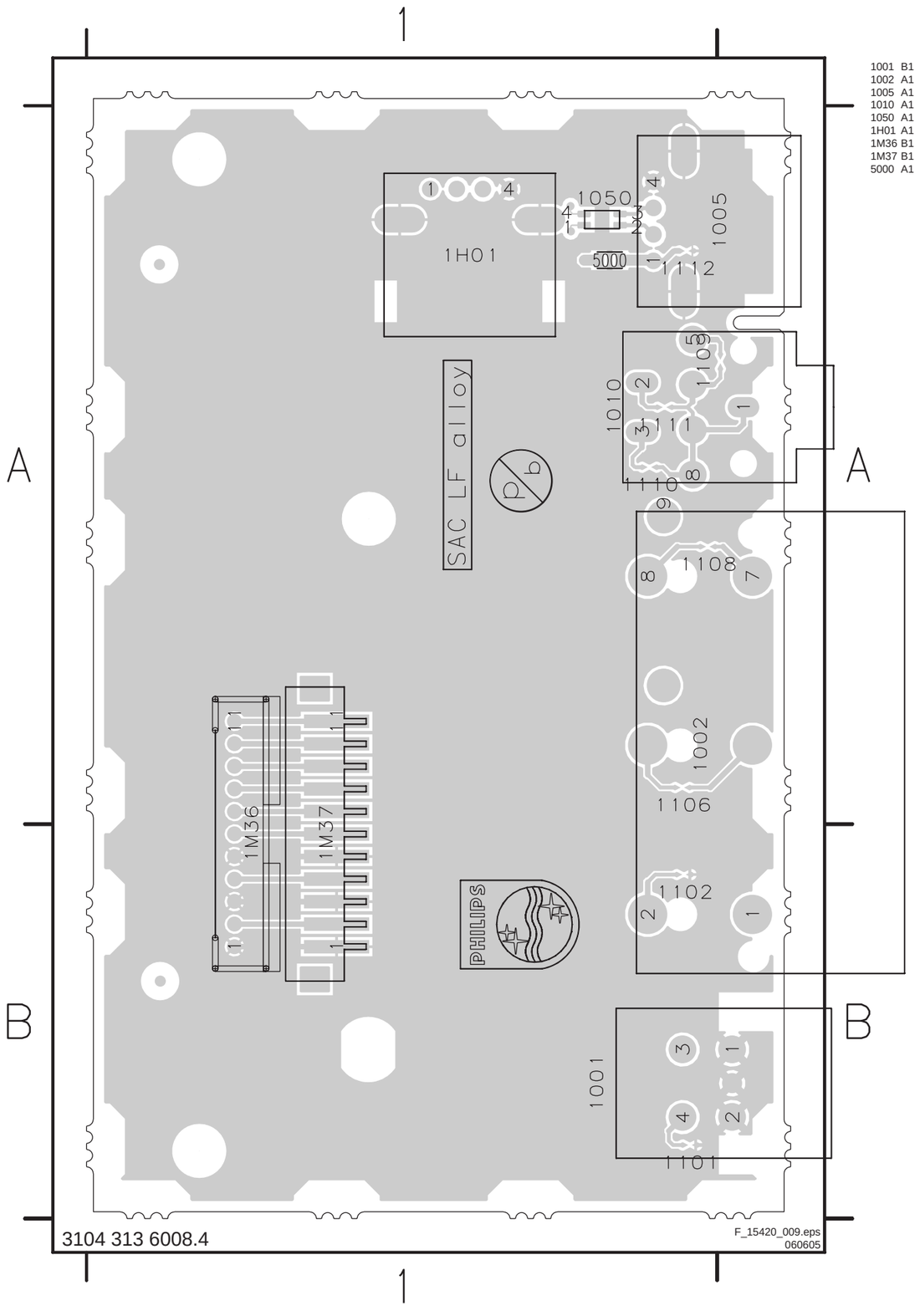
180505

Side I/O Panel

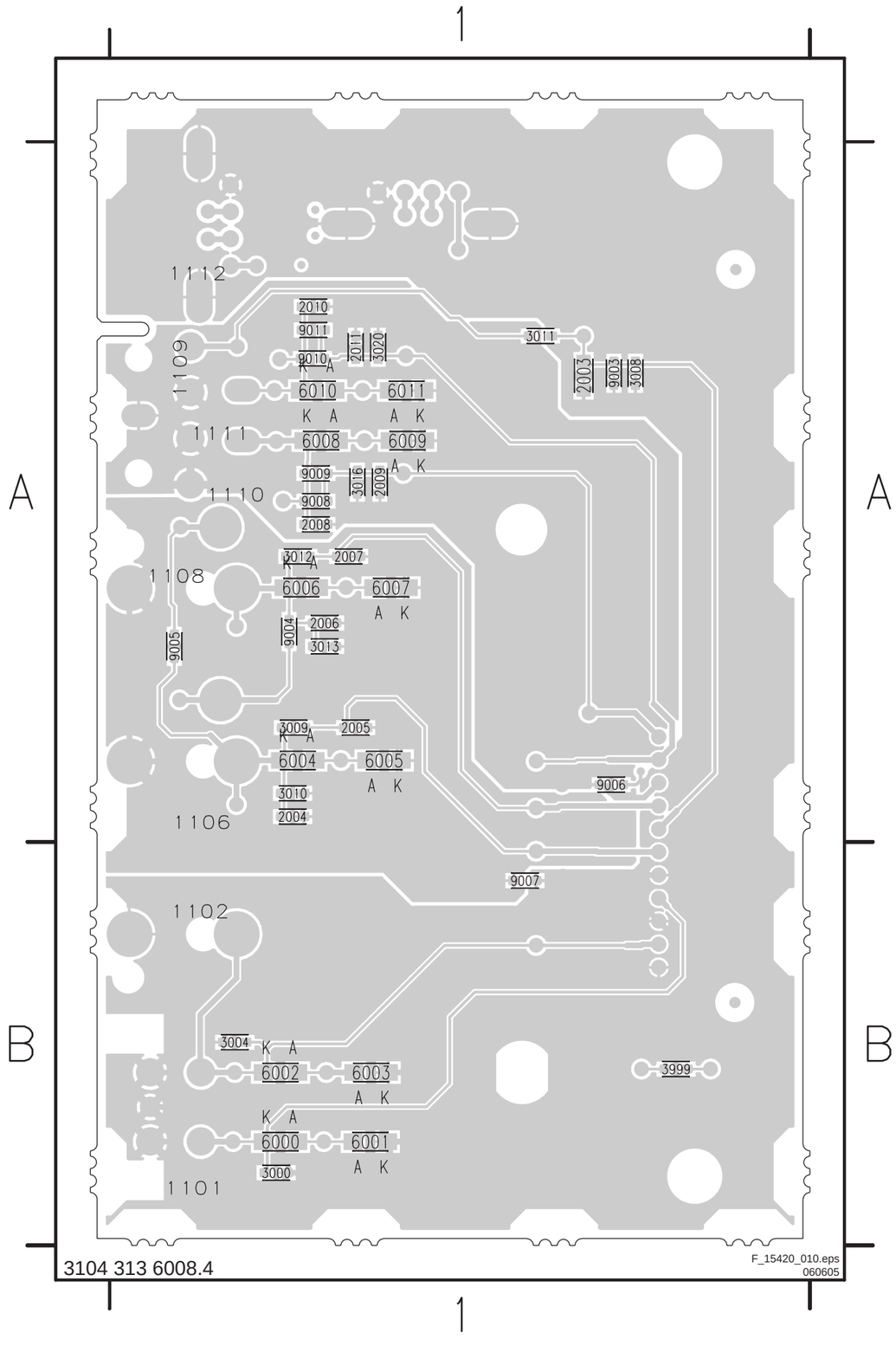


1001 B2	F002 A2
1002-1 B1	F003 B2
1002-2 C1	F004 C2
1002-3 D1	F005 C2
1005 A8	F006 D2
1010 E1	F007 E2
1050 A7	F008 E2
1101 A3	F009 E2
1102 B3	F010 F8
1106 C3	F011 F9
1108 D3	F012 A6
1109 E3	F013 A7
1110 F3	F014 A6
1111 E3	F015 A7
1112 A7	F016 A6
1H01 A6	F017 A7
1M36 B8	F018 F7
1M37 B8	F019 F2
2003 C5	F020 B4
2004 C3	F021 C6
2005 C4	F022 C6
2006 D3	F023 C6
2007 D4	F024 E6
2008 F2	F025 E6
2009 F5	I001 C2
2010 E2	I002 C3
2011 E5	I003 D2
3000 A4	I004 A3
3004 B3	I005 F4
3008 C5	I006 F4
3009 C4	I007 E4
3010 C4	I008 E4
3011 C5	I009 B3
3012 D4	I010 D3
3013 D4	I011 F7
3016 F5	I012 F8
3020 E5	I013 F3
3999 F9	I014 E3
5000 A7	
6000 A3	
6001 A3	
6002 B3	
6003 B3	
6004 C3	
6005 C3	
6006 D3	
6007 D3	
6008 F3	
6009 F3	
6010 E3	
6011 F3	
9003 C6	
9004 C2	
9005 D2	
9006 F7	
9007 F8	
9008 F4	
9009 F4	
9010 E4	
9011 E4	
F001 A2	

Layout Side I/O Panel (Top Side)

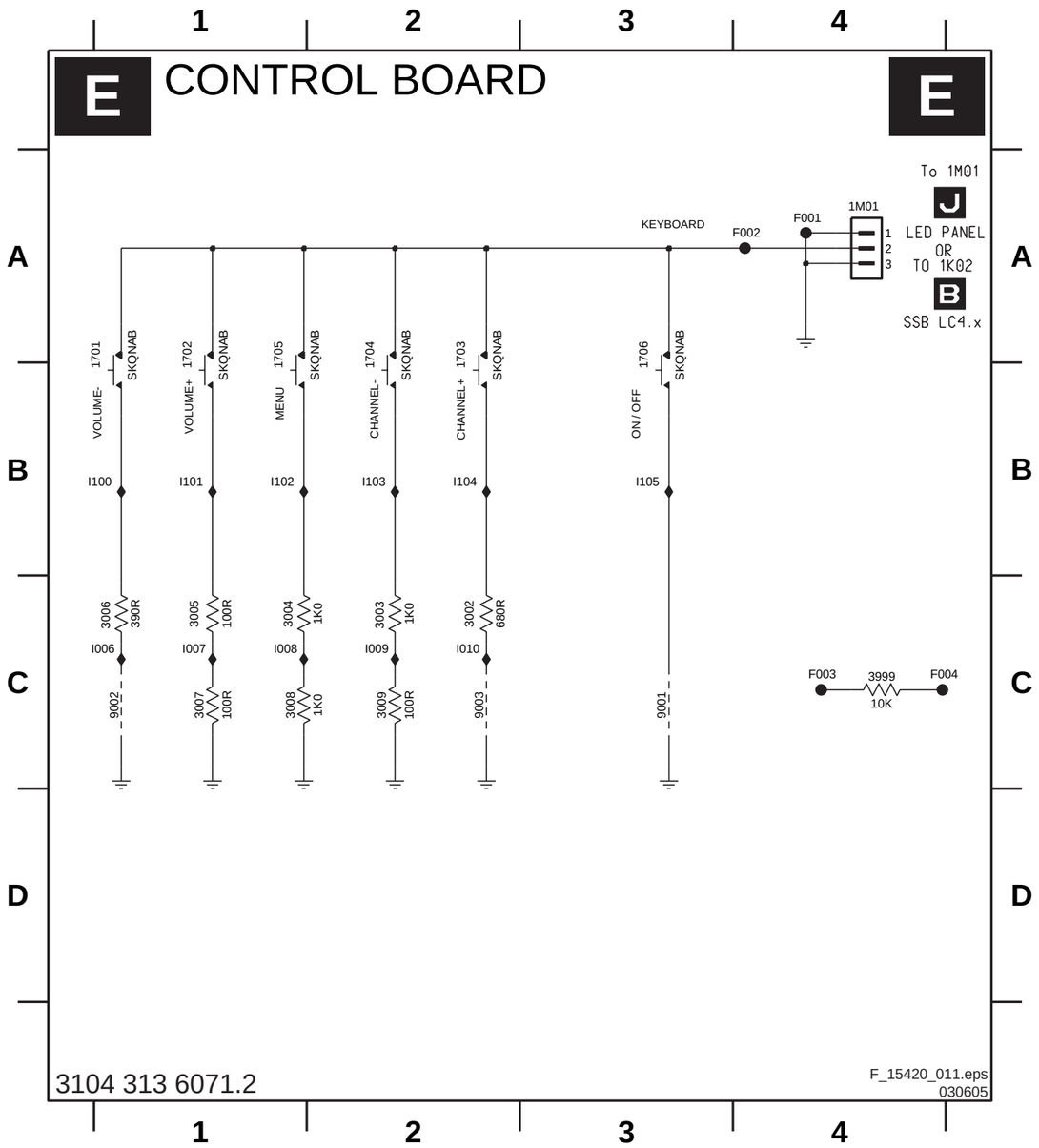


Layout Side I/O Panel (Bottom Side)



Control Board

1701 A1	1704 A2	1M01 A4	3004 C1	3007 C1	3999 C4	9003 C2	F003 C4	I007 C1	I010 C2	I102 B1	I105 B3
1702 A1	1705 A1	3002 C2	3005 C1	3008 C1	9001 C3	F001 A4	F004 C4	I008 C1	I100 B1	I103 B2	
1703 A2	1706 A3	3003 C2	3006 C1	3009 C2	9002 C1	F002 A4	I006 C1	I009 C2	I101 B1	I104 B2	

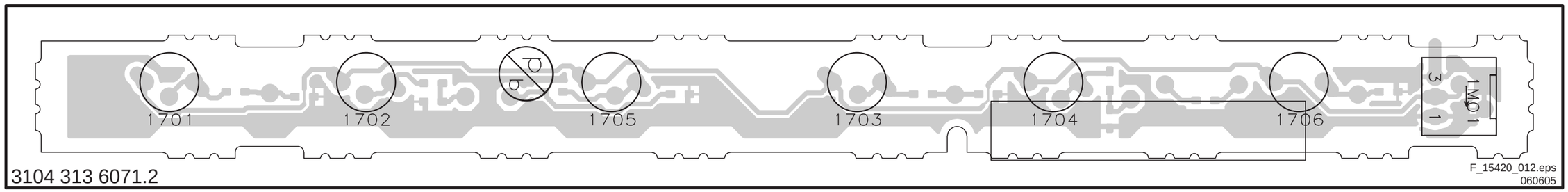


Personal Notes:

E_06532_012.eps
131004

Layout Control Board (Top Side)

1701 -- 1702 -- 1703 -- 1704 -- 1705 -- 1706 -- 1M01 --

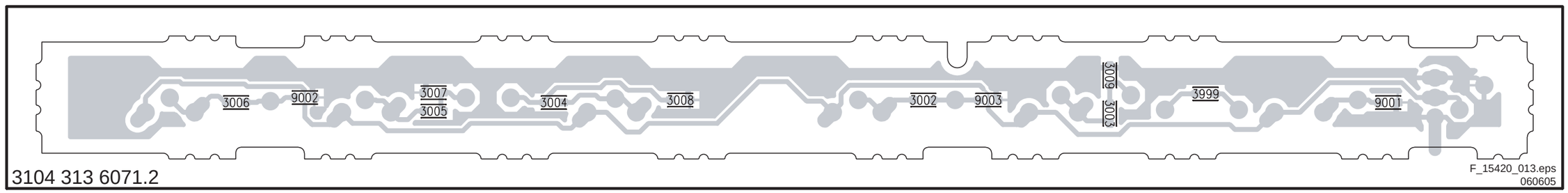


3104 313 6071.2

F_15420_012.eps
060605

Layout Control Board (Bottom Side)

3002 -- 3003 -- 3004 -- 3005 -- 3006 -- 3007 -- 3008 -- 3009 -- 3999 -- 9001 -- 9002 -- 9003 --



3104 313 6071.2

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060605

LED Panel

J LED PANEL

"BLUE" or "GREEN"

"RED"

"LED DIMMING"

"IR RECEIVER"

"LIGHT SENSOR"

TO 1M20 B SSB JL2.x / LC4.x OR TO 1M20 B E EXTERNALS FTx2.x / Bx2.x

TO 1M01 E CONTROL BOARD

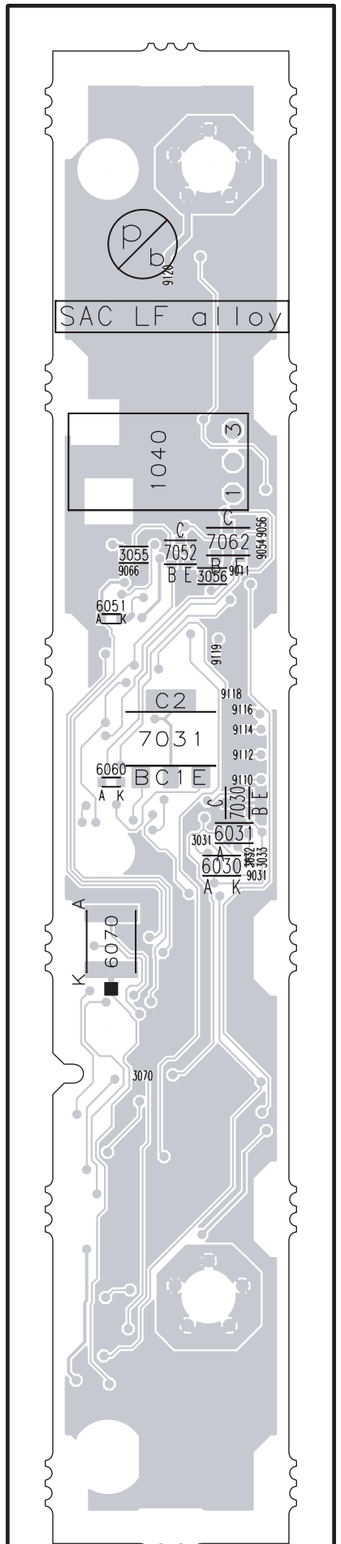
TO 0345 E TOP CONTROL

KEYBOARD, COM-SND, LED1, RC, LIGHT-SENSOR, LED2, BLACKLIGHT-TC

F_15420_014.eps 030605

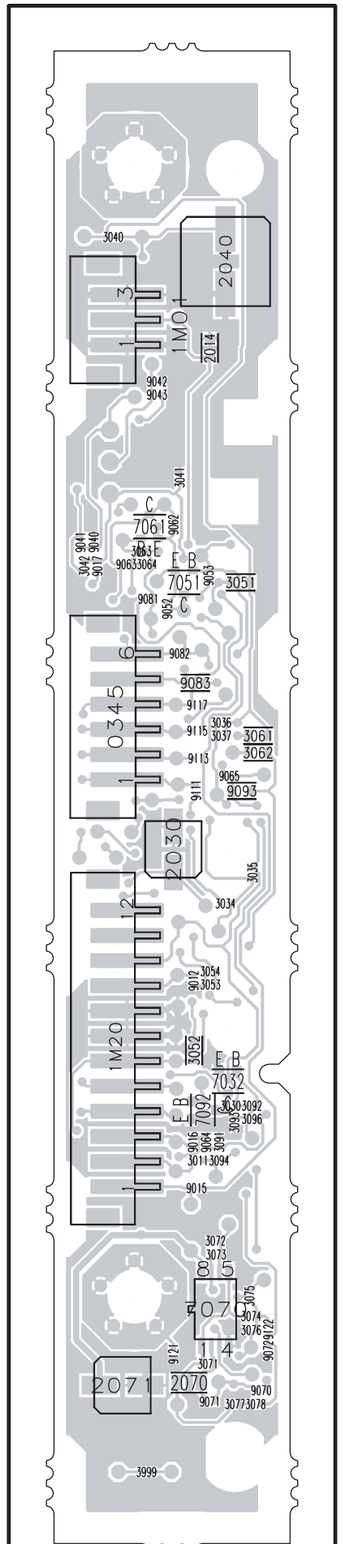
0001 A10 9119 E2
0002 A11 9120 B10
0345 D2 9121 B11
1040 F9 9122 F11
1M01 C2 F010 A3
1M20 A2 F011 A3
2014 C4 F012 A3
2030 G5 F013 B3
2040 F9 F014 B3
2070 F12 F015 A3
2071 G12 F016 B3
3011 A4 F017 B3
3030 G4 F018 B2
3031 G5 F021 C3
3032 G5 F038 B12
3033 G5 F039 B12
3034 G6 F083 D3
3035 G6 F084 D3
3036 G7 F086 E3
3037 G7 F089 E3
3040 F9 I010 F2
3041 G9 I011 G2
3042 F9 I012 E3
3051 B8 I013 E4
3052 B8 I026 F12
3053 C8 I033 G4
3054 C8 I037 G7
3055 C8 I038 G6
3056 D6 I039 G4
3061 B6 I040 G5
3062 B6 I041 G9
3063 D5 I042 G9
3064 D5 I043 F9
3070 G11 I044 F9
3071 F12 I045 F9
3072 G13 I046 E9
3073 G13 I047 G4
3074 F13 I048 G5
3075 F14 I049 G7
3076 G14 I051 D8
3077 G12 I052 C8
3078 G11 I053 B9
3091 G2 I054 D7
3092 F2 I061 D6
3093 F3 I062 C6
3094 F2 I063 D7
3096 G3 I064 D5
3999 B12 I065 C9
6030 G4 I071 F11
6031 G4 I072 F14
6051 C8 I073 G12
6060 C6 I074 G12
6070 G11 I075 F12
7030 G6 I076 F13
7031 G7 I093 F2
7032 G4 I094 F3
7051 C8 I095 C6
7052 D8
7061 D6
7062 C6
7070-1 F12
7070-2 G13
7092 F2
9011 C6
9012 B4
9015 A4
9016 A4
9017 A4
9031 G4
9040 G9
9041 F9
9042 G9
9043 F9
9052 C9
9053 C8
9054 D9
9056 D7
9062 D7
9063 D6
9064 B7
9065 B7
9066 D7
9070 F11
9071 F11
9072 G11
9081 E4
9082 E3
9083 D3
9093 G2
9110 D2
9111 D4
9112 D2
9113 D4
9114 E2
9115 E4
9116 E2
9117 E4
9118 E2

Layout LED Panel



3104 313 6074.3 F_15420_015.eps 060605

1040 --
3031 --
3032 --
3033 --
3055 --
3056 --
3070 --
6030 --
6031 --
6051 --
6060 --
6070 --
7030 --
7031 --
7052 --
7062 --
9011 --
9031 --
9054 --
9056 --
9066 --
9110 --
9112 --
9114 --
9116 --
9118 --
9119 --
9120 --



3104 313 6074.3 F_15420_016.eps 060605

0345 --
1M01 --
1M20 --
2014 --
2030 --
2040 --
2070 --
2071 --
3011 --
3030 --
3034 --
3035 --
3036 --
3037 --
3040 --
3041 --
3042 --
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3091 --
3092 --
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3094 --
3096 --
3999 --
7032 --
7051 --
7061 --
7070 --
7092 --
9012 --
9015 --
9016 --
9017 --
9040 --
9041 --
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9121 --
9122 --

Personal Notes:

E_06532_012.eps 131004

Standby Audio Panel: Connections

SA1 CONNECTIONS

SA1

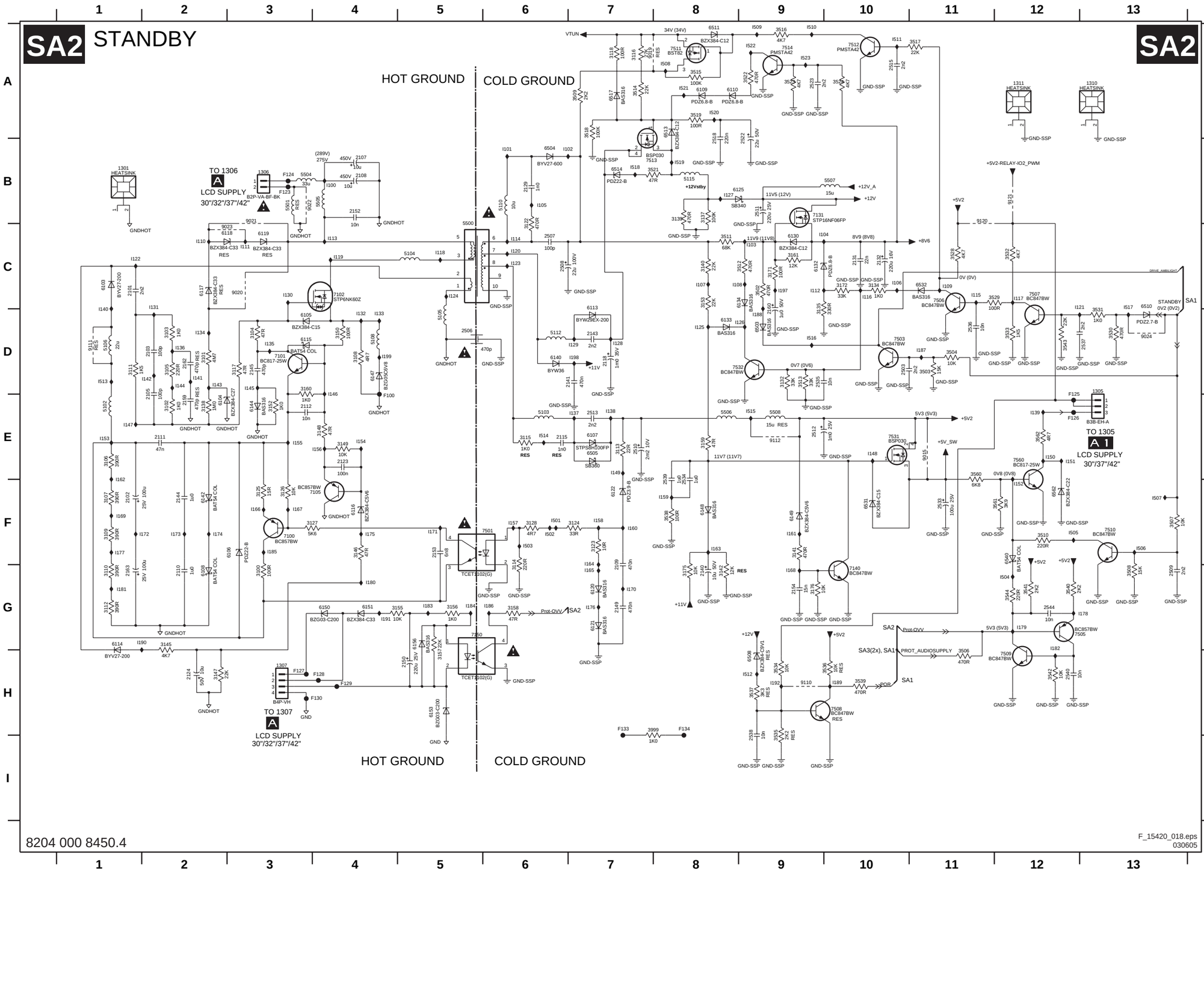
TO DISPLAY 1316 B12P-PH-K
TO DISPLAY 1317 B12P-PH-K
1318 B6B-PH-K
+5V_SW +5V_SW
9008 9009 RES
F137 F138
9002 RES 9003 RES
GND-SSP GND-SSP GND-SSP
F105 F104
GND-SSP
DIM_CONTROL SA1 (3x)
ON_OFF SA1 (3x)
DIM_CONTROL SA1 (3x)
ON_OFF SA1 (3x)
DIM_CONTROL SA1 (3x)
POR SA2
ON_OFF
F111 F113 F115
GND-SSP
+5V_SW 9113 I551
STANDBY F121
PROT_AUDIOSUPPLY F139
F122
+5V2-RELAY-IO2_PWM
DRIVE_AMBILIGHT
1M03 B10P-PH-K-S
9013
TO 1M46 B FTV 2.X BL 2.X JL 2.X LC 4.X
TO DISPLAY 1319 B14B-PH-K
GND-SSP 9012 I550
9014
GND-SSP
TO 1303 A LCD SUPPLY 42"
1303 B4P-VH
+24V_2 F103
1320 B3P-VH
GND-SSP
TO 1320 A LCD SUPPLY 42"
6516 BAS316
I525
3526 470R
VTUN
100K 3525
BZX384-C15 6515
BSP030 7515
I524
F140 F110
1M10 B4B-PH-K
TO 1M10 AL AMBI LIGHT
9106
F101 +12V_+24V
1304 B4P-VH
9018
F108 +12V_A
TO 1304 A LCD SUPPLY 30"/37"/42"
2517 4u7 50V
220K 3520
3527 100R
GND-SSP GND-SSP
9004 5018 68u 9010
9005 5019 68u 9011
9006 9007
F119 F120
3190 1K2 3191 1K2 3192 1K2
GND-SSP
TO DISPLAY 1314 B10P-PH-K-S
TO DISPLAY 1315 B10P-PH-K-S
GND-SSP
1M46 B11B-PH-K
F131 GND-SSP
+8V6 F135
+12V F136
+5V_SW F109
GND-SSP +5V2 F132
VTUN F114
+12V
9001 F117
TO 1M46 B FTV 2.X BL 2.X JL 2.X LC 4.X
1M63 B2B-PH-K
+5V_SW
GND-SSP
1309 B3P-VH F112
GND-SSP
TO 1309 A LCD SUPPLY 30"/32"/37"/42"
0001 GND screw 1 GND-SSP
0002 GND screw 1 GND-SSP
0003 GND screw 1 GND-SSP
1M49 B4B-PH-K I552 I553 I554 I555 1K49 B4B-PH-K
1D40 B5B-PH-K I556 I557 I558 I559 I560 1D42 B5B-PH-K

8204 000 8450.4

F_15420_017.eps
030605

0001 F4	F140 B8	1D40 F7	I560 F7
0002 F4	I524 C8	1D42 F8	
0003 F5	I525 C7	1K49 F6	
1303 B7	I550 C6	1M03 B5	
1304 C8	I551 C4	1M10 B9	
1309 E7	I552 F6	1M46 E4	
1314 E1	I553 F6	1M49 F6	
1315 E2	I554 F6	1M63 E6	
1316 B1	I555 F6	2517 C7	
1317 B2	I556 F7	3190 E7	
1318 B3	I557 F8	3191 E7	
1319 B6	I558 F7	3192 E7	
1320 B7	I559 F8	3520 C8	
		3525 C7	
		3526 C7	
		3527 D7	
		5018 D6	
		5019 D6	
		6515 B8	
		6516 C7	
		7515 C8	
		9001 F3	
		9002 C3	
		9003 C3	
		9004 C6	
		9005 D6	
		9006 D7	
		9007 D7	
		9008 B3	
		9009 B3	
		9010 D6	
		9011 E6	
		9012 C5	
		9013 C5	
		9014 C6	
		9016 B8	
		9018 C9	
		9113 C4	
		F101 C9	
		F103 B7	
		F104 C3	
		F105 C3	
		F108 C9	
		F109 E3	
		F110 B8	
		F111 B4	
		F112 E7	
		F113 B5	
		F114 E3	
		F115 C4	
		F117 F3	
		F119 D6	
		F120 D6	
		F121 C4	
		F122 C5	
		F131 E3	
		F132 E3	
		F135 E3	
		F136 E3	
		F137 B3	
		F138 B3	
		F139 C4	

Standby Audio Panel: Standby



1301 B1	3506 H11	7511 A8	I186 G6
1305 D13	3507 F13	7512 A10	I187 D11
1306 B3	3508 G13	7513 B7	I188 D9
1307 H3	3509 A7	7514 A9	I189 H10
1310 A13	3510 F12	7531 E10	I190 G1
1311 A12	3511 C8	7532 D9	I191 G4
2101 C1	3512 C9	7560 E12	I192 H9
2102 F1	3513 D9	9015 E11	I197 C9
2103 D2	3514 A7	9019 A7	I198 D7
2105 D2	3515 A8	9020 C3	I199 D4
2107 B4	3516 A9	9021 B3	I501 F6
2108 B4	3517 A11	9022 B3	I502 F6
2109 F7	3518 A7	9023 C2	I503 F6
2110 G2	3519 A8	9024 D13	I504 G12
2111 E2	3521 B7	9110 H9	I505 F12
2112 E3	3522 A9	9111 D1	I506 F13
2115 E6	3523 A9	9112 E9	I507 F13
2118 D7	3524 A10	9120 B11	I508 A8
2123 E4	3528 C11	9121 B12	I509 A9
2124 H2	3529 C11	F100 E4	I510 A9
2129 B6	3530 D13	F123 B3	I511 A10
2131 C10	3531 D13	F124 B3	I512 H9
2132 C10	3532 C12	F125 E12	I513 D1
2140 G8	3533 D12	F126 E12	I514 E6
2141 D7	3534 H9	F127 H3	I515 E9
2143 D7	3535 H9	F128 H4	I516 D9
2144 F2	3536 H10	F129 H4	I517 C13
2145 D3	3537 H9	F130 H4	I518 B7
2149 G7	3538 F8	I133 H7	I519 B8
2150 H5	3539 H10	I134 H8	I520 A8
2152 B4	3540 G12	I100 B4	I521 A8
2153 F5	3541 G12	I101 B6	I522 A9
2154 G9	3542 H12	I102 B6	I523 A9
2159 E2	3543 D12	I103 C9	
2160 C9	3544 G12	I104 C9	
2162 D2	3560 E11	I105 B6	
2163 G1	3561 F12	I106 C10	
2503 D10	3562 E12	I107 C8	
2506 D5	3999 H7	I108 C8	
2507 C6	5102 E1	I109 C11	
2508 C6	5103 E6	I110 C2	
2509 G13	5104 C5	I111 C3	
2510 E7	5105 D5	I112 C9	
2511 B9	5106 D1	I113 C4	
2512 E9	5108 D4	I114 C6	
2513 E7	5110 B6	I115 C11	
2515 A10	5112 D6	I116 C10	
2518 A8	5115 B8	I117 C12	
2522 A9	5500 C5	I118 C5	
2523 A9	5501 B3	I119 C4	
2533 F11	5504 B3	I120 C6	
2534 E8	5505 B4	I121 C12	
2535 D9	5506 E8	I122 C1	
2536 D11	5507 B10	I123 C6	
2537 D13	5508 E9	I124 C5	
2538 H9	6103 C1	I125 D8	
2539 E8	6104 E2	I126 D9	
2540 H12	6105 D3	I127 B8	
2544 G12	6106 F2	I128 D7	
3100 G3	6107 E7	I129 D7	
3101 D2	6108 G2	I130 C3	
3102 E2	6109 A8	I131 C2	
3103 D2	6110 A8	I132 D4	
3104 D3	6113 C7	I133 D4	
3105 D2	6114 G1	I134 D2	
3106 E1	6115 D3	I135 D3	
3107 F1	6116 F4	I136 D2	
3108 D4	6117 C2	I137 E7	
3109 F1	6118 C2	I138 E7	
3110 G1	6119 C3	I139 E12	
3111 D1	6120 G7	I140 C1	
3112 G1	6121 G7	I141 D2	
3113 E7	6122 F7	I142 D2	
3114 F6	6125 B8	I143 D2	
3115 E6	6130 C9	I144 D2	
3116 A7	6132 C9	I145 D3	
3117 D3	6133 D8	I146 D4	
3118 A7	6134 C9	I147 E1	
3122 B6	6140 D6	I148 E10	
3123 F7	6142 F2	I149 E7	
3124 F7	6144 E3	I150 E12	
3125 F3	6147 D4	I151 E12	
3126 F3	6148 F8	I152 F12	
3127 F3	6149 F9	I153 E1	
3128 F6	6150 G4	I154 E4	
3132 D9	6151 G4	I155 E3	
3134 C10	6153 H5	I156 E4	
3135 C9	6156 G5	I157 F6	
3137 B8	6503 D9	I158 F7	
3138 E2	6504 B6	I159 F8	
3139 B8	6505 E7	I160 F7	
3140 C8	6508 H9	I161 F9	
3141 F9	6510 C13	I162 E1	
3142 G8	6511 A8	I163 F8	
3145 G2	6513 A8	I164 F7	
3146 F4	6514 B7	I165 G7	
3147 H2	6517 A7	I166 F3	
3148 E4	6531 F10	I167 F3	
3149 E4	6532 C11	I168 G9	
3150 D4	6540 F12	I169 F1	
3152 E3	6562 F12	I170 G7	
3153 C8	7100 F3	I171 F5	
3155 G4	7101 D3	I172 F2	
3156 G5	7102 C4	I173 F2	
3157 H5	7105 F4	I174 F2	
3158 G6	7131 B9	I175 F4	
3159 E8	7140 G10	I176 G7	
3160 D3	7150 G5	I177 F1	
3161 C9	7501 F6	I178 G13	
3171 C9	7503 D10	I179 G12	
3172 C10	7505 G12	I180 G4	
3175 G8	7506 C11	I181 G1	
3176 G9	7507 C12	I182 G12	
3502 C9	7508 H10	I183 G5	
3503 D11	7509 H12	I184 G5	
3504 D11	7510 F13	I185 F3	

Standby Audio Panel: Audio

0044 D14 0045 B1 1735 F2 1736 G2 1737 F7 1738 F7 1739 F5 1M02 A9 2702 B5 2704 C2
2705 A7 2706 B4 2707 B4 2708 G4 2709 D6 2710 D6 2711 E2 2712 E5 2713 B7 2714 C3
2715 F4 2716 B3 2717 G4 2718 E3 2719 F5 2720 F4 2721 C1 2722 D1 2723 F8 2725 F6
2726 E2 2727 E2 2728 B3 2729 F3 2741 F11 2743 F13 2753 E13 2754 D11 2755 D11 2756 G12
2758 G9 2759 F8 2762 E13 2764 B2 2766 A4 2768 E5 2769 E5 2777 D1 2778 C5 2779 E2
2780 E5 2781 E5 2782 D12 2783 D7 2784 D13 2785 B13 2786 B4 2787 C5 2788 D1 2789 D2
2790 E2 2791 C7 2792 C8 2793 D13 2794 C9 2795 D13 2796 C10 2797 D8 2798 E8 2799 D13
3701 E6 3702 B6 3703 A6 3704 B6 3705 E4 3706 E6 3707 D6 3708 F6 3709 F5 3710 B3
3711 E4 3712 E3 3713 D7 3714 C6 3715 B6 3716 B6 3717 F3 3718 G4 3720 F7 3721 C1
3722 C1 3723 C1 3724 F1 3725 B4 3726 F1 3727 F5 3729 G9 3730 F7 3741 F11 3743 F3
3744 G11 3746 C6 3747 C6 3748 C5 3749 A7 3750 G3 3751 G8 3752 B8 3753 G8 3754 C8
3755 B10 3756 F3 3757 G3 3758 C10 3759 D8 3760 E8 3761 B12 3762 B12 3763 C12 3764 C12
3765 C12 3766 C14 3767 B12 3768 B13 3790 B4 3791 C2 3792 B3 3793 B4 3794 D11 3795 C5
3796 E11 3797 C5 3798 D6 5701 F4 5702 F2 5703 B5 5704 F7 5705 F6 5707 D1 5708 E1
5711 E6 5712 E4 5720 F9 5722 D13 5723 D13 5730 F2 5731 G2 5732 G8 6701 C6 6702 B12
6703 C12 6704 B6 6710 D8 6711 E8 7700 C3 7701 B7 7702 E11 7703 C7 7704 B5 7705 B6
7706 C6 7707 C5 7708 C13 7709 C13 7710 B13 7711 B13 7712 D9 7713 E9 7714 C5 7715-1 C9
7715-2 C11 9717 B5 9718 B13 F708 F2 F710 G2 F711 A2 F712 B2 F718 D10
F720 G8 F721 G2 F722 F2 F731 G8 F736 G7 F737 G6 F738 F2 F739 G2 F741 G8 F742 B9
F743 B9 F744 B9 F745 A9 F747 G5 F748 G5 F749 G6 F751 F6 I700 E6 I701 E6 I702 A6
I703 B6 I704 A6 I705 D6 I706 D5 I707 E3 I708 F11 I709 C3 I710 F5 I711 B4 I712 A5
I713 B3 I714 C8 I715 A7 I716 C3 I717 B5 I718 B5 I719 F3 I720 C8 I721 E4 I722 B2
I723 B9 I724 E2 I725 E1 I726 C2 I727 B5 I728 C9 I729 C5 I730 F7 I731 B11 I732 C6
I733 C10 I734 F12 I735 D8 I736 E8 I737 C6 I738 C6 I739 B6 I740 F9 I741 E9 I742 C12
I743 C12 I744 B4 I745 B4 I746 E13 I747 D11 I748 F4 I749 G12 I750 B12 I751 A12 I752 E13
I753 F4 I755 E2 I756 C1 I757 D2 I758 G12 I759 F7 I760 D2 I761 E8 I762 C13
I763 F6 I764 D13 I765 D13 I766 G9 I767 F2 I768 G3 I769 F3 I770 G2 I771 G3 I772 F8
I773 G9 I774 F9 I775 F7 I776 E4 I777 D2 I778 E4 I779 C15 I780 E13 I781 C13 I782 C13
I783 B2 I784 B4 I785 B4 I786 B4 I787 C4 I788 C7 I790 F3 I791 B12 I792 B13 I793 B13
I794 B12 I795 F6 I796 C12 I797 C12 I798 E5 I799 E3

1 2 3 4 5 6 7 8 9 10 11 12 13 14

A B C D E F G

SA3 AUDIO

SA3

SA3 AUDIO-L F711 SA3 AUDIO-R F712

0045 HEATSINK

SA3 (3x) PROT1 SA3 DCPROT SA3 AUDIO-SW SA3 DCPROT

TO 1M02 A LCD SUPPLY 30"/37"/42"

1M02 B7B-EH-A F745 F742 F743 F744 +16V+19V -16V-19V

TO 1M52 B FTV 2.X BL 2.X JL 2.X LC 4.C

15W/8 R 15W/8 L 15W/8 CENTERWOOFER

TDA7492 TDA1519BTW TDA7482

BC847BW BC857BW BAS316 BZX384-C10 BZX384-C15 LM833D PLT09H

SA1,SA2,SA3 PROT_AUDIOSUPPLY

SA3(3x) PROT1 SA3 POR-CLASSD SOUND-ENABLE PROT_AUDIOSUPPLY AUDIO-SW AUDIO-R AUDIO-L SA1,SA2,SA3 SA3 SOUND-ENABLE SA3 POR-CLASSD SA3(3x) PROT1

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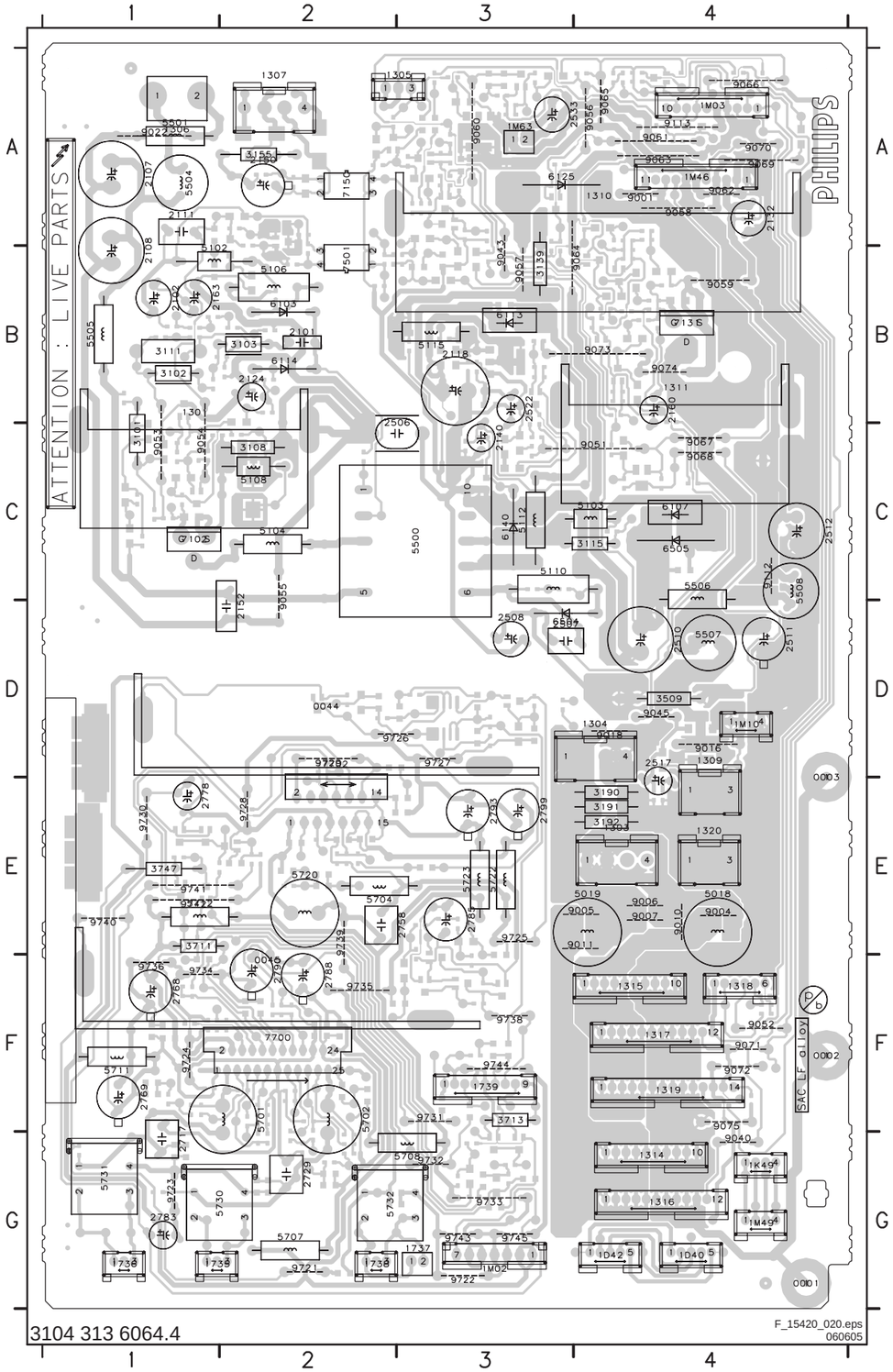
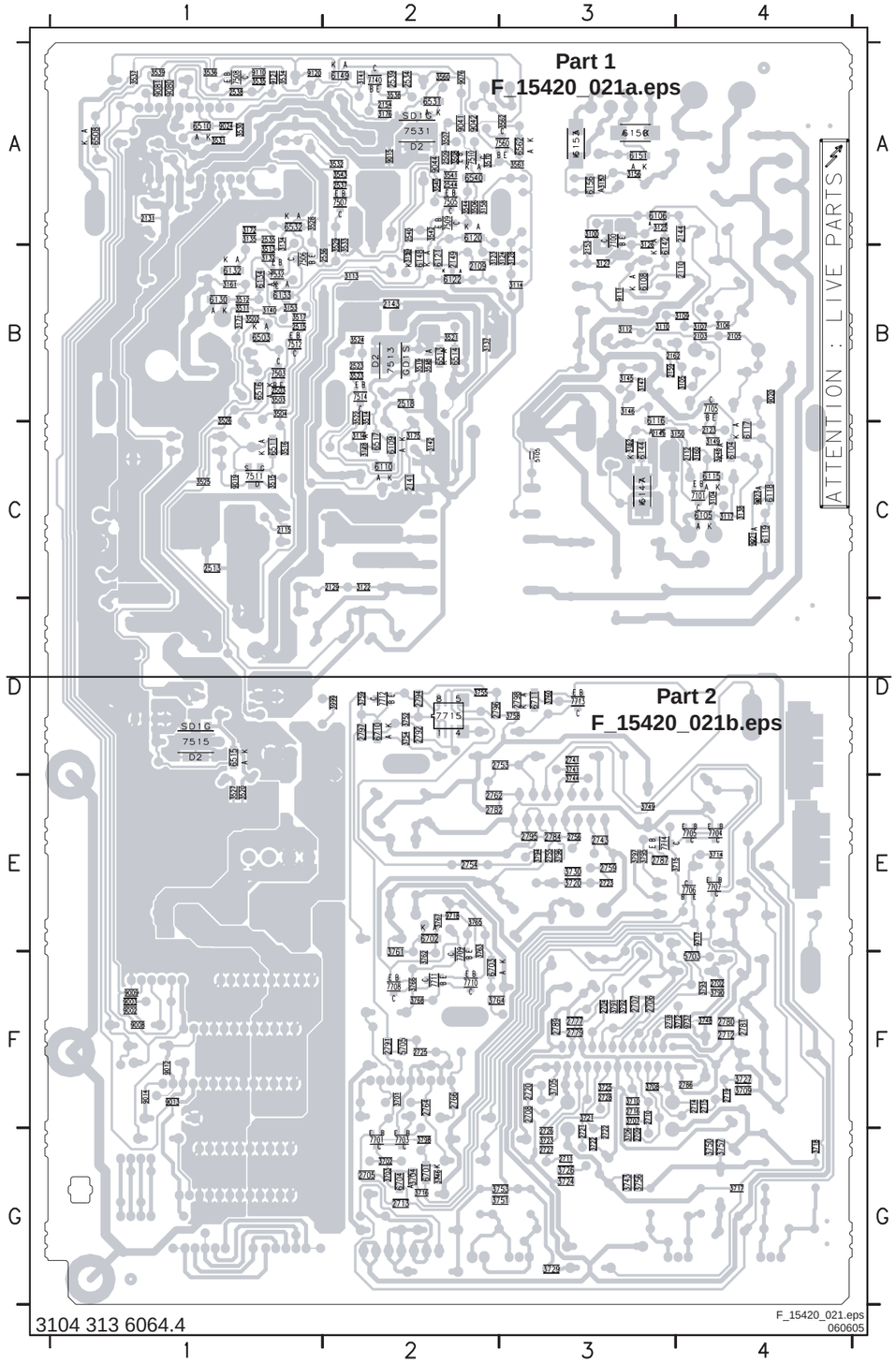
Layout Standby Audio Panel (Top Side)



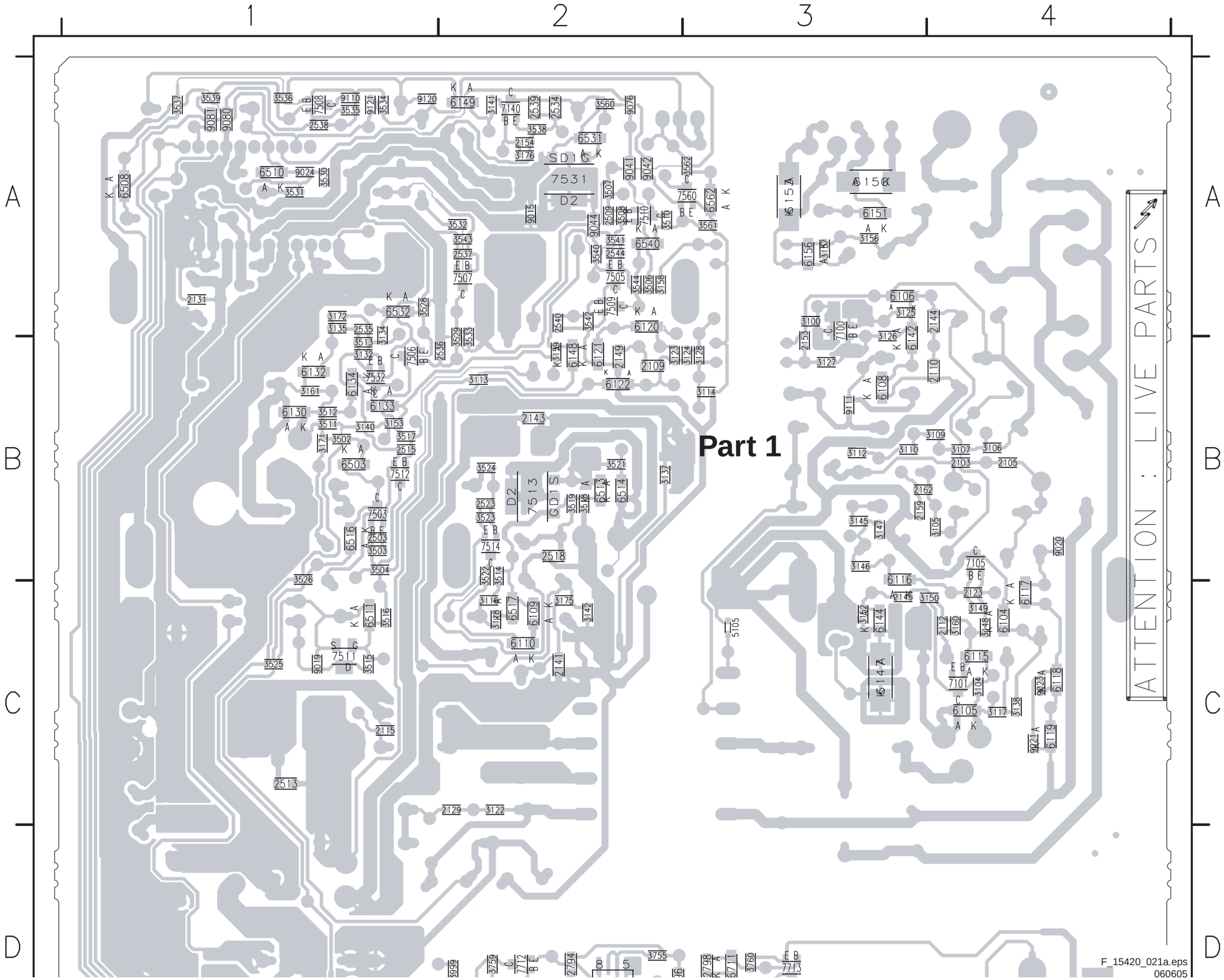
0001 G4 5701 F2
0002 F4 5702 F2
0003 D4 5704 E2
0044 D1 5707 G2
0045 E1 5708 G3
1301 C1 5711 F1
1303 E4 5712 E1
1304 D4 5720 E2
1305 A3 5722 E3
1306 A1 5723 E3
1307 A2 5730 G2
1309 D4 5731 G1
1310 A3 5732 G3
1311 B4 6103 B2
1314 G4 6107 C4
1315 F4 6113 B3
1316 G4 6114 B2
1317 F4 6125 A3
1318 F4 6140 C3
1319 F4 6504 D3
1320 E4 6505 C4
1735 G1 7102 C1
1736 G1 7131 B4
1737 G3 7150 A2
1738 G2 7501 B2
1739 F3 7700 F2
1D40 G4 7702 D2
1D42 G4 9001 A4
1K49 G4 9004 E4
1M02 G3 9005 E4
1M03 A4 9006 E4
1M10 D4 9007 E4
1M46 A4 9010 E4
1M49 G4 9011 E4
1M63 A3 9016 D4
2101 B2 9018 D4
2102 B1 9022 A1
2107 A1 9040 G4
2108 A1 9043 B3
2111 A1 9045 D4
2118 B3 9051 C4
2124 B2 9052 F4
2132 A4 9053 B1
2140 C3 9054 B1
2150 A2 9055 C2
2152 D2 9056 A4
2160 B4 9057 A3
2163 B1 9058 A4
2506 B2 9059 B4
2507 D3 9060 A3
2508 D3 9061 A4
2510 D4 9062 A4
2511 D4 9063 A4
2512 C4 9064 A3
2517 D4 9065 A4
2522 B3 9066 A4
2533 A4 9067 C4
2717 F1 9068 C4
2729 G2 9069 A4
2758 E3 9070 A4
2768 F1 9071 F4
2769 F1 9072 F4
2778 E1 9073 B4
2783 G1 9074 B4
2785 E3 9075 F4
2788 F2 9112 C4
2790 E2 9113 A4
2793 E3 9721 G2
2799 E3 9722 G3
3101 C1 9723 G1
3102 B1 9724 F1
3103 B2 9725 E3
3108 C2 9726 D2
3111 B1 9727 D3
3115 C4 9728 E2
3139 B3 9729 D2
3155 A2 9730 E1
3190 E3 9731 F3
3191 E3 9732 G3
3192 E3 9733 G3
3509 D4 9734 F1
3711 F1 9735 F3
3713 F3 9736 F1
3747 E1 9738 F3
5018 E4 9739 F2
5019 E4 9740 E1
5102 B2 9741 E1
5103 C4 9742 E1
5104 C2 9743 G3
5106 B2 9744 F3
5108 C2 9745 G3
5110 C3
5112 C3
5115 B3
5500 C3
5501 A1
5504 A1
5505 B1
5506 C4
5507 D4
5508 C4

Layout Standby Audio Panel (Overview Bottom Side)

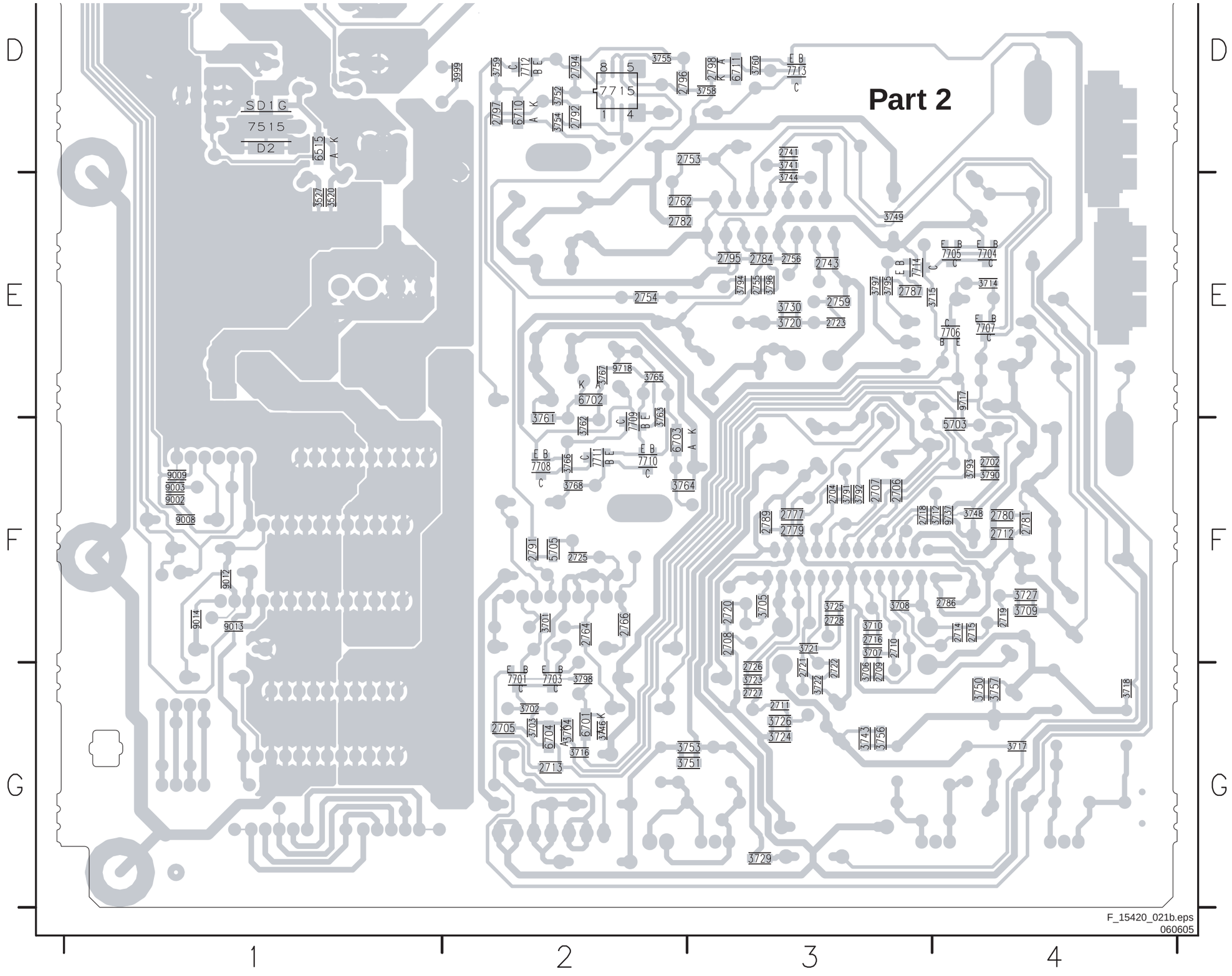


2103 B4 2141 C2 2503 B1 2537 A2 2707 F3 2716 F3 2727 G3 2762 E2 2786 F4 2798 D3 3113 B2 3126 A3 3141 A2 3153 B1 3175 C2 3511 B1 6119 C4
2105 B4 2143 B2 2509 A2 2538 A1 2708 F3 2718 F3 2728 F3 2764 F2 2787 E3 3100 A3 3114 B3 3127 B3 3142 C2 3156 A3 3176 A2 3512 B1 6120 A2
2109 B2 2144 A4 2513 C1 2539 A2 2709 G3 2719 F4 2741 D3 2766 F2 2789 F3 3104 C4 3116 C2 3128 B3 3145 B3 3157 A3 3502 B1 3513 B1 6121 B2
2110 B4 2145 C3 2515 B1 2540 A2 2710 F3 2720 F3 2743 E3 2777 F3 2791 F2 3105 B4 3117 C4 3132 B1 3146 B3 3158 A2 3503 B1 3514 B2 6122 B2
2112 C4 2149 B2 2518 B2 2544 A2 2711 G3 2721 G3 2753 D3 2779 F3 2792 D2 3106 B4 3118 C2 3134 A1 3147 B3 3159 B2 3504 B1 3515 C1 6130 B1
2115 C1 2153 B3 2523 B2 2702 F4 2712 F4 2722 G3 2754 E2 2780 F4 2794 D2 3107 B4 3122 C2 3135 A1 3148 C4 3160 C4 3506 A2 3516 C1 6132 B1
2123 C4 2154 A2 2534 A2 2704 F3 2713 G2 2723 E3 2755 E3 2781 F4 2795 E3 3109 B4 3123 B2 3137 B2 3149 C4 3161 B1 3507 A2 3517 B1 6133 B1
2129 C2 2159 B3 2535 A1 2705 G2 2714 F4 2725 F2 2756 E3 2782 E2 2796 D2 3110 B3 3124 B3 3138 C4 3150 C4 3171 B1 3508 A2 3518 B2 6134 B1
2131 A1 2162 B3 2536 B2 2706 F3 2715 F4 2726 G3 2759 E3 2784 E3 2797 D2 3112 B3 3125 A3 3140 B1 3152 C3 3172 A1 3510 A2 3519 B2 6142 B3
3520 E1 6144 C3
3521 B2 6147 C3
3522 B2 6148 B2
3523 B2 6149 A2
3524 B2 6150 A3
3525 C1 6151 A3
3526 B1 6153 A3
3527 E1 6156 A3
3528 A1 6503 B1
3529 B2 6508 A1
3530 A1 6510 A1
3531 A1 6511 C1
3532 A2 6513 B2
3533 B2 6514 B2
3534 A1 6515 D1
3535 A1 6516 B1
3536 A1 6517 C2
3537 A1 6531 A2
3538 A2 6532 A1
3539 A1 6540 A2
3540 A2 6562 A3
3541 A2 6701 G2
3542 A2 6702 E2
3543 A2 6703 F3
3544 A2 6704 G2
3560 A2 6710 D2
3561 A3 6711 D3
3562 A3 7100 A3
3701 F2 7101 C4
3702 G2 7105 B4
3703 G2 7140 A2
3704 G2 7503 B1
3705 F3 7505 A2
3706 G3 7506 B1
3707 F3 7507 A2
3708 F3 7508 A1
3709 F4 7509 A2
3710 F3 7510 A2
3712 F4 7511 C1
3714 E4 7512 B1
3715 E3 7513 B2
3716 G2 7514 B2
3717 G4 7515 D1
3718 G4 7531 A2
3720 E3 7532 B1
3721 F3 7560 A3
3722 G3 7701 G2
3723 G3 7703 G2
3724 G3 7704 E4
3725 F3 7705 E4
3726 G3 7706 E4
3727 F4 7707 E4
3729 G3 7708 F2
3730 E3 7709 F2
3741 D3 7710 F2
3743 G3 7711 F2
3744 E3 7712 D2
3746 G2 7713 D3
3748 F4 7714 E3
3749 E3 7715 D2
3750 G4 9002 F1
3751 G3 9003 F1
3752 D2 9008 F1
3753 G3 9009 F1
3754 D2 9012 F1
3755 D2 9013 F1
3756 G3 9014 F1
3757 G4 9015 A2
3758 D3 9019 C1
3759 D2 9020 B4
3760 D3 9021 C4
3761 F2 9023 C4
3762 F2 9024 A1
3763 E2 9041 A2
3764 F2 9042 A2
3765 E2 9044 A2
3766 F2 9076 A2
3767 E2 9080 A1
3768 F2 9081 A1
3790 F4 9110 A1
3791 F3 9111 B3
3792 F3 9120 A1
3793 F4 9121 A1
3794 E3 9717 E4
3795 E3 9718 E2
3796 E3 9737 F4
3797 E3
3798 G2
3999 D2
5105 C3
5703 F4
5705 F2
6104 C4
6105 C4
6106 A3
6108 B3
6109 C2
6110 C2
6115 C4
6116 B3
6117 B4
6118 C4

Layout Standby Audio Panel (Part 1 Bottom Side)



Layout Standby Audio Panel (Part 2 Bottom Side)



8. Alignments

Index of this chapter:

Note: Figures below can deviate slightly from the actual situation, due to the different set executions.

General: The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5. Menu navigation is done with the Cursor Up, Down, Left or Right keys of the remote control transmitter.

8.1 General Alignment Conditions

Perform all electrical adjustments under the following conditions:
Mains voltage and frequency: 100-240 V / 50/60 Hz.
Allow the set to warm up for approximately 10 minutes.
Test probe: Ri > 10 MΩ; Ci < 2.5 pF.

8.2 Hardware Alignments

There are no hardware alignments foreseen for the LCD-TV.

8.3 Software Alignments

With the software alignments of the Service Alignment Mode (SAM) the geometry, white tone and tuner (IF) can be aligned.
To store the data: Use the RC button Menu to switch to the main menu and next, switch to ‘Stand-by’ mode.

8.3.1 SAM Menu

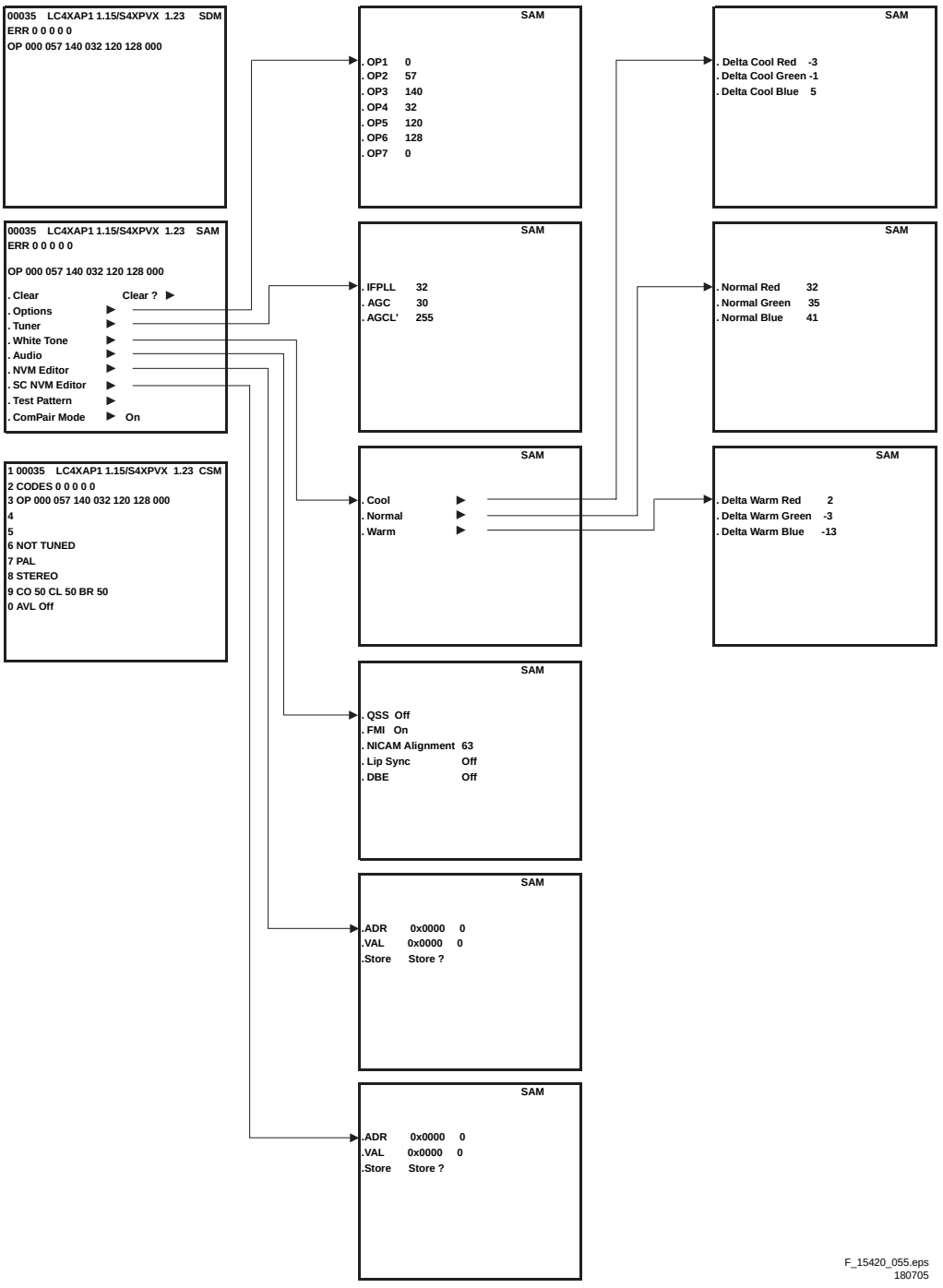


Figure 8-1 Overview SAM menu.

8.3.2 Tuner Adjustment

AGC (RF AGC Take Over Point)

- Activate the SAM menu.
- Go to the sub-menu Tuner.
- Select the AGC sub-menu.
- Adjust the AGC value to AGC = 27.
- Adjust the AGC L' value to AGC L' = 27 (Europe only).
- Adjust the IFPLL value to IFPLL = 32 (Europe only).
- Switch the set to standby to store the data.

8.3.3 DCXO (Digital Xtal Oscillator) Alignment (for NICAM sets only)

- Input a Colour bar signal with a colour subcarier frequency of 4.43 MHz on SCART1 or SCART2.
- Select as a signal source EXT1 or AV1.
- Go to the SAM menu and select Audio.
- Activate DCXO Alignment and wait until this process has finished (DONE).
- Check if the NICAM audio reception is OK, if not: repeat the procedure.
- Switch the set to standby to store the data.

8.3.4 ADC Gain and Grey Scale Alignment & Panel Size Settings

The table below shows a number of NVM settings used for each model of TV set. Be sure to use the correct editor in the SAM menu (NVM Editor or SC NVM Editor), because the first one is used for the Hercules NVM, and the second one for the SCALER (SC) part of the TV set. For further important NVM settings, see also the other NVM tables elsewhere in this manual.

Caution:

- **Do not change the NVM settings without understanding the function of each setting, because incorrect NVM settings may seriously hamper the correct functioning of the TV set!**
- **Do not change the Scaler NVM settings, as this will hamper the DVI functionality of the TV set!**
- Always note down the existing NVM settings, before changing the settings. This will enable you to return to the orgininal settings, if the new settings turn out to be incorrect.

Table 8-1 ADC gain and grey scale alignment

SDTV ADC Gain settings: Use the NVM Editor in SAM to set these values in the Hercules NVM				
		These models are with ADC & Columbus 3D Combfilter		
Setting	**Hercules NVM Address (decimal value)**	**37PF7320/69 /79 /93 /98**	**42PF7420/69 /79 /93 /98**	**Settings Range (decimal value)**
NVM_ADC_GAIN_R	006	143	143	075 - 155
NVM_ADC_GAIN_G	007	191	191	200 - 250
NVM_ADC_GAIN_B	008	143	143	075 - 155

SDTV Greyscale settings: Use the SC NVM Editor in SAM to set these values in the Scaler NVM				
		These models are with ADC & Columbus 3D Combfilter		
Setting	**Scaler NVM Address (decimal value)**	**37PF7320/69 /79 /93 /98**	**42PF7420/69 /79 /93 /98**	**Settings Range (decimal value)**
ADC_RED_OFFSET2	338	080	080	050 - 110
ADC_GRN_OFFSET2	339	080	080	050 - 110
ADC_BLU_OFFSET2	340	080	080	050 - 110
ADC_RED_GAIN	341	154	154	045 - 095
ADC_GRN_GAIN	343	154	154	045 - 095
ADC_BLU_GAIN	345	154	154	045 - 095
PC Greyscale settings				
		These models are with ADC & Columbus 3D Combfilter		
Setting	**Scaler NVM Address (decimal value)**	**37PF7320/69 /79 /93 /98**	**42PF7420/69 /79 /93 /98**	**Settings Range (decimal value)**
ADC_RED_OFFSET2	325	080	080	040 - 090
ADC_GRN_OFFSET2	326	080	080	040 - 090
ADC_BLU_OFFSET2	327	080	080	040 - 090
ADC_RED_GAIN	328	154	154	180 - 270
ADC_GRN_GAIN	330	154	154	180 - 270
ADC_BLU_GAIN	332	154	154	180 - 270
HD Greyscale settings				
		These models are with ADC & Columbus 3D Combfilter		
Setting	**Scaler NVM Address (decimal value)**	**37PF7320/69 /79 /93 /98**	**42PF7420/69 /79 /93 /98**	**Settings Range (decimal value)**
ADC_RED_OFFSET2	351	064	064	050 - 090
ADC_GRN_OFFSET2	352	082	082	050 - 090
ADC_BLU_OFFSET2	353	064	064	050 - 090
ADC_RED_GAIN	354	159	159	120 - 200
ADC_GRN_GAIN	356	144	144	120 - 200
ADC_BLU_GAIN	358	147	147	120 - 200

8.3.5 Sound

- For NICAM sets: see paragraph 8.3.3.
- For other sets: No adjustments needed for sound.

8.3.6 Options

Options OP1...OP7 in the SAM menu can be used for quickly restoring 64 features or settings of the HERCULES part of the TV set to their orginal default factory values (8 groups of 8 features/settings each). When the decimal value of one option byte OP1...OP7 is changed (see the first table below) then a group of 8 bits, representing 8 HERCULES options or features, is changed as well (see the second table below for a detailed description of the features or settings that are changed).
The second table shows which option byte (OP1...OP7) represents which group of 8 option bits. Each bit (0...7) switches a particular HERCULES feature or setting ON or OFF, depending on its value (1 or 0).
It is also possible to change the features or settings mentioned in the second table directly at bit level, by means of the NVM Editor in the SAM menu. In the NVM Editor, first the correct NVM address (ADR) has to be entered, then the correct value (VAL, 1 or 0) for each bit (see second table), and finally the settings have to be stored (STORE). For quickly restoring the HERCULES part of the TV set to its original factory settings, however, it is more convenient to simply enter the default factory settings OP1...OP7 that are given in the first table below. How to do this, is described in the next paragraph.

How to Change an Option Byte
As has been explained above, an Option byte (OP) represents a number of different HERCULES options. Changing these bytes directly makes it possible to set all HERCULES options very fast. All options are controlled via seven option bytes. Select the option byte (OP1.. OP7) with the Menu Up/ Down keys, and enter the new (decimal) value. For the correct Factory Default settings, see the first table below. For more detailed information, see the second table.

Leaving the Option submenu saves the changes in the Option Byte settings. Some changes will only take effect after the set has been switched “off” and “on” with the AC power switch (cold start).

Table 8-2 Option codes OP1...OP7

Option table for quickly restoring the HERCULES to its Factory Default settings		
Model number	**xxPF7x20/69 /79 /98**	**xxPF7x20/93**
OP1	128	1
OP2	37	37
OP3	79	77
OP4	97	96
OP5	252	252
OP6	27	27
OP7	28	20
Options (can be changed only via the SAM menu)	**Total decimal value for each option per model number**	

How to Change Options at Bit Level
If you wish to know which features or settings of the HERCULES are changed via OP1...OP7, or if you want to change each option or feature bit by bit, use the more detailed table below.
Note: the table below contains only part of the NVM settings that can be changed. A second range of settings and features can be found in Chapter 5 of this manual, in table **NVM Default values**. The settings mentioned there can only be changed via the NVM editor. For further settings, see also the table “ADC Gain and Grey scale alignment” elsewhere in this manual.

Table 8-3 Option codes in detail, at bit level

Option byte & bit table for restoring the TV set to its original Factory Default settings via the NVM Editor in the SAM menu			
		Model number	xxPF7x20/69 /79 /98	xxPF7x20/93
OP1	**Description of feature/option to be switched ON or OFF**		
bit 7 (msb)	OP_PHILIPS_TUNER	1	0
bit 6	OP_FM_RADIO	0	0
bit 5	OP_LNA	0	0
bit 4	OP_ATS // for EU	0	0
bit 3	OP_ACI	0	0
bit 2	OP_UK_PNP	0	0
bit 1	OP_VIRGIN_MODE	0	0
bit 0 (lsb)	OP_CHINA	0	1
	Total DEC Value	128	1
	Total HEX Value	80	01
OP2			
bit 7 (msb)	OP_SC	0	0
bit 6	OP_IBEX	0	0
bit 5	OP_CHANNEL_NAMING	1	1
bit 4	OP_LTI (Lum Transcient Improvmt)	0	0
bit 3	OP_TILT	0	0
bit 2	OP_FINE_TUNING	1	1
bit 1	OP_PIP_PHILIPS_TUNER	0	0
bit 0 (lsb)	OP_HUE	1	1
	Total DEC Value	37	37
	Total HEX Value	25	25
OP3			
bit 7 (msb)	OP_EW_FUNCTION	0	0
bit 6	OP_PIXEL_PLUS	1	1
bit 5	OP_PIP_SPLITTER // temp	0	0
bit 4	OP_SPLITTER // temp	0	0
bit 3	OP_VIRTUAL_DOLBY	1	1
bit 2	OP_WIDE_SCREEN	1	1
bit 1	OP_WSSB	1	0
bit 0 (lsb)	OP_OP_ME5 // OP_ME5 - 5/6 local buttons implementation	1	1
	Total DEC Value	79	77
	Total HEX Value	4F	4D
OP4			
bit 7 (msb)	OP_LIP_SYNC	0	0
bit 6	OP_HD	1	1
bit 5	OP_ULTRA_BASS	1	1
bit 4	OP_DELTA_VOLUME	0	0
bit 3	OP_TAIWAN_KOREA	0	0
bit 2	OP_VOLUME_LIMITER	0	0
bit 1	OP_STEREO_DBX	0	0
bit 0 (lsb)	OP_STEREO_NICAM_2CS	1	0
	Total DEC Value	97	96
	Total HEX Value	61	60
OP5			
bit 7 (msb)	OP_AV1	1	1
bit 6	OP_AV2	1	1
bit 5	OP_AV3	1	1
bit 4	OP_CVI	1	1
bit 3	OP_SVHS2	1	1
bit 2	OP_SVHS3	1	1
bit 1	OP_HOTEL_MODE	0	0
bit 0 (lsb)	OP_SIMPLY_FACTORY=OP_BTSC_AVSTEREO	0	0
	Total DEC Value	252	252
	Total HEX Value	FC	FC
OP6			
bit 7 (msb)	OP_PERSONAL_ZAPPING	0	0
bit 6	OP_SMART_SURF	0	0
bit 5	OP_FMTRAP	0	0
bit 4	OP_COMBFILTER	1	1
bit 3	OP_ACTIVE_CONTROL	1	1
bit 2	OP_VIDEO_TEXT	0	0
bit 1	OP_LIGHT_SENSOR	1	1
bit 0 (lsb)	OP_TWIN_TEXT	1	1
	Total DEC Value	27	27
	Total HEX Value	1B	1B
OP7			
bit 7 (msb)	OP_TIME_WIN1	0	0
bit 6	OP_DVB_USB = OP_MALAY	0	0
bit 5	OP_AMBILIGHT	0	0
bit 4	OP_COLUMBUS	1	1
bit 3	OP_COLOR_SYSTEM_AP	1	0
bit 2	OP_SOUND_SYSTEM_AP_1	1	1
bit 1	OP_SOUND_SYSTEM_AP_2	0	0
bit 0 (lsb)	OP_SOUND_SYSTEM_AP_3	0	0
	Total DEC Value	28	20
	Total HEX Value	1C	14

9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

Index of this chapter:

9.1 Introduction

The LC4.8 LCD TV is a global LCD TV for the year 2005. It is the successor of the LC4.6 LCD TV and has screen sizes of 37 inch and 42 inch (in 16:9 ratio); it has a new styling, called Entry+. Globally, there are three different picture qualities available, depending on the model: Pixel Plus, Digital Cristal Clear, and Crystal Clear. The block diagram below (see Figure "Block diagram") shows the Pixel Plus architecture; the architectures of the other models (that are not discussed in this manual) are shown in the block diagram on the next page (see Figure "Block diagram of the internal building blocks").

The architecture consists of a TV and Scaler panel, I/O panel, Side I/O and Local Keyboard panel and Power Supply panel. The functions for video/audio processing, microprocessor (µP), and CC/Teletext (TXT) decoder are all combined in one IC (TDA150xx, item 7217), the so-called third generation Ultimate One Chip (UOC-III) or "Hercules". This chip has the following features:

- Control, small signal, mono/stereo, and extensive Audio/ Video switching in one IC.
- Upgrade with digital sound & video processing.
- Alignment free IF, including SECAM-L/L1 and AM.
- FM sound 4.5/5.5/6.0/6.5, no traps/bandpass filters.
- Full multi-standard colour decoder.
- One Xtal reference for all functions (microprocessor, RCP, TXT/CC, RDS, colour decoder, and stereo sound processor).

9.2 Block Diagram

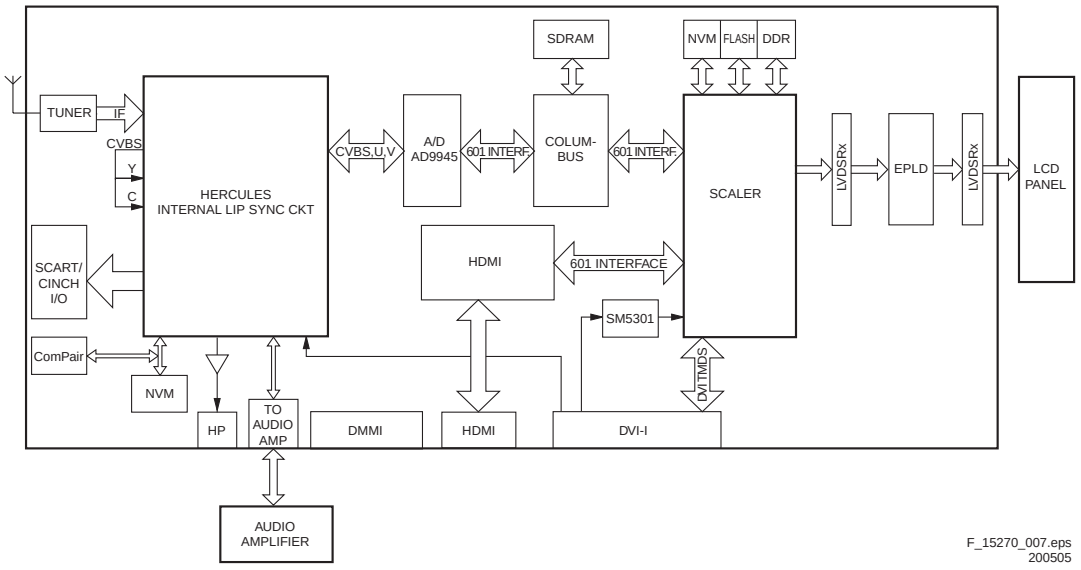


Figure 9-1 Block Diagram

The PLL tuner UV1316E/1318SD/TEDE9 delivers the IF-signal, via audio & video SAW-filters, to the Video Signal Processor and FLASH embedded TEXT/Control/Graphics Micro Controller TDA120x1 (item 7011, also called Hercules). This IC has the following functions:

- Analogue Video Processing
- Sound Demodulation
- Audio Interfaces and switching
- Volume and tone control for loudspeakers
- Reflection and delay for loudspeaker channels
- Micro Controller
- Data Capture
- Display

The Hercules has one input for the internal CVBS signal and a video switch with 3 external CVBS inputs and a CVBS output. All CVBS inputs can be used as Y-input for Y/C signals. However, only 2 Y/C sources can be selected because the circuit has 2 chroma inputs. It is possible to add an additional CVBS(Y)/C input (CVBS/YX and CX) when the YUV interface and the RGB/YPRPB input are not needed. There are two rear analogue video inputs: AV is for SVHS in and video (CVBS) in, and CVI-1 is meant for RGB/YUV in). The rear VIDEO OUT cinch connector can be used for monitoring purposes: WYSIWYR (What you see is what you record).
Depending on the model of the TV set, the Hercules delivers its RGB signals either directly to the Scaler IC or indirectly, via a Columbus chip (for 2D/3D comb filtering and spatial/temporal noise reduction, for its description: see further down in this text). The EPLD, which is present in the Pixel Plus models discussed in this manual, provides additional sharpening to the picture. For a general outline, see the table and the block diagrams below, in which the architectures of the various models are given, together with their electronic building blocks.

Table 9-1 Models and picture quality

Model	Picture quality
37PF7320/69 /79 / 93 /98	Pixel Plus
42PF7420/69 /79 / 93 /98	Pixel Plus
N.a.	Digital Crystal Clear
N.a.	Crystal Clear

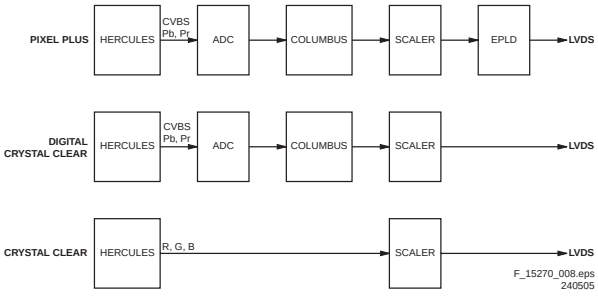


Figure 9-2 Block diagram of the internal building blocks

The Genesis GM1501 Malibu Scaler IC can receive two video input signals: SDTV (directly from Hercules or via Columbus), DVI (from an external DVI source), or PC (from external computer).
After the video processing, the digital data is sent via a Low Voltage Differential Signalling bus to the LCD panel. LVDS is used to improve data speed and to reduce EMI significantly.
There are two I^2C lines and two interrupt and communication lines (TV_IRQ and TV_SC_COM) for the Scaler control. The Scaler communicates with the Hercules as a slave device. To avoid buffer overflow at the Scaler side, the TV_SC_COM line provides the necessary hardware flow control. To allow bi-directional communication, the Scaler can initiate a service interrupt-request to the Hercules via the TV_IRQ line.

The Hercules, and EEPROM are supplied with 3.3 V, which is also present during STANDBY.
The EEPROM, or NVM (Non Volatile Memory) is used to store the settings.

The sound part is built up around the Hercules. The Source Selection, Decoding and Processing are all done by the Hercules.

Power supply input are several DC voltages coming from a supply panel.

9.3 Input/Output

The I/O is divided over two parts: Rear I/O and Side I/O. The rear has two AV inputs with CVBS, Y/C and YUV, a PC (VGA) input, and an HDMI input. The side has a CVBS and Y/C (SVHS) input.
The selection of the external I/O's is controlled by the Hercules.

AV1 / CVI-1: The input of AV1 / CVI-1 is CVBS + YUV + L/R.
AV2: The input of AV2 is Y/C + CVBS + L/R.

PC-VGA/CVI-2: This input is directly going to the Scaler IC. See paragraph “Video: Scaler Part”.

HDMI in / PC-D: This input is directly going to the Scaler IC. See paragraph “Video: Scaler Part”.

9.4 Tuner and IF

A Philips UV1316E/1318SD/TEDE9 Tuner is used in the TV board. The SIF signals are decoded by the Hercules. Tuning is done via I^2C.

9.4.1 Video IF Amplifier

The IF-filter is integrated in a SAW (Surface Acoustic Wave) filter. One for filtering IF-video (1104, in some models: 1105) and one for IF-audio (1106). The type of these filters depends on the standard(s) that has/have to be received.

The output of the tuner is controlled via an IF-amplifier with AGC-control. This is a voltage feedback from pin 31 of the Hercules to pin 1 of the tuner. The AGC-detector operates on top sync and top white level. AGC take-over point is adjusted via the service alignment mode 'Tuner' - 'AGC'. If there is too much noise in the picture, then it could be that the AGC setting is wrong. The AGC-setting could also be mis-aligned if the picture deforms with perfect signal; the IF-amplifier amplifies too much.

9.5 Video: TV Part (Diagrams B1, B2, and B3)

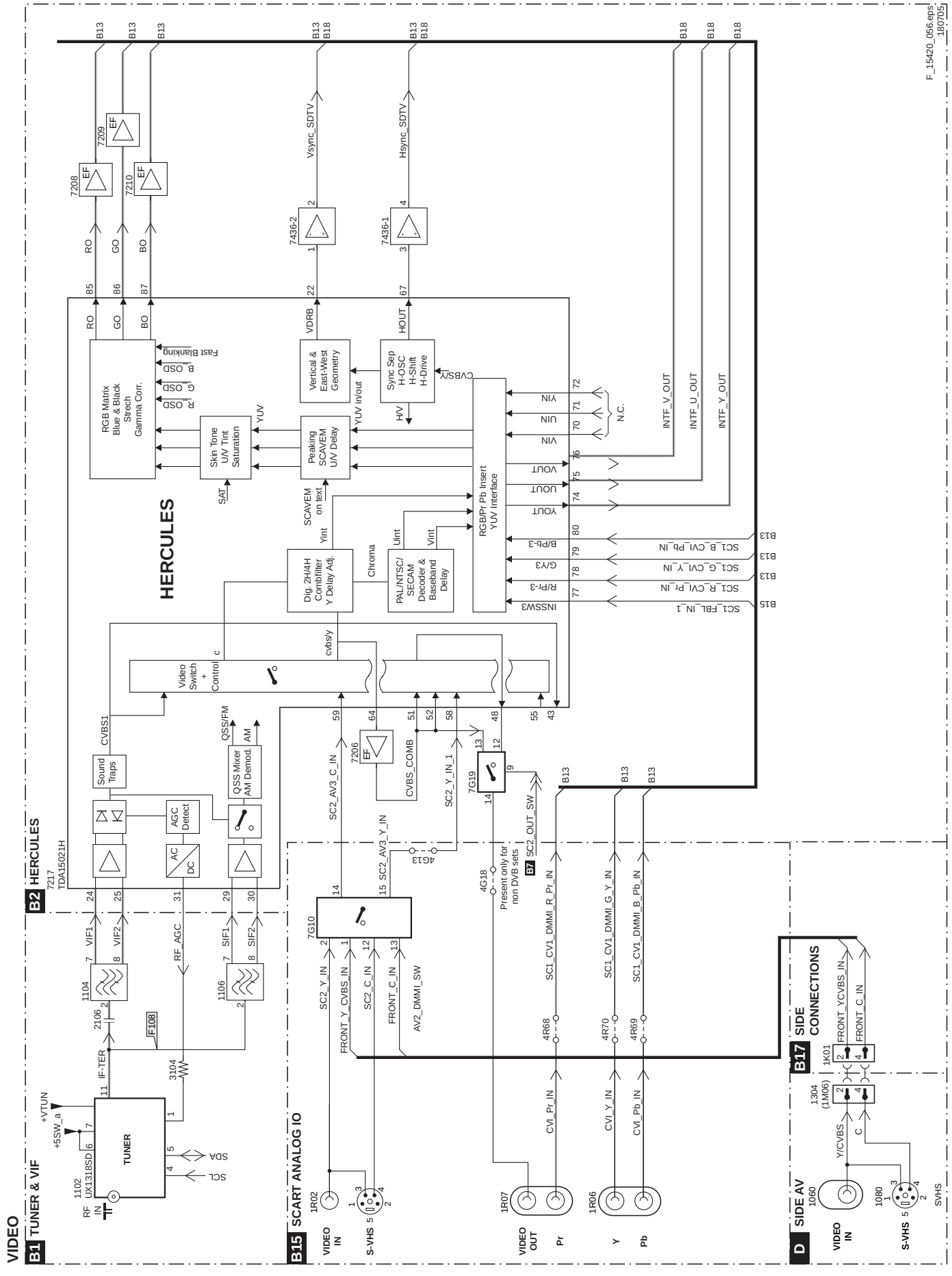


Figure 9-3 Block diagram video processing

The video processing is completely handled by the Hercules
- IF demodulator.
- Chrominance decoder
- Sync separator.
- Horizontal & vertical drive.
- RGB processing.
- CVBS and SVHS source select.

It has also built-in features like:
- CTI.
- Black stretch.
- Blue stretch.
- White stretch.
- Slow start up.
- Dynamic skin tone correction etc.

Further, it also incorporates sound IF traps and filters, and requires only one crystal for all systems.

9.6 Columbus

9.6.1 Introduction

The Columbus is a combination of:
- A **2D/3D Comb filter** for both PAL and NTSC, and
- A **spatial/temporal noise reduction system** for both colour and luminance signals.

The Columbus 3D Comb filter uses digitalised CVBS, U, and V (or C) signals and can be used with or without an external 16 Mbit SDRAM. Without external 16Mbit SDRAM, 3D comb filtering and temporal noise reduction are not possible.

The noise reduction part of the Columbus is controlled by the FBX software using the SNERT interface. The 2D/3D Comb filter part is controlled by the Main software using the I^2C bus.

9.6.2 2D/3D Comb Filter

Introduction
The "3D Comb filter Columbus" is a combined 2D/3D Comb filter function that is part of the Columbus chip (circuit diagram B19, item 7M00). It is a comb filter for both PAL and NTSC.

The 3D Comb filter is used to separate chroma and luminance components out of a CVBS signal. It is of no use when the CVBS signal is a SECAM signal (SECAM signals cannot be combed) The Columbus chip can be used with or without 16 Mbit external SDRAM (circuit diagram B10, item 7B01). When an external SDRAM is connected to the IC, the Comb filter function can work in combined 2D/3D processing (depending on the detected pixel based motion). When no external SDRAM is connected, only 2D Comb filtering is possible.

The Columbus can comb the following standard signals:
- PAL B, PAL G, PAL H, PAL I, PAL D, PAL K: Colour standard PAL, Colour carrier at 4.43 MHz, field frequency: 50 Hz
- PAL M: Colour standard PAL, Colour carrier at 3.58 MHz, field frequency: 60 Hz
- PAL N: Colour standard PAL, Colour carrier at 3.58 MHz, field frequency: 50 Hz
- NTSC M: Colour standard NTSC, Colour carrier at 3.58 MHz, field frequency: 60 Hz

For NTSC signals, the PAL delay line must always be bypassed.

The following signals CANNOT be combed:
- Double Window signals or Multi PIP. For these signals, only one part or even no part of the signal is in relation with the burst. The part that is not in relation with the burst can become very blurred when combed by the Columbus Comb filter. Such a signal must be bypassed. Notch mode is not even an option since e.g. in double window, one part can be a PAL signal while the other part is NTSC or SECAM.
- In cases where a SECAM signal is presented to the Columbus Comb filter; both the luminance and UV path must be bypassed. The PAL delay line inside the Columbus cannot be used for SECAM signals so it must also be bypassed. The luminance path must have luminance at its input instead of CVBS. A chroma delay line outside Columbus must be used for SECAM signals. Reason for this: the Columbus PAL delay line halves the output of the chroma signals in case of SECAM.
- Y/C, YPbPr, and RGB signals do not have to be combed. So both the luminance and UV path must be bypassed. The PAL delay line will also be bypassed.
- In cases where the Columbus Comb filter does not receive a CVBS signal with burst at the right place according to the standard (this includes black and white signals without burst), phase correction results become unpredictable and the Comb filter must be set in bypass (= luminance path bypassed, UV path bypassed, PAL delay line bypassed)
- VCR signals cannot be combed and must be processed in notch mode, or bypassed.

Columbus Modes
The several modes of the Columbus 3D Comb filter are:
- Bypass mode.
- Band-Pass-Notch mode.
- 2D Comb filter modes.
  - Simple median.
  - Median.
- Field Comb filter mode.
- Frame Comb filter mode.

Bypass Mode
The 3D Comb filter can be set in bypass mode. In this mode, the CVBS, U and V signals are just bypassed to the output.

Band-Pass-Notch Mode
This is a mode where no Comb filtering is applied. A "Band Pass Filter" is used to filter the chroma information out of the CVBS signal. A "Notch Filter" is used to subtract the sub carrier out of the CVBS in order to make a luminance signal without chroma sub carrier.
In terms of cross colour and cross luminance, this mode has the worst performance of all. It is only used on these signals where no comb filtering can be applied (non-standard signals and most VCR signals for example).

2D Comb Filter Modes
A Comb filter does an action on a current pixel and a delayed pixel. When the delayed pixel is a line-delayed pixel, we talk about a "Spatial or 2D Comb Filter" (for NTSC the delay must be 1 line, for PAL it must be 2 lines).
Spatial or 2D Comb filters show problems on vertical colour transients and on single coloured lines. For these situations, extra hardware is added in the Columbus chip to avoid these kinds of problems. However even with these extra measures, there are still situations where the 2D Comb filter does not perform optimally (diagonal resolution and single lines with equal luminance content). In order to restrict the working area of the 2D Comb filter to the frequencies where the sub carrier is present, a horizontal band pass filter always precedes a 2D Comb filter.
When a 2D Comb filter has no extra hardware to avoid problems at vertical colour transients (or this extra hardware is switched "off"), the Comb filter is called a "simple median filter". When there is extra hardware to avoid these kinds of problems, the filter is called a "median filter".

Field Comb Filter Mode
A Comb filter does an action on a current pixel and a delayed pixel. When the delayed pixel is a field-delayed pixel, we talk

about a “Field Comb Filter”. Field Comb filters are only for PAL of commercial interest.
Field Comb filters show also problems on vertical colour transients and on motion. For the vertical transients, a hanging dots detector has been added, however the performance on vertical transients of the field Comb filter, even with this hanging dots detector, is worse than the performance of the 2D Comb filter. On motion, the field Comb filter performs very badly. A motion detector must detect the pixels where there is motion and on these pixels, the Comb filter must be forced back to 2D Comb filter mode. This switching back is not implemented with a hard switch, but with a motion controlled fader. When there is a lot of motion, the fader will take a lot of the 2D Comb filter output, when there is less motion, more field-combed signal will be taken.
A field Comb filter is also called a “vertical-temporal filter” because it filters in the vertical and temporal direction.

Frame Comb Filter Mode
A Comb filter does an action on a current pixel and a delayed pixel. When the delay is a frame, we talk about a “Frame Comb Filter”. For NTSC we need a delay of one frame, for PAL however the delay must be two frames.
Frame Comb filters have the best performance, but just like the Field Comb filter, they perform very badly on motion. A motion detector will have to detect motion and on these motion pixels, 2D Comb filtering will have to be applied. A frame Comb filter is a pure “temporal filter”.
The Columbus needs an external memory connected to it, before it can do a temporal or vertical-temporal Comb filter action. When no external memory is connected, field or frame Comb filtering is impossible.

Block Diagram
In the next block diagram, two main parts of the Columbus 2D/3D Comb filter can be seen:

- The upper part is what is called the luminance Comb filter. It tries to make an as clean as possible luminance signal out of the CVBS signal at the input.
- The lower part receives U and V signals (sequentially) that are normally only band pass filtered in front of the 3D Comb filter. It filters all left over luminance signals out of it, in order to make an as clean as possible U and V signal.

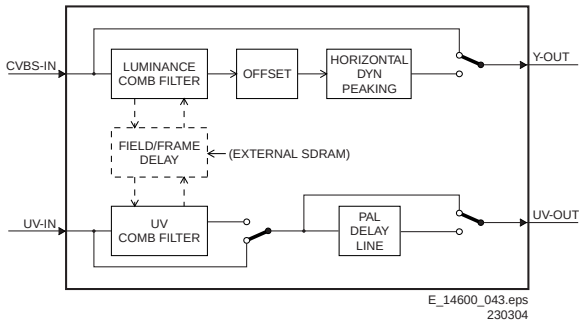


Figure 9-4 Columbus 2D/3D Comb Filter block diagram

The Comb filter has two inputs. One is the CVBS where clean luminance (Y) will be extracted from; the other one is UV where a clean U and V signal will be extracted. Both input signals are **digital** signals.

The field or frame delay is used for the Field and Frame Comb filter mode. An external memory connected to the Columbus IC provides this delay.

Phase correction is done at the inputs of both the Comb filter blocks. There is a phase correction for spatial filtering (called the spatial phase corrector) and a separate phase correction on the signals used for temporal (Frame or Field) Comb filtering (called the temporal phase corrector).

The offset block receives the motion dependant 2D/3D Comb filtered signal as input. The black level of the luminance signal is restored and the result is output. The black level restoration is corrected continuously. However, on VCR signals, this restoration can become unstable. Therefore, on VCR signals, a fixed black level restoration value must be forced.

A horizontal dynamic peaking can be done on the luminance signal. This peaking is adaptive in order not to amplify any cross luminance distortion. It detects where there could be left over sub carrier in the luminance signal and reduces the peaking over there. The detection of the left over cross luminance is different depending on the pre-filter or post-filter mode.
The amount of peaking and coring can be chosen. The peaking algorithm behind it is a simplified copy of the luminance peaking of picnic. After the peaking block, the signal is output as clean luminance.

The bypass switches have the obvious purpose of bypassing the input signal, in case no Comb filtering is wanted.

A PAL delay line is added in the UV path. This is done because a delay line in front of the 3D Comb filter does need an extra vertical filter action on the UV signals. This vertical filtering deteriorates the vertical transient performance for colours. The Columbus Comb filter cannot undo this. However, this reduction in performance can be omitted by putting the PAL delay line after the 3D Comb filter block.
For PAL signals, the PAL delay line in front of the Columbus 3D Comb filter is bypassed and the Columbus delay line is switched “on”. In cases where the delay line in front of Columbus cannot be bypassed, the Columbus PAL delay line is bypassed.
For NTSC signals, the PAL delay line is bypassed as usual.

9.6.3 Noise Reduction and Noise Estimator

The noise reduction function is a sophisticated successor of the noise reduction module from the PICNIC-chip, also known as “LIMERIC”.

Besides the noise reduction part, the Columbus noise reduction module also comprises a noise estimator. This noise estimator (the LORE-noise estimator) is a new design with the ambition of more accuracy and with less control complexity than the existing noise estimators.

9.7 Video: Scaler Part (Diagram B7, B8 and B9)

The Genesis gm1501 Scaler is a dual channel graphics and video processing IC for LCD monitors and televisions incorporating Picture in Picture, up to SXGA output resolutions. The Scaler controls the display processing in an LCD TV, e.g. like the deflection circuit in a CRT-based TV. It controls all the view modes (e.g. like "zooming" and "shifting"). Features like PC (VGA) or HD inputs, are also handled by this part.

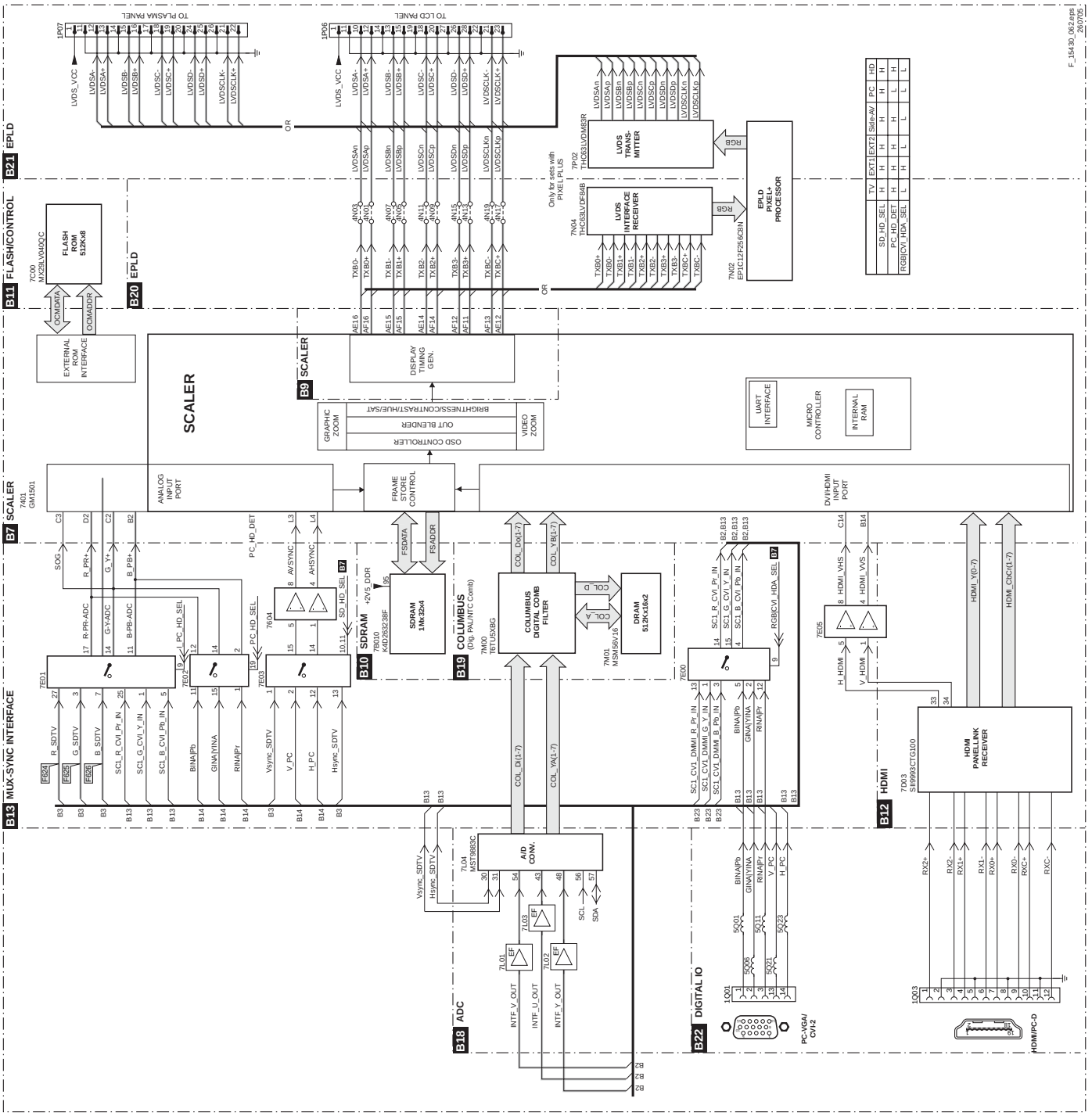


Figure 9-5 Block diagram scaler part

9.7.1 Teletext Path

In Pixel Plus and Digital Crystal Clear models, which have an ADC (B18) and Columbus 3D combfilter (B19), the digital input of the scaler is used for the digital video signal (Columbus output), whereas the analogue RGB input input of the scaler is used for teletext. This means that no mixed mode (video plus teletext simultaneously) is possible. In Crystal Clear models, which do not have an ADC and Columbus, the analogue RGB input of scaler is used for both video and teletext (generated by the Hercules). The digital input of the Scaler is not used in Crystal Clear TV sets. See also the block diagrams at the beginning of this chapter. When faultfinding, checking the teletext path may be useful: if there is sound and teletext, but no video and user menu (blank screen), the digital path (Hercules - ADC - Columbus - Scaler) is faulty. If there is sound but no teletext, the back-end part (Scaler - LCD panel) is faulty.

9.7.2 Features

The Scaler provides several key IC functions:
- Scaling.
- Auto-configuration/ Auto-Detection.
- Various Input Ports:
  - Analog RGB.
  - Video Graphics.
- Integrated LVDS Transmitter.
- On-chip Micro-controller

9.7.3 Inputs

Analog RGB
The RGB input is fed to pins B2, C2 and D2 of the Scaler IC (Genesis GM1501, item 7801, see circuit diagram B8). This input consists of either the Hercules RGB output or the RGB/ YpbPr input of the VGA connector. The Scaler can switch between the two signals via the PC_HD_SEL signal and selection IC SM5301 (see circuit diagram B13).

PC (VGA) Input
The VGA input is processed by the VGA block of the Scaler. The Scaler supports pixel frequencies up to 165MHz. YpbPr format is also supported via the VGA interface and covers a resolution of 480p/560p/720p/1080i.

9.7.4 Output

The Display Output Port provides data and control signals that permit the Scaler to connect to a variety of display devices using a TTL or LVDS interface. The output interface is configurable for single or dual wide TTL/LVDS in 18, 24 or 30-bit RGB pixels format. All display data and timing signals are synchronous with the DCLK output clock. The integrated LVDS transmitter is programmable to allow the data and control signals to be mapped into any sequence depending on the specified receiver format.

9.8 Audio Processing

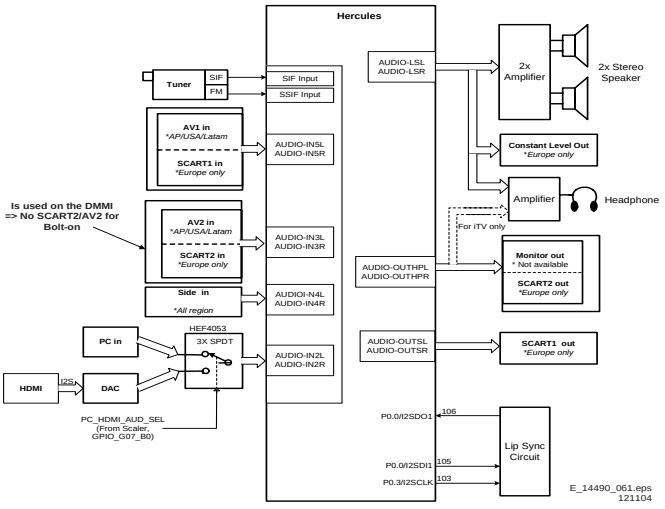


Figure 9-6 Block diagram audio processing

The audio decoding is done entirely via the Hercules. The IF output from the Tuner is fed directly to either the Video-IF or the Sound-IF input depending on the type of concept chosen. There are mainly two types of decoder in the Hercules, an analogue decoder that decodes only Mono, regardless of any standards, and a digital decoder (or DEMDEC) that can decode both Mono as well as Stereo, again regardless of any standards.

In this chassis, the analogue decoder is used in two cases:
- It is used for AM Sound demodulation in the Europe SECAM LL' transmission.
- It is used for all FM demodulation in AV-Stereo sets.

9.8.1 Diversity

The diversity for the Audio decoding can be broken up into two main concepts:
- The Quasi Split Sound concept used in Europe and some AP sets.
- The Inter Carrier concept, used in NAFTA and LATAM.

The UOC-III family makes no difference anymore between QSS- and Intercarrier IF, nearly all types are software-switchable between the two SAW-filter constructions.

Simple data settings are required for the set to determine whether it is using the Inter Carrier or the QSS concept. These settings are done via the "QSS" and "FMI" bit found in SAM mode. Due to the diversity involved, the data for the 2 bits are placed in the NVM location and it is required to write once during startup.

On top of that, it can be further broken down into various systems depending on the region. The systems or region chosen, will in turn affect the type of sound standard that is/are allowed to be decoded.
- For the case of Europe, the standard consists of BG/DK/I/ LL' for a Multi-System set. There are also versions of Eastern Europe and Western Europe set and the standard for decoding will be BG/DK and I/DK respectively. FM Radio is a feature diversity for the Europe sets. The same version can have either FM Radio or not, independent of the system (e.g. sets with BG/DK/I/LL' can have or not have FM radio).
- For the case of NAFTA and LATAM, there is only one transmission standard, which is the M standard. The diversity then will be based on whether it has a dBx noise reduction or a Non-dBx (no dBx noise reduction).
- For the case of AP, the standard consists of BG/DK/I/M for a Multi-System set. The diversity here will then depend on

the region. AP China can have a Multi-System and I/DK version. For India, it might only be BG standard.

9.8.2 Functionality

The features available in the Hercules are as follows:
- Treble and Bass Control.
- Surround Sound Effect that includes:
  - Incredible Stereo.
  - Incredible Mono.
  - 3D Sound (not for AV Stereo).
  - TruSurround (not for AV Stereo).
  - Virtual Dolby Surround, VDS422 (not for AV Stereo).
  - Virtual Dolby Surround, VDS423 (not for AV Stereo).
  - Dolby Pro-Logic (not for AV Stereo).
- Bass Feature that includes:
  - Dynamic Ultra-Bass.
  - Dynamic Bass Enhancement.
  - BBE (not for AV Stereo).
- Auto-Volume Leveler.
- 5 Band Equalizer.
- Loudness Control.

All the features stated are available for the Full Stereo versions and limited features for the AV Stereo

9.8.3 Audio Amplifier

The audio amplifier part is very straightforward. It uses two integrated TDA8931T power amplifiers for the L and R channels; each amplifier IC is able to deliver a maximum output of 20 W_{RMS} continuously in a 4-6 ohm speaker without needing a heatsink.
The operating supply for the amplifier may range from 12 V to 32 V; in the LC04x TV set, depending on the model, supply voltages of 18 V (for the 5 W / 8 ohm version) or 24 V (for the 15 W / 4 ohm version) are used.
Muting is done via the SOUND_ENABLE line connected to pins 7 of both amplifier-ICs, which comes from the Hercules.

9.8.4 Audio: Lip Sync

No Lip Sync adjustments are neccessary in this model.

9.9 Control

9.9.1 Hercules

The System Board has two main micro-controllers on board. These are:
- On-chip x86 micro-controller (OCM) from Genesis LCD TV/ Monitor Controller.
- On-chip 80C51 micro-controller from Philips Semiconductor UOCIII (Hercules) series.

Each micro-controller has it own I^2C bus which hosts its own internal devices.
The Hercules is integrated with the Video and Audio Processor. For dynamic data storage, such as SMART PICTURE and SMART SOUND settings, an external NVM IC is being used. Another feature includes an optional Teletext/Closed Caption decoder with the possibility of different page storage depending on the Hercules type number.

9.9.2 Block Diagram

The block diagram of the Micro Controller application is shown below.

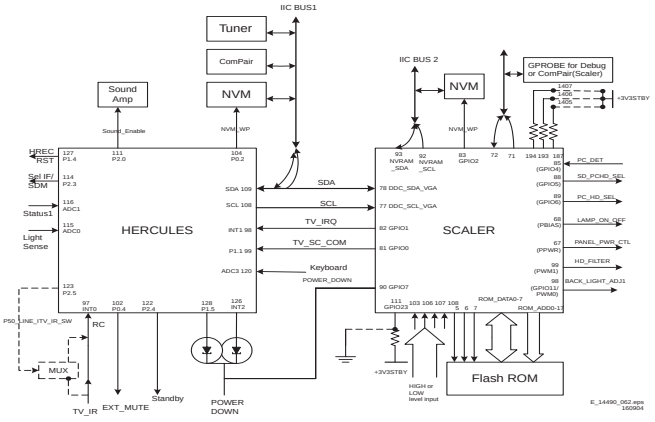


Figure 9-7 Micro Controller block diagram

9.9.3 Basic Specification

The Micro Controller operates at the following supply voltages:
- +3.3 V_{DC} at pins 4, 88, 94, and 109.
- +1.8 V_{DC} at pins 93, 96, and 117.
- I^2C pull up supply: +3.3V_{DC}.

9.9.4 Pin Configuration and Functionality

The ports of the Micro Controller can be configured as follows:
- A normal input port.
- An input ADC port.
- An output Open Drain port.
- An output Push-Pull port.
- An output PWM port.
- Input/Output Port

The following table shows the ports used for the LC04 control:

Table 9-2 Micro Controller ports overview

Pin	Name	Description	Configuration
97	INT0/ P0.5	IR	INT0
98	P1.0/ INT1	TV_IRQ	INT2
99	P1.1/ T0	TV_SC_COM	P1.1
102	P0.4/ I2SWS	EXT_MUTE	P0.4
103	P0.3/ I2SCLK	Lip Sync	I2SCLK
104	P0.2/ I2SDO2	NVM_WP	P0.2
105	P0.1/ I2SDO1	Lip Sync	I2SDO1
106	P0.0/ I2SDI/O	Lip Sync	I2SDI/O
107	P1.3/ T1	PC-TV_LED	P1.3
108	P1.6/ SCL	SCL	SCL
109	P1.7/ SDA	SDA	SDA
111	P2.0/ TPWM	SOUND_ENABLE	P2.0
112	P2.1/ PWM0	(for future use)	-
113	P2.2/ PWM1	(for future use)	-
114	P2.3/ PWM2	SEL_IF	P2.3
115	P3.0/ ADC0	Light Sensor - SDM	ADC0
116	P3.1/ ADC1	STATUS_1	ADC1
119	P3.2/ ADC2	STATUS_2	ADC2
120	P3.3/ ADC3	KEYBOARD	ADC3
122	P2.4/ PWM3	STANDBY	P2.4
123	P2.5/ PWM4	(for future use)	-
126	P1.2/ INT2	(for future use)	-
127	P1.4/ RX	HERC_RESET	-
128	P1.5/ TX	POWER_DOWN	P1.5

The description of each functional pin is explained below:

- **LED.** This signal is used as an indication for the Standby, Remote and Error Indicator. Region diversity:
  - During protection mode, the LED blinks and the set is in standby mode.
  - During error conditions it blinks at a predefined rate.
  - After receiving a valid RC-5 or local keyboard command it flashes once.
  - For sets with error message indication, the LED blinks when message is active and the set is in standby mode.
- **SCL.** This is the clock wire of the two-wire single master bi-directional I^2C bus.
- **SDA.** This is the data wire of the two-wire single master bi-directional I^2C bus.
- **STANDBY.** The Hercules generates this signal. This can enable the power supply in normal operation and disable it during Standby. It is of logic “high” (3.3 V) under normal operation and “low” (0 V) during Standby.
- **IR.** This input pin is connected to an RC5 remote control receiver.
- **SEL-IF.** This is an output pin to switch the Video SAW filter between M system and other systems.
  - 0: NTSC M (default)
  - 1: PAL B/G, DK, I, L
- **NVM_WP.** The global protection line is used to enable and disable write protection to the NVM. When write to the NVM is required, pin 7 of the NVM must be pulled to logic ‘0’ first (via Write_Protect of the micro-controller pin) before a write is performed. Otherwise pin 7 of NVM must always be at logic “1”
  - 0: Disabled
  - 1: Enabled (default)
- **SOUND_ENABLE.** This pin is used to MUTE the audio amplifier. It is configured as push pull.
- **STATUS_1.** This signal is used to read the status of the SCART 1 input.
- **STATUS_2.** This signal is used to read the status of the SCART 2 input.
- **HERC_RESET.** This pin is used to switch the +1.8V supply.
- **POWER_DOWN**. The power supply generates this signal. Logic “high” (3.3 V) under normal operation of the TV and goes “low” (0 V) when the Mains input voltage supply goes below 70 V_{AC}.
- **KEYBOARD**. Following are the Keyboard functions and the step values (8 bit) for it.

Table 9-3 Local keyboard values

Function	Voltage (V_{DC})	Step values (8 bit)
NAFTA Standby	0	0 - 6
Ch +	0.43	7 - 33
Exit Factory (Ch- and Vol-)	0.69	34 - 53
Ch -	0.93	54 - 73
Menu (Vol - and Vol +)	1.19	74 - 96
Vol -	1.49	97 - 121
DVD Eject	1.8	122 - 147
Vol +	2.12	148 - 169

- **TV_IRQ.** This signal is the interrupt from the Scaler IC.
- **TV_SC_COM.** This signal is used for the communication with the Scaler IC.
- **EXT_MUTE.** This signal is used to reduce the Switch-off plop.

9.10 Abbreviation List

0/6/12	SCART switch control signal on A/V board. 0 = loop through (AUX to TV), 6 = play 16:9 format, 12 = play 4:3 format
1080i	1080 visible lines, interlaced
1080p	1080 visible lines, progressive scan
2CS	2 Carrier Sound (or 2 Channel Stereo)
480i	480 visible lines, interlaced
480p	480 visible lines, progressive scan
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control; Control signal used to tune and lock to the correct frequency
AGC	Automatic gain control (feedback) signal to the tuner. This circuit ensures a constant output amplitude regardless of the input amplitude
AM	Amplitude Modulation; A "data encoding to a carrier" method, such that the carrier amplitude is proportional to the data value
AP or A/P	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
ASD	Automatic Standard Detection
AV	External Audio Video
B-SC1-IN	Blue SCART1/EXT1 in
B-SC2-IN	Blue SCART2/EXT2 in
B-TXT	Blue TeleteXT
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz. B= VHF-band, G= UHF-band
BOCMA	Bimos one Chip Mid-end Architecture: video and chroma decoder
C-FRONT	Chrominance front input
CBA	Circuit Board Assembly (also called PCB or PWB)
CL	Constant Level: audio output to connect with an external amplifier
CLUT	Colour Look-Up Table
COLUMBUS	COLour LUMinance Baseband Universal Subsystem. IC performing noise reduction and 2D/3D comb filtering
ComPair	Computer aided rePair. A tool for diagnosing a TV through a PC controlled interface
CSM	Customer Service Mode
CVBS	Composite Video and Blanking Signal; A single video signal that contains luminance, colour, and timing information
CVBS-EXT	CVBS signal from external source (VCR, VCD, etc.)
CVBS-INT	CVBS signal from internal Tuner
CVBS-MON	CVBS monitor signal
CVBS-TER-OUT	CVBS TERrestrial OUTput signal
DAC	Digital to Analogue Converter
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DFU	Directions For Use: Owner's manual
DNR	Dynamic Noise Reduction / Digital Noise Reduction; Noise reduction feature of the set
DRAM	Dynamic RAM; dynamically refreshed RAM
DSP	Digital Signal Processing
DST	Dealer Service Tool; Special remote control designed for dealers to enter

	e.g. service mode (a DST-emulator is available in ComPair)
DTS	Digital Theatre System; A multi-channel surround sound format, similar to Dolby Digital
DVD	Digital Versatile Disc
EEPROM	Electrically Erasable and Programmable Read Only Memory
EPG	Electronic Program Guide: system used by broadcasters to transmit TV guide information (= NexTView)
EU	Europe
EXT	EXTernal (source), entering the set by SCART or by cinches (jacks)
FBL	Fast BLanking; DC signal accompanying RGB signals. To blank the video signal when it is returning from the right side of the screen to the left side. The video level is brought down below the black video level
FBL-SC1-IN	Fast blanking signal for SCART1 in
FBL-SC2-IN	Fast blanking signal for SCART2 in
FBL-TXT	Fast Blanking Teletext
FM	Field Memory; A memory chip that is capable of storing one or more TV picture fields / Frequency Modulation; A technique that sends data as frequency variations of a carrier signal
FMR	Radio receiver that can receive the FM Band 87.5 - 108 MHz
FRC	Frame Rate Converter
FRONT-C	Front input chrominance (SVHS)
FRONT-DETECT	Control line for detection of headphone insertion, Service Mode jumper, power failure detection
FRONT-Y_CVBS	Front input luminance or CVBS (SVHS)
G-SC1-IN	Green SCART1/EXT1 in
G-SC2-IN	Green SCART2/EXT2 in
G-TXT	Green teletext
H	H_sync to the module
HA	Horizontal Acquisition; horizontal sync pulse
HD	High Definition
HP	HeadPhone
I	Monochrome TV system. Sound carrier distance is 6.0 MHz. VHF- and UHF-band
I^2C	Integrated IC bus
I^2S	Integrated IC Sound bus
IC	Integrated Circuit
IF	Intermediate Frequency
Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of lines. The fields are written in "pairs", causing line flicker.
IR	Infra Red
IRQ	Interrupt ReQuest
Last Status	The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customer's preferences
LATAM	LATin AMerica
LC04	Philips chassis name for LCD TV 2004 project
LCD	Liquid Crystal Display
LED	Light Emitting Diode; A semiconductor diode that emits light when a current is passed through it
LINE-DRIVE	Horizontal (line) deflection drive signal (for the Line transistor)
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
LS	LoudSpeaker
LVDS	Low Voltage Differential Signalling, data transmission system for high speed and low EMI communication.
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz. M= 525 lines @ 60 Hz, N= 625 lines @ 50 Hz
MOSFET	Metal Oxide Semiconductor Field Effect Transistor
MPEG	Motion Pictures Experts Group. An ISO/IEC body that has given its name to an image compressing scheme for moving video
MSP	Multi-standard Sound Processor: ITT sound decoder
MUTE	MUTE Line
NC	Not Connected
NICAM	Near Instantaneously Companded Audio Multiplexing; This is a digital sound system, mainly used in Europe
NTSC	National Television Standard Committee. Colour system used mainly in North America and Japan. Colour carrier NTSC M/N = 3.579545 MHz, NTSC 4.43 = 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
NVM	Non Volatile Memory; IC containing data such as alignment values, preset stations
O/C	Open Circuit
ON/OFF LED	On/Off control signal for the LED
OSD	On Screen Display
PAL	Phase Alternating Line. Colour system used mainly in Western Europe (colour carrier = 4.433619 MHz) and South America (colour carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)
PC	Personal Computer
PCB	Printed Circuit Board (or PWB)
PIG	Picture In Graphic
PIP	Picture In Picture
PLL	Phase Locked Loop. Used, for example, in FST tuning systems. The customer can directly provide the desired frequency
Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.
PWB	Printed Wiring Board (also called PCB or CBA)
RAM	Random Access Memory
RC	Remote Control transmitter
RC5 or 6	Remote Control system 5 or 6, the signal from the remote control receiver
RGB	Red, Green, and Blue colour space; The primary colour signals for TV. By mixing levels of R, G, and B, all colours (Y/C) are reproduced
RGBHV	Red, Green, Blue, Horizontal sync, and Vertical sync
ROM	Read Only Memory
SAM	Service Alignment Mode
SC	SandCastle: two-level pulse derived from sync signals
SC-IN	SCART in
SC-OUT	SCART out
S/C	Short Circuit
SCART	Syndicat des Constructeurs d'Appareils Radiorécepteurs et

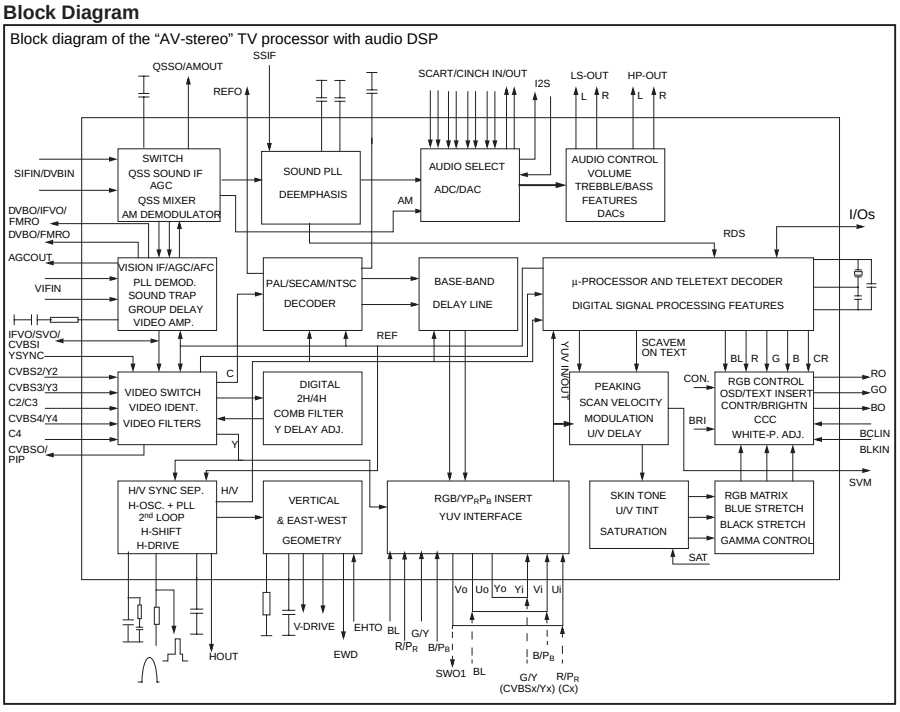
	Téléviseurs; This is a 21-pin connector used in EU, that carries various audio, video, and control signals (it is also called Péritel connector)
SCL	Serial CLock Signal on I^2C bus
SD	Standard Definition
SDA	Serial DAta Signal on I^2C bus
SDRAM	Synchronous DRAM
SECAM	SÉquence Couleur Avec Mémoire; Colour system mainly used in France and East Europe. The chroma is FM modulated and the R-Y and B-Y signals are transmitted line sequentially. Colour carriers= 4.406250 MHz and 4.250000 MHz
SIF	Sound Intermediate Frequency
SMPS	Switched Mode Power Supply
SND	SouND
SNDL-SC1-IN	Sound left SCART1 in
SNDL-SC1-OUT	Sound left SCART1 out
SNDL-SC2-IN	Sound left SCART2 in
SNDL-SC2-OUT	Sound left SCART2 out
SNDR-SC1-IN	Sound right SCART1 in
SNDR-SC1-OUT	Sound right SCART1 out
SNDR-SC2-IN	Sound right SCART2 out
SNDR-SC2-OUT	Sound right SCART2 out
SOPS	Self Oscillating Power Supply
S/PDIF	Sony Philips Digital InterFace; This is a consumer interface used to transfer digital audio
SRAM	Static RAM
STBY	STandBY
SVHS	Super Video Home System
SW	Software or Subwoofer or Switch
THD	Total Harmonic Distortion
TXT	Teletext; TXT is a digital addition to analogue TV signals that contain textual and graphical information (25 rows x 40 columns). The information is transmitted within the first 25 lines during the Vertical Blank Interval (VBI)
µP	Microprocessor
VA	Vertical Acquisition
VL	Variable Level out: processed audio output towards external amplifier
VCR	Video Cassette Recorder
VGA	Video Graphics Array; 640x480 (4:3)
WD	Watch Dog
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
XTAL	Quartz crystal
Y	Luminance signal
Y/C	Y consists of luminance signal, blanking level and sync; C consists of chroma (colour) signal
YPbPr	This is a scaled version of the YUV colour space. Y= Luminance, Pb/Pr= Colour difference signals B-Y and R-Y, other amplitudes w.r.t. to YUV
YUV	Colour space used by the NTSC and PAL video systems. Y is the luminance and U/V are the colour difference signals

9.11 IC Data Sheets

This section shows the internal block diagrams and pin layouts of ICs that are drawn as "black boxes" in the electrical diagrams (with the exception of "memory" and "logic" ICs).

9.11.1 Diagram B2, Type TDA15021H (IC7217, Hercules)

Block Diagram



Pin Configuration

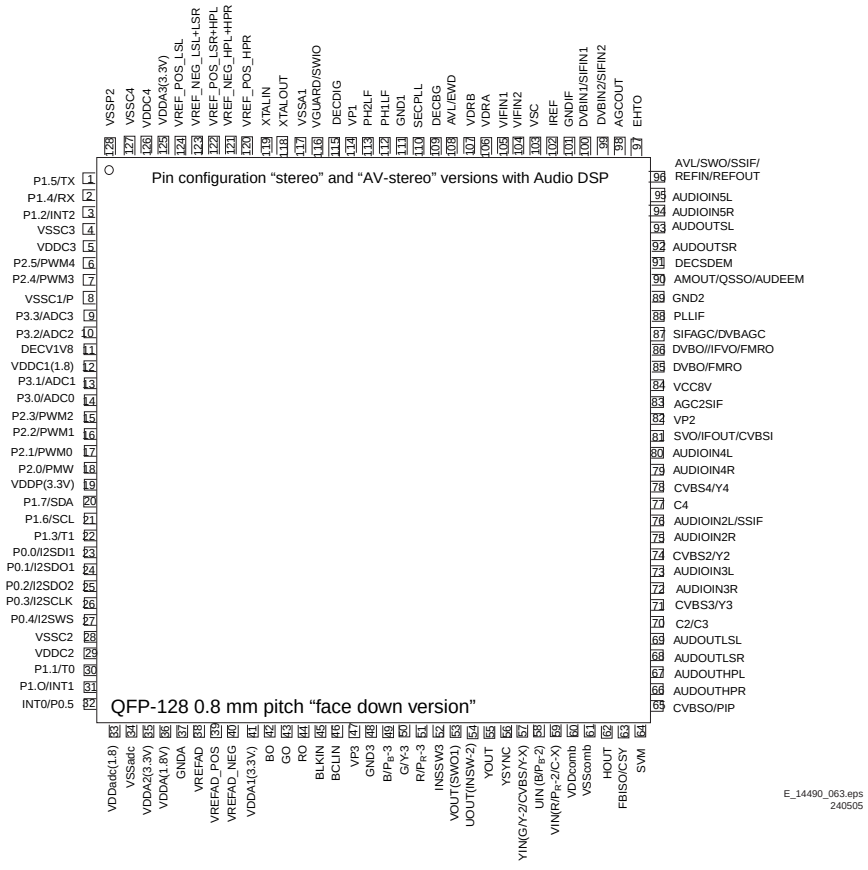


Figure 9-8 Internal block diagram and pin configuration

9.11.2 Diagram B19, Type T6TU5XB (IC7M00, Columbus)

Figure 1 Package outline (top view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
A	WEB/ DAVB	UVA0 /Di0	UVA2 /Di2	UVA4 /Di4	UVA6 /Di6	UVA8 /Di8	SEL656	TST1	YA2	YA4	YA6	YA8	VA	HREF	SDA	A
B	YB8	VSS	UVA1 /Di1	UVA3 /Di3	UVA5 /Di5	UVA7 /Di7	YA0 /Di9	BISTEN	YA1	YA3	YA5	YA7	WEA/ DAVA	VSS	SCL	B
C	YB7	YB6	VSS	VDDS	VSS	VSS	VDDC	VDDC	VSS	VSS	VDDC	VDDS	VSS	SNDA	SNRST	C
D	YB5	YB4	VDDC	N.C.									VSS	SNCL	TCK	D
E	YB3	YB2	VSS										VDDC	TMS	TDO	E
F	TST2	YB1	VSS										VSS	TRST	TDI	F
G	CLKASB	YB0 /Do9	VDDS										VDDS	A0ICC	RESET	G
H	CLKASA	UVB8/ Do8	TST3										VDDC	CLK EXT	CLKSEL	H
J	UVB7 /Do7	UVB6/ Do6	VSS										VSS	CLK	WEN	J
K	UVB5 /Do5	UVB4/ Do4	VDDC										VSS	CASN	RASN	K
L	UVB3 /Do3	UVB2 /Do2	VSS										VDDS	DQM	DQ16	L
M	UVB1 /Do1	UVB0 /Do0	VDDS										VSS	DQ14	DQ15	M
N	AVD	N.C.	VDDS	VSS	VSS	VDDC	VSS	VDDS	VDDC	VSS	VDDS	VSS	VSS	VDDS	DQ13	N
P	AVS	VSS	A7	A9	A2	A0	A11	DQ7	DQ6	DQ4	DQ3	DQ1	VDDS	VSS	DQ12	P
R	A4	A5	A6	A8	A3	A1	A10	DQ8	VSS	DQ5	VSS	DQ2	DQ9	DQ10	DQ11	R
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	

COLUMBUS TOP-VIEW

PPA Version 2.7

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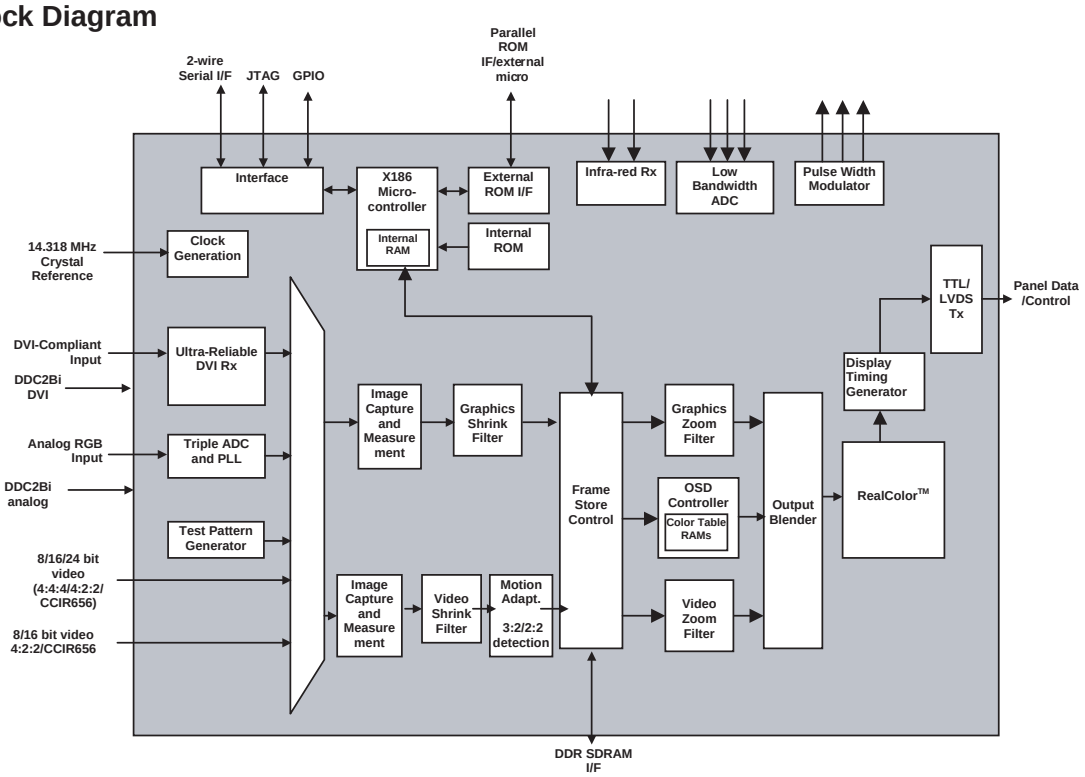
200804

Figure 9-9 Pin configuration

9.11.3 Diagram B7+B8+B9, Type GM1501 (IC7401, Genesis)

Block Diagram



Pin Configuration

	1	2	3	4	5	6	7	8	9	10	11	12	13
A	NC	ADC_3.3	ADC_1.8	ADC_1.8	ADC_DGND	RXC+	DVI_GND	RX0+	RX1+	RX2+	DVI_GND	LBADC_N3	D_GND
B	BLUE-	BLUE+	ADC_3.3	ADC_DGND	DVI_GND	RXC-	DVI_GND	RX0-	RX1-	RX2-	REXT	LBADC_N2	D_GND
C	GREEN-	GREEN+	SOG	ADC_AGND	NC	DVI_3.3	DVI_GND	DVI_3.3	DVI_3.3	DVI_3.3	DVI_3.3	LBADC_N1	LBADC_33
D	RED-	RED+	ADC_3.3	ADC_AGND	NC	DVI_1.8	DVI_GND	DVI_1.8	DVI_1.8	DVI_1.8	DVI_GND	LBADC_ RETURN	LBADC_GND
E	ADC_AGND	ADC_AGND	ADC_3.3	ADC_AGND									
F	NC	VDDD33_ PLL	VSSA33_ RPLL	VDDA33_ RPLL									
G	VDDA33_ FPLL	VSSD33_ PLL	TCLK	XTAL									
H	VDDD33_ SDDS	VSSA33_ SDDS	VDDA33_ SDDS	VSSA33_ FPLL									
J	VDDD33_ DDDS	VSSA33_ DDDS	VDDA33_ DDDS	VSSD33_ SDDS									
K	RESETn	ACS_ RSET_HD	NC	VSSD33_ DDDS						CORE_1.8	CORE_1.8	D_GND	D_GND
L	OCM_INT2	OCM_INT1	AVSYNC	AHSYNC						D_GND	CORE_1.8	D_GND	D_GND
M	OCM_UDO	OCM_UDI	IR0	IR1						D_GND	D_GND	D_GND	D_GND
N	VGA_SDA	VGA_SCL	DVI_SDA	DVI_SCL						D_GND	D_GND	D_GND	D_GND
P	OCM_CS1n	OCM_CS2n	MSTR_SDA	MSTR_SCL						D_GND	D_GND	D_GND	D_GND
R	ROM_CSn	OCM_REn	OCM_WEn	EXTCLK						D_GND	D_GND	D_GND	D_GND
T	OCMADDR 17	OCMADDR 18	OCMADDR 19	OCM_CS0n						D_GND	CORE_1.8	D_GND	D_GND
U	OCMADDR 13	OCMADDR 14	OCMADDR 15	OCMADDR 16						CORE_1.8	CORE_1.8	D_GND	D_GND
V	OCMADDR 9	OCMADDR 10	OCMADDR 11	OCMADDR 12									
W	OCMADDR 6	OCMADDR 7	OCMADDR 8	IO_3.3									
Y	OCMADDR 3	OCMADDR 4	OCMADDR 5	IO_3.3									
AA	OCMADDR 0	OCMADDR 1	OCMADDR 2	IO_3.3									
AB	OCMDATA13	OCMDATA14	OCMDATA15	IO_3.3									
AC	OCMDATA10	OCMDATA11	OCMDATA12	IO_3.3	GPIO_G09_B2 (DEGRN0)	IO_3.3	DCLK	IO_3.3	GPIO_G07_B2 (DERED4)	IO_3.3	SHIELD[1] (DEGRN3)	LVDSB_3.3	LVDSB_GND
AD	OCMDATA9	OCMDATA6	OCMDATA3	OCMDATA0	GPIO_G09_B3 (DEGRN1)	GPIO_G08_B0 (DORED0)	DEN	GPIO_G08_B5 (DOBLU1)	GPIO_G07_B3 (DERED5)	GPIO_G07_B6 (DERED8)	SHIELD[2] (DEGRN4)	LVDSB_3.3	LVDSB_3.3
AE	OCMDATA8	OCMDATA5	OCMDATA2	GPIO_G09_B0 (DERED0)	GPIO_G09_B4 (DEBLU0)	GPIO_G08_B1 (DORED1)	GPIO_G08_B3 (DOGRN1)	GPIO_G07_B0 (DERED2)	GPIO_G07_B4 (DERED6)	GPIO_G07_B7 (DERED9)	SHIELD[3] (DEGRN5)	BC+ (DEGRN8)	SHIELD[4] (DEBLU2)
AF	OCMDATA7	OCMDATA4	OCMDATA1	GPIO_G09_B1 (DERED1)	GPIO_G09_B5 (DEBLU1)	GPIO_G08_B2 (DOGRN0)	GPIO_G08_B4 (DOBLU0)	GPIO_G07_B1 (DERED3)	GPIO_G07_B5 (DERED7)	SHIELD[0] (DEGRN2)	B3+ (DEGRN6)	B3- (DEGRN7)	BC- (DEGRN9)

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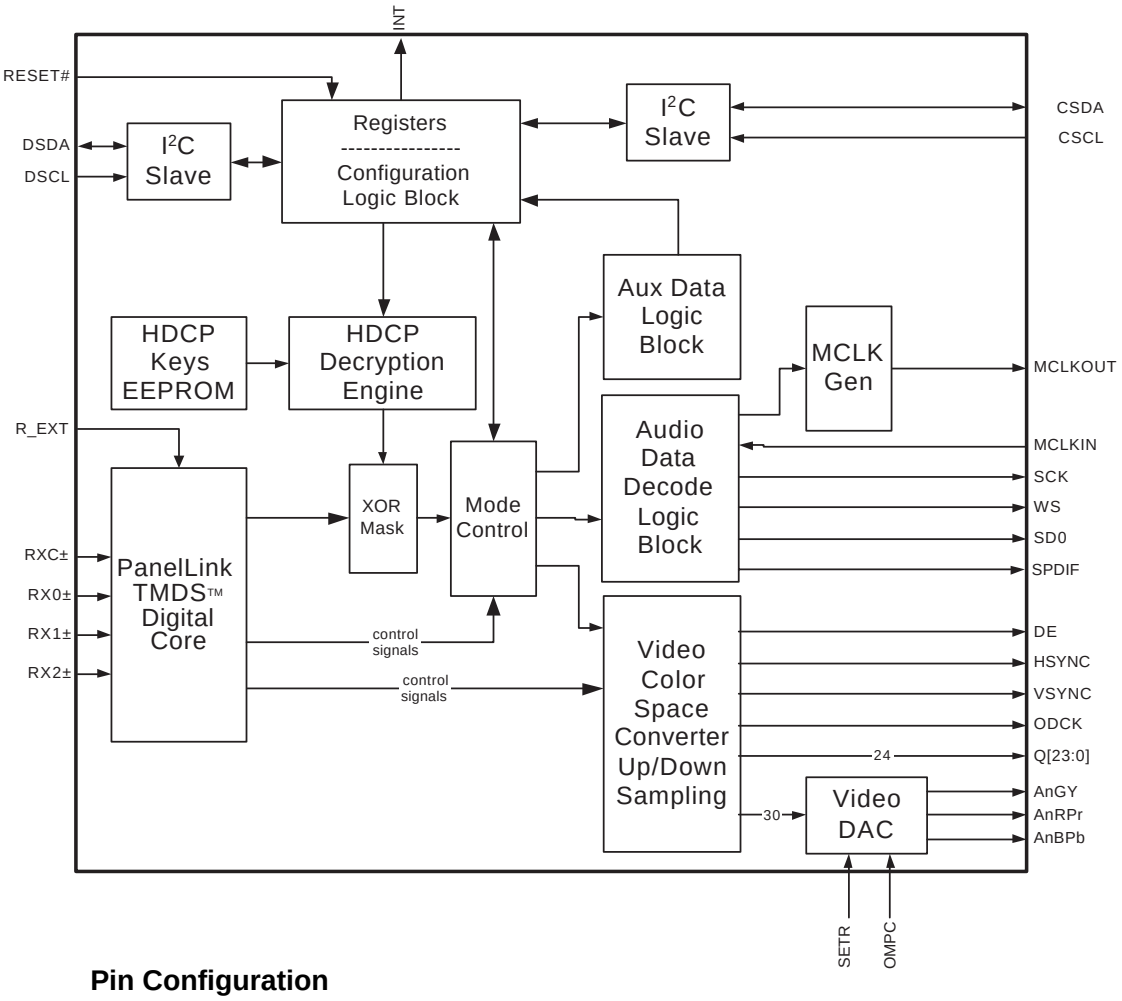
241204

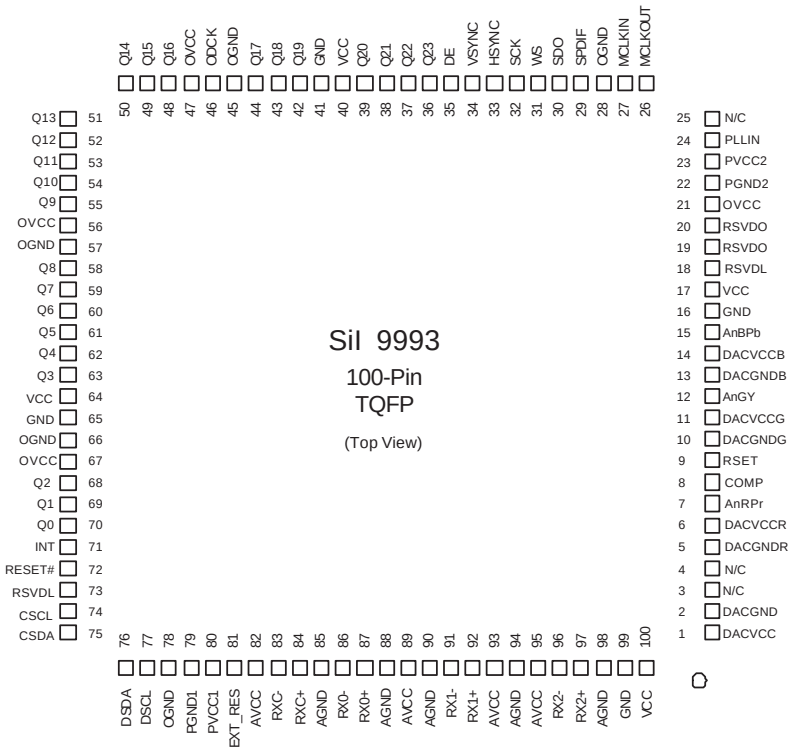
Figure 9-10 Internal block diagram and pin configuration

9.11.4 Diagram B12, Type S9993CT (IC7D03, HDMI Panellink), Reserved

Block Diagram



Pin Configuration



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170305

Figure 9-11 Internal block diagram and pin configuration

10. Spare Parts List

Set Level

Various

1004▲	9322 220 87682	LC370W01-A6 (LPL)
1005	3104 328 38021	Supply LCD 32"
1006	3104 328 36412	Audio Standby supply
8103	3104 311 06641	Cable10p/180/10p
8120▲	3104 311 07231	Cable 6p/560/6p
8136▲	3104 311 07951	Cable 11P/680/11P
8146	3104 311 07401	Cable 11P/180/11P
8150	3104 311 09701	Cable 31P/380/30P
8152▲	3104 311 06811	Cable 9P/340/9P
8302▲	3104 311 07591	Cable 7P/820/7P
8304	3104 311 08291	Cable 4P/680/4P
8305▲	3104 311 08401	Cable 3P/280/3P
8306	3104 311 08351	Cable 2P3/340/2P3
8308▲	3104 311 06951	Cable 2P3/180/2P
8309	3104 311 08321	Cable 3P/680/3P
8316	3104 311 07261	Cable 12P/120/12P
8317▲	3104 311 08191	Cable 12P/1K2/12P

Set Level

Various

1112	3104 328 39571	LED panel LC04SD2
1114	3104 328 39561	Side control LC04SD2
1116	3104 328 41731	Side I/O no usb
8101	3104 311 10171	Cable 3p/1000/3p
8735	3104 311 07491	Cable 2p3/480/2p
8736	3104 311 08481	Cable 2p3/1000/2 POSI

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5213	2441 257 30020	Loudspeaker 8Ω 10W
5214	2441 257 30020	Loudspeaker 8Ω 10W

Not applicable yet

LCD Supply 37" [A]

Various

1007▲	4822 071 55002	Fuse T5A 250V
1302	4822 252 60151	Surge protect
1303	4822 252 60151	Surge protect
1305	4822 267 10735	Connector 3p
1306	2422 025 16374	Connector 2p m
1308	4822 265 20723	Connector 2p
1314	4822 265 11253	Fuse holder
1315	4822 265 11253	Fuse holder
1350▲	2422 132 07411	Relay 1p 5V 5A

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2002	2020 012 00006	680µF 20% 25V
2003	4822 124 80061	1000µF 20% 25V
2006	5322 126 11578	1nF 10% 50V 0603
2007	2020 552 96684	470nF 10% 25V 0805
2008	4822 126 14583	470nF 10% 16V 0805
2009	4822 126 13881	470pF 5% 50V
2010	4822 124 40207	100µF 20% 25V
2012	4822 126 13862	1.5nF 10% 2kV
2013	4822 126 13862	1.5nF 10% 2kV
2014	4822 126 13451	2.2nF 10% 2kV
2015	5322 126 11583	10nF 10% 50V 0603
2016	2238 586 59812	100nF 20% 50V 0603
2018	4822 124 12417	2200µF 20% 25V
2019	5322 126 11583	10nF 10% 50V 0603
2020	2020 021 00039	1800µF 20% 35V
2021	4822 126 13881	470pF 5% 50V
2022	2020 021 00039	1800µF 20% 35V
2023	2020 552 96684	470nF 10% 25V 0805
2024	2238 586 59812	100nF 20% 50V 0603
2025	2022 552 05679	1µF 10% 16V 0805
2026	4822 126 14238	2.2nF 50V 0603
2028	5322 126 11578	1nF 10% 50V 0603
2029	5322 126 11578	1nF 10% 50V 0603
2031	5322 126 11583	10nF 10% 50V 0603
2033	2022 552 05679	1µF 10% 16V 0805
2034	4822 124 12417	2200µF 20% 25V
2035	5322 126 11578	1nF 10% 50V 0603
2036	5322 126 11578	1nF 10% 50V 0603
2037	4822 126 14238	2.2nF 50V 0603
2038	2020 021 00039	1800µF 20% 35V
2039	5322 126 11583	10nF 10% 50V 0603
2040	4822 126 14249	560pF 10% 50V 0603
2041	2020 021 00039	1800µF 20% 35V
2042	5322 126 11578	1nF 10% 50V 0603
2043	2020 021 00039	1800µF 20% 35V
2044	5322 126 11578	1nF 10% 50V 0603
2045	5322 126 11578	1nF 10% 50V 0603
2046	3198 017 34730	47nF 16V 0603
2047	5322 126 11583	10nF 10% 50V 0603
2048	5322 126 11578	1nF 10% 50V 0603
2049	5322 126 11578	1nF 10% 50V 0603
2050	5322 126 11578	1nF 10% 50V 0603
2051	5322 126 11583	10nF 10% 50V 0603
2052	4822 126 14238	2.2nF 50V 0603
2053	4822 126 13881	470pF 5% 50V
2054	4822 126 13881	470pF 5% 50V
2055	4822 126 14238	2.2nF 50V 0603
2056	4822 126 14238	2.2nF 50V 0603
2057	4822 126 14238	2.2nF 50V 0603
2058	2238 867 18101	100pF 1% 50V 0603
2059	2222 375 24153	15nF 5% 1kV
2060	2222 375 24153	15nF 5% 1kV
2061	2238 867 18101	100pF 1% 50V 0603
2062	2238 867 18101	100pF 1% 50V 0603
2063	2238 586 59812	100nF 20% 50V 0603
2300▲	2222 339 22474	470µF 20% 275V
2301▲	2222 339 22474	470µF 20% 275V
2307▲	2252 811 95065	220pF 10% 250V
2316	2020 024 00001	330µF 20% 400V
2318▲	2252 811 95065	220pF 10% 250V
2319	2222 338 22105	1µF 20% 275V
2320	2020 024 00001	330µF 20% 400V

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3000▲	4822 052 10478	4.7Ω 5% 0.33W
3001	4822 051 30101	100Ω 5% 0.062W
3002	4822 051 30222	2.2kΩ 5% 0.062W
3003	4822 051 30472	4.7Ω 5% 0.062W
3004	4822 051 30273	27kΩ 5% 0.062W
3005	4822 051 30333	33kΩ 5% 0.062W
3006	4822 051 30103	10kΩ 5% 0.062W
3007	4822 051 30103	10kΩ 5% 0.062W
3008	4822 051 30331	330Ω 5% 0.062W
3009	4822 051 30332	3.3Ω 5% 0.062W
3010	4822 051 30471	47Ω 5% 0.062W
3011	4822 051 30471	47Ω 5% 0.062W
3012	4822 051 30223	22kΩ 5% 0.062W
3013	4822 051 30103	10kΩ 5% 0.062W
3014▲	4822 052 10101	100Ω 5% 0.33W
3015▲	4822 052 10479	47Ω 5% 0.33W
3016	4822 051 30332	3.3Ω 5% 0.062W
3017▲	4822 052 10101	100Ω 5% 0.33W
3018▲	4822 052 10479	47Ω 5% 0.33W
3019	4822 051 30332	3.3Ω 5% 0.062W
3020	4822 051 30332	3.3Ω 5% 0.062W
3021	4822 051 20229	22kΩ 5% 0.1W
3022	4822 051 30681	680Ω 5% 0.062W
3023	4822 051 30103	10kΩ 5% 0.062W
3025	4822 051 30152	1.5Ω 5% 0.062W
3026	2120 368 90118	Potm. lin. 470Ω hor.
3027	4822 117 13632	100kΩ 1% 0603 0.62W
3028	4822 051 30102	1kΩ 5% 0.062W
3029	4822 051 30332	3.3Ω 5% 0.062W
3030	4822 051 30183	18kΩ 5% 0.062W
3031	4822 051 30103	10kΩ 5% 0.062W
3032	4822 051 30223	22kΩ 5% 0.062W
3033	4822 051 30561	560Ω 5% 0.062W
3034	4822 051 30471	47Ω 5% 0.062W
3035	4822 051 30101	100Ω 5% 0.062W
3036	4822 051 30103	10kΩ 5% 0.062W
3037	4822 051 30153	15kΩ 5% 0.062W
3039	4822 051 30102	1kΩ 5% 0.062W
3040	3198 021 38220	8.2kΩ 5% 0.062W 0603
3041	4822 051 30333	33kΩ 5% 0.062W
3042	4822 051 30222	2.2kΩ 5% 0.062W
3043	4822 051 30109	10Ω 5% 0.062W
3044	4822 051 30103	10kΩ 5% 0.062W
3045	4822 051 20229	22kΩ 5% 0.1W
3046	4822 051 20229	22kΩ 5% 0.1W
3047	4822 051 30479	47Ω 5% 0.062W
3048	4822 051 30272	2.7kΩ 5% 0.062W
3049	4822 117 13632	100kΩ 1% 0603 0.62W
3051	4822 051 30103	10kΩ 5% 0.062W
3052	4822 051 30153	15kΩ 5% 0.062W
3054	4822 051 30683	68kΩ 5% 0.062W
3055	4822 051 30221	220Ω 5% 0.062W
3056	4822 051 30221	220Ω 5% 0.062W
3057	4822 051 30221	220Ω 5% 0.062W
3059	5322 117 13019	100kΩ 1% 0.063W 0603
3060	4822 051 30103	10kΩ 5% 0.062W
3061	4822 051 30332	3.3Ω 5% 0.062W
3062	4822 051 30332	3.3Ω 5% 0.062W
3063	4822 051 30103	10kΩ 5% 0.062W
3065	4822 051 30102	1kΩ 5% 0.062W
3071	4822 050 25602	5K60 1% 0,6W
3073	4822 050 25602	5K60 1% 0,6W
3076	4822 050 25602	5K60 1% 0,6W
3077	4822 050 25602	5K60 1% 0,6W
3078	4822 050 25602	5K60 1% 0,6W
3079	4822 050 25602	5K60 1% 0,6W
3081	4822 050 25602	5K60 1% 0,6W
3082	4822 050 25602	5K60 1% 0,6W
3083	4822 050 25602	5K60 1% 0,6W
3085	4822 050 25602	5K60 1% 0,6W
3086	4822 050 25602	5K60 1% 0,6W
3087	4822 050 25602	5K60 1% 0,6W
3089	4822 051 30103	10kΩ 5% 0.062W
3300▲	2122 550 00158	VDR 1mA 612V
3301▲	4822 053 21475	4.7MΩ 5% 0.5W
3302▲	4822 053 21475	4.7MΩ 5% 0.5W
3303▲	4822 053 21475	4.7MΩ 5% 0.5W
3304	4822 116 83872	220Ω 5% 0.5W
3305	4822 116 83872	220Ω 5% 0.5W
3306	4822 051 30102	1kΩ 5% 0.062W
3308	4822 053 11223	22kΩ 5% 2W
3318	4822 053 10471	470Ω 5% 1W
3999	4822 051 30102	1kΩ 5% 0.062W

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5001	2422 531 02444	Transf. S13932-04Y
5002	3104 308 21211	Transf. BS51321-02 B
5005	4822 526 10704	Bead 50 Ω at 100MHz
5007	4822 526 10704	Bead 50 Ω at 100MHz
5008	4822 526 10704	Bead 50 Ω at 100MHz
5009	4822 157 11411	Bead 80Ω at 100MHz
5010	4822 157 11411	Bead 80Ω at 100MHz
5011	3104 308 21211	Transf. BS51321-02 B
5012	4822 526 10704	Bead 50 Ω at 100MHz
5013	4822 526 10704	Bead 50 Ω at 100MHz
5015	4822 157 11411	Bead 80Ω at 100MHz
5016	4822 157 11411	Bead 80Ω at 100MHz
5017	4822 526 10704	Bead 50 Ω at 100MHz
5018	2422 535 94636	3.3µF 20%
5019	2422 536 00776	33µH 10%
5020	2422 536 00776	33µH 10%
5021	4822 157 11411	Bead 80Ω at 100MHz
5022	4822 157 11411	Bead 80Ω at 100MHz
5025	4822 157 11411	Bead 80Ω at 100MHz
5026	4822 157 11411	Bead 80Ω at 100MHz
5303	3104 308 21201	Line filter DTH40383H65

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6002	4822 130 11397	BAS316
6003	4822 130 11397	BAS316
6004	4822 130 80622	BAT54
6005	4822 130 80622	BAT54
6006	4822 130 11397	BAS316
6007	4822 130 11397	BAS316
6008	4822 130 11397	BAS316
6010	4822 130 11397	BAS316
6011	4822 130 11397	BAS316
6012	9322 208 80685	BZG05C15
6013	9322 208 80685	BZG05C15
6014	9340 548 71115	PDZ33B
6015	4822 130 11397	BAS316
6017	4822 130 11397	BAS316
6018	4822 130 11152	UDZ18B
6019	9322 173 47687	STPS20L40CFP
6021	4822 130 11596	BYW29EX-200
6022	4822 130 11148	UDZ4.7B
6023	4822 130 11397	BAS316
6024	9322 202 55685	BYG22D
6025	9322 202 55685	BYG22D
6026	4822 130 11397	BAS316
6027	4822 130 11397	BAS316
6028	4822 130 11397	BAS316
6029	4822 130 11596	BYW29EX-200
6030	4822 130 11596	BYW29EX-200

6031	4822 130 11596	BYW29EX-200
6032	9322 202 55685	BYG22D
6033	9322 202 55685	BYG22D
6038	4822 130 11397	BAS316
6040	4822 130 11596	BYW29EX-200
6041	4822 130 11596	BYW29EX-200
6304	4822 130 11397	BAS316
6305	4822 130 11397	BAS316
6306	4822 130 83147	DF06M
6307	9322 199 74682	GBJ6J-B15
6314	9340 292 50135	BZG03-C200
6315	9340 292 50135	BZG03-C200
6316	9340 548 71115	PDZ33B
6318	4822 130 11397	BAS316
6360	4822 130 11397	BAS316
6361	4822 130 11397	BAS316

7001	9322 108 21682	MC34067P
7003	3198 010 42310	BC847BW
7004	3198 010 42310	BC847BW
7005	9322 192 18687	STP15NK50ZFP
7006	9322 192 18687	STP15NK50ZFP
7007	3198 010 42320	BC857BW
7008	3198 010 42320	BC857BW
7009	3198 010 42320	BC857BW
7010	9322 192 16685	TS2431AI
7011	3198 010 42320	BC857BW
7012	3198 010 42310	BC847BW
7307⚠	9322 149 04682	TCET1102

Small Signal Board [B]

Various

1101	2422 025 18749	Connector 3p m
1102	2422 542 00003	Tuner TEDE9-286A
1104	2422 549 44376	SAW 38MHz M3956L
1105	2422 549 44373	SAW 38MHz K3955L
1106	2422 549 44374	SAW 38MHz K9352L
1107	2422 025 18749	Connector 3p m
1202	2422 543 01414	Xtal 24.576MHz
1801	2422 543 01133	Xtal 14.32MHz 20pF
1J00	2422 025 10771	Connector 10p m
1J01	2422 025 10655	Connector 11p m
1J04	2422 025 10769	Connector 9p m
1J07⚠	2422 086 11081	Fuse T3A 125V
1J08	2422 086 11105	Fuse F630mA 50V
1K00	2422 025 08149	Connector 6p m
1K02	2422 025 10768	Connector 3p m
1K04	2422 025 10655	Connector 11p m
1N05	2722 171 08825	Xtal 14.31818Mhz 15pF
1P01	2422 549 45325	Bead 67Ω at 100MHz
1P02	2422 549 45325	Bead 67Ω at 100MHz
1P03	2422 549 45325	Bead 67Ω at 100MHz
1P04	2422 549 45325	Bead 67Ω at 100MHz
1P05	2422 549 45325	Bead 67Ω at 100MHz
1P07	2422 025 18427	Connector 31p f
1Q01	2422 025 18477	Socket sub-D 15p f h
1Q03	2422 033 00505	Socket HDMI 19p f
1R02	2422 033 00533	Socket COMBI 2p f
1R03	2422 026 05652	Socket CINCH 4p f WhRd
1R06	2422 026 05705	Socket CINCH 4p f
1R07	2422 026 05704	Socket CINCH 4p f

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2101	4822 124 12095	100µF 20% 16V
2102	5322 126 11583	10nF 10% 50V 0603
2103	5322 126 11583	10nF 10% 50V 0603
2104	4822 122 33761	22pF 5% 50V
2105	4822 122 33761	22pF 5% 50V
2106	5322 126 11583	10nF 10% 50V 0603
2107	3198 024 44730	47nF 50V 0603
2109	5322 124 41945	22µF 20% 35V
2113	4822 124 12095	100µF 20% 16V
2206	2020 552 00035	2.2µF 6.3V 10% 0603
2207	2020 552 96718	220nF 10% 6.3V 0402
2208	4822 124 12084	1µF 20% 50V
2209	4822 124 23002	10µF 16V
2210	2020 552 96718	220nF 10% 6.3V 0402
2211	2020 552 96628	10nF 10% 16V 0402
2214	2020 552 96618	1nF 10% 50V 0402
2216	2020 552 96618	1nF 10% 50V 0402
2218	3198 035 71040	100nF 10% 16V 0402
2221	4822 124 12095	100µF 20% 16V
2223	2238 869 15101	100pF 5% 50V 0402
2225	2020 552 96618	1nF 10% 50V 0402
2226	3198 035 03320	3.3nF 5% 50V 0402
2227	2020 552 96618	1nF 10% 50V 0402
2228	3198 035 71040	100nF 10% 16V 0402
2230	3198 035 71040	100nF 10% 16V 0402
2231	2020 552 96718	220nF 10% 6.3V 0402
2232	3198 035 71040	100nF 10% 16V 0402
2233	4822 124 23002	10µF 16V
2234	2020 552 96718	220nF 10% 6.3V 0402
2235	2020 552 96718	220nF 10% 6.3V 0402
2236	4822 126 14076	220nF +80/-20% 25V
2237	2020 552 96718	220nF 10% 6.3V 0402
2238	2020 552 96718	220nF 10% 6.3V 0402
2239	3198 035 71040	100nF 10% 16V 0402
2240	2020 552 96718	220nF 10% 6.3V 0402
2241	2020 552 96718	220nF 10% 6.3V 0402
2242	3198 035 71040	100nF 10% 16V 0402
2243	4822 124 23002	10µF 16V
2250	2020 552 96618	1nF 10% 50V 0402
2251	2020 552 96656	10µF 20% 25V 1210
2252	3198 035 71040	100nF 10% 16V 0402
2253	3198 035 71040	100nF 10% 16V 0402
2254	3198 035 71040	100nF 10% 16V 0402
2255	3198 035 71040	100nF 10% 16V 0402
2256	4822 124 23002	10µF 16V
2257	3198 035 71040	100nF 10% 16V 0402
2258	2020 552 96637	10µF 10% 6.3V 0805
2259	3198 035 71040	100nF 10% 16V 0402
2260	2020 552 96637	10µF 10% 6.3V 0805
2262	4822 124 12082	10µF 20% 50V
2263	3198 035 26820	6.8nF 10% 16V 0402
2264	3198 017 44740	470nF 10V 0603
2265	3198 017 41050	1µF 10V 0603
2266	3198 035 71040	100nF 10% 16V 0402
2267	2020 552 96718	220nF 10% 6.3V 0402
2269	2020 012 00003	470µF 16V 20% SMD
2270	3198 035 71040	100nF 10% 16V 0402
2271	4822 124 12095	100µF 20% 16V
2272	3198 035 71040	100nF 10% 16V 0402
2273	2020 552 96718	220nF 10% 6.3V 0402
2274	3198 017 31540	150nF 10V 0603
2277	3198 035 71040	100nF 10% 16V 0402
2280	2020 552 00027	4.7µF 2% 6.3V 0603
2281	2020 552 00027	4.7µF 2% 6.3V 0603
2285⚠	3198 035 71040	100nF 10% 16V 0402
2286	3198 035 71040	100nF 10% 16V 0402
2449	3198 035 71040	100nF 10% 16V 0402
2603	2020 552 96834	1µF 20% 6.3V 0402
2604	3198 035 04710	470pF 50V 0402
2605	2020 552 96834	1µF 20% 6.3V 0402
2608	2020 552 96834	1µF 20% 6.3V 0402
2609	3198 035 04710	470pF 50V 0402
2610	2020 552 96834	1µF 20% 6.3V 0402
2611	4822 124 12095	100µF 20% 16V
2612	3198 017 41050	1µF 10V 0603
2614	3198 035 71040	100nF 10% 16V 0402
2615	2020 012 00003	470µF 16V 20% SMD
2618	2020 012 00003	470µF 16V 20% SMD
2701	2238 869 15101	100pF 5% 50V 0402
2704	4822 124 23002	10µF 16V
2706	4822 124 23002	10µF 16V
2709	4822 124 80151	47µF 16V
2710	2020 552 96656	10µF 20% 25V 1210
2711	2020 552 96656	10µF 20% 25V 1210
2713	2020 012 00028	470µF 20% 16V
2714	3198 035 02210	220pF 5% 50V 0402
2715	2020 552 96455	22nF 10% 16V 0402
2716	2020 012 00028	470µF 20% 16V
2730	2020 552 96656	10µF 20% 25V 1210
2731	2020 012 00003	470µF 16V 20% SMD
2733	3198 035 02210	220pF 5% 50V 0402
2734	2238 787 16641	22nF 10% 16V 0402
2735	3198 035 04710	470pF 50V 0402
2736	2022 031 00308	22µF 20% 35V
2737	2020 012 00003	470µF 16V 20% SMD
2738	4822 124 80151	47µF 16V
2739	4822 124 80151	47µF 16V
2741	4822 126 13879	220nF +80-20% 16V
2750	2020 552 00035	2.2µF 6.3V 10% 0603
2751	3198 035 71040	100nF 10% 16V 0402
2752	4822 124 80151	47µF 16V
2753	2020 012 00003	470µF 16V 20% SMD
2755	3198 035 14720	4.7nF 5% 25V 0402
2756	3198 035 04710	470pF 50V 0402
2757	2020 012 00003	470µF 16V 20% SMD
2758	2020 012 00003	470µF 16V 20% SMD
2760	2020 552 96671	1µF 10% 25V
2761	2020 552 96671	1µF 10% 25V
2762	4822 124 23237	22µF 6.3V
2800	2020 021 91557	100µF 20% 16V
2801	3198 035 71040	100nF 10% 16V 0402
2802	3198 035 71040	100nF 10% 16V 0402
2803	3198 035 71040	100nF 10% 16V 0402
2804	3198 035 71040	100nF 10% 16V 0402
2805	3198 035 71040	100nF 10% 16V 0402
2806	3198 035 71040	100nF 10% 16V 0402
2807	3198 035 71040	100nF 10% 16V 0402
2808	3198 035 71040	100nF 10% 16V 0402
2809	3198 035 71040	100nF 10% 16V 0402
2810	3198 035 71040	100nF 10% 16V 0402
2811	3198 035 71040	100nF 10% 16V 0402
2812	3198 035 71040	100nF 10% 16V 0402
2813	3198 035 71040	100nF 10% 16V 0402
2814	3198 035 71040	100nF 10% 16V 0402
2815	5322 124 41945	22µF 20% 35V
2816	3198 035 71040	100nF 10% 16V 0402
2817	3198 035 71040	100nF 10% 16V 0402
2818	3198 035 71040	100nF 10% 16V 0402
2819	3198 035 71040	100nF 10% 16V 0402
2820	3198 035 71040	100nF 10% 16V 0402
2821	3198 035 71040	100nF 10% 16V 0402
2822	3198 035 71040	100nF 10% 16V 0402
2823	4822 126 14519	22pF 5% 50V 0402
2824	4822 126 14519	22pF 5% 50V 0402
2900	3198 035 71040	100nF 10% 16V 0402
2901	2020 552 96618	1nF 10% 50V 0402
2902	2020 021 00046	470µF 20% 16V
2903	3198 035 71040	100nF 10% 16V 0402
2904	4822 124 80151	47µF 16V
2905	2020 021 91557	100µF 20% 16V
2906	3198 035 71040	100nF 10% 16V 0402
2907	3198 035 71040	100nF 10% 16V 0402
2908	3198 035 71040	100nF 10% 16V 0402
2909	3198 035 71040	100nF 10% 16V 0402
2910	3198 035 71040	100nF 10% 16V 0402
2911	3198 035 71040	100nF 10% 16V 0402
2912	3198 035 71040	100nF 10% 16V 0402
2913	3198 035 71040	100nF 10% 16V 0402
2914	3198 035 71040	100nF 10% 16V 0402
2915	3198 035 71040	100nF 10% 16V 0402
2916	3198 035 71040	100nF 10% 16V 0402
2917	2020 021 91557	100µF 20% 16V
2918	3198 035 71040	100nF 10% 16V 0402
2919	3198 035 71040	100nF 10% 16V 0402
2920	3198 035 71040	100nF 10% 16V 0402
2921	3198 035 71040	100nF 10% 16V 0402
2922	3198 035 71040	100nF 10% 16V 0402
2923	3198 035 71040	100nF 10% 16V 0402
2924	3198 035 71040	100nF 10% 16V 0402
2925	3198 035 71040	100nF 10% 16V 0402
2926	3198 035 71040	100nF 10% 16V 0402
2927	3198 035 71040	100nF 10% 16V 0402
2928	3198 035 71040	100nF 10% 16V 0402
2929	3198 035 71040	100nF 10% 16V 0402
2930	3198 035 71040	100nF 10% 16V 0402
2931	3198 035 71040	100nF 10% 16V 0402
2932	3198 035 71040	100nF 10% 16V 0402
2933	3198 035 71040	100nF 10% 16V 0402
2934	4822 124 80151	47µF 16V
2935	3198 035 71040	100nF 10% 16V 0402
2936	3198 035 71040	100nF 10% 16V 0402
2937	3198 035 71040	100nF 10% 16V 0402
2938	3198 035 71040	100nF 10% 16V 0402
2939	3198 035 71040	100nF 10% 16V 0402
2940	4822 124 80151	47µF 16V
2941	3198 035 71040	100nF 10% 16V 0402
2942	3198 035 71040	100nF 10% 16V 0402
2945	5322 124 41945	22µF 20% 35V
2946	3198 035 71040	100nF 10% 16V 0402
2947	3198 035 71040	100nF 10% 16V 0402
2948	3198 035 71040	100nF 10% 16V 0402
2949	3198 035 71040	100nF 10% 16V 0402
2950	5322 124 41945	22µF 20% 35V
2951	3198 035 71040	100nF 10% 16V 0402
2952	3198 035 71040	100nF 10% 16V 0402
2953	3198 035 71040	100nF 10% 16V 0402
2954	3198 035 71040	100nF 10% 16V 0402
2955	5322 124 41945	22µF 20% 35V
2956	3198 035 71040	100nF 10% 16V 0402
2957	3198 035 71040	100nF 10% 16V 0402
2958	3198 035 71040	100nF 10% 16V 0402
2959	3198 035 71040	100nF 10% 16V 0402
2A03	3198 017 41050	1µF 10V 0603
2A12	2020 552 96628	10nF 10% 16V 0402
2A13	3198 035 71040	100nF 10% 16V 0402
2B01	4822 124 80151	47µF 16V
2B02	4822 124 11131	47µF 6.3V
2B03	3198 035 71040	100nF 10% 16V 0402
2B04	3198 035 71040	100nF 10% 16V 0402
2B05	3198 035 71040	100nF 10% 16V 0402
2B06	3198 035 71040	100nF 10% 16V 0402
2B07	3198 035 71040	100nF 10% 16V 0402
2B08	3198 035 71040	100nF 10% 16V 0402
2B09	3198 035 71040	100nF 10% 16V 0402
2B10	3198 035 71040	100nF 10% 16V 0402
2B11	3198 035 71040	100nF 10% 16V 0402
2B12	3198 035 71040	100nF 10% 16V 0402
2B13	3198 035 71040	100nF 10% 16V 0402
2B14	3198 035 71040	100nF 10% 16V 0402
2B15	3198 035 71040	100nF 10% 16V 0402

2B16	3198 035 71040	100nF 10% 16V 0402
2B17	3198 035 71040	100nF 10% 16V 0402
2B18	5322 124 41945	22µF 20% 35V
2C00	3198 035 71040	100nF 10% 16V 0402
2C01	4822 124 23002	10µF 16V
2C02	3198 035 71040	100nF 10% 16V 0402
2C03	3198 035 71040	100nF 10% 16V 0402
2D00	3198 035 71040	100nF 10% 16V 0402
2D01	2020 552 96628	10nF 10% 16V 0402
2D02	2020 552 96618	1nF 10% 50V 0402
2D03	2020 552 96656	10µF 20% 25V 1210
2D04	2020 552 96628	10nF 10% 16V 0402
2D05	3198 035 74730	47nF 5% 16V 0402
2D06	2020 552 96656	10µF 20% 25V 1210
2D07	4822 124 23237	22µF 6.3V
2D08	3198 035 71040	100nF 10% 16V 0402
2D09	2020 552 96618	1nF 10% 50V 0402
2D10	2020 552 96618	1nF 10% 50V 0402
2D11	2020 552 96618	1nF 10% 50V 0402
2D12	4822 124 23237	22µF 6.3V
2D13	3198 035 71040	100nF 10% 16V 0402
2D14	2020 552 96618	1nF 10% 50V 0402
2D15	2020 552 96618	1nF 10% 50V 0402
2D16	2020 552 96618	1nF 10% 50V 0402
2D17	2020 552 96656	10µF 20% 25V 1210
2D18	3198 035 71040	100nF 10% 16V 0402
2D19	2020 552 96618	1nF 10% 50V 0402
2D20	2020 552 96656	10µF 20% 25V 1210
2D21	3198 035 71040	100nF 10% 16V 0402
2D22	2020 552 96618	1nF 10% 50V 0402
2D23	4822 124 23002	10µF 16V
2D24	3198 035 71040	100nF 10% 16V 0402
2D25	2020 552 96618	1nF 10% 50V 0402
2D26	2020 552 96618	1nF 10% 50V 0402
2D27	4822 124 23237	22µF 6.3V
2D28	3198 035 71040	100nF 10% 16V 0402
2D29	2020 552 96618	1nF 10% 50V 0402
2D30	2020 552 96618	1nF 10% 50V 0402
2D31	2020 552 96618	1nF 10% 50V 0402
2D32	4822 124 11131	47µF 6.3V
2D33	3198 035 71040	100nF 10% 16V 0402
2D34	4822 124 11131	47µF 6.3V
2D35	3198 035 71040	100nF 10% 16V 0402
2D36	3198 017 41050	1µF 10V 0603
2D37	2020 552 96628	10nF 10% 16V 0402
2D38	4822 124 11131	47µF 6.3V
2D39	3198 035 71040	100nF 10% 16V 0402
2D40	3198 017 41050	1µF 10V 0603
2D41	2020 552 96628	10nF 10% 16V 0402
2D44	3198 017 41050	1µF 10V 0603
2D45	3198 017 41050	1µF 10V 0603
2E00	2020 552 00005	4.7µF 10% 6.3V 0603
2E01	2020 552 00005	4.7µF 10% 6.3V 0603
2E02	2020 552 00005	4.7µF 10% 6.3V 0603
2E03	3198 035 71040	100nF 10% 16V 0402
2E04	2020 552 96834	1µF 20% 6.3V 0402
2E05	2020 552 96834	1µF 20% 6.3V 0402
2E06	2020 552 96834	1µF 20% 6.3V 0402
2E07	4822 126 14324	33pF 5% 50V 0402
2E08	2020 552 00005	4.7µF 10% 6.3V 0603
2E09	4822 126 14324	33pF 5% 50V 0402
2E10	2020 552 00005	4.7µF 10% 6.3V 0603
2E11	4822 126 14324	33pF 5% 50V 0402
2E12	2020 552 00005	4.7µF 10% 6.3V 0603
2E13	3198 017 41050	1µF 10V 0603
2E14	4822 126 14324	33pF 5% 50V 0402
2E15	3198 035 71040	100nF 10% 16V 0402
2E16	3198 035 71040	100nF 10% 16V 0402
2E17	3198 035 71040	100nF 10% 16V 0402
2E18	3198 035 71040	100nF 10% 16V 0402
2E19	3198 035 71040	100nF 10% 16V 0402
2E20	4822 124 11131	47µF 6.3V
2E21	2020 552 00005	4.7µF 10% 6.3V 0603
2E22	2020 552 00005	4.7µF 10% 6.3V 0603
2E23	2020 552 00005	4.7µF 10% 6.3V 0603
2E24	3198 035 71040	100nF 10% 16V 0402
2E25	3198 035 71040	100nF 10% 16V 0402
2E26	3198 035 71040	100nF 10% 16V 0402
2E27	3198 035 71040	100nF 10% 16V 0402
2E28	3198 035 71040	100nF 10% 16V 0402
2E29	3198 035 71040	100nF 10% 16V 0402
2E30	3198 035 71040	100nF 10% 16V 0402
2E31	3198 035 71040	100nF 10% 16V 0402
2E32	3198 035 71040	100nF 10% 16V 0402
2E33	2020 552 00005	4.7µF 10% 6.3V 0603
2E34	2020 552 00005	4.7µF 10% 6.3V 0603
2E35	2020 552 00005	4.7µF 10% 6.3V 0603
2E36	3198 035 71040	100nF 10% 16V 0402
2J02	2020 552 96618	1nF 10% 50V 0402
2J03	2020 552 96618	1nF 10% 50V 0402
2J17	2020 552 96618	1nF 10% 50V 0402
2J18	2238 869 15101	100pF 5% 50V 0402
2J19	2238 869 15101	100pF 5% 50V 0402
2J21	2238 869 15101	100pF 5% 50V 0402
2J22	2238 869 15101	100pF 5% 50V 0402
2J23	2238 869 15101	100pF 5% 50V 0402
2J26	2238 869 15101	100pF 5% 50V 0402
2J27	2238 869 15101	100pF 5% 50V 0402
2J28	2238 869 15101	100pF 5% 50V 0402
2J29	2238 869 15101	100pF 5% 50V 0402
2J30	2020 552 96618	1nF 10% 50V 0402
2J31	2238 869 15101	100pF 5% 50V 0402
2J35	2020 552 96618	1nF 10% 50V 0402
2K00	2020 552 96618	1nF 10% 50V 0402
2K01	2020 552 96618	1nF 10% 50V 0402
2K02	2238 869 15109	10pF 5% 50V 0402
2K03	2238 869 15109	10pF 5% 50V 0402
2K04	2238 869 15109	10pF 5% 50V 0402
2K05	2238 869 15109	10pF 5% 50V 0402
2K06	2238 869 15101	100pF 5% 50V 0402
2K07	2238 869 15101	100pF 5% 50V 0402
2K08	2020 552 00035	2.2µF 6.3V 10% 0603
2K10	2238 869 15101	100pF 5% 50V 0402
2K11	2238 869 15101	100pF 5% 50V 0402
2K12	2020 552 00035	2.2µF 6.3V 10% 0603
2K13	2238 869 15101	100pF 5% 50V 0402
2K14	2238 869 15101	100pF 5% 50V 0402
2K16	2238 869 15101	100pF 5% 50V 0402
2K17	2238 869 15101	100pF 5% 50V 0402
2K18	2238 869 15101	100pF 5% 50V 0402
2K19	2020 552 96618	1nF 10% 50V 0402
2K20	2020 552 96618	1nF 10% 50V 0402
2K21	2238 869 15101	100pF 5% 50V 0402
2K22	2238 869 15101	100pF 5% 50V 0402
2K23	2238 869 15101	100pF 5% 50V 0402
2K24	2238 869 15101	100pF 5% 50V 0402
2K25	2238 869 15101	100pF 5% 50V 0402
2K26	2238 869 15101	100pF 5% 50V 0402
2K27	2238 869 15101	100pF 5% 50V 0402
2K28	2238 869 15101	100pF 5% 50V 0402
2L02	2020 552 96637	10µF 10% 6.3V 0805
2L03	3198 035 71040	100nF 10% 16V 0402
2L04	3198 035 71040	100nF 10% 16V 0402
2L05	3198 035 71040	100nF 10% 16V 0402
2L06	3198 035 71040	100nF 10% 16V 0402
2L07	2020 552 96637	10µF 10% 6.3V 0805
2L08	3198 035 71040	100nF 10% 16V 0402
2L09	3198 035 71040	100nF 10% 16V 0402
2L10	3198 035 71040	100nF 10% 16V 0402
2L11	3198 035 71040	100nF 10% 16V 0402
2L13	3198 035 74730	47nF 5% 16V 0402
2L17	3198 035 74730	47nF 5% 16V 0402
2L20	3198 035 71040	100nF 10% 16V 0402
2L21	3198 035 71040	100nF 10% 16V 0402
2L22	2020 552 96637	10µF 10% 6.3V 0805
2L23	3198 035 71040	100nF 10% 16V 0402
2L24	3198 035 71040	100nF 10% 16V 0402
2L26	2020 552 96718	220nF 10% 6.3V 0402
2L27	4822 124 23002	10µF 16V
2L28	4822 124 23002	10µF 16V
2L29	4822 124 23002	10µF 16V
2L30	4822 124 23002	10µF 16V
2L31	4822 124 12095	100µF 20% 16V
2L32	4822 124 12095	100µF 20% 16V
2L33	3198 035 71040	100nF 10% 16V 0402
2L34	3198 035 71040	100nF 10% 16V 0402
2L37	4822 126 14524	68pF 5% 50V 0402
2L39	2238 869 15829	82pF 5% 50V 0402
2M00	3198 035 71040	100nF 10% 16V 0402
2M01	3198 035 71040	100nF 10% 16V 0402
2M02	3198 035 71040	100nF 10% 16V 0402
2M03	3198 035 71040	100nF 10% 16V 0402
2M04	3198 035 71040	100nF 10% 16V 0402
2M05	3198 035 71040	100nF 10% 16V 0402
2M06	3198 035 71040	100nF 10% 16V 0402
2M07	3198 035 71040	100nF 10% 16V 0402
2M08	3198 035 71040	100nF 10% 16V 0402
2M09	3198 035 71040	100nF 10% 16V 0402
2M10	3198 035 71040	100nF 10% 16V 0402
2M11	3198 035 71040	100nF 10% 16V 0402
2M12	3198 035 71040	100nF 10% 16V 0402
2M13	3198 035 71040	100nF 10% 16V 0402
2M14	3198 035 71040	100nF 10% 16V 0402
2M15	3198 035 71040	100nF 10% 16V 0402
2M16	3198 035 71040	100nF 10% 16V 0402
2M17	3198 035 71040	100nF 10% 16V 0402
2M18	3198 035 71040	100nF 10% 16V 0402
2M19	3198 035 71040	100nF 10% 16V 0402
2M20	3198 035 71040	100nF 10% 16V 0402
2M21	2020 552 00035	2.2µF 6.3V 10% 0603
2M22	3198 035 71040	100nF 10% 16V 0402
2M23	4822 124 12095	100µF 20% 16V
2M24	3198 035 71040	100nF 10% 16V 0402
2M25	3198 035 71040	100nF 10% 16V 0402
2M26	3198 035 71040	100nF 10% 16V 0402
2M27	3198 035 71040	100nF 10% 16V 0402
2M28	3198 035 71040	100nF 10% 16V 0402
2M29	3198 035 71040	100nF 10% 16V 0402
2M30	3198 035 71040	100nF 10% 16V 0402
2M31	4822 124 12095	100µF 20% 16V
2M32	4822 124 12095	100µF 20% 16V
2M56	4822 124 12095	100µF 20% 16V
2M65	3198 035 71040	100nF 10% 16V 0402
2M66	4822 124 12095	100µF 20% 16V
2M67	3198 035 71040	100nF 10% 16V 0402
2M68	4822 124 12095	100µF 20% 16V
2N01	3198 035 71040	100nF 10% 16V 0402
2N02	3198 035 71040	100nF 10% 16V 0402
2N03	2020 552 96834	1µF 20% 6.3V 0402
2N04	2020 552 96618	1nF 10% 50V 0402
2N05	3198 035 71040	100nF 10% 16V 0402
2N06	3198 035 71040	100nF 10% 16V 0402
2N07	3198 035 71040	100nF 10% 16V 0402
2N08	3198 035 71040	100nF 10% 16V 0402
2N09	3198 035 71040	100nF 10% 16V 0402
2N10	3198 035 71040	100nF 10% 16V 0402
2N11	2238 869 15101	100pF 5% 50V 0402
2N12	2238 869 15101	100pF 5% 50V 0402
2N13	2238 869 15101	100pF 5% 50V 0402
2N14	2238 869 15101	100pF 5% 50V 0402
2N15	2238 869 15101	100pF 5% 50V 0402
2N16	2238 869 15101	100pF 5% 50V 0402
2P01	2020 552 00035	2.2µF 6.3V 10% 0603
2P02	3198 035 71040	100nF 10% 16V 0402
2P03	3198 035 71040	100nF 10% 16V 0402
2P04	3198 035 71040	100nF 10% 16V 0402
2P05	3198 035 71040	100nF 10% 16V 0402
2P06	3198 035 71040	100nF 10% 16V 0402
2P07	3198 035 71040	100nF 10% 16V 0402
2P08	3198 035 71040	100nF 10% 16V 0402
2P09	3198 035 71040	100nF 10% 16V 0402
2P10	3198 035 71040	100nF 10% 16V 0402
2P11	3198 035 71040	100nF 10% 16V 0402
2P12	3198 035 71040	100nF 10% 16V 0402
2P13	3198 035 71040	100nF 10% 16V 0402
2P14	3198 035 71040	100nF 10% 16V 0402
2P15	4822 124 12095	100µF 20% 16V
2P16	3198 035 71040	100nF 10% 16V 0402
2P17	2020 552 00035	2.2µF 6.3V 10% 0603
2P18	2020 552 00035	2.2µF 6.3V 10% 0603
2P19	3198 035 71040	100nF 10% 16V 0402
2P20	3198 035 71040	100nF 10% 16V 0402
2P21	3198 035 71040	100nF 10% 16V 0402
2P22	2020 552 00035	2.2µF 6.3V 10% 0603
2P23	3198 035 71040	100nF 10% 16V 0402
2P24	3198 035 71040	100nF 10% 16V 0402
2P25	3198 035 71040	100nF 10% 16V 0402
2P26	3198 035 71040	100nF 10% 16V 0402
2P27	3198 035 71040	100nF 10% 16V 0402
2P28	3198 035 71040	100nF 10% 16V 0402
2P29	3198 035 71040	100nF 10% 16V 0402
2P30	3198 035 71040	100nF 10% 16V 0402
2P31	3198 035 71040	100nF 10% 16V 0402
2P32	3198 035 71040	100nF 10% 16V 0402
2P33	3198 035 71040	100nF 10% 16V 0402
2P34	3198 035 71040	100nF 10% 16V 0402
2P35	3198 035 71040	100nF 10% 16V 0402
2P36	2238 869 15109	10pF 5% 50V 0402
2P37	2238 869 15109	10pF 5% 50V 0402
2P38	2238 869 15109	10pF 5% 50V 0402
2P39	2238 869 15109	10pF 5% 50V 0402
2P40	2238 869 15109	10pF 5% 50V 0402
2P41	2238 869 15109	10pF 5% 50V 0402
2P42	2238 869 15109	10pF 5% 50V 0402
2P43	2238 869 15109	10pF 5% 50V 0402
2P44	2238 869 15109	10pF 5% 50V 0402
2P45	2238 869 15109	10pF 5% 50V 0402
2Q16	2238 586 59812	100nF 20% 50V 0603
2Q17	4822 126 14241	330pF 0603 50V
2Q18	4822 126 14241	330pF 0603 50V
2Q21	2020 552 94427	100pF 5% 50V
2Q23	2020 552 94427	100pF 5% 50V
2Q25	2238 586 59812	100nF 20% 50V 0603
2Q30	4822 126 14508	180pF 5% 50V 0603
2Q31	4822 126 14508	180pF 5% 50V 0603
2Q32	2020 552 00035	2.2µF 6.3V 10% 0603
2Q33	2020 552 00035	2.2µF 6.3V 10% 0603
2R00	4822 126 14508	180pF 5% 50V 0603
2R01	2020 552 00035	2.2µF 6.3V 10% 0603
2R03	2020 552 00035	2.2µF 6.3V 10% 0603
2R04	4822 126 14508	180pF 5% 50V 0603
2R35	2020 552 00005	4.7µF 10% 6.3V 0603
2R41	2020 552 00005	4.7µF 10% 6.3V 0603
2R50	4822 126 14508	180pF 5% 50V 0603
2R51	2020 552 00035	2.2µF 6.3V 10% 0603
2R54	2020 552 00035	2.2µF 6.3V 10% 0603
2R55	4822 126 14508	180pF 5% 50V 0603
2R57	2238 586 59812	100nF 20% 50V 0603
2R58	2020 552 00005	4.7µF 10% 6.3V 0603
2R59	2020 552 00005	4.7µF 10% 6.3V 0603
2R81	4822 126 14241	330pF 0603 50V
2R82	4822 126 14241	330pF 0603 50V

2R85	4822 124 23002	10µF 16V
2R86	4822 124 23002	10µF 16V

–WW–

3101	4822 051 30101	100Ω 5% 0.062W
3102	4822 051 30101	100Ω 5% 0.062W
3103	4822 117 13606	10kΩ 5% 0.01W 0402
3105	4822 117 13548	1kΩ 5% 0402
3107	4822 051 30682	6.8Ω 5% 0.062W
3108	4822 051 30222	2.2kΩ 5% 0.062W
3109	4822 051 30222	2.2kΩ 5% 0.062W
3110	4822 051 30222	2.2kΩ 5% 0.062W
3111	4822 051 30223	22kΩ 5% 0.062W
3112	4822 051 30183	18kΩ 5% 0.062W
3113	4822 051 30223	22kΩ 5% 0.062W
3114	4822 117 12925	47kΩ 1% 0.063W 0603
3120	4822 117 13606	10kΩ 5% 0.01W 0402
3121	4822 117 13606	10kΩ 5% 0.01W 0402
3122	4822 117 13545	100Ω 1% 0402
3123	4822 117 13545	100Ω 1% 0402
3124	4822 117 13545	100Ω 1% 0402
3125	4822 117 13545	100Ω 1% 0402
3207	3198 031 06810	680Ω 5% 0.01W 0402
3208	4822 117 13545	100Ω 1% 0402
3209	4822 117 13545	100Ω 1% 0402
3210	4822 117 13545	100Ω 1% 0402
3211	4822 117 13545	100Ω 1% 0402
3212	4822 117 13545	100Ω 1% 0402
3213	4822 117 13545	100Ω 1% 0402
3214	3198 031 06810	680Ω 5% 0.01W 0402
3215	3198 031 02710	270Ω 5% 0.1W 0402
3216	4822 117 13597	330Ω 5% 0402 0.01W
3217	4822 117 13548	1kΩ 5% 0402
3218	4822 117 11297	100kΩ 5% 0.1W
3219	4822 117 13545	100Ω 1% 0402
3220	3198 031 04730	47Ω 5% 0402
3222	4822 117 13545	100Ω 1% 0402
3223	3198 031 01090	10Ω 5% 0.01W 0402
3224	3198 031 04720	4.7kΩ 5% 0402
3225	3198 031 04720	4.7kΩ 5% 0402
3226	4822 117 13545	100Ω 1% 0402
3227	4822 117 13545	100Ω 1% 0402
3229	3198 031 04720	4.7kΩ 5% 0402
3230	4822 117 13606	10kΩ 5% 0.01W 0402
3231	4822 117 13602	2.2kΩ 5% 0.01W 0402
3232	3198 031 03320	3.3kΩ 5% 0402
3233	3198 031 03320	3.3kΩ 5% 0402
3234	3198 031 04720	4.7kΩ 5% 0402
3235	3198 031 04720	4.7kΩ 5% 0402
3236	3198 031 04720	4.7kΩ 5% 0402
3238	4822 117 13545	100Ω 1% 0402
3239	4822 117 13545	100Ω 1% 0402
3240	2322 704 61002	1kΩ 1%
3241	4822 117 13545	100Ω 1% 0402
3242	4822 117 13606	10kΩ 5% 0.01W 0402
3243	3198 031 04720	4.7kΩ 5% 0402
3245	3198 031 02240	220kΩ 5% 0.1W 0402
3246	3198 031 04720	4.7kΩ 5% 0402
3247	4822 117 13545	100Ω 1% 0402
3248	4822 117 13545	100Ω 1% 0402
3249	3198 031 04720	4.7kΩ 5% 0402
3262	4822 117 13601	22kΩ 5% 0402
3263	2322 702 70398	3.9Ω 5% 0603
3264	4822 117 13601	22kΩ 5% 0402
3265	2322 702 70398	3.9Ω 5% 0603
3266	3198 031 05620	5.6kΩ 5% 0.01W 0402
3267	3198 031 05620	5.6kΩ 5% 0.01W 0402
3268	4822 117 13545	100Ω 1% 0402
3272	3198 031 04720	4.7kΩ 5% 0402
3273	4822 117 13548	1kΩ 5% 0402
3274	3198 031 03910	390Ω 1% 0402
3275	4822 117 13545	100Ω 1% 0402
3276	3198 031 07590	75Ω 5% 0402
3277	3198 031 01520	1.2kΩ 5% 0.01W 0402
3280⚠	4822 117 11151	1Ω 5%
3281	3198 031 03930	39kΩ 5% 0402
3285	4822 117 13605	Jumper 0402
3286	4822 117 13545	100Ω 1% 0402
3295⚠	4822 117 11297	100kΩ 5% 0.1W
3431	4822 117 13548	1kΩ 5% 0402
3451	3198 031 04720	4.7kΩ 5% 0402
3453	4822 117 13545	100Ω 1% 0402
3454	4822 117 13545	100Ω 1% 0402
3455	4822 117 13545	100Ω 1% 0402
3456	4822 117 13545	100Ω 1% 0402
3458	4822 117 13545	100Ω 1% 0402
3459	4822 117 13545	100Ω 1% 0402
3461	4822 117 13545	100Ω 1% 0402
3462	4822 117 13545	100Ω 1% 0402
3604	4822 117 13601	22kΩ 5% 0402
3605	4822 117 13601	22kΩ 5% 0402
3609	4822 117 13601	22kΩ 5% 0402
3610	4822 117 11297	100kΩ 5% 0.1W
3611	4822 117 11297	100kΩ 5% 0.1W
3612	4822 117 13601	22kΩ 5% 0402
3616	4822 117 13548	1kΩ 5% 0402
3617	4822 117 13548	1kΩ 5% 0402
3619	4822 117 13606	10kΩ 5% 0.01W 0402
3620	4822 117 13606	10kΩ 5% 0.01W 0402
3628	4822 117 13606	10kΩ 5% 0.01W 0402
3629	4822 117 13601	22kΩ 5% 0402
3630	4822 117 13602	2.2kΩ 5% 0.01W 0402
3631	4822 117 13602	2.2kΩ 5% 0.01W 0402
3632	2322 705 70569	56Ω 5% 0402
3633	2322 705 70569	56Ω 5% 0402
3708	4822 117 13606	10kΩ 5% 0.01W 0402
3709	3198 031 06820	6.8kΩ 5% 0.01W 0402
3712	5322 117 13031	5.6kΩ 1% 0.063W 0603
3713	2322 704 63302	3.3kΩ 1% 0603
3716	3198 031 04720	4.7kΩ 5% 0402
3732	2322 704 61002	1kΩ 1%
3733	2322 704 63302	3.3kΩ 1% 0603
3734	4822 117 13602	2.2kΩ 5% 0.01W 0402
3735	4822 117 13548	1kΩ 5% 0402
3736	3198 031 04720	4.7kΩ 5% 0402
3740	3198 031 01520	1.2kΩ 5% 0.01W 0402
3741	3198 031 01520	1.2kΩ 5% 0.01W 0402
3742	3198 031 01530	15kΩ 5% 0.01W 0402
3743	4822 117 13601	22kΩ 5% 0402
3750	4822 117 13601	22kΩ 5% 0402
3751	3198 021 31080	1Ω 5% 0603
3752	3198 021 31080	1Ω 5% 0603
3753	2322 704 61002	1kΩ 1%
3754	2322 704 63302	3.3kΩ 1% 0603
3755	4822 117 13606	10kΩ 5% 0.01W 0402
3758	3198 031 01530	15kΩ 5% 0.01W 0402
3759	3198 031 01230	12kΩ 5% 0402
3760	4822 117 13545	100Ω 1% 0402
3761	4822 117 13545	100Ω 1% 0402
3800	4822 117 13606	10kΩ 5% 0.01W 0402
3801	2350 035 10229	4 x 22Ω 5% 1206
3802	2350 035 10229	4 x 22Ω 5% 1206
3803	2350 035 10229	4 x 22Ω 5% 1206
3804	2350 035 10229	4 x 22Ω 5% 1206
3805	2350 035 10229	4 x 22Ω 5% 1206
3806	2350 035 10229	4 x 22Ω 5% 1206
3807	2350 035 10229	4 x 22Ω 5% 1206
3808	2350 035 10229	4 x 22Ω 5% 1206
3809	2350 035 10229	4 x 22Ω 5% 1206
3810	2350 035 10229	4 x 22Ω 5% 1206
3811	2350 035 10229	4 x 22Ω 5% 1206
3812	2350 035 10229	4 x 22Ω 5% 1206
3813	2350 035 10229	4 x 22Ω 5% 1206
3814	3198 031 02290	22Ω 5% 0.1W 0402
3815	3198 031 02290	22Ω 5% 0.1W 0402
3816	3198 031 02290	22Ω 5% 0.1W 0402
3817	4822 117 13606	10kΩ 5% 0.01W 0402
3818	4822 117 13606	10kΩ 5% 0.01W 0402
3820	4822 117 13606	10kΩ 5% 0.01W 0402
3822	4822 117 13545	100Ω 1% 0402
3824	3198 031 03320	3.3kΩ 5% 0402
3825	3198 031 11030	4 x 10kΩ 5% 1206
3826	3198 031 11030	4 x 10kΩ 5% 1206
3827	4822 117 13606	10kΩ 5% 0.01W 0402
3828	4822 117 13606	10kΩ 5% 0.01W 0402
3829	4822 117 13606	10kΩ 5% 0.01W 0402
3831	4822 117 13545	100Ω 1% 0402
3832	4822 117 13545	100Ω 1% 0402
3833	3198 031 01090	10Ω 5% 0.01W 0402
3834	4822 117 13606	10kΩ 5% 0.01W 0402
3835	4822 117 13606	10kΩ 5% 0.01W 0402
3836	4822 117 13606	10kΩ 5% 0.01W 0402
3837	4822 117 13606	10kΩ 5% 0.01W 0402
3838	4822 117 13606	10kΩ 5% 0.01W 0402
3839	4822 117 13545	100Ω 1% 0402
3840	3198 031 02290	22Ω 5% 0.1W 0402
3841	4822 117 13606	10kΩ 5% 0.01W 0402
3900	3198 031 03320	3.3kΩ 5% 0402
3901	4822 117 13606	10kΩ 5% 0.01W 0402
3902	4822 117 13606	10kΩ 5% 0.01W 0402
3903	4822 117 13545	100Ω 1% 0402
3904	4822 117 13545	100Ω 1% 0402
3A02	4822 117 13548	1kΩ 5% 0402
3A06	4822 051 30103	10kΩ 5% 0.062W
3A10	4822 117 13606	10kΩ 5% 0.01W 0402
3A11	4822 117 13606	10kΩ 5% 0.01W 0402
3A13	4822 117 13606	10kΩ 5% 0.01W 0402
3A14	3198 031 04720	4.7kΩ 5% 0402
3B01	4822 117 12706	10kΩ 1% 0.063W 0603
3B02	4822 117 12706	10kΩ 1% 0.063W 0603
3B03	2322 704 61501	150Ω 1% 0603
3C00	4822 117 13606	10kΩ 5% 0.01W 0402
3C01	4822 117 13606	10kΩ 5% 0.01W 0402
3C02	4822 117 13548	1kΩ 5% 0402
3C04	3198 031 11030	4 x 10kΩ 5% 1206
3C05	4822 117 13606	10kΩ 5% 0.01W 0402
3C06	3198 031 11030	4 x 10kΩ 5% 1206
3C07	3198 031 11030	4 x 10kΩ 5% 1206
3C08	3198 031 11030	4 x 10kΩ 5% 1206
3C09	3198 031 11030	4 x 10kΩ 5% 1206
3C10	3198 031 11030	4 x 10kΩ 5% 1206
3C16	3198 031 11030	4 x 10kΩ 5% 1206
3C17	4822 117 13606	10kΩ 5% 0.01W 0402
3C18	4822 117 13606	10kΩ 5% 0.01W 0402
3D00	3198 031 04720	4.7kΩ 5% 0402
3D01	3198 031 04720	4.7kΩ 5% 0402
3D02	3198 031 04720	4.7kΩ 5% 0402
3D03	4822 117 13605	Jumper 0402
3D04	4822 117 13605	Jumper 0402
3D05	4822 117 13545	100Ω 1% 0402
3D06	4822 117 13545	100Ω 1% 0402
3D07	3198 031 04720	4.7kΩ 5% 0402
3D08	3198 031 04720	4.7kΩ 5% 0402
3D09	3198 031 03390	33Ω 1% 0402
3D10	3198 031 03910	390Ω 1% 0402
3D11	4822 117 13545	100Ω 1% 0402
3D12	3198 031 03920	3.9kΩ 5% 0402
3D15	3198 031 13390	4X 33Ω 5% 1206
3D16	3198 031 13390	4X 33Ω 5% 1206
3D17	3198 031 13390	4X 33Ω 5% 1206
3D18	3198 031 13390	4X 33Ω 5% 1206
3D19	3198 021 31080	1Ω 5% 0603
3D20	3198 021 31080	1Ω 5% 0603
3D21	3198 031 13390	4X 33Ω 5% 1206
3D22	3198 031 03390	33Ω 1% 0402
3D23	3198 031 03390	33Ω 1% 0402
3D24	4822 117 13596	220Ω 5% 0.01W 0402
3D25	4822 117 13545	100Ω 1% 0402
3D26	4822 117 13596	220Ω 5% 0.01W 0402
3D27	4822 117 13545	100Ω 1% 0402
3D30	4822 117 13606	10kΩ 5% 0.01W 0402
3D31	4822 117 13606	10kΩ 5% 0.01W 0402
3D32	4822 117 13606	10kΩ 5% 0.01W 0402
3D33	4822 117 13606	10kΩ 5% 0.01W 0402
3E00	2322 705 70569	56Ω 5% 0402
3E01	2322 705 70569	56Ω 5% 0402
3E02	2322 705 70569	56Ω 5% 0402
3E06	3198 031 04730	47Ω 5% 0402
3E07	3198 031 04730	47Ω 5% 0402
3E08	3198 031 04730	47Ω 5% 0402
3E09	3198 031 04730	47Ω 5% 0402
3E10	3198 031 04730	47Ω 5% 0402
3E11	3198 031 04730	47Ω 5% 0402
3E12	4822 117 13606	10kΩ 5% 0.01W 0402
3E13	4822 117 13597	330Ω 5% 0402 0.01W
3E14	4822 117 13597	330Ω 5% 0402 0.01W
3E15	4822 117 13597	330Ω 5% 0402 0.01W
3E16	4822 117 13597	330Ω 5% 0402 0.01W
3E17	4822 117 13597	330Ω 5% 0402 0.01W
3E18	4822 117 13597	330Ω 5% 0402 0.01W
3E19	2322 705 70569	56Ω 5% 0402
3E20	2322 705 70569	56Ω 5% 0402
3E21	2322 705 70569	56Ω 5% 0402
3E22	4822 117 13632	100kΩ 1% 0603 0.62W
3E23	3198 031 08210	820Ω 5% 0.5W
3E24	4822 117 13543	470Ω 5% 0402
3E25	2322 705 70399	39Ω 5% 0402
3E26	3198 031 02290	22Ω 5% 0.1W 0402
3E27	2322 705 70399	39Ω 5% 0402
3E28	3198 031 02290	22Ω 5% 0.1W 0402
3E29	2322 705 70399	39Ω 5% 0402
3E30	3198 031 02290	22Ω 5% 0.1W 0402
3E31	4822 117 13545	100Ω 1% 0402
3E32	4822 117 13545	100Ω 1% 0402
3E33	4822 117 13545	100Ω 1% 0402
3E34	4822 117 13545	100Ω 1% 0402
3E35	4822 117 13545	100Ω 1% 0402
3E36	4822 117 13545	100Ω 1% 0402
3E37	3198 031 02290	22Ω 5% 0.1W 0402
3E38	4822 117 13545	100Ω 1% 0402
3E39	4822 117 13545	100Ω 1% 0402
3E41	4822 117 13545	100Ω 1% 0402
3E42	4822 117 13545	100Ω 1% 0402
3E43	4822 117 13545	100Ω 1% 0402
3E44	4822 117 13545	100Ω 1% 0402
3E45	4822 117 13545	100Ω 1% 0402
3E49	3198 031 02290	22Ω 5% 0.1W 0402
3E50	3198 031 04730	47Ω 5% 0402
3E51	3198 031 04730	47Ω 5% 0402
3E52	3198 031 04730	47Ω 5% 0402
3E53	3198 031 04730	47Ω 5% 0402
3E54	3198 031 04730	47Ω 5% 0402
3E55	3198 031 04730	47Ω 5% 0402
3J03	3198 031 06890	68Ω 5% 0402
3J04	3198 031 06890	68Ω 5% 0402
3J05	3198 031 06890	68Ω 5% 0402
3K00	4822 117 13545	100Ω 1% 0402
3K01	4822 117 13545	100Ω 1% 0402
3K02	4822 117 13606	10kΩ 5% 0.01W 0402
3K03	3198 031 01530	15kΩ 5% 0.01W 0402

3K05	4822 117 13606	10kΩ 5% 0.01W 0402
3K06	3198 031 01530	15kΩ 5% 0.01W 0402
3K07	2322 705 70399	39Ω 5% 0402
3K09	2322 705 70399	39Ω 5% 0402
3K11	3198 031 06890	68Ω 5% 0402
3K12	3198 031 06890	68Ω 5% 0402
3K13	3198 031 06890	68Ω 5% 0402
3L00	4822 117 13548	1kΩ 5% 0402
3L04	4822 117 13605	Jumper 0402
3L05	3198 031 01510	150Ω 5% 0.01W 0402
3L06	4822 117 13605	Jumper 0402
3L10	4822 117 13597	330Ω 5% 0402 0.01W
3L11	3198 031 01510	150Ω 5% 0.01W 0402
3L12	4822 117 13548	1kΩ 5% 0402
3L16	4822 117 13605	Jumper 0402
3L17	3198 031 01510	150Ω 5% 0.01W 0402
3L19	3198 031 01510	150Ω 5% 0.01W 0402
3L20	3198 031 01510	150Ω 5% 0.01W 0402
3L21	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L22	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L24	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L25	2350 035 10229	4 x 22Ω 5% 1206
3L26	2350 035 10229	4 x 22Ω 5% 1206
3L27	2350 035 10229	4 x 22Ω 5% 1206
3L28	2350 035 10229	4 x 22Ω 5% 1206
3L30	3198 031 02290	22Ω 5% 0.1W 0402
3L31	3198 031 02290	22Ω 5% 0.1W 0402
3L32	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L33	4822 117 13596	220Ω 5% 0.01W 0402
3L34	4822 117 13605	Jumper 0402
3L35	4822 117 13596	220Ω 5% 0.01W 0402
3L36	3198 031 03320	3.3kΩ 5% 0402
3L37	3198 031 03320	3.3kΩ 5% 0402
3L38	4822 117 13605	Jumper 0402
3M01	2350 035 10689	4 x 68Ω 5%
3M02	2350 035 10689	4 x 68Ω 5%
3M03	2350 035 10689	4 x 68Ω 5%
3M04	2350 035 10689	4 x 68Ω 5%
3M06	2350 035 10229	4 x 22Ω 5% 1206
3M07	2350 035 10229	4 x 22Ω 5% 1206
3M08	2350 035 10229	4 x 22Ω 5% 1206
3M09	2350 035 10229	4 x 22Ω 5% 1206
3M11	3198 031 04720	4.7kΩ 5% 0402
3M13	3198 031 04720	4.7kΩ 5% 0402
3M14	4822 117 13545	100Ω 1% 0402
3M15	4822 117 13545	100Ω 1% 0402
3M16	3198 031 04720	4.7kΩ 5% 0402
3M26	4822 117 13605	Jumper 0402
3M27	4822 117 13605	Jumper 0402
3M50	4822 117 13606	10kΩ 5% 0.01W 0402
3M51	4822 117 13606	10kΩ 5% 0.01W 0402
3M52	4822 117 13606	10kΩ 5% 0.01W 0402
3M53	4822 117 13546	47Ω 5% 0402
3M54	4822 117 13546	47Ω 5% 0402
3M55	4822 117 13546	47Ω 5% 0402
3M56	4822 117 13606	10kΩ 5% 0.01W 0402
3M57	4822 117 13546	47Ω 5% 0402
3M58	4822 117 13606	10kΩ 5% 0.01W 0402
3M59	4822 117 13546	47Ω 5% 0402
3M78	4822 117 13548	1kΩ 5% 0402
3M79	3198 031 03320	3.3kΩ 5% 0402
3M87	4822 117 13605	Jumper 0402
3M89	3198 031 02290	22Ω 5% 0.1W 0402
3M90	3198 031 02290	22Ω 5% 0.1W 0402
3N01	4822 117 13606	10kΩ 5% 0.01W 0402
3N02	4822 117 13606	10kΩ 5% 0.01W 0402
3N03	4822 117 13606	10kΩ 5% 0.01W 0402
3N04	4822 117 13606	10kΩ 5% 0.01W 0402
3N05	4822 117 13606	10kΩ 5% 0.01W 0402
3N06	4822 117 13606	10kΩ 5% 0.01W 0402
3N07	4822 051 30333	33kΩ 5% 0.062W
3N08	4822 117 13606	10kΩ 5% 0.01W 0402
3N09	4822 117 13548	1kΩ 5% 0402
3N10	4822 117 13603	33kΩ 5% 0402
3N11	4822 117 13546	47Ω 5% 0402
3N12	4822 117 13606	10kΩ 5% 0.01W 0402
3N13	4822 117 13606	10kΩ 5% 0.01W 0402
3N14	4822 117 13606	10kΩ 5% 0.01W 0402
3N15	4822 117 13546	47Ω 5% 0402
3N16	4822 117 13546	47Ω 5% 0402
3N17	4822 117 13546	47Ω 5% 0402
3N18	4822 117 13546	47Ω 5% 0402
3N19	4822 117 13606	10kΩ 5% 0.01W 0402
3N20	4822 117 13546	47Ω 5% 0402
3N21	4822 117 13545	100Ω 1% 0402
3N22	4822 117 13545	100Ω 1% 0402
3N23	4822 117 13545	100Ω 1% 0402
3N24	4822 117 13545	100Ω 1% 0402
3N25	4822 117 13545	100Ω 1% 0402
3N26	3198 031 04720	4.7kΩ 5% 0402
3N27	4822 117 13546	47Ω 5% 0402
3N28	4822 051 30181	180Ω 5% 0.062W
3N29	4822 117 13545	100Ω 1% 0402
3N30	4822 117 13545	100Ω 1% 0402
3N31	4822 117 13545	100Ω 1% 0402
3N32	4822 117 13545	100Ω 1% 0402
3N33	4822 117 13545	100Ω 1% 0402
3N34	4822 117 13545	100Ω 1% 0402
3N35	4822 117 13545	100Ω 1% 0402
3N46	4822 117 13545	100Ω 1% 0402
3N47	4822 117 13545	100Ω 1% 0402
3P01	3198 031 04720	4.7kΩ 5% 0402
3P03	4822 117 13546	47Ω 5% 0402
3P04	4822 117 13605	Jumper 0402
3P05	4822 117 13605	Jumper 0402
3Q01	4822 051 30759	75Ω 5% 0.062W
3Q06	4822 051 30759	75Ω 5% 0.062W
3Q11	4822 051 30759	75Ω 5% 0.062W
3Q16	4822 051 30151	150Ω 5% 0.062W
3Q17	4822 051 30102	1kΩ 5% 0.062W
3Q18	4822 051 30103	10kΩ 5% 0.062W
3Q21	4822 051 30222	2.2kΩ 5% 0.062W
3Q22	4822 051 30221	220Ω 5% 0.062W
3Q23	4822 051 30222	2.2kΩ 5% 0.062W
3Q24	4822 051 30221	220Ω 5% 0.062W
3Q25	4822 051 30103	10kΩ 5% 0.062W
3Q26	4822 051 30103	10kΩ 5% 0.062W
3Q27	4822 051 30103	10kΩ 5% 0.062W
3Q30	4822 051 30103	10kΩ 5% 0.062W
3Q31	4822 051 30103	10kΩ 5% 0.062W
3Q32	4822 051 30153	15kΩ 5% 0.062W
3Q33	4822 051 30153	15kΩ 5% 0.062W
3Q34	4822 051 30222	2.2kΩ 5% 0.062W
3Q40	4822 051 30102	1kΩ 5% 0.062W
3R00	4822 051 30103	10kΩ 5% 0.062W
3R02	4822 051 30153	15kΩ 5% 0.062W
3R03	4822 051 30103	10kΩ 5% 0.062W
3R05	4822 051 30153	15kΩ 5% 0.062W
3R12	4822 051 30689	68Ω 5% 0.063W 0603
3R13	4822 051 30102	1kΩ 5% 0.062W
3R16	4822 051 30759	75Ω 5% 0.062W
3R17	4822 051 30101	100Ω 5% 0.062W
3R20	4822 051 30102	1kΩ 5% 0.062W
3R22	4822 051 30759	75Ω 5% 0.062W
3R23	4822 051 30101	100Ω 5% 0.062W
3R28	4822 051 30759	75Ω 5% 0.062W
3R29	4822 051 30101	100Ω 5% 0.062W
3R35	4822 051 30101	100Ω 5% 0.062W
3R36	4822 051 30103	10kΩ 5% 0.062W
3R37	4822 117 12925	47kΩ 1% 0.063W 0603
3R40	4822 051 30759	75Ω 5% 0.062W
3R42	4822 051 30101	100Ω 5% 0.062W
3R43	4822 117 12925	47kΩ 1% 0.063W 0603
3R46	4822 117 12925	47kΩ 1% 0.063W 0603
3R51	4822 051 30103	10kΩ 5% 0.062W
3R53	4822 051 30153	15kΩ 5% 0.062W
3R54	4822 051 30103	10kΩ 5% 0.062W
3R56	4822 051 30153	15kΩ 5% 0.062W
3R57	4822 051 30759	75Ω 5% 0.062W
3R58	4822 117 12925	47kΩ 1% 0.063W 0603
3R77	4822 117 12925	47kΩ 1% 0.063W 0603
3R87	4822 051 30151	150Ω 5% 0.062W
3R88	4822 051 30151	150Ω 5% 0.062W
3R89	4822 117 12891	220kΩ 1%
3R90	4822 117 12891	220kΩ 1%
3R96	4822 117 12925	47kΩ 1% 0.063W 0603
3R98	4822 117 12925	47kΩ 1% 0.063W 0603
4206	4822 051 20008	Jumper 0805
4211	4822 117 13605	Jumper 0402
4212	4822 117 13605	Jumper 0402
4440	4822 117 13605	Jumper 0402
4441	4822 117 13605	Jumper 0402
4801	4822 117 13605	Jumper 0402
4J01	4822 117 13605	Jumper 0402
4K04	4822 117 13605	Jumper 0402
4K05	4822 117 13605	Jumper 0402
4L02	4822 117 13605	Jumper 0402
4L05	4822 117 13605	Jumper 0402
4M00	4822 117 13605	Jumper 0402
4M01	4822 117 13605	Jumper 0402
4M02	4822 117 13605	Jumper 0402
4M03	4822 117 13605	Jumper 0402
4M05	4822 117 13605	Jumper 0402
4M08	4822 117 13605	Jumper 0402
4M09	4822 117 13605	Jumper 0402
4M10	4822 117 13605	Jumper 0402
4M16	4822 117 13605	Jumper 0402
4M17	4822 117 13605	Jumper 0402
4N21	4822 117 13605	Jumper 0402
4N22	4822 117 13605	Jumper 0402

5101	3198 018 33970	0.39µF 10% 0805
5102	4822 157 71334	0.68µH 5% 1008
5103	4822 157 71334	0.68µH 5% 1008
5201	4822 157 11716	Bead 30Ω at 100MHz
5202	4822 157 11716	Bead 30Ω at 100MHz
5203	4822 157 11716	Bead 30Ω at 100MHz
5204	2422 549 42896	Bead 120Ω 100MHz
5205	4822 157 11716	Bead 30Ω at 100MHz
5206	4822 157 11716	Bead 30Ω at 100MHz
5207	2422 549 42896	Bead 120Ω 100MHz
5208	4822 157 11716	Bead 30Ω at 100MHz
5209	4822 157 11716	Bead 30Ω at 100MHz
5210	4822 157 11716	Bead 30Ω at 100MHz
5211	4822 157 11716	Bead 30Ω at 100MHz
5212	4822 157 11716	Bead 30Ω at 100MHz
5213	4822 157 11716	Bead 30Ω at 100MHz
5214	2422 536 00667	1000µF 20% 7032
5216	4822 157 11716	Bead 30Ω at 100MHz
5700	2422 549 45333	Bead 120Ω 100MHz
5704	4822 157 63635	10µF 20% 1206
5709	2422 535 94134	10µH 20% 0805
5712	2422 536 00339	33µ 20%
5713	2422 535 94995	10µF 20% 10145
5730	2422 535 94134	10µH 20% 0805
5733	2422 536 00689	220µF 20%
5735	2422 536 00667	1000µF 20% 7032
5737	2422 535 94134	10µH 20% 0805
5738	2422 549 45333	Bead 120Ω 100MHz
5752	2422 535 94134	10µH 20% 0805
5753	2422 536 00689	220µF 20%
5754	2422 535 94134	10µH 20% 0805
5756	2422 549 45333	Bead 120Ω 100MHz
5757	2422 549 45333	Bead 120Ω 100MHz
5900	2422 549 45333	Bead 120Ω 100MHz
5901	2422 549 45333	Bead 120Ω 100MHz
5902	2422 549 45333	Bead 120Ω 100MHz
5903	2422 549 45333	Bead 120Ω 100MHz
5904	2422 549 45333	Bead 120Ω 100MHz
5905	2422 549 45333	Bead 120Ω 100MHz
5906	2422 549 45333	Bead 120Ω 100MHz
5907	2422 549 45333	Bead 120Ω 100MHz
5908	2422 549 45333	Bead 120Ω 100MHz
5909	2422 549 45333	Bead 120Ω 100MHz
5910	2422 549 45333	Bead 120Ω 100MHz
5911	2422 549 45333	Bead 120Ω 100MHz
5C00	2422 549 45333	Bead 120Ω 100MHz
5D00	2422 549 42896	Bead 120Ω 100MHz
5D01	2422 549 42896	Bead 120Ω 100MHz
5D02	2422 549 42896	Bead 120Ω 100MHz
5D03	2422 549 42896	Bead 120Ω 100MHz
5D04	2422 549 42896	Bead 120Ω 100MHz
5E00	2422 549 45333	Bead 120Ω 100MHz
5E01	2422 549 45333	Bead 120Ω 100MHz
5E02	2422 549 45333	Bead 120Ω 100MHz
5E03	2422 549 45333	Bead 120Ω 100MHz
5J01	2422 549 42896	Bead 120Ω 100MHz
5J02	2422 549 42896	Bead 120Ω 100MHz
5J03	2422 549 45333	Bead 120Ω 100MHz
5J04	2422 549 45333	Bead 120Ω 100MHz
5L00	2422 549 45333	Bead 120Ω 100MHz
5L01	2422 549 45333	Bead 120Ω 100MHz
5L02	2422 549 45333	Bead 120Ω 100MHz
5M00	2422 549 45333	Bead 120Ω 100MHz
5M01	2422 549 45333	Bead 120Ω 100MHz
5M02	2422 549 45333	Bead 120Ω 100MHz
5M03	2422 549 45333	Bead 120Ω 100MHz
5M04	2422 549 45333	Bead 120Ω 100MHz
5M05	2422 549 45333	Bead 120Ω 100MHz
5N01	4822 157 11716	Bead 30Ω at 100MHz
5N02	4822 157 11716	Bead 30Ω at 100MHz
5N03	4822 157 11716	Bead 30Ω at 100MHz
5N04	4822 157 11716	Bead 30Ω at 100MHz
5N05	4822 157 11716	Bead 30Ω at 100MHz
5P01	4822 157 11716	Bead 30Ω at 100MHz
5P02	4822 157 11716	Bead 30Ω at 100MHz
5P03	4822 157 11716	Bead 30Ω at 100MHz
5P04	4822 157 11716	Bead 30Ω at 100MHz
5P05	4822 157 11716	Bead 30Ω at 100MHz
5P06	4822 157 11716	Bead 30Ω at 100MHz
5Q01	2422 549 45333	Bead 120Ω 100MHz
5Q06	2422 549 45333	Bead 120Ω 100MHz
5Q11	2422 549 45333	Bead 120Ω 100MHz
5Q16	2422 549 45333	Bead 120Ω 100MHz
5Q21	2422 549 45333	Bead 120Ω 100MHz
5Q23	2422 549 45333	Bead 120Ω 100MHz
5R57	2422 549 45333	Bead 120Ω 100MHz

6101	4822 130 11416	PDZ6.8B
6102	4822 130 11416	PDZ6.8B
6104	4822 130 11525	1SS356
6105	4822 130 11525	1SS356
6204	4822 130 80622	BAT54
6205	4822 130 80622	BAT54
6430	9340 548 42115	PDZ2.4B
6431	9965 000 20150	1N4148WS SOD-323

6601	4822 130 10838	UDZ3.3B
6708	3198 010 10720	SS24
6709	9322 128 70685	SMSS14
6712	3198 010 10730	SS36
6733	9322 128 70685	SMSS14
6735	5322 130 34337	BAV99
6736	9340 548 71115	PDZ33B
6740	4822 130 10837	UDZS8.2B
6751	9322 128 70685	SMSS14
6E01	9322 102 64685	UDZ2.7B
6E03	9322 102 64685	UDZ2.7B
6N01	9322 085 77685	TLMG3100
6Q16	4822 130 11397	BAS316
6R61	4822 130 11416	PDZ6.8B
6R62	4822 130 11416	PDZ6.8B
6R63	4822 130 11416	PDZ6.8B
6R64	4822 130 11416	PDZ6.8B
6R65	4822 130 11416	PDZ6.8B
6R66	4822 130 11416	PDZ6.8B
6R67	4822 130 11416	PDZ6.8B
6R68	4822 130 11416	PDZ6.8B

7101	3198 010 42310	BC847BW
7102	3198 010 42310	BC847BW
7201	9340 550 49115	PUMH7
7202	9340 550 49115	PUMH7
7206	4822 130 60373	BC856B
7207	9322 214 45668	M24C16-WMN6P
7214	9339 693 90135	BCP69-25
7215	9339 693 90135	BCP69-25
7216	9340 425 20115	BC847BS
7217	9352 780 19557	IC SM TDA15011H/ N1BD0 (PHSE) Y
7219	9322 164 91668	IC SM CD74HC4053M (TI00) R
7430	4822 130 11155	PDTC114ET
7436	9322 221 97668	IC SM SN74LVC14APW (TI00) R
7601	9322 183 05668	TS482ID
7602	9351 742 70118	74HC08PW
7603	3198 010 42310	BC847BW
7604	3198 010 42310	BC847BW
7605	9340 310 50215	PDTA143ET
7606	9340 425 20115	BC847BS
7708	9322 139 16668	LF33CPT
7710	9322 202 34668	L5973D
7730	9322 191 07668	IC SM L5970D
7735	4822 130 42804	BC817-25
7738	9322 163 24668	L78M08CDT
7741	3198 010 42310	BC847BW
7742	3198 010 42310	BC847BW
7752	5322 209 90529	MC34063AD
7754	9322 214 00668	SI2301BDS-E3
7755	4822 130 11155	PDTC114ET
7756	4822 130 11155	PDTC114ET
7758	9322 212 14668	SI4423DY
7801	9322 200 07671	GM1501-LF-BD
7900	9322 142 88668	LF25CDT
7901	9322 189 19668	LD1086D2T18
7A02	3198 010 42310	BC847BW
7A03	3198 010 42310	BC847BW
7B01	9322 214 42671	K4D263238F-QC50
7C00	9322 205 12671	MX29LV040QC-70G
7C01	9322 206 23668	M24C32-WMN6P
7C02	9322 215 39685	PST596JN
7D00	9322 206 24668	M24C02-WMN6P
7D01	9965 000 04199	BSN20
7D02	9965 000 04199	BSN20
7D03	9322 199 35671	SII9993CTG100
7D04	9352 703 94118	UDA1334BT/N2
7D05	9322 164 91668	IC SM CD74HC4053M (TI00) R
7E00	9322 195 23668	ADG733BRU
7E01	9322 199 80668	SM5301BS-G
7E02	9322 199 56668	ADG781BCP
7E03	9322 164 91668	IC SM CD74HC4053M (TI00) R
7E04	9322 221 97668	IC SM SN74LVC14APW (TI00) R
7E05	9322 221 97668	IC SM SN74LVC14APW (TI00) R
7L01	3198 010 42310	BC847BW
7L02	3198 010 42310	BC847BW
7L03	3198 010 42310	BC847BW
7L04	9322 212 77672	MST9883C-LF-110
7L05	4822 209 17398	LD1117DT33
7L06	9965 000 04199	BSN20
7L07	9965 000 04199	BSN20
7M00	9322 204 76671	T6TU5XBG-0001
7M01	9322 206 19672	MSM56V16160F-7T3-FG
7M03	9322 170 14668	LF15ABDT
7N01	9322 210 01668	EPCS4SI8N
7N02	9322 217 35671	EP1C12F256C8N
7N03	9340 425 20115	BC847BS
7N04	9322 210 59668	THC63LVDF84B
7P01	9322 170 14668	LF15ABDT
7P02	9322 201 03668	THC63LVDM83R
7Q01	3198 010 42310	BC847BW
7Q25	9322 206 24668	M24C02-WMN6P
7R12	3198 010 42310	BC847BW
7R57▲	9322 164 91668	IC SM CD74HC4053M (TI00) R

Side I/O [D]

Various

1001	2422 026 05133	Connector SVHS 4p f
1002	4822 267 10975	Soc. CINCH f YeWhRd
1010	4822 267 31014	Soc. headphone
1701	4822 276 13775	Switch 1p 0.1A 12V
1702	4822 276 13775	Switch 1p 0.1A 12V
1703	4822 276 13775	Switch 1p 0.1A 12V
1704	4822 276 13775	Switch 1p 0.1A 12V
1705	4822 276 13775	Switch 1p 0.1A 12V
1706	4822 276 13775	Switch 1p 0.1A 12V
1M01	4822 267 10459	Connector 3p
1M36	2422 025 17179	Connector 11p m

2003	2022 552 05679	1µF 10% 16V 0805
2004	3198 016 36810	680pF 25V 0603
2005	2020 552 94427	100pF 5% 50V
2006	3198 016 36810	680pF 25V 0603
2007	2020 552 94427	100pF 5% 50V
2008	2238 916 15641	22nF 10% 25V 0603
2009	5322 126 11583	10nF 10% 50V 0603
2010	2238 916 15641	22nF 10% 25V 0603
2011	5322 126 11583	10nF 10% 50V 0603

3000	4822 051 30759	75Ω 5% 0.062W
3002	4822 051 30151	150Ω 5% 0.062W
3003	4822 051 30391	390Ω 5% 0.062W
3004	4822 051 30561	560Ω 5% 0.062W
3004	4822 051 30759	75Ω 5% 0.062W
3005	4822 117 12968	820Ω 5% 0.62W
3006	3198 021 31820	1.8kΩ 5% 0.062W 0603
3008	4822 051 30222	2.2kΩ 5% 0.062W
3009	4822 051 30102	1kΩ 5% 0.062W
3010	4822 051 30333	33kΩ 5% 0.062W
3011	4822 051 30392	3.9Ω 5% 0.063W 0603
3012	4822 051 30102	1kΩ 5% 0.062W
3013	4822 051 30333	33kΩ 5% 0.062W
3016	4822 051 30103	10kΩ 5% 0.062W
3020	4822 051 30103	10kΩ 5% 0.062W
3999	4822 117 11454	820Ω 1% 0.1W
9004	4822 051 30008	Jumper 0603
9005	4822 051 30008	Jumper 0603
9006	4822 051 30008	Jumper 0603
9007	4822 051 30008	Jumper 0603
9008	4822 051 30008	Jumper 0603
9009	4822 051 30008	Jumper 0603
9010	4822 051 30008	Jumper 0603
9011	4822 051 30008	Jumper 0603

6000	4822 130 11416	PDZ6.8B
6001	4822 130 11416	PDZ6.8B
6002	4822 130 11416	PDZ6.8B
6003	4822 130 11416	PDZ6.8B
6004	4822 130 11416	PDZ6.8B
6005	4822 130 11416	PDZ6.8B
6006	4822 130 11416	PDZ6.8B
6007	4822 130 11416	PDZ6.8B
6008	4822 130 11416	PDZ6.8B
6009	4822 130 11416	PDZ6.8B
6010	4822 130 11416	PDZ6.8B
6011	4822 130 11416	PDZ6.8B

LED Panel [J]

Various

1040	9322 206 81667	TSOP34836YA1

2040	4822 124 12095	100µF 20% 16V

3040	4822 117 13597	330Ω 5% 0402 0.01W
3051	4822 051 30221	220Ω 5% 0.062W
3061	4822 051 30221	220Ω 5% 0.062W
3063	4822 117 13606	10kΩ 5% 0.01W 0402
3078	3198 031 02250	2.2MΩ 5% 0.1W 0402
9012	4822 117 13605	Jumper 0402
9041	4822 117 13605	Jumper 0402
9042	4822 117 13605	Jumper 0402
9062	4822 117 13605	Jumper 0402
9066	4822 117 13606	10kΩ 5% 0.01W 0402
9070	4822 117 13605	Jumper 0402
9081	4822 117 13605	Jumper 0402
9082	4822 117 13605	Jumper 0402
9111	4822 117 13605	Jumper 0402
9112	4822 117 13605	Jumper 0402
9115	4822 117 13605	Jumper 0402
9122	4822 117 13605	Jumper 0402

6051	9322 218 97685	SML-310VTK
6060	9322 134 46685	SML-310MT
6070	9322 140 63685	TEMD5000

7051	3198 010 42310	BC847BW
7052	3198 010 42310	BC847BW
7062	4822 130 60373	BC856B

IBO Zapper Panel [K]

Various

0188	3139 124 62521	IDTV BRACKET
0315	3139 120 41531	SCR T10 SERR ST ZN M3X8
1301	2422 025 10768	Connector 3p m
1304	4822 252 51187	19398E1(0,500A)
1401	4822 267 31729	Connector cinch 1p
1402	4822 267 10459	Connector 3p
1403	2422 025 18799	Socket USB 4p f
1500	2422 025 18872	Connector 32p f
1600	3112 297 13381	TUNER TD1316/SPHP
1700	2422 033 00364	Connector smartcard
8301	3139 110 27701	Cable 03P/480/03P
8500	3139 131 06221	Cable 32P/400/32P
8600	3139 131 05451	Cable 340

2100	4822 124 23002	10µF 16V
2101	4822 124 23002	10µF 16V
2102	4822 124 23002	10µF 16V
2103	2238 586 59812	100nF 20% 50V 0603
2104	2238 586 59812	100nF 20% 50V 0603
2105	2238 586 59812	100nF 20% 50V 0603
2106	2238 586 59812	100nF 20% 50V 0603
2107	2238 586 59812	100nF 20% 50V 0603
2108	2238 586 59812	100nF 20% 50V 0603
2109	2238 586 59812	100nF 20% 50V 0603
2110	2238 586 59812	100nF 20% 50V 0603
2111	2238 586 59812	100nF 20% 50V 0603
2112	2238 586 59812	100nF 20% 50V 0603
2113	2238 586 59812	100nF 20% 50V 0603
2114	2238 586 59812	100nF 20% 50V 0603
2115	2238 586 59812	100nF 20% 50V 0603
2116	2238 586 59812	100nF 20% 50V 0603
2119	2238 586 59812	100nF 20% 50V 0603
2120	2238 586 59812	100nF 20% 50V 0603
2121	2238 586 59812	100nF 20% 50V 0603
2130	4822 124 23002	10µF 16V
2131	4822 124 23002	10µF 16V
2132	4822 124 23002	10µF 16V
2133	4822 124 23002	10µF 16V
2203	4822 124 23002	10µF 16V
2204	2238 586 59812	100nF 20% 50V 0603
2206	4822 124 23002	10µF 16V
2207	2238 586 59812	100nF 20% 50V 0603
2208	2238 586 59812	100nF 20% 50V 0603
2209	2238 586 59812	100nF 20% 50V 0603
2210	2238 586 59812	100nF 20% 50V 0603
2211	2238 586 59812	100nF 20% 50V 0603

2212	2238 586 59812	100nF 20% 50V 0603
2213	2238 586 59812	100nF 20% 50V 0603
2214	2238 586 59812	100nF 20% 50V 0603
2300	4822 126 13881	470pF 5% 50V
2301	4822 124 40849	330UF 20% 16V
2302	4822 124 40207	100µF 20% 25V
2304	2020 021 91506	1000µF 20% 16V
2305	2238 586 59812	100nF 20% 50V 0603
2306	4822 124 40207	100µF 20% 25V
2308	4822 126 13881	470pF 5% 50V
2309	4822 124 40849	330UF 20% 16V
2311	2020 021 91687	470µF 20% 16V
2313	4822 126 13881	470pF 5% 50V
2314	3198 017 33330	33nF 20% 16V 0603
2315	4822 124 40849	330UF 20% 16V
2317	4822 124 40207	100µF 20% 25V
2318	2020 021 91687	470µF 20% 16V
2319	2020 021 91634	100µF 25V
2320	2238 586 59812	100nF 20% 50V 0603
2324	3198 017 44740	470nF 10V 0603
2325	3198 017 44740	470nF 10V 0603
2326	3198 017 44740	470nF 10V 0603
2327	2238 586 59812	100nF 20% 50V 0603
2328	2238 586 59812	100nF 20% 50V 0603
2329	4822 126 13193	4.7nF 10% 63V
2330	2020 021 91687	470µF 20% 16V
2331	4822 126 13193	4.7nF 10% 63V
2332	4822 124 40207	100µF 20% 25V
2333	5322 126 11583	10nF 10% 50V 0603
2334	2238 586 59812	100nF 20% 50V 0603
2335	4822 124 12095	100µF 20% 16V
2336	4822 126 13193	4.7nF 10% 63V
2337	4822 124 11947	10µF 20% 16V
2337	4822 124 22652	2.2µF 20% 50V
2403	2238 586 59812	100nF 20% 50V 0603
2405	2238 586 59812	100nF 20% 50V 0603
2406	3198 032 27190	100µF 6.3V
2411	2238 586 59812	100nF 20% 50V 0603
2412	2238 586 59812	100nF 20% 50V 0603
2413	2238 586 59812	100nF 20% 50V 0603
2500	3198 017 41050	1µF 10V 0603
2501	2020 552 94427	100pF 5% 50V
2502	2238 586 59812	100nF 20% 50V 0603
2503	2020 552 94427	100pF 5% 50V
2504	2238 586 59812	100nF 20% 50V 0603
2505	3198 017 41050	1µF 10V 0603
2506	4822 124 12084	1µF 20% 50V
2507	4822 126 13193	4.7nF 10% 63V
2508	3198 017 41050	1µF 10V 0603
2509	2020 552 94427	100pF 5% 50V
2510	2020 552 94427	100pF 5% 50V
2511	2238 586 59812	100nF 20% 50V 0603
2512	4822 124 80151	47µF 16V
2513	3198 017 41050	1µF 10V 0603
2514	4822 124 12084	1µF 20% 50V
2515	4822 126 13193	4.7nF 10% 63V
2520	4822 122 33761	22pF 5% 50V
2521	4822 122 33761	22pF 5% 50V
2522	4822 126 14315	390pF 5% 50V 0603
2523	4822 126 14315	390pF 5% 50V 0603
2524	4822 122 33761	22pF 5% 50V
2525	4822 126 14315	390pF 5% 50V 0603
2526	4822 126 14315	390pF 5% 50V 0603
2527	4822 122 33761	22pF 5% 50V
2528	4822 122 33761	22pF 5% 50V
2529	4822 122 33761	22pF 5% 50V
2530	4822 126 14315	390pF 5% 50V 0603
2531	4822 126 14315	390pF 5% 50V 0603
2532	4822 122 33761	22pF 5% 50V
2533	4822 122 33761	22pF 5% 50V
2534	4822 122 33761	22pF 5% 50V
2535	4822 122 33761	22pF 5% 50V
2536	4822 122 33761	22pF 5% 50V
2537	4822 126 14315	390pF 5% 50V 0603
2538	4822 126 14315	390pF 5% 50V 0603
2539	4822 126 13879	220nF +80-20% 16V
2540	4822 126 13879	220nF +80-20% 16V
2543	4822 124 80151	47µF 16V
2544	2238 586 59812	100nF 20% 50V 0603
2550	4822 126 13879	220nF +80-20% 16V
2551	3198 017 41050	1µF 10V 0603
2553	4822 126 13879	220nF +80-20% 16V
2554	3198 017 41050	1µF 10V 0603
2555	4822 124 23002	10µF 16V
2556	2238 586 59812	100nF 20% 50V 0603
2607	2238 586 59812	100nF 20% 50V 0603
2608	2238 586 59812	100nF 20% 50V 0603
2609	2238 586 59812	100nF 20% 50V 0603
2610	2238 586 59812	100nF 20% 50V 0603
2611	2238 586 59812	100nF 20% 50V 0603
2612	2238 586 59812	100nF 20% 50V 0603
2613	2238 586 59812	100nF 20% 50V 0603
2614	4822 124 80151	47µF 16V
2615	2238 586 59812	100nF 20% 50V 0603
2617	2238 586 59812	100nF 20% 50V 0603
2618	2238 586 59812	100nF 20% 50V 0603
2619	2238 586 59812	100nF 20% 50V 0603
2620	2238 586 59812	100nF 20% 50V 0603
2621	4822 124 80151	47µF 16V
2622	4822 124 80151	47µF 16V
2623	2238 586 59812	100nF 20% 50V 0603
2624	2238 586 59812	100nF 20% 50V 0603
2625	2238 586 59812	100nF 20% 50V 0603
2626	2238 586 59812	100nF 20% 50V 0603
2627	2238 586 59812	100nF 20% 50V 0603
2628	2238 586 59812	100nF 20% 50V 0603
2629	2238 586 59812	100nF 20% 50V 0603
2630	2238 586 59812	100nF 20% 50V 0603
2631	2238 586 59812	100nF 20% 50V 0603
2632	4822 122 33741	10pF 10% 50V
2700	2238 586 59812	100nF 20% 50V 0603
2701	2238 586 59812	100nF 20% 50V 0603
2702	2238 586 59812	100nF 20% 50V 0603
2703	2238 586 59812	100nF 20% 50V 0603
2704	2238 586 59812	100nF 20% 50V 0603
2705	2238 586 59812	100nF 20% 50V 0603
2706	4822 124 23002	10µF 16V
2707	4822 124 23002	10µF 16V
2708	2238 586 59812	100nF 20% 50V 0603
2709	4822 124 23002	10µF 16V
2710	2238 586 59812	100nF 20% 50V 0603
2711	2238 586 59812	100nF 20% 50V 0603
2712	2238 586 59812	100nF 20% 50V 0603
2713	4822 124 23002	10µF 16V
2714	5322 126 11578	1nF 10% 50V 0603
2715	2020 552 94427	100pF 5% 50V

⊣WW⊢

3100	4822 051 30103	10kΩ 5% 0.062W
3101	4822 051 30103	10kΩ 5% 0.062W
3112	4822 051 30103	10kΩ 5% 0.062W
3116	4822 051 30103	10kΩ 5% 0.062W
3117	4822 051 30103	10kΩ 5% 0.062W
3119	4822 051 30103	10kΩ 5% 0.062W
3128	4822 051 30103	10kΩ 5% 0.062W
3130	4822 051 30103	10kΩ 5% 0.062W
3131	4822 051 30103	10kΩ 5% 0.062W
3133	9965 000 23109	22Ω 5% 0603
3134	9965 000 23109	22Ω 5% 0603
3135	9965 000 23109	22Ω 5% 0603
3137	4822 051 30103	10kΩ 5% 0.062W
3138	4822 051 30103	10kΩ 5% 0.062W
3139	4822 051 30339	33Ω 5% 0.062W
3140	5322 117 13036	1.2kΩ 1% 0.063W 0603
3141	4822 051 30103	10kΩ 5% 0.062W
3142	4822 051 30101	100Ω 5% 0.062W
3143	4822 051 30101	100Ω 5% 0.062W
3144	4822 051 30101	100Ω 5% 0.062W
3146	4822 051 30101	100Ω 5% 0.062W
3147	4822 051 30101	100Ω 5% 0.062W
3151	4822 051 30103	10kΩ 5% 0.062W
3154	4822 051 30103	10kΩ 5% 0.062W
3156	3198 031 13390	4X 33Ω 5% 1206
3157	3198 031 13390	4X 33Ω 5% 1206
3158	3198 031 13390	4X 33Ω 5% 1206
3159	3198 031 13390	4X 33Ω 5% 1206
3160	4822 051 30339	33Ω 5% 0.062W
3161	4822 051 30339	33Ω 5% 0.062W
3162	4822 051 30339	33Ω 5% 0.062W
3163	4822 051 30103	10kΩ 5% 0.062W
3200	4822 051 30332	3.3Ω 5% 0.062W
3205	4822 051 30103	10kΩ 5% 0.062W
3206	4822 051 30332	3.3Ω 5% 0.062W
3207	4822 051 30332	3.3Ω 5% 0.062W
3209	4822 051 30101	100Ω 5% 0.062W
3210	4822 051 30101	100Ω 5% 0.062W
3211	4822 051 30103	10kΩ 5% 0.062W
3300	3198 021 31080	1Ω 5% 0603
3301	3198 021 31080	1Ω 5% 0603
3303	3198 021 31080	1Ω 5% 0603
3304	5322 117 13046	1.8kΩ 1% 0.063W 0603
3306	2322 704 61002	1kΩ 1%
3307	2322 704 61001	100Ω 1% 0603
3312	3198 021 31080	1Ω 5% 0603
3313	3198 021 31080	1Ω 5% 0603
3314	3198 021 31080	1Ω 5% 0603
3315	4822 051 30102	1kΩ 5% 0.062W
3316	4822 051 30102	1kΩ 5% 0.062W
3317	2322 704 63302	3.3kΩ 1% 0603
3318	3198 021 31080	1Ω 5% 0603
3319	3198 021 31080	1Ω 5% 0603
3320	3198 021 31080	1Ω 5% 0603
3321	3198 021 31080	1Ω 5% 0603
3322	5322 117 13042	3.9kΩ 1% 0.063W 0603
3323	5322 117 13057	820Ω 1% 0.063W 0603
3324	4822 051 30102	1kΩ 5% 0.062W
3325	4822 117 13632	100kΩ 1% 0603 0.62W
3326	4822 051 30103	10kΩ 5% 0.062W
3327	4822 051 30339	33Ω 5% 0.062W
3328	4822 117 13632	100kΩ 1% 0603 0.62W
3330	3198 021 31820	1.8kΩ 5% 0.062W 0603
3331	2322 704 61001	100Ω 1% 0603
3332	5322 117 13055	75Ω 1% 0.063W 0603
3333	4822 051 30273	27kΩ 5% 0.062W
3333	4822 117 12925	47kΩ 1% 0.063W 0603
3334	4822 051 30103	10kΩ 5% 0.062W
3334	4822 051 30333	33kΩ 5% 0.062W
3403	4822 051 30103	10kΩ 5% 0.062W
3404	4822 051 30561	560Ω 5% 0.062W
3405	4822 051 30102	1kΩ 5% 0.062W
3406	4822 051 30102	1kΩ 5% 0.062W
3407	4822 051 30689	68Ω 5% 0.063W 0603
3411	4822 051 30181	180Ω 5% 0.062W
3420	4822 051 30339	33Ω 5% 0.062W
3421	4822 051 30339	33Ω 5% 0.062W
3422	4822 051 30153	15kΩ 5% 0.062W
3423	4822 051 30153	15kΩ 5% 0.062W
3500	4822 051 30102	1kΩ 5% 0.062W
3501	4822 117 12968	820Ω 5% 0.62W
3502	4822 051 30683	68kΩ 5% 0.062W
3503	4822 051 30102	1kΩ 5% 0.062W
3504	4822 117 13613	2.2Ω 5% 0603
3505	4822 117 12968	820Ω 5% 0.62W
3506	4822 051 30333	33kΩ 5% 0.062W
3507	4822 051 30152	1.5Ω 5% 0.062W
3508	4822 117 13613	2.2Ω 5% 0603
3509	4822 051 30102	1kΩ 5% 0.062W
3510	4822 051 30683	68kΩ 5% 0.062W
3511	4822 117 12968	820Ω 5% 0.62W
3512	4822 051 30101	100Ω 5% 0.062W
3513	4822 051 30101	100Ω 5% 0.062W
3514	4822 051 30102	1kΩ 5% 0.062W
3515	4822 051 30333	33kΩ 5% 0.062W
3516	4822 117 12968	820Ω 5% 0.62W
3517	4822 051 30152	1.5Ω 5% 0.062W
3519	4822 051 30759	75Ω 5% 0.062W
3520	4822 051 30759	75Ω 5% 0.062W
3521	4822 051 30759	75Ω 5% 0.062W
3522	4822 051 30759	75Ω 5% 0.062W
3523	4822 051 30759	75Ω 5% 0.062W
3526	4822 051 30759	75Ω 5% 0.062W
3527	4822 051 30759	75Ω 5% 0.062W
3528⚠	5322 117 11726	10Ω 5%
3530	4822 051 30759	75Ω 5% 0.062W
3532	4822 051 30561	560Ω 5% 0.062W
3533	4822 051 30759	75Ω 5% 0.062W
3534	4822 117 12891	220kΩ 1%
3535	4822 117 13632	100kΩ 1% 0603 0.62W
3537	4822 117 12891	220kΩ 1%
3538	4822 117 13632	100kΩ 1% 0603 0.62W
3539	4822 051 30759	75Ω 5% 0.062W
3540	4822 051 30561	560Ω 5% 0.062W
3547	4822 051 30759	75Ω 5% 0.062W
3548	4822 051 30561	560Ω 5% 0.062W
3557	4822 117 13632	100kΩ 1% 0603 0.62W
3558	4822 051 30102	1kΩ 5% 0.062W
3559	4822 051 30681	680Ω 5% 0.062W
3560	4822 051 30273	27kΩ 5% 0.062W
3561	4822 051 30271	270Ω 5% 0.062W
3562	4822 051 30151	150Ω 5% 0.062W
3563	4822 117 13632	100kΩ 1% 0603 0.62W
3564	4822 051 30102	1kΩ 5% 0.062W
3565	4822 051 30681	680Ω 5% 0.062W
3566	4822 051 30273	27kΩ 5% 0.062W
3567	4822 051 30271	270Ω 5% 0.062W
3568	4822 051 30151	150Ω 5% 0.062W
3570	4822 051 30689	68Ω 5% 0.063W 0603
3571	4822 051 30151	150Ω 5% 0.062W
3606	4822 051 30101	100Ω 5% 0.062W
3607	4822 051 30101	100Ω 5% 0.062W
3608	4822 051 30103	10kΩ 5% 0.062W
3609	4822 051 30472	4.7Ω 5% 0.062W
3610	4822 051 30472	4.7Ω 5% 0.062W
3612	4822 051 30472	4.7Ω 5% 0.062W
3613	4822 117 13632	100kΩ 1% 0603 0.62W
3614	4822 117 13632	100kΩ 1% 0603 0.62W
3615	4822 051 30102	1kΩ 5% 0.062W
3618	4822 117 13632	100kΩ 1% 0603 0.62W
3619	4822 117 13632	100kΩ 1% 0603 0.62W
3621	4822 051 30339	33Ω 5% 0.062W
3622	3198 031 13390	4X 33Ω 5% 1206
3623	4822 051 30472	4.7Ω 5% 0.062W
3624	3198 031 13390	4X 33Ω 5% 1206
3625	4822 051 30101	100Ω 5% 0.062W
3626	4822 051 30272	2.7kΩ 5% 0.062W
3627	4822 051 30272	2.7kΩ 5% 0.062W
3629	4822 051 30101	100Ω 5% 0.062W
3630	4822 051 30101	100Ω 5% 0.062W
3631	4822 051 30101	100Ω 5% 0.062W
3635	4822 051 30339	33Ω 5% 0.062W

3636	4822 051 30684	680kΩ 5% 0.062W
3637	4822 117 12891	220kΩ 1%
3638	4822 051 30331	330Ω 5% 0.062W
3639	4822 051 30391	390Ω 5% 0.062W
3640	4822 051 30684	680kΩ 5% 0.062W
3641	4822 117 12891	220kΩ 1%
3642	4822 051 30331	330Ω 5% 0.062W
3643	4822 051 30331	330Ω 5% 0.062W
3644	3198 031 13390	4X 33Ω 5% 1206
3645	4822 051 30103	10kΩ 5% 0.062W
3700	4822 051 30101	100Ω 5% 0.062W
3701	4822 051 30101	100Ω 5% 0.062W
3702	3198 031 13390	4X 33Ω 5% 1206
3703	3198 031 13390	4X 33Ω 5% 1206
3704	4822 051 30103	10kΩ 5% 0.062W
3705	3198 031 13390	4X 33Ω 5% 1206
3707	4822 051 30103	10kΩ 5% 0.062W
3708	4822 051 30103	10kΩ 5% 0.062W
3709	4822 051 30103	10kΩ 5% 0.062W
3710	4822 051 30103	10kΩ 5% 0.062W
3711	4822 051 30103	10kΩ 5% 0.062W
3712	4822 051 30103	10kΩ 5% 0.062W
3713	2322 704 62002	2kΩ 1%
3715	4822 051 30103	10kΩ 5% 0.062W
3716	4822 051 30103	10kΩ 5% 0.062W
3717	4822 051 30103	10kΩ 5% 0.062W
3718	4822 051 30103	10kΩ 5% 0.062W
3719	4822 051 30103	10kΩ 5% 0.062W
3720	4822 051 30103	10kΩ 5% 0.062W
3721	4822 051 30103	10kΩ 5% 0.062W
3722	4822 051 30103	10kΩ 5% 0.062W
3723	3198 031 13390	4X 33Ω 5% 1206
3724	3198 031 13390	4X 33Ω 5% 1206
3725	4822 051 30339	33Ω 5% 0.062W
3726	4822 051 30339	33Ω 5% 0.062W
3727	4822 051 30479	47Ω 5% 0.062W
3728	4822 051 30479	47Ω 5% 0.062W
3729	4822 051 30479	47Ω 5% 0.062W
3730	4822 051 30479	47Ω 5% 0.062W
3731	4822 051 30479	47Ω 5% 0.062W
3732	4822 051 30479	47Ω 5% 0.062W
3733	4822 051 30479	47Ω 5% 0.062W
3734	4822 117 13573	4 x 47Ω 5%
3738	4822 051 30479	47Ω 5% 0.062W
3739	4822 051 30479	47Ω 5% 0.062W
3740	4822 051 30479	47Ω 5% 0.062W
3741	4822 051 30479	47Ω 5% 0.062W
3742	4822 051 30479	47Ω 5% 0.062W
3743	4822 051 30479	47Ω 5% 0.062W
3744	4822 051 30479	47Ω 5% 0.062W
3745	4822 051 30479	47Ω 5% 0.062W
3746	4822 051 30479	47Ω 5% 0.062W
3747	4822 051 30479	47Ω 5% 0.062W
3748	4822 051 30479	47Ω 5% 0.062W
3749	4822 051 30339	33Ω 5% 0.062W
3750	4822 051 30339	33Ω 5% 0.062W
3751	4822 051 30472	4.7Ω 5% 0.062W
3752	4822 051 30472	4.7Ω 5% 0.062W

5100	4822 157 11499	Bead 60Ω at 100MHz
5101	4822 157 11717	Bead 50Ω at 100MHz
5102	4822 157 11717	Bead 50Ω at 100MHz
5103	4822 157 11717	Bead 50Ω at 100MHz
5201	4822 157 11499	Bead 60Ω at 100MHz
5202	4822 157 11499	Bead 60Ω at 100MHz
5203	4822 157 11499	Bead 60Ω at 100MHz
5300	2422 536 00491	47µ
5301	4822 157 10452	10µH 10%
5302	2422 535 94639	10µH 20%
5303	2422 536 00548	100µ
5304	4822 157 10452	10µH 10%
5305	2422 536 00548	100µ
5306	4822 157 10452	10µH 10%
5307	2422 535 94639	10µH 20%
5309	3198 018 90050	Bead 1kΩ at 100MHz
5401	4822 157 11499	Bead 60Ω at 100MHz
5420	2422 549 44197	Bead 220Ω at 100MHz
5502	4822 157 11499	Bead 60Ω at 100MHz
5504	4822 157 11499	Bead 60Ω at 100MHz
5505	4822 157 11499	Bead 60Ω at 100MHz
5507	4822 157 11499	Bead 60Ω at 100MHz
5508	4822 157 11499	Bead 60Ω at 100MHz
5511	3198 018 52280	2.2µF 10% 1008
5512	3198 018 52280	2.2µF 10% 1008
5513	3198 018 52280	2.2µF 10% 1008
5514	3198 018 52280	2.2µF 10% 1008
5528	4822 157 11499	Bead 60Ω at 100MHz
5600	4822 157 11499	Bead 60Ω at 100MHz
5601	4822 157 11499	Bead 60Ω at 100MHz
5602	4822 157 11499	Bead 60Ω at 100MHz
5700	4822 157 11499	Bead 60Ω at 100MHz
5701	4822 157 11499	Bead 60Ω at 100MHz
5702	4822 157 11499	Bead 60Ω at 100MHz
5703	4822 157 11499	Bead 60Ω at 100MHz
5704	4822 157 11499	Bead 60Ω at 100MHz

6300	9322 128 70685	SMSS14
6303	9322 128 70685	SMSS14
6304	9322 128 70685	SMSS14
6307	9965 000 20150	1N4148WS SOD-323
6400	9340 548 52115	PDZ5.1B
6401	4822 130 10837	UDZS8.2B
6403	4822 130 10837	UDZS8.2B
6503	4822 130 11397	BAS316
6504	4822 130 11397	BAS316

7100	9352 744 74557	SM PNX8316HS/C102
7200	9322 206 20668	M29W320DT70N6F
7202	9322 213 88668	K4S281632F-TC60
7203	9322 130 41668	M24C64-WMN6
7300	4822 209 60059	MC34063AP1
7301	9322 184 19687	LD1117V18
7302	9322 216 98687	LD1117V
7303	4822 209 60059	MC34063AP1
7305	4822 209 60059	MC34063AP1
7306	9322 165 15685	NCP303LSN30
7307	9322 202 15687	LD1117V50
7308	9322 202 15687	LD1117V50
7309	4822 130 60373	BC856B
7310	3198 010 70510	TL431CZ
7311	9322 214 70685	SM SI2314EDS-E3
7312	5322 130 60159	BC846B
7402	5322 130 60159	BC846B
7403	9322 150 49668	LM3525M-H
7500	4822 130 60373	BC856B
7501	5322 130 60159	BC846B
7502	9352 668 39118	SM UDA1334ATS/N2
7503	4822 130 60373	BC856B
7504	5322 130 60159	BC846B
7505	5322 130 60159	BC846B
7506	5322 130 60159	BC846B
7507	5322 130 60159	BC846B
7510	5322 130 60159	BC846B
7511	4822 130 60373	BC856B
7512	5322 130 60159	BC846B
7513	4822 130 60373	BC856B
7514	5322 130 60159	BC846B
7600	9352 732 45557	TDA10046AHT/C1
7601	5322 209 70225	LM393D
7605	9352 630 16165	SM 74AHC1GU04GW
7606	9352 630 16165	SM 74AHC1GU04GW
7700	9322 172 92671	CIMAX 2.0
7701	9352 190 10118	74LVC573ADB
7702	9352 190 10118	74LVC573ADB
7703	9352 115 40118	74LVC245APW
7704	2722 171 08821	XTL 27MHz 50pF
7705	9322 175 13668	ST890CD

Standby Supply / Audio Amp. [SA]

Various

1304	2422 025 10647	Connector 4p m
1305	4822 267 10735	Connector 3p
1306▲	2422 025 16374	Connector 2p m
1307	2422 025 10647	Connector 4p m
1309	2422 025 11143	Connector 3p m
1315	2422 025 10771	Connector 10p m
1316	2422 025 10772	Connector 12p m
1317	2422 025 10772	Connector 12p m
1735	4822 267 10918	Connector 3p
1736	2422 025 10768	Connector 3p m
1739	2422 025 10769	Connector 9p m
1M02	2422 025 11244	Connector 7p m
1M03	2422 025 10771	Connector 10p m
1M46	2422 025 10655	Connector 11p m

2101	4822 121 51598	2.2nF 5% 400V
2102	4822 124 40207	100µF 20% 25V
2103	2020 552 94427	100pF 5% 50V
2105	2020 552 94427	100pF 5% 50V
2109	4822 126 14583	470nF 10% 16V 0805
2110	2022 552 05679	1µF 10% 16V 0805
2111	4822 121 43526	47nF 5% 250V
2112	5322 126 11583	10nF 10% 50V 0603
2123	2238 586 59812	100nF 20% 50V 0603
2124	4822 124 40248	10µF 20% 63V
2129	5322 126 11578	1nF 10% 50V 0603
2140	4822 124 40248	10µF 20% 63V
2141	4822 126 14583	470nF 10% 16V 0805
2144	2022 552 05679	1µF 10% 16V 0805
2145	4822 126 13881	470pF 5% 50V
2149	4822 126 14583	470nF 10% 16V 0805
2150	4822 124 12379	220µF 25V
2152	4822 121 70162	10nF 5% 400V
2153	5322 126 11582	6.8nF 10% 63V
2154	3198 017 31530	15nF 20% 50V 0603
2163	4822 124 40207	100µF 20% 25V
2506▲	2252 811 95017	470pF 10% 250V
2507	4822 126 13682	100pF 5% 1kV
2508	4822 124 40764	22µF 100V
2510	2020 021 91668	2200µF 20% 10V
2511	4822 124 12379	220µF 25V
2512	4822 124 80061	1000µF 20% 25V
2513	2222 930 56627	2.2nF 10% 200V 0805
2533	4822 124 40207	100µF 20% 25V
2534	2022 552 05679	1µF 10% 16V 0805
2535	5322 126 11583	10nF 10% 50V 0603
2536	5322 126 11583	10nF 10% 50V 0603
2537	4822 126 14238	2.2nF 50V 0603
2539	2022 552 05679	1µF 10% 16V 0805
2540	5322 126 11583	10nF 10% 50V 0603
2544	5322 126 11583	10nF 10% 50V 0603
2702	5322 126 11578	1nF 10% 50V 0603
2704	5322 126 11578	1nF 10% 50V 0603
2705	2020 552 96684	470nF 10% 25V 0805
2706	2222 580 15649	100nF 10% 50V 0805
2707	4822 126 14585	100nF 10% 0805 50V
2708	2020 552 96326	220nF 10% 16V
2709	4822 126 13881	470pF 5% 50V
2710	4822 126 13881	470pF 5% 50V
2711	5322 126 11578	1nF 10% 50V 0603
2712	2020 552 96683	220nF 10% 50V
2713	2020 552 96684	470nF 10% 25V 0805
2714	3198 017 33330	33nF 20% 16V 0603
2715	5322 126 11578	1nF 10% 50V 0603
2716	4822 126 14241	330pF 0603 50V
2717	5322 121 42498	680nF 5% 63V
2718	4822 122 33761	22pF 5% 50V
2719	5322 126 11578	1nF 10% 50V 0603
2720	2020 552 96326	220nF 10% 16V
2721	4822 126 13881	470pF 5% 50V
2722	4822 126 13881	470pF 5% 50V
2725	2020 552 94427	100pF 5% 50V
2726	3198 017 33330	33nF 20% 16V 0603
2727	5322 126 11578	1nF 10% 50V 0603
2728	4822 126 14241	330pF 0603 50V
2729	5322 121 42498	680nF 5% 63V
2764	4822 126 14491	2.2µF 10V 0805
2766	4822 126 14491	2.2µF 10V 0805
2768	4822 124 40255	100µF 20% 63V
2769	4822 124 40255	100µF 20% 63V
2777	2020 552 96683	220nF 10% 50V
2778	4822 124 40769	4.7µF 20% 100V
2779	2020 552 96683	220nF 10% 50V
2780	2020 552 96683	220nF 10% 50V
2781	2020 552 96683	220nF 10% 50V
2783	4822 124 41751	47µF 20% 50V
2785	4822 124 40207	100µF 20% 25V
2786	2238 586 15641	22nF 10% 50V 0603
2788	4822 124 40255	100µF 20% 63V
2789	2020 552 96683	220nF 10% 50V
2790	4822 124 40255	100µF 20% 63V

3100	4822 051 30101	100Ω 5% 0.062W
3101	4822 053 20475	4.7MΩ 5% 0.25W
3102	2312 915 11002	1kΩ 1% 0.5W
3103	2312 915 11002	1kΩ 1% 0.5W
3104	4822 051 30479	47Ω 5% 0.062W
3105	4822 051 30221	220Ω 5% 0.062W
3106	4822 051 30391	390Ω 5% 0.062W
3107	4822 051 30391	390Ω 5% 0.062W
3108	4822 053 10478	4.7Ω 5% 1W
3109	4822 051 30391	390Ω 5% 0.062W
3110	4822 051 30391	390Ω 5% 0.062W
3111	4822 053 10152	1.5kΩ 5% 1W
3112	4822 051 30391	390Ω 5% 0.062W
3113	9965 000 23109	22Ω 5% 0603
3114	4822 051 30221	220Ω 5% 0.062W
3117	4822 051 30479	47Ω 5% 0.062W
3122	4822 051 30471	47Ω 5% 0.062W
3123	4822 051 30109	10Ω 5% 0.062W
3124	4822 051 30339	33Ω 5% 0.062W
3125	4822 117 12971	15Ω 5% 0603 0.62W
3126	4822 051 30103	10kΩ 5% 0.062W
3127	4822 051 30562	5.6kΩ 5% 0.063W 0603

3128	4822 117 13608	4.7Ω 5% 0603 0.62W
3132	4822 051 30333	33kΩ 5% 0.062W
3134	4822 051 30102	1kΩ 5% 0.062W
3138	4822 051 30105	1MΩ 5% 0.062W
3140	4822 051 30223	22kΩ 5% 0.062W
3141	4822 051 30471	47Ω 5% 0.062W
3145	4822 051 30472	4.7Ω 5% 0.062W
3146	4822 051 30479	47Ω 5% 0.062W
3147	4822 051 30223	22kΩ 5% 0.062W
3148	4822 051 30479	47Ω 5% 0.062W
3149	4822 051 30103	10kΩ 5% 0.062W
3150	4822 051 30101	100Ω 5% 0.062W
3152	4822 051 30102	1kΩ 5% 0.062W
3153	4822 051 30223	22kΩ 5% 0.062W
3155	4822 050 21003	10kΩ 1% 0.6W
3156	4822 051 30102	1kΩ 5% 0.062W
3157	4822 051 30223	22kΩ 5% 0.062W
3158	4822 051 30479	47Ω 5% 0.062W
3159	4822 051 30479	47Ω 5% 0.062W
3160	4822 051 30102	1kΩ 5% 0.062W
3175	4822 051 30103	10kΩ 5% 0.062W
3176	4822 051 30103	10kΩ 5% 0.062W
3190	4822 053 10122	1.2kΩ 5% 1W
3191	4822 053 10122	1.2kΩ 5% 1W
3192	4822 053 10122	1.2kΩ 5% 1W
3506	4822 051 30471	47Ω 5% 0.062W
3513	4822 051 30333	33kΩ 5% 0.062W
3528	4822 051 30472	4.7Ω 5% 0.062W
3529	4822 051 30101	100Ω 5% 0.062W
3531	4822 051 30153	15kΩ 5% 0.062W
3532	4822 051 30472	4.7Ω 5% 0.062W
3538	4822 051 30101	100Ω 5% 0.062W
3540	4822 051 30222	2.2kΩ 5% 0.062W
3541	4822 051 30222	2.2kΩ 5% 0.062W
3542	4822 051 30103	10kΩ 5% 0.062W
3543	4822 051 30223	22kΩ 5% 0.062W
3544	4822 051 30221	220Ω 5% 0.062W
3560	4822 051 30682	6.8Ω 5% 0.062W
3561	4822 051 30392	3.9Ω 5% 0.063W 0603
3562	4822 117 13608	4.7Ω 5% 0603 0.62W
3701	4822 051 30103	10kΩ 5% 0.062W
3702	4822 051 30682	6.8Ω 5% 0.062W
3703	4822 051 30333	33kΩ 5% 0.062W
3704	4822 117 10833	10kΩ 1% 0.1W
3705	4822 051 20828	8.2Ω 5% 0.1W
3706	4822 051 30472	4.7Ω 5% 0.062W
3707	4822 051 30683	68kΩ 5% 0.062W
3708	4822 051 30563	56kΩ 5% 0.062W
3709	4822 117 11503	220Ω 1% 0.1W
3710	4822 051 30223	22kΩ 5% 0.062W
3711	4822 050 21204	120kΩ 1% 0.6W
3712	4822 051 30103	10kΩ 5% 0.062W
3713	2312 915 11202	1.2kΩ 1% 0.5W
3714	4822 117 12925	47kΩ 1% 0.063W 0603
3715	4822 117 12925	47kΩ 1% 0.063W 0603
3716	4822 117 12925	47kΩ 1% 0.063W 0603
3717	4822 117 13632	100kΩ 1% 0603 0.62W
3718	4822 117 13632	100kΩ 1% 0603 0.62W
3721	4822 051 30472	4.7Ω 5% 0.062W
3722	4822 051 30683	68kΩ 5% 0.062W
3723	4822 051 30563	56kΩ 5% 0.062W
3724	4822 117 11503	220Ω 1% 0.1W
3725	4822 051 30223	22kΩ 5% 0.062W
3726	4822 117 11503	220Ω 1% 0.1W
3727	4822 117 11503	220Ω 1% 0.1W
3743	4822 117 11449	2.2kΩ 5% 0.1W 0805
3746	4822 051 30223	22kΩ 5% 0.062W
3747	4822 050 21004	100kΩ 1% 0.6W
3748	4822 051 30471	47Ω 5% 0.062W
3750	4822 117 11449	2.2kΩ 5% 0.1W 0805
3756	4822 117 11449	2.2kΩ 5% 0.1W 0805
3757	4822 117 11449	2.2kΩ 5% 0.1W 0805
3759	4822 051 30332	3.3Ω 5% 0.062W
3760	4822 051 30332	3.3Ω 5% 0.062W
3761	4822 117 11454	820Ω 1% 0.1W
3762	4822 051 30222	2.2kΩ 5% 0.062W
3763	4822 051 30222	2.2kΩ 5% 0.062W
3764	4822 117 11454	820Ω 1% 0.1W
3765	4822 051 30123	12kΩ 5% 0.1W
3766	4822 051 30103	10kΩ 5% 0.062W
3767	4822 051 30123	12kΩ 5% 0.1W
3768	4822 051 30103	10kΩ 5% 0.062W
3790	4822 051 30682	6.8Ω 5% 0.062W
3791	4822 051 30682	6.8Ω 5% 0.062W
3792	4822 051 30153	15kΩ 5% 0.062W
3793	4822 051 30153	15kΩ 5% 0.062W
3798	4822 051 30153	15kΩ 5% 0.062W
3999	4822 051 30682	6.8Ω 5% 0.062W
9041	4822 051 20008	Jumper 0805
9042	4822 051 20008	Jumper 0805
9044	4822 051 20008	Jumper 0805
9080	4822 051 20008	Jumper 0805
9081	4822 051 20008	Jumper 0805

5018	2422 536 00945	10µF 20%
5019	2422 536 00945	10µF 20%
5102	4822 526 10704	Bead 50 Ω at 100MHz
5103	4822 526 10704	Bead 50 Ω at 100MHz
5104	4822 157 11411	Bead 80Ω at 100MHz
5105	2422 549 43769	Bead 30Ω at 100MHz
5106	4822 157 11441	22µH 5%
5108	4822 526 10704	Bead 50 Ω at 100MHz
5110	4822 157 71736	10µH 5%
5500▲	3104 308 21181	Transf. BS25320-00
5504	2422 536 00776	33µH 10%
5505	4822 157 11411	Bead 80Ω at 100MHz
5506	4822 157 11411	Bead 80Ω at 100MHz
5507	2422 536 00433	15µH 10%
5701	2422 536 00951	68µH 20% LHL10
5702	2422 536 00951	68µH 20% LHL10
5703	4822 157 11716	Bead 30Ω at 100MHz
5705	4822 157 11716	Bead 30Ω at 100MHz
5707	4822 157 11411	Bead 80Ω at 100MHz
5708	4822 157 11411	Bead 80Ω at 100MHz
5711	4822 157 11411	Bead 80Ω at 100MHz
5712	4822 157 11411	Bead 80Ω at 100MHz
5730	2422 549 00112	Line filt. 50V 3A
5731	2422 549 00112	Line filt. 50V 3A

6103	4822 130 10871	SBYV27-200
6104	9340 548 69115	PDZ27B
6105	4822 130 11522	UDZ15B
6106	9340 548 67115	PDZ22B
6108	4822 130 80622	BAT54
6114	4822 130 10871	SBYV27-200
6115	4822 130 80622	BAT54
6116	3198 020 55680	BZX384-C5V6
6120	4822 130 11397	BAS316
6121	4822 130 11397	BAS316
6122	9322 129 34685	BZM55-C3V9
6133	4822 130 11397	BAS316
6140	4822 130 83755	BYW36
6142	4822 130 80622	BAT54
6144	4822 130 11397	BAS316
6147	9322 208 44685	BZG05C6V8
6148	4822 130 11397	BAS316
6149	3198 020 55680	BZX384-C5V6
6150	9340 292 50135	BZG03-C200
6151	9340 548 71115	PDZ33B
6153	9340 292 50135	BZG03-C200
6156	4822 130 11397	BAS316
6504	9340 418 70133	BYV27-600
6505	9322 161 78682	SB360L-7024
6531	4822 130 11522	UDZ15B
6532	4822 130 11397	BAS316
6540	4822 130 80622	BAT54
6562	9340 548 67115	PDZ22B
6701	4822 130 11397	BAS316
6702	4822 130 11551	UDZS10B
6703	4822 130 11551	UDZS10B
6704	4822 130 11397	BAS316

7100	3198 010 42320	BC857BW
7101	9340 219 30115	BC817-25W
7102	9322 160 34687	FQPF3N60
7105	3198 010 42320	BC857BW
7140	3198 010 42310	BC847BW
7150▲	9322 149 04682	TCET1102
7501▲	9322 149 04682	TCET1102
7505	3198 010 42320	BC857BW
7506	3198 010 42310	BC847BW
7507	3198 010 42310	BC847BW
7509	3198 010 42310	BC847BW
7531	9340 436 50115	BSP030
7532	3198 010 42310	BC847BW
7560	9340 219 30115	BC817-25W
7700	9322 163 86682	TDA7490L
7701	3198 010 42310	BC847BW
7703	3198 010 42310	BC847BW
7704	3198 010 42310	BC847BW
7705	3198 010 42310	BC847BW
7706	3198 010 42320	BC857BW
7707	3198 010 42310	BC847BW
7709	3198 010 42310	BC847BW
7710	3198 010 42310	BC847BW

11. Revision List

Manual xxxx xxx xxxx.0

- First release.