

Service
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Service Manual

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Version 1.0

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GENERAL DESCRIPTION						
MP3-USB Mini Hi FiSystem with Digital Tuner, 1CD/mp3 BT for NX5 NX7 ALL) (125W x 4 FOR NX5; 239W x 4 FOR NX7 ALL Power Amplifier, LCD Display, Aux in , Remote control						
LIFETIME : 7 Years						
Class	Tuner	Supply + Amplifier	USB	Recorder	Clock	CD-mp3
I			X	N/A		
II	X	X			X	X
III						
Page	10	3-7	9		8	11
SAFETY requirements						
Version	Safety			EMC		
/98	EN 60065			CISPR 13		
/55	EN 60065			CISPR 13		
/12	EN 60065			EN 55013 / EN 55020		
/05	EN 60065			EN 55013 / EN 55020		
/79	EN 60065			CISPR 13		
/37	UL 60065			FCC99		
RADIATION / IMMUNITY requirments (EMC) for 12 version only						
CLIMATIC requirements						
ALL climates	: + 5 Degree	till	+ 35 Degree			
MODERATE climates	: + N.A	till	N.A Degree			
PERFORMANCE CLASSES						
POWER SUPPLY						
MAINS (A.C.)	120 Vac (110V-10%, 120V ±10%)	230 Vac ± 10 %	127 / 240 Vac ± 15 %	240 Vac ± 10 %	220 Vac ± 10 %	
Version	/ 37	/ 12 /05	/ 55 /98/96	/ 79	/ 61, /93	
Voltage Selection	No	No	Yes	No	No	
Frequency	60Hz ±5%	50Hz	60/50Hz	50Hz	60Hz, 50Hz	
POWER CONSUMER						
	/12	/ 55/98/96	/79 /61 /93	/ 37		
Stadby :	< 25W	< 25W	<25W	<25W		
(DEMO mode " OFF ") , NOM. A, INPUT						
Maximum :	<110W	<110W	<110W	<110W	<110W	
@ 1/8 Prated , NOM. A, INPUT	<130W	<130W	<130W	<130W	<130W	
ECO Power mode :	<= 1W	no	<= 1W	<= 1W	<= 1W	
Quality	: 0.8 % (Major)	2.0 % (Mirror)				
Reliability	: 3.0 % (C 42)					
Tested according to General Test Instruction refer to PHILIPS standary (UAN -D1591)						
Measured according to PHILIPS standary (UAN - L1059) unless other wise stated						
All not mentioned date, please refer to PHILIPS standary (XUW - 0010 - JUNE 2001)						
DERIVED	REMARKS			APPROBATION		
Remarks						
GENERAL PART 1 - GENERAL SPECIFICATION						
Class No	<u>NX5 NX7 ALL</u>			Ver	Issued Date	
				1	16-4-2013	
				2		
				3		
NAME : MZ.FENG	10	10	SH 190 - 3			A4
KT	CHECK	DATE :				

TECHNIAL DESCRIPTION					
Total power 500W FOR NX5 1000W FOR NX7), FOUR INPUT SOURCE, (Digital Sound Control). IS (Incredible Sound)					
GENERAL PART					
OUTPUT stage Protection		: Yes	Temperature	: Yes.	
LoudSpeaker D.C. Protection		: Yes.	Shorcircuit	: Yes	
INDICATORS					
Standby Mode Indicator		: LCD display Clock active			
ECO Mode Indiicator		: LCD turns off, ECO - Standby LED turn on			
ELECTRICAL DATA					
DSC :	Rock, Pop, Jazz, Optimal	Channel Differencer at -46dB	3	dB	
MAX	YES	Hum (Volume Minimun - 50mW)(A - weighted)	< 200	nW	
IS :	YES	Residual Noise (Volume Minium)(A - weighted)	< 100	nW	
VAC :	N/A	Channel Separation (at 1 kHz)	≥ 45	dB	
WOOX :	N/A	Signal / Noise (weighted)	≥ 60	dB	
Frequency Response (+/- 3dB), reference 1kHz		60Hz - 16kHz			
INTERCONNECTS					
Input Sensitivity(±2 dB)rated ouput power at 1 kHz and 10kHz.		Line Output Voltage (*1)			
Tuner	: FM 67.5KHz,AM 80% Modulation - 3dB	Line Out (Left / Right)	N.A		
CD	: 0 dB track (Audio Disc 1, Trk 35)	Subwoofer Out	N.A		
USB	: 0 dB track	Headphone	N.A		
AUX	: Nor: 600mV Lim: 450mV ~ 550mV for /37	Digital Coaxial Out	N.A		
	: Nor: 2V Lim: 1.5V ~ 2.5V for /55	Booster Out	N.A		
input leven Nor: 1.5mv Lim:0.8-2.5mv					
Microphone : Rs=600ohm (output=500MW)					
OUTPUT POWER (*1) At THD = 10% (Measured with 20Hz-20KHz filter), both channels driven (Low channel at 1KHz, High channel at 10k)					
Power output (RMS) FOR NX5 ALL		Low channel	125W per channel (Lim '-1dB) (CD USB AUX)		
		High channel	125W per channel (Lim '-1dB) (CD USB AUX)		
Power output (RMS) FOR NX7 ALL		Low channel	250W per channel (Lim '-1dB) (CD USB AUX)		
		High channel	250W per channel (Lim '-1dB) (CD USB AUX)		
Frequency Response					
LOW Frepuecy	Frequency Response - 60Hz - ref. 1kHz		±3 dB		
HI Frepuecy	Frequency Response -6KHz - ref. 10kHz		±3 dB		
Rated Impedance					
: 3 Ohms					
Remarks					
(*1) Electrical parameters are to be measurement at specker terminals with rated input signal in AUX mode; DSC setting in Jazee mode with DBB OFF IS off and OSM unless specified otherwise One channel signal input (L or R), two channel load (< Low ch. L + High ch. L > or < Low ch. R + High ch. R >) Measurement output power only for AUX model and CD model of used audio analyzer equipment.					
GENERAL PART 1 - TECHNICAL SPECIFICATION					
Class No	<u>NX5 NX7 ALL</u>			Ver	Issued Date
				1	
				2	16-4-2013
				3	
NAME : MZ.FENG	10	10	SH 190 - 4		A4
KT	CHECK	DATE :			

AUDIO SIGNAL PROCESSING

MP3-USB Mini Hi Fi System with Digital Tuner ,Class AB Power Amplifier

1) DSC (Digital Sound Control)

Select AUX as input source with the following set conditions:

Inject sine wave 2V at 1 KHz to L/R channels of AUX-IN socket.

Set DSC to JAZZ(Flat) mode and switch off DBB. Max off

Refence level for DSC's without DBB on=500mW.

Refence level for DSC'S with DBB on=1.7V at the speaker terminal .

Inject sine wave 2V to AUX-IN socket with frequencies indicated in Table 1.

Tabel 1a (Tolerance ± 3dB)

Frequency	DSC Modes with DBB Off				
	JAZZ	POP	ROCK	TECHNO	SAMBA
60 Hz	-1.8 dB	+ 3 dB	+ 6dB	+0.5dB	+0.3dB
1 kHz	0 dB	0.5db	1 dB	0.5dB	0
10 kHz	-1.5 dB	-0.6dB	+1 dB	-0.5 dB	-3

Tabel 1b (Tolerance ± 3dB)

Frequency	DSC Modes with DBB 1 ON				
	JAZZ	POP	ROCK	TECHNO	SAMBA
60 Hz	+3 dB	+8dB	+ 14. 5dB	5.5 dB	+5.5dB
1 kHz	0 dB	+1 dB	1 dB	+1 dB	0
10 kHz	-1.5 dB	+0.6dB	+1dB	-0.5dB	-3

Tabel 1b (Tolerance ± 3dB)

Frequency	DSC Modes with DBB 2 ON				
	JAZZ	POP	ROCK	TECHNO	SAMBA
60 Hz	+8dB	+ 14.0 dB	+ 15.0 dB	+ 11.0 dB	+11dB
1 kHz	+0 dB	+1dB	+1 dB	+1 dB	0
10kHz	-1.5 dB	+ 1dB	+2 dB	- 0.5dB	-0.5

Tabel 1b (Tolerance ± 3dB)

Frequency	DSC Modes with DBB 3 ON				
	JAZZ	POP	ROCK	TECHNO	SAMBA
60 Hz	+14 dB	+ 17.0 dB	+ 20.0 dB	+ 18.0 dB	+18dB
1 kHz	+0dB	+1dB	+1dB	+1 dB	0
10 kHz	-0.5 dB	+ 2dB	+3dB	+ 1dB	1

GENERAL PART 1 - GENERAL SPECIFICATION

Class No	<u>NX5 NX7 ALL</u>			Ver	Issued Date
				1	16-4-2013
				2	
				3	
NAME : MZ.FENG	DATE:25/08/07	10	10	SH 190 - 5	A4
KT	CHECK	DATE :			

AUDIO SIGNAL PROCESSING

MP3 - USB Mini Hi Fi System with Digital Tuner , 1CDCfor NX5 NX7 ALL

3) IS (Incredible Sound)

Select AUX as input source.

Inject sine wave 2V at 1kHz to AUX-IN socket, one channel at a time (input level 500mV for /37,2V for /55).

Set DSC to JAZZ (Flat) mode and switch of DBB, OSM & INCREDIBLE SURROUND.

Adjust volume level to obtain 500mW across 4OHM load at L/R speaker output.

Inject sine wave 2V to AUX-IN socket with frequency indicated in Table 3 (input level 500mV for /37,2V for /55).

Right channel reference to left channel.

Table 3 (Tolerance ± 3 dB)

FREQ	INPUT LEVEL		OUTPUT LEVEL			
			IS OFF		IS ON	
	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
60 Hz	2V	-	- 1.0 dB	-	+2.0 dB	-17.0 dB
1 kHz	2V	-	0	-	+ 3.5 dB	-0 dB
10 kHz	2V	-	- 0.5 dB	-	+ 3.0 dB	-7.0 dB

Note : The above specs also apply to right channel.

4) DSC Mode (Jazz , Rock, Techno and Optimal)

The VEC modes are software controlled by switching the combination between DBB and DSC modes as show in Table 4.

DSC MODE	DBB Level preset
Jazz	DBB OFF
POP	DBB 2
Techno	DBB 3
Optimal	DBB 1

Note : When these modes are activ DBB and DSC will not be displayed

5) MAX (Maximum Sound)

Select AUX as input source.

Inject sine wave 2V at 1kHz to AUX-IN socket, one channel at a time (input level 600mV for /37,2V for /55).

Set DSC to JAZZ (Flat) mode and switch of DBB, OSM & INCREDIBLE SURROUND.

Adjust volume level to obtain 500mW load at L/R speaker output.

The 500mW level will be used as 0 dB reference

Inject sine wave 2V to AUX-IN socket with frequency indicated in Table 5 (input level 600mV for /37,2V for /55).

FREQ	Max OFF	Max ON
60 Hz	00 dB	+ 19 .0 dB
1 kHz	0	+ 7.0 dB
10 kHz	- 0.5 dB	+ 10.0 dB

GENERAL PART 1 - AUDIO SIGNAL SPECIFICATION (2)

Class No		NX5 NX7 ALL	Ver	Issued Date	
			1		
			2	16-4-2013	
			3		
NAME : MZ.FENG		10	10	SH 190 - 6	A4
KT	CHECK	DATE :			

TECHNIAL DESCRIPTION

AUX modle

GENERAL PART

Description	Specification
Output power = , 1 KHz)	125W± 1 Db(NX5) 250W± 1 Db(NX7)
Channel Unbalance	<= +/- 3 dB
THD + Noise (0dB, 1Khz)	<=2%
Channel Crosstalk ((0dB, 1 KHz)	>= 40dB
(0 dB, 10 KHz)	>= 40dB
Signal to Noise Ratio (0dB,1kHz) (A - weighted)	>= 60dB(A - weighted)
Frequency Response (+/- 3dB), reference 1kHz	60Hz - 16kHz
Microphone	
Description	Specification
Output power = , 1 KHz 2mV input)	1W± 1 dB
THD + Noise (0dB, 1Khz)	<=5%
Signal to Noise Ratio (0dB,1kHz) (A - weighted)	>= 45dB(A - weighted)
Frequency Response (+/- 3dB), reference 1kHz	100Hz - 16kHz

Remarks :

USB SPECIFICATION					
Class No				Ver	Issued Date
	NX5 NX7 ALL			1	16-4-2013
				2	
				3	
NAME : MZ.FENG		10	10	SH 190 -9	A4
	CHECK	DATE :			

TECHNIAL DESCRIPTION						
SOFTWARE IMPLEMENTED CLOCK / TIMER FUNCTION WITHOUT 32.768KHZ QUARTZ OSCILLATOR.						
GENERAL PART						
Timer Setting	:	Clock and Timer				
Timer Wakeup Mode	:	CD USB or Tuner				
Remarks Time Setting	:	12hr for /37 version, 24hrs for other version.				
Volume at Wakeup	:	Last Setting				
No of Timer Settings	:	1				
Clock Accuracy	:	Nom : 1 sec/day	Limit	:	2 sec/day	
INDICATORS						
Display Type	:	LCD				
Remark						
CLOCK / TIMMER SPECIFICATION						
Class No	NX5 NX7 ALL				Ver	Issued Date
					1	16-4-2013
					2	
					3	
NAME : MZ.FENG	10	10	SH 190 - 7			A4
KT		CHECK	DATE :			

TECHNIAL DESCRIPTION

USB

See also SH 190 USB Audio Module (300605)

Measurement are directly done at the coonector on the board

GENERAL PART

Measurement are directly done at the connector on CDC board

Description	Specification
Output Resistance	< = 1.5 kOhm
Output Voltage RL = 33 k ohm dB, 1 KHz	NC
Channel Unbalance	< = +/- 1 dB
THD + Noise (0dB, 1Khz)	<=1.5%
Channel Crosstalk (1k)	>= 40dB
(0 dB, 10 KHz)	>= 40dB
Signal to Noise Ratio (0dB,1kHz) (A - weighted)	>= 60dB(A - weighted)
Frequency Response (+/- 3dB), reference 1kHz	60Hz - 16kHz

USB Measurement at Set Level

Electrical Parameters are to be measured at speaker teminals across 6 ohm load with 500mW output and DSC setting in Jazz Mode

Description	Specification
Channel Crosstalk (0 dB, 1 KHz)	>= 40dB (with 1 KHz filter)
Signal to Noise Ratio (0 dB, 1 KHz)	>= 60dBA (A - weighted)
Channel Unbalance (0 dB, 1 KHz)	< +/- 1.5dB
Frequency Response (+/- 3dB), reference 1kHz	60Hz - 5.8kHz
Frequency Response (+/- 4dB), reference 10kHz	6KHz - 16kHz

Remarks :

USB SPECIFICATION

Class No					Ver	Issued Date
	NX5 NX7 ALL				1	16-4-2013
					2	
					3	
NAME : MZ.FENG		10	10	SH 190 -8		A4
	CHECK	DATE :				

TECHNICAL DESCRIPTION									
GENERAL PART									
WAVE RANGE			TOLERANCE				TUNING GRID		
FM(55/37) 87.5 - 108.00 MHz			QUARTZ PRECISION				100 kHz		
FM(12) 87.5 - 108.00 MHz							50KHZ		
AM (55/37) 530 - 1700 kHz			QUARTZ PRECISION				10 kHz		
AM (12) 531 - 1602 kHz			QUARTZ PRECISION				9 kHz		
AERIAL									
FM : PIGTAIL ANT WIRE 300 Ohm(for/37) 75ohm for 55/12									
AM : FRAME ANT. 18.1 uH									
INDICATORS									
LCD									
ELECTRICAL DATA									
A.M		Nom	Limit	Unit	F.M.		Nom	Limit	Unit
					- 3 dB Limiting Point		: 17	23.5	dBf
Amplification Reverse		: - 2	-4	dB	Amplification Reverse		: 0	-4	dB
AGC Figure of Merit		: 30	25	dB	Distortion (RF 1mV, Frq Dev.75 kHz)		: 2	5	%
Distortion (RF 50mV, M 80%)		: 3	5	%	Stereo - 46 dB Quieting		: 38	43	dBf
IF		: 450	± 3	kHz	Crosstalk (RF1mV, Freq Dev.40kHz)		: 25	18	dB
Modulation Hum.		35	30	dB	Modulation Hum.		45	40	dB
Wave Range		Noise Limited Sensitivity 26 dB		Image Rejection	IF Rejection	Large Signal	Selectivity S3 / S9 / 300kHz		
MW 610 kHz		Nom.	3500	uV/m	32 db	28db	1000mv/m	22	db
		Lim.	4000	uV/m	28db	24db	500mv/m	18	db
MW 1400 kHz		Nom.	1500	uV/m	32db	28db	1000mv/m	22	db
		Lim.	4000	uV/m	28db	24db	500mv/m	18	db
FM 98 MHz		Nom.	18	dBf	40db	65db	116 dBu	45	db
		Lim.	22	dBf	30db	60db	108 dBu	25	db
		Auto Search sensitivity							
MW 610 kHz		Nom.	58	db/m					
		Lim.	± 10	db/m					
MW 1400 kHz		Nom.	58	db/m					
		Lim.	± 10	db/m					
FM 98 MHz		Nom.	26	dBuV					
		Lim.	± 10	dBuV					
Remarks									
TUNER SPECIFICATION									
Class No		NX5 NX7 ALL				Ver		Issued Date	
						1		16-4-2013	
						2			
						3			
NAME : MZ.FENG			10	10	SH 190 - 9				A4
KT		CHECK	DATE :						

TECHNIAL DESCRIPTION			
Bluetooth Function			
GENERAL PART			
Bluetooth Version :		Ver2.1 + EDR	
Receive A2DP:		N/A	
Transmit A2DP:		N/A	
Receive HSP		N/A	
		Remote Controlled : YES	
		Noise Reduction System : No	
INDICATORS			
Bluetooth Flashing		: Yes	
Display		: Yes	
ELECTRICAL DATA			
Bluetooth at Module level:		Mobile Phone	
Frequency Response		125-16khz	
S/N (Unweighted)		≥55	
S/N (A-weighted)		≥60	
Level Diff		\	
Channel Separation		≥35	
Distortion		<1	
Bluetooth at Set Level		Mobile Phone	
10%THD OUTPUT POWER(EQ:FLAT)		\	
		250± 3dB	
Connected distance		8-10	
		meter	
REMARKS			
Bluetooth SPECIFICATION			
Class No		Ver	
NX5 NX7 ALL All Version		1	
		2	
		3	
NAME : TAN		DATE :	
CHECK:		DATE :	
		SH 190 - 9	

TECHNIAL DESCRIPTION

CD + MP3 - Part Specifications (CD MECHAISM DA11VF OF SANYO) 1DISC for NX5 NX7 ALL

	Input	Output	Motor	Logic control
Active components	BU9543	BU9543	SA5888	BU9543
	Signal processing	D/A converter	HF-preamplifier	Servo processor
Active components	BU9543	BU9543	NA	DA23SR

AUDIO part: Measurement with Audio Signals Disc TCD-781 on speakers or Headphone socket with nom.load

Description	Extern	Nom	Lim	Unit
De-emphasis	15us / 50us Switchable via Subcode information			
Frequency accuracy		N/A	± 0.5	%
Channel Unbalance		0.5	1.5	dB
Frequency Response (60Hz - 16 kHz)		0	± 3	dB
Signal to Noise Ration (Unweighted)		60	55	dBA
Signal to Noise Ration (A - weighted)		65	60	dBA
Crosstalk (1kHz) (A - weighted)		55	40	dB
Crosstalk (10kHz) (A - weighted)		50	40	dB
Hum & Noise (*1)		1	2	Mv
THD (1KHz -6dB)		0.2	<1.5	%
THD (10KHz -20dB)		<1	<1.5	%

REMARKS:

1. Amplification reserve for CD = +2dB (±2dB),Ref.Level for CD is a 0dB track instead of a -.6dB track.

Playability :(acc.To AR 30-05-239)

	Limit	Typical	Test disc
Wedge	600um	900um	TNO 7, 9 of SBC 444A(7104 099 24990)
Eccentric	150um	200um	TNO 1, 24 of 200um disc (7104 099 24960)
Fingerprint	No audible defect		TNO 11 of Sub chassis 8A
Black dot	500um	800um	TNO 13 of SBC 444A (7104 099 24990)
Skew 0.6mm	No audible defect		TNO 1,6 of 0.6mm skew (7104 099 28260)
Bad HF track	No audible defect		TNO 8 of Sub chassis 8A
Playback position	Solid, Normal position (Set is located on a flat surface, floor)		

1. Playback of above mentioned tracks possible without track loss or audible defects.
2. Double black dot, max. diameter, thin/disk is according to PQR or AR 30-05-239
3. This unit can playback (only) CD-R or CD-RW discs. For performance specification, Please refer to module. specification of CD99 (3103 308 52190)

CD / MP3 SPECIFICATION

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VERSION OVERVIEW (NX5 NX7) ALL

Ver	DEST	APPROBATION		TUNER				AC SUPPLY			MIC MIX	MATRIX SURR. SPK.
		SAFETY	EMC	Wave RANGE	GRID	AERIAL SOCKET	AERIAL SUPPLIED	MAINS VOLTAGE	SOC.	CORD		
/55 /98	OVS	EN60065 CLASS II SISR TAIWAN	CISPR 13	FM 87.5-108MHz MW 531-1602kHz or 530-1710kHz	50kHz 9kHz 10kHz	75 Ohm Coaxial JST XH 2P Side	75 Ohm Pigtail Loop Sagami 18.1uH	110-127V Switched 220 - 240V 50/60Hz	IEC	IEC	No	No
/05 / 12	EUROPE	EN60065 SEMKO DEMKO NEMKO SEV BS415-UK	EN55013 EN55020	FM 87.5-108MHz MW 531-1602kHz	50kHz 9kHz	75 Ohm Coaxial JST XH 2P Side	75 Ohm Pigtail Loop Sagami 18.1uH	230V 50Hz	IEC	IEC	No	No
/79	AUST / NZ	EN60065 CLASS II		FM 87.5-108MHz MW 531-1602kHz	50kHz 9kHz	75 Ohm Coaxial JST XH 2P Side	75 Ohm Pigtail Loop Sagami 18.1uH	240V 50Hz	IEC	IEC	No	No
/37	USA Canada	UL 6500	FCC 99	FM 87.5-108MHz MW 530-1710kHz	100kHz 10kHz	JALCO Click Fit JST XH 2P Side	300 Ohm Dipole Loop Sagami 18.1uH	120V 60Hz	UL	UL	No	No
/35	China	EN60065 CLASS II		FM 87.5-108MHz MW 531-1602kHz	50kHz 9kHz	75 Ohm Coaxial JST XH 2P Side	75 Ohm Pigtail Loop Sagami 18.1uH	220V 60Hz	IEC	IEC	No	No
/33	Korea	EN60065 CLASS II		FM 87.5-108MHz MW 531-1602kHz	50kHz 9kHz	75 Ohm Coaxial JST XH 2P Side	75 Ohm Pigtail Loop Sagami 18.1uH	220V 60Hz	IEC	IEC	No	No

VERSION OVERVIEW

Class No	NX5 NX7 ALL					Ver	Issued Date
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						3	
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2.Safety instruction

1. General safety

Safety regulations require that during a repair:

- . Connect the unit to the mains via an isolation transformer.
- . 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, you must return the unit in its original condition. Pay, in particular, attention to the following points:

- . Route the wires/cables correctly, and fix them with the mounted cable clamps.
- . Check the insulation of the mains lead for external damage.
- . Check the electrical DC resistance between the mains plug and the secondary side:
 - 1) Unplug the mains cord, and connect a wire between the two pins of the mains plug.
 - 2) Set the mains switch the "on" position (keep the mains cord unplug).
 - 3) Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
 - 4) Repair or correct unit when the resistance measurement is less than 1M Ω .
 - 5) Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
 - 6) Switch the unit "off", and remove the wire between the two pins of the mains plug.

2.Laser safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

Laser device unit

Type	: Semiconductor laser GaAlAs
Wavelength	: 650nm (DVD)
	: 780nm (VCD/CD)
Output power	: 7mW (DVD)
	: 10mW (DVD /CD)

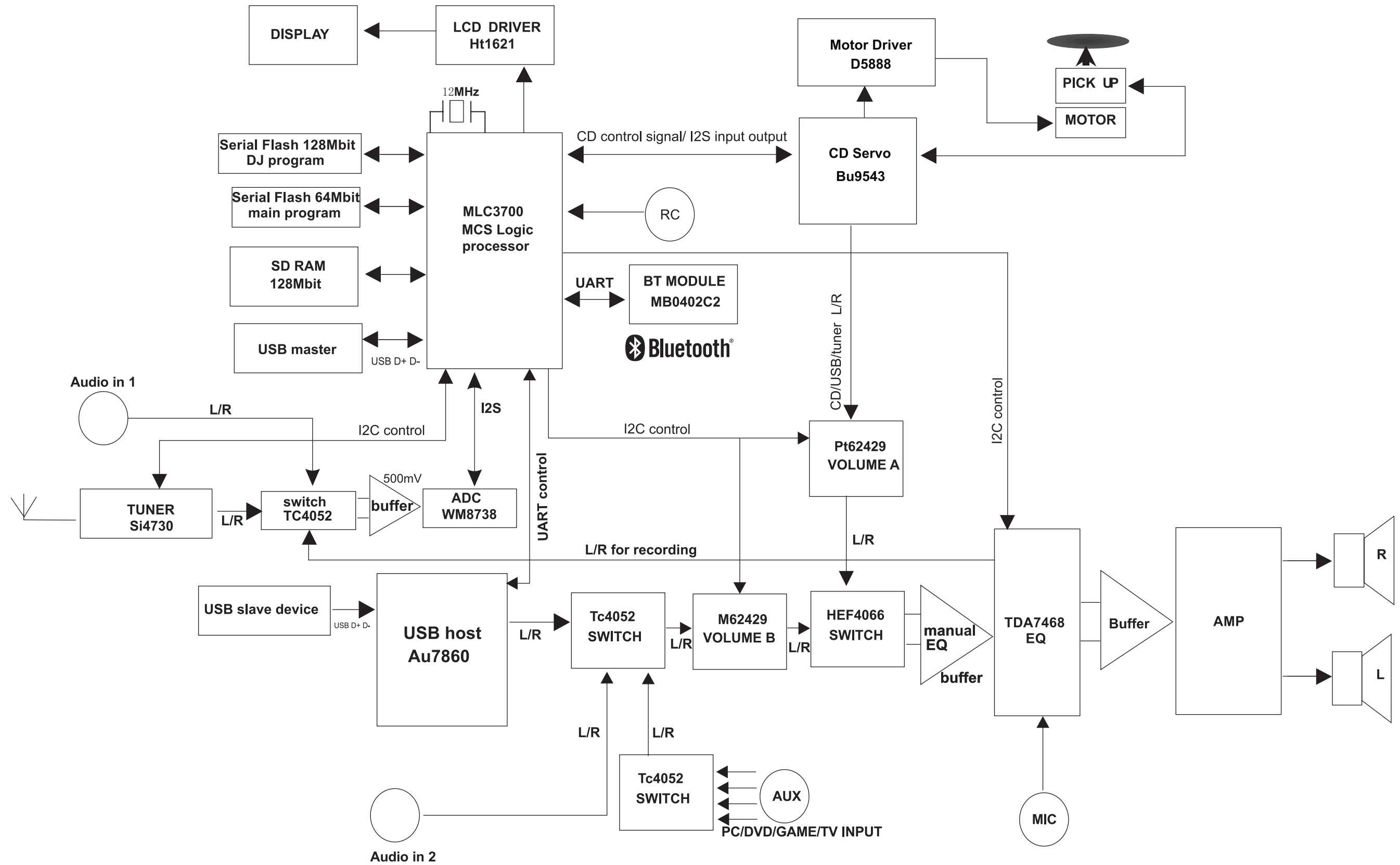
Beam divergence: 60 degree

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

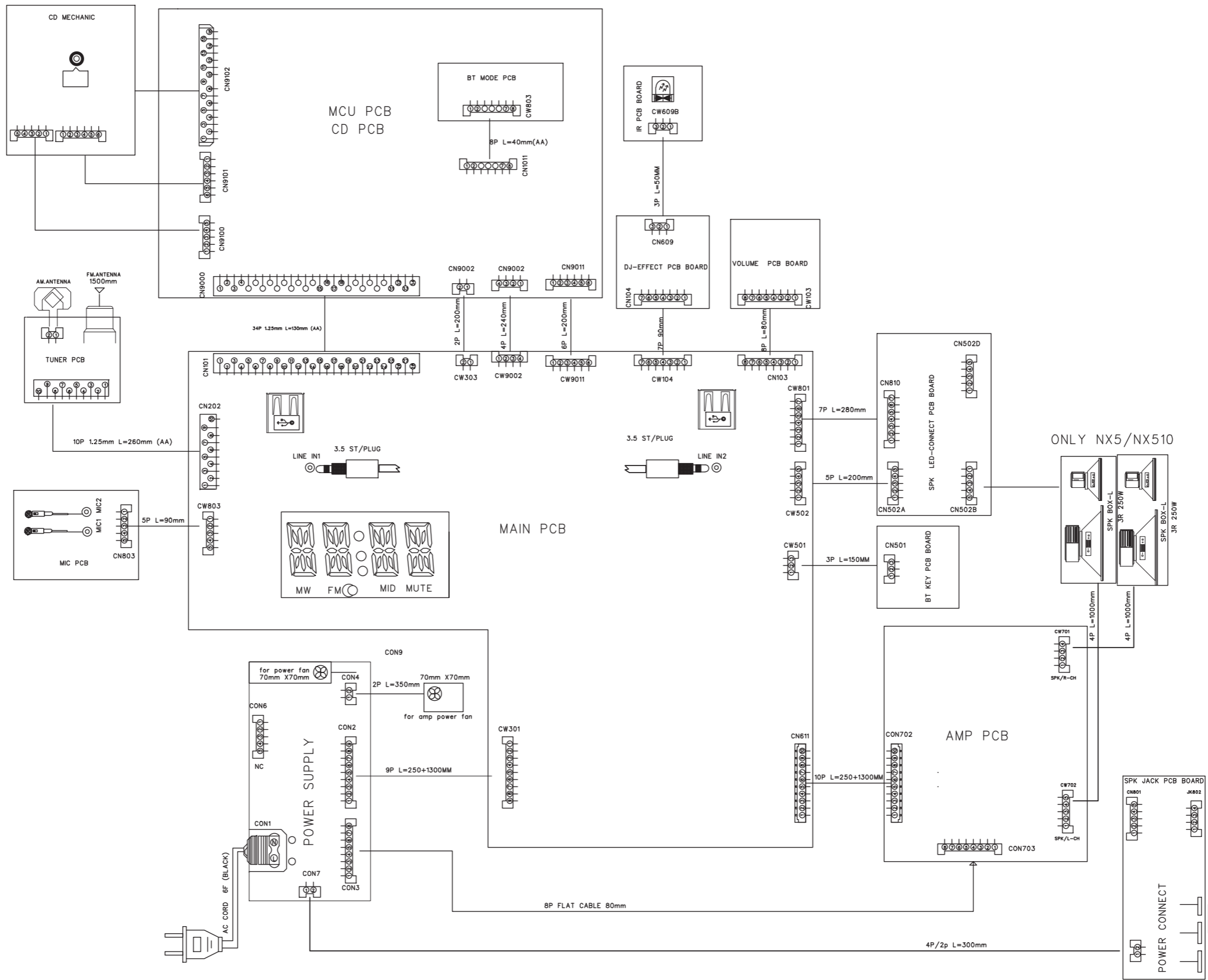
BLOCK DIAGRAM

3-1

3-1



WIRING DIAGRAM



DISASSEMBLY INSTRUCTIONS

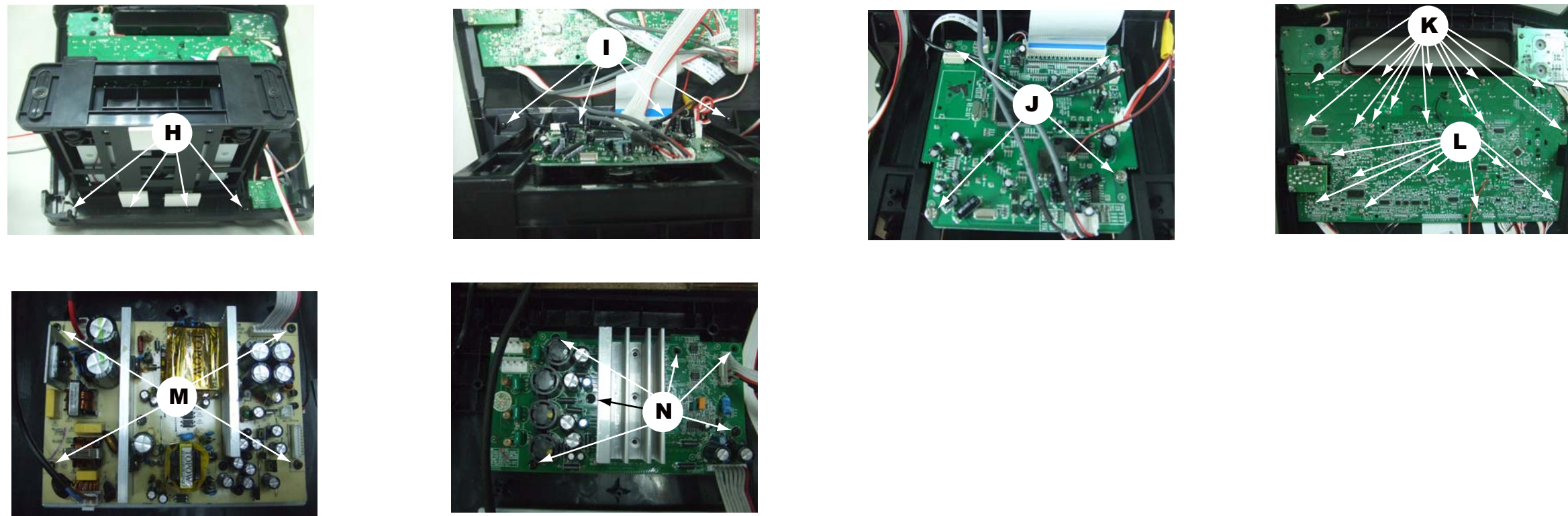
Dismantling of OUTER Portion

1) Remove 46 screws A/B/C/D/E/F/G as indicated to loosen the top/front/bottom plate.

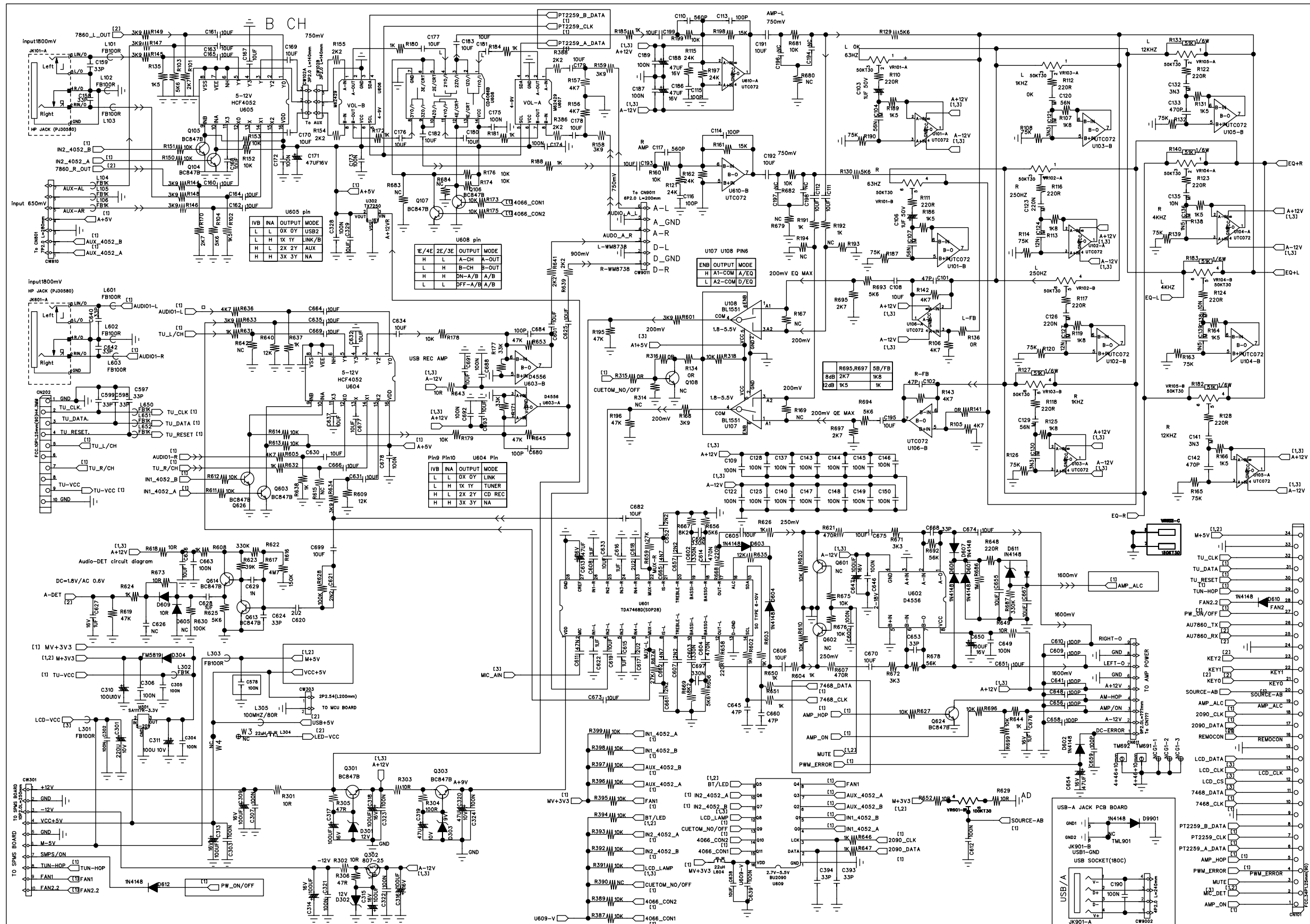


Dismantling of the CD part and PCB Board

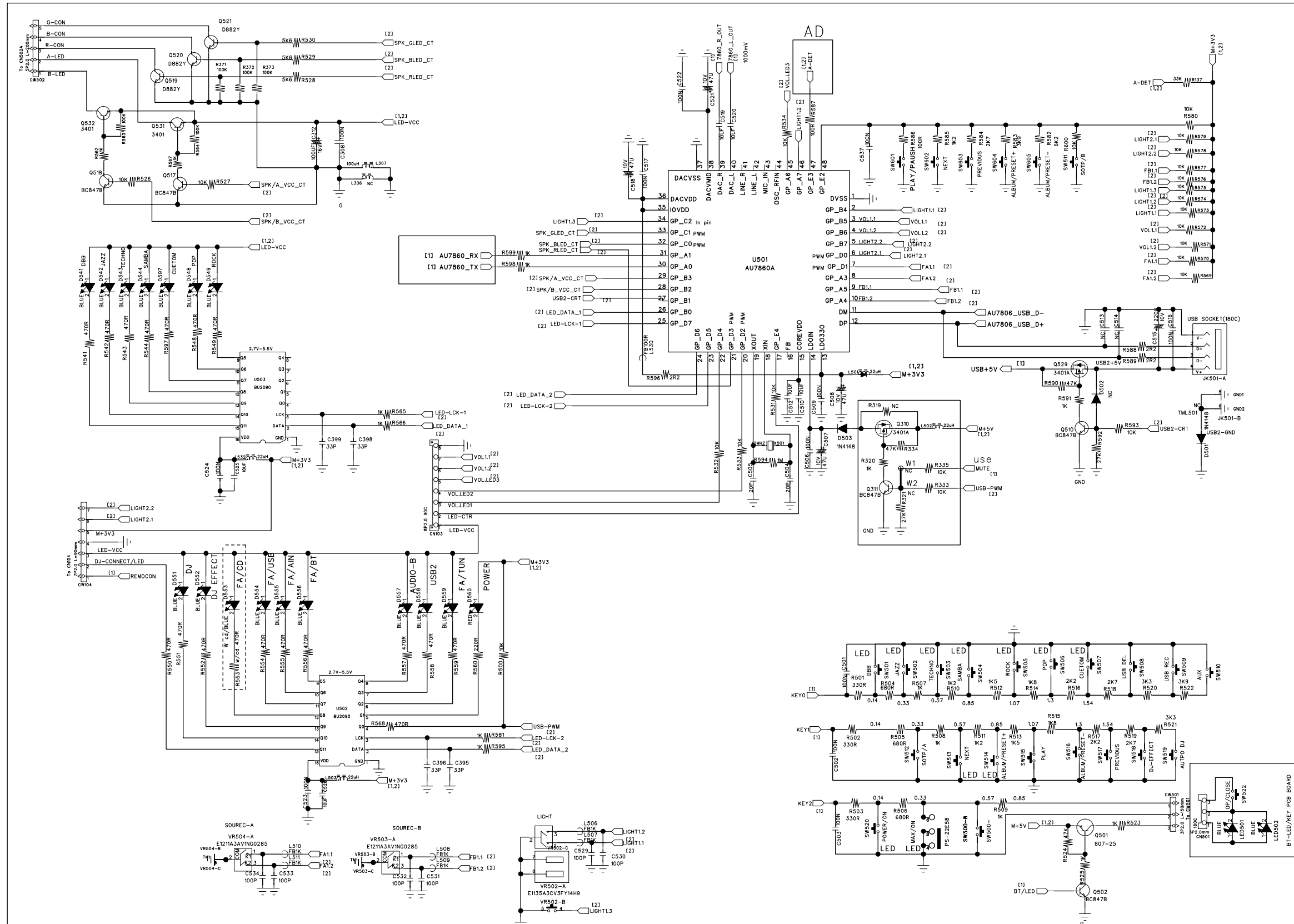
- 1) Remove 8 screws H&I as indicated to loosen the CD part.
- 2) Remove 4 screws J as indicated to loosen the CD Board.
- 4) Remove 13 screws K and 8 screws L as indicated to loosen the Main Board.
- 5) Remove 4 screws M as indicated to loosen the Smps power Board.
- 6) Remove 6 screws N as indicated to loosen the Amp Board.



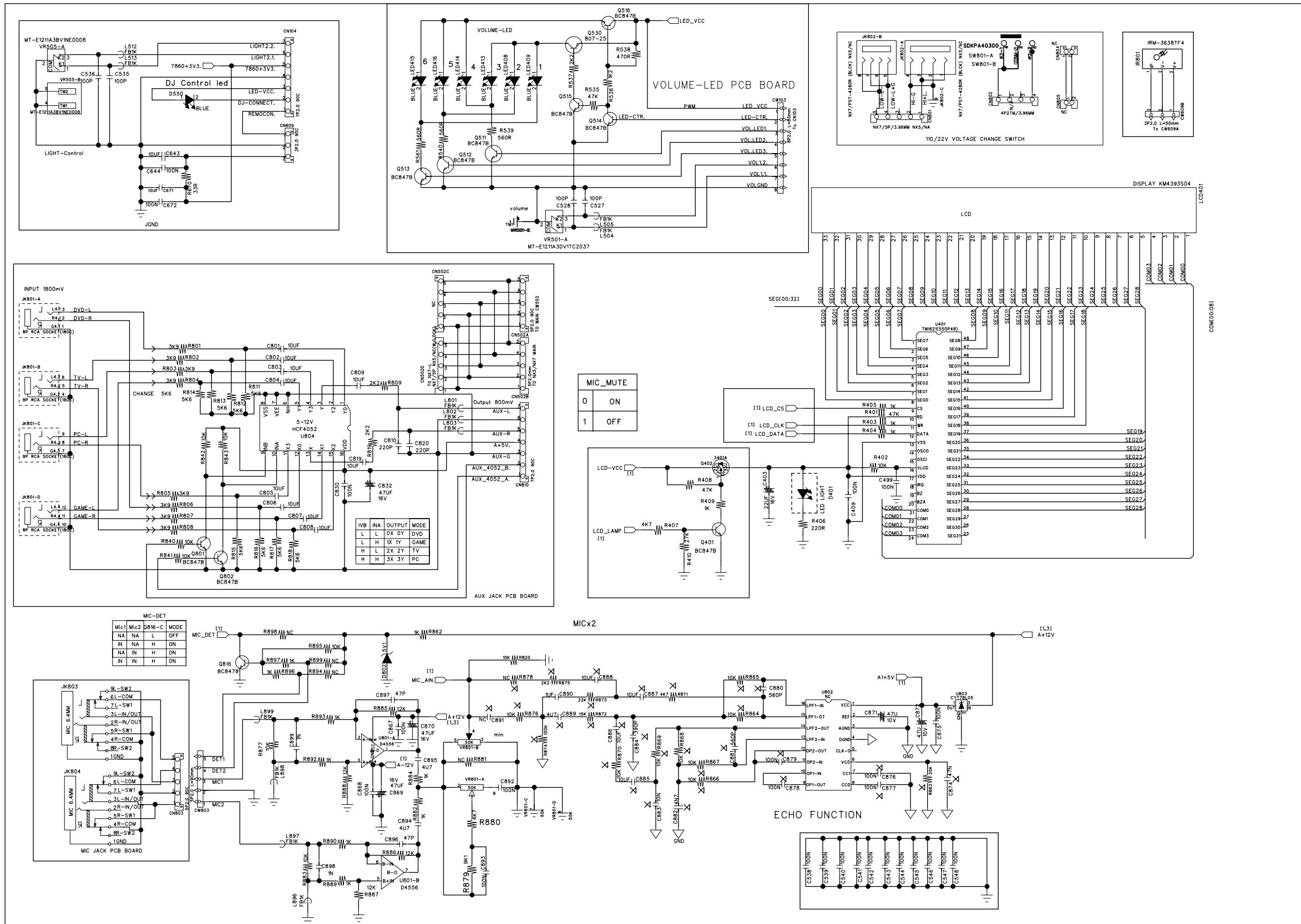
CIRCUIT DIAGRAM - MAIN BOARD AND JACK BOARD



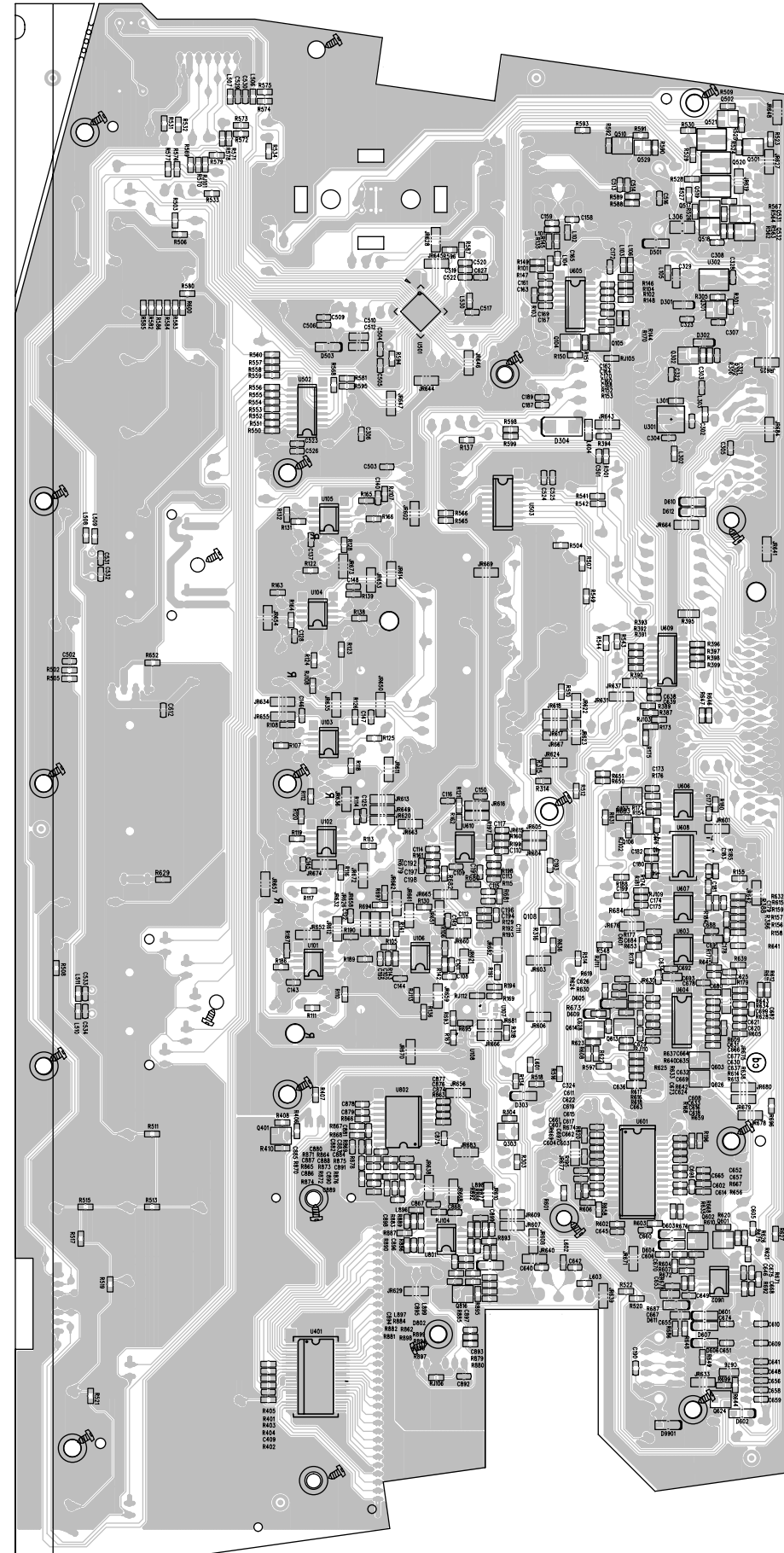
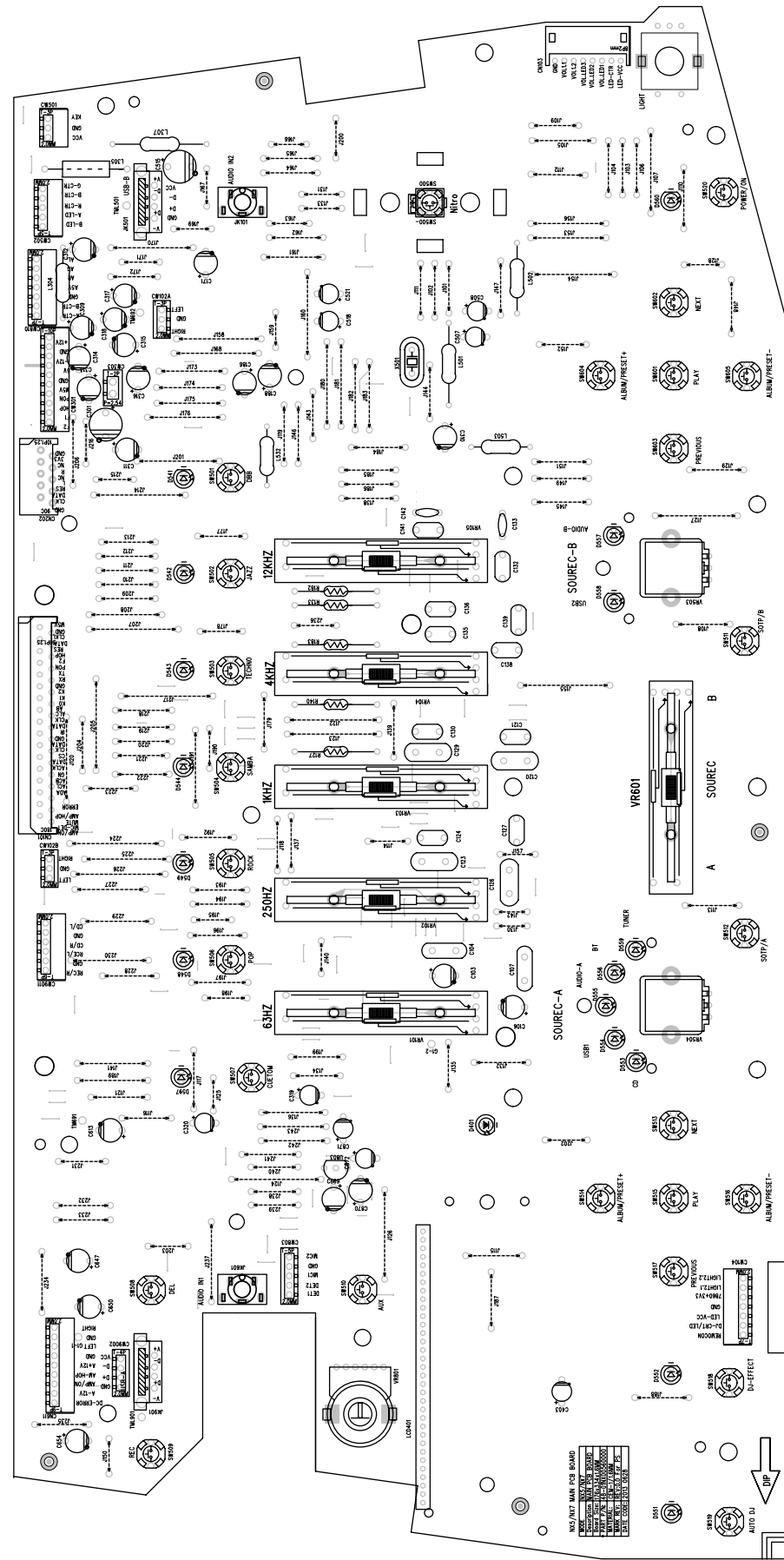
CIRCUIT DIAGRAM - MAIN BOARD



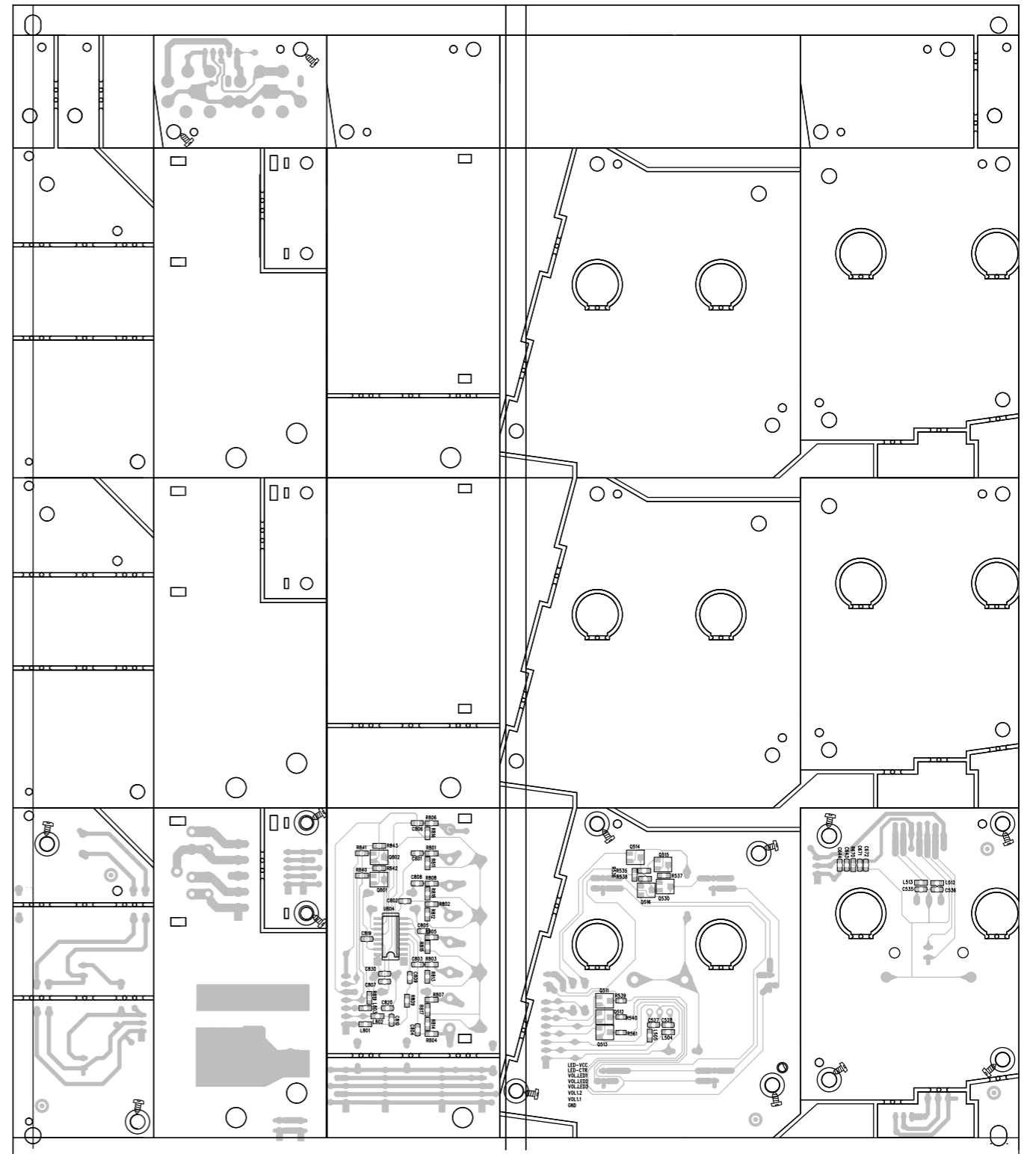
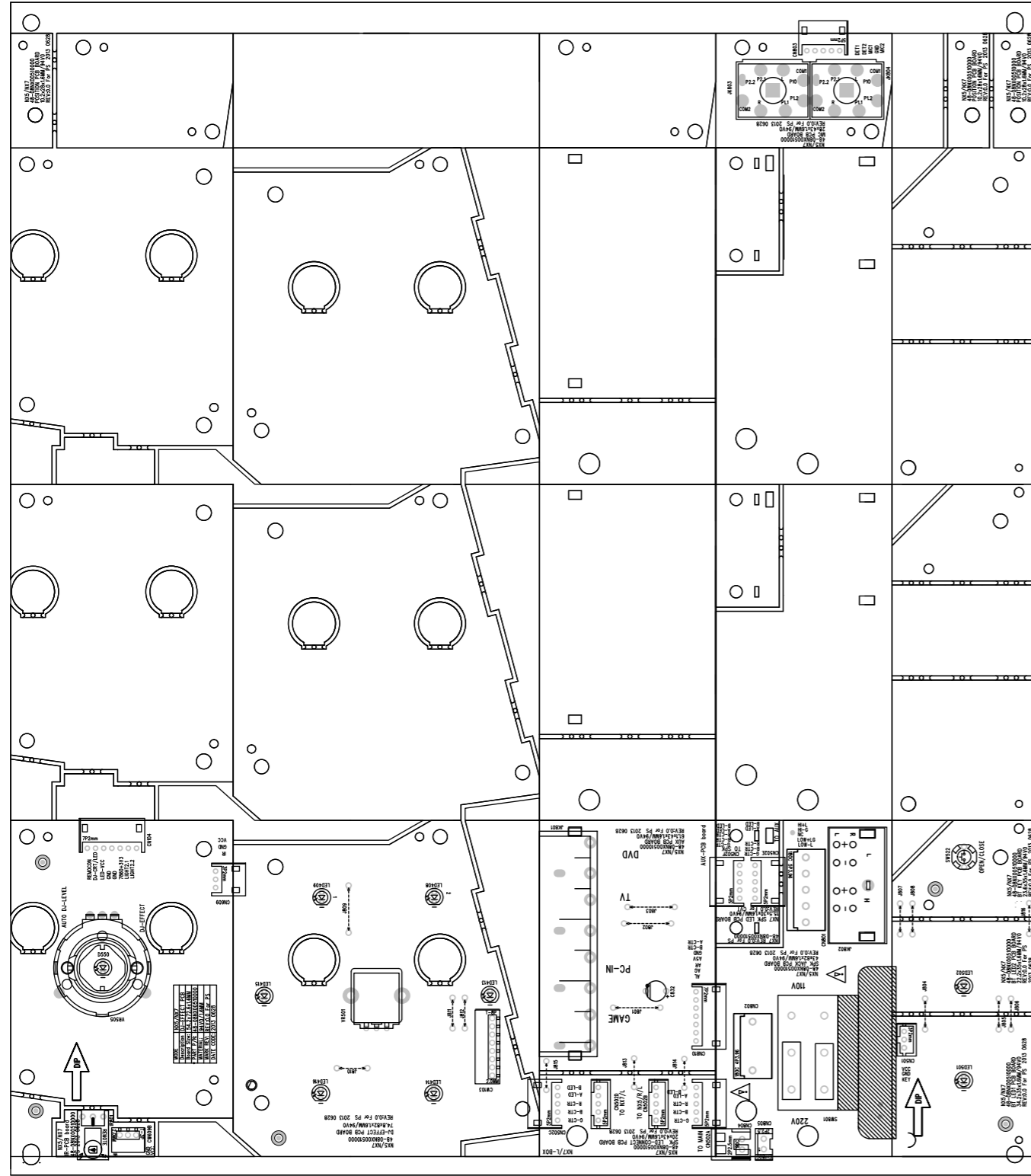
CIRCUIT DIAGRAM - MAIN BOARD



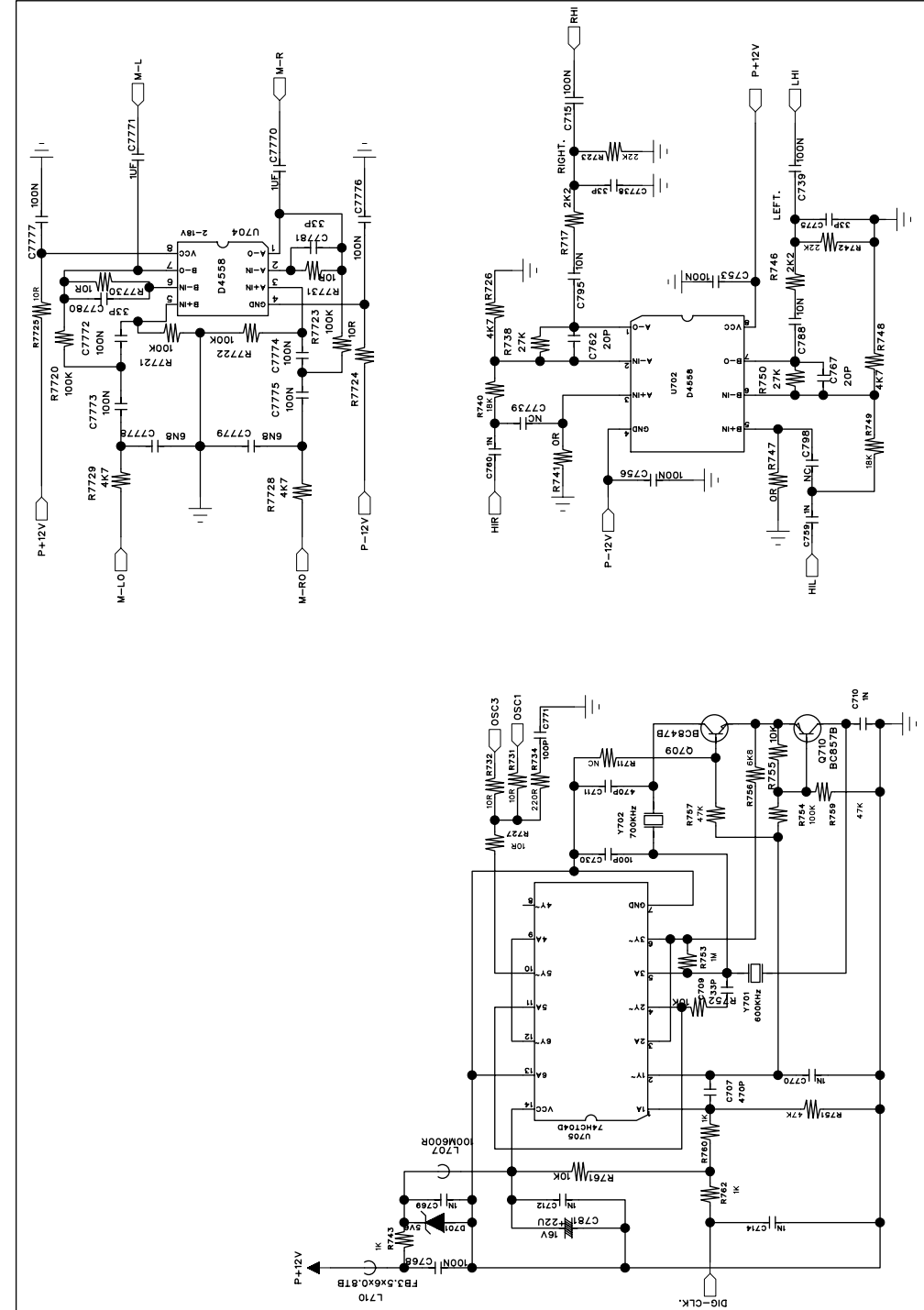
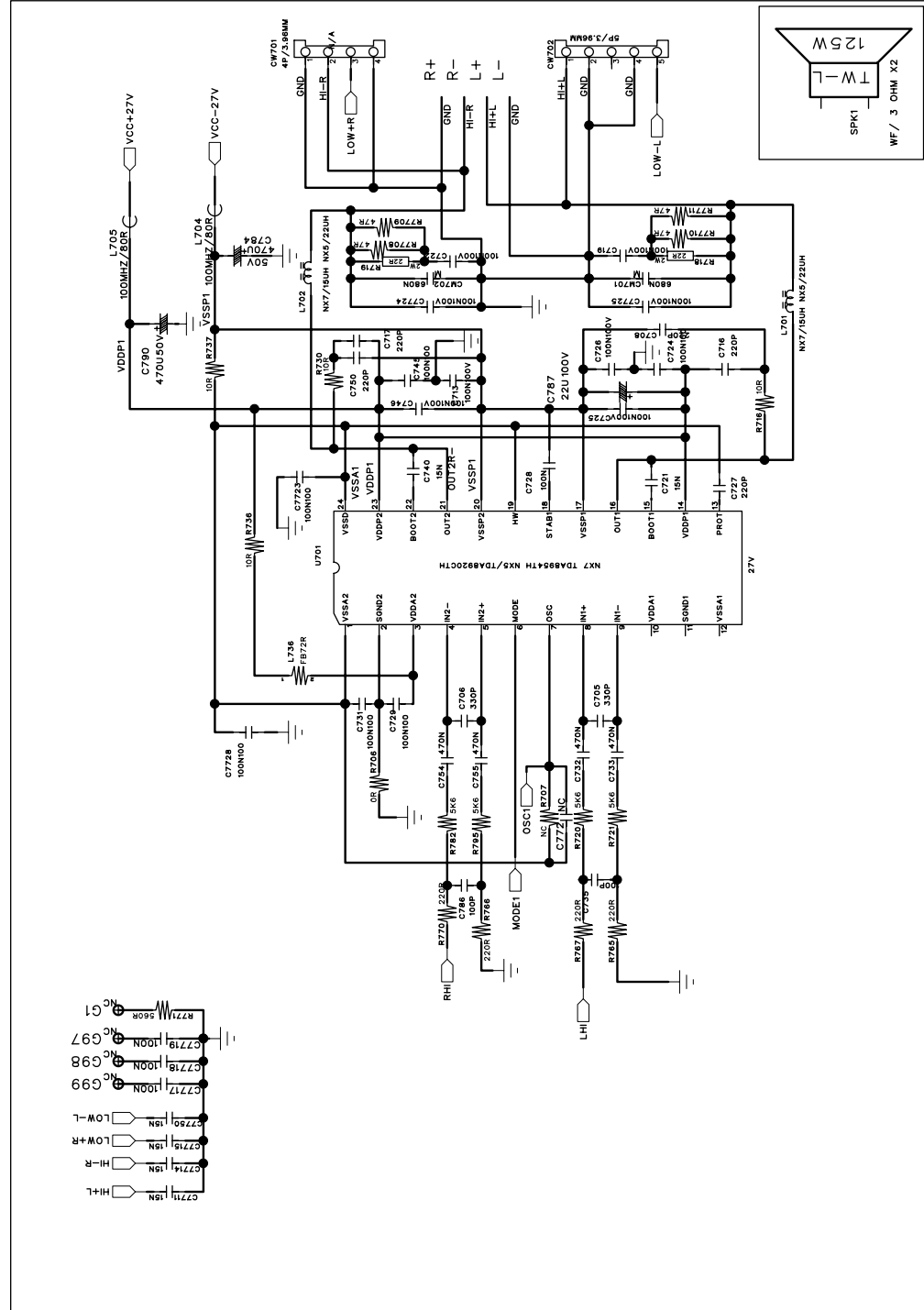
PCB LAYOUT - MAIN BOARD



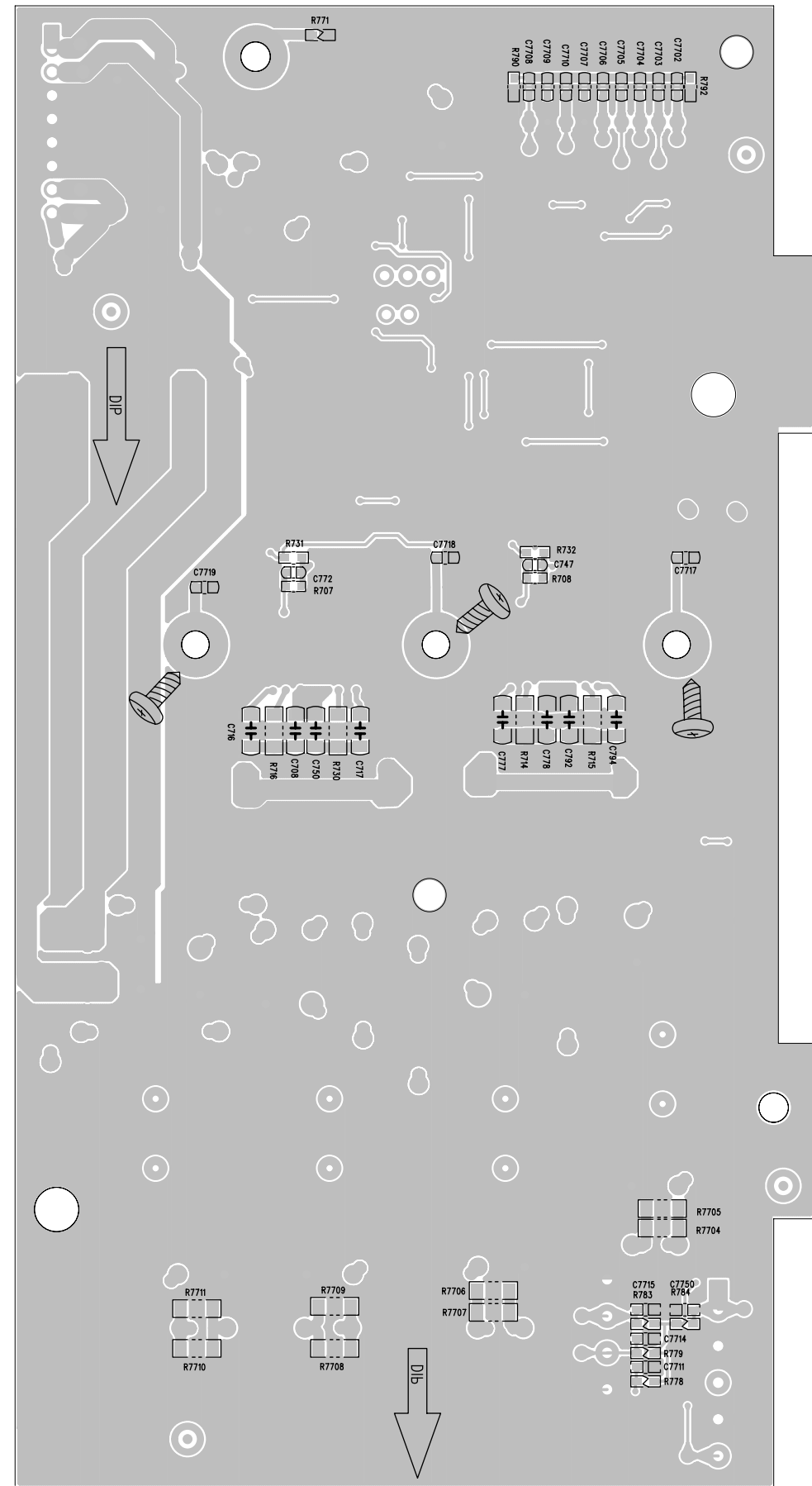
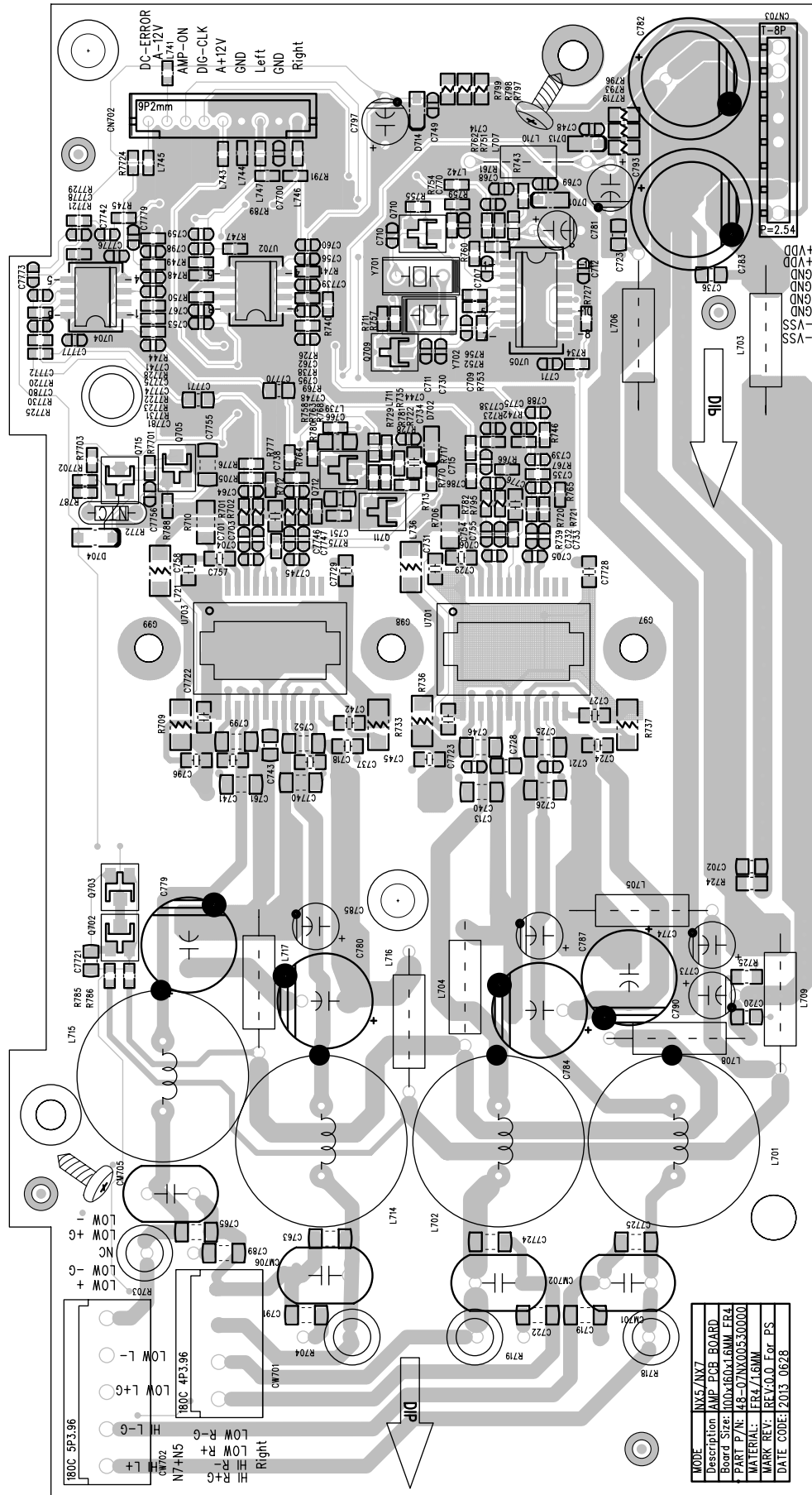
PCB LAYOUT - JACK BOARD



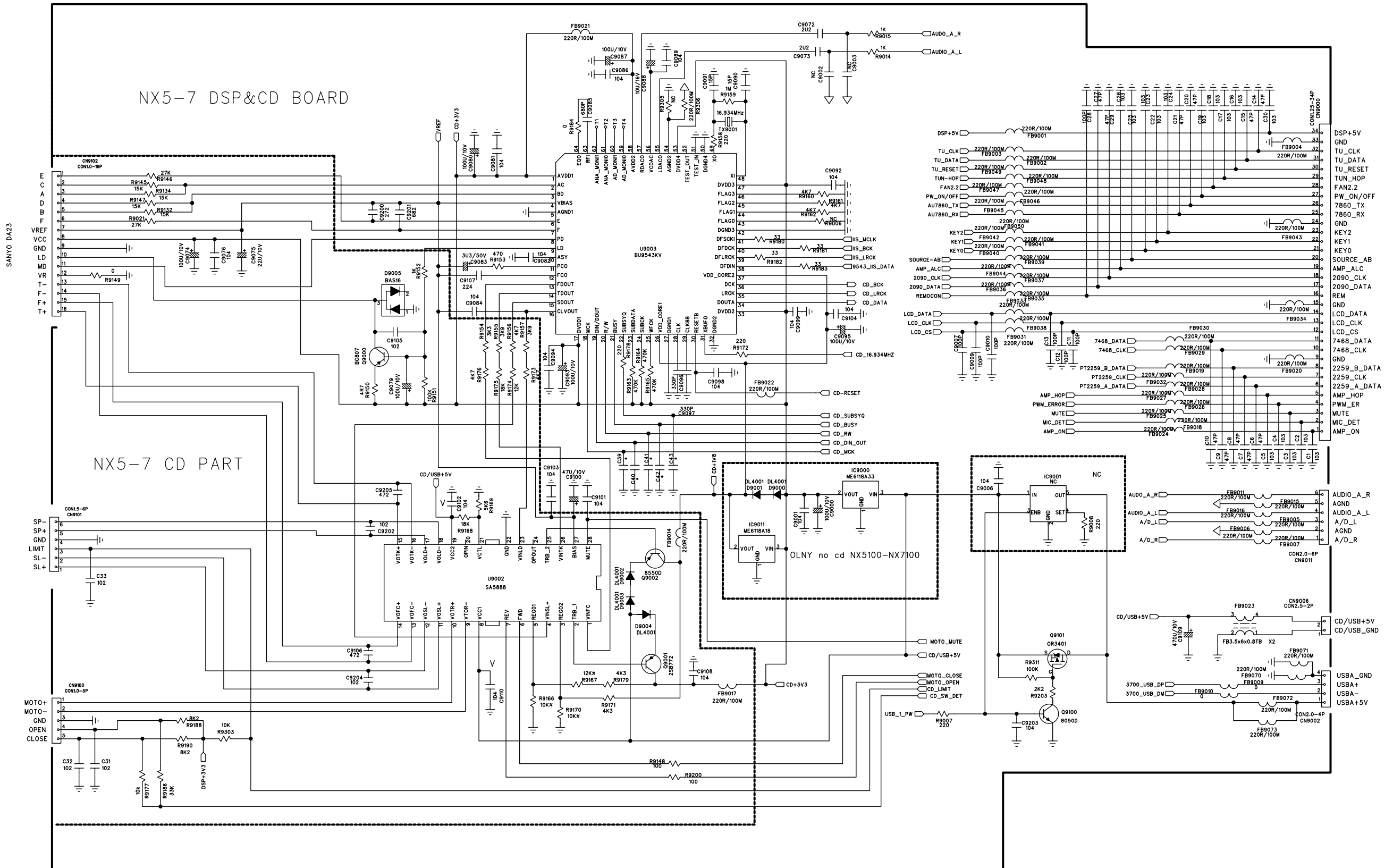
CIRCUIT DIAGRAM - AMP BOARD



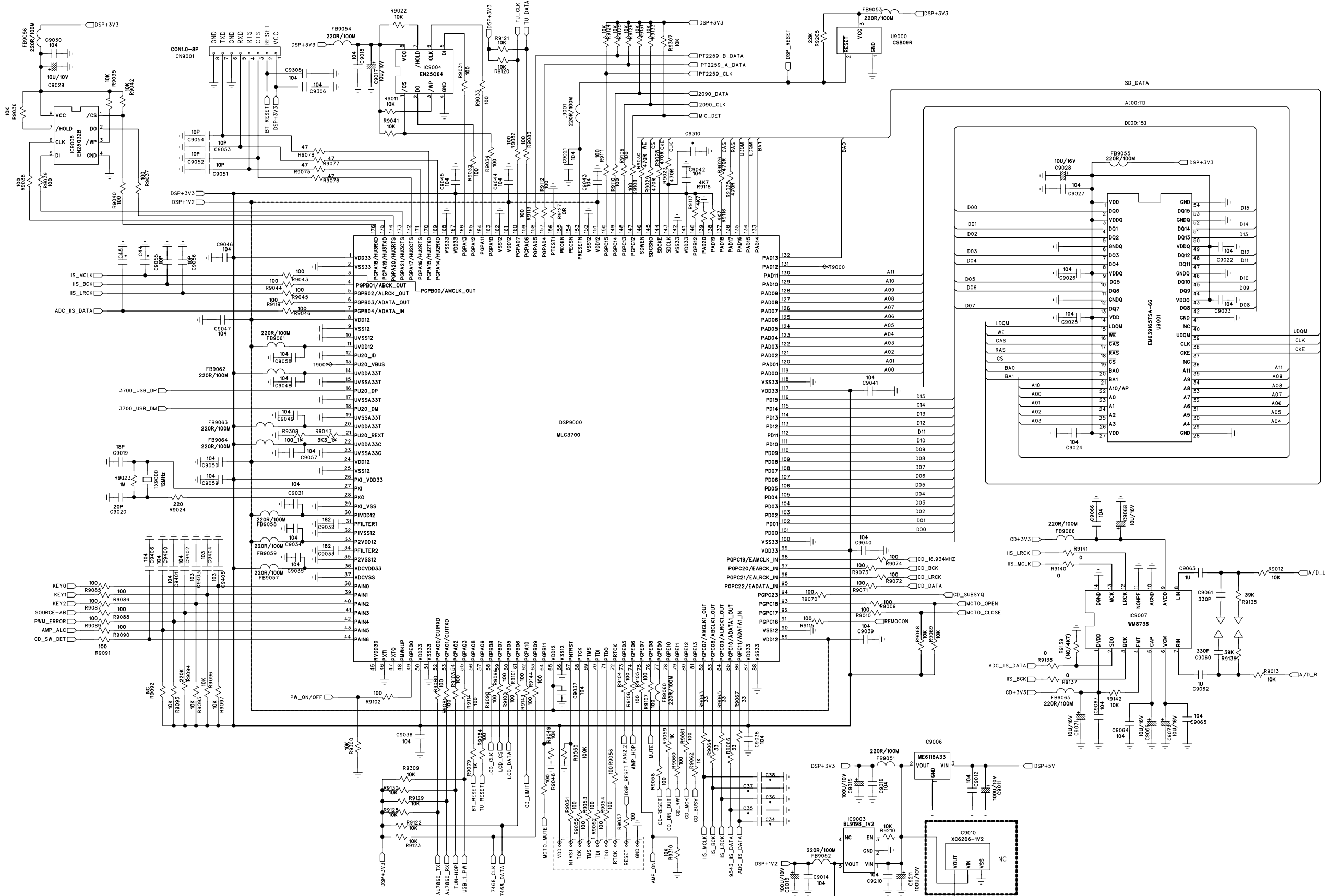
PCB LAYOUT - AMP BOARD



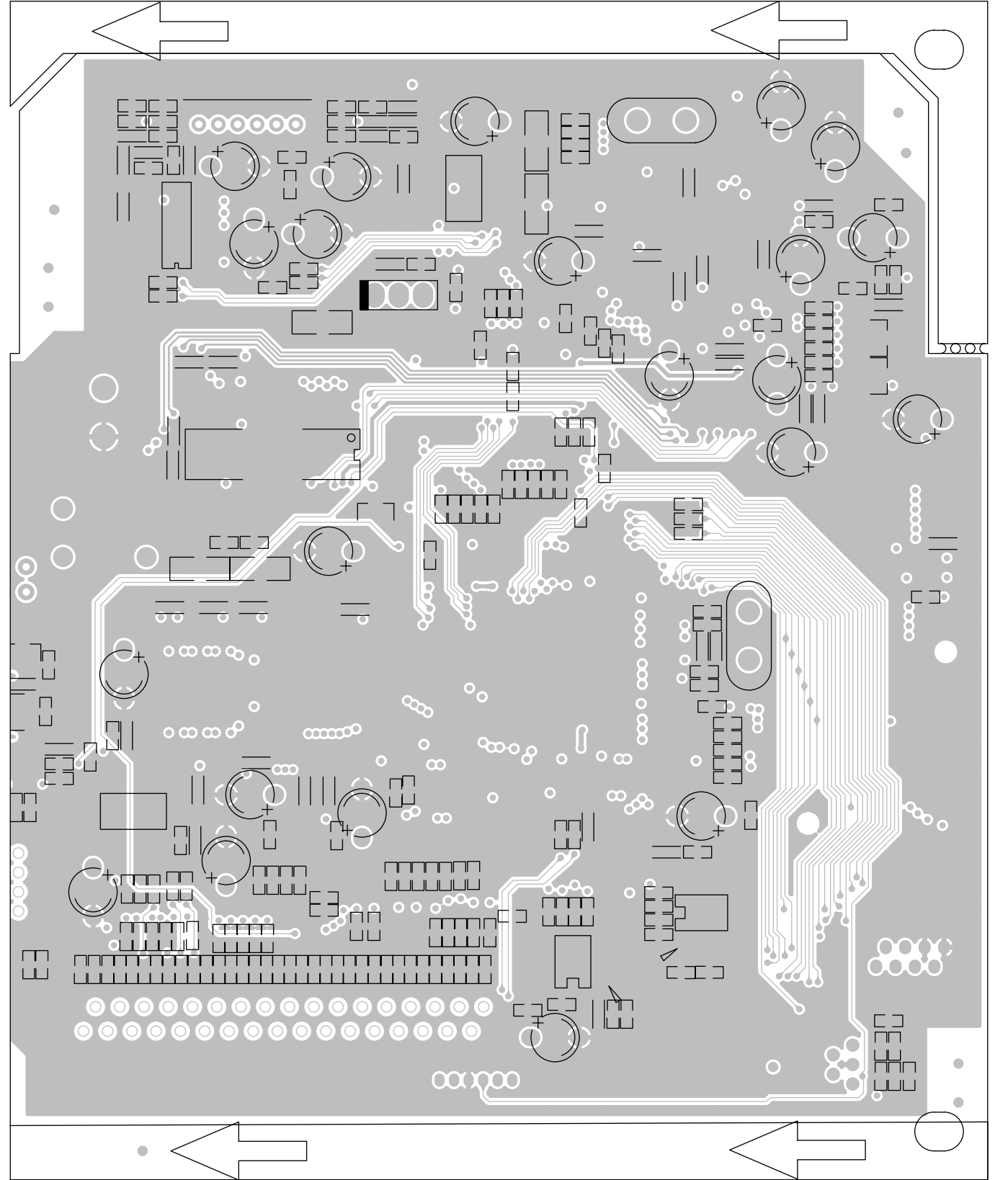
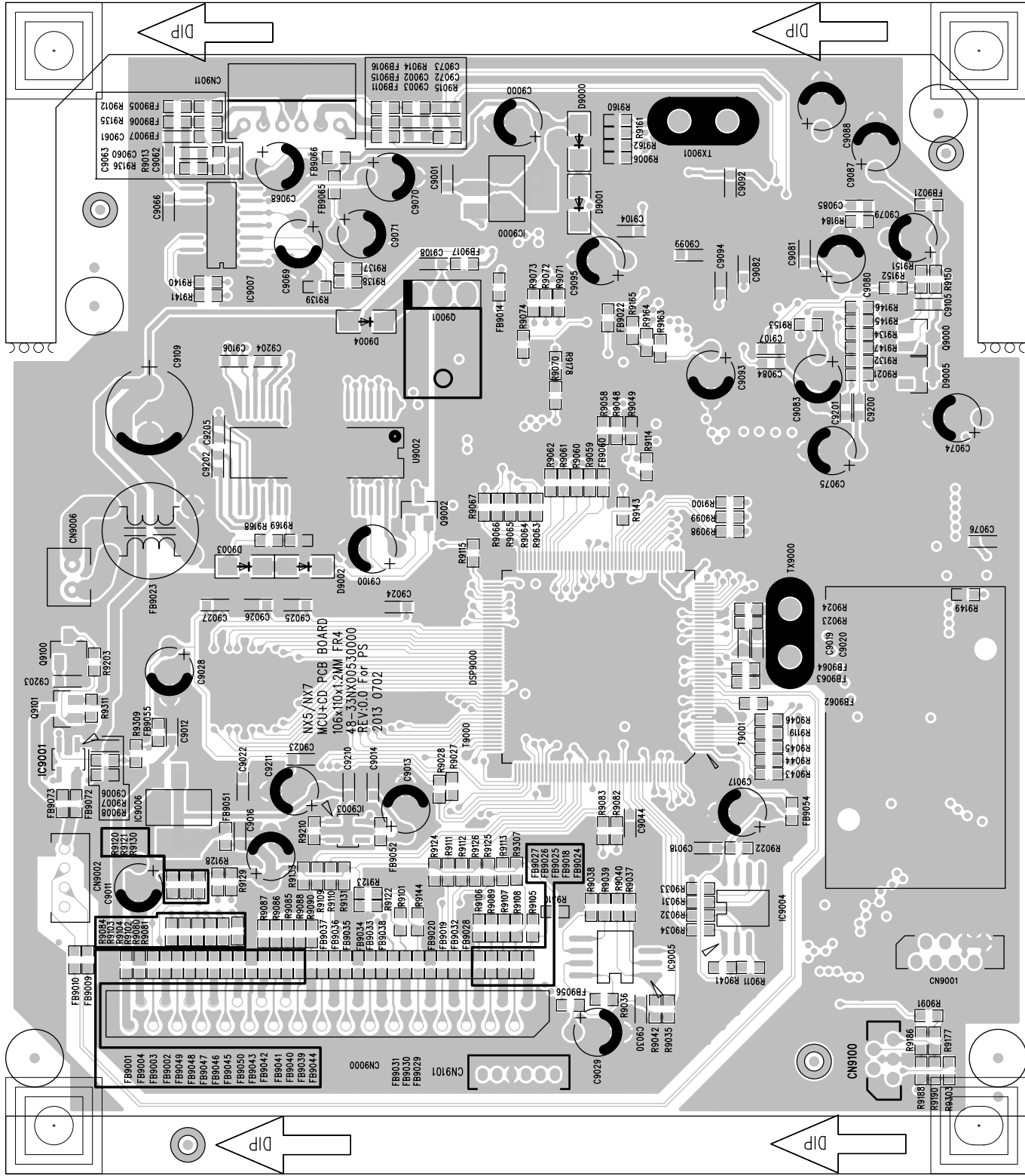
CIRCUIT DIAGRAM - MCU BOARD AND CD BOARD



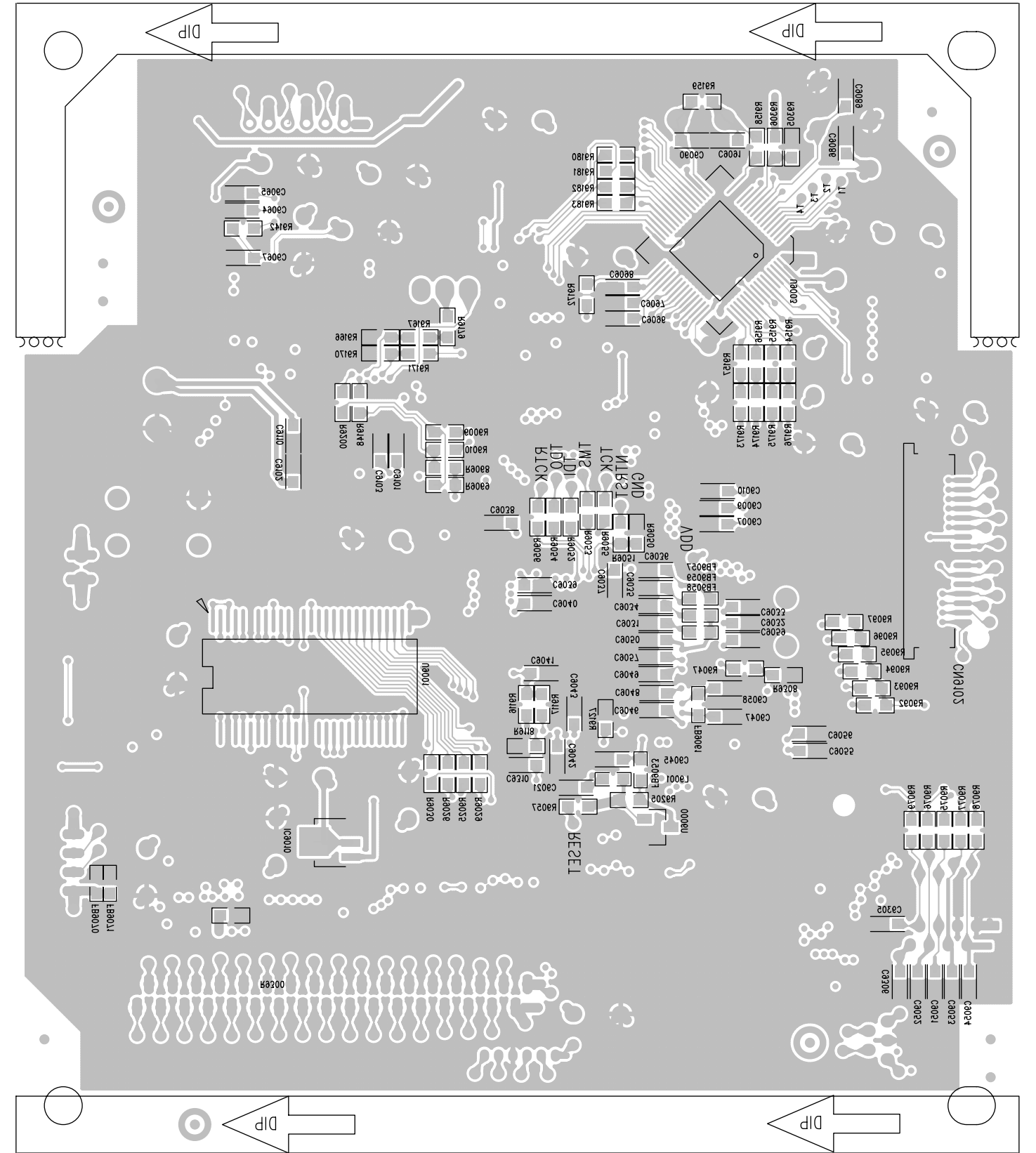
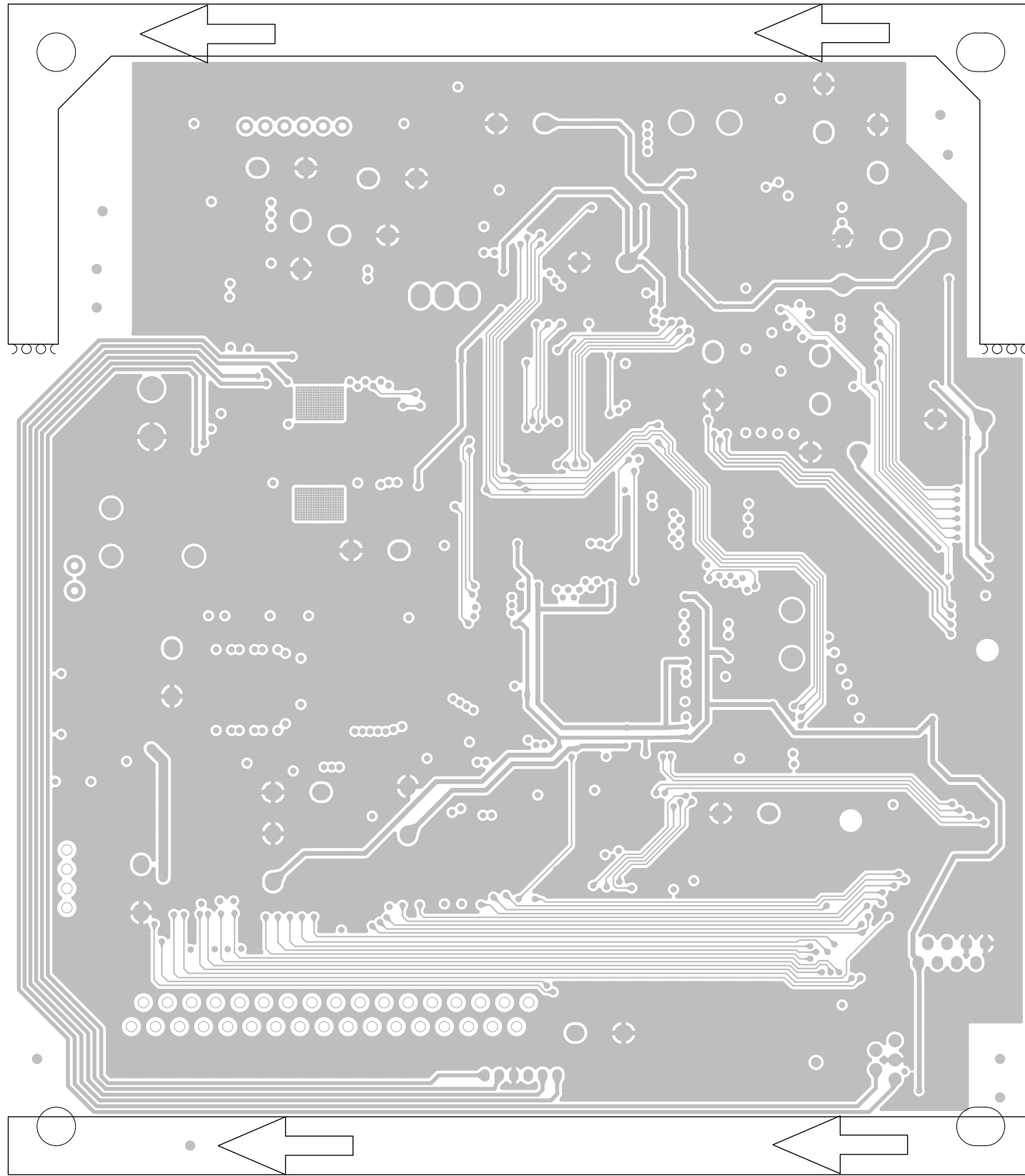
CIRCUIT DIAGRAM - MCU BOARD AND CD BOARD



PCB LAYOUT - MCU + CD BOARD



PCB LAYOUT - MCU + CD BOARD



EXPLODED VIEW

