

M3 C/AH
INTEGRATE AMPLIFIER

SERVICE MANUAL

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INTEGRATE AMPLIFIER



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SECTION 1

SUMMARY

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PRODUCT SAFETY SERVICING GUIDELINES FOR AUDIO PRODUCTS

CAUTION : DO NOT ATTEMPT TO MODIFY THIS PRODUCT IN ANY WAY, NEVER PERFORM CUSTOMIZED INSTALLATIONS WITHOUT MANUFACTURER'S APPROVAL. UNAUTHORIZED MODIFICATIONS WILL NOT ONLY VOID THE WARRANTY, BUT MAY LEAD TO YOUR BEING LIABLE FOR ANY RESULTING PROPERTY DAMAGE OR USER INJURY.

SERVICE WORK SHOULD BE PERFORMED ONLY AFTER YOU ARE THOROUGHLY FAMILIAR WITH ALL OF THE FOLLOWING SAFETY CHECKS AND SERVICING GUIDELINES. TO DO OTHERWISE, INCREASES THE RISK OF POTENTIAL HAZARDS AND INJURY TO THE USER.

WHILE SERVICING, USE AN ISOLATION TRANSFORMER FOR PROTECTION FROM A.C. LINESHOCK.

SAFETY CHECKS

AFTER THE ORIGINAL SERVICE PROBLEM HAS BEEN CORRECTED. A CHECK SHOULD BE MADE OF THE FOLLOWING.

SUBJECT : FIRE & SHOCK HAZARD

1. BE SURE THAT ALL COMPONENTS ARE POSITIONED IN SUCH A WAY AS TO AVOID POSSIBILITY OF ADJACENT COMPONENT SHORTS. THIS IS ESPECIALLY IMPORTANT ON THOSE MODULES WHICH ARE TRANSPORTED TO AND FROM THE REPAIR SHOP.

2. NEVER RELEASE A REPAIR UNLESS ALL PROTECTIVE DEVICES SUCH AS INSULATORS, BARRIERS, COVERS, SHIELDS, STRAIN RELIEFS, POWER SUPPLY CORDS, AND OTHER HARDWARE HAVE BEEN REINSTALLED PER ORIGINAL DESIGN. BE SURE THAT THE SAFETY PURPOSE OF THE POLARIZED LINE PLUG HAS NOT BEEN DEFEATED.

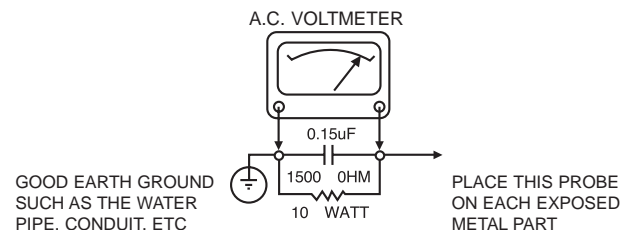
3. SOLDERING MUST BE INSPECTED TO DISCOVER POSSIBLE COLD SOLDER JOINTS, SOLDER SPLASHES OR SHARP SOLDER POINTS. BE CERTAIN TO REMOVE ALL LOOSE FOREIGN PARTICLES.

4. CHECK FOR PHYSICAL EVIDENCE OF DAMAGE OR DETERIORATION TO PARTS AND COMPONENTS. FOR FRAYED LEADS, DAMAGED INSULATION (INCLUDING A.C. CORD). AND REPLACE IF NECESSARY.


5. NO LEAD OR COMPONENT SHOULD TOUCH A RECEIVING TUBE OR A RESISTOR RATED AT 1 WATT OR MORE. LEAD TENSION AROUND PROTRUDING METAL SURFACES MUST BE AVOIDED.


6. ALL CRITICAL COMPONENTS SUCH AS FUSES, FLAMEPROOF RESISTORS, CAPACITORS, ETC. MUST BE REPLACED WITH EXACT FACTORY TYPES, DO NOT USE REPLACEMENT COMPONENTS OTHER THAN THOSE SPECIFIED OR MAKE UNRECOMMENDED CIRCUIT MODIFICATIONS.

7. AFTER RE-ASSEMBLY OF THE SET ALWAYS PERFORM AN A.C. LEAKAGE TEST ON ALL EXPOSED METALLIC PARTS OF THE CABINET, (THE CHANNEL SELECTOR KNOB, ANTENNA TERMINALS. HANDLE AND SCREWS) TO BE SURE THE SET IS SAFE TO OPERATE WITHOUT DANGER OF ELECTRICAL SHOCK. DO NOT USE A LINE ISOLATION TRANSFORMER DURING THIS TEST USE AN A.C. VOLTME-TER, HAVING 5000 OHMS PER VOLT OR MORE SENSITIVITY, IN THE FOLLOWING MANNER; CONNECT A 1500 OHM 10 WATT RESISTOR, PARALLELED BY A .15 MFD. 150.V A.C TYPE CAPACITOR BETWEEN A KNOWN GOOD EARTH GROUND (WATER PIPE, CONDUIT, ETC.) AND THE EXPOSED METALLIC PARTS, ONE AT A TIME. MEASURE THE A.C. VOLTAGE ACROSS THE COMBINATION OF 1500 OHM RESISTOR AND .15 MFD CAPACITOR. REVERSE THE A.C. PLUG AND REPEAT A.C. VOLTAGE MEASUREMENTS FOR EACH EXPOSED METALLIC PART. VOLTAGE MEASURED MUST NOT EXCEED 75 VOLTS R.M.S. THIS CORRESPONDS TO 0.5 MILLIAMPS A.C ANY VALUE EXCEEDING THIS LIMIT CONSTITUTES A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED IMMEDIATELY.



SUBJECT: GRAPHIC SYMBOLS

 THE LIGHTNING FLASH WITH APROWHEAD SYMBOL. WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.

 THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.

SERVICING PRECAUTIONS

CAUTION: Before servicing the Stereo amplifier covered by this service data and its supplements and addends, read and follow the SAFETY PRECAUTIONS. NOTE: if unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions in this publication, always follow the safety precautions.

Remember Safety First:

General Servicing Precautions

1. Always unplug the Stereo amplifier AC power cord from the AC power source before:
 - (1) Removing or reinstalling any component, circuit board, module, or any other assembly.
 - (2) Disconnecting or reconnecting any internal electrical plug or other electrical connection.
 - (3) Connecting a test substitute in parallel with an electrolytic capacitor.Caution: A wrong part substitute or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
2. Do not spray chemicals on or near this Stereo amplifier or any of its assemblies.
3. Unless specified otherwise in this service data, clean electrical contacts by applying an appropriate contact cleaning solution to the contacts with a pipe cleaner, cottontipped swab, or comparable soft applicator. Unless specified otherwise in this service data, lubrication of contacts is not required.
4. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.
5. Do not apply AC power to this Stereo amplifier and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
6. Always connect test instrument ground lead to the appropriate ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power on. Connect an insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts (Note 1) should be more than 1 M-ohm. Note 1: Accessible Conductive Parts including Metal panels, Input terminals, Earphone jacks, etc.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical Es devices are integrated circuits and some field effect transistors and semiconductor chip components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reason prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified a "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freonpropelled chemicals. These can generate electrical charge sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil, or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Normally harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

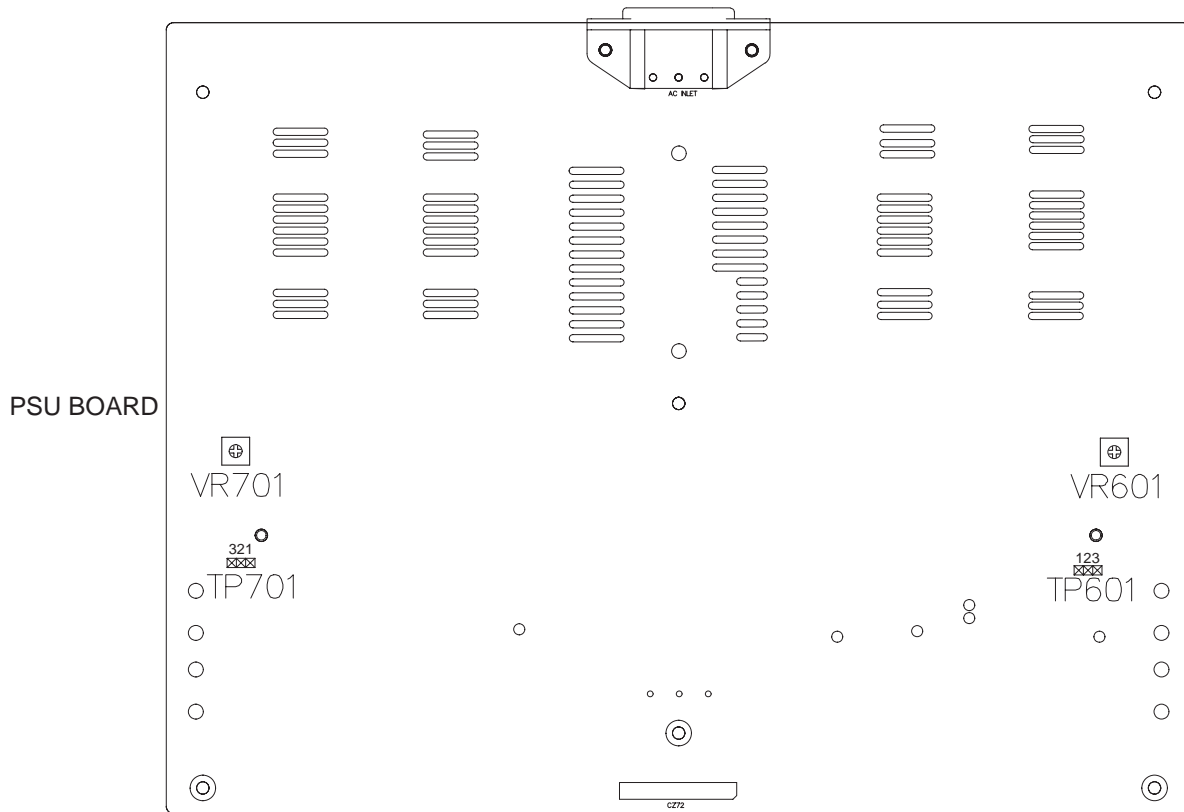
ALIGNMENT PROCEDURE

A. POWER DRIVEN VOLTAGE(PSU BOARD)

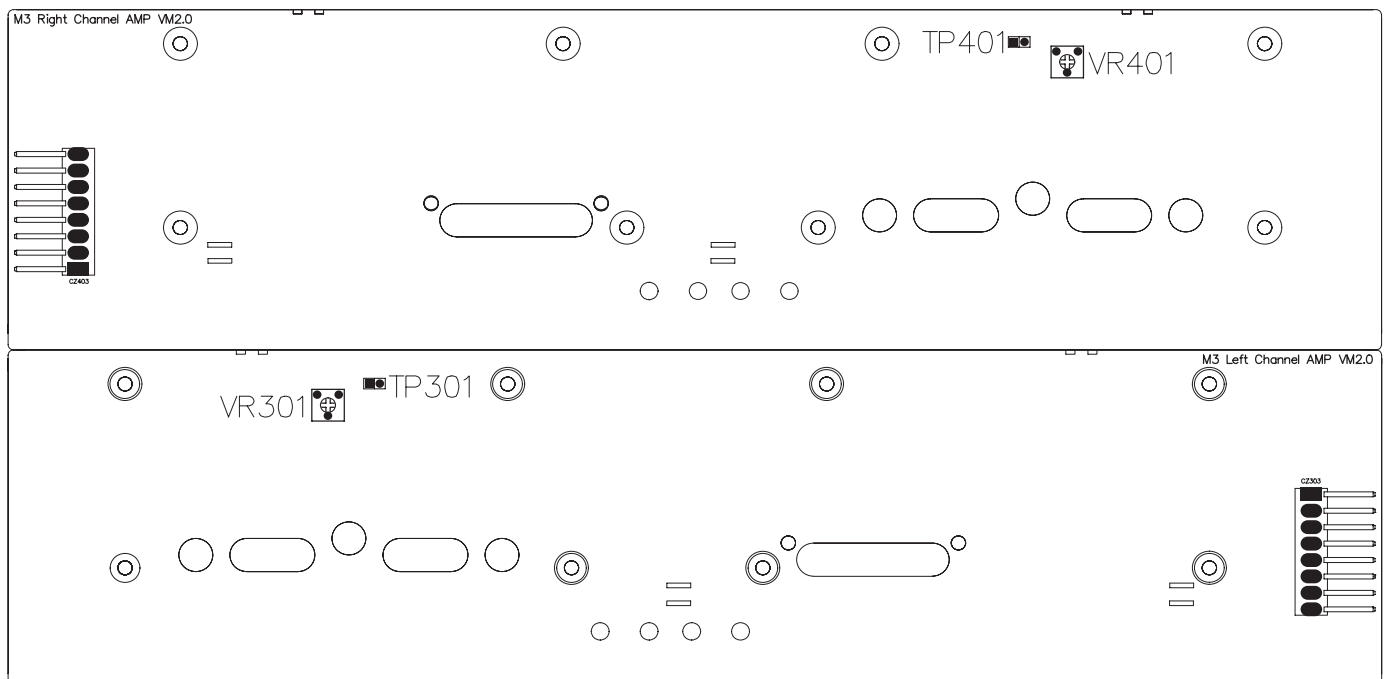
Connect a DC Millivoltmeter to TP601/TP701 1 and 2 pin, then adjust VR601/VR701(6.8kohms) for $0V \pm 0.1V$.

B. IDLING CURRENT(AMP BOARD)

1. Connect a DC Millivoltmeter between TP301 2 pins, then adjust VR301 (200ohms) for 7-8mV reading on meter.
2. Connect a DC Millivoltmeter between TP401 2 pins, then adjust VR401 (200ohms) for 7-8mV reading on meter.
3. Watch for 10minutes, to make sure it is around 7mV

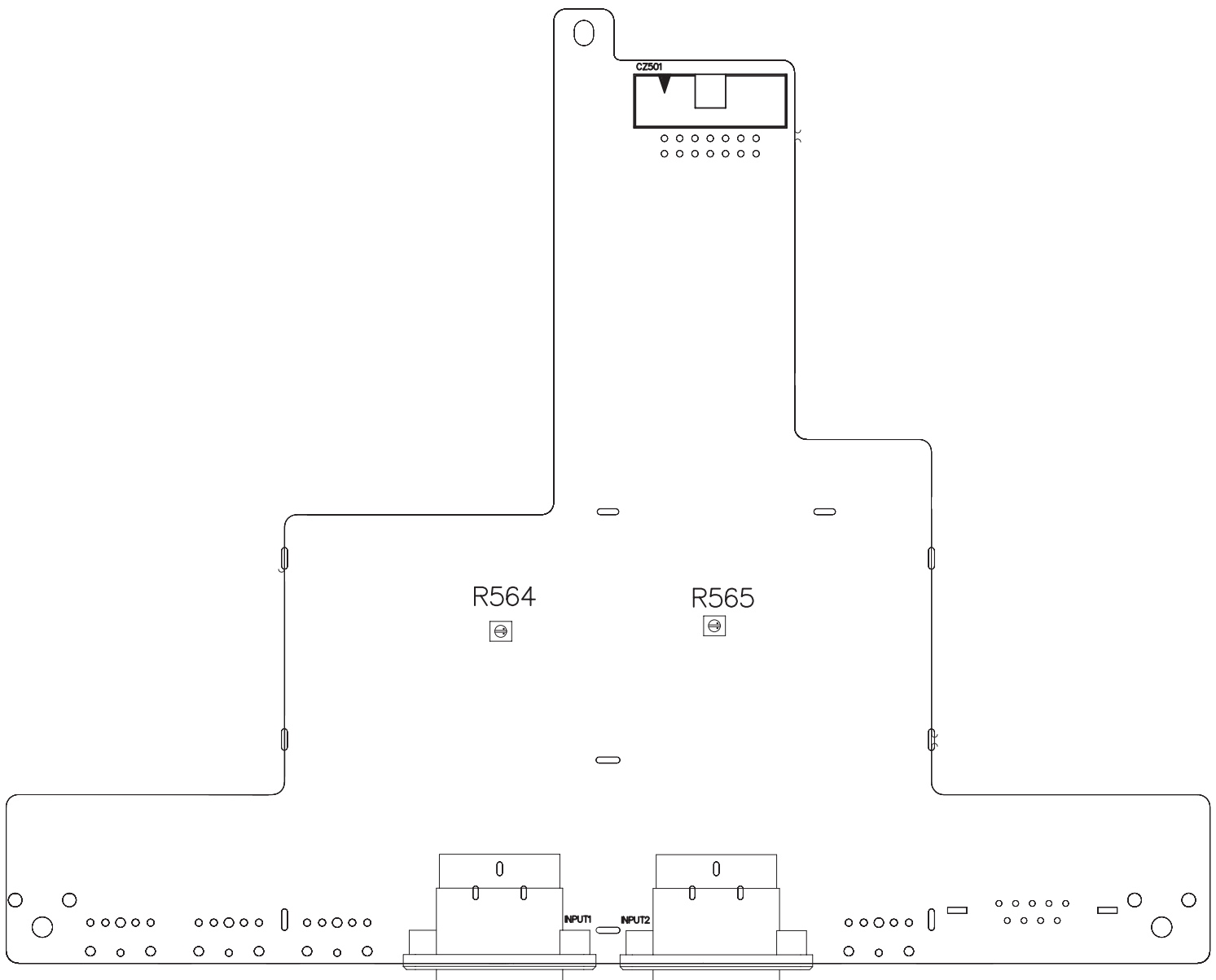


AMP BOARD(L/R)



C. BALANCE INPUTS CMRR

1. Volum set 0dB, Input 2V/10KHZ common mode sinwave signal at L channel Balance input, Connect a AC Millivoltmeter to preout1L then adjust R565 for lowest output level.
2. Volum set 0dB, Input 2V/10KHZ common mode sinwave signal at R channel Balance input, Connect a AC Millivoltmeter to preout1R then adjust R564 for lowest output level.



SPECIFICATIONS

NAD M3 INTEGRATE AMPLIFIER

Note: Specifications are measured in accordance with EIA Standard RS-490 (IHF A-202) for amplifiers

Power Amplifier Section

Continuous output power into 4/8 ohms (Minimum RMS power per channel, both channels driven, With no more than the rated distortion)		180W (17dBw)
Rated distortion (THD)(20Hz –20kHz)		≤0.004%
Channel Separation (MAIN IN, 60W Out at 8Ω,1kΩ shorted, 1kHz)		≥100dB
Clipping power, 1kHz (Maximum continuous power per channel)		220W
Dynamic Headroom at 8 ohms		4.2dB
Dynamic power (Maximum short-term power per channel)	8ohms 4ohms 2ohms	≥280W ≥480W ≥785W
Damping factor		≥150
Signal to noise ratio(refer 1W A-weighted)		≥100dB
Slew rate		≥20V/μsec
T.H.D and SMPTE I.M. (Distortion from 250mW to rated output)		≤0.01%
IHF I.M. (CCIF IM) and T.I.M distortion (From 250mW to rated output))		≤0.005%
Input impedance		20kΩ//680pF
Input sensitivity (For rate power into 8ohms)		1.38V
Power amp gain		29dB

Preamplifier Section

Input Impedance single-ended input	150kΩ//500pF
balanced input	120kΩ //100pF

Signal-to-Noise ratio (A-weighted, line In, Pre-Out)	110dB ref 500mV
Rated distortion (THD) (20Hz –21kHz)	≤0.005%
Channel Separation (1kHz 2V Line/balanced IN, 2V Pre-Out)	≥110dB
Input Sensitivity	320mV for 2V out
Input Overload Line input Balanced input	≥10V ≥9 V
Frequency response (5Hz-70KHz)	< +/-0.3dB
THD (SUB OUT) (2V CD in, 2V SUB out; 50Hz, 80kHz LPF)	≤0.01%
THD (ZONE 2 OUT) (2V CD IN, 1kHz, 80kHz LPF)	≤0.01%
Outputs	
Preamp output impedance	100 Ω
Zone2 output impedance	600 Ω
Controls	
Treble	±5dB at 10kHz
Bass	±5dB at 100Hz
 Pre-in ,Power AMP out,input 2V	
Signal-to-Noise ratio, A-weighted (500mV CD in, SPK out, 8Ω, A weighted)	107dB ref 1 W out
Rated distortion (THD) (20Hz –20kHz)	≤0.008%
Input sensitivity (CD in, SPK out, at rated power, volume max.)	450mV
Channel Separation (CD in, 20W out at 8Ω, 1kΩ shorted, 1kHz)	≥100dB
Frequency response	+/-0.3dB
 PHYSICAL SPECIFICATIONS	
Dimensions(W x H x D)	
Net	17.2x5.3x15.2”(435x135x386mm)
Gross	17.2x5.8x17.2”(435x147x435mm)
 Net Weight	 51.8lbs(23.5kg)
Shipping Weight	68.3lbs(31.0kg)

SECTION 2

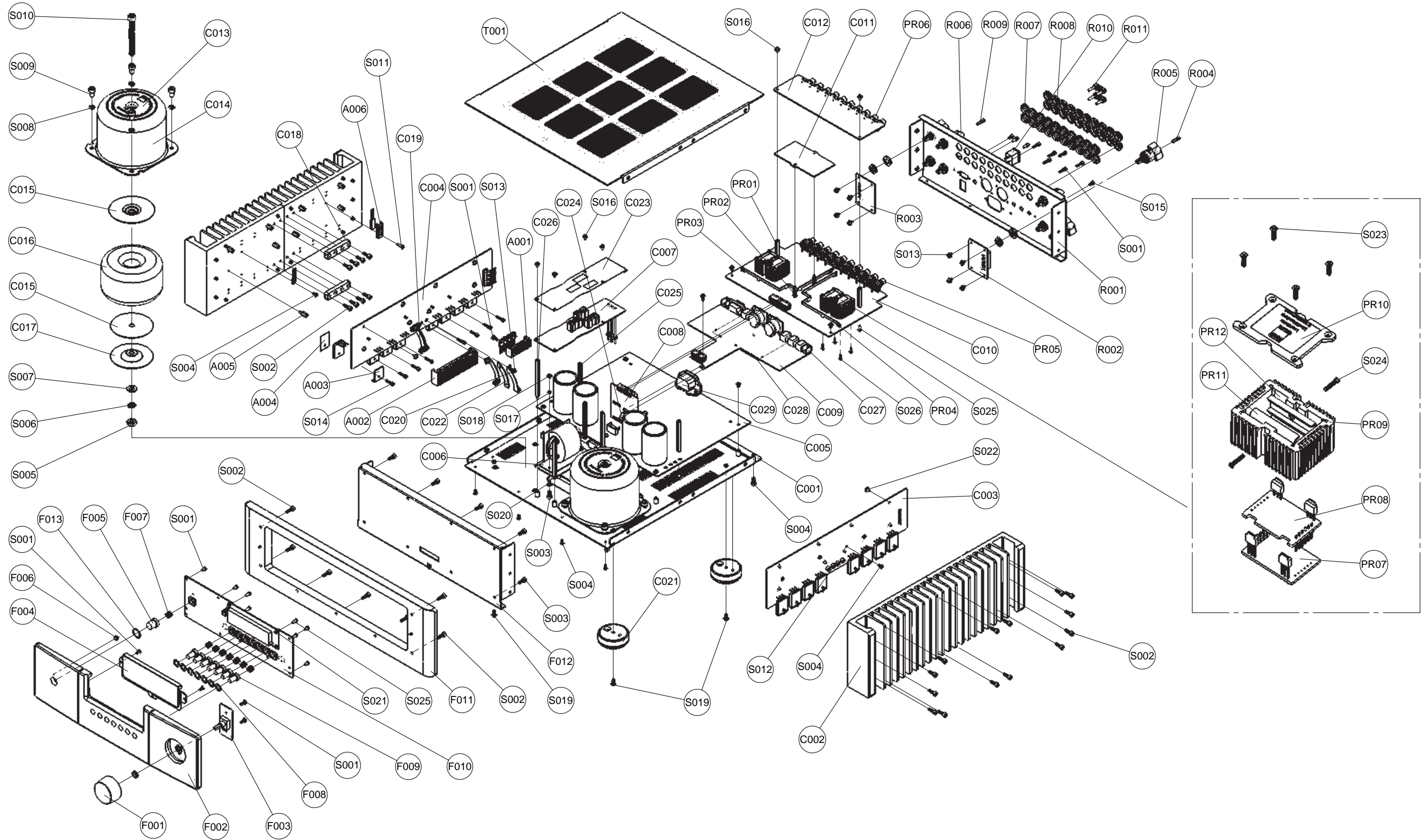
CABINET & MAIN CHASSIS

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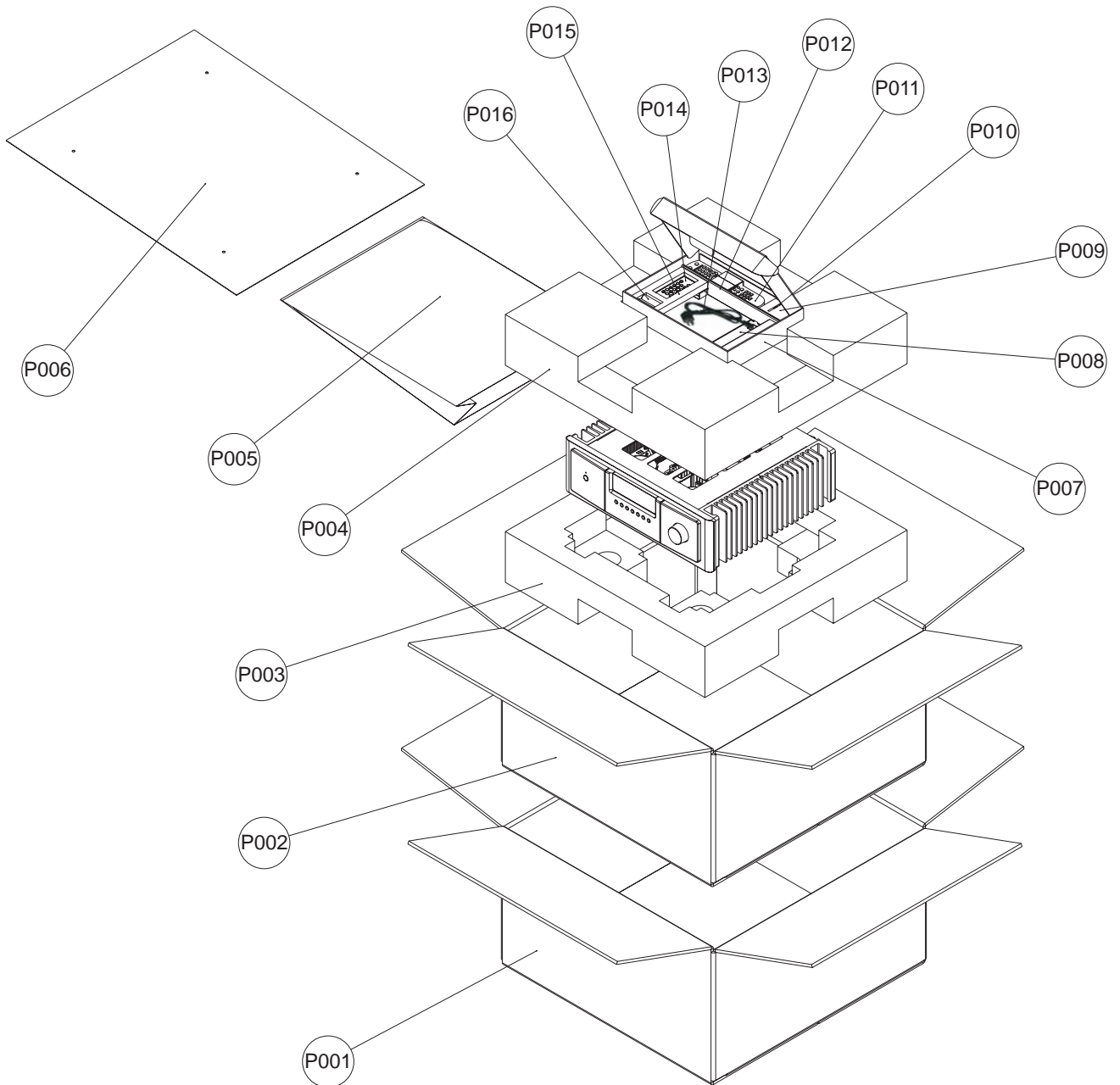
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EXPLODED VIEWS

1. Cabinet and main frame section



2. Packing accessory section



3. Exploded view parts list

REF.NO	PART NO.	DESCRIPTION	Qty.	REF.NO	PART NO.	DESCRIPTION	Qty.
C001	67-048002-2	Chassis	1		67-048004-1	Rear Panel (C)	1
C002	70-048001-0	Heatsink	4	R001	67-048014-2	Rear Panel (AH)	1
C003	01-50306-02	RAMP Board Assy	1		67-048024-0	Rear Panel (CCC)	1
C004	01-50306-01	LAMP Board Assy	1	R002	01-50308-02	SPK Board (R)	1
C005	01-50305-00	Power Board Assy	1	R003	01-50308-01	SPK Board (L)	1
C006	01-50307-02	StandbyBoard(Buttom) Assy	1	R004	77-048001-0	Bindingpost Plug Red(C)	4
C007	01-50307-21	StandbyBoard(Top) Assy	1	R005	17-03001-03	HS Bindingpost Red Assy	4
C008	01-50303-00	Connect Board Assy	1	R006	17-03001-04	HS Bindingpost white Assy	4
C009	01-50301-00	Balance Board Assy	1	R007	77-048010-0	Double step washer Red	10
C010	01-50309-00	PREM Board Assy	1		77-048011-0	Double step washer White	10
C011	01-50312-00	Tone Board Assy	1	R008	69-048016-0	Counternut	20
C012	01-50311-00	L Input Board Assy	1	R009	77-048002-0	Bindingpost Plug White(C)	4
C013	94-048001-2	Transformer label	2	R010	11-01101-03	Power Switch	1
C014	68-048002-0	Shielding Box	2	R011	30-60480-00	RCA Shorting Plug	2
C015	18-53231-01	Transformer rubber pad	4				
C016		Transformer	2	A01	70-048005-0	Small Heatsink B	2
C017	66-001008-0	Metal Disc	2	A02	70-048004-0	Small Heatsink	2
C018	68-048001-1	HS Fixl Bar	4	A03	66-005009-0	Tr. Clamping	16
C019	69-048010-1	Bus Bar A	4	A04	78-005005-0	Insulated Cashion	16
C020	69-048011-1	Bus Bar B	4	A05	69-048024-0	Copper Spacer-Screw	16
C021	83-048010-0	Foot Assy	4	A06	66-018005-0	Tem. SW. Clamper	2
C022	75-048022-0	Bus Bar Washer	4				
C023	76-048012-0	PC Cover	1	PR01	69-048032-0	Copper Spacer	2
C024	85-008001-1	Spacer Support	1	PR02	85-048001-0	Pcb Spacer	2
C025	69-048013-0	Copper Spacer	2	PR03	69-048027-0	PRE-BUSBAR L	1
C026	69-048031-0	Copper Spacer-Screw	4	PR04	69-048028-0	PRE-BUSBAR R	1
C027	66-011011-0	Connectible Bracket	2	PR05	17-01001-16	HS RCA Red Assy	10
C028	66-048004-0	Blance pcb Shielding	1	PR06	17-01001-15	HS RCA White Assy	10
C029	17-07102-00	AC Inlet	1	PR07	16-53013-00	Pre. Module pcb Down	2
				PR08		Pre. Module pcb Up	2
F001	71-048010-0	Vol. Knob Assy	1	PR09	70-048002-0	Module Base	2
F002	70-048011-0	M3 Fascia 2	1	PR10	70-048003-0	Module Cover	2
F003	01-50302-00	Encoder Board Assy	1	PR11	66-048001-0	Tr. Bracket	4
F004	76-048010-0	Window lens	1	PR12	78-048004-0	Insulated Cashion	8
F005	70-048013-0	Power Button	1				
F006	76-008001-1	LED Lens	1	S001	61-023208-0	Screws, BTB3x8	35
F007	92-048001-0	Spring for Button	8	S002	61-224512-1	Hex Screws 4x12	51
F008	87-048002-0	Input Button Pad	7	S003	61-224508-1	Hex Screws 4x8	10
F009	70-048012-1	Input Button	7	S004	61-023206-0	Screws, BTB3x6	40
F010	01-50304-00	FPP Board Assy	1	S005	62-010802-0	Nut M8	2
F011	70-048010-1	M3 Fascia 1	1	S006	63-020820-1	Spring Washers φ8	2
F012	67-048003-1	Subfascia	1	S007	63-010816-0	Washers φ8	2
F013	87-048003-0	Power Button Pad	1	S008	63-020616-0	Spring Washers φ6	8
				S009	61-226510-0	Hex Screws 6x10	8
T001	67-048001-0	Top Cover	1	S010	64-208070-0	Bolts M8x70	2

REF.NO	PART NO.	DESCRIPTION	Qty.	REF.NO	PART NO.	DESCRIPTION	Qty.
S011	61-023212-0	Screws, BTB3x12	2				
S012	62-050302-0	PEM NUT-PCB M3x0.5	16				
S013	61-223506-1	Hex Screws w/Tooth washer	24				
S014	61-223514-0	Hex Screws 3x14	16				
S015	61-023106-0	Screws, STB3x6	4				
S016	61-373506-0	Machine Screws M3x6	14				
S017	63-010408-0	Spring Washers φ4	2				
S018	62-010402-0	Nut M4	2				
S019	61-024108-0	Screws, STB4x8	4				
S020	63-020411-0	Washers φ4	2				
S021	62-010302-1	Nut M3	6				
S022	61-023506-1	Screws, MB3x6	16				
S023	61-062206-1	Screws, BTF2x6	8				
S024	61-062108-1	Screws, STF2x8	4				
S025	61-023508-0	Screws, MB3x8	10				
S026	61-022206-0	Screws, BTB2x6	8				
Packing List							
P001	88-048001-0	Shipping Box	1				
P002	88-048002-0	Gift Box	1				
P003	89-048001-0	Polyfoam-Bottom	1				
P004	89-048002-0	Polyfoam-Cap	1				
P005	87-048004-0	Non-woven-cloth Bag	1				
P006	90-005001-0	Polybag	1				
P007	88-043003-0	Accessories Box	1				
P008	30-45030-11	Instruction Manual	1				
	30-45030-02	Instruction Manual	1				
	30-45030-03	Instruction Manual CCC	1				
P009	89-048003-0	Little Polyfoam A	1				
P010	30-28601-00	Batteries CR2025	1				
P011	30-10300-00	Remote Control	1				
P012	88-043004-0	Box Sheet	1				
P013	15-10250-00	AC Cord C	1				
	15-10125-00	AC Cord AH					
	15-10250-03	AC Cord CCC	1				
P014	30-17200-01	Remote Control ZR3	1				
P015	89-048004-0	Little Polyfoam B	1				
P016	30-22100-00	Batteries AA	2				

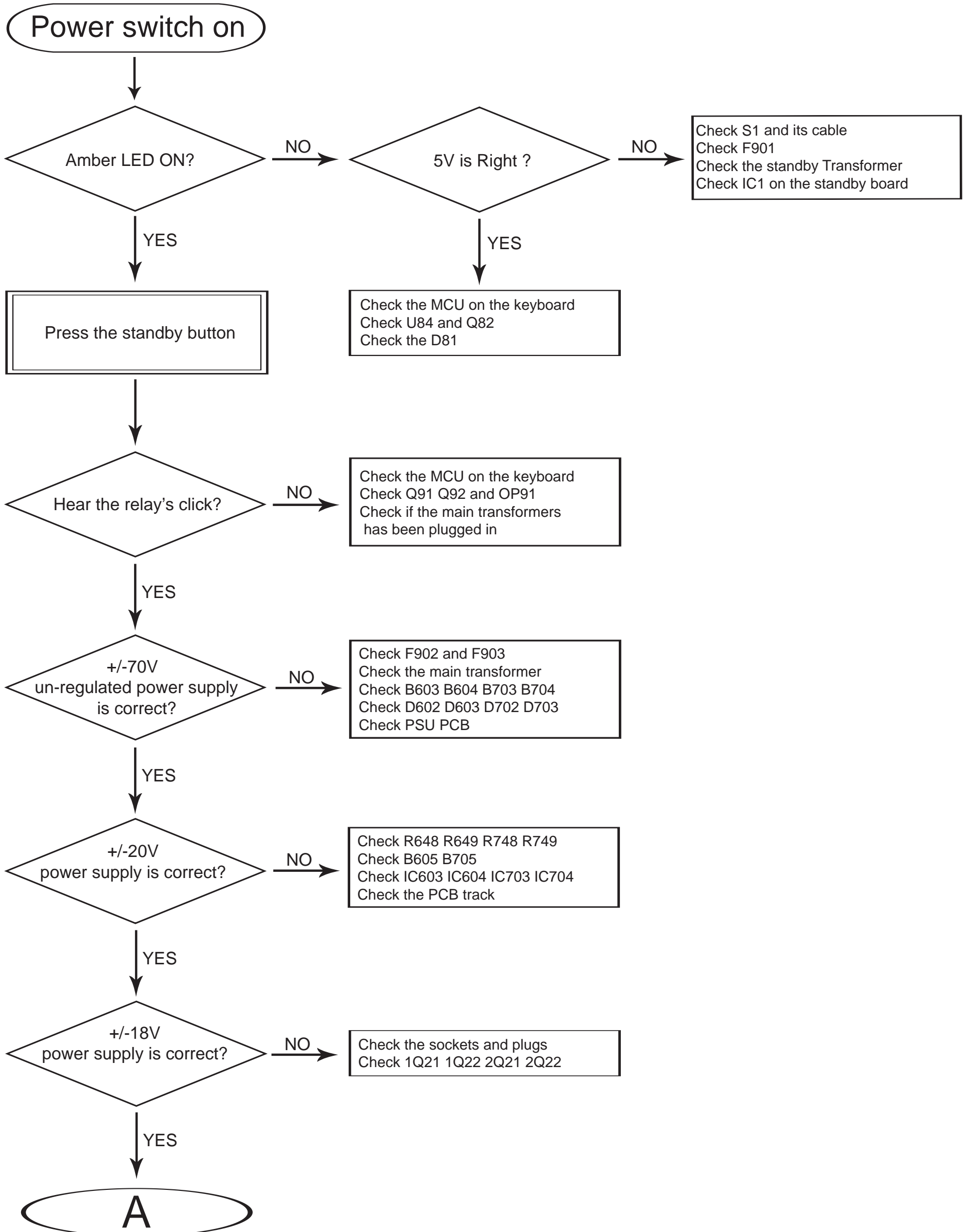
SECTION 3

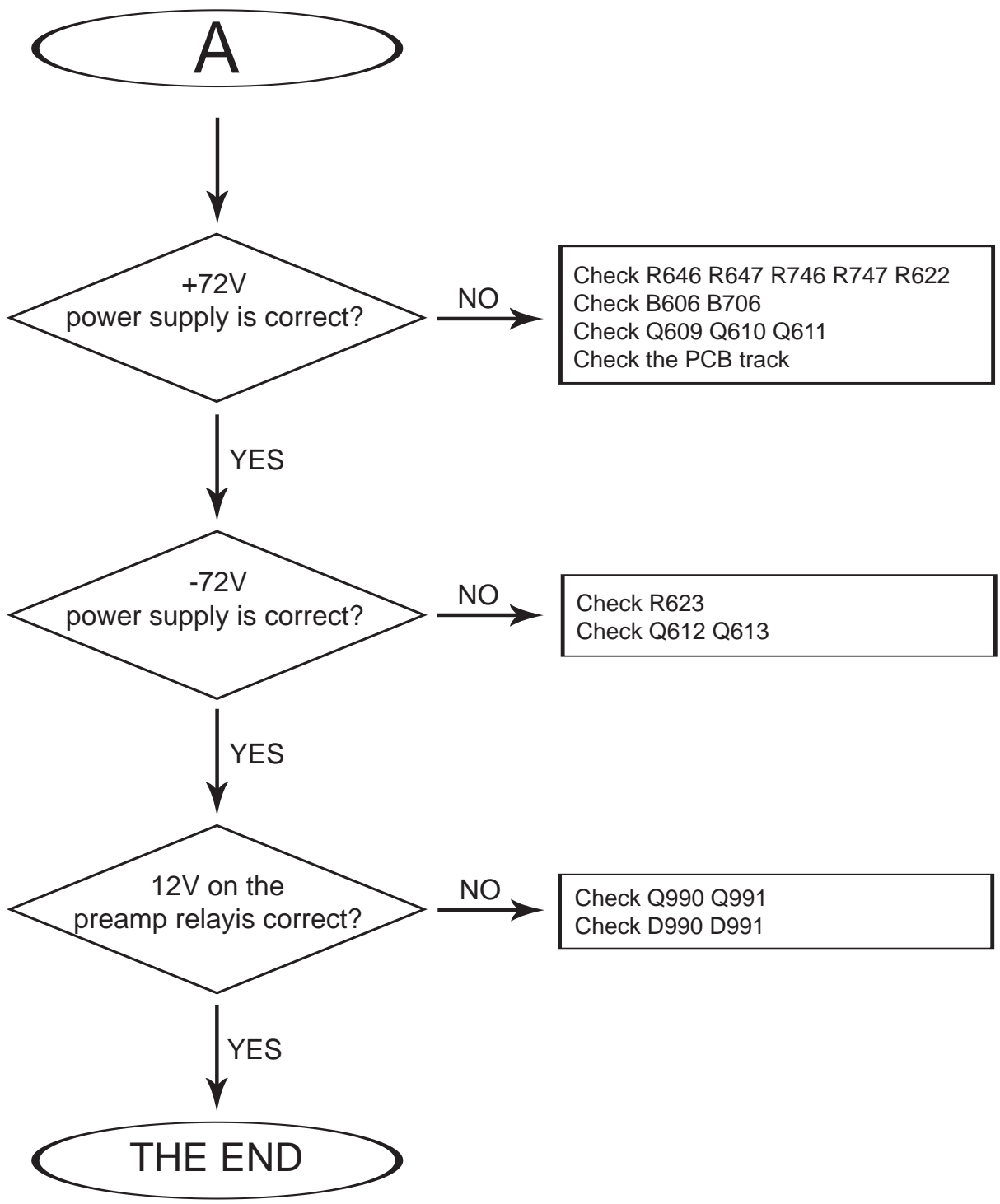
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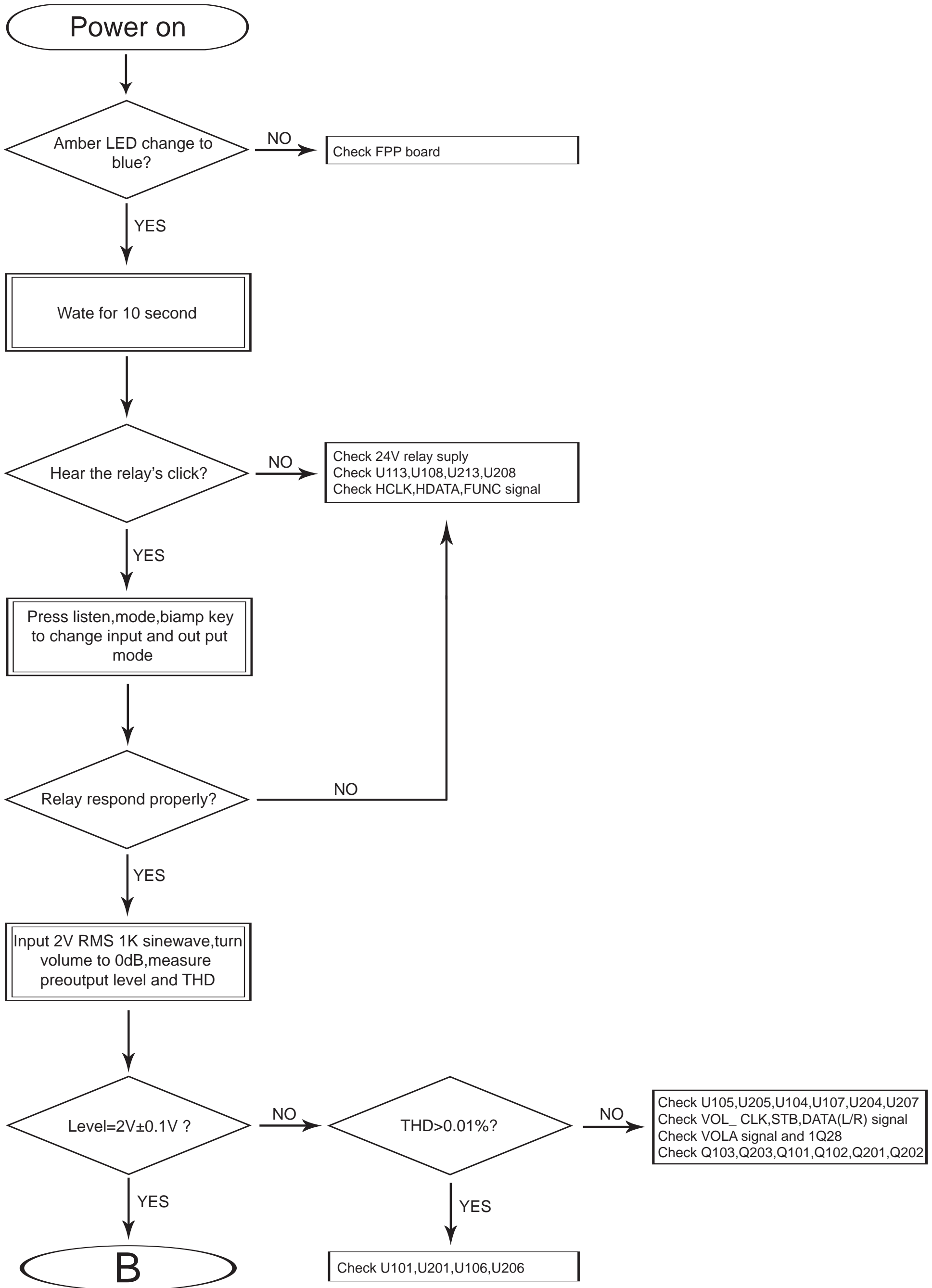
ELECTRICAL TROUBLESHOOTING GUIDE

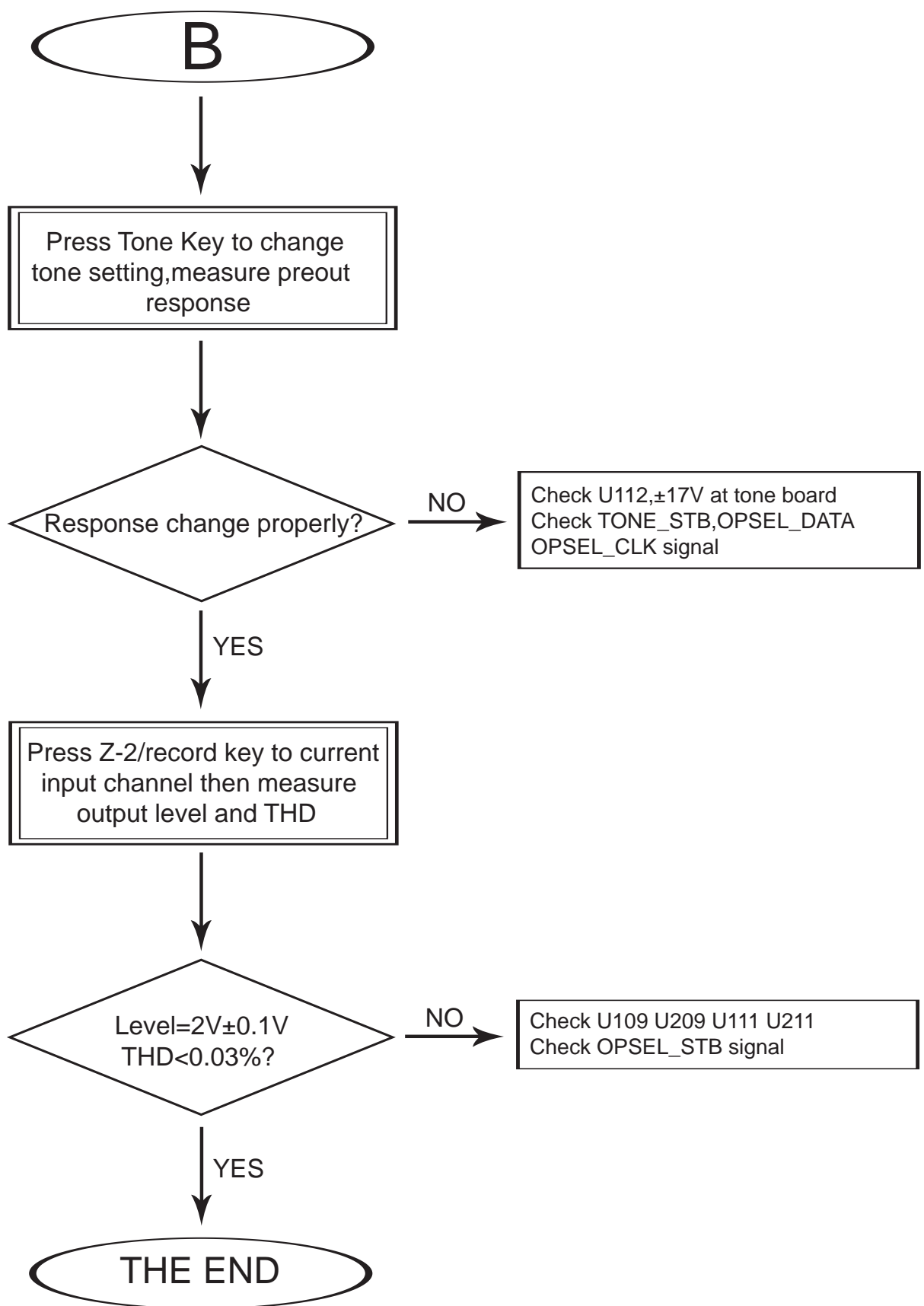
1. Power Check Flow





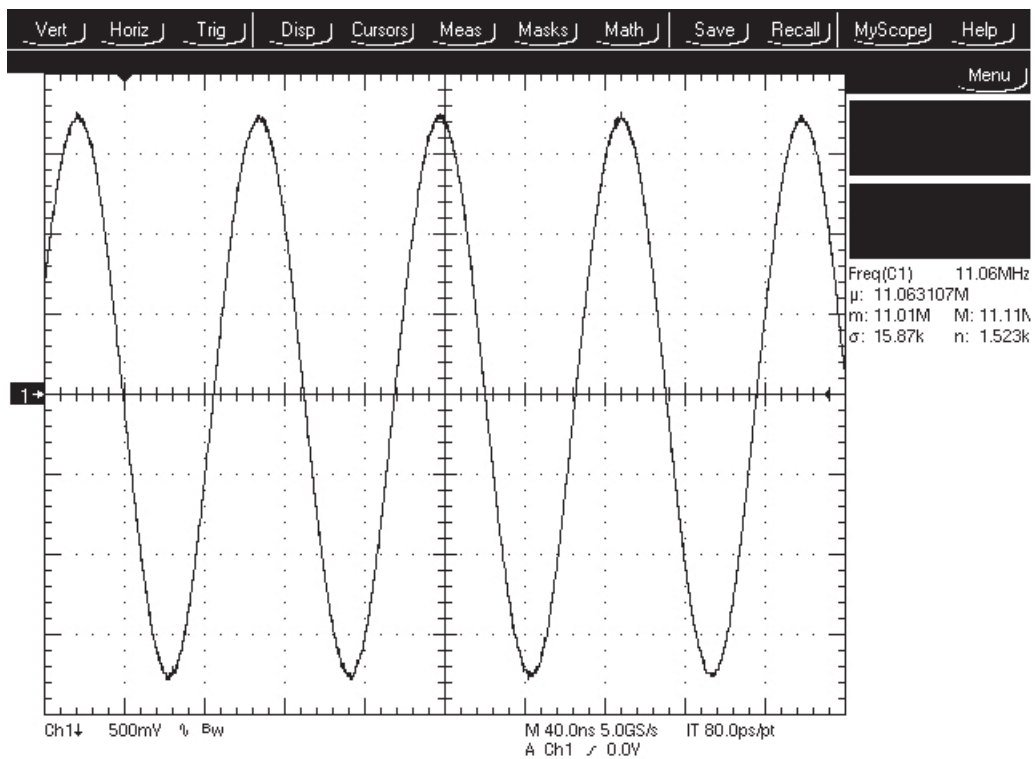
2.Preamp operation flow



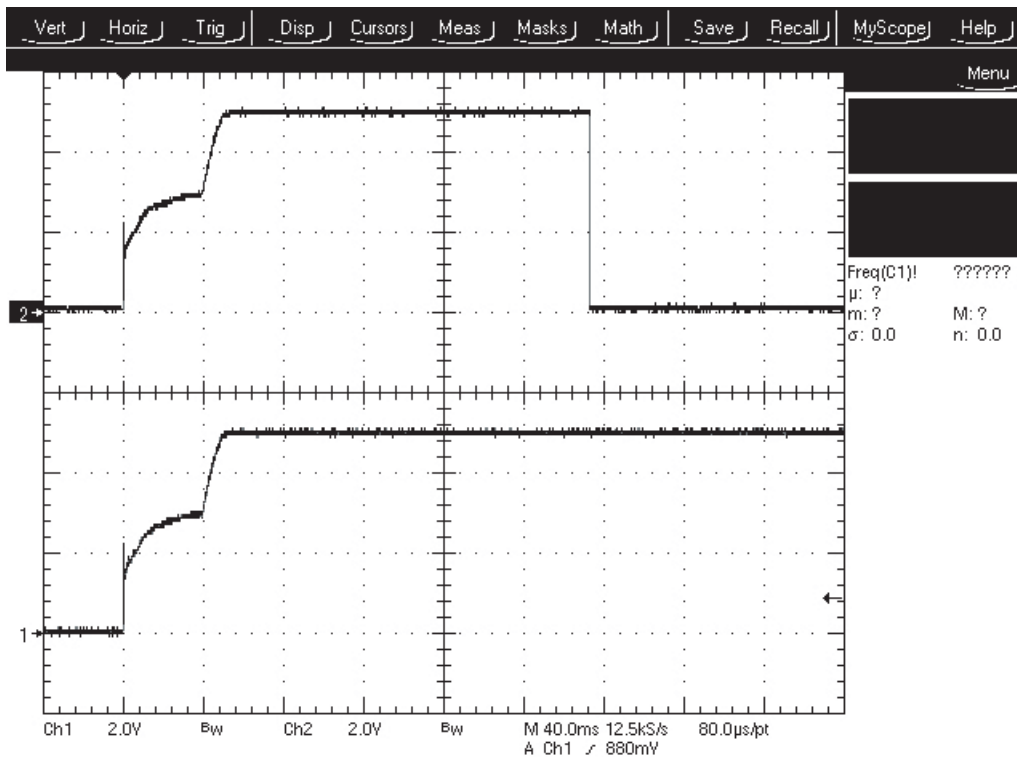


DETAILS AND WAVEFORMS ON SYSTEM TEST AND DEBUGGING

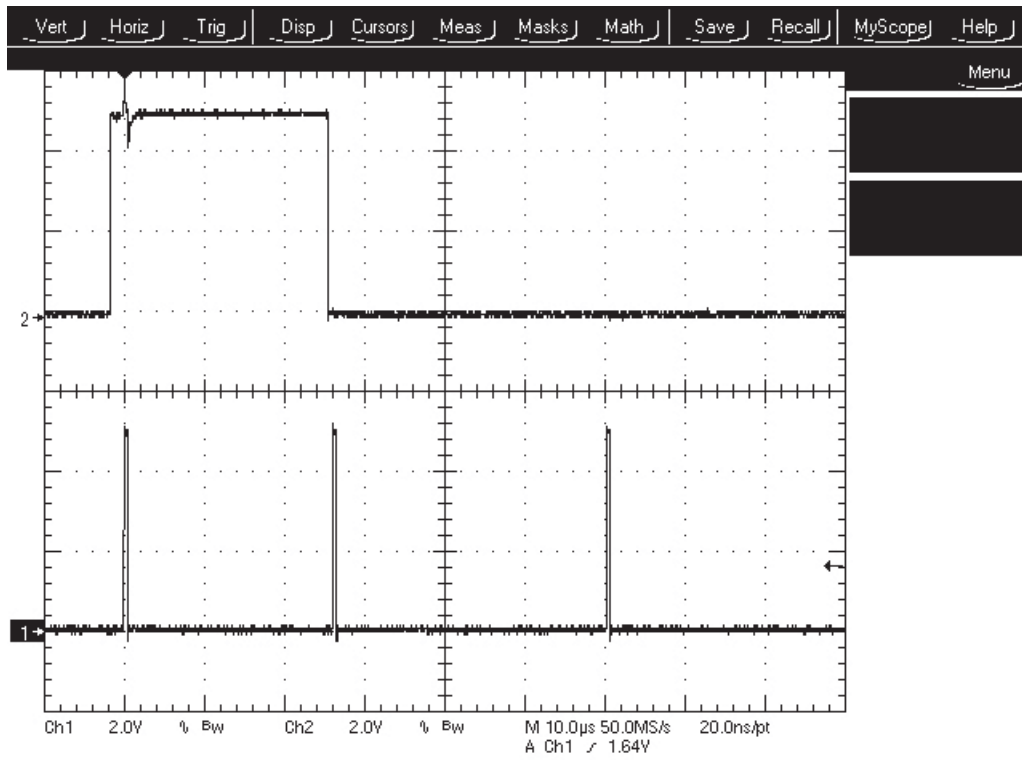
1. SYSTEM 11MHz CLOCK



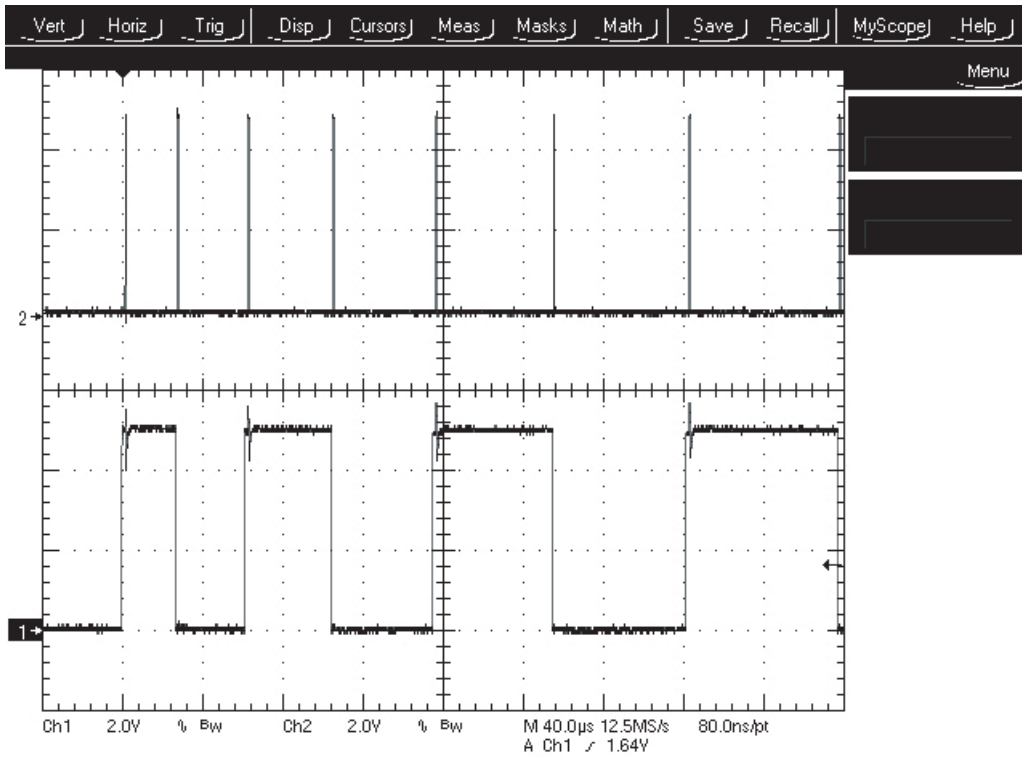
2. AT89C51 reset is high active.



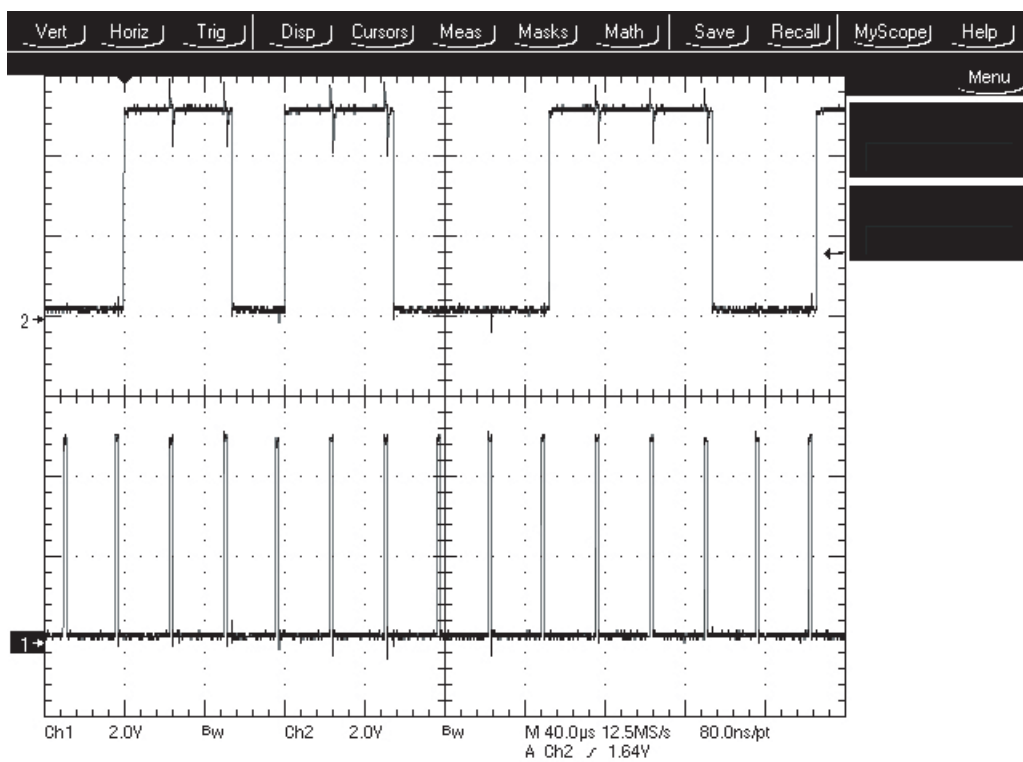
3.volume control DATA and CLOCK



4.REC(ZONE) select DATA and CLOCK

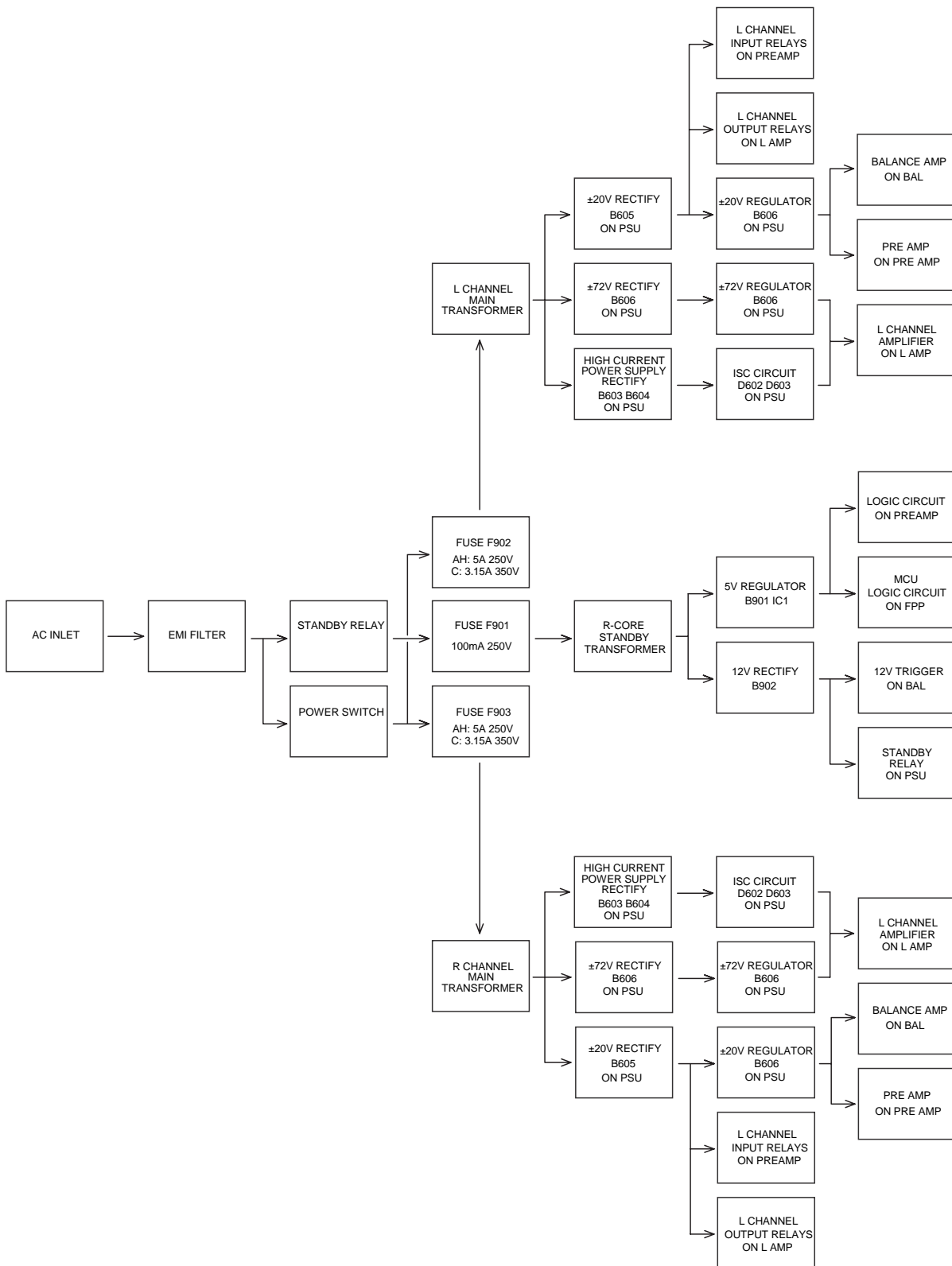


5. Input select DATA and CLOCK

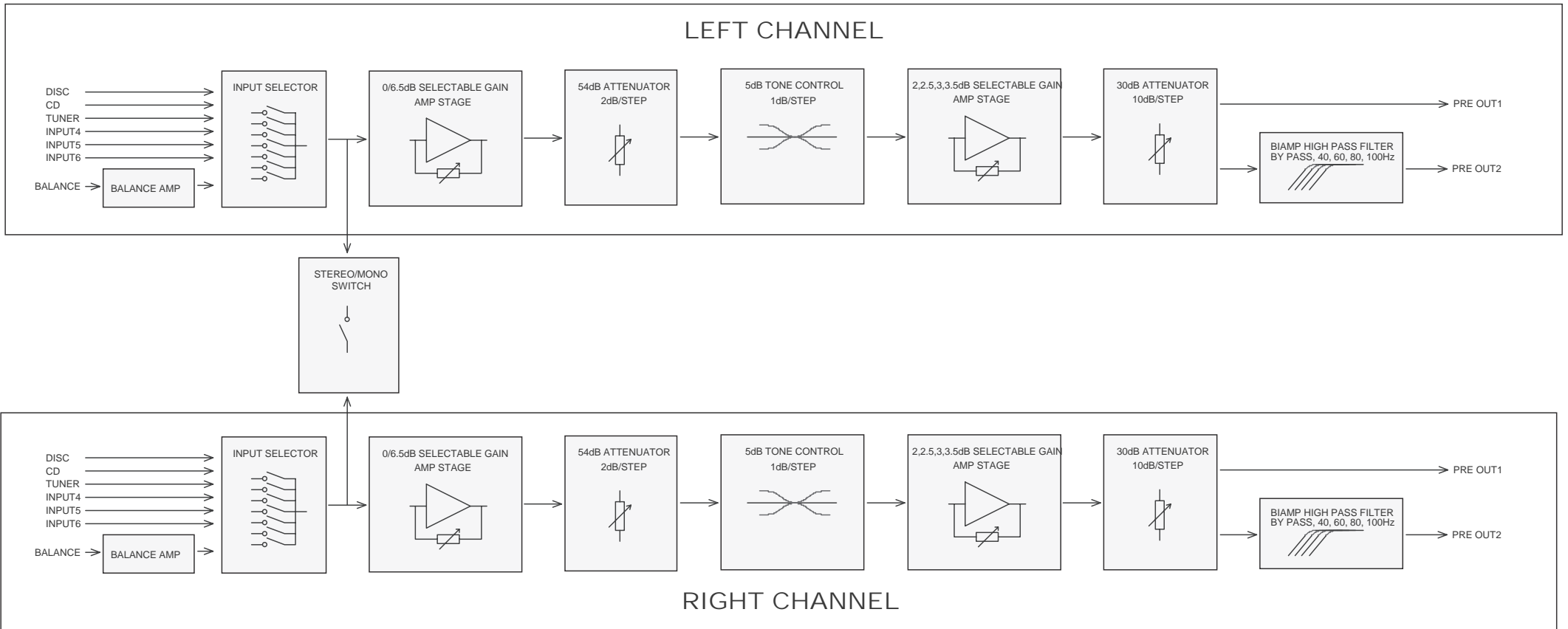


BLOCK DIAGRAMS

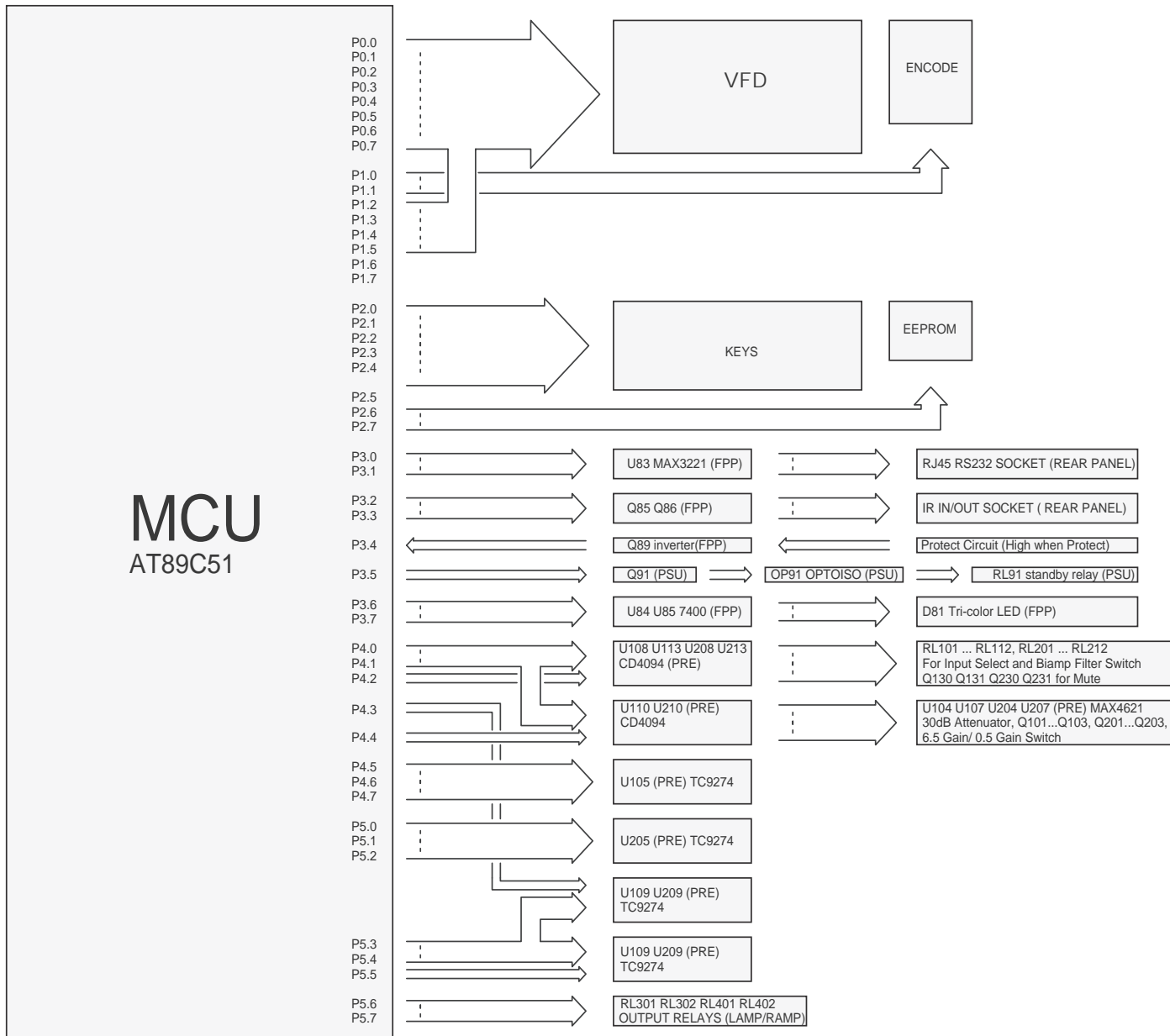
1. POWER DISTRIBUTE DIAGRAM



2. PREAMP SIGNAL PATH

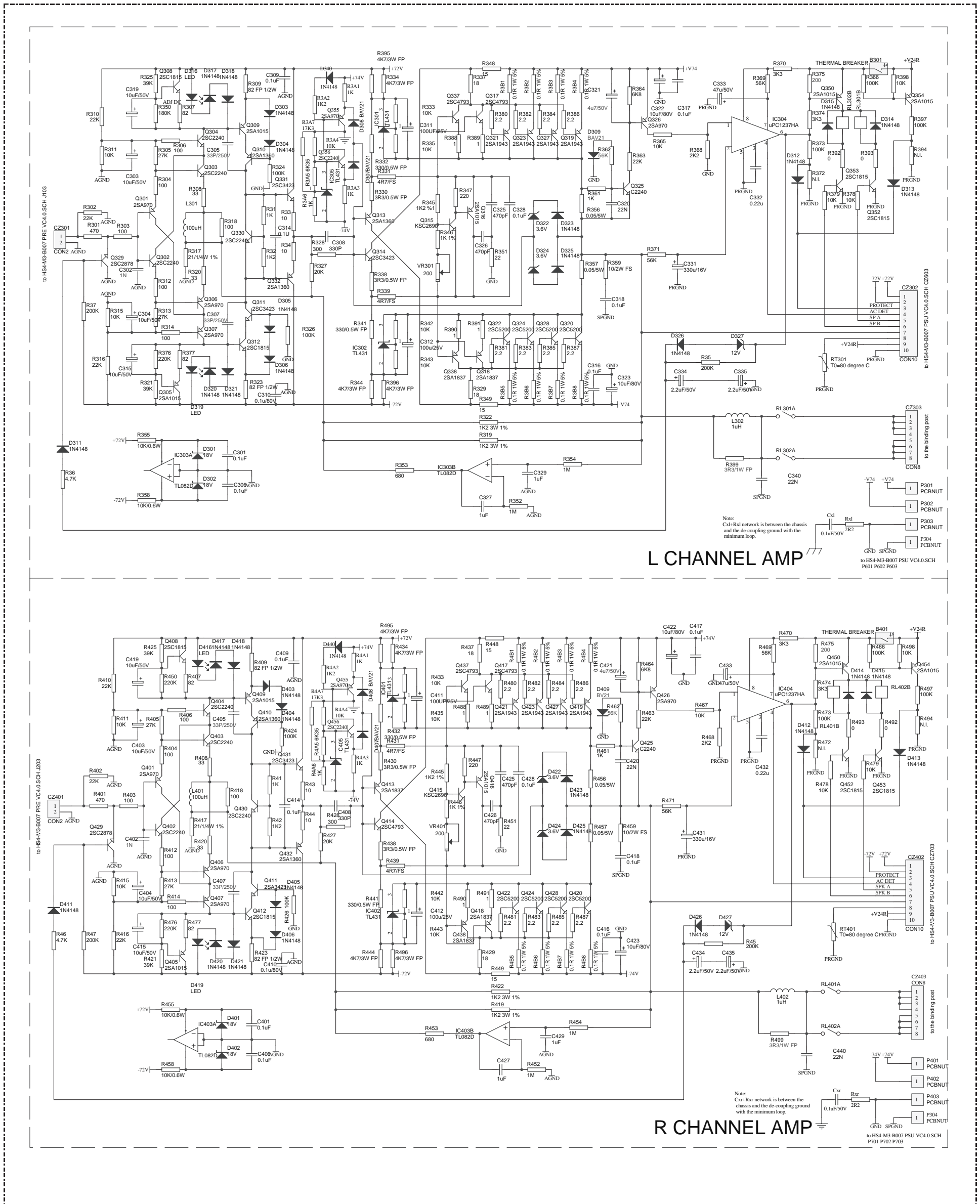


3. SYSTEM CONTROL PATH

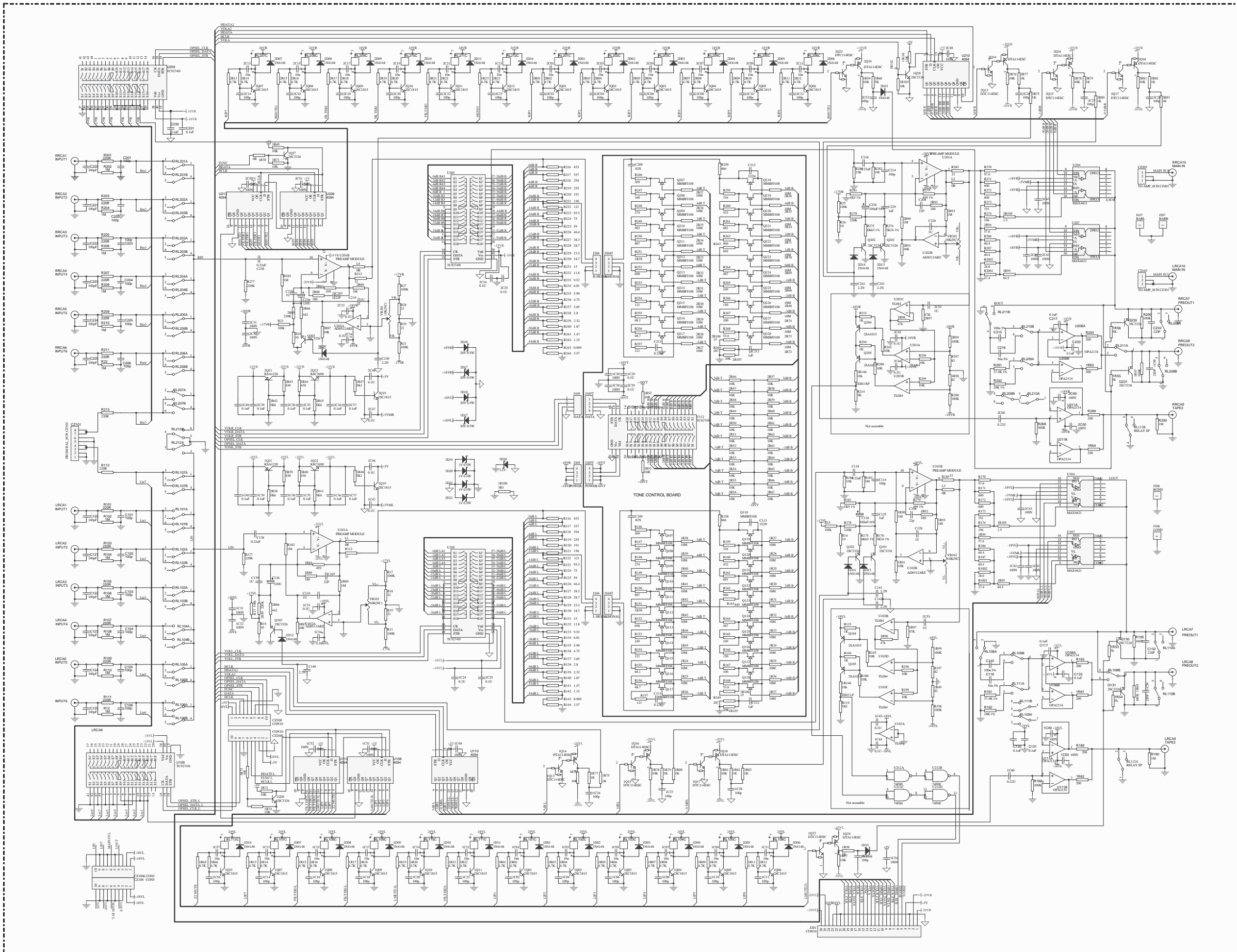


CIRCUIT DIAGRAMS

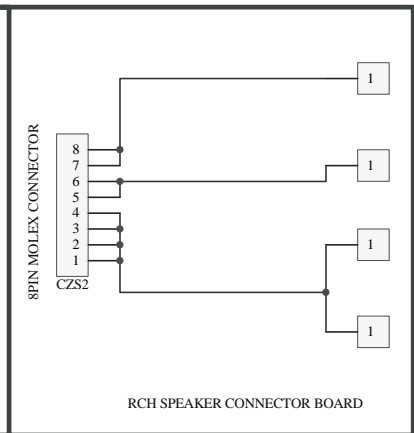
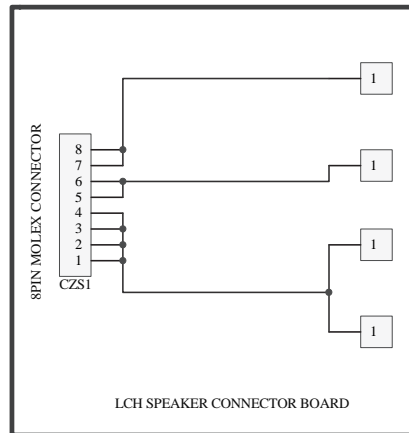
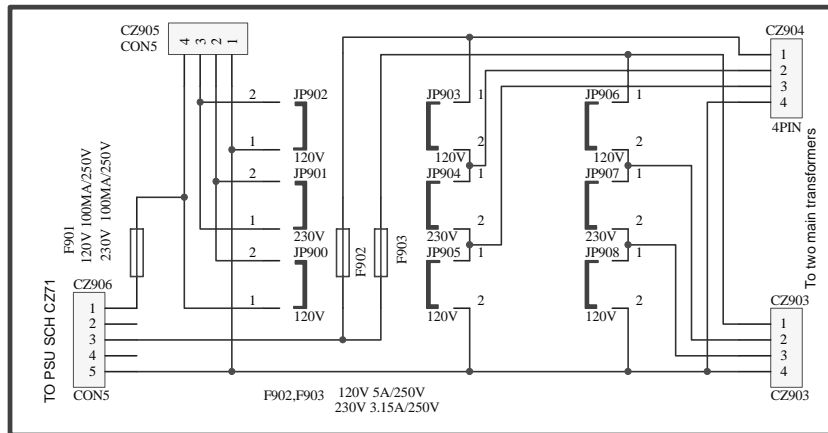
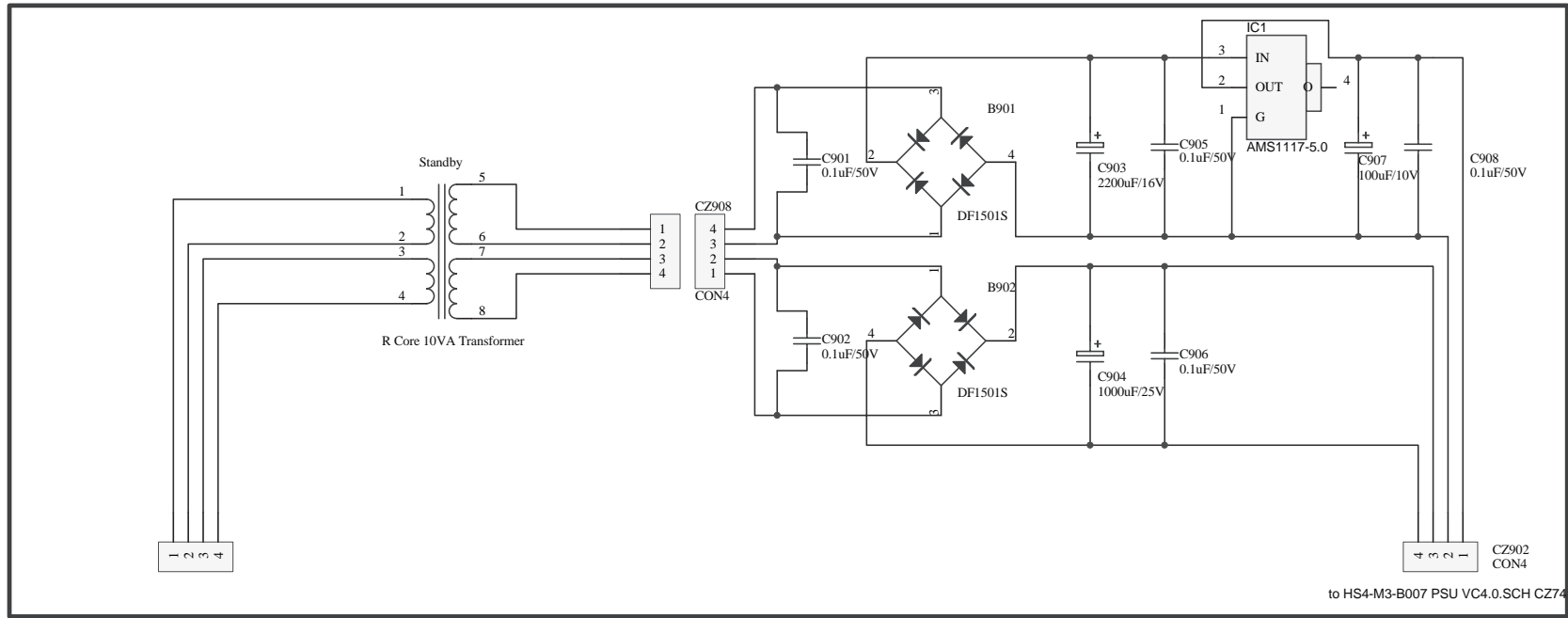
1. POWER AMPLIFIER BOARD



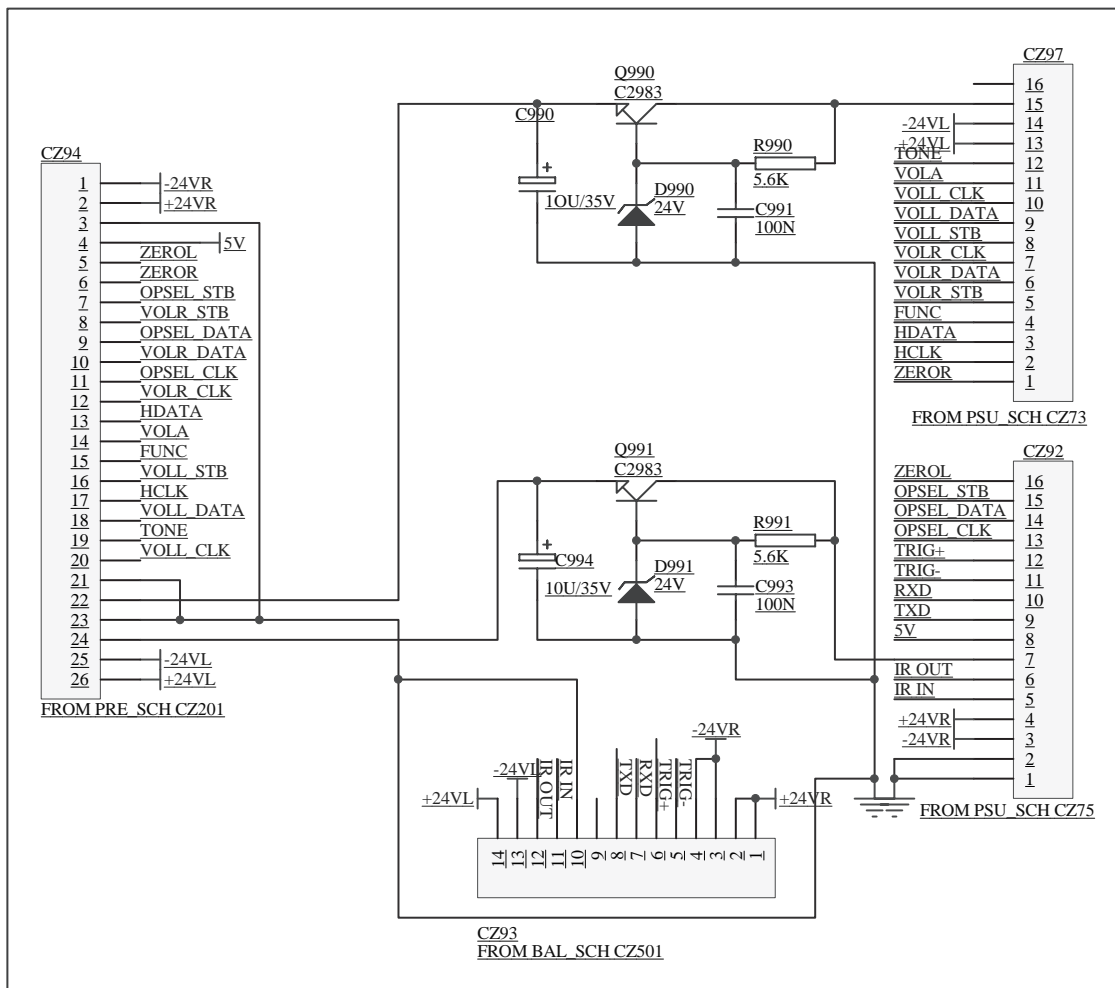
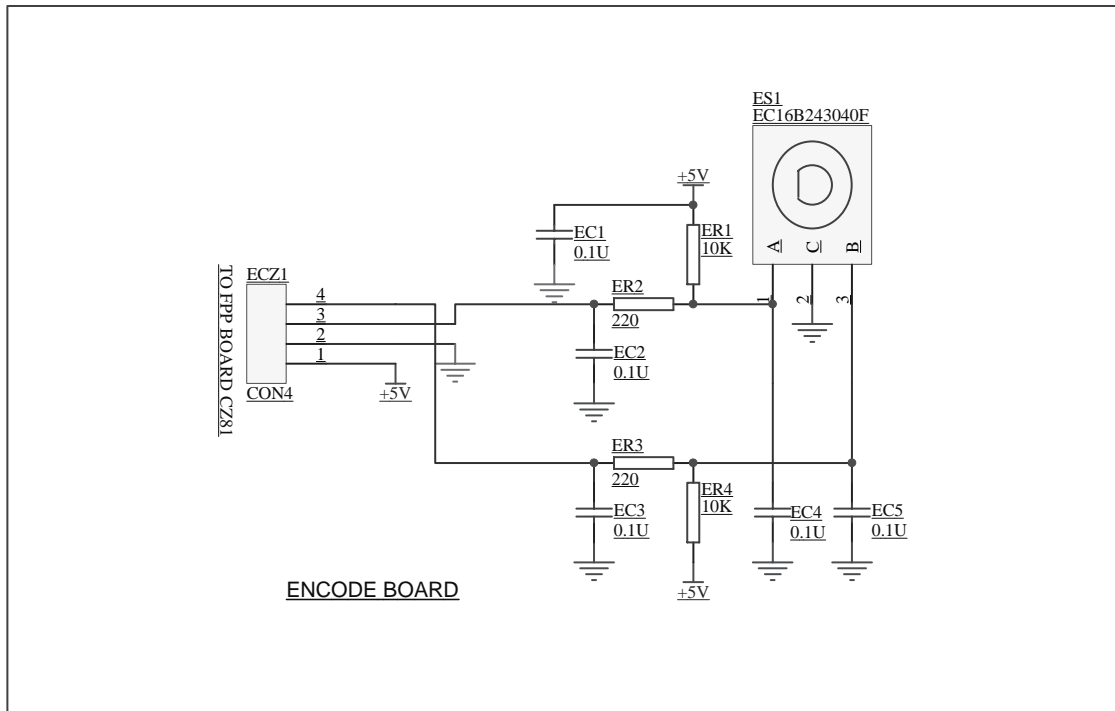
2. PREAMP BOARD



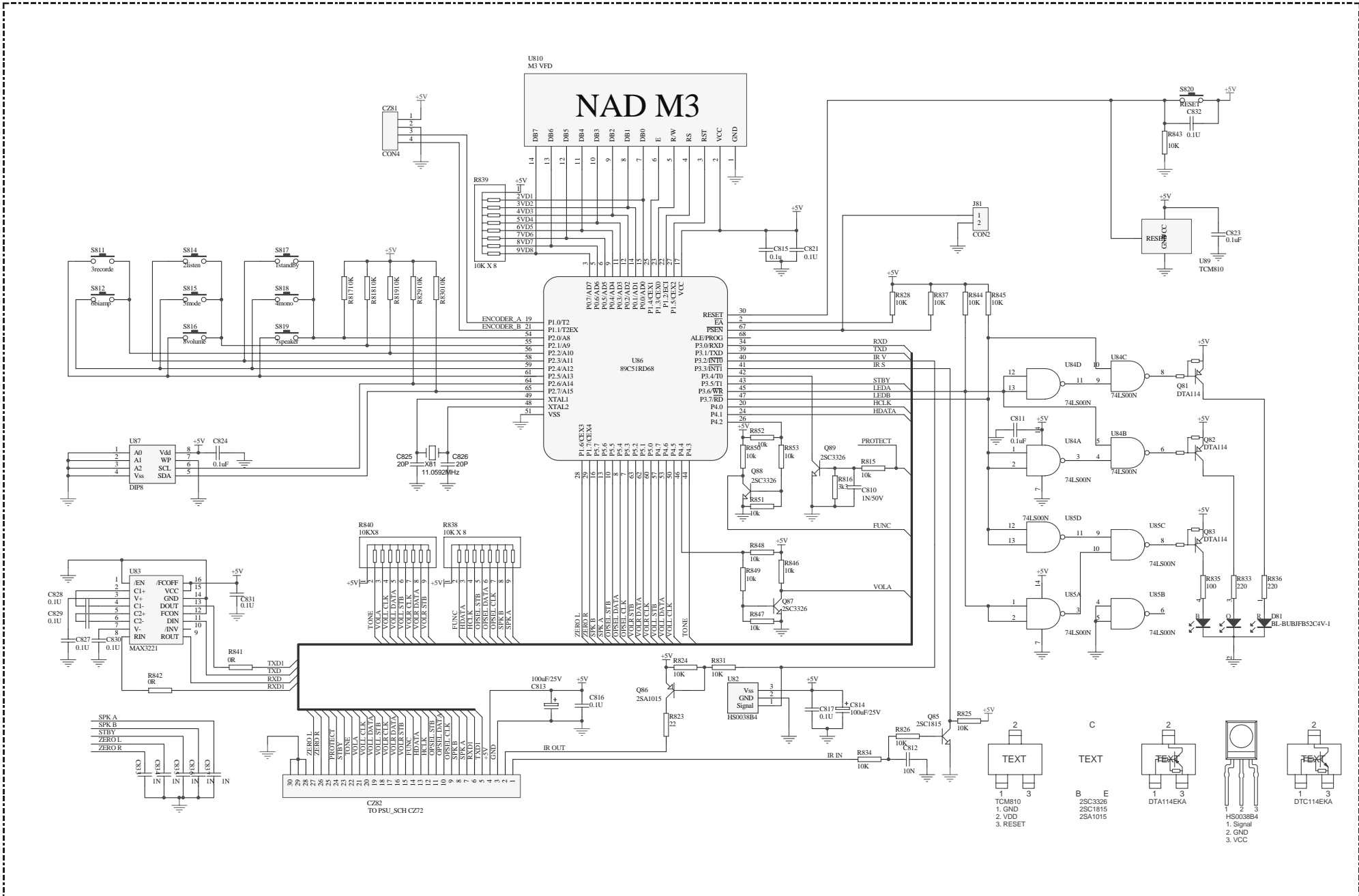
3. STANDBY AND SPEAKER BOARD



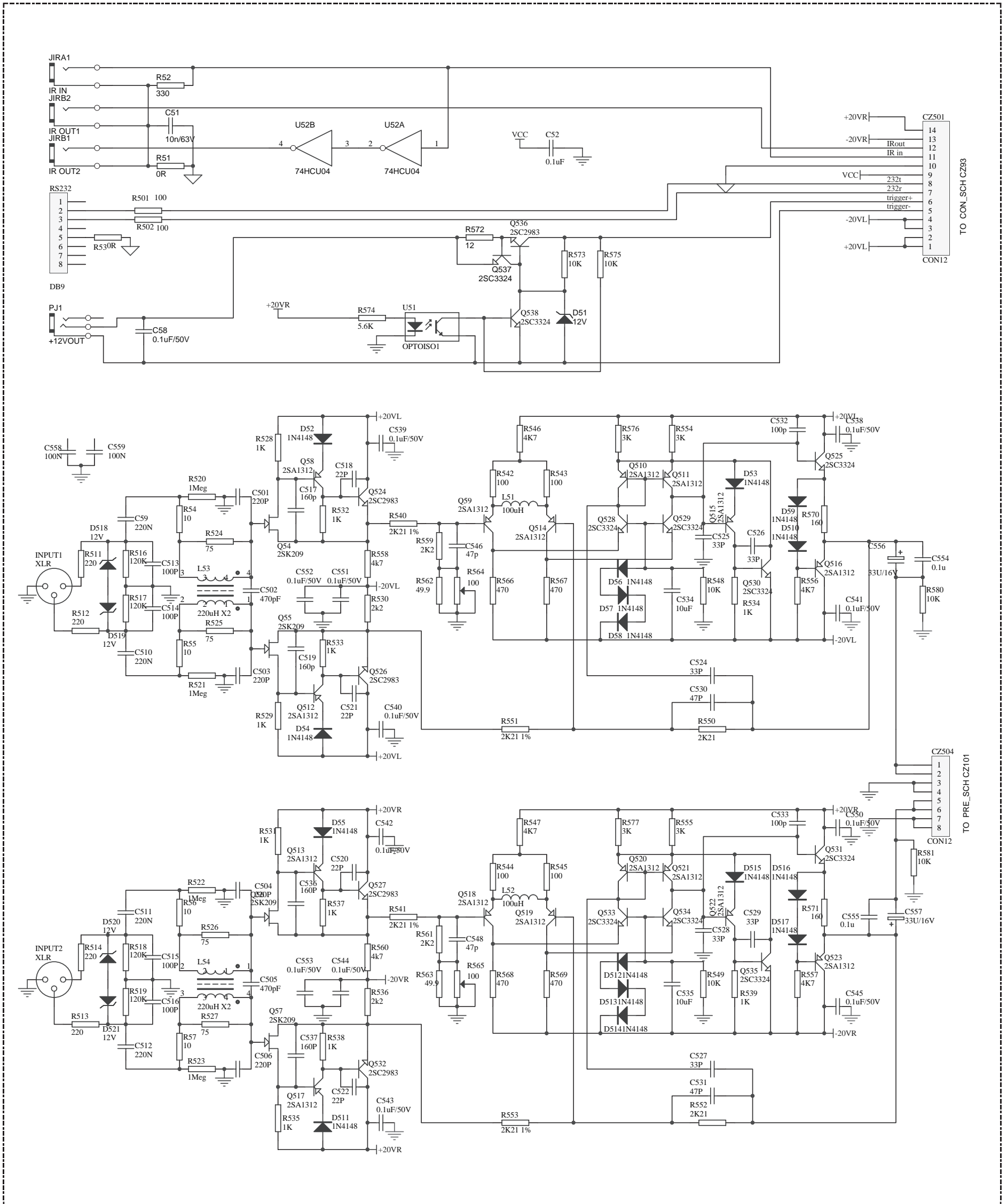
4. ENCODER AND CONNECT BOARD



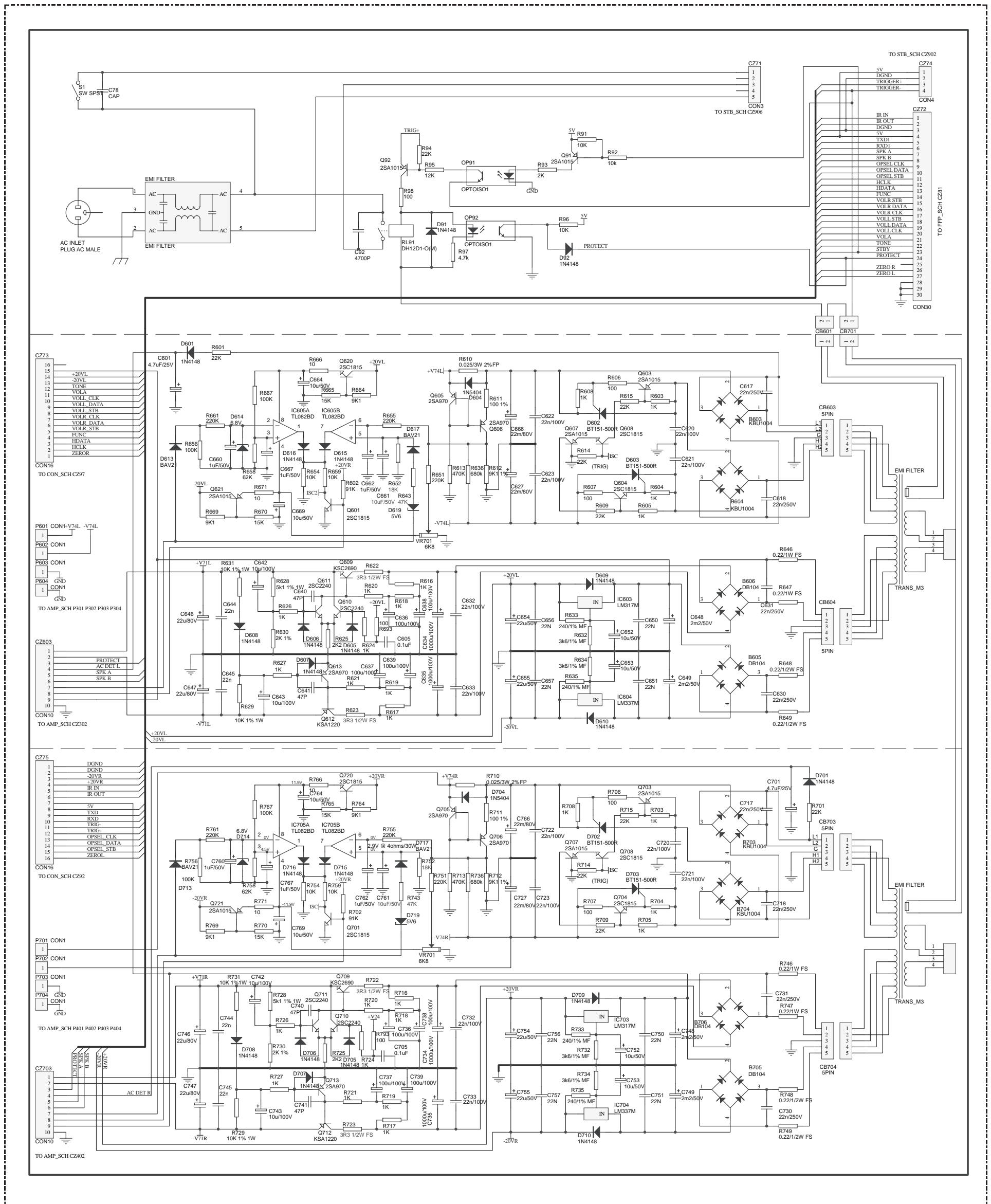
5. FRONT PANEL BOARD



6. BALANCE INPUT BOARD

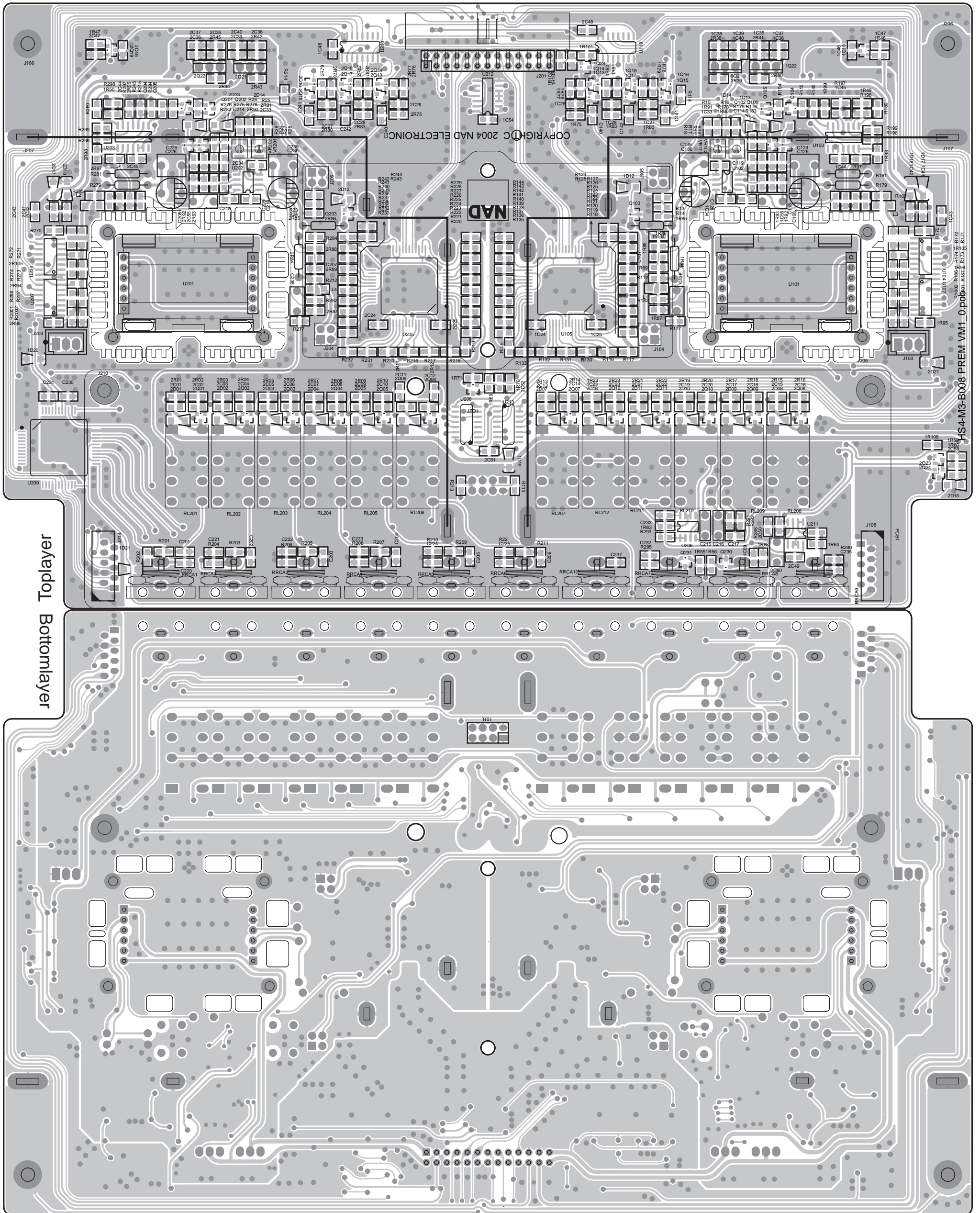


7. POWER BOARD

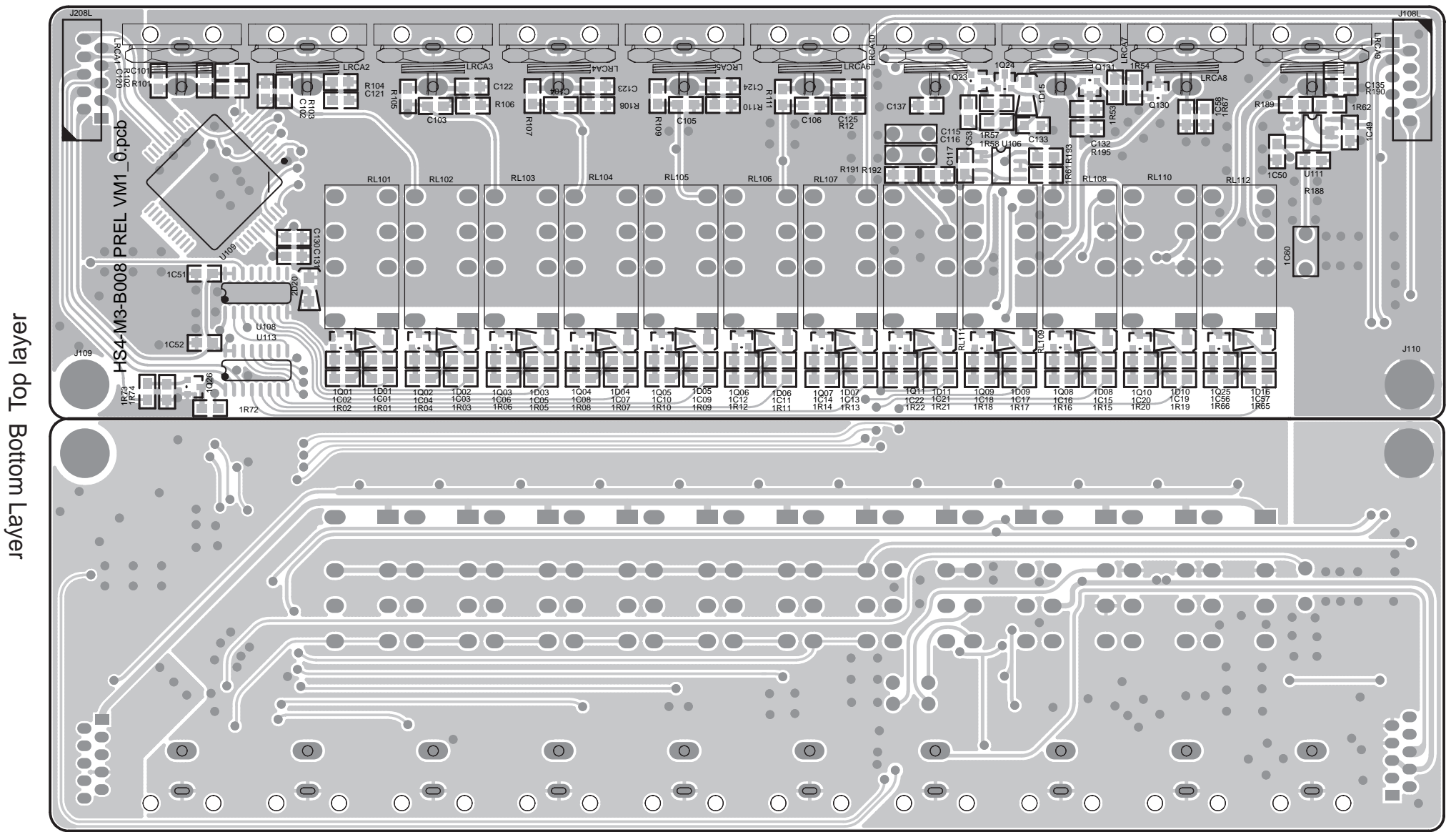


PRINTED CIRCUIT DIAGRAMS

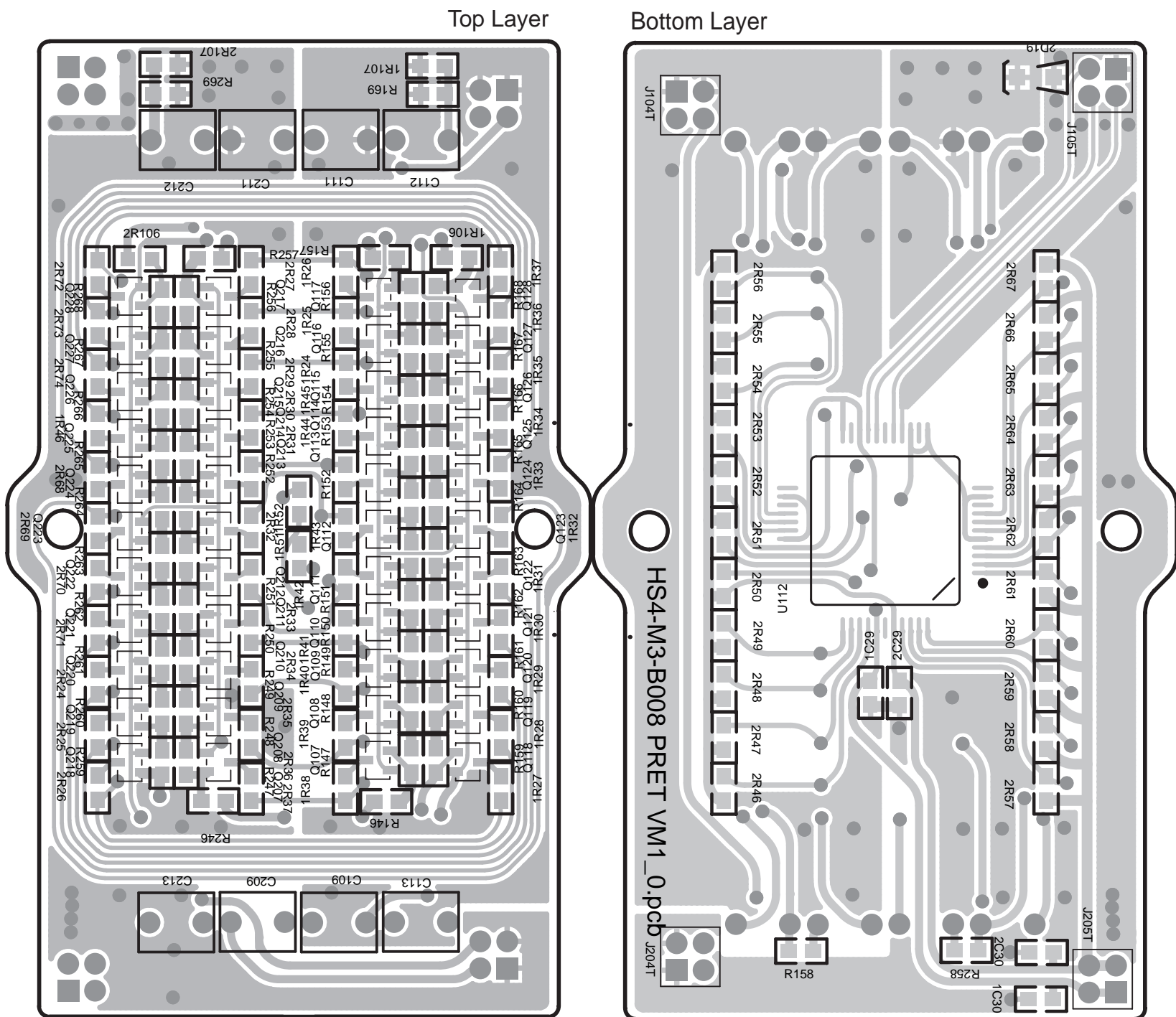
1. Preamp Main board(PREM)



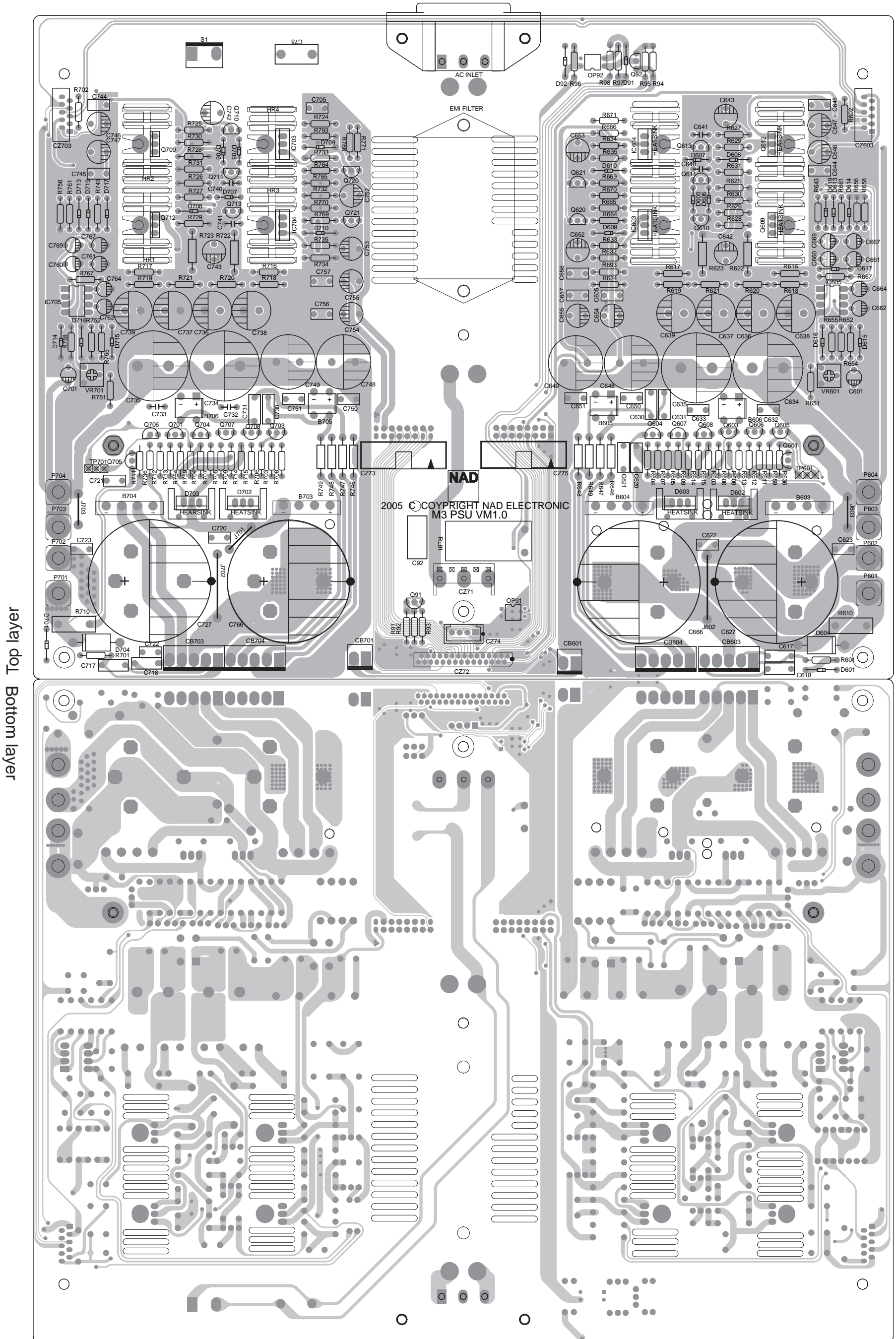
2. Preamp LCH input board(PREL)



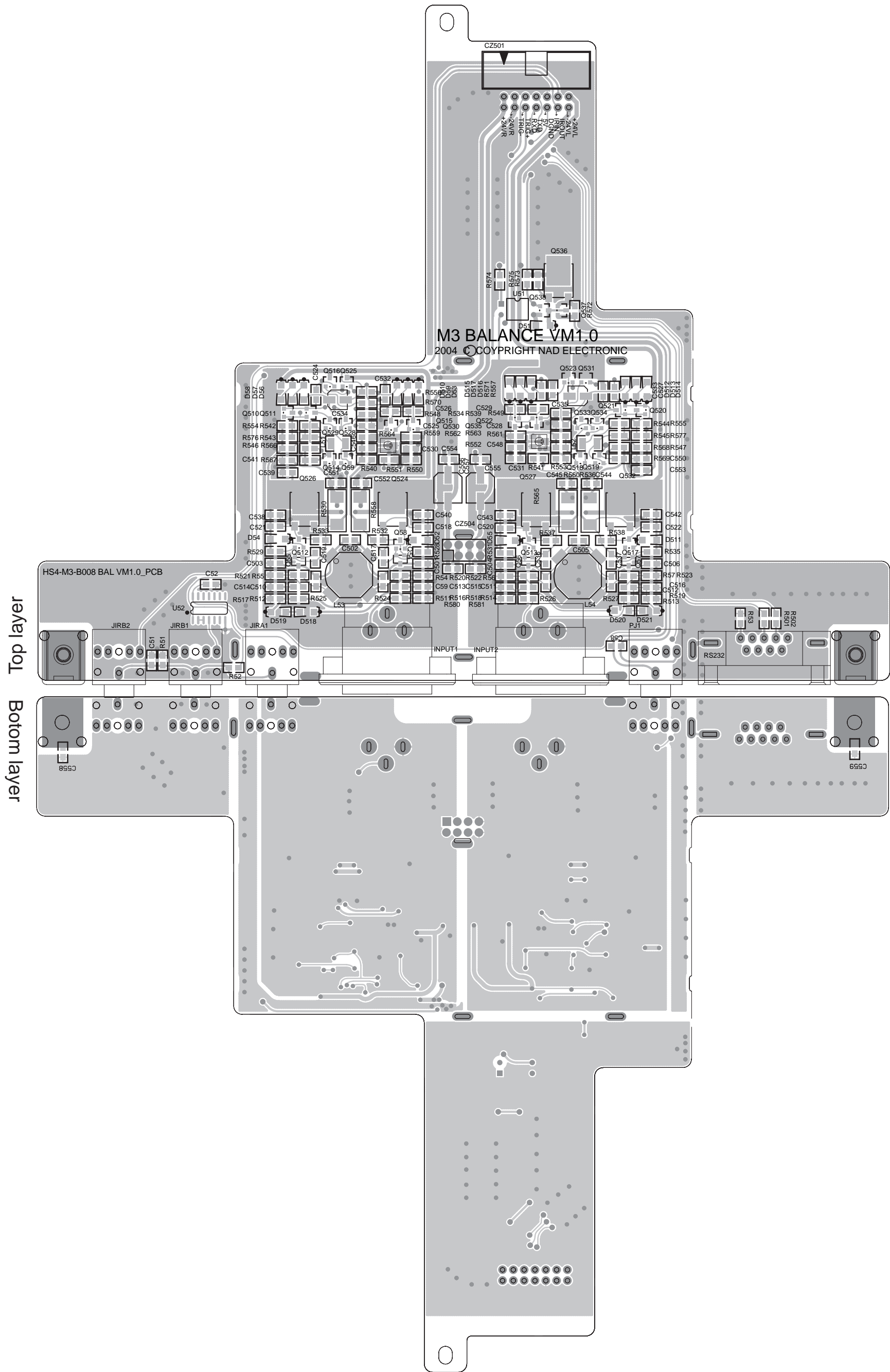
3. Preamp tone control board(PRET)



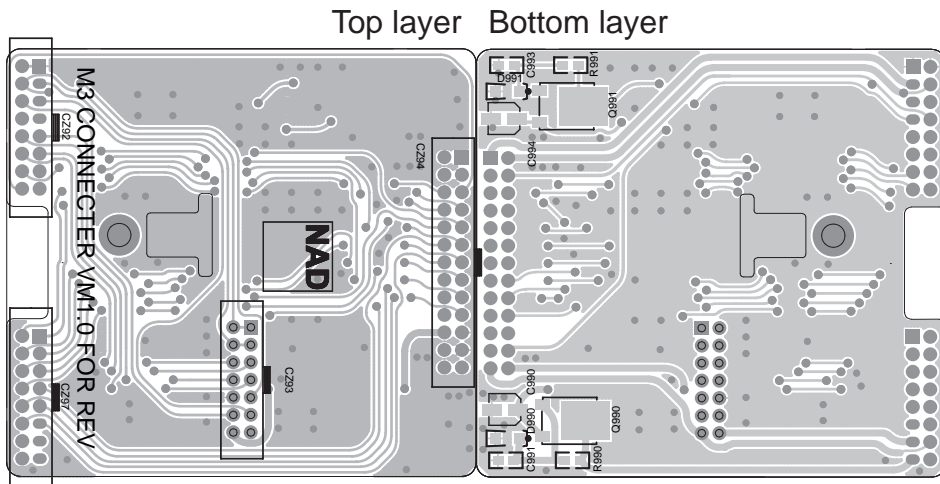
4. Power supply board(PSU)



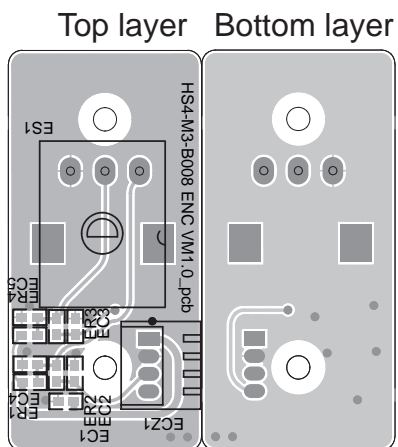
5. Balance amplifier board(BAL)



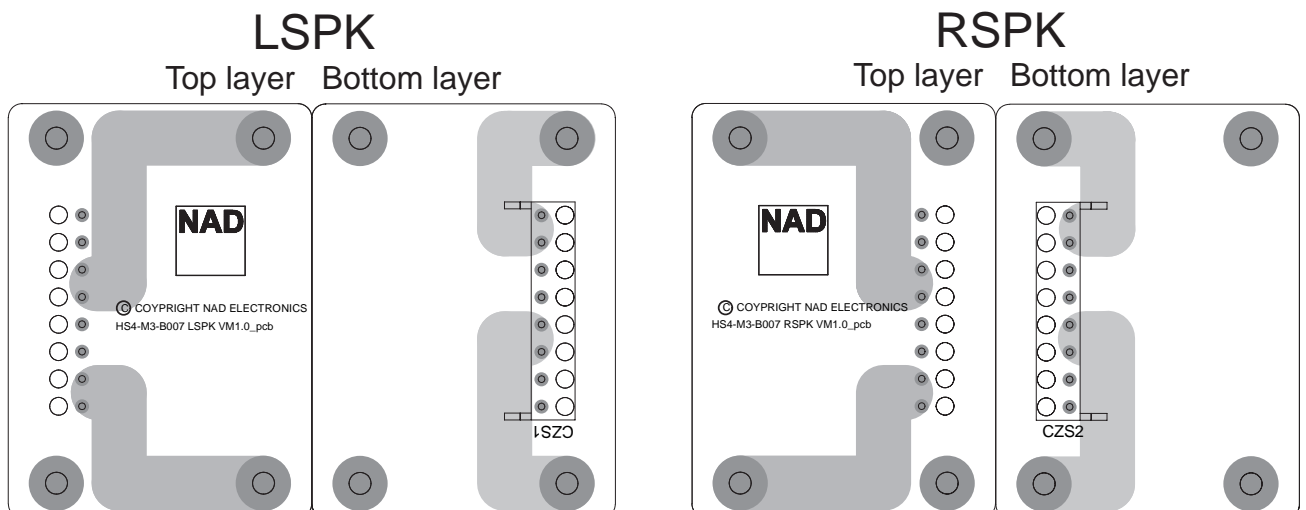
6. Connect board(CON)



7. Encoder board(ENC)

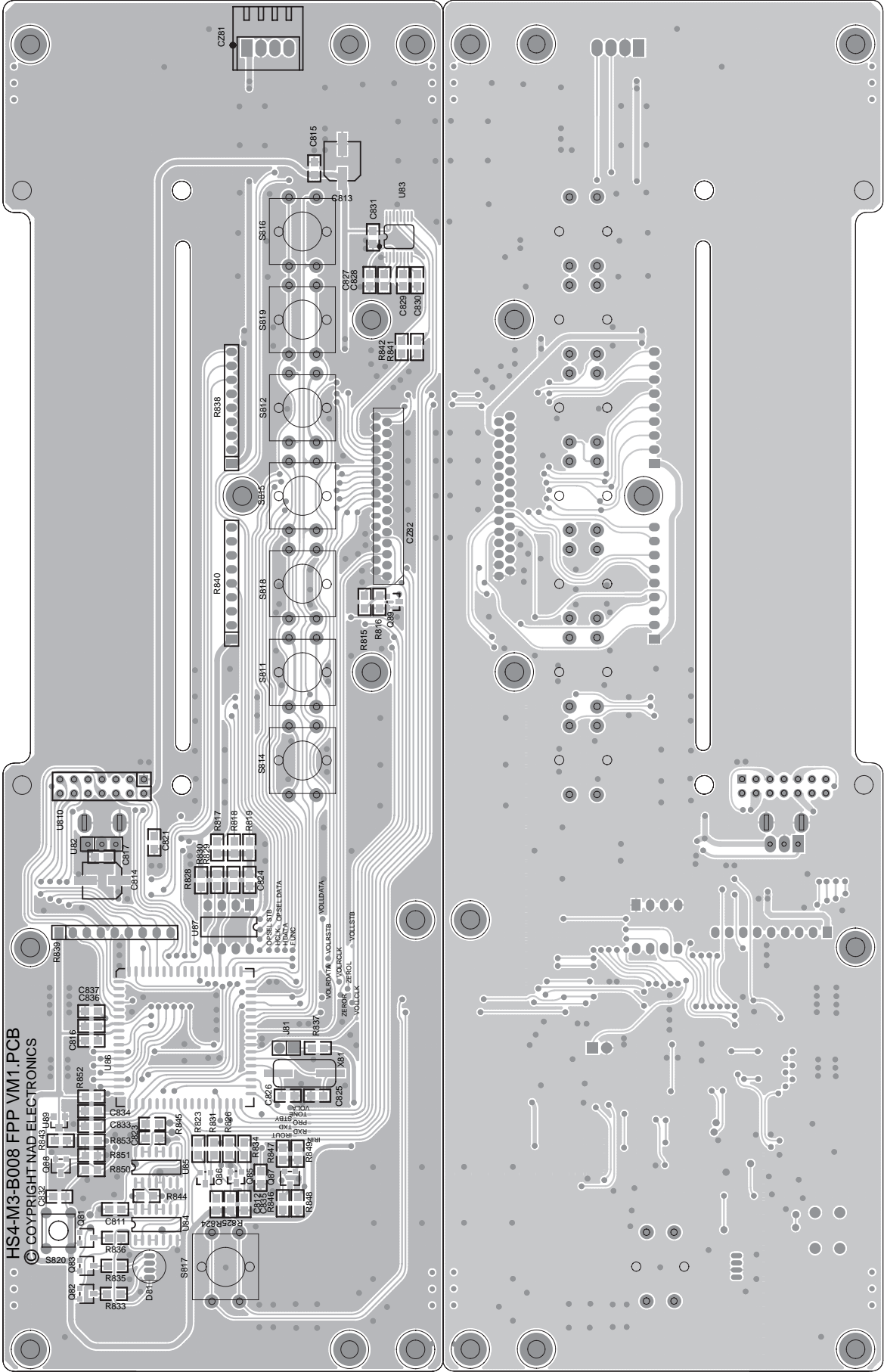


8. Speaker board(L/R SPK)

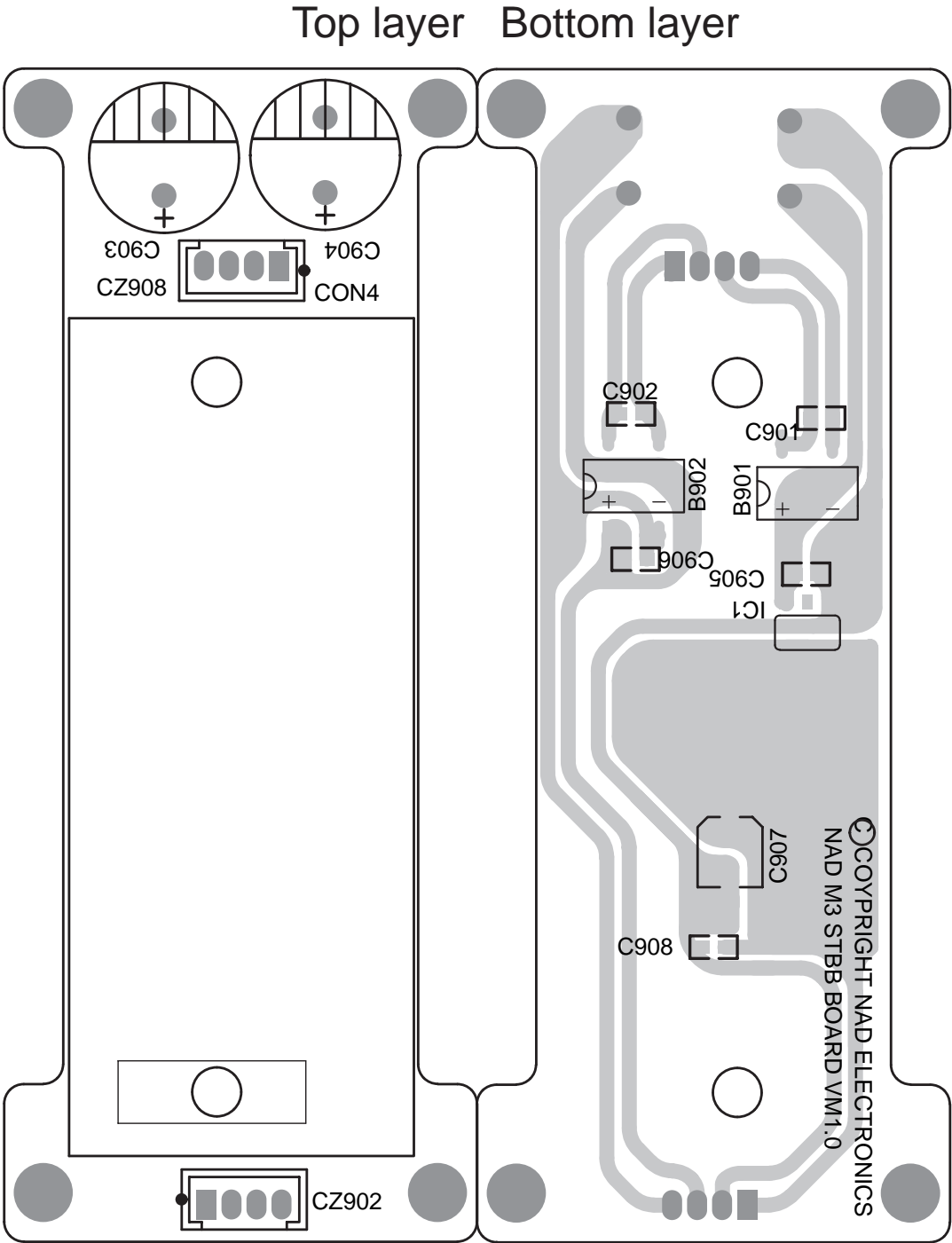


9. Front panel board(FPP)

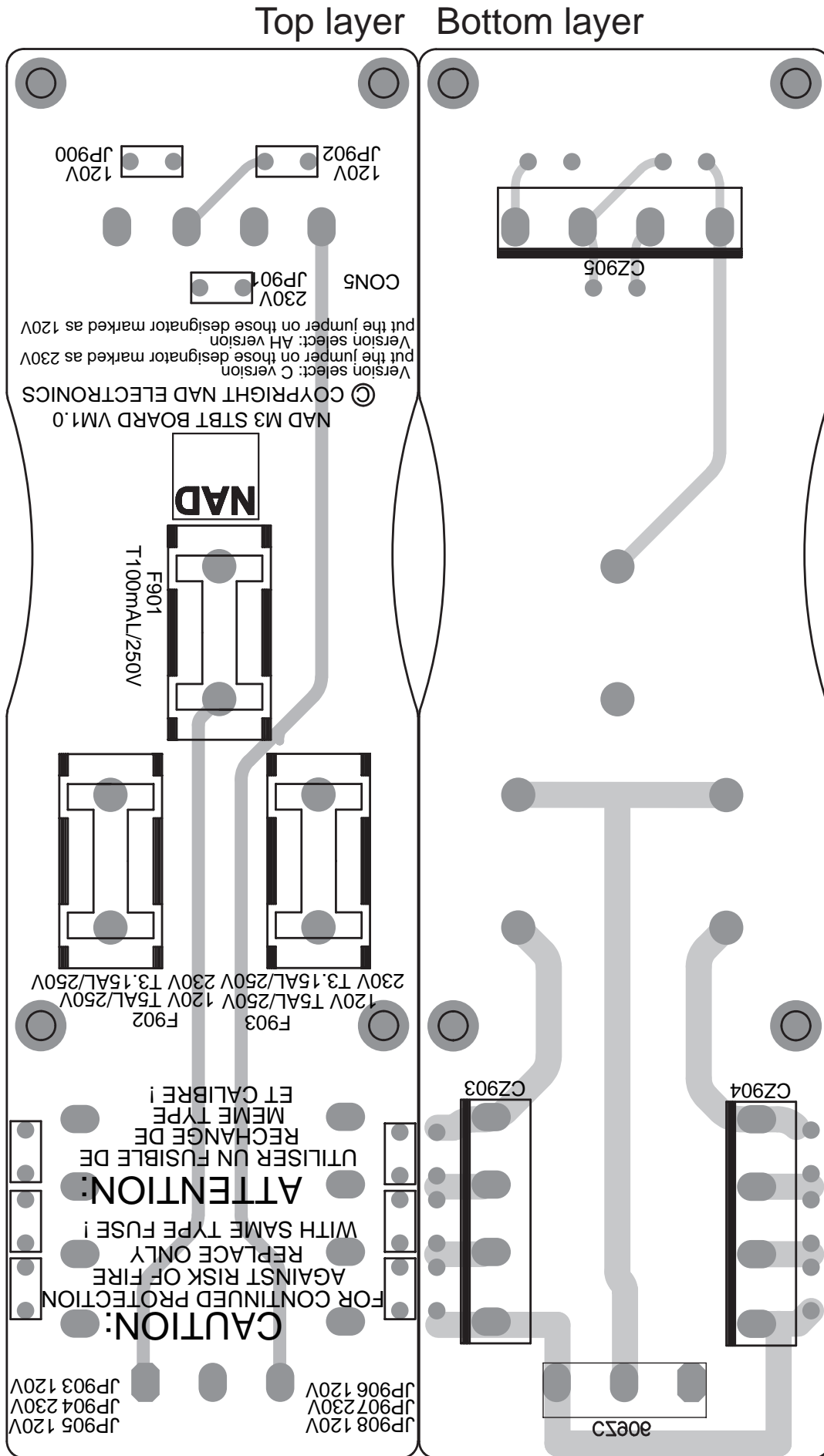
Top layer Bottom layer



10. Standby board bottom(STBB)

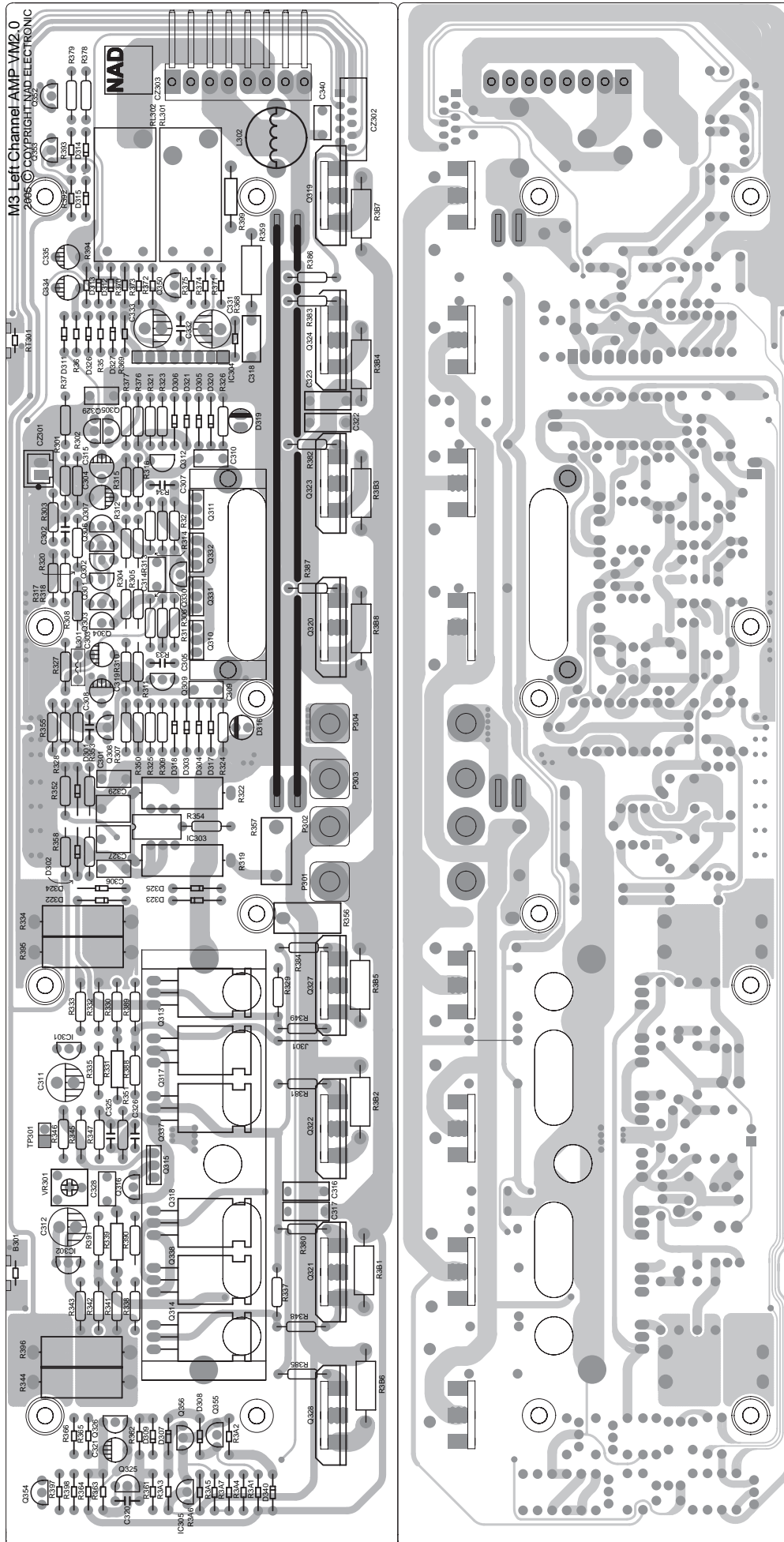


10. Standby board top(STBT)



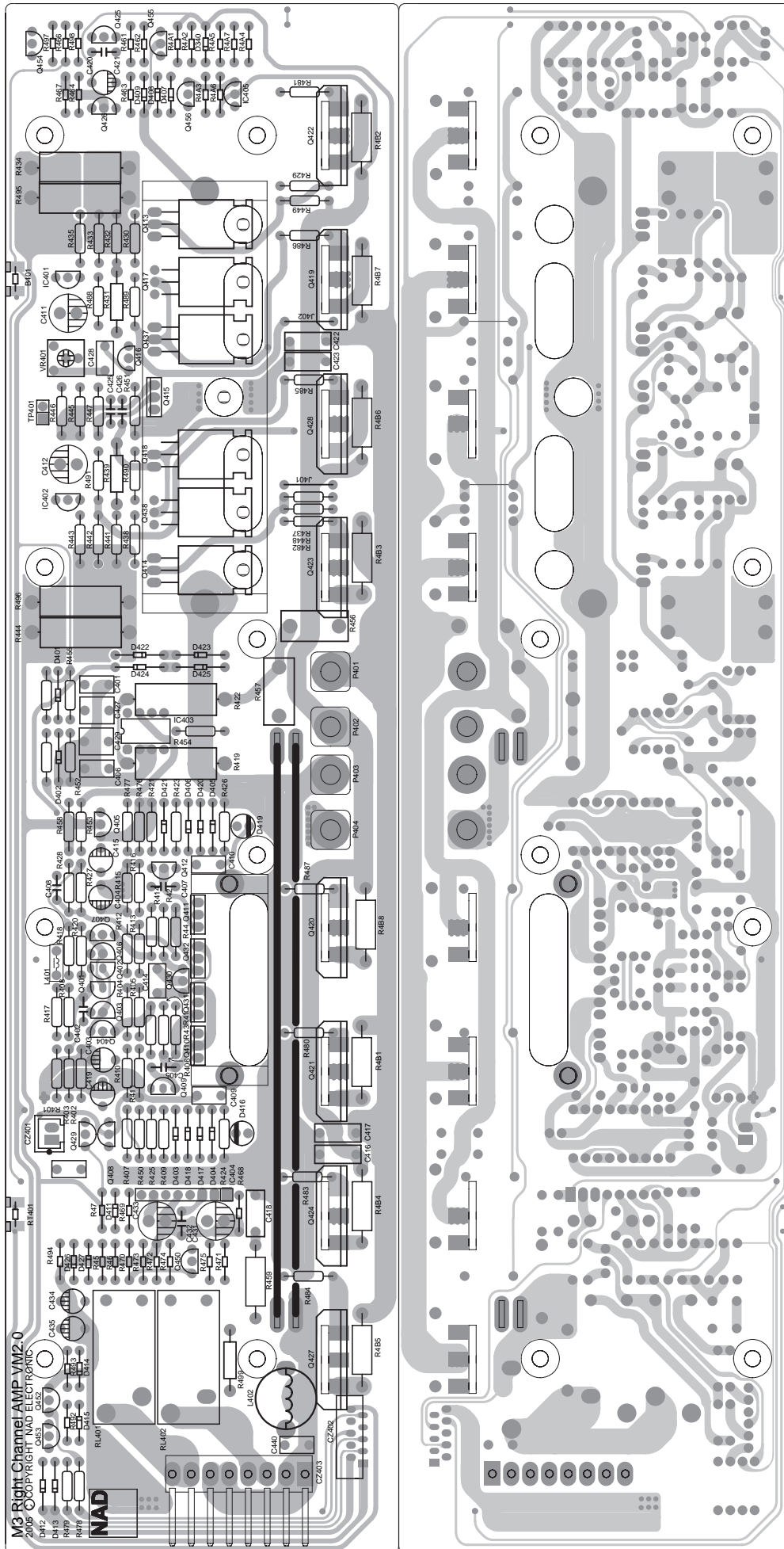
12. L channel amplifier board(AMPL)

Top layer Bottom layer

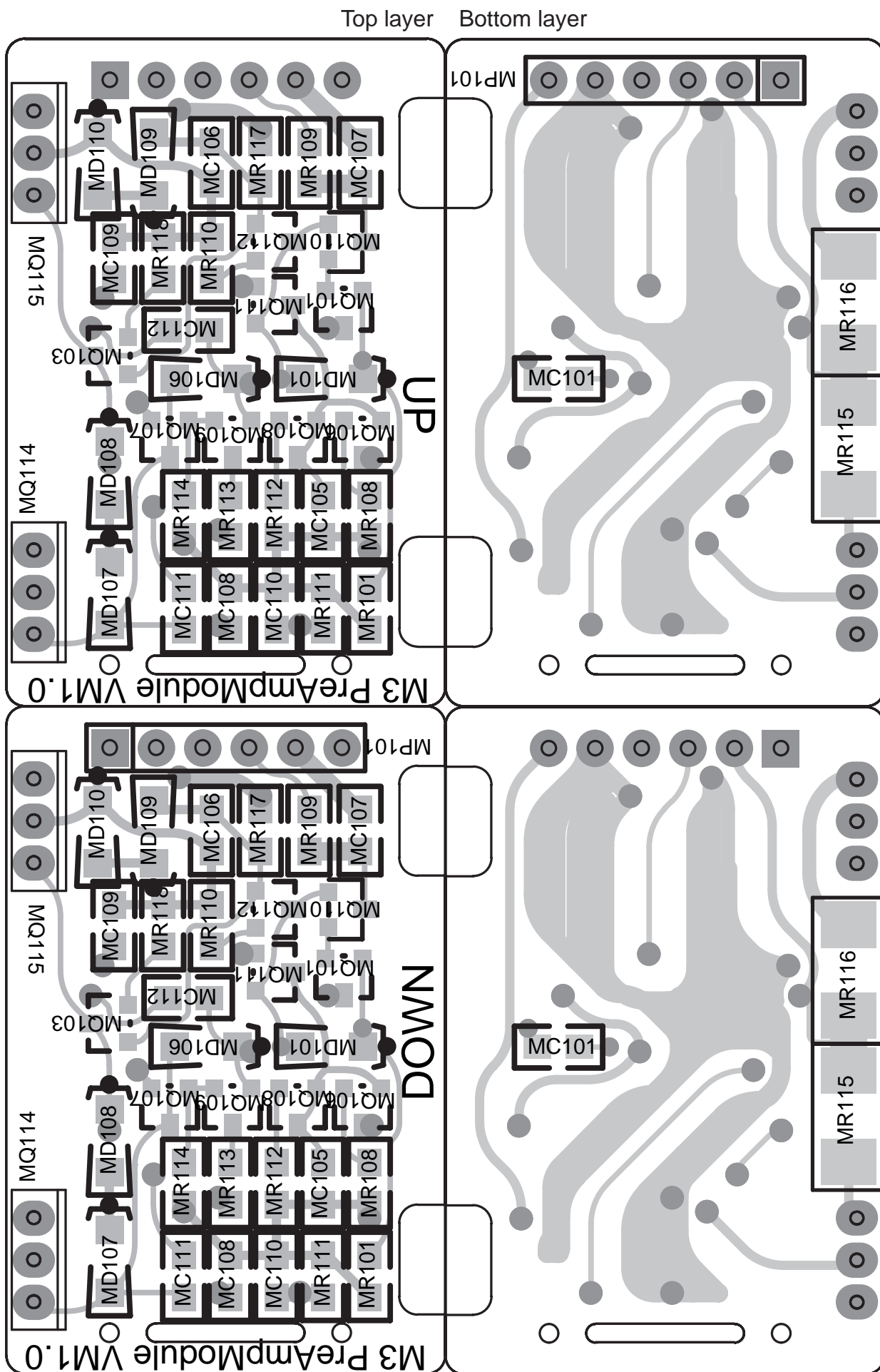


13. R channel amplifier board(AMPR)

Top layer Bottom layer



14. Preamp Module board(MOD)



SECTION 5 REPLACEMENT PARTS LIST

MODEL :M3 C/AH(NAD)
 RUN DATE : HS4-M3_B013_VM2.6

NOTES: ⚠ Warning Parts that are shaded are critical With respect to risk of fire or electrical shock.

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
0		C VERSION P/N 00-50300-20		AH VERSION P/N 00-50300-10		CH VERSION P/N: 00-50300-30	
.1		P/N:01-50301-00	BALANCE BOARD				
DIODE							
..2		33-44148-11	Switch Diode SMD	LL4148	D52, D53, D54, D55, D56, D57, D58, D59, D510, D511, D512, D513, D514, D515, D516, D517	MINIMELF	16
..2		33-11200-11	Zener Diode SMD	12V/0.5W	D518, D519, D520, D521	MINIMELF	4
..2		33-11300-12	Zener Diode SMD	HZK12B, 13V/0.5W	D51	LLD	1
..2		or33-11300-12	Zener Diode SMD	DL5242B, 12.1V~12.75V	D51	MINIMELF	1
TRANSISTORS							
TRANSISTC		31-01312-00	Transistor	2SA1312GR	Q58, Q59, Q510, Q511, Q512, Q513, Q514, Q515, Q516, Q517, Q518, Q519, Q520, Q521, Q522, Q523	SOT-23A	16
TRANSISTC		31-03324-00	Transistor	2SC3324GR	Q525, Q528, Q529, Q530, Q531, Q533, Q534, Q535, Q537, Q538	SOT-23A	10
TRANSISTC		31-00209-00	Transistor	2SK209GR	Q54, Q55, Q56, Q57	SC-59	4
TRANSISTC		31-02983-01	NPN Transistor	2SC2983Y	Q526, Q524, Q536, Q527, Q532	2-7J1A	5
TRANSISTC		03-00817-00	Optiosolator	PC817B	U51	DIP4	1
IGS							
..2		03-00004-03	6-Inverter	74HC04	U52	SOIC14	1
CAPACITORS							
..2		26-22051-01	Ceramic Chip Capacitor	22pF, 50V, ±5%	C518, C520, C521, C522	0805	4
..2		26-33051-01	Ceramic Chip Capacitor	33pF, 50V, ±5%	C524, C525, C526, C527, C528, C529	0805	6
..2		26-47051-01	Ceramic Chip Capacitor	47pF, 50V, ±5%	C530, C531, C548, C546	0805	4
..2		26-10151-01	Ceramic Chip Capacitor	100pF, 50V, ±5%	C513, C514, C515, C516, C532, C533,	0805	6
..2		26-16151-01	Ceramic Chip Capacitor	160pF, 50V, ±5%	C517, C519, C536, C537	0805	4
..2		26-22151-01	Ceramic Chip Capacitor	220pF, 50V, ±5%	C501, C503, C504, C506	0805	4
..2		26-47151-01	Ceramic Chip Capacitor	470pF, 50V, ±5%	C502, C505	0805	2
..2		26-10351-01	Ceramic Chip Capacitor	10nF, 50V, ±10%	C51	0805	1
..2		26-10421-01	Ceramic Chip Capacitor	0.1uF, 25V, ±10%	C58, C539, C540, C541, C542, C543, C544, C545, C538, C550, C551, C552, C553, C554, C555	0805	15
..2		26-10451-01	Ceramic Chip Capacitor	0.1uF, 50V, +80%-20%	C52	0805	1
..2		26-22421-01	Ceramic Chip Capacitor	0.22uF, 25V, ±10%	C59, C510, C511, C512	0805	4
..2		06-10031-02	Chip Alu Electrolytic Capacitor	10uF, 35V, ±20%	C534, C535	5x5.4	2
..2		06-33011-04	Chip Alu Electrolytic Capacitor	33U, 16V, ±20%	C556, C557	6.3x5.4	2
RESISTORS							
..2		07-90000-01	Chip Resistor	0Ω, ±5%	R51, R53	0805	2
..2		07-90100-01	Chip Resistor	10Ω, ±5%	R54, R55, R56, R57	0805	4
..2		07-90120-01	Chip Resistor	12Ω, ±5%	R572	0805	1
..2		07-94999-11	Chip Resistor	49.9Ω, ±1%	R562, R563	0805	2
..2		07-90750-01	Chip Resistor	75Ω, ±5%	R524, R525, R526, R527	0805	4
..2		07-90101-01	Chip Resistor	100Ω, ±5%	R501, R502, R542, R543, R544, R545	0805	6
..2		07-90161-01	Chip Resistor	160Ω, ±5%	R570, R571	0805	2
..2		07-90221-01	Chip Resistor	220Ω, ±5%	R511, R512, R513, R514	0805	4
..2		07-90331-01	Chip Resistor	330Ω, ±5%	R52	0805	1
..2		07-90471-01	Chip Resistor	470Ω, ±5%	R566, R567, R568, R569	0805	4
..2		07-90102-01	Chip Resistor	1KΩ, ±5%	R528, R529, R531, R532, R533, R534, R535, R537, R538, R539	0805	10
..2		07-92201-11	Chip Resistor	2K2Ω, ±1%	R559, R561	0805	2
..2		07-92211-11	Chip Resistor	2K21Ω, ±1%	R540, R541, R550, R551, R552, R553	0805	6
..2		07-90302-01	Chip Resistor	3K, ±5%	R555, R554, R576, R577	0805	4
..2		07-90472-01	Chip Resistor	4K7Ω, ±5%	R556, R557, R546, R547	0805	4
..2		07-90562-01	Chip Resistor	5.6KΩ, ±5%	R574	0805	1
..2		07-90103-01	Chip Resistor	10KΩ, ±5%	R573, R548, R549, R580, R581	0805	5
..2		07-90223-01	Chip Resistor	22KΩ, ±5%	R575	0805	1
..2		07-90124-01	Chip Resistor	120KΩ, ±5%	R516, R517, R518, R519	0805	4
..2		07-90105-01	Chip Resistor	1MΩ, ±5%	R520, R521, R522, R523	0805	4
..2		07-90222-06	Chip Resistor	2K2Ω, 1W, ±5%	R530, R536	2512	2
..2		07-90472-06	Chip Resistor	4K7Ω, 1W, ±5%	R558, R560	2512	2
INDUCTORS							
..2		22-00221-00	Inductor	220uH x2	L53, L54	220UH*2	2
..2		08-04101-00	Inductor SMD	100uH	L51, L52	1210	2
POT							
..2		09-03101-00	Semi-POT	100Ω 20%	R564, R565		2
CONNECTORS							
..2		13-12508-22	CONNECTOR	8PIN(L=29.5mm)	CZ504	S=2.5mm	1
..2		13-22514-01	CONNECTOR	3012-14GRB	CZ501	FFC12/S=2.5mm	1
..2		17-08009-00	PORT	DB9, 7906-9-F-B	RS232		1
..2		17-09003-04	CONNECTOR	E303A007	INPUT1, INPUT2	XLR	2

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
..2		17-02001-04	3.5PHONE JACK1	ST-323B-04/CKX-3.5-02-3P	PJ1, JIRA1, JIRB1, JIRB2	PHONE1	4
..2		or17-02001-03	3.5PHONE JACK1	SCJ349P00xS0B01	PJ1, JIRA1, JIRB1, JIRB2	PHONE1	4
PCB							
..2		16-53001-00	MULTI PCB	FR-4, 1.6mm, 200mmx80mm			1
...3		16-53010-00	PCB	FR-4, 1.6mm, 170mmx320mm			1/6
MECHANICAL PARTS							
..2		66-011011-0	Connectible Bracket	SECC N4 T=1.0			2
..2		61-023106-0	Self Taping Screws	STB3x6			2
..2		66-048004-0	Blance pcb shielding	TIN T=0.5			1
.1		P/N:01-50304-00	KEY BOARD				
DIODE							
..2		33-50565-02	LED	φ5 THREE COLOR LED	D81		1
TRANSISTORS							
..2		31-01015-01	PNP TRANS	2SA1015	Q86	SC-59	1
..2		31-01815-01	NPN TRANS	2SC1815	Q85	SC-59	1
..2		31-03326-01	Transistor	2SC3326A	Q87, Q88, Q89	SC-59	3
..2		31-00114-01	Digital transistor	DTA114EKA	Q81, Q82, Q83	SC-59	3
ICs							
..2		03-08951-11	SINGLE-CHIP	AT89C51ED2	U86	PLCC68	1
..2		03-02416-01	EEPROM	24C16	U87	DIP8	1
..2		03-00810-01	Watch Dog	TCM810LENB	U89	SOT-23B	1
..2		03-00038-40	IR RECEIVER	HS0038B4	U82		1
..2		23-30202-00	VFD MODULE	20T202DA1 (J) REVE	U810		1
..2		03-03221-02	RS232 RECEIVER	MAx3221	U83	SSOP16	1
..2		03-00000-02	Quad 2-Input NAND Gate	74AC00D	U84, U85	SOIC14	2
..2		or03-00000-01	Quad 2-Input NAND Gate	74AC00SC/MC74AC00D	U84, U85	SOIC14	2
CAPACITORS							
..2		26-20051-01	Ceramic Chip Capacitor	20pF, 50V, ±5%	C825, C826	0805	2
..2		26-10251-11	Ceramic Chip Capacitor	1nF, 50V, ±5%	C810, C833, C834, C835, C836, C837	0805	6
..2		26-10351-01	Ceramic Chip Capacitor	10nF, 50V, ±5%	C812	0805	1
..2		26-10451-01	Ceramic Chip Capacitor	0.1uF, 50V, +80%-20%	C811, C815, C816, C817, C821, C824, C827, C828, C829, C830, C831, C832, C823	0805	13
..2		06-10121-05	Chip Alu Electrolytic Capacitor	100uF, 25V, ±20%	C813, C814	6.3x7.7	2
RESISTORS							
..2		07-90000-01	Chip Resistor	0Ω, 0805	R841, R842	0805	2
..2		07-90332-01	Chip Resistor	3.3K Ω, 0805, ±5%	R816	0805	1
..2		07-90220-11	Chip Resistor	22Ω, 0805, ±5%	R823	0805	1
..2		07-90331-01	Chip Resistor	330Ω, 0805, ±5%	R833, R835, R836	0805	3
..2		07-90103-01	Chip Resistor	10KΩ, 0805, ±5%	R817, R818, R819, R824, R828, R829, R830, R831, R834, R837, R843, R844, R845, R846, R847, R849, R850, R851, R853, R825, R826, R848, R852, R815	0805	24
..2		07-01002-09	Resistor Net	10KΩ x 8, ±2%, A	R838, R840, R839	SIP9	3
CRYSTALS							
..2		04-11102-01	CRYSTAL SMD	11.0592MHz	X81		1
SWITCHES							
..2		11-04101-08	Tact Switch	IT-1103AA-1160	S811, S812, S814, S815, S816, S817, S818, S819	KEY1	8
..2		11-04101-00	Tact Switch	IT-1102D-1160	S821	KEY	1
CONNECTERS							
..2		13-12502-00	Connector	2PIN, 2.54	J81	S=2.5mm	1
..2		13-12514-03	Connector	14PIN, 2.54, 8mm	CZ80	S=2.5mm	1
..2		13-22504-05	Connector	XHB 4PIN	CZ81	S=2.5mm	1
..2		13-21030-03	FFC Socket	1.0S-15S-30PW	CZ82		1
PCB							
..2		16-53004-10	FPP PCB	VM2.0, FR-4, 1.6mm, 250mmx80mm			1
MECHANICAL PARTS							
..2		66-048002-0	IR Bracket	iron			1
..2		61-023508-0	Machine Screws	MB3x8	FPP(4)		4
..2		62-010302-1	Nut	M3 NUT	FPP(4)		4
..2		86-004002-0	Red-Paper Pad	φ3x1	FPP(4)		4
.1		P/N:01-50302-00	ENCODER BOARD				

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
ENCODE							
..2		37-16243-00	ENCODE	EC16B243040F	ES1	ENCODE	1
CAPACITORS							
..2		26-10451-01	Ceramic Chip Capacitor	0.1uF, 50V, +80%-20%	EC1, EC2, EC3, EC4, EC5,	0805	5
RESISTORS							
..2		07-90221-01	Chip Resistor	220Ω, 1/8W, ±5%	ER2, ER3	0805	2
..2		07-90103-01	Chip Resistor	10K, 1/8W, ±5%	ER1, ER4	0805	2
CONNECTERS							
..2		13-22504-05	Connector	4PIN, 2.54	ECZ1	S=2.5mm	1
PCB							
..2		16-53002-00	ECODER PCB	FR-4, 1.6mm, 30mmx80mm			1
...3		16-53010-00	PCB	FR-4, 1.6mm, 170mmx320mm			1/6
.1 C VERSION P/N:01-50307-21 AH VERSION P/N:01-50307-11 STANDBY BOARD(TOP)							
CONNECTORS							
..2		13-23905-21	Connector	3PIN	CZ906		1
..2		13-23907-30	Connector	4PIN	CZ903, CZ904		2
..2		13-23907-31	Connector	4PIN	CZ905		1
JUMPER							
..2		21-06500-00	Jumper	L=5mm	JP900(120V), JP901(230V), JP902(120V), JP903(120V), JP904(230V), JP905(120V), JP906(120V), JP907(230V), JP908(120V),		C BC:3 AH:6
FUSE							
..2		20-20000-01	FUSE HOLDER	HF-003-1	F901, F902, F903	FUSEHOLD	3
..2		20-12312-02	FUSE	3.15A	F902, F903		C BC:2
..2		20-12502-00	FUSE	5A	F902, F903		AH:2
..2		20-12101-00	FUSE	100mA	F901		1
PCB							
..2		16-53007-01	STANDBY PCB	FR-4, 1.6mm, 165mmx48mm			1
..2		94-048005-0	Warning Label	φ10, YELLOW	PCB(2)		2
.1 P/N:01-50307-02 STANDBY BOARD (BOTTOM)							
DIODE							
..2		33-30112-00	Diode Bridge	DF1501S	B901, B902	BRIDGEDF	2
ICS							
..2		03-01117-01	Regulator IC	LM1117MPx-5.0/AMS1117-5.0	IC1	SOT-223	1
CAPACITORS							
..2		26-10451-01	Ceramic Chip Capacitor	0.1uF, 50V, +80%-20%	C901, C902, C905, C906, C908	0805	5
..2		06-10111-09	Chip Alu Electrolytic Capacitor	100uF, 10V, ±20%	C907	6.3x5.4	1
..2		06-22211-04	Alu Electrolytic Capacitor	2200uF, 25V, ±20%	C903, C904	Pitch=7.5mm	2
TRANSFORMERS							
..2		18-53010-00	Transformer	12V, 5V R type transformer	T901		1
CONNECTORS							
..2		13-22504-00	Connector	4PIN	CZ902	SIP4A	1
..2		13-22504-10	Connector	4PIN	CZ908	SIP4A	1
PCB							
..2		16-53007-02	STANDBY PCB	FR-4, 1.6mm, 120mmx48mm			1
MECHANICAL PARTS							
..2		62-010402-0	NUT	GB6170-86, M4,			2
..2		63-010408-0	WASHER	GB97.1-85 φ4			2
..2		63-020411-0	WASHER	GB93-87 φ4			2
..2		61-224508-1	BOLT	GB/T70.1, 4x8,			2
.1 P/N: 01-50308-01 SPK BOARD (L)							
CONNECTORS							
..2		13-23908-01	M Connector	3.96B-8A	CZS1(L)		1
PCB							
..2		16-53008-01	SPK PCB	FR-4, 1.6mm, 45mmx60mm			1
.1 P/N:01-50308-02 SPK BOARD (R)							
CONNECTORS							
..2		13-23908-01	M Connector	3.96B-8A	CZS2 (R)		1
PCB							
..2		16-53008-02	SPK PCB	FR-4, 1.6mm, 45mmx60mm			1

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
.1		P/N:01-50306-01	LAMP BOARD				
DIODE							
..2		33-44148-03	Switch Diode	1N4148	D303, D304, D305, D306, D323, D325, D317, D318, D320, D321	Pitch=10mm	10
..2		33-44148-02	Switch Diode	1N4148	D311, D312, D313, D314, D315, D326, D340	Pitch=7.5mm	7
..2		33-40021-03	Switch Diode	BAV21	D307, D308, D309	Pitch=7.5mm	3
..2		33-13609-01	Zener Diode	3V6, 1/2W	D322, D324	Pitch=10mm	2
..2		33-11200-01	Zener Diode	12V, 1/2W	D327	Pitch=7.5mm	1
..2		33-11800-01	Zener Diode	18V, 1/2W	D301, D302	Pitch=10mm	2
..2		33-50550-01	LED	GREEN	D316, D319	Pitch=2.5mm	2
TRANSISTOR							
..2		31-00872-00	Transistor	2SA872AE	Q301, Q306, Q307	TO-92	3
..2		31-01775-00	Transistor	2SC1775AE	Q302, Q303, Q304, Q330	TO-92	4
..2		31-00970-00	Transistor	2SA970-GR	Q326, Q355	TO-92	2
..2		31-01015-00	Transistor	2SA1015-GR	Q305, Q309, Q316, Q350, Q354	TO-92	5
..2		31-01815-00	Transistor	2SC1815-GR	Q308, Q312, Q352, Q353	TO-92	4
..2		31-02240-00	Transistor	2SC2240-GR	Q325, Q356	TO-92	2
..2		31-02878-00	Transistor	2SC2878A	Q329	TO-92	1
..2		31-01360-00	Transistor	2SA1360	Q310, Q332	TO-126MOD	2
..2		31-03423-00	Transistor	2SC3423	Q311, Q331	TO-126MOD	2
..2		31-01837-00	Transistor	2SA1837	Q313, Q318, Q338	TO-220	3
..2		31-04793-00	Transistor	2SC4793	Q314, Q317, Q337	TO-220	3
..2		31-02690-00	Transistor	KSC2690	Q315	TO-126	1
..2		31-01943-00	Transistor	2SA1943-O	Q319, Q321, Q323, Q327	2-21F1A	4
..2		31-05200-00	Transistor	2SC5200-O	Q320, Q322, Q324, Q328	2-21F1A	4
ICS							
..2		03-00431-00	Regulator	TL431/AE431/KA431	IC301, IC302, IC305	TO-92	3
..2		03-00082-00	Dual OP-AMP	TL082CP/CN/D	IC303	DIP8	1
..2		03-01237-00	Protection IC	uPC1237HA	IC304	SIP8-IC	1
CAPACITOR							
..2		05-33022-00	Ceramic Disc Capacitor	33pF, 250V, ±10%	C305, C307	Pitch=5mm	2
..2		05-33151-01	Ceramic Disc Capacitor	330pF, 50V, ±10%	C308	Pitch=5mm	1
..2		05-47112-00	Ceramic Disc Capacitor	470pF, 100V, ±10%	C325, C326	Pitch=5mm	2
..2		24-22461-00	Monolithic Capacitor	0.22uF, 63V, ±20%	C332	Pitch=5mm	1
..2		25-10261-00	Metallized Polyester Film Capacitor	1nF, 63V, ±5%	C302	Pitch=5mm	1
..2		25-22361-05	Metallized Polyester Film Capacitor	22nF, 63V, ±5%	C320	Pitch=5mm	1
..2		25-22361-05	Metallized Polyester Film Capacitor	22nF, 63V, ±5%	C340	Pitch=5mm	1
..2		25-10412-10	Metallized Polyester Film Capacitor	0.1uF, 100V, ±10%	C316, C317, C322, C323	Pitch=7.5mm	4
..2		25-10412-11	Metallized Polyester Film Capacitor	0.1uF, 100V, ±5%	C318	Pitch=7.5mm	1
..2		25-10412-04	Metallized Polyester Film Capacitor	0.1uF, 100V, ±5%	C301, C306, C309, C310, C328 C314,	Pitch=5mm	6
..2		25-10561-02	Metallized Polyester Film Capacitor	1uF, 63V, ±5%	C327, C329	Pitch=5mm	2
..2		06-22951-05	Alu Electrolytic Capacitor	2.2uF, 50V, ±20%	C334, C335	Pitch=5mm	2
..2		06-47951-05	Alu Electrolytic Capacitor	4.7uF, 50V, ±20%	C321	Pitch=5mm	1
..2		06-10051-01	Alu Electrolytic Capacitor	10uF, 50V, ±20%	C303, C304, C315, C319	Pitch=5mm	4
..2		06-47061-02	Alu Electrolytic Capacitor	47uF, 63V, ±20%	C333	Pitch=3.5mm	1
..2		06-10151-02	Alu Electrolytic Capacitor	100uF, 50V, ±20%	C311, C312	Pitch=3.5mm	2
..2		06-33111-03	Alu Electrolytic Capacitor	330uF, 16V, ±20%	C331	Pitch=3.5mm	1
RESISTOR							
..2		21-06750-00	Link	L=7.5mm	R392, R393	Pitch=7.5mm	2
..2		07-10109-10	Carbon Film Resistor	1Ω, 1/4W, ±5%	R388, R389, R390, R391	Pitch=10mm	4
..2		07-10220-10	Carbon Film Resistor	22Ω, 1/4W, ±5%	R351	Pitch=10mm	1
..2		07-10201-01	Carbon Film Resistor	200Ω, 1/6W, ±5%	R375	Pitch=7.5mm	1
..2		07-10222-01	Carbon Film Resistor	2K2Ω, 1/6W, ±5%	R368	Pitch=7.5mm	1
..2		07-10332-01	Carbon Film Resistor	3K3Ω, 1/6W, ±5%	R374	Pitch=7.5mm	1
..2		07-10472-01	Carbon Film Resistor	4K7Ω, 1/6W, ±5%	R36	Pitch=7.5mm	1
..2		07-10682-01	Carbon Film Resistor	6K8Ω, 1/6W, ±5%	R364	Pitch=7.5mm	1
..2		07-10682-01	Carbon Film Resistor	6K8Ω, 1/6W, ±5%	R370	Pitch=7.5mm	1
..2		07-10103-10	Carbon Film Resistor	10KΩ, 1/4W, ±5%	R311, R315, R333, R335, R342, R343, R378, R379, R394(N.I.)	Pitch=10mm	8
..2		07-10103-01	Carbon Film Resistor	10KΩ, 1/6W, ±5%(NI)	R365, R372(N.I.), R398	Pitch=7.5mm	2
..2		07-10223-10	Carbon Film Resistor	22KΩ, 1/4W, ±5%	R302, R310, R316	Pitch=10mm	3
..2		07-10223-01	Carbon Film Resistor	22KΩ, 1/6W, ±5%	R363	Pitch=7.5mm	1
..2		07-10563-01	Carbon Film Resistor	56KΩ, 1/6W, ±5%	R362, R369, R371	Pitch=7.5mm	3
..2		07-10204-01	Carbon Film Resistor	200KΩ, 1/6W, ±5%	R35	Pitch=7.5mm	1
..2		07-20000-10	Metal Film Resistor	0Ω, 1/4W, ±5%	J301	Pitch=10mm	1
..2		07-21009-10	Metal Film Resistor	10Ω, 1/4W, ±1%	R33, R34	Pitch=10mm	2
..2		07-20150-60	Metal Film Resistor	15Ω, 0.6W, ±5%	R348, R349	Pitch=10mm	2

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty	
..2		07-20180-60	Metal Film Resistor	18Ω, 0.6W, ±5%	R337, R329	Pitch=10mm	2	
..2		07-22109-10	Metal Film Resistor	21Ω, 1/4W, ±1%	R317	Pitch=10mm	1	
..2		07-20330-10	Metal Film Resistor	33Ω, 1/4W, ±5%	R308, R320	Pitch=10mm	2	
..2		07-20820-10	Metal Film Resistor	82Ω, 1/4W, ±5%	R307, R377	Pitch=10mm	2	
..2		07-20101-10	Metal Film Resistor	100Ω, 1/4W, ±5%	R303, R304, R306, R312, R314, R318	Pitch=10mm	6	
..2		07-20221-10	Metal Film Resistor	220Ω, 1/4W, ±5%	R347	Pitch=10mm	1	
..2		07-20301-10	Metal Film Resistor	300Ω, 1/4W, ±5%	R328	Pitch=10mm	1	
..2		07-20471-10	Metal Film Resistor	470Ω, 1/4W, ±5%	R301	Pitch=10mm	1	
..2		07-20681-10	Metal Film Resistor	680Ω, 1/4W, ±5%	R353	Pitch=10mm	1	
..2		07-20102-10	Metal Film Resistor	1K Ω, 1/4W, ±5%	R31	Pitch=10mm	1	
..2		07-21001-10	Metal Film Resistor	1K Ω, 1/4W, ±1%	R346	Pitch=10mm	1	
..2		07-20102-02	Metal Film Resistor	1K Ω, 1/6W, ±5%	R361, R3A6	Pitch=7.5mm	2	
..2		07-20122-10	Metal Film Resistor	1K2Ω, 1/4W, ±5%	R32	Pitch=10mm	1	
..2		07-21201-10	Metal Film Resistor	1K2 Ω, 1/4W, ±1%	R345	Pitch=10mm	1	
..2		07-20202-01	Metal Film Resistor	2K, 1/6W, ±5%	R3A1, R3A3	Pitch=7.5mm	2	
..2		07-20222-01	Metal Film Resistor	2.2K, 1/6W, ±5%	R3A2	Pitch=7.5mm	1	
..2		07-26341-01	Metal Film Resistor	6K34 Ω, 1/6W, ±1%	R3A5	Pitch=7.5mm	1	
..2		07-20103-60	Metal Film Resistor	10KΩ, 0.6W, ±5%	R355, R358	Pitch=10mm	2	
..2		07-20103-01	Metal Film Resistor	10K Ω, 1/6W, ±5%	R3A4	Pitch=7.5mm	1	
..2		07-21742-01	Metal Film Resistor	17K4, 1/6W, ±1%	R3A7	Pitch=7.5mm	1	
..2		07-22002-10	Metal Film Resistor	20K, 1/4W, 1%	R327	Pitch=10mm	1	
..2		07-20273-10	Metal Film Resistor	27KΩ, 1/4W, ±5%	R305, R313	Pitch=10mm	2	
..2		07-20393-10	Metal Film Resistor	39KΩ, 1/4W, ±5%	R321, R325	Pitch=10mm	2	
..2		07-20104-01	Metal Film Resistor	100KΩ, 1/6W, ±5%	R373	Pitch=7.5mm	1	
..2		07-20104-10	Metal Film Resistor	100KΩ, 1/4W, ±5%	R324, R326	Pitch=10mm	2	
..2		07-20104-01	Metal Film Resistor	100K Ω, 1/6W, ±5%	R366, R397	Pitch=7.5mm	2	
..2		07-20204-10	Metal Film Resistor	200KΩ, 1/4W, ±5%	R37	Pitch=10mm	1	
..2		07-20224-10	Metal Film Resistor	220KΩ, 1/4W, ±5%	R350, R376	Pitch=10mm	2	
..2		07-20105-10	Metal Film Resistor	1MΩ, 1/4W, ±5%	R352, R354	Pitch=10mm	2	
..2		07-30108-10	Oxidized Film Resistor	0.1Ω, 1W, ±5%	R3B1, R3B2, R3B3, R3B4, R3B5, R3B6, R3B7, R3B8	Pitch=15mm	8	
..2		07-30229-10	Oxidized Film Resistor	2R2, 1/4W, ±5%	R380, R381, R382, R383, R384, R385, R386, R387	Pitch=10mm	8	
..2		07-30339-12	Oxidized Film Resistor	3R3Ω, 1/2W, ±5%	R330, R338	Pitch=10mm	2	
..2		07-30820-00	Oxidized Film Resistor	82Ω, 1/2W, ±5%	R309, R323	Pitch=10mm	2	
..2		07-30331-11	Oxidized Film Resistor	330Ω, 1/2W, ±5%	R332, R341	Pitch=10mm	2	
..2		07-30339-11	Oxidized Film Resistor	3.3 Ω, 1W, ±5%	R399	Pitch=12.5mm	1	
..2		07-31201-03	Oxidized Film Resistor	1K2, 3W, ±2% TCR=100	R319, R322	Pitch=20mm	2	
..2		07-30472-04	Oxidized Film Resistor	4K7Ω, 3W, ±5%	R334, R344, R395, R396	Pitch=20mm	4	
..2		07-30229-02	Oxidized Film Resistor	2.2 Ω, 2W, ±5%	R359	Pitch=15mm	1	
..2		07-40507-05	Ceramic Resistor	0.05Ω, 5W, ±10%	R356, R357	Pitch=10mm	2	
..2		07-50479-02	Fusible Resistor	4R7Ω, 1/2W, ±5%	R331, R339	Pitch=12.5mm	2	
..2		07-70471-08	Posistor	T=80 C degree	RT301	Pitch=5mm	1	
..2		07-70022-09	Thermal Breaker	T=90 C degree	B301	Pitch=5mm	1	
INDUCTORS								
..2		08-01010-00	Inductor	1uH, 10%	L302	Pitch=12.5mm	1	
..2		08-01101-01	Inductor	100uH, 20%	L301	Pitch=5mm	1	
POTS								
..2		09-02201-01	Semi-POT	200Ω	VR301	VR	1	
RELAY								
..2		12-03101-03	Relay	24V	RL301, RL302	JDF&TH1A	2	
CONNECTOR								
..2		13-12502-00	Test Pin	2pin 2.54	TP301		1	
..2		13-22502-00	Connector	2PIN	CZ301	SIP2/S=2.5mm	1	
..2		13-21210-00	Connector	10PIN	CZ302	CB10/S=2.5mm	1	
..2		13-13908-01	Connector	3.96 8PIN	CZ303	POWZ8	1	
..2		76-050001-0	Teflon	15mm 24AWG	RT301		2	
..2		76-048001-0	Teflon	12mm 24AWG	B301		2	
PCB 线路板								
..2		16-53006-11	L CHANNEL PCB	VM2.0, FR-4, 1.6mm, 320mmx80mm			1	
...3		16-53060-10	PCB	VM2.0, FR-4, 1.6mm, 333mmx177mm			1/2	
MECHANICAL PARTS								
..2		62-050302-0	PEM NUT-PCB	M3x0.5, KFEB, copper made	P301, P302, P303, P304		4	
..2		70-048004-0	Small Heatsink	6063, T5			1	
..2		70-048005-0	Small Heatsink B	6063, T5			1	
..2		61-023206-0	Self Taping Screws	BTB3x6	little heatsink(2), little heatsink B(2), Transistor(6)		10	
..2		61-023208-0	Self Taping Screws	BTB3x8	Transistor(5)		5	
..2		69-048029-0	Busbar C	T2Y2, 0.1μm gold plated			2	
.1		P/N: 01-50306-02 RAMP BOARD						
DIODE								

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
..2		33-44148-02	Switch Diode	1N4148	D411, D414, D415, D426, D440	Pitch=7.5mm	5
..2		33-44148-03	Switch Diode	1N4148	D403, D404, D405, D406, D412, D413, D417, D418, D420, D421, D423, D425	Pitch=10mm	12
..2		33-40021-03	Switch Diode	BAV21	D407, D408, D409	Pitch=7.5mm	3
..2		33-13609-01	Zener Diode	3V6, 1/2W	D424, D422	Pitch=10mm	2
..2		33-11200-01	Zener Diode	12V, 1/2W	D427	Pitch=7.5mm	1
..2		33-11800-01	Zener Diode	18V, 1/2W	D401, D402	Pitch=10mm	2
..2		33-50550-01	LED	GREEN LED	D416, D419	Pitch=2.5mm	2
TRANSISTOR							
..2		31-00872-00	Transistor	2SA872AE	Q401, Q406, Q407	TO-92	3
..2		31-01775-00	Transistor	2SC1775AE	Q402, Q403, Q404, Q430	TO-92	4
..2		31-00970-00	Transistor	2SA970	Q426, Q455	TO-92	2
..2		31-01015-00	Transistor	2SA1015	Q405, Q409, Q416, Q450, Q454	TO-92	5
..2		31-01815-00	Transistor	2SC1815-GR	Q408, Q412, Q452, Q453	TO-92	4
..2		31-02240-00	Transistor	2SC2240-GR	Q425, Q456	TO-92	2
..2		31-02878-00	Transistor	2SC2878A	Q429	TO-92	1
..2		31-01360-00	Transistor	2SA1360	Q410, Q432	TO-126MOD	2
..2		31-03423-00	Transistor	2SC3423	Q411, Q431	TO-126MOD	2
..2		31-01837-00	Transistor	2SA1837	Q418, Q438, Q413	TO-220	3
..2		31-04793-00	Transistor	2SC4793	Q417, Q437, Q414	TO-220	3
..2		31-02690-00	Transistor	KSC2690	Q415	TO-126	1
..2		31-01943-00	Transistor	2SA1943-O	Q419, Q421, Q423, Q427	2-21F1A	4
..2		31-05200-00	Transistor	2SC5200-O	Q420, Q422, Q424, Q428	2-21F1A	4
ICS							
..2		03-00431-00	Regulator	TL431/AE431/KA431	IC401, IC402, IC405	TO-92	3
..2		03-00082-00	Dual OP-AMP	TL082CP/CN/D	IC403	DIP8	1
..2		03-01237-00	Protection IC	uPC1237HA	IC404	SIP8-IC	1
CAPACITOR							
..2		05-33022-00	Ceramic Disc Capacitor	33pF, 250V, ±10%	C405, C407	Pitch=5mm	2
..2		05-33151-01	Ceramic Disc Capacitor	330pF, 50V, ±10%	C408	Pitch=5mm	1
..2		05-47112-00	Ceramic Disc Capacitor	470pF, 100V, ±10%	C425, C426	Pitch=5mm	2
..2		24-22461-00	Capacitor	0.22uF, 63V, +80%, -20%	C432	Pitch=5mm	1
..2		25-10261-00	Metallized Polyester Film Capacitor	1nF, 63V, ±5%	C402	Pitch=5mm	1
..2		25-22361-05	Metallized Polyester Film Capacitor	22nF, 63V, ±5%	C420, C440	Pitch=5mm	2
..2		25-10412-04	Metallized Polyester Film Capacitor	0.1uF, 100V, ±5%	C401, C406, C409, C410, C428, C414	Pitch=5mm	6
..2		25-10412-11	Metallized Polyester Film Capacitor	0.1uF, 100V, ±5%	C418	Pitch=7.5mm	1
..2		25-10412-10	Metallized Polyester Film Capacitor	0.1uF, 100V, ±10%	C422, C423, C416, C417	Pitch=7.5mm	4
..2		25-10561-02	Metallized Polyester Film Capacitor	1uF, 63V, ±5%	C427, C429	Pitch=5mm	2
..2		06-22951-05	Alu Electrolytic Capacitor	2.2uF, 50V, ±20%	C434, C435	Pitch=5mm	2
..2		06-47951-05	Alu Electrolytic Capacitor	4.7uF, 50V, ±20%	C421	Pitch=5mm	1
..2		06-10051-01	Alu Electrolytic Capacitor	10uF, 50V, ±20%	C403, C404, C415, C419	Pitch=5mm	4
..2		06-47061-02	Alu Electrolytic Capacitor	47uF, 63V, ±20%	C433	Pitch=3.5mm	1
..2		06-10151-02	Alu Electrolytic Capacitor	100uF, 50V, ±20%	C411, C412	Pitch=3.5mm	2
..2		06-33111-03	Alu Electrolytic Capacitor	330uF, 16V, ±20%	C431	Pitch=3.5mm	1
RESISTOR							
..2		21-06750-00	Link	L=7.5mm	R492, R493	Pitch=7.5mm	2
..2		07-10109-10	Carbon Film Resistor	1Ω, 1/4W, ±5%	R488, R489, R490, R491	Pitch=10mm	4
..2		07-10220-10	Carbon Film Resistor	22Ω, 1/4W, ±5%	R451	Pitch=10mm	1
..2		07-10201-01	Carbon Film Resistor	200Ω, 1/6W, ±5%	R475	Pitch=7.5mm	1
..2		07-10222-01	Carbon Film Resistor	2.2K, 1/6W, ±5%	R468	Pitch=7.5mm	1
..2		07-10332-01	Carbon Film Resistor	3.3K, 1/6W, ±5%	R474	Pitch=7.5mm	1
..2		07-10472-01	Carbon Film Resistor	4K7, 1/6W, ±5%	R46	Pitch=7.5mm	1
..2		07-10682-01	Carbon Film Resistor	6.8K, 1/6W, ±5%	R470	Pitch=7.5mm	1
..2		07-10682-01	Carbon Film Resistor	6K8, 1/6W, ±5%	R464	Pitch=7.5mm	1
..2		07-10103-01	Carbon Film Resistor	10K, 1/6W, ±5%(NI)	R467, R472(N.I.), R498	Pitch=7.5mm	2
..2		07-10103-10	Carbon Film Resistor	10K, 1/4W, ±5%	R411, R415, R433, R435, R442, R443, R478, R479, R494(N.I.)	Pitch=10mm	8
..2		07-10223-10	Carbon Film Resistor	22K, 1/4W, ±5%	R402, R410, R416	Pitch=10mm	3
..2		07-10223-01	Carbon Film Resistor	22K, 1/6W, ±5%	R463	Pitch=7.5mm	1
..2		07-10563-01	Carbon Film Resistor	56K, 1/6W, ±5%	R462, R471, R469	Pitch=7.5mm	3
..2		07-10204-01	Carbon Film Resistor	200K, 1/6W, ±5%	R45	Pitch=7.5mm	1
..2		07-20000-10	Metal Film Resistor	0Ω, 1/4W, ±5%	J401, J402	Pitch=10mm	2
..2		07-21009-10	Metal Film Resistor	10Ω, 1/4W, ±1%	R43, R44	Pitch=10mm	2
..2		07-20150-60	Metal Film Resistor	15Ω, 0.6W, ±5%	R448, R449	Pitch=10mm	2
..2		07-20180-60	Metal Film Resistor	18Ω, 0.6W, ±5%	R437, R429	Pitch=10mm	2
..2		07-22109-10	Metal Film Resistor	21Ω, 1/4W, ±1%	R417	Pitch=10mm	1
..2		07-20330-10	Metal Film Resistor	33Ω, 1/4W, ±5%	R408, R420	Pitch=10mm	2
..2		07-20820-10	Metal Film Resistor	82Ω, 1/4W, ±5%	R407, R477	Pitch=10mm	2
..2		07-20101-10	Metal Film Resistor	100Ω, 1/4W, ±5%	R403, R404, R406, R412, R414, R418	Pitch=10mm	6
..2		07-20221-10	Metal Film Resistor	220Ω, 1/4W, ±5%	R447	Pitch=10mm	1

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
..2		07-20301-10	Metal Film Resistor	300Ω, 1/4W, ±5%	R428	Pitch=10mm	1
..2		07-20471-10	Metal Film Resistor	470Ω, 1/4W, ±5%	R401	Pitch=10mm	1
..2		07-20681-10	Metal Film Resistor	680Ω, 1/4W, ±5%	R453	Pitch=10mm	1
..2		07-20102-10	Metal Film Resistor	1K, 1/4W, ±5%	R41	Pitch=10mm	1
..2		07-21001-10	Metal Film Resistor	1K, 1/4W, ±1%	R446	Pitch=10mm	1
..2		07-20102-02	Metal Film Resistor	1K, 1/6W, ±5%	R461, R4A6	Pitch=7.5mm	2
..2		07-20122-10	Metal Film Resistor	1K2, 1/4W, ±5%	R42	Pitch=10mm	1
..2		07-21201-10	Metal Film Resistor	1K2, 1/4W, ±1%	R445	Pitch=10mm	1
..2		07-20202-01	Metal Film Resistor	2K, 1/6W, ±5%	R4A1, R4A3	Pitch=7.5mm	2
..2		07-20222-01	Metal Film Resistor	2.2K, 1/6W, ±5%	R4A2	Pitch=7.5mm	1
..2		07-26341-01	Metal Film Resistor	6K34 Ω, 1/6W, ±1%	R4A5	Pitch=7.5mm	1
..2		07-20103-60	Metal Film Resistor	10KΩ, 0.6W, ±5%	R455, R458	Pitch=10mm	2
..2		07-20103-01	Metal Film Resistor	10KΩ, 1/6W, ±5%	R4A4	Pitch=7.5mm	1
..2		07-21742-01	Metal Film Resistor	17K4, 1/6W, ±1%	R4A7	Pitch=7.5mm	1
..2		07-22002-10	Metal Film Resistor	20K, 1/4W, ±1%	R427	Pitch=10mm	1
..2		07-20273-10	Metal Film Resistor	27K, 1/4W, ±5%	R405, R413	Pitch=10mm	2
..2		07-20393-10	Metal Film Resistor	39K, 1/4W, ±5%	R421, R425	Pitch=10mm	2
..2		07-20104-01	Metal Film Resistor	100K, 1/6W, ±5%	R473	Pitch=7.5mm	1
..2		07-20104-10	Metal Film Resistor	100K, 1/4W, ±5%	R424, R426	Pitch=10mm	2
..2		07-20104-01	Metal Film Resistor	100K, 1/6W, ±5%	R466, R497	Pitch=7.5mm	2
..2		07-20204-01	Metal Film Resistor	200K, 1/6W, ±5%	R47	Pitch=7.5mm	1
..2		07-20224-10	Metal Film Resistor	220K, 1/4W, ±5%	R450, R476	Pitch=10mm	2
..2		07-20105-10	Metal Film Resistor	1M, 1/4W, ±5%	R452, R454	Pitch=10mm	2
..2		07-30108-10	Oxidized Film Resistor	0.1Ω, 1W, ±5%	R4B1, R4B2, R4B3, R4B4, R4B5, R4B6, R4B7, R4B8	Pitch=15mm	8
..2		07-30229-10	Resistor	2R2, 1/4W, ±5%	R480, R481, R482, R483, R484, R485, R486, R487	Pitch=10mm	8
..2		07-30339-12	Oxidized Film Resistor	3R3Ω, 1/2W, ±5%	R430, R438	Pitch=10mm	2
..2		07-30820-00	Oxidized Film Resistor	82Ω, 1/2W, ±5%	R409, R423	Pitch=10mm	2
..2		07-30331-11	Oxidized Film Resistor	330Ω, 1/2W, ±5%	R432, R441	Pitch=10mm	2
..2		07-30339-11	Oxidized Film Resistor	3.3 Ω, 1W, ±5%	R499	Pitch=12.5mm	1
..2		07-31201-03	Oxidized Film Resistor	1K2, 3W, ±2% TCR=100	R419, R422	Pitch=20mm	2
..2		07-30472-04	Oxidized Film Resistor	4K7Ω, 3W, ±5%	R434, R444, R495, R496	Pitch=20mm	4
..2		07-30229-02	Oxidized Film Resistor	2.2 Ω, 2W, ±5%	R459	Pitch=15mm	1
..2		07-40507-05	Ceramic Resistor	0.05Ω, 5W, ±10%	R456, R457	Pitch=10mm	2
..2		07-50479-02	Fusible	4R7Ω, 1/2W, ±5%	R431, R439	Pitch=12.5mm	2
..2		07-70471-08	Posistor	T=80 C degree	RT401	Pitch=5mm	1
..2		07-70022-09	Thermal Breaker	TO=90 C degree	B401	Pitch=5mm	1
INDUCTORS							
..2		08-01010-00	Inductor	1uH, 10%	L402	Pitch=12.5mm	1
..2		08-01101-01	Inductor	100uH, 20%	L401	Pitch=5mm	1
POTS							
..2		09-02201-01	Semi-POT	200 Ω	VR401	VR	1
RELAY							
..2		12-03101-03	Relay	24V	RL401, RL402		2
CONNECTOR							
..2		13-12502-00	Test Pin	2pin 2.54	TP401		1
..2		13-22502-00	Connector	2PIN	CZ401	S=2.5mm	1
..2		13-21210-00	Connector	10PIN	CZ402	CB10/S=1.25mm	1
..2		13-13908-01	Connector	3.96 8PIN, gold plated	CZ403		1
..2		76-050001-0	Teflon	15mm 24AWG	RT401		2
..2		76-048001-0	Teflon	12mm 24AWG	B401		2
PCB							
..2		16-53006-12	R CHANNEL PCB	VM2.0, FR-4, 1.6mm, 320mmx80mm			1
...3		16-53060-10	PCB	VM2.0, FR-4, 1.6mm, 333mmx177mm			1/2
MECHANICAL PARTS							
..2		62-050302-0	PEM NUT-PCB	M3x0.5, KFEB, copper made	P401, P402, P403, P404		4
..2		70-048004-0	Small Heatsink	6063, T5			1
..2		70-048005-0	Small Heatsink B	6063, T5			1
..2		61-023206-0	Self Taping Screws	BTB3x6,	little heatsink(2), little heatsinkB(2), transistor(6)		10
..2		61-023208-0	Self Taping Screws	BTB3x8,	transistor(5)		5
..2		69-048029-0	Busbar C	T2Y2, 0.1μm gold plated			2
.1		P/N: 01-50305-00	POWER BOARD				
DIODE							
..2		33-44148-02	Switch Diode	1N4148	D605, D606, D607, D705, D706, D707	Pitch=7.5mm	6
..2		33-44148-03	Switch Diode	1N4148	D91, D92, D601, D608, D609, D610, D615, D616, D701, D708, D709, D710, D715, D716	Pitch=10mm	14
..2		33-40021-01	Switch Diode	BAV21	D613, D617, D713, D717	Pitch=10mm	4
..2		33-15609-04	Zener Diode	5V6, 1/2W	D619, D719	Pitch=10mm	2

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
..2		33-16809-01	Zener Diode	6.8V, 1/2W	D614, D714	Pitch=10mm	2
..2		33-25404-03	Rectifier Diode	1N5404	D604, D704	Pitch=17.5mm	2
...3		33-25404-00	Rectifier Diode	1N5404, Taping	D604, D704	DO-27	2
..2		33-60116-00	Thyristor	BT151-500R	D602, D603, D702, D703	TO-220	4
..2		33-30142-00	Rectifier Bridge	DB104	B605, B606, B705, B706	BRIDGE 6X9	4
..2		33-31042-10	Rectifier Bridge	KBU1004	B603, B604, B703, B704	BRIDGEGBU	4
TRANSISTOR							
..2		31-00872-00	Transistor	2SA872AE	Q613, Q713	TO-92	2
..2		31-00970-00	Transistor	2SA970	Q605, Q606, Q705, Q706	TO-92	4
..2		31-01775-00	Transistor	2SC1775AE	Q610, Q611, Q710, Q711	TO-92	4
..2		31-01015-00	Transistor	2SA1015-GR	Q603, Q607, Q621, Q703, Q707, Q721, Q92, Q91,	TO-92	8
..2		31-01815-00	Transistor	2SC1815-GR	Q601, Q604, Q608, Q620, Q701, Q704, Q708, Q720,	TO-92	8
..2		31-01220-00	Transistor	KSA1220	Q612, Q712	TO-126MOD	2
..2		31-02690-00	Transistor	KSC2690	Q609, Q709	TO-126MOD	2
ICS							
..2		03-00082-00	Dual OP-AMP	TL082CP/D	IC605, IC705	DIP8	2
..2		03-00317-00	Regulator	LM317M	IC603, IC703	TO-220	2
..2		03-00337-00	Regulator	LM337M	IC604, IC704	TO-220	2
..2		03-00817-00		PC817B	OP91, OP92	DIP4	2
CAPACITOR							
..2		05-47012-00	Ceramic Disc Capacitor	47pF, 100V, ±10%	C640, C641, C740, C741	Pitch=5mm	4
..2		05-47242-00	High Voltage Ceramic Capacitor	4700p, 400V, ±20%, CT81	C92, C78	Pitch=10mm	2
..2		78-001001-0	Sleeve Boot	811810-23			2
..2		25-22361-05	Metallized Polyester Film Capacitor	22nF, 63V, ±5%	C644, C645, C650, C651, C656, C657, C744, C745, C750, C751, C756, C757	Pitch=5mm	12
..2		25-22312-06	Metallized Polyester Film Capacitor	22nF, 100V, ±5%	C622, C623, C722, C723, C632, C633, C732, C733, C720, C721	Pitch=5mm	10
..2		25-22312-08	Metallized Polyester Film Capacitor	22nF, 100V, ±5%	C620, C621,	Pitch=7.5mm	2
..2		25-22322-04	Metallized Polyester Film Capacitor	22nF, 250V, ±10%	C617, C618, C630, C631, C717 C718, C730, C731	Pitch=7.5mm	8
..2		25-10461-07	Metallized Polyester Film Capacitor	0.1uF, 63V, ±5%	C605, C705	Pitch=5mm	2
..2		06-10951-00	Alu Electrolytic Capacitor	1uF, 50V, ±20%	C660, C662, C667, C760, C762, C767	Pitch=5mm	6
..2		06-47951-00	Alu Electrolytic Capacitor	4.7uF, 50V, ±20%	C601, C701	Pitch=5mm	2
..2		06-10051-00	Alu Electrolytic Capacitor	10uF, 50V, ±20%	C652, C653, C661, C664, C669, C752, C753, C761, C764, C769	Pitch=5mm	10
..2		06-10012-00	Alu Electrolytic Capacitor	10uF, 100V, ±20%	C642, C742, C643, C743	Pitch=5mm	4
..2		06-22051-00	Alu Electrolytic Capacitor	22uF, 50V, ±20%	C654, C655, C754, C755	Pitch=5mm	4
..2		06-22012-00	Alu Electrolytic Capacitor	22uF, 100V, ±20%	C646, C647, C746, C747	Pitch=5mm	4
..2		06-10112-00	Alu Electrolytic Capacitor	100uF, 100V, ±20%	C636, C637, C638, C639, C736, C737, C738, C739	Pitch=5mm	8
..2		06-10212-01	Alu Electrolytic Capacitor	1000uF, 100V, ±20%	C634, C635, C734, C735	Pitch=10mm	4
..2		06-22251-03	Alu Electrolytic Capacitor	2200uF, 50V, ±20%	C648, C649, C748, C749	Pitch=7.5mm	4
..2		06-22381-02	Alu Electrolytic Capacitor	22000uF, 80V, ±20%, φ40mmx80	C627, C666, C727, C766	4PIN	4
RESISTOR							
..2		07-10100-10	Carbon Film Resistor	10Ω, 1/4W, ±5%	R666, R671, R766, R771	Pitch=10mm	4
..2		07-10101-10	Carbon Film Resistor	100Ω, 1/4W, ±5%	R606, R607, R693, R706, R707, R793	Pitch=10mm	6
..2		07-10102-10	Carbon Film Resistor	1K, 1/4W, ±5%	R603, R604, R605, R608, R616, R617, R618, R619, R620, R621, R624, R626, R627, R703, R704, R705, R708, R716, R717, R718, R719, R720, R721, R724, R726, R727	Pitch=10mm	26
..2		07-10202-10	Carbon Film Resistor	2K, 1/4W, ±5%	R93,	Pitch=10mm	1
..2		07-10472-10	Carbon Film Resistor	4K7, 1/4W, ±5%	R97,	Pitch=10mm	1
..2		07-10222-10	Carbon Film Resistor	2K2Ω, 1/4W, ±5%	R625, R725	Pitch=10mm	2
..2		07-10103-10	Carbon Film Resistor	10KΩ, 1/4W, ±5%	R654, R659, R754, R759, R91, R92, R96	Pitch=10mm	7
..2		07-10123-10	Carbon Film Resistor	12KΩ, 1/4W, ±5%	R95	Pitch=10mm	1
..2		07-10223-10	Carbon Film Resistor	22KΩ, 1/4W, ±5%	R601, R609, R614, R615, R701, R709, R714, R715, R94	Pitch=10mm	9
..2		07-10913-10	Carbon Film Resistor	91KΩ, 1/4W, ±5%	R602, R702	Pitch=10mm	2
..2		07-20910-10	Metal Film Resistor	91Ω, 1/4W, ±5%	R98	Pitch=10mm	1
..2		07-21000-10	Metal Film Resistor	100Ω, 1/4W, ±1%	R611, R711	Pitch=10mm	2
..2		07-22400-10	Metal Film Resistor	240Ω, 1/4W, ±1%	R633, R635, R733, R735	Pitch=10mm	4
..2		07-23601-10	Metal Film Resistor	3K6, 1/4W, ±1%	R632, R634, R732, R734	Pitch=10mm	4
..2		07-25101-60	Metal Film Resistor	5k1Ω, 0.6W, ±1%	R628, R728	Pitch=10mm	2
..2		07-22001-60	Metal Film Resistor	2kΩ, 0.6W, ±1%	R630, R730	Pitch=10mm	2
..2		07-29101-10	Metal Film Resistor	9K1Ω, 1/4W, ±1%	R664, R669, R764, R769, R612, R712,	Pitch=10mm	6
..2		07-21002-10	Metal Film Resistor	10KΩ, 1/4W, ±1%	R629, R631, R729, R731,	Pitch=10mm	4
..2		07-21502-10	Metal Film Resistor	15KΩ, 1/4W, ±1%	R665, R765, R670, R770,	Pitch=10mm	4
..2		07-20183-10	Metal Film Resistor	18KΩ, 1/4W, ±5%	R652, R752	Pitch=10mm	2
..2		07-20473-10	Metal Film Resistor	47KΩ, 1/4W, ±5%	R643, R743	Pitch=10mm	2

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
..2		07-26202-10	Metal Film Resistor	62KΩ, 1/4W, ±1%	R658, R758	Pitch=10mm	2
..2		07-20104-10	Metal Film Resistor	100KΩ, 1/4W, ±5%	R656, R756	Pitch=10mm	2
..2		07-20154-10	Metal Film Resistor	150KΩ, 1/4W, ±5%	R667, R767	Pitch=10mm	2
..2		07-20224-10	Metal Film Resistor	220KΩ, 1/4W, ±5%	R655, R661, R755, R761, R751, R651,	Pitch=10mm	6
..2		07-20474-10	Metal Film Resistor	470KΩ, 1/4W, ±5%	R613, R713	Pitch=10mm	2
..2		07-20684-10	Metal Film Resistor	680KΩ, 1/4W, ±5%	R636, R736	Pitch=10mm	2
..2		07-40257-03	Cement Resistor	0.025Ω, 3W, ±2%	R610, R710	Pitch=10mm	2
..2		07-50339-01	Fusible Resistor	3.3Ω, 1/2W, ±5%	R622, R623, R722, R723	Pitch=12.5mm	4
..2		07-50228-11	Fusible Resistor	0.22 Ω, 1W, ±10%	R646, R647, R746, R747	Pitch=12.5mm (D3.9xL10.5)	4
..2		07-50228-12	Fusible Resistor	0.22 Ω, 1/2W, ±10%	R648, R649, R748, R749	Pitch=12.5mm	4
POTS							
..2		09-02682-00	Semi-POT	6K8Ω	VR601, VR701	VR	2
CONNECTOR							
..2		13-12503-00	Connector	3PIN.2.54	TP601, TP701	S=2.5mm	2
..2		13-22504-00	Connector	LD2.5A-4A	CZ74	S=2.5mm	1
..2		13-22516-01	Connector	3012-16GRB	CZ73, CZ75	S=2.5mm	2
..2		13-21030-02	FFC Socket	1.0-15-30P	CZ72		1
..2		13-23905-30	Connector	B5P-VH	CB603, CB604, CB703, CB704	S=3.9mm	4
..2		13-23902-30	Connector	B2P-VH	CB601, CB701	S=3.9mm	2
..2		13-23903-11	Connector	7.92A-2A VH	S1	S=7.92mm	1
..2		13-23905-04	Connector	09-48-4058	CZ71	S=3.9mm	1
..2		13-21210-00	Connector	10PIN	CZ603, CZ703	CB10	2
..2		17-07102-00	AC INLET	GSP1.9500.1/R-30190 2PIN	AC INLET		1
SWITCHES							
..2		11-01101-03	Power Switch	RF-1003-BB2	S1	POWER2	1
AC FILTER							
..2		22-00010-00	EMI FILTER	250V 10A 50/60HZ	EMI FILTER		1
RELAY							
..2		12-02101-04	Relay	DH1U 15A/250V 12V	RL91		1
JUMPER							
..2		21-10101-00	Link	L=10mm	J603, J701, J703		3
..2		21-10201-00	Link	L=20mm	J602, J702		2
PCB							
..2		16-53005-00	PSU PCB	FR-4, 1.6mm, 280mmx216mm			1
MECHANICAL PARTS							
..2		62-050302-0	PEM NUT-PCB	M3x0.5, KFEB, copper made	P601, P602, P603, P604, P701, P702, P703, P704		8
..2		61-023206-0	Self Taping Screws	BTB3x6,	AC INLET(2)		2
..2		70-004001-0	Heat sink	F25			4
..2		70-048015-0	Heat sink	Heatsink D			8
..2		61-023206-0	SCREW	BTB3x6	BT151(F25) LM337 LM317		8
..2		61-023208-0	SCREW	BTB3x8	KSA1220 KSC2690		4
..2		61-023508-0	SCREW	MB3x8,	Filter(2)		2
..2		62-010302-1	NUT	M3 NUT			2
..2		75-048023-0	Heat sink Washer	epon(YELLOW), T=0.5mm			4
..1		P/N: 01-50303-00	CONNECT BOARD				
DIODE							
..2		33-12400-11	Zener Diode	24V, 1/2W	D990, D991	MINIMELF	2
TRANSISTOR							
..2		31-02983-01	Transistor	2SC2983Y	Q991, Q990	2-7J1A	2
CAPACITOR							
..2		26-10451-01	Ceramic Chip Capacitor	100N	C991, C993	0805	2
..2		06-10031-02	Chip Alu Electrolytic Capacitor	10uF, 35V, ±20%	C994, C990	5x5.4	2
RESISTOR							
..2		07-90562-01	Chip Resistor	5.6K	R990, R991	0805	2
CONNECTOR							
..2		13-22526-02	CONNECTOR	26PIN	CZ94	S=2.5mm	1
..2		13-22514-02	CONNECTOR	14PIN	CZ93	S=2.5mm	1
..2		13-22516-02	CONNECTOR	16PIN	CZ92, CZ97	S=2.5mm	2
PCB							
..2		16-53003-00	CONNECT PCB	FR-4, 1.6mm, 62mmx68mm			1
..2		16-53010-00	PCB	FR-4, 1.6mm, 170mmx320mm			1/6
MECHANICAL PARTS							

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
..2		85-008001-1	Spacer Support	PMB-1			1
..2		61-023208-0	Self Taping Screws	BTB3x8,	PCB INTERVAL(1)		1
..1		P/N:01-50309-00 PREM BOARD					
DIODE							
..2		33-44148-11	Switch Diode SMD	LL4148	1D12, 1D13, 1D14, 2D12, 2D13, 2D14, 2D01, 2D02, 2D03, 2D04, 2D05, 2D06, 2D07, 2D08, 2D09, 2D10, 2D11, 2D15, 2D16	MINIMELF	19
..2		33-12409-01	Zener Diode SMD	2.4V, 1/2W	1D19, 1D20, 1D21, 2D21	MINIMELF	4
..2		33-12000-11	Zener Diode	20V, 1/2W	1D17, 1D18, 2D17, 2D18	MINIMELF	4
TRANSISTOR							
..2		31-00114-01	Digital transistor	DTA114EKA	1Q14 1Q16 1Q18 2Q14 2Q16 2Q18 2Q24	SC59	7
..2		31-00114-05	Digital transistor	DTC114EKA	1Q13 1Q15 1Q17 2Q13 2Q15 2Q17 2Q23	SC59	7
..2		31-01815-01	Transistor	2SC1815	2Q19, 1Q19, 2Q01, 2Q02, 2Q03, 2Q04 2Q05 2Q06 2Q07 2Q08 2Q09 2Q10 2Q11 2Q12	SC59	14
..2		31-03326-01	Transistor	2SC3326A	Q101, Q102, Q103, Q201, Q202, Q203, 1Q27,1Q28, Q230, Q231	SC59	10
..2		31-01220-00	Transistor	KSA1220AYSTU	1Q21, 2Q21	TO-126	2
..2		31-02690-00	Transistor	KSC2690AYASTU	1Q22, 2Q22	TO-126	2
ICS							
..2		03-04094-02	REGISTER	CD4094	U110, U210,U208, U213	DSOP16	4
..2		03-02134-00	Opamp	OPA2134UA	U206, U211	SO8	2
..2		03-08512-01	Opamp	AD8512ARZ	U102, U202	SO-8	2
..2		03-92740-01	Analog Switch	TC9274F-001	U105, U205, U209	QFP44-P-1414	3
..2		03-04621-01	Analog Switch	MAx4621CSE	U104, U107, U204, U207	SO16	4
CAPACITOR							
..2		26-22051-01	Ceramic Chip Capacitor	22pF, 50V,±5%	C107, C108, C207, C208	0805	4
..2		26-10151-01	Ceramic Chip Capacitor	100pF, 50V,±5%	1C26, 1C27, 1C28, C214, C114, 2C02, 2C04, 2C06, 2C08, 2C10, 2C12, 2C26, 2C28, 2C27, 2C14, 2C16, 2C18, 2C20, 2C22, 2C23, 2C53, C201, C202, C203, C204, C205, C206, C235, C237, C220, C221, C222, C223, C224, C225	0805	35
..2		26-22151-01	Ceramic Chip Capacitor	220pF, 50V,±5%	1C59, C232	0805	2
..2		26-22251-21	Ceramic Chip Capacitor	2.2nF, 50V,±5%	C140, C141, C142, C240, C241, C242	0805	6
..2		26-10351-01	Ceramic Chip Capacitor	10nF, 50V,±10%	1C23, 2C01, 2C03, 2C05, 2C07, 2C09, 2C11, 2C13, 2C15, 2C17, 2C19, 2C21	0805	12
..2		26-10451-01	Ceramic Chip Capacitor	100nF, 50V,+80%-20%	1C24, 1C25, 1C33, 1C34, 1C35, 1C36, 1C37, 1C38, 1C39, 1C40, 1C41, 1C42, 1C43, 1C46, 1C47, 1C48, 2C24, 2C25, 2C33, 2C34, 2C35, 2C36, 2C37, 2C38, 2C39, 2C40, 2C41, 2C42, 2C43, 2C46, 2C47, 2C48, 2C49, 2C50, 2C51, 2C52, C217, C230, C231, C233	0805	40
..2		26-10511-01	Ceramic Chip Capacitor	1uF, 16V, ±10%	C119, C128, C219, C228	0805	4
..2		25-56361-00	Metallized Polyester Film Capacitor	56nF, 63V, ±5%	C216	Pitch=5mm	1
..2		25-10461-07	Metallized Polyester Film Capacitor	100nF, 63V, ±5%	C215	Pitch=5mm	1
..2		25-22461-02	Metallized Polyester Film Capacitor	220nF, 63V, ±5%	C118, C138, C218, C238, 2C60	Pitch=5mm	5
..2		25-10561-02	Metallized Polyester Film Capacitor	1uF, 63V, ±5%	C139, C239, C129, C229	Pitch=5mm	4
..2		06-10111-10	Alu Electrolytic Capacitor	100uF, 16V, ±20%, CD11A	C126, C226	Pitch=5mm	2
..2		06-22111-10	Alu Electrolytic Capacitor	220uF, 16V, ±20%, CD11A	C136, C236	Pitch=5mm	2
RESISTOR							
..2		07-90000-01	Chip Resistor	0Ω, ±5%	1R102, 1R70	0805	2
..2		07-90000-02	Chip Resistor	0Ω, ±5%	L1, L2, L3, L4	1206	4
..2		07-99097-01	Chip Resistor	0.909Ω, ±1%	R143, R243	0805	2
..2		07-91158-01	Chip Resistor	1.15Ω, ±1%	R142, R242	0805	2
..2		07-91478-01	Chip Resistor	1.47Ω, ±1%	R141, R241	0805	2
..2		07-91508-01	Chip Resistor	1.5Ω, ±1%	1R105, 2R105	0805	2
..2		07-91878-01	Chip Resistor	1.87Ω, ±1%	R140, R240	0805	2
..2		07-92328-01	Chip Resistor	2.32Ω, ±1%	R139, R239	0805	2
..2		07-92808-01	Chip Resistor	2.8Ω, ±1%	R138, R238	0805	2
..2		07-90339-01	Chip Resistor	3.3Ω, ±5%	1R108	0805	1
..2		07-93578-01	Chip Resistor	3.57Ω, ±1%	R144, R244	0805	2
..2		07-93658-01	Chip Resistor	3.65Ω, ±1%	R137, R237	0805	2
..2		07-94758-01	Chip Resistor	4.75Ω, ±1%	R136, R236	0805	2
..2		07-95908-01	Chip Resistor	5.90Ω, ±1%	R135, R235	0805	2
..2		07-96818-01	Chip Resistor	6.81Ω, ±1%	R134, R234	0805	2
..2		07-99538-01	Chip Resistor	9.53Ω, ±1%	R133, R233	0805	2
..2		07-91009-01	Chip Resistor	10Ω, ±1%	R14, R16, R24, R26	0805	4
..2		07-91189-01	Chip Resistor	11.8Ω, ±1%	R232, R132	0805	2

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
..2		07-91509-01	Chip Resistor	15Ω, ±1%	R131, R231	0805	2
..2		07-91879-01	Chip Resistor	18.7Ω, ±1%	R130, R230	0805	2
..2		07-92329-01	Chip Resistor	23.2Ω, ±1%	R229, R129	0805	2
..2		07-92749-01	Chip Resistor	27.4Ω, ±1%	R1002, R2002	0805	2
..2		07-92809-01	Chip Resistor	28Ω, ±1%	R1001, R2001	0805	2
..2		07-92879-01	Chip Resistor	28.7Ω, ±1%	R128, R228	0805	2
..2		07-93309-01	Chip Resistor	33Ω, ±1%	R285, R112, R212, R185	0805	4
..2		07-93839-01	Chip Resistor	38.3Ω, ±1%	R127, R227	0805	2
..2		07-94649-01	Chip Resistor	46.4Ω, ±1%	R126, R226	0805	2
..2		07-95769-01	Chip Resistor	57.6Ω, ±1%	1R94, 2R94	0806	2
..2		07-95909-01	Chip Resistor	59Ω, ±1%	R125, R225	0805	2
..2		07-96049-01	Chip Resistor	60.4Ω, ±1%	R186, R187, R286, R287	0805	4
..2		07-97509-01	Chip Resistor	75Ω, ±1%	R124, R224	0805	2
..2		07-98459-01	Chip Resistor	84.5Ω, ±1%	1R95, 2R95	0805	2
..2		07-99539-01	Chip Resistor	95.3Ω, ±1%	R123, R223	0805	2
..2		07-99769-01	Chip Resistor	97.6Ω, ±1%	R170, R270	0805	2
..2		07-91210-01	Chip Resistor	121Ω, ±1%	R122, R222	0805	2
..2		07-91500-01	Chip Resistor	150Ω, ±1%	R121, R221	0805	2
..2		07-91800-01	Chip Resistor	180Ω, ±1%	1R88, 1R92, 2R88, 2R92	0805	4
..2		07-91910-01	Chip Resistor	191Ω, ±1%	R120, R220, R173, R273,	0805	4
..2		07-91960-01	Chip Resistor	196Ω, ±1%	R174, R274	0805	2
..2		07-92000-01	Chip Resistor	200Ω, ±1%	1R63, 1R64, R289, R293	0805	4
..2		07-92200-01	Chip Resistor	220Ω, ±1%	R201, R203, R205, R207, R209, R211, R213, R113	0805	8
..2		07-92550-01	Chip Resistor	255Ω, ±1%	R119, R219	0805	2
..2		07-92940-01	Chip Resistor	294Ω, ±1%	R118, R218	0805	2
..2		07-93570-01	Chip Resistor	357Ω, ±1%	R117, R217	0805	2
..2		07-94300-01	Chip Resistor	430Ω, ±1%	2R39, 2R40, 2R43, 2R44	0805	4
..2		07-94530-01	Chip Resistor	453Ω, ±1%	R116, R216	0805	2
..2		07-91001-01	Chip Resistor	1k, ±1%	1R75, 1R77, 1R79, 1R80, 1R82, 1R83, 2R75, 2R77, 2R79, 2R80, 2R82, 2R83,	0805	12
..2		07-93241-01	Chip Resistor	3.24KΩ, ±1%	R176, R276	0805	2
..2		07-90472-01	Chip Resistor	4K7Ω, ±5%	1R23, 2R01, 2R02, 2R03, 2R04, 2R05, 2R06, 2R07, 2R08, 2R09, 2R10, 2R11, 2R12, 2R13, 2R14, 2R15, 2R16, 2R17, 2R18, 2R19, 2R20, 2R21, 2R22, 2R23	0805	24
..2		07-95101-01	Chip Resistor	5K1Ω, ±1%	1R47, 1R48, 1R55, 1R56, 1R60	0805	5
..2		07-95601-01	Chip Resistor	5K6Ω, ±1%	2R38, 2R41, 2R42, 2R45	0805	4
..2		07-96651-01	Chip Resistor	6.65KΩ, ±1%	R175, R275	0805	2
..2		07-91002-01	Chip Resistor	10KΩ, ±1%	1R71, 1R101, 1R69, 1R59, 1R76, 1R78, 1R81, 1R87, 1R91, 1R103, 2R76, 2R78, 2R81, 2R87, 2R91,	0805	15
..2		07-92202-01	Chip Resistor	22KΩ, ±1%	1R85, 2R85	0805	2
..2		07-92802-01	Chip Resistor	28KΩ, ±1%	R292	0805	1
..2		07-93302-01	Chip Resistor	33KΩ, ±1%	R184, R284	0805	2
..2		07-93742-01	Chip Resistor	37K4Ω, ±1%	R291	0805	1
..2		07-90104-01	Chip Resistor	100KΩ, ±5%	1R68, R295	0805	2
..2		07-91003-01	Chip Resistor	100KΩ, ±1%	R13, R15, R23, R25	0805	4
..2		07-90224-01	Chip Resistor	220KΩ, ±5%	R177, R277	0805	2
..2		07-90304-01	Chip Resistor	300KΩ, ±5%	R288	0805	1
..2		07-90105-01	Chip Resistor	1MΩ, ±5%	R182, R282, R22, R183, R202, R204, R206, R208, R210, R283, R290, 1R89, 2R89, 1R93, 2R93, 1R90, 2R90	0805	17
..2		07-90225-01	Chip Resistor	2M2Ω, ±5%	R178, R278	0805	2
..2		07-96040-02	Chip Resistor	604Ω, ±1%	R171, R172, R271, R272	1206	4
..2		07-21911-60	Chip Resistor	1K91Ω, ±1% 0.6W	R181, R281	Pitch=10mm	2
..2		07-24990-60	Chip Resistor	499Ω, ±1% 0.6W	R179, R279, 1R84, 2R84	Pitch=10mm	4
..2		07-24420-60	Chip Resistor	442Ω, ±1% 0.6W	1R86, 2R86	Pitch=10mm	2
RELAY							
..2		12-02202-04	Relay	24V	RL201, RL202, RL203, RL204, RL205, RL206, RL207, RL208, RL209, RL210, RL211, RL212		12
Connector							
..2		13-22503-00	Connector	3PIN	J103, J203	S=2.5mm	2
..2		13-22504-06	Connector	4PIN	J104, J204, J105, J205	S=2.5mm	4
..2		13-21210-00	Connector	10PIN	J108, J208	S=1.25mm	2
..2		13-22526-00	Connector	26PIN	J201	S=2.5mm	1
..2		13-22508-01	Connector	8PIN	J101	S=2.5mm	1
..2		17-01001-16	RCA	HANSONG RCA,RED	RRCA1, RRCA2, RRCA3, RRCA4, RRCA5, RRCA6, RRCA7, RRCA8, RRCA9, RRCA10	RCAM	10
MECHANICAL PARTS							
..2		61-022206-0	Self Taping Screws	BTB2×6,	MODULE HOUSE(8)		8
..2		69-048027-0	PRE-BUSBAR L	PRE-BUSBAR L, 0.1u GOLD PLATED	H107	BUS BARD	1

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
..2		69-048028-0	PRE-BUSBAR R	PRE-BUSBAR R, 0.1u GOLD PLATED	H207	BUS BARD	1
PCB							
..2		16-53009-00	PREMAIN BOARD	FR-4, 1.6mm, 150mmx240mm			1
...3		16-53020-00	PCB	FR-4, 1.6mm, 220mmx250mm			1/2
..2		01-50310-00	Line/Drive Amp	PREAMP MODULE	U101, U201		2
...3		01-50310-01	MODULE BOARD				4
DIODE							
....4		33-44148-11	Switch Diode SMD	LL4148	MD106, MD107, MD108, MD109, MD110	LL34	5x4
....4		33-15609-03	Zener Diode	5V6, 1/2W	MD101	LL34	1x4
TRANSISTOR							
....4		31-00209-00	J-FET	2SK209GR	MQ110	SOT-23 (SC-59)	1x4
....4		31-01312-00	Transistor	2SA1312	MQ106, MQ107, MQ108, MQ109	SOT-23	4x4
....4		31-03324-00	Transistor	2SC3324	MQ103, MQ111, MQ112, MQ101	SOT-23	4x4
....4		31-01225-00	Transistor	2SA1225Y	MQ115	2-7B1A	1x4
....4		31-02983-00	Transistor	2SC2983Y	MQ114	2-7B1A	1x4
CAPACITOR							
....4		26-22151-01	Ceramic Chip Capacitor	220pF, 50V, ±5%	MC112	0805	1x4
....4		26-47151-01	Ceramic Chip Capacitor	470pF, 50V, ±5%	MC107	0805	1x4
....4		26-10251-11	Ceramic Chip Capacitor	1N, 50V, ±5%	MC105, MC106	0805	2x4
....4		26-22251-21	Ceramic Chip Capacitor	2N2, 50V, ±5%	MC110	0805	1x4
....4		26-10351-01	Ceramic Chip Capacitor	10N, 50V, ±10%	MC111	0805	1x4
....4		26-10451-01	Ceramic Chip Capacitor	100N, 50V, +80%-20%	MC108, MC109, MC101	0805	3x4
RESISTOR							
....4		07-90270-01	Chip Resistor	27Ω, ±5%	MR111	0805	1x4
....4		07-90750-01	Chip Resistor	75Ω, ±5%	MR110	0805	1x4
....4		07-90101-01	Chip Resistor	100Ω, ±5%	MR108, MR112, MR113	0805	3x4
....4		07-90221-01	Chip Resistor	220Ω, ±5%	MR109, MR114, MR118	0805	3x4
....4		07-90223-01	Chip Resistor	22KΩ, ±5%	MR117	0805	1x4
....4		07-90333-01	Chip Resistor	33KΩ, ±5%	MR101	0805	1x4
....4		07-90100-05	Chip Resistor	10Ω, 1/2W, ±5%	MR115, MR116	2010	2x4
CONNECTOR							
....4		13-12506-04	6PIN CONNECTOR	2.54, 6PIN,15mm	MP101	SIP6	1x4
PCB							
....4		16-53013-00	PCB	FR-4, 1.6mm, 36mmx24mm			1x4
.....5		16-53040-00	PCB	FR-4, 1.6mm, 120mmx180mm			1/10x4
MECHANICAL PARTS							
...3		70-048002-0	Module Base	6063, T5			2
...3		70-048003-0	Module Cover	6063, T5			2
...3		66-048001-0	Tr. Bracket	SECC N4 T=1.0			4
...3		61-062206-1	Self Taping Screws	BTF2x6,	MODULE HOUSE(8)		8
...3		61-062108-1	Self Taping Screws	STF2x8,	MODULE HOUSE(4)		4
...3		78-048004-0	Insulated Cashion	10x15mm			8
.1		P/N: 01-50312-00	TONE BOARD				
DIODE							
..2		33-12409-01	Zener Diode	2.4V, 1/2W	2D19	MINIMELF	1
TRANSISTOR							
..2		31-00108-01	J-FET	MMBFJ108	Q107, Q108, Q109, Q110, Q111, Q112, Q113, Q114, Q115, Q116, Q117, Q118, Q119, Q120, Q121, Q122, Q123, Q124, Q125, Q126, Q127, Q128, Q207, Q208, Q209, Q210, Q211, Q212, Q213, Q214, Q215, Q216, Q217, Q218, Q219, Q220, Q221, Q222, Q223, Q224, Q225, Q226, Q227, Q228	SOT-23	44
ICs							
..2		03-92740-01	Analog Switch	TC9274F-001	U112	QFP44-P-1414	1
CAPACITOR							
..2		26-10451-01	Ceramic Chip Capacitor	100N, 50V, +80%-20%	1C29, 2C29, 1C30, 2C30,	0805	4
..2		25-22461-02	Metallized Polyester Film Capacitor	220nF, 63V, ±5%	C111, C211	Pitch=5mm	2
..2		25-82361-00	Metallized Polyester Film Capacitor	82nF, 63V, ±5%	C109, C209	Pitch=5mm	2
..2		25-33461-01	Metallized Polyester Film Capacitor	330nF, 63V, ±5%	C113, C213	Pitch=5mm	2
..2		25-10561-02	Metallized Polyester Film Capacitor	1uF, 63V, ±5%	C112, C212	Pitch=5mm	2

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
RESISTOR							
..2		07-91009-01	Chip Resistor	10Ω, ±1%	1R51, 1R52	0805	2
..2		07-91509-01	Chip Resistor	15Ω, ±1%	2R106, 1R106	0805	2
..2		07-94879-01	Chip Resistor	48.7Ω, ±1%	R156, R256	0805	2
..2		07-95369-01	Chip Resistor	53.6Ω, ±1%	R168, R268	0805	2
..2		07-96819-01	Chip Resistor	68.1Ω, ±1%	R155, R255	0805	2
..2		07-91000-01	Chip Resistor	100Ω, ±1%	R167, R267	0805	2
..2		07-91210-01	Chip Resistor	121Ω, ±1%	R154, R254, R157, R257	0805	4
..2		07-91500-01	Chip Resistor	150Ω, ±1%	R166, R266	0805	2
..2		07-91600-01	Chip Resistor	160Ω, ±1%	R147, R247	0805	2
..2		07-92490-01	Chip Resistor	249Ω, ±1%	R165, R265, R153, R253	0805	4
..2		07-92740-01	Chip Resistor	274Ω, ±1%	R148, R248	0805	2
..2		07-92870-01	Chip Resistor	287Ω, ±1%	R169, R269,	0805	2
..2		07-93090-01	Chip Resistor	309Ω, ±1%	R146, R246	0805	2
..2		07-93160-01	Chip Resistor	316Ω, ±1%	R159, R259	0805	2
..2		07-94020-01	Chip Resistor	402Ω, ±1%	R149, R249	0805	2
..2		07-94320-01	Chip Resistor	432Ω, ±1%	R160, R260	0805	2
..2		07-94870-01	Chip Resistor	487Ω, ±1%	R164, R264	0805	2
..2		07-96810-01	Chip Resistor	681Ω, ±1%	R161, R261	0805	2
..2		07-96980-01	Chip Resistor	698Ω, ±1%	R152, R252	0805	2
..2		07-98450-01	Chip Resistor	845Ω, ±1%	R163, R263	0805	2
..2		07-98660-01	Chip Resistor	866Ω, ±1%	R162, R262, R258, R158	0805	4
..2		07-98870-01	Chip Resistor	887Ω, ±1%	R150, R250	0805	2
..2		07-91581-01	Chip Resistor	1.58K, ±1%	R151, R251	0805	2
..2		07-91002-01	Chip Resistor	10KΩ, ±1%	2R46, 2R47, 2R48, 2R49, 2R50, 2R51, 2R52, 2R53, 2R54, 2R55, 2R56, 2R57, 2R58, 2R59, 2R60, 2R61, 2R62, 2R63, 2R64, 2R65, 2R66, 2R67	0805	22
..2		07-92002-01	Chip Resistor	20KΩ, ±1%	1R107, 2R107,	0805	2
..2		07-90106-01	Chip Resistor	10MΩ, ±5%	1R24, 1R25, 1R26, 1R27, 1R28, 1R29, 1R30, 1R31, 1R32, 1R33, 1R34, 1R35, 1R36, 1R37, 1R38, 1R39, 1R40, 1R41, 1R42, 1R43, 1R44, 1R45, 1R46, 2R24, 2R25, 2R26, 2R27, 2R28, 2R29, 2R30, 2R31, 2R32, 2R33, 2R34, 2R35, 2R36, 2R37, 2R68, 2R69, 2R70, 2R71, 2R72, 2R73, 2R74,	0805	44
CONNECTOR							
..2		13-12504-08	Connector	4PIN	J104T, J204T, J105T, J205T	S=2.5mm	4
PCB							
..2		16-53012-00	TON BOARD	FR-4, 1.6mm, 92mmx55mm			1
...3		16-53040-00	PCB	FR-4, 1.6mm, 120mmx180mm			1/10
.1		P/N: 01-50311-00					
DIODE							
..2		33-44148-11	Switch Diode SMD	LL4148	1D01, 1D02, 1D03, 1D04, 1D05, 1D06, 1D07, 1D08, 1D09, 1D10, 1D11, 1D15, 1D16,	MINIMELF	13
..2		33-12409-01	Zener Diode	2.4V, 1/2W	2D20	MINIMELF	1
TRANSISTOR							
..2		31-00114-01	Digital transistor	DTA114EKA	1Q24	SC59	1
..2		31-00114-05	Digital transistor	DTC114EKA	1Q23	SC59	1
..2		31-01815-01	Transistor	2SC1815	1Q01, 1Q02, 1Q03, 1Q04, 1Q05, 1Q06, 1Q07, 1Q08, 1Q09, 1Q10, 1Q11, 1Q25,	SC59	12
..2		31-03326-01	Transistor	2SC3326A	1Q26, Q130, Q131	SC59	3
ICS							
..2		03-04094-02	REGISTER	CD4094	U108, U113	DSOP16	2
..2		03-02134-00	Opamp	OPA2134UA	U106, U111	SO8	2
..2		03-92740-01	Analog Switch	TC9274F-001	U109	QFP44-P-1414	1
CAPACITOR							
..2		26-10151-01	Ceramic Chip Capacitor	100pF, 50V, ±5%	1C02, 1C04, 1C06, 1C08, 1C10, 1C12, 1C14, 1C16, 1C18, 1C20, 1C22, 1C53, 1C56, C101, C102, C103, C104, C105, C106, C135, C137, C120, C121, C122, C123, C124, C125,	0805	27
..2		26-22151-01	Ceramic Chip Capacitor	220pF, 50V, ±5%	C132, 1C58	0805	2
..2		26-10351-01	Ceramic Chip Capacitor	10nF, 50V, ±10%	1C01, 1C03, 1C05, 1C07, 1C09, 1C11, 1C13, 1C15, 1C17, 1C19, 1C21, 1C57	0805	12
..2		26-10451-01	Ceramic Chip Capacitor	100nF, 50V, +80%-20%	1C49, 1C50, 1C51, 1C52, C117, C130, C131, C133	0805	8
..2		25-56361-00	Metallized Polyester Film Capacitor	56nF, 63V, ±5%	C116	Pitch=5mm	1
..2		25-10461-07	Metallized Polyester Film Capacitor	100nF, 63V, ±5%	C115	Pitch=5mm	1

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
..2		25-22461-02	Metallized Polyester Film Capacitor	220nF, 63V, ±5%	1C60	Pitch=5mm	1
RESISTOR							
..2		07-90000-01	Chip Resistor	0Ω, ±5%	1R73	0805	1
..2		07-92200-01	Chip Resistor	200Ω, ±1%	1R61,1R62, R189, R193	0805	4
..2		07-92200-01	Chip Resistor	220Ω, ±1%	R101, R105, R107, R109, R111, R103	0805	6
..2		07-90472-01	Chip Resistor	4K7Ω, ±5%	1R01, 1R02, 1R03, 1R04, 1R05, 1R06, 1R07, 1R08, 1R09, 1R10, 1R11, 1R12, 1R13, 1R14, 1R15, 1R16, 1R17, 1R18, 1R19, 1R20, 1R21, 1R22, 1R65, 1R66,	0805	24
..2		07-95101-01	Chip Resistor	5K1Ω, ±1%	1R53, 1R54, 1R58	0805	3
..2		07-91002-01	Chip Resistor	10KΩ, ±1%	1R74, 1R57, 1R72	0805	3
..2		07-92802-01	Chip Resistor	28KΩ, ±1%	R192	0805	1
..2		07-93742-01	Chip Resistor	37K4Ω, ±1%	R191	0805	1
..2		07-90104-01	Chip Resistor	100KΩ, ±5%	1R67, R195	0805	2
..2		07-90304-01	Chip Resistor	300KΩ, ±5%	R188	0805	1
..2		07-90105-01	Chip Resistor	1MΩ, ±5%	R12, R102, R104, R106, R108, R110, R190	0805	7
RELAY							
..2		12-02202-04	Relay	24V	RL101, RL102, RL103, RL104, RL105, RL106, RL107, RL108, RL109, RL110, RL111, RL112		12
Connector							
..2		13-21210-00	Connector	10PIN	J108L, J208L	S=1.25mm	2
..2		17-01001-15	RCA	HANSONG RCA,WHITE	LRCA1, LRCA2, LRCA3, LRCA4, LRCA5, LRCA6, LRCA7, LRCA8, LRCA9, LRCA10	RCAM	10
PCB							
..2		16-53011-00	L INPUT PCB	FR-4, 1.6mm, 200mmx60mm			1
...3		16-53020-00	PCB	FR-4, 1.6mm, , 220mmx250mm			1/2
MISC&MECHANICAL PARTS							
TRANSFORMER&AC CORD							
.1		24-10412-03	Monolithic Capacitor	0.1u, 100V, ±20%	From chassis to GND	Pitch=7.5mm	2
.1		A07-10229-10	Carbon Film Resistor	2.2 Ω , 1/4W, ±5%		Taping	2
.1		32-28042-00	Ground tap	GND-8			4
TRANSFORMER&AC CORD							
.1		18-53231-01	MAIN TRANSFORMER	TORIOD TI-043813 AU ISS 7	ONE φ70mm THE OTHER φ90mm		2
.1	▲	15-10250-00	AC CORD	T582-C			C:1
.1	▲	15-10125-00	AC CORD	T582-AH			AH:1
.1	▲	15-10250-03	AC CORD	X-CCC			BC:1
WIRE							
.1		14-53030-20	wire	30PIN, 1.0mm, 250mm, same side			1
.1		14-53010-10	FFC	1.25-C-0.1x0.8-45-4.5/4.5/8-10, same side	FF1, FF2		2
.1		14-53010-01	FFC	1.25-C-0.1x0.8-50-4.5/4.5/8-10, same side	FF3, FF4		2
.1		14-53004-00	wire	plug XHB 2.5A-4Y,wireUL1569, 24AWG, terminal:LD2.5A-0.6Y-1, length45mm			2
.1		14-53002-00	wire	plug XHB 2.5A-3Y,XHB 2.5A-2Y, wireUL2547 (2CORE) 20AWG length:80mm			1
.1		14-53002-01	wire	plug:XHB 2.5A-3Y, XHB 2.5A-2Y, wireUL2547 (2CORE) 20AWG length:80mm			1
.1		14-53002-02	wire	plug:LD3.96A-3Y, FDFD2-187(8), wire:UL1672 18AWG red length:50mm			1
METAL PARTS							
.1		67-048001-0	Top Cover	SECC-N4 T=2.0mm silver gray			1
..2		81-048001-0	SECC	SECC-N4 370x370x2.0			1
.1		67-048002-2	Chassis	SECC-N4 T=2.0mm			1
..2		65-048002-2	Chassis	SECC-N4 T=2.0mm			1
...3		81-048001-0	SECC	SECC-N4 370x370x2.0			1
.1		67-048003-1	Subfascia	SECC-N4 T=1.6mm			1
..2		65-048003-1	Subfascia	SECC-N4 T=1.6mm			1
...3		81-046006-0	SECC	SECC-N4 396x1219x1.6			1/8
.1		S67-048004-1	Rear Panel(C)	SECC-N4 T=1.6mm			C:1
.1		S67-048014-2	Rear Panel(AH)	SECC-N4 T=1.6mm			AH:1
.1		S67-048024-0	Rear Panel(CCC)	SECC-N4 T=1.6mm			BC:1
..2		S80-048004-1	Rear Panel	SECC-N4 T=1.6mm			1
...3		S65-048004-1	Rear Panel	SECC-N4 T=1.6mm			1

L	CP	P/N	Description	Part Type	Designator	Footprint	Qty
....4		81-046006-0	SECC	SECC-N4 396x1219x1.6			1/8
.1		68-048001-1	HS Fixl Bar	C45, HRC45,			4
.1		66-005009-0	Tr. Clamping				16
.1		66-018005-0	Tem. SW Clamper	65Mn HRC48-52,			2
.1		66-001008-0	Metal Disc				2
.1		68-048002-0	Shielding Box				2
.1		70-048010-1	M3 Fascia 1	6063, T5			1
.1		S70-048011-0	M3 Fascia 2	Kirksite, painting			1
.1		S70-048012-1	Input Button	Kirsite			7
.1		S70-048013-0	Power Button	Kirsite			1
.1		71-048010-0	Vol. Knob Assy				1
..2		75-048020-0	Knob Core	ABS, Black			1
..2		70-048014-0	Knob Skin				1
.1		92-048001-0	Spring for Button	65Mn,			8
.1		70-048001-0	Heatsink	6063, T5			4
.1		69-048024-0	Copper Spacer-Screw	hexagon H=10mm,Steel,			16
.1		69-048031-0	Copper Spacer-Screw	hexagon H=70mm,H62			4
.1		69-048013-0	Copper Spacer	hexagon H=59.6mm			2
.1		69-048032-0	Copper Spacer	hexagon, H=36mm			2
.1		69-048010-1	Bus Bar A	T2Y2, 0.1µm gold plated			4
.1		69-048011-1	Bus Bar B	T2Y2, 0.1µm gold plated			4
.1		30-60480-00	RCA Shorting Plug				2
PLASTIC PARTS							
.1		76-048010-0	Window lens	PMMA blue			1
.1		76-008001-0	LED Lens				1
.1		85-048001-0	PCB Spacer	LCI-11	tone control board		2
.1		83-048010-0	Foot Assy	Black			4
.1		17-03001-03	Hs New Binding Post, Red				4
.1		17-03001-04	Hs New Binding Post, White				4
.1		77-048001-0	Plug Red	Just for C version			C BC:4
.1		77-048002-0	Plug White	Just for C version			C:4
.1		75-048022-0	BUS BAR WASHER	blue PC			4
.1		85-048002-0	Moveable Bushing	KG-010N, 43.5mm	Transformer screen house		2
..2		85-000002-0	Moveable Bushing	KG-010N, 260mm	Transformer screen house		1/3
.1		85-048003-0	Moveable Bushing	KG-010N, 18mm	Transformer screen house		2
..2		85-000002-0	Moveable Bushing	KG-010N, 260mm			1/7
.1		76-048012-0	PC COVER	PC T=0.30 Clear	Standby Board(TOP)		1
FASTENERS							
.1		61-023106-0	Self Taping Screws	STB3x6	Back board(2)		2
.1		61-023206-0	Self Taping Screws	BTB3x6	critesistor(2), front bracket(4), Back board(4)		10
.1		61-023208-0	Self Taping Screws	BTB3x8	Connect board(1), XLR(4),Back board AC INLET(2), windows(3),FPP board(8), Encoder board(2)		20
.1		61-023212-0	Self Taping Screws	BTB3x12,	breaker presser(2)		2
.1		61-223506-1	Hex Screws w/Tooth washer	M3x6,	power amp board(8), PSU board(8), spk board(8)		24
.1		61-373506-0	Machine Screws	M3x6	PSU board PCB(6), standby board(4),preamp board(2), L input board(2)		14
.1		61-023506-1	Machine Screws	MB3x6,	Power amp board(16)		16
.1		61-024108-0	Self Taping Screws	STB4x8	foot(4)		4
.1		61-023508-0	Machine Screws	MB3x8,	psu board PCB(2),preamp boardPCB(2)		4
.1		61-224508-1	Hex Screws	GB/T70.1, 4x8	front pannel1(8)		8
.1		61-224512-1	Hex Screws	GB/T70.1, 4x12	heatsink(28), steel bar for fix(16), front pannel2(7)		51
.1		61-226510-0	Hex Screws	GB/T70.1, 6x10,	screen house(8)		8
.1		63-020616-0	Spring Washers	GB93φ6	screen house(8)		8
.1		61-223514-0	Hex Screws	GB/T70.1, 3x14	transistor(16)		16
.1		64-208070-0	Bolts	GB/T70.1, M8x70,	TRANSFORMER(2)		2
.1		62-010802-0	Nuts	GB6170, M8	TRANSFORMER(2)		2
.1		63-020820-1	Spring Washers	GB93φ8	TRANSFORMER(2)		2
.1		63-010816-0	Washers	GB97-87 φ 8	TRANSFORMER(2)		2
ACCESSORY							
.1		78-005005-0	Insulated Cashion	SFAT686			16
.1		86-018002-1	Expanded Rubber	110x25x0.5mm			2
.1		86-010002-0	Nonwavens	25x50x0.5mm	FFC		3
.1		87-048002-0	Button pad	NWC White	KEYS AT FRONT PANNEL		7
.1		87-048003-0	Power pad	NWC White	KEYS AT FRONT PANNEL		1
.1		86-010004-0	Rubber Pad	10x25x3mm			3
.1		86-046001-0	LED Lens Gum	3M, Φ2.3x8	LED AT FRONT PANNEL		1
.1		86-046002-0	Padding	FR-4, 20x4x1mm	FRONT PANNEL1(2)		2
.1		89-046003-0	Foot Polyfoam	Φ55, EPS White			2
PACKING							

