

Service
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Service Manual



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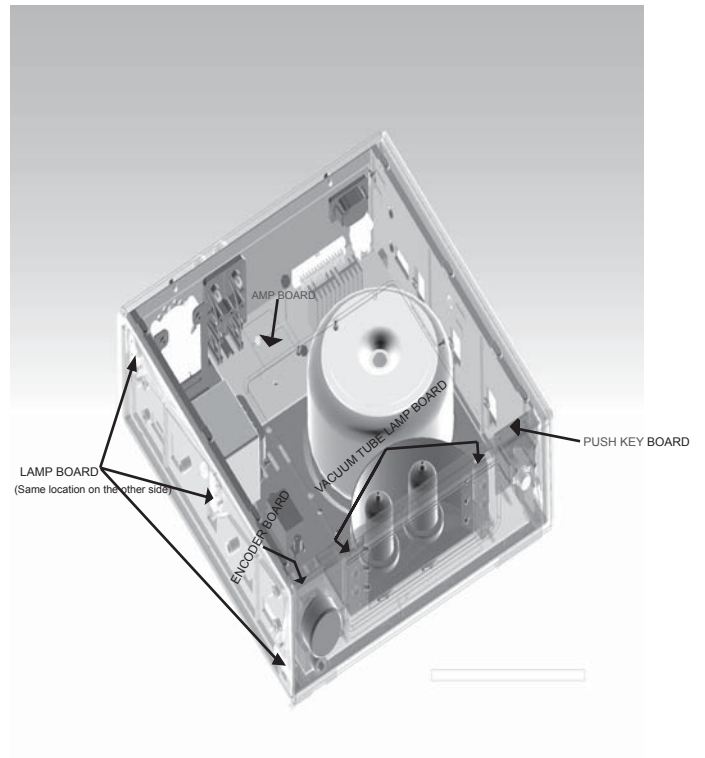
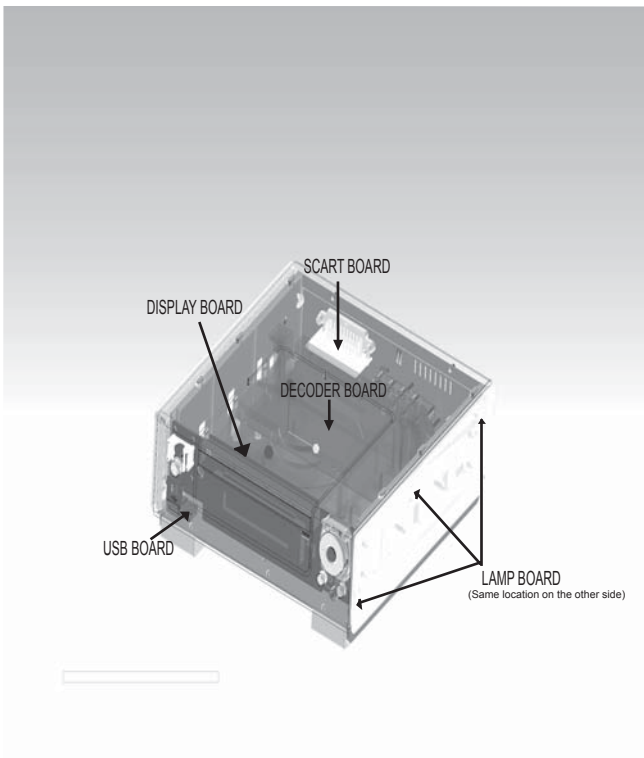
Published by DB 0908 Service Audio Printed in The Netherlands Subject to modification

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Version 1.0



Location of PC Boards



Type /Versions:		MCD909												
		/05	/12	/37	/55	/58	/61	/79	/93	/94	/96	/98		
Board in used:	Service policy													
	BUTTON BOARD		M											
	DISPLAY BOARD		C											
	USB BOARD		M											
	LAMP BOARD		M											
	DECODER BOARD		M											
	AMP BOARD		C											
	VACUUM TUBE LAMP BOARD		M											
	ENCODER BOARD		M											
	PREPOSITIVE BOARD		C											
	ECO-POWER BOARD		M											
Type /Versions:		MCD909												
Features	Feature difference	/05	/12	/37	/55	/58	/61	/79	/93	/94	/96	/98		
	RDS		√											
	VOLTAGE SELECTOR													
	ECO STANDBY - DARK		√											
	TDS													
* TIPS : C -- Component Level Repair. M -- Module Level Repair √ -- Used														

Specifications

AMPLIFIER

Rated Output Power 2 x 75W RMS
 S/N >=65dBA
 Frequency response 40Hz-20KHz,±3dB
 Aux Input 0.5V RMS 47kohm

DISC

Laser Type Semiconductor
 Disc Diameter 12cm/8cm
 Support Disc
 DVD,Divx,CD-DA,CD-R,CD-RW,MP3,WMA
 Audio DAC..... 24Bits / 44.1kHz
 Total Harmonic Distortion 4Hz - 20kHz (44.1kHz)
 S/N >65dBA

TUNER

FM Tuning Range 87.5 – 108 MHz
 Tuning grid 50K/100KHz

Sensitivity

- Mono,26dB S/N 5uV
 - Stereo,46dB S/N 100uV
 Selectivity >33dB
 Image Rejection 25-30 dB
 Total Harmonic Distortion 2-3%
 S/N >33dBA

SPEAKERS

Speaker Impedance4ohm
 Speaker Driver,base 5 1/4"
 Speaker Driver,tweeter RT-2
 Frequency response 60Hz - 20 KHz

GENERAL INFORMATION

Total Output Power 150 W RMS
 AC Power 220V-230V / 50Hz(/12)
 240V/50Hz(/79).220V / 50Hz(/93).220V / 60Hz(/61)
 Operation Power Consumption 85W
 Standby Pwer Consumption <4W
 Eco Standby Pwer Consumption.....NA
 USB Direct..... Version 1.1

Dimensions

- Main unit (w x h x d) 280X130X290mm
 - Speaker box(w x h x d) 185x305x225mm

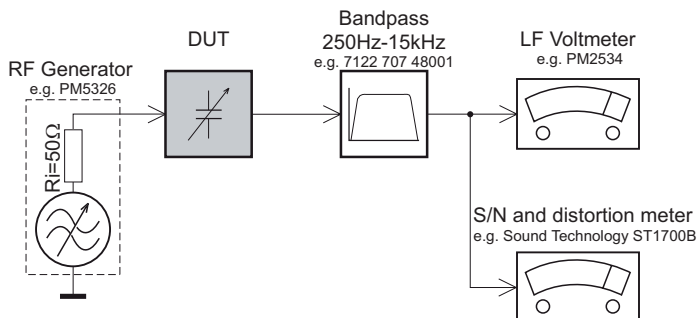
Weight

- With Packing24.5 KG
 - Main unit 6.78KG
 - Speaker box 14KG
 - Subwoofer.....NA

*Specifications and external appearance
 are subject to change without notice.

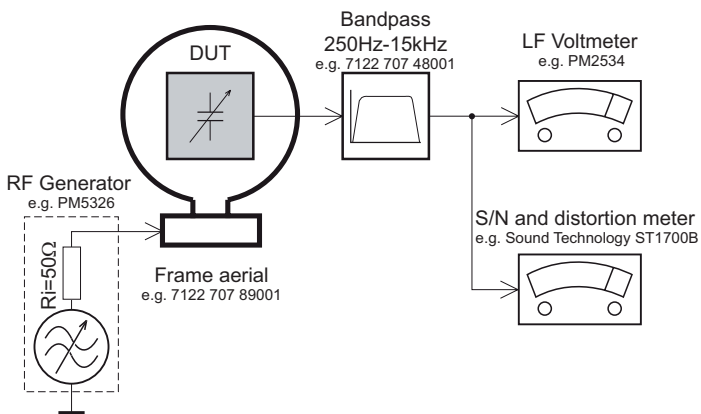
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

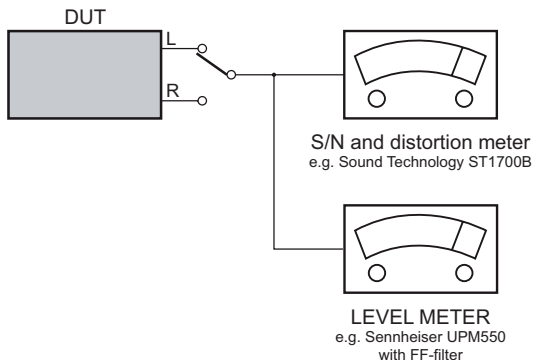
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

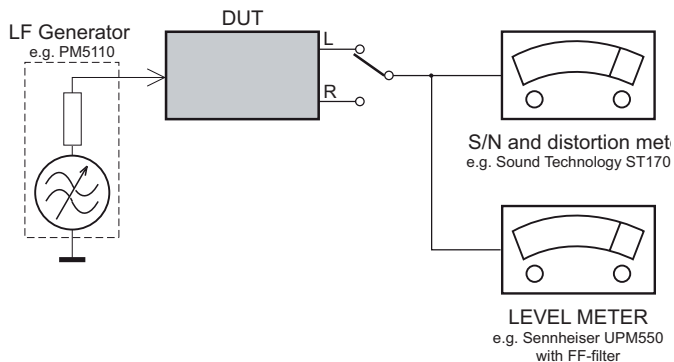
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)



Recorder

Use Universal Test Cassette **Cr02** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



SERVICE AIDS

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.


When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD



GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used

Safety components are marked by the symbol .

**CLASS 1
LASER PRODUCT**

INFORMATION ABOUT LEAD-FREE SOLDERING

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

IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from 1 Jan 2005 onwards, according next rules:



- On our website www.atyourservice.ce.Philips.com you find more information to:
 - * BGA-de-/soldering (+ baking instructions)
 - * Heating-profiles of BGAs and other ICs used in Philips-sets
 - * Lead free

You will find this and more technical information within the "magazine", chapter "workshop news".

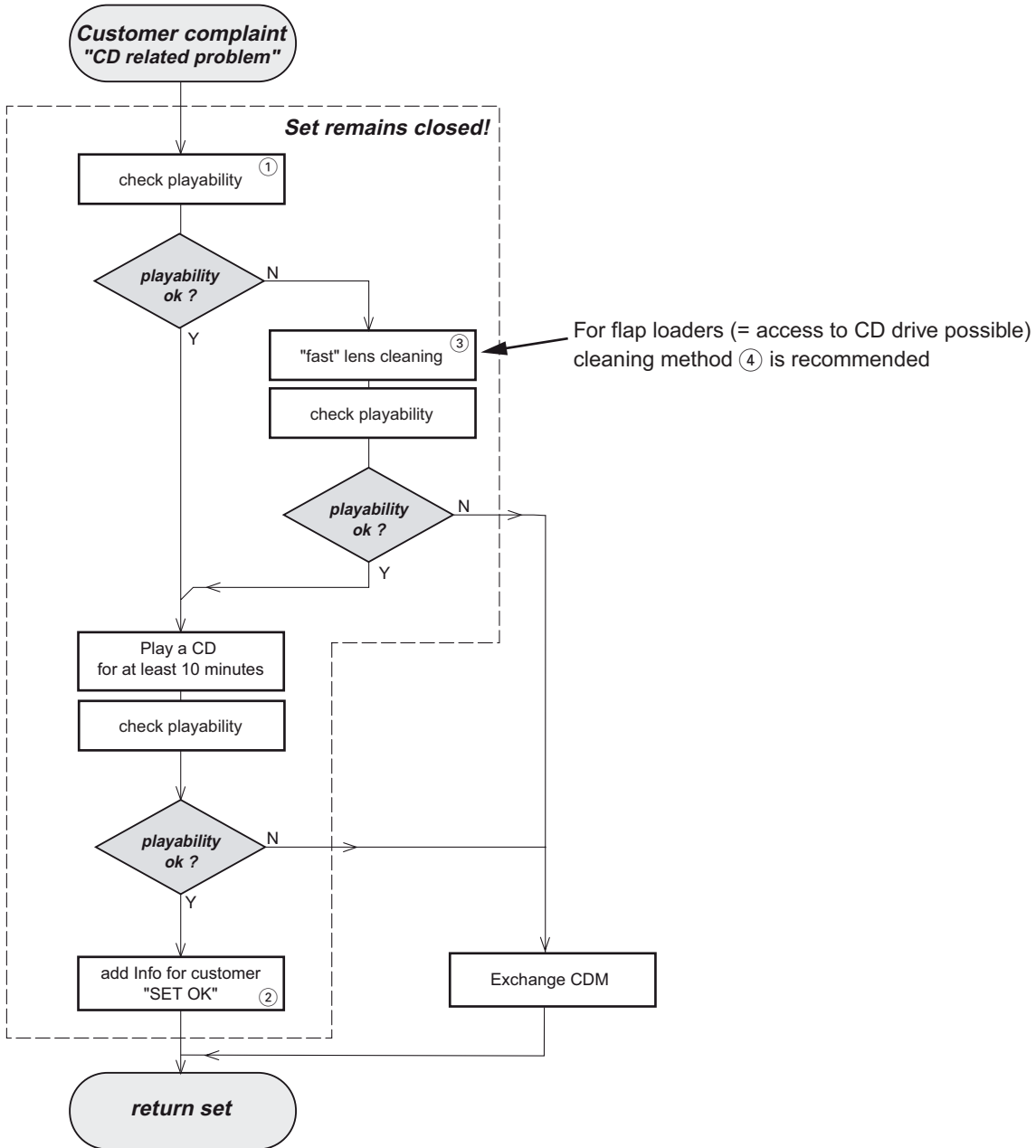
For additional questions please contact your local repair-helpdesk.

SERVICE INSTRUCTION

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

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):
 1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
 2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
 4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

INSTRUCTIONS ON CD PLAYABILITY



① - ④ For description - see following pages

INSTRUCTIONS ON CD PLAYABILITY

①

PLAYABILITY CHECK

For sets which are compatible with **CD-RW** discs
 use CD-RW Printed Audio Disc7104 099 96611
 TR 3 (Fingerprint)
 TR 8 (600 μ Black dot) **maximum at 01:00**

- playback of these two tracks without audible disturbance
 playing time for: Fingerprint ≥ 10 seconds
 Black dot from 00:50 to 01:10
- jump forward/backward (search) within a reasonable time

For all other sets
 use CD-DA SBC 444A4822 397 30245
 TR 14 (600 μ Black dot) **maximum at 01:15**
 TR 19 (Fingerprint)
 TR 10 (1000 μ wedge)

- playback of all these tracks without audible disturbance
 playing time for: 1000 μ wedge ≥ 10 seconds
 Fingerprint ≥ 10 seconds
 Black dot from 01:05 to 01:25
- jump forward/backward (search) within a reasonable time

②

CUSTOMER INFORMATION

It is proposed to add an addendum sheet to the set which informs the customer that the set has been checked carefully - but no fault was found.

The problem was obviously caused by a scratched, dirty or copy-protected CD. In case problems remain, the customer is requested to contact the workshop directly.

The lens cleaning (method ③) should be mentioned in the addendum sheet.

The final wording in national language as well as the printing is under responsibility of the Regional Service Organizations.

④

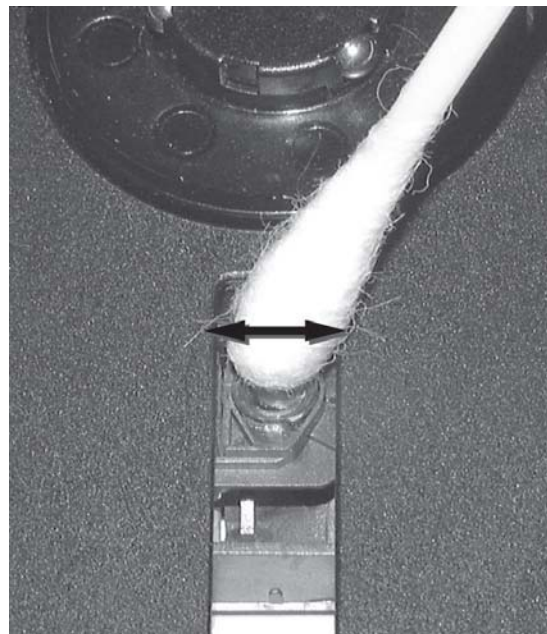
LIQUID LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it. This to avoid that little particles make scratches on the lens.

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. Clean the lens gently (don't press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

The direction of cleaning must be in the way as indicated in the picture below.



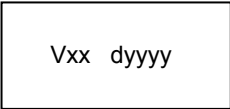
Software Version Check & Upgrade

Upgrade software

1. Download the software from Philips support website
<http://www.philips.com/support>
2. Put in the Software CD Disc or USB,
until hear a long ding voice while it is loading. Software
upgrade finish.

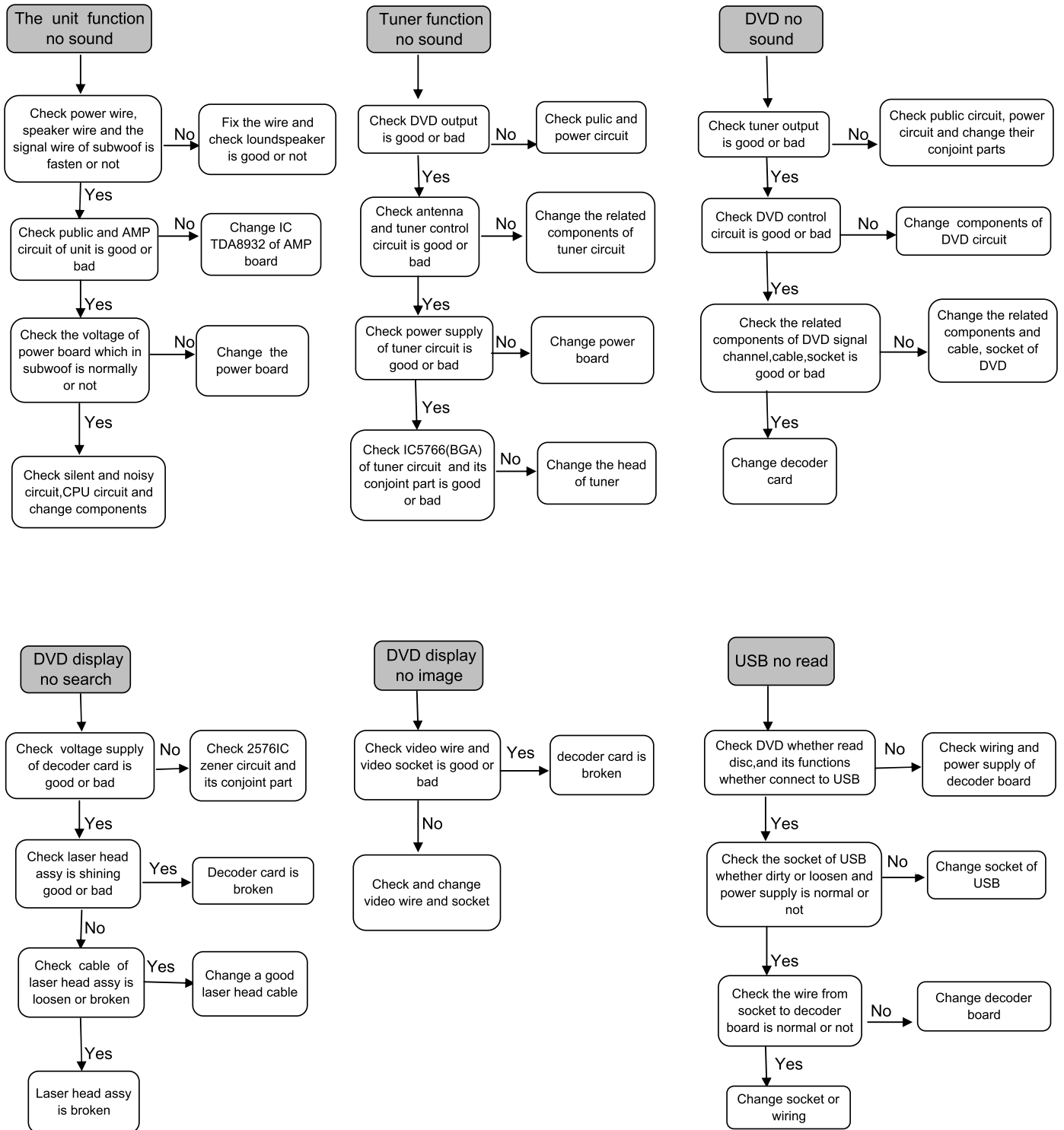
Software check

Press the “display” button quartic continuously on remote control,
display showing as below:



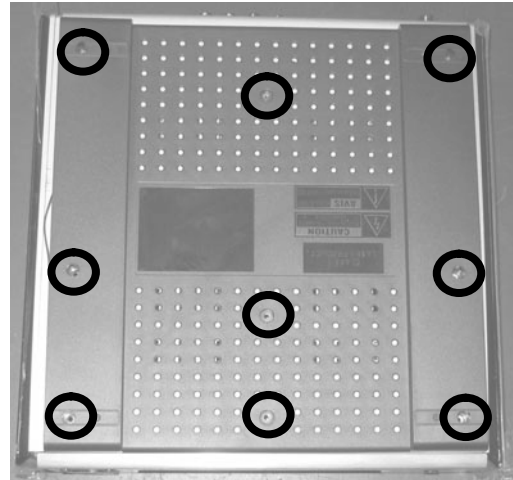
Vxx dyyyy

Malfunction follow check chart

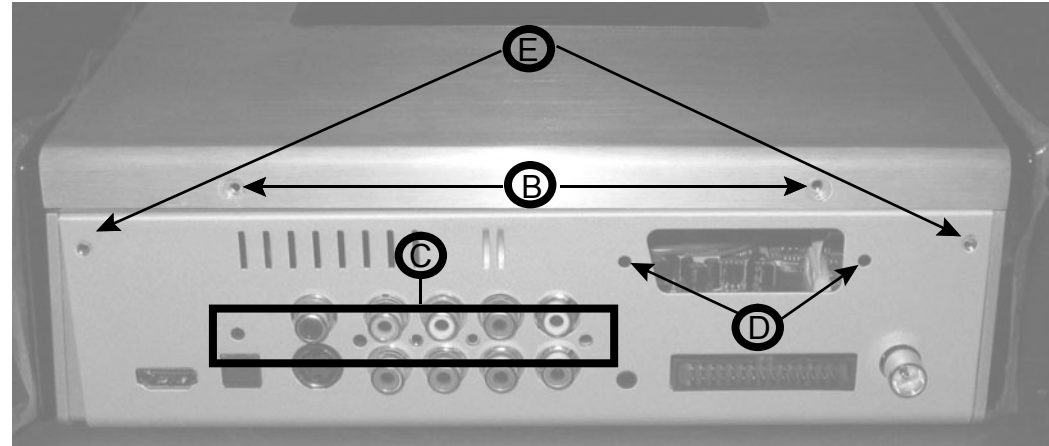


Disassembly Diagram -- DVD Part

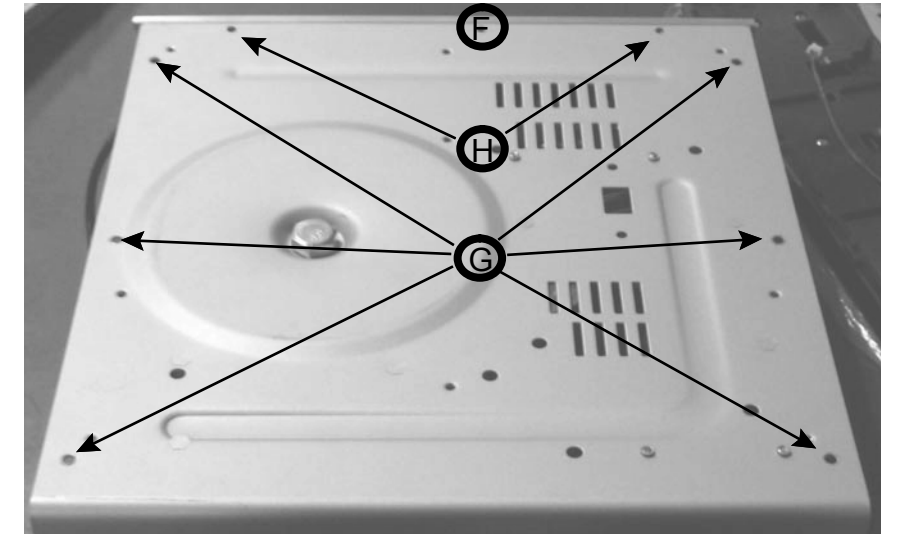
A. Loosen screws 9 PCS 3 X 6 BMTT to remove bottom chassis



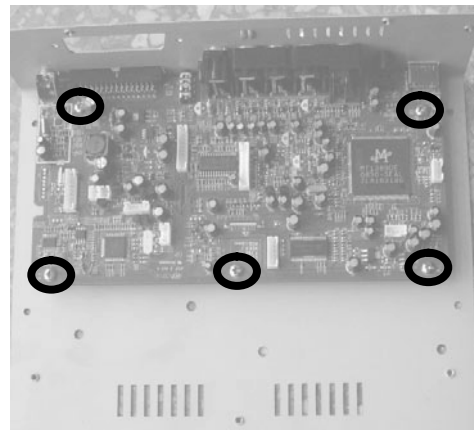
B. Loosen screws 2 PCS 3 X 6 FMTT
C. Loosen screws 5 PCS 3 X 10 BA
D. Loosen screws 2 PCS 3 X 10 BA
E. Loosen screws 2 PCS 3 X 10 BTH



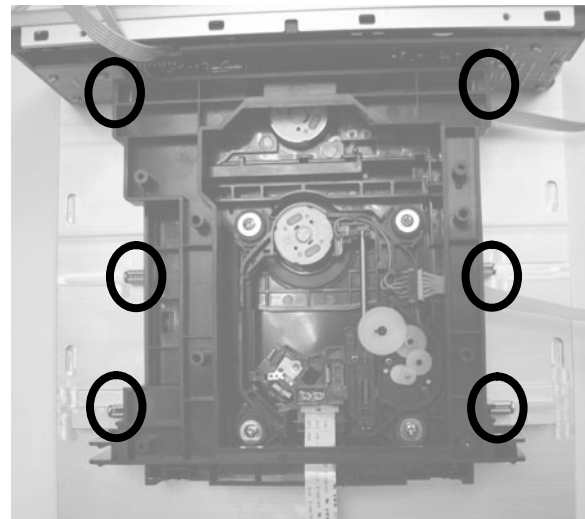
F. Loosen screws 1 PCS 3 X 4 FMTT
G. Loosen screws 2 PCS 3 X 6 BMTT
H. Loosen screws 6 PCS 3 X 10 BTH



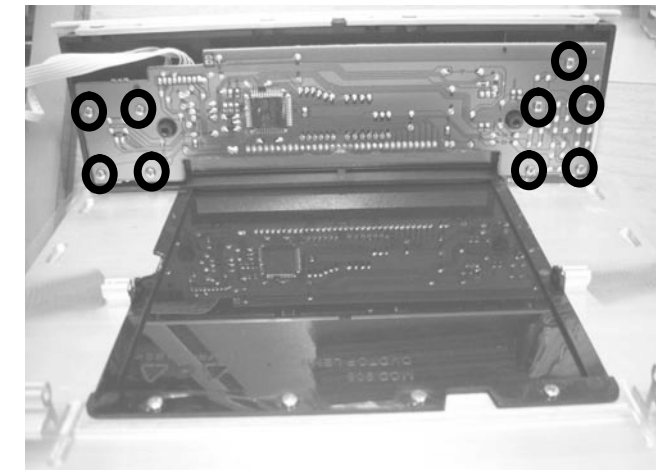
I. Loosen screws 5 PCS 3 X 6 BM



J. Loosen 6PCS 3x12BTH screws to disassembly mechanism

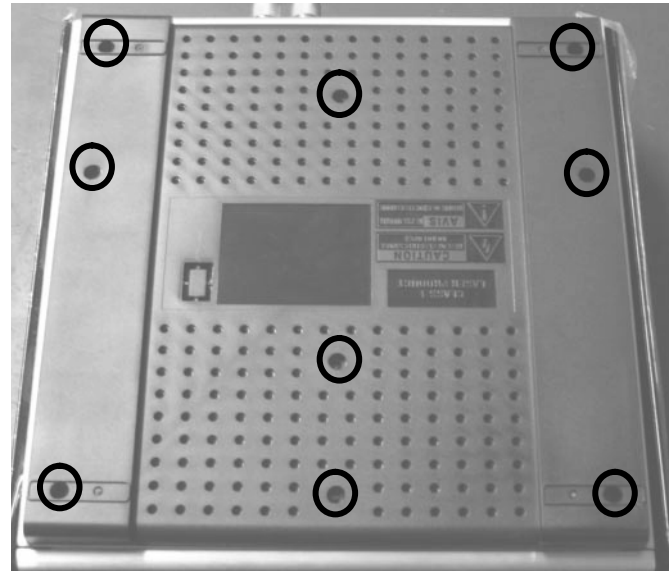


K. Loosen 9PCS 2.6x8PA screws to disassembly display board

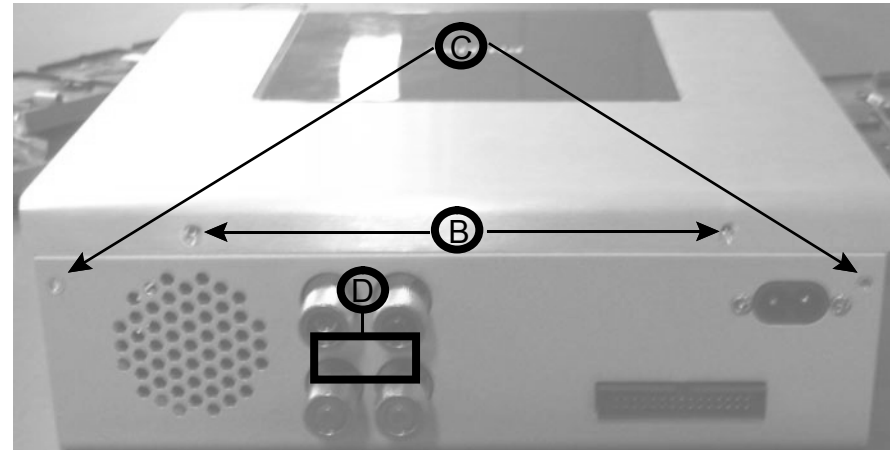


Disassembly Diagram -- AMP Part

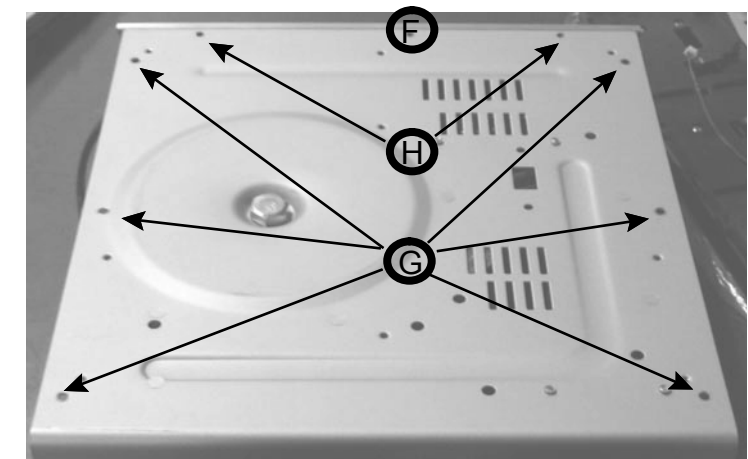
A. Loosen screws 9 PCS 3 X 6 BMTT to remove bottom chassis



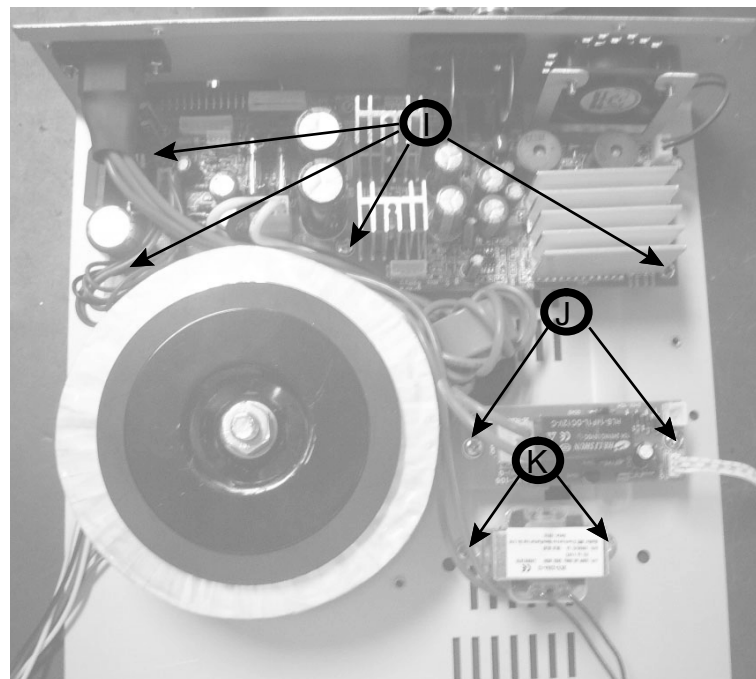
B. Loosen 2 PCS 3 X 6 FMTT screws
C. Loosen 2 PCS 3 X 10 BMTT screws
D. Loosen 2 PCS 3 X 10 BTH screws



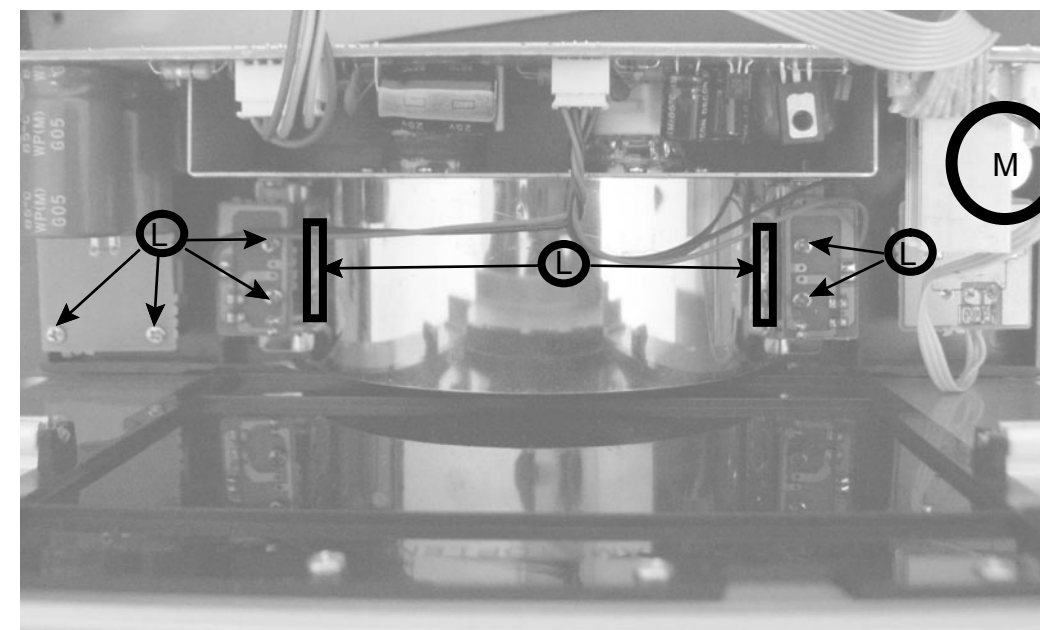
F. Loosen 1 PCS 3 X 4 FMTT screws
G. Loosen 2 PCS 3 X 6 BMTT screws
H. Loosen 6 PCS 3 X 10 BTH screws



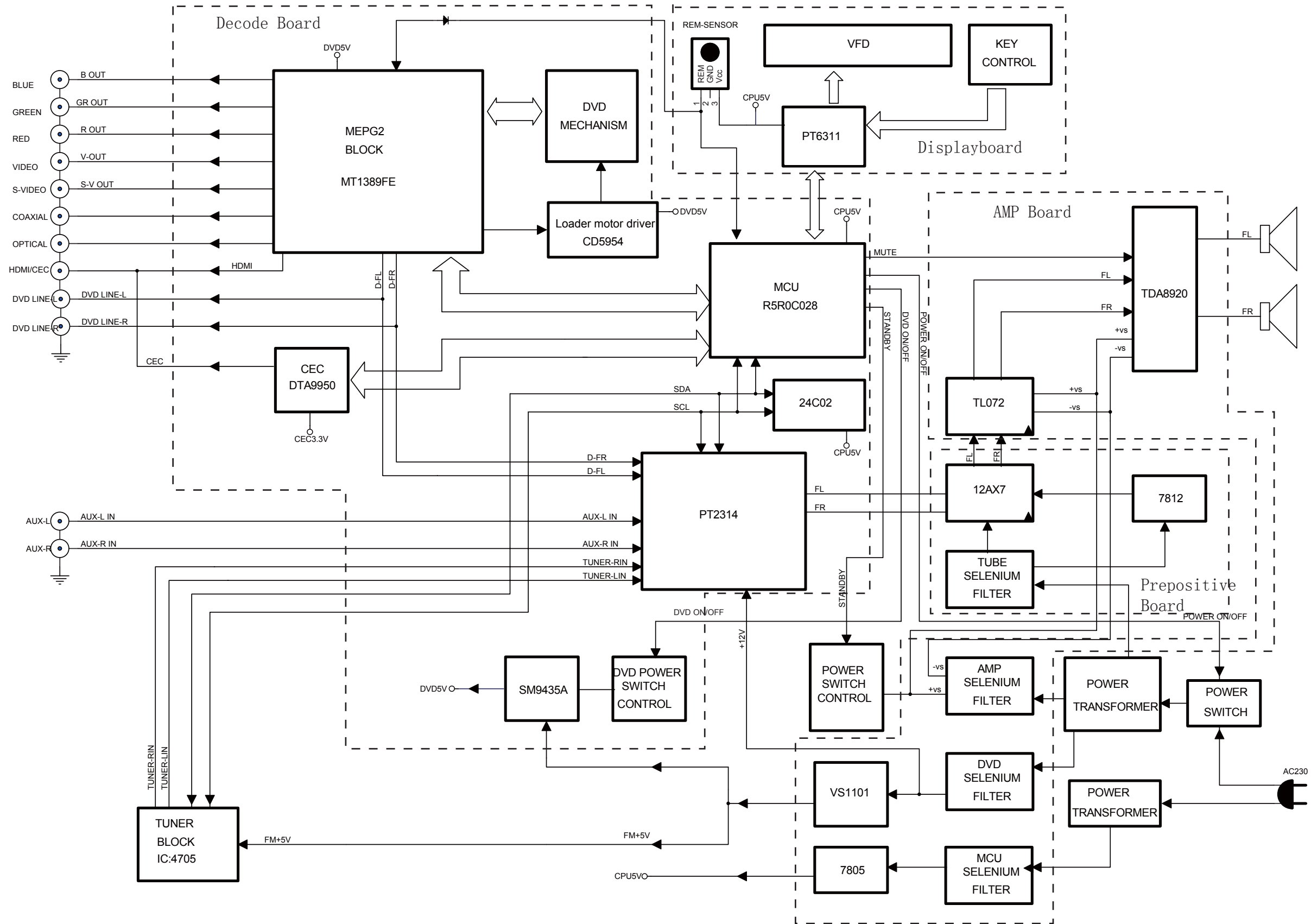
I. Loosen 4 PCS 3 X 6 BM screws
J. Loosen 2 PCS 3 X 4 BMTT screws
K. Loosen 2 PCS 3 X 6 BM screws



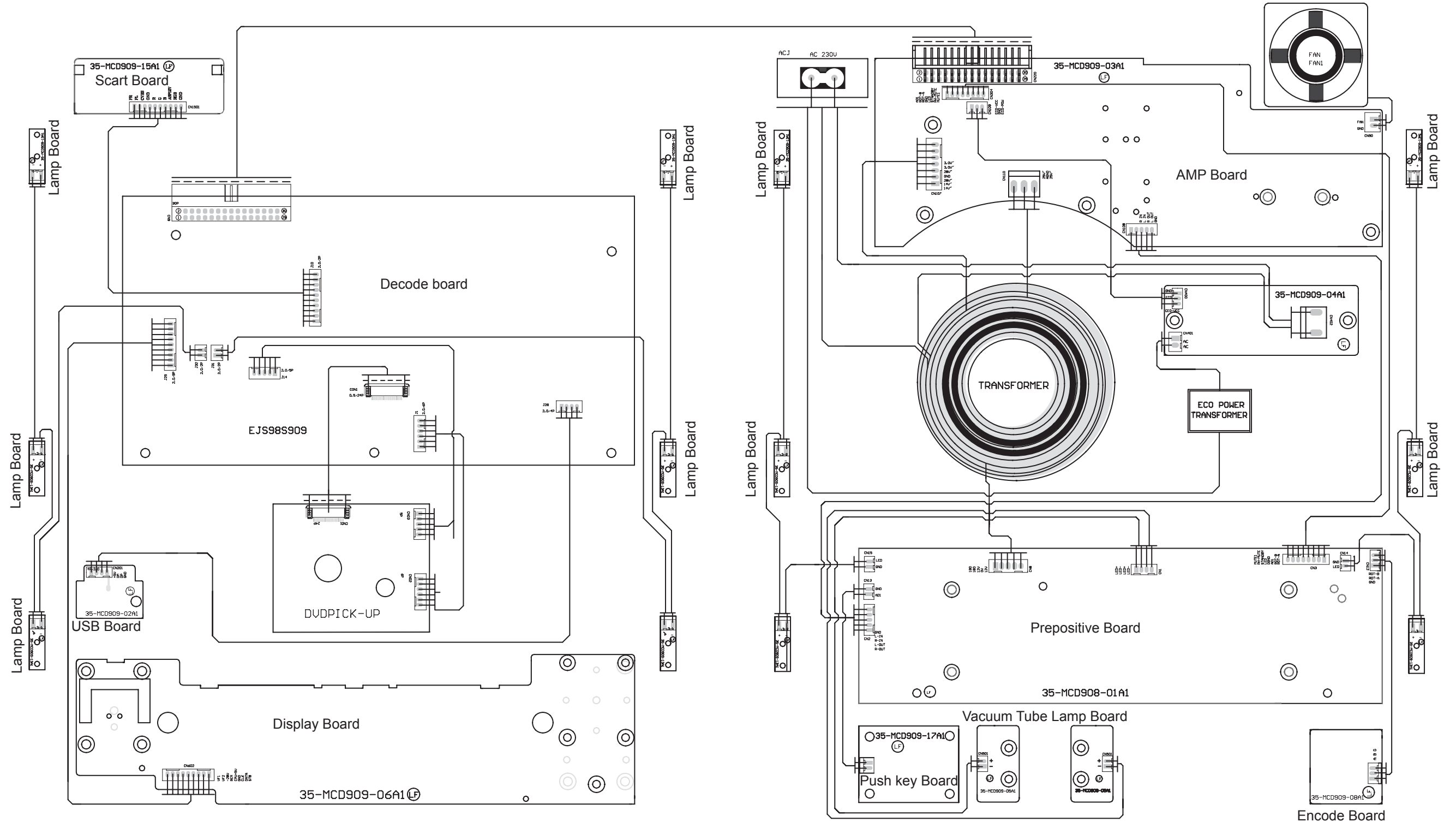
L. Loosen 10 PCS 2.6X 8 PA screws
M. Loosen 1 PCS 3 X 10PA screws



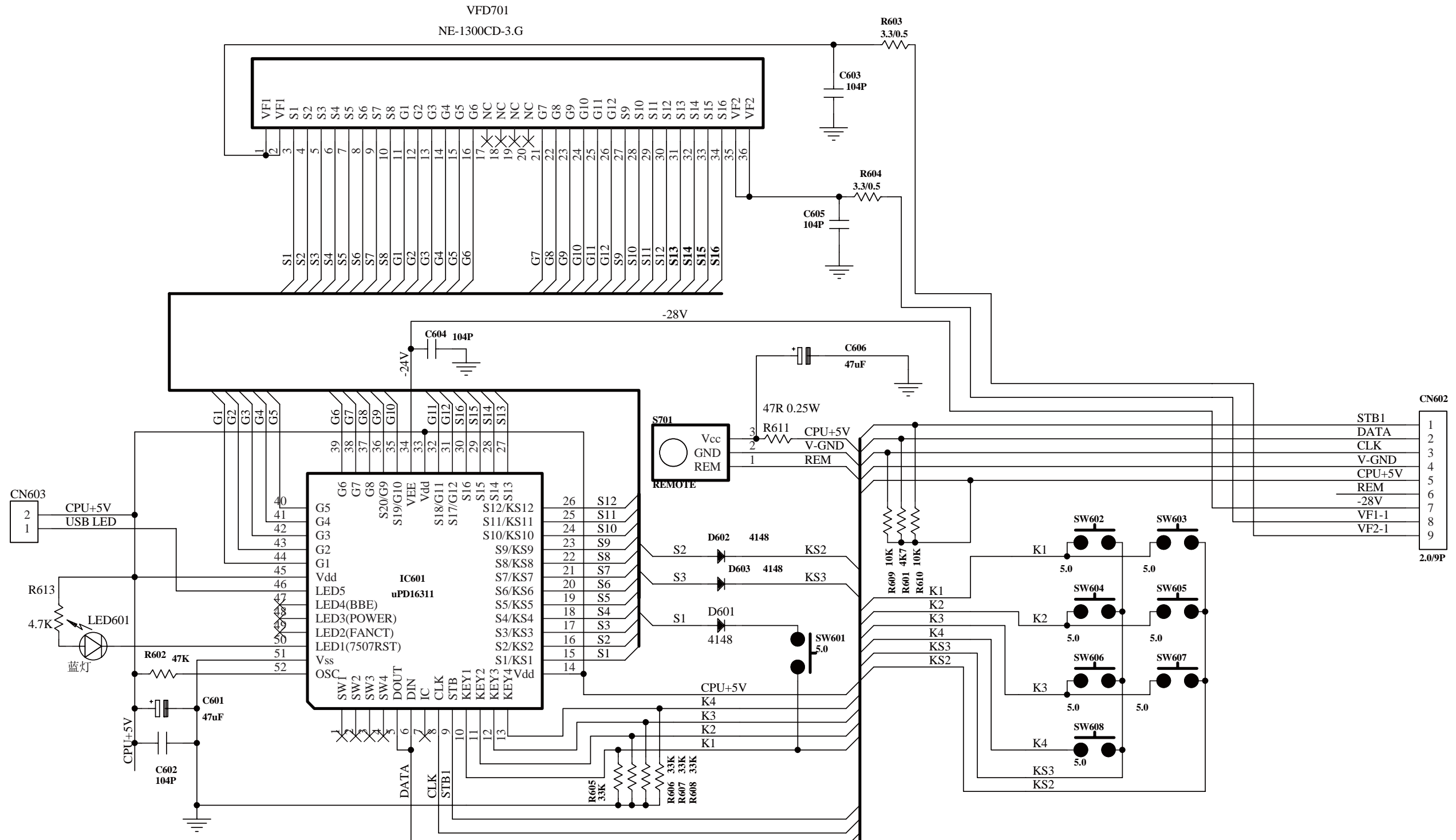
Block Diagram



Wiring Diagram



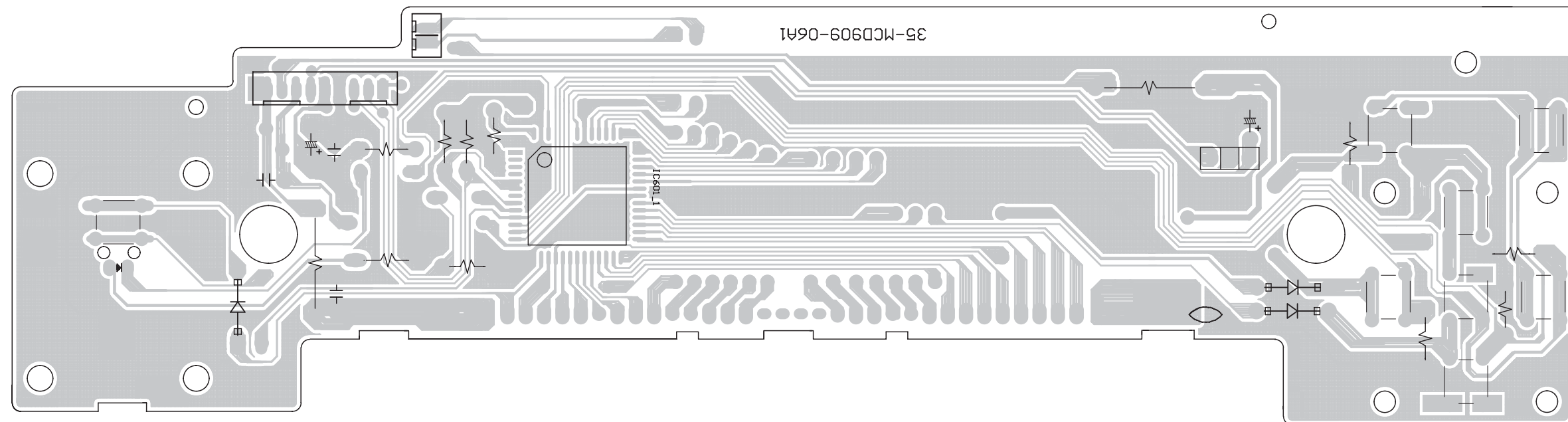
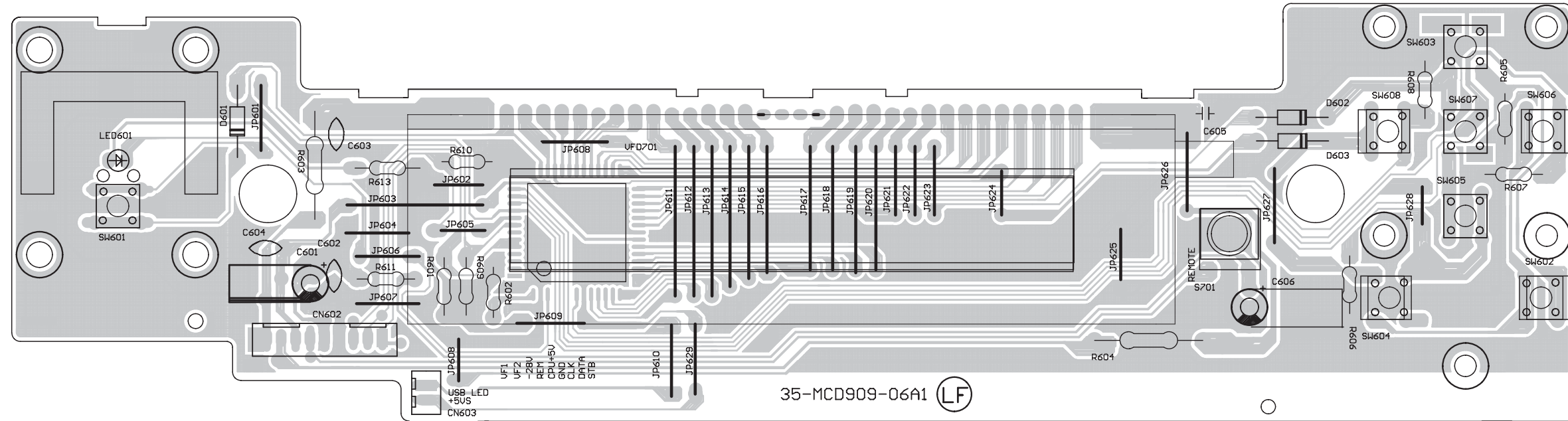
Display Board -- Circuit Diagram



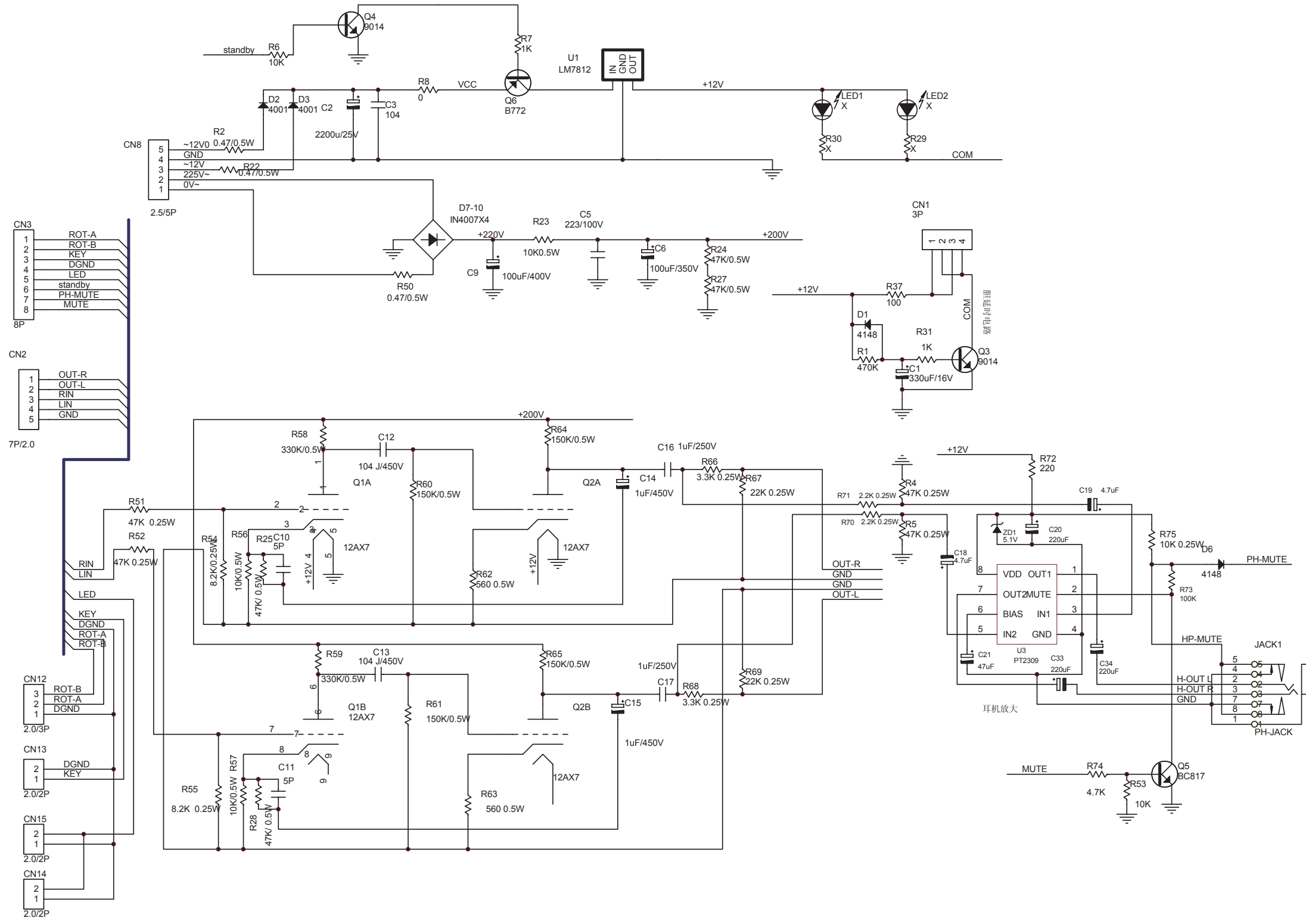
Pin	Signal
1	STB1
2	DATA
3	CLK
4	V-GND
5	CPU+5V
6	REM
7	-28V
8	VF1-1
9	VF2-1

2.09P

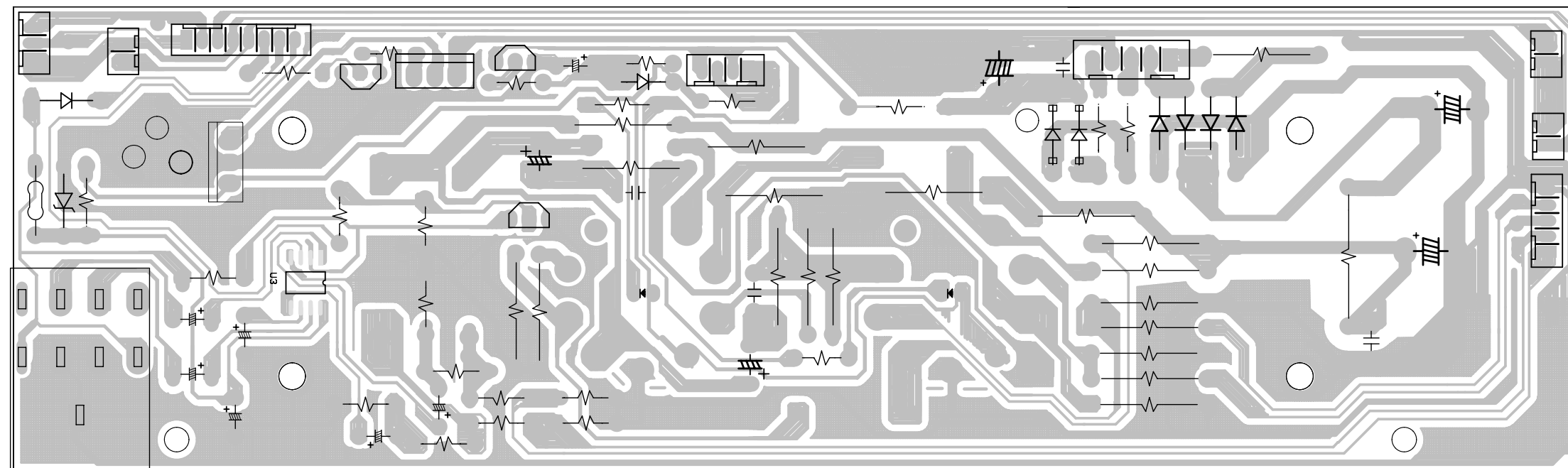
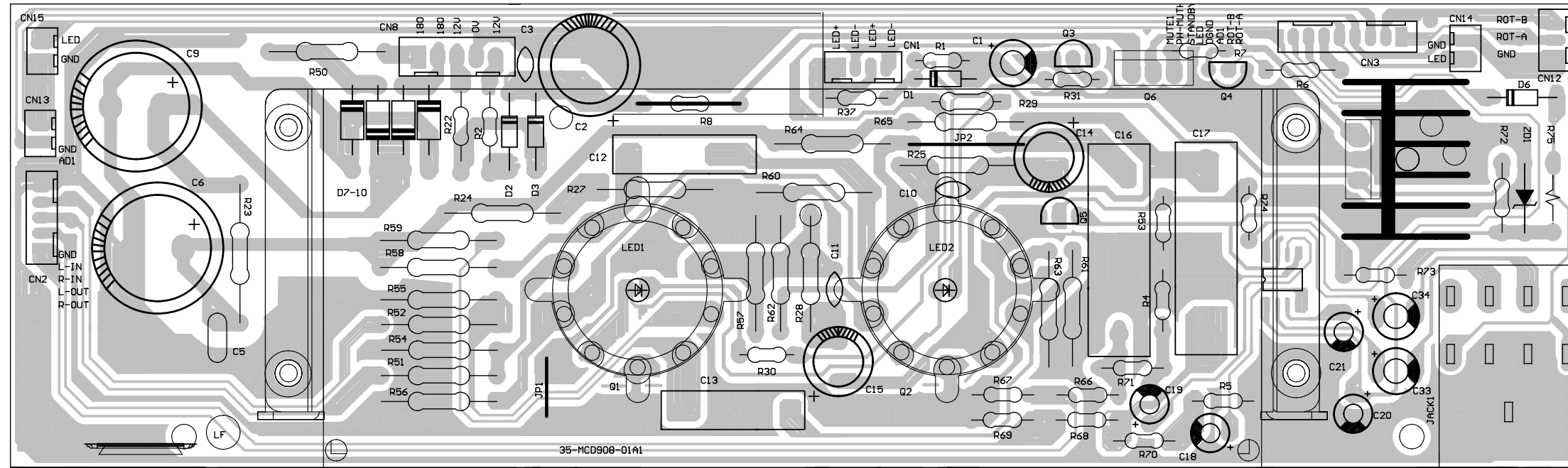
Display Board -- Layout Diagram



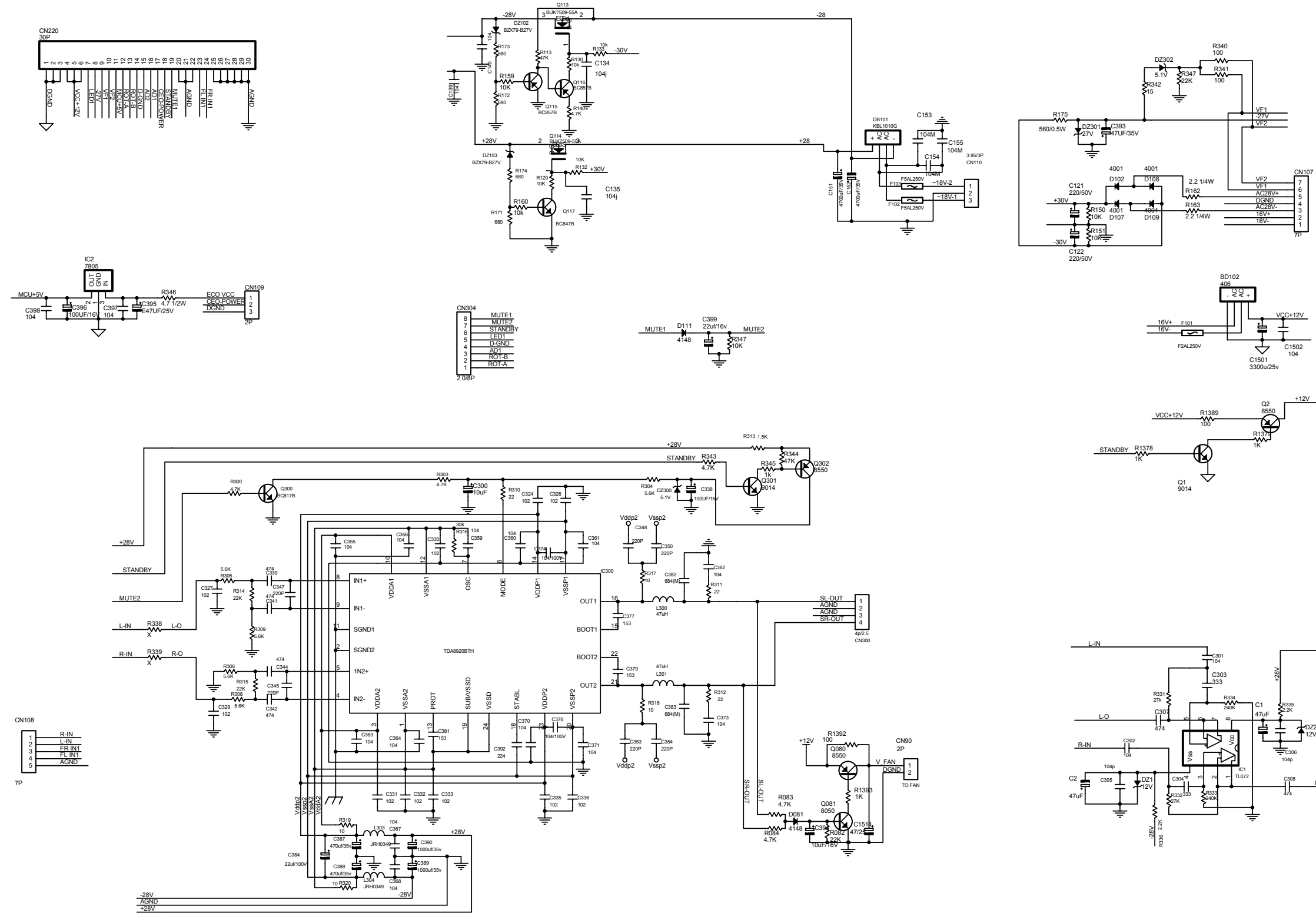
Prepositive Board -- Circuit Diagram



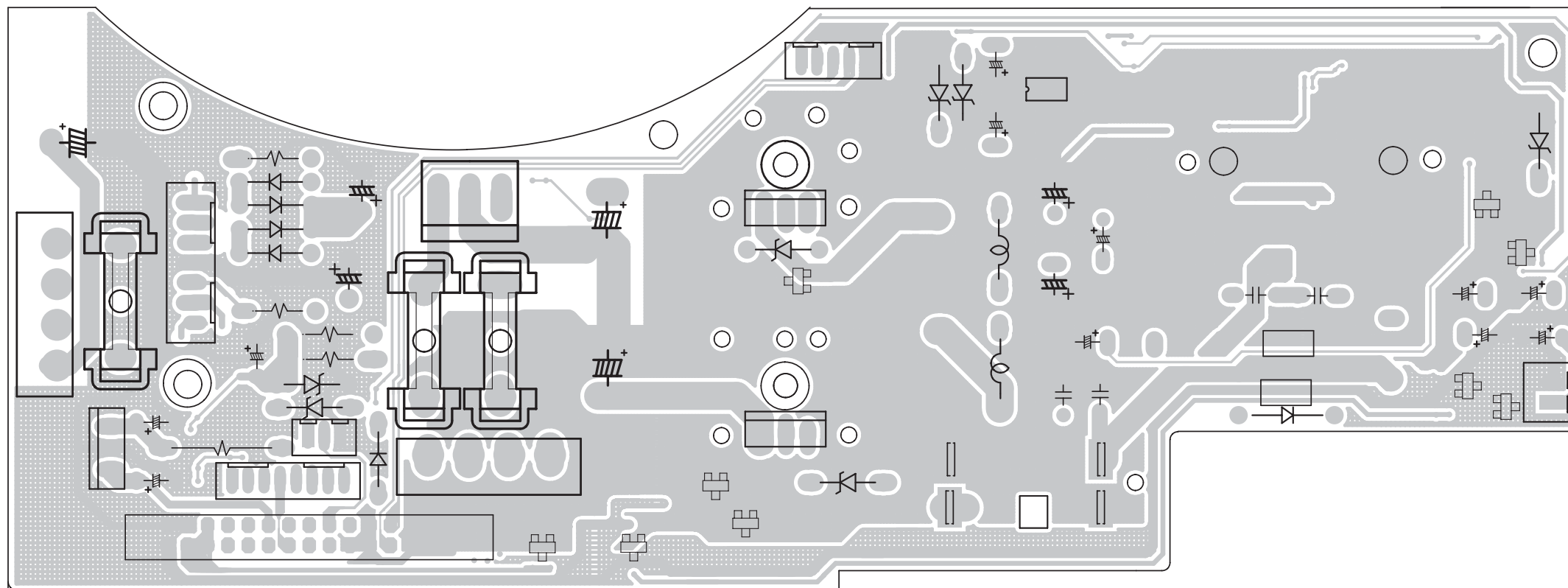
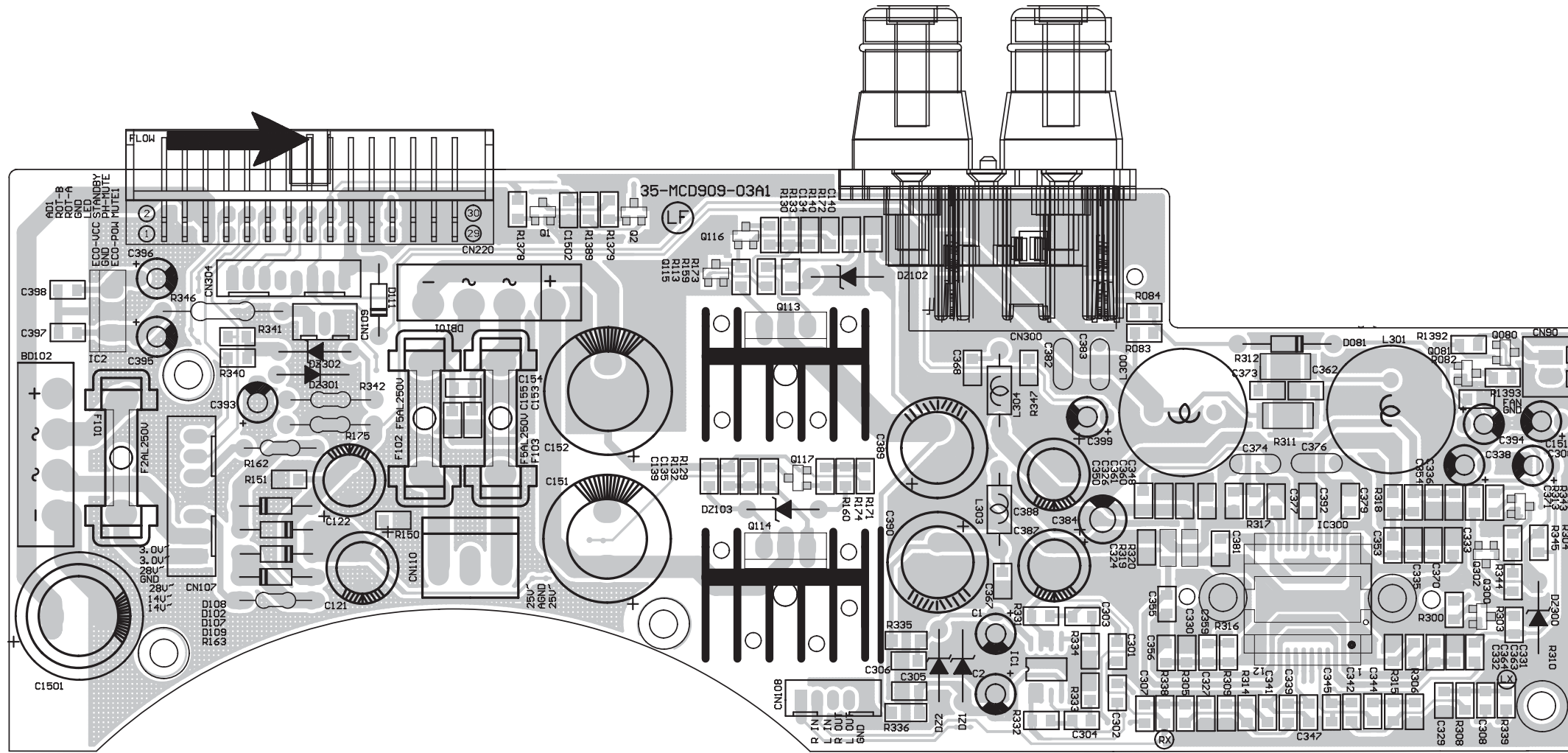
Prepositive Board -- Layout Diagram



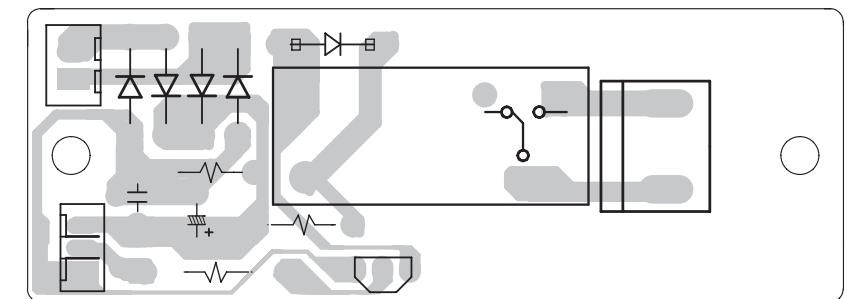
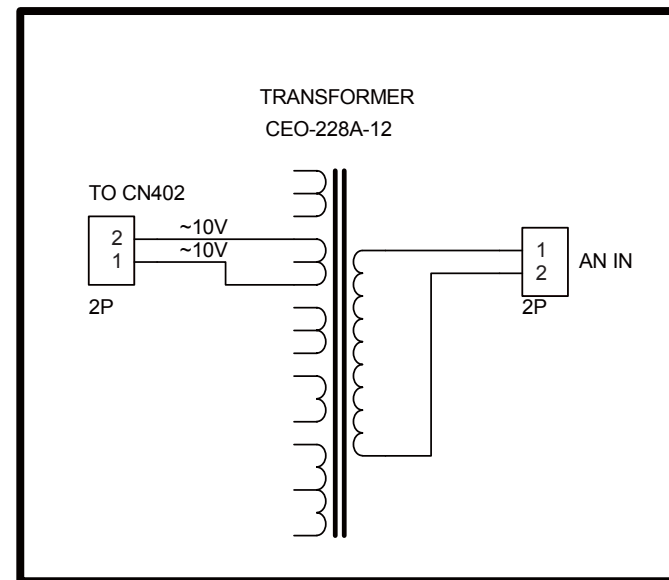
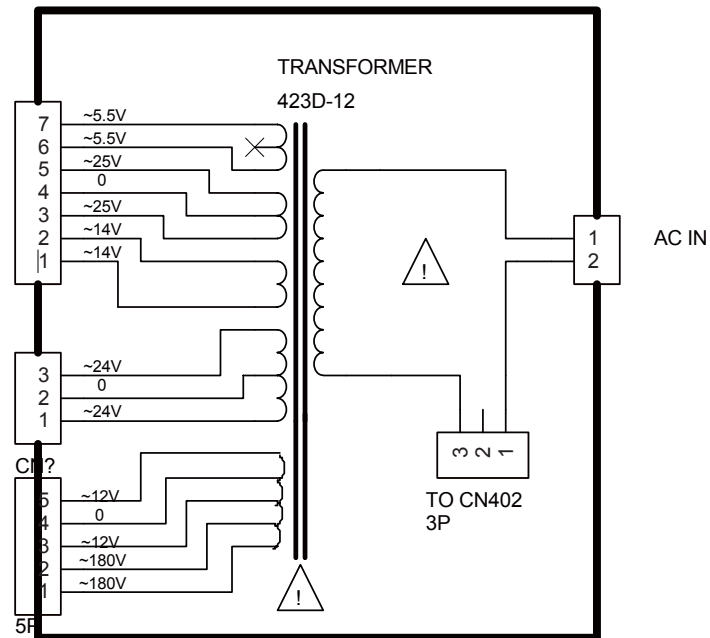
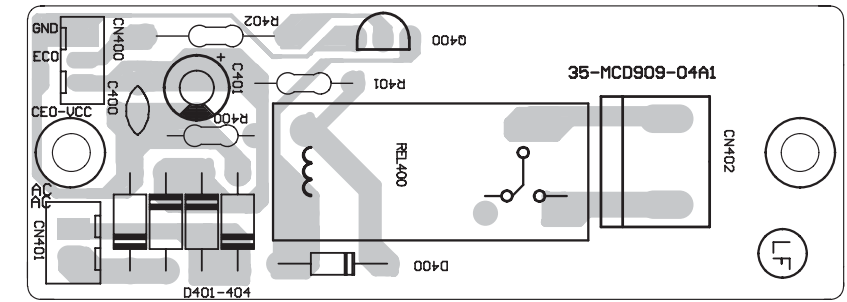
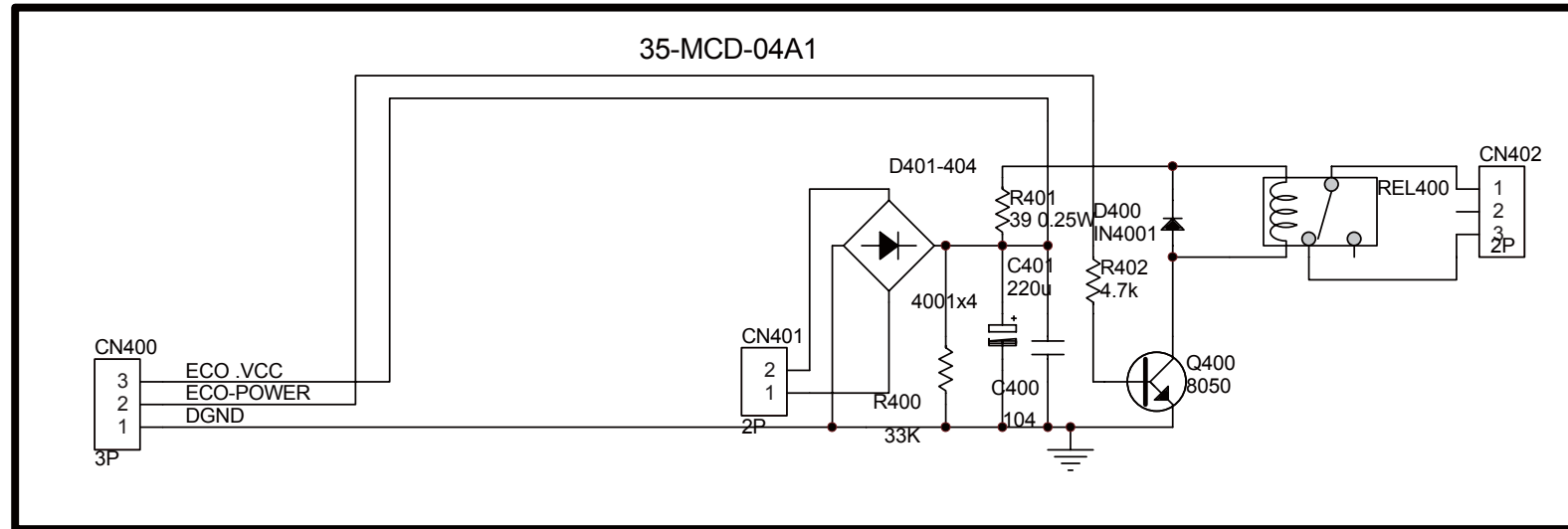
AMP Board -- Circuit Diagram



AMP Board -- Layout Diagram

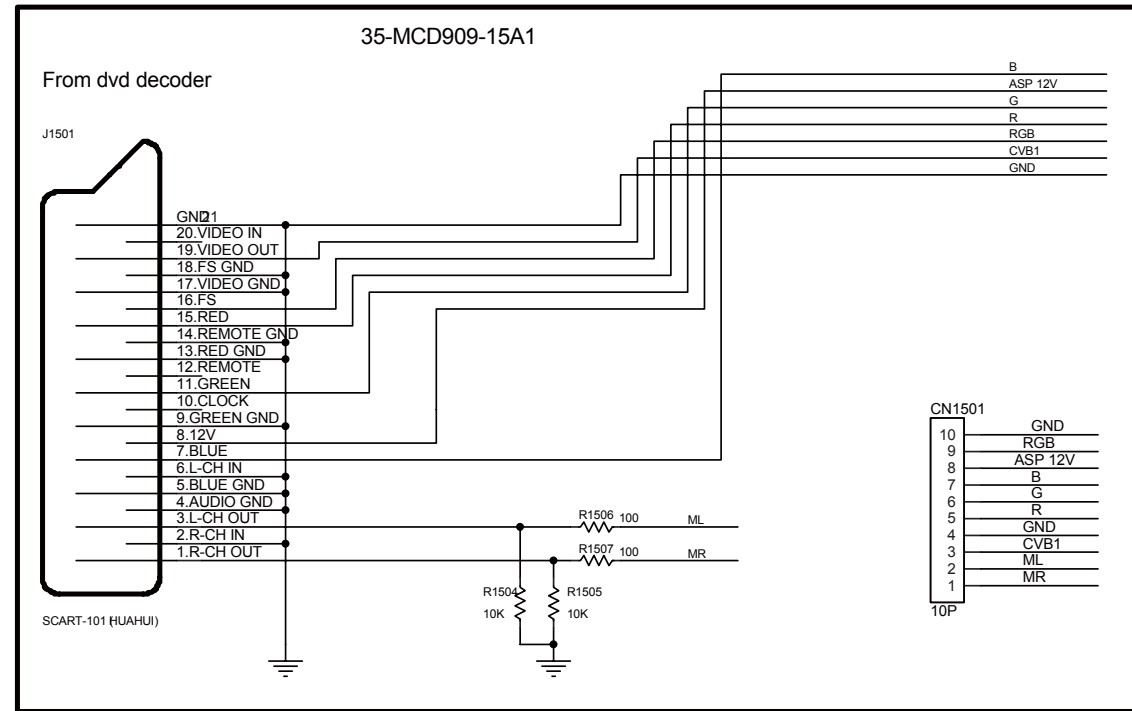


ECO Control Board Diagram

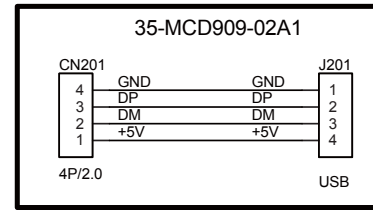


Small Board Diagram

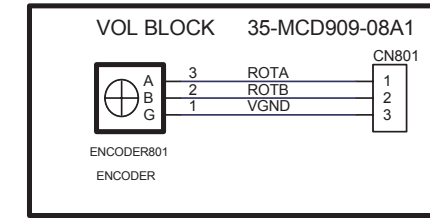
Scart Board



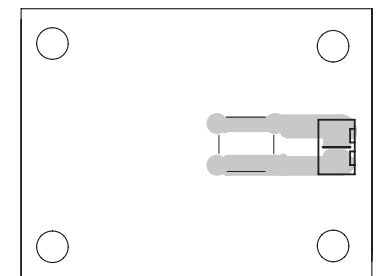
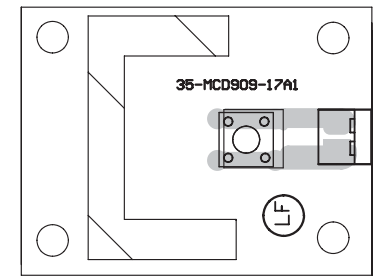
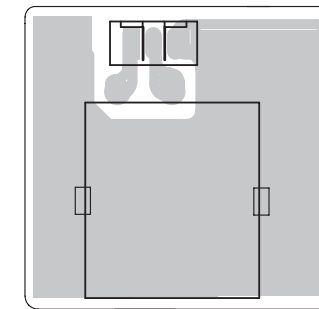
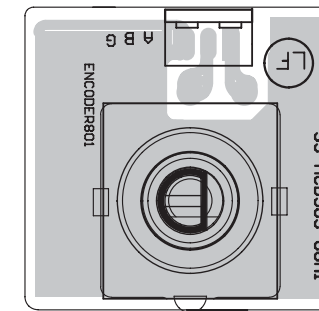
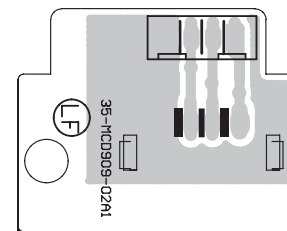
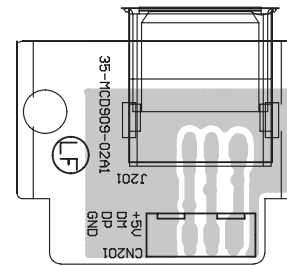
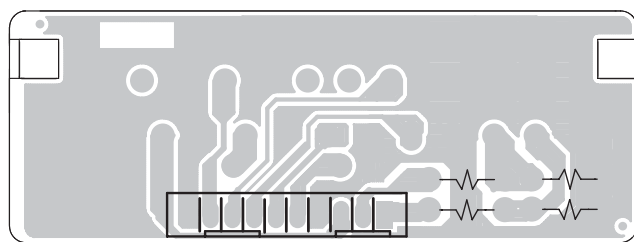
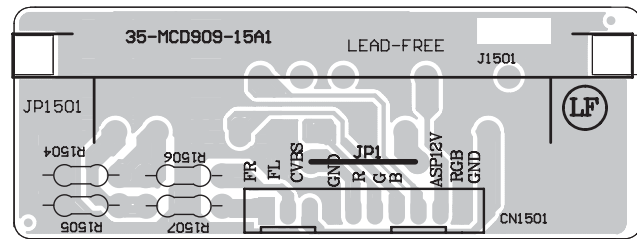
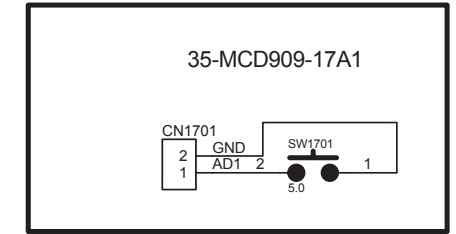
USB Board



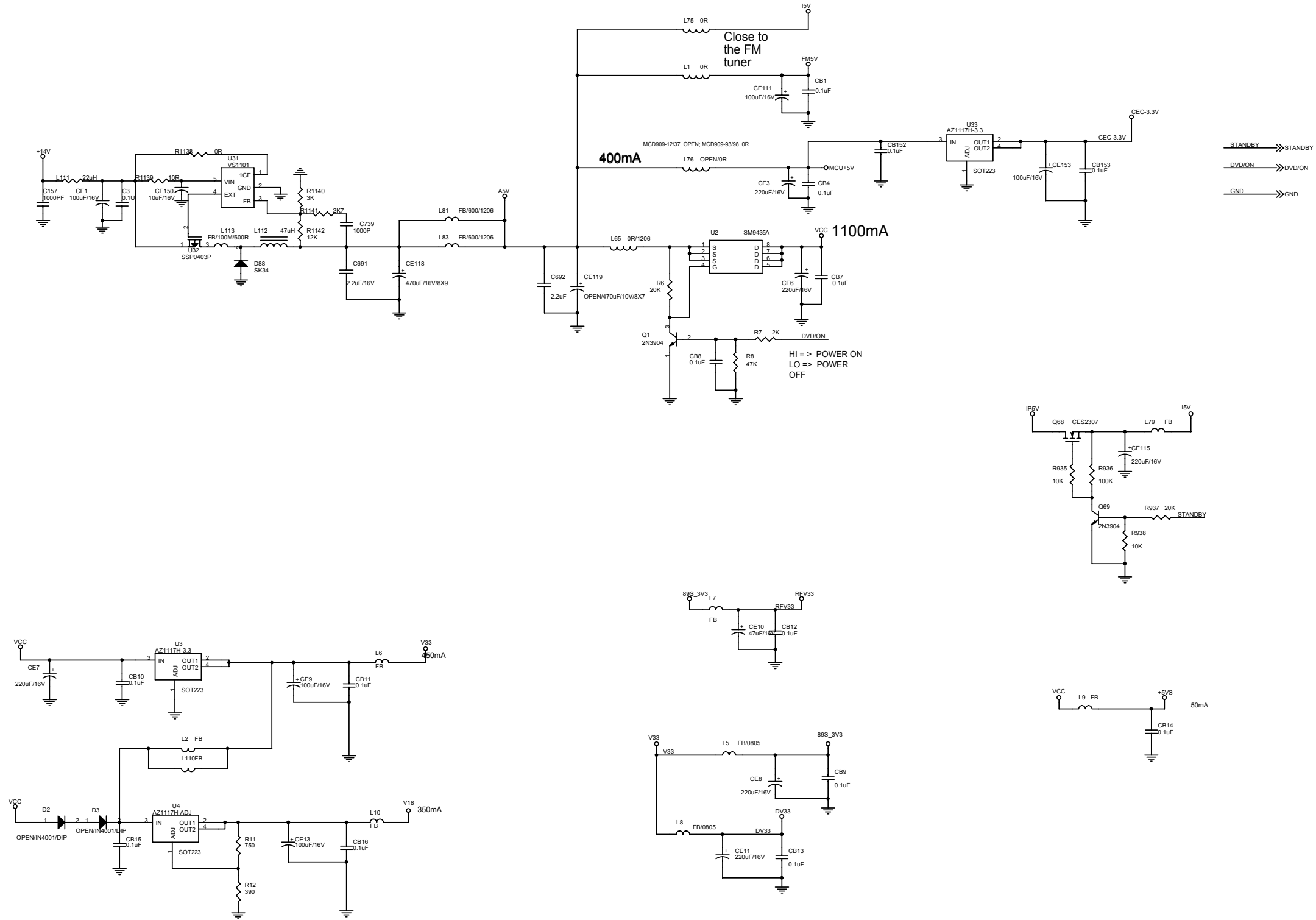
Encoder Board



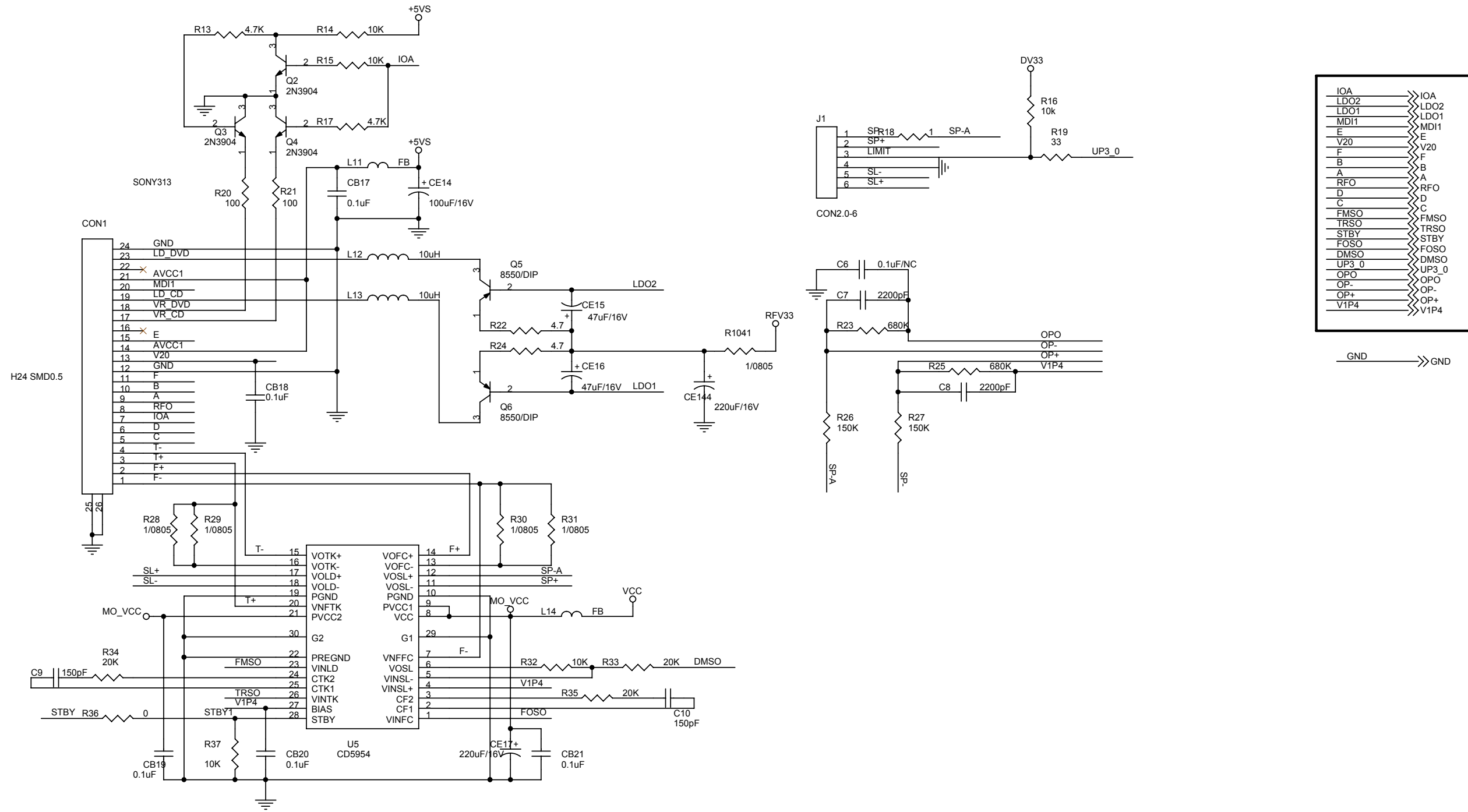
Push Key Board



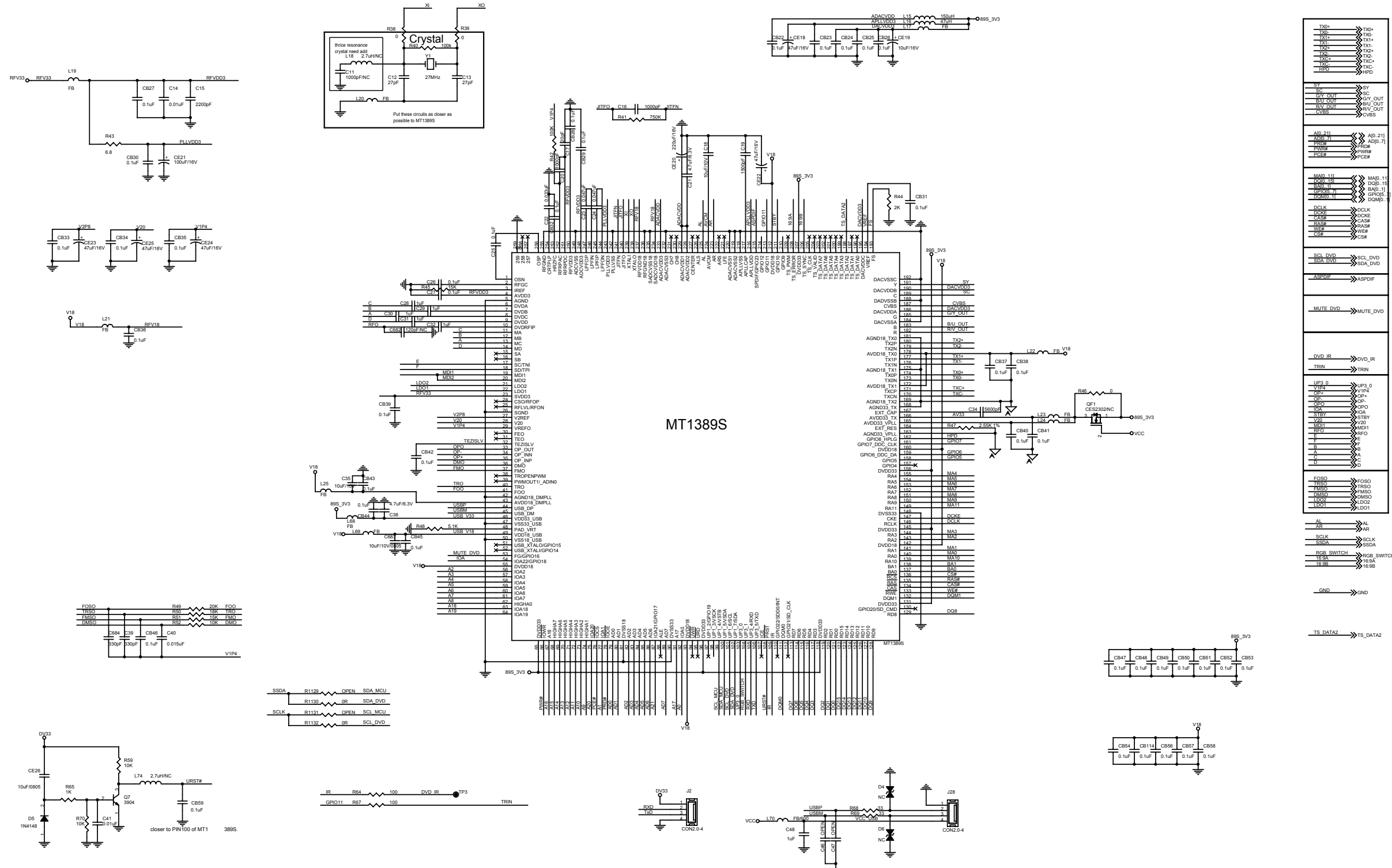
Decoder Board -- Circuit Diagram Part 1



Decoder Board -- Circuit Diagram Part 2



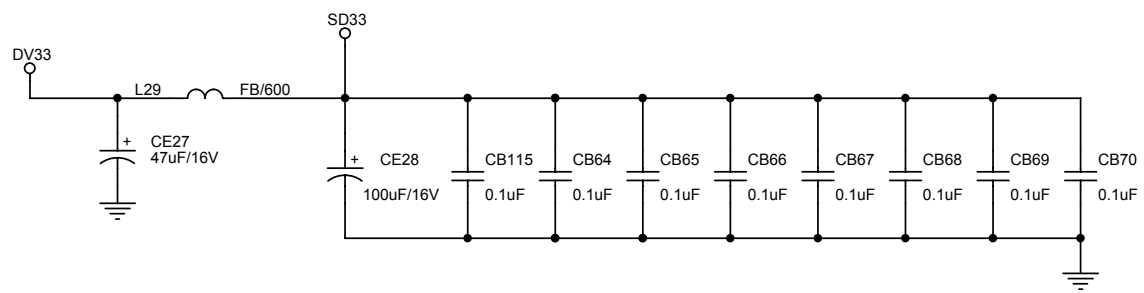
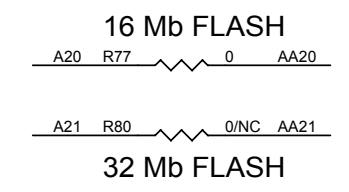
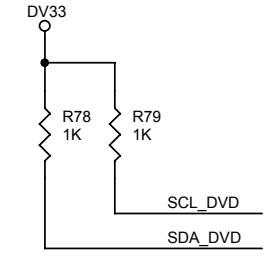
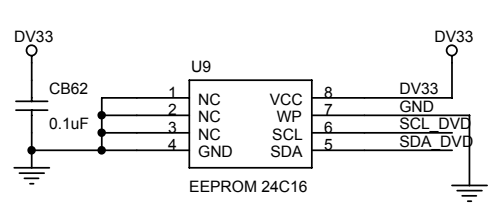
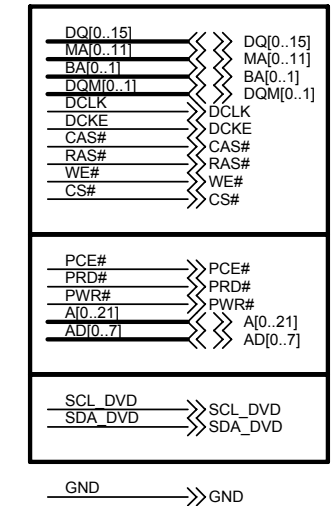
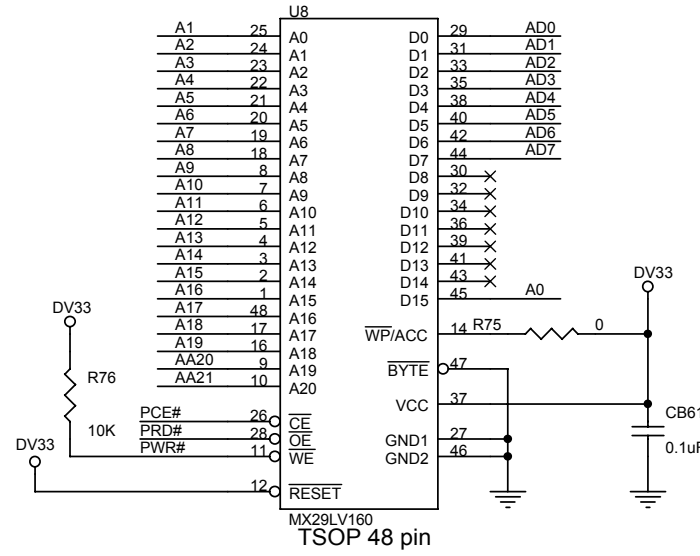
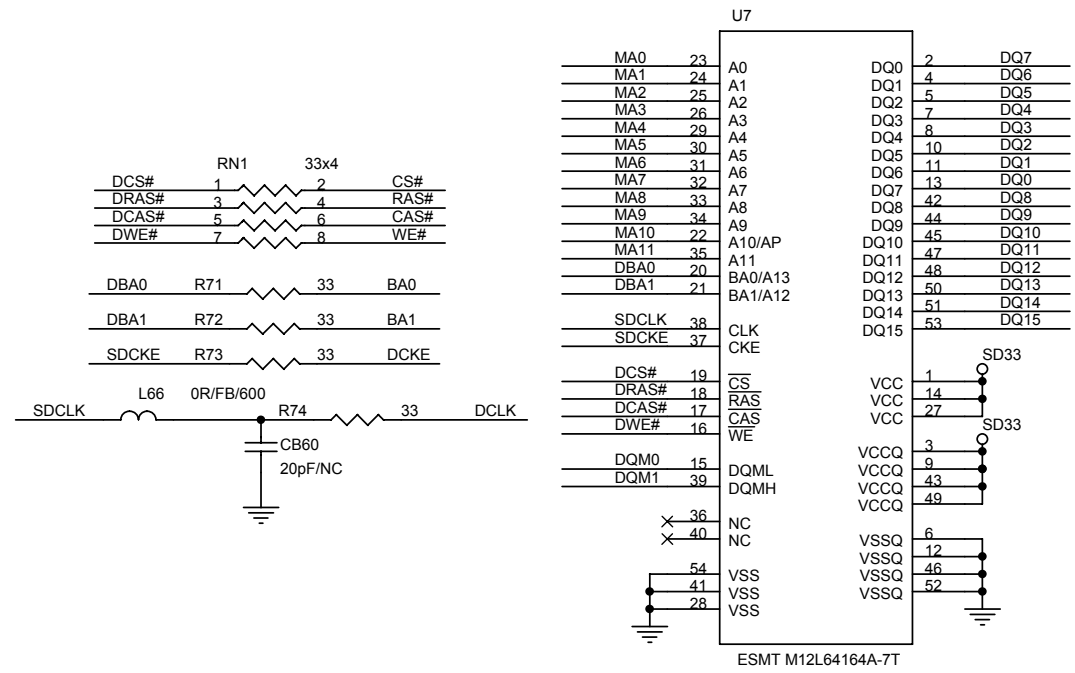
Decoder Board -- Circuit Diagram Part3



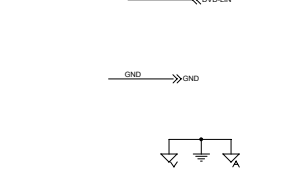
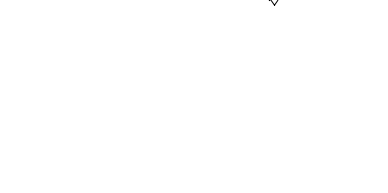
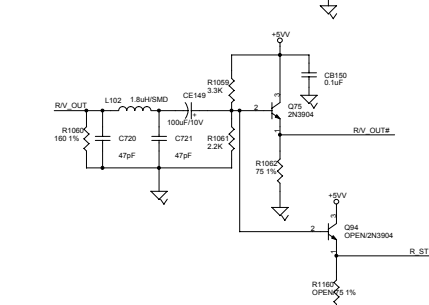
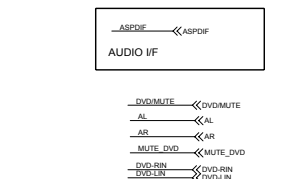
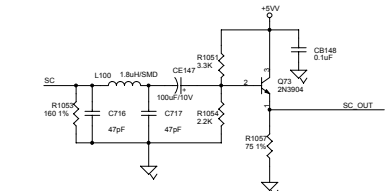
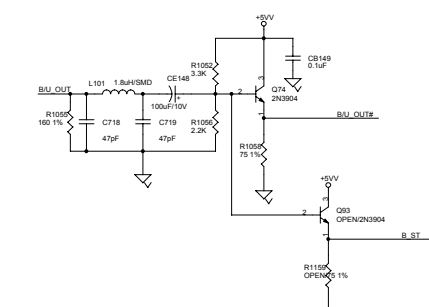
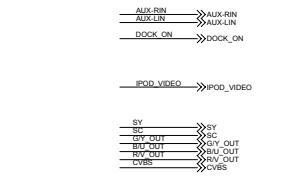
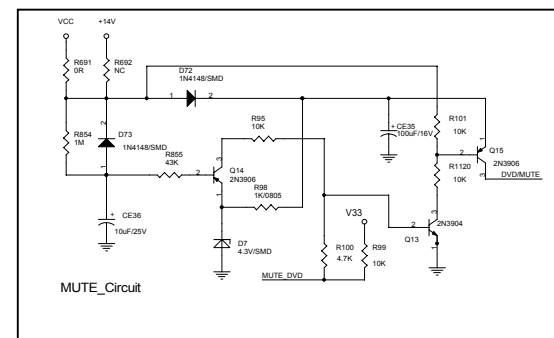
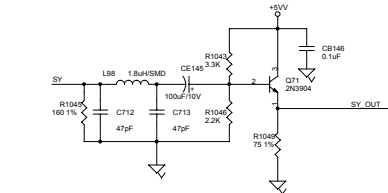
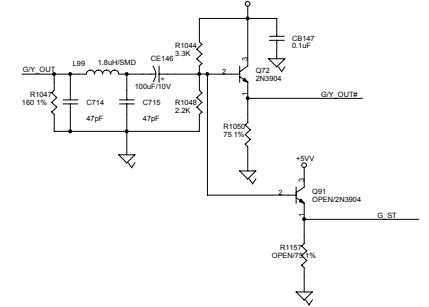
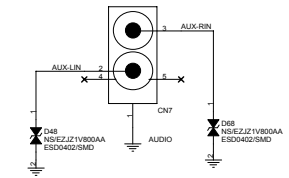
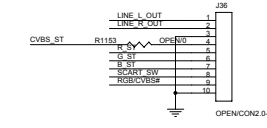
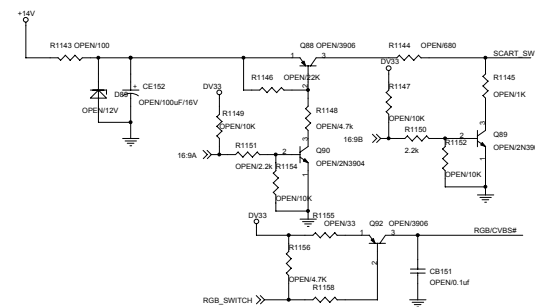
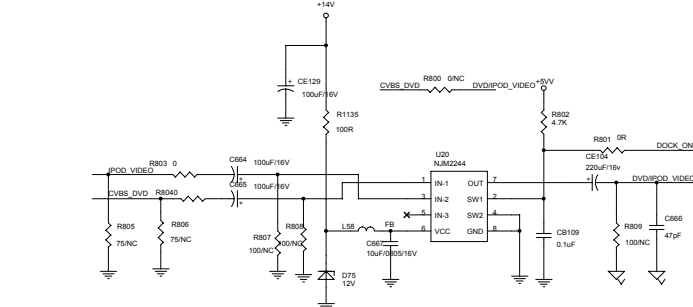
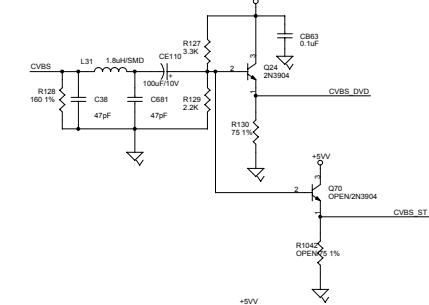
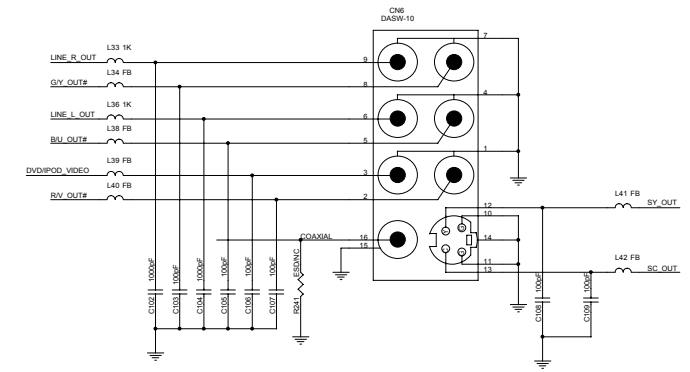
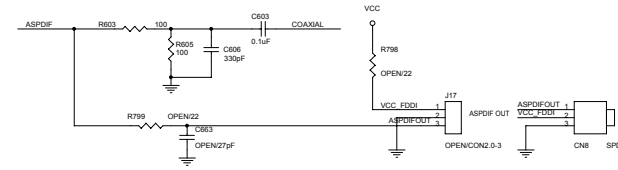
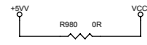
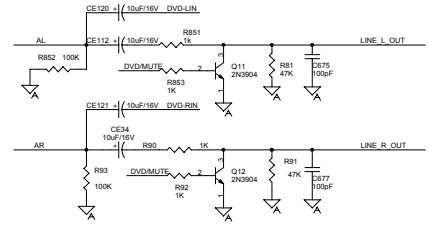
MT1389S

closer to PIN100 of MT1 389S.

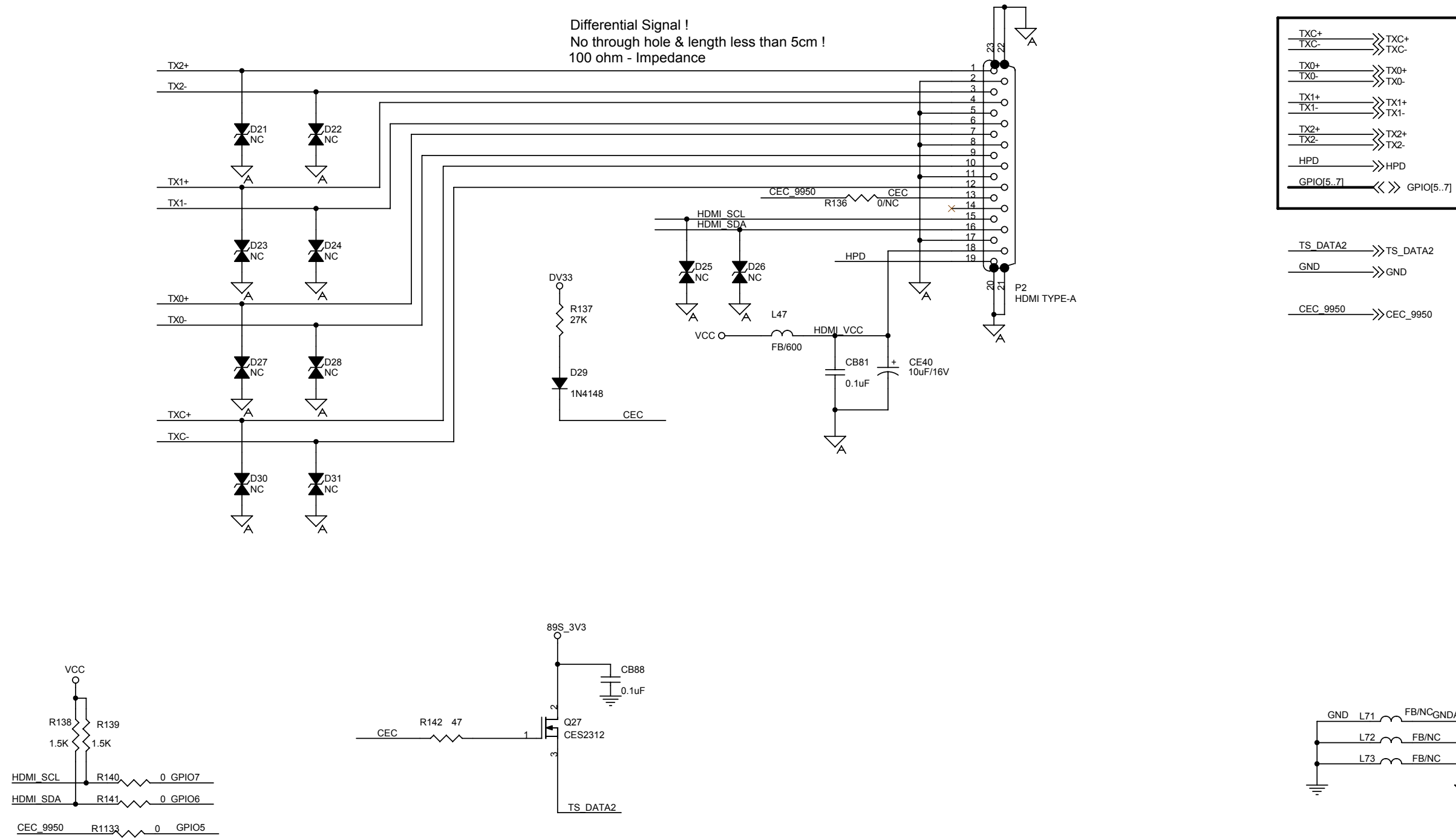
Decoder Board -- Circuit Diagram Part 4



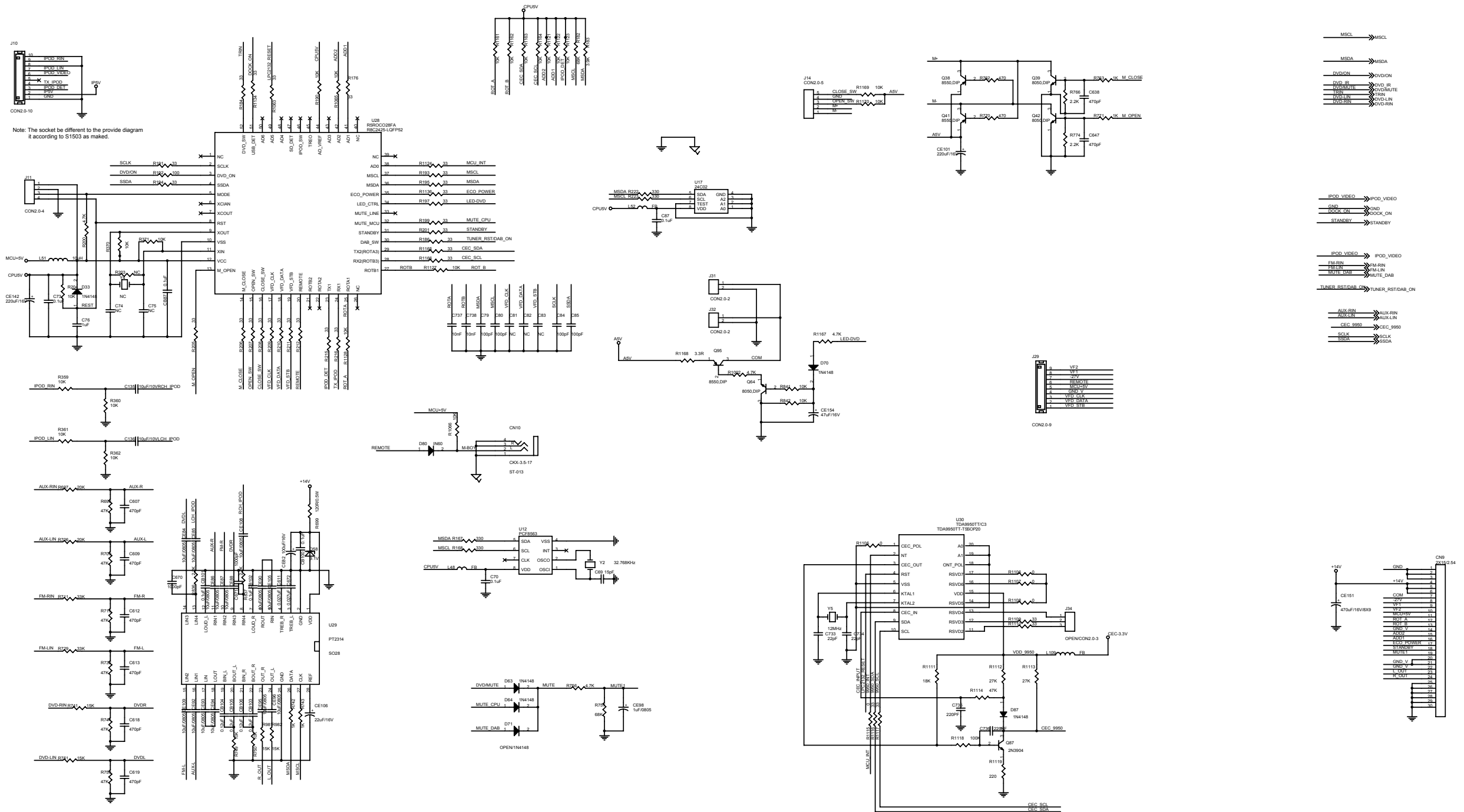
Decoder Board -- Circuit Diagram
Part 5



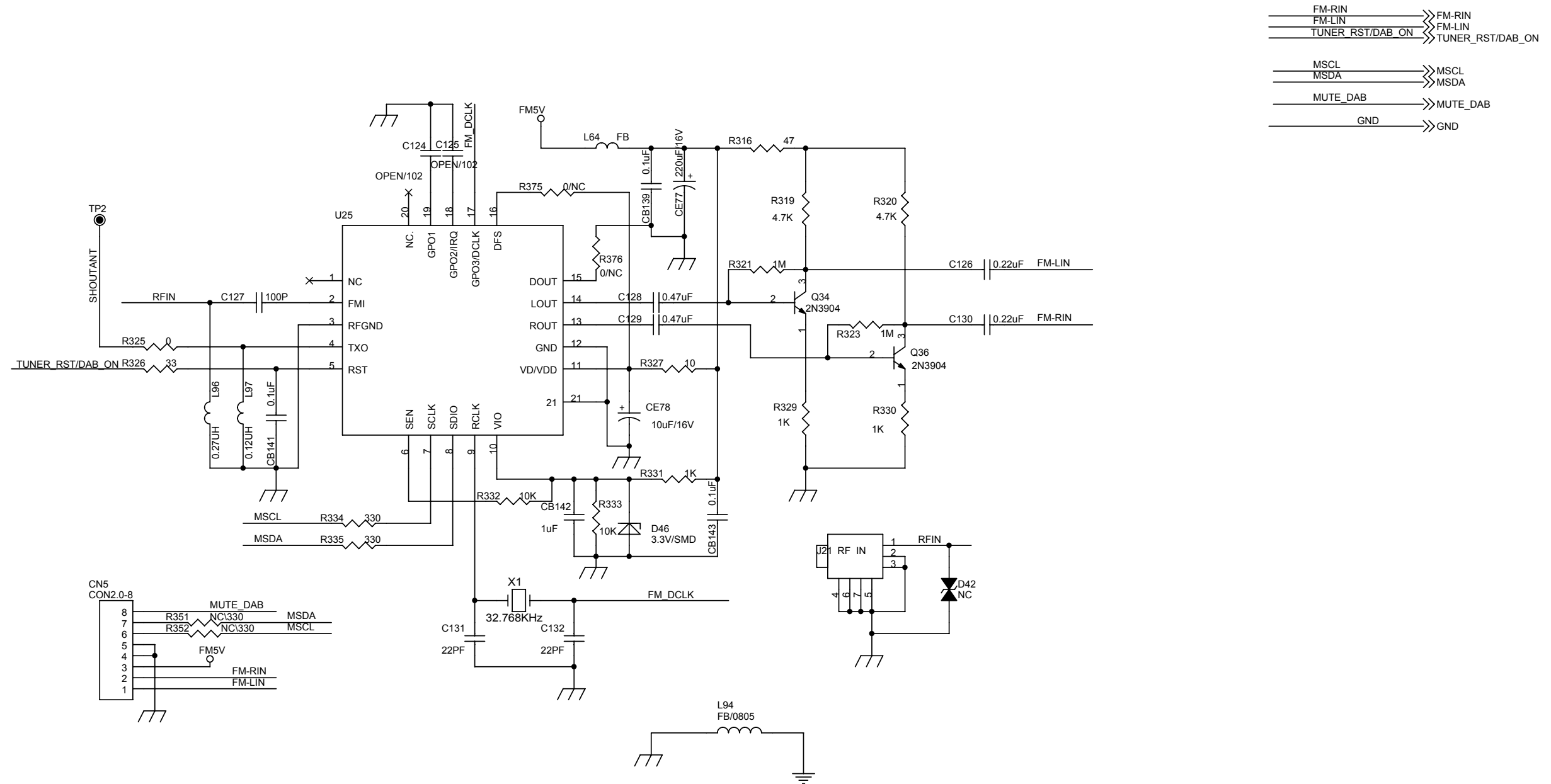
Decoder Board -- Circuit Diagram Part 6



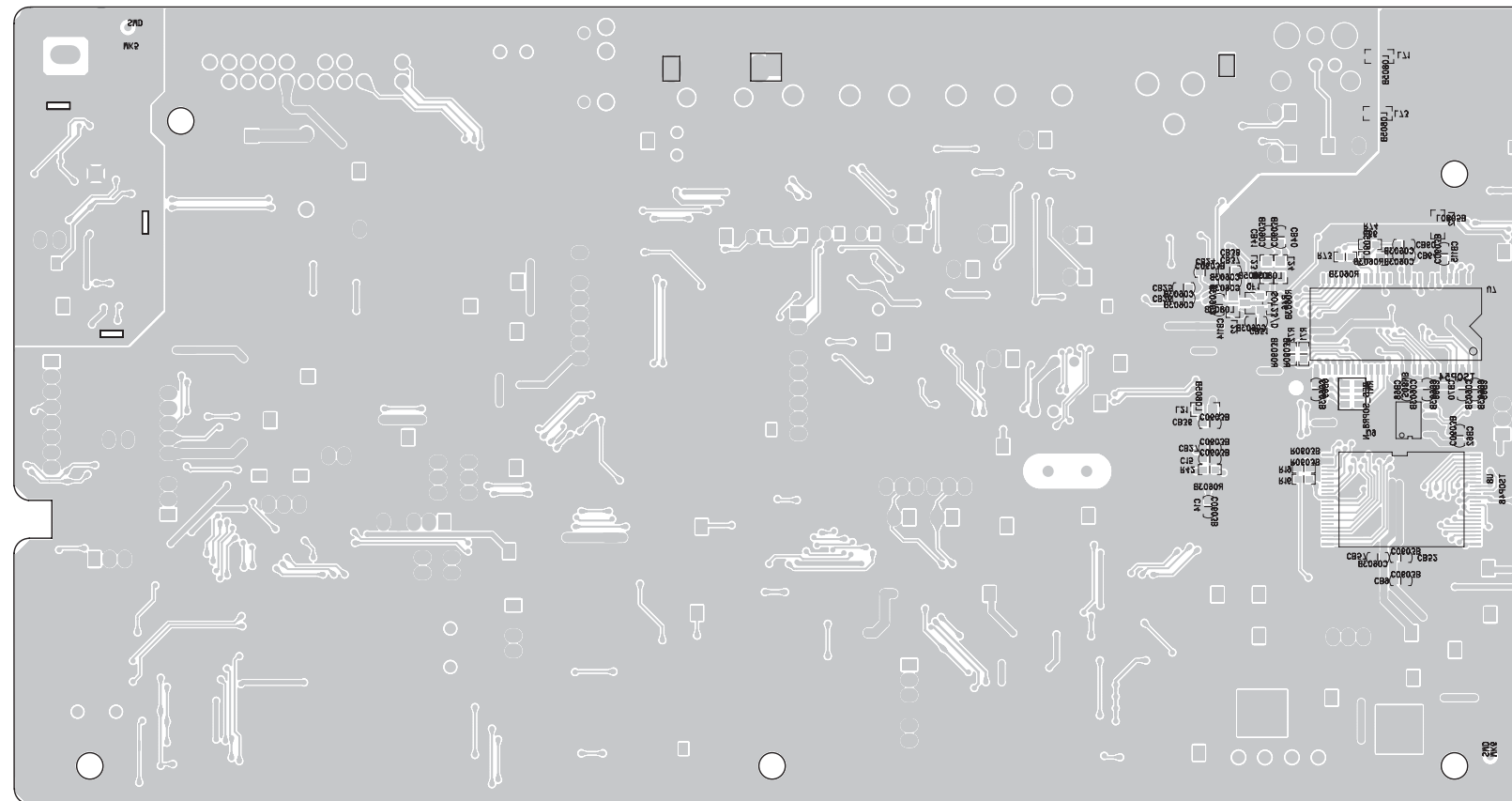
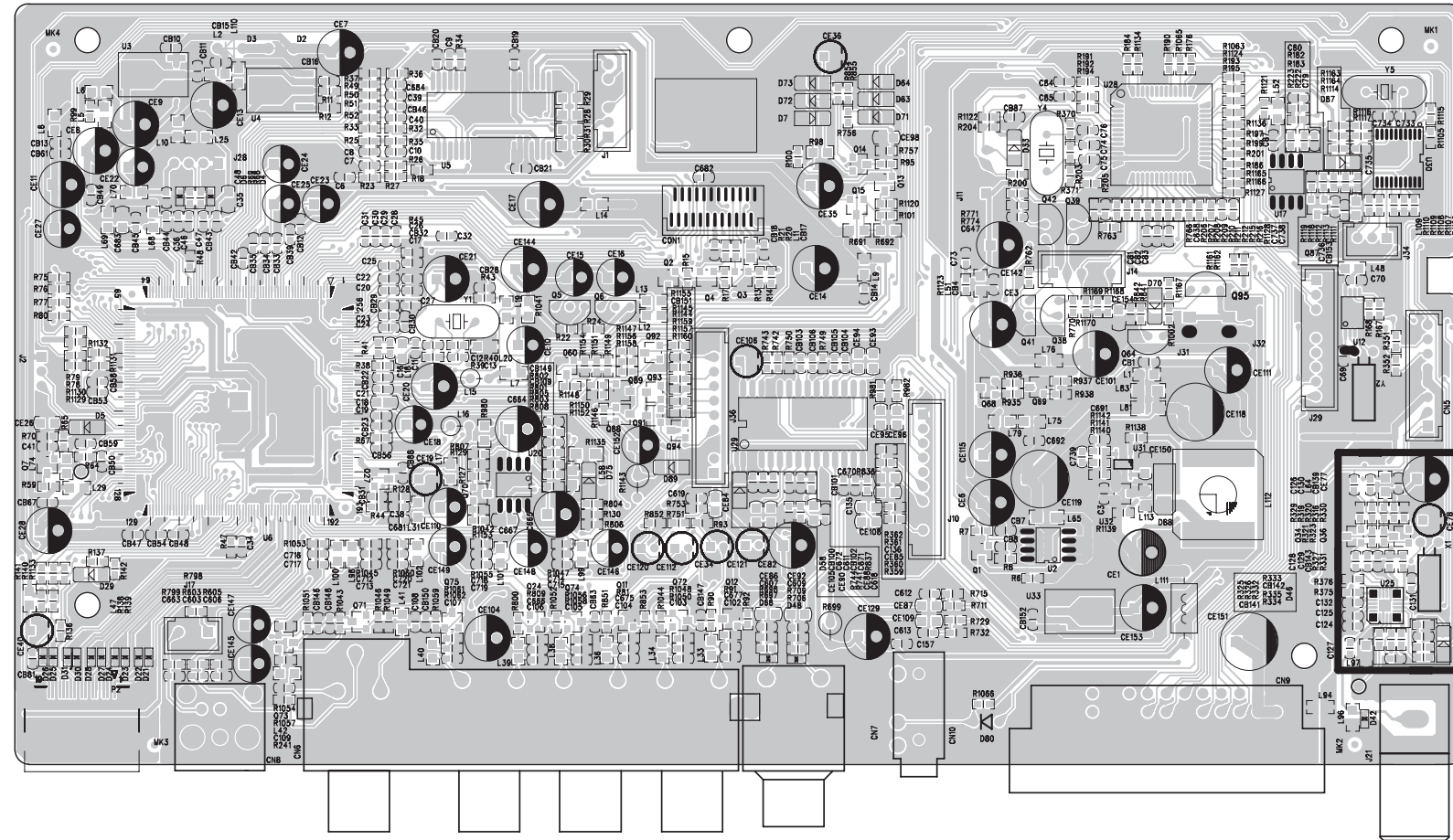
Decoder Board -- Circuit Diagram Part 7



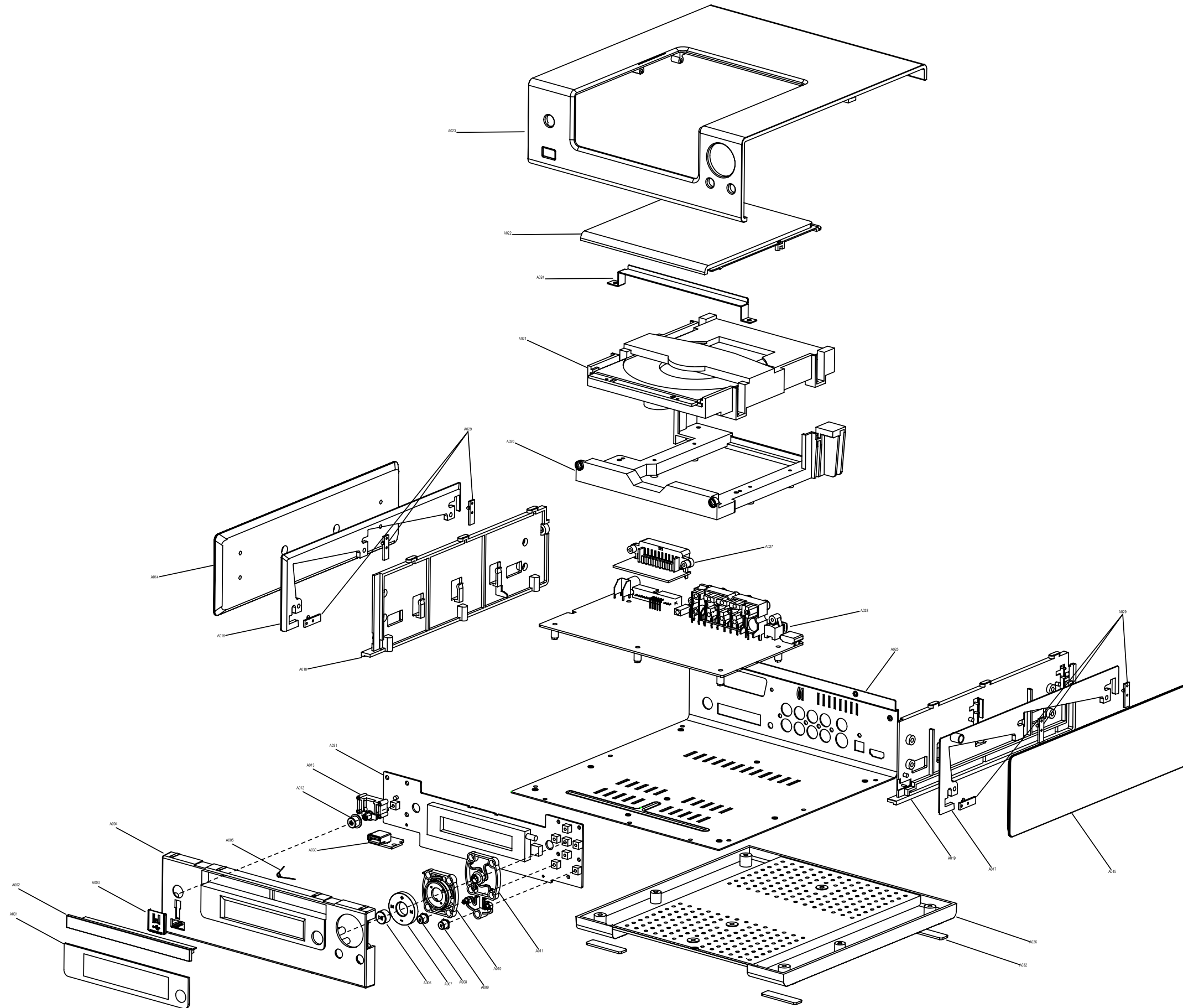
Decoder Board -- Circuit Diagram
Part 8



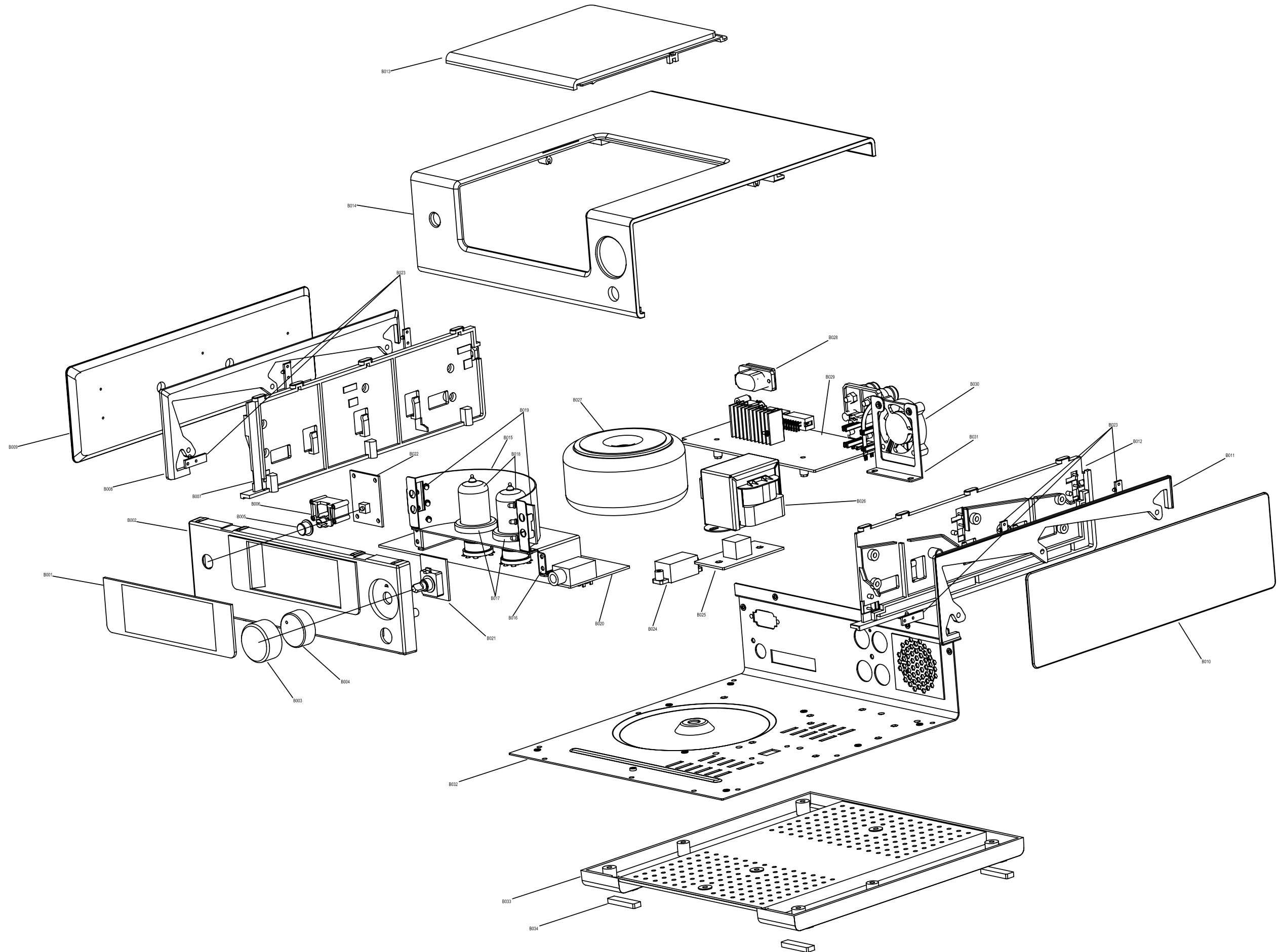
Decoder Board -- Layout Diagram



Explode View -- DVD Part



Explode View -- AMP Part



ACCESSORIES PARTS LIST

ACC1	996510021165	PRC507-03 REMOTE CONTROL
ACC2	996510021143	MCD909/12 MAIN SPEAKER BOX
ACC3	996500041018	FM ANTENNA WIRE 1.5m
ACC4	994000005078	AUDIO SINGLE WIRE W/RCA 1.5M
ACC5	996500042551	CONTROL CABLE WIRE 2.5/30P
ACC6	994000004988	AC LINE CORD 1.8M
ACC7	996510002970	VIDEO CONNECTION CABLE 21PINS

MECHNICAL&MISCELLANEOUS PARTS FOR AMP

B001	996510021142	MCD908 AMP DISPLAY LENS(PMMA)
B002	996510001143	MCD908 AMP CABINET FRONT
B003	996510021159	MCD908 ALUMINIUM VOLUME KNOB
B005	996510021152	MCD908 SOURCE BUTTON(SILVER)
B007	996510001240	MCD908 SIDE PLATE-L SILVER
B008	996500042527	PCB-L PMMA
B009	996510021166	MCD908 SIDE WOODEN BOARD-L
B010	996510021173	MCD908 SIDE WOODEN BOARD-R
B011	996500042528	PCB-R PMMA
B012	996510001241	MCD908 SIDE PLATE-R SILVER
B013	996510021158	MCD908 AMP TOP LENS
B026	996510018713	i TRANSFORMER228A-12 230V/50CE
B027	996510011730	TRANSFORMER 423D-12 230V/50 CE
B028	994000005165	AC SOCKET 1A/250V
B030	996510007807	MINI FAN RDM4010S DC12V/0.7A
B033	996510001146	MCD908 AMP CABINET BOTTOM
B034	996510021175	BLACK SPONGE 35.5X6X3 60
B019	996510021167	MCD909 VACUUM TUBE LAMP BOARD
B021	996510021149	MCD909 ENCODER BOARD
B022	996510021147	MCD909 PUSH KEY BOARD
B023	996510021153	MCD909 LAMP BOARD
B025	996510021164	909/12ECO POWER CONTROL BOARD

ELECTRICAL PARTS FOR AMP - PREPOSITIVE PCB

C12	996510001150	MYLAR CAPACITOR 104P 280V K
C14	996510001152	ELE.CAPACITOR 1U 450V L-5
C16	996510001151	METALLIZED CAP. 1u 250V
C5	996510001153	CERAMIC CAPACITOR 223P 1000V L
C6	996510001149	ELECTROLYTIC CAP. 100U 350V
JACK1	996510000821	HEADPHONE JACK
Q1	996510001121	MOSFET 12AX7
U1	996500042020	IC 7812
U3	994000004952	IC PT2309-S(L)
ZD1	996510005833	ZENER DIODE 5.1V 1/2W-52

ELECTRICAL PARTS FOR AMP - AMP PCB

C1501	996500041014	ELEC. CAP. 3300uF 25V
C151	996510021151	ELECTROLYTIC CAP. 4700 35V L
C384	996510021169	ELECTROLYTIC CAP.22 100V 105
CN300	996510018707	SPEAKER SOCKET 4PINS PST-410A
DZ1	994000005488	ZENER DIODE 12V 0.5W-52
DZ300	996510005833	ZENER DIODE 5.1V 1/2W-52
DZ301	996510010895	ZENER DIODE
F101	994000004867	FUSE F2AL250V
F101H	996510000682	FUSE HOLDER(PLASTIC)
F102	996510000823	FUSE F6.3AL250V(50F)
IC1	996510002941	IC TL072 SOP
IC2	996510000010	IC LM7805/LM340T5 7805
IC300	996510000464	CHIP IC TDA8920(PACKING)
L300	996510021141	INDUCTOR 22u (7A) 15X19
Q113	996500042558	MOSFET BUK7509-55A
REL100	996510021162	RELAY OJE-SS-103LM 3A/250V DC

MECHNICAL&MISCELLANEOUS PARTS FOR DVD

CASSING1	996520035700	MCD909/12 DVD CASING PARTS
A001	996510021157	MCD908 DVD DISPLAY LENS FOR909
A002	996510021174	MCD908 DVD DOOR(ABST100)
A003	996510021161	MCD908 USB DOOR(ABS)
A004	996510021168	MCD908 DVD FRONT CABINET
A006	996510021171	MCD908 PLAY BUTTON PARTS
A007	996510021155	MCD908 FUNCTION BUTTON PARTS
A012	996510021145	MCD908 POWER BUTTON PARTS
A014	996510021166	MCD908 SIDE WOODEN BOARD-L
A015	996510021173	MCD908 SIDE WOODEN BOARD-R
A016	996500042527	PCB-L PMMA
A017	996500042528	PCB-R PMMA
A018	996510001240	MCD908 SIDE PLATE-L SILVER
A019	996510001241	MCD908 SIDE PLATE-R SILVER
A020	996510021144	MCD908 DVD MECHANISM BRACKET
A022	996510021148	MCD908 DVD TOP LENS PARTS
A026	996510001239	MCD908 DVD CABINET BOTTOM
A1	996510000069	24P FLAT FELX CABLE
A021	996510029271	SONY313AAD-T LOADER MECHANISM
A027	996510021176	MCD909/12 SCART BOARD
A028	996510021172	DVD DECODER89SCA909-12(89S909)
A029	996510021153	MCD909 LAMP BOARD
A030	996510021156	MCD909/12 USB BOARD

ELECTRICAL PARTS FOR DVD - DISPLAY PCB

A031	996520035698	MCD909/12 DISPLAY BOARD
IC601	996510000500	IC PT6311/SC16311/CD16311
LED601	994000004948	LED LAMP(BLUE) /12
S601	996510011314	IR SENSOR
SW601	994000004963	LIGHT TOUCH SW. TC103 H5
VFD601	996510000806	VFD DISPLAY NE-705D-2.GB

Note: Only these parts mentioned in the list are normal service parts.

FACTORY PART LIST

A031	MCD909/12 DVD UNIT PARTS ASS'Y
R603	MCD909/12 DISPLAY BOARD
R604	CARBON FILM RESISTOR 3.3 1/2W-52
R601	CARBON FILM RESISTOR 3.3 1/2W-52
R613	CARBON FILM RESISTOR 4.7K 1/8W J-52
C602	CARBON FILM RESISTOR 4.7K 1/8W J-52
C603	CHIP CERAMIC CAP.104p 50V K-5
C604	CHIP CERAMIC CAP.104p 50V K-5
C605	CHIP CERAMIC CAP.104p 50V K-5
R609	CHIP CERAMIC CAP.104p 50V K-5
R610	CARBON FILM RESISTOR 10K 1/8W J-52
R605	CARBON FILM RESISTOR 10K 1/8W J-52
R606	CARBON FILM RESISTOR 33K 1/8W J-52
R607	CARBON FILM RESISTOR 33K 1/8W J-52
R608	CARBON FILM RESISTOR 33K 1/8W J-52
R602	CARBON FILM RESISTOR 33K 1/8W J-52
C601	CARBON FILM RESISTOR 47K 1/8W J-52
C606	ELECTROLYTIC CAP.47u 16V L-5 5X5
D601	ELECTROLYTIC CAP.47u 16V L-5 5X5
D602	DIODE 4148-52
D603	DIODE 4148-52
LED601	DIODE 4148-52
IC601	LED 3R4CB71D-2B-208 (BLUE)
VFD601	IC PT6311/SC16311/CD16311 (H=1.4)
AMP	NE-705D-2.GB VFD DISPLAY
B029	MCD909/12 AMP UNIT PARTS ASS'Y
R319	MCD909 AMP BOARD
R320	CHIP RESISTOR 10 1/4W J (1206)
R342	CHIP RESISTOR 10 1/4W J (1206)
R171	CARBON FILM RESISTOR 15 1/4W J-52
R172	CHIP RESISTOR 680 1/16W J (0805)
R173	CHIP RESISTOR 680 1/16W J (0805)
R174	CHIP RESISTOR 680 1/16W J (0805)
R317	CHIP RESISTOR 680 1/16W J (0805)
R318	CHIP RESISTOR 10 1/16W J (0805)
R1392	CHIP RESISTOR 10 1/16W J (0805)
R1340	CHIP RESISTOR 100 1/16W J (0805)
R1341	CHIP RESISTOR 100 1/16W J (0805)
R1389	CHIP RESISTOR 100 1/16W J (0805)
R1379	CHIP RESISTOR 100 1/16W J (0805)
R1378	CHIP RESISTOR 1K 1/16W J (0805)
R1393	CHIP RESISTOR 1K 1/16W J (0805)
R345	CHIP RESISTOR 1K 1/16W J (0805)
R129	CHIP RESISTOR 1K 1/16W J (0805)
R130	CHIP RESISTOR 10K 1/16W J (0805)
R132	CHIP RESISTOR 10K 1/16W J (0805)
R133	CHIP RESISTOR 10K 1/16W J (0805)
R150	CHIP RESISTOR 10K 1/16W J (0805)
R151	CHIP RESISTOR 10K 1/16W J (0805)
R159	CHIP RESISTOR 10K 1/16W J (0805)
R160	CHIP RESISTOR 10K 1/16W J (0805)
R346	CHIP RESISTOR 10K 1/16W J (0805)
R347	CHIP RESISTOR 10K 1/16W J (0805)

FACTORY PART LIST

R140	CHIP RESISTOR 4.7K 1/16W J (0805)
R083	CHIP RESISTOR 4.7K 1/16W J (0805)
R084	CHIP RESISTOR 4.7K 1/16W J (0805)
R300	CHIP RESISTOR 4.7K 1/16W J (0805)
R343	CHIP RESISTOR 4.7K 1/16W J (0805)
R303	CHIP RESISTOR 4.7K 1/16W J (0805)
R113	CHIP RESISTOR 47K 1/16W J (0805)
R344	CHIP RESISTOR 47K 1/16W J (0805)
R304	CHIP RESISTOR 5.6K 1/16W J (0805)
R305	CHIP RESISTOR 5.6K 1/16W J (0805)
R306	CHIP RESISTOR 5.6K 1/16W J (0805)
R308	CHIP RESISTOR 5.6K 1/16W J (0805)
R309	CHIP RESISTOR 5.6K 1/16W J (0805)
R335	CHIP RESISTOR 2.2K 1/4W J (1206)
R336	CHIP RESISTOR 2.2K 1/4W J (1206)
R082	CHIP RESISTOR 22K 1/16W J (0805)
R314	CHIP RESISTOR 22K 1/16W J (0805)
R315	CHIP RESISTOR 22K 1/16W J (0805)
R347	CHIP RESISTOR 22K 1/16W J (0805)
R310	CHIP RESISTOR 22 1/16W J (0805)
R311	CHIP RESISTOR 22 1W J (2512)
R312	CHIP RESISTOR 22 1W J (2512)
R316	CHIP RESISTOR 30K 1/16W J (0805)
R331	CHIP RESISTOR 27K 1/16W J (0805)
R332	CHIP RESISTOR 27K 1/16W J (0805)
R333	CHIP RESISTOR 240K 1/16W J (0805)
R334	CHIP RESISTOR 240K 1/16W J (0805)
R175	CARBON FILM RESISTOR 560 1/4W J-52
R162	CARBON FILM RESISTOR 2.2 1/4W J-52
R163	CARBON FILM RESISTOR 2.2 1/4W J-52
R313	CHIP RESISTOR 1.5K 1/16W J (0805)
C307	CHIP CAP.474p 50V M (0805) Y5V
C308	CHIP CAP.474p 50V M (0805) Y5V
C339	CHIP CAP.474p 50V M (0805) Y5V
C341	CHIP CAP.474p 50V M (0805) Y5V
C342	CHIP CAP.474p 50V M (0805) Y5V
C344	CHIP CAP.474p 50V M (0805) Y5V
C392	CHIP CAP.224p 50V M (0805) Y5V
C345	CHIP CAP.220p 50V K (0805) X7R
C347	CHIP CAP.220p 50V K (0805) X7R
C353	CHIP CAP.220p 50V K (0805) X7R
C354	CHIP CAP.220p 50V K (0805) X7R
C350	CHIP CAP.220p 50V K (0805) X7R
C348	CHIP CAP.220p 50V K (0805) X7R
C377	CHIP CAP.153p 50V M (0805) Y5V
C379	CHIP CAP.153p 50V M (0805) Y5V
C381	CHIP CAP.153p 50V M (0805) Y5V
C324	CHIP CAP.102p 50V K (0805) X7R
C326	CHIP CAP.102p 50V K (0805) X7R
C327	CHIP CAP.102p 50V K (0805) X7R
C332	CHIP CAP.102p 50V K (0805) X7R
C329	CHIP CAP.102p 50V K (0805) X7R
C330	CHIP CAP.102p 50V K (0805) X7R
C331	CHIP CAP.102p 50V K (0805) X7R
C333	CHIP CAP.102p 50V K (0805) X7R
C335	CHIP CAP.102p 50V K (0805) X7R
C336	CHIP CAP.102p 50V K (0805) X7R
C303	CHIP CAP.333p 50V M (0805) Y5V
C304	CHIP CAP.333p 50V M (0805) Y5V

FACTORY PART LIST

C153	CHIP CAP.104p 100V M (0805) Y5V
C154	CHIP CAP.104p 100V M (0805) Y5V
C155	CHIP CAP.104p 100V M (0805) Y5V
C140	CHIP CAP.104p 100V M (0805) Y5V
C139	CHIP CAP.104p 100V M (0805) Y5V
C301	CHIP CAP.104p 100V M (0805) Y5V
C302	CHIP CAP.104p 100V M (0805) Y5V
C397	CHIP CAP.104p 100V M (0805) Y5V
C398	CHIP CAP.104p 100V M (0805) Y5V
C1502	CHIP CAP.104p 100V M (0805) Y5V
C355	CHIP CAP.104p 100V M (0805) Y5V
C356	CHIP CAP.104p 100V M (0805) Y5V
C359	CHIP CAP.104p 100V M (0805) Y5V
C360	CHIP CAP.104p 100V M (0805) Y5V
C361	CHIP CAP.104p 100V M (0805) Y5V
C362	CHIP CAP.104p 100V M (0805) Y5V
C363	CHIP CAP.104p 100V M (0805) Y5V
C364	CHIP CAP.104p 100V M (0805) Y5V
C367	CHIP CAP.104p 100V M (0805) Y5V
C368	CHIP CAP.104p 100V M (0805) Y5V
C370	CHIP CAP.104p 100V M (0805) Y5V
C371	CHIP CAP.104p 100V M (0805) Y5V
C373	CHIP CAP.104p 100V M (0805) Y5V
C134	CHIP CAP.104p 100V M (0805) Y5V
C135	CHIP CAP.104p 100V M (0805) Y5V
C305	CHIP CAP.104p 100V M (0805) Y5V
C306	CHIP CAP.104p 100V M (0805) Y5V
C382	NONINDUCTIVE CAP.684J 100VJ-5 (SMALL)
C383	NONINDUCTIVE CAP.684J 100VJ-5 (SMALL)
C374	NONINDUCTIVE CAP.104J 100V K-5
C376	NONINDUCTIVE CAP.104J 100V K-5
C300	ELECTROLYTIC CAP.10u 25V L-5 4X5
C394	ELECTROLYTIC CAP.10u 25V L-5 4X5
C338	ELECTROLYTIC CAP.100u 16V L-5 5X11
C396	ELECTROLYTIC CAP.100u 16V L-5 5X11
R346	CHIP CAP.33p 50V J (0805) NPO
C1	ELECTROLYTIC CAP.47u 25V L-5 5X11
C2	ELECTROLYTIC CAP.47u 25V L-5 5X11
C1514	ELECTROLYTIC CAP.47u 25V L-5 5X11
C395	ELECTROLYTIC CAP.47u 25V L-5 5X11
C393	ELECTROLYTIC CAP.47u 35V L-5 6.3X7
C384	ELECTROLYTIC CAP.22u 100V L 105°C SHQ
C695	ELECTROLYTIC CAP.22u 16V L-5 5X11
C399	ELECTROLYTIC CAP.22u 16V L-5 5X11
C121	ELECTROLYTIC CAP.220u 50V L-5 10X12.5
C122	ELECTROLYTIC CAP.220u 50V L-5 10X12.5
C390	ELECTROLYTIC CAP.1000u 35V L 105°C
C389	ELECTROLYTIC CAP.1000u 35V L 105°C
C1501	ELECTROLYTIC CAP.3300u 25V L 16X25
C151	ELECTROLYTIC CAP. 4700u 35V L 16X40
C152	ELECTROLYTIC CAP. 4700u 35V L 16X40
C387	ELECTROLYTIC CAP.470u 35V L 105°C 10X16
C388	ELECTROLYTIC CAP.470u 35V L 105°C 10X16
D081	DIODE 4148-52
D110	DIODE 4148-52
D111	DIODE 4148-52
DZ300	ZENER DIODE 5.1V 1/2W-52
DZ302	ZENER DIODE 5.1V 1/2W-52
DZ301	ZENER DIODE 27V 1W -52

FACTORY PART LIST

DZ102	ZENER DIODE 27V 1W -52
DZ103	ZENER DIODE 27V 1W -52
DZ1	ZENER DIODE 12V 0.5W-52
DZ2	ZENER DIODE 12V 0.5W-52
Q081	CHIP TRANSISTOR 8050(SOT-23)
Q2	CHIP TRANSISTOR 8550C(SOT-23)
Q080	CHIP TRANSISTOR 8550C(SOT-23)
Q302	CHIP TRANSISTOR 8550C(SOT-23)
Q1	CHIP TRANSISTOR 9014 (SOT-23)
Q301	CHIP TRANSISTOR 9014 (SOT-23)
Q115	CHIP TRANSISTOR BC857B(SOT23)
Q116	CHIP TRANSISTOR BC857B(SOT23)
Q117	CHIP TRANSISTOR BC847B(SOT23)
Q113	MOSFET BUK7509-55A
Q114	MOSFET BUK7509-55A
DB102	RECTIFIER RS808
DB101	RECTIFIER RS1010G(10A)
L300	INDUCTOR 22u (7A) Φ 15X19
L301	INDUCTOR 22u (7A) Φ 15X19
D102	RECTIFIER DIODE 4001-52
D107	RECTIFIER DIODE 4001-52
D108	RECTIFIER DIODE 4001-52
D109	RECTIFIER DIODE 4001-52
Q300	CHIP TRANSISTOR BC817-25(SOT23)
IC300	IC TDA8920BTH(SOP)
IC1	IC TL072 SOP
IC2	IC LM7805/LM340T5 7805
B020	MCD909/12 PREPOSITIVE BOARD
R50	CARBON FILM RESISTOR 0.47 1/2W J
C2	ELECTROLYTIC CAP.2200u 25V L 13X21
C33	ELECTROLYTIC CAP. 220u 16V L-5 6.3X11
C34	ELECTROLYTIC CAP. 220u 16V L-5 6.3X11
C20	ELECTROLYTIC CAP.470u 16V L-5 8X11.5/12
C5	Δ HI-VOLTAGE CHIP CERAMIC CAP.223p 1000V
R74	CARBON FILM RESISTOR 4.7K 1/8W J-52
D3	RECTIFIER DIODE 4001-52
D2	RECTIFIER DIODE 4001-52
D1	DIODE 4148-52
D6	DIODE 4148-52
24	CARBON FILM RESISTOR 47K 1/2W J-52
25	CARBON FILM RESISTOR 47K 1/2W J-52
27	CARBON FILM RESISTOR 47K 1/2W J-52
28	CARBON FILM RESISTOR 47K 1/2W J-52
C21	ELECTROLYTIC CAP.47u 16V L-5 5X11
ZD1	ZENER DIODE 5.1V 1/2W-52
C11	CHIP CERAMIC CAP.5p 50V \pm 0.25p npo
C10	CHIP CERAMIC CAP.5p 50V \pm 0.25p npo
D7	RECTIFIER DIODE 4007
D8	RECTIFIER DIODE 4007
D9	RECTIFIER DIODE 4007
D10	RECTIFIER DIODE 4007
U3	IC PT2309-S(L) SOP

FACTORY PART LIST

R2	CARBON FILM RESISTOR 0.47 1/2W J
R22	CARBON FILM RESISTOR 0.47 1/2W J
R37	CARBON FILM RESISTOR 100 1/8W J-52
R73	CARBON FILM RESISTOR 100K 1/8W J-52
C3	CHIP CERAMIC CAP.104p 50V K-5
R23	METALLIZED FILM RESISTOR 10K 1/2W F-52
R6	CARBON FILM RESISTOR 10K 1/8W J-52
R75	CARBON FILM RESISTOR 10K 1/8W J-52
R53	CARBON FILM RESISTOR 10K 1/8W J-52
R61	CARBON FILM RESISTOR 150K 1/2W J-52
R60	CARBON FILM RESISTOR 150K 1/2W J-52
R64	CARBON FILM RESISTOR 150K 1/2W J-52
R65	CARBON FILM RESISTOR 150K 1/2W J-52
R70	CARBON FILM RESISTOR 2.2K 1/8W J-52
R71	CARBON FILM RESISTOR 2.2K 1/8W J-52
R57	CARBON FILM RESISTOR 3.3K 1/2W J-52
R56	CARBON FILM RESISTOR 3.3K 1/2W J-52
R72	CARBON FILM RESISTOR 220 1/8W J-52
R62	CARBON FILM RESISTOR 560 1/2W J
R63	CARBON FILM RESISTOR 560 1/2W J
R7	CARBON FILM RESISTOR 1K 1/8W J-52
R31	CARBON FILM RESISTOR 1K 1/8W J-52
R4	CARBON FILM RESISTOR 47K 1/8W J-52
R5	CARBON FILM RESISTOR 47K 1/8W J-52
R51	CARBON FILM RESISTOR 47K 1/8W J-52
R52	CARBON FILM RESISTOR 47K 1/8W J-52
R69	CARBON FILM RESISTOR 47K 1/8W J-52
R67	CARBON FILM RESISTOR 47K 1/8W J-52
R66	CARBON FILM RESISTOR 3.3K 1/8W J-52
R68	CARBON FILM RESISTOR 3.3K 1/8W J-52
R59	CARBON FILM RESISTOR 330K 1/2W J-52
R58	CARBON FILM RESISTOR 330K 1/2W J-52
C1	ELECTROLYTIC CAP. 330u 16V L-5 8X11.5
C19	ELECTROLYTIC CAP.4.7u 50V L-5 5X11
C18	ELECTROLYTIC CAP.4.7u 50V L-5 5X11
U1	IC 7812 (ST)
R1	CARBON FILM RESISTOR 470K 1/8W J-52
R54	CARBON FILM RESISTOR 8.2K 1/8W J-52
R55	CARBON FILM RESISTOR 8.2K 1/8W J-52
Q3	TRANSISTOR 9014D-5($\beta > 500$)
Q4	TRANSISTOR 9014D-5($\beta > 500$)
Q5	TRANSISTOR 9014D-5($\beta > 500$)
Q6	TRANSISTOR 2SB772A

FACTORY PART LIST

B025	MCD909/12 ECO POWER CONTROL BOARD
REL400	RELAY 10A 240VAC-30VDC HLS-14F1L-DC12V-C
D400	RECTIFIER DIODE 4001-52
D401	RECTIFIER DIODE 4001-52
D402	RECTIFIER DIODE 4001-52
D403	RECTIFIER DIODE 4001-52
D404	RECTIFIER DIODE 4001-52
R400	CARBON FILM RESISTOR 33K 1/8W J-52
R402	CARBON FILM RESISTOR 4.7K 1/8W J-52
R401	CARBON FILM RESISTOR 10 1/4W J-52
ACC2	MCD909/12 MAIN SPEAKER BOX
	MCD908 FREQUENCY DIVIDER BOARD
R5	CEMENT RESISTOR 4.7 10W J
R6	CEMENT RESISTOR 4.7 10W J
C2	NON-POLARITG ELEC.CAP.5.6u 100V M SNP
C3	NON-POLARITG ELEC.CAP.5.6u 100V M SNP
C4	NON-POLARITG ELEC.CAP.1u 100V M SNP
C5	NON-POLARITG ELEC.CAP.6.8u 100V M SNP
L1	SILICON INDUCTOR 0.9mH
L3	SILICON INDUCTOR 0.05mH
L2	HOLLOW INDUCTOR 0.3mH
	PRC507-01A REMOTE CONTROL BOARD
R11	CHIP RESISTOR 10 1/16W J (0805)
R1	CHIP RESISTOR 1K 1/16W J (0805)
R5	CHIP RESISTOR 1K 1/16W J (0805)
R8	CHIP RESISTOR 1K 1/16W J (0805)
R10	CHIP RESISTOR 1K 1/16W J (0805)
R3	CHIP RESISTOR 5.6 1/16W J (0805)
R7	CHIP RESISTOR 56 1/16W J (0805)
R6	CHIP RESISTOR 300 1/16W J(0805)
R9	CHIP RESISTOR 300 1/16W J(0805)
R4	CHIP RESISTOR 300 1/16W J(0805)
C1	ELECTROLYTIC CAP.100u 10V M 5X7
C2	CHIP CAP.30p 50V J(0805) NPO
C3	CHIP CAP.30p 50V J(0805) NPO
Q5	CHIP DIODE 4148
D3	LED 2.6X7X7.6 1L2745B12E0DI001
D2	LED 2X5X7 1L2545B12E0DE002
D4	LED 2X5X7 1L2545B12E0DE002
D1	INFRARED-EMITTING DIODE Φ3
Q1	CHIP TRANSISTOR BC817-25(SOT23)
Q2	CHIP TRANSISTOR 8050(SOT-23)
Q3	CHIP TRANSISTOR 8050(SOT-23)
Q4	CHIP TRANSISTOR 8050(SOT-23)
U1	IC TM58P20SC(0310)
XY1	CERAMIC CRYSTAL OSCILLATOR 4.19mHz