

Service
Service
Service



Service Manual

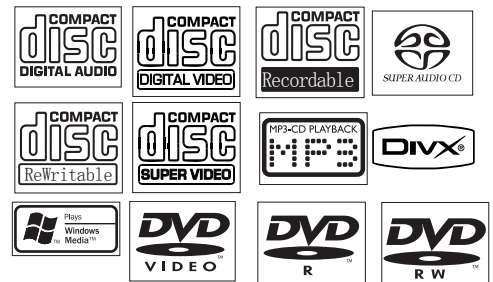


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Version 1.1



PHILIPS

Electronic Specification

AMPLIFIER

Rated Output Power 2X20W RMS
 Signal-to-noise ratio ≥65dBA
 Frequency response 20Hz--20kHz ±3dB
 Aux Input 1V/ RMS 16kohm

DISC

Laser Type Simeconductor
 Disc Diameter 12cm/8cm
 Support Disc CD-DA,
 CD-R,CD-RW,MP3,DVD,DVD-RW,DVD+RW
 Audio DAC 1KHz
 Total Harmonic Distortion < 1%
 Frequency Response 20Hz ~ 20KHz
 S/N Ration >65dBA

TUNER

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

Sensitivity

– Mono, 26dB S/N Ratio 5uV
 – Stereo, 46dB S/N Ration 100uV
 Selectivity >33dB
 Image Rejection >25dB
 Total Harmonic Distortion 3%
 Signal to Noise Ration ≥50dBA

SPEAKERS

Speaker Impedance 2x8ohm
 Speaker Driver, base 4"
 Speaker Driver, tweeter Buzzer
 Frequency Response 100Hz +5dB+/-5 15KHz

GENERAL INFORMATION

Total Output power 40W RMS
 AC Power 220V / 50Hz
 Operation Power Consumption 40W
 Standby Power Consumption <6W
 Eco Standby Power Consumption <1W
 Headphone Output 500mV 32ohm
 USB Direct Version 2.0

Dimensions

– Main unit (w x h x d) 220x90x240mm
 – Speaker box (w x h x d) 100x220x160mm
 – SUBwoofer(w x h x d) NA

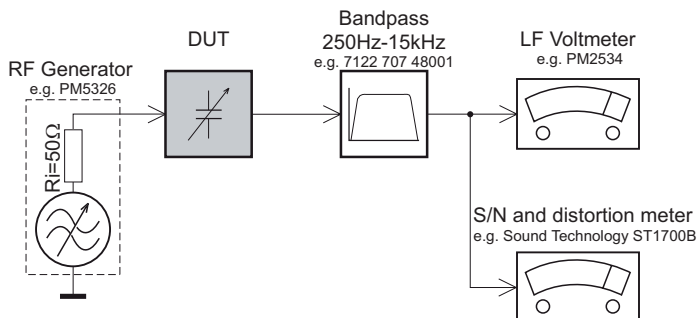
Weight

– With Packing 6KG
 – Main Unit 1.65 KG
 – Speaker box 1.5x2KG
 – SUBwoofer..... NA

Specifications and external appearance are subject to change without notice.

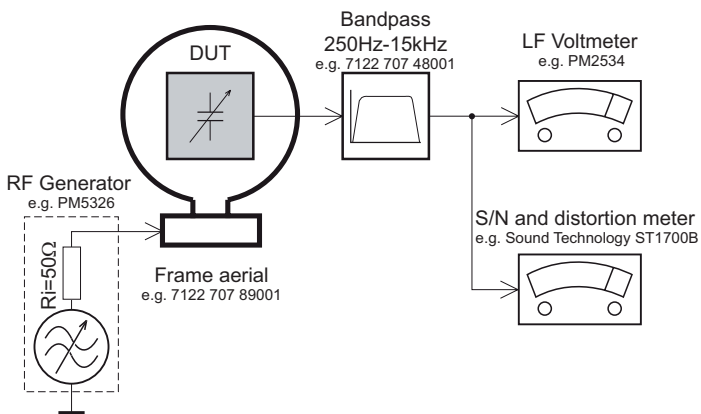
MEASUREMENT SETUP

Tuner FM



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

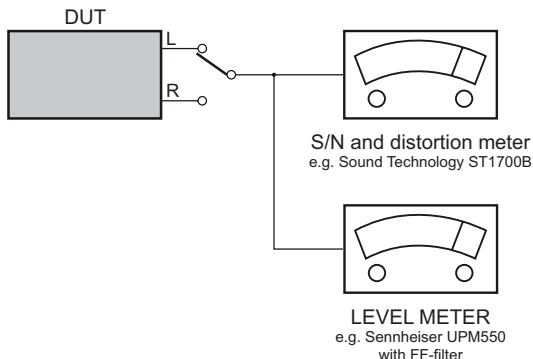
Tuner AM (MW,LW)



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).

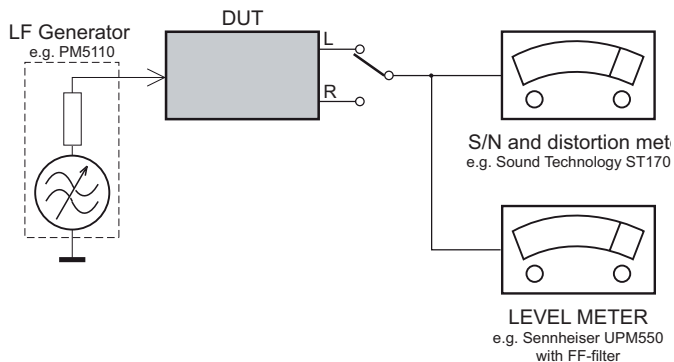
CD

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".

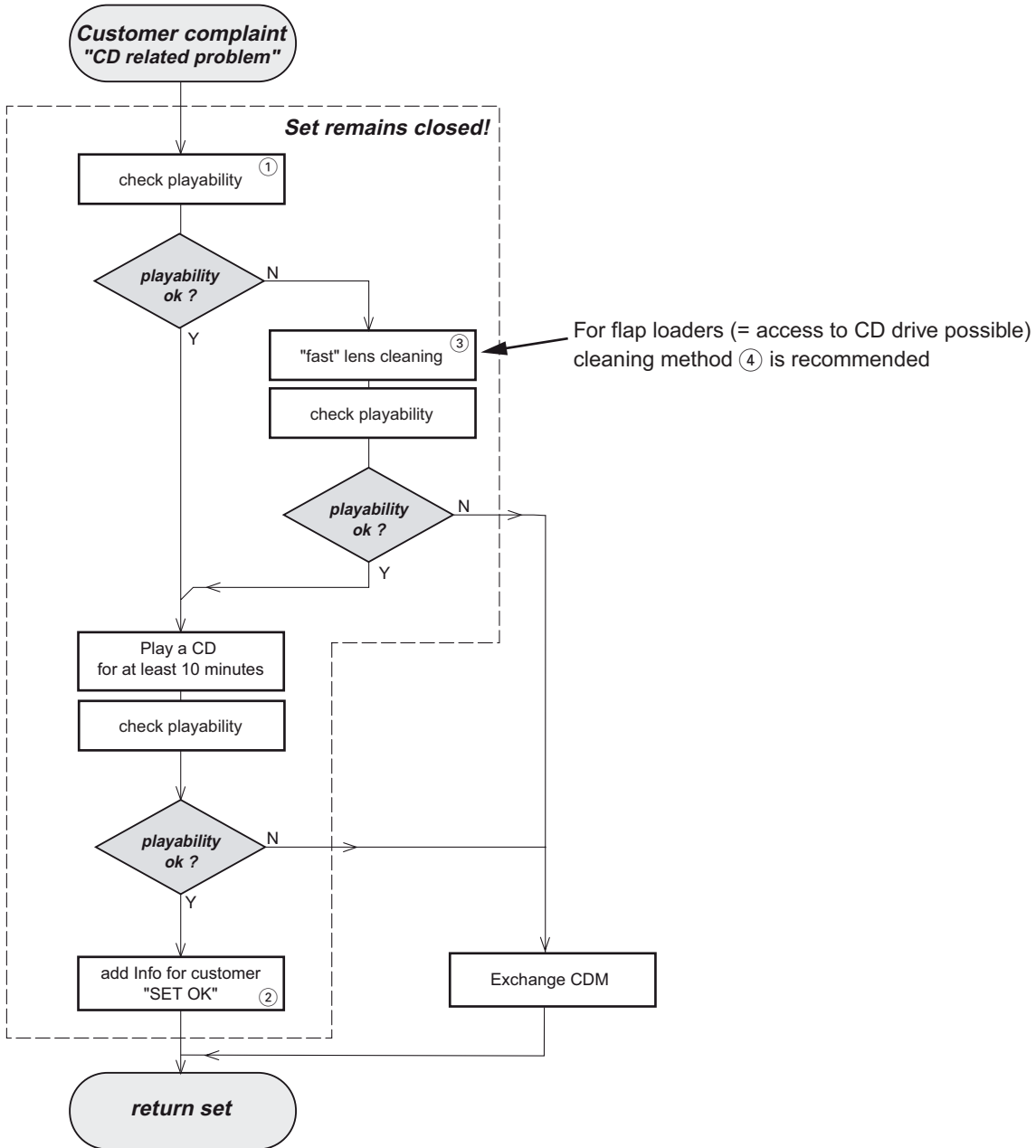
For additional questions please contact your local repair-helpdesk.

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 (600µ 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 (600µ Black dot) **maximum at 01:15**
 TR 19 (Fingerprint)
 TR 10 (1000µ wedge)

- playback of all these tracks without audible disturbance
 playing time for: 1000µ 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

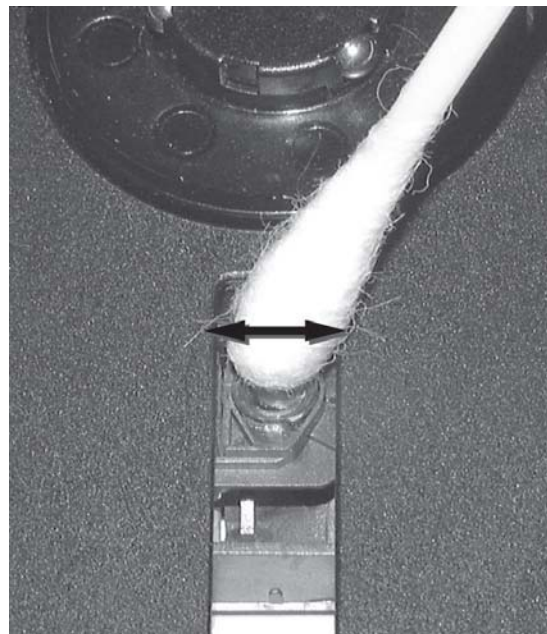
LIQUID LENS CLEANING

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

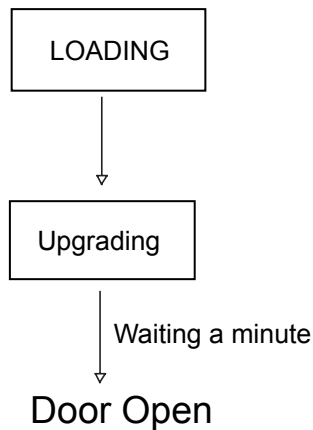
Upgrade software

1. Download the software from Philips support website:

<http://www.philips.com/support>

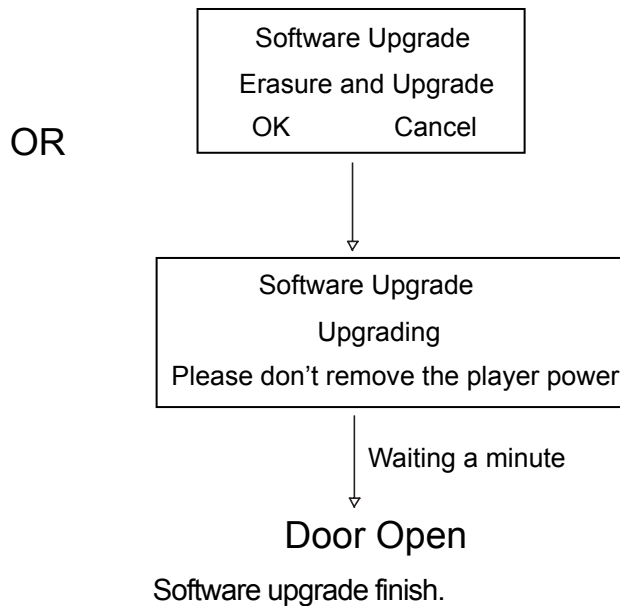
2. Load the CD Disc or USB device with software, Software upgrade procedure starts automatically

VFD Display:



Software upgrade finish.

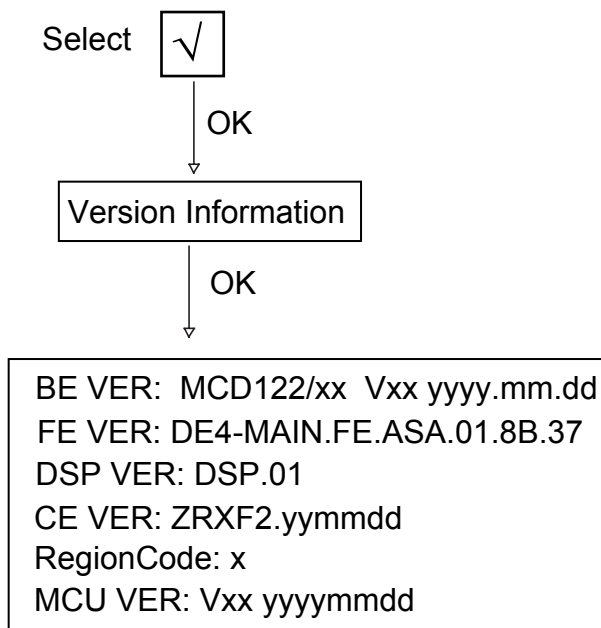
TV Screen Display:



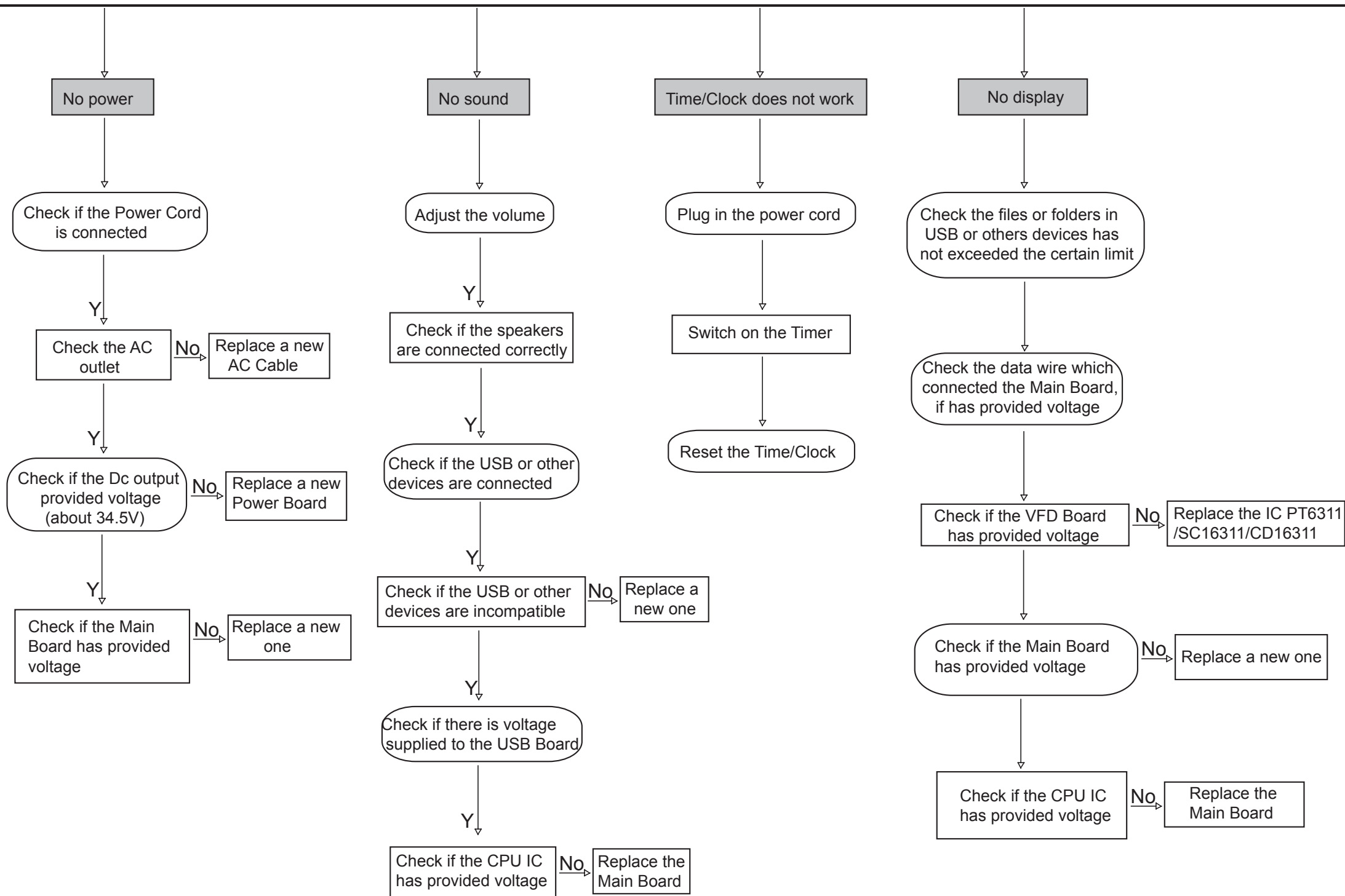
Software upgrade finish.

Software version and date check

1, In the absence of USB/DISC state or STOP status, press the "SYSTEM/MENU" on remote control, TV Screen Display:

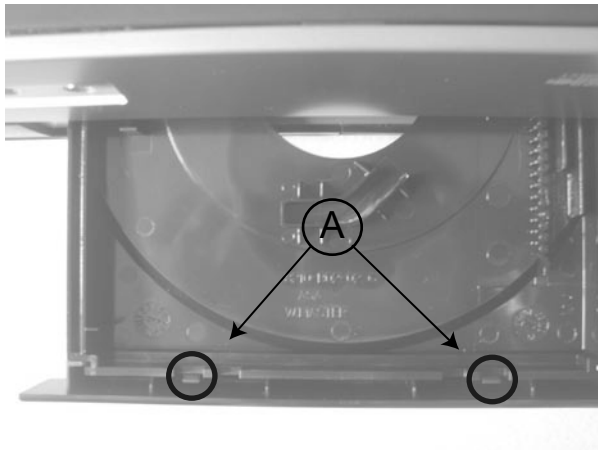


Malfunction Follow Check Chart

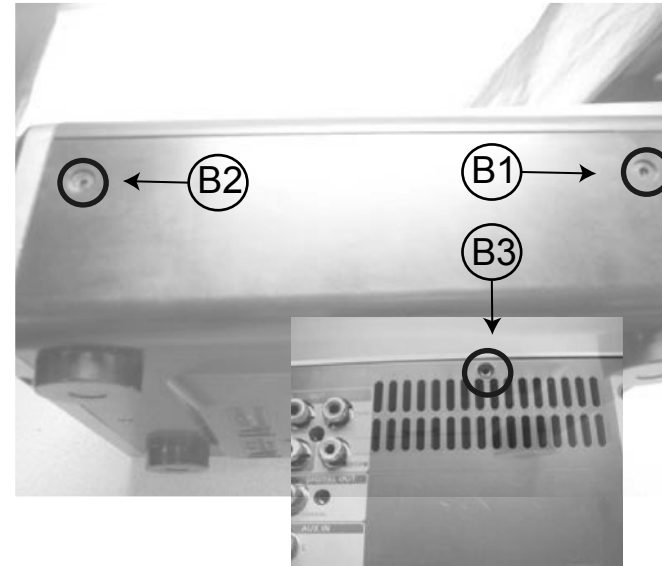


Disassembly Diagram

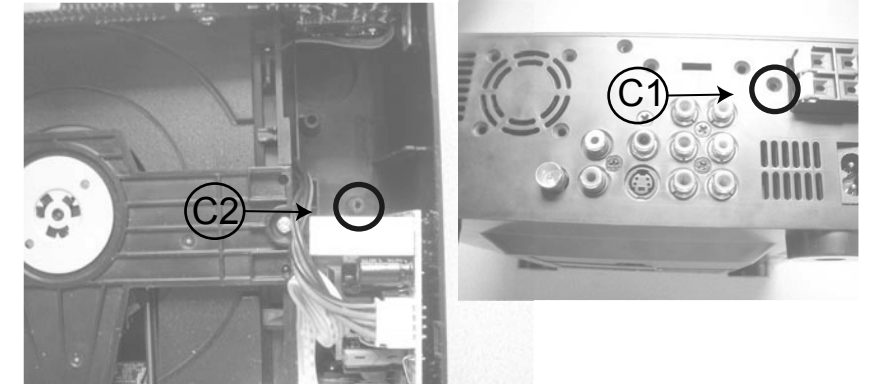
A. Open the DVD Door and loose 2 clips to remove the door



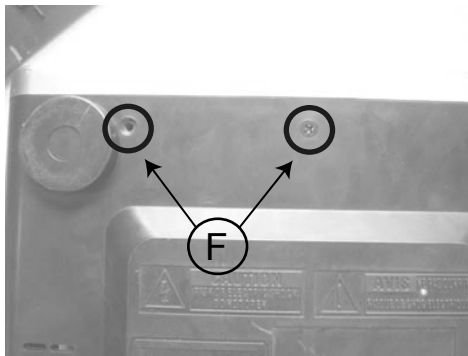
B. Remove the Top-cabinet
 B1. Loose 2pcs screws(3 x 6 KB) of both side near to the back side.
 B2. Loose 2pcs screws(3 x 8 Km) of both side near to the front cabinet.
 B3. Loose 1pc screw(3 x10 FA) of the back side.



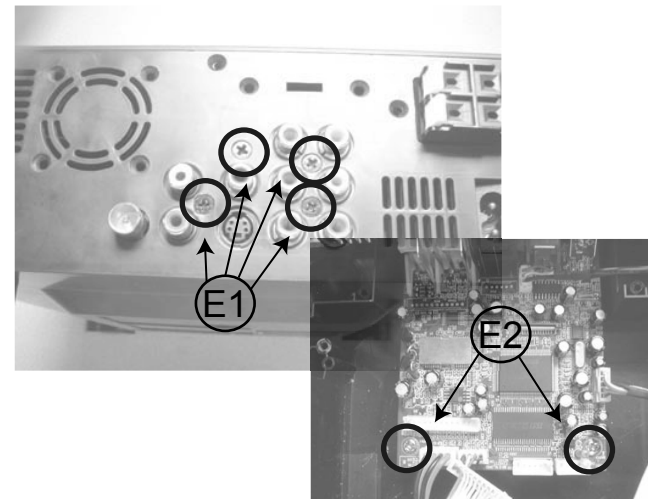
C. Remove the Power Board
 C1. Loose 1pc screw(3 x10 FA) of the back side.
 C2. Loose 1pc screw(3 x 8 BA)



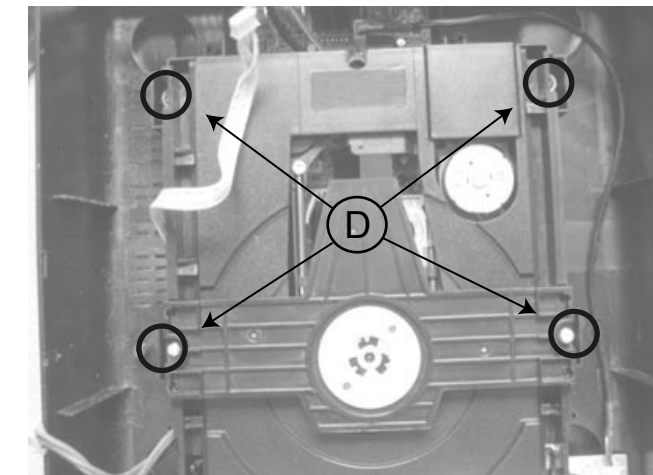
F. Loose 2pcs screws(3 x 8 FT) to remove the Front Cabinet



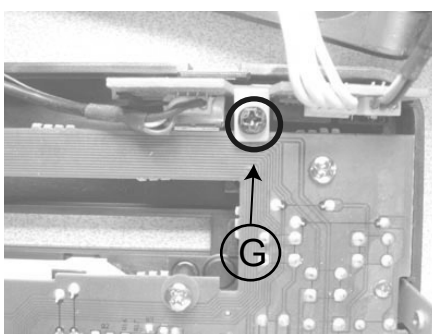
E. Remove Decoder Board
 E1. Loose 4pcs screws(3 x 10 FA) of the back side.
 E2. Loose 2pcs screws(3 x 10 FA) of the decoder board.



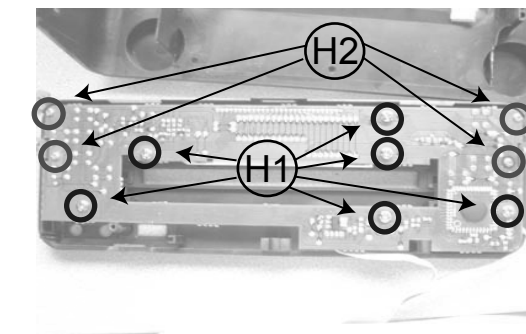
D. Loose 4pcs screws(3 x 10 PWA) to remove DVD Loader Driver



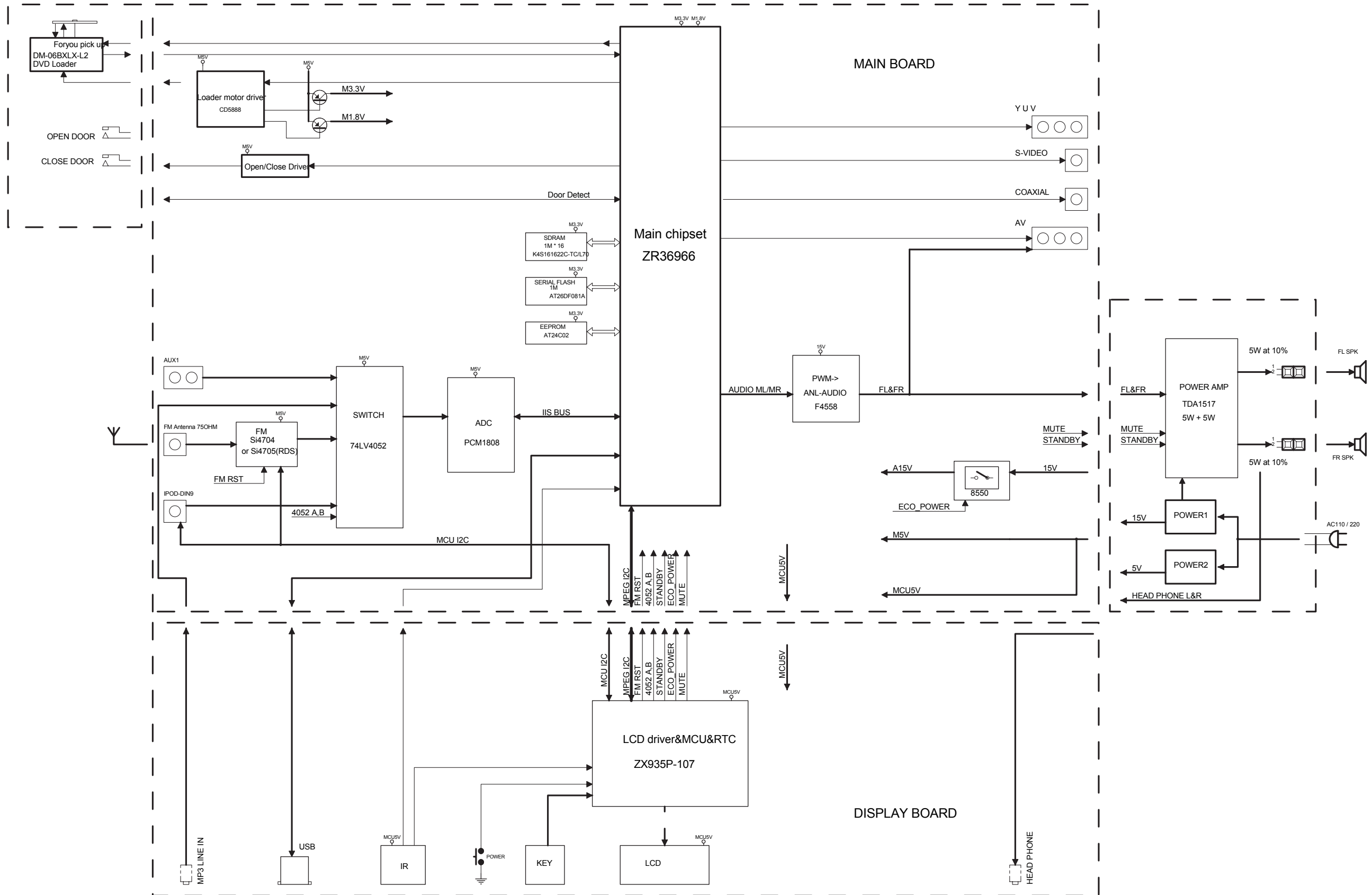
G. Loose 1pc screw(3 x 8 BA) to remove the Headphone Board



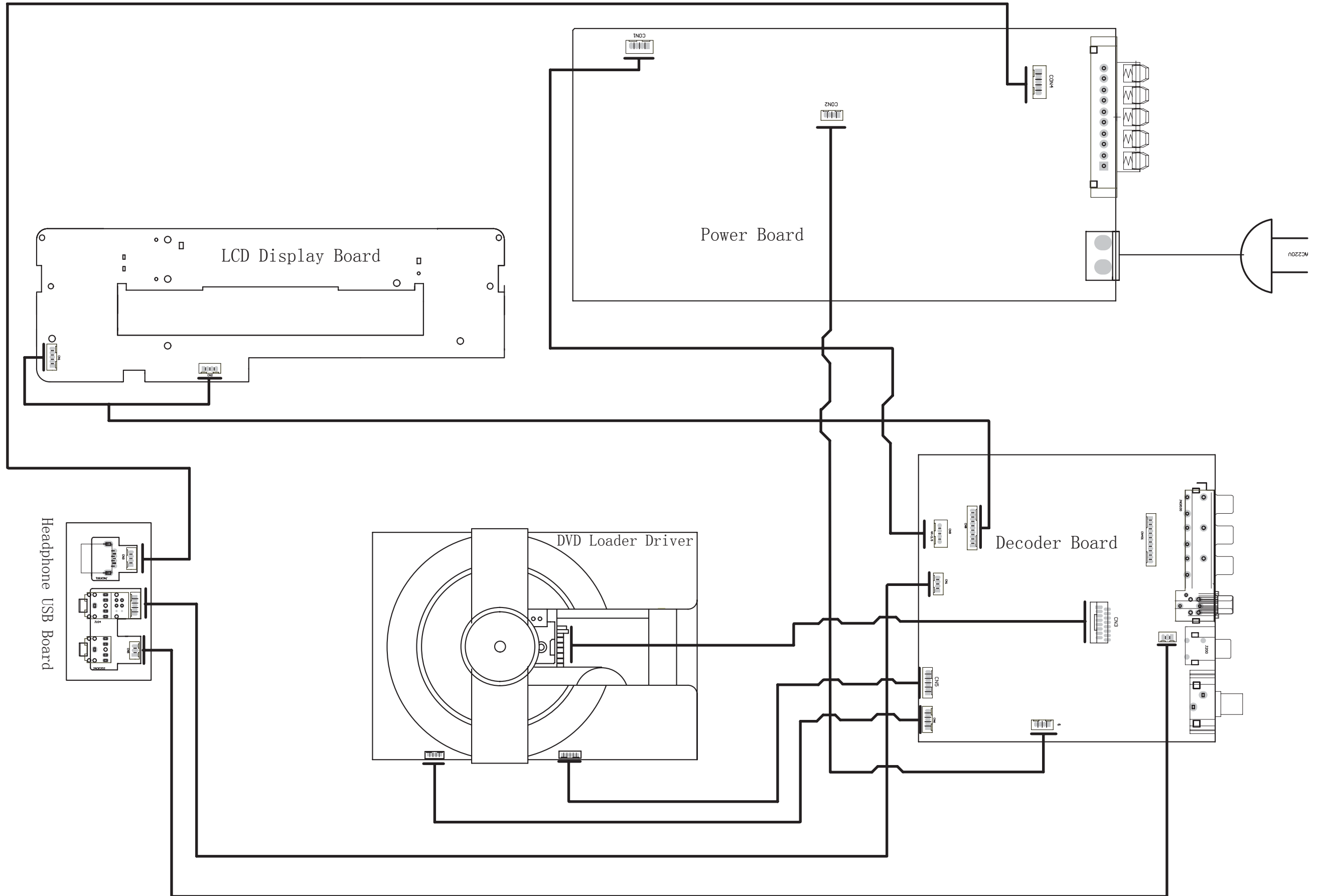
H. Remove the Display Board
 H1. Loose 6pcs screws(3 x 8 BA)
 H2. Loose 4pcs screws(2 x 8 BT)



Block Diagram

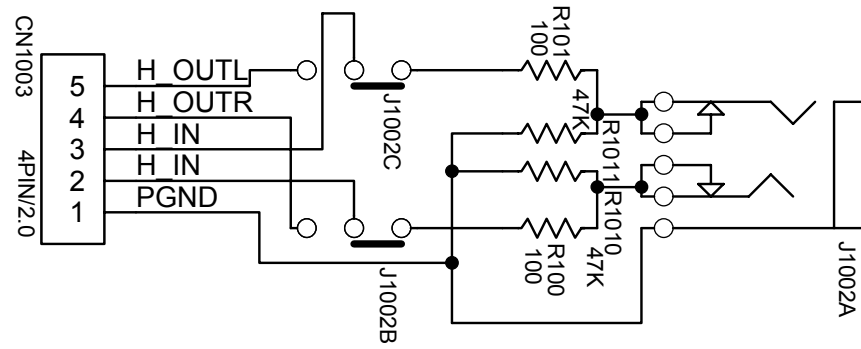


Wiring Diagram

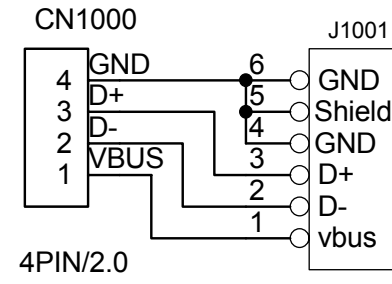


Small Board -- Layout & Circuit Diagram

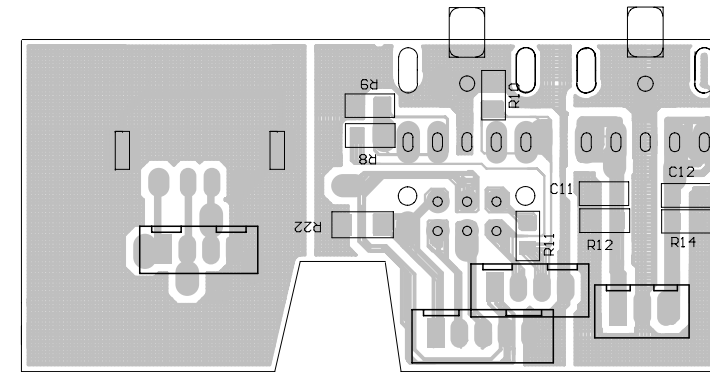
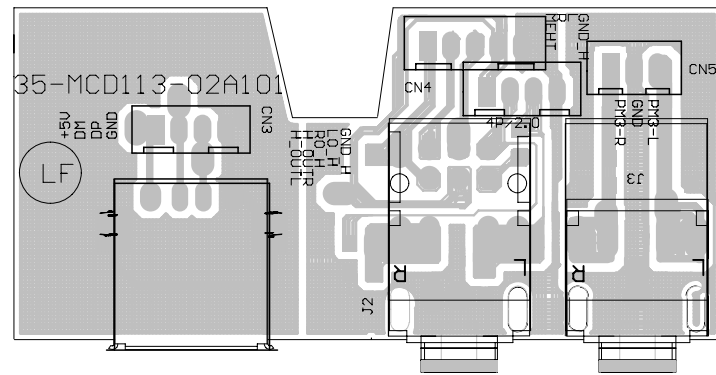
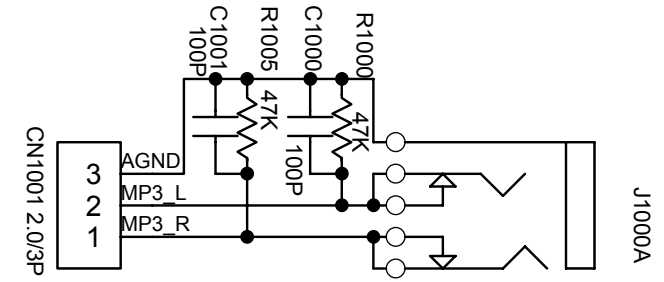
headphone



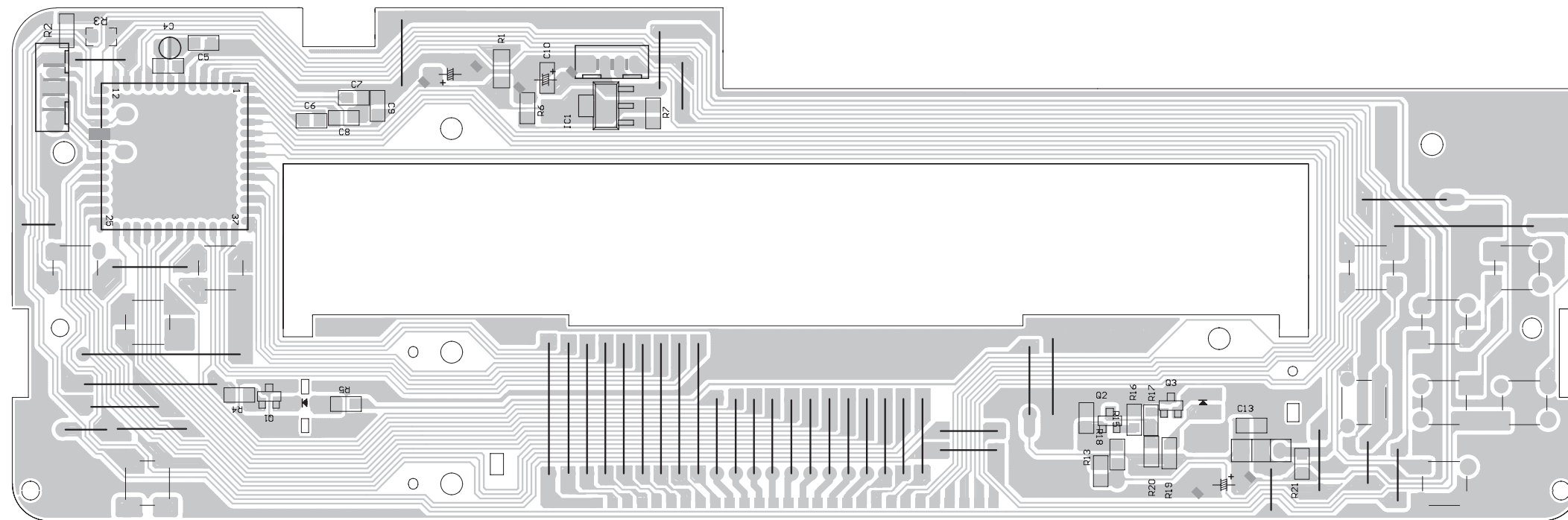
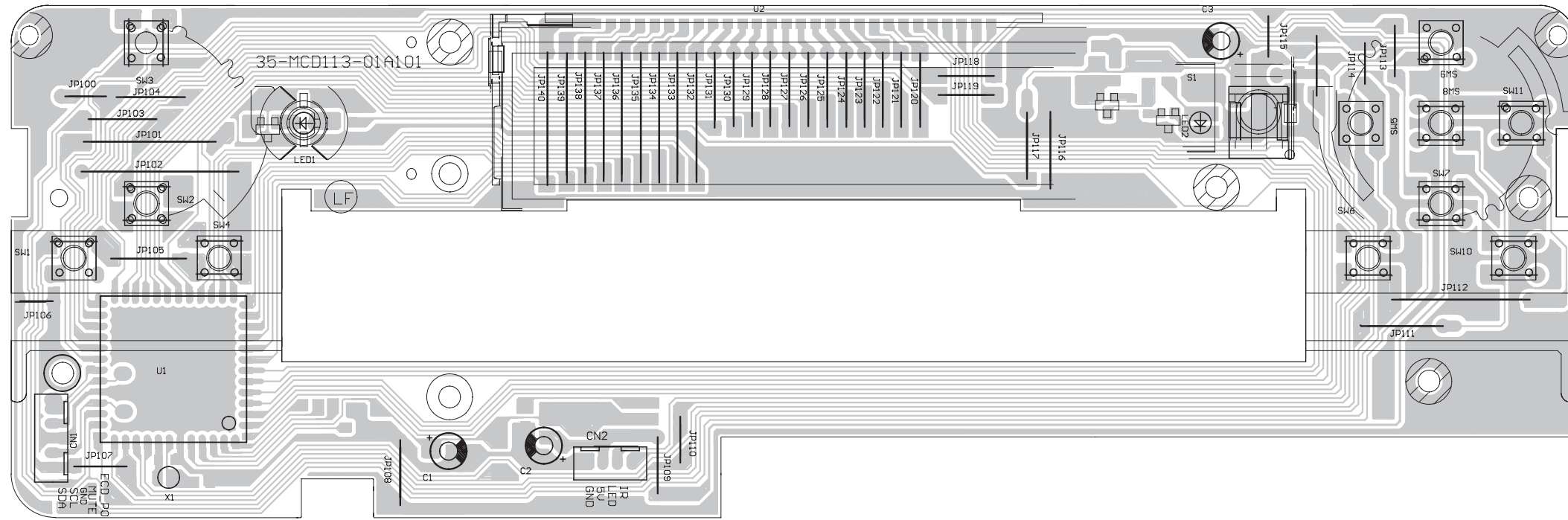
USB



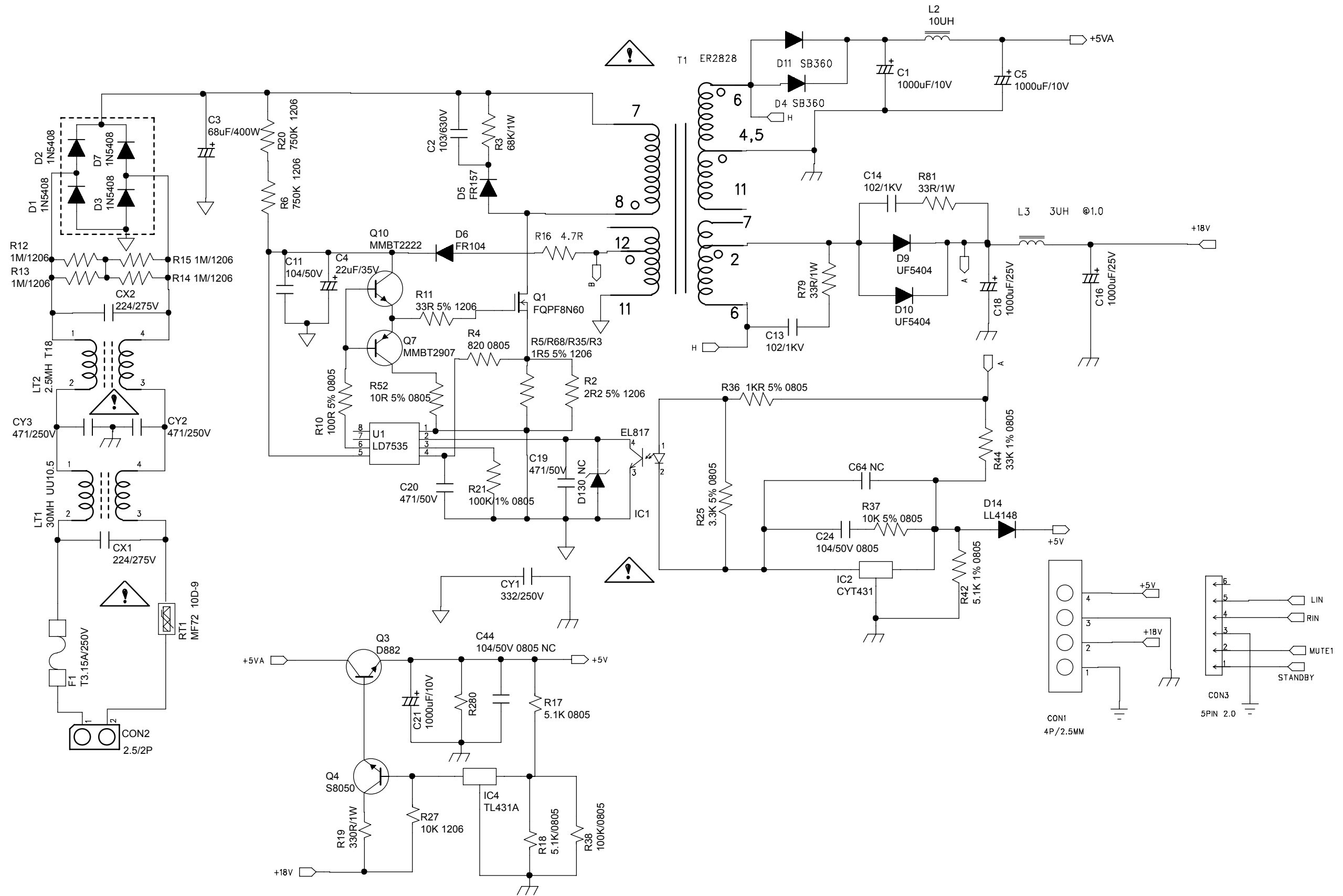
MP3 IN



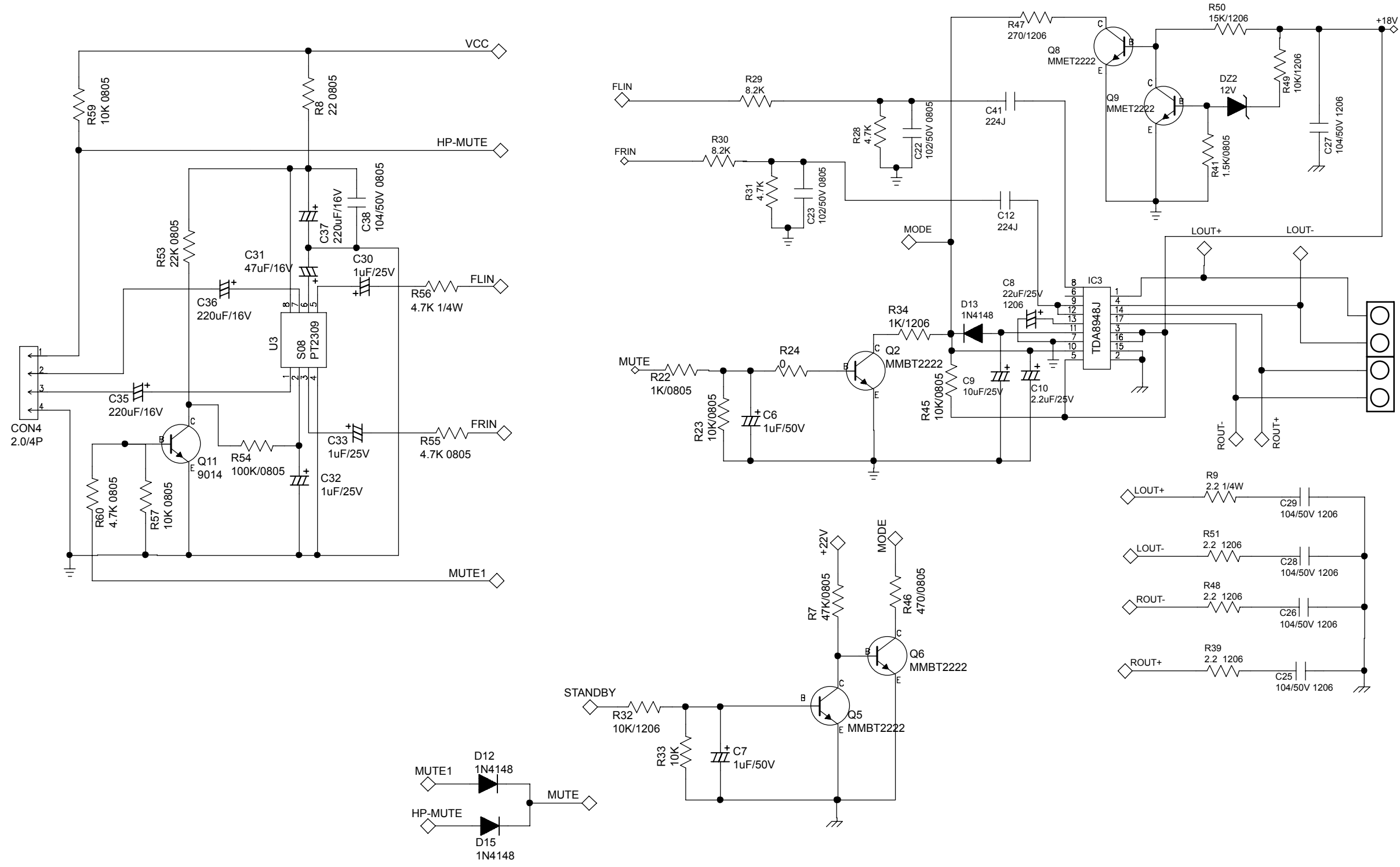
LCD Display Board -- Layout Diagram



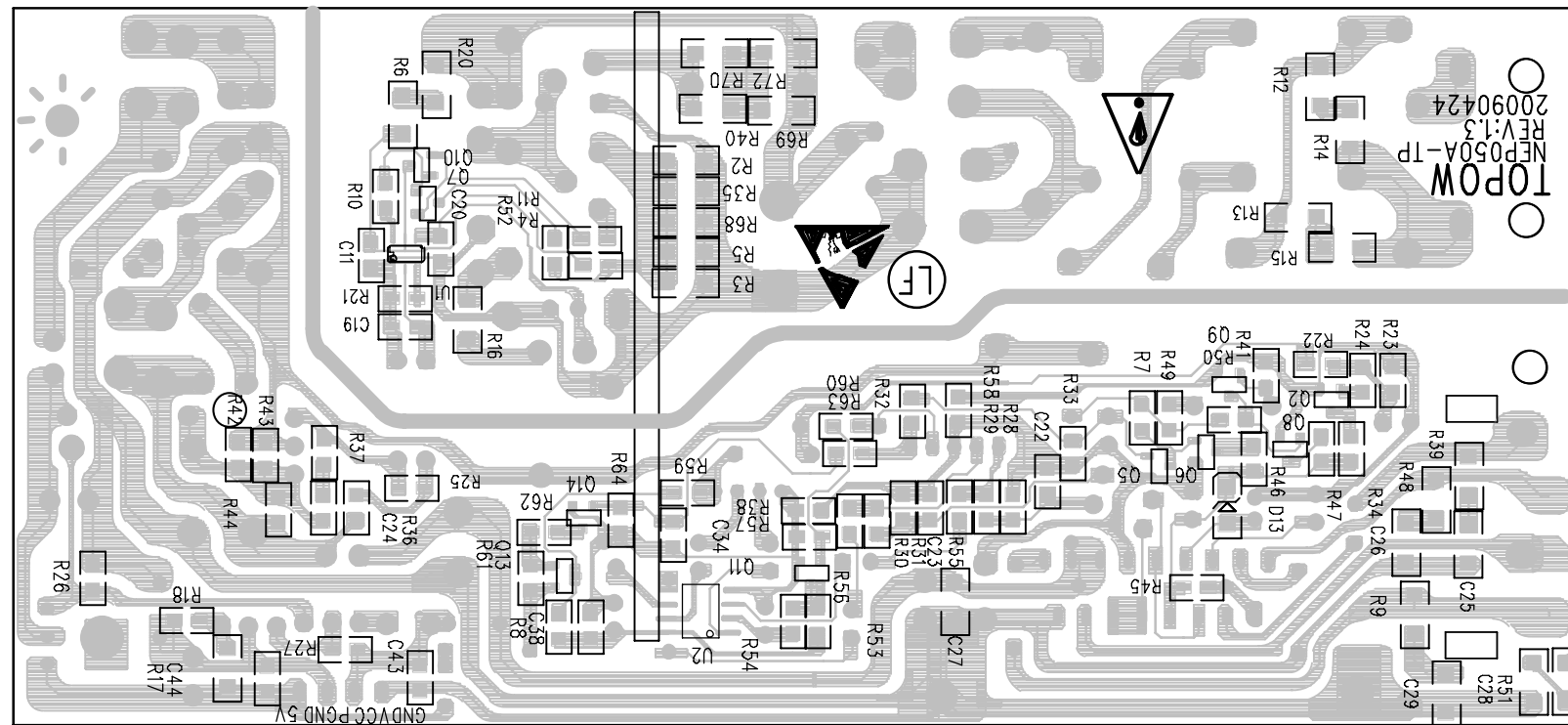
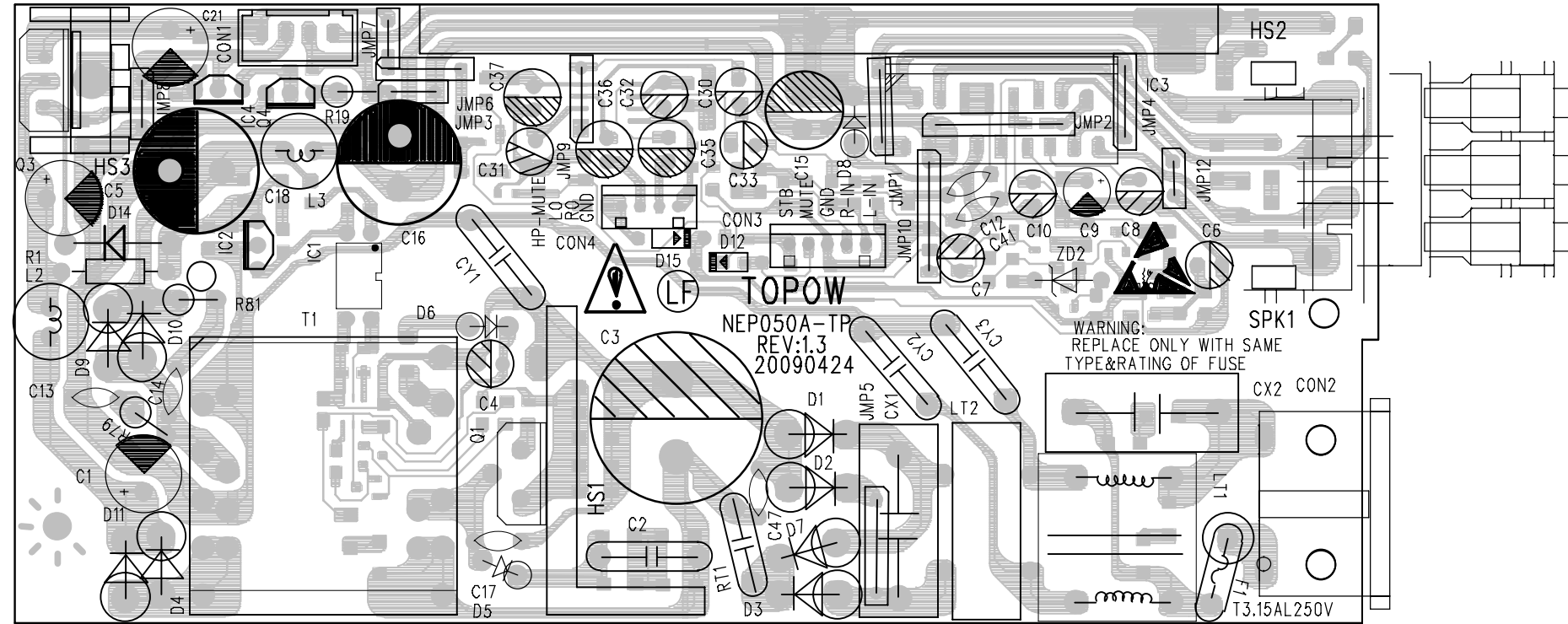
Power Board -- Circuit Diagram -- Power part



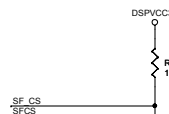
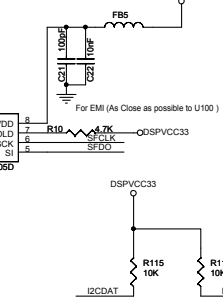
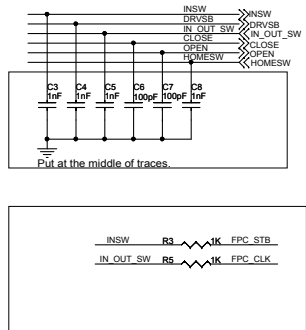
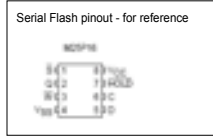
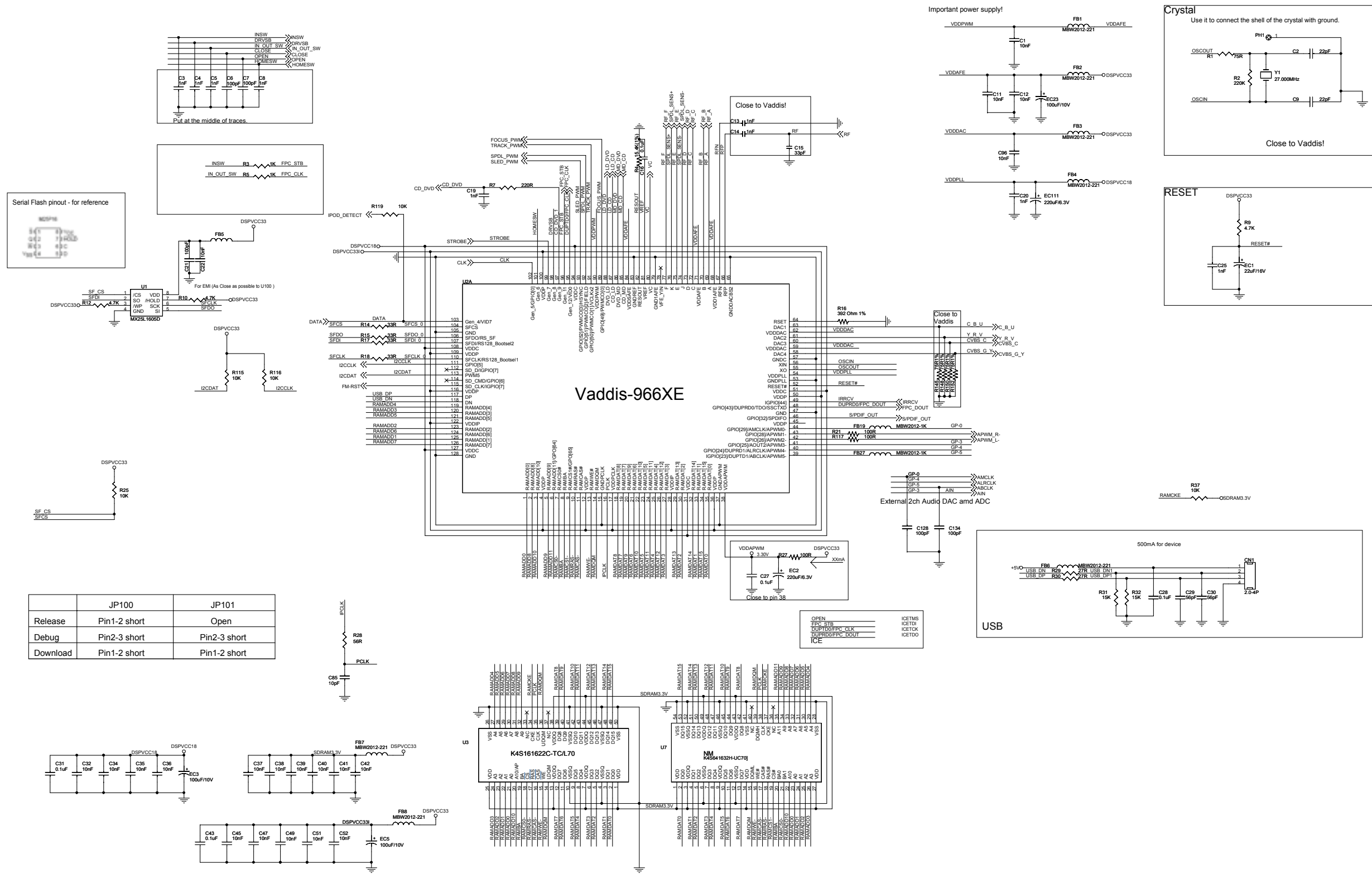
Power Board -- Circuit Diagram -- Audio Part



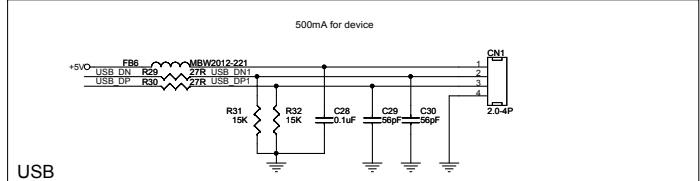
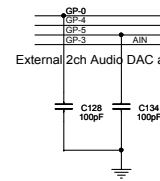
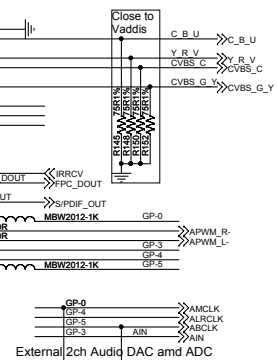
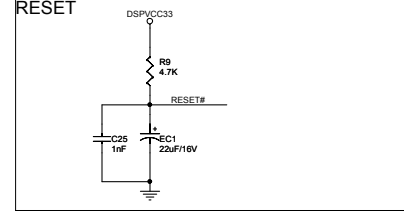
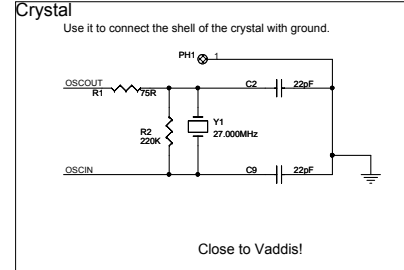
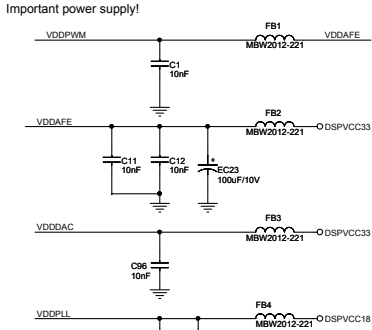
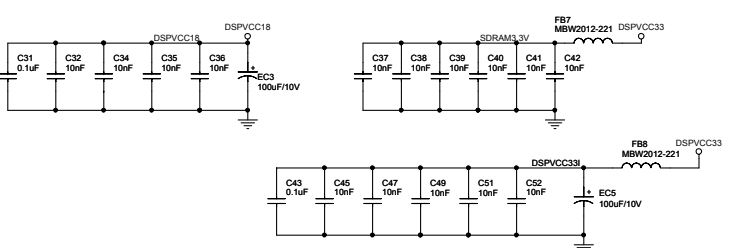
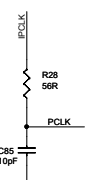
Power Board -- Layout Diagram



Decoder Board -- Circuit Diagram -- Part1

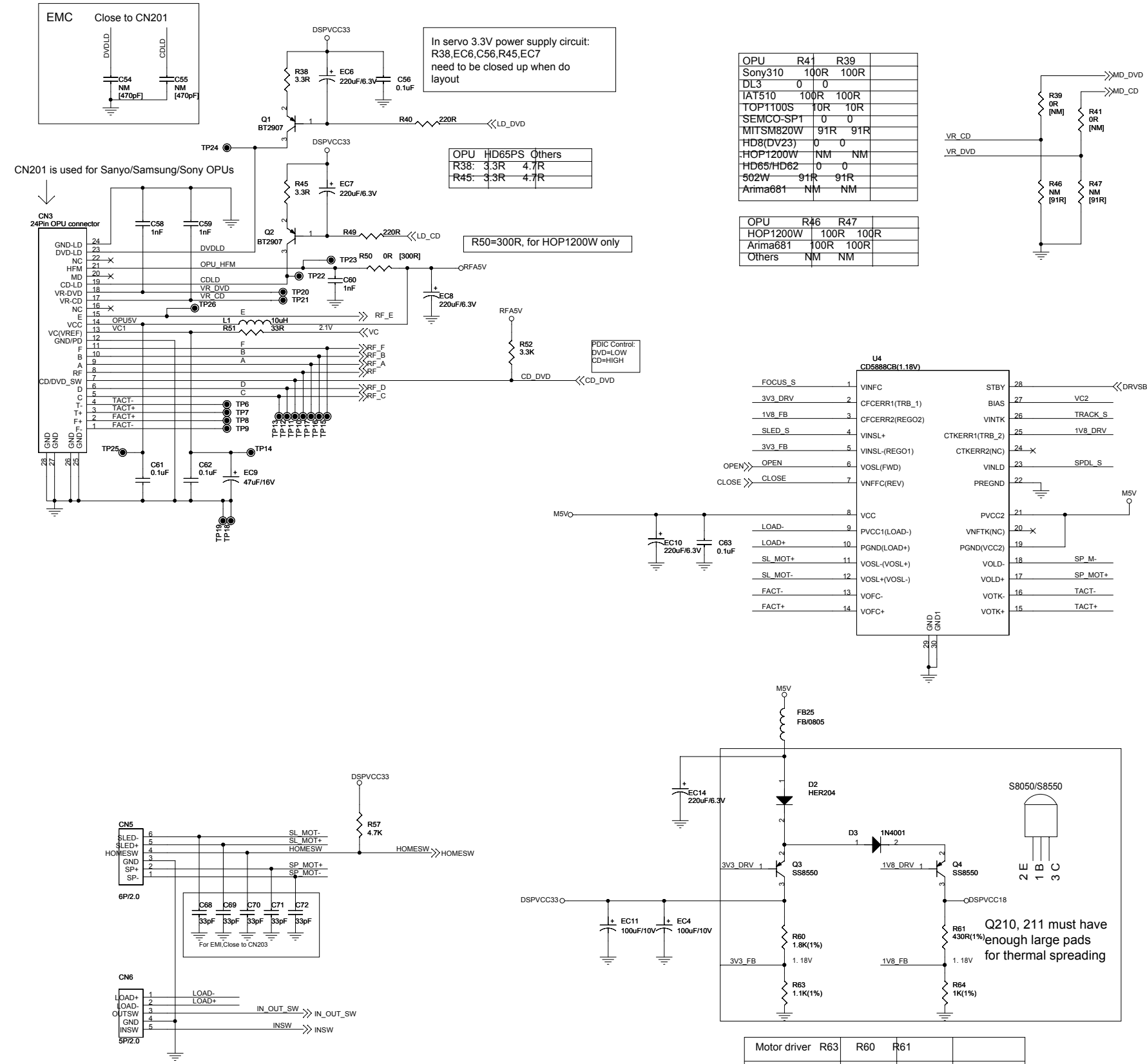


	JP100	JP101
Release	Pin1-2 short	Open
Debug	Pin2-3 short	Pin2-3 short
Download	Pin1-2 short	Pin1-2 short



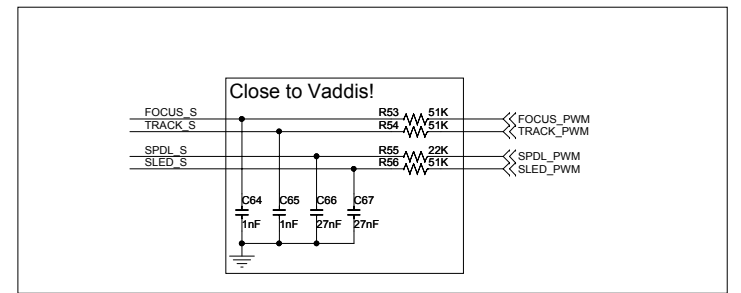
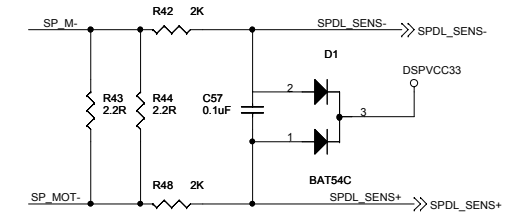
- OPEN
- ICETMS
- ICETDI
- ICETCK
- ICETDO

Decoder Board -- Circuit Diagram -- Part2

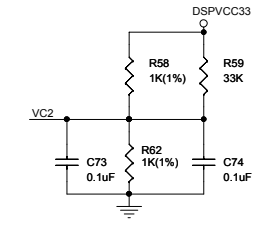


BEMF

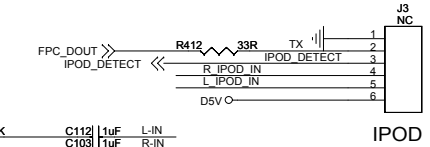
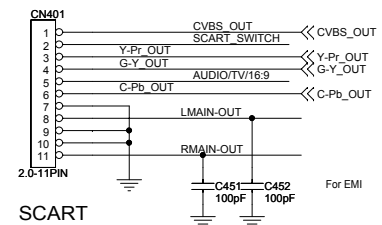
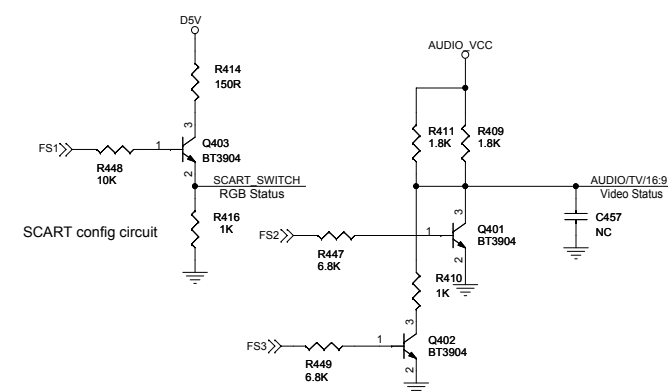
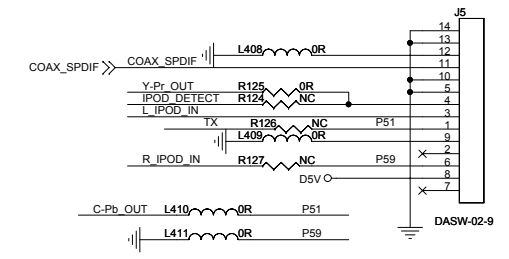
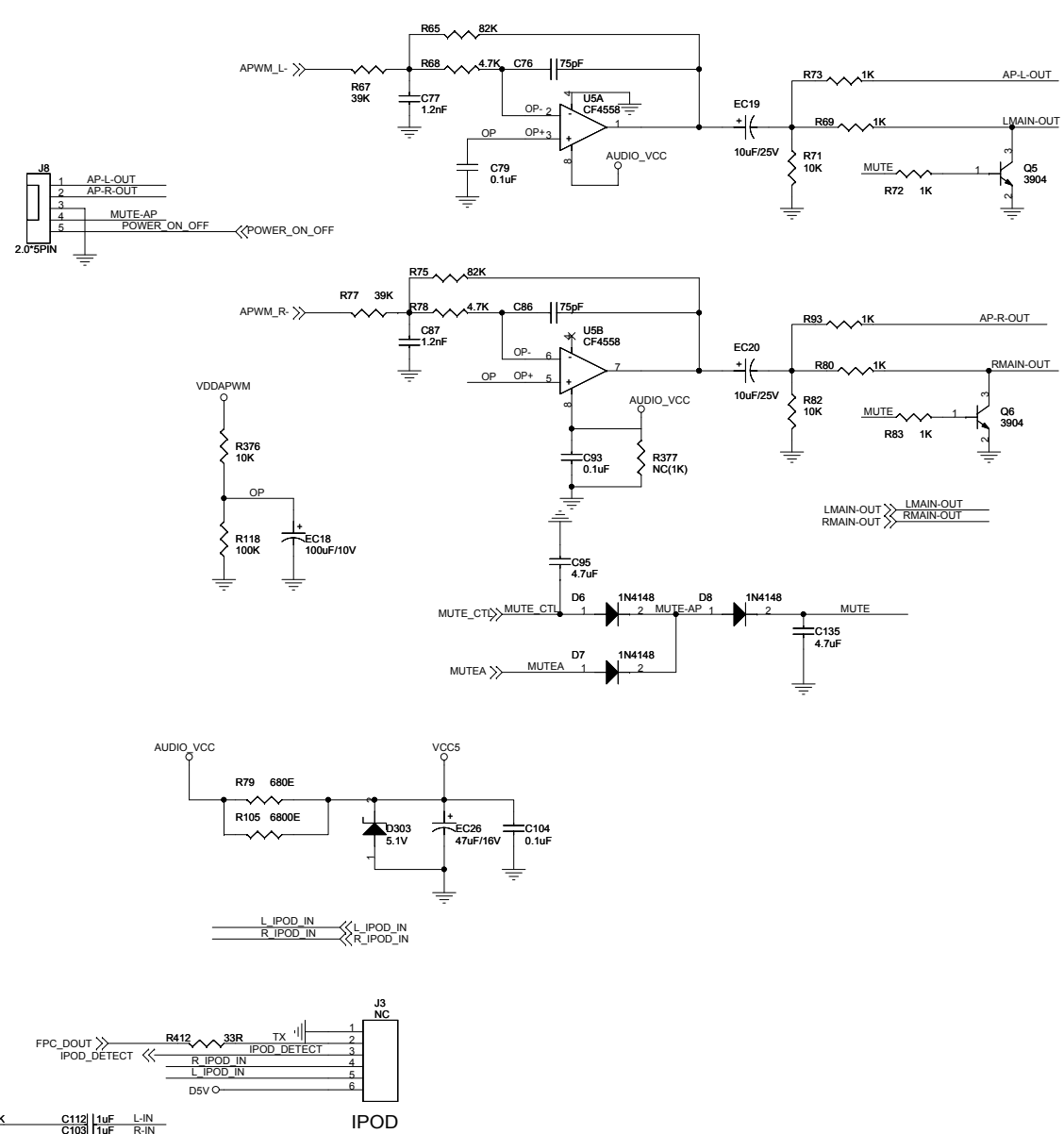
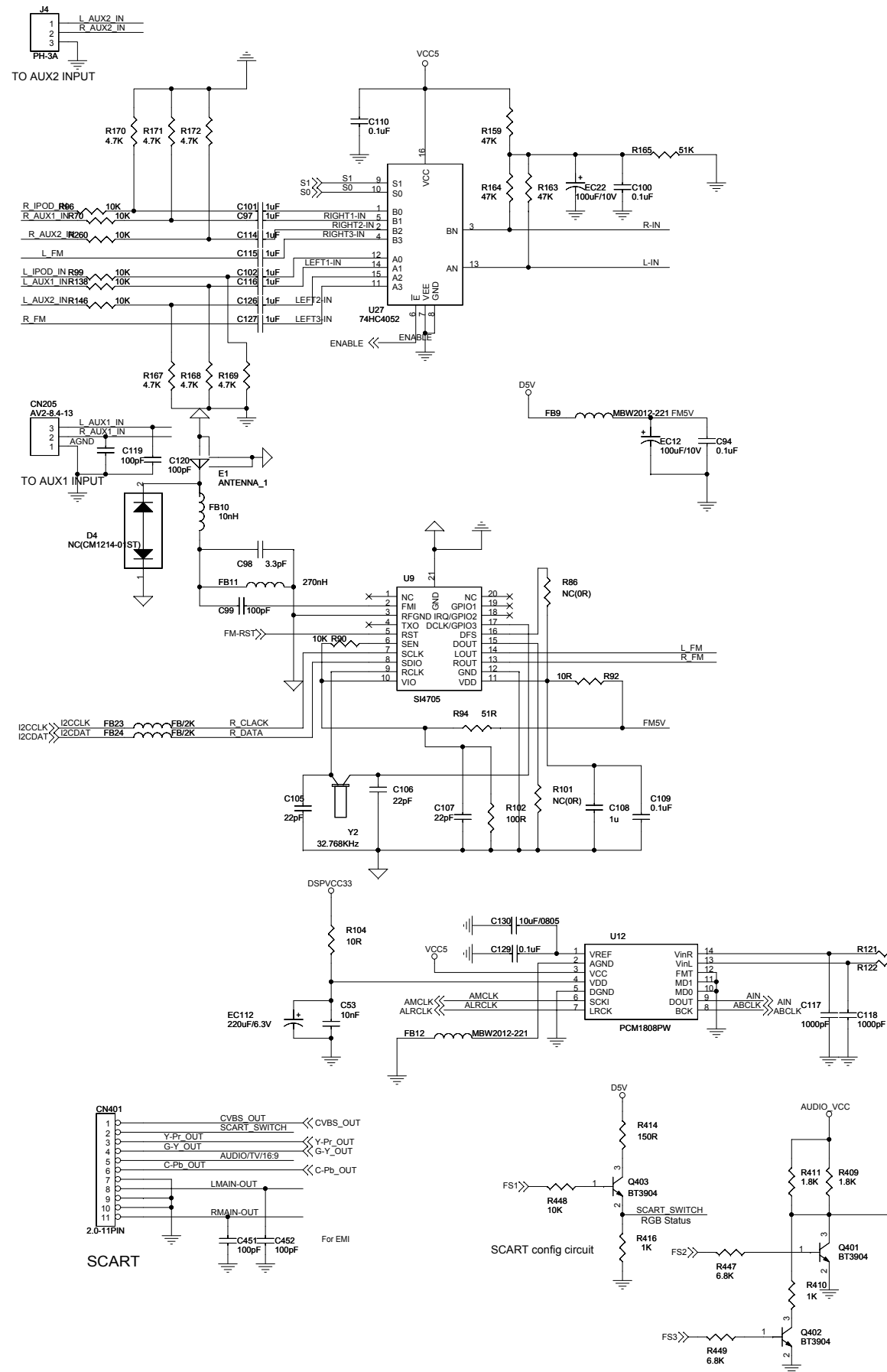
Current Type(Default)



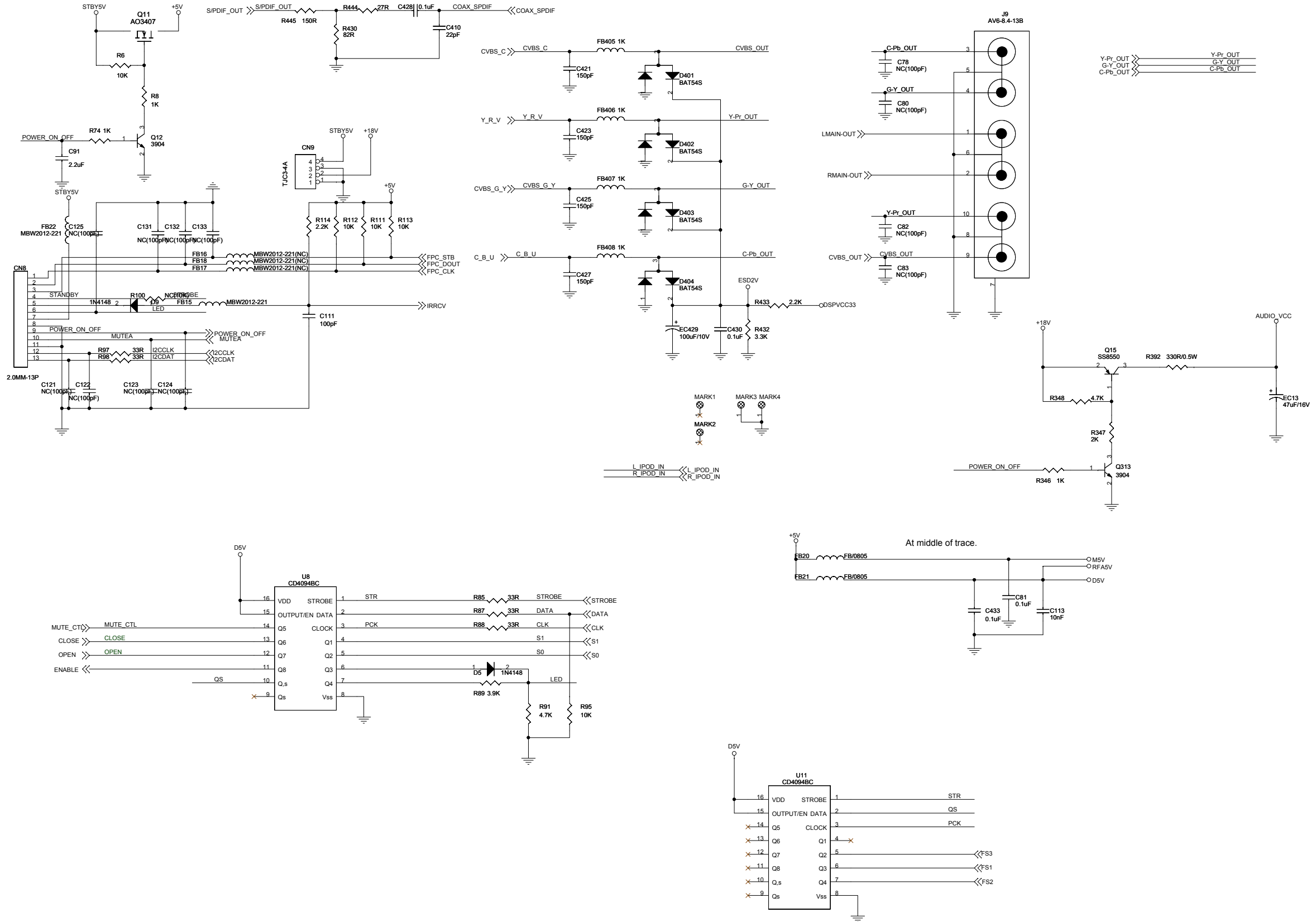
Close to motor driver.



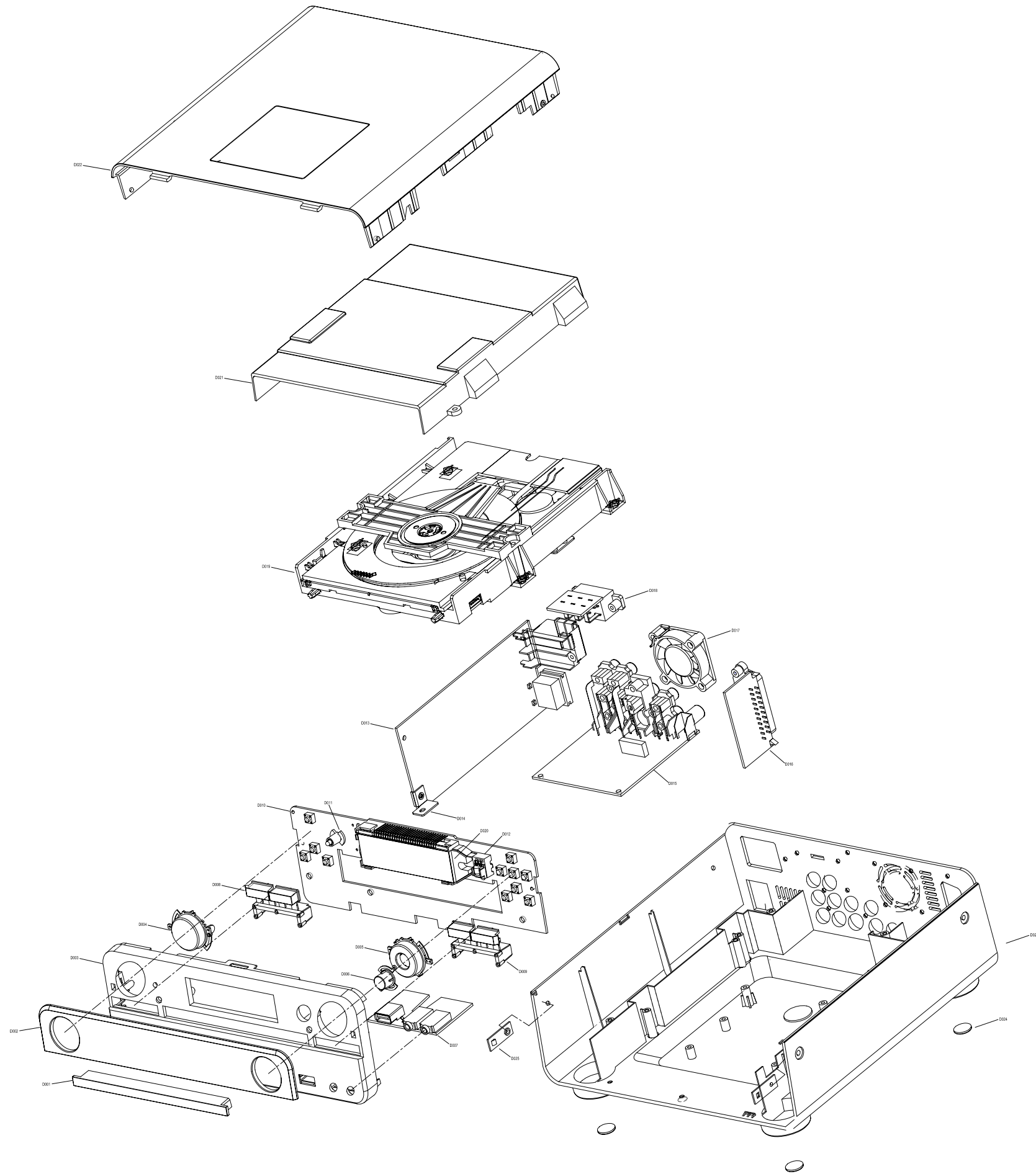
Decoder Board --Circuit Diagram -- Part3



Decoder Board -- Circuit Diagram -- Part4



Exploded View



ACCESSORIES PARTS LIST

994000004988	AC LINE CORD 1.8M (/12/98)
994000005166	AC LINE CORD 1.8M(/93)
994000005078	AUDIO SINGLE WIRE W/RCA 1.5M
996510018744	FM ANT CONNECTOR 1.5m BLACK
996510026289	MCD122/93 DISPLAY BOX(/93)
996510024836	PRC500-56REMOTE CONTROL(/12)
996510025369	PRC500-56 REMOTE CONTROL(/98)
996510026288	PRC500-56REMOTE CONTROL 183/98(/93)
996510025643	MCD122/12 MAIN SPEAKER BOX(/12)
996510025765	MCD122/98 MAIN SPEAKER BOX(/98)
996510026287	MCD122/93 MAIN SPEAKER BOX(/93)

MECHNICAL&MISCELLANEOUS PARTS

CASING4	996510025544	FLAT FLEXIBLE CABLE 24PX100
D001	996510025647	MCD113 DVD DOOR/ABS
D002	996510025532	MCD113 DISPLAY LENS/PMMA
D003	996510025646	MCD113 DVD FRONT CABINET/HIPS
D004	996510025539	MCD113 FUNCTION BUTTON/ABS
D005	996510025534	MCD113 DIRECTION BUTTON/ABS
D006	996510025529	MCD113 CENTER BUTTON/ABS
D008	996510025549	MCD113 FUNCTION BUTTON-L/ABS
D009	996510025546	MCD113 FUNCTION BUTTON-R/ABS
D022	996510025552	MCD113 DVD TOP COVER/HIPS
D023	996510025649	MCD113 DVD BOTTOM CHASSIS/HIPS(/12)
D023	996510025766	MCD113 DVD BOTTOM CHASSIS/HIPS(/98)
D023	996510025766	MCD113 DVD BOTTOM CHASSIS/HIPS(/93)
D007	996510025652	MCD122 HEADPHONE BOARD
D013	996510025642	POWER BOARD NEP050A-TP(/12)
D013	996510025759	POWER BOARD NEP050A-TP(/98)
D013	996510026284	POWER BOARD NEP050A-TP-93(/93)
D015	996510025651	DVD DECODER ZMCD122(/12)
D015	996510025764	DVD DECODER ZMCDA122(/98)
D015	996510026283	DVD DECODER ZMCDA122-93(/93)
D016	996510025645	MCD122 SCART BOARD(/12)
D019	996510025536	DVD MECHANISM F-8829D+DM3381-0
D010N	996510032287	LCD DISPLAY BOARD(/98/12)

ELECTRICAL PARTS - DISPLAY PCB

D011	996510025535	MCD113 LED BRACKET/HIPS
D012	996510025581	MCD113 LCD BRACKET/HIPS
D020	996510025554	MCD113 LIGHT-GUIDE(PMMA)
IC1	996510014857	IC AMC1117-0333J(SMD)
LED1	996510025551	LED 2X5X7 1L2545B12E0DE002(B)
LED2	996510021107	LED D3X4 1L034XW31B0CT201
S1	996510015840	IR SENSOR 1MA81P36D1TD001
SW1	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW10	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW11	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW2	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW3	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW4	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW5	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW6	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW7	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW8	996510000263	LIGHT TOUCH SWITCH 6X6X5
SW9	996510000263	LIGHT TOUCH SWITCH 6X6X5
U1	996510024049	LCD DRIVER MODUL ZX935P-302
U2	996510032288	LCD DISPLAY
X1	996510021097	CRYSTAL OSCILLATOR 32.768KHZ

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

version list

v1.0 release service manual of /12/98
v1.1 add service bom of /93

Factory Parts List

UNIT	MCD122/12 DVD MAIN UNIT PARTS
D010	MCD113 LCD DISPLAY BOARD
R19	CHIP RESISTOR 56 1/16W J (0805)
R2	CHIP RESISTOR 0 1/16W J (0805)
R3	CHIP RESISTOR 0 1/16W J (0805)
R4	CHIP RESISTOR 1.2K 1/16W J (0805)
R6	CHIP RESISTOR 1.2K 1/16W J (0805)
R7	CHIP RESISTOR 750 1/16W J (0805)
R17	CHIP RESISTOR 10 1/16W J (0805)
R16	CHIP RESISTOR 100 1/16W J (0805)
R5	CHIP RESISTOR 10K 1/16W J (0805)
R18	CHIP RESISTOR 10K 1/16W J (0805)
R13	CHIP RESISTOR 2K 1/16W J (0805)
R15	CHIP RESISTOR 4.7K 1/16W J (0805)
R21	CHIP RESISTOR 4.7K 1/16W J (0805)
R20	CHIP RESISTOR 10K 1/16W J (0805)
R1	CHIP RESISTOR 30K 1/4W J (1206)
C4	CHIP CAP.15p 50V J(0805) NPO
C5	CHIP CAP.15p 50V J(0805) NPO
C6	CHIP CAP.104p 50V K (0805) X7R
C7	CHIP CAP.104p 50V K (0805) X7R
C8	CHIP CAP.104p 50V K (0805) X7R
C9	CHIP CAP.104p 50V K (0805) X7R
C10	CHIP CAP.104p 50V K (0805) X7R
C13	CHIP CAP.104p 50V K (0805) X7R
C3	ELECTROLYTIC CAP. 47u 6.3V M-5 4X6
C1	ELECTROLYTIC CAP.100u 10V L-5 5X7
C2	ELECTROLYTIC CAP. 220u 16V L-5 6.3X5
Q2	CHIP TRANSISTOR 8050(SOT-23)
Q1	CHIP TRANSISTOR 8550C(SOT-23)
Q3	CHIP TRANSISTOR 8550C(SOT-23)
D007	MCD122 HEADPHONE BOARD
R22	CHIP RESISTOR 0 1/4W J (1206)
R12	CHIP RESISTOR 47K 1/16W J (0805)
R14	CHIP RESISTOR 47K 1/16W J (0805)
C11	CHIP CAP.100p 50V K (0805) X7R
C12	CHIP CAP.100p 50V K (0805) X7R
D016	MCD122 SCART BOARD
R806	CHIP RESISTOR 100 1/16W J(0603)
R807	CHIP RESISTOR 100 1/16W J(0603)
R804	CHIP RESISTOR 10K 1/16W J(0603)
R805	CHIP RESISTOR 10K 1/16W J(0603)