SoundBar System HSB4383

Service
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Service Manual

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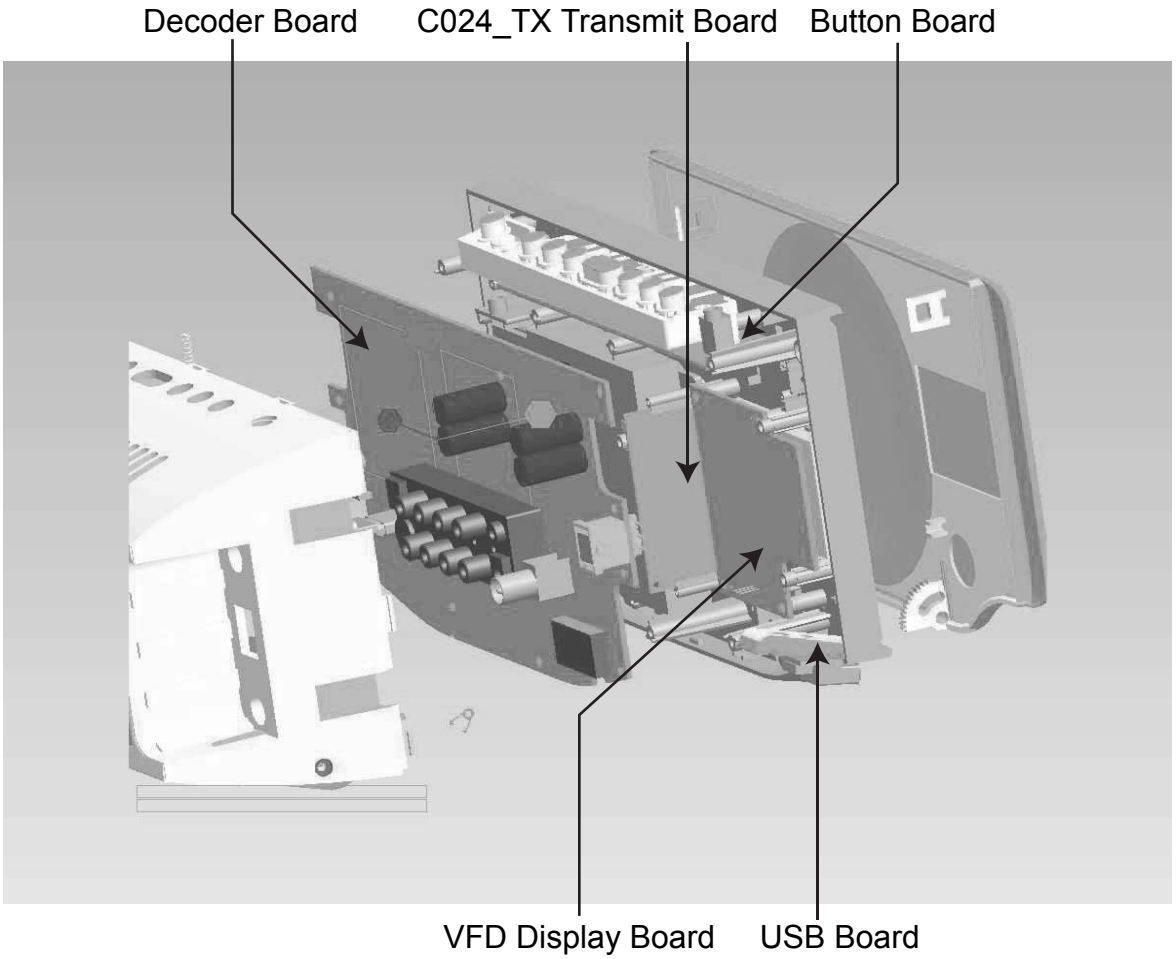
CLASS 1
LASER PRODUCT

Published by DB 0915 Service Audio Printed in The Netherlands Subject to modification © 3141 785 33581

Version 1.1

PHILIPS

Location of PC Boards



VERSION VARIATIONS :

Type /Versions: / Service policy / Board in used:	HSB4383										
	/05	/12	/37	/55	/58	/61	/79	/93	/94	/96	/98
USB BOARD		M									M
DISPLAY BOARD		C									C
BUTTON BOARD		M									M
C024_TX-RADIO TRANSMIT BOARD		M									M
DECODER BOARD		M									M
AMP BOARD		C									C
LAMP BOARD		M									M
C001SWF_RX-RADIO RECEIVE BOARD		M									M
POWER SWITCHING ADAPTOR		M									M
POWER BOARD		M									M
Type /Versions: / Feature diffrence / Features	HSB4383										
	/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

Electronic Specification

AMPLIFIER

Rated OutputPower ....200W+(75W+75W) x 2RMS
Signal-to-noise ratio .....≥67dBA
Frequency response..... 63Hz +3dB+/-3 6KHz
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 ..... 40Hz ~ 20KHz
S/N Ration .....>65dBA

TUNER

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

Sensitivity

– Mono, 50dB S/N Ratio 5uV
– Stereo, 50dB S/N Ratio 100uV
Selectivity .....>33dB
Image Rejection .....>25dB
Total Harmonic Distortion 3%
Signal to Noise Ration .....≥67dBA

SPEAKERS

Speaker Impedance 8ohm
Speaker Driver, base .....3”
Speaker Driver, tweeter ..... 1”
Frequency Response .....40Hz + 3dB+/-3 16KHz

GENERAL INFORMATION

Total Output power .....350W RMS
AC Power .....230V / 50Hz
Operation Power Consumption 50W
Standby Power Consumption .....<10W
Eco Standby Power Consumption .....<1W
Headphone Output .....NA
USB Direct ..... Version 1.1

Dimensions

– Main unit (w x h x d) 260x135.1x100mm
– Speaker box (w x h x d) 307.4x117.6x94mm
– SUBwoofer(w x h x d) 170x396x340mm

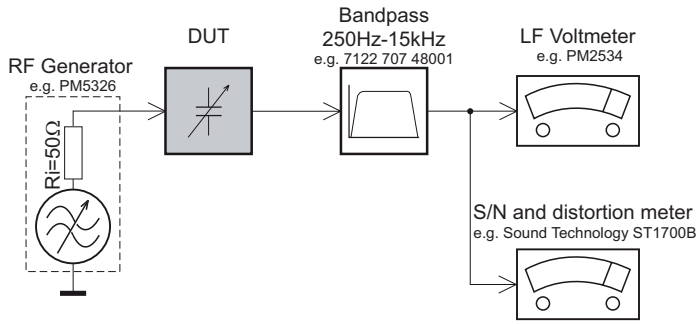
Weight

– With Packing 9KG
– Main Unit .....1 KG
– Speaker box 0.81x2KG
– SUBwoofer..... 5.88KG

Specifications and external appearance are subject to change without notice.

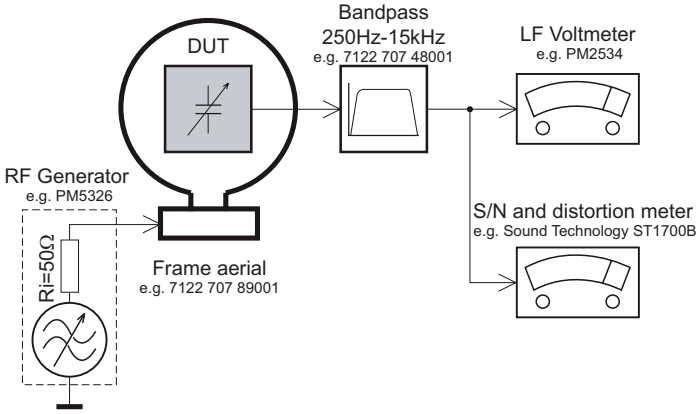
MEASUREMENT SETUP

Tuner FM



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

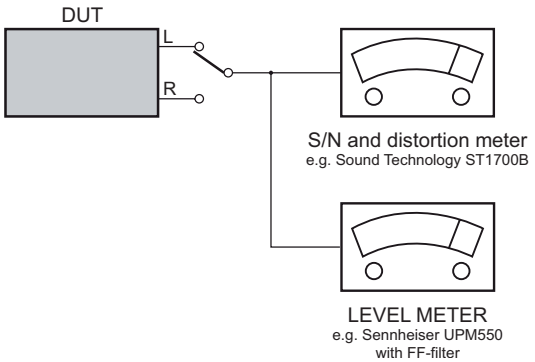
Tuner AM (MW,LW)



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).

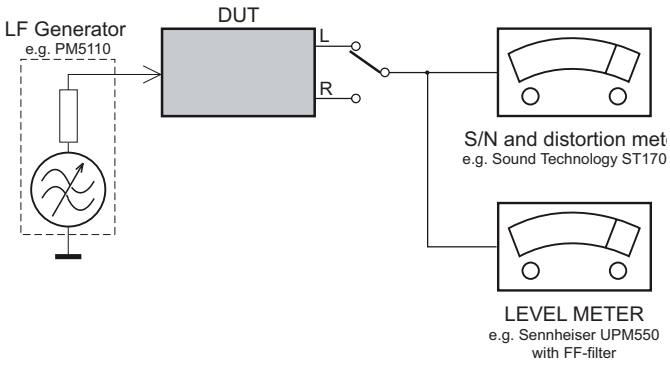
CD

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



Recorder

Use Universal Test Cassette **CrO2** 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 ⚠.

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

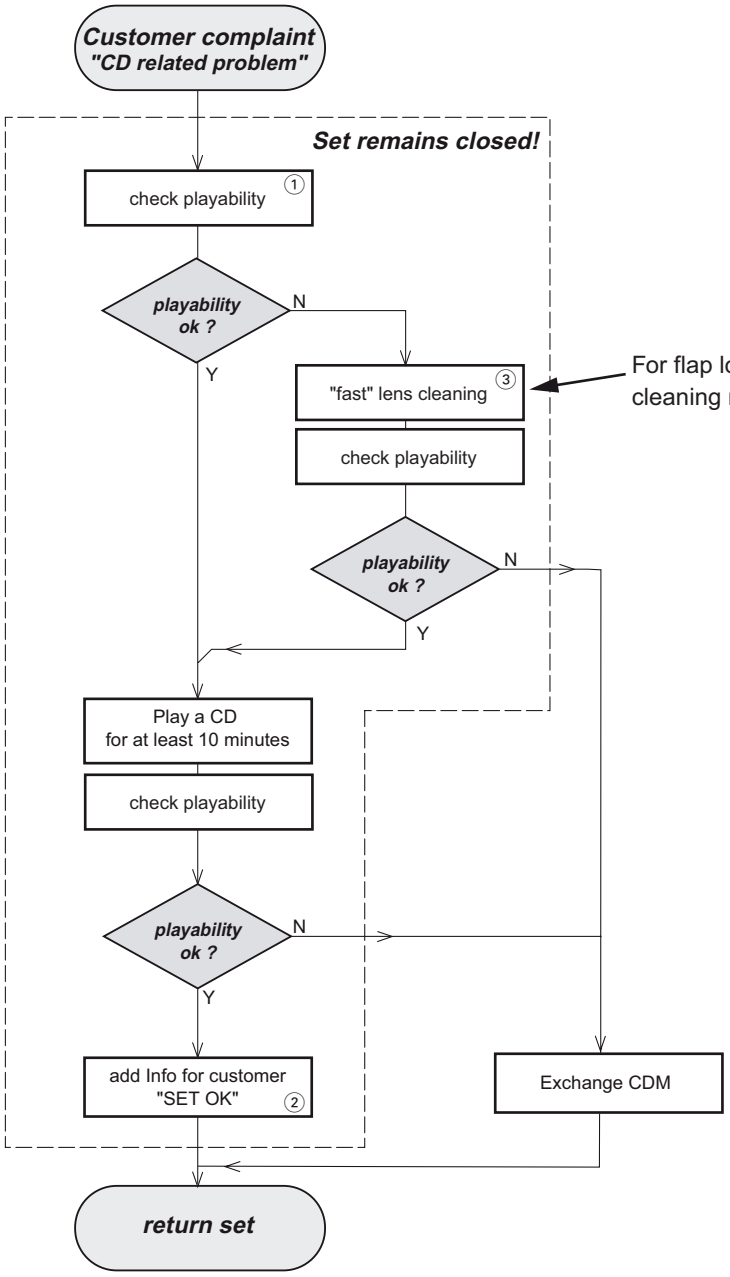
Safety regulations require that after a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- 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



For flap loaders (= access to CD drive possible) cleaning method ④ is recommended

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 Disc.....7104 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 ≥10seconds
  Black dot from 00:50 to 01:10
- jump forward/backward (search) within a reasonable time

For all other sets
use CD-DA SBC 444A.....4822 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 ≥10seconds
  Fingerprint ≥10seconds
  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

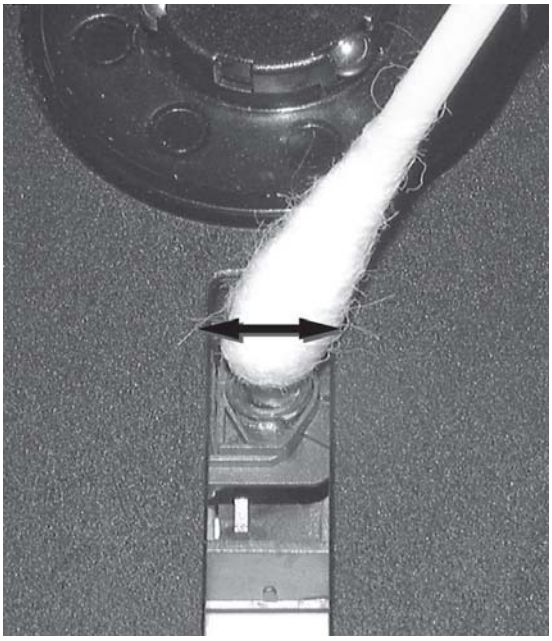
LIQUID LENS CLEANING

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.



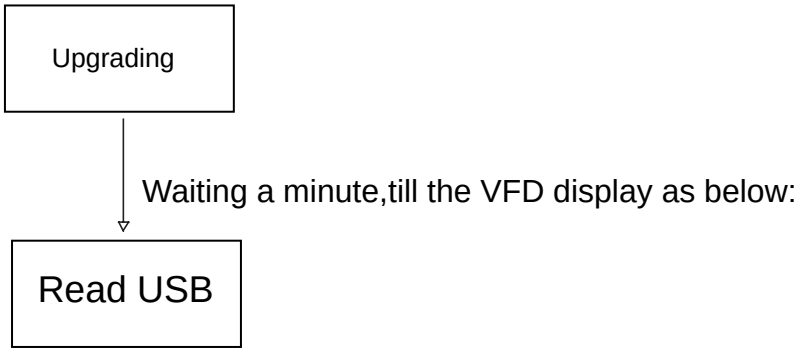
Software Version Check & Upgrade

Upgrade software

1.Downloading the software from Philips support website

http://www.philips.com/support

2.Insert the Software USB device,when it is loading ,
VFD display showing as below:



Software upgrade finish.

Software version and date check

1, In the absence of USB/DISC state or STOP status at the next,press the “OPTIONS” on remote control

Press “▲” or “▼” select “Preferences”

↓ Press “OK”

Select “Version Info”

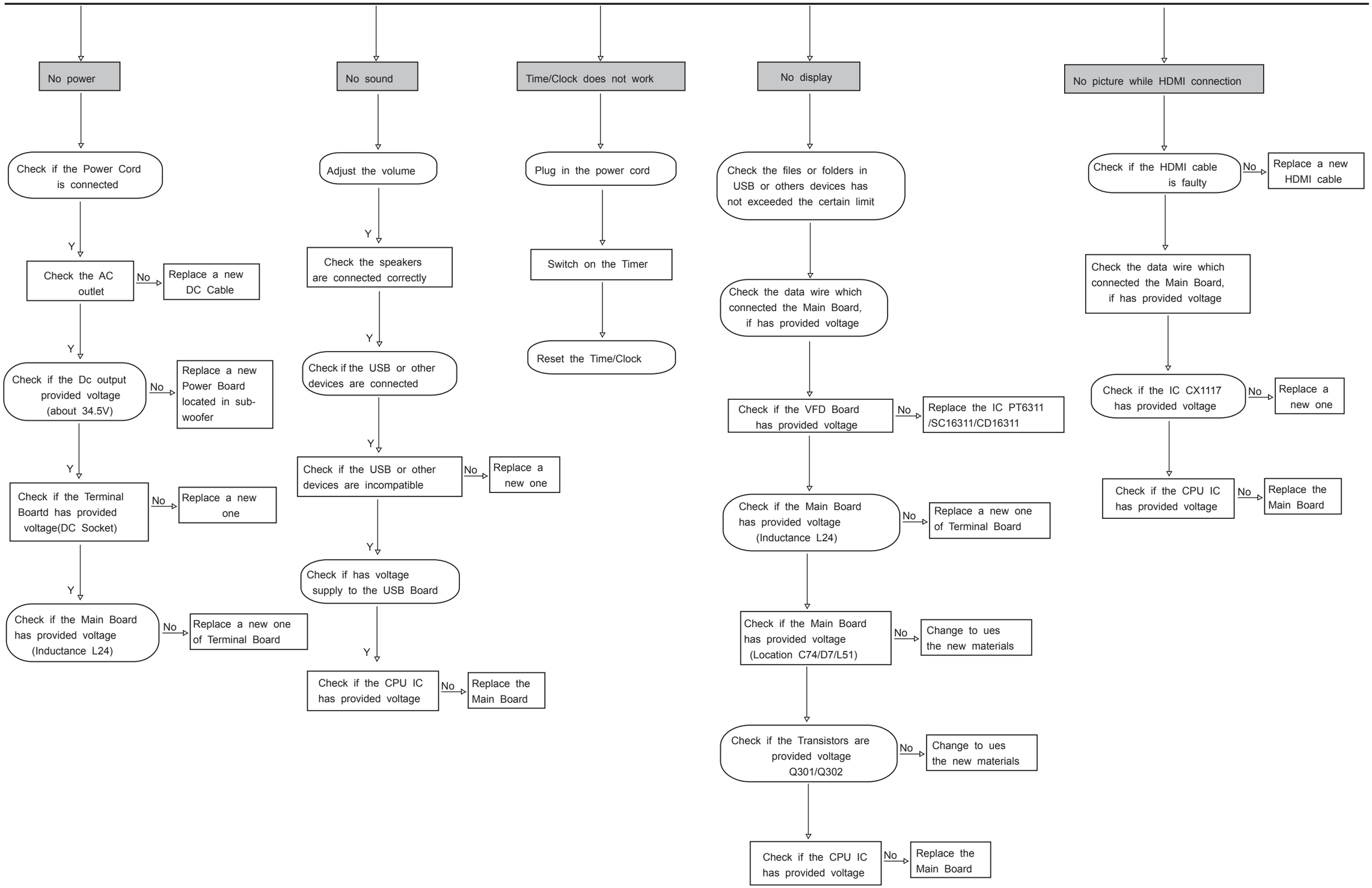
↓ Press “OK”

2, TV will shows:

Current model		HSB4383-xx Vxxx
MT1389	Mmm dd yyyy	Version yy.mm.dd.xx
Region x		Servo 89.77.11.00
8032	05.00.01.08	RISC 00.00.00.25
MCU Mmm.dd.yyyy		McuVer Ver x.x

2-2

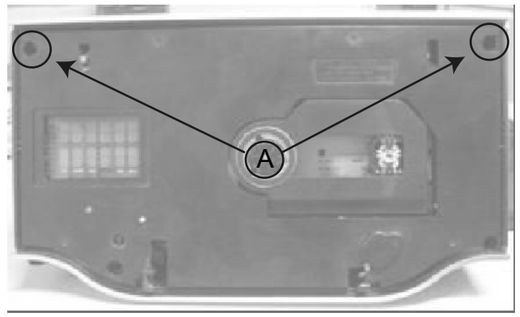
Malfunction Follow Check Chart



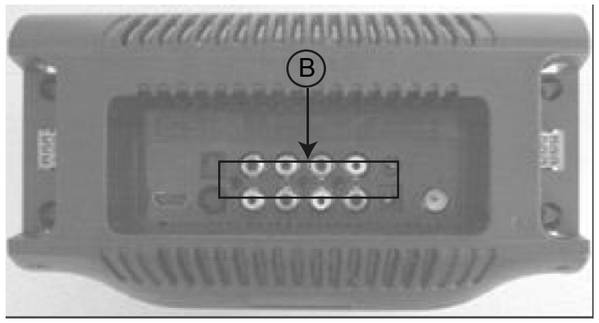
3-1

Disassembly Diagram

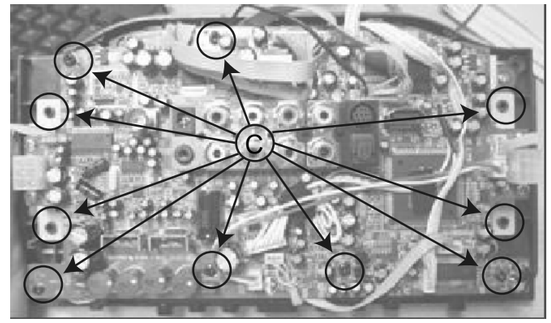
A.Loose these screws of the Front Cabinet.



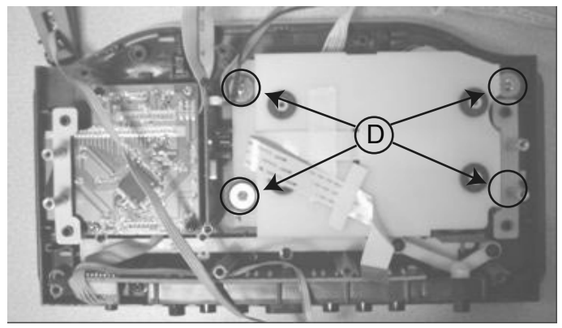
B.Loose these screws of the Back Cabinet



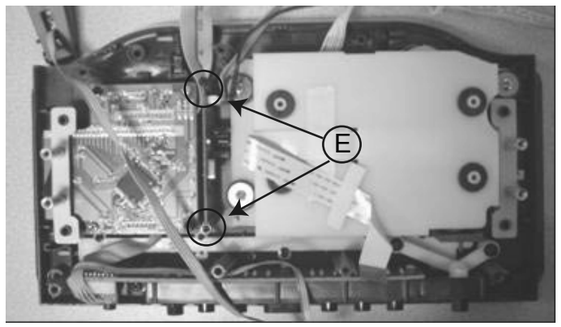
C.Loose these screws to remove the Decoder Board



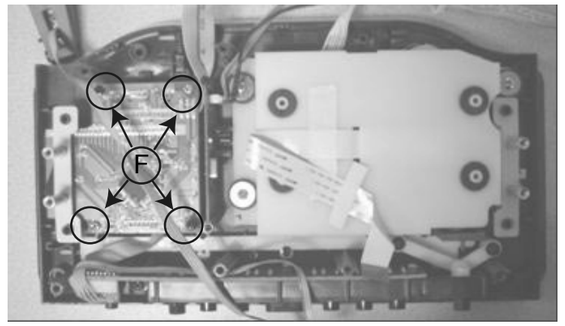
D.Loose these screws to remove DVD Loader



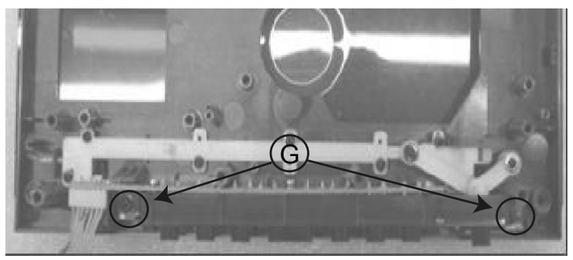
E.Loose these screws to remove Data transmit Board



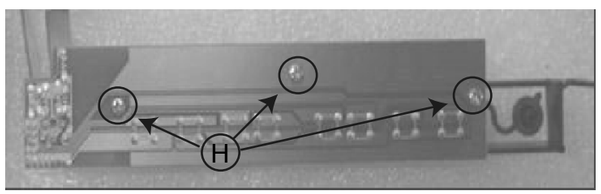
F. Loose these screws to remove VFD Display Board



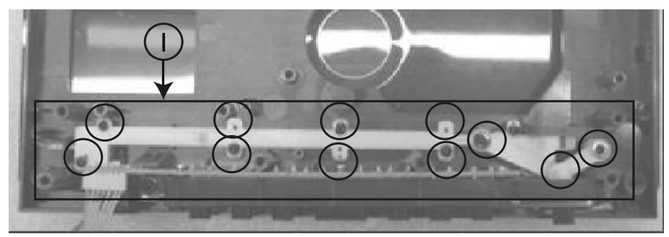
G.Loose these screws to remove Button and Button Board



H.Loose these screws to remove Button Board

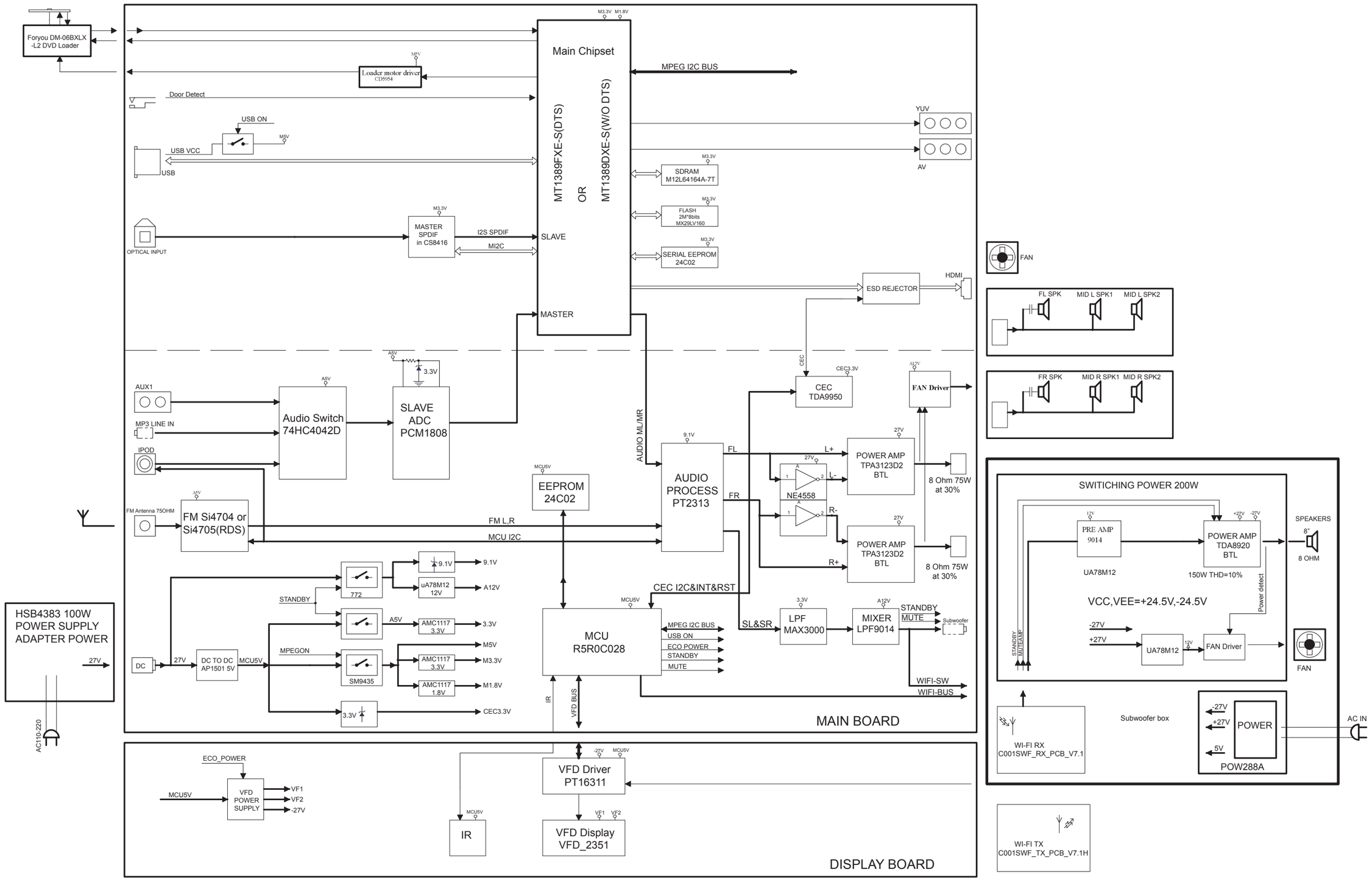


I.Loose these screws to remove Pole



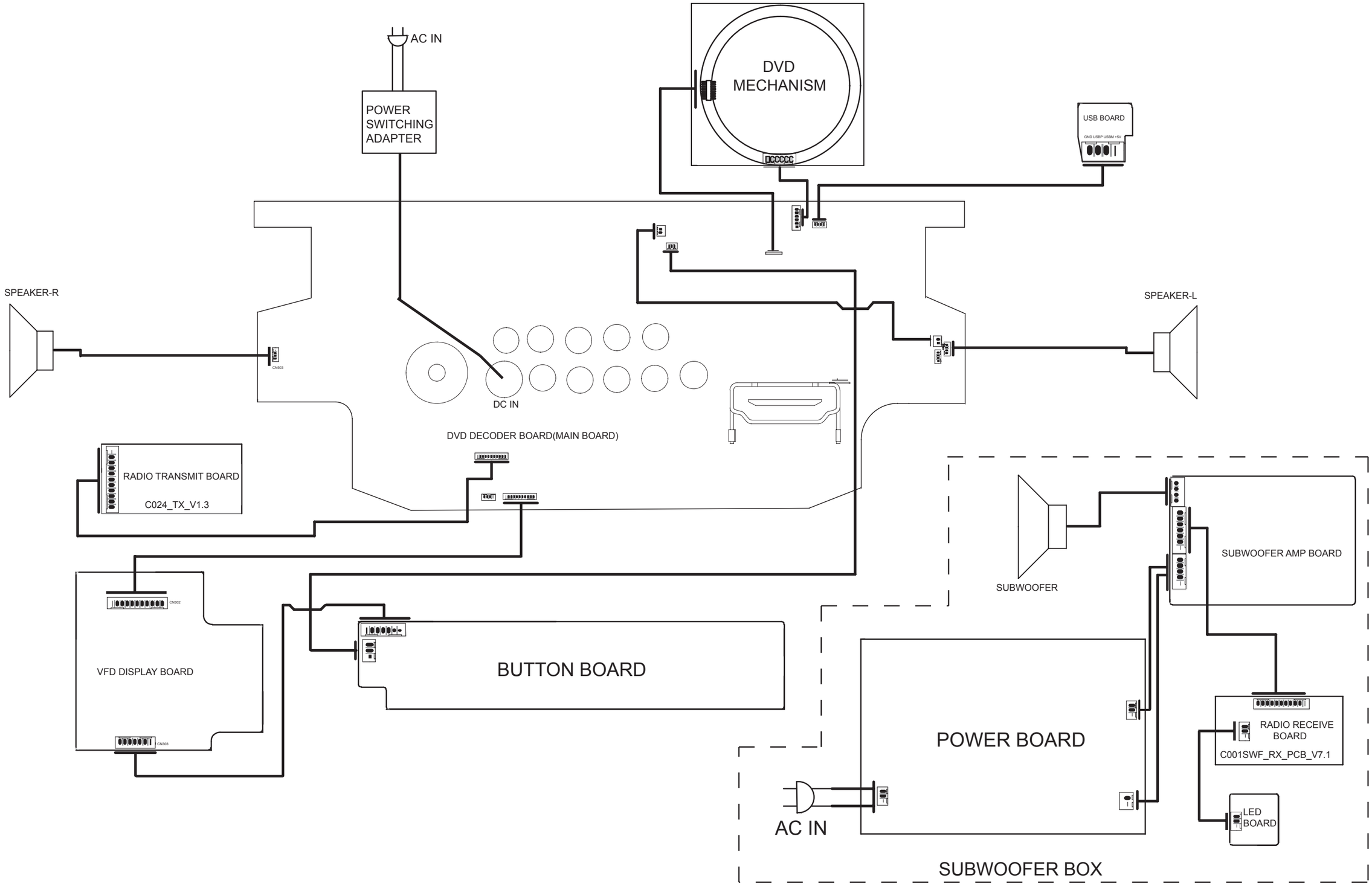
4-1

Block Diagram



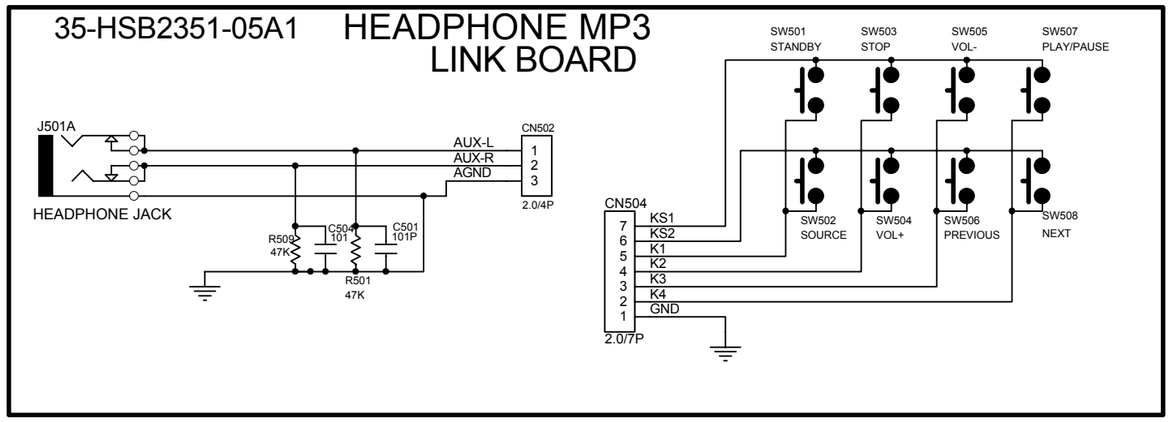
4-2

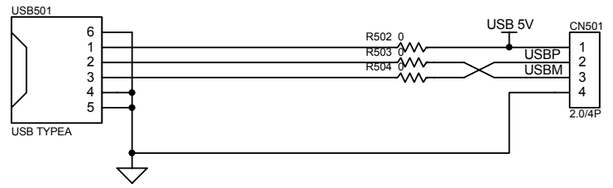
Wiring Diagram

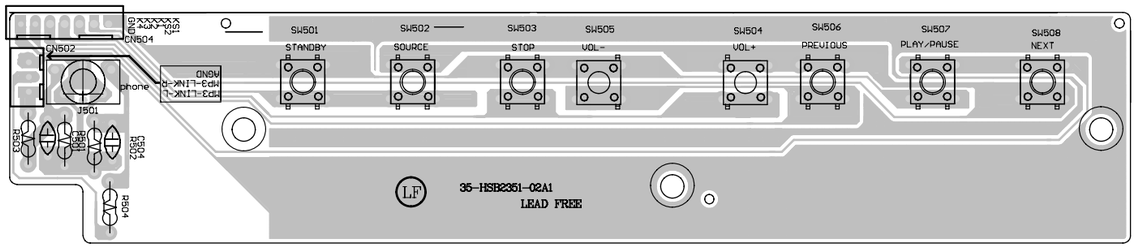


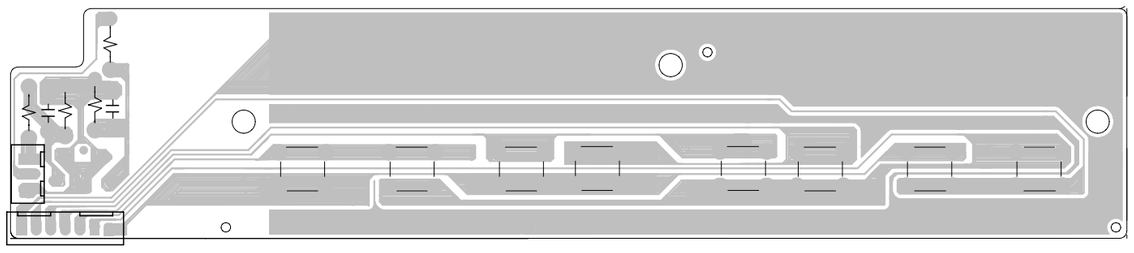
5-1

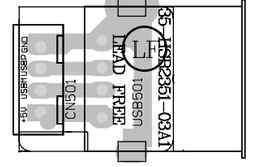
Small Board

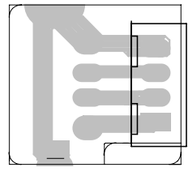


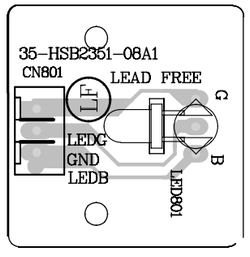


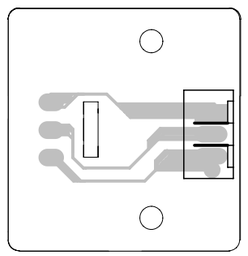






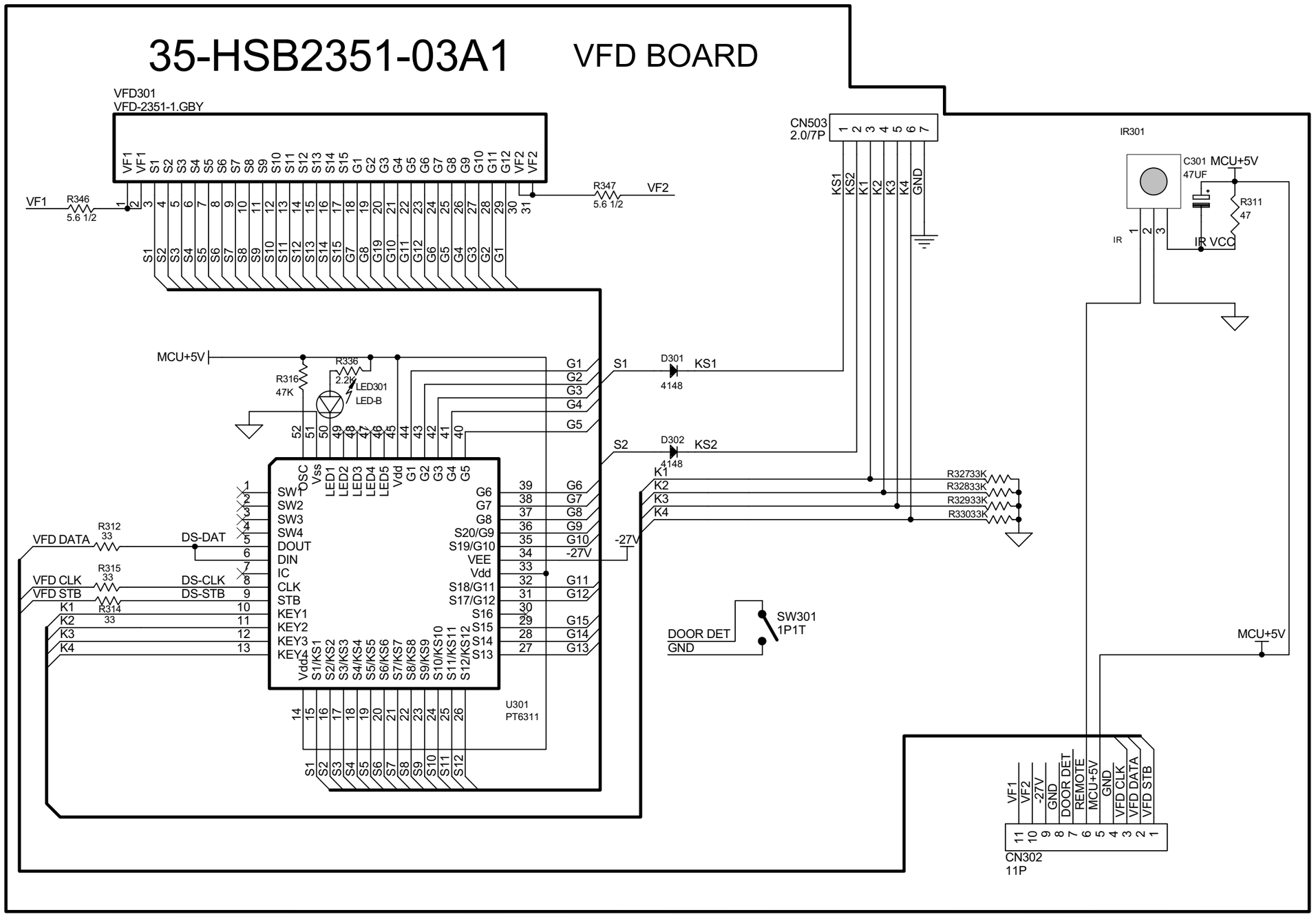






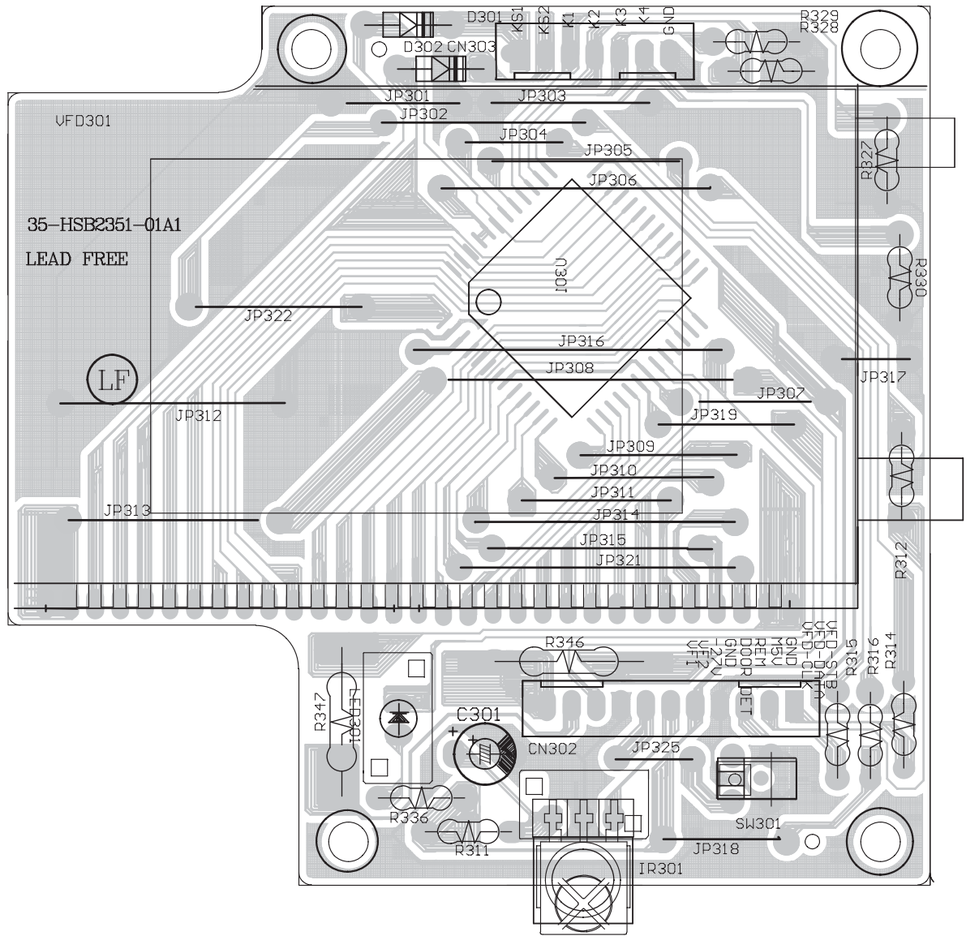
6-1

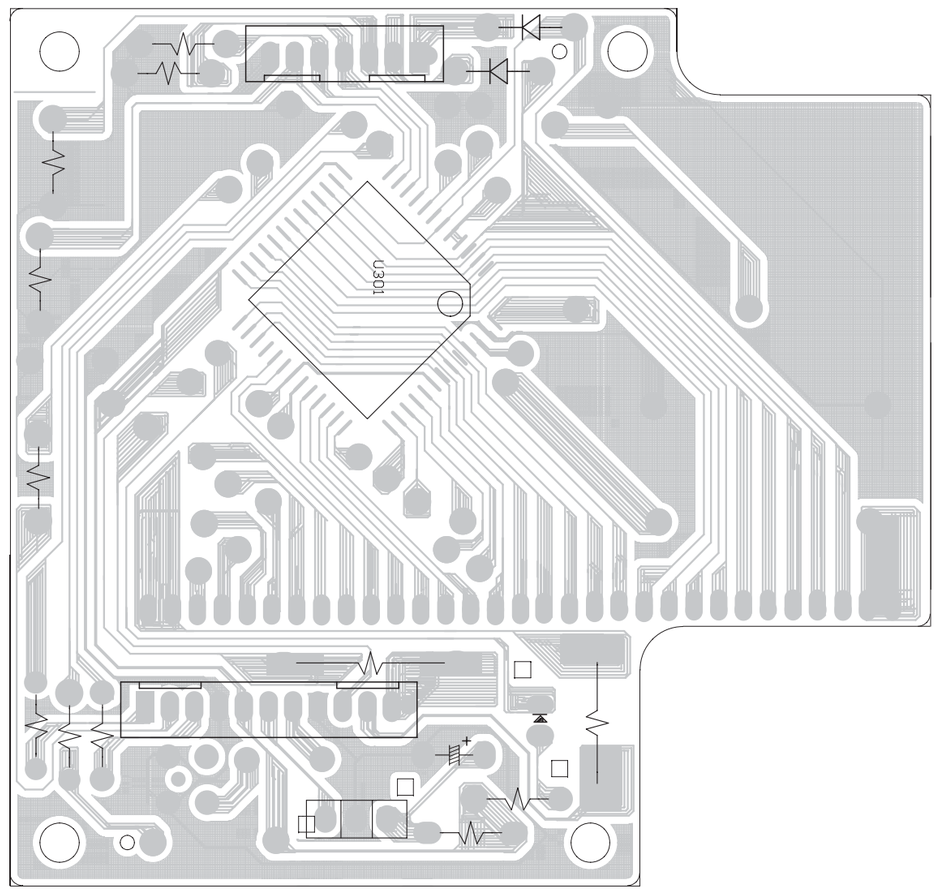
VFD Display Board -- Circuit Diagram



6-2

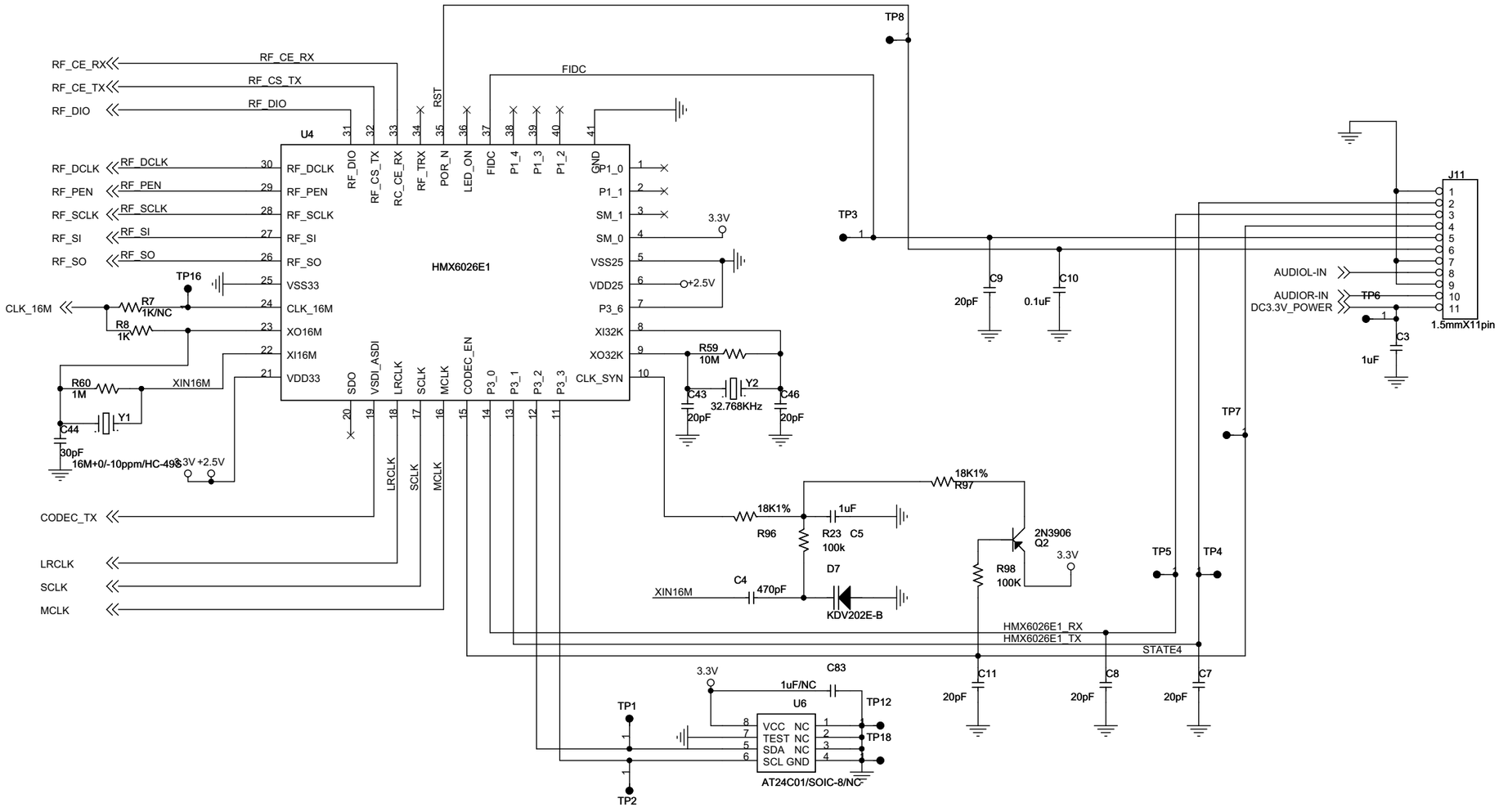
VFD Display Board -- Layout Diagram





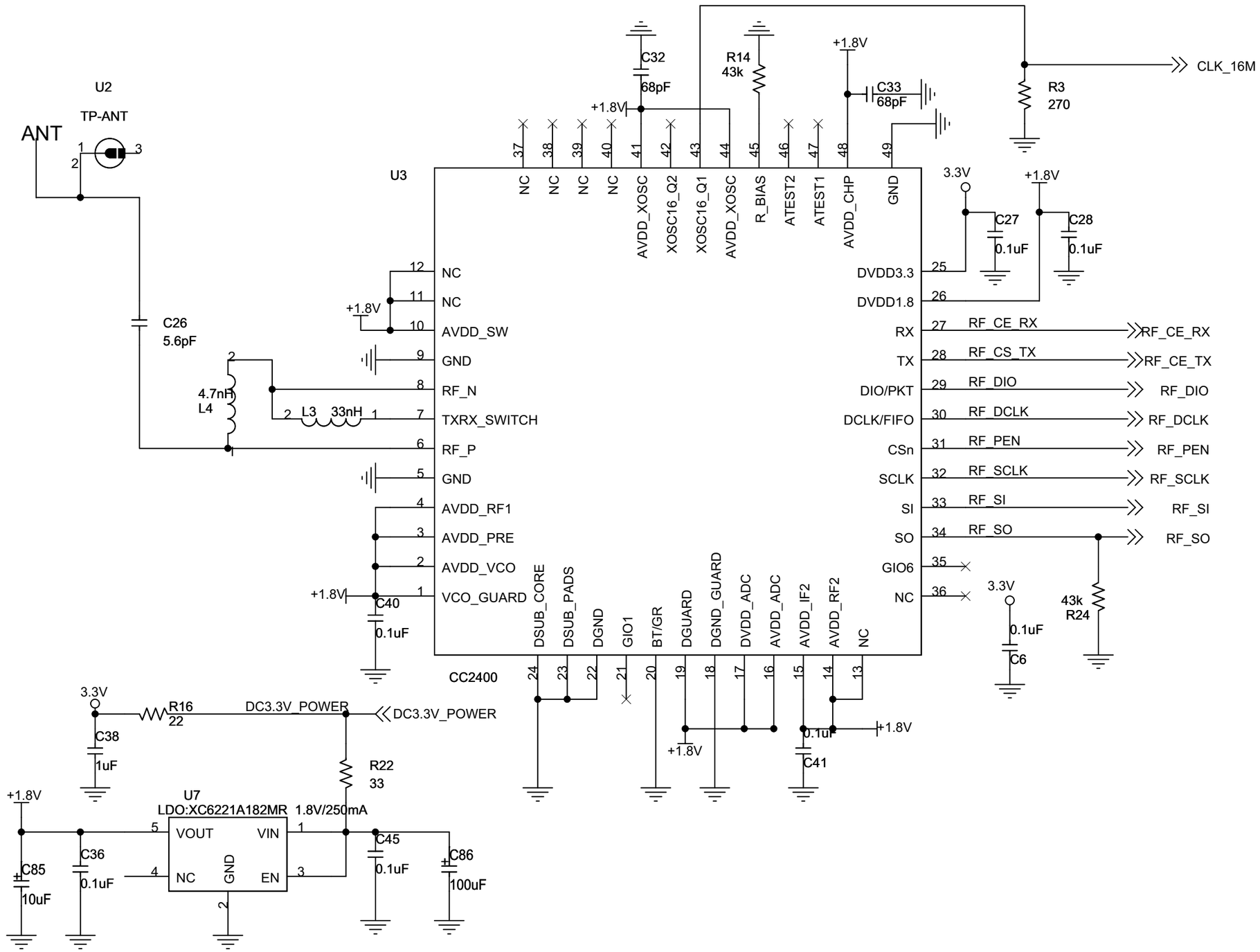
7-1

C024_TX-Transmit Board -- Circuit Diagram



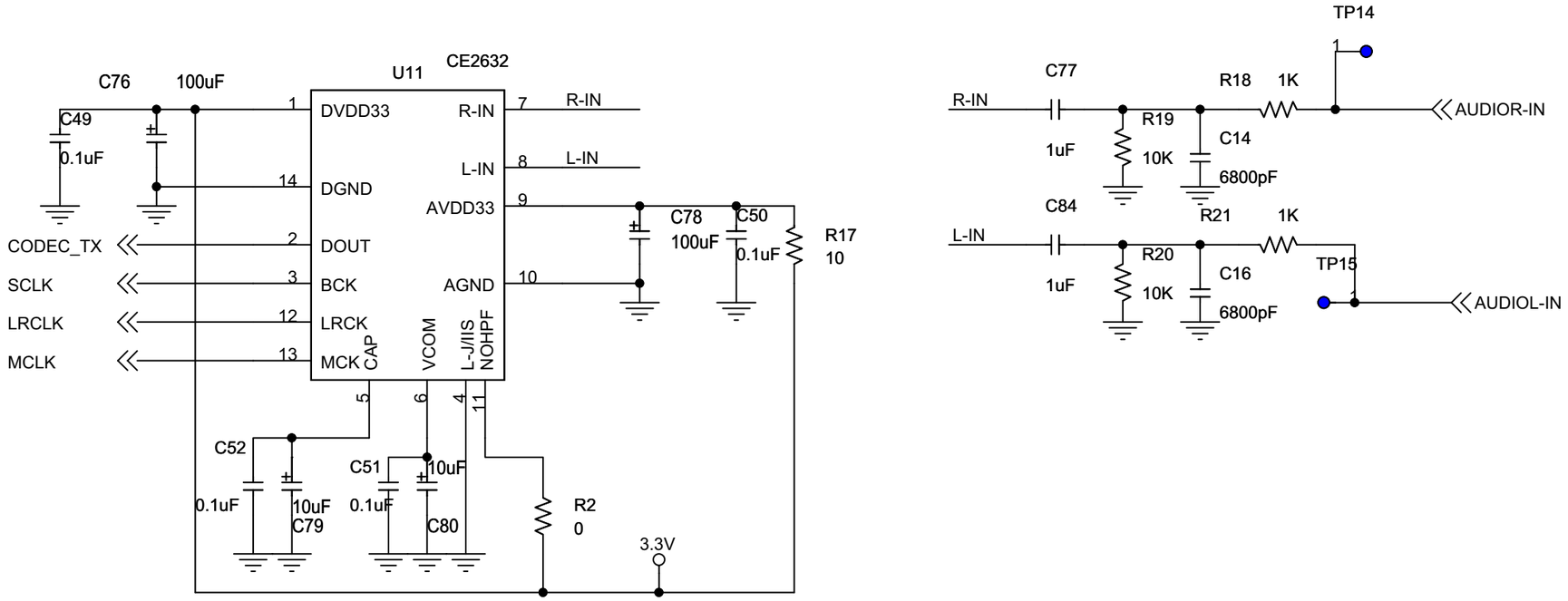
7-2

C024_TX--Transmit Board -- Circuit Diagram



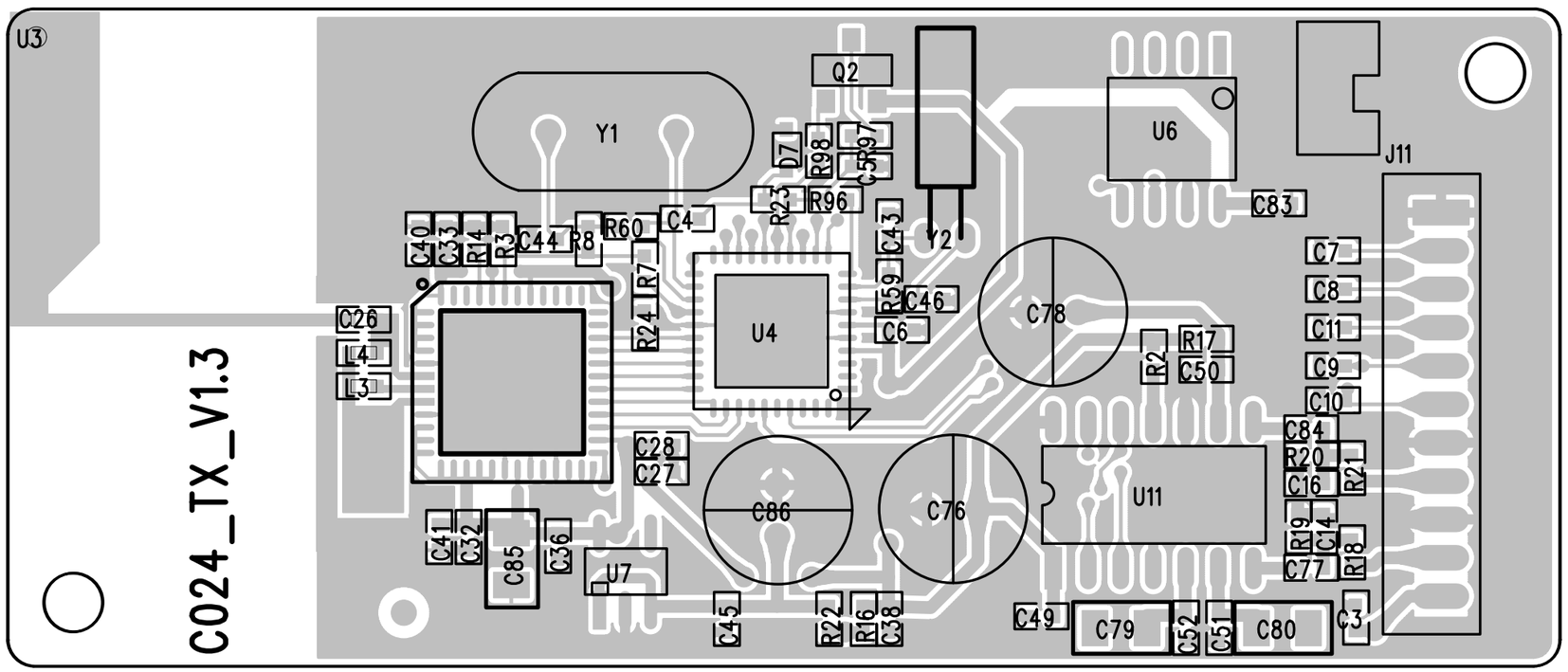
7-3

C024_TX--Transment Board -- Circuit Diagram



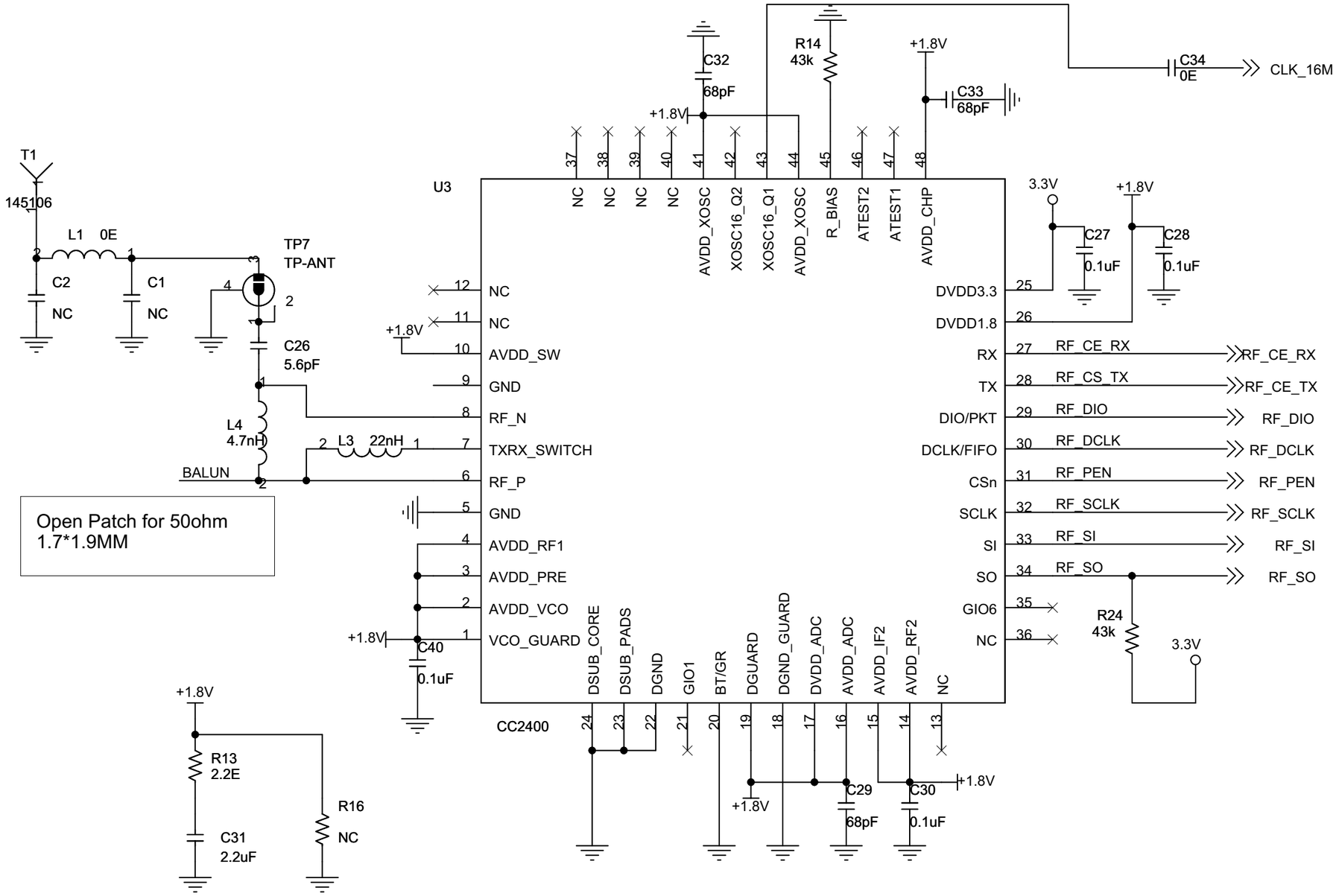
7-4

C024_TX--Transmit Board -- Layout Diagram



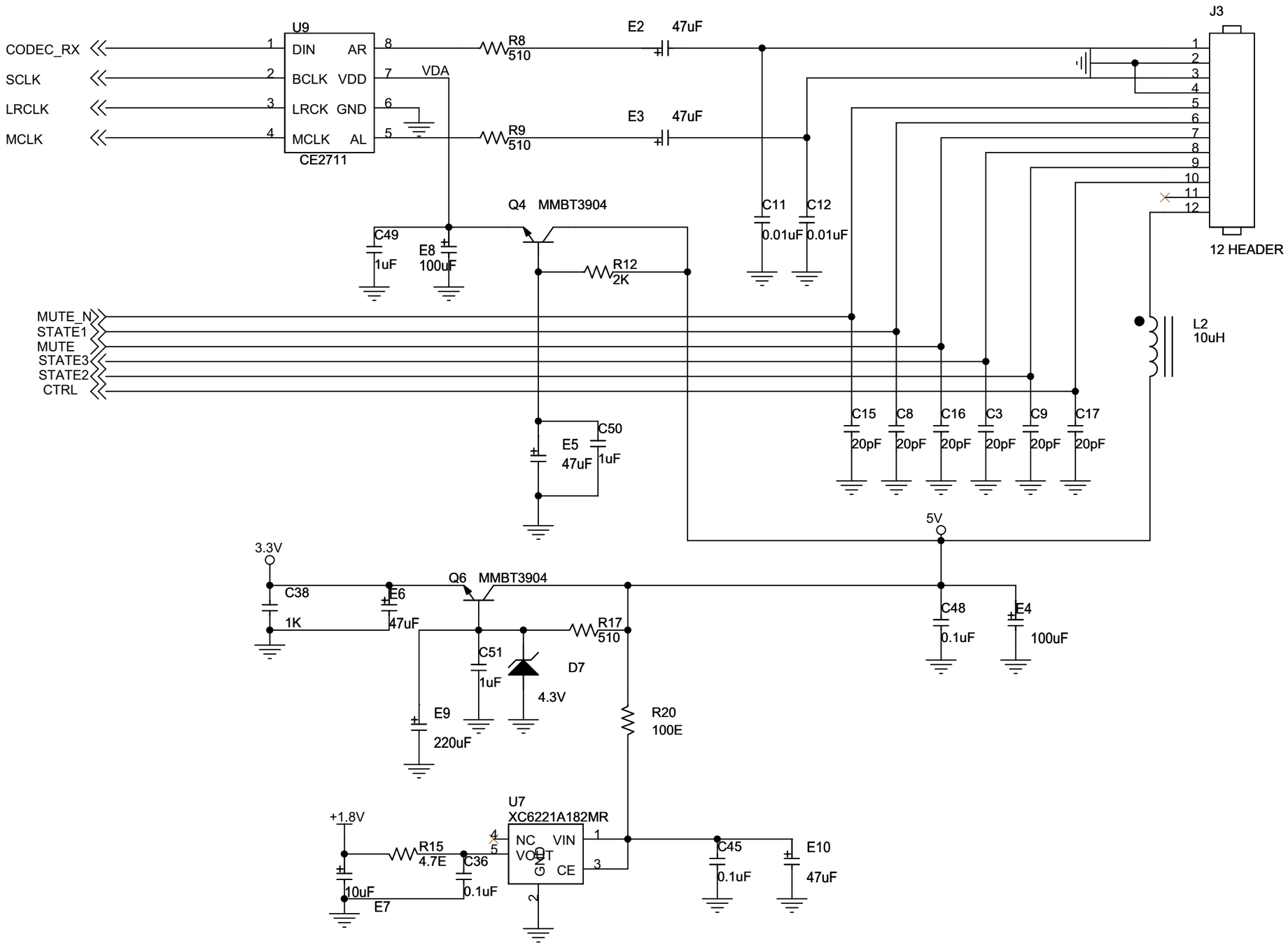
8-1

C001SWF_RX--Transmit Board -- Circuit Diagram



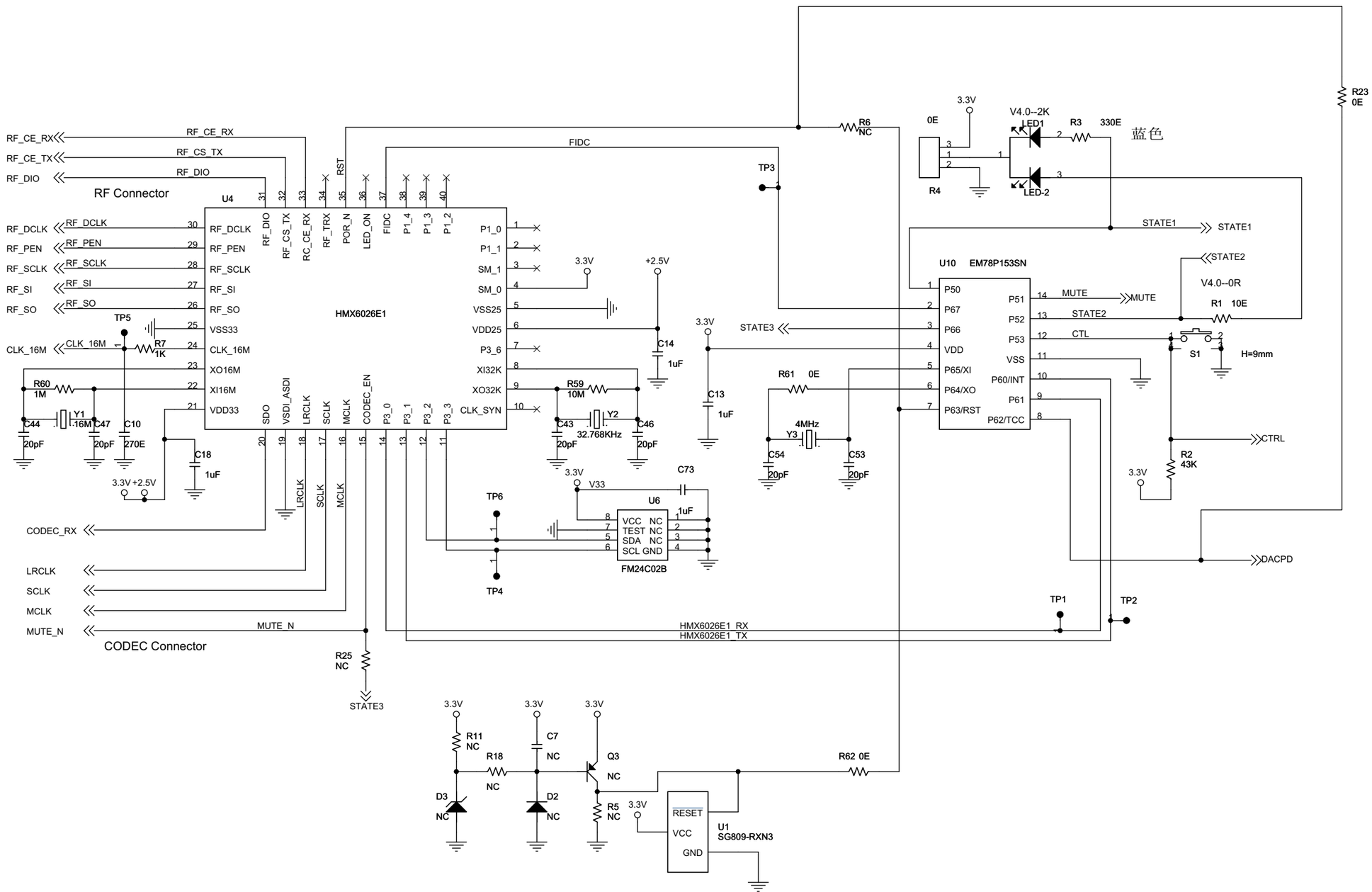
8-2

C001SWF_RX--Transmit Board -- Circuit Diagram



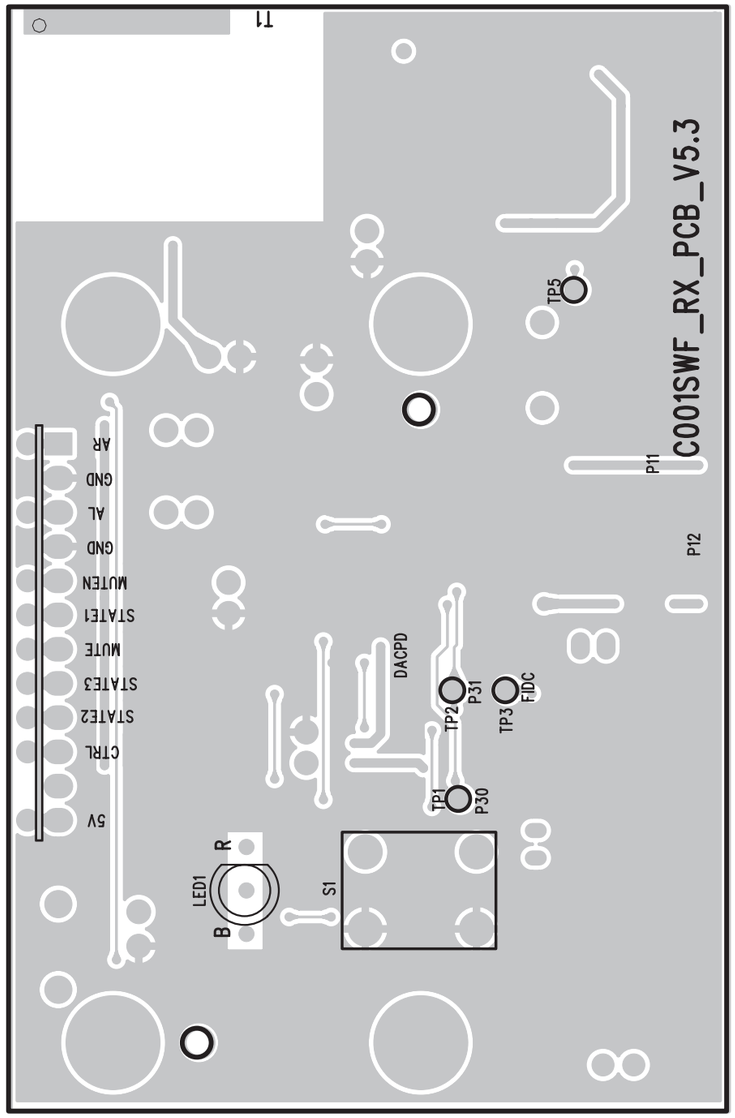
8-3

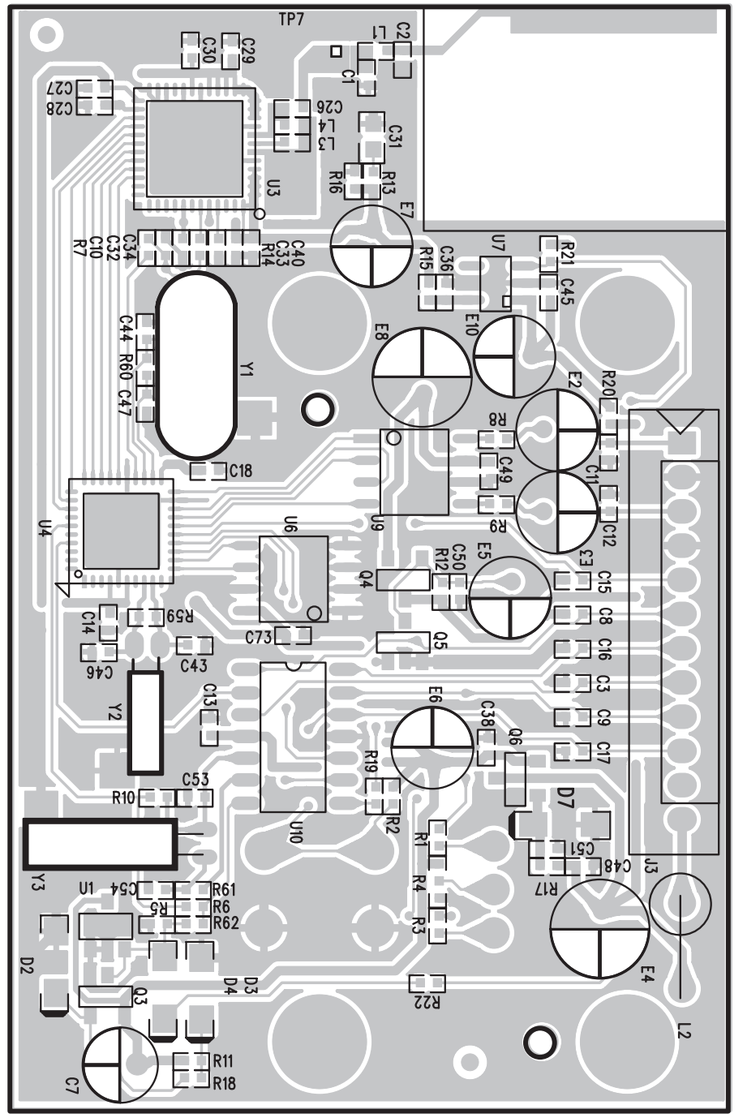
C001SWF_RX--Transmit Board -- Circuit Diagram



8-4

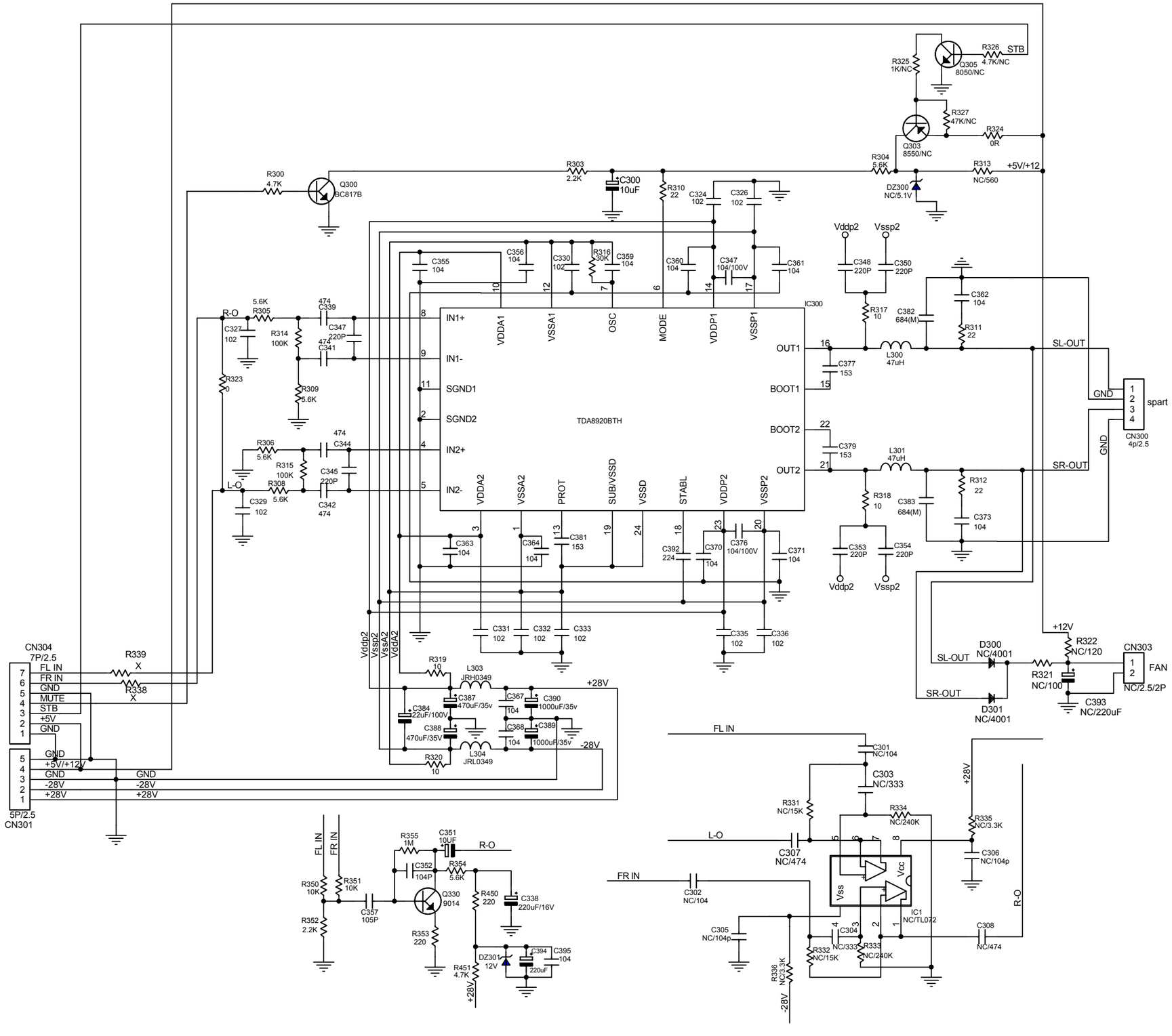
C001SWF_RX--Transmit Board -- Layout Diagram





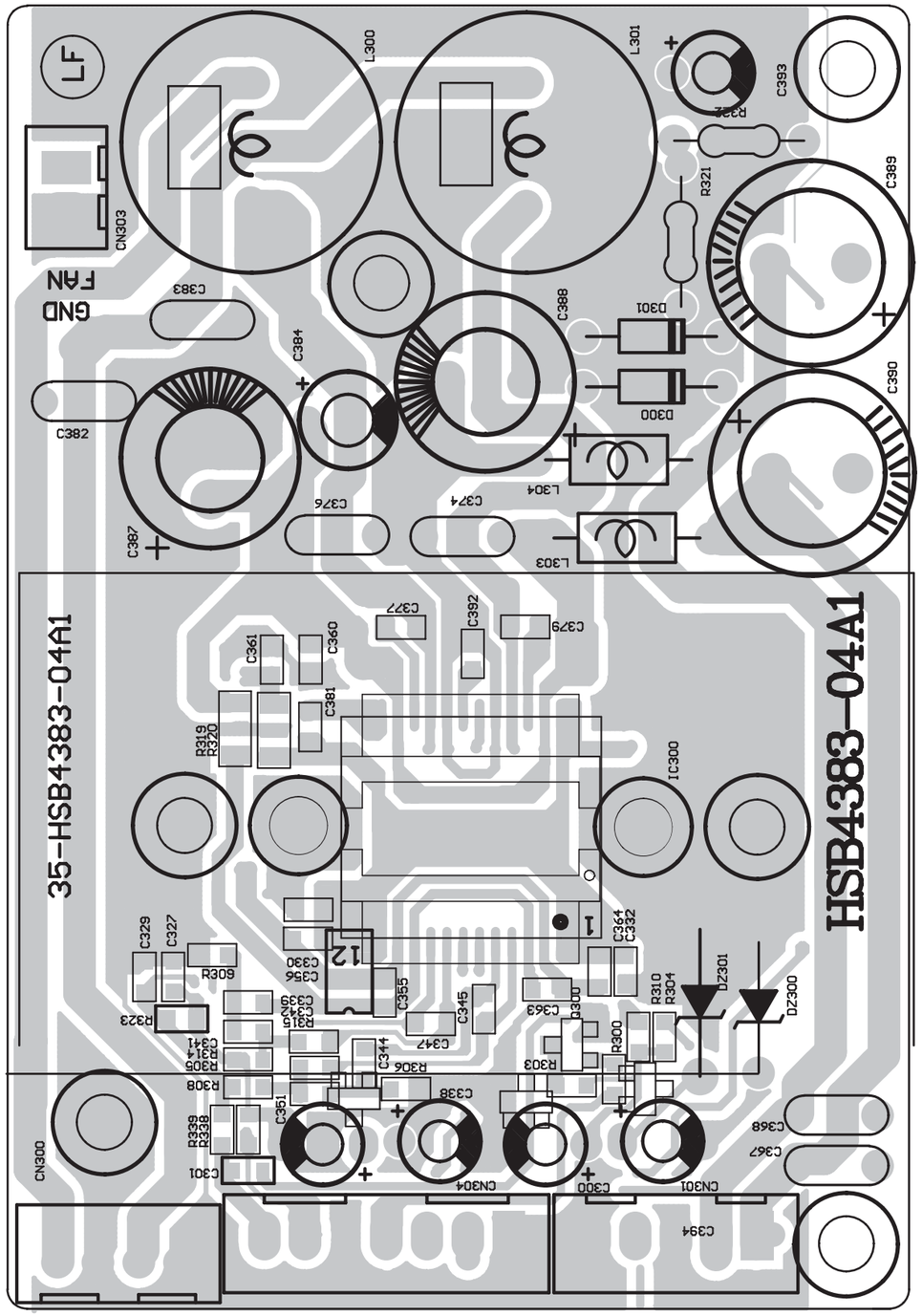
9-1

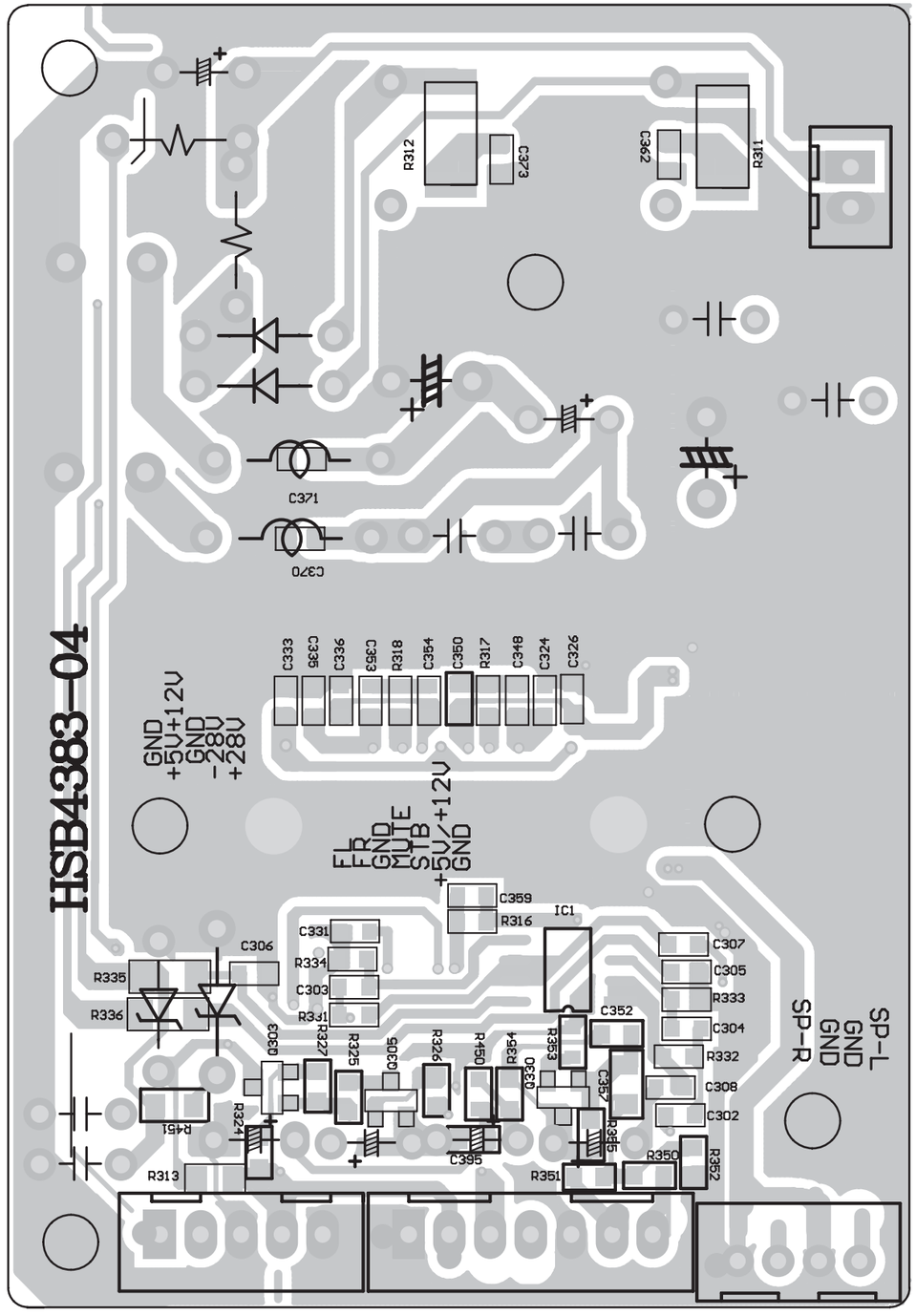
AMP Board -- Circuit Diagram



9-2

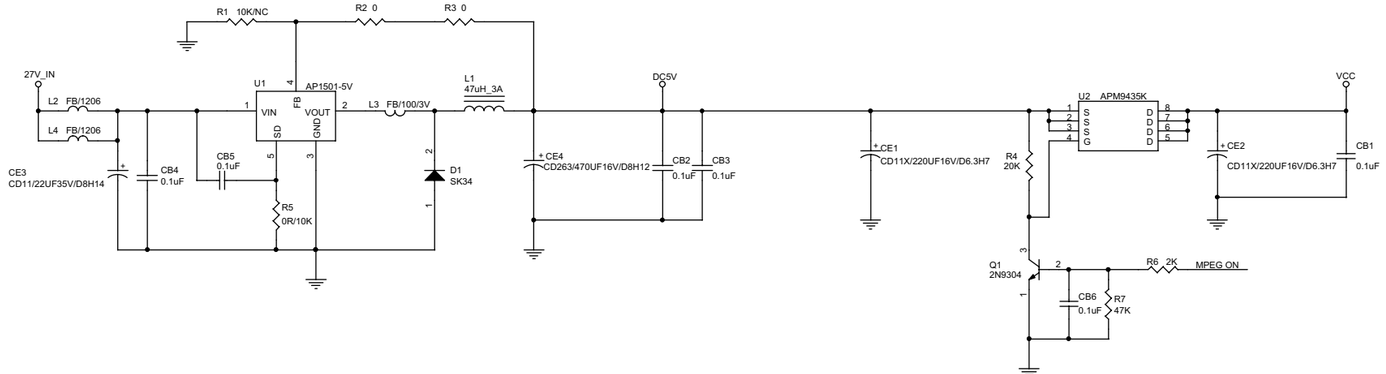
AMP Board -- Layout Diagram

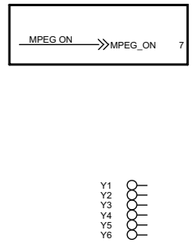


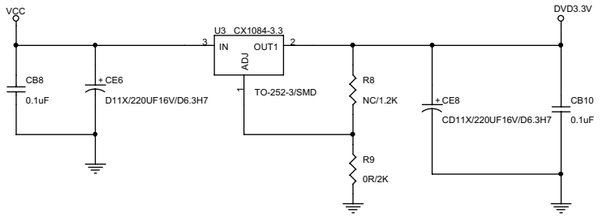


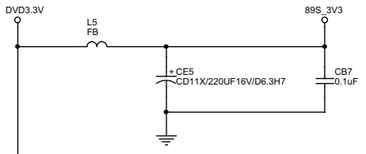
10-1

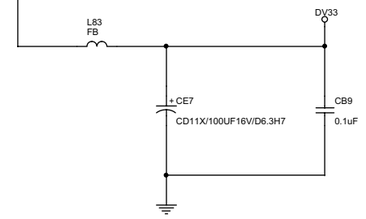
Decoder Board -- Circuit Diagram

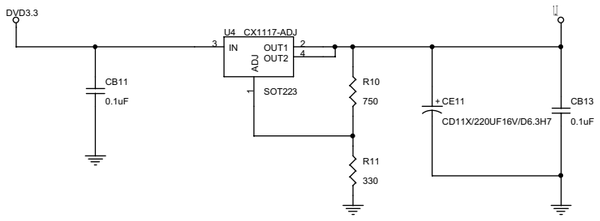


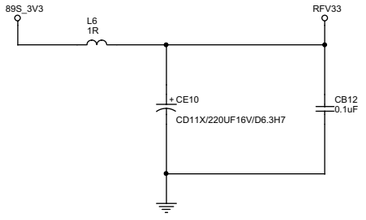






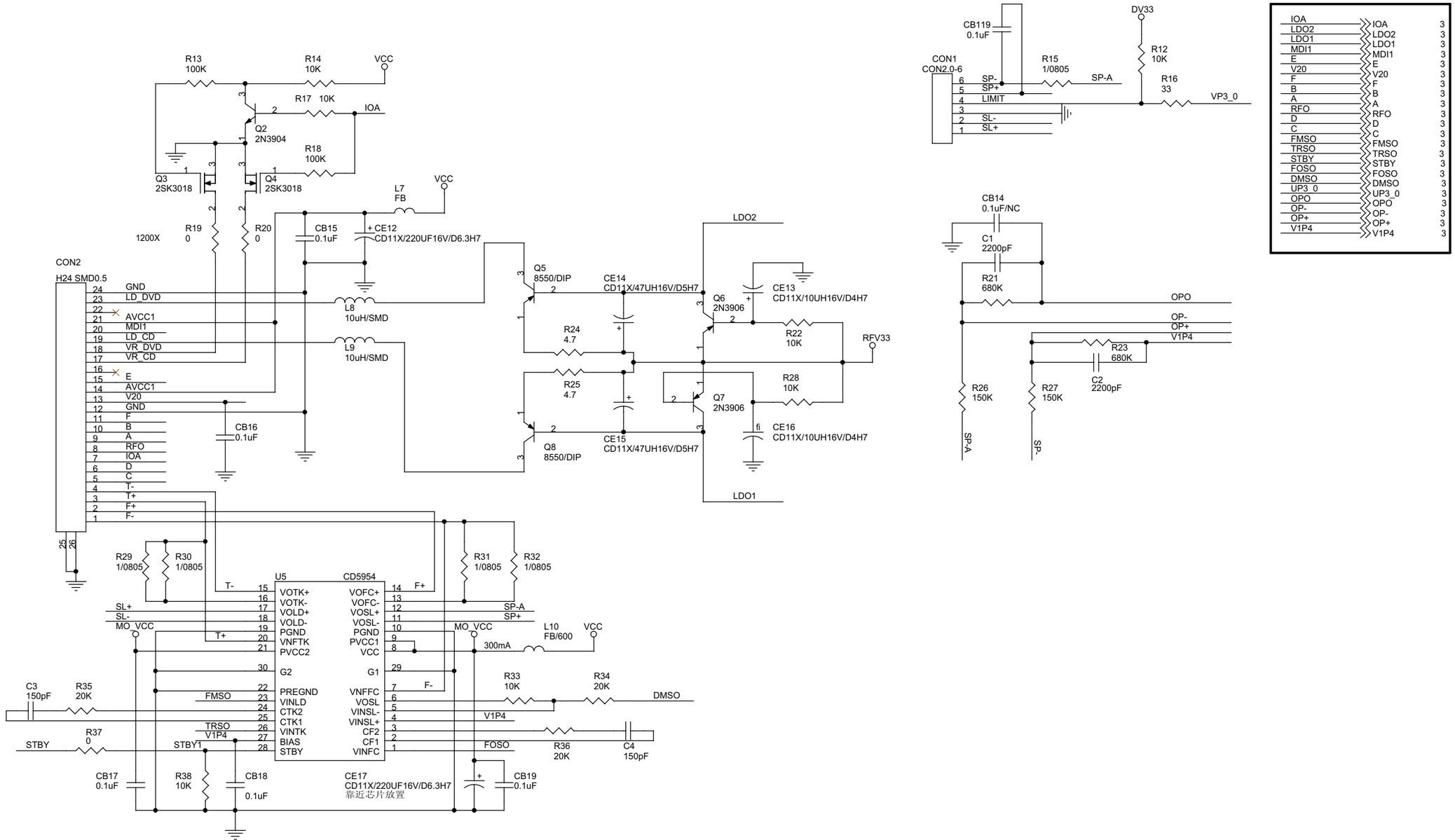






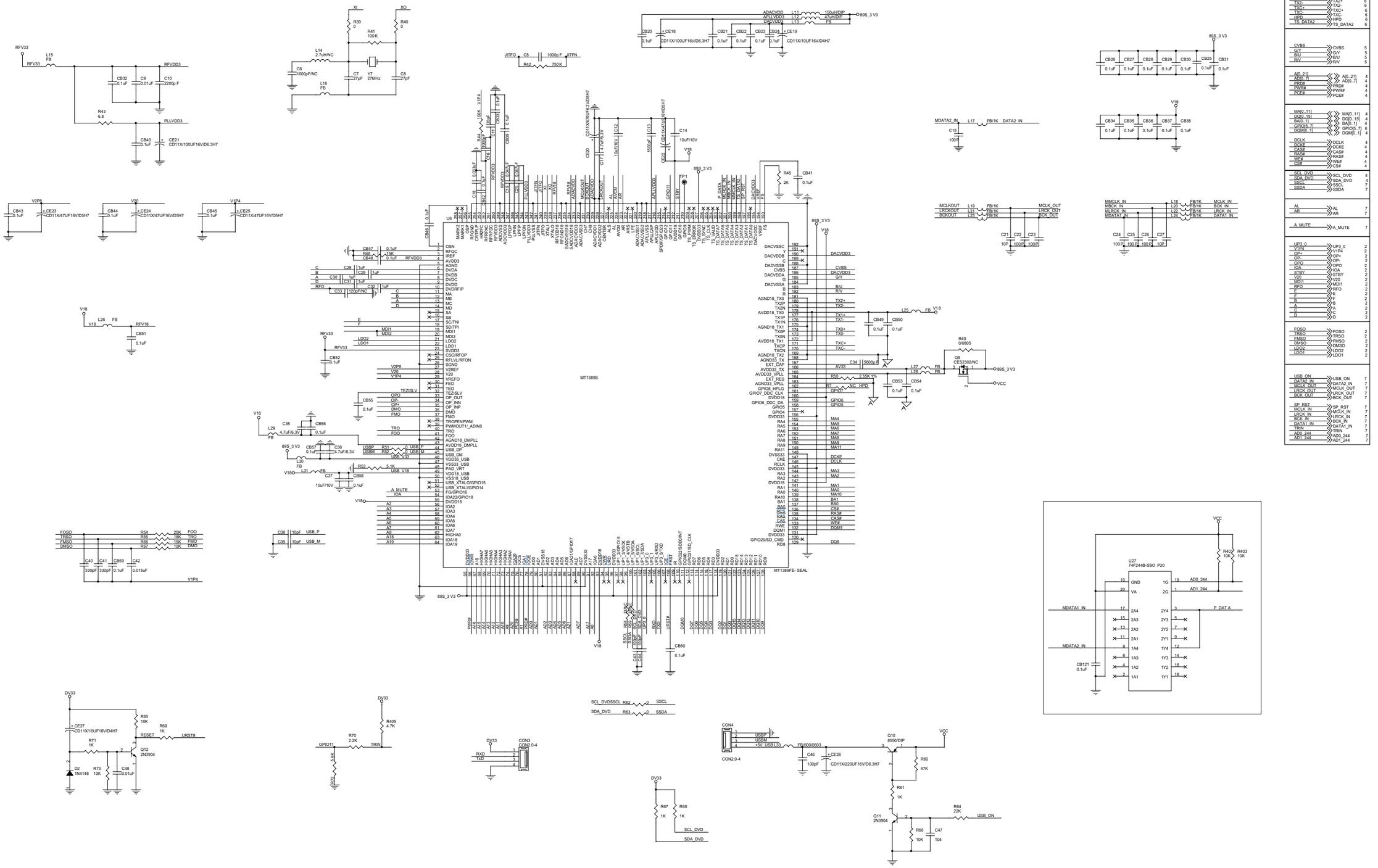
10-2

Decoder Board -- Circuit Diagram



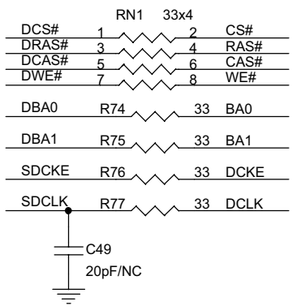
10-3

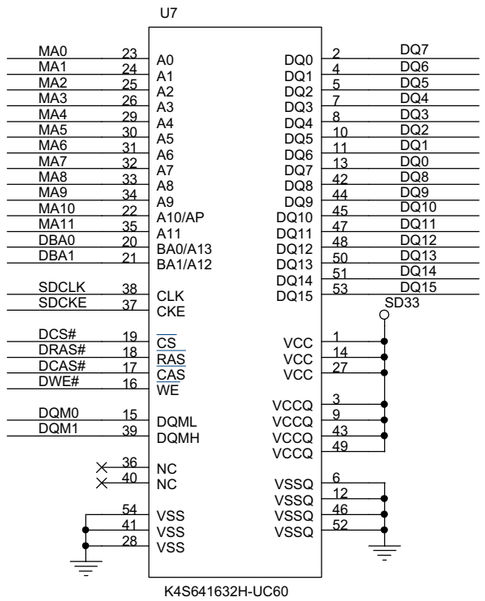
Decoder Board -- Circuit Diagram

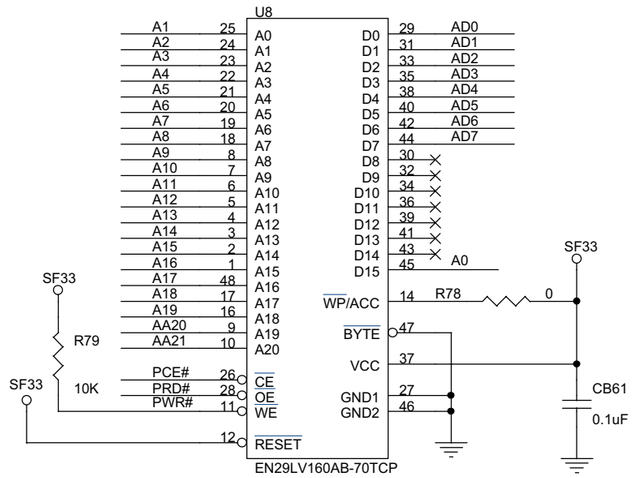


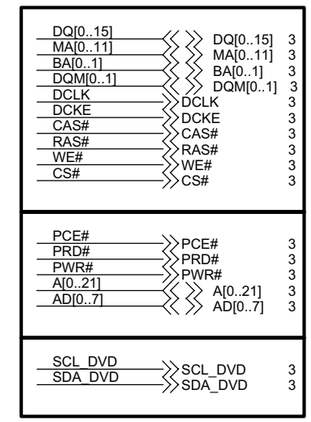
10-4

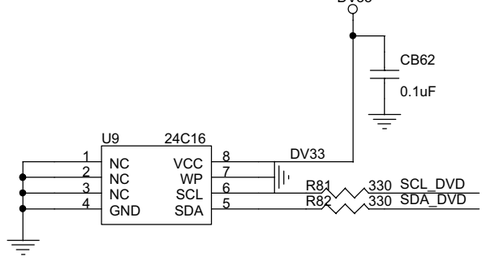
Decoder Board -- Circuit Diagram



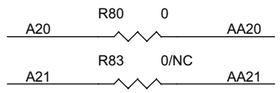




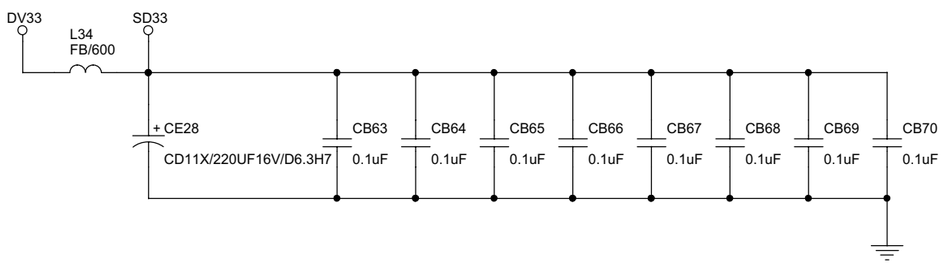


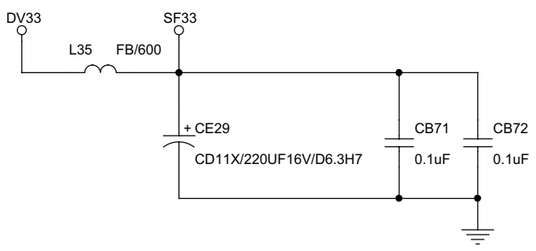


16 Mb FLASH



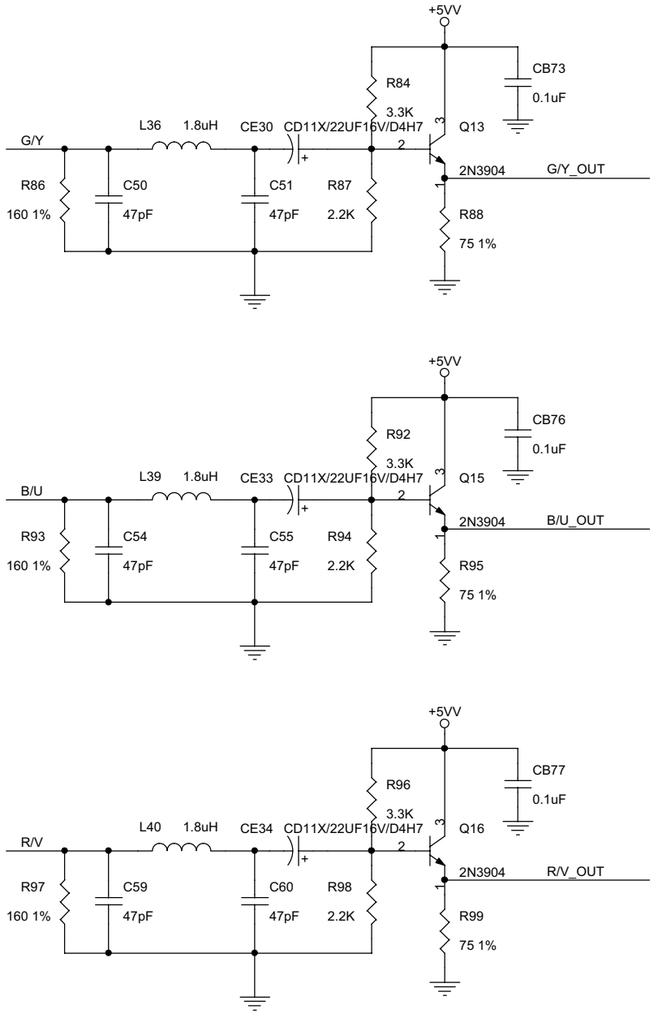
32 Mb FLASH

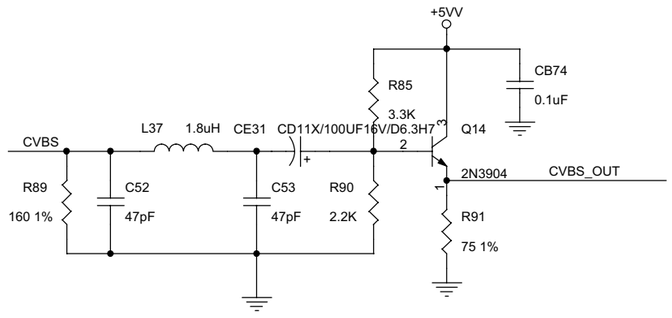


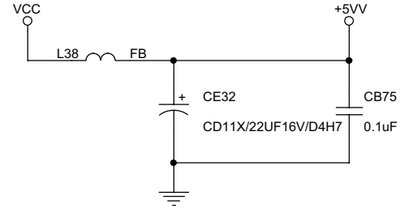


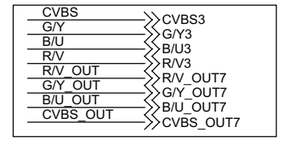
10-5

Decoder Board -- Circuit Diagram



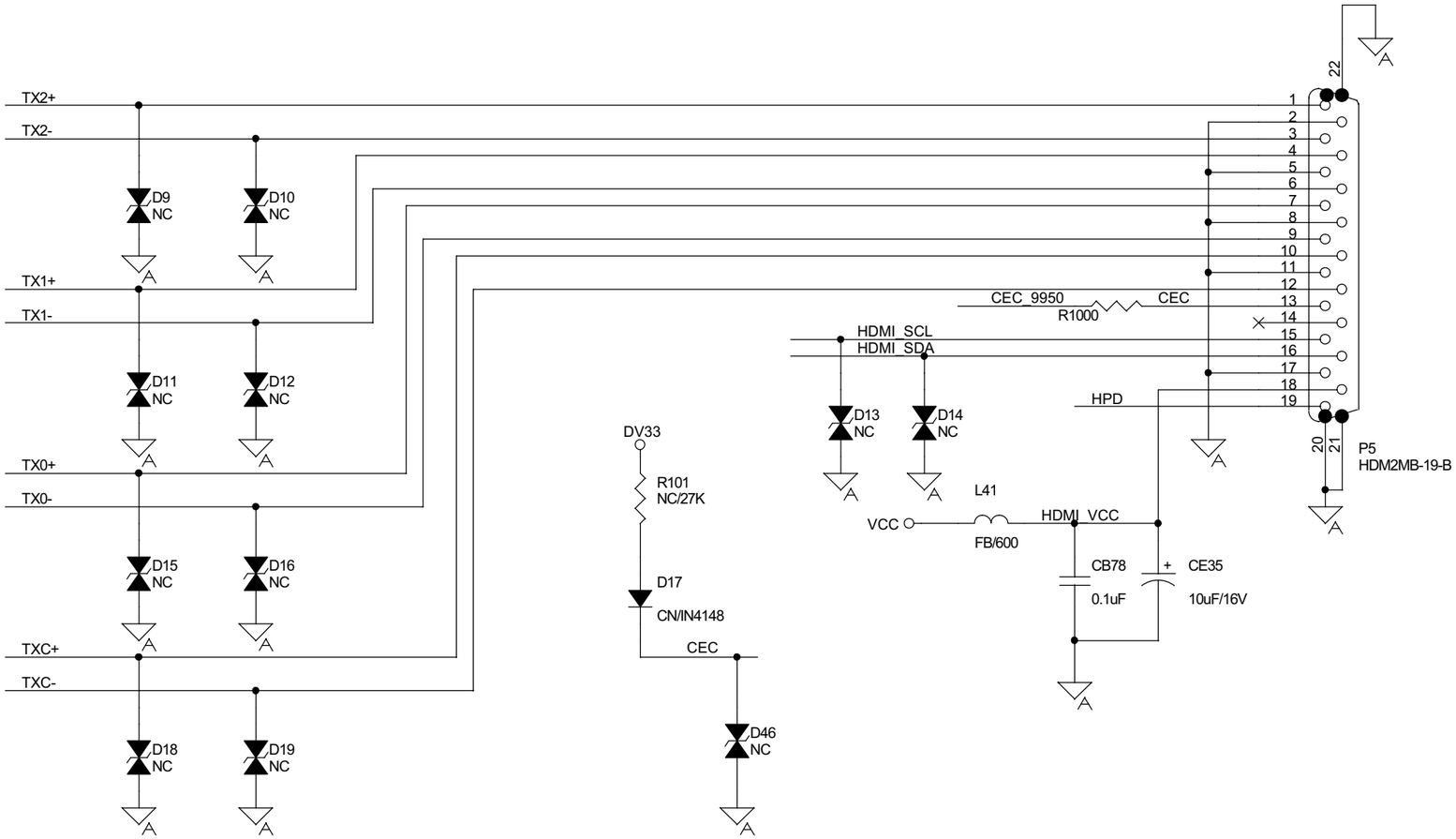


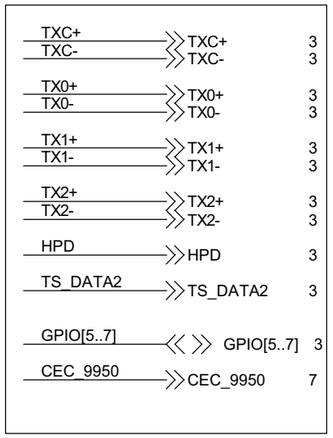


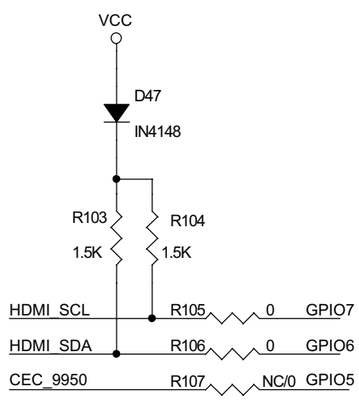


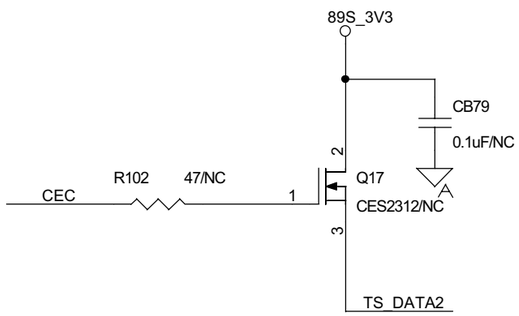
10-6

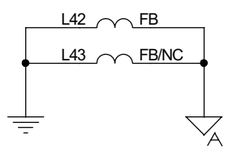
Decoder Board -- Circuit Diagram





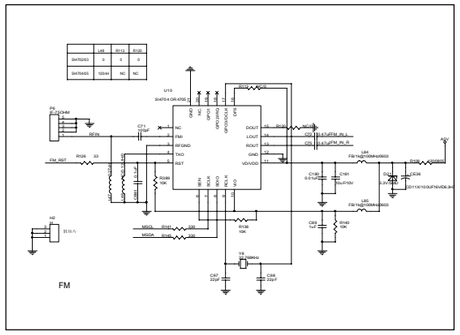


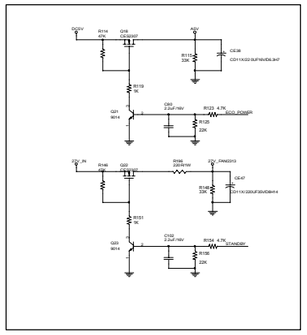


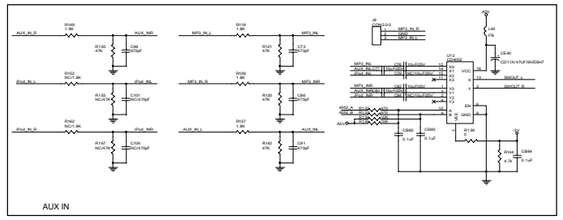


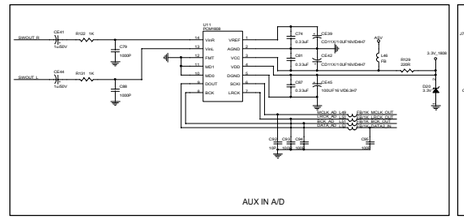
10-7

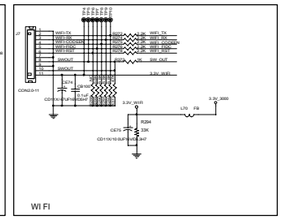
Decoder Board -- Circuit Diagram

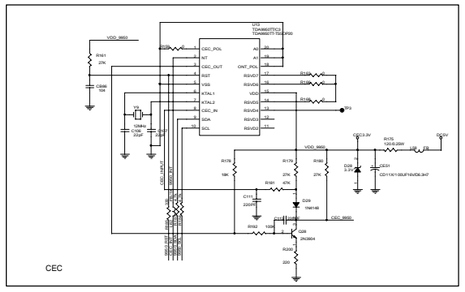


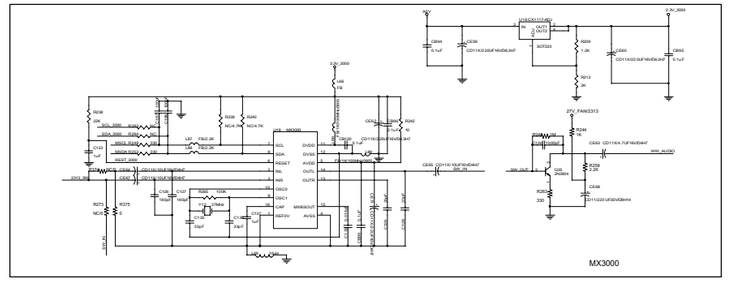


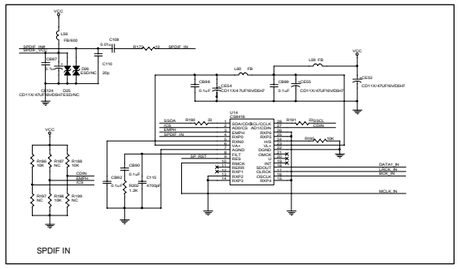


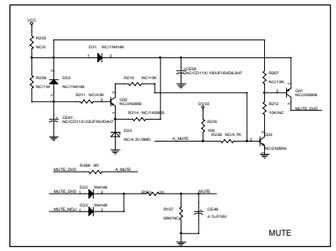


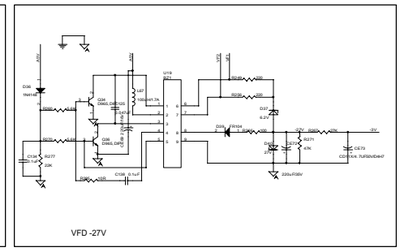


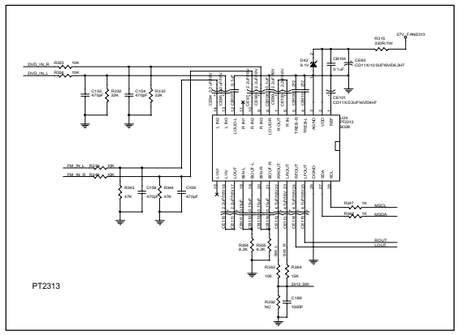


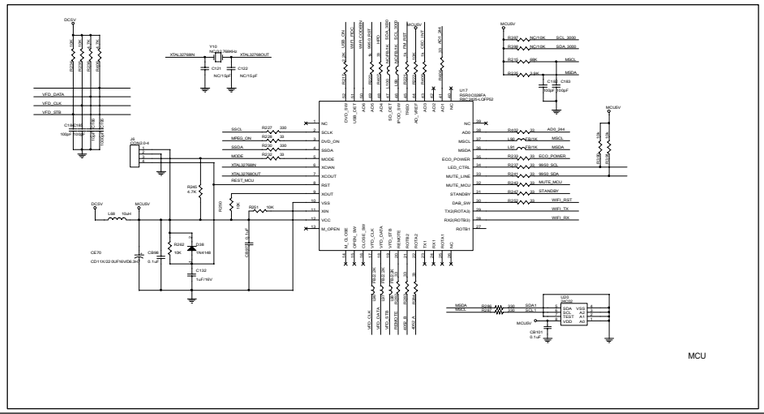


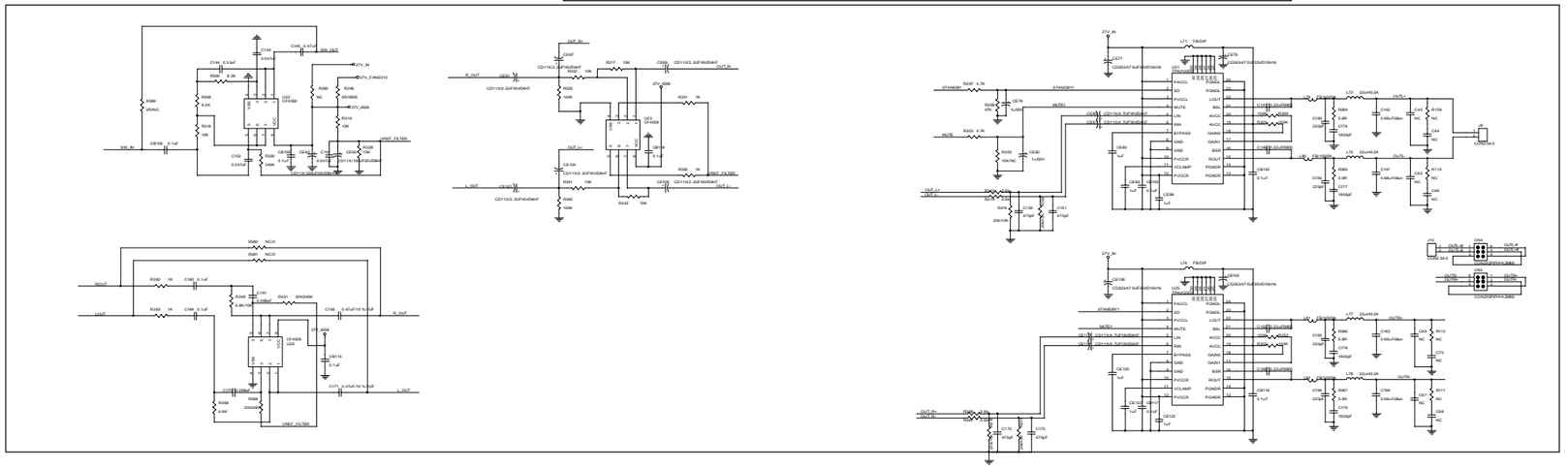


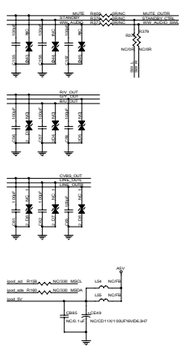


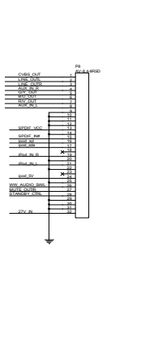






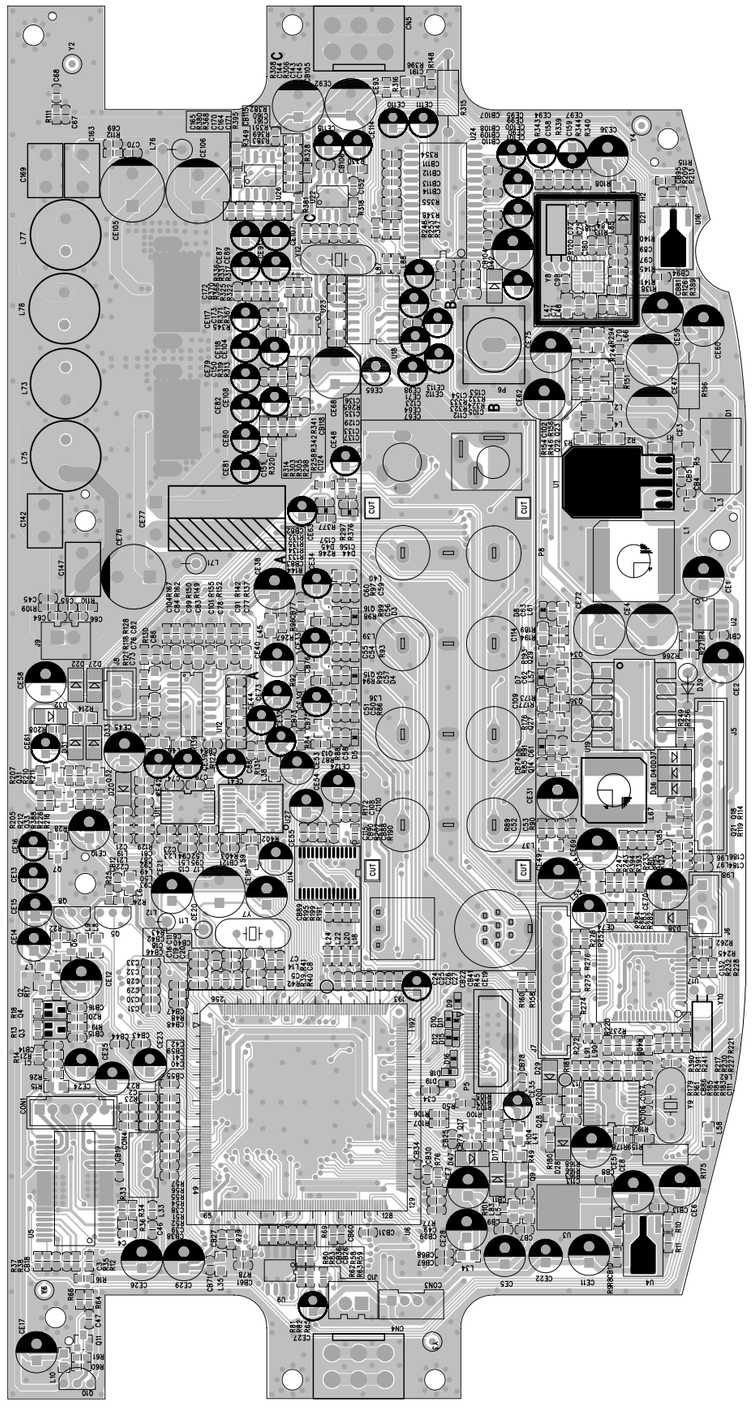


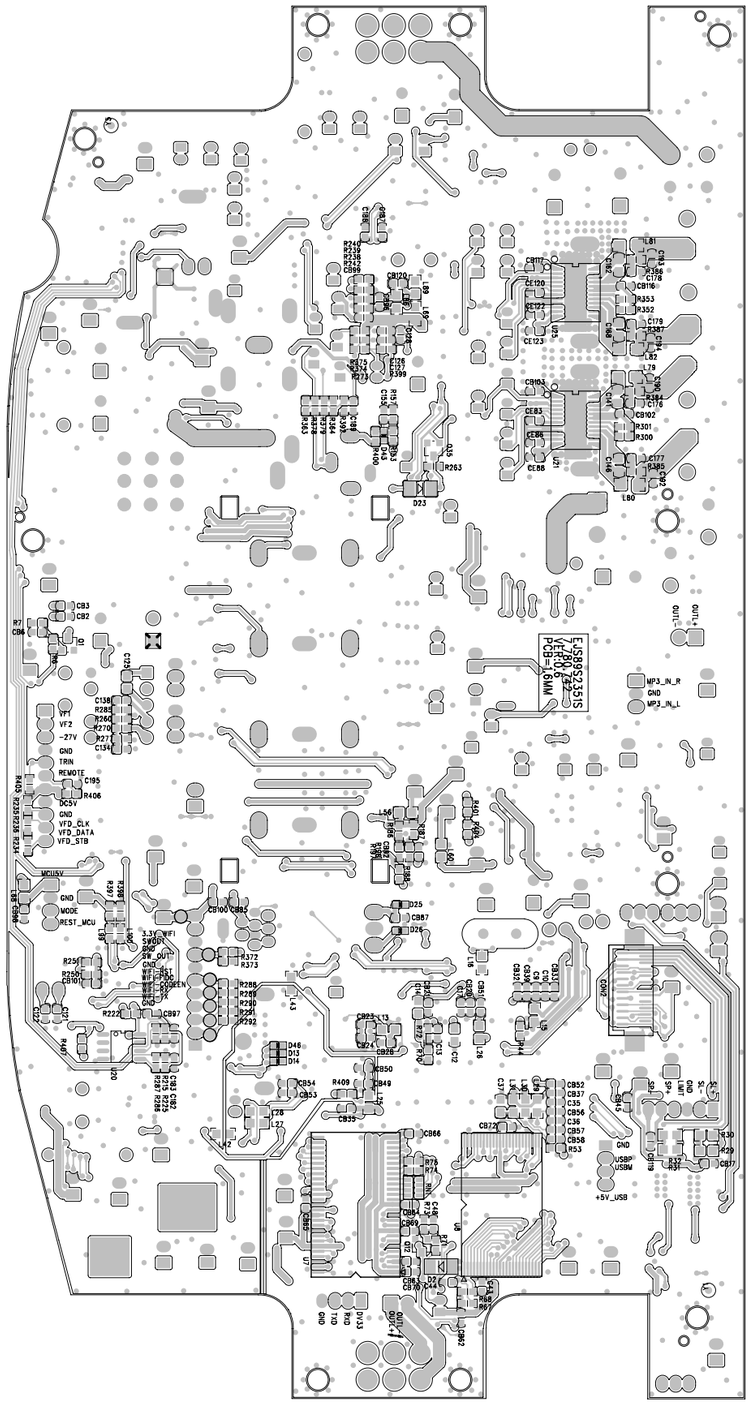




10-8

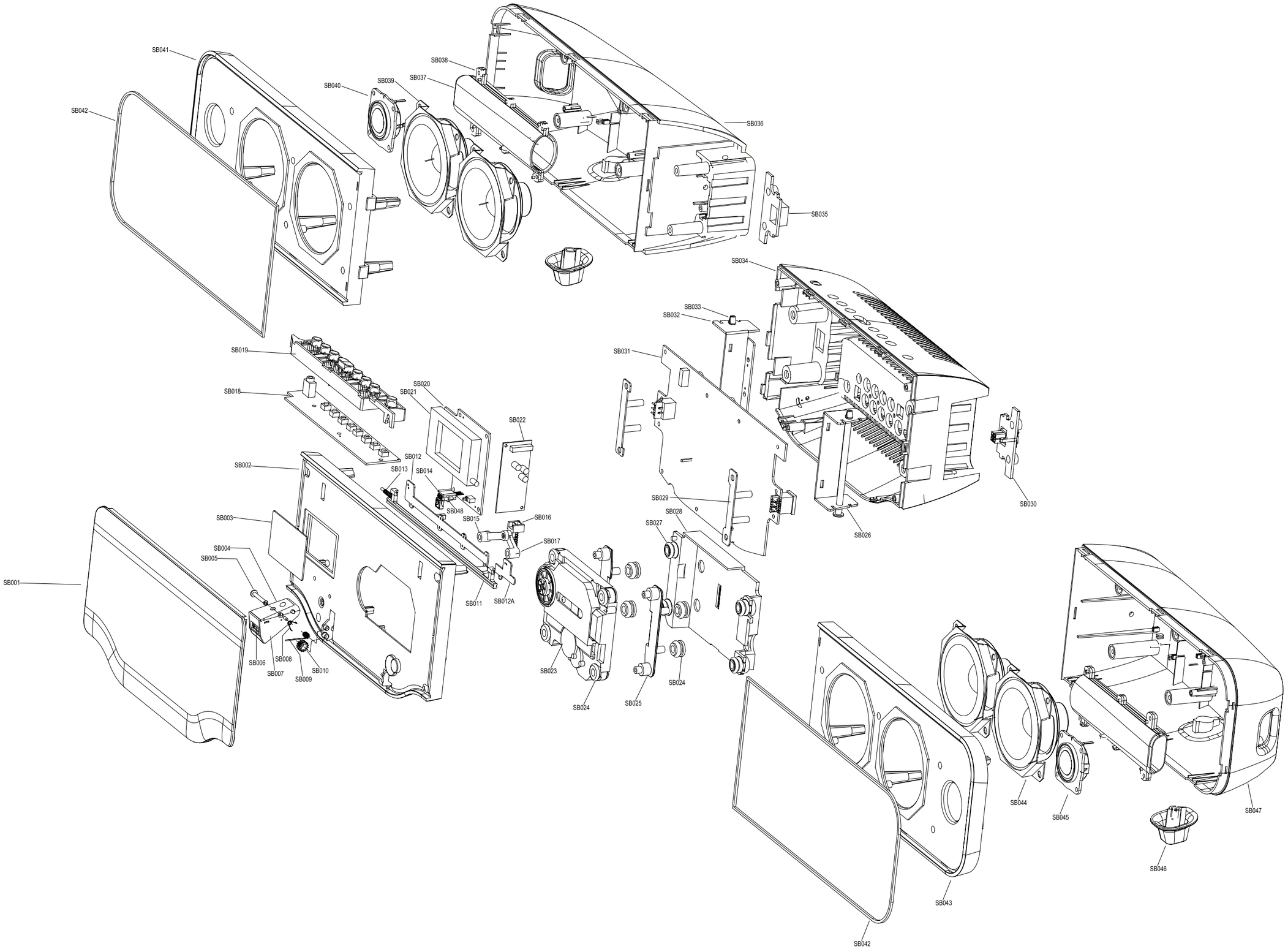
Decoder Board -- Layout Diagram





11-1

Explode View



ACCESSORIES PARTS LIST

996510021327	HSB4383/12 MAIN SPEAKER BOX?L(/12)
996510022367	HSB4383/98 MAIN SPEAKER BOX?L(/98)
996510023985	HSB4383/93 MAIN SPEAKER BOX-L(/93)
996510000218	VIDEO CABLE 1.5m 3P RD WHI YEL
996510022363	USB CABLE LINE L=100
994000004988	AC LINE CORD 1.8M (/12/98)
994000005166	AC LINE CORD 1.8M(/93)
996510018744	FM ANT CONNECTOR 1.5m BLACK
996510021357	HSB4383/12 MAIN SPEAKER BOX?R(/12)
996510022362	HSB4383/98 MAIN SPEAKER BOX?R(/98)
996510023986	HSB4383/93 MAIN SPEAKER BOX-R(/93)
996510026031	REMOTE CONTROL
996510023991	HSB4383/93 DISPLAY BOX(/93)
996510021349	AC SWITCH ADAPTER G721DA270250
996510006198	SCART SWITCH JACK RCA-329(IN)

HSB4383/12SUBWOOFER BOX

996510000522	PW CTR SW ASS'Y 110/22V MCD7X(/98)
996510000523	SWITCH VSC?22?1?110/220V?m(/98)
996510021354	HSB4383 AMP BOARD
996510019357	RADIO RECEIVE BOARD RX_V7.1
996510021325	POWER BOARD POW288A(/12)
996510023988	POWER BOARD POW288A(/93)
996510022359	POWER BOARD POW288A(/98)
996520035744	HSB4383/12SUBWOOFER BOX CASING(/12)
996510022368	HSB4383/98 SUBWOOFER CASING(/98)
996510023987	HSB4383/93SUBWOOFER BOXCASING(/93)

MECHNICAL&MISCELLANEOUS PARTS

CASING1	996510021321	HSB2351 BACK OUT?PUT PC SHEET
CASING3	996510021363	SHOCKPROOF RUBBER(BLACK)
CASING4	996510021353	FLAT FLEXIBLE CABLE 24PX180
SB001	996510023971	HSB2351 DVD DOOR/ABS
SB002	996510021361	HSB2351 FRONT CABINET/HIPS
SB003	996510021358	HSB2351 DISPLAY LENS
SB004	996510021364	HSB2351 USB TOP CABINET/ABS
SB005	996510021323	HSB2351 USB POLE/HIPS BLACK
SB007	996510021362	HSB2351 USB BOTTOM CABINET/ABS
SB010	996510021322	HSB2351 GEAR/ABS
SB012	996510021355	HSB2351 PRESS PIECE 1/ABS
SB012A	996510021332	HSB2351 PRESS PIECE 2/ABS
SB015	996510021339	HSB2351 POLE 1/ABS BLACK
SB016	996510021345	HSB2351 POLE 2/ABS BLACK
SB017	996510021356	HSB2351 POLE 3/ABS BLACK

MECHNICAL&MISCELLANEOUS PARTS

SB026	996510021324	HSB2351 BRACKET 2/ABS BLACK
SB027	996510022357	SHOCKPROOF RUBBER
SB034	996510021338	HSB2351 BACK CABINET/HIPS
SB048	996510021331	HSB2351 POWER INPUT BRACKET
SB006	996510021342	HSB2351 USB BOARD
SB018	996510021351	HSB2351 BUTTON BOARD
SB022	996510021359	RADIO TRANSMIT BOARD
SB023	996510021344	HSB2351 DVD MECHANISM DRIVER
SB031	996510021337	DVD DECODER 89S4383A(/12)
SB031N	996510029747	DVD DECODER 89S4383A-12 V1.1(/12)
SB031	996510022365	DVD DECODER 89S4383(/98)
SB031N	996510029748	DVD DECODER 89S4383-98 V1.1(/98)
SB031	996510023989	DVD DECODER 89S4383(/93)
SB031N	996510029746	DVD DECODER 89S4383-93 V1.1(/93)
SB011	996510021326	HSB2351 POLE 4/ABS BLACK
SB019	996510021352	HSB2351 BUTTON/ABS
SB025	996510021335	HSB2351 BRACKET 1/ABS BLACK

ELECTRICAL PARTS - DISPLAY BOARD

SB020	996510021343	HSB2351 DISPLAY BOARD (/98/93)
IR301	996510015840	IR SENSOR 1MA81P36D1TD001
LED301	994000004948	LED LAMP(BLUE) /12
SB014	996510021329	HSB2351 RECEIVER BRACKET
SW301	996510021334	SWITCH DS?01
U301	996510000500	IC PT6311/SC16311/CD16311
VFD301	996510021336	DISPLAY VFD 2351 1.GBY

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

Factory Parts List

SB020	HSB2351 DISPLAY BOARD
R336	CARBON FILM RESISTOR 1K 1/8W J-52
R346	CARBON FILM RESISTOR 5.6 1/2W J-52
R347	CARBON FILM RESISTOR 5.6 1/2W J-52
RXXX	CARBON FILM RESISTOR 10K 1/2W J-52
R312	CARBON FILM RESISTOR 33 1/8W J-52
R314	CARBON FILM RESISTOR 33 1/8W J-52
R315	CARBON FILM RESISTOR 33 1/8W J-52
R327	CARBON FILM RESISTOR 33K 1/8W J-52
R328	CARBON FILM RESISTOR 33K 1/8W J-52
R329	CARBON FILM RESISTOR 33K 1/8W J-52
R330	CARBON FILM RESISTOR 33K 1/8W J-52
R311	CARBON FILM RESISTOR 47 1/8W J-52
R316	CARBON FILM RESISTOR 47K 1/8W J-52
SB018	HSB2351 BUTTON BOARD
R501	CARBON FILM RESISTOR 47K 1/8W J-52
R502	CARBON FILM RESISTOR 47K 1/8W J-52
R503	CARBON FILM RESISTOR 220 1/8W J-52
R504	CARBON FILM RESISTOR 220 1/8W J-52
C501	CHIP CERAMIC CAP.100p 50V K-5 H<7
C504	CHIP CERAMIC CAP.100p 50V K-5 H<7
ACC3	HSB4383/12SUBWOOFER BOX
ACC4	HSB4383 AMP BOARD
R323	CHIP RESISTOR 0 1/16W J(0603)
R305	CHIP RESISTOR 0 1/16W J(0603)
R308	CHIP RESISTOR 0 1/16W J(0603)
R324	CHIP RESISTOR 0 1/16W J (0805)
C384	ELECTROLYTIC CAP.22u 100V L 105°C SHQ
C380	ELECTROLYTIC CAP.220u 16V L 105° 6.3X11
R354	CHIP RESISTOR 5.6K 1/16WJ(0603)
R355	CHIP RESISTOR 1M 1/16W J(0603)
R350	CHIP RESISTOR 3.3K 1/16W J(0603)
R351	CHIP RESISTOR 3.3K 1/16W J(0603)
R352	CHIP RESISTOR 3.3K 1/16W J(0603)
R316	CHIP RESISTOR 30K 1/16W J(0603)
R327	CHIP RESISTOR 47K 1/16W J (0603)
R326	CHIP RESISTOR 4.7K 1/16W J(0603)
R300	CHIP RESISTOR 4.7K 1/16W J(0603)
C387	ELECTROLYTIC CAP.470u 35V L 10X16
C388	ELECTROLYTIC CAP.470u 35V L 10X16
C339	CHIP CAP.474p 50V M (0603) Y5V
C341	CHIP CAP.474p 50V M (0603) Y5V
C342	CHIP CAP.474p 50V M (0603) Y5V
C344	CHIP CAP.474p 50V M (0603) Y5V
CN300	PINS CONNECTOR 2.5/4P
R304	CHIP RESISTOR 5.6K 1/16WJ(0603)
R306	CHIP RESISTOR 5.6K 1/16WJ(0603)
R309	CHIP RESISTOR 5.6K 1/16WJ(0603)
CN301	PINS CONNECTOR 2.5/5P
C382	NONINDUCTIVE CAP.474p 63V M
C383	NONINDUCTIVE CAP.474p 63V M
CN304	PINS CONNECTOR 2.5/7P
Q305	CHIP TRANSISTOR 8050(SOT-23)
Q303	CHIP TRANSISTOR 8550C(SOT-23)
Q330	CHIP TRANSISTOR 9014 (SOT-23)
Q300	CHIP TRANSISTOR BC817-25(SOT23)
L303	FERRITE BEAD JRHW0349 BLUE
L304	FERRITE BEAD JRHW0349 BLUE
DZ300	ZENER DIODE 5.1V 1/2W-52

Factory Parts List

L300	INDUCTOR 22u (7A) Φ15X19
L301	INDUCTOR 22u (7A) Φ15X19
R450	CHIP RESISTOR 220 1/16W J (0603)
R319	CHIP RESISTOR 10 1/4W J (1206)
R320	CHIP RESISTOR 10 1/4W J (1206)
R317	CHIP RESISTOR 10 1/16W J(0603)
R318	CHIP RESISTOR 10 1/16W J(0603)
R353	CHIP RESISTOR 560 1/16W J (0603)
C389	ELECTROLYTIC CAP.1000u 35V L 105°C
C390	ELECTROLYTIC CAP.1000u 35V L 105°C
C338	ELECTROLYTIC CAP.220u 16V L-5 105°
C326	CHIP CAP. 102p 50V K (0603) X7R
C327	CHIP CAP. 102p 50V K (0603) X7R
C329	CHIP CAP. 102p 50V K (0603) X7R
C330	CHIP CAP. 102p 50V K (0603) X7R
C331	CHIP CAP. 102p 50V K (0603) X7R
C332	CHIP CAP. 102p 50V K (0603) X7R
C333	CHIP CAP. 102p 50V K (0603) X7R
C324	CHIP CAP. 102p 50V K (0603) X7R
C335	CHIP CAP. 102p 50V K (0603) X7R
C336	CHIP CAP. 102p 50V K (0603) X7R
C330	CHIP CAP. 102p 50V K (0603) X7R
C331	CHIP CAP. 102p 50V K (0603) X7R
C332	CHIP CAP. 102p 50V K (0603) X7R
C355	CHIP CAP.104p 50V M (0603) Y5V
C356	CHIP CAP.104p 50V M (0603) Y5V
C360	CHIP CAP.104p 50V M (0603) Y5V
C361	CHIP CAP.104p 50V M (0603) Y5V
C363	CHIP CAP.104p 50V M (0603) Y5V
C364	CHIP CAP.104p 50V M (0603) Y5V
C359	CHIP CAP.104p 50V M (0603) Y5V
C362	CHIP CAP.104p 50V M (0603) Y5V
C370	CHIP CAP.104p 50V M (0603) Y5V
C371	CHIP CAP.104p 50V M (0603) Y5V
C373	CHIP CAP.104p 50V M (0603) Y5V
C367	NONINDUCTIVE CAP.104J 100V K-5
C368	NONINDUCTIVE CAP.104J 100V K-5
C374	NONINDUCTIVE CAP.104J 100V K-5
C376	NONINDUCTIVE CAP.104J 100V K-5
C300	ELECTROLYTIC CAP.10u 35V L 4X7
C351	ELECTROLYTIC CAP.10u 35V L 4X7
C377	CHIP CAP.153p 50V M (0603) Y5V
C379	CHIP CAP.153p 50V M (0603) Y5V
C381	CHIP CAP.153p 50V M (0603) Y5V
R325	CHIP RESISTOR 1K 1/16W J(0603)
C450	CHIP CAP.1u 50V K (0805) X7R
R303	CHIP RESISTOR 2.2K 1/16W J(0603)
R310	CHIP RESISTOR 22 1/16W J(0603)
R311	CHIP RESISTOR 22 1W J (2512)
R312	CHIP RESISTOR 22 1W J (2512)
C345	CHIP CAP.220p 50V K (0603) X7R
C347	CHIP CAP.220p 50V K (0603) X7R
C348	CHIP CAP.220p 50V K (0603) X7R
C353	CHIP CAP.220p 50V K (0603) X7R
C354	CHIP CAP.220p 50V K (0603) X7R
C350	CHIP CAP.220p 50V K (0603) X7R
C392	CHIP CAP.224p 50V M (0603) Y5V
R314	CHIP RESISTOR 22K 1/16W J(0603)
R315	CHIP RESISTOR 22K 1/16W J(0603)