

Service
Service
Service



Service Manual



TABLE OF CONTENTS

Location of PCBS	1-1
Specifications	1-2
Measurement Setup	1-3
Service Aids, Safety Instruction, etc.	1-4
Instructions On CD Playability	1-5 to 1-6
Software Version Check & Upgrade	2-1
Malfuction Check Chart	2-2
Disassembly Diagram	3-1
Block Diagram	4-1
Wiring Diagram.....	4-2
Display(VFD) Board	5
Tuner Board	6
USB Board	7
Power Board(In SW box).....	8
Decode Board	9
Explode View	10
Service Partlist	11
Factory Partlist	12

© Copyright 2008 Philips Consumer Electronics B.V. Eindhoven, The Netherlands
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Philips.

Published by DB 0946 Service Audio Printed in The Netherlands Subject to modification

CLASS 1
LASER PRODUCT

GB 314178532350

Version 1.0



PHILIPS



Features & Board in used:	Type /Versions:	MCD288E									
	Service policy	/12									
DISPLAY BOARD	C										
TUNER BOARD	M										
HEADPHONE BOARD	M										
USB BOARD	M										
POWER BOARD	X										
DECODE BOARD	M										

* TIPS : C -- Component Lever Repair.
M -- Module Lever Repair
X -- Not need repair(only for reference)

SPEIFICATION

Amplifier

Rated output power 2 x 20W + 50W RMS
 Frequency response (L/R) 20 - 20000Hz
 (Subwoofer) 50 - 180Hz
 Signal to noise ratio > 65dB
 Aux input 1V RMS 20kohm

Disc

Laser type Semiconductor
 Disc diameter 12cm/8cm
 Video decoding MPEG-1 / MPEG-2 / Divx
 Video DAC 12Bits
 Signal system PAL / NTSC
 Video format 4:3 / 16:9
 Video S/N > 48dB
 Audio DAC 24Bits / 96kHz
 Total harmonic distortion < 0.1% (1kHz)
 Frequency response 4Hz - 20kHz (44.1kHz)
 Hz - 22kHz (48kHz)
 4Hz - 24kHz (96kHz)
 S/N ratio > 65dBA

Tuner

FM tuning range 87.5 - 108MHz
 Tuning grid 50KHz
 Sensitivity
 – Mono, 26dB S/N ratio 50uV
 – Stereo, 46dB S/N ratio 100uV
 Selectivity > 28dB
 Image rejection > 25dB
 Total harmonic distortion < 3%
 Signal to noise ratio > 55dBA

Speakers

Speaker impedance (L/R) 4 ohm
 (Subwoofer) 4 ohm
 Speaker driver (L/R) 3"
 (Subwoofer) 5"
 Frequency response 50 - 16000 Hz

General information

Total output power 2 x 25W + 50W RMS
 AC power 220V - 230V, 50Hz / 60Hz
 Operation power consumption 35W
 Standby power consumption < 4W
 Eco standby power consumption 1W
 Composite video output 1.0Vp-p, 75ohm
 Headphone output 2 X 15mW, 32ohm
 USB direct Version 2.0
 HDMI Version 1.1
 Dimensions (W x H x D)
 – Main unit 472 x 362 x 224mm
 – Main speaker 140 x 220 x 33mm (each)
 – Subwoofer 170 x 197 x 302mm

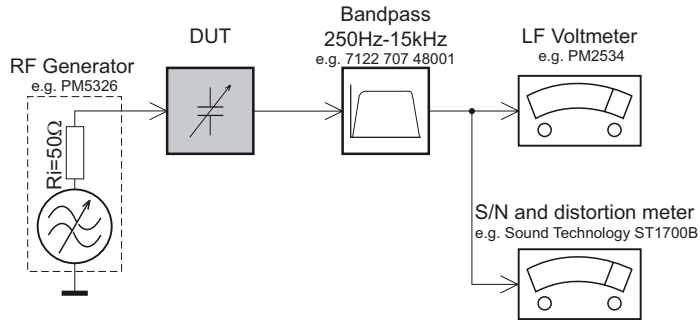
Weight

– With packing 10kg
 – Main unit 1.35kg
 – Main speaker 0.37kg (each)
 – Subwoofer 3.12kg

Specifications subject to change without
 prior notice

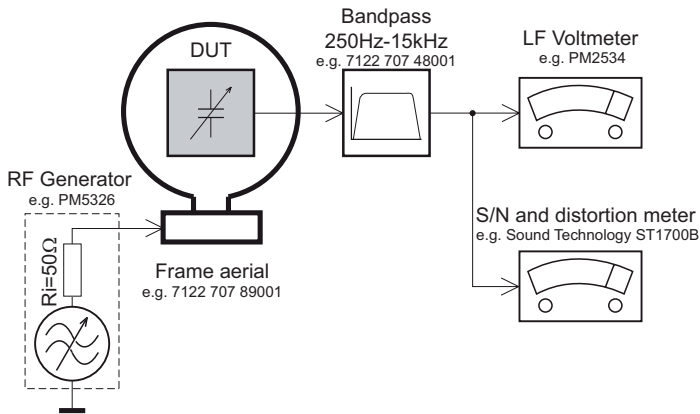
MEASUREMENT SETUP

Tuner FM



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

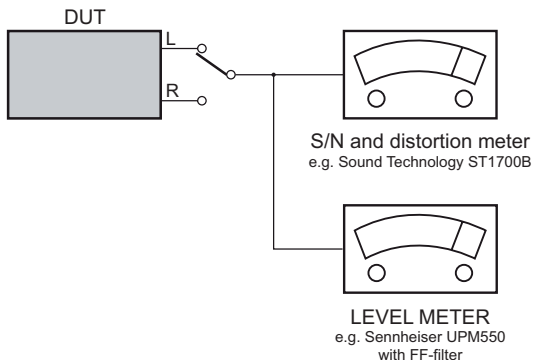
Tuner AM (MW,LW)



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).

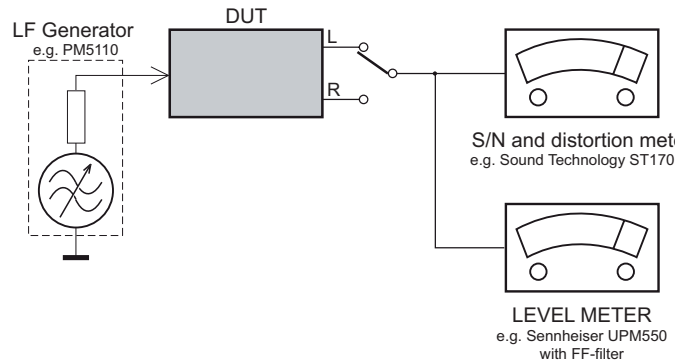
CD

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".

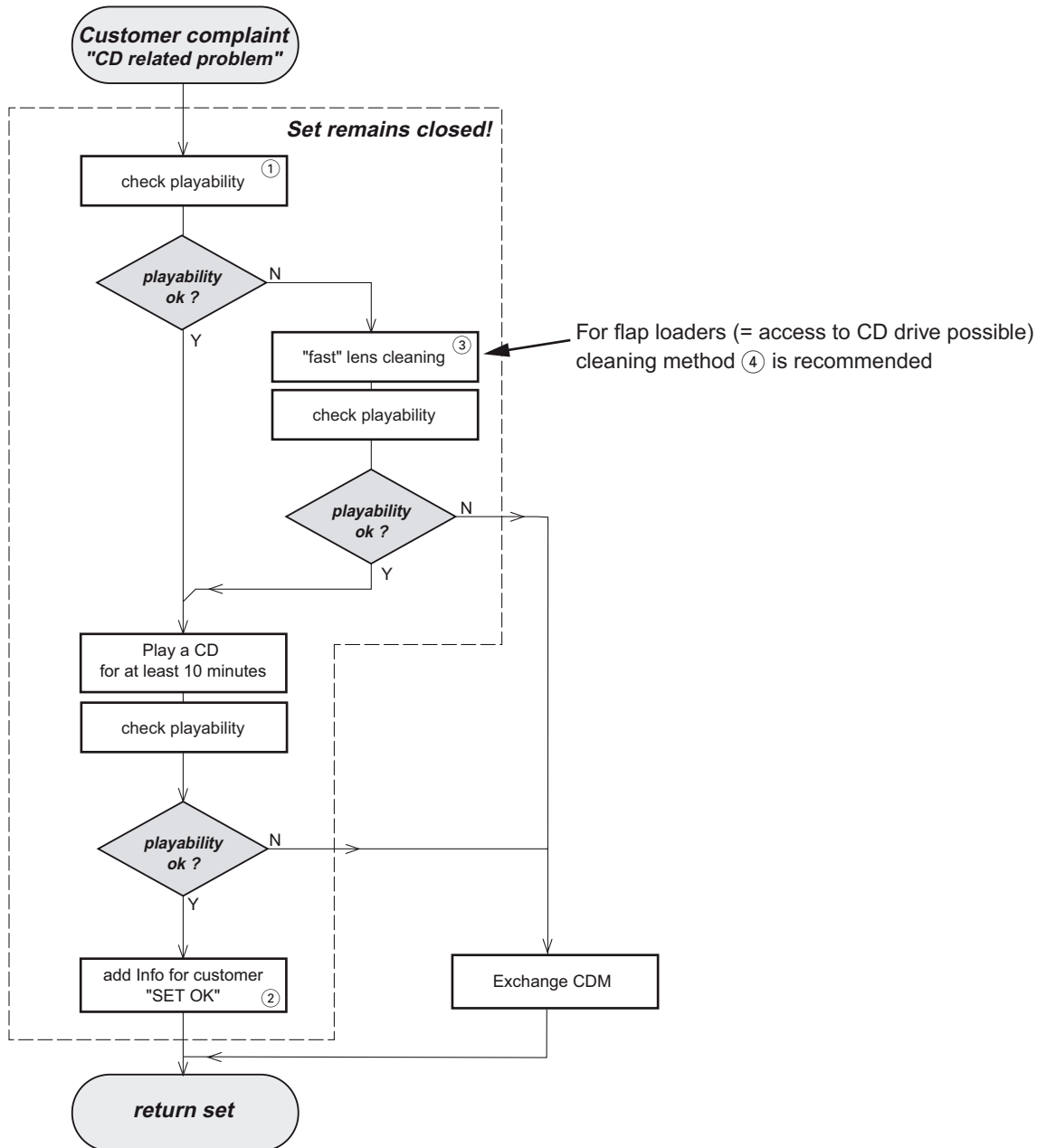
For additional questions please contact your local repair-helpdesk.

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

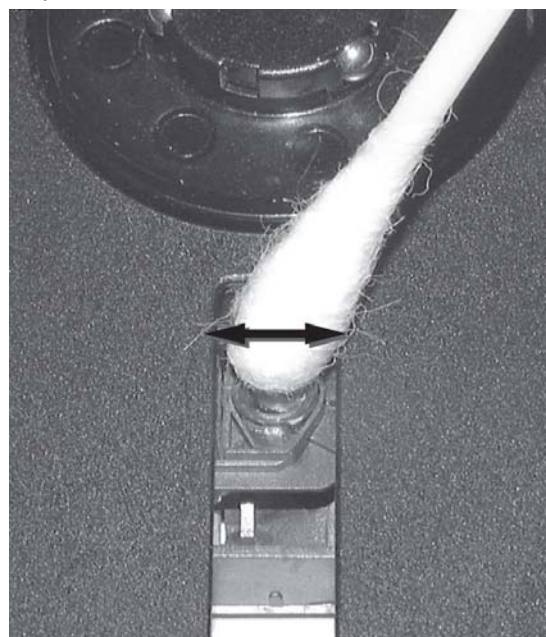
LIQUID LENS CLEANING

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.

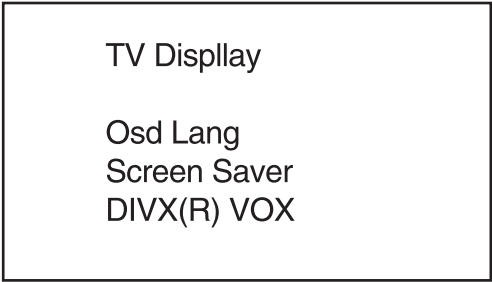


SOFTWARE VERSION CHECK & UPGRADE

A.MPEG SOFTWARE VERSION CHECK

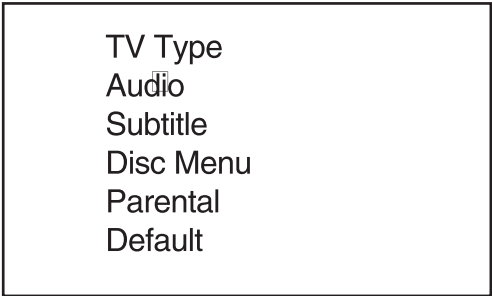
1.Press SYSTEM key to open setup page,

TV Screen shows:



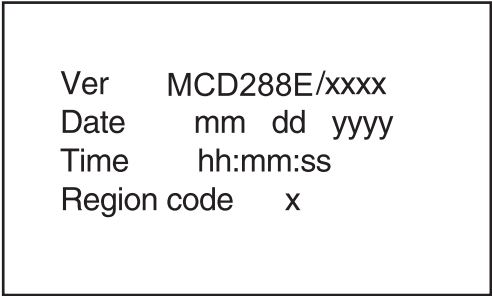
2.Press REMOVAL key to the original setup page,

TV Screen shows:



3.Enter the password "811502"

TV Screen shows:

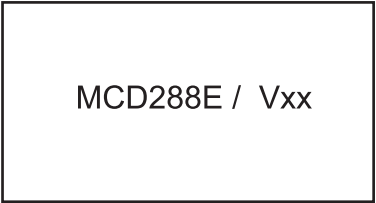


4.Press ▲ or ▼ button (on the remote control) to change region.
Press OK to confirm.

B.CPU VERSION CHECK

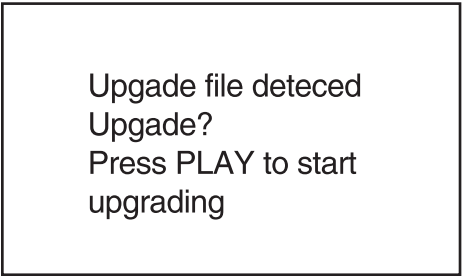
Keep PLAY/PAUSE and STOP buttons (on the set) depressed while pressing POWER on.

TV screen shows

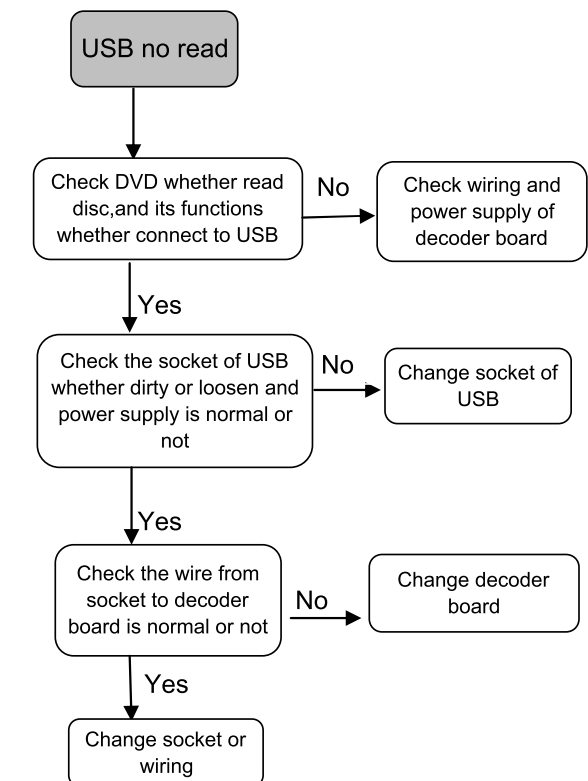
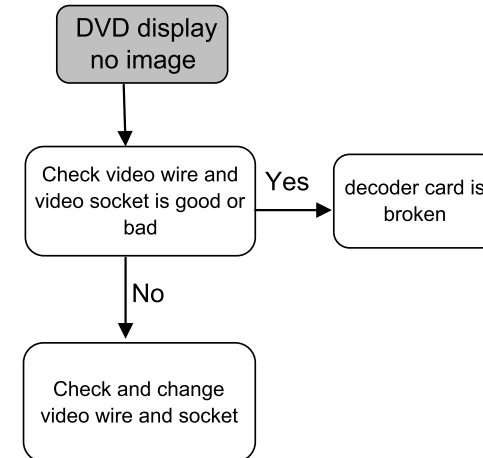
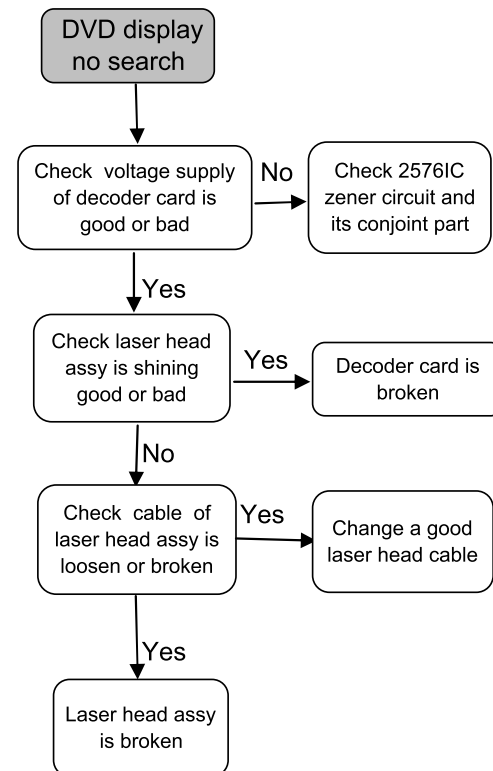
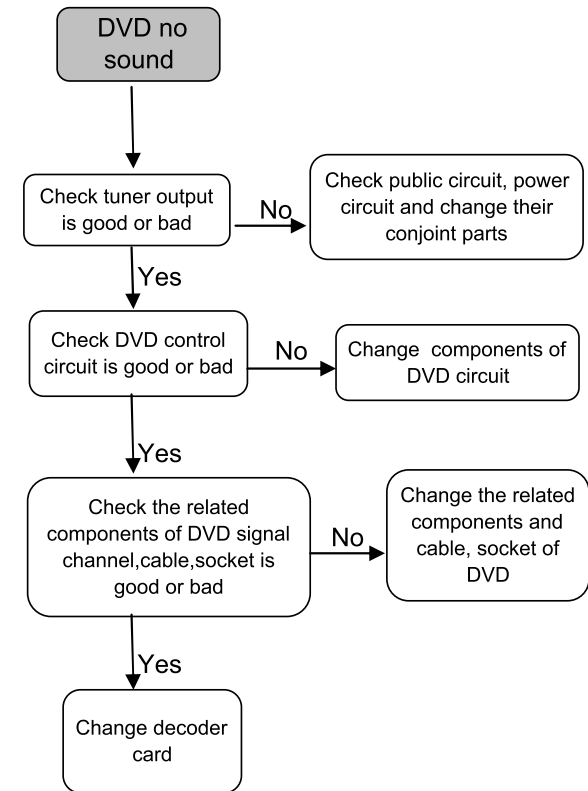
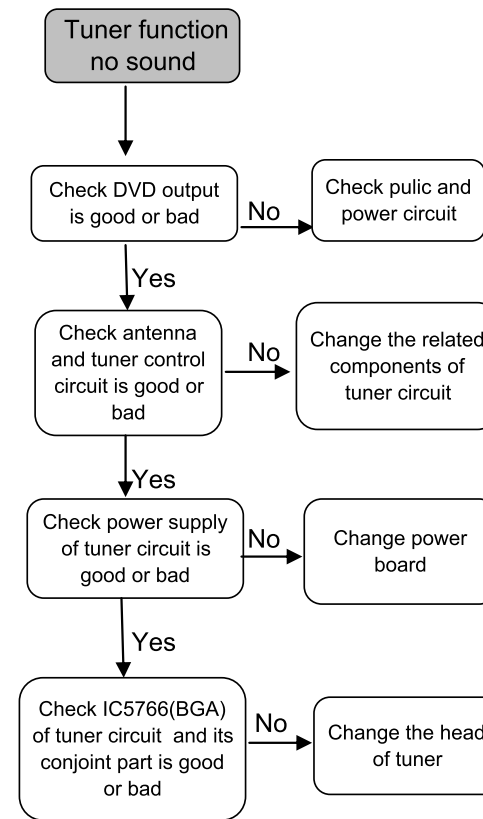
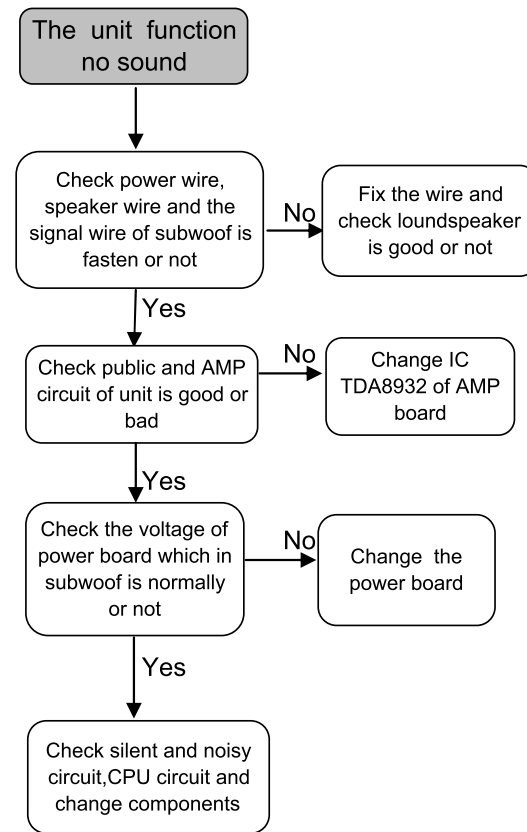


C. MPEG SOFTWARE UPGRADING

- 1. download the firmware from Philips support website
<http://www.philips.com/support>
- 2. Prepare a uploading CD
- 3. Put the CD in the CD tray
- 4. TV Screen shows

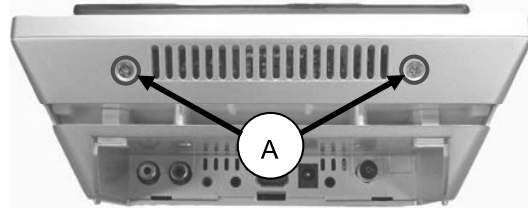


MALFUCTION CHECK CHART



DISASSEMBLY DIAGRAM

A.Loosen screws3×8FA(2PCS)



B.Use a flat screw driver to prize the position of lock of rubber foot where the position of right angle



C.Keep on moving the blade (it's about 5mm width) to position of 45mm, and press it, then open the position of lock



D.Keep on moving the blade to position of 60mm again,and press it ,then open the position of lock



E.Keep on moving the blade to position of 60mm again, and press it, then open the position of lock.



F.Prize the position of lock on the top angle.



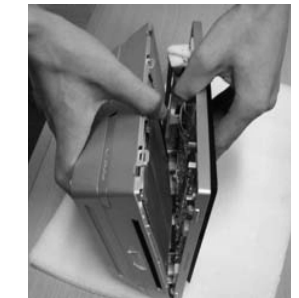
G.Near the position of DVD door, use the thumb press it.



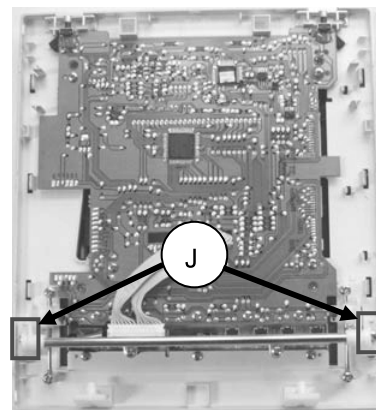
H.Near the position of DVD door, use the thumb press it.



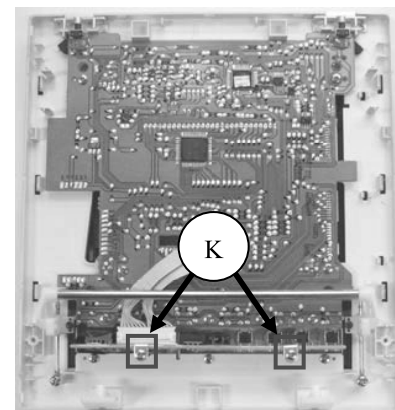
I.Use two hands to open bottom panel.



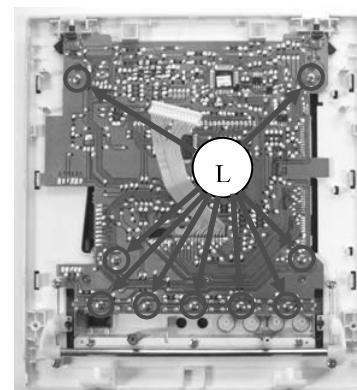
J.Loosen screws 3×8BTH(2PCS) to remove slide plank



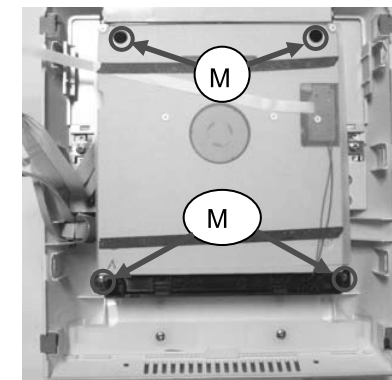
K.Loosen screws 2.6×8BT(2PCS) to remove key board



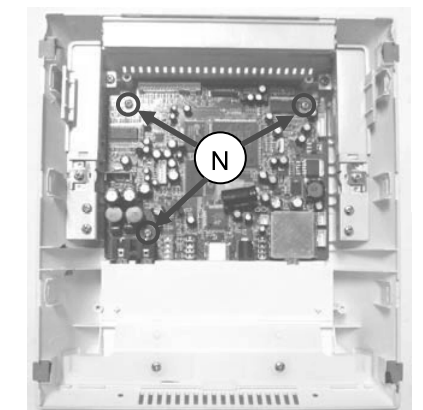
L.Loosen screws 2.6×8PT(9PCS) to remove VFD board



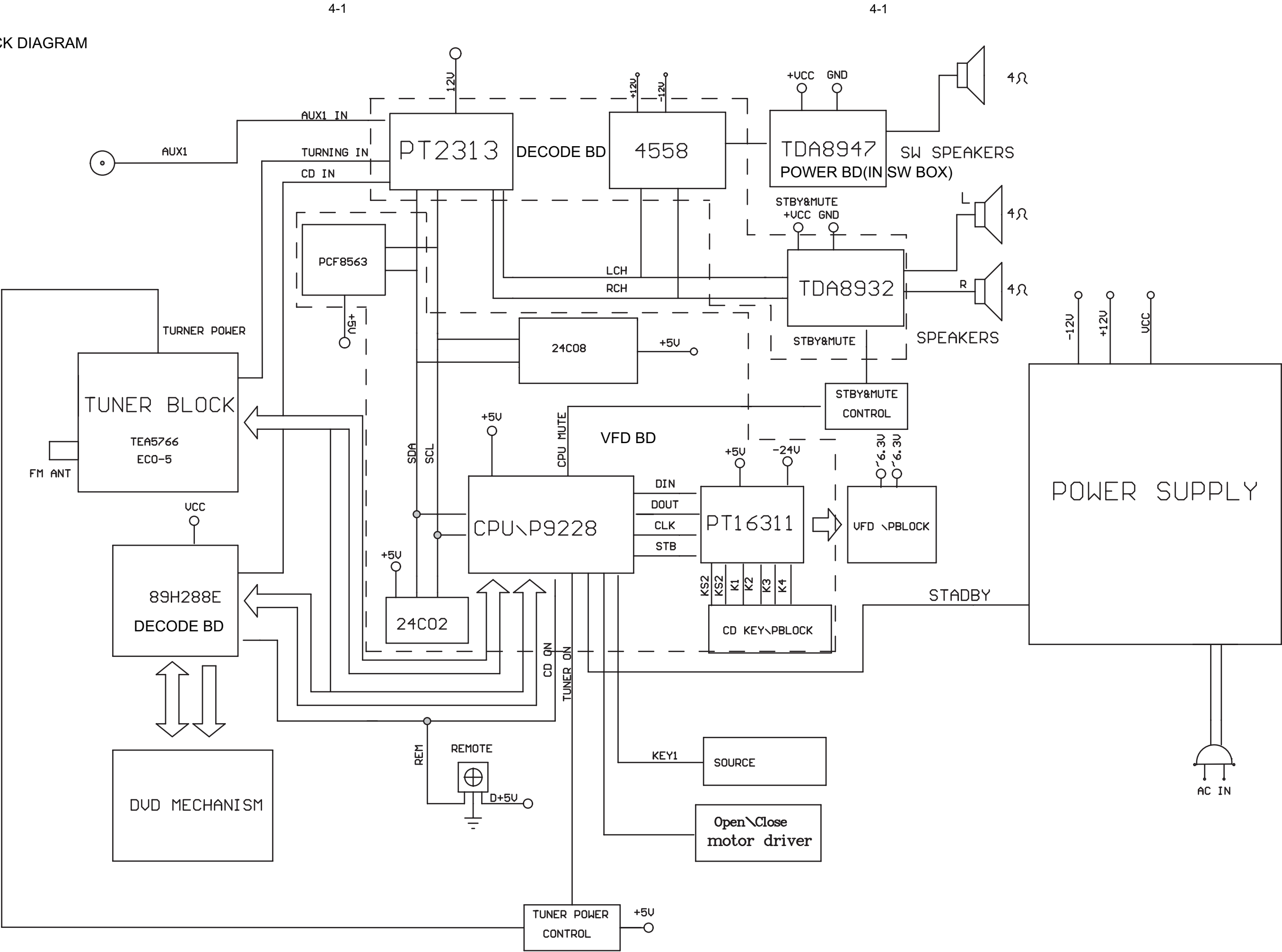
M. Loosen screws3×18BTH(2PCS)
M1.Loosen screws3×10PTH(2PCS) to remove mechanism core



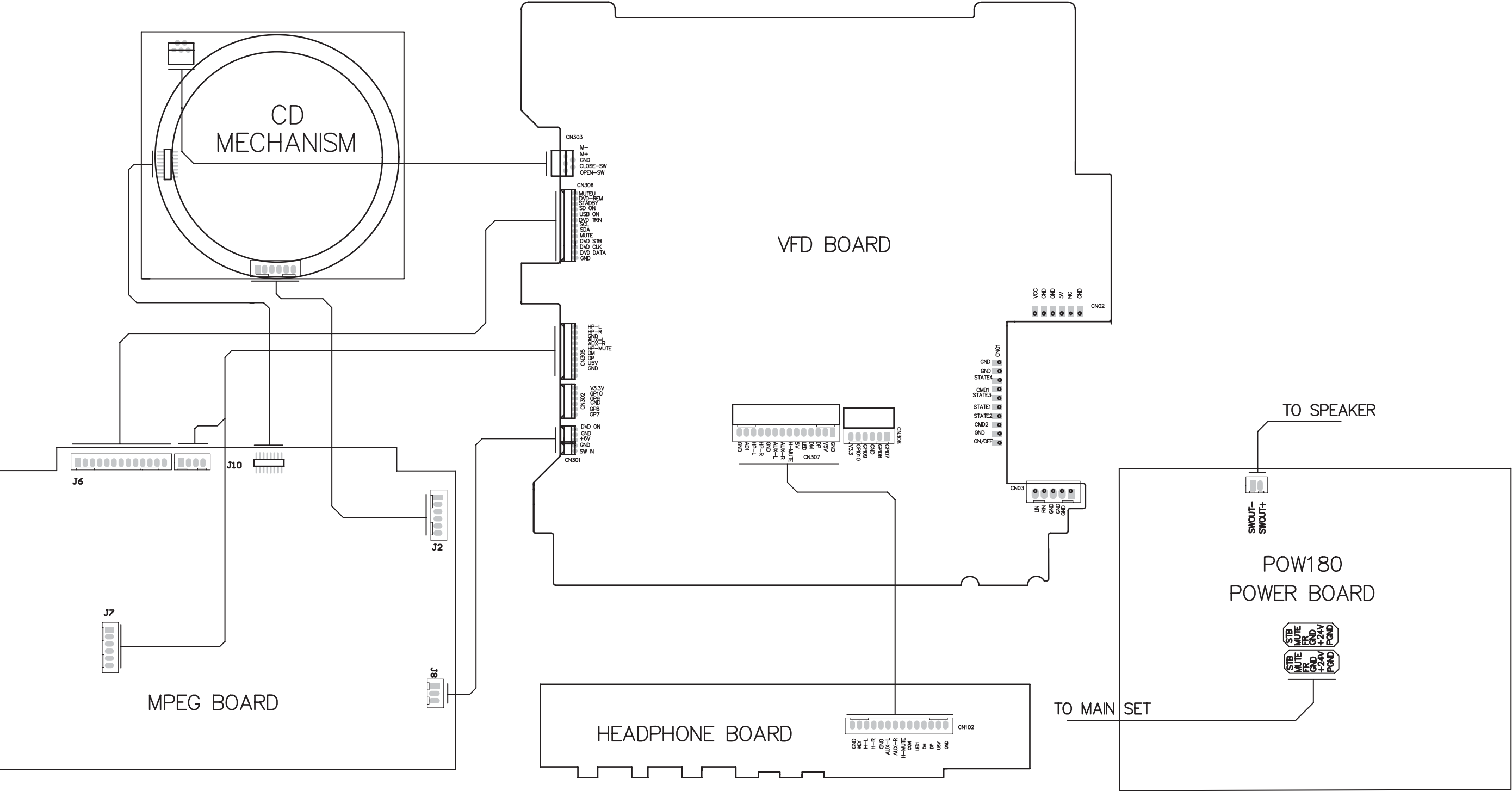
N.Loosen screws3×6BTH(2PCS) to remove decoder board



BLOCK DIAGRAM



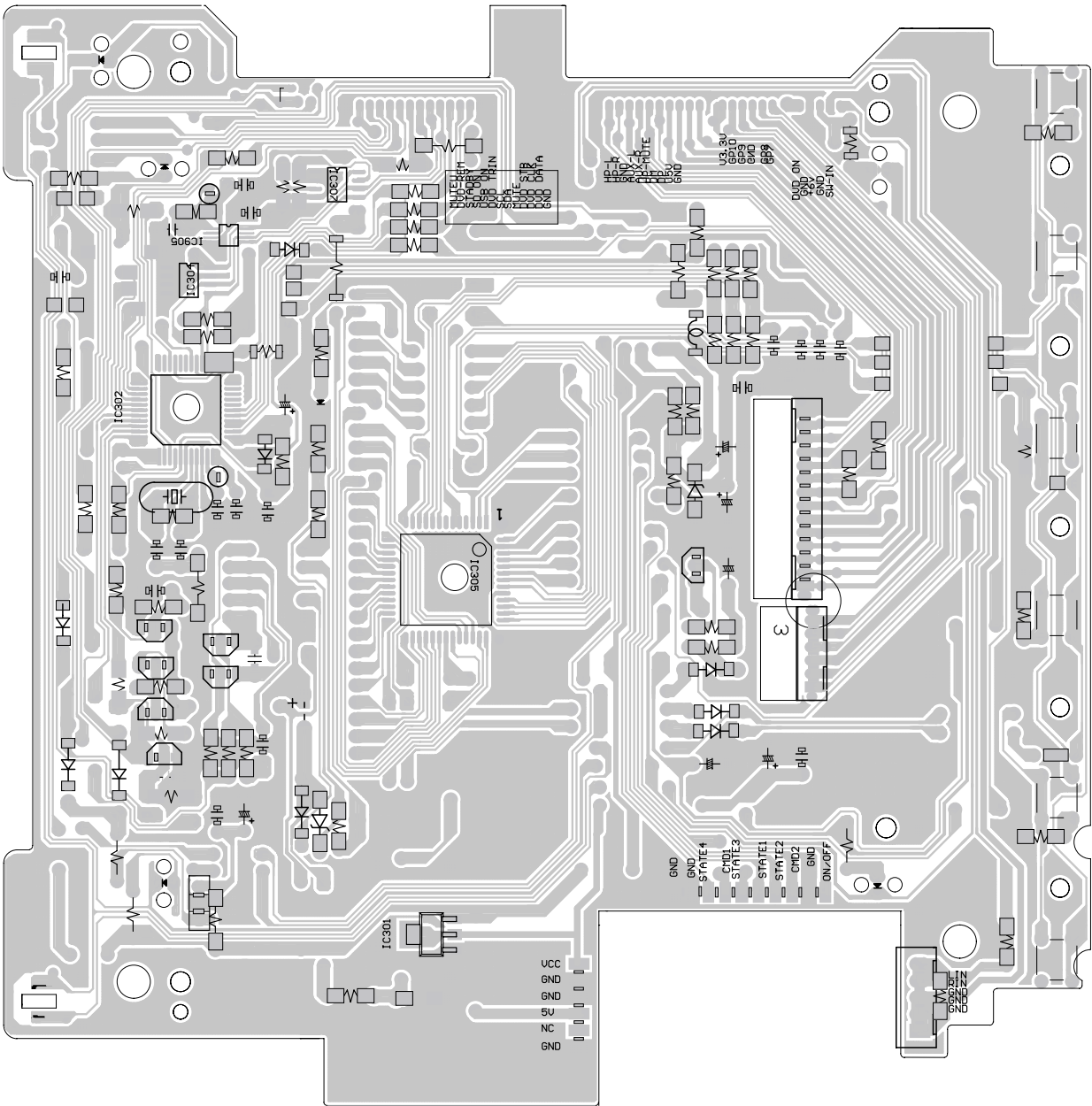
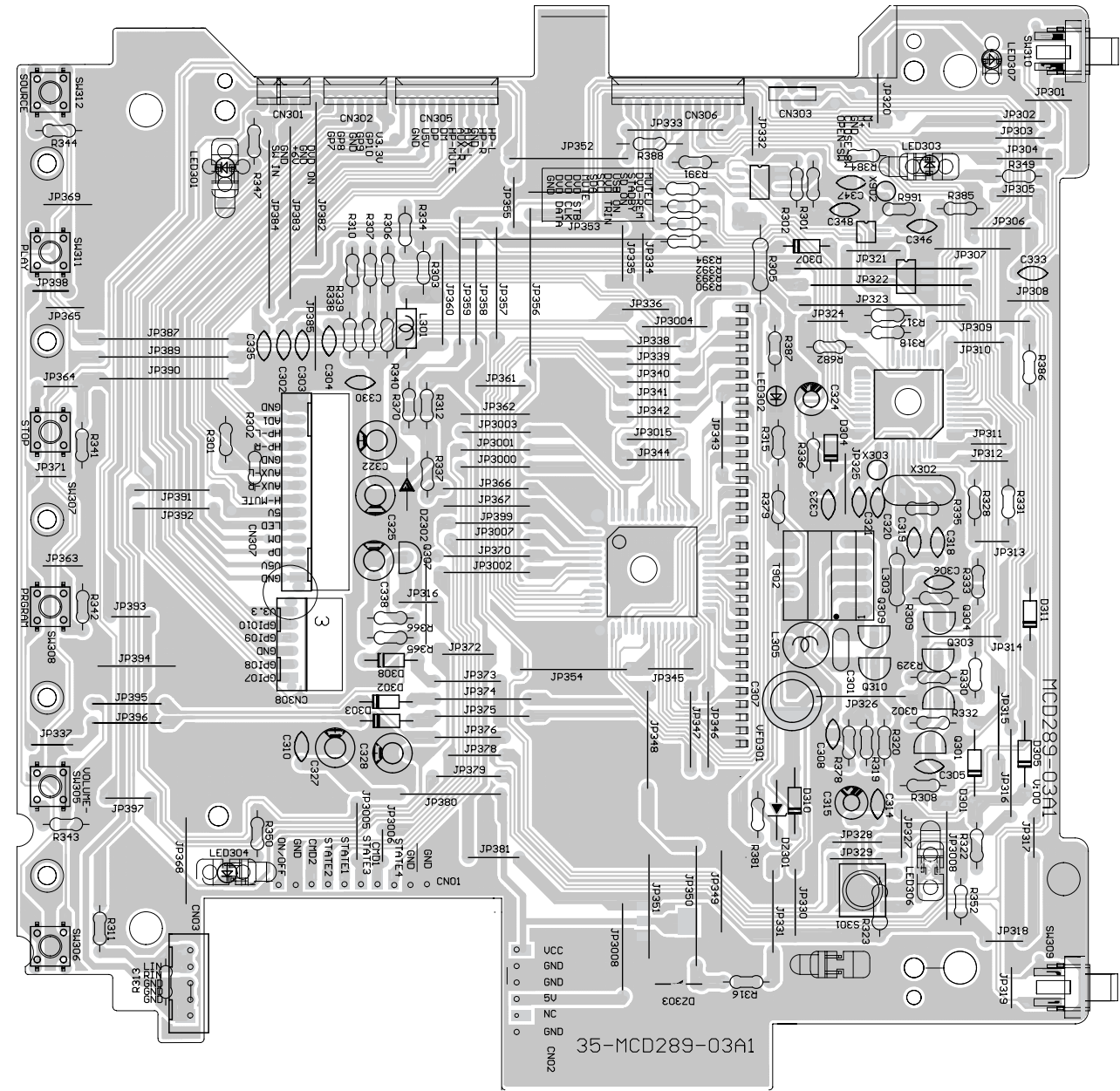
WIRING DIAGRAM



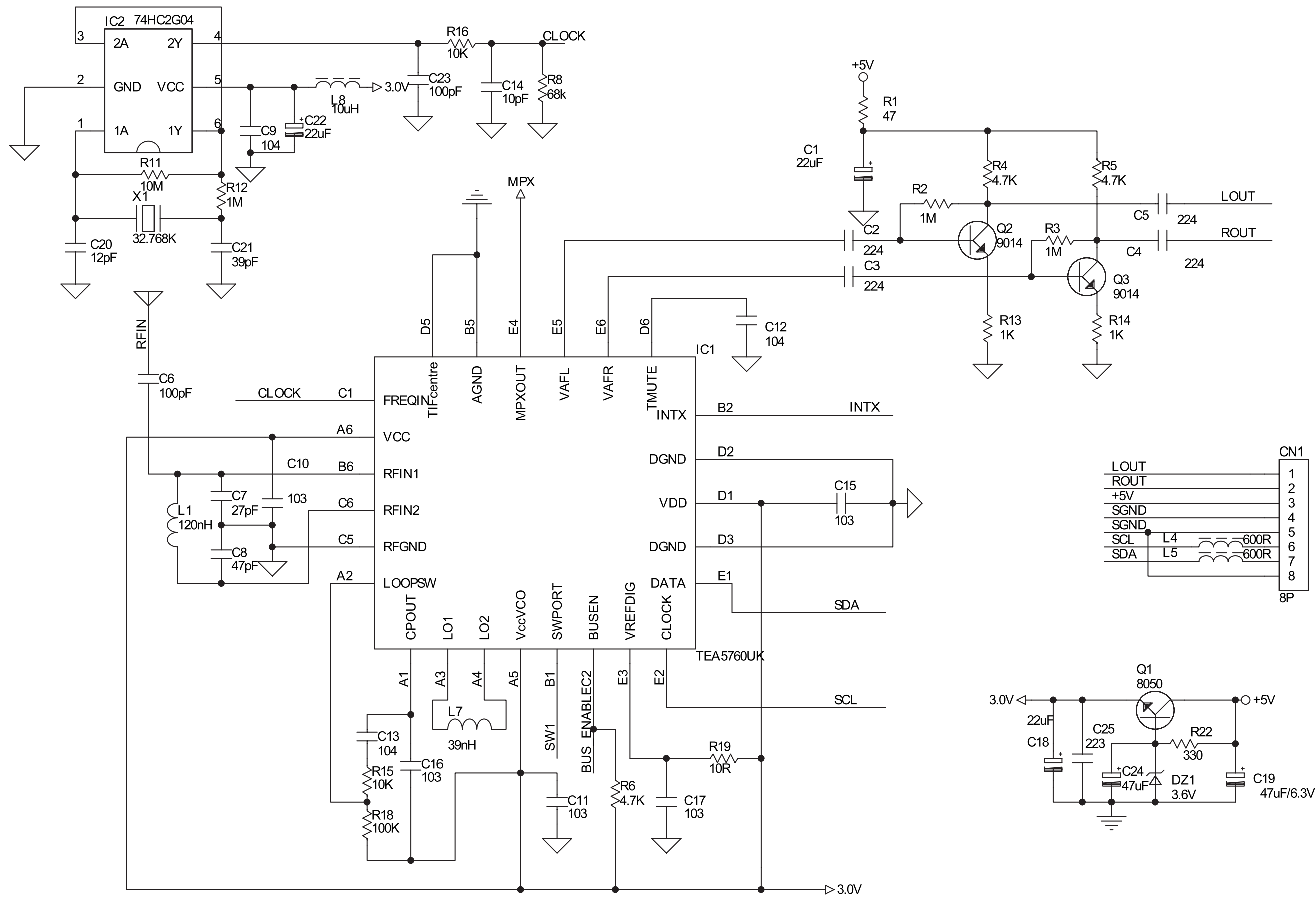
note: tolerance RES±10 %
CAP±20 % ,
special parts nated beside parts
All parts comply with supply environment
protect material licf regulate by green envionment management

protect material licf regulate by green envionment management

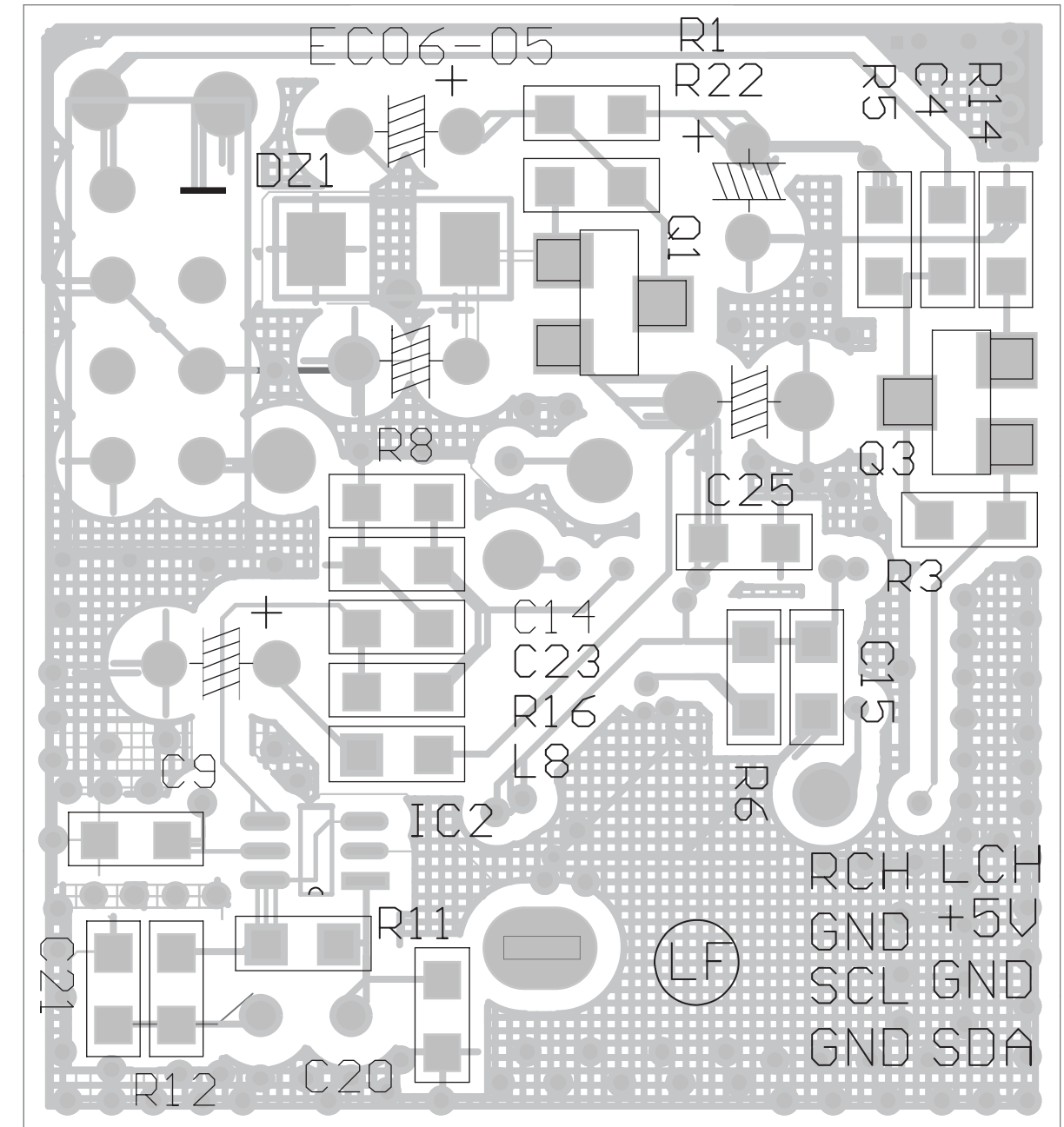
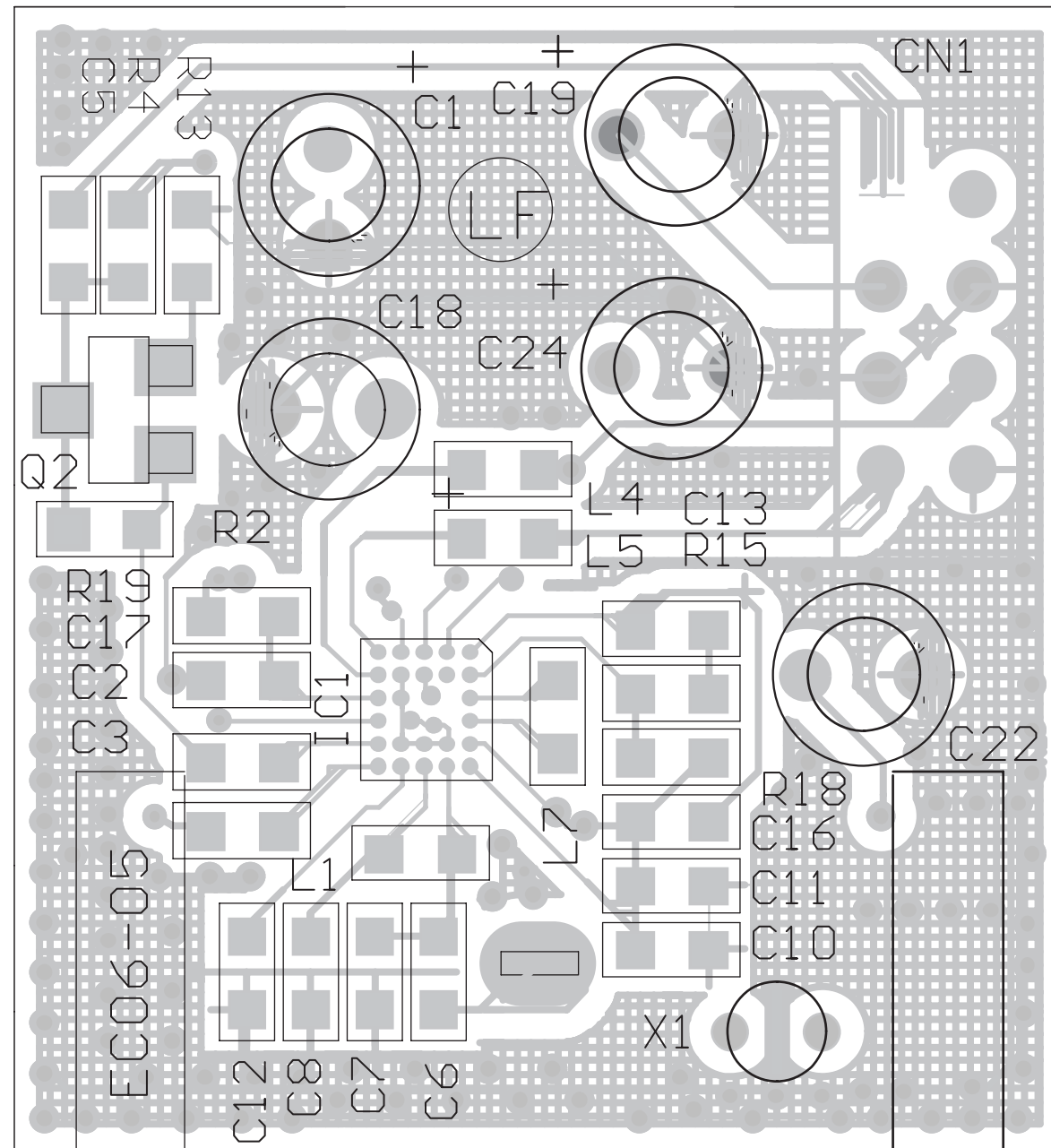
VFD BOARD - LAYOUT DIAGRAM



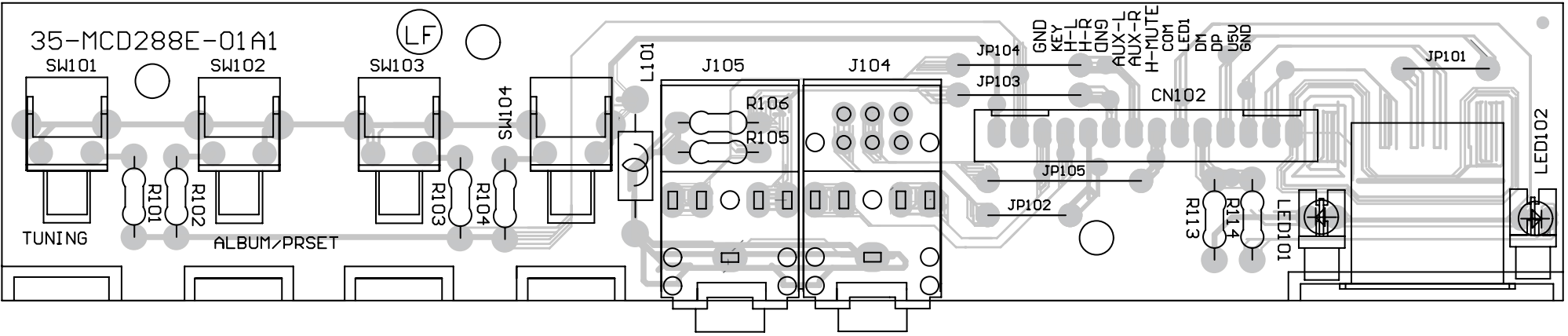
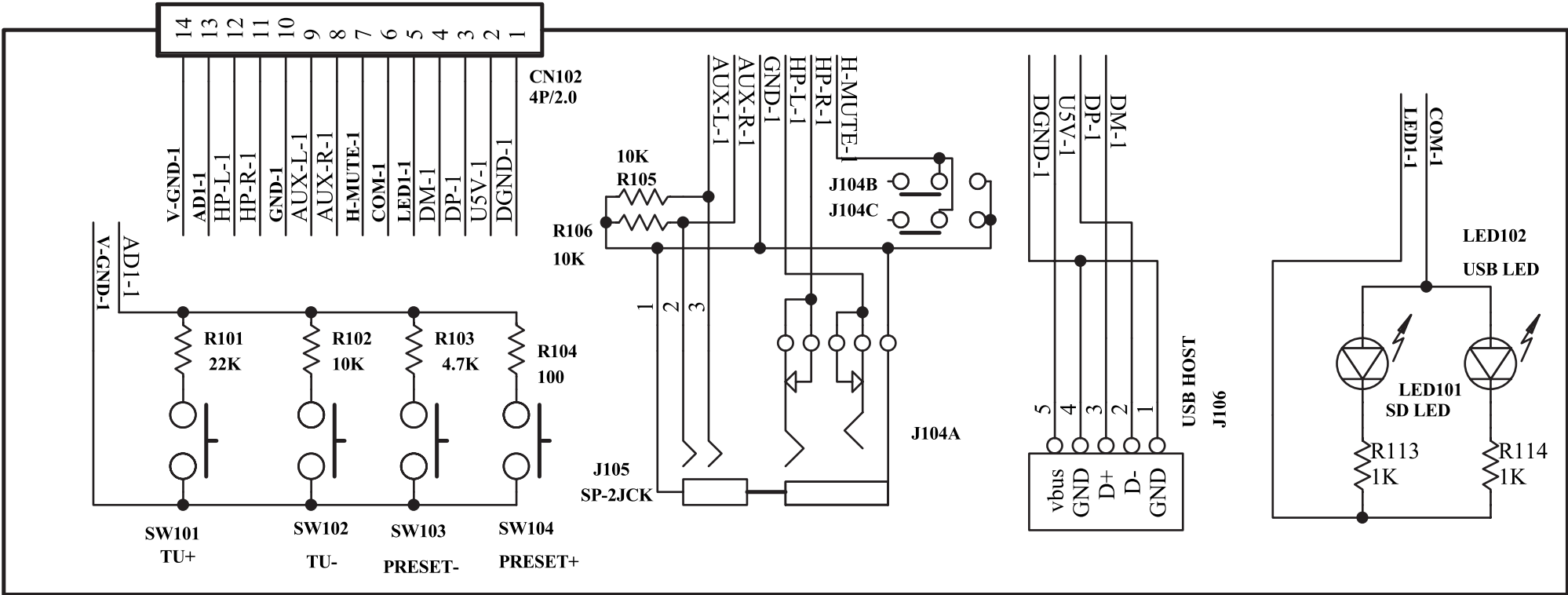
TUNER BOARD - CIRCUIT DIAGRAM

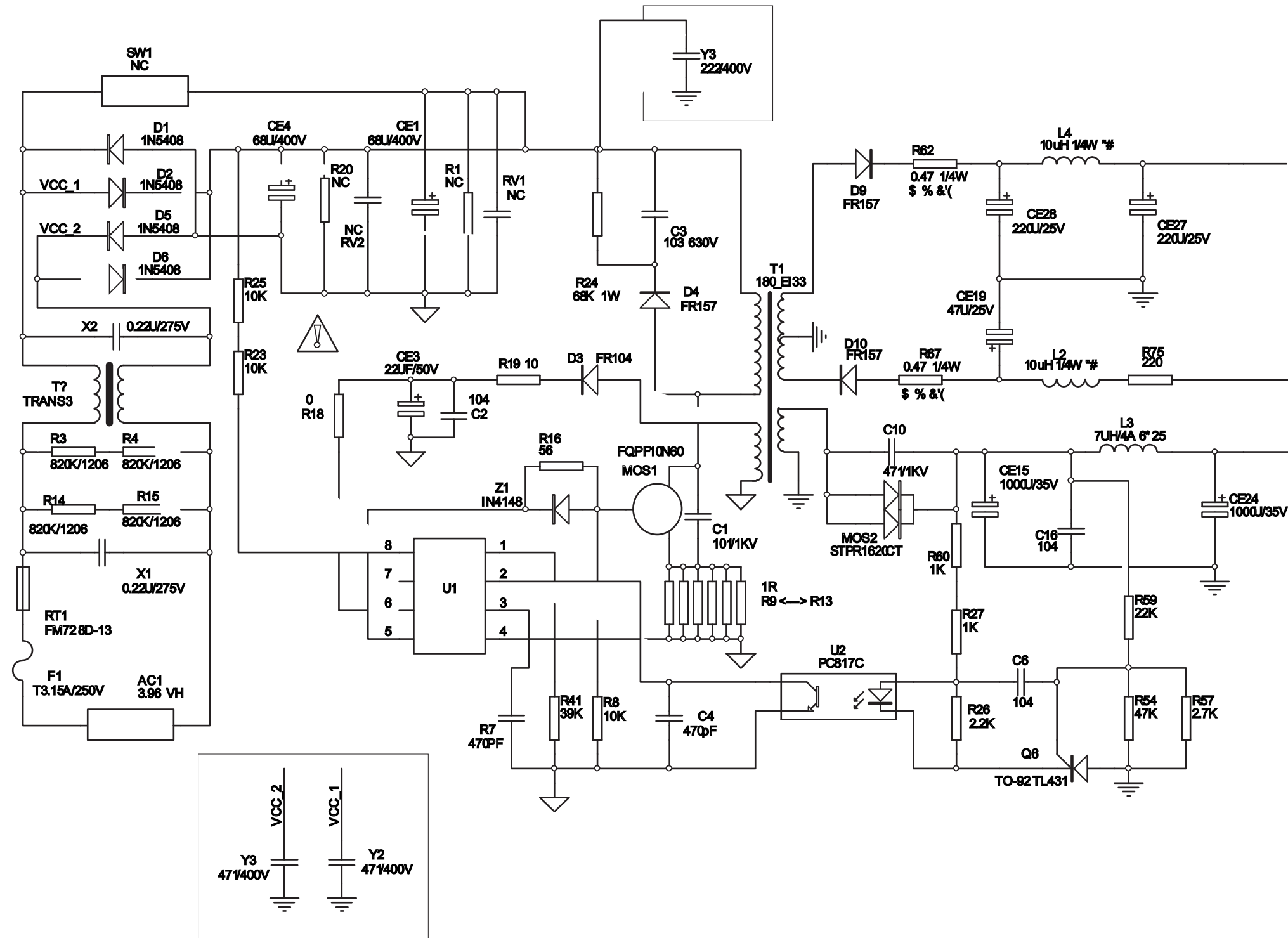


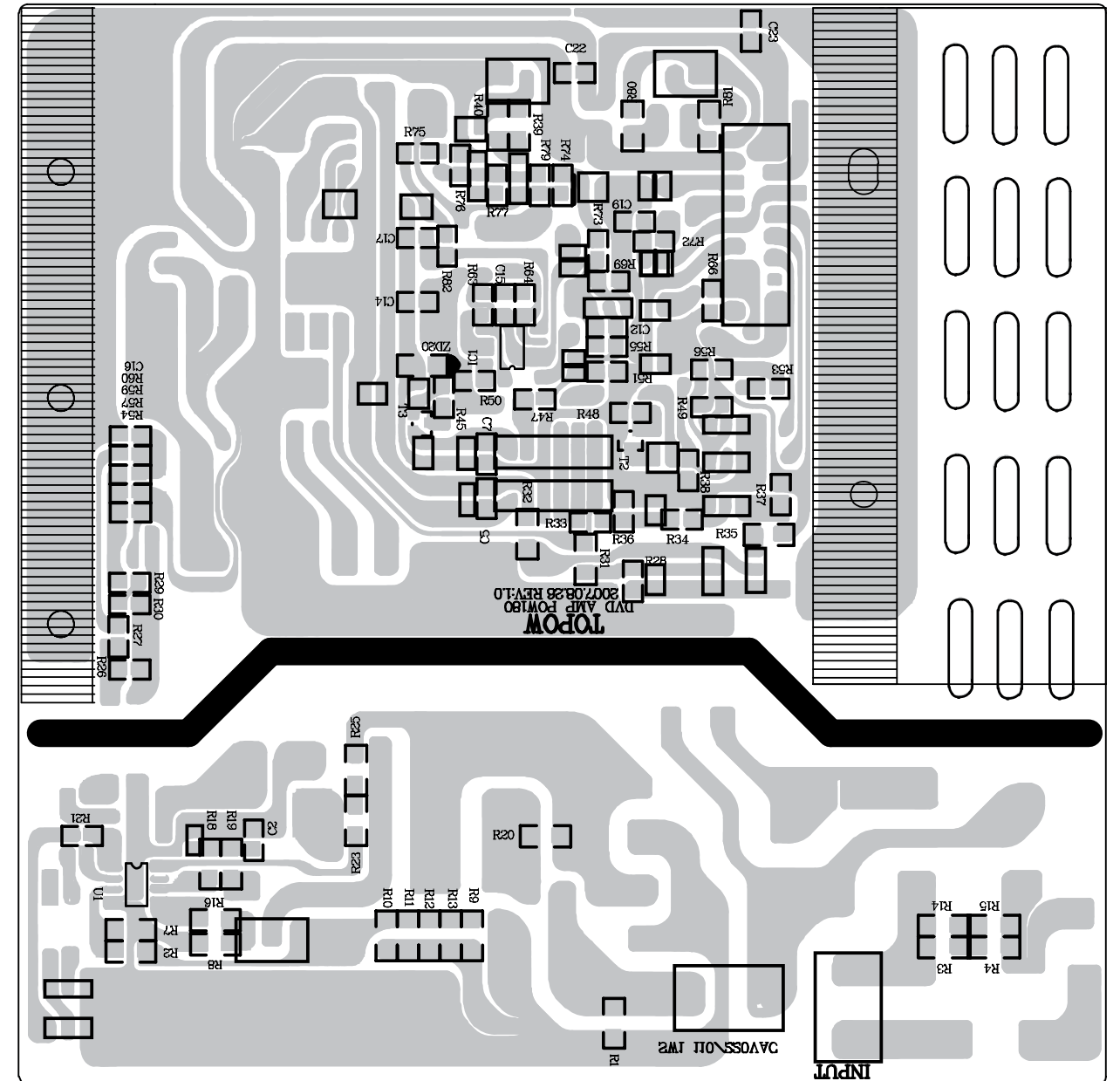
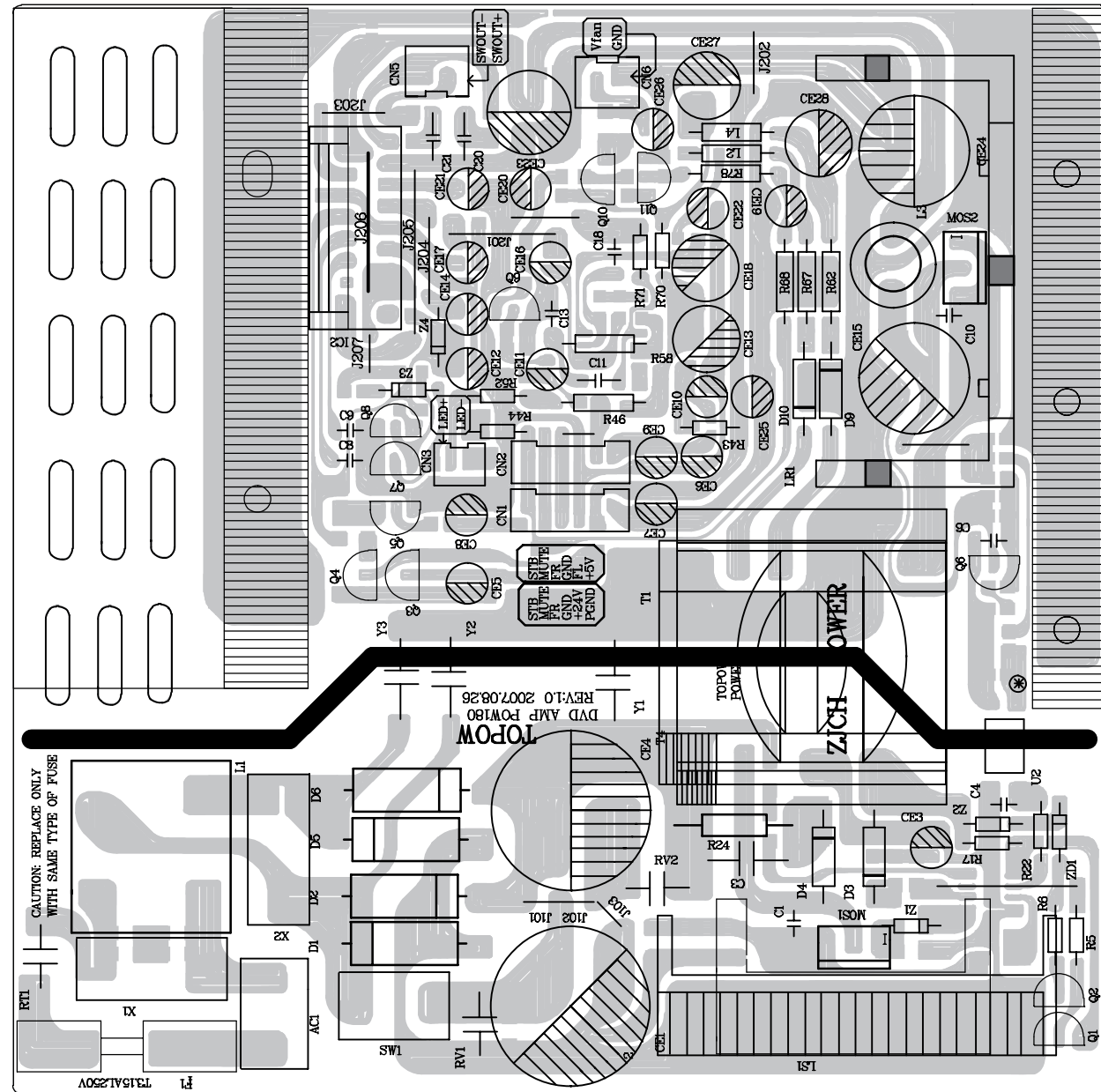
TUNER BOARD - LAYOUT DIAGRAM



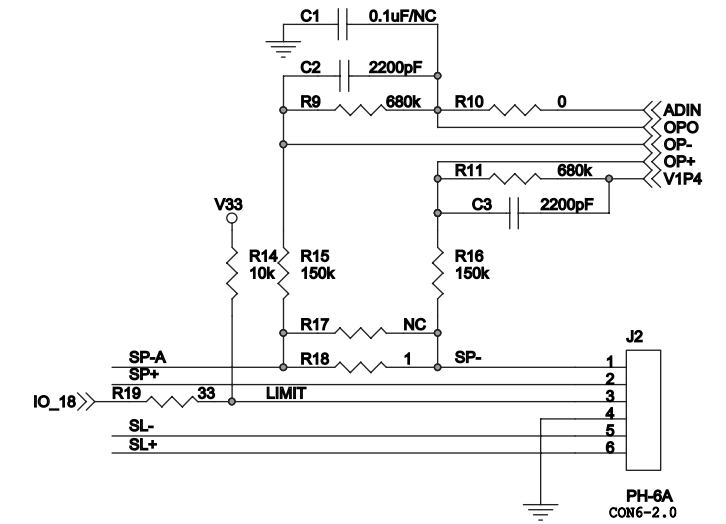
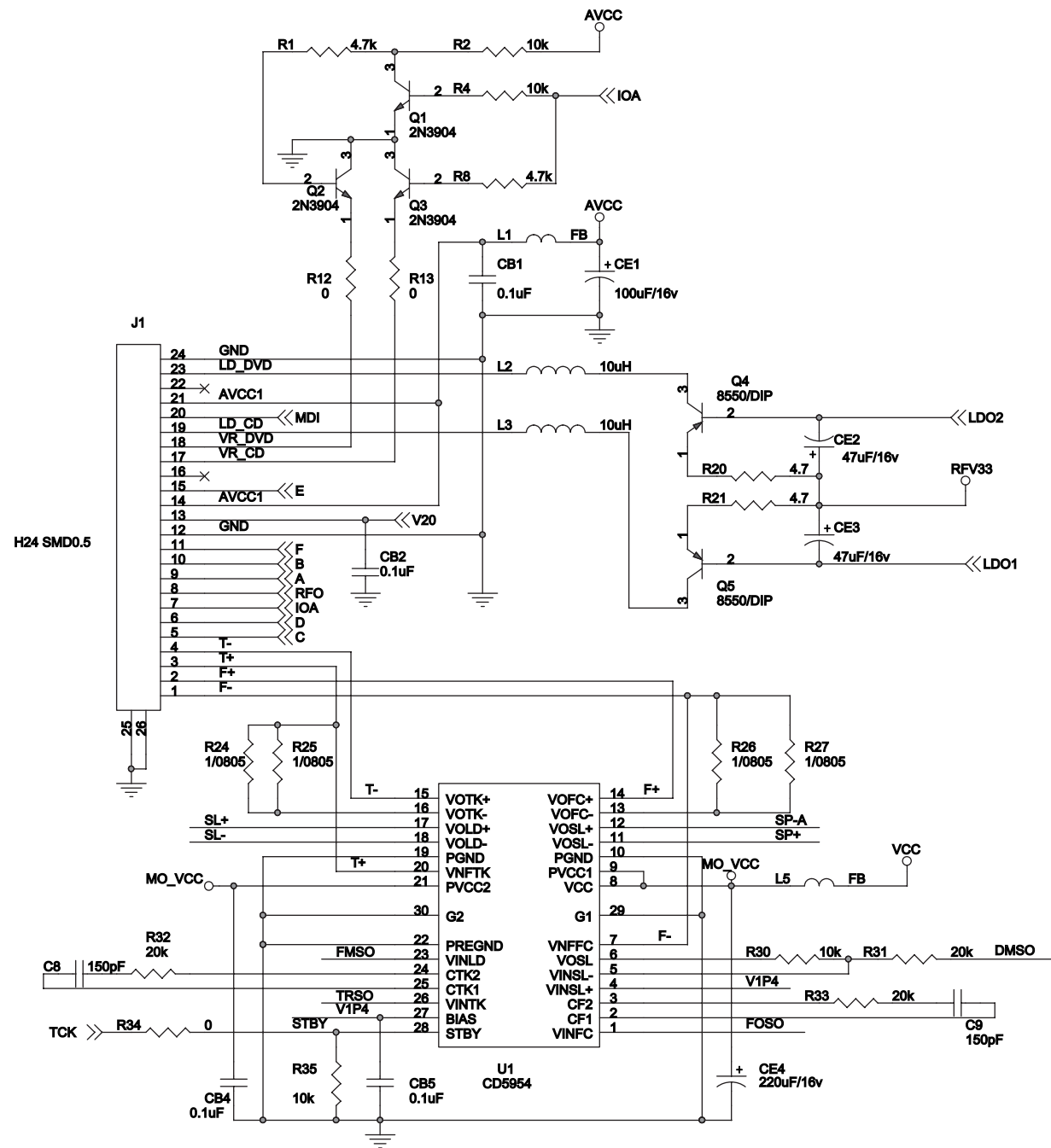
USB BOARD



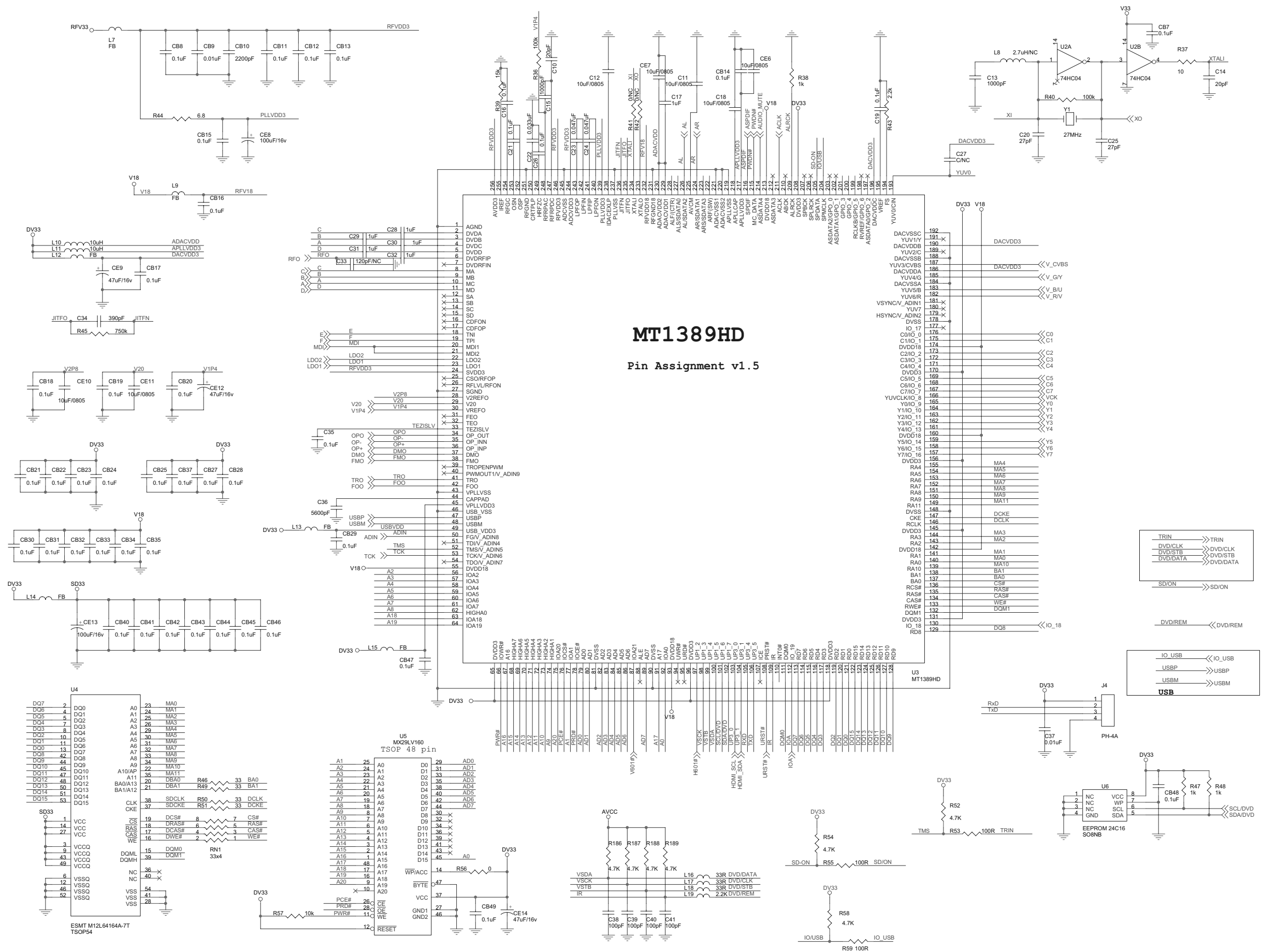




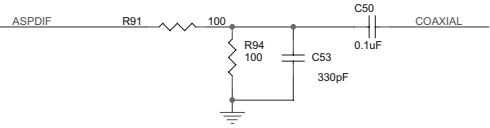
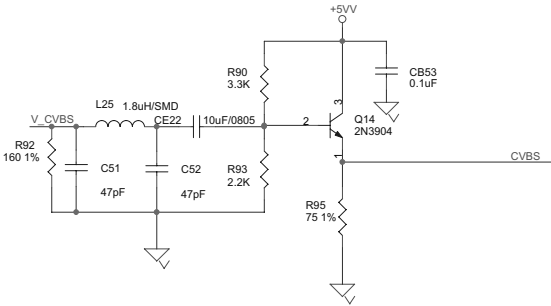
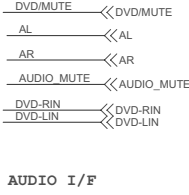
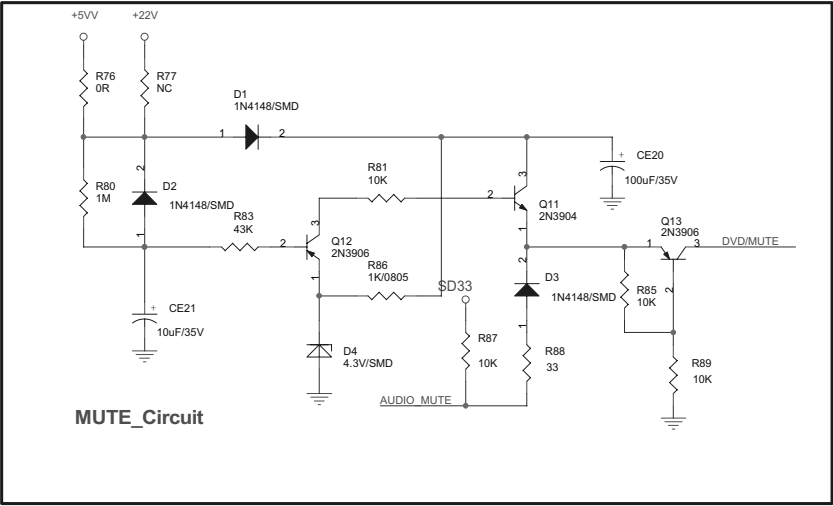
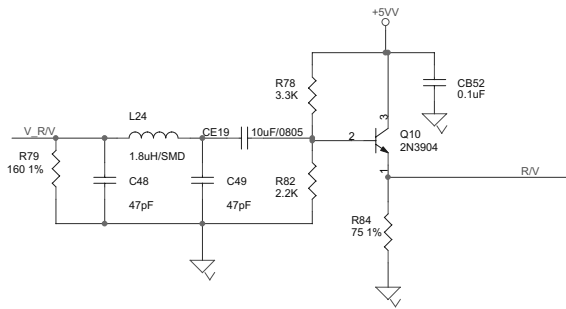
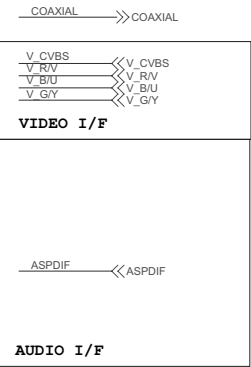
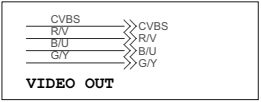
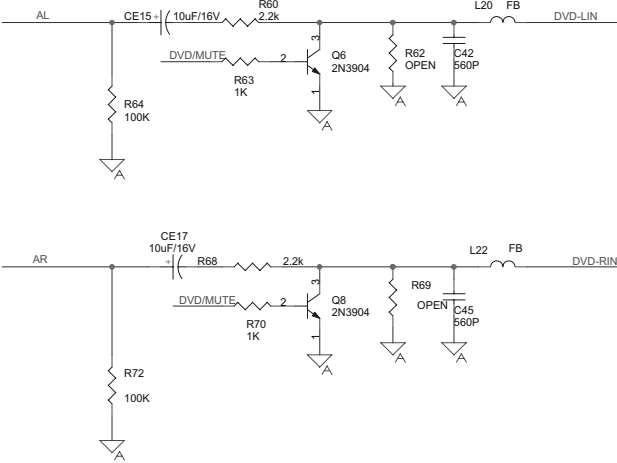
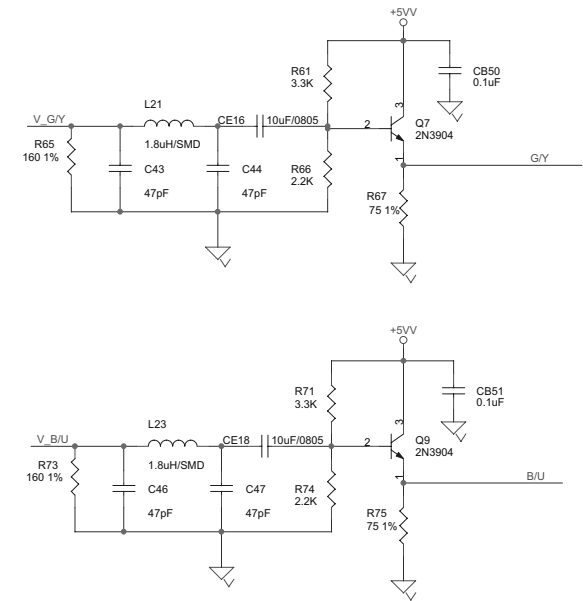
The schematic diagram illustrates the output stage of the V1P4 power amplifier. It features a 2N2219A transistor in a common-emitter configuration. The base is biased using a voltage divider network consisting of resistors R22 and R28, which are connected to the FOSO and TRSO input lines. A bypass capacitor C5 (330pF) is connected in parallel with R28 to the common ground. The emitter is connected to a common ground through a bypass capacitor C6 (0.1uF). The collector is connected to a load resistor R29 (10k) and a load capacitor C7 (0.015uF). The load resistor R29 is connected to the FMSO and DMSO input lines. The output of the amplifier is taken from the collector and connected to the FOO, TRO, FMO, and DMO output lines. The power supply for the base bias is provided by the FOSO and TRSO lines, and the power supply for the collector load is provided by the FMSO and DMSO lines.



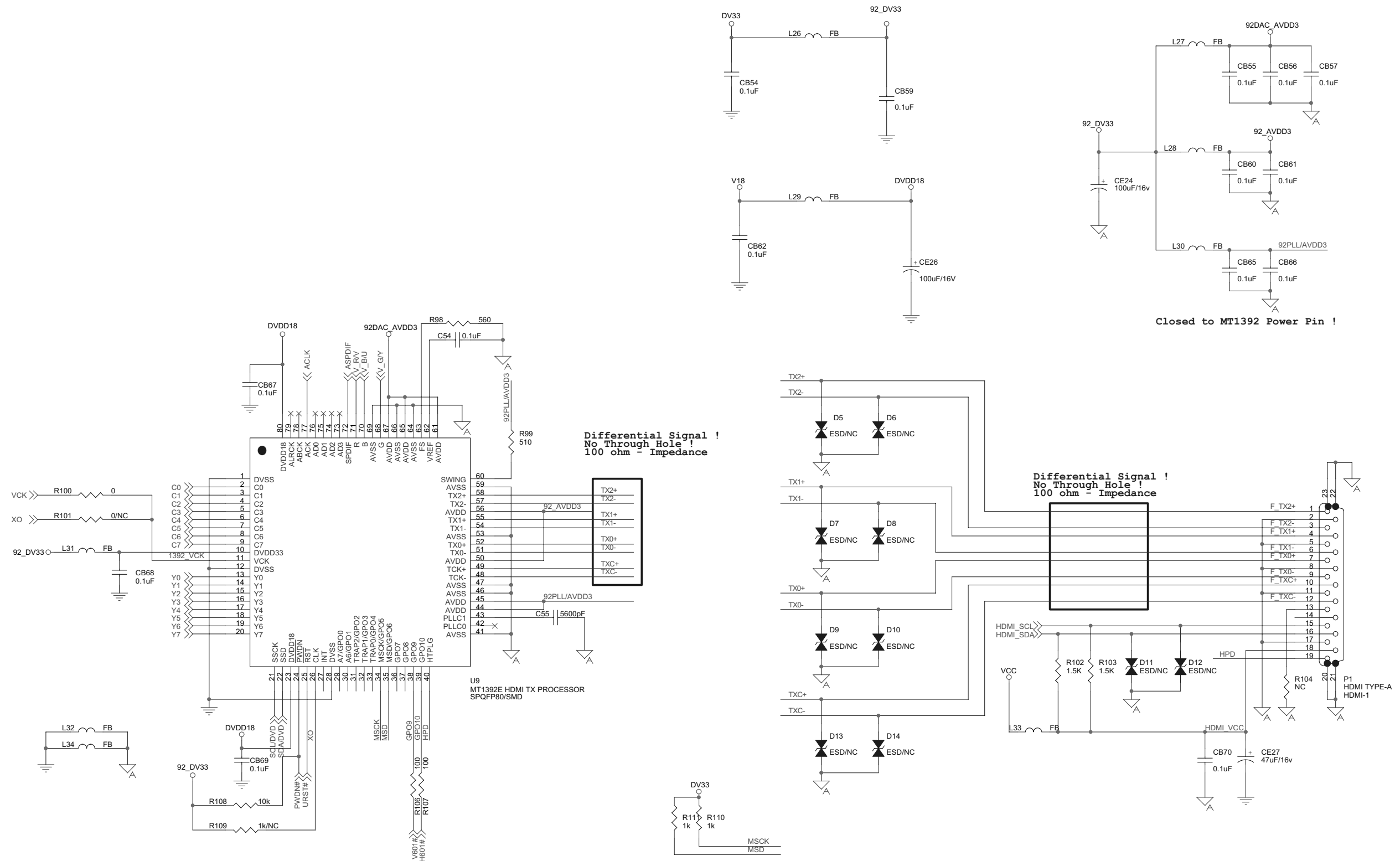
DECODE BOARD - CIRCUIT DIAGRAM - PART2(FOR REFERENCE ONLY)



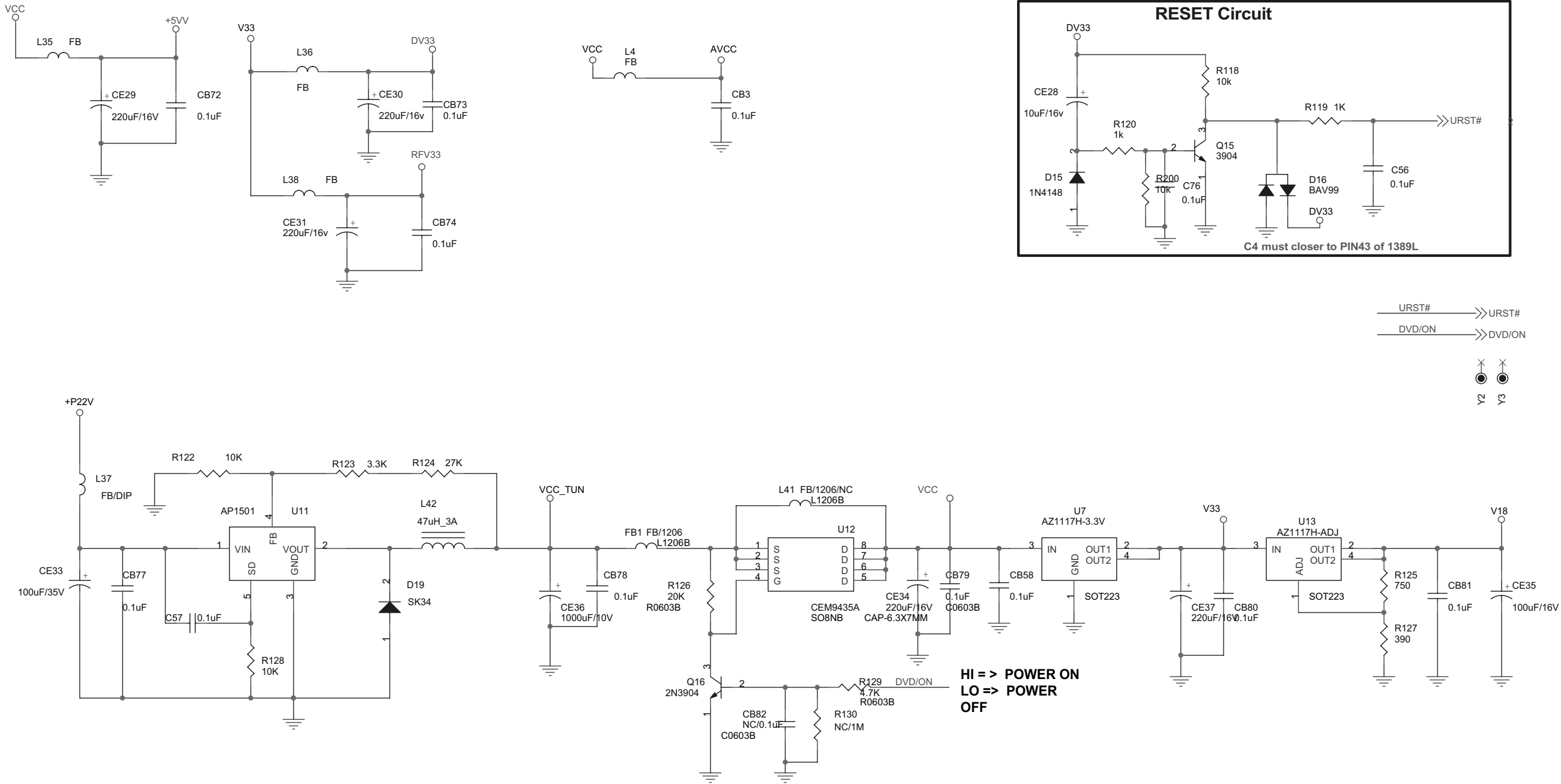
DECODE BOARD - CIRCUIT DIAGRAM - PART3(FOR REFERENCE ONLY)



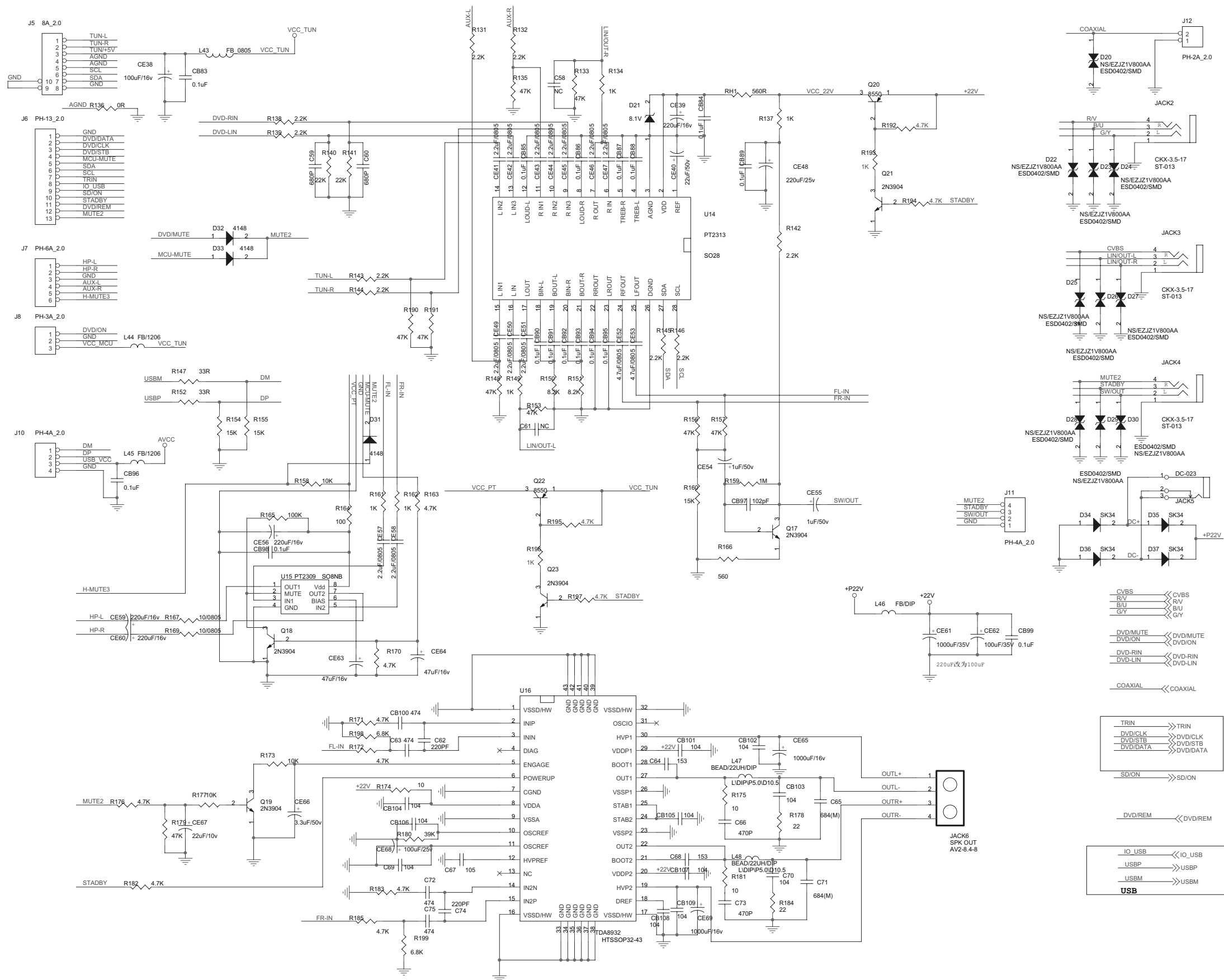
DECODE BOARD - CIRCUIT DIAGRAM - PART4(FOR REFERENCE ONLY)



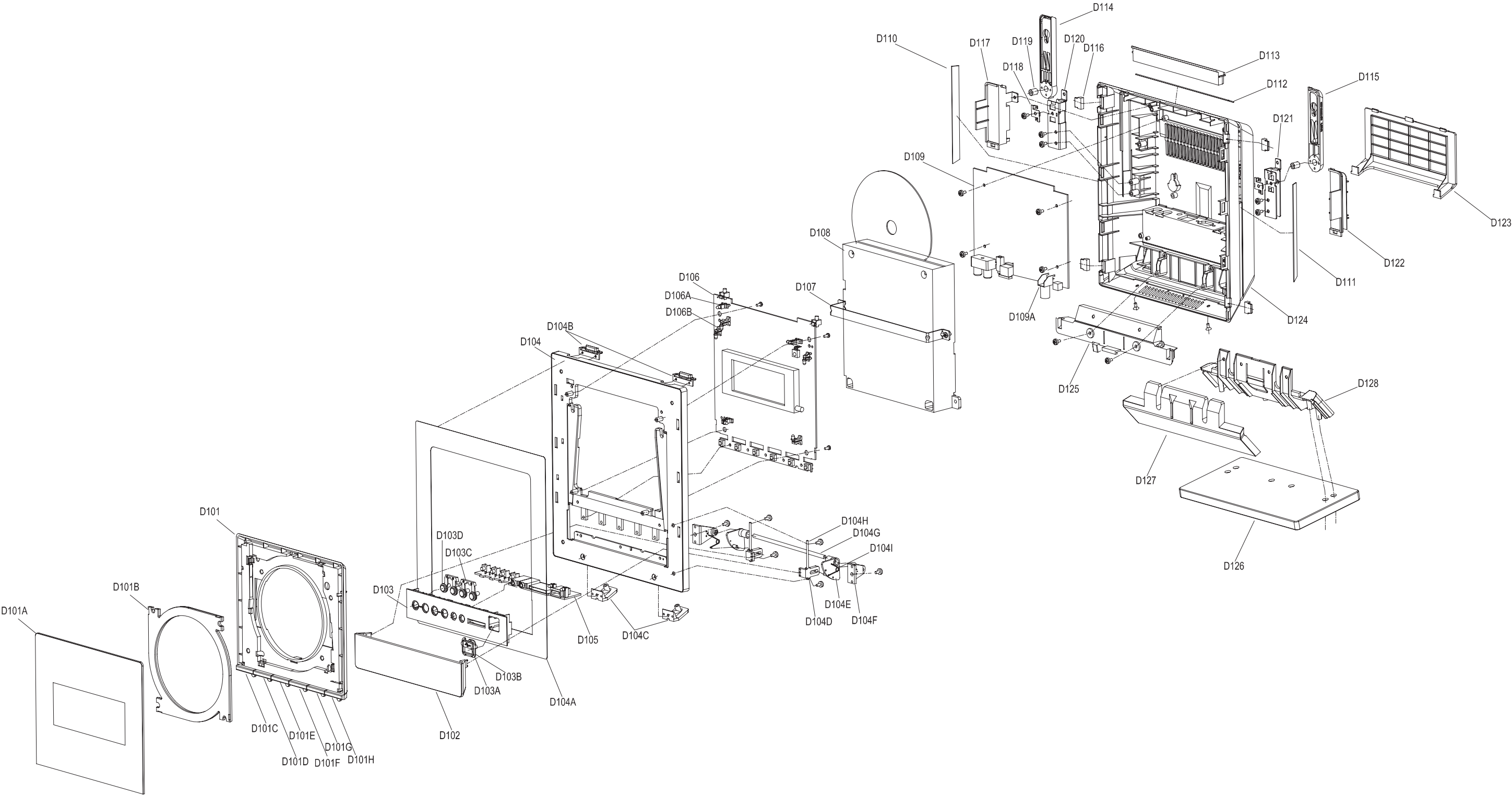
DECODE BOARD - CIRCUIT DIAGRAM - PART5(FOR REFERENCE ONLY)



DECODE BOARD - CIRCUIT DIAGRAM - PART6(FOR REFERENCE ONLY)



EXPLODE VIEW



ACCESSORIES PARTS LIST

	2	996510010890	REMOTE CONTROL ASSY
	3	996520032971	SPEAKER BOX ASS'Y
3A		996510010891	SPEAKER BOX(L) ASSY
3B		996510010892	SPEAKER BOX(R) ASSY
	4	996510010893	WOOFER SPEAKER BOX ASSY

MECHANICAL&MISCELLANEOUS PARTS

D101	996510010880	MAIN DISPLAY FRAME ASSY
D103	996510010881	ADDITIONAL-KEY FRAME ASSY
D104	996510010901	MAIN FRONT-CAB FRAME ASSY
D105	996510010898	HEADPHONE PCB ASSY
CABLE	996510010886	FLAT FLEXIBLE CABLE
D102	996510010885	PUSH-DOOR PC
D110	996510010888	MAINFRAME LEFT DECORATION
D111	996510010889	MAINFRAME RIGH DECORATION
D112	996510010887	MAINFRAME TOP DECORATION
D113	996510000511	MCD288 CONNECT-PART
D114	994000004908	SPK ARM(L)
D115	994000004909	SPK ARM(R)
D118	996510010882	SPRING PRESS-PIECE
D120	996510000514	SPEAKER BOX BRACKET COVER(L)
D121	996510000515	SPEAKER BOX BRACKET COVER(R)
D123	996510010884	OUT PUT COVER
D124	996510010883	BACK CABINET ABS
2	996510030819	POWER CORD 2.15m VH3.96
3	996510030818	POWER CORD CLIP FIXER/5N-4/H10

ELECTRICAL PARTS - DISPLAY(VFD) BOARD

D106	996510018617	MCD288E MAINF DISPLAY BOARD
D310	996510002976	DIODE FR104
DZ301	996510005833	ZENER DIODE 5.1V 1/2W-52
DZ303	996510010895	ZENER DIODE
IC302	996510017188	CPU U252(S3C9228 XYZ-CAN)
IC304	996510013859	IC AT24C02 (1.8V)
IC305	996510000500	IC PT6311/SC16311/CD16311
IC306	996510002918	IC PCF8563 SOP8
IC307	996510010896	IC AT24C08-PC27(2.7V)
LED301	994000004947	LED DIODE D3 3B4SCB01 (BLUE)
LED303	994000004947	LED DIODE D3 3B4SCB01 (BLUE)
LED304	994000004947	LED DIODE D3 3B4SCB01 (BLUE)
LED306	994000004947	LED DIODE D3 3B4SCB01 (BLUE)
LED307	994000004948	LED LAMP(BLUE) /12
S301	996510015840	IR SENSOR 1MA81P36D1TD001
SW305	996510000502	LIGHT TOUCH SW. 6X6X4.3
SW306	996510000502	LIGHT TOUCH SW. 6X6X4.3
SW307	996510000502	LIGHT TOUCH SW. 6X6X4.3
SW308	996510000502	LIGHT TOUCH SW. 6X6X4.3
SW309	994000004964	LIGHT TOUCH SW. TP-1105CS
SW310	994000004964	LIGHT TOUCH SW. TP-1105CS
SW311	996510000502	LIGHT TOUCH SW. 6X6X4.3
SW312	996510000502	LIGHT TOUCH SW. 6X6X4.3
T902	996510002975	TRANSFORMER EE13 5V
VFD301	996510000501	VFD DISPLAY NE-288D-6.GB
X302	994000004945	CER. FILTER FREQUENCY 4.19MHZ
X902	996510000012	CRYSTAL OSC FREQ.32.768KHz
D108	996510000988	DVD MODULE (DISC ASS'Y MCD288)
D109	996510010899	MCU PARTS ASSY
D109	996510022123	DECODER 89HA288E-12(89H288E)
D109A	996510010897	TUNER BOARD ASSY
D126	996510000542	MAIN BRACKET FOOT ASSY

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

FACTORY PARTLIST

LOCATION	DESCRIPTION
	ELECTRICAL PARTS LIST-DISPLAY BOARD
T902	△TRANSFORMER EE13 5V
R322	CARBON FILM RESISTOR 10 1/8W J-52
R378	CARBON FILM RESISTOR 10 1/8W J-52
R347	CARBON FILM RESISTOR 10 1/8W J-52
R349	CARBON FILM RESISTOR 10 1/8W J-52
R350	CARBON FILM RESISTOR 10 1/8W J-52
R352	CARBON FILM RESISTOR 10 1/8W J-52
R303	CARBON FILM RESISTOR 10 1/8W J-52
R306	CARBON FILM RESISTOR 100 1/8W J-52
R307	CARBON FILM RESISTOR 100 1/8W J-52
R310	CARBON FILM RESISTOR 100 1/8W J-52
R312	CARBON FILM RESISTOR 100 1/8W J-52
R379	CARBON FILM RESISTOR 100 1/8W J-52
R381	CARBON FILM RESISTOR 100 1/8W J-52
R384	CARBON FILM RESISTOR 100 1/8W J-52
R385	CARBON FILM RESISTOR 100 1/8W J-52
R386	CARBON FILM RESISTOR 100 1/8W J-52
R390	CARBON FILM RESISTOR 100 1/8W J-52
R392	CARBON FILM RESISTOR 100 1/8W J-52
R393	CARBON FILM RESISTOR 100 1/8W J-52
R394	CARBON FILM RESISTOR 100 1/8W J-52
R338	CARBON FILM RESISTOR 10K 1/8W J-52
R340	CARBON FILM RESISTOR 10K 1/8W J-52
R328	CARBON FILM RESISTOR 10K 1/8W J-52
R331	CARBON FILM RESISTOR 10K 1/8W J-52
R334	CARBON FILM RESISTOR 10K 1/8W J-52
R335	CARBON FILM RESISTOR 10K 1/8W J-52
R315	CARBON FILM RESISTOR 10K 1/8W J-52
R314	CARBON FILM RESISTOR 10K 1/8W J-52
R682	CARBON FILM RESISTOR 10K 1/8W J-52
R301	CARBON FILM RESISTOR 10K 1/8W J-52
R301	CARBON FILM RESISTOR 10K 1/8W J-52
R302	CARBON FILM RESISTOR 10K 1/8W J-52
R302	CARBON FILM RESISTOR 10K 1/8W J-52
R991	CARBON FILM RESISTOR 1M 1/8W J-52
R316	CARBON FILM RESISTOR 15 1/8W J-52
R305	CARBON FILM RESISTOR 5.6 1W J-52
R308	CARBON FILM RESISTOR 2.2K 1/8W J-52
R309	CARBON FILM RESISTOR 2.2K 1/8W J-52
R391	CARBON FILM RESISTOR 2.2K 1/8W J-52
R341	CARBON FILM RESISTOR 33K 1/8W J-52
R342	CARBON FILM RESISTOR 33K 1/8W J-52
R343	CARBON FILM RESISTOR 33K 1/8W J-52
R344	CARBON FILM RESISTOR 33K 1/8W J-52
R323	CARBON FILM RESISTOR 47 1/8W J-52
R317	CARBON FILM RESISTOR 4.7K 1/8W J-52
R339	CARBON FILM RESISTOR 4.7K 1/8W J-52
R365	CARBON FILM RESISTOR 4.7K 1/8W J-52
R337	CARBON FILM RESISTOR 47K 1/8W J-52
R370	CARBON FILM RESISTOR 1K 1/8W J-52
R319	CARBON FILM RESISTOR 1K 1/8W J-52
R320	CARBON FILM RESISTOR 1K 1/8W J-52
R366	CARBON FILM RESISTOR 1K 1/8W J-52
R336	CARBON FILM RESISTOR 22K 1/8W J-52
R332	CARBON FILM RESISTOR 390 1/8W J-52
R333	CARBON FILM RESISTOR 390 1/8W J-52
R329	CARBON FILM RESISTOR 390 1/8W J-52
R330	CARBON FILM RESISTOR 390 1/8W J-52
R318	CARBON FILM RESISTOR 68K 1/8W J-52

FACTORY PARTLIST

R388	CARBON FILM RESISTOR 6.2K 1/8W J-52
R398	CARBON FILM RESISTOR 6.2K 1/8W J-52
C302	CERAMIC CAP. 100p 50V K-5 H<7
C303	CERAMIC CAP. 100p 50V K-5 H<7
C304	CERAMIC CAP. 100p 50V K-5 H<7
C333	CERAMIC CAP. 100p 50V K-5 H<7
C335	CERAMIC CAP. 100p 50V K-5 H<7
C308	CERAMIC CAP. 104P 50V K-5
C314	CERAMIC CAP. 104P 50V K-5
C330	CERAMIC CAP. 104P 50V K-5
C348	CERAMIC CAP. 104P 50V K-5
C346	CERAMIC CAP. 15p 50V ±1p-5
C347	CERAMIC CAP. 15p 50V ±1p-5
C318	CERAMIC CAP. 30p 50V±1p-5
C319	CERAMIC CAP. 30p 50V±1p-5
C305	CERAMIC CAP. 470p 50V K-5
C306	CERAMIC CAP. 470p 50V K-5
C322	ELECTROLYTIC CAP.47u 16V L-5 5X7
C338	ELECTROLYTIC CAP.47u 16V L-5 5X7
C328	ELECTROLYTIC CAP.47u 16V L-5 5X7
C323	ELECTROLYTIC CAP.47u 16V L-5 5X7
C325	ELECTROLYTIC CAP.100u 16V L-5 105°C 6.3X
C324	ELECTROLYTIC CAP.10u 25V L-5 4X5
C315	ELECTROLYTIC CAP.47u 16V L-5 5X5
C307	ELECTROLYTIC CAP.220u 35V L 8X11.5/12
C301	NONINDUCTIVE CAP.104J 100V K
L301	AXIAL FIXED INDUCTOR 10u 52
L305	FIXED INDUCTOR 200U 6X5
D301	DIODE IN60
D305	DIODE IN60
D302	DIODE 4148-52
D303	DIODE 4148-52
D304	DIODE 4148-52
D307	DIODE 4148-52
D308	DIODE 4148-52
D309	DIODE 4148-52
D311	DIODE 4148-52
D310	DIODE FR104
DZ301	ZENER DIODE 3V 1/2W-52
DZ303	ZENER DIODE 27V 1W -52
LED301	LED Φ3 3B4SCB01 (BLUE)
LED303	LED Φ3 3B4SCB01 (BLUE)
LED304	LED Φ3 3B4SCB01 (BLUE)
LED306	LED Φ3 3B4SCB01 (BLUE)
LED307	LED 3R4CB71D-2B-208 (BLUE)
Q301	TRANSISTOR 8050C-5
Q304	TRANSISTOR 8050C-5
Q307	TRANSISTOR 8050C-5
Q302	TRANSISTOR 8550C-5
Q303	TRANSISTOR 8550C-5
Q309	TRANSISTOR SS8050-5 1.5A
Q310	TRANSISTOR SS8050-5 1.5A
IC304	IC AT24C02 (2.7~5.5V) SOP PACKING
IC307	IC AT24C08-PC27(2.7V) SOP PACKING
IC306	IC PCF8563/AMI8563 SOP8
IC305	IC PT6311/SC16311/CD16311
S301	IR SENSOR SMALL BLACK
X302	CERAMIC CRYSTAL OSCILLATOR 4.19mHz
X902	CRYSTAL OSCILLATOR 32.768KHz Φ3XH8±10PPM
SW305	LIGHT TOUCH SWITCH 6X6X4.3 130g
SW306	LIGHT TOUCH SWITCH 6X6X4.3 130g

FACTORY PARTLIST

SW307	LIGHT TOUCH SWITCH 6X6X4.3 130g
SW308	LIGHT TOUCH SWITCH 6X6X4.3 130g
SW311	LIGHT TOUCH SWITCH 6X6X4.3 130g
SW312	LIGHT TOUCH SWITCH 6X6X4.3 130g
SW309	LIGHT TOUCH SWITCH TP-1105CS H=8.0
SW310	LIGHT TOUCH SWITCH TP-1105CS H=8.0
CN306	PINS CONNECTOR 1.5/13P
CN305	PINS CONNECTOR 1.5/10P
CN301	PINS CONNECTOR 1.5/3P
CN303	PINS CONNECTOR 1.0/5P BLACK
	28 WIRE 80 2.0/14PX1 2.0/14PX1
VFD301	VFD DISPLAY NE-288D-6.GB
L303	FERRITE BEAD JRHW0349 BLUE
	PCB 35-MCD289-03A1 166X161 MAIN DISPLAY
JP301-3007	BARE WIRE $\Phi 0.6 \times 40\text{mm}$ (375m=1kG)
UNDERLAY VFD(BOTTOM)	BLACK SPONGE 30X15XH1 40°
UNDERLAY SENSOR	BLACK SPONGE 8X8X7 75°
D106A	MCD288 LED BRACKET1 ABS
D106B	MCD288 LED BRACKET 3 ABS

ELECTRICAL PARTS LIST-TUNER BOARD

CN1	PINS CONNECTOR 2.0X2X4P H8
D109A	METAL BOX F-8 28X26X13 NICKEL-PLATE
R18	CHIP RESISTOR 100K 1/16W J(0603)
R15	CHIP RESISTOR 10K 1/16W J(0603)
R16	CHIP RESISTOR 10K 1/16W J(0603)
R8	CHIP RESISTOR 10K 1/16W J(0603)
R19	CHIP RESISTOR 10 1/16W J(0603)
R2	CHIP RESISTOR 1M 1/16W J(0603)
R3	CHIP RESISTOR 1M 1/16W J(0603)
R12	CHIP RESISTOR 1M 1/16W J(0603)
R4	CHIP RESISTOR 4.7K 1/16W J(0603)
R5	CHIP RESISTOR 4.7K 1/16W J(0603)
R6	CHIP RESISTOR 4.7K 1/16W J(0603)
R1	CHIP RESISTOR 47 1/16W J(0603)
R11	CHIP RESISTOR 10M 1/16W J (0603)
R13	CHIP RESISTOR 820 1/16W J(0603)
R14	CHIP RESISTOR 820 1/16W J(0603)
C14	CHIP CAP.10P 50V J (0603) NPO
R22	CHIP RESISTOR 330 1/16W J(0603)
C20	CHIP CAP.12P 50V J(0603)NPO
C25	CHIP CAP.223P 50V M (0603) Y5V
C21	CHIP CAP.39P 50V J (0603) NPO
C8	CHIP CAP.47P 50V J(0603)NPO
C1	TANTALUM CAP. 22uF/6.3V (A) (3216)
C18	TANTALUM CAP. 22uF/6.3V (A) (3216)
C19	TANTALUM CAP. 22uF/6.3V (A) (3216)
C22	TANTALUM CAP. 22uF/6.3V (A) (3216)
C24	TANTALUM CAP. 22uF/6.3V (A) (3216)
C2	CHIP CAP.224P 50V M (0603) Y5V
C3	CHIP CAP.224P 50V M (0603) Y5V
C4	CHIP CAP.224P 50V M (0603) Y5V
C5	CHIP CAP.224P 50V M (0603) Y5V
C7	CHIP CAP.27P 50V J(0603) NPO
C6	CHIP CAP.100P 50V K (0603) X7R
C23	CHIP CAP.100P 50V K (0603) X7R
C10	CHIP CAP.103P 50V K (0603) X7R
C11	CHIP CAP.103P 50V K (0603) X7R
C15	CHIP CAP.103P 50V K (0603) X7R
C16	CHIP CAP.103P 50V K (0603) X7R
C17	CHIP CAP.103P 50V K (0603) X7R

FACTORY PARTLIST

C13	CHIP CAP.104P 50V M (0603) Y5V
C12	CHIP CAP.104P 50V M (0603) Y5V
C9	CHIP CAP.104P 50V M (0603) Y5V
L1	CHIP INDUCTOR 120n (0603)
L7	CHIP INDUCTOR 39n J (0603)
L8	CHIP INDUCTOR 10U (0603)
DZ1	CHIP ZENER DIODE 3.6V 1/2W (LL-34)
Q2	CHIP TRANSISTOR 9014 (SOT-23)
Q3	CHIP TRANSISTOR 9014 (SOT-23)
Q1	CHIP TRANSISTOR 8050(SOT-23)
IC2	IC 74HC2G04
IC1	IC TEA5766UK
X1	CRYSTAL OSCILLATOR 32.768KHZ ϕ 2X6
L4	FERRITE BEAD 601 K (0603)
L5	FERRITE BEAD 601 K (0603)
	TUNER PCB 35-ECO6-05A1
D105	ELECTRICAL PARTS LIST-HEADPHONE BOARD
R104	CARBON FILM RESISTOR 100 1/8W J-52
R102	CARBON FILM RESISTOR 10K 1/8W J-52
R113	CARBON FILM RESISTOR 1K 1/8W J-52
R114	CARBON FILM RESISTOR 1K 1/8W J-52
R101	CARBON FILM RESISTOR 22K 1/8W J-52
R103	CARBON FILM RESISTOR 4.7K 1/8W J-52
R106-EARPHONE JACK	CARBON FILM RESISTOR 4.7K 1/8W J-52
J106-CN102	AXIAL FIXED INDUCTOR 10u 52
LED101	LED 3R4CB71D-2B-208 (BLUE)
LED102	LED 3R4CB71D-2B-208 (BLUE)
SW101	LIGHT TOUCH SWITCH KFC-05
SW102	LIGHT TOUCH SWITCH KFC-05
SW103	LIGHT TOUCH SWITCH KFC-05
SW104	LIGHT TOUCH SWITCH KFC-05
J105	HEADPHONE JACK ϕ 3.5 TE-03501S-05 SILV.
J104	HEADPHONE JACK ϕ 3.5 TE-03501S-11
J106	USB A-TYPE 4 P FEMALE 90°DIP TYPE BLACK
CN102	PINS CONNECTOR 2.0/14P
	PCB 35-MCD288E-01A1 HEADPHONE
D109	ELECTRICAL PARTS LIST-DECODER BOARD
D108	MECHANICAL PARTS LIST-MECHANISM(SONY KHM313AAA)
D126	MECHANICAL PARTS LIST-MAINFRAME BRACKET
D127	MCD288 FOOT FRONT COVER HIPS
D128	MCD288 FOOT BACK COVER HIPS
D126	MCD288 BRACKET FRONT CABINET ABS
SPONGE	BLACK SPONGE 11.7X6.8X8 75°
D104	MECHANICAL PARTS LIST-MAINFRAME PANEL
D104A	MCD288 MAIN PANEL DECORATION SHEET
D104G	MCD288 TRANSMISSION SHAFT
D104H	MCD288 SMOOTH POLE
D104I	MCD288 SLIDE DOOR SPRING(L)
D104I	MCD288 SLIDE DOOR SPRING(R)
D104F	MCD288 PUSH DOOR BRACKET ABS
D104D	MCD288 DOOR BRACKET ABS
D104E	MCD288 ROCKER ABS
D104	MCD288 MAIN FRONT CABINET ABS
D104C	MCD288 CONNECT BRACKET ABS
D104B	MCD288 STANDBY-OPEN-KNOB

FACTORY PARTLIST

D101	MECHANICAL PARTS LIST-MAINFRAME DISPLAY BRACKET
D101A	MCD288E DISPLAY LENS PC
D101B	MCD288 ROUND LIGHT-GUIDE PMMA
D101	MCD288 FRONT LENS BRACKET ABS
D101C	MCD288 FUNCTION-BUTTON(SOURCE)
D101D	MCD288 FUNCTION-BUTTON(PLAY)
D101E	MCD288 FUNCTION-BUTTON(STOP)
D101F	MCD288 FUNCTION-BUTTON(VOLUME+)
D101G	MCD288 FUNCTION-BUTTON(VOLUME-)
D101H	MCD288 FUNCTION-BUTTON(VOLUME+)
D103	MECHANICAL PARTS LIST-ADDITIONAL-KEY PANEL
D103	MCD288 ADDITIONAL KEY PANEL ABS
D103C	MCD288 ADDITIONAL KEY BRACKET ABS
D103D	MCD288 ADDITIONAL KEY ABS SILVER
D103B	MCD288 USB LIGHT-GUIDE PMMA
D103A	MCD288 USB MARK BOARD
DVD	MECHANICAL PARTS LIST-MAIN CASING PARTS
D118	MCD288 SPRING PRESS-PIECE
D120	MCD288 SPEAKER SHORE PRESS-PIECE(L)
D121	MCD288 SPEAKER SHORE STICK BRACKET(R)
D114	MCD288 SPEAKER SHORE STICK BRACKET(L)
D115	MCD288 SPEAKER SHORE STICK BRACKET(R)
D119	MCD288 SPEAKER BRASS STUD
D124	MCD288E BACK CABINET ABS(4Ω) For288E
D123	MCD288 OUT PUT COVER HIPS
D113	MCD288 CONNECT PART HIPS
D114	MCD288 SPEAKER ARM(L) ABS+GP
D115	MCD288 SPEAKER ARM(R) ABS+GP
D125	MCD288 PRESS PIECE HIPS
D102	MCD288 PUSH-DOOR PC For MCD288E
D116	MCD288 SPEAKER BOX PLASTIC
D117	MCD288 SPEAKER BOX BRACKET COVER(L)ABS
D122	MCD288 SPEAKER BOX BRACKET COVER(R)ABS
D112	MCD288 MAINFRAME TOP DECORATION
D110	MCD288 MAINFRAME LEFT DECORATION
D111	MCD288 MAINFRAME RIGHT DECORATION
3	SPEAKER BOX PARTS
4	WOOFER SPEAKER BOX PARTS
4A	ELECTRICAL PARTS LIST-POWER BOARD(IN WOOFER)
	IC TDA8947J
	POWER PCB ASS'Y DVD AMP POW180 FOR/12
1	ACCESSORY PARTS
5	PACKING PARTS
2	REMOTE CONTROL PARST