DVD Home Theater System

HTS3020/12/05＆HTS3019/12

Service
Service
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Service Manual

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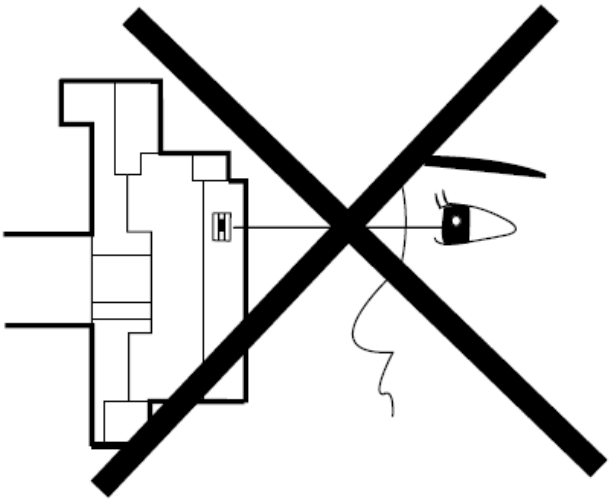
GB 3139 785 34811

Version 1.1

PHILIPS

LASER BEAM SAFETY PRECAUTIONS

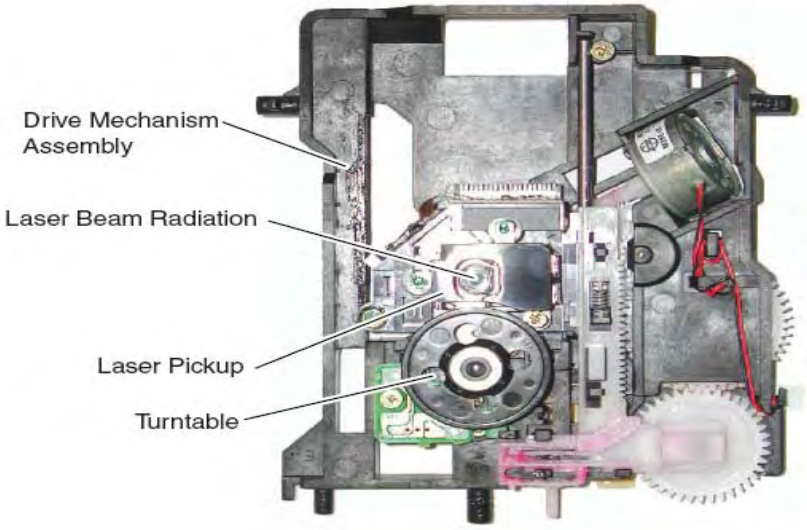
This DVD player uses a pickup that emits a laser beam**.**



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



CAUTION

LASER RADIATION

WHEN OPEN. DO NOT

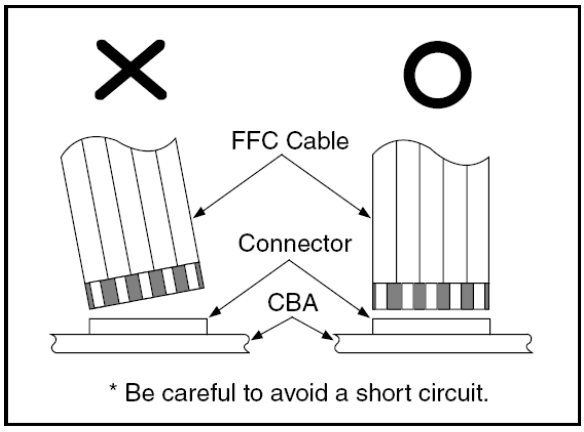
STARE INTO BEAM.

Location: Top of DVD mechanism.

STANDARD NOTES FOR SERVICING

Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

IDENTIFICATION:
Regardless of special logo (not always indicated)
One must treat all sets from 1.1.2005 onwards, according next rules.

Important note: In fact also products a little older can also be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be
respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your solder-equipment. In general use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for leadfree solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C - 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free). If one cannot avoid, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:

- always use the 12nc-recognizable soldering temperature profile of the specific BGA (for desoldering always use highest lead-free

temperature profile, in case of doubt)
- lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicatorlabel in the bag, the BGA-IC possibly still has to be baked dry. This will be communicated via AYS-website.
Do not re-use BGAs at all.
- For sets produced before 1.1.2005, containing leaded soldering-tin and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- 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.

You will find this and more technical information within the “magazine”, chapter “workshop news”.
For additional questions please contact your local repair-helpdesk.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

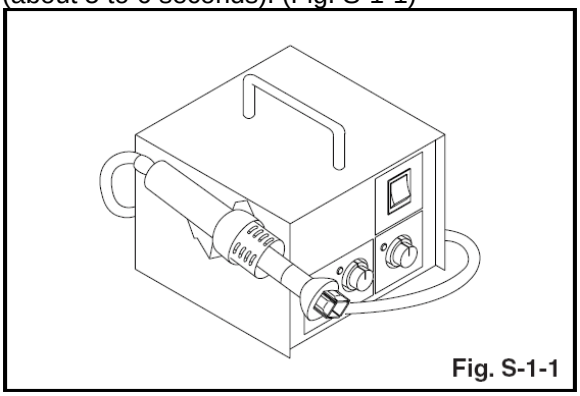


Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)
3. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

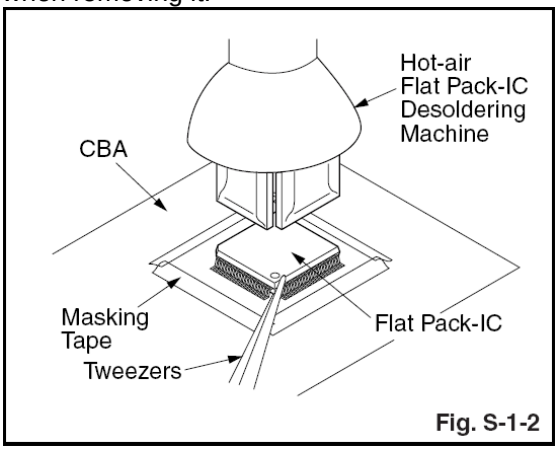


Fig. S-1-2

With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

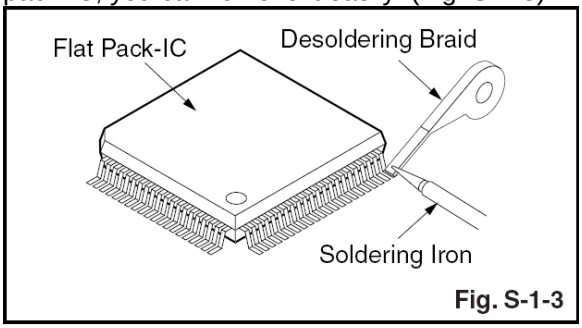


Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

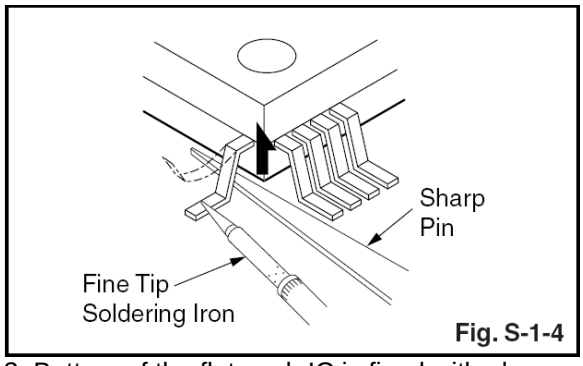


Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig.S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

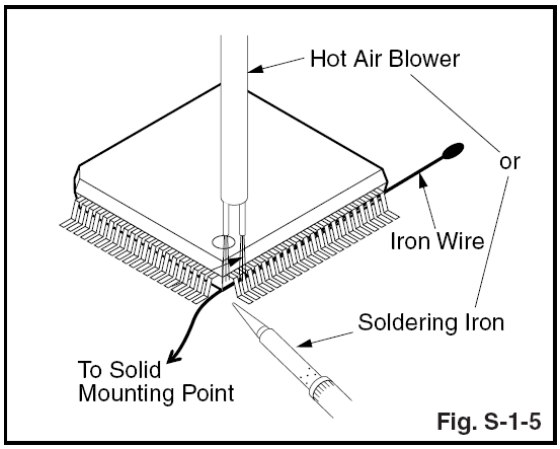


Fig. S-1-5

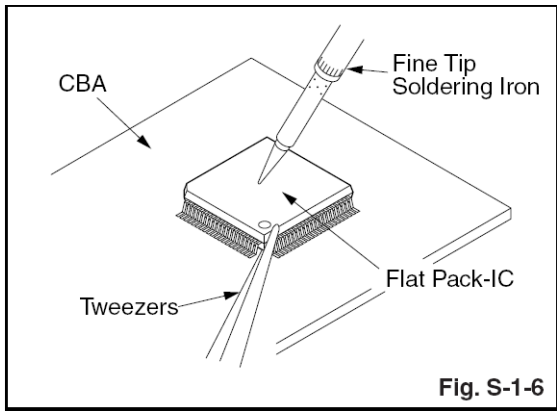


Fig. S-1-6

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA
so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

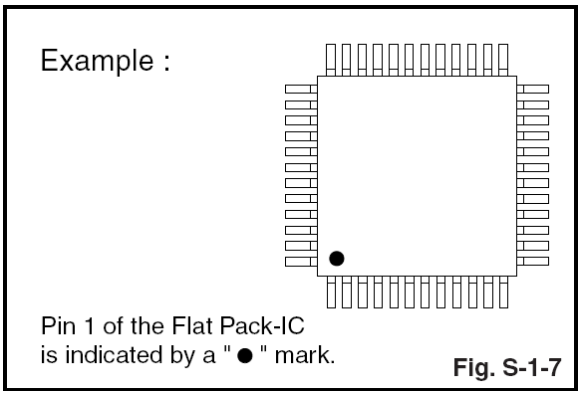


Fig. S-1-7

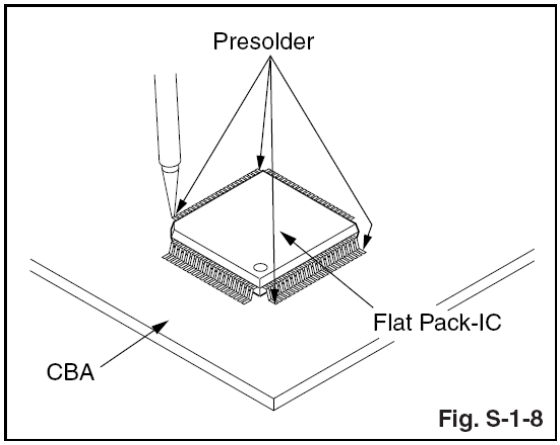


Fig. S-1-8

Instructions for Handling

Semiconductors

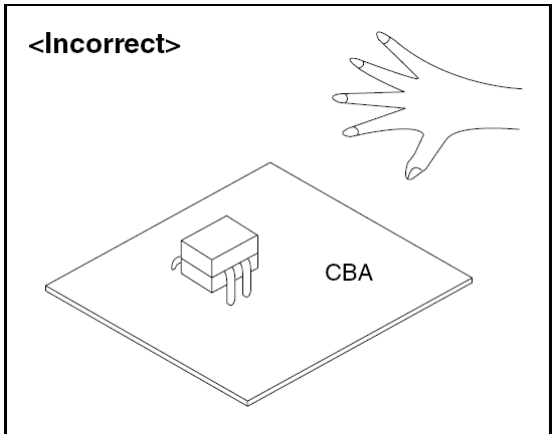
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

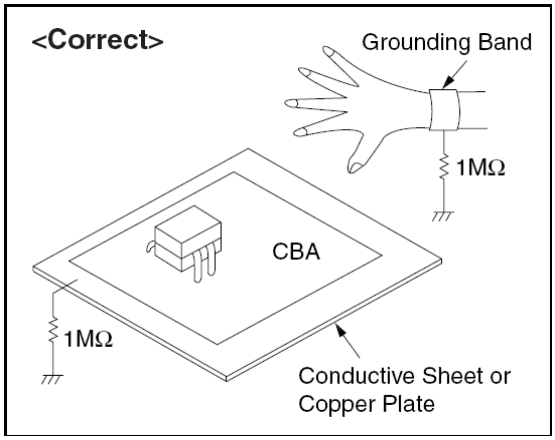
1. Ground for Human Body

Be sure to wear a grounding band (1 M∧) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 M∧) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.



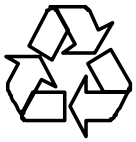


Safety and important notice

Warning

- Risk of overheating! Never install the Home Theater System in a confi ned space. Always leave a space of at least 4 inches around the Home Theater System for ventilation. Ensure curtains or other objects never cover the ventilation slots on the Home Theater System.
- Never place the Home Theater System, remote control or batteries near naked fl ames or other heat sources, including direct sunlight.
- Only use this Home Theater System indoors. Keep this Home Theater System away from water, moisture and liquid-fi lled objects.
- Never place this Home Theater System on other electrical equipment.
- Keep away from this Home Theater System during lightning storms.
- Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
- Visible and invisible laser radiation when open. Avoid exposure to beam.

Recycle notice



This electronic equipment contains a large number of materials that can be recycled or reused if disassembled by a specialized company. If you are disposing of an old machine, please take it to a recycling center. Please observe the local regulations regarding disposal of packaging materials, exhausted batteries and old equipment.

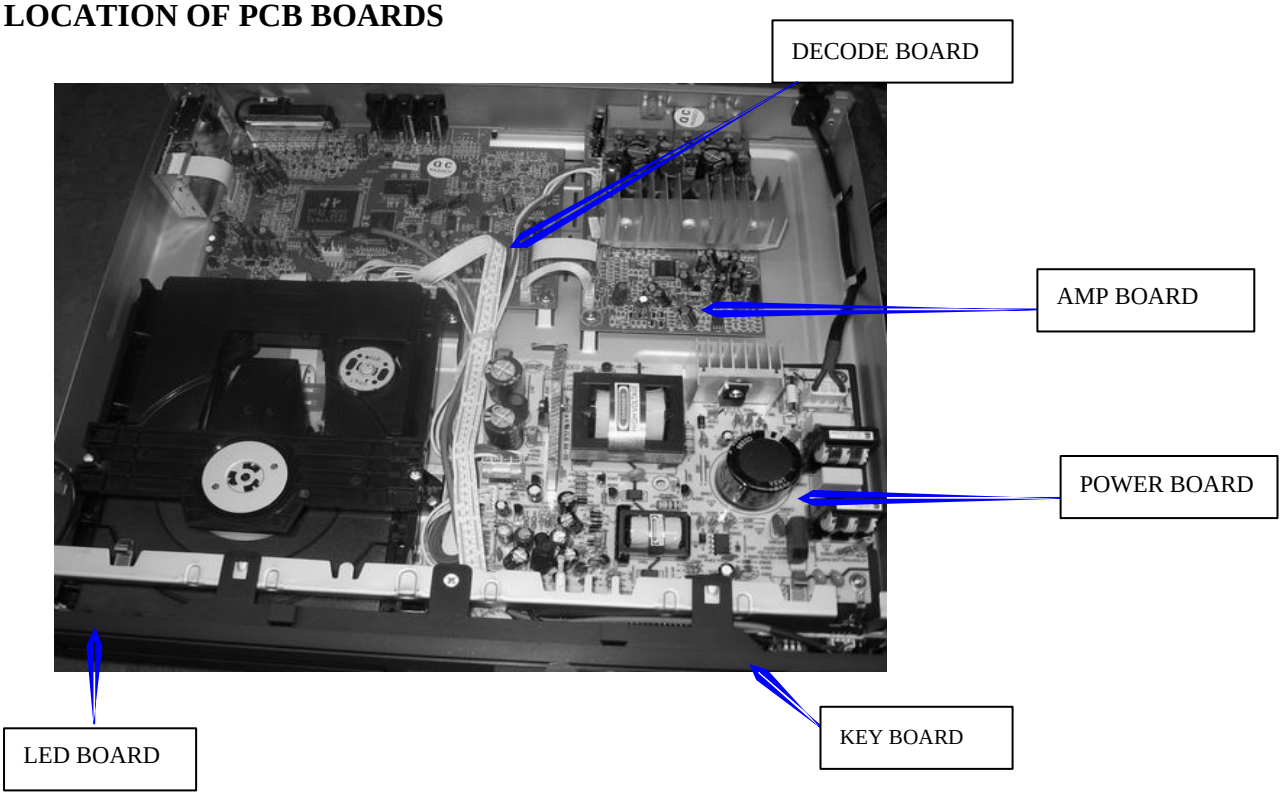
Copyright notice

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorised by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorised by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

About Progressive Scan

Consumers should note that not all high defi nition television sets are fully compatible with this product and may cause artifacts to be displayed in the picture. In case of 525 or 625 progressive scan picture problems, it is recommended that the user switch the connection to the ‘standard defi nition’ output. If there are questions regarding our TV set compatibility with this model 525p and 625p DVD player, please contact our customer service center.

LOCATION OF PCB BOARDS



VERSION VARIATION:

Type/Versions / Features	HTS3020 /12/05	HTS3019 /12
Output Power-200W	X	X
Voltage(220V-240V)	X	X
MP3 Link	X	X

SERVICE SCNARIO MATRIX:

Type/Versions / Board in used	HTS3020 /12/05	HTS3019 /12
DECODE board	Bd	Bd
POWER board	Bd	Bd
AMP board	Bd	Bd
LED board	Bd	Bd
KEY board	Bd	Bd

*Bd=Board Level Repair

OPERATING CONTROLS AND FUNCTIONS

Front Panel

Standby-On
—Turns on the player or switches to standby mode

Disc Tray

Open/Close
—Opens or closes the disc compartment.

Display Panel

USB
—Connects a USB supported device

Play/Pause
—starts or pauses playback

Stop
—Stops playback

VOLUME
—Increases or decreases volume.

SOURCE
—Selects a media to play or listen to audio from the connected device.

Back Panel

MAINS~(AC Power cord)
—Connect to a standard AC outlet

AUDIO IN
—Connect the audio cables(not supplied) to the AUDIO IN_AUX1 jacks

SCART to TV
—Connect a scart cable(not supplied) to the SCART to TV jack

SPEAKERS
—Connect the Speakers to the matching jacks

VIDEO
—Connect a composite video cable to the video jack

ANTENNA
—Connect the FM antenna to the FM 75Ω jack

SPECIFICATIONS

AMPLIFIER

Total output power ..... 200 W RMS(30%THD)
Frequency Response .....……63Hz – 14kHz / ±3 dB
Signal-to-Noise Ratio .....>- 60 dB (A-weighted)
Input Sensitivity
- AUX.…….... .....500 mV
- SCART TO TV ..... 500 mV
- MP3 LINK ..... 500 mV

RADIO

Tuning Range .....FM 87.5-108 MHz
.....(50kHz)
.....26 dB Quieting
Sensitivity..... .....FM 22 dBf,
IF Rejection Ratio .....FM 50 dB
Signal-to-Noise Ratio .....FM 30 dB
Harmonic Distortion ..... FM 3%
Frequency Response ..... FM 180 Hz–10 kHz / ±3 dB
Stereo Separation ..... FM 26 dB (1 kHz)
Stereo Threshold .....FM 23.5 dB

DISC

Laser Type ....…..Semiconductor
Disc Diametre .....12cm / 8cm
Video Decoding .....MPEG-1 / MPEG-2 /DivX
..... / DivX Ultra
Video DAC 12 Bits,108MHz
Signal System .....PAL / NTSC
Video S/N ..... 56 dB
Audio DAC..... 24bits/96KHz
Frequency Response ..... 4 Hz–20 kHz (44.1 kHz)
....4 Hz–22 kHz (48 kHz)
.....4 Hz–44 kHz (96 kHz)
PCM ..... IEC 60958
Dolby Digital ..... IEC 60958, IEC 61937

MAIN UNIT

Power Supply.....…….....….....220 - 240 V~50Hz
Standby power consumption.....<1W
Power Consumption .....50 W
Dimensions ..... 360 x 48 x 332 (mm)
.....(w x h x d)
Weight .....2.64 kg

SPEAKERS

System ..... Full range satellite
Speaker impedance .....8 ohm(centre),4 ohm(Front/Rear)
Speaker drivers ..... .3” full range speaker
Frequency response .....150 Hz – 20 kHz
Dimensions:
-Center…….....100 x 100x 75 (mm)
-Front/Rear..…….. 100 x 100x 75 (mm)
.....(w x h x d)
Weight:
-Center……...…..…0.38kg
-Front/Rear…….....…….0.38 kg/each

USB

Compatibility ..... USB
Class support ..... UMS(USB Mass storage Class)
File system.....FAT12,FAT16,FAT32

SUBWOOFER

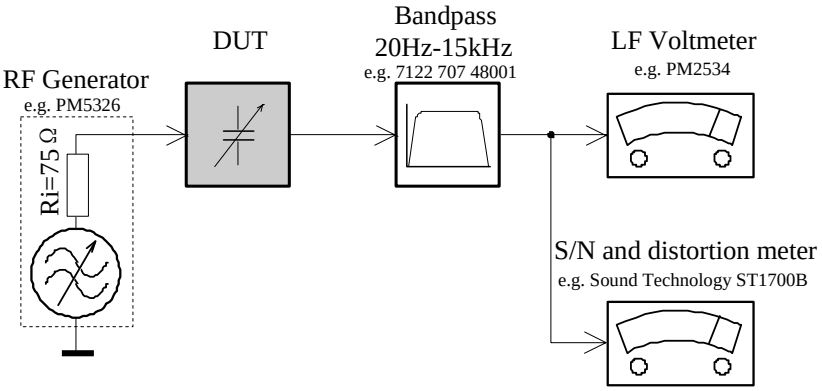
Impedance .....8 ohm
Speaker drivers ..... 165mm (6.5”) woofer
Frequency response .....45Hz – 150 Hz
Dimensions .....122.6x 309.5 x 369 (mm)
.....(w x h x d)
Weight 3.54kg

Laser specification

Type.....Semiconductor laser GaAlAs(CD)
Wave length..... 645-665nm (DVD) 770-800nm(CD)
Output power .....6Mw(DVD) 7Mw(VCD/CD)
Beam divergence..... 60 degrees

MEASUREMENT SETUP

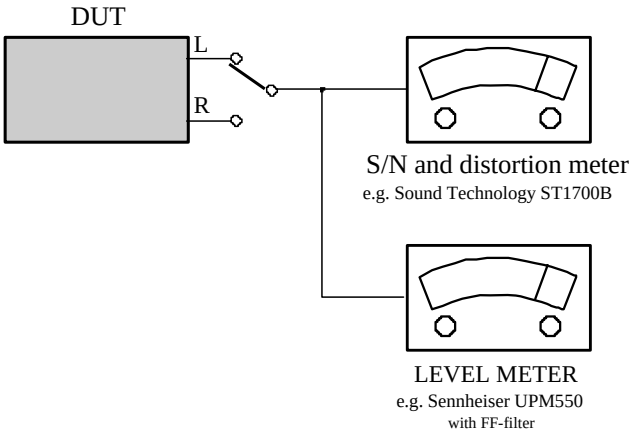
Tuner FM



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

CD

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



System , Region Code , etc. Setting Produre

1)System Reset

a) Press “SETUP“ button on RC,TV will show setup menu
b) Select the menu using the▼ and ► on RC
c) Go preference page to do system reset

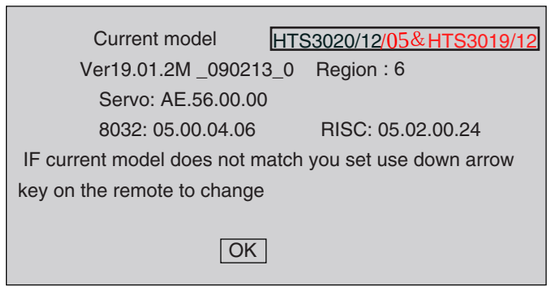
2)Region Code Change

a) In open model, press”9” “9“ “9“ “9“ on R/C,then input desired number to change region code :

1	USA
2	EU
3	AP
4	Australia ,NZ , Latam
5	Russia , INDIA
6	CHINA

3)Version Control Change

a) In open model, press “1“ “5“ “9“ on RC
b) Press ► and select version you want using ▼
c) Press ► and “ok” button to confirm
d) TV will show message as below:



4)Password Change

a) Press “SETUP“ button on R/C,TV will show setup menu
b) Select the menu using the▼ and ► on RC
c) Go preference page select “password“ to change
* 136900 is default password supplied.

5)Check on the Sofeware Version

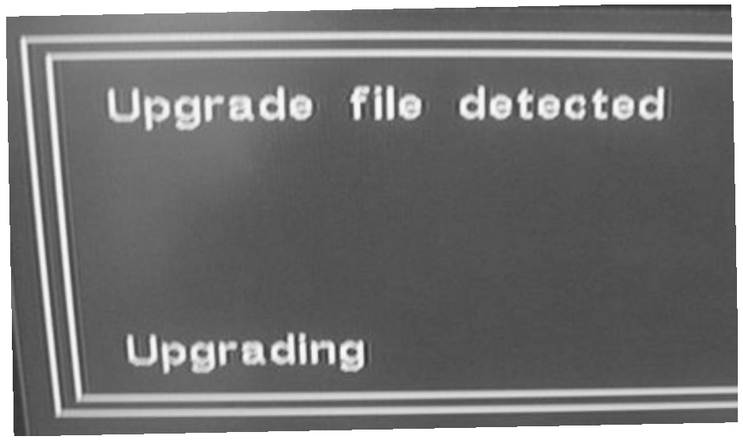
a) Press “SETUP“ button on R/C,TV will show setup menu
b) Select the menu using the▼ and ► on RC
c) Go preference page select “Version Info“.
TV will show the version on screen.

6)Trade model

a) Press “Open/Close “ button on RC
b) Press “2” “5” “9” on R/C,VFD will display “TRA ON “ or “TRA OFF“

7) Upgrading new sofeware

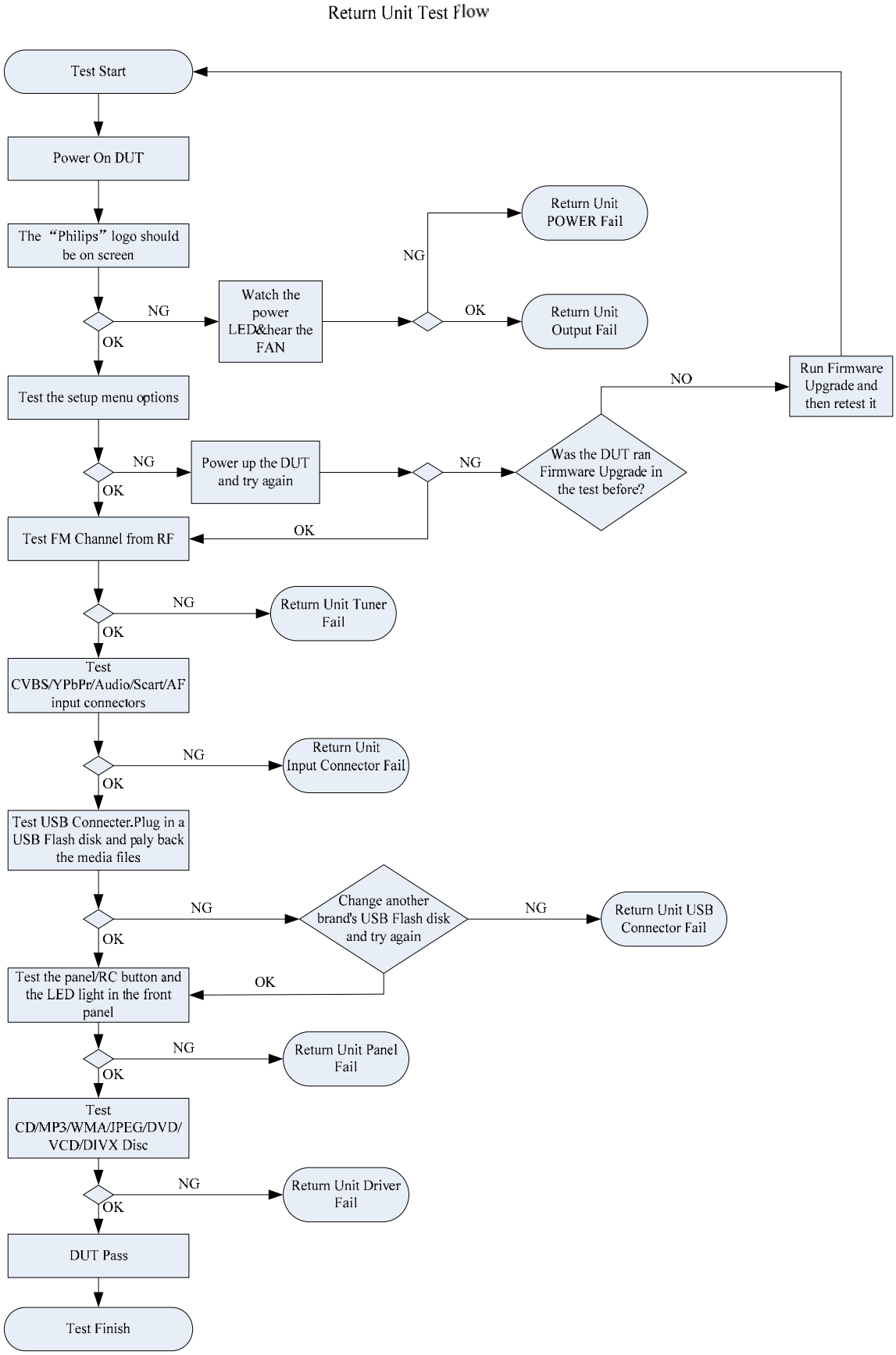
a) Copy “sofeware files” into a CD-R or USB flash drive.
b) Insert the CD-R disc or USB flash drive.
c) Press DISC or USB, the system will identify the update file autometically.
d) VFD will show “Updating“ until update is complete.
* the system will switch off to standby automatically after update is complete.
e) OSD will show:



CAUTION!

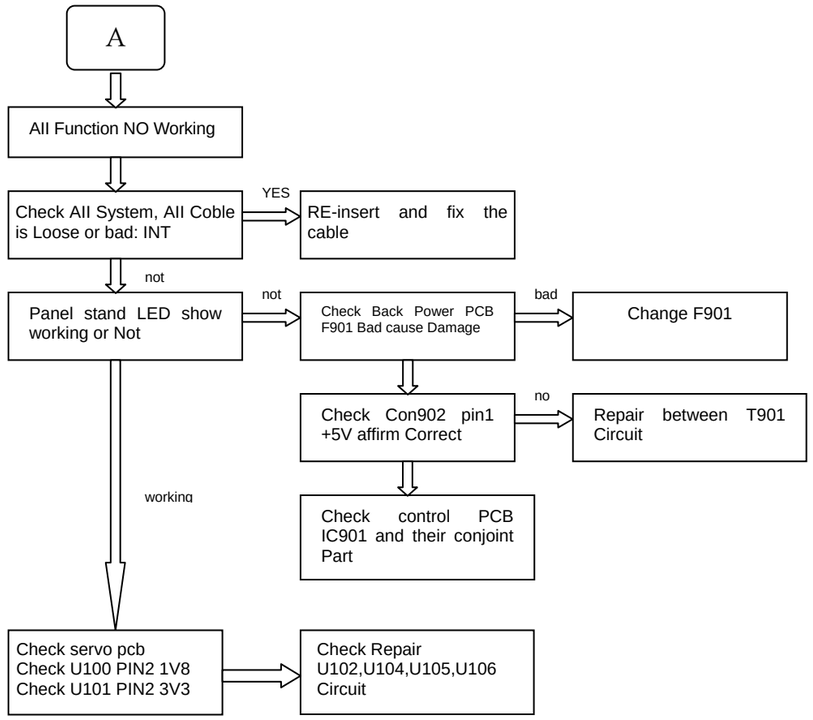
This information is confidential and may not be distributed.Only a qualified service person should reprogram the Region Code.

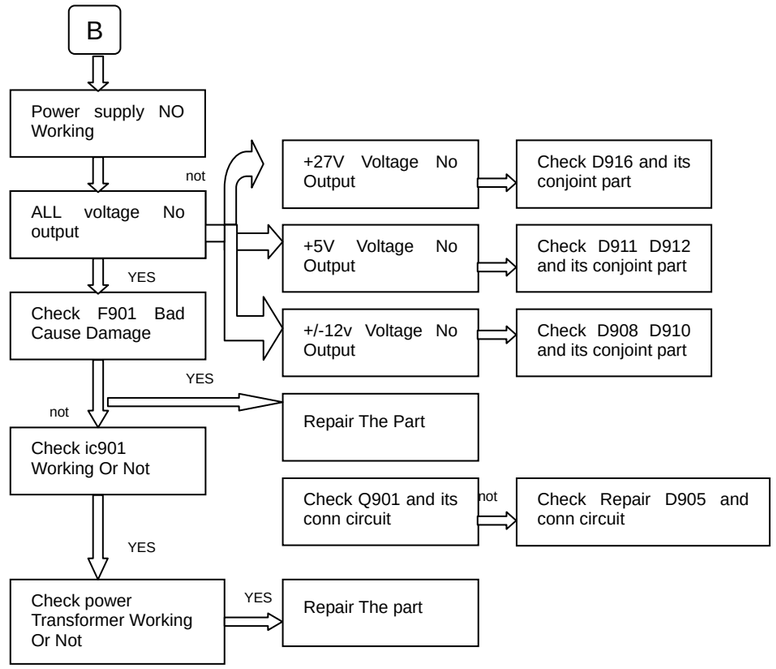
Flow chart on how to filter between working &defective sets

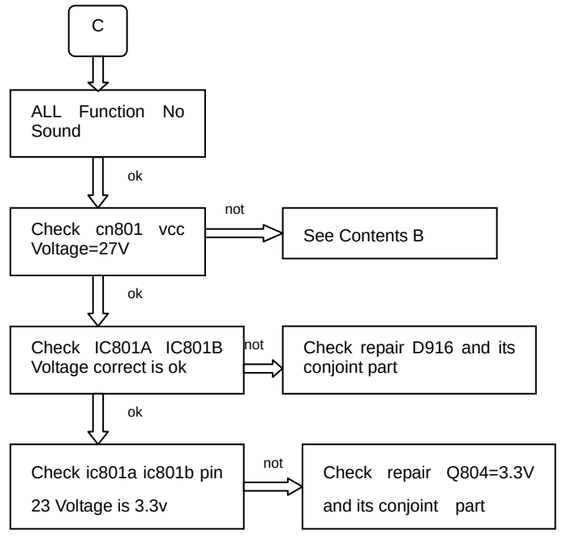


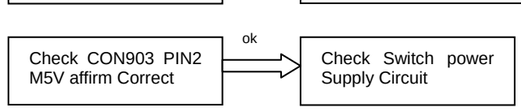
MAIN UNIT REPAIR CHART

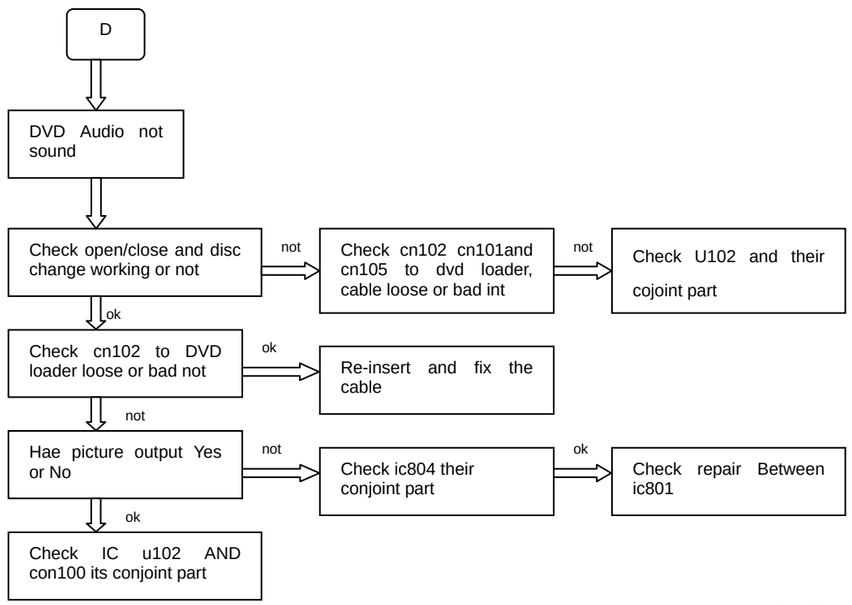
- A — AII Function NO Working
- B — Power supply NO working
- C — ALL Function NO Sound
- D — DVD Audio NO Sound
- E — Aux/TV in NO Sound
- F — Tuner NO Sound

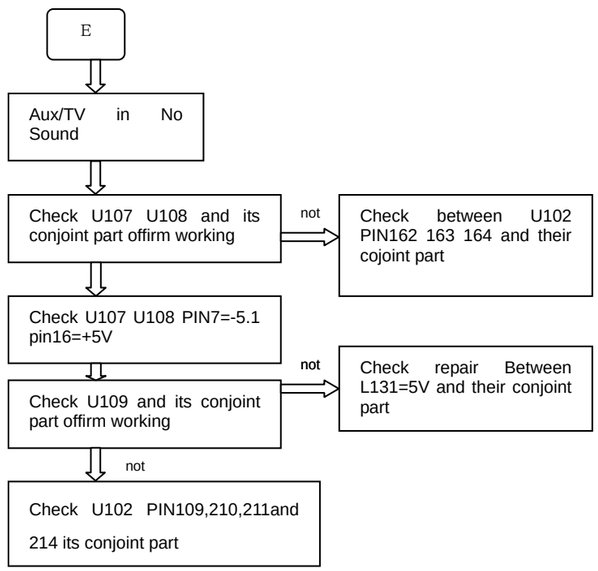


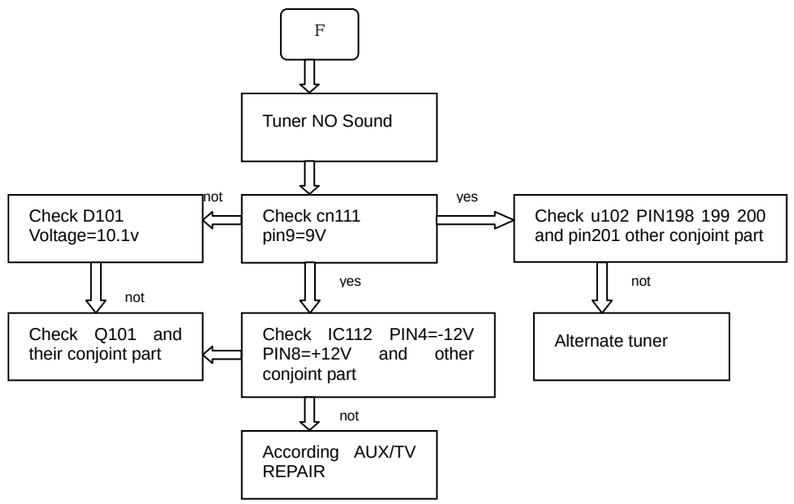








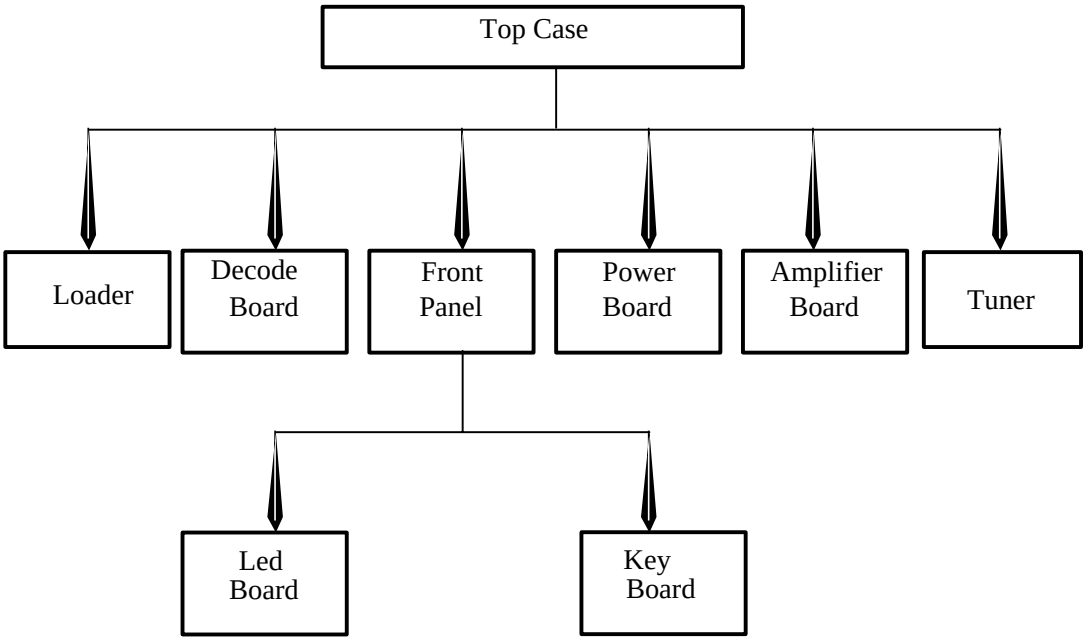




DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Dismantling of top case

2-1. Ensure no disc in the tray and keep tray close, turn off the DVD player and then disconnect the mains supply. Loosen 6 screws“A” as shown in figure 2-1.

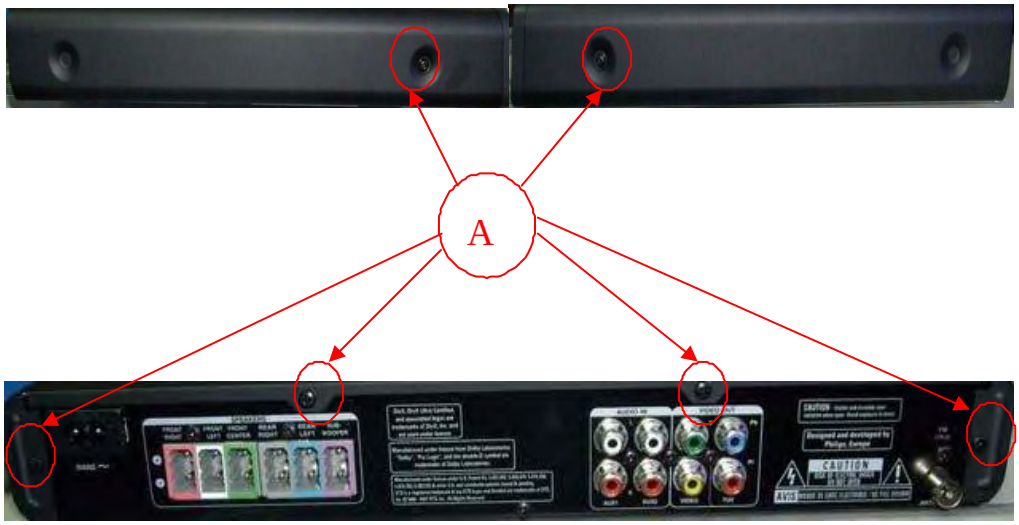


Figure 2-1.

2-2. Take off the top case as shown in figure 2-2.

Figure 2-2.

3. Dismantling of led+key board

3-1. Loosen 4 screws “B” as shown in figure 3-1.

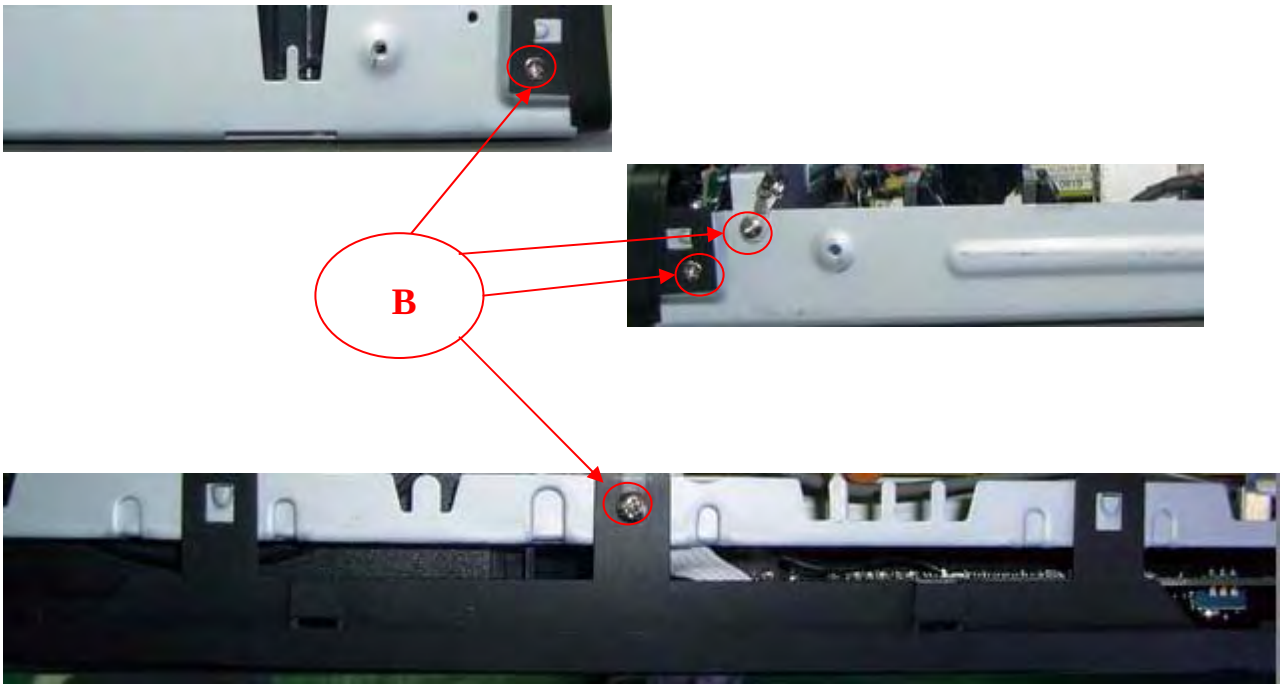


Figure 3-1

3-2. Release the lock “C” at the same time as shown figure 3-2.

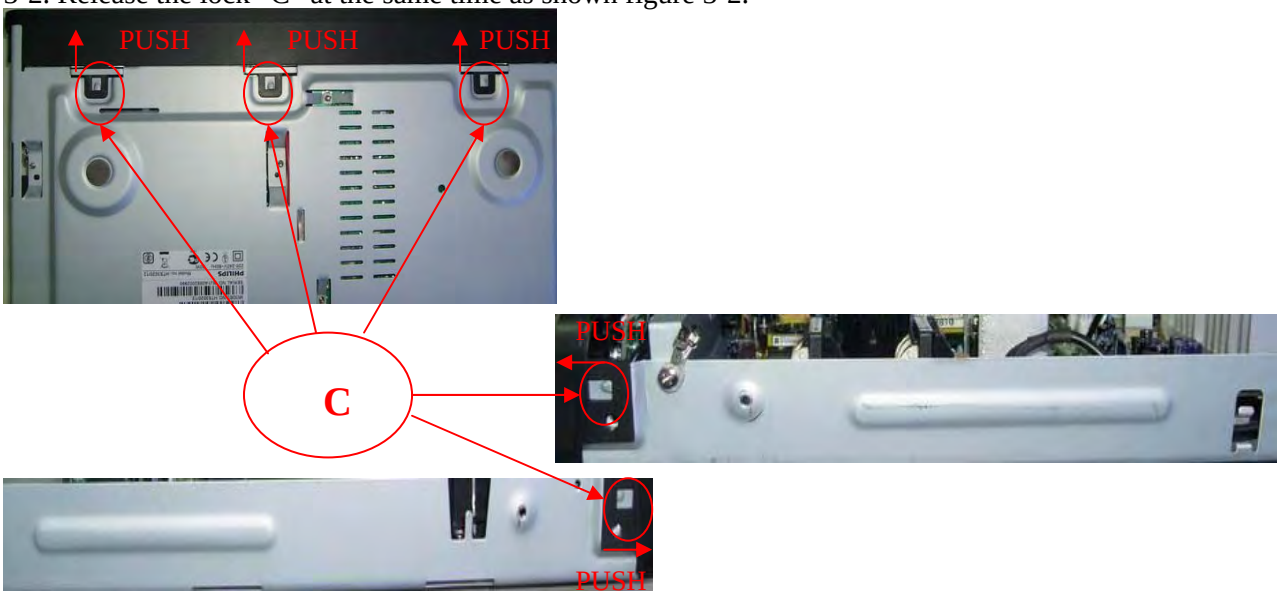


Figure 3-2

3-3. Loosen 5 screws “D” as shown in figure 3-3.

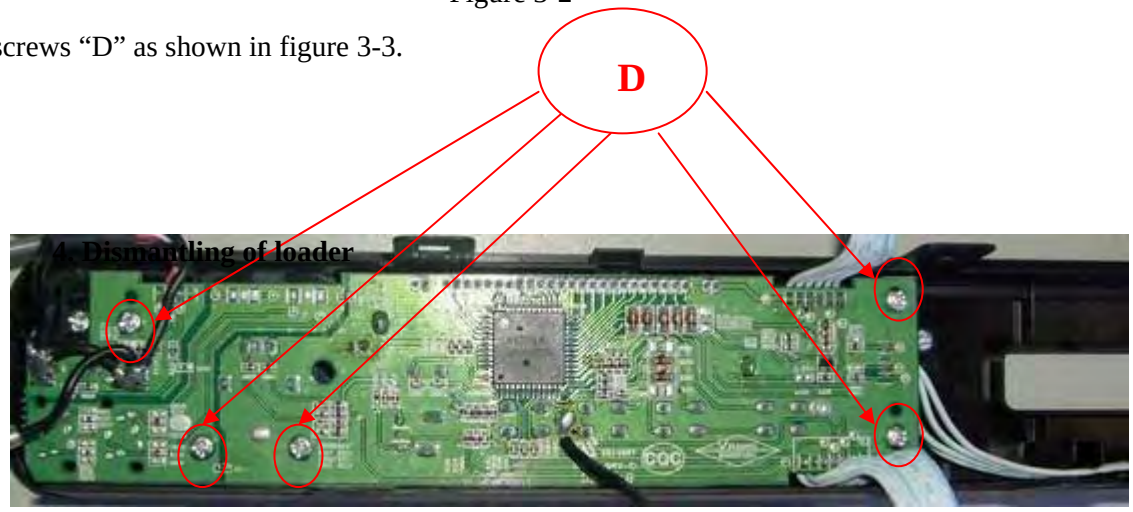


Figure 3- 3

4-1. Loosen 4 screws “E” as shown in figure 4-1.

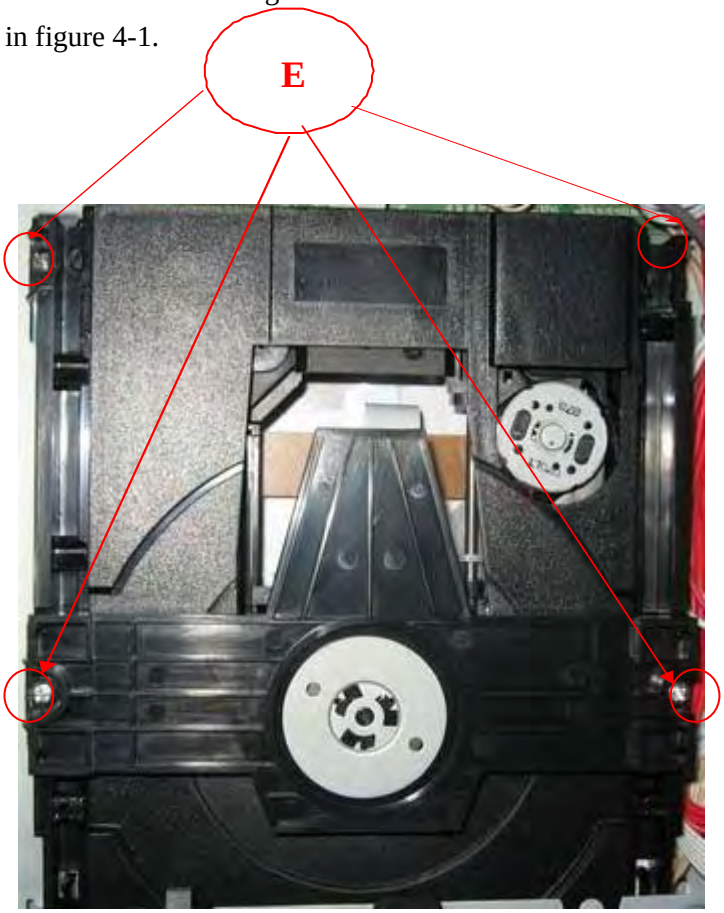


Figure 4-1

5. Dismantling of decode board

5-1. Loosen 4 screws as shown in figure 5-1.

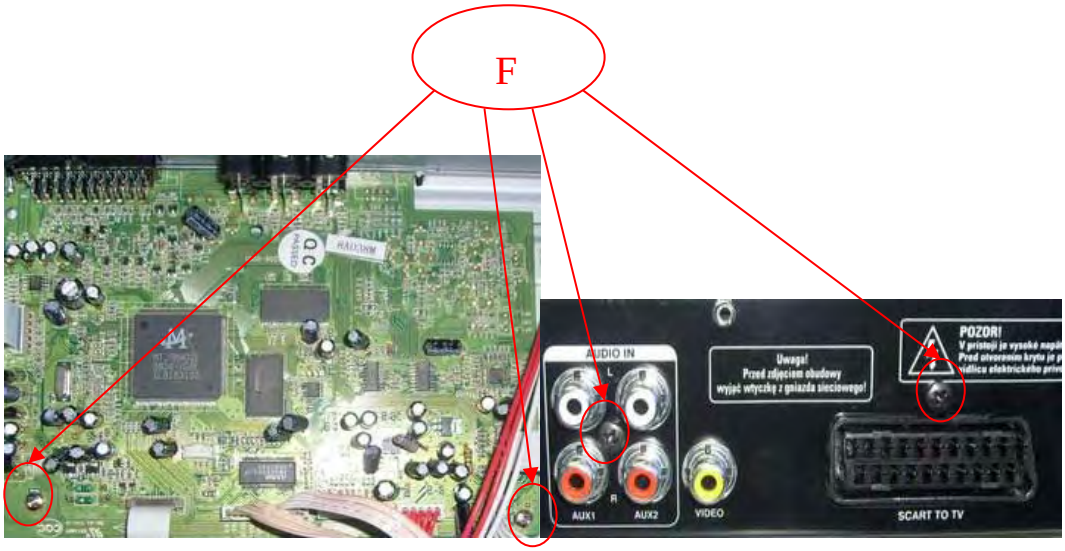


Figure 5-1

6. Dismantling of power board

6-1. Loosen 4 screws “G” as shown in figure 6-1.

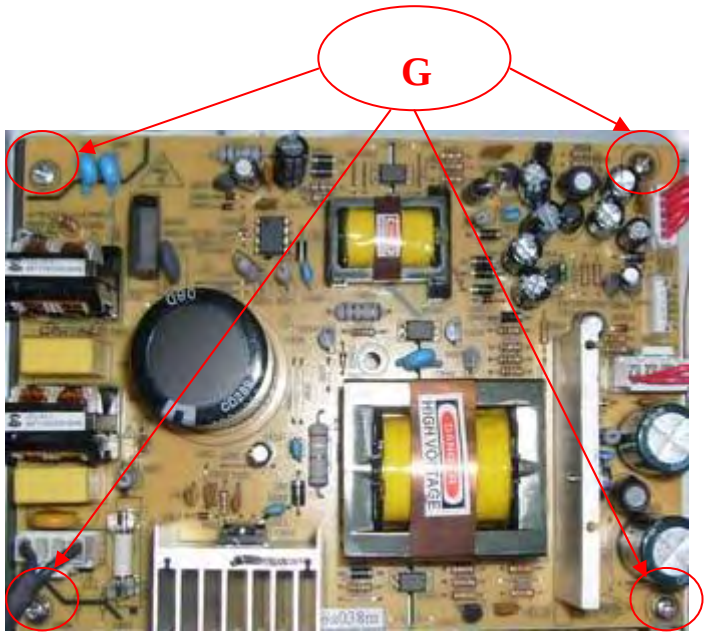


Figure 6-1

7. Dismantling of amplifier board

7-1. Loosen 4 screw “H” as shown in figure 7-1

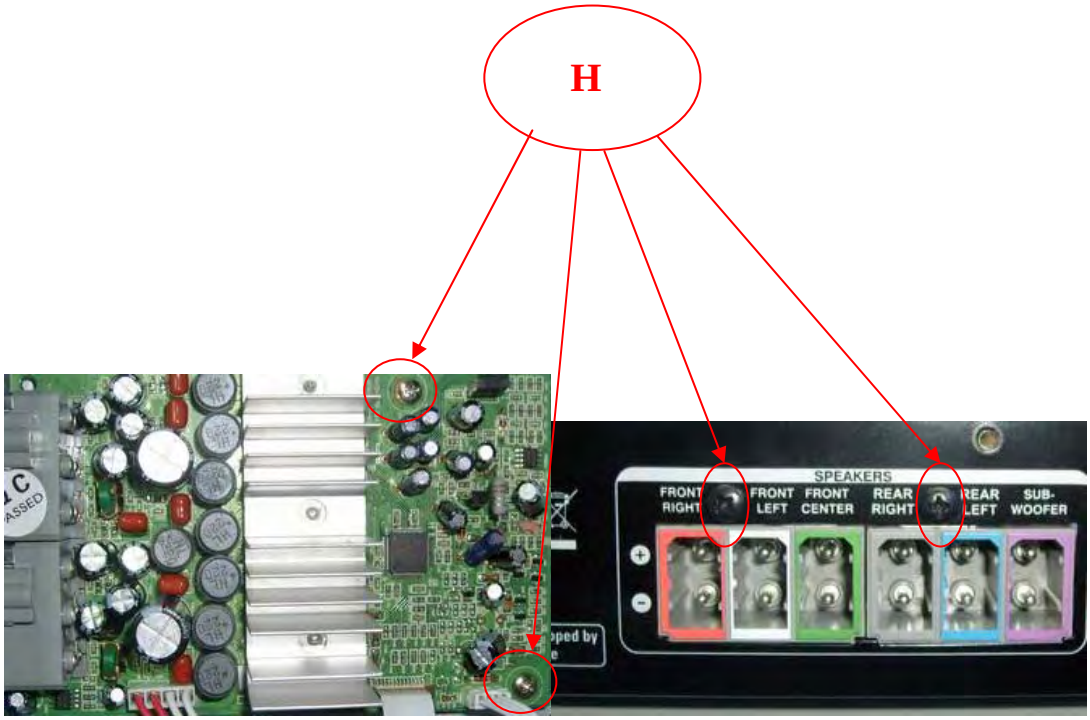


Figure 7-1.

8. Dismantling of tuner

8-1. Loosen 1 screws “I” as shown in figure 8-1.

Figure 8-1.

9. Dismantling of Led board

9-1. Loosen 2 screws “J” as shown in figure 9-1.

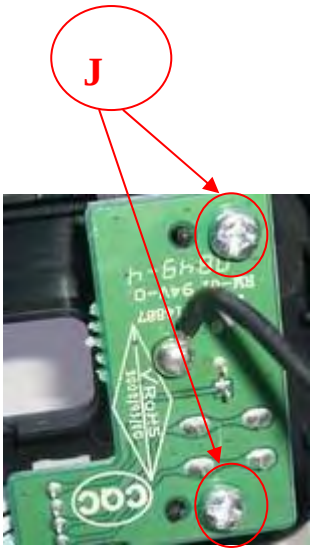
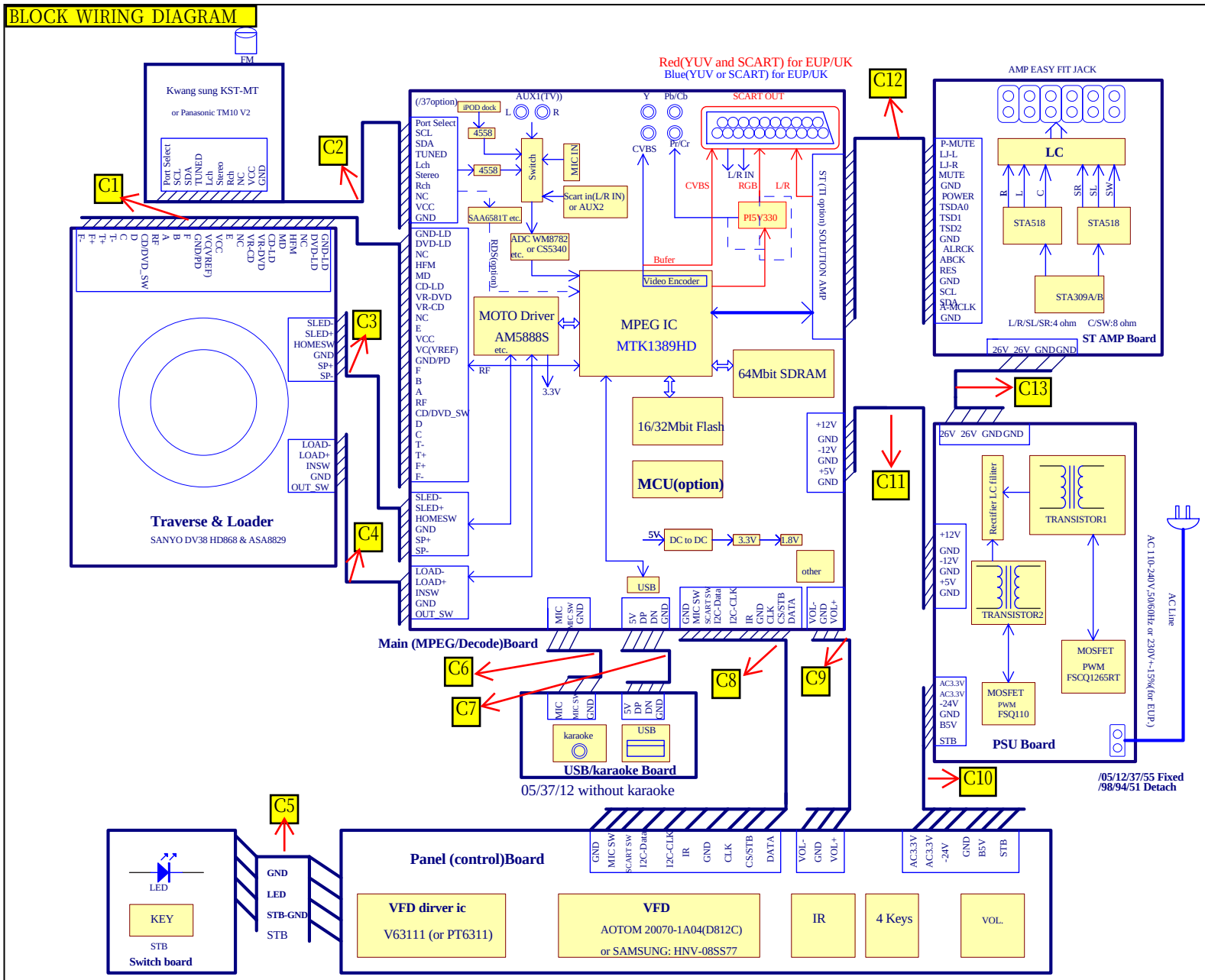


Figure 9-1.

BLOCK WIRING DIAGRAM



AMPLIFIER BOARD

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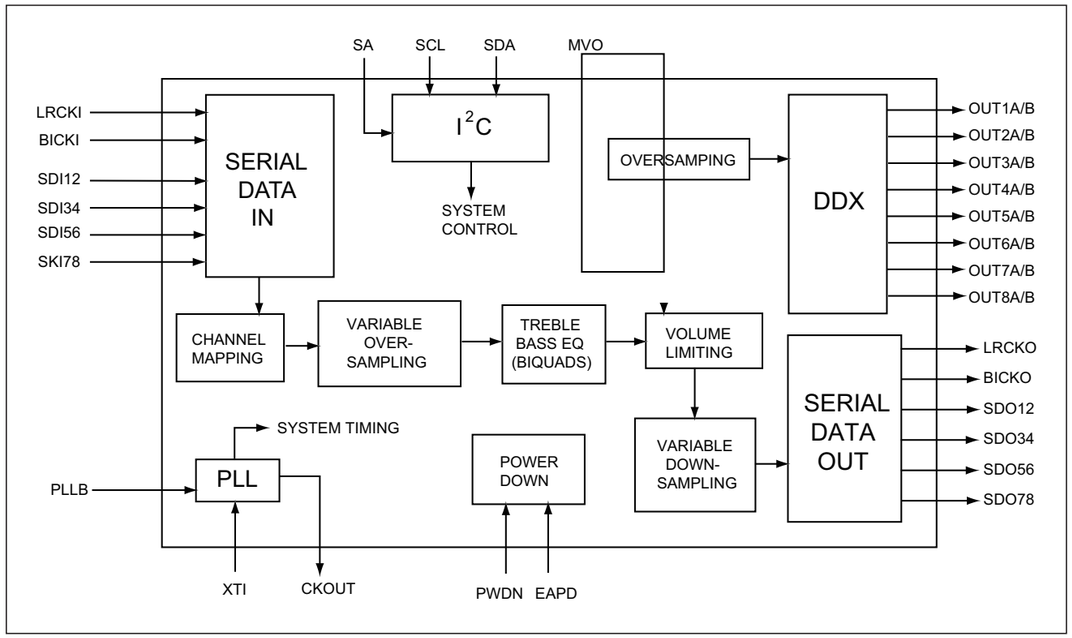
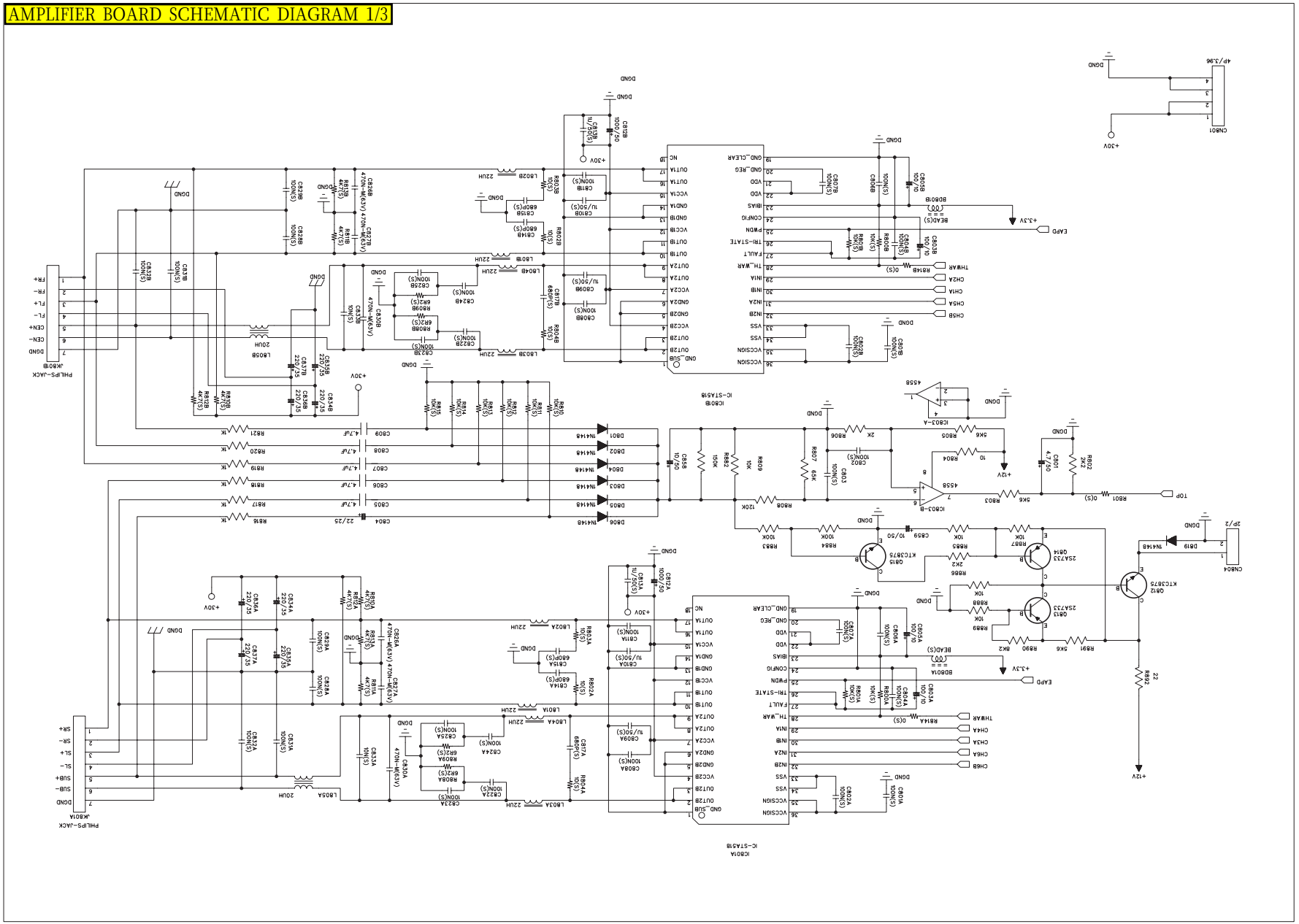
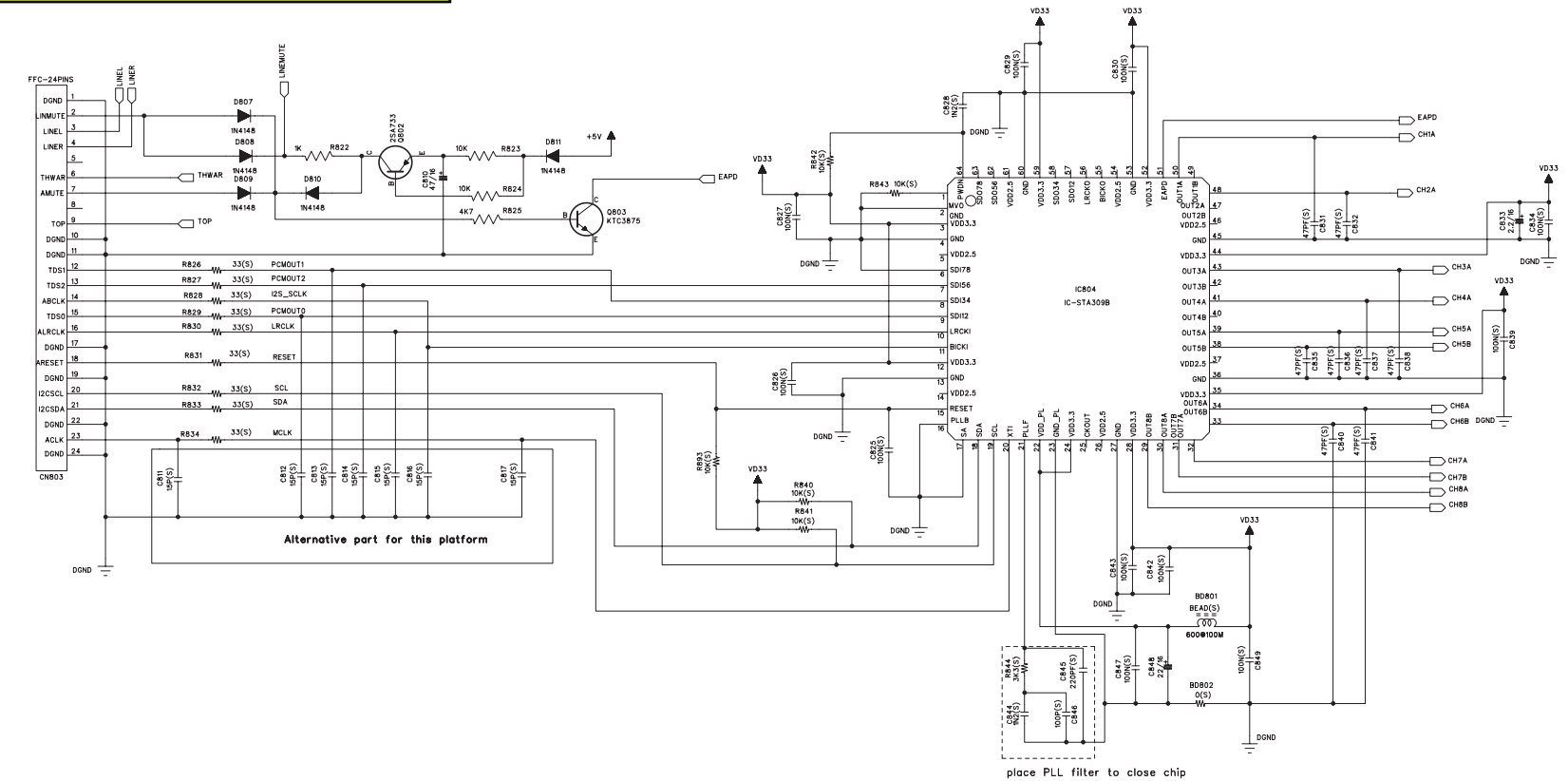
INTERNAL IC DIAGRAM - STA309A

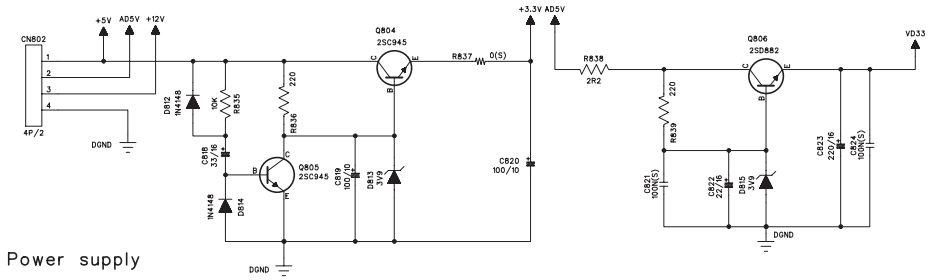


AMPLIFIER BOARD SCHEMATIC DIAGRAM 1/3



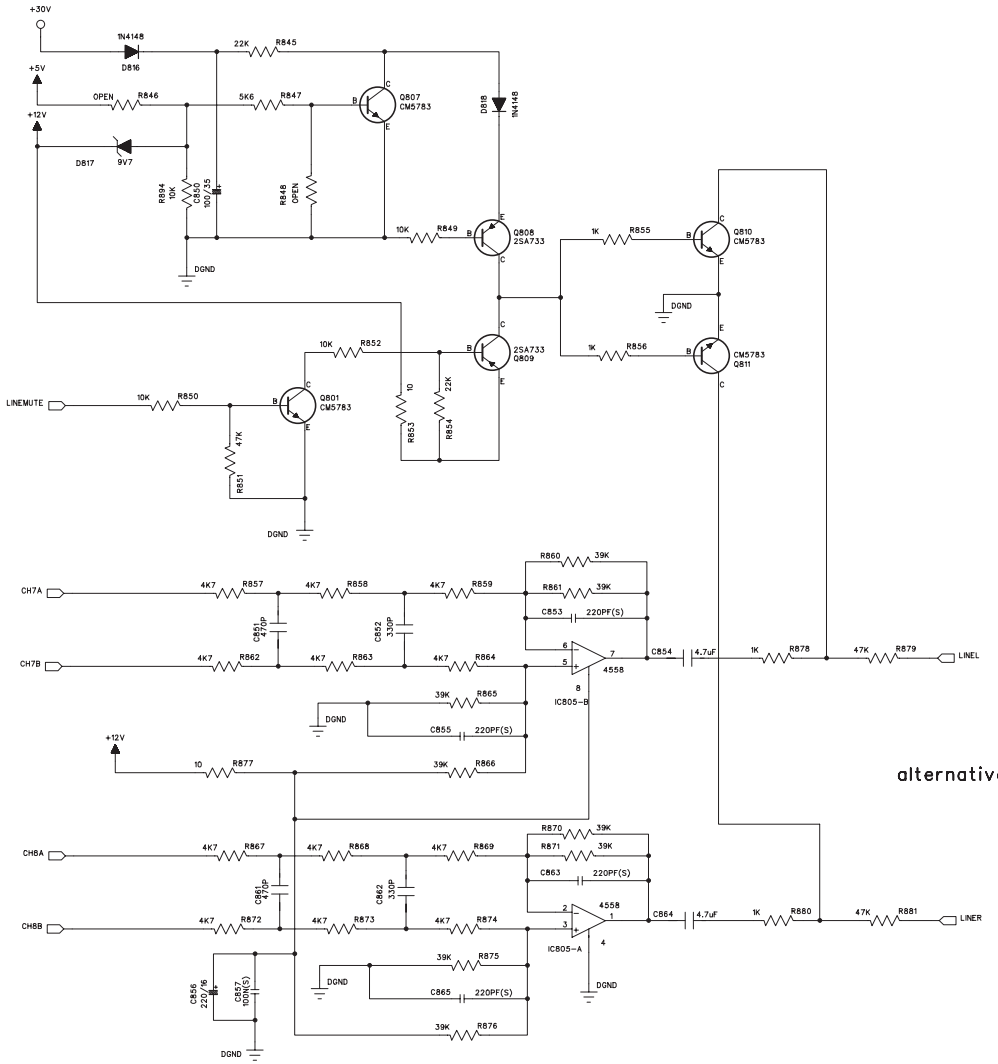
AMPLIFIER BOARD SCHEMATIC DIAGRAM 2/3





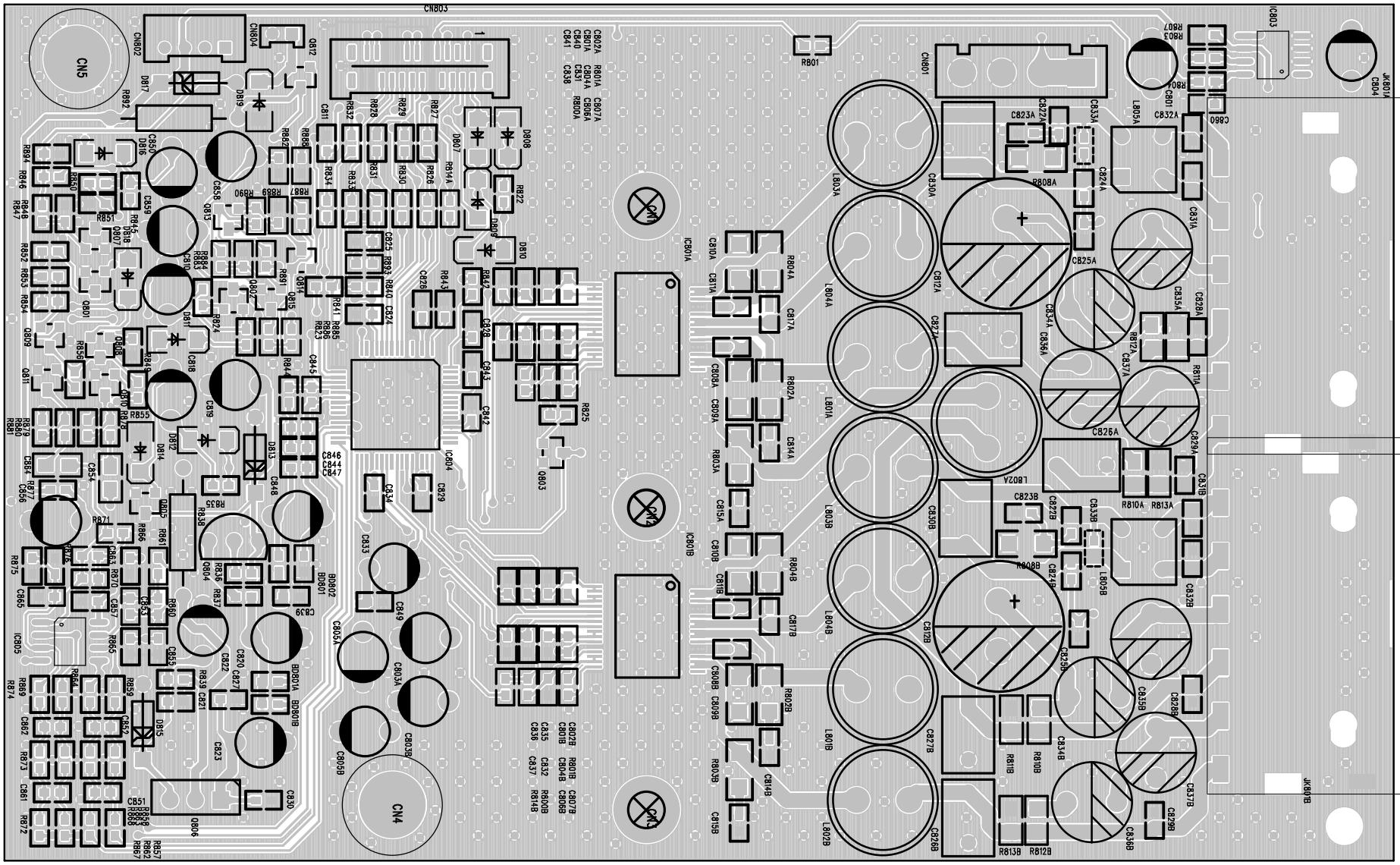
Power supply

AMPLIFIER BOARD SCHEMATIC DIAGRAM 3/3

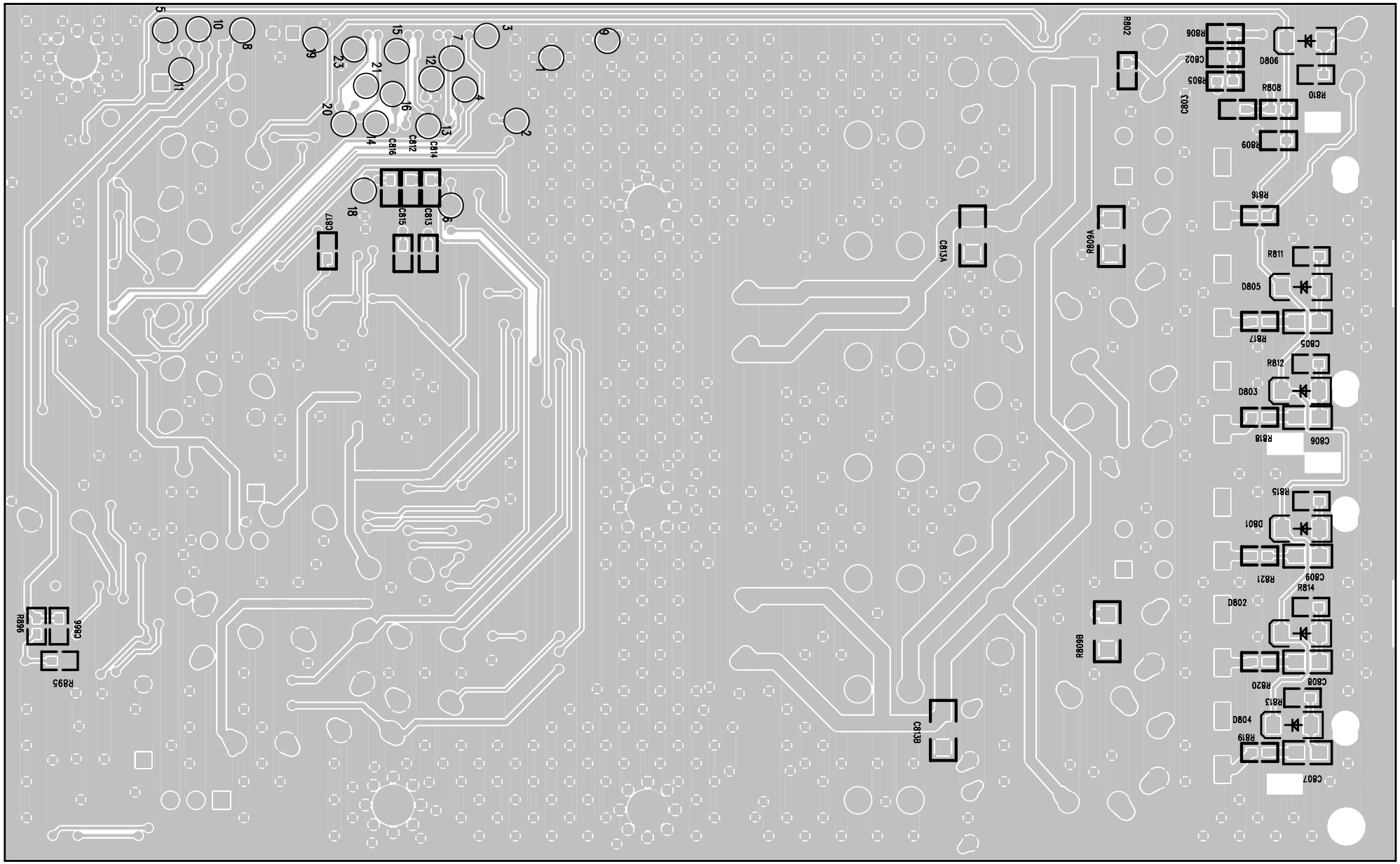


alternative part for this platform

AMPLIFIER BOARD TOP VIEW



AMPLIFIER BOARD BOTTOM VIEW



LED & KEY BOARD

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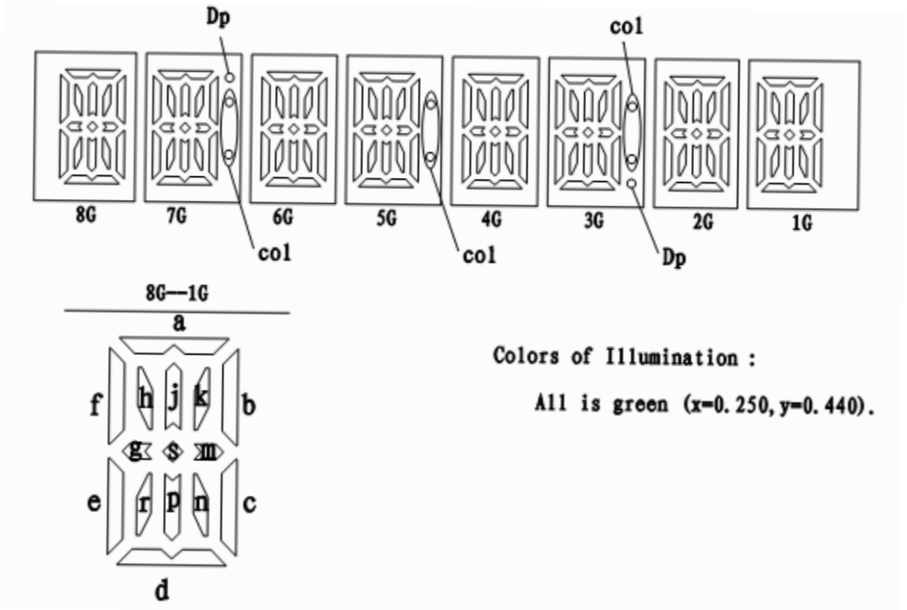
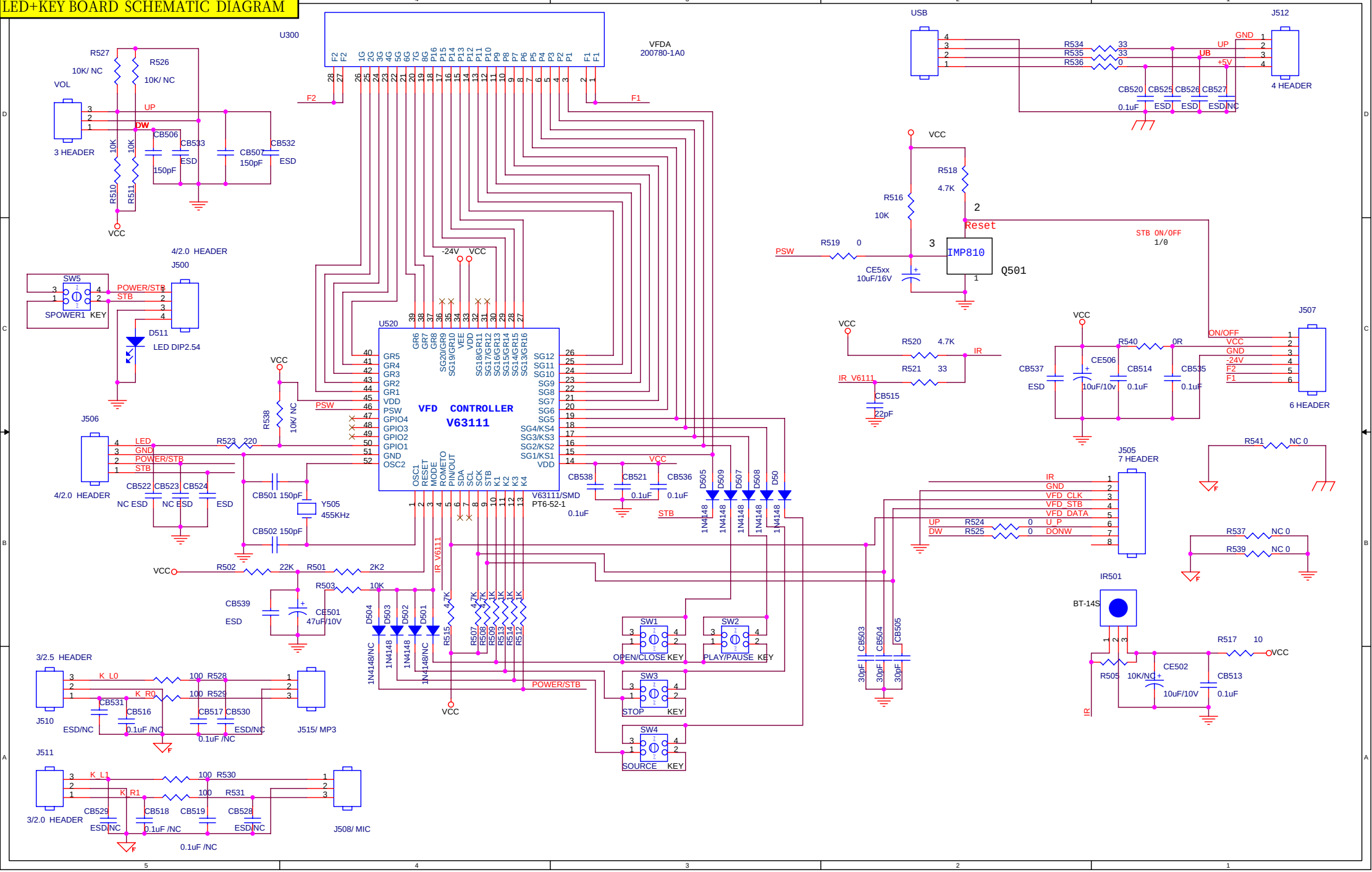
FTD DISPLAY PIN ASSIGNMENT

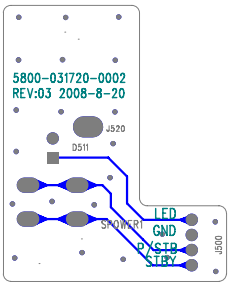


	8G	7G	6G	5G	4G	3G	2G	1G
P1	a	a	a	a	a	a	a	a
P2	j, p	j, p	j, p	j, p	j, p	j, p	j, p	j, p
P3	h	h	h	h	h	h	h	h
P4	k	k	k	k	k	k	k	k
P5	b	b	b	b	b	b	b	b
P6	f	f	f	f	f	f	f	f
P7	m	m	m	m	m	m	m	m
P8	g	g	g	g	g	g	g	g
P9	c	c	c	c	c	c	c	c
P10	e	e	e	e	e	e	e	e
P11	r	r	r	r	r	r	r	r
P12	n	n	n	n	n	n	n	n
P13	d	d	d	d	d	d	d	d
P14		Dp		col		col		
P15	s	s	s	s	s	s	s	s
P16		col				Dp		

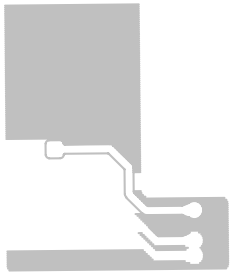
LED+KEY BOARD SCHEMATIC DIAGRAM



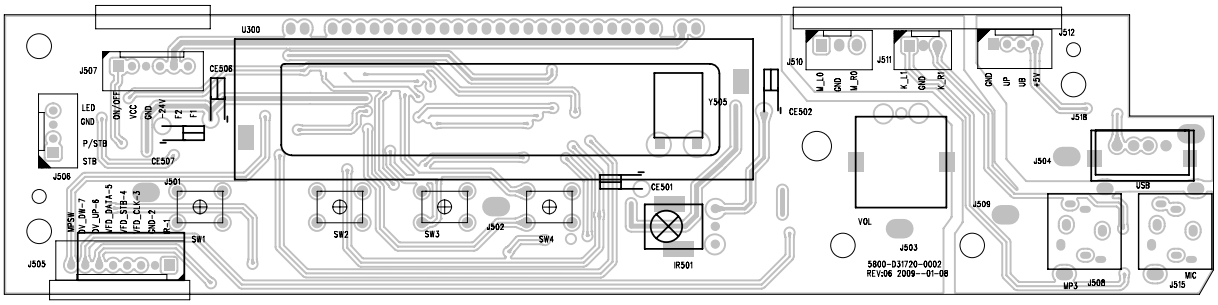
LED BOARD TOP VIEW



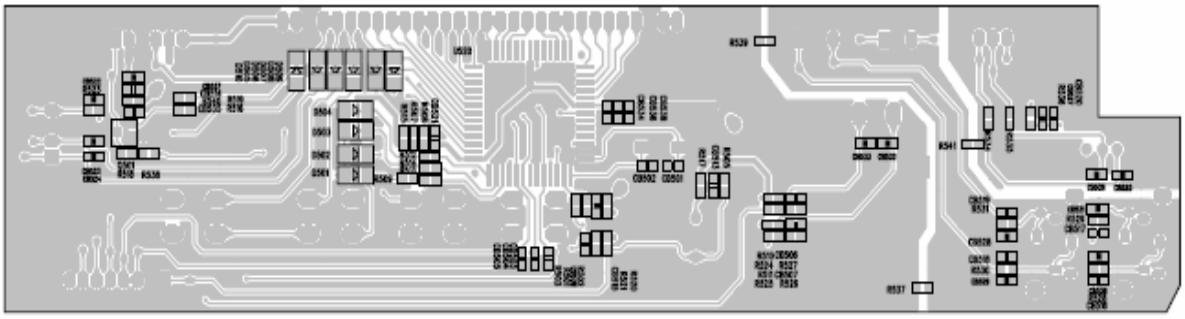
LED BOARD BOTTOM VIEW



KEY BOARD TOP VIEW



KEY BOARD BOTTOM VIEW



DECODE BOARD

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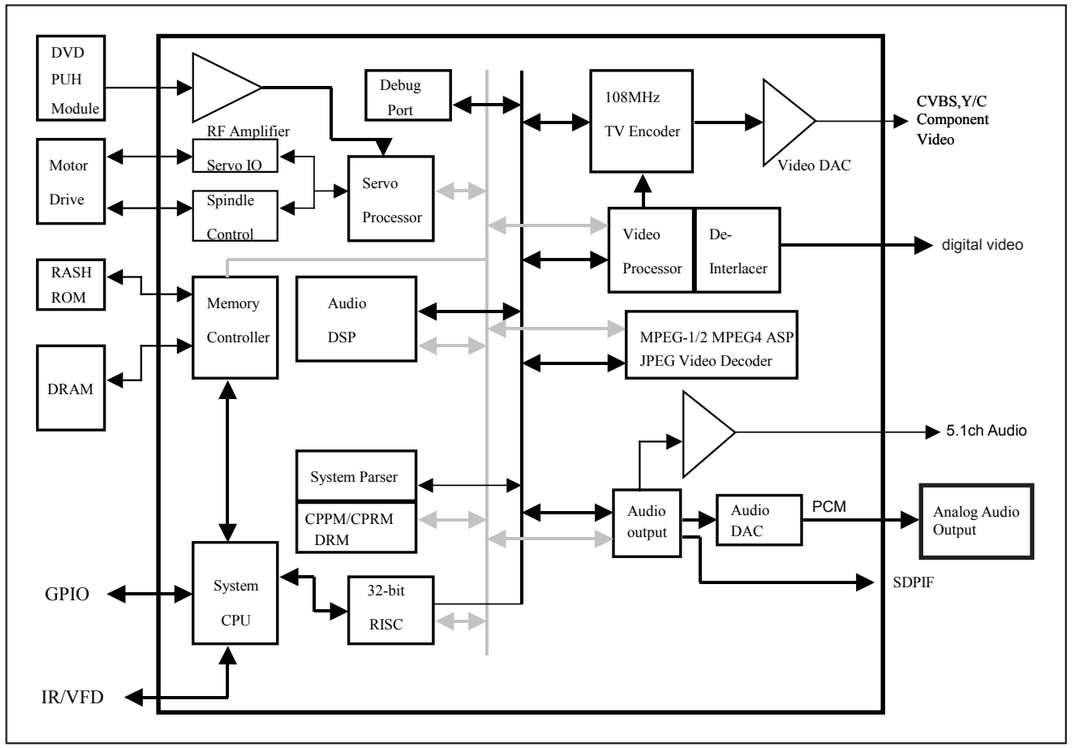
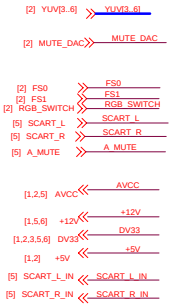
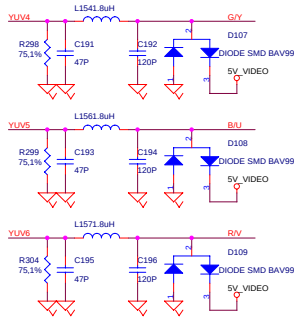
INTERNAL IC DIAGRAM - MT1389HD



DECODE BOARD SCHEMATIC DIAGRAM 1/6

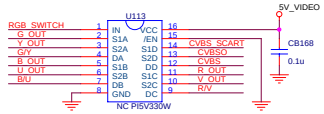


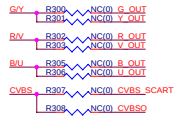


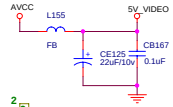
Low Impedance Mode

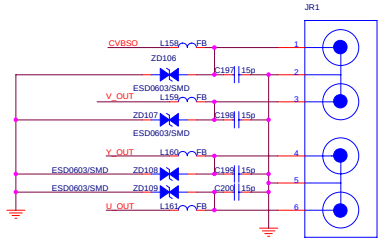
RGB_SWITCH: 0--->RGB, 1--->CVBS/YUV

RGB/YUV Switch	
IN	Dir
L	R,G,B
H	Y,U,V

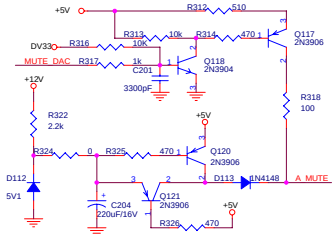




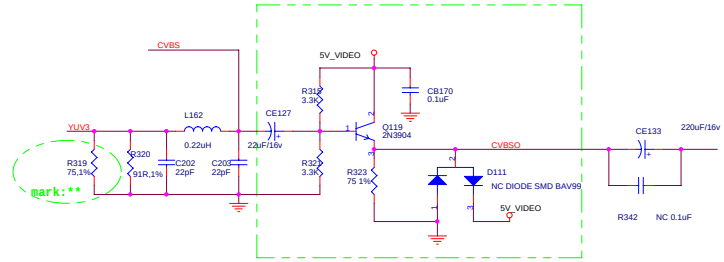




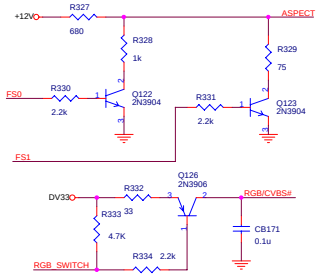
AV-RCA3.5



MUTE_Circuit

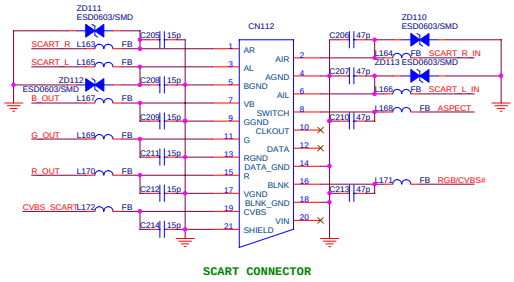


Only when both signal CVBSO & SCART_CVBS need output, then the parts mark "" will need to be added.**



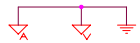
SCART CONTROL

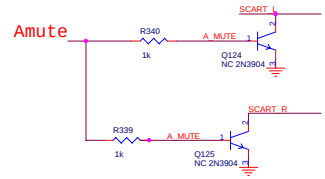
FS0	FS1	
PIN158	PIN157	MT1389
0	0	4:3 / USB
0	1	
1	0	16:9
1	1	STB / AUX IN / MP3 IN / SCART IN / FM IN



SCART CONNECTOR

RGB_SWITCH#: 1-3V RGB, 0-0.4V CVBS



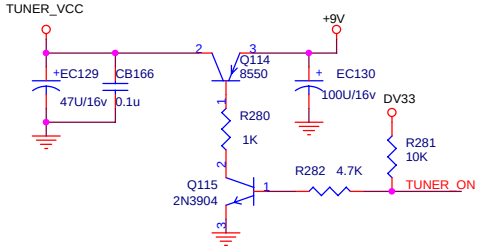


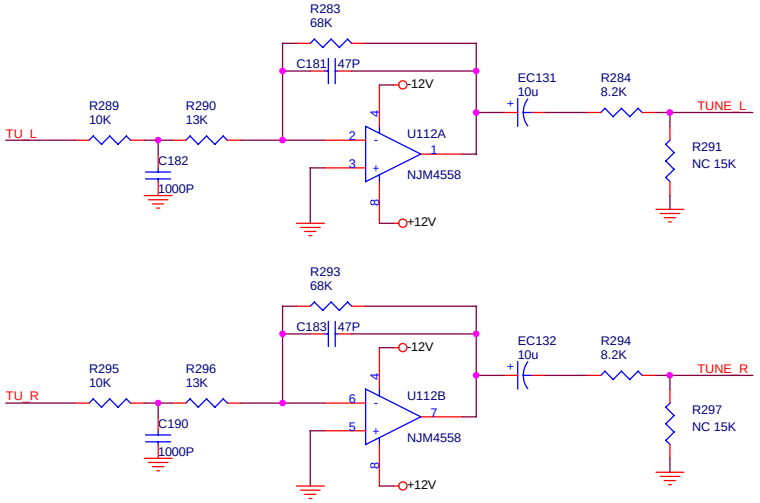
DECODE BOARD SCHEMATIC DIAGRAM 2/6

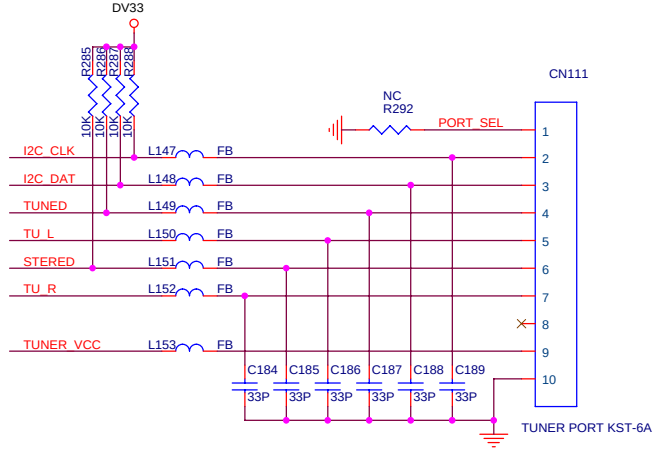
[2] TUNER_ON — TUNER_ON
[2] TUNED — TUNED
[2] STERED — STERED
[2] I2C_CLK — I2C_CLK
[2] I2C_DAT — I2C_DAT

TUNE_L — TUNE_L [5]
TUNE_R — TUNE_R [5]

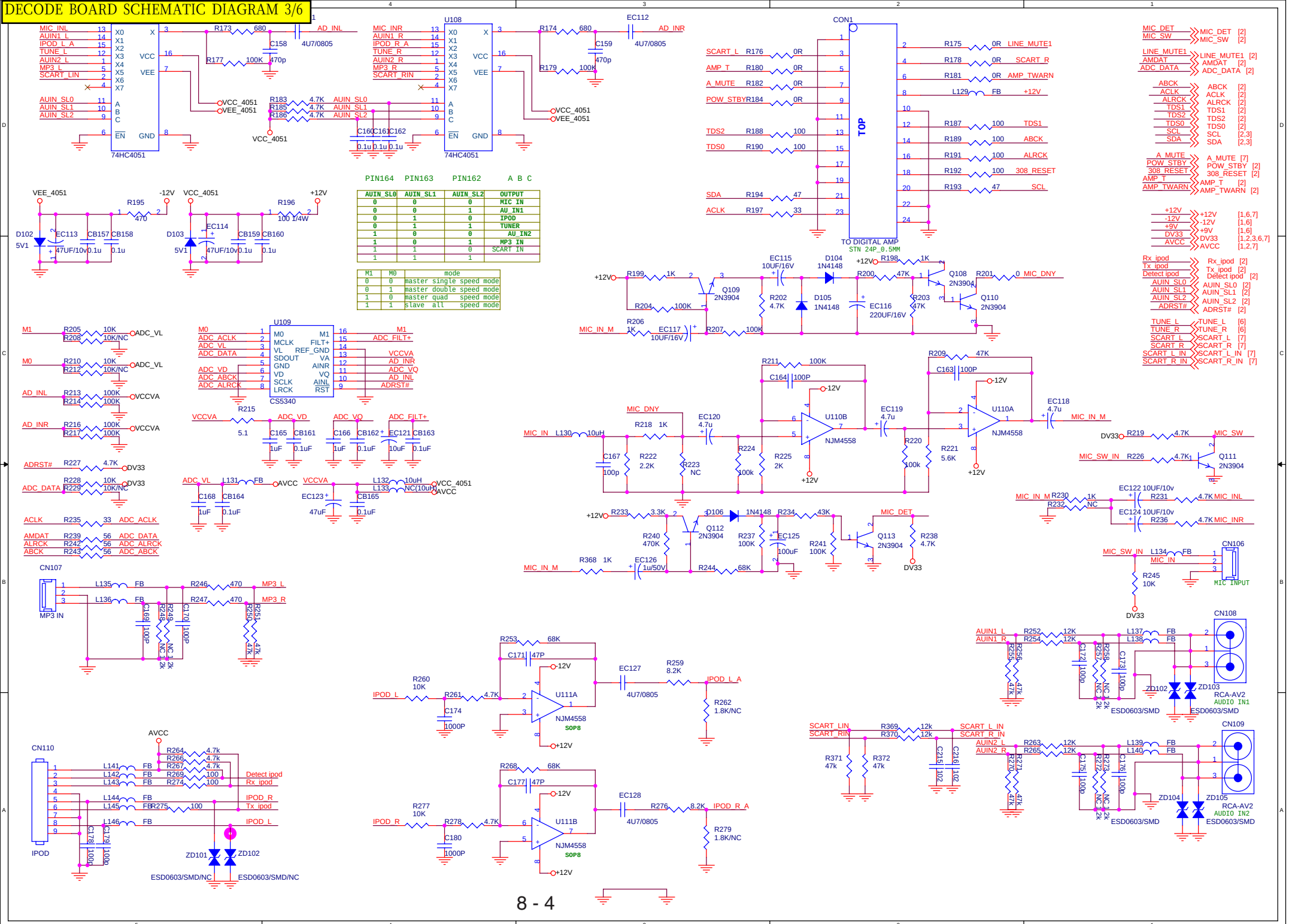
+9V — +9V [1]
DV33 — DV33 [1,2,3,5,7]
+12V — +12V [1,5,7]
-12V — -12V [1,5]



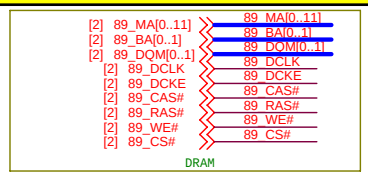


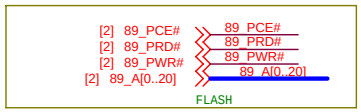


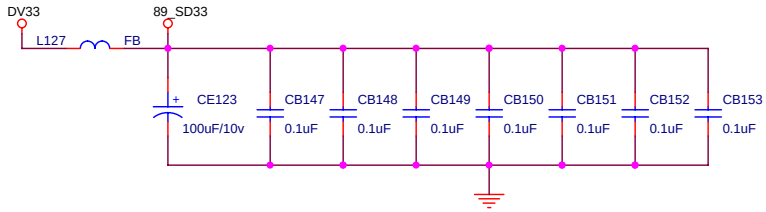
DECODE BOARD SCHEMATIC DIAGRAM 3/6

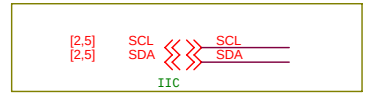


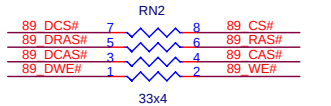
DECODE BOARD SCHEMATIC DIAGRAM 4/6

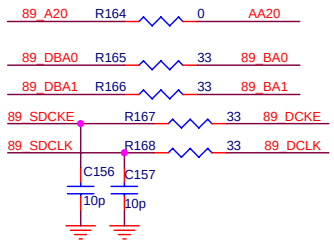


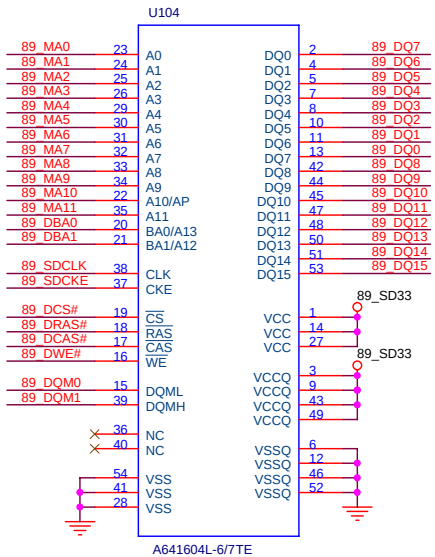


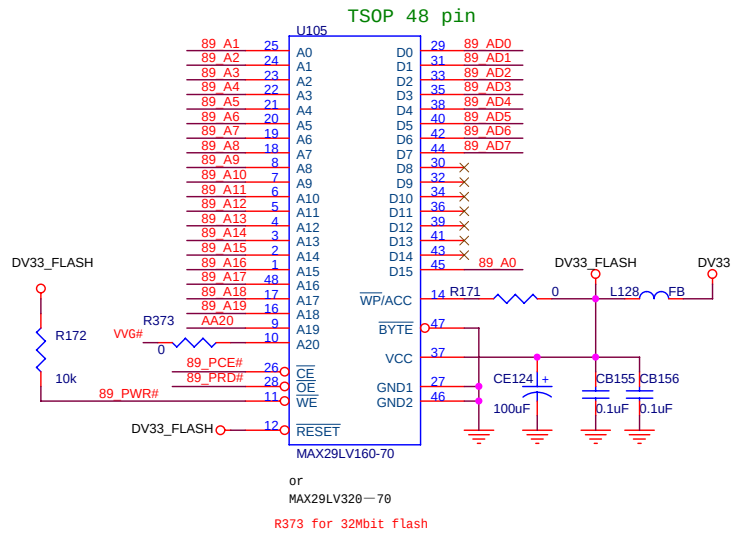


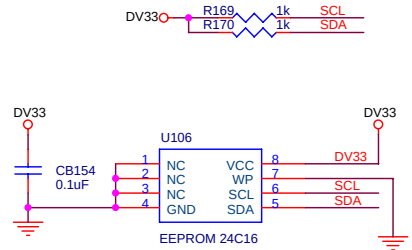












MT1389HD

Pin Assignment v1.0

U102

CE14/CE30/CE31 closed to IC's pin

SANYO DV38 SF-HD868

SONY313 : R142,R141=100
HD868 : R142,R141=0

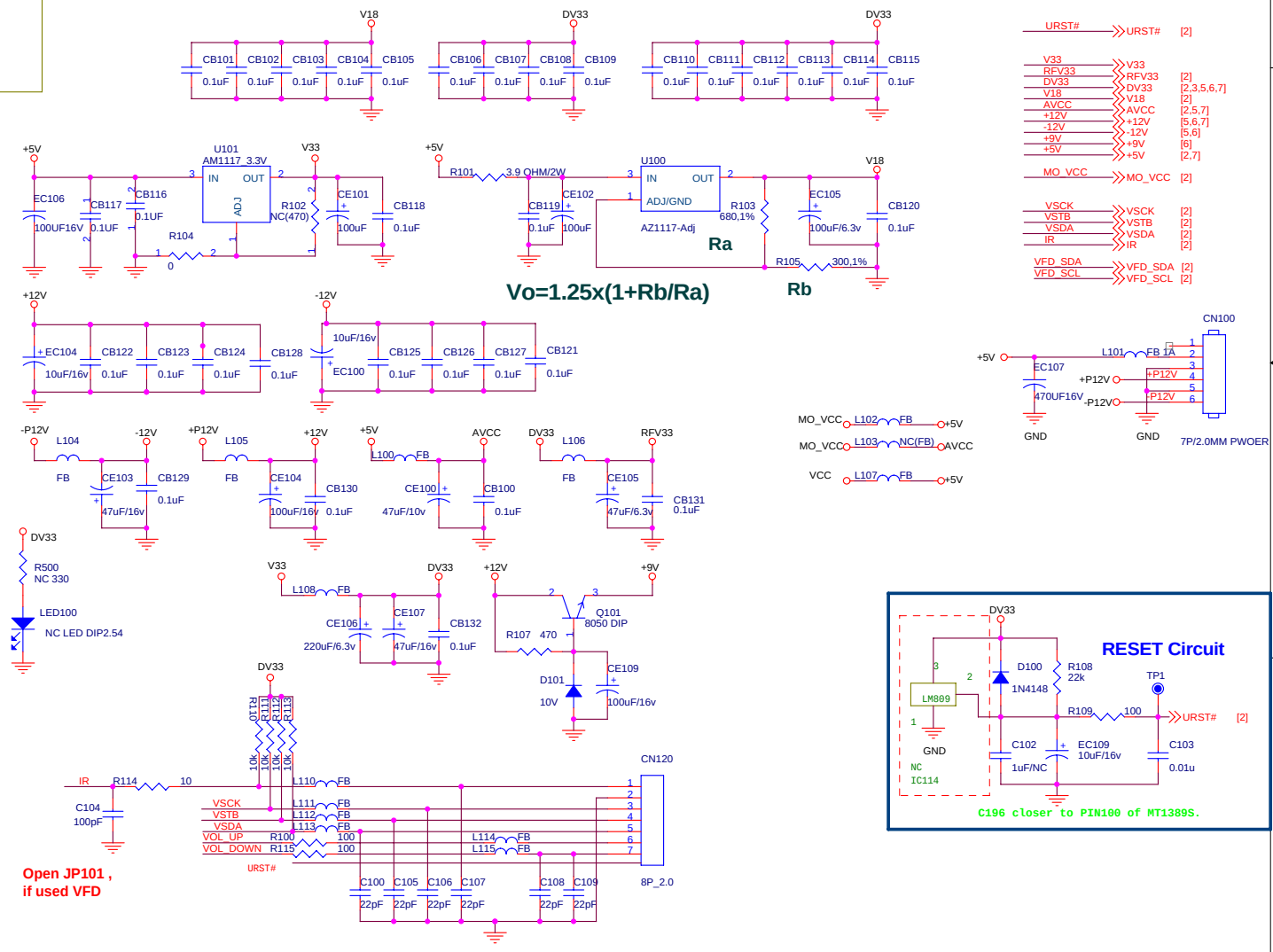
Very Important to reduce Noise

RS-232

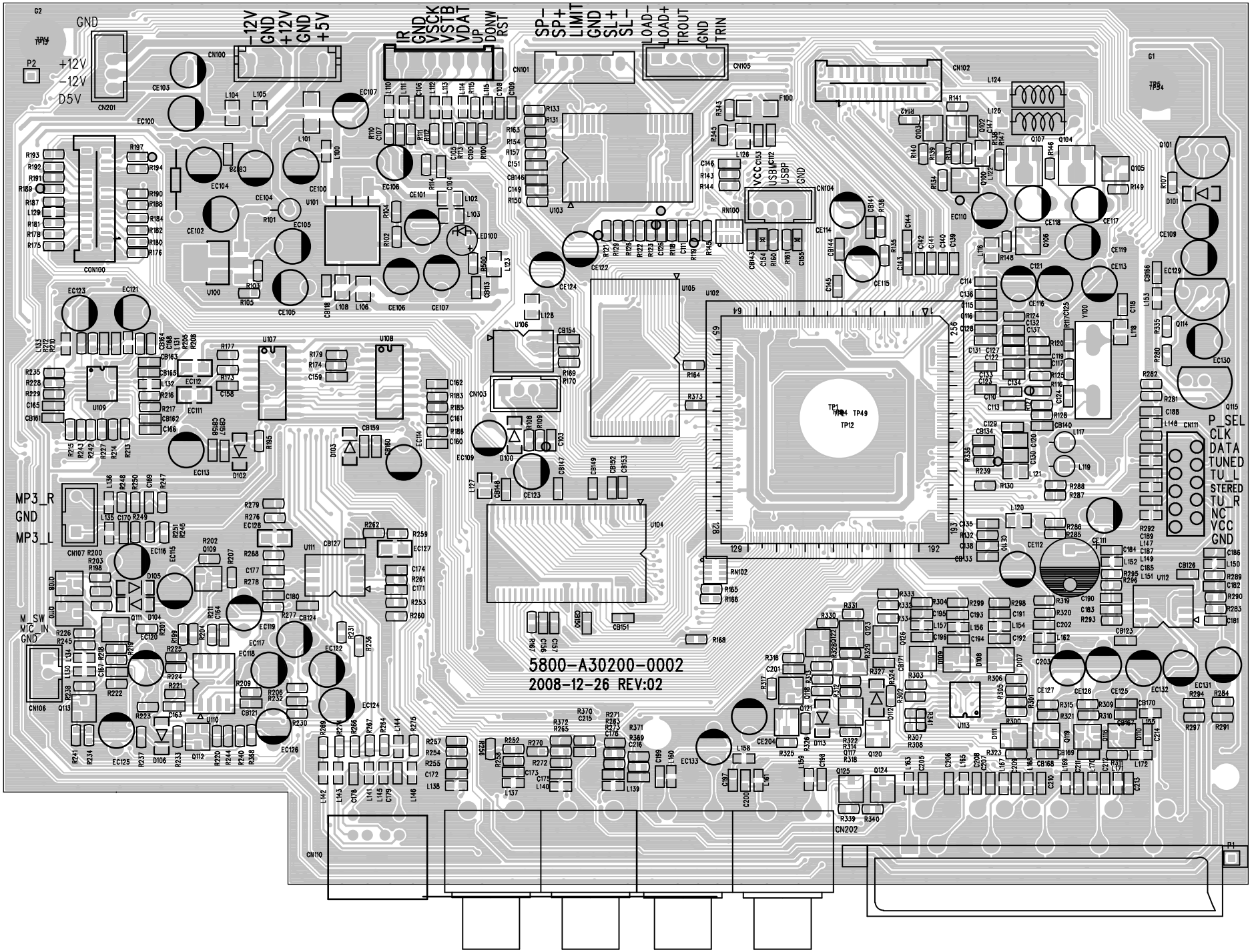
USB I/F

DECODE BOARD SCHEMATIC DIAGRAM 6/6

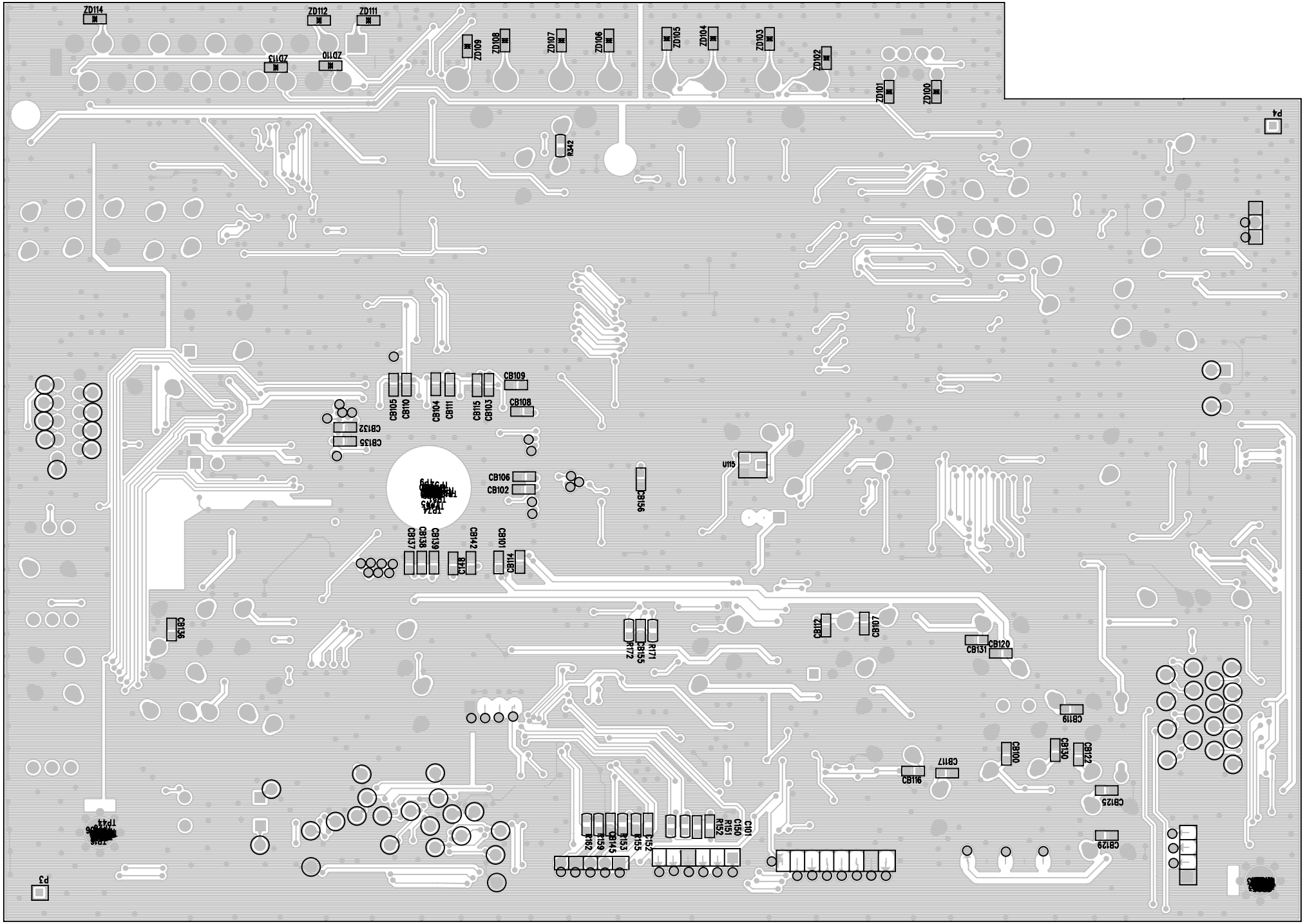
NAME	TYPE	DEVICE
VCC/+5V	Digital 5V	SUPPLY
DV33	Digital 3.3V	MT1389HD
RFV33	Servo 3.3V	MT1389HD
AV33	Laser Diode 3.3V	
V18	Digital 1.8V	MT1389HD
SD33	Digital 3.3V	SDRAM
+12V	Audio +12V	OP AMP.
-12V	Audio -12V	OP AMP.
AVDD5	Audio 5V	Audio DAC
DVDD3	Audio 3.3V	Audio DAC
MCU_3V3	Nxp Mcu 3.3V	MCU



DECODE BOARD TOP VIEW



DECODE BOARD BOTTOM VIEW



POWER BOARD

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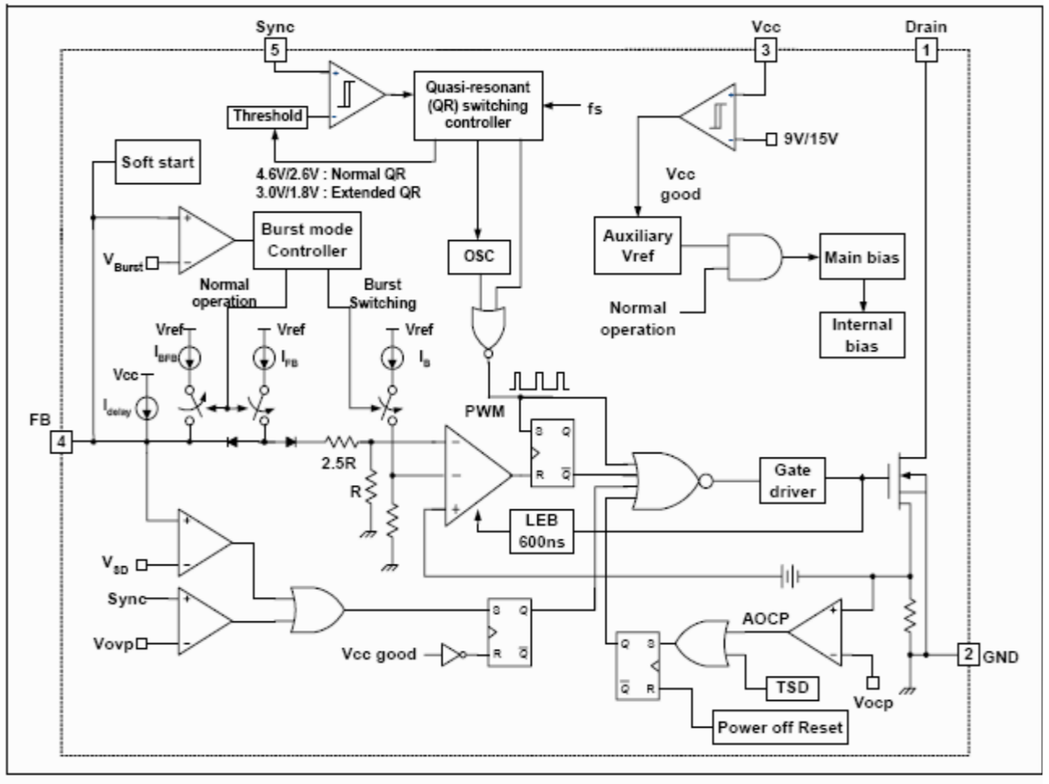
INTERNAL IC DIAGRAM - FSC1565RT



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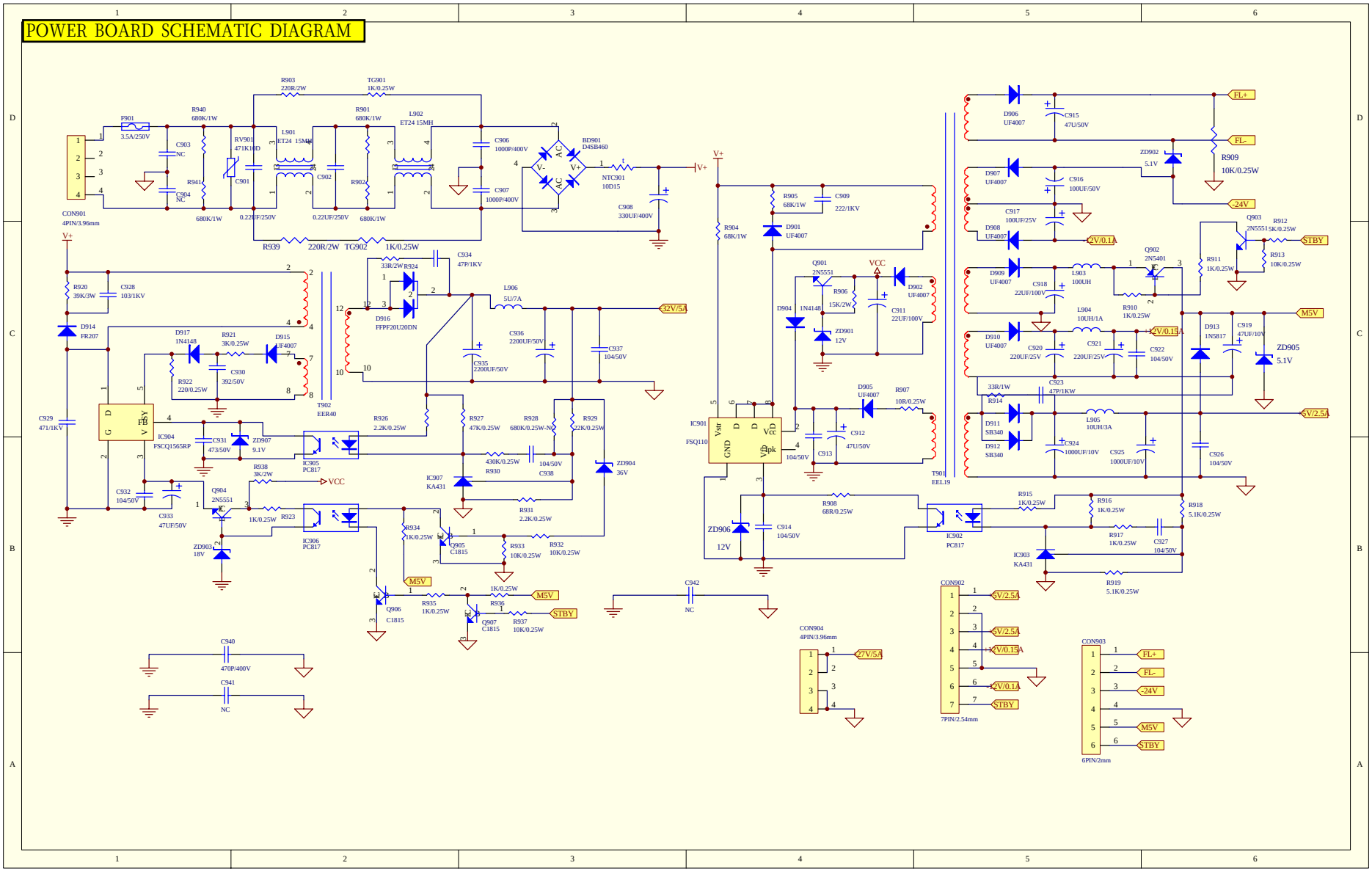
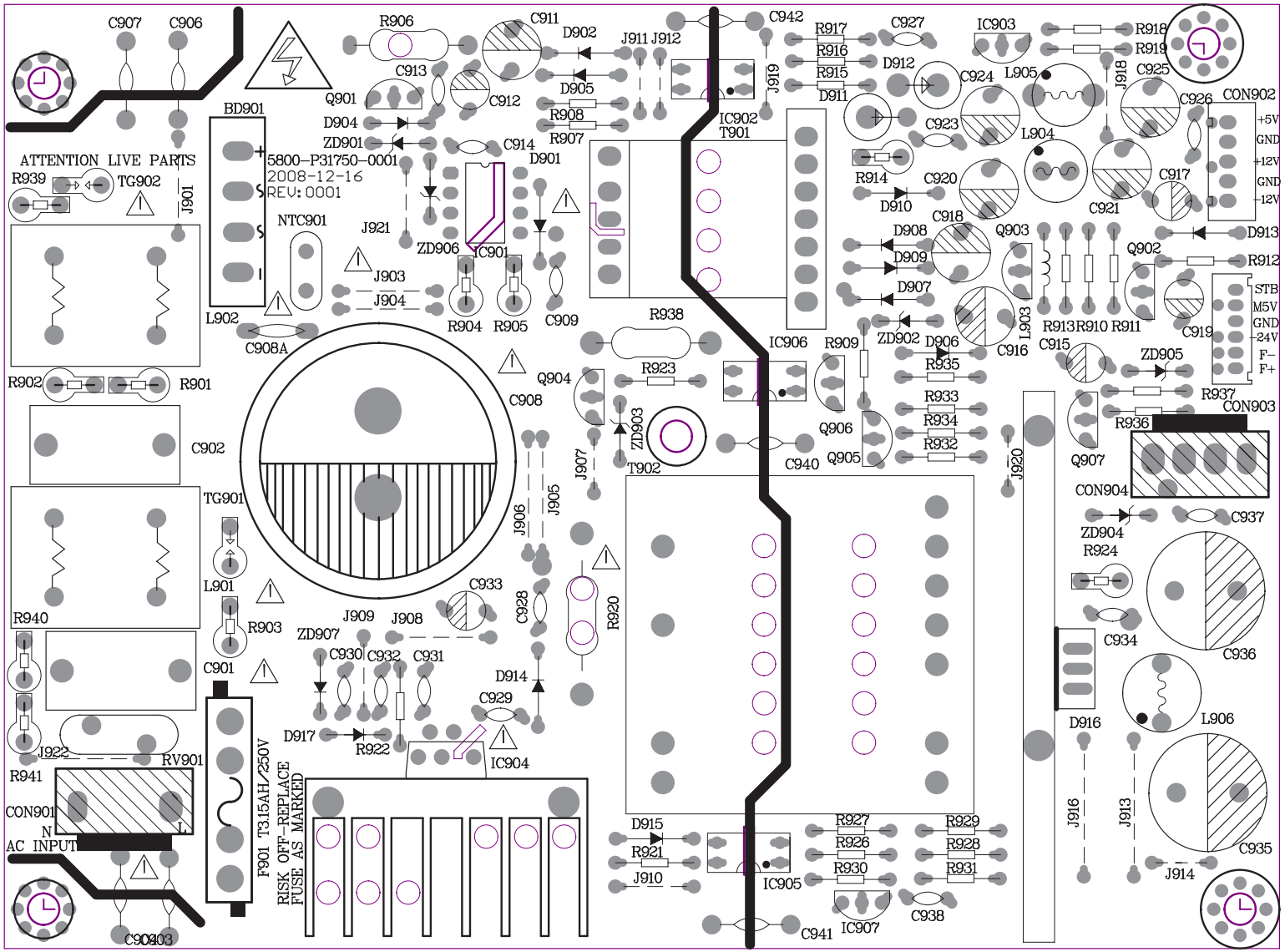
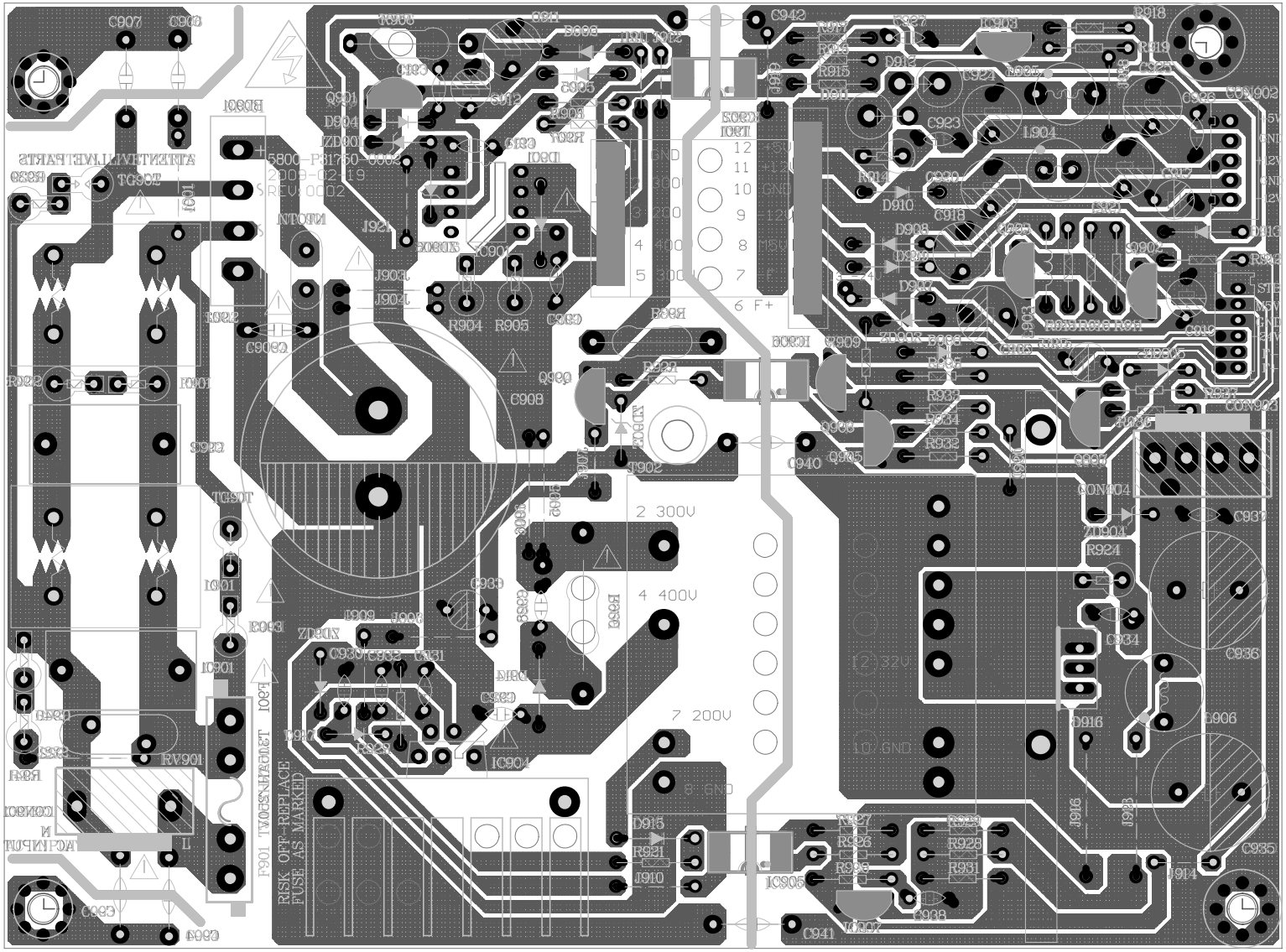
POWER BOARD SCHEMATIC DIAGRAM



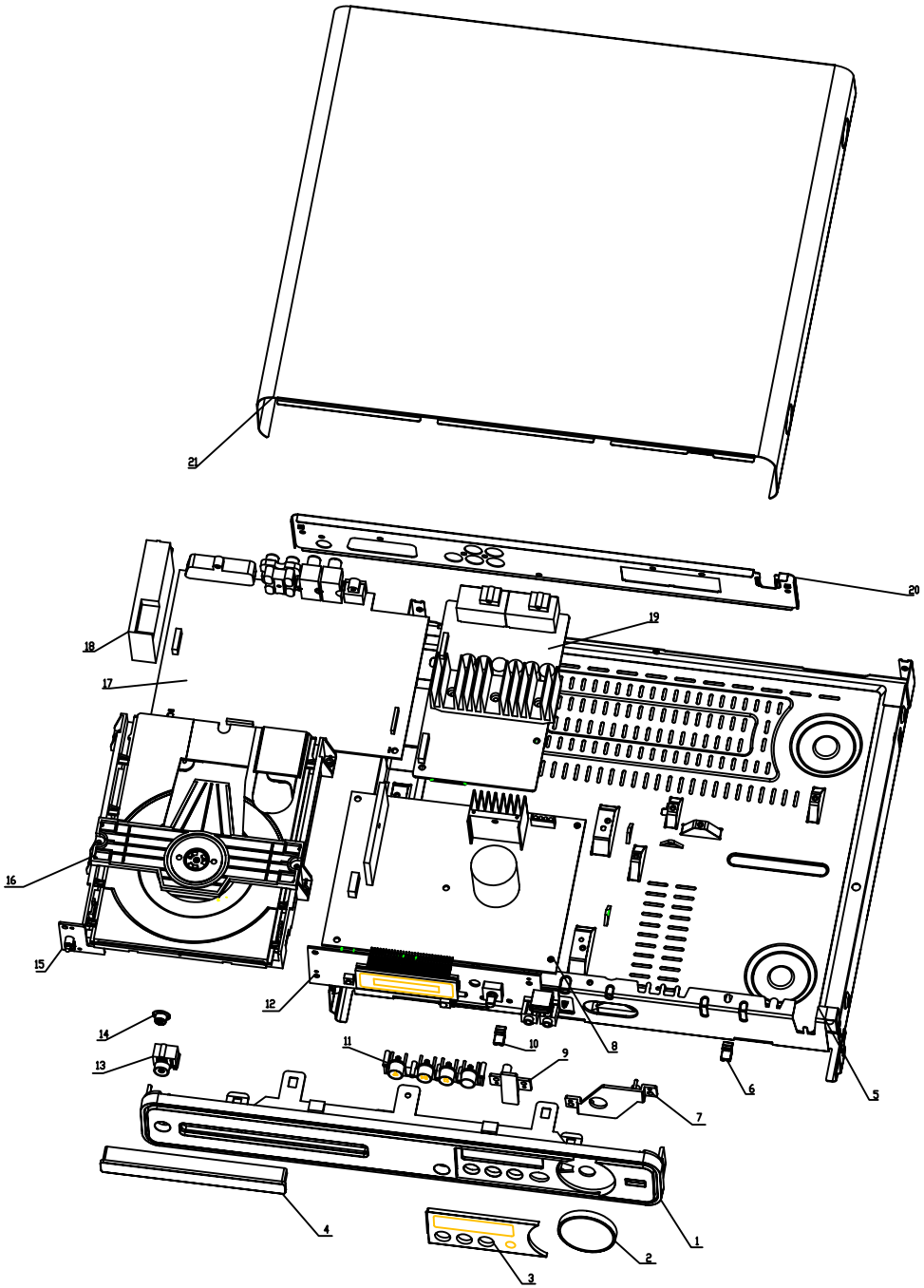
POWER BOARD TOP VIEW



POWER BOARD BOTTOM VIEW



MECHANICAL EXPLODE VIEW



MECHANICAL PART LIST(FOR HTS3019/12)

LOC.	Alt.	12NC	Safety	Description
2		996510028174		VOLUME BUTTON-ABS/BLACK 80007
4		996510029109		CD DOOR-ABS/BLACK 80301(HTS301
5		996510021707		RUBBER FOOT
6		996510028162		INSULATED PLATE(BOTTOM)-BLACK
7		996510021709		BOTTOM CASE -SECC
9		996510028164		TOP CASE SUPPORT(CU)
10		996510028159		FUNCTION BOARD SUPPORT(RIGHT)
12		996510028161		FUNCTION BOARD SUPPORT(LEFT)
15		996510028155		FUNCTION BUTTON-ABS/BLACK
24		996510021933		BACK PANEL-SECC(WITH SCART HTS
25		996510021701		INSULATED PLATE(TOP)-BLACK PVC
26		996510021751	⚠	AC LINE CORD 1500MM VDE PLUG 2
27		996510021727		TOP CASE-SPCC/BLACK 80301/NO K
A		996510029112		MY01- KEY BOARD & LED BOARD
AB		996510029115		MY01-HTS3019/12(HI)AMPLIFIER B
BATTERY		996520030958		BATTERY UM - 4AAA
C1		996510021699		FILM FLAT CABLE 24 PIN PITCH=0
C2		996510021729		FILM FLAT CABLE 10 PIN PITCH=1
C3		996510021714		HOUSING 06+ HOUSING 06+190MM F
C3		996510021714		HOUSING 06+ HOUSING 06+190MM F
C4		996510021712		HOUSING 05+ HOUSING 05+230MM M
C9		996510028182		HOUSING 04+ HOUSING 04+50MM FL
C11		996510021725		HOUSING 05(2.5) + HOUSING 05(2
C12		996510029108		FILM FLAT CABLE 24 PIN PITCH=0
DB		996510029111		MY01-HTS3019/12(HI) DECODE BOA
FM		996510021718		AM/FM TUNER MODEL10.7MHZ KST-M
FPA		996510029117		FRONT PANEL ASSY
LSA		996510022159		LOADER SUPPOREER ASM
OPU		996510022224		DVD PLAY HEAD OPTICAL PICK-UP
PA		996510029116		MY01-HTS3019/12 PACKING
PB		996510029114		MY01-HTS3019/12(HI)POWER BOARD
PBA		996510021715		POWER BUTTON & LED LENS
RC		996510021705		REMOTE CONTROL 41 KEYS FOR HTS
SS		996510029138		SPEAKER & SUBWOOFER

SPEAKER ASSY

SC	996510029148	SPEAKER BOX-CENTER
SML	996510029147	SPEAKER BOX-MAIN-LEFT
SMR	996510029146	SPEAKER BOX-MAIN-RIGHT
SSL	996510029145	SPEAKER BOX-SURROUND-LEFT
SSR	996510029144	SPEAKER BOX-SURROUND-RIGHT
SW	996510029149	SPEAKER BOX-SUBWOOFER

KEY BOARD

C5	996510029113	90 DEG PIN 04 +90 DEG PIN 04 +
C8	996510021728	90 DEGREE PIN 07+ HOUSING 07+2

AMPLIFIER BOARD

C13	996510021716	PIN 04(3.96)+HOUSING 04(3.96)

MECHANICAL PART LIST(FOR HTS3020/12/05)

LOC.	Alt.	12NC.	Safety	Description
1		996510021743		FR.PANEL-ABS/80301/FOILED HL-3
2		996510021704		VOLUME BUTTON-ABS/BLACK 80007
3		996510021711		FRONT LENS-PMMA/BLACK 80248(TR
4		996510021703		CD DOOR -ABS/BLACK 80301(HTS30
5		996510021707		RUBBER FOOT
6		996510021702		INSULATED PLATE(BOTTOM)-BLACK
7		996510021709		BOTTOM CASE -SECC
11		996510021746		MY01-HTS3020/12(HI)POWER BOARD(FOR/12)
11		996510021735		MY01-HTS3020/05(HI)POWER BOARD(FOR/05)
15		996510021698		FUNCTION BUTTON-ABS/BLACK 8000
16		996510021747		MY01-HTS3020/12(HI) KEY BOARD(FOR/12)
16		996510021733		MY01-HTS3020/05(HI) KEY BOARD(FOR/05)
17		996510021715		POWER BUTTON & LED LENS
18		996510021706		MY01-HTS3020/05(HI)LED BOARD
19		996510022159		LOADER SUPPOREER ASM
20		996510021748		MY01-HTS3020/12(HI) DECODE BOA(FOR/12)
20		996510021734		MY01-HTS3020/05(HI) DECODE BOA(FOR/05)
21		996510021718		AM/FM TUNER MODEL10.7MHZ KST-M
23		996510021749	⚠	MY01-HTS3020/12(HI)AMPLIFIER B(FOR/12)
23		996510021708	⚠	MY01-HTS3020/05(HI)AMPLIFIER B(FOR/05)
24		996510021933		BACK PANEL-SECC(WITH SCART HTS
25		996510021701		INSULATED PLATE(TOP)-BLACK PVC
26		996510021751	⚠	AC LINE CORD 1500MM VDE PLUG 2
27		996510021727		TOP CASE-SPCC/BLACK 80301/NO K
C1		996510021699		FILM FLAT CABLE 24 PIN PITCH=0
C2		996510021729		FILM FLAT CABLE 10 PIN PITCH=1
C3		996510021714		HOUSING 06+ HOUSING 06+190MM F
C4		996510021712		HOUSING 05+ HOUSING 05+230MM M
C11		996510021725		HOUSING 05(2.5) + HOUSING 05(2
C12		996510021697		FILM FLAT CABLE 24 PIN PITCH=0
CVBS		996510021741		RCA TO RCA AV SIGNAL CABLE1515
FM		996510021732		FM antenna
RC		996510021705		REMOTE CONTROL 41 KEYS FOR HTS
SPA		996520035759		SPEAKER ASSY
SS		996510021717		SUBWOOFER SPEAKER HTS3020

SPEAKER ASSY

CS	996510021726	CENTER SPEAKER HTS3020
FLS	996510021739	FRONT LEFT SPEAKER HTS3020
FRS	996510021737	FRONT RIGHT SPEAKER HTS3020
RLS	996510021731	REAR LEFT SPEAKER HTS3020
RRS	996510021742	REAR RIGHT SPEAKER HTS3020

REVISION LIST

Version 1.0
*Initial release
Version 1.1
*Adding Model HTS 3019/12
＃=Altemative Codes

 =Safety Symbol