

Service
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Service Manual



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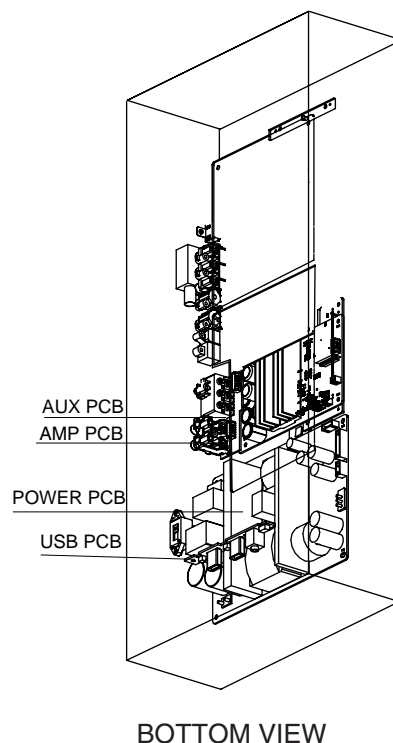
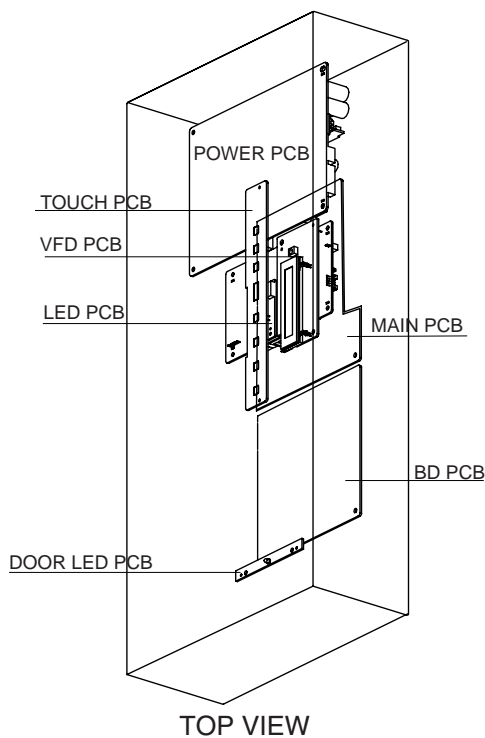
GB 3139 785 35392

Version 1.2



PHILIPS

LOCATION OF PCB BOARDS



VERSION VARIATION:

Type/Versions	HTS5220	
	/12	/51
Output Power - 400W	X	X
Voltage (220~240V)	X	
Voltage (110-127V/220~240V)		X
Scart	X	X

REPAIR SCENARIO MATRIX:

Type/Versions	HTS5220	
	/12	/51
Board in used		
Main+LED Board	C	C
Power Board	C	C
VFD+USB+AUX+Door LED Board	C	C
BD Board	Bd	Bd
Touch Board	C	C
AMP Board	C	C

*Bd = Board Level Replacement

*C = Component Level Repair

SPECIFICATIONS

Playback media

AVCHD, BD-RE, BD-Video, DVD-Video, DVD+R/+RW, DVD/-RW, DVD+R/-RDL, CD-R/CD-RW, Audio CD, Video CD/SVCD, Picture CD, MP3-CD, WMA-CD, DivX (Ultra)-CD, USB storage device

File Format

Audiomp3, .wma, .wav
Video avi, .divx, .mp4, .mkv, .mov, .wmv
Picturejpg, .gif, .png

Amplifier

Total output power 400 W RMS
Frequency response 20Hz-20 kHz / ± 3 dB
Signal-to-noise ratio > 65 dB (CCIR) / (A-weighted)
Input sensitivity
AUX1, AUX2 1000 mV
MP3 LINK 550 mV

Video

Signal system PAL / NTSC
Component video output 480i/576i, 480p/576p, 720p, 1080i
HDMI output 480i/576i, 480p/576p, 720p, 1080i, 1080p, 1080p24

Audio

S/PDIF Digital audio input
Coaxial IEC 60958-3
Sampling frequency
MP3 32 kHz, 44.1 kHz, 48 kHz
WMA 44.1 kHz, 48 kHz
Constant bit rate
MP3 112 kbps - 320 kbps
WMA 48 kbps - 192 kbps

Radio

Tuning range FM 87.5-108 MHz (50 kHz)
Signal-to-noise ratio FM 55 dB
Frequency response FM 60 Hz~12.5 kHz / ± 3 dB

USB

Compatibility Hi-Speed USB (2.0)
Class support UMS (USB Mass Storage Class)
File system FAT16, FAT32
Maximum memory support < 160GB

Main Unit

Power supply
Aisa Pacific/Latin America 110-127V/220-240V; ~50-60 Hz
Russia/China/India 220-240V, ~50Hz
Power consumption 100W
Standby power consumption ≤ 0.3 W
Dimensions (WxHxD) 434 x 253 x 129 (mm)
Weight 3.6 kg

Speakers

System full range satellite
Speaker impedance 6 ohm
Speaker drivers 1 x 76mm(3")woofer +25mm(1") tweeter
Frequency response 150 Hz-20 kHz
Dimension (WxHxD) 114 x 316 x114(mm)
Weight 1.03 kg
Cable length: 2 m

Subwoofer

Impedance 3 ohm
Speaker drivers 165 mm (6.5") woofer
Frequency response 40 Hz-150 Hz
Dimensions (WxHxD) 196 x 395 x 342 (mm)
Weight 5.25 kg
Cable length 4 m

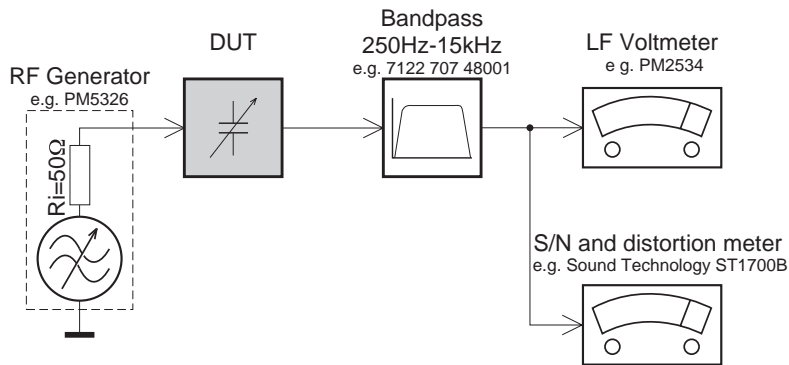
Laser specification

Laser Type (Diode) InGaN/AlGaIn (BD), InGaAlP (DVD), AlGaAs (CD)
Wave length 405 +5nm/-5nm (BD), 650 +13nm/-10nm (DVD), 790 +15nm/-15nm(CD)
Output power (Max. ratings) 20mW (BD), 7mW (DVD/CD)

Specifications subject to change without prior notice.

MEASUREMENT SETUP

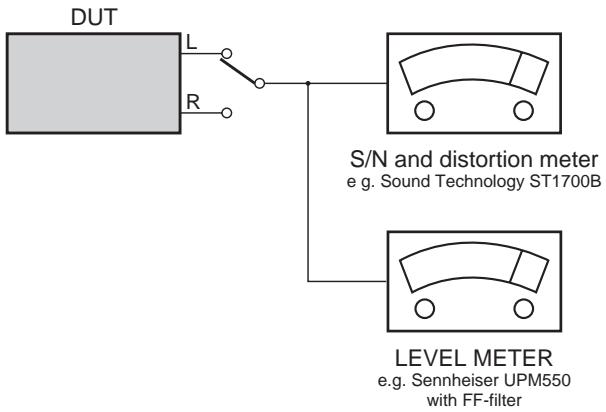
Tuner FM



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

CD

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



SERVICE AIDS

Service Tools:

- Universal Torx driver holder4822 395 91019
- Torx bit T10 150mm4822 395 50456
- Torx driver set T6-T204822 395 50145
- Torx driver T10 extended4822 395 50423

Compact Disc:

- SBC426/426A Test disc 5 + 5A4822 397 30096
- SBC442 Audio Burn-in test disc 1kHz4822 397 30155
- SBC429 Audio Signals disc4822 397 30184
- Dolby Pro-logic Test Disc4822 395 10216

HANDLING CHIP COMPONENTS

GENERAL

SOLDER CHIP COMPONENT SOLDER
COPPER TRACK P.C.B.
GLUE

SERVICE PACKAGE

DISMOUNTING

VACUUM PISTON
4822 395 10082

SOLDERING IRON
e.g. WELLER solder tip PT-H7

SOLDERING IRON
SOLDER WICK
4822 321 40042

e.g. A PAIR OF TWEEZERS

HEATING HEATING

SOLDERING IRON
SOLDER WICK CLEANING

MOUNTING

e.g. A PAIR OF TWEEZERS

SOLDER
ø0.5-0.8mm PRESSURE

SOLDERING IRON

SOLDERING TIME
< 3 sec./side

SOLDER ø0.5-0.8mm PRESSURE

SOLDERING IRON

PRECAUTIONS

SOLDERING IRON CORRECT SOLDERING IRON

COPPER TRACK

SOLDERING IRON CORRECT SOLDERING IRON

CHIP COMPONENT

EXAMPLES

CORRECT

SOLDERING IRON NO!

ESD**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.

NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

**F ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).

Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).

Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.

Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).

La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione.

Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.

Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB ESD PROTECTION EQUIPMENT

Complete Kit ESD3 (small tablemat, wristband, connection box, estention cable and earth cable 4822 310 10671
Wristband tester 4822 344 13999

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 Δ .

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

De Veiligheidsonderdelen zijn aangeduid met het symbol Δ .

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisés les pièces de rechange identiques à celles spécifiées.

Less composants de sécurité sont marqués Δ .

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

Sicherheitsbauteile sind durch das Symbol Δ markiert.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

Componenti di sicurezza sono marcati con Δ .

GB

After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist, The leakage current must not exceed 0.5mA.

**GB Warning !**

Invisible laser radiation when open.
Avoid direct exposure to beam.

S Varning !

Osynlig laserstrålning när apparaten är öppnad och spårren är urkopplad. Betrakta ej strålen.

SF Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alltiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

F

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

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 Jan 2005** onwards, according next rules:

Important note: In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (lead-free/ 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 lead-free 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 unused 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 or does not know whether product is lead-free, 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 de-soldering always use the 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 indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.

Do not re-use BGAs at all.

- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy 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.

Software upgrade & Procedure to restore product setting

1) Restore factory setting

- Press “” <Home> button on R/C.
- Select <SETUP>, then press “OK” button on R/C.
- Select <Advanced setup>, then press <OK> button on R/C.
- Select <Restore default settings>, then press <OK> to confirm.

2) Password change

- Press “” <Home> button on R/C.
 - Select <SETUP>, then press “OK” button on R/C.
 - Select <preference setup>, then press <OK> button on R/C.
 - Select <Change Password> <Confirm>, then press <OK> button on R/C.
- “0000” is default password supplied.

3) Trade mode

- In open model, press “” <Home> button on R/C.
- Press “2” “5” “9” on R/C, VFD will display “TRA ON” or “TRA OFF”.

4) Check software version

- Press “” <Home> button on R/C
- Select <Setup>, then press <OK> button on R/C.
- Select <Advanced Setup> <Version Info.>, then press <OK> button on R/C.
- TV will show message as follow:

Model: HTS5220/12/51
 Version:
 System SW: 34.00
 Subsystem SW: 32-00-00-00
 Ethernet MAC: 00-25-D1-01-87-39
<http://www.philips.com/support>

Close

- Select <Close> on the version display screen and press <OK> button to exit .

5) Upgrading new software

Method 1: Update software from a USB storage device or CD-R

- Create a folder named “UPG” in your CD-R or USB storage device, and Copy the latest upgrading software into the folder.
- Insert the CD-R program disc or connect the USB storage device to the home theater.
- Press “” <Home> button on R/C, and select <Setup>.
- Select <Advance Setup> <Software Update> <USB>.
- TV will show message as follow:

Now searching for upgrade software!
Please wait...!

Software updates for this player have been found. Do you want to upgrade?

Cancel

Start

- Select <Start>, press <OK> button on R/C.

Software upgrade will take 5 minutes

Do not switch off!

Package version: 000034.0

Software BE	80%
Software FE	Completed
Software MCU1:	
Software Dock:	
Software MCU3:	

Software upgrade will take 5 minutes

Do not switch off!

Package version: 000034.0

Software BE	Completed
Software FE	Completed
Software MCU1:	Not started
Software Dock:	2%
Software MCU3:	Not started

Software upgrade will take 5 minutes

Do not switch off!

Package version: 000034.0

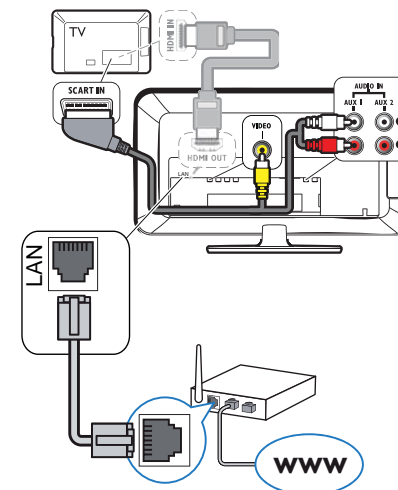
Software BE	Completed
Software FE	Completed
Software MCU1:	1%
Software Dock:	Failed
Software MCU3:	

- The set will shut down automatically when the software upgrade is completed.

Method 2: Update software from the network

Note: To check for new updates, compare the current software version of your home theater with the latest software version (if available) on the Philips web site, and for BD-Live application and software update, make sure that the network router has access to the Internet and the firewall is disabled.

- The “LAN” jack at the back panel of the set must be connect to the network router via network cable and the set connect to TV, Prepare the connection as shown follow:



- Press “” <Home> button on R/C, and select <Setup>.
- Select <Advance Setup> <Software Update> <Network>.
- TV will show message as follow:

Now searching for upgrade software!
Please wait...!

Software updates for this player have been found. Do you want to upgrade?

Cancel

Start

- Select <Start>, press <OK> button on R/C.

Software upgrade will take 5 minutes

Do not switch off!

Package version: 000034.0

Software BE	80%
Software FE	Completed
Software MCU1:	
Software Dock:	
Software MCU3:	

Software upgrade will take 5 minutes

Do not switch off!

Package version: 000034.0

Software BE	Completed
Software FE	Completed
Software MCU1:	Not started
Software Dock:	2%
Software MCU3:	Not started

Software upgrade will take 5 minutes

Do not switch off!

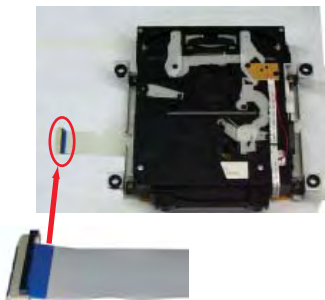
Package version: 000034.0

Software BE	Completed
Software FE	Completed
Software MCU1:	1%
Software Dock:	Failed
Software MCU3:	

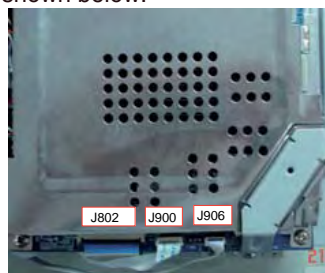
f) The set will shut down automatically when the software upgrade is completed.

6) How to replace the defective Blu-ray Loader

- Remove the defective Blu-ray Loader.
- loosen the short circuit socket and remove it as shown follow:
note: 1.the short circuit socket connect 45p VFC cable on the BD Loader ;2.the socket make the ESD protection points short circuit.



c) Assembly Blu-ray Loader to "J802","J900","J906" on the top of BD Board as shown below.

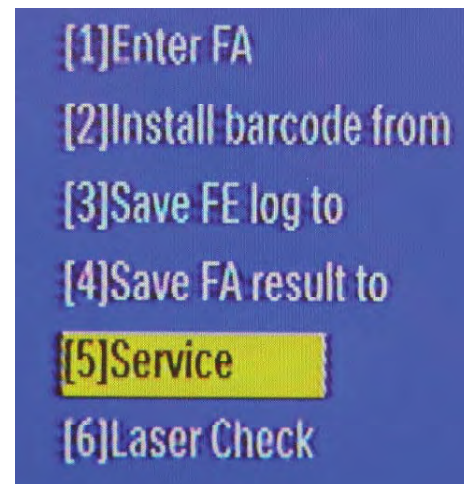


2 - 2

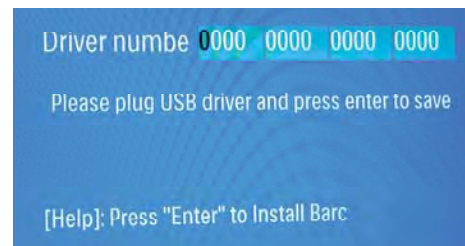
7) BD board and Blu-ray Loader OPU matching procedure

Note: This procedure must be performed whenever the defective Blu-ray Loader or BD Board has been replaced .

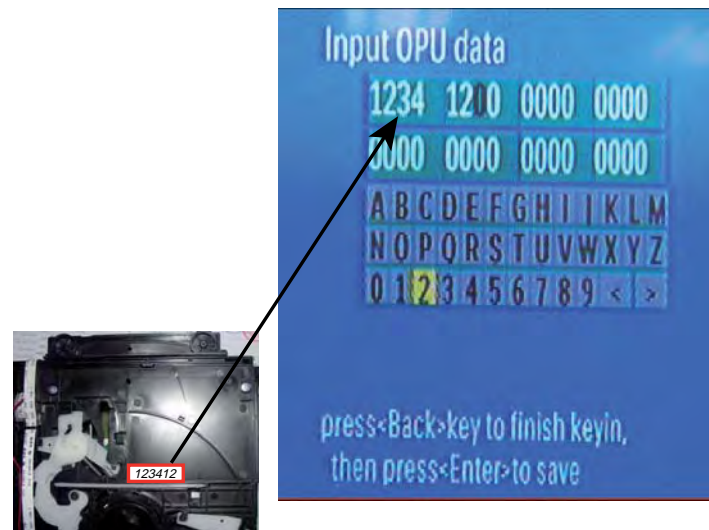
- Loosen the short circuit socket and remove it
- Assembly Blu-ray Loader to BD Board.
- Power on the set , press "Home" button and input "5" "1" "7" "7" on R/C.
- Go into OSD Select mode and select item [5] ,then press <OK> button on R/C as shown follow:



e) Insert empty USB device of MSC type and press <OK> button with R/C as shown follow:



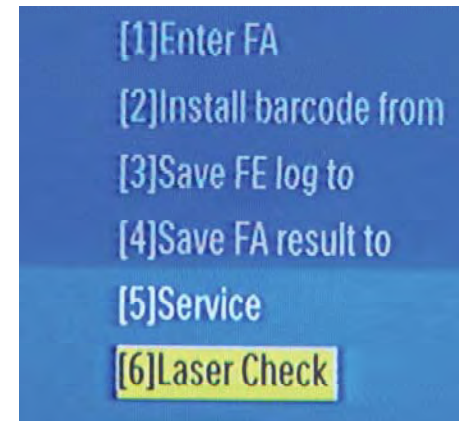
f) Using "▲▼◀▶" buttons on R/C input the 6-digits OPU data given on the 1D barcode (see label on the Loader) with the on-screen selection and press <OK> button to save each digit entered as shown follow:



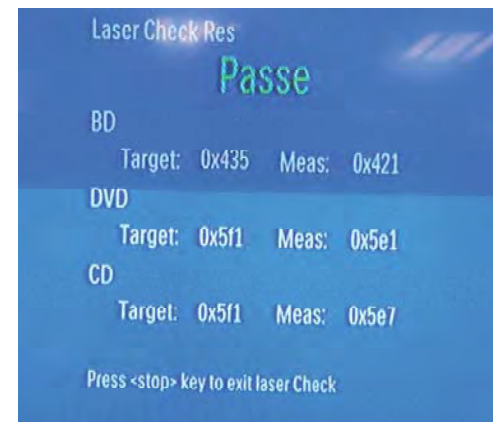
2 - 2

g) Press <Back> followed by <OK> button to finish OPU matching and "Home" button to exit.

h) Repeat step c) and select item [6] ,then press <OK> button on R/C as shown follow:



i) Wait laser check to complete, press <stop> button to exit as shown follow:



j) If laser check fails press "Home" button and repeat OPU matching procedure.

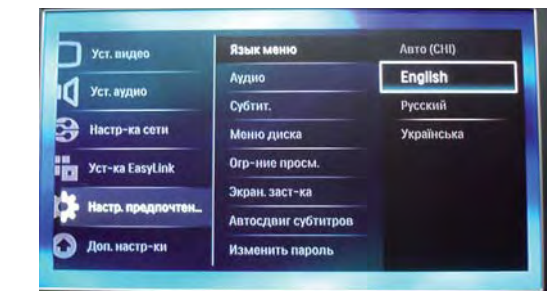
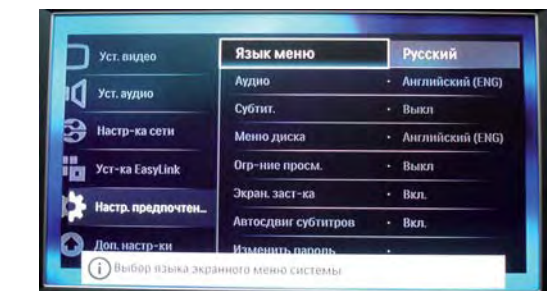
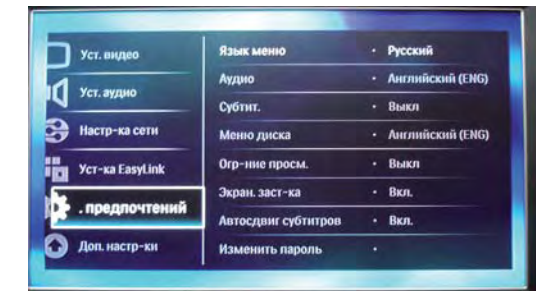
8) Produce to change Tuner grid (only for 198/51 version)

In some countries, you can switch the FM tuning grid between 50 kHz and 100 kHz. Changing the tuning grid erases all preset radio stations.

- Press <radio> button on R/C
- Press <Stop> button on R/C.
- Press and hold <Play> until (50 kHz) or (100 kHz) is displayed.
Note: repeaing the same action will toggle back to it previous tuning grid setting.

9) Menu Language setup (only for 51 version)

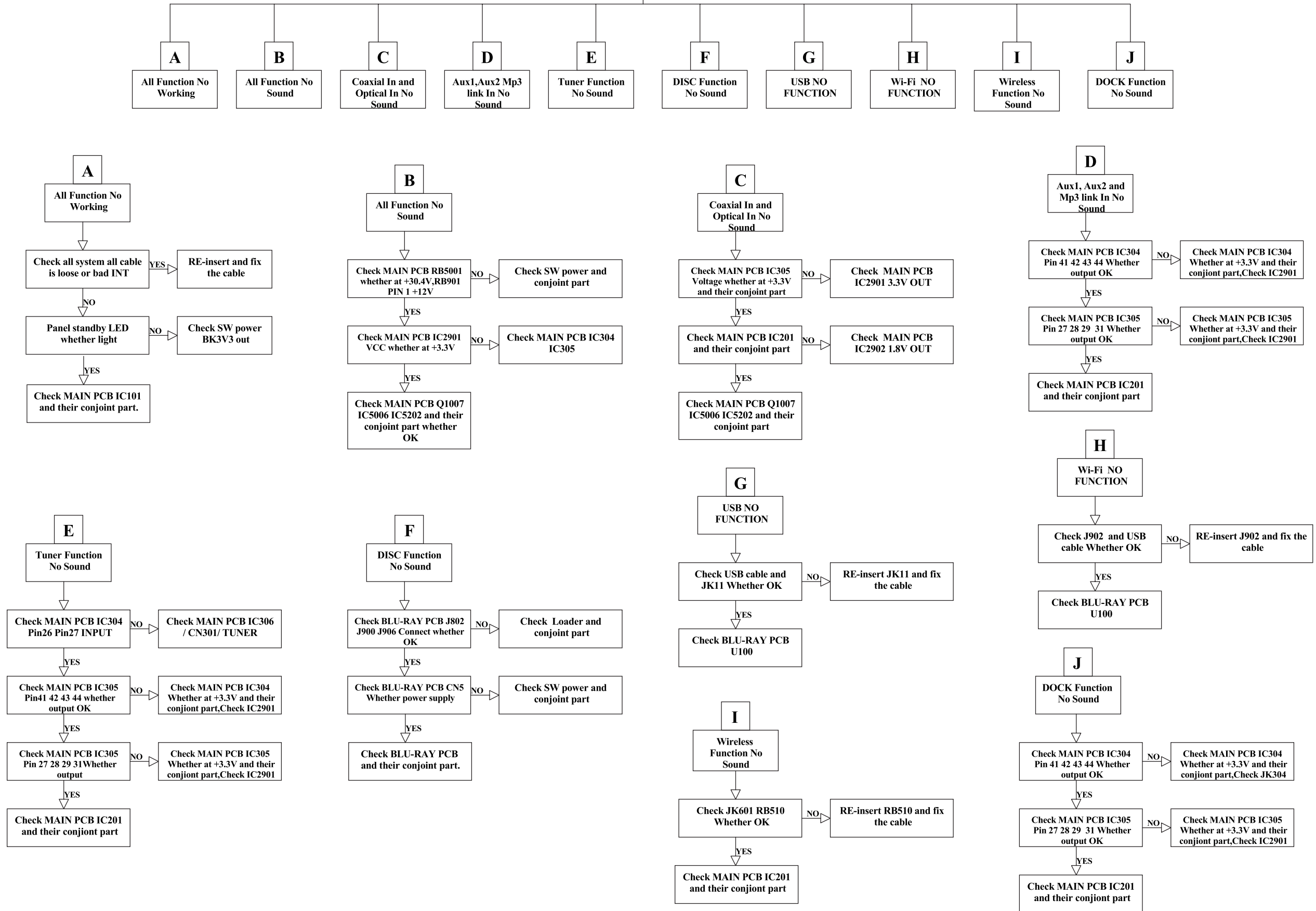
- Press "Home" button on R/C.
- Select <SETUP>, then press "OK" button on R/C.
- Select <preference setup>, then press <OK> button on R/C.
- Select <Menu language>, then press <OK> button on R/C.
- Select <English>, then press <OK> button on R/C.



CAUTION!

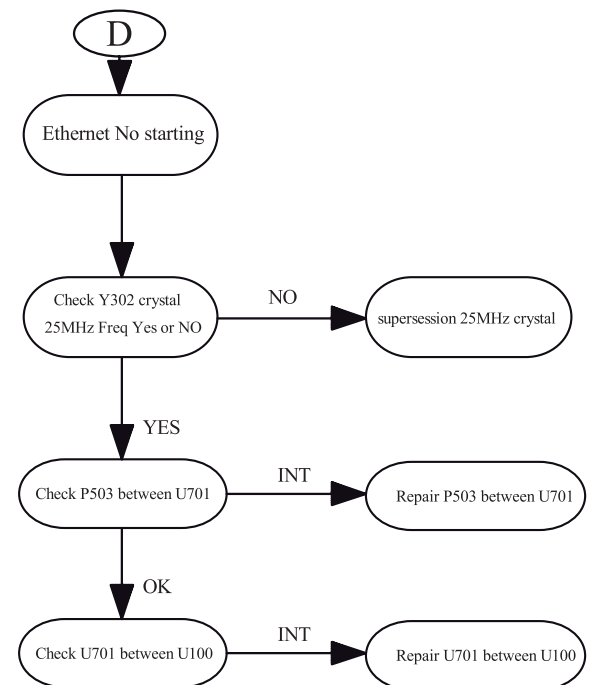
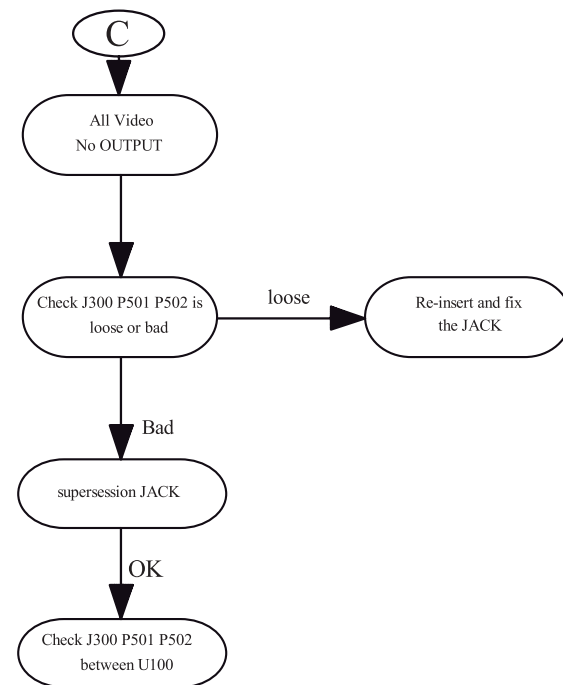
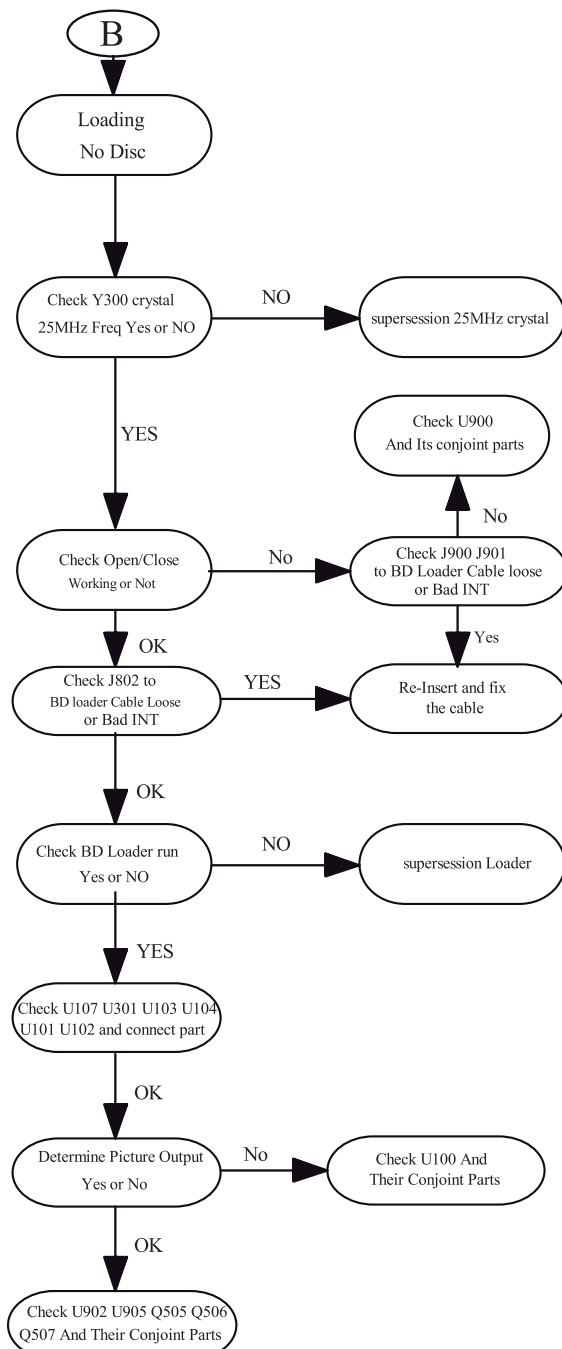
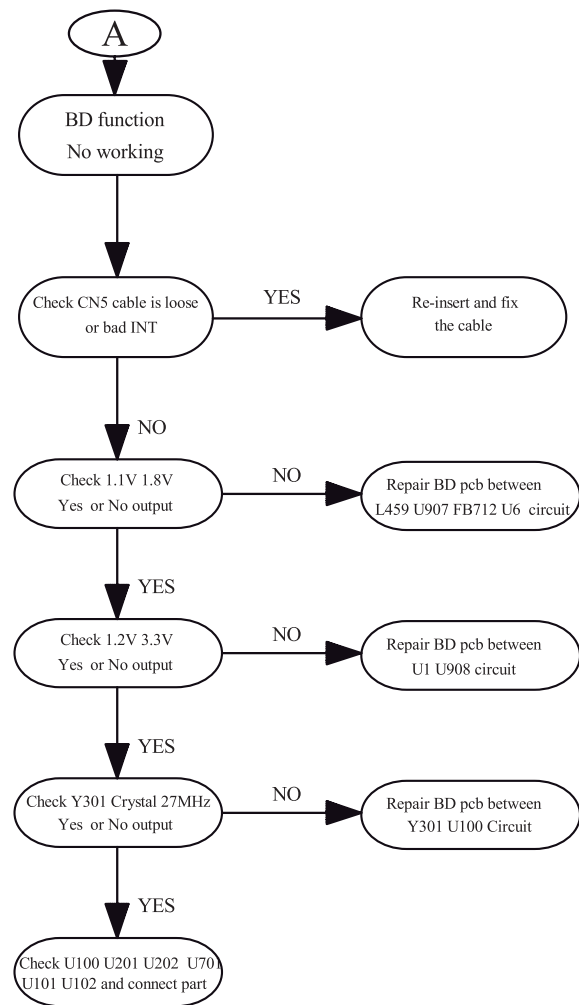
This information is confidential and may not be distributed. Only a qualified service person should reprogram the Region Code.

MAIN UNIT REPAIR CHART



M8530 BD Board Repair Block Diagram

MAIN UNIT REPAIR CHART



DISASSEMBLY INSTRUCTIONS

3 - 1

Dismantling of Rear Panel

- 1) Push the cable door to remove it as shown in figure 1.
- 2) Loosen 2 screws "A" to remove footstand ass'y as shown in figure 2.
- 3) Loosen 9 screws "B" to remove rear panel as shown in figure 3.

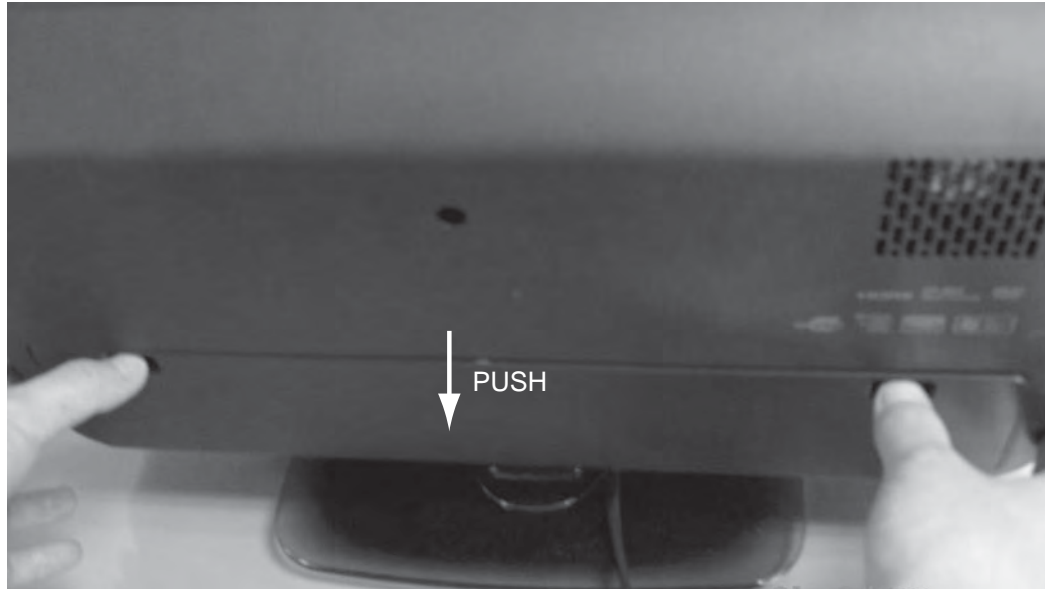


Figure 1

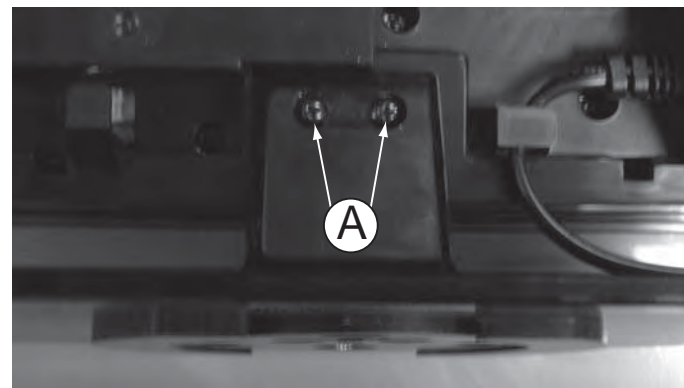


Figure 2

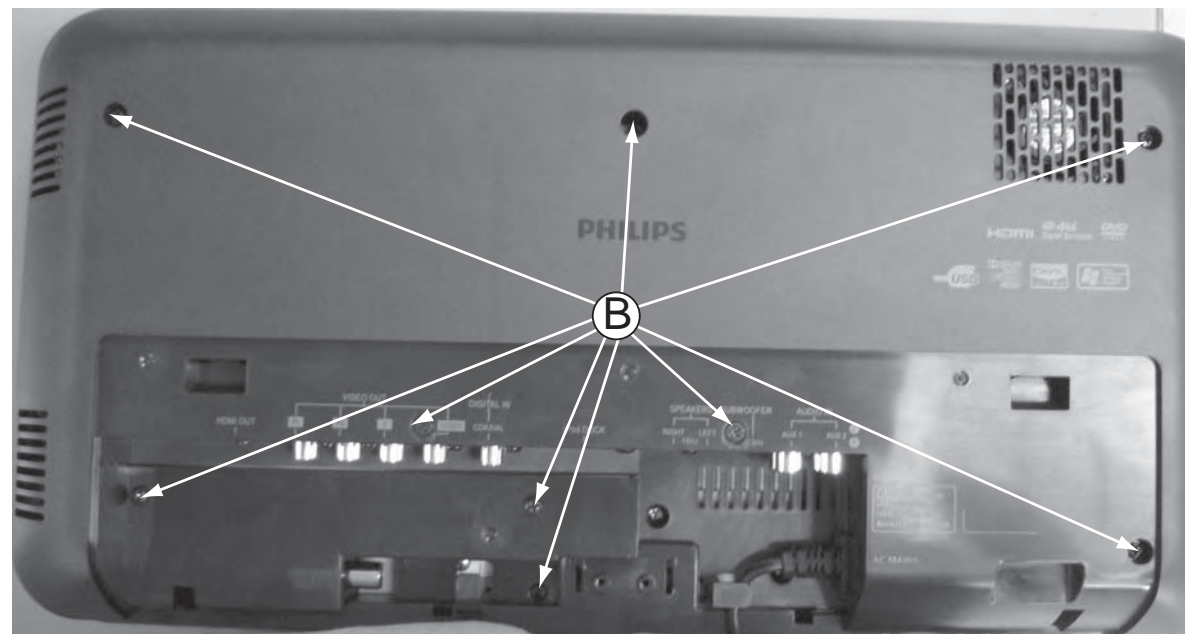


Figure 3

3 - 1

Dismantling of VFD+LED+TOUCH+Door LED PCB

- 1) Loosen 7 screws "C" on the bracket to remove front cabinet as shown in figure 4.
- 2) Loosen 3 screws "D" to remove the VFD PCB as shown in figure 5.
- 3) Loosen 2 screws "E" to remove the LED PCB as shown in figure 6.
- 4) Loosen 4 screws "F" on the bracket to remove the TOUCH PCB as shown in figure 7.
- 5) Loosen 2 screws "G" to remove the Door LED PCB as shown in figure 8

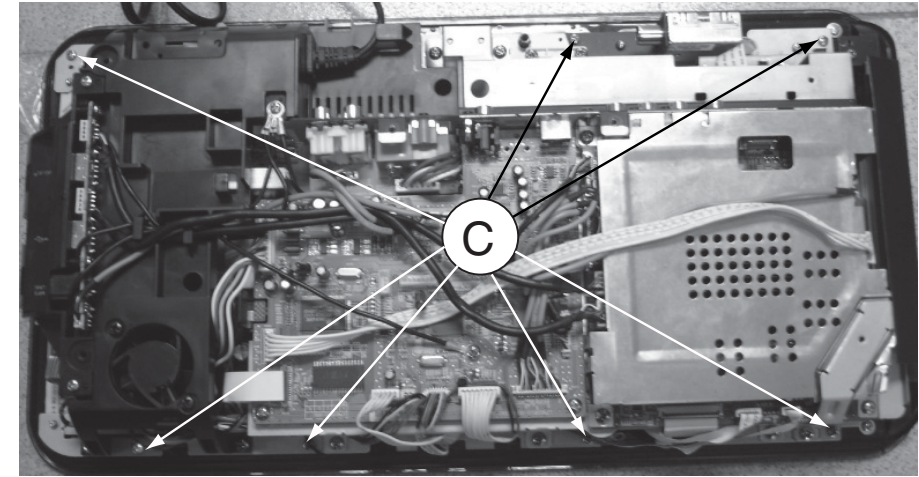


Figure 4

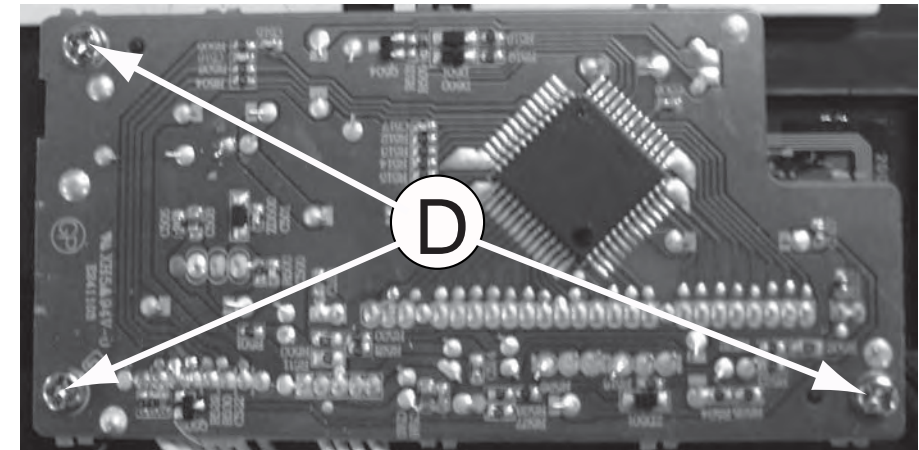


Figure 5

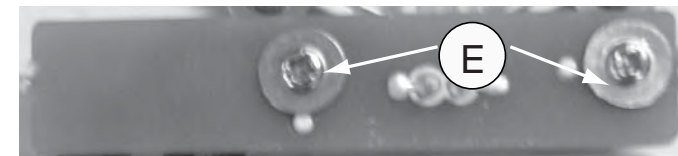


Figure 6



Figure 7

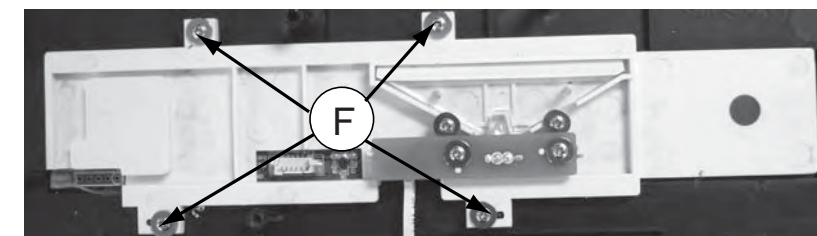


Figure 8

Dismantling of the BD PCB

- 1) Loosen 2 screws on the bracket "H1" and 4 screws on the ESD cover "H2" as shown in figure 9.
- 2) Loosen 5 screws "I" at the main pcb bracket as shown in figure 10.

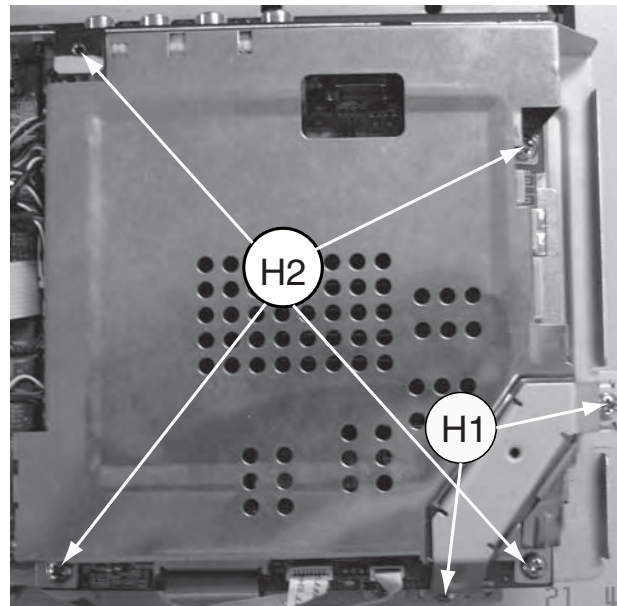


Figure 9

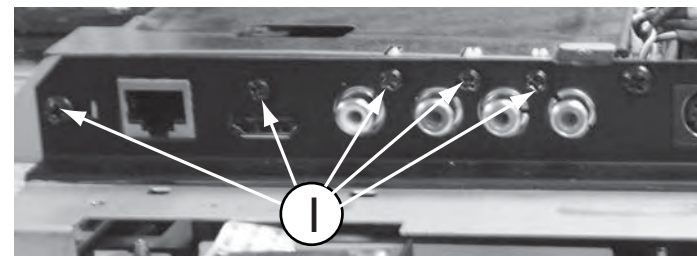


Figure 10

Dismantling of MAIN +AUX +USB PCB

- 1) Loosen 4 screws "J" on the top of MAIN PCB and 1 screws "K" on the MAIN PCB bracket to remove the MAIN PCB as shown in figure 11 & figure 12.
- 2) Loosen 2 screws "L" on the MAIN PCB bracket to remove AUX PCB as shown in figure 13.
- 3) Loosen 2 screws "M" on the USB bracket and 2 screws "N" on the top of USB PCB to remove the USB PCB as shown in figure 14 & figure 15.

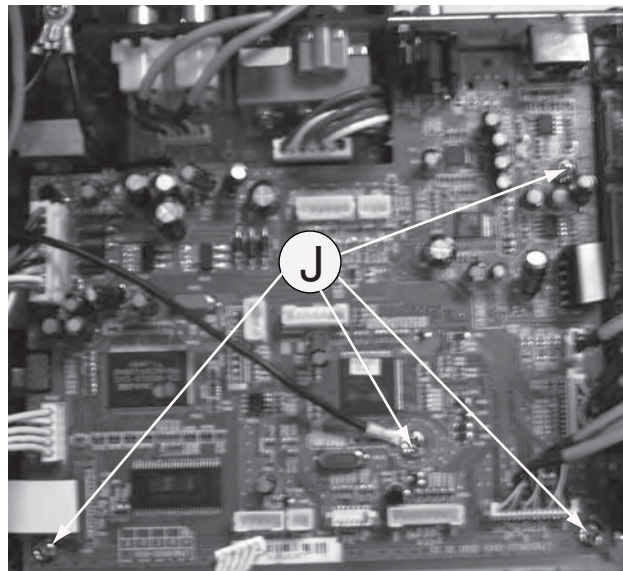


Figure 11



Figure 12

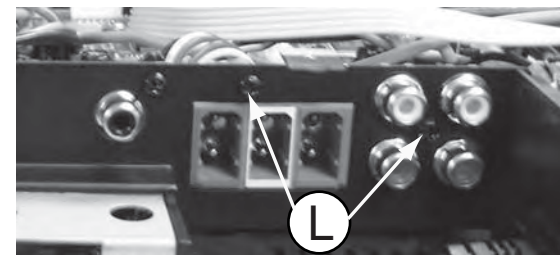


Figure 13

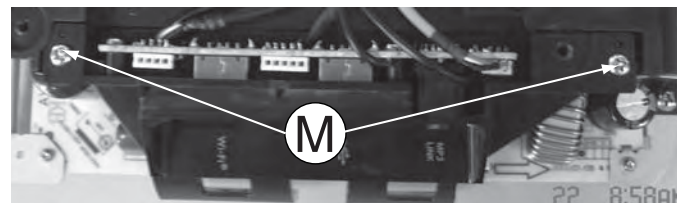


Figure 14



Figure 15

Dismantling of the BD LOADER

- 1) Loosen 3 screws "O" on the plate_Tin as shown in figure 16.
- 2) Loosen 4 screws "P" at the BD Loader as shown in figure 17.

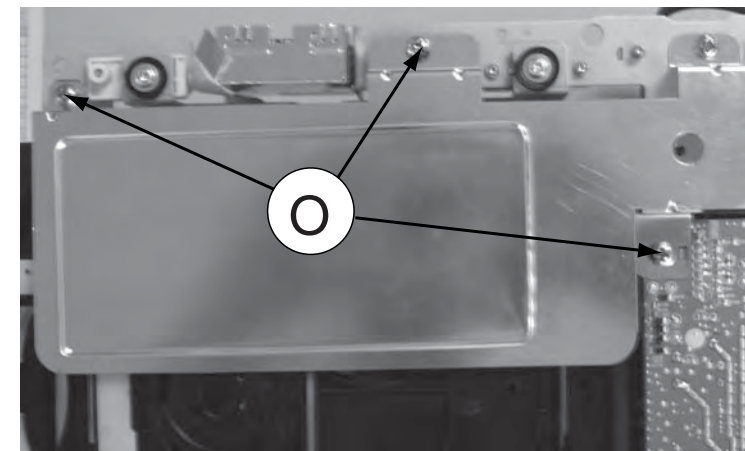


Figure 16

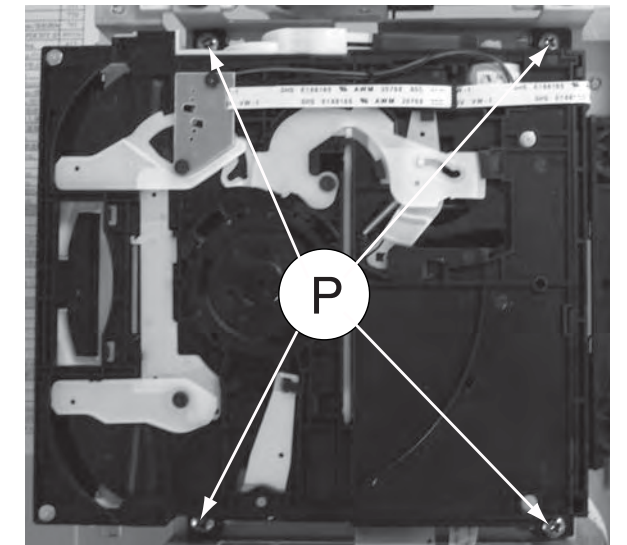


Figure 17

Dismantling of the AMP PCB

- 1) Loosen 4 screws "Q" on the bottom of AMP PCB as shown in figure 18.

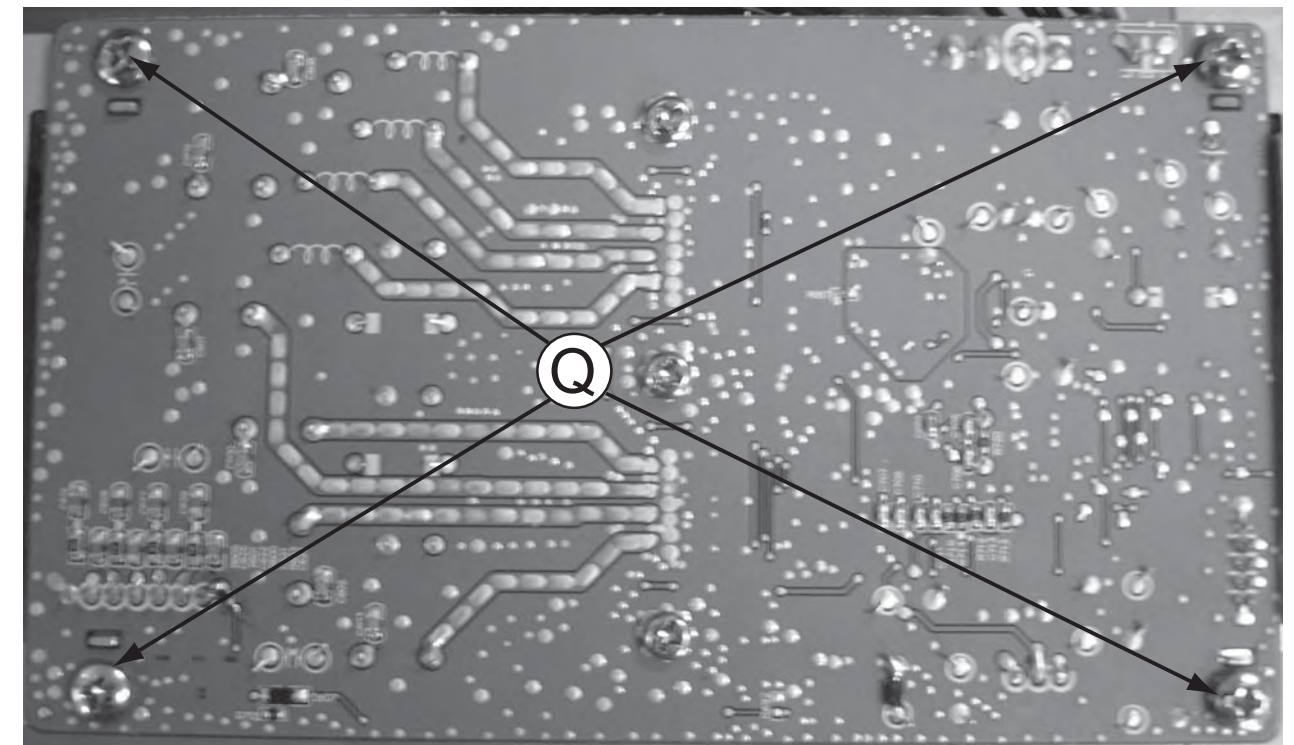


Figure 18

Dismantling of the POWER PCB

1) Loosen 4 screws "R" on the bottom of Power PCB as shown in figure 19.

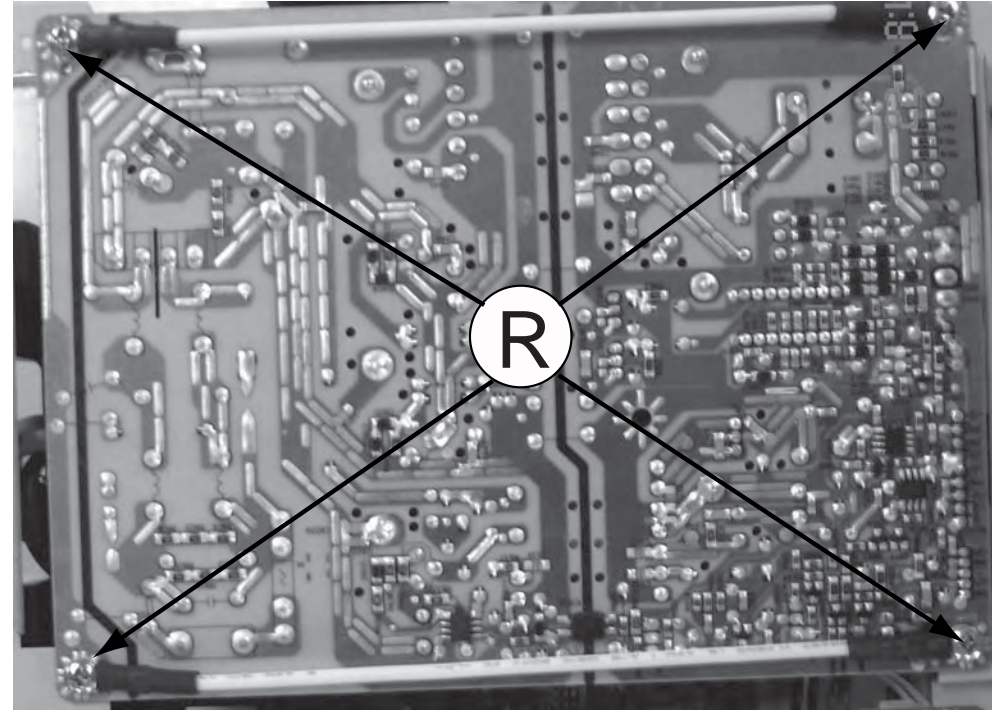
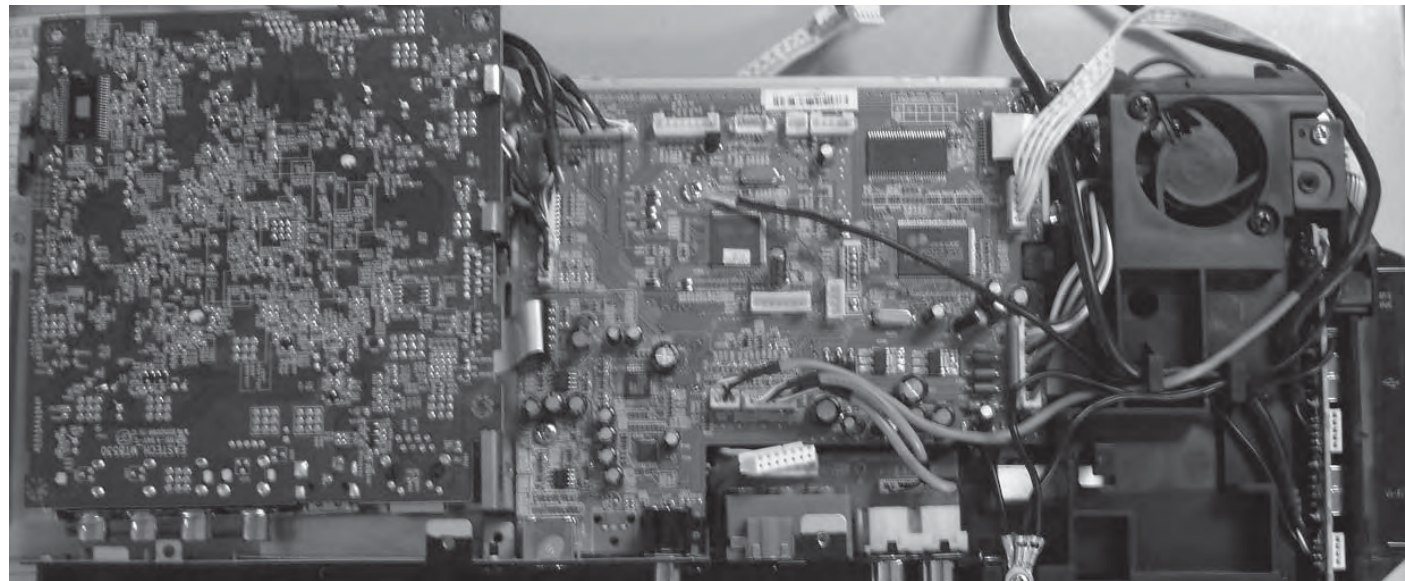


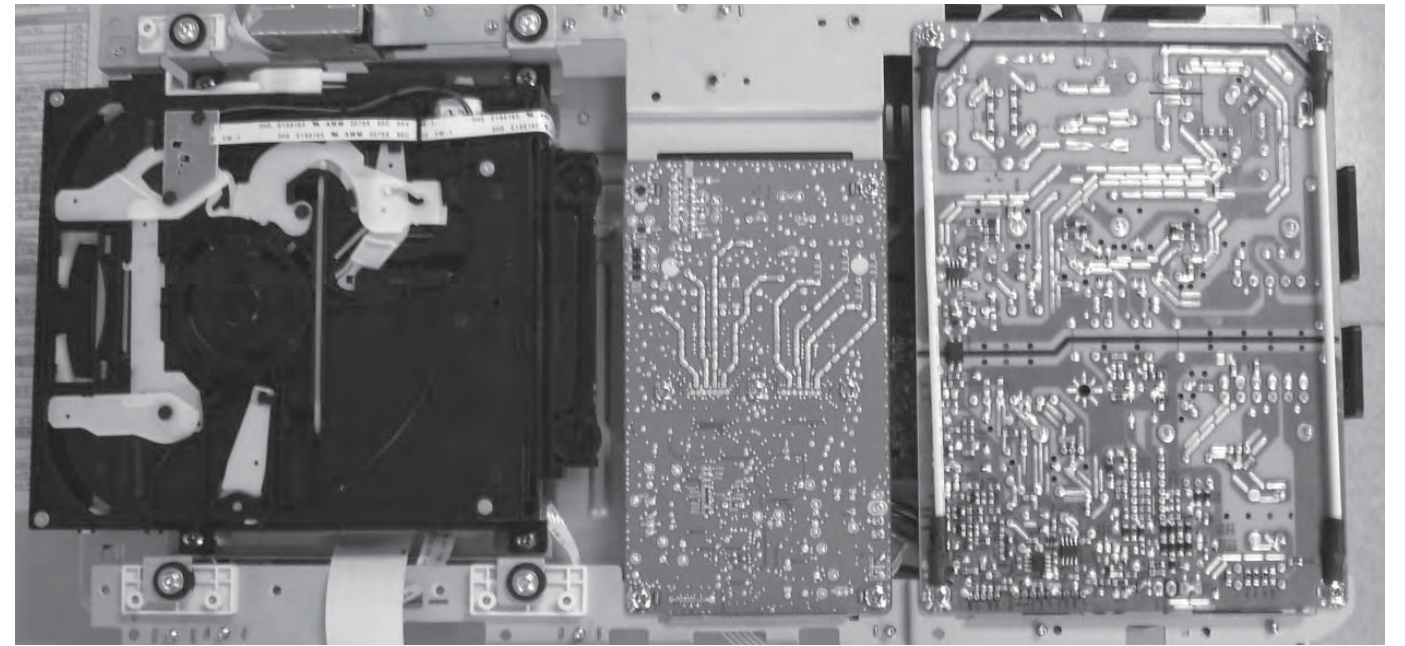
Figure 19

SERVICE POSITIONS

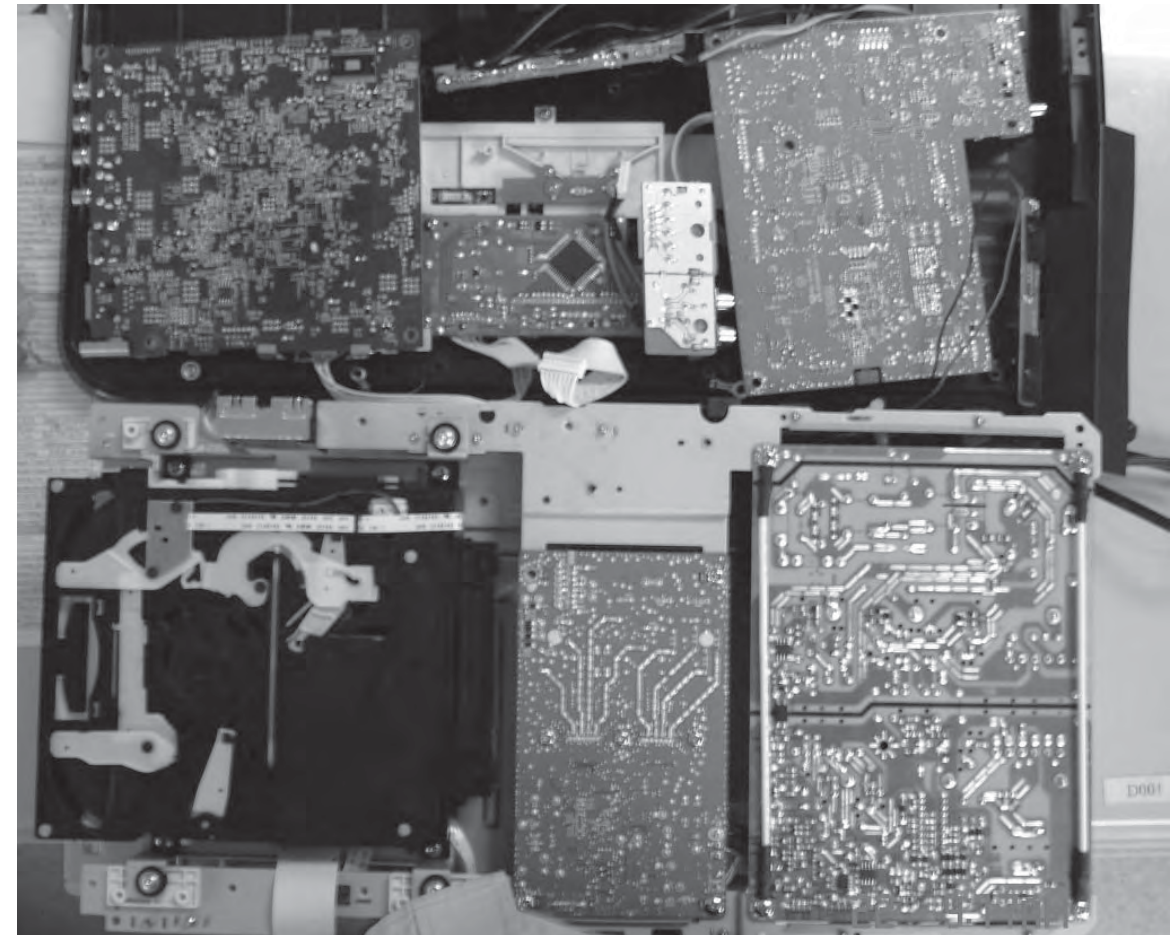
Service Position A - BD & MAIN Board



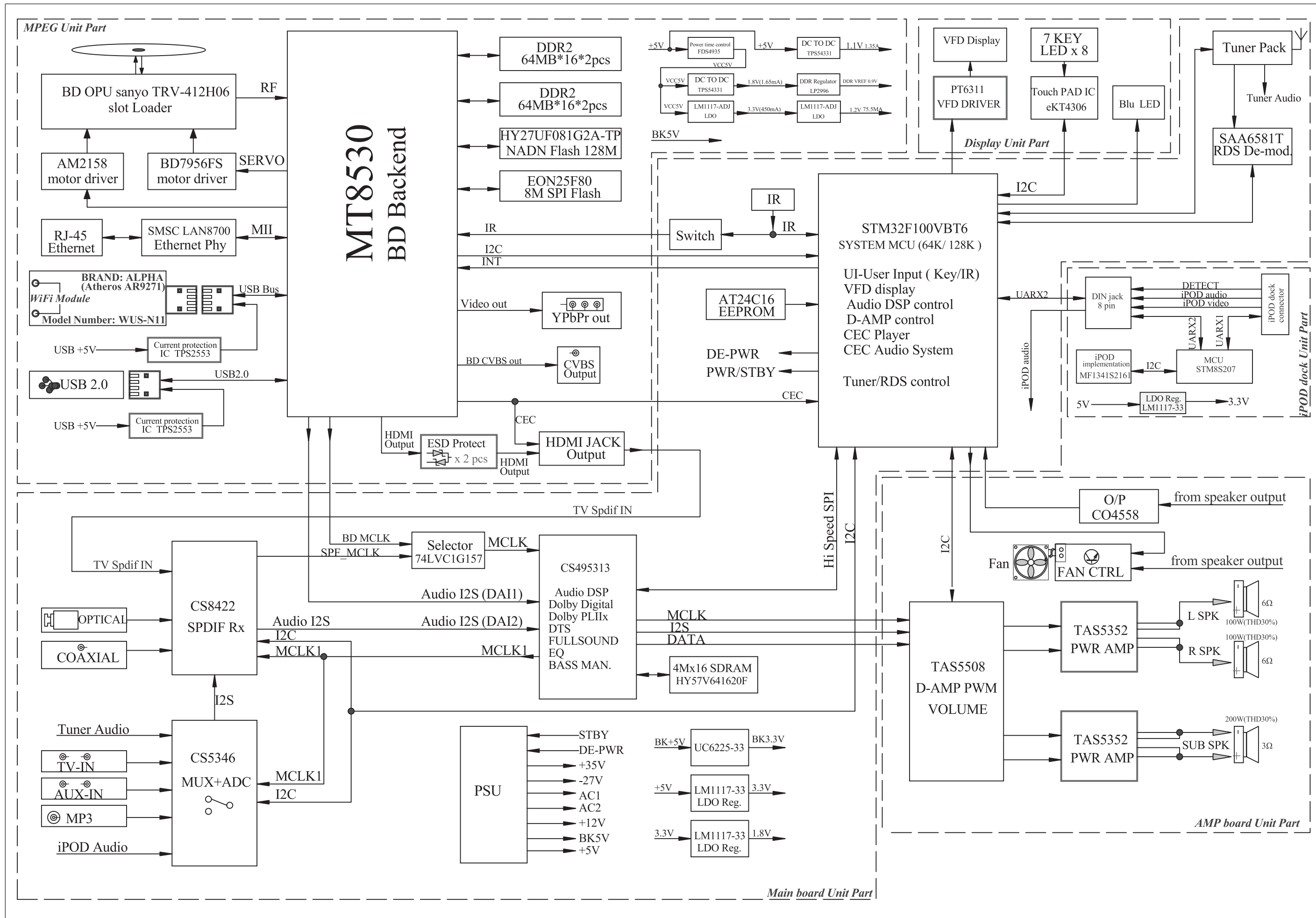
Service Position B - AMP & Power Board

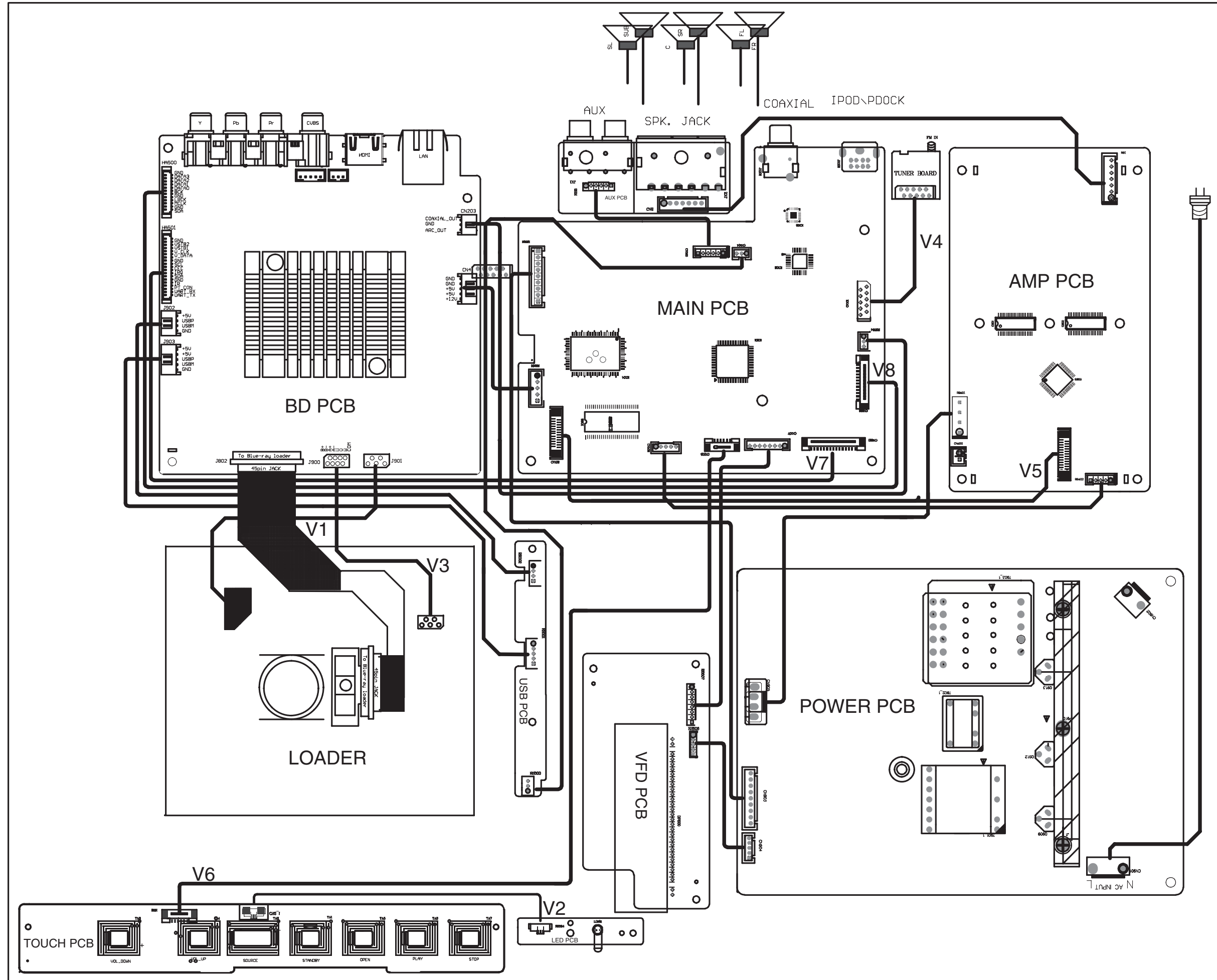


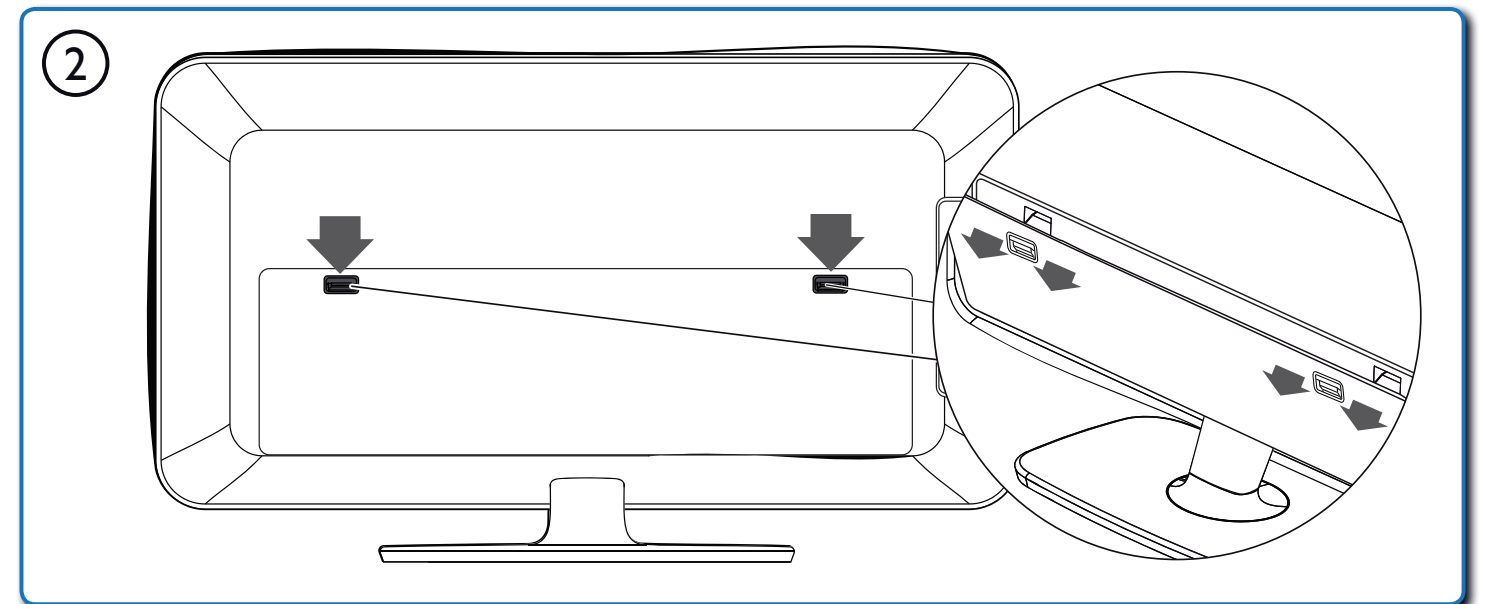
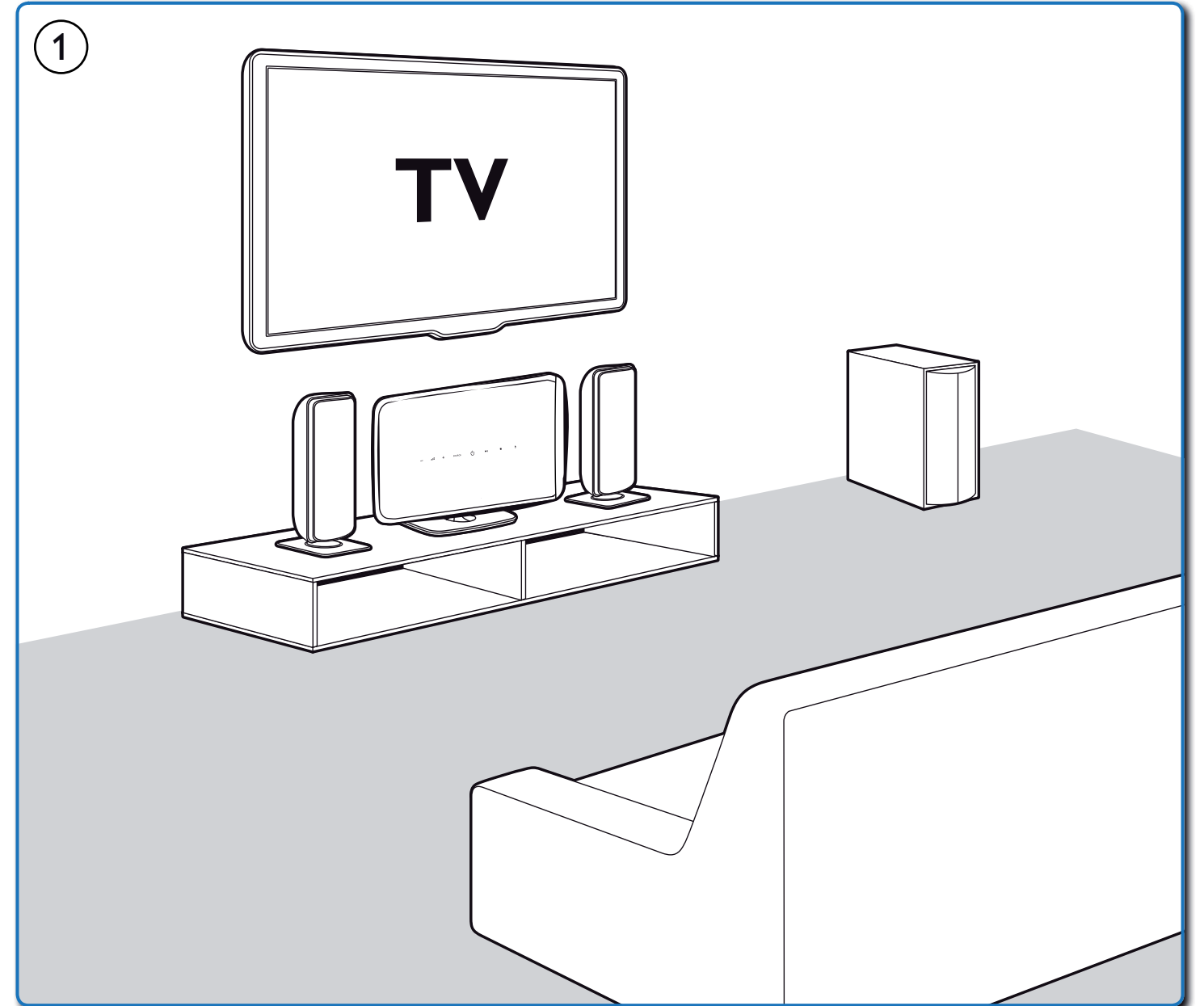
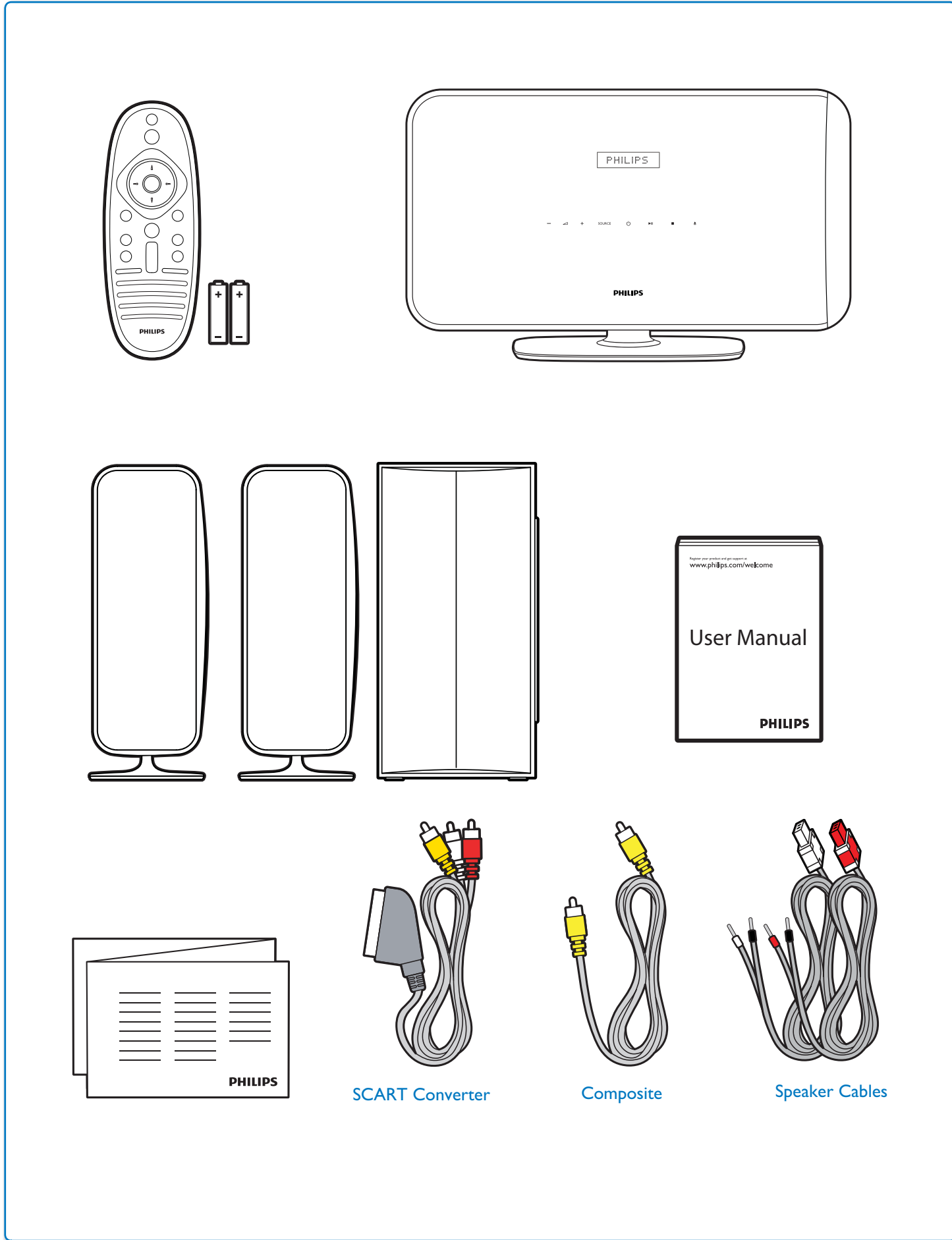
Service Position C - All Boards

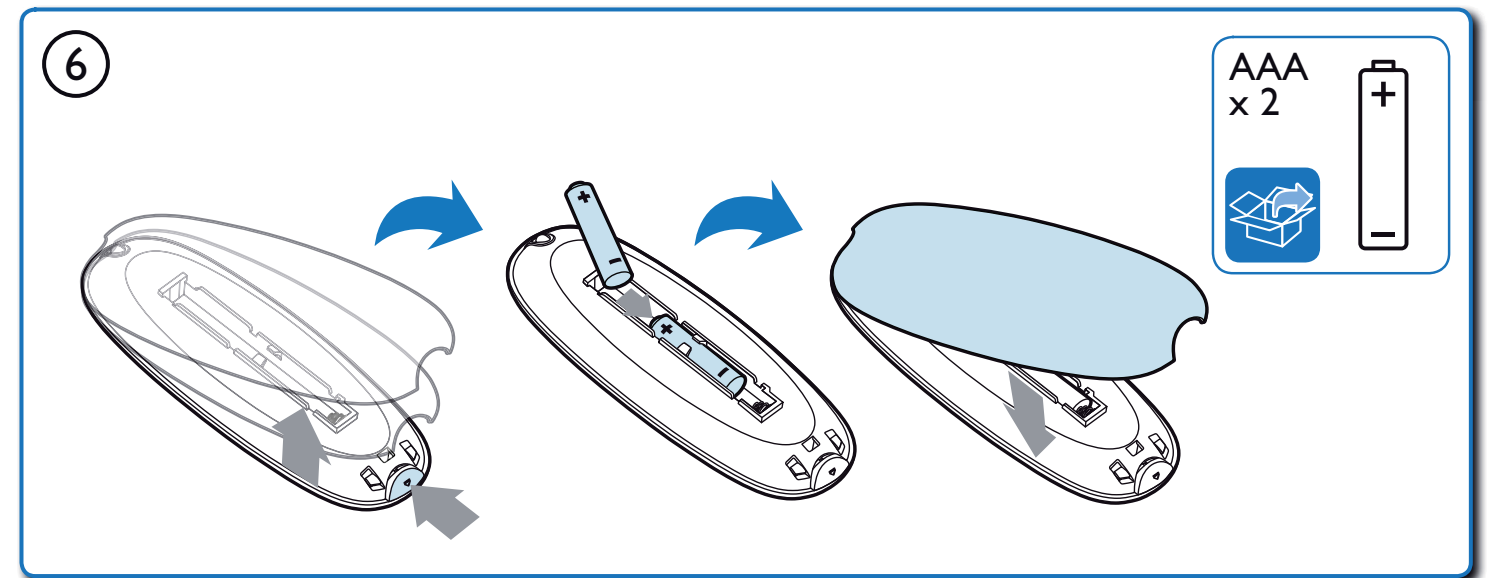
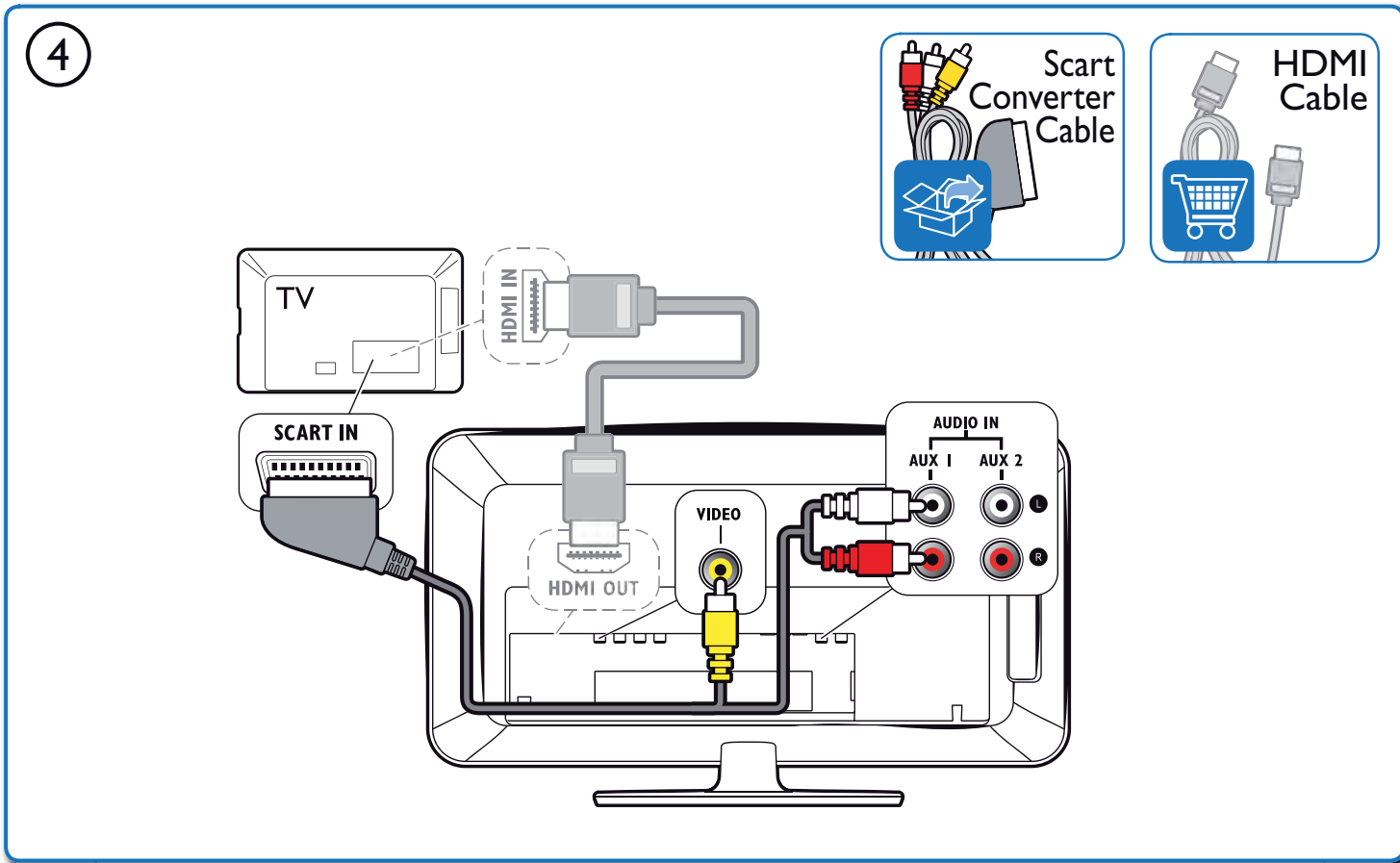
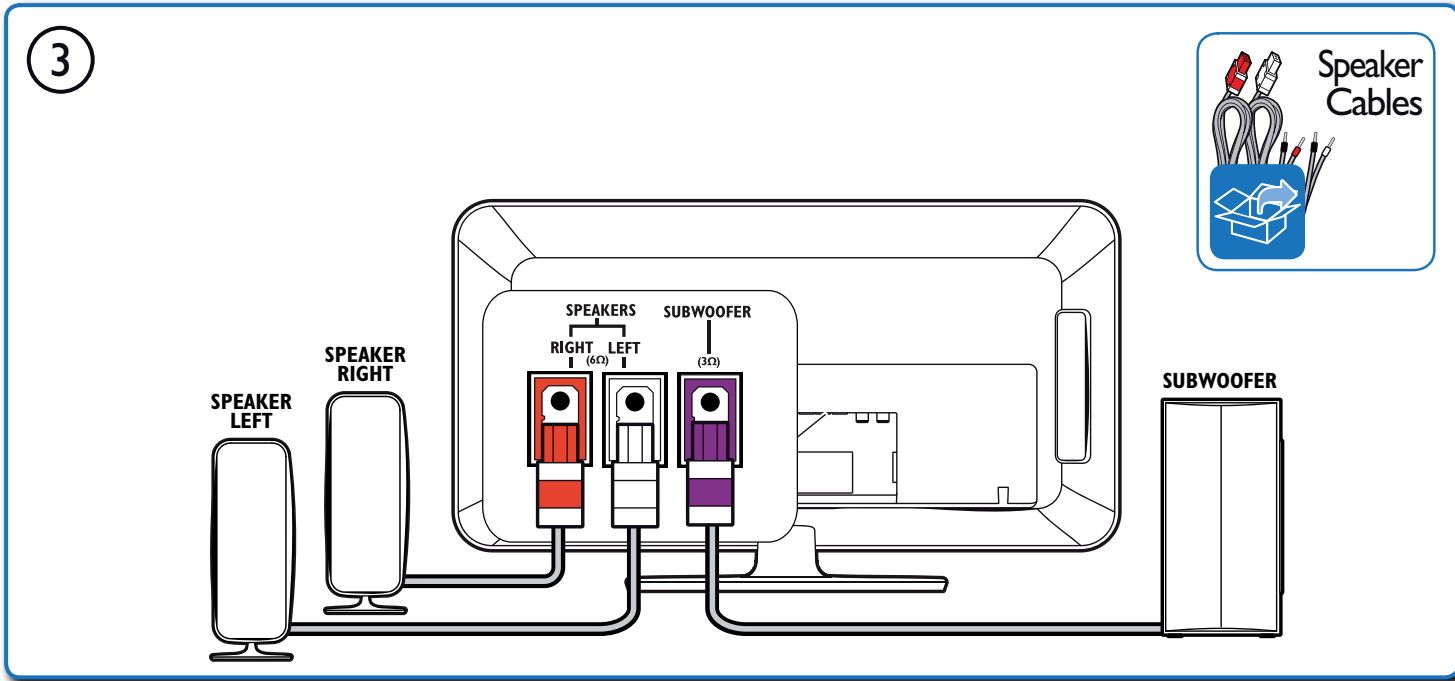


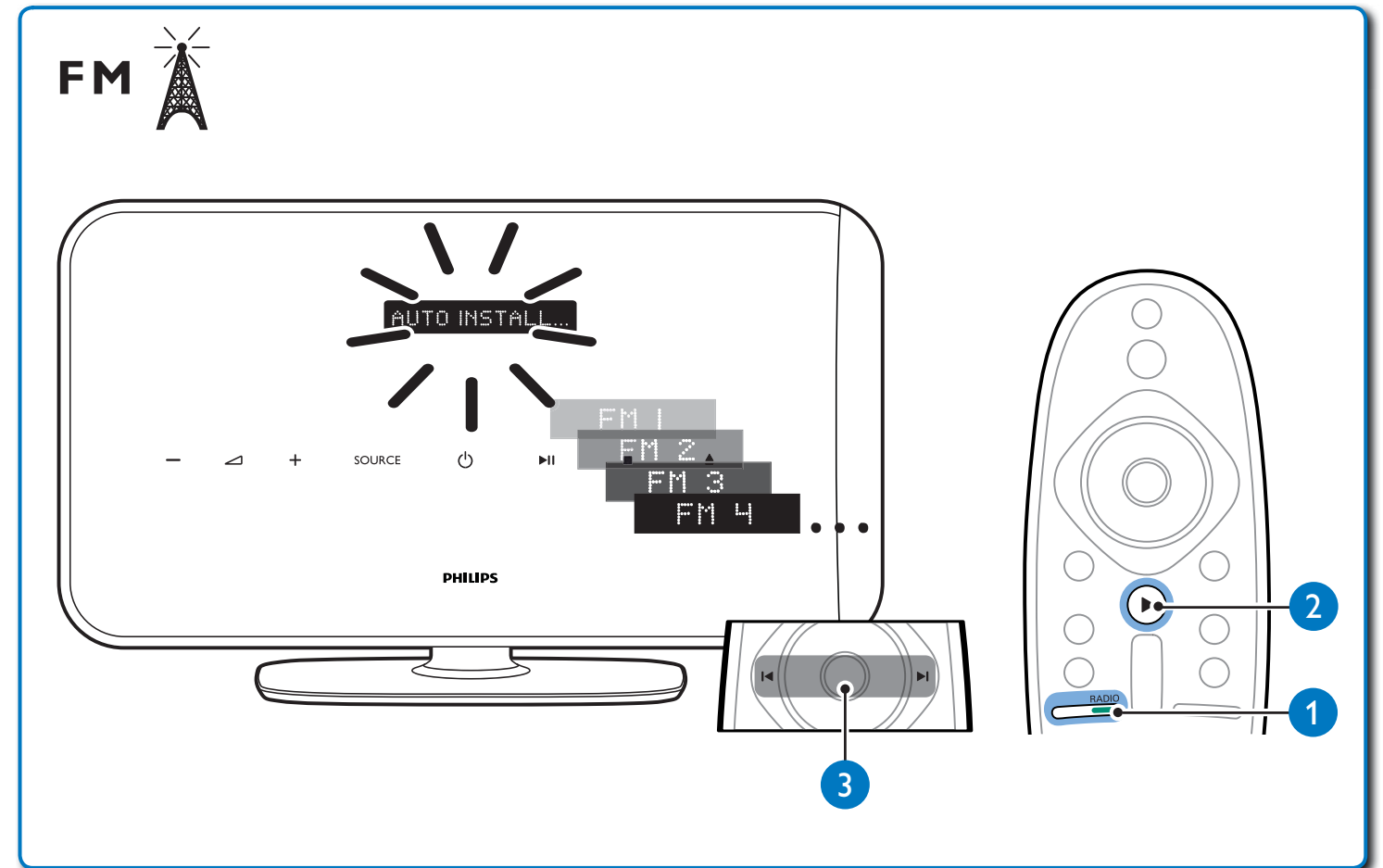
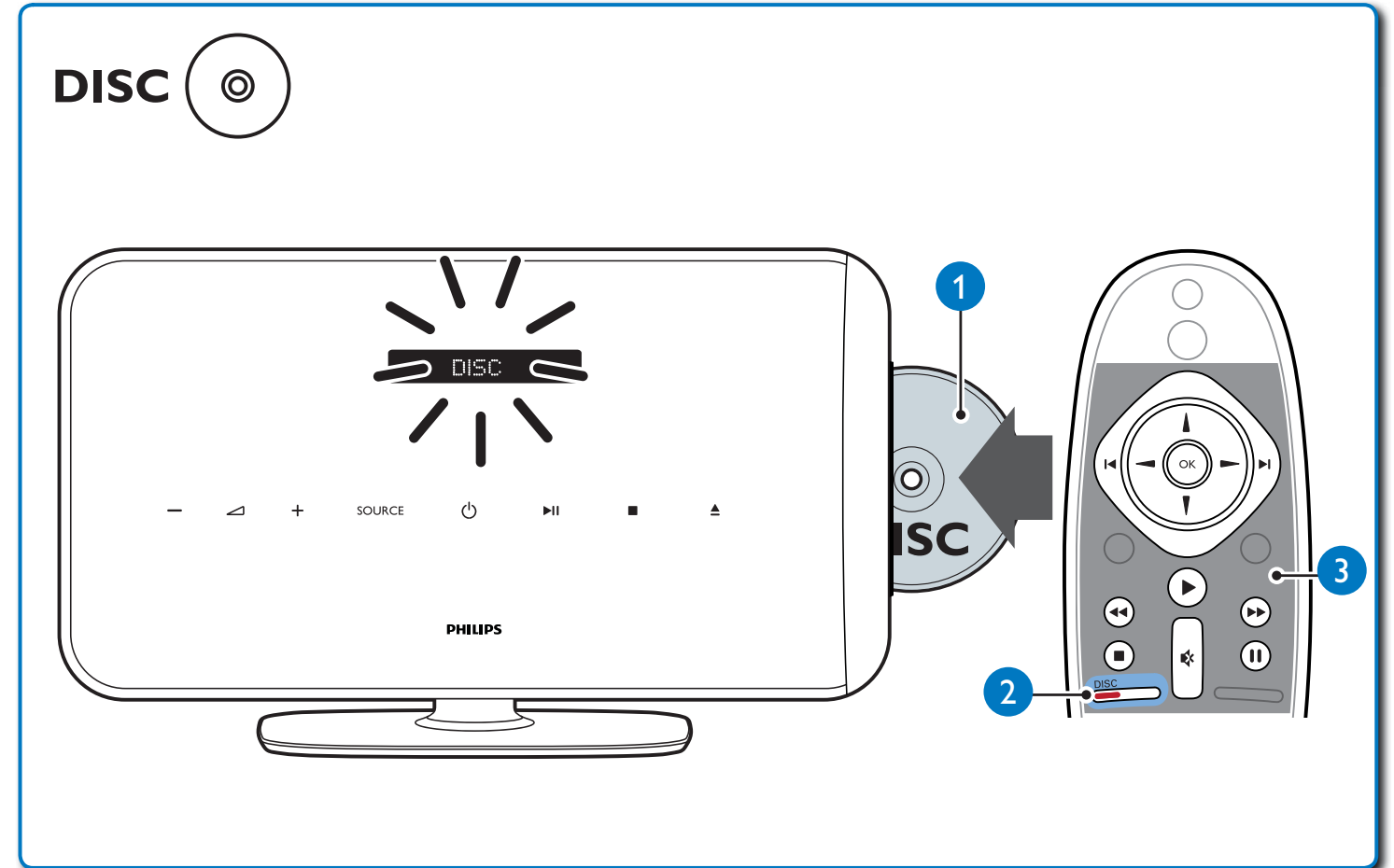
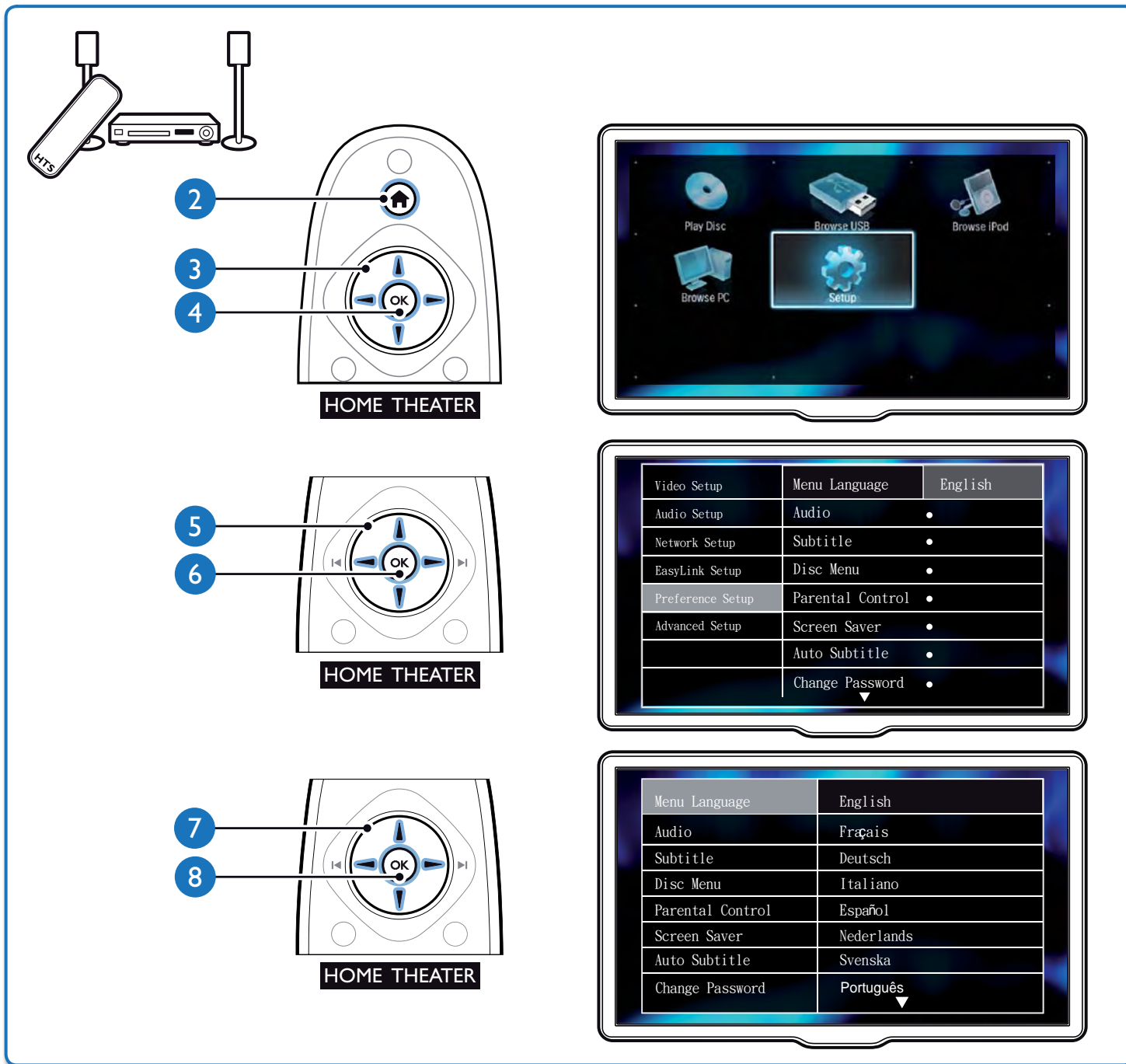
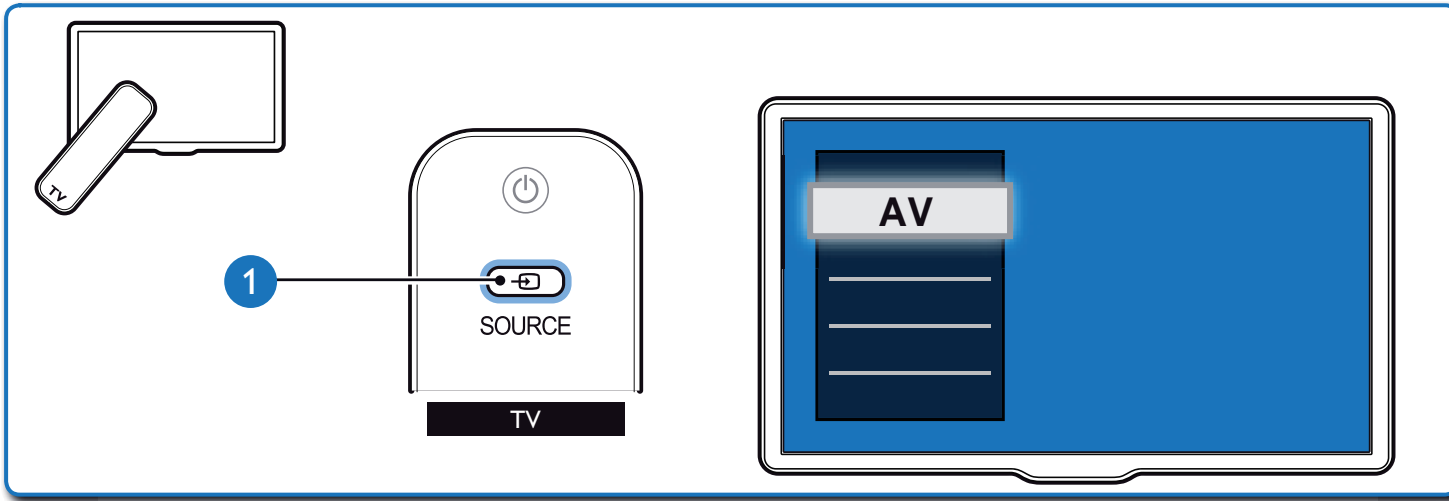
Note: In some service positions the components or copper patterns of one board may risk touching its neighbouring pc boards or metallic parts. To prevent such short-circuit use a piece of hard paper or other insulating material between them.



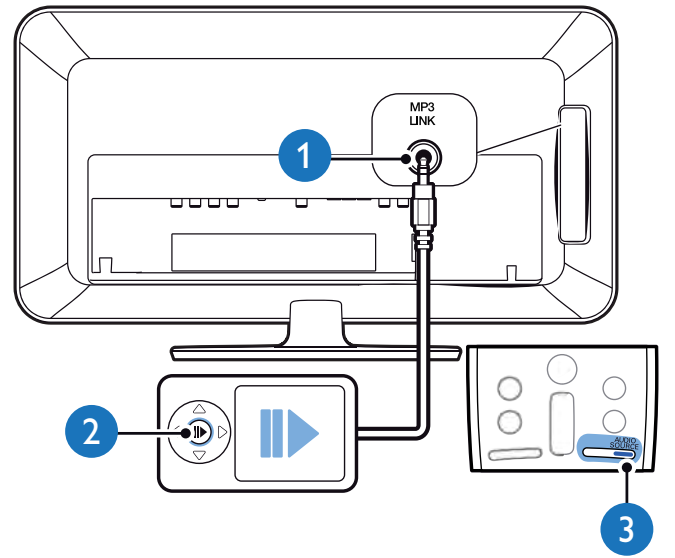
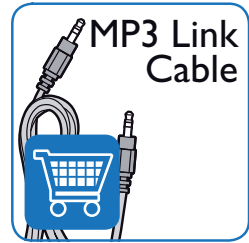




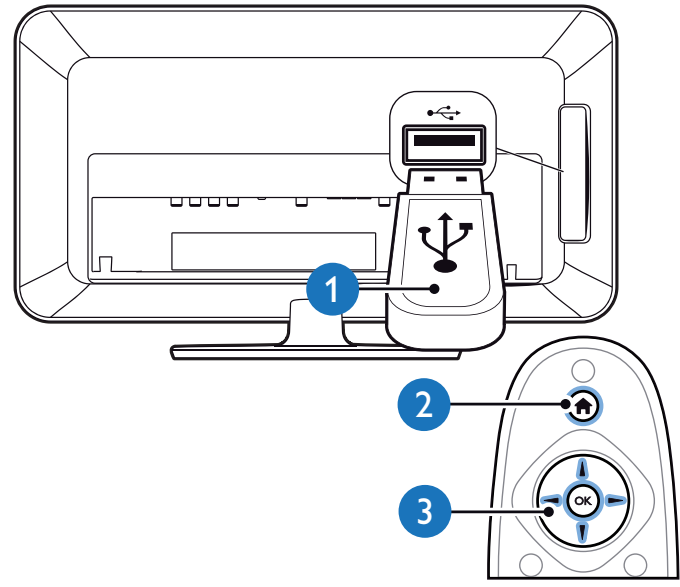




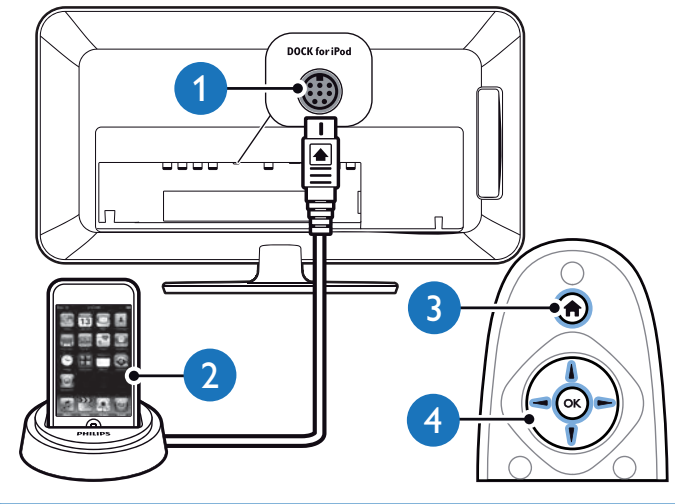
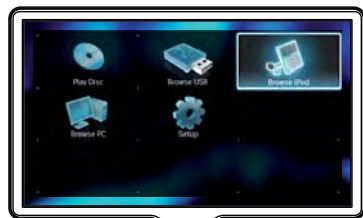
MP3



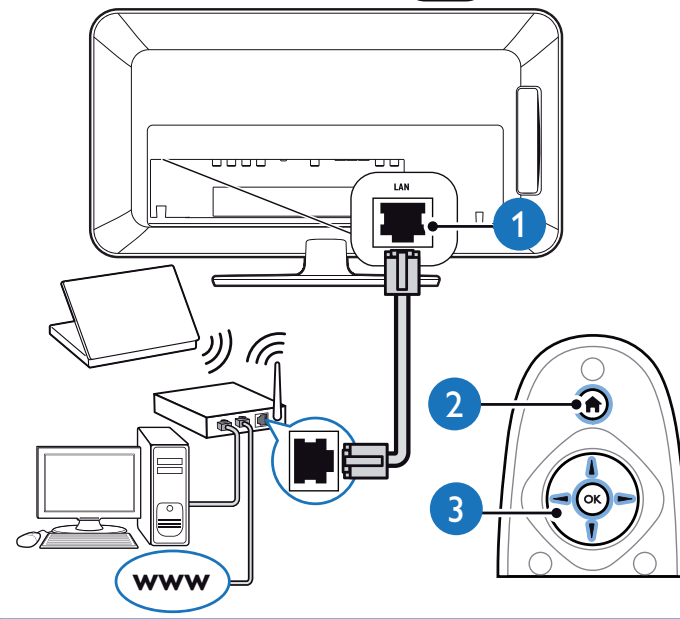
USB



iPod / iPhone



Browse PC

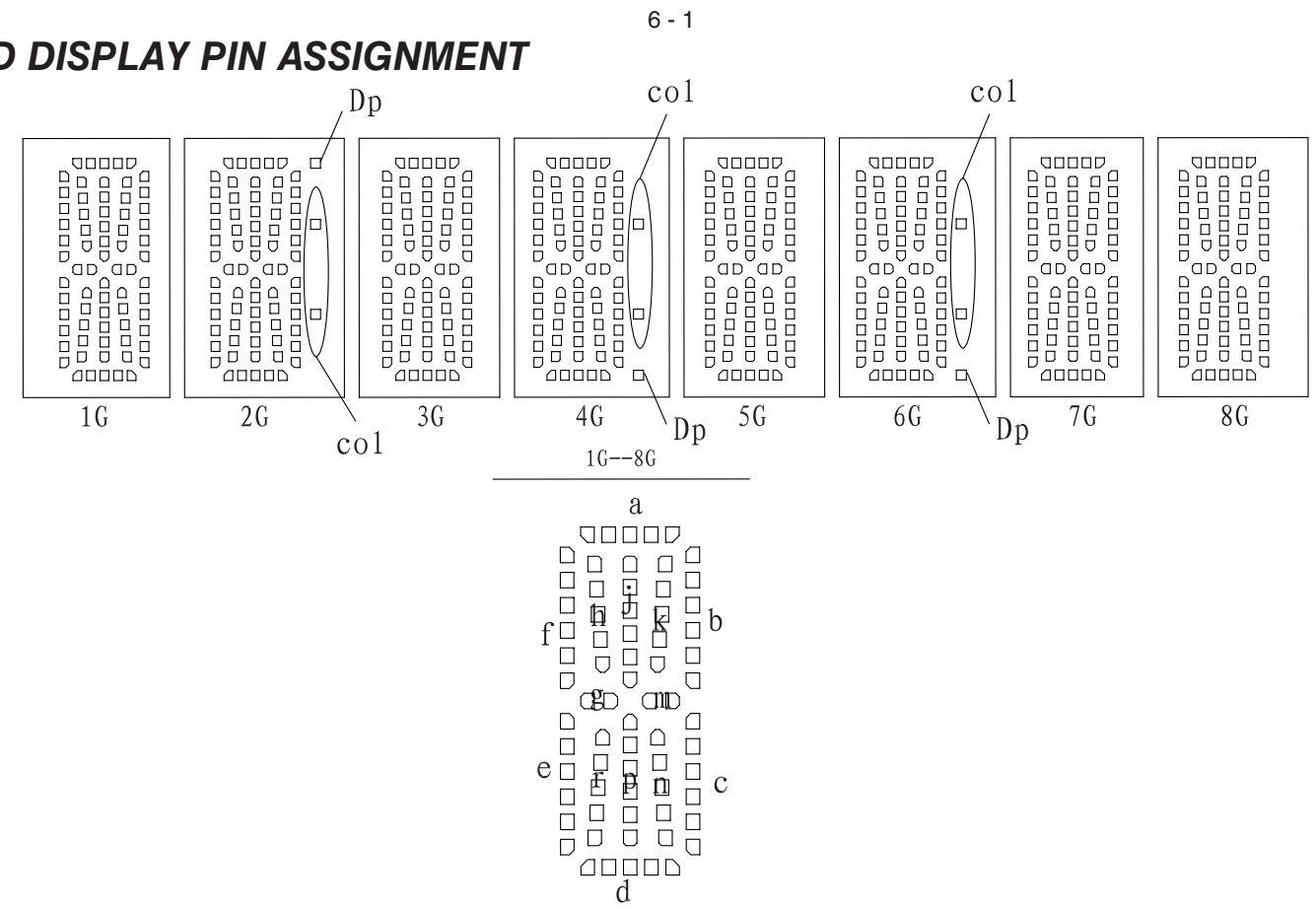


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FTD DISPLAY PIN ASSIGNMENT



VFD+USB+AUX+DOOR LED BOARD

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FTD Display Pin Assignment..... 6-1
 Circuit Diagram 6-2
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	1G	2G	3G	4G	5G	6G	7G	8G
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	/	col	/	col	/	col	/	/
P15	/	Dp	/	Dp	/	Dp	/	/

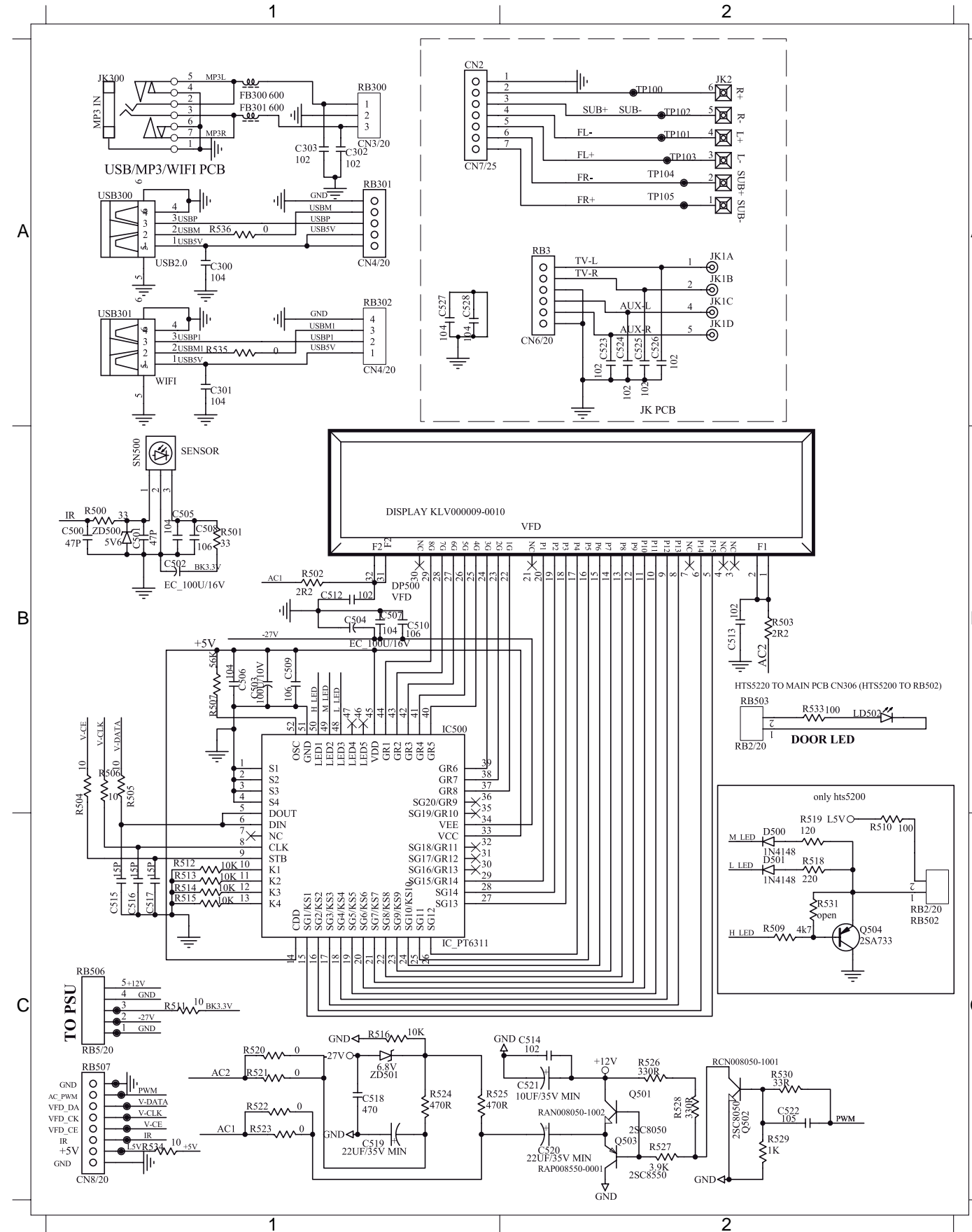
PIN CONNECTION

(Pin NO.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(Connection)	F1	F1	NP	NC	P15	P14	NC	P13	P12	P11	P10	P9	P8	P7	P6	P5
(Pin NO.)	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
(Connection)	P4	P3	P2	P1	NC	1G	2G	3G	4G	5G	6G	7G	8G	NP	F2	F2

(Notes) : Fn : (Filament Pin) nG : (Grid Pin)
 Pn : (Anode Pin) NP : (No Pin)
 NC : (No connection Pin)

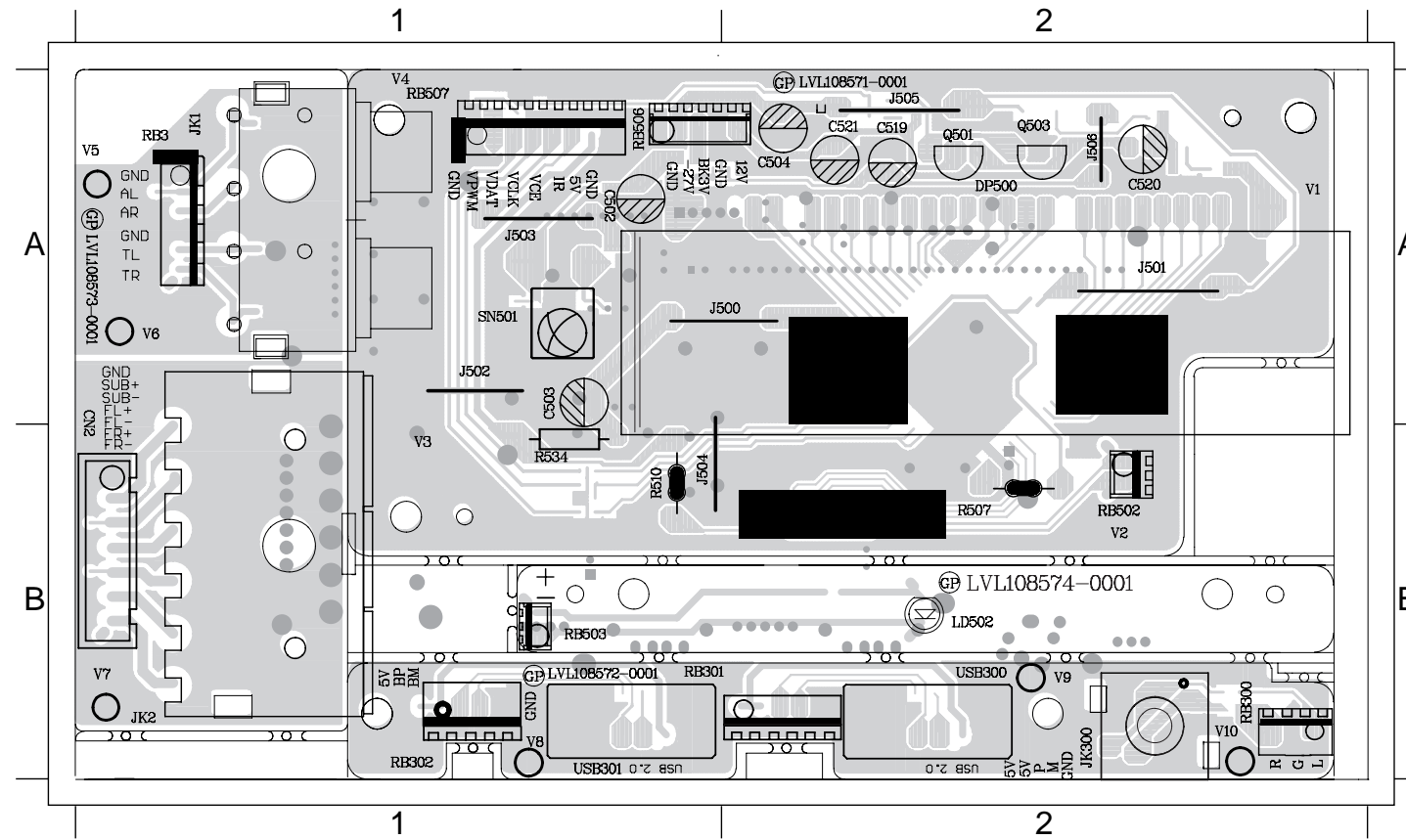
CIRCUIT DIAGRAM

C300	A1	C501	B1	C506	B1	C512	B1	C517	C1	C522	C2	C527	A1	DP500	B1	JK2	A2	Q503	C2	R503	B2	R509	C2	R514	C1	R520	C1	R525	C1	R530	C2	RB3	A2	RB506	C1	ZD500	B1		
C301	A1	C502	B1	C507	B1	C513	B1	C518	B2	C519	C1	C523	A2	C528	A1	FB300	A1	JK300	A1	Q504	C2	R504	B1	R510	C2	R515	C1	R521	C1	R526	C2	R533	B2	RB300	A1	RB507	C1	ZD501	C1
C302	A1	C503	B1	C508	B1	C514	B1	C519	C2	C519	C1	C524	A2	CN2	A1	FB301	A1	LD502	B2	R500	B1	R505	B1	R511	C1	R516	C1	R522	C1	R527	C2	R534	C1	RB301	A1	SN500	B1		
C303	A1	C504	B1	C509	B1	C515	B1	C520	C1	C520	C2	C525	A2	D500	C2	IC500	B1	Q501	C2	R501	B1	R506	B1	R512	C1	R518	C2	R523	C1	R528	C2	R535	A1	RB302	A1	USB300	A1		
C500	B1	C505	B1	C510	B1	C516	B1	C521	C1	C521	C2	C526	A2	D501	C2	IC500	B1	Q502	C2	R502	B1	R507	B1	R513	C1	R519	C2	R524	C1	R529	C2	R536	A1	RB503	B2	USB301	A1		



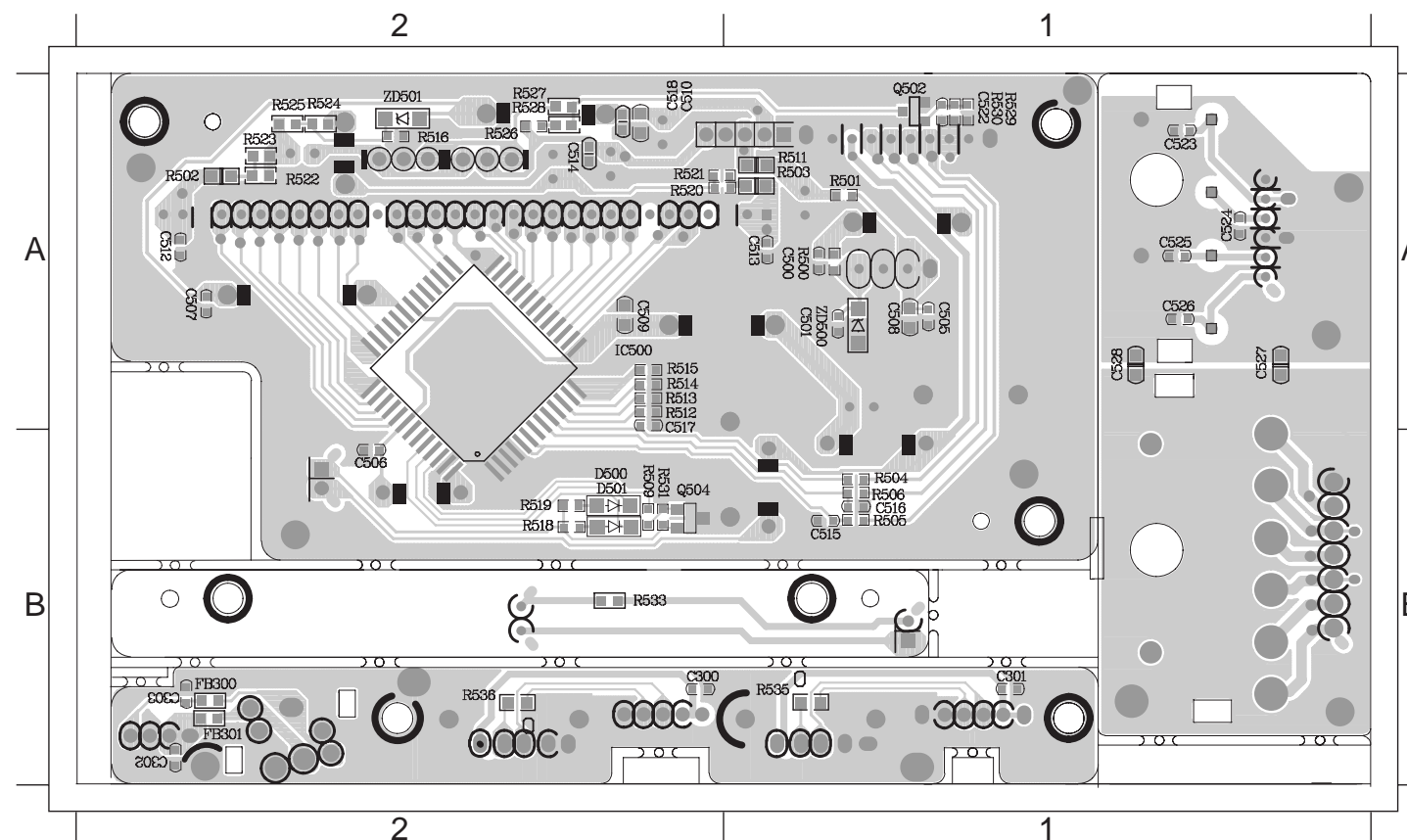
PCB LAYOUT - TOP VIEW

C502 A1 C504 A2 C520 A2 DP500 A2 J501 A2 J503 A1 J505 A2 JK1 A1 JK300 B2 Q501 A2 R507 B2 R534 B1 RB300 B2 RB503 B1 RB507 A1 USB300 B2 RB302 B1
 C503 A1 C519 A2 C521 A2 J500 A1 J502 A1 J504 B1 J506 A2 JK2 B1 LD502 B2 Q503 A2 R510 B1 RB3 A1 RB301 B2 RB506 A1 SN500 A1 USB301 B1



PCB LAYOUT - BOTTOM VIEW

C300 B2 C500 A1 C506 B2 C509 A2 C513 A1 C516 B1 C522 A1 C525 A1 C528 A1 D501 B2 IC500 A2 Q504 B2 R502 A2 R505 B1 R511 A1 R514 A2 R518 B2 R521 A2 R524 A2 R527 A2 R530 A1 C301 B1 ZD501 A2
 C302 B2 C501 A1 C507 A2 C510 A2 C514 A2 C517 A2 C523 A1 C526 A1 CN2 A1 FB300 B2 IC500 A2 R500 A1 R503 A1 R506 B1 R512 A2 R515 A2 R519 B2 R522 A2 R525 A2 R528 A2 R533 B2 R536 B2
 C303 B2 C505 A1 C508 A1 C512 A2 C515 B1 C518 A2 C524 A1 C527 A1 D500 B2 FB301 B2 Q502 A1 R501 A1 R504 B1 R509 B2 R513 A2 R516 A2 R520 A2 R523 A2 R526 A2 R529 A1 R535 B1 ZD500 A1

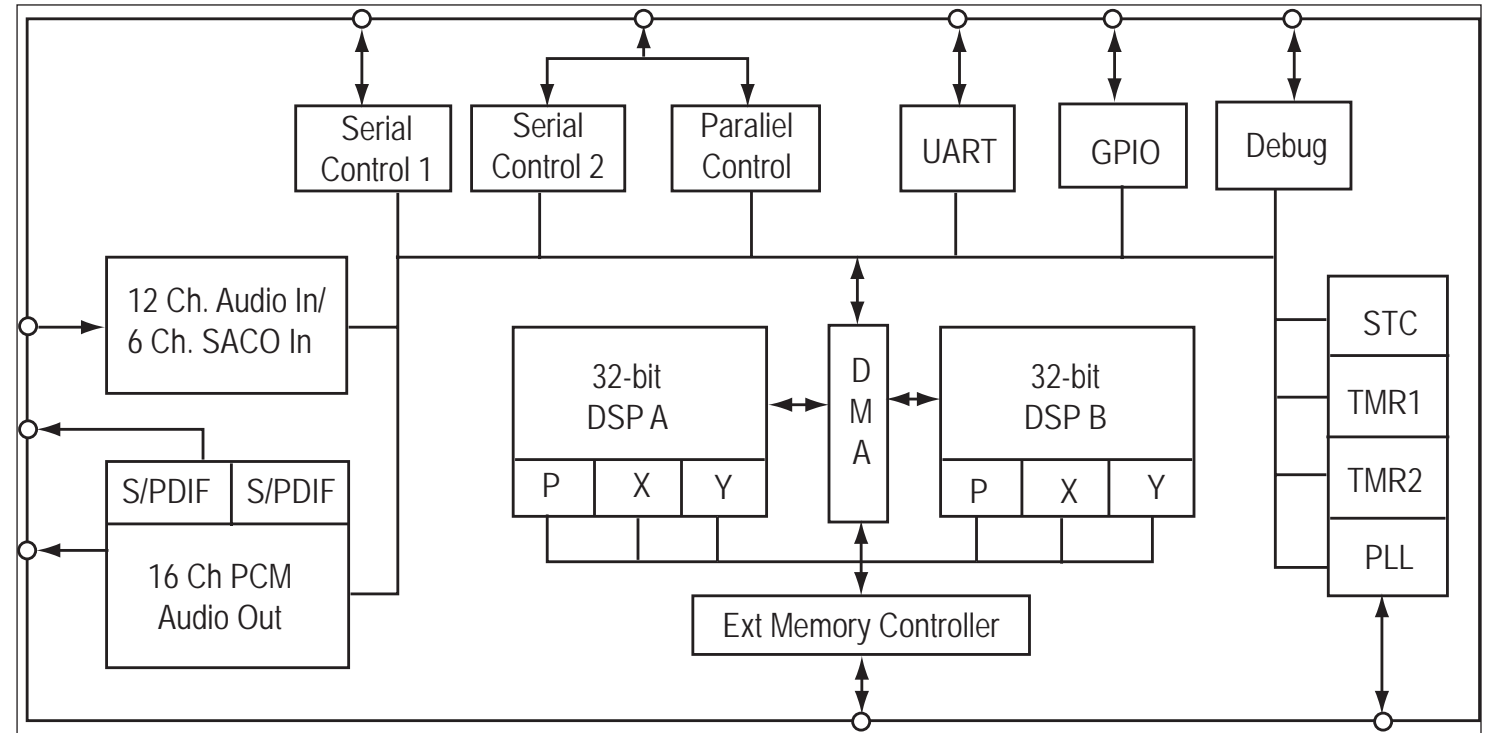


MAIN+LED BOARD

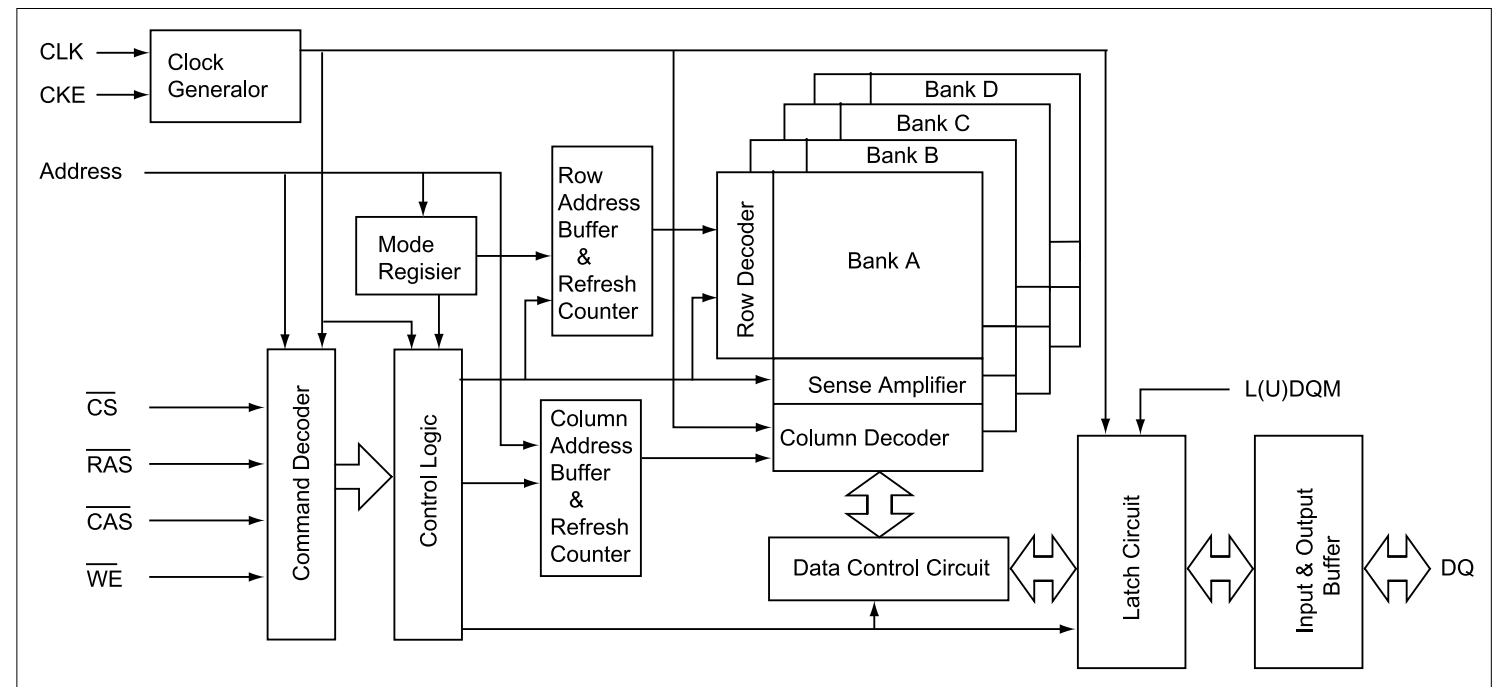
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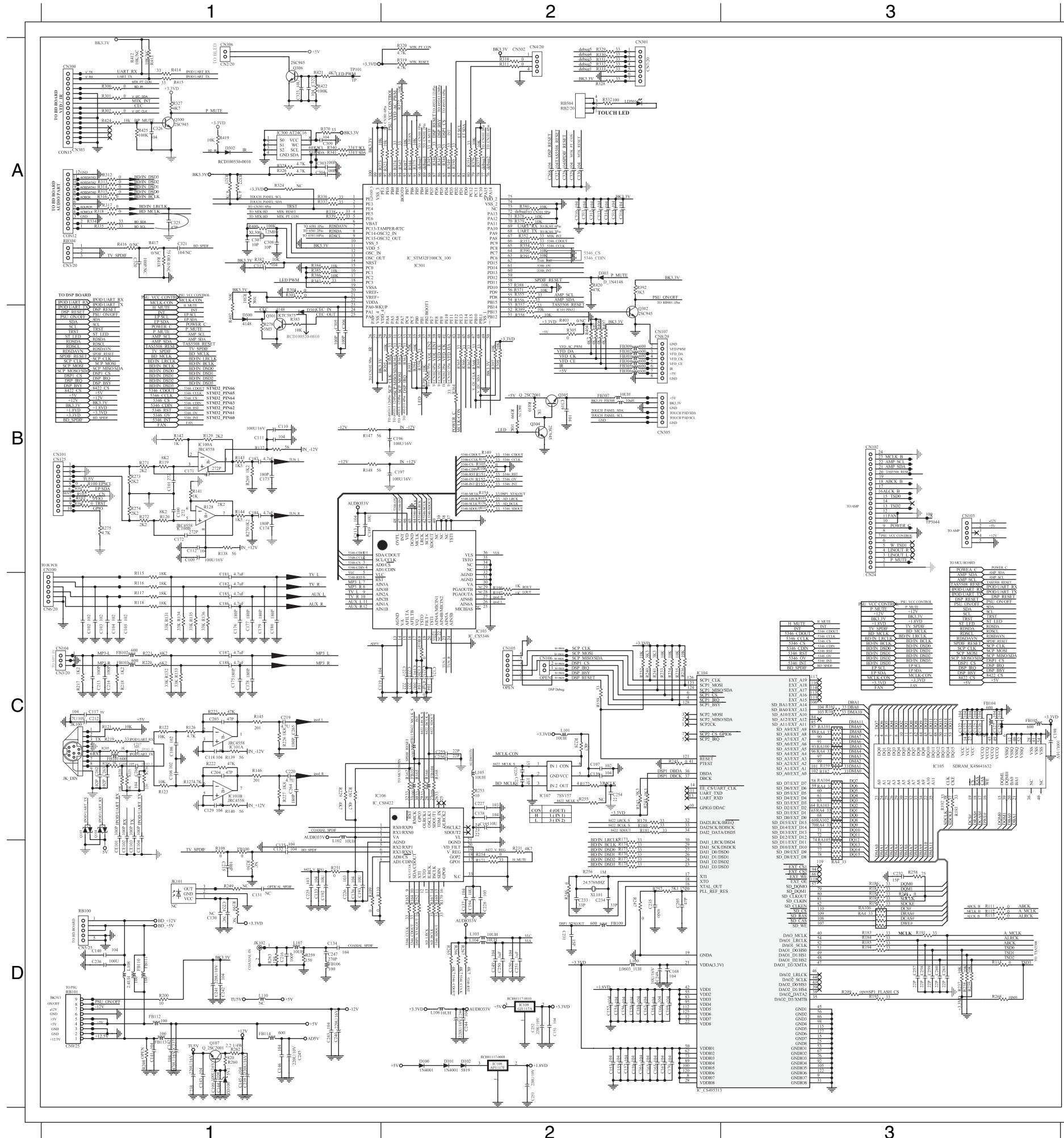
7-1
INTERNAL IC DIAGRAM - CS495313-CVZ



INTERNAL IC DIAGRAM - A641604L



CIRCUIT DIAGRAM

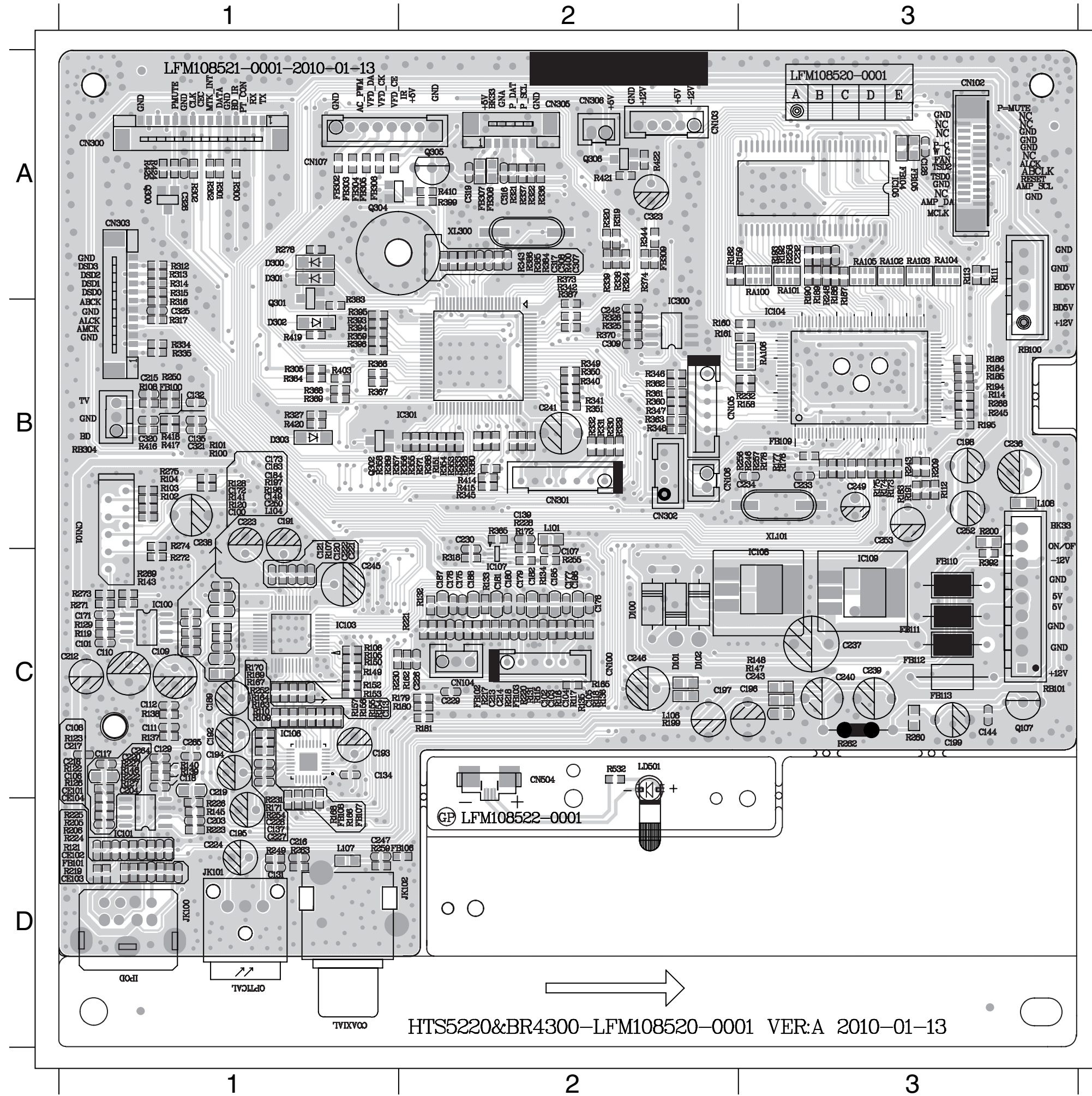


C100	B1	C183	B1	C309	A1	IC300	A1	R156	B2	R248	C2	R356	A2
C101	B1	C184	B1	C310	A2	IC301	A2	R157	B2	R251	D1	R357	A2
C102	C1	C185	C1	C311	A2	JK100	C1	R158	C2	R252	D2	R358	B2
C103	C1	C186	C1	C312	A2	JK102	D1	R159	C3	R253	C2	R359	B2
C104	C1	C187	C1	C313	A2	L101	C2	R160	C3	R254	D2	R360	B2
C105	C1	C188	C1	C314	A2	L102	D1	R161	C3	R256	D2	R361	B2
C106	C1	C189	B1	C315	A2	L103	D2	R162	C2	R257	A2	R362	B2
C107	C2	C191	C2	C316	A2	L104	D2	R163	D2	R258	D3	R363	B2
C108	C1	C192	D1	C317	A1	L105	C2	R164	D2	R259	D1	R364	B2
C109	B1	C193	D1	C319	B2	L106	D2	R165	C2	R260	D1	R365	B2
C110	B1	C194	D2	C322	A1	L107	D1	R166	C2	R262	C1	R366	B2
C111	B1	C195	C2	C323	A1	L108	D1	R167	D2	R263	C1	R367	B2
C112	B1	C196	B2	C325	A1	L109	D2	R168	C2	R265	D2	R368	B2
C113	B1	C197	B2	C326	A1	LD501	A2	R169	D2	R266	D2	R369	B2
C117	C1	C198	C3	C327	A2	Q103	C1	R170	D2	R267	D2	R370	A1
C118	C1	C199	D1	C328	A2	Q104	C1	R171	D2	R269	B1	R371	A2
C119	C2	C203	C1	C329	A2	Q107	D1	R172	C2	R270	B1	R372	A2
C120	C2	C204	C1	C330	A2	Q300	A1	R173	D2	R271	B1	R373	A1
C121	C2	C205	D2	CE101	D1	Q301	B1	R174	D2	R272	B1	R374	A2
C122	C3	C212	C1	CE102	D1	Q302	B2	R175	D2	R273	B1	R375	A2
C123	C3	C213	C1	CE103	D1	Q304	B2	R176	D2	R274	B1	R376	A2
C124	C3	C214	C1	CE104	D1	Q305	B2	R177	D2	R275	B1	R377	A2
C125	C3	C215	D1	CN100	C1	Q306	A1	R178	D2	R276	C1	R378	A2
C126	C3	C216	D1	CN101	B1	R100	B1	R179	C2	R278	B1	R379	A2
C127	C3	C217	C1	CN102	B3	R101	B1	R180	C2	R300	A1	R380	A2
C128	C3	C218	C1	CN103	B3	R103	B1	R181	C2	R301	A1	R381	A1
C129	C1	C219	C1	CN104	C1	R104	B1	R182	C3	R302	A1	R382	A1
C132	D1	C220	C1	CN107	B2	R105	B2	R183	D3	R303	A1	R383	B1
C133	D1	C221	C2	CN300	A1	R106	B2	R184	D3	R304	A1	R384	A1
C136	D1	C223	C2	CN302	A2	R108	D1	R186	D3	R310	A2	R386	A1
C137	D2	C225	D1	CN303	A1	R109	D1	R187	D3	R311	A2	R387	A2
C138	B1	C226	D1	CN305	B2	R110	D1	R188	D3	R312	A1	R388	A2
C139	C2	C227	C2	CN306	A1	R111	D3	R189	D3	R313	A1	R389	B2
C140	D1	C228	D2	RB504	A2	R112	D3	R190	D3	R314	A1	R390	A2
C141	D1	C229	C2	D100	D2	R113	D3	R191	D3	R315	A1	R391	A2
C142	D1	C230	C2	D101	D2	R114	D3	R192	C3	R316	A1	R392	A2
C143	D1	C231	D2	D102	D2	R115	C1	R193	C3	R317	A1	R393	B2
C144	D1	C232	D3	D300	B1	R116	C1	R194	D3	R318	A1	R394	B2
C145	D1	C233	D2	D301	B1	R117	C1	R195	D3	R319	A2	R395	B2
C146	D1	C234	D2	D302	A1	R118	C1	R196	C2	R320	A2	R396	B2
C149	D2	C236	D1	D303	A2	R119	B1	R197	C2	R321	A1	R397	B2
C150	D2	C237	D1	FB100	D1	R120	B1	R200	D1	R322	A1	R398	B2
C151	D2	C238	D1	FB101	C1	R121	C1	R205	C1	R323	A2	R399	B2
C152	D2	C239	D1	FB102	C1	R122	C1	R206	C1	R325	A1	R400	A1
C153	D2	C240	D1	FB103	C1	R123	C1	R217	C1	R326	A1	R402	B1
C154	D2	C241	D1	FB104	C3	R126	C1	R218	C1	R327	A1	R404	B2
C155	D2	C242	D1	FB105	C3	R127	C1	R219	C1	R328	A2	R405	B2
C156	D2	C243	D1	FB107	C2	R128	B1	R220	C1	R329	A2	R406	B2
C157	D2	C244	D2	FB108	C2	R129	B1	R221	C1	R330	A2	R407	B2
C158	D2	C245	D1	FB109	D2	R131	C1	R222	C1	R331	A2	R410	B2
C159	D2	C246	D2	FB110	D1	R132	C1	R223	C1	R332	A2	R414	A1
C160	D2	C249	D2	FB111	D1	R133	C1	R224	C1	R333	A2	R415	A1
C161	D2	C250	D2	FB112	D1	R134	C1	R225	C1	R334	A1	R419	A1
C162	D2	C251	D2	FB113	D1	R135	C1	R226	C1	R335	A1	R420	A2
C163	D2	C252	D2	FB114	D1	R136	C1	R227	C1	R336	A1	R421	A1
C164	D2	C253	D2	FB115	C2	R137	B1	R228	C2	R337	A1	R422	A1
C165	D2	C255	C2	FB302	B2	R138	B1	R229	C1	R338	A1	R424	A1
C166	D2	C256	C2	FB303	B2	R139	C1	R230	C1	R339	A1	R425	A1
C167	D2	C257	D3	FB304	B2	R140	C1	R231	D2	R340	A1	R532	A2
C168	D2	C258	D3	FB305	B2	R141	B1	R232	C2	R341	A1	RA100	C3
C169	D2	C259	D3	FB306	B2	R142	B1	R233	C2	R342	A2	RA101	C3
C170	D2	C260	D3	FB307	B2	R143	B1	R234	C2	R343	A1	RA102	C3
C171	B1	C262	C1	FB308A	B2	R144	B1	R235	C2	R344	A2	RA103	C3
C172	B1	C263	C1	FB309	B2	R145	C1	R236	C2	R345	A2	RA104	C3
C173	B1	C264	C1	IC100	B1	R146	C1	R237	D3	R346	A2	RA105	C3
C174	B1	C265	C1	IC101	B2	R147	B1	R238	D3	R347	A2	RA106	D3
C175	C1	C266	C1	IC103	C2	R148	B1	R239	D3	R348	A2	RB100	D1
C176	C1	C268	A2	IC104	C3	R149	B2	R240	C2	R349	A2	RB101	D1
C177	C1	C303	A1	IC105	C3	R150	B2	R241	C2	R350	A2	RB304	A1
C178	C1	C304	A1	IC106	C2	R151	B2	R242	A1	R351	A2	XL101	D2
C179	C1	C305	B1	IC107	C2	R152	B2	R243	C2	R352	A2	XL300	A1
C180	C1	C306	B1	IC108	D2	R153	B2	R245	C2	R353	A2	ZD100	D1
C181	C1	C307	A1	IC109	D2	R154	B2	R246	C2	R354	A2		
C182	C1	C308	A1	IC300	A1	R155	B2	R247	D2	R355	A2		

PCB LAYOUT - TOP VIEW

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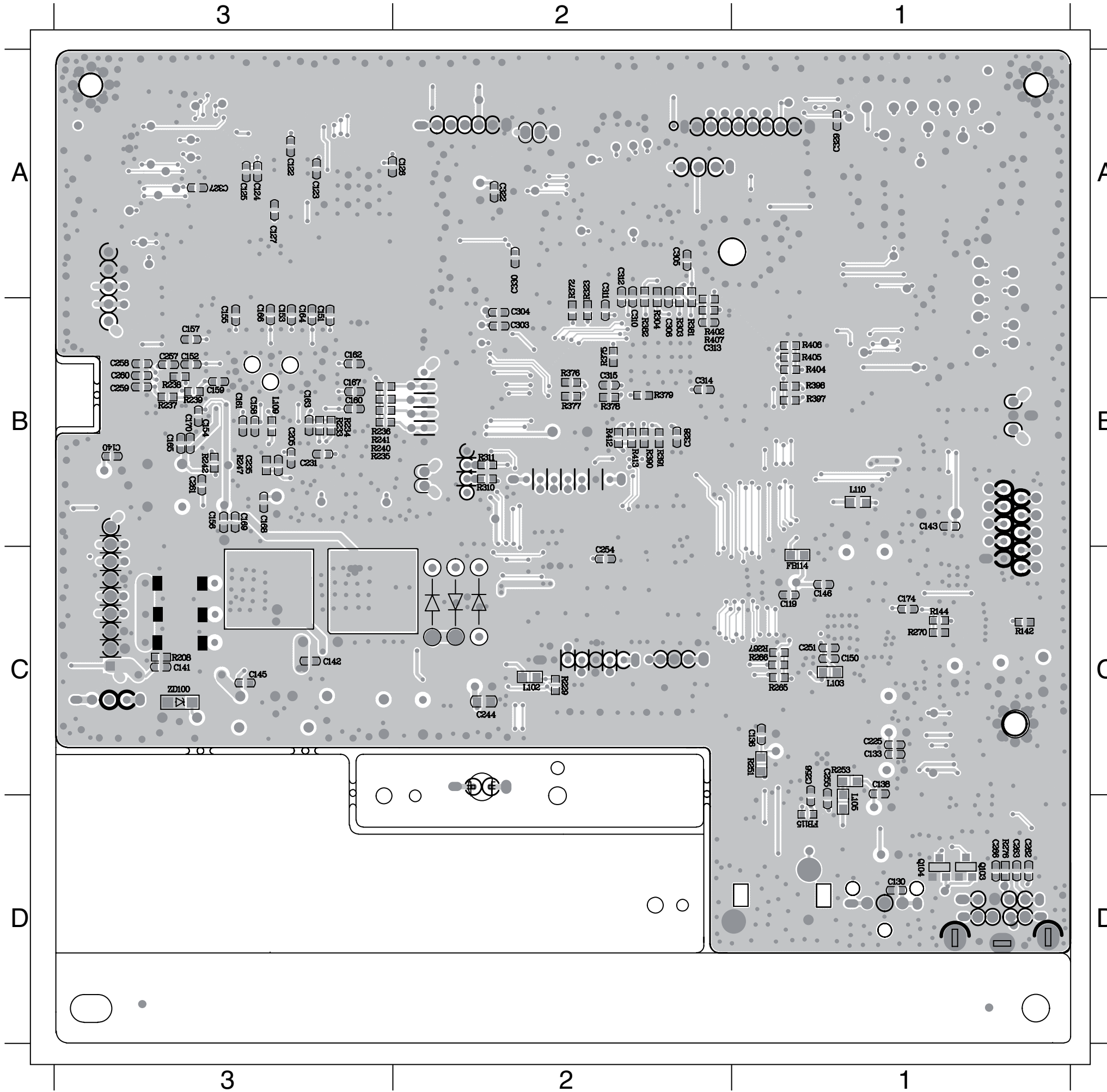


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C101	C1	C243	C3	LD501	C2	R179	C2	R332	B2
C102	C2	C245	C1	Q107	C3	R180	C2	R333	B2
C103	C2	C246	C2	Q300	A1	R181	C2	R334	B1
C104	C2	C249	B3	Q301	B1	R182	A2	R335	B1
C105	C2	C250	B1	Q302	B1	R183	B3	R336	A2
C106	C1	C252	B3	Q304	A1	R184	B3	R337	A2
C107	C2	C253	B3	Q305	A2	R185	B3	R338	A2
C108	C1	C264	C1	Q306	A2	R186	B3	R339	A2
C109	C1	C265	C1	R100	B1	R187	A3	R340	B2
C110	C1	C307	A2	R101	B1	R188	A3	R341	B2
C111	C1	C308	A2	R103	B1	R189	A3	R342	A2
C112	C1	C309	B2	R104	B1	R190	A3	R343	A2
C113	C1	C316	A2	R105	C1	R191	B3	R344	A2
C117	C1	C317	A2	R106	C1	R192	A3	R345	B2
C118	C1	C319	A2	R107	C1	R193	A3	R346	B2
C120	C1	C325	B1	R108	B1	R194	B3	R347	B2
C121	C1	C326	A1	R109	C1	R195	B3	R348	B2
C128	A3	CE101	C1	R110	C1	R196	B1	R349	B2
C129	C1	CE102	C1	R111	A3	R197	B1	R350	B2
C132	B1	CE103	D1	R112	B3	R200	B3	R351	B2
C134	C1	CE104	C1	R113	A3	R205	D1	R352	A1
C137	D1	CN100	C2	R114	B3	R206	D1	R353	B2
C139	B2	CN101	B1	R115	C2	R217	C2	R354	B2
C144	C3	CN102	A3	R116	C2	R218	C2	R355	B2
C149	B1	CN103	A2	R117	C2	R219	D1	R356	B2
C171	C1	CN104	C2	R118	C2	R220	C2	R357	B1
C172	B1	CN107	A1	R119	C1	R221	C2	R358	B1
C173	B1	CN300	A1	R120	B1	R222	C1	R359	B1
C175	C2	CN301	B2	R121	D1	R223	D1	R360	B2
C176	C2	CN302	B2	R122	C1	R224	D1	R361	B2
C177	C2	CN303	A1	R123	C1	R225	D1	R362	B2
C178	C2	CN305	A2	R126	C1	R226	D1	R363	B2
C179	C2	CN306	A2	R127	C1	R227	C1	R364	B1
C180	C2	CN504	C2	R128	B1	R228	B2	R365	B2
C181	C2	D100	C2	R129	C1	R230	C1	R366	B1
C182	C2	D101	C2	R131	C2	R231	D1	R367	B1
C183	B1	D102	C2	R132	C2	R232	B3	R368	B1
C184	B1	D300	A1	R133	C2	R243	B3	R369	B1
C185	C2	D301	A1	R134	C2	R245	B3	R370	B2
C186	C2	D302	B1	R135	C2	R246	B3	R371	B2
C187	C2	D303	B1	R136	C2	R248	A3	R373	A2
C188	C2	FB100	B1	R137	C1	R251	C1	R374	A2
C189	C1	FB101	D1	R138	C1	R252	C1	R380	B2
C191	B1	FB102	C2	R139	C1	R254	D1	R383	A1
C192	C1	FB103	C2	R140	C1	R256	B3	R384	A2
C193	C1	FB104	A3	R141	B1	R257	B3	R385	A2
C194	C1	FB105	A3	R143	C1	R258	A3	R386	A2
C195	D1	FB107	D1	R145	D1	R259	D1	R387	A2
C196	B3	FB108	D1	R146	C1	R260	C3	R388	B2
C197	C2	FB109	B3	R147	C3	R262	C3	R389	B1
C198	B3	FB110	C3	R148	C3	R263	D1	R392	C3
C199	C3	FB111	C3	R149	C1	R269	C1	R393	B1
C203	D1	FB112	C3	R150	C1	R271	C1	R394	B1
C204	C1	FB113	C3	R151	B2	R272	C1	R395	B1
C212	C1	FB302	A1	R152	C1	R273	C1	R396	B1
C213	C2	FB303	A1	R153	C1	R274	B1	R399	A2
C214	C2	FB304	A1	R154	C1	R275	B1	R400	A2
C215	B1	FB305	A1	R155	C1	R278	A1	R410	A2
C216	D1	FB306	A1	R156	C1	R300	A1	R414	B2
C217	C1	FB307	A1	R157	C1	R301	A1	R415	B2
C218	C1	FB308	A2	R158	B3	R302	A1	R419	B1
C219	C1	FB309	A2	R159	A3	R305	B1	R420	B1
C220	C1	IC100	C1	R160	B2	R312	A1	R421	A2
C221	C1	IC101	D1	R161	B2	R313	A1	R422	A2
C222	C1	IC103	C1	R162	C2	R314	A1	R424	A1
C223	B1	IC104	B3	R163	C1	R315	A1	R425	A1
C226	C2	IC105	A3	R164	C1	R316	B1	R532	C2
C227	D1	IC106	C1	R165	C2	R317	B1	RA100	A3
C228	D1	IC107	C2	R166	D1	R318	C2	RA101	A3
C229	C2	IC108	C3	R167	C1	R319	A2	RA102	A3
C230	B2	IC109	C3	R168	D1	R320	A2	RA103	A3
C232	A3	IC300	B2	R169	C1	R321	A2	RA104	A3
C233	B3	IC300	B2	R170	C1	R322	A2	RA105	A3
C234	B3	IC301	B2	R171	D1	R323	A2	RA106	B3
C236	B3	JK100	D1	R172	B2	R325	B2	RB100	B3
C237	C3	JK102	D2	R173	B3	R326	B3	RB101	C3
C238	B1	L101	B2	R174	B3	R327	B1	RB304	B1
C239	C3	L104	B1	R175	B3	R328	B2	XL101	B3
C240	C3	L106	C2	R176	B3	R329	B2	XL300	A2
C241	B2	L107	D1	R177	B3	R330	B2		

PCB LAYOUT - BOTTOM VIEW

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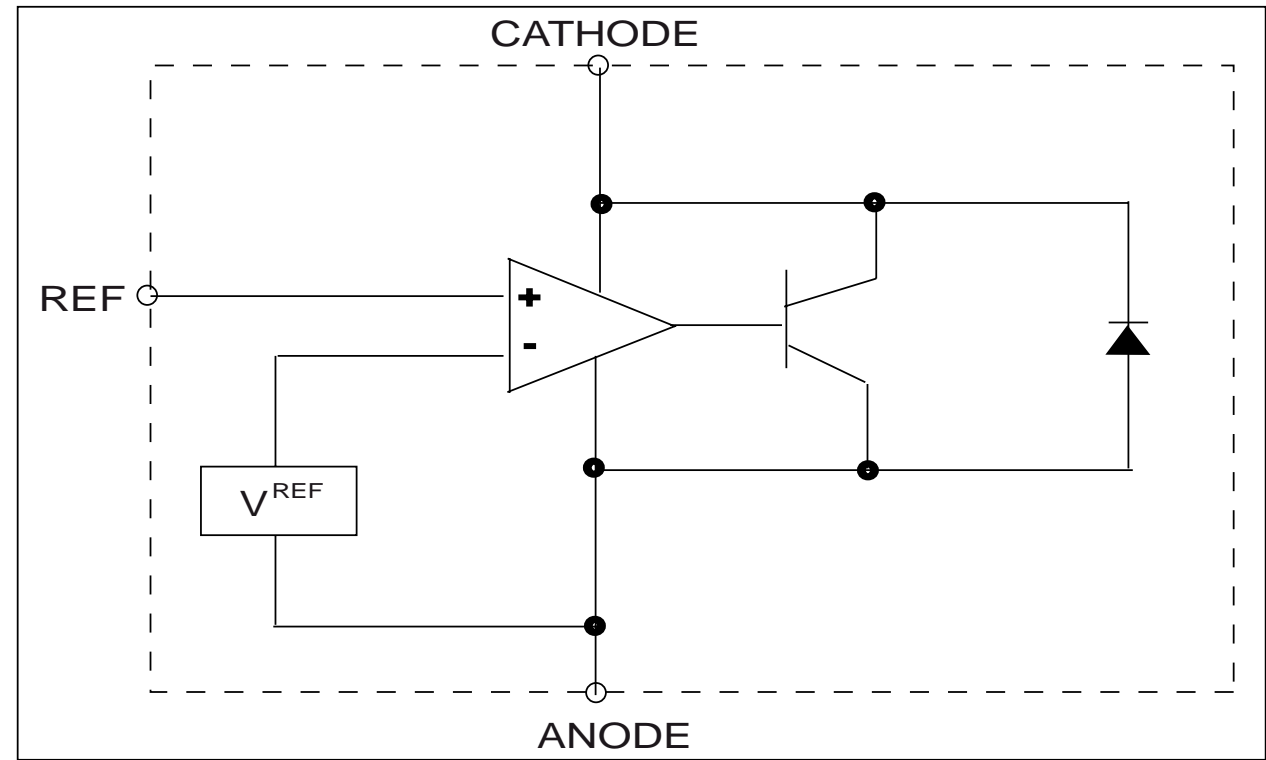
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C124	A3	L105	C1
C125	A3	L109	B3
C126	A2	Q103	C1
C127	A3	Q104	C1
C133	C1	R142	C1
C136	C1	R144	C1
C138	C1	R229	C2
C140	B3	R233	B3
C141	C3	R234	B3
C142	C3	R235	B3
C143	B1	R236	B3
C145	C3	R237	B3
C150	C1	R238	B3
C151	B3	R239	B3
C152	B3	R240	B3
C153	B3	R241	B3
C154	B3	R242	B3
C155	B3	R247	B3
C156	B3	R253	C1
C157	B3	R265	C1
C158	B3	R266	C1
C159	B3	R267	C1
C160	B3	R276	C1
C161	B3	R303	B2
C162	B3	R304	B2
C163	B3	R310	B2
C164	B3	R311	B2
C165	B3	R372	A3
C166	B3	R375	B2
C167	B3	R376	B2
C168	B3	R377	B2
C169	B3	R378	B2
C170	B3	R379	B2
C174	C1	R381	B2
C205	B3	R382	B2
C225	C1	R390	B2
C231	B3	R391	B2
C244	C2	R397	B1
C251	C1	R398	B1
C255	C1	R402	B2
C256	C1	R404	B1
C257	B3	R405	B1
C258	B3	R406	B1
C259	B3	R407	B2
C260	B3	ZD100	C3
C262	C1		
C263	C1		
C266	D1		
C268	B2		
C303	B2		
C304	B2		
C305	A2		
C306	B2		
C310	B2		
C311	A2		
C312	A2		
C313	B2		
C314	B2		
C315	B2		
C322	A2		
C323	A2		
C327	A3		
C328	B2		
C329	A1		
C330	A2		
FB114	C1		

POWER BOARD

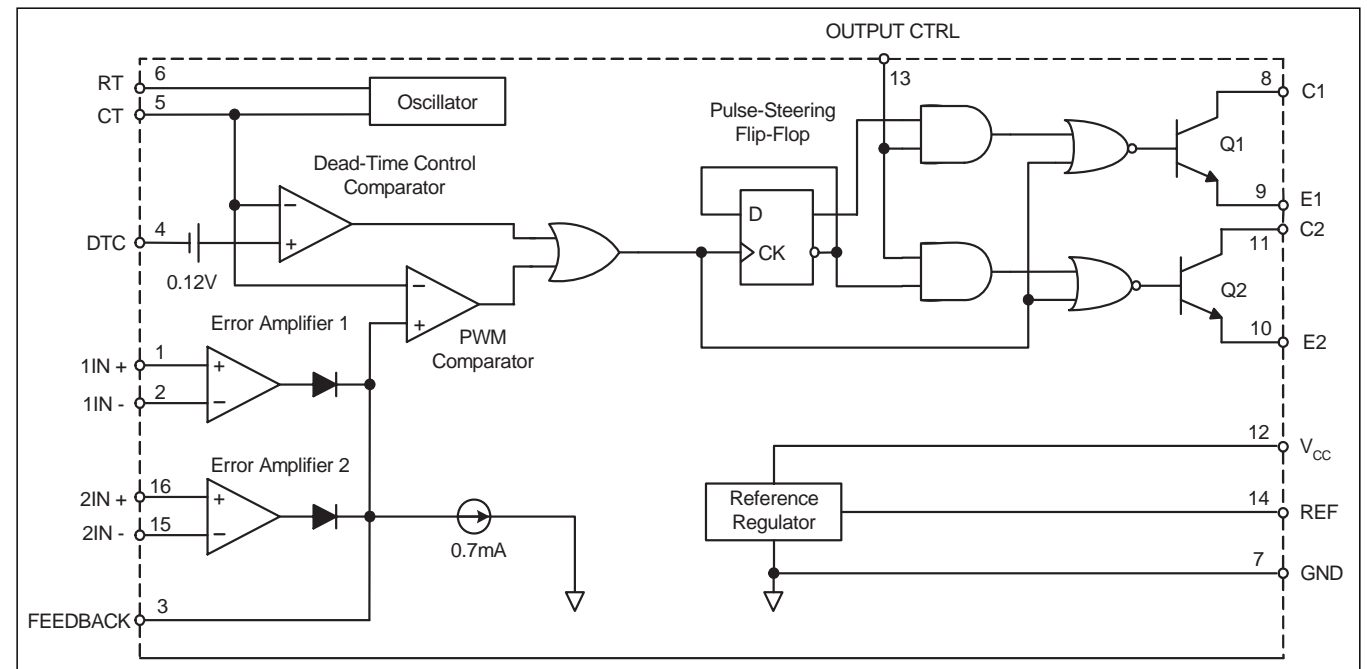
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INTERNAL IC DIAGRAM - AZ431

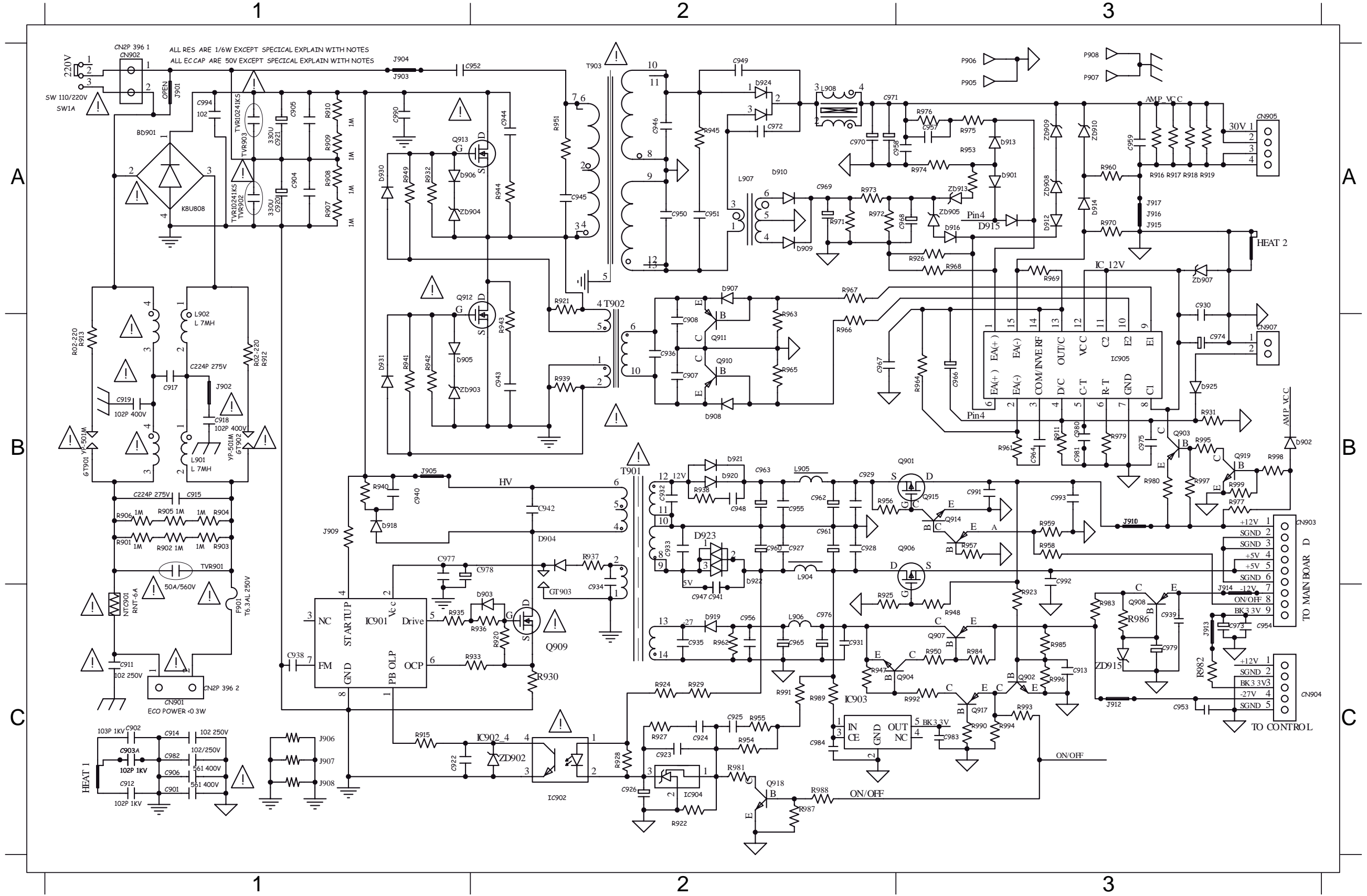


INTERNAL IC DIAGRAM - AZ7500BP



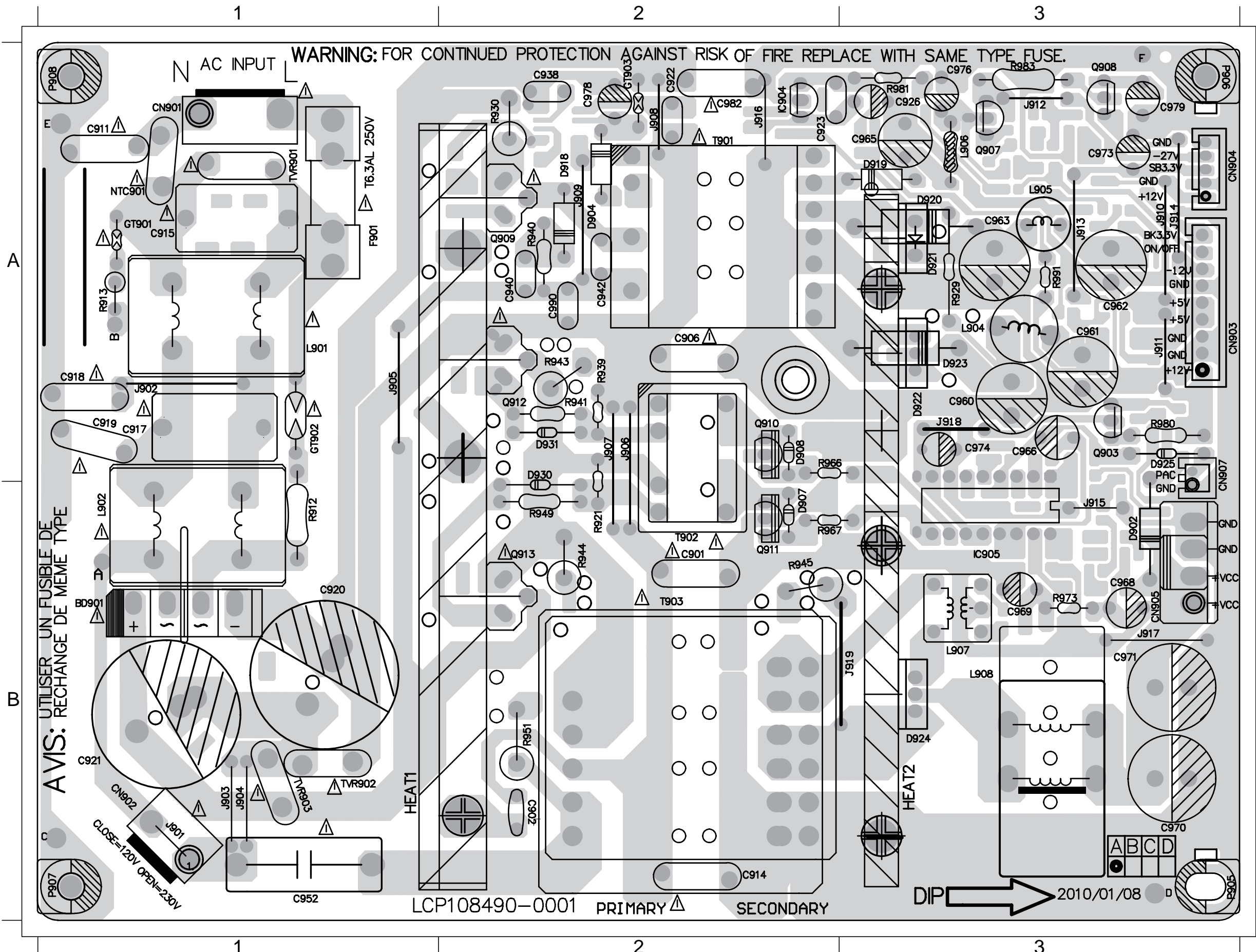
CIRCUIT DIAGRAM

BD901 A1 C919 B1 C929 B2 C946 A2 C956 C2 C967 B2 C977 B1 C993 B3 D904 B2 D915 A3 F901 C1 L904 B2 Q906 B3 Q917 C3 R908 A1 R920 C2 R930 C2 R942 B1 R955 C2 R965 B2 R975 A3 R986 C3 R996 C3 ZD902 C2
C901 C1 C920 A1 C930 A3 C947 C2 C957 A3 C968 A3 C978 B2 C994 A1 D905 B1 D916 A3 GT902 B1 L905 B2 Q907 C3 Q918 C2 R909 A1 R921 A2 R932 A1 R943 B2 R956 B2 R966 B2 R976 A3 R987 C2 R997 B3 ZD903 B1
C902 C1 C921 A1 C931 C2 C948 B2 C958 A2 C969 A2 C979 C3 CN901 C1 D906 A1 D918 B1 GT903 C2 L906 C2 Q908 C3 Q919 B3 R910 A1 R922 C2 R933 C1 R944 A2 R957 B3 R967 A2 R977 B3 R988 C2 R998 B3 ZD904 A1
C903 C1 C922 C1 C936 B2 C949 A2 C960 B2 C970 A2 C980 B3 CN902 A1 D907 A2 D919 C2 IC901 C1 L907 A2 Q909 C2 R901 B1 R911 B3 R923 C3 R935 C1 R945 A2 R958 B3 R968 A3 R979 B3 R989 C2 R999 B3 ZD905 A3
C904 A1 C923 C2 C938 C1 C950 A2 C961 B2 C971 A2 C981 B3 CN903 B3 D908 B2 D921 B2 IC902 C2 L908 A2 Q910 B2 R902 B1 R912 B1 R924 C2 R936 C2 R947 C2 R959 B3 R969 A3 R980 B3 R990 C3 T901 B2 ZD907 A3
C905 A1 C924 C2 C939 C3 C951 A2 C962 B2 C972 A2 C982 C1 CN904 C3 D909 A2 D922 B2 IC903 C2 NTC901 C1 Q911 A2 R903 B1 R915 C1 R925 C2 R937 B2 R948 C3 R960 A3 R970 A3 R981 C2 R991 C2 T902 A2 ZD908 A3
C913 C3 C925 C2 C940 B1 C952 A1 C963 B2 C973 A2 C984 C2 CN905 A3 D910 A2 D924 A2 IC904 C2 Q901 B3 Q912 A1 R904 B1 R916 A3 R926 A3 R938 B2 R949 A1 R961 B3 R971 A2 R982 C3 R992 C3 T903 A2 ZD909 A3
C915 B1 C926 C2 C941 C2 C953 C3 C964 B3 C974 B3 C990 A1 CN907 B3 D912 A3 D925 B3 IC905 B3 Q902 C3 Q913 A1 R905 B1 R917 A3 R927 C2 R939 B2 R950 C3 R962 C2 R972 A2 R983 C3 R993 B3 TVR901 B1 ZD910 A3
C917 B1 C927 B2 C943 B2 C954 C3 C965 C2 C975 B3 C991 B3 D902 B3 D913 A3 D930 A1 L901 B1 Q903 B3 Q914 B3 R906 B1 R918 A3 R928 C2 R940 B1 R953 A3 R963 B2 R973 A2 R984 C3 R994 C3 TVR902 A1 ZD913 A3
C918 B1 C928 B2 C944 A2 C955 B2 C966 B3 C976 C2 C992 B3 D903 C2 D914 A3 D931 B1 L902 A1 Q904 C3 Q915 B3 R907 A1 R919 A3 R929 C2 R941 B1 R954 C2 R964 B3 R974 A3 R985 C3 R995 B3 TVR903 A1 ZD915 C3



PCB LAYOUT - TOP VIEW

BD901	B1 C918	A1 C923	A2 C960	A3 C966	A3 C973	A3 C982	A2 CN904	A3 D907	B2 D922	A3 F901	A1 J902	A1 J907	A2 J912	A3 J917	B3 L904	A3 NTC901	A1 Q910	A2 R912	B1 R940	A2 R949	B2 R981	A3 T903	B2
C901	B2 C919	A1 C926	A3 C961	A3 C968	B3 C974	A3 C990	A2 CN905	B3 D908	A2 D924	B3 GT902	A1 J903	B1 J908	A2 J913	A3 J918	A3 L905	A3 Q903	A3 Q911	B2 R921	B2 R941	A2 R966	A2 R983	A3 TVR901	A1
C902	B2 C920	B1 C938	A2 C962	A3 C969	B3 C976	A3 CN901	A1 CN907	A3 D918	A2 D925	A3 GT903	A2 J904	B1 J909	A2 J914	A3 J919	B3 L906	A3 Q907	A3 Q912	A2 R929	A3 R943	A2 R967	B2 R991	A3 TVR902	B1
C915	A1 C921	B1 C940	A2 C963	A3 C970	B3 C978	A2 CN902	B1 D902	B3 D919	A3 D930	A2 IC904	A2 J905	A1 J910	A3 J915	B3 L901	A1 L907	A3 Q908	A3 Q913	B2 R930	A2 R944	B2 R973	B3 T901	A2 TVR903	B1
C917	A1 C922	A2 C952	B1 C965	A3 C971	B3 C979	A3 CN903	A3 D904	A2 D921	A3 D931	A2 IC905	B3 J906	A2 J911	A3 J916	A2 L902	B1 L908	B3 Q909	A2 R902	B2 R939	A2 R945	B2 R980	A3 T902	B2	

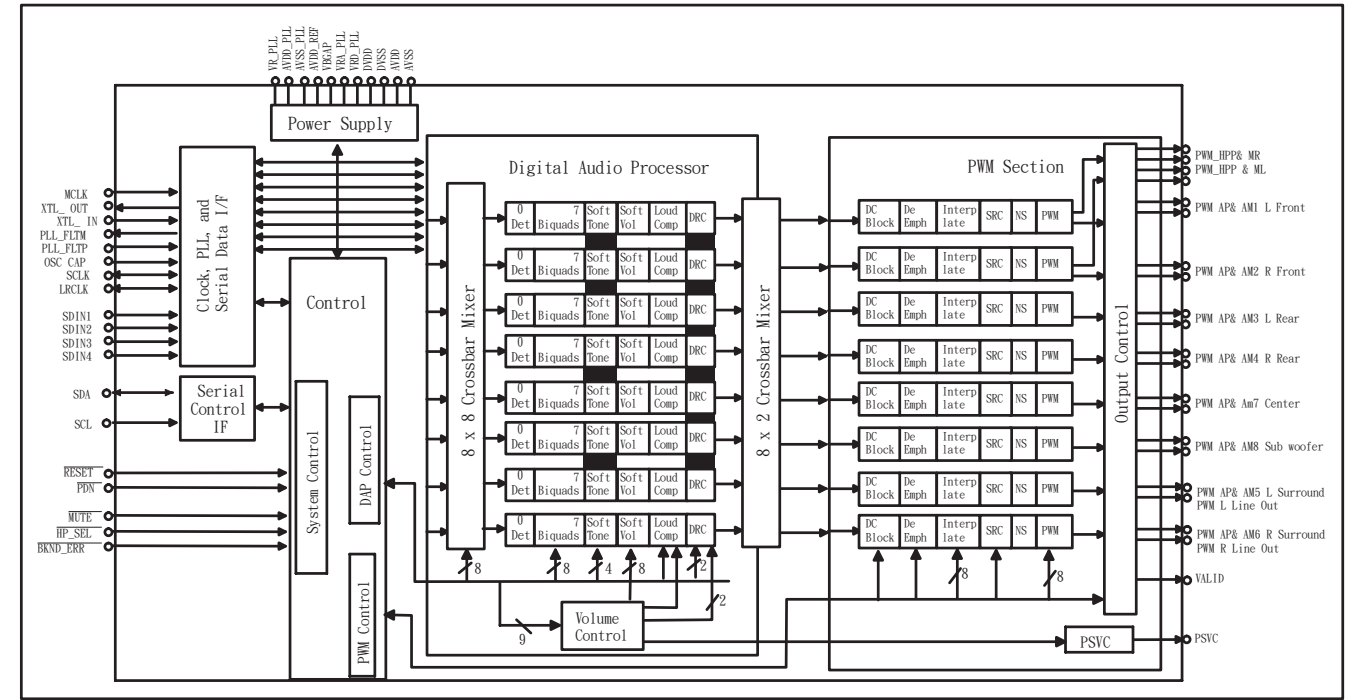


AMP BOARD

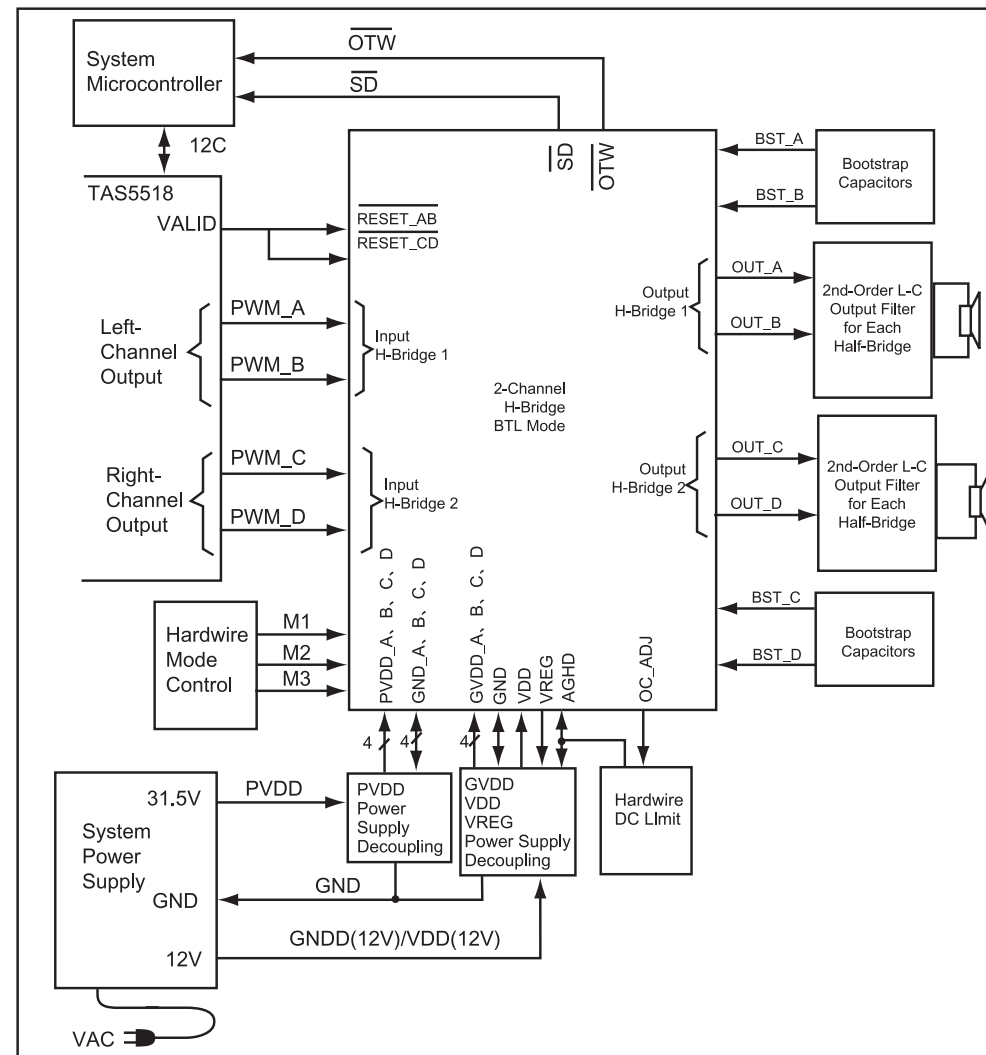
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INTERNAL IC DIAGRAM - TA5508APAG

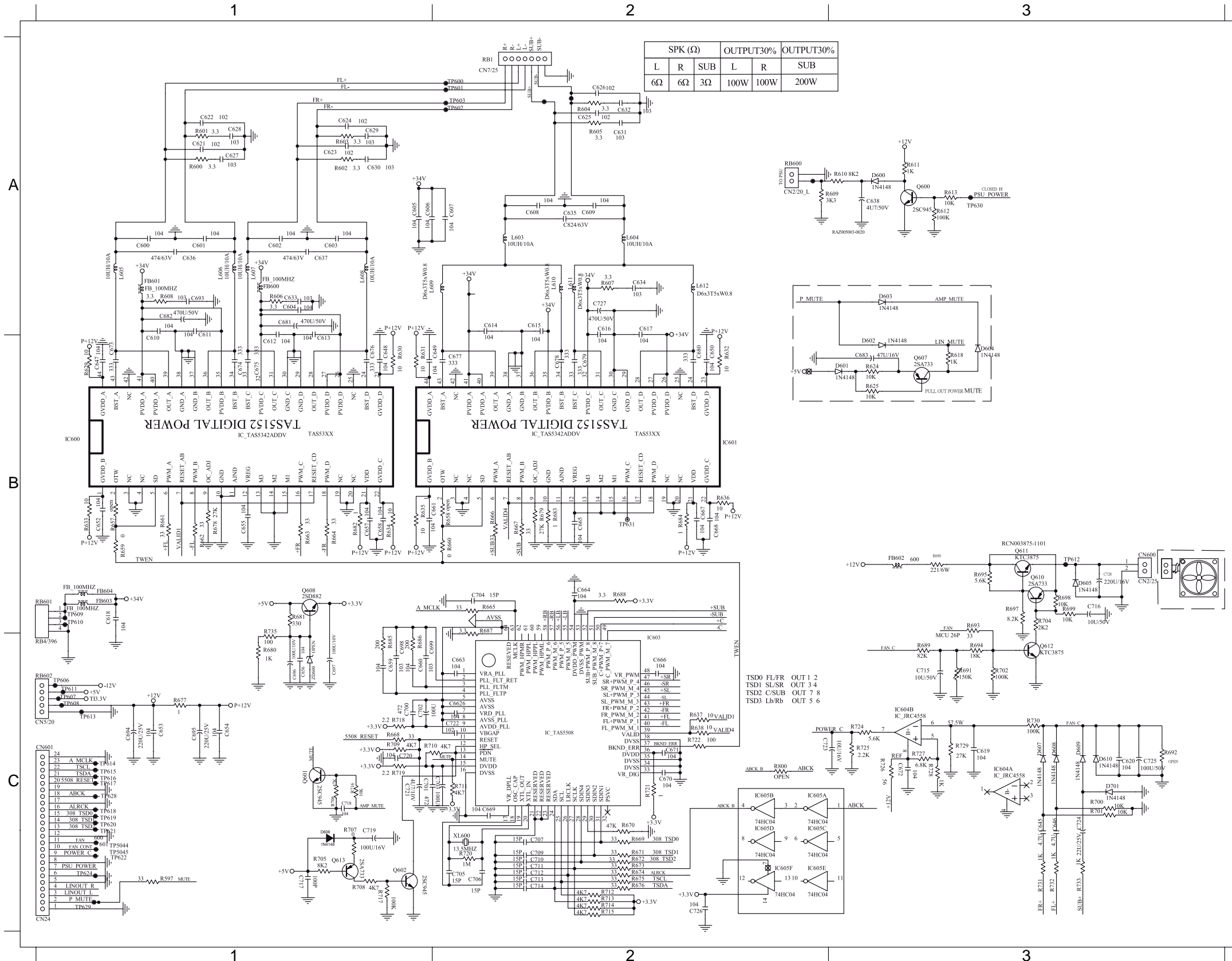


INTERNAL IC DIAGRAM - TAS5342ADDV



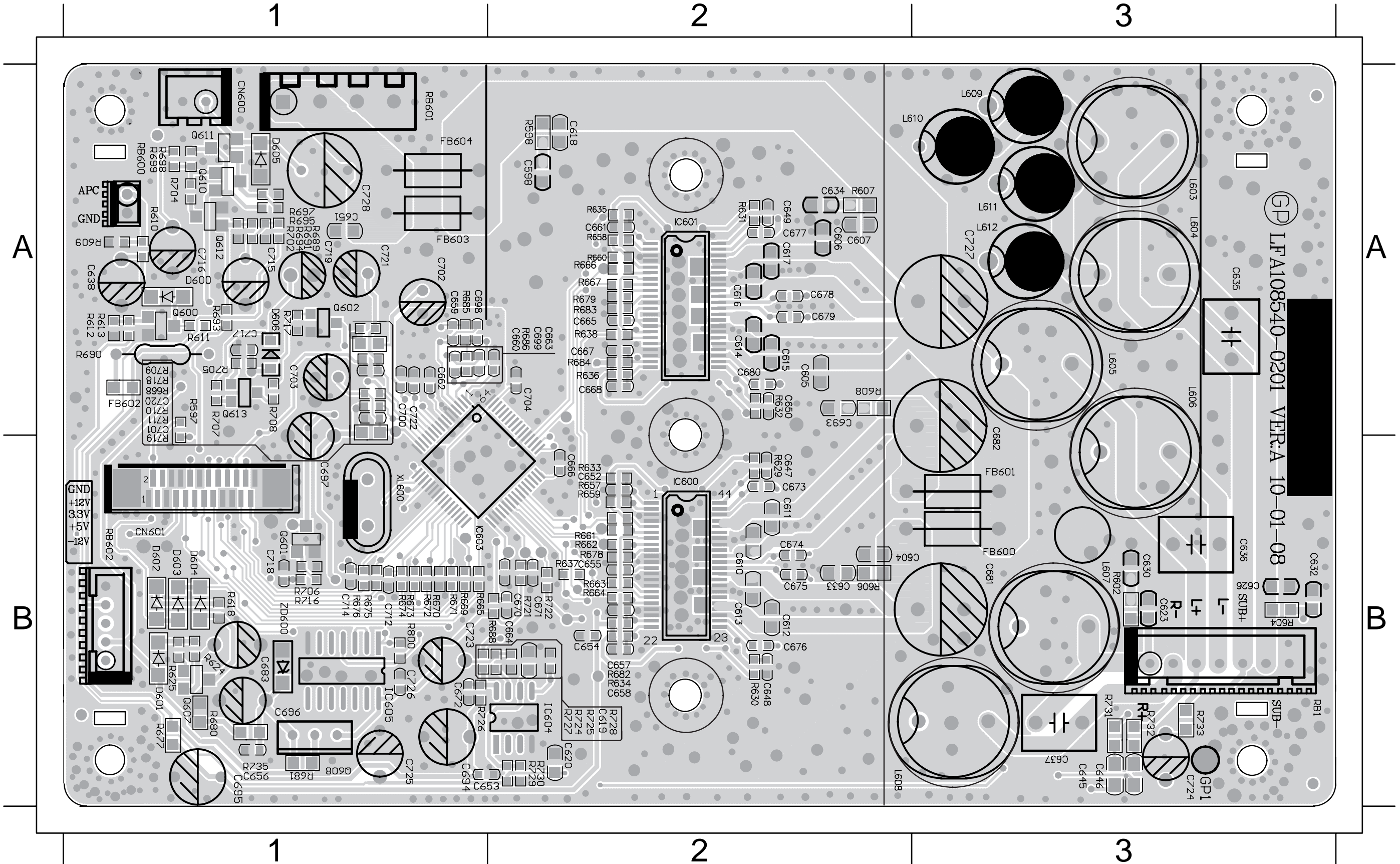
CIRCUIT DIAGRAM

C600 A1 C611 A1 C622 A1 C632 A2 C649 B2 C660 C1 C671 C2 C682 A1 C701 C1 C713 C2 C724 C3 D604 B3 FB603 B1 L607 A1 Q610 B3 R606 A1 R629 B1 R660 B2 R671 C2 R682 B1 R694 C3 R707 C1 R718 C1 R730 C3
 C601 A1 C612 B1 C623 A1 C633 A1 C650 B2 C661 B2 C672 C3 C683 B3 C702 C1 C714 C2 C725 C3 D605 B3 FB604 B1 L608 A1 Q611 B3 R607 A2 R630 B1 R661 B1 R672 C2 R683 B2 R695 B3 R708 C1 R719 C1 R731 C3
 C602 A1 C613 A1 C624 A1 C634 A2 C651 B2 C662 C2 C673 B1 C693 A1 C703 C2 C715 C3 C726 C2 D606 C1 IC600 B1 L609 A1 Q612 C3 R608 A1 R631 B1 R662 B1 R673 C2 R684 B2 R697 B3 R709 C1 R720 C2 R732 C3
 C603 A1 C614 A2 C625 A2 C635 A2 C652 B1 C663 C2 C674 B1 C693 A1 C704 B2 C716 B3 C727 A2 D607 C3 IC601 B2 L610 A2 Q613 C1 R609 A2 R632 B2 R663 B1 R674 C2 R685 C1 R698 B3 R710 C1 R721 C2 R733 C3
 C604 A1 C615 A2 C626 A2 C636 A1 C653 C1 C664 B2 C675 B1 C694 C1 C705 C2 C717 C1 C728 B3 D608 C3 IC603 C2 L611 A2 R597 C1 R610 A3 R633 B1 R664 B1 R675 C2 R686 C1 R699 B3 R711 C2 R722 C2 R735 B1
 C605 A1 C616 A2 C627 A1 C637 A1 C654 C1 C665 B2 C676 B1 C695 C1 C706 C2 C718 C1 CN600 B3 D609 C3 IC604 C3 L612 A2 R600 A1 R611 A3 R634 B1 R665 B2 R676 C2 R687 B2 R700 C3 R712 C2 R724 C3 RB1 A2
 C606 A1 C617 A2 C628 A1 C638 A3 C655 B1 C666 C2 C677 B2 C696 C1 C707 C2 C719 C1 CN601 C1 D610 C3 IC605 C2 Q600 A3 R601 A1 R612 A3 R635 B1 R666 B2 R677 C1 R688 B2 R701 C3 R713 C2 R725 C3 RB600 A2
 C607 A2 C618 B1 C629 A1 C645 C3 C656 C1 C667 B2 C678 B2 C697 C1 C709 C2 C720 C1 D600 A3 D701 C3 L603 A2 Q601 C1 R602 A1 R613 A3 R636 B2 R667 B2 R678 B1 R689 C3 R702 C3 R714 C2 R726 C3 RB601 B1
 C608 A2 C619 C3 C630 A1 C646 C3 C657 B1 C668 B2 C679 B2 C698 C1 C710 C2 C721 C1 D601 B3 FB600 A1 L604 A2 Q602 C1 R603 A1 R618 B3 R637 C2 R668 C1 R679 B2 R690 B3 R704 B3 R715 C2 R727 C3 RB602 C1
 C609 A2 C620 C3 C630 A1 C647 B1 C658 B1 C669 C2 C680 B2 C699 C1 C711 C2 C722 C2 D602 B3 FB601 A1 L605 A1 Q607 B3 R604 A2 R624 B3 R638 C2 R669 C2 R680 C1 R691 C3 R705 C1 R716 C1 R728 C3 XL600 C2
 C610 A1 C621 A1 C631 A2 C648 B1 C659 C1 C670 C2 C681 A1 C700 C1 C712 C2 C723 C2 D603 A3 FB602 B3 L606 A1 Q608 B1 R605 A2 R625 B3 R659 B1 R670 C2 R681 B1 R693 B3 R706 C1 R717 C1 R729 C3



PCB LAYOUT - TOP VIEW

C604	B3	C615	A2	C630	B3	C646	B3	C655	B2	C664	B2	C674	B2	C683	B1	C700	A1	C717	A1	C726	B1	D604	B1	IC601	A2	L608	B2	Q608	B1	R607	A2	R625	B1	R637	B2	R666	A2	R675	B1	R684	A2	R695	A1	R708	A1	R722	B2	R732	B3
C605	A2	C616	A2	C632	B3	C647	B2	C656	B1	C665	A2	C675	B2	C693	A2	C701	A1	C718	B1	C727	A3	D605	A1	IC603	B1	L609	A3	Q610	A1	R608	A2	R629	B2	R638	A2	R667	A2	R676	B1	R685	A1	R697	A1	R709	A1	R724	B2	R733	B3
C606	A2	C617	A2	C633	B2	C648	B2	C657	B2	C666	B2	C676	B2	C693	A2	C702	A1	C719	A1	C728	A1	D606	A1	IC604	B2	L610	A2	Q611	A1	R609	A1	R630	B2	R659	B2	R668	A1	R677	B1	R686	A2	R698	A1	R710	A1	R725	B2	R735	B1
C607	A2	C618	A2	C634	A2	C649	A2	C658	B2	C667	A2	C677	A2	C694	B1	C703	A1	C720	A1	CN600	A1	FB600	B3	IC605	B1	L611	A3	Q612	A1	R610	A1	R631	A2	R660	A2	R669	B1	R678	B2	R688	B2	R699	A1	R711	A1	R726	B1	RB1	B3
C610	B2	C619	B2	C635	A3	C650	A2	C659	A1	C668	A2	C678	A2	C695	B1	C704	A2	C721	A1	CN601	B1	FB601	B3	L603	A3	L612	A3	Q613	A1	R611	A1	R632	A2	R661	B2	R670	B1	R679	A2	R689	A1	R702	A1	R716	B1	R727	B2	RB600	A1
C611	B2	C620	B2	C636	B3	C651	A1	C660	A2	C670	B2	C679	A2	C696	B1	C712	B1	C722	A1	D600	A1	FB602	A1	L604	A3	Q600	A1	R597	A1	R612	A1	R633	B2	R662	B2	R671	B1	R680	B1	R690	A1	R704	A1	R717	A1	R728	B2	RB601	A1
C612	B2	C623	B3	C637	B3	C652	B2	C661	A2	C671	B2	C680	A2	C697	B1	C714	B1	C723	B1	D601	B1	FB603	A1	L605	A3	Q601	B1	R602	B3	R613	A1	R634	B2	R663	B2	R672	B1	R681	B1	R691	A1	R705	A1	R718	A1	R729	B2	RB602	B1
C613	B2	C626	B3	C638	A1	C653	B1	C662	A1	C672	B1	C681	B3	C698	A1	C715	A1	C724	B3	D602	B1	FB604	A1	L606	A3	Q602	A1	R604	B3	R618	B1	R635	A2	R664	B2	R673	B1	R682	B2	R693	A1	R706	B1	R719	B1	R730	B2	XL600	B1
C614	A2	C630	B3	C645	B3	C654	B2	C663	A2	C673	B2	C682	B3	C699	A2	C716	A1	C725	B1	D603	B1	IC600	B2	L607	B3	Q607	B1	R606	B2	R624	B1	R636	A2	R665	B1	R674	B1	R683	A2	R694	A1	R707	A1	R721	B2	R731	B3		



PCB LAYOUT - BOTTOM VIEW

9 - 4

9 - 4

C600 A3	C602 B3	C608 A3	C621 B3	C624 B3	C627 B3	C629 B3	C669 B1	C706 B1	C709 B1	C711 B1	D607 B3	D609 B3	D701 B3	R601 B3	R605 B3	R700 B3	R712 B1	R714 B1	R720 B1
C601 A3	C603 B3	C609 A3	C622 B3	C625 B3	C628 B3	C631 B3	C705 B1	C707 B1	C710 B1	C713 B1	D608 B3	D610 B3	R600 B3	R603 B3	R687 A2	R701 B3	R713 B1	R715 B1	

3

2

1

A

A

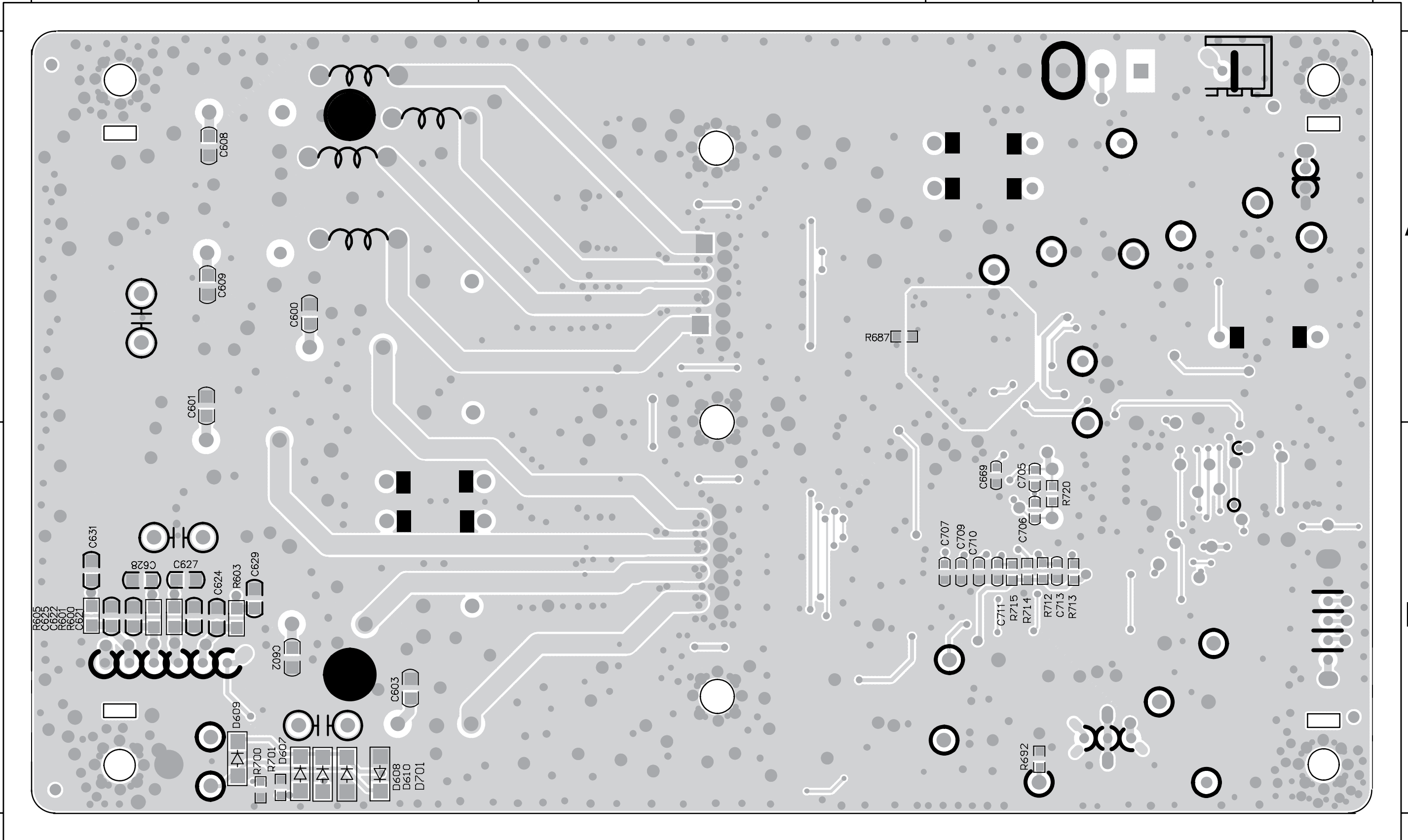
B

B

3

2

1



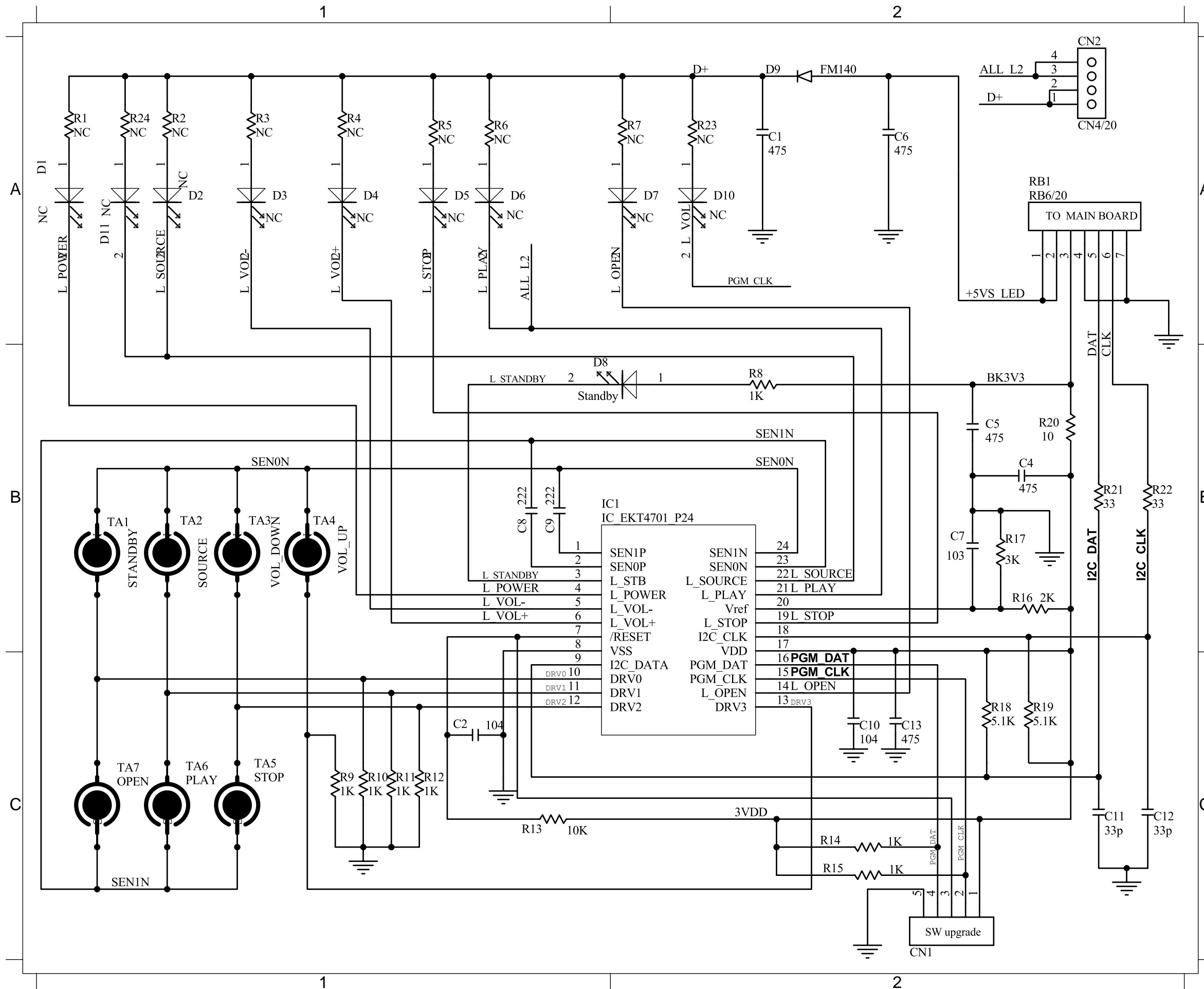
TOUCH BOARD

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CIRCUIT DIAGRAM

C1 A1 C11 C2 C13 C2 C4 B2 C6 A1 C8 B1 CN1 C2 D8 B1 IC1 B1 R11 C1 R13 C1 R15 C2 R17 B2 R19 C2 R21 B2 R8 B2
 C10 C2 C12 C2 C2 C1 C5 B2 C7 B2 C9 B1 CN2 A1 D9 A1 R10 C1 R12 C1 R14 C2 R16 B2 R18 C2 R20 B2 R22 B2 R9 C1



PCB LAYOUT - TOP VIEW

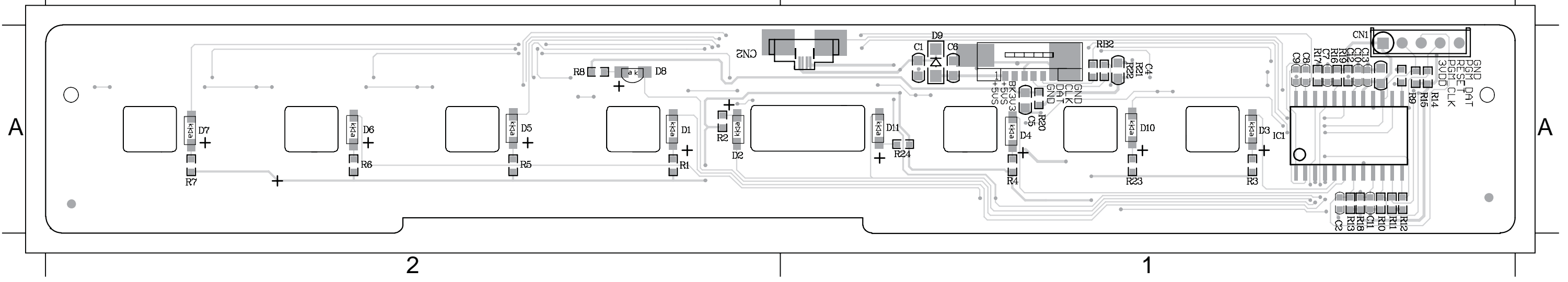
10 - 3

10 - 3

C1 A1 C11 A1 C13 A1 C4 A1 C6 A1 C8 A1 CN1 A1 D8 A2 IC1 A1 R11 A1 R13 A1 R15 A1 R17 A1 R19 A1 R21 A1 R8 A2
 C10 A1 C12 A1 C2 A1 C5 A1 C7 A1 C9 A1 CN2 A2 D9 A1 R10 A1 R12 A1 R14 A1 R16 A1 R18 A1 R20 A1 R22 A1 R9 A1

2

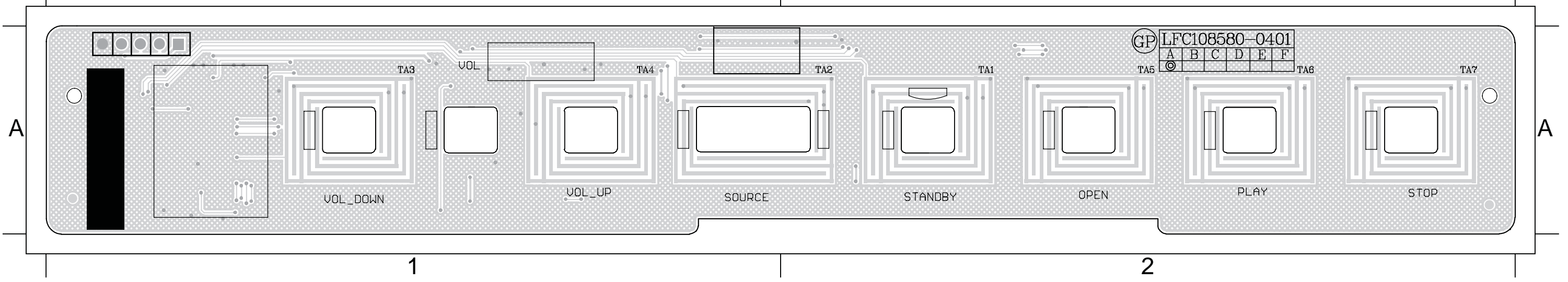
1



PCB LAYOUT - BOTTOM VIEW

1

2

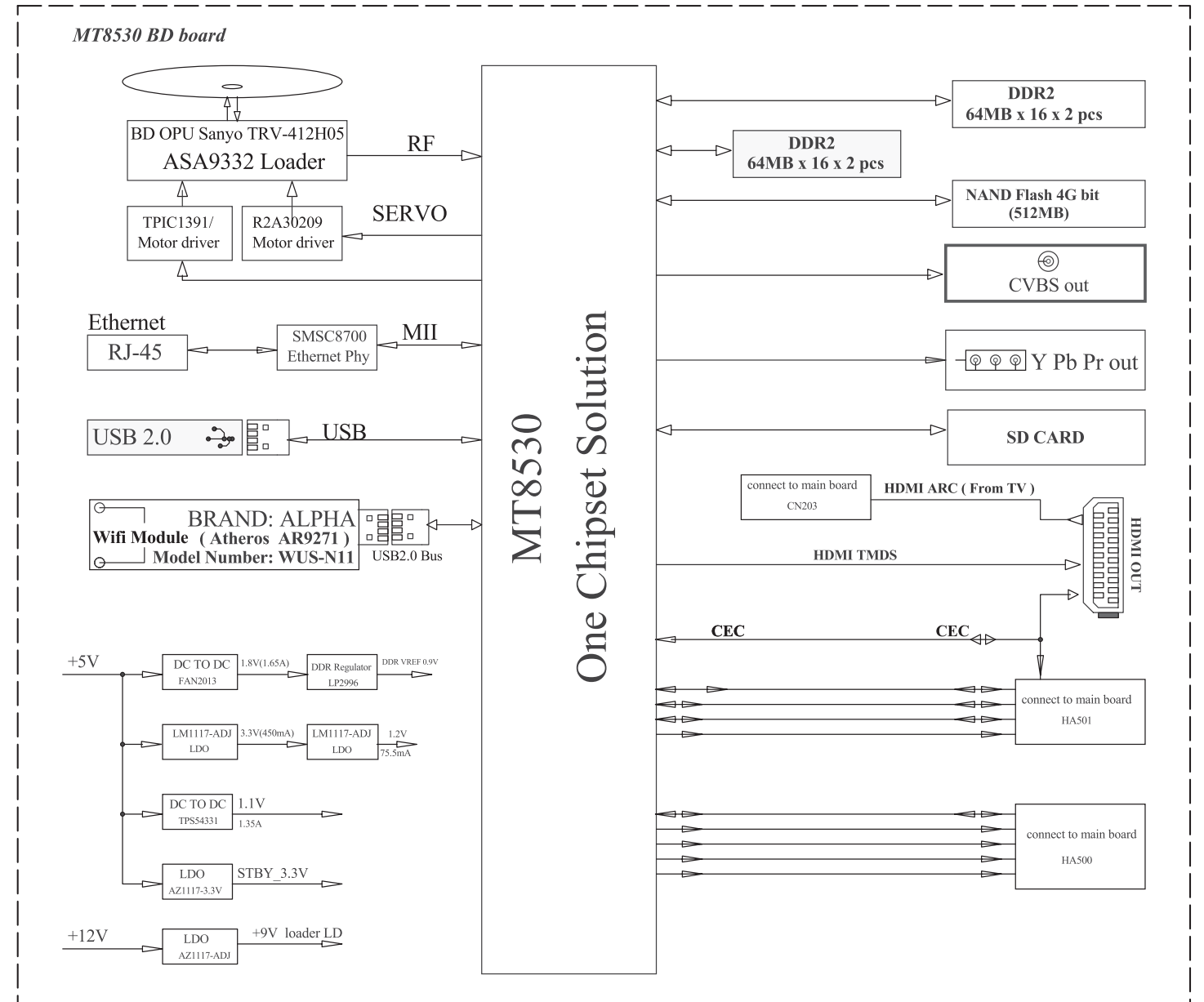


BD BOARD

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Block Diagram(BD Board) 11-1
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BLOCK DIAGRAM



Voltages for per connection pin

1. HA500--->>from BD board connect to main board

PIN NO	PIN Assign	Remarks
1	SCL	
2	SDA	
3	GND	
4	AOMCLK	
5	AOLRCK	
6	GND	
7	AOBCK	
8	AOSDAT0	
9	AOSDAT1	
10	AOSDAT2	
11	AOSDAT3	OPEN
12	GND	

2. HA501--->>from BD board connect to main board

PIN NO	PIN Assign	Remarks
1	UART_TX	
2	UART_RX	
3	PT_CON	OPEN
4	IR	
5	GND	
6	SDA	
7	I2C_IRQ	
8	CEC	
9	SCL	
10	GND	
11	VDATA	OPEN
12	VCLK	OPEN
13	VSTB1	OPEN
14	VSTB2	OPEN
15	GND	

3. J902--->>from BD board connect to WIFI connect PCB

PIN NO	PIN Assign	Remarks
1	USB+5V	4.75V-5.25V
2	USBP	High speed
3	USBM	difference
4	GND	

4. J903--->>from BD board connect to USB connect PCB

PIN NO	PIN Assign	Remarks
1	USB+5V	4.75V-5.25V
2	USB+5V	
3	USBP	High speed
4	USBM	difference
5	GND	

5. CN4 --->>from BD board connect to MAIN board

PIN NO	PIN Assign	Remarks
1	12V	motor driver vcc
2	5V	BD main vcc
3	5V	BD main vcc
4	GND	
5	GND	

6. CN203 --->>from BD board connect to MAIN board

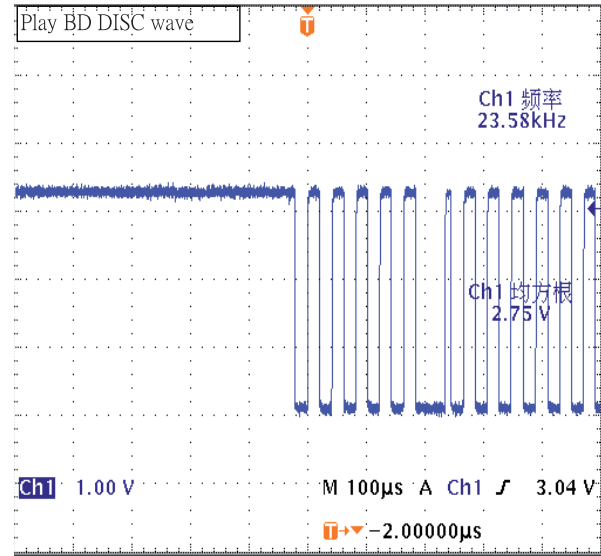
PIN NO	PIN Assign	Remarks
1	HDMI_ARC	SPDIF single
2	GND	
3	OPEN	

Waveforms for measure point

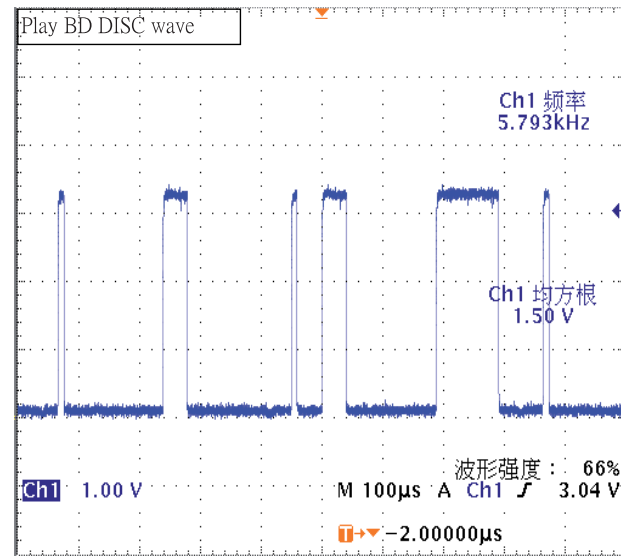
11 - 3

11 - 3

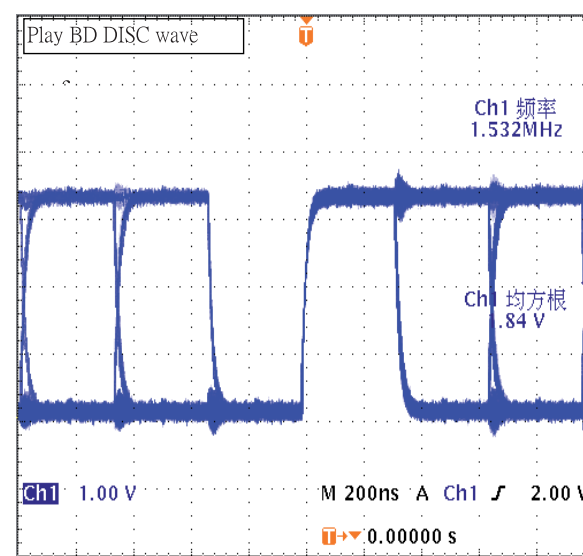
HA500 PIN1_SCL



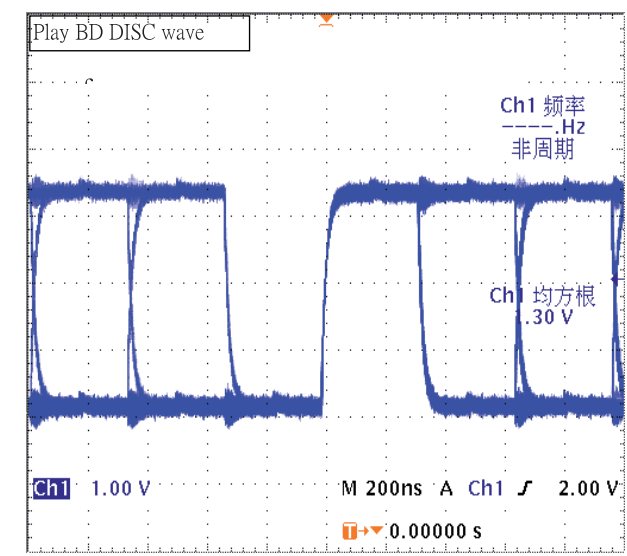
HA500 PIN2_SDA



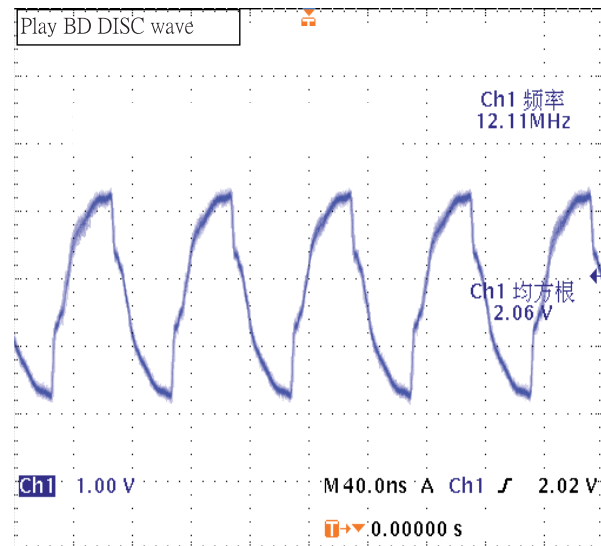
HA500 PIN9_AOSDAT0



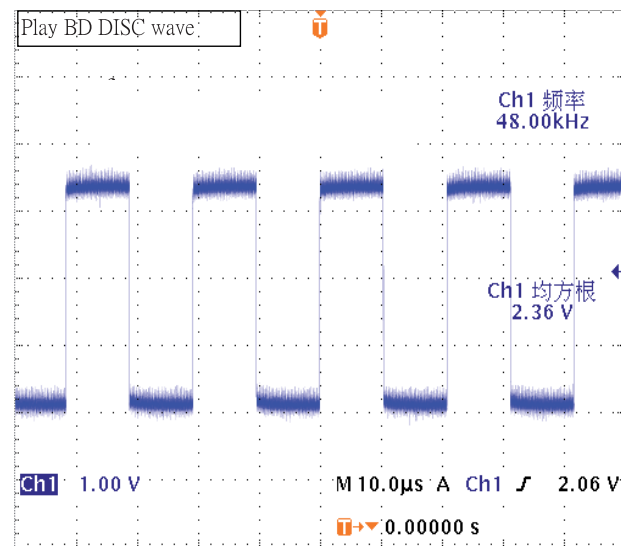
HA500 PIN10_AOSDAT0



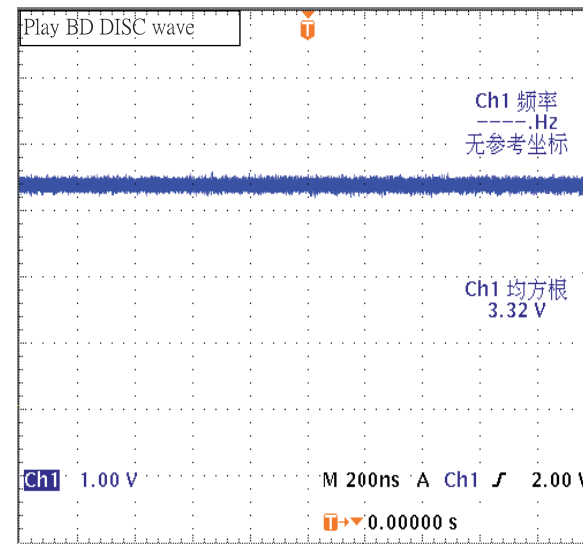
HA500 PIN4_AOMCLK



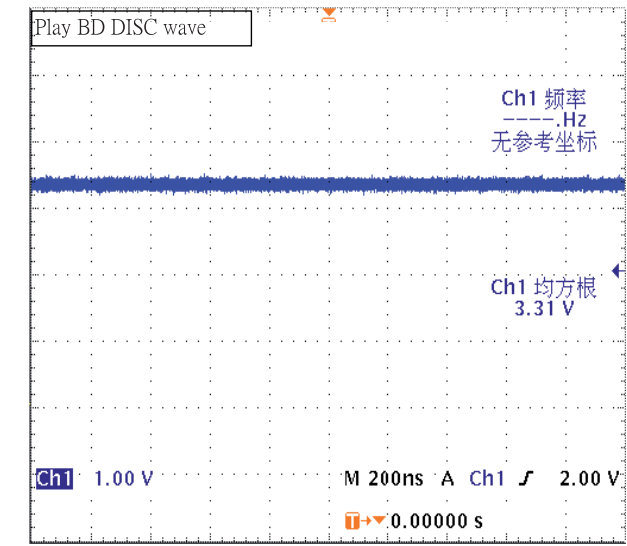
HA500 PIN5_AOLRCK



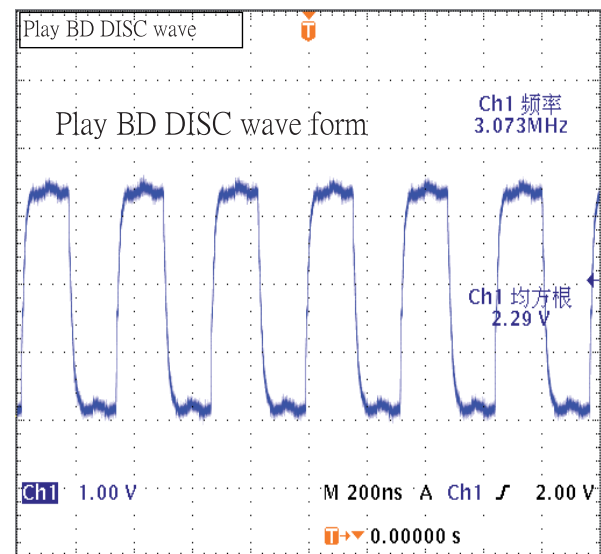
HA501 PIN1_UART_TX



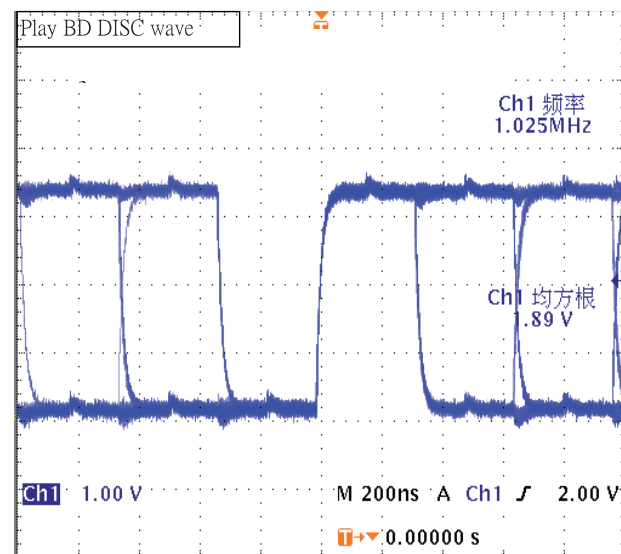
HA501 PIN1_UART_RX



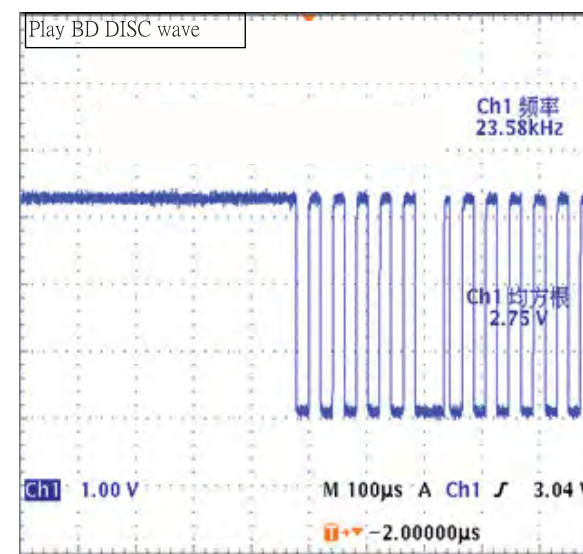
HA500 PIN7_AOBCK



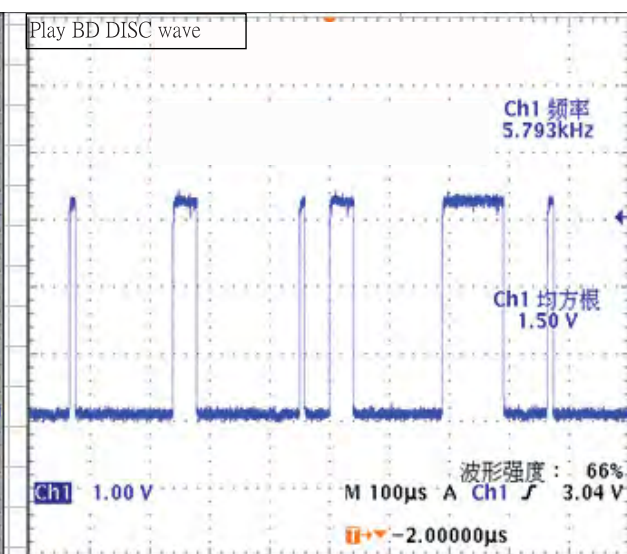
HA500 PIN8_AOSDAT0



HA501 PIN9_SCL



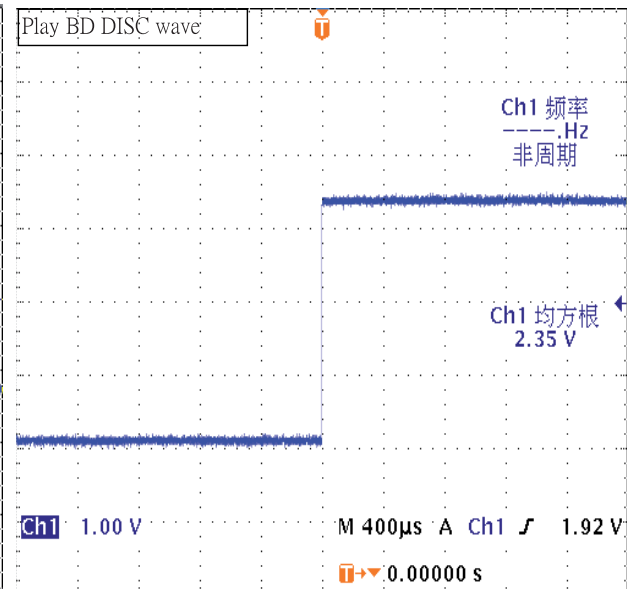
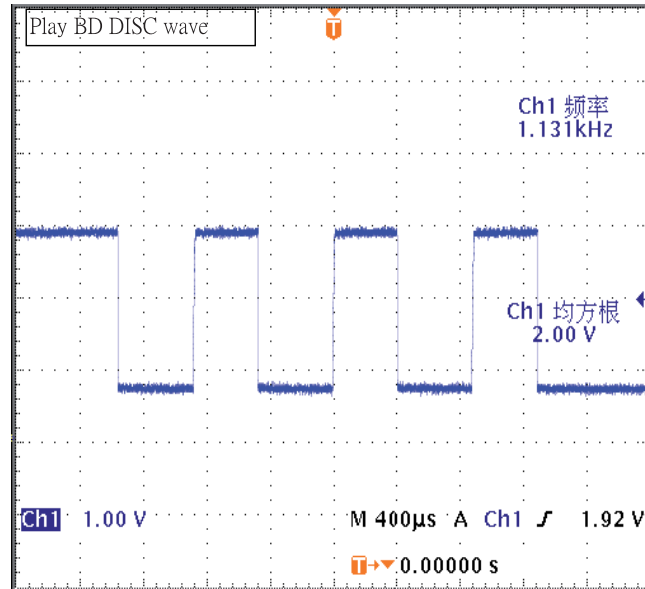
HA501 PIN6_SDA



Waveforms for measure point

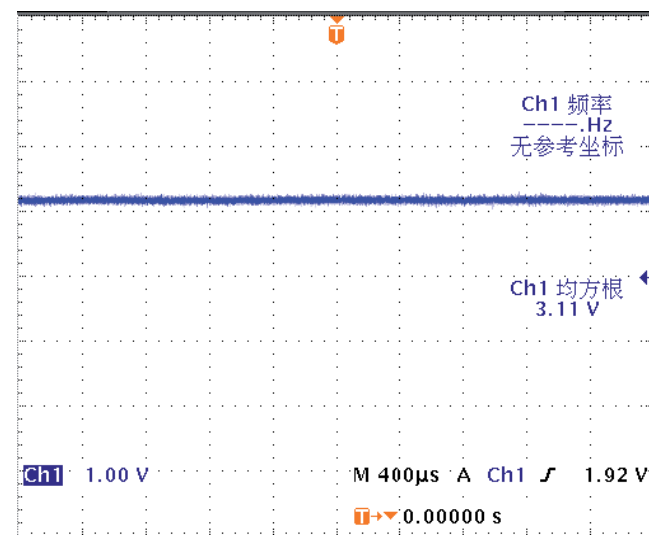
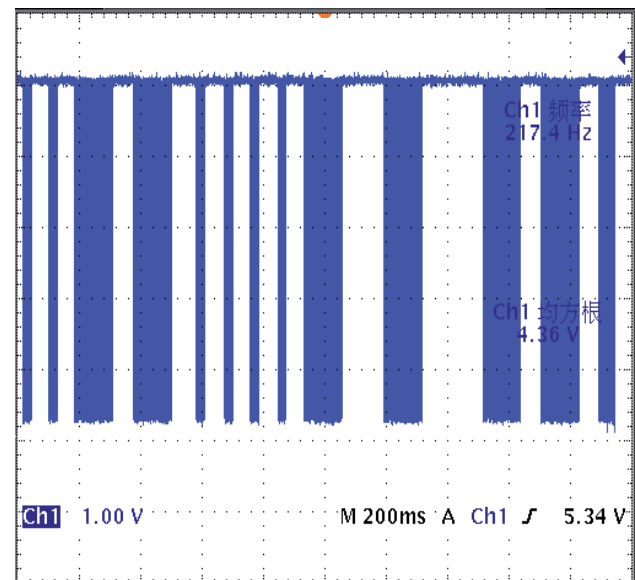
HA501 PIN4_IR

HA501 PIN7 12C_IRQ

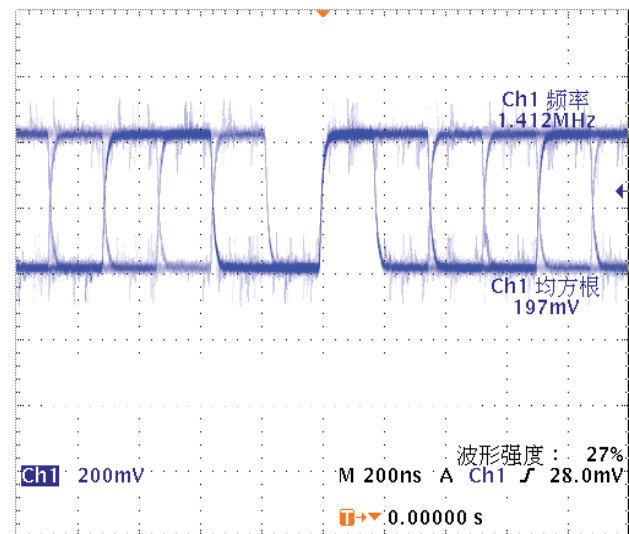


HA501 PIN8_ECE

HA501 PIN8_ECE(No signal)



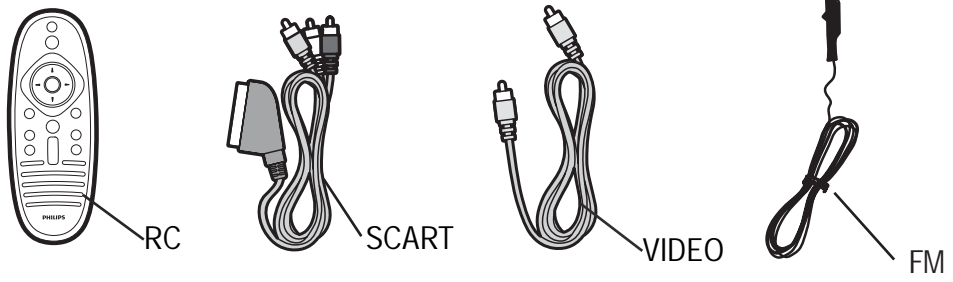
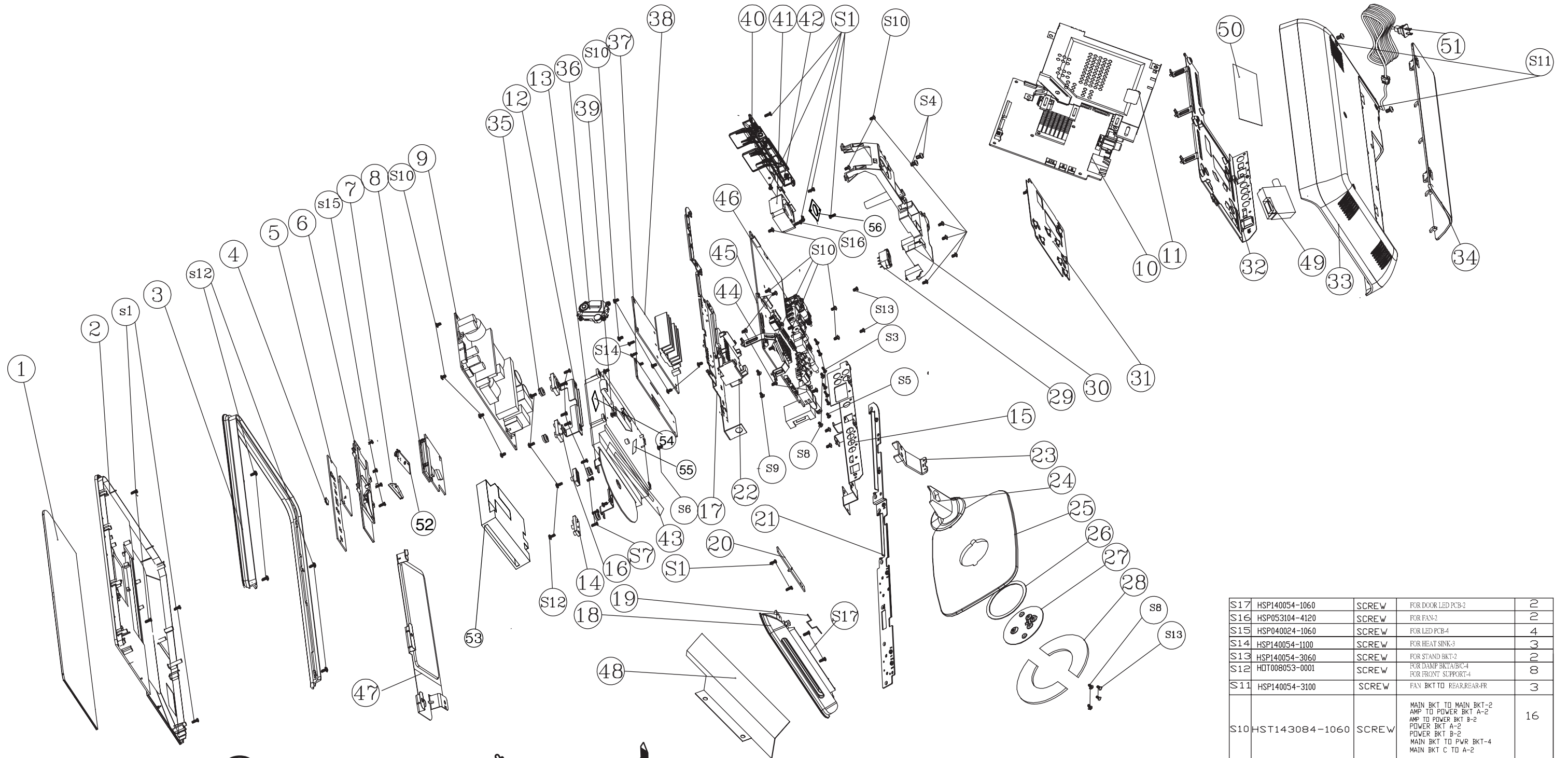
CN203 PIN1_HDMI_ARC



Mechanical Exploded View

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12 - 1



NOTE: A1=1+2+5
 B1=23+24+25+26+27+28
 C1=12+13+35+36+37+39+53+54+55
 D1=45+52
 E1=8+20+42+46

S17	HSP140054-1060	SCREW	FOR DOOR LED PCB-2	2
S16	HSP053104-4120	SCREW	FOR FAN-2	2
S15	HSP040024-1060	SCREW	FOR LED PCB-4	4
S14	HSP140054-1100	SCREW	FOR HEAT SINK-3	3
S13	HSP140054-3060	SCREW	FOR STAND BKT-2	2
S12	HDT008053-0001	SCREW	FOR DAMP BKT/BKC-4 FOR FRONT SUPPORT-4	8
S11	HSP140054-3100	SCREW	FAN BKT TO REAR-REAR-FR	3
S10	HST143084-1060	SCREW	MAIN BKT TO MAIN BKT-2 AMP TO POWER BKT A-2 POWER BKT A-2 POWER BKT B-2 MAIN BKT TO PWR BKT-4 MAIN BKT C TO A-2	16
S9	HST143084-3080	SCREW	FOR JACK BKT-2	2
S8	HST143084-3060	SCREW	FOR STAND BKT-2	2
S7	HST143084-1080	SCREW	FOR BAMP BKT A/B/C-6	6
S6	HSP143084-3060	SCREW	FOR JACK BKT-1	2
S5	HSP143084-3060	SCREW	FOR JACK BKT-1	1
S4	HSP140132-3100	SCREW	FOR FAN-2	2
S3	HSP140054-3080	SCREW	MAIN TO MAIN BKT-4 FAN BKT TO REAR-2 AUX TO MAIN BKT-2 REAR TO FRONT-1	9
S2	HSP143084-3060	SCREW	REAR TO MAIN BKT A	2
S1	HSP140054-1080	SCREW	DAMP BKT TO PWR BKT-6 DAMP BKT TO MAIN BKT USB BKT TO FAN BKT-2 MAIN BKT TO FRONT-1 PWR BKT TO BKT-7 LED PCB TO LENS BKT-2 LENS BKT TO FR BK-2 VFD PCB TO FR BKT-3	24
NO	PART NO.	NAME	LOCATION	Q'TY

REVISION LIST

Version 1.0

*Initial release

Version 1.1

*hts5220/51 combine with hts5220/12.

Version 1.2

*updated 6)How to replace the defective Blu-ray Loader and 7)BD board and Blu-ray Loader OPU matching procedure
In chapter 2.