

Service
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Service Manual



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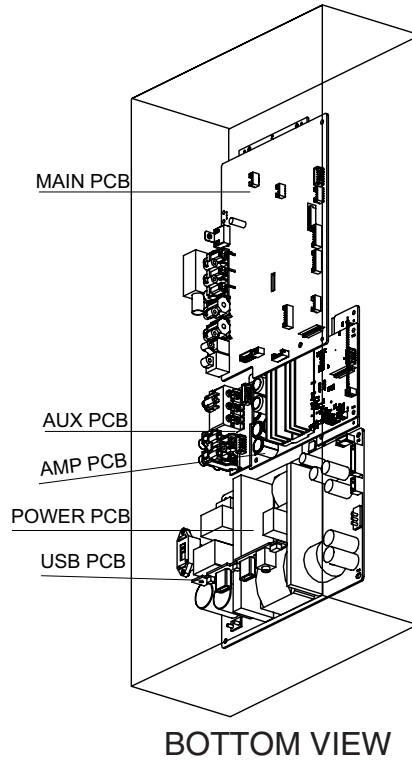
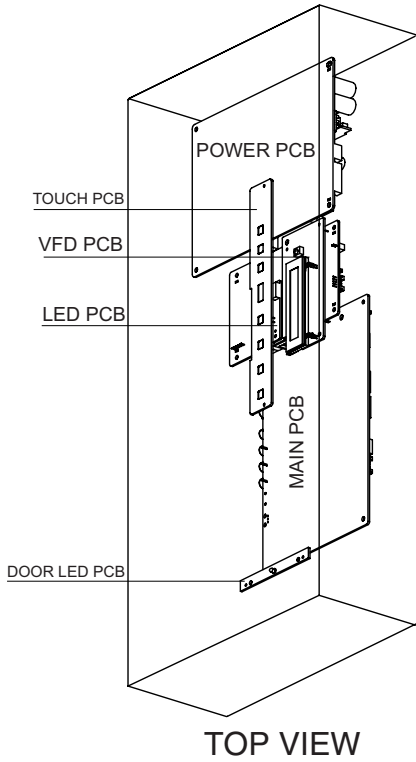
GB 3139 785 35301

Version 1.1



PHILIPS

LOCATION OF PCB BOARDS



VERSION VARIATION:

Type/Versions	HTS5200		
	/12	/98	/51
Features			
Output Power - 400W	X	X	X
Voltage (110~127V)		X	
Voltage (220~240V)	X	X	X

REPAIR SCENARIO MATRIX:

Type/Versions	HTS5200		
	/12	/98	/51
Board in used			
Main+Led Board	C	C	C
Power Board	C	C	C
VFD+USB+UAX Board	C	C	C
AMP Board	C	C	C
Touch Board	C	C	C

*C = Component Level Repair

SPECIFICATIONS

Playback media

DVD-Video, DVD+R/+RW, DVD-R/-RW, DVD+R DL, CD-R/CD-RW, Audio CD, Video CD/SVCD, Picture CD, MP3-CD, WMA-CD, DivX-CD, USB storage device (for /12/98)

AVCHD, BD-RE, BD-Video, DVD-Video, DVD+R/+RW, DVD-R/-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 (for /51)

File Format

Audiomp3, .wma (for /12/98)

Audiomp3, .wma.wav (for /51)

Videodivx, .divx ultra, .mpeg, .mpg, .wmv (simple profile)

..... (for /12/98)

Videoavi, .divx, .mp4, .mkv, .mov, .wmv (for /51)

Picturejpeg, .jpg (for /12/98)

Picturejpg, .gif, .png (for /51)

Amplifier

Total output power..... 400 W RMS (for /12/98)

Total output power..... 1000 W RMS (30%THD) (for /51)

Frequency response..... 20 Hz-20 kHz / ± 3 dB

Signal-to-noise ratio..... > 65 dB (CCIR) / (A-weighted)

Input sensitivity.....

AUX 1000 mV (for /12/98)

AUX 900 mV (for /51)

MP3 LINK 550 mV (for /12/98)

MP3 LINK 500 mV (for /51)

Video

Signal system..... PAL / NTSC

Component video output

..... 480i/576i, 480p/576p, 720p, 1080i (for /51)

HDMI output

..... 480i/576i, 480p/576p, 720p, 1080i, 1080p (for /12/98)

HDMI output

.... 480i/576i, 480p/576p, 720p, 1080i, 1080p, 1080p24 (for /51)

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) (for /12)

Tuning range FM 87.5-108 MHz (50/100 kHz) (for /98/51)

Signal-to-noise ratio..... FM 50 dB

Frequency response FM 180 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.....

Russia/China/India 220-240V; ~50 Hz

Asia Pacific/Latin America.....

..... 110-127V/220-240V; ~50-60Hz switchable

Power consumption..... 100 W (for /12/98)

Power consumption..... 135 W (for /51)

Standby power consumption ≤ 0.3 W (for /12/98)

Standby power consumption < 0.9 W (for /51)

Dimensions (WxHxD) 434 x 253 x 129 (mm) (for /12/98)

Dimensions (WxHxD) 435 x 58 x 358 (mm) (for /51)

Weight 3.6 kg (for /12/98)

Weight 3.87 kg (for /51)

Speakers

System..... full range satellite

Speaker impedance..... 6 ohm (for /12/98)

Speaker impedance.....

..... 3 ohm (center), 5 ohm (Front/Rear) (for /51)

Speaker drivers 1 x 3" full range + 1" twitter (for /12/98)

Speaker drivers 2 x 3" full range (for /51)

Frequency response..... 150 Hz-20 kHz

Dimension (WxHxD).....

..... 114 x 316 x 114 (mm) (for /12/98)

Center..... 280 x 95 x 92 (mm) (for /51)

Speaker 100 x 280 x 115 (mm) (for /51)

Tall speaker..... 260 x 1101 x 260 (mm) (for /51)

Weight.....

..... 1.03 kg (for /12/98)

Center..... 1.40 kg (for /51)

Speaker 0.98~1.05 kg/each (for /51)

Tall speaker..... 3.73~3.81 kg/each (for /51)

Cable length

..... 2 m (for /12/98)

Center..... 3 m (for /51)

Front..... 4 m (for /51)

Rear..... 10 m (for /51)

Subwoofer

Impedance..... 3 ohm

Speaker drivers 165 mm (6.5") woofer (for /12/98)

Speaker drivers 203 mm (8") woofer (for /51)

Frequency response..... 40 Hz-150 Hz

Dimensions (WxHxD) 196 x 395 x 342 (mm)

Weight 4.7 kg (for /12/98)

Weight 5.37 kg (for /51)

Cable length

..... 4 m

Laser specification

Type..... Semiconductor laser GaAlAs (CD) (for /12/98)

Laser Type (Diode).....

..... InGaN/AlGaIn (BD), InGaAlP (DVD), AlGaAs (CD) (for /51)

Wave length.....

..... 650 - 660 nm (DVD), 784 - 796 nm (CD) (for /12/98)

Wave length.....

..... 405 +5nm/-5nm (BD), 650+13nm/-10nm (DVD),

..... 790 +15nm/-15nm (CD) (for /51)

Output power..... 6 mW (DVD), 7 mW (VCD/CD) (for /12/98)

Output power (Max. ratings).....

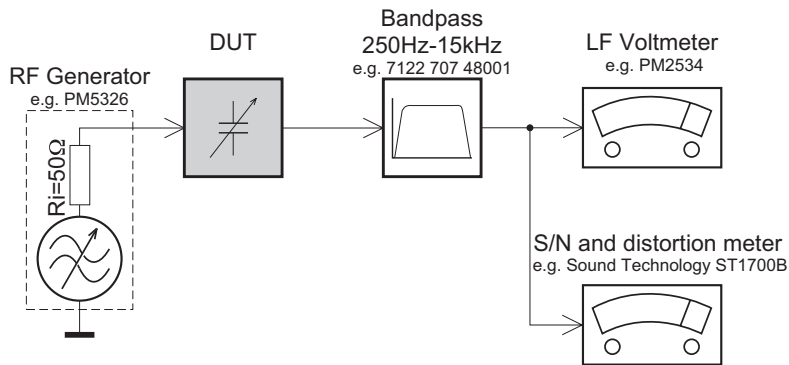
..... 20mW (BD), 7mW (DVD/CD) (for /51)

Beam divergence..... 60 degrees. (for /12/98)

Specifications subject to change without prior notice.

MEASUREMENT SETUP

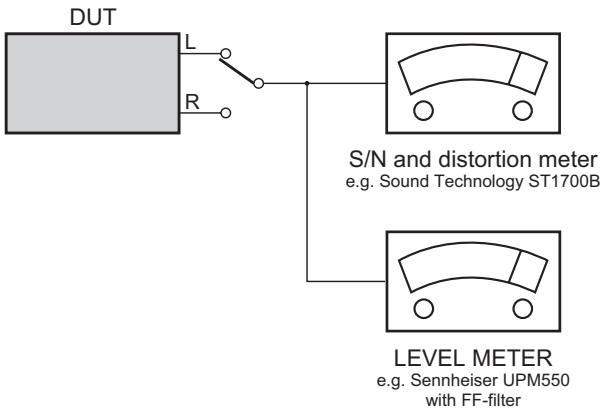
Tuner FM



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 holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6-T20	4822 395 50145
Torx driver T10 extended	4822 395 50423

Compact Disc:

SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
Dolby Pro-logic Test Disc	4822 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

PRECAUTIONS

SOLDERING IRON
CORRECT
COPPER TRACK

SOLDERING IRON
CHIP COMPONENT

MOUNTING

e.g. A PAIR OF TWEEZERS

SOLDERING IRON
SOLDER
ø0.5-0.8mm
PRESSURE

SOLDERING TIME
< 3 sec/side

SOLDERING IRON
SOLDER
ø0.5-0.8mm
PRESSURE

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.

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).
Unsorgfältige 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.

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.

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 utilisées 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.

Componenty 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.

System , Region Code , etc. Setting Prochure

1)Restore factory setting

- Press <SETUP> button on R/C
- Select <preference setup> ,then press < OK >
- Select <default>,then press <OK> to confirm

2)Region code change

- Open the Door,then,press "1" "5" "9" on RC
- Press <OK> button on RC
- TV will show message as follow:

Current model:
 Version:00.08.00_1 Release:2009.12.16
 Region: 2 Servo:D1.72.01.00
 8032: 05.00.04.06 Risc: BB.00.00.00
 MCU: 06.01 Touch: 0044 Dock: Error

if current model doesnot match your set,
 use down arrow key on the remote to change

- If current model doesnot match your set, use down arrow key on the remote to change.

3)Password change

- Press <SETUP> button on R/C
- Select <preference setup> ,then press <OK>
- Select <password> <change>,then press <OK> to confirm
 "0000" is default password supplied.

4)Trade model

- Press <Open/Close>button on R/C
- Press "2" "5" "9" on R/C,VFD will display "TRA ON " or "TRA OFF"

5)Check on software version

- Press <SETUP> button on R/C
- Select <preference setup> ,then press <OK>
- Select <version info>,then press <OK>
- TV will show message as follow:

Preference setup
 Version Info.

Current model:
 Version :00.08.00_1 Release: 2009.12.16
 Region: 2 Servo: D1 .72.01.00
 8032:05.00.04.06 Resc: BB.00.00.00
 MCU: 06.01 Touch: 0044

Press SETUP to exit menu

6) Upgrading new software

- Copy the latest upgrading software onto a CD-R or USB storage device
- Insert the CD-R program disc or connect the USB storage device to the home theater
- TV will show message as follow

Upgrade file detected
 Do you wish to continue with
 the software upgrade?

- Select <OK>,the home theater will start to upgrading automatically

Note: when upgrade in progress, please do not unplug or switch off the device.
 when the updated is complete ,the home theater automatically switch to standby.

7) Produce to change Tuner grid (for I98)

Only applicable for certain regions, in some countries, the frequency step between adjacent channels in the FM hand is 50KHZ(100KHZ in some areas)

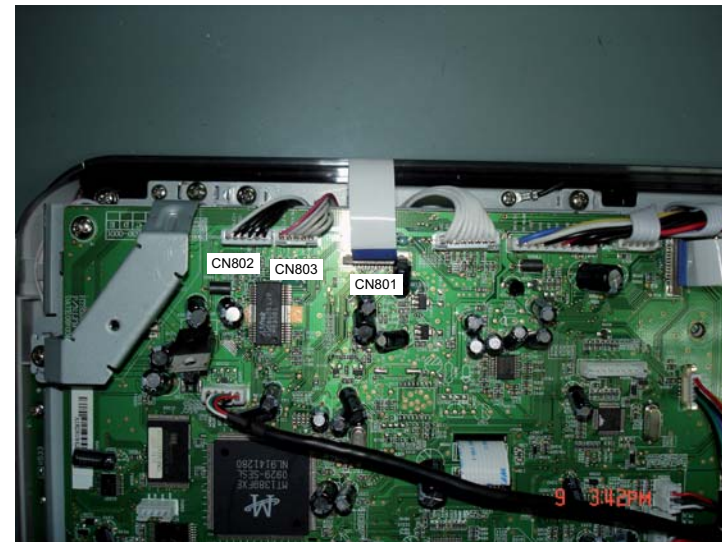
- Press<radio> on R/C to select "FM"
- In "FM" playbak mode,press & hold< play/pause> button until "grid 9" or "grid 10" appears

Note: repeaing the same action will toggle back to it previous tuning grid setting.

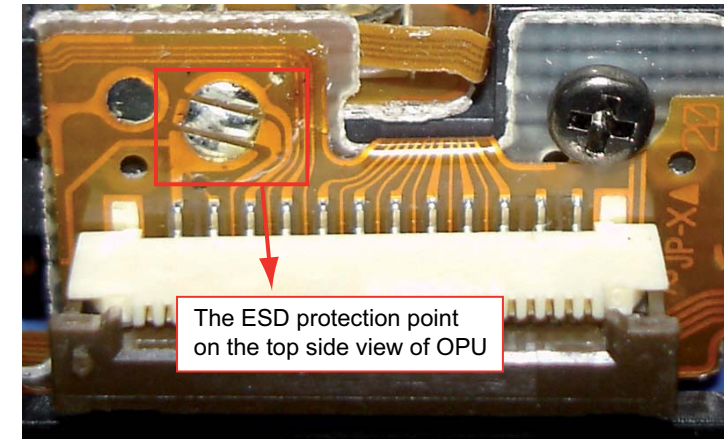
* "grid 10" is default for /55/98 version.

8)How to replace the defective DVD Loader

- Remove the defective DVD Loader (see chapter 3).
- Accordingly connect DVD Loader and "CN802", "CN803", "CN801" on the top of main board as shown below:



- Remove solder joint on the ESD protection point.



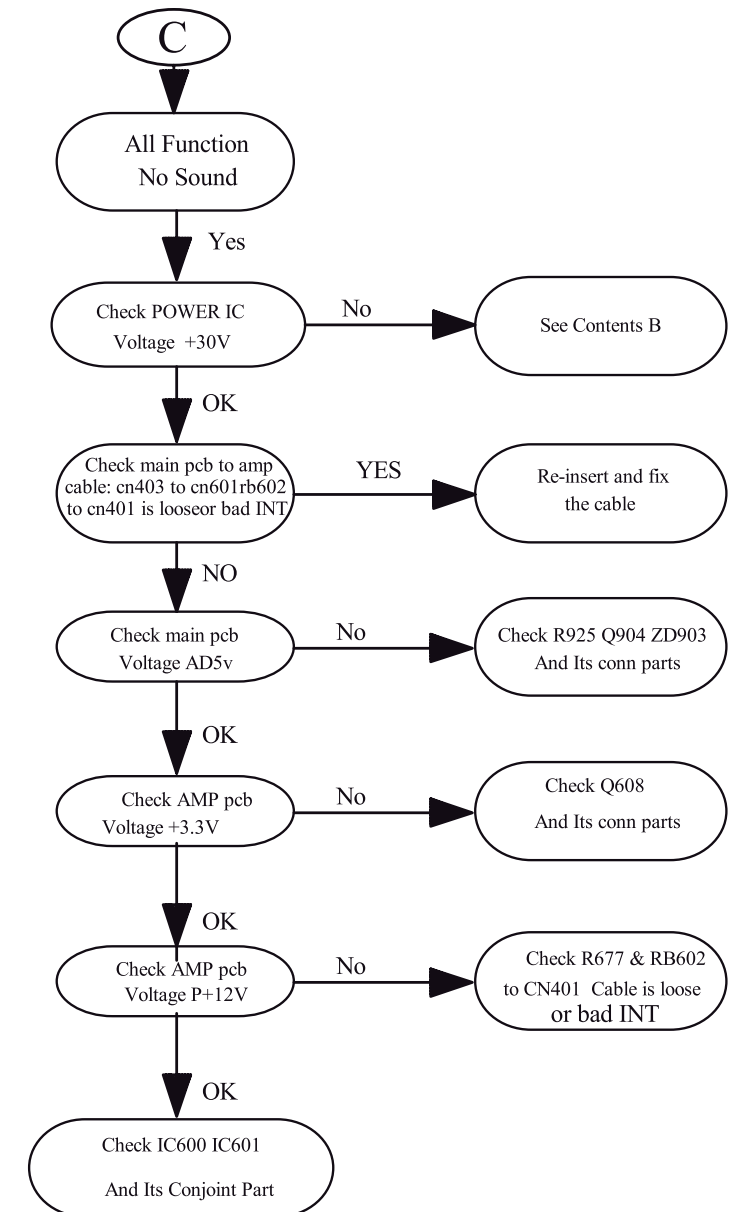
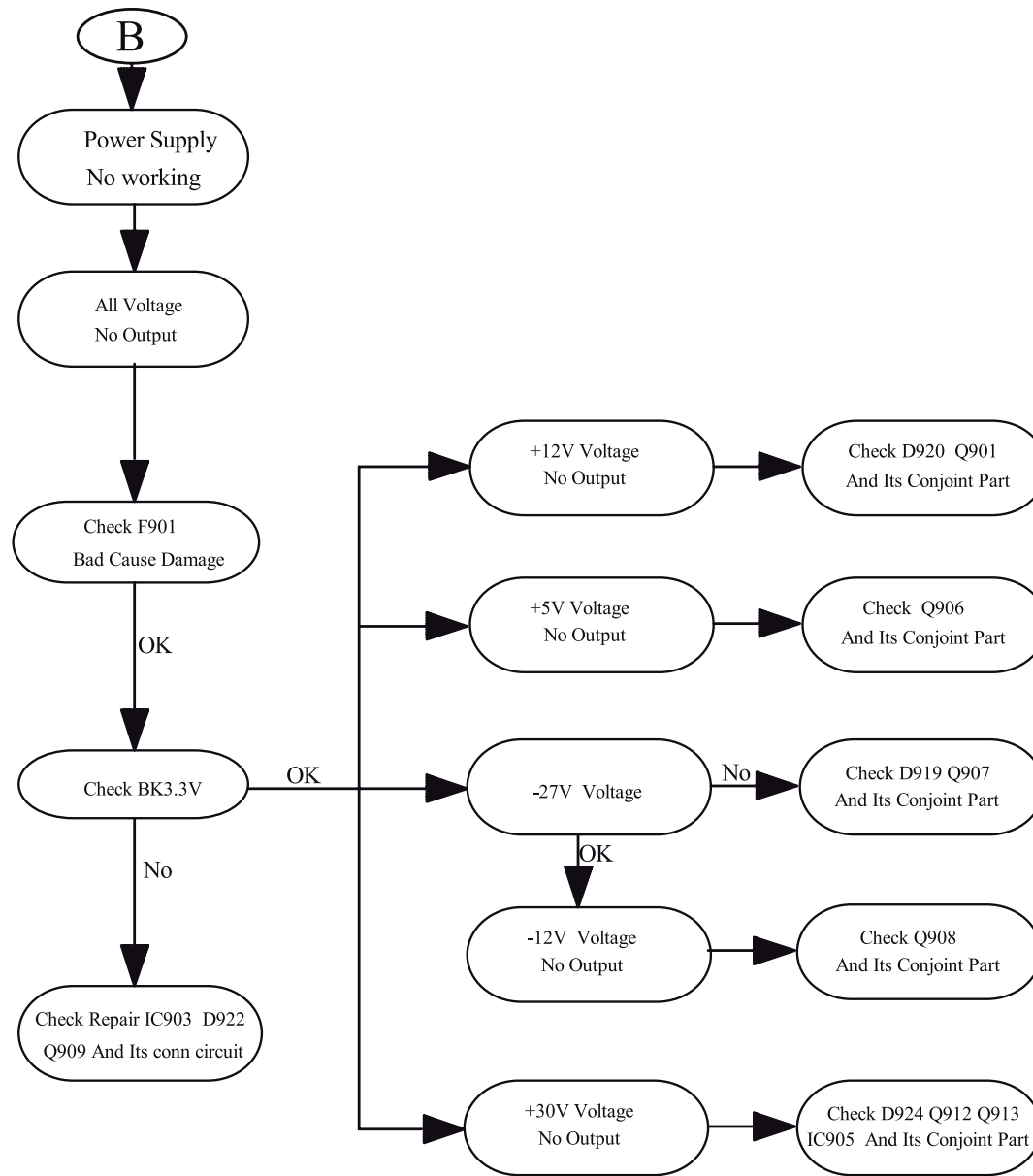
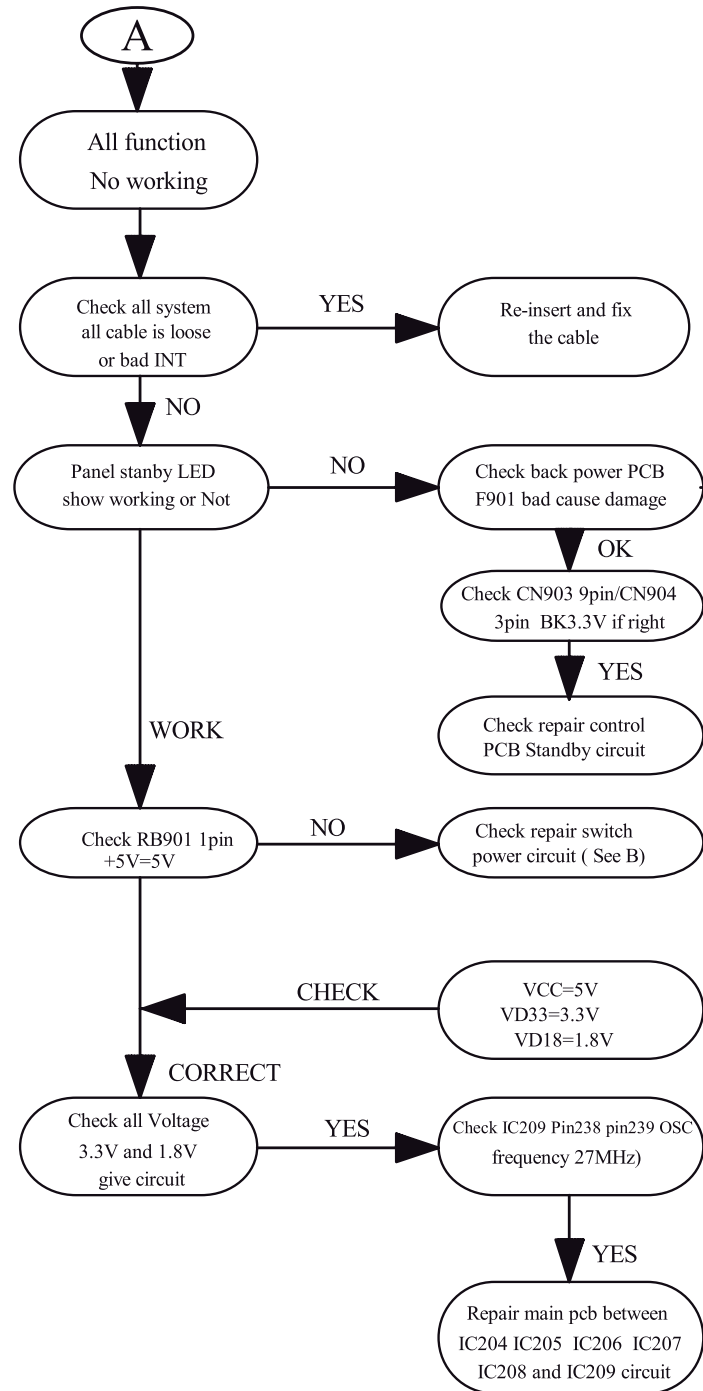
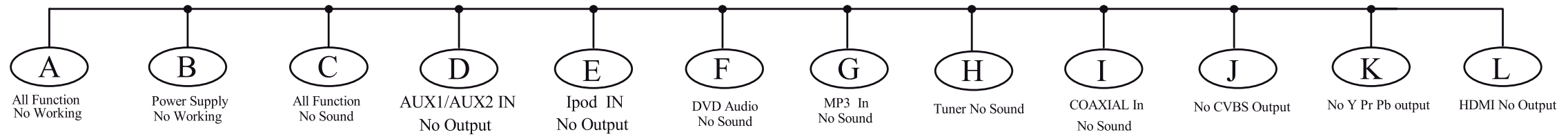
The Top side view of OPU

Note: The ESD protection point on any one side must be soldered if
 - the DVD Loader is OK and needs to be disconnected from connector CN802, CN803 and CN801 of the main board.
 - the defective DVD Loader is needed to be send back to supplier for failure analysis and to support back charging evidence.

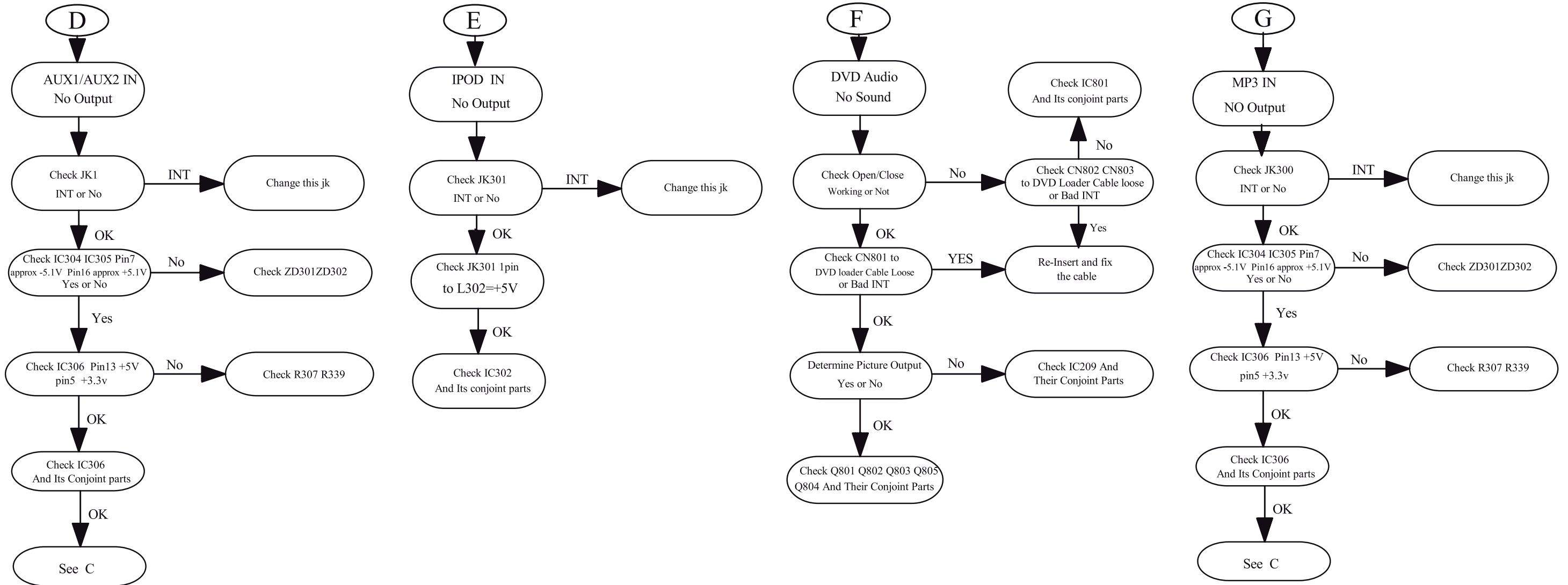
CAUTION!

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

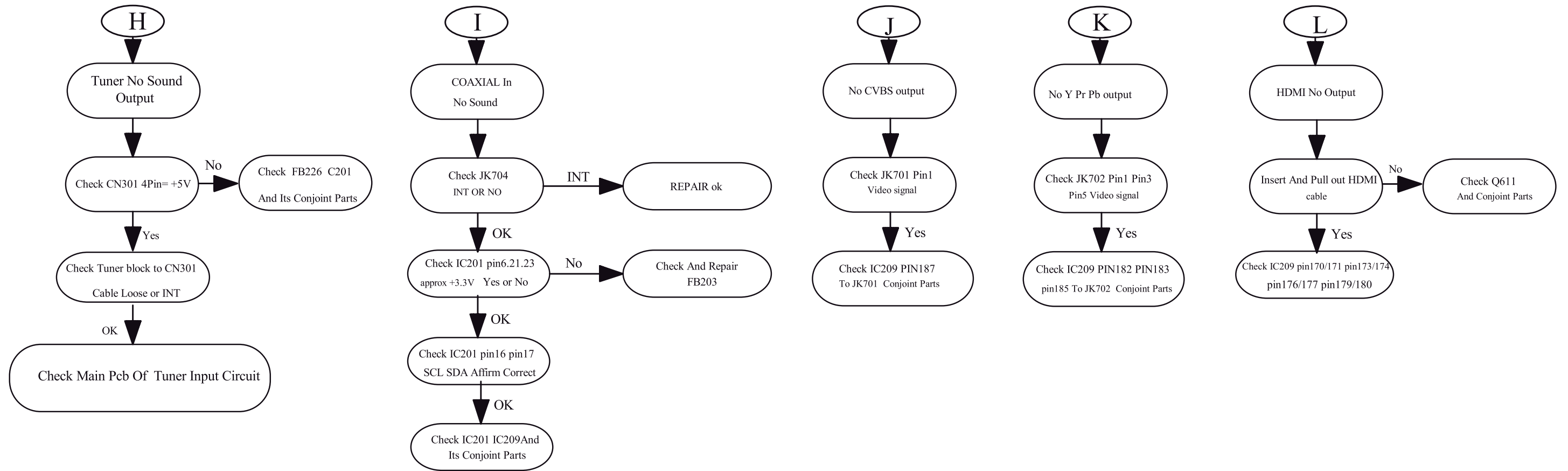
MAIN UNIT REPAIR CHART 1/3



MAIN UNIT REPAIR CHART 2/3



MAIN UNIT REPAIR CHART 3/3



DISASSEMBLY INSTRUCTIONS

Dismantling of Rear Panel

- 1) Using hands to 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.

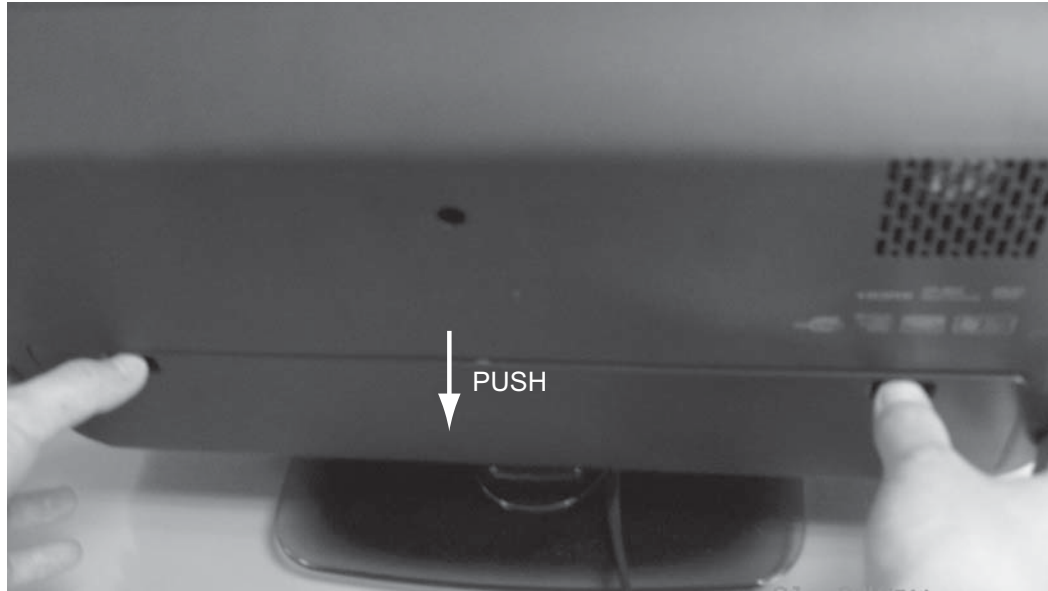


Figure 1

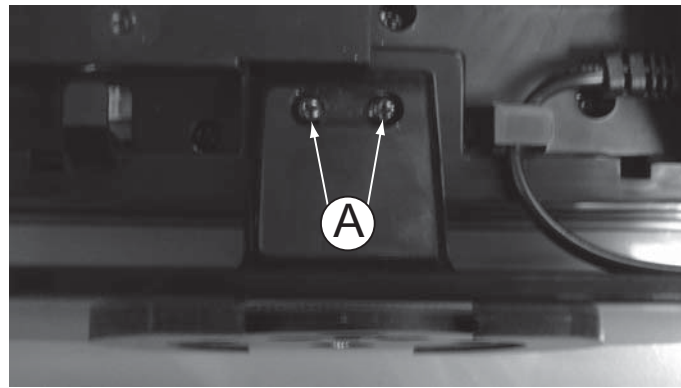


Figure 2

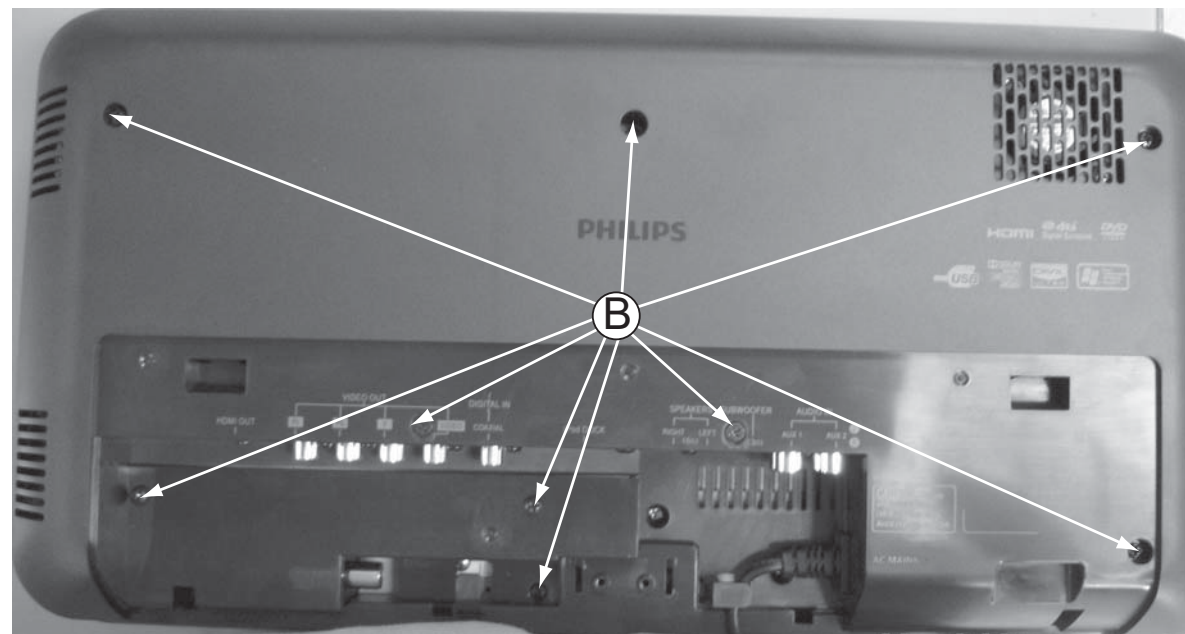


Figure 3

Dismantling of the Main PCB

- 1) Loosen 8 screws "C" to remove main PCB bracket as shown in figure 4.
- 2) Loosen 3 screws "D" and loosen 7 screws "E" at the main PCB bracket as shown in figure 5&6 to remove main PCB.

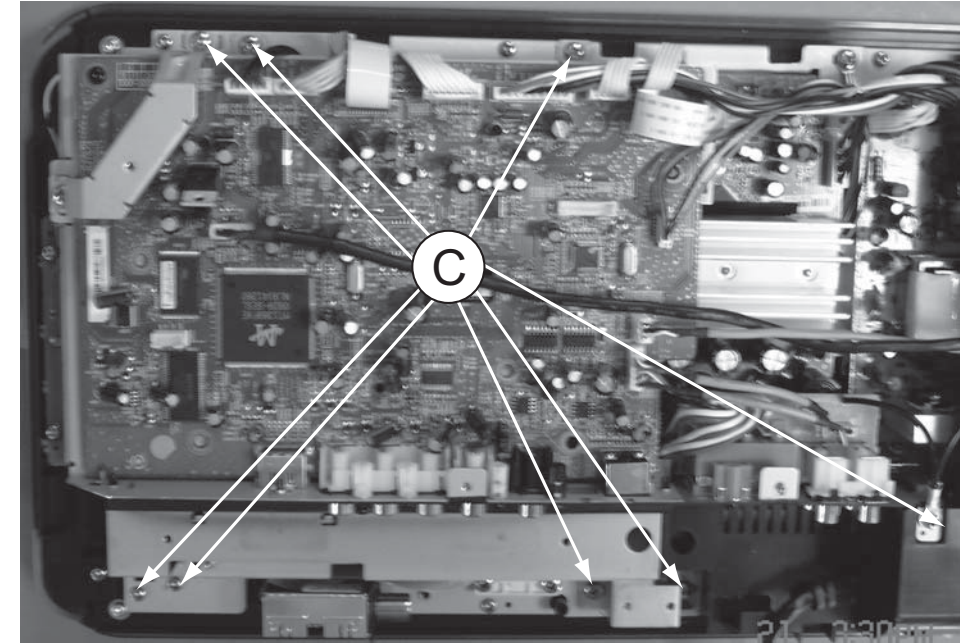


Figure 4

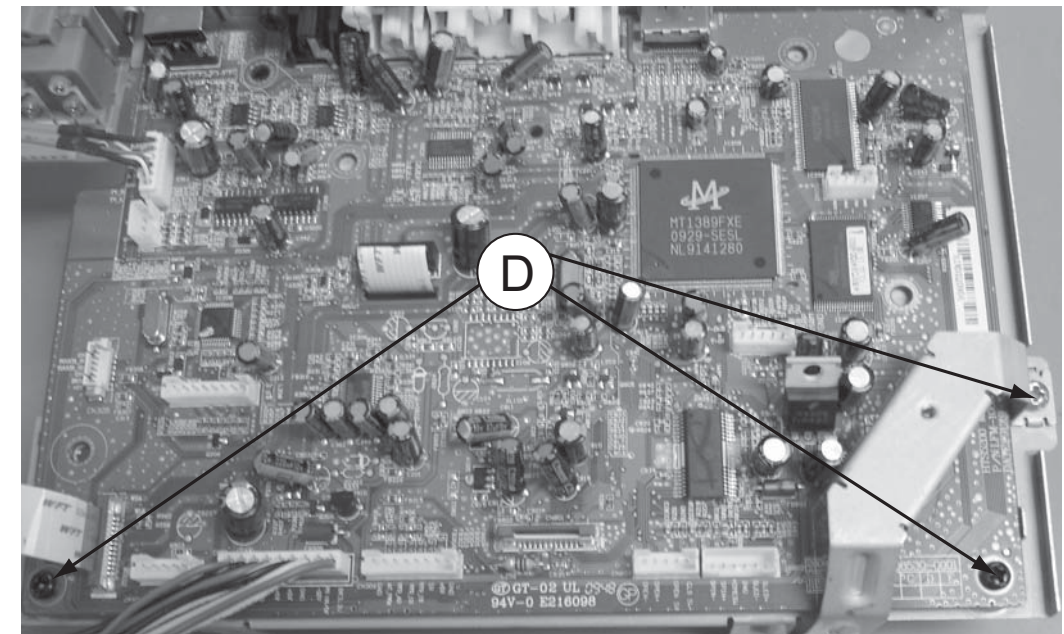


Figure 5

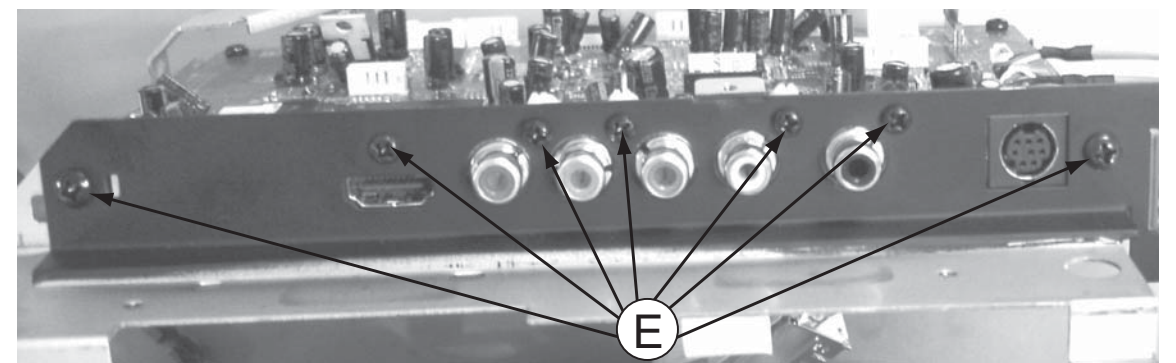


Figure 6

Dismantling of the USB+AUX PCB

- 1) Loosen 2 screws "F" at the main PCB bracket to remove AUX PCB as shown in figure 7.
- 2) Loosen 9 screws "G" to remove DVD fan bracket&fan&USB bracket as shown in figure 8.
- 3) Loosen 2 screws "H" on the USB PCB to remove it as shown in figure 9.

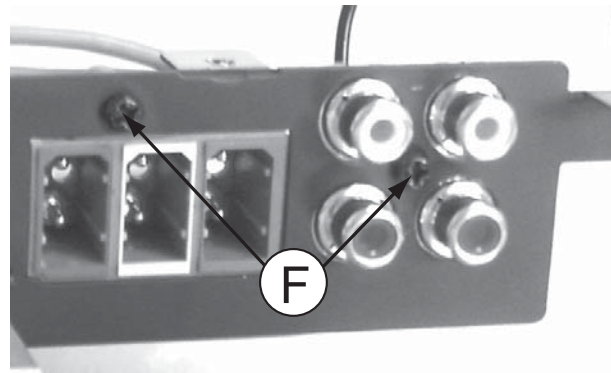


Figure 7

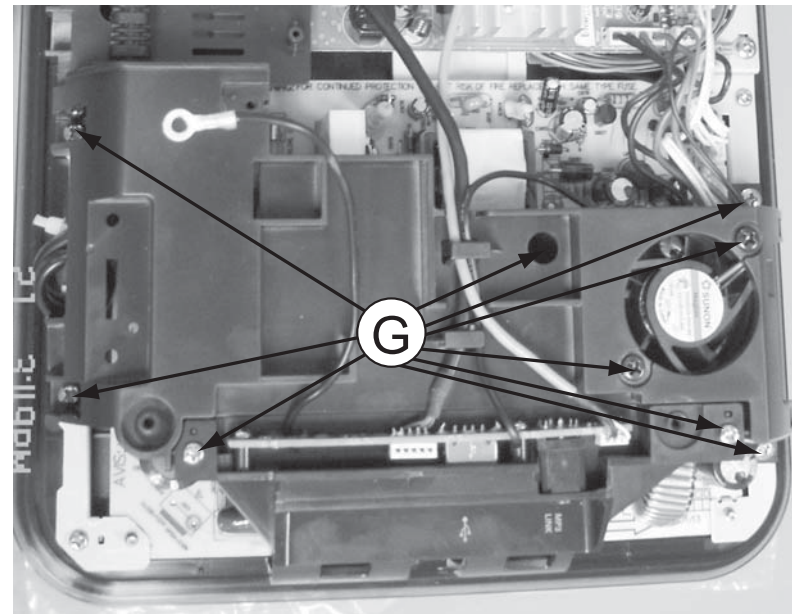


Figure 8

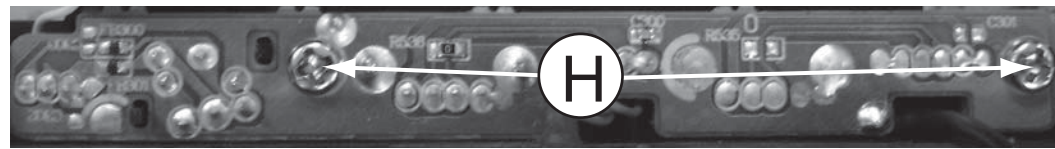


Figure 9

Dismantling of the Power PCB

- 1) Loosen 6 screws "I" at the power PCB bracket as shown in figure 10.
- 2) Loosen 4 screws "J" on the power PCB bottom to remove power PCB as shown in figure 11.

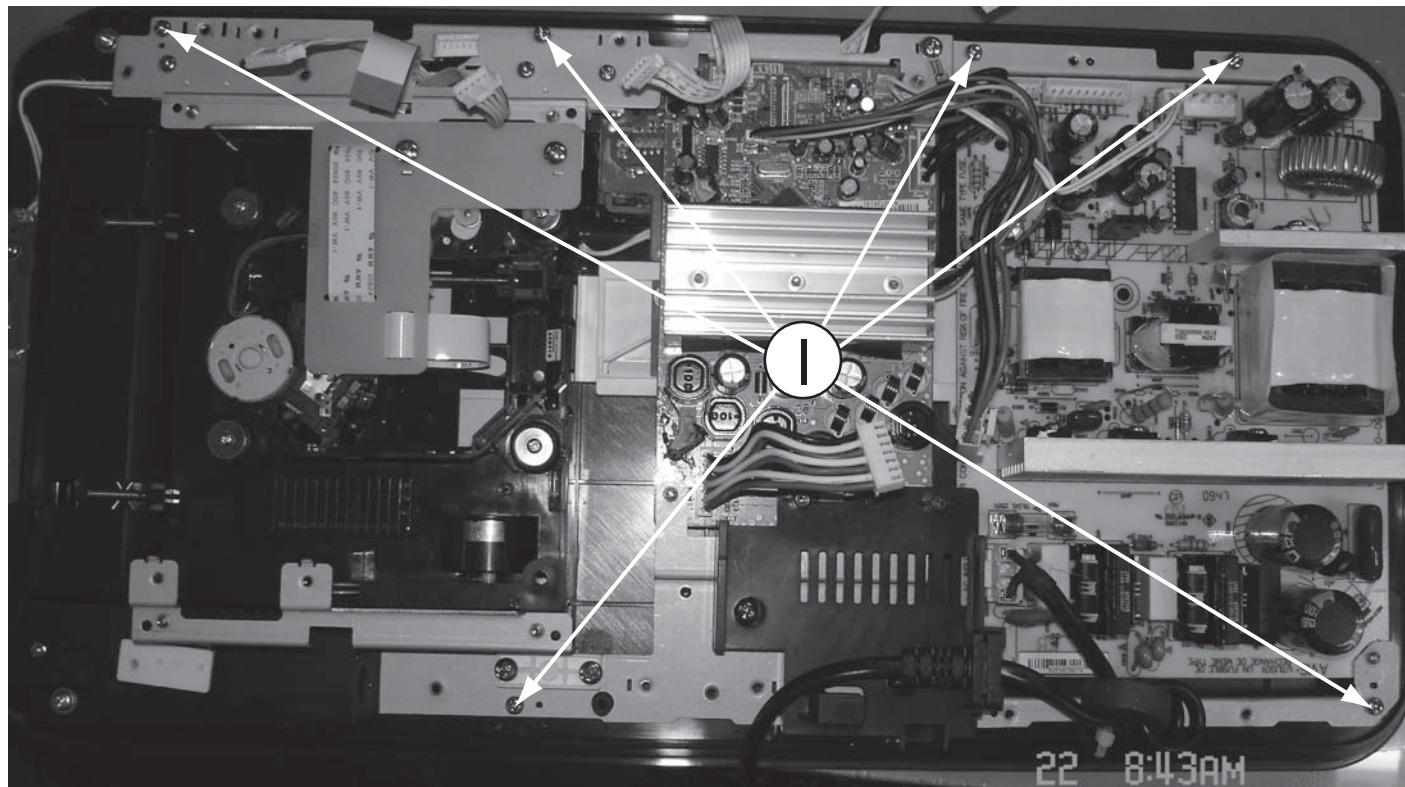


Figure 10

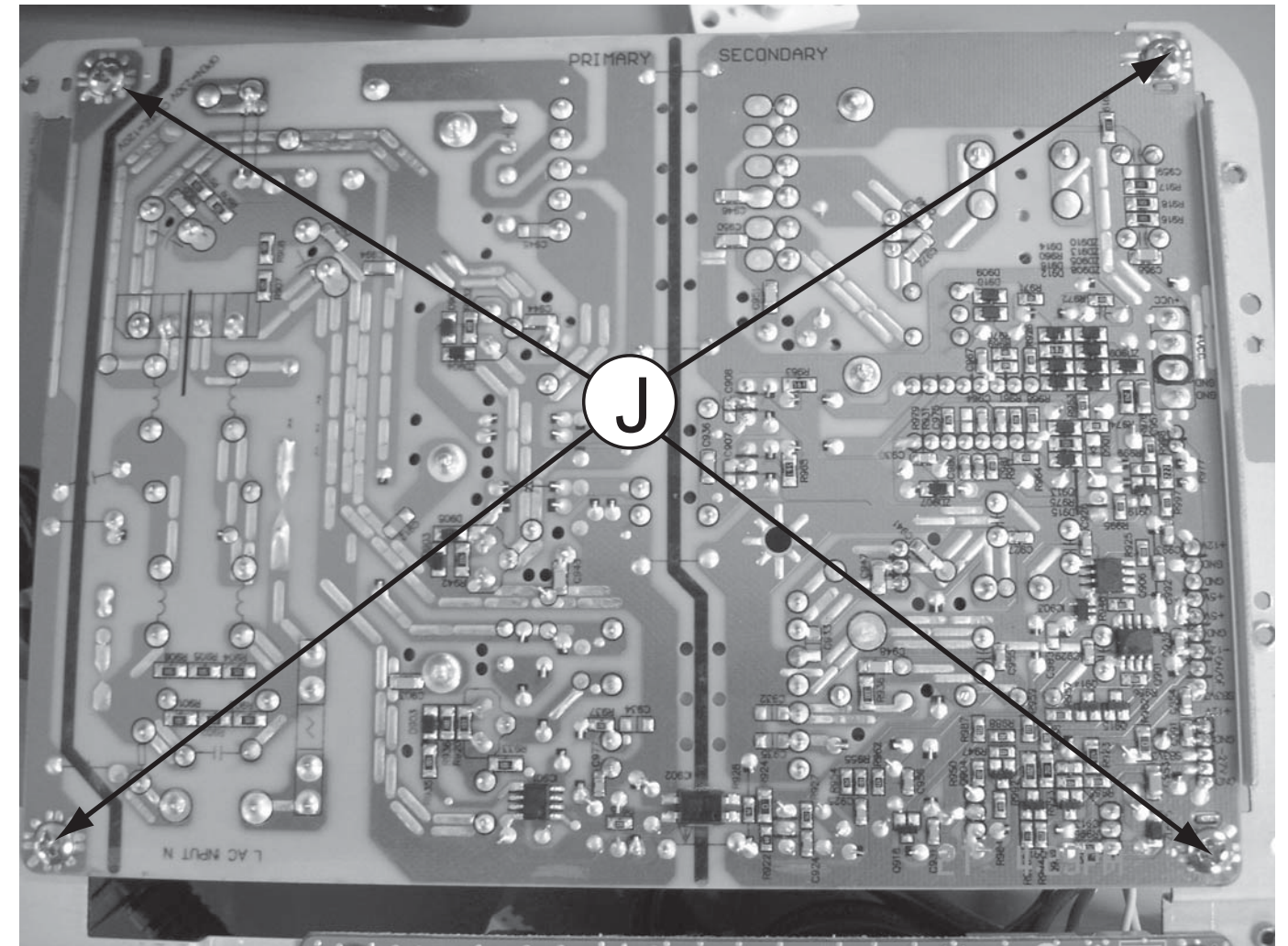


Figure 11

Dismantling of the AMP PCB

- 1) Loosen 4 screws "K" on the AMP PCB bottom to remove AMP PCB as shown in figure 12.

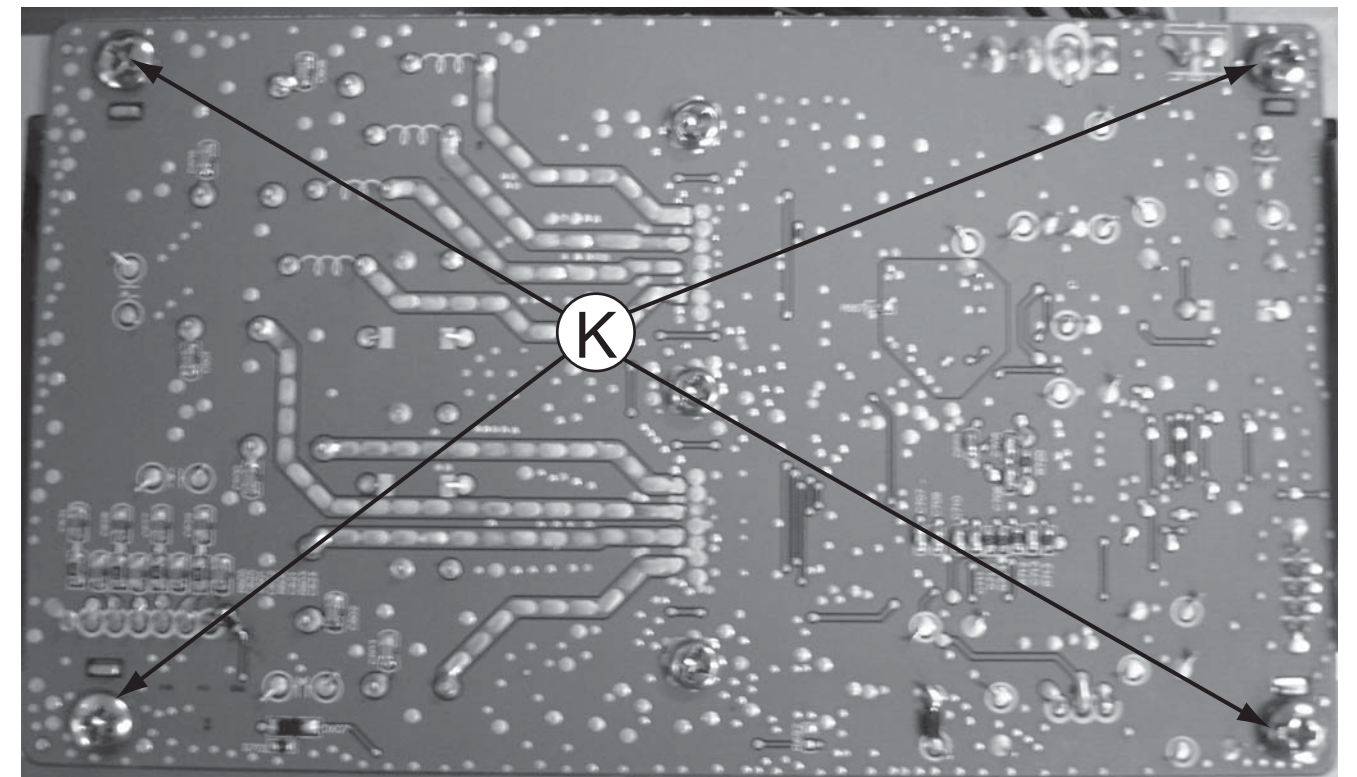


Figure 12

1) Loosen 3 screws "L" at the power PCB bracket bottom to remove DVD module as shown in figure 13.

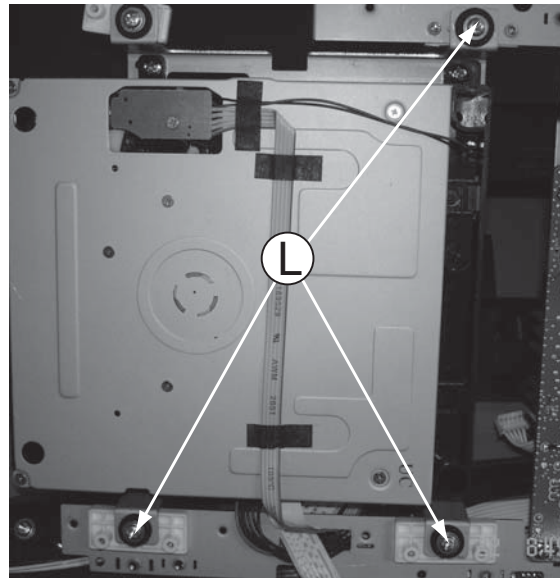


Figure 13

Dismantling of the VFD+LED+DVD LED PCB

- 1) Loosen 3 screws "M" on the VFD PCB to remove it as shown in figure 14.
- 2) Loosen 2 screws "N" on the LED PCB to remove it as shown in figure 15.
- 3) Loosen 2 screws "O" on the door LED PCB to remove it as shown in figure 16.
- 4) Loosen 2 screws "P" at the DVD door lens ass'y to remove it as shown in figure 17.
- 5) Loosen 4 screws "Q" at the touch PCB bracket as shown in figure 18

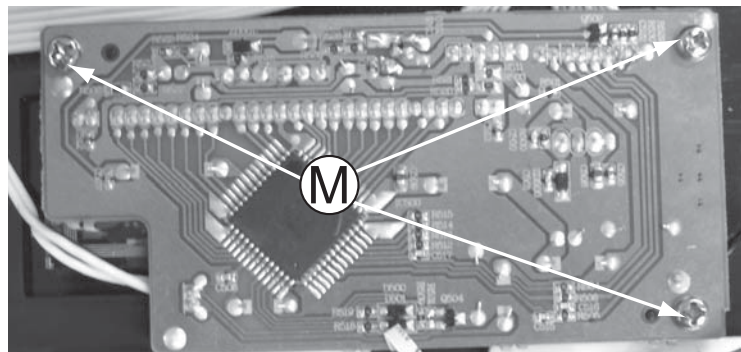


Figure 14

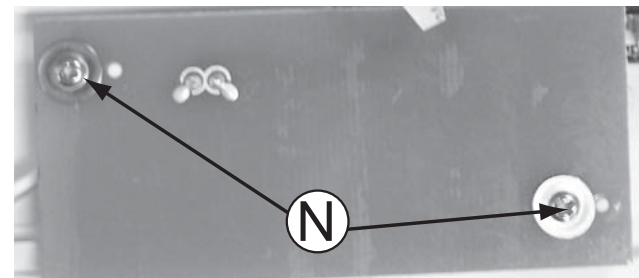


Figure 15

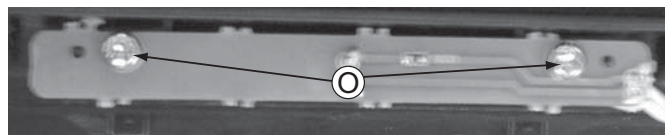


Figure 16

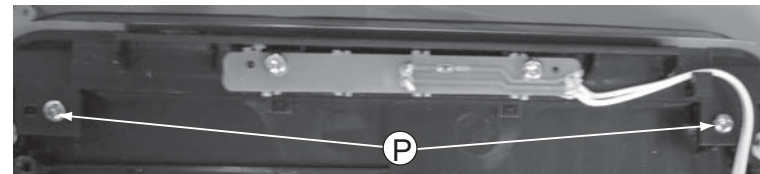


Figure 17

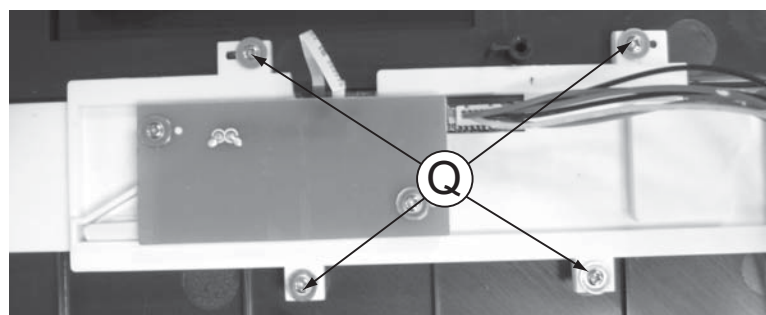
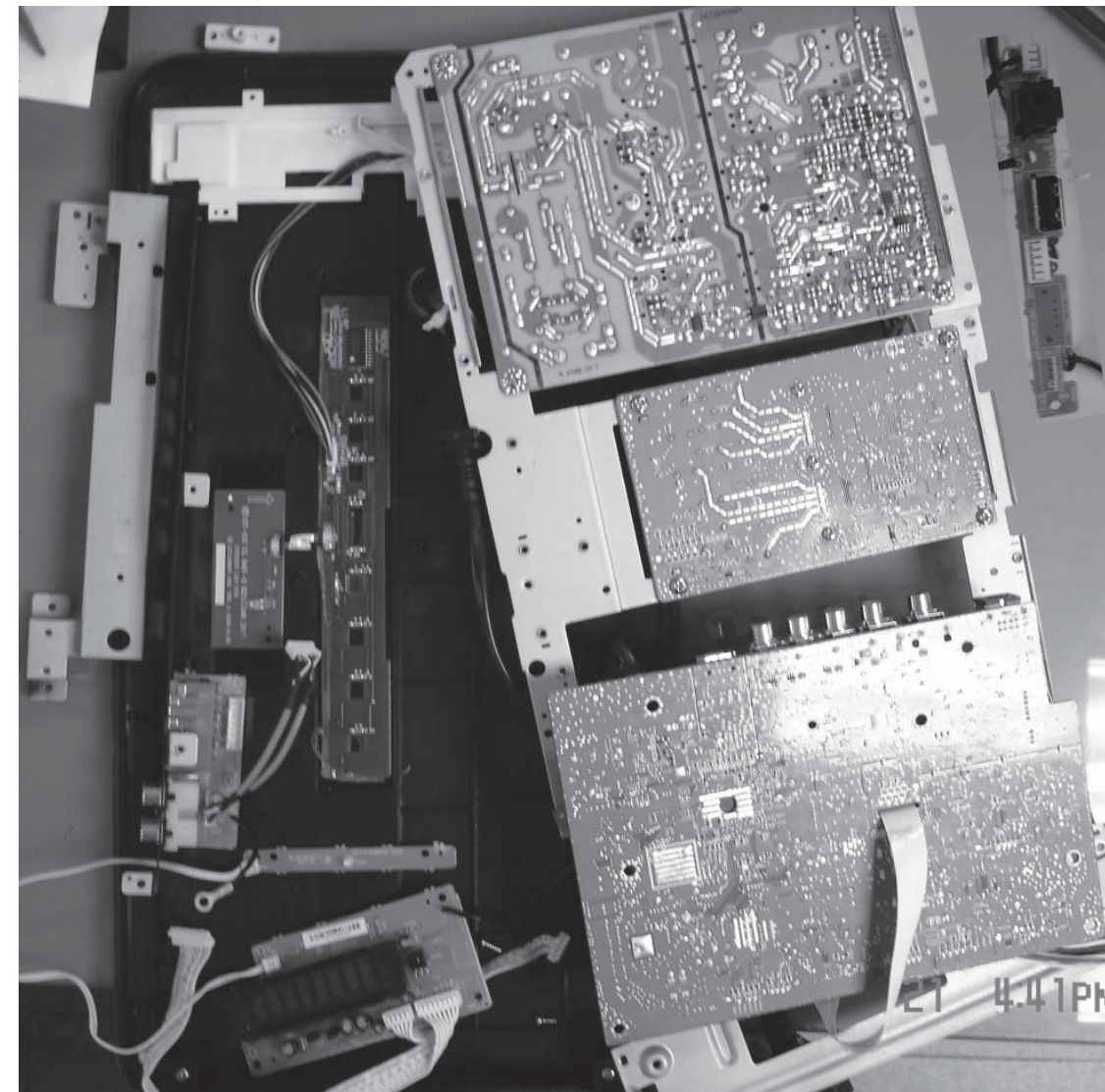
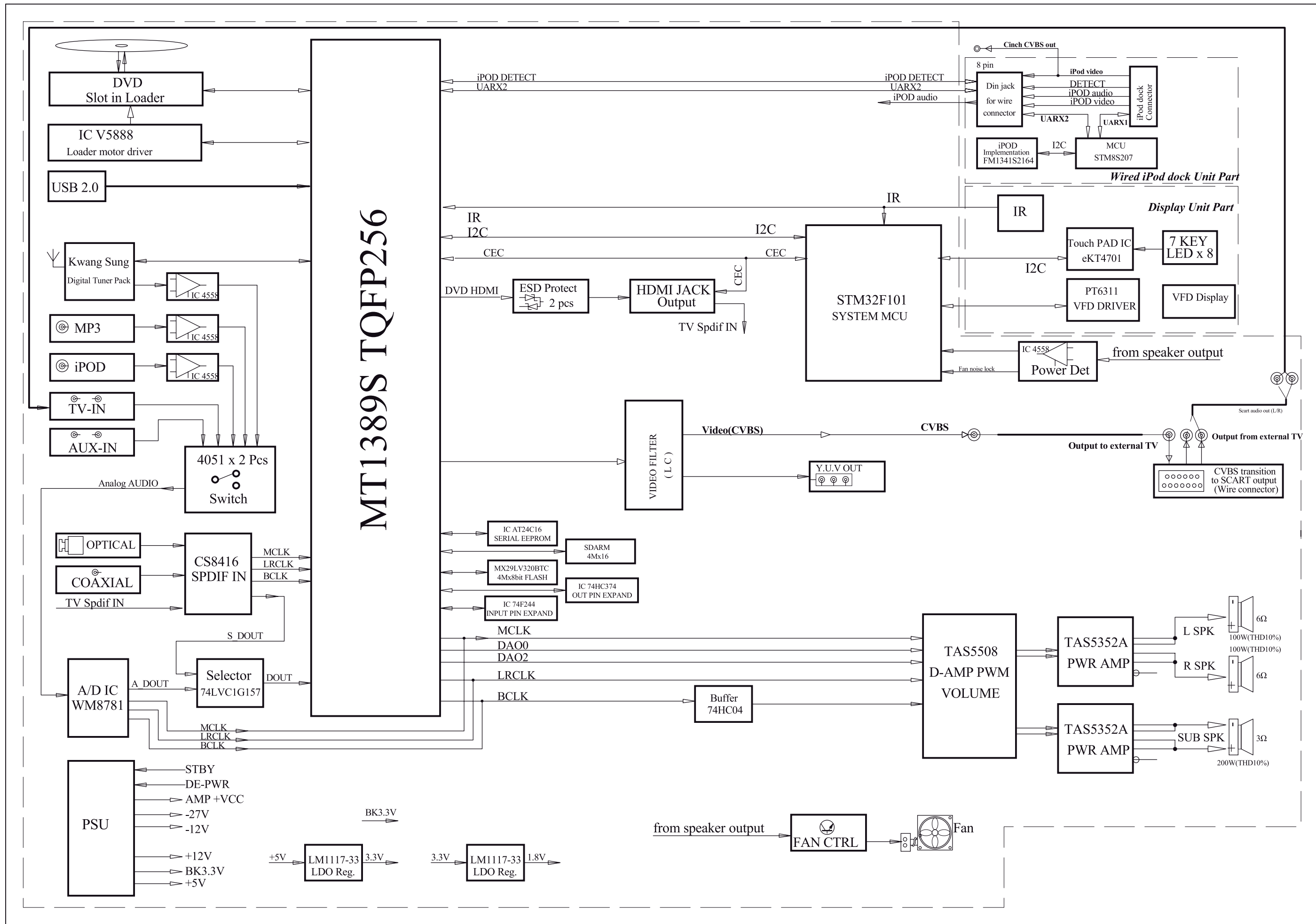


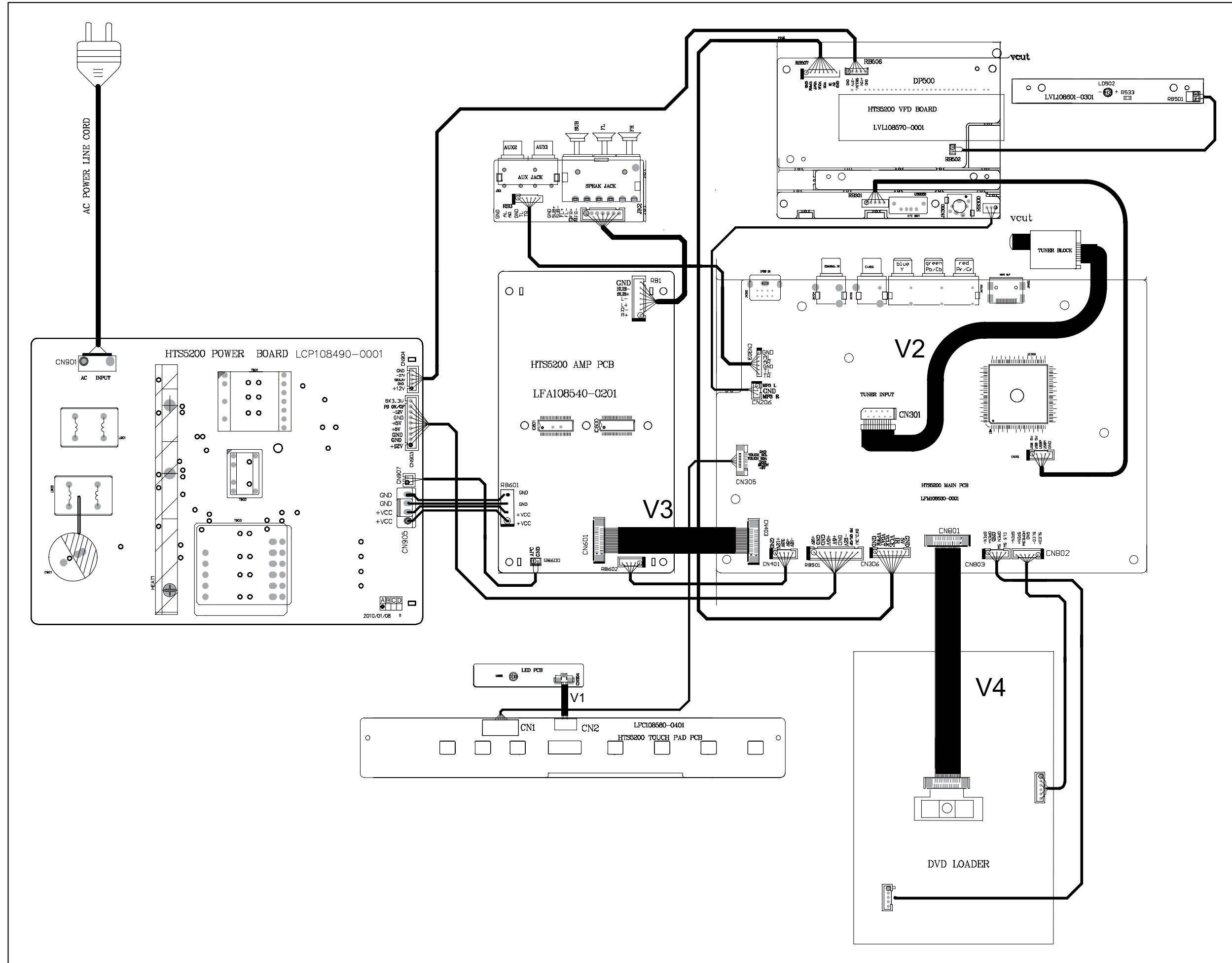
Figure 18

SERVICE POSITIONS

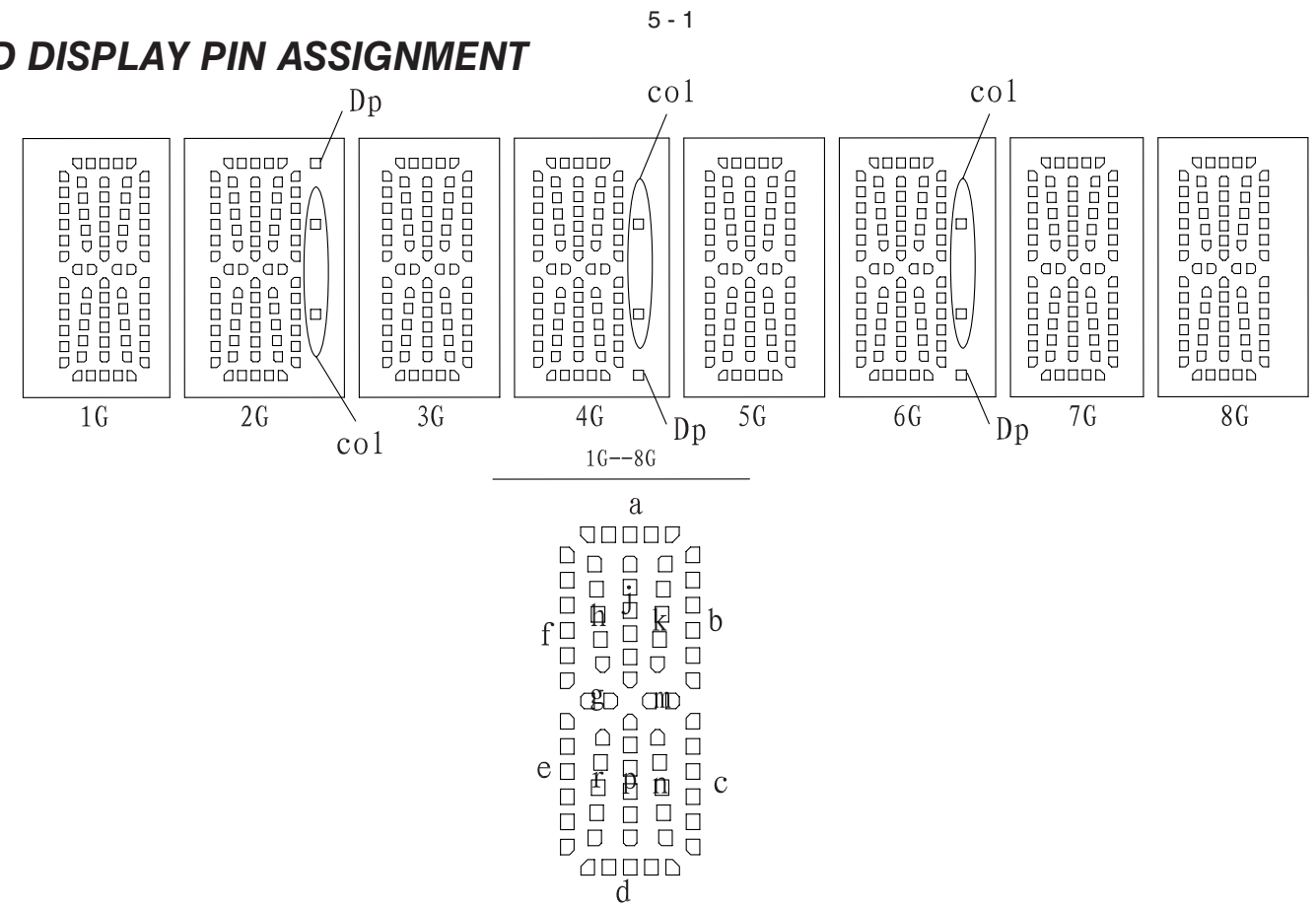


Note: In some service positions the components or copper patterns of one board may risk touching its neighbouring pc boards or metallic parts. To prevent such short-circuit use a piece of hard paper or other insulating material between them.





FTD DISPLAY PIN ASSIGNMENT



VFD+USB+AUX BOARD

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FTD Display Pin Assignment..... 5-1
 Circuit Diagram 5-2
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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	/	/

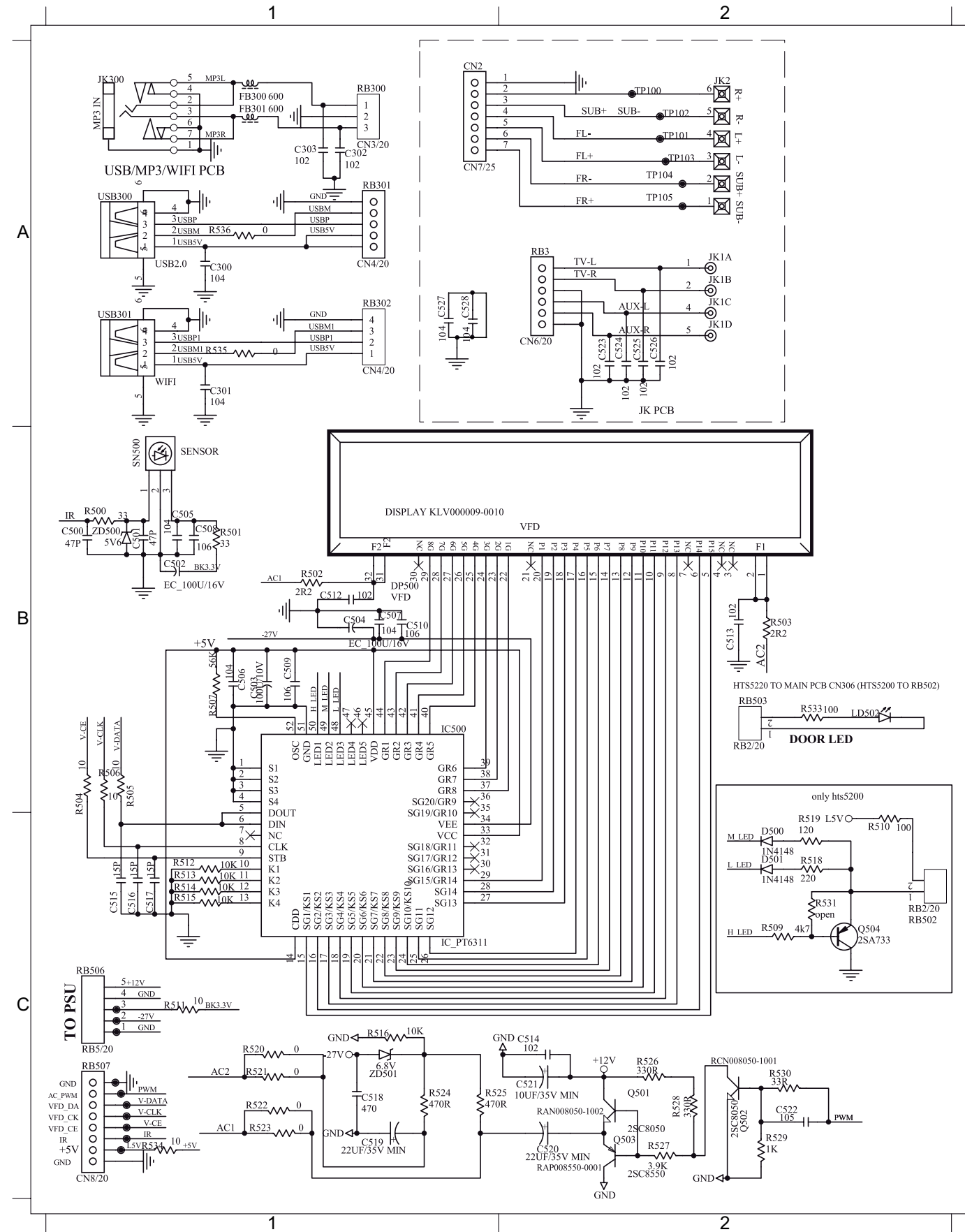
PIN CONNECTION

(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)

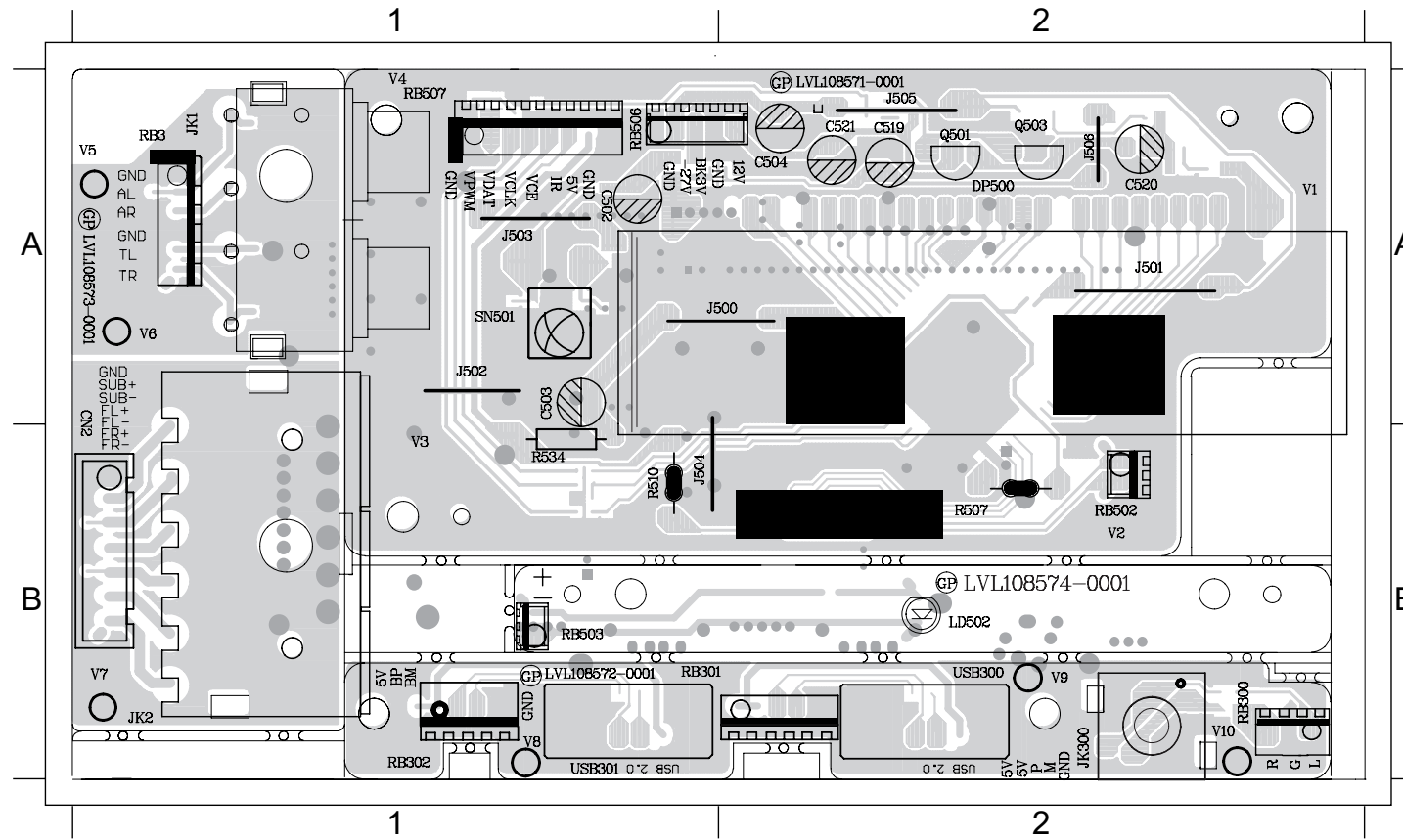
CIRCUIT DIAGRAM

C300	A1	C502	B1	C507	B1	C513	B2	C518	C1	C523	A2	C528	A1	FB300	A1	JK300	A1	Q504	C2	R504	B1	R510	C2	R515	C1	R521	C1	R526	C2	R533	B2	RB301	A1	USB300	A1
C302	A1	C503	B1	C508	B1	C514	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	RB503	B2	ZD500	B1
C303	A1	C504	B1	C509	B1	C515	C1	C520	C2	C525	A2	D500	C2	IC500	B1	Q501	C2	R501	B1	R506	B1	R512	C1	R518	C2	R523	C1	R528	C2	R536	A1	RB506	C1	ZD501	C1
C500	B1	C505	B1	C510	B1	C516	C1	C521	C2	C526	A2	D501	C2	IC500	B1	Q502	C2	R502	B1	R507	B1	R513	C1	R519	C2	R524	C1	R529	C2	RB3	A2	RB507	C1		
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	RB300	A1	SN500	B1		



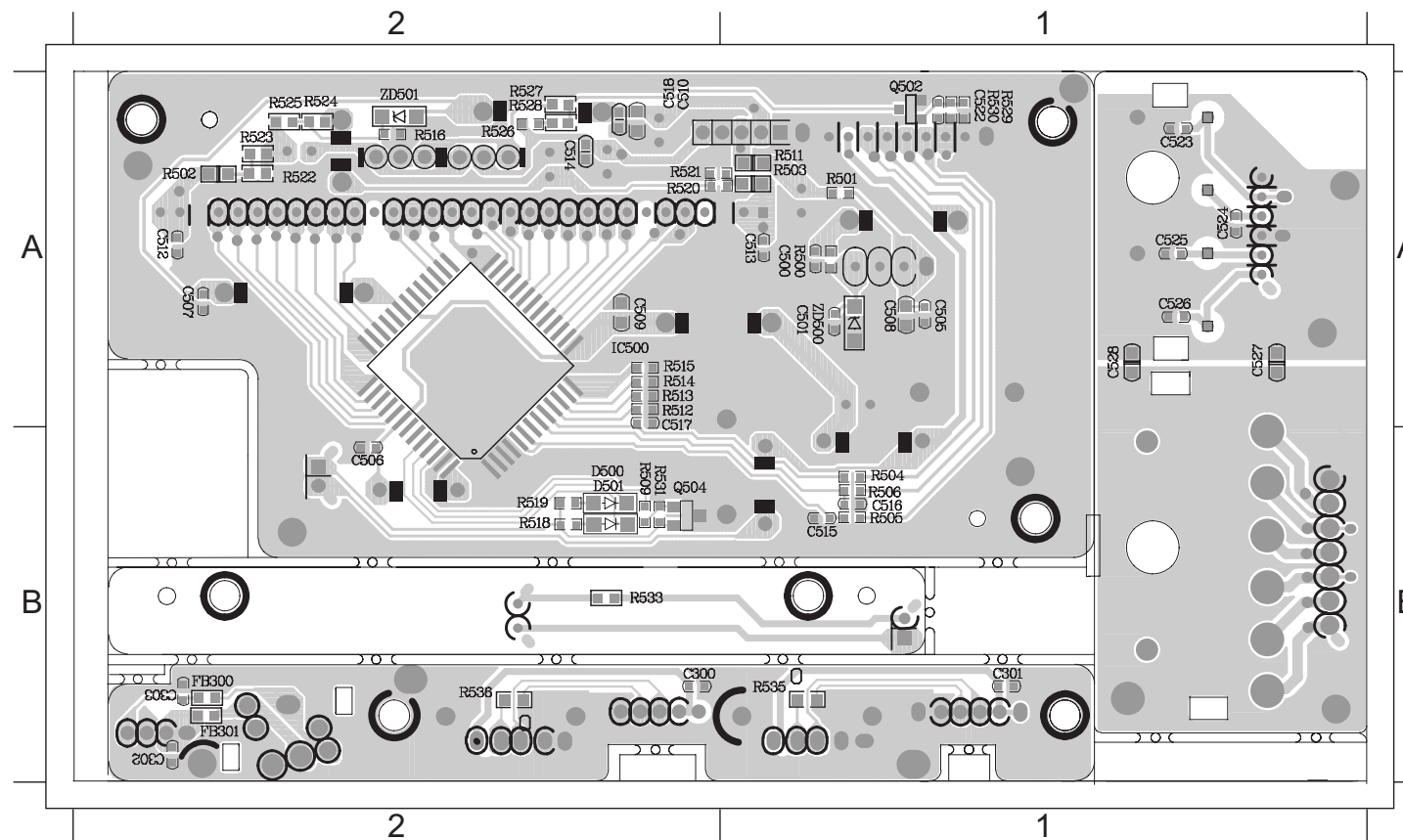
PCB LAYOUT - TOP VIEW

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
 C503 A1 C519 A2 C521 A2 J500 A1 J502 A1 J504 B1 J506 A2 JK2 B1 LD502 B2 Q503 A2 R510 B1 RB3 B1 RB301 B2 RB506 A1 SN500 A1



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 ZD500A1
 C302 B2 C501 A1 C507 A2 C510 A2 C514 A2 C517 A2 C523 A1 C526 A1 CN2 A1 FB300B2 IC500 A2 R500 A1 R503 A1 R506 B1 R512 A2 R515 A2 R519 B2 R522 A2 R525 A2 R528 A2 R533 B2 ZD501A2
 C303 B2 C505 A1 C508 A1 C512 A2 C515 B1 C518 A2 C524 A1 C527 A1 D500 B2 FB301B2 Q502 A1 R501 A1 R504 B1 R509 B2 R513 A2 R516 A2 R520 A2 R523 A2 R526 A2 R529 A1 R536 B2

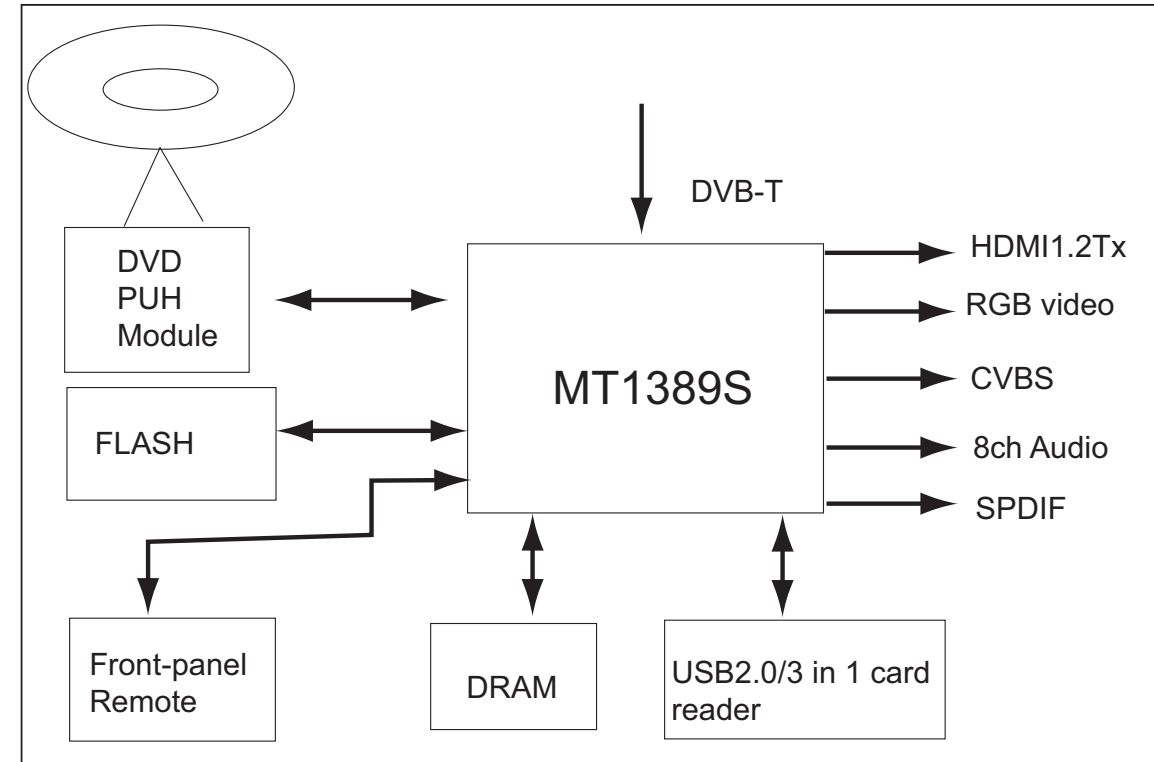


MAIN+LED BOARD

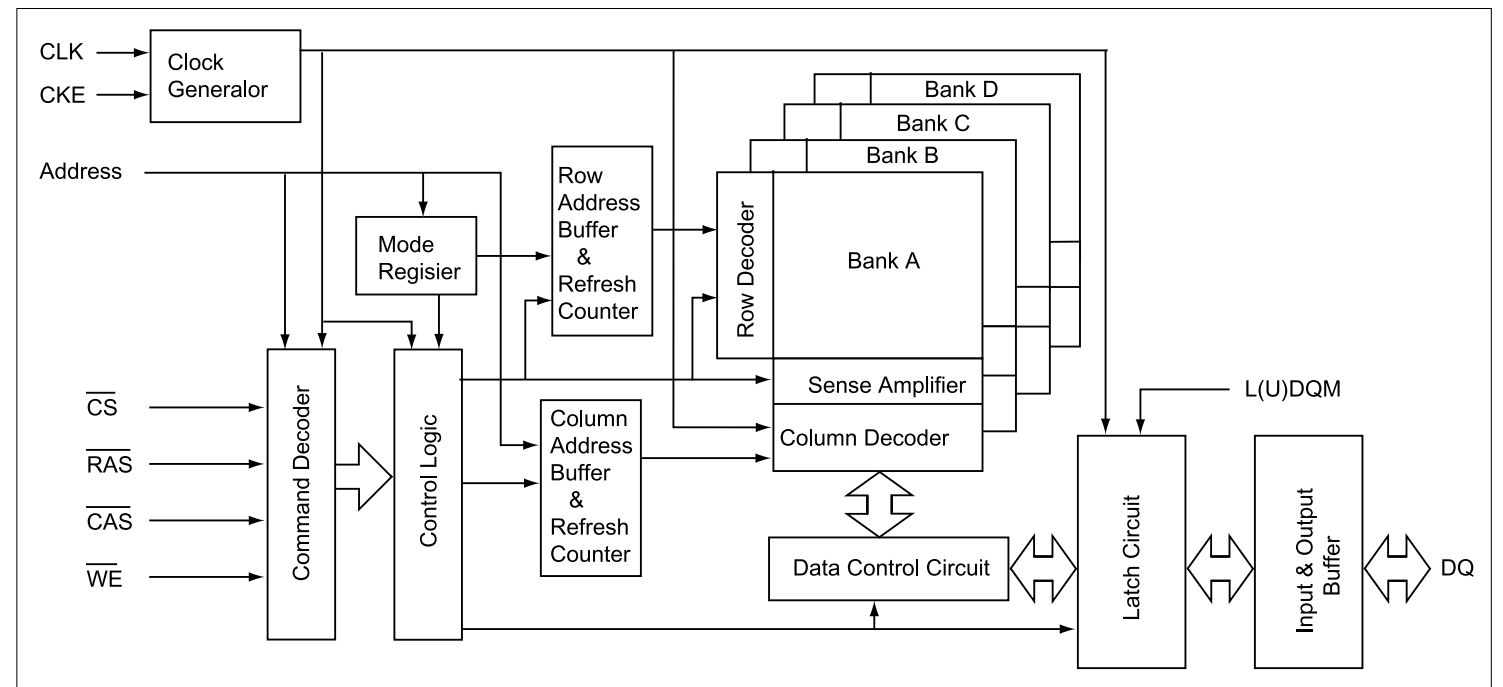
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6 - 1
INTERNAL IC DIAGRAM - MT1389FEX/SN

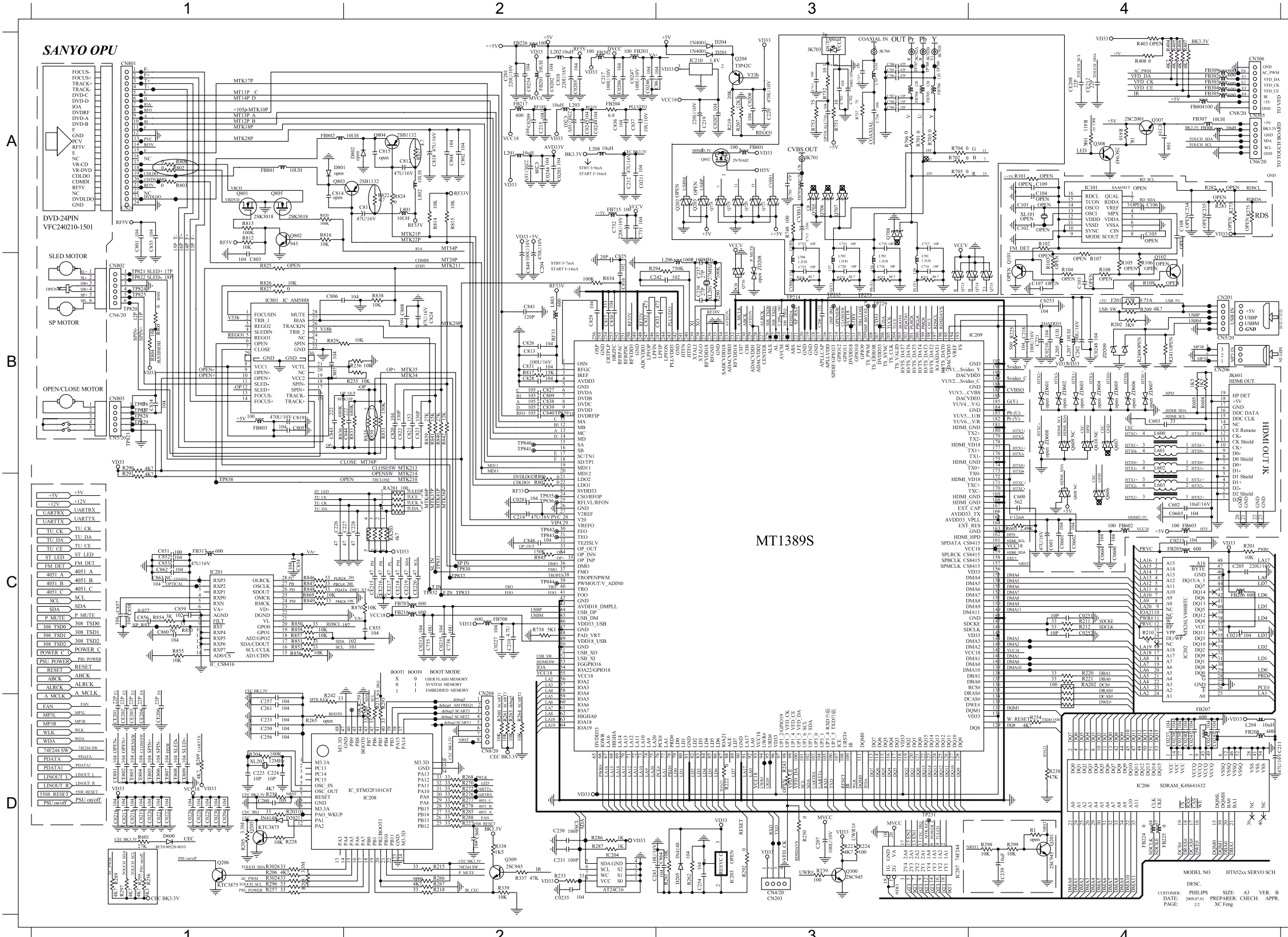


INTERNAL IC DIAGRAM - A641604L



CIRCUIT DIAGRAM - part one

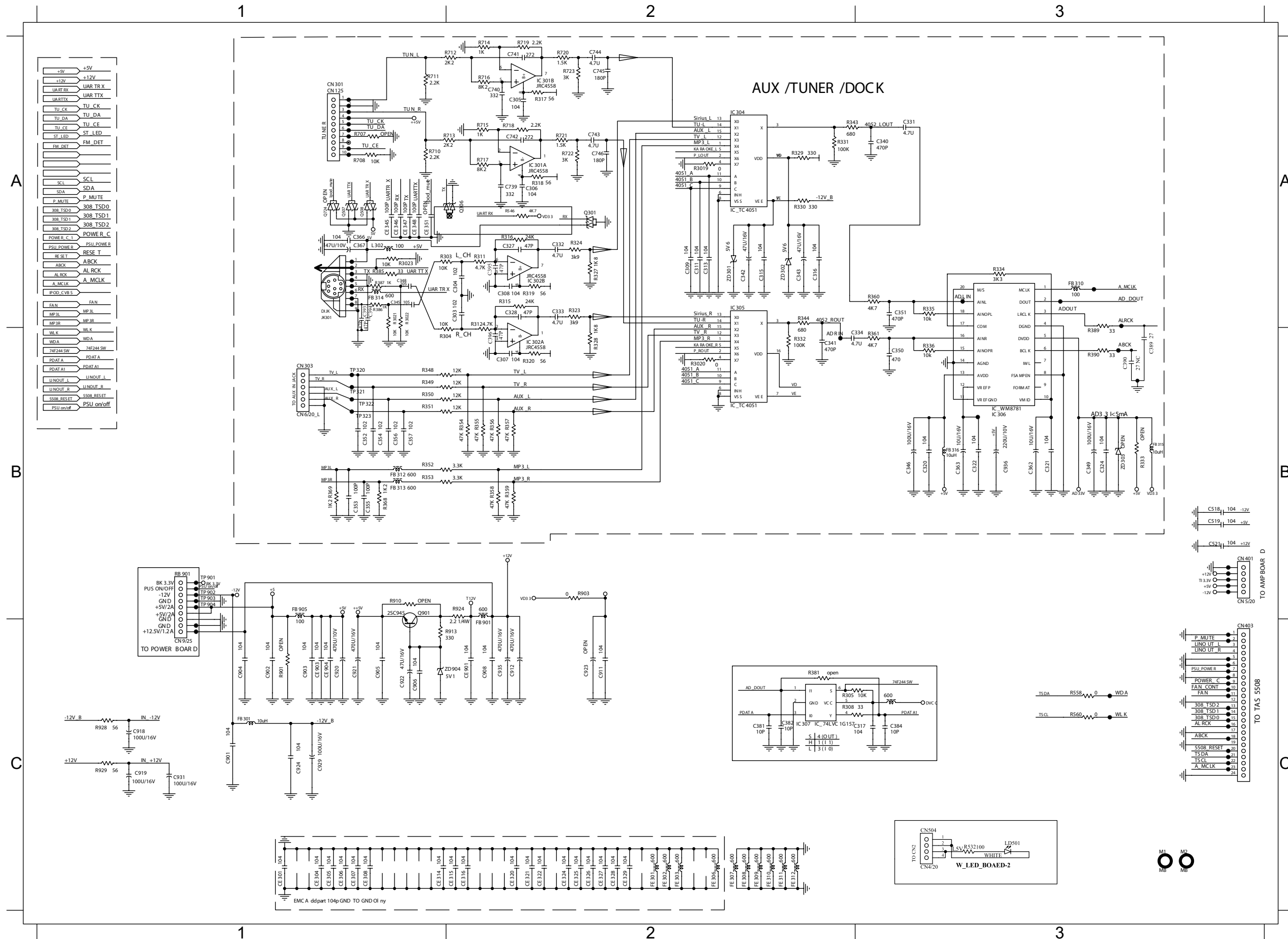
C0201	C2	C0216	D1	C0239	D4	C0601	C4	C211	D4	C231	D2	C601	C4	C721	A3	C807	B1	C824	B2	C839	B2	C859	C1	CE218	C2	CN306	A4	FB205	C4	FB308	A4	FB803	B1	JK701	A3	L707	A3	Q707	A3	R201	C4	R219	A3	R250	D3	R272	D2	R294	B2	R408	A4	R733	B3	R815	A2	R836	B1	R854	C1
C0202	A2	C0217	D1	C0240	D4	C0602	C4	C212	A2	C233	D1	C602	C4	C722	A3	C808	B2	C825	B2	C840	B2	C860	C1	CE219	C2	CN801	A1	FB206	C4	FB309	A4	FB804	A4	JK702	A3	L801	A2	Q708	A3	R202	B4	R220	C4	R254	D4	R276	D2	R295	D1	R410	A4	R734	B3	R816	A1	R838	B2	R855	C1
C0203	A2	C0218	D1	C0241	D4	C0603	C4	C214	C2	C237	D3	C703	A3	C723	B3	C809	B2	C826	B2	C841	B2	C861	A2	CE220	C2	CN802	B1	FB207	D4	FB317	C1	IC201	C1	JK704	A3	L802	A2	Q713	B3	R203	D1	R221	C4	R256	D1	R277	D2	R296	D1	R411	A4	R737	A3	R817	B2	R839	B2	R856	C1
C0204	D1	C0219	D1	C0242	D4	C0604	C4	C215	A2	C238	B3	C704	A3	C731	A2	C810	A2	C827	B2	C843	B1	C862	C1	CE801	D1	CN803	B1	FB208	D4	FB601	A3	IC202	C4	L201	A2	L803	B2	Q714	B4	R204	D1	R222	D3	R257	D1	R278	D2	R297	D1	R601	D1	R738	C2	R820	A1	R840	B2	R857	C1
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C0206	A2	C0221	D1	C0244	A2	C201	A2	C218	B4	C242	B2	C706	A3	C735	C2	C812	A2	C829	B2	C846	C2	CE201	D1	CE803	D1	D202	D1	FB217	A2	FB603	C4	IC204	D2	L203	A2	Q204	A3	Q716	B3	R206	D1	R224	D3	R259	D2	R281	D3	R299	D4	R604	B4	R802	A1	R823	A2	R842	B2	R869	C1
C0207	A3	C0222	D1	C0245	A2	C202	B4	C219	A3	C243	D2	C707	A3	C736	A3	C813	B2	C830	B2	C849	B2	CE202	D1	CE804	D1	D204	A3	FB224	D4	FB703	A3	IC206	D4	L204	D4	Q205	D1	Q718	A3	R207	A3	R225	B4	R260	D2	R285	D2	R3024	D1	R605	B4	R803	A1	R824	A2	R845	C2	R870	C2
C0208	A3	C0226	D1	C0246	A2	C203	A2	C220	A3	C250	D1	C708	A3	C737	A3	C816	B2	C831	B2	C851	C1	CE203	D1	CE805	D1	D205	D3	FB225	D4	FB704	A3	IC207	D3	L205	B4	Q206	D1	Q719	A3	R208	D2	R227	D2	R261	D2	R286	D2	R3026	D1	R606	B4	R804	A1	R825	A2	R846	C1	RA201	C2
C0209	A2	C0227	C2	C0247	A2	C204	B2	C221	B4	C254	D3	C709	A3	C738	C2	C817	B2	C832	B2	C852	C1	CE204	D1	CE806	D1	D600	D1	FB226	A2	FB705	A3	IC208	D2	L206	B3	Q300	D3	Q720	A3	R209	B4	R228	D1	R262	D3	R287	D2	R3027	D1	R607	A3	R805	B1	R827	B1	R847	C1	RA202	C4
C0210	B4	C0228	D1	C0248	B4	C205	C4	C223	D1	C256	D1	C713	A3	C801	A1	C818	A2	C833	B3	C853	C1	CE206	D1	CE807	D1	F201	B4	FB301	C1	FB706	A3	IC209	B4	L207	B4	Q307	A4	Q721	A3	R210	C4	R233	D2	R263	D2	R288	D2	R338	D2	R703	A3	R806	C2	R829	B1	R848	C1	RA203	C2
C0211	A2	C0229	D1	C0249	A2	C206	D1	C224	D1	C257	D1	C716	B3	C802	A2	C819	B1	C834	B1	C854	C1	CE208	A4	CE808	D1	FB1007	C3	FB302	A4	FB707	C2	IC210	A3	L208	A2	Q308	A4	Q801	A1	R211	C4	R235	B2	R264	D2	R289	D1	R339	D2	R704	A3	R807	C2	R830	B2	R849	C1	XL201	B3
C0212	C2	C0230	D1	C0251	C4	C207	D3	C226	C2	C260	D1	C717	A3	C803	B1	C820	B2	C835	A1	C855	C2	CE212	A4	CE809	D1	FB201	A2	FB303	A4	FB708	C2	IC301	A2	L701	B3	Q309	D2	Q802	A1	R212	C4	R236	B2	R267	D2	R290	B1	R404	A4	R705	A3	R808	A1	R831	B2	R850	C1	XL202	D1
C0213	C4	C0235	D2	C0252	C4	C208	A2	C227	C2	C261	D1	C718	B3	C804	A2	C821	B2	C836	A2	C856	C1	CE215	C2	CN201	B4	FB202	A2	FB304	A4	FB715	A2	IC302	B2	L702	B3	Q602	A3	Q803	A1	R213	D2	R238	D4	R268	D2	R291	B1	R405	A4	R706	A3	R812	A1	R833	B2	R851	C1	ZD209	B4
C0214	C4	C0237	D4	C0253	B4	C209	B3	C228	C2	C319	A4	C719	A3	C805	B1	C822	B2	C837	A2	C857	C1	CE216	C2	CN206	B4	FB203	A2	FB305	A4	FB801	A1	IC801	B1	L703	B3	Q705	A3	Q804	A2	R215	D2	R239	D3	R269	D1	R292	D3	R406	A4	R731	B3	R813	A1	R834	B2	R852	C1		
C0215	C2	C0238	D4	C0254	A2	C210	C2	C230	D2	C600	C4	C720	B3	C806	B1	C823	B2	C838	B2	C858	C1	CE217	C2	CN305	A4	FB204	A2	FB307	A4	FB802	A1	JK601	B4	L704	B3	Q706	A3	Q805	A1	R218	D2	R242	D1	R270	D2	R293	D2	R407	A4	R732	B3	R814	A2	R835	B2	R853	C1		



MODEL NO HTSS2x SERVO SCH
DESC.
CUSTOMER: PHILIPS SIZE: A3 VER: B
DATE: 200701 PREPARED: CHECH APPR.
PAGE: 27 XC Fong

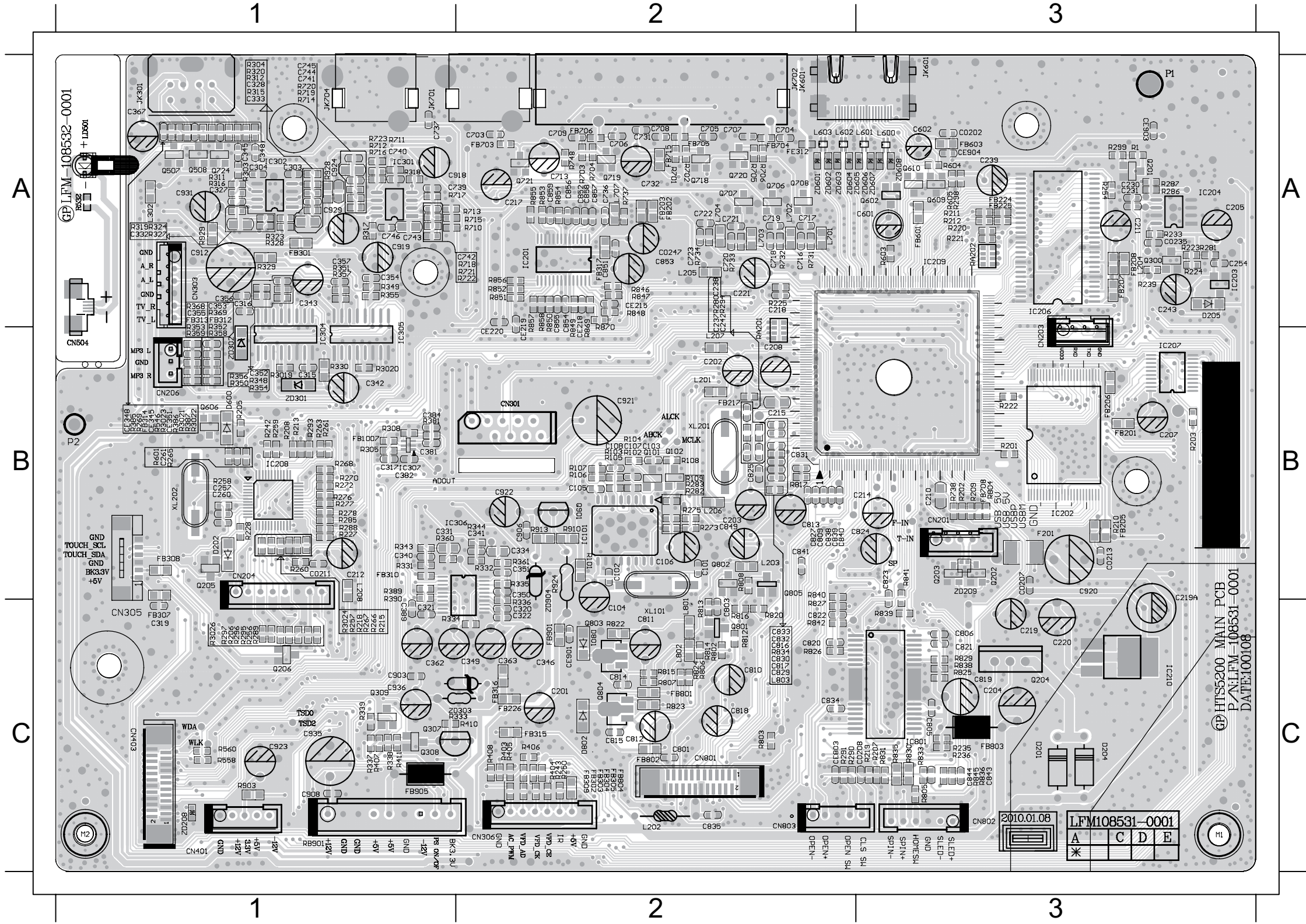
CIRCUIT DIAGRAM - part two

C303	A2	C313	A2	C327	A2	C342	A2	C352	B1	C366	A1	C395	C2	C742	A2	C904	C1	C921	C1	CE305	C1	CE321	C2	CE345	A1	CN303	B1	FB315	B3	FE307	C2	IC306	B3	R3020	B2	R311	A2	R323	A2	R334	A3	R351	B1	R359	B2	R389	B3	R711	A1	R719	A2	RB901	B1
C304	A2	C315	A2	C328	A2	C343	A2	C353	B1	C367	A1	C396	B2	C743	A2	C905	C1	C924	C1	CE306	C1	CE322	C2	CE346	A1	CN401	B3	FB316	B3	FE308	C2	IC307	C2	R3021	A1	R312	A2	R324	A2	R335	A3	R352	B1	R360	A3	R390	B3	R712	A2	R720	A2	ZD301	A2
C305	A2	C316	A2	C331	A3	C345	A1	C354	B1	C381	C2	C518	B3	C744	A2	C908	C2	C929	C1	CE307	C1	CE324	C2	CE347	A1	CN403	C3	FB901	C2	FE309	C2	JK301	A1	R3022	A1	R315	A2	R327	A2	R336	B3	R353	B1	R361	B3	R532	C3	R713	A2	R721	A2	ZD302	A2
C306	A2	C317	C3	C332	A2	C346	B3	C355	B1	C382	C2	C519	B3	C745	A2	C911	C2	C931	C1	CE308	C1	CE325	C2	CE348	A1	CN504	C3	FB905	B1	FE310	C2	L302	A1	R3023	A1	R316	A2	R328	B2	R343	A2	R354	B2	R368	B1	R546	A2	R714	A2	R722	A2		
C307	B2	C320	B3	C333	A2	C348	A1	C356	B1	C384	C3	C521	B3	C746	A2	C912	C2	C935	C2	CE314	C1	CE326	C2	CE901	C2	FB310	A3	FE301	C2	FE311	C2	LD501	C3	R303	A1	R317	A2	R329	A2	R344	A2	R355	B2	R369	B1	R558	C3	R715	A2	R723	A2		
C308	A2	C321	B3	C334	B3	C349	B3	C357	B1	C389	B3	C739	A2	C901	C1	C918	C1	C936	B3	CE315	C2	CE327	C2	CE903	C1	FB312	B1	FE302	C2	FE312	C2	Q507	A1	R304	B2	R318	A2	R330	A2	R348	B1	R356	B2	R385	A1	R560	C3	R716	A2	R903	B2		
C309	A2	C322	B3	C340	A3	C350	B3	C362	B3	C393	C1	C740	A2	C902	C1	C919	C1	C936	C1	CE301	C1	CE316	C2	CE328	C2	CE904	C1	FB313	B1	FE303	C2	IC304	A2	Q508	A1	R305	C2	R319	A2	R331	A2	R349	B1	R357	B2	R386	A1	R708	A1	R717	A2	R928	C1
C311	A2	C324	B3	C341	B2	C351	A3	C363	B3	C394	C1	C741	A2	C903	C1	C920	C1	C936	C1	CE304	C1	CE320	C2	CE329	C2	CN301	A1	FB314	A1	FE306	C2	IC305	A2	R3019	A2	R308	C2	R320	B2	R332	B2	R350	B1	R358	B2	R387	A1	R710	A1	R718	A2	R929	C1



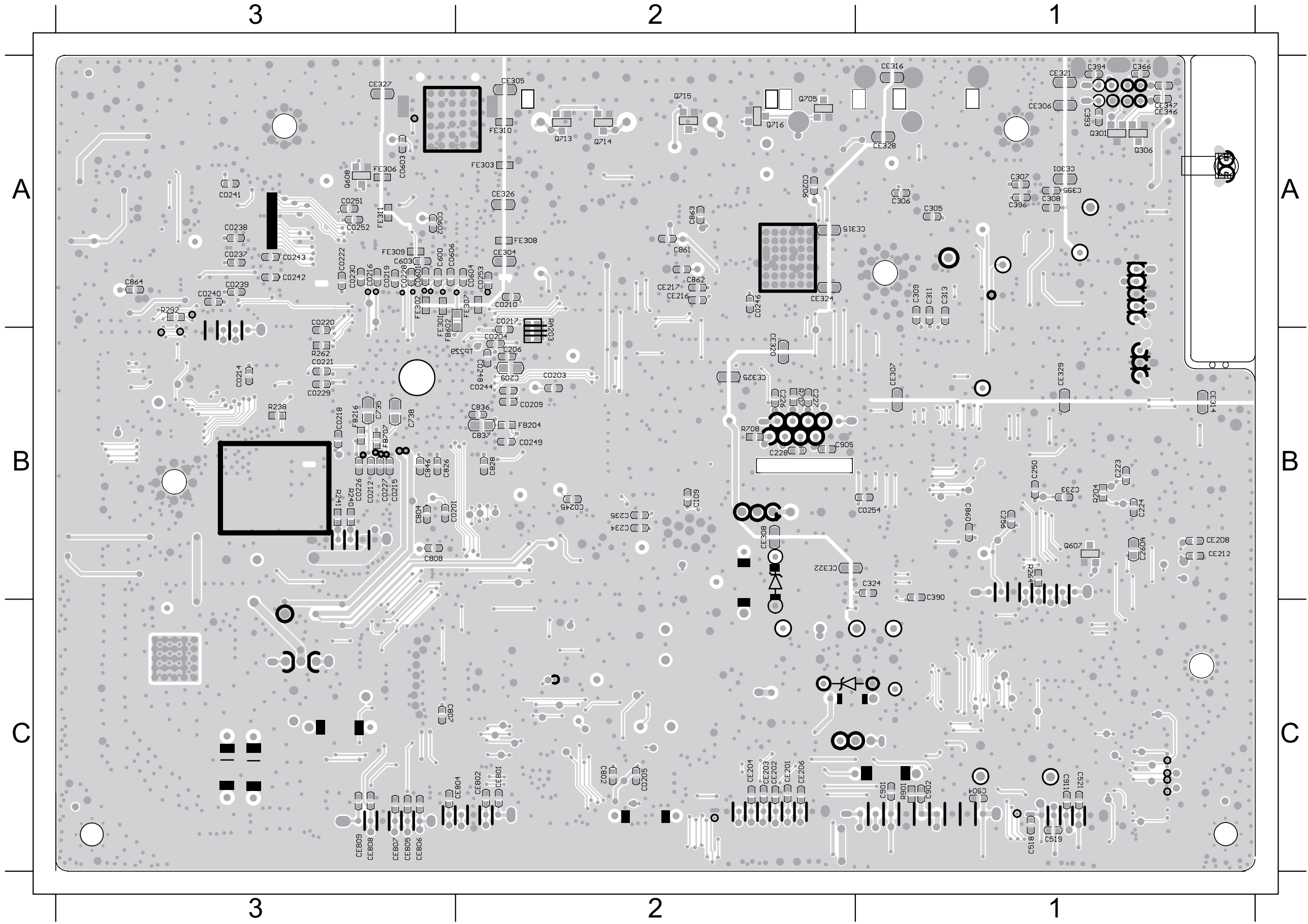
PCB LAYOUT - TOP VIEW

C0202 A3 C214 B3 C261 B1 C341 B2 C367 A1 C718 A2 C746 A1 C823 B3 C849 B2 C924 A1 CN301B2 FB201 B3 FB308 B1 FB801 C2 IC302 A1 L207 B2 Q307 C1 Q805 B2 R221 A3 R259 B1 R288 B1 R3026 C1 R329 A1 R353 A1 R405 C2 R704 A2 R731 A2 R815 C2 R839 C3 R858 B2
C0207 B3 C215 B2 C303 A1 C342 B1 C381 B1 C719 A2 C801 C2 C824 B3 C851 A2 C929 A1 CN303A1 FB202 A2 FB309 C2 FB802 C2 IC304 B1 L208 B1 Q308 C1 R201 B3 R222 B3 R260 B1 R289 C1 R303 A1 R330 B1 R354 B1 R406 C2 R705 A2 R732 A2 R816 C2 R840 B2 R869 B2
C0208 C3 C217 A2 C304 A1 C343 A1 C382 B1 C720 A2 C803 C2 C825 B3 C852 A2 C931 A1 CN305C1 FB203 A2 FB310 B2 FB803 C3 IC305 B1 L302 A1 Q309 C1 R202 B3 R223 A3 R261 B1 R290 C2 R304 A1 R331 B1 R355 A1 R407 C1 R706 A2 R733 A2 R817 B2 R841 B3 R870 B2
C0211 B1 C218 A2 C315 B1 C345 A1 C384 B1 C721 A2 C805 C3 C827 B2 C853 A2 C935 C1 CN306C2 FB205 B3 FB312 A1 FB804 C2 IC306 B1 L701 A2 Q507 A1 R203 B3 R224 A3 R263 B1 R291 C2 R305 B1 R332 B2 R356 B1 R408 C2 R710 A2 R734 A2 R820 C2 R842 C2 R903 C1
C0213 B3 C219 C3 C316 A1 C346 C2 C389 C1 C722 A2 C806 C3 C829 C2 C854 B2 C936 C1 CN401C1 FB206 B3 FB313 A1 FB901 C2 IC307 B1 L702 A2 Q508 A1 R205 B1 R225 A2 R267 C1 R293 B1 R308 B1 R334 C1 R357 A1 R410 C2 R711 A1 R737 A2 R822 C2 R845 C3 R928 A1
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C201 C2 C230 A3 C320 C2 C350 B2 C703 A2 C732 A2 C811 C2 C832 C2 C857 A2 CE219B2 CN801C2 FB217 B2 FB316 C2 IC201 A2 JK601 A2 L707 A2 Q707 A2 R208 B1 R233 A3 R270 B1 R296 C1 R315 A1 R337 C1 R360 B1 R546 B1 R714 A1 R802 C2 R826 C2 R848 A2 RA202 A3
C202 B2 C231 A3 C321 C1 C351 B2 C704 A2 C736 A2 C812 C2 C833 C2 C858 A2 CE220B2 CN802C3 FB224 A3 FB317 A2 IC202 B3 JK701 A1 L801 C2 Q708 A2 R209 B3 R235 C3 R272 B1 R297 C1 R316 A1 R338 C1 R361 B2 R558 C1 R715 A2 R803 C2 R827 C2 R849 B2 RB901 C1
C203 B2 C237 B2 C322 C2 C352 B1 C705 A2 C737 A1 C813 B2 C834 C2 C859 A2 CE345B1 CN803C2 FB225 A3 FB601 A3 IC203 A3 JK702 A2 L802 C2 Q718 A2 R210 B3 R236 C3 R276 B1 R298 A3 R317 A1 R339 C1 R368 A1 R560 C1 R716 A1 R804 B3 R829 C3 R850 B2 XL201 B2
C204 C3 C238 A2 C327 A1 C353 A1 C706 A2 C739 A1 C816 C2 C835 C2 C903 C1 CE348B1 D201 C3 FB226 C2 FB603 A3 IC204 A3 JK704 A1 L803 C2 Q719 A2 R211 A3 R239 A3 R277 B1 R299 A3 R318 A1 R343 B1 R369 A1 R601 B1 R717 A1 R805 C3 R830 C3 R851 A2 XL202 B1
C205 A3 C239 A3 C328 A1 C354 A1 C707 A2 C740 A1 C817 C2 C838 B2 C908 C1 CE803C2 D202 B1 FB301 A1 FB703 A2 IC206 A3 L201 B2 LD501 A1 Q720 A2 R212 A3 R242 B1 R278 B1 R3019 B1 R319 A1 R344 B2 R385 B1 R603 A3 R718 A2 R806 C2 R831 C3 R852 A2 ZD209 B3
C207 B3 C242 B2 C331 B1 C355 A1 C708 A2 C741 A1 C818 C2 C839 B2 C912 A1 CE901C2 D204 C3 FB302 C2 FB704 A2 IC207 B3 L202 C2 Q201 A3 Q721 A2 R213 B1 R250 C2 R280 A2 R3020 B1 R320 A1 R348 B1 R386 B1 R604 A3 R719 A1 R807 C2 R833 C3 R853 A2 ZD301 B1
C208 B2 C243 A3 C332 A1 C356 A1 C709 A2 C742 A2 C819 C3 C840 B2 C918 A1 CE903A3 D205 A3 FB303 C2 FB705 A2 IC208 B1 L203 B2 Q204 C3 Q801 C2 R215 C1 R254 A3 R281 A3 R3021 B1 R323 A1 R349 A1 R387 B1 R605 A3 R720 A1 R808 B2 R834 C2 R854 A2 ZD302 B1
C210 B3 C254 A3 C333 A1 C357 A1 C713 A2 C743 A1 C820 C2 C841 B2 C919 A1 CE904A3 D600 B1 FB304 C2 FB706 A2 IC209 A3 L204 A3 Q205 B1 Q802 B2 R218 C1 R256 C1 R285 B1 R3022 B1 R324 A1 R350 B1 R389 B1 R701 A2 R721 A2 R812 C2 R835 C3 R855 A2
C211 A3 C257 B1 C334 B2 C362 C1 C716 A2 C744 A1 C821 C3 C843 C3 C920 B3 CN201B3 F201 B3 FB305 C2 FB708 B2 IC210 C3 L205 A2 Q206 C1 Q803 C2 R219 C3 R257 C1 R286 A3 R3023 B1 R327 A1 R351 A1 R390 B1 R702 A2 R722 A2 R813 C2 R836 C3 R856 A2
C212 B1 C260 B1 C340 B1 C363 C2 C717 A2 C745 A1 C822 C2 C844 C3 C921 B2 CN206B1 FB1007B1 FB307 C1 FB715 A2 IC211 A1 L206 B2 Q300 A3 Q804 C2 R220 A3 R258 B1 R287 A3 R3024 C1 R328 A1 R352 A1 R404 C2 R703 A2 R723 A1 R814 C2 R838 C3 R857 B2



PCB LAYOUT - BOTTOM VIEW

C0201 B3 C0210 A2 C0218 B3 C0227 B3 C0239 A3 C0245 B2 C0253 A2 C0606 A3 C227 B2 C306 A1 C324 B1 C518 C1 C802 C2 C836 B2 C864 A3 CE201 C2 CE212 B1 CE306 A1 CE320 B2 CE327 A3 CE802 C2 CE809 C3 FE302 A3 FE310 A2 Q716 A2 R708 B2
 C0203 B2 C0212 B3 C0219 A3 C0228 A3 C0240 A3 C0246 A2 C0254 B1 C206 B2 C228 B2 C307 A1 C366 A1 C519 C1 C804 B3 C837 B2 C901 C1 CE202 C2 CE216 A2 CE307 B1 CE321 A1 CE328 A1 CE804 C2 FB204 B2 FE303 A2 FE311 A3 R204 B1 RA203 B2
 C0204 B2 C0214 B3 C0220 A3 C0229 B3 C0241 A3 C0248 B2 C0601 A3 C209 B2 C233 B1 C308 A1 C393 A1 C521 C1 C807 C3 C846 B3 C902 C1 CE203 C2 CE217 A2 CE308 B2 CE322 B2 CE329 B1 CE805 C3 FB216 B3 FE306 A3 Q705 A2 R238 B3
 C0205 C2 C0215 B3 C0221 B3 C0230 A3 C0242 A3 C0249 B2 C0602 A3 C223 B1 C250 B1 C309 A1 C394 A1 C600 A3 C808 B3 C860 B1 C904 C1 CE204 C2 CE301 A1 CE314 B1 CE324 A2 CE346 A1 CE806 C3 FB602 A3 FE307 A2 Q713 A2 R262 B3
 C0206 B2 C0216 A3 C0222 A3 C0237 A3 C0243 A3 C0251 A3 C0603 A3 C224 B1 C256 B1 C311 A1 C395 A1 C735 B3 C826 B3 C861 A2 C905 B2 CE206 C2 CE304 A2 CE315 A2 CE325 B2 CE347 A1 CE807 C3 FB707 B3 FE308 A2 Q714 A2 R264 B1
 C0209 B2 C0217 A2 C0226 B3 C0238 A3 C0244 B2 C0252 A3 C0604 A2 C226 B2 C305 A1 C313 A1 C396 A1 C738 B3 C828 B2 C862 A2 C911 C1 CE208 B1 CE305 A2 CE316 A1 CE326 A2 CE801 C2 CE808 C3 FE301 A3 FE309 A3 Q715 A2 R292 A3

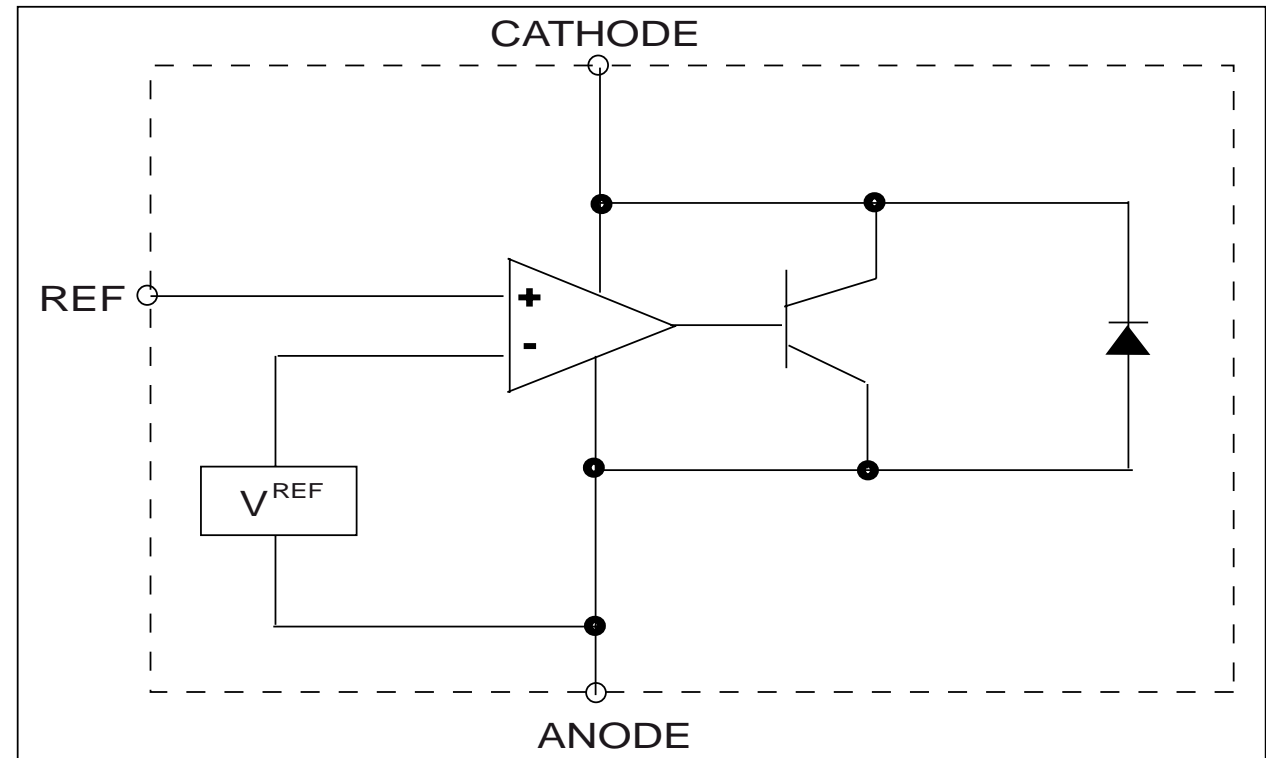


POWER BOARD

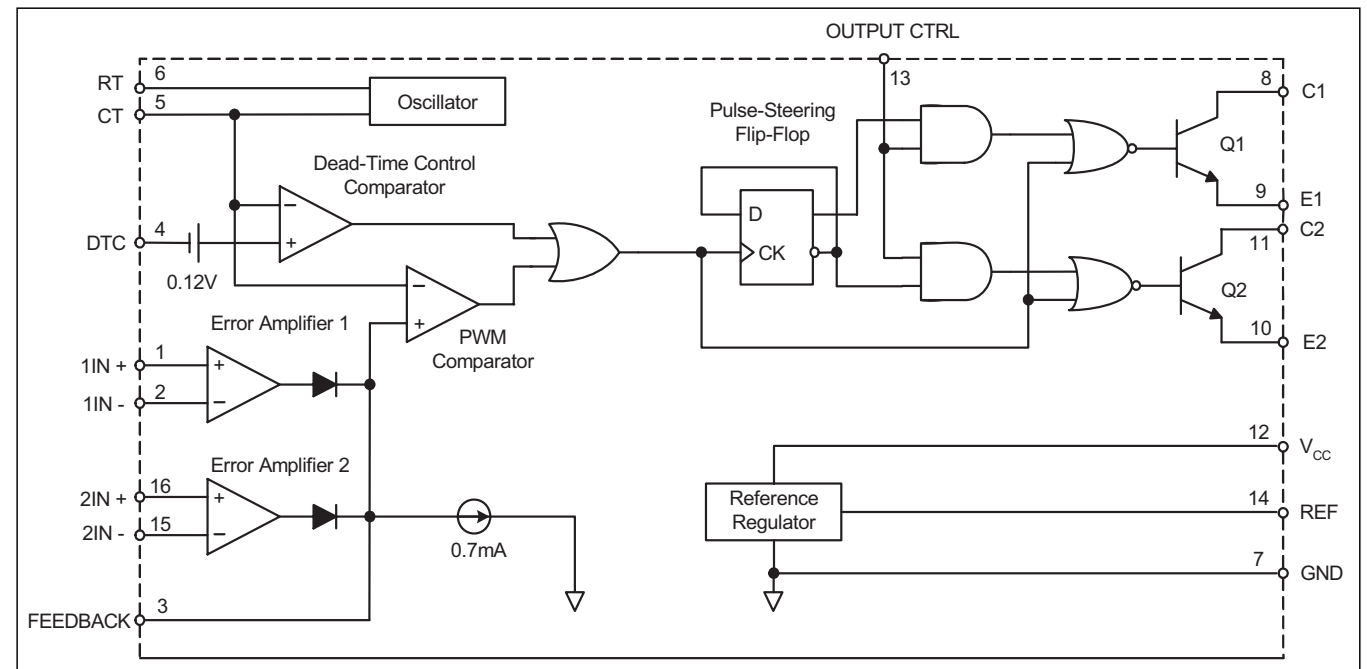
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INTERNAL IC DIAGRAM - AZ431

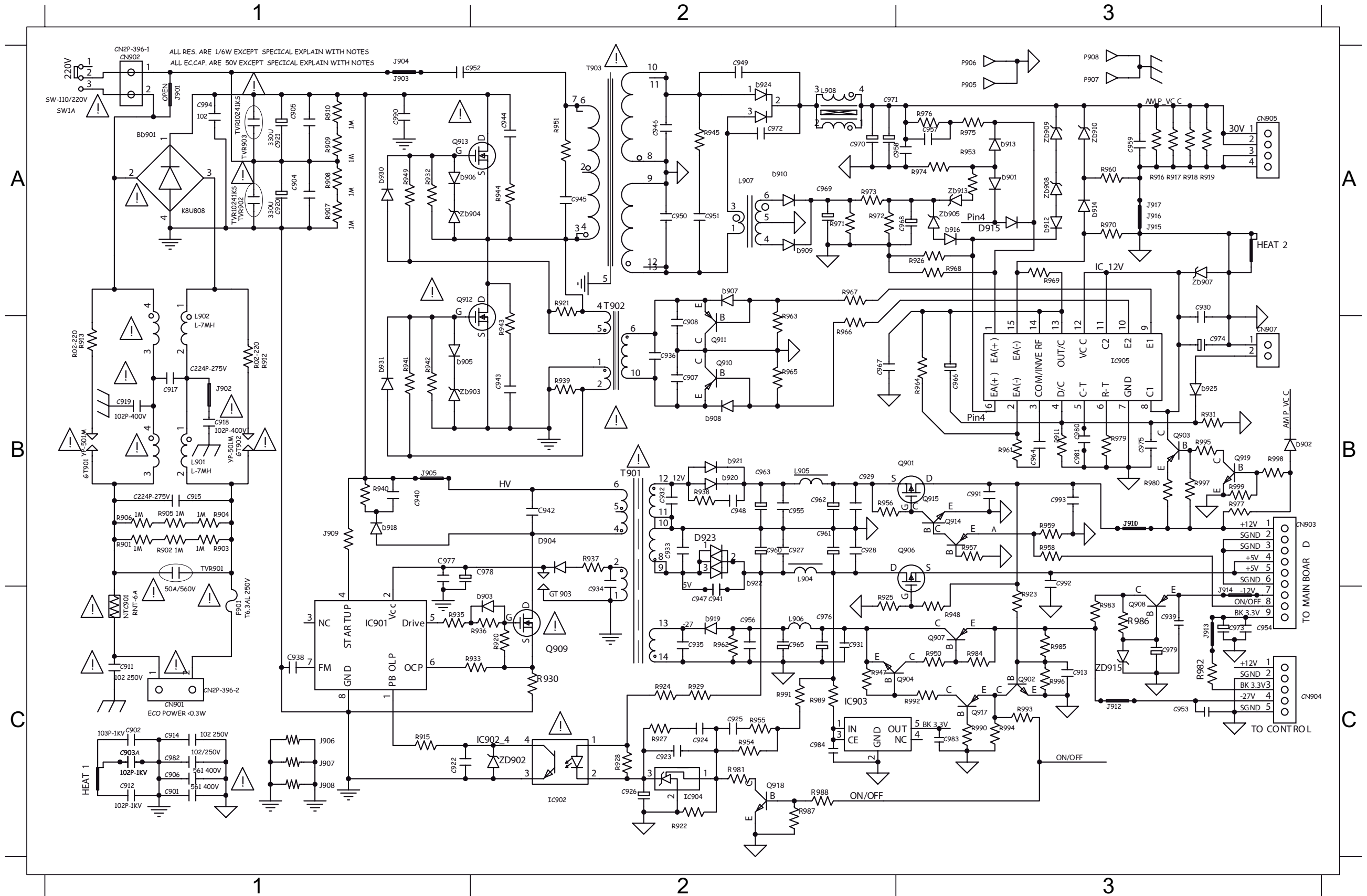


INTERNAL IC DIAGRAM - AZ7500BP



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 D920 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
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 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

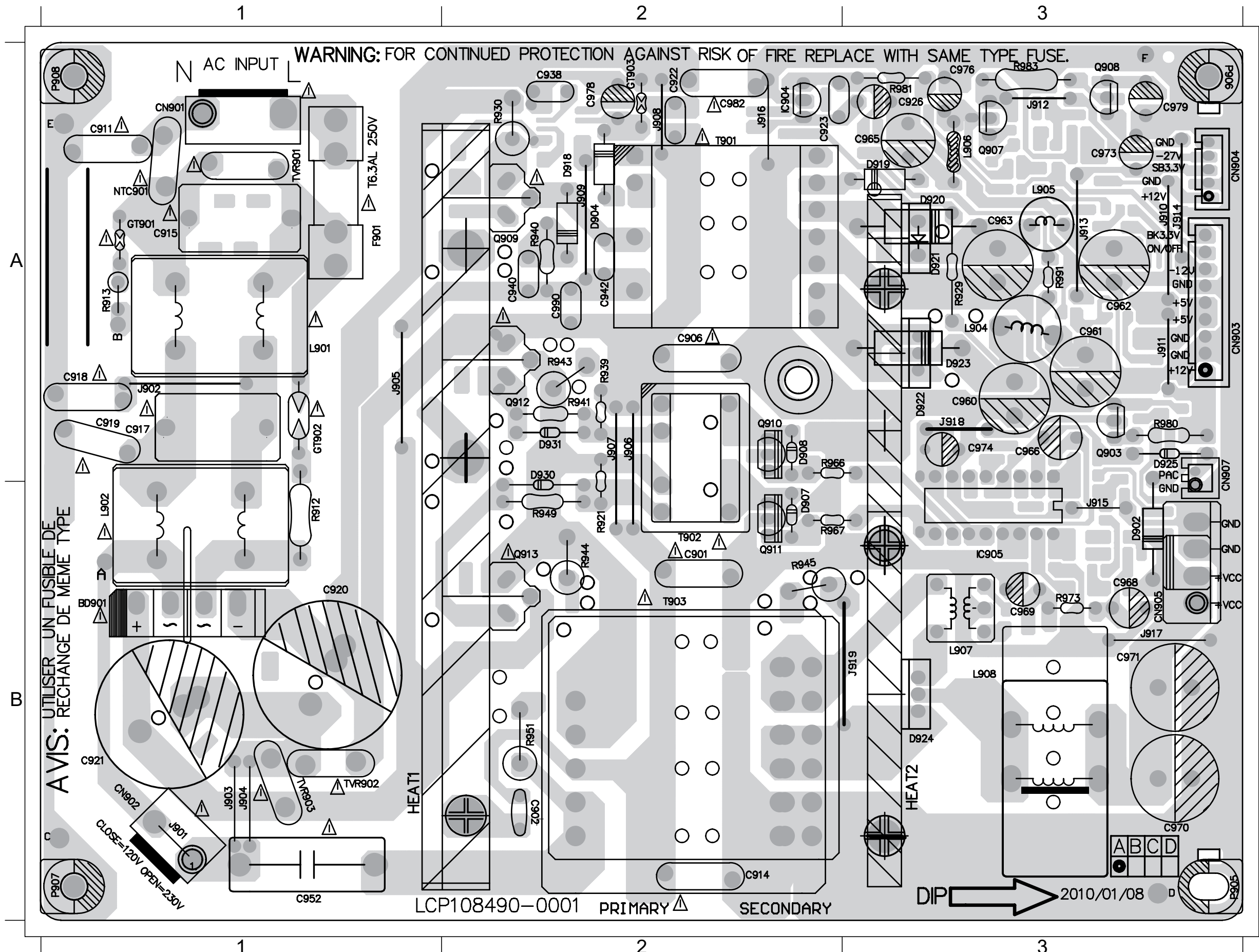


PCB LAYOUT - TOP VIEW

7 - 3

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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 D920	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	

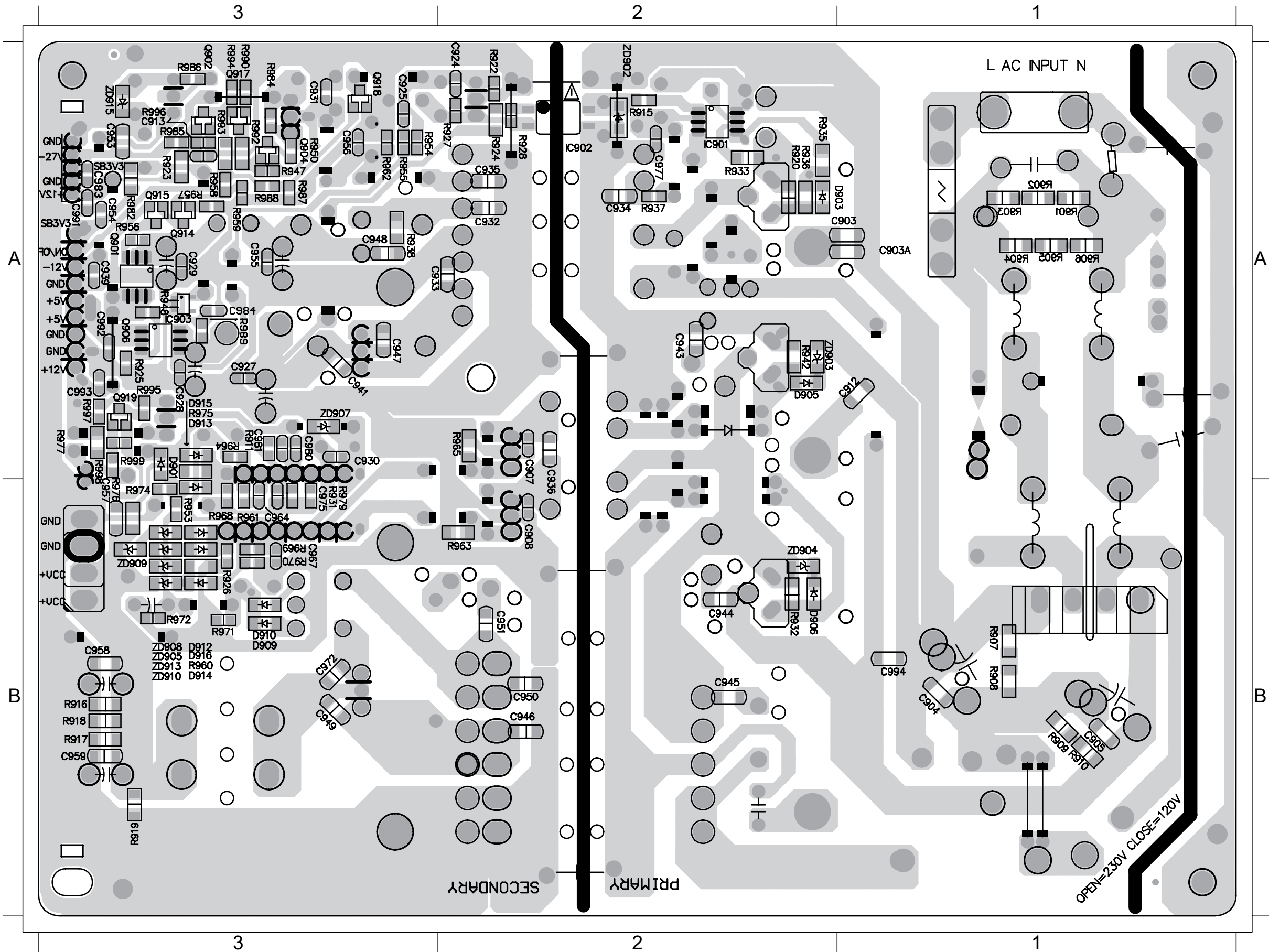


PCB LAYOUT - BOTTOM VIEW

7 - 4

7 - 4

C903 A1 C927 A3 C939 A3 C948 A3 C955 A3 C972 B3 C991 A3 D906 B2 D915 A3 Q902 A3 Q918 A3 R905 A1 R911 A3 R920 A2 R927 A2 R937 A2 R953 B3 R959 A3 R965 A2 R974 B3 R984 A3 R990 A3 R997 A3 ZD905 B3 ZD915 A3
C904 B1 C928 A3 C941 A3 C949 B3 C956 A3 C975 B3 C992 A3 D909 B3 D916 B3 Q904 A3 Q919 A3 R906 A1 R915 A2 R922 A2 R928 A2 R938 A3 R954 A3 R960 B3 R968 B3 R975 A3 R985 A3 R992 A3 R998 A3 ZD907 A3
C905 B1 C929 A3 C943 A2 C950 B2 C957 B3 C977 A2 C993 A3 D910 B3 IC901 A2 Q906 A3 R901 A1 R907 B1 R916 B3 R923 A3 R932 B2 R942 A2 R955 A3 R961 B3 R969 B3 R976 B3 R986 A3 R993 A3 R999 A3 ZD908 B3
C913 A3 C930 A3 C944 B2 C951 B2 C958 B3 C980 A3 C994 B1 D912 B3 IC902 A2 Q914 A3 R902 A1 R908 B1 R917 B3 R924 A2 R933 A2 R947 A3 R956 A3 R962 A3 R970 B3 R977 A3 R987 A3 R994 A3 ZD902 A2 ZD909 B3
C924 A2 C931 A3 C946 B2 C953 A3 C964 B3 C981 A3 D903 A1 D913 A3 IC903 A3 Q915 A3 R903 A1 R909 B1 R918 B3 R925 A3 R935 A2 R948 A3 R957 A3 R963 B2 R971 B3 R979 B3 R988 A3 R995 A3 ZD903 A2 ZD910 B3
C925 A3 C936 B2 C947 A3 C954 A3 C967 B3 C984 A3 D905 A2 D914 B3 Q901 A3 Q917 A3 R904 A1 R910 B1 R919 B3 R926 B3 R936 A2 R950 A3 R958 A3 R964 A3 R972 B3 R982 A3 R989 A3 R996 A3 ZD904 B2 ZD913 B3

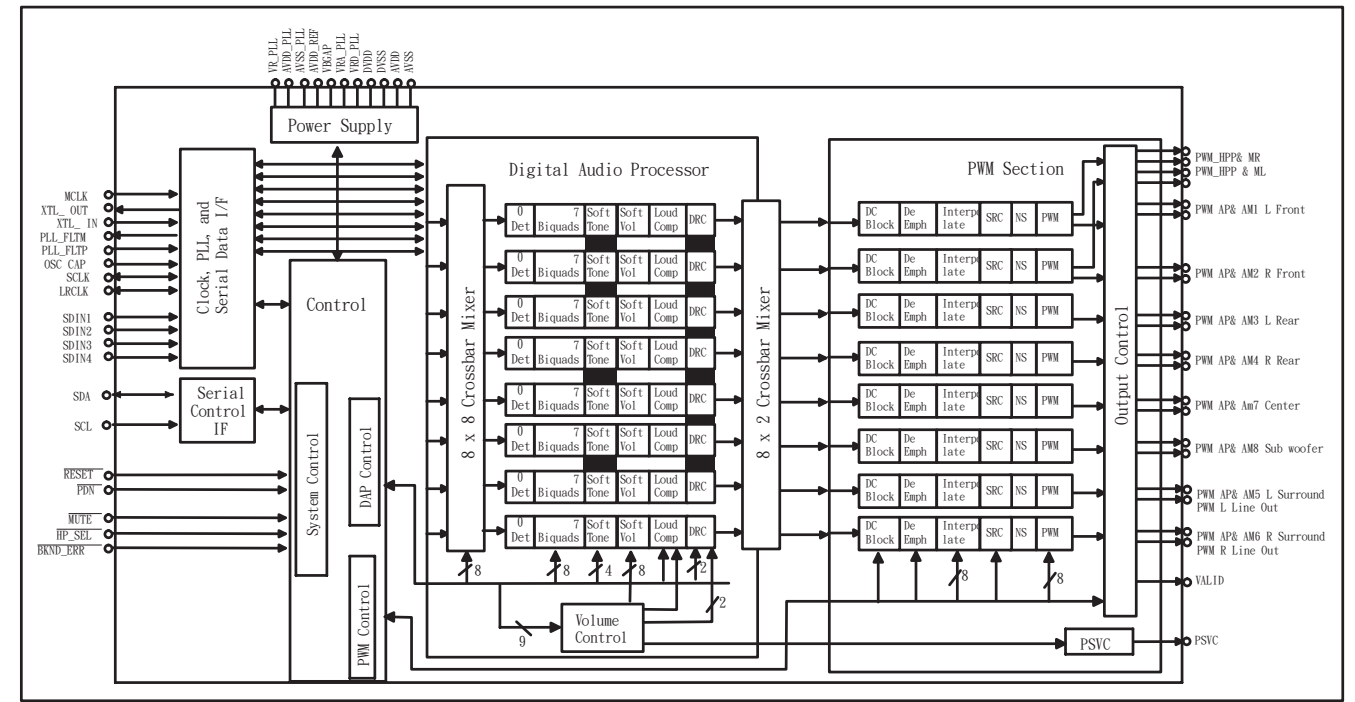


AMP BOARD

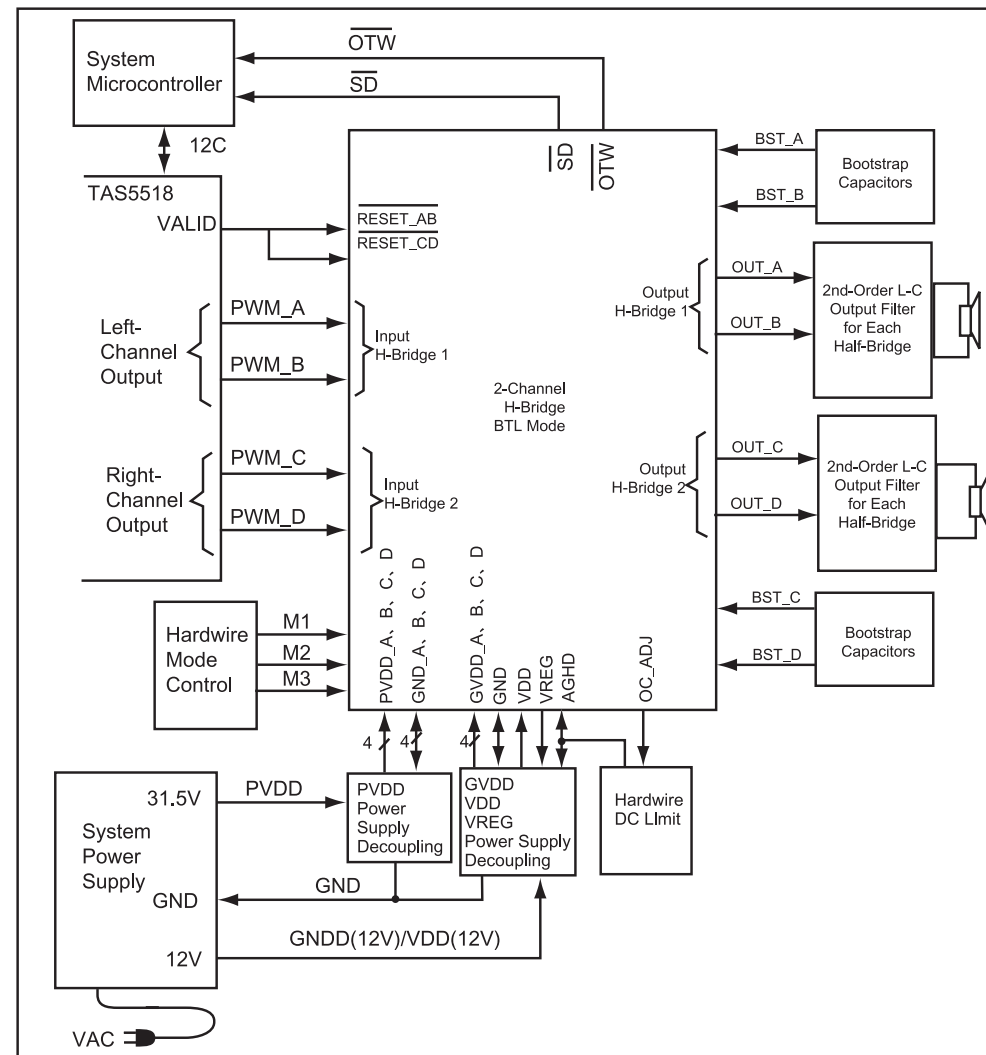
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INTERNAL IC DIAGRAM - TA5508APAG

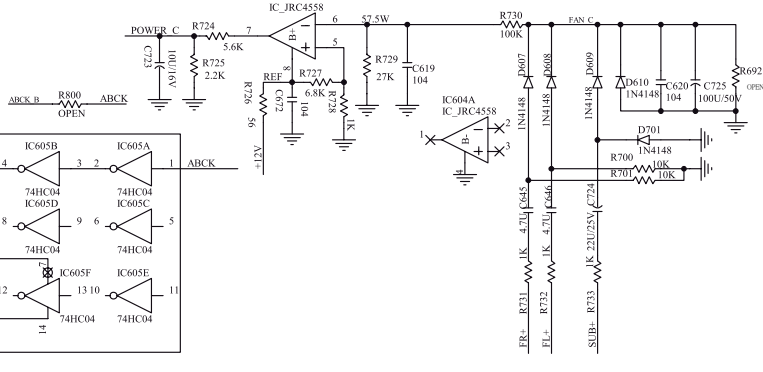
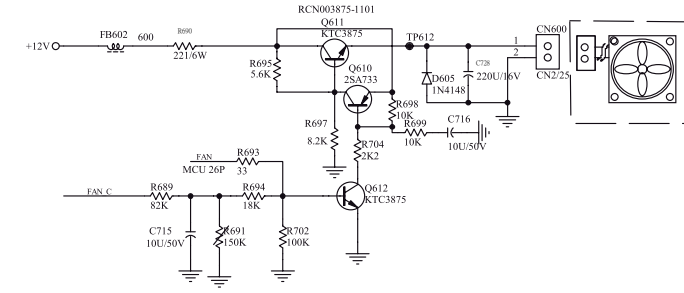
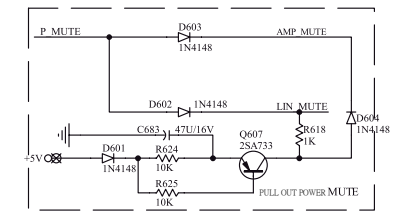
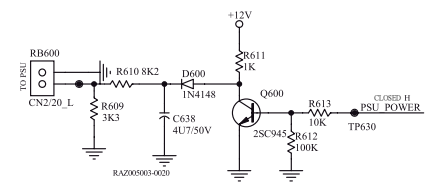
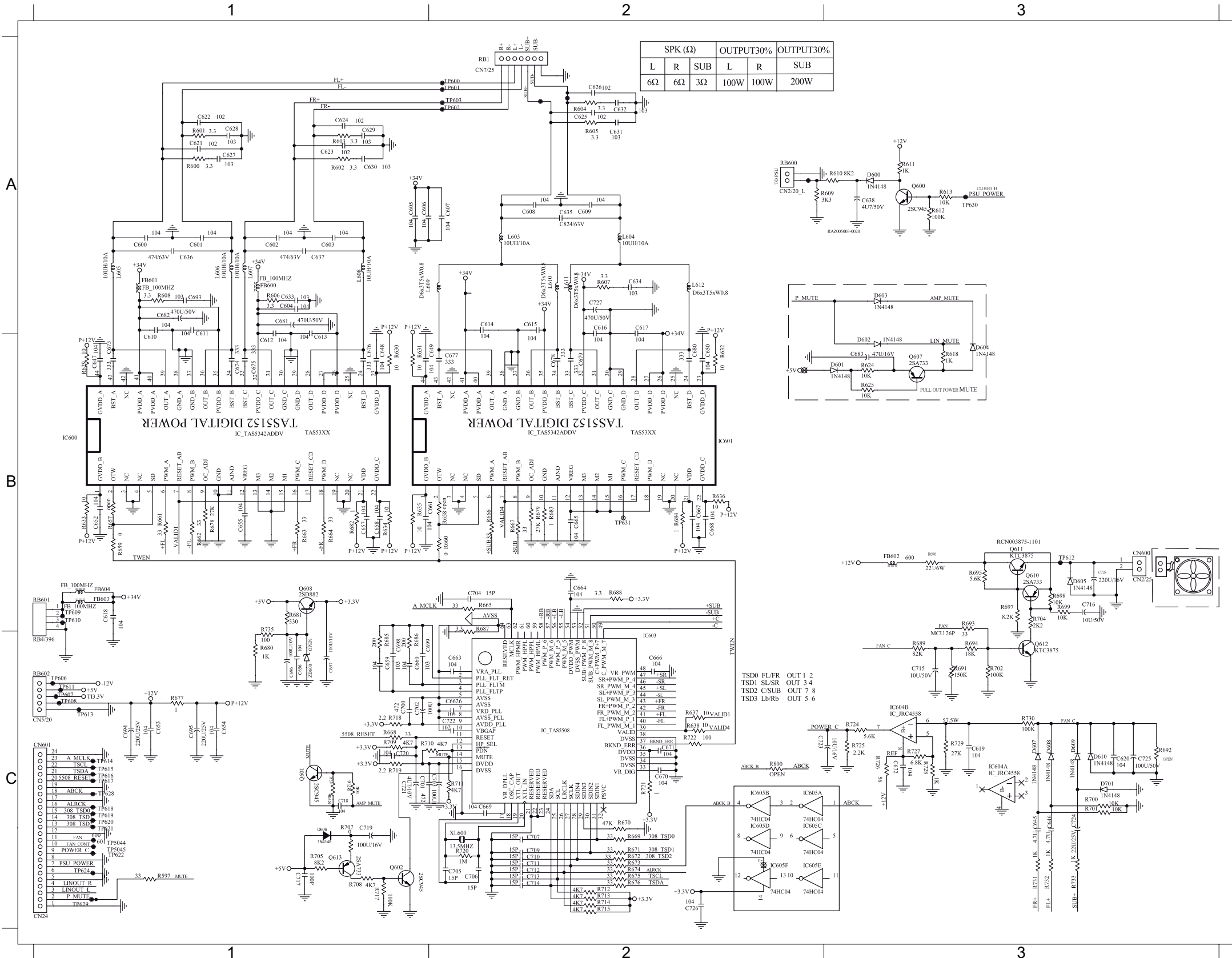


INTERNAL IC DIAGRAM - TAS5342ADDV



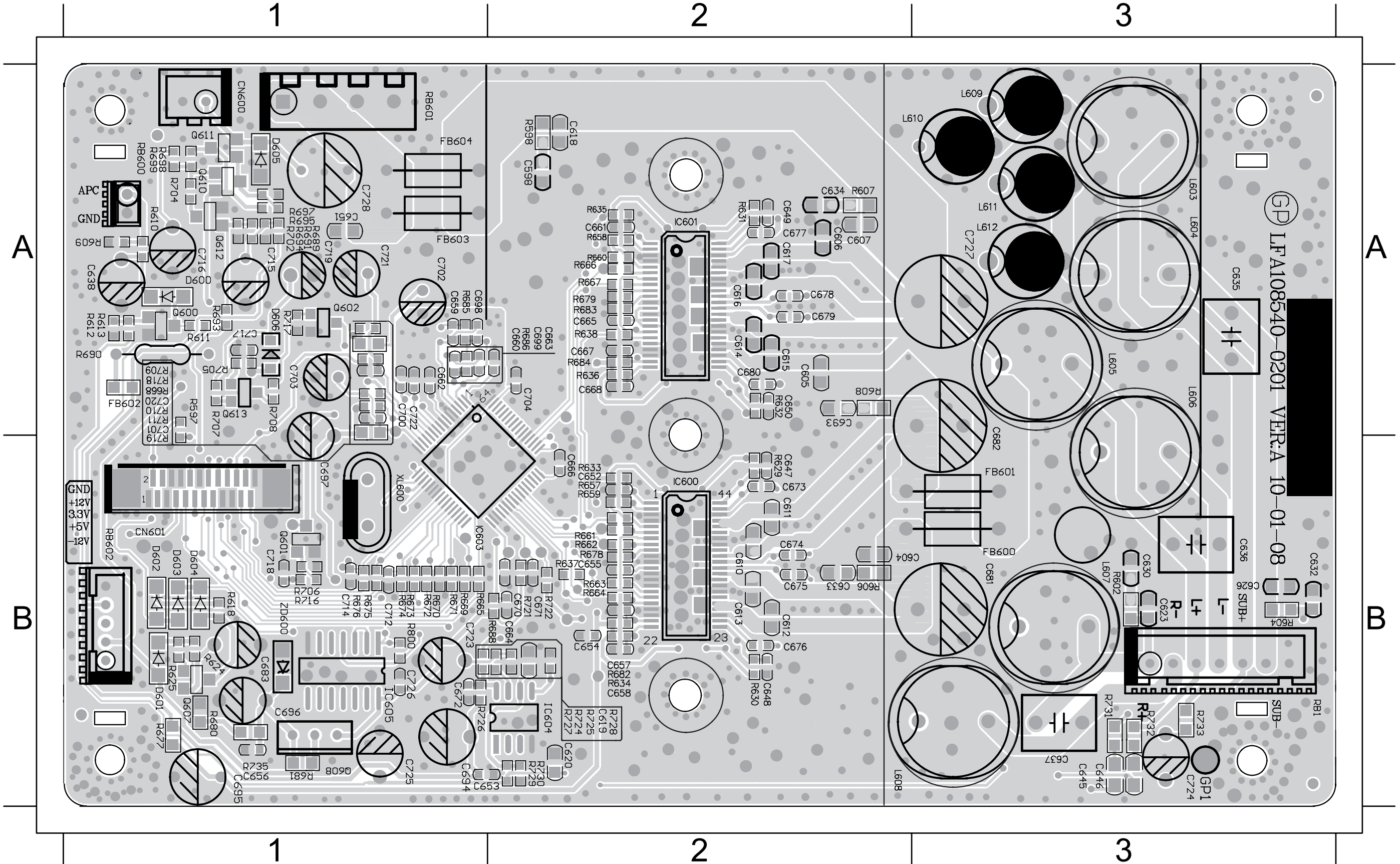
CIRCUIT DIAGRAM

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 R607 A2 R630 B1 R661 B1 R672 C2 R683 B2 R695 B3 R708 C1 R719 C1 R731 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 R608 A1 R631 B1 R662 B1 R673 C2 R684 B2 R697 B3 R709 C1 R720 C2 R732 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 R609 A2 R632 B2 R663 B1 R674 C2 R685 C1 R698 B3 R710 C1 R721 C2 R733 C3
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 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 R600 A1 R611 A3 R634 B1 R665 B2 R676 C2 R687 B2 R700 C3 R712 C2 R724 C3 RB1 A2
 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 R601 A1 R612 A3 R635 B1 R666 B2 R677 C1 R688 B2 R701 C3 R713 C2 R725 C3 RB600 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 R602 A1 R613 A3 R636 B2 R667 B2 R678 B1 R689 C3 R702 C3 R714 C2 R726 C3 RB601 B1
 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 R603 A1 R618 B3 R637 C2 R668 C1 R679 B2 R690 B3 R704 B3 R715 C2 R727 C3 RB602 C1
 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 R604 A2 R624 B3 R638 C2 R669 C2 R680 C1 R691 C3 R705 C1 R716 C1 R728 C3 XL600 C2
 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 R605 A2 R625 B3 R659 B1 R670 C2 R681 B1 R693 B3 R706 C1 R717 C1 R729 C3
 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 R606 A1 R629 B1 R660 B2 R671 C2 R682 B1 R694 C3 R707 C1 R718 C1 R730 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	R608	A2	R629	B2	R638	A2	R667	A2	R676	B1	R685	A1	R697	A1	R709	A1	R724	B2	R733	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	R609	A1	R630	B2	R659	B2	R668	A1	R677	B1	R686	A2	R698	A1	R710	A1	R725	B2	R735	B1
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	R610	A1	R631	A2	R660	A2	R669	B1	R678	B2	R688	B2	R699	A1	R711	A1	R726	B1	RB1	B3
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	R611	A1	R632	A2	R661	B2	R670	B1	R679	A2	R689	A1	R702	A1	R716	B1	R727	B2	RB600	A1
C610	B2	C619	B2	C635	A3	C650	A2	C659	A1	C668	A2	C678	A2	C695	B1	C704	A1	C721	A1	CN601	B1	FB601	B3	L603	A3	L612	A3	Q613	A1	R612	A1	R633	B2	R662	B2	R671	B1	R680	B1	R690	A1	R704	A1	R717	A1	R728	B2	RB601	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	R602	B3	R613	A1	R634	B2	R663	B2	R672	B1	R681	B1	R691	A1	R705	A1	R718	A1	R729	B2	RB602	B1
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	R604	B3	R618	B1	R635	A2	R664	B2	R673	B1	R682	B2	R693	A1	R706	B1	R719	B1	R730	B2	XL600	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	R606	B2	R624	B1	R636	A2	R665	B1	R674	B1	R683	A2	R694	A1	R707	A1	R721	B2	R731	B3		
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	R607	A2	R625	B1	R637	B2	R666	A2	R675	B1	R684	A2	R695	A1	R708	A1	R722	B2	R732	B3		



PCB LAYOUT - BOTTOM VIEW

8 - 4

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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

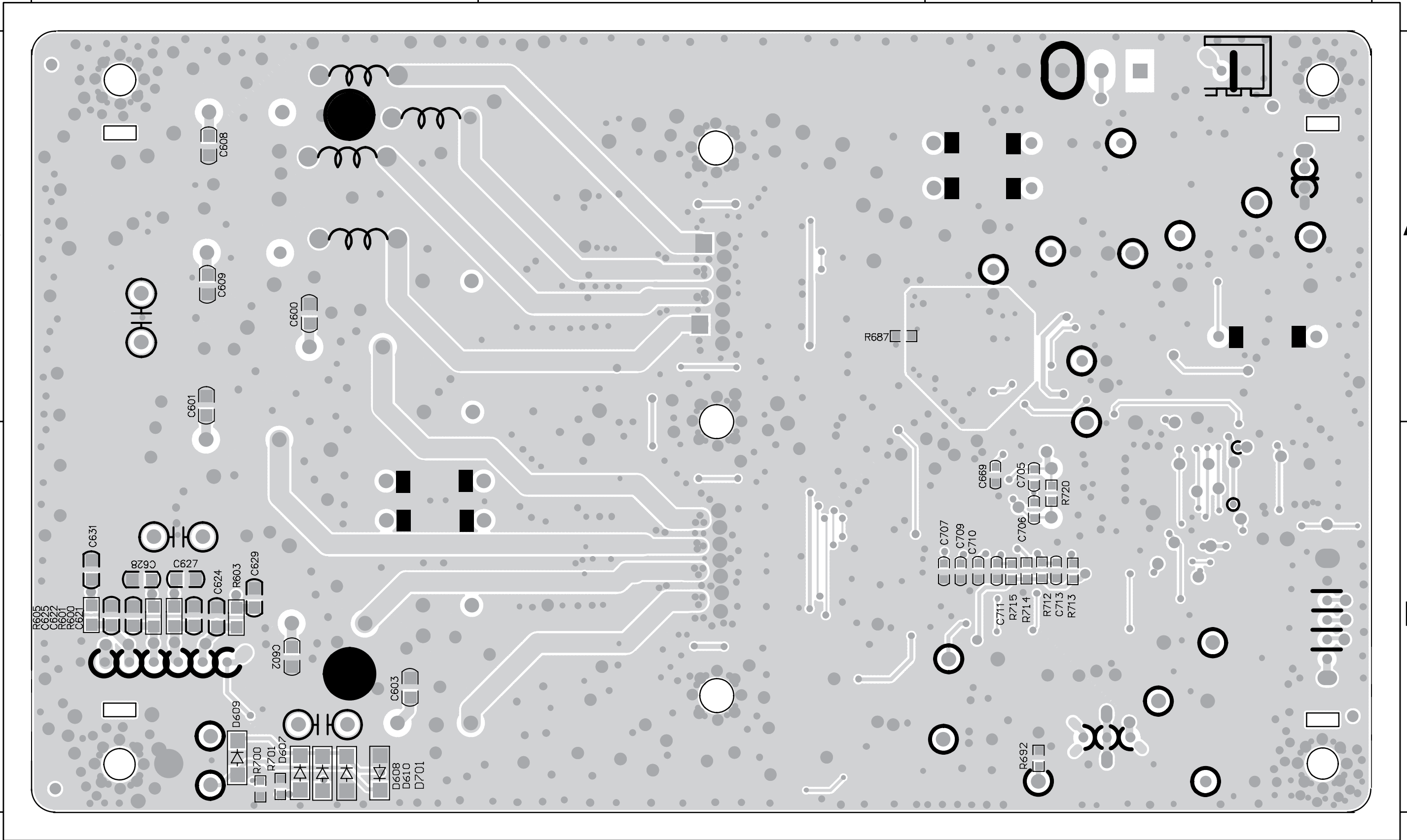
1

A

A

B

B



3

2

1

TOUCH BOARD

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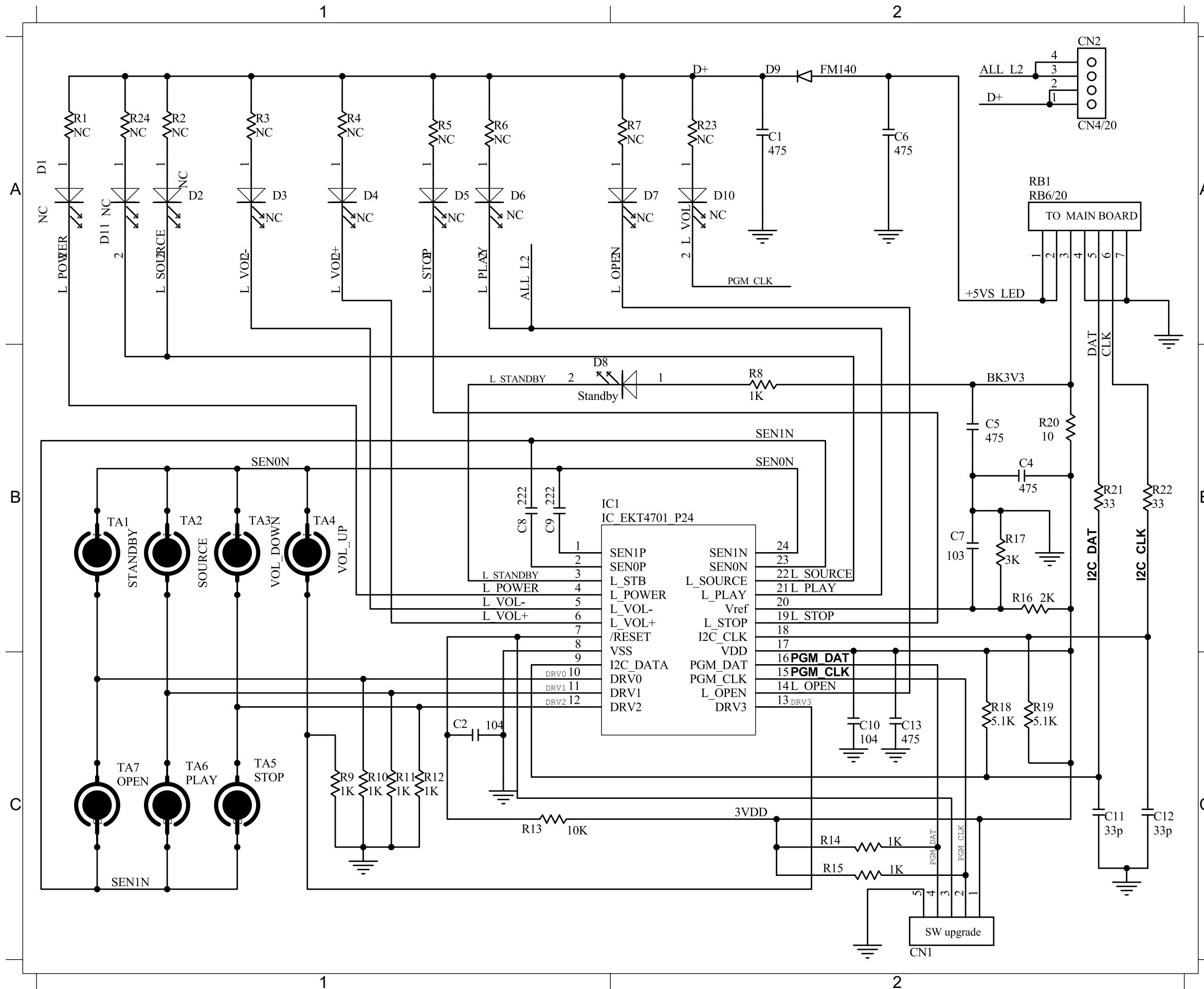
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PCB Layout Top View & Bottom View.....	9-3

CIRCUIT DIAGRAM

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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

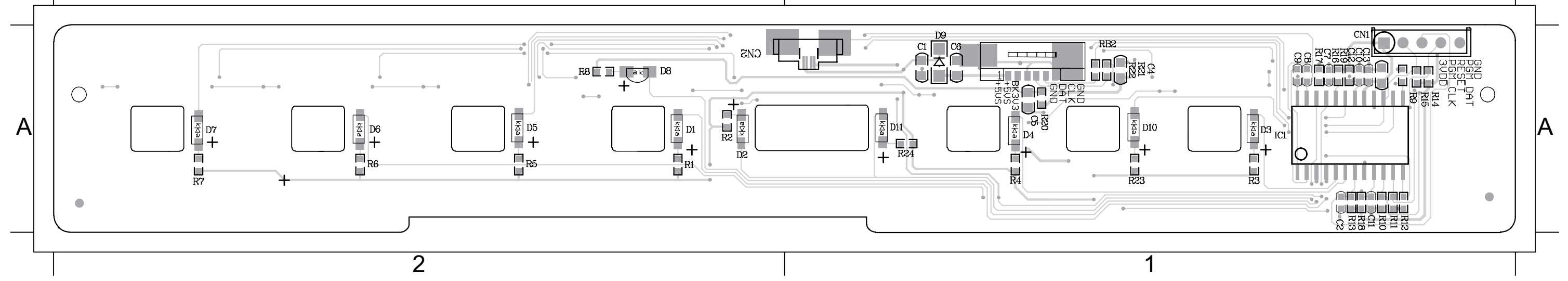


PCB LAYOUT - TOP VIEW

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

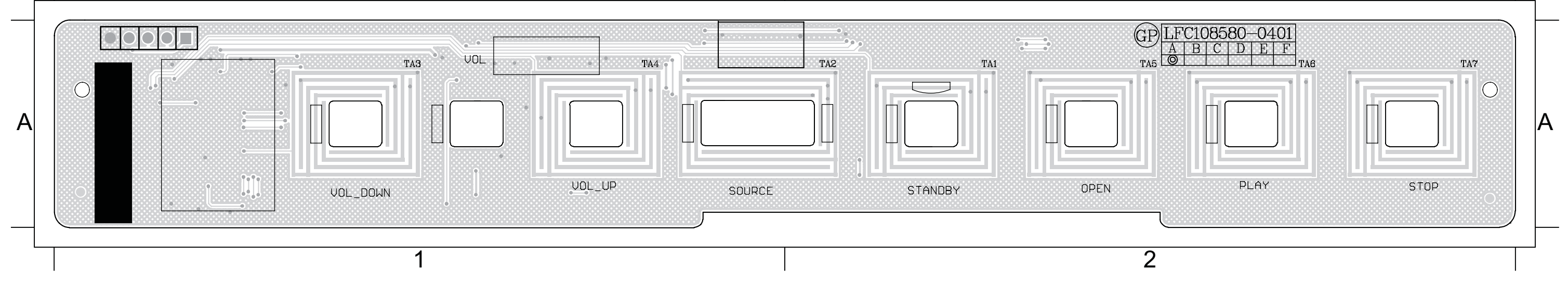
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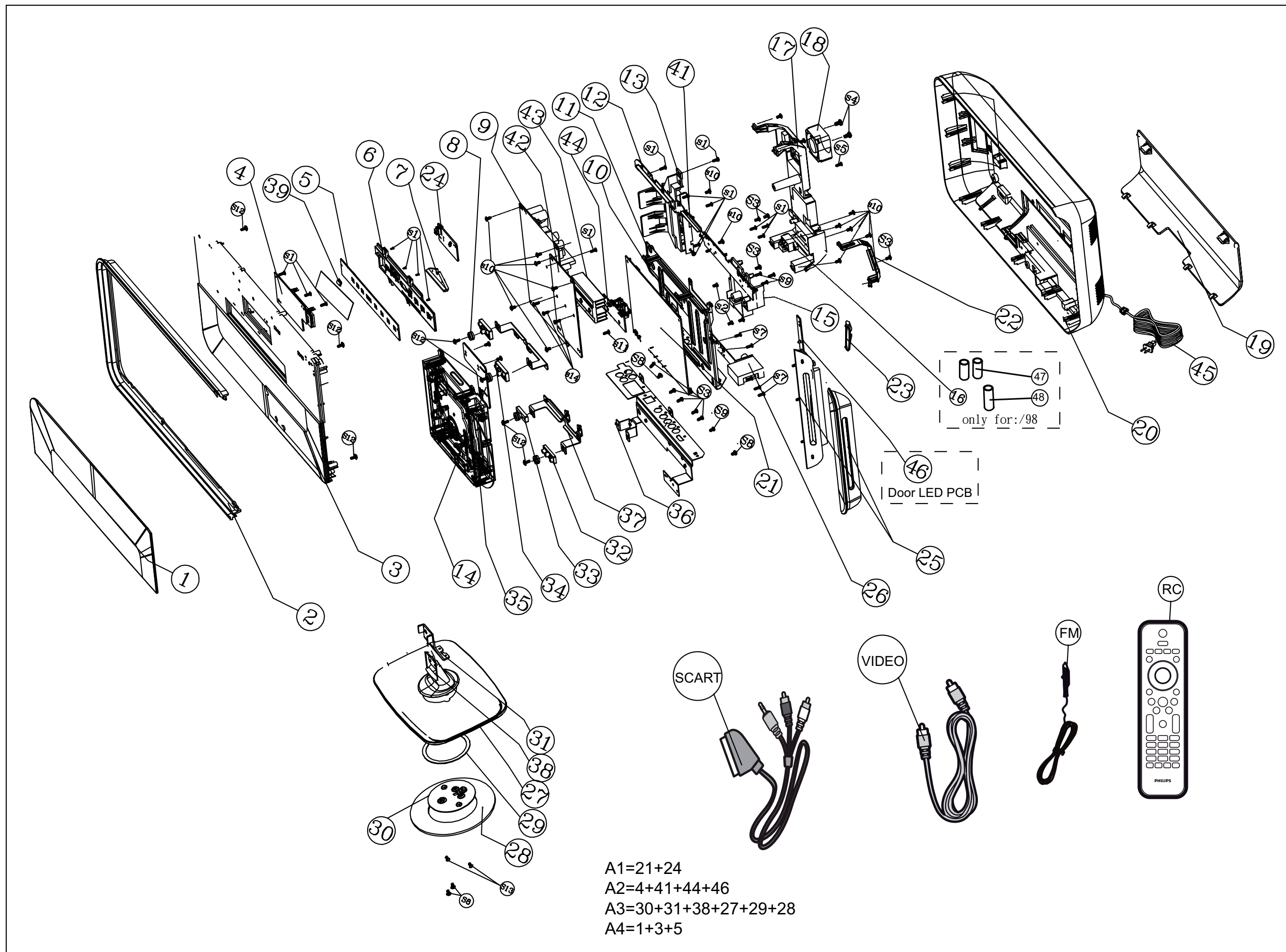


PCB LAYOUT - BOTTOM VIEW

1

2





REVISION LIST

Version 1.0

*Initial release

Version 1.1

*Update chapter 1&2