

Service
Service
Service



Service Manual

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Published by SL 1015 Service Audio

Printed in The Netherlands

Subject to modification

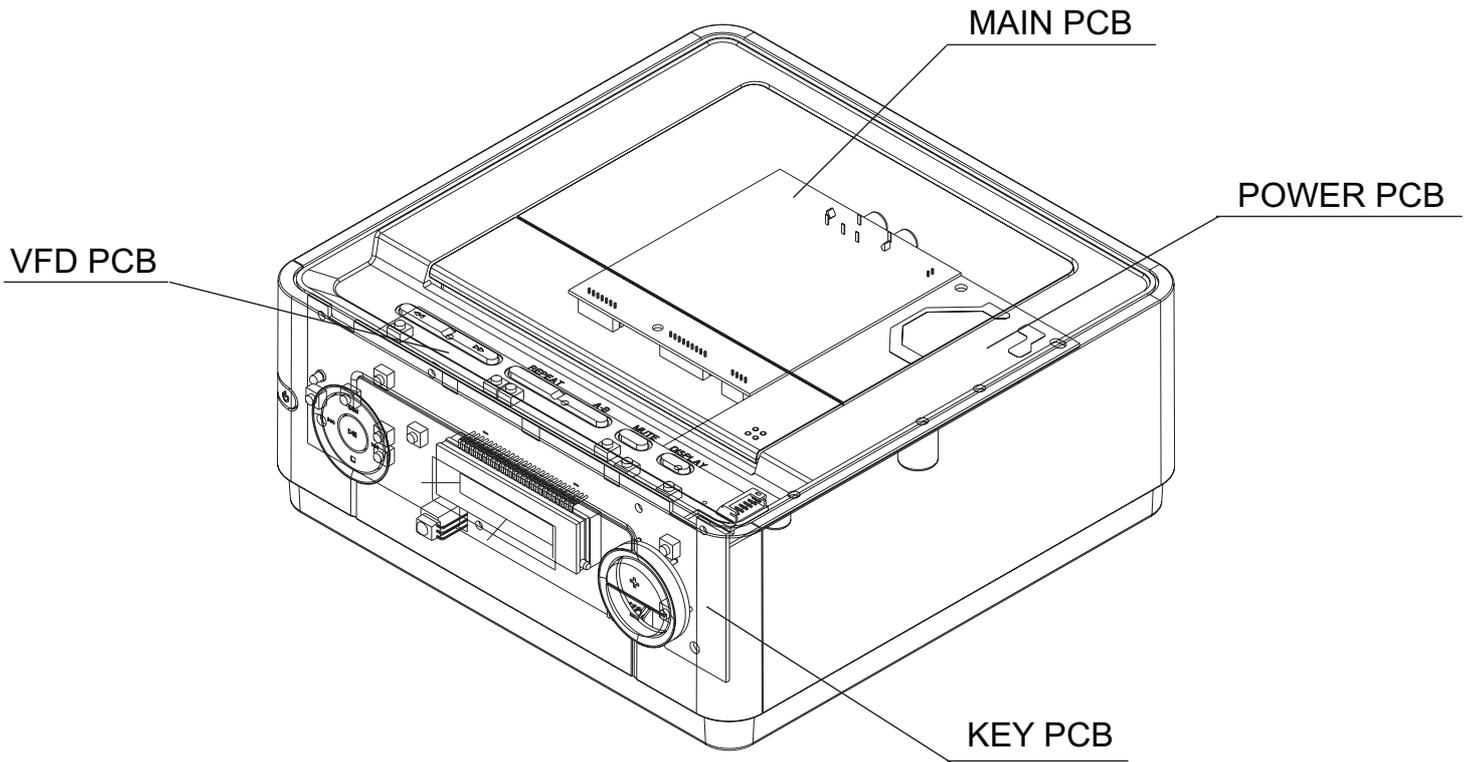
© 3141 785 31952

Version 1.2



PHILIPS

LOCATION OF PCB BOARDS



VERSION VARIATION:

Type / Versions:	MCD106
	/94
Composite video out	X
Voltage (Dual)	X
AC line cord (fixed)	X

SPECIFICATIONS

Picture

Aspect ratio 4:3, 16:9
 D/A Converter..... 10 bit, 108 MHz]

Sound

Signal to noise ratio 90 dB, A-weight
 Distortion and Noise 1 kHz 0.2%
 Sound System Dolby Digital

Convenience

Child protection Rating Level

Power

Power supply 110-240V, 50-60 Hz
 Standby power consumption < 1.5 W
 Power consumption 8 W

Cabinet

Dimensions (W x H x D) 218 x 90 x 221.5 mm
 Net Weight 1.095 kg
 Packaging Dimensions (H x W x D) 248 x 267 x 130 mm
 Gross weight 1.5 kg

Specifications and external appearance are subject to change without notice.

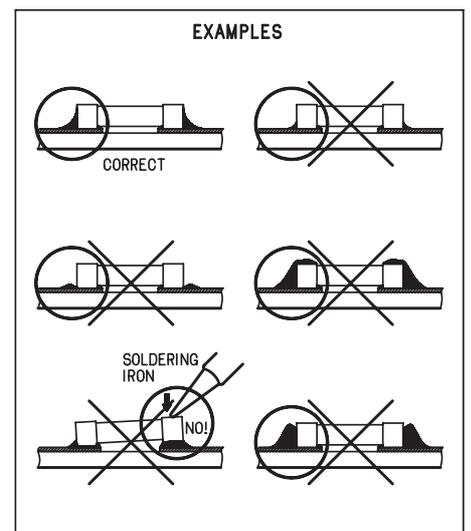
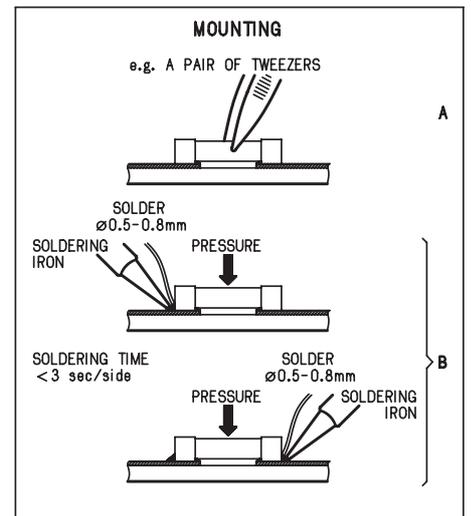
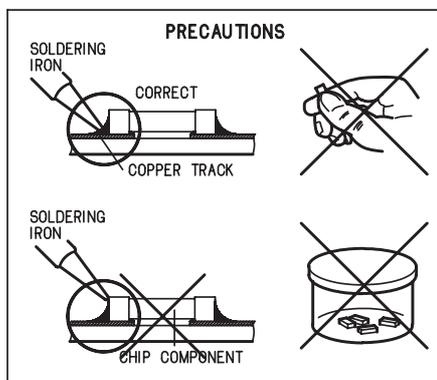
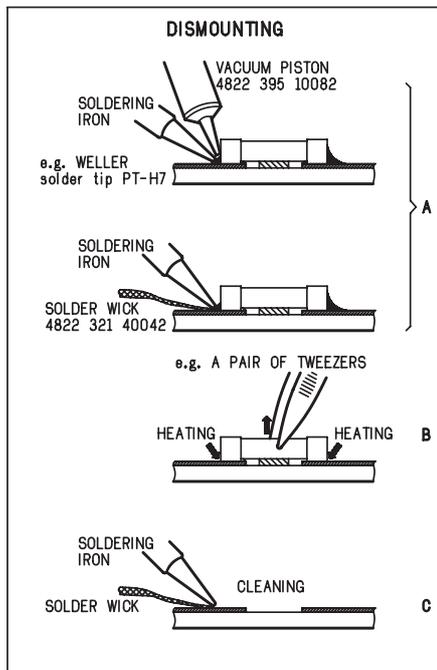
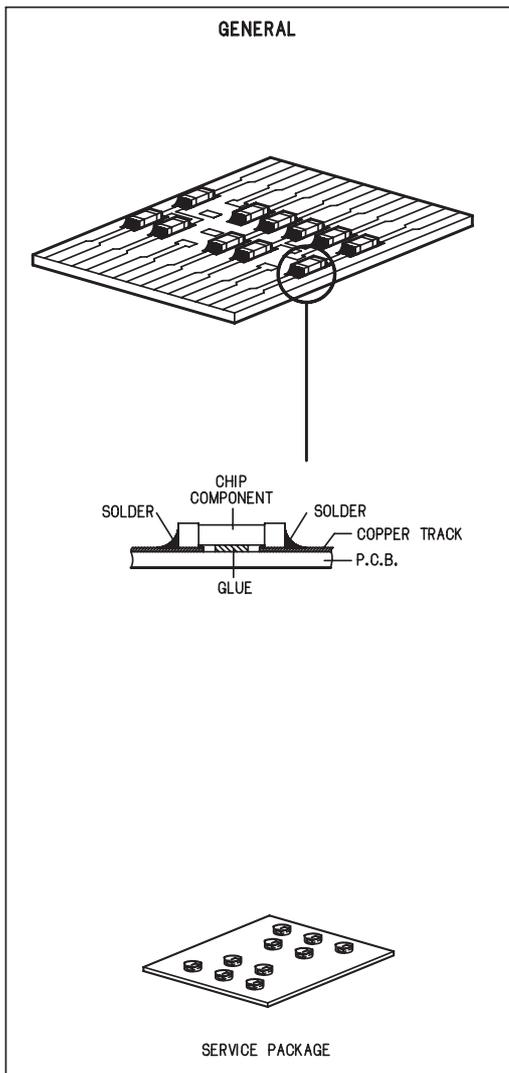
Service Tools:

- 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



SERVICE AIDS

Service Tools:

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Torx bit T10 150mm	4822 395 50456
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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

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.

Keep components and tools also at this potential.

ESD



GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used

Safety components are marked by the symbol .

**CLASS 1
LASER PRODUCT**

INFORMATION ABOUT LEAD-FREE SOLDERING

Philips CE is producing lead-free sets from 1.1.2005 onwards.

IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from 1 Jan 2005 onwards, according next rules:



- On our website www.atyourservice.ce.Philips.com you find more information to:
 - * BGA-de-/soldering (+ baking instructions)
 - * Heating-profiles of BGAs and other ICs used in Philips-sets
 - * Lead free

You will find this and more technical information within the "magazine", chapter "workshop news".

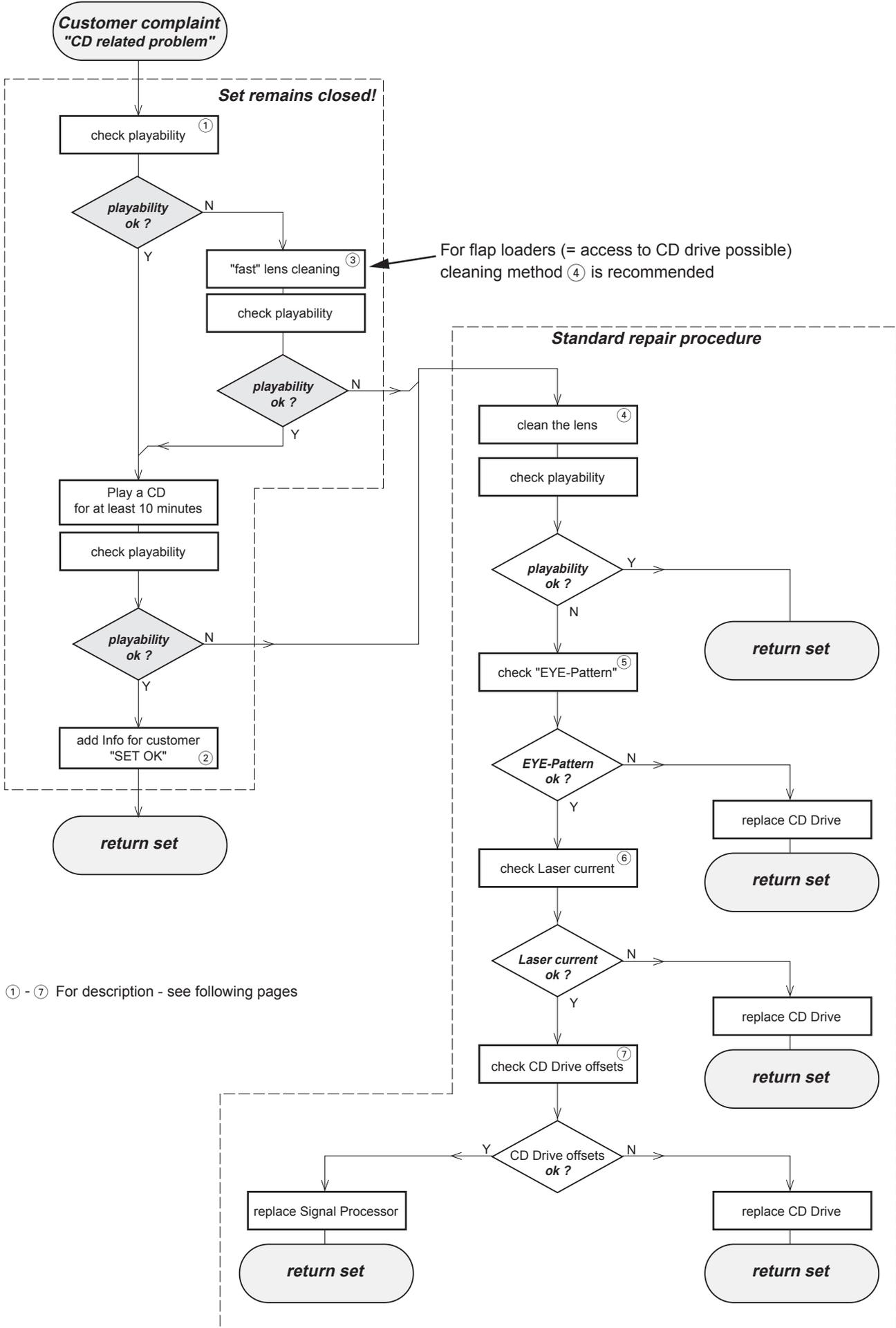
For additional questions please contact your local repair-helpdesk.

SERVICE INSTRUCTION

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

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):
 1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
 2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
 4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

INSTRUCTIONS ON CD PLAYABILITY



INSTRUCTIONS ON CD PLAYABILITY

①

PLAYABILITY CHECK

For sets which are compatible with **CD-RW** discs
 use CD-RW Printed Audio Disc.....7104 099 96611
 TR 3 (Fingerprint)
 TR 8 (600µ Black dot) **maximum at 01:00**

- playback of these two tracks without audible disturbance
 playing time for: Fingerprint ≥ 10 seconds
 Black dot from 00:50 to 01:10
- jump forward/backward (search) within a reasonable time

For all other sets
 use CD-DA SBC 444A.....4822 397 30245
 TR 14 (600µ Black dot) **maximum at 01:15**
 TR 19 (Fingerprint)
 TR 10 (1000µ wedge)

- playback of all these tracks without audible disturbance
 playing time for: 1000µ wedge ≥ 10 seconds
 Fingerprint ≥ 10 seconds
 Black dot from 01:05 to 01:25
- jump forward/backward (search) within a reasonable time

②

CUSTOMER INFORMATION

It is proposed to add an addendum sheet to the set which informs the customer that the set has been checked carefully - but no fault was found.
 The problem was obviously caused by a scratched, dirty or copy-protected CD. In case problems remain, the customer is requested to contact the workshop directly.
 The lens cleaning (method ③) should be mentioned in the addendum sheet.

The final wording in national language as well as the printing is under responsibility of the Regional Service Organizations.

③

FAST LENS CLEANING (dry brush)

Use lens cleaning CD
 SBC AC300.....9082 100 00043

Insert the lens cleaning CD, press PLAY and follow the voice guide's instructions on the CD.

④

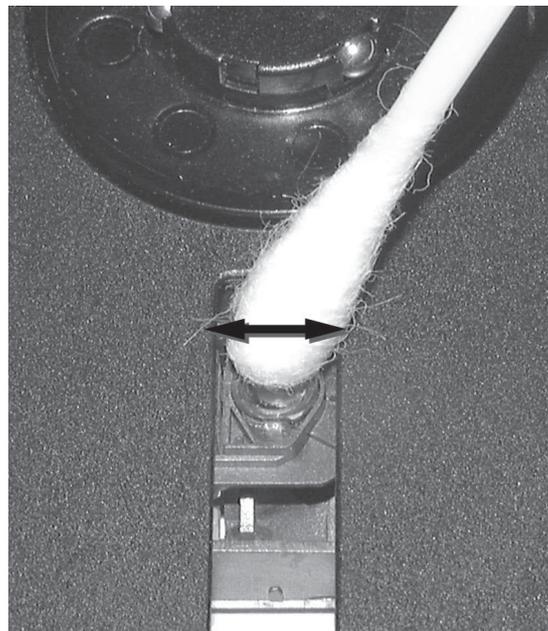
LIQUID LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it. This to avoid that little particles make scratches on the lens.

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent B4-No2", available with codenumber 4822 389 10026.

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. Clean the lens gently (don't press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

The direction of cleaning must be in the way as indicated in the picture below.



System , Region Code , etc. Setting Prochure

1) System Reset

(1) System reset

- a) Press "setup" button on R/C, TV will show the "setup" menu.
- b) Select the menu using the ▼ on R/C.
- c) Selcet default to restore system setting.
remark: But can't restore region code default setting.

(2) Region code reset

- a) Open CD Door.
- b) Press "stop" button on RC, then press "0000" TV Display "DEFAULT".
- c) The system will switch to standby when finished,and region code will to be default setting.

2) Region Code Change

- a) Press "5168" on R/C in open mode.
- b) Use "▼" "▲" on R/C to selece desirde region code in customer page.
- c) Pess "OK" to confirm:

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

3) Password Change

- a) Press "setup" button on R/C,TV shows the "setup" menu.
 - b) Press "►" to select "password", then press "►/OK".
- * 0000 is default password supplied.

4) Check on the Sofeware Version

- a) Open the CD door.
- b) Press "stop 159" button on R/C.
- c) TV will show the version on screen.

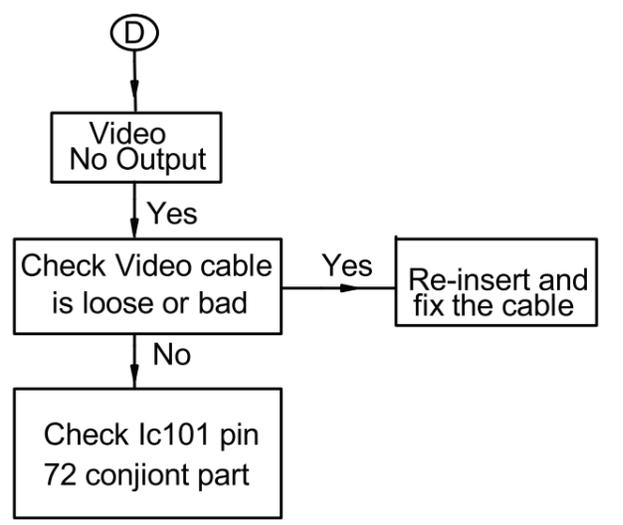
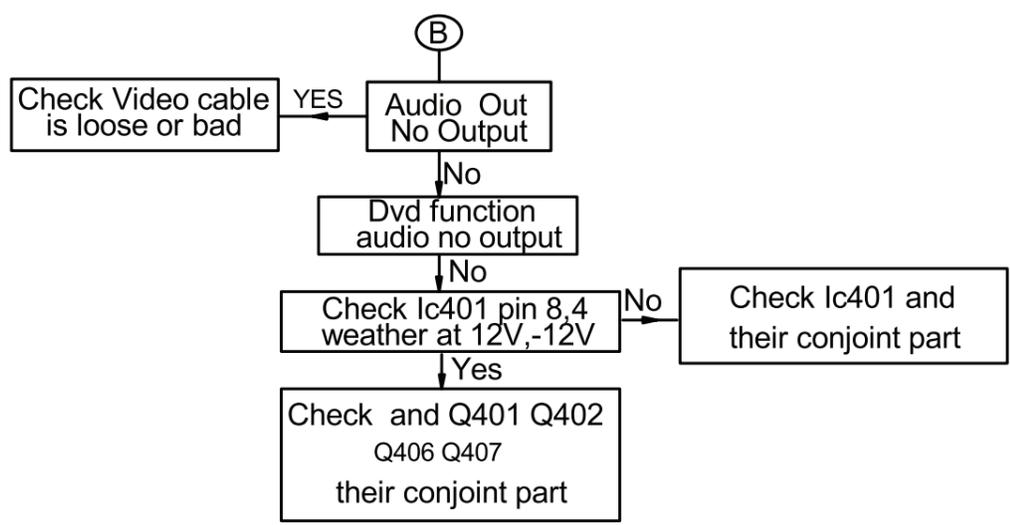
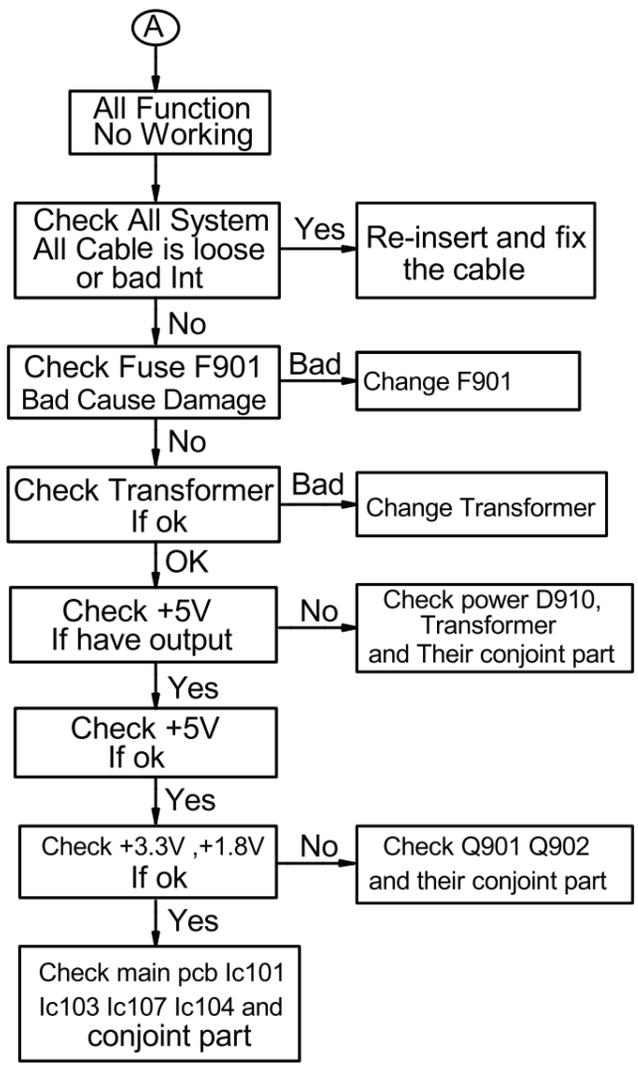
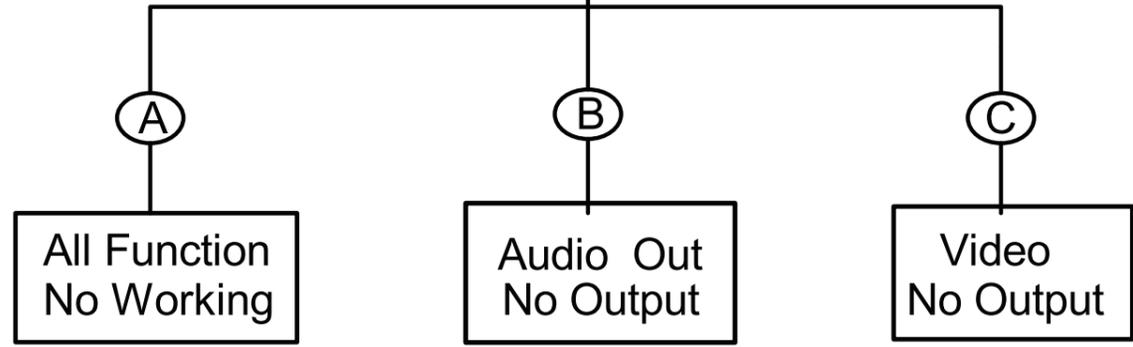
5) Upgrading new sofeware

- a) Open the CD door,then insert the CD-R program disc.
- b) Close the CD door.
- c) TV will show the upgrade prompt menu, and the system will auto upgrading, the system will switch to standby when finish upgrading.
* the latest upgraded is in version VER 070602.

CAUTION !

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

MAIN UNIT REPAIR CHART



DISASSEMBLY INSTRUCTIONS

Dismantling the Outer Cover

1) Loosen 6 screws "A" as shown in figure 1 to remove bottom cover.

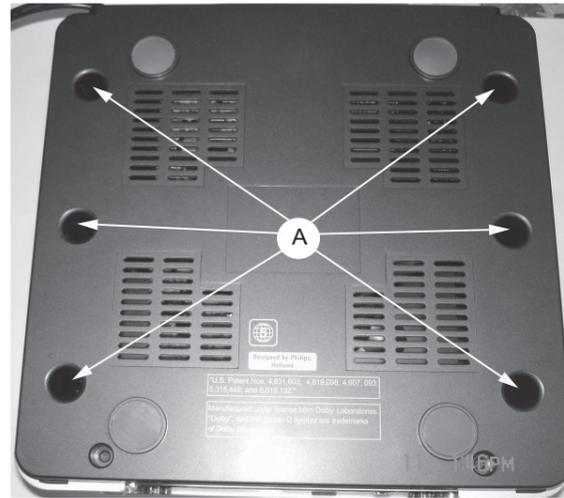


figure 1

Dismantling the Main Board

- 1) Loosen 1 screw "B" at the back panel as shown in figure 2.
- 2) Loosen 1 screw "C" at the Main Board as shown in figure 3.

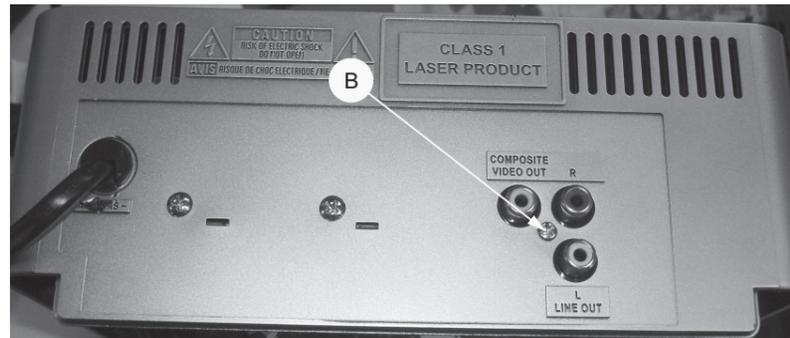


figure 2

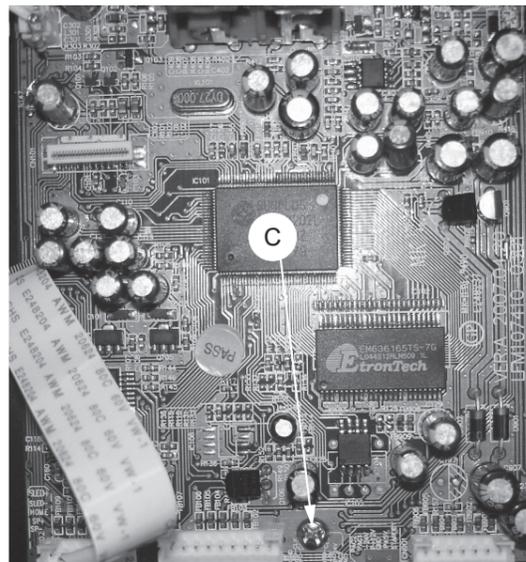


figure 3

Dismantling the Power Board

1) Loosen 2 screws "D" at the Power Board as shown in figure 4 to remove the Power Board.

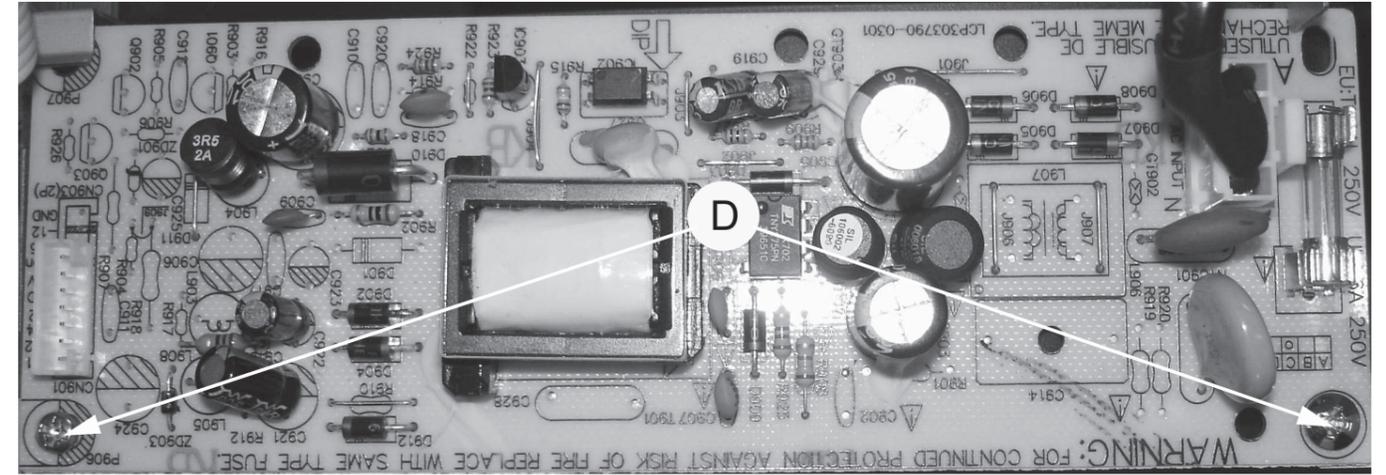


figure 4

Dismantling the Control Board

- 1) Loosen 7 screws "E" at the KEY Panel as shown in figure 5.
- 2) Loosen 6 screws "F" at the VFD Panel as shown in figure 6.

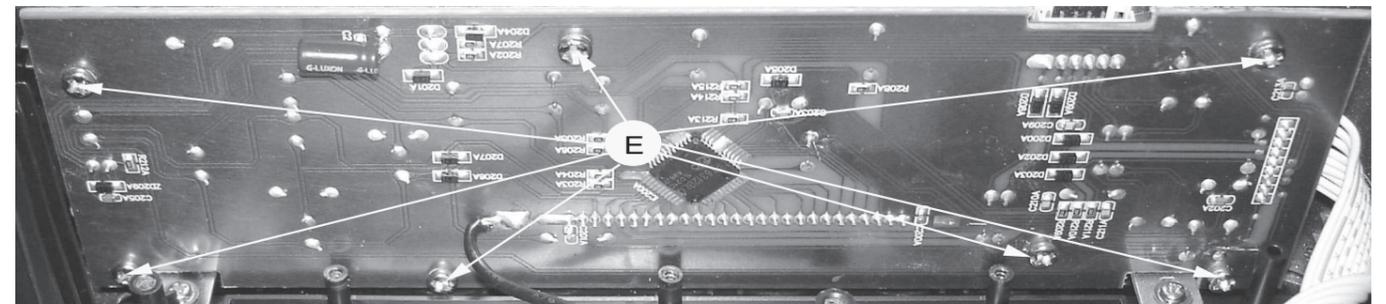


figure 5

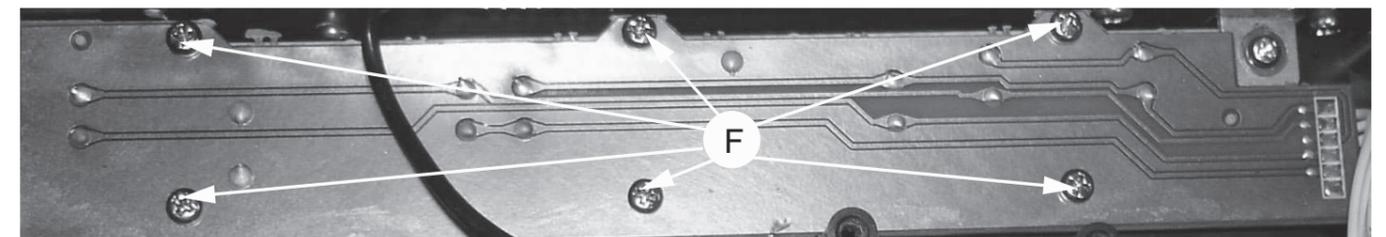
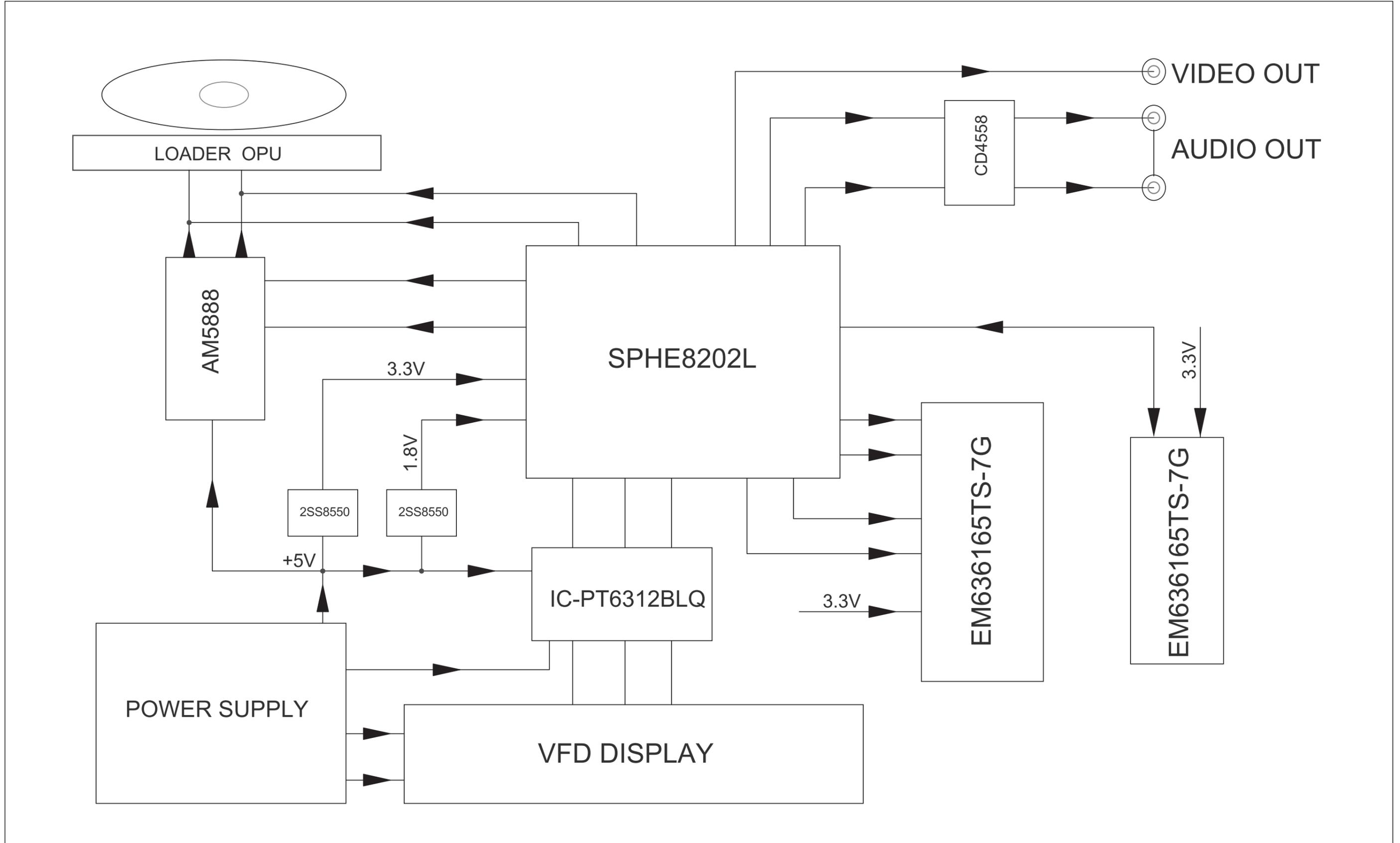
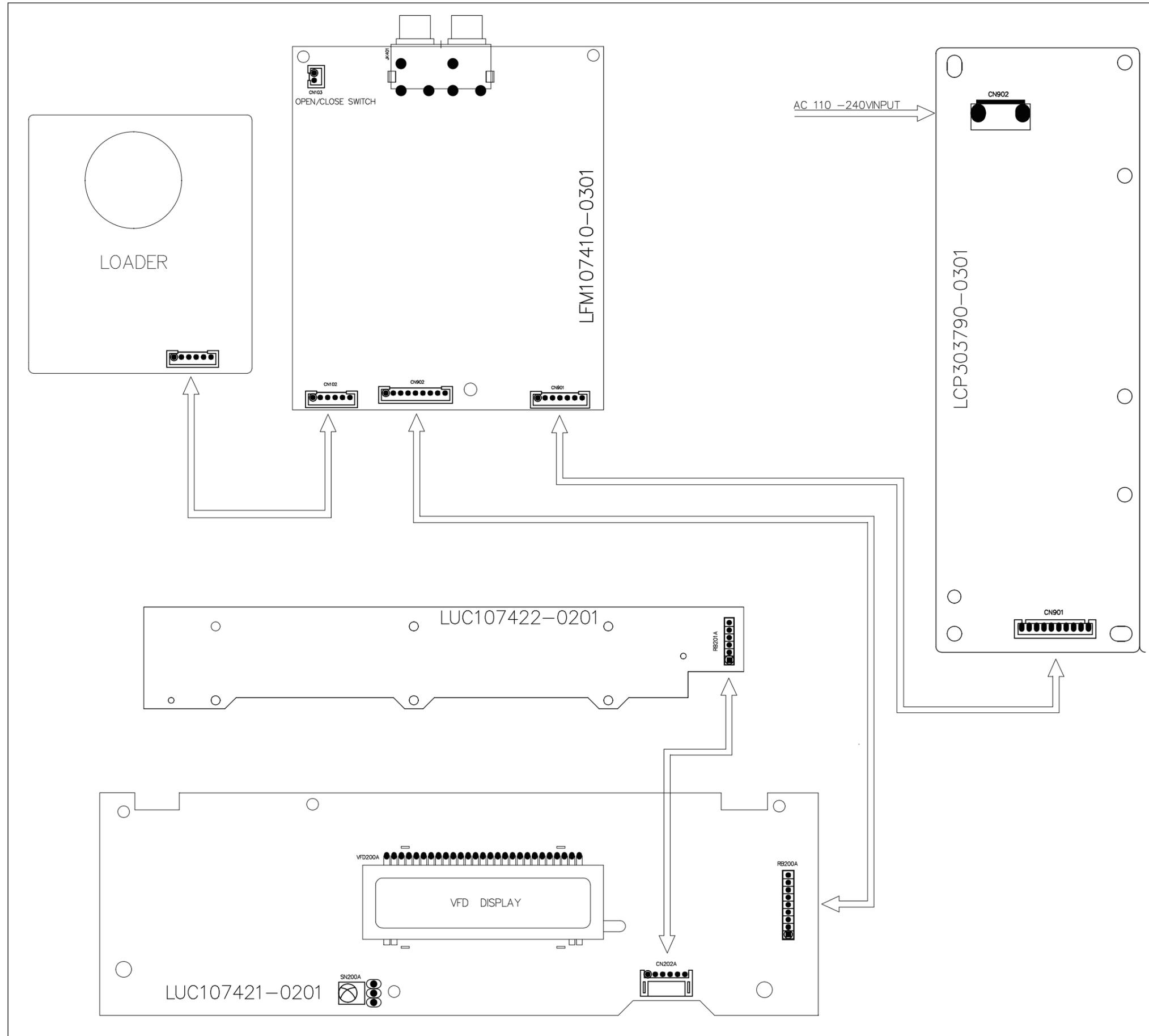


figure 6

BLOCK DIAGRAM



WIRING DIAGRAM

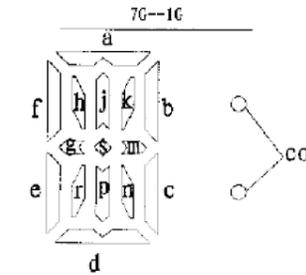
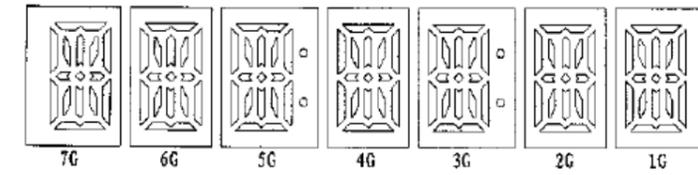


CONTROL BOARD

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FTD DISPLAY PIN ASSIGNMENT



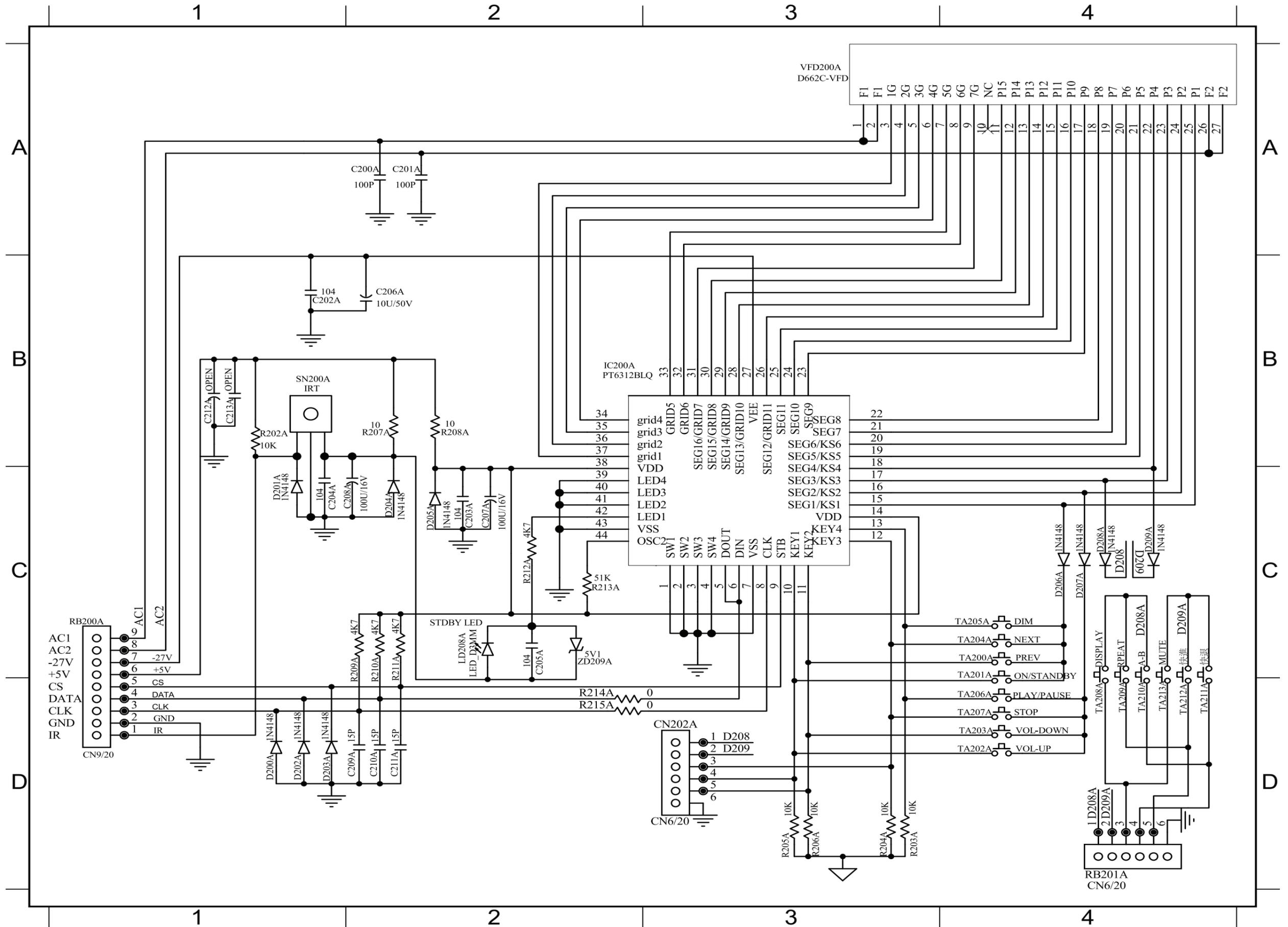
	1G	2G	3G	4G	5G	6G	7G
P1	a	a	a	a	a	a	a
P2	j, p	j, p	j, p	j, p	j, p	j, p	j, p
P3	h	h	h	h	h	h	h
P4	k	k	k	k	k	k	k
P5	b	b	b	b	b	b	b
P6	f	f	f	f	f	f	f
P7	m	m	m	m	m	m	m
P8	g	g	g	g	g	g	g
P9	c	c	c	c	c	c	c
P10	e	e	e	e	e	e	e
P11	r	r	r	r	r	r	r
P12	n	n	n	n	n	n	n
P13	d	d	d	d	d	d	d
P14			col		col		
P15	s	s	s	s	s	s	s

PIN CONNECTION

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CONNECTION	F1	F1	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
PIN No.	15	16	17	18	19	20	21	22	23	24	25	26	27	
CONNECTION	P13	P14	P15	NC	7G	6G	5G	4G	3G	2G	1G	F2	F2	

Note

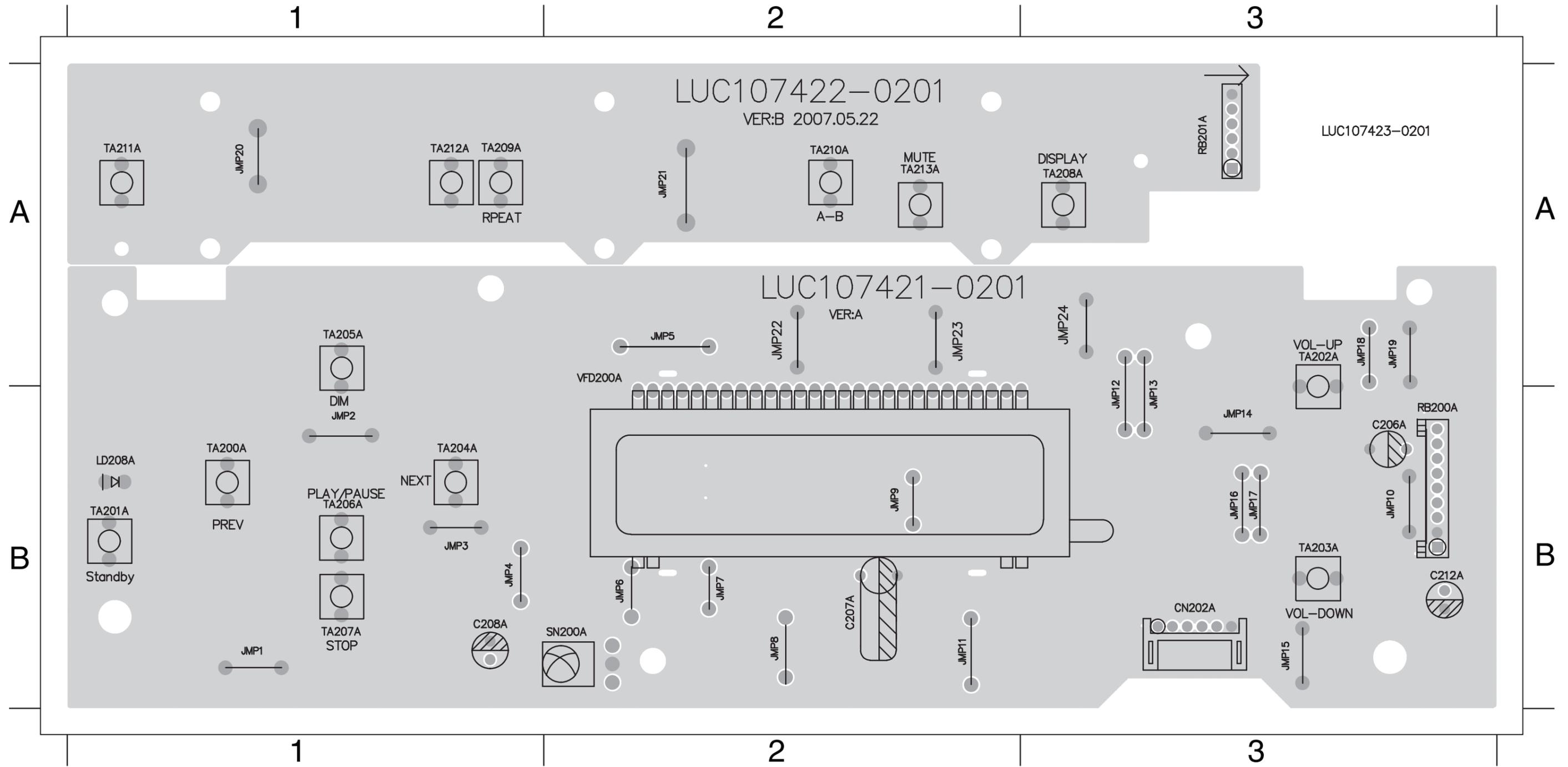
- 1. FN: Filament Pin
- 2. NP: No Pin
- 3. NX: No Extended Pin
- 4. NG: Gird Pin
- 5. PN: Anode Pin



PCB LAYOUT - TOP VIEW

5 - 3

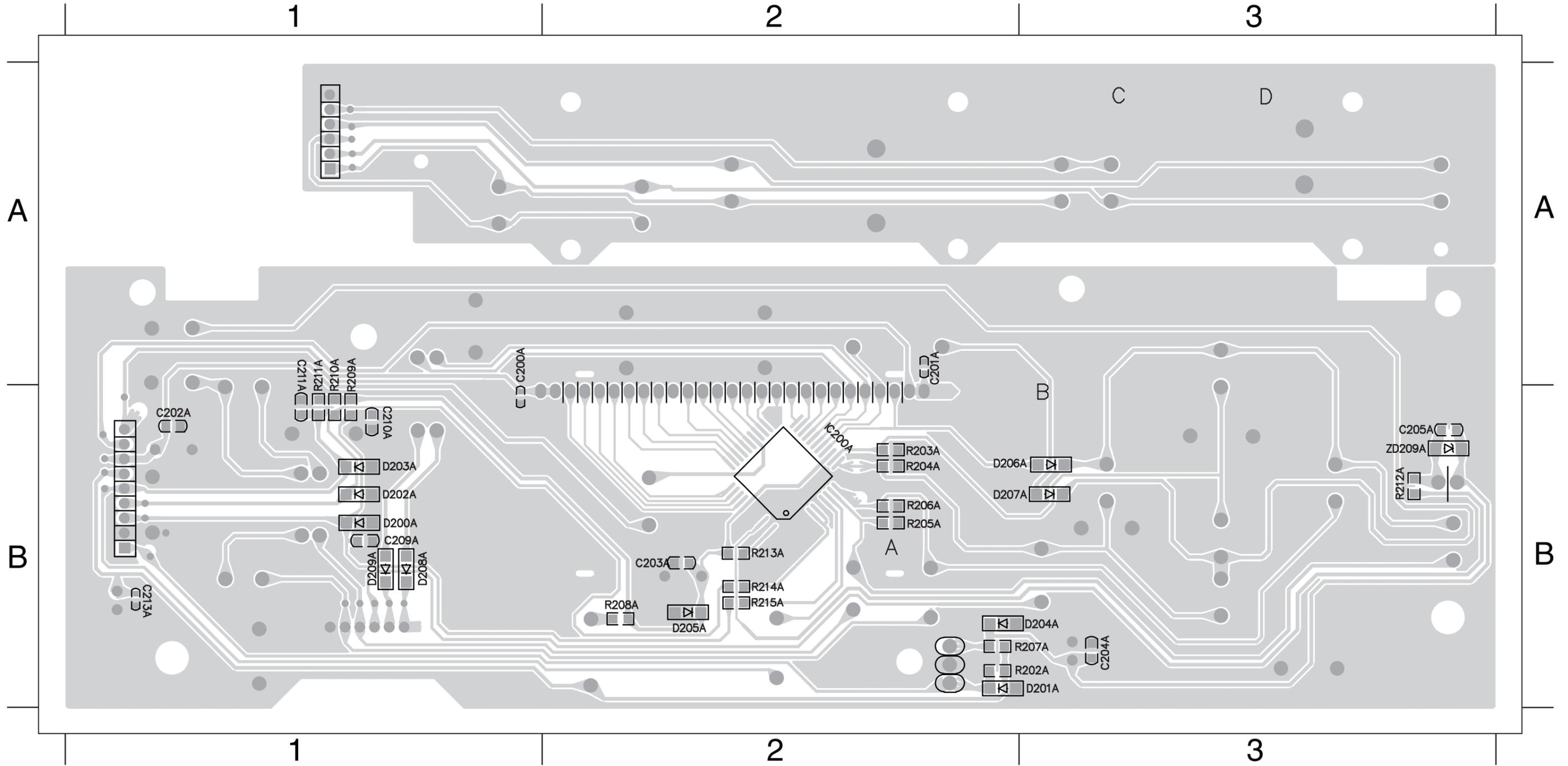
5 - 3



PCB LAYOUT - BOTTOM VIEW

5 - 4

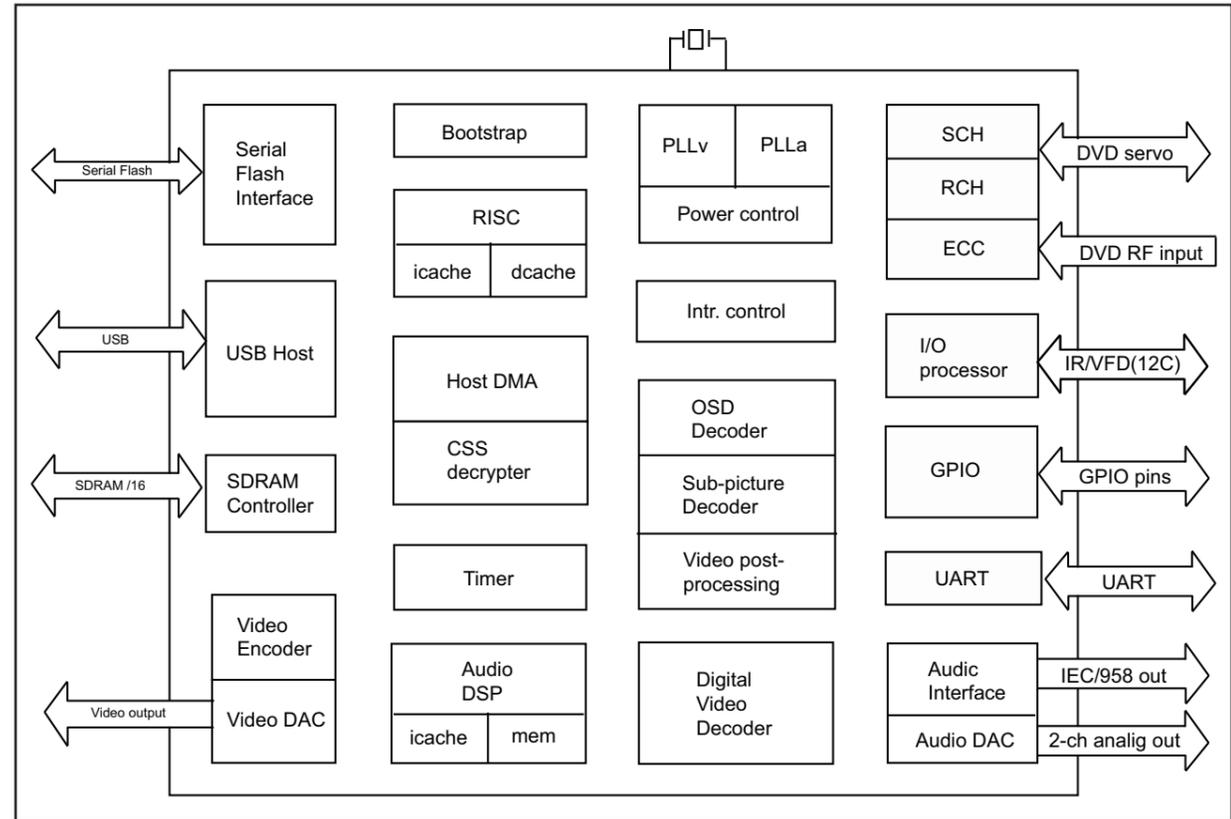
5 - 4



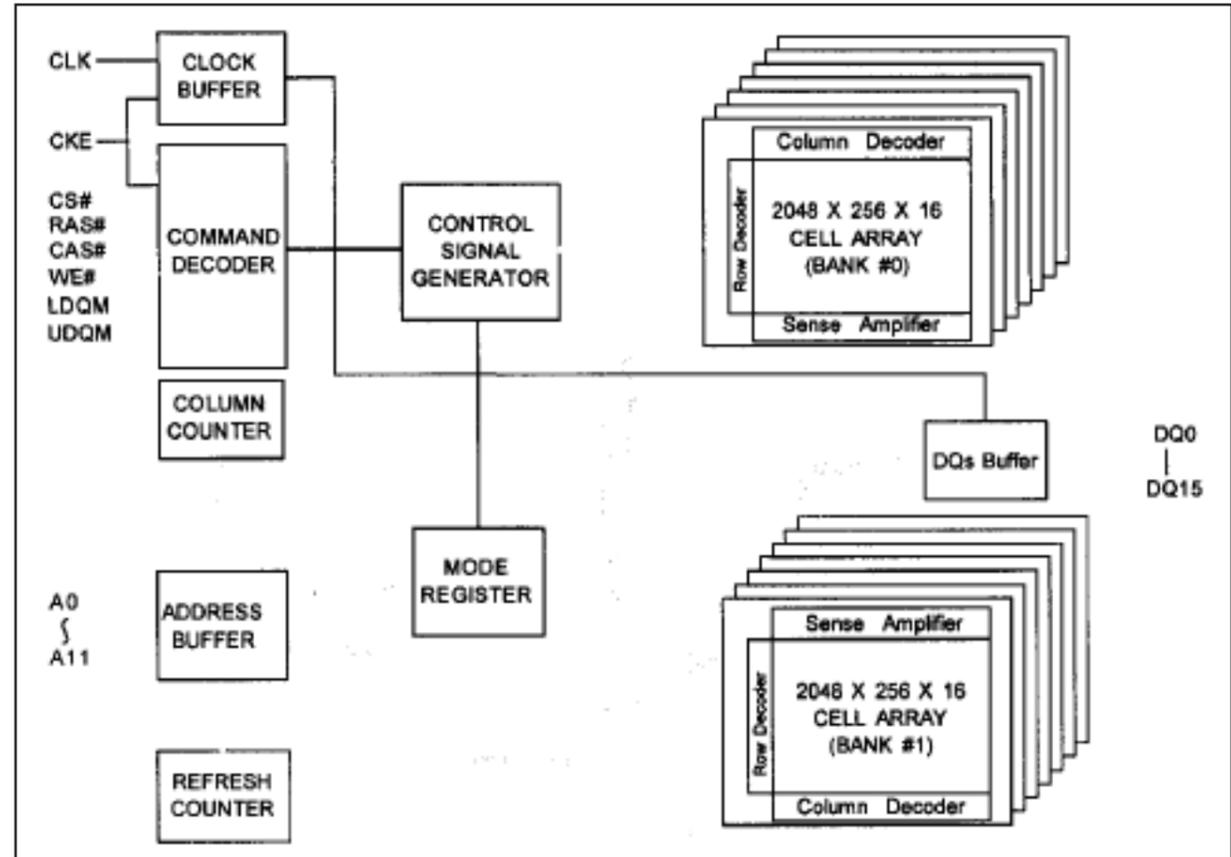
MAIN BOARD

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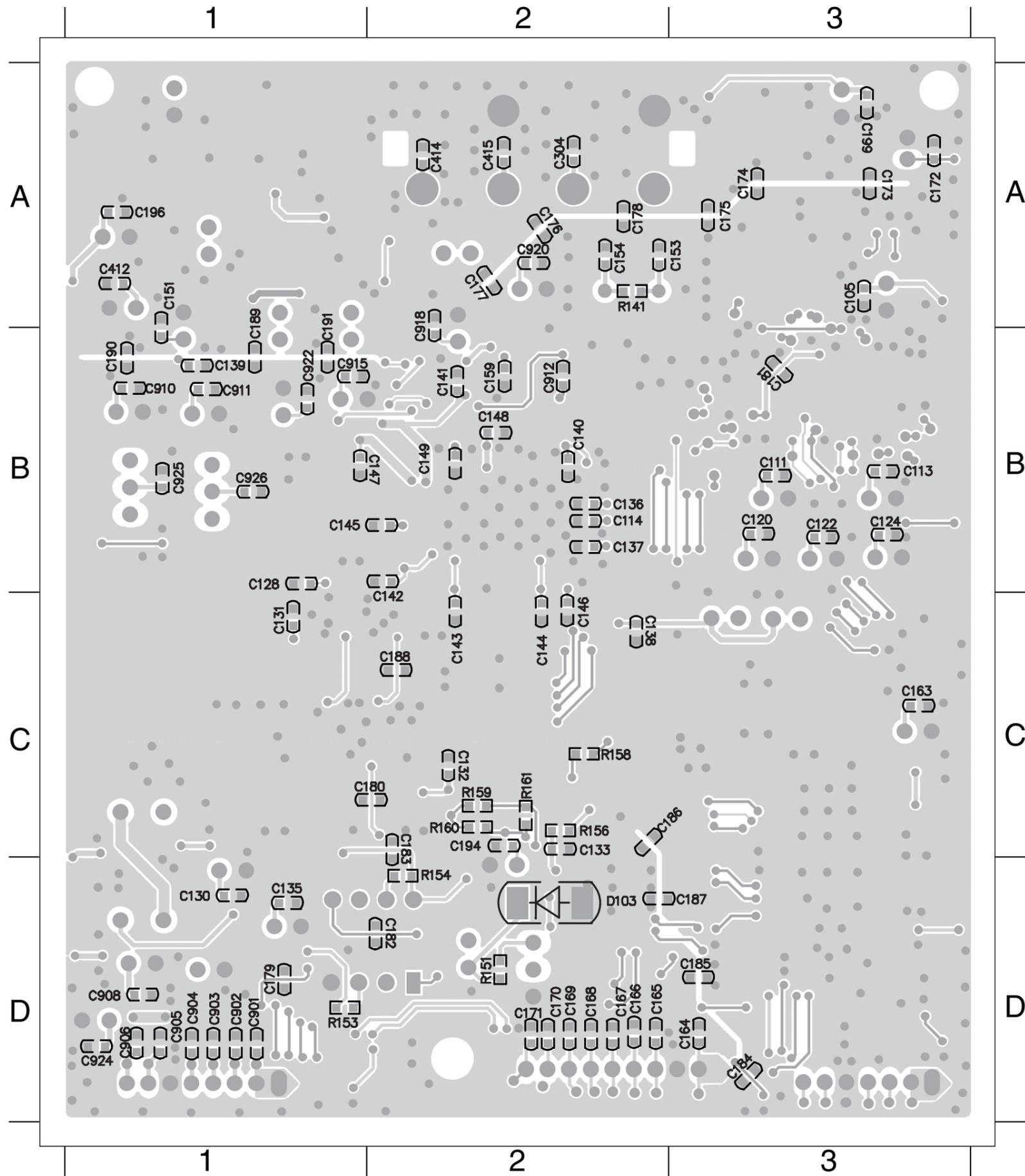
INTERNAL IC DIAGRAM-CO4558A



PCB Layout Bottom View

6-4

6-4

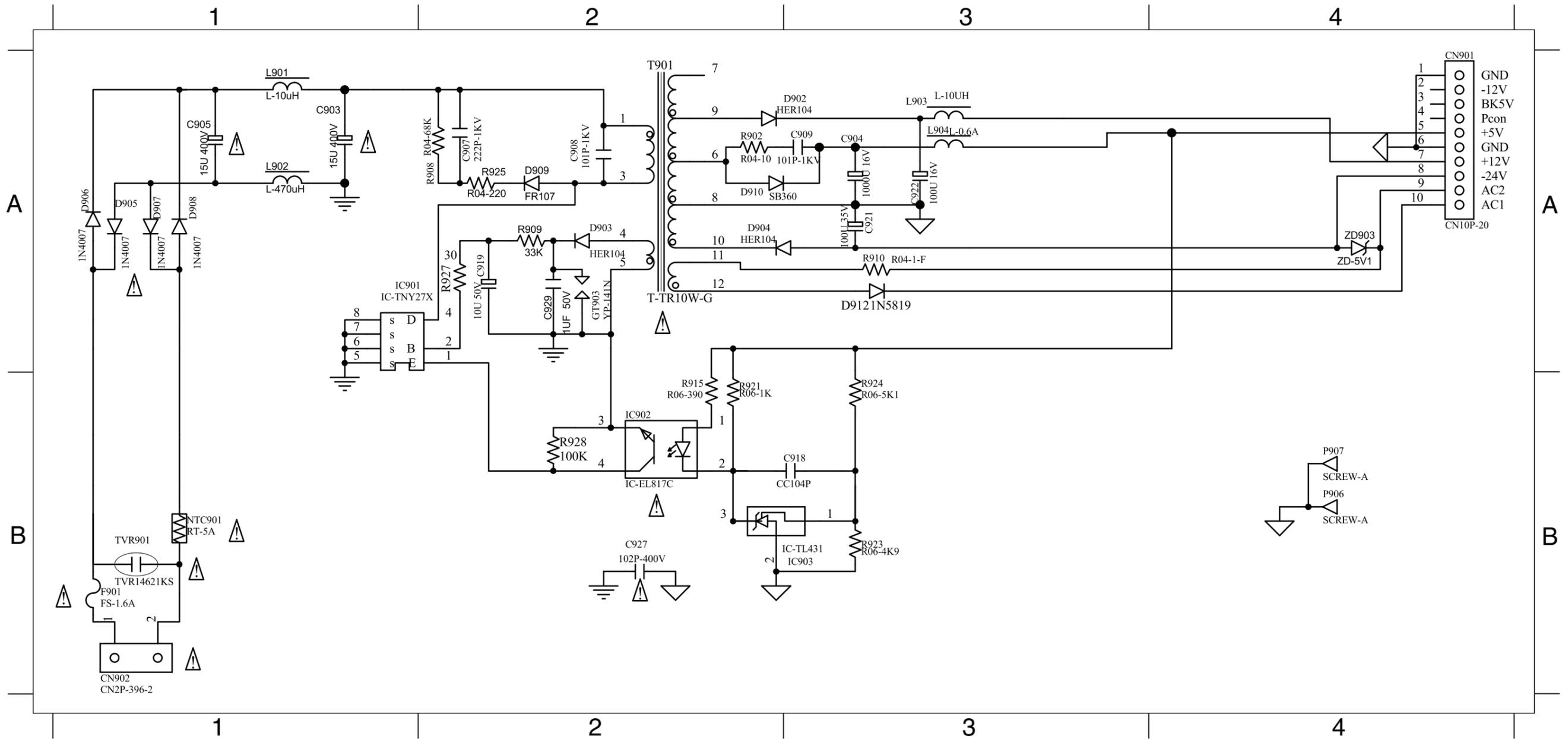


POWER BOARD

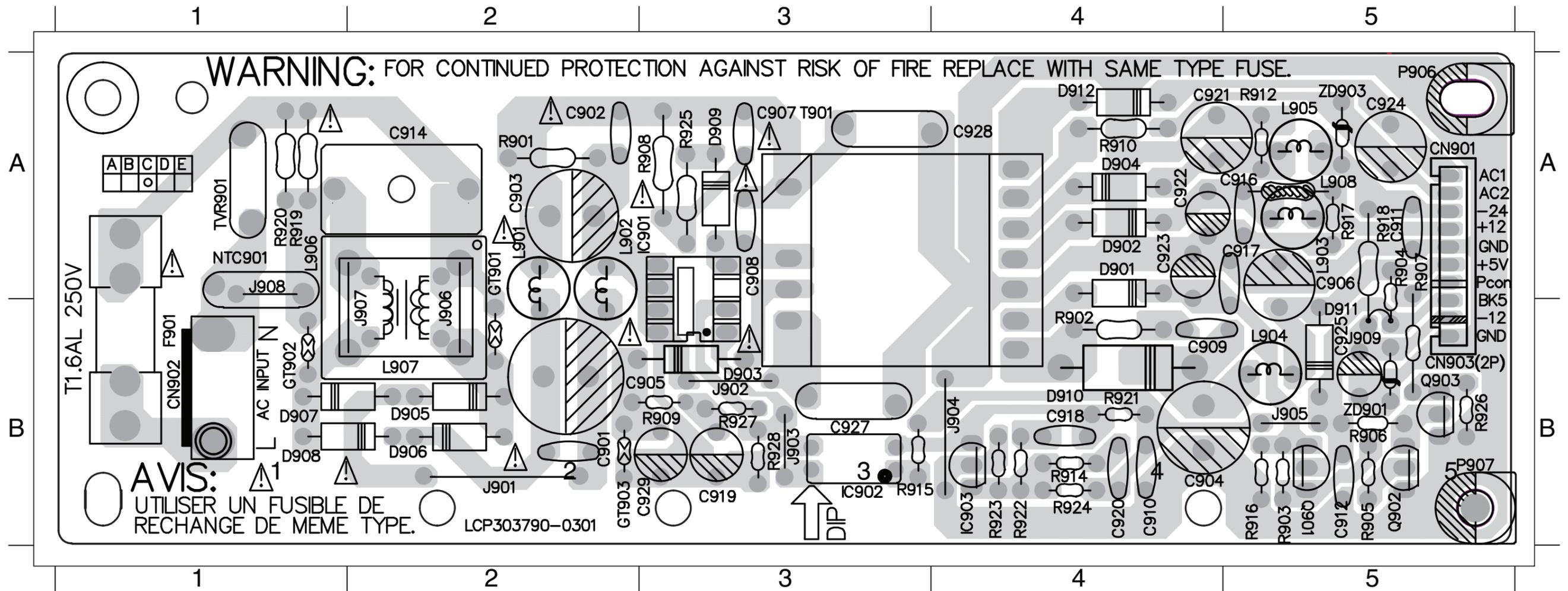
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CIRCUIT DIAGRAM



PCB LAYOUT - POWER BOARD



WARNING: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE WITH SAME TYPE FUSE.

AVIS: UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE.

LCP303790-0301

DIP

AC1
AC2
-24
+12
GND
+5V
Pcon
BK5
-12
GND

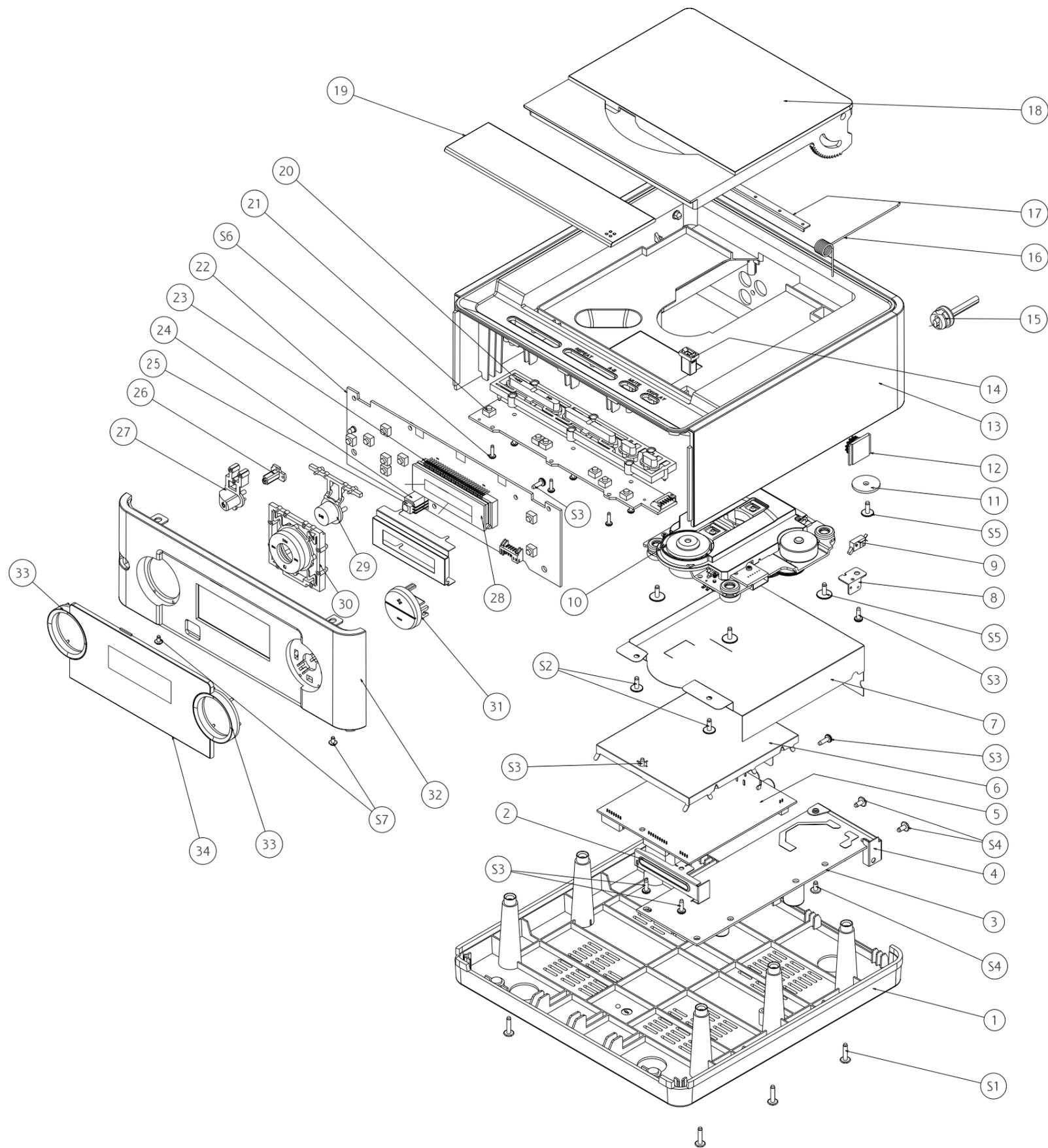
T1.6AL 250V

A	B	C	D	E
	o			

SET MECHANICAL EXPLODED VIEW

8 - 1

8 - 1



MECHANICAL & ACCESSORIES PARTS LIST(only for side code:MF)

01	996510005659	BOTTOM CAB
10	996510004624	DVD LOADER
12	996500022120	DAMPER-ASSY-MODULE-0.8
13	996510005660	TOP CABINET
14	994000005481	DOOR LOCK OP/CL FUNCTION
16	994000005438	CD DOOR SPRING LEFT HANDED
18	994000005484	CD DOOR ABS
19	994000005434	DOOR LENS
20	994000005486	FUNC BUTTON
26	994000005435	STANDBY LENS
27	994000005428	FUNC- POWER KNOB
29	994000005429	FUNC - PLAY BUTTON
30	996510005662	STOP BTN W/FUN. BTN
31	994000005432	FUNC -VOL BUTTON
32	996510005661	FRONT PANEL 94HB
33	994000005436	CHORME RING
34	996510005663	DISPLAY LENS
	996500036543	FFC WIRE 24P L240MM 20696 S1=S
	△996500038338	LINE CORD 2P 1980mm BLK VDE
	996500020577	RCA CABLE 1500MM OD2.6MM BLK
	996500023889	RCA CABLE 1500MM BLK
	996510005664	REMOTE CONTROL 32KEY

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

ELECTRICAL PARTS LIST - MAIN BOARD (only for side code:MF)

D103	994000005453	SCHOTTKY DIODE FM5819
D301	996510005666	DIODE CHIP BAV99
IC101	996510005669	IC 128P SPHE8202L DVD
IC103	996510005670	IC 50P EM636165TS-7G TSOP II
IC104	996510005658	IC 8P EN25T80-75HCP EON
IC107	994000005214	IC 28P V5888S
IC401	996500029611	IC 8P CO4558A SO8
JK401	996510005665	RCA JACK 4P WHT-NC/RED-YEL
Q101	996510004117	FET 2SK3018 30V/0.1A SC-70
Q102	996510004117	FET 2SK3018 30V/0.1A SC-70
Q103	996500041293	XISTR NPN PMBT3904
Q104	996500026927	XISTR PNP 2SB1132RT100 ROHM
Q105	996500026927	XISTR PNP 2SB1132RT100 ROHM
Q106	996510005667	XISTR 8050S TO92
Q401	996500041293	XISTR NPN PMBT3904
Q402	996500041293	XISTR NPN PMBT3904
Q406	996510005668	XISTR PNP 3906 SOT23
Q407	996510005668	XISTR PNP 3906 SOT23
Q901	996510000593	XISTR PNP 8550SS-D TO-92 CJ
Q902	996510000593	XISTR PNP 8550SS-D TO-92 CJ
RA101	996500041964	RES. ARRAY 4.7KR 1/16W 5%
XL101	996500023929	X'TAL 27MHZ HC-49/US +/-15PPM

ELECTRICAL PARTS LIST - POWER BOARD

C907	996500027125	COND DISC 0.0022UF 1KV 20%
C908	996510005677	COND DISC 56pF 1KV 10%
C927	△ 996500027115	CAP. SAFTY Y1 102PF 250V 20%
D902	994000000941	DIODE HER104 1A 300V 50NS
D903	994000000941	DIODE HER104 1A 300V 50NS
D904	994000000941	DIODE HER104 1A 300V 50NS
D909	994000001571	DIODE FR107 1A 1000V
D910	994000005249	DIODE SB360 3A 60V DO-201AD
D912	996510004297	IN5819 1A 28V SCHOTTKY
F901	△ 996510005675	FUSE T1.6A L250V 5x20mm
GT903	996500029310	ABSORBER BL 140V 500A
IC901	996510005678	IC 8P TNY275PN 15W
IC902	994000000946	OPTICAL SENSOR 4P
IC903	996500029312	IC 3 PIN TL431 TO-92
L902	996500016694	6UH 13.5TS 2UEW
NTC901	994000005232	THERMIST. NTC 5R 5A
T901	△ 996510005676	TRASFO EEL-19 5+7PIN
TVR901	996500032754	THERMIST 50A 561V

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

ELECTRICAL PARTS LIST - VFD+KEY Board

IC200A	996510005674	IC 44P PT6312BLQ PTC VFD
LD208A	996500012537	LED 3 DIA RED ROUND
SN200A	994000005472	IRT RECEIVER IRM-2638AF4
TA200A	996510005672	AI TACT SW H=5mm 160GF
TA201A	996510005672	AI TACT SW H=5mm 160GF
TA202A	996510005672	AI TACT SW H=5mm 160GF
TA203A	996510005672	AI TACT SW H=5mm 160GF
TA204A	996510005672	AI TACT SW H=5mm 160GF
TA205A	996510005672	AI TACT SW H=5mm 160GF
TA206A	996510005672	AI TACT SW H=5mm 160GF
TA207A	996510005672	AI TACT SW H=5mm 160GF
TA208A	996510005672	AI TACT SW H=5mm 160GF
TA209A	996510005672	AI TACT SW H=5mm 160GF
TA210A	996510005672	AI TACT SW H=5mm 160GF
TA211A	996510005672	AI TACT SW H=5mm 160GF
TA212A	996510005672	AI TACT SW H=5mm 160GF
TA213A	996510005672	AI TACT SW H=5mm 160GF
VFD200A	996510005673	VFD 27P L65xW20xT6.1

FACTORY MECHANICAL PART LIST (ONLY FOR REFERENCE)
(only for side code:MF)

Loc.	Part NO.	Description
1	BPB100040-0004	BTM CAB HIPS 94HB
2	GSE100763-0001	POWER BKT-LOW
3	APE303790-0005	POWER PCB ASS'Y
4	GSE100764-0001	POWER BKT-HIGH
5	APE107410-0001	MAIN BOARD
6	GTP100193-0001	EMC SCREEN COVER
7	BFP121128-0001	DUST PVC SHEET
8	GSE100632-0001	MICRO SW BKT
9	MSW002005-0010	SW LEAF
10	ASL261606-1106	TRAVERSE
11	LUC107423-0201	GEAR SUPPRESS PCB
12	DGD101003-0001	DUMP GEAR
13	BPC100076-0201	TOP CAB
14	DDL100001-2001	DOOR LOCK
15	DBU001001-0020	AC LINE BUSHING
16	GSW100007-0001	DOOR SPRING
17	GSE100655-0001	DOOR BKT
18	BPD101124-0001	CD DOOR
19	BPN100282-0001	DOOR LENS
20	BPK102108-0001	FUNCTION BUTTON
21	APE107422-0001	KEY PCB ASS'Y
22	APE107420-0001	VFD=KEY PCB ASS'Y
23	IVE100397-0001	VFD SPONGE
24	IVE100377-0002	IR SPONGE
25	RHO263804-2102	IRT RECEIVER
26	BPN100283-0001	STANDBY LENS
27	BPK112108-0001	POWER KNOB
28	KLV000050-0010	VFD 27P
29	BPK122108-0001	PLAY BUTTON
30	BPK132108-0002	STOP BUTTON
31	BPK142108-0001	VOL BUTTON
32	BPF106061-3002	FRONT PANEL
33	BPY100015-0001	RING
34	BPN100281-0012	DISPLAY LENS
S1	HST140054-1120	SCREW
S2	HSW140054-1080	SCREW
S3	HSP140054-1080	SCREW
S4	HST143084-1060	SCREW
S5	HSW140054-1081	SCREW
S6	HSP140044-1040	SCREW
S7	HSW140044-1060	SCREW

MECHANICAL & ACCESSORIES PARTSLIST (only for side code:GC)

01	996510017625	BOTTOM CHASSIS
10	996510017618	DVD DECK SM-D203 (SANYO850)
111	996510017615	AV CABLE 1500mm MCD137
113	996510017616	AV WIRE 1500mm
12	996510008078	CD DOOR GEAR HOLDER
13	996510017626	TOP PANEL
14	994000001744	CD DOOR LOCK
16	996510017620	CD DECK SPRING
18	996510028967	CD DOOR PLATE
19	996510017627	CD DOOR LENS
20	996510017632	FUNCTION KNOB
27	996510017633	POWER KNOB
30	996510017635	TUING KNOB
31	996510017630	VOLUME KNOB
32	996510017624	FRONT CABINET
33	996510017631	LEFT DISPLAY LOOP
34	996510018932	RIGHT DISPLAY LOOP
35	996510008079	CD DOOR GEAR
39	996510017634	PLAY STOP KONB
LINE	994000001745	POWER CORD SET (BLACK) VDE
PCB1	996510015933	P.C.B MCD-137 DVD BD.
PCB2	996510018931	P.C.B MCD-137 RECTIFIER BD-/98
PCB3	996510015935	P.C.B MCD-137 CONTROL BD
PCB4	996510015936	P.C.B MCD-137 DISPLAY BD
RC	996510017619	MCD137 REMOTE CONTROL

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

REVISION LIST

1.0 Manual 3141 785 31950

Initial Service Manual released.

1.1 Manual 3141 785 31951

In this version,

1) Page 8-3 Main Board Partslist updated ---- Flash IC change to programmed IC.

IC104 996510005658 IC 8P EN25T80-75HCP EON

1.2 Manual 3141 785 31952

In this version,

1) Page 8-5 Mechanical & Accessories partslist added,for side code changed from MF to GC.

All other pages in service manual except page 8-5 is for side code MF.