

Service Service Service



Service Manual



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**CLASS 1
LASER PRODUCT**



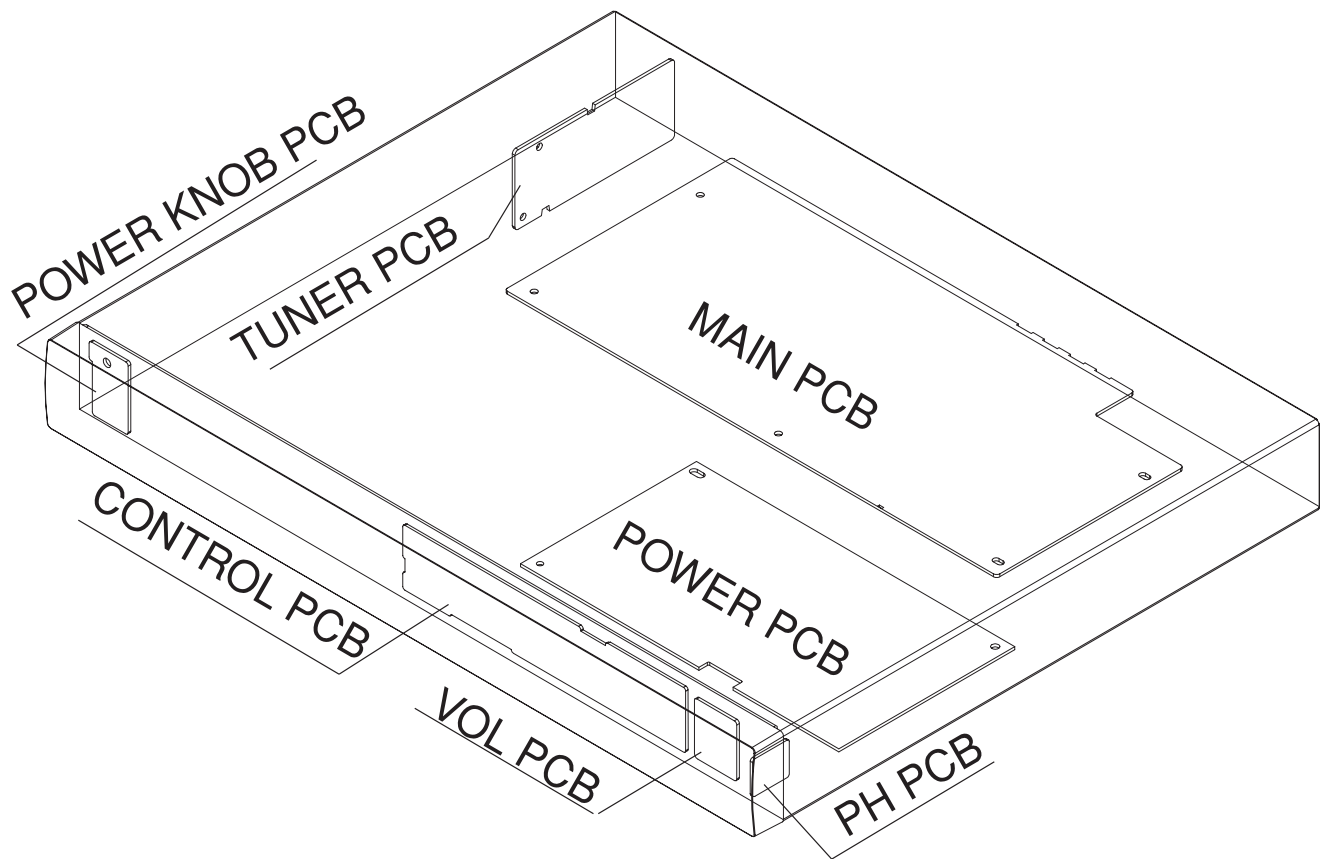
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Version 1.0



PHILIPS

LOCATION OF PC BOARDS



VERSION VARIATION:

Type /Versions	MX2500D
	/78
Features & Board in used:	
RDS	
Rotary Encoder (volume control)	x
Aux Input	x
Digital Output	x
Line Output	x
Progressive scan	x
Power supply (110~230V)	x

SPECIFICATIONS

AMPLIFIER SECTION

Output power	200 W Total power
- Front	30 W RMS / channel
.....	30 W FTC ^① /channel
- Rear	30 W RMS / channel
- Center	30 W RMS
- Subwoofer	50 W RMS
Frequency Response	180 Hz - 14 kHz / ± 3 dB
Signal-to-Noise Ratio	> 60 dB (A-weight)
Input Sensitivity	
AUX/TV In	400 mV

^① 8ohm, 120Hz-12.5 KHz, 10% THD

TUNER SECTION

Tuning Range	FM 87.5 – 108 MHz
.....	(50 or 100 kHz step)
.....	MW 530 – 1710 kHz (10 kHz)
.....	MW 531 – 1602 kHz (9 kHz)
26 dB Quieting Sensitivity	FM 20 dBf
26 dB Quieting Sensitivity	AM 5000 μ V/m
Image Rejection Radio	FM 25 dB
.....	AM 28 dB
IF Rejection Ratio	FM 60 dB
.....	AM 24 dB
Signal-to-Noise Ratio	FM 55 dB
.....	AM 40 dB
AM Suppression Ratio	FM 30 dB
Harmonic Distortion	FM Mono 3 %
.....	FM Stereo 3 %
.....	AM 5 %
Frequency Response	FM 180 Hz – 10 kHz / ± 6 dB
Stereo Separation	FM 26 dB (1 kHz)
Stereo Threshold	FM 23.5 dB

DISC SECTION

Laser Type	Semiconductor
Disc Diameter	12cm / 8cm
Video Decoding	MPEG-2 / MPEG-1
Video DAC	10 Bits
Signal System	PAL / NTSC
Video Format	4:3 / 16:9
Video S/N	56 dB (minimum)
Composite Video Output	1.0 Vp-p, 75 Ω
S-Video Output	Y - 1.0 Vp-p, 75 Ω
.....	C - 0.286 Vp-p, 75 Ω
Audio DAC	24 Bits / 96 kHz
Frequency Response	4 Hz - 20 kHz (44.1kHz)
.....	4 Hz - 22 kHz (48kHz)
.....	4 Hz - 44 KHz (96KHz)
Digital Output	
.....	SPDIF (Sony Philips digital interface) Coaxial
- PCM	IEC 60958
- Dolby Digital	IEC 60958, IEC 61937

MAIN UNIT

Power Supply Rating	120 V-230V, 50 / 60 Hz
Power Consumption	120W
Dimensions (w x h x d)	435x 53 x 365 (mm)
.....	17.1 x 2.1 x 14.4 (inch)
Weight	4.07 kg / 8.95 pounds

SPEAKERS

Front/Rear speakers

System	1-way, Bass Reflex system
Impedance	8 Ω
Frequency response	120 Hz – 20 kHz
Dimensions (w x h x d)	90 x 92 x 87 (mm)
.....	3.5x 3.6 x 3.4 (inch)
Weight	0.53 kg/1.17 pounds

CENTER SPEAKERS

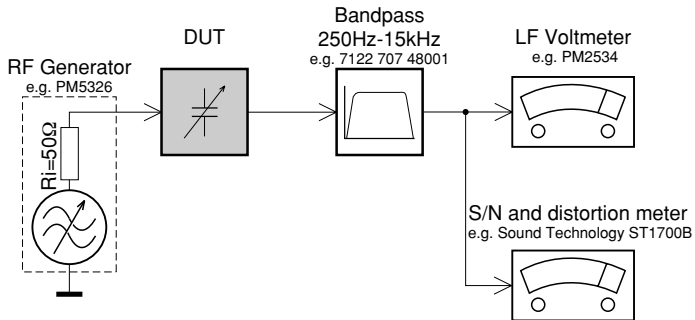
System	1-way, Bass Reflex system
Impedance	8 Ω
speaker drivers	1 x 3 " C
Frequency response	120 Hz – 20 kHz
Dimensions (w x h x d)	90 x 92 x 87 (mm)
.....	3.5 x 3.6 x 3.4 (inch)
Weight	0.53 kg/1.17 pounds

PASSIVE SUBWOOFER

Impedance	4 Ω
speaker drivers	6 1/2" woofer
Frequency response	30 Hz – 120 kHz
Dimensions (w x h x d)	220 x 212 x 350 (mm)
.....	8.7 x 8.3 x 13.8 (inch)
Weight	3.57 kg/7.85 pounds

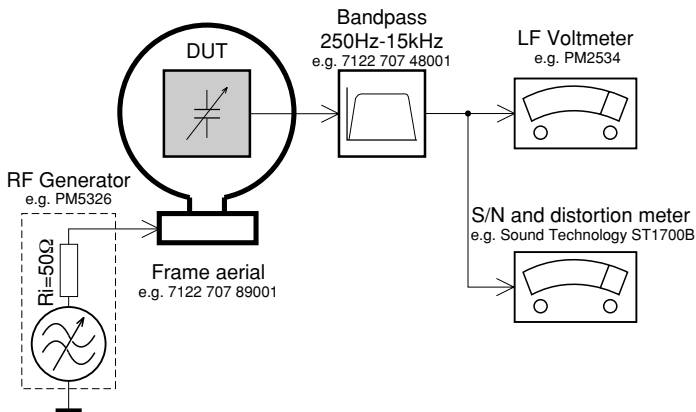
MEASUREMENT SETUP

Tuner FM



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

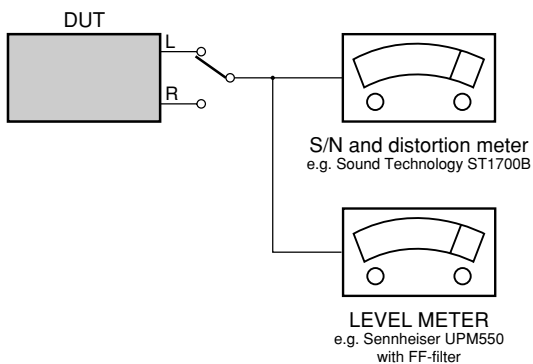
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

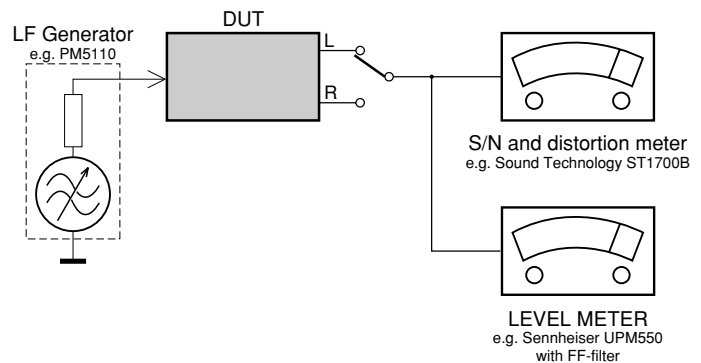
CD

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



Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



SERVICE AIDS

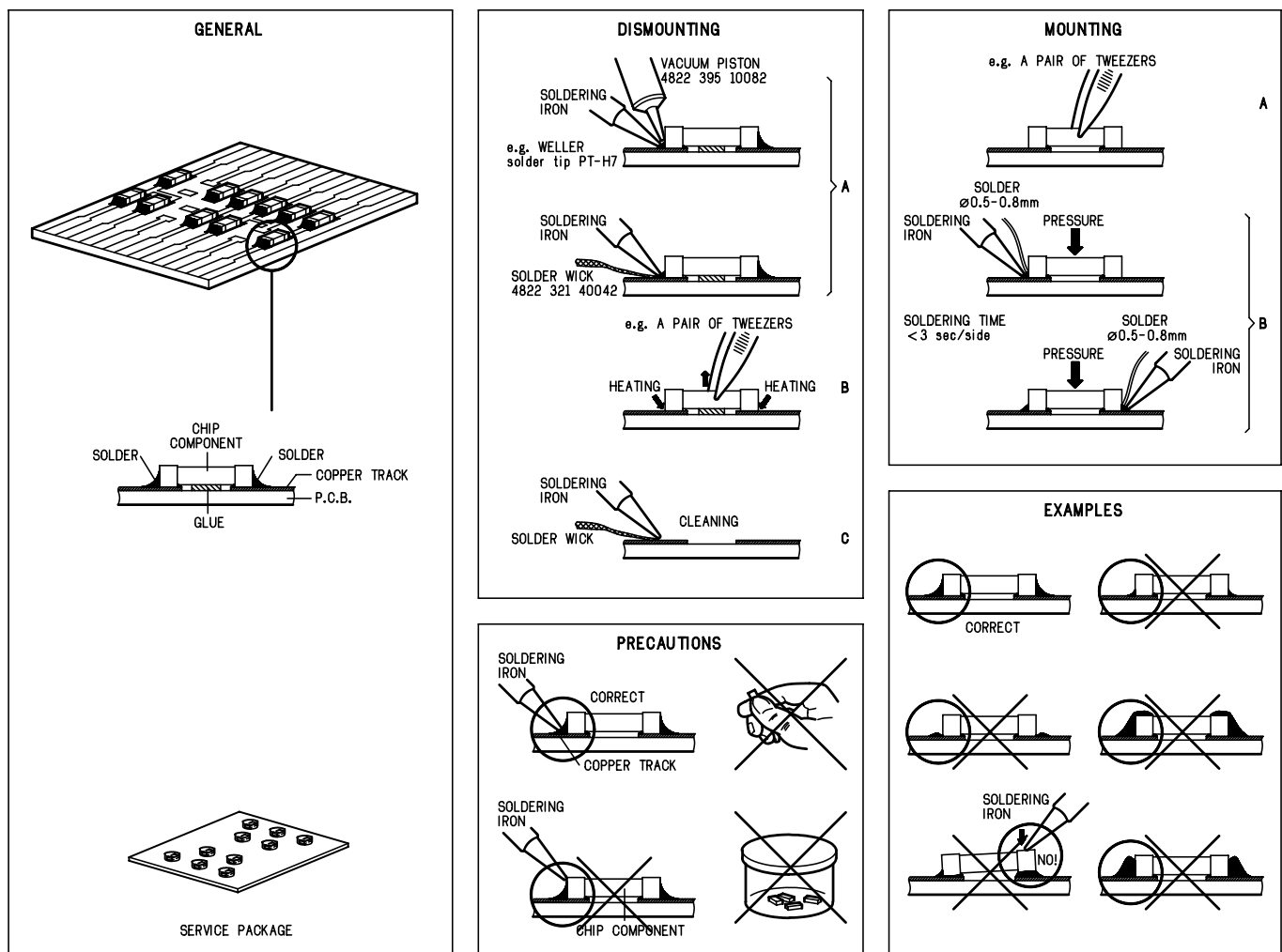
Service Tools:

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



**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**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.

**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.

**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.

**AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta 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.

**ESD PROTECTION EQUIPMENT**

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



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 .



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 .



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 .



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.



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 .



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.

**Warning !**

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

**Varning !**

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

**Varoitus !**

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

**Advarse !**

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



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

System, Region code, Tuner, etc. setting procedure

1) System Reset

- a) Press "SYSTEM" button on R/C. TV show "SETUP"
- b) Select the menu using the "▼" and "►" button on R/C
- c) Go feature setup page to do system reset

2) Region Code Change

After replacement / repair of the MPEG board, the customer setting and the region code may lost. Changing the Region code will put the player back in the state which it has left the factory.

Region Code		
	1	USA
	2	EU
	3	AP
	4	Australia, NZ, Latam
	5	RUSSIA, INDIA
	6	CHINA

TV System		
	1	NTSC
	2	PAL
	3	AUTO

Menu/ Audio Subtitle (AS) Language		
	1	English
	2	English
	3	English
	4	English

AFS		
	001	LX3000D/LX3500D /MX2500D
	002	MX3600D/MX3800
	003	LX3700D/LX3750W

Hence in total, reprograming will be done by way of the remote control. It should run as below :-

- a) Put the player in stop mode. No disc loaded.
- b) Press the following key on remote control:

For MX2500D/78 (LATAM) :
<PLAY> <159> <411> <001> <08> <PLAY>

* After the Region Code is changed it is necessary to reset the system so that the new Region Code will be fully effective. All customer setting will be lost.

* On top of the maximum number of times allowed for changing the region code is changed to 25.

* When the counter reach 25, you will not be able to further change the code until you reset the timer by the Region Code timer reset procedure

CAUTION !

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

oem derivative
08

- region code = 1 digit
- tv system = 1 digit
- "as/menu lang" = 1 digit
- "AFS" = "architecture Feature Set" = 3 digits

This field is used to define the architecture / features sets for each product.

- "oem derivative" = 2 digit

This field is use to define the OEM set. This will affect the background display.

3) Region code change timer reset

Press below key to reset the timer :

- a) In DISC source, stop mode and no disc in tray.
- b) Press R/C "Play -159-PLAY" to reset timer to 25

4) Tuner area change

- a) Press the "OPEN/CLOSE" button to open the set' s door
- b) Press "1" "5" "9" button by using R/C.
- c) TV Show "TUNER AREA"
- d) Select the tuner area you want by using the "▼" and "►" button on R/C, then press "OK" to confirm. TV show " TUNER AREA CHANGED"

If you didn' t press it in five seconds, the system will remain original status.

AREA	BAND	FREQUENCY (Hz)		STEP (Hz)
LATAM (78)	FM	87.5M	108M	50K /100K
	MW	531K	1602K	9K
		530K	1710K	10K

Note :-

Please refer to the above different tuner area.

5. Video Out Change

- a) Press "SYSTEM" on R/C button
- b) Select the menu using the "▼" and "►" button on R/C
- c) Go picture setup page select Video out item.

6. Password Change

- a) Press "SYSTEM" on R/C button
- b) Select the menu using the "▼" and "►" button on R/C
- c) Go feature setup page select "PASSWORD". TV show "ENTER CODE".Press 4 times of "STOP" button on R/C.
- d) Select "PARENTAL" "8 ADULT" on TV.
- e) Enter PASSWORD to "1234".
- * "1234" is a default password supplied.

7. Checking on the Software version

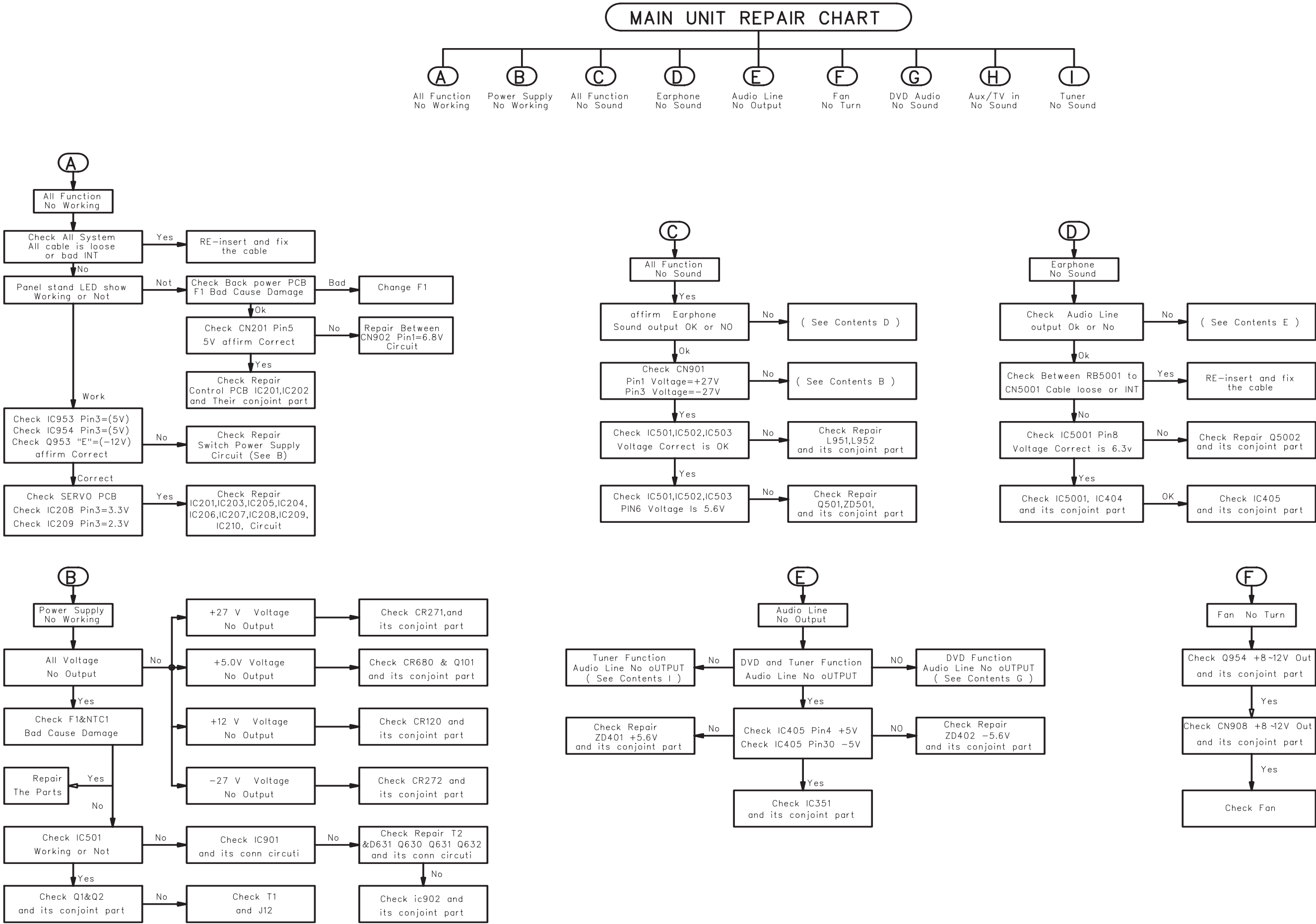
- a) Open the CD door.
- b) Press "123" and "OK" on the remote control.
- c) TV will show the version on screen.

8. Upgrading new software

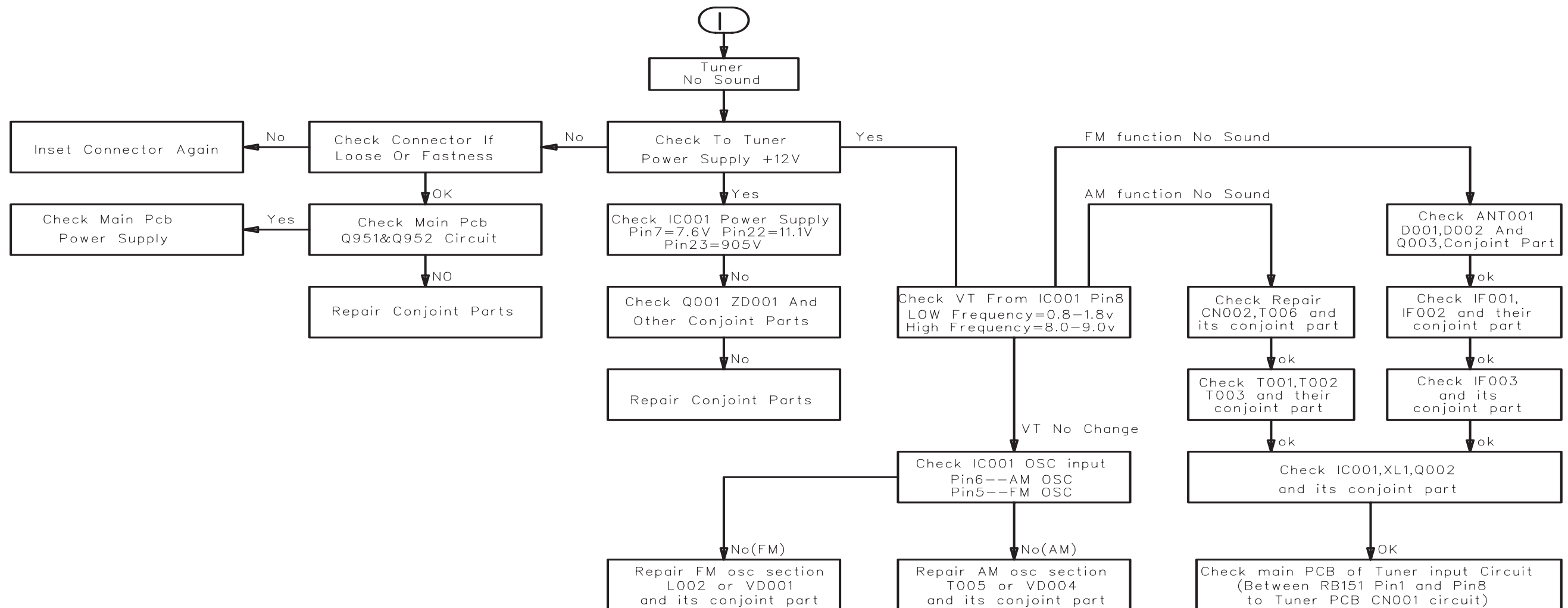
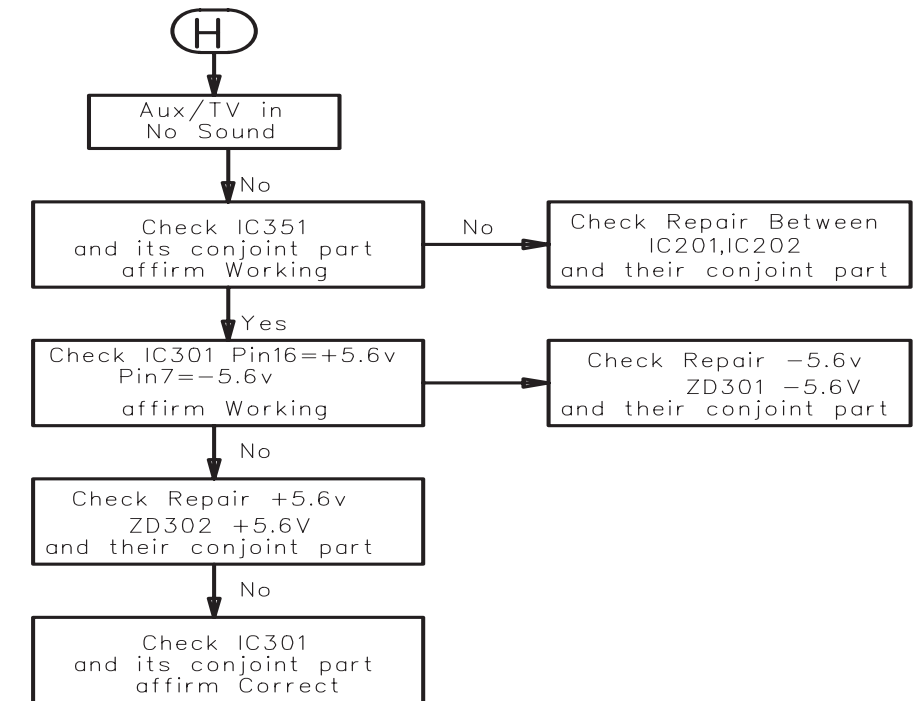
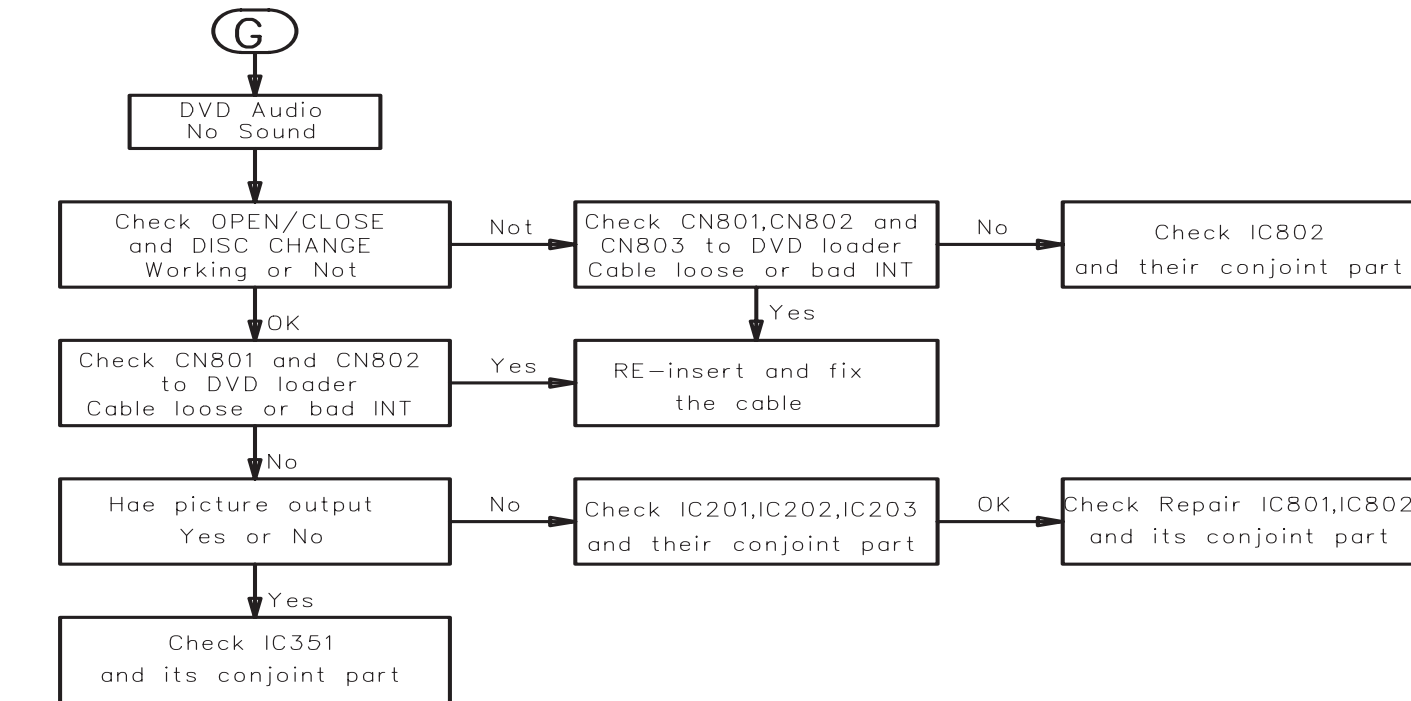
- a) Open the door, then insert the CD-R program disc.
- b) Close the door.
- c) TV will show:-
 - "disc loading"
 - "bank30.rom"
 - "writing" about 6 seconds.
 - "Done"

* The latest upgraded is in version VER0610.

REPAIR INSTRUCTIONS (1 of 2)



REPAIR INSTRUCTIONS (2 of 2)



DISASSEMBLY INSTRUCTIONS

Dismantling of the Front Panel Assembly

- 1) Open the DVD Tray by using the Open/Close Button while the Set is ON and disconnect the mains supply after removing the Tray Cover.

Note: If this is not possible, the DVD Tray has to be open manually.

Take a mini screw driver about 2mm diameter and make a marking 24mm from the tip as shown in figure 2. place the set on its side, insert the mini screw driver till the marking and slide it towards the right as shown in figure 1 until the Tray moves out of the Front Panel.
- 2) Return the set to its upright position and remove the Tray Cover as shown in Figure 3 and close the tray manually by pushing it back in.

3) Loosen 9 screws and remove the Top Cover by lifting the rear portion upwards before sliding it out towards the rear.
 - 5 screws on the back
 - 2 screws each on the left & right side

4) Loosen 7 screws & lift up the top edge of Front Panel assembly to free some catches before sliding it out towards the front.
 - 4 screws on the bottom
 - 1 screw "E" on the inside as indicated in Figure 8.
 - 1 screw each on the left & right side

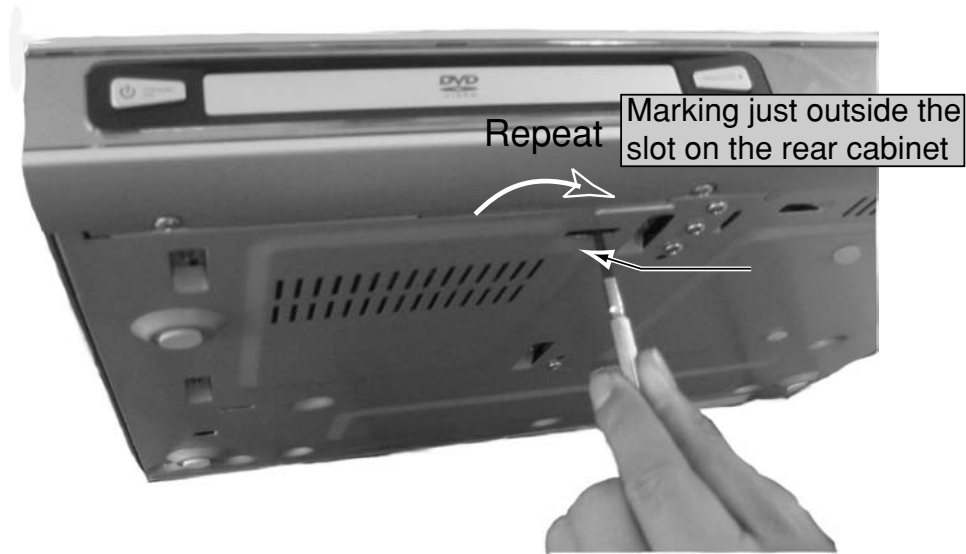


Figure 1



Figure 2

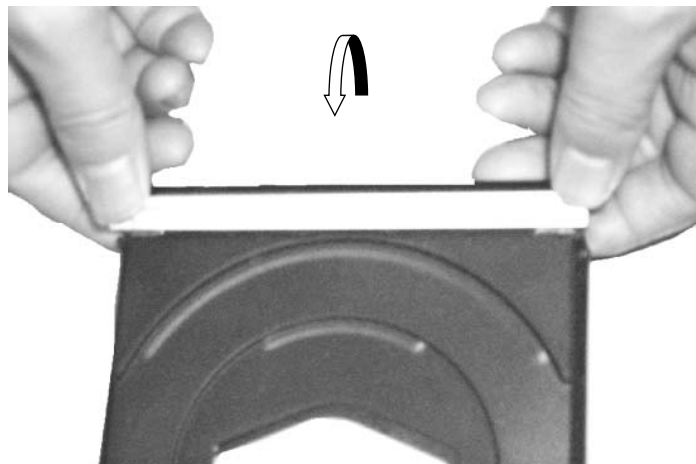


Figure 3

Dismantling of the DVD Module

- 1) Loosen 4 screws "A" to remove the DVD Module as shown in figure 4.

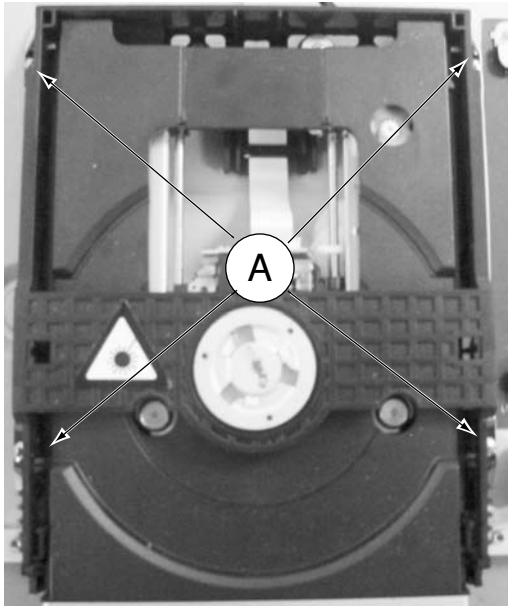


Figure 4

Dismantling of the Power Board

- 1) Loosen 4 screws "B" at the top of the Power Board as shown in figure 5

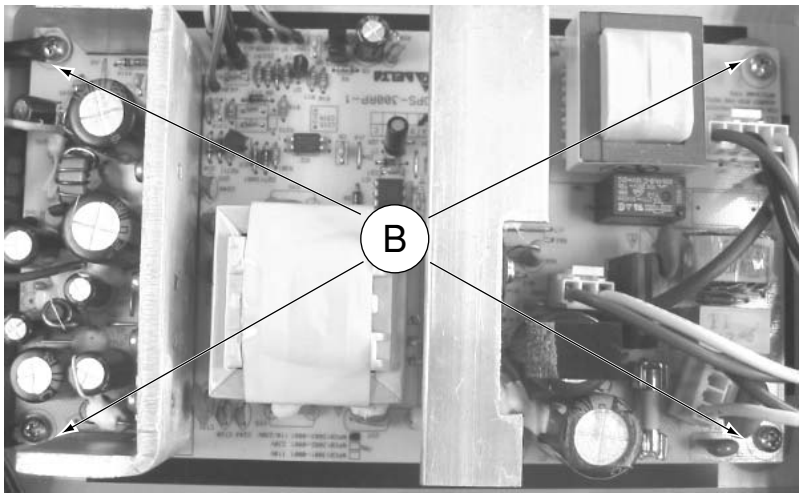


Figure 5

Dismantling of the Tuner PCB

- 1) Loosen 10 screw " C " at the back panel as shown in figure 7.
- 2) Loosen 6 screw " D " on the top of main board as shown in figure 8.

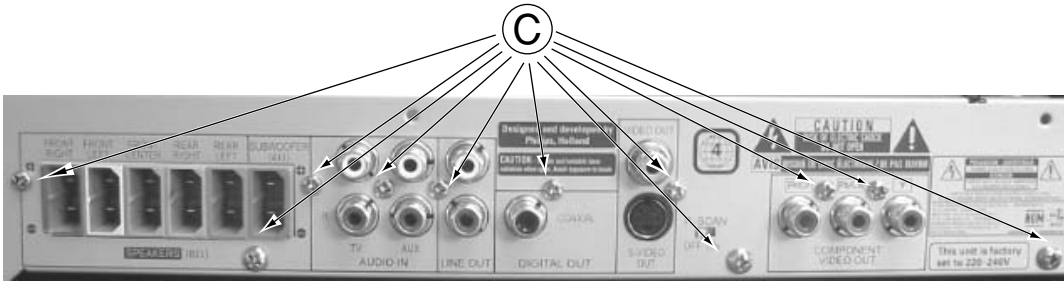


Figure 7



Figure 8

SERVICE POSITIONS

Service position A

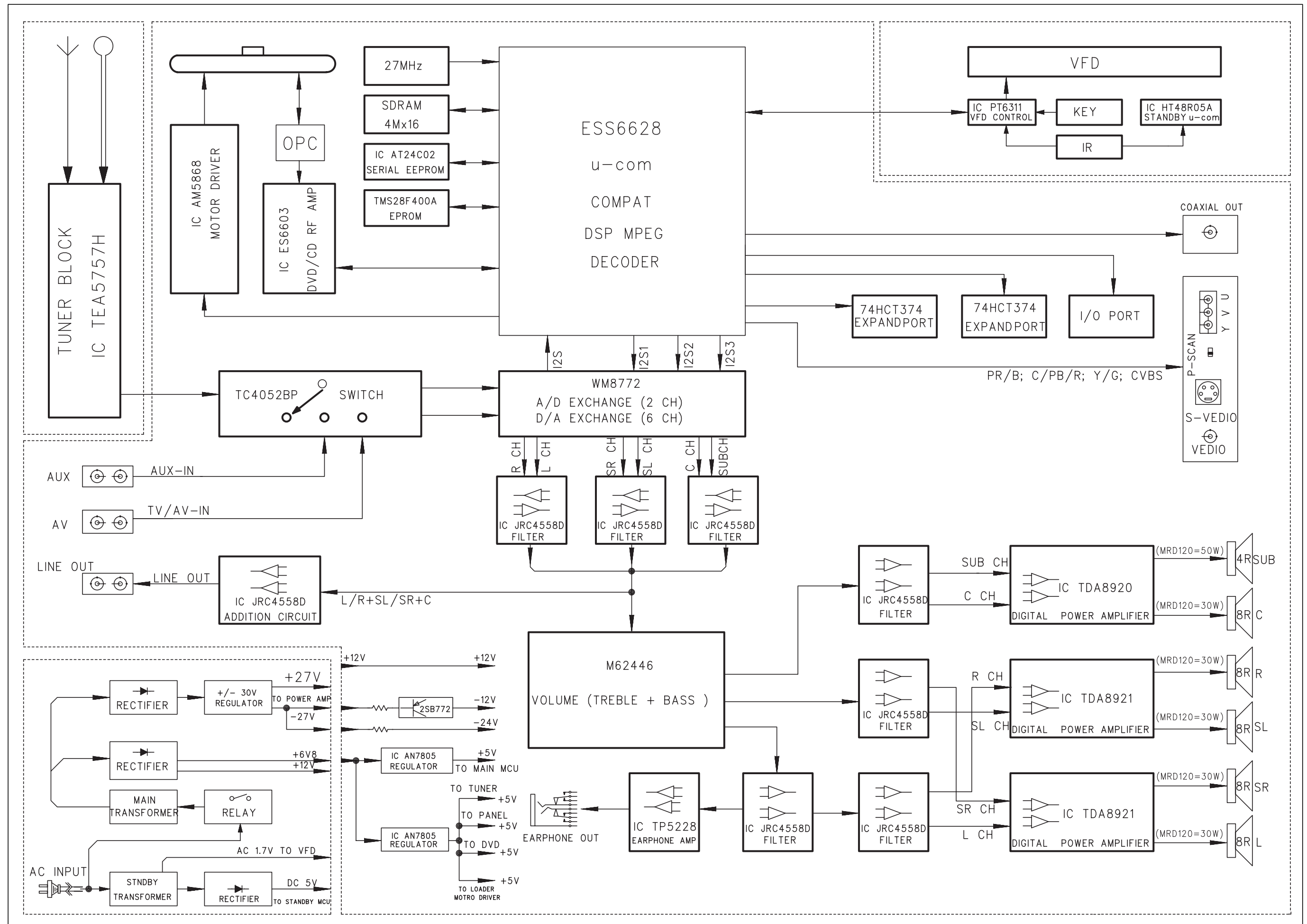


Note: In some service positions the components or copper patterns of one board may risk touching its neighbouring pc boards or metallic parts. To prevent such short-circuit use a piece of hard paper or other insulating material between them.

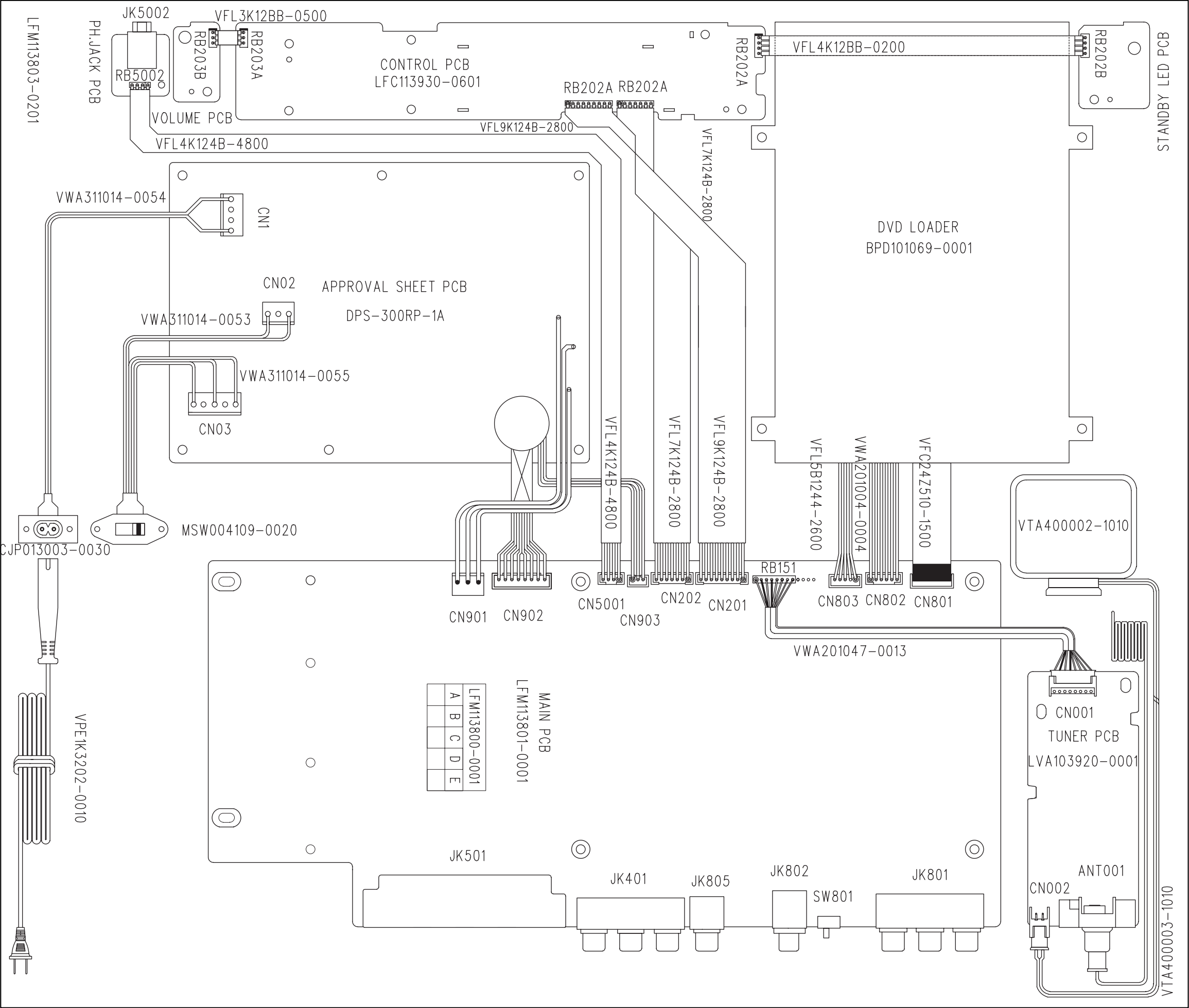
Service position B



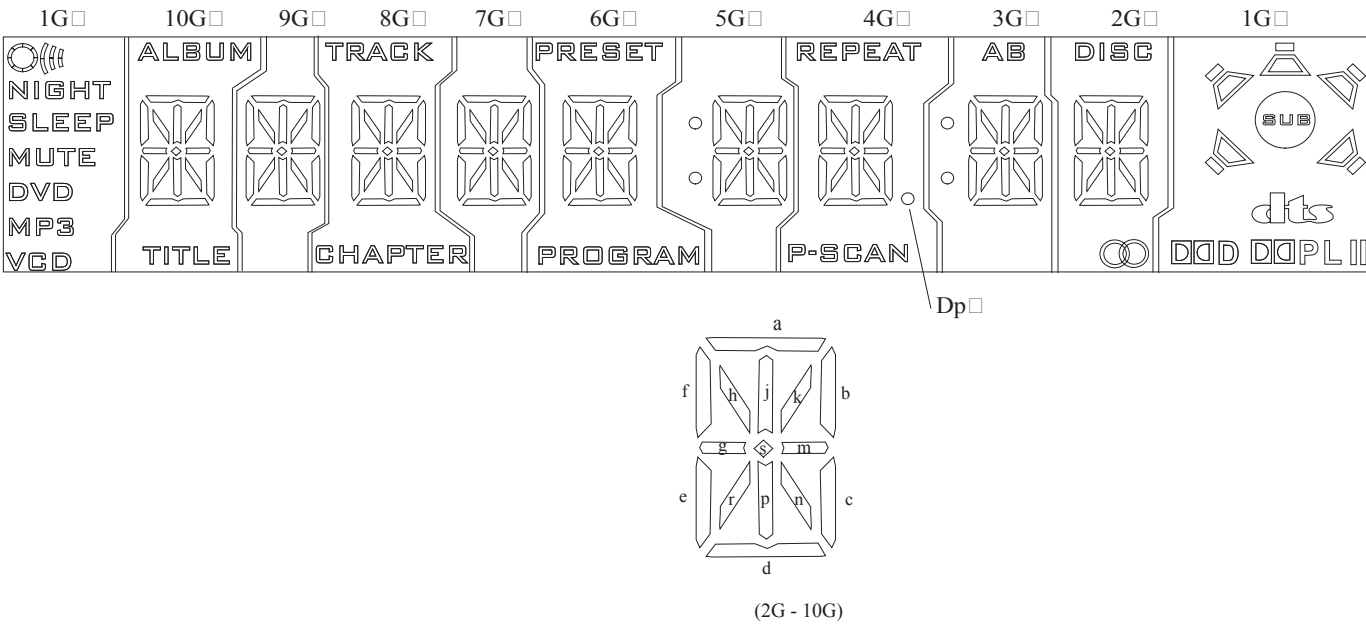
BLOCK DIAGRAM



WIRING DIAGRAM



FTD DISPLAY PIN ASSIGNMENT



KEY (CONTROL / STANDBY / VOL) BOARD

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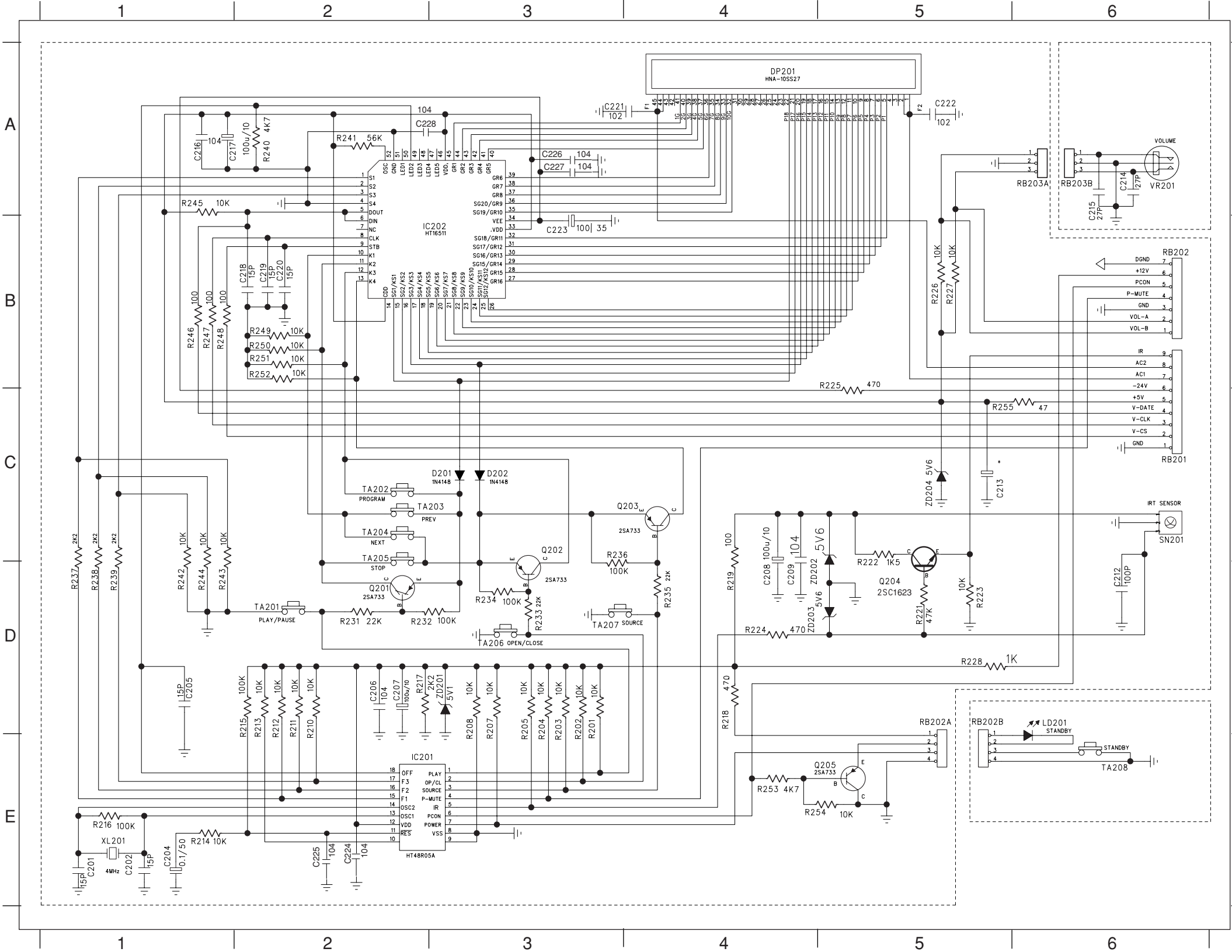
	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	a	a	a	a	a	a	a	a	a	
P2	b	b	b	b	b	b	b	b	b	
P3	f	f	f	f	f	f	f	f	f	
P4	h	h	h	h	h	h	h	h	h	
P5	j	j	j	j	j	j	j	j	j	
P6	k	k	k	k	k	k	k	k	k	
P7	m	m	m	m	m	m	m	m	m	
P8	s	s	s	s	s	s	s	s	s	
P9	g	g	g	g	g	g	g	g	g	
P10	c	c	c	c	c	c	c	c	c	
P11	e	e	e	e	e	e	e	e	e	
P12	r	r	r	r	r	r	r	r	r	
P13	p	p	p	p	p	p	p	p	p	
P14	n	n	n	n	n	n	n	n	n	
P15	d	d	d	d	d	d	d	d	d	
P16						Col	Dp	Col		
P17	ALBUM		TRACK		PRESET		REPEAT	A	DISC	
P18	TITLE		CHAPTER		PROGRAM		P-SCAN	B		

PIN CONNECTION

PIN NO.	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31~23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	F2	NP	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	NX	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	NP	F1	F1

Note ##
1. Fn: Filament pin
2. NP : No Pin
3. NX : No Extended Pin
4. nG : Grid Pin
5. PN : Anode Pin

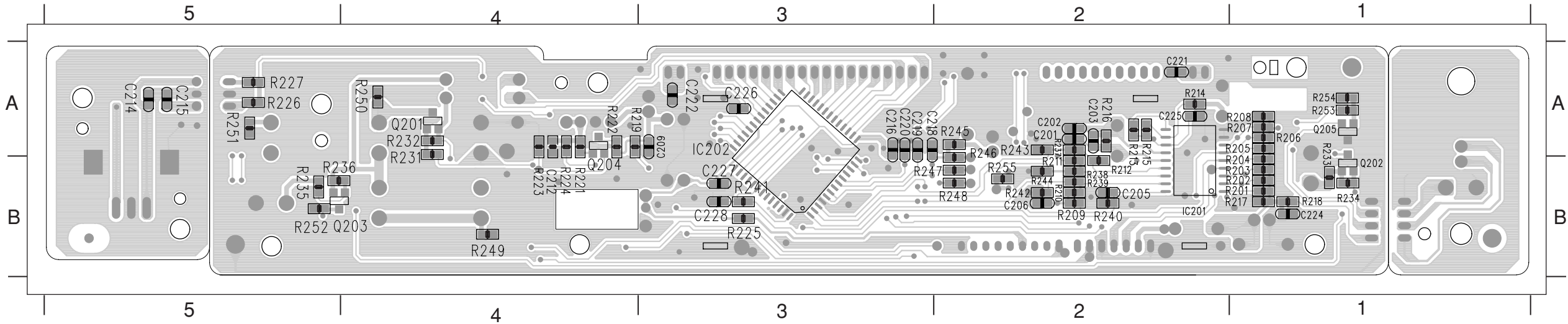
CIRCUIT DIAGRAM - KEY BOARD



C201	E1	R232	D2
C202	E1	R233	D3
C204	E1	R234	D3
C205	D1	R235	D4
C206	D2	R236	D3
C207	D2	R237	D1
C208	D4	R238	D1
C209	D4	R239	D1
C212	D6	R240	A2
C214	A6	R241	A2
C215	A6	R242	D1
C216	A1	R243	D1
C217	A1	R244	D1
C218	B2	R245	A1
C219	B2	R246	B1
C220	B2	R247	B1
C221	A3	R248	B1
C222	A5	R249	B2
C223	B2	R250	B2
C224	E2	R251	B2
C225	E2	R252	B2
C226	A3	R253	E4
C227	A3	R254	E5
C228	A2	R255	C6
D201	C3	RB201	C6
D202	C3	RB202	B6
DP201	A4	RB202A	D5
IC201	E2	RB202B	D5
IC202	B3	RB203A	A6
LD201	D6	RB203B	A6
Q201	D2	SN201	C6
Q202	D3	TA201	D2
Q203	C4	TA202	C2
Q204	D5	TA203	C2
Q205	E5	TA204	C2
R201	D3	TA205	C2
R202	D3	TA206	D3
R203	D3	TA207	D3
R204	D3	TA208	E6
R205	D3	VR201	A6
R207	D3	XL201	E1
R208	D3	ZD201	D3
R210	D2	ZD202	D4
R211	D2	ZD203	D4
R212	D2	ZD204	C5
R213	D2		
R214	E1		
R215	D2		
R216	E1		
R217	D2		
R218	D4		
R219	D4		
R221	D5		
R222	C5		
R223	D5		
R224	D4		
R225	C5		
R226	B5		
R227	B5		
R228	D5		
R231	D2		

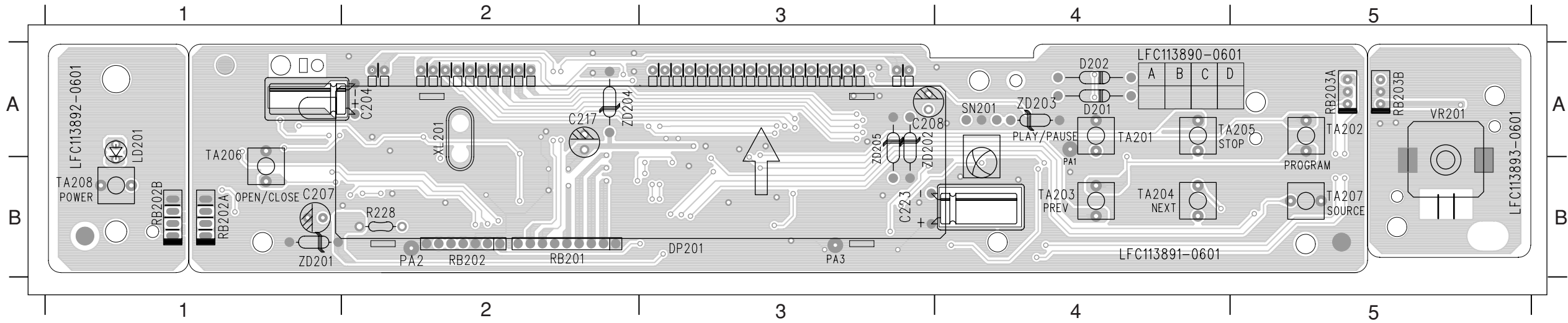
PCB LAYOUT - KEY BOARD (TOP)

C201	A2	C214	A5	C221	A2	C228	B3	Q204	B5	R205	A1	R213	A2	R219	A4	R226	A5	R235	B5	R241	B3	R247	B2	R253	A1
C202	A2	C215	A5	C222	A3	IC201	B2	Q205	A1	R207	A1	R214	A2	R221	B4	R227	A5	R236	B5	R242	B2	R248	B2	R254	A1
C205	B2	C216	A3	C224	B1	IC202	A3	R201	B1	R208	A1	R215	A2	R222	A4	R231	A4	R237	A2	R243	A2	R249	B4	R255	B2
C206	A2	C218	A3	C225	A2	Q201	A4	R202	B1	R210	B2	R216	A2	R223	B4	R232	A4	R238	B2	R244	B2	R250	A4		
C209	A3	C219	A3	C226	A3	Q202	B1	R203	B1	R211	B2	R217	B1	R224	B4	R233	B1	R239	B2	R245	A2	R251	A5		
C212	B4	C220	A3	C227	B3	Q203	B5	R204	A1	R212	B2	R218	B1	R225	B3	R234	B1	R240	B2	R246	A2	R252	B5		



PCB LAYOUT - KEY BOARD (BOTTOM)

C204	A2	D202	A4	RB202A	B1	TA202	A5	TA208	B1	ZD204	A2
C207	B1	DP201	B3	RB202B	B1	TA203	B4	VR201	A5		
C208	A3	LD201	A1	RB203A	A5	TA204	B4	XL201	A2		
C217	A2	R228	B2	RB203B	A5	TA205	A4	ZD201	B1		
C223	B3	RB201	B2	SN201	A4	TA206	B1	ZD202	A3		
D201	A4	RB202	B2	TA201	A4	TA207	B5	ZD203	A4		



ELECTRICAL PARTS LIST - KEY (CONTROL/STANDBY/VOL) BOARD

MISCELLANEOUS

DP2201	9965 000 18031	VFD 100x25mm
LD2201	9965 000 17400	LED 3 DIA RED ROUND
SN2201	9965 000 23591	IRT RECEIV IRM-2038F4
TA2201	4822 276 13648	AI TACT SW SKHVBE3520 ALPS
TA2202	4822 276 13648	AI TACT SW SKHVBE3520 ALPS
TA2203	4822 276 13648	AI TACT SW SKHVBE3520 ALPS
TA2204	4822 276 13648	AI TACT SW SKHVBE3520 ALPS
TA2205	4822 276 13648	AI TACT SW SKHVBE3520 ALPS
TA2206	4822 276 13648	AI TACT SW SKHVBE3520 ALPS
TA2207	4822 276 13648	AI TACT SW SKHVBE3520 ALPS
TA2208	4822 276 13648	AI TACT SW SKHVBE3520 ALPS
VR2201	9965 000 23589	ENCODER L20 a=12 WITHOUT CC
XL2201	9965 000 23590	CRYSTAL4MHz HC-49US +/-15PPM

DIODES

D2201	4822 130 30621	1N4148
D2202	4822 130 30621	1N4148
ZD2201	4822 130 34233	BZX79-B5V1
ZD2202	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD2203	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W

TRANSISTORS & INTEGRATED CIRCUITS

Q2201	9965 000 14175	2SA733Q,P
Q2202	9965 000 14175	2SA733Q,P
Q2203	9965 000 14175	2SA733Q,P
Q2204	9965 000 20268	XISTR NPN SMT TYPE (2SC1623)
Q2205	9965 000 14175	2SA733Q,P
IC2201	9965 000 23592	IC 18 PIN HT48R05A-1 SOPHOLTEK
IC2202	9965 000 20647	IC 52 PIN TP6311QH QFP TOPRO

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

VOLTAGES

IC2201 (HT480051)																					
PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
VOLTAGE	5.1	5.1	5.1	0	5.1	0	5.1	0	0	4.9	4.9	5.2	0	0	0	0	0	0			

IC2202 (PT6311)																					
PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VOLTAGE	0	4.8	0	4.8	3.9	3.9	0	5	4.6	0	0	0	0	-27.8	-23.4	18.5	-30.5	-30.5	-30.5	-13.5	
PIN	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
VOLTAGE	-28.8	-23.3	-28.2	-30.5	-28.2	-23.3	-22	-16.1	-17	-25.8	-29.3	-29	-29	-29	-29	-29	-29	-28.9	-29	-28.9	
PIN	41	42	43	44	45	46	47	48	49	50	51	52									
VOLTAGE	-29	-28.9	-29.3	29.6	4.8	0	4.8	0	4.8	0	0	2.6									

Q2201 (2SA733)				
PIN	1	2	3	
VOLTAGE	5	0	5	

Q2202 (2SA733)				
PIN	1	2	3	
VOLTAGE	5	0	5	

Q2203 (2SA733)				
PIN	1	2	3	
VOLTAGE	5	0	5	

Q2204 (2SC1623)				
PIN	1	2	3	
VOLTAGE	4.6	4.2	4.2	

Q2205 (2SA733)				
PIN	1	2	3	
VOLTAGE	5	0	5	

TUNER ADJUSTMENT TABLE

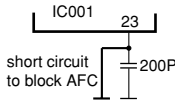
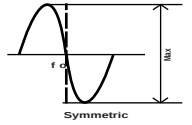
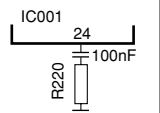
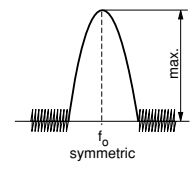
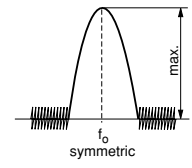
Waverange	Input f requency	Input	Tuned to	Adj ust	Output	Scope/Voltmete
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (50kHz grid)			108MHz	check		6.5V ±0.2V
			87.5MHz	check		1.0V ±0.5V
1602KHz	check		7.8V ±0.2V			
531KHz	T005		1.1V ±0.5V			
AM 530-1710kHz (10kHz grid) (21L / 21L / 37S)			1700KHz	check		8.0V ±0.1HV
			530KHz	T005		1.1V ±0.2V
FM - IF						
FM	10.7MHz, 50mV continuous wave			No need to adjust		
FM - RF						
FM	108MHz	mod=1kHz Δf=±2.5kHz	106MHz	VC001	MAX	MAX
	87.5MHz		90.1MHz	L001		
AM IF						
AM	450kHz	Δf = ±0.5kHz V _{RF} = 3mV		T001 T002	MAX	
AM AFC MW	Connect pin 29 of IC001 (AM Osc.) with short wire to ground (pin 6)	ΔV=mV		T003		
AM RF ³⁾						
MW	1404kHz	Δf = ±30kHz V _{RF} as low as possible	1404kHz	VC001	MAX	
	576kHz		612kHz	T006		
	1400kHz		1400kHz	VC002		
	610kHz		610kHz	T006		

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Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

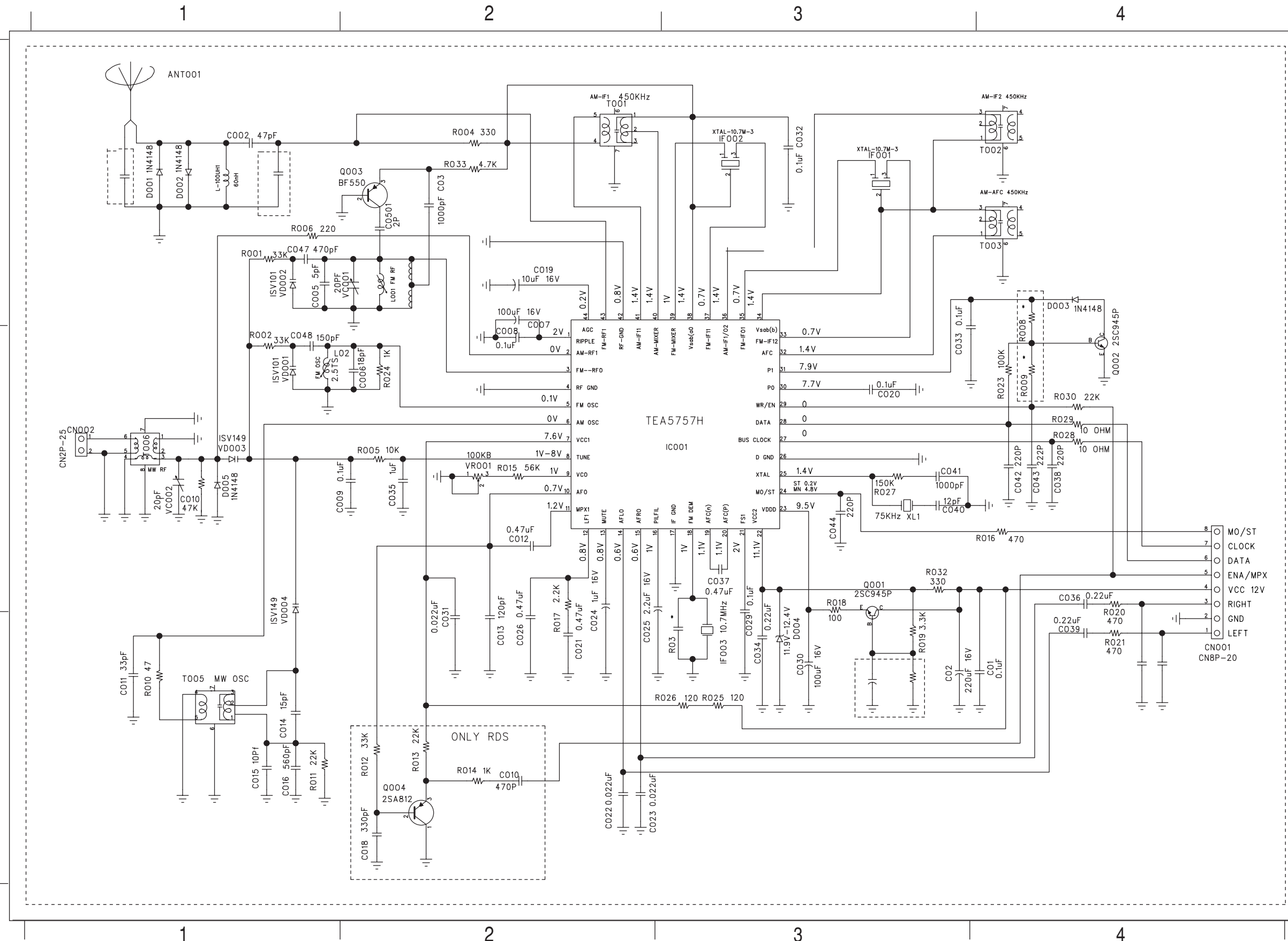
1) If sensitivity of frequency counter is too low adjust to max. channel separation
(input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while
adjusting the other one.

3) For AM RF adjustments the original frame antenna has to be used!

TUNER BOARD

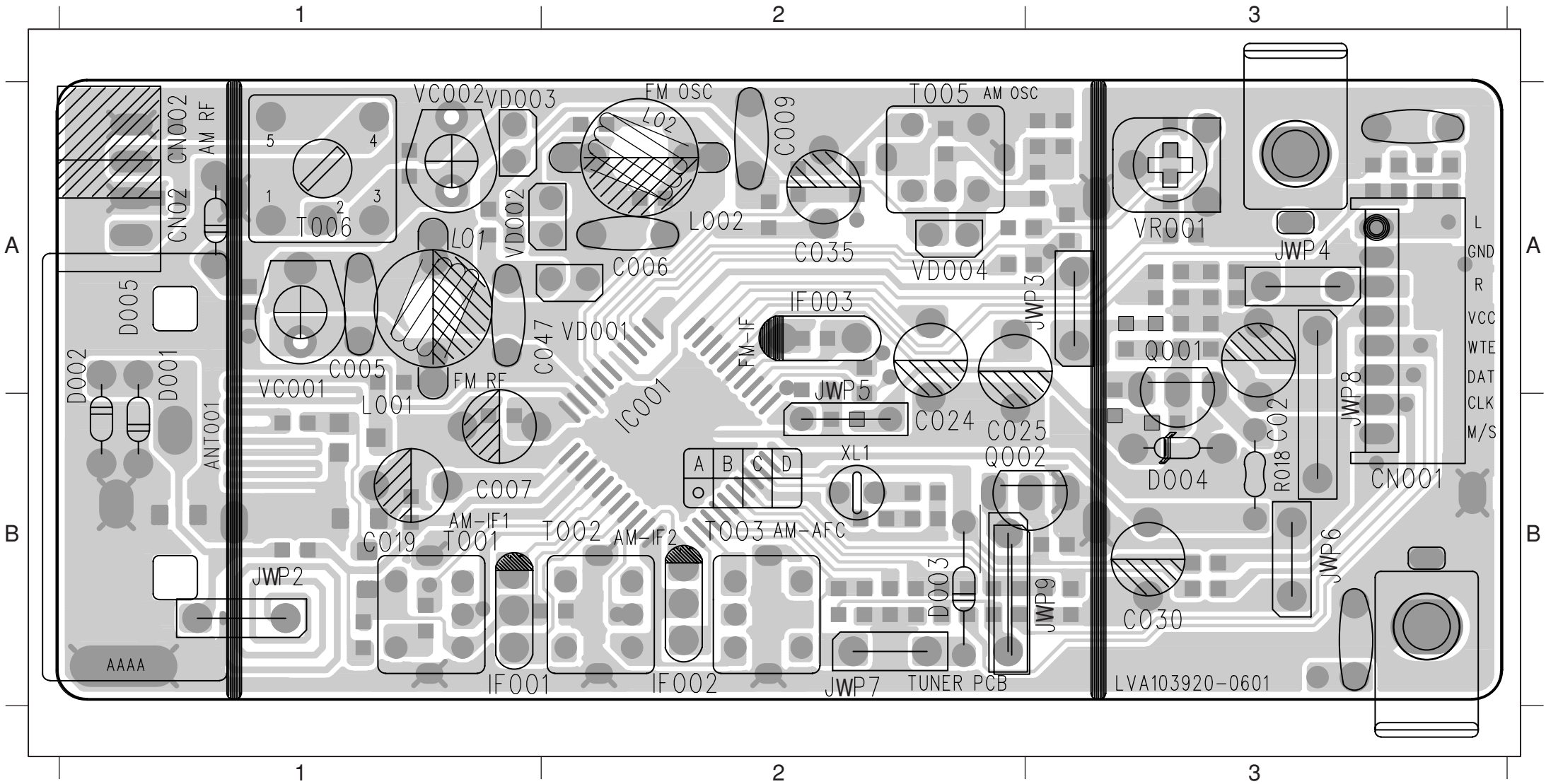
C



A	ANT001	A1	R004	A2
	C002	A1	R005	B2
	C005	A1	R006	A1
	C007	A2	R010	C1
	C006	B2	R011	C1
	C008	B2	R015	B2
	C009	B2	R016	B4
	C01	C4	R017	C2
	C02	C3	R018	B3
	C03	A2	R019	C3
	C010	B1	R020	B4
	C011	C1	R021	C4
	C012	B2	R023	B4
	C013	C2	R024	B2
	C014	C1	R025	C3
	C015	C1	R026	C3
	C016	C1	R027	B3
	C019	A2	R028	B4
	C020	B3	R029	B4
	C021	C2	R030	B4
B	C022	C2	R032	B3
	C023	C2	R033	A2
	C024	C2	T001	A2
	C025	C2	T002	A4
	C026	C2	T003	A4
	C029	C3	T005	C1
	C030	C3	T006	B1
	C031	C2	VC001	A2
	C032	A3	VC002	B1
	C033	B3	VD001	B1
	C034	C3	VD002	A1
	C035	B2	VD003	B1
	C036	B4	VD004	C1
	C037	B3	VR001	B2
	C038	B4	XL1	B3
	C039	C4		
	C040	B3		
	C041	B3		
	C042	B4		
	C	C043	B4	
C044		B3		
C047		A1		
C048		B1		
C0501		A2		
CN001		C4		
CN002		B1		
D001		A1		
D002		A1		
D003		A4		
D004		C3		
D005		B1		
IC001		B3		
IF001		A3		
IF002		A3		
IF003		C3		
L02	B1			
L001	A2			
Q001	B3			
Q002	B4			
Q003	A2			
R001	A1			
R002	B1			

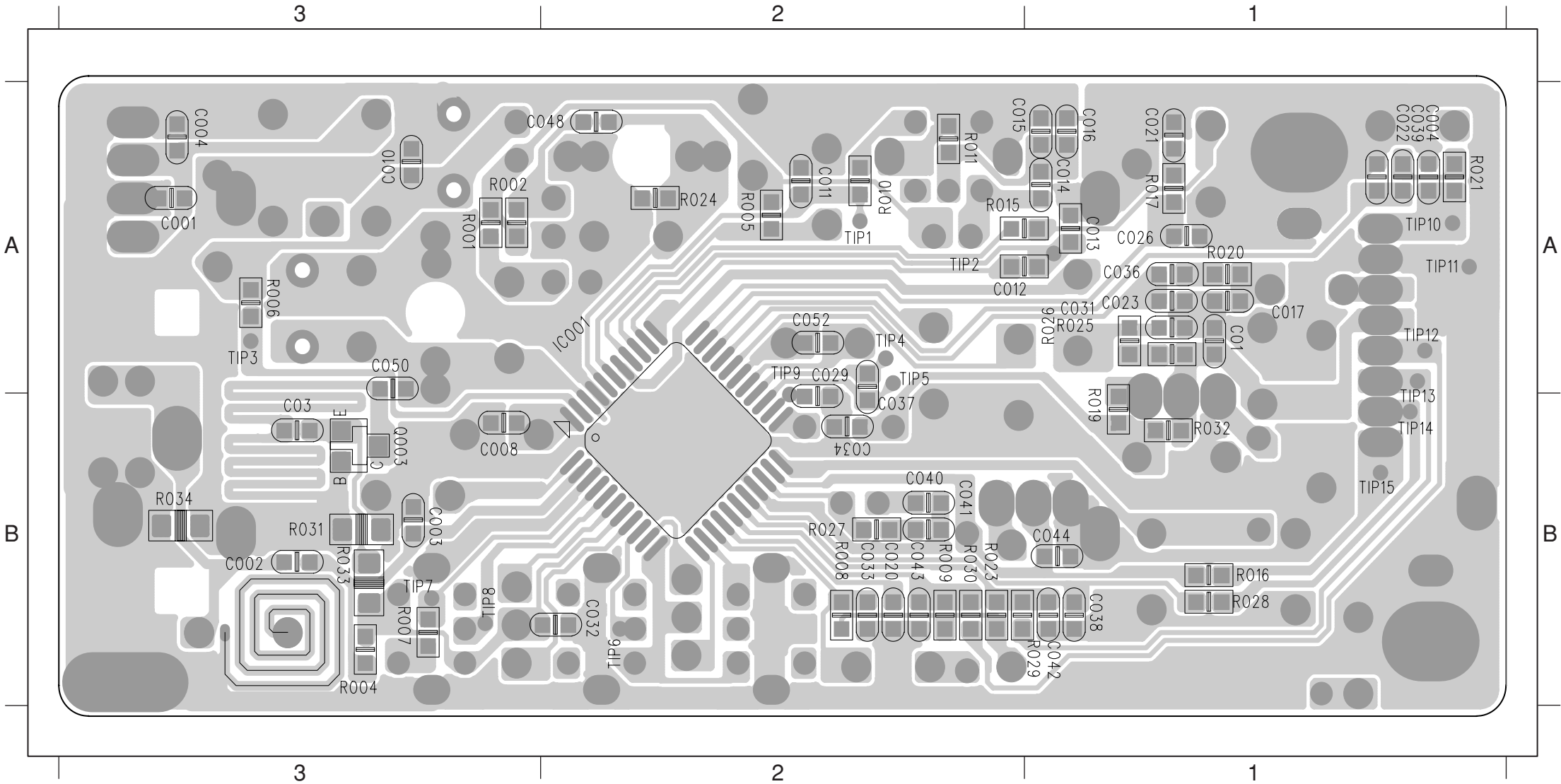
PCB LAYOUT - TUNER BOARD (TOP)

ANT001	B1	C025	B2	D002	A1	IF003	A2	JWP8	A3	T001	B1	VD001	A2
C005	A1	C030	B3	D003	B2	JWP2	B1	JWP9	B3	T002	B2	VD002	A1
C006	A2	C035	A2	D004	B3	JWP3	A3	L02	A2	T003	B2	VD003	A1
C007	B1	C047	A1	D005	A1	JWP4	A3	L001	B1	T005	A2	VD004	A2
C009	A2	CN001	B3	IC001	B2	JWP5	B2	Q001	A3	T006	A1	VR001	A3
C019	B1	CN002	A1	IF001	B1	JWP6	B3	Q002	B2	VC001	A1	XL1	B2
C024	B2	D001	A1	IF002	B2	JWP7	B2	R018	B3	VC002	A1		



PCB LAYOUT - TUNER BOARD (BOTTOM)

C01	A3	C013	A3	C023	A3	C037	A2	C048	A2	R005	A2	R019	B3	R028	B3
C03	B3	C014	A3	C026	A3	C038	B3	C050	A3	R006	A3	R020	A3	R029	B3
C001	A3	C015	A2	C029	A2	C039	A3	C052	A2	R007	B3	R021	A3	R030	B2
C002	B3	C016	A3	C031	A3	C040	B2	IC001	A2	R010	A2	R023	B2	R031	B3
C008	B3	C020	B2	C032	A2	C041	B2	Q003	B3	R011	A2	R024	A2	R032	B3
C010	A3	C021	A3	C033	B2	C042	B3	R001	A3	R015	A2	R025	A3	R033	B3
C011	A2	C022	A3	C034	B2	C043	B2	R002	A3	R016	B3	R026	A3	R034	B3
C012	A2	C023	A3	C036	A3	C044	B3	R004	B3	R017	A3	R027	B2		



ELECTRICAL PARTS LIST - TUNER BOARD

MISCELLANEOUS

ANT001	9965 000 24668	RF JACK MALE TYPE 75 OHM
CN002	9965 000 25150	CONNECTOR S2B-XH-A 2P
IF001	9965 000 24669	CER FILTER 10.7MHz
IF002	9965 000 24670	CER FILTER 10.7MHz
IF003	9965 000 24671	CER FILTER CDA10.7MG-18A
L001	9965 000 23587	MOULDED COIL 2.5T 57-89nH
L02	9965 000 23586	SPRING COIL 0.8X4.5DX(1~2)2.5T
T001	9965 000 24672	AM IFT 450kHz 180pF Q=80MIN
T002	9965 000 24673	AM IFT 450kHz 180pF Q=80MIN
T003	9965 000 24673	AM IFT 450kHz 180pF Q=80MIN
T005	9965 000 24674	OSC COIL AM 120uH (796kHz)
T006	9965 000 24675	ANT OSC AM 4-6:10T 1-3:86T
VC001	9965 000 24676	CONDTRIM3-10pFNP0PB<1000PPM
VC002	9965 000 24676	CONDTRIM3-10pFNP0PB<1000PPM
VR001	9965 000 24677	CNTL TRIMR 50KB 30% P=5x5mm
XL1	9965 000 23588	CRYSTAL 75kHz +/-15 PPMCOLUMN

DIODES

D001	4822 130 30621	1N4148
D002	4822 130 30621	1N4148
D003	4822 130 30621	1N4148
D004	9965 000 17375	11.9-12.4V 0.5W
D005	4822 130 30621	1N4148
VD001	4822 130 30621	1N4148
VD002	4822 130 30621	1N4148
VD003	4822 130 81673	1SV149
VD004	4822 130 81673	1SV149

TRANSISTORS & INTEGRATED CIRCUITS

Q001	4822 130 41198	2SC945P
Q002	4822 130 41198	2SC945P
Q003	9965 000 22272	XISTR PNP BF550 SOT23
IC001	9965 000 22265	IC 44 PIN TEA5757H QFP44

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

VOLTAGES

IC001 (TEA5757H)																				
PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOLTAGE(FM)	2.1	0.01	0.01	0.01	0.01	0.01	7.21	4.49	1	0.7	1.24	0.83	0.77	0.63	0.64	1.01	0.01	0	1.15	1.15
VOLTAGE(AM)	2.1	0.01	0.01	0.01	0.01	0.01	7.45	1.12	1.36	0.58	1.24	0.18	0.77	0.63	0.64	1.01	0.01	0	1.15	1.15
PIN	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
VOLTAGE(FM)	1.94	10.9	9.13	1.26	1.92	0.01	0.19	0.52	0.2	0.01	0.01	1.43	0.75	1.43	0.7	1.43	0.62	1.35	1.02	1.34
VOLTAGE(AM)	1.94	10.9	9.13	1.2	1.88	0.01	0.19	0.52	0.2	0.01	0.01	1.43	1.44	1.47	1.42	1.47	1.32	1.35	1.41	1.37
PIN	41	42	43	44																
VOLTAGE(FM)	1.35	0.01	0.75	0.15																
VOLTAGE(AM)	1.35	0.01	0.75	0.43																

Q003 (BF550)

PIN	1	2	3
VOLTAGE(FM)	0.01	0.66	0.01
VOLTAGE(AM)	0.01	0.66	0.01

Q001 (2SC945)

PIN	1	2	3
VOLTAGE(FM)	0.07	-0.03	1.3
VOLTAGE(AM)	0.08	0.01	1.24

Q002 (2SC945)

PIN	1	2	3
VOLTAGE(FM)	10.12	11.8	10.77
VOLTAGE(AM)	10.17	11.81	10.82

DVD LOADER

(For Information only)

It is not recommended for component repair on this module but to replace the module when it becomes defective.

Therefore no service parts list is published in this chapter.

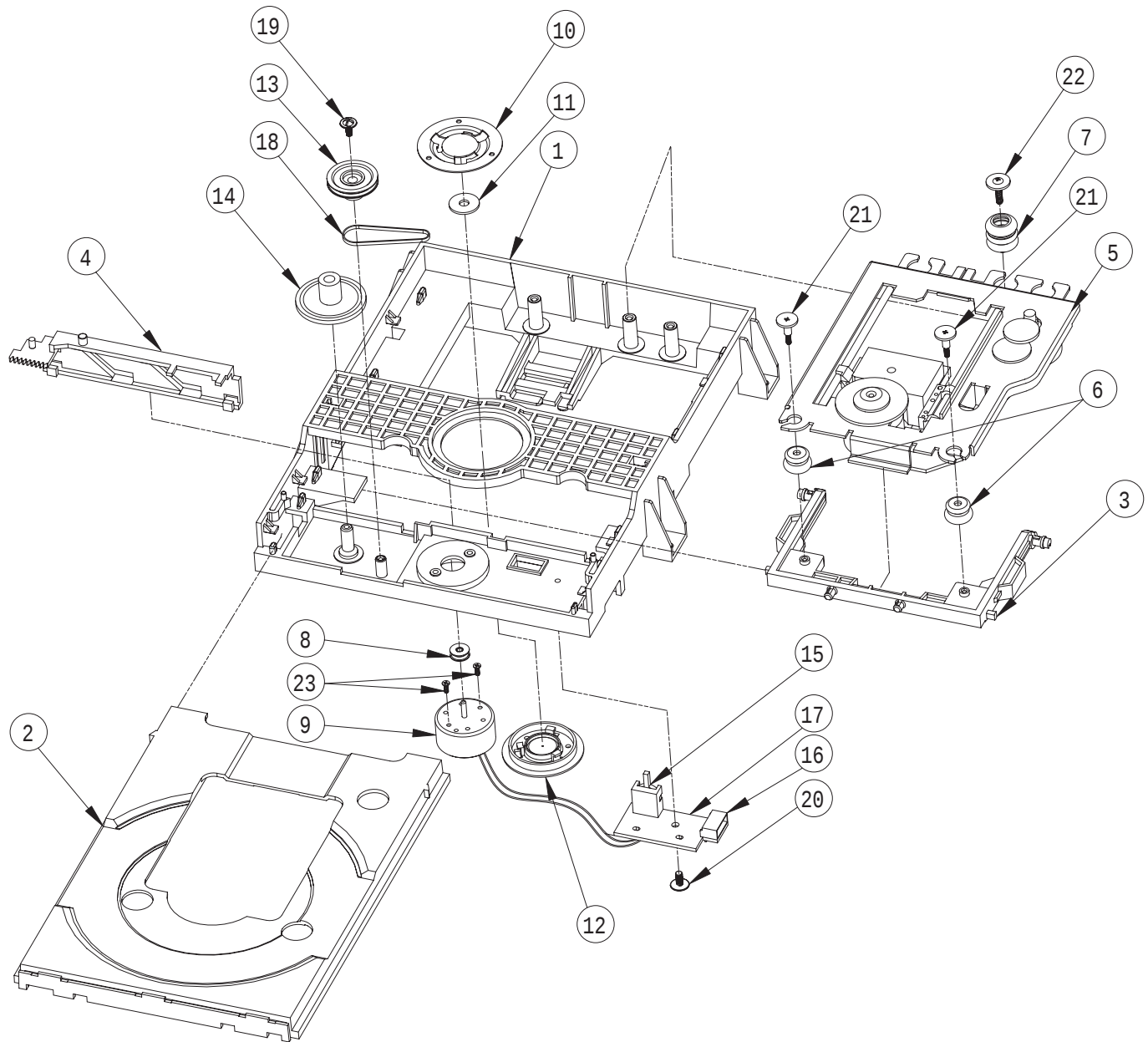
The only service part available for replacement is:

DVD MECH. LOADER ASSY 9965 000 23573

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Exploded View

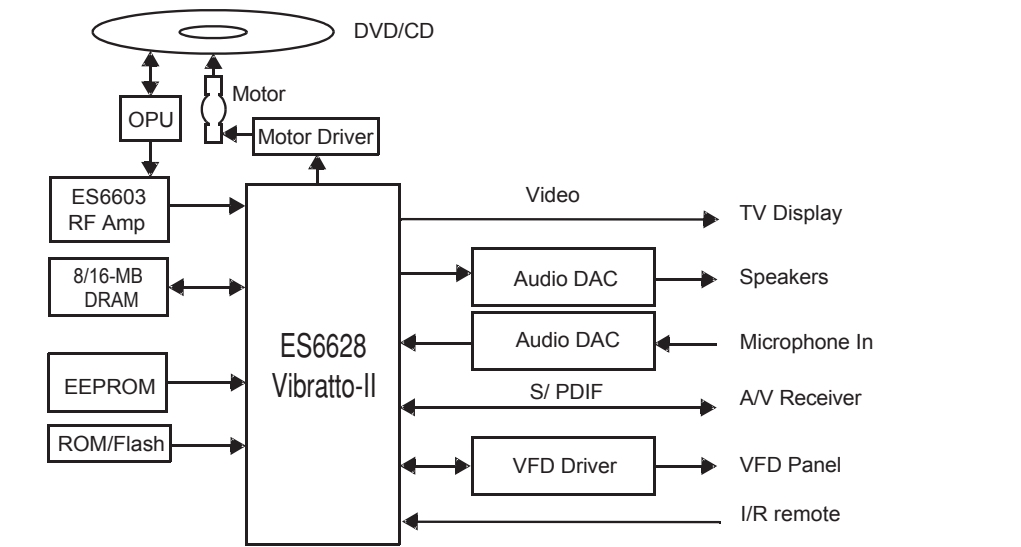


MAIN BOARD

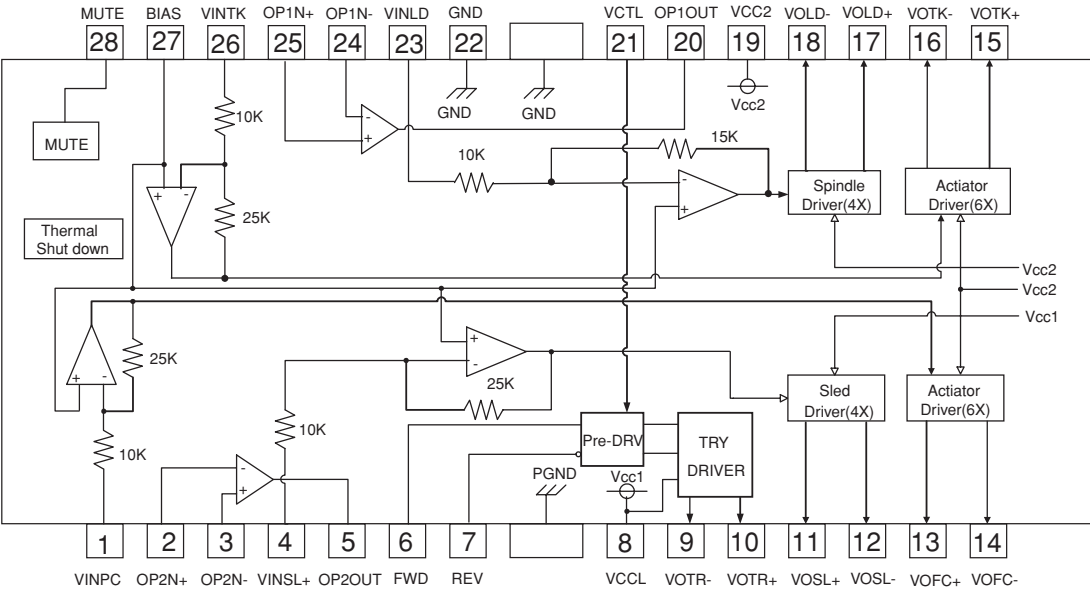
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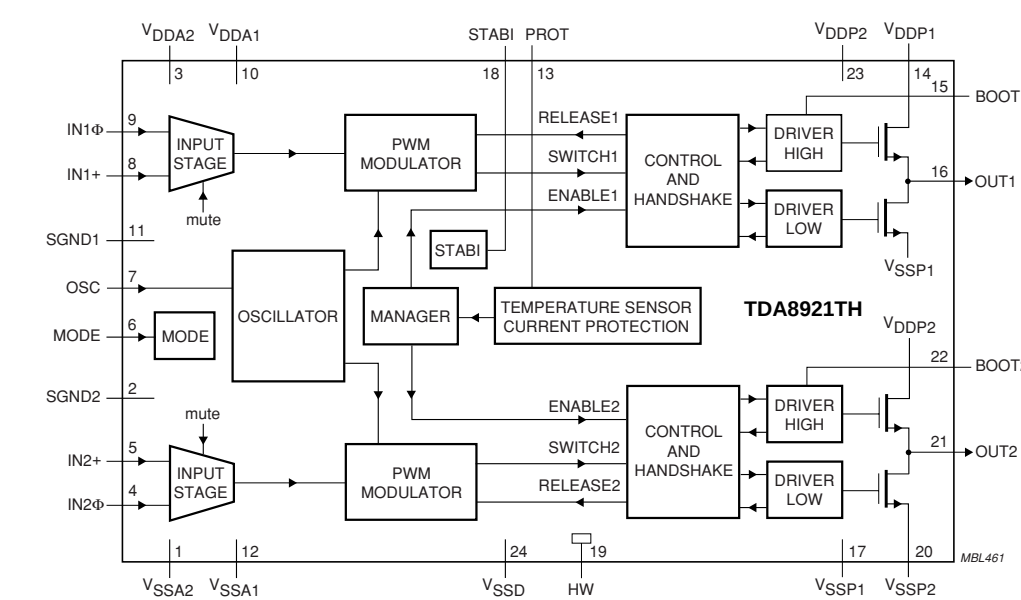
ES6628F INTERNAL IC DIAGRAM



AM5868S INTERNAL IC DIAGRAM



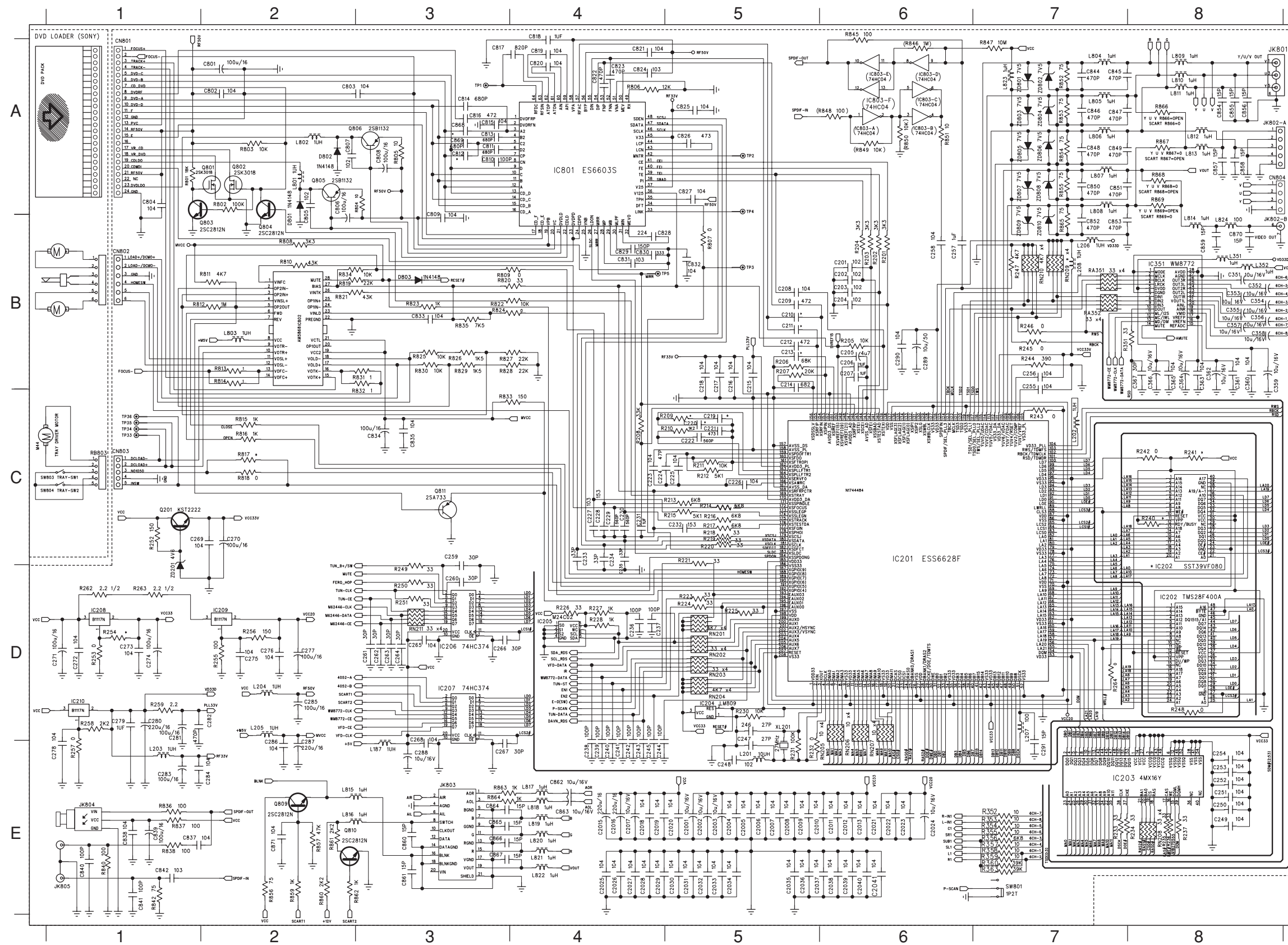
TDA8921TH INTERNAL IC DIAGRAM



VOLTAGES

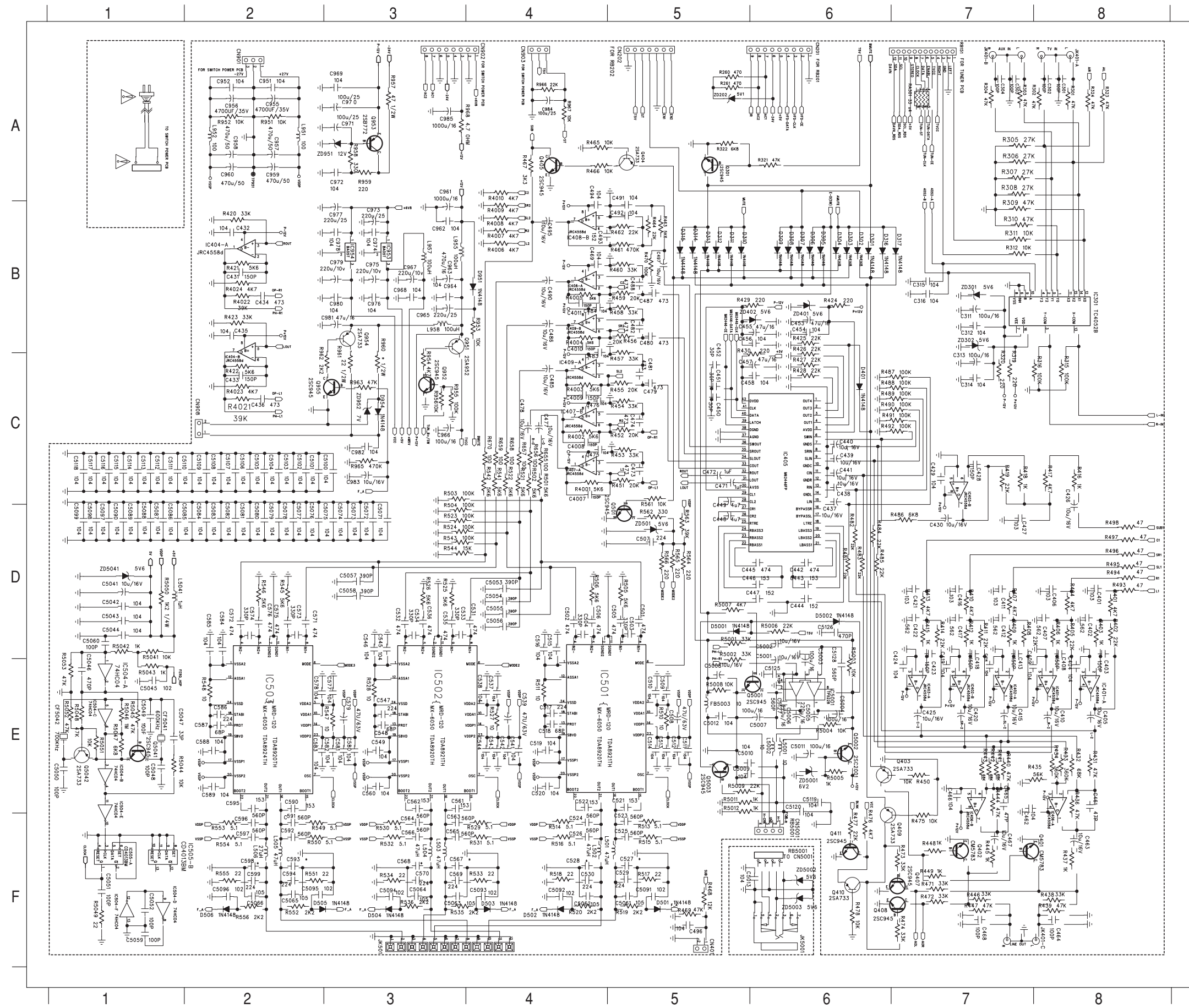
IC201 (ES6628)																				
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.3	1.77	1.77	1.77	3.3	3.3	3.3	1.5	0	3.3	1.4	1.5	1.5	1.5	1	0	0	0	3.3	0.1
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	3.3	2.8	3.1	3	0.2	0	2	0.2	3.3	3	1.3	1.3	1.4	0	3.3	1.4	1.3	1.3	1.2	1.3
PIN NO	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Voltage	1.4	1.4	0	3.3	1.5	1.1	1.2	1.2	1.2	1.3	1.6	0	3.3	0.1	3.3	0	0	0	0	0
PIN NO	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Voltage	0	3.3	1.3	1.6	2.6	1.8	1.2	2.5	0.7	0	2	2	1.1	1.7	2	2.6	2	0	3.3	2
PIN NO	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Voltage	2	2	3.3	3.3	3.3	0	2	0	3.3	0	0.7	0.9	1.7	1.4	0	3.3	1.7	1.8	1.6	1
PIN NO	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Voltage	1.2	1.6	1.6	3.3	0	1.3	2.1	1.3	3.3	0.6	3.3	0	1	0.8	0.7	1.6	1	0	0	0
PIN NO	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Voltage	0	1.5	1.6	1.6	1.2	3.3	0	3.3	3	3.6	3.6	3.6	0.2	3.3	3.3	3.3	0	2	1.3	0
PIN NO	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Voltage	2	1.6	0	1.6	1.5	0	3.3	2.1	0.9	1.5	1.3	3.3	1.5	1.5	1.5	1.5	0	0	1.5	1.5
PIN NO	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Voltage	1.5	3.3	0.6	2.19	1.5	1.5	0	1.5	3	3.3	2.1	1.5	1.7	1.5	1.6	1.7	2.5	2.5	0	2.4
PIN NO	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
Voltage	3.3	0	3.3	3.3	3.3	0	0	2.4	0	2.4	0	0.7	3.3	3.3	3.3	0	0	2.1	5	5
PIN NO	201	202	203	204	205	206	207	208												
Voltage	-0.4	-0.4	-0.4	4	4	3.3	3.1	0												
IC202 (MBM29LV160)																				
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	1.2	1.7	2.6	2	1.2	2.5	0.7	0	0	0	3.2	0	0	1.3	0	0	2.1	2.5	1.7
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	2	1.9	2.1	2.1	2.1	0	0	0	1.8	1.2	1.9	1.7	1.2	1.3	1.2	3.3	1.5	1.2	2	1.2
PIN NO	41	42	43	44	45	46	47	48												
Voltage	1.7	1.2	1.5	2	0	0	0	0												
IC203 (SD41620HGT)																				
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.3	1.3	3.3	1.2	1.4	0	1.4	1.3	3.3	1.1	1.1	0	1.4	3.3	0.1	3	3.1	3	2.8	0.2
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0.2	0.1	0	0	0.5	1.5	3.3	0	1.4	1.5	1.5	1.5	1	0	0.1	1.6	3.3	1.6	0.1	0
PIN NO	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
Voltage	0	1.2	3.3	1.2	1.2	0	1.1	1.1	3.3	1.4	1.5	0	1.4	0						
IC206 (74F374D)																				
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	3.8	1.2	1.7	3.8	4.3	1.4	0.8	0.1	0	5	4	0.1	1.5	4	0	1.9	1.2	3.5	3.3
PIN NO	21	22																		
Voltage	4.5	0																		
IC207 (74F374D)																				
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	3.8	1.2	1.7	3.8	4.3	1.4	0.8	0.1	0	5	4	0.1	1.5	4	0	1.9	1.2	3.5	3.3
PIN NO	21	22																		
Voltage	4.5	0																		
IC209 (B1117N)																				
PIN NO	1	2	3																	
Voltage	3.3	2.2	1.0																	
IC210 (B1117N)																				
PIN NO	1	2	3																	
Voltage	5	3.3	0																	
IC301 (CD4052BM)																				
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Voltage	0	0	0	0	0	0	5.6	0	3.8	3.8	0	0.1	0	0	0	5.8				
IC351 (WM8772)																				
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	1.7	1.7	3.3	0	0	0	0	0	0	0	0	0	5	5	0	5	5	0	0
PIN NO	21	22	23	24	25	26	27	28												
Voltage	0	0	0	0	0	0	0	5												
IC401 (RC4558)																				
PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												
IC402 (RC4558)																				
PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												
IC403 (RC4558)																				
PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												
IC404 (RC4558)																				
PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

IC405 (M62446FP)																						
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Voltage	0	0	0	0	5.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
Voltage	4.5	0	0	0	0	0	0	0	0	-6	0	0	0	0	0	0	0	0	0.1	0.1		
PIN NO	41	42																				
Voltage	4.6	4.9																				
IC406 (RC4558)																						
PIN NO	1	2	3	4	5	6	7	8														
Voltage	0	0	0	-12	0	0	0	12														
IC407 (RC4558)																						
PIN NO	1	2	3	4	5	6	7	8														
Voltage	0	0	0	-12	0	0	0	12														
IC408 (RC4558)																						
PIN NO	1	2	3	4	5	6	7	8														
Voltage	0	0	0	-12	0	0	0	12														
IC409 (RC4558)																						
PIN NO	1	2	3	4	5	6	7	8														
Voltage	0	0	0	-12	0	0	0	12														
IC501 (TDA8921TH)																						
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Voltage	1.5	0.7	2	1.5	4.6	0	0	4.5	0	0	2.1	2.2	2.2	1.8	2.1	2.1	1.1	3.1	4.5	0.1		
PIN NO	21	22																				
Voltage	1.2	1.1																				
IC5001 (APA3541)																						
PIN NO	1	2	3	4	5	6	7	8														
Voltage	2.7	0	2.7	0	2.7	2.7	2.7	5.7														
IC502 (TDA8921TH)																						
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Voltage	1.5	0.7	2	1.5	4.6	0	0	4.5	0	0	2.1	2.2	2.2	1.8	2.1	2.1	1.1	3.1	4.5	0.1		
PIN NO	21	22																				
Voltage	1.2	1.1																				
IC503 (TDA8921TH)																						
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Voltage	1.5	0.7	2	1.5	4.6	0	0	4.5	0	0	2.1	2.2	2.2	1.8	2.1	2.1	1.1	3.1	4.5	0.1		
PIN NO	21	22																				
Voltage	1.2	1.1																				
IC504 (74LVC04AD)																						
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14								
Voltage	4.1	0	2.6	3	2.5	2.6	0	0	5.7	2.6	3	5.7	0	5.7								
IC801 (ES6603)																						
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Voltage	3.5	3.5	2.6	2.6	2.6	2.6	3.8	3.8	2.7	2.6	2.7	2.7	2.6	2.6	2.7	2.7	2.6	2.6	5.1	2.6		
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
Voltage	3.9	5.1	0.2	0.2	0	3.3	0	2.6	0	0	0	1.5	2.4	0	3.9	1.6	3.3	2	1.5	1.6		
PIN NO	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60		
Voltage	1.6	2	4.2	4.2	3.3	3.3	2.7	0	1.5	0	0	2.5	2.5	3.5	3.5	2.5	2.4	5.1	4.3	4.3		
PIN NO	61	62	63	64																		
Voltage	3.2	3.1	0.8	3																		
IC802 (AM5868)																						
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Voltage	1.5	0.7	2	1.5	4.6	0	0	4.5	0	0	2.1	2.2	2.2	1.8	2.1	2.1	1.1	3.1	4.5	0.1		
PIN NO	21	22	23	24	25	26	27	28	29	30												
Voltage	0	0	1.2	1.1	1.2	1.5	1.5	2	0	0												
IC953 (BA05T)					IC953 (BA05T)					Q301 (2SC1623)					Q401 (CM5783GR)							
Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3							
Voltage 6.8 0 5					Voltage 6.8 0 5					Voltage 0.6 0 0					Voltage 0.6 0 0							
Q402 (CM5783GR)					Q403 (2SA812)					Q5001 (2SC1623)					Q5002 (2SL2001)							
Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3							
Voltage 0.6 0 0					Voltage 0.1 0.7 0.7					Voltage 0.6 0 0					Voltage 5.6 14.4 6.2							
Q5003 (2SC1623)					Q5041 (2SC1623)					Q5042 (2SC1623)					Q501 (2SC1623)							
Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3							
Voltage 0 1.9 0					Voltage 0.6 0 0					Voltage 0.6 0 0					Voltage 0.6 0 0							
Q801 (2SK3018)					Q802 (2SC1623)					Q803 (2SC1623)					Q804 (2SC1623)							
Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3							
Voltage 0 0 0					Voltage 2.3 0 0					Voltage 0 2.3 0					Voltage 0.6 0 0							
Q805 (2SB1132Q)					Q806 (2SB1132Q)					Q811 (2SA812)					Q951 (2SA952)							
Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3					Pin No. 1 2 3							
Voltage 4.8 0 4.8					Voltage 3.8 2.0 0					Voltage 0.1 0 0.8					Voltage 14 14							
Q952 (2SC1623)					Q953 (2SB772P)																	
Pin No. 1 2 3					Pin No. 1 2 3																	
Voltage 0.6 0 0					Voltage -12 -24 -13																	



A	C201	B6	C801	A2	IC801	A4	R801	A1
	C202	B6	C802	A2	IC802	B2	R802	A2
	C203	B6	C803	A3	JK801	A8	R803	A2
	C204	B6	C804	A1	JK802-A	A8	R804	A3
	C205	B6	C805	B2	JK802-B	B8	R805	A3
	C206	B6	C806	A2	LK805	E1	R806	A4
	C207	B6	C807	A2	L187	E3	R807	A5
	C208	B5	C808	A3	L201	E5	R808	B2
	C209	B5	C809	B3	L202	C7	R809	B2
	C210	B5	C810	A3	L203	D1	R810	B2
A	C214	B5	C811	A3	L204	D2	R811	B2
	C215	B5	C812	A3	L205	E2	R812	B2
	C216	B5	C813	A3	L206	B7	R813	B2
	C217	B5	C814	A3	L207	D7	R814	B2
	C218	B5	C815	A3	L351	B8	R815	C2
	C221	C5	C816	A3	L352	B8	R816	C2
	C222	C5	C817	A4	L801	A2	R818	C2
	C223	C4	C818	A4	L802	A2	R819	B2
	C224	C4	C819	A4	L803	B2	R820	B3
	C225	C5	C820	A4	L804	A7	R821	B2
B	C226	C5	C821	A4	L805	A7	R822	B3
	C227	C4	C822	A4	L806	A7	R823	B3
	C228	C4	C823	A4	L807	A7	R824	B3
	C229	C4	C824	A4	L808	B7	R825	B3
	C230	C4	C825	A5	L809	A8	R826	B3
	C231	C4	C826	A5	L810	A8	R827	B3
	C232	C5	C827	A5	L811	A8	R828	B4
	C233	C4	C828	B4	L812	A8	R829	B3
	C234	C4	C830	B4	L813	A8	R830	B3
	C235	C4	C831	B4	L814	B8	R831	B3
B	C236	D4	C832	B5	L823	A7	R832	B3
	C237	D4	C833	B3	Q801	A2	R833	C3
	C238	D4	C834	C3	Q802	A2	R834	B2
	C239	D4	C835	C3	Q803	B2	R835	B3
	C240	D4	C837	E2	Q804	B2	R838	E1
	C241	D4	C840	E1	Q805	A2	R840	E1
	C242	D4	C841	E1	Q806	A3	R845	A6
	C243	D4	C844	A7	Q811	C3	R850	A6
	C244	D4	C845	A7	R201	B6	R852	A7
	C245	D4	C846	A7	R202	B6	R853	A7
C	C246	D6	C847	A7	R203	B6	R854	A7
	C247	D6	C848	A7	R204	B6	R855	A7
	C248	E5	C849	A7	R205	B6	R865	B7
	C249	E8	C850	A7	R206	B5	RA351	B7
	C250	E8	C851	A7	R207	B5	RA352	B7
	C251	E8	C852	B7	R208	C4	RN201	D6
	C252	E8	C853	B7	R210	C5	RN202	D6
	C253	E8	C854	A8	R211	C5	RN203	D6
	C254	E8	C855	A8	R212	C5	RN204	D6
	C255	B7	C856	A8	R213	C5	RN205	D6
C	C256	B7	C857	A8	R214	C5	RN206	D6
	C257	B6	C858	A8	R215	C5	RN207	D6
	C259	C3	C859	B8	R216	C5	RN208	E8
	C260	D3	C2001	E5	R217	C5	RN210	B7
	C261	D3	C2002	E5	R218	C5	RN211	D3
	C262	D3	C2003	E5	R219	C5	SW804	C1
	C263	D3	C2004	E5	R220	C5	XL201	E5
	C264	D3	C2005	E5	R221	C5	ZD801	A7
	C265	D3	C2006	E5	R223	D6	ZD802	A7
	C266	D3	C2007	E5	R224	D6	ZD803	A7
D	C267	E3	C2008	E5	R225	D6	ZD804	A7
	C268	D3	C2009	E6	R226	D4	ZD805	A7
	C269	C2	C2010	E6	R227	D4	ZD806	A7
	C270	C2	C2011	E6	R228	D4	ZD807	A7
	C271	D1	C2012	E6	R230	D6	ZD808	A7
	C272	D1	C2013	E6	R231	E5	ZD809	B7
	C273	D1	C2015	E5	R232	D5	ZD810	B7
	C274	D1	C2016	E5	R233	E7		
	C275	D2	C2017	E5	R234	E7		
	C276	D2	C2018	E5	R235	E8		
D	C277	D2	C2019	E5	R236	E8		
	C278	E1	C2020	E5	R237	E8		
	C279	D1	C2021	E6	R242	C8		
	C280	D1	C2022	E6	R243	C7		
	C281	D1	C2023	E6	R244	B7		
	C282	D2	C2024	E6	R245	B7		
	C283	E1	C2025	E6	R246	B7		
	C284	E2	C2026	E6	R247	B7		
	C285	D2	C2027	E6	R248	D8		
	C286	E2	C2028	E6	R249	D8		
E	C287	E2	C2029	E6	R250	D3		
	C288	E3	C2030	E6	R251	D3		
	C289	B6	C2031	E6	R253	D1		
	C290	B6	C2032	E6	R255	D2		
	C351	B8	CN801	A1	R256	D2		
	C352	B8	CN802	B1	R257	E1		
	C353	B8	CN803	C1	R258	D1		
	C354	B8	D801	B2	R259	D1		
	C355	B8	D802	A2	R262	D1		
	C356	B8	D803	B3	R263	D1		
E	C357	B8	IC201	C6	R351	B7		
	C358	B8	IC202	C8	R352	E7		
	C359	B8	IC203	E7	R353	E7		
	C360	B8	IC204	D6	R354	E7		
	C361	B8	IC205	D4	R355	E7		
	C362	B8	IC206	D3	R356	E7		
	C363	B8	IC207	D3	R357	E7		
	C364	B8	IC208	D1	R358	E7		
	C365	B8	IC209	D2	R359	E7		
	C366	B8	IC210	D1	R360	E7		
C367	B7	IC351	B8	R363	E7			

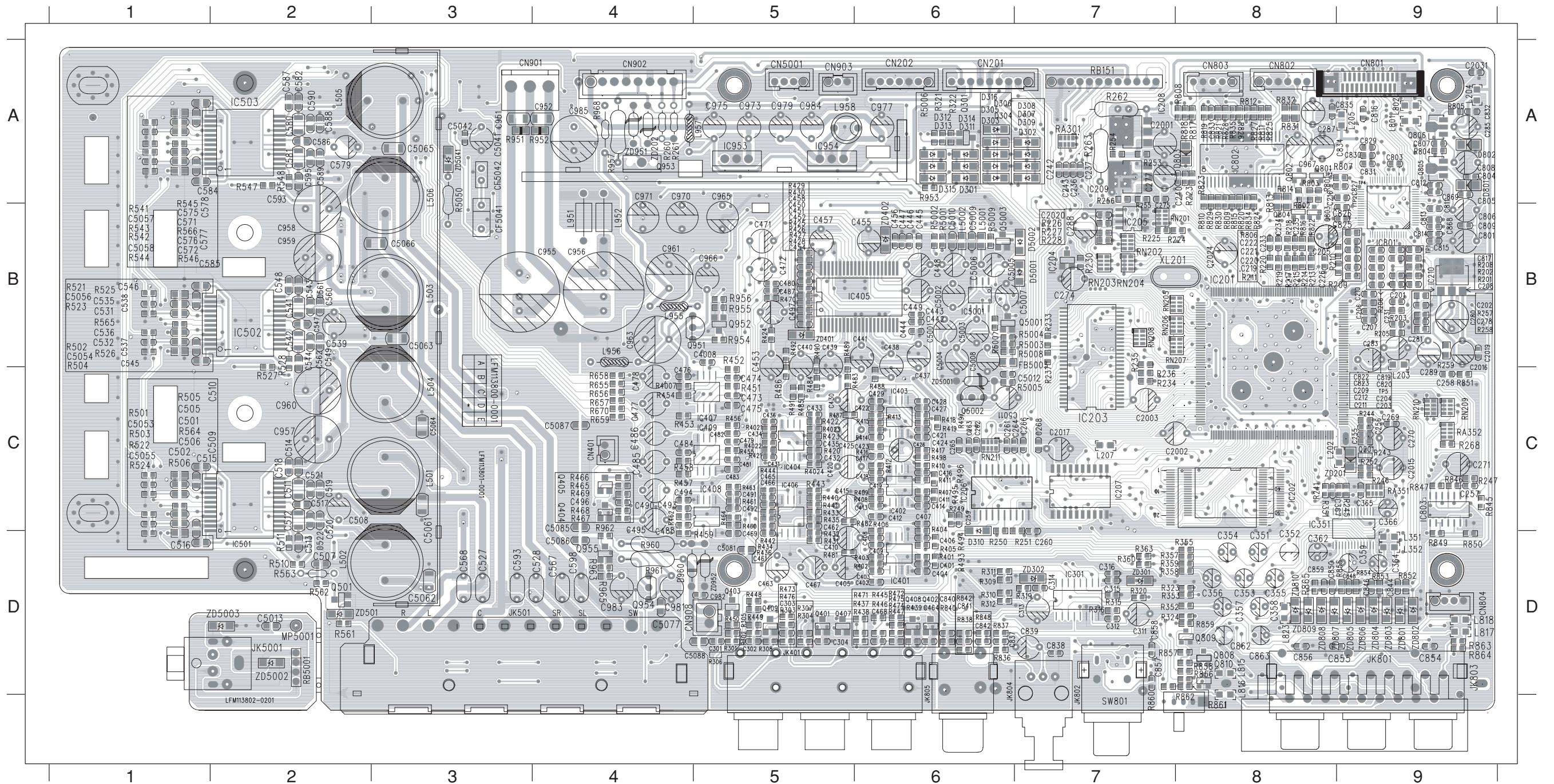
CIRCUIT DIAGRAM (2)- MAIN BOARD



C301	A8	C515	D4	C5005	E6	L502	F4	R481	D6	R5045	D1
C302	A8	C516	D4	C5006	E6	L503	F3	R482	D6	R5046	D1
C303	A7	C517	E4	C5007	E5	L504	F3	R483	D6	R5047	E1
C304	A7	C518	E4	C5008	E5	L505	F2	R484	D6	R5048	D1
C311	A7	C519	E4	C5009	E5	L506	F2	R485	D6	R5049	F1
C312	B7	C520	E4	C5010	E6	L507	A2	R486	D7	R5050	D1
C313	C7	C521	F5	C5011	E6	L508	A2	R487	C7	RA301	A7
C314	C7	C522	E4	C5012	E5	L509	B3	R488	C7	RB151	A7
C315	B7	C523	F5	C5013	D1	L510	B3	R489	C7	RB5001	F6
C316	B7	C524	F5	C5014	D1	L511	B3	R490	C7	ZD202	A5
C402	D8	C525	F4	C5015	D1	L512	E6	R491	C7	ZD301	B7
C403	E8	C526	F4	C5016	D1	L513	E6	R492	C7	ZD302	B7
C404	E8	C527	F4	C5017	D1	L514	E6	R493	D8	ZD501	B6
C405	E8	C528	F4	C5018	D1	L515	E6	R494	D8	ZD502	B5
C406	D8	C529	F4	C5019	D1	L516	E6	R495	D8	ZD503	D6
C407	E8	C530	F4	C5020	D1	L517	E6	R496	D8	ZD504	D5
C408	E8	C531	F4	C5021	D1	L518	E6	R497	D8	ZD505	E1
C409	E8	C532	F4	C5022	D1	L519	E6	R498	D8	ZD506	E1
C410	E8	C533	F4	C5023	D1	L520	E6	R499	D8	ZD507	E1
C411	D6	C534	D3	C5024	D4	L521	E6	R500	C4		
C412	D7	C535	D3	C5025	D4	L522	E6	R501	C4		
C413	E7	C536	D3	C5026	D4	L523	E6	R502	C4		
C414	E7	C537	D3	C5027	D4	L524	E6	R503	C4		
C415	E7	C538	D3	C5028	D4	L525	E6	R504	C4		
C416	D7	C539	D3	C5029	D4	L526	E6	R505	C4		
C417	D7	C540	D3	C5030	D4	L527	E6	R506	C4		
C418	E7	C541	D3	C5031	D4	L528	E6	R507	C4		
C419	E7	C542	D3	C5032	D4	L529	E6	R508	C4		
C420	E7	C543	D3	C5033	D4	L530	E6	R509	C4		
C421	D7	C544	D3	C5034	D4	L531	E6	R510	C4		
C422	D7	C545	D3	C5035	D4	L532	E6	R511	C4		
C423	E7	C546	D3	C5036	D4	L533	E6	R512	C4		
C424	E7	C547	D3	C5037	D4	L534	E6	R513	C4		
C425	E7	C548	D3	C5038	D4	L535	E6	R514	C4		
C426	C8	C549	E3	C5039	D3	L536	E6	R515	C4		
C427	D7	C550	D3	C5040	D4	L537	E6	R516	C4		
C428	C7	C551	F3	C5041	D3	L538	E6	R517	C4		
C429	C7	C552	F3	C5042	D3	L539	E6	R518	C4		
C430	D7	C553	F3	C5043	D3	L540	E6	R519	C4		
C431	B2	C554	F3	C5044	D3	L541	E6	R520	C4		
C432	B2	C555	F3	C5045	D3	L542	E6	R521	C4		
C433	C2	C556	F3	C5046	D3	L543	E6	R522	C4		
C434	B2	C557	F3	C5047	D3	L544	E6	R523	C4		
C435	B2	C558	F3	C5048	D3	L545	E6	R524	C4		
C436	C2	C559	F3	C5049	D3	L546	E6	R525	C4		
C437	D6	C560	F3	C5050	D3	L547	E6	R526	C4		
C438	C6	C561	D2	C5051	D3	L548	E6	R527	C4		
C439	C6	C562	D2	C5052	D3	L549	E6	R528	C4		
C440	C6	C563	D2	C5053	D3	L550	E6	R529	C4		
C441	C6	C564	D2	C5054	D3	L551	E6	R530	C4		
C442	D6	C565	D2	C5055	D3	L552	E6	R531	C4		
C443	D6	C566	D2	C5056	D3	L553	E6	R532	C4		
C444	D6	C567	D2	C5057	D3	L554	E6	R533	C4		
C445	D6	C568	D2	C5058	D3	L555	E6	R534	C4		
C446	D6	C569	D2	C5059	D3	L556	E6	R535	C4		
C447	D6	C570	D2	C5060	D3	L557	E6	R536	C4		
C448	D5	C571	E3	C5061	D3	L558	E6	R537	C4		
C449	D5	C572	E3	C5062	D3	L559	E6	R538	C4		
C450	D5	C573	E3	C5063	D3	L560	E6	R539	C4		
C451	D5	C574	E3	C5064	D3	L561	E6	R540	C4		
C452	D5	C575	E3	C5065	D3	L562	E6	R541	C4		
C453	D5	C576	E3	C5066	D3	L563	E6	R542	C4		
C454	D5	C577	E3	C5067	D3	L564	E6	R543	C4		
C455	D5	C578	E3	C5068	D3	L565	E6	R544	C4		
C456	D5	C579	E3	C5069	D3	L566	E6	R545	C4		
C457	D5	C580	E3	C5070	D3	L567	E6	R546	C4		
C458	D5	C581	E3	C5071	D3	L568	E6	R547	C4		
C459	D5	C582	E3	C5072	D3	L569	E6	R548	C4		
C460	D5	C583	E3	C5073	D3	L570	E6	R549	C4		
C461	D5	C584	E3	C5074	D3	L571	E6	R550	C4		
C462	D5	C585	E3	C5075	D3	L572	E6	R551	C4		
C463	D5	C586	E3	C5076	D3	L573	E6	R552	C4		
C464	D5	C587	E3	C5077	D3	L574	E6	R553	C4		
C465	D5	C588	E3	C5078	D3	L575	E6	R554	C4		
C466	D5	C589	E3	C5079	D3	L576	E6	R555	C4		
C467	D5	C590	E3	C5080	D3	L577	E6	R556	C4		
C468	D5	C591	E3	C5081	D3	L578	E6	R557	C4		
C469	D5	C592	E3	C5082	D3	L579	E6	R558	C4		
C470	D5	C593	E3	C5083	D3	L580	E6	R559	C4		
C471	D5	C594	E3	C5084	D3	L581	E6	R560	C4		
C472	D5	C595	E3	C5085	D3	L582	E6	R561	C4		
C473	D5	C596	E3	C5086	D3	L583	E6	R562	C4		
C474	D5	C597	E3	C5087	D3	L584	E6	R563	C4		
C475	D5	C598	E3	C5088	D3	L585	E6	R564	C4		
C476	D5	C599	E3	C5089	D3	L586	E6	R565	C4		
C477	D5	C600	E3	C5090	D3	L587	E6	R566	C4		
C478	D5	C601	E3	C5091	D3	L588	E6	R567	C4		
C479	D5	C602	E3	C5092	D3	L589	E6	R568	C4		
C480	D5	C603	E3	C5093	D3	L590	E6	R569	C4		
C481	D5	C604	E3	C5094	D3	L591	E6	R570	C4		
C482	D5	C605	E3	C5095	D3	L592	E6	R571	C4		
C483	D5	C606	E3	C5096	D3	L593	E6	R572	C4		
C484	D5	C607	E3	C5097	D3	L594	E6	R573	C4		
C485	D5	C608	E3	C5098	D3	L595	E6	R574	C4		
C486	D5	C609	E3	C5099	D3	L596	E6	R575	C4		
C487	D5	C610	E3	C5100	D3	L597	E6	R576	C4		
C488	D5	C611	E3	C5101	D3	L598	E6	R577	C4		
C489	D5	C612	E3	C5102	D3	L599	E6	R578	C4		
C490	D5	C613	E3	C5103	D3	L600	E6	R579	C4		
C491	D5	C614	E3	C5104	D3	L601	E6	R580	C4		
C492	D5	C615	E3	C5105	D3	L602	E6	R581	C4		
C493	D5	C616	E3	C5106	D3	L603	E6	R582	C4		
C494	D5	C617	E3	C5107	D3	L604	E6	R583	C4		
C495	D5	C618	E3	C5108	D3	L605	E6	R584	C4		
C496	D5	C619	E3	C5109	D3	L606	E6	R585	C4		
C497	D5	C620	E3	C5110	D3	L607	E6	R586	C4		
C498	D5	C621	E3	C5111	D3	L608	E6	R587	C4		
C499	D5	C622	E3	C5112	D3	L609	E6	R588	C4		
C500	D5	C623	E3	C5113	D3	L610	E6	R589	C4		
C501	D5	C624	E3	C5114	D3	L611	E6	R590	C4		
C502	D5	C625	E3	C5115	D3	L612	E6	R591	C4		
C503	D5	C626	E3	C5116	D3	L613	E6	R592	C4		
C504	D5	C627	E3	C5117	D3	L614	E6	R593	C4		
C505	D5	C628	E3	C5118	D3	L615	E6	R594	C4		
C506	D5	C629	E3	C5119	D3	L616	E6	R595	C4		
C507	D5	C630	E3	C5120	D3	L617	E6	R596	C4		
C508	D5	C631	E3	C5121	D3	L618	E6	R597	C4		
C509	D5	C632	E3	C5122	D3	L619	E6	R598	C4		
C510	D5	C633	E3	C5123	D3	L620	E6	R599	C4		
C511	D5	C634	E3	C5124	D3	L621	E6	R600	C4		
C512	D5	C635	E3	C5125	D3	L622	E6	R601	C4		
C513	D5	C636	E3	C5126	D3	L623	E6	R602	C4		
C514	D5	C637	E3	C5127	D3	L624	E6	R603	C4		

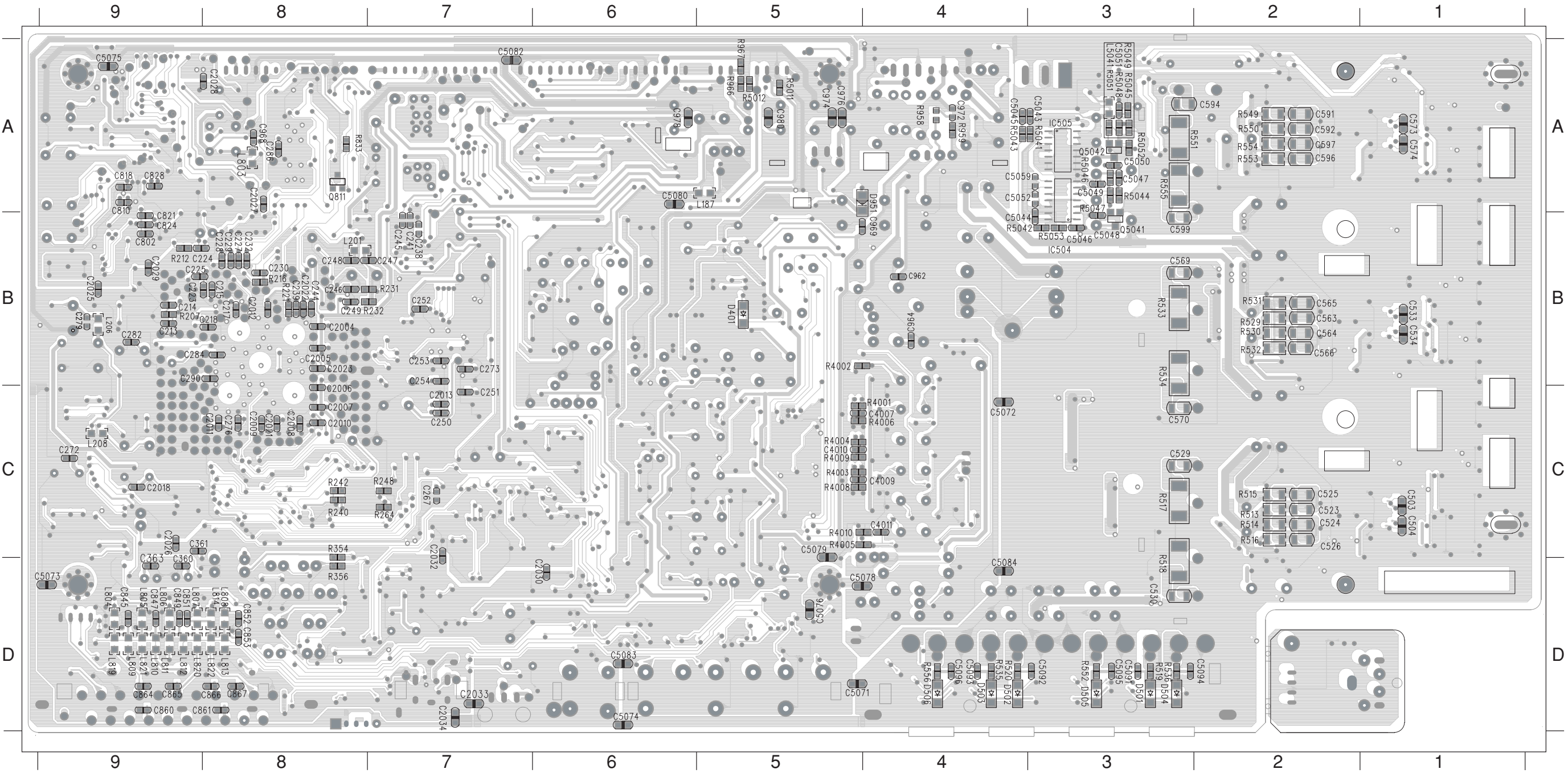
PCB LAYOUT - MAIN BOARD (TOP)

C202	B9	C261	C6	C314	D7	C412	C6	C440	B5	C474	C5	C509	C1	C546	B1	C595	A2	C834	A9	C970	A4	C5011	C6	CN801	A9	IC201	B8	IC953	A5	L957	A4	R208	B9	R249	C6	R320	D7	R411	C6	R439	D6	R472	D6	R522	C1	R802	A8	R831	A8	R5007	B6	ZD802	D9
C203	C9	C262	C6	C315	D7	C413	C6	C441	B6	C475	C5	C510	C1	C547	B2	C598	D4	C835	A9	C971	A4	C5012	B7	CN802	A8	IC202	C8	IC954	A5	L958	A5	R210	B8	R250	D6	R321	A6	R412	C6	R440	C5	R481	D5	R523	B1	R803	A8	R832	A8	R5008	B7	ZD803	D9
C204	C9	C263	C6	C316	D7	C414	C6	C442	B6	C476	B4	C511	C2	C548	B2	C601	B9	C837	D6	C973	A5	C5013	D2	CN803	A8	IC203	C7	IC5001	B6	L5001	B6	R211	B8	R251	D7	R322	A6	R413	C6	R441	C5	R482	C6	R524	C1	R804	A9	R834	B8	R5009	B6	ZD804	D9
C205	B8	C264	C6	C351	D8	C415	C5	C443	B6	C477	C4	C512	C2	C549	B2	C803	A9	C840	D6	C975	A5	C5041	A3	CN901	A4	IC204	B7	JK401	D5	L5002	B6	R213	B8	R253	A7	R323	D7	R414	C6	R442	D5	R483	C5	R525	B1	R805	A9	R835	A8	R5050	A3	ZD805	D9
C206	B9	C265	C6	C352	D8	C416	C6	C444	B6	C478	C4	C513	D2	C560	B2	C804	A9	C841	D6	C977	A6	C5042	A3	CN902	A4	IC205	B7	JK501	D3	MP5001	D2	R214	B8	R255	A7	R324	D7	R415	C6	R443	C5	R484	C5	R526	B1	R806	B8	R838	D6	RA301	A7	ZD806	D9
C207	B9	C266	C7	C353	D8	C417	C6	C445	B6	C479	C5	C514	C2	C561	B2	C805	A9	C844	D9	C979	A5	C5053	C1	CN903	A5	IC206	C6	JK801	D9	Q301	A6	R215	B8	R256	A7	R351	C8	R416	C6	R444	C5	R485	C5	R527	B2	R807	A9	R840	D6	RA351	C9	ZD807	D8
C208	B9	C268	C7	C354	D8	C418	C6	C446	B6	C480	B5	C515	C1	C562	B2	C806	B9	C846	D9	C984	A5	C5054	B1	D301	A6	IC207	C7	JK802	D7	Q401	D5	R217	B8	R257	B9	R352	D7	R417	C6	R445	D6	R486	C5	R528	B2	R808	A8	R845	C9	RA352	C9	ZD808	D8
C209	C9	C269	C9	C355	D8	C419	C6	C447	B6	C481	C5	C516	C1	C567	D4	C807	A9	C848	D9	C2001	A7	C5055	C1	D302	A7	IC208	A7	JK805	D6	Q402	D6	R218	B8	R258	B9	R353	D7	R418	C6	R446	D6	R487	C5	R541	B1	R809	B8	R850	C9	RB151	A7	ZD809	D8
C210	C9	C270	C9	C356	D8	C420	C5	C448	B6	C482	C5	C517	C2	C568	D3	C808	A9	C850	D8	C2002	C7	C5056	B1	D303	A6	IC209	A7	JK5001	D2	Q403	D5	R219	B8	R259	B9	R355	D7	R419	C6	R447	D6	R488	C6	R542	B1	R810	A8	R852	D9	RB5001	D2	ZD810	D8
C212	C9	C271	C9	C357	D8	C421	C6	C449	B6	C483	C5	C518	C2	C571	B1	C809	B9	C854	D9	C2003	C7	C5057	B1	D304	A6	IC210	B9	L202	C8	Q501	D2	R220	B8	R260	A4	R357	D7	R420	C5	R448	D5	R489	B5	R543	B1	R811	A8	R853	D9	RN201	B8	ZD951	A4
C216	A8	C274	B7	C358	D8	C422	C6	C453	B5	C484	C4	C519	C2	C572	B1	C811	A9	C855	D9	C2015	C9	C5058	B1	D305	A6	IC301	D7	L203	B9	Q801	A8	R223	A8	R261	A4	R358	D7	R421	C5	R449	D5	R490	B5	R544	B1	R812	A8	R854	D9	RN202	B7	ZD5001	C6
C221	B8	C275	A7	C359	D9	C423	C6	C454	B5	C485	C4	C520	C2	C575	B1	C812	A9	C856	D8	C2016	B9	C5061	C3	D306	A6	IC351	C8	L204	A9	Q802	A8	R224	B7	R262	A7	R359	D7	R422	C5	R450	D5	R491	C5	R545	B1	R813	A8	R855	D9	RN203	B7	ZD5041	A3
C222	B8	C277	A7	C362	D8	C424	C6	C455	B5	C486	C4	C521	C2	C576	B1	C813	B9	C857	D7	C2017	C7	C5062	D3	D307	A7	IC401	D6	L205	A9	Q803	B8	R225	B7	R263	A7	R360	D7	R423	C5	R451	C5	R492	B5	R546	B1	R814	A8	R865	D8	RN204	B7		
C226	B8	C278	B9	C364	D9	C425	C5	C456	B6	C487	B5	C522	D2	C577	B1	C814	B9	C858	D7	C2019	B9	C5063	D3	D308	A7	IC402	C6	L207	C7	Q804	B8	R226	B7	R301	D5	R363	D7	R424	B5	R452	B5	R493	D6	R547	A2	R815	B8	R951	A3	RN205	B7		
C231	B9	C280	B9	C365	C9	C426	C6	C457	B5	C488	C4	C527	D3	C578	B1	C815	B9	C859	D8	C2020	B7	C5064	C3	D309	A7	IC403	C6	L351	C9	Q805	A9	R227	B7	R302	D5	R401	D6	R425	B5	R453	C4	R494	D6	R548	A2	R816	B8	R952	A3	RN206	B7		
C233	B8	C281	B9	C366	C9	C427	C6	C458	A5	C490	C4	C528	D3	C579	A2	C816	A9	C951	A3	C2024	B8	C5065	A3	D310	D6	IC404	C5	L352	D9	Q806	A9	R228	B7	R303	D5	R402	D6	R426	B5	R454	C4	R495	C6	R561	D2	R818	A8	R953	A6	RN207	B7		
C234	B8	C283	B9	C367	C9	C428	C6	C461	D5	C491	C5	C531	B1	C580	A2	C817	B9	C952	A4	C2031	A9	C5066	B3	D311	A6	IC405	C5	L501	C3	Q951	B4	R230	B7	R304	D5	R403	D5	R427	B5	R455	C5	R496	C6	R562	D2	R819	A8	R954	B5	RN208	B7		
C235	B8	C285	A9	C401	D6	C429	C6	C462	C5	C492	C5	C532	B1	C581	A2	C819	C9	C955	B3	C4008	B5	C5077	D4	D312	A6	IC406	B5	L502	D2	Q952	B5	R233	B7	R305	D5	R4022	C5	R428	B5	R456	C5	R497	C6	R563	D2	R820	B8	R955	B5	RN210	C9		
C236	A7	C287	A8	C402	D6	C430	C5	C463	D5	C493	C4	C535	B1	C582	A2	C820	C9	C956	B4	C5001	B6	C5081	D5	D313	A6	IC406	C5	L503	B3	Q953	A4	R234	C7	R306	D5	R4023	C5	R429	A5	R457	C4	R498	C6	R564	C1	R821	A8	R956	B5	RN211	C6		
C237	A7	C288	B7	C403	D6	C431	C5	C464	D6	C494	C4	C536	B1	C583	A2	C822	C9	C957	C2	C5002	B6	C5085	C4	D314	A6	IC407	C5	L504	C3	Q5001	B7	R235	B7	R307	D5	R4024	C5	R430	A5	R458	C4	R501	C1	R565	B1	R822	B8	R957	A4	SW801	D7		
C240	A8	C289	B9	C404	D6	C432	C5	C465	C5	C495	C4	C537	B1	C584	A1	C823	C9	C958	B2	C5003	B6	C5086	D4	D315	A6	IC408	C5	L505	A2	Q5002	C6	R236	C7	R308	D5	R403	D6	R431	D5	R459	D4	R502	B1	R566	B1	R823	A8	R968	A4	XL201	B7		
C242	A7	C301	D5	C405	D5	C433	C5	C466	C5	C497	B5	C538	B1	C585	B1	C825	B9	C959	B2	C5004	B6	C5087	C4	D316	A6	IC409	C5	L506	A3	Q5003	B6	R237	B7	R309	D6	R404	C6	R432	C5	R460	C5	R503	C1	R565	C4	R824	B8	RA4007	C4	ZD202	A4		
C243	A7	C302	D5	C406	D6	C434	C5	C467	D5	C501	C1	C539	B2	C586	A2	C826	B9	C960	C2	C5005	B6	C5088	D4	D801	A9	IC501	D2	L801	A9	R201	B9	R241	C8	R310	D6	R405	D6	R433	C5	R461	C5	R504	B1	R566	C4	R825	A8	R5001	B6	ZD301	D7		
C255	C9	C303	D5	C407	C6	C435	C5	C468	D6	C502	C1	C541	B2	C587	A2	C827	A9	C961	B4	C5006	B6	CF5041	B3	D802	A9	IC502	B2	L802	A9	R202	B9	R243	C9	R311	D6	R406	C6	R434	D5	R462	C4	R505	C1	R567	C4	R826	A8	R5002	B6	ZD302	D7		
C256	C9	C304	D5	C408	D6	C436	C5	C469	C5	C505	C1	C542	B2	C588	A2	C830	A9	C963	B4	C5007	B7	CF5042	A3	D803	A8	IC503	A2	L823	D8	R203	B9	R244	C9	R312	D6	R407	C6	R435	C5	R463	C5	R506	C1	R568	C4	R827	A8	R5003	B7	ZD401	B5		
C257	C9	C311	D7	C409	D6	C437	C6	C471	B5	C506	C1	C543	B2	C589	A2	C831	A9	C965	A5	C5008	B6	CN201	A6	D5001	B7	IC801	B9	L951	B4	R204	B9	R245	C9	R315	D7	R408	C6	R436	D5	R464	C5	R510	D2	R659	C4	R828	A8	R5004	B7	ZD402	B6		
C259	C6	C312	D7	C410	D5	C438	B6	C472	B5	C507	D2	C544	B2	C590	A2	C832	A9	C966	B5	C5009	B6	CN202	A6	D5002	B7	IC802	A8	L952	B4	R205	B9	R246	C9	R316	D7	R409	C6	R437	D6	R470	B5	R511	C2	R670	C4	R829	B8	R5005	C7	ZD501	D2		
C260	D7	C313	D7	C411	C6	C439	B5	C473	C5	C508	C2	C545	B1	C593	D3	C833	A8	C967	A8	C5010	B6	CN5001	A5	FB5003	B7	IC803	C9	L955	B4	R206	B9	R247	C9	R319	D7	R410	C6	R438	D6	R471	D6	R521	B1	R801	A8	R830	B8	R5006	A6	ZD801	D9		



PCB LAYOUT - MAIN BOARD (BOTTOM)

C214	B9	C239	B8	C267	C7	C504	C1	C569	B3	C821	B9	C972	A4	C2012	B8	C4007	C4	C5052	A4	C5084	D4	L808	D8	R221	B8	R529	B2	R958	A4	R5011	A5
C215	B8	C241	B7	C272	C9	C523	C2	C570	C3	C824	B9	C974	A5	C2013	C7	C4009	C4	C5059	A4	D951	A4	L809	D9	R231	B7	R530	B2	R959	A4	R5012	A5
C217	B8	C244	B8	C273	B7	C524	C2	C573	A1	C828	A9	C976	A5	C2018	C9	C4010	C5	C5071	D5	IC504	B3	L810	D9	R232	B7	R531	B2	R966	A5	R5041	A3
C218	B8	C245	B7	C276	C8	C525	C2	C574	A1	C845	D9	C978	A6	C2021	C8	C4011	C4	C5072	C4	IC505	A3	L811	D9	R242	C8	R532	B2	R967	A5	R5042	B3
C223	B8	C246	B8	C279	B9	C526	C2	C591	A2	C847	D9	C980	A5	C2022	B8	C5043	A1	C5073	D9	L187	A5	L812	D9	R248	C7	R533	B3	R4001	C4	R5043	A4
C224	B8	C247	B7	C282	B9	C529	C3	C592	A2	C849	D9	C2004	B8	C2023	B8	C5044	A4	C5074	D6	L201	B8	L813	D8	R354	C8	R534	B3	R4002	B5	R5044	A3
C225	B9	C248	B8	C284	B8	C530	D3	C594	A2	C851	D9	C2005	B8	C2025	B9	C5045	A4	C5075	A9	L206	B9	L814	D8	R356	D8	R549	A2	R4003	C5	R5045	A3
C227	B8	C249	B8	C286	A8	C533	B1	C596	A2	C852	D8	C2006	C8	C2026	C9	C5046	B3	C5076	D5	L208	C9	Q5041	B3	R513	C2	R550	A2	R4004	C5	R5046	A3
C228	B8	C250	C7	C290	B8	C534	B1	C597	A2	C853	D8	C2007	C8	C2027	A8	C5047	A3	C5078	D5	L803	A8	Q5042	A3	R514	C2	R551	A3	R4005	C5	R5047	B3
C229	B8	C251	C7	C360	D9	C563	B2	C599	B3	C962	B4	C2008	C8	C2028	A8	C5048	B3	C5079	C5	L804	D9	Q811	A8	R515	C2	R553	A2	R4006	C4	R5048	A3
C230	B8	C252	B7	C361	C8	C564	B2	C802	B9	C964	B4	C2009	C8	C2029	B9	C5049	A3	C5080	A6	L805	D9	R207	B9	R516	C2	R554	A2	R4008	C5	R5049	A3
C232	B8	C253	B7	C363	D9	C565	B2	C810	B9	C968	A8	C2010	C8	C2030	D6	C5050	A3	C5082	A7	L806	D9	R212	B9	R517	C3	R555	A3	R4009	C5		
C238	B7	C254	C7	C503	C1	C566	B2	C818	A9	C969	B4	C2011	C8	C2032	C7	C5051	A3	C5083	D6	L807	D8	R216	B8	R518	D3	R833	A8	R4010	C5		



ELECTRICAL PARTS LIST - MAIN BOARD

MISCELLANEOUS

C837	9965 000 23594	CHIP INDUC 1uH 10%
CF5041	9965 000 23595	RESONATOR 2P 600kHz
CF5042	9965 000 23596	RESONATOR 2P 700kHz
CN801	9965 000 25152	CHIP CONNECTOR 24P P=0.5mm
CN901	9965 000 25151	CONNECTOR 3P CL3962WVO
CN902	9965 000 25149	CONNECTOR B8B-XH-A 8P
FB5003	9965 000 19426	CHIP INDUCTOR 10uH 10%
JK401	9965 000 24074	RCAJACK 6P WHTx3/REDx3 AXIAL
JK501	9965 000 25157	SPK JACK 12P PUSH TERMINAL
JK801	9965 000 23598	RCA JACK 3P RED/BLU/GRN
JK802	9965 000 25153	RCA+DIN JK 1RCA+4P DIN YEL
JK805	9965 000 25156	RCA JACK 1P BLACK W/GND PIN
JK5002	9965 000 25154	PHONE JACK D3.5 9P NICKEL
L187	9965 000 23594	CHIP INDUC 1uH 10%
L201	9965 000 19426	CHIP INDUCTOR 10uH 10%
L202	9965 000 23594	CHIP INDUC 1uH 10%
L203	9965 000 23594	CHIP INDUC 1uH 10%
L204	9965 000 23594	CHIP INDUC 1uH 10%
L205	9965 000 23594	CHIP INDUC 1uH 10%
L206	9965 000 23594	CHIP INDUC 1uH 10%
L207	9965 000 23891	CHIP BEAD 60 OHM 100MHz 25%
L208	9965 000 23594	CHIP INDUC 1uH 10%
L351	9965 000 23594	CHIP INDUC 1uH 10%
L352	9965 000 23594	CHIP INDUC 1uH 10%
L501	9965 000 23892	INDUCTOR 47uH 20% 4.3A
L502	9965 000 23892	INDUCTOR 47uH 20% 4.3A
L503	9965 000 23892	INDUCTOR 47uH 20% 4.3A
L504	9965 000 23892	INDUCTOR 47uH 20% 4.3A
L505	9965 000 23892	INDUCTOR 47uH 20% 4.3A
L506	9965 000 23893	INDUCTOR 33uH 20% 6A
L801	9965 000 23594	CHIP INDUC 1uH 10%
L802	9965 000 23594	CHIP INDUC 1uH 10%
L803	9965 000 23594	CHIP INDUC 1uH 10%
L804	9965 000 23895	CHIP INDUC 2.4uH 5%
L805	9965 000 23895	CHIP INDUC 2.4uH 5%
L806	9965 000 23895	CHIP INDUC 2.4uH 5%
L807	9965 000 23895	CHIP INDUC 2.4uH 5%
L808	9965 000 23895	CHIP INDUC 2.4uH 5%
L809	9965 000 23594	CHIP INDUC 1uH 10%
L810	9965 000 23594	CHIP INDUC 1uH 10%
L811	9965 000 23594	CHIP INDUC 1uH 10%
L812	9965 000 23594	CHIP INDUC 1uH 10%
L813	9965 000 23594	CHIP INDUC 1uH 10%
L814	9965 000 23594	CHIP INDUC 1uH 10%
L823	9965 000 23594	CHIP INDUC 1uH 10%
L951	9965 000 12470	BEAD FERITE 100 OHM/AT 100MHz
L952	9965 000 12470	BEAD FERITE 100 OHM/AT 100MHz
L955	9965 000 15931	INDUCTOR 100 uH 10%
L957	9965 000 15931	INDUCTOR 100 uH 10%
L958	9965 000 16694	INDUCTOR 6uH 13.5Ts 2UEW
L5001	9965 000 19426	CHIP INDUCTOR 10uH 10%
L5002	9965 000 19426	CHIP INDUCTOR 10uH 10%

L5041	9965 000 23594	CHIP INDUC 1uH 10%
SW801	9965 000 25161	SW SLIDE 1P2T 3P L=2.5mm
XL201	9965 000 23602	CRYSTAL27MHzHC-49/S +/-20PPM

CAPACITORS

C508	9965 000 24680	COND ELECT 47uF 63V 20%
C511	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C512	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C523	9965 000 23896	CHIP CAP 560pF 100V 10%
C524	9965 000 23896	CHIP CAP 560pF 100V 10%
C525	9965 000 23896	CHIP CAP 560pF 100V 10%
C526	9965 000 23896	CHIP CAP 560pF 100V 10%
C527	9965 000 23605	COND MYLAR 0.01uF 100V 5%
C528	9965 000 23605	COND MYLAR 0.01uF 100V 5%
C539	9965 000 24680	COND ELECT 47uF 63V 20%
C541	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C542	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C563	9965 000 23896	CHIP CAP 560pF 100V 10%
C564	9965 000 23896	CHIP CAP 560pF 100V 10%
C565	9965 000 23896	CHIP CAP 560pF 100V 10%
C566	9965 000 23896	CHIP CAP 560pF 100V 10%
C567	9965 000 23605	COND MYLAR 0.01uF 100V 5%
C568	9965 000 23605	COND MYLAR 0.01uF 100V 5%
C579	9965 000 24680	COND ELECT 47uF 63V 20%
C580	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C581	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C591	9965 000 23896	CHIP CAP 560pF 100V 10%
C592	9965 000 23896	CHIP CAP 560pF 100V 10%
C593	9965 000 23605	COND MYLAR 0.01uF 100V 5%
C596	9965 000 23896	CHIP CAP 560pF 100V 10%
C597	9965 000 23896	CHIP CAP 560pF 100V 10%
C598	9965 000 23605	COND MYLAR 0.01uF 100V 5%
C951	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C952	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C955	5322 124 22614	1000uF 20% 50V
C956	5322 124 22614	1000uF 20% 50V
C961	9965 000 23606	COND ELECT 1000uF 16V 20% 85°C

RESISTORS

R262	9965 000 24681	RESISTOR 2.2 OHM 1 W 5% MF HI
R263	9965 000 24681	RESISTOR 2.2 OHM 1 W 5% MF HI
R513	4822 051 10518	5R1 5% 0,25W
R514	4822 051 10518	5R1 5% 0,25W
R515	4822 051 10518	5R1 5% 0,25W
R516	4822 051 10518	5R1 5% 0,25W
R517	9965 000 23608	CHIP RES 22 OHM 1/2W 5%
R518	9965 000 23608	CHIP RES 22 OHM 1/2W 5%
R529	4822 051 10518	5R1 5% 0,25W
R530	4822 051 10518	5R1 5% 0,25W
R531	4822 051 10518	5R1 5% 0,25W
R532	4822 051 10518	5R1 5% 0,25W
R533	9965 000 23608	CHIP RES 22 OHM 1/2W 5%

ELECTRICAL PARTS LIST - MAIN BOARD

R534	9965 000 23608	CHIP RES 22 OHM 1/2W 5%
R549	4822 051 10518	5R1 5% 0,25W
R550	4822 051 10518	5R1 5% 0,25W
R551	9965 000 23608	CHIP RES 22 OHM 1/2W 5%
R553	4822 051 10518	5R1 5% 0,25W
R554	4822 051 10518	5R1 5% 0,25W
R555	9965 000 23608	CHIP RES 22 OHM 1/2W 5%
R957	9965 000 23609	RESISTOR 47 OHM 1/2 W 5% CF
R968	9965 000 23610	RESISTOR 1 OHM 1/4W 5%
RA301	9965 000 23612	RES ARRAY 4x33R 1/16W 5%
RA351	9965 000 23612	RES ARRAY 4x33R 1/16W 5%
RA352	9965 000 23612	RES ARRAY 4x33R 1/16W 5%
RN201	9965 000 23613	RES ARRAY 4x4.7k 1/16W 5%
RN202	9965 000 23612	RES ARRAY 4x33R 1/16W 5%
RN203	9965 000 23612	RES ARRAY 4x33R 1/16W 5%
RN204	9965 000 23613	RES ARRAY 4x4.7k 1/16W 5%
RN205	9965 000 23614	CHIP ARRAY 10Rx4 1/16 W 5%
RN206	9965 000 23614	CHIP ARRAY 10Rx4 1/16 W 5%
RN207	9965 000 23614	CHIP ARRAY 10Rx4 1/16 W 5%
RN208	9965 000 23612	RES ARRAY 4x33R 1/16W 5%
RN210	9965 000 23613	RES ARRAY 4x4.7k 1/16W 5%
RN211	9965 000 23612	RES ARRAY 4x33R 1/16W 5%

DIODES

D301	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D302	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D303	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D304	4822 130 34233	BZX79-B5V1
D305	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D306	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D307	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D308	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D309	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D310	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D311	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D312	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D313	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D314	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D315	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D316	4822 130 34233	BZX79-B5V1
D801	4822 130 83338	CHIP DIODE LL4148
D802	4822 130 83338	CHIP DIODE LL4148
D803	4822 130 83338	CHIP DIODE LL4148
D951	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D5001	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D5002	4822 130 34233	BZX79-B5V1
ZD202	4822 130 34233	BZX79-B5V1
ZD301	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD302	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD401	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD402	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD501	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W

ZD801	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD802	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD803	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD804	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD805	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD806	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD807	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD808	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD809	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD810	9965 000 19431	CHIP ZENER 7.5V 5% 0.5W
ZD951	9965 000 17375	DIODE ZENR 11.9-12.4V 0.5W
ZD5001	4822 130 34167	BZX79-B6V2

TRANSISTORS & INTEGRATED CIRCUITS

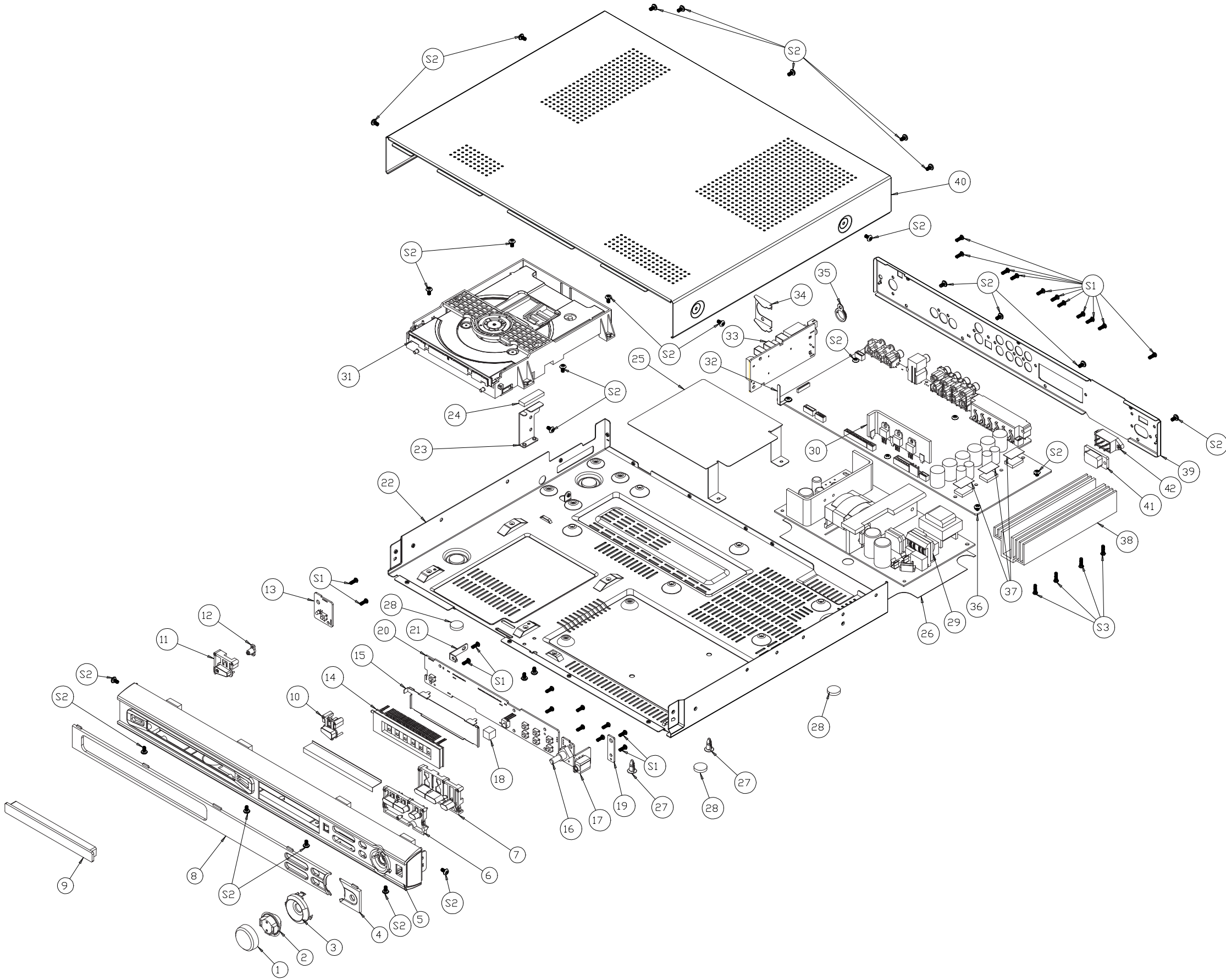
Q301	9965 000 20268	XISTR NPN SMT TYPE (2SC1623)
Q401	9965 000 20286	XISTR NPN CM5783GR SOT23
Q402	9965 000 20286	XISTR NPN CM5783GR SOT23
Q403	9965 000 14175	2SA733Q,P
Q501	9965 000 20268	XISTR NPN SMT TYPE (2SC1623)
Q801	3141 018 51690	FET 2SK3018
Q802	3141 018 51690	FET 2SK3018
Q803	9965 000 19393	XISTR NPN 2SC2812N 2204
Q804	9965 000 19393	XISTR NPN 2SC2812N 2204
Q805	9965 000 21008	XISTR PNP 2SB1132RT100 ROHM
Q806	9965 000 21008	XISTR PNP 2SB1132RT100 ROHM
Q811	9965 000 14175	2SA733Q,P
Q951	4822 130 10211	XISTR PNP 2SA952
Q952	9965 000 20268	XISTR NPN SMT TYPE (2SC1623)
Q953	4822 130 10358	2SB772P/Q
Q5001	9965 000 20268	XISTR NPN SMT TYPE (2SC1623)
Q5002	4822 130 41651	XISTR NPN 2SC2001L
Q5003	9965 000 20268	XISTR NPN SMT TYPE (2SC1623)
Q5041	9965 000 20268	XISTR NPN SMT TYPE (2SC1623)
Q5042	9965 000 14175	2SA733Q,P
IC201	9965 000 24682	IC 208 PIN ES6629FD PQFP ESS
IC202	9965 000 23615	IC 48 PIN M29LV1600T70 TSOP
IC203	9940 000 00029	IC 54 PIN SD41620HGT-6 TSOP
IC204	9965 000 15890	IC 3 PIN IMP809SEUR-T SOT23
IC205	9965 000 23616	IC 8 PIN M24C02-MN6T ST SD8
IC206	9965 000 20293	IC 20 PIN 74F374D
IC207	9965 000 20293	IC 20 PIN 74F374D
IC208	9965 000 23617	IC 3P B1117N 3.3V BAY-LINEAR 1A
IC209	9965 000 23617	IC 3P B1117N 3.3V BAY-LINEAR 1A
IC210	9965 000 23617	IC 3P B1117N 3.3V BAY-LINEAR 1A
IC301	9965 000 23619	IC 16 PIN CD4052BM SOIC TI
IC351	9965 000 20295	IC 28 PIN WM8772 TSOP WOLFSON
IC401	9965 000 15886	IC 8 PIN RC4558D
IC402	9965 000 15886	IC 8 PIN RC4558D
IC403	9965 000 15886	IC 8 PIN RC4558D
IC404	9965 000 15886	IC 8 PIN RC4558D
IC405	9965 000 12514	IC 42 PIN M62446FP
IC406	9965 000 15886	IC 8 PIN RC4558D

ELECTRICAL PARTS LIST - MAIN BOARD

TRANSISTORS & INTEGRATED CIRCUITS		
IC407	9965 000 15886	IC 8 PIN RC4558D
IC408	9965 000 15886	IC 8 PIN RC4558D
IC409	9965 000 15886	IC 8 PIN RC4558D
IC501	9965 000 23618	IC 24PIN TDA8921TH HSOP24
IC502	9965 000 23618	IC 24PIN TDA8921TH HSOP24
IC503	9965 000 23618	IC 24PIN TDA8921TH HSOP24
IC504	9965 000 22230	IC 14 PIN 74LVC04AD
IC505	9965 000 22229	IC 14 PIN HEF4013BT
IC801	9965 000 21182	IC 64 PIN ES6603S LQFP ESS
IC802	9965 000 23620	IC 28 PIN AM5868S HSOP AMTEK
IC953	9965 000 12512	IC 3 PIN BA05T TO220FP ROHM
IC954	9965 000 12512	IC 3 PIN BA05T TO220FP ROHM
IC5001	9965 000 23621	IC8PAPA3541 SOP-8 HEADPHONE

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

MECHANICAL EXPLODED VIEW



MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

	9965 000 24683	MAIN+PH JACK+PH BKT+RGB PCBA
	9965 000 24684	CONTROL PCB ASSY
	9965 000 24658	RADIO (TUNER) PCB ASSY
1	9965 000 23639	VOLUME KNOB
2	9965 000 23640	VOLUME DOCKING
3	9965 000 23641	VOLUME RING
4	9965 000 23642	VOLUME KNOB LENS
5	9965 000 24685	FRONT PANNEL
6	9965 000 23644	FUNCTION BUTTON 1
7	9965 000 23645	FUNCTION BUTTON 2
8	9965 000 23646	DISPLAY LENS
9	9965 000 23647	DVD DOOR
10	9965 000 23648	OPEN/CLOSE BUTTON
11	9965 000 23649	POWER BUTTON
12	9965 000 23650	POWER LED LENS
27	9965 000 23651	SPACER PCB
28	9965 000 23571	FOOT RUBBER
29	9965 000 25165	SW PWR SUP ASSY INPUT 110~230V
31	9965 000 23573	DVD MECH. LOADER ASSY
35	9965 000 23575	ANTENNA HOLDER
41	9965 000 20576	△ AC SOCKET SO-222-PC-S(TECX)
42	9965 000 16339	SWITCH SLIDE 6 PIN SL14-22AH
	9965 000 25159	SATELLITE SPEAKER ASSY 30Wx5
	9965 000 25160	SUBWOOFER ASSY 50W
	9965 000 23578	FFC WIRE 24P L=150mm P=0.5mm
	9965 000 24688	△ LINE CORD
	9965 000 23580	RCA CABLE (VIDEO CABLE)
	9965 000 23889	RCA CABLE (AUDIO CABLE)
	9965 000 23582	LOOP ANTENNA
	9965 000 23583	FM ANTENNA
	9965 000 23656	REMOTE CONTROL
	9965 000 25158	CONVERSION PLUG SAA TO 2 FLAT PIN
	9965 000 25163	BEAD FERIT OD28xID16xH20mm BLK

SATELLITE SPEAKER ASSY BREAKDOWN

	9965 000 24689	SPEAKER BOX FRONT-L
	9965 000 24690	SPEAKER BOX FRONT-R
	9965 000 24691	SPEAKER BOX REAR-L
	9965 000 24692	SPEAKER BOX REAR-R
	9965 000 24693	SPEAKER BOX CENTER
	9965 000 23627	RUBBER FOOT

SCREW LISTS - MAIN UNIT

S1	D3 x 8
S2	M3 x 6
S3	D3 x 10

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

POWER BOARD

(For Information only)

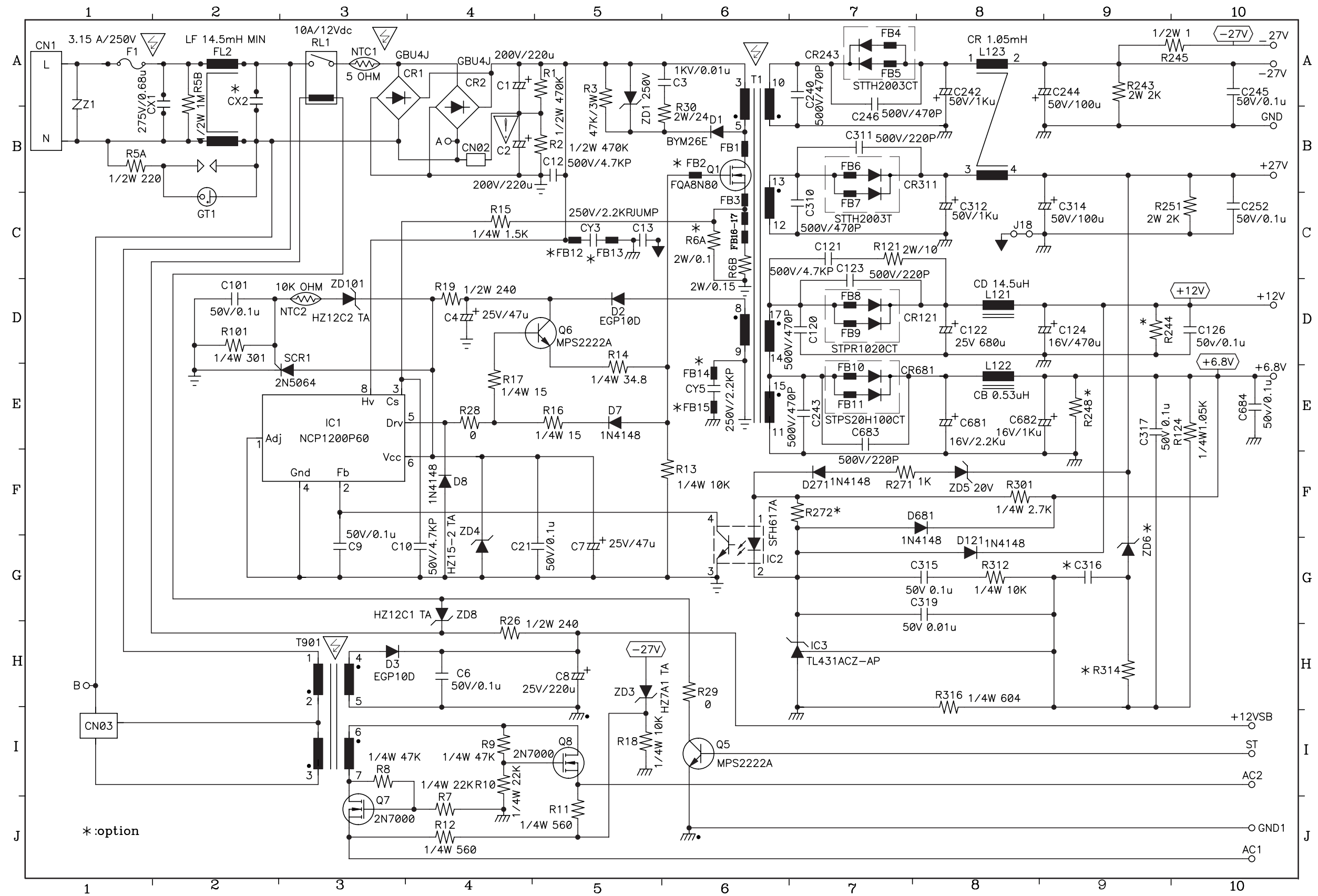
It is not recommended for component repair on this board but to replace the board when it becomes defective.
Therefore no service parts list is published in this chapter.

The only service part available for replacement is:
SW PWR SUP ASSY INPUT 110 ~ 230V 9965 000 25165

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CIRCUIT DIAGRAM - POWER BOARD (I78)



PCB LAYOUT - POWER BOARD (/78)

