

Service
Service
Service

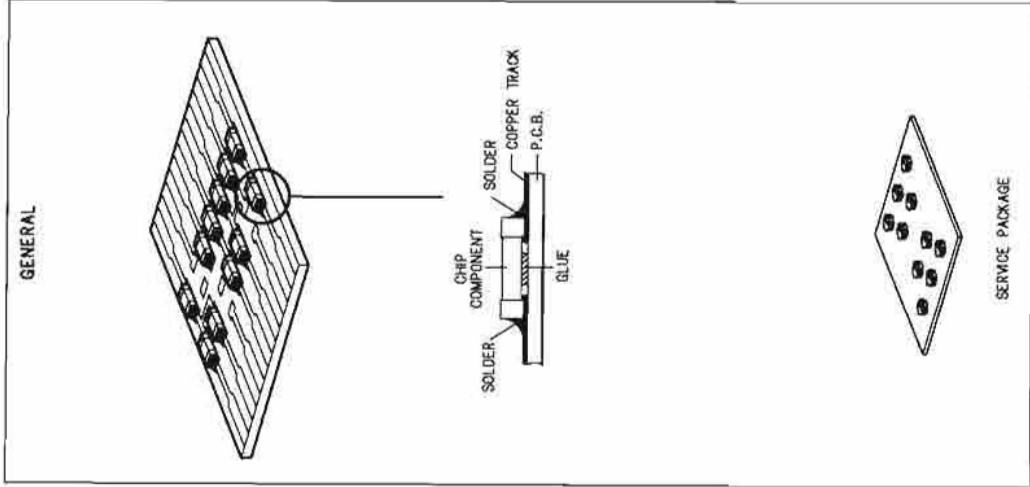


Service Manual

CONTENT	PAGE
Safety	1
Controls - Front	2
Controls - Remote Control	3
Installation	4
Block Diagram	5
Wiring Diagram	6
Specifications	6
Radio Alignment	7
Tuning Board - Circuit Diagram	7
- Layout Diagram	8
Front Board - Circuit Diagram	9
- Layout Diagram	10
Main Board - Circuit Diagram	11
- Layout Diagram	12
Power Supply Board - Circuit Board	13
- Layout Board	14
Service Test Program	15 - 16
Exploded View Diagram	17
Mechanical Partslist	18
Electrical Partslist	18 - 20
Blank	



HANDLING CHIP COMPONENTS



(GB) WARNING
All IC's and many other semiconductors 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 service wrist wrap with resistance. Keep components and tools at this potential.

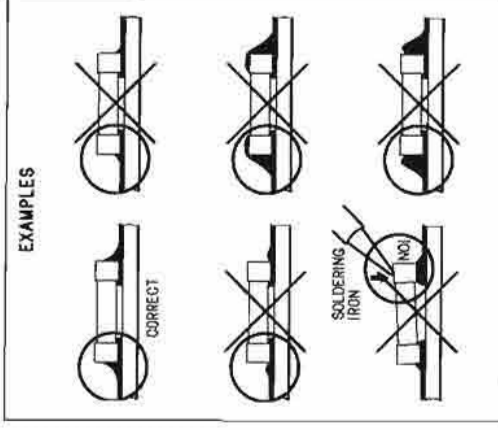
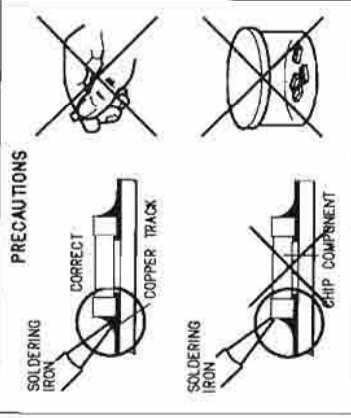
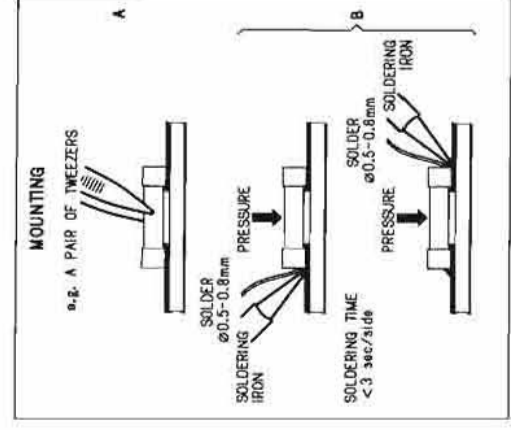
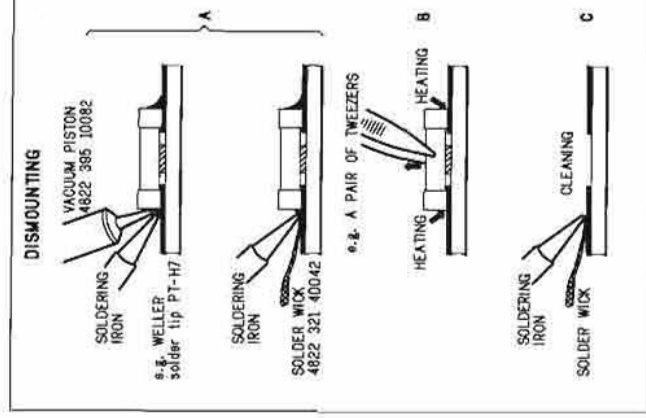
(F) ATTENTION
Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enlever le bracelet anti-statique.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

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

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

(S) Varning!
Ösnyttig laserstrålning när apparaten är öppnad och spårren är urkopplad. Beträkta ej strålen.

(F)
Four votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne.



ESD



(NL) WAARSCHUWING

Alle IC's en vele andere halgeleiders 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 ditzelfde 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 braccialeto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, daß sie im Reparaturfall über ein Polsband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(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.

(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.

(NL)

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

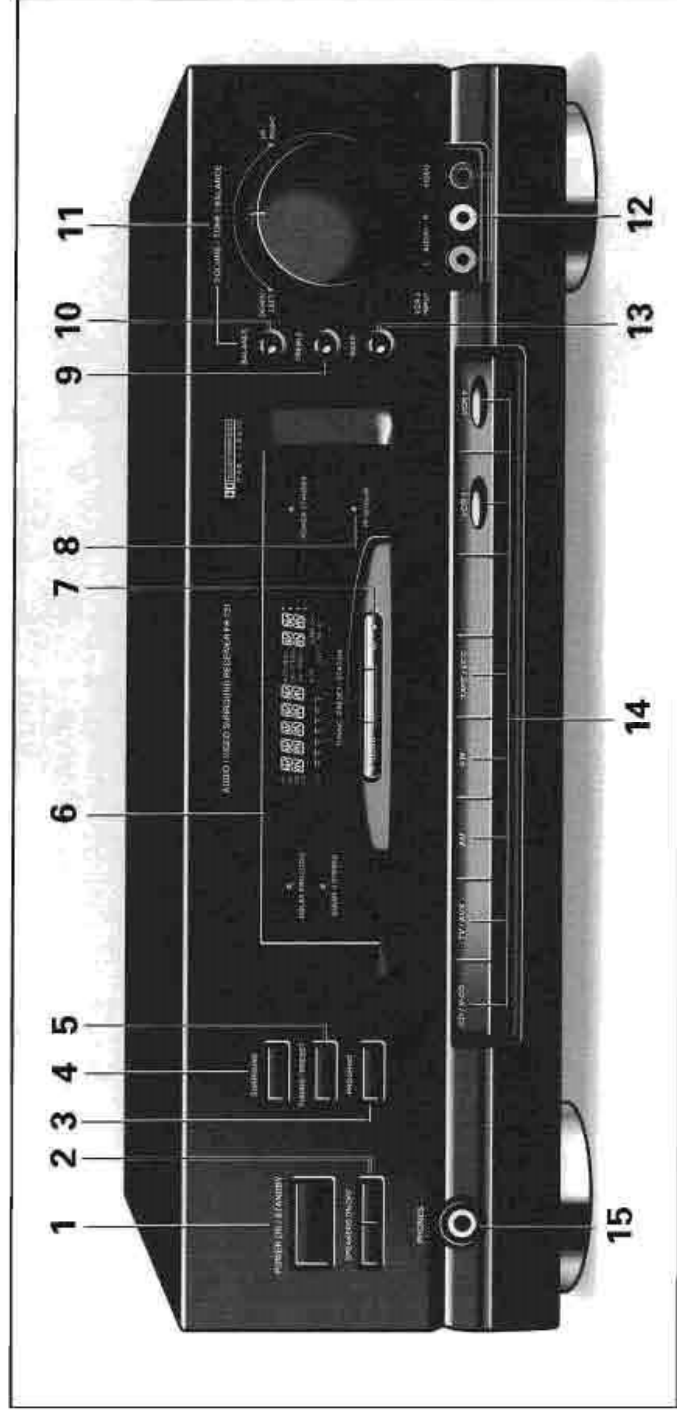
(DK) Advarsel!

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

(SF) Varoitus!

Avatussa laitteessa ja suojauslaitteiden ohittautessa olet alttina näkymättömälle lasersäteilylle. Älä katso säteeseen!

CONTROLS - FRONT



FRONT

- 1 POWER ON/STANDBY**
For switching on to standby mode or for switching off.
- 2 SPEAKERS ON/OFF**
For switching on and off the speakers which are connected to the FRONT SPEAKERS terminals.
- 3 PROGRAM**
For storing preset stations.
- 4 SURROUND**
For selecting the surround modes.
DOLBY PRO LOGIC, DOLBY 3 STEREO, OFF.
Dolby Surround manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- 5 TUNING/PRESET**
For selecting the frequency or channel mode.
- 6 DISPLAY**
Informs you about the functioning of the receiver.
- 7 TUNING/PRESET STATION UP/DOWN**
- For adjusting the station frequency.
- For selecting the next or previous tuner preset.

8 (Infra) R(ed) SENSOR
Infrared remote control eye for receiving signals from the remote control.

9 TREBLE
For adjusting the high tones (use together with the VOLUME/TONE/BALANCE control **11**).

10 BALANCE
For adjusting the balance of the volume between the left and right channels (use together with the VOLUME/TONE/BALANCE control **11**).

11 VOLUME/TONE/BALANCE
- **VOLUME** - For adjusting the volume.
- **TONE** - For adjusting the high tones and the bass tones (use together with the TREBLE **9** and BASS **13** controls).
- **BALANCE** - For adjusting the balance of the volume between the left and right channels (use together with BALANCE button **10**).

12 VCR 2 AUDIO/VIDEO INPUT

Connections for an extra VCR, camcorder (VIDEO) or an extra audio source (AUDIO).

13 BASS

For adjusting the bass tones (use together with the VOLUME/TONE/BALANCE control **11**).

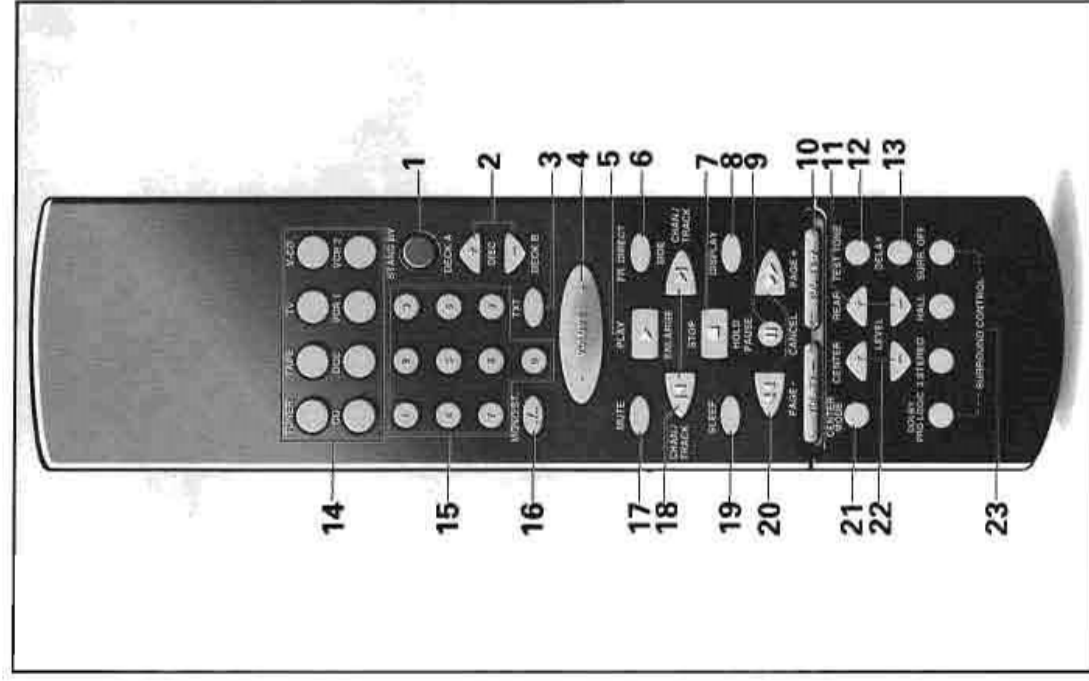
14 SOURCE SELECTION KEYS

For selecting the required audio or video source.

15 PHONES

For connecting the headphones.

CONTROLS - REMOTE CONTROL



AMPLIFIER

- 1 STANDBY** – for switching the complete system to standby (by pressing for longer than approx. 1 second).
- 4 - VOLUME +** – for adjusting the volume.
- 14 Source selectors**
- 19 SLEEP** – for setting a time period after which the system will automatically be switched to standby.

Surround processor

- 11 REAR LEVEL +/-** – for adjusting the rear level (only in Dolby Pro Logic mode).
- 12 TEST TONE** – for checking the output level of the front, center and rear speakers.
- 13 DELAY** – for adjusting the delay time of the rear channel (*has no influence on the FR731 for the delay time is fixed*).
- 21 CENTER MODE** – for selecting the desired center mode when in Dolby Pro Logic or Dolby 3 Stereo mode.
- 22 CENTER LEVEL +/-** – for adjusting the center level (only in normal mode or wide mode).
- 23 SURROUND CONTROL**
 - **□□ PRO LOGIC, 3 STEREO** – for selecting the different surround modes (*the HALL button has no influence on the FR731*).
 - **SURR(ound) OFF** – for switching the surround mode off.

TUNER

- 1 STANDBY** – for switching the complete system to standby.
- 6 FR(requency) DIRECT** – for direct tuning to the station frequency.
- 15 0-9 digit keys** – for selecting stations in frequency direct mode.
- 16 MONO/ST** – for mono/stereo selection.
- 18 CHANNEL/TRACK** – next **▶** or previous **◀** preset station
- 20 ◀◀ ▶▶** – for tuning up and down.

TAPE

- 1 STANDBY** – for switching the complete system to standby.
- 2 DECK A/DECK B** – for selecting deck A or B.
- 5 PLAY ▶** – for starting play.
- 6 SIDE** – for selecting tape side A or B.
- 7 STOP ■** – for stopping recording/play.
- 9 PAUSE II** – for interrupting recording/play.
- 18 CHANNEL/TRACK** – next **▶** or previous **◀** track.
- 20 ◀◀ ▶▶** – for winding the tape.

VCR 1 and VCR 2

- 1 STANDBY** – for switching the complete system to standby.
- 5 PLAY ▶** – for starting play.
- 7 STOP ■** – for stopping recording/play.
- 9 PAUSE II** – for interrupting recording/play.
- 15 0-9 digit keys** – for selecting stations.
- 18 CHANNEL/TRACK** – next **▶** or previous **◀** station
- 20 ◀◀ ▶▶** – for winding the tape.

CD and V-CD

- 1 STANDBY** – for switching the complete system to standby.
- 2 DISC +/-** (CD changer only) – for disc selection.
- 5 PLAY ▶** – for starting play.
- 7 STOP ■** – for stopping recording/play/clearing a program.
- 8 DISPLAY** – for displaying the elapsed playing time and the remaining playing time during playback of a V-CD.
- 9 PAUSE II** – for interrupting recording/play.
- 15 0-9 digit keys** – for track selection.
- 18 CHANNEL/TRACK** – next **▶** or previous **◀** track.
- 20 ◀◀ ▶▶** – for searching up and down.

TV

- 1 STANDBY** – for switching the complete system to standby.
- 3 TXT** – for switching teletext on and off.
- 5 PLAY ▶** – enlarge picture.
- 7 STOP ■** – hold picture.
- 8 DISPLAY** – for selecting on screen display.
- 9 CANCEL** – cancel teletext.
- 10 VOLUME TV** – for adjusting the volume.
- 15 0-9 digit keys** – for selecting preset stations.
- 16 +/-** – 1 or 2 digit entry.
- 18 CHANNEL/TRACK** – next **▶** or previous **◀** channel.
- 20 PAGE + /PAGE -** – next or previous teletext page.

DCC

- 1 STANDBY** – for switching the complete system to standby.
- 2 DECK A/DECK B** – for selecting deck A or B.
- 5 PLAY ▶** – for starting play.
- 6 SIDE** – for selecting the tape travel direction.
- 7 STOP ■** – for stopping recording/play.
- 8 DISPLAY** – for displaying character information (e.g. title names etc.).
- 9 PAUSE II** – for interrupting recording/play.
- 15 0-9 digit keys** – for track selection.
- 18 CHANNEL/TRACK** – next **▶** or previous **◀** track.
- 20 ◀◀ ▶▶** – for winding the tape.

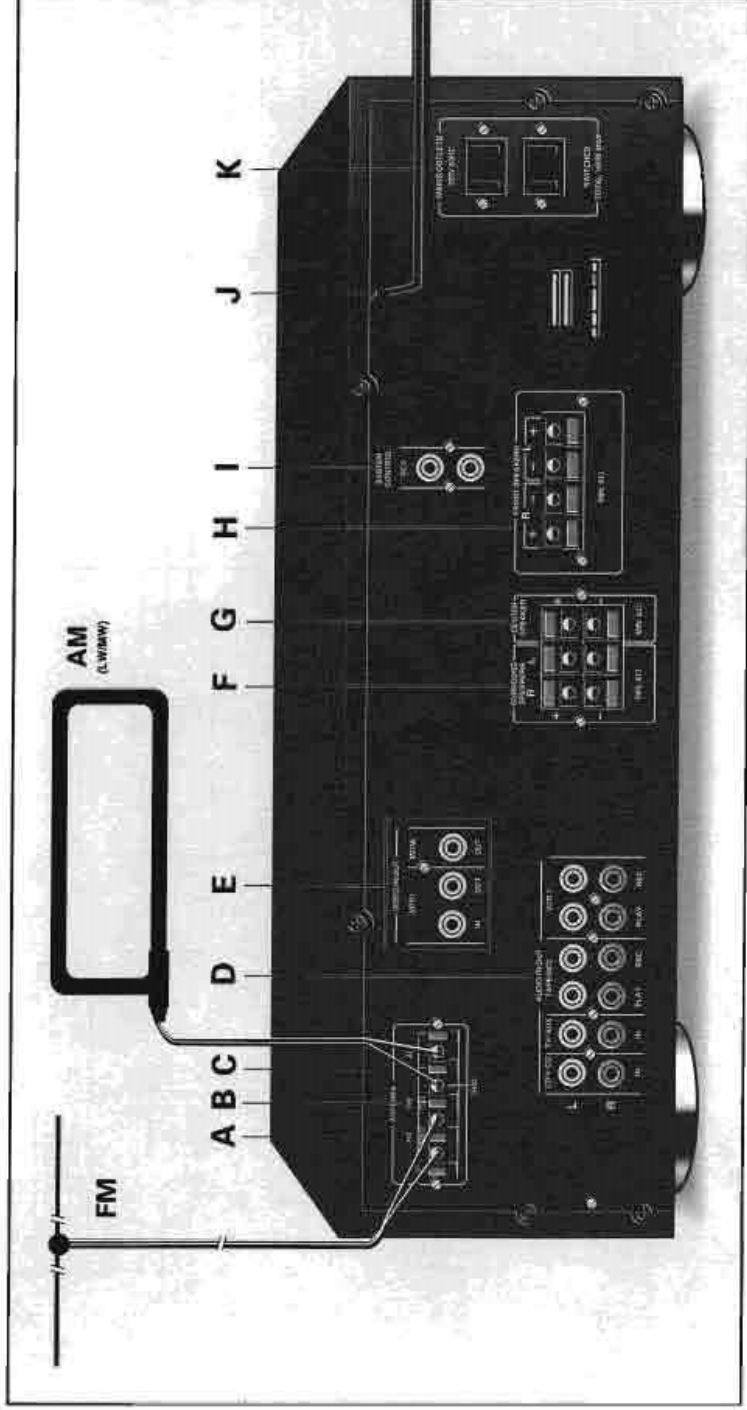
INSTALLATION

NOTES!

- **SWITCH OFF THE RECEIVER BEFORE MAKING ANY CONNECTIONS.**
- Do not connect the set to the power when making connections.
- Be sure to connect the white plugs to the L (left) and the red plugs to the R (right) jacks when making connections.

Important note for connecting equipment that does not have PLAY/REC markings on the input and output jacks:

FR731	Device to be connected e.g. cassette deck.
PLAY →	PLAY or OUT
REC →	REC or IN



CONNECTIONS

WARNING! The user should not attempt to connect the antenna wire of the receiver to an outdoor antenna!

A FM 300 Ω

These FM jacks are used for connection to the Community or Cable Antenna System or to a roof-mounted FM antenna with an impedance of 300 ohms. If none of these are available, you may use the wire supplied for nearby stations (reception could be poor).

B FM 75 Ω

These FM jacks are used for connection to the Community or Cable Antenna System or to a roof-mounted FM antenna with an impedance of 75 ohms. If none of these are available, you may use the wire supplied for nearby stations (reception could be poor).

C GND/AM

For AM reception, connect the supplied wires to the GND and AM antenna terminals (one wire to GND and one wire to the AM terminal) and position the antenna for best reception.

Note: Do **not** place the AM loop antenna on the unit, as this unit employs a computing device which could cause interference.

D AUDIO IN/OUT

- **CD/V-CD IN** – input jacks for connecting a CD (Compact Disc) player or a Video CD player.

- Connect these jacks to the OUTPUT jacks of the (V) CD player.

- **TV/AUX IN** – input jacks for connecting the sound channel of a TV set or any other source you want to hear; an additional CD player, a cassette deck, a VCR or a turntable with ceramic cartridge, etc.

- **TAPE/DCC PLAY/REC** – input and output jacks for connecting a cassette deck, a Digital Compact Cassette deck, or another digital recording device.

- Connect the PLAY jacks to the LINE OUTPUT jacks of the deck. These jacks may also be connected to the LINE OUTPUT jacks of an audio processor like an optional graphic equalizer or a Digital Signal Processor.
- Connect the REC jacks to the LINE INPUT jacks of the deck.

These jacks may also be connected to the LINE INPUT jacks of an audio processor like an optional graphic equalizer or a Digital Signal Processor.

- **VCR 1 PLAY/REC** – input jacks for connecting the sound channel of a video recorder and output jacks for extra sound recording equipment (e.g. a HiFi stereo video recorder, or cassette, or tape deck).

- Connect the PLAY jacks to the OUTPUT jacks of the VCR.
- Connect the REC jacks to the INPUT jacks of the VCR.

E VIDEO IN/OUT

- **VCR 1 IN/OUT** – input and output jacks for connecting the video input and output of a video recorder.

- **MONI/OUT** – output jacks for connecting to the video input of a video TV set.

F SURROUND SPEAKERS

Terminals for connecting a pair of surround speakers, impedance of 8 Ω each, to obtain a surround sound effect.

NOTE: Always connect **two** speakers to these terminals.

G CENTER SPEAKER

Terminals for connecting a center speaker.

H FRONT SPEAKERS

Terminals for connecting a pair of speakers, impedance 6-16 ohms (L = left, R = right).

- One of the wires of a loudspeaker cable is marked with a color or rib. Connect the marked wire to the red terminal, the non-marked wire to the black one.

I SYSTEM CONTROL

RC-5 (colored orange) – remote-control input/output jacks for connection to the corresponding RC-5 jacks of a CD (Compact Disc) player or a remote control receiver. Connect the RC-5 jacks to the RC-5 jacks of the external equipment that uses the RC-5 remote control system. This jacks has been added to maintain compatibility with other Magnavox Audio equipment.

POWER

J POWER CORD

For connecting the set to the power.

K POWER OUTLETS (Mains outlets)

Switched power outputs for connecting power plugs from various units such as cassette deck, CD player, etc. (maximum capacity is 100 W).

Power supplied through this outlet is turned on and off by the **POWER** button of the receiver.

CONNECTING HEADPHONES

- Connect headphones with a 6,3 mm jack plug to the **PHONES** jack.
 - Inserting the plug will not disconnect the speakers.



SPEAKER POSITIONING

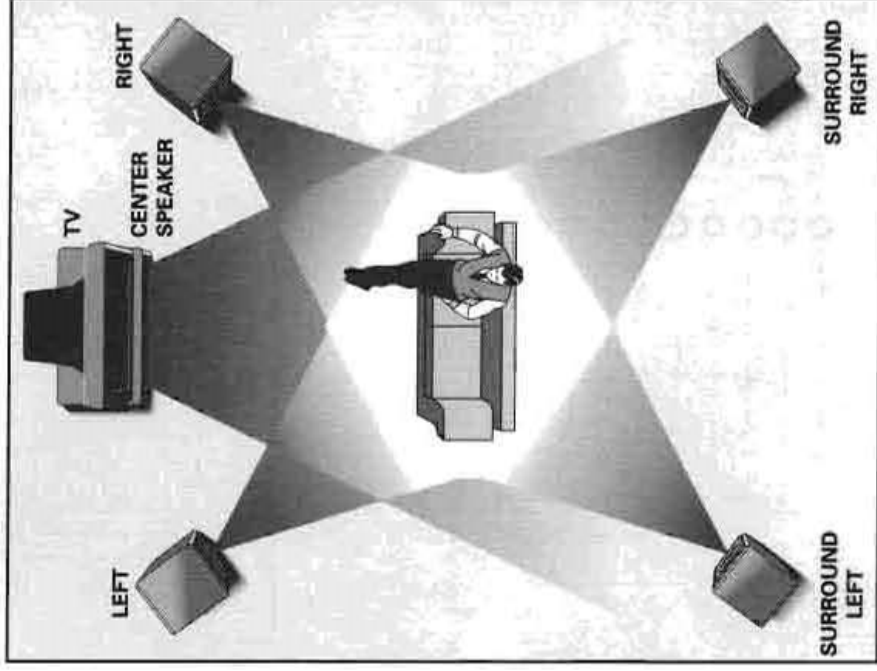
To get the best surround sound effect in your home, place the speakers as shown below.

The left and right speakers should be about 1 m. (40") from the TV set.

The center speaker should be above or below the TV set.

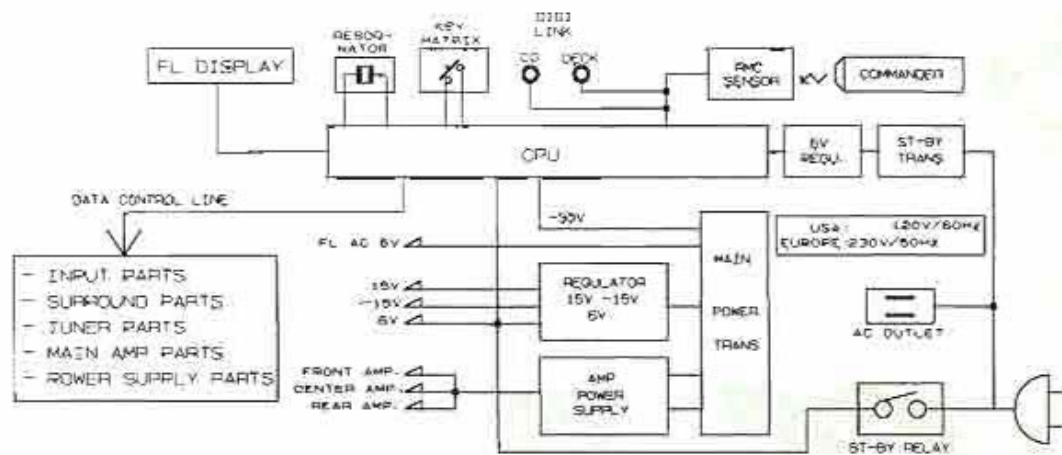
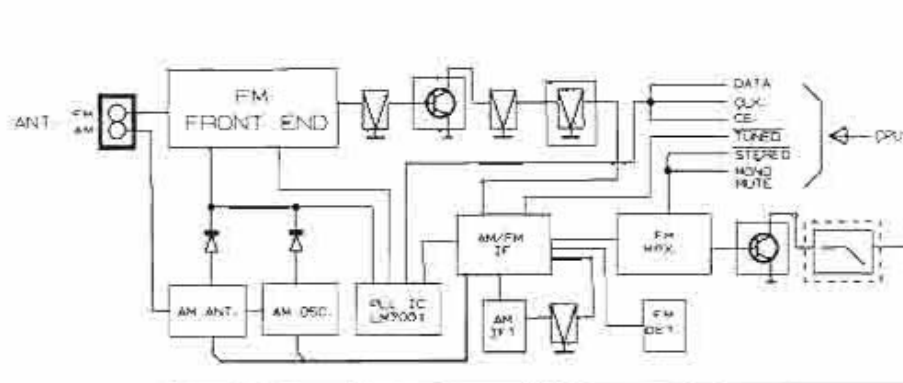
The rear speakers should be placed at normal listening ear level.

Note: to avoid interference with the TV picture, use only magnetically shielded speaker systems.

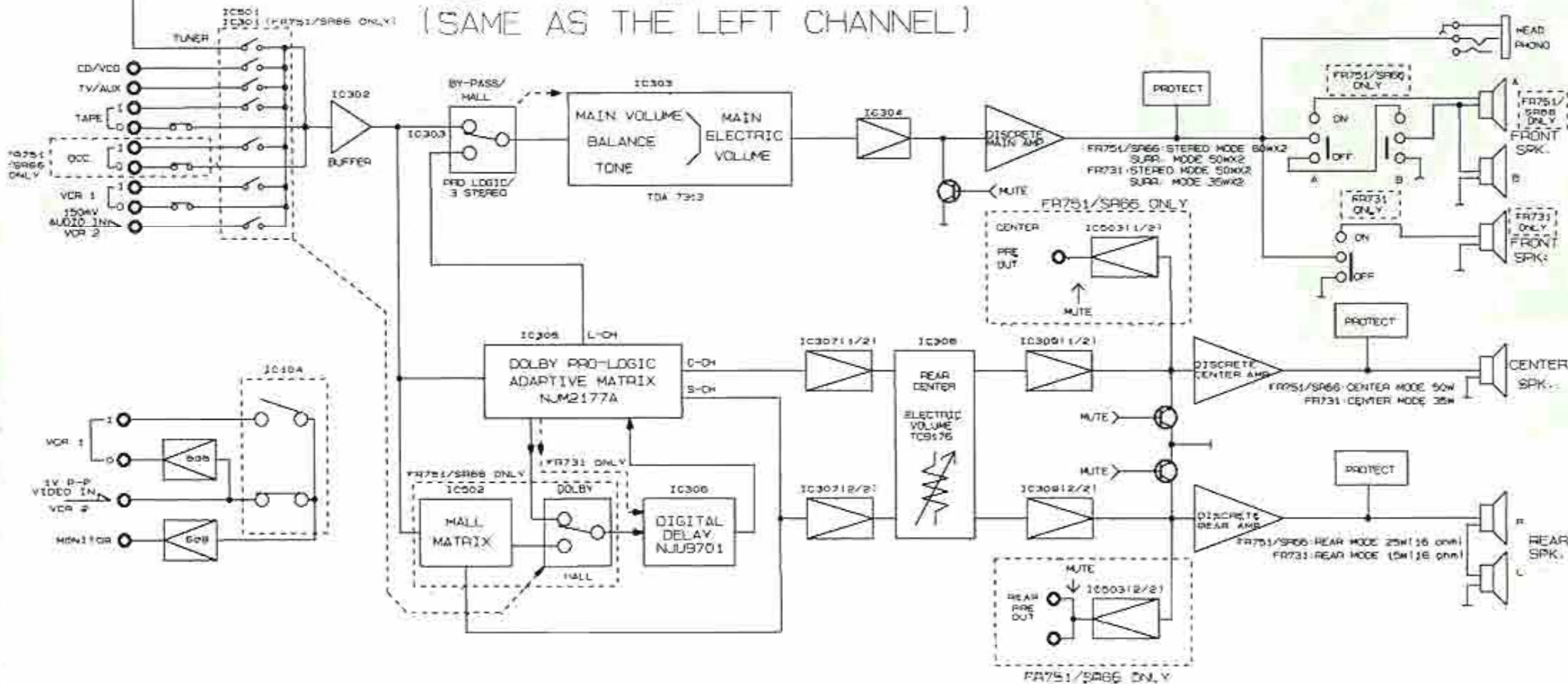


After making all necessary connections (some may not be applicable for your system set up), your system is now ready for use. In the next chapter, we will describe how to operate your FR 731 receiver.

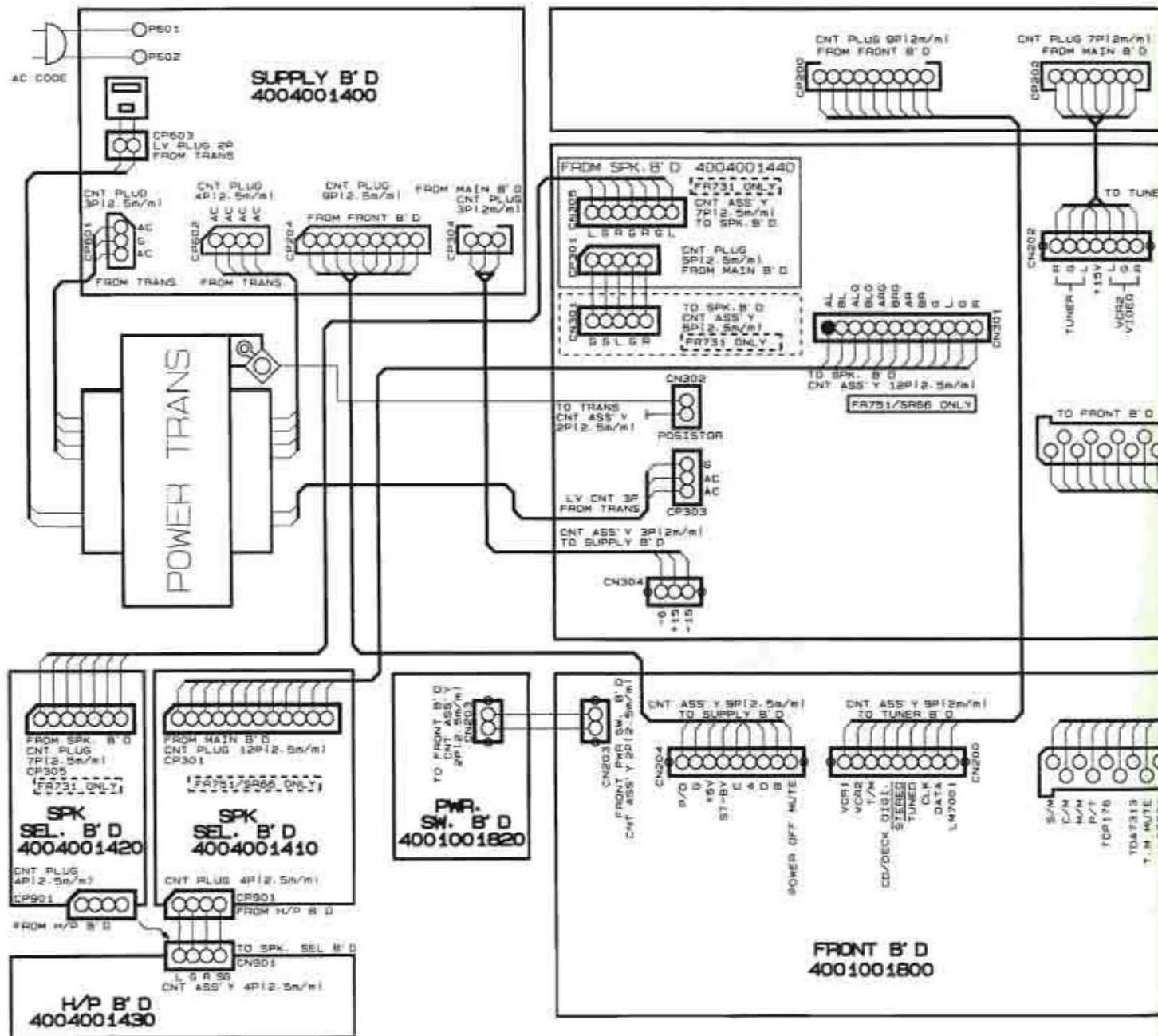
BLOCK DIAGRAM

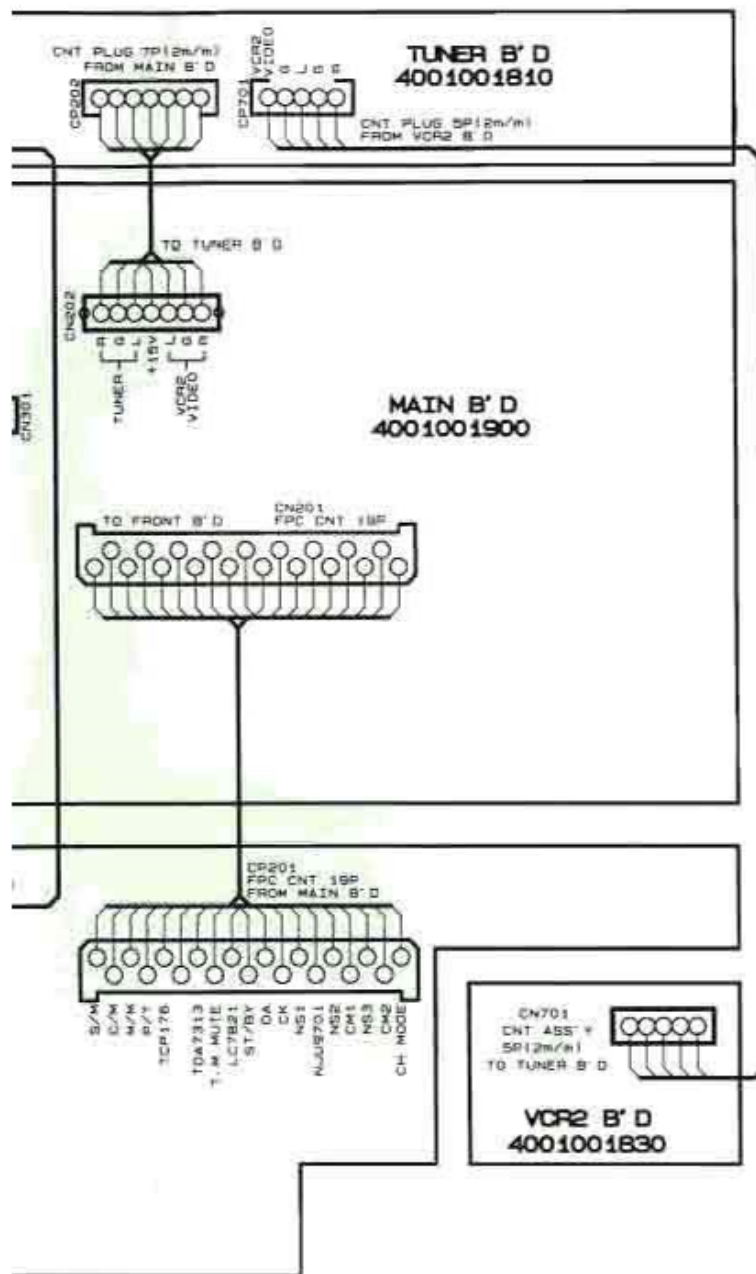


RIGHT CHANNEL
(SAME AS THE LEFT CHANNEL)



WIRING DIAGRAM





SPECIFICATIONS

GENERAL

Mains voltage (AC)	-00 : 230 V
	-10 : 240 V
	-17 : 120 V
Mains frequency	-00/10 : 50 Hz
	/17 : 60 Hz
Battery (remote control)	: 3 V (R03 x 2)
Power consumption	: 450 W
Dimension (W x H x D)	: 435 x 125 x 350 mm
Weight	: 10 Kg

AMPLIFIER

Output power	Main : 2 x 50 W
	Center : 35 W
	Rear : 2 x 15 W
Speaker impedance	Main : 2 x 8 ohm
	Center : 8 ohm
	Rear : 2 x 16 ohm
Frequency response	Main : 20 Hz - 40 kHz (-3dB)
	Center (PRO-LOGIC) : 50 Hz - 15 kHz
	Rear (PRO-LOGIC) : 100 Hz - 6 kHz
Tone control	Bass at 100 Hz : ± 10 dB
	Treble at 10k Hz : ± 10 dB
Channel separation	1k Hz : 30 dB
CD/AUX sensitivity	: 200 mV

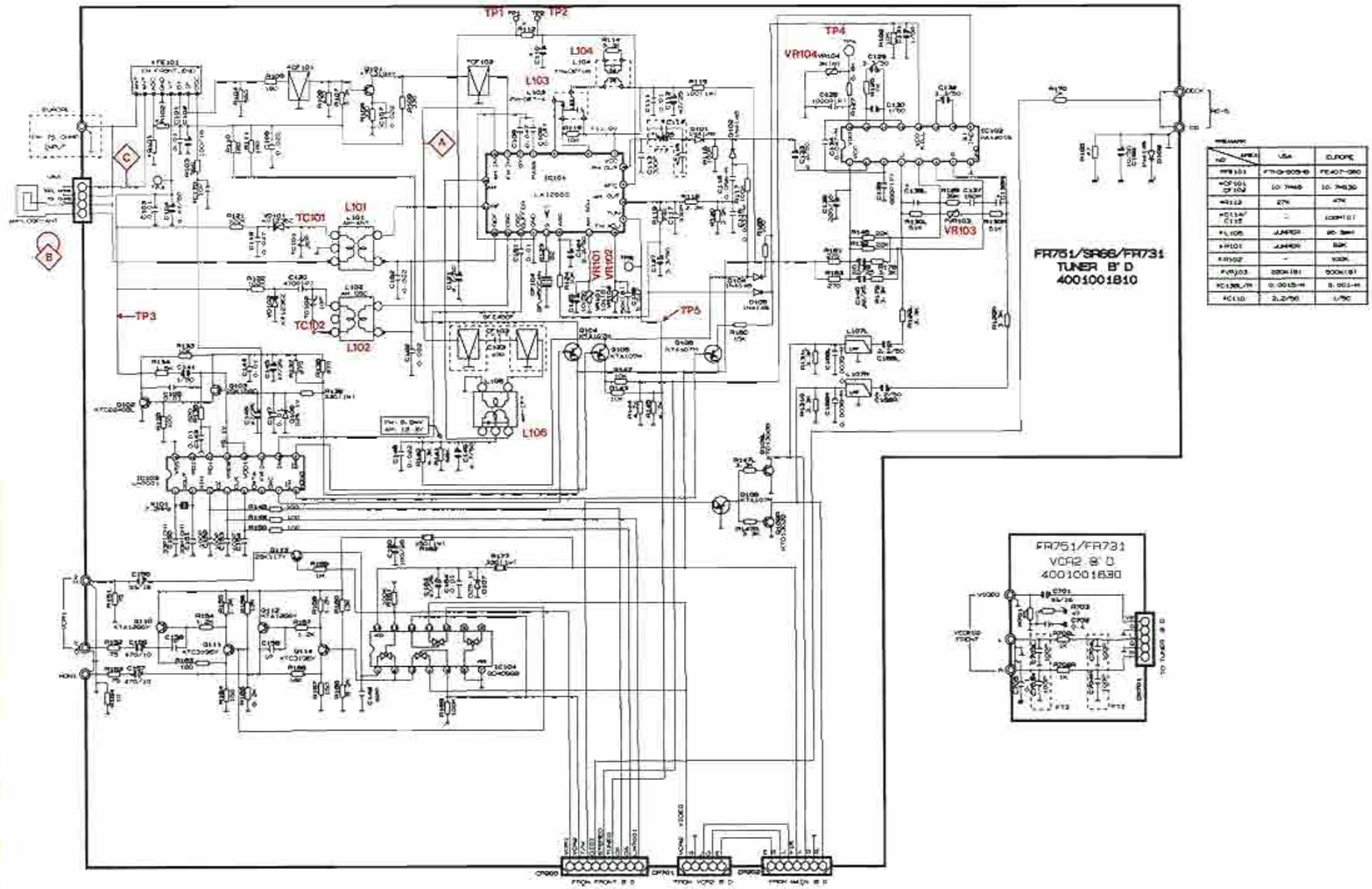
TUNER - FM section

Tuning range	: 87.5 - 108 MHz
IF frequency	: 10.7 MHz
Sensitivity	: < 20 dBf at 26 dB S/N
Selectivity	: > 40 dB at 600 kHz B.W.
IF rejection	: > 70 dB
Image rejection	: > 70 dB
Auto search stop sensitivity	: < 34 dBf
Stereo separation	1k Hz : > 28 dB

TUNER - AM section

Tuning range	-00/10 : 522 - 1611 kHz
	-17 : 520 - 1710 kHz
IF frequency	: 450 kHz
Sensitivity	: < 1000 µV/m 20 dB S/N
Selectivity	: > 20 dB
IF rejection	: > 30 dB
Image rejection	: > 28 dB
Auto search stop sensitivity	: < 1585 µV/m

TUNING BOARD - CIRCUIT DIAGRAM



RADIO ALIGNMENT

AM IF								
AM (for -17)	450KHz		999KHz (1000KHz)	L106	TAPE OUT	max.		
AM RF								
MW (AM) * TUNING VOLTAGE	522KHz (520KHz)		522KHz (520KHz)	L102	TP3	DC voltage 1.0 - 1.2V		
	1611KHz (1710KHz)		1611KHz (1710KHz)	TC102		DC voltage 8.5 - 9.0V		
MW (AM)* RF SENSITIVITY	603KHz (600KHz)		603KHz (600KHz)	L101	TAPE OUT	max.		
	1404KHz (1400KHz)		1404KHz (1400KHz)	TC101				
MW (AM) AUTO TUNING SENSITIVITY	999KHz (1000KHz)		999KHz (1000KHz)	VR101	TP5	200mV		
FM IF								
FM #	98.0MHz (98.1MHz)		98.1MHz (98.1MHz)	L103	TP1/TP2 (R112)	Zero voltage		
				L104	TAPE OUT	Min. distortion		
FM RF								
FM # AUTO TUNING SENSITIVITY	98.0MHz (98.1MHz)		98.0MHz (98.1MHz)	VR102	TP5	Zero reading on AC voltmeter with SG o/p = 28dBf ⁹		
FM MPX								
VCO	98MHz Pilot off		98MHz	VR104	TP4	Frequency 76 ± 0.2KHz		
SEPERATION	98MHz (L-channel)		98MHz (R-channel)	VR103	TAPE OUT R-ch	Seperation Betten than 28dB		
	98MHz (R-channel)							

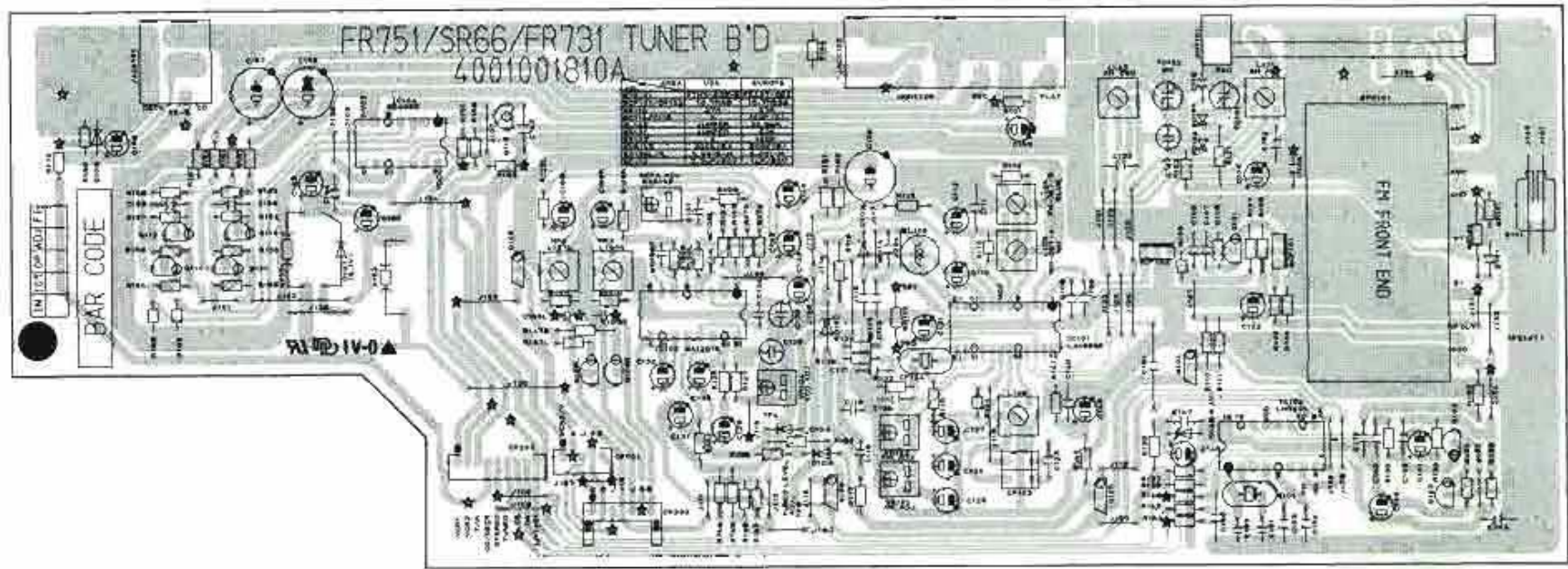
* Mod. 1KHz 30%

75KHz dev.

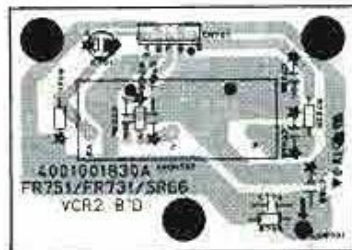
"Bei notwendigem Abgleich ist das Gerät auf die gesetlich vorgeschriebenen Eckfrequenzen abzugleichen".

Repeat

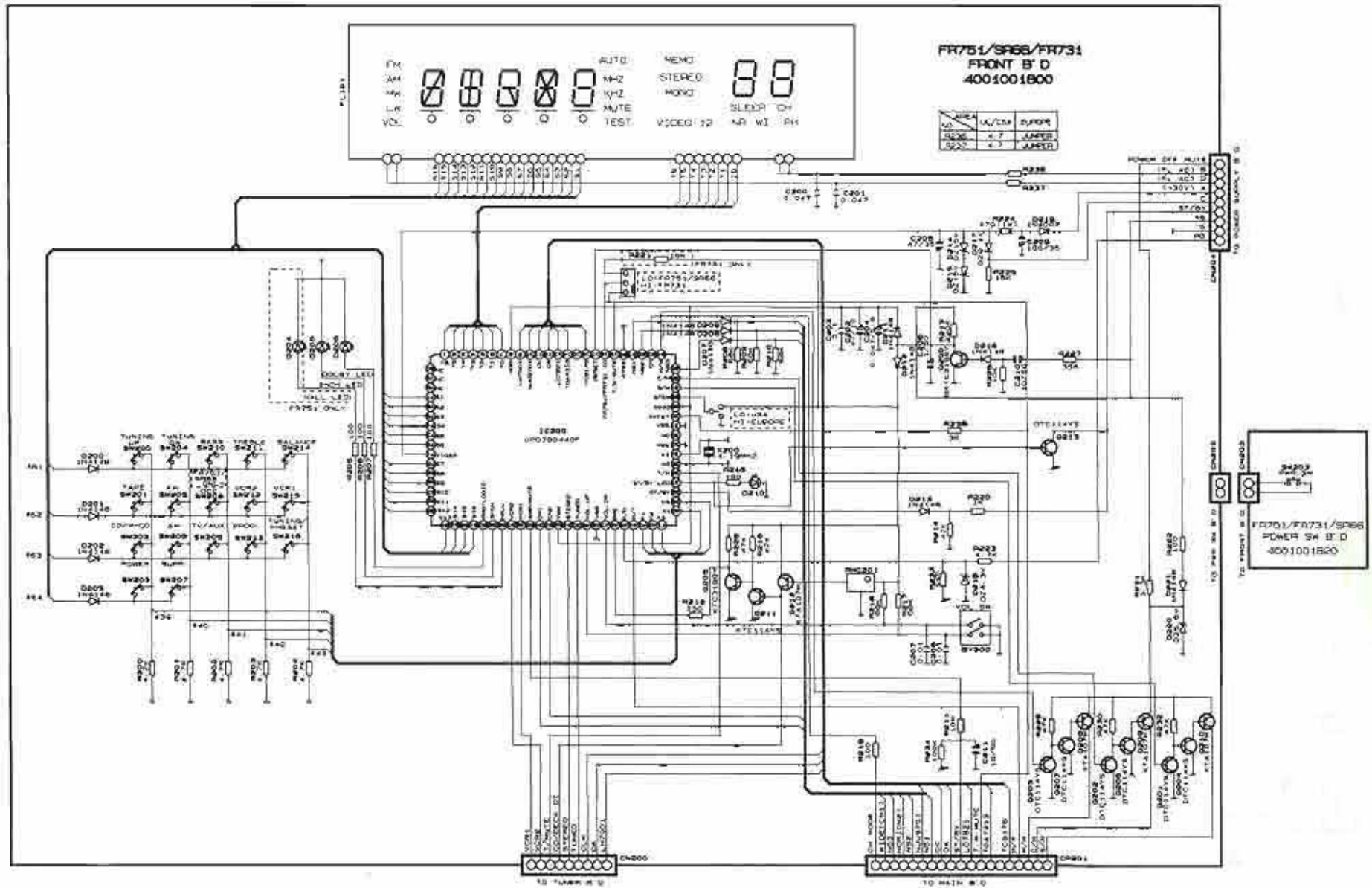
TUNING BOARD - LAYOUT DIAGRAM



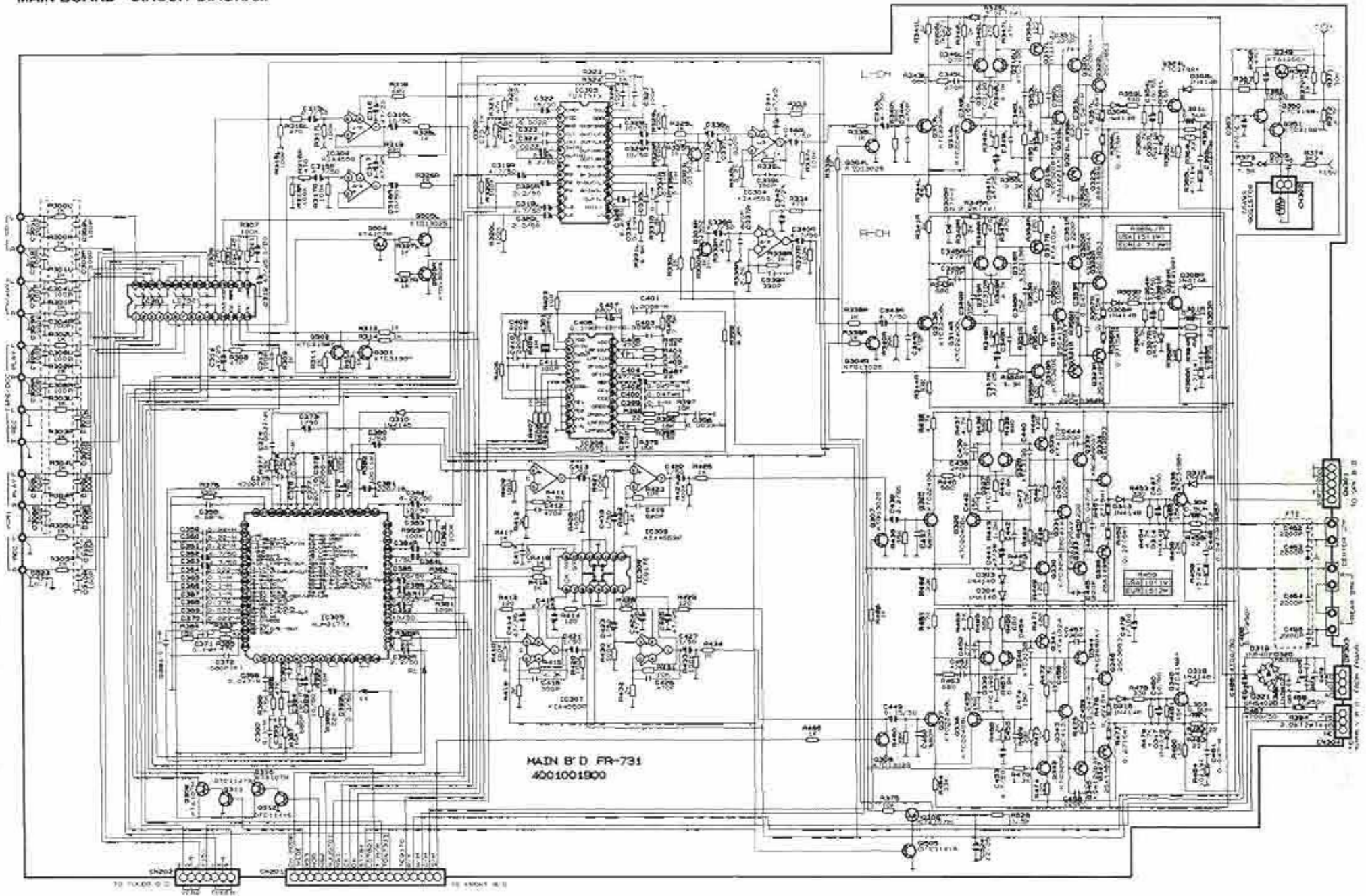
VCR2 BOARD - LAYOUT DIAGRAM



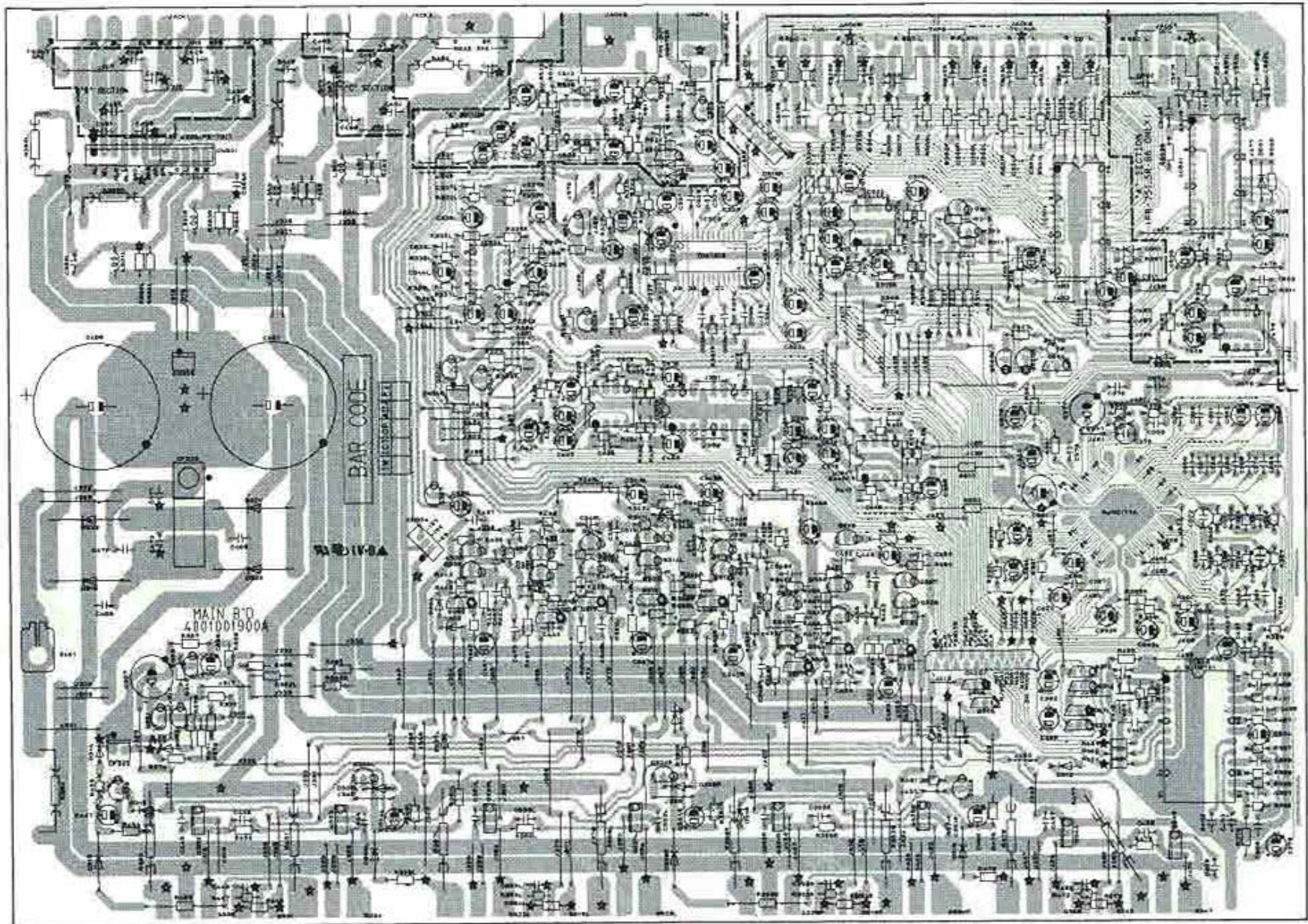
FRONT BOARD - CIRCUIT DIAGRAM



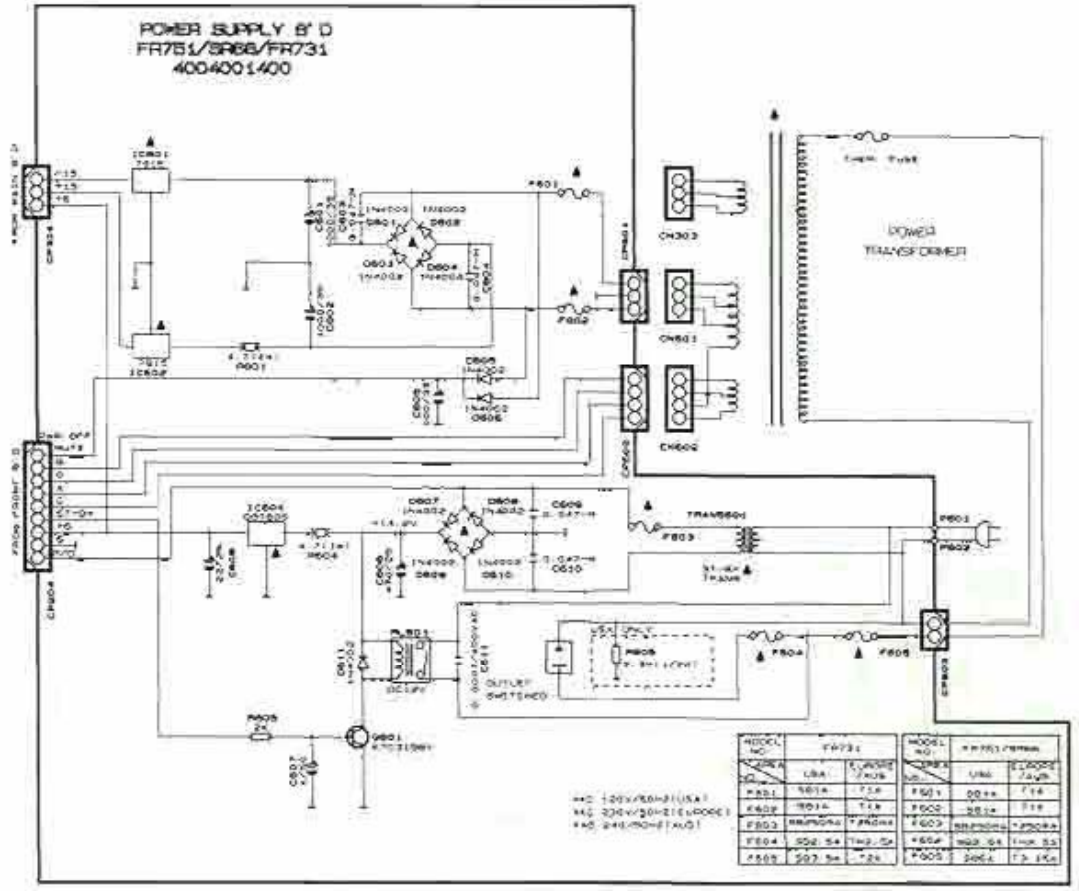
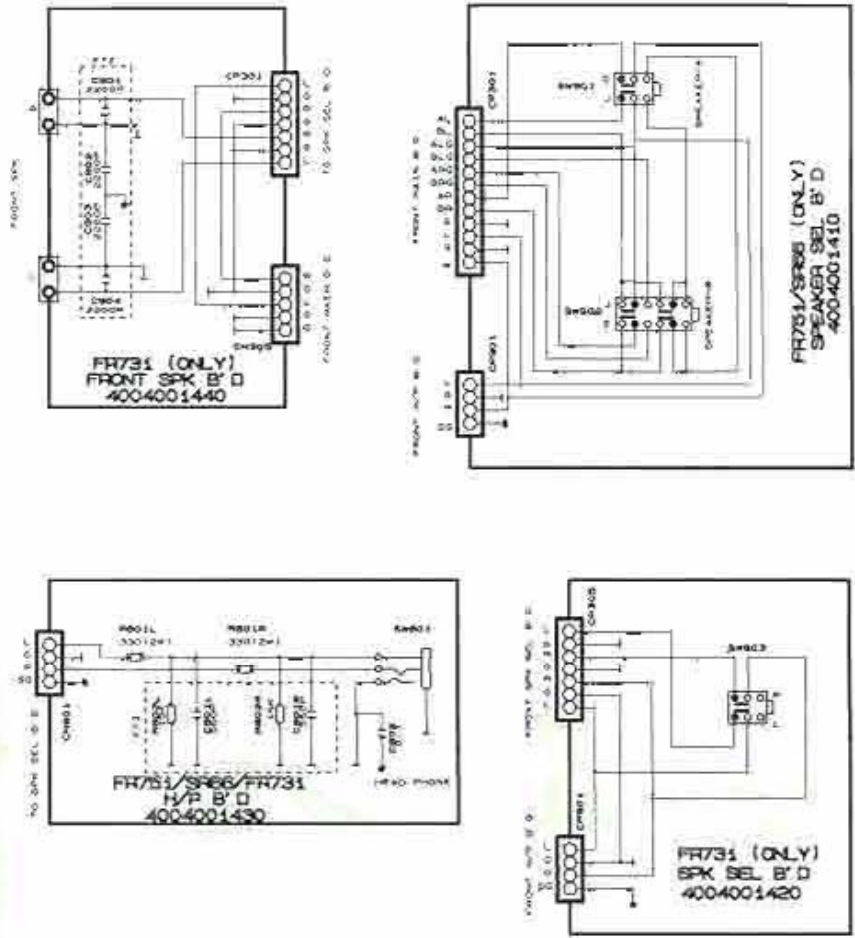
MAIN BOARD - CIRCUIT DIAGRAM



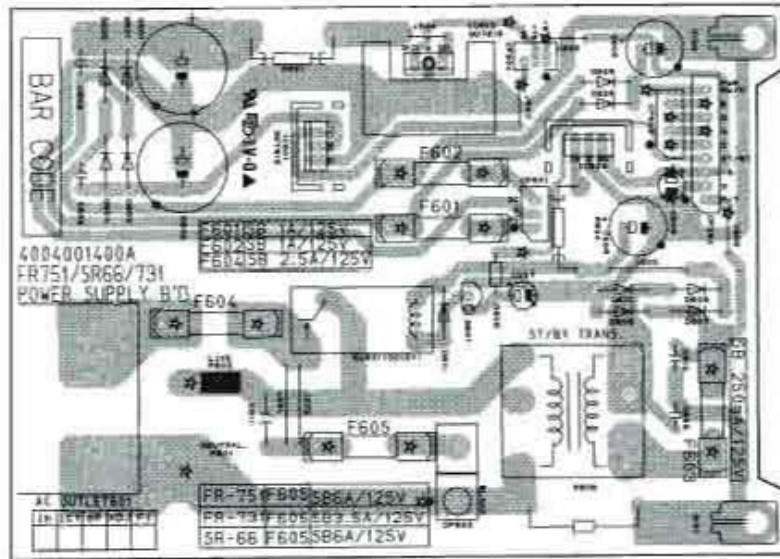
MAIN BOARD - LAYOUT DIAGRAM



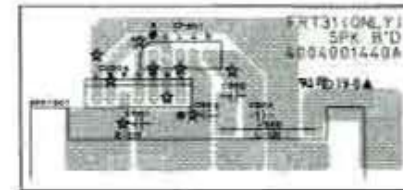
POWER SUPPLY BOARD - CIRCUIT DIAGRAM



POWER SUPPLY BOARD - LAYOUT DIAGRAM

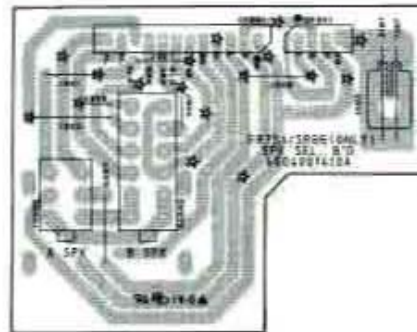
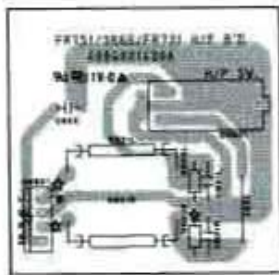


FRONT SPEAKER BOARD - LAYOUT DIAGRAM (FR731 ONLY)

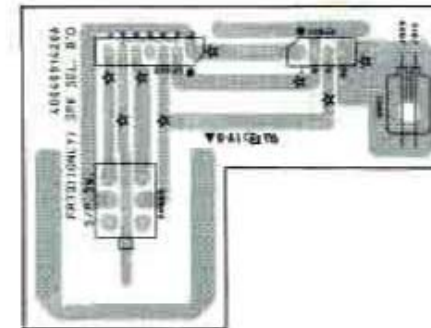


SPEAKER SELECTOR BOARD - LAYOUT DIAGRAM (FR751 ONLY)

HEADPHONE BOARD - LAYOUT BOARD





SPEAKER SELECTOR BOARD - LAYOUT DIAGRAM (FR731 ONLY)



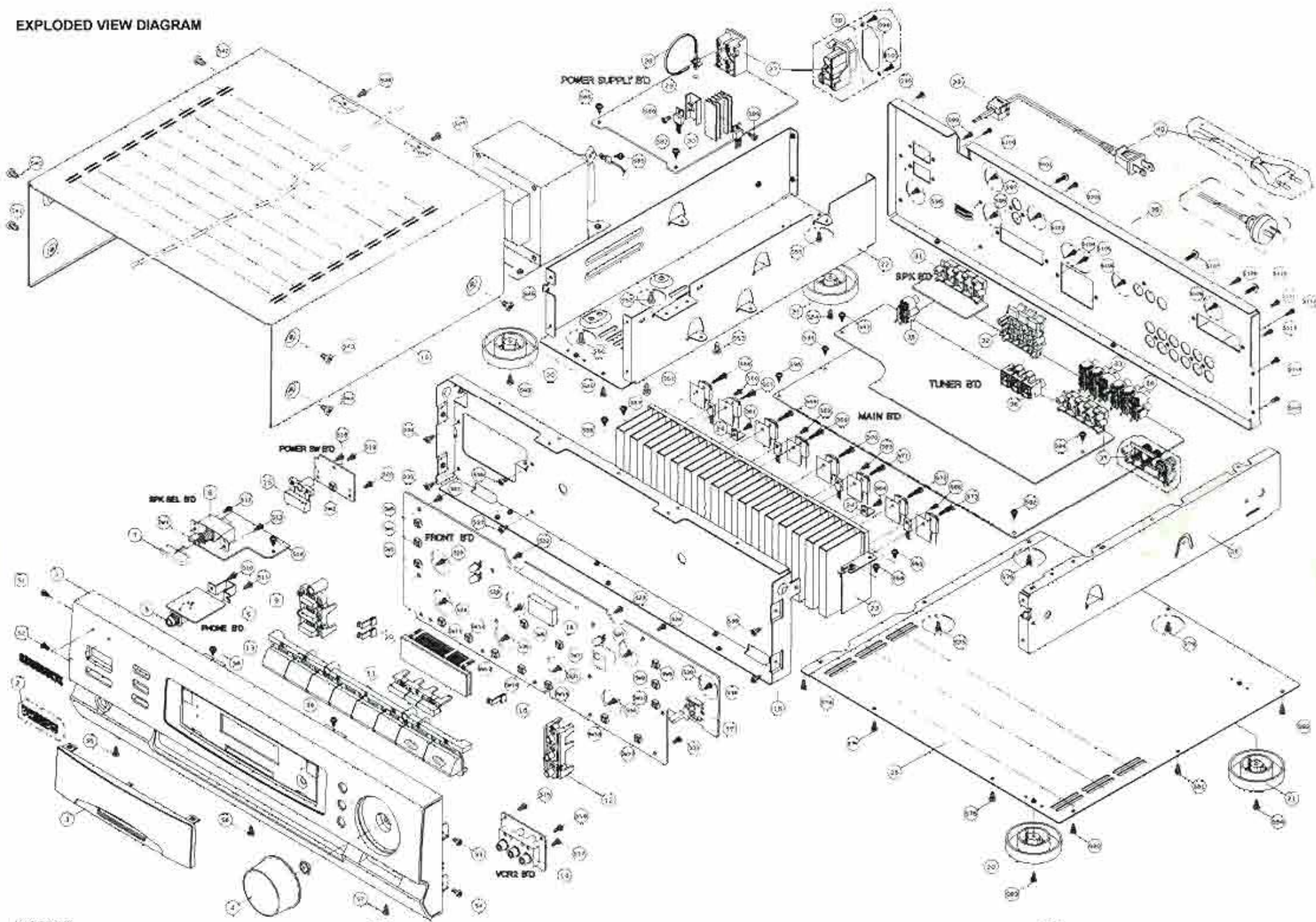
SERVICE TEST PROGRAM - μ PD780446F

4. Pin Functions

Pin No.	Symbol	Description																								
1 - 7	$T_e - T_0$	Grid signal output for FIP.																								
8	V_{DD}	+5V power supply.																								
9	LM7001	Chip enable output for LM7001.																								
10	NJU9701	Chip enable output for NJU9701.																								
11/12	CLK/DATA	CLOCK/DATA output for TDA7313, TC9176, NJU9701, LC7821, TC9176 and LM7001.																								
13	LC7821	Chip enable output for LC7821.																								
14	TDA7313	Chip enable output for TDA7313.																								
15	NC	Not used !																								
16	TC9176	Chip enable output for TC 9176.																								
17	RESET	Input for resetting CPU.(At "H", it is active.)																								
18	SR-66(FR-751) / FR-731 ID	Input for selecting SR-66(FR-751) or FR-731 mode. According to each mode, data input is as follows.																								
		<table border="1"> <thead> <tr> <th>MODE</th> <th>INPUT</th> </tr> </thead> <tbody> <tr> <td>SR-66(FR-751)</td> <td>L</td> </tr> <tr> <td>FR-731</td> <td>H</td> </tr> </tbody> </table>	MODE	INPUT	SR-66(FR-751)	L	FR-731	H																		
MODE	INPUT																									
SR-66(FR-751)	L																									
FR-731	H																									
19	T. TONE MUTE	Output for PRO-LOGIC test tone mute. (At "H", it is active.)																								
20	$A.V_{SS}$	Analog ground.																								
21/22/25	NS1/NS2/NS3	Control data output for selectings channel in the test tone mode. Setting are as follows.																								
		<table border="1"> <thead> <tr> <th>SELECTION</th> <th>NS 1</th> <th>NS 2</th> <th>NS 3</th> </tr> </thead> <tbody> <tr> <td>TEST TONE(OFF)</td> <td>H</td> <td>Δ</td> <td>Δ</td> </tr> <tr> <td>LEFT</td> <td>L</td> <td>L</td> <td>L</td> </tr> <tr> <td>CENTER</td> <td>L</td> <td>L</td> <td>H</td> </tr> <tr> <td>RIGHT</td> <td>L</td> <td>H</td> <td>L</td> </tr> <tr> <td>SURROUND</td> <td>L</td> <td>H</td> <td>H</td> </tr> </tbody> </table> <p>Δ: Previous states</p>	SELECTION	NS 1	NS 2	NS 3	TEST TONE(OFF)	H	Δ	Δ	LEFT	L	L	L	CENTER	L	L	H	RIGHT	L	H	L	SURROUND	L	H	H
SELECTION	NS 1	NS 2	NS 3																							
TEST TONE(OFF)	H	Δ	Δ																							
LEFT	L	L	L																							
CENTER	L	L	H																							
RIGHT	L	H	L																							
SURROUND	L	H	H																							
23	CH. MODE	Port for settings of PRO-LOGIC and 3-STEREO mode. According to each mode, data output is as follows.																								
		<table border="1"> <thead> <tr> <th>MODE</th> <th>OUTPUT</th> </tr> </thead> <tbody> <tr> <td>3-STEREO</td> <td>High impedance</td> </tr> <tr> <td>PRO-LOGIC</td> <td>H</td> </tr> <tr> <td>OTHERS</td> <td>L</td> </tr> </tbody> </table>	MODE	OUTPUT	3-STEREO	High impedance	PRO-LOGIC	H	OTHERS	L																
MODE	OUTPUT																									
3-STEREO	High impedance																									
PRO-LOGIC	H																									
OTHERS	L																									
24	MAIN MUTE	Output for main mute.(At "H", it is active.)																								
26	CENTER MUTE	Output for center mute.(At "H", it is active.)																								
27	SURR. MUTE	Output for surround mute.(At "H", it is active.)																								
28	STEP	According to region, input for selecting the frequency band and the steps of FM and AM. Settings are as follows.																								
		<table border="1"> <thead> <tr> <th>REGION</th> <th>FREQUENCY BANDS</th> <th>STEPS</th> <th>STEP</th> </tr> </thead> <tbody> <tr> <td>AMERICA</td> <td>FM: 87.5 - 108 MHz AM: 520 - 1710 kHz</td> <td>100 kHz 10 kHz</td> <td>L</td> </tr> <tr> <td>EUROPE</td> <td>FM: 87.5 - 108 MHz AM: 522 - 1611 kHz</td> <td>50 kHz 9 kHz</td> <td>H</td> </tr> </tbody> </table>	REGION	FREQUENCY BANDS	STEPS	STEP	AMERICA	FM: 87.5 - 108 MHz AM: 520 - 1710 kHz	100 kHz 10 kHz	L	EUROPE	FM: 87.5 - 108 MHz AM: 522 - 1611 kHz	50 kHz 9 kHz	H												
REGION	FREQUENCY BANDS	STEPS	STEP																							
AMERICA	FM: 87.5 - 108 MHz AM: 520 - 1710 kHz	100 kHz 10 kHz	L																							
EUROPE	FM: 87.5 - 108 MHz AM: 522 - 1611 kHz	50 kHz 9 kHz	H																							
29	$A.V_{DD}$	Connected to V_{DD} .																								
30	$A.V_{ref}$	Reference Voltage.(Connected to +5V, Not VDD.)																								
31	V_{SS}	Ground.																								

Pin No.	Symbol	Description															
32	NC	Not used !															
33	V _{SS}	Ground.															
34	X-TAL IN	Input for crystal oscillator.															
35	X-TAL OUT	Output for crystal oscillator.															
36	TUNER MUTE	Output for tuner mute.(At "H", it is active.)															
37	ST/BY LED	Output for driving stand by LED.(At "H", it is active.)															
38	ST/BY	When the power is on, control data output is "H". When the power is off, control data output is "L" and last memory function is actived.															
39 - 43	KEY5 - KEY1	Data input for key scan.															
44	PROTECTION	Signal input for protection.															
45	POWER DOWN	Input for power down.(At "L", it is active.)															
46	RMC	Input for remocon data.(At "L", it is active.)															
47/49	M.VOL. IN1/IN2	Input for main volume up/down. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>M.VOL.IN 1</p>  </div> <div style="text-align: center;"> <p>M.VOL.IN 2</p>  </div> </div>															
48	V _{SS}	Ground															
50	TUNED	Input for detecting station during tuning. If "L" is inputed during tuning, tuning stops at that frequency.															
51	STEREO	Input for lighting the STEREO indicator.(At "L", it is active.)															
52	V _{DD}	+5V power supply.															
53/54	CENTER MODE 2/1	Control data output for center mode in the DOLBY PRO-LOGIC and the 3-STEREO mode. Settings are as follows. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>CENTER MODE</th> <th>C.M.1</th> <th>C.M.2</th> </tr> </thead> <tbody> <tr> <td>NORMAL, OFF</td> <td>L</td> <td>H</td> </tr> <tr> <td>WIDE</td> <td>H</td> <td>L</td> </tr> <tr> <td>PHANTOM</td> <td>L</td> <td>L</td> </tr> </tbody> </table>	CENTER MODE	C.M.1	C.M.2	NORMAL, OFF	L	H	WIDE	H	L	PHANTOM	L	L			
CENTER MODE	C.M.1	C.M.2															
NORMAL, OFF	L	H															
WIDE	H	L															
PHANTOM	L	L															
55	AMP MUTE	Output for Amp mute.(At "H", it is active.)															
56/57	VCR IN.1 / VCR IN.2	Control data output for selecting VCR1 or VCR2 video signal. According to each mode, data output is as follows. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>MODE</th> <th>VCR IN.1</th> <th>VCR IN.2</th> <th>REMARKS</th> </tr> </thead> <tbody> <tr> <td>VCR 1</td> <td>H</td> <td>L</td> <td rowspan="2">Enitial settings.</td> </tr> <tr> <td>VCR 2</td> <td>L</td> <td>H</td> </tr> <tr> <td>OTHERS</td> <td>Δ</td> <td>Δ</td> <td>Δ: Previous state</td> </tr> </tbody> </table>	MODE	VCR IN.1	VCR IN.2	REMARKS	VCR 1	H	L	Enitial settings.	VCR 2	L	H	OTHERS	Δ	Δ	Δ: Previous state
MODE	VCR IN.1	VCR IN.2	REMARKS														
VCR 1	H	L	Enitial settings.														
VCR 2	L	H															
OTHERS	Δ	Δ	Δ: Previous state														
58	HALL (FR-751/SR-66 Only)	※Last memory function is available. Output for driving HALL LED.(At "H", it is active.)															
59	3-STEREO	Output for driving 3-STEREO LED.(At "H", it is active.)															
60	DOLBY PRO-LOGIC	Output for driving DOLBY PRO-LOGIC LED.(At "H", it is active.)															
61 - 70	S16 - S7	Segment signal output for FIP.															
71	V _{load}	-30V power supply for FIP.															
72 - 77	S6 - S1	Segment signal output for FIP.															
78 - 80	NC	Not used !															

EXPLODED VIEW DIAGRAM






MECHANICAL PARTSLIST

1	4822 426 51871	Front Panel
2	4822 459 11262	Badge (Philips)
3	4822 450 62552	Display Window
4	4822 413 51525	Volume Knob
7	4822 410 63968	Push Button-SPK
9	4822 410 63967	Surround Button
10	4822 381 11651	Indicator LED
11	4822 410 63966	Tuning Button
12	4822 413 41931	Tone Button
13	4822 410 63969	Function Button
15	4822 410 63971	Power Button
20	4822 462 42232	Foot (Silver)
21	4822 462 42233	Foot (Black)
27	4822 267 31994	AC Outlet (For-/00)
39	4822 325 80544	Cord Stopper
40	4822 321 10527	AC Cord (For-/00)
40	4822 320 11171	AC Cord (For-/10)
	4822 218 10599	Remo Assy RC8080/01
	4822 736 22616	Manual Instructions

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

MAIN BOARD

		4822 117 11964	Cement rst 0,27R 5W
R357L		4822 117 11964	Cement rst 0,27R 5W
R357R		4822 117 11964	Cement rst 0,27R 5W
R358L		4822 117 11964	Cement rst 0,27R 5W
R358R		4822 117 11964	Cement rst 0,27R 5W
R451		4822 117 11964	Cement rst 0,27R 5W
R452		4822 117 11964	Cement rst 0,27R 5W
R476		4822 117 11964	Cement rst 0,27R 5W
R477		4822 117 11964	Cement rst 0,27R 5W
L301L		4822 157 71892	Coil Ind 0.5µH
L301R		4822 157 71892	Coil Ind 0.5µH
L302		4822 157 71892	Coil Ind 0.5µH
L303		4822 157 71892	Coil Ind 0.5µH
X301		4822 242 81969	Reson CSA2.0MG-TF01
D301		4822 130 30621	1N4148
D302		4822 130 70046	Zener UZ9.1BSC
D303		4822 130 30621	1N4148
D304		4822 130 30621	1N4148
D305L		4822 130 70048	Zener UZ27.0BSC
D305R		4822 130 70048	Zener UZ27.0BSC
D306L		4822 130 30621	1N4148
D306R		4822 130 30621	1N4148
D307L		4822 130 30621	1N4148
D307R		4822 130 30621	1N4148
D308L		4822 130 30621	1N4148
D308R		4822 130 30621	1N4148
D309		4822 130 81737	Zener UZ5.1BSB
D310		4822 130 30621	1N4148
D313		4822 130 30621	1N4148
D314		4822 130 30621	1N4148
D315		4822 130 30621	1N4148
D316		4822 130 30621	1N4148
D317		4822 130 30621	1N4148
D318		4822 130 30621	1N4148
D319		4822 130 33765	1N5402
D320		4822 130 33765	1N5402
D321		4822 130 33765	1N5402
D322		4822 130 33765	1N5402



Q301	4822 130 41947	KTC3198
Q302	4822 130 41947	KTC3198
Q303L	4822 130 63904	KTD1302S
Q303R	4822 130 63904	KTD1302S
Q304L	4822 130 63904	KTD1302S
Q304R	4822 130 63904	KTD1302S
Q306	4822 130 63907	KTA107M
Q307	4822 130 63904	KTD1302S
Q308	4822 130 63904	KTD1302S
Q309	4822 130 63907	KTA107M
Q310	4822 130 63907	KTA107M
Q311	4822 130 63906	KTC114YS
Q312	4822 130 63906	KTC114YS
Q313L	4822 130 41312	KTC2240BL
Q313R	4822 130 41312	KTC2240BL
Q314L	4822 130 41312	KTC2240BL
Q314R	4822 130 41312	KTC2240BL
Q315L	4822 130 41947	KTC3198
Q315R	4822 130 41947	KTC3198
Q316L	4822 130 41947	KTC3198
Q316R	4822 130 41947	KTC3198
Q317L	4822 130 63903	KTA1024
Q317R	4822 130 63903	KTA1024
Q318L	4822 130 63905	KTC3206
Q318R	4822 130 63905	KTC3206
Q319L	4822 130 63899	2SC4137
Q319R	4822 130 63899	2SC4137
Q320L	4822 130 63898	KSC2690A-Y
Q320R	4822 130 63898	KSC2690A-Y
Q321L	4822 130 63897	KSA1220A-Y
Q321R	4822 130 63897	KSA1220A-Y
Q322L	4822 130 63902	2SC3853
Q322R	4822 130 63902	2SC3853
Q323L	4822 130 63901	2SA1489
Q323R	4822 130 63901	2SA1489
Q324L	4822 130 41947	KTC3198
Q324R	4822 130 41947	KTC3198
Q325	4822 130 41312	KTC2240BL
Q326	4822 130 41312	KTC2240BL
Q327	4822 130 41947	KTC3198








Q328	4822 130 41947	KTC3198
Q329	4822 130 63903	KTA1024
Q330	4822 130 63905	KTC3206
Q331	4822 130 63899	2SC4137
Q332	4822 130 63898	KSC2690A-Y
Q333	4822 130 63897	KSA1220A-Y
Q334	4822 130 63902	2SC3853
Q335	4822 130 63901	2SA1489
Q336	4822 130 41947	KTC3198
Q337	4822 130 41312	KTC2240BL
Q338	4822 130 41312	KTC2240BL
Q339	4822 130 41947	KTC3198
Q340	4822 130 41947	KTC3198
Q341	4822 130 63903	KTA1024
Q342	4822 130 63905	KTC3206
Q343	4822 130 63899	2SC4137
Q344	4822 130 63898	KSC2690A-Y
Q345	4822 130 63897	KSA1220A-Y
Q346	4822 130 63902	2SC3853
Q347	4822 130 63901	2SA1489
Q348	4822 130 41947	KTC3198
Q349	4822 130 41726	KTA1015Y
Q350	4822 130 41947	KTC3198
Q351	4822 130 41947	KTC3198
Q503L	4822 130 63904	KTD1302S
Q503R	4822 130 63904	KTD1302S
Q504	4822 130 63907	KTA107M
Q505	4822 130 63906	KTC114YS
IC301	4822 209 72748	LC7821
IC302	4822 209 91029	KIA4559
IC303	4822 209 32995	TDA7313
IC304	4822 209 91029	KIA4559
IC305	4822 209 90742	NJM2177A
IC306	4822 209 91028	NJU9701
IC307	4822 209 91029	KIA4559
IC308	4822 209 91026	TC9176
IC309	4822 209 91029	KIA4559

- MISCELLANEOUS -




Jack1	4822 290 81736	Terminal Speaker, 4P
Jack2	4822 290 81737	Terminal Speaker, 6P
Jack3	4822 267 41252	Jack RCA, 6P
Jack4	4822 267 41251	Jack RCA, 6P


TUNER BOARD

	VR101	4822 100 12292	Semi Fixed Res 10K
	VR102	4822 100 12294	Semi Fixed Res 50K
	VR103	4822 100 12295	Semi Fixed Res 500K
	VR104	4822 100 12293	Semi Fixed Res 2K
	TC101	4822 125 60227	Trimmer 20pF
	TC102	4822 125 60228	Trimmer 10pF
	CF101	4822 242 82235	Filter SFE10.7MS3G
	CF102	4822 242 82235	Filter SFE10.7MS3G
	CF103	4822 242 73951	Filter SFZ450B
	CF104	4822 242 82242	BFU450C4N
	L101	4822 157 71881	AM-Ant Coil
	L102	4822 157 71888	AM-Osc Coil
	L103	4822 157 71889	FM-Det-A Coil
	L104	4822 157 71891	FM-Det-B Coil
	L105	4822 157 71893	Coil 20.8mH
	L106	4822 157 71896	AM IFT Coil
	L107L	4822 157 71894	Coil MPX19KHZ FB-7SG
	L107R	4822 157 71894	Coil MPX19KHZ FB-7SG
	X101	4822 242 82238	Resonator 7.2MHZ
	D101	4822 130 30621	1N4148
	D102	4822 130 30621	1N4148
	D103	4822 130 30621	1N4148
	D104	4822 130 30621	1N4148
	D105	4822 130 30621	1N4148
	D106	4822 130 70044	Zener Diode
	D107	4822 130 70044	Zener Diode
	D109	4822 130 30621	1N4148
	VD101	4822 130 81197	Varactor Diode
	VD102	4822 130 81197	Varactor Diode













	Q101	4822 130 63896	KTC3194Y
	Q102	4822 130 41312	KTC2240BL
	Q103	4822 130 63908	FET 2SK-168DTZ
	Q104	4822 130 63907	KTA107M
	Q105	4822 130 63907	KTA107M
	Q106	4822 130 63907	KTA107M
	Q108	4822 130 63907	KTA107M
	Q109L	4822 130 63904	KTD1302B
	Q109R	4822 130 63904	KTD1302B
	Q110	4822 130 41726	KTA1015Y
	Q111	4822 130 41947	KTC3198
	Q112	4822 130 41726	KTA1015Y
	Q113	4822 130 43546	FET 2SK117Y
	Q114	4822 130 41947	KTC3198
	IC101	4822 209 91027	LA1266G
	IC102	4822 209 91051	HA12016
	IC103	4822 209 30152	LM7001
	IC104	4822 209 91025	GD4066B
- MISCELLANEOUS -			
	JK102	4822 267 41253	Jack RCA, 3P
	JK101	4822 267 31993	Jack Remote, 2P
	FE101	4822 210 10676	Tuner FE407-G60
	ANT101	4822 290 81738	Terminal Antenna

FRONT BOARD

X200	 4822 242 82236 Resonator 4.19MHz	
D200	 4822 130 30621 1N4148	
D201	4822 130 30621 1N4148	
D202	4822 130 30621 1N4148	
D203	4822 130 30621 1N4148	
D205	4822 130 70051 LED SLR-54URCF03	
D206	4822 130 70051 LED SLR-54URCF03	
D207	4822 130 30621 1N4148	
D208	4822 130 30621 1N4148	
D209	4822 130 30621 1N4148	
D210	4822 130 70051 LED SLR-54URCF03	
D211	4822 130 30621 1N4148	
D212	4822 130 30621 1N4148	
D213	4822 130 30621 1N4148	
D214	4822 130 83228 Zener UZ15.0BSC	
D215	4822 130 83228 Zener UZ15.0BSC	
D216	4822 130 70043 Zener UZ4.3BSB	
D217	4822 130 70046 Zener UZ9.1BSC	
D218	4822 130 30621 1N4148	
D219	5322 130 30684 1N4002	
D220	4822 130 70045 Zener UZ5.6BSB	
D221	4822 130 30621 1N4148	
Q200	 4822 130 41947 KTC3198	
Q201	4822 130 63906 DTC114YS	
Q202	4822 130 63906 DTC114YS	
Q203	4822 130 63906 DTC114YS	
Q204	4822 130 63906 DTC114YS	
Q205	4822 130 41947 KTC3198	
Q206	4822 130 63906 DTC114YS	
Q207	4822 130 63906 DTC114YS	
Q208	4822 130 63907 KTA107M	
Q209	4822 130 63907 KTA107M	

Q210	 4822 130 63907 KTA107M	
Q211	4822 130 63906 DTC114YS	
Q212	4822 130 63907 KTA107M	
Q213	4822 130 63906 DTC114YS	
IC200	4822 209 91036 UPD78044GF	
- MISCELLANEOUS -		
SW3	4822 276 13661 Tact Switch	
SW4	4822 276 13661 Tact Switch	
SW5	4822 276 13661 Tact Switch	
SW6	4822 276 13661 Tact Switch	
SW7	4822 276 13661 Tact Switch	
SW8	4822 276 13661 Tact Switch	
SW9	4822 276 13661 Tact Switch	
SW10	4822 276 13661 Tact Switch	
SW11	4822 276 13661 Tact Switch	
SW12	4822 276 13661 Tact Switch	
SW13	4822 276 13661 Tact Switch	
SW14	4822 276 13661 Tact Switch	
SW15	4822 276 13661 Tact Switch	
SW16	4822 276 13661 Tact Switch	
SW17	4822 276 13661 Tact Switch	
SY200	4822 276 13659 Switch, Encoded	
FL101	4822 130 91528 Display Florescent	
RMC201	4822 130 91529 Remote Sen KRN-34LI	

POWER BOARD

			
D601	5322 130 30684	1N4002	
D602	5322 130 30684	1N4002	
D603	5322 130 30684	1N4002	
D604	5322 130 30684	1N4002	
D605	5322 130 30684	1N4002	
D606	5322 130 30684	1N4002	
D607	5322 130 30684	1N4002	
D608	5322 130 30684	1N4002	
D609	5322 130 30684	1N4002	
D610	5322 130 30684	1N4002	
D611	5322 130 30684	1N4002	
			
Q601	4822 130 41947	KTC3198	
IC601	4822 209 91032	KA7915	
IC602	4822 209 91033	KA7815	
IC604	4822 209 91031	KA7806	
- MISCELLANEOUS -			
SW1	4822 276 13658	Push Switch 2P2T	
SW2	4822 276 13661	Tact Switch	
SW801	4822 267 31992	Jack Phone	
F601	 4822 253 50165	Fuse T 1A 250V	
F602	 4822 253 50165	Fuse T 1A 250V	
F603	 4822 253 50164	Fuse T 250mA 250V	
F604	 4822 253 50167	Fuse TH 2.5A 250V	
F605	 4822 253 50166	Fuse T 2A 250V	
JK701	4822 265 31321	Jack RCA, 3P	
RL601	 4822 280 80794	Relay SDT-SS-112DM	
	 4822 146 31507	Transf 230V 50Hz (For -/00)	
	 4822 146 10373	Transf 240V SAA (For -/10)	
TX601	 4822 146 31505	Stand-by Trans 230V (For -/00)	
TX601	 4822 146 10374	Stand-by Trans 240V (For -/10)	

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