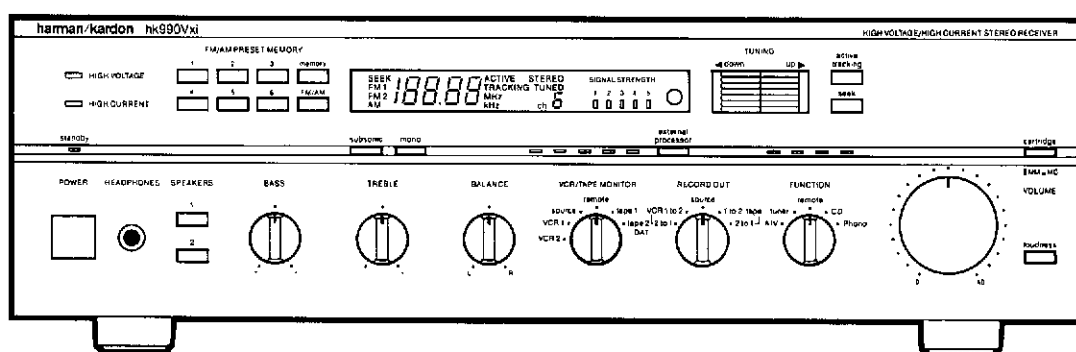


The Harman Kardon Model hk990Vxi

Manual 135A

HIGH VOLTAGE/HIGH CURRENT STEREO RECEIVER

Technical Manual



The following marks found in the parts list of this manual identify the models as follows.

- **UA** : North America area model
- **BK** : North America area model Black version
- **G** : General model
- **GB** : General model Black version
- **EB** : Australia model Black version

harman/kardon

240 Crossways Park West, Woodbury, N. Y. 11797
1112-3152135A9 P-078803 1500 Printed in Japan

SPECIFICATIONS

● FM SECTION

	Nominal	Limit
Tuning Range	87.5	~ 108.0MHz
50dB Quieting Sensitivity		
Mono	15.2dBf	≧ 19dBf
Stereo	37dBf	≧ 41dBf
Usable Sensitivity	11.2dBf	≧ 15dBf
Image Ratio	75dB	≧ 60dB
IF Rejection	100dB	≧ 85dB
Spurious Response Rejection	95dB	
Capture Ratio	1.5dB	≧ 2dB
Alternate Channel Selectivity	80dB	≧ 65dB
AM Rejection	60dB	≧ 45dB
Signal to Noise Ratio		
Mono	80dB	≧ 74dB
Stereo	73.5dB	≧ 70dB
Total Harmonic Distortion (65dBf 1kHz Input)		
Mono	0.08%	≧ 0.3%
Stereo	0.08%	≧ 0.3%
Stereo Separation at 1kHz	53dB	≧ 45dB

● AM SECTION

Tuning Range		
North America area model	520	~ 1,620kHz
General and Australia models	531	~ 1,602kHz
Usable Sensitivity	16 μ Vm	≧ 40 μ Vm
Selectivity	32dB	≧ 25dB
Signal to Noise Ratio	53dB	≧ 48dB
Image Rejection	40dB	≧ 32dB
IF Rejection	62dB	≧ 50dB

● AUDIO SECTION

Usable Sensitivity		
Video/CD	135mV	± 25mV
Phono (MM)	2.2mV	± 0.2mV
Phono (MC)	2.2mV	± 0.2mV
Signal to Noise Ratio		
Video/CD	77.5dB	≧ 74dB
Phono (MM)	76dB	≧ 73dB
Phono (MC)	76dB	≧ 72dB

	Nominal	Limit
Channel Separation at 10kHz		
Video/CD	49dB	≧ 40dB
Phono (MM)	49.2dB	≧ 40dB
Phono (MC)	49.2dB	≧ 40dB
IM Distortion Ratio	0.015%	≧ 0.2%
RMS Output Power		
8 Ω , 1kHz, THD 0.08%	104W	≧ 90W
Damping Factor at 1kHz	57	≧ 50
Tone Control Characteristics		
Bass at 50Hz		
Boost	10dB	± 2dB
Cut	-10dB	± 2dB
Treble at 10kHz		
Boost	10dB	± 2dB
Cut	-10dB	± 2dB
Loudness Control		
at 10kHz	3dB	± 1dB
at 50Hz	10dB	± 2dB
Subsonic Control		
at 15Hz	-3.5dB	± 1.5dB
DC Output Voltage		
L channel	0mV	± 60mV
R channel	0mV	± 60mV
RIAA Equalization at Tape Out (20Hz/20kHz)	0.013dB	± 0.5dB/0.02dB ± 0.5dB

● **DIMENSIONS (W x H x D)** 17-3/8" x 5-1/4" x 14-1/2"
(443 x 134 x 368 mm)

● **WEIGHT** 22 lbs. (10 kg)

● POWER SUPPLY

North America area model AC120V, 60Hz
General and Australia models AC220/240V, 50/60Hz

● POWER CONSUMPTION

North America area model 280W (340VA)
General and Australia models 250W

These specifications are Service target specs.

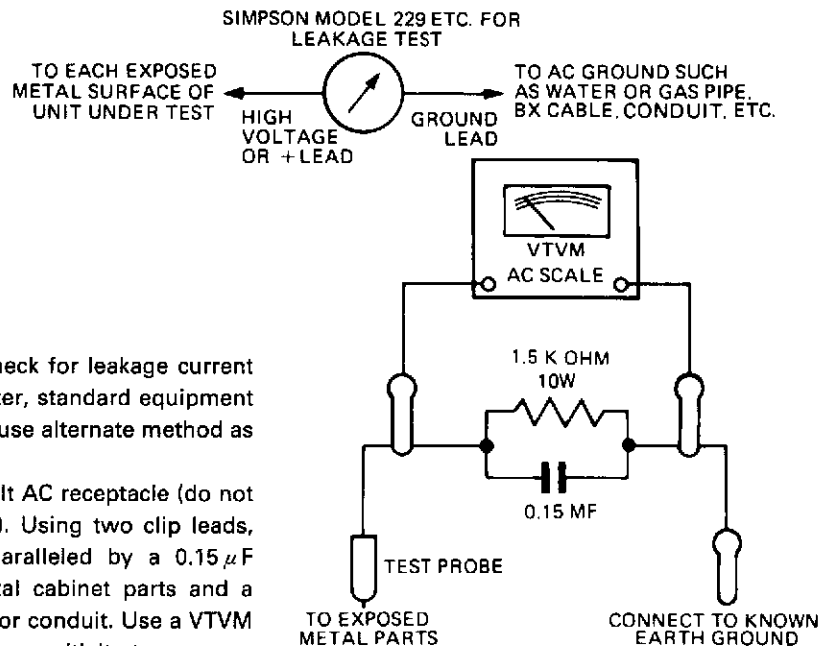
Specifications and components subject to change without notice.
Overall performance will be maintained or improved.

LEAKAGE TEST (FOR SERVICE ENGINEERS IN THE U.S.A.)

Before returning the unit to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the unit.
2. Replace all protective devices such as nonmetallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
3. Be sure that no shock hazard exists; check for leakage current using Simpson Model 229 Leakage Tester, standard equipment item No. 21641, RCA Model WT540A or use alternate method as follows:

Plug the AC line cord directly into a 120-volt AC receptacle (do not use an Isolation Transformer for this test). Using two clip leads, connect a 1500 ohm, 10-watt resistor paralleled by a 0.15 μ F capacitor, in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit. Use a VTVM or VOM with 1000 ohms per volt, or higher sensitivity to measure the AC voltage drop across the resistor. (See Diagram.) Move the resistor connection to each exposed metal part having a return path to the chassis (antenna, metal, cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor. (This test should be performed with the power switch in both the On and Off positions.) A reading of 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the unit to the owner.



DISASSEMBLY PROCEDURES (REFER TO PAGES 9, 10, 11, 12, 22 AND 23)**① CABINET TOP (131) REMOVAL**

Remove 6 screws (A) and then remove the Cabinet Top (131).

② CABINET BOTTOM (135) REMOVAL

Remove 6 screws (B) and then remove the Cabinet Bottom (135).

③ FRONT PANEL ASSEMBLY (AA) REMOVAL

1. Remove the Cabinet Top (131), referring to the previous step ①.
2. Remove 6 screws (C) and then remove the Front Panel Assembly (AA).

④ TUNER P.C. BOARD (PCB-21) REMOVAL

1. Remove the Front Panel Assembly (AA), referring to the previous step ③.
2. Disconnect the (CW804) from (CN107) on the Tuner P.C. Board (PCB-21).
3. Open the lid of connectors (CN101, CN102, CN103, CN105 and CN106) on the Tuner P.C. Board (PCB-21) and then disconnect the lead wires.
4. Remove 5 screws (D) and then remove the Tuner P.C. Board (PCB-21). If necessary, unsolder the lead wires.

⑤ EQUALIZER P.C. BOARD (PCB-5) REMOVAL

1. Remove the Tuner P.C. Board (PCB-21), referring to the previous step ④.
2. Remove 2 screws (E) and then remove the Metal Fitting (166).
3. Disconnect the (CW602) from (CN804) on the Control P.C. Board (PCB-6).
4. Open the lid of connector (CN403) on the Main P.C. Board (PCB-1) and (CN802) on the Control P.C. Board (PCB-6) and then disconnect the lead wires.
5. Open the lid of connector (CN601) on the Equalizer P.C. Board (PCB-5) and then disconnect the lead wire.
6. Remove 3 screws (F) and then remove the Equalizer P.C. Board (PCB-5). If necessary, unsolder the lead wires.

⑥ CONTROL P.C. BOARD (PCB-6) REMOVAL

1. Remove the Equalizer P.C. Board (PCB-5), referring to the previous step ⑤.
2. Disconnect the (CW801, CW802 and CW803) from (CN806, CN808 and CN810) on the Function P.C. Board (PCB-8).
3. Disconnect the (CW808 and CW813) from (CN803 and CN805) on the Control P.C. Board (PCB-6).
4. Remove 4 screws (G) and then remove the Control P.C. Board (PCB-6).
If necessary, unsolder the lead wires connected to the PCB-6.

⑦ MAIN P.C. BOARD (PCB-1) REMOVAL

1. Remove the Control P.C. Board (PCB-6), referring to the previous step ⑥.
2. Open the lid of connectors (CN401 and CN402) on the Main P.C. Board (PCB-1) and then disconnect the lead wires.
3. Remove 6 screws (H) and then remove the Main P.C. Board (PCB-1) with Metal Fittings (163 and 164) and Heat Sink (171).
If necessary, unsolder the lead wires.

⑧ VOLUME P.C. BOARD (PCB-11) REMOVAL

1. Remove the Tuner P.C. Board (PCB-21), referring to the previous Step ④.
2. Open the lid of connectors (CN501, CN503) on the Toner Control P.C. Board (PCB-2) and then disconnect the lead wires.
3. Pull out Volume Knob (154).
4. Remove hexagon nut (I) and then remove the Volume P.C. Board (PCB-11).
If necessary, unsolder the lead wires.

⑨ FUNCTION P.C. BOARD (PCB-2) REMOVAL

1. Remove the Tuner P.C. Board (PCB-21), referring to the previous step ④.
2. Disconnect the (CW801, CW802, CW803, CW805 and CW806) from (CN806, CN807, CN808, CN809 and CN810) on the Function P.C. Board (PCB-8).
3. Pull out VCR/TAPE Monitor, Record Out and Function Knob (155).
4. Remove 3 hexagon nuts (J) and then remove the Function P.C. Board (PCB-8).

⑩ TONE CONTROL P.C. BOARD (PCB-2) REMOVAL

1. Remove the Tuner P.C. Board (PCB-21), referring to the previous step ④.
2. Open the lid of connector (CN401) on the Main P.C. Board (PCB-1) and then disconnect the lead wires.
3. Open the lid of connector (CN501, CN502 and CN503) on the Tone Control P.C. Board (PCB-2) and then disconnect the lead wires.
4. Pull out Bass, Treble and Balance Knob (155).
5. Remove 3 hexagon nuts (K) and then remove the Tone Control P.C. Board (PCB-2).
If necessary, unsolder the lead wires connected to the PCB-2.

⑪ LED P.C. BOARD (PCB-7) REMOVAL

1. Remove the Tuner P.C. Board (PCB-21), referring to the previous step ④.
2. Open the lid of connector (CN601) on the Equalizer P.C. Board (PCB-5) and (CN801) on the Control P.C. Board (PCB-6) and then disconnect the lead wires.
3. Disconnect the (CW807) from (CN811) on the Relay P.C. Board (PCB-9).
4. Remove 4 screws (L), then remove the Holder (176), and then remove the LED P.C. Board (PCB-7).

12 RELAY P.C. BOARD (PCB-9) REMOVAL

1. Remove the Cabinet Top (131), referring to the previous step 11.
2. Remove 2 screws (M) and then remove the Relay P.C. Board (PCB-9) with Metal Fitting (168).

13 AV P.C. BOARD (PCB-10) REMOVAL

1. Remove the Cabinet Top (131), referring to the previous Step 11.
2. Disconnect the (CW808) from (CN803) on the Control P.C. Board (PCB-6).
3. Open the lid of connector (CN806) on the Control P.C. Board (PCB-6).
4. Remove 3 screws (N) and then remove the AV P.C. Board (PCB-10).

14 ANTENNA TERMINAL P.C. BOARD (PCB-24) AND AM ADJUSTMENT P.C. BOARD (PCB-25) REMOVAL

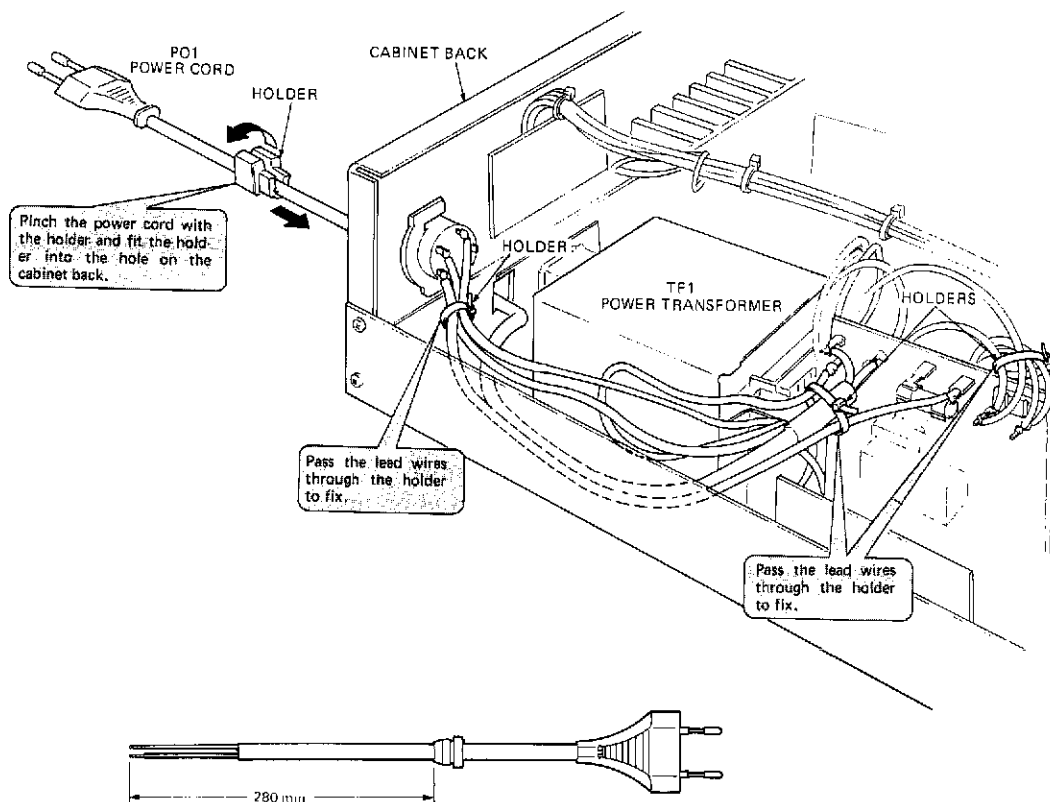
1. Remove the Cabinet Top (131), referring to the previous step 11.
2. Remove 3 screws (O) and then remove the Antenna Terminal P.C. Board (PCB-24) and AM Adjustment P.C. Board (PCB-25).
If necessary, unsolder the lead wires.

15 SPEAKER TERMINAL P.C. BOARD (PCB-14) REMOVAL

1. Remove the Cabinet Top (131), referring to the previous step 11.
2. Remove 2 screws (P) and then remove the Speaker Terminal P.C. Board (PCB-14). If necessary, unsolder the lead wires.

POWER CORD REPLACEMENT (FOR SERVICE ENGINEERS OTHER THAN NORTH AMERICA)

In order to prevent fire or shock hazard when replacing the power cord, follow the Procedure below to replace the part with the standard supply parts.

**CIRCUIT DESCRIPTION****FM TUNER SECTION**

The FM signal which has entered through the antenna is high-frequency amplified in the front end. Then it is mixed with the output of the local oscillators and converted into the 10.7MHz intermediate-frequency.

The 10.7MHz signal is amplified in the intermediate frequency amplifying section which consists of CF201, Q201, CF202, Q202 and CF203 and fed to pin 1 of IC201. In IC201, the signal is sent through the IF amplifier and after

being detected in the quadrature, it is sent through the post amplifier to pin 12 and then inputted to pin 2 of IC301. In IC301, the pilot signal is detected out of the signal which has been fed and 38kHz signal is produced. Then by this signal, stereo signal is demodulated, output from pin 4 for the left channel and from pin 7 for the right channel and transmitted to the input selector section.

■ACTIVE TRACKING CIRCUIT

When FM reception is poor because the tuned frequency is interfered by some other strong FM signal nearby, turning ON the active tracking switch causes the signal from the tuned station to come out of IF AMP Q202 and pass through D208, CF204, IF AMP Q204 and CF205. Then it is fed to 1 pin of IC202 where its phase compared with the phase of the VCO output signal composed in Q205, D206 and L203, by the phase comparison device included in IC202. The output signal of the phase comparison device is sent out from 7 pin of IC202, transmitted through LPF consisting of Q206, R233, and C229 back to D206. As this forms the PLL circuit, the VCO output signal follows the signal within the PLL lock range only and that signal is sent through D210 to 1 pin of IC201.

■AM TUNER SECTION

The AM signal which has entered through the antenna passes through the tuning circuit consisting of L251 and TC251 and is inputted to pin 21 of IC201. In IC201, it undergoes radio-frequency amplification and local oscillation and is output from pin 20, and passed through the transformer (T251) and ceramic filter (CF251) and enters pin 18 of IC301. It is then passed through the IF amplification and detection and is output from pin 15. This signal is fed to IC301.

■AUDIO AMPLIFIER SECTION

The signal which has entered from each input terminal is selected by the input selector, passes through the audio mode switch, subsonic switch balance circuit, volume and loudness circuit and is fed into the pre-amplifier. Then it is fed into the power amplifier through the tone control circuit, power amplified and transmitted to the speaker terminal.

The power amplifier has an over-output protective circuit. If current exceeding the specification flows to Q431, Q433 (L ch), Q432, Q434 (R ch), it is detected at Q5 (L ch) and Q6 (R ch) and the protective circuit consisting of Q1, Q2, Q3, Q7 and Q8 draws in the base of Q417 (L ch) and Q418 (R ch), and thus the input signal is cut to protect the circuit.

■MUTING CIRCUIT

If FM or AM is received out of tuning or in a very weak field intensity, pin 41 of IC701 becomes high level. This is fed to the base of Q351, whose collector then becomes low level and the collector of Q356 high level. As a result, Q301 (L ch) and Q302 (R ch) are conducted to mute the output.

■SYNTHESIZER SECTION

●FM

The local oscillation output at the front end is fed to pin 15 of the prescaler IC702 and after being frequency divided into 30 or 32, Control output signal is fed from IC701, compared with the divided local oscillation output and output to pin 10. This voltage is level converted at Q701 and Q702, and fed to the front end.

●AM

The local oscillation output is fed from pin 24 of IC201 to pin 13 of IC702. In IC702, Control output signal is fed from IC701, compared with the local oscillation output and output to pin 10. This voltage is level converted at Q701 and Q702, and fed to the AM local oscillation section.

■INDICATOR SECTION

●Frequency display

The indicator tube is turned ON by the output decoded in IC701.

●Signal strength

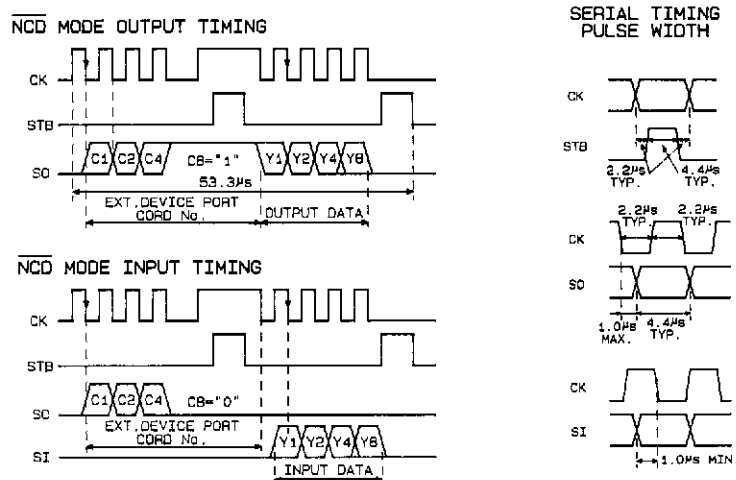
The voltage corresponding to the signal level is output from pin 16 of IC201 and fed into pin 8 of the level comparator IC351. Then D381, D382, D383, D384 and D385 of the signal strength indicator turn ON according to the signal level.

●Tuning

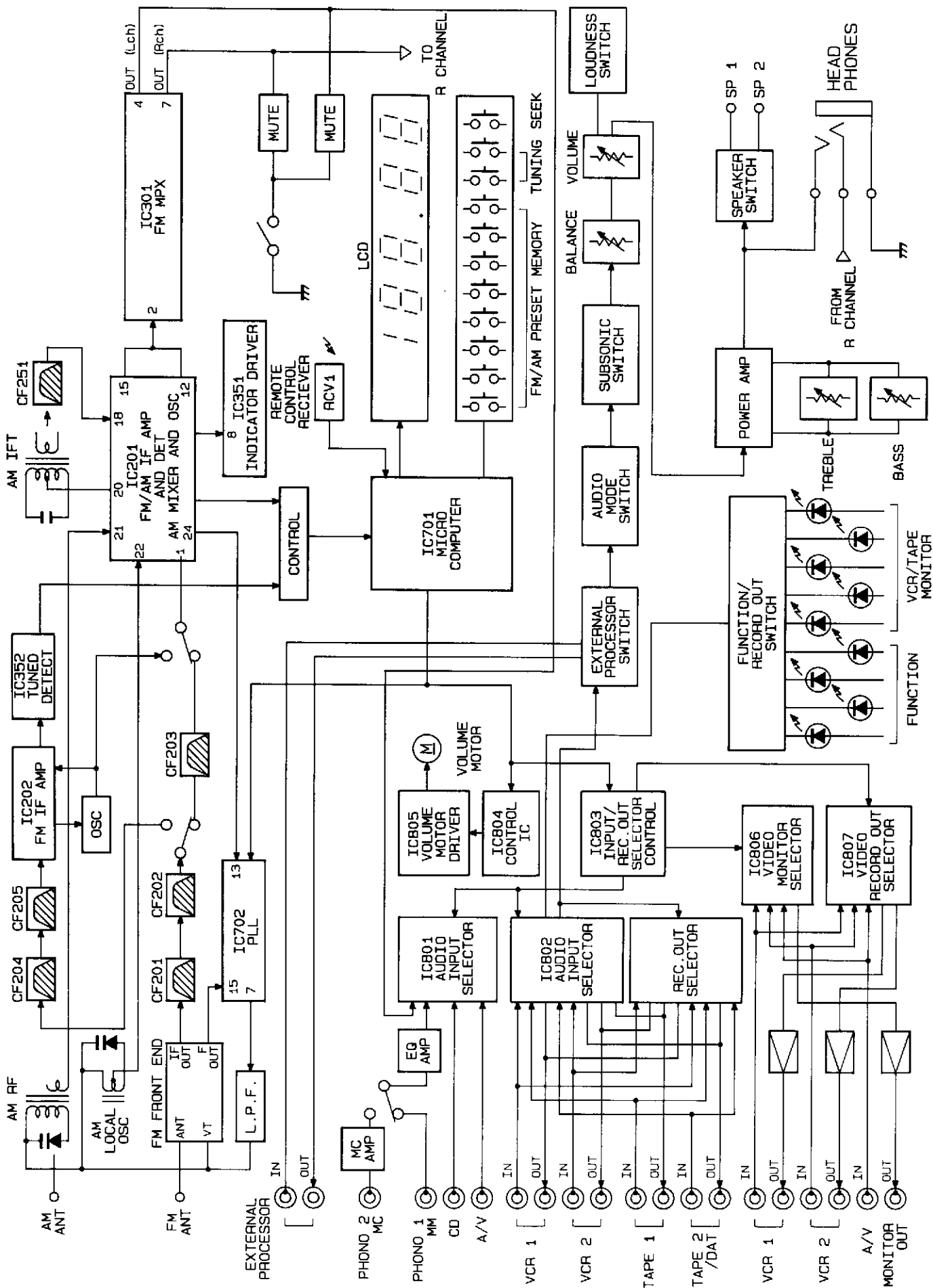
When broadcast is received, tuned signal passes through IC202 and IC352 is inputted to IC701. And then "Tuned" of the indicator tube is turned ON by the control signal in IC701. When FM or stereo broadcast is received, pin 9 of IC301 becomes low level, Q705 turns ON and "Stereo" of the indicator tube is turned ON by the control signal in IC701.

TIMING CHART

Frequency display timing chart of IC701 (TC9306F-025)



BLOCK DIAGRAM



ALIGNMENT PROCEDURES (REFER TO PAGES 18, 19, 20, 21, 24, 25, 26, 27 AND 28)**■ DC BALANCE AND IDLING ADJUSTMENT**

- Conditions:
- Set the Speaker Operating Mode switch to "8Ω" position.
 - Set the Volume to minimum.
 - Press the "Speakers 1 and 2" switches to off (button out) position.
 - Make the adjustment at a room temperature of 77°F (25°C).
 - After the Power switch is pushed on, wait for 30 minutes before measuring to be sure of the most stable.
 - Set the Function switch to tuner position.

Step	Alignment	Connections Equipments	Adjustment	For
1	DC balance	● Connect the Digital Voltmeter to TP1 and ground.	VR401 (L channel)	0±10mV
2		● Connect the Digital Voltmeter to TP2 and ground.	VR402 (R channel)	0±10mV
3	Idling	● Connect the Digital Voltmeter to TP3 and TP4.	VR403 (L channel)	40mV
4		● Connect the Digital Voltmeter to TP5 and TP6.	VR404 (R channel)	40mV
5	Repeat steps 1 through 4 after aging for 15 minutes.			

■ AM ADJUSTMENT

- Conditions:
- Set the AM mode by pressing the "FM/AM" button.
 - Set the seek switch to off (put out seek indicator) position.
 - Standard modulation of the AM signal Generator is 400Hz at 30%.

Step	Alignment	Connection Equipments	Measurement Frequency	Station Display	Adjustment	For
1	IF	<ul style="list-style-type: none"> • Connect the AM Test Loop Antenna cable into the output jack of AM Signal Generator (80 dB μV Signal). Place AM Test Loop Antenna close enough to couple signal into the AM Loop Antenna. • Connect the VTVM and oscilloscope to the OUTPUT jacks. 	1400kHz ※1404kHz	1400kHz ※1404kHz	T251	Maximum output level and symmetrical curve on scope.
2	Tracking		1400kHz ※1404kHz	1400kHz ※1404kHz	TC251	Maximum output.
3			600kHz ※603kHz	600kHz ※603kHz	L251	Maximum output.
4			Repeat steps 2 and 3 for optimum sensitivity.			
5	Signal indicator		1000kHz ※999kHz	1000kHz ※999kHz		Confirm the all Signal indicators light at 5000 μV/m input.

※General and Australia models

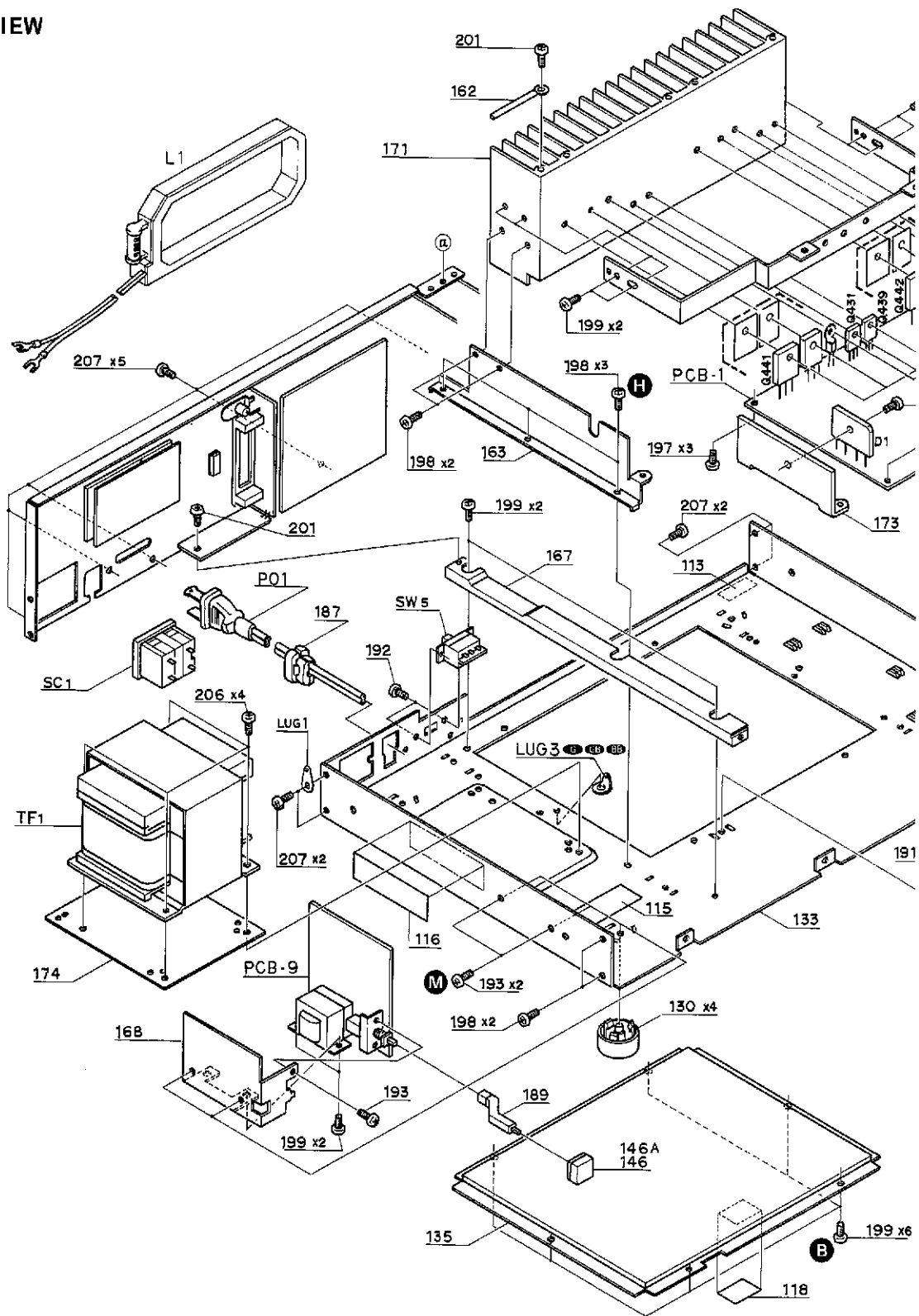
■ FM ADJUSTMENT

- Conditions:
- Set the FM mode by pressing the "FM/AM" button.
 - Set the seek switch to off (put out seek indicator) position.
- (Set the seek switch to on position when discriminator and muting level adjust.)

	U.S.A. model	General model
FM Signal Generator	1kHz, 100% modulation	1kHz, 45% modulation
Stereo Modulator	L+R=45.5%, L-R=45.5%, 19kHz=9%	L+R=22.5%, L-R=22.5%, 19kHz=8%

Step	Alignment	Connection Equipments	Measurement Frequency	Station Display	Adjustment	For	
1	IF	<ul style="list-style-type: none"> Connect the FM Signal Generator to FM 300ΩBAL Antenna terminals through the 300Ω balanced dummy. [1mV(65dBf) input signal] Connect the Oscilloscope and Distortion meter to the OUTPUT jacks. Set the Seek switch to on (seek indicator lights) position. 	97.9MHz	97.9MHz	T201 T202	Maximum output level.	
2	Discriminator		97.9MHz	97.9MHz	T203(A)	Adjust so that the TUNED indicator lights in the same range on both plus (+) and minus (-) sides of 97.9 MHz.	
3			97.9MHz	97.9MHz	T203(B)	Minimum distortion.	
4			Repeat steps 2 and 3 for optimum sensitivity.				
5			Muting level	97.9MHz	97.9MHz	VR251	Apply 32dBf signal, and adjust VR251 so that the waveform become undistorted.
6	Separation	<ul style="list-style-type: none"> Connect the Stereo Modulator to FM Signal Generator. Connect FM Signal Generator to FM 300ΩBAL Antenna terminal through the 300Ω balanced dummy. (65 dBf input signal) Connect the VTVM and Oscilloscope to the TAPE 1 OUTPUT jacks. 	97.9MHz	97.9MHz	VR301	Adjust so that the left channel output becomes minimum when only the right channel of the Stereo Modulator is modulated.	
					VR301	Adjust so that the right channel output becomes minimum when only the left channel of the Stereo Modulator is modulated.	
7	Signal indicator					Confirm the all signal indicators light at 1mV (65 dBf) input.	
8	Active tracking		<ul style="list-style-type: none"> Connect the FM Signal Generator to FM 300ΩBAL Antenna terminals through the 300Ω balanced dummy. [1mV(65dBf) input] Connect the Oscilloscope and Distortion meter to the OUTPUT jacks. 	97.9MHz	97.9MHz	L203 TC201	Adjust L203 so that the upper and lower parts of the waveform are symmetrical and TC201 so as to obtain the waveform immediately before clipping. Modulation 1kHz 133% (General and Australia models 1kHz 100%)
9	Tuned indicator			97.9MHz	97.9MHz	VR352	Adjust so that the TUNED indicator lights at 32dBf input. (32 μV/75Ω input for General model)
10	Signal indicator	97.9MHz		97.9MHz	VR353	At ACTV off, adjust the signal generator so that four SIGNAL STRENGTH light. At ACTV on, adjust VR353 so that four SIGNAL STRENGTH light.	
11						Confirm the all signal indicators light at 1mV (65dBf) input.	

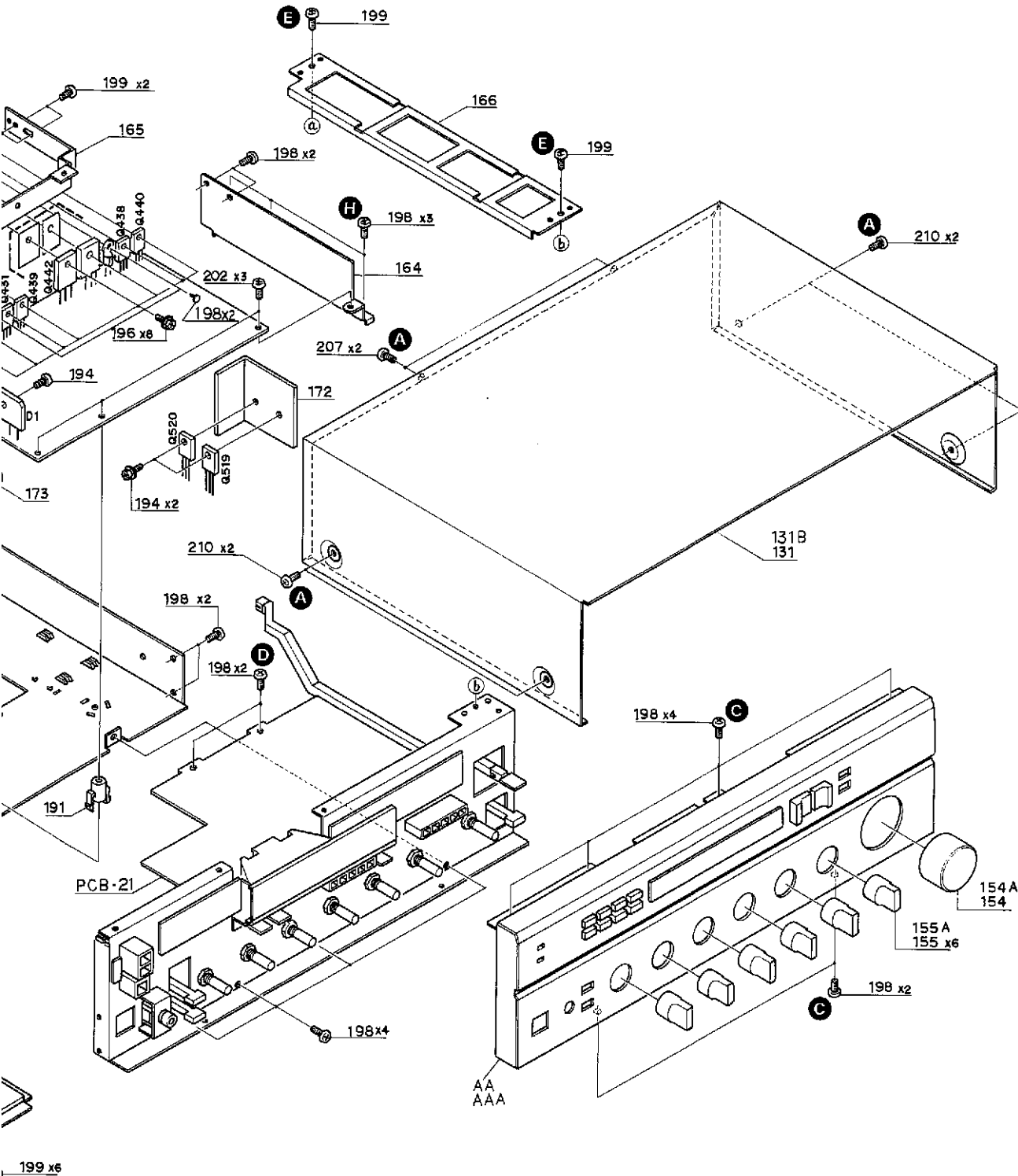
**GENERAL UNIT
EXPLODED VIEW**



PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
AA	A443-HK990A	FRONT PANEL ASS'Y UA G	154A	1630-02603	ROTARY KNOB, VOLUME BK GP BB
AAA	A443-HK990B	FRONT PANEL ASS'Y BK GB BB	155	1632-16502	ROTARY KNOB, BASS, TREBLE, BALANCE, TAPE MONITOR, RECORD OUT, FUNCTION UA G
113	1117-78	SERIAL LABEL, BOTTOM	155A	1632-17101	ROTARY KNOB, BASS, TREBLE, BALANCE, TAPE MONITOR, RECORD OUT, FUNCTION BK GB B
115	1756-11301	LABEL UA BK	162	2218-7011	BRACKET, FIX WIRING
116	1756-05910	LABEL UA BK	163	2219-8210	METAL FITTG L
118	1751-01018	LABEL	164	2219-8211	METAL FITTG R
130	1319-0139	LEG	165	2219-8234	METAL FITTG
131	1414-11601	CABINET UA BK	166	2219-8209	METAL FITTG
131B	1414-04401	CABINET G GB BB	167	2219-8212	METAL FITTG
133	1424-25001	CABI BACK BOTTOM	168	2219-8213	METAL FITTG
135	1424-26101	CABI BACK	171	2222-7236	HEAT SINK
146	1660-00401	PUSH BUTTON, POWER UA G	172	2222-7244	HEAT SINK
146A	1660-00403	PUSH BUTTON, POWER BK GB BB			
154	1630-02601	ROTARY KNOB, VOLUME UA G			

E F G H I J

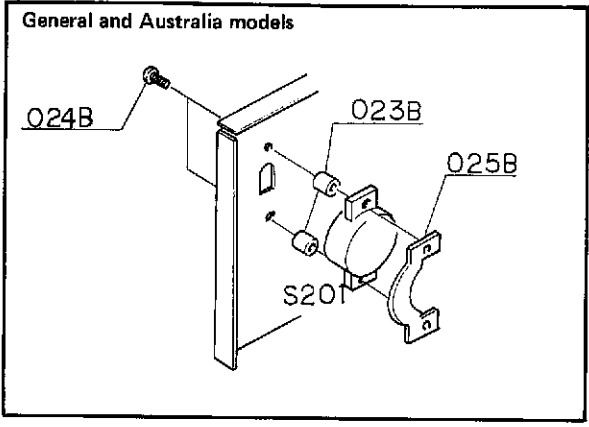
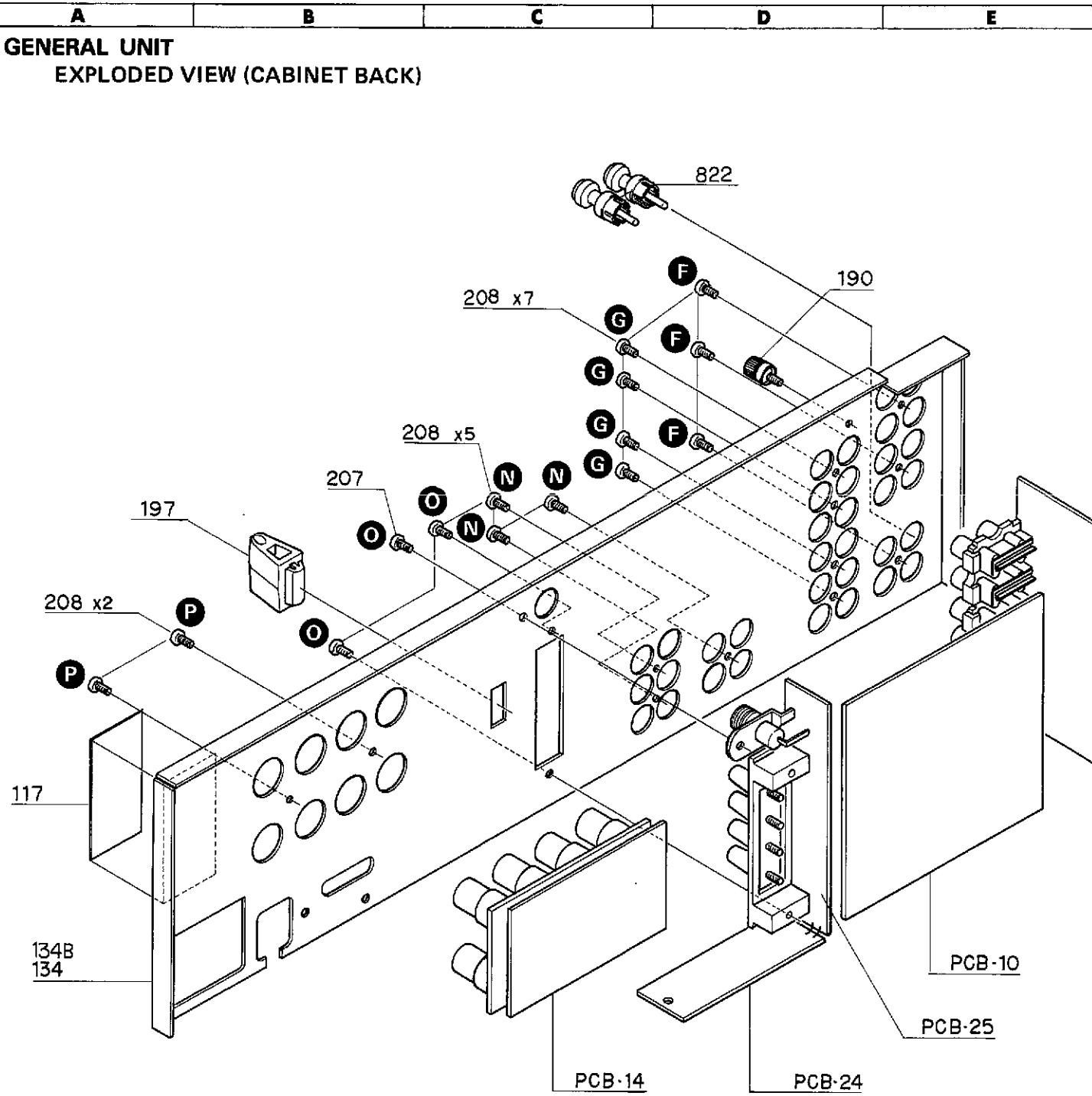


Ref. No.	Part No.	Description
173	2222-7243	HEAT SINK
174	2219-8240	METAL FITTG
187	2240-364	HOLDER, AC
189	2601-7174	SHAFT POWER
191	2360-7015	SPECIAL BOSS
192	2327-R0130064	SCREW (3 x 6mm)
193	2327-R0130062	SCREW (3 x 6mm)
194	2327-R0130082	SCREW (3 x 8mm)
196	2320-34	SPECIAL SCREW
197	2347-R0130082	SCREW (3 x 8mm)
198	2347-R0130062	SCREW (3 x 6mm)
199	2347-R0130062	SCREW (3 x 6mm)
200	2347-R0130062	SCREW (3 x 6mm)
201	2347-R0130062	SCREW (3 x 6mm)

Ref. No.	Part No.	Description
202	2347-R0130102	SCREW (3 x 10mm)
206	2592-400826	SCREW (4 x 8mm)
207	2347-R0130064	SCREW (3 x 6mm)
210	2347-R0140064	SCREW (4 x 6mm)
L1	5911-235	ANT COIL BC
LUG1	4211-4	LUG
LUG3	4211-4	LUG
ΔTF1	5584-S2501	XFORMER, POWER
ΔTF1B	5584-S2502	XFORMER, POWER
SW5	4421-0227230	SWITCH, SLIDE
ΔSC1	4474-157	SOCKET, AC OUTLET
ΔP01	4161-71151	CORD W/PLUG, POWER
ΔP01B	4161-7256	CORD W/PLUG, POWER
ΔP01D	4161-04100	CORD W/PLUG, POWER

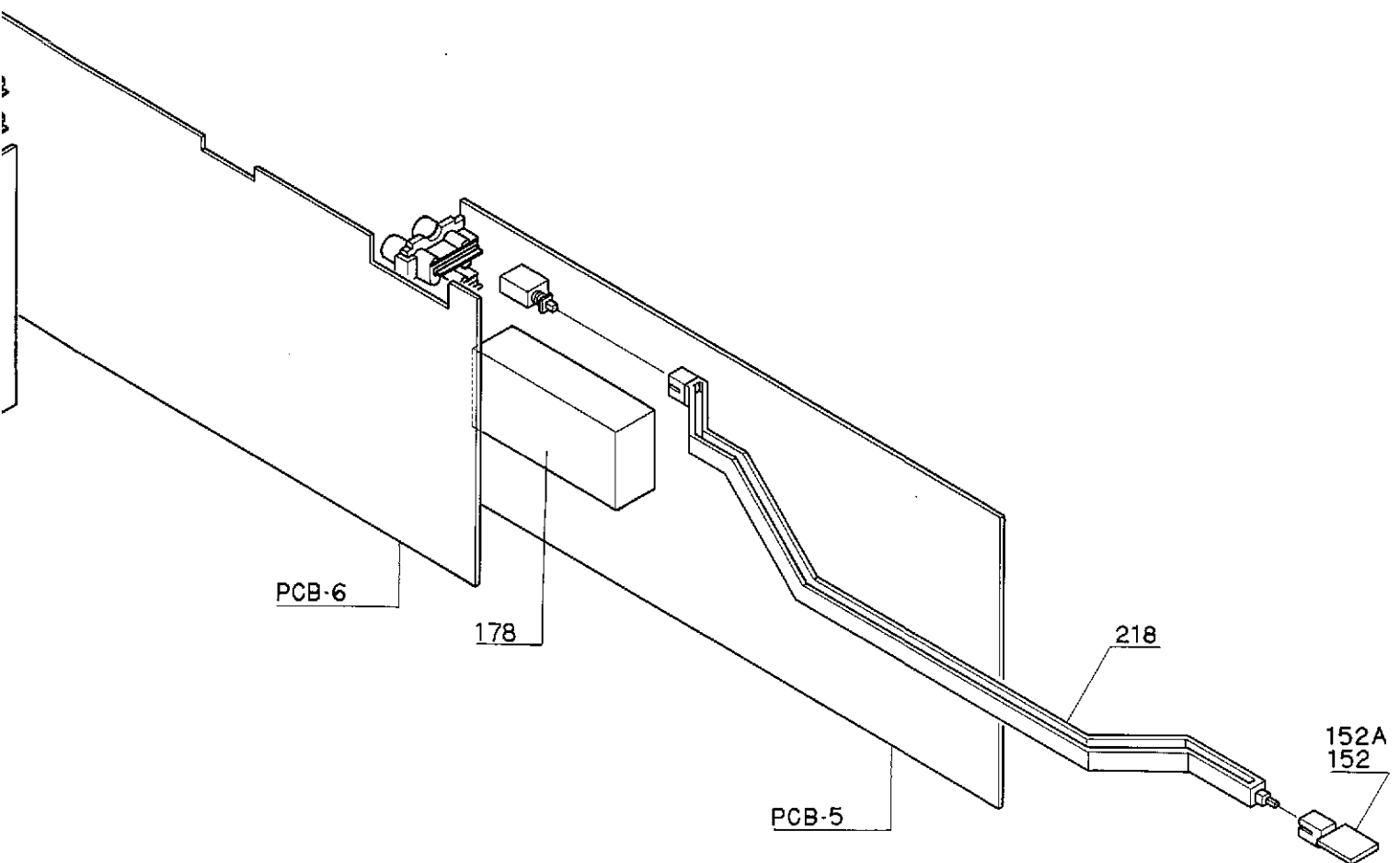
TAPE
G
TAPE
GB BB

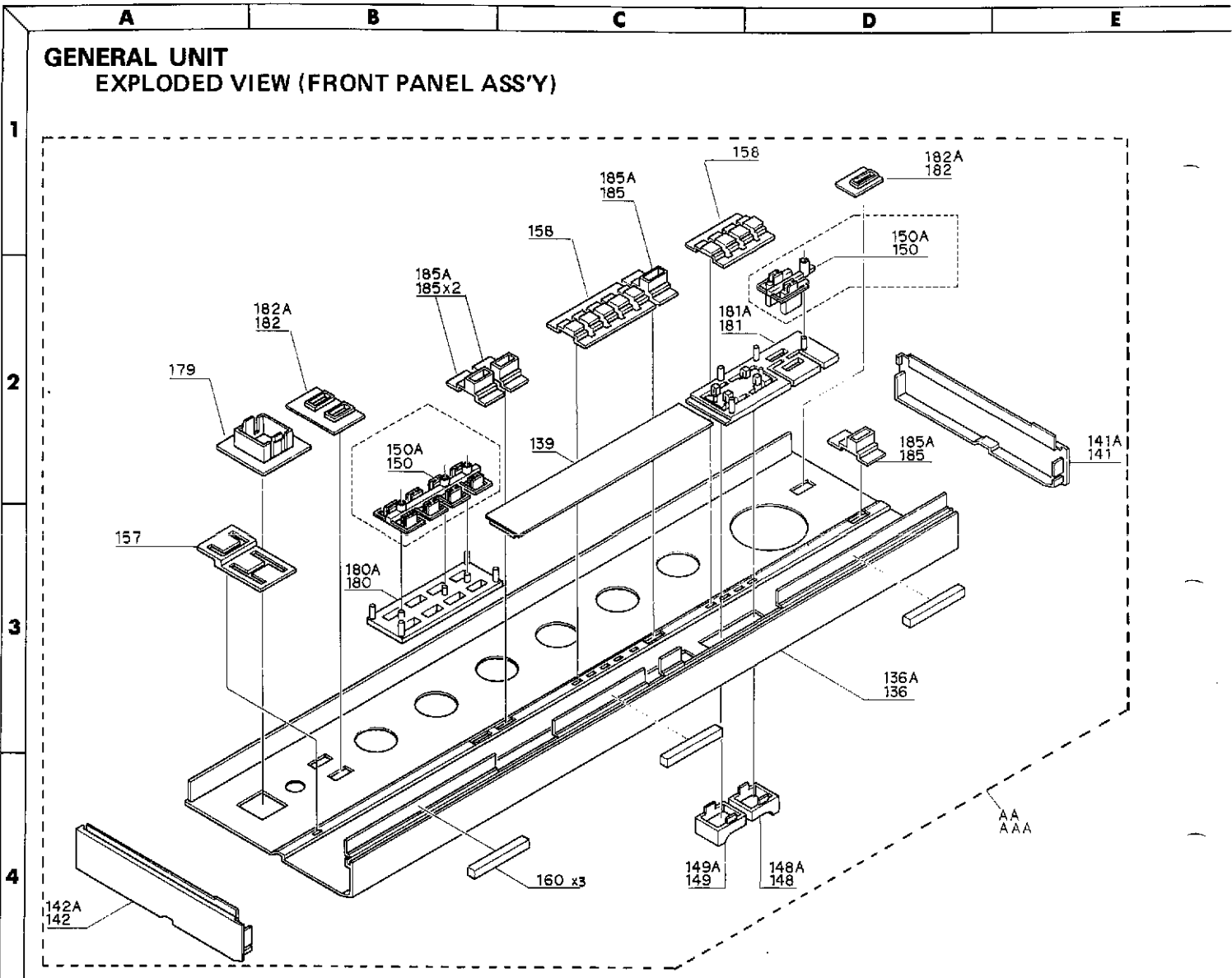
G GB BB
UA BK
G GB BB
UA BK
G GB
BB



PARTS LIST

Ref. No.	Part No.	Description
023B	2132-7116	SPACER (G GB BB)
024B	2327-R0130124	SCREW (3 x 12mm) (G GB)
025B	2440-7017	SPECIAL NUT (G GB)
117	1756-CSA	LABEL CSA
134	1424-25101	CABI BACK REAR (UA BK)
134B	1424-25201	CABI BACK REAR (G GB BB)
152	1662-36801VN	PUSH BUTTON, CARTRIDGE (UA G)
152A	1662-36802	PUSH BUTTON, CARTRIDGE (BK GB BB)
178	2240-7183	HOLDER
190	4214-168	TERMINAL GND
197	2240-7208	HOLDER
207	2347-R0130064	SCREW (3 x 6mm)
208	2347-R0130104	SCREW (3 x 10mm)
218	2601-7175	SHAFT MC
822	2421-7004	PIN, SHORT
△S201	4411-102719	ROTRY SWITCH, VOLTAGE SELECTOR (G GB BB)





PARTS LIST

Ref. No.	Part No.	Description
AA	A443-HK990A	FRONT PANEL ASS'Y UA G
AAA	A443-HK990B	FRONT PANEL ASS'Y BK GB BB
139	1531-12001	WINDOW, FRONT
141	1562-06601	FRAME R UA G
141A	1562-06602	FRAME R BK GB BB
142	1562-06701	FRAME L UA G
142A	1562-06702	FRAME L BK GB BB
148	1662-35701VN	PUSH BUTTON, TUNING UP UA G
148A	1662-35702	PUSH BUTTON, TUNING UP BK GB BB
149	1662-35801VN	PUSH BUTTON, TUNING DOWN UA G
149A	1662-35802	PUSH BUTTON, TUNING DOWN BK GB BB
150	1662-37101VN	PUSH BUTTON, PRESET MEMORY, ACTIVE TRACKING, SEEK UA G
150A	1662-37102	PUSH BUTTON, PRESET MEMORY, ACTIVE TRACKING, SEEK BK GB BB
157	1732-04301	INDICATOR
158	1732-05401	INDICATOR
160	2112-11762	SPONGE
179	2240-7209	HOLDER
180	2240-7322	HOLDER UA G
180A	2240-7333	HOLDER BK GB BB
181	2240-7323	HOLDER UA G
181A	2240-7332	HOLDER BK GB BB
182	2240-7324	HOLDER UA G
182A	2240-7337	HOLDER BK GB BB
185	2240-7341	HOLDER UA G
185A	2240-7342	HOLDER BK GB BB

IC TERMINAL FUNCTIONS

Terminal number	Port name	Terminal code	I/O	Outline of functions	
				Segment name COM1	Segment name COM2
1	S7	S7	O	Received frequency display	Point 2 on level meter
2	S8	S8	O	Received frequency display	Received frequency display
3	S9	S9	O	Point 1 on level meter	Received frequency display
4	S10	S10	O	Received frequency display	Received frequency display
5	S11	S11	O	Received frequency display	Received frequency display
6	S12	S12	O	Received frequency display	Received frequency display
7	S13	S13	O	Received frequency display	Received frequency display
8	S14	S14	O	Received frequency display	Received frequency display
9	S15	S15	O	Received frequency display	Received frequency display
10	S16	S16	O	Received frequency display	Received frequency display
11	S17	S17	O	Received frequency display	Received frequency display
12	S18	S18	O	Received frequency display	Received frequency display
13	S19	S19	O	Received frequency display	Received frequency display
14	S20	S20	O	Received frequency display	Received frequency display
15	S21	S21	O	Received frequency display	Received frequency display
16	S22	S22	O	Point 5 on level meter	Store mode (MEMORY)
17	S23	S23	O		Received frequency display
18	S24	S24	O	Received frequency display	Received frequency display
19	S25	S25	O	MW band	FM stereo
20	S26	S26	O	MW band	FM band
21	S27	S27	O	LW band	SW band
22	COM1	COM1	O	Common 1	
23	V _{DD}	V _{DD}	I	Power supply	
24	K0	K0	I	Key input	
25	K1	K1	I	Key input	
26	K2	K2	I	Key input	
27	K3	K3	I	Key input	
28	T0	T0	O	Key timing output	
29	T1	T1	O	Key timing output	
30	T2	T2	O	Key timing output	
31	T3	T3	O	Key timing output	
32	T4	T4	O	Key timing output	
33	T5	T5	O	Key timing output	

Terminal number	Port name	Terminal code	I/O	Outline of functions	
				Segment name COM1	Segment name COM2
34	T6	T6	O	Key timing output	
35	P3-2	AD IN	I	AD IN signal strength display input	
36	P3-1	VREF	I	AD IN reference voltage input	
37	P2-4	LOCAL IF	O	LOCAL DX select control output (FM, MW, LW)	
38	P2-3	MONO	O	Forced output of mono control (FM mode only)	
39	P2-2	AUTO-STOP	I	Stop signal input	
40	P2-1	R-I	I	Remote control serial data input	
41	MUTE	MUTE	O	Mute output	
42	STB	STB	I	Strobe signal input	
43	CK	CK	I	Serial clock signal input	
44	SO	SO	O	Serial data output	
45	SI	SI	I	Serial data input	
46	REF	REF	I	Reference frequency input	
47	$\overline{\text{INT}}$	$\overline{\text{INT}}$	I	Initialize input terminal	
48	$\overline{\text{INH}}$	$\overline{\text{INH}}$	I	Normal mode (H level) Inhibit mode (L level)	
49	TEST	TEST	I	Test terminal	
50	XT	XT	O	Clock output	
51	$\overline{\text{XT}}$	$\overline{\text{XT}}$	O	Clock output	
52	GND	GND	—	GND pin	
53	V _{DD}	V _{DD}	I	Power supply	
54	COM2	COM2	O		Common 2
55	S1	S1	O	Preset ch	Received frequency display
56	S2	S2	O	Received frequency display	Received frequency display
57	S3	S3	O	Received frequency display	Received frequency display
58	S4	S4	O	Received frequency display	Received frequency display
59	S5	S5	O	Point 4 on level meter	FM/SW unit
60	S6	S6	O	Point 3 on level meter	MW/LW unit

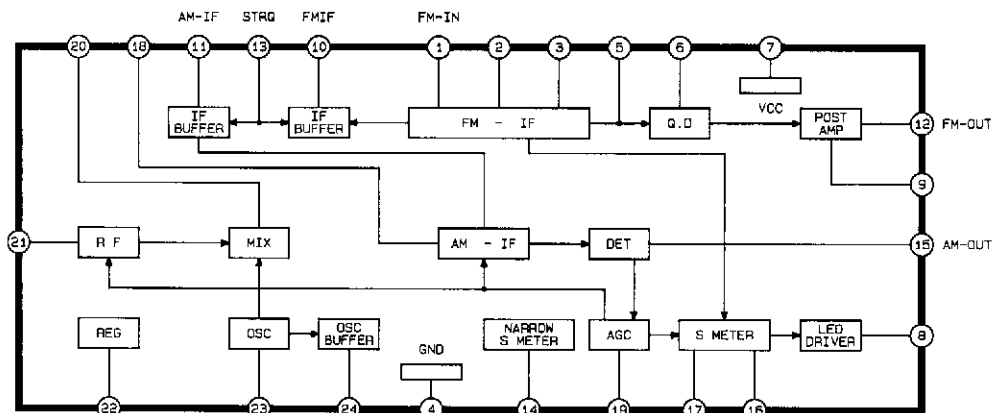
	Terminal number	Port name	Terminal code	I/O	Outline of functions
IC702	1	GND	GND	—	GND pin
	2	REF	REF	I	Reference frequency input
	3	SI	SI	I	Serial data input
	4	CK	CK	I	Serial clock signal input
	5	STB	STB	I	Strobe signal input
	6	OT1	FM	O	FM Band output
	7	OT2	MW	O	MW Band output
	8	OT3	IF-Mode	O	IF mode control output
	9	OT4	SDK	O	SDK control output
	10	DO2	DO2	O	Phase Comparat output
	11	DO1	DO1	O	Phase Comparat output
	12	TEST	TEST	I	Test mode control input terminal
	13	AM IN	AM IN	I	AM local oscillator signal input
	14	GND	GND	—	Prescaler ground terminal
	15	FM IN	FM IN	I	FM local oscillator signal input
	16	V _{DD}	V _{DD}	I	5V ± 10% power supply terminal

	Terminal number	Port name	Terminal code	I/O	Outline of functions
IC803	1	GND	GND	—	GND pin
	2	OP-1	M1/F1	O	Function select F1
	3	OP-2	M2/F2	O	Function select F2
	4	OP-3	M3/F3	O	Function select F3
	5	OP-4	M4/Dolby C /F4	O	Function select F4
	6	OP-5	M5/Dolby B /F5	O	Function select F5
	7	OP-6	M6/MTL /SOURCE	O	Tape monitor select Source
	8	OP-7	MS/V1	O	Tape monitor select V1
	9	OP-8	STO/V2	O	Tape monitor select V2
	10	OP-9	IF-Mode /T1	O	Tape monitor select T1
	11	OP-10	PSCAN/T2	O	Tape monitor select T2
	12	SO	SO	O	Serial data output
	13	SI	SI	I	Serial data input
	14	CK	CK	I	Serial clock signal input
	15	STB	STB	I	Strobe signal input
	16	V _{DD}	V _{DD}	I	5V ± 10% power supply terminal

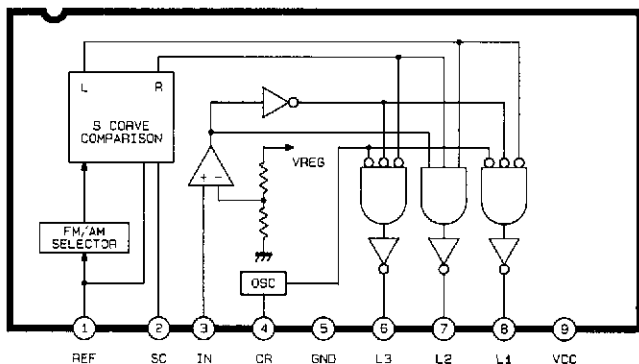
Terminal number	Port name	Terminal code	I/O	Outline of functions
1	GND	GND	—	GND pin
2	I/O-1	EX-OUT	O	This output terminal have no connection with Band, and reverse when EX-IN input.
3	I/O-2	EX-RESET	I	Reset EX-OUT
4	I/O-3	EX-IN	I	Whenever EX-IN input, EX-OUT reverse.
5	I/O-4	Moni-en	I	Permit to select source, T1, T2, V1 or V2.
6	I/O-5	Func-en	I	Permit to select a function from F1 through F5.
7	I/O-6	F-Mute	O	This is the Mute output terminal when select Moni or Function.
8	I/O-7	P-SW	I	Remote control receiver ON/OFF and P-Cont control input.
9	I/O-8	P-CONT	O	Power supply control
10	I/O-9	VR-UP	O	VR-UP output
11	I/O-10	VR-DN	O	VR-DOWN output
12	SO	SO	O	Serial data output
13	SI	SI	I	Serial data input
14	CK	CK	I	Serial clock signal input
15	STB	STB	I	Strobe signal input
16	V _{DD}	V _{DD}	—	5V ± 10% power supply terminal

IC BLOCK DIAGRAM

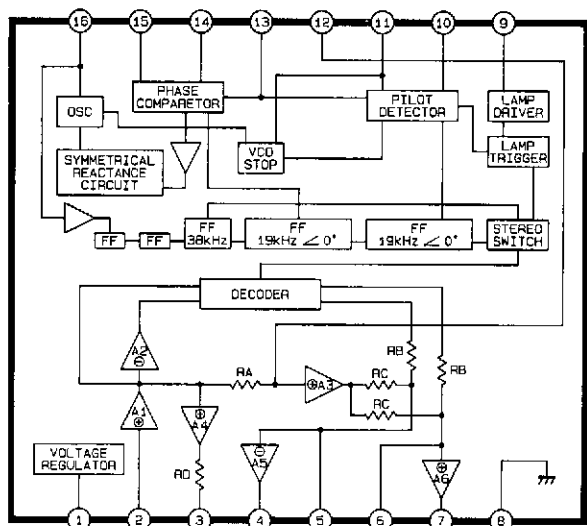
IC201 : LA1266
FM/AM IF Amp. and
Det., AM Mixer and OSC



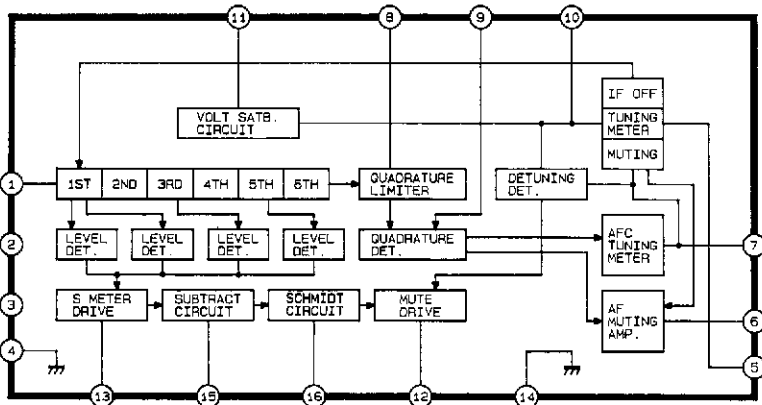
IC352 : BA695
Tuning Detector



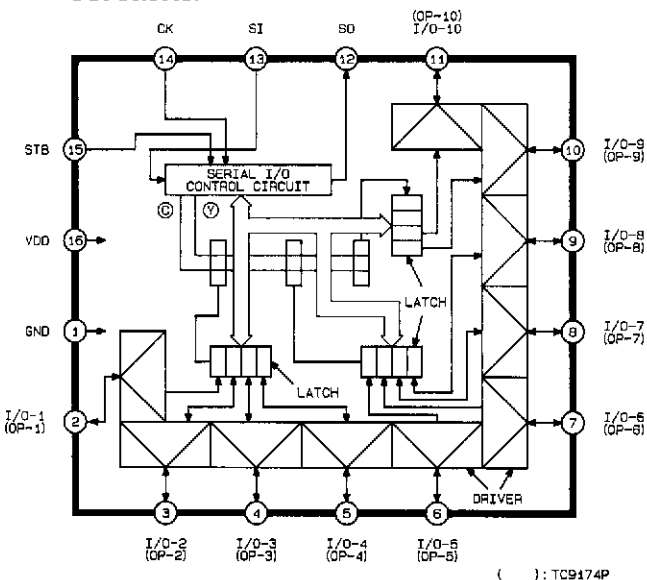
IC301 : LA3410
FM MPX



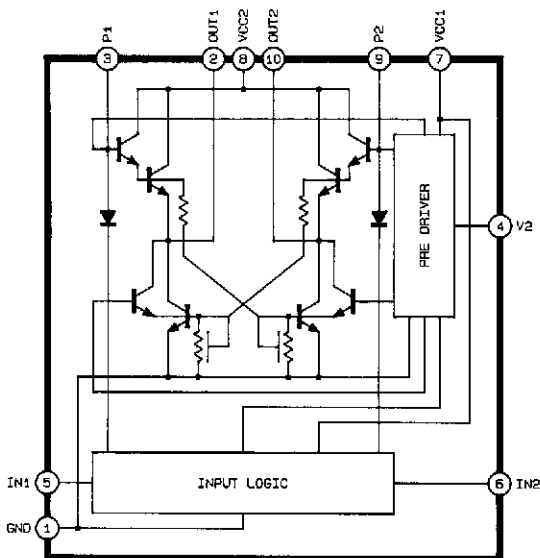
IC202 : LA1235
FM IF Amp.



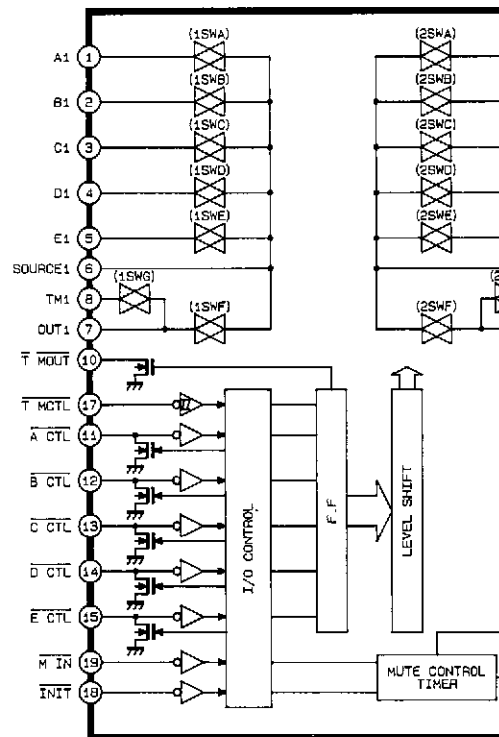
IC803 : TC9174P
IC804 : TC9173P
Audio Input Record
Out Selector



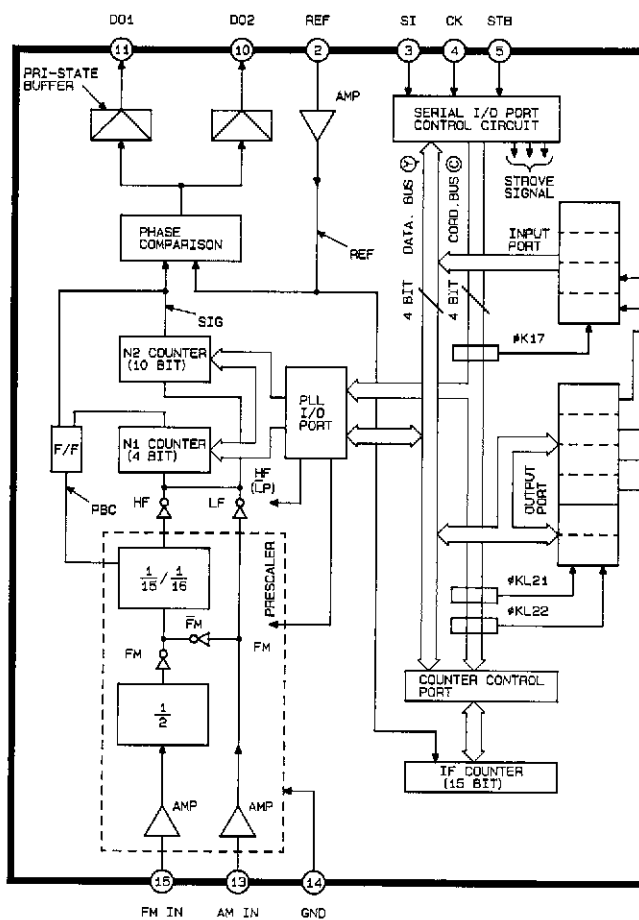
IC805 : LB1641
Volume Motor Driver



IC801, 802 : LC7818
Audio Input Record Out Selector

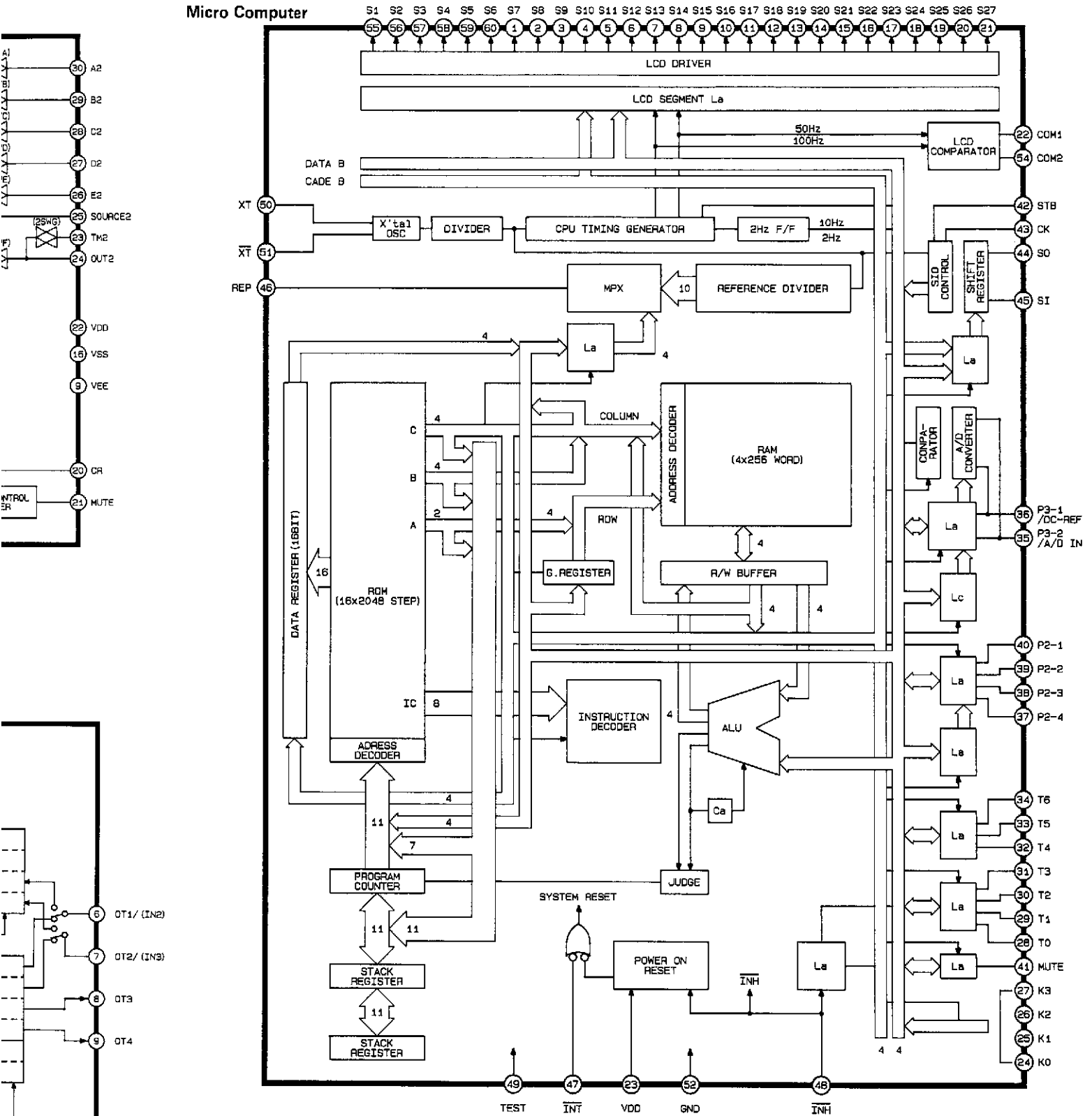


IC702 : TC9172AP
Pre Scaler



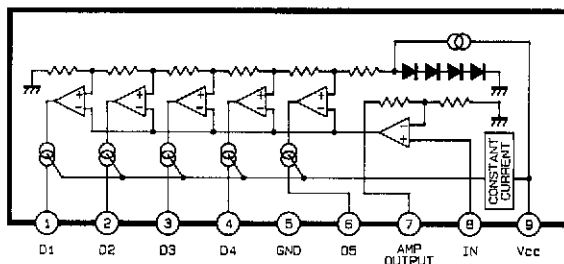
IC701 : TC9306F-025

Micro Computer



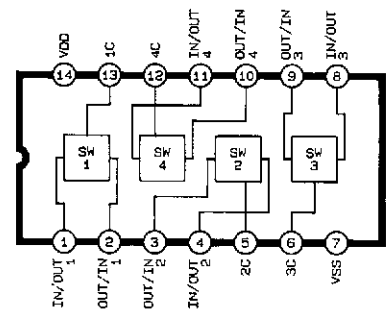
IC351 : BA6124

Indicator Driver

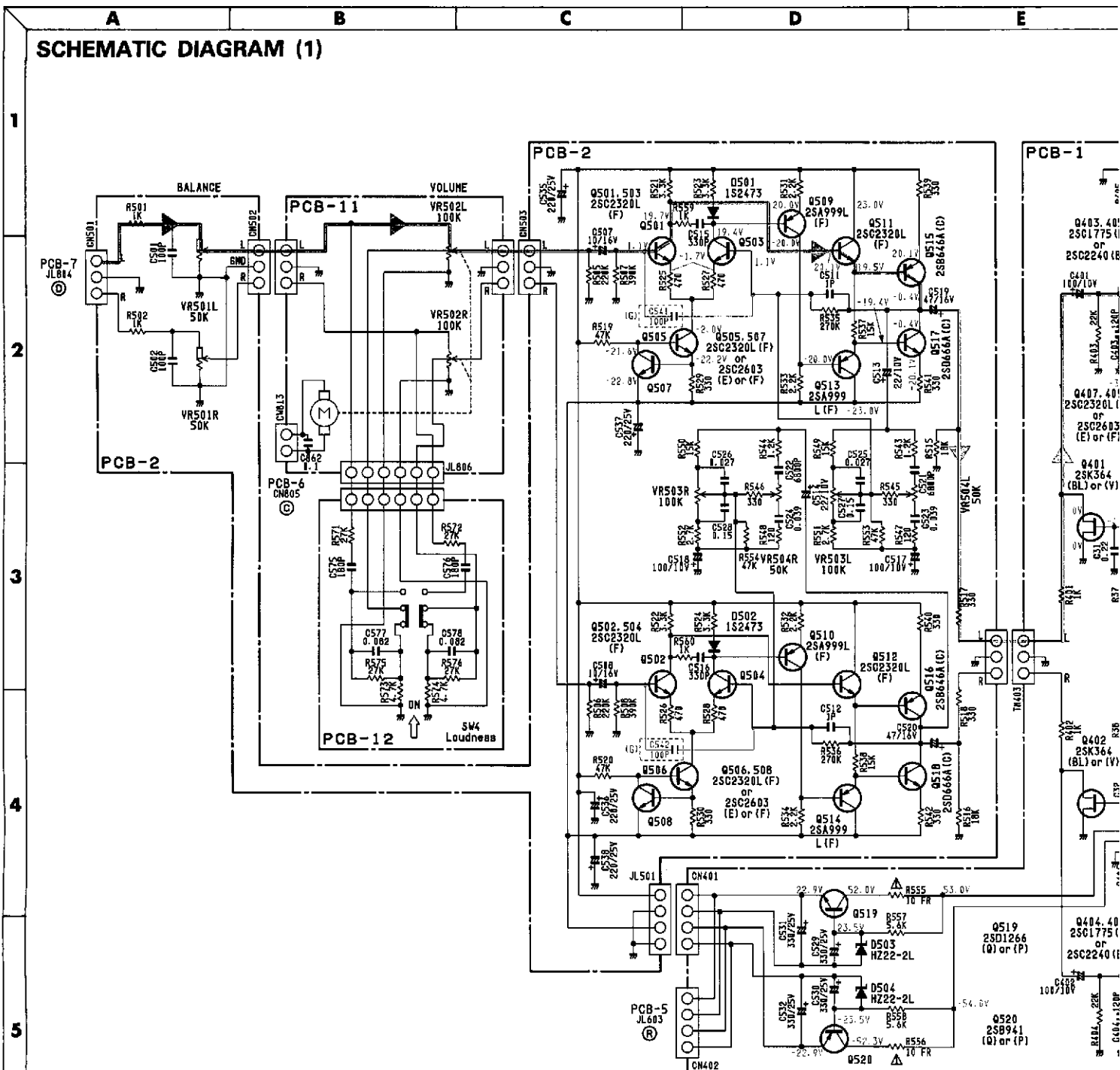


IC806, 807 : LC4966

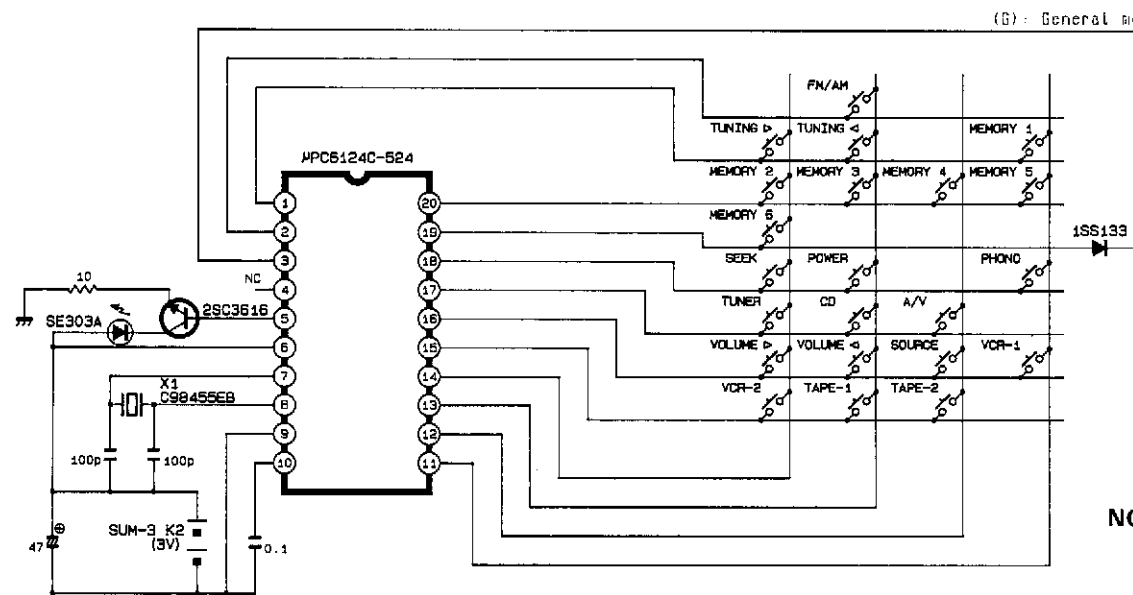
Video Input/Record Out Selector



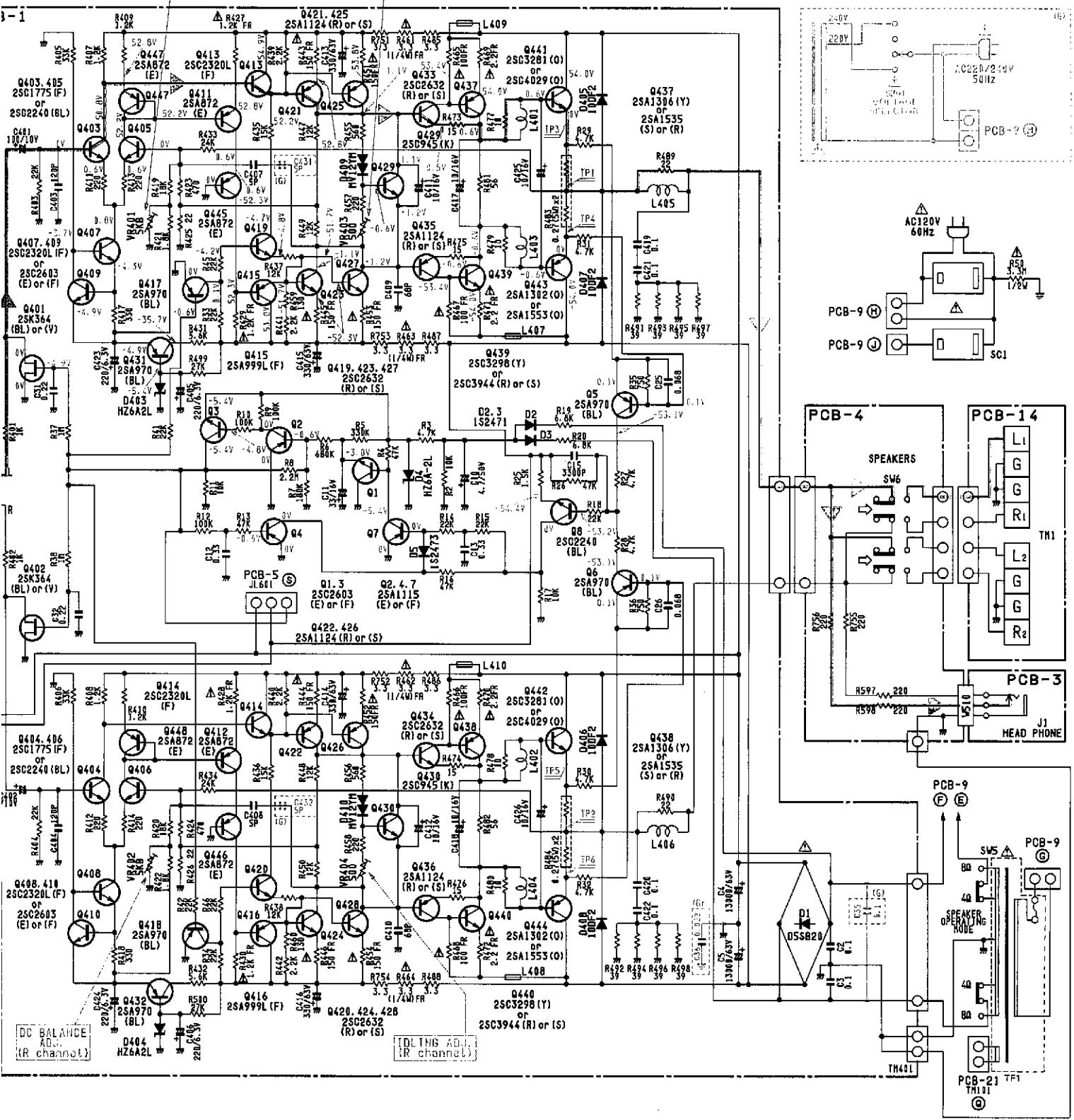
SCHEMATIC DIAGRAM (1)



Infrared remote control



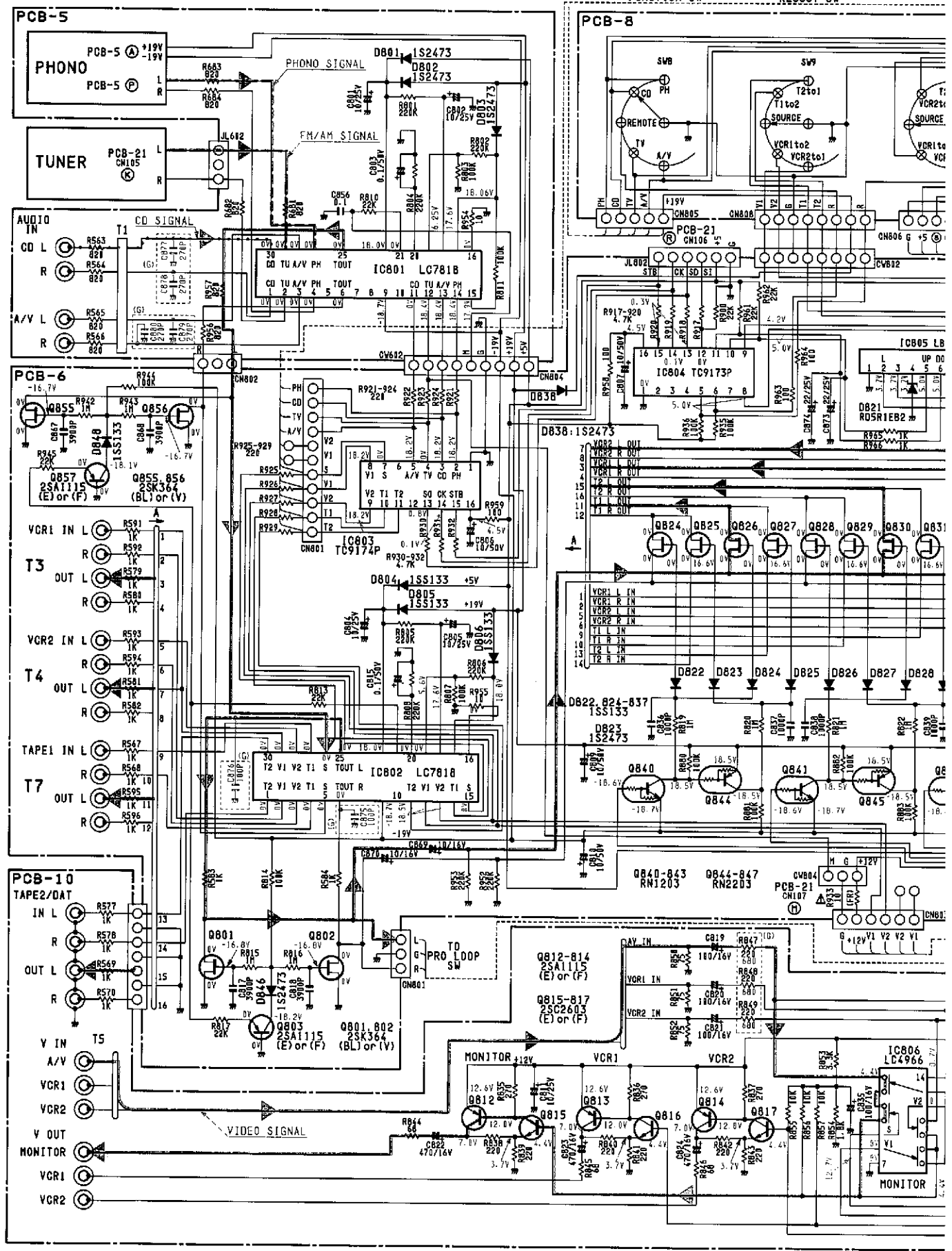
NOTE: Infrared remote control Schematic diagram



note control parts not available.
 diagram supplied for reference only.

SCHEMATIC DIAGRAM (2)

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A B C D E
SCHEMATIC DIAGRAM (3)

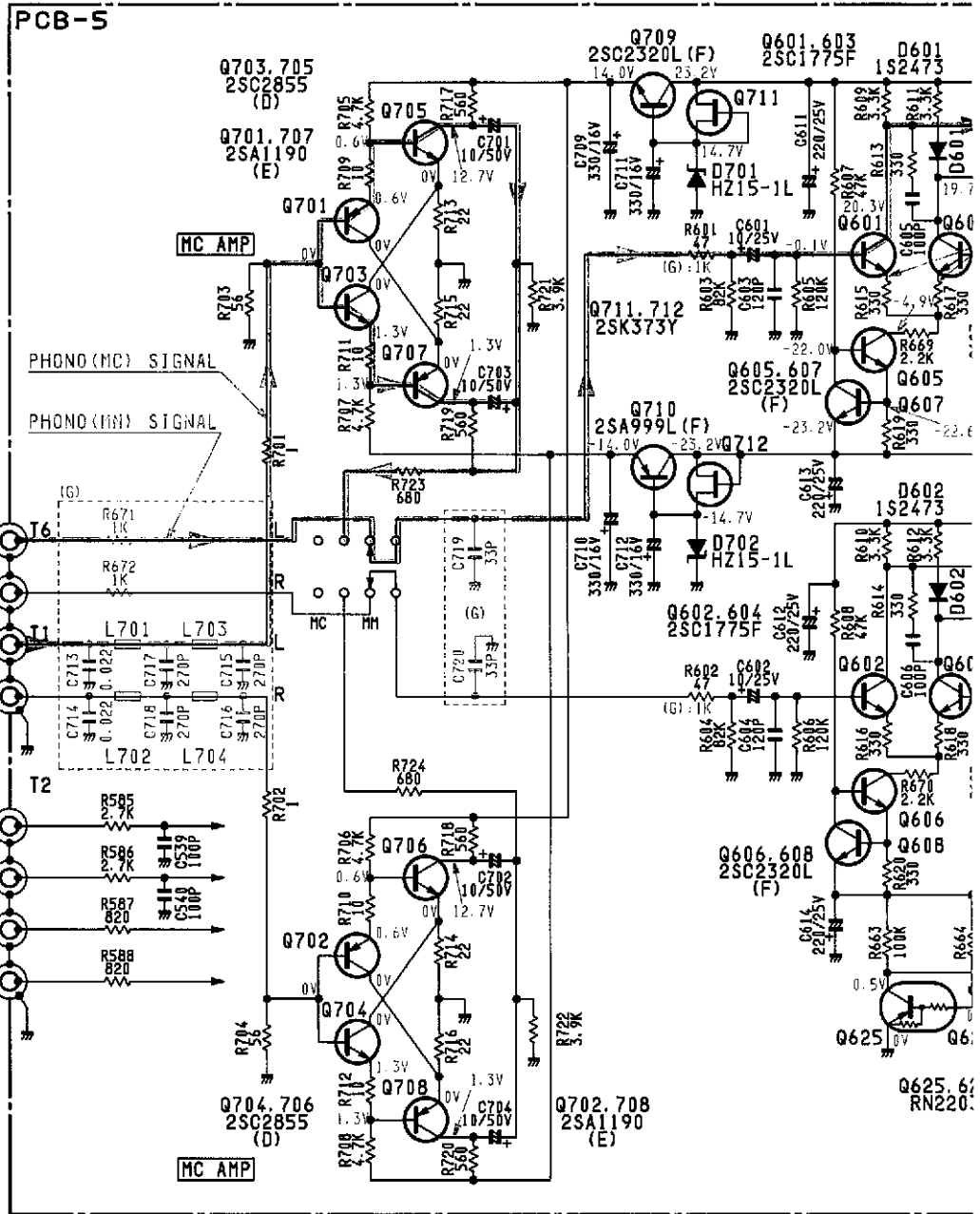
1

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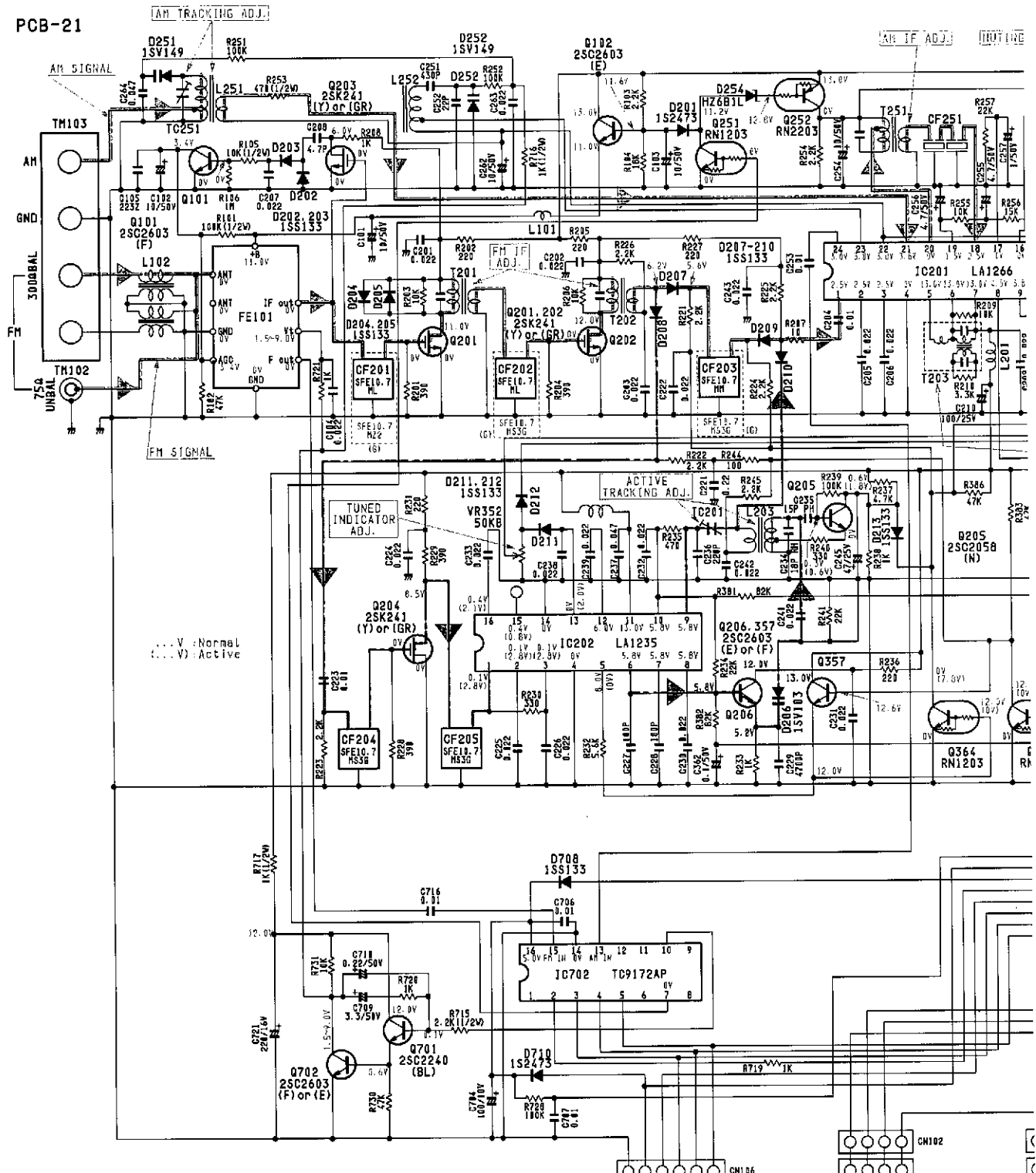
4

5



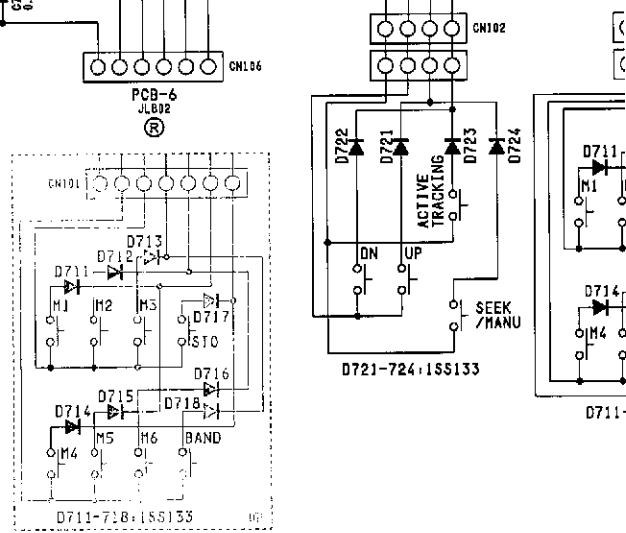
SCHEMATIC DIAGRAM (4)

PCB-21



... V: Normal
 (... V): Active

- NOTE:**
1. ALL RESISTANCES VALUES ARE IN Ω .
 $K\Omega=1000\Omega$, $M\Omega=1000K\Omega$.
 2. THE WATTAGE OF RESISTORS IS 1/6W UNLESS OTHERWISE NOTED.
 3. ALL CAPACITANCES VALUES ARE IN μF UNLESS OTHERWISE NOTED. $P=\mu MF$.
 4. ... V: DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
 5. SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS. THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

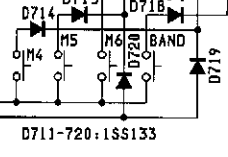
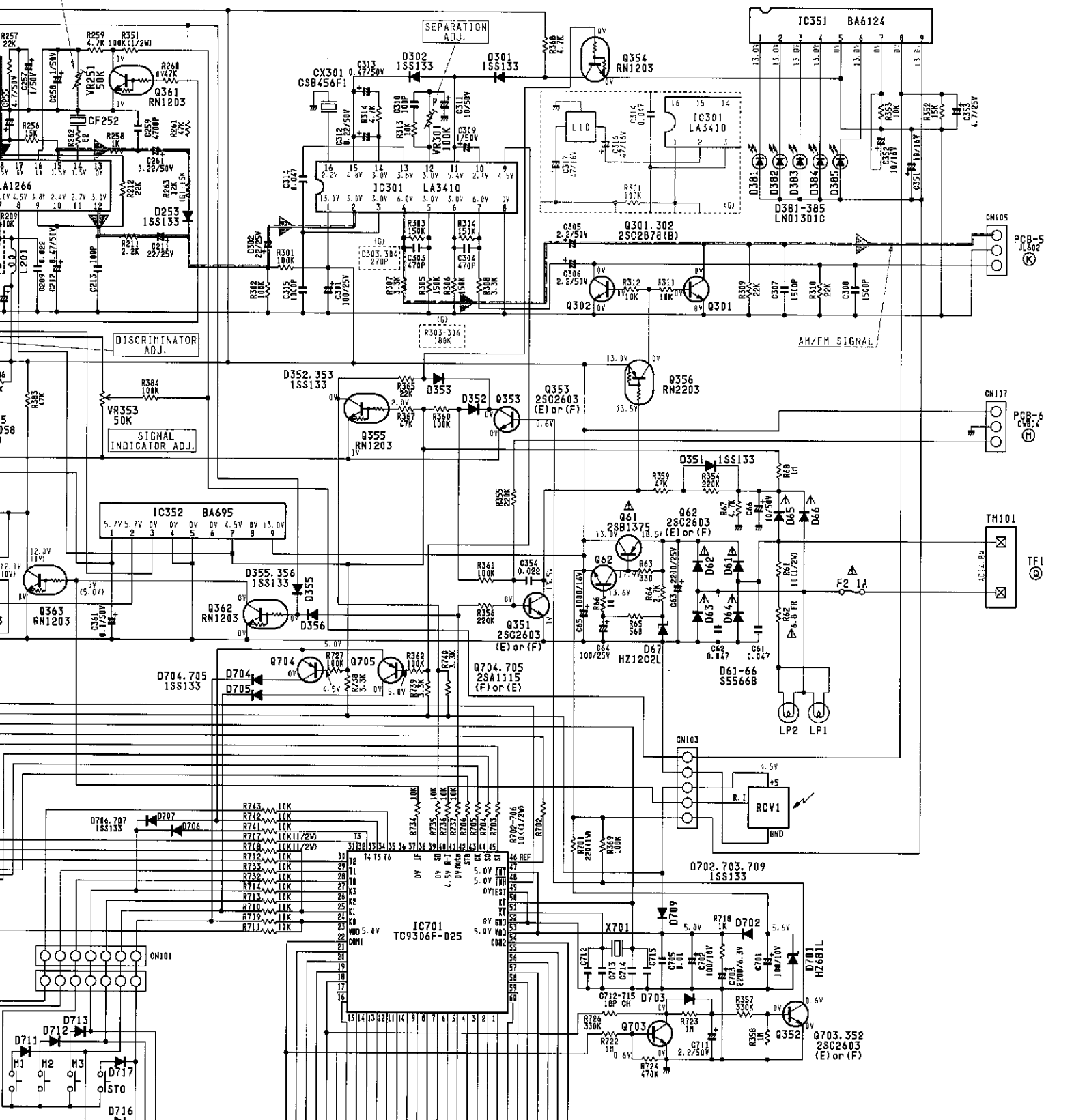


E F G H I J

TUNING LEVEL ADJ.

SEPARATION ADJ.

IC351 BA6124



SEEK
FM 1
FM 2
AM

188.88

ACTIVE TRACKING
MHZ
KHZ

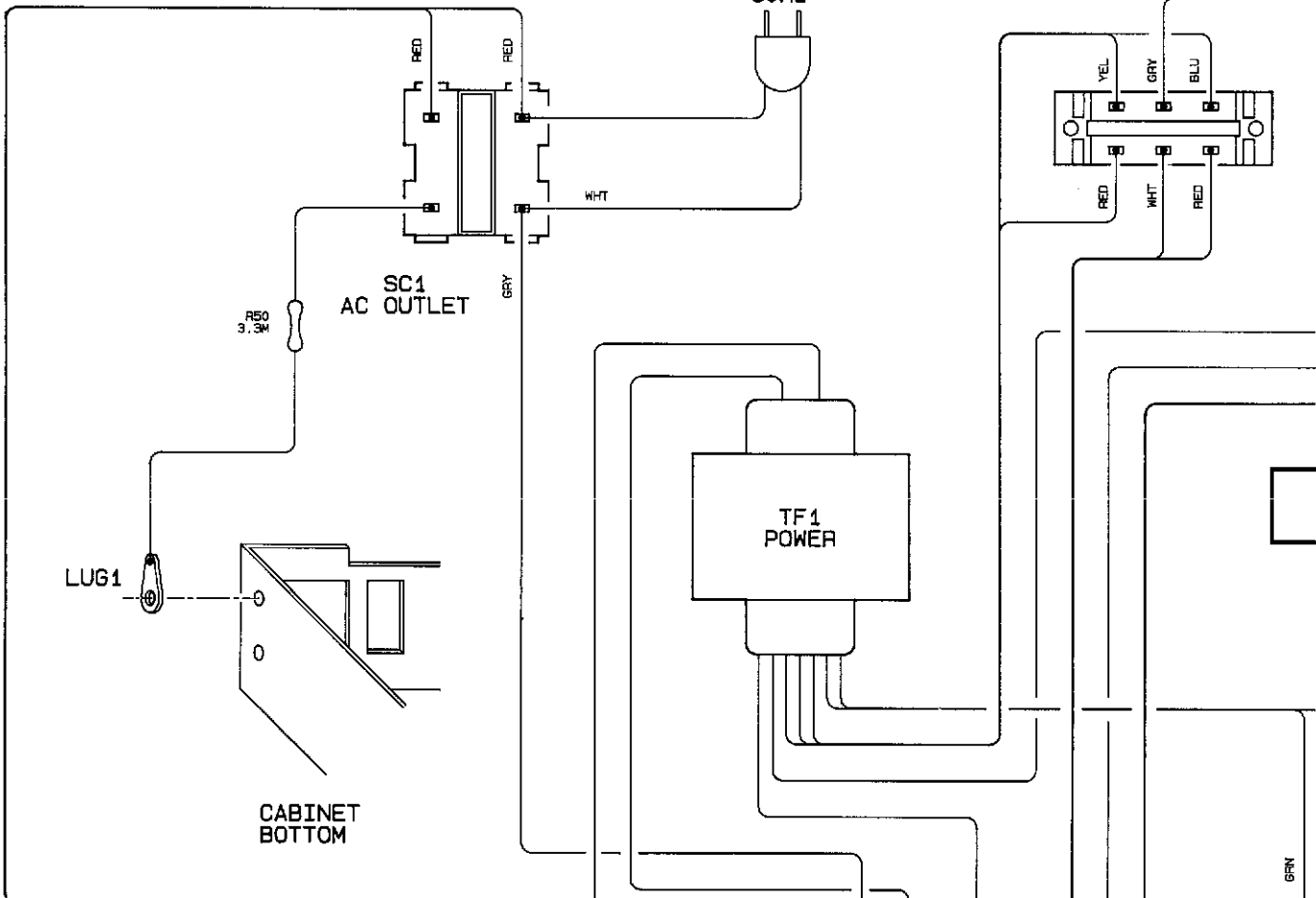
STEREO
TUNED
ch. 8

DSP1

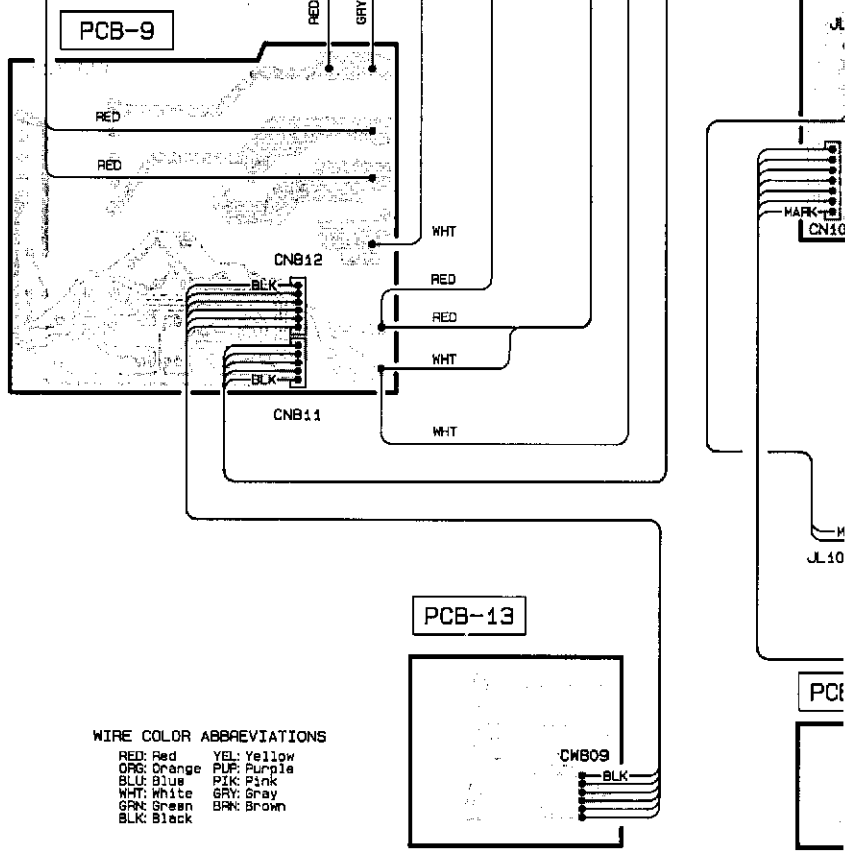
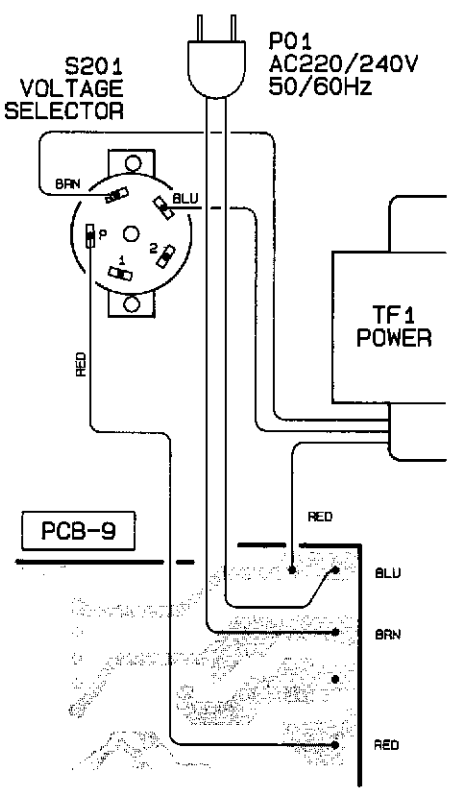
WIRING DIAGRAM

P01
AC120V
60Hz

SW5
SPEAKER OPERATING MODE



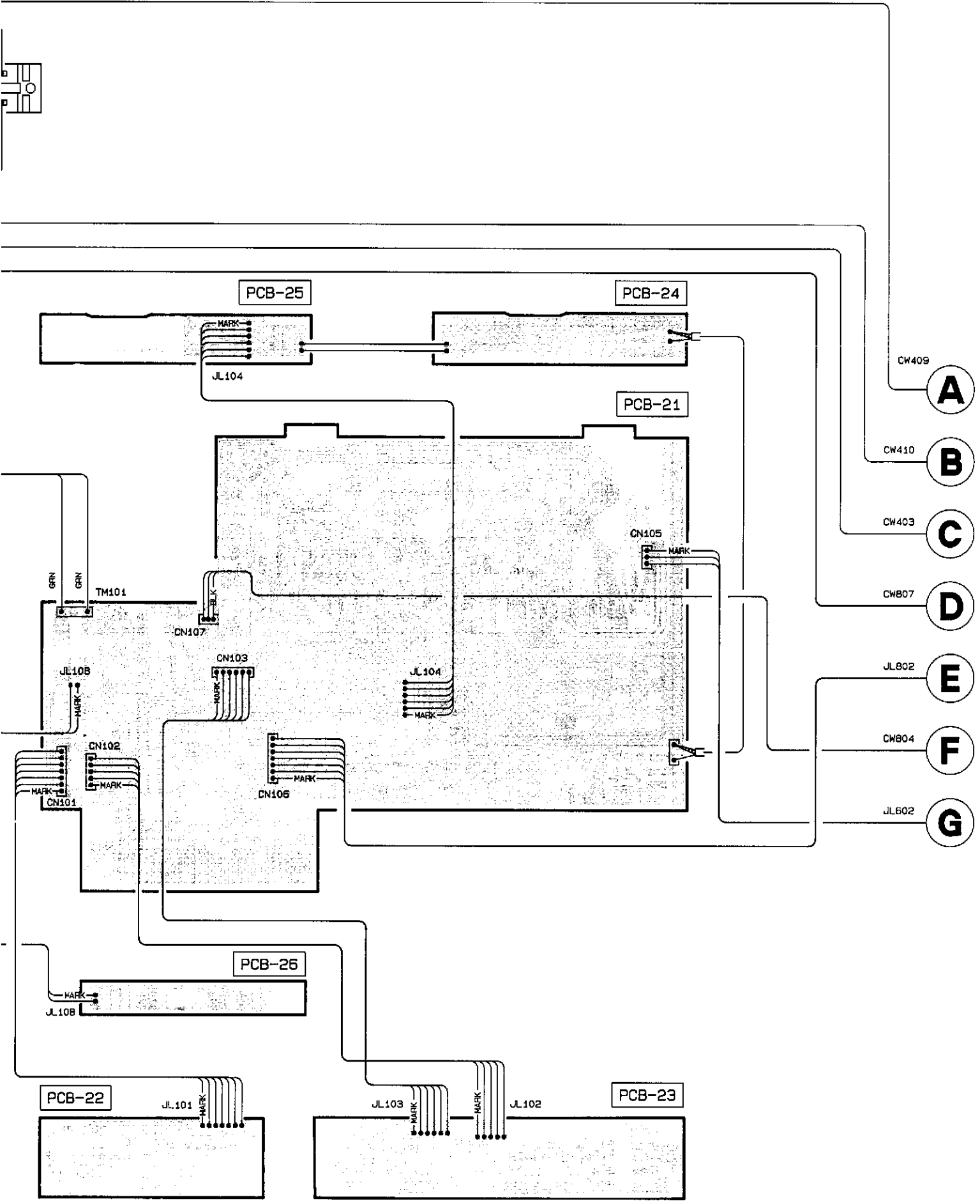
General and Australia models



WIRE COLOR ABBREVIATIONS
 RED: Red YEL: Yellow
 ORG: Orange PUR: Purple
 BLU: Blue PPK: Pink
 WHT: White GRN: Green
 GRN: Green BRN: Brown
 BLK: Black

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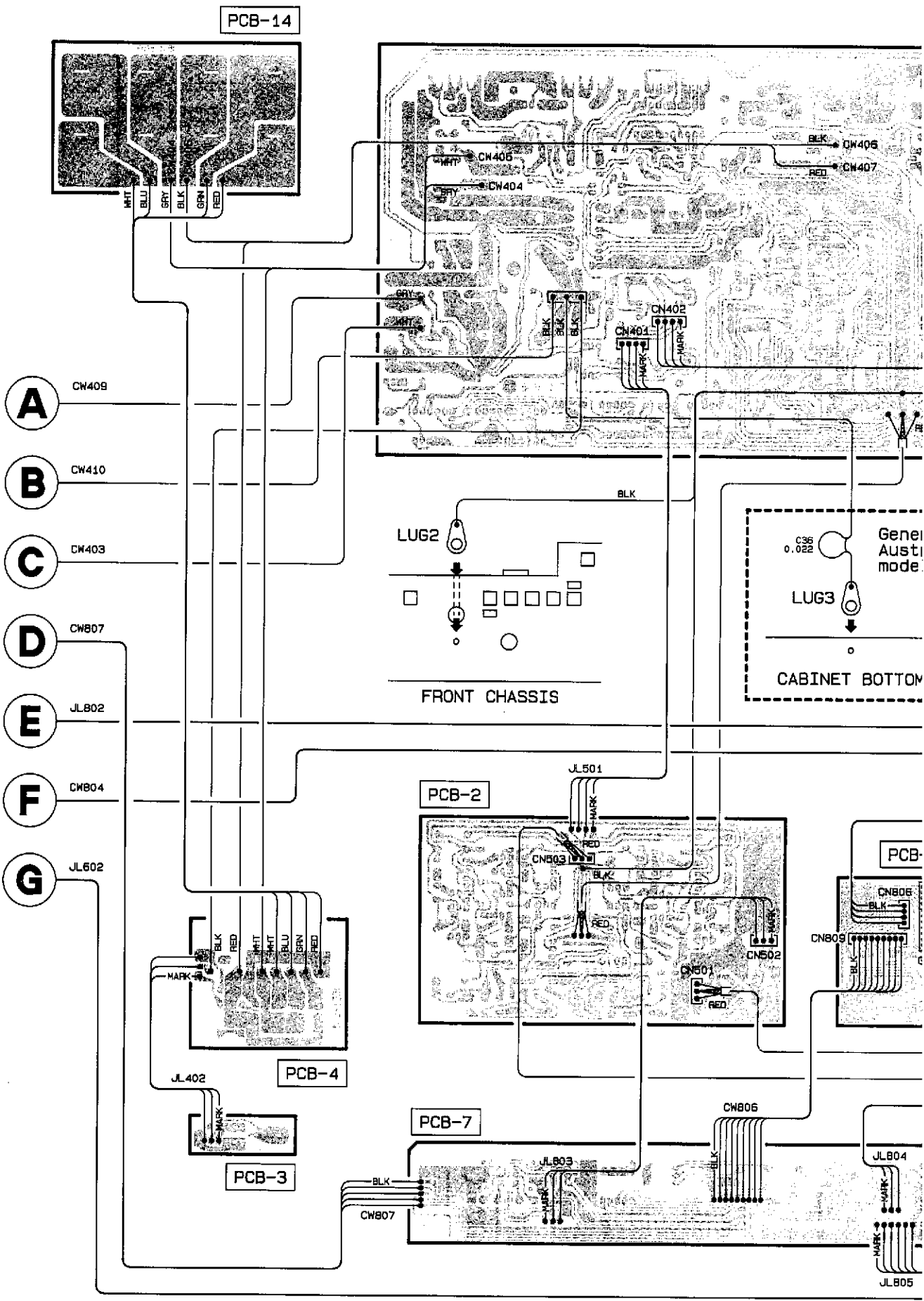
ING MODE



A B C D E

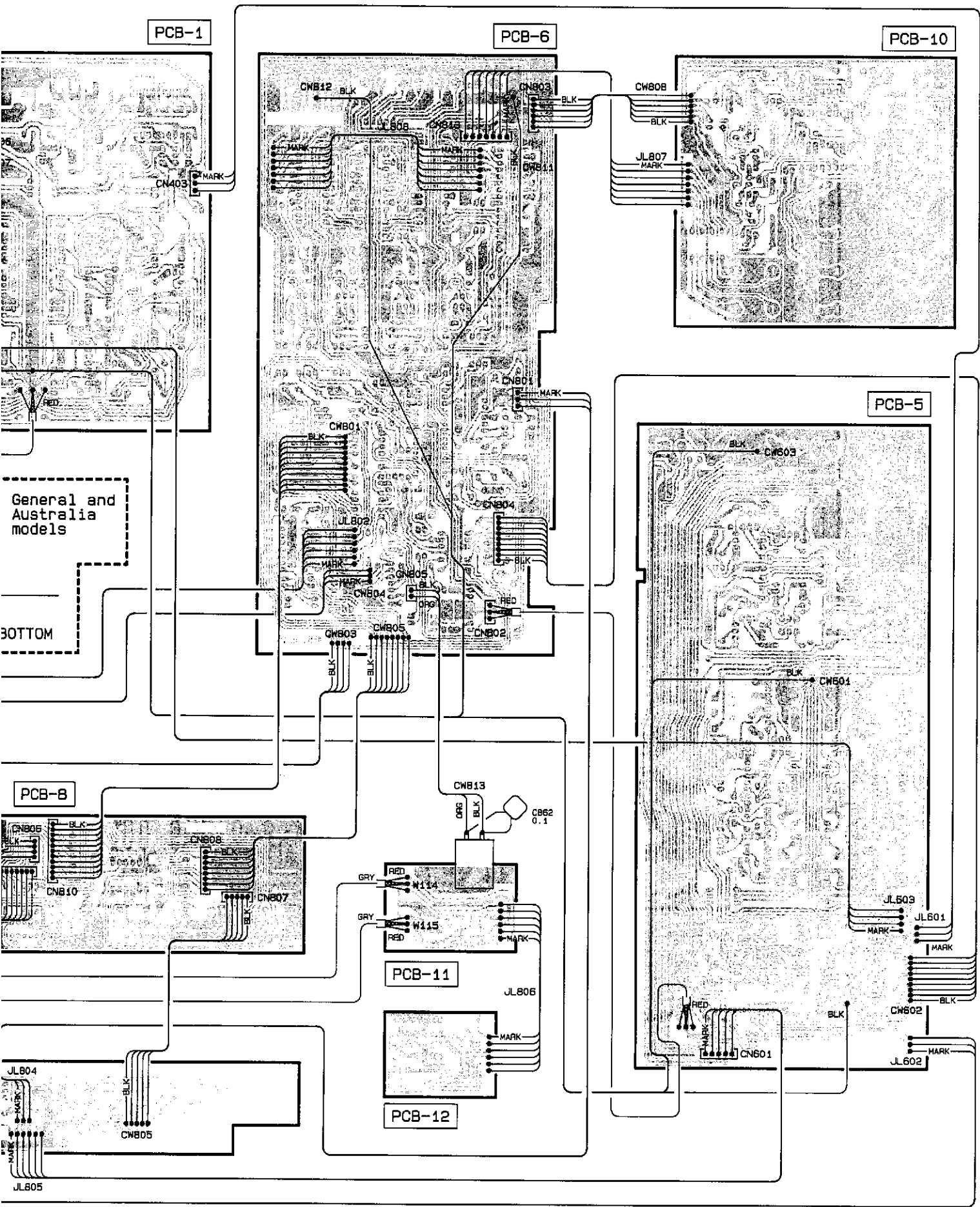
WIRING DIAGRAM

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- A** CW409
- B** CW410
- C** CW403
- D** CW807
- E** JL802
- F** CW804
- G** JL502

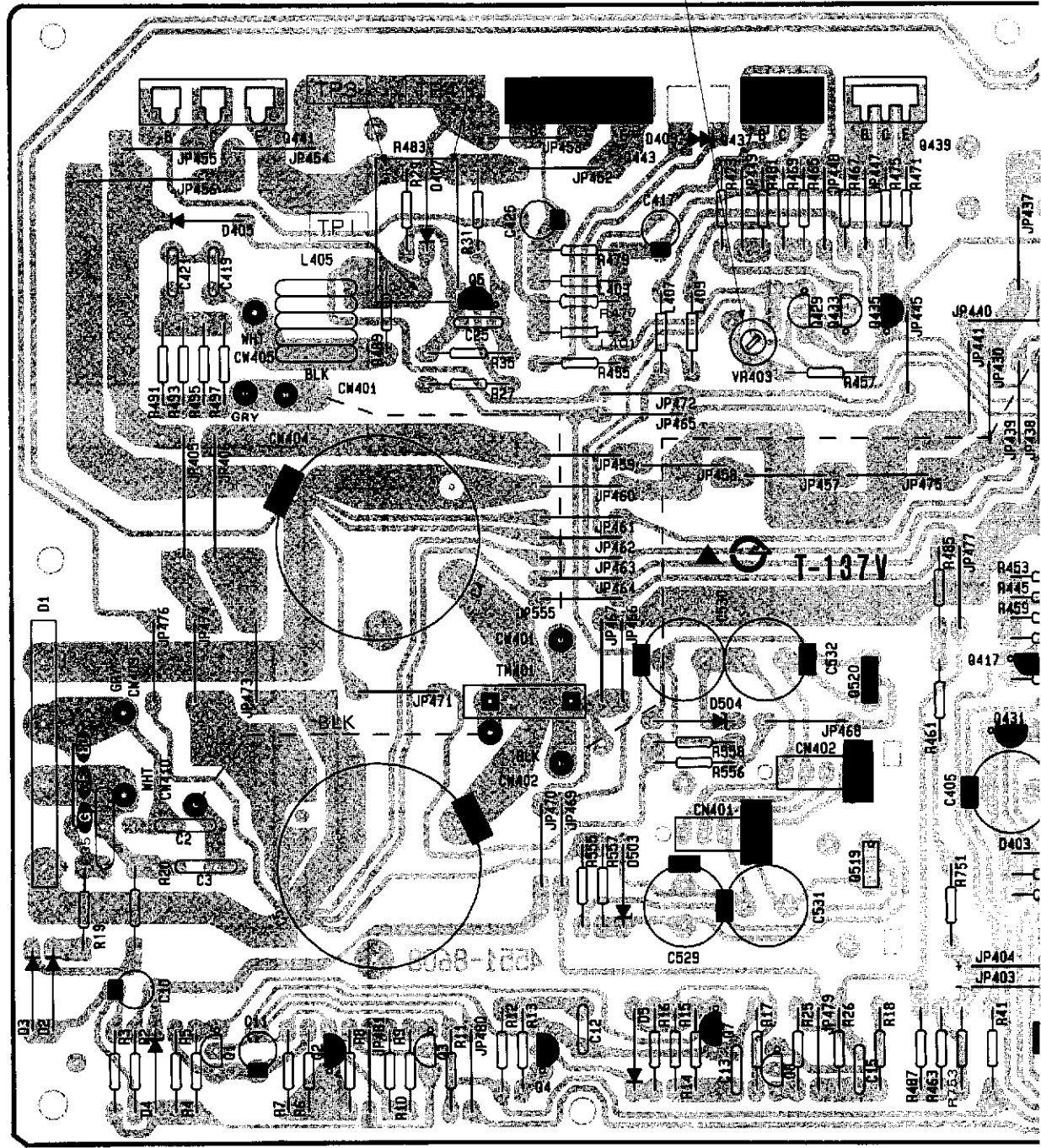
E F G H I J



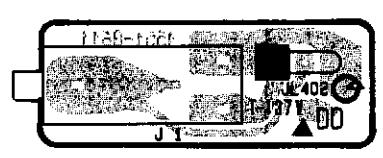
P.C. BOARDS (1)

PCB-1 Main P.C. Board

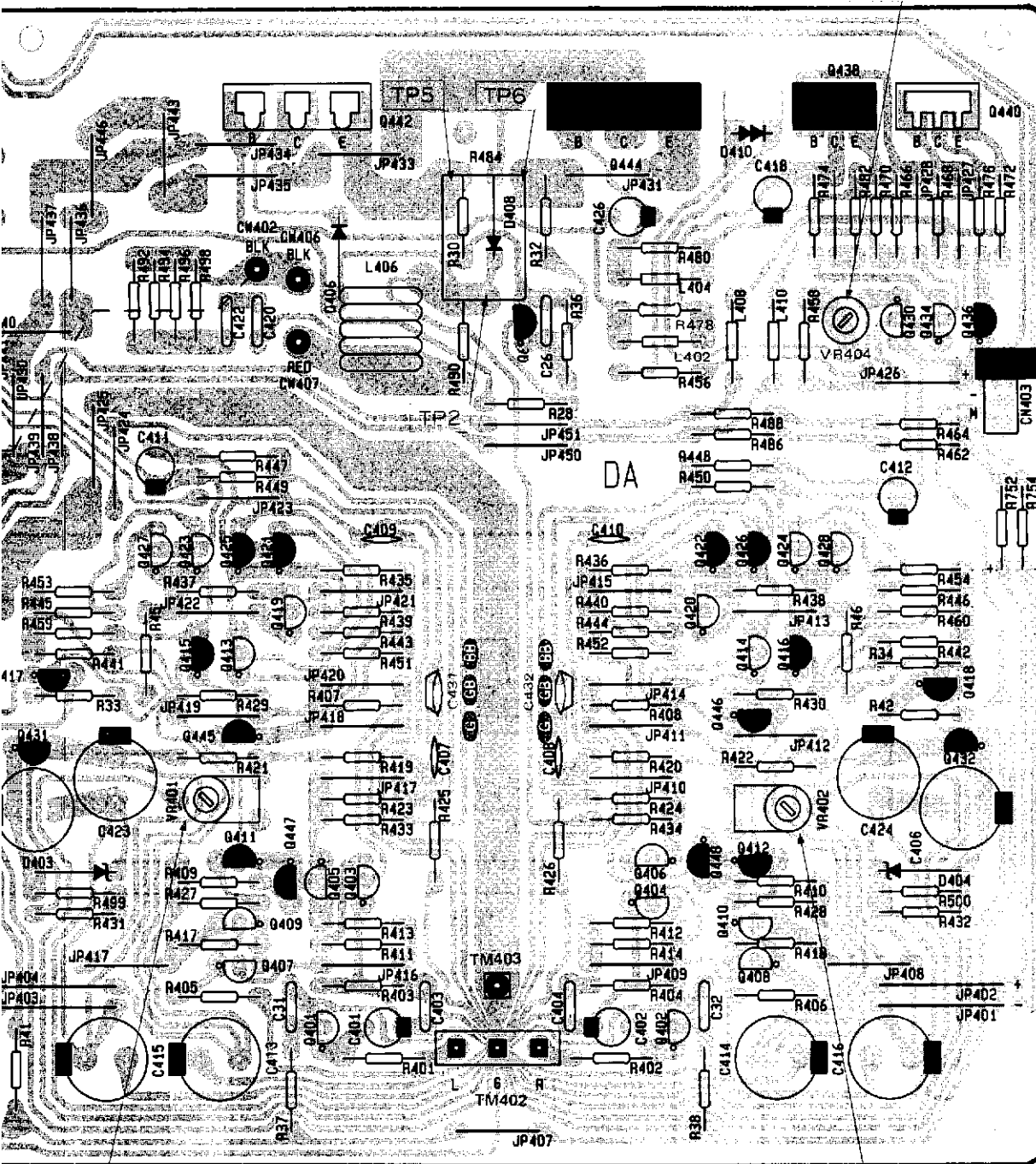
IDLING ADJ. (L channel)



PCB-3 Headphone Jack P.C. Board



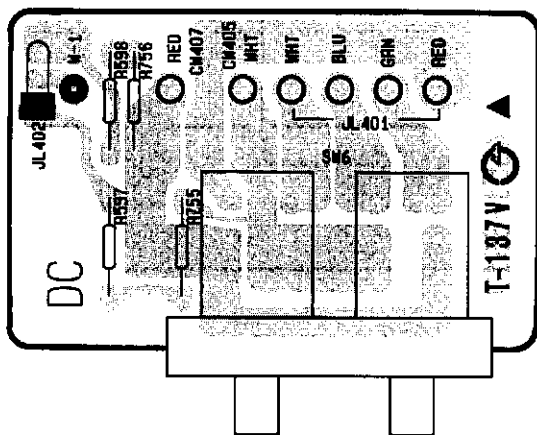
IDLING ADJ. (R channel)



DC BALANCE ADJ. (L channel)

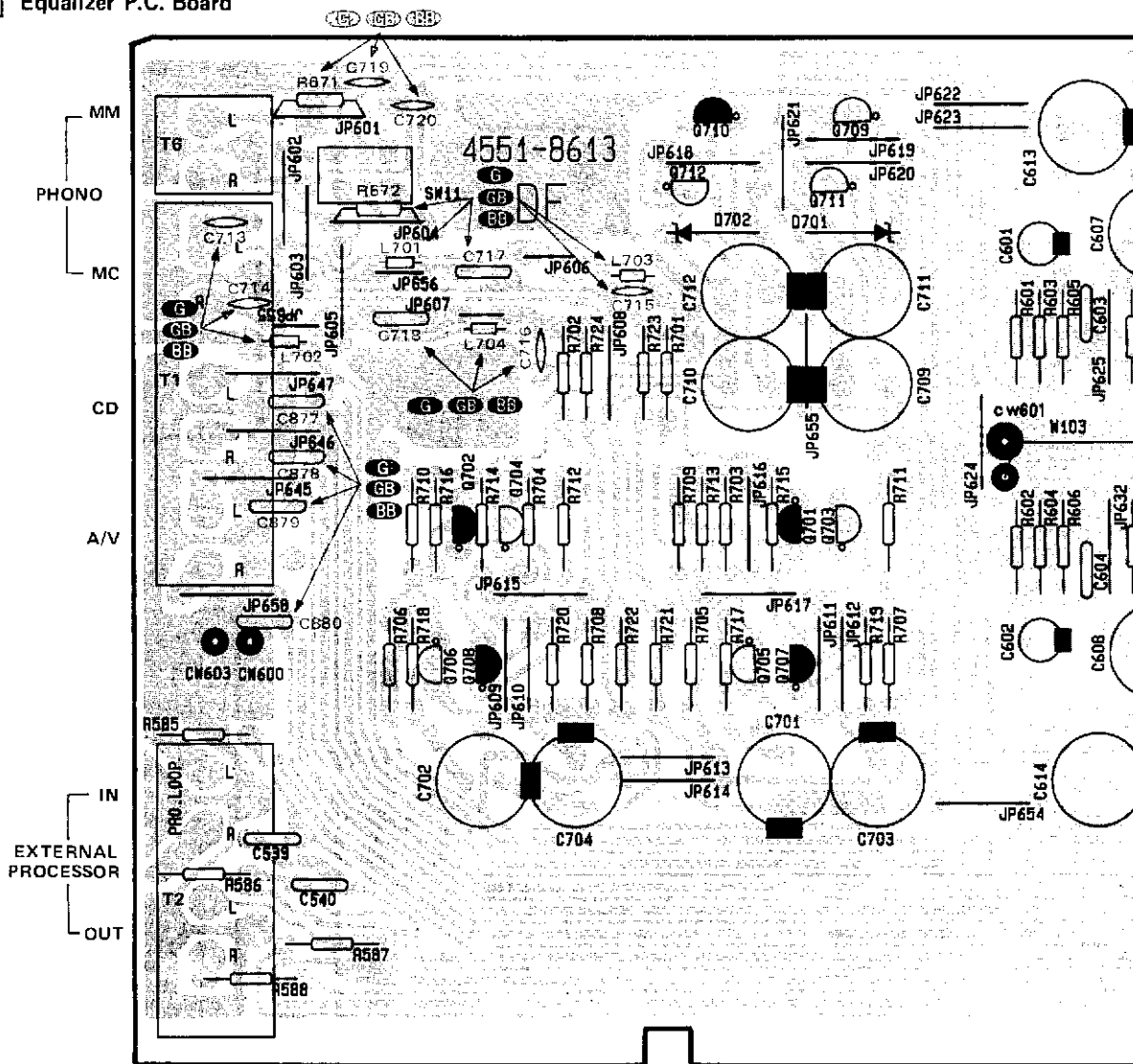
DC BALANCE ADJ. (R channel)

PCB-4 Speaker Switches P.C. Board

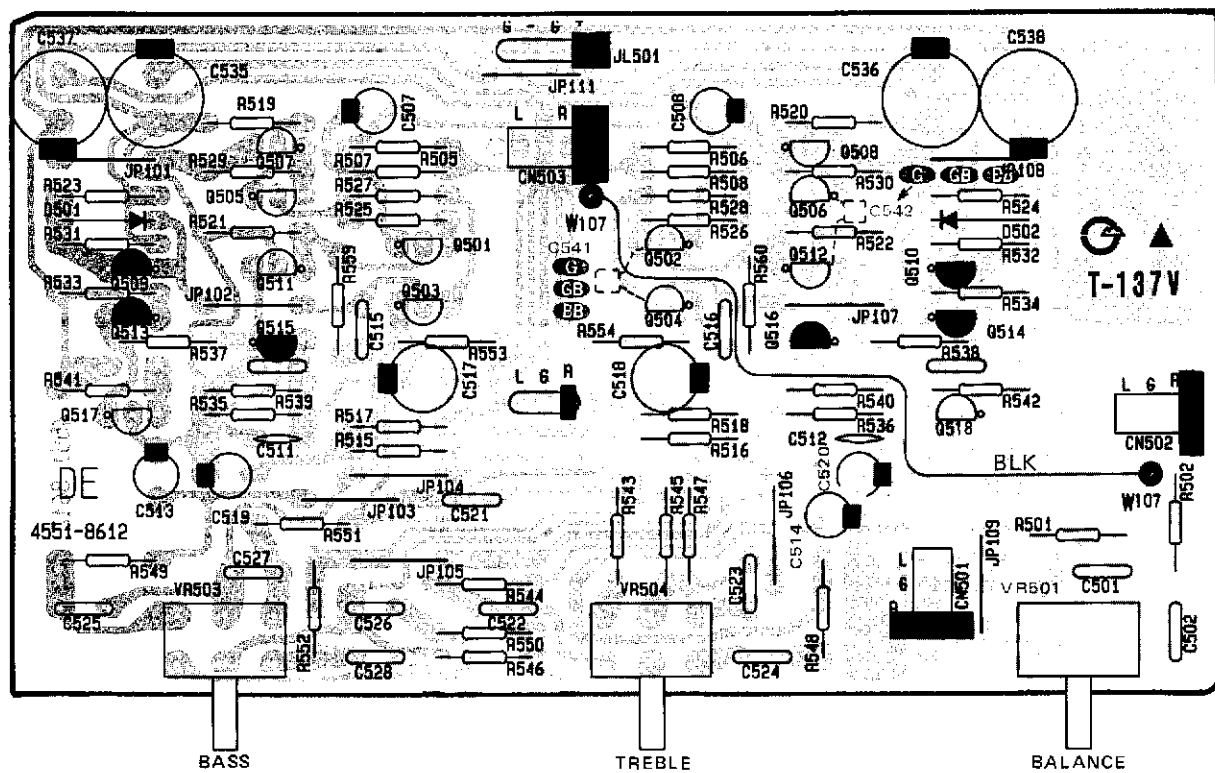


P.C. BOARDS (2)

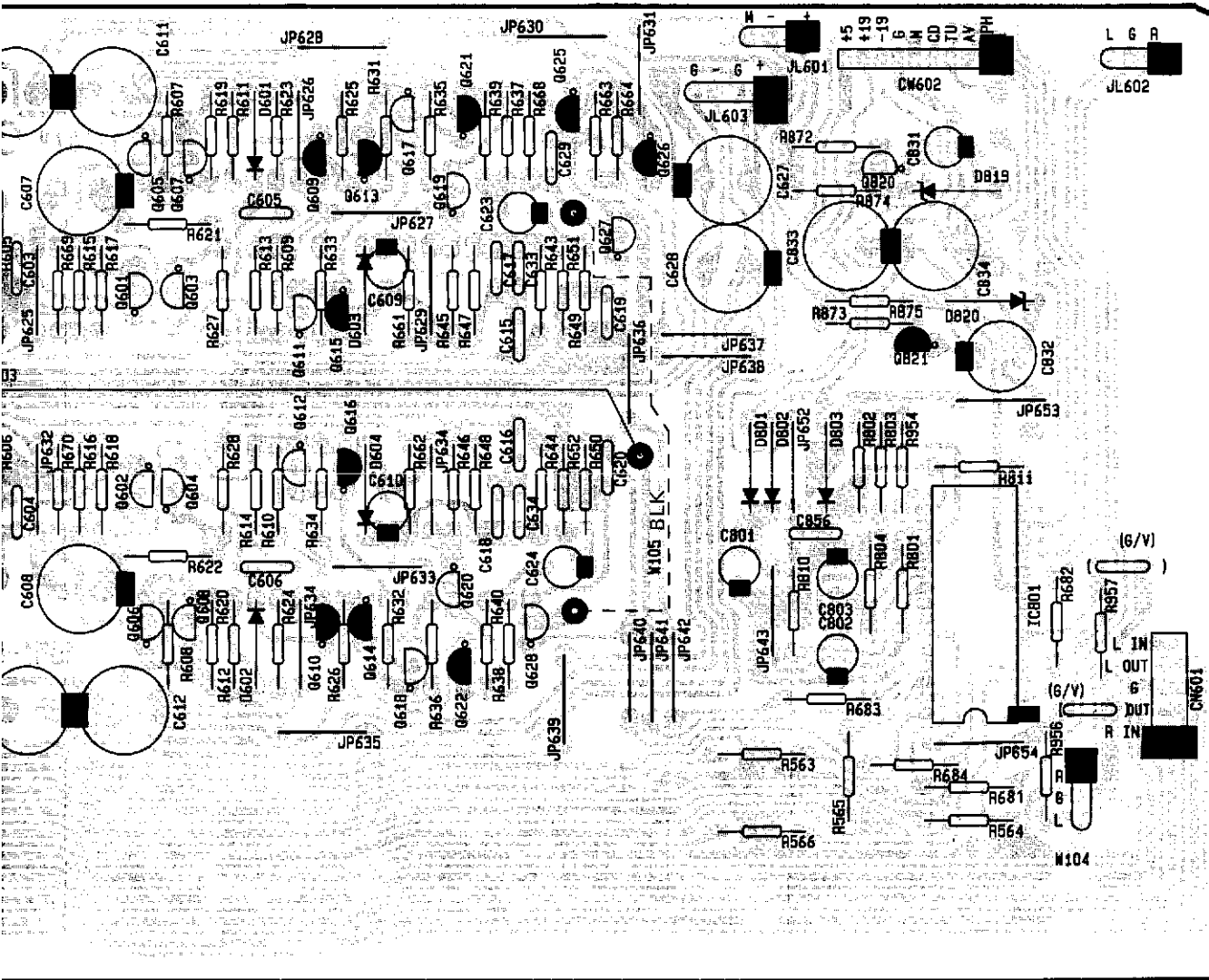
PCB-5 Equalizer P.C. Board



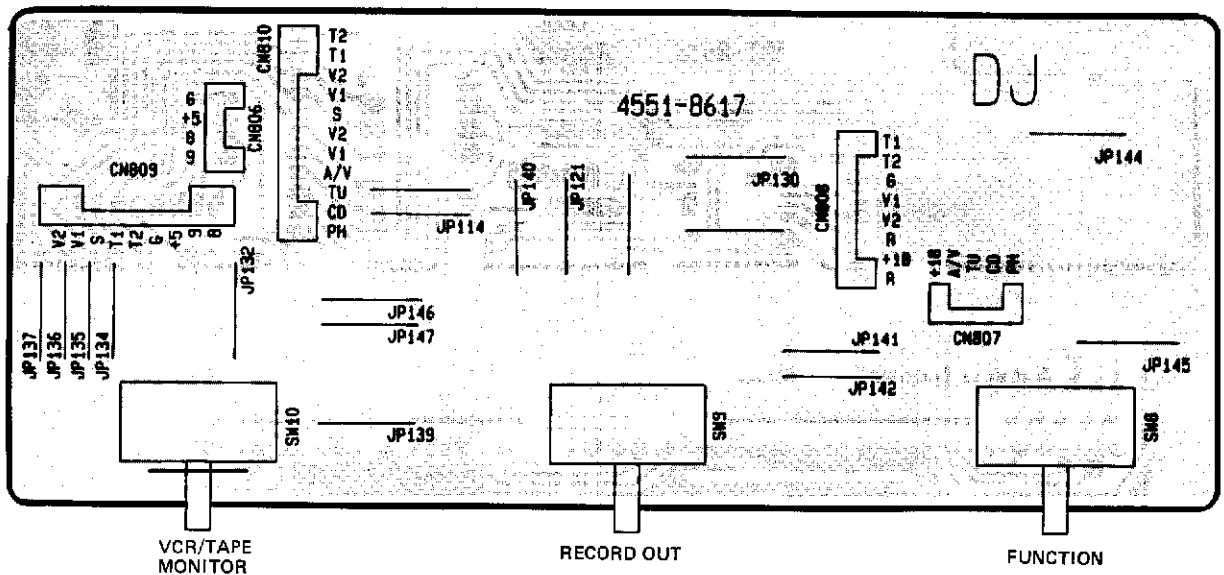
PCB-2 Tone Control P.C. Board



E F G H I J

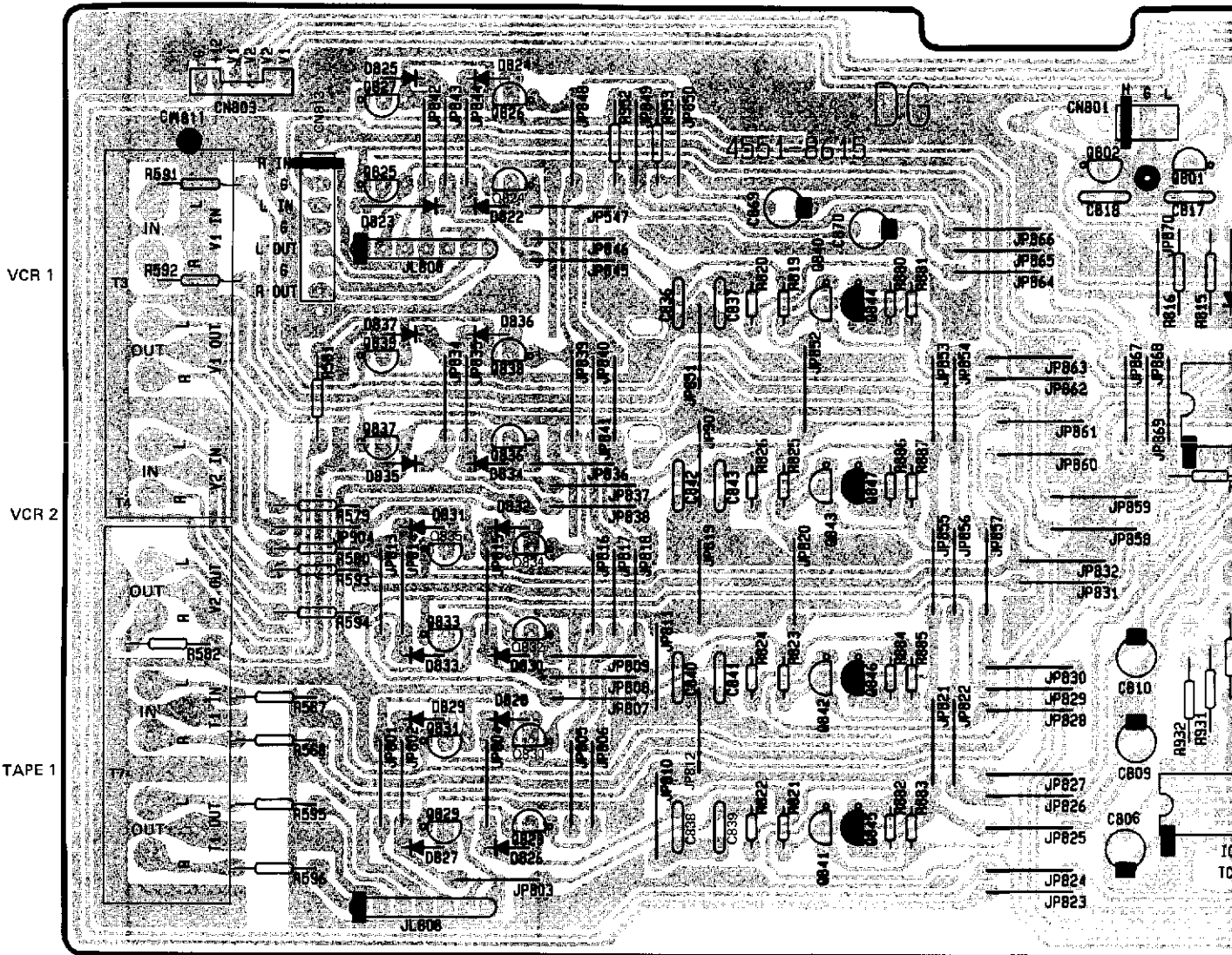


PCB-8 Function P.C. Board

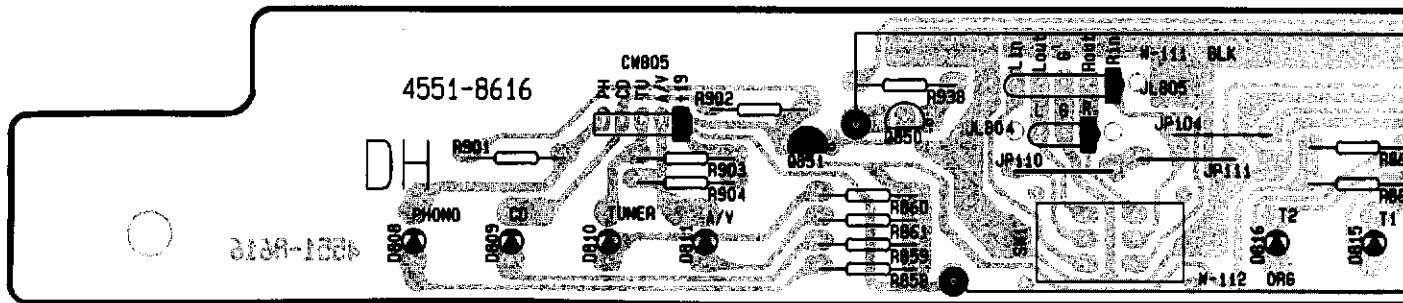


P.C. BOARDS (3)

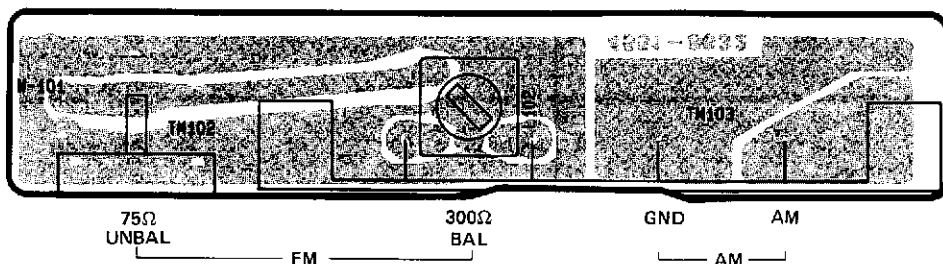
PCB-6 Control P.C. Board

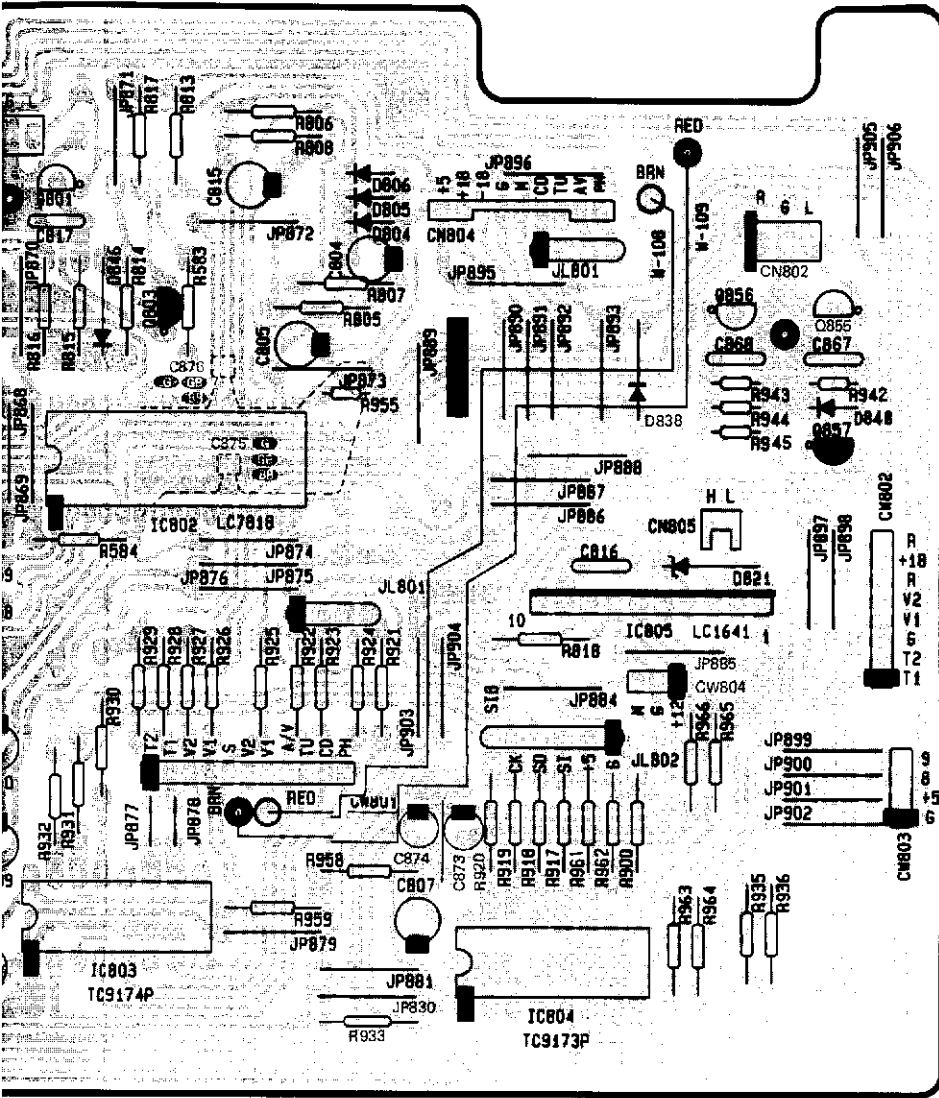


PCB-7 LED P.C. Board

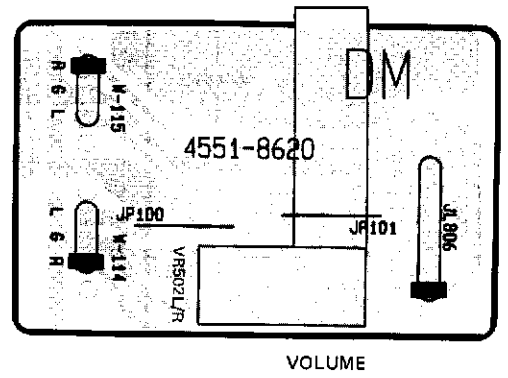


PCB-24 Antenna Terminal P.C. Board



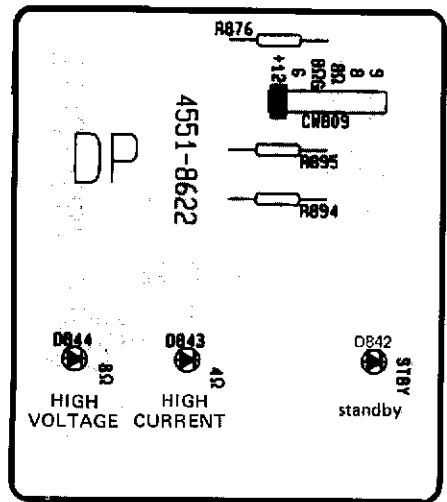


PCB-11 Volume P.C. Board



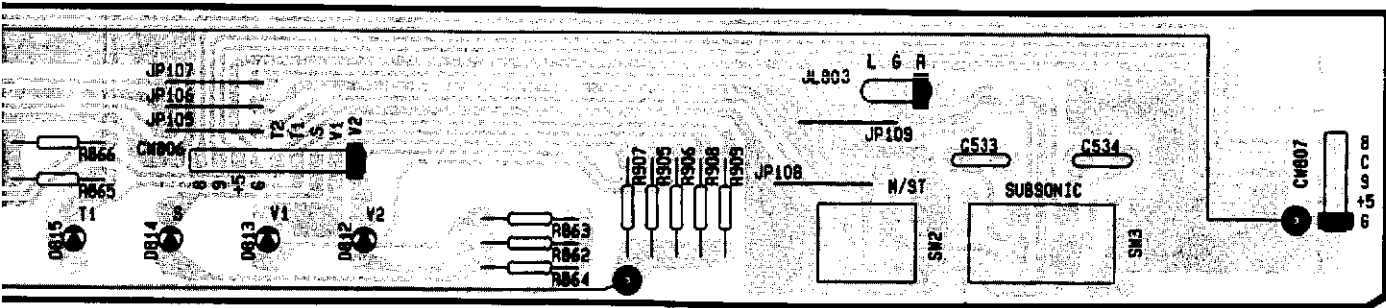
VOLUME

PCB-13 Operating Mode P.C. Board



HIGH VOLTAGE CURRENT

standby

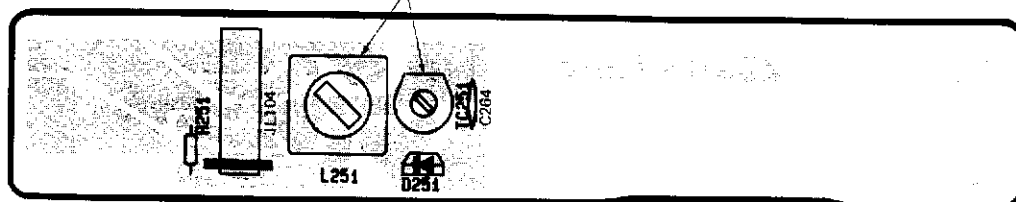


mono

subsonic

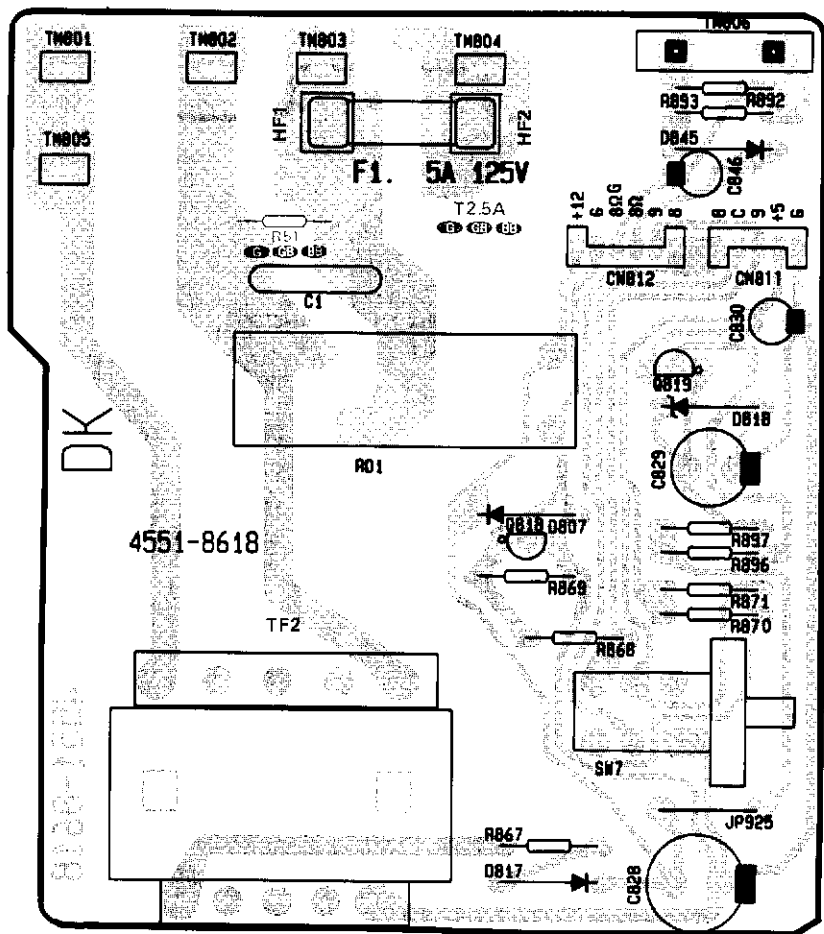
AM TRACKING ADJ.

PCB-25 AM adjustment P.C. Board

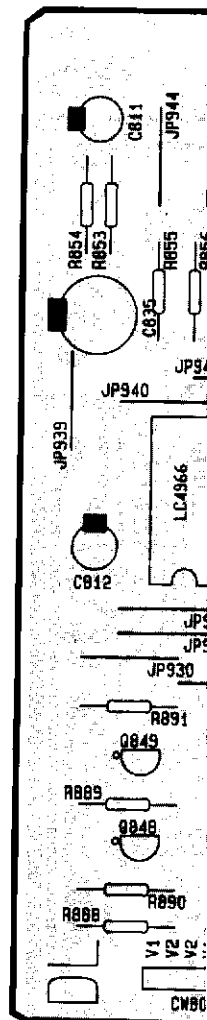


P.C. BOARDS (4)

PCB-9 Relay P.C. Board

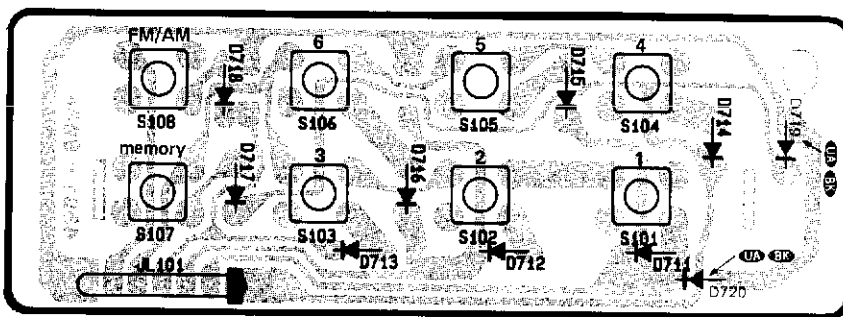


PCB-10 AV P.C.

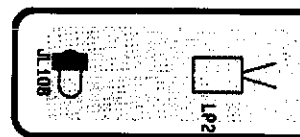


PCB-22 Tact Switches P.C. Board

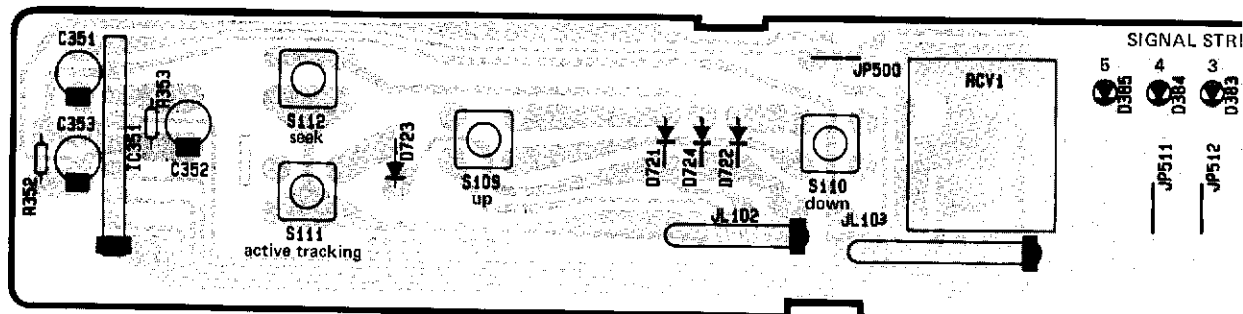
FM/AM PRESET MEMORY



PCB-26 Lamp P.C. Board

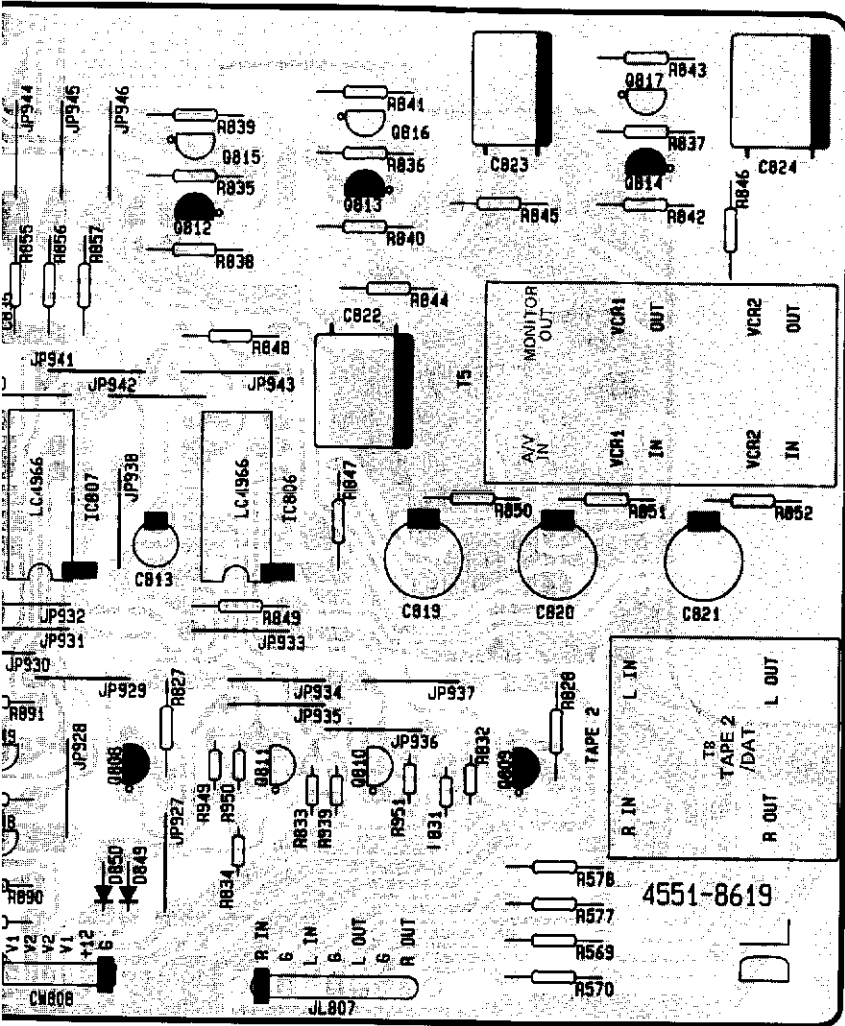


PCB-23 Tuning Switch P.C. Board

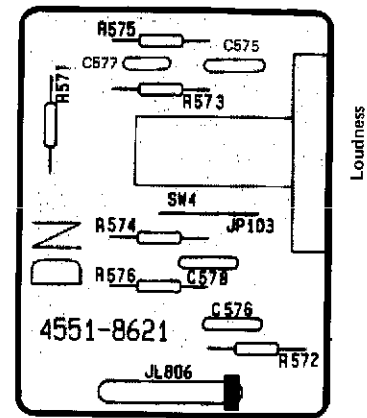


E F G H I J

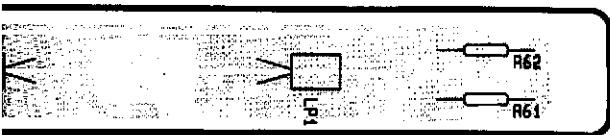
V P.C. Board



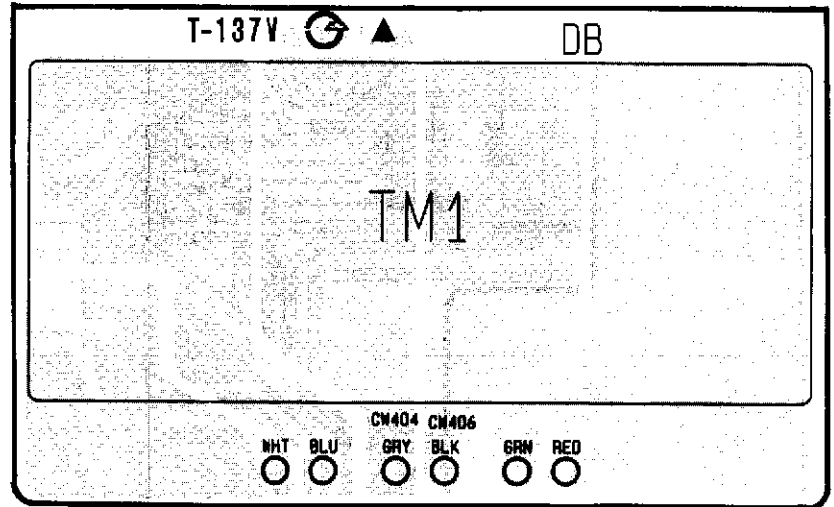
PCB-12 Loudness P.C. Board



Board



PCB-14 Speaker Terminal P.C. Board

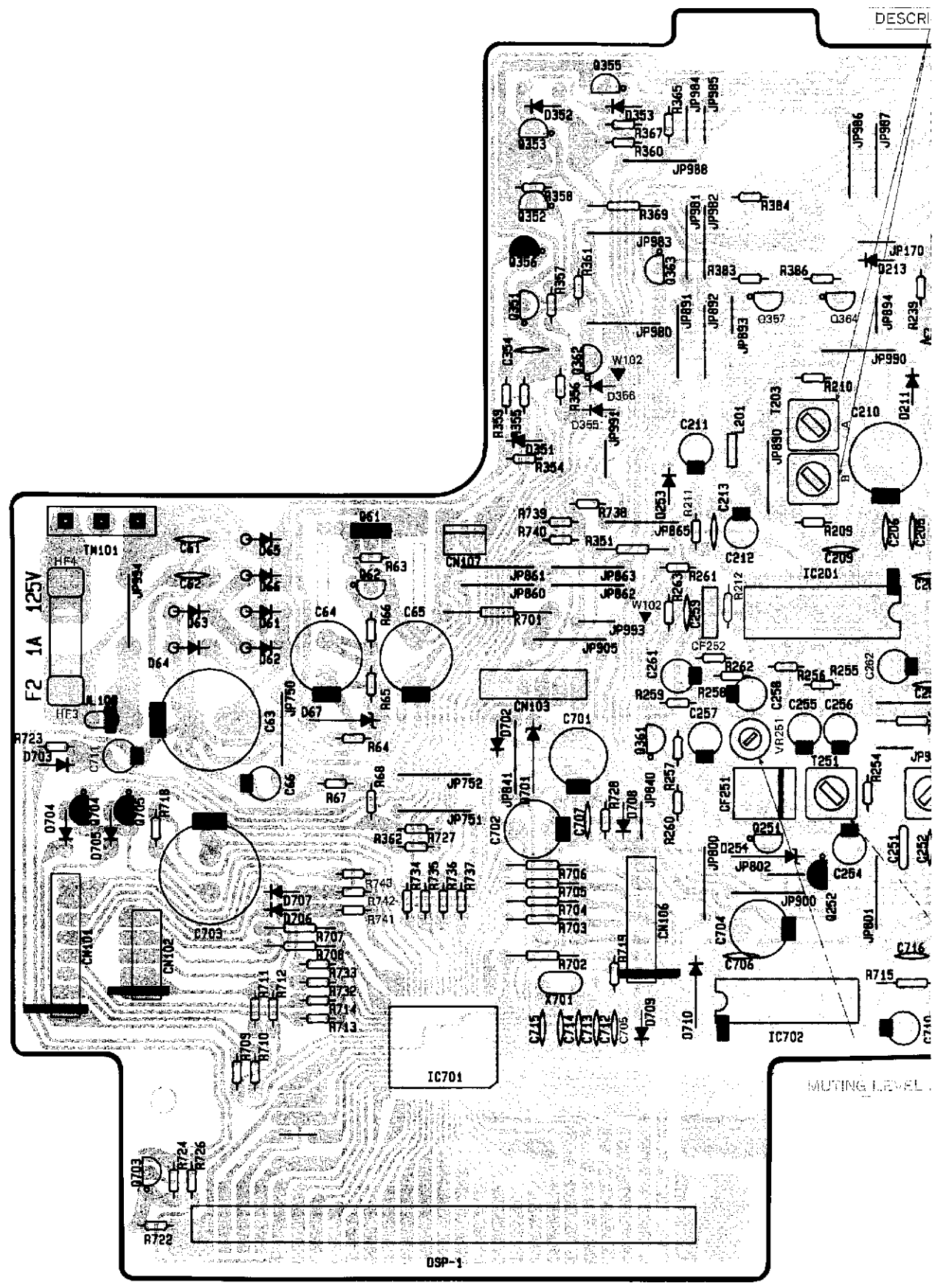


P.C. BOARDS (5)

PCB-21 Tuner P.C. Board

1
2
3
4
5
6
7

A B C D E



DESCR

MUTING LEVEL

DSP-1

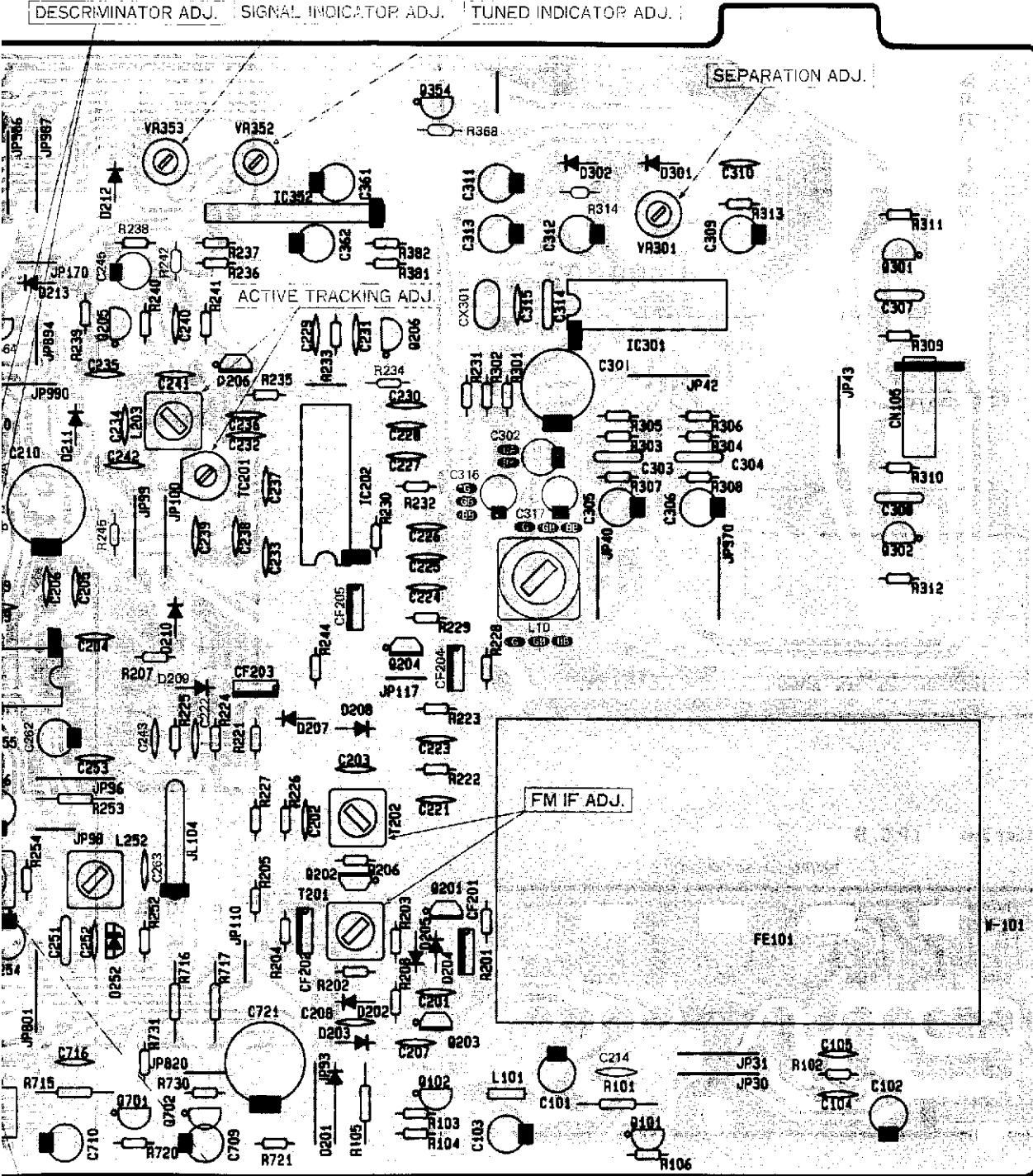
DISCRIMINATOR ADJ. SIGNAL INDICATOR ADJ. TUNED INDICATOR ADJ.

SEPARATION ADJ.

ACTIVE TRACKING ADJ.

FM IF ADJ.

AM IF ADJ.



ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
PCB-1 MAIN P.C. BOARD							
CAPACITORS							
689	C2	5352-1041957	CAP, MTL .1 μ	648	R27	5135-472522	RES, CBN 1/2P 4.7K
689	C3	5352-1041957	CAP, MTL .1 μ	648	R28	5135-472522	RES, CBN 1/2P 4.7K
687	C4	5341-S10GM139	CAP, ELE 13000 μ /63V	648	R29	5135-472522	RES, CBN 1/2P 4.7K
687	C5	5341-S10GM139	CAP, ELE 13000 μ /63V	648	R30	5135-472522	RES, CBN 1/2P 4.7K
631	C10	5345-475F0951	CAP, MINI ELE 4.7 μ /50V	648	R31	5135-472522	RES, CBN 1/2P 4.7K
632	C11	5345-336C0951	CAP, MINI ELE 33 μ /16V	648	R32	5135-472522	RES, CBN 1/2P 4.7K
633	C12	5354-334593	CAP, MYL .33 μ	646	R33	5135-223522	RES, CBN 1/2P 22K
633	C13	5354-334593	CAP, MYL .33 μ	646	R34	5135-223522	RES, CBN 1/2P 22K
636	C15	5354-332M1HM	CAP, MYL 3300P	637	R35	5135-751522	RES, CBN 1/2P 750
635	C25	5354-683593	CAP, MYL .068 μ	637	R36	5135-751522	RES, CBN 1/2P 750
635	C26	5354-683593	CAP, MYL .068 μ	639	R37	5135-105522	RES, CBN 1/2P 1M
634	C31	5354-224593	CAP, MYL .22 μ	639	R38	5135-105522	RES, CBN 1/2P 1M
634	C32	5354-224593	CAP, MYL .22 μ	646	R41	5135-223522	RES, CBN 1/2P 22K
057B	C35	5352-1041957	CAP, MTL .1 μ	646	R42	5135-223522	RES, CBN 1/2P 22K
061B	C36	5361-223ZF	CAP, CER .022 μ	646	R45	5135-223522	RES, CBN 1/2P 22K
561	C401	5345-107B0951	CAP, MINI ELE 100 μ /10V	646	R46	5135-223522	RES, CBN 1/2P 22K
561	C402	5345-107B0951	CAP, MINI ELE 100 μ /10V	598	R401	5135-102522	RES, CBN 1/2P 1K
566	C403	5359-1215851	CAP, PPP 120P	598	R402	5135-102522	RES, CBN 1/2P 1K
566	C404	5359-1215851	CAP, PPP 120P	599	R403	5135-223522	RES, CBN 1/2P 22K
563	C405	5345-227A0951	CAP, MINI ELE 220 μ /6.3V	599	R404	5135-223522	RES, CBN 1/2P 22K
563	C406	5345-227A0951	CAP, MINI ELE 220 μ /6.3V	600	R405	5135-333522	RES, CBN 1/2P 33K
570	C407	5353-050933	CAP, MCA 5p	600	R406	5135-333522	RES, CBN 1/2P 33K
068B	C407	5353-050934	CAP, MCA 5p	589	R407	5174-122381	RES, MTL 1/4P 1.2K
570	C408	5353-050933	CAP, MCA 5p	589	R408	5174-122381	RES, MTL 1/4P 1.2K
068B	C408	5353-050934	CAP, MCA 5p	589	R409	5174-122381	RES, MTL 1/4P 1.2K
571	C409	5353-680533	CAP, MCA 68p	589	R410	5174-122381	RES, MTL 1/4P 1.2K
571	C410	5353-680533	CAP, MCA 68p	602	R411	5135-221522	RES, CBN 1/2P 220
562	C411	5345-106C0951	CAP, MINI ELE 10 μ /16V	602	R412	5135-221522	RES, CBN 1/2P 220
562	C412	5345-106C0951	CAP, MINI ELE 10 μ /16V	602	R413	5135-221522	RES, CBN 1/2P 220
564	C413	5345-337G0962	CAP, MINI ELE 330 μ /63V	602	R414	5135-221522	RES, CBN 1/2P 220
564	C414	5345-337G0962	CAP, MINI ELE 330 μ /63V	604	R417	5135-331522	RES, CBN 1/2P 330
564	C415	5345-337G0962	CAP, MINI ELE 330 μ /63V	604	R418	5135-331522	RES, CBN 1/2P 330
564	C416	5345-337G0962	CAP, MINI ELE 330 μ /63V	605	R419	5135-183522	RES, CBN 1/2P 18K
562	C417	5345-106C0951	CAP, MINI ELE 10 μ /16V	605	R420	5135-183522	RES, CBN 1/2P 18K
562	C418	5345-106C0951	CAP, MINI ELE 10 μ /16V	606	R421	5135-182522	RES, CBN 1/2P 1.8K
568	C419	5354-104593	CAP, MYL .1 μ	606	R422	5135-182522	RES, CBN 1/2P 1.8K
568	C420	5354-104593	CAP, MYL .1 μ	592	R423	5174-471381	RES, MTL 1/4P 470
568	C421	5354-104593	CAP, MYL .1 μ	592	R424	5174-471381	RES, MTL 1/4P 470
568	C422	5354-104593	CAP, MYL .1 μ	591	R425	5174-220381	RES, MTL 1/4P 22
563	C423	5345-227A0951	CAP, MINI ELE 220 μ /6.3V	591	R426	5174-220381	RES, MTL 1/4P 22
563	C424	5345-227A0951	CAP, MINI ELE 220 μ /6.3V	587	Δ R427	5102-1224713	RES, FUSE 1.2K
562	C425	5345-106C0951	CAP, MINI ELE 10 μ /16V	587	Δ R428	5102-1224713	RES, FUSE 1.2K
562	C426	5345-106C0951	CAP, MINI ELE 10 μ /16V	587	Δ R429	5102-1224713	RES, FUSE 1.2K
068B	C431	5353-050934	CAP, MCA 5p	587	Δ R430	5102-1224713	RES, FUSE 1.2K
068B	C432	5353-050934	CAP, MCA 5p	603	R431	5135-562522	RES, CBN 1/2P 5.6K
659	C529	5345-337D041	CAP, MINI ELE 330 μ /25V	603	R432	5135-562522	RES, CBN 1/2P 5.6K
659	C530	5345-337D041	CAP, MINI ELE 330 μ /25V	593	R433	5174-243381	RES, MTL 1/4P 24K
659	C531	5345-337D041	CAP, MINI ELE 330 μ /25V	593	R434	5174-243381	RES, MTL 1/4P 24K
659	C532	5345-337D041	CAP, MINI ELE 330 μ /25V	613	R435	5135-153522	RES, CBN 1/2P 15K
RESISTORS							
641	R2	5135-103522	RES, CBN 1/2P 10K	613	R436	5135-153522	RES, CBN 1/2P 15K
648	R3	5135-472522	RES, CBN 1/2P 4.7K	608	R437	5135-123522	RES, CBN 1/2P 12K
645	R4	5135-473522	RES, CBN 1/2P 47K	608	R438	5135-123522	RES, CBN 1/2P 12K
644	R5	5135-334522	RES, CBN 1/2P 330K	595	R439	5174-222381	RES, MTL 1/4P 2.2K
642	R6	5135-684522	RES, CBN 1/2P 680K	595	R440	5174-222381	RES, MTL 1/4P 2.2K
647	R7	5135-184522	RES, CBN 1/2P 180K	595	R441	5174-222381	RES, MTL 1/4P 2.2K
643	R8	5135-225522	RES, CBN 1/2P 2.2M	585	Δ R442	5174-222381	RES, MTL 1/4P 2.2K
640	R9	5135-104522	RES, CBN 1/2P 100K	585	Δ R443	5102-1515116	RES, FUSE 150
640	R10	5135-104522	RES, CBN 1/2P 100K	585	Δ R444	5102-1515116	RES, FUSE 150
641	R11	5135-103522	RES, CBN 1/2P 10K	585	Δ R445	5102-1515116	RES, FUSE 150
640	R12	5135-104522	RES, CBN 1/2P 100K	585	Δ R446	5102-1515116	RES, FUSE 150
645	R13	5135-473522	RES, CBN 1/2P 47K	594	R447	5174-123381	RES, MTL 1/4P 12K
646	R14	5135-223522	RES, CBN 1/2P 22K	594	R448	5174-123381	RES, MTL 1/4P 12K
646	R15	5135-223522	RES, CBN 1/2P 22K	594	R449	5174-123381	RES, MTL 1/4P 12K
645	R16	5135-473522	RES, CBN 1/2P 47K	594	R450	5174-123381	RES, MTL 1/4P 12K
641	R17	5135-103522	RES, CBN 1/2P 10K	585	Δ R451	5102-1515116	RES, FUSE 150
646	R18	5135-223522	RES, CBN 1/2P 22K	585	Δ R452	5102-1515116	RES, FUSE 150
649	R19	5135-682522	RES, CBN 1/2P 6.8K	585	Δ R453	5102-1515116	RES, FUSE 150
649	R20	5135-682522	RES, CBN 1/2P 6.8K	585	Δ R454	5102-1515116	RES, FUSE 150
650	R25	5135-152522	RES, CBN 1/2P 1.5K	609	R455	5135-561522	RES, CBN 1/2P 560
645	R26	5135-473522	RES, CBN 1/2P 47K	609	R456	5135-561522	RES, CBN 1/2P 560
				610	R457	5135-221522	RES, CBN 1/2P 220
				610	R458	5135-221522	RES, CBN 1/2P 220
				597	R459	5135-131522	RES, CBN 1/2P 130
				597	R460	5135-131522	RES, CBN 1/2P 130
				584	Δ R461	5102-3R35116	RES, FUSE 3.3

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
703	CW407	4163-0140021	CONNECTR W/W	519	R543	5135-122522	RES, CBN 1/2P 1.2K
670	CW409	4163-0122023	CONNECTR W/W	519	R544	5135-122522	RES, CBN 1/2P 1.2K
671	CW410	4163-0125022	CONNECTR W/W	507	R545	5135-331522	RES, CBN 1/2P 330
705	JL401	4242-043405	JUMPER LEAD	507	R546	5135-331522	RES, CBN 1/2P 330
691	TM401	4214-11023	TERMINAL	511	R547	5135-121522	RES, CBN 1/2P 120
692	TM402	4214-11031	TERMINAL	511	R548	5135-121522	RES, CBN 1/2P 120
690	TM403	4214-11013	TERMINAL	510	R549	5135-153522	RES, CBN 1/2P 15K

PCB-2 TONE CONTROL P.C. BOARD

CAPACITORS

484	C501	5359-1015851	CAP, PPP 100p
484	C502	5359-1015851	CAP, PPP 100p
480	C507	5345-106C0951	CAP, MINI ELE 10 μ /16V
480	C508	5345-106C0951	CAP, MINI ELE 10 μ /16V
487	C511	5353-010933	CAP, MCA 1p
487	C512	5353-010933	CAP, MCA 1p
481	C513	5345-226B0951	CAP, MINI ELE 22 μ /10V
481	C514	5345-226B0951	CAP, MINI ELE 22 μ /10V
488	C515	5359-3315851	CAP, PPP 330p
488	C516	5359-3315851	CAP, PPP 330p
478	C517	5345-107B0951	CAP, MINI ELE 100 μ /10V
478	C518	5345-107B0951	CAP, MINI ELE 100 μ /10V
482	C519	5345-476C0951	CAP, MINI ELE 47 μ /16V
482	C520	5345-476C0951	CAP, MINI ELE 47 μ /16V
497	C521	5354-682J1HM	CAP, MYL 6800p
497	C522	5354-682J1HM	CAP, MYL 6800p
498	C523	5354-393J1HM	CAP, MYL .039 μ
498	C524	5354-393J1HM	CAP, MYL .039 μ
499	C525	5354-273J1HM	CAP, MYL .027 μ
499	C526	5354-273J1HM	CAP, MYL .027 μ
491	C527	5354-154593	CAP, MYL .15 μ
491	C528	5354-154593	CAP, MYL .15 μ
479	C535	5345-227D041	CAP, MINI ELE 220 μ /25V
479	C536	5345-227D041	CAP, MINI ELE 220 μ /25V
479	C537	5345-227D041	CAP, MINI ELE 220 μ /25V
479	C538	5345-227D041	CAP, MINI ELE 220 μ /25V
053B	C541	5359-1015851	CAP, PPP 100p G GB BB
053B	C542	5359-1015851	CAP, PPP 100p G GB BB

RESISTORS

501	R501	5135-102522	RES, CBN 1/2P 1K
501	R502	5135-102522	RES, CBN 1/2P 1K
503	R505	5135-224522	RES, CBN 1/2P 220K
503	R506	5135-224522	RES, CBN 1/2P 220K
502	R507	5135-394522	RES, CBN 1/2P 390K
502	R508	5135-394522	RES, CBN 1/2P 390K
514	R515	5135-183522	RES, CBN 1/2P 18K
514	R516	5135-183522	RES, CBN 1/2P 18K
507	R517	5135-331522	RES, CBN 1/2P 330
507	R518	5135-331522	RES, CBN 1/2P 330
504	R519	5135-473522	RES, CBN 1/2P 47K
504	R520	5135-473522	RES, CBN 1/2P 47K
505	R521	5135-332522	RES, CBN 1/2P 3.3K
505	R522	5135-332522	RES, CBN 1/2P 3.3K
505	R523	5135-332522	RES, CBN 1/2P 3.3K
505	R524	5135-332522	RES, CBN 1/2P 3.3K
506	R525	5135-471522	RES, CBN 1/2P 470
506	R526	5135-471522	RES, CBN 1/2P 470
506	R527	5135-471522	RES, CBN 1/2P 470
506	R528	5135-471522	RES, CBN 1/2P 470
507	R529	5135-331522	RES, CBN 1/2P 330
507	R530	5135-331522	RES, CBN 1/2P 330
508	R531	5135-222522	RES, CBN 1/2P 2.2K
508	R532	5135-222522	RES, CBN 1/2P 2.2K
508	R533	5135-222522	RES, CBN 1/2P 2.2K
508	R534	5135-222522	RES, CBN 1/2P 2.2K
509	R535	5135-274522	RES, CBN 1/2P 270K
509	R536	5135-274522	RES, CBN 1/2P 270K
510	R537	5135-153522	RES, CBN 1/2P 15K
510	R538	5135-153522	RES, CBN 1/2P 15K
507	R539	5135-331522	RES, CBN 1/2P 330
507	R540	5135-331522	RES, CBN 1/2P 330
507	R541	5135-331522	RES, CBN 1/2P 330
507	R542	5135-331522	RES, CBN 1/2P 330

519	R543	5135-122522	RES, CBN 1/2P 1.2K
519	R544	5135-122522	RES, CBN 1/2P 1.2K
507	R545	5135-331522	RES, CBN 1/2P 330
507	R546	5135-331522	RES, CBN 1/2P 330
511	R547	5135-121522	RES, CBN 1/2P 120
511	R548	5135-121522	RES, CBN 1/2P 120
510	R549	5135-153522	RES, CBN 1/2P 15K
510	R550	5135-153522	RES, CBN 1/2P 15K
512	R551	5135-272522	RES, CBN 1/2P 2.7K
512	R552	5135-272522	RES, CBN 1/2P 2.7K
504	R553	5135-473522	RES, CBN 1/2P 47K
504	R554	5135-473522	RES, CBN 1/2P 47K
501	R559	5135-102522	RES, CBN 1/2P 1K
501	R560	5135-102522	RES, CBN 1/2P 1K

TRANSISTORS

471	Q501	5613-2320L (F)	XISTOR, NPN R
471	Q502	5613-2320L (F)	XISTOR, NPN R
471	Q503	5613-2320L (F)	XISTOR, NPN R
471	Q504	5613-2320L (F)	XISTOR, NPN R
471	Q505	5613-2320L (F)	XISTOR, NPN R
471	Q506	5613-2320L (F)	XISTOR, NPN R
471	Q507	5613-2320L (F)	XISTOR, NPN R
471	Q508	5613-2320L (F)	XISTOR, NPN R
473	Q509	5611-999L (F)	XISTOR, PNP R
473	Q510	5611-999L (F)	XISTOR, PNP R
476	Q511	5613-2320L (F)	XISTOR, NPN R
476	Q512	5613-2320L (F)	XISTOR, NPN R
473	Q513	5611-999L (F)	XISTOR, PNP R
473	Q514	5611-999L (F)	XISTOR, PNP R
475	Q515	5612-646A (C)	XISTOR, PNP A
475	Q516	5612-646A (C)	XISTOR, PNP A
474	Q517	5614-666A (C)	XISTOR, NPN A
474	Q518	5614-666A (C)	XISTOR, NPN A

DIODES

477	D501	5631-1S2473	DIODE, DET
477	D502	5631-1S2473	DIODE, DET

CONTROLS

720	VR501	5113-50346122	RES, V CBN 16 50K
714	VR503	5113-10447122	RES, V CBN 16 100K
717	VR504	5113-50348122	RES, V CBN 16 50K

MISCELLANEOUS

709	CN501	4443-030185	CONNECTOR
709	CN502	4443-030185	CONNECTOR
709	CN503	4443-030185	CONNECTOR
710	JL501	4242-R0404201	JUMPER LEAD

PCB-3 HEADPHONE JACK P.C. BOARD

MISCELLANEOUS

736	J1	4451-00159	JACK, 1P
796	JL402	4242-R0103101	JUMPER LEAD

PCB-4 SPEAKER SWITCHES P.C. BOARD

RESISTORS

619	R597	5135-221522	RES, CBN 1/2P 220
619	R598	5135-221522	RES, CBN 1/2P 220
619	R755	5135-221522	RES, CBN 1/2P 220
619	R756	5135-221522	RES, CBN 1/2P 220

MISCELLANEOUS

728	SW6	4431-S0303204	SWITCH, PUSH
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PCB-5 EQUALIZER P.C. BOARD

CAPACITORS

855	C539	5359-1015851	CAP, PPP 100p
855	C540	5359-1015851	CAP, PPP 100p
425	C601	5345-106D0951	CAP, MINI ELE 10 μ /25V
425	C602	5345-106D0951	CAP, MINI ELE 10 μ /25V
435	C603	5359-1215851	CAP, PPP 120p
435	C604	5359-1215851	CAP, PPP 120p

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
434	C605	5359-1015851	CAP, PPP 100p	455	R613	5135-331522	RES, CBN 1/2P 330
434	C606	5359-1015851	CAP, PPP 100p	455	R614	5135-331522	RES, CBN 1/2P 330
426	C607	5345-477A0952	CAP, MINI ELE 470 μ /6.3V	455	R615	5135-331522	RES, CBN 1/2P 330
426	C608	5345-477A0952	CAP, MINI ELE 470 μ /6.3V	455	R616	5135-331522	RES, CBN 1/2P 330
428	C609	5345-226C0951	CAP, MINI ELE 22 μ /16V	455	R617	5135-331522	RES, CBN 1/2P 330
428	C610	5345-226C0951	CAP, MINI ELE 22 μ /16V	455	R618	5135-331522	RES, CBN 1/2P 330
429	C611	5345-227D041	CAP, MINI ELE 220 μ /25V	455	R619	5135-331522	RES, CBN 1/2P 330
429	C612	5345-227D041	CAP, MINI ELE 220 μ /25V	455	R620	5135-331522	RES, CBN 1/2P 330
429	C613	5345-227D041	CAP, MINI ELE 220 μ /25V	437	R621	5174-751381	RES, MTL 1/4P 750
429	C614	5345-227D041	CAP, MINI ELE 220 μ /25V	437	R622	5174-751381	RES, MTL 1/4P 750
430	C615	5354-562J1HM	CAP, MYL 5600p	447	R623	5135-222522	RES, CBN 1/2P 2.2K
430	C616	5354-562J1HM	CAP, MYL 5600p	447	R624	5135-222522	RES, CBN 1/2P 2.2K
435	C617	5359-1215851	CAP, PPP 120p	447	R625	5135-222522	RES, CBN 1/2P 2.2K
435	C618	5359-1215851	CAP, PPP 120p	447	R626	5135-222522	RES, CBN 1/2P 2.2K
436	C619	5359-2025851	CAP, PPP 2000p	441	R627	5174-102381	RES, MTL 1/4P 1K
436	C620	5359-2025851	CAP, PPP 2000p	441	R628	5174-102381	RES, MTL 1/4P 1K
427	C623	5345-106F0951	CAP, MINI ELE 10 μ /50V	448	R631	5135-123522	RES, CBN 1/2P 12K
427	C624	5345-106F0951	CAP, MINI ELE 10 μ /50V	448	R632	5135-123522	RES, CBN 1/2P 12K
429	C627	5345-227D041	CAP, MINI ELE 220 μ /25V	449	R633	5135-471522	RES, CBN 1/2P 470
429	C628	5345-227D041	CAP, MINI ELE 220 μ /25V	449	R634	5135-471522	RES, CBN 1/2P 470
459	C629	5354-102M1HM	CAP, MYL 1000p	449	R635	5135-471522	RES, CBN 1/2P 470
433	C633	5359-S010J183	CAP, PPP .018 μ	449	R636	5135-471522	RES, CBN 1/2P 470
433	C634	5359-S010J183	CAP, PPP .018 μ	450	R637	5135-330522	RES, CBN 1/2P 33
392	C701	5345-106F0951	CAP, MINI ELE 10 μ /50V	450	R638	5135-330522	RES, CBN 1/2P 33
392	C702	5345-106F0951	CAP, MINI ELE 10 μ /50V	450	R639	5135-330522	RES, CBN 1/2P 33
392	C703	5345-106F0951	CAP, MINI ELE 10 μ /50V	450	R640	5135-330522	RES, CBN 1/2P 33
392	C704	5345-106F0951	CAP, MINI ELE 10 μ /50V	438	R643	5174-135381	RES, MTL 1/4P 1.3M
391	C709	5345-337C041	CAP, MINI ELE 330 μ /16V	438	R644	5174-135381	RES, MTL 1/4P 1.3M
391	C710	5345-337C041	CAP, MINI ELE 330 μ /16V	440	R645	5174-125381	RES, MTL 1/4P 1.2M
391	C711	5345-337C041	CAP, MINI ELE 330 μ /16V	440	R646	5174-125381	RES, MTL 1/4P 1.2M
391	C712	5345-337C041	CAP, MINI ELE 330 μ /16V	439	R647	5174-2412238	RES, MTL 1/4P 41.2K
064B	C713	5354-223J1HM	CAP, MYL 0.22 μ G GB BB	439	R648	5174-2412238	RES, MTL 1/4P 41.2K
064B	C714	5354-223J1HM	CAP, MYL 0.22 μ G GB BB	451	R649	5135-102522	RES, CBN 1/2P 1K
066B	C715	5359-2715851	CAP, PPP 270p G GB BB	451	R650	5135-102522	RES, CBN 1/2P 1K
066B	C716	5359-2715851	CAP, PPP 270p G GB BB	453	R651	5135-104522	RES, CBN 1/2P 100K
066B	C717	5359-2715851	CAP, PPP 270p G GB BB	453	R652	5135-104522	RES, CBN 1/2P 100K
066B	C718	5359-2715851	CAP, PPP 270p G GB BB	442	R661	5135-474522	RES, CBN 1/2P 470K
056B	C719	5353-330534	CAP, MCA 33p G GB BB	442	R662	5135-474522	RES, CBN 1/2P 470K
056B	C720	5353-330534	CAP, MCA 33p G GB BB	460	R663	5135-104522	RES, CBN 1/2P 100K
834	C801	5345-106D0951	CAP, MINI ELE 10 μ /25V	460	R664	5135-104522	RES, CBN 1/2P 100K
834	C802	5345-106D0951	CAP, MINI ELE 10 μ /25V	462	R668	5135-105522	RES, CBN 1/2P 1M
835	C803	5345-104F0951	CAP, MINI ELE .1 μ /50V	447	R669	5135-222522	RES, CBN 1/2P 2.2K
467	C831	5345-107D041	CAP, MINI ELE 100 μ /25V	447	R670	5135-222522	RES, CBN 1/2P 2.2K
467	C832	5345-107D041	CAP, MINI ELE 100 μ /25V	055B	R671	5135-102522	RES, CBN 1/2P 1K G GB BB
467	C833	5345-107D041	CAP, MINI ELE 100 μ /25V	055B	R672	5135-102522	RES, CBN 1/2P 1K G GB BB
467	C834	5345-107D041	CAP, MINI ELE 100 μ /25V	405	R681	5135-821522	RES, CBN 1/2P 820
840	C856	5354-104593	CAP, MYL .1 μ	405	R682	5135-821522	RES, CBN 1/2P 820
069B	C877	5359-2715851	CAP, PPP 270p G GB BB	405	R683	5135-821522	RES, CBN 1/2P 820
069B	C878	5359-2715851	CAP, PPP 270p G GB BB	405	R684	5135-821522	RES, CBN 1/2P 820
069B	C879	5359-2715851	CAP, PPP 270p G GB BB	396	R701	5135-1R0522	RES, CBN 1/2P 1
069B	C880	5359-2715851	CAP, PPP 270p G GB BB	396	R702	5135-1R0522	RES, CBN 1/2P 1
		RESISTORS		399	R703	5135-560522	RES, CBN 1/2P 56
841	R563	5135-821522	RES, CBN 1/2P 820	399	R704	5135-560522	RES, CBN 1/2P 56
841	R564	5135-821522	RES, CBN 1/2P 820	401	R705	5135-472522	RES, CBN 1/2P 4.7K
841	R565	5135-821522	RES, CBN 1/2P 820	401	R706	5135-472522	RES, CBN 1/2P 4.7K
841	R566	5135-821522	RES, CBN 1/2P 820	401	R707	5135-472522	RES, CBN 1/2P 4.7K
856	R585	5135-272522	RES, CBN 1/2P 2.7K	401	R708	5135-472522	RES, CBN 1/2P 4.7K
856	R586	5135-272522	RES, CBN 1/2P 2.7K	397	R709	5135-100522	RES, CBN 1/2P 10
841	R587	5135-821522	RES, CBN 1/2P 820	397	R710	5135-100522	RES, CBN 1/2P 10
841	R588	5135-821522	RES, CBN 1/2P 820	397	R711	5135-100522	RES, CBN 1/2P 10
443	R601	5135-470522	RES, CBN 1/2P 47	397	R712	5135-100522	RES, CBN 1/2P 10
055C	R601	5135-102522	RES, CBN 1/2P 1K UA BK	398	R713	5135-220522	RES, CBN 1/2P 22
443	R602	5135-470522	RES, CBN 1/2P 47 UA BK	398	R714	5135-220522	RES, CBN 1/2P 22
055C	R602	5135-102522	RES, CBN 1/2P 1K UA BK BB	398	R715	5135-220522	RES, CBN 1/2P 22
454	R603	5135-823522	RES, CBN 1/2P 82K	398	R716	5135-220522	RES, CBN 1/2P 22
454	R604	5135-823522	RES, CBN 1/2P 82K	395	R717	5174-561381	RES, MTL 1/4P 560
444	R605	5135-124522	RES, CBN 1/2P 120K	395	R718	5174-561381	RES, MTL 1/4P 560
444	R606	5135-124522	RES, CBN 1/2P 120K	395	R719	5174-561381	RES, MTL 1/4P 560
445	R607	5135-473522	RES, CBN 1/2P 47K	395	R720	5174-561381	RES, MTL 1/4P 560
445	R608	5135-473522	RES, CBN 1/2P 47K	400	R721	5135-392522	RES, CBN 1/2P 3.9K
446	R609	5135-332522	RES, CBN 1/2P 3.3K	400	R722	5135-392522	RES, CBN 1/2P 3.9K
446	R610	5135-332522	RES, CBN 1/2P 3.3K	402	R723	5135-681522	RES, CBN 1/2P 680
446	R611	5135-332522	RES, CBN 1/2P 3.3K	402	R724	5135-681522	RES, CBN 1/2P 680
446	R612	5135-332522	RES, CBN 1/2P 3.3K	837	R801	5135-224522	RES, CBN 1/2P 220K
				837	R802	5135-224522	RES, CBN 1/2P 220K

Ser. No.	Ref. No.	Part No.	Description
838	R803	5135-104522	RES, CBN 1/2P 100K
837	R804	5135-224522	RES, CBN 1/2P 220K
839	R810	5135-223522	RES, CBN 1/2P 22K
838	R811	5135-104522	RES, CBN 1/2P 100K
468	R872	5102-1015116	RES, FUSE 100
468	R873	5102-1015116	RES, FUSE 100
469	R874	5135-472522	RES, CBN 1/2P 4.7K
469	R875	5135-472522	RES, CBN 1/2P 4.7K
842	R954	5135-100522	RES, CBN 1/2P 10
841	R956	5135-821522	RES, CBN 1/2P 820
841	R957	5135-821522	RES, CBN 1/2P 820
INTEGRATED CIRCUIT			
632	IC801	5654-LC7818	IC, DIGITAL
TRANSISTORS			
411	Q601	5613-1775 (F)	XISTOR, NPN R
411	Q602	5613-1775 (F)	XISTOR, NPN R
411	Q603	5613-1775 (F)	XISTOR, NPN R
411	Q604	5613-1775 (F)	XISTOR, NPN R
412	Q605	5613-2320L (F)	XISTOR, NPN R
412	Q606	5613-2320L (F)	XISTOR, NPN R
412	Q607	5613-2320L (F)	XISTOR, NPN R
412	Q608	5613-2320L (F)	XISTOR, NPN R
413	Q609	5611-999L (F)	XISTOR, PNP R
413	Q610	5611-999L (F)	XISTOR, PNP R
418	Q611	5613-2320L (F)	XISTOR, NPN R
418	Q612	5613-2320L (F)	XISTOR, NPN R
413	Q613	5611-999L (F)	XISTOR, PNP R
413	Q614	5611-999L (F)	XISTOR, PNP R
415	Q615	5612-646A (C)	XISTOR, PNP A
415	Q616	5612-646A (C)	XISTOR, PNP A
414	Q617	5614-666A (C)	XISTOR, NPN A
414	Q618	5614-666A (C)	XISTOR, NPN A
416	Q619	5614-667A (C)	XISTOR, NPN A
416	Q620	5614-667A (C)	XISTOR, NPN A
417	Q621	5612-647A (C)	XISTOR, PNP A
417	Q622	5612-647A (C)	XISTOR, PNP A
457	Q625	5611-RN2203	XISTOR, PNP R
457	Q626	5611-RN2203	XISTOR, PNP R
458	Q627	5616-2SK364 (V) or (BL)	FET, N-CH
458	Q628	5616-2SK364 (V) or (BL)	FET, N-CH
382	Q701	5611-1190 (E)	XISTOR, PNP R
382	Q702	5611-1190 (E)	XISTOR, PNP R
381	Q703	5613-2855 (D)	XISTOR, NPN R
381	Q704	5613-2855 (D)	XISTOR, NPN R
381	Q705	5613-2855 (D)	XISTOR, NPN R
381	Q706	5613-2855 (D)	XISTOR, NPN R
382	Q707	5611-1190 (E)	XISTOR, PNP R
382	Q708	5611-1190 (E)	XISTOR, PNP R
383	Q709	5613-2320L (F)	XISTOR, NPN R
384	Q710	5611-999L (F)	XISTOR, PNP R
385	Q711	5616-2SK373 (Y)	FET, N-CH
385	Q712	5616-2SK373 (Y)	FET, N-CH
463	Q820	5614-667A (C)	XISTOR, NPN A
464	Q821	5612-647A (C)	XISTOR, PNP A
DIODES			
421	D601	5631-1S2473	DIODE, DET
421	D602	5631-1S2473	DIODE, DET
422	D603	5641-MV103	VARIATOR
422	D604	5641-MV103	VARIATOR
388	D701	5635-HZ15-1L	DIODE, ZENER
388	D702	5635-HZ15-1L	DIODE, ZENER
833	D801	5631-1S2473	DIODE, DET
833	D802	5631-1S2473	DIODE, DET
833	D803	5631-1S2473	DIODE, DET
465	D819	5635-HZ20-2L	DIODE, ZENER
465	D820	5635-HZ20-2L	DIODE, ZENER
COILS			
067B	L701	5597-45502	CORE, BEADS G GB BB
067B	L702	5597-45502	CORE, BEADS G GB BB
067B	L703	5597-45502	CORE, BEADS G GB BB
067B	L704	5597-45502	CORE, BEADS G GB BB

Ser. No.	Ref. No.	Part No.	Description
MISCELLANEOUS			
737	T1	4489-01302006	PIN JACK, MLT
738	T2	4484-46	PIN JACK, 4P
746	T6	4489-00801002	PIN JACK, MLT
844	CN601	4443-050185	CONNECTOR
847	CW601	4163-0145020	CONNECTR W/W
848	CW602	4163-S0209121	CONNECTR W/W
849	CW603	4163-0150020	CONNECTR W/W
849	CW604	4163-0150020	CONNECTR W/W
851	JL601	4242-R0403161	JUMPER LEAD
852	JL602	4242-R0403101	JUMPER LEAD
853	JL603	4242-R0404451	JUMPER LEAD
742	SW11	4431-S0801102	SWITCH, PUSH

PCB-6 CONTROL P.C. BOARD

Ser. No.	Ref. No.	Part No.	Description
CAPACITORS			
883	C804	5345-106D0951	CAP, MINI ELE 10 μ /25V
883	C805	5345-106D0951	CAP, MINI ELE 10 μ /25V
881	C806	5345-106F041	CAP, MINI ELE 10 μ /50V
881	C807	5345-106F041	CAP, MINI ELE 10 μ /50V
881	C809	5345-106F041	CAP, MINI ELE 10 μ /50V
881	C810	5345-106F041	CAP, MINI ELE 10 μ /50V
882	C815	5345-104F0951	CAP, MINI ELE 1 μ /50V
877	C816	5354-103M1HM	CAP, MYL .01 μ
879	C817	5354-392M1HM	CAP, MYL 3900p
879	C818	5354-392M1HM	CAP, MYL 3900p
878	C836	5354-102M1HM	CAP, MYL 1000p
878	C837	5354-102M1HM	CAP, MYL 1000p
878	C838	5354-102M1HM	CAP, MYL 1000p
878	C839	5354-102M1HM	CAP, MYL 1000p
878	C840	5354-102M1HM	CAP, MYL 1000p
878	C841	5354-102M1HM	CAP, MYL 1000p
878	C842	5354-102M1HM	CAP, MYL 1000p
878	C843	5354-102M1HM	CAP, MYL 1000p
879	C867	5354-392M1HM	CAP, MYL 3900p
879	C868	5354-392M1HM	CAP, MYL 3900p
880	C869	5345-106C0951	CAP, MINI ELE 10 μ /16V
880	C870	5345-106C0951	CAP, MINI ELE 10 μ /16V
865	C873	5345-226D041	CAP, MINI ELE 22 μ /25V
865	C874	5345-226D041	CAP, MINI ELE 22 μ /25V
053B	C875	5359-1015851	CAP, PPP 100p G GB BB
053B	C876	5359-1015851	CAP, PPP 100p G GB BB
RESISTORS			
898	R567	5135-102522	RES, CBN 1/2P 1K
898	R568	5135-102522	RES, CBN 1/2P 1K
898	R579	5135-102522	RES, CBN 1/2P 1K
898	R580	5135-102522	RES, CBN 1/2P 1K
898	R581	5135-102522	RES, CBN 1/2P 1K
898	R582	5135-102522	RES, CBN 1/2P 1K
898	R583	5135-102522	RES, CBN 1/2P 1K
898	R584	5135-102522	RES, CBN 1/2P 1K
898	R591	5135-102522	RES, CBN 1/2P 1K
898	R592	5135-102522	RES, CBN 1/2P 1K
898	R593	5135-102522	RES, CBN 1/2P 1K
898	R594	5135-102522	RES, CBN 1/2P 1K
898	R595	5135-102522	RES, CBN 1/2P 1K
898	R596	5135-102522	RES, CBN 1/2P 1K
891	R805	5135-224522	RES, CBN 1/2P 220K
891	R806	5135-224522	RES, CBN 1/2P 220K
892	R807	5135-104522	RES, CBN 1/2P 100K
891	R808	5135-224522	RES, CBN 1/2P 220K
894	R813	5135-223522	RES, CBN 1/2P 22K
896	R814	5135-104522	RES, CBN 1/2P 100K
893	R815	5135-105522	RES, CBN 1/2P 1M
893	R816	5135-105522	RES, CBN 1/2P 1M
894	R817	5135-223522	RES, CBN 1/2P 22K
895	R818	5135-100522	RES, CBN 1/2P 10
889	R819	5232-105J16P	RES, CBN 1/6P 1M
889	R820	5232-105J16P	RES, CBN 1/6P 1M
889	R821	5232-105J16P	RES, CBN 1/6P 1M
889	R822	5232-105J16P	RES, CBN 1/6P 1M
889	R823	5232-105J16P	RES, CBN 1/6P 1M
889	R824	5232-105J16P	RES, CBN 1/6P 1M

Ser. No.	Ref. No.	Part No.	Description
889	R825	5232-105J16P	RES, CBN 1/6P 1M
889	R826	5232-105J16P	RES, CBN 1/6P 1M
890	R880	5232-104J16P	RES, CBN 1/6P 100K
890	R881	5232-104J16P	RES, CBN 1/6P 100K
890	R882	5232-104J16P	RES, CBN 1/6P 100K
890	R883	5232-104J16P	RES, CBN 1/6P 100K
890	R884	5232-104J16P	RES, CBN 1/6P 100K
890	R885	5232-104J16P	RES, CBN 1/6P 100K
890	R886	5232-104J16P	RES, CBN 1/6P 100K
890	R887	5232-104J16P	RES, CBN 1/6P 100K
885	R900	5135-223522	RES, CBN 1/2P 22K
886	R917	5135-472522	RES, CBN 1/2P 4.7K
886	R918	5135-472522	RES, CBN 1/2P 4.7K
886	R919	5135-472522	RES, CBN 1/2P 4.7K
886	R920	5135-472522	RES, CBN 1/2P 4.7K
887	R921	5135-221522	RES, CBN 1/2P 220
887	R922	5135-221522	RES, CBN 1/2P 220
887	R923	5135-221522	RES, CBN 1/2P 220
887	R924	5135-221522	RES, CBN 1/2P 220
887	R925	5135-221522	RES, CBN 1/2P 220
887	R926	5135-221522	RES, CBN 1/2P 220
887	R927	5135-221522	RES, CBN 1/2P 220
887	R928	5135-221522	RES, CBN 1/2P 220
887	R929	5135-221522	RES, CBN 1/2P 220
886	R930	5135-472522	RES, CBN 1/2P 4.7K
886	R931	5135-472522	RES, CBN 1/2P 4.7K
886	R932	5135-472522	RES, CBN 1/2P 4.7K
884	R933	5102-1005116	RES, FUSE 10
888	R935	5135-104522	RES, CBN 1/2P 100K
888	R936	5135-104522	RES, CBN 1/2P 100K
889	R942	5232-105J16P	RES, CBN 1/6P 1M
889	R943	5232-105J16P	RES, CBN 1/6P 1M
890	R944	5232-104J16P	RES, CBN 1/6P 100K
901	R945	5232-223J16P	RES, CBN 1/6P 22K
891	R952	5135-224522	RES, CBN 1/2P 220K
891	R953	5135-224522	RES, CBN 1/2P 220K
899	R955	5232-100J16P	RES, CBN 1/6P 10
897	R958	5135-101522	RES, CBN 1/2P 100
897	R959	5135-101522	RES, CBN 1/2P 100
894	R961	5135-223522	RES, CBN 1/2P 22K
894	R962	5135-223522	RES, CBN 1/2P 22K
897	R963	5135-101522	RES, CBN 1/2P 100
897	R964	5135-101522	RES, CBN 1/2P 100
898	R965	5135-102522	RES, CBN 1/2P 1K
898	R966	5135-102522	RES, CBN 1/2P 1K

INTEGRATED CIRCUITS

861	IC802	5654-LC7818	IC, DIGITAL
862	IC803	5654-TC9174P	IC, DIGITAL
863	IC804	5654-TC9173P	IC, DIGITAL
866	IC805	5653-LB1641	IC, LINEAR

TRANSISTORS

868	Q801	5616-2SK364 (V) or (BL)	FET, N-CH
868	Q802	5616-2SK364 (V) or (BL)	FET, N-CH
870	Q803	5611-1115 (E) or (F)	XISTOR, PNP R
867	Q824	5616-2SK364V	FET, N-CH
869	Q825	5616-2SK246BL	FET, N-CH
867	Q826	5616-2SK364V	FET, N-CH
869	Q827	5616-2SK246BL	FET, N-CH
867	Q828	5616-2SK364V	FET, N-CH
869	Q829	5616-2SK246BL	FET, N-CH
867	Q830	5616-2SK364V	FET, N-CH
869	Q831	5616-2SK246BL	FET, N-CH
867	Q832	5616-2SK364V	FET, N-CH
869	Q833	5616-2SK246BL	FET, N-CH
867	Q834	5616-2SK364V	FET, N-CH
869	Q835	5616-2SK246BL	FET, N-CH
867	Q836	5616-2SK364V	FET, N-CH
869	Q837	5616-2SK246BL	FET, N-CH
867	Q838	5616-2SK364V	FET, N-CH
869	Q839	5616-2SK246BL	FET, N-CH
871	Q840	5613-RN1203	XISTOR, NPN R
871	Q841	5613-RN1203	XISTOR, NPN R
871	Q842	5613-RN1203	XISTOR, NPN R
871	Q843	5613-RN1203	XISTOR, NPN R

Ser. No.	Ref. No.	Part No.	Description
873	Q844	5611-RN2203	XISTOR, PNP R
873	Q845	5611-RN2203	XISTOR, PNP R
873	Q846	5611-RN2203	XISTOR, PNP R
873	Q847	5611-RN2203	XISTOR, PNP R
868	Q855	5616-2SK364 (V) or (BL)	FET, N-CH
868	Q856	5616-2SK364 (V) or (BL)	FET, N-CH
870	Q857	5611-1115 (E) or (F)	XISTOR, PNP R

DIODES

872	D804	5631-1SS133	DIODE, DET
872	D805	5631-1SS133	DIODE, DET
872	D806	5631-1SS133	DIODE, DET
874	D821	5635-RD5R1EB2	DIODE, ZENER
872	D822	5631-1SS133	DIODE, DET
875	D823	5631-1S2473	DIODE, DET
872	D824	5631-1SS133	DIODE, DET
872	D825	5631-1SS133	DIODE, DET
872	D826	5631-1SS133	DIODE, DET
872	D827	5631-1SS133	DIODE, DET
872	D828	5631-1SS133	DIODE, DET
872	D829	5631-1SS133	DIODE, DET
872	D830	5631-1SS133	DIODE, DET
872	D831	5631-1SS133	DIODE, DET
872	D832	5631-1SS133	DIODE, DET
872	D833	5631-1SS133	DIODE, DET
872	D834	5631-1SS133	DIODE, DET
872	D835	5631-1SS133	DIODE, DET
872	D836	5631-1SS133	DIODE, DET
872	D837	5631-1SS133	DIODE, DET
875	D838	5631-1S2473	DIODE, DET
875	D846	5631-1S2473	DIODE, DET
872	D848	5631-1SS133	DIODE, DET

MISCELLANEOUS

739	T3	4484-46	PIN JACK, 4P
739	T4	4484-46	PIN JACK, 4P
739	T7	4484-46	PIN JACK, 4P
749	CN801	4443-030185	CONNECTOR
749	CN802	4443-030185	CONNECTOR
750	CN803	4443-0601140	CONNECTOR
751	CN804	4443-0901140	CONNECTOR
752	CN805	4443-0201140	CONNECTOR
758	CN813	4443-070185	CONNECTOR
753	CW801	4163-S0211251	CONNECTR W/W
754	CW802	4163-S0208121	CONNECTR W/W
755	CW803	4163-S0204161	CONNECTR W/W
756	CW804	4163-S0203351	CONNECTR W/W
757	CW811	4163-0145020	CONNECTR W/W
757	CW812	4163-0145020	CONNECTR W/W
759	JL801	4242-R0104700	JUMPER LEAD
760	JL802	4242-R0406301	JUMPER LEAD
761	JL808	4242-R0107121	JUMPER LEAD

PCB-7 LED P.C. BOARD

CAPACITORS

958	C533	5354-394593	CAP, MYL .39 μ
958	C534	5354-394593	CAP, MYL .39 μ

RESISTORS

955	R858	5135-222522	RES, CBN 1/2P 2.2K
955	R859	5135-222522	RES, CBN 1/2P 2.2K
955	R860	5135-222522	RES, CBN 1/2P 2.2K
955	R861	5135-222522	RES, CBN 1/2P 2.2K
955	R862	5135-222522	RES, CBN 1/2P 2.2K
955	R863	5135-222522	RES, CBN 1/2P 2.2K
955	R864	5135-222522	RES, CBN 1/2P 2.2K
955	R865	5135-222522	RES, CBN 1/2P 2.2K
955	R866	5135-222522	RES, CBN 1/2P 2.2K
957	R901	5135-223522	RES, CBN 1/2P 22K
957	R902	5135-223522	RES, CBN 1/2P 22K
957	R903	5135-223522	RES, CBN 1/2P 22K
957	R904	5135-223522	RES, CBN 1/2P 22K
957	R905	5135-223522	RES, CBN 1/2P 22K
957	R906	5135-223522	RES, CBN 1/2P 22K
957	R907	5135-223522	RES, CBN 1/2P 22K

Ser. No.	Ref. No.	Part No.	Description
957	R908	5135-223522	RES, CBN 1/2P 22K
957	R909	5135-223522	RES, CBN 1/2P 22K
956	R938	5135-473522	RES, CBN 1/2P 47K
TRANSISTORS			
952	Q850	5613-RN1203	XISTOR, NPN R
953	Q851	5611-RN2203	XISTOR, PNP R
DIODES			
951	D808	5637-LT5D41B	LED
951	D809	5637-LT5D41B	LED
951	D810	5637-LT5D41B	LED
951	D811	5637-LT5D41B	LED
951	D812	5637-LT5D41B	LED
951	D813	5637-LT5D41B	LED
951	D814	5637-LT5D41B	LED
951	D815	5637-LT5D41B	LED
951	D816	5637-LT5D41B	LED
MISCELLANEOUS			
765	CW805	4163-S0105500	CONNECTR W/W
766	CW806	4163-S0109500	CONNECTR W/W
767	CW807	4163-S0105141	CONNECTR W/W
768	JL803	4242-R0403101	JUMPER LEAD
769	JL804	4242-R0403301	JUMPER LEAD
770	JL805	4242-R0405251	JUMPER LEAD
735	SW1	4431-S0105102	SWITCH, PUSH
731	SW2	4431-A027261	SWITCH, PUSH
733	SW3	4431-S0104102	SWITCH, PUSH

PCB-8 FUNCTION P.C. BOARD

Ser. No.	Ref. No.	Part No.	Description
MISCELLANEOUS			
771	CN806	4443-0401140	CONNECTOR
772	CN807	4443-0501140	CONNECTOR
773	CN808	4443-0801140	CONNECTOR
774	CN809	4443-0901140	CONNECTOR
775	CN810	4443-1101140	CONNECTOR
723	SW8	4411-00210105	SWITCH, ROTRY
723	SW9	4411-00210105	SWITCH, ROTRY
729	SW10	4411-00212106	SWITCH, ROTRY

PCB-9 RELAY P.C. BOARD

Ser. No.	Ref. No.	Part No.	Description
CAPACITORS			
946	C1	5352-S010M103	CAP, MTL .01 μ UA BK
946B	C1	5352-1030958	CAP, MTL .01 μ G GB BB
930	C828	5345-477C041	CAP, MINI ELE 470 μ /16V
931	C829	5345-227A041	CAP, MINI ELE 220 μ /6.3V
931	C830	5345-227A041	CAP, MINI ELE 220 μ /6.3V
932	C846	5345-336E041	CAP, MINI ELE 33 μ /35V
RESISTORS			
054B	R51	5135-335522	RES, CBN 1/2P 3.3M G GB BB
935	Δ R867	5102-4R74715	RES, FUSE 4.7
938	R868	5135-822522	RES, CBN 1/2P 8.2K
941	R869	5135-472522	RES, CBN 1/2P 4.7K
940	R870	5135-560522	RES, CBN 1/2P 56
939	R871	5135-332522	RES, CBN 1/2P 3.3K
936	Δ R892	5102-1005116	RES, FUSE 10
936	Δ R893	5102-1005116	RES, FUSE 10
936	Δ R896	5102-1005116	RES, FUSE 10
941	R897	5135-472522	RES, CBN 1/2P 4.7K
TRANSISTORS			
922	Q818	5613-3246 (H)	XISTOR, NPN R
921	Q819	5614-667A (C)	XISTOR, NPN A
DIODES			
924	D807	5631-1S2473	DIODE, DET
925	D817	5632-S5566B	DIODE, RECT
926	D818	5635-HZ6B1L	DIODE, ZENER
925	D845	5632-S5566B	DIODE, RECT
MISCELLANEOUS			
782	CN811	4443-0501140	CONNECTOR
783	CN812	4443-0601140	CONNECTOR
948	Δ HF1	4472-0131	HOLDER, FUSE

Ser. No.	Ref. No.	Part No.	Description
948	Δ HF2	4472-0131	HOLDER, FUSE
945	RD1	4331-10120137	RELAY, DC UA BK
945B	RD1	4331-10120237	RELAY, DC G GB BB
732	SW7	4431-S0701102	SWITCH, PUSH
944	Δ TF2	5584-702550	XFORMER, POWR UA BK
944B	Δ TF2	5584-701550	XFORMER, POWR G GB BB
779	TM801	4214-122	TERMINAL
779	TM802	4214-122	TERMINAL
779	TM803	4214-122	TERMINAL
779	TM804	4214-122	TERMINAL
779	TM805	4214-122	TERMINAL
780	TM806	4214-11023	TERMINAL

PCB-10 A/V P.C. BOARD

Ser. No.	Ref. No.	Part No.	Description
CAPACITORS			
906	C811	5345-106D041	CAP, MINI ELE 10 μ /25V
906	C812	5345-106D041	CAP, MINI ELE 10 μ /25V
906	C813	5345-106D041	CAP, MINI ELE 10 μ /25V
907	C819	5345-107C041	CAP, MINI ELE 100 μ /16V
907	C820	5345-107C041	CAP, MINI ELE 100 μ /16V
907	C821	5345-107C041	CAP, MINI ELE 100 μ /16V
908	C822	5345-477C045	CAP, MINI ELE 470 μ /16V
908	C823	5345-477C045	CAP, MINI ELE 470 μ /16V
908	C824	5345-477C045	CAP, MINI ELE 470 μ /16V
907	C835	5345-107C041	CAP, MINI ELE 100 μ /16V
RESISTORS			
919	R569	5135-102522	RES, CBN 1/2P 1K
919	R570	5135-102522	RES, CBN 1/2P 1K
919	R577	5135-102522	RES, CBN 1/2P 1K
919	R578	5135-102522	RES, CBN 1/2P 1K
911	R827	5135-473522	RES, CBN 1/2P 47K
911	R828	5135-473522	RES, CBN 1/2P 47K
909	R831	5232-473J16P	RES, CBN 1/6P 47K
909	R832	5232-473J16P	RES, CBN 1/6P 47K
909	R833	5232-473J16P	RES, CBN 1/6P 47K
909	R834	5232-473J16P	RES, CBN 1/6P 47K
912	R835	5135-271522	RES, CBN 1/2P 270
912	R836	5135-271522	RES, CBN 1/2P 270
912	R837	5135-271522	RES, CBN 1/2P 270
913	R838	5135-221522	RES, CBN 1/2P 220
913	R839	5135-221522	RES, CBN 1/2P 220
913	R840	5135-221522	RES, CBN 1/2P 220
913	R841	5135-221522	RES, CBN 1/2P 220
913	R842	5135-221522	RES, CBN 1/2P 220
913	R843	5135-221522	RES, CBN 1/2P 220
914	R844	5135-680522	RES, CBN 1/2P 68
914	R845	5135-680522	RES, CBN 1/2P 68
914	R846	5135-680522	RES, CBN 1/2P 68
913	R847	5135-221522	RES, CBN 1/2P 220 UA BK
058B	R847	5135-681522	RES, CBN 1/2P 680 G GB BB
913	R848	5135-221522	RES, CBN 1/2P 220 UA BK
058B	R848	5135-681522	RES, CBN 1/2P 680 G GB BB
913	R849	5135-221522	RES, CBN 1/2P 220 UA BK
058B	R849	5135-681522	RES, CBN 1/2P 680 G GB BB
915	R850	5135-750522	RES, CBN 1/2P 75
915	R851	5135-750522	RES, CBN 1/2P 75
915	R852	5135-750522	RES, CBN 1/2P 75
916	R853	5135-332522	RES, CBN 1/2P 3.3K
917	R854	5135-182522	RES, CBN 1/2P 1.8K
918	R855	5135-103522	RES, CBN 1/2P 10K
918	R856	5135-103522	RES, CBN 1/2P 10K
918	R857	5135-103522	RES, CBN 1/2P 10K
918	R888	5135-103522	RES, CBN 1/2P 10K
911	R889	5135-473522	RES, CBN 1/2P 47K
918	R890	5135-103522	RES, CBN 1/2P 10K
911	R891	5135-473522	RES, CBN 1/2P 47K
910	R939	5232-124J16P	RES, CBN 1/6P 120K
920	R949	5232-223J16P	RES, CBN 1/6P 22K
920	R950	5232-223J16P	RES, CBN 1/6P 22K
920	R951	5232-223J16P	RES, CBN 1/6P 22K
INTEGRATED CIRCUITS			
900	IC806	5654-LC4966	IC, DIGITAL

Ser. No.	Ref. No.	Part No.	Description
900	IC807	5654-LC4966	IC, DIGITAL
TRANSISTORS			
905	Q808	5611-RN2203	XISTOR, PNP R
905	Q809	5611-RN2203	XISTOR, PNP R
904	Q810	5613-2603 (E) or (F)	XISTOR, NPN R
904	Q811	5613-2603 (E) or (F)	XISTOR, NPN R
902	Q812	5611-1115 (E) or (F)	XISTOR, PNP R
902	Q813	5611-1115 (E) or (F)	XISTOR, PNP R
902	Q814	5611-1115 (E) or (F)	XISTOR, PNP R
904	Q815	5613-2603 (E) or (F)	XISTOR, NPN R
904	Q816	5613-2603 (E) or (F)	XISTOR, NPN R
904	Q817	5613-2603 (E) or (F)	XISTOR, NPN R
903	Q848	5613-RN1204	XISTOR, NPN R
903	Q849	5613-RN1204	XISTOR, NPN R

DIODES			
970	D849	5631-1SS133	DIODE, DET
970	D850	5631-1SS133	DIODE, DET
MISCELLANEOUS			
740	T5	4489-00901006	PIN JACK, MLT
747	T8	4489-01001004	PIN JACK, MLT
786	CW808	4163-S0106800	CONNECTR W/W
787	JL807	4242-R0407800	JUMPER LEAD

PCB-11 VOLUME P.C. BOARD

CAPACITOR			
790	C862	5354-104593	CAP, MYL .1 μ
CONTROL			
711	VR502	6161-00202	VR BLOCK
MISCELLANEOUS			
794	CW813	4163-01501002	CONNECTR W/W
789	JL806	4242-R0106800	JUMPER LEAD

PCB-12 LOUDNESS P.C. BOARD

CAPACITORS			
525	C575	5359-1815851	CAP, PPP 180P
525	C576	5359-1815851	CAP, PPP 180P
526	C577	5354-823593	CAP, MYL .082 μ
526	C578	5354-823593	CAP, MYL .082 μ
RESISTORS			
524	R571	5135-273522	RES, CBN 1/2P 27K
524	R572	5135-273522	RES, CBN 1/2P 27K
523	R573	5135-472522	RES, CBN 1/2P 4.7K
523	R574	5135-472522	RES, CBN 1/2P 4.7K
524	R575	5135-273522	RES, CBN 1/2P 27K
524	R576	5135-273522	RES, CBN 1/2P 27K
MISCELLANEOUS			
741	SW4	4431-A027610	SWITCH, PUSH

PCB-13 4/5 P.C. BOARD

RESISTORS			
961	R876	5135-681522	RES, CBN 1/2P 680
962	R894	5135-121522	RES, CBN 1/2P 120
963	R895	5135-122522	RES, CBN 1/2P 1.2K
DIODES			
960	D842	5637-LT5H41B	LED
959	D843	5637-LT5D41B	LED
959	D844	5637-LT5D41B	LED
MISCELLANEOUS			
792	CW809	4163-S0106101	CONNECTR W/W

PCB-14 SPEAKER TERMINAL P.C. BOARD

MISCELLANEOUS			
743	TM1	4214-156	TERMINAL

PCB-21 TUNER P.C. BOARD

CAPACITORS			
381	C61	5361-473ZF	CAP, CER .047 μ
381	C62	5361-473ZF	CAP, CER .047 μ
377	C63	5345-228D045	CAP, MINI ELE 2200 μ /25V
379	C64	5345-107D041	CAP, MINI ELE 100 μ /25V
378	C65	5345-108C041	CAP, MINI ELE 1000 μ /16V
380	C66	5345-106F041	CAP, MINI ELE 10 μ /50V
106	C101	5345-106F041	CAP, MINI ELE 10 μ /50V
106	C102	5345-106F041	CAP, MINI ELE 10 μ /50V
106	C103	5345-106F041	CAP, MINI ELE 10 μ /50V
110	C104	5361-223Z921	CAP, CER .022 μ
110	C105	5361-223Z921	CAP, CER .022 μ
148	C201	5361-223Z921	CAP, CER .022 μ
148	C202	5361-223Z921	CAP, CER .022 μ
148	C203	5361-223Z921	CAP, CER .022 μ
149	C204	5361-103M920	CAP, CER .01 μ
148	C205	5361-223Z921	CAP, CER .022 μ
148	C206	5361-223Z921	CAP, CER .022 μ
148	C207	5361-223Z921	CAP, CER .022 μ
151	C208	5361-4R7K917	CAP, CER 4.7p
147	C209	5361-223ZF	CAP, CER .022 μ
143	C210	5345-107D041	CAP, MINI ELE 100 μ /25V
144	C211	5345-226D0951	CAP, MINI ELE 22 μ /25V
145	C212	5345-474F0951	CAP, MINI ELE .47 μ /50V
150	C213	5361-101K918	CAP, CER 100p
152	C214	5361-220J917	CAP, CER 22p
038B	C221	5361-223Z921	CAP, CER .22 μ
038B	C222	5361-223Z921	CAP, CER .022 μ
039B	C223	5361-103M919	CAP, CER .01 μ
038B	C224	5361-223Z921	CAP, CER .022 μ
038B	C225	5361-223Z921	CAP, CER .022 μ
038B	C226	5361-223Z921	CAP, CER .022 μ
042B	C227	5361-101K918	CAP, CER 100p
042B	C228	5361-101K918	CAP, CER 100p
040B	C229	5361-472K918	CAP, CER 4700p
038B	C230	5361-223Z921	CAP, CER .022 μ
038B	C231	5361-223Z921	CAP, CER .022 μ
038B	C232	5361-223Z921	CAP, CER .022 μ
038B	C233	5361-223Z921	CAP, CER .022 μ
036B	C234	5361-180JRH	CAP, CER 18p
037B	C235	5361-150JPH	CAP, CER 15p
041B	C236	5361-221K918	CAP, CER 220p
035B	C237	5361-473ZF	CAP, CER .047 μ
038B	C238	5361-223Z921	CAP, CER .022 μ
038B	C239	5361-223Z921	CAP, CER .022 μ
038B	C240	5361-223Z921	CAP, CER .022 μ
038B	C241	5361-223Z921	CAP, CER .022 μ
038B	C242	5361-223Z921	CAP, CER .022 μ
044B	C243	5361-223Z921	CAP, CER .022 μ
046B	C245	5345-476D041	CAP, MINI ELE 47 μ /25V UA BK
035B	C245	5361-473ZF	CAP, CER .047 μ G GB BB
209	C251	5359-4315851	CAP, PPP 430p
211	C252	5361-220JSH	CAP, CER 22p
212	C253	5361-103M920	CAP, CER .01 μ
204	C254	5345-106F041	CAP, MINI ELE 10 μ /50V
205	C255	5345-475F041	CAP, MINI ELE 4.7 μ /50V
205	C256	5345-475F041	CAP, MINI ELE 4.7 μ /50V
206	C257	5345-105F041	CAP, MINI ELE 1 μ /50V
206	C258	5345-105F041	CAP, MINI ELE 1 μ /50V
213	C259	5361-472K919	CAP, CER 4700p
207	C261	5345-224F041	CAP, MINI ELE .22 μ /50V
204	C262	5345-106F041	CAP, MINI ELE 10 μ /50V
214	C263	5361-223Z921	CAP, CER .022 μ
256	C301	5345-107D041	CAP, MINI ELE 100 μ /25V
257	C302	5345-226D041	CAP, MINI ELE 22 μ /25V UA BK
266	C303	5359-S010J471	CAP, PPP 470p UA BK
266C	C303	5359-271585	CAP, PPP 270p G GB BB
266	C304	5359-S010J471	CAP, PPP 470p UA BK
266C	C304	5359-271585	CAP, PPP 270p G GB BB
259	C305	5345-225F041	CAP, MINI ELE 2.2 μ /50V
259	C306	5345-225F041	CAP, MINI ELE 2.2 μ /50V
265	C307	5354-152K1HM	CAP, MYL 1500p

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
265	C308	5354-152K1HM	CAP, MYL 1500p	056B	R241	5232-223J16P	RES, CBN 1/6P 22K
260	C309	5345-105F0951	CAP, MINI ELE 1 μ /50V	067B	R242	5232-103J16P	RES, CBN 1/6P 10K
268	C310	5361-101K918	CAP, CER 100p	065B	R244	5232-101J16P	RES, CBN 1/6P 100
258	C311	5345-106F041	CAP, MINL ELE 10 μ /50V	059B	R245	5232-222J16P	RES, CBN 1/6P 2.2K
262	C312	5345-224F0951	CAP, MINI ELE 22 μ /50V	230	R252	5232-104J16P	RES, CBN 1/6P 100K
261	C313	5345-474F0951	CAP, MINI ELE .47 μ /50V	227	R253	5135-471522	RES, CBN 1/2P 470
264	C314	5354-473K1HM	CAP, MYL .047 μ	236	R254	5232-222J16P	RES, CBN 1/6P 2.2K
267	C315	5361-102K918	CAP, CER 1000p	234	R255	5232-103J16P	RES, CBN 1/6P 10K
021C	C316	5345-476C0951	CAP, MINI ELE 47 μ /16V	233	R256	5232-153J16P	RES, CBN 1/6P 15K
066D	C317	5345-476C0951	CAP, MINI ELE 47 μ /16V	232	R257	5232-223J16P	RES, CBN 1/6P 22K
288	C354	5361-223Z921	CAP, CER .022 μ	237	R258	5232-102J16P	RES, CBN 1/6P 1K
045B	C361	5345-104F041	CAP, MINI ELE .1 μ /50V	235	R259	5232-472J16P	RES, CBN 1/6P 4.7K
045B	C362	5345-104F041	CAP, MINI ELE .1 μ /50V	231	R260	5232-473J16P	RES, CBN 1/6P 47K
327	C701	5345-107B041	CAP, MINI ELE 100 μ /10V	231	R261	5232-473J16P	RES, CBN 1/6P 47K
327	C702	5345-107B041	CAP, MINI ELE 100 μ /10V	238	R262	5232-820J16P	RES, CBN 1/6P 82
325	C703	5345-228A041	CAP, MINI ELE 2200 μ /6.3V	240	R263	5232-123J16P	RES, CBN 1/6P 12K
327	C704	5345-107B041	CAP, MINI ELE 100 μ /10V	214C	R263	5332-822J16P	RES, CBN 1/6P 8.2K
334	C705	5361-103M920	CAP, CER .01 μ	270	R301	5232-104J16P	RES, CBN 1/6P 100K
334	C706	5361-103M920	CAP, CER .01 μ	270	R302	5232-104J16P	RES, CBN 1/6P 100K
334	C707	5361-103M920	CAP, CER .01 μ	269	R303	5232-154J16P	RES, CBN 1/6P 150K
329	C709	5345-335F0951	CAP, MINI ELE 3.3 μ /50V	269D	R303	5232-184J16P	RES, CBN 1/6P 180K
330	C710	5345-224F0951	CAP, MINI ELE .22 μ /50V	269	R304	5232-154J16P	RES, CBN 1/6P 150K
328	C711	5345-225F041	CAP, MINI ELE 2.2 μ /50V	269D	R304	5232-184J16P	RES, CBN 1/6P 180K
333	C712	5361-180J922	CAP, CER 18p	269	R305	5232-154J16P	RES, CBN 1/6P 150K
333	C713	5361-180J922	CAP, CER 18p	269D	R305	5232-184J16P	RES, CBN 1/6P 180K
333	C714	5361-180J922	CAP, CER 18p	269	R306	5232-154J16P	RES, CBN 1/6P 150K
333	C715	5361-180J922	CAP, CER 18p	269D	R306	5232-184J16P	RES, CBN 1/6P 180K
334	C716	5361-103M920	CAP, CER .01 μ	273	R307	5232-332J16P	RES, CBN 1/6P 3.3K
326	C721	5345-227C041	CAP, MINI ELE 220 μ /16V	273	R308	5232-332J16P	RES, CBN 1/6P 3.3K
RESISTORS				274	R309	5232-223J16P	RES, CBN 1/6P 22K
387	R63	5232-331J16P	RES, CBN 1/6P 330	274	R310	5232-223J16P	RES, CBN 1/6P 22K
385	R64	5232-272J16P	RES, CBN 1/6P 2.7K	271	R311	5232-103J16P	RES, CBN 1/6P 10K
386	R65	5232-561J16P	RES, CBN 1/6P 560	271	R312	5232-103J16P	RES, CBN 1/6P 10K
388	R66	5232-100J16P	RES, CBN 1/6P 10	271	R313	5232-103J16P	RES, CBN 1/6P 10K
389	R67	5232-472J16P	RES, CBN 1/6P 4.7K	272	R314	5232-472J16P	RES, CBN 1/6P 4.7K
390	R68	5232-105J16P	RES, CBN 1/6P 1M	290	R351	5135-104522	RES, CBN 1/2P 100K
112	R101	5135-104522	RES, CBN 1/2P 100K	293	R354	5232-224J16P	RES, CBN 1/6P 220K
118	R102	5232-473J16P	RES, CBN 1/6P 47K	293	R355	5232-224J16P	RES, CBN 1/6P 220K
120	R103	5232-222J16P	RES, CBN 1/6P 2.2K	292	R356	5232-224J16P	RES, CBN 1/6P 220K
119	R104	5232-183J16P	RES, CBN 1/6P 18K	292	R357	5232-334J16P	RES, CBN 1/6P 330K
113	R105	5135-103522	RES, CBN 1/2P 10K	291	R358	5232-105J16P	RES, CBN 1/6P 1M
117	R106	5232-105J16P	RES, CBN 1/6P 1M	295	R359	5232-473J16P	RES, CBN 1/6P 47K
166	R201	5232-391J16P	RES, CBN 1/6P 390	294	R360	5232-104J16P	RES, CBN 1/6P 100K
167	R202	5232-221J16P	RES, CBN 1/6P 220	294	R361	5232-104J16P	RES, CBN 1/6P 100K
162	R203	5232-103J16P	RES, CBN 1/6P 10K	294	R362	5232-104J16P	RES, CBN 1/6P 100K
166	R204	5232-391J16P	RES, CBN 1/6P 390	296	R365	5232-223J16P	RES, CBN 1/6P 22K
167	R205	5232-221J16P	RES, CBN 1/6P 220	295	R367	5232-473J16P	RES, CBN 1/6P 47K
162	R206	5232-103J16P	RES, CBN 1/6P 10K	299	R368	5232-472J16P	RES, CBN 1/6P 4.7K
168	R207	5232-100J16P	RES, CBN 1/6P 10	290	R369	5135-104522	RES, CBN 1/2P 100K
165	R208	5232-102J16P	RES, CBN 1/6P 1K	051B	R381	5232-823J16P	RES, CBN 1/6P 82K
162	R209	5232-103J16P	RES, CBN 1/6P 10K	051B	R382	5232-823J16P	RES, CBN 1/6P 82K
163	R210	5232-332J16P	RES, CBN 1/6P 3.3K	054B	R383	5232-473J16P	RES, CBN 1/6P 47K
164	R211	5232-222J16P	RES, CBN 1/6P 2.2K	053B	R384	5232-104J16P	RES, CBN 1/6P 100K
161	R212	5232-223J16P	RES, CBN 1/6P 22K	054B	R386	5232-473J16P	RES, CBN 1/6P 47K
059B	R221	5232-222J16P	RES, CBN 1/6P 2.2K	060D	R388	5232-102J16P	RES, CBN 1/6P 1K
059B	R222	5232-222J16P	RES, CBN 1/6P 2.2K	341	R701	5171-221593	RES, MTL 1P 220
059B	R223	5232-222J16P	RES, CBN 1/6P 2.2K	343	R702	5135-103522	RES, CBN 1/2P 10K
059B	R224	5232-222J16P	RES, CBN 1/6P 2.2K	343	R703	5135-103522	RES, CBN 1/2P 10K
059B	R225	5232-222J16P	RES, CBN 1/6P 2.2K	343	R704	5135-103522	RES, CBN 1/2P 10K
059B	R226	5232-222J16P	RES, CBN 1/6P 2.2K	343	R705	5135-103522	RES, CBN 1/2P 10K
064B	R227	5232-221J16P	RES, CBN 1/6P 220	343	R706	5135-103522	RES, CBN 1/2P 10K
062B	R228	5232-391J16P	RES, CBN 1/6P 390	343	R707	5135-103522	RES, CBN 1/2P 10K
062B	R229	5232-391J16P	RES, CBN 1/6P 390	343	R708	5135-103522	RES, CBN 1/2P 10K
063B	R230	5232-331J16P	RES, CBN 1/6P 330	353	R709	5232-103J16P	RES, CBN 1/6P 10K
064B	R231	5232-221J16P	RES, CBN 1/6P 220	353	R710	5232-103J16P	RES, CBN 1/6P 10K
057B	R232	5232-562J16P	RES, CBN 1/6P 5.6K	353	R711	5232-103J16P	RES, CBN 1/6P 10K
060B	R233	5232-102J16P	RES, CBN 1/6P 1K	353	R712	5232-103J16P	RES, CBN 1/6P 10K
056B	R234	5232-223J16P	RES, CBN 1/6P 22K	353	R713	5232-103J16P	RES, CBN 1/6P 10K
061B	R235	5232-471J16P	RES, CBN 1/6P 470	344	R714	5232-103J16P	RES, CBN 1/6P 10K
064B	R236	5232-221J16P	RES, CBN 1/6P 220	344	R715	5135-222522	RES, CBN 1/2P 2.2K
058B	R237	5232-472J16P	RES, CBN 1/6P 4.7K	345	R716	5135-102522	RES, CBN 1/2P 1K
060B	R238	5232-102J16P	RES, CBN 1/6P 1K	345	R717	5135-102522	RES, CBN 1/2P 1K
052B	R239	5232-104J16P	RES, CBN 1/6P 100K	354	R718	5232-102J16P	RES, CBN 1/6P 1K
063B	R240	5232-331J16P	RES, CBN 1/6P 330	354	R719	5232-102J16P	RES, CBN 1/6P 1K
				354	R720	5232-102J16P	RES, CBN 1/6P 1K

Ser. No.	Ref. No.	Part No.	Description
320	D712	5631-1SS133	DIODE, DET
320	D713	5631-1SS133	DIODE, DET
320	D714	5631-1SS133	DIODE, DET
320	D715	5631-1SS133	DIODE, DET
320	D716	5631-1SS133	DIODE, DET
320	D717	5631-1SS133	DIODE, DET
320	D718	5631-1SS133	DIODE, DET
320	D719	5631-1SS133	DIODE, DET UA BK
320	D720	5631-1SS133	DIODE, DET UA BK
MISCELLANEOUS			
405	S101	4431-A010196	SWITCH, PUSH
405	S102	4431-A010196	SWITCH, PUSH
405	S103	4431-A010196	SWITCH, PUSH
405	S104	4431-A010196	SWITCH, PUSH
405	S105	4431-A010196	SWITCH, PUSH
405	S106	4431-A010196	SWITCH, PUSH
405	S107	4431-A010196	SWITCH, PUSH
405	S108	4431-A010196	SWITCH, PUSH
411	JL101	4242-R0407121	JUMPER LEAD

PCB-23 TUNING SWITCH P.C. BOARD

CAPACITORS			
286	C351	5345-106C0356	CAP, MINI ELE 10 μ /16V
286	C352	5345-106C0356	CAP, MINI ELE 10 μ /16V
287	C353	5345-475D0356	CAP, MINI ELE 4.7 μ /25V
RESISTORS			
297	R352	5232-153J16P	RES, CBN 1/6P 15K
298	R353	5232-103J16P	RES, CBN 1/6P 10K
INTEGRATED CIRCUIT			
281	IC351	5652-BA6124	IC, MONO
DIODES			
403	D381	5637-LN01301C	LED
403B	D382	5637-LN01301C	LED
403	D383	5637-LN01301C	LED
403B	D384	5637-LN301C	LED
403	D385	5637-LN01301C	LED
321	D721	5631-1SS133	DIODE, DET
321	D722	5631-1SS133	DIODE, DET
321	D723	5631-1SS133	DIODE, DET
321	D724	5631-1SS133	DIODE, DET
MISCELLANEOUS			
406	S109	4431-A010196	SWITCH, PUSH
406	S110	4431-A010196	SWITCH, PUSH
406	S111	4431-A010196	SWITCH, PUSH
406B	S112	4431-A010196	SWITCH, PUSH
410	JL102	4242-R0404181	JUMPER LEAD
412	JL103	4242-R0405161	JUMPER LEAD
408	RCV1	6143-00301	RECEIV BLOCK

PCB-24 ANTENNA TERMINAL P.C. BOARD

COIL			
123	L102	5943-00136	COIL BBN, 10
MISCELLANEOUS			
424	TM102	4214-166	TERMINAL UA BK
424C	TM102	4214-167	TERMINAL G GB BB
423	TM103	4214-164	TERMINAL

PCB-25 AM ADJUSTMENT P.C. BOARD

CAPACITOR			
215	C264	5361-473ZF	CAP, CER .047 μ
RESISTOR			
239	R251	5232-104J16P	RES, CBN 1/6P 100K
DIODE			
192	D251	5633-1SV149	DIODE, CAP
MISCELLANEOUS			
413	JL104	4242-R0304601	JUMPER LEAD

Ser. No.	Ref. No.	Part No.	Description
196	L251	5933-00101	COIL CASE, 10
194	TC251	5371-93	TRIMMER, 1P

PCB-26 LAMP P.C. BOARD

RESISTORS			
383	R61	5135-100522	RES, CBN 1/2P 10
391	Δ R62	5102-6R85116	RES, FUSE 6.8
MISCELLANEOUS			
415	JL108	4132-R0100101	CORD, 2C
402	LP1	5731-00101140	LAMP
402	LP2	5731-00101140	LAMP

ABBREVIATIONS IN PARTS LIST

CAPACITORS

CAP, MINI ELE : Electrolytic
 CAP, CER : Ceramic
 CAP, PPP : Polypropylene
 CAP, MYL : Mylar
 CAP, MCA : Mica
 CAP, MINI BP : Bipolar
 CAP, ELE BP : Electrolytic Bipolar
 CAP, STY : Polystyrene Film
 CAP, SPE : Specia
 CAP, TAN : Tantalum
 470 μ : 470 μ F
 6800p : 6800pF
 .047 μ : 0.047 μ F

RESISTORS

RES, CBN 1/6P : Carbon 1/6W
 RES, FUSE : Fuse
 RES, CEM 5P : Cement 5W
 RES, MTL 1P : Metal 1W
 2.2K : 2.2k Ω
 220 : 220 Ω

TRANSISTORS

XISTOR : Transistor
 FET : Field Effect Transistor

CONTROLS

RES, V CBN : Variable Carbon Resistor
 RES, SEMI FIX : Semi-fixed Resistor

CHASSIS MISCELLANEOUS

947	Δ F1	5732-502031	FUSE UA
947B	Δ F1	5732-252030	FUSE G GB BB
395	Δ F2	5732-102031	FUSE
744	Δ SC1	4474-157	SOCKET, AC OUTLET UA BK
734	SW5	4421-0227230	SWITCH, SLIDE
051B	Δ S201	4411-102719	ROTRY SWITCH, VOLTAGE SELECTOR G GB
683	Δ TF1	5584-S2501	XFORMER, POWER UA BK
683B	Δ TF1	5584-S2502	XFORMER, POWER G GB BB
745	Δ PO1	4161-71151	CORD W/PLUG, POWER UA BK
745B	Δ PO1	4161-7256	CORD W/PLUG, POWER G GB
745D	Δ PO1	4161-04100	CORD W/PLUG, POWER BB
820	Δ R50	5135-335522	RES, CBN 1/2P 3.3M

PACKAGE PARTS LIST

106	1119-01201	ATTACH SHEET UA BK
107	1111-30283	OWNER GUIDE UA BK
107B	1111-30284	OWNER GUIDE G GB BB
108	1113-717004	OWNER CARD UA BK
109	1119-047	ATTACH SHEET UA BK
110	1119-0137	ATTACH SHEET UA BK
120	4191-0355	BATTERY, DRY UM-3X2
121	1241-C12732	POLYETHY BAG OG
122	1241-C1491	POLYETHY BAG SET
123	1241-C1227	POLYETHY BAG ANT
124	1221-77167	CARTON BOX UA G
124A	1221-787167	CARTON BOX BK GB BB
125	1222-7331	CUSHION L
126	1222-7332	CUSHION R
127	1223-11729	SOFT SHEET
128	1397-6	T FEEDER ANT
129	6142-02701	REMOTE CONTROL
822	2421-7004	PIN

NOTE



SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.