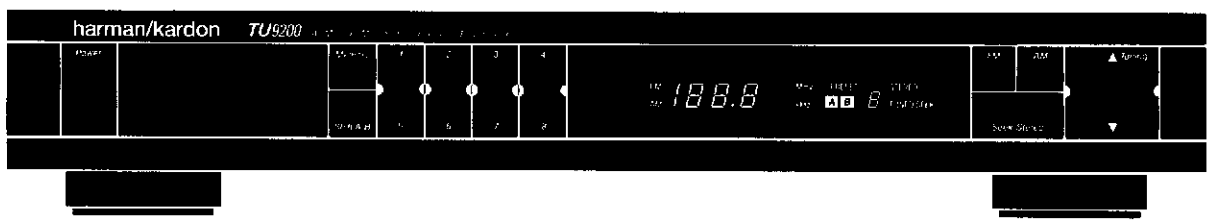
The Harman Kardon
Model TU9200

Manual 180A

AM/FM STEREO TUNER

TU9200

Technical Manual



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

- (BK): North America area model Black version
- (I): International model
- (IB): International model Black version
- (BB): Australia model Black version

CONTENTS

harman/kardon
Parts and Service Office
240 Crossways Park West, Woodbury, N.Y. 11797
1112-0040A1523 P-089109 2000 Printed in Japan

SPECIFICATIONS

● FM SECTION	Nominal	Limit
Tuning Range	87.5–108.0 MHz	
50dB Quieting Sensitivity		
Mono	15.2dBf	≦ 19dBf
	15.2dBf	≦ 27dBf (1) (1B) (BB)
Stereo	38dBf	≦ 41dBf
	38dBf	≦ 50dBf (1) (1B) (BB)
Usable Sensitivity	11.2dBf	≦ 15dBf
	11.2dBf	≦ 17dBf (1) (1B) (BB)
Image Ratio	45dB	≧ 38dB
IF Rejection	87dB	≧ 70dB
Spurious Response Rejection	80dB	
Capture Ratio	1.5dB	≦ 2dB
Alternate Channel Selectivity	77dB	≧ 60dB
AM Rejection	59dB	≧ 45dB
Signal to Noise Ratio		
Mono	79dB	≧ 75dB
	79dB	≧ 68dB (1) (1B) (BB)
Stereo	73dB	≧ 68dB
	73dB	≧ 62dB (1) (1B) (BB)
Total Harmonic Distortion		
Mono	0.18%	≦ 0.4%
Stereo	0.2%	≦ 0.5%
Stereo Separation at 1 kHz	50dB	≧ 40dB
Output Level	750mV	± 1.5dB
	450mV	± 1.5dB (1) (1B) (BB)

● AM SECTION	Nominal	Limit
Tuning Range		
North America area model	530–1,710kHz	
International and Australia models	531–1,602kHz	
Usable Sensitivity		
External Antenna	16μV	≦ 33μV
Loop Antenna	400μV/m	≦ 700μV/m
Selectivity	30dB	≧ 25dB
Signal to Noise Ratio	52dB	≧ 47dB
Image Rejection	38dB	≧ 30dB
IF Rejection	58dB	≧ 50dB

● DIMENSION (W x H x D)	17-7/16" x 2-11/16" x 14-3/16" (443 x 68 x 360 mm)
● WEIGHT	7.3 lbs. (3.3 kg)
● POWER SUPPLIES	
North America area model	AC 120V, 60Hz
International and Australia models	AC 230/240V, 50/60Hz
● POWER CONSUMPTION	10W

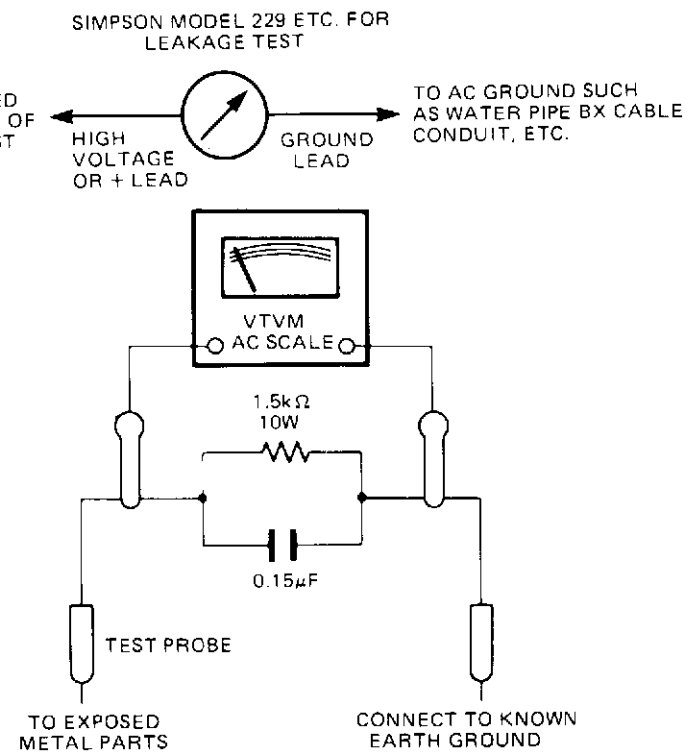
These specifications are service target specs.

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

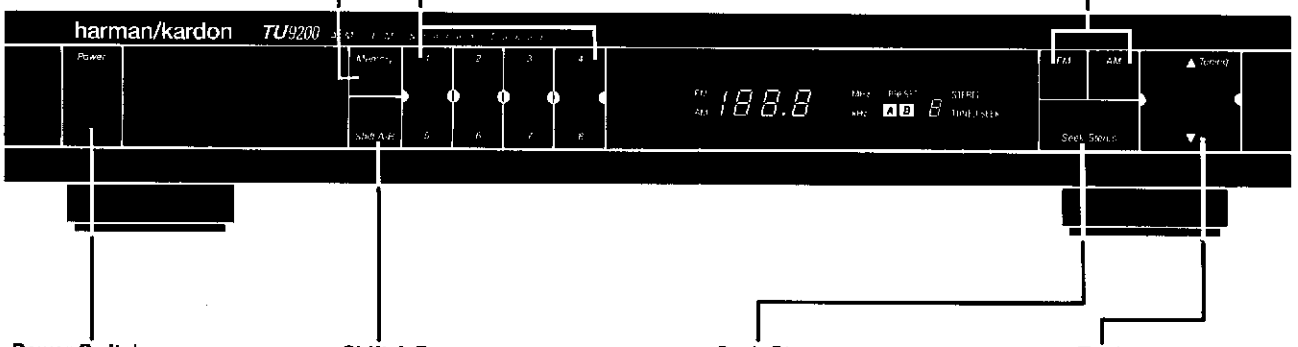
LEAKAGE TEST (FOR SERVICE ENGINEERS IN THE U.S.A.)

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. Be sure that any protective devices such as nonmetallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc. which were removed for servicing are properly reinstalled.
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 power 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 μF 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.



CONTROLS AND FUNCTIONS



Memory
Press to set in memory a new preset station.

Preset Buttons
Press to access pre-selected stations.

FM/AM
Press to select FM or AM reception.

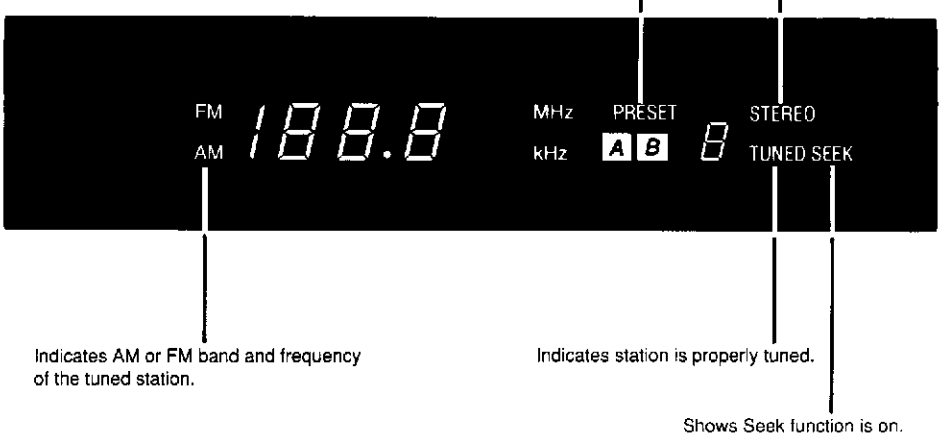
Power Switch
Press to turn the unit on and off.

Shift A-B
Allows you to access 16 pre-selected stations using the 8 Preset buttons.

Seek-Stereo
Press on for Seek tuning in stereo, off for manual tuning in mono.

Tuning
Press ▲ to tune to stations with higher frequencies; press ▼ for lower frequencies.

DISPLAYS



DISASSEMBLY PROCEDURES (REFER TO PAGES 9, 10 AND 18)

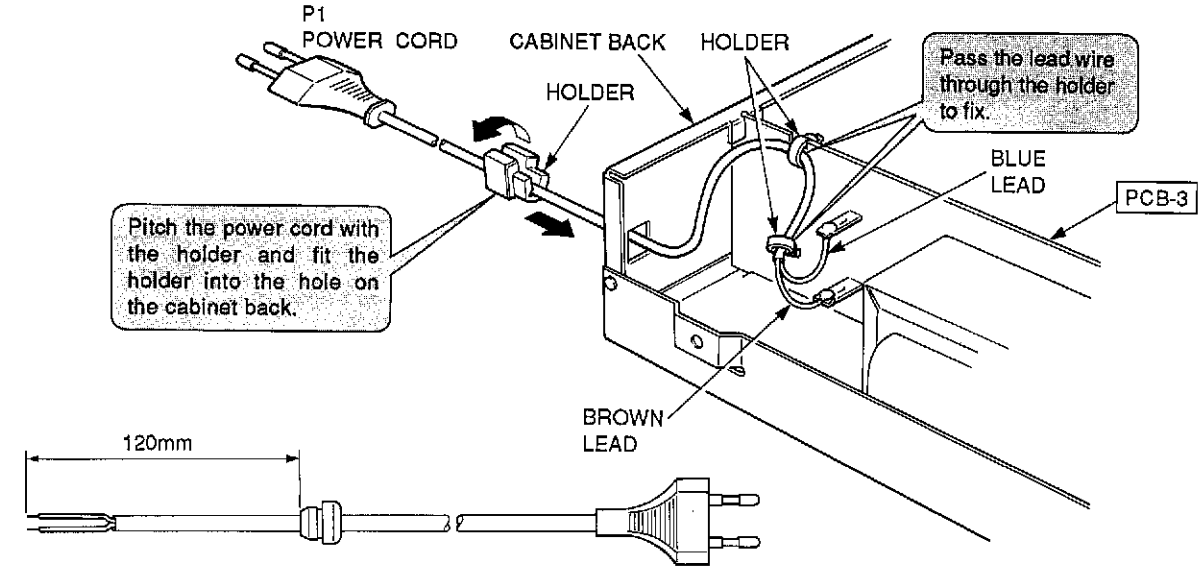
[1] CABINET TOP REMOVAL
Remove 5 screws (A) and then remove the Cabinet Top (127).

[2] FRONT PANEL ASS'Y (AA) REMOVAL
1. Remove the Cabinet Top (127), referring to the previous step [1].
2. Disconnect the jumper lead (JL1) from connector (CN102A) on the Main P. C. Board (PCB-1).
3. Remove 5 screws (B) and then remove the Front Panel Ass'y (AA).

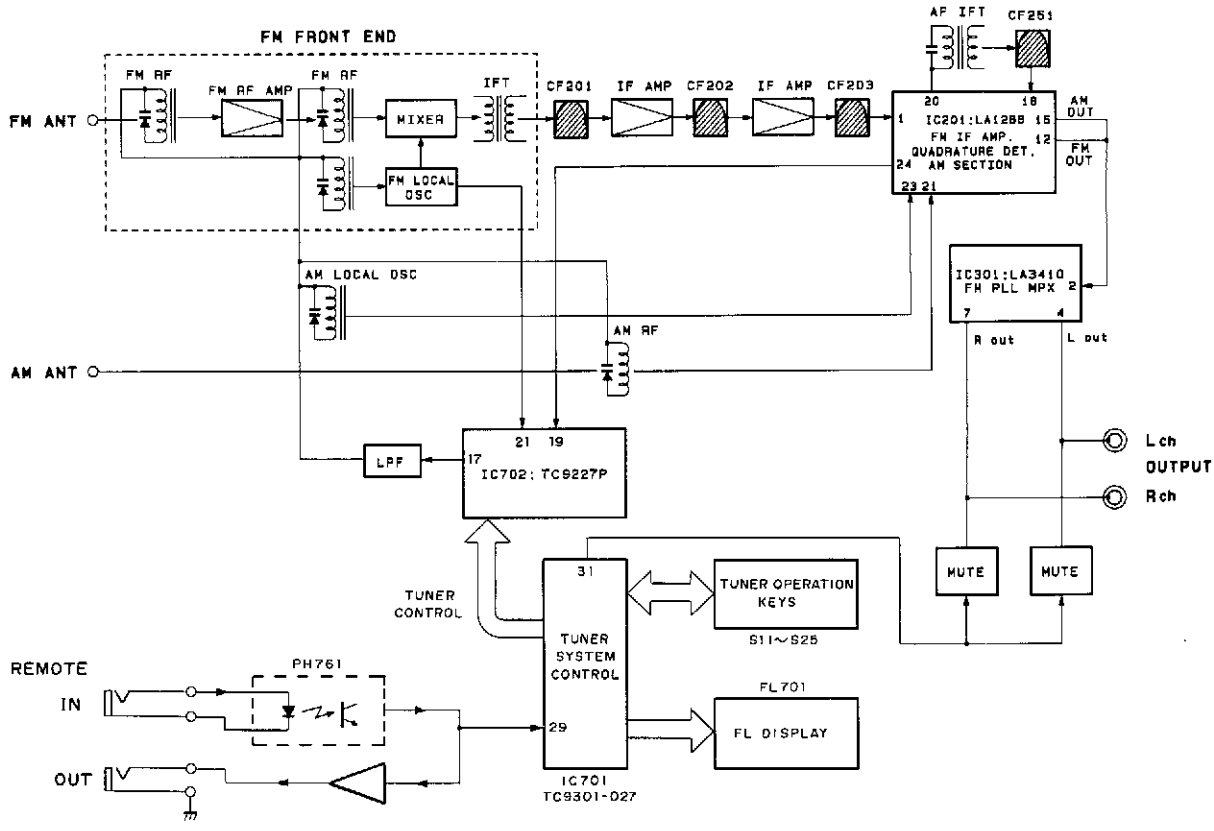
[3] MAIN P. C. BOARD (PCB-1) REMOVAL
1. Remove the Cabinet Top (127), referring to the previous step [1].
2. Disconnect the jumper lead (JL1) from connector (CN102A) on the Main P. C. Board (PCB-1).
3. Open the lid of connector (CN101) on the Main P. C. Board (PCB-1) and then disconnect the jumper lead (JL2).
4. Remove 8 screws (C and D) and then remove the Main P. C. Board (PCB-1).

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 parts with the standard supply parts.



BLOCK DIAGRAM



CIRCUIT DESCRIPTION

■ FM TUNER SECTION

The FM signal which has entered through the antenna is high-frequency amplified in the front end unit FE101, mixed with the output of the local oscillator 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 transmitted through the IF amplifier in two steps, and after being detected in the quadrature, it is transmitted through the post amplifier to pin 12 and then input 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 be fed to the amplifier.

■ AM TUNER SECTION

The AM signal which has entered through the antenna is transmitted through the tuning circuit consisting of T251 and TC251 to IC201. In IC201 it undergoes high-frequency amplification, intermediate-frequency amplification local oscillation, intermediate-frequency amplification and detection, and then output from pin 15. This signal is turned ON and OFF at Q703 and Q704 according to the signal from the input selector and fed to pin 2 of IC301.

■ MUTING CIRCUIT

If FM is received out of tuning or in a very weak field intensity, pin 31 of IC701 becomes high level. This is fed to the base of Q706, whose collector then becomes low level and the collector of Q708 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 21 of IC702. Control output signal if fed from IC701, compared with the divided local oscillation output and output to pin 17. 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 19 of IC702. In IC702, Control output signal is fed from IC701, compared with the local oscillation output and output to pin 17. This voltage is level converted at Q701 and Q702, and fed to the AM local oscillation section.

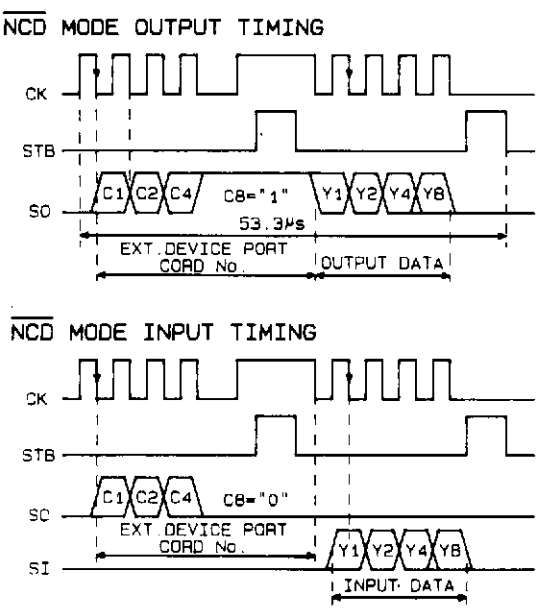
■ INDICATOR SECTION

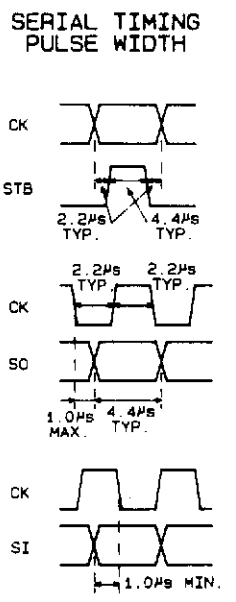
● Frequency display

The serial data sent out of pins 6 to 20 of IC701, where the data is decoded to provide a signal which turns ON the indicator.

TIMING CHART

Frequency display timing chart of IC701 (TC9301-027)





ALIGNMENT PROCEDURES (REFER TO PAGES 11 and 17)

Conditions: • Make the adjustment at a room temperature of 77°F (25°C).
• After the Power switch is pushed on, wait for 2 minutes before measuring to be sure of the most stable operation.

■ AM ADJUSTMENT

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

Step	Alignment	Terminals to be connected	Measurement Frequency	Station Display	Adjustment	For
1	IF	• Connect the AM Test Loop Antenna cable into the output jack of AM Signal Generator. (80dBμV input 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	T252	Maximum output level and symmetrical curve on scope.
2	Tracking		1400kHz *1404kHz	1400kHz *1404kHz	TC251	Maximum output
3			600kHz *603kHz	600kHz *603kHz	T251	Maximum output
4			Repeat steps 2 and 3 for optimum sensitivity.			

* International and Australia models

■ FM ADJUSTMENT

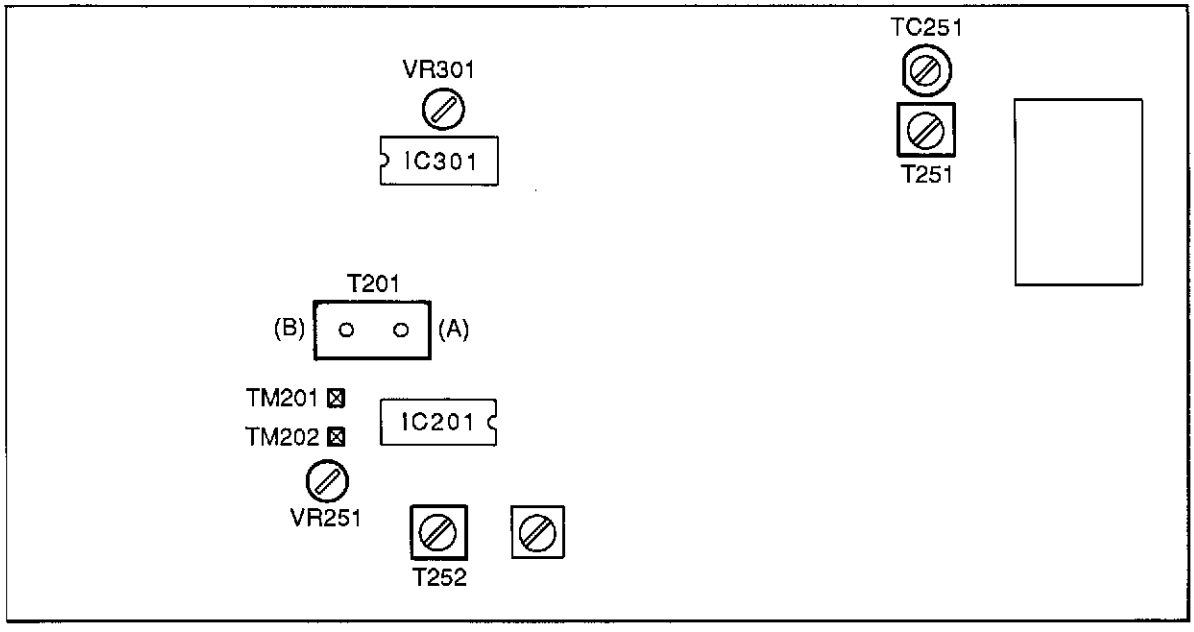
Conditions: • Set the FM mode by pressing the "FM" button.
• Set the Seek-Stereo switch to on (seek indicator lights) position.

* International and Australia models

FM Signal Generator	1kHz, 100% modulation 1kHz, 40kHz 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	Terminals to be connected	Measurement Frequency	Station Display	Adjustment	For
1	Discriminator	• Connect the FM Signal Generator to FM 300Ω BAL Antenna terminals through the 300Ω balanced dummy. [1mV (65dBf) input signal] • Connect the Oscilloscope and Distortion meter to the OUTPUT jacks. * In using the center meter, connect it to TM201 and TM202. (Make sure to remove the center meter before adjusting distortion factor.)	97.9MHz	97.9MHz	T201(A)	Adjust so that the TUNED indicator lights in the same range on both plus (+) and minus (–) sides of 97.9MHz.
2			97.9MHz	97.9MHz	T201(B)	Minimum distortion.
3			Repeat steps 1 and 2 for optimum sensitivity.			
4	Muting level		97.9MHz	97.9MHz	VR251	Adjust VR251 so that the waveform is muted at 35 dBf input.
5	Separation	• Connect the Stereo Modulator to FM Signal Generator. Connect the FM Signal Generator to FM 300Ω BAL Antenna terminal through the 300Ω balanced dummy. [1mV (65dBf) input signal] • Connect the VTVM and Oscilloscope to the OUTPUT jacks.	97.9MHz	97.9MHz	VR301	Adjust so that the left (or right) channel output becomes minimum when only the right (or left) channel of the Stereo Modulator is modulated.

PCB-1



IC TERMINAL FUNCTIONS

■ IC701 (TC9301-027)

Pin No.	Pin Name	I/O	Function
1	GND	—	GND pin
2	K0	I	4-bit key input port
3	K1	I	4-bit key input port
4	K2	I	4-bit key input port
5	K3	I	4-bit key input port
6	D0	O	Digit output
7	D1	O	Digit output
8	D2	O	Digit output
9	D3	O	Digit output
10	D4	O	Digit output
11	D5	O	Digit output
12	D6	O	Digit output
13	a	O	Segment output
14	b	O	Segment output
15	c	O	Segment output
16	d	O	Segment output
17	e	O	Segment output
18	f	O	Segment output
19	g	O	Segment output
20	h	O	Segment output
21	–VFL	I	Negative power terminal (4-bit key input port, digit output, segment output)

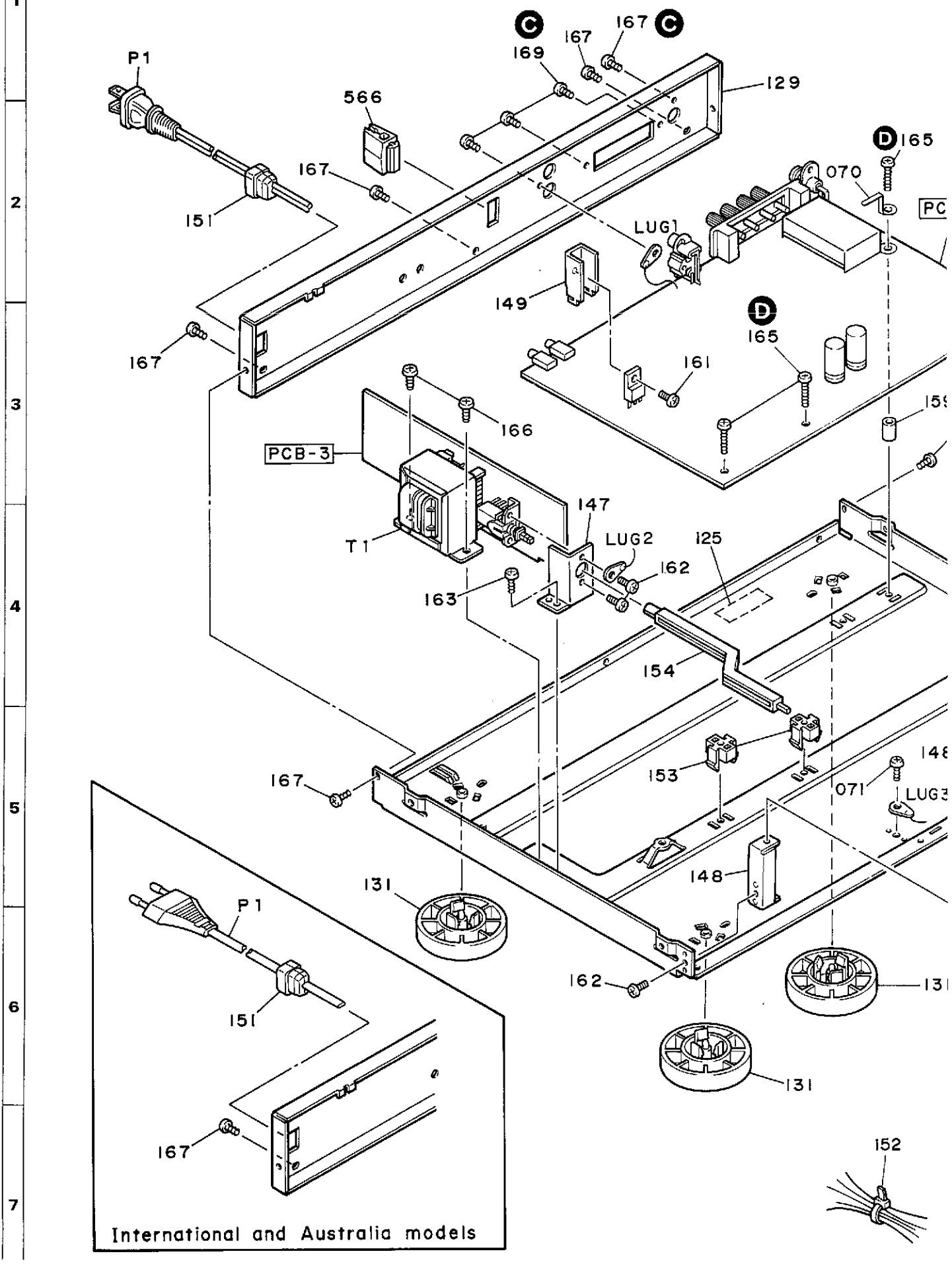
Pin No.	Pin Name	I/O	Function
22	P3-1	I/O	4-bit I/O port (3)
23	P3-2	I/O	4-bit I/O port (3)
24	P3-3	I/O	4-bit I/O port (3)
25	P3-4	I/O	4-bit I/O port (3)
26	P2-1	I/O	4-bit I/O port (2)
27	P2-2	I/O	4-bit I/O port (2)
28	P2-3	I/O	4-bit I/O port (2)
29	P2-4	I/O	4-bit I/O port (2)
30	P1-2	I/O	1-bit I/O port (1)
31	MUTE	O	1-bit muting signal output port
32	TEST	I	Test mode control input terminal
33	STB	O	Serial interface (strove pulse output)
34	CK	O	Serial interface (serial clock output)
35	SO	O	Serial interface (serial data output)
36	SI	I	Serial interface (serial data input)
37	REF	O	Reference frequency signal output terminal
38	$\overline{\text{INT}}$	I	Initialize input (system reset signal input terminal)
39	$\overline{\text{INH}}$	I	Inhibit input (select signal input port of radio mode)
40	$\overline{\text{XT}}$	—	Connect quartz oscillator
41	XT	—	Connect quartz oscillator
42	V_{DD}	I	Power supply terminal

■ IC702 (TC9227P)

Pin No.	Pin Name	I/O	Function
1	NC	—	Not connected
2	REF	I	Reference frequency input
3	SO	O	Serial I/O port (serial output)
4	SI	I	Serial I/O port (serial input)
5	CK	I	Serial I/O port (clock signal input)
6	STB	I	Serial I/O port (strove signal input)
7	A-STP	I	Autostop signal input
8	IFIN	I	IF signal input of IF counter detected autostop
9	IN1	I	Input port
10	OT1	O	Output port
11	OT2	O	Output port
12	OT3	O	Output port
13	OT4	O	Output port
14	OT5	O	Output port
15	OT6	O	Output port
16	DO2	O	Phase comparator output
17	DO1	O	Phase comparator output
18	TEST	I	Test mode control input
19	AMIN	I	AM local oscillator (programmable counter input)
20	GND	—	GND pin
21	FMIN	I	FM local oscillator (pre scaler input)
22	V_{DD}	I	5V ± 10% power supply terminal

GENERAL UNIT

EXPLODED VIEW



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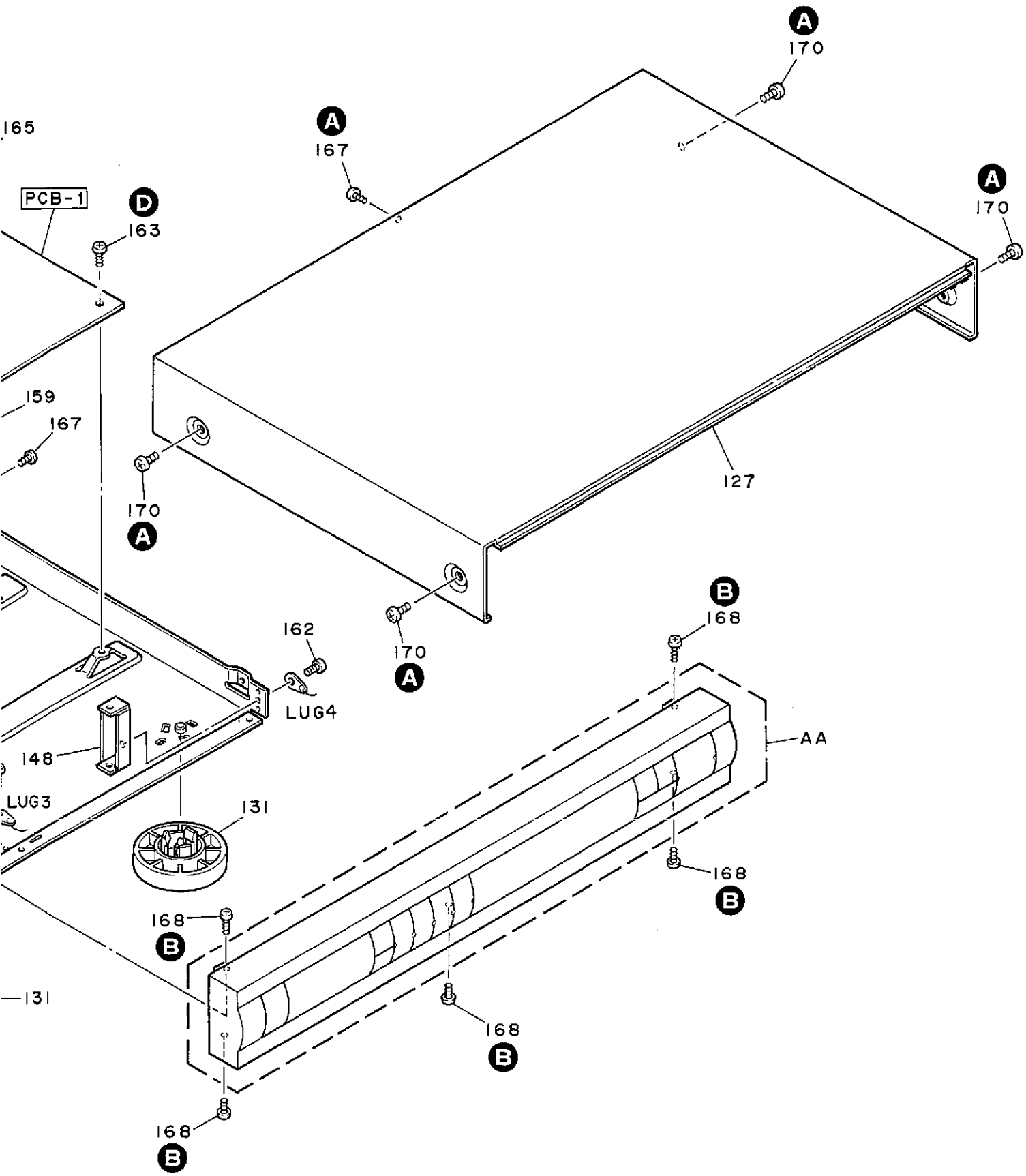
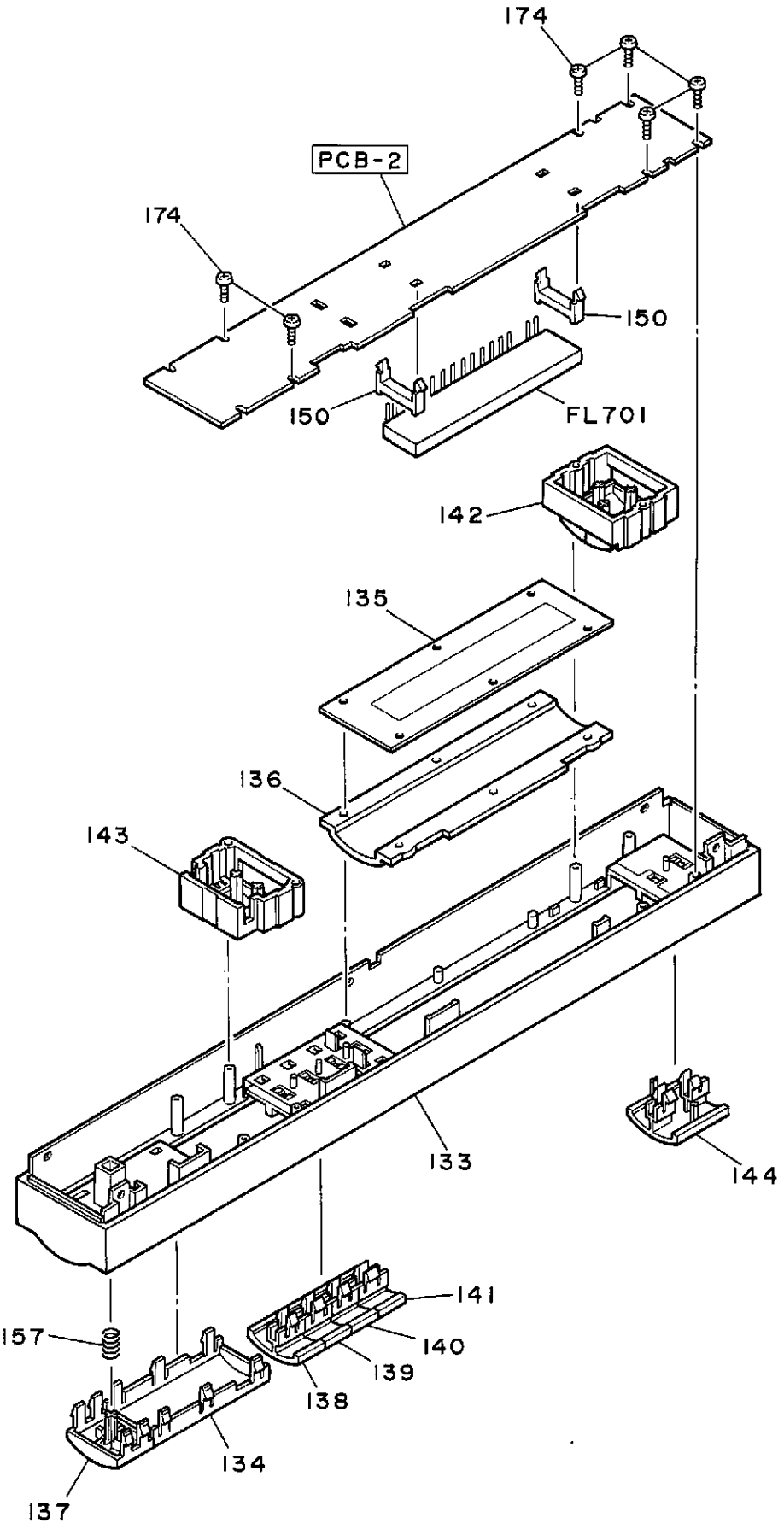

A
170
165
A
167
A
170
PCB-1
D
163
159
167
170
A
127
B
168
162
170
A
LUG4
AA
148
LUG3
131
168
B
168
B
131
168
B
168
B

GENERAL UNIT

EXPLODED VIEW (FRONT PANEL ASS'Y)

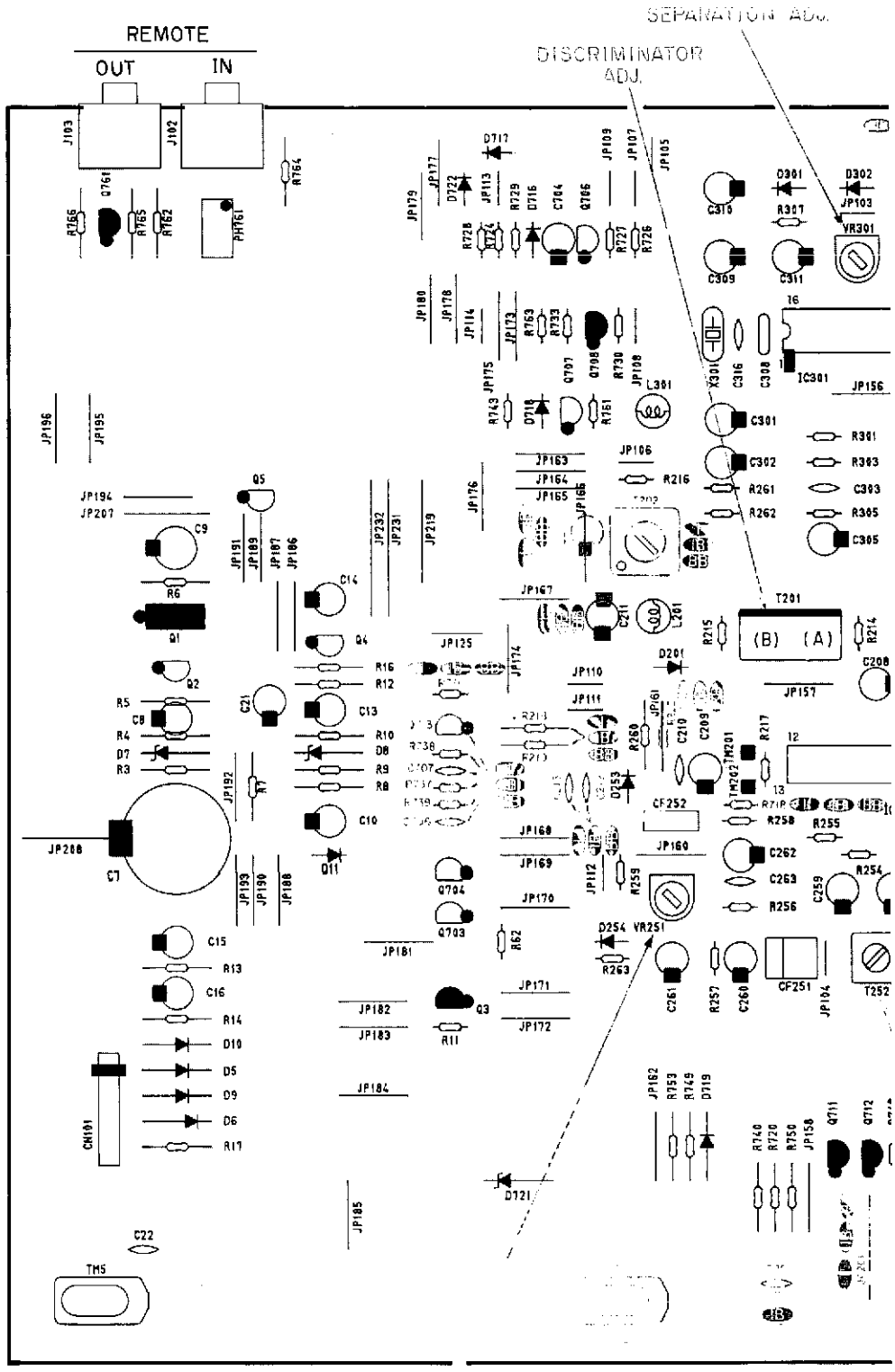


GENERAL UNIT PARTS LIST

Ref. No.	Part No.	Description
AA	A442-TU9200A	FRONT PANEL ASS'Y (I)
AA	A442-TU9200B	FRONT PANEL ASS'Y (BK) (IB) (BB)
070	2218-20	BRACKET, FIX (I) (IB) (BB)
071	2347-R0130062	SCREW, BND T+ (3x6mm)
125	1756-CSA	LABEL, CSA (BK)
127	1414-16002	CABINET
128	1424-31801	CABI BACK, BOTTOM
129	1424-35501	CABI BACK, REAR (BK)
129	1424-35502	CABI BACK, REAR (I) (IB) (BB)
131	1319-03301	LEG (x4)
133	1442-24506	PANEL, FRONT (I)
133	1442-24505	PANEL, FRONT (BK) (IB) (BB)
134	1442-24701	PANEL, DUMMY (I)
134	1442-24702	PANEL, DUMMY (BK) (IB) (BB)
135	1511-19804	PLATE, FL FILTER
136	1532-17504	WINDOW, FRONT
137	1662-52003	PUSH BUTTON, POWER (I)
137	1662-52001	PUSH BUTTON, POWER (BK) (IB) (BB)
138	1662-58601	PUSH BUTTON, PRESET 1/5 (I)
138	1662-58605	PUSH BUTTON, PRESET 1/5 (BK) (IB) (BB)
139	1662-58602	PUSH BUTTON, PRESET 2/6 (I)
139	1662-58606	PUSH BUTTON, PRESET 2/6 (BK) (IB) (BB)
140	1662-58603	PUSH BUTTON, PRESET 3/7 (I)
140	1662-58607	PUSH BUTTON, PRESET 3/7 (BK) (IB) (BB)
141	1662-58604	PUSH BUTTON, PRESET 4/8 (I)
141	1662-58608	PUSH BUTTON, PRESET 4/8 (BK) (IB) (BB)
142	1662-62401	PUSH BUTTON, FM/AM, SEEK (I)
142	1662-62402	PUSH BUTTON, FM/AM, SEEK (BK) (IB) (BB)
143	1662-59003	PUSH BUTTON, SHIFT, MEMORY (I)
143	1662-59004	PUSH BUTTON, SHIFT, MEMORY (BK) (IB) (BB)
144	1662-58901	PUSH BUTTON, TUNING (I)
144	1662-58902	PUSH BUTTON, TUNING (BK) (IB) (BB)
146	2219-7975	METAL FITTING, TM7, MAIN PCB GND (BK)
147	2219-8291	METAL FITTING, POWER SW
148	2219-8292	METAL FITTING, R.L SIDE (x2)
149	2222-7230	HEAT SINK, MAIN
150	2240-7386	HOLDER, FL (x2)
151	2240-364	HOLDER, AC CORD
152	2240-R0101	HOLDER, WIRING (x2)
153	2360-7018	BOSS, SPE, MAIN (x2)
154	2601-7156	SHAFT, POWER
157	2651-2101732	SPRING, POWER
159	2132-01401	SPACER, MAIN
161	2327-R0130082	SCREW, BND + (3x8mm)
162	2327-R0130062	SCREW, BND + (3x6mm) (x4)
163	2347-R0130062	SCREW, BND T+ (3x6mm) (x2)
165	2347-R0130162	SCREW, BND T+ (3x16mm) (x3)
166	2347-R0140062	SCREW, BND T+ (4x6mm) (x2)
167	2347-R0130064	SCREW, BND T+ (3x6mm) (x7)
168	2347-R0130084	SCREW, BND T+ (3x8mm) (x5)
169	2347-R0130104	SCREW, BND T+ (3x10mm) (x3)
170	2347-R0140064	SCREW, BND T+ (4x6mm) (x4)
174	2347-R0126082	SCREW, BND T+ (2.6x8mm) (x6)
566	2240-7208	HOLDER
⚠ F1	5732-122030	FUSE (T1.25A) (I) (IB) (BB)
⚠ P1	4161-71151	CORD W/PLUG (BK)
⚠ P1	4161-7256	CORD W/PLUG (I) (IB)
⚠ P1	4161-04100	CORD W/PLUG (BB)
⚠ T1	5584-S7701	XFORMER, POWER (BK)
⚠ T1	5584-S7702	XFORMER, POWER (I) (IB) (BB)

P. C. BOARDS

PCB-1 Main P. C. Board



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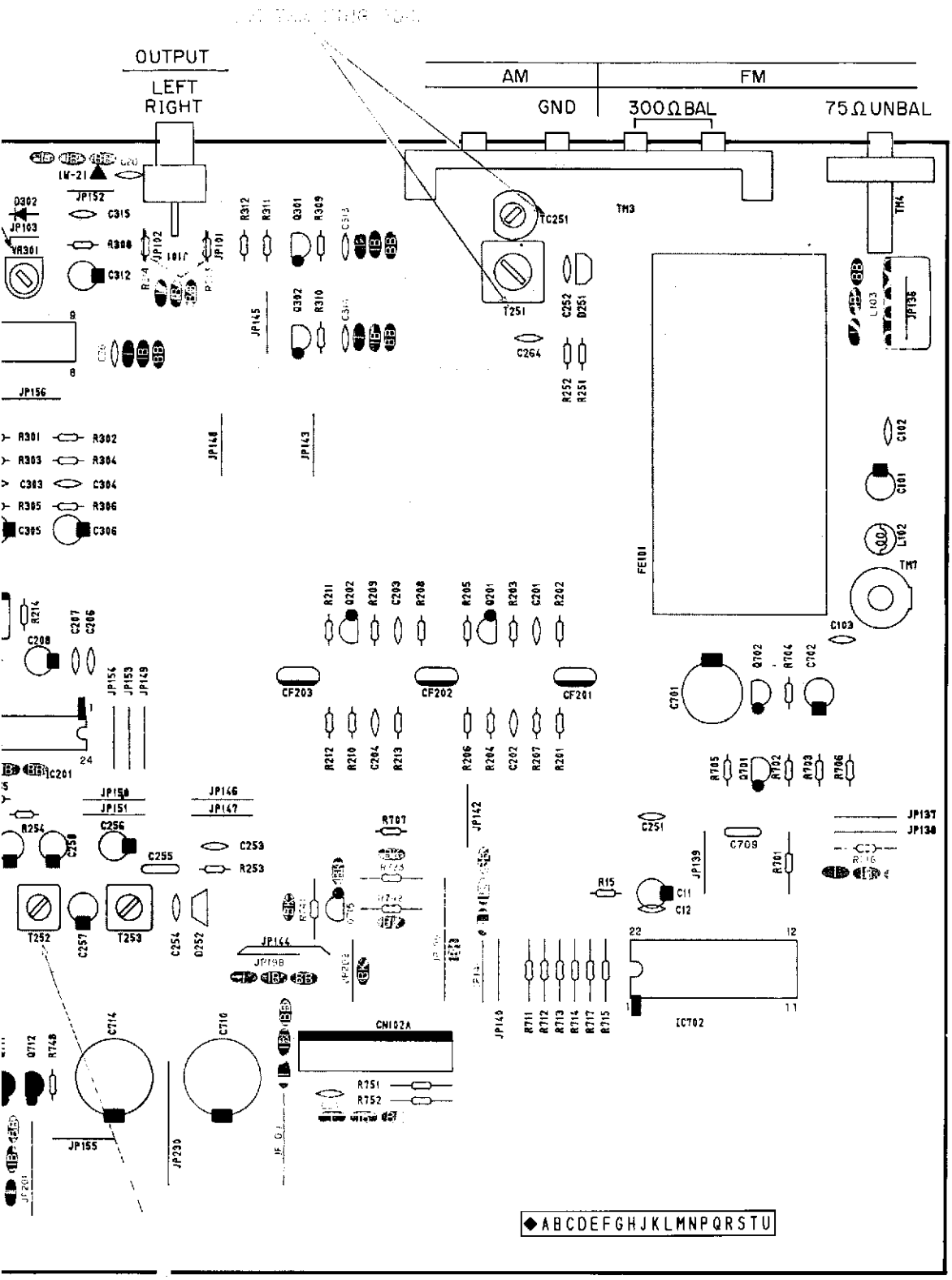
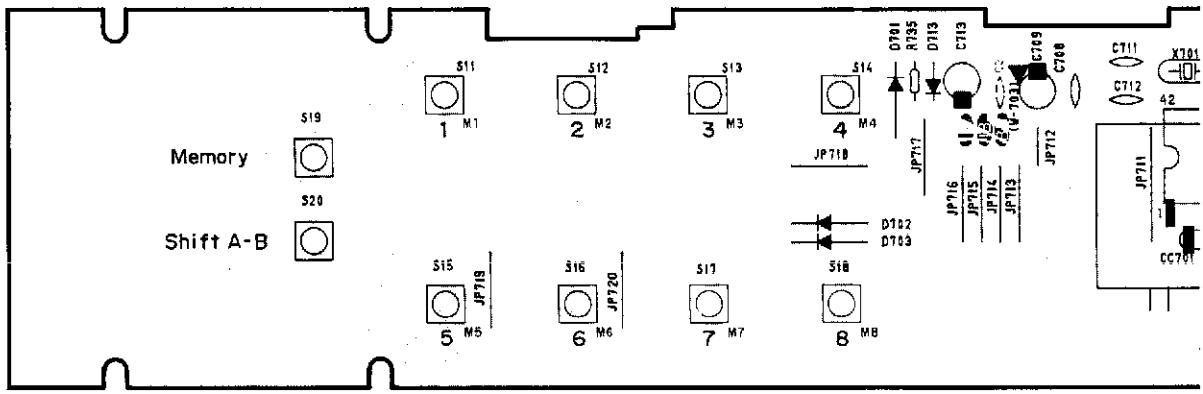

OUTPUT
LEFT
RIGHT
AM
FM
GND
300Ω BAL
75Ω UNBAL
TC251
TM3
TM4
T251
C264
FE101
TM7
CF203
CF202
CF201
IC201
IC702
T252
T253
JP155
JP230
CN102A
◆ABCDEFGHJKLMNPQRSTU

A B C D E

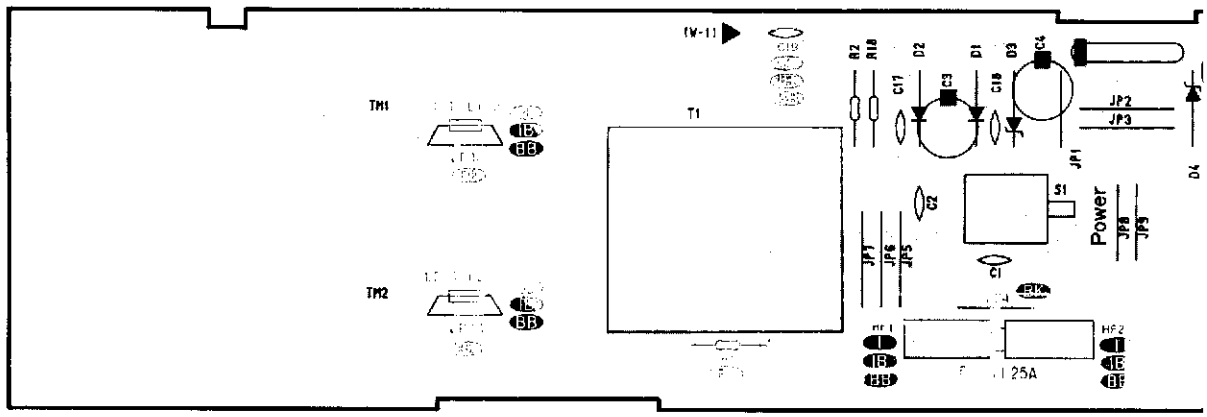
1 2 3 4 5 6 7

P. C. BOARDS

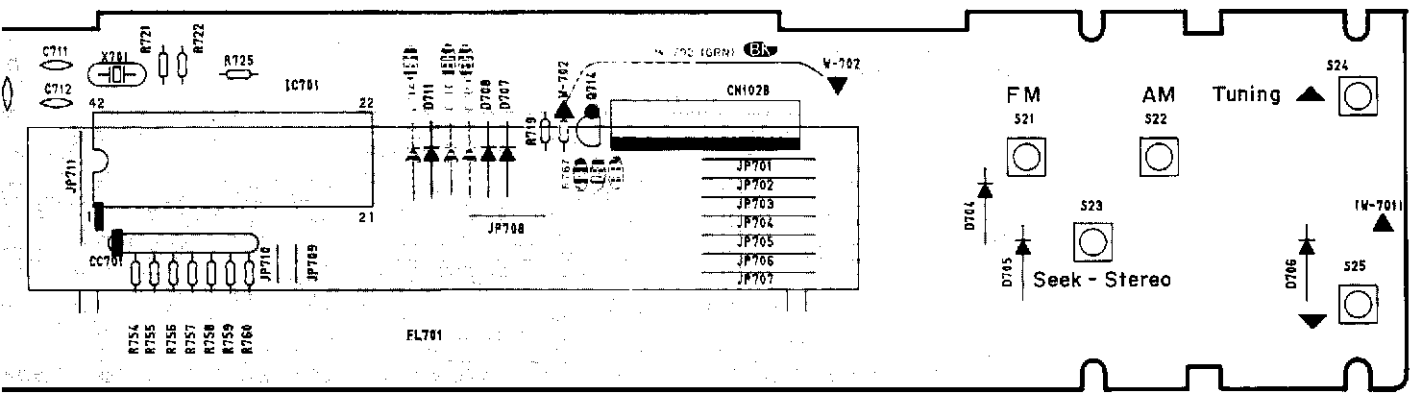
PCB-2 Front P. C. Board



PCB-3 Power Supply P. C. Board



E	F	G	H	I	J


C711
C712
X701
R721
R722
R725
IC701
42
22
21
1
JP711
CC701
JP710
JP709
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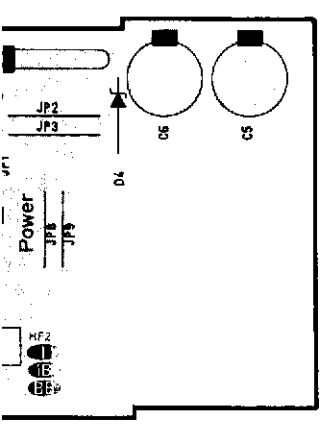
R755
R756
R757
R758
R759
R760
FL701
D711
D708
D707
R719
Q702
Q714
W-702
CN102B
JP701
JP702
JP703
JP704
JP705
JP706
JP707
JP708
FM
AM
Tuning
S21
S22
S24
S23
S25
D704
D705
D706
W-701
Seek - Stereo

LCD


JP2
JP3
D4
C6
C5
Power
JP6
JP9
HF2

ELECTRICAL PARTS LIST

PCB-1 MAIN P.C. BOARD

CAPACITORS

Ser.No	Ref. No.	Part No.	Description
691	C7	5345-228D045	CAP, MINI ELE 2200µ/25V
692	C8	5345-107D041	CAP, MINI ELE 100µ/25V
689	C9	5345-476D041	CAP, MINI ELE 47µ/25V
690	C10	5345-106D041	CAP, MINI ELE 10µ/25V
689	C11	5345-476D041	CAP, MINI ELE 47µ/25V
695	C12	5361-102K918	CAP, CER 1000p
689	C13	5345-476D041	CAP, MINI ELE 47µ/25V
689	C14	5345-476D041	CAP, MINI ELE 47µ/25V
690	C15	5345-106D041	CAP, MINI ELE 10µ/25V
744	C16	5345-475F041	CAP, MINI ELE 4.7µ/50V
051B	C20	5361-223ZF	CAP, CER .022µ (I) (IB) (BB)
692	C21	5345-107D041	CAP, MINI ELE 100µ/25V
755	C22	5361-223ZF	CAP, CER .022µ
065B	C24	5361-103ZF	CAP, CER .01µ (I) (IB) (BB)
065B	C25	5361-103ZF	CAP, CER .01µ (I) (IB) (BB)
065B	C26	5361-103ZF	CAP, CER .01µ (I) (IB) (BB)
505	C101	5345-476D041	CAP, MINI ELE 47µ/25V
507	C102	5361-223Z921	CAP, CER .022µ
508	C103	5361-150KSL	CAP, CER 15p
542	C201	5361-223Z921	CAP, CER .022µ
542	C202	5361-223Z921	CAP, CER .022µ
542	C203	5361-223Z921	CAP, CER .022µ
542	C204	5361-223Z921	CAP, CER .022µ
542	C206	5361-223Z921	CAP, CER .022µ
542	C207	5361-223Z921	CAP, CER .022µ
543	C208	5345-106F041	CAP, MINI ELE 10µ/50V
544	C209	5345-105F041	CAP, MINI ELE 1µ/50V
546	C210	5361-101K918	CAP, CER 100p
545	C211	5345-226D041	CAP, MINI ELE 22µ/25V
063B	C212	5361-223Z921	CAP, CER .022µ (I) (IB) (BB)
063B	C213	5361-223Z921	CAP, CER .022µ (I) (IB) (BB)
044B	C214	5345-226D041	CAP, MINI ELE 22µ/25V (I) (IB) (BB)
576	C251	5361-103M920	CAP, CER .01µ
571	C252	5361-473ZF	CAP, CER .047µ
571	C253	5361-473ZF	CAP, CER .047µ
573	C254	5361-220JPH	CAP, CER 22p
572	C255	5359-4315851	CAP, PPP 430p
577	C256	5345-106F041	CAP, MINI ELE 10µ/50V
577	C257	5345-106F041	CAP, MINI ELE 10µ/50V
579	C258	5345-475F041	CAP, MINI ELE 4.7µ/50V
579	C259	5345-475F041	CAP, MINI ELE 4.7µ/50V
578	C260	5345-105F041	CAP, MINI ELE 1µ/50V
581	C261	5345-474F041	CAP, MINI ELE .47µ/50V
580	C262	5345-224F041	CAP, MINI ELE .22µ/50V
575	C263	5361-472M919	CAP, CER 4700p
571	C264	5361-473ZF	CAP, CER .047µ
599	C301	5345-226D041	CAP, MINI ELE 22µ/25V
600	C302	5345-476D041	CAP, MINI ELE 47µ/25V
605	C303	5361-471K918	CAP, CER 470p (BK)
605B	C303	5361-271K918	CAP, CER 270p (I) (IB) (BB)
605	C304	5361-471K918	CAP, CER 470p (BK)
605B	C304	5361-271K918	CAP, CER 270p (I) (IB) (BB)
604	C305	5345-225F041	CAP, MINI ELE 2.2µ/50V
604	C306	5345-225F041	CAP, MINI ELE 2.2µ/50V
608	C308	5354-473K1HM	CAP, MYL .047µ
601	C309	5345-474F0951	CAP, MINI ELE .47µ/50V
603	C310	5345-106F041	CAP, MINI ELE 10µ/50V
602	C311	5345-224F0951	CAP, MINI ELE .22µ/50V
604	C312	5345-225F041	CAP, MINI ELE 2.2µ/50V
064B	C313	5361-331KB	CAP, CER 330p (I) (IB) (BB)
064B	C314	5361-331KB	CAP, CER 330p (I) (IB) (BB)
609	C315	5361-101K918	CAP, CER 100p
606	C316	5361-821K918	CAP, CER 820p
641	C701	5345-227C041	CAP, MINI ELE 220µ/16V
640	C702	5345-684F0951	CAP, MINI ELE .68µ/50V
645	C703	5354-473K1HM	CAP, MYL .047µ
638	C704	5345-225F041	CAP, MINI ELE 2.2µ/50V
063B	C706	5361-223Z921	CAP, CER .022µ (I) (IB) (BB)
063B	C707	5361-223Z921	CAP, CER .022µ (I) (IB) (BB)
639	C710	5345-228A041	CAP, MINI ELE 2200µ/6.3V
639	C714	5345-228A041	CAP, MINI ELE 2200µ/6.3V

RESISTORS

Ser.No	Ref. No.	Part No.	Description
701	R3	5135-272522	RES, CBN 1/2P 2.7K
704	R4	5135-471522	RES, CBN 1/2P 470
703	R5	5135-101522	RES, CBN 1/2P 100
702	R6	5135-331522	RES, CBN 1/2P 330
709 ⚠	R7	5102-4R75116	RES, FUSE 4.7
743 ⚠	R8	5102-1014713	RES, FUSE 100
701	R9	5135-272522	RES, CBN 1/2P 2.7K
704	R10	5135-471522	RES, CBN 1/2P 470
700	R11	5232-272J16P	RES, CBN 1/6P 2.7K
703	R12	5135-101522	RES, CBN 1/2P 100
706	R13	5135-332522	RES, CBN 1/2P 3.3K
705	R14	5135-334522	RES, CBN 1/2P 330K
708	R15	5232-101J16P	RES, CBN 1/6P 100
703	R16	5135-101522	RES, CBN 1/2P 100
710	R17	5135-150522	RES, CBN 1/2P 15
707	R62	5232-102J16P	RES, CBN 1/6P 1K
548	R201	5232-331J16P	RES, CBN 1/6P 330
549	R202	5232-391J16P	RES, CBN 1/6P 390
551	R203	5232-154J16P	RES, CBN 1/6P 150K
556	R204	5232-220J16P	RES, CBN 1/6P 22 (BK)
556B	R204	5232-180J16P	RES, CBN 1/6P 18 (I) (IB) (BB)
552	R205	5232-101J16P	RES, CBN 1/6P 100
549	R206	5232-391J16P	RES, CBN 1/6P 390
553	R207	5232-102J16P	RES, CBN 1/6P 1K
549	R208	5232-391J16P	RES, CBN 1/6P 390
551	R209	5232-154J16P	RES, CBN 1/6P 150K
556	R210	5232-220J16P	RES, CBN 1/6P 22 (BK)
556B	R210	5232-180J16P	RES, CBN 1/6P 18 (I) (IB) (BB)
552	R211	5232-101J16P	RES, CBN 1/6P 100
549	R212	5232-391J16P	RES, CBN 1/6P 390
553	R213	5232-102J16P	RES, CBN 1/6P 1K
555	R214	5232-103J16P	RES, CBN 1/6P 10K
559	R215	5232-332J16P	RES, CBN 1/6P 3.3K
558	R216	5232-472J16P	RES, CBN 1/6P 4.7K (BK)
558B	R216	5232-222J16P	RES, CBN 1/6P 2.2K (I) (IB) (BB)
557	R217	5232-153J16P	RES, CBN 1/6P 15K (BK)
557B	R217	5232-223J16P	RES, CBN 1/6P 22K (I) (IB) (BB)
061B	R218	5135-472522	RES, CBN 1/2P 4.7K (I) (IB) (BB)
062B	R219	5135-104522	RES, CBN 1/2P 100K (I) (IB) (BB)
045B	R220	5135-222522	RES, CBN 1/2P 2.2K (I) (IB) (BB)
583	R251	5232-104J16P	RES, CBN 1/6P 100K
587	R252	5232-471J16P	RES, CBN 1/6P 470
583	R253	5232-104J16P	RES, CBN 1/6P 100K
586	R254	5232-103J16P	RES, CBN 1/6P 10K
586	R255	5232-103J16P	RES, CBN 1/6P 10K
584	R256	5232-822J16P	RES, CBN 1/6P 8.2K
590	R257	5232-223J16P	RES, CBN 1/6P 22K
588	R258	5232-820J16P	RES, CBN 1/6P 82
589	R259	5232-473J16P	RES, CBN 1/6P 47K
582	R260	5135-123522	RES, CBN 1/2P 12K (BK)
582B	R260	5135-153522	RES, CBN 1/2P 15K (I) (IB) (BB)
583	R261	5232-104J16P	RES, CBN 1/6P 100K
583	R262	5232-104J16P	RES, CBN 1/6P 100K
585	R263	5232-272J16P	RES, CBN 1/6P 2.7K
613	R301	5232-124J16P	RES, CBN 1/6P 120K (BK)
613B	R301	5232-154J16P	RES, CBN 1/6P 150K (I) (IB) (BB)
613	R302	5232-124J16P	RES, CBN 1/6P 120K (BK)
613B	R302	5232-154J16P	RES, CBN 1/6P 150K (I) (IB) (BB)
611	R303	5232-164J16P	RES, CBN 1/6P 160K (BK)
611B	R303	5232-184J16P	RES, CBN 1/6P 180K (I) (IB) (BB)
611	R304	5232-164J16P	RES, CBN 1/6P 160K (BK)
611B	R304	5232-184J16P	RES, CBN 1/6P 180K (I) (IB) (BB)
612	R305	5232-182J16P	RES, CBN 1/6P 1.8K
612	R306	5232-182J16P	RES, CBN 1/6P 1.8K
615	R307	5232-472J16P	RES, CBN 1/6P 4.7K
614	R308	5232-103J16P	RES, CBN 1/6P 10K
614	R309	5232-103J16P	RES, CBN 1/6P 10K
614	R310	5232-103J16P	RES, CBN 1/6P 10K
614	R311	5232-103J16P	RES, CBN 1/6P 10K
614	R312	5232-103J16P	RES, CBN 1/6P 10K
046B	R313	5232-102J16P	RES, CBN 1/6P 1K (I) (IB) (BB)
046B	R314	5232-102J16P	RES, CBN 1/6P 1K (I) (IB) (BB)
656	R701	5135-103522	RES, CBN 1/2P 10K
664	R702	5232-222J16P	RES, CBN 1/6P 2.2K
658	R703	5232-103J16P	RES, CBN 1/6P 10K
659	R704	5232-473J16P	RES, CBN 1/6P 47K
662	R705	5232-102J16P	RES, CBN 1/6P 1K
662	R706	5232-102J16P	RES, CBN 1/6P 1K
662	R707	5232-102J16P	RES, CBN 1/6P 1K
654	R711	5135-222522	RES, CBN 1/2P 2.2K
654	R712	5135-222522	RES, CBN 1/2P 2.2K

Ser.No	Ref. No.	Part No.	Description
654	R713	5135-222522	RES, CBN 1/2P 2.2K
654	R714	5135-222522	RES, CBN 1/2P 2.2K
653	R715	5135-472522	RES, CBN 1/2P 4.7K
062B	R716	5135-104522	RES, CBN 1/2P 100K (I) (IB) (BB)
657	R717	5135-332522	RES, CBN 1/2P 3.3K
059B	R718	5232-103J16P	RES, CBN 1/6P 10K (I) (IB) (BB)
657	R720	5135-332522	RES, CBN 1/2P 3.3K
655	R723	5135-104522	RES, CBN 1/2P 100K (BK)
660	R724	5232-223J16P	RES, CBN 1/6P 22K
660	R726	5232-223J16P	RES, CBN 1/6P 22K
660	R727	5232-223J16P	RES, CBN 1/6P 22K
660	R728	5232-223J16P	RES, CBN 1/6P 22K
620	R729	5232-104J16P	RES, CBN 1/6P 100K
660	R730	5232-223J16P	RES, CBN 1/6P 22K
616	R733	5232-223J16P	RES, CBN 1/6P 22K
055B	R736	5232-224J16P	RES, CBN 1/6P 220K (I) (IB) (BB)
056B	R737	5232-154J16P	RES, CBN 1/6P 150K (I) (IB) (BB)
057B	R738	5232-102J16P	RES, CBN 1/6P 1K (I) (IB) (BB)
058B	R739	5232-472J16P	RES, CBN 1/6P 4.7K (I) (IB) (BB)
670	R740	5135-562522	RES, CBN 1/2P 5.6K
653	R741	5135-472522	RES, CBN 1/2P 4.7K (BK)
653	R742	5135-472522	RES, CBN 1/2P 4.7K (BK)
660	R743	5232-223J16P	RES, CBN 1/6P 22K
663	R748	5232-332J16P	RES, CBN 1/6P 3.3K
652	R749	5135-102522	RES, CBN 1/2P 1K
651	R750	5135-101522	RES, CBN 1/2P 100
655	R751	5135-104522	RES, CBN 1/2P 100K
655	R752	5135-104522	RES, CBN 1/2P 100K
656	R753	5135-103522	RES, CBN 1/2P 10K
663	R761	5232-332J16P	RES, CBN 1/6P 3.3K
677	R762	5135-473522	RES, CBN 1/2P 47K
620	R763	5232-104J16P	RES, CBN 1/6P 100K
679	R764	5135-271522	RES, CBN 1/2P 270
676	R765	5135-102522	RES, CBN 1/2P 1K
678	R766	5135-470522	RES, CBN 1/2P 47
		INTEGRATED CIRCUITS	
531	IC201	5653-LA1266	IC, LINEAR
591	IC301	5653-LA3410	IC, LINEAR
622	IC702	5654-TC9227P	IC, DIGITAL
		TRANSISTORS	
681	Q1	5612-1375	XISTOR, PNP A
682	Q2	5613-2320(F)	XISTOR, NPN R
683	Q3	5611-933S(S)	XISTOR, PNP R
684	Q4	5614-667(C)	XISTOR, NPN A
684	Q5	5614-667(C)	XISTOR, NPN A
532	Q201	5613-2056(N)	XISTOR, NPN R
532	Q202	5613-2056(N)	XISTOR, NPN R
592	Q301	5614-1450(T)	XISTOR, NPN A
592	Q302	5614-1450(T)	XISTOR, NPN A
627	Q701	5613-2240(BL)	XISTOR, NPN R
623	Q702	5613-2320(F)	XISTOR, NPN R
626	Q703	5613-C124ES	XISTOR, NPN R
626	Q704	5613-C124ES	XISTOR, NPN R
628	Q706	5613-1740S(S)	XISTOR, NPN R
626	Q707	5613-C124ES	XISTOR, NPN R
624	Q708	5611-933S(S)	XISTOR, PNP R
625	Q711	5611-A124ES	XISTOR, PNP R
625	Q712	5611-A124ES	XISTOR, PNP R
054B	Q713	5613-1740S(S)	XISTOR, NPN R (I) (IB) (BB)
635	Q715	5613-C144ES	XISTOR, NPN R (BK)
674	Q761	5611-A124ES	XISTOR, PNP R
		DIODES	
685	D5	5632-S5566B	DIODE, RECT
685	D6	5632-S5566B	DIODE, RECT
687	D7	5635-HZ12C2L	DIODE, ZENER
688	D8	5635-HZ6C2L	DIODE, ZENER
685	D9	5632-S5566B	DIODE, RECT
686	D10	5631-1S2473	DIODE, DET
745	D11	5631-1SS133	DIODE, DET
538	D201	5631-1SS133	DIODE, DET
561	D251	5633-1SV149	DIODE, CAP
561	D252	5633-1SV149	DIODE, CAP
562	D253	5631-1SS133	DIODE, DET
562	D254	5631-1SS133	DIODE, DET
593	D301	5631-1SS133	DIODE, DET
593	D302	5631-1SS133	DIODE, DET
630	D716	5631-1SS133	DIODE, DET
630	D717	5631-1SS133	DIODE, DET

Ser.No	Ref. No.	Part No.	Description
630	D718	5631-1SS133	DIODE, DET
632	D719	5631-1S2473	DIODE, DET
634	D721	5635-HZ7B2L	DIODE, ZENER
630	D722	5631-1SS133	DIODE, DET
		COILS	
503	L102	5995-2R2J107	COIL W/CORE
050B	L103	5214-78	LC COMPOSITE (I) (IB) (BB)
537	L201	5995-2R2J107	COIL W/CORE
596	L301	5995-2R2J107	COIL W/CORE
		TRANSFORMERS	
536	T201	5572-10201	DISCRI 7
565	T252	5552-00712	IFT, AM 7
		CONTROLS	
534	VR251	5101-S0801103	RES, SEMI FIX 10K
595	VR301	5101-S0801104	RES, SEMI FIX 100K
		MISCELLANEOUS	
535	CF201	5671-7147A	FILTER, CER S (BK)
535B	CF201	5671-7142A	FILTER, CER S (I) (IB) (BB)
535	CF202	5671-7147A	FILTER, CER S (BK)
535B	CF202	5671-7142A	FILTER, CER S (I) (IB) (BB)
539	CF203	5671-012A	FILTER, CER S
568	CF251	5671-7137C	FILTER, CER S
567	CF252	5671-0159	FILTER, CER S
735	CN101	4443-060185	CONNECTOR
736	CN102A	4443-05501019	CONNECTOR
501 ⚠	FE101	6114-00401	FM TUNER (BK)
501B	FE101	6114-00402	FM TUNER (I) (IB) (BB)
747	J101	4482-0133	PIN JACK, 2P
753	J102	4451-00184	JACK, 1P
753	J103	4451-00184	JACK, 1P
047B	LUG1	4211-4	LUG (I) (IB) (BB)
673	PH761	5624-PC817	PHOTO COUPLR
043B	T202	5214-86	LC COMPOSITE (I) (IB) (BB)
570	T251	5933-S0602	COIL CASE, 10
564	T253	5922-00215	OSC COIL, 7
569	TC251	5371-93	TRIMMER, 1P
726 ⚠	TM3	4214-164	TERMINAL
727	TM4	4214-166	TERMINAL (BK)
727B	TM4	4214-167	TERMINAL (I) (IB) (BB)
723	TM5	4214-193	TERMINAL (BK)
723B	TM5	4214-193	TERMINAL (I) (IB) (BB)
723B	TM6	4214-193	TERMINAL (I) (IB) (BB)
724	TM201	4214-132	TERMINAL
724	TM202	4214-132	TERMINAL
594	X301	5693-CSB456F1	OSC, CER

PCB-2 FRONT P.C. BOARD

		CAPACITORS	
721	C1	5361-473ZF	CAP, CER .047µ
721	C2	5361-473ZF	CAP, CER .047µ
721	C17	5361-473ZF	CAP, CER .047µ
721	C18	5361-473ZF	CAP, CER .047µ
048B	C19	5361-223ZF	CAP, CER .022µ (I) (IB) (BB)
067B	C23	5361-103ZF	CAP, CER .01µ (I) (IB) (BB)
648	C708	5361-223Z921	CAP, CER .022µ
642	C709	5345-476D041	CAP, MINI ELE 47µ/25V
649	C711	5361-300JCH	CAP, CER 30p
649	C712	5361-300JCH	CAP, CER 30p
643	C713	5345-225F041	CAP, MINI ELE 2.2µ/50V
		RESISTORS	
669	R719	5232-104J16P	RES, CBN 1/6P 100K
667	R721	5232-472J16P	RES, CBN 1/6P 4.7K
666	R722	5232-222J16P	RES, CBN 1/6P 2.2K
666	R725	5232-222J16P	RES, CBN 1/6P 2.2K
669	R735	5232-104J16P	RES, CBN 1/6P 100K
665	R754	5232-102J16P	RES, CBN 1/6P 1K
665	R755	5232-102J16P	RES, CBN 1/6P 1K
665	R756	5232-102J16P	RES, CBN 1/6P 1K
665	R757	5232-102J16P	RES, CBN 1/6P 1K
665	R758	5232-102J16P	RES, CBN 1/6P 1K
665	R759	5232-102J16P	RES, CBN 1/6P 1K
665	R760	5232-102J16P	RES, CBN 1/6P 1K
060B	R767	5232-473J16P	RES, CBN 1/6P 47K (I) (IB) (BB)

Ser.No	Ref. No.	Part No.	Description
		INTEGRATED CIRCUIT	
621	IC701	5654-T9301-27	IC, DIGITAL
		TRANSISTOR	
629	Q714	5613-C124ES	XISTOR, NPN R
		DIODES	
633	D701	5631-1S2473	DIODE, DET
633	D702	5631-1S2473	DIODE, DET
633	D703	5631-1S2473	DIODE, DET
633	D704	5631-1S2473	DIODE, DET
633	D705	5631-1S2473	DIODE, DET
633	D706	5631-1S2473	DIODE, DET
633	D707	5631-1S2473	DIODE, DET
633	D708	5631-1S2473	DIODE, DET
633	D709	5631-1S2473	DIODE, DET BK
633	D710	5631-1S2473	DIODE, DET BK
633	D711	5631-1S2473	DIODE, DET
631	D713	5631-1SS133	DIODE, DET
633	D714	5631-1S2473	DIODE, DET BK
		MISCELLANEOUS	
650	CC701	5213-S0207221	C COMPOSITE
737	CN102B	4443-05401019	CONNECTOR
711	FL701	5722-057	TUBE DISPLAY
068B	LUG3	4211-4	LUG 1 IB BB
068B	LUG4	4211-4	LUG 1 IB BB
717	S11	4437-01202	SWITCH, PU-TC
717	S12	4437-01202	SWITCH, PU-TC
717	S13	4437-01202	SWITCH, PU-TC
717	S14	4437-01202	SWITCH, PU-TC
717	S15	4437-01202	SWITCH, PU-TC
717	S16	4437-01202	SWITCH, PU-TC
717	S17	4437-01202	SWITCH, PU-TC
717	S18	4437-01202	SWITCH, PU-TC
718	S19	4437-01201	SWITCH, PU-TC
718	S20	4437-01201	SWITCH, PU-TC
718	S21	4437-01201	SWITCH, PU-TC
718	S22	4437-01201	SWITCH, PU-TC
718	S23	4437-01201	SWITCH, PU-TC
717	S24	4437-01202	SWITCH, PU-TC
717	S25	4437-01202	SWITCH, PU-TC
636	X701	5691-00720027	XTAL, OSC

PCB-3 POWER SUPPLY P.C. BOARD

		CAPACITORS	
693	C3	5345-476F041	CAP, MINI ELE 47µ/50V
693	C4	5345-476F041	CAP, MINI ELE 47µ/50V
694	C5	5345-227E041	CAP, MINI ELE 220µ/35V
694	C6	5345-227E041	CAP, MINI ELE 220µ/35V
		RESISTORS	
729 ⚠	R1	5135-335522	RES, CBN 1/2P 3.3M BK
699	R2	5135-121522	RES, CBN 1/2P 120
730	R18	5135-101522	RES, CBN 1/2P 100
		DIODES	
696	D1	5632-S5566B	DIODE, RECT
696	D2	5632-S5566B	DIODE, RECT
697	D3	5635-HZ24-2L	DIODE, ZENER
698	D4	5635-HZ5B2	DIODE, ZENER
		MISCELLANEOUS	
053B⚠	F1	5732-122030	FUSE 1 IB BB
052B⚠	HF1	4472-04501	HOLDER, FUSE 1 IB BB
052B⚠	HF2	4472-04501	HOLDER, FUSE 1 IB BB
732	JL2	4242-R0206141	JUMPER LEAD
069B	L1-1	5597-35502	CORE, BEADS 1 IB BB
069B	L1-2	5597-35502	CORE, BEADS 1 IB BB
069B	L2-1	5597-35502	CORE, BEADS 1 IB BB
069B	L2-2	5597-35502	CORE, BEADS 1 IB BB
049B	LUG2	4211-4	LUG 1 IB BB
719	S1	4431-S1003102	SWITCH, PUSH
751 ⚠	T1	5584-S7701	XFORMER, POWER BK
751B	T1	5584-S7702	XFORMER, POWER 1 IB BB
725	TM1	4214-122	TERMINAL
725	TM2	4214-122	TERMINAL

Ser.No	Ref. No.	Part No.	Description

CHASSIS MISCELLANEOUS

731	JL1	4242-S0319201	JUMPER LEAD
749 ⚠	P1	4161-71151	CORD W/PLUG BK
749B⚠	P1	4161-7256	CORD W/PLUG 1 IB
749D⚠	P1	4161-04100	CORD W/PLUG BB

PACKAGE PARTS LIST

022	1756-03108	LABEL (x2) 1 IB
022	1756-03111	LABEL (x2) BB
023	1111-J30235	OWNER GUIDE, ADDENDUM SHEET 1 IB
023	1111-J30319	OWNER GUIDE, AUSTRALIA ADDENDUM SHEET BB
111	1221-27706	CARTON BOX 1
111	1221-27705	CARTON BOX BK IB BB
113	1222-7363	CUSHION, R
114	1222-7364	CUSHION, L
115	1223-R0120055	SOFT SHEET
116	1241-R0123350	POLYETHY BAG, IB
117	1241-R0155550	POLYETHY BAG, SET
118	1111-J30345	OWNER GUIDE BK
118	1111-J30346	OWNER GUIDE, IB 1 IB
119	1241-R0115300	POLYETHY BAG, LOOP ANT
120	1113-02501	OWNER CARD BK
121	1116-03801	GUARANT CARD BK
122	1119-01201	ATTACH SHEET BK
123	1119-04501	ATTACH SHEET, SERVICE GUIDE BK
713	1397-6	T FEEDER ANT
714	5911-266	ANT COIL, BC
750	4161-71184	CORD W/PLUG

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	: Special
CAP, TAN	: Tantalum
470µ	: 470µF
6800p	: 6800pF
.047µ	: 0.047µF

RESISTORS

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

TRANSISTORS

XISTOR	: Transistor
FET	: Field Effect Transistor

CONTROLS

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

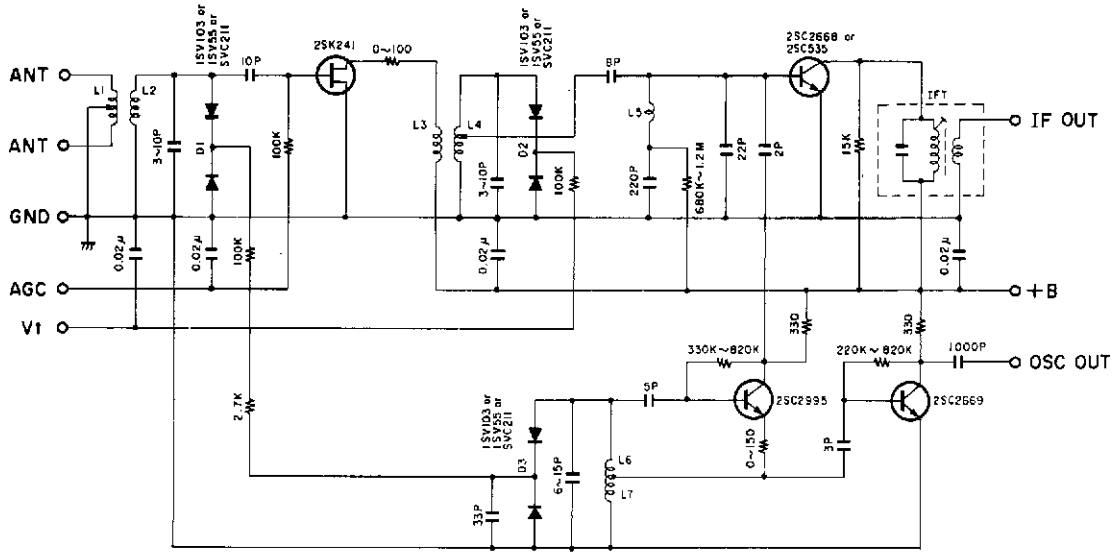
NOTE

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

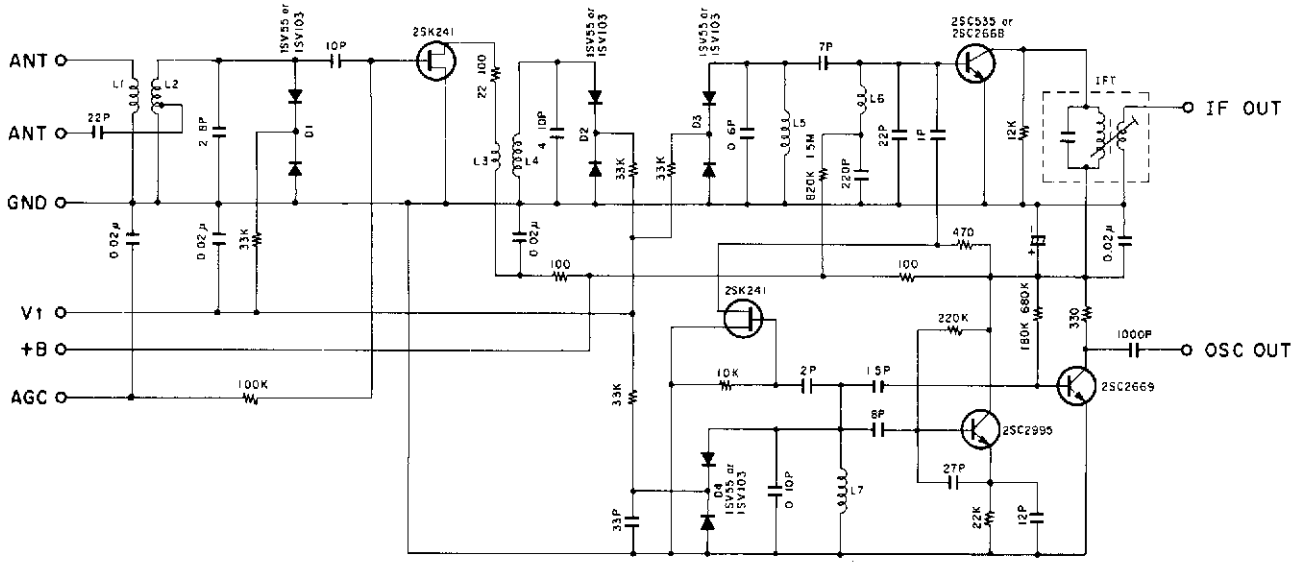
SCHEMATIC DIAGRAM (1)

(FM TUNER PACK SECTION)

- For North America area model

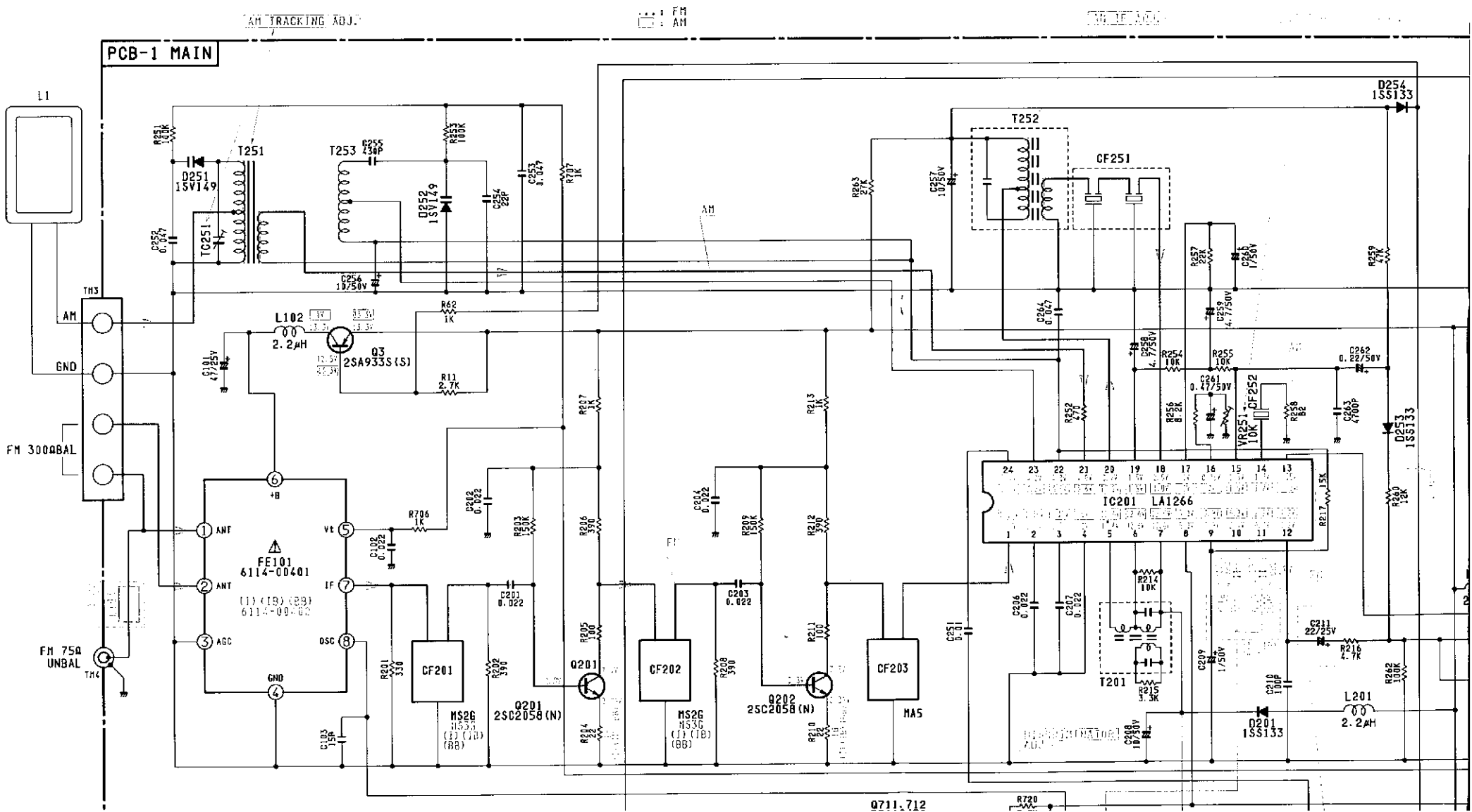


- For International and Australia models



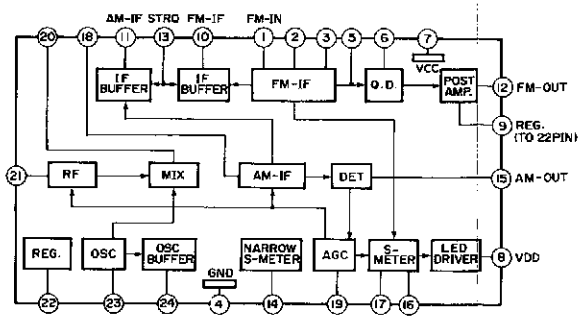
NOTE: Front End parts not available.
Schematic diagram supplied for reference only.

SCHEMATIC DIAGRAM (2)

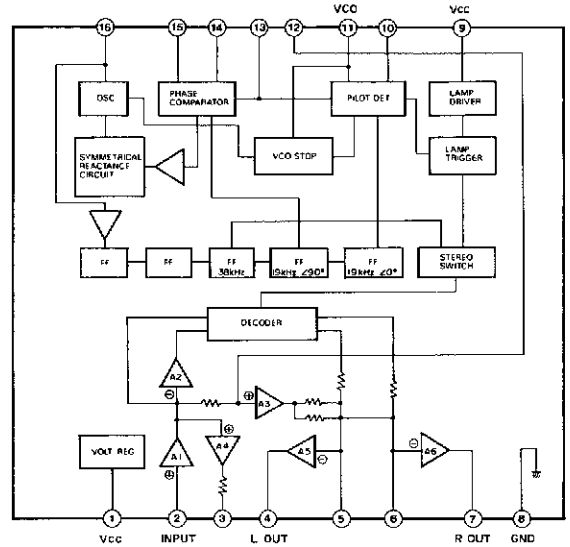


H I J K L M N

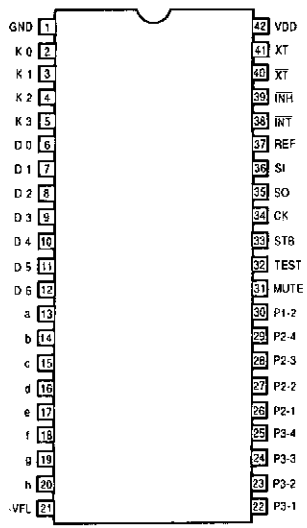
IC201 : LA1266
AM/FM IF AMP. and FM DET.

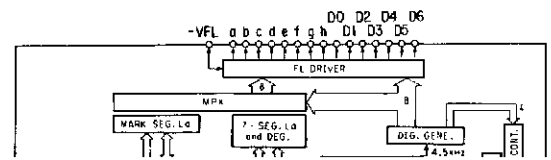


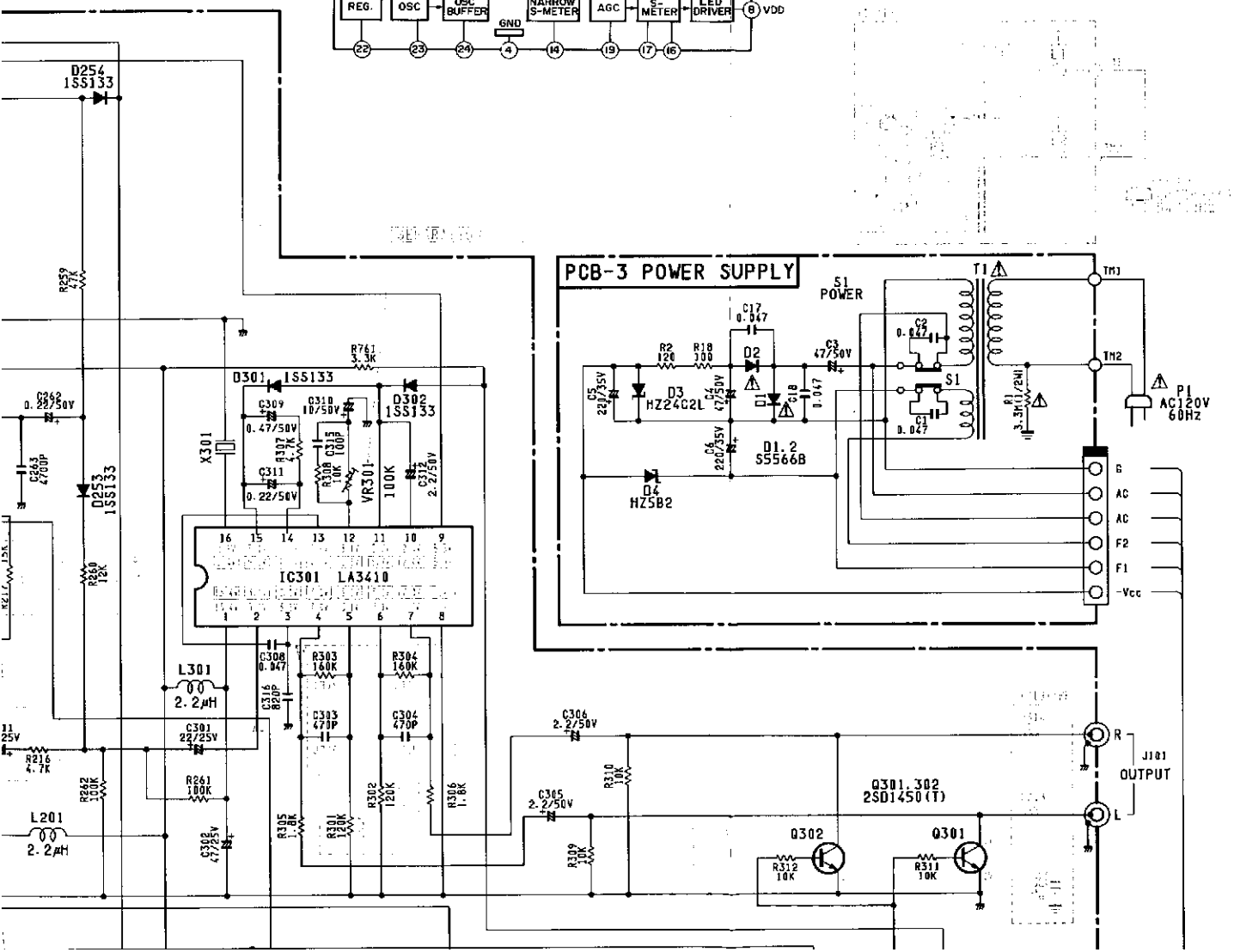
IC301 : LA3410
FM PLL MPX

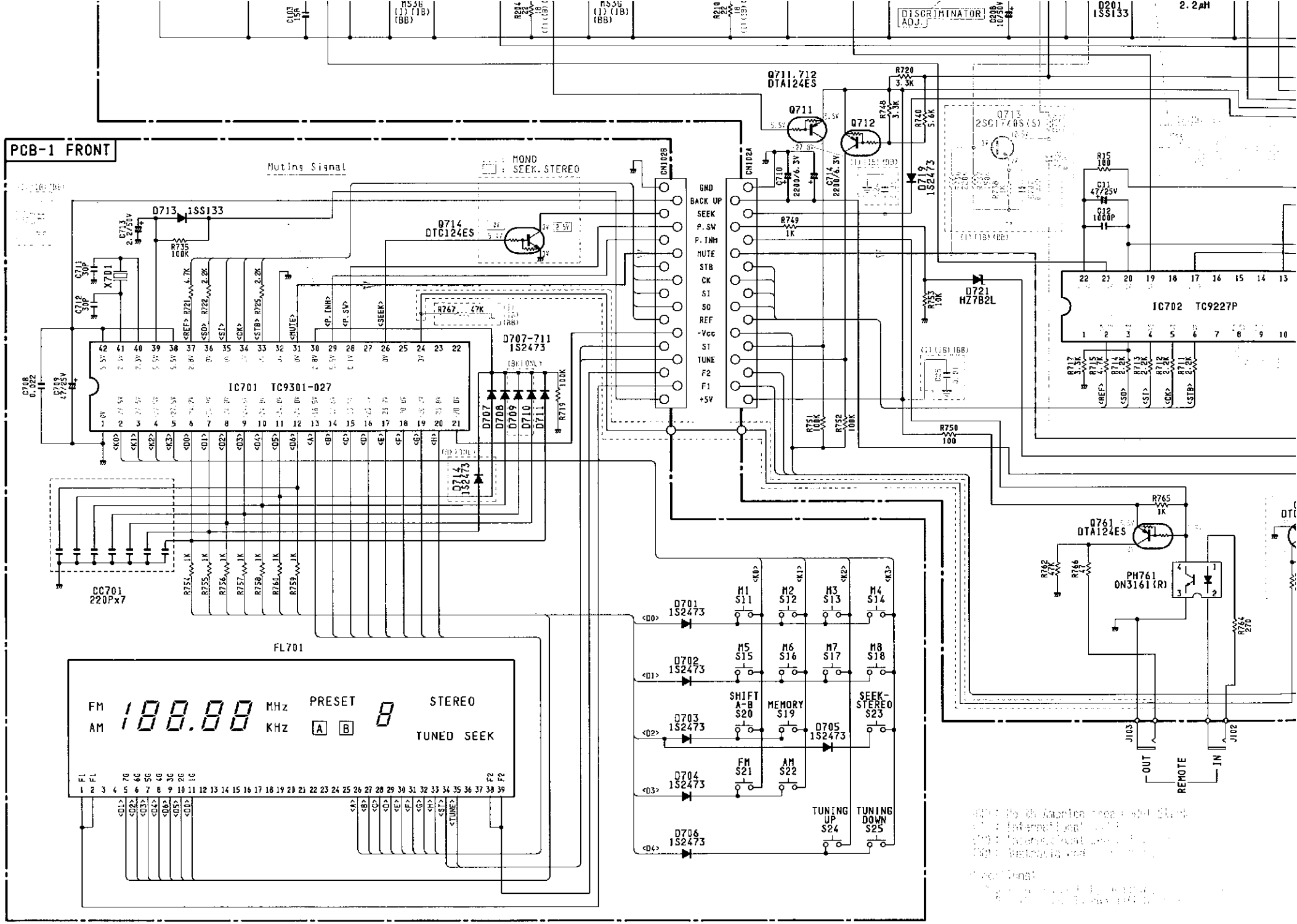


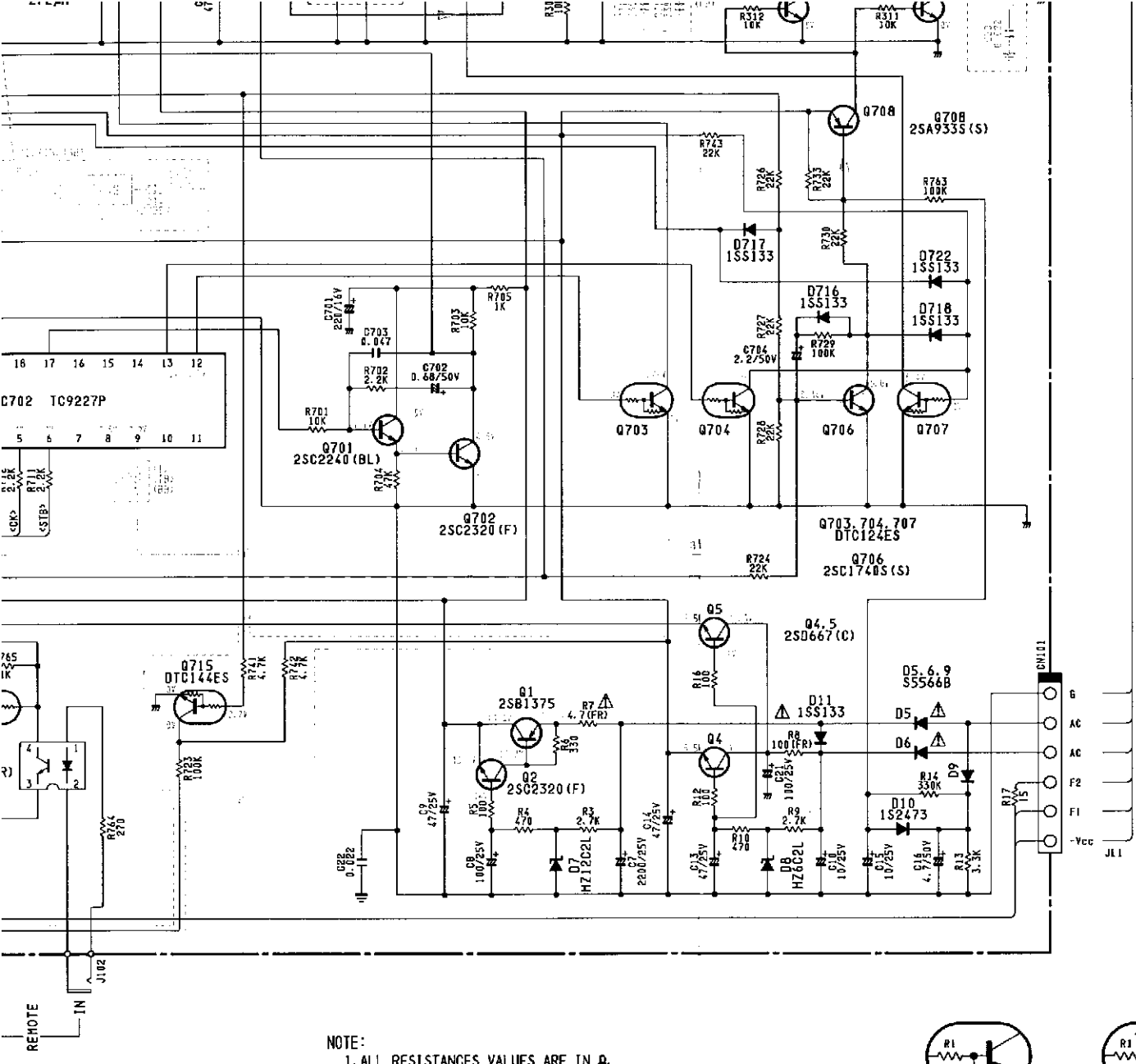
IC701 : TC9301-027
FL DRIVER and PLL CONTROL







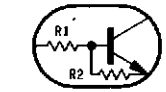

PCB-1 FRONT
Muting Signal
MONO : SEEK. STEREO
CN102B
CN102A
GND
BACK UP
SEEK
P.SW
P.INH
MUTE
STB
CK
SI
SO
REF
-Vcc
ST
TUNE
F2
F1
+5V
D713 1SS133
Q714 DTC124ES
Q711,712 DTA124ES
Q711
Q712
Q713 2SC1740S(S)
D719 1S2473
D721 HZ7B2L
IC702 TC9227P
IC701 TC9301-027
D707-711 1S2473
D714 1S2473
CC701 220Px7
FL701
FM
AM
180.00
MHz
KHz
PRESET
8
A
B
STEREO
TUNED
SEEK
M1 S11
M2 S12
M3 S13
M4 S14
M5 S15
M6 S16
M7 S17
M8 S18
SHIFT A-B S20
MEMORY S19
SEEK-STEREO S23
FM S21
AM S22
TUNING UP S24
TUNING DOWN S25
D701 1S2473
D702 1S2473
D703 1S2473
D704 1S2473
D705 1S2473
D706 1S2473
Q761 DTA124ES
PH761 ON3161(R)
J103
J102
OUT
REMOTE
IN
DISCRIMINATOR ADJ.
D201 1SS133
2.2μH



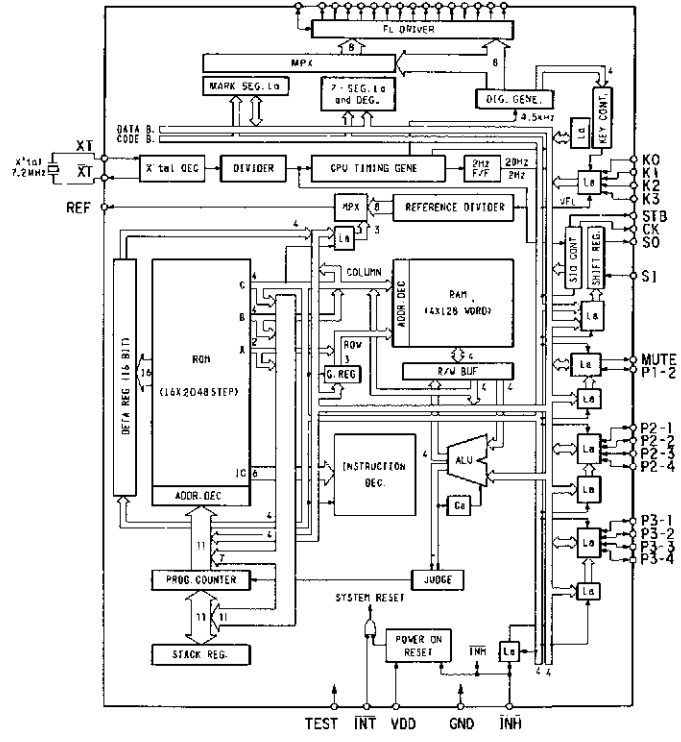
NOTE:

1. ALL RESISTANCES VALUES ARE IN Ω.
   KΩ=1000Ω, MΩ=1000KΩ.
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN μF UNLESS OTHERWISE NOTED. P=μμF.
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.

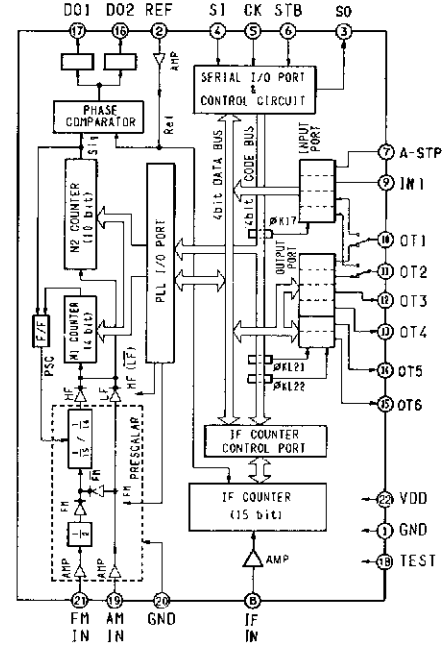
	R1	R2
DTA124ES	22K	22K



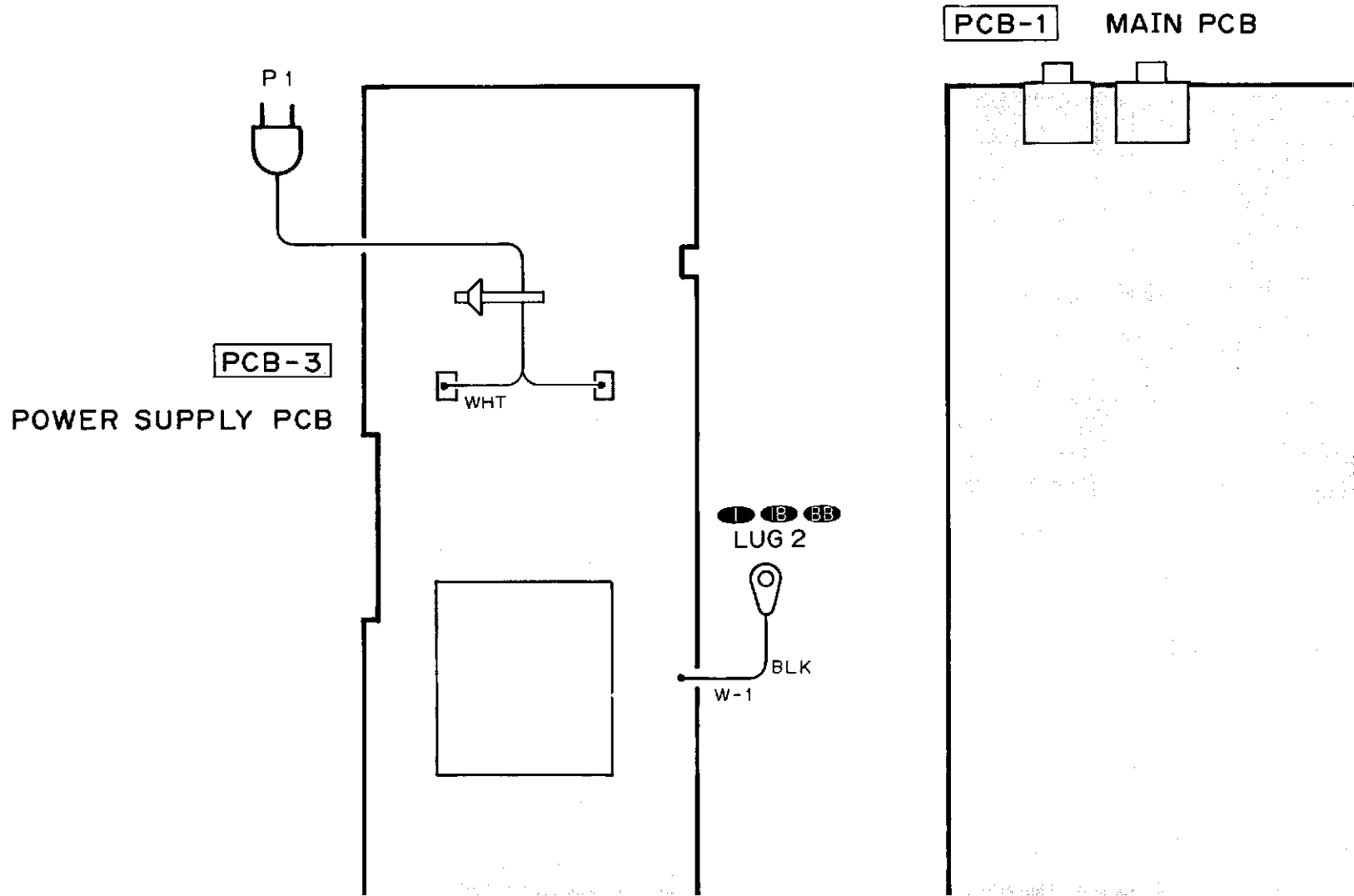
	R1	R2
DTC124ES	22K	22K
DTC144ES	47K	47K

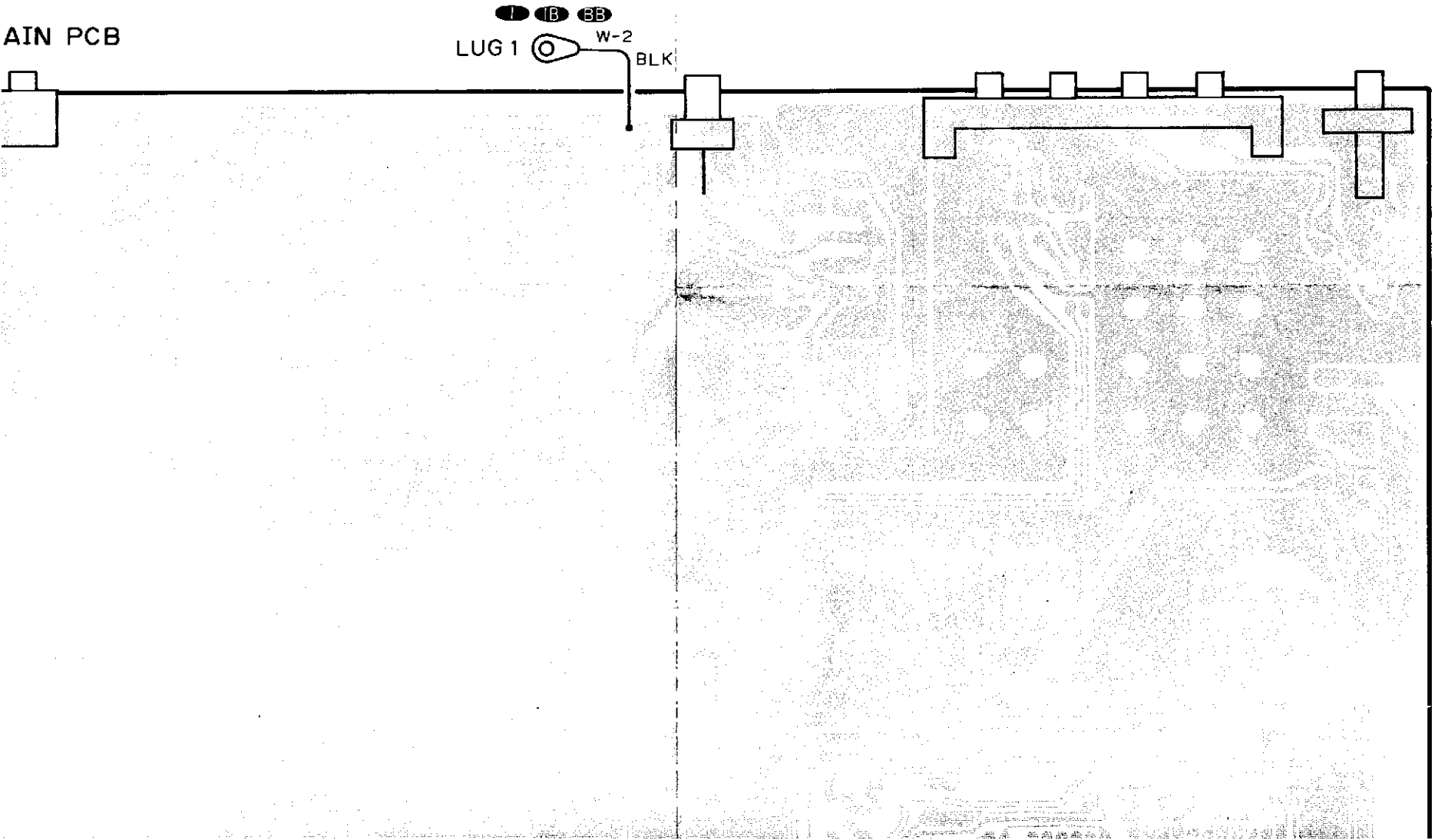


IC702 : TC9227P
PLL SYNTHESIZER



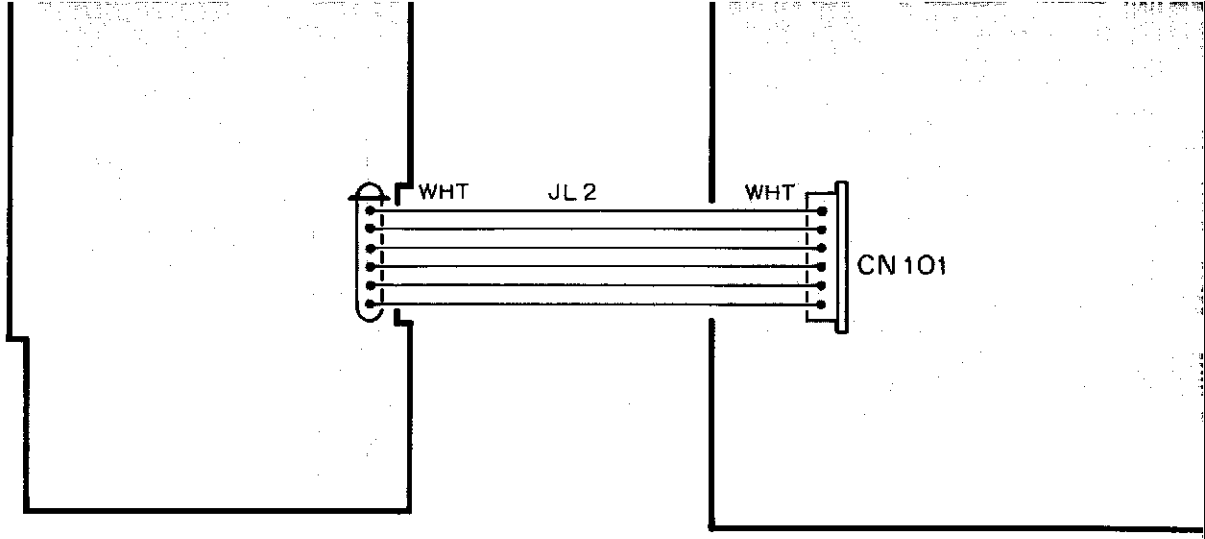
WIRING DIAGRAM

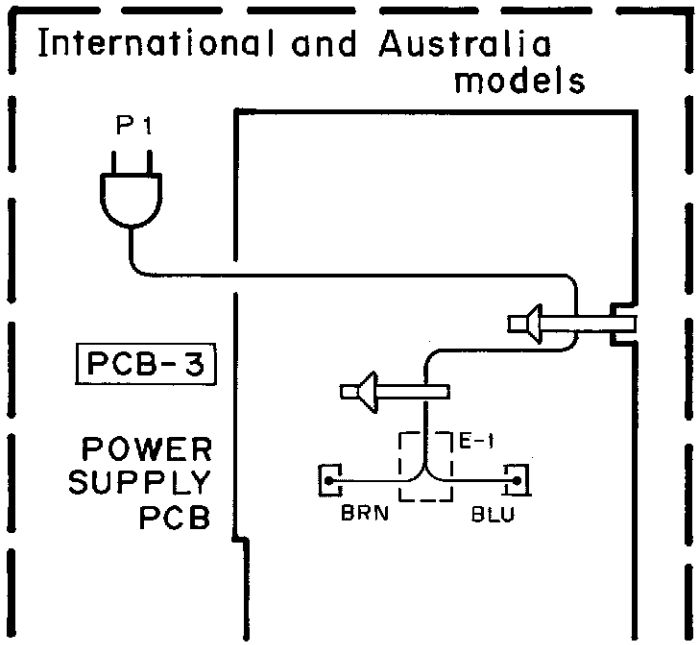


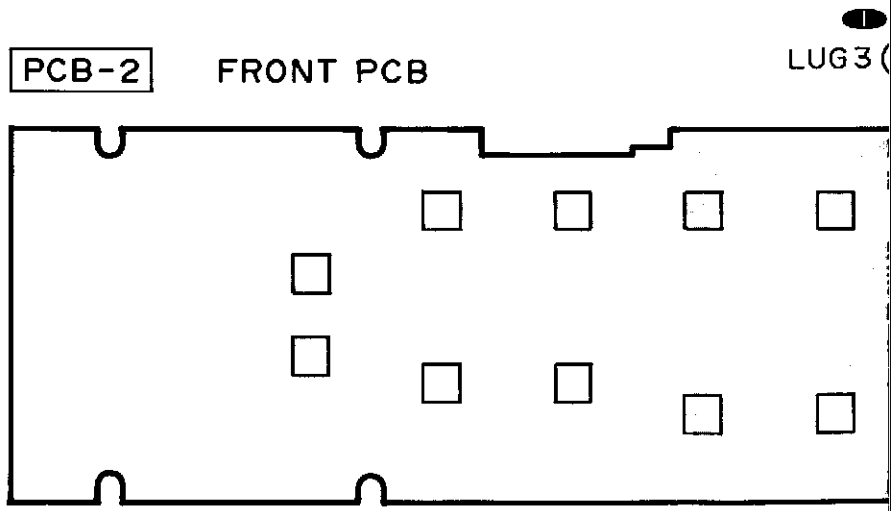

AIN PCB
LUG 1
W-2
BLK

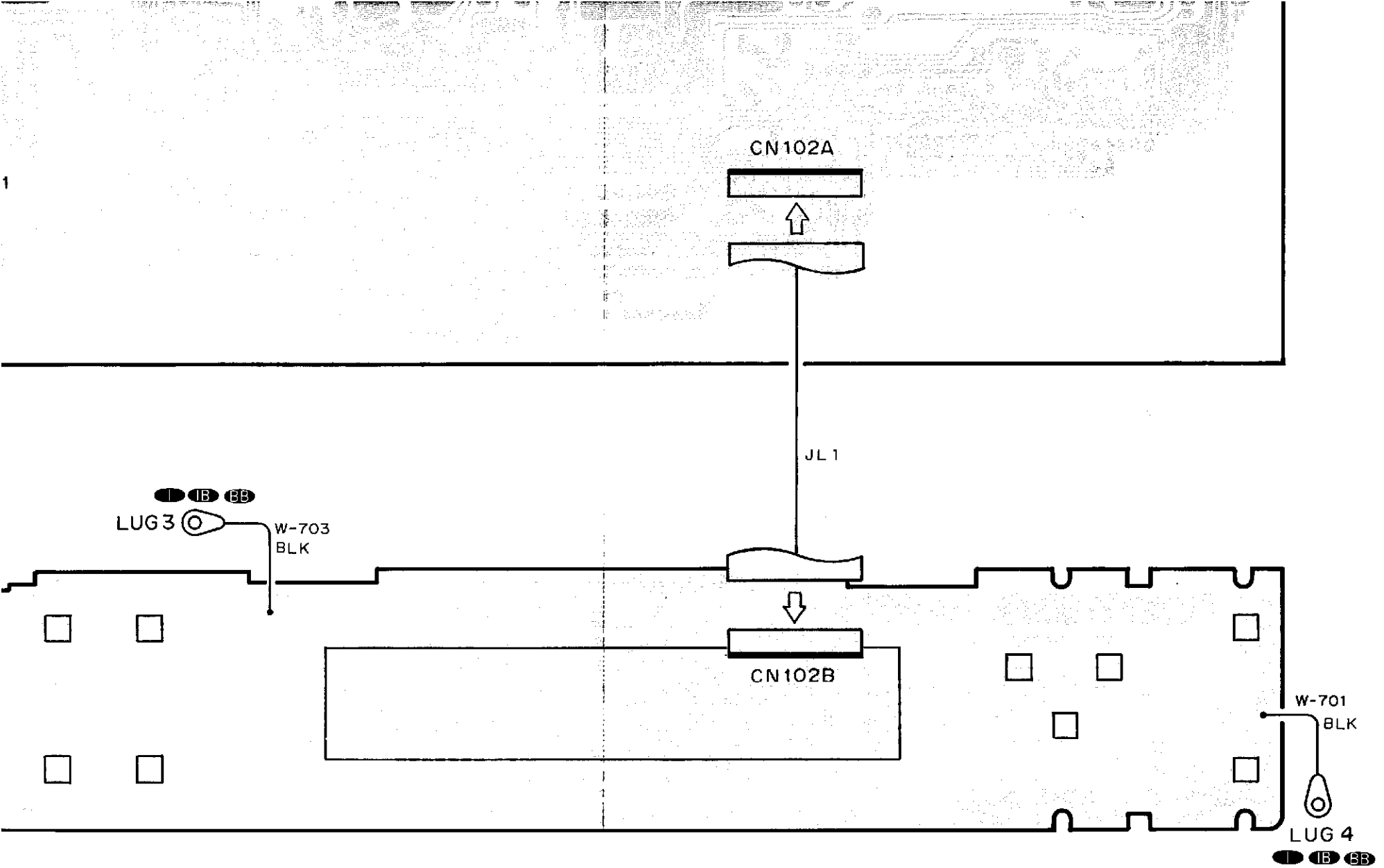
WIRE COLOR ABBREVIATIONS

Red	: RED	YEL	: Yellow
ORG	: Orange	PUP	: Purple
BLU	: Blue	PIK	: Pink
WHT	: White	GRY	: Gray
GRN	: Green	BRN	: Brown
BLK	: Black		








CN102A
JL1
LUG 3
W-703
BLK
CN102B
W-701
BLK
LUG 4