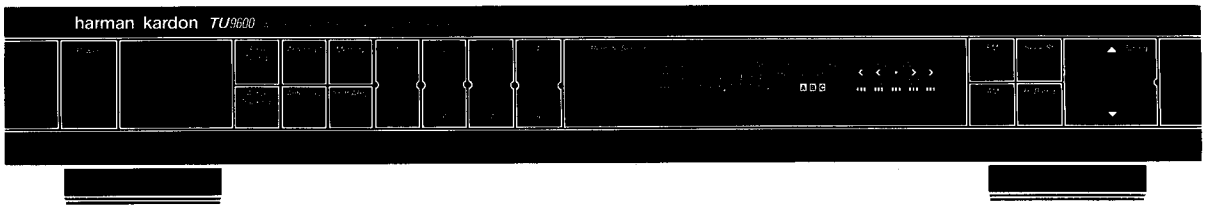
The Harman Kardon Model TU9600

Manual 155A

ACTIVE TRACKING TUNER

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**
- (IB) : **International model Black version**
- (BB) : **Australia model Black version**

harman/kardon

240 Crossways Park West, Woodbury, N.Y. 11797
1112-3152155A8 P-079007 2000 Printed in Japan

TU9600

CONTENTS

SPECIFICATIONS

●FM SECTION	Nominal	Limit
Tuning Range	87.5 ~ 108.0MHz	
	50dB Quieting Sensitivity	
Stereo	37.2dBf	≦ 41(48)dBf
Usable Sensitivity		
Mono	11.7dBf	≦ 15(17)dBf
Mono for active tracking	13.2dBf	
Image Ratio	47dB	≧ 40(90)dB
IF Rejection	85dB	≧ 75(100)dB
Spurious Response Rejection	96dB	
Capture Ratio at 65dBf	1.2dB	≦ 2dB
Alternate Channel Selectivity	45dB	≧ 40dB
for active tracking	78dB	≧ 70dB
AM Rejection	60dB	≧ 45dB
Signal to Noise Ratio		
Mono	83dB	≧ 77(71)dB
Stereo	75dB	≦ 69(63)dB
Total Harmonic Distortion (65dBf 1kHz Input)		
Mono	0.09%	≦ 0.3%
Mono for active tracking	0.2%	≦ 0.5%
Stereo	0.07%	≦ 0.5%
Stereo for active tracking	0.1%	≦ 0.6%
Stereo Separation at 1kHz	58dB	≧ 40(35)dB

This figures in parenthesis ( ) in the FM section are specifications for the International model.

●AM SECTION	Nominal	Limit
Tuning Range		
North America area model	520 ~ 1,620kHz	
International and Australia models	531 ~ 1,602kHz	
Usable Sensitivity	17 μVm	
Selectivity	55dB	
Signal to Noise Ratio	53dB	≧ 48dB
Image Rejection	40dB	≧ 30dB
IF Rejection	66dB	≧ 50dB
●DIMENSIONS (W x H x D)	17-3/8" x 2-7/8" x 13-1/2" (442 x 73 x 342 mm)	
●WEIGHT	7.5 lbs. (3.4 kg)	
●POWER SUPPLIES		
North America area model	AC120V, 60Hz	
International and Australia models	AC220/240V, 50/60Hz	
●POWER CONSUMPTION		
North America area model	12W	
International and Australia models	12W	

These specifications are Service target specs.

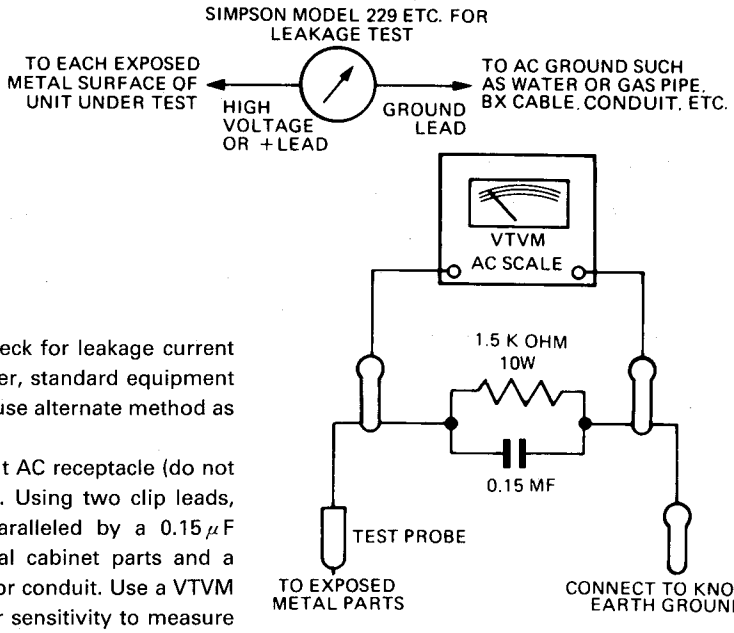
Specifications and components subject to change without notice. Overall performance will be maintained or improved.

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

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

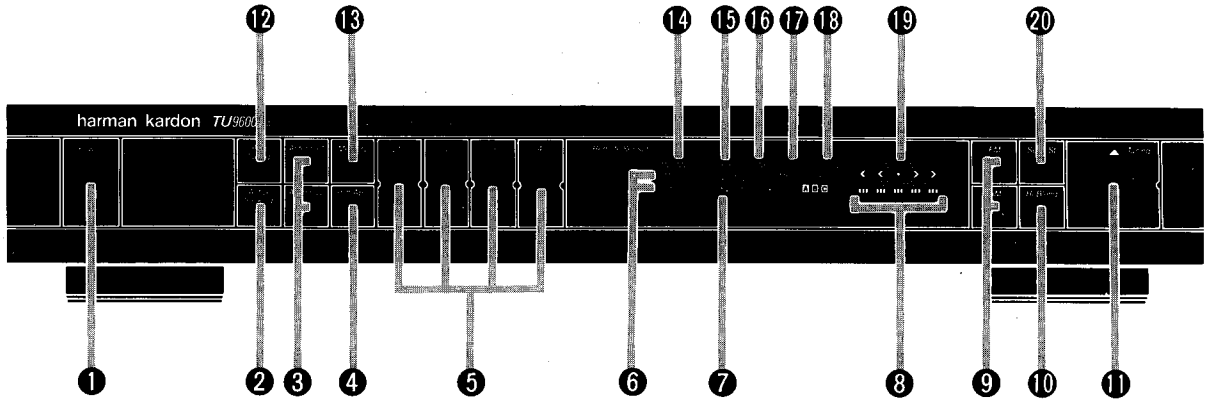
1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the unit.
2. Replace all protective devices such as nonmetallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, 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 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 DISPLAYS



❶ Power Switch
Press to turn the unit on and off.

❷ Active Tracking
Press to reduce interference from adjacent stations.

❸ Antenna 1, 2
When two FM antennas are connected to the unit, use these buttons to select desired antenna.

❹ Shift ABC
Allows you to access 24 pre-selected stations using the 8 preset buttons.

❺ Preset Buttons
Press to access pre-selected stations.

❻
Indicates AM or FM band and frequency of the tuned station.

❼
Flashes during period when a station can be entered into the memory.

❽
Number of segments illuminated shows signal strength. when tuning stations or positioning antennas, adjust so that maximum number of segments is illuminated.

❾ FM/AM
Press to select FM or AM reception.

❿ Hi-Blend
When tuned to a weak signal (in Seek-St mode), press on to improve sound quality.

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

⓬ Fine Tuning
Use with Active Tracking to reduce interference from adjacent stations.

⓭ Memory
Press to set in memory a new preset station.

⓮
Shows which antenna is in use.

⓯
Shows stereo broadcast is being received.

⓰
Indicates station is properly tuned.

⓱
Shows Seek function is on.

⓲
Shows Hi-Blend function is on.

⓳
Lights when Active Tracking is turned on. Arrows and center circle indicate Fine Tuning position.

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

DISASSEMBLY PROCEDURES (REFER TO PAGES 8 THROUGH 10)

[1] CABINET TOP REMOVAL

Remove 7 screws (A) and then remove the Cabinet Top (127).

[2] FRONT PANEL ASS'Y (AA) REMOVAL

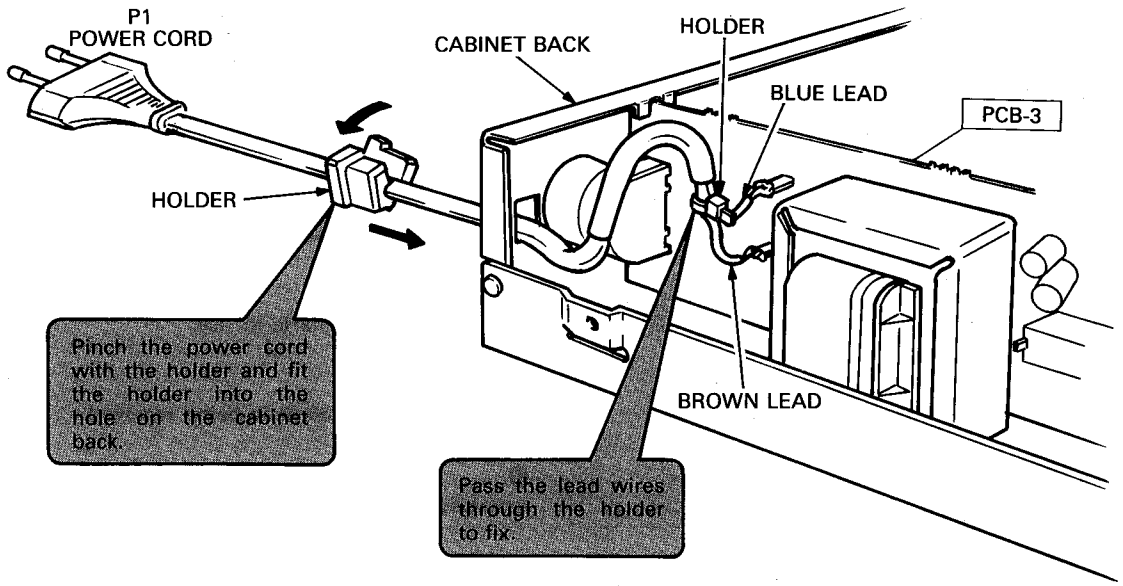
1. Remove the Cabinet Top (127), referring to the previous step [1].
2. Disconnect the jumper leads (JL701 and JL702) from connectors (CN701A and CN702A).
3. Remove 5 screws (B) and then remove the Front Panel Ass'y (AA).

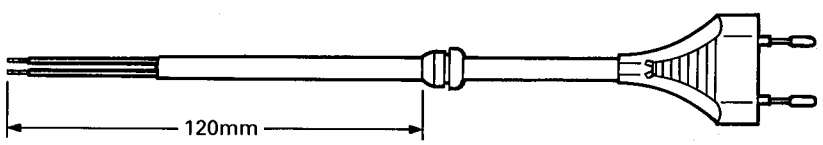
[3] MAIN P.C. BOARD (PCB-1) REMOVAL

1. Remove the Front Panel Ass'y (AA), referring to the previous step [2].
2. Open the lid of connector (CN101) on the Main P.C. Board (PCB-1) and then disconnect the jumper lead (JL101).
3. Remove 9 screws (C) and then remove the Main P.C. Board (PCB-1).
4. Remove 4 screws (D), 2 screws (E) (North America area model only) and shaft (154) and then remove the Power Supply P.C. Board (PCB-3).
   If necessary, unsolder the lead wires connected to the PCB-3.
5. Remove 8 screws (F) and then remove the Front P.C. Board (PCB-2).

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.





ALIGNMENT PROCEDURES (REFER TO PAGES 11, 12, 26 AND 27)

■ AM ADJUSTMENT

Conditions: ● Press the "AM" switch.
● Standard modulation of the AM signal Generator is 400Hz at 30%.

※International and Australia models

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. 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	L251 L252	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.			
5	Signal indicator		1000kHz ※999kHz	1000kHz ※999kHz	VR251	Adjust so that the 5 SIGNAL STRENGTH indicator lights at 1000 μV/m input.

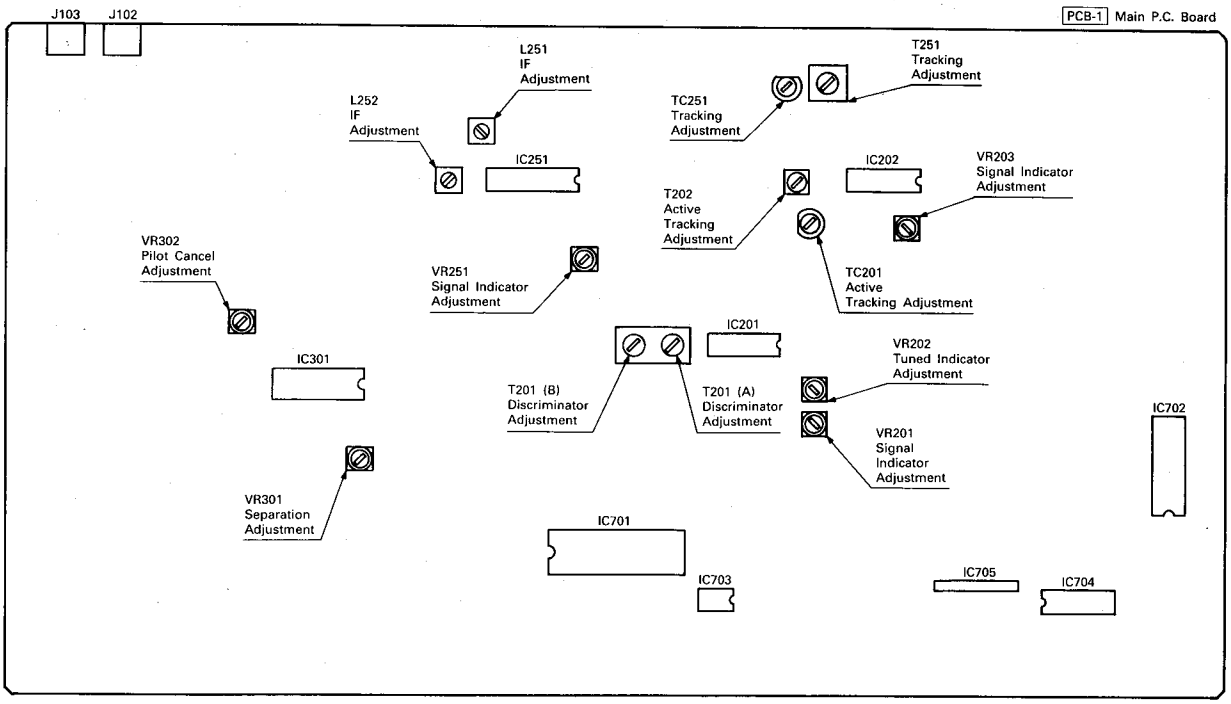
■ FM ADJUSTMENT

Conditions: ● Press the "FM" switch.
● Set the "Seek-ST" switch to off (put out seek indicator) position.

	North America area model	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 75Ω UNBAL Antenna terminal. [500 μV/75Ω (65dBf) input] { International and Australia models: 1kHz, 40kHz mod. } • Connect the Distortion meter and Oscilloscope to the OUTPUT jacks.	98.1MHz ±30~40kHz	98.1MHz	T201(A)	Adjust so that the TUNED indicator lights in the same range on both plus (+) and minus (−) sides of 98.1 MHz.
2			98.1MHz	98.1MHz	T201(B)	Minimum distortion.
3			Repeat steps 1 and 2 for optimum sensitivity.			
4	Tuned indicator		98.1MHz	98.1MHz	VR202	Adjust so that the TUNED indicator lights at 9 μV/75 Ω (30dBf) input.(32 μV/75 Ω input for International and Australia models.)
5	Signal indicator		98.1MHz	98.1MHz	VR201	Adjust so that the 5 SIGNAL STRENGTH indicator lights at 280 μV/75Ω (60dBf) input.

Step	Alignment	Terminals to be Connected	Measurement Frequency	Station Display	Adjustment	For
6	Active tracking	• Connect the FM Signal Generator to FM 75Ω UNBAL Antenna terminal. [500 μV/75Ω (65dBf) input] [1kHz, 100kHz mod.] • Connect the Distortion meter and Oscilloscope to the OUTPUT jacks.	98.1MHz	98.1MHz	T202 TC201	Adjust T202 so that the upper and lower parts of waveform are symmetrical and TC201 so as to obtain the waveform immediately before clipping.
7	Signal indicator	[International and Australia models: 1kHz, 75kHz mod.]	98.1MHz	98.1MHz	VR203	Adjust so that 5 SIGNAL STRENGTH light at 220 μV/75Ω (55dBf) input.
8	Pilot cancel	• Connect the Stereo Modulator to FM signal Generator. Connect FM signal Generator to FM signal Generator to FM 75Ω UNBAL Antenna terminal. • Connect the VTVM and Oscilloscope to the OUTPUT jacks.	98.1MHz	98.1MHz	VR302	Minimum output level and symmetrical curve on scope.
9	Separation		98.1MHz	98.1MHz	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.



Alignment Point Location

CIRCUIT DESCRIPTION

●FM TUNER SECTION

The signal which has entered through the antenna is high-frequency amplified in front end 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 and Q202 and fed to pin 1 of IC201. In IC201, the signal is transmitted through the IF amplifier in six steps, detected in the quadrature detector and after going through the AF amplifier it is sent to pin 6.

Then it is fed to pin 24 of IC301. In IC301, the pilot signal is detected and a 38kHz signal is produced. The stereo signal is demodulated by the 38kHz signal and sent to pin 8 (left channel) and pin 20 (right channel).

●ACTIVE TRACKING CIRCUIT

To reduce interference from strong FM adjacent stations, the Hi Q mode can be selected. In the Hi Q mode, the 10.7MHz IF signal then panes through CF203, Q203 and CF204 into pin 1 of IC202. In IC202, the phase of this signal is compaired with the phase of the VCO signal generated by Q207 and Q208, varicap diode D209 and T202.

The phase comparison is made between pin 1 and pin 9 of IC202. The output of the phase comparitor (pin 6 of IC202) is again fed to the external LPF transistor Q205 and Q206. The phase compaired 10.7MHz signal at T202 is fed into pin 1 of IC201 through C229, D204 and C210.

When the FINE TUNE 'front panel control setting is changed, the DC bias voltage of varicap diode D209 changes and the center frequency of the Q207 and Q208 VCO is varied. By means of this system, interference from other FM stations can be reduced or eliminated.

●AM TUNER SECTION

The signal which has entered through the antenna is transmitted through the tuning circuit consisting of T251 and TC251, also fed to pin 3 of IC251. In IC251, it undergoes high-frequency amplification, local oscillation, mixing, intermediate frequency amplification and detection, and then output from pin 13. This signal is fed to pin 23 of IC301.

●MUTING CIRCUIT

If FM is received out of tuning or in a very weak field intensity, pin 12 of IC201 becomes high level. Then this is supplied to the base of Q707, whereby Q745 turn ON. As a result, Q311 (L ch) and Q312 (R ch) also turn ON to mute the output.

●SYNTHESIZER SECTION

• FM

The local oscillation output signal is fed from the front end unit FE101 to pin 21 of the prescaler IC702 and after being frequency divided into 15 or 16, it is fed to IC701. In IC701, the standard frequency is oscillated by the crystal oscillator, compared with the divided local oscillation output signal, it is fed to IC702 and output to pin 16. This voltage is level converted at Q701 and Q702, and fed to the varicap diode in the front end unit.

• AM

The local oscillation output signal is fed from pin 20 of IC251 to pin 19 of the prescaler IC702. In IC702, the standard frequency is oscillated by the crystal oscillator, compared with the local oscillation output signal, it is fed to IC702 and output to pin 16.

●INDICATOR SECTION

• Frequency display

The serial data sent out of pin 35 of the digital synthesizer tuning system micro controller IC701 is fed to pin 29 of IC706, where the data is decoded to provide a signal which turns ON the indicator.

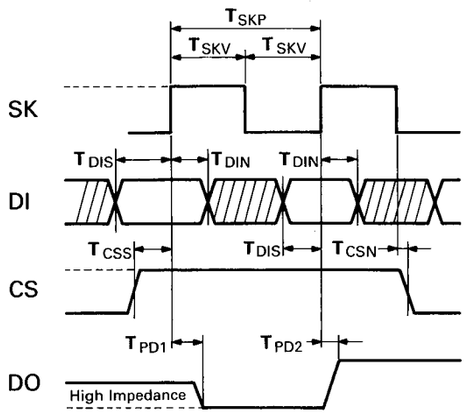
• Signal strength

The voltage corresponding to the signal level is output from pin 13 of IC201 (for FM) and pin 16 of IC251 (for AM), fed to pin 8 of the level comparator IC705. Then it is further sent through Exclusive OR Q731, Q732, Q733, Q734 and Q735 to the indicator, whereby the signal strength segments 1 to 5 light according to the signal level.

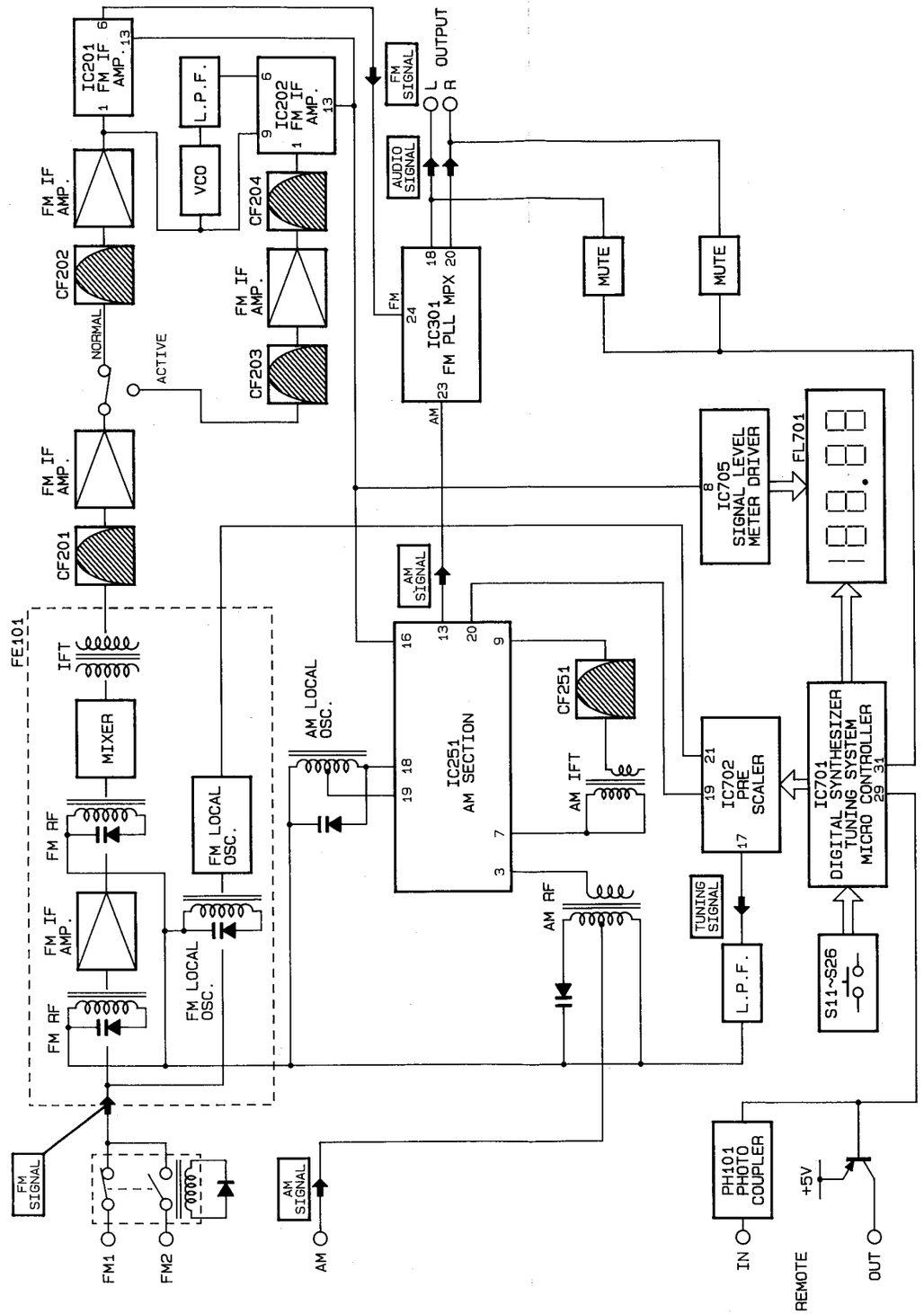
• Tuning

When tuning, the control signal is fed to IC704 from IC701. The output is sent to Q726, Q727, Q728, Q729 and Q730 to the indicator, whereby the fine tuning segment of the indicator lights according to the tuning direction.

TIMING CHART IC703 (AK93C46)



BLOCK DIAGRAM



CIRCUIT DESCRIPTION

●FM TUNER SECTION

The signal which has entered through the antenna is high-frequency amplified in front end 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 and Q202 and fed to pin 1 of IC201. In IC201, the signal is transmitted through the IF amplifier in six steps, detected in the quadrature detector and after going through the AF amplifier it is sent to pin 6.

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To reduce interference from strong FM adjacent stations, the Hi Q mode can be selected. In the Hi Q mode, the 10.7MHz IF signal then panes through CF203, Q203 and CF204 into pin 1 of IC202. In IC202, the phase of this signal is compaired with the phase of the VCO signal generated by Q207 and Q208, varicap diode D209 and T202.

The phase comparison is made between pin 1 and pin 9 of IC202. The output of the phase comparitor (pin 6 of IC202) is again fed to the external LPF transistor Q205 and Q206. The phase compaired 10.7MHz signal at T202 is fed into pin 1 of IC201 through C229, D204 and C210.

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●MUTING CIRCUIT

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●SYNTHESIZER SECTION

• FM

The local oscillation output signal is fed from the front end unit FE101 to pin 21 of the prescaler IC702 and after being frequency divided into 15 or 16, it is fed to IC701. In IC701, the standard frequency is oscillated by the crystal oscillator, compared with the divided local oscillation output signal, it is fed to IC702 and output to pin 16. This voltage is level converted at Q701 and Q702, and fed to the varicap diode in the front end unit.

• AM

The local oscillation output signal is fed from pin 20 of IC251 to pin 19 of the prescaler IC702. In IC702, the standard frequency is oscillated by the crystal oscillator, compared with the local oscillation output signal, it is fed to IC702 and output to pin 16.

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The voltage corresponding to the signal level is output from pin 13 of IC201 (for FM) and pin 16 of IC251 (for AM), fed to pin 8 of the level comparator IC705. Then it is further sent through Exclusive OR Q731, Q732, Q733, Q734 and Q735 to the indicator, whereby the signal strength segments 1 to 5 light according to the signal level.

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When tuning, the control signal is fed to IC704 from IC701. The output is sent to Q726, Q727, Q728, Q729 and Q730 to the indicator, whereby the fine tuning segment of the indicator lights according to the tuning direction.

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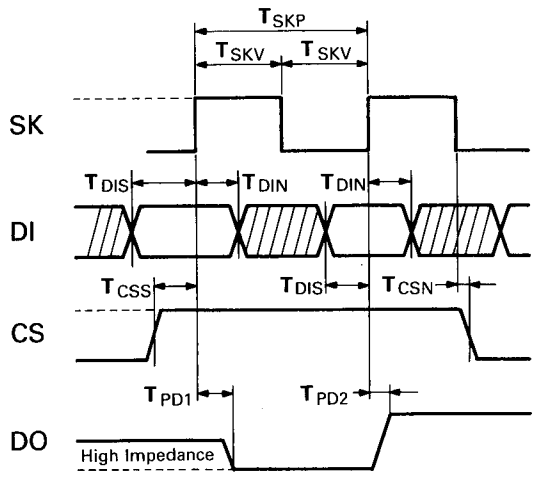

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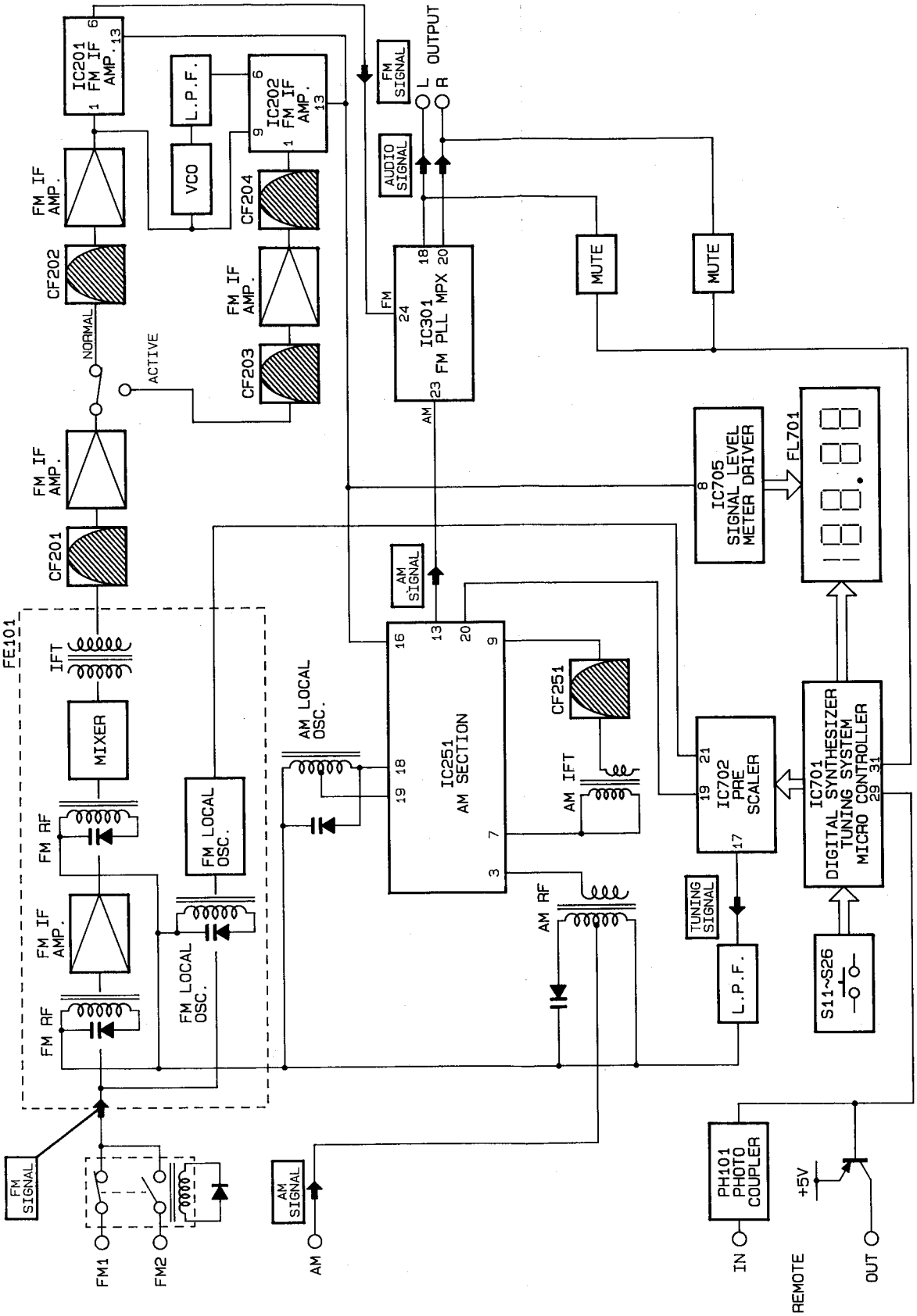
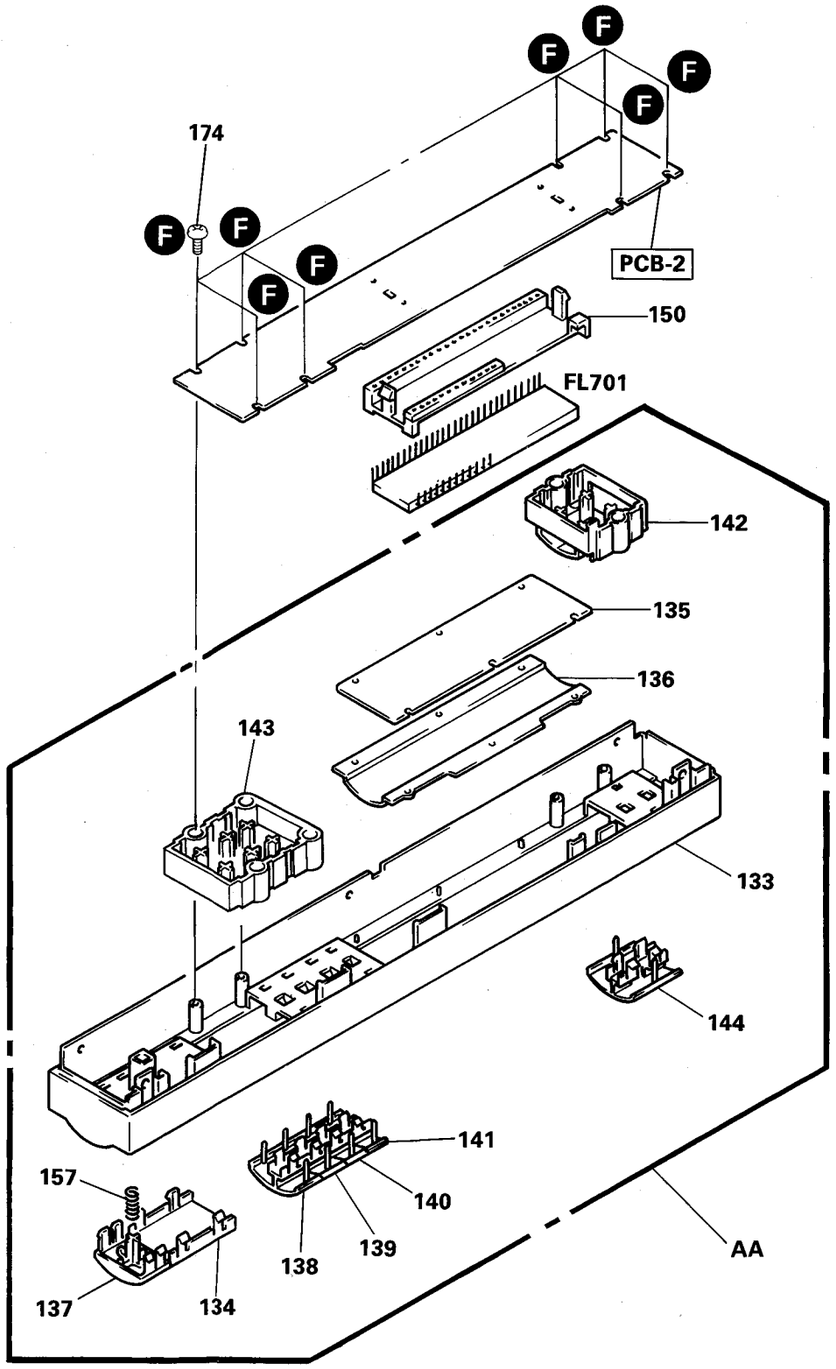


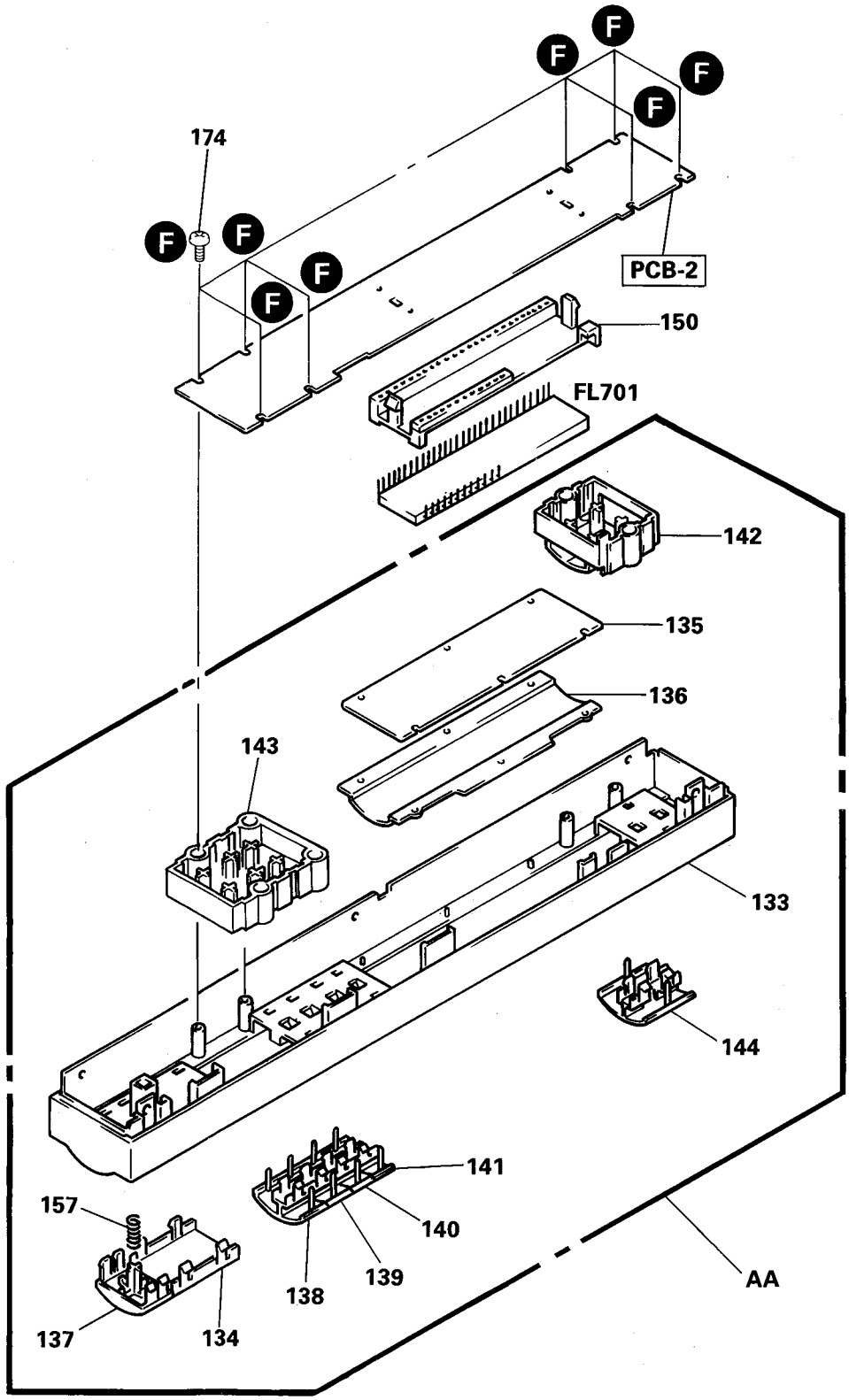
GENERAL UNIT
EXPLODED VIEW (FRONT PANEL)



PARTS LIST

Ref. No.	Part No.	Description
AA	A442-TU9600B	FRONT PANEL ASS'Y (BK) (IB) (BB)
133	1442-24504	PANEL
134	1442-24602	PANEL
135	1511-19805	PLATE
136	1532-17505	WINDOW
137	1662-52001	PUSH BUTTON, POWER
138	1662-58605	PUSH BUTTON, PRESET 1/5
139	1662-58606	PUSH BUTTON, PRESET 2/6
140	1662-58607	PUSH BUTTON, PRESET 3/7
141	1662-58608	PUSH BUTTON, PRESET 4/8
142	1662-58702	PUSH BUTTON, FM, AM, SEEK-ST, HI-BLEND
143	1662-58802	PUSH BUTTON, FINE TUNING, ACTIVE TRACKING, ANTENNA 1, 2, MEMORY, SHIFT ABC
144	1662-58902	PUSH BUTTON, TUNING
150	2240-7372	HOLDER
157	2651-2101734	SPRING
174	2347-R0126082	SCREW (2.6 x 8mm)

GENERAL UNIT
EXPLODED VIEW (FRONT PANEL)



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135	1511-19805	PLATE
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137	1662-52001	PUSH BUTTON, POWER
138	1662-58605	PUSH BUTTON, PRESET 1/5
139	1662-58606	PUSH BUTTON, PRESET 2/6
140	1662-58607	PUSH BUTTON, PRESET 3/7
141	1662-58608	PUSH BUTTON, PRESET 4/8
142	1662-58702	PUSH BUTTON, FM, AM, SEEK-ST, HI-BLEND
143	1662-58802	PUSH BUTTON, FINE TUNING, ACTIVE TRACKING, ANTENNA 1, 2, MEMORY, SHIFT ABC
144	1662-58902	PUSH BUTTON, TUNING
150	2240-7372	HOLDER
157	2651-2101734	SPRING
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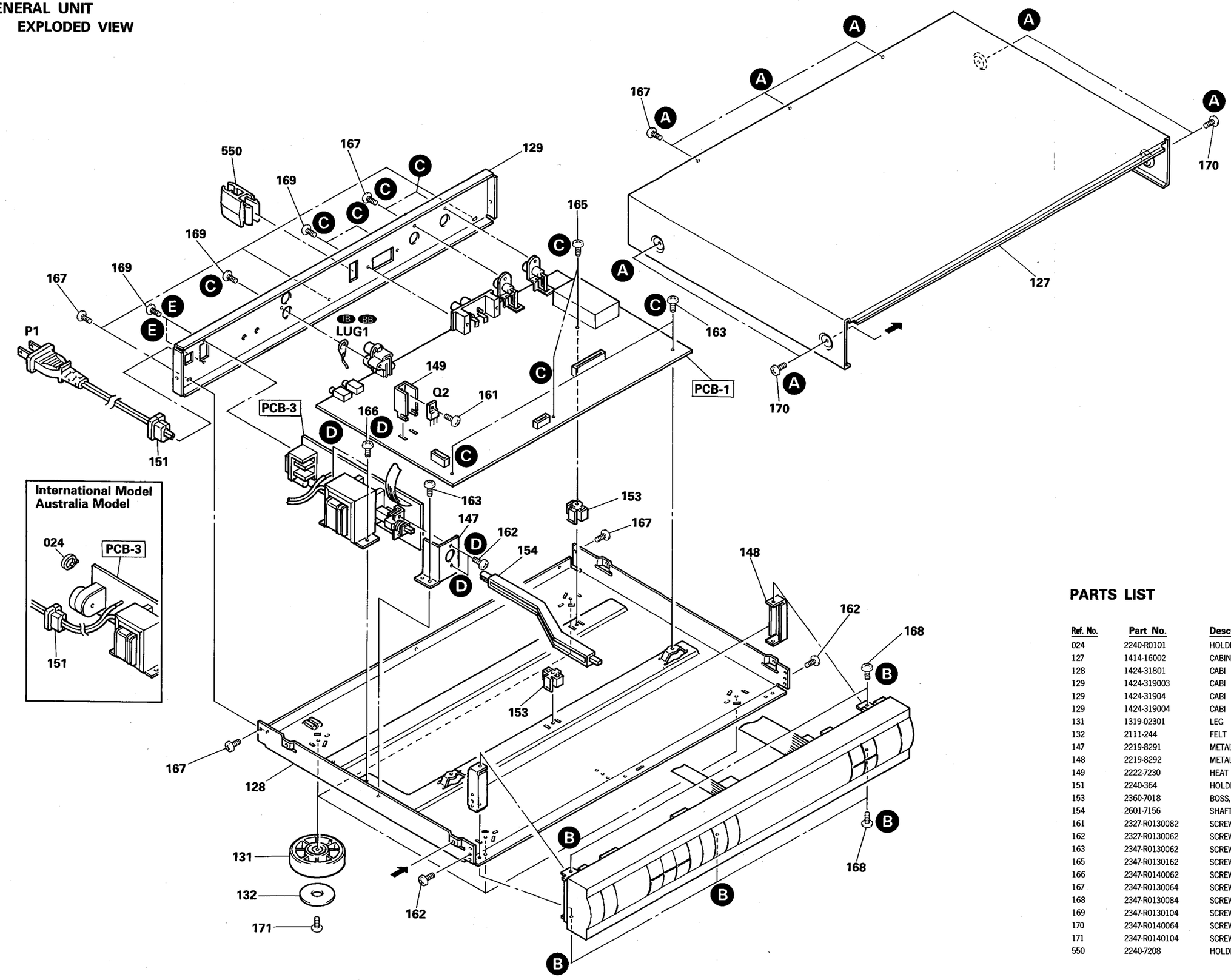
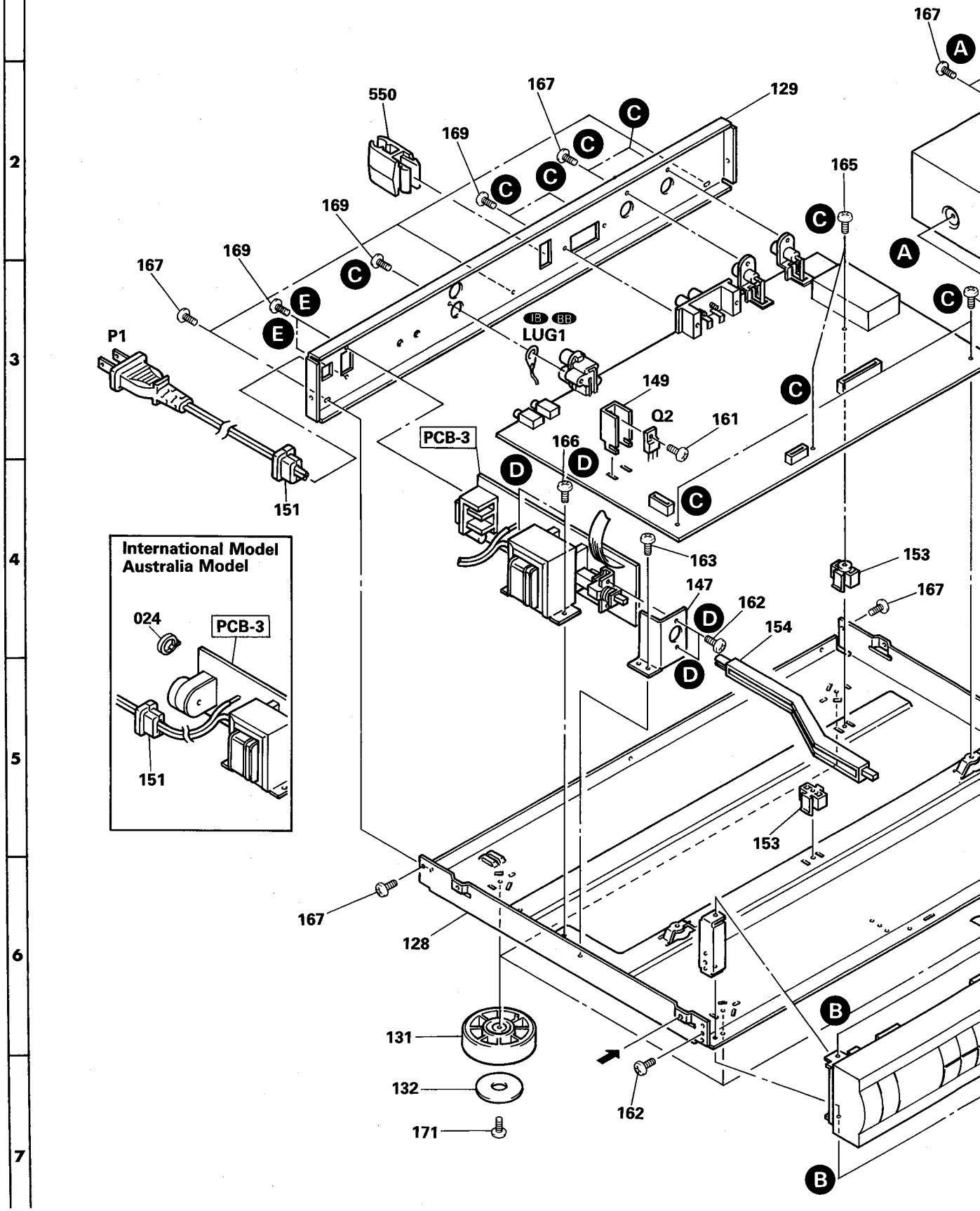
GENERAL UNIT
EXPLODED VIEW

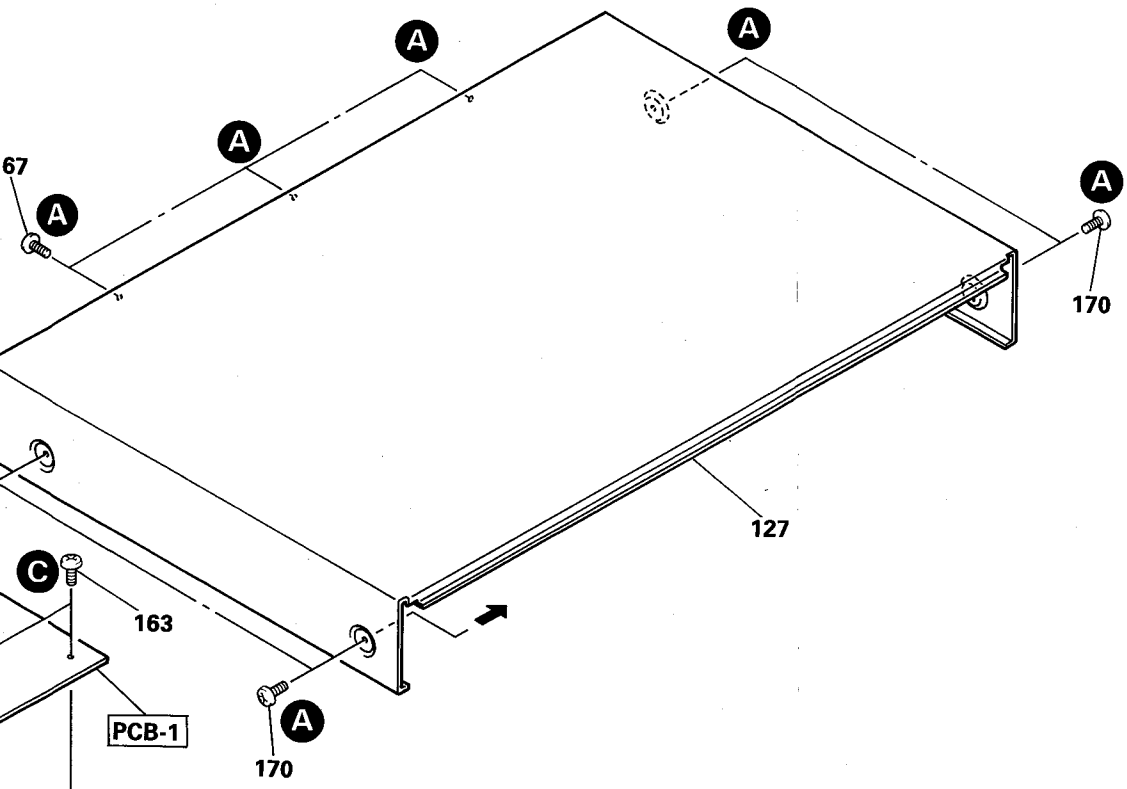


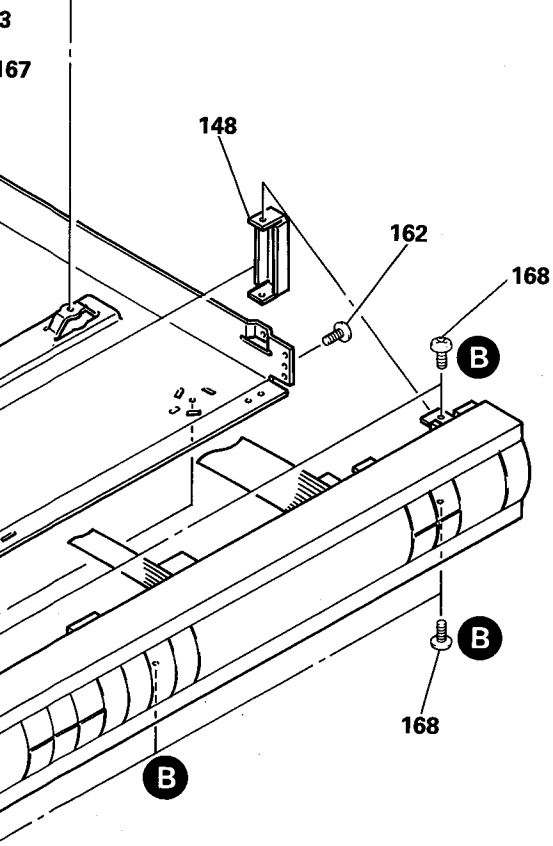
PARTS LIST

Ref. No.	Part No.	Description
024	2240-R0101	HOLDER IB BB
127	1414-16002	CABINET
128	1424-31801	CABI BACK
129	1424-319003	CABI BACK BK
129	1424-31904	CABI BACK IB
129	1424-319004	CABI BACK BB
131	1319-02301	LEG
132	2111-244	FELT
147	2219-8291	METAL FITTING
148	2219-8292	METAL FITTING
149	2222-7230	HEAT SINK
151	2240-364	HOLDER
153	2360-7018	BOSS, SPE
154	2601-7156	SHAFT
161	2327-R0130082	SCREW (3 x 8mm)
162	2327-R0130062	SCREW (3 x 6mm)
163	2347-R0130062	SCREW (3 x 6mm)
165	2347-R0130162	SCREW (3 x 16mm)
166	2347-R0140062	SCREW (4 x 6mm)
167	2347-R0130064	SCREW (3 x 6mm)
168	2347-R0130084	SCREW (3 x 8mm)
169	2347-R0130104	SCREW (3 x 10mm)
170	2347-R0140064	SCREW (4 x 6mm)
171	2347-R0140104	SCREW (4 x 10mm)
550	2240-7208	HOLDER

GENERAL UNIT
EXPLODED VIEW



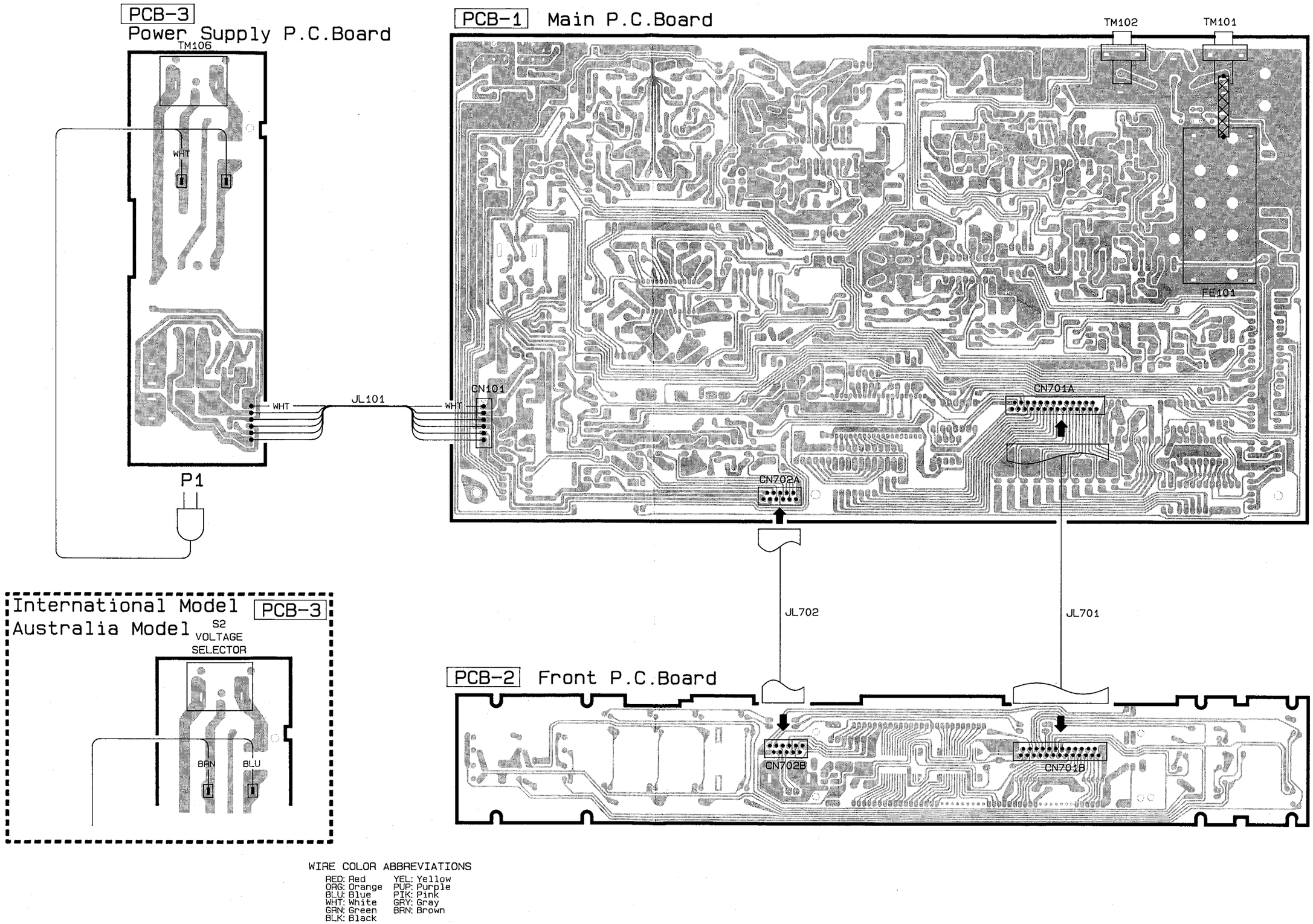




PARTS LIST

Ref. No.	Part No.	Description
024	2240-R0101	HOLDER (IB) (BB)
127	1414-16002	CABINET
128	1424-31801	CABI BACK
129	1424-319003	CABI BACK (BK)
129	1424-31904	CABI BACK (IB)
129	1424-319004	CABI BACK (BB)
131	1319-02301	LEG
132	2111-244	FELT
147	2219-8291	METAL FITTING
148	2219-8292	METAL FITTING
149	2222-7230	HEAT SINK
151	2240-364	HOLDER
153	2360-7018	BOSS, SPE
154	2601-7156	SHAFT
161	2327-R0130082	SCREW (3 x 8mm)
162	2327-R0130062	SCREW (3 x 6mm)
163	2347-R0130062	SCREW (3 x 6mm)
165	2347-R0130162	SCREW (3 x 16mm)
166	2347-R0140062	SCREW (4 x 6mm)
167	2347-R0130064	SCREW (3 x 6mm)
168	2347-R0130084	SCREW (3 x 8mm)
169	2347-R0130104	SCREW (3 x 10mm)
170	2347-R0140064	SCREW (4 x 6mm)
171	2347-R0140104	SCREW (4 x 10mm)
550	2240-7208	HOLDER

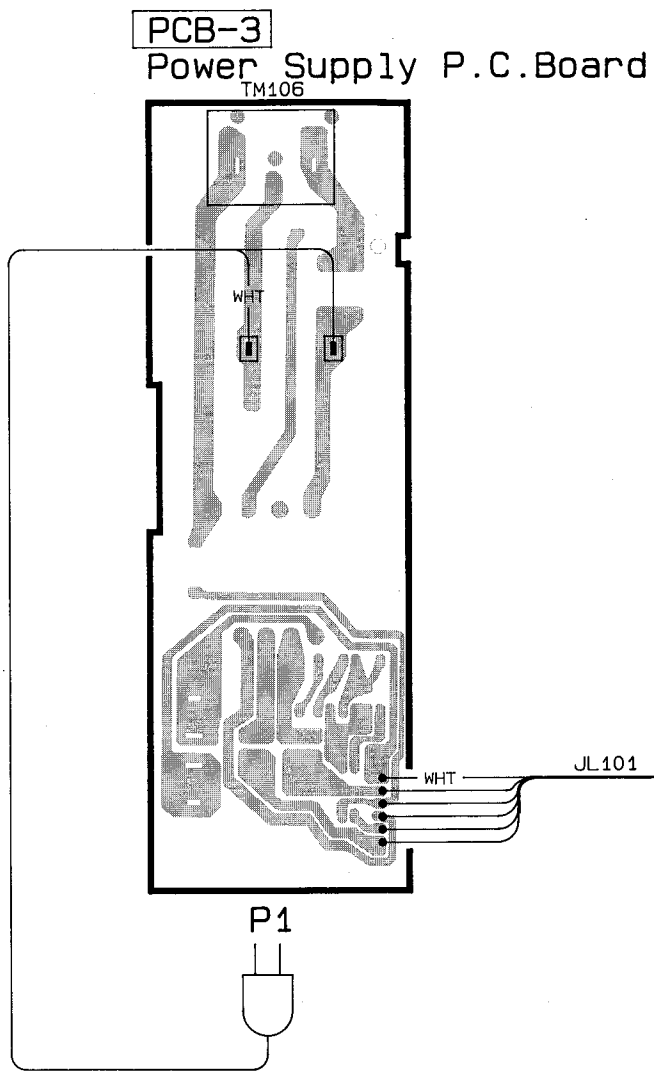
WIRING DIAGRAM

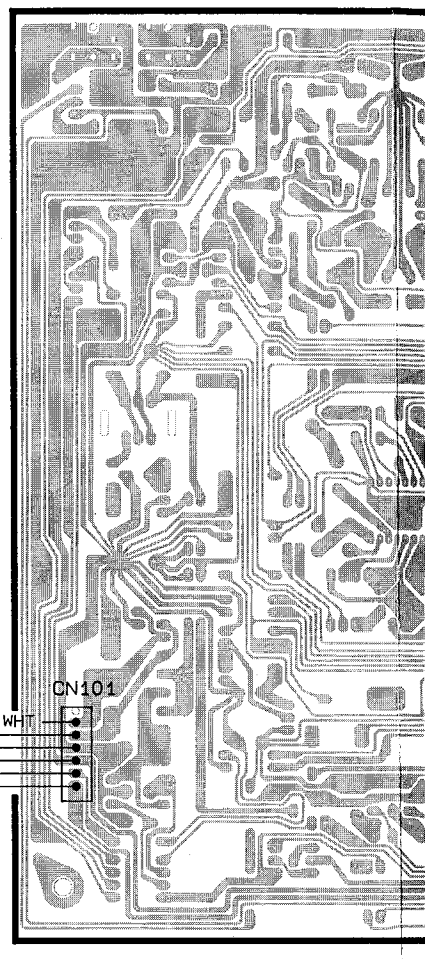


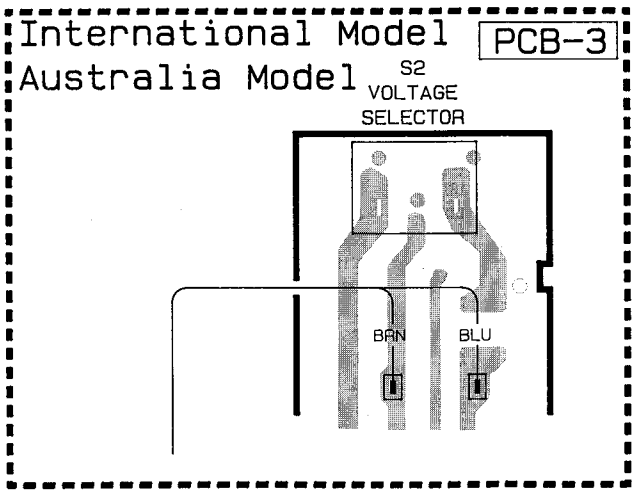
WIRE COLOR ABBREVIATIONS

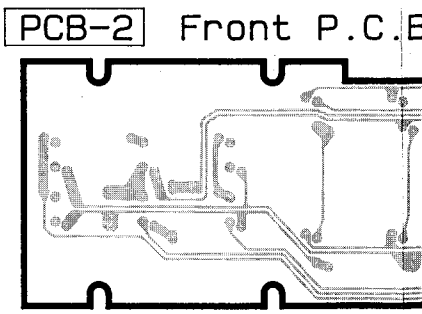
RED: Red	YEL: Yellow
ORG: Orange	PUP: Purple
BLU: Blue	PIK: Pink
WHT: White	GRY: Gray
GRN: Green	BRN: Brown
BLK: Black	

WIRING DIAGRAM









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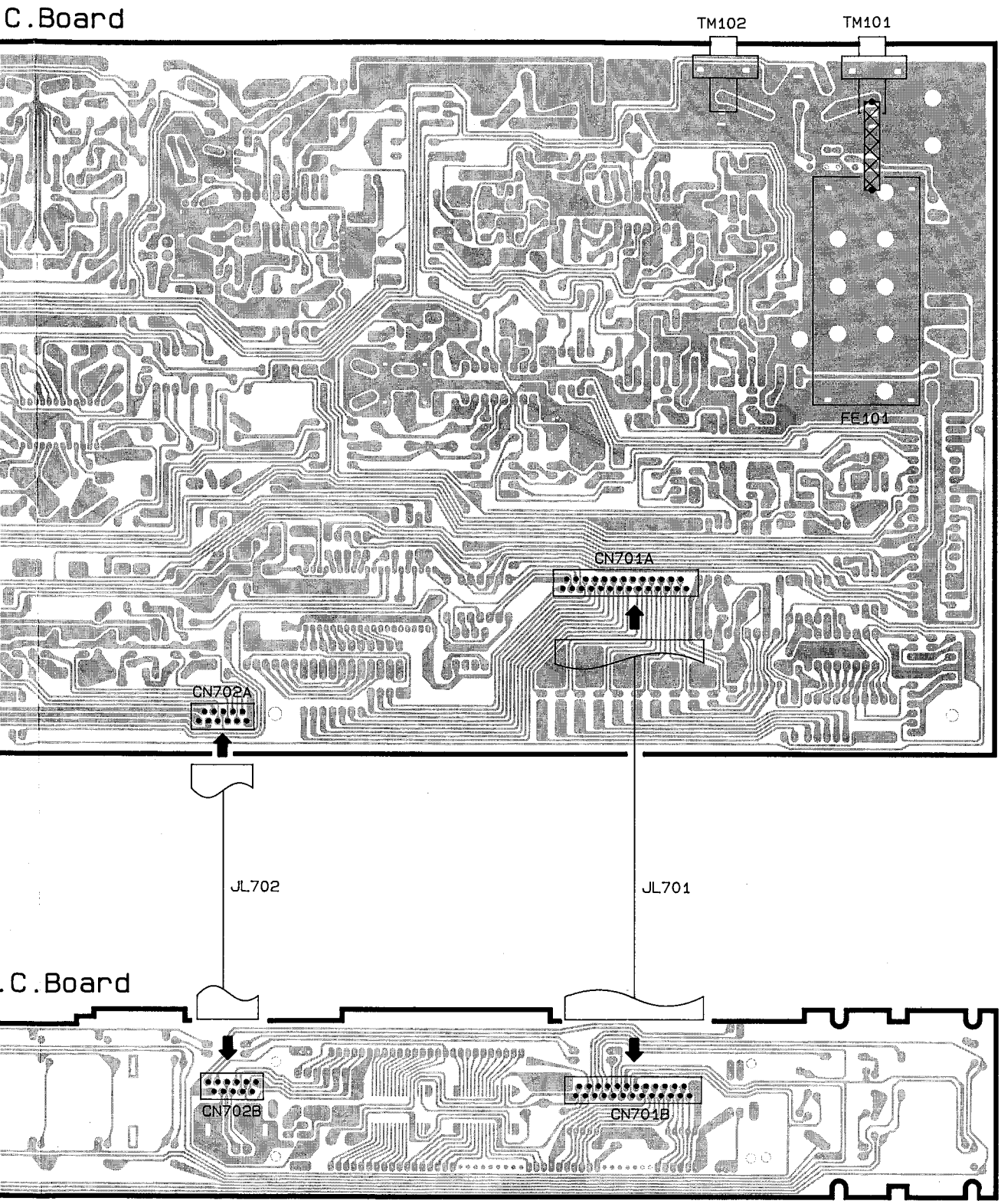
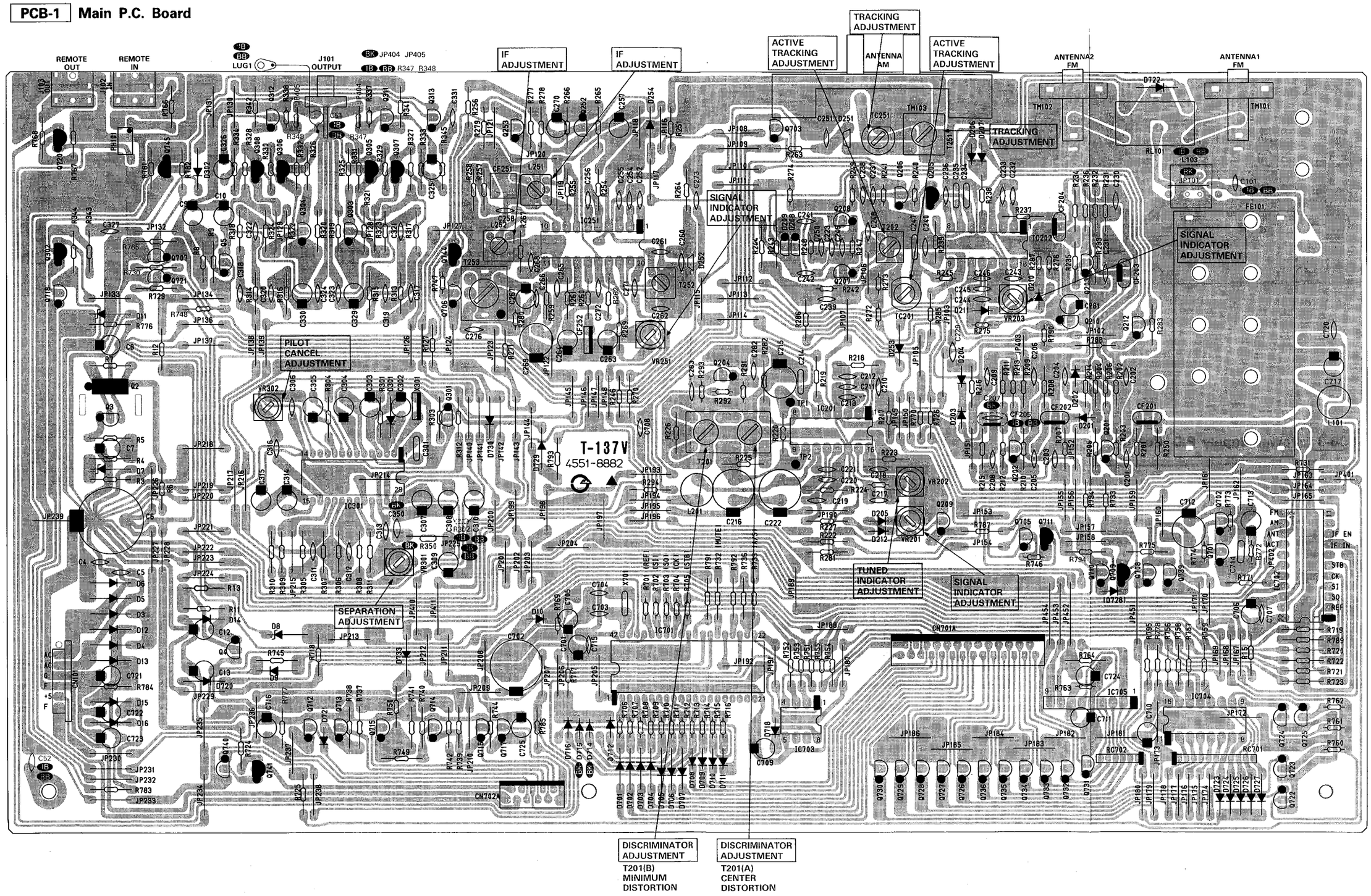

C.Board
TM102
TM101
FE101
CN701A
CN702A
JL702
JL701
.C.Board
CN702B
CN701B

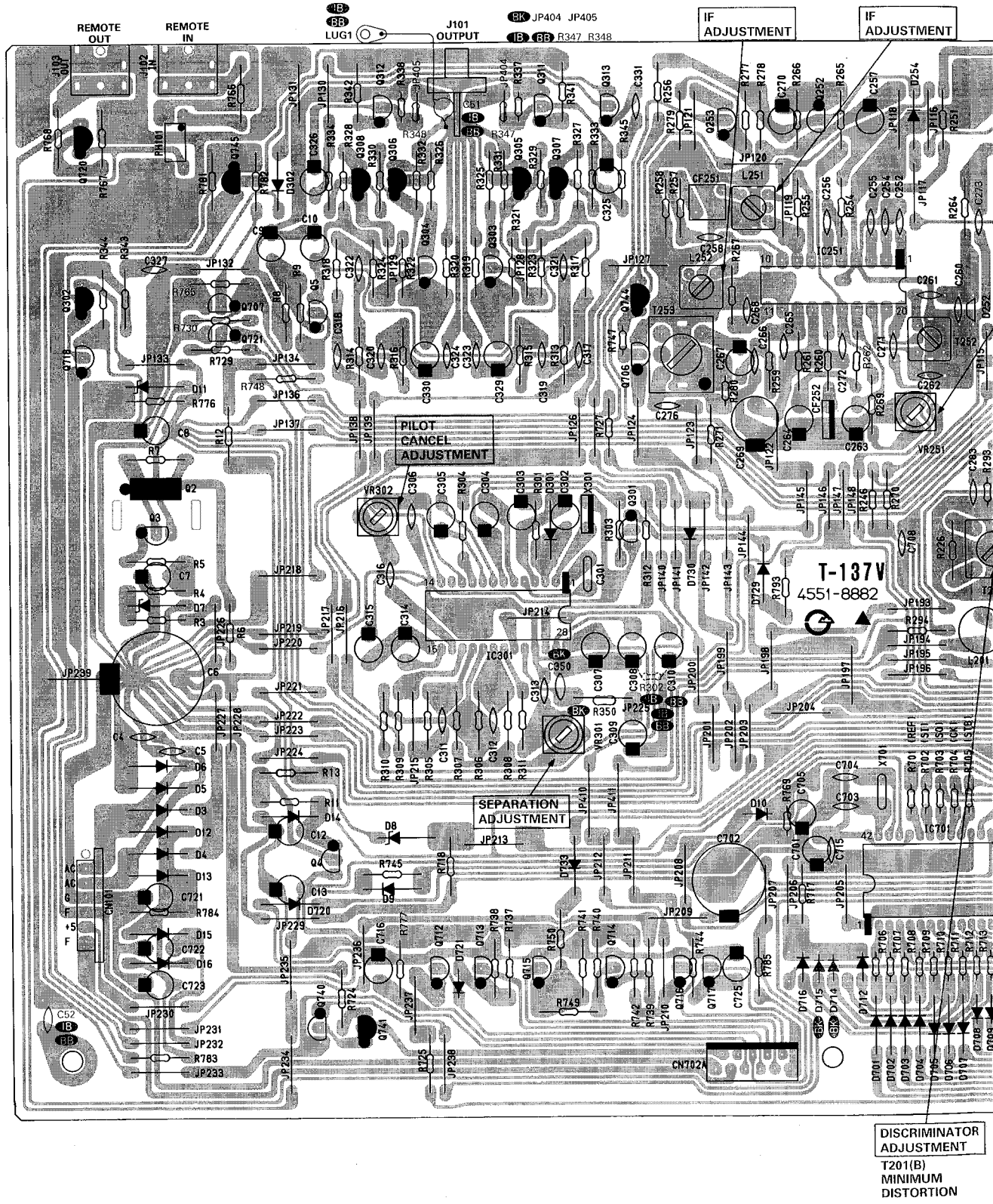
P.C. BOARDS

PCB-1 **Main P.C. Board**

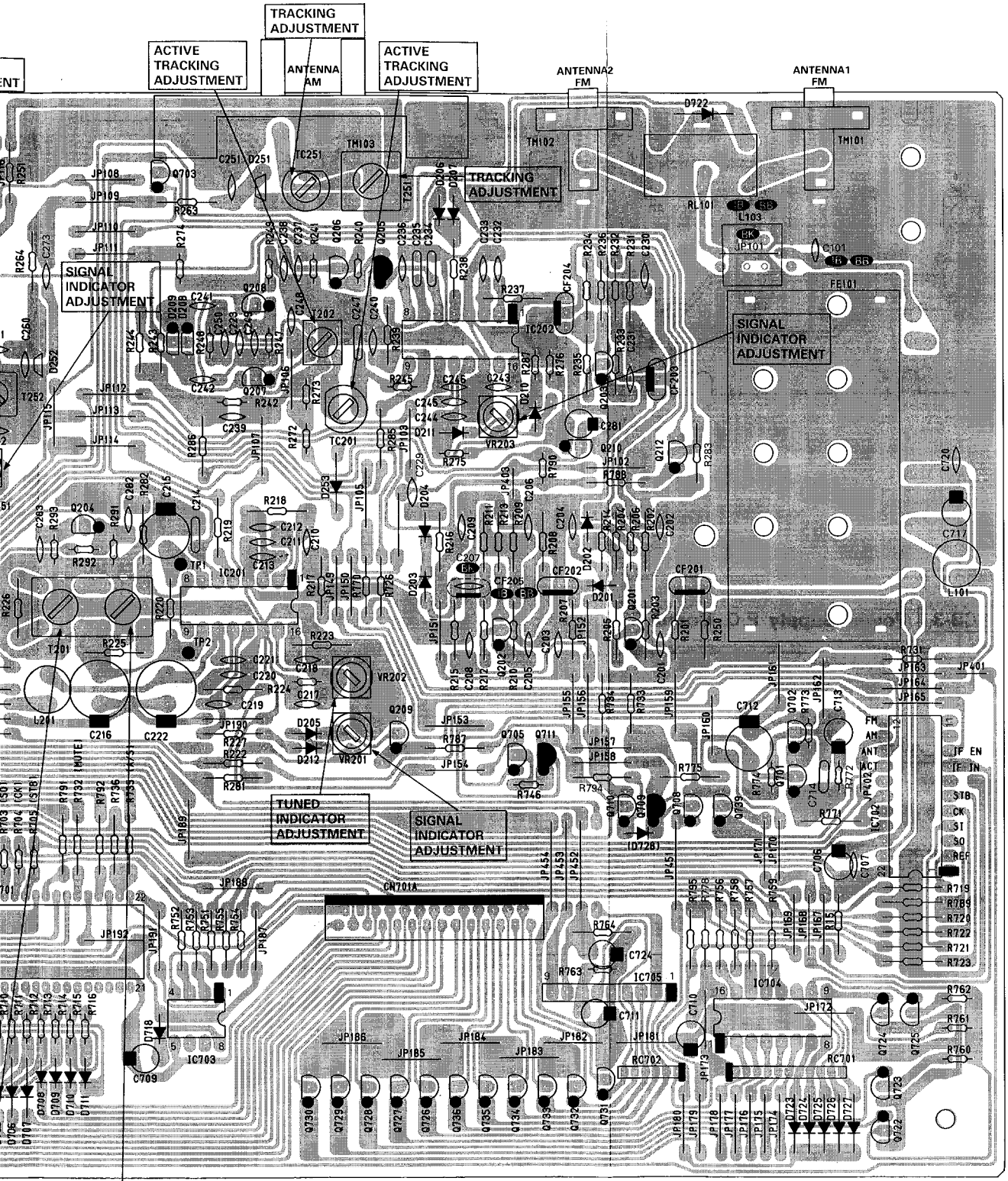


P.C. BOARDS

PCB-1 Main P.C. Board

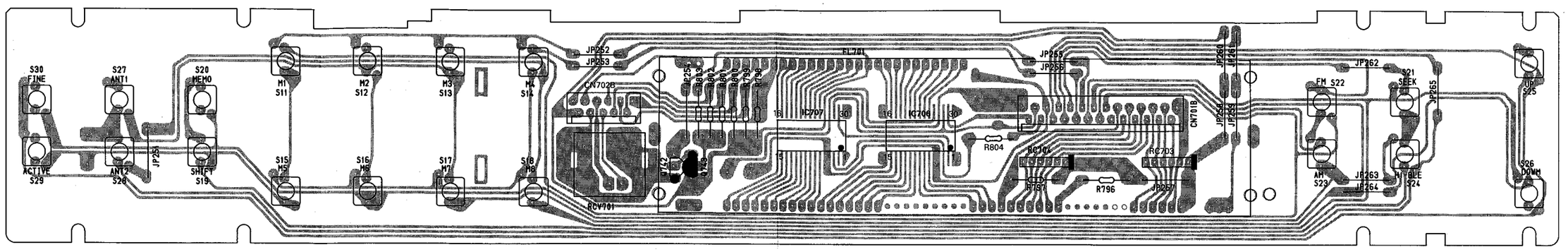


F G H I J

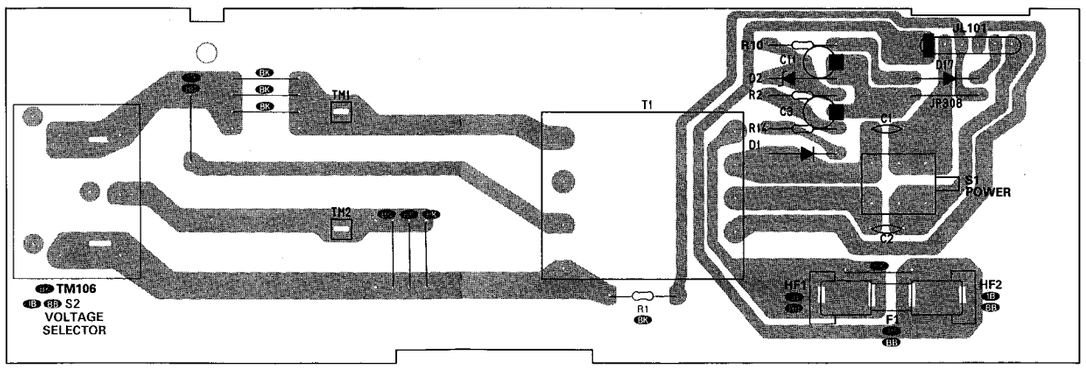

TRACKING ADJUSTMENT
ACTIVE TRACKING ADJUSTMENT
ANTENNA AM
ACTIVE TRACKING ADJUSTMENT
ANTENNA2 FM
ANTENNA1 FM
TRACKING ADJUSTMENT
SIGNAL INDICATOR ADJUSTMENT
SIGNAL INDICATOR ADJUSTMENT
TUNED INDICATOR ADJUSTMENT
SIGNAL INDICATOR ADJUSTMENT
DISCRIMINATOR ADJUSTMENT
T201(A)
CENTER
DISTORTION

P.C. BOARDS

PCB-2 Front P.C. Board

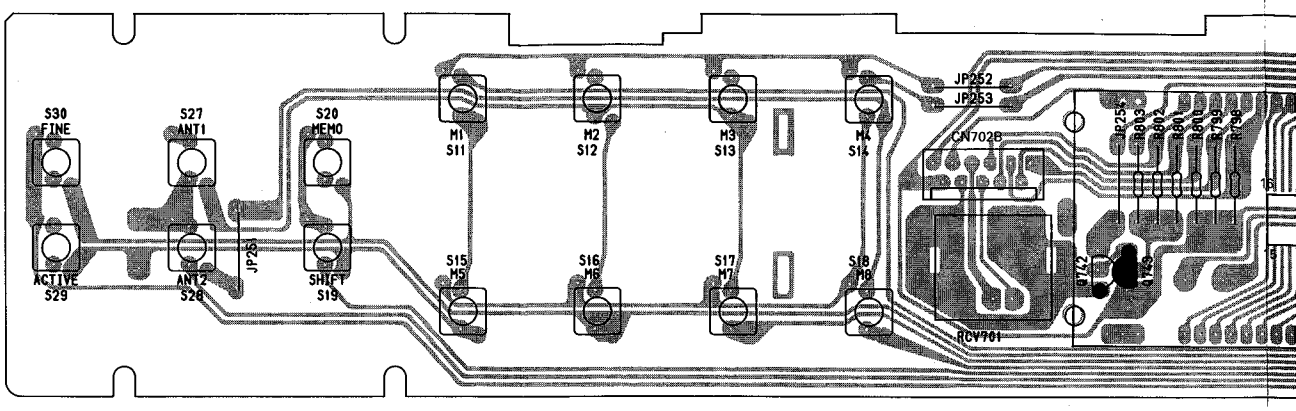


PCB-3 Power Supply P.C. Board

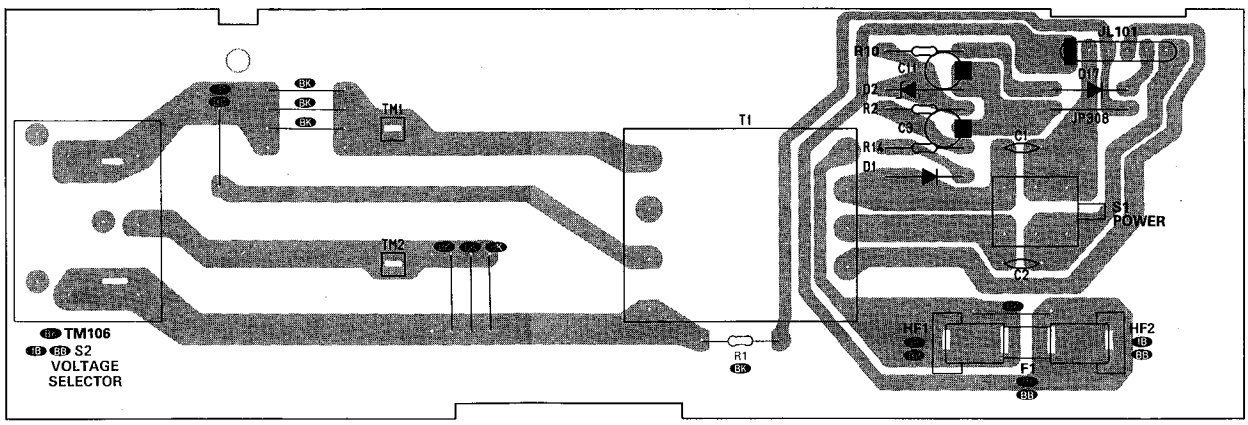


P.C. BOARDS

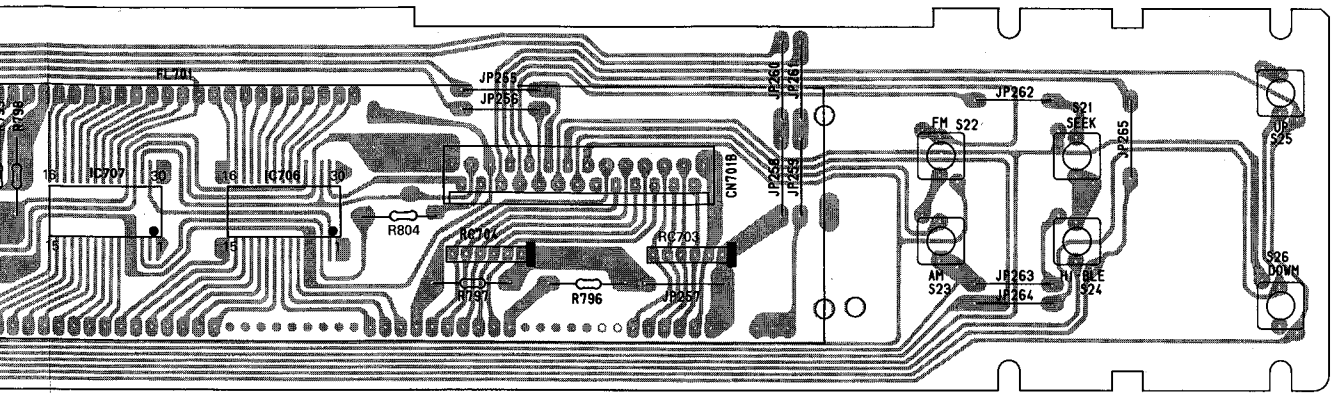
PCB-2 Front P.C. Board



PCB-3 Power Supply P.C. Board



F	G	H	I	J


FL701
JP265
JP266
JP261
JP260
JP262
FM S22
S21
SEEK
JP265
UP
S25
IC707
IC706
CN701B
JP258
JP259
R804
RC704
RC703
R797
R796
JP257
AM
S23
JP263
JP264
S24
S26
DOWN

ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description
PCB-1 MAIN P.C. BOARD			
		CAPACITORS	
722	C4	5361-473ZF	CAP, CER .047 μ
722	C5	5361-473ZF	CAP, CER .047 μ
717	C6	5345-228D045	CAP, MINI ELE 2200 μ /25V
715	C7	5345-107D041	CAP, MINI ELE 100 μ /25V
718	C8	5345-476D041	CAP, MINI ELE 47 μ /25V
718	C9	5345-476D041	CAP, MINI ELE 47 μ /25V
718	C10	5345-476D041	CAP, MINI ELE 47 μ /25V
718	C12	5345-476D041	CAP, MINI ELE 47 μ /25V
718	C13	5345-476D041	CAP, MINI ELE 47 μ /25V
048C	C51	5361-223ZF	CAP, CER .022 μ (IB) (BB)
048C	C52	5361-223ZF	CAP, CER .022 μ (IB) (BB)
044C	C101	5361-180JCH	CAP, CER 18p (IB) (BB)
417	C201	5361-223Z921	CAP, CER .022 μ
417	C202	5361-223Z921	CAP, CER .022 μ
417	C203	5361-223Z921	CAP, CER .022 μ
417	C204	5361-223Z921	CAP, CER .022 μ
417	C205	5361-223Z921	CAP, CER .022 μ
417	C206	5361-223Z921	CAP, CER .022 μ
417	C207	5361-103ZF	CAP, CER .01 μ (BK)
417	C208	5361-223Z921	CAP, CER .022 μ
417	C209	5361-223Z921	CAP, CER .022 μ
417	C210	5361-223Z921	CAP, CER .022 μ
417	C211	5361-223Z921	CAP, CER .022 μ
417	C212	5361-223Z921	CAP, CER .022 μ
417	C213	5361-223Z921	CAP, CER .022 μ
420	C214	5359-1015851	CAP, PPP 100p
413	C215	5345-105F041	CAP, MINI ELE 1 μ /50V
414	C216	5345-227C041	CAP, MINI ELE 220 μ /16V
418	C217	5361-103M920	CAP, CER .01 μ
419	C218	5361-473ZF	CAP, CER .047 μ
417	C219	5361-223Z921	CAP, CER .022 μ
417	C220	5361-223Z921	CAP, CER .022 μ
419	C221	5361-473ZF	CAP, CER .047 μ
414	C222	5345-227C041	CAP, MINI ELE 220 μ /16V
480	C223	5361-220JUJ	CAP, CER 22p
473	C229	5361-223Z921	CAP, CER .022 μ
473	C230	5361-223Z921	CAP, CER .022 μ
473	C231	5361-223Z921	CAP, CER .022 μ
473	C232	5361-223Z921	CAP, CER .022 μ
473	C233	5361-223Z921	CAP, CER .022 μ
482	C234	5359-2215851	CAP, PPP 220p
475	C235	5361-101K918	CAP, CER 100p
474	C236	5361-473ZF	CAP, CER .047 μ
481	C237	5359-4725851	CAP, PPP 4700p
473	C238	5361-223Z921	CAP, CER .022 μ
473	C239	5361-223Z921	CAP, CER .022 μ
473	C240	5361-223Z921	CAP, CER .022 μ
473	C241	5361-223Z921	CAP, CER .022 μ
473	C242	5361-223Z921	CAP, CER .022 μ
473	C243	5361-223Z921	CAP, CER .022 μ
473	C244	5361-223Z921	CAP, CER .022 μ
473	C245	5361-223Z921	CAP, CER .022 μ
474	C246	5361-473ZF	CAP, CER .047 μ
477	C247	5361-121K918	CAP, CER 120p
473	C248	5361-223Z921	CAP, CER .022 μ
479	C249	5361-180JUJ	CAP, CER 18p
479	C250	5361-180JUJ	CAP, CER 18p
543	C251	5361-473ZF	CAP, CER .047 μ
542	C252	5361-102K918	CAP, CER 1000p
543	C254	5361-473ZF	CAP, CER .047 μ
541	C255	5361-223Z921	CAP, CER .022 μ
541	C256	5361-223Z921	CAP, CER .022 μ
535	C257	5345-106F041	CAP, MINI ELE 10 μ /50V
541	C258	5361-223Z921	CAP, CER .022 μ
545	C260	5361-180JPH	CAP, CER 18p
547	C261	5359-4715851	CAP, PPP 470p
543	C262	5361-473ZF	CAP, CER .047 μ
536	C263	5345-475F041	CAP, MINI ELE 4.7 μ /50V
536	C264	5345-475F041	CAP, MINI ELE 4.7 μ /50V
544	C265	5361-103M920	CAP, CER .01 μ
540	C266	5361-472K918	CAP, CER 4700p
539	C267	5345-105F041	CAP, MINI ELE 1 μ /50V
542	C268	5361-102K918	CAP, CER 1000p
537	C269	5345-107C041	CAP, MINI ELE 100 μ /16V
538	C270	5345-104F041	CAP, MINI ELE .1 μ /50V
541	C271	5361-223Z921	CAP, CER .022 μ
543	C272	5361-473ZF	CAP, CER .047 μ
543	C273	5361-473ZF	CAP, CER .047 μ
546	C276	5359-5115851	CAP, PPP 510p
483	C281	5345-474F041	CAP, MINI ELE .47 μ /50V
417	C282	5361-223Z921	CAP, CER .022 μ
417	C283	5361-223Z921	CAP, CER .022 μ
605	C301	5354-473K1HM	CAP, MYL .047 μ
593	C302	5345-224F0951	CAP, MINI ELE .22 μ /50V
594	C303	5345-474F0951	CAP, MINI ELE .47 μ /50V
595	C304	5345-105F041	CAP, MINI ELE 1 μ /50V
595	C305	5345-105F041	CAP, MINI ELE 1 μ /50V
606	C306	5361-103M920	CAP, CER .01 μ
596	C307	5345-476D041	CAP, MINI ELE 47 μ /25V
596	C308	5345-476D041	CAP, MINI ELE 47 μ /25V
597	C309	5345-226D041	CAP, MINI ELE 22 μ /25V
597	C310	5345-226D041	CAP, MINI ELE 22 μ /25V
601	C311	5359-4715851	CAP, PPP 470p (BK)
601C	C311	5359-2715851	CAP, PPP 270p (IB) (BB)
601	C312	5359-4715851	CAP, PPP 470p (BK)
601C	C312	5359-2715851	CAP, PPP 270p (IB) (BB)
602	C313	5359-2715851	CAP, PPP 270p
598	C314	5345-474F041	CAP, MINI ELE .47 μ /50V
598	C315	5345-474F041	CAP, MINI ELE .47 μ /50V
606	C316	5361-103M920	CAP, CER .01 μ
600	C317	5359-1525851	CAP, PPP 1500p
600	C318	5359-1525851	CAP, PPP 1500p
600	C319	5359-1525851	CAP, PPP 1500p
600	C320	5359-1525851	CAP, PPP 1500p
604	C321	5359-3025851	CAP, PPP 3000p
604	C322	5359-3025851	CAP, PPP 3000p
603	C323	5359-1025851	CAP, PPP 1000p
603	C324	5359-1025851	CAP, PPP 1000p
599	C325	5345-225F041	CAP, MINI ELE 2.2 μ /50V
599	C326	5345-225F041	CAP, MINI ELE 2.2 μ /50V
609	C327	5361-223Z921	CAP, CER .022 μ
599	C329	5345-225F041	CAP, MINI ELE 2.2 μ /50V
599	C330	5345-225F041	CAP, MINI ELE 2.2 μ /50V
609	C331	5361-223Z921	CAP, CER .022 μ
608	C350	5361-271K918	CAP, CER 270p (BK)
661	C701	5345-476D041	CAP, MINI ELE 47 μ /25V
662	C702	5350-S010Z473	CAP, SPE .047
667	C703	5361-300JCH	CAP, CER 30p
667	C704	5361-300JCH	CAP, CER 30p
659	C705	5345-225F041	CAP, MINI ELE 2.2 μ /50V
661	C706	5345-476D041	CAP, MINI ELE 47 μ /25V
669	C707	5361-102K918	CAP, CER 1000p
668	C708	5361-223Z921	CAP, CER .022 μ
661	C709	5345-476D041	CAP, MINI ELE 47 μ /25V
661	C710	5345-476D041	CAP, MINI ELE 47 μ /25V
660	C711	5345-106F041	CAP, MINI ELE 10 μ /50V
663	C712	5345-227C041	CAP, MINI ELE 220 μ /16V
664	C713	5345-684F0951	CAP, MINI ELE .68 μ /50V
665	C714	5354-473K1HM	CAP, MYL .047 μ
668	C715	5361-223Z921	CAP, CER .022 μ
661	C716	5345-476D041	CAP, MINI ELE 47 μ /25V
661	C717	5345-476D041	CAP, MINI ELE 47 μ /25V
668	C720	5361-223Z921	CAP, CER .022 μ
660	C721	5345-106F041	CAP, MINI ELE 10 μ /50V
670	C722	5345-107D041	CAP, MINI ELE 100 μ /25V
666	C723	5345-475F041	CAP, MINI ELE 4.7 μ /50V
666	C724	5345-475F041	CAP, MINI ELE 4.7 μ /50V
659	C725	5345-225F041	CAP, MINI ELE 2.2 μ /50V
		RESISTORS	
725	R3	5135-272522	RES, CBN 1/2P 2.7K
726	R4	5135-101522	RES, CBN 1/2P 100
726	R5	5135-101522	RES, CBN 1/2P 100
730	⚠R6	5102-2R25116	RES, FUSE 2.2
727	R7	5135-331522	RES, CBN 1/2P 330
728	R8	5135-105522	RES, CBN 1/2P 1M

Ser. No.	Ref. No.	Part No.	Description
729	R9	5135-102522	RES, CBN 1/2P 1K
728	R11	5135-102522	RES, CBN 1/2P 1K
695	⚠R12	5102-3304715	RES, FUSE 33
726	R13	5135-101522	RES, CBN 1/2P 100
423	R201	5135-391522	RES, CBN 1/2P 390
424	R202	5135-102522	RES, CBN 1/2P 1K
425	R203	5135-154522	RES, CBN 1/2P 150K
423	R204	5135-391522	RES, CBN 1/2P 390
426	R205	5135-101522	RES, CBN 1/2P 100
427	R206	5135-150522	RES, CBN 1/2P 15 BK
427C	R206	5135-220522	RES, CBN 1/2P 22 IB BB
428	R207	5135-222522	RES, CBN 1/2P 2.2K
423	R208	5135-391522	RES, CBN 1/2P 390
424	R209	5135-102522	RES, CBN 1/2P 1K
425	R210	5135-154522	RES, CBN 1/2P 150K
423	R211	5135-391522	RES, CBN 1/2P 390
426	R212	5135-101522	RES, CBN 1/2P 100
429	R213	5135-220522	RES, CBN 1/2P 22
428	R214	5135-222522	RES, CBN 1/2P 2.2K
428	R215	5135-222522	RES, CBN 1/2P 2.2K
428	R216	5135-222522	RES, CBN 1/2P 2.2K
428	R217	5135-222522	RES, CBN 1/2P 2.2K
431	R218	5135-471522	RES, CBN 1/2P 470
430	R219	5135-562522	RES, CBN 1/2P 5.6K
432	R220	5135-123522	RES, CBN 1/2P 12K BK
432C	R220	5135-223522	RES, CBN 1/2P 22K IB BB
434	R222	5135-103522	RES, CBN 1/2P 10K
435	R223	5135-683522	RES, CBN 1/2P 68K
436	R224	5135-223522	RES, CBN 1/2P 22K
438	R225	5135-472522	RES, CBN 1/2P 4.7K
428	R226	5135-222522	RES, CBN 1/2P 2.2K
434	R227	5135-103522	RES, CBN 1/2P 10K
485	R231	5135-391522	RES, CBN 1/2P 390
486	R232	5135-102522	RES, CBN 1/2P 1K
487	R233	5135-154522	RES, CBN 1/2P 150K
485	R234	5135-391522	RES, CBN 1/2P 390
488	R235	5135-101522	RES, CBN 1/2P 100
489	R236	5135-100522	RES, CBN 1/2P 10
490	R237	5135-331522	RES, CBN 1/2P 330
491	R238	5135-472522	RES, CBN 1/2P 4.7K
492	R239	5135-223522	RES, CBN 1/2P 22K
495	R240	5232-332J16P	RES, CBN 1/6P 3.3K
496	R241	5232-102J16P	RES, CBN 1/6P 1K
497	R242	5232-223J16P	RES, CBN 1/6P 22K
493	R243	5135-104522	RES, CBN 1/2P 100K
493	R244	5135-104522	RES, CBN 1/2P 100K
496	R245	5232-102J16P	RES, CBN 1/6P 1K
493	R246	5135-104522	RES, CBN 1/2P 100K
498	R247	5232-473J16P	RES, CBN 1/6P 47K
498	R248	5232-473J16P	RES, CBN 1/6P 47K
499	R249	5232-472J16P	RES, CBN 1/6P 4.7K
490	R250	5135-331522	RES, CBN 1/2P 330
563	R251	5135-471522	RES, CBN 1/2P 470
554	R254	5135-182522	RES, CBN 1/2P 1.8K
556	R255	5135-683522	RES, CBN 1/2P 68K
557	R256	5135-223522	RES, CBN 1/2P 22K
558	R257	5135-122522	RES, CBN 1/2P 1.2K
555	R258	5135-102522	RES, CBN 1/2P 1K
559	R259	5135-272522	RES, CBN 1/2P 2.7K
560	R260	5135-820522	RES, CBN 1/2P 82
561	R261	5135-103522	RES, CBN 1/2P 10K
561	R262	5135-103522	RES, CBN 1/2P 10K
562	R263	5135-104522	RES, CBN 1/2P 100K
562	R264	5135-104522	RES, CBN 1/2P 100K
559	R265	5135-223522	RES, CBN 1/2P 22K
561	R266	5135-103522	RES, CBN 1/2P 10K
563	R267	5135-471522	RES, CBN 1/2P 470
553	R269	5135-103522	RES, CBN 1/2P 10K
562	R270	5135-104522	RES, CBN 1/2P 100K
564	R271	5135-473522	RES, CBN 1/2P 47K
499	R272	5232-472J16P	RES, CBN 1/6P 4.7K
500	R273	5232-681J16P	RES, CBN 1/6P 680
504	R274	5232-101J16P	RES, CBN 1/6P 100
498	R275	5232-473J16P	RES, CBN 1/6P 47K
498	R276	5232-473J16P	RES, CBN 1/6P 47K

Ser. No.	Ref. No.	Part No.	Description
564	R277	5135-473522	RES, CBN 1/2P 47K
557	R278	5135-223522	RES, CBN 1/2P 22K
565	R279	5135-822522	RES, CBN 1/2P 8.2K
551	R280	5232-223J16P	RES, CBN 1/6P 22K
439	R281	5135-104522	RES, CBN 1/2P 100K
505	R282	5135-103522	RES, CBN 1/2P 10K
494	R283	5135-562522	RES, CBN 1/2P 5.6K
493	R285	5135-104522	RES, CBN 1/2P 100K
493	R286	5135-104522	RES, CBN 1/2P 100K
501	R287	5232-103J16P	RES, CBN 1/6P 10K
441	R291	5232-154J16P	RES, CBN 1/6P 150K
442	R292	5232-104J16P	RES, CBN 1/6P 100K
443	R293	5232-102J16P	RES, CBN 1/6P 1K
438	R294	5135-472522	RES, CBN 1/2P 4.7K
611	R301	5135-472522	RES, CBN 1/2P 4.7K
050C	R302	5232-473J16P	RES, CBN 1/6P 47K IB BB
612	R303	5135-103522	RES, CBN 1/2P 10K
612	R304	5135-103522	RES, CBN 1/2P 10K
613	R305	5135-154522	RES, CBN 1/2P 150K BK
613C	R305	5134-184522	RES, CBN 1/2P 180K IB BB
613	R306	5135-154522	RES, CBN 1/2P 150K BK
613C	R306	5134-184522	RES, CBN 1/2P 180K IB BB
614	R307	5135-124522	RES, CBN 1/2P 120K
614	R308	5135-124522	RES, CBN 1/2P 120K
615	R309	5135-222522	RES, CBN 1/2P 2.2K
615	R310	5135-222522	RES, CBN 1/2P 2.2K
612	R311	5135-103522	RES, CBN 1/2P 10K
612	R312	5135-103522	RES, CBN 1/2P 10K
616	R313	5135-272522	RES, CBN 1/2P 2.7K
616	R314	5135-272522	RES, CBN 1/2P 2.7K
616	R315	5135-272522	RES, CBN 1/2P 2.7K
616	R316	5135-272522	RES, CBN 1/2P 2.7K
626	R317	5135-132522	RES, CBN 1/2P 1.3K
626	R318	5135-132522	RES, CBN 1/2P 1.3K
614	R319	5135-124522	RES, CBN 1/2P 120K
614	R320	5135-124522	RES, CBN 1/4P 120K
618	R321	5135-224522	RES, CBN 1/2P 220K
618	R322	5135-224522	RES, CBN 1/2P 220K
619	R323	5135-182522	RES, CBN 1/2P 1.8K
619	R324	5135-182522	RES, CBN 1/2P 1.8K
620	R325	5135-470522	RES, CBN 1/2P 47
620	R326	5135-470522	RES, CBN 1/2P 47
621	R327	5135-121522	RES, CBN 1/2P 120
621	R328	5135-121522	RES, CBN 1/2P 120
616	R329	5135-272522	RES, CBN 1/2P 2.7K
616	R330	5135-272522	RES, CBN 1/2P 2.7K
623	R331	5135-242522	RES, CBN 1/2P 2.4K
623	R332	5135-242522	RES, CBN 1/2P 2.4K
622	R333	5135-152522	RES, CBN 1/2P 1.5K
622	R334	5135-152522	RES, CBN 1/2P 1.5K
629	R337	5232-103J16P	RES, CBN 1/6P 10K
629	R338	5232-103J16P	RES, CBN 1/6P 10K
612	R341	5135-103522	RES, CBN 1/2P 10K
612	R342	5135-103522	RES, CBN 1/2P 10K
624	R343	5135-104522	RES, CBN 1/2P 100K
625	R344	5135-105522	RES, CBN 1/2P 1M
617	R345	5135-122522	RES, CBN 1/2P 1.2K
045B	R347	5232-102J16P	RES, CBN 1/6P 1K IB BB
045B	R348	5232-102J16P	RES, CBN 1/6P 1K IB BB
628	R350	5135-102522	RES, CBN 1/2P 1K BK
671	R701	5232-472J16P	RES, CBN 1/6P 4.7K
672	R702	5232-222J16P	RES, CBN 1/6P 2.2K
672	R703	5232-222J16P	RES, CBN 1/6P 2.2K
672	R704	5232-222J16P	RES, CBN 1/6P 2.2K
672	R705	5232-222J16P	RES, CBN 1/6P 2.2K
672	R706	5232-222J16P	RES, CBN 1/6P 2.2K
672	R707	5232-222J16P	RES, CBN 1/6P 2.2K
672	R708	5232-222J16P	RES, CBN 1/6P 2.2K
672	R709	5232-222J16P	RES, CBN 1/6P 2.2K
672	R710	5232-222J16P	RES, CBN 1/6P 2.2K
672	R711	5232-222J16P	RES, CBN 1/6P 2.2K
672	R712	5232-222J16P	RES, CBN 1/6P 2.2K
672	R713	5232-222J16P	RES, CBN 1/6P 2.2K
672	R714	5232-222J16P	RES, CBN 1/6P 2.2K
672	R715	5232-222J16P	RES, CBN 1/6P 2.2K

Ser. No.	Ref. No.	Part No.	Description
672	R716	5232-222J16P	RES, CBN 1/6P 2.2K
681	R717	5135-104522	RES, CBN 1/2P 100K
682	R718	5135-102522	RES, CBN 1/2P 1K
683	R719	5135-472522	RES, CBN 1/2P 4.7K
684	R720	5135-222522	RES, CBN 1/2P 2.2K
684	R721	5135-222522	RES, CBN 1/2P 2.2K
684	R722	5135-222522	RES, CBN 1/2P 2.2K
684	R723	5135-222522	RES, CBN 1/2P 2.2K
699	R724	5171-S010J470	RES, MTL 1P 47
685	R725	5135-103522	RES, CBN 1/2P 10K
685	R726	5135-103522	RES, CBN 1/2P 10K
685	R727	5135-103522	RES, CBN 1/2P 10K
685	R729	5135-103522	RES, CBN 1/2P 10K
685	R730	5135-103522	RES, CBN 1/2P 10K
682	R731	5135-102522	RES, CBN 1/2P 1K
682	R732	5135-102522	RES, CBN 1/2P 1K
687	R733	5135-222522	RES, CBN 1/2P 2.2K
687	R734	5135-222522	RES, CBN 1/2P 2.2K
688	R735	5135-100522	RES, CBN 1/2P 10
686	R736	5135-473522	RES, CBN 1/2P 47K
686	R737	5135-473522	RES, CBN 1/2P 47K
686	R738	5135-473522	RES, CBN 1/2P 47K
685	R739	5135-103522	RES, CBN 1/2P 10K
686	R740	5135-473522	RES, CBN 1/2P 47K
686	R741	5135-473522	RES, CBN 1/2P 47K
680	R742	5135-223522	RES, CBN 1/2P 22K
685	R744	5135-103522	RES, CBN 1/2P 10K
681	R745	5135-104522	RES, CBN 1/2P 100K
679	R746	5232-273J16P	RES, CBN 1/6P 27K
679	R747	5232-273J16P	RES, CBN 1/6P 27K
680	R748	5135-223522	RES, CBN 1/2P 22K
680	R749	5135-223522	RES, CBN 1/2P 22K
680	R750	5135-223522	RES, CBN 1/2P 22K
687	R751	5135-222522	RES, CBN 1/2P 2.2K
687	R752	5135-222522	RES, CBN 1/2P 2.2K
687	R753	5135-222522	RES, CBN 1/2P 2.2K
687	R754	5135-222522	RES, CBN 1/2P 2.2K
687	R755	5135-222522	RES, CBN 1/2P 2.2K
687	R756	5135-222522	RES, CBN 1/2P 2.2K
687	R757	5135-222522	RES, CBN 1/2P 2.2K
687	R758	5135-222522	RES, CBN 1/2P 2.2K
687	R759	5135-222522	RES, CBN 1/2P 2.2K
676	R760	5232-183J16P	RES, CBN 1/6P 18K
677	R761	5232-513J16P	RES, CBN 1/6P 51K
678	R762	5232-154J16P	RES, CBN 1/6P 150K
673	R763	5232-103J16P	RES, CBN 1/6P 10K
694	R764	5135-333522	RES, CBN 1/2P 33K
686	R765	5135-473522	RES, CBN 1/2P 47K
700	R766	5135-271522	RES, CBN 1/2P 270
686	R767	5135-473522	RES, CBN 1/2P 47K
690	R768	5135-470522	RES, CBN 1/2P 47
674	R769	5232-102J16P	RES, CBN 1/6P 1K
682	R770	5135-102522	RES, CBN 1/2P 1K
685	R771	5135-103522	RES, CBN 1/2P 10K
672	R772	5232-222J16P	RES, CBN 1/6P 2.2K
675	R773	5232-473J16P	RES, CBN 1/6P 47K
675	R774	5232-473J16P	RES, CBN 1/6P 47K
682	R775	5135-102522	RES, CBN 1/2P 1K
682	R776	5135-102522	RES, CBN 1/2P 1K
690	R777	5135-470522	RES, CBN 1/2P 47
696	R778	5135-101522	RES, CBN 1/2P 100
680	R781	5135-223522	RES, CBN 1/2P 22K
685	R782	5135-103522	RES, CBN 1/2P 10K
686	R783	5135-473522	RES, CBN 1/2P 47K
692	R784	5135-562522	RES, CBN 1/2P 5.6K
682	R785	5135-102522	RES, CBN 1/2P 1K
506	R787	5135-473522	RES, CBN 1/2P 47K
506	R788	5135-473522	RES, CBN 1/2P 47K
691	R789	5135-332522	RES, CBN 1/2P 3.3K
679	R790	5232-273J16P	RES, CBN 1/6P 27K
682	R791	5135-102522	RES, CBN 1/2P 1K
682	R792	5135-102522	RES, CBN 1/2P 1K
685	R793	5135-103522	RES, CBN 1/2P 10K
685	R794	5135-103522	RES, CBN 1/2P 10K
685	R795	5135-103522	RES, CBN 1/2P 10K

Ser. No.	Ref. No.	Part No.	Description
		INTEGRATED CIRCUITS	
404	IC201	5652-LA1235	IC, MONO
461	IC202	5652-LA1235	IC, MONO
521	IC251	5652-LA1245	IC, MONO
581	IC301	5653-LA3450	IC, LINEAR
641	IC701	5654-T9301-20	IC, DIGITAL
642	IC702	5654-TC9227P	IC, DIGITAL
643	IC703	5654-AK93C46	IC, DIGITAL
644	IC704	5654-TC9173P	IC, DIGITAL
646	IC705	5652-BA6124	IC, MONO
		TRANSISTORS	
704	Q2	5612-1375	XISTOR, PNP A
703	Q3	5613-2320(F)	XISTOR, NPN R
701	Q4	5614-667(C)	XISTOR, NPN A
701	Q5	5614-667(C)	XISTOR, NPN A
406	Q201	5613-2058(N)	XISTOR, NPN R
406	Q202	5613-2058(N)	XISTOR, NPN R
463	Q203	5613-2058(N)	XISTOR, NPN R
405	Q204	5613-2320(F)	XISTOR, NPN R
465	Q205	5611-999(F)	XISTOR, PNP R
464	Q206	5613-2320(F)	XISTOR, NPN R
463	Q207	5613-2058(N)	XISTOR, NPN R
463	Q208	5613-2058(N)	XISTOR, NPN R
466	Q209	5613-RN1203	XISTOR, NPN R
464	Q210	5613-2320(F)	XISTOR, NPN R
466	Q212	5613-RN1203	XISTOR, NPN R
522	Q252	5613-2320(F)	XISTOR, NPN R
522	Q253	5613-2320(F)	XISTOR, NPN R
584	Q301	5613-RN1203	XISTOR, NPN R
585	Q302	5611-RN2203	XISTOR, PNP R
586	Q303	5613-2320(F)	XISTOR, NPN R
586	Q304	5613-2320(F)	XISTOR, NPN R
587	Q305	5611-999(F)	XISTOR, PNP R
587	Q306	5611-999(F)	XISTOR, PNP R
587	Q307	5611-999(F)	XISTOR, PNP R
587	Q308	5611-999(F)	XISTOR, PNP R
583	Q311	5614-1450(T)	XISTOR, NPN A
583	Q312	5614-1450(T)	XISTOR, NPN A
588	Q313	5616-2SK381(D) OR (E)	FET, N-CH
647	Q701	5613-2240(BL)	XISTOR, NPN R
648	Q702	5613-2320(F)	XISTOR, NPN R
648	Q703	5613-2320(F)	XISTOR, NPN R
649	Q705	5613-RN1203	XISTOR, NPN R
649	Q706	5613-RN1203	XISTOR, NPN R
648	Q707	5613-2320(F)	XISTOR, NPN R
649	Q708	5613-RN1203	XISTOR, NPN R
651	Q709	5611-RN2203	XISTOR, PNP R
649	Q710	5613-RN1203	XISTOR, NPN R
651	Q711	5611-RN2203	XISTOR, PNP R
649	Q712	5613-RN1203	XISTOR, NPN R
648	Q713	5613-2320(F)	XISTOR, NPN R
649	Q714	5613-RN1203	XISTOR, NPN R
648	Q715	5613-2320(F)	XISTOR, NPN R
649	Q716	5613-RN1203	XISTOR, NPN R
649	Q717	5613-RN1203	XISTOR, NPN R
649	Q718	5613-RN1203	XISTOR, NPN R
651	Q720	5611-RN2203	XISTOR, PNP R
649	Q721	5613-RN1203	XISTOR, NPN R
649	Q722	5613-RN1203	XISTOR, NPN R
649	Q723	5613-RN1203	XISTOR, NPN R
649	Q724	5613-RN1203	XISTOR, NPN R
649	Q725	5613-RN1203	XISTOR, NPN R
649	Q726	5613-RN1203	XISTOR, NPN R
649	Q727	5613-RN1203	XISTOR, NPN R
649	Q728	5613-RN1203	XISTOR, NPN R
649	Q729	5613-RN1203	XISTOR, NPN R
649	Q730	5613-RN1203	XISTOR, NPN R
649	Q731	5613-RN1203	XISTOR, NPN R
649	Q732	5613-RN1203	XISTOR, NPN R
649	Q733	5613-RN1203	XISTOR, NPN R
649	Q734	5613-RN1203	XISTOR, NPN R
649	Q735	5613-RN1203	XISTOR, NPN R
649	Q736	5613-RN1203	XISTOR, NPN R
650	Q739	5613-RN1203	XISTOR, NPN R

Ser. No.	Ref. No.	Part No.	Description
650	Q740	5613-RN1203	XISTOR, NPN R
651	Q741	5611-RN2203	XISTOR, PNP R
651	Q744	5611-RN2203	XISTOR, PNP R
652	Q745	5611-999(F)	XISTOR, PNP R
		DIODES	
705	D3	5632-S5566B	DIODE, RECT
705	D4	5632-S5566B	DIODE, RECT
705	D5	5632-S5566B	DIODE, RECT
705	D6	5632-S5566B	DIODE, RECT
708	D7	5635-HZ12C2L	DIODE, ZENER
709	D8	5635-HZ9A1L	DIODE, ZENER
710	D9	5631-1S2473	DIODE, DET
711	D10	5631-1SS133	DIODE, DET
712	D11	5635-HZ3B-2	DIODE, ZENER
705	D12	5632-S5566B	DIODE, RECT
705	D13	5632-S5566B	DIODE, RECT
713	D14	5635-HZ6C2L	DIODE, ZENER
710	D15	5631-1S2473	DIODE, DET
710	D16	5631-1S2473	DIODE, DET
471	D201	5631-1SS133	DIODE, DET
471	D202	5631-1SS133	DIODE, DET
471	D203	5631-1SS133	DIODE, DET
471	D204	5631-1SS133	DIODE, DET
411	D205	5631-1SS133	DIODE, DET
471	D206	5631-1SS133	DIODE, DET
471	D207	5631-1SS133	DIODE, DET
467	D208	5633-1SV103	DIODE, CAP
467	D209	5633-1SV103	DIODE, CAP
471	D210	5631-1SS133	DIODE, DET
411	D211	5631-1SS133	DIODE, DET
471	D212	5631-1SS133	DIODE, DET
525	D251	5633-1SV149	DIODE, CAP
525	D252	5633-1SV149	DIODE, CAP
462	D253	5631-1S2473	DIODE, DET
524	D254	5631-1S2473	DIODE, DET
589	D301	5631-1S2473	DIODE, DET
589	D302	5631-1S2473	DIODE, DET
653	D701	5631-1S2473	DIODE, DET
653	D702	5631-1S2473	DIODE, DET
653	D703	5631-1S2473	DIODE, DET
653	D704	5631-1S2473	DIODE, DET
653	D705	5631-1S2473	DIODE, DET
653	D706	5631-1S2473	DIODE, DET
653	D707	5631-1S2473	DIODE, DET
654	D708	5631-1SS133	DIODE, DET
654	D709	5631-1SS133	DIODE, DET
654	D710	5631-1SS133	DIODE, DET
654	D711	5631-1SS133	DIODE, DET
654	D712	5631-1SS133	DIODE, DET
654	D714	5631-1SS133	DIODE, DET (BK)
654	D715	5631-1SS133	DIODE, DET (BK)
654	D716	5631-1SS133	DIODE, DET
654	D718	5631-1SS133	DIODE, DET
653	D720	5631-1S2473	DIODE, DET
654	D721	5631-1SS133	DIODE, DET
653	D722	5631-1S2473	DIODE, DET
653	D723	5631-1S2473	DIODE, DET
653	D724	5631-1S2473	DIODE, DET
653	D725	5631-1S2473	DIODE, DET
653	D726	5631-1S2473	DIODE, DET
653	D727	5631-1S2473	DIODE, DET
654	D728	5631-1SS133	DIODE, DET
653	D729	5631-1S2473	DIODE, DET
653	D730	5631-1S2473	DIODE, DET
653	D733	5631-1S2473	DIODE, DET
		CONTROLS	
407	VR201	5101-50301934	RES, SEMI FIX 50K
408	VR202	5101-20301934	RES, SEMI FIX 20K
468	VR203	5101-50301934	RES, SEMI FIX 50K
534	VR251	5101-50301934	RES, SEMI FIX 50K
591	VR301	5101-50401934	RES, SEMI FIX 500K
592	VR302	5101-50301934	RES, SEMI FIX 50K

Ser. No.	Ref. No.	Part No.	Description
		COILS	
402	L101	5995-2R2J107	COIL W/CORE
043C	L103	5214-78	LC COMPOSITE (IB) (BB)
402	L201	5995-2R2J107	COIL W/CORE
529	L251	5552-70113	IFT, AM 7
530	L252	5932-70123	COIL CASE, 7
		TRANSFORMERS	
410	T201	5573-10101	DISCRI 10
470	T202	5922-10901	OSC COIL, 7
527	T251	5933-S0102	COIL CASE, 10
528	T252	5922-00512	OSC COIL, 7
526	T253	5933-S1601	COIL CASE, 10
		MISCELLANEOUS	
737	J101	4482-0133	PIN JACK, 2P
738	J102	4451-00184	JACK, 1P
738	J103	4451-00184	JACK, 1P
590	X301	5693-CSB456F1	OSC, CER
655	X701	5691-00720027	XTAL, OSC
409	CF201	5671-0151A113	FILTER, CER S (BK)
409C	CF201	5671-2036GKA	FILTER, CER S (IB) (BB)
409	CF202	5671-0151A113	FILTER, CER S (BK)
409C	CF202	5671-2036GKA	FILTER, CER S (IB) (BB)
472	CF203	5671-0011A106	FILTER, CER S
472	CF204	5671-0011A106	FILTER, CER S
042B	CF205	5671-0011A106	FILTER, CER S (IB) (BB)
531	CF251	5671-0161D451	FILTER, CER S
532	CF252	5671-7137C	FILTER, CER S
739	CN701A	4443-05501027	CONNECTOR
741	CN702A	4443-05501011	CONNECTOR
401	FE101	6114-00401	FM TUNER (BK)
401C	FE101	6114-00402	FM TUNER (IB) (BB)
697	JL701	4242-S0327201	JUMPER LEAD
698	JL702	4242-S0311171	JUMPER LEAD
049C	LUG1	4211-4	LUG (IB) (BB)
720	PH101	5624-ON3161	PHOTO COUPLER
656	RC701	5212-103J1003	R COMPOSITE
657	RC702	5212-103J0603	R COMPOSITE
751	RL101	4331-01201	RELAY, DC
469	TC201	5371-93	TRIMMER, 1P
533	TC251	5371-93	TRIMMER, 1P
749	TM101	4214-166	TERMINAL (BK)
749C	TM101	4214-167	TERMINAL (IB) (BB)
749	TM102	4214-166	TERMINAL (BK)
749C	TM102	4214-167	TERMINAL (IB) (BB)
750	TM103	4214-229	TERMINAL
736	CN101	4443-060185	CONNECTOR

PCB-2 FRONT P.C. BOARD

		RESISTORS	
689	R796	5135-152522	RES, CBN 1/2P 1.5K
634	R797	5135-222522	RES, CBN 1/2P 2.2K
635	R798	5135-472522	RES, CBN 1/2P 4.7K
635	R799	5135-472522	RES, CBN 1/2P 4.7K
635	R800	5135-472522	RES, CBN 1/2P 4.7K
693	R801	5135-153522	RES, CBN 1/2P 15K
693	R802	5135-153522	RES, CBN 1/2P 15K
636	R803	5135-332522	RES, CBN 1/2P 3.3K
693	R804	5135-153522	RES, CBN 1/2P 15K
		INTEGRATED CIRCUITS	
645	IC706	5654-TB2104F	IC, DIGITAL
645	IC707	5654-TB2104F	IC, DIGITAL
		TRANSISTORS	
702	Q742	5613-RN1203	XISTOR, NPN R
633	Q743	5611-RN2203	XISTOR, PNP R
		MISCELLANEOUS	
732	S11	4437-00603	SWITCH, PU-TC
732	S12	4437-00603	SWITCH, PU-TC
732	S13	4437-00603	SWITCH, PU-TC
732	S14	4437-00603	SWITCH, PU-TC
732	S15	4437-00603	SWITCH, PU-TC
732	S16	4437-00603	SWITCH, PU-TC

Ser. No.	Ref. No.	Part No.	Description
732	S17	4437-00603	SWITCH, PU-TC
732	S18	4437-00603	SWITCH, PU-TC
734	S19	4437-00604	SWITCH, PU-TC
734	S20	4437-00604	SWITCH, PU-TC
734	S21	4437-00604	SWITCH, PU-TC
734	S22	4437-00604	SWITCH, PU-TC
734	S23	4437-00604	SWITCH, PU-TC
734	S24	4437-00604	SWITCH, PU-TC
732	S25	4437-00603	SWITCH, PU-TC
732	S26	4437-00603	SWITCH, PU-TC
734	S27	4437-00604	SWITCH, PU-TC
734	S28	4437-00604	SWITCH, PU-TC
734	S29	4437-00604	SWITCH, PU-TC
734	S30	4437-00604	SWITCH, PU-TC
740	CN701B	4443-05401027	CONNECTOR
742	CN702B	4443-05401011	CONNECTOR
746	FL701	5722-053	TUBE DISPLAY
658	RC703	5212-153J0503	R COMPOSITE
658	RC704	5212-153J0503	R COMPOSITE
752	RCV701	6143-00801	RECEIV BLOCK

PCB-3 POWER SUPPLY P.C. BOARD

CAPACITORS

721	C1	5361-473ZF	CAP, CER .047μ
721	C2	5361-473ZF	CAP, CER .047μ
716	C3	5345-476D041	CAP, MINI ELE 47μ/25V
716	C11	5345-476D041	CAP, MINI ELE 47μ/25V

RESISTORS

723	⚠R1	5135-335522	RES, CBN 1/2P 3.3M BK
724	R2	5135-152522	RES, CBN 1/2P 1.5K
719	R10	5135-102522	RES, CBN 1/2P 1K
724	R14	5135-152522	RES, CBN 1/2P 1.5K

DIODES

706	⚠D1	5632-S5566B	DIODE, RECT
707	D2	5635-HZ6C2L	DIODE, ZENER
714	D17	5631-1S2473	XISTOR, DET

TRANSFORMERS

731	⚠T1	5584-S7701	XFORMER, POWER BK
731C	⚠T1	5584-S7702	XFORMER, POWER IB BB

MISCELLANEOUS

047C	⚠F1	5732-162030	FUSE IB BB
733	S1	4431-S1003102	SWITCH, PUSH
041C	⚠S2	4411-1047111	SWITCH, ROTARY IB BB
046C	⚠HF1	4472-0131	HOLDER, FUSE IB BB
046C	⚠HF2	4472-0131	HOLDER, FUSE IB BB
743	TM1	4214-122	TERMINAL
743	TM2	4214-122	TERMINAL
744	⚠TM106	4474-02701	SOCKET BK
735	JL101	4242-R0206800	JUMPER LEAD

Ser. No.	Ref. No.	Part No.	Description

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
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, SEMI FIX	: Semi-fixed Resistor

CHASSIS MISCELLANEOUS PARTS LIST

MISCELLANEOUS

549	L1	5911-235	ANT COIL, BC
747	⚠P1	4161-71151	CORD W/PLUG BK
747B	⚠P1	4161-7256	CORD W/PLUG IB
747D	⚠P1	4161-04100	CORD W/PLUG BB
745		1398-015	ADAPTER, ANT BK
748		4161-71184	CORD W/PLUG, CONNECTION
754		6142-02702	CONT BLOCK
755		1397-6	T FEEDER ANT

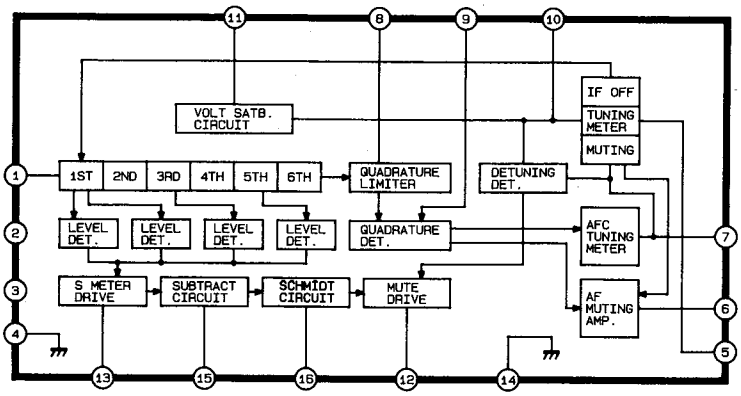
PACKAGE PARTS LIST

021C	1756-06303	LABEL IB BB
022C	1756-03108	LABEL IB
022D	1756-03111	LABEL BB
023C	1111-J30235	OWNER GUIDE, ADDENDUM IB BB
024D	1111-J30319	OWNER GUIDE BB
025D	1756-08501	LABEL BB
111	1221-27703	CARTON BOX BK
111C	1221-27704	CARTON BOX IB BB
113	1222-7363	CUSHION
114	1222-7364	CUSHION
115	1223-R0120055	SOFT SHEET
116	1241-R0123350	POLYETHYLENE BAG
117	1241-C1493	POLYETHYLENE BAG
118	1111-J30321	OWNER GUIDE BK
118C	1111-J30322	OWNER GUIDE IB
119	1241-R0115300	POLYETHYLENE BAG
120	1113-717004	OWNER CARD BK
121	1119-047	ATTACH SHEET BK
122	1119-01201	ATTACH SHEET BK
123	1119-0137	ATTACH SHEET BK

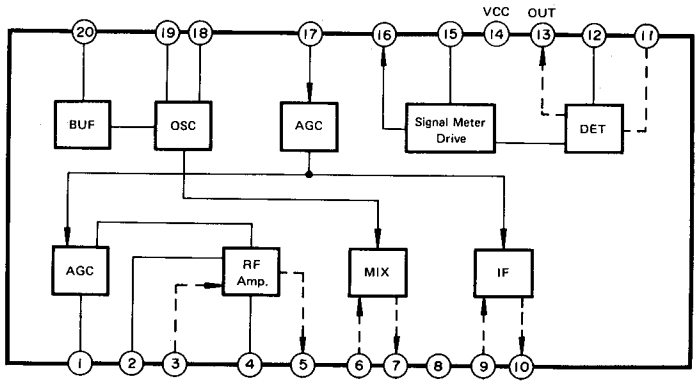
NOTE

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

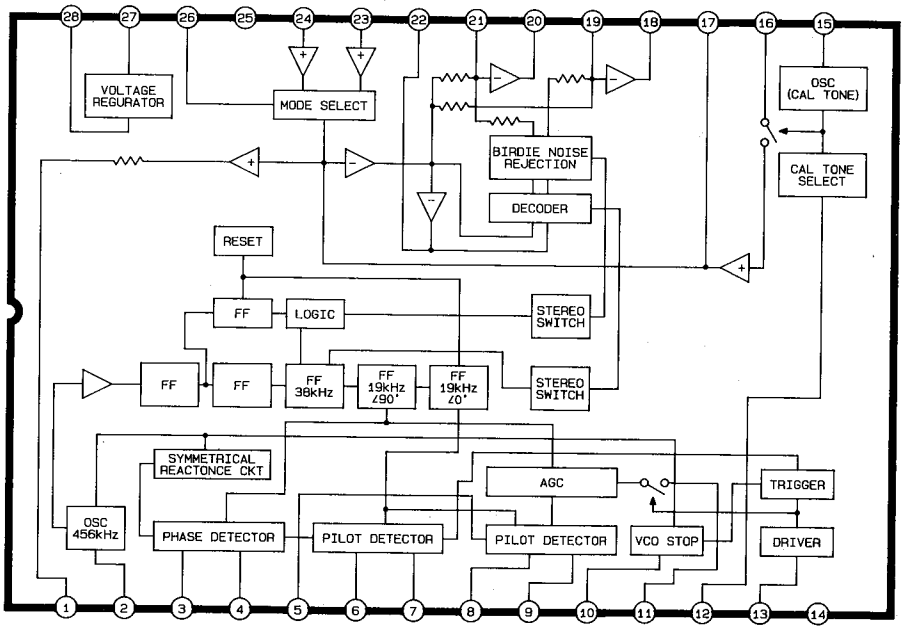
IC BLOCK DIAGRAM



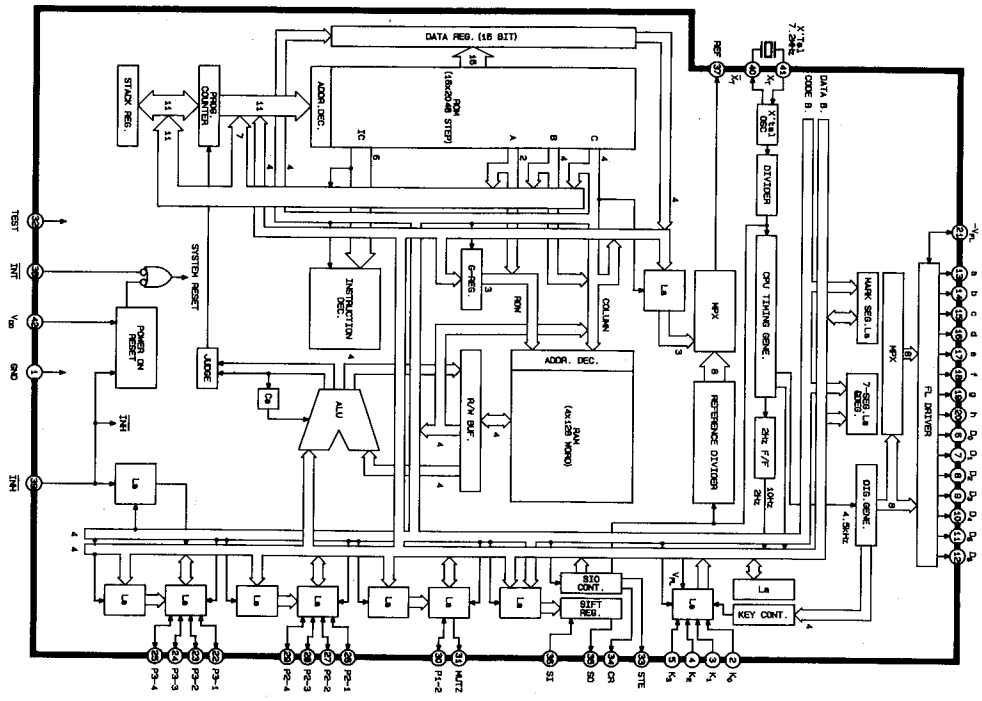
IC201, 202 : LA1235
FM IF Amp.



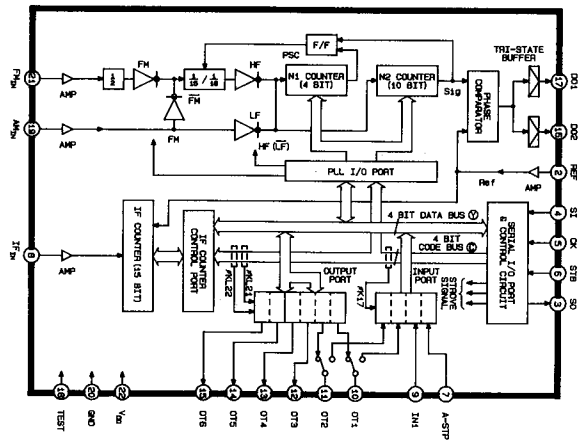
IC251 : LA1245
AM Section



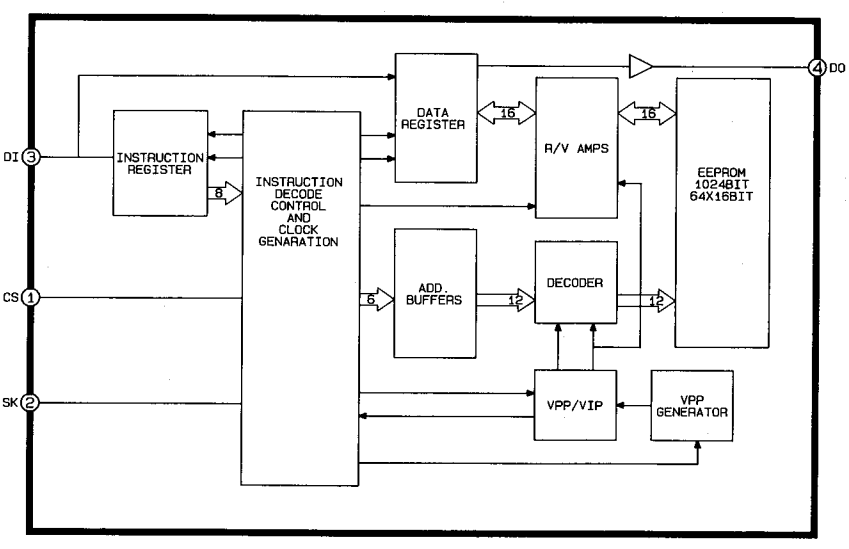
IC301 : LA3450
FM PLL MPX



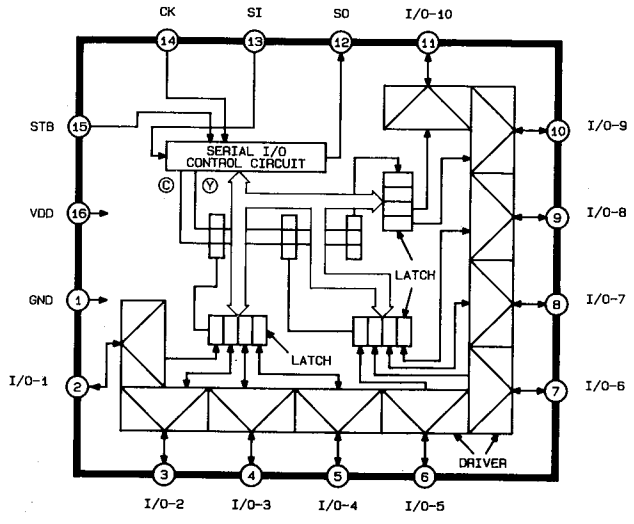
IC701 : TC9301AN
Digital Synthesizer
Tuning System
Micro Controller



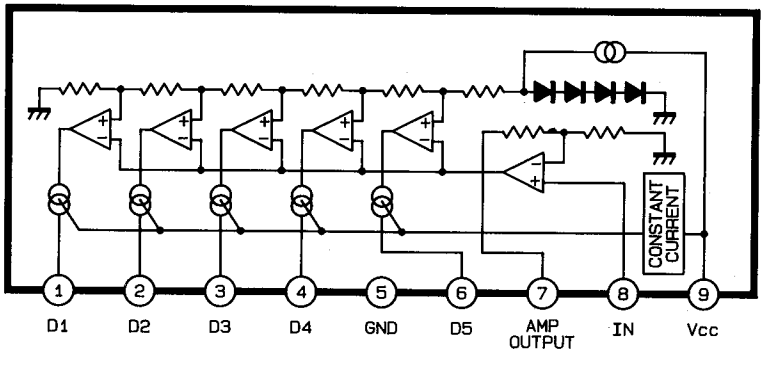
IC702 : TC9227P
Pre Scaler



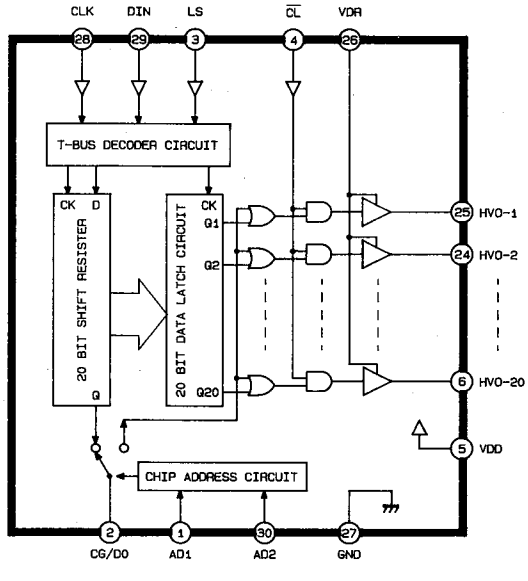
IC703 : AK93C46
EEP Rom



IC704 : TC9173P
Active Tracking
System Controller



IC705 : BA6124
Signal Strength
Indicator Driver



IC706, 707 : TB2104F
FL Tube Driver

IC TERMINAL FUNCTIONS

	Terminal number	Port name	Terminal code	I/O	Outline of functions
	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
IC701	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)
	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

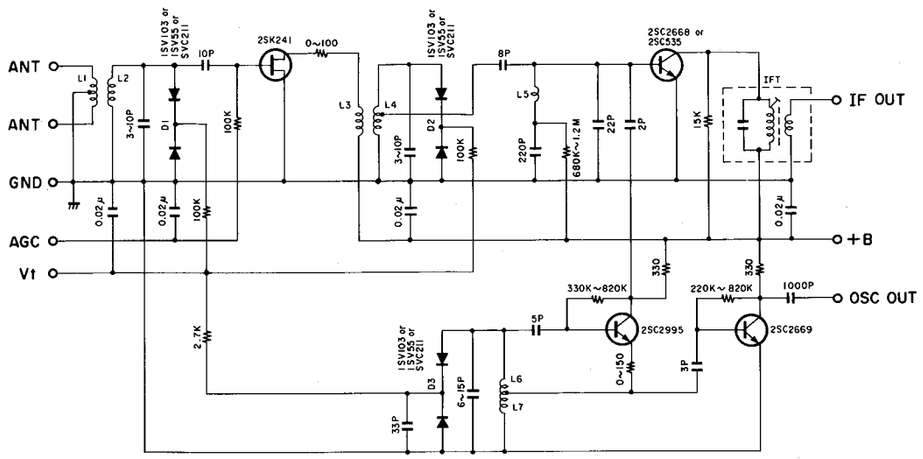
	Terminal number	Port name	Terminal code	I/O	Outline of functions
IC701	33	STB		O	Serial interface (strove pulse output)
	34	CK		O	Serial interface (serial clock output)
	35	SO		O	Serial interface (serial data output)
	36	SI		I	Serial interface (serial data input)
	37	REF		O	Reference frequency signal 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	VDD		I	Power supply terminal
IC702	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	VDD		I	5V ± 10% power supply terminal

	Terminal number	Port name	Terminal code	I/O	Outline of functions
IC703	1	CS		I	Serial interface (chip select)
	2	SK		I	Serial interface (serial data clock)
	3	DI		I	Serial interface (serial data input)
	4	DO		O	Serial interface (serial data output)
	5	GND			GND pin
	6	NC			Not connected
	7	NC			Not connected
	8	VCC		I	Power supply terminal
IC704	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 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	Strove signal input
	16	V_{DD}	V_{DD}	I	5V ± 10% power supply terminal
IC706 IC707	1	AD1		I	Chip select • address set input
	2	CG/DO		I/O	Ramp test input and data output terminal
	3	LS		I	Serial data input terminal (strove signal)
	4	$\overline{CL}$		I	Clear signal input terminal (driver off)
	5	VDD		I	Power supply terminal
	6	HVO-20		O	Driver output terminal
	7	HVO-19		O	Driver output terminal
	8	HVO-18		O	Driver output terminal

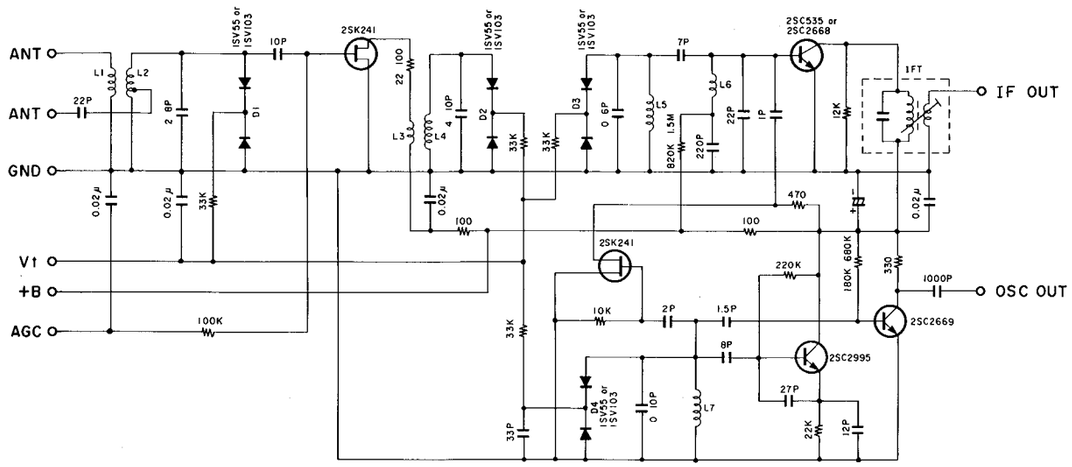
	Terminal number	Port name	Terminal code	I/O	Outline of functions
	9	HVO-17		O	Driver output terminal
	10	HVO-16		O	Driver output terminal
	11	HVO-15		O	Driver output terminal
	12	HVO-14		O	Driver output terminal
	13	HVO-13		O	Driver output terminal
	14	HVO-12		O	Driver output terminal
	15	HVO-11		O	Driver output terminal
	16	HVO-10		O	Driver output terminal
	17	HVO-9		O	Driver output terminal
IC706	18	HVO-8		O	Driver output terminal
IC707	19	HVO-7		O	Driver output terminal
	20	HVO-6		O	Driver output terminal
	21	HVO-5		O	Driver output terminal
	22	HVO-4		O	Driver output terminal
	23	HVO-3		O	Driver output terminal
	24	HVO-2		O	Driver output terminal
	25	HVO-1		O	Driver output terminal
	26	VDR		I	Power supply terminal
	27	GND			GND pin
	28	CLK		I	Serial data input terminal (clock signal)
	29	DIN		I	Serial data input terminal (data)
	30	AD2		I	Chip select • address set input

SCHEMATIC DIAGRAM
(FM TUNER)

● **For North America area model**

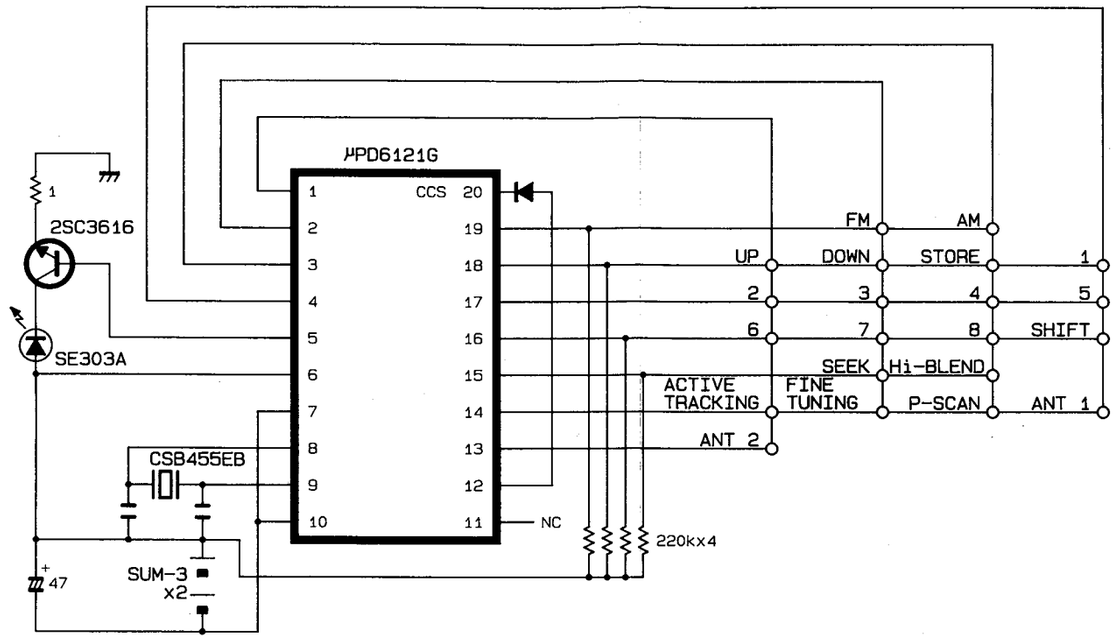


● **For International and Australia models**



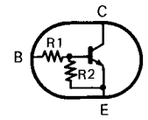
NOTE: Front End parts not available.
Schematic diagram supplied for reference only.

(INFRARED REMOTE CONTROL)



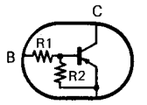
NOTE: Infrared Remote Control parts not available.
Schematic diagram supplied for reference only.

RN1203



R1 22K
R2 22K

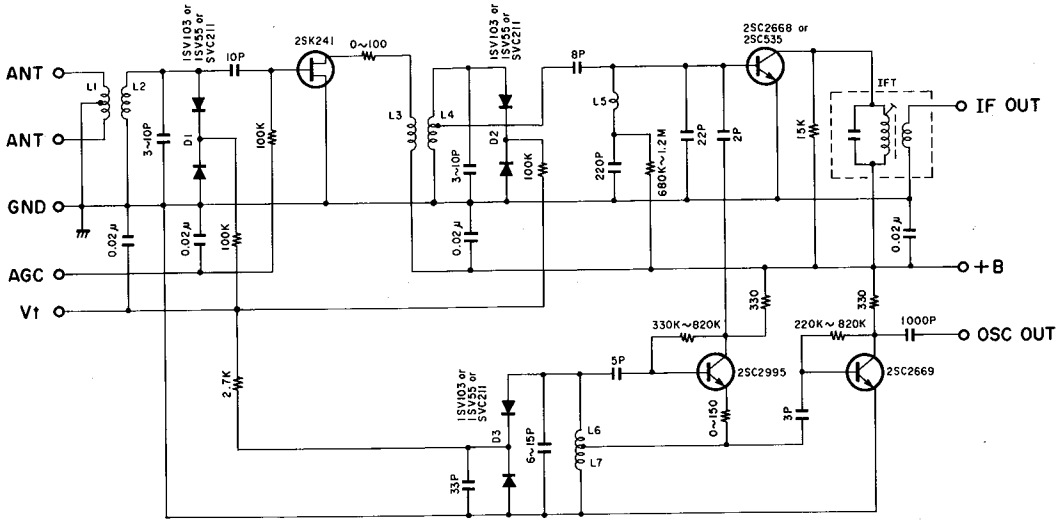
RN2203



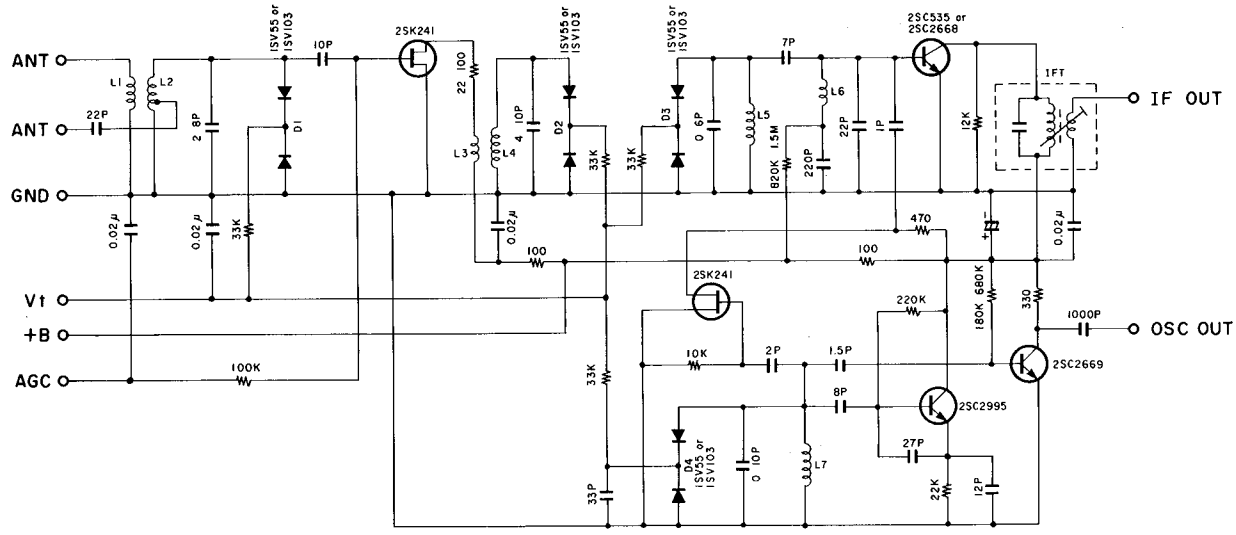
R1 22K
R2 22K

SCHEMATIC DIAGRAM
(FM TUNER)

● For North America area model



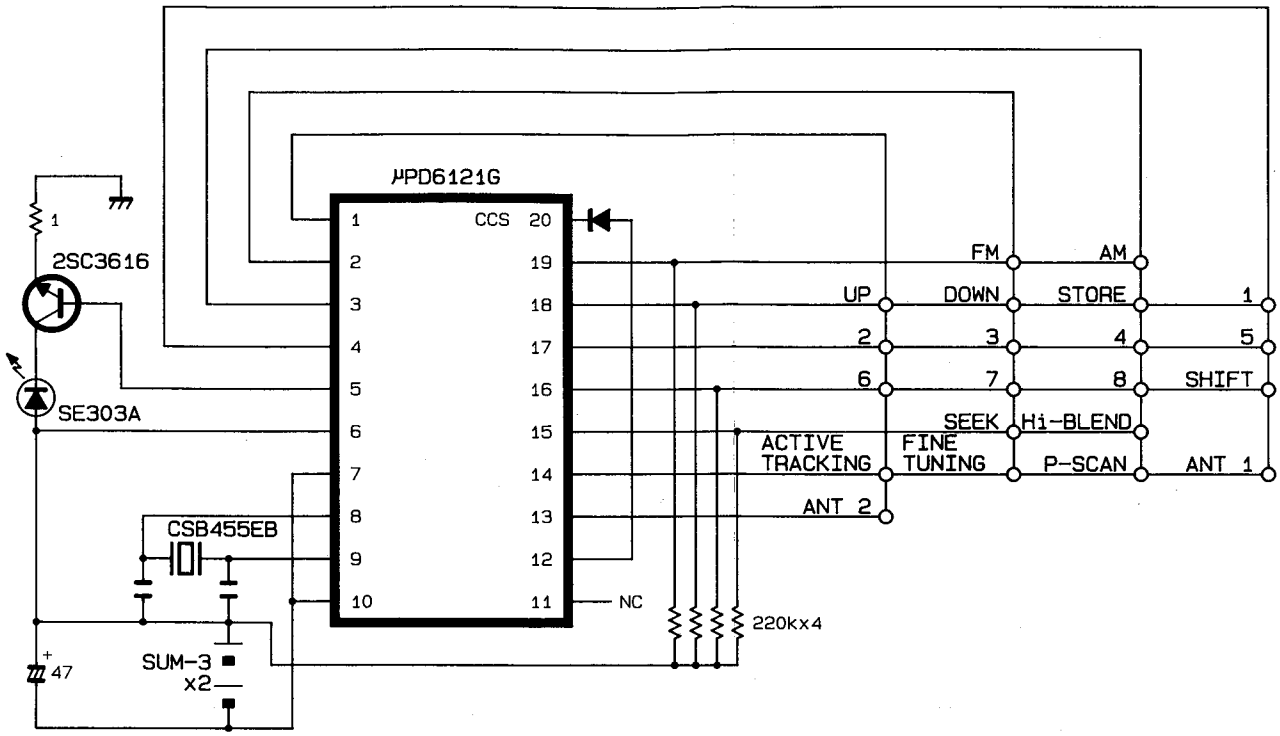
● For International and Australia models



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

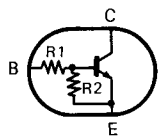
F	G	H	I	J

(INFRARED REMOTE CONTROL)



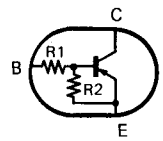
NOTE: Infrared Remote Control parts not available.
Schematic diagram supplied for reference only.

RN1203



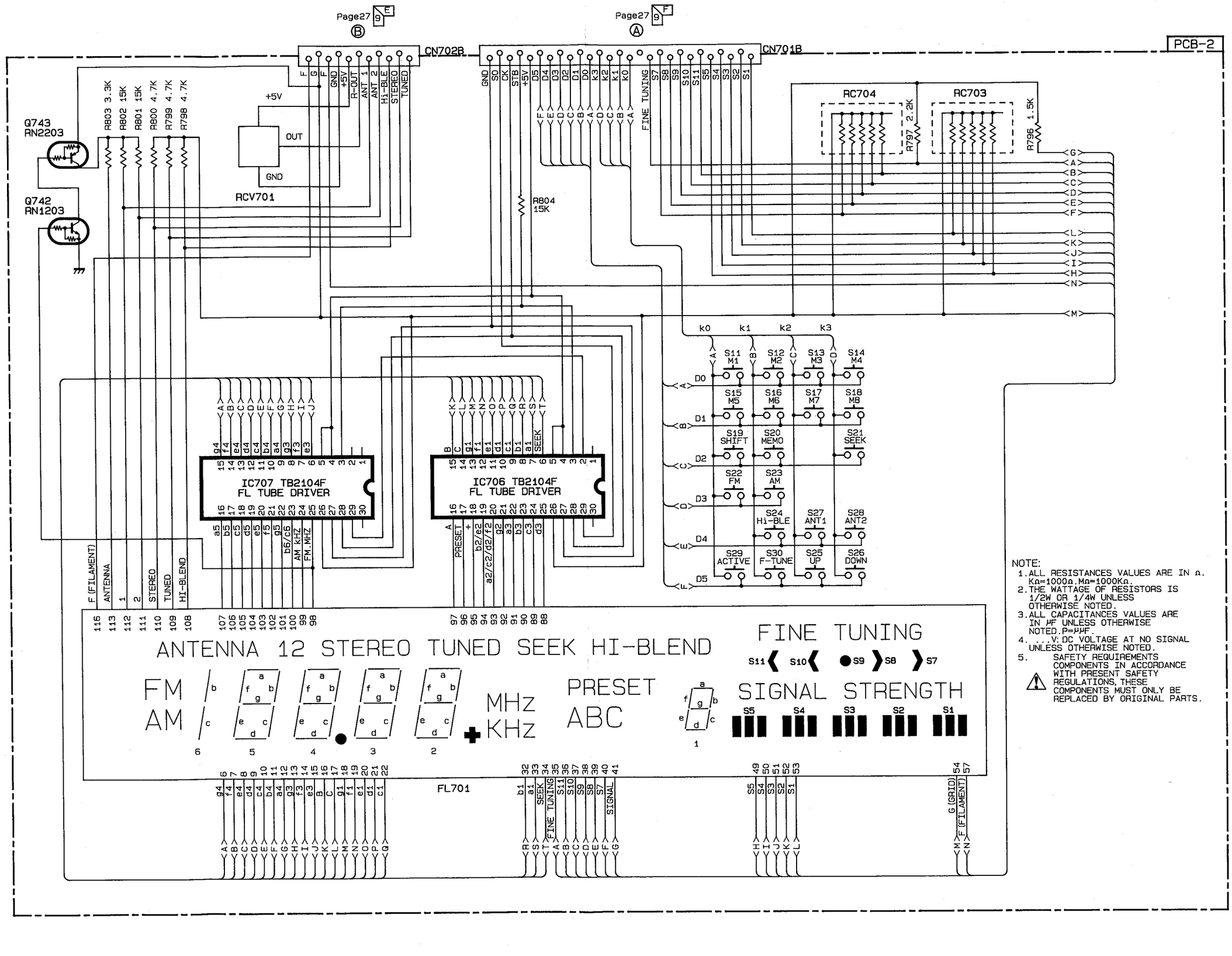
R1 22K
R2 22K

RN2203



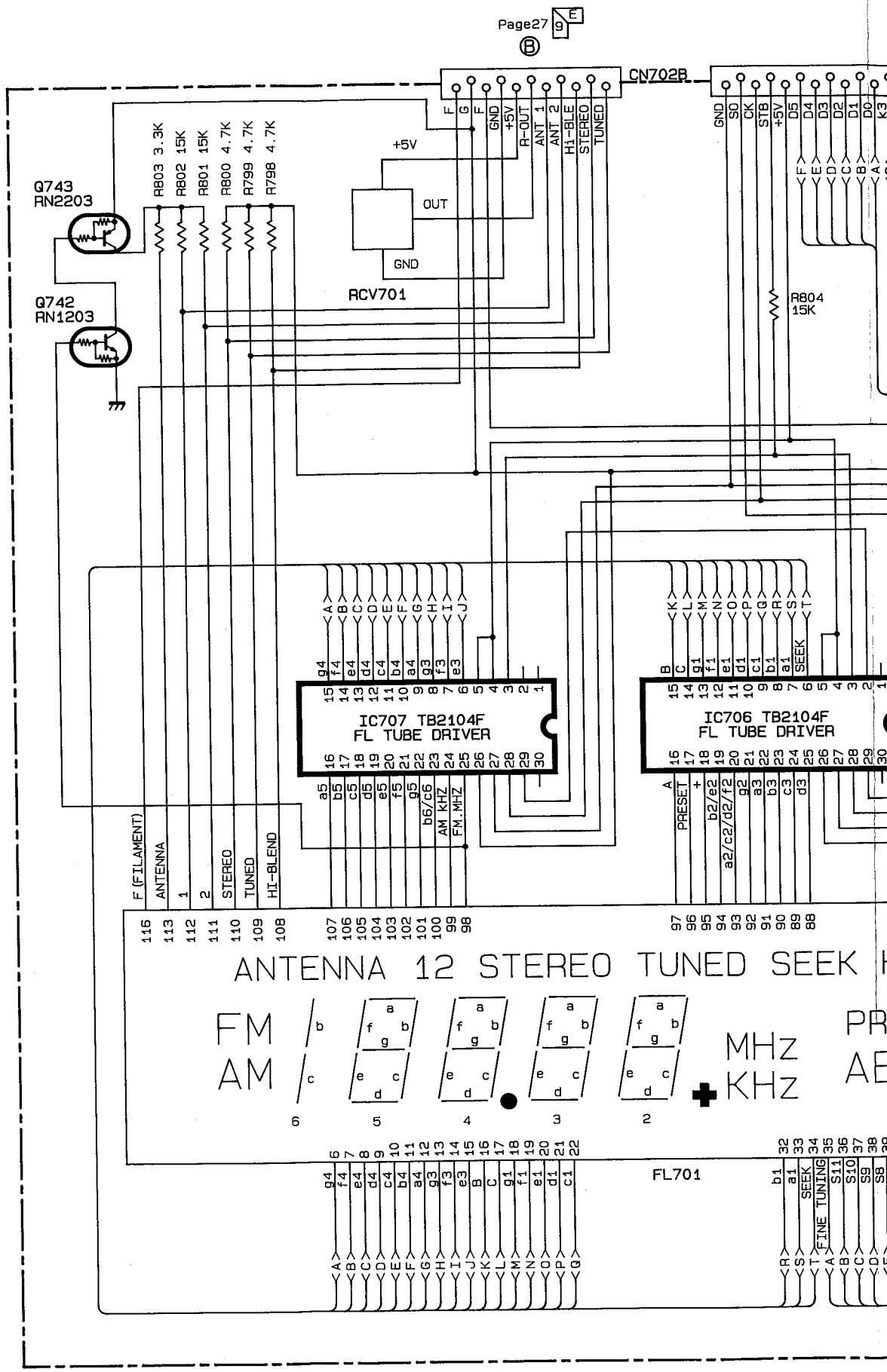
R1 22K
R2 22K

SCHEMATIC DIAGRAM



NOTE:
1. ALL RESISTANCES VALUES ARE IN Ω. KΩ=1000Ω. MΩ=1000KΩ.
2. THE WATTAGE OF RESISTORS IS 1/2W OR 1/4W 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.

SCHEMATIC DIAGRAM



Page27 9 F
A

PCB-2

CN701B

FINE TUNING

RC704

RC703

R797 2.2K

R796 1.5K

k0 k1 k2 k3

S11 M1 | S12 M2 | S13 M3 | S14 M4

S15 M5 | S16 M6 | S17 M7 | S18 M8

S19 SHIFT | S20 MEMO | S21 SEEK

S22 FM | S23 AM

S24 Hi-BLE | S27 ANT1 | S28 ANT2

S29 ACTIVE | S30 F-TUNE | S25 UP | S26 DOWN

D0 D1 D2 D3 D4 D5

K HI-BLEND

PRESET ABC

FINE TUNING

S11 S10 S9 S8 S7

SIGNAL STRENGTH

S5 S4 S3 S2 S1

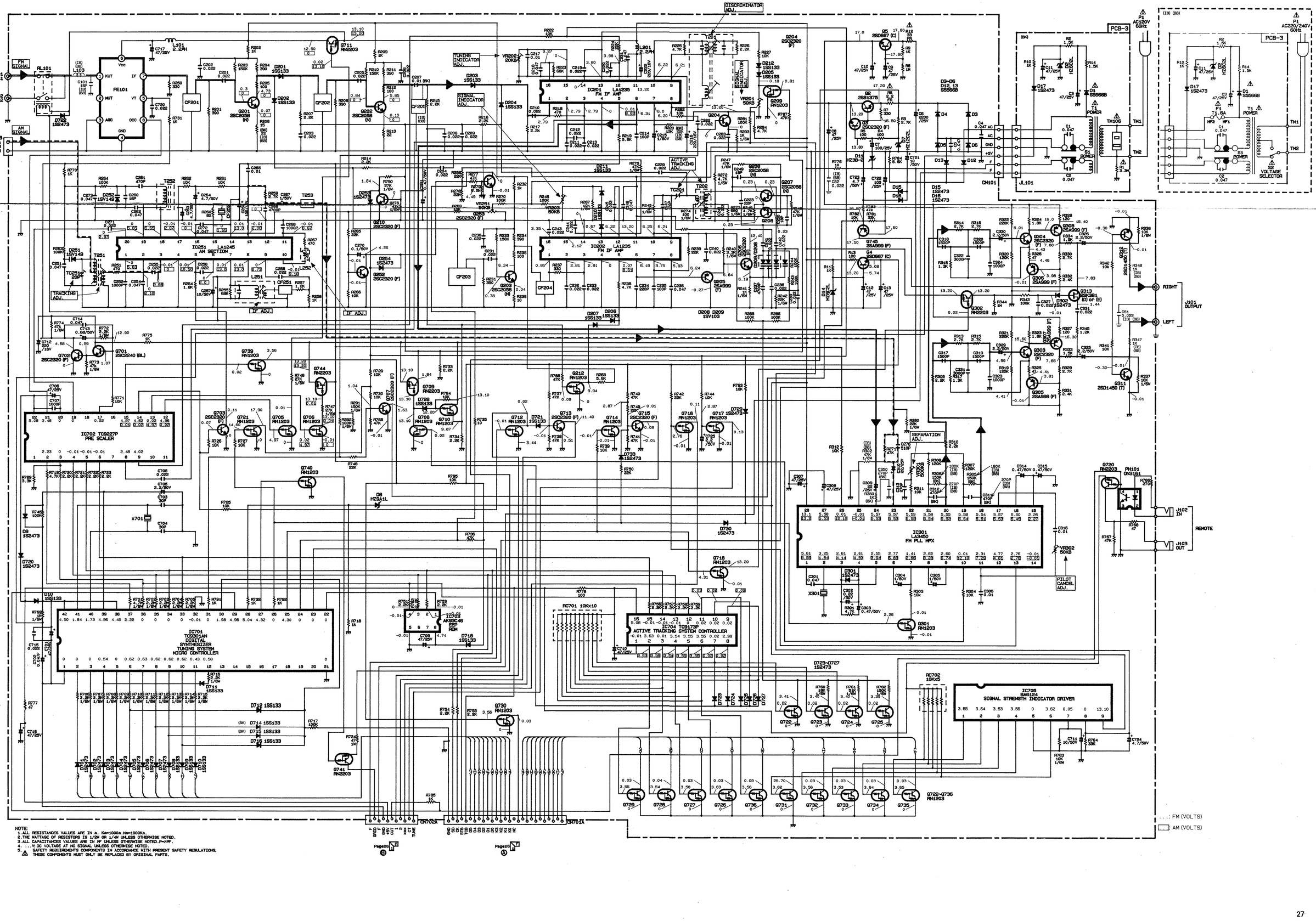
SIGNAL

G (GRID)

F (FILAMENT)

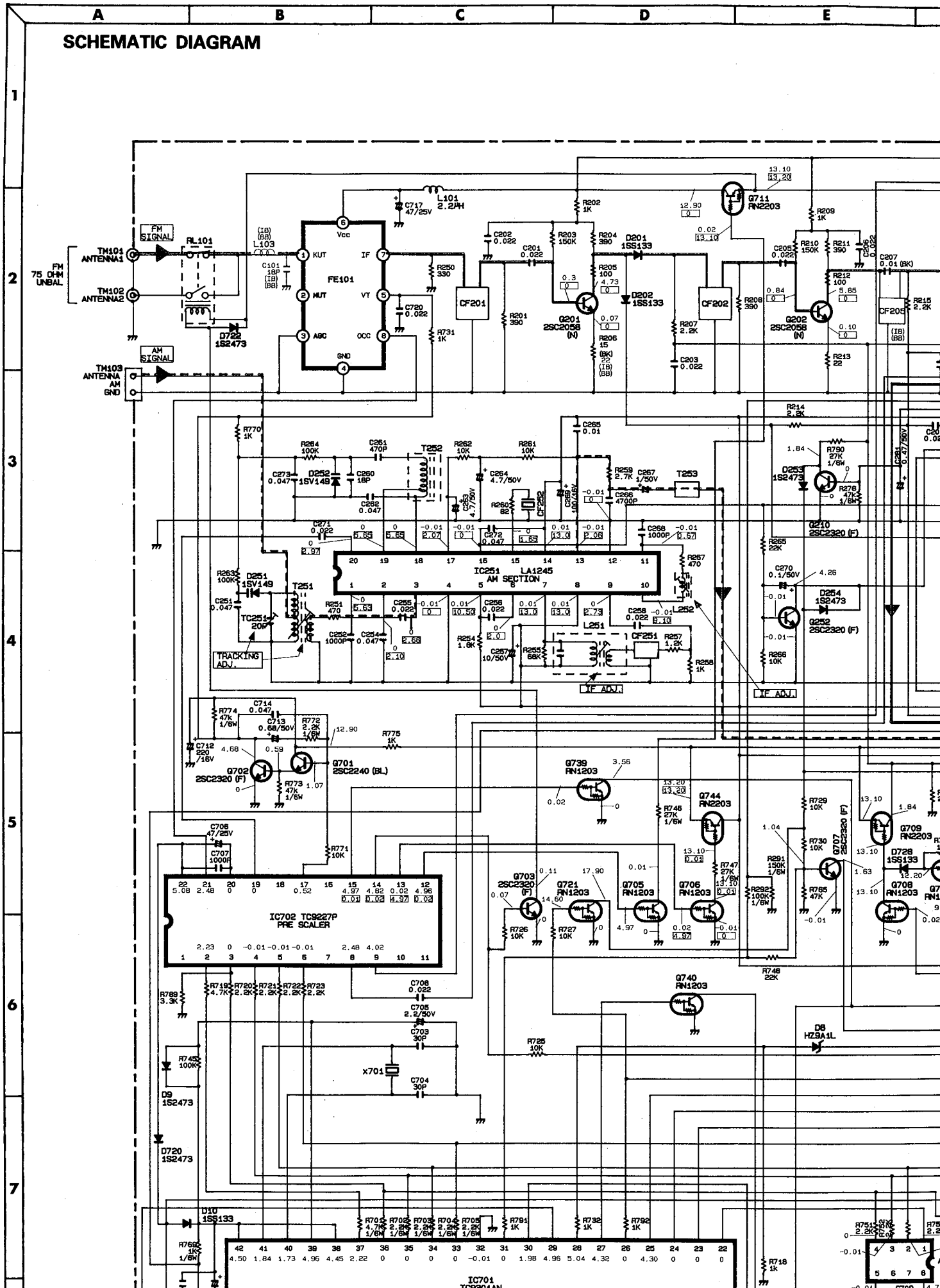
NOTE:
1. ALL RESISTANCES VALUES ARE IN Ω. KΩ=1000Ω, MΩ=1000KΩ.
2. THE WATTAGE OF RESISTORS IS 1/2W OR 1/4W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN μF UNLESS OTHERWISE NOTED. P=μμF.
4. ...V: DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
5. SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

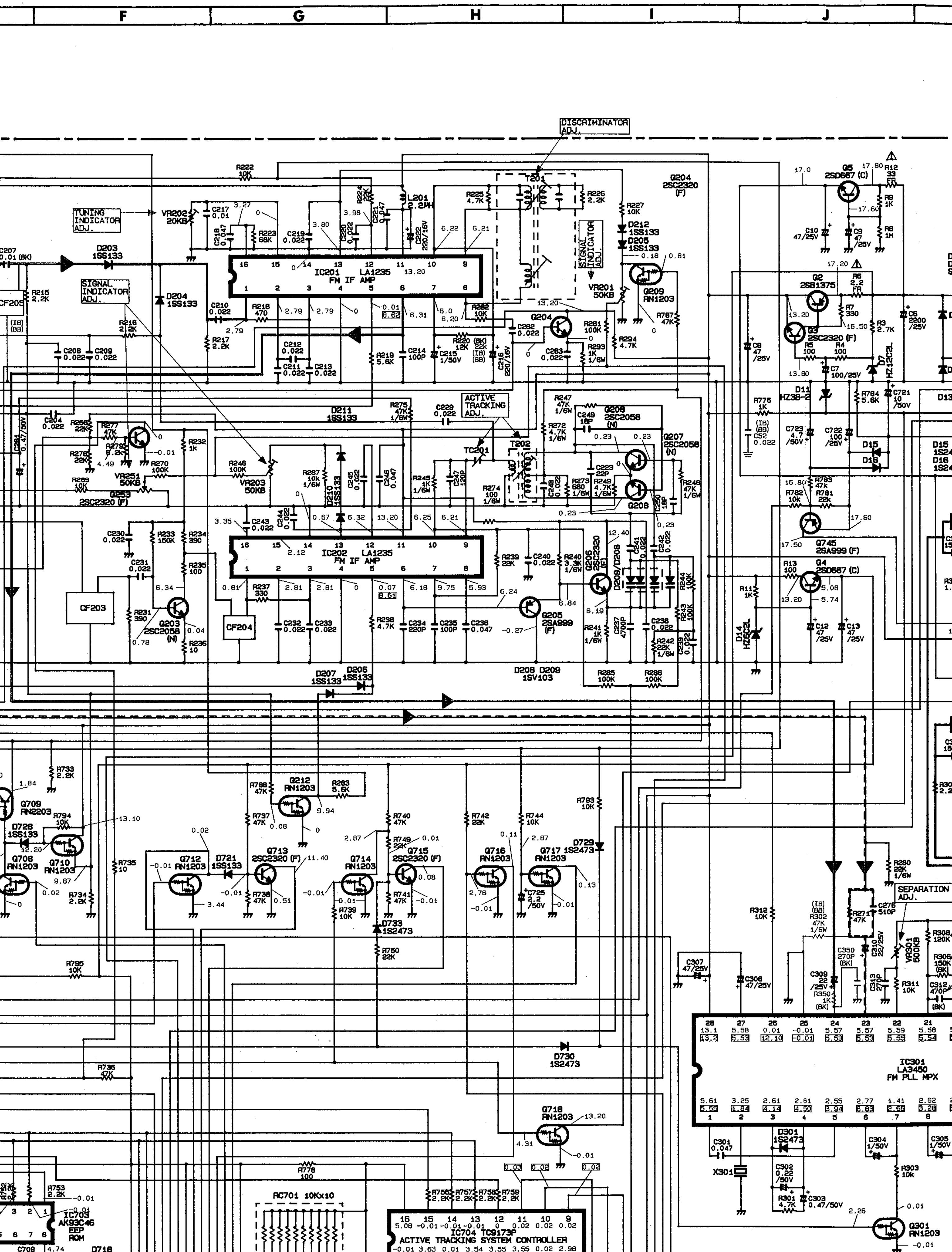
SCHEMATIC DIAGRAM



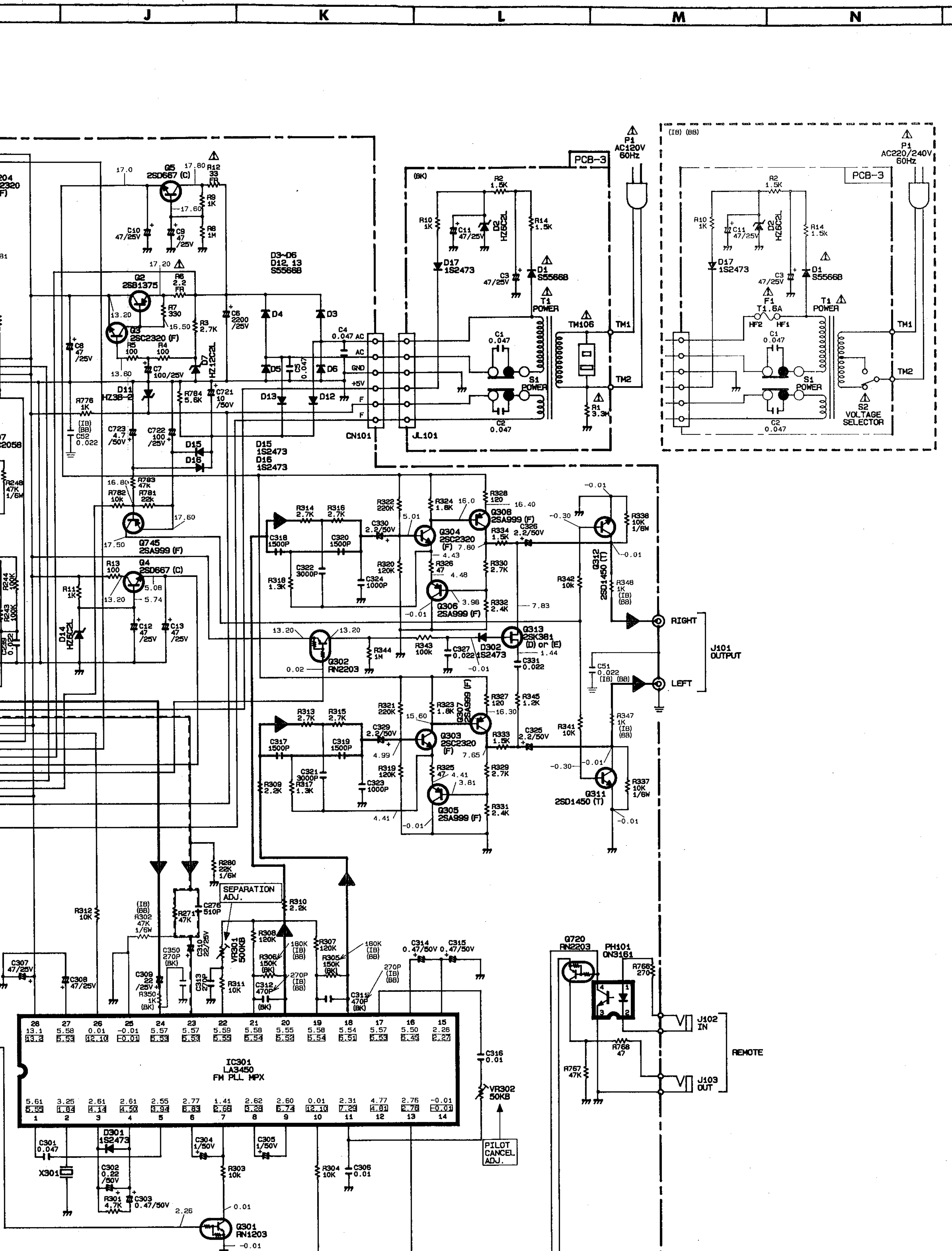
NOTE:
1. ALL RESISTANCES VALUES ARE IN Ω. K=1000Ω. M=1000KΩ.
2. THE WATTAGE OF RESISTORS IS 1/2W OR 1/4W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN μF UNLESS OTHERWISE NOTED. P=PμF.
4. . . . V: DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
5. ⚠ SAFETY REGULATIONSHENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

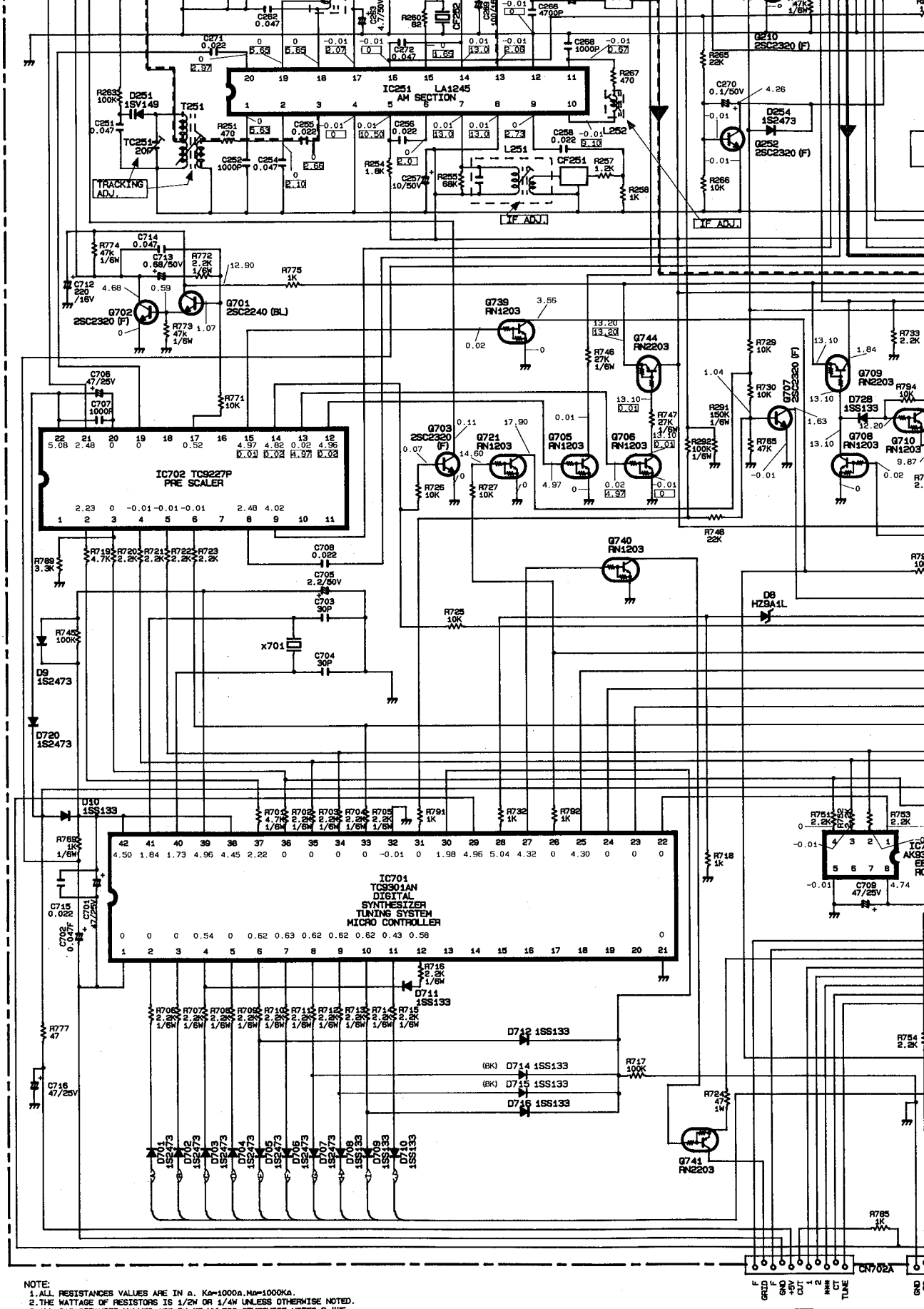
SCHEMATIC DIAGRAM





F
G
H
I
J
DISCRIMINATOR ADJ.
TUNING INDICATOR ADJ.
SIGNAL INDICATOR ADJ.
IC201 LA1235 FM IF AMP
ACTIVE TRACKING ADJ.
IC202 LA1235 FM IF AMP
D208 D209 1SV103
SEPARATION ADJ.
IC301 LA3450 FM PLL MPX
IC703 AK93C46 EEP ROM
RC701 10Kx10
IC704 TC9173P ACTIVE TRACKING SYSTEM CONTROLLER


J
K
L
M
N
PCB-3
P1
AC120V
60Hz
(IB) (BB)
P1
AC220/240V
60Hz
(BK)
T1
POWER
S1
POWER
TM106
TM1
TM2
S2
VOLTAGE
SELECTOR
F1
T1.6A
CN101
JL101
D3~D6
D12, 13
S5566B
D15
1S2473
D16
1S2473
Q5
2SD667 (C)
Q2
2SB1375
Q3
2SC2320 (F)
Q4
2SD667 (C)
Q745
2SA999 (F)
Q308
2SA999 (F)
Q304
2SC2320
Q306
2SA999 (F)
Q302
RN2203
Q313
2SK381
(D) or (E)
D302
1S2473
Q303
2SC2320
Q307
2SA999 (F)
Q305
2SA999 (F)
Q312
2SD1450 (T)
Q311
2SD1450 (T)
RIGHT
LEFT
J101
OUTPUT
SEPARATION
ADJ.
VR301
500KB
IC301
LA3450
FM PLL MPX
VR302
50KB
PILOT
CANCEL
ADJ.
X301
D301
1S2473
Q301
RN1203
Q720
RN2203
PH101
ON3161
J102
IN
J103
OUT
REMOTE



NOTE:
1. ALL RESISTANCES VALUES ARE IN Ω. KΩ=1000Ω. MΩ=1000KΩ.
2. THE WATTAGE OF RESISTORS IS 1/2W OR 1/4W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN MF 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.

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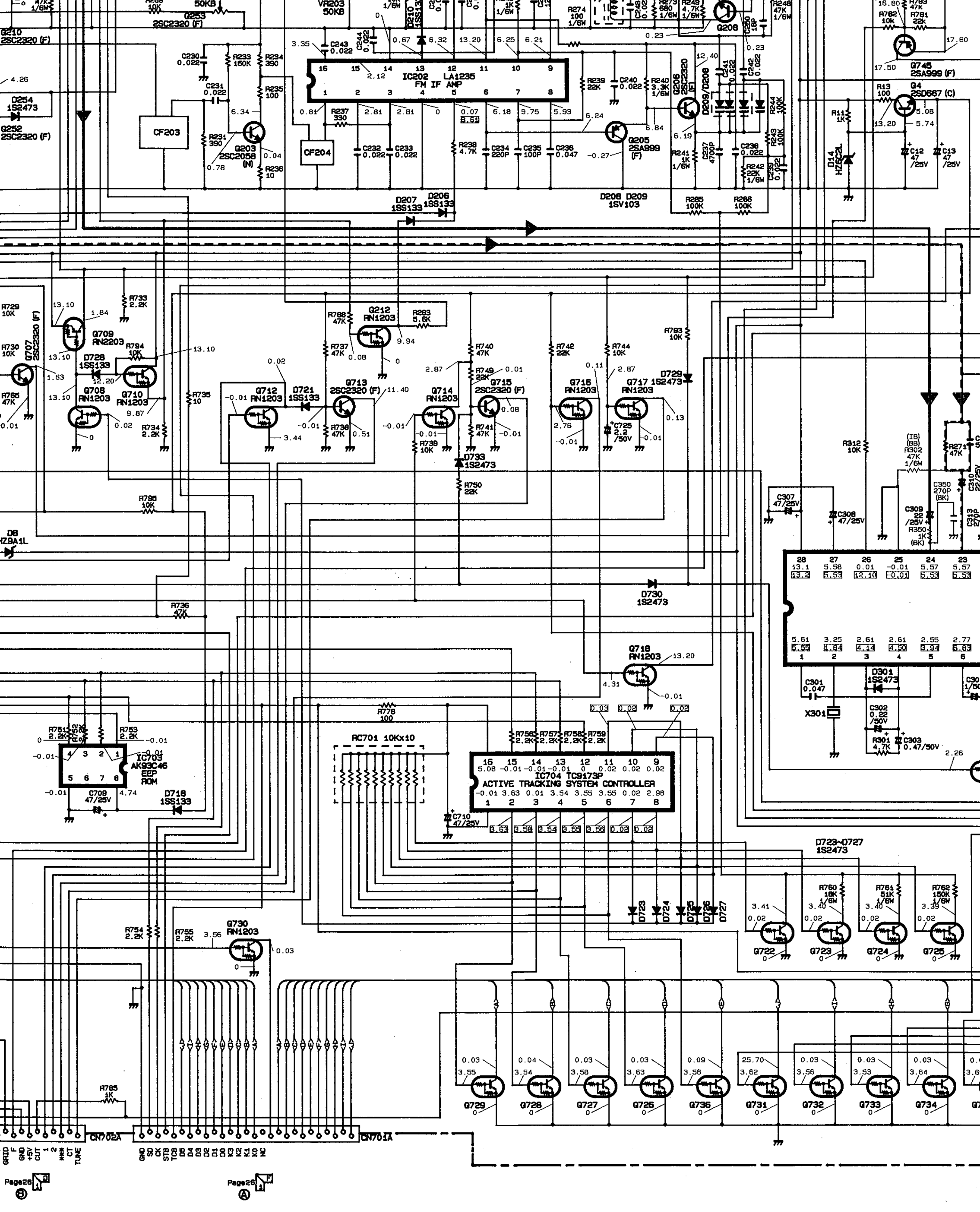
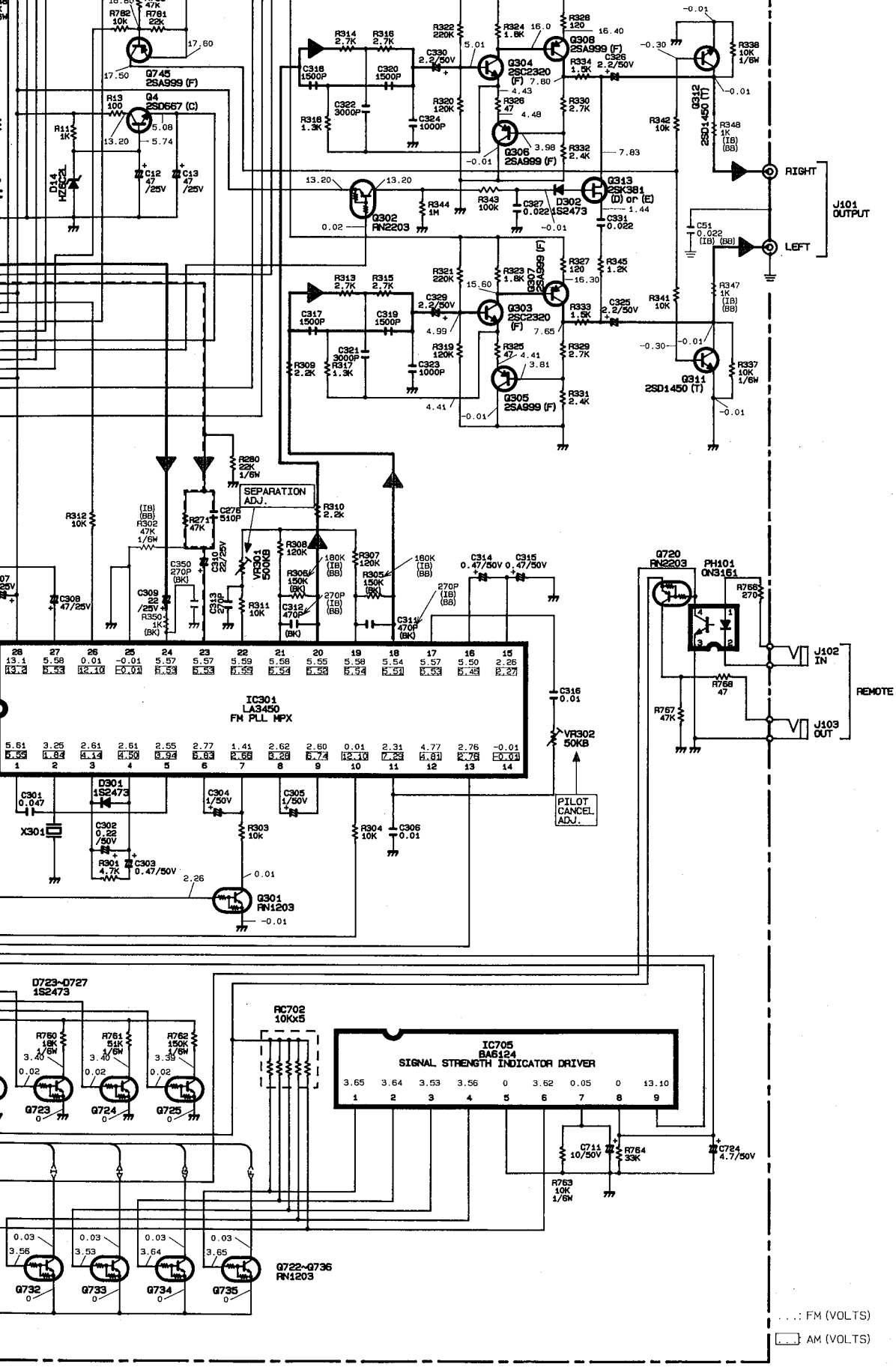


IC202 LA1235
FM IF AMP
CF203
CF204
D207 1SS133
D206 1SS133
D208 D209 1SV103
Q745 2SA999 (F)
Q4 2SD667 (C)
D14 HZ6C2L
D8 HZ9A1L
IC703 AK93C46 EEP ROM
D718 1SS133
RC701 10Kx10
IC704 TC9173P
ACTIVE TRACKING SYSTEM CONTROLLER
D730 1S2473
D301 1S2473
X301
D723~D727 1S2473
Q730 RN1203
Q718 RN1203
CN702A
CN701A
GRID
F
GND
+5V
CUT
TUNE
GND
SO
CK
STB
Page26 D
Page26 F


Q745 2SA999 (F)
Q4 2SD667 (C)
Q302 RN2203
Q304 2SC2320 (F)
Q306 2SA999 (F)
Q308 2SA999 (F)
Q313 2SK381 (D) or (E)
D302 1S2473
Q312 2SD1450 (T)
RIGHT
LEFT
J101 OUTPUT
Q303 2SC2320 (F)
Q305 2SA999 (F)
Q307 2SA999 (F)
Q311 2SD1450 (T)
SEPARATION ADJ.
VR301 500KB
IC301 LA3450 FM PLL MPX
VR302 50KB
PILOT CANCEL ADJ.
Q720 RN2203
PH101 ON3161
J102 IN
J103 OUT
REMOTE
Q301 RN1203
X301
D301 1S2473
D723~D727 1S2473
RC702 10KX5
IC705 BA6124 SIGNAL STRENGTH INDICATOR DRIVER
Q723
Q724
Q725
Q722~Q736 RN1203
Q732
Q733
Q734
Q735
. . . : FM (VOLTS)
[. . .] AM (VOLTS)