

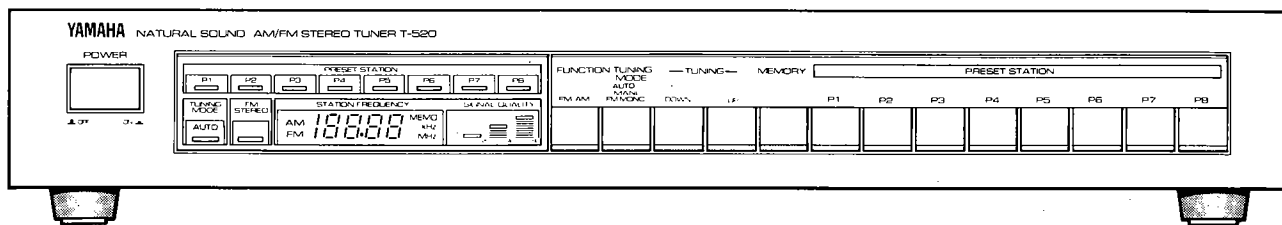
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T-520/17

AM/FM STEREO TUNER T-520/17

SERVICE MANUAL

T-520



U, C, R, A models

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit/s indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

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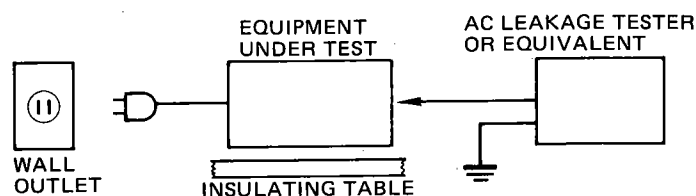
YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

2.6k-103 ☐ Ⓜ Printed in Japan. '84.12

■ TO SERVICE PERSONNEL

1. Critical Components Information.
Components having special characteristics are marked **!** and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120 V Model Only).
When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.
 - Meter impedance should be equivalent to 1500 ohm shunted by 0.15 μ F.
 - Leakage current must not exceed 0.5mA.
 - Be sure to test for leakage with the AC plug in both polarities.



■ SPECIFICATIONS

■ FM SECTION

Tuning Range	87.5 to 108.1MHz (U)(C) (R) 87.5 to 108.0MHz (G)(A) (B)
50dB Quieting Sensitivity	
Mono, 75 Ω	1.55 μ V (15.1dBf)
Stereo, 75 Ω	21 μ V (37.7dBf)
Usable Sensitivity	
Mono (30dB Quieting)	0.8 μ V (75 Ω) 9.3dBf
DIN Mono (S/N 26dB), 75 Ω	1.4 μ V (G)
DIN Stereo (S/N 46dB), 75 Ω	30 μ V (G)
Image Response Ratio (98MHz)	40dB/75dB (G)
IF Response Ratio (98MHz)	100dB/75dB (G)
Spurious Response Ratio (98MHz)	80dB/70dB (G)
AM Suppression Ratio (IHF)	55dB
Capture Ratio (IHF)	1.5dB
Alternate Channel	85dB
Selectivity (two signals)	70dB (G)
Signal to Noise Ratio (at 85dBf)	
Mono	81dB
Stereo	76dB
Harmonic Distortion	
Mono 1kHz	0.1%
Stereo 1kHz	0.2%
Stereo Separation 1kHz	40dB
Frequency Response 30Hz to 13kHz	0 \pm 0.5dB
Meter Saturation Level	100 μ V (45.2dBf)

■ AM SECTION

Tuning Range	520 to 1610kHz (U)(C) 522 to 1611kHz (G)(A)(B) 520 to 1620kHz or 522 to 1611kHz (R)
Usable Sensitivity (IHF)	250 μ V/m
Selectivity	24dB
Signal to Noise Ratio	50dB
Image Response Ratio	40dB
Spurious Response Ratio	Better than 50dB
Distortion	0.5%

■ LW SECTION (G)(B) models only

Tuning Range	153 to 360kHz
Usable Sensitivity (IHF)	250 μ V/m
Selectivity	32dB
Signal to Noise Ratio	50dB
Image Response Ratio	30dB
Spurious Response Ratio	Better than 45dB
Distortion (400Hz)	0.5%

■ AUDIO SECTION

Output Level/Impedance	
FM 100% MOD 1kHz	500mV/3.3k Ω
FM 40kHz DEV. 1kHz	400mV/3.3k Ω (G)
AM 30% MOD 400Hz	150mV/3.3k Ω
LW 30% MOD 400Hz	150mV/3.3k Ω

■ GENERAL

Power Supply	
U.S. & Canadian Models	120V, 60Hz
General Model	110–130V/220–240V 50/60Hz
European Models	220V, 50Hz
British & Australian Models	240V, 50Hz
Power Consumption	10W (U) (C) (R) 14W (A) (G) (B)
Dimensions (W x H x D)	435 x 72 x 281 mm (17-1/8x2-7/8x11")
Weight	3.0 kg (6 lbs. 10 oz)

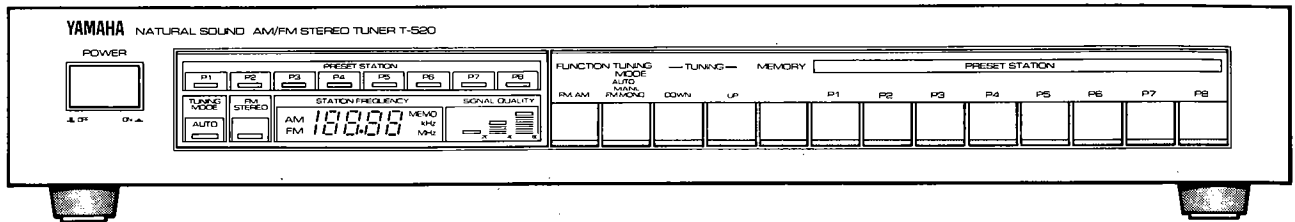
(U) U.S.A. model (G) European model
(C) Canadian model (B) British model
(A) Australian model (R) General model

Specifications subject to change without notice.

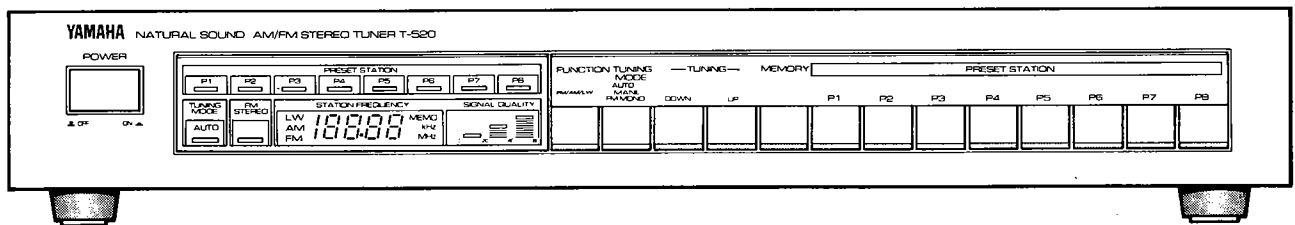
FRONT PANELS

▼ U, C, R, A models

T-520

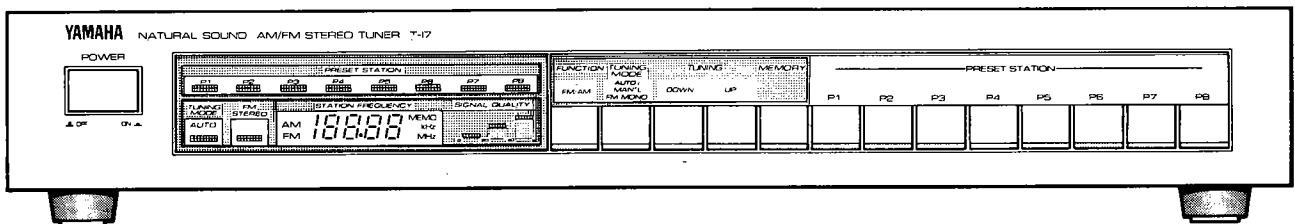


▼ G, B models

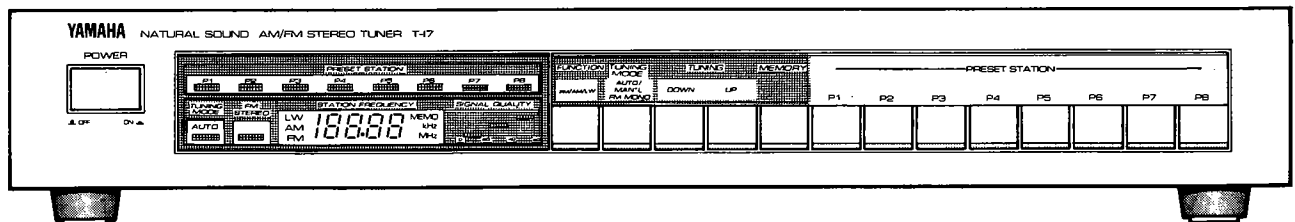


▼ U, C, R, A models

T-17



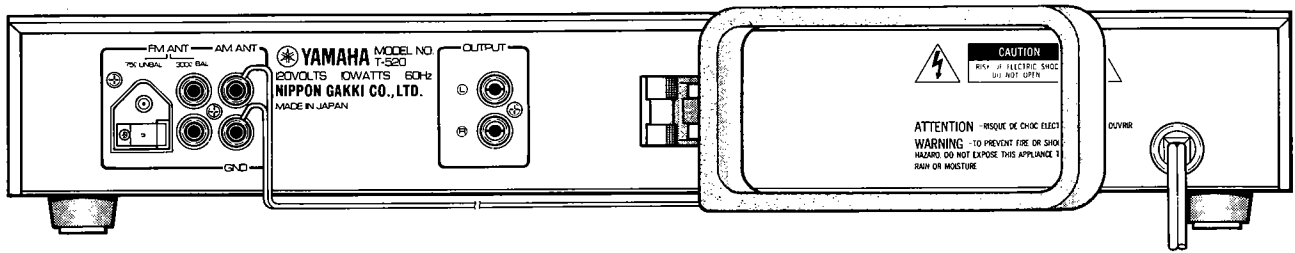
▼ G, B models



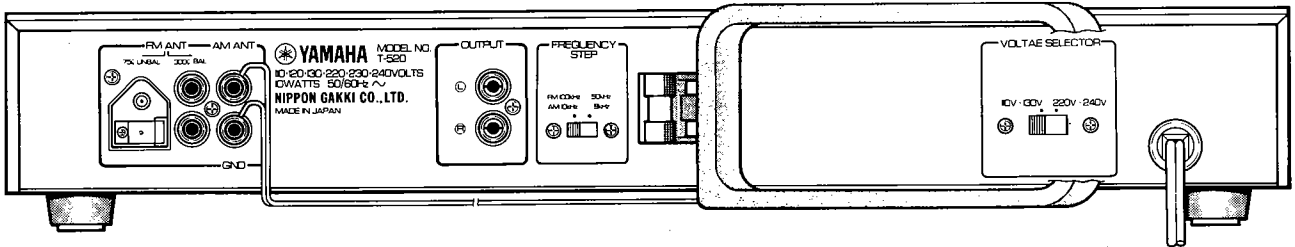
REAR PANELS

T-520

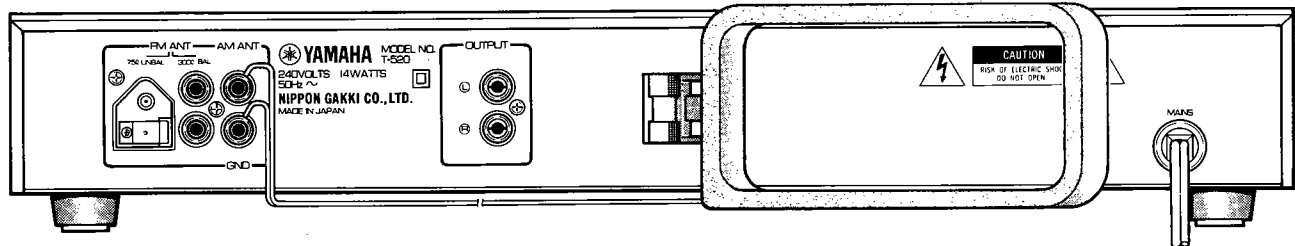
▼ U.S.A. & Canadian models



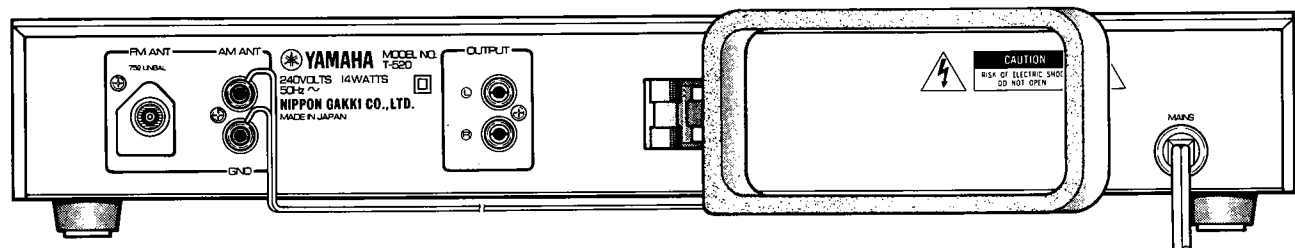
▼ General model



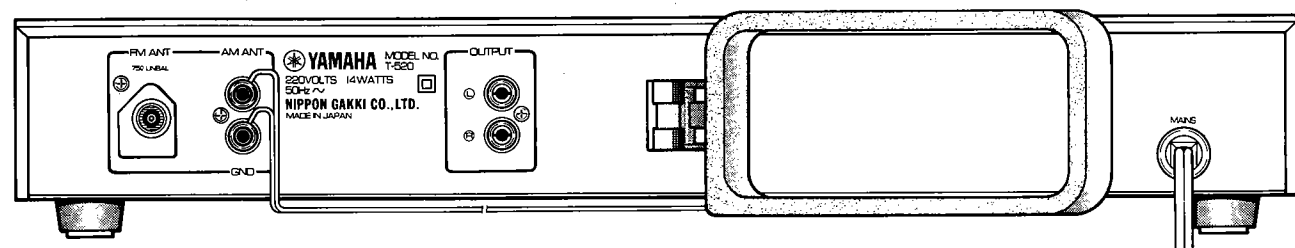
▼ Australian model



▼ British model

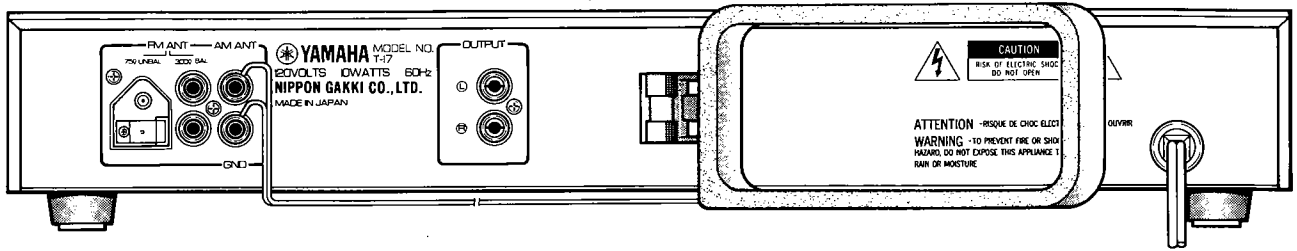


▼ European model

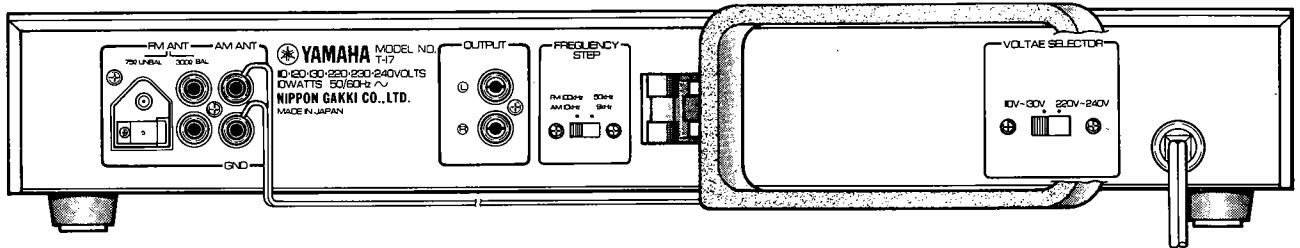


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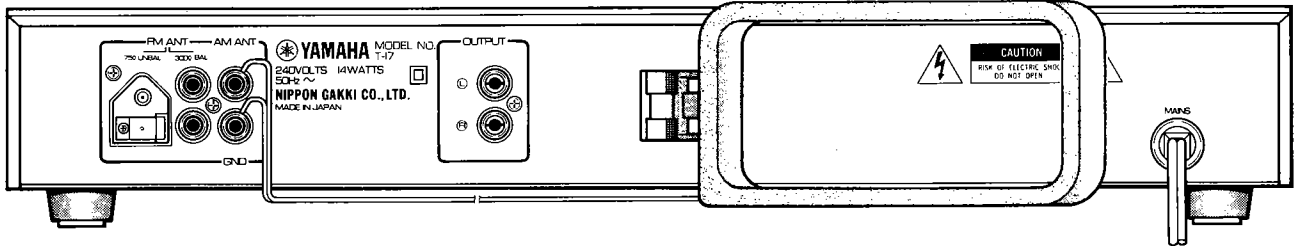
▼ U.S.A. & Canadian models



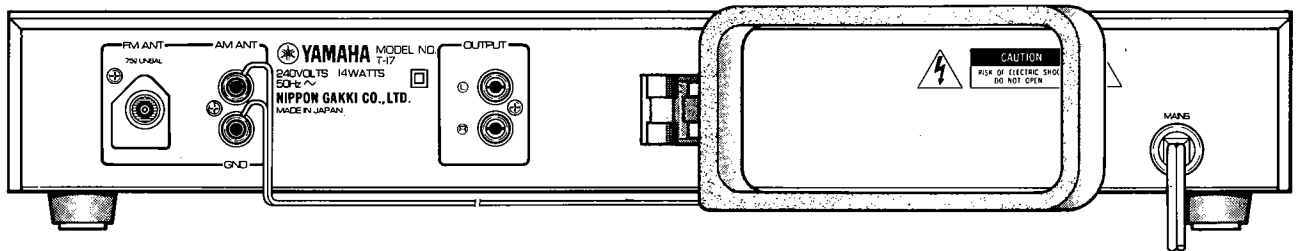
▼ General model



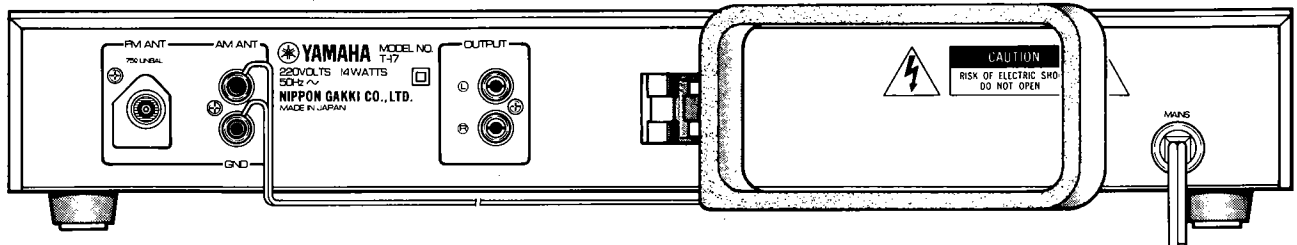
▼ Australian model



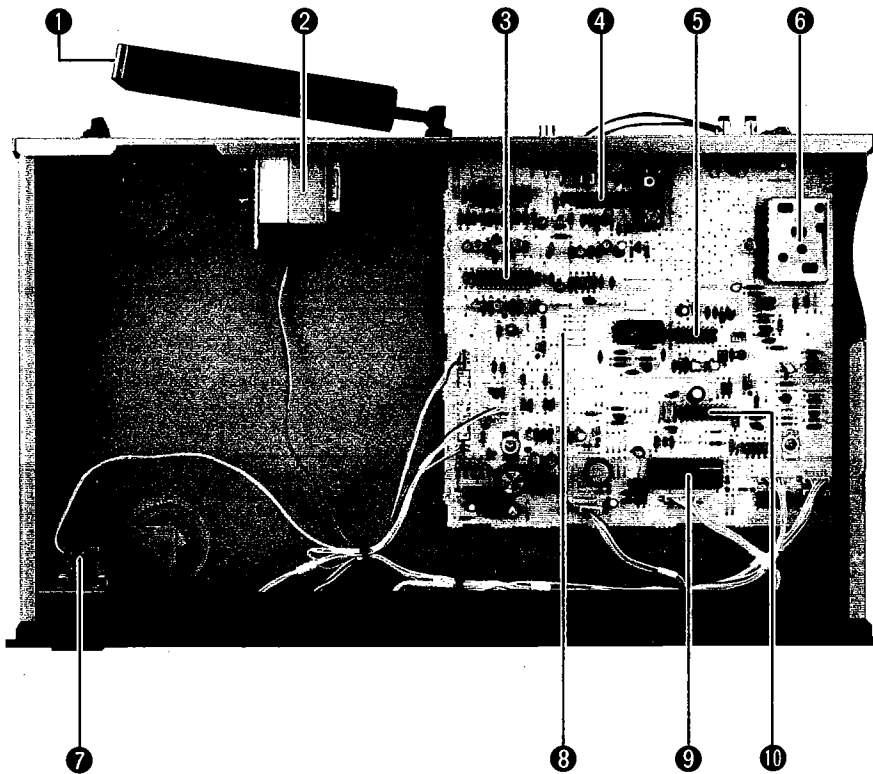
▼ British models



▼ European models



INTERNAL VIEW



- ① AM LOOP ANTENNA
- ② POWER TRANSFORMER
U, C models: GA68490
R, A, G, B models: GA68480
- ③ MPX IC: LA3400
- ④ AM IC: LA1245
- ⑤ FM IF IC: LA1235
- ⑥ FRONT END PACK
- ⑦ POWER SWITCH
- ⑧ TUNER CIRCUIT BOARD (1)
- ⑨ 4 BIT CPU: LC7030
- ⑩ PLL IC: LM7000

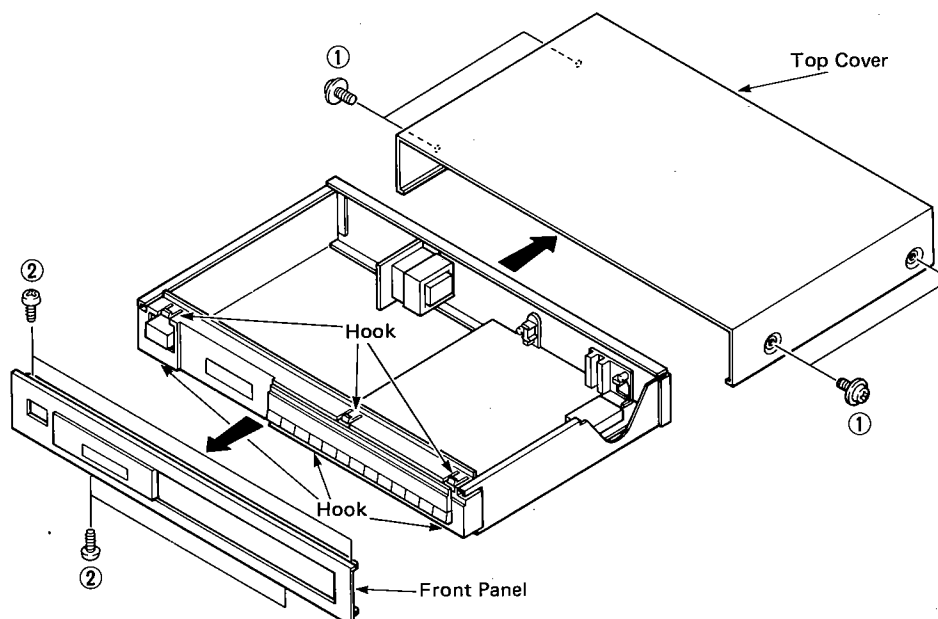
DISASSEMBLY PROCEDURES

1. Removal of Top Cover

Remove 4 screws (①) in Fig. 1, and slide the Top Cover back.

2. Removal of Front Panel

Remove 4 screws (②) and 6 hooks in Fig. 1, and pull the Front Panel forward.



ADJUSTMENTS

1. Before adjustment

- Note 1) After the Power switch is pushed on, wait for 5 minutes before measuring, to be sure of the most stable operation.
- Note 2) Adjust the OSC coil and IFT with a nonferrous screw driver.
- Note 3) Proceed with the AM section adjustments after having finished the FM section adjustment.
- Note 4) $0dB\mu = 1\mu V$ Ex: $60dB\mu = 1mV$

2. Measuring instruments abbreviation

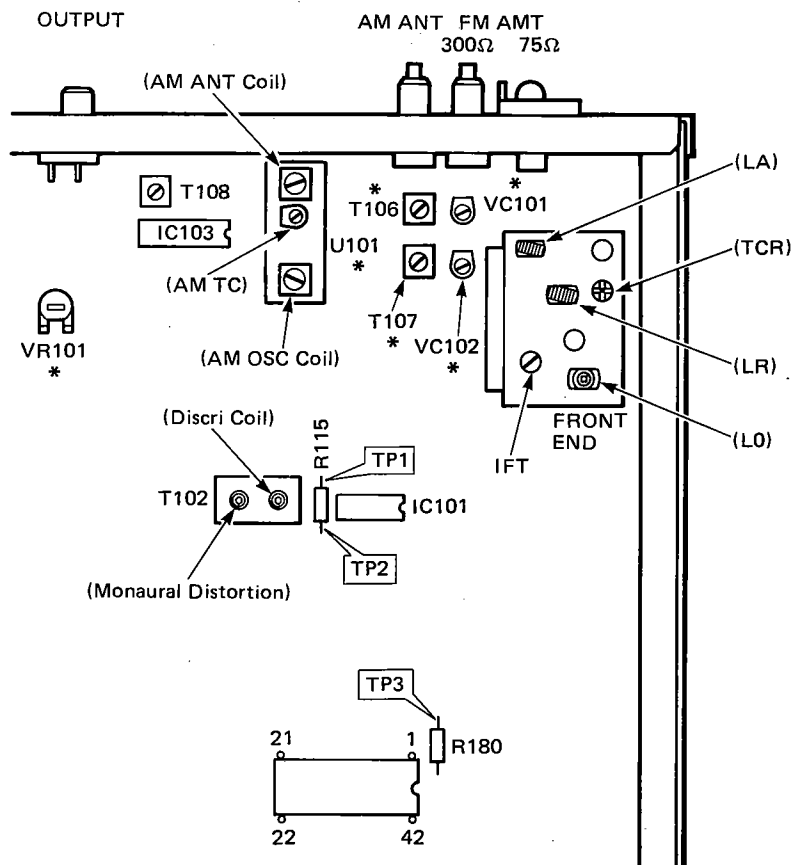
- FM SG : FM signal generator
- SSG : Stereo signal generator
- AM SG : AM signal generator
- DIST. M : Distortion meter
- FC : Frequency counter
- A.C.V.M. : AC voltagemeter
- D.C.V.M. : DC voltagemeter

<POWER SUPPLY CHECK>

Check that the following voltages are obtained respectively across each test point and ground on tuner circuit.

Test point	Rating or standard	Remark								
+12	+12.5V ± 1V DC	Make sure that AC line voltage comes within <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Models</th> <th>AC line voltage</th> </tr> </thead> <tbody> <tr> <td>U, C</td> <td>120V ± 10%</td> </tr> <tr> <td>G</td> <td>220V ± 10%</td> </tr> <tr> <td>A, B</td> <td>240V ± 10%</td> </tr> </tbody> </table>	Models	AC line voltage	U, C	120V ± 10%	G	220V ± 10%	A, B	240V ± 10%
Models	AC line voltage									
U, C	120V ± 10%									
G	220V ± 10%									
A, B	240V ± 10%									
+5.5	+5.5V ± 0.5V DC									
FB	At FM reception mode +12.5V ± 1V DC									
	At AM reception mode less than +1V DC									
AB	At AM reception mode +12.5V ± 1V DC									
	At FM reception mode less than +1V DC									
LW (G, B models only)	At LW reception mode +12.5V ± 0.5V DC									
	At FM or AM reception mode less than +1V DC									

• TEST POINT

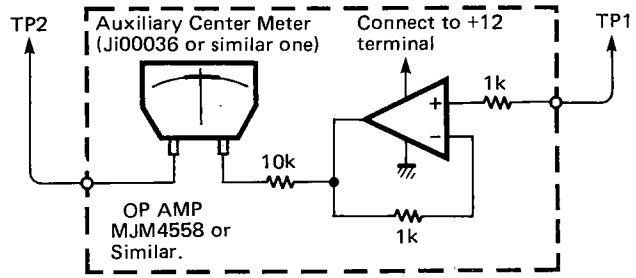


Note: * marked

- U101 : R.U.C.A models only
- VR101 : G, B models only
- VC101 : G, B models only (AM High)
- VC102 : G, B models only (LW High)
- T106 : G, B models only (AM Low)
- T107 : G, B models only (LW Low)

<FM TUNER SECTION>

- Use 19kHz L.P.F. to measure the output.
- On step 1 and 2 connect the auxiliary center meter (ji00036 or similar) to confirm the best tuned point.
- 100% modulation means that the Frequency Deviation is 75kHz.
- For the G, B model, install the Matching Transformer and connect FM SG.

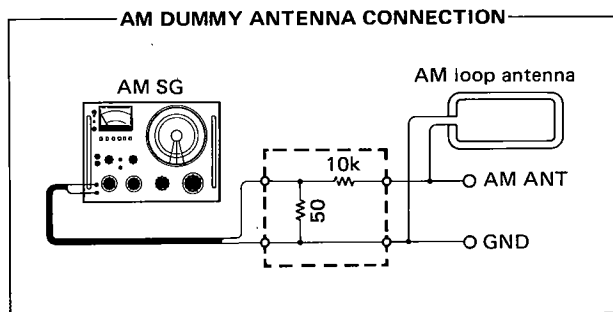


Step	Adjustment item	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard	Remarks
1	Discriminator balance	TP1 ~ TP2	Auxiliary center meter	T102 (Discri Coil)	Adjust so that the pointer of the auxiliary center meter points to 0 at detuned point.		After the adjustment of step 1 to 5, confirm it again.
2	Confirmation of station center set	300Ω FM ANT TP1 ~ TP2	FM SG 98MHz ± 1kHz 70dBμ (75.2dBf) MONO 1kHz 100% MOD Auxiliary center meter	TUNING Key → UP or DOWN	Confirm that the auxiliary center meter deflects to 0 when tuned to signal of FM SG.		
3	Monaural distortion	300Ω FM ANT OUTPUT L,R	FM SG 98MHz ± 1kHz 70dBμ (75.2dBf) MONO 100Hz 100% MOD DIST. M L.P.F.	T102 (Monaural Distortion) SIGNAL QUALITY indicator	Reduce distortion to minimum.	Less than -43dB	Confirm that all signal quality indicators lights
4	Stereo distortion	300Ω FM ANT OUTPUT L, R	FM SG, SSG 98MHz ± 1kHz 70dBμ (75.2dBf) STEREO L, R 1kHz, 100% MOD DIST. M L.P.F.	Front end IFT STEREO indicator	Same as step 3	Less than -33dB	Confirm that stereo indicator lights up.
5	Separation	300Ω FM ANT OUTPUT L, R	FM SG, SSG 98MHz ± 1kHz 70dBμ (75.2dBf) STEREO L, R 1kHz, 100% MOD L.P.F. A.C.V.M.	VR101 (G model only)	Reduce output level to minimum.	Separation more than 28dB	
6	Confirmation of auto search reception	300Ω FM ANT	FM SG 98MHz ± 1kHz 20dBμ (25.2dBf) MONO 1kHz 100% MOD	TUNING Key → Up or DOWN		Confirm that auto search reception is possible with the tuning key.	Confirm that muting is performed at auto reception.

Note: X dBμ = x + 5.2dBμf

<AM TUNER SECTION> R, U, C, A models only

- Connect the AM loop antenna to the AM ANT terminals.
- Connect the AM dummy antenna for adjustment.



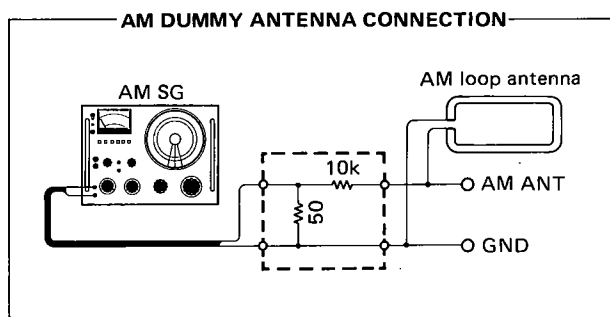
- Shorting TP3 (P SET) and ground (between chassis) while set at FM will result in automatic memory of each preset from P1 to P3 as given in the right table. This is convenient when making an adjustment.
<Addition> P SET : 4 Pin of IC105 (LC7030)

	P1	P2	P3
FM	98.0MHz		
AM	630kHz	1080kHz	1440kHz

Step	Adjustment item	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard
1	AM IFT	AM ANT OUTPUT	AM SG AM dummy antenna 630kHz ± 0.1kHz 50dBμ 400Hz, 30% MOD A.C.V.M.	T108	Adjust so that the detector output is at maximum.	
2	Confirmation of sensitivity	AM ANT OUTPUT	AM SG AM dummy antenna 630kHz ± 0.1kHz 1080kHz ± 0.1kHz 1440kHz ± 0.1kHz 400Hz, 30% MOD A.C.V.M. DIST. M		Obtain AM SG output level where distortion become 10%.	Less than 58dBμ
3	Confirmation of auto search reception	AM ANT	AM SG AM dummy antenna 1080kHz ± 0.1kHz 60dBμ 400Hz, 30% MOD	TUNING key UP or DOWN		Confirm the auto search reception with the tuning key

<AM & LW TUNER SECTION> . . . G, B models only

- Connect the AM loop antenna to the AM ANT terminals.
- Connect the AM dummy antenna for adjustment.



- Shorting TP3 (P SET) and ground (between chassis) while set at FM will result in automatic memory of each preset from P1 to P4 as given in the right table. This is convenient when making an adjustment.
<Addition> P SET : 4 Pin of IC105 (LC7030)

	P1	P2	P3	P4
FM	98.0MHz			
AM	630kHz	1080kHz	1440kHz	245kHz

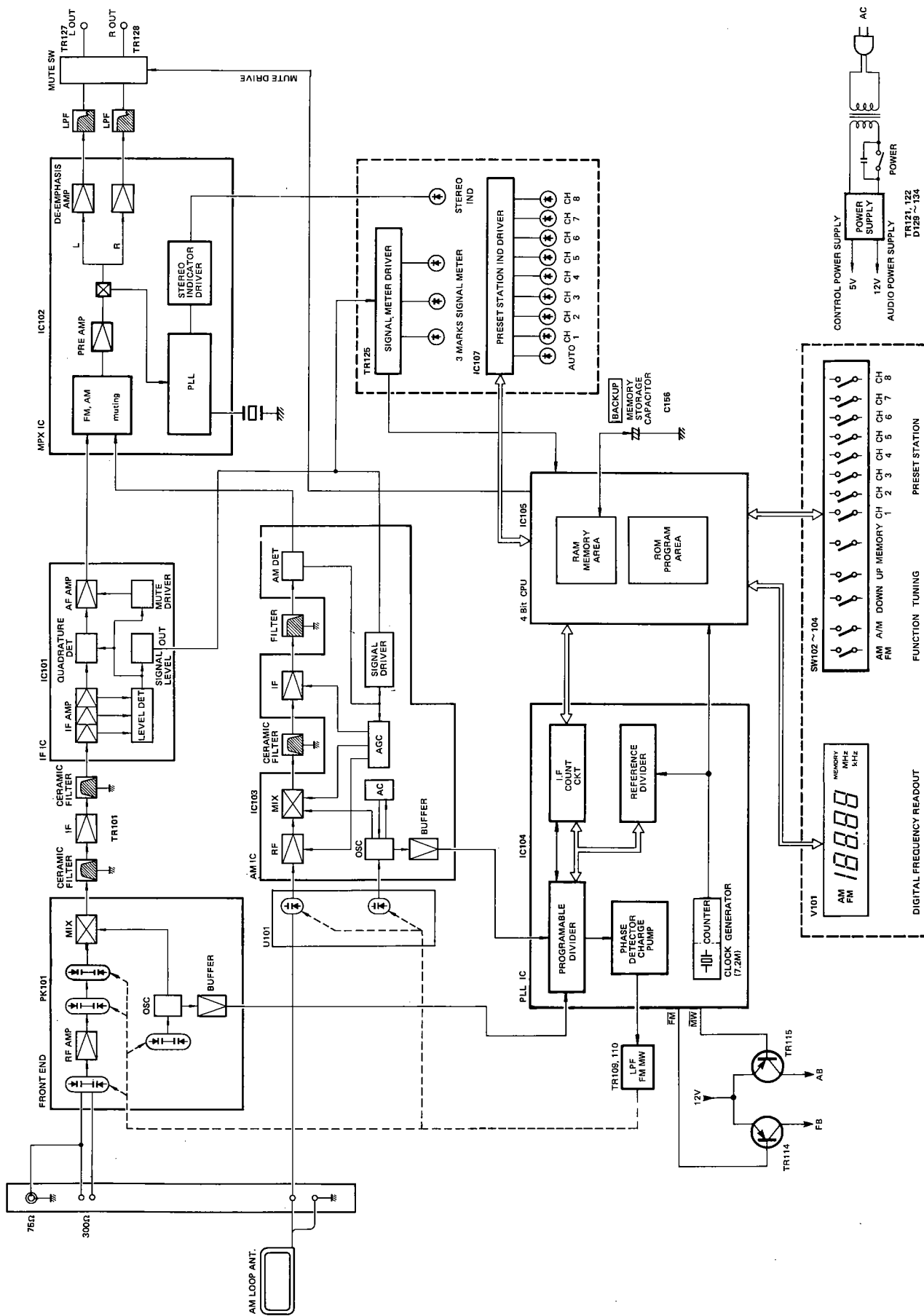
Step	Adjustment item	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard
1	AM IFT	AM ANT OUTPUT	AM SG. AM dummy antenna 630kHz ± 0.1kHz 50dBμ 400Hz, 30% MOD A.C.V.M.	T108	Adjust so that the detector output is at maximum.	
2	AM sensitivity	AM ANT OUTPUT	AM SG AM dummy antenna 630kHz ± 0.1kHz 1080kHz ± 0.1kHz 1440kHz ± 0.1kHz 400Hz, 30% MOD A.C.V.M. DIST. M	T106 (Low frequency range) VC101 (High frequency range)	Obtain AM SG output level where distortion become 10%	Less than 58dBμ
3	LW sensitivity	AM ANT OUTPUT	AM SG AM dummy antenna 173kHz ± 0.1kHz 245kHz ± 0.1kHz 326kHz ± 0.1kHz 400Hz, 30% MOD A.C.V.M. DIST. M	T107 (Low frequency range) VC102 (High frequency range)	Obtain AM SG. output level where distortion become 10%	Less than 63dBμ
4	Confirmation of auto search reception	AM ANT	AM SG AM dummy antenna 1080kHz ± 0.1kHz 60dBμ 400Hz, 30% MOD	TUNING key UP or DOWN		Confirm the auto search reception with the tuning key

<DIGITAL CONTROL SECTION>

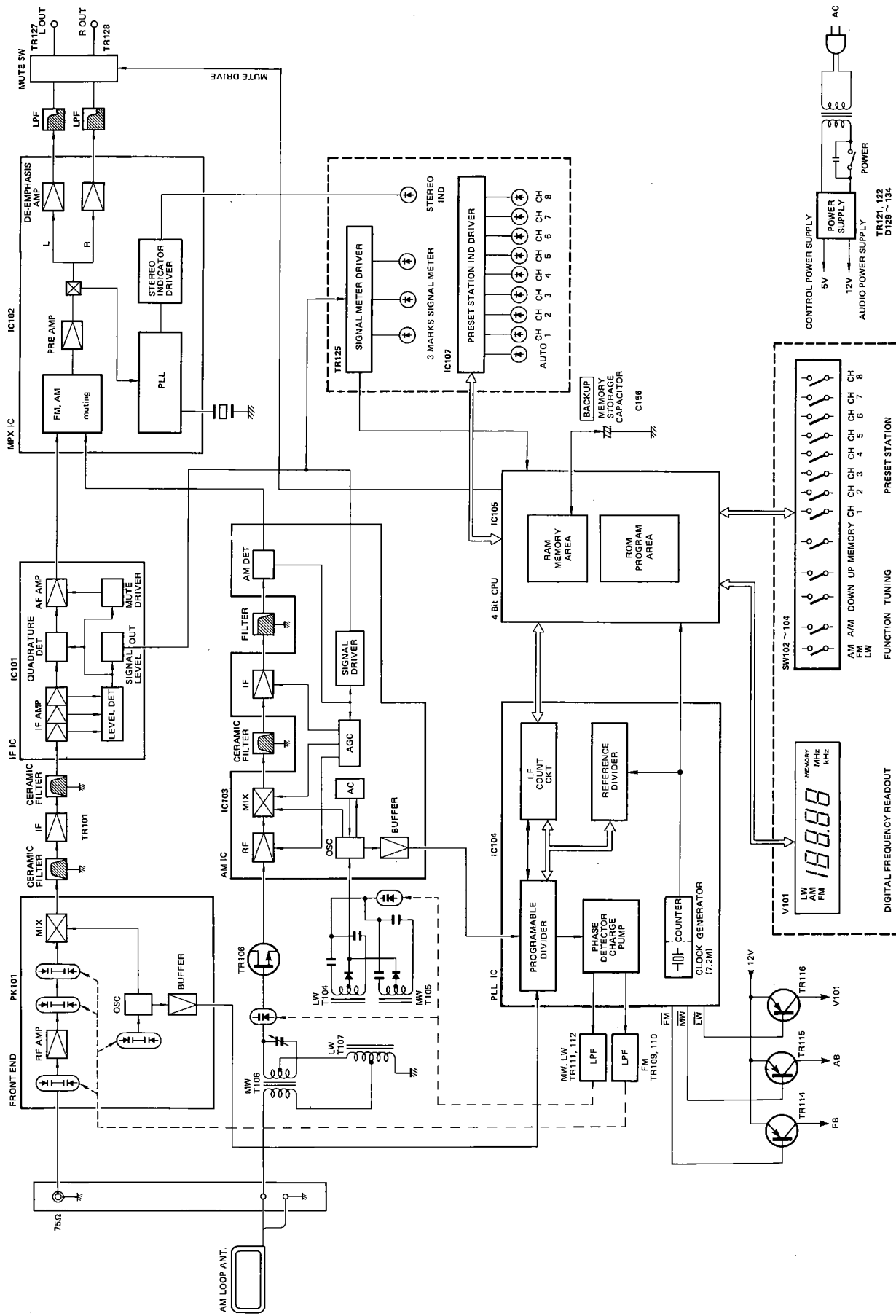
Step	Confirmation item	Connection terminal	Instrument required	Operation key	Confirmation method
1	Preset memory	300 Ω FM ANT	FM SG. SSG [98MHz \pm 1kHz 70dB μ (75.2 dBf) STEREO L, R 1kHz, 100% MOD]	FUNCTION TUNING MODE TUNING (UP or DOWN) MEMORY PRESET STATION	① Receive FM 98MHz by means of auto search. ② Press MEMORY key \rightarrow MEMORY indicator flashes about 5 seconds. ③ Press P1 \rightarrow MEMORY indicator goes OFF P1 of PRESET STATION indicator lights.
		AM ANT	AM SG AM dummy antenna [1080kHz \pm 0.1kHz 80dB μ 400Hz, 30% MOD]		④ Receive AM 1080kHz ⑤ Press MEMORY key \rightarrow MEMORY indicator flashes about 5 seconds. ⑥ Press P2 \rightarrow MEMORY indicator goes OFF P2 of PRESET STATION indicator lights.
		300 Ω FM ANT AM ANT	FM SG. SSG AM SG AM dummy antenna		⑦ Press P1 and P2 and check that content is read out. \rightarrow P1 and P2 of PRESET STATION indicator lights.
2	Tuning mod	Same as step 1	Same as step 1	FUNCTION TUNING MODE TUNING (UP or DOWN)	Tune to FM 98MHz and AM 1080kHz, and check that when receiving MAN'L/MONO, FM reception become forced mono TUNING MODE indicator \rightarrow Goes out FM STEREO indicator \rightarrow Goes out Check that tuning operation stops when tuned while AUTO searching. TUNING MODE indicator \rightarrow lights up FM STEREO indicator \rightarrow lights up
3	Last channel memory			POWER	① Read out P2. ② Turn OFF POWER Switch. ③ Turn ON POWER Switch after 5 seconds. ④ P2 content should come out. P2 of PRESET STATION indicator lights.

BLOCK DIAGRAM

- U, C, R, A models

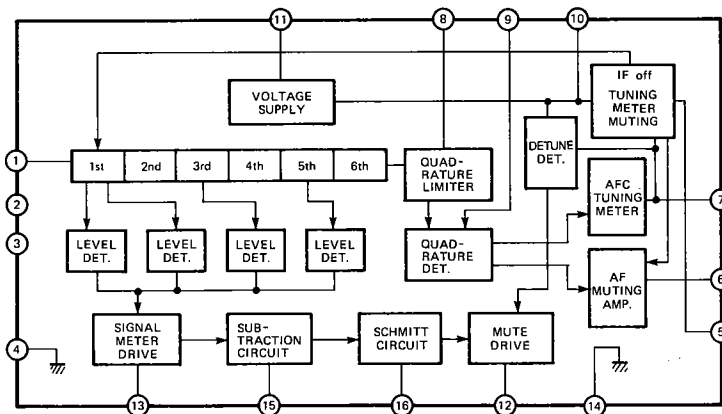


• G, B models

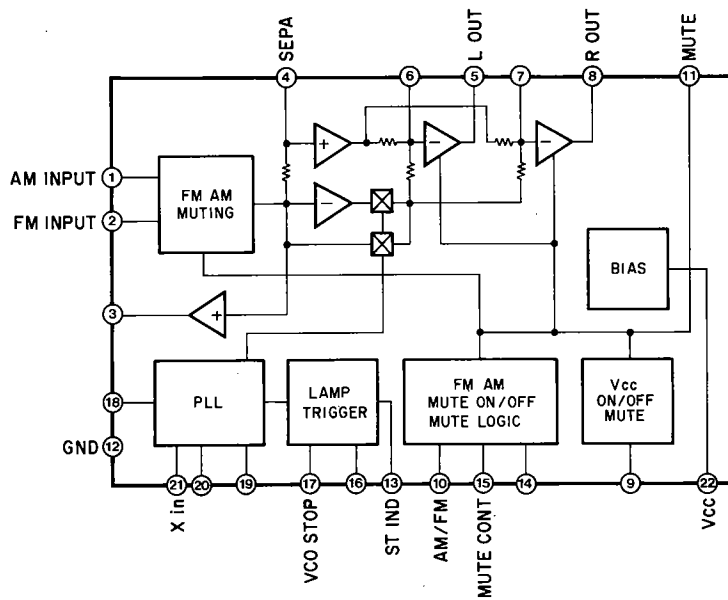


IC BLOCK

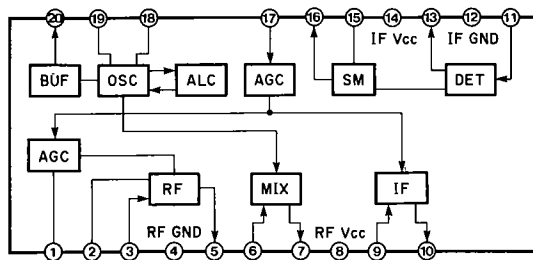
IC101 : LA1235



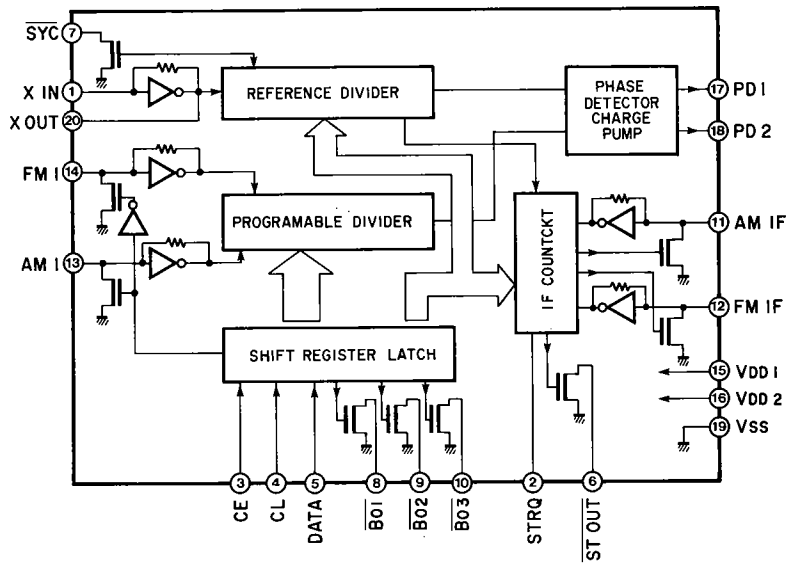
IC102 : LA3400



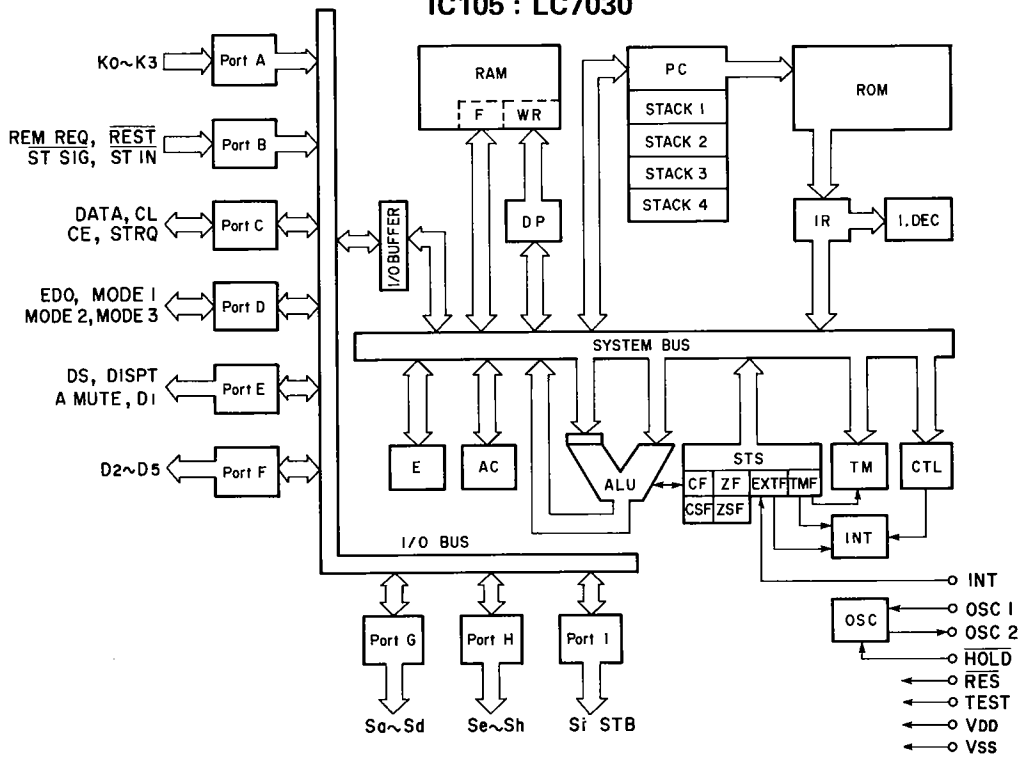
IC103 : LA1245



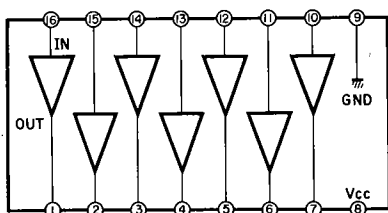
IC104 : LM7000



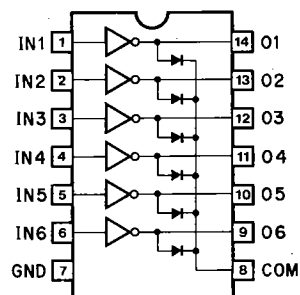
IC105 : LC7030



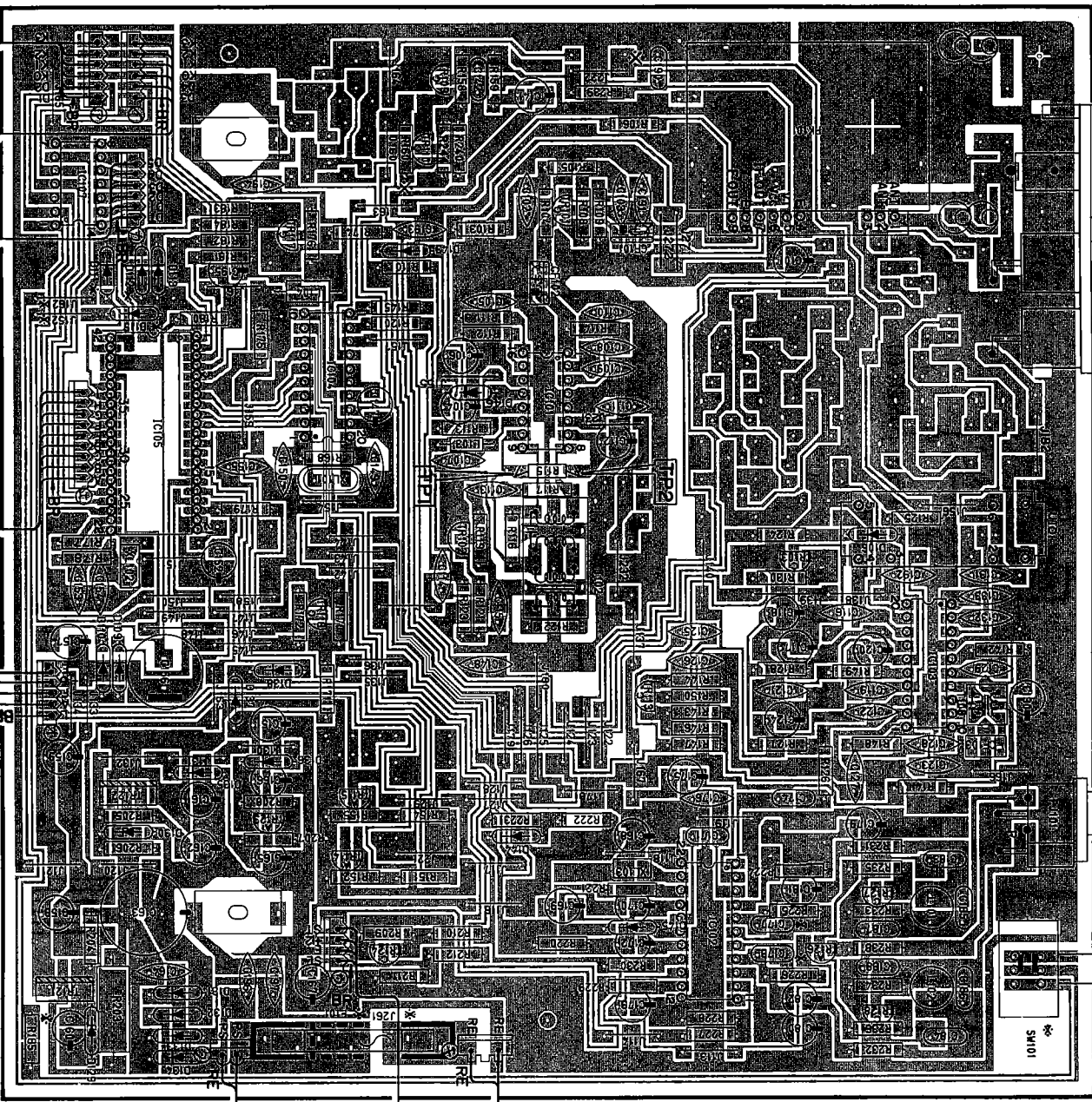
IC106 : BA618



IC107 : LB1274



PRINTED CIRCUIT BOARD R, U, C, A models



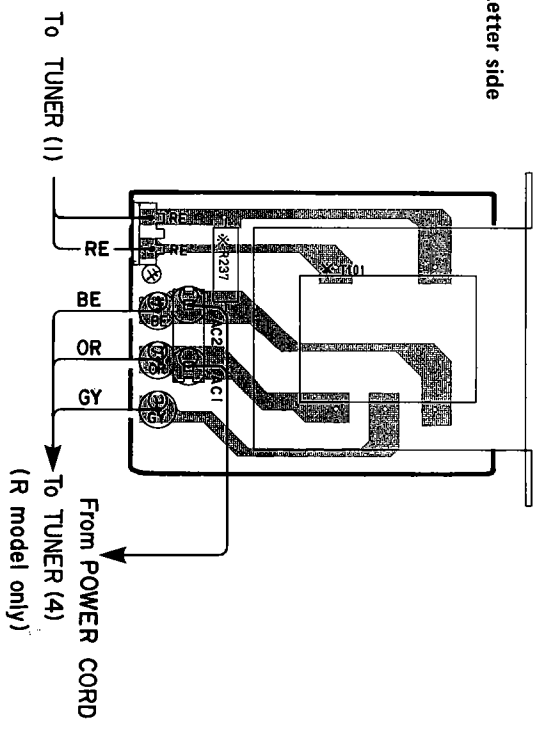
FM ANT 75a UNBAL
AM ANT 300a BAL

TUNER (1)

OUTPUT FM 100kHz 50kHz
AM 10kHz 9kHz

Note)
文字面 : Letter side

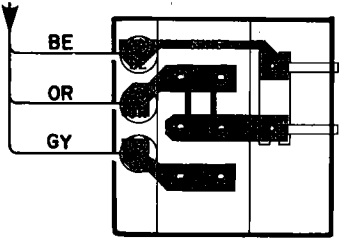
TUNER (5)



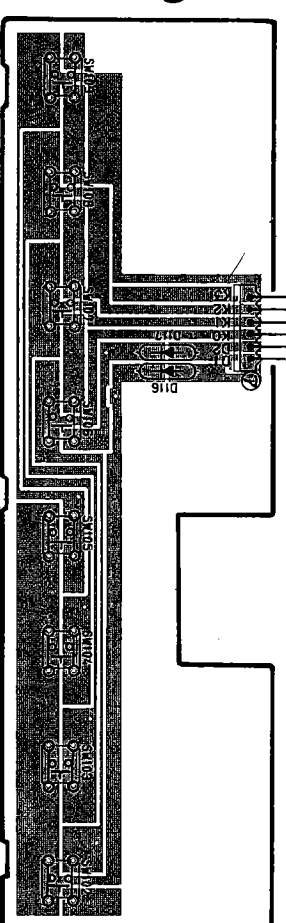
Note: * marked

	R	U, C	A
C177, 178	1500P/100	1500P/100	1000P/100
C190	0.033	0.01	0.033
R160	4.7K	22K	4.7K
R185	10K	OPEN	OPEN
R237	OPEN	1/2P 2.2M	OPEN
J151, 162	SHORT	OPEN	OPEN
J261	SHORT	OPEN	SHORT
D112	OPEN	OPEN	Set
D111, 115	Set	OPEN	OPEN
SW101	Set	OPEN	OPEN
SW116	Set	OPEN	OPEN
F101	OPEN	0.5A 250V	OPEN
T101	GA68480	GA68490	GA68480
TUNER (4)	Set	Non Set	Non Set

TUNER (4)



TUNER (3)

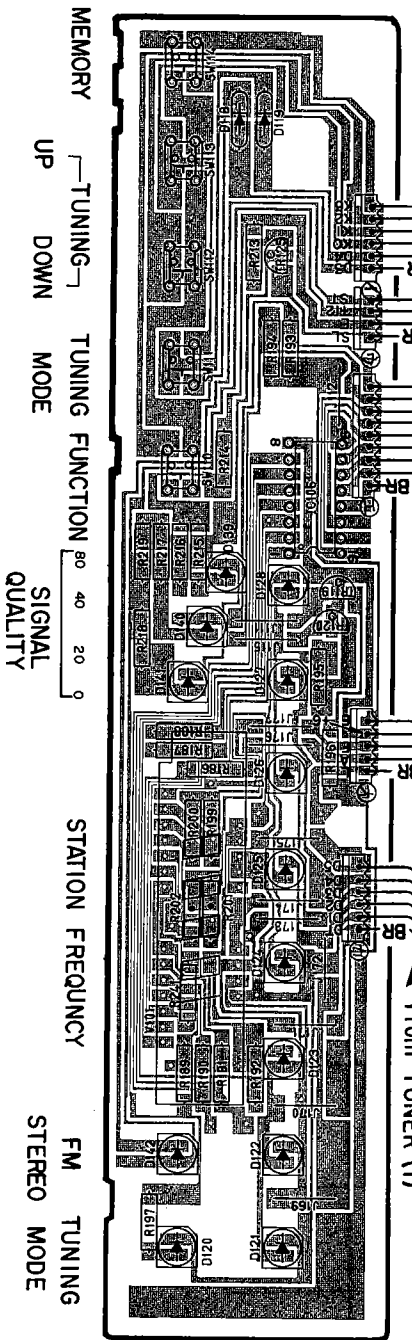
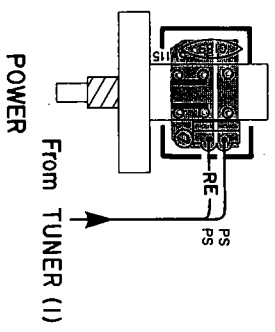


PRESET STATION P8 P7 P6 P5 P4 P3 P2 P1

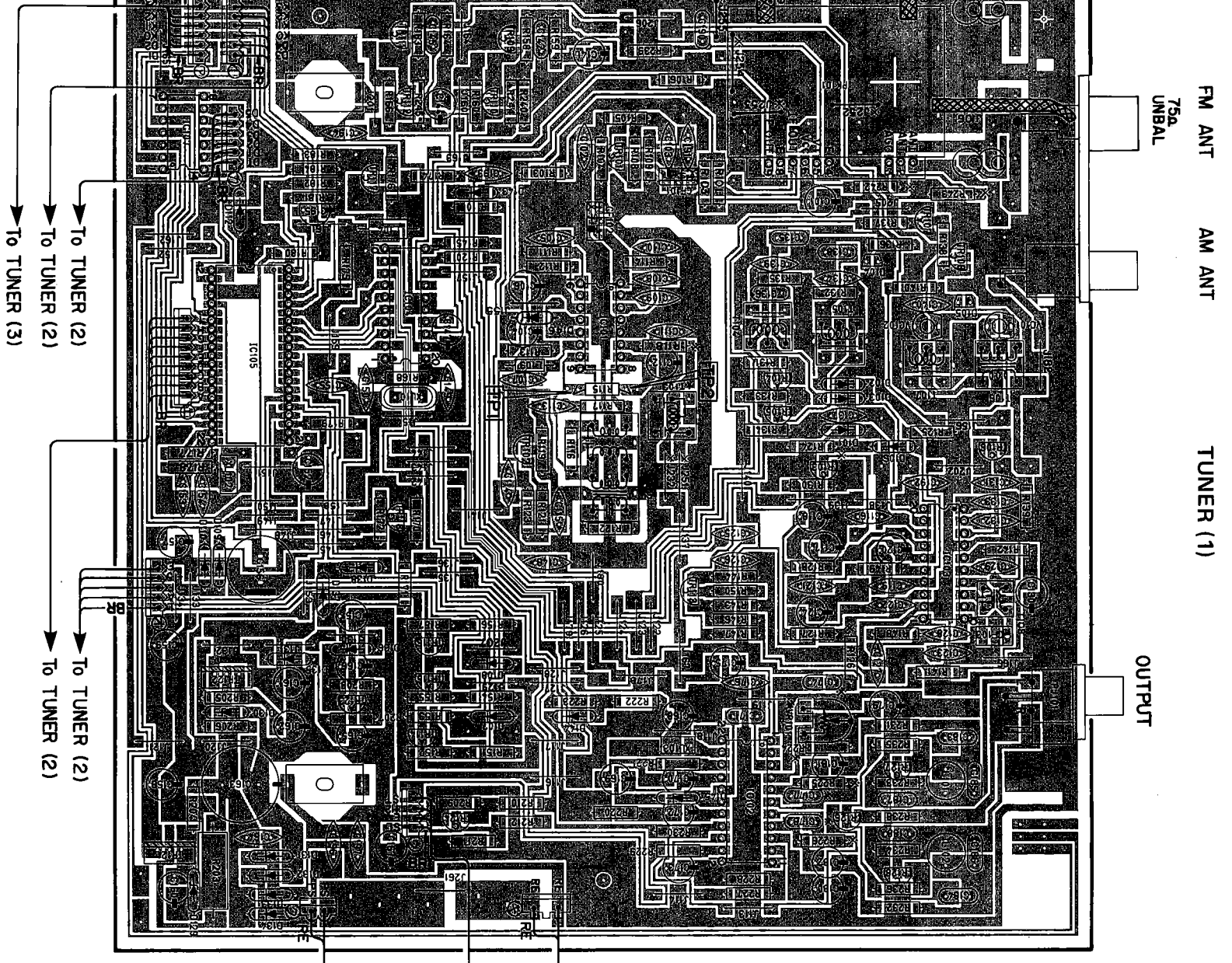
TUNER (2)

To TUNER (2)
To TUNER (2)
To TUNER (3)

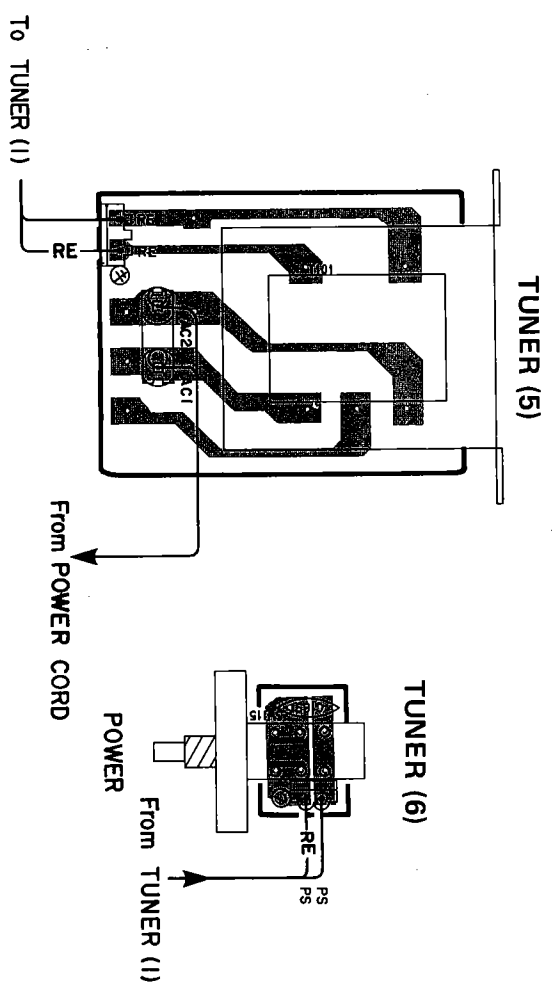
TUNER (6)



MEMORY TUNING UP DOWN TUNING FUNCTION MODE SIGNAL QUALITY STATION FREQUENCY FM TUNING STEREO MODE

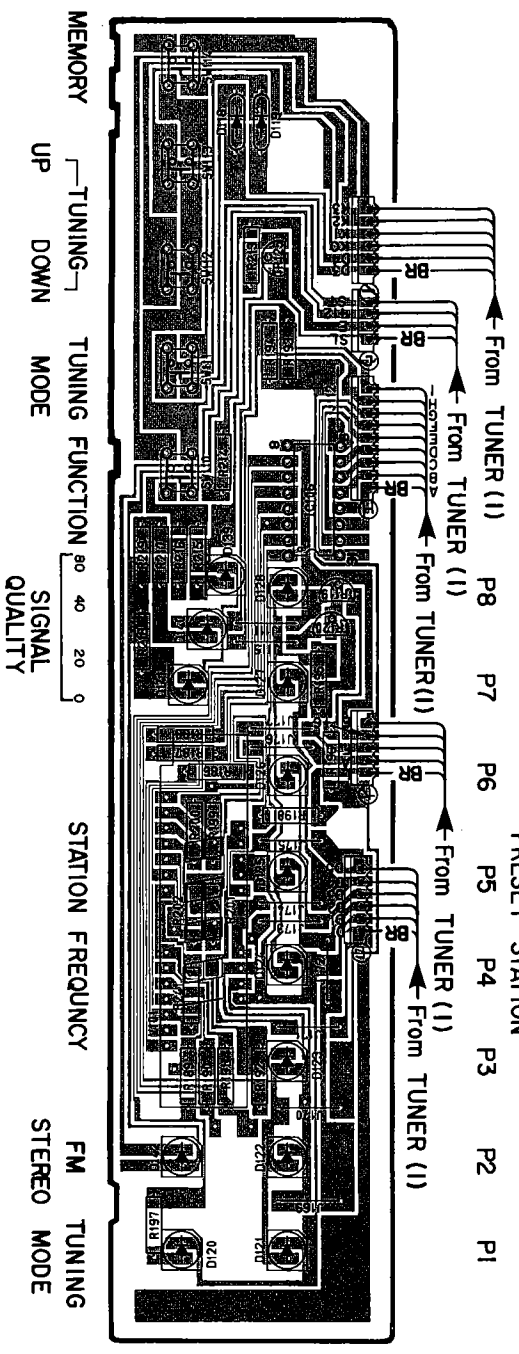
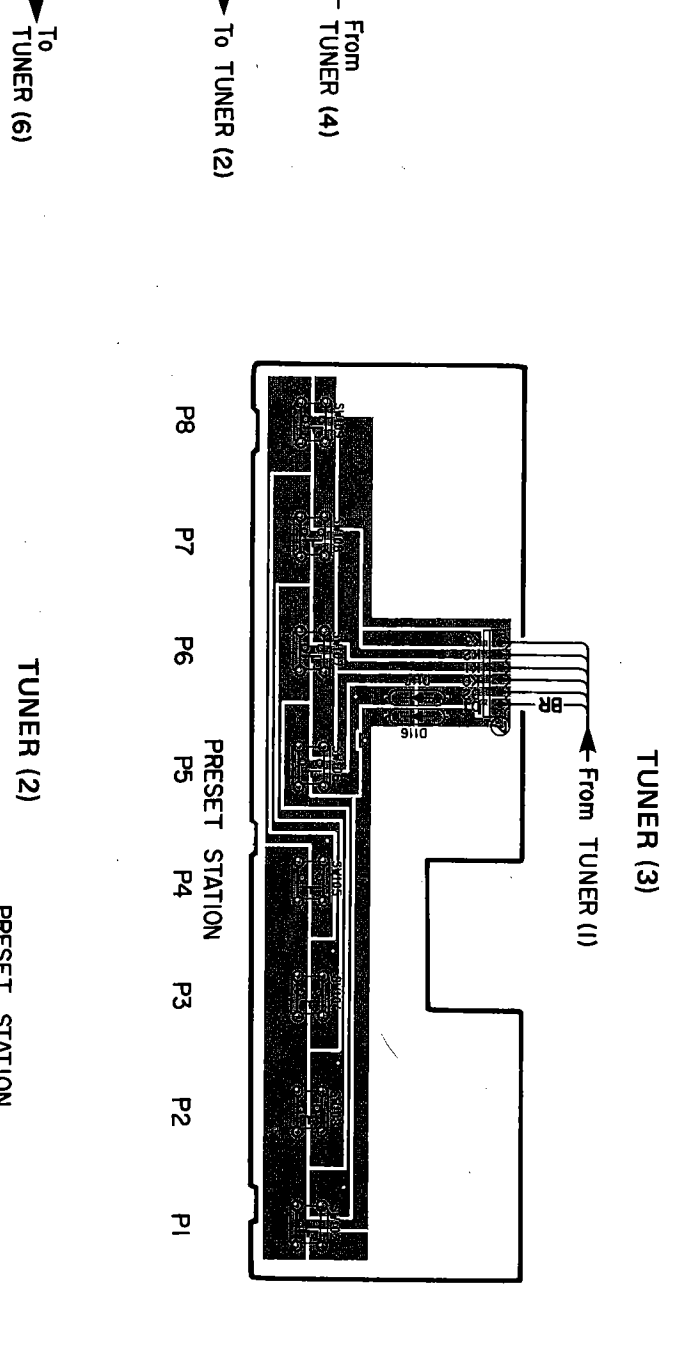


Note)
文字面 : Letter side

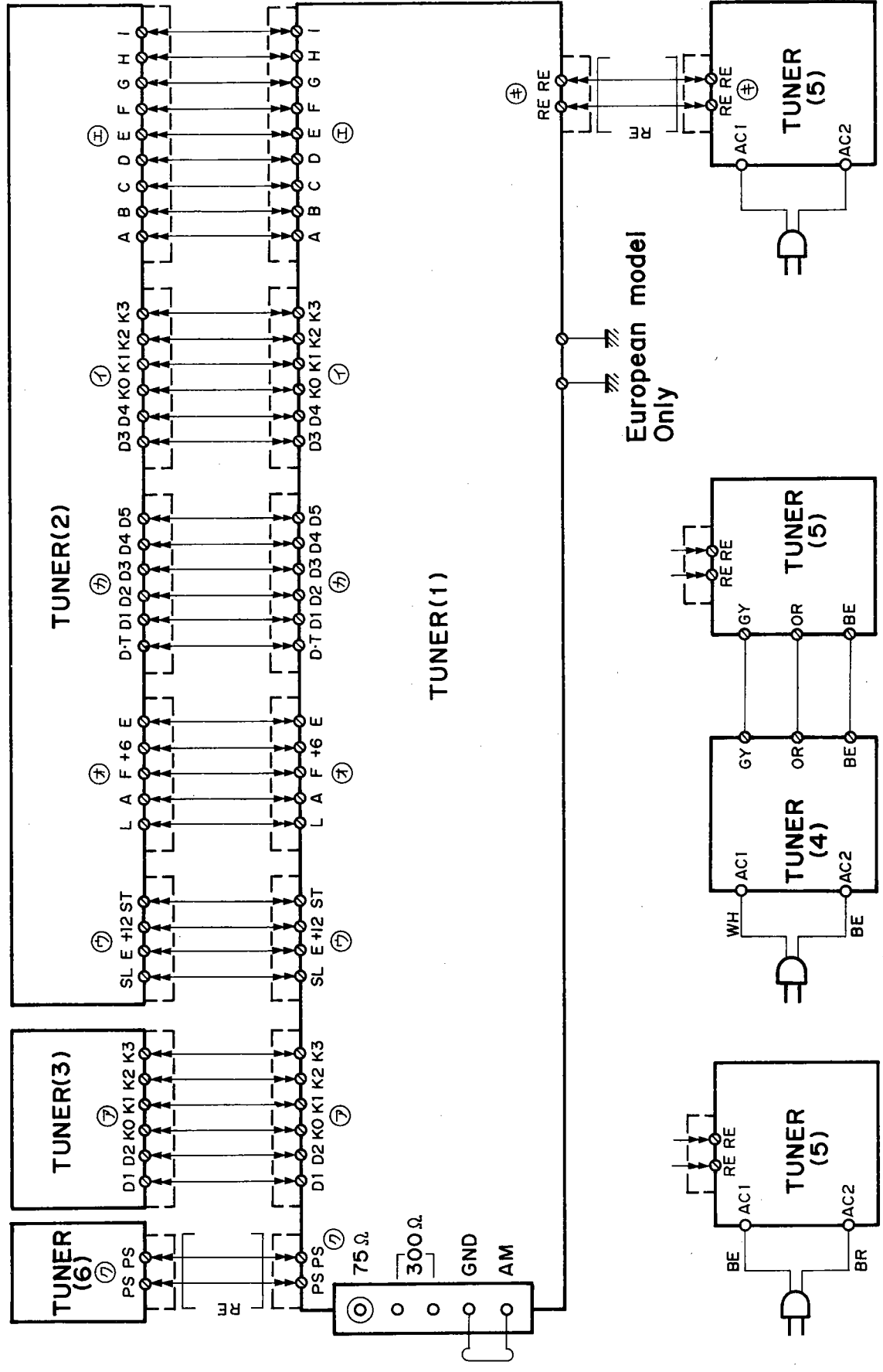


Note: * marked

	G	B
C177, 178	470P/100	1000P/100
C174	0.022	0.047
R110	1K	3.3K
R225, 226	100K	47K
R224	OPEN	47K
R118	.10K	SHORT
R126	47K	10K
R124	1K	470
R243	100K	OPEN
R242	1M	OPEN
VR101	B 100K	OPEN
T103	GE20040	OPEN
PK101	PA00085	PA00081
J232	OPEN	SHORT
J251 ~ 255	SHORT	OPEN



WIRING



U.S. & Canadian models

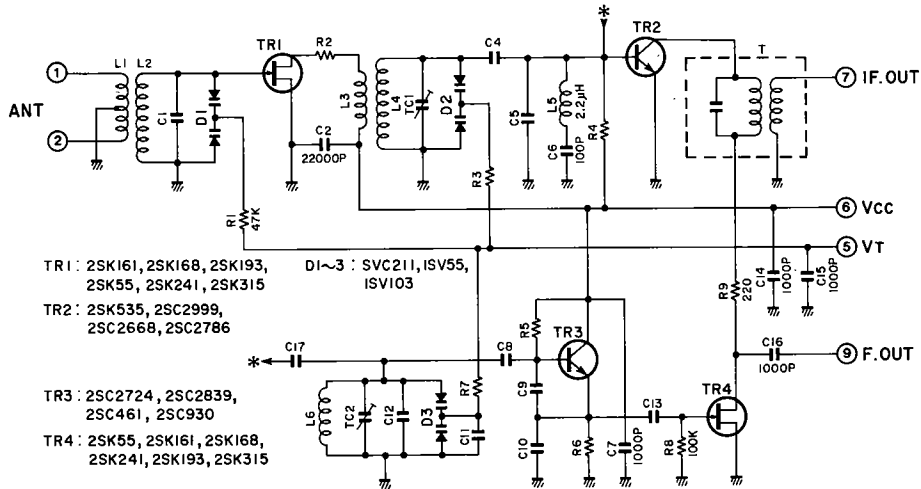
General model

Australian, European & British models

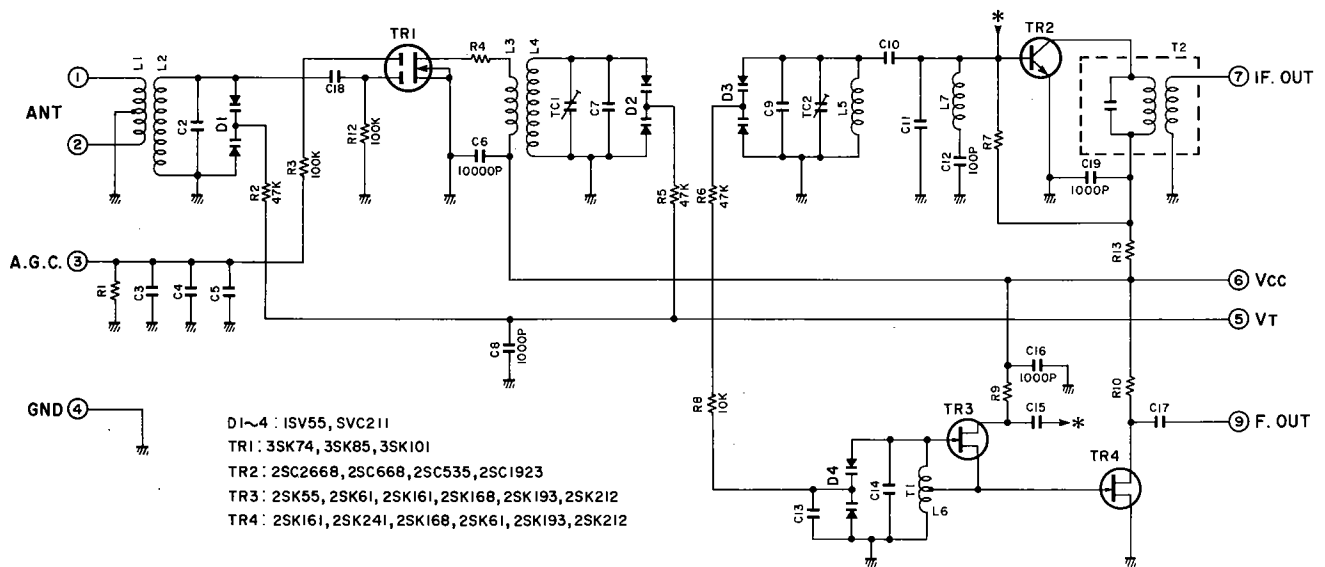
SCHEMATIC DIAGRAM

• FRONT END PACK (PK101)

R.U.C.A models



G.B models



PARTS LIST

- **WARNING**
 Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 ● Carbon resistors of this stereo tuner are 1/4W. There is no discription about them in this parts list. Use the "Part No." HJ35○○○○ or equivalent.

T-520/17

T-520/17

■ ELECTRICAL PARTS

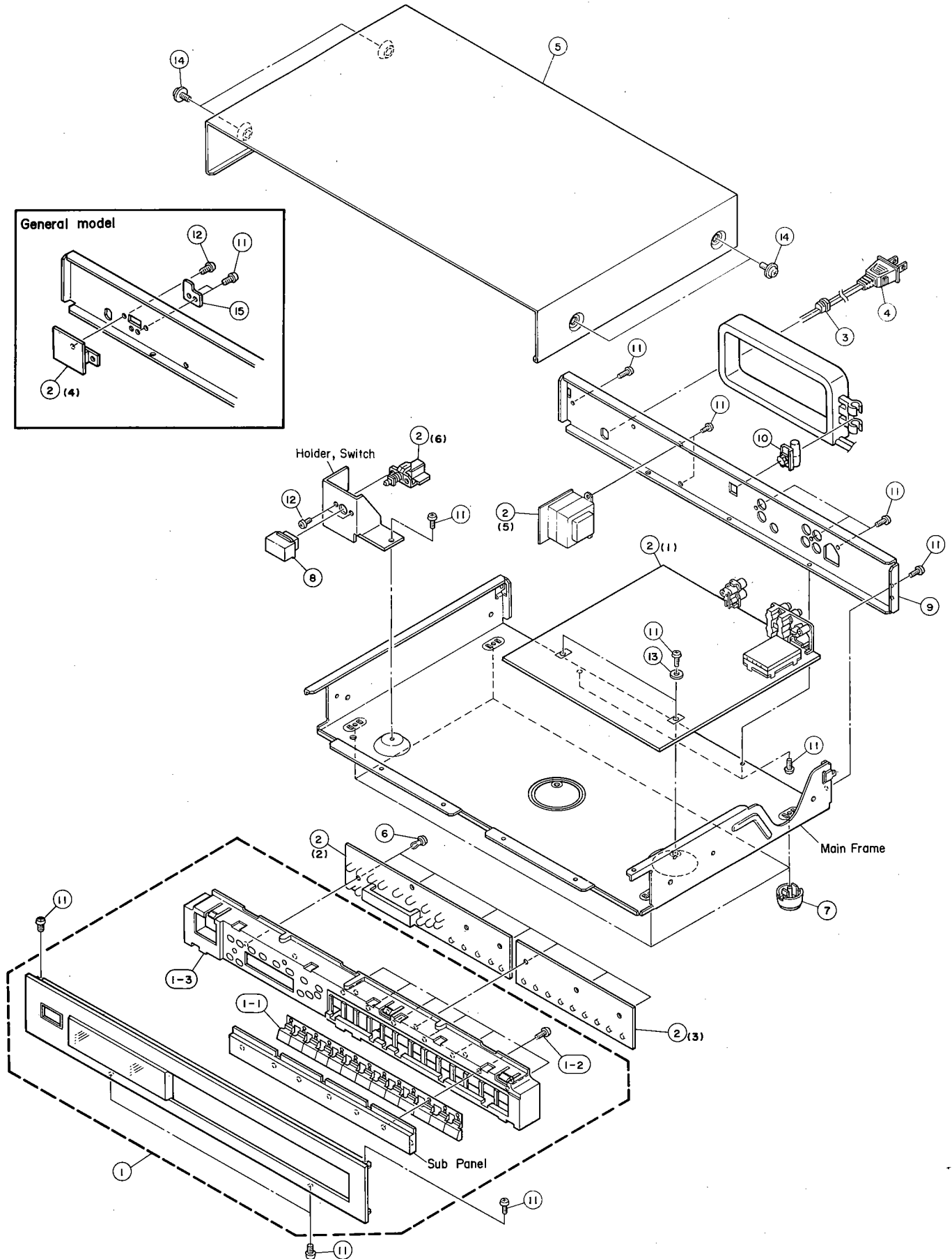
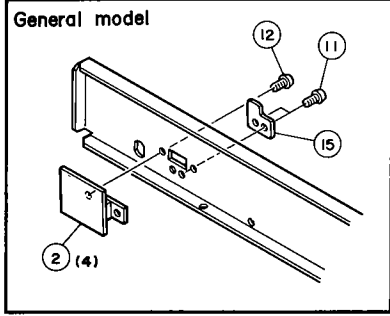
Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA:08:58:40	Tuner Circuit Board	チューナーシート			R	
※	NA:08:58:50	"	"			U, C	
※	NA:08:58:60	"	"			A	
※	NA:08:58:70	"	"			G	
※	NA:08:58:80	"	"			B	
	FG:21:05:00	Ceramic Cap	セラコン	C134, 139		G, B	
	FG:21:13:30	"	"	C111, 113, 192			
	FG:21:21:00	"	"	C114			
	FG:21:22:20	"	"	C154			
	FG:21:24:70	"	"	C153, 176			
	FG:21:31:00	"	"	C125, 127, 133, 148			
	FG:24:41:00	"	"	<small>C102,103,105,107~110,115 116,119,121~123,128,129 131,132,135,136,189,191</small>			
	FG:24:41:00	"	"	C137, 140		G, B	
	FG:24:42:20	"	"	C126,193,194,196,197			
※	Fi:19:13:30	"	"	C149, 150			
	FU:35:17:50	Mica Cap	マイカコン	C136		G, B	
	FZ:00:35:80	Electrolytic Cap	ケミコン	C156			
	UA:25:32:70	Mylar Cap	マイラーコン	C183, 184			
	UA:25:31:00	"	"	C185, 186			
	UA:25:33:90	"	"	C187, 188			
	UA:25:41:00	"	"	C190		U, C	
	UA:25:43:30	"	"	C190		R,A,G,B	
	UA:25:42:20	"	"	C174		G	
	UA:25:44:70	"	"	"		R,U,C,A,B	
	UA:25:44:70	"	"	C142, 171			
	UA:25:44:70	"	"	C145		G, B	
	UL:46:61:00	Electrolytic Cap	ケミコン	C141			
	UL:46:61:00	"	"	C144		G, B	
	UT:45:22:20	Polypropylene Film Cap	ポリプロコン	C135		G, B	
	UT:45:24:30	"	"	C138		G, B	
	UT:45:24:70	"	"	C177, 178		G	
	FT:15:31:00	"	"	"		A, B	
	FT:15:31:50	"	"	"		R, U, C	
	Ui:91:84:70	Electrolytic Cap	ケミコン	C147			
	UW:93:71:00	"	"	<small>C124,130,157,159 161,168,179,180,117</small>			
	UW:93:73:30	"	"	C165			
	UW:93:81:00	"	"	C101, 160, 162			
	UW:93:82:20	"	"	C158, 166			
	UW:94:92:20	"	"	C163			
	UW:96:54:70	"	"	C120, 152, 170			
	UJ:16:61:00	"	"	<small>C104,106,151,167 169,172,173,181,182</small>			
	UJ:16:62:20	"	"	C112			
	UW:96:63:30	"	"	C175			
	UW:96:64:70	"	"	C118, 195			
	FY:00:01:50	Trimmer Cap	トリマーコン	VC102		G, B	
	FY:00:02:50	"	"	VC101		G, B	
	GE:10:06:40	AM ANT Coil	AM ANT コイル	T106		G, B	
	GE:10:06:00	AM IFT Coil	AM IFT コイル	T108			
※	GE:10:07:40	Quadrature Detection Coil	クオドラチャー検波コイル	T102			
	GE:20:04:00	Anti-birdie Filter	アンチバーディーフィルター	T103		G, B	
	GE:90:09:20	LW OSC Coil	LW OSC コイル	T104		G, B	

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	GE 90:09:10	LW ANT Coil	L W A N T コイル	T107	} Inter-changeable	G, B	
	GE 90:09:30	"	"	"		G, B	
	GE 90:09:40	AM OSC Coil	A M O S C コイル	T105		G, B	
※	GA 68:48:00	Power Transformer	電 源 ト ラ ン ス	T101		R, A, G, B	
※	GA 68:49:00	"	"	"		U, C	
	GE 30:05:00	Inductor	12 μ H	イ ン ダ ク タ ー	L103		
	GE 30:04:50	"	1mH	"	L104		
※	GE 90:18:50	"	39mH	"	L101, 102		
	GG 00:05:60	FM Ceramic Filter	SFE10.7MS3GHY-A	F M セ ラ ミ ッ ク フ ィ ル タ ー	CF101, 102		
	GG 00:06:60	AM Ceramic Filter	SFU450B9	A M セ ラ ミ ッ ク フ ィ ル タ ー	CF103		
	GG 00:07:00	Ceramic Resonator	FCR400K	セ ラ ミ ッ ク 振 動 子	XL102		
※	GG 00:07:40	"	CSB456F10	"	XL103		
	QU 00:38:00	Quartz Crystal Unit	7.2MHz	水 晶 振 動 子	XL101		
	HG 30:92:20	Carbon Resistor	2.2M Ω 1/2W	カ ー ボ ン 抵 抗	R237	U, C	
	HL 42:43:90	Metal Oxide Film Resistor	39 Ω 2W	酸 金 抵 抗	R203		
	HV 45:68:20	Flame Proof Carbon Resistor	8.2k Ω , RDF25SL	不 燃 化 カ ー ボ ン 抵 抗	R115		
	HT 37:04:20	Pre-Set Potentiometer	B100k Ω	半 固 定 抵 抗	VR101	G	
	iA 11:15:10	Transistor	2SA1115 (E, F)	ト ラ ン ジ ス タ	TR114,115,123,126	} Inter-changeable	
	iA 09:33:00	"	2SA933 (Q, R)	"	"		
	iA 11:15:10	"	2SA1115 (E, F)	"	TR104,105,107,116	} Inter-changeable	G, B
	iA 09:33:00	"	2SA933 (Q, R)	"	"		G, B
	iC 17:40:00	"	2SC1740 (S, R)	"	TR101,109,110,113,117 ~120,124,125,127,128	} Inter-changeable	
	iC 26:03:10	"	2SC2603 (E, F)	"	"		
	iC 17:40:00	"	2SC1740 (S, R)	"	TR108, 111, 112	} Inter-changeable	G, B
	iC 26:03:10	"	2SC2603 (E, F)	"	"		G, B
	iD 08:80:20	"	2SD880 (O, Y)	"	TR121, 122		
	iE 10:12:30	FET	2SK105 (E, F)	F E T	TR102	} Inter-changeable	
	iE 10:26:00	"	2SK246 (Y)	"	"		
	iE 10:32:00	"	2SK192A(Y,GR,BL)	"	TR106		G, B
	iF 00:06:70	Diode	IS2473	ダ イ オ ー ド	D106,109,110,116~ 119,135~138,143~146	} Inter-changeable	
	iF 00:00:40	"	IS1555	"	"		
	iF 00:06:70	"	IS2473	"	D101~103,107,108	} Inter-changeable	G, B
	iF 00:00:40	"	IS1555	"	"		G, B
	iF 00:06:70	"	IS2473	"	D111, 115	} Inter-changeable	R
	iF 00:00:40	"	IS1555	"	"		R
	iF 00:06:70	"	IS2473	"	D113	} Interchangeable	R, U, A, C
	iF 00:00:40	"	IS1555	"	"		R, U, A, C
	iF 00:06:70	"	IS2473	"	D112	} Interchangeable	A, G, B
	iF 00:00:40	"	IS1555	"	"		A, G, B
	iF 00:16:70	Zener Diode	RD6.8EB2	ツェナーダイオード	D129		
	iF 00:35:50	"	HZ12B-2	"	D130		
	iF 00:22:00	Varactor Diode	SVC321 A,B,C,D	バラクタダイオード	D104, 105	} Interchangeable	G, B
	iF 00:41:70	"	ISV100	"	"		G, B
	iF 00:42:70	LED (Red)	SLR-55URC3H	L E D (ア カ)	D120~128, 142		
	iF 00:42:80	" (Green)	SLR-55MC3H	" (ミ ド)	D139~141		
	iH 00:14:30	Diode	ISR35-100A	ダ イ オ ー ド	D131~134		

※New Parts (新規部品)

1 ■ EXPLODED VIEW

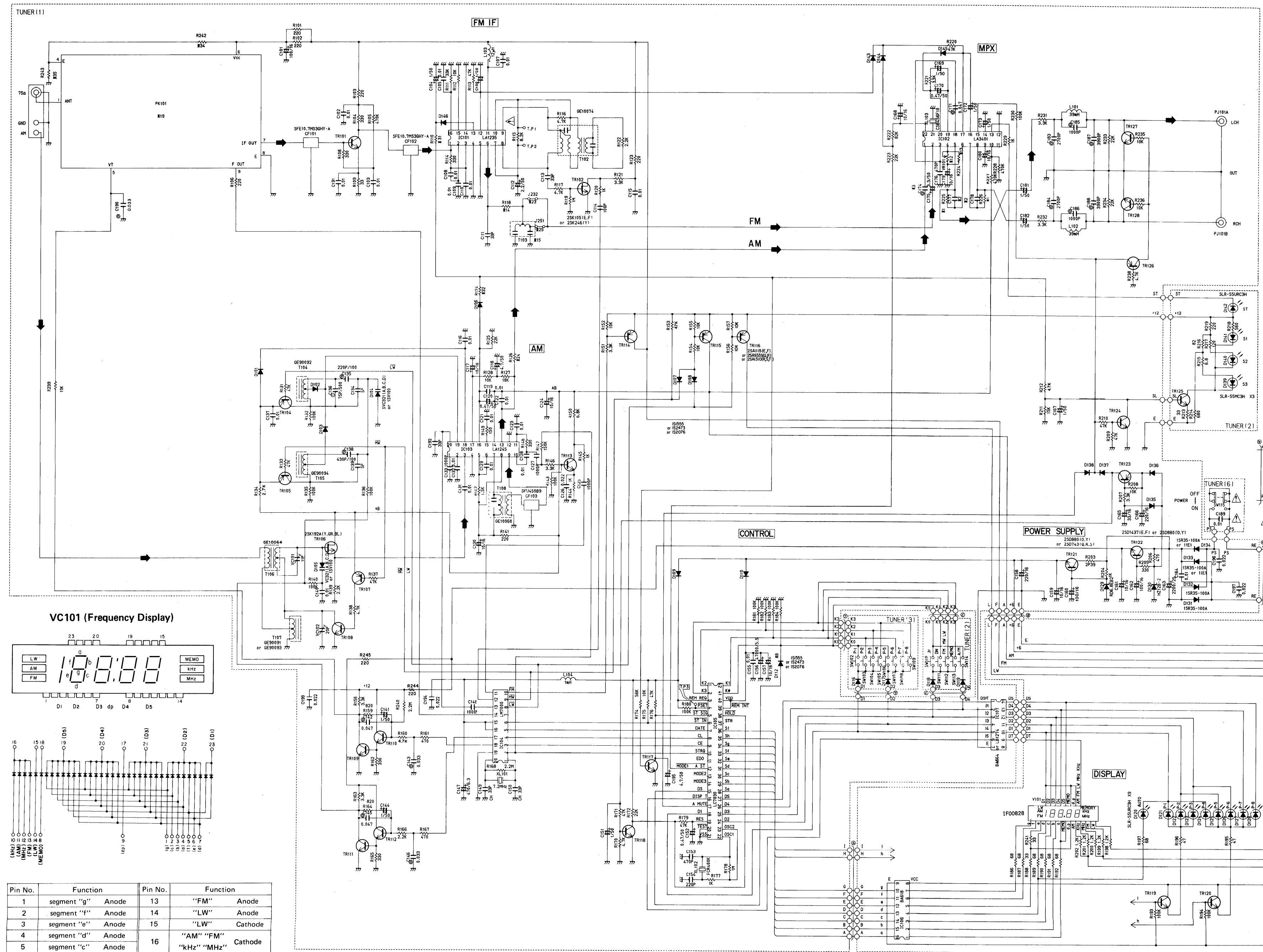


MECHANISM PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	1	NB 62:34:10	Panel Unit	パネ ル ユ ニ ッ ト	T-520 Silver	R, U, A, C	
※	※	NB 62:34:20	″	″	″ Black	R, U, A, C	
※	※	NB 62:34:30	″	″	″ Silver	G, B	
※	※	NB 62:34:40	″	″	″ Black	G, B	
※	※	NB 62:35:20	″	″	T-17 Silver	R, U, A, C	
※	※	NB 62:35:30	″	″	″ Black	R, U, A, C	
※	※	NB 62:35:40	″	″	″ Silver	G, B	
※	※	NB 62:35:50	″	″	″ Black	G, B	
※	1-1	NB 62:31:40	Button Ass'y	ボ タ ン A s s 'y	Silver		
※	※	NB 62:31:50	″	″	Black		
※	1-2	Ei 32:60:86	Binding Head Tapping Screw	2.6×8 FCRM3-BI	バ イ ン ド タ ッ ピ ン グ ネ ジ	PACK	
※	1-3	CB 63:44:40	Sub Chassis	サ ブ シ ャ ー シ			
※	2	NA 08:58:40	Tuner Circuit Board	チ ュ ー ナ ー シ ー ト		R	
※	※	NA 08:58:50	″	″		U, C	
※	※	NA 08:58:60	″	″		A	
※	※	NA 08:58:70	″	″		G	
※	※	NA 08:58:80	″	″		B	
※	3	CB 61:68:10	Cord Stopper	CM-22A	コ ー ド ス ト ッ パ ー		U, C
※	※	CB 62:01:90	″	CM-22B	″		R, A, G, B
※	4	MG 00:16:30	Power Cord	6A 250V 2m	電 源 コ ー ド		R
※	※	MG 00:08:40	″	10A 125V 2m	″	Interchangeable	U, C
※	※	MG 00:12:40	″	10A 125V 2m	″		U, C
※	※	MG 00:09:20	″	7.5A 250V 2.5m	″	Interchangeable	A
※	※	MG 00:14:90	″	7.5A 250V 2.5m	″		A
※	※	MG 00:09:60	″	2.5A 250V 2m	″	Interchangeable	G
※	※	MG 00:16:20	″	2.5A 250V 2m	″		G
※	※	MG 00:18:60	″	2.5A 250V 2m	″		B
※	5	AA 61:37:60	Top Cover	ト ッ プ カ バ ー	Silver	T-500	
※	※	AA 61:38:60	″	″	Black	T-500	
※	6	CB 60:56:20	Plastic Rivet	プ ラ ス チ ッ ク リ ベ ッ ト			
※	7	CB 61:03:90	Leg	脚			
※	8	NB 62:33:70	Button Ass'y	ボ タ ン A s s 'y	Silver		
※	※	NB 62:33:80	″	″	Black		
※	9	AA 62:33:90	Rear Panel	リ ア パ ネ ル	T-520		R
※	※	AA 62:34:00	″	″	″		U, C
※	※	AA 62:34:10	″	″	″		A
※	※	AA 62:34:20	″	″	″		G
※	※	AA 62:41:30	″	″	″		B
※	※	AA 62:34:40	″	″	T-17		R
※	※	AA 62:34:50	″	″	″		U, C
※	※	AA 62:34:60	″	″	″		A
※	※	AA 62:34:70	″	″	″		G
※	※	AA 62:41:40	″	″	″		B
※	10	CB 60:74:70	Holder, Antenna	ア ン テ ナ ホ ル ダ ー			
※	11	Ei 33:00:86	Binding Head Tapping Screw	3×8 FCRM3-BI	バ イ ン ド タ ッ ピ ン グ ネ ジ	PACK	
※	12	ED 33:00:66	Binding Head Screw	3×6 FCRM3-BI	バ イ ン ド 小 ネ ジ	PACK	
※	13	EV 43:00:36	Toothed Lock Washer	φ3 ZMC2-Y	歯 付 座 金	PACK	
※	14	EK 13:50:20	B. W Head Tapping Screw	4×8 FNM3-3g	ブ レ ザ ー タ ッ ピ ン グ ネ ジ	Silver	
※	※	EK 36:50:40	″	4×8 FCRM3-BI	″	Black	
※	15	CB 60:14:40	Votage Selector Stopper	V S ス ト ッ パ ー			R
※		CB 06:92:50	Binding Tie	BK-1	イ ン シ ュ ロ ッ ク タイ		

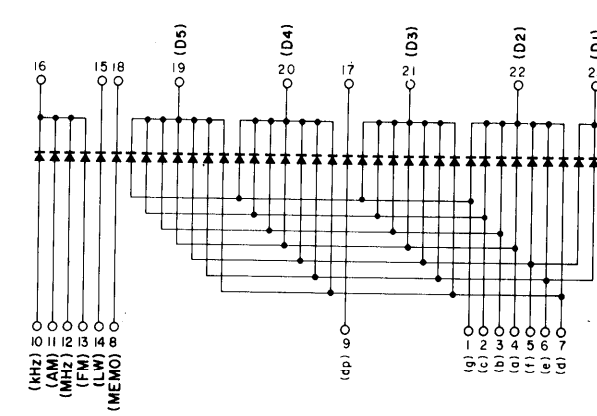
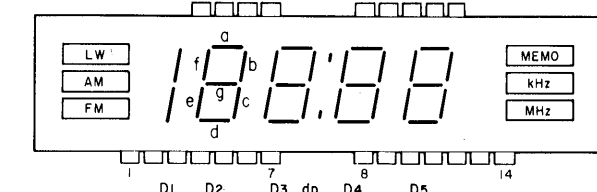
※New Parts (新規部品)

SCHEMATIC DIAGRAM G, B models



	G	B
R1	R25, 226	100K 47K
R2	C177, 178	470P/100 1000P/100
R3	C174	0.022 0.047
R12	VR101	8100K OPEN
R13	R224	OPEN 47K
R14	R118	10K SHORT
R15	T103	GE2040 OPEN
R19	PK101	FA0085 FA0081
R23	J292	OPEN SHORT
R24	R126	47K 10K
R25	J251	SHORT OPEN
R31	R110	1K 3.3K
R32	R124	1K 470
R34	R242	1M OPEN
R35	R243	100K OPEN

VC101 (Frequency Display)

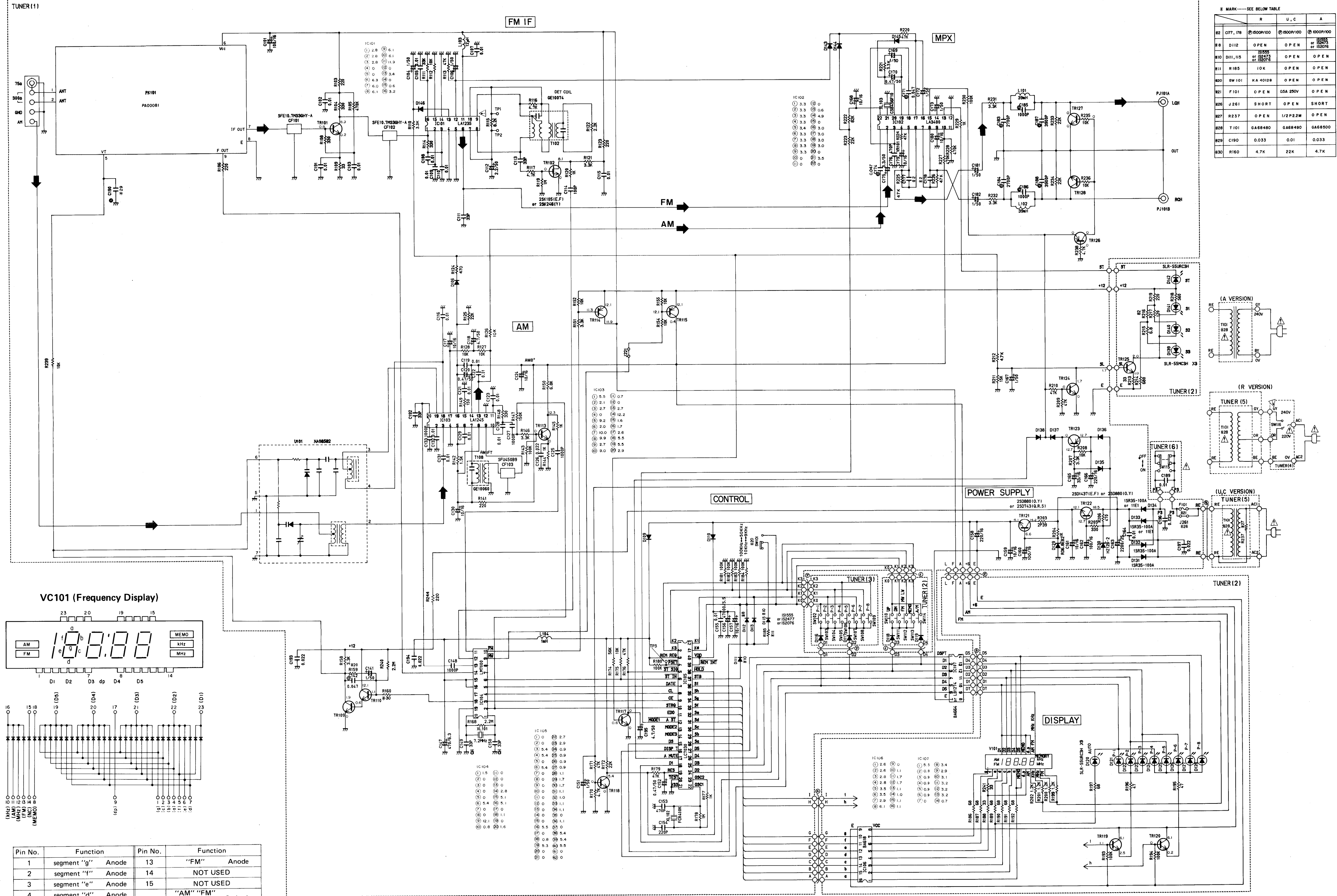


Pin No.	Function	Pin No.	Function
1	segment "g" Anode	13	"FM" Anode
2	segment "f" Anode	14	"LW" Anode
3	segment "e" Anode	15	"LW" Cathode
4	segment "d" Anode	16	"AM" "FM" Cathode
5	segment "c" Anode	17	"kHz" "MHz" Cathode
6	segment "b" Anode	19	digit "5" Anode
8	"MEMO" Anode	20	digit "4" Anode
9	decimal point Anode	21	digit "3" Anode
10	"kHz" Anode	22	digit "2" Anode
11	"AM" Anode	23	digit "1" Anode
12	"MHz" Anode		

LC7030	LM7000 LA1245	LA1245	LA3400	LB1274	2SD880 (O, Y)	2SA1115 (E, F) 2SA933 (O, R) 2SC2603 (E, F) 2SC1740 (S, R)	2SK105 (E, F) 2SK246 (Y) 2SK192A (Y, GR, BL)	1S2076 1S2473 1S1555 RD6,8E2 HZ12B-2 1SR35-100A

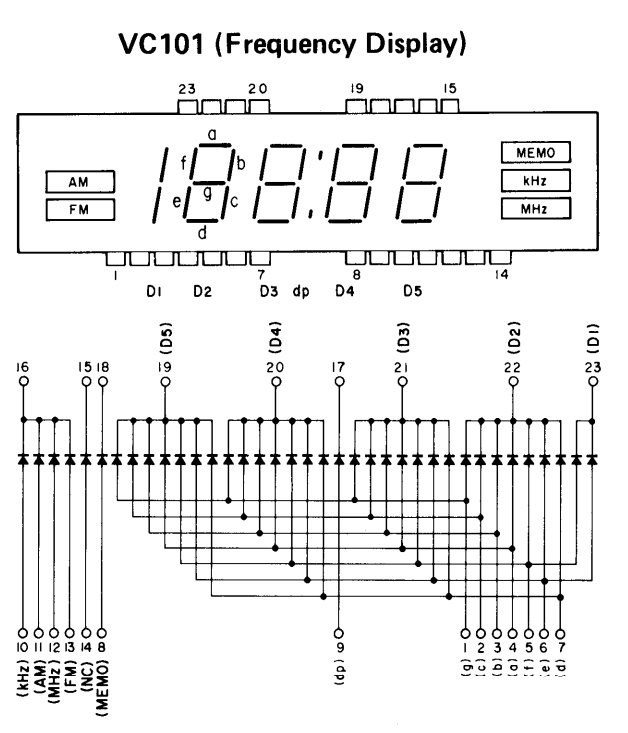
• Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
• Schematic Diagram is subject to change without notice.

SCHEMATIC DIAGRAM R, U, C, A models

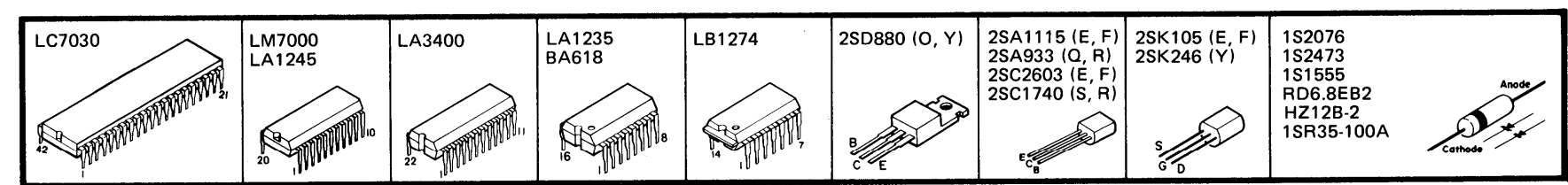


★ MARK—SEE BELOW TABLE

	R	U, C	A
R2	C17, 17B	1500P/100	1000P/100
R8	D112	OPEN	OPEN
R10	D111, 115	OPEN	OPEN
R11	R185	10K	OPEN
R20	SW101	KA4012B	OPEN
R21	F101	OPEN	GSA 250V
R26	J261	SHORT	OPEN
R27	R237	OPEN	1/2P22M
R28	T101	GAE8480	GAE8490
R29	C190	0.033	0.01
R30	R160	4.7K	22K



Pin No.	Function	Pin No.	Function
1	segment "g"	13	"FM" Anode
2	segment "f"	14	NOT USED
3	segment "e"	15	NOT USED
4	segment "d"	16	"AM" "FM" Cathode
5	segment "c"	17	"kHz" "MHz" Cathode
6	segment "b"	18	decimal point Cathode
7	segment "a"	19	"MEMO" Cathode
8	"MEMO"	20	digit "5" Anode
9	decimal point	21	digit "4" Anode
10	"kHz"	22	digit "3" Anode
11	"AM"	23	digit "2" Anode
12	"MHz"		digit "1" Anode



• All voltages measured with a 10MS1/VDC electric volt meter, under no-signal condition.
 • The voltages are measured at FM reception mode. Only the voltages at IC103 are at AM reception mode.
 • Components having special characteristics are marked ★ and must be replaced with parts having specifications equal to those originally installed.
 • Schematic Diagram is subject to change without notice.