

ST-JX220A

Canadian Model
AUS Model



BLACK model shown.

SPECIFICATIONS

FM tuner section

Tuning range 87.5 MHz – 108 MHz
Antenna terminals
300 ohms, balanced
75 ohms, unbalanced
Intermediate frequency 10.7 MHz
Sensitivity
at 50 dB quieting
16.1 dBf, 3.5 μ V (mono)
38.3 dBf, 45 μ V (stereo)
Usable sensitivity
10.3 dBf, 1.8 μ V (IHF)
Signal-to-noise ratio
(at 75 kHz deviation)
80 dB (mono)
75 dB (stereo)
Harmonic distortion
at 1 kHz 0.3% (mono)
0.4% (stereo)
IM distortion 0.3% (mono)
0.4% (stereo)
Separation
at 1 kHz 45dB
Frequency response
30 Hz-15 kHz $+0.5$ dB
 -2.0 dB
Selectivity 55 dB at 400 kHz
Capture ratio 1.0 dB
AM suppression ratio
54 dB
Image response ratio
50 dB
IF rejection ratio
90 dB
Spurious response ratio
70 dB
RF intermodulation
60 dB (IHF)
Output level/impedance
at 75 kHz deviation
775 mV, 3.3 kilohms

AM tuner section

Tuning range 530-1,610 kHz (with the AM tuning interval set at 10 kHz)
531-1,602 kHz (with the AM tuning interval set at 9 kHz)
Antenna LAYOUT-FREE AM antenna
external antenna terminal
Intermediate frequency 450 kHz
Usable sensitivity
LAYOUT-FREE AM antenna
300 μ V/m (at 999 or 1,000 kHz)
external antenna
30 μ V (at 999 or 1,000 kHz)

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.



FM STEREO/AM STEREO TUNER
SONY®



Signal-to-noise ratio

54 dB (at 50 mV/m) (mono),

45 dB (at 50 mV/m) (stereo)

Harmonic distortion

0.3% (at 50mV/m, 400 Hz) (mono)

0.8% (at 50mV/m, 400 Hz) (stereo)

Frequency responseIF BAND: WIDE 40 Hz-8 kHz ± 0 dB

(Canadian model)

IF BAND: NORMAL 40 Hz-3.5 kHz ± 0 dB**Separation**

at 400 Hz

26 dB

Selectivity

IF BAND: WIDE

6 dB at 9 kHz

8 dB at 10 kHz

IF BAND: NORMAL

35 dB at 9 kHz

40 dB at 10 kHz

General**System**

PLL quartz-locked digital

synthesizer system

FM/AM stereo, FM/AM super-heterodyne

tuner

Power requirements

Canadian model: 120 V ac, 60 Hz

AUS model: 240 V ac (or 220 V ac adjustable
by authorized Sony personnel), 50/60 Hz**Power consumption**

Canadian model: 14 watts

AUS model: 12 watts

Dimensions

Approx. 430 × 55 × 255 mm (w/h/d)

(17 × 2¹/₄ × 10¹/₈ inches)

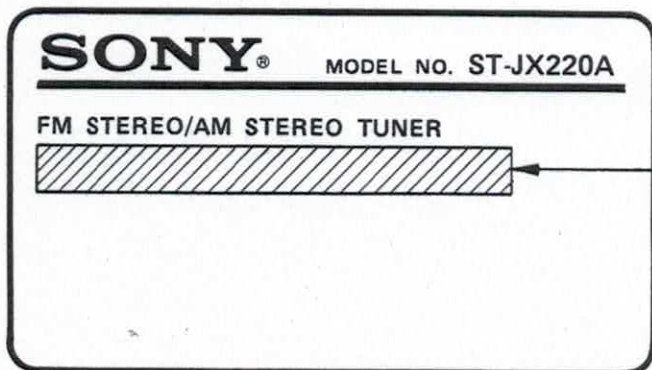
including projecting parts and controls

Weight

2.5 kg (5 lbs 8 oz)

MODEL IDENTIFICATION

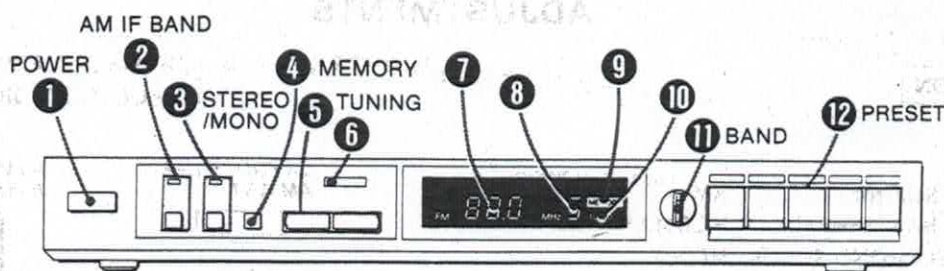
— Specification Label —



{ Canadian model: 120 V ac, 60 Hz 14W
AUS model: 240 V ac, 50/60 Hz

1-1. FUNCTION OF CONTROLS

OUTLINE

**To change the AM tuning interval**

The AM tuning interval is preset at the factory to match the frequency allocation system of your country.

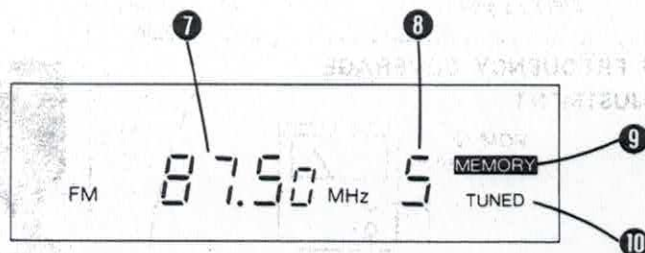
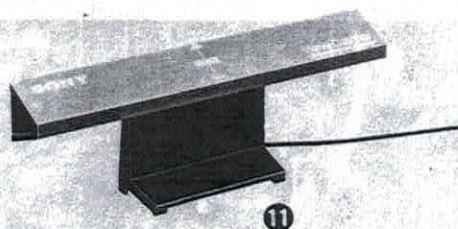
Canadian model: 10 kHz

Australian model: 9 kHz

If you use the tuner where the frequency allocation system is based on a 9 kHz (10 kHz) interval, change the interval as follows.

- 1 Depress the POWER switch to turn on the unit.
- 2 Select the AM band.
- 3 Press the POWER switch to turn it off.
- 4 While pressing the "+" TUNING button, depress the POWER switch to turn it on.

The AM tuning interval has been set to 9 kHz (10 kHz). To reset the interval to 10 kHz (9 kHz), follow the same procedure.

**① POWER switch****② AM IF BAND switch and indicator**

For AM stereo program reception, normally keep this switch in the WIDE position (the IF BAND WIDE indicator lights up). Low-distortion, hi-fi sound can be obtained. When there is interference by adjacent stations or due to noise, press the switch so that the IF BAND WIDE indicator goes out. The higher selectivity will improve the reception.

③ STEREO/MONO switch and indicator

Normally keep this switch in the STEREO position (the MONO indicator goes out).

When an FM or AM program is too noisy, press the switch so that the MONO indicator lights up. This will enable the tuner to receive weak stations, although the stereo feature is sacrificed.

④ MEMORY switch

Press to operate memory circuit. The MEMORY indicator will appear in the display window for a few seconds indicating that the memory circuit is standing by.

⑤ TUNING buttons

Press either button to change the frequency. Press the left button (−) to go to a lower frequency and the right button (+) to go to a higher frequency. To change the frequency continuously until the desired frequency is received, keep the button pressed. The frequency figures will change rapidly. To change the frequency slowly, successively press and immediately release the button.

⑥ STEREO indicator

This indicator will light when an FM or an AM stereo program of sufficient signal strength is tuned in.

⑦ Band/frequency-display

Permits reading the received frequency at a glance from the figures.

⑧ Station preset button indicator

When the station PRESET button is pressed, a figure from 1 to 5 corresponding to the pressed button will appear.

⑨ MEMORY indicator

When the MEMORY switch is pressed, "MEMORY" will appear for a few seconds indicating that the memory circuit is standing by.

⑩ TUNED indicator

This indicator illuminates when a sufficiently strong signal is tuned in.

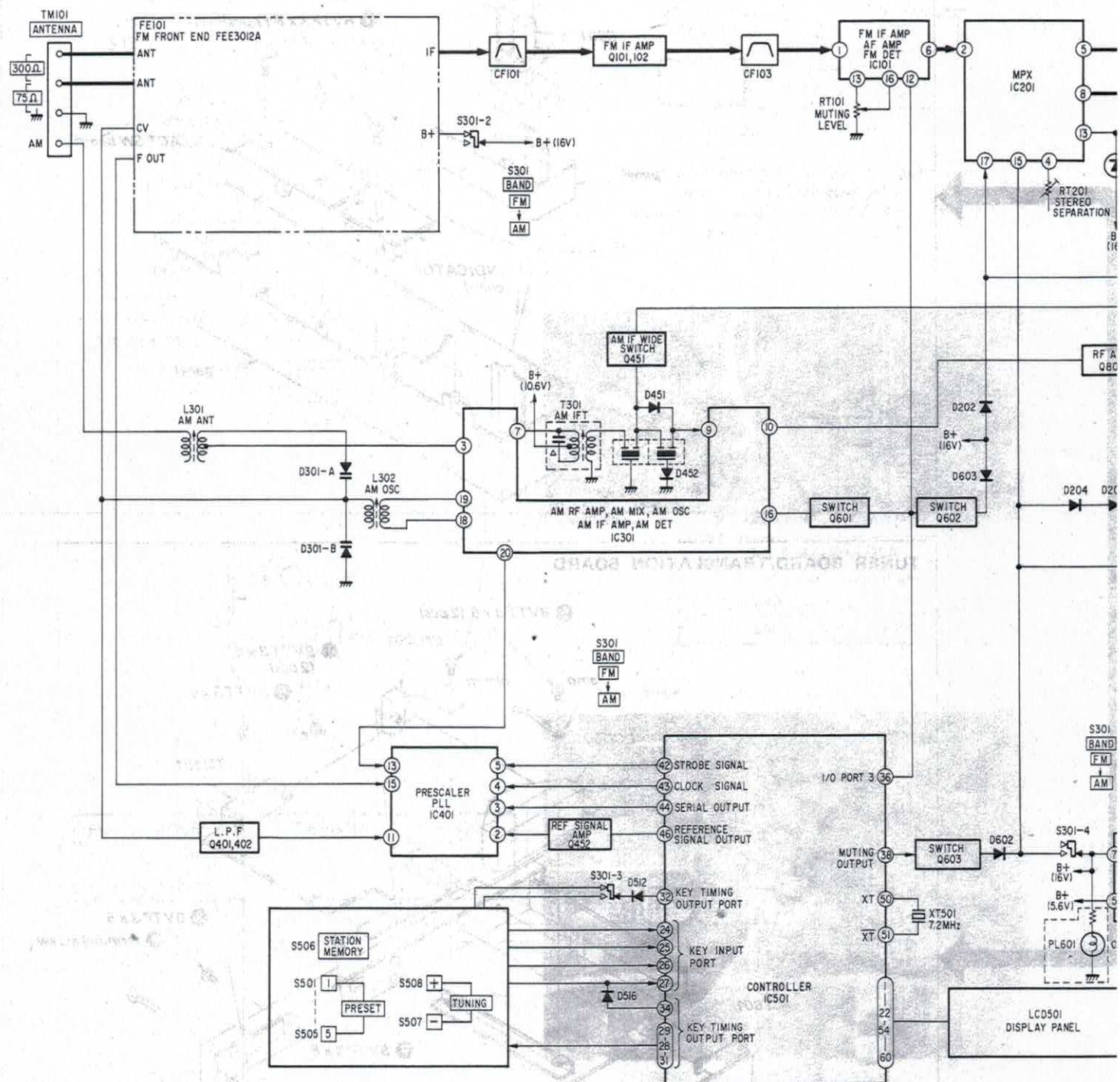
⑪ BAND selector

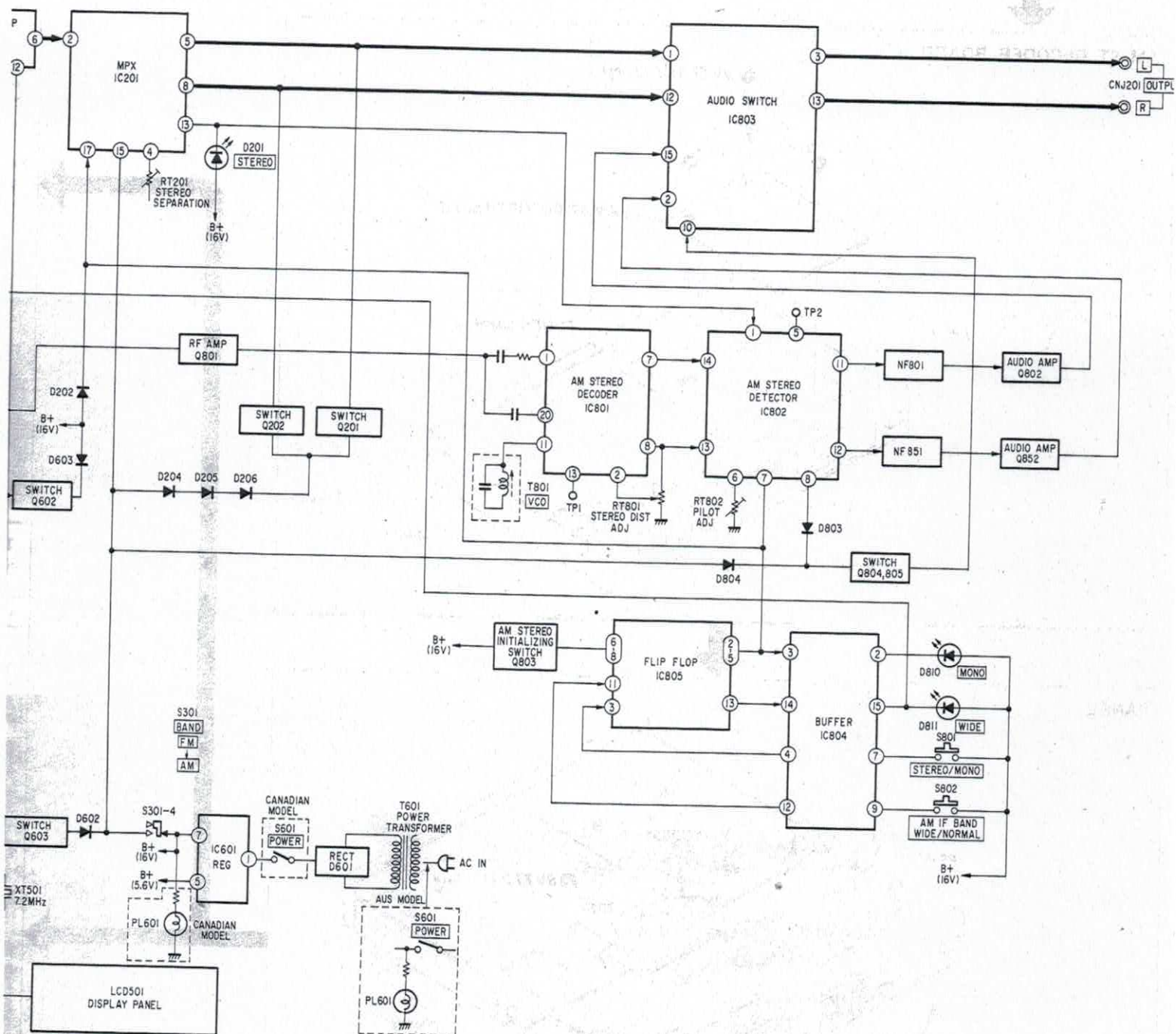
Selects the desired band: FM or AM. The selected band will be indicated in the band/frequency-display window.

⑫ Station PRESET buttons

To call up a memorized station, press the appropriate button.

1-2. BLOCK DIAGRAM



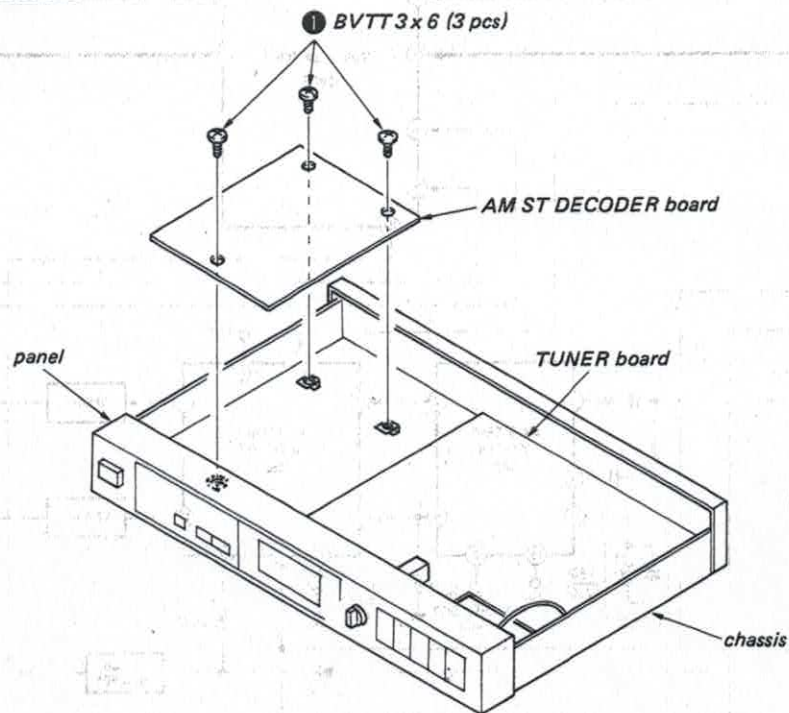


SECTION 2 DISASSEMBLY

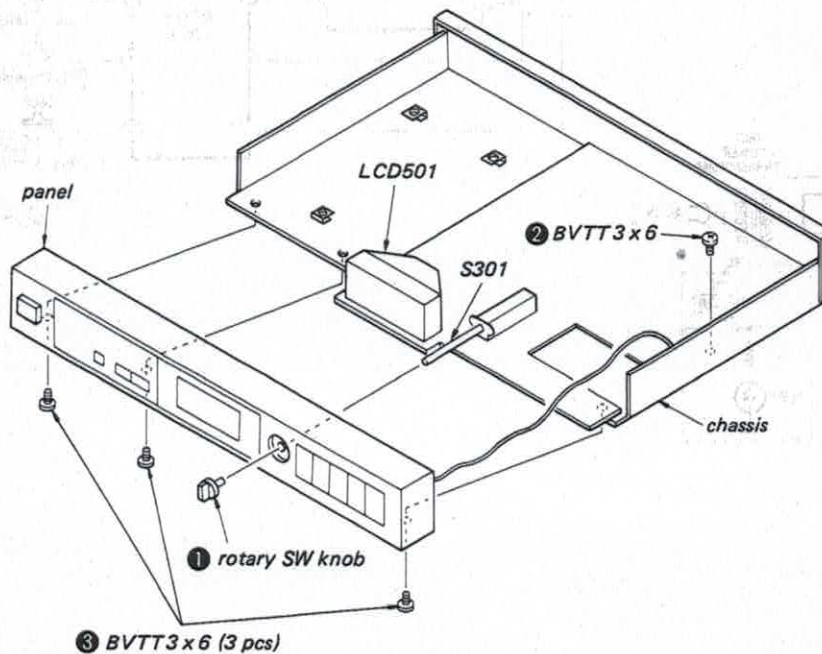
Remove the case.

• Follow the disassembly procedure in the numerical order given.

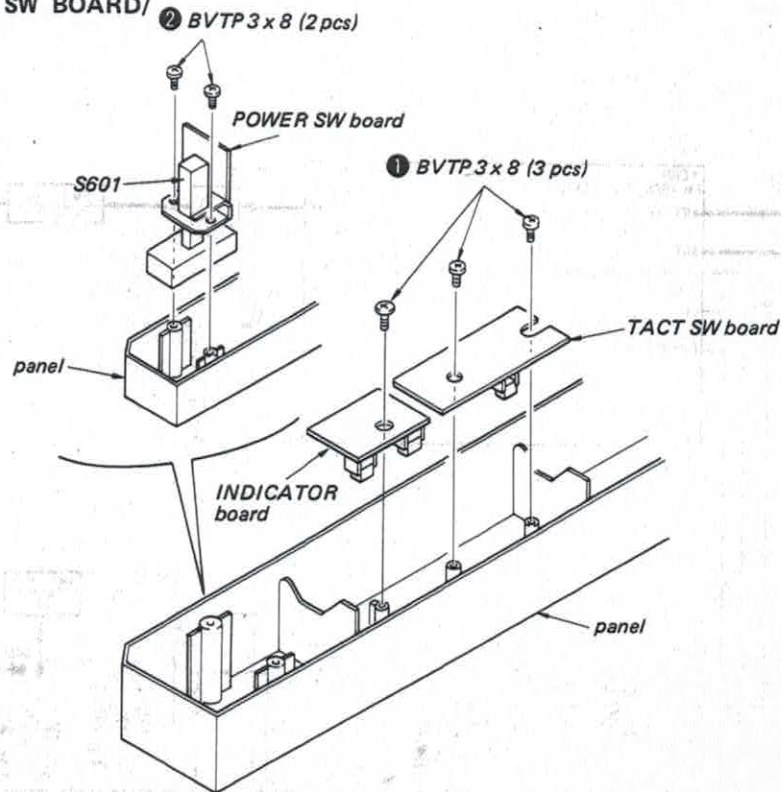
AM ST DECODER BOARD



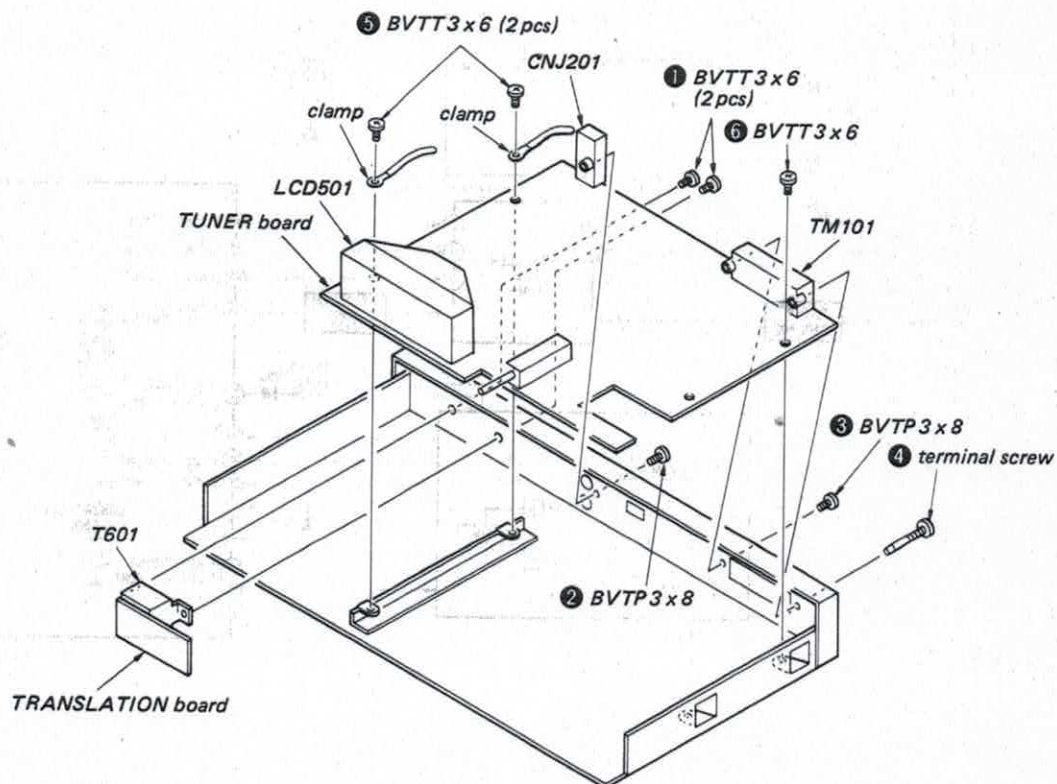
PANEL



POWER SW BOARD/TACT SW BOARD/ INDICATOR BOARD



TUNER BOARD/TRANSLATION BOARD

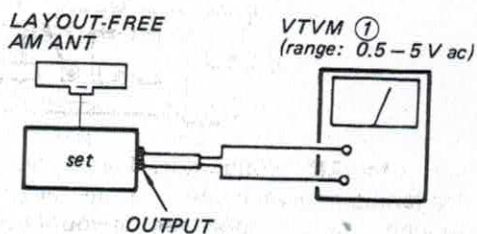
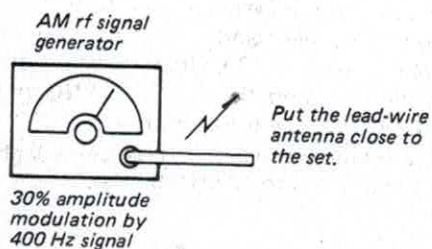


SECTION 3 ADJUSTMENTS

AM SECTION

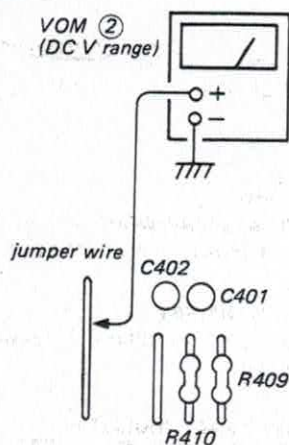
Setting:

BAND Selector: AM
AM IF BAND Switch: NORMAL
STEREO/MONO Switch: MONO



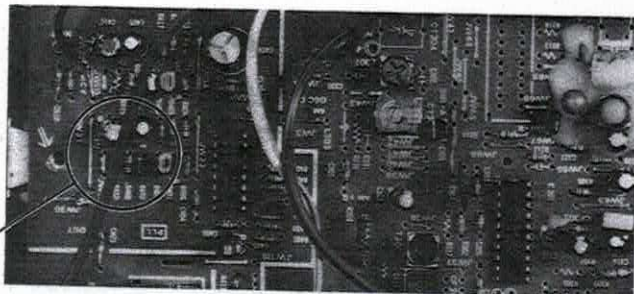
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM FREQUENCY COVERAGE ADJUSTMENT



Frequency Display	1,610 kHz	530 kHz
Voltage at VOM (2)	9.0 ± 0.4 V	1.1 ± 0.1 V
Adjustment Parts	CT302	L302

— tuner board —

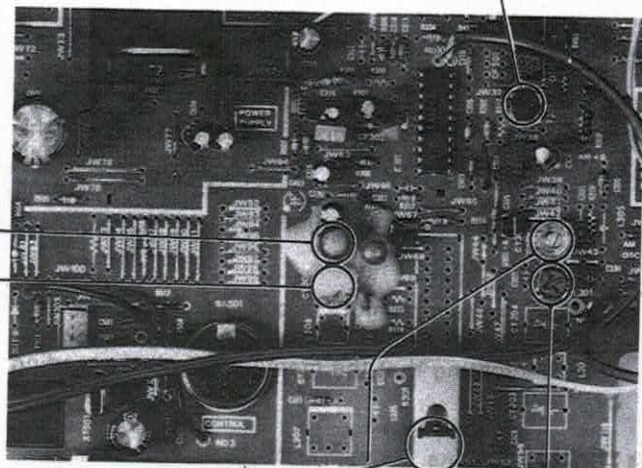


AM IF ADJUSTMENT

Adjust for a maximum reading on VTVM (1).

450 kHz	T301
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— tuner board —



FM
AM
BAND

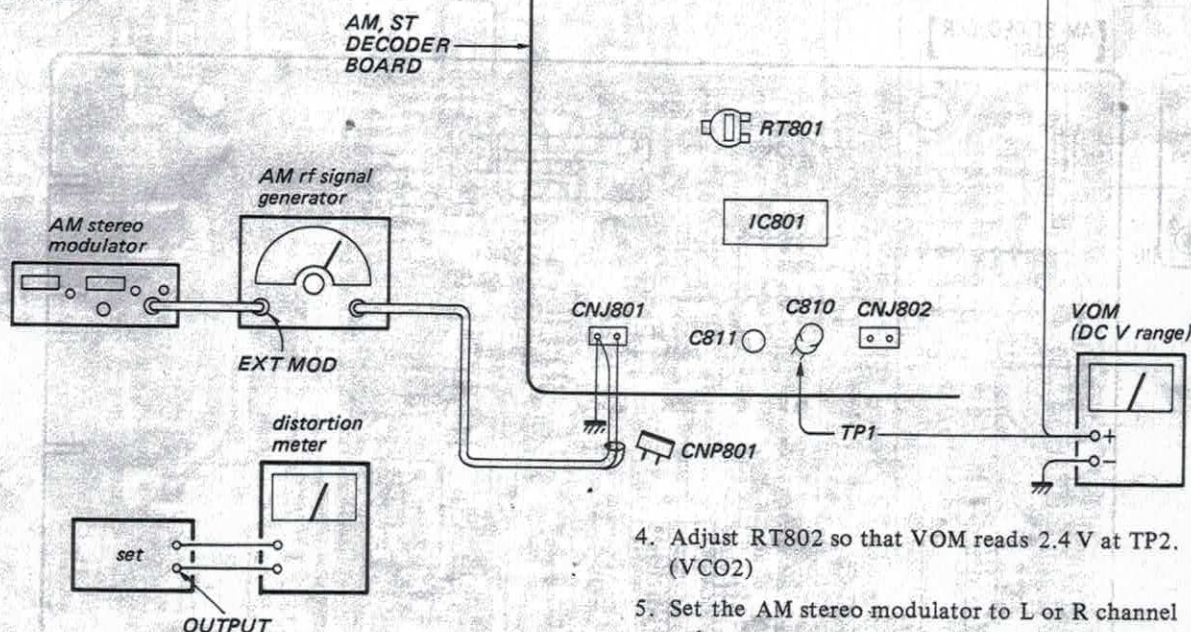
CT301	L301
1,400 kHz	600 kHz
Adjust for a maximum reading on VTVM (1).	
AM TRACKING ADJUSTMENT	

AM Stereo Adjustment

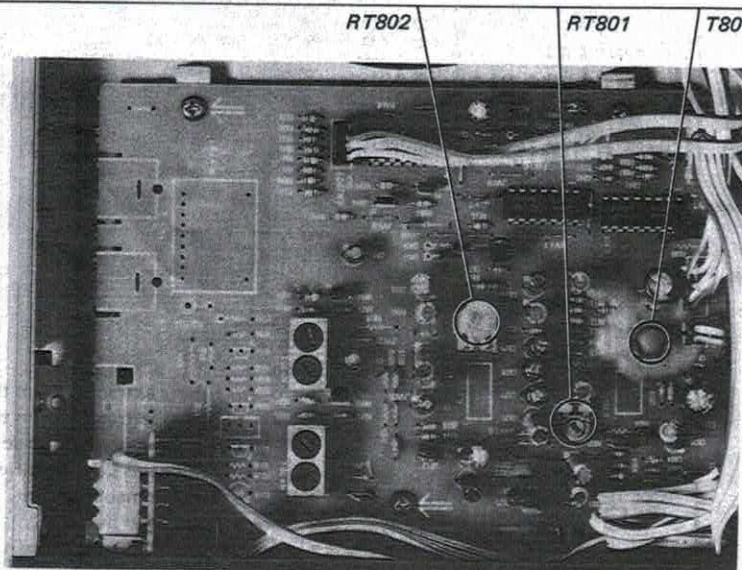
Setting:

STEREO/MONO Switch: STEREO
 AM IF BAND Switch: NORMAL
 BAND SELECTOR Switch: AM

Procedure:



1. Set the frequency of the AM rf signal generator to 450 kHz, and the output to 100 mV (100 dB) with the modulation turned off (no modulation).
2. Adjust T801 so that VOM reads 1.7 V at TP1. (VCO1)
3. Set the AM stereo modulator to C-QUAM (Motorola system) (400 Hz, 30%).
4. Adjust RT802 so that VOM reads 2.4 V at TP2. (VCO2)
5. Set the AM stereo modulator to L or R channel only.
6. Adjust RT801 to obtain an output of minimum distortion.
7. If necessary, turn the modulation system to CPM (Harris), ISB (Kahn) or to AM-PM (Magna-vox) and check for the above adjustments.
8. If necessary, perform the steps 1. through 7. above, until no further improvement is obtained.



The FM front-end is carefully adjusted at the factory and is supplied as one whole block for replacement.

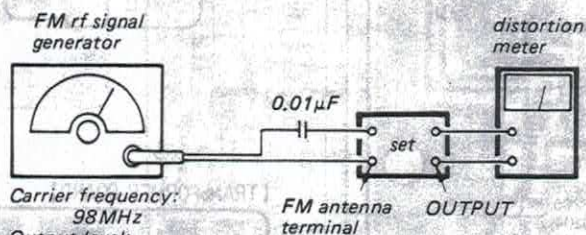
FM SECTION

Setting:

BAND Selector: FM
STEREO/MONO Switch: STEREO

FM Discriminator Alignment

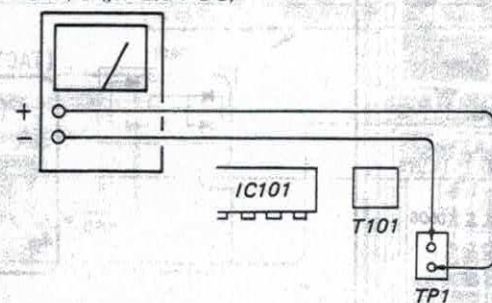
Procedure:



Carrier frequency: 98 MHz
Output level: 1 mV (60 dB)
Modulation: 1 kHz, 75 kHz deviation (100%)

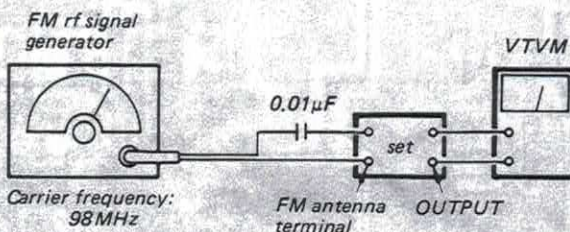
1. Tune the set to 98 MHz.
2. Connect a VOM to NULL test point (TP1) and adjust the core of T101 for 0 V DC reading on the VOM.

VOM (range: 2.5 V DC)



FM Muting Level Adjustment

Procedure:

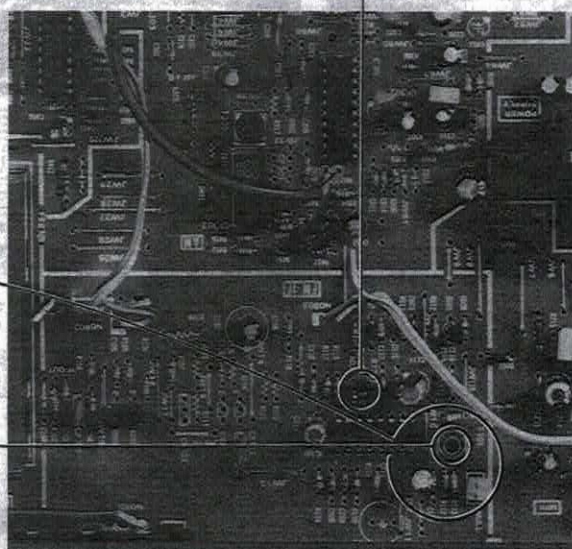


Carrier frequency: 98 MHz
Modulation: 1 kHz, 75 kHz deviation (100%)
Output level: 17.8 µV (25 dB)

1. Tune the set to 98 MHz by pressing the TUNING switches.
2. Adjust RT101 for a 0 V reading on the VTVM.

RT101

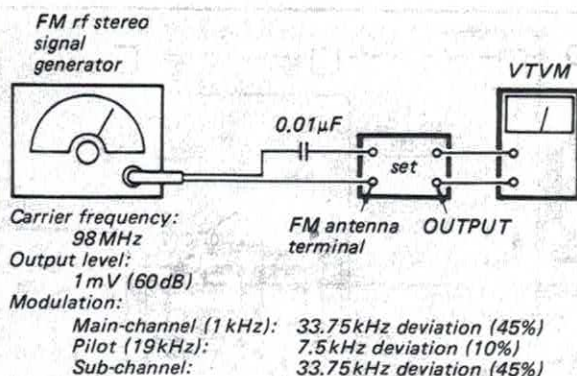
— tuner board —



T101

FM Stereo Separation Adjustment

Procedure:



FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RT201 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RT201 for minimum reading.

L-CH Stereo separation: Ⓐ - Ⓑ

R-CH Stereo separation: Ⓒ - Ⓓ

The separations of both channels should be equal.

● IF OFFSET ADJUSTMENT:

Circuit Connections Depending on the Ceramic Filter (CF101, 103)

This set employs three types of ceramic filter (CF101, 103) which have different center frequency. Therefore FM IF offset adjustment by diode connection is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



Ceramic filter		Diode connection		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	D513A	D513B	
Red	10.70	X	X	10.70
White	10.75	○	X	10.75
Black	10.65	X	○	10.65

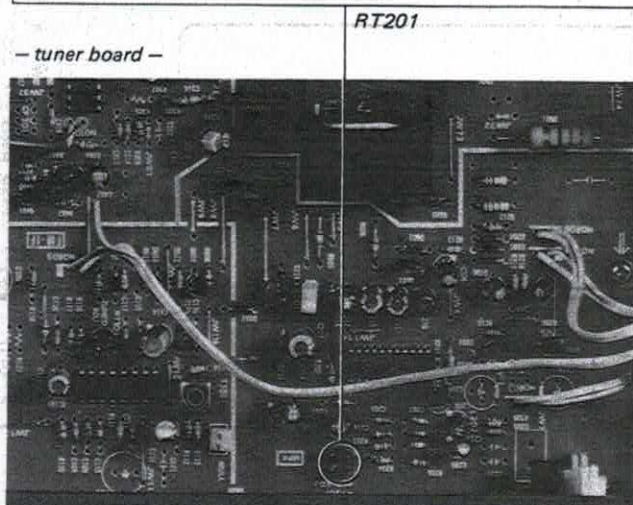
○: connected

X: not connected

- CF101 and 103 should use the ceramic filters of same center frequency.

Part Numbers of each color are shown below.

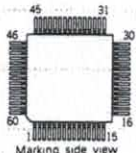
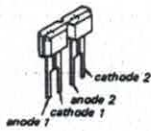
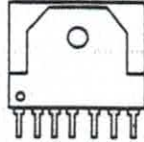
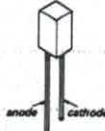
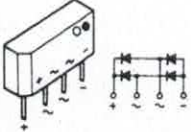
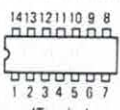
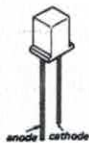
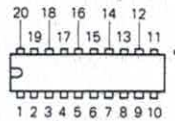
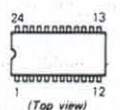
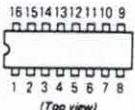
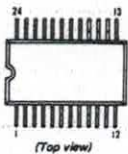
Red	1-567-390-11
White	1-567-390-51
Black	1-567-390-41



SECTION 4 DIAGRAMS

MEMO

● Semiconductor Lead Layouts

1SS202-1 	TC9302F-005  Marking side view	2SA1175 
KV1236Z 	LA5665 	GL-9HY84-D 
S1VB20 	TC4013BP  (Top view)	GL-9PG4 GL-9PR4 
2SK246-GR3 	CX857 LA1247  (Top view)	
2SC2669 2SC2603-F DTC144ES DTA144ES 	LA3401  (Top view)	
LA1231 TC4052BP TC4049BP TC9172P  (Top view)	CXA1017M  (Top view)	

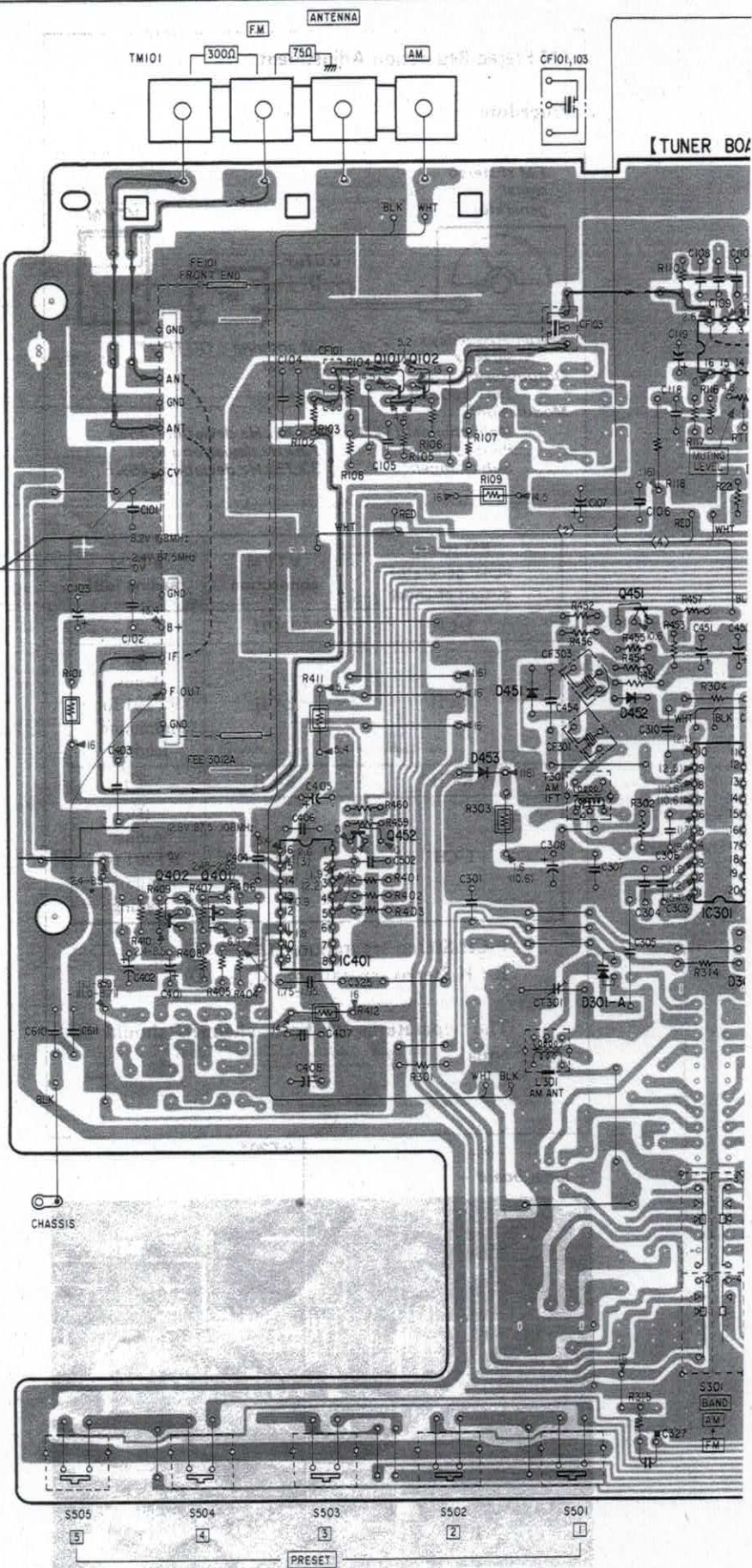
4-1. MOUNTING DIAGRAM

— Conductor Side —

Q, IC	D
IC101	
IC201	
101	
102	
	201
	202
	202
	602
	603
	602
	206
	205
	204
451	
	451
	452
IC601	
	453
601	
IC301	
452	
	601
IC401	
402	
401	
	301-A
	301-B
	513-B
	513-A
	511
	509
	507
	506
	512
	510
	517
	518
■ IC501	
	516
	504
	503
	502
	501

CERAMIC FILTERS CF101, CF103		DIODE CONNECTION		FM INTERMEDIATE FREQUENCY (MHz)
COLOR MARK	CENTER FREQUENCY (MHz)	DS13 - A	DS13 - B	
BLACK	10.65	X	○	10.65
RED	10.70	X	X	10.70
WHITE	10.75	○	X	10.75

O : CONNECTED
X : NOT CONNECTED





15

16

17

18

19

20

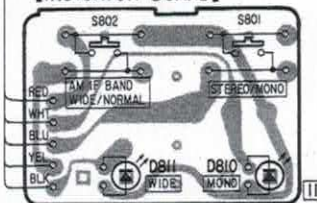
21

22

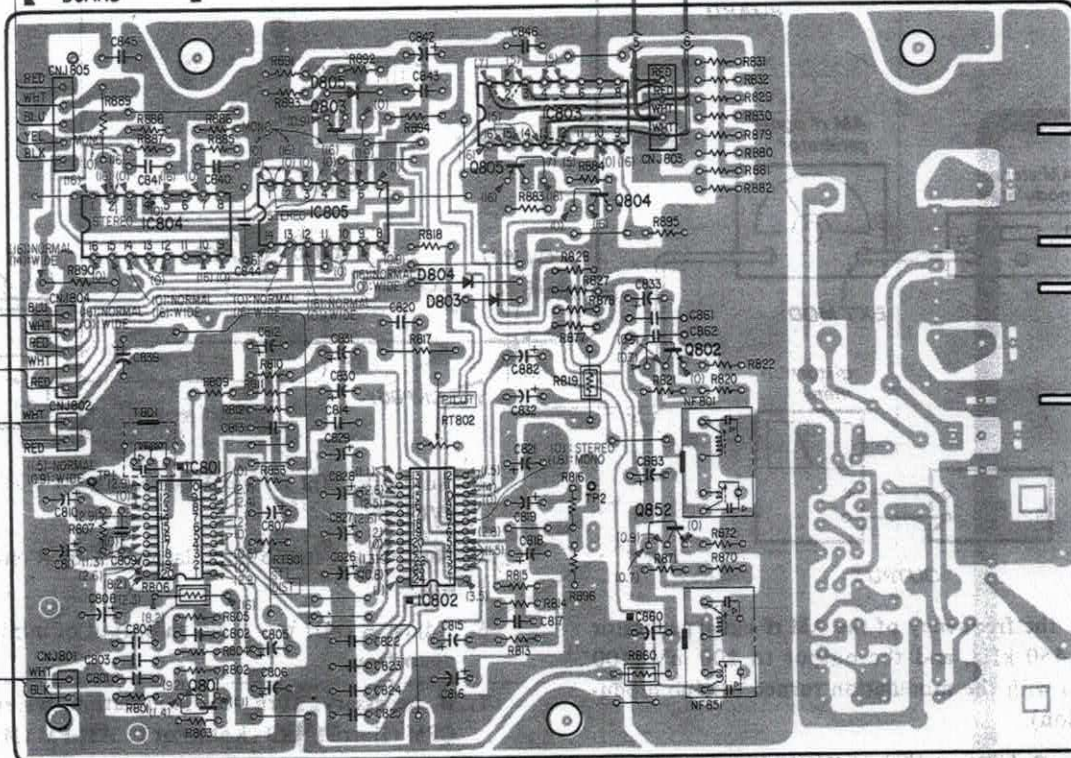
(5.6)

Q	IC	IC804	801	IC805	803	IC802	IC803	805	804	802	852
D	811	810	201	805	804	803					

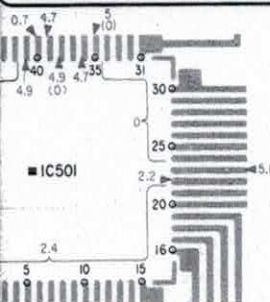
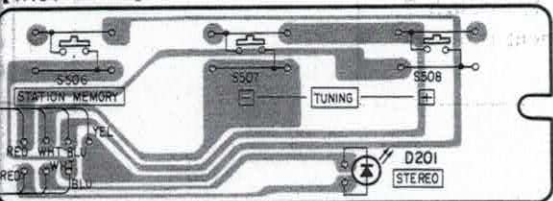
[INDICATOR BOARD]



[AM ST DECODER BOARD]



[TACT BOARD]



SIGNAL 1 2 3 4 5



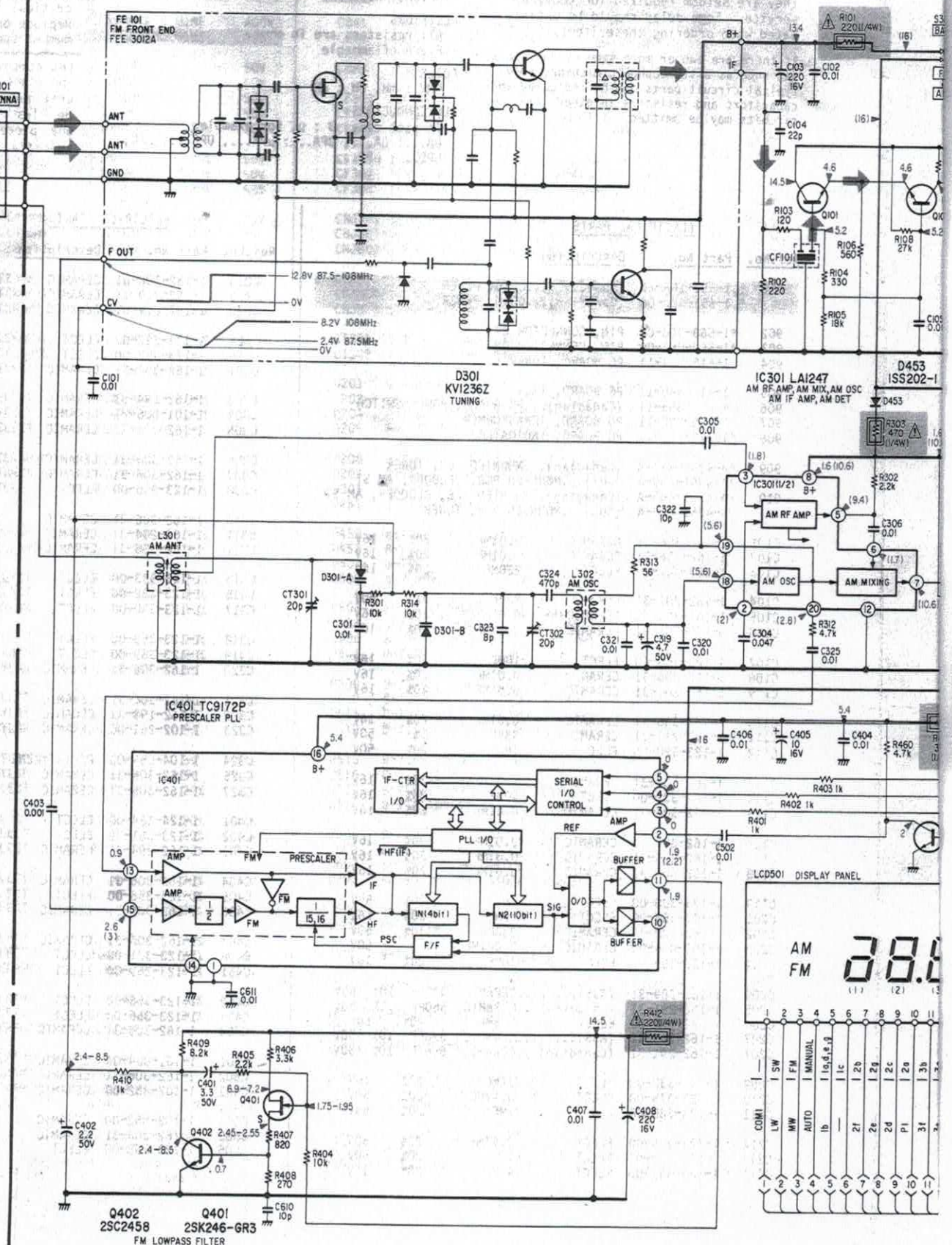
Note:

- : parts extracted from the component side
- : parts extracted from the conductor side
- : part mounted on the conductor side.
- : indicates side identified with part number
- ▲ : nonflamable resistor.
- : signal path
- : L-CH signal path
- : R-CH signal path

4-2. SCHEMATIC DIAGRAM

• See page 22 for Note.

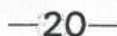
[TUNER BOARD(1/2)]



8	9	10	11	12	13	14	15	16
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ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C601	1-101-004-00	(Canadian)...CERAMIC	0.01MF	400V	
C601	1-161-744-00	(AUS).....CERAMIC	0.01MF	400V	
C602	1-101-004-00	CERAMIC	0.01MF	50V	
C603	1-101-004-00	CERAMIC	0.01MF	50V	
C604	1-101-004-00	CERAMIC	0.01MF	50V	
C605	1-101-004-00	CERAMIC	0.01MF	50V	
C606	1-123-349-00	ELECT	1000MF	20%	35V
C607	1-123-380-00	ELECT	1MF	20%	50V
C608	1-123-369-00	ELECT	4.7MF	20%	50V
C609	1-123-369-00	ELECT	4.7MF	20%	50V
C610	1-162-199-31	CERAMIC	10PF	5%	50V
C611	1-162-306-31	CERAMIC	0.01MF	20%	16V
C612	1-162-306-31	CERAMIC	0.01MF	20%	16V
C613	1-162-306-31	CERAMIC	0.01MF	20%	16V
C801	1-162-306-31	CERAMIC	0.01MF	30%	16V
C802	1-162-306-31	CERAMIC	0.01MF	30%	16V
C803	1-162-306-31	CERAMIC	0.01MF	30%	16V
C804	1-162-207-31	CERAMIC	22PF	5%	50V
C805	1-123-379-00	ELECT	0.47MF	20%	50V
C806	1-123-379-00	ELECT	0.47MF	20%	50V
C807	1-123-379-00	ELECT	0.47MF	20%	50V
C808	1-123-356-00	ELECT	10MF	20%	50V
C809	1-162-306-31	CERAMIC	0.01MF	30%	16V
C810	1-131-370-71	TANTALUM	6.8MF	20%	16V
C811	1-123-332-00	ELECT	47MF	20%	16V
C812	1-123-356-00	ELECT	10MF	20%	50V
C813	1-162-303-31	CERAMIC	0.0033MF	30%	16V
C814	1-162-303-31	CERAMIC	0.0033MF	30%	16V
C815	1-123-381-00	ELECT	2.2MF	20%	50V
C816	1-123-609-00	ELECT	0.33MF	20%	50V
C817	1-130-518-91	MYLAR	0.015MF	10%	50V
C818	1-131-346-71	ELECT	0.68MF	20%	35V
C819	1-131-370-71	TANTALUM	6.8MF	20%	16V
C820	1-106-184-00	MYLAR	0.0033MF	5%	50V
C821	1-123-380-00	ELECT	1MF	20%	50V
C822	1-130-471-00	MYLAR	0.001MF	5%	50V
C823	1-130-483-00	MYLAR	0.01MF	5%	50V
C824	1-130-483-00	MYLAR	0.01MF	5%	50V
C825	1-130-471-00	MYLAR	0.001MF	5%	50V
C826	1-123-356-00	ELECT	10MF	20%	50V
C827	1-123-330-00	ELECT	22MF	20%	16V
C828	1-123-330-00	ELECT	22MF	20%	16V
C829	1-123-330-00	ELECT	22MF	20%	16V
C830	1-123-369-00	ELECT	4.7MF	20%	50V
C831	1-123-607-00	ELECT	0.1MF	20%	50V
C832	1-123-380-00	ELECT	1MF	20%	50V
C833	1-123-608-00	ELECT	0.22MF	20%	50V
C839	1-123-333-00	ELECT	100MF	20%	16V
C840	1-162-306-31	CERAMIC	0.01MF	30%	16V
C841	1-162-306-31	CERAMIC	0.01MF	30%	16V
C842	1-123-380-00	ELECT	1MF	20%	50V
C843	1-101-005-00	CERAMIC	0.022MF		50V
C844	1-162-306-31	CERAMIC	0.01MF	30%	16V
C845	1-101-005-00	CERAMIC	0.022MF		50V
C846	1-101-005-00	CERAMIC	0.022MF		50V
C860	1-123-319-00	ELECT	47MF	20%	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C861	1-162-302-31	CERAMIC	0.0022MF	30%	16V
C862	1-162-302-31	CERAMIC	0.0022MF	30%	16V
C882	1-123-380-00	ELECT	1MF	20%	50V
C883	1-123-608-00	ELECT	0.22MF	20%	50V
CF101	1-567-390-11	FILTER, CERAMIC			
CF103	1-567-390-11	FILTER, CERAMIC			
CF201	1-567-250-11	OSCILLATOR, CERAMIC			
CF301	1-567-123-00	FILTER, CERAMIC			
CF302	1-527-981-00	FILTER, CERAMIC			
CF303	1-527-481-00	FILTER, CERAMIC			
CNJ201	1-507-807-00	JACK, PIN 2P (OUTPUT)			
CNJ801*1	1-560-708-00	PIN, CONNECTOR 2P			
CNJ802*1	1-560-708-00	PIN, CONNECTOR 2P			
CNJ803*1	1-560-603-00	PIN, CONNECTOR 4P			
CNJ804*1	1-560-604-00	PIN, CONNECTOR 5P			
CNJ805*1	1-560-604-00	PIN, CONNECTOR 5P			
CT301	1-141-171-00	CAP, TRIMMER 20P			
CT302	1-141-171-00	CAP, TRIMMER 20P			
D201	8-719-919-04	DIODE GL-9PR4 (STEREO)			
D202	8-719-107-94	DIODE 1SS202-1			
D204	8-719-107-94	DIODE 1SS202-1			
D205	8-719-107-94	DIODE 1SS202-1			
D206	8-719-107-94	DIODE 1SS202-1			
D207	8-719-107-94	DIODE 1SS202-1			
D301	8-719-902-79	DIODE KV1236Z			
D451	8-719-107-94	DIODE 1SS202-1			
D452	8-719-107-94	DIODE 1SS202-1			
D453	8-719-107-94	DIODE 1SS202-1			
D501	8-719-107-94	DIODE 1SS202-1			
D502	8-719-107-94	DIODE 1SS202-1			
D503	8-719-107-94	DIODE 1SS202-1			
D504	8-719-107-94	DIODE 1SS202-1			
D506	8-719-107-94	DIODE 1SS202-1			
D507	8-719-107-94	DIODE 1SS202-1			
D509	8-719-107-94	DIODE 1SS202-1			
D510	8-719-107-94	DIODE 1SS202-1			
D511	8-719-107-94	DIODE 1SS202-1			
D512	8-719-107-94	DIODE 1SS202-1			
D513	8-719-107-94	DIODE 1SS202-1			
D516	8-719-107-94	DIODE 1SS202-1			
D517	8-719-107-94	DIODE 1SS202-1			
D518	8-719-107-94	DIODE 1SS202-1			
D601	8-719-511-20	DIODE S1VB20			
D602	8-719-107-94	DIODE 1SS202-1			
D603	8-719-107-94	DIODE 1SS202-1			
D803	8-719-107-94	DIODE 1SS202-1			
D804	8-719-107-94	DIODE 1SS202-1			
D805	8-719-107-94	DIODE 1SS202-1			
D810	8-719-920-52	DIODE GL-9HY84-D (MONO)			
D811	8-719-915-51	DIODE GL-9PG4 (WIDE)			
FE101	1-463-609-11	FRONT END, FM (FEE-3012A)			
IC101	8-759-812-31	IC LA1231			
IC201	8-759-801-80	IC LA3401			
IC301	8-759-802-12	IC LA1247			
IC401	8-759-202-63	IC TC9172P			
IC501	8-759-204-24	IC TC9302F-005			
IC601	8-759-801-79	IC LA5665			
IC801	8-759-907-69	IC CX-857			
IC802	8-759-030-14	IC CXA1017M			
IC803	8-759-240-52	IC TC4052BP			

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC804	8-759-240-49	IC TC4049BP
IC805	8-759-240-13	IC TC4013BP
L301	1-402-069-11	COIL (ANT)
L302	1-406-147-11	COIL, OSC (MW)
LCD501	1-806-875-11	INDICATOR, L-CRYSTAL LT5057
NF801	1-235-590-11	(Canadian)...FILTER, BAND ILLUMINATOR
NF801	1-235-606-11	(AUS).....FILTER, BANDPASS
NF802	1-235-590-11	(Canadian)...FILTER, BAND ILLUMINATOR
NF802	1-235-606-11	(AUS).....FILTER, BANDPASS
PL601	1-518-511-00	(AUS).....LAMP, PILOT 12V 0.1A
PL601	1-518-557-00	(Canadian)...LAMP, PILOT 12V 0.15A
Q101	8-729-266-93	TRANSISTOR 2SC2669
Q102	8-729-266-93	TRANSISTOR 2SC2669
Q201	8-729-606-33	TRANSISTOR 2SC2603-F
Q202	8-729-606-33	TRANSISTOR 2SC2603-F
Q401	8-729-202-67	TRANSISTOR 2SK246-GR3
Q402	8-729-606-33	TRANSISTOR 2SC2603-F
Q451	8-729-606-33	TRANSISTOR 2SC2603-F
Q452	8-729-606-33	TRANSISTOR 2SC2603-F
Q601	8-729-606-33	TRANSISTOR 2SC2603-F
Q602	8-729-117-54	TRANSISTOR 2SA1175
Q603	8-729-606-33	TRANSISTOR 2SC2603-F
Q801	8-729-606-33	TRANSISTOR 2SC2603-F
Q802	8-729-606-33	TRANSISTOR 2SC2603-F
Q803	8-729-117-54	TRANSISTOR 2SA1175
Q804	8-729-900-89	TRANSISTOR DTC144ES
Q805	8-729-900-65	TRANSISTOR DTA144ES
Q852	8-729-606-33	TRANSISTOR 2SC2603-F
R101	1-247-115-00	CARBON 220 5% 1/4W F
R102	1-247-815-00	CARBON 220 5% 1/6W
R103	1-247-809-00	CARBON 120 5% 1/6W
R104	1-247-819-00	CARBON 330 5% 1/6W
R105	1-247-861-00	CARBON 18K 5% 1/6W
R106	1-247-825-00	CARBON 560 5% 1/6W
R107	1-247-819-00	CARBON 330 5% 1/6W
R108	1-247-865-00	CARBON 27K 5% 1/6W
R109	1-247-111-00	CARBON 150 5% 1/4W F
R110	1-247-819-00	CARBON 330 5% 1/6W
R111	1-247-873-00	CARBON 56K 5% 1/6W
R112	1-247-849-00	CARBON 5.6K 5% 1/6W
R113	1-247-837-00	CARBON 1.8K 5% 1/6W
R114	1-247-863-00	CARBON 22K 5% 1/6W
R115	1-247-111-00	CARBON 150 5% 1/4W F
R116	1-247-879-00	CARBON 100K 5% 1/6W
R117	1-247-855-00	CARBON 10K 5% 1/6W
R118	1-247-855-00	CARBON 10K 5% 1/6W
R202	1-247-831-00	CARBON 1K 5% 1/6W
R203	1-247-881-00	CARBON 120K 5% 1/6W
R204	1-247-879-00	CARBON 100K 5% 1/6W
R205	1-247-843-00	CARBON 3.3K 5% 1/6W
R206	1-247-849-00	CARBON 5.6K 5% 1/6W
R207	1-247-881-00	CARBON 120K 5% 1/6W
R208	1-247-879-00	CARBON 100K 5% 1/6W
R209	1-247-843-00	CARBON 3.3K 5% 1/6W
R210	1-247-849-00	CARBON 5.6K 5% 1/6W
R211	1-247-873-00	CARBON 56K 5% 1/6W
R212	1-247-135-00	CARBON 1.5K 5% 1/4W

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
R213	1-247-871-00	CARBON 47K 5% 1/6W
R214	1-247-843-00	CARBON 3.3K 5% 1/6W
R215	1-247-111-00	CARBON 150 5% 1/4W F
R216	1-247-867-00	CARBON 33K 5% 1/6W
R217	1-247-867-00	CARBON 33K 5% 1/6W
R218	1-247-855-00	CARBON 10K 5% 1/6W
R219	1-247-708-11	CARBON 470 5% 1/4W
R220	1-247-871-00	CARBON 47K 5% 1/6W
R221	1-247-879-00	CARBON 100K 5% 1/6W
R301	1-247-855-00	CARBON 10K 5% 1/6W
R302	1-249-421-11	CARBON 2.2K 5% 1/6W
R303	1-247-123-00	CARBON 470 5% 1/4W F
R304	1-247-823-00	CARBON 470 5% 1/6W
R306	1-247-807-00	CARBON 100 5% 1/6W
R307	1-247-855-00	CARBON 10K 5% 1/6W
R308	1-247-855-00	CARBON 10K 5% 1/6W
R309	1-247-115-00	CARBON 220 5% 1/4W F
R310	1-247-799-00	CARBON 47 5% 1/6W
R311	1-247-843-00	CARBON 3.3K 5% 1/6W
R312	1-247-847-00	CARBON 4.7K 5% 1/6W
R313	1-247-801-00	CARBON 56 5% 1/6W
R314	1-247-855-00	CARBON 10K 5% 1/6W
R315	1-247-863-00	CARBON 22K 5% 1/6W
R401	1-247-831-00	CARBON 1K 5% 1/6W
R402	1-247-831-00	CARBON 1K 5% 1/6W
R403	1-247-831-00	CARBON 1K 5% 1/6W
R404	1-247-855-00	CARBON 10K 5% 1/6W
R405	1-249-421-11	CARBON 2.2K 5% 1/6W
R406	1-247-843-00	CARBON 3.3K 5% 1/6W
R407	1-247-829-00	CARBON 820 5% 1/6W
R408	1-247-817-00	CARBON 270 5% 1/6W
R409	1-247-853-00	CARBON 8.2K 5% 1/6W
R410	1-247-831-00	CARBON 1K 5% 1/6W
R411	1-247-095-00	CARBON 33 5% 1/4W F
R412	1-247-115-00	CARBON 220 5% 1/4W F
R451	1-247-855-00	CARBON 10K 5% 1/6W
R452	1-247-851-00	CARBON 6.8K 5% 1/6W
R453	1-247-847-00	CARBON 4.7K 5% 1/6W
R454	1-247-855-00	CARBON 10K 5% 1/6W
R455	1-247-847-00	CARBON 4.7K 5% 1/6W
R456	1-247-855-00	CARBON 10K 5% 1/6W
R457	1-247-855-00	CARBON 10K 5% 1/6W
R458	1-247-847-00	CARBON 4.7K 5% 1/6W
R459	1-247-879-00	CARBON 100K 5% 1/6W
R460	1-247-847-00	CARBON 4.7K 5% 1/6W
R461	1-247-855-00	CARBON 10K 5% 1/6W
R501	1-247-867-00	CARBON 33K 5% 1/6W
R502	1-247-879-00	CARBON 100K 5% 1/6W
R503	1-247-847-00	CARBON 4.7K 5% 1/6W
R504	1-247-847-00	CARBON 4.7K 5% 1/6W
R601	1-206-475-11	(Canadian)...METAL OXIDE 33 5% 21
R601	1-206-647-11	(AUS).....METAL OXIDE 120 5% 21
R602	1-247-879-00	CARBON 100K 5% 1/6W
R603	1-247-232-00	CARBON 470 5% 1/2W F
R604	1-247-855-00	CARBON 10K 5% 1/6W
R605	1-247-855-00	CARBON 10K 5% 1/6W
R606	1-247-855-00	CARBON 10K 5% 1/6W
R607	1-247-855-00	CARBON 10K 5% 1/6W
R608	1-247-855-00	CARBON 10K 5% 1/6W
R609	1-247-855-00	CARBON 10K 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R610	1-247-887-00	CARBON	220K	5%	1/6W
R611	1-247-867-00	CARBON	33K	5%	1/6W
R612	1-247-867-00	CARBON	33K	5%	1/6W
R614	A.1-202-725-00	SOLID	3.3M	10%	1/2W
R801	1-247-815-00	CARBON	220	5%	1/6W
R802	1-247-895-00	CARBON	470K	5%	1/6W
R803	1-247-813-00	CARBON	180	5%	1/6W
R804	1-247-831-00	CARBON	1K	5%	1/6W
R805	1-247-831-00	CARBON	1K	5%	1/6W
R806	A.1-247-131-00	CARBON	1K	5%	1/4W F
R807	1-247-829-00	CARBON	820	5%	1/6W
R809	1-247-831-00	CARBON	1K	5%	1/6W
R810	1-247-847-00	CARBON	4.7K	5%	1/6W
R811	1-247-847-00	CARBON	4.7K	5%	1/6W
R812	1-247-867-00	CARBON	33K	5%	1/6W
R813	1-247-855-00	CARBON	10K	5%	1/6W
R814	1-247-879-00	CARBON	100K	5%	1/6W
R815	1-247-867-00	CARBON	33K	5%	1/6W
R816	1-247-877-00	CARBON	82K	5%	1/6W
R817	1-215-482-81	METAL	360K	1%	1/6W
R818	1-247-867-00	CARBON	100K	5%	1/6W
R819	A.1-247-123-00	CARBON	470	5%	1/4W F
R820	1-247-887-00	CARBON	220K	5%	1/6W
R821	1-247-851-00	CARBON	6.8K	5%	1/6W
R822	1-247-821-00	CARBON	390	5%	1/6W
R827	1-247-879-00	CARBON	100K	5%	1/6W
R828	1-247-879-00	CARBON	100K	5%	1/6W
R829	1-247-879-00	CARBON	100K	5%	1/6W
R830	1-247-879-00	CARBON	100K	5%	1/6W
R831	1-247-879-00	CARBON	100K	5%	1/6W
R832	1-247-879-00	CARBON	100K	5%	1/6W
R833	1-247-865-00	CARBON	27K	5%	1/6W
R860	A.1-247-115-00	CARBON	220	5%	1/4W F
R870	1-247-887-00	CARBON	220K	5%	1/6W
R871	1-247-851-00	CARBON	6.8K	5%	1/6W
R872	1-247-821-00	CARBON	390	5%	1/6W
R877	1-247-879-00	CARBON	100K	5%	1/6W
R878	1-247-879-00	CARBON	100K	5%	1/6W
R879	1-247-879-00	CARBON	100K	5%	1/6W
R880	1-247-879-00	CARBON	100K	5%	1/6W
R881	1-247-879-00	CARBON	100K	5%	1/6W
R882	1-247-879-00	CARBON	100K	5%	1/6W
R883	1-247-871-00	CARBON	47K	5%	1/6W
R884	1-247-871-00	CARBON	47K	5%	1/6W
R885	1-247-871-00	CARBON	47K	5%	1/6W
R886	1-247-871-00	CARBON	47K	5%	1/6W
R887	1-247-871-00	CARBON	47K	5%	1/6W
R888	1-247-871-00	CARBON	47K	5%	1/6W
R889	1-247-713-11	CARBON	1K	5%	1/4W
R890	1-247-236-91	CARBON	680	5%	1/2W
R891	1-247-879-00	CARBON	100K	5%	1/6W
R892	1-247-847-00	CARBON	4.7K	5%	1/6W
R893	1-247-879-00	CARBON	100K	5%	1/6W
R894	1-247-855-00	CARBON	10K	5%	1/6W
R895	1-247-871-00	CARBON	47K	5%	1/6W
R896	1-247-901-00	CARBON	820K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RT101	1-228-996-00	RES, ADJ, CARBON 47K
RT201	1-228-998-00	RES, ADJ, CARBON 220K
RT801	1-226-241-00	RES, ADJ, CARBON 500K
RT802	1-228-223-00	RES, ADJ, METAL GLAZE 100K
S301	1-554-914-11	SWITCH, ROTARY SLIDE (BAND)
S501	1-553-976-00	SWITCH, PUSH (PRESET 1)
S502	1-553-976-00	SWITCH, PUSH (PRESET 2)
S503	1-553-976-00	SWITCH, PUSH (PRESET 3)
S504	1-553-976-00	SWITCH, PUSH (PRESET 4)
S505	1-553-976-00	SWITCH, PUSH (PRESET 5)
S506	1-553-739-21	SWITCH, KEY BOARD (MEMORY)
S507	1-553-739-21	SWITCH, KEY BOARD (TUNING -)
S508	1-553-739-21	SWITCH, KEY BOARD (TUNING +)
S601	A.1-553-318-41	(AUS).....SWITCH, PUSH (AC POWER)
S601	1-570-103-11	(Canadian)...SWITCH, PUSH (1 KEY)(POWER)
S801	1-553-739-21	SWITCH, KEY BOARD (STEREO/MONO)
S802	1-553-739-21	SWITCH, KEY BOARD (AM IF BAND)
T101	1-404-419-00	COIL, DISCRIMINATOR
T301	1-404-623-11	TRANSFORMER, RF
T601	A.1-448-032-11	(Canadian)...TRANSFORMER, POWER
T601	A.1-448-249-11	(AUS).....TRANSFORMER, POWER
T801	1-406-149-00	COIL, OSC (VCO)
TM101	1-536-708-00	TERMINAL BOARD, PUSH 4P (ANTENNA)
XT501	1-567-125-00	VIBRATOR, CRYSTAL

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
151	1-402-082-12	ANTENNA, FERRITE-ROD (LW/MW/SW)
152	1-501-224-00	ANTENNA, FEEDER
153	3-701-630-00	BAG, POLYETHYLENE
154	3-703-895-01	LABEL, COLOR
155	3-760-339-31	MANUAL, INSTRUCTION
156	4-879-798-00	SHEET, PROTECTION
157	4-904-526-01	CUSHION, LOWER
158	4-904-527-01	CUSHION (LEFT), UPPER
159	4-904-528-01	CUSHION (RIGHT), UPPER
160	4-904-542-01	SPACER
161	4-904-543-22	INDIVIDUAL CARTON
162	8-915-122-90	CORD, CONNECTION

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