ORDER NO. RD77011404

Service Manual

Radio

FM-AM-SW1~6 8-BAND
PORTABLE RADIO

RF-2200BA

* This service manual includes only the changes of the RF-2200BS service manual (ORDER NO. RD7701-1412).
* This manual should be filed with the service manual for model RF-2200BS (ORDER NO. RD7701-1412).
* When servicing model RF-2200BA, this service manual and the RF-2200BS service manual should be used together.

CHANGES

■ SPECIFICATIONS

Frequency Range:	FM 87.5~108 MHz	➡	FM 88~108 MHz
Sensitivity:	FM 2μV for 50 mW Output		FM 3μV for S/N 6 dB
Power Source:	AC 110~125V/220~240V 50-60 Hz or 6V (Four "D" Size Flashlight Batteries) (National UM-1 or equivalent)		AC 240V 50 Hz or 6V (Four "D" Size Flashlight Batteries) (National UM-1 or equivalent)
	(Model RF-2200BS)		(Model RF-2200BA)

■ REPLACEMENT PARTS LIST

Ref. No.	Change of Part No.		Description	Per Set	Remarks	Price
	RF-2200BS ➡	RF-2200BA				
$D_{50,51}$	RVD10E1LF	—	Removed			
T_{12}	RLT5J199	RLT5J191	Power Transformer	1	○X	
S_{10}	RSR2A01Z-A	—	Removed			
$C_{510,511}$	ECKV1H103ZF	—	Removed			
	RYMF2200BSXG	RYMF2200N	Cabinet Assembly	1	○X	
	RYF2F2200BSX	RYF2F2200BAX	Cabinet Cover Assembly (Rear)	1	○X	
	RYF2F2200BSI	—	Removed			
	RYPF2200BSXG	RYPF2200BAXA	Front Panel Assembly	1	○X	
CH_2	RJJ30Z-H	RJJ29Z-H	Jack, EXT Power Source	1	Y	
	RXEF2200BSXG	RXEF2200BAXA	Dial Drive Assembly	1	○X	
	RJA20Z-K	RJA26Z-K	Power Cord, AC	1	Y	
A_1	RQX6071Z	RQX6072Z	Instruction Book	1	○Y	

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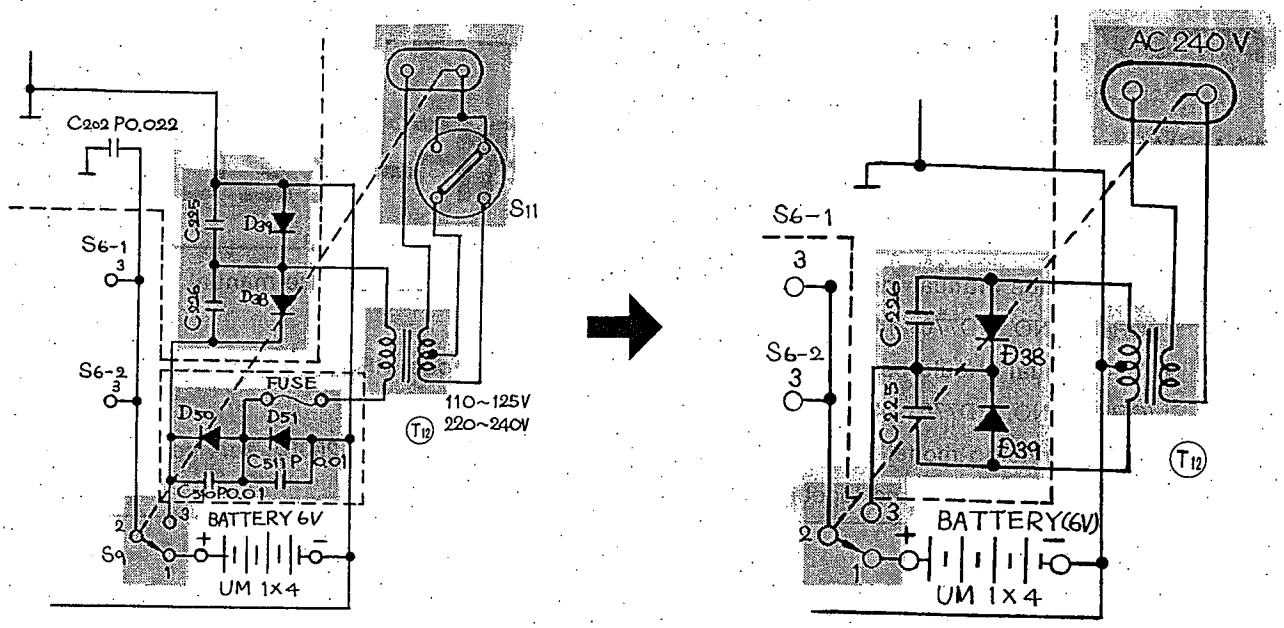
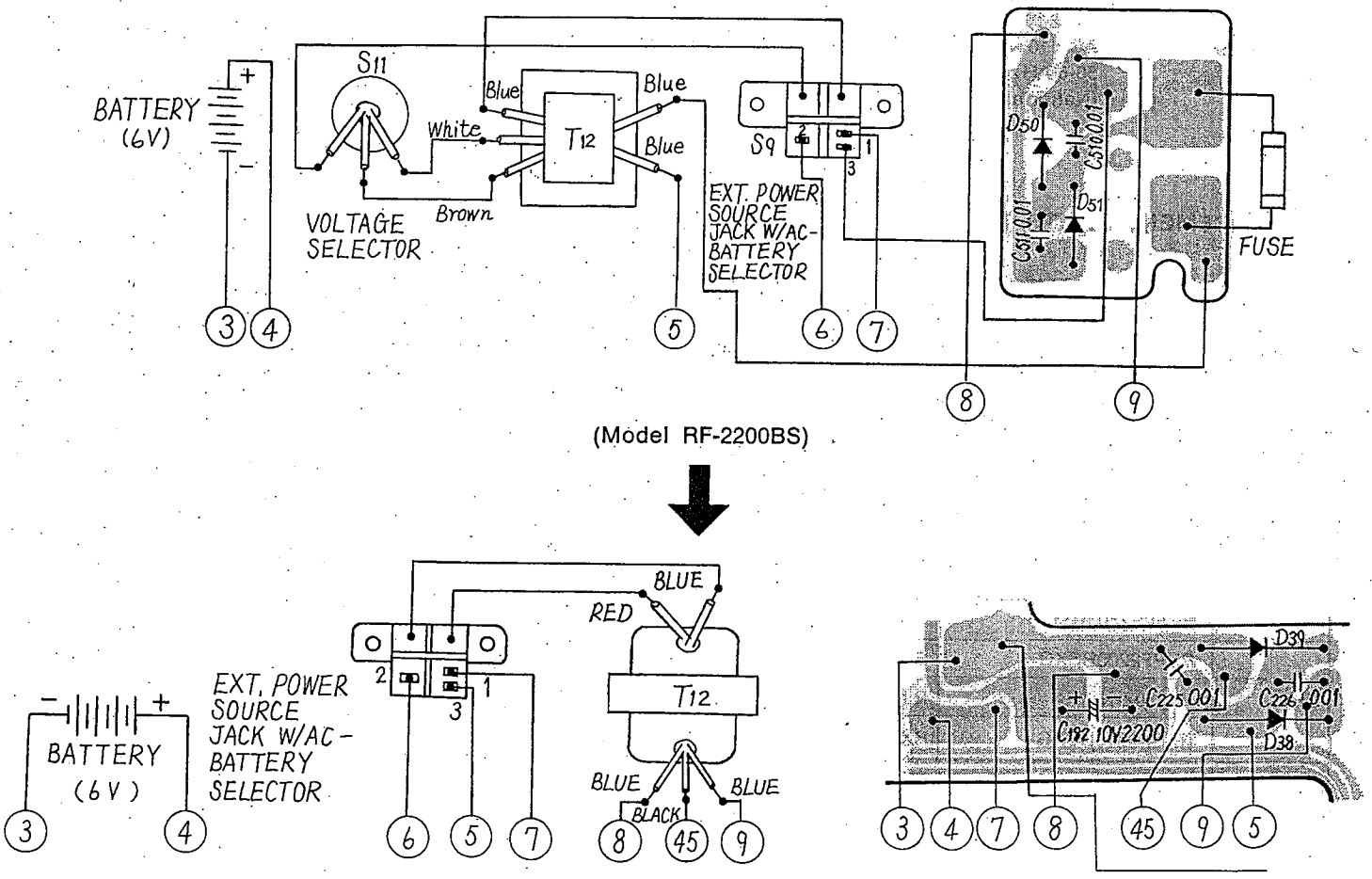
P.O. Box 288, Central Osaka, Japan

■ SCHEMATIC DIAGRAM



(Model RF-2200BS) (Model RF-2200BA)

■ CIRCUIT BOARD WIRING VIEW



(Model RF-2200BS)

(Model RF-2200BA)

ORDER NO. RD7702-1412

Service Manual

Radio

FM-AM-SW$_{1\sim6}$ 8-BAND
PORTABLE RADIO

RF-2200BS

■ SPECIFICATIONS

Frequency Range:	FM 87.5~108 MHz
	MW 525~1610 kHz (571~186m)
	SW$_1$ 3.9~8 MHz (76.9~37.5m)
	SW$_2$ 8~12 MHz (37.5~25m)
	SW$_3$ 12~16 MHz (25~18.8m)
	SW$_4$ 16~20 MHz (18.8~15m)
	SW$_5$ 20~24 MHz (15~12.5m)
	SW$_6$ 24~28 MHz (12.5~10.7m)
Intermediate Frequency:	FM 10.7 MHz
	MW & SW 2nd 455 kHz
	SW 1st 1.985 MHz
Sensitivity:	FM 2μV (S/N 6 dB)/50 mW Output
	MW 14μV/m for 50 mW Output
	SW$_1$ 0.5μV for 50 mW Output
	SW$_2$ 0.5μV for 50 mW Output
	SW$_3$ 0.5μV for 50 mW Output
	SW$_4$ 0.5μV for 50 mW Output
	SW$_5$ 0.3μV for 50 mW Output
	SW$_6$ 0.3μV for 50 mW Output
Power Output:	3W (DC Max.)
	2.4W (MPO)
Power Source:	AC 110—125/220—240V 50/60 Hz or 6V (Four "D" Size Flashlight Batteries) (Panasonic UM-1 or equivalent)
Power Consumption:	7W (AC Only)
Speaker:	10 cm (4") PM Dynamic Speaker
Dimensions:	$12\frac{17}{32}$"(Wide) × $7\frac{13}{32}$"(High) × $3\frac{15}{16}$" (Deep) (318 × 188 × 100 mm)
Weight:	3 kg (6 lb. 9.8 oz.) without batteries
Impedance:	Speaker 8Ω
	Earphone Jack 8Ω
	Recording Out Jack 3kΩ

Specifications are subject to change without notice for further improvement.

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P.O. Box 288, Central Osaka, Japan

■ TO REMOVE FRONT AND REAR COVER

1. Set dial scale to minimum frequency.
2. Remove the ten (10) knobs for the FM AFC, X-TAL MARKER, VOLUME, BASS, TREBLE, TUNING SPEED, BAND and MW/SW RF GAIN.
3. Lift up the gyro antenna.
4. Remove the battery cover and pull out the batteries.
5. Remove the six (6) screws for the cabinet cover, as shown in fig. 1.
6. Remove the rear cover.
7. Remove the sockets from chassis.
8. Push the catch in the direction of arrow, as shown in fig. 2 and remove the front cover.
9. Remove the sockets from chassis.
10. To reassemble, reverse the above procedure and note the following.
    1. Set power and AFC switch to "ON" position.
    2. Set X-TAL marker and BFO switch to "OFF" positions.

■ TO REMOVE DIAL DRIVE ASSEMBLY

1. Set band switch to "SW-SW1" position.
2. Remove the cabinet covers. (Refer to cabinet cover removal instruction.)
3. Remove the four (4) screws (nos. 1～4) for the dial drive assembly, as shown in fig. 3.
4. Turn the tuning shaft to clockwise and set the two (2) screws at the position, as shown in fig. 4.
5. Loosen the one (1) screw (no. 2) for the variable capacitor shaft, as shown in fig. 4.
6. Turn tuning shaft fully counter-clockwise.
7. Loosen the one (1) screw (no. 1) for the variable capacitor shaft, as shown in fig. 4.
8. Remove the tuning knob.
9. Push the catch in the direction of arrow ① and remove the front panel in the direction of arrow ②, as shown in fig. 5.
10. Remove the six (6) screws (nos. 1～6) for the dial drive assembly, as shown in fig. 6.
11. Remove the dial drive assembly.
12. To reassemble, reverse the above procedure and note the following.
    1. Set the band switch shaft at the position (SW, SW1), as shown in fig. 7.
    2. Set the band switch shaft of dial drive assembly at the position, as shown in fig. 8.
    3. Set the "0" point of dial scale to pointer of front panel, as shown in fig. 8.
    4. Set tuning capacitor to maximum capacity.
    5. Insert the dial drive assembly in chassis.
    6. Turn the shaft of band selector drum with a pliers and set the indicator of band selector drum to "SW1" position, as shown in fig. 8.

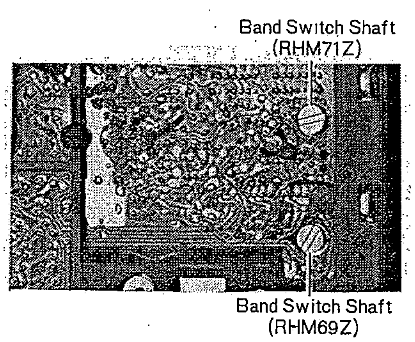


Fig. 7

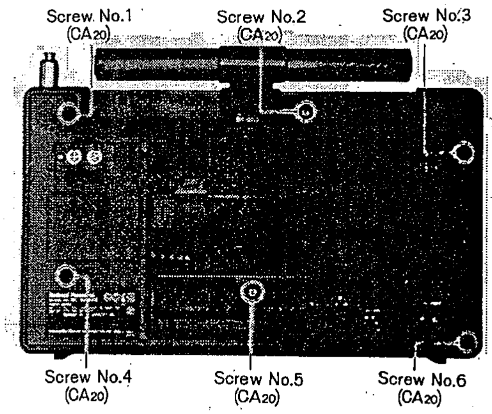


Fig. 1

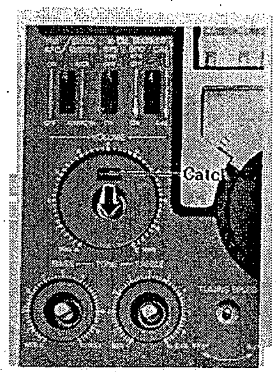


Fig. 2

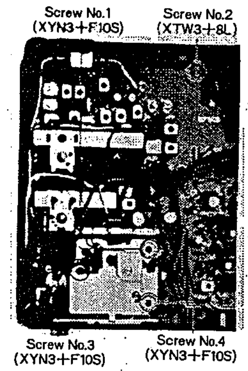


Fig. 3

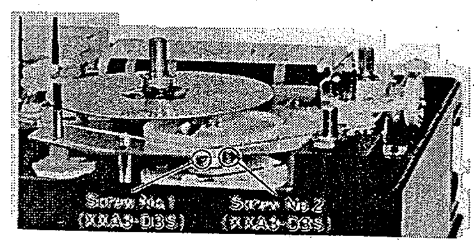


Fig. 4

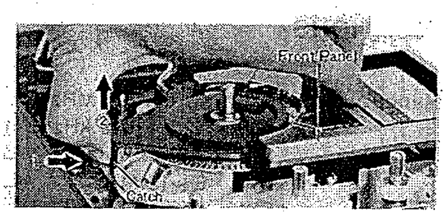


Fig. 5

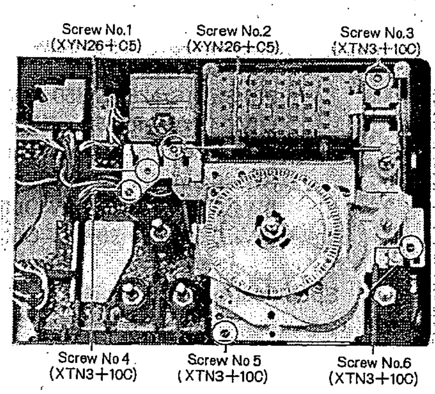


Fig. 6

■ DIAL CORD INSTALLATION GUIDE

1. Remove dial drive assembly. (Refer to dial drive assembly removal instruction.)
2. Remove spread dial.
3. Loosen the one (1) screw for the drum shaft, as shown in fig. 8.
4. Set the dial drum at the position, as shown in fig. 9.
5. Turn tuning shaft fully counter-clockwise.
6. Cord length is 100 cm (39$\frac{3}{8}$").
7. Arrows (1~12) indicate correct order and direction of dial cord installation, as shown in fig. 9.
8. Cement dial cord ends.
9. Set the "0" point of dial scale to pointer of front panel. (Refer to dial scale mounting instruction.)

■ TO MOUNT DIAL SCALE

1. Remove the front cover. (Refer to cabinet cover removal instruction.)
2. Remove the front panel. (Refer to dial drive assembly removal instruction.)
3. Loosen the one (1) screw for the drum shaft, as shown in fig. 10.
4. When removed the rollers, set the roller no. 1 and 2 at the position, as shown in fig. 11.
5. Wind the dial scale onto roller no. 2 shown in fig. 10 and secure the gear of roller no. 2. Hook the dial scale on the catch of roller no. 1, as shown in fig. 10.
6. Mount the front panel to chassis.
7. Turn the tuning shaft fully counter-clockwise.
8. Turn the roller gear, shown in fig. 12 and set the "0" point of dial scale to the pointer of front panel, as shown in fig. 8. Tighten the one (1) screw for the drum shaft, as shown in fig. 8.

■ TO REMOVE POWER, LIGHT AND BFO SWITCH

1. Remove the cabinet covers. (Refer to cabinet cover removal instruction.)
2. Push the four (4) catches in the direction of arrow shown in fig. 13 and remove the switch.
3. To reassemble, reverse the above procedure.

■ TO REMOVE BASS, TREBLE, VOLUME AND RF GAIN CONTROL

1. Remove the cabinet covers. (Refer to cabinet cover removal instruction.)
2. Remove the dial drive assembly. (Refer to dial drive assembly removal instruction.)
3. Set variable capacitor to maximum capacity.
4. Unsolder the lead wire of RF gain control from chassis.
5. Remove the meter and dial lamp.
6. Remove the power, light and BFO switch. (Refer to switch removal instruction.)
7. Remove the FM AFC and X-TAL marker switch.
8. Remove the three (3) red screws (nos. 1~3) for the PC board, as shown in fig. 14.
9. Remove the two (2) screws (nos. 4 & 5) for the lead wires, as shown in fig. 14.
10. Remove the four (4) nuts (nos. 1, 3, 4 & 5) for the controls, as shown in fig. 15.
11. Remove the one (1) screw (no. 2) for sub PC board, shown in fig. 15 and remove sub PC board.
12. Push the eight (8) catches for the PC board, shown in fig. 15 and remove PC board.
13. Unsolder the controls, as shown in fig. 16.

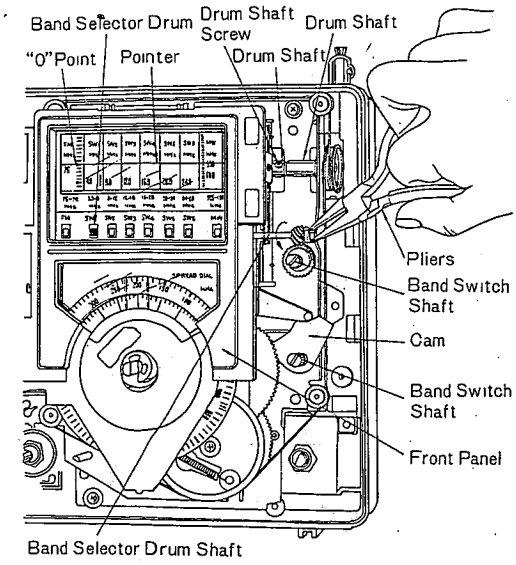


Fig. 8

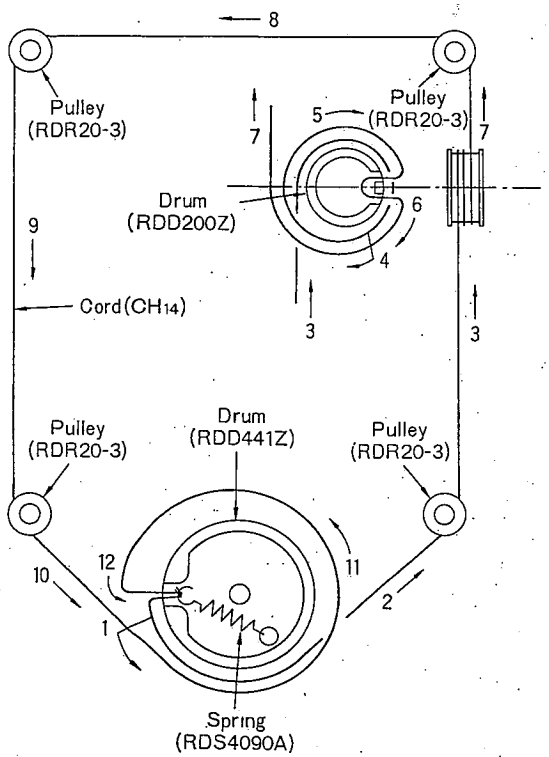


Fig. 9

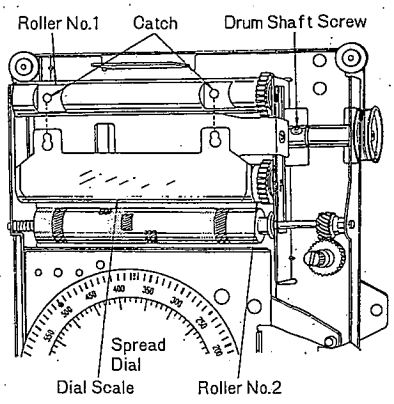


Fig. 10

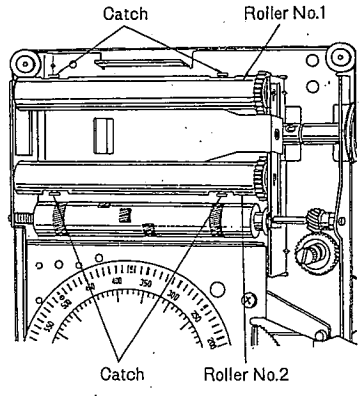


Fig. 11

■ TO REMOVE GYRO ANTENNA CASE ASSEMBLY

1. Remove the rear cover. (Refer to cabinet cover removal instruction.)
2. Unsolder the lead wire of gyro antenna from PC board.
3. Remove the circlip in the direction of arrow, as shown in fig. 17.
4. Remove the gyro antenna case.
5. To reassemble, reverse the above procedure.

■ TO REMOVE SHIELD PLATE

1. Remove the front cover. (Refer to cabinet cover removal instruction.)
2. Remove the power, light and BFO switch. (Refer to switch removal instruction.)
3. Unsolder the shield plate, as shown in fig. 18.
4. To reassemble, reverse the above procedure.

■ TO REMOVE CORE ANTENNA

1. Remove the gyro antenna cover in the direction of arrow, as shown in fig. 19.
2. Unsolder lead wires from core antenna, as shown in fig. 20.
3. To reassemble, reverse the above procedure.

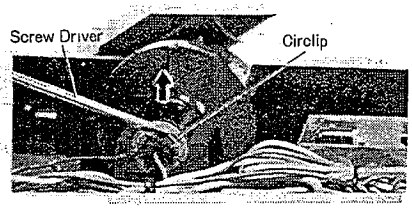


Fig. 17

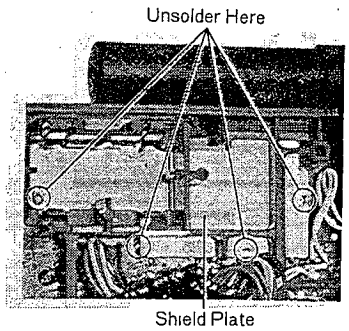


Fig. 18

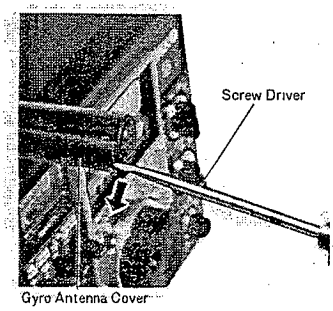


Fig. 19

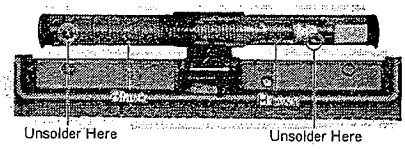


Fig. 20

Fig. 12

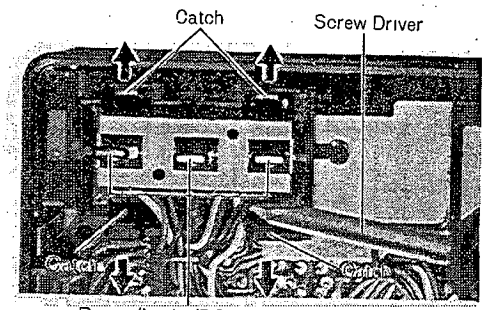


Fig. 13

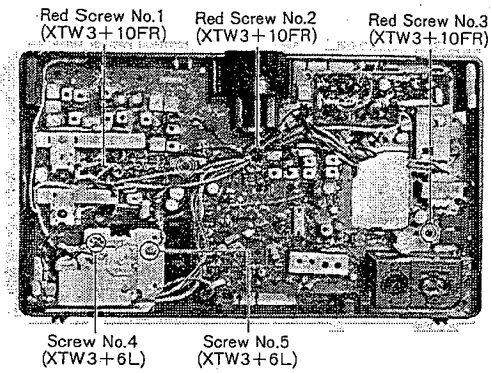


Fig. 14

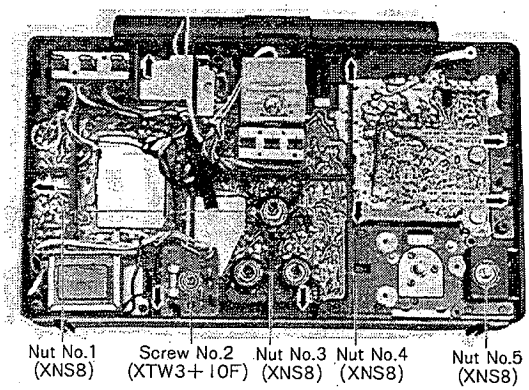


Fig. 15

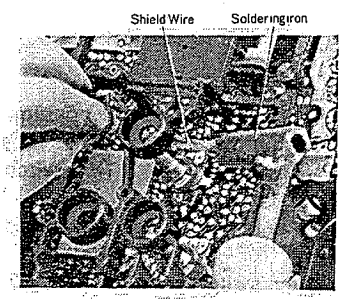
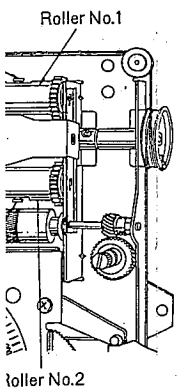
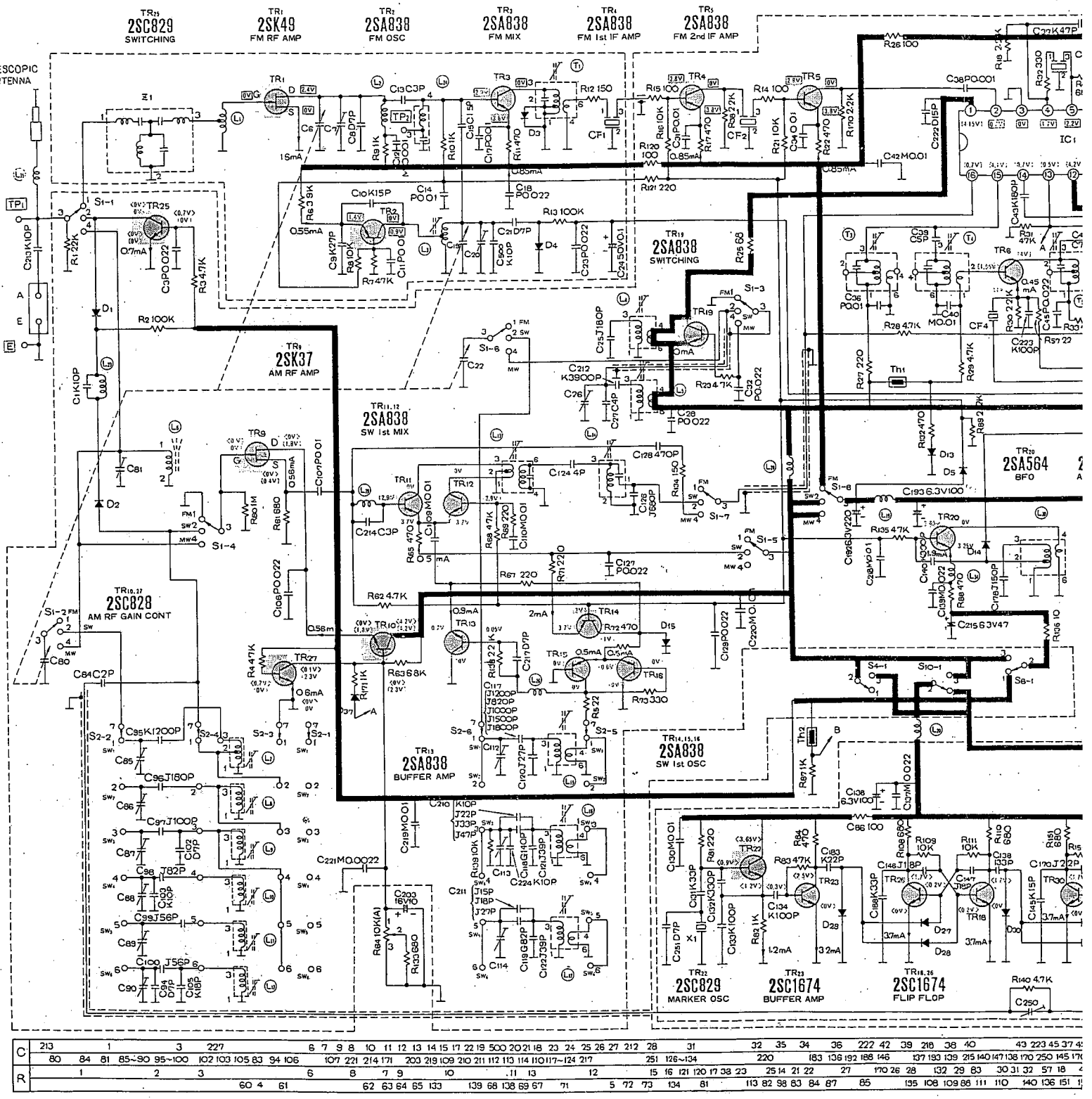


Fig. 16





Notes:

1. S_{1-1}～S_{1-8}: Band switch in "FM" position.
2. S_{2-1}～S_{2-6}: SW band switch in "SW_1" position.
3. S_{3-1}, S_{3-2}: FM AFC/BAND WIDTH switch in "OFF", "NARROW" position.
4. S_{4-1}, S_{4-2}: X-TAL MARKER/125 kHz switch in "OFF" position.
5. S_{6-1}, S_{6-2}: Power switch in "OFF" position.
6. S_7: Dial Light switch in "OFF" position.
7. S_{8-1}, S_{8-2}: BFO switch in "OFF" position.
8. S_9: AC-BATTERY switch in "BATTERY" position.
9. S_{10-1}, S_{10-2}: X-TAL MARKER/500 kHz switch in "OFF" position.
10. S_{11}: Voltage selector in "110～125V" position
11. DC voltage measurements are taken with circuit tester 10kΩ/V from negative side of batteries.
    □...FM position [ ]...MW & SW position
    ( )...SW position 〈 〉...CAL-ON position
    TR_{20}...BFO-ON position
12. 1) IC_2 with B rank w
    2) IC_2 with C rank R
    3) IC_2 with D rank R
13. Battery current: No s
    Max

IMPORTANT S.

THE SHADED AREA (
INCORPORATES SPE
FOR SAFETY
WHEN SERVICING I
MANUFACTURER'S S
THE CRITICAL CON
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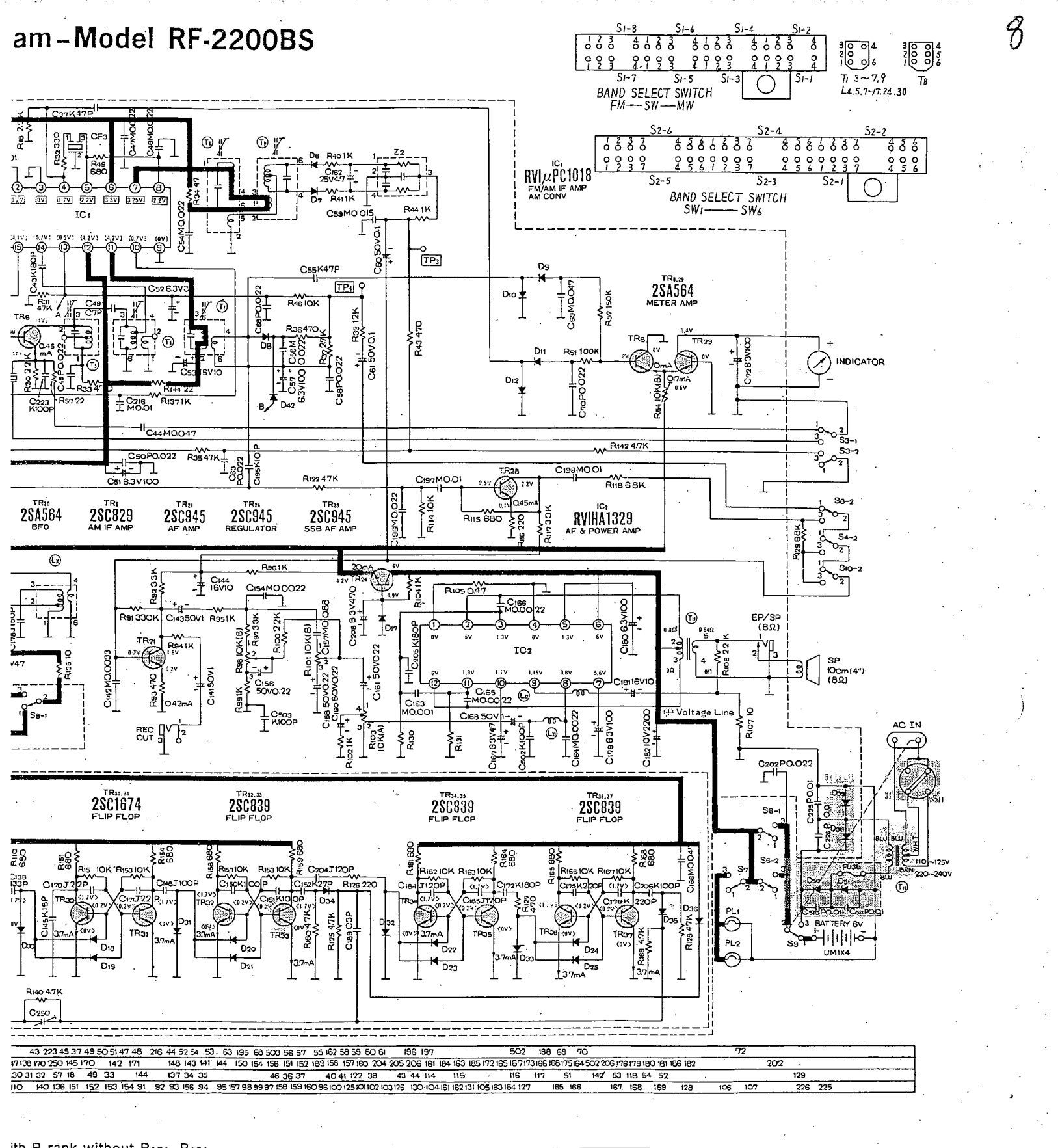
am-Model RF-2200BS



ith B rank without R130, R131.
th C rank R130, R131.....22 kΩ.
th D rank R130, R131.....15 kΩ.
urrent: No signal 60mA
Maximum output 650mA

IMPORTANT SAFETY NOTICE

SHADED AREA ON THIS SCHEMATIC DIAGRAM ORPORATES SPECIAL FEATURES IMPORTANT SAFETY
N SERVICING IT IS ESSENTIAL THAT ONLY UFACTURER'S SPECIFIED PARTS BE USED FOR CRITICAL COMPONENTS IN THE SHADED AS OF THE SCHEMATIC.

D1, 2	RVDSD113	SWITCHING
D3	RVD1K110	FM AGC
D4	RVDSD113	FM AFC
D5, 13	RVDVD1250M	AOC
D6, 7	2-OA90	FM DET
D8	OA90	AM DET
D9, 10	OA90	AM METER RECT
D11, 12	OA90	FM METER RECT

D14	RVD1K110	SSB DET
D15	RVDVD1252L	AOC
D17	RVDMZA205	ZENER
D18~25	MA150	TRIGGER
D27~33	MA150	TRIGGER
D34, 35	OA90	DET
D36, 37, 42	MA150	SWITCHING
D38, 39	RVD10E1LF	RECT

■ BLOCK DIAGRAM

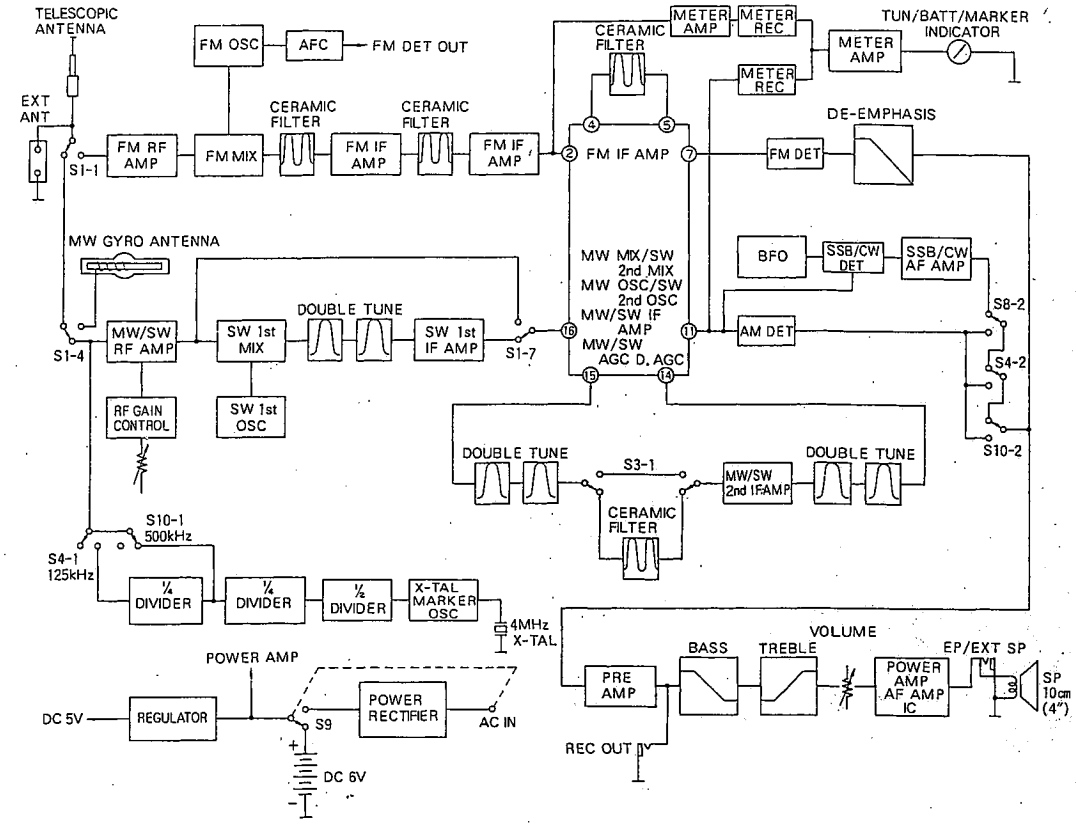


Fig. 21

■ ALIGNMENT POINTS

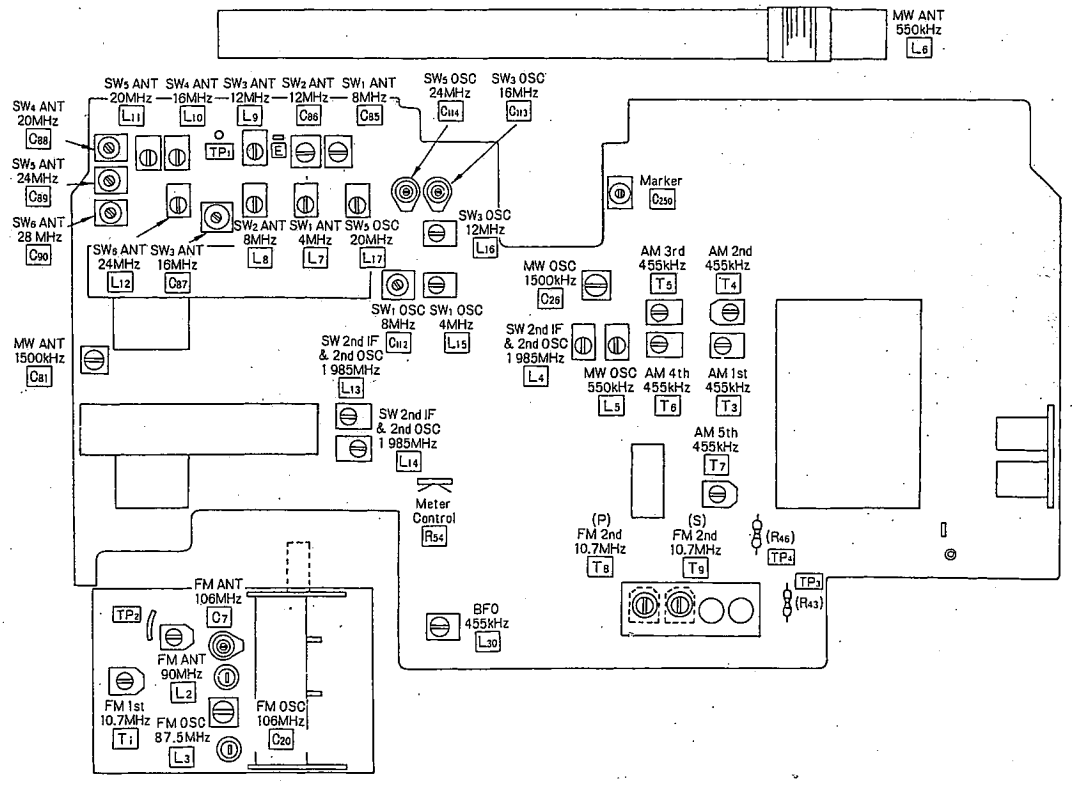


Fig. 22

■ TUNING/BATTERY/MARKER METER ADJUSTMENT

1. RADIO RECEIVER SETTING
   - Set band switch to MW.
   - Set volume control to MIN.
   - Set power source voltage to DC 6V.

2. REMARKS
   - Adjust R_{54} so that the pointer of level meter stays as shown in fig. 23.

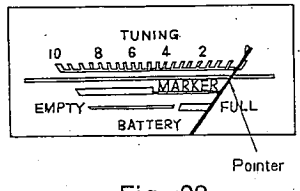


Fig. 23

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set power switch to ON.
3. Set bass and treble control to maximum.
4. Set band switch to MW, SW or FM.
5. Set SW band switch to SW_1, SW_2, SW_3, SW_4, SW_5 or SW_6.
6. Set MW/SW RF gain control to high.
7. Set FM AFC/Band width switch to narrow, OFF position for the BFO and FM adjustment, and to wide ON position for other adjustment.
8. Set X-TAL Marker switch to OFF.
9. Set BFO switch to ON position for BFO adjustment, and to OFF position for other adjustment.
10. Output of signal generator should be no higher than necessary to obtain an output reading.

■ MW, SW ALIGNMEMT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
		AM-IF ALIGNMENT					
(1)	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. at 400 Hz	Point of non-interference.	Output meter across voice coil.	T_3 (AM 1st IFT) T_4 (AM 2nd IFT) T_5 (AM 3rd IFT) T_6 (AM 4th IFT) T_7 (AM 5th IFT)	1. Set band width switch to narrow and adjust for maximum output. 2. Set band width switch to wide. 3. Adjust for maximum output.
		BFO ALIGNMENT					
(2)	MW	〃	455 kHz	〃	Audio output from speaker.	L_{30} (BFO OSC Coil)	Adjust for zero beat.
		MW-RF ALIGNMENT					
(3)	MW	〃	550 kHz	550 kHz (Refer to fig.30)	Output meter across voice coil	L_5 (MW OSC Coil) L_6 (MW ANT Coil)	Adjust for maximum output.
(4)	MW	〃	1500 kHz	1500 kHz (Refer to fig.31)	〃	C_{26} (MW OSC Trimmer) C_{81} (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (3) and (4).
		SW-1st IF and 2nd OSC ALIGNMENT					
(5)	SW1	Connect to test point [TP1] through ceramic capacitor (10PF). Negative side to point [E]	1.985 MHz	Point of non-interference.	〃	L_4 (2nd OSC Coil) L_{13} (SW 1st IF Coil) L_{14} (SW 1st IF Coil)	Adjust for maximum output.

■ PADDING ALIGNMENT

• When you change variable capacitor please adjust as follows.

1. Solder padding capacitors at the position, as shown in fig. 26 according to the following table.

Ref. No.	Part No.	Description
C_{117} (SW_1)	ECQS05122JZ	1200 PF, 50 WV, ±5%, Styrol
C_{210} (SW_3)	ECMS05270JH	27 PF, 50WV, ±5%, Mica
C_{211} (SW_5)	ECCD1H100KC	10 PF, 50WV, ±10%, Ceramic

2. Adjust the RF circuit of SW_1, SW_3 and SW_5.
3. Set 125 marker switch to ON position and then check zero beat as following frequencies.

Band	Zero Beat Frequency	Radio Dial Setting
SW_1	6 MHz	Turn spread dial two times from 4 MHz position and set it to 0 kHz.
SW_3	14 MHz	Turn spread dial two times from 12 MHz position and set it to 0 kHz.
SW_5	22 MHz	Turn spread dial two times from 20 MHz position and set it to 0 kHz.

4. If there is difference between spread dial indication and the frequency of following table, please change proper capacitor.

Band	Ref. No.	Spread Dial	Part No.	Description
SW_1	C_{117}	less than 960 kHz	ECQS05821JZ	820 PF, 50WV, ±5% Styrol
		960~980 kHz	ECQS05102JZ	1000PF, 50WV, ±5%, Styrol
		20~40 kHz	ECMS05152JZ	1500PF, 50WV, ±5%, Mica
		more than 40 kHz	ECQS05182JZ	1800PF, 50WV, ±5%, Styrol
SW_3	C_{210}	less than 960 kHz	ECCE1H100KC	10PF, 50WV, ±10%, Ceramic
		960~980 kHz	ECMS05220JH	22PF, 50WV, ±5%, Mica
		20~40 kHz	ECMS05330JH	33PF, 50WV, ±5%, Mica
		more than 40 kHz	ECMS05470JH	47PF, 50WV, ±5%, Mica
SW_5	C_{211}	less than 920 kHz	ECCD1H040C	4PF, 50WV, ±0.25PF, Ceramic
		920~960 kHz	ECCD1H070DC	7PF, 50WV, ±0.5PF, Ceramic
		40~80 kHz	ECMS05150JH	15PF, 50WV, ±5%, Mica
		more than 80 kHz	ECMS05180JH	18PF, 50WV, ±5%, Mica

■ SW RF ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
				SW1-RF ALIGNMENT			
(1)	SW1	Connect to test point [TP1] through ceramic capacitor (10PF) Negative side to point [E]	4 MHz	4 MHz Refer to note 1.	Output meter across voice coil.	L_{15} (SW1 OSC Coil) L_7 (SW1 ANT Coil)	Adjust for maximum output.
(2)	SW1	〃	8 MHz	8 MHz Refer to note 2.	〃	C_{112} (SW1 OSC Trimmer) C_{85} (SW1 ANT Trimmer)	Adjust for maximum output. Repeat steps (1) and (2).
				SW2-RF ALIGNMENT			
(3)	SW2	〃	8 MHz	8 MHz Refer to note 1.	〃	L_8 (SW2 ANT Coil)	Adjust for maximum output.
(4)	SW2	〃	12 MHz	12 MHz Refer to note 2.	〃	C_{86} (SW2 ANT Trimmer)	Adjust for maximum output. Repeat steps (3) and (4).
				SW3-RF ALIGNMENT			
(5)	SW3	〃	12 MHz	12 MHz Refer to note 1.	〃	L_{16} (SW3 OSC Coil) L_9 (SW3 ANT (Coil)	Adjust for maximum output.
(6)	SW3	〃	16 MHz	16 MHz Refer to note 2.	〃	C_{113} (SW3 OSC Trimmer) C_{87} (SW3 ANT Trimmer)	Adjust for maximum output. Repeat steps (5) and (6).
				SW4-RF ALIGNMENT			
(7)	SW4	〃	16 MHz	16 MHz Refer to note 1.	〃	L_{10} (SW4 ANT Coil)	Adjust for maximum output.
(8)	SW4	〃	20 MHz	20 MHz Refer to note 2.	〃	C_{88} (SW4 ANT Trimmer)	Adjust for maximum output. Repeat steps (7) and (8).
				SW5-RF ALIGNMENT			
(9)	SW5	〃	20 MHz	20 MHz Refer to note1.	〃	L_{17} (SW5 OSC Coil) L_{11} (SW5 ANT Coil)	Adjust for maximum output.
(10)	SW5	〃	24 MHz	24 MHz Refer to note 2.	〃	C_{114} (SW6 OSC Trimmer) C_{89} (SW5 ANT Trimmer)	Adjust for maximum output. Repeat steps (9) and (10).
				SW6-RF ALIGNMENT			
(11)	SW6	〃	24 MHz	24 MHz Refer to note 1.	〃	L_{12} (SW6 ANT Coil)	Adjust for maximum output.
(12)	SW6	〃	28 MHz	28 MHz Refer to note 2.	〃	C_{90} (SW6 ANT Trimmer)	Adjust for maximum output. Repeat steps (11) and (12).

Notes:

1. Set tuning capacitor to maximum capacity (minimum frequency), tuning knob to fully counter-clockwise, spread dial to 435 kHz, as shonw in fig. 24. Then set tuning knob to clockwise and set spread dial to 0 kHz, as shown in fig. 25.
2. Set spread dial to 0 kHz by turning 4 times to clockwise from the position of note 1.

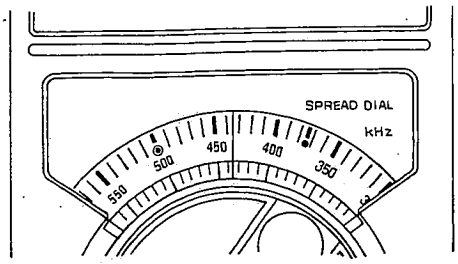


Fig. 24

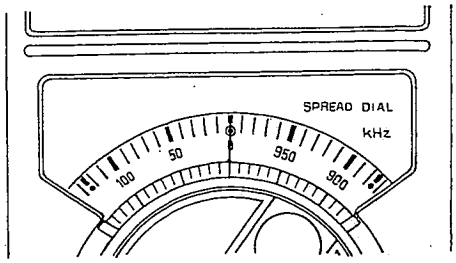


Fig. 25

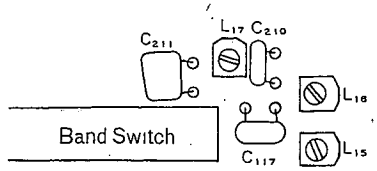


Fig. 26

■ MARKER ALIGNMENT

1. Set trimmer capacitor (C_{250}) to maximum capacity.
2. Check zero beat at the position of 24 MHz (SW_5).
3. Set 125, 500 kHz marker to ON. For the image beat of 24.03 MHz, set spread dial to 24.03 MHz and adjust C_{250} so that the meter indicates 4 scale or less.

■ FM ALIGNMENT INSTRUCTIONS

	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
	FM-IF ALIGNMENT					
(1)	High side thru. 0.001μF to point TP2. Negative side to point E.	10.7 MHz (400 kHz SWP.)	Point of non-interference. (on/about 90 MHz).	Connect vert. amp. of scope to point TP3, Negative side to point E.	T_1 (FM 1st IFT) T_8 (FM 2nd IFT) (Primary)	Adjust for maximum amplitude. (Refer to fig. 27).
(2)	〃	〃	〃	〃	T_9 (FM 2nd IFT) (Secondary)	Adjust for maximum amplitude. (Refer to fig. 28).
	FM-RF ALIGNMENT					
(3)	Connect to test point TP1 through FM dummy antenna. Negative side to point E. (Refer to fig. 29).	87.5 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L_3 (FM OSC Coil)	Adjust for maximum output.
(4)	〃	90 MHz	90 MHz (Refer to fig. 32)	〃	L_2 (FM Tuning Coil)	Adjust for maximum output.
(5)	〃	106 MHz	106 MHz (Refer to fig. 33)	〃	C_{20} (FM OSC Trimmer) C_7 (FM ANT Trimmer)	Adjust for maximum output. Repeat steps (3) and (4).

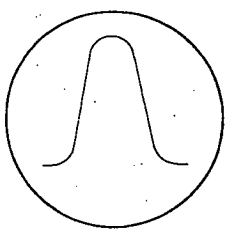


Fig. 27

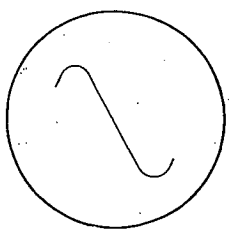


Fig. 28

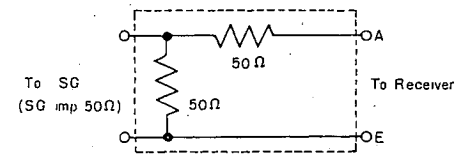


Fig. 29 FM Dummy Antenna

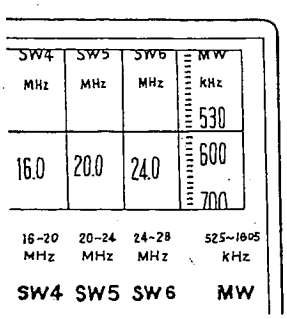


Fig. 30 550 kHz (MW)

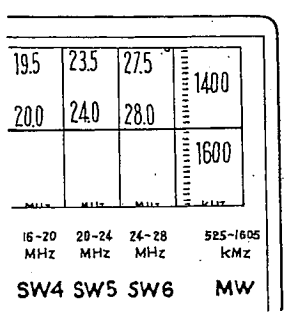


Fig. 31 1500 kHz

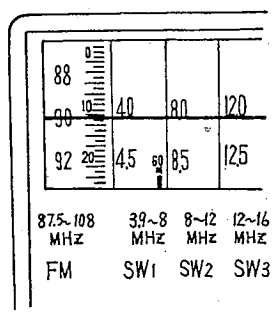


Fig. 32 90 MHz (FM)

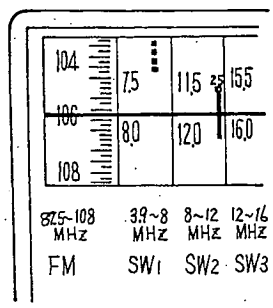
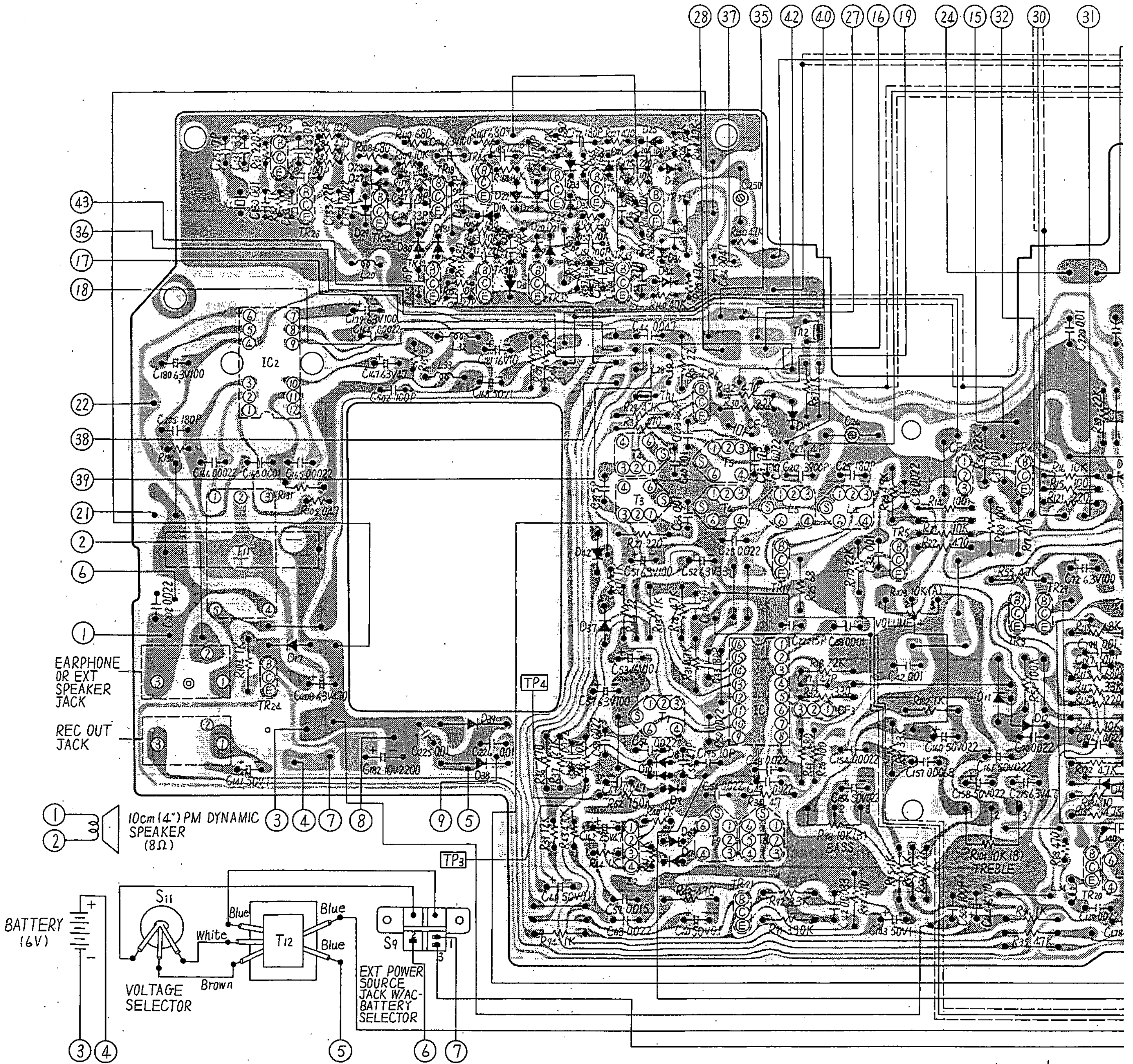


Fig. 33 106 MHz



TR, D&IC	IC2 TR22 TR23 D28 D27 D29 TR26 D30 TR30 D18 TR18 TR31 D19 TR34 D31 D22 D23 D20 D32 TR32 D21 TR35 D33 TR36 D24 TR33 D25 TR37 D36 D34 D35
	D17 D39 D38 D42 D37 D8 D10 D9 D6 D7 TR6 TR21 IC1 TR19 D13 TR5 D11 D12 TR8 TR4 TR29 TR20 D14 D5 T
T & L	T11 T12 L20 L33 L32 T4 T3 L28 T7 T5 T6 T9 T8 L5 L4 L34 L

TR1

	FM
S	0 V
G	0 V
D	2 4V
IE	1.6mA

TR2

	FM
C	0 V
B	0 9V
E	1.4V
IE	0.55mA

TR3

	FM
C	0 V
B	2 9V
E	3.6V
IE	0.85mA

TR4

	FM
C	0 V
B	2 8V
E	3.8V
IE	0.85mA

TR5

	FM
C	0 V
B	2.8V
E	3 8V
IE	0.85mA

TR6

	MW&SW
C	4 V
B	1 55V
E	1 V
IE	0.45mA

TR8

C	0 V
B	0 V
E	0.6V
IE	0mA

TR9

	MW&SW	CAL-ON
S	0 4V	0 V
G	0 V	0 V
D	1 8V	0 V
IS	0.56mA	0mA

TR10

	MW&SW	CAL
C	4 2V	4
B	2 3V	0
E	1 8V	0
IE	0.56mA	0

TR21

C	1.8V
B	0 7V
E	0.2V
IE	0.42mA

TR22

	CAL-ON
C	3.65V
B	0.9V
E	1.2V
IE	1.2mA

TR 23

	CAL-ON
C	2 5V
B	0.3V
E	0 V
IE	3.2mA

TR24

C	6 V
B	4 9V
E	4.2V
IE	20mA

TR25

	SW	CAL-ON
C	0 V	0 V
B	0 V	0.7V
E	0 V	0 V
IE	0mA	0.7mA

TR26

	CAL-ON
C	1.7V
B	0.2V
E	0 V
IE	3.7mA

TR27

	SW	CAL-ON
C	2 3V	0 1V
B	0 V	0.7V
E	0 V	0 V
IE	0mA	0.6mA

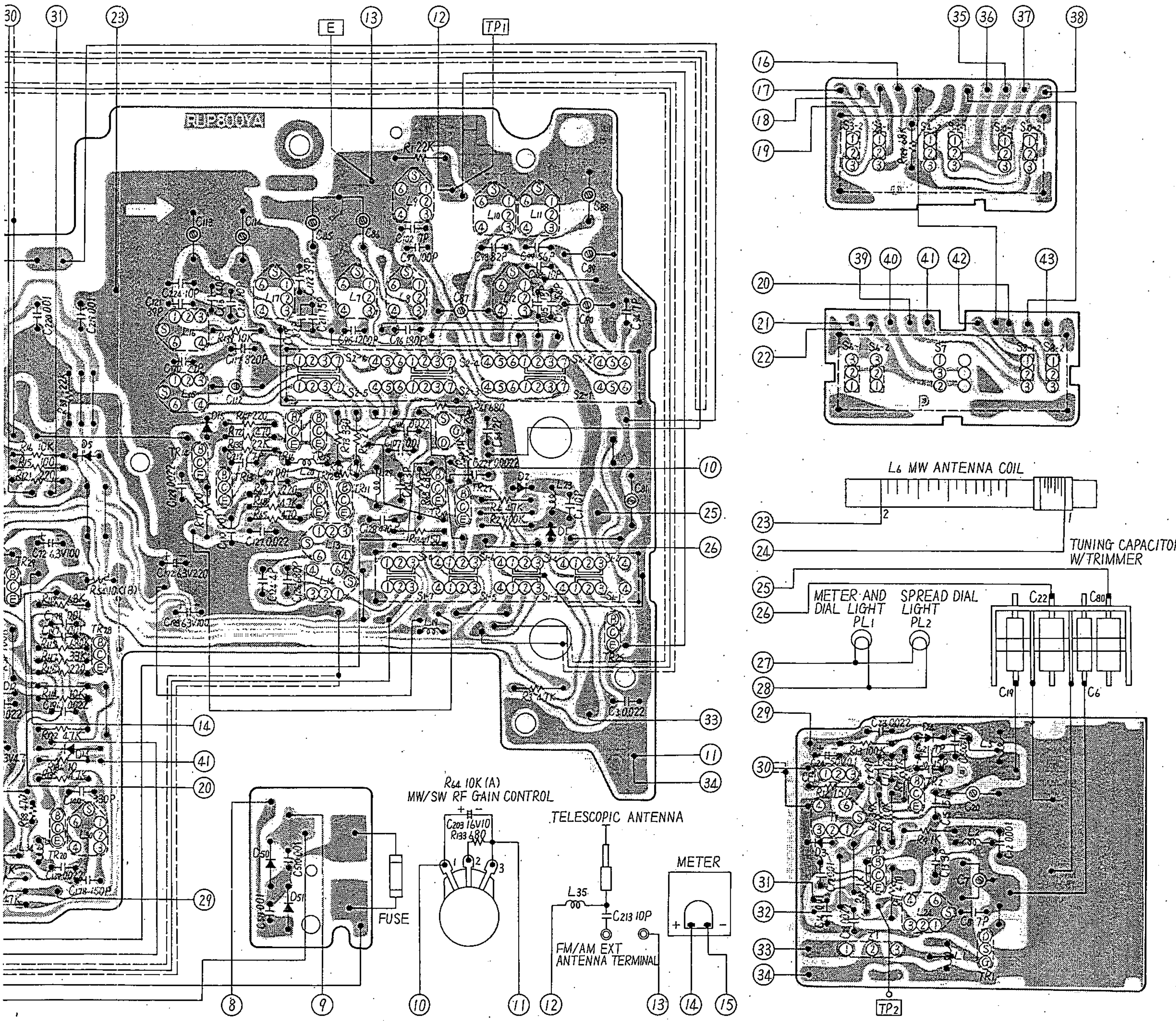
TR28

C	2 2V
B	0 5V
E	0.1V
IE	0 45mA

TR29

C	0 4V
B	0 V
E	0.6V
IE	0.75mA

ıg View – Model RF-2200BS



TR29 TR20 D14 D5 TR28 TR14 D15 TR13 TR16 TR15 TR12 TR11 D50 D51 TR10 TR9 TR27 D2 D1 D3 TR3 TR2 D4 TR1

L34 L30 L16 L15 L17 L26 L13 L14 L7 L29 L8 L9 L19 L10 L12 L11 L23 L35 T1 L6 L24 L1 L3

TR10

	MW&SW	CAL-ON
	4 2V	4 2V
	2 3V	0 V
	1 8V	0 V
	0.56mA	0mA

TR11

	SW
C	0 V
B	2 9V
E	3 7V
IE	0.5mA

TR12

	SW
C	0 V
B	2 9V
E	3.7V
IE	0.5mA

TR13

	SW
C	0 V
B	0 05V
E	0 7V
IE	0 9mA

TR14

	SW
C	1 V
B	3 V
E	3 7V
IE	2mA

TR15

	SW
C	0 V
B	0 V
E	0 6V
IE	0 5mA

TR16

	SW
C	0 V
B	0 V
E	0 6V
IE	0 5mA

TR18

	CAL-ON
C	1 7V
B	0.2V
E	0 V
IE	3 7mA

TR19

C	———
B	———
E	———
IE	———

TR20

	BFO-ON
C	0 V
B	2.85V
E	3.25V
IE	1.9mA

TR29

0 4V
0 V
0.6V
0.75mA

TR30 - 37

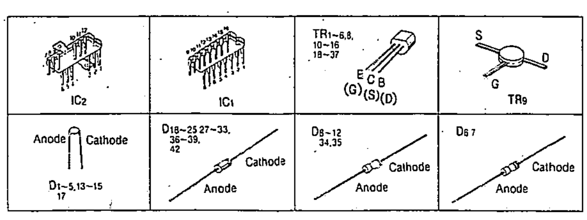
	CAL-ON
C	1 7V
B	0.2V
E	0 V
IE	3 7mA

IC1

	FM		MW&SW
2	0.7V	1	4.15V
3	0 V	9	0 V
4	1 7V	10	0.7V
5	2 2V	11	4 2V
6	3.3V	12	4 2V
7	3 25V	13	0 5V
8	2 2V	14	0 7V
		15	4 1V
		16	0 7V

IC2

1	0 V	7	5 6V
2	6 V	8	0 8V
3	1.3V	9	1.15V
4	0 V	10	1 1V
5	1 3V	11	1 3V
5	6 V	12	6 V



■ CABINET PARTS LOCATION

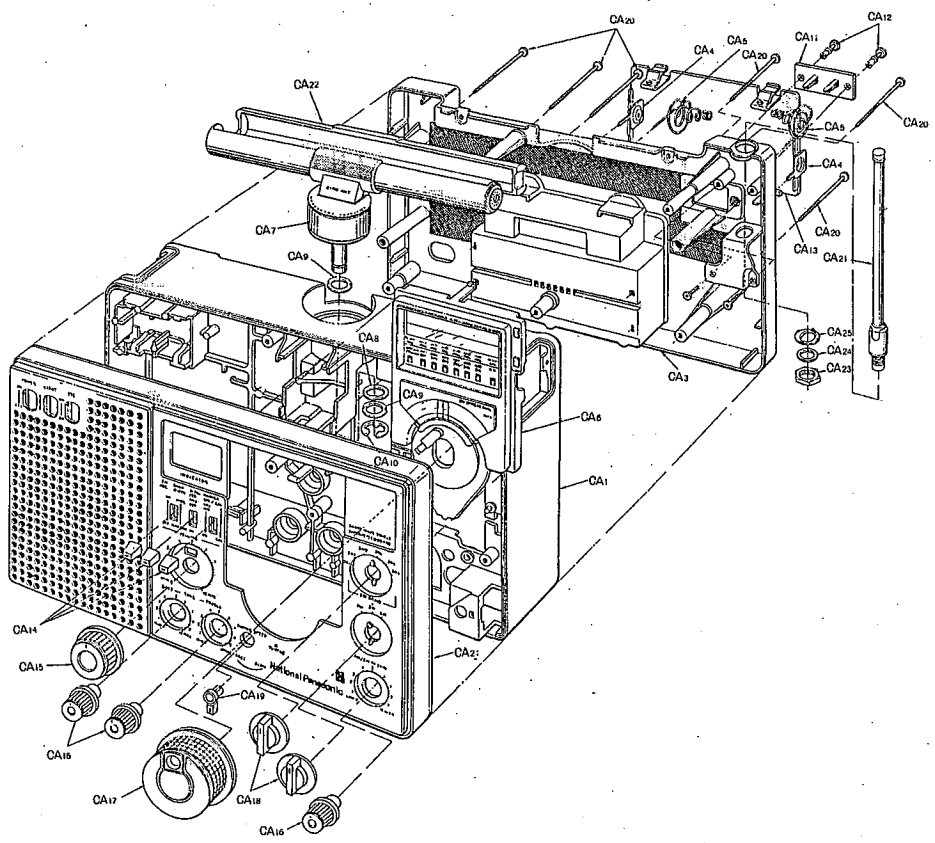


Fig. 34

■ PACKING MATERIALS AND ACCESSORIES

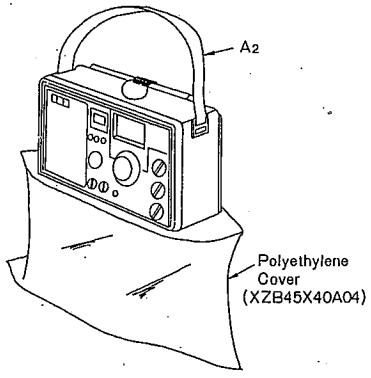


Fig. 35

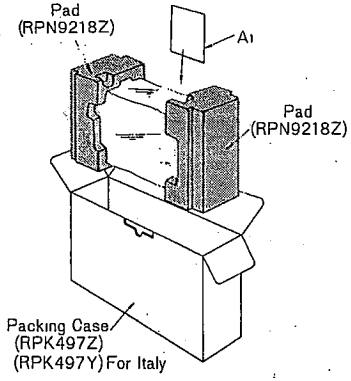


Fig. 36

■ CHASSIS PARTS LOCATIONS

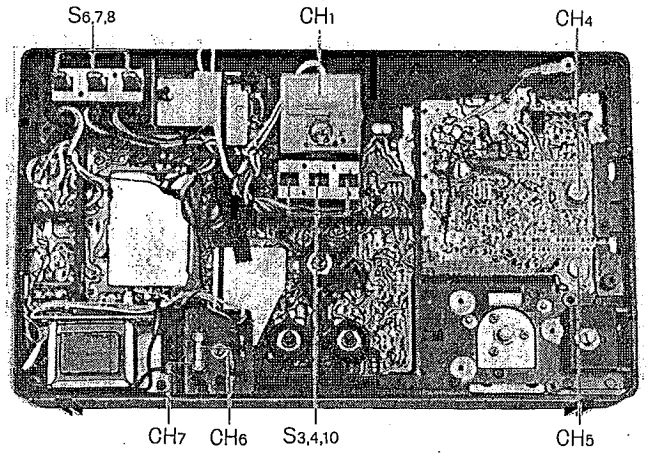


Fig. 37

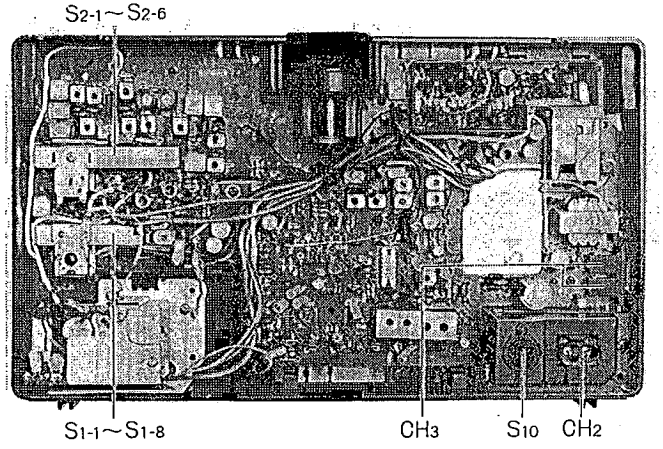


Fig. 38

■ DIAL DRIVE ASSEMBLY PARTS LOCATIONS

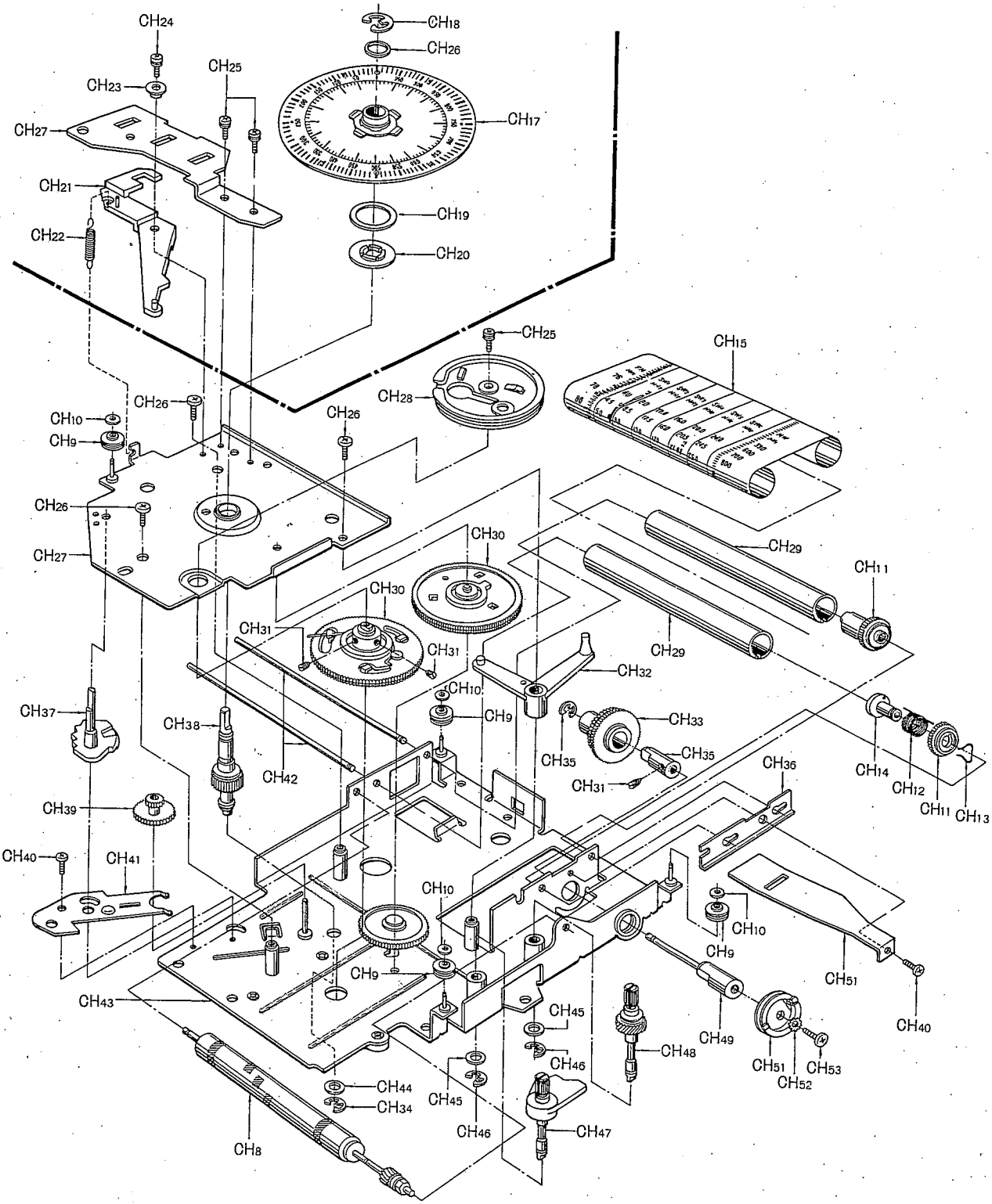


Fig. 39

REPLACEMENT PARTS LIST ..... Model RF-2200BS

(RD7702-1412)

NOTES 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2. X—Z rank : X rank parts will cover 80% of repair needs.
X+Y rank parts will cover 95% of repair needs.
Z rank parts are less necessary.
3. Components identified by shaded area have special characteristic important for safety. When replacing any of these components use only manufacture's special parts.
4. Part numbers shown in bold letters are service standard parts and may differ from production parts.
5. The ○ mark is used by the manufacturing plant only.

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
INTEGRATED CIRCUITS, TRANSISTORS AND DIODES					
IC1	RVIμPC1018	IC, FM/AM IF AMP., AM Converter	1		X
IC2	RVIHA1329	IC, AF & Power Amp.	1		X
TR1	2SK49	Transistor(Si), FM RF Amp.	1		X
TR2,3,4,5,11, 12,13,14, 15,16,19	2SA838	Transistor(Ge), FM OSC, FM MIX, FM IF AMP., SW MIX, Buffer Amp., SW OSC, Switching	11		X
TR6,22,25	2SC829	Transistor(Si), AM IF Amp., Marker OSC, Switching	3		X
TR8,20,29	2SA564	Transistor(Ge), Meter AMP., BFO	3		X
TR9	2SK37	Transistor(Si), AM RF AMP.	1		X
TR10,27	2SC828	Transistor(Si), AM RF Gain Control	2		X
TR18,23,26, 30,31	2SC1674	Transistor(Si), Flip Flop, Buffer Amp.	5		X
TR21,24,28	2SC945	Transistor(Si), AF Amp., Regulator, SSB AF Amp.	3		X
TR32,33,34, 35,36,37	2SC839	Transistor(Si), Flip Flop	6		X
D1,2,4	RVDSD113	Diode(Si), FM AGC, Switching	3		X
D3,14	RVD1K110	Diode(Si), FM AGC, SSB Det.	2		X
D5,13	RVDVD1250M	Diode(Si), Operation Compensator	2		X
D6,7	2-OA90	Diode(Ge), FM Detector	2		X
D8,9,10,11,12 34,35	OA90	Diode(Ge), Detector, AM Meter r Rect. Marker	7		X
D15	RVDVD1252L	Diode(Si), Operation Compensator	1		X
D17	RVDMZA205	Diode(Si), Zener	1		X
D18,19,20,21, 22,23,24,25, 27,28,29,30, 31,32,33,36, 37,42	MA150	Diode(Si), Triger, Switching	18		X
D38,39,50,51	RVD10E1LF	Diode(Si), Rectifier	4		X

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
CRYSTAL AND THERMISTORS					
X1	RVCX4000Q5Z	Crystal	1		X
Th1,2	RRT262	Temperature Compensator	2		X
CERAMIC FILTERS, COILS AND TRANSFORMERS					
CF1,2,3	RVFCF10S12FR	Ceramic Filter	3		X
CF4	RVFBFB455C1	Ceramic Filter	1		X
L1	RLA4Y6	Antenna Coil, FM	1		X
L2	RLD4N33	Coil, Tuning	1		○X
L3	RLO4N27	Oscillator Coil, FM(RLO4N27-O)	1		X
L4	RLO9M4	Oscillator Coil, 2nd Local	1		○X
L5	RLO2M16	Oscillator Coil, MW	1		○X
L6	RLF2G38	Antenna Coil, MW	1		○X
L7	RLA3M19	Antenna Coil, SW1	1		○X
L8	RLA3M20	Antenna Coil, SW2	1		○X
L9	RLA3M21	Antenna Coil, SW3	1		○X
L10	RLA3M22	Antenna Coil, SW4	1		○X
L11	RLA3M23	Antenna Coil, SW5	1		○X
L12	RLA3M24	Antenna Coil, SW6	1		○X
L13	RLI9M3	IFT, SW 2nd IF	1		○X
L14	RLI9M4	IFT, SW 2nd IF	1		○X
L15	RLO3M37	Oscillator Coil, SW1	1		○X
L16	RLO3M38	Oscillator Coil, SW3	1		○X
L17	RLO3M39	Oscillator Coil, SW5,6	1		○X
L24	RLI4M103	Coil, IF Trap	1		X
L30	RLO9M5	Oscillator Coil, BFO	1		○X
T1	RLI4M101	IFT, FM 1st	1		X
T3,5	RLI2M212	IFT, AM 1st, 3rd(RLI2M212-K)	2		X
T4,6	RLI2M208	IFT, AM 2nd, 4th	2		X
T7	RLI2M402	IFT, AM 5th	1		X
T8	RLI4M504	IFT, FM 2nd(Primary)	1		X
T9	RLI4M506	IFT, FM 2nd(Secondary)	1		X
T11	RLT2H32	Output Transformer, P=20Ω,S=8Ω (RLT2H32-V, RLT2H32-W)	1		○X
T12	RLT5J199	Power Transformer	1		○X
VARIABLE RESISTORS					
R64	EVHCMA095A14	10KΩ(A), RF Gain Control	1		X
R103	EVH8XAF25A14	10KΩ(A), Volume Control	1		X
R98,101	EVH7XAF25B14	10KΩ(B), Tone Control	2		X
R54	EVLTOAA00B14	10KΩ(B), Pre Set, Meter Control	1		Y
VARIABLE CAPACITORS					
C6,9,22,80	RCVCV45D112	Tuning Capacitor	1		○Y
C85,86	RCVCTY21D17	Trimmer Capacitor	1		Y

Ref. No.	Part No	Part Name & Description	Per Set		Remarks
C20,26,81, 250	RCV1PX15AG	Trimmer Capacitor	4		Y
C87,88,89,90	RCV1PX20AG	Trimmer Capacitor	4		Y
C112,113,114	RCV1PX30AG	Trimmer Capacitor	3		Y
C7	ECV1ZW10×32	Trimmer Capacitor	1		Y
COMPONENT COMBINATIONS					
Z1	RXABPF10801H	Component Combination, Coils & Capacitors	1		Y
Z2	EXA5DL04C	Component Combination, 330PF×3, 4.7KΩ×2	1		Y
SPEAKER					
SP	EAS10P57SA	Speaker, Imp.8Ω, PM Dynamic	1		OX
SWITCHES					
S1-1~S1-8	RSR3H02Z-H	Switch, Band	1		OX
S2-1~S2-6	RSR6F01Z-P	Switch, SW Band	1		OX
S3,4,10	RSTX003Z-A	Switch, FM AFC, X-TAL MARKER	1		OX
S6,7,8	RSTX002Z-M	Switch, Power, Light, BFO	1		OX
S11	RSR2A01Z-H	Switch, Voltage Selector	1		OX
RESISTORS					
R27,67,69,71, 116,121,126	ERD25TJ221	220Ω, ⅛Watt, ±5%, Carbon	7		Z
R11,17,22,33, 36,65,72,84, 88,93,127, 132	ERD25TJ471	470Ω, ⅛Watt, ±5%, Carbon	12		Z
R49,61,108, 110,151,154 156,159,161 164,165,168	ERD25TJ681	680Ω, ⅛Watt, ±5%, Carbon	12		Z
R14,15,26,86, 120	ERD25TJ101	100Ω, ⅛Watt, ±5%, Carbon	5		Z
R9,10,40,41, 44,82,87,94, 95,96,99, 102,104,137 171,172	ERD25TJ102	1KΩ, ⅛Watt, ±5%, Carbon	16		Z
R3,4,7,23,28, 29,62,68,122, 125,128,135 140,160,169	ERD25TJ472	4.7KΩ, ⅛Watt, ±5%, Carbon	15		Z

Ref. No	Part No.	Part Name & Description	Per Set		Remarks
R8,16,21,46, 109,111,114 139,152,153 157,158,162 163,166,167	ERD25TJ103	10KΩ, ⅛Watt, ±5%, Carbon	16		Z
R130,131	ERD25TJ153	15KΩ, ⅛Watt, ±5%, Carbon	2		Z
R1,130,131	ERD25TJ223	22KΩ, ⅛Watt, ±5%, Carbon	3		Z
R31,35,83	ERD25TJ473	47KΩ, ⅛Watt, ±5%, Carbon	3		Z
R81	ERD25TJ224	220KΩ, ⅛Watt, ±5%, Carbon	1		Z
R107,136	ERD25TJ100	10Ω, ⅛Watt, ±5%, Carbon	2		Z
R5,57,144	ERD25TJ220	22Ω, ⅛Watt, ±5%, Carbon	3		Z
R34	ERD25TJ470	47Ω, ⅛Watt, ±5%, Carbon	1		Z
R25	ERD25TJ680	68Ω, ⅛Watt, ±5%, Carbon	1		Z
R12,134	ERD25TJ151	150Ω, ⅛Watt, ±5%, Carbon	2		Z
R32,73	ERD25TJ331	330Ω, ⅛Watt, ±5%, Carbon	2		Z
R6	ERD25TJ392	3.9KΩ, ⅛Watt, ±5%, Carbon	1		Z
R18,30,38,89, 100,106,138 170	ERD25TJ222	2.2KΩ, ⅛Watt, ±5%, Carbon	8		Z
R37	ERD25TJ272	2.7KΩ, ⅛Watt, ±5%, Carbon	1		Z
R92,97,117	ERD25TJ332	3.3KΩ, ⅛Watt, ±5%, Carbon	3		Z
R63,118	ERD25TJ682	6.8KΩ, ⅛Watt, ±5%, Carbon	2		Z
R129	ERD25TJ683	68KΩ, ⅛Watt, ±5%, Carbon	1		Z
R39	ERD25TJ123	12KΩ, ⅛Watt, ±5%, Carbon	1		Z
R52	ERD25TJ154	150KΩ, ⅛Watt, ±5%, Carbon	1		Z
R2,13,51	ERD25TJ104	100KΩ, ⅛Watt, ±5%, Carbon	3		Z
R91	ERD25TJ334	330KΩ, ⅛Watt, ±5%, Carbon	1		Z
R43	ERD25TJ474	470KΩ, ⅛Watt, ±5%, Carbon	1		Z
R115	ERD25TJ684	680KΩ, ⅛Watt, ±5%, Carbon	1		Z
R60	ERD25TJ105	1MΩ, ⅛Watt, ±5%, Carbon	1		Z
R105	ERX1ANJR47U	0.47Ω, 1Watt, ±5%, Metal Oxide	1		Z
R133	ERD25TJ681	680Ω, ⅛Watt, ±5%, Carbon	1		Z
CAPACITORS					
C15	ECCD1H1R5C	1.5PF, 50WV,±0.25PF,Ceramic	1		Z
C84	ECCD1H020C	2PF, 50WV,±0.25PF,Ceramic	1		Z
C13,189,214	ECCD1H030C	3PF, 50WV,±0.25PF,Ceramic	3		Z
C27,124,211	ECCD1H040C	4PF, 50WV,±0.25PF,Ceramic	3		Z
C39	ECCD1H050CC	5PF, 50WV,±0.25PF,Ceramic	1		Z
C8,21,49,94, 102,217,251	ECCD1H070DC	7PF, 50WV,±0.5PF, Ceramic	7		Z
C1,103,195, 213,500	ECCD1H100KC	10PF, 50WV,±10%, Ceramic	5		Z
C10,145,222	ECCD1H150KC	15PF, 50WV,±10%, Ceramic	3		Z
C105	ECCD1H180KC	18PF, 50WV,±10%, Ceramic	1		Z
C183	ECCD1H220KC	22PF, 50WV,±10%, Ceramic	1		Z
C9,152	ECCD1H270KC	27PF, 50WV,±10%, Ceramic	2		Z
C131,188	ECCD1H330KC	33PF, 50WV,±10%, Ceramic	2		Z
C37,55	ECCD1H470KC	47PF, 50WV,±10%, Ceramic	2		Z
C38	ECKD1H102ZF	0.001μF, 50WV,$\pm^{80}_{20}$%, Ceramic	1		Z
C133,134,150 151,206,223 502,503,210	ECCD1H101K	100PF, 50WV,±10%, Ceramic	9		Z

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
C43,172,205	ECCD1H181K	180PF, 50WV, ±10%, Ceramic	3		Z
C175,176	ECCD1H221K	220PF, 50WV, ±10%, Ceramic	2		Z
C132,140	ECKV1H331KB	330PF, 50WV, ±10%, Ceramic	2		Z
C122	ECCD1H390JU	39PF, 50WV, ±5%, Ceramic	1		Z
C11,14,17, 107,225,510 511	ECKV1H103ZF	0.01μF, 50WV, +80 −20 %, Ceramic	7		Z
C31,34,36, 226	ECKT1H103ZF	0.01μF, 50WV, +80 −20 %, Ceramic	4		Z
C18,23,32,45, 68,127	ECKV1H223ZF	0.022μF, 50WV, +80 −20 %, Ceramic	6		Z
C3,28,50,58, 63,70,106, 129,202	ECKT1H223ZF	0.022μF, 50WV, +80 −20 %, Ceramic	8		Z
C128	ECKD1H471MD	470PF, 50WV, ±20%, Ceramic	1		Z
C12,163	ECKD1H102MD	0.001μF, 50WV, ±20%, Ceramic	2		Z
C154,165,166 164,221	ECKD1H222MD	0.0022μF, 50WV, ±20%, Ceramic	5		Z
C142	ECKD1H332MD	0.0033μF, 50WV, ±20%, Ceramic	1		Z
C157	ECKD1H682MD	0.0068μF, 50WV, ±20%, Ceramic	1		Z
C40,42,110, 130,198,219 220,218 109,197,216	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	11		Z
C146,147	ECMS05180JH	18PF, 50WV, ±5%, Mica	2		Z
C170,171	ECMS05220JH	22PF, 50WV, ±5%, Mica	2		Z
C120	ECMS05270JH	27PF, 50WV, ±5%, Mica	1		Z
C138	ECMS05330JH	33PF, 50WV, ±5%, Mica	1		Z
C121	ECMS05390JH	39PF, 50WV, ±5%, Mica	1		Z
C99,100	ECMS05560JH	56PF, 50WV, ±5%, Mica	2		Z
C98	ECMS05820JH	82PF, 50WV, ±5%, Mica	1		Z
C97,148	ECMS05101JH	100PF, 50WV, ±5%, Mica	2		Z
C184,185,204	ECMS05121JH	120PF, 50WV, ±5%, Mica	3		Z
C25,96	ECMS05181JH	180PF, 50WV, ±5%, Mica	2		Z
C119	ECMS05820GH	82PF, 50WV, ±2%, Mica	1		Z
C118	ECMS05141GH	140PF, 50WV, ±2%, Mica	1		Z
C211	ECMS05120JH	12PF, 50WV, ±5%, Mica	1		Z
C126	ECQS05102JZ	1000PF, 50WV, ±5%, Styrol	1		Z
C95	ECQS05122KZ	1200PF, 50WV, ±10%, Styrol	1		Z
C212	ECQS05392KZ	3900PF, 50WV, ±10%, Styrol	1		Z
C178	ECQS1151JZ	150PF, 50WV, ±5%, Styrol	1		Z
C117	ECQS05821JZ	820PF, 50WV, ±5%, Styrol	1		Z
C59	ECFVD153MD	0.015μF, 50WV, ±20%, Semi-Conductor	1		Z
C47,54,56, 137,196,228	ECFVD223MD	0.022μF, 50WV, ±20%, Semi-Conductor	6		Z
C44,186	ECFTD473MD	0.047μF, 50WV, ±20%, Semi-Conductor	2		Z
C69	ECFVD473MD	0.047μF, 50WV, ±20%, Semi-Conductor	1		Z
C48,139	ECFTD223MD	0.022μF, 50WV, ±20%, Semi-Conductor	2		Z
C52	**ECEA16V33**	33μF, 16WV, Electrolytic	1		Y
C167,215	**ECEA16V47**	47μF, 16WV, Electrolytic	2		Y
C51,72,180, 193,57,136, 179	**ECEA10V100**	100μF, 10WV, Electrolytic	7		Y
C208	**ECEA6V470**	470μF, 6.3WV, Electrolytic	1		
C192	**ECEA6V220**	220μF, 6.3WV, Electrolytic	1		

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
C182	**ECEA10V2200**	2200μF, 10WV, Electrolytic	1		Y
C203,53,144, 181	**ECEA16V10**	10μF, 16WV, Electrolytic	4		Y
C162	**ECEA35V4R7B**	4.7μF, 35WV, Electrolytic	1		Y
C24,60,61	**ECEA50ZR1E**	1μF, 50WV, Electrolytic	3		Y
C158,143, 156,160	**ECEA50ZR22**	0.22μF, 50WV, Electrolytic	4		Y
C141,168	**ECEA50V1**	1μF, 50WV, Electrolytic	2		Y
		CABINET			
CA1	RYMF2200BSXG	Cabinet Assembly	1		OX
CA2	RYF1F2200BSX	Cabinet Cover Assembly (Front)	1		OX
CA3	RYF2F2200BSX	Cabinet Cover Assembly (Rear)	1		OX
CA3	RYF2F2200BSI	Cabinet Cover Assembly (Rear), For Italy	1		OX
CA4	RJC111A	Terminal, Battery ⊕ Side	2		Y
CA5	RJC505Z	Terminal Spring, Battery ⊖ Side	2		Y
CA6	RYPF2200BSXG	Front Panel Assembly	1		OX
CA7	RYEF2200N	Gyro Antenna Case Assembly	1		OX
CA8	RUS238Z	Spring, Gyro Antenna	1		Z
CA9	RHE6021Z	Washer, Gyro Antenna	3		Z
CA10	XUC9FY	Circlip, Gyro Antenna	1		Z
CA11	RJF1044Z	Terminal, EXT. Antenna	1		Y
CA12	SHRA403	Latch, EXT. Antenna Terminal M'tg	2		Z
CA13	RKK114Z	Cover, Battery Compartment	1		OY
CA14	RBE13Z	Knob, FM AFC, BAND WIDTH	3		OX
CA15	RBN379Z	Knob, Volume	1		OX
CA16	RBN381Z	Knob, Bass, Treble, RF Gain	3		OX
CA17	RBN380Z	Knob, Tuning	1		OX
CA18	RBS103ZK	Knob, Band	2		OX
CA19	RBS104Z	Knob, Tuning Speed	1		OX
CA20	XTB3+50CFN	Screw, Cabinet Back Cover M'tg	6		Z
CA21	**XEART160GDY**	Telescopic Antenna, 7 Steps, 963mm	1		X
CA22	RKE140Z	Cover, Core Antenna	1		Y
		CHASSIS			
	XAMR46T200	Pilot Lamp, Dial & Meter, 6V, 40mA	2		X
CH1	RSM2614Z-K	Meter, Tune, Battery, Marker	1		OX
CH2	RJJ30Z-H	Jack, EXT. Power Source	1		Y
CH3	RJJ80A-C	Jack, Earphone & Rec. Out	1		Y
	RUS279Z	Spring, Band Switch Shaft	2		OZ
	RNW423Z	Washer, Band Switch Shaft	2		OZ
CH4	RHM71Z	Shaft, SW Band Switch	1		OZ
CH5	RHM69Z	Shaft, Band Switch	1		OZ
	RJE10Z	Cover, EXT. Power Source Jack	1		Y

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
CH6	XBA2C08TRO	Fuse, 250V, 800mA	1		X
CH7	RJF7A	Holder, Fuse	2		X
	XTW3+10FR	Red Screw, P.C. Board M'tg	3		Z
	RXEF2200BSXG	Dial Drive Assembly	1		OX
CH8	RXE6F2200N	Selector Drum Assembly	1		OX
CH9	RDR20-3	Pulley, Dial	4		Z
CH10	RNW150-2	Washer, Dial	4		Z
CH11	RDG5649Z	Gear, Roller	1		OZ
CH12	RDS5050Z	Spring, Gear	1		OZ
CH13	RUS273Z	Spring, Gear	1		OZ
CH14	RDE88Z	Shaft, Gear	1		OZ
CH15	RKD423Y	Scale, Dial	1		OY
CH16 (Fig.9)	RDZ05Z	Cord(500m), Dial	1Roll		Z
CH17	RXE11F2200N	Spread Dial Assembly	1		OX
CH18	XUC6FW	Circlip, Spread Dial M'tg	1		Z
CH19	RUS283Z	Spring, Spread Dial M'tg	1		OZ
CH20	RDE99Z	Washer, Tuning Shaft M'tg	1		OZ
CH21	RUB145Z	Lever, Calibrator	1		OZ
CH22	RDS3120A	Spring, Calibrator Lever	1		Z
CH23	RHM68Z	Spacer, Calibrator Lever	1		OZ
ACCESSORIES					
	XEH1A1-P	Magnetic Earphone	1		Y
	RJA20Z-K	Power Cord, AC	1		Y
A1	RQX6071Z	Instruction Book	1		OY
A2	RQC9011Z	Belt	1		Y