2160

Service Manual

Radio

10-BAND
COMMUNICATION RECEIVER

RF-4900

SPECIFICATIONS

Frequency Range:	FM	88～108 MHz
	MW	525～1605 kHz (571～187m)
	SW_1	1.6～3 MHz (187～100m)
	SW_2	3～7 MHz (100～42.9m)
	SW_3	7～11 MHz (42.9～27.3m)
	SW_4	11～15 MHz (27.3～20m)
	SW_5	15～19 MHz (20～15.8m)
	SW_6	19～23 MHz (15.8～13m)
	SW_7	22～26 MHz (13.6～11.5m)
	SW_8	26～30 MHz (11.5～10m)
Intermediate Frequency:	FM 10.7 MHz	
	MW/SW_1 455 kHz	
	SW_2～$_8$	1st IF 2 MHz
		2nd IF 455 kHz
Sensitivity:	FM	3μV (S/N 26 dB)
	MW	60μV/m (S/N 10 dB)
	SW_1	1μV (S/N 10 dB)
	SW_2	1.3μV (S/N 10 dB)
	SW_3	0.8μV (S/N 10 dB)
	SW_4	1.2μV (S/N 10 dB)
	SW_5	1.2μV (S/N 10 dB)
	SW_6	1.2μV (S/N 10 dB)
	SW_7	1.3μV (S/N 10 dB)
	SW_8	1.3μV (S/N 10 dB)

Power Source:	AC 120V 60 Hz or 12V (Eight "D" Size Flashlight Batteries) (Panasonic UM-1 or equivalent)
Power Consumption:	10W (AC Only)
Speaker:	10 cm (4") PM Dynamic Speaker
Dimensions:	$18\frac{31}{32}$(Wide) × $7\frac{7}{8}$(High) × $13\frac{15}{16}$(Deep) (482 × 200 × 354 mm)
Weight:	8 kg (17 lb 10 oz) without batteries
Impedance:	Speaker 4Ω
	AUX Jack 300kΩ (20mV)
	REC OUT Jack 4kΩ (400mV)
	Earphone Jack .....4～8Ω
	FM EXT ANT 300Ω
	SW_1/MW 75Ω
	SW_2～$_8$ 75Ω

Weights and dimensions shown are approximate.
(Les poids et dimensions mentionnés sont approximatifs.)
Specifications are subject to change without notice for further improvement.

Panasonic®

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DISASSEMBLY INSTRUCTIONS

■ TO REMOVE CABINET COVER

1. Remove the four (4) covers for the handle in the direction of arrow, as shown in fig. 1.
2. Remove the six (5) screws (nos. 1~5) for the handle and cabinet cover, as shown in fig. 2.
3. Remove the six (5) screws (nos. 1~5) for the handle and cabinet cover, as shown in fig. 3.
4. Remove the eight (8) screws (nos. 1~8) for the cabinet cover, as shown in fig. 4.
5. Remove the nine (9) screws (nos. 1~9) for the cabinet cover, as shown in fig. 5.
6. Remove the cabinet cover.
7. To reassemble, reverse the above procedure.

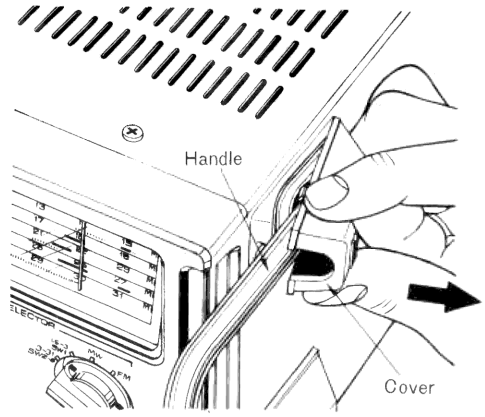


Fig. 1

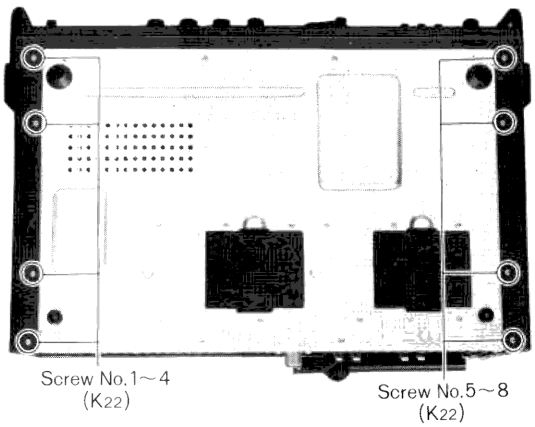


Fig. 4

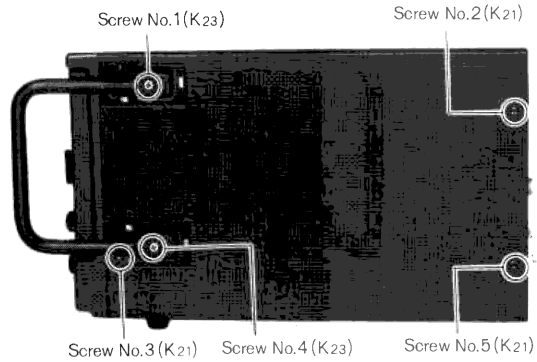


Fig. 2

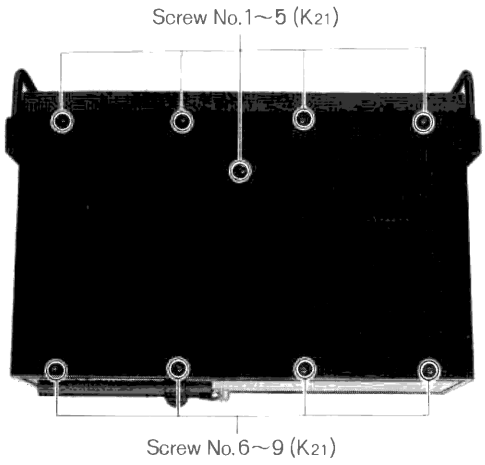


Fig. 5

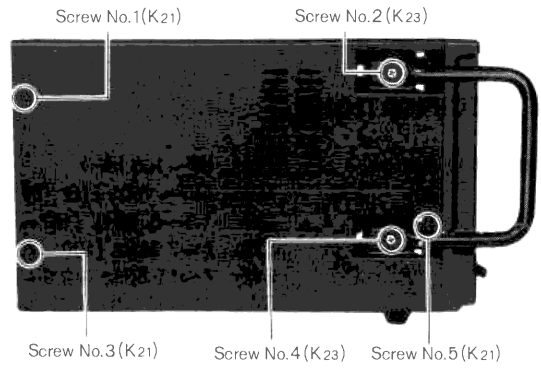


Fig. 3

■ TO REMOVE BOTTOM COVER

1. Remove the cabinet cover. (Refer to cabinet cover removal instruction.)
2. Remove the eight (8) screws (nos. 1~8) for the bottom cover as shown in fig. 6.
3. Remove the bottom cover.
4. Remove the socket from power source PC board.
5. To reassemble, reverse the above procedure.

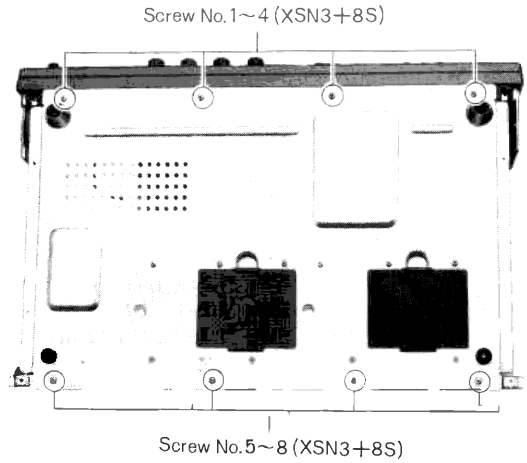


Fig. 6

■ TO REMOVE FREQUENCY COUNTER

1. Remove the cabinet cover. (Refer to cabinet cover removal instruction.)
2. Remove the socket from PC board.
3. Remove the three (3) screws (nos. 1~3) for the frequency counter, as shown in fig. 7-1.
4. Remove the two (2) sockets (nos. 1 & 2) for the frequency counter, as shown in fig 7-2.
5. Remove the frequency counter.
6. To reassemble, reverse the above procedure.

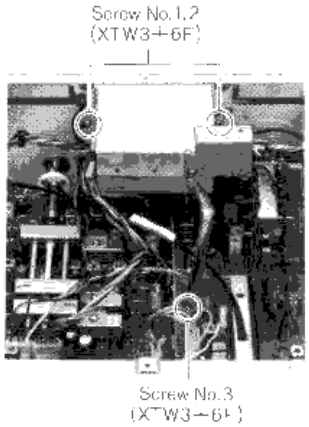


Fig. 7-1

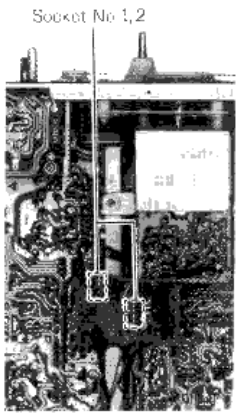


Fig. 7-2

■ TO REMOVE PC BOARD (Frequency Counter)

1. Remove the frequency counter.
2. Remove the three (3) screws (nos. 1~3) for the shield cover, as shown in fig. 8.
3. Remove the two (2) screws (nos. 1 & 2) for the PC board, as shown in fig. 9.
4. Remove the PC board.
5. To reassemble, reverse the above procedure.

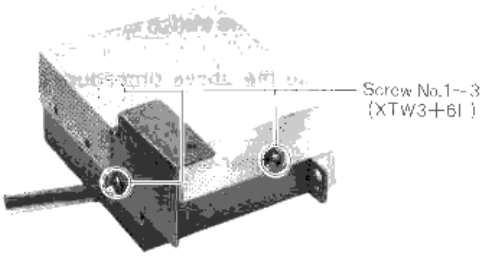


Fig. 8

■ TO REMOVE PC BOARD (VFO Circuit)

1. Remove the bottom cover. (Refer to bottom cover removal instruction.)
2. Loosen the two (2) screws (nos. 1 & 2) for the tuning capacitor shaft, as shown in fig. 10.
3. Remove the one (1) screw for the PC board, as shown in fig. 11.
4. Remove the three (3) screws (nos. 1~3) for the PC board, as shown in fig. 12.
5. To remove PC board completely unsolder lead wires from the other PC board.
6. To reassemble, reverse the above procedure and read the following notes.

Notes:
1. Set tuning capacitor to maximum capacity.
2. Turn tuning shaft fully counter-clockwise.

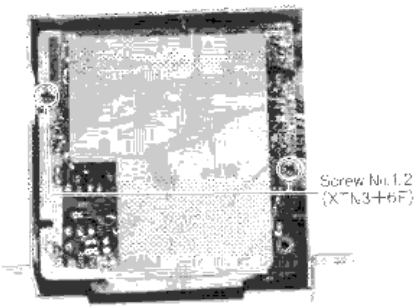


Fig. 9

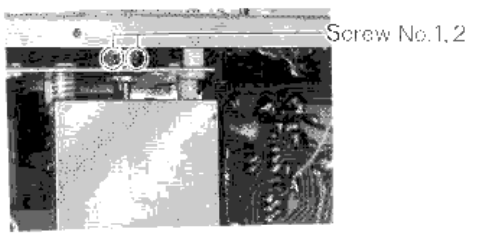


Fig. 10

■ TO REMOVE FERRITE ANTENNA

1. Remove the bottom cover. (Refer to the bottom cover removal instruction.)
2. Unsolder lead wires from PC board.
3. Push the catches in the direction of arrows, as shown in fig. 13 and remove the holder.
4. Push the holder in the direction of arrows ① and ② and open the holder in the direction of arrow ③ and ④, as shown in fig. 14.
5. Remove the ferrite antenna.
6. To reassemble, reverse the above procedure and read the following note.

Note:
1. Insert the lead wires in the slit of holder, as shown in fig. 15.

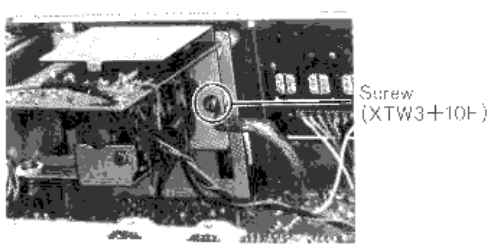


Fig. 11

■ TO REMOVE FRONT PANEL

1. Remove the bottom cover. (Refer to the bottom cover removal instruction.)
2. Pull out sockets from speaker.
3. Pull out socket from PC board.
4. Remove the eleven (11) knobs.
5. Remove the three (3) red screws (nos. 1~3) for the front panel, as shown in fig. 16.
6. Remove the three (3) red screws (nos. 1~3) for the front panel, as shown in fig. 17.
7. To reassemble, reverse the above procedure.

■ TO REMOVE BAND SWITCH SHAFT ($SW_2 \sim 8$, SW_1, MW, FM)

1. Remove the front panel. (Refer to the front panel removal instruction.)
2. Set band switch to "$SW_{2\sim8}$" position.
3. Remove the switch wire in the direction of arrow, as shown in fig. 18.
4. Remove the one (1) nut for the switch shaft, as shown in fig. 19.
5. To reassemble, reverse the above procedure and read the following note.

Note:

1. Turn switch shaft fully counter-clockwise.

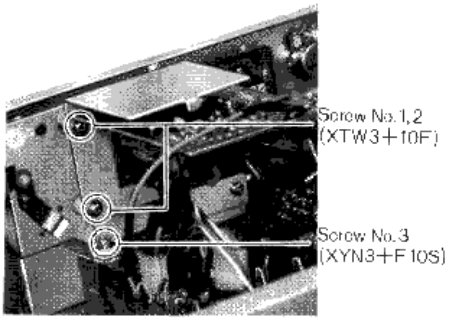


Fig. 12

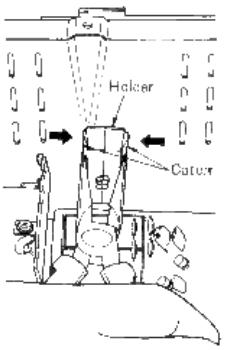


Fig. 13

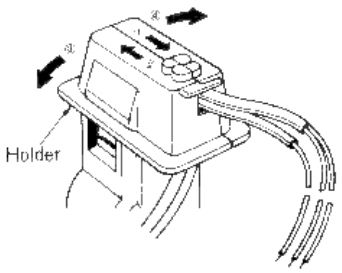


Fig. 14

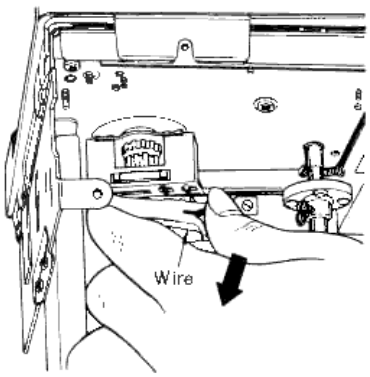


Fig. 18

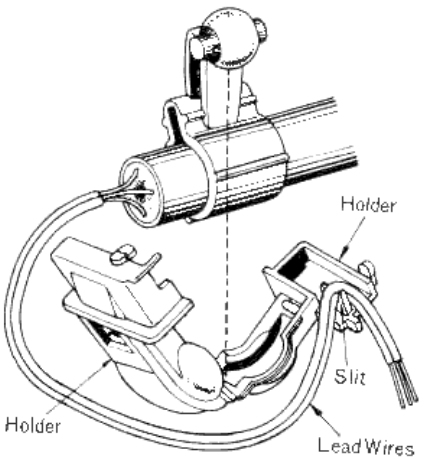


Fig. 15

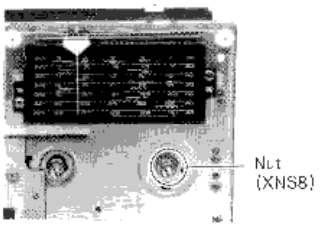


Fig. 19

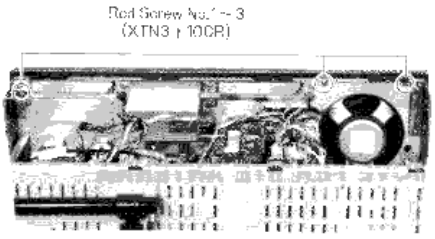


Fig. 16

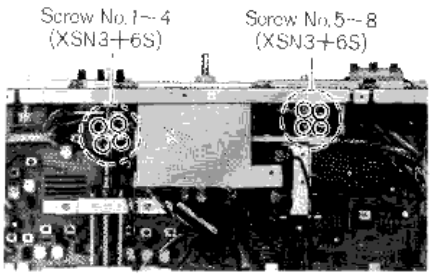


Fig. 20

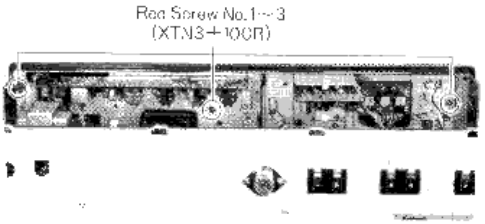


Fig. 17

■ TO REMOVE BAND SWITCH SHAFT ($SW_2 \sim _8$)

1. Remove the frequency counter. (Refer to the frequency counter removal instruction.)
2. Loosen the four (4) screws (nos. 1~4) for the joint, as shown in fig. 20.
3. Slide the joint in the direction of arrow, as shown in fig. 20.
4. Remove the six (6) screws (nos. 1~6) for the shaft, as shown in fig. 21.
5. Remove the shaft.
6. To reassemble, reverse the above procedure and read the following notes.

Notes:

1. Turn switch shaft fully counter-clockwise.
2. Set the switch lever at the position, as shown in fig. 22.

■ TO REMOVE PC BOARD (FM, MW RF Circuit)

1. Remove the frequency counter. (Refer to the frequency counter removal instruction.)
2. Remove the front panel. (Refer to the front panel removal instruction.)
3. Remove the dial scale.
4. Remove the dial cord.
5. Turn dial drum fully counter-clockwise.
6. Loosen the four (4) screws (nos. 5~8) for the joint, as shown in fig. 20.
7. Remove the dial drum.
8. Set the band switch to "$SW_{2\sim8}$" position.
9. Remove the switch wire in the direction of arrow, as shown in fig. 23.
10. Remove the six (6) screws (nos. 7~12) for the PC board, as shown in fig. 21.
11. Remove the PC board.
12. To reassemble, reverse the above procedure and read the following notes.

Notes:

1. Set the tuning capacitor to maximum capacity.
2. Set the dial drum at the position, as shown in fig. 24.
3. Set the switch lever at the position, as shown in fig. 25.
4. Refer to dial cord installation (SW-/MW/FM).

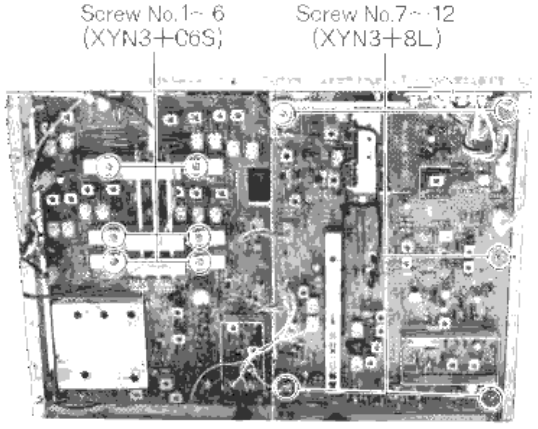


Fig. 21

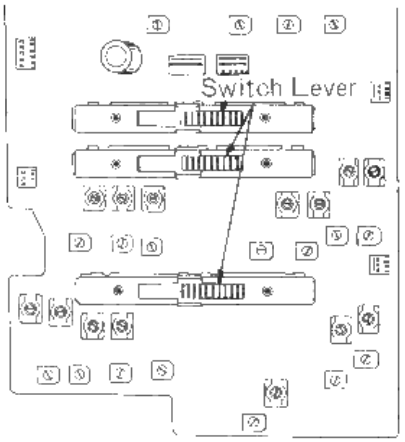


Fig. 22

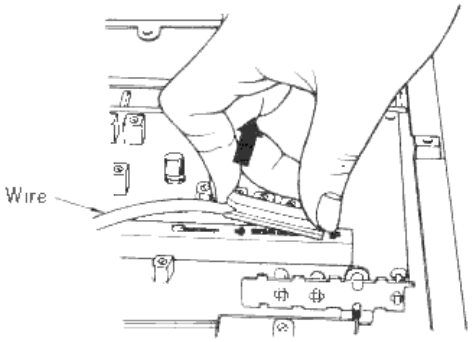


Fig. 23

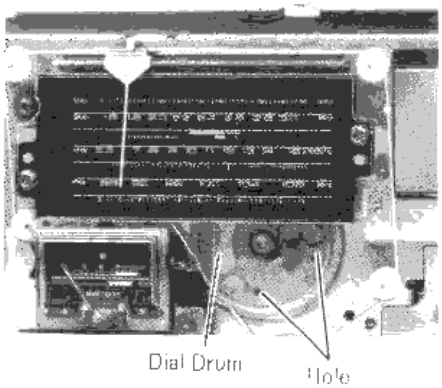


Fig. 24

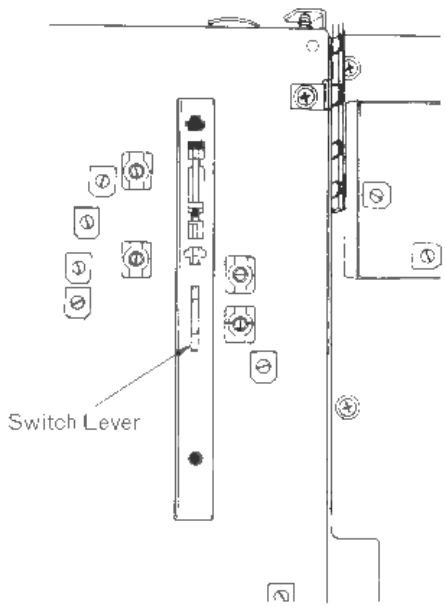


Fig. 25

■ TO REMOVE DIAL MECHANISM

1. Remove the front panel. (Refer to the front panel removal instruction.)
2. Remove the PC board (VFO circuit). (Refer to PC board removal instruction.)
3. Remove the dial cord.
4. Remove the four (4) screws (nos. 1~4) for the dial mechanism, as shown in fig. 26.
5. Remove the dial mechanism.
6. To reassemble, reverse the above procedure and read the following notes.

Note:

1. Refer to dial cord installation (SW_{2}~$_{8}$).

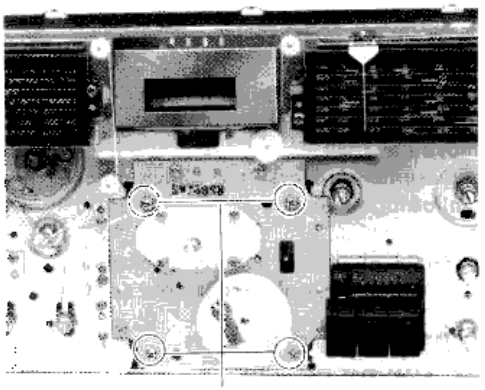


Fig. 26

■ DIAL CORD INSTALLATION GUIDE

• SW_1 /MW/FM

1. Remove the front panel. (Refer to the front panel removal instruction.)
2. Remove the dial scale.
3. Turn the dial drum fully counter-clockwise.
4. Cord length is 90 cm (35 7/16").
5. Arrows (1~10) indicate correct order and direction of cord installation, as shown in fig. 27.
6. Cement cord ends.
7. Turn tuning shaft fully counter-clockwise.
8. Attach pointer to cord.
9. Set pointer to "0" point of dial scale.

• SW_2 ~SW_8

1. Remove the front panel. (Refer to the front panel removal instruction.)
2. Turn tuning shaft fully clockwise.
3. Cord length is 115 cm (47¼").
4. Arrows (1~9) indicate correct order and direction of cord installation, as shown in fig. 28.
5. Turn tuning shaft fully counter-clockwise.
6. Attach pointer to cord.
7. Set pointer to start point of dial scale.

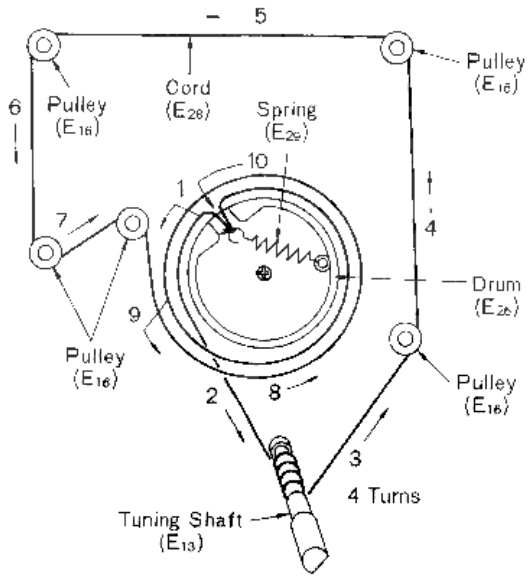


Fig. 27

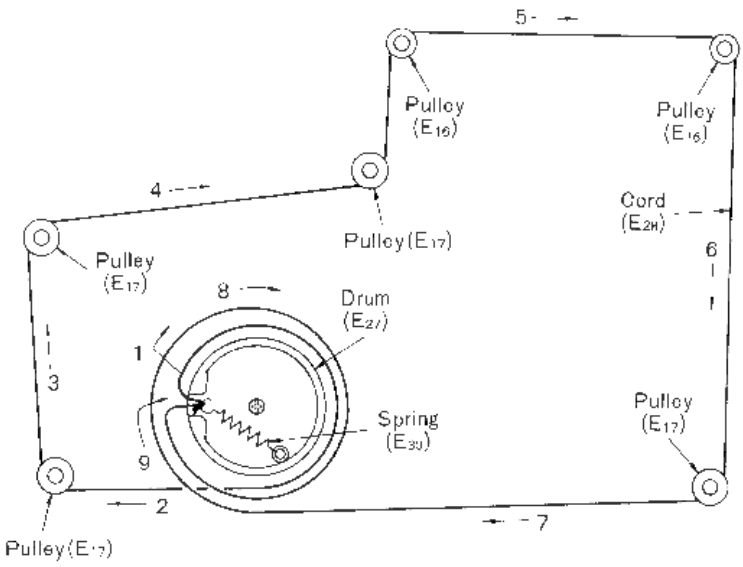


Fig. 28

■ HOW TO REPLACE CHIPS (RESISTOR, CAPACITOR, JUMPER)

1. Remove solder from chip by using solder sucker.
2. Remove chip with tweezers by rotating it while removing solder as shown in fig.29.
3. Solder circuit board first and then solder chip in the direction of the arrow as shown in fig.30.

Notes:

1. Do not use chip again which is removed from P.C. Board.
2. Use lead wire with insulator for replacement instead of chip jumper.

Color	Original Parts Name
Black	Chip Resistor
Brown	Chip Capacitor
Blue	Chip Jumper

■ NOTE FOR REPLACING CHIPS

1. Do not heat chips more than three (3) seconds.
2. Be careful not to damage the electrode of chips.
3. Use soldering iron (less than 60 W) and tweezers for replacing chips.

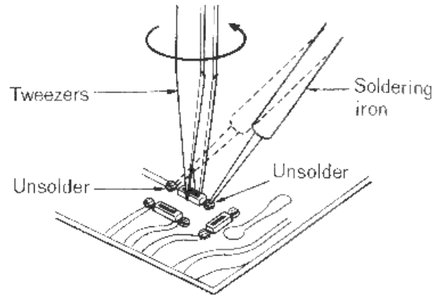


Fig. 29

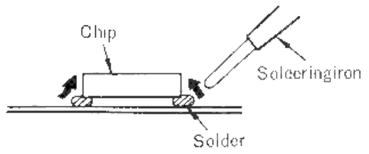


Fig. 30

CABINET PARTS

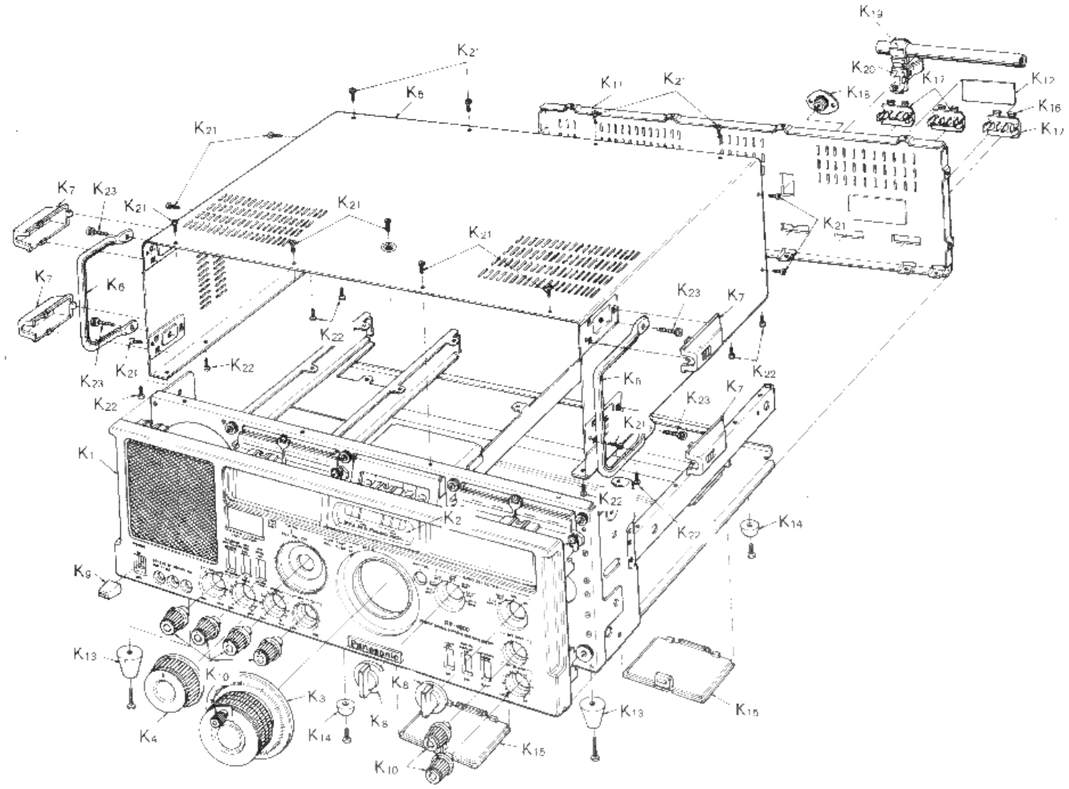


Fig. 31

■ VOLTAGE

IC1

	MW	FM
1	4.7V	0V
2	0V	0.72V
3	0V	0V
4	0V	2.76V
5	0V	3.79V
6	0V	4.95V
7	0V	4.95V
8	0V	3.8V
9	0V	0V
10	0.79V	0V
11	4.72V	0V
12	4.78V	0V
13	0.82V	0V
14	0.71V	0V
15	4.79V	0V
16	0.74V	0V

Q1

S	0V
G	0V
D	1.7V
ID	2mA

Q2

C	0V
B	4.3V
E	5.0V
Ie	1mA

Q3

C	1.25V
B	3.9V
E	4.65V
Ie	1.2mA

Q4

C	0V
B	4.33V
E	5.04V
Ie	0.5mA

Q5

C	0V
B	4.33V
E	5.04V
Ie	0.5mA

Q6

C	0V
B	4.31V
E	5.03V
Ie	0.7mA

Q7

	SW4
C	5.51V
B	1.26V
E	0.62V
Ie	0.4mA

Q8

	SW5, 6
C	5.51V
B	1.26V
E	0.6V
Ie	0.4mA

Q9

	SW7, 8
C	5.51V
B	1.24V
E	0.6V
Ie	0.4mA

Q10

C	0.35V
B	4.27V
E	4.98V
Ie	0.3mA

Q11

		SW4~8
C	5.51V	5.51V
B	1.29V	1.26V
E	1.53V	0.63V
Ie	0mA	0.34mA

Q12

C	10.68V
B	5.59V
E	4.97V
Ie	130mA

Q13

C	0V
B	4.31V
E	5.01V
Ie	3.6mA

Q14

	SW2~8
C	0V
B	3.51V
E	4.27V
Ie	3.6mA

Q15

	SW2~8
C	0.03V
B	4.35V
E	5.02V
Ie	0.35mA

Q16

	FM
S	0V
G	0V
D	3.52V
ID	2mA

Q17

	FM
C	0V
B	1.32V
E	1.96V
Ie	0.35mA

Q18

	AM
S	0.43V
G	0V
D	2.15V
ID	2mA

Q19

	AM
C	4.81V
B	2.83V
E	2.16V
Ie	4mA

Q20

	SW2,4,5,7	SW3, 6, 8
C	0V	0V
B	0.75V	−0.25V
E	0V	0V
Ie	0mA	0mA

Q24

	FM
C	0V
B	4.28V
E	5V
Ie	0.8mA

Q30

	FM
C	1.84V
B	4.3V
E	5.03V
Ie	3.8mA

IC2

1	12V
2	9.67V
3	5.31V
4	7.32V
5	1.41V
6	5.98V
7	5.77V
8	5.71V
9	5.71V
10	5.77V
11	1.36V
12	0V
13	0V
14	5.95V
15	—
16	—

Q31

	FM
C	1.58V
B	4.32V
E	5.04V
Ie	0.8mA

Q32

C	0V
B	3.74V
E	4.46V
Ie	0.65mA

Q33

	CW/SSB
C	0V
B	3.5V
E	4.1V
Ie	1.2mA

Q34

	CW/SSB
C	2.78V
B	0.75V
E	0.13V
Ie	0.8mA

Q35

C	5.44V
B	0.58V
E	0V
Ie	0mA

Q36

C	2.22V
B	0.99V
E	0.36V
Ie	0.76mA

Q37

	SW2~8
C	11.91V
B	8.2V
E	5.54V
Ie	25mA

Q38

	LW, MW	SW1
C	5.3V	4.85V
B	3.15V	2.77V
E	2.45V	2.06V
Ie	2.4mA	2mA

Q39

	FM	
C	0.03V	4.77V
B	0.71V	0V
E	0V	0V
Ie	0.4mA	0mA

Q40

	LW, MW, SW1	FM	SW2~8
C	0.01V	0.55V	1.4V
B	0.7V	0V	0V
E	0V	0V	0V
Ie	0.4mA	0mA	0mA

Q41

	SW2 - 8	
C	0.01V	0.56V
B	0.7V	0V
E	0V	0V
Ie	1.5mA	0mA

Q43

	SW1	FM	
C	0.01V	0.58V	1.6V
B	0.70V	0V	0V
E	0V	0V	0V
Ie	0.4mA	0mA	0mA

Q901

	FM	SW
C	4.8V	0.17V
B	1.25V	0.85V
E	0.56V	0.17V

Q902

	FM	SW
C	3.5V	0.34V
B	0.53V	0.53V
E	0.56V	3.17V

Q903

C	4V
B	0.06V
E	0V

Q904

	FM	SW
C	4.8V	0.17V
B	4.2V	4.3V
E	4.9V	4.9V

Q905

	FM	SW
C	4.9V	4.9V
B	4.3V	4.3V
E	4.9V	4.9V

Q906

	FM	SW
C	4.9V	4.9V
B	0V	4.2V
E	4.2V	4.3V

Q907

	FM	SW
C	2.5V	3.35V
B	4.2V	4.3V
E	4.9V	4.9V

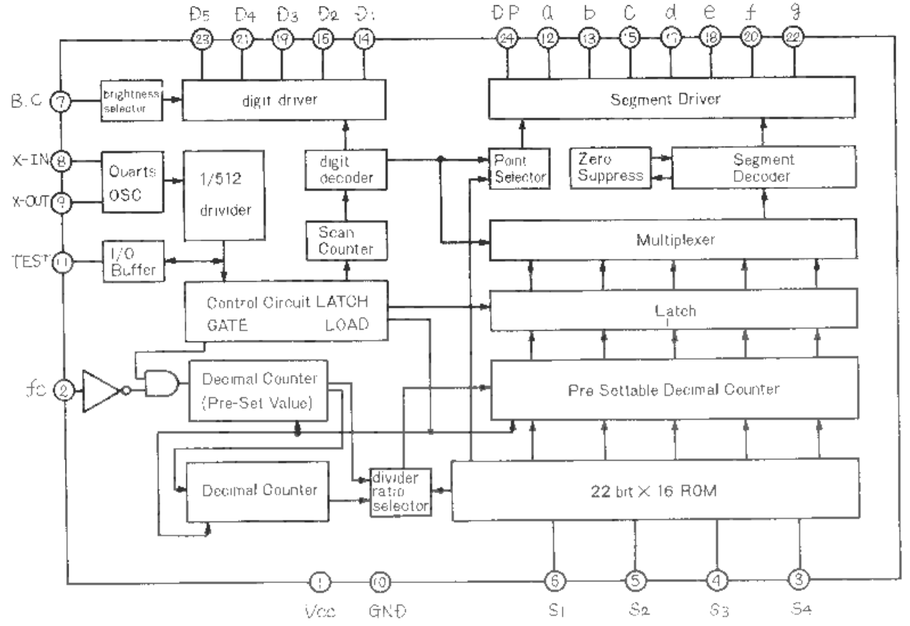
Q908

	FM	SW
C	2.5V	3.35V
B	4.9V	4.9V
E	4.9V	4.9V

Q42

	FM
C	6.5V
B	4.1V
E	3.39V
Ie	3.4mA

■ IC902(RVIM54824P) BLOCK DIAGRAM

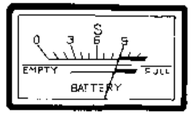


ALIGNMENTS

■ TUNE/BATT METER ADJUSTMENT

1. RADIO RECEIVER SETTING
   - Set band switch to MW.
   - Set volume control MIN.
   - Set indicator switch to BATT.
   - Set AM mode switch to AM.
   - Set power source voltage to 7.2 volts DC.

2. REMARKS
   - Adjust R_{274} so that the pointer of meter stays as shown in figure right.



■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Notes:
1. Set power switch to ON.
2. Set volume control to MAX.
3. Set bass and treble control to center.
4. Set band switch to MW, SW1~SW8 or FM.
5. Set SW cal control to center.
6. Set AM RF gain control to DX.
7. Set FM AFC/Band width switch to WIDE or OFF (FM).
8. Set light switch to OFF.
9. Set AM ANL switch to OFF.
10. Set BFO pitch control to center.
11. Set digital display switch to OFF.
12. Set AM mode switch to AM or SSB/CW.
13. Set indicator switch to signal.
14. Set ANT trim control to center.
15. Output of signal generator should be no higher than necessary to obtain an output reading.

■ MW, SW ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
				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_4 (AM 1st IFT) T_5 (AM 2nd IFT) T_9 (AM 3rd IFT) T_{10} (AM 4th IFT) T_6 (AM 5th IFT)	Adjust for maximum output.
				BFO ALIGNMENT **Note:** Set band width switch to "Narrow".			
	MW	〃	600 kHz	Tune to signal.	Audio output from speaker.	L_{52}(BFO OSC Coil)	1. Cut off modulation after tune signal. 2. Set AM mode switch to CW/SSB. 3. Adjust for zero beat.
				SW-1st IF and 2nd OSC ALIGNMENT			
(3)	SW2	Connect EXT ANT (SW_2~$_9$) terminal.	2 MHz	Point of non-interference.	Output meter across voice coil.	L_{49}(SW 2nd OSC Coil) T_1 (SW 1st IFT) T_2 (SW 1st IFT)	Adjust for maximum output.
	SW3	〃	〃	〃	〃	L_{48}(SW 2nd OSC Coil)	〃
				MW-RF ALIGNMENT			
(4)	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	550 kHz	550 kHz 2.4 mm ($\frac{3}{32}$")	Output meter across voice coil	L_{53}(MW OSC Coil) L_{43}(MW ANT Coil)	Adjust for maximum output.
(5)	MW	〃	1500 kHz	1500 kHz 57 mm ($2\frac{1}{4}$")	〃	C_{227}(MW OSC Trimmer) C_{201}(MW ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).

■ SW4~7 X' tal ALIGNMENT **Note:** Pull out socket CP6.

BAND	CONNECTIONS	ADJUSTMENT	REMARKS
SW4	Connect RF voltmeter: ⊕ side to TP1 ⊖ side to E	C_{101} (Trimmer) L_{39} (39 MHz Coil)	1. Turn C_{101} to its center position. 2. Adjust L_{39} (Turn to upper) until 25 mV ±1 mV is read on RF voltmeter.
SW4	Connect frequency counter: ⊕ side to TP1 ⊖ side to E	C_{101} (Trimmer)	Adjust C_{101} until 39.100 MHz ±100 Hz is read on frequency counter.
SW4	Connect RF voltmeter: ⊕ side to TP3 ⊖ side to E	L_{30} (31 MHz Coil)	Adjust L_{30} (Turn to upper) until 30 mV ±1 mV is read on RF voltmeter.
SW5	〃	L_{31} (27 MHz Coil)	Adjust L_{31} (Turn to upper) until 30 mV ±1 mV is read on RF voltmeter.
SW7	〃	L_{32} (19 MHz Coil)	Adjust L_{32} (Turn to upper) until 30 mV ±1 mV is read on RF voltmeter.

■ 44~48 MHz BPF ALIGNMENT **Note:** Pull out socket CP6.

BAND	SWEEP GENERATOR CONNECTIONS	SWEEP GENERATOR FREQUENCY	SWEEP SCOPE	ADJUSTMENT	REMARKS
SW4	Connect to test point TP1 through ceramic capacitor (0.01μF) negative side to point E	44.48 MHz	Connect to test point TP2 negative side to point E	L_{35} (BPF Coil) L_{36} (BPF Coil) L_{37} (BPF Coil)	1. Turn L_{35} to lower before adjustment. 2. Adjust L_{36} and L_{37} for maximum amplitude.

■ TRAP ALIGNMENT **Note:** Pull out socket CP6.

BAND	CONNECTIONS	ADJUSTMENT	REMARKS
SW4	Connect RF voltmeter: ⊕ side to TP2 ⊖ side to E	L_{35} (Trap Coil)	Adjust L_{35} for minimum RF voltmeter reading.
SW5	Connect RF voltmeter: ⊕ side to TP4 ⊖ side to E	L_{28} (Trap Coil)	Adjust L_{28} for minimum RF voltmeter reading.
SW7	〃	L_{29} (Trap Coil)	Adjust L_{29} for minimum RF voltmeter reading.

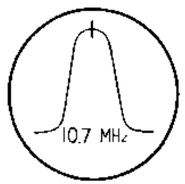


Fig. 32

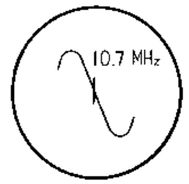


Fig. 33

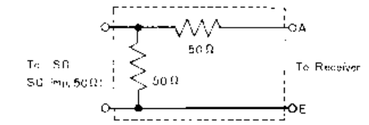
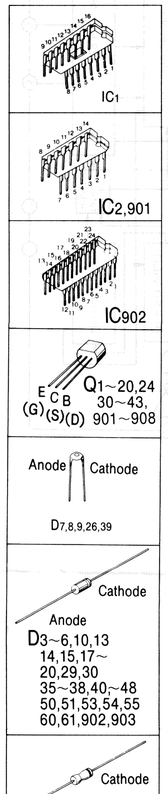
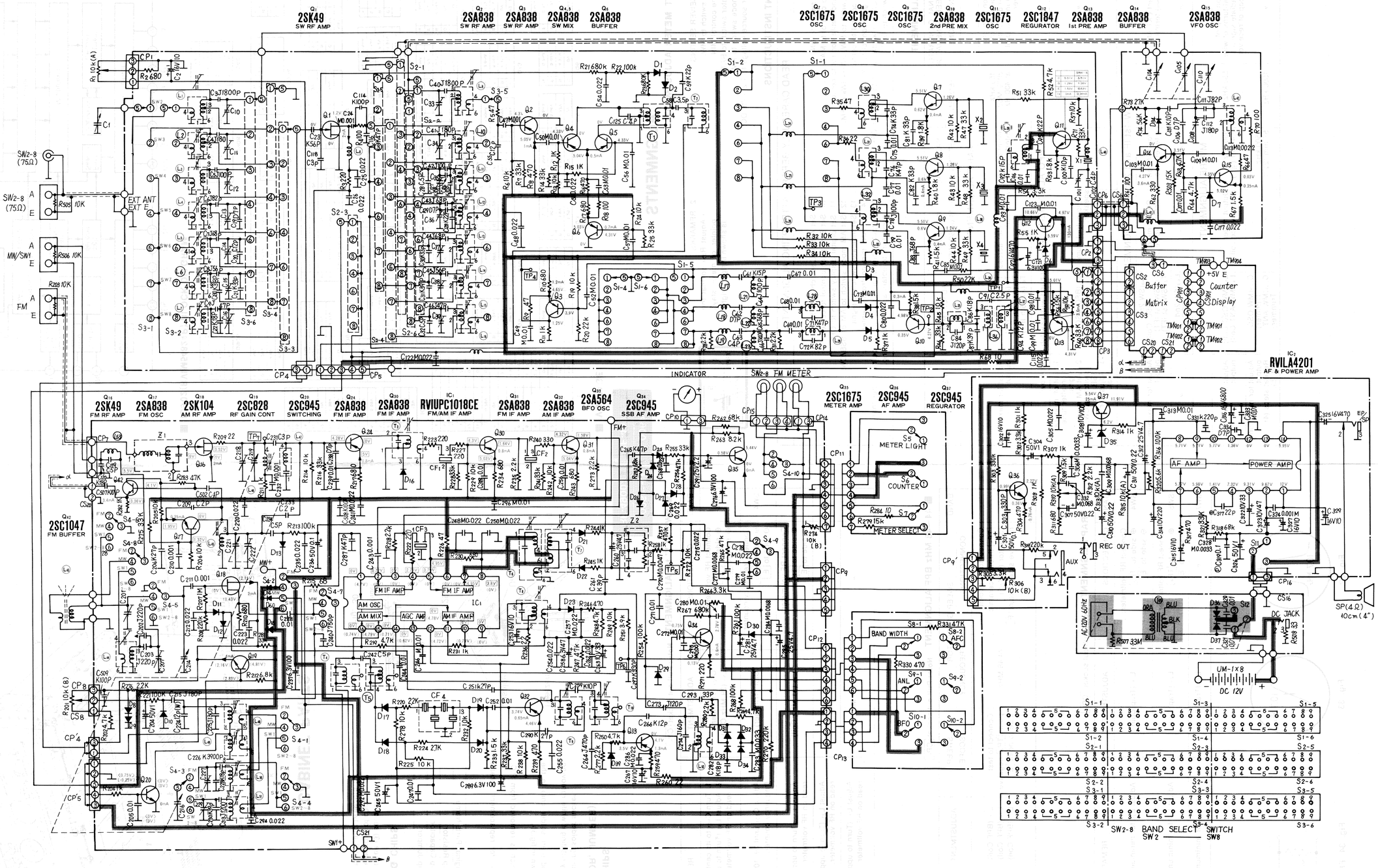


Fig. 34 FM Dummy Antenna

Schematic Diagram – Model RF-4900/©





Notes:

1. S_{1-1}~S_{3-6}: Band switch (SW_2~$_8$) in "SW_2" position.
2. S_{4-1}~S_{4-10}: Band switch (SW_{2-8}, SW_1, MW, FM) in "FM" position.
3. S_5: Light switch in "OFF" position.
4. S_6: Digital display switch in "OFF" position.
5. S_7: Indicator switch in "SIGNAL" position.
6. S_{8-1}, S_{8-2}: FM AFC/Band Width switch in "WIDTH" "AFC" position.
7. S_9: AM ANL switch in "OFF" position.
8. S_{10-1}, S_{10-2}: AM mode switch in "AM" position.
9. S_{11}: Power switch in "OFF" position.
10. S_{12}: AC-BATTERY selector in "BATTERY" position.
11. DC voltage measurements are taken with circuit tester 10kΩ/V from negative side of batteries.
    □.....FM position, ( ).....MW, SW position.
    〈 〉.....SW_2 position, 〔 〕.....SW_3 position.
    Q_{7}...SW_4, Q_{8}...$SW_{5, 6}$, Q_{9}...$SW_{7, 8}$ $Q_{33, 34}$...CW/SSB, $Q_{14, 15, 37}$...SW_2~$_8$
12. Battery current: No signal 45mA
    Maximum output 600mA

IMPORTANT SAFETY NOTICE

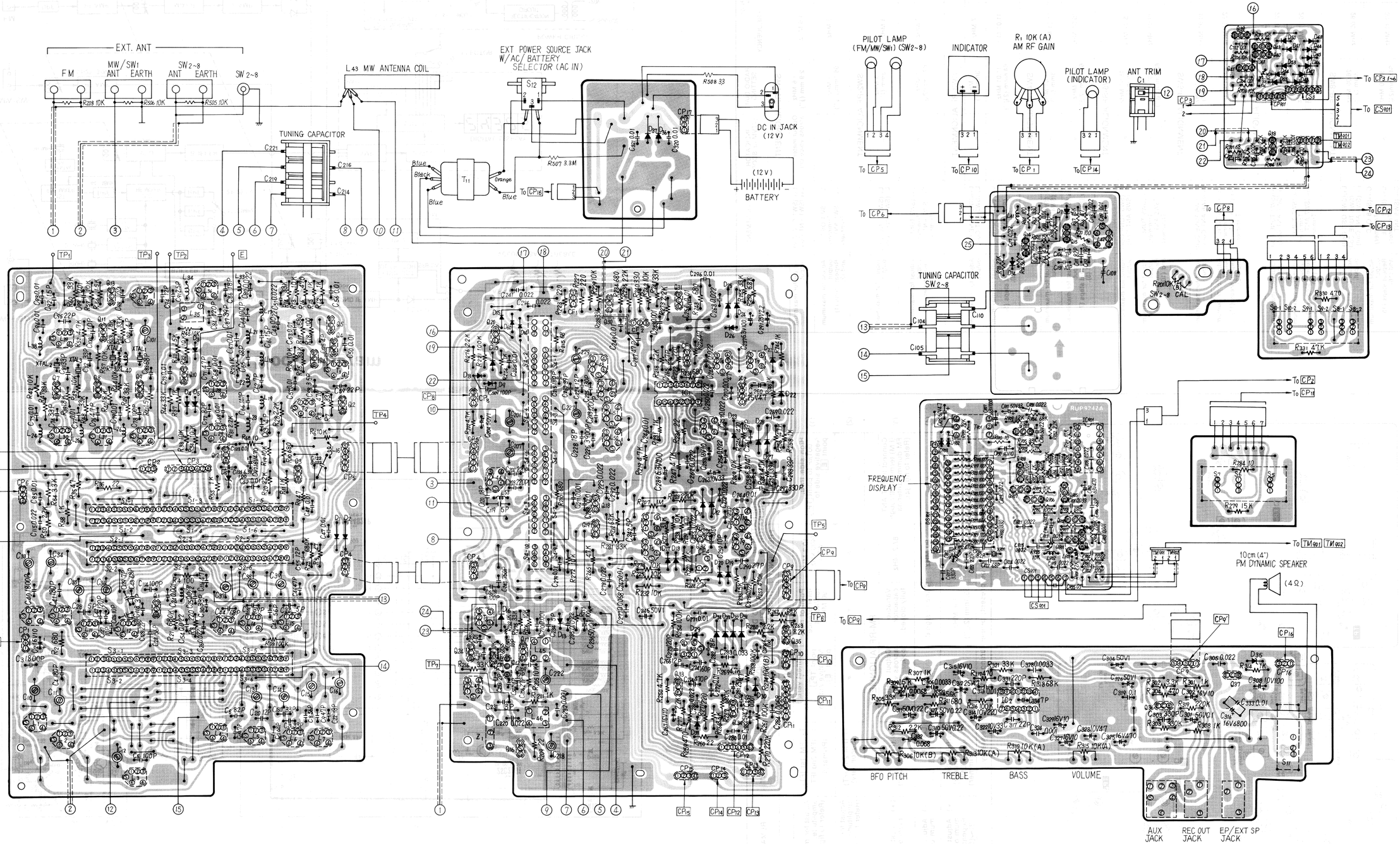
THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR SAFETY.
WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

$D_{1,2}$	OA90	SW AGC
D_{3}~$_{6}$	MA150	SWITCHING
D_6	RVDEQA0106RF	ZENER
D_7	RVDVD1261L	AOC
$D_{8,9}$	RVDVD1262L	AOC
D_{10}	RVDSD113	COUNT ADJUST
$D_{11,12}$	OA90	AM AGC
D_{13}	RVDSD113	FM AFC

$D_{14,15}$	MA150	SWITCHING
D_{16}	OA90	FM AGC
D_{17}~$_{20}$	MA150	SWITCHING
$D_{21,22}$	2-OA90	FM DET
D_{23}~$_{25}$	OA90	AM METER RECT
D_{26}	RVDVD1160L	AOC
$D_{27,28}$	OA90	FM METER RECT
D_{29}	RVDSD113	BFO DET

D_{30}	MA150	ANL
D_{31}~$_{34}$	2-OA90	BFO DET
D_{35}	RVDMZ206	Zener
$D_{36,37}$	RVD10E1LF	RECT
D_{38}	RVDSD113	SWITCHING
D_{39}	RVDVD1261M	AOC
$D_{40,41}$	RVD10E1LF	RECT

Circuit Board Wiring View–Model RF-4900/©



Schematic Diagram (COUNTER CIRCUIT)-Model RF-4900

■ SW RF ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
				SW1-RF ALIGNMENT			
(1)	SW1	Connect to EXT ANT (MW/SW1) terminal.	1.6 MHz	1.6 MHz 2.9 mm (⅛")	Output meter across voice coil.	L_{61} (SW1 OSC Coil) L_{44} (SW1 ANT Coil)	Adjust for maximum output.
(2)	SW1	〃	3 MHz	3 MHz 58.1mm(2⅜")	〃	C_{229} (SW1 OSC Trimmer) C_{207} (SW1 ANT Trimmer)	Adjust for maximum output. Repeat steps (1) and (2).
				SW2-RF ALIGNMENT			
(3)	SW2	Connect to EXT ANT (SW2～SW8) terminal.	3 MHz	3 MHz 3mm (⅛")	〃	L_9 (SW2 TUNE Coil) L_1 (SW2 ANT Coil)	Adjust for maximum output.
(4)	SW2	〃	7 MHz	7 MHz 62.7mm(2$\frac{15}{32}$")	〃	C_{33} (SW2 TUNE Trimmer) C_{10} (SW2 ANT Trimmer)	Adjust for maximum output. Repeat steps (3) and (4).
				SW3-RF ALIGNMENT			
(5)	SW3	〃	7 MHz	7 MHz 3mm (⅛")	〃	L_{10}(SW3 TUNE Coil) L_2 (SW3 ANT Coil)	Adjust for maximum output.
(6)	SW3	〃	11.01 MHz	11.01 MHz 64.6mm (2$\frac{13}{32}$")	〃	C_{34} (SW3 TUNE Trimmer) C_{11} (SW3 ANT Trimmer)	Adjust for maximum output. Repeat steps (5) and (6).
				SW4-RF ALIGNMENT			
(7)	SW4	〃	11.01 MHz	11.01 MHz 3mm (⅛")	〃	L_{11} (SW4 TUNE Coil) L_3 (SW4 ANT Coil)	Adjust for maximum output.
(8)	SW4	〃	15.01 MHz	15.01 MHz 62.7mm (2$\frac{15}{32}$")	〃	C_{35} (SW4 TUNE Trimmer) C_{12} (SW4 ANT Trimmer)	Adjust for maximum output. Repeat steps (7) and (8).
				SW5-RF ALIGNMENT			
(9)	SW5	〃	15.01 MHz	15.01 MHz 3mm (⅛")	〃	L_{12}(SW5 TUNE Coil) L_4 (SW5 ANT Coil)	Adjust for maximum output.
(10)	SW5	〃	19.01 MHz	19.01 MHz 62.7mm(2$\frac{15}{32}$")	〃	C_{36} (SW5 TUNE Trimmer) C_{13} (SW5 ANT Trimmer)	Adjust for maximum output. Repeat steps (9) and (10).
				SW6-RF ALIGNMENT			
(11)	SW6	〃	19.01 MHz	19.01 MHz 3mm (⅛")	〃	L_{13}(SW6 TUNE Coil) L_5 (SW6 ANT Coil)	Adjust for maximum output.
(12)	SW6	〃	23.01 MHz	23.01 MHz 64.6mm (2$\frac{13}{32}$")	〃	C_{37} (SW6 TUNE Trimmer) C_{14} (SW6 ANT Trimmer)	Adjust for maximum output. Repeat steps (11) and (12).
				SW7-RF ALIGNMENT			
(13)	SW7	〃	22.01 MHz	22.01 MHz 3mm (⅛")	〃	L_{14}(SW7 TUNE Coil) L_6 (SW7 ANT Coil)	Adjust for maximum output.
(14)	SW7	〃	26.01 MHz	26.01 MHz 62.7mm (2$\frac{15}{32}$")	〃	C_{38} (SW7 TUNE Trimmer) C_{15} (SW7 ANT Trimmer)	Adjust for maximum output. Repeat steps (13) and (14).
				SW8-RF ALIGNMENT			
(15)	SW8	〃	26.00 MHz	26.00 MHz 3mm (⅛")	〃	L_{42}(SW8 OSC Coil) L_{15}(SW8 TUNE Coil) L_7 (SW8 ANT Coil)	Adjust for maximum output.
(16)	SW8	〃	30.00 MHz	30.00 MHz 64.6mm(2$\frac{13}{32}$")	〃	C_{109}(SW8 OSC Trimmer) C_{39} (SW8 TUNE Trimmer) C_{16} (SW8 ANT Trimmer)	Adjust for maximum output. Repeat steps (15) and (16).

■ FM ALIGNMENT

	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING (DISTANCE)	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
			FM-IF ALIGNMENT			
(1)	High side thru. 0.001㎌ to point TP7. 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 TP5. Negative side to point E.	T_3 (FM 1st IFT) T_6 (FM 2nd IFT) (Primary)	Adjust for maximum amplitude. (Refer to fig. 32).
(2)	〃	〃	〃	〃	T_7 (FM 2nd IFT) (Secondary)	Adjust for maximum amplitude. (Refer to fig. 33).
			FM-RF ALIGNMENT			
(3)	Connect to EXT ANT (FM) terminal through FM dummy antenna. (Refer to fig. 34).	87.2 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L_{45} (FM OSC Coil)	(＊) Adjust for maximum output.
(4)	〃	90 MHz	Tune to signal.	〃	L_{46} (FM TUNE Coil)	(＊) Adjust for maximum output.
(5)	〃	106 MHz	106 MHz 53.1mm (2$\frac{1}{32}$")	〃	C_{222}(FM OSC Trimmer) C_{218}(FM TUNE Trimmer)	(＊) Adjust for maximum output. Repeat steps (3)～(5).
(＊) Three output responses will be present; proper tuning is the center frequency.						

■ ALIGNMENT POINTS

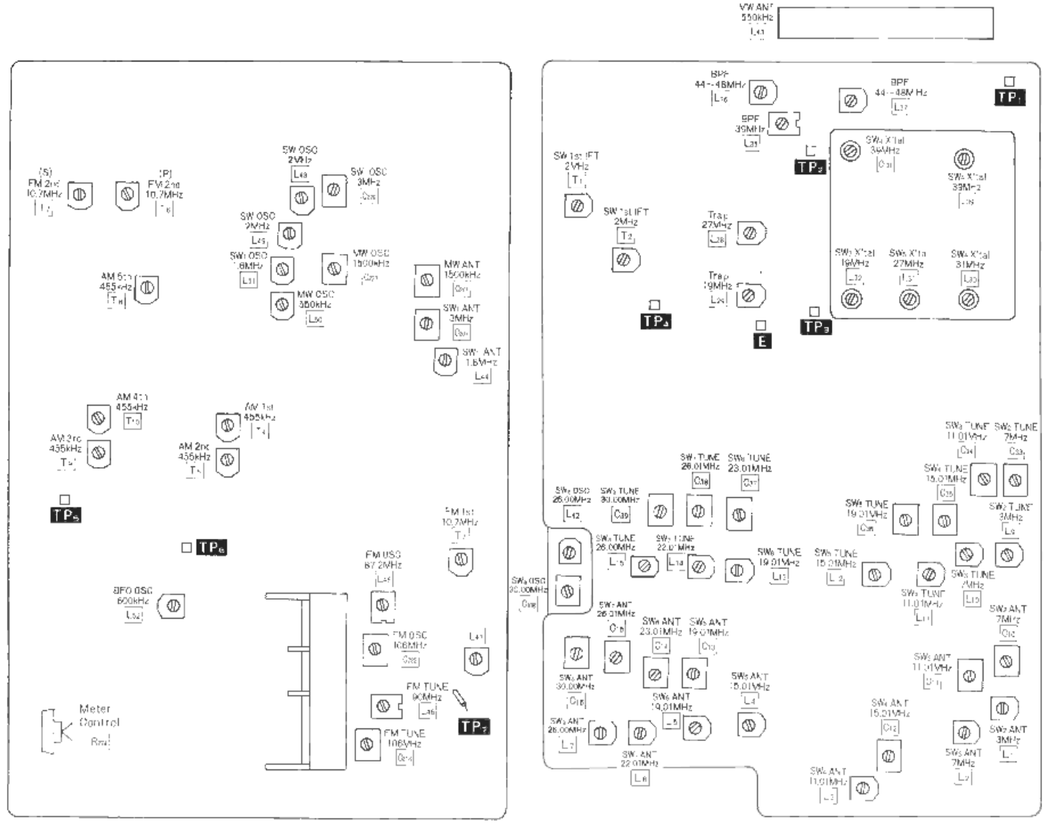


Fig. 35

Schematic Diagram (COUNTER CIRCUIT) – Model RF-4900/©

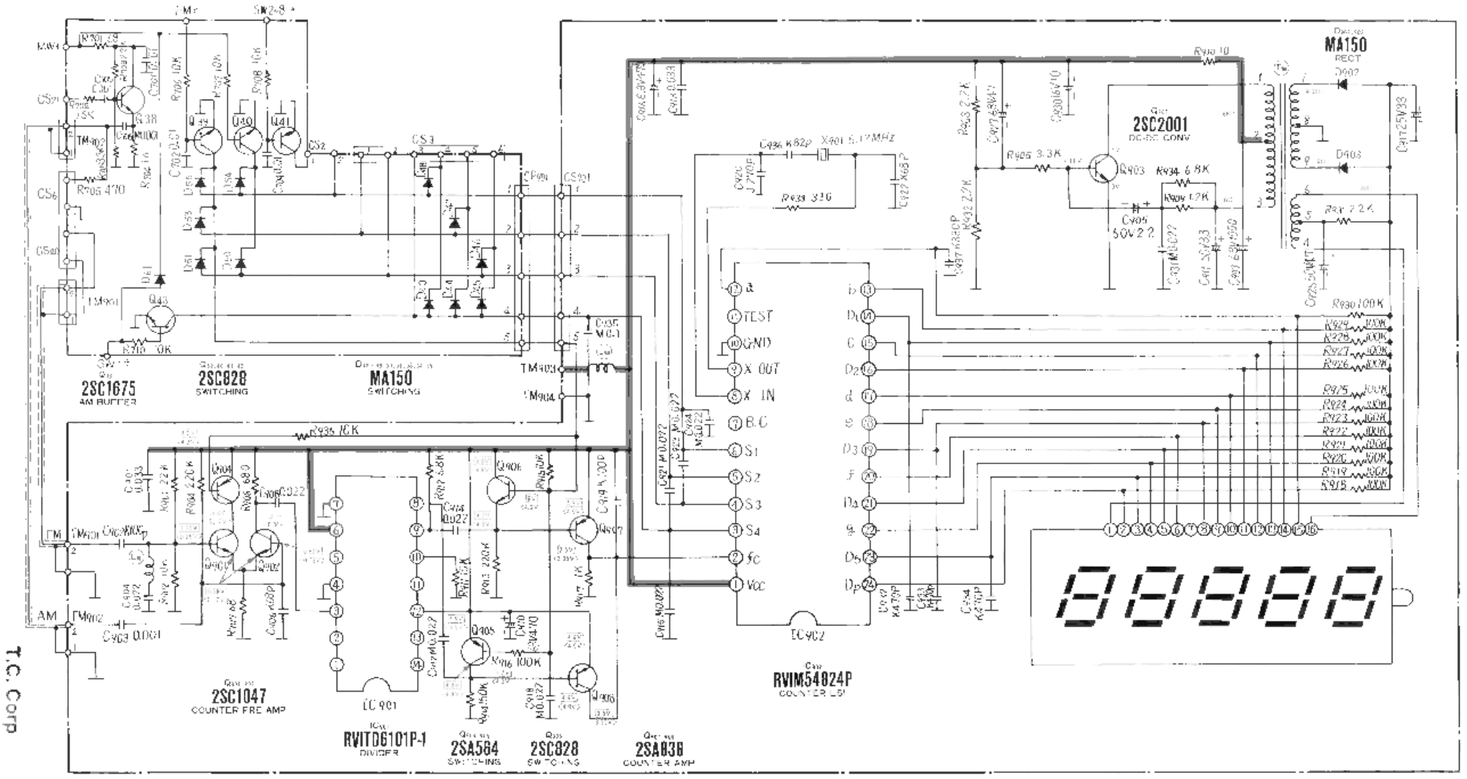


Fig. 36

Block Diagram

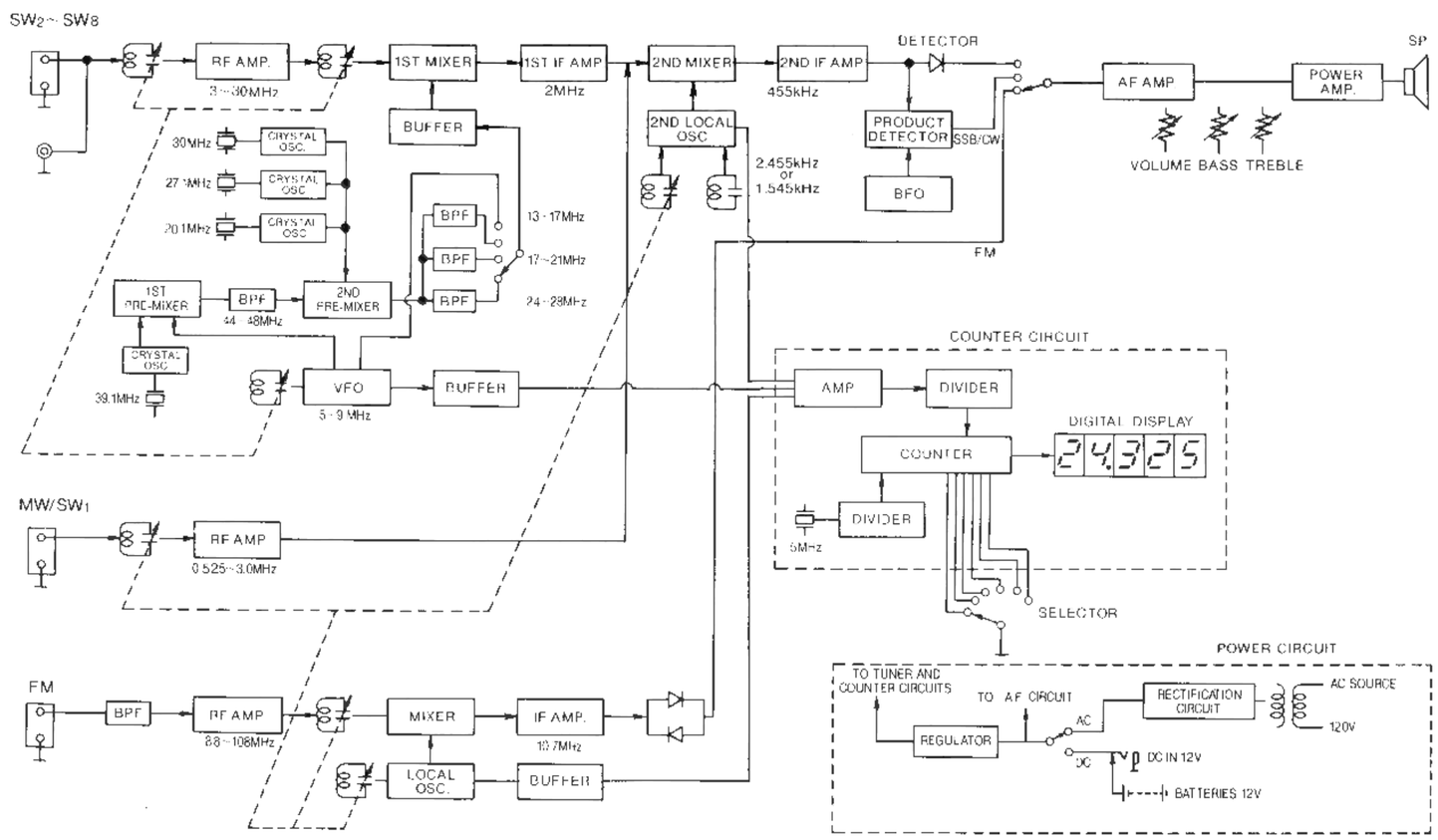


Fig. 37

CHASISS PARTS LOCATION

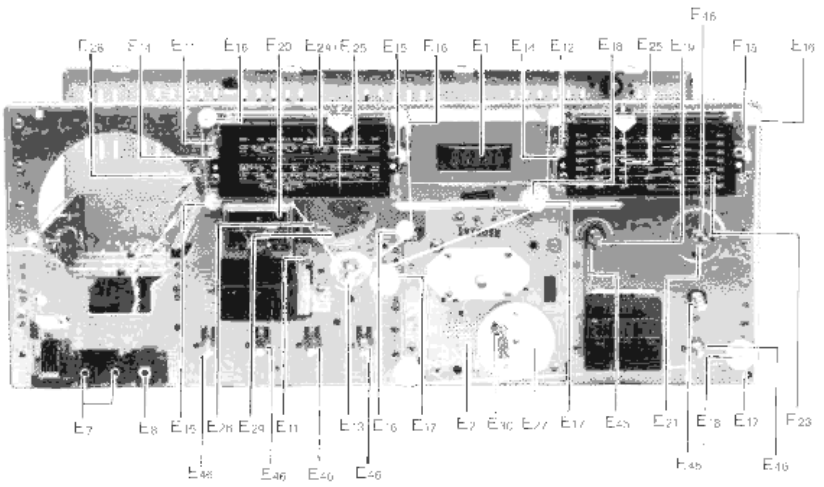


Fig. 38

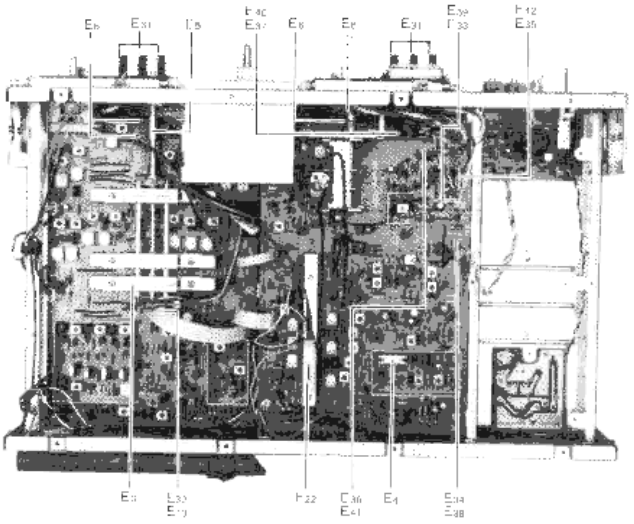


Fig. 39

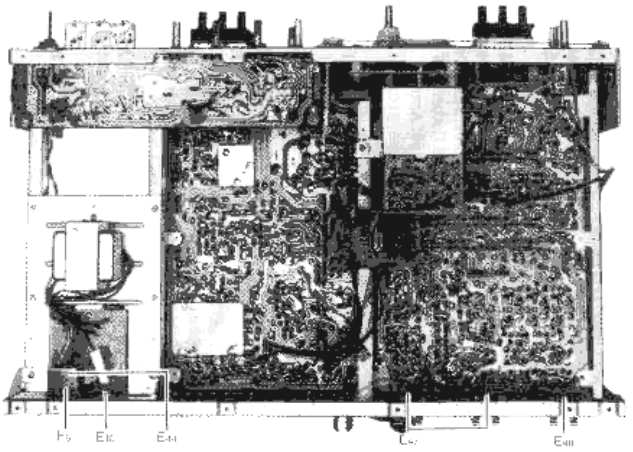


Fig. 40

■REPLACEMENT PARTS LIST····· Model RF-4900/©

(RD7811-1630C)

NOTES: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2. Components identified by shaded area have special characteristic important for safety.
When replacing any of these components use only manufacturer's specified parts.
3. The Ⓢ mark is service standard parts and may differ from production parts.
4. The © mark is used by the manufacturing only.

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
INTEGRATED CIRCUITS, TRANSISTORS AND DIODES					
IC1	RVIUPC1018CE	IC,FM/AM IF Amp.	1		
IC2	RV1LA4201	IC,AF & Power Amp.	1		
IC902	RVIM54824P	IC,Counter LSI	1	©	
IC901	RVITD6101P-1	IC,Divider	1		
Q1,16	2SK49	Transistor(Si),SW RF Amp.,FM RF Amp.	2		
Q2,3,4,5,6,10, 13,14,15,17, 24,30,31,32, 907,908	2SA838	Transistor(Ge),SW RF Amp.,SW Mixer, Buffer,2nd Pre Mix.1st Pre Mix,VFO Oscillator,FM Oscillator.,FM IF Amp., AM IF Amp.	16		
Q7,8,9,11,35, 38	2SC1675	Transistor(Si),Oscillator	6		
Q12	2SC1847	Transistor(Si),Regulator	1		
Q18	2SK104	Transistor(Si),AM RF Amp.	1		
Q19,39,40,41, 43,906	2SC828	Transistor(Si),RF Gain Control	6		
Q20,34,36,37	2SC945	Transistor(Si),Switching,SSB AF Amp.,AF Amp.,Regulator	4		
Q903	2SC2001	Transistor(Si),Digit Driver	1		
Q33,904,905	2SA564	Transistor(Ge),BFO Oscillator	3		
Q42,901,902	2SC1047	Transistor(Si),FM Buffer,Counter Pre Amp.	3		
D1,2,11,12,16 23,24,25,27, 28	OA90	Diode(Ge),SW AGC,AM AGC,FM AGC, AM Meter Rectifier	10		Ⓢ
D3,4,5,14,15, 17,18,19,20, 30,60,902, 903,43,44, 45,46,47,48, 50,51,53,54, ,61	MA161	Diode(Si),Switching,ANL	25		Ⓢ
D6	RVDEQA0106RF	Diode(Si),Zener	1		
D8,9	RVDVD1262L	Diode(Si),AOC	2		
D10,13,29,38	RVDSD113	Diode(Si),Count Ajust,FM AFC, BFO Detector	4		Ⓢ
D21,22,31,32, 33,34	2-OA90	Diode(Ge),FM Detector,BFO Detector	6		
D26	RVDVD1160L	Diode(Si),AOC	1		Ⓢ
D35	RVDMZ206	Diode(Si),Zener	1		
D36,37	SM112	Diode(Si),Rectifier	2		Ⓢ
D39	RVDVD1261M	Diode(Si),AOC	1		Ⓢ
D7	RVDVD1261L	Diode(Si),AOC	1		Ⓢ

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
CERAMIC FILTERS, COILS AND TRANSFORMERS					
CF1,2,3	RVFL07MFR	Ceramic Filter	3		
CF4	RVFL6B4	Ceramic Filter	1		
L1,9	RLA3M32	Antenna Coil or Tuning Coil,SW2	2		
L2,10	RLA3M33	Antenna Coil or Tuning Coil,SW3	2		
L3,11	RLA3M34	Antenna Coil or Tuning Coil,SW4	2		
L4,12	RLA3M35	Antenna Coil or Tuning Coil,SW5	2		
L5	RLA3M48	Antenna Coil,SW6	1		
L6	RLA3M49	Antenna Coil,SW7	1		
L7	RLA3M39	Antenna Coil,SW8	1		
L14,28,29	RLA3M37	Tuning Coil,SW7,Trap Coil	3		
L15	RLA3M38	Tuning Coil,SW8	1		
L13	RLA3M36	Tuning Coil,SW6	1		
L30,31,32,36, 37,39	RLO9M7	Oscillator Coil,Xtal,BPF Coil	6		
L35	RLD4M5	Coil,Trap	1		
L42	RLO3M52	Oscillator Coil,SW2	1		
L43	RLF2E41	Antenna Coil,MW	1		
L44	RLA3M31	Antenna Coil,SW1	1		
L45	RLD4M1	Oscillator Coil,FM	1		
L46	RLD4M8	Antenna Coil,FM	1		
L47	RLI4M103	Coil,Trap	1		
L48,51	RLO3M51	Oscillator Coil,2nd Local & SW1	2		
L49	RLO9M6	Oscillator Coil,2nd Local	1		
L50	RLO2M16	Oscillator Coil,MW	1		
L52	RLO9M8	Oscillator Coil,BFO	1		
T1	RLI9M3	IFT,SW 1st	1		
T2	RLI9M4	IFT,SW 1st	1		
T3	RLI4M101	IFT,FM 1st	1		
T4,9,10	RLI2M212	IFT,AM 1st,3rd,4th	3		
T5	RLI2M208	IFT,AM 2nd	1		
T6	RLI4M504	IFT,FM 2nd(Primary)	1		
T7	RLI4M506	IFT,FM 2nd(Secondary)	1		
T8	RLI2M402	IFT,AM 5th	1		
T11	RLT5K331A	Power Transformer	1		
T901	RLT9E2	Power Transformer ,Display	1		
VARIABLE RESISTORS					
R1	EVHCMA088A14	Variable Resistor,10KΩ(A),RF Gain Control	1		
R201	EVLD8AT12B14	Variable Resistor,10KΩ(B),SW2~8 CAL	1		
R274	EVLT4AA00B14	Variable Resistor,10KΩ(B),Preset, Meter Control	1		Ⓢ
R306	EVH8SA029B14	Variable Resistor,10KΩ(B),BFO Pitch	1		
R310,313,315	EVH8SA029A14	Variable Resistor,10KΩ(A),Bass, Treble & Volume Control	3		
VARIABLE CAPACITORS					
C1	RCVC321A152	Tuning Capacitor	1		
C10,201	RCV1PX10AGS	Trimmer Capacitor	2		

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C11~16, 33~39, 108,218,222 227,229	RCV1PX20AGS	Trimmer Capacitor	18	
C214,216,219 221	RCVCV45D112	Tuning Capacitor	1	
C101,207	RCV1PX30AGS	Trimmer Capacitor	1	
C104,105,110	RCVCV35D112	Tuning Capacitor	1	
COMPONENT COMBINATIONS AND CRYSTALS				
Z1	RXABPMF1	Component Combination, Coils & Capacitors	1	
Z2	EXA5DL04CC	Component Combination, 330PF×3, 4.7KΩ×2	1	
X1	RVCX39100N3R	Crystal	1	
X2	RVCX31100N3R	Crystal	1	
X3	RVCX27100N3R	Crystal	1	
X4	RVCX20100N3R	Crystal	1	○
X901	RVCX5120N5Z	Crystal, 5MHz	1	○
SPEAKER				
SP	EAS10P72S	Speaker, 1mp, 4Ω, 10cm(4"), PM Dynamic	1	
SWITCHES				
S1-1~S3-6	ESRK68S1	Switch, Band (SW2~8)	3	
S4-1~S4-10	ESA2625	Switch, Band (FM/MW/SW1/SW2~8)	1	
S5~7, S8-1, S8-2, S9, S10-1, S10-2	RSTX003Y	Switch, Light, Digital Display, Indicator, FM AFC/Band Width, MW ANL or AM Mode	2	
S11	RST51YS	Switch, Power	1	
RESISTORS				
R2	ERD25TJ681	680Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R3	ERD25TJ221	220Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R4	ERD25TJ101	100Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R5	ERD25TJ470	47Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R6	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R7	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R8	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R9	ERD25TJ470	47Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R10	ERD25TJ681	680Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R11	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R12	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R13	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R14	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R15	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R16	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R17	ERD25TJ681	680Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R18	ERD25TJ101	100Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R19	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R20	ERD25TJ223	22KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R21	ERD25TJ684	680KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R22	ERD25TJ104	100KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R23	ERD25TJ684	680KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R24	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R25	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R28	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R31	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R32	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R33	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R34	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R35	ERD25TJ470	47Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R36	ERD25TJ220	22Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R37	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R38	ERD25TJ152	1.5KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R39	ERD25TJ182	1.8KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R40	ERD25TJ182	1.8KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R41	ERD25TJ152	1.5KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R42	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R43	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R44	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R45	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R46	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R47	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R48	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R49	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R50	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R51	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R52	ERD25TJ472	4.7KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R53	ERD25TJ182	1.8KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R54	ERD25TJ332	3.3KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R55	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R56	ERD25TJ152	1.5KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R57	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R58	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R59	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R60	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R61	ERD25TJ101	100Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R62	ERD25TJ331	330Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R63	ERD25TJ472	4.7KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R64	ERD25TJ472	4.7KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R66	ERD25TJ470	47Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R67	ERD25TJ152	1.5KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R68	ERX1ANJ100	10Ω, 1Watt, ±5%, Metal Oxide	1	Ⓢ
R69	ERD25TJ101	100Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R70	ERD25TJ101	100Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R71	ERD25TJ332	3.3KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R73	ERD25TJ273	27KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R74	ERD25TJ563	56KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R202	ERD25TJ472	4.7KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R203	ERC12GK203	20KΩ, ½Watt, ±10%, Solid	1	Ⓢ
R204	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R205	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R206	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R207	ERD25TJ105	1MΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R208	ERD25TJ224	220KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R209	ERD25TJ220	22Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R210	ERD25TJ681	680Ω, ¼Watt, ±5%, Carbon	1	Ⓢ

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R211	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R212	ERD25TJ682	6.8KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R213	ERD25TJ104	100KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R214	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R215	ERD25TJ680	68Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R216	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R217	ERD25TJ681	680Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R218	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R219	ERD25TJ472	4.7KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R220	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R221	ERD25TJ104	100KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R222	ERD25TJ221	220Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R223	ERD25TJ221	220Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R224	ERD25TJ272	2.7KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R225	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R226	ERD25TJ470	47Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R227	ERD25TJ221	220Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R228	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R229	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R230	ERD25TJ681	680Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R231	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R232	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R233	ERD25TJ152	1.5KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R234	ERD25TJ681	680Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R235	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R236	ERD25TJ220	22Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R237	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R238	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R239	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R240	ERD25TJ331	330Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R241	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R242	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R243	ERD25TJ681	680Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R244	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R245	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R246	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R247	ERD25TJ473	47KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R248	ERD25TJ472	4.7KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R249	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R250	ERD25TJ472	4.7KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R251	ERD25TJ392	3.9KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R252	ERD25TJ682	6.8KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R254	ERD25TJ104	100KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R255	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R256	ERD25TJ473	47KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R257	ERD25TJ474	470KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R258	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R259	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R260	ERD25TJ220	22Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R261	ERD25TJ104	100KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R262	ERD25TJ683	68KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R263	ERD25TJ822	8.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R265	ERD25TJ473	47KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R266	ERD25TJ332	3.3KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R267	ERD25TJ684	680KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R268	ERD25TJ104	100KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R269	ERD25TJ472	4.7KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R270	ERD25TJ224	220KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R271	ERD25TJ221	220Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R272	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R273	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R275	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R276	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R277	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R278	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R279	ERD25TJ153	15KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R280	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R281	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R282	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R283	ERD25TJ473	47KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R284	ERD10TJ100	10Ω, ½Watt, ±5%, Carbon	1	
R301	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R302	ERD25TJ332	3.3KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R303	ERD25TJ334	330KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R304	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R305	ERD25TJ332	3.3KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R307	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R308	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R309	ERD25TJ152	1.5KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R311	ERD25TJ681	680Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R312	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R314	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R316	ERD25TJ104	100KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R317	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R318	ERD25TJ683	68KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R319	ERD25TJ224	220KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R320	ERD25TJ562	5.6KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R321	ERD25TJ333	33KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R330	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R331	ERD25TJ473	47KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R503	ERD25TJ153	15KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R505	ERC12GK103	10KΩ, ½Watt, ±10%, Solid	1	Ⓢ
R506	ERC12GK103	10KΩ, ½Watt, ±10%, Solid	1	Ⓢ
R507	ERC12ZGM335	3.3MΩ, ½Watt, ±20%, Solid	1	
R508	ERX2ANJ3R3	3.3Ω, 2Watt, ±5%, Metal Oxide for USA only	1	Ⓢ
R701	ERD25TJ680	68Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R702	ERD25TJ153	15KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R703	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R704	ERD25TJ102	1KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R705	ERD25TJ471	470Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R706	ERD25TJ332	3.3KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R707	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R708	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R709	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R710	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R901	RRD18XK223	22KΩ, ⅛Watt, ±10%, Chip	1	
R902	RRD18XK103	10KΩ, ⅛Watt, ±10%, Chip	1	
R903	RRD18XK222	2.2KΩ, ⅛Watt, ±10%, Chip	1	
R904	RRD18XK224	220KΩ, ⅛Watt, ±10%, Chip	1	
R905	ERD25TJ332	3.3KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R907	RRD18XK680	68Ω, ⅛Watt, ±10%, Chip	1	
R908	RRD18XK681	680Ω, ⅛Watt, ±10%, Chip	1	
R909	ERD25TJ122	1.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R910	ERD25TJ100	10Ω, ¼Watt, ±5%, Carbon	1	Ⓢ
R911	RRD18XK103	10KΩ, 1/8Watt, ±10%, Chip	1	
R912	RRD18XK682	6.8KΩ, 1/8Watt, ±10%, Chip	1	
R913	RRD18XK224	220KΩ, 1/8Watt, ±10%, Chip	1	
R914	RRD18XK154	150KΩ, 1/8Watt, ±10%, Chip	1	
R915	RRD18XK103	10KΩ, 1/8Watt, ±10%, Chip	1	
R916	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R917	RRD18XK102	1KΩ, 1/8Watt, ±10%, Chip	1	
R918	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R919	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R920	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R921	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R922	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R923	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R924	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R925	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R926	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R927	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R928	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R929	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R930	RRD18XK104	100KΩ, 1/8Watt, ±10%, Chip	1	
R931	RRD18XK222	2.2KΩ, 1/8Watt, ±10%, Chip	1	
R932	ERD25TJ222	2.2KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R933	RRD18XK331	330Ω, 1/8Watt, ±5%, Chip	1	
R934	ERD25TJ682	6.8KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ
R935	ERD25TJ103	10KΩ, ¼Watt, ±5%, Carbon	1	Ⓢ

CAPACITORS

C2	ECEA1HS100	10μF, 50WV, Electrolytic	1	Ⓢ
C3	ECQS05182JZ	1800PF, 50WV, ±5%, Styrol	1	
C4	ECMS05181JH	180PF, 50WV, ±5%, Mica	1	
C5	ECMS05101JH	100PF, 50WV, ±5%, Mica	1	
C6	ECMS05820JH	82PF, 50WV, ±5%, Mica	1	
C7	ECMS05680JH	68PF, 50WV, ±5%, Mica	1	
C8	ECMS05560JH	56PF, 50WV, ±5%, Mica	1	
C9	ECMS05470JH	47PF, 50WV, ±5%, Mica	1	
C19	ECCD1H070DC	7PF, 50WV, ±0.5PF, Ceramic	1	
C20	ECCD1H120KC	12PF, 50WV, ±10%, Ceramic	1	
C21	ECCD1H330KC	33PF, 50WV, ±10%, Ceramic	1	
C23	ECCD1H560K	56PF, 50WV, ±10%, Ceramic	1	
C24	ECKD1H102MD	0.001μF, 50WV, ±20%, Ceramic	1	
C22	ECCD1H180KC	18PF, 50WV, ±10%, Ceramic	1	
C25	ECKD1H223PF	0.022μF, 50WV, ±10%, Ceramic	1	
C26	ECKD1H223PF	0.022μF, 50WV, ±10%, Ceramic	1	
C28	ECCD1H050CC	5PF, 50WV, ±0.25PF, Ceramic	1	
C29	ECCD1H390KC	39PF, 50WV, ±10%, Ceramic	1	
C30	ECCD1H330KC	33PF, 50WV, ±10%, Ceramic	1	
C31	ECCD1H390KC	39PF, 50WV, ±10%, Ceramic	1	
C32	ECCD1H560K	56PF, 50WV, ±10%, Ceramic	1	
C40	ECQS05182JZ	1800PF, 50PF, ±5%, Styrol	1	
C41	ECMS05181JH	180PF, 50WV, ±5%, Mica	1	
C42	ECMS05101JH	100PF, 50WV, ±5%, Mica	1	
C43	ECMS05680JH	68PF, 50WV, ±5%, Mica	1	
C44	ECMS05680JH	68PF, 50WV, ±5%, Mica	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C45	ECMS05560JH	56PF, 50WV, ±5%, Mica	1	
C46	ECMS05470JH	47PF, 50WV, ±5%, Mica	1	
C47	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C48	ECKD1H223PF	0.022μF, 50WV, ±10%, Ceramic	1	
C49	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C50	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C51	ECKD1H223PF	0.022μF, 50WV, ±10%, Ceramic	1	
C52	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C53	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C54	ECKD1H223PF	0.022μF, 50WV, ±10%, Ceramic	1	
C55	ECCD1H120KC	12PF, 50WV, ±10%, Ceramic	1	
C56	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C57	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C58	ECCD1H3R5C	3.5PF, 50WV, ±0.25PF, Ceramic	1	
C59	ECCD1H220KC	22PF, 50WV, ±10%, Ceramic	1	
C61	ECCD1H150KC	15PF, 50WV, ±10%, Ceramic	1	
C62	ECCD1H070DC	7PF, 50WV, ±0.5PF, Ceramic	1	
C63	ECCD1H040C	4PF, 50WV, ±0.25PF, Ceramic	1	
C64	ECMS05101JH	100PF, 50WV, ±5%, Mica	1	
C65	ECMS05680JH	68PF, 50WV, ±5%, Mica	1	
C66	ECMS05141JH	140PF, 50WV, ±5%, Ceramic	1	
C67	ECKD1H103PF	0.01μF, 50WV, ±10%, Ceramic	1	
C68	ECKD1H103PF	0.01μF, 50WV, ±10%, Ceramic	1	
C69	ECKD1H103PF	0.01μF, 50WV, ±10%, Ceramic	1	
C71	ECCD1H470KC	47PF, 50WV, ±10%, Ceramic	1	
C72	ECCD1H820K	82PF, 50WV, ±10%, Ceramic	1	
C73	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C74	ECCD1H330KC	33PF, 50WV, ±10%, Ceramic	1	
C75	ECKD1H103PF	0.01μF, 50WV, ±10%, Ceramic	1	
C76	ECMS05470JH	47PF, 50WV, ±5%, Ceramic	1	
C77	ECKD1H103PF	0.01μF, 50WV, ±10%, Ceramic	1	
C78	ECMS05101JH	100PF, 50WV, ±5%, Mica	1	
C79	ECKD1H103PF	0.01μF, 50WV, ±10%, Ceramic	1	
C80	ECKD1H223PF	0.022μF, 50WV, ±10%, Ceramic	1	
C81	ECCD1H330KC	33PF, 50WV, ±10%, Ceramic	1	
C82	ECCD1H330KC	33PF, 50WV, ±10%, Ceramic	1	
C83	ECMS05680JH	68PF, 50WV, ±5%, Mica	1	
C84	ECMS05121JH	120PF, 50WV, ±5%, Mica	1	
C85	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C86	ECCD1H180KC	18PF, 50WV, ±10%, Ceramic	1	
C87	ECCD1H390KC	39PF, 50WV, ±10%, Ceramic	1	
C91	ECCD1H2R5C	2.5PF, 50WV, ±0.25PF, Ceramic	1	
C92	ECCD1H150KC	15PF, 50WV, ±10%, Ceramic	1	
C93	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C94	ECCD1H120KC	0.01μF, 50WV, ±10%, Ceramic	1	
C95	ECCD1H220KC	22PF, 50WV, ±10%, Ceramic	1	
C96	ECKD1H103PF	0.01μF, 50WV, ±10%, Ceramic	1	
C97	ECEA1CS471	470μF, 16WV, Electrolytic	1	Ⓢ
C98	ECKD1H103PF	0.01μF, 50WV, ±10%, Ceramic	1	
C99	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C100	ECCD1H100KC	10PF, 50WV, ±10%, Ceramic	1	
C102	ECCD1H040C	4PF, 50WV, ±0.25PF, Ceramic	1	
C103	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C106	ECCD1H070DC	7PF, 50WV, ±0.5PF, Ceramic	1	
C107	ECKD1H103PF	0.01μF, 50WV, ±10%, Ceramic	1	
C109	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C111	ECMS05820JH	82PF, 50WV, ±5%, Mica	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C112	ECMS05181JH	180PF, 50WV, ±5%, Mica	1	
C113	ECKD1H222MD	0.0022μF, 50WV, ±20%, Ceramic	1	
C114	ECCD1H101K	100PF, 50WV, ±10%, Ceramic	1	
C115	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C116	ECCD1H470KC	47PF, 50WV, ±10%, Ceramic	1	
C117	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C118	ECCD1H030C	3PF, 50WV, ±0.25PF, Ceramic	1	
C119	ECCD1H050CC	5PF, 50WV, ±0.25PF, Ceramic	1	
C120	ECCD1H180KC	18PF, 50WV, ±10%, Ceramic	1	
C121	ECEA1AS101	100μF, 10WV, Electrolytic	1	Ⓢ
C122	ECKD1H223MD	0.022μF, 50WV, ±20%, Ceramic	1	
C123	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C125	ECCD1H040C	4PF, 50WV, ±0.25PF, Ceramic	1	
C126	ECCD1H100KC	10PF, 50WV, ±10%, Ceramic	1	
C127	ECCD1H100KC	10PF, 50WV, ±10%, Ceramic	1	
C128	ECCD1H220KC	22PF, 50WV, ±10%, Ceramic	1	
C129	ECCD1H070DC	7PF, 50WV, ±0.5PF, Ceramic	1	
C130	ECCD1H330KC	33PF, 50WV, −10%, Ceramic	1	
C131	ECCD1H100KC	10PF, 50WV, −10%, Ceramic	1	
C202	ECQS05221JZ	220PF, 50WV, ±5%, Styrol	1	
C203	ECQS05221JZ	220PF, 50WV, ±5%, Styrol	1	
C204	ECEA2AS010	1μF, 100WV, Electrolytic	1	Ⓢ
C205	ECKD1H103PF	0.01μF, 50WV, +100%, Ceramic	1	
C206	ECCD1H270KC	27PF, 50WV, ±10%, Ceramic	1	
C208	ECCD1H100KC	10PF, 50WV, ±10%, Ceramic	1	
C209	ECCD1H020C	2PF, 50WV, ±0.25PF, Ceramic	1	
C210	ECKD1H102PF	0.001μF, 50WV, +100%, Ceramic	1	
C211	ECKD1H102PF	0.001μF, 50WV, +100%, Ceramic	1	
C212	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C213	ECQS05122JZ	1200PF, 50WV, ±5%, Styrol	1	
C215	ECMS05181JH	180PF, 50WV, ±5%, Mica	1	
C220	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C223	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C224	ECCD1H120KW	12PF, 50WV, ±10%, Ceramic	1	
C225	ECMS05131JH	130PF, 50WV, ±5%, Mica	1	
C226	ECQS05392KZ	3900PF, 50WV, ±10%, Styrol	1	
C228	ECCD1H180KC	18PF, 50WV, ±10%, Ceramic	1	
C230	ECCD1H390KC	39PF, 50WV, ±10%, Ceramic	1	
C231	ECCD1H030C	3PF, 50WV, ±0.25PF, Ceramic	1	
C232	ECKD1H102MD	0.001μF, 50WV, +20%, Ceramic	1	
C233	ECCD1H020C	2PF, 50WV, ±0.25PF, Ceramic	1	
C234	ECCD1H050CC	5PF, 50WV, ±0.25PF, Ceramic	1	
C235	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C236	ECEA50ZR1	0.1μF, 50WV, Electrolytic	1	Ⓢ
C237	ECEA1AS101	100μF, 10WV, Electrolytic	1	Ⓢ
C238	ECCD1H070DC	7PF, 50WV, ±0.5PF, Ceramic	1	
C239	ECKD1H103PF	0.01μF, 50WV, +100%, Ceramic	1	
C240	ECQS05751JZ	750PF, 50WV, ±5%, Styrol	1	
C241	ECFVD223MD	0.022μF, 25WV, ±20%, Semi-Conductor	1	
C242	ECCD1H050CC	5PF, 50WV, ±0.25PF, Ceramic	1	
C243	ECKD1H102PF	0.01μF, 50WV, +100%, Ceramic	1	
C244	ECKD1H103PF	0.01μF, 50WV, +100%, Ceramic	1	
C245	ECEA2AS010	1μF, 100WV, Electrolytic	1	Ⓢ
C246	ECKD1H103MD	0.01μF, 50WV, +20%, Ceramic	1	
C247	ECKD1H103PF	0.01μF, 50WV, +100%, Ceramic	1	
C248	ECFVD223MD	0.022μF, 25WV, ±20%, Semi-Conductor	1	
C249	ECKD1H103PF	0.01μF, 50WV, +100%, Ceramic	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C250	ECFVD223MD	0.022μF, 25WV, −20%, Semi-Conductor	1	
C251	ECCD1H270KC	27PF, 50WV, ±10%, Ceramic	1	
C252	ECKD1H103PF	0.01μF, 50WV, +100%, Ceramic	1	
C253	ECEA1HS100	10μF, 50WV, Electrolytic	1	Ⓢ
C254	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C255	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C256	ECKD1H103PF	0.01μF, 50WV, +100%, Ceramic	1	
C257	ECFVD223MD	0.022μF, 25WV, ±20%, Semi-Conductor	1	
C258	ECEA1AS470	47μF, 10WV, Electrolytic	1	Ⓢ
C259	ECCD1H100KC	10PF, 50WV, ±10%, Ceramic	1	
C260	ECEA1JS4R7	4.7μF, 63WV, Electrolytic	1	Ⓢ
C261	ECCD1H390KC	39PF, 50WV, ±10%, Ceramic	1	
C262	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C263	ECEA1CS330	33PF, 16WV, Electrolytic	1	Ⓢ
C264	ECQS05471JZ	470PF, 50WV, ±5%, Styrol	1	
C265	ECCD1H470KC	47PF, 50WV, ±10%, Ceramic	1	
C266	ECCD1H120KC	12PF, 50WV, ±10%, Ceramic	1	
C267	ECEA1HS100	10μF, 50WV, Electrolytic	1	Ⓢ
C268	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C269	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C270	ECKD1H472MD	0.0047μF, 50WV, ±20%, Ceramic	1	
C271	ECKD1H103PF	0.01μF, 50WV, +100%, Ceramic	1	
C272	ECFVD103MD	0.01μF, 25WV, ±20%, Semi-Conductor	1	
C273	ECMS05121JH	120PF, 50WV, ±5%, Mica	1	
C274	ECMS05161JH	160PF, 50WV, ±5%, Mica	1	
C275	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C276	ECEA1AS101	100μF, 10WV, Electrolytic	1	Ⓢ
C277	ECKD1H682MD	0.0068μF, 50WV, ±20%, Ceramic	1	
C278	ECFVD223MD	0.022μF, 25WV, −20%, Semi-Conductor	1	
C279	ECKD1H103MD	0.01μF, 50WV, −20%, Ceramic	1	
C280	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C281	ECEA1JS4R7	4.7μF, 63WV, Electrolytic	1	Ⓢ
C282	ECCD1H180KC	18PF, 50WV, −10%, Ceramic	1	
C283	ECFVD333MD	0.033μF, 25WV, ±20%, Semi-Conductor	1	
C284	ECKD1H682MD	0.0068μF, 50WV, −20%, Ceramic	1	
C285	ECEA1JS4R7	4.7μF, 63WV, Electrolytic	1	Ⓢ
C286	ECFVD223MD	0.022μF, 25WV, ±20%, Semi-Conductor	1	
C287	ECCD1H470KC	47PF, 50WV, ±10%, Ceramic	1	
C288	ECKD1H103PF	0.01μF, 50WV, +100%, Ceramic	1	
C289	ECEA1AS101	100μF, 10WV, Electrolytic	1	Ⓢ
C290	ECCD1H270KC	27PF, 50WV, ±10%, Ceramic	1	
C291	ECEA2AS2R2	2.2μF, 100WV, Electrolytic	1	Ⓢ
C292	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C293	ECCD1H330KC	33PF, 50WV, ±10%, Ceramic	1	
C294	ECKD1H223PF	0.022μF, 50WV, +100%, Ceramic	1	
C295	ECKD1H102MD	0.001μF, 50WV, ±20%, Ceramic	1	
C296	ECKD1H103MD	0.01μF, 50WV, ±20%, Ceramic	1	
C297	ECCD1H331K	330PF, 50WV, ±10%, Ceramic	1	
C301	ECEA50ZR1	0.1μF, 50WV, Electrolytic	1	Ⓢ
C302	ECEA1HS100	10μF, 50WV, Electrolytic	1	Ⓢ
C303	ECCD1H331K	330PF, 50WV, ±10%, Ceramic	1	
C304	ECEA2AS010	1μF, 100WV, Electrolytic	1	Ⓢ
C305	ECFVD223MD	0.022μF, 25WV, +20%, Semi-Conductor	1	
C306	ECKD1H332MD	0.0033μF, 50WV, ±20%, Ceramic	1	
C307	ECEA50ZR22	0.22μF, 50WV, Electrolytic	1	Ⓢ
C308	ECEA1AS101	100μF, 10WV, Electrolytic	1	Ⓢ
C309	ECKD1H682MD	0.0068μF, 50WV, +20%, Ceramic	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C310	ECEA50ZR22	0.22μF, 50WV, Electrolytic	1	Ⓢ
C311	ECEA50ZR22	0.22μF, 50WV, Electrolytic	1	Ⓢ
C312	ECEA1JS4R7	4.7μF, 63WV, Electrolytic	1	Ⓢ
C313	ECFVD103MD	0.01μF, 25WV, ±20%, Semi-Conductor	1	
C314	ECEA1AS221	220μF, 10WV, Electrolytic	1	Ⓢ
C315	ECEA1HS100	10μF, 50WV, Electrolytic	1	Ⓢ
C316	ECET16R682SW	6800μF, 16WV, Electrolytic	1	
C317	ECCD1H220KC	22PF, 50WV, ±10%, Ceramic	1	
C319	ECFVD104MD	0.1μF, 25WV, +20%, Semi-Conductor	1	
C320	ECKD1H103PF	0.01μF, 50WV, +100-0%, Ceramic	1	
C321	ECKD1H103PF	0.01μF, 50WV, +100-0%, Ceramic	1	
C322	ECEA1CS330	33μF, 16WV, Electrolytic	1	Ⓢ
C323	ECEA1AS470	47μF, 10WV, Electrolytic	1	Ⓢ
C324	ECKD1H102MD	0.001μF, 50WV, ±20%, Ceramic	1	
C325	ECEA1CS471	470μF, 16WV, Electrolytic	1	Ⓢ
C326	ECEA2AS010	1μF, 100WV, Electrolytic	1	Ⓢ
C327	ECEA1HS100	10μF, 50WV, Electrolytic	1	Ⓢ
C328	ECKD1H332MD	0.0033μF, 50WV, ±20%, Ceramic	1	
C329	ECEA1HS100	10μF, 50WV, Electrolytic	1	Ⓢ
C331	ECCD1H221K	220PF, 50WV, ±10%, Ceramic	1	
C332	ECFVD683MD	0.068μF, 25WV, +20%, Semi-Conductor	1	
C333	ECKD1H103MD	0.01μF, 50WV, +20%, Ceramic	1	
C334	ECCD1H070DC	7PF, 50WV, ±0.5PF, Ceramic	1	
C502	ECCD1H010C	1PF, 50WV, ±0.25PF, Ceramic	1	
C507	ECCD1H100KC	10PF, 50WV, ±10%, Ceramic	1	
C508	ECCD1H101K	100PF, 50WV, ±10%, Ceramic	1	
C509	ECCD1H101K	100PF, 50WV, ±10%, Ceramic	1	
C701	ECKD1H103ZF	0.01μF, 50WV, +80-20%, Ceramic	1	
C702	ECKD1H103ZF	0.01μF, 50WV, +80-20%, Ceramic	1	
C704	ECKD1H103ZF	0.01μF, 50WV, +80-20%, Ceramic	1	
C705	ECKD1H102MD	0.001μF, 50WV, ±20%, Ceramic	1	
C706	ECKD1H102MD	0.001μF, 50WV, ±20%, Ceramic	1	
C901	ECUX1H330KC	33PF, 50WV, ±10%, Chip	1	
C902	ECUX1H101KD	100PF, 50WV, ±10%, Chip	1	
C903	ECUX1H102ZF	0.01μF, 50WV, +80-20%, Chip	1	
C904	ECUX1H223ZF	0.022μF, 50WV, +80-20%, Chip	1	
C905	ECEA2AS2R2	2.2μF, 100WV, Electrolytic	1	Ⓢ
C906	ECUX1H680KC	68PF, 50WV, ±10%, Chip	1	
C907	ECEA0JS102	1000μF, 6.3WV, Electrolytic	1	Ⓢ
C908	ECUX1H223ZF	0.022μF, 50WV, +80-20%, Chip	1	
C910	ECEA0JS471	470μF, 6.3WV, Electrolytic	1	Ⓢ
C911	ECEA2AS3R3	3.3μF, 100WV, Electrolytic	1	Ⓢ
C912	ECUX1H223MD	0.022μF, 50WV, ±20%, Chip	1	
C913	ECUX1H333ZF	0.033μF, 50WV, +80-20%, Chip	1	
C914	ECUX1H223ZF	0.022μF, 50WV, +80-20%, Chip	1	
C915	ECUX1H223MD	0.022μF, 50WV, ±20%, Chip	1	
C916	ECEA0JS471	470μF, 6.3WV, Electrolytic	1	Ⓢ
C917	ECEA1VS330	33μF, 35WV, Electrolytic	1	Ⓢ
C918	ECUX1H223MD	0.022μF, 50WV, ±20%, Chip	1	
C919	ECCD1H101K	100PF, 50WV, −10%, Ceramic	1	
C920	ECQS05271JZ	270PF, 50WV, −5%, Styrol	1	
C921	ECQS05271JZ	270μF, 50WV, ±5%, Styrol	1	
C922	ECUX1H680KC	68PF, 50WV, ±10%, Chip	1	
C923	ECUX1H223MD	0.022μF, 50WV, ±20%, Chip	1	
C924	ECUX1H223MD	0.022μF, 50WV, ±20%, Chip	1	
C925	ECEA2AS4R7	4.7μF, 100WV, Electrolytic	1	Ⓢ
C927	ECEA1AS470	47μF, 10WV, Electrolytic	1	Ⓢ

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C930	ECEA1HS100	10μF, 50WV, Electrolytic	1	Ⓢ
C931	ECFVD223MD	0.022μF, 25WV, ±20%, Semi-Conductor	1	
C932	ECKD1H470KB	47PF, 50WV, ±10%, Ceramic	1	
C933	ECKD1H470KB	47PF, 50WV, ±10%, Ceramic	1	
C934	ECKD1H470KB	47PF, 50WV, ±10%, Ceramic	1	
C935	ECFVD104MD	0.1μF, 25WV, +20%, Semi-Conductor	1	
C936	ECUX1H820KC	82PF, 50WV, ±10%, Chip	1	
C937	ECCD1H331K	330PF, 50WV, ±10%, Ceramic	1	

CABINET

K1	RYPF4900M	Front Panel Assembly	1	○
K2	RYEF4900M	Indicating Plate Assembly	1	○
	RWBJX4800N	Battery Case Assembly	1	
	RJC505Z	Terminal Spring, Battery ⊖ Side	4	
	RJT398A	Connecting Pipe, Terminal Spring	4	
	RJC111A	Terminal Spring, Battery Spring	4	
K3	RYTF4900LBSX	Knob Assembly, SW2~8 Tuning	1	○
K4	RYT2JX4800N	Knob Assembly, SW1/MW/FM Tuning	1	
K5	RKF367Z	Cabinet Cover	1	
K6	RKH5076Y	Handle, Cabinet	2	○
K7	RKX125Z	Cover, Handle	4	
	RHG886Y	Rubber Cushion, Speaker	1	○
K8	RBS1G3ZK	Knob, Band Selector	2	
K9	RBE15Y	Knob, Power	1	
K10	RBN381Z	Knob, Volume, Bass; Treble, BFO Pitch, Ant. Trim & AM RF Gain	6	
K11	RKU267T	Rear Panel	1	○
K12	RGT663X	Name Plate	1	○
K13	RHG309C	Rubber Leg (Large), Cabinet	2	
K14	RHG325Z	Rubber Leg (Small), Cabinet	2	
K15	RKK92Z	Cover, Battery Compartment	2	
K16	RJF1065Z	Terminal, EXT. ANT.	6	
K17	RJF2002Z	Terminal Board, EXT. ANT.	3	
K18	RJS258Y	Socket, SW ANT.	1	
K19	SMA205	Holder, Core Antenna	1	
K20	SMA207	Holder, Core Antenna	1	
	RBE4Y	Knob, SW2~8 Cal.	1	
	RHE5005A-8	Screw, Knob M'tg	1	
K21	XSB3+8BVS	Screw, Cabinet Cover M'tg	15	
K22	XSN3+8S	Screw, Cabinet Cover M'tg	8	
K23	XYN4+C16S	Screw, Handle M'tg	4	

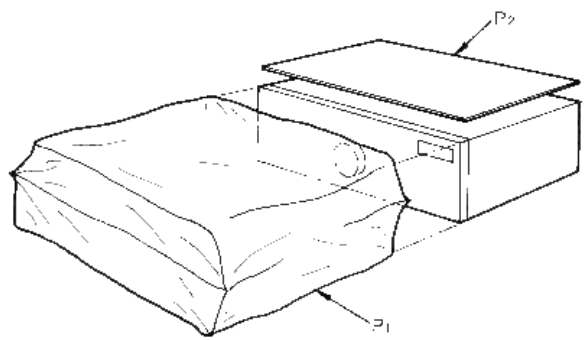
CHASSIS

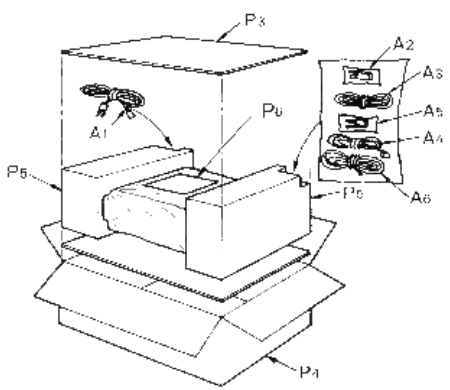
E1	RAD5-BT-11	Display	1	○
E2	RSG9ZS	Dial Mechanism Assembly	1	
E3	ESRK307F35A	Shaft, Switch (SW2~8)	1	
E4	RMC171Y	Shield Plate, IC1	1	
E5	RHE37Z	Joint, Tuning Capacitor, Switch Shaft	2	
E6	XSN3+6S	Screw, Joint M'tg	8	

Ref. No	Part No.	Part Name & Description	Per Set	Remarks
E7	RJJ87Y	Jack,Rec.Out & EXT EP.SP	2	
E8	RJJ82Z	Jack,Aux	1	
E9	RJJ122Z	Jack,AC IN	1	
E10	**RJJ104Z**	**Jack,DC IN**	1	
E11	**XAMR48S100A**	**Pilot Lamp,12V,40mA**	2	
E12	XAMR48S250A	Pilot Lamp,12V,40mA	1	
E13	RDT9091Z	Shaft,Tuning	1	
E14	RUM39Z	Bracket,Dial Scale	2	
E15	RUM40Y	Bracket,Dial Scale	2	
E16	RDR20-3	Pulley(Small),Dial	7	
E17	RDR23-1	Pulley(Large),Dial	4	
E18	RNW150-2	Washer,Pulley	11	
E19	RDP803ZK	Shaft,SW2~8 Switch	1	
E20	RSM2622Z	Meter,Tune/Battery	1	
E21	ESA23407	Shaft,Switch	1	
E22	ESA20813B	Wire,Switch	1	
E23	RKD458U	Scale,SW2~8	1	
E24	RKD455X	Scale,SW1/MW/FM	1	
E25	RDP170Z	Pointer,Dial	2	
E26	RDD4012Z	Drum,Dial(SW1/MW/FM)	1	
E27	RDD441Z	Drum,Dial(SW2~8)	1	
E28	RDZ05Z	Cord,Dial	1Rol	
E29	RDS4060A	Spring,Drum(RDD4012Z)	1	Ⓢ
E30	RDS3090A	Spring,Drum(RDD441Z)	1	Ⓢ
E31	RBE17Z	Knob,Switch	6	
E32	RJP171Z	Plug(8P),CP3	1	
E33	RJP137Z	Plug(3P),CP1,2,6,8,10,14,16,17	8	
E34	RJP116Z	Plug(5P),CP5,9,901	3	
E35	RJP119Z	Plug(7P),CP11	1	
E36	RJP142Z	Plug(6P),CP12	1	
E37	RJP107Z	Plug(4P),CP13,15,TM901,902	4	
E38	RJS217Y-X	Socket(5P),CP5,9,901	3	
E39	RJS253Y-X	Socket(3P),CP1,2,6,8,10,14,16,17	8	
E40	RJS216Y-X	Socket(4P),CP13,15,19	3	
E41	RJS112Y-X	Socket(6P),CP12	1	
E42	RJS219Y-X	Socket(7P),CP11	1	
E43	RJS264Y-X	Socket(8P),CP3	1	
	RJT462Z-X	Terminal,Socket	69	
E44	**RUV482Z**	**Cover,AC IN Jack**	1	
E45	XNS9FZ	Nut,SW Switch Shaft & Ant.Trim M'tg	2	
E46	XNS8	Nut,Volume,Bass,Treble & etc.M'tg	7	
E47	RJS55A	Terminal,MW/SW1,SW2~8 EXT.Ant	2	
E48	RJS56A	Terminal,FM EXT.Ant.	1	
		ACCESSORIES		
A1	**RJA22Y**	**Power Cord,AC**	1	Ⓢ
A2	RJP97Z	Plug,SW2~8 Antenna	1	
A3	RSA205Z	FM Antenna	1	
A4	XEH1A1-P	Magnetic Earphone	1	Ⓢ
A5	RJP169Z	Plug,Headphone	1	
A6	WRL01000bb	Lead Wire,Antenna	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		PACKING MATERIALS		
P1	XZB70×55A04	Polyethylene Cover	1	
P2	RPN2525Z	Pad	1	
P3	RPN1758Z	Pad	2	
P4	RPG1995Z	Packing Case,for USA	1	
P4	RPG1995Y	Packing Case,for Canada	1	
P5	RPN9237Z	Pad Complete	1	
P6	RQX8350Z	Instruction Book,for USA	1	
P6	RQX6368Z	Instruction Book,for Canada	1	
P6	RQX9154Z	SW Manual,for USA	1	○
P6	RQX9158Z	SW Manual,for Canada	1	○

PACKING MATERIALS & ACCESSORYS





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