

# ICF-22/22L

## SERVICE MANUAL



Photo: ICF-22L

ICF-22:  
*Canadian Model*  
*AEP Model*  
*E Model*  
*AUS Model*  
*SAF Model*

ICF-22L:  
*AEP Model*  
*UK Model*

Model ICF-22/22L are almost the same as ICF-25/25L. The difference between ICF-22/22L and ICF-25/25L is given in this manual. Refer to the ICF-25/25L service manual about the other information.

### PARTS LIST (ICF-22)

GENERAL SECTION		
No.	Part No.	Description
15	3-892-814-31	(BLACK).....KNOB, TUNING
	3-892-814-41	(DARK SILVER)...KNOB, TUNING
	3-892-814-51	(PEARL WHITE)...KNOB, TUNING
19	3-892-855-01	KNOB, VOLUME
21	3-893-129-01	(BLACK).....NET, SPEAKER
	3-893-129-11	(DARK SILVER)...NET, SPEAKER
	3-893-129-21	(PEARL WHITE)...NET, SPEAKER
23	3-893-104-11	PLATE, BACK, DIAL
42	X-3893-115-1	(BLACK).....KNOB ASSY, BAND
	X-3893-115-2	(DARK SILVER)...KNOB ASSY, BAND
	X-3893-115-3	(PEARL WHITE)...KNOB ASSY, BAND
44	X-3893-120-1	(BLACK).....CABINET ASSY, FRONT
	X-3893-120-2	(DARK SILVER)...CABINET ASSY, FRONT
	X-3893-120-3	(PEARL WHITE)...CABINET ASSY, FRONT
ACCESSORY & PACKING MATERIAL		
No.	Part No.	Description
72	3-703-910-01	(BLACK).....LABEL, COLOR
	3-703-921-01	(DARK SILVER)...LABEL, COLOR
	3-703-923-01	(PEARL WHITE)...LABEL, COLOR
75	3-893-135-01	(Canadian,AEP,AUS,SAF,Saudi Arabia) ...INDIVIDUAL CARTON
	3-893-136-01	(E).....INDIVIDUAL CARTON
78	3-990-069-11	MANUAL, INSTRUCTION
81	3-990-069-41	(AEP)...MANUAL, INSTRUCTION
	3-764-464-01	(AEP)...INSTRUCTION
82	*3-893-330-11	(SAF)...PLATE, SHIELD

ELECTRICAL PARTS		
Ref.No.	Part No.	Description
501	1-501-222-31	ANTENNA, TELESCOPIC
503	A-3660-502-A	(AEP)...PC BOARD ASSY, MAIN
	A-3660-503-A	(Canadian,E,AUS,Saudi Arabia) ...PC BOARD ASSY, MAIN
	A-3660-545-A	(SAF).....PC BOARD ASSY, MAIN
C4	1-102-672-00	(Canadian,E,AUS,Saudi Arabia) ...CERAMIC 24PF 5% 50V
	1-102-883-00	(AEP).....CERAMIC 27PF 5% 50V
L1	1-102-714-11	(SAF).....CERAMIC 10PF 50V
	*1-401-495-11	(Canadian,AEP,E,AUS,Saudi Arabia) ...LOADING ANTENNA COIL
L4	*1-422-184-11	(Canadian,E,AUS,SAF,Saudi Arabia) ...COIL, AIR-CORE
	1-422-131-00	(Canadian,E,AUS,Saudi Arabia) ...COIL, FM OSC
L5	1-422-127-11	(SAF).....COIL, FM OSC
	1-247-843-11	(SAF)...CARBON 3.3K 5% 1/6W
R1	1-247-719-11	(Canadian,E,AEP,AUS,Saudi Arabia) ...CARBON 3.3K 5% 1/4W
	1-247-719-11	(Canadian,E,AEP,AUS,Saudi Arabia) ...CARBON 3.3K 5% 1/4W
SP	1-503-684-11	SPEAKER

— Continued on page 2 —

**ICF-22: FM/MW/SW 3BAND RECEIVER**  
**ICF-22L: FM/MW/LW 3BAND RECEIVER**

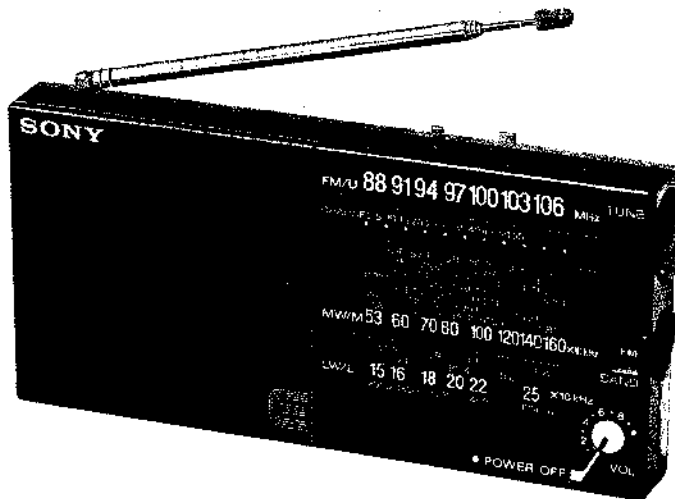
# SONY®



SONY-01061

ICF-25L

## SERVICE MANUAL

UK Model  
AEP Model


## SPECIFICATIONS

Frequency range	FM: 87.6–107 MHz (for European countries) 87.6–108 MHz (for the United Kingdom) MW: 530–1,605 kHz (566–187 m) LW: 150–255 kHz (2,000–1,176 m)
Antennas	FM: Telescopic antenna MW/LW: Built-in ferrite bar antenna
Speaker	Approx. 7.7 cm (3 inches) dia.
Power output	200 mW (at 10 % harmonic distortion)
Output	Earphone jack (minijack)
Power requirements	4.5 V dc, three batteries, IEC designation R6 (size AA) DC IN 4.5 V jack accepts:
Battery life	Approx. 35 hours with Sony SUM-3(NS) New Super batteries
Dimensions	Approx. 194 x 92 x 34 mm (w/h/d) (7 $\frac{3}{4}$ x 3 $\frac{5}{8}$ x 1 $\frac{3}{8}$ inches) including projecting parts and controls with the carrying handle pushed in
Weight	Approx. 460 g (1 lb 1 oz), including batteries

## FEATURES

- High selectivity and high sensitivity with one chip IC (Integrated Circuit).
- Fast tuning to key stations marked on the MW and LW dial scales for the ICF-25L.
- Two different power sources: batteries and house current.

## SAFETY-RELATED COMPONENT WARNING!!

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

FM/MW/LW  
3 BAND RECEIVER  
**SONY**®

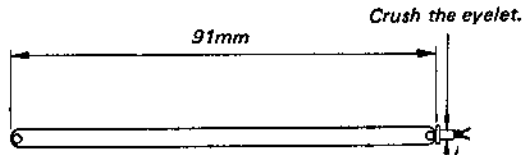


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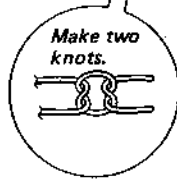
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**DIAL CORD STRINGING**

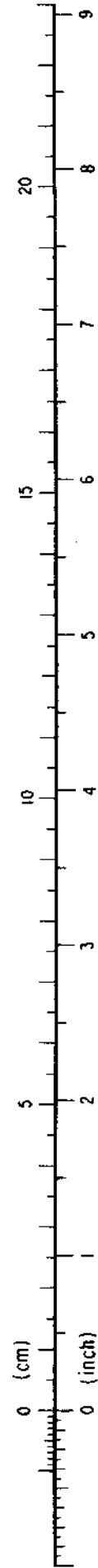
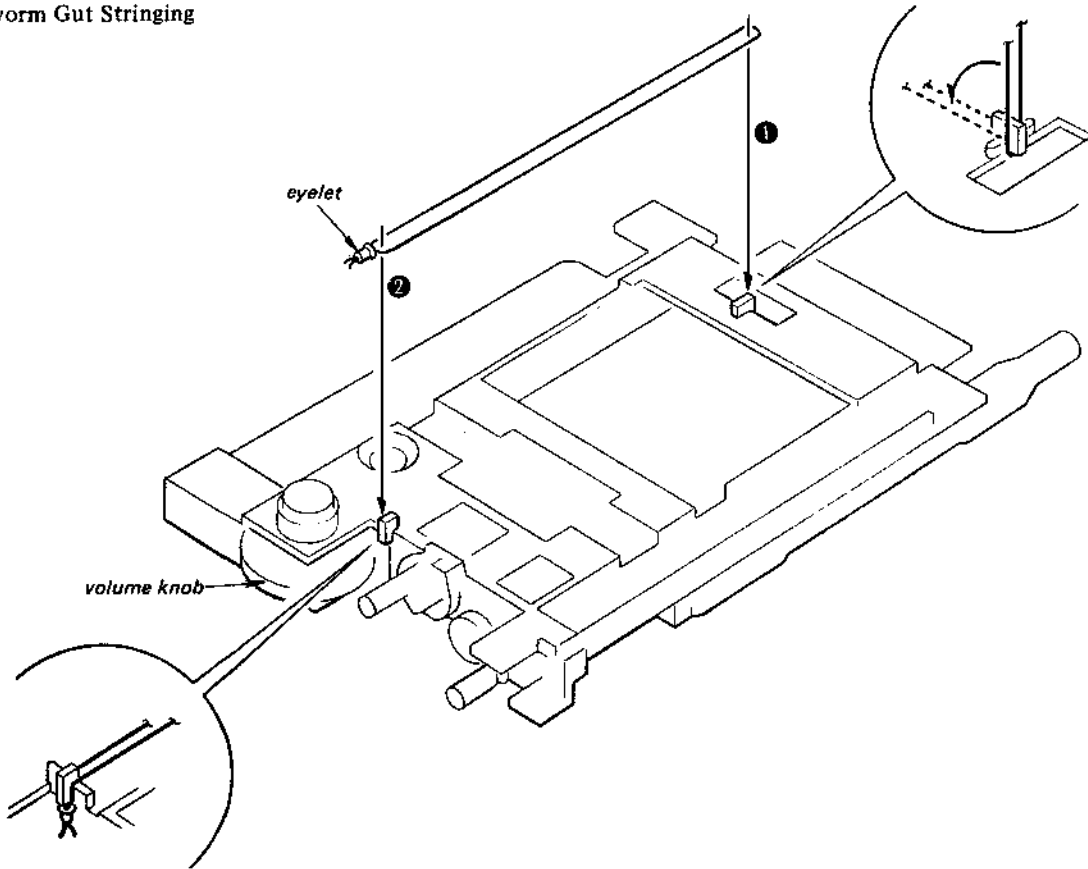
**1) Silkworm Gut Preparation**

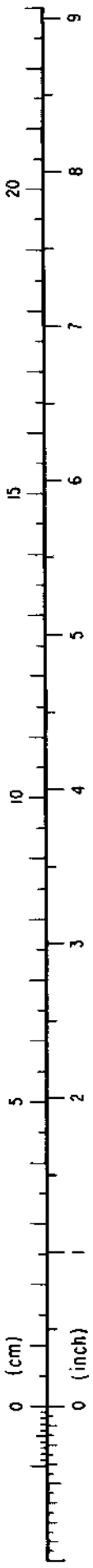


Note: Silkworm gut is not supplied as replacement part. Substitute a string for fishing line.

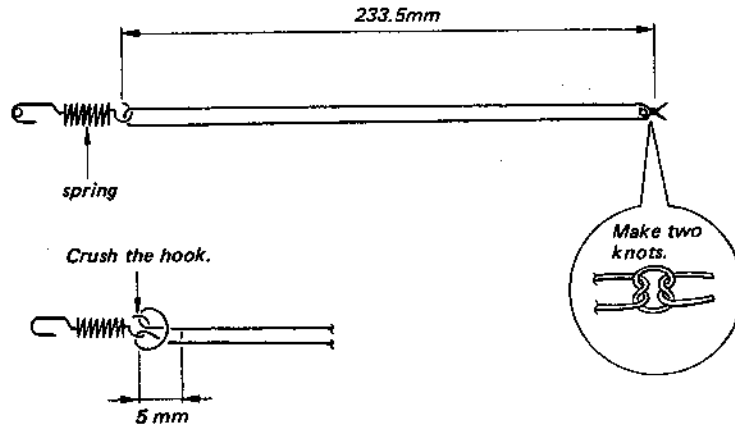


**2) Silkworm Gut Stringing**

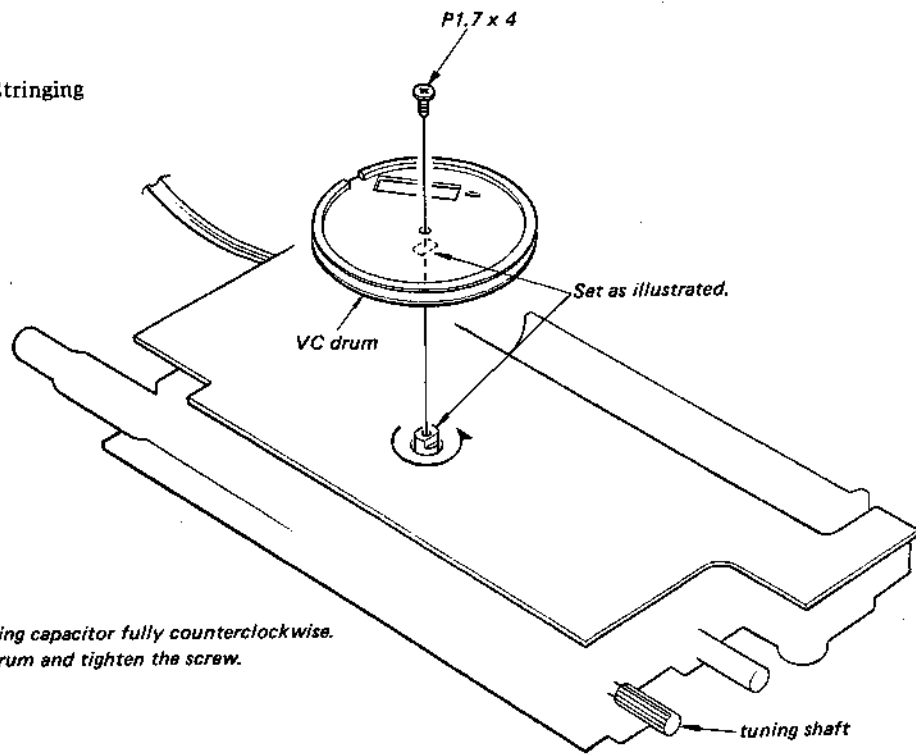




3) Dial Cord Preparation

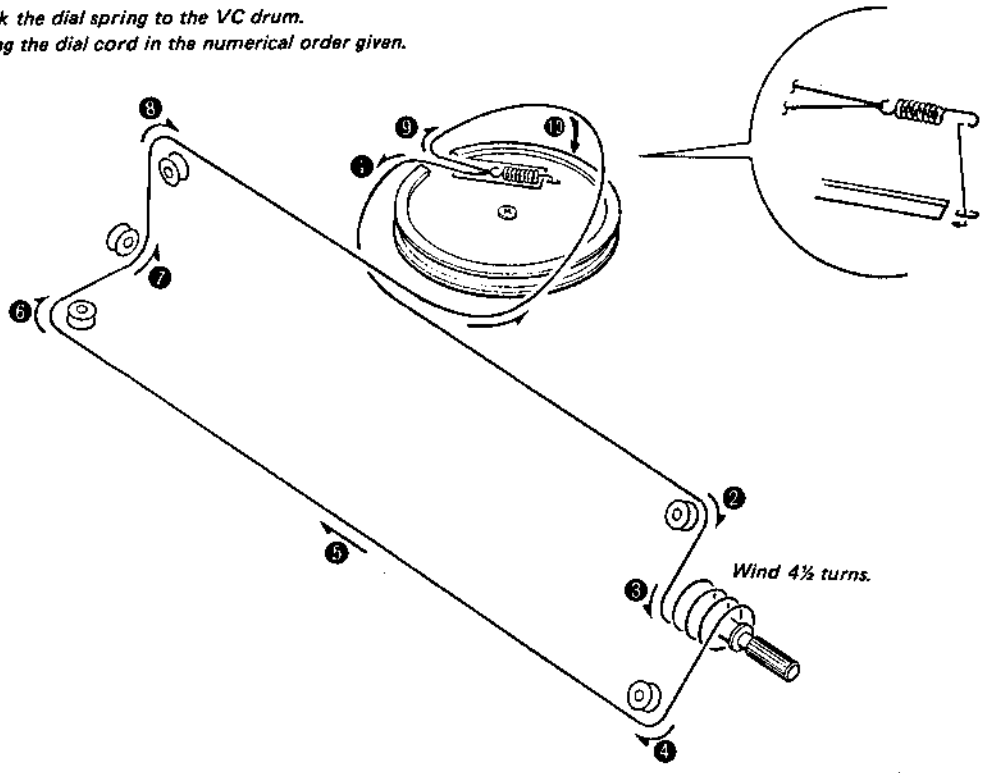


4) Dial Cord Stringing



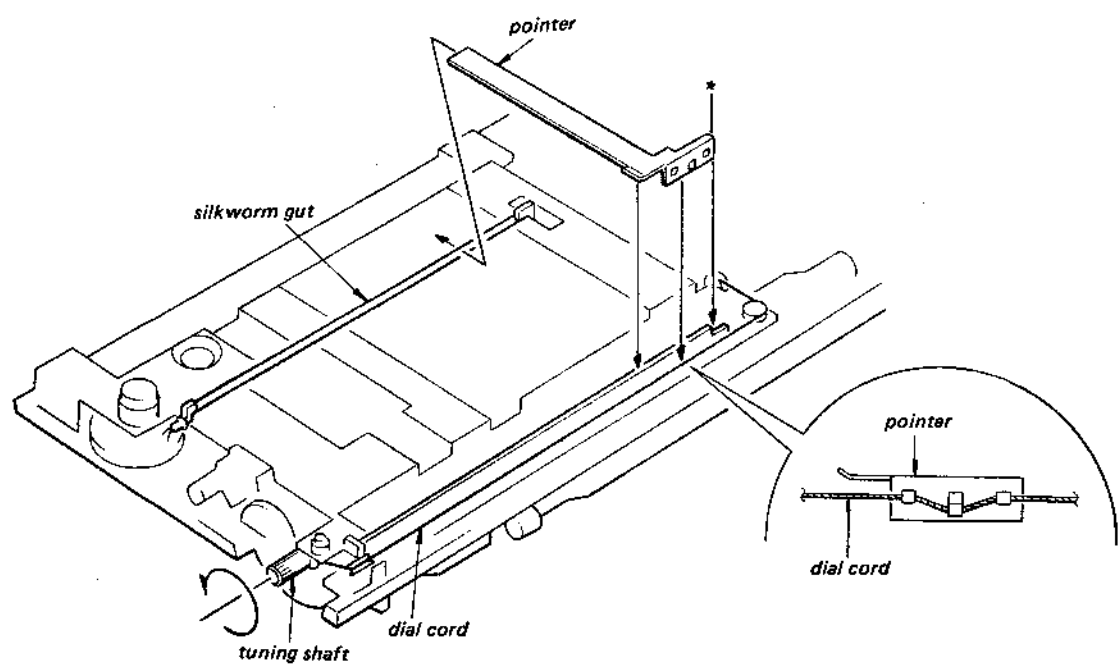
1. Turn the tuning capacitor fully counterclockwise.
2. Set the VC drum and tighten the screw.

- 3. Hook the dial spring to the VC drum.
- 4. String the dial cord in the numerical order given.



**5) Pointer Installation**

- 1. Turn the tuning shaft fully counterclockwise.
- 2. Install the pointer to the dial cord after setting side \* of the pointer to end of the chassis each other.

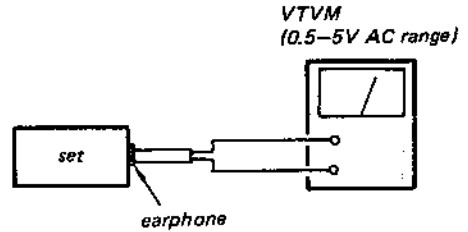
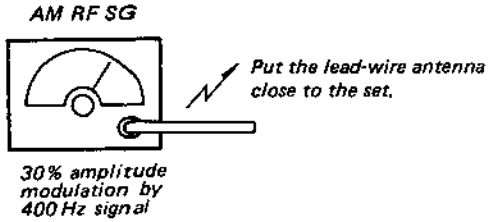


**SECTION 2  
ADJUSTMENTS**

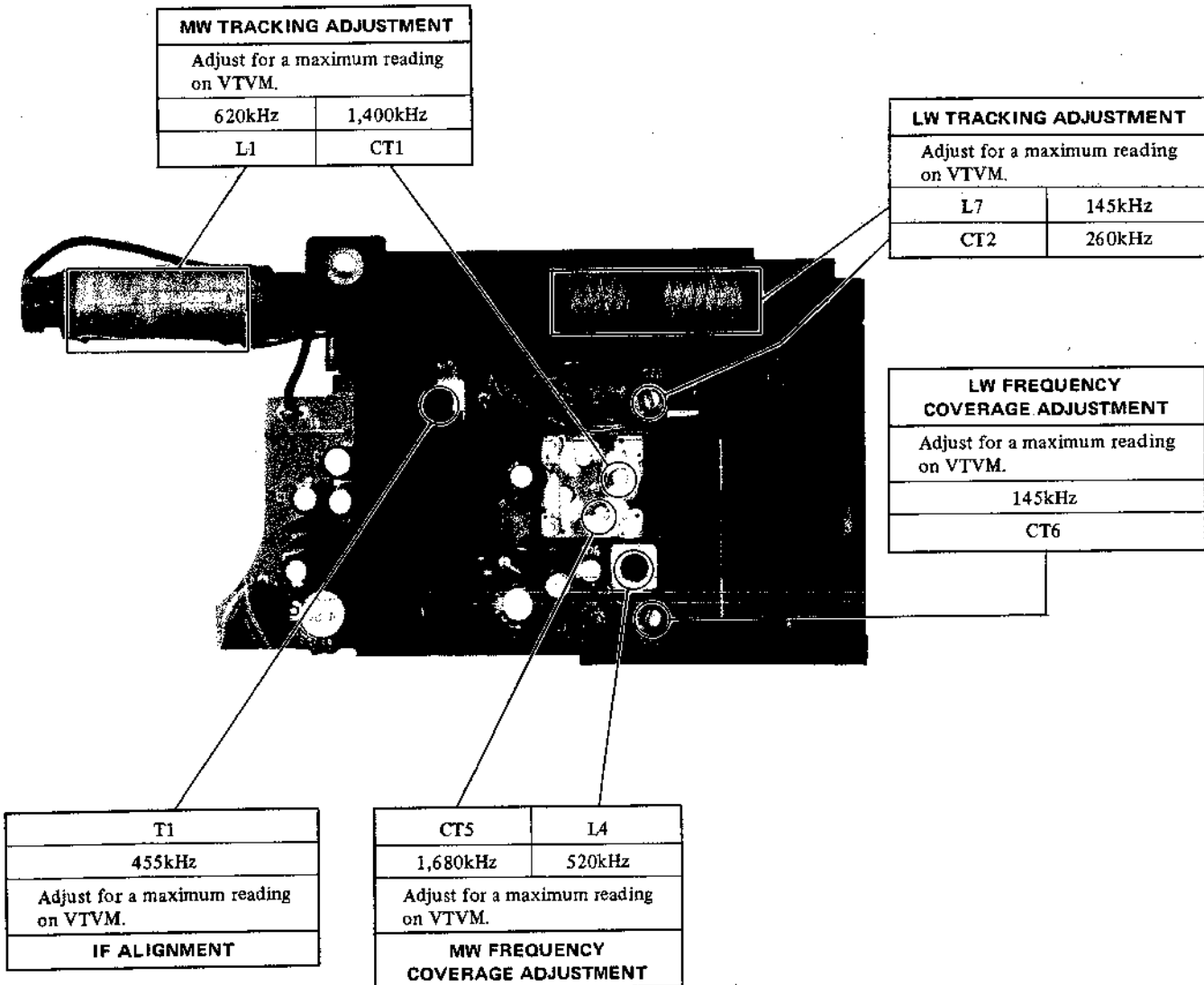
**2-1. AM SECTION**

– MW/LW –

- Perform the adjustment in the order of MW and LW.



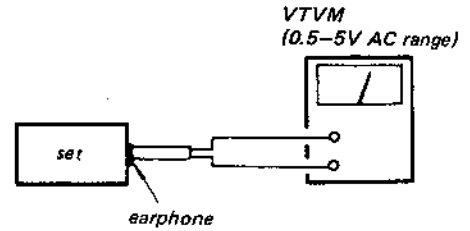
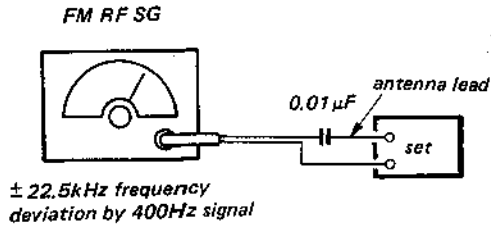
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.



# ICF-25L

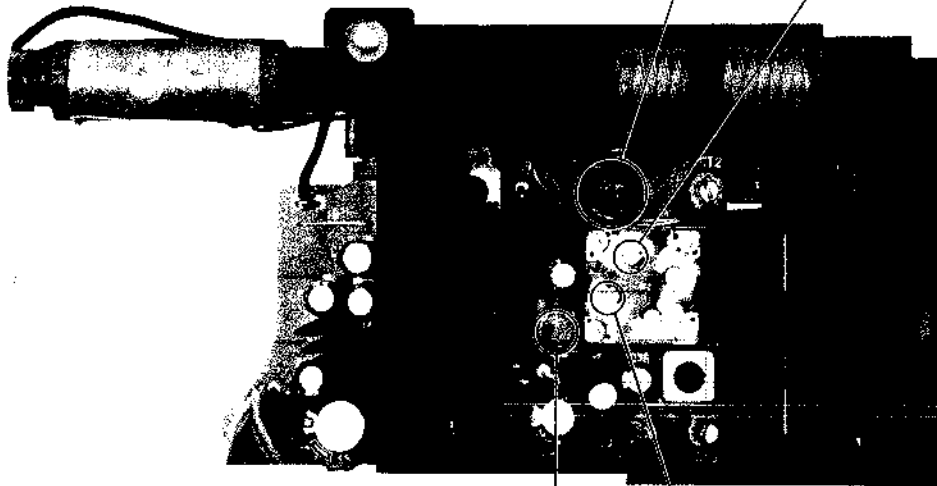
## 2-2. FM SECTION

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



FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
86.5MHz (87.35MHz)	109.5MHz (108MHz)
L2	CT3

( ) : AEP model



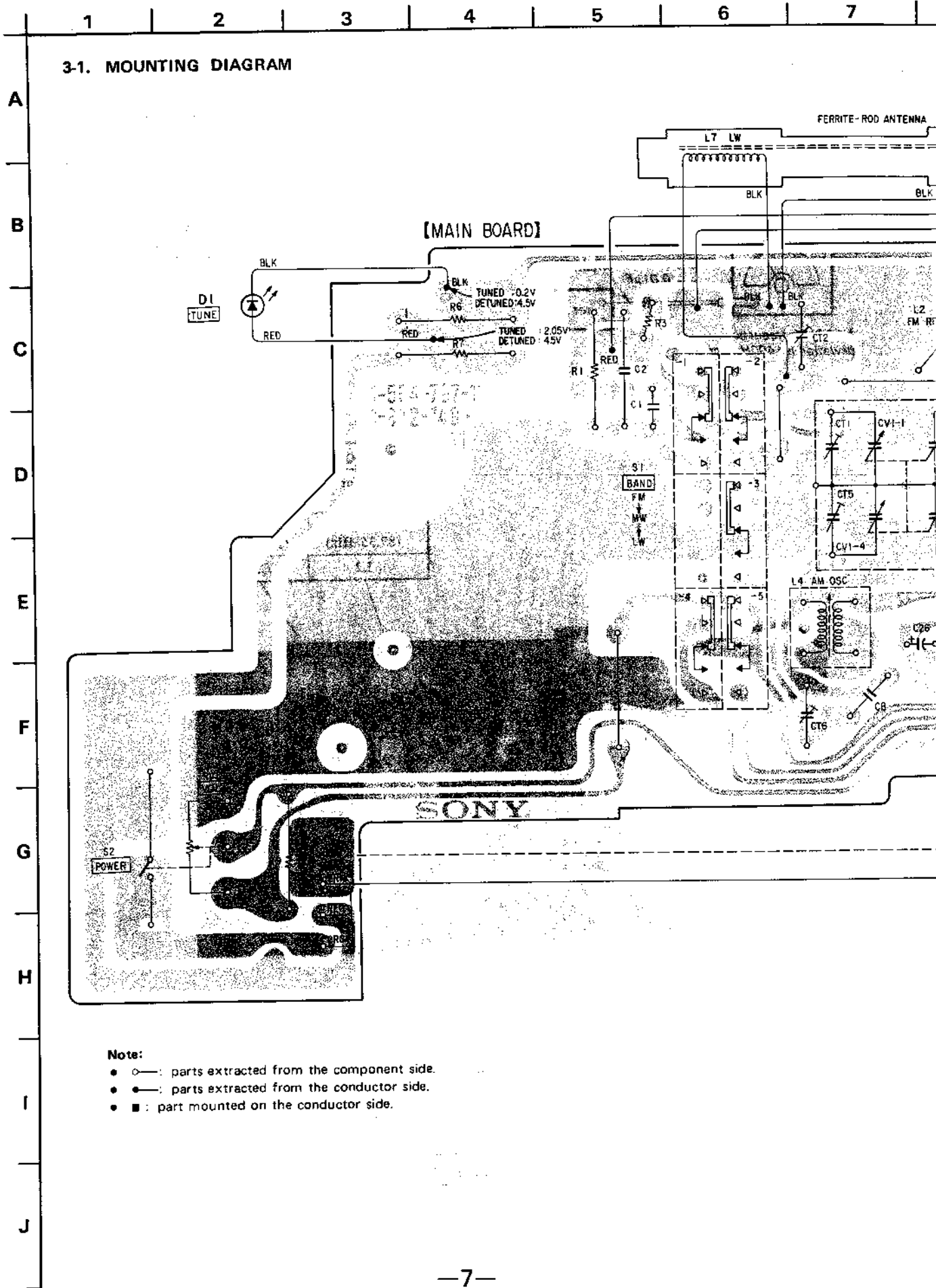
L3	CT4
86.5MHz (87.35MHz)	109.5MHz (108MHz)
Adjust for a maximum reading on VTVM.	
FM FREQUENCY COVERAGE ADJUSTMENT	

( ) : AEP model

# SECTION 3 DIAGRAMS

ICF-25

## 3-1. MOUNTING DIAGRAM





# ICF-25L

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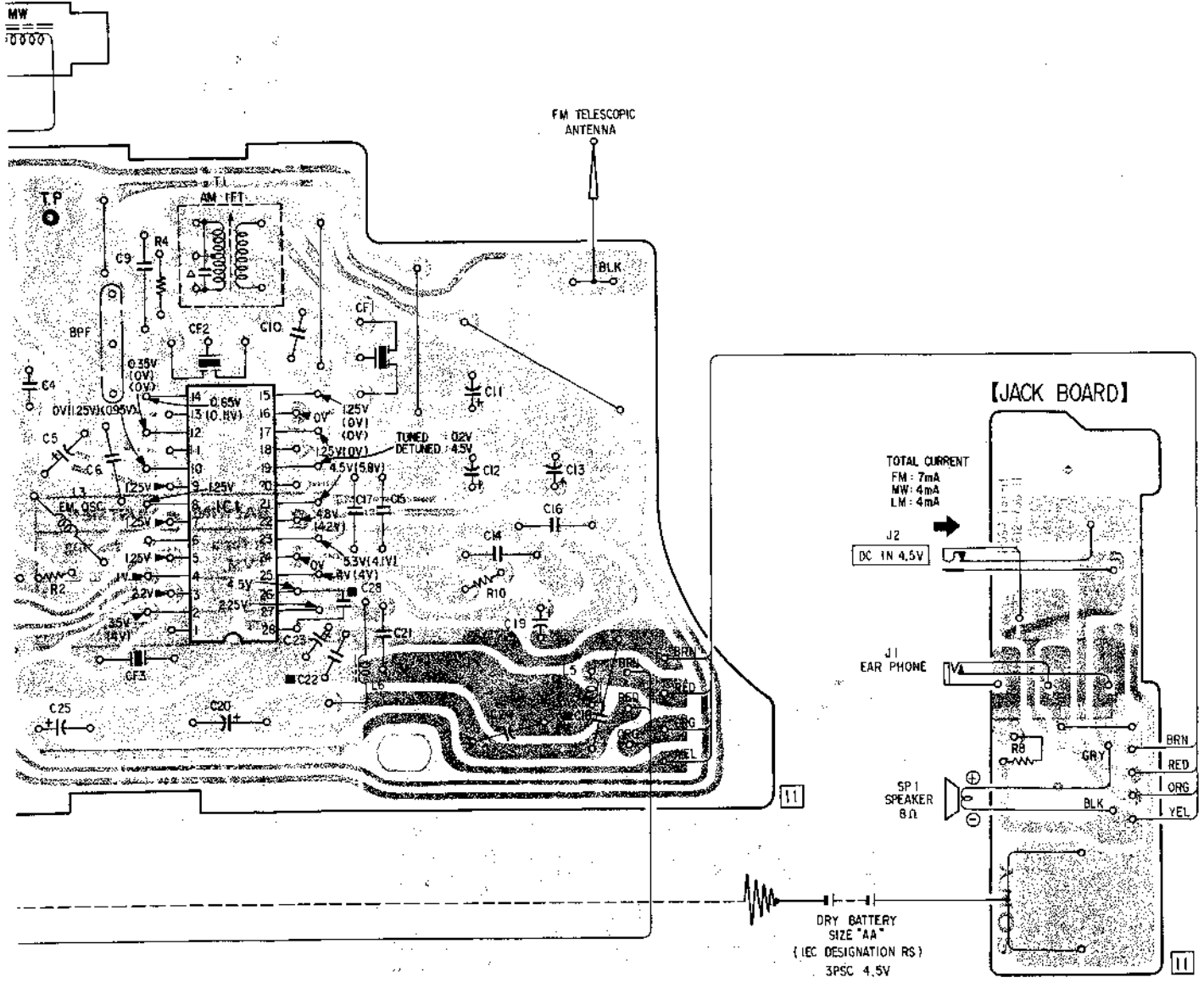
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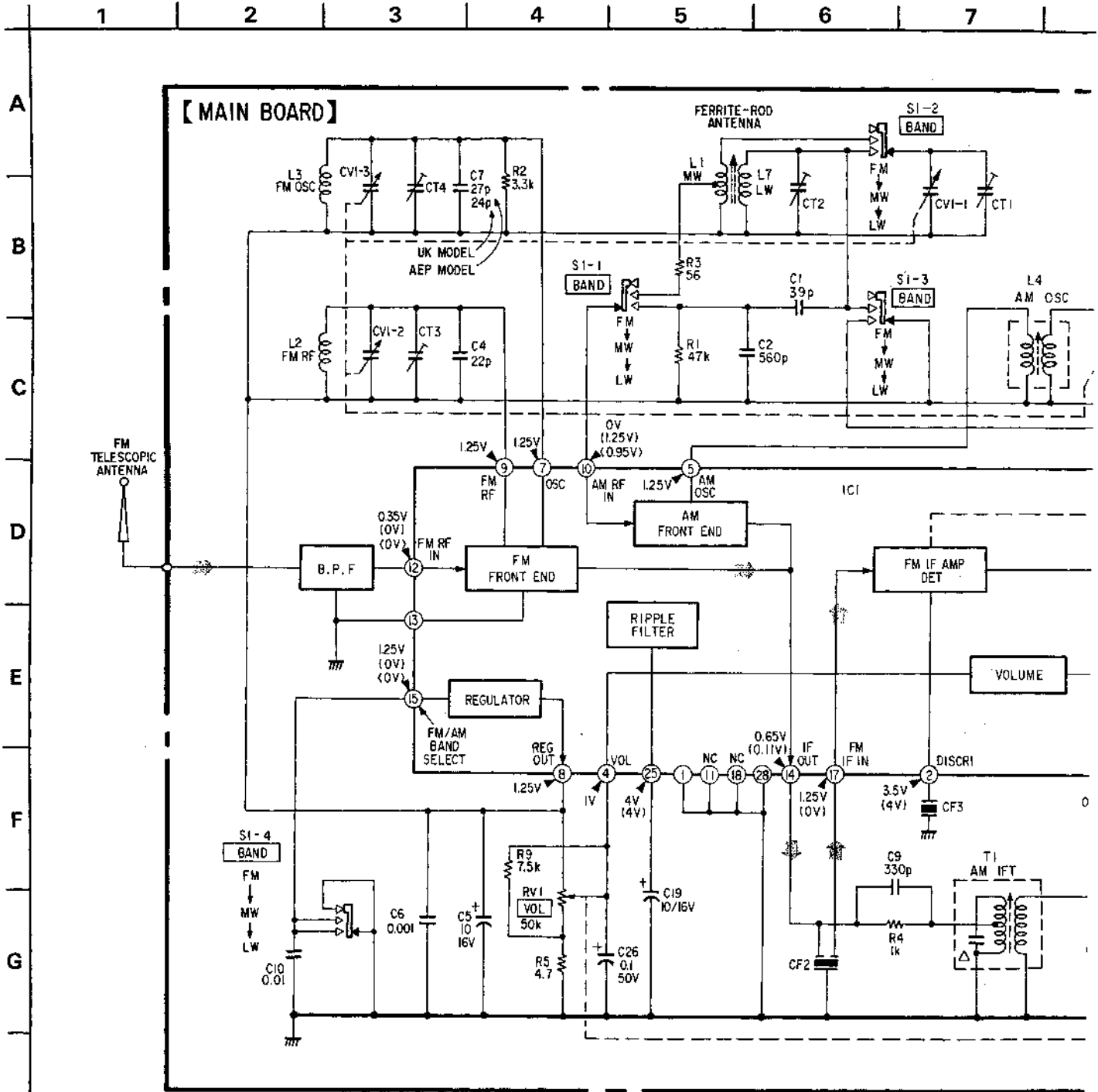
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3-2. SCHEMATIC DIAGRAM



Notes:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} : \mu\text{M}\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in ohms,  $\frac{1}{4}\text{W}$  unless otherwise noted.  $\text{k}\Omega : 1000\ \Omega$ ,  $\text{M}\Omega : 1000\ \text{k}\Omega$
  - $\Delta$  : internal component.
  - Voltages are dc with respect to ground unless otherwise noted.
  - Readings are take under detuned conditions with a VOM.
- No mark : FM  
 ( ) : MW  
 < > : LW

- Voltage variations may be noted due to normal production tolerances.
- Signal Path

Note: Voltages are measured with a VOM (50)

# ICF-25L

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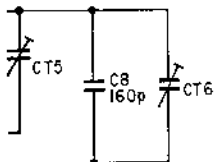
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12

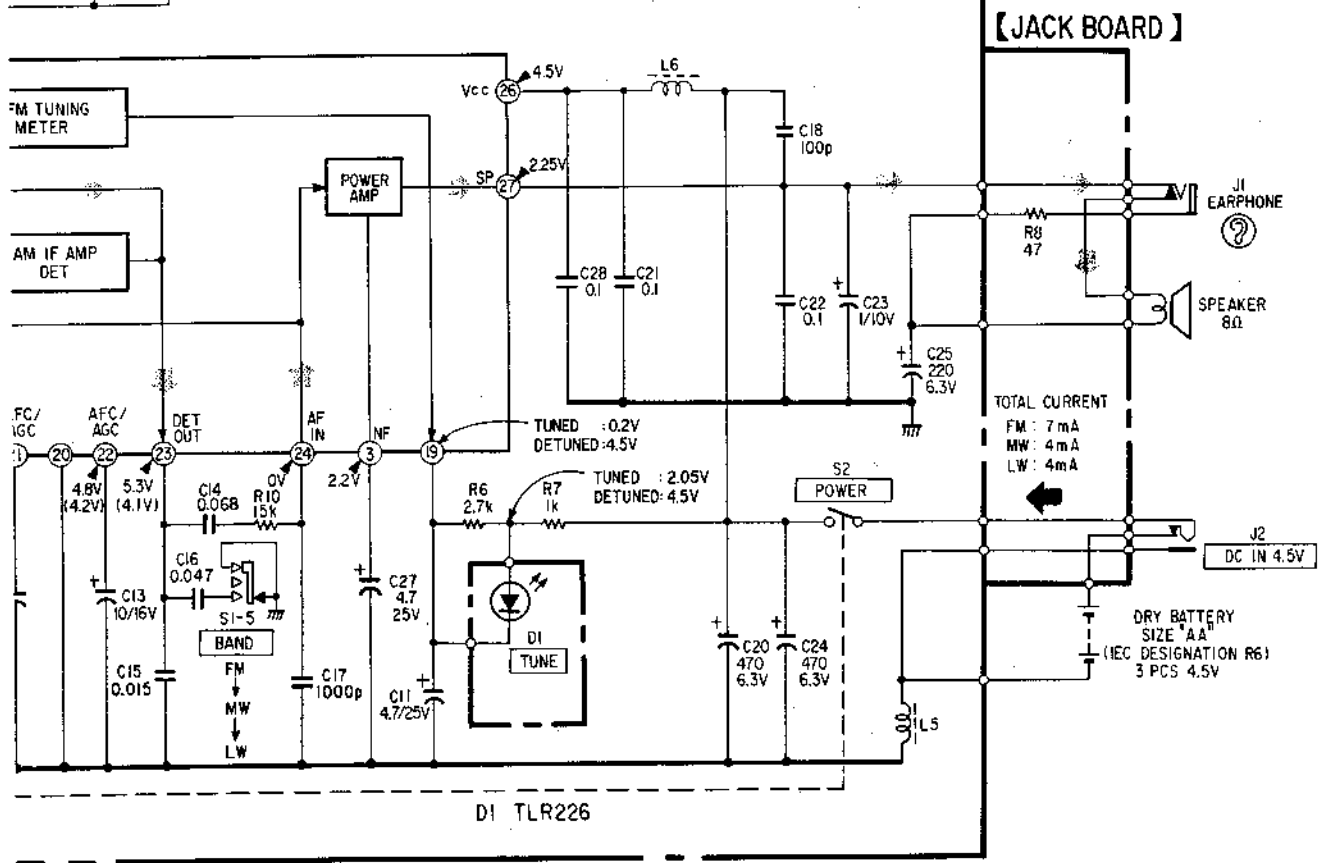
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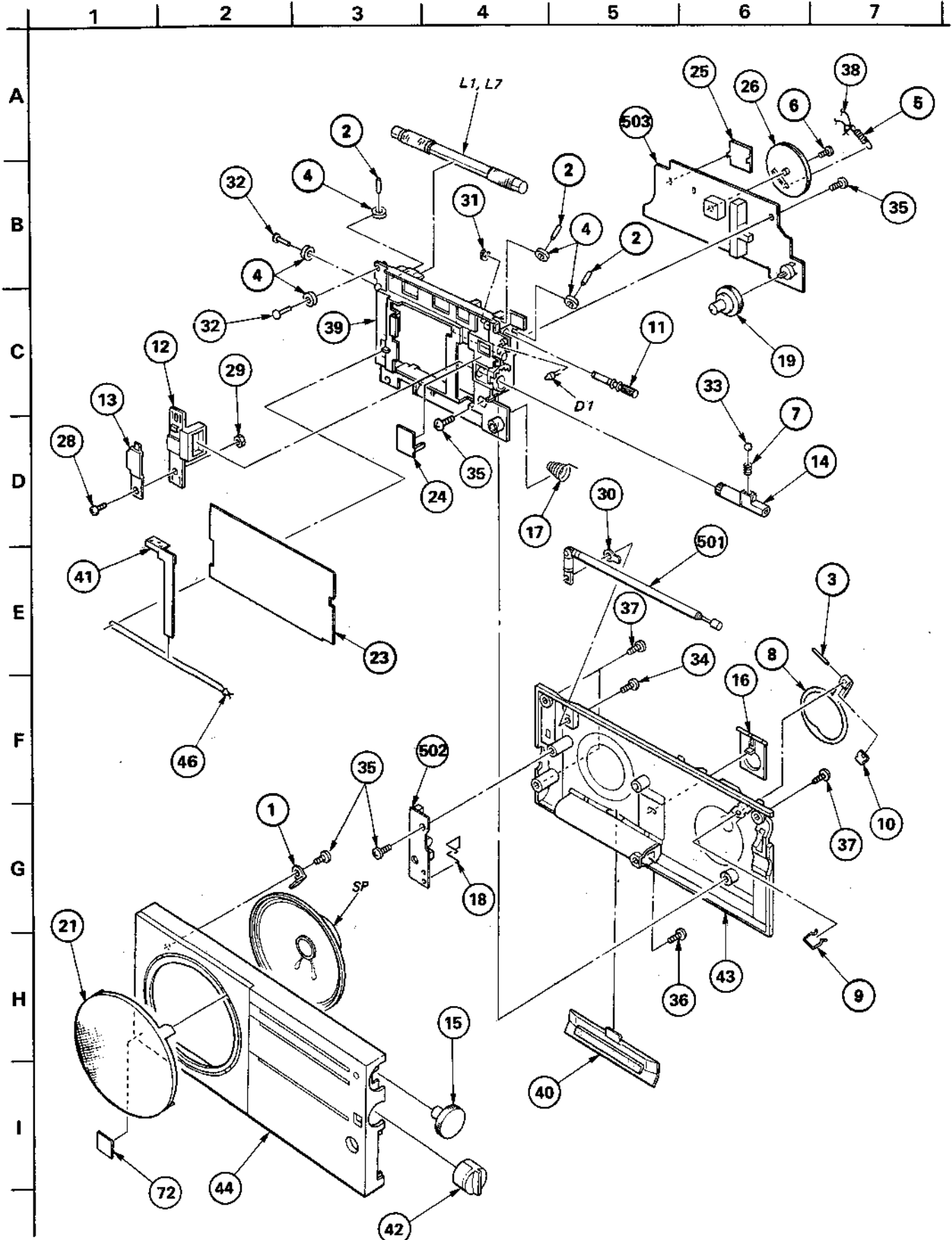
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IC1  
CX20091  
FM/AM RECEIVER SYSTEM



SECTION 4  
EXPLODED VIEW AND PARTS LIST



## GENERAL SECTION

No.	Part No.	Description
1	3-593-019-00	CLAW, SPEAKER
2	3-703-358-01	PIN, PARALLEL (DIA. 2X5)
3	3-703-358-08	PIN, PARALLEL (DIA. 2X20)
4	3-881-911-00	PULLEY
5	3-881-923-00	SPRING
6	7-627-552-47	SCREW (1.7X4)
7	3-890-231-00	SPRING, COMPRESSION
8	3-892-803-01	HANDLE
9	3-892-804-01	SPRING
10	3-892-805-01	STOPPER, HANDLE
11	3-892-806-01	SHAFT, TUNING
12	3-892-807-01	SLIDER
13	*3-892-808-01	ADJUSTOR
14	*3-892-809-01	SELECTOR, BAND
15	3-892-814-01	(SILVER)... KNOB, TUNING
15	3-892-814-11	(BLACK)... KNOB, TUNING (UK only)
15	3-892-814-21	(VIOLET)... KNOB, TUNING
16	3-892-817-01	STAND
17	3-892-818-01	SPRING
18	3-892-819-01	TERMINAL, BATTERY
19	3-892-820-01	KNOB, CONTROL
20	.....	
21	3-893-102-01	(SILVER)...GRILLE, SPEAKER
21	3-893-102-11	(VIOLET)...GRILLE, SPEAKER
21	3-893-102-21	(BLACK)...GRILLE, SPEAKER (UK only)
22	.....	
23	*3-893-104-01	PLATE, BACK, DIAL
24	*3-893-105-01	PLATE (C), SHIELD
25	*3-893-107-01	PLATE (B), SHIELD
26	3-893-108-01	DRUM, VC
27	.....	
28	7-621-775-40	SCREW +B 2.6X8
29	7-622-207-05	N 2.6, TYPE 2
30	7-623-508-01	LUG, 3
31	7-624-106-04	STOP RING 3.0, TYPE -E
32	7-625-712-40	RIVET 2X5
33	7-671-156-01	BALL, STAINLESS
34	7-682-548-04	SCREW +B 3X8
35	7-685-147-19	SCREW +BTP 3X10 TYPE2 N-S
36	7-685-547-14	SCREW +BTP 3X10 TYPE2 N-S
37	7-685-549-14	SCREW +BTP 3X14 TYPE2 N-S
38	9-911-825-32	STRING, TETRON DIAL (0.3)
39	3-893-109-01	CHASSIS
40	X-3892-809-1	BATTERY LID ASSY

## GENERAL SECTION

No.	Part No.	Description
41	X-3892-810-1	POINTER ASSY
42	X-3893-113-1	{VIOLET}...KNOB, BAND ASSY
42	X-3892-807-1	{SILVER}...KNOB, BAND ASSY
42	X-3892-808-1	{BLACK}...KNOB, BAND ASSY
43	3-893-110-11	CABINET ASSY, REAR
44	X-3893-109-1	{UK;SILVER}....CABINET ASSY, FRONT
44	X-3893-110-1	{UK;BLACK}....CABINET ASSY, FRONT
44	X-3893-111-1	{AEP;VIOLET}...CABINET ASSY, FRONT
44	X-3893-112-1	{AEP;SILVER}...CABINET ASSY, FRONT
45	.....	
46	*7-623-605-01	EYELET 1.3X2.5

## ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
71	3-701-308-00	{BLACK}.... LABEL, COLOR
71	3-701-316-00	{VIOLET}... LABEL, COLOR
71	3-703-729-00	{SILVER}... LABEL, COLOR
72	3-703-710-01	STICKER, SONY SYMBOL (12)
73	3-893-113-01	CUSHION
74	3-893-116-01	{AEP,UK}....INDIVIDUAL CARTON
74	3-893-117-01	{AEP}...INDIVIDUAL CARTON (WITH AC ADAPTOR)
75	3-893-124-01	CASE, ADAPTOR
76	3-985-622-61	MAT, MIRROR
77	3-995-995-11	{AEP,UK}...MANUAL, INSTRUCTION
77	3-995-995-41	{AEP}.....MANUAL, INSTRUCTION
78	1-463-534-11	{AEP}...ADAPTOR, AC-450
79	3-893-124-01	{AEP}...SLEEVE AC-450
80	3-985-622-41	SHEET, PROTECTION (FOR AC ADAPTOR)

### NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

### CAPACITORS:

All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
MF:  $\mu\text{F}$ , PF:  $\mu\mu\text{F}$ .

### COILS

MMH : mH, UH :  $\mu\text{H}$

### SEMICONDUCTORS

In each case, U :  $\mu$ , for example:  
UA...:  $\mu\text{A}$ ..., UPA...:  $\mu\text{PA}$ ..., UPC...:  $\mu\text{PC}$ ,  
UPD...:  $\mu\text{PD}$ ...

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

### ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	1-501-222-21	ANTENNA, TELESCOPIC
502	* 1-612-750-11	PC BOARD, JACK
503	* A-3660-504-A	PC BOARD ASSY, MAIN
BPF	1-235-171-00	FILTER, BAND PASS
C1	1-102-965-00	CERAMIC 39PF 10% 50V
C2	1-102-115-00	CERAMIC 560PF 10% 50V
C4	1-102-959-00	CERAMIC 22PF 10% 50V
C5	1-123-356-00	ELECT 10MF 20% 16V
C6	1-102-074-00	CERAMIC 0.001MF 10% 50V
C7	1-102-672-00	(UK)... CERAMIC 24PF 5% 50V
C7	1-102-883-00	(AEP)... CERAMIC 27PF 5% 50V
C8	1-103-706-11	POLYSTYRENE 160PF 10% 50V
C9	1-102-112-00	CERAMIC 330PF 10% 50V
C10	1-161-013-00	CERAMIC 0.01MF 10% 25V
C11	1-123-369-00	ELECT 4.7MF 20% 25V
C12	1-123-356-00	ELECT 10MF 20% 16V
C13	1-123-356-00	ELECT 10MF 20% 16V
C14	1-161-023-00	CERAMIC 0.068MF 10% 25V
C15	1-161-053-00	CERAMIC 0.015MF 10% 25V
C16	1-161-036-00	CERAMIC 0.047MF 20% 25V
C17	1-161-039-00	CERAMIC 1000PF 5% 50V
C18	1-102-973-00	CERAMIC 100PF 5% 50V
C19	1-123-356-00	ELECT 10MF 20% 16V
C20	1-123-298-00	ELECT 470MF 20% 6.3V
C21	1-161-974-00	CERAMIC 0.1MF 0 16V
C22	1-161-974-00	CERAMIC 0.1MF 0 16V
C23	1-131-418-00	ELECT(SOLID) 1MF 20% 10V
C24	1-123-298-00	ELECT 470MF 20% 6.3V
C25	1-123-308-00	ELECT 220MF 20% 6.3V
C26	1-124-463-11	ELECT 0.1MF 20% 50V
C27	1-123-369-00	ELECT 4.7MF 20% 25V
C28	1-161-974-00	CERAMIC 0.1MF 0 16V
CF1	1-527-954-00	FILTER, MECHANICAL
CF2	1-567-051-61	FILTER, CERAMIC (FM)
CF3	1-567-051-61	FILTER, CERAMIC (FM)
CT2	1-141-227-00	TRIMAR, CERAMIC
CT6	1-141-227-00	TRIMAR, CERAMIC
D1	8-719-812-26	DIODE TLR226
IC1	8-752-009-10	IC CX20091
J1	1-507-398-00	EARPHONE JACK
J2	1-507-459-00	JACK DC IN 45V

### ELECTRICAL PARTS

Ref.No.	Part No.	Description
L1	1-402-113-11	ANTENNA, FERRITE-ROD (MW/LW)
L2	1-422-149-11	(AEP)...COIL, AIR-CORE
L2	1-422-184-11	(UK)...COIL, AIR-CORE
L3	1-422-121-00	(AEP)...COIL, FM OSCILLATION
L3	1-422-131-00	(UK)...COIL, FM OSCILLATION
L4	1-406-028-00	COIL, OSC (MW)
L5	1-421-659-11	COIL, CHOKE 20UH
L6	1-421-659-11	COIL, CHOKE 20UH
L7	1-402-113-11	ANTENNA, FERRITE-ROD (MW/LW)
R1	1-246-513-00	CARBON 47K 5% 1/4W
R2	1-247-143-00	CARBON 3.3K 5% 1/4W
R3	1-247-101-00	CARBON 56 5% 1/4W
R4	1-246-473-00	CARBON 1K 5% 1/4W
R5	1-247-147-00	CARBON 4.7K 5% 1/4W
R6	1-247-141-00	CARBON 2.7K 5% 1/4W
R7	1-246-473-00	CARBON 1K 5% 1/4W
R8	1-246-441-00	CARBON 47 5% 1/4W
R9	1-247-152-00	CARBON 7.5K 10% 1/4W
R10	1-247-159-00	CARBON 15K 5% 1/4W
S1	1-554-901-11	SWITCH, BAND SLIDE
SP	1-503-370-11	SPEAKER
T1	1-404-341-00	TRANSFORMER, IF
VC1	1-151-429-00	CAP, TUNING, POLYETHYLENE
VR1	1-230-363-11	RES, VAR, CARBON (WITH SW) 50K

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**CAPACITORS:**

• All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
 MF:  $\mu\text{F}$ , PF:  $\mu\text{PF}$ .

**COILS**

• MH : mH, UH :  $\mu\text{H}$

**SEMICONDUCTORS**

In each case, U :  $\mu$ , for example:  
 UA... :  $\mu\text{A}$ ..., UPA... :  $\mu\text{PA}$ ..., UPC... :  $\mu\text{PC}$ ,  
 UPD... :  $\mu\text{PD}$ ...

The components identified by shading and mark are critical for safety. Replace only with part number specified.