

# ICF-8/8L

## SERVICE MANUAL

Ver 1.3 2000.10  
With SUPPLEMENT-1  
(9-924-922-81)  
With SUPPLEMENT-2  
(9-924-922-82)  
With SUPPLEMENT-3  
(9-924-922-83)



*AEP Model*  
*UK Model*  
ICF-8/8L  
*E Model*  
ICF-8

Photo: ICF-8

### SPECIFICATIONS

#### Frequency range

##### Models for Italy and East European countries

Band	ICF-8	ICF-8L
FM	87.5-108 MHz	65.0-108 MHz
AM	526.5-1606.5 kHz	—
LW	—	153-255 kHz

##### Models for other countries

Band	ICF-8	ICF-8L
FM	87.5-108 MHz	87.5-108 MHz
AM	530-1605 kHz	—
LW	—	153-255 kHz

#### Speaker

Approx. 5.7 cm dia., 8 ohms

#### Power output

100 mW (at 10% harmonic distortion)

#### Output

Ⓞ jack (minijack)

#### Power requirements

3V DC, two R6 (size AA) batteries

#### Dimensions

Approx. 133 × 72 × 33.5 mm (w/h/d)  
(5 1/4 × 2 7/8 × 1 3/8 in) incl.  
projecting parts and controls

#### Mass

Approx. 206 g (7.3 oz.) incl. batteries

Design and specifications are subject to change without notice.

#### Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

ICF-8  
FM/AM RADIO  
ICF-8L  
FM/LW RADIO



# SONY®

This section is extracted from instruction manual.

## SECTION 1 GENERAL

### Precautions

- Operate the unit only on 3 V DC.
- Do not leave the unit in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- When the case becomes soiled, clean it with a soft cloth dampened with a mild detergent solution. Never use abrasive cleansers or chemical solvents, as they may mar the case.
- Do not leave magnetic bank cards, magnetic train passes, or other cards containing magnetic information near the speaker. The information on the card may be erased by the magnetism inside the speaker.

If you have any questions or problem concerning your unit, please consult the nearest Sony dealer.

### Installing the Batteries (see fig. A)

- 1 Open the battery compartment lid at the rear of the radio.
- 2 Insert two batteries (not supplied) with the ⊕ and ⊖ marks aligned correctly.
- 3 Close the battery compartment lid.

#### Battery life

Using Sony R6 (size AA) batteries

	(Approx. hours)		
	FM	AM	LW
ICF-8	40	45	—
ICF-8L	40	—	45

#### When to change the batteries

Change the batteries when the sound becomes weak or distorted. Remove both of the old batteries and insert new ones.

#### Notes on the batteries

- Align batteries correctly.
- Do not mix new and used batteries.
- The batteries cannot be charged.
- To avoid damage from possible battery leakage, remove the batteries when the unit will not be used for a long time.

### Operating the Radio

- 1 To turn on the power, slide **BAND** to **FM** or **AM** (for ICF-8)/**LW** (for ICF-8L).
- 2 Turn **VOL** to the desired volume.
- 3 Turn **TUNE** to select the station.  
The **TUNE** indicator lights up when a station is received.

#### To turn off the radio

Slide **BAND** to **OFF**.

#### To listen with an earphone

Connect the earphone to the Ⓞ jack. The speaker is deactivated when an earphone is connected.

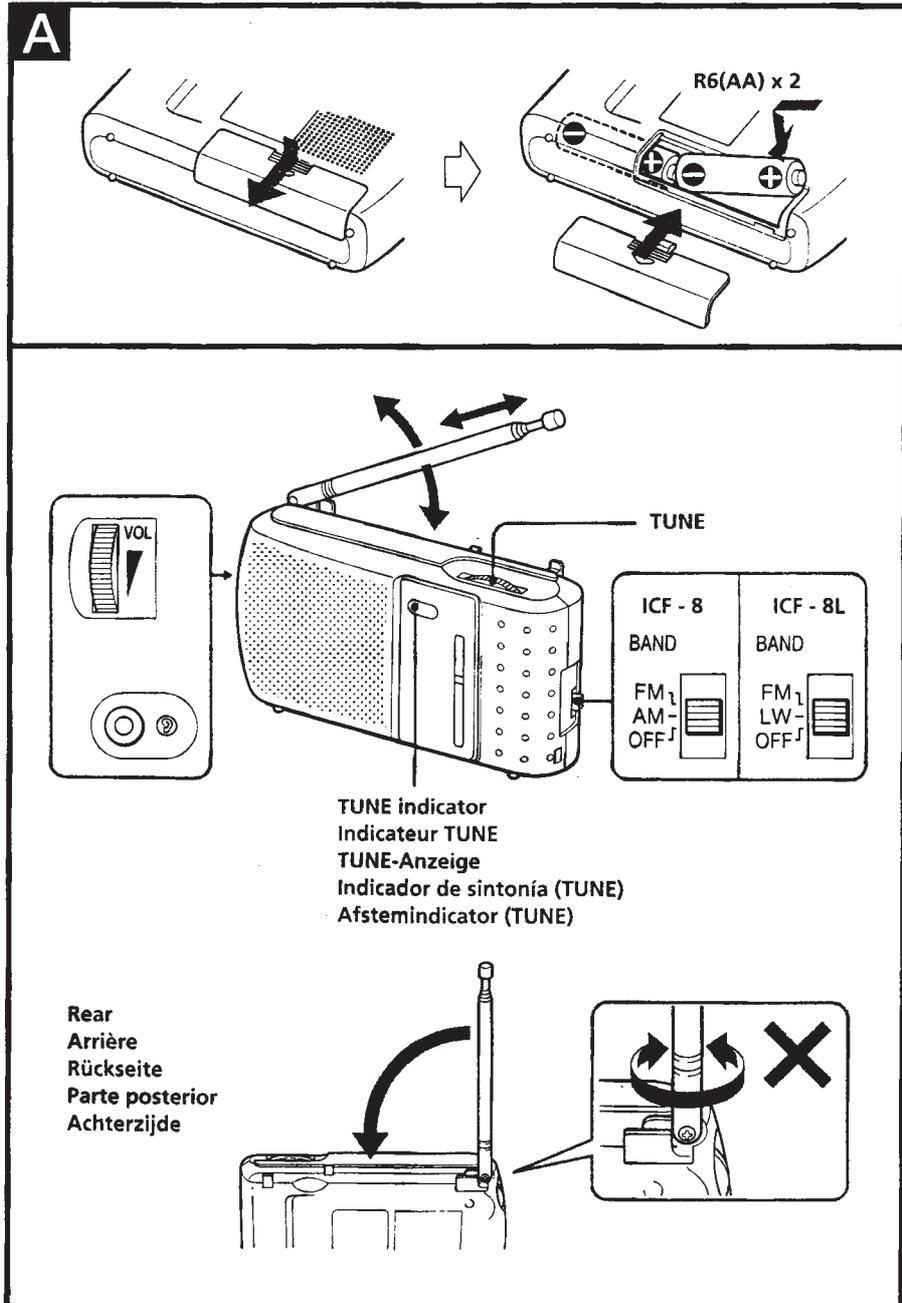
#### To improve reception

**FM:** Extend the telescopic antenna and adjust the angle for the best reception.

**AM/LW:** Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built in the unit.

#### Note

Do not rotate the antenna.

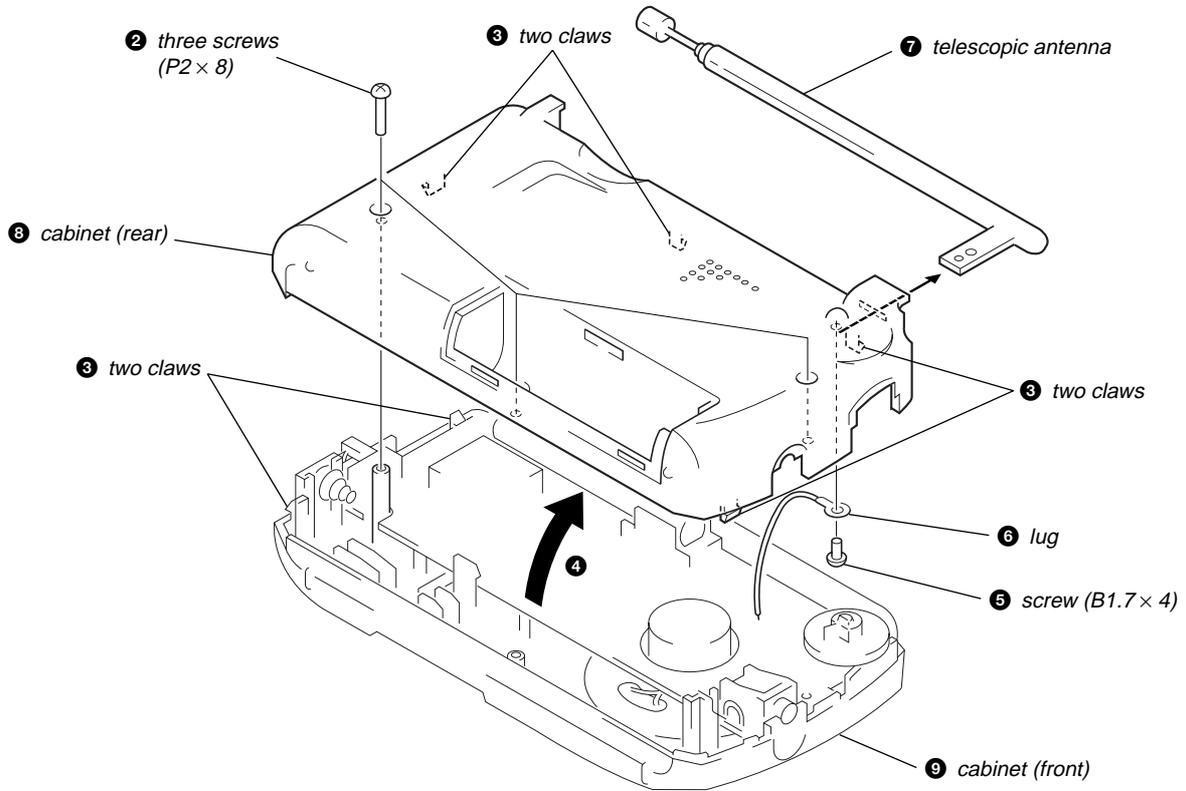


## SECTION 2 DISASSEMBLY

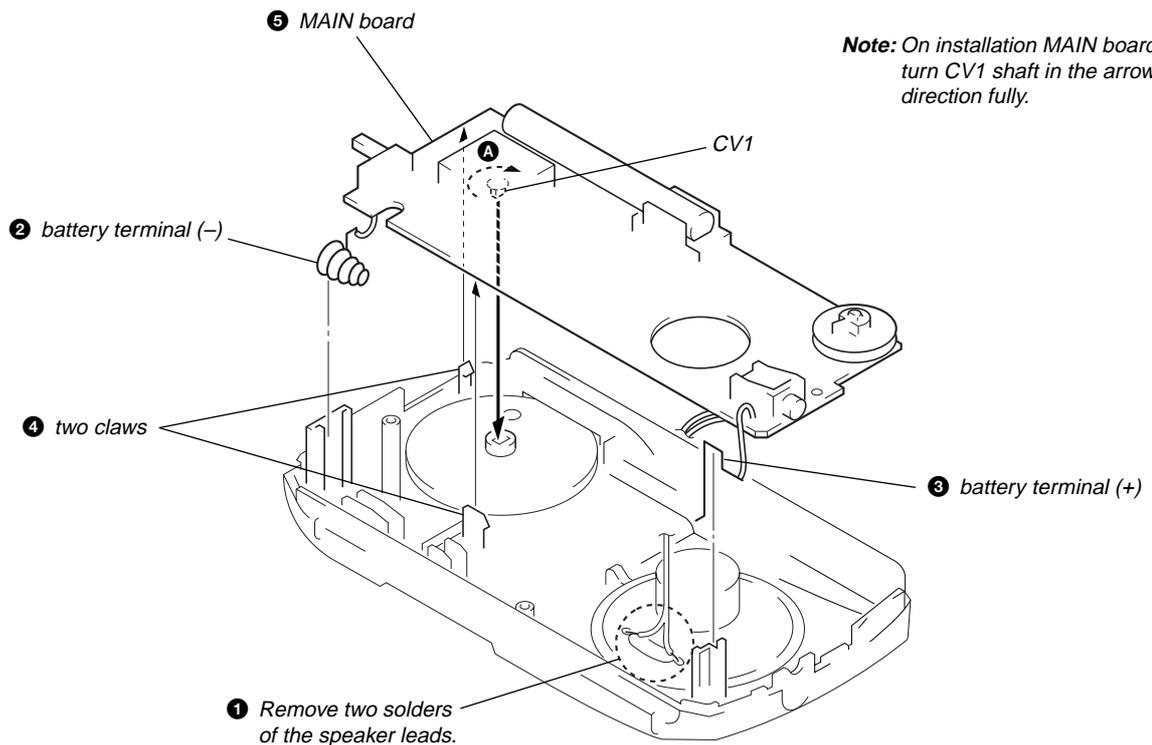
**Note:** Follow the disassembly procedure in the numerical order given.

### CABINET (REAR)

❶ Remove the battery lid.



### MAIN BOARD

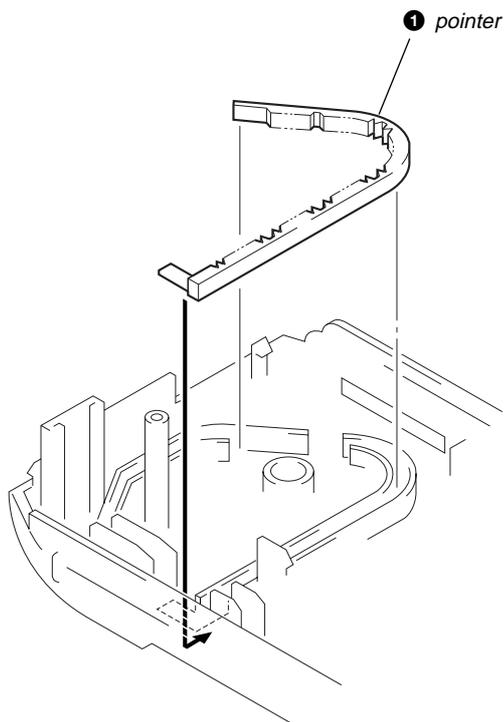


**Note:** On installation MAIN board, turn CV1 shaft in the arrow **A** direction fully.

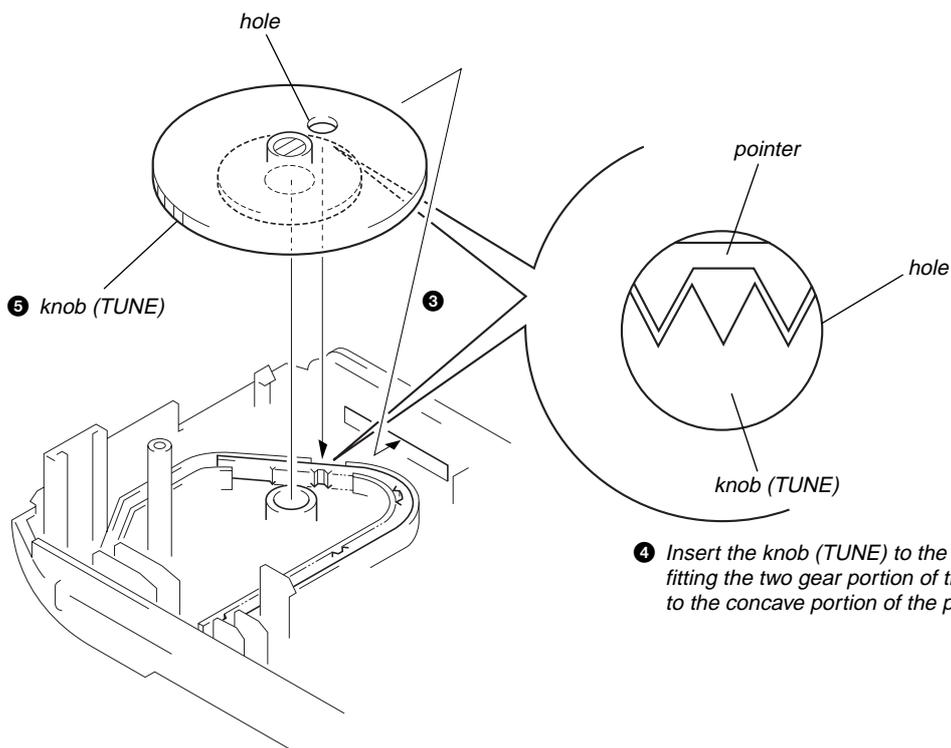
## DIAL POINTER SETTING

**Note:** Follow the assembly procedure in the numerical order given.

### • POINTER



### • KNOB (TUNE)



## SECTION 3 ELECTRICAL ADJUSTMENTS

### PRECAUTION

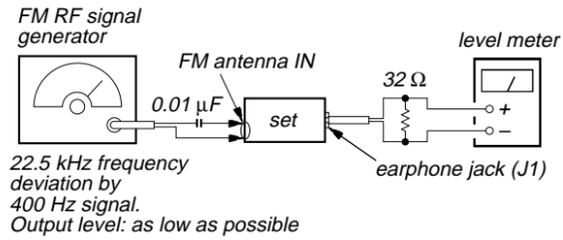
- Adjustment should be performed in the order given.

0 dB=1  $\mu$ V

### [FM]

#### Setting:

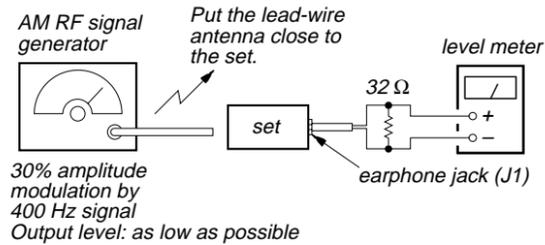
BAND switch: FM



### [AM/LW]

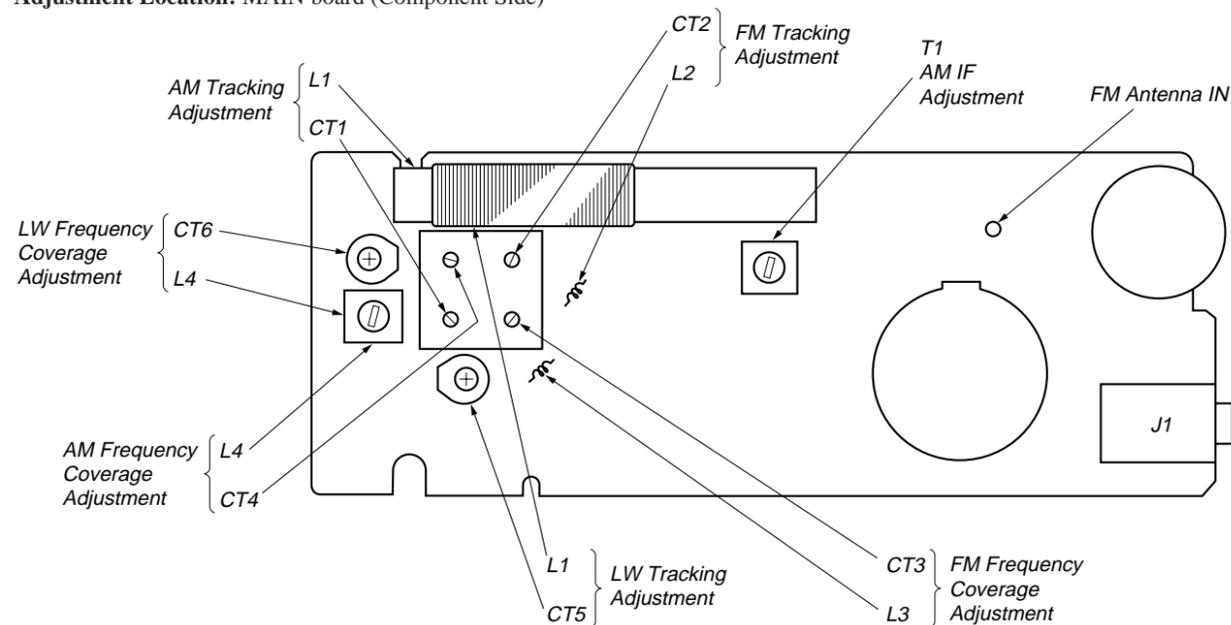
#### Setting:

BAND switch: AM/LW



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

Adjustment Location: MAIN board (Component Side)



( ) : Italian model, [ ] : East European model

FM FREQUENCY COVERAGE ADJUSTMENT		
Adjust for a maximum reading on level meter.		
L3	86.5 MHz (87.35 MHz)	[64.0 MHz]
CT3	109.5 MHz (108.25 MHz)	[109.5 MHz]

FM TRACKING ADJUSTMENT		
Adjust for a maximum reading on level meter.		
L2	86.5 MHz (87.35 MHz)	[64.0 MHz]
CT2	109.5 MHz (108.25 MHz)	[109.5 MHz]

AM IF ADJUSTMENT		
Adjust for a maximum reading on level meter.		
T1		455 kHz

AM FREQUENCY COVERAGE ADJUSTMENT (ICF-8)		
Adjust for a maximum reading on level meter.		
L4		520 kHz (516.5 kHz)
CT4		1,650 kHz (1,631.5 kHz)

AM TRACKING ADJUSTMENT (ICF-8)		
Adjust for a maximum reading on level meter.		
L1		620 kHz
CT1		1,400 kHz

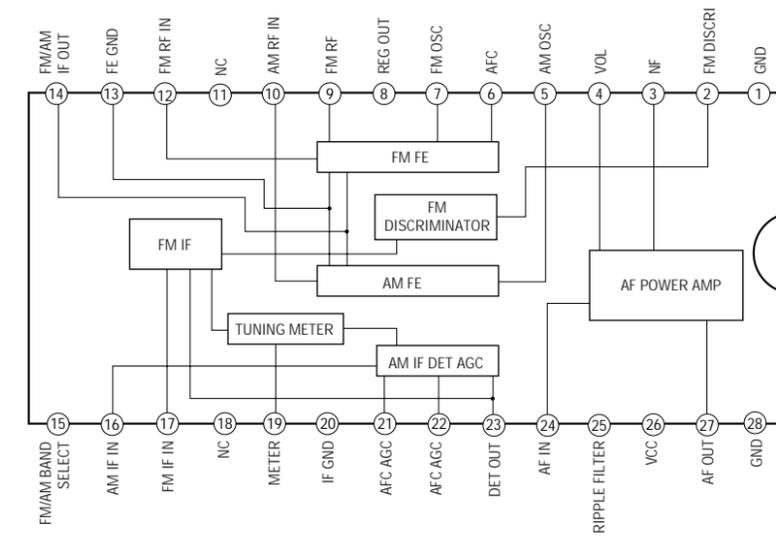
LW FREQUENCY COVERAGE ADJUSTMENT (ICF-8L)		
Adjust for a maximum reading on level meter.		
L4		145 kHz
CT6		265 kHz

LW TRACKING ADJUSTMENT (ICF-8L)		
Adjust for a maximum reading on level meter.		
L1		160 kHz
CT5		240 kHz

## SECTION 4 DIAGRAMS

### • IC Block Diagram

#### IC1 CXA1019M

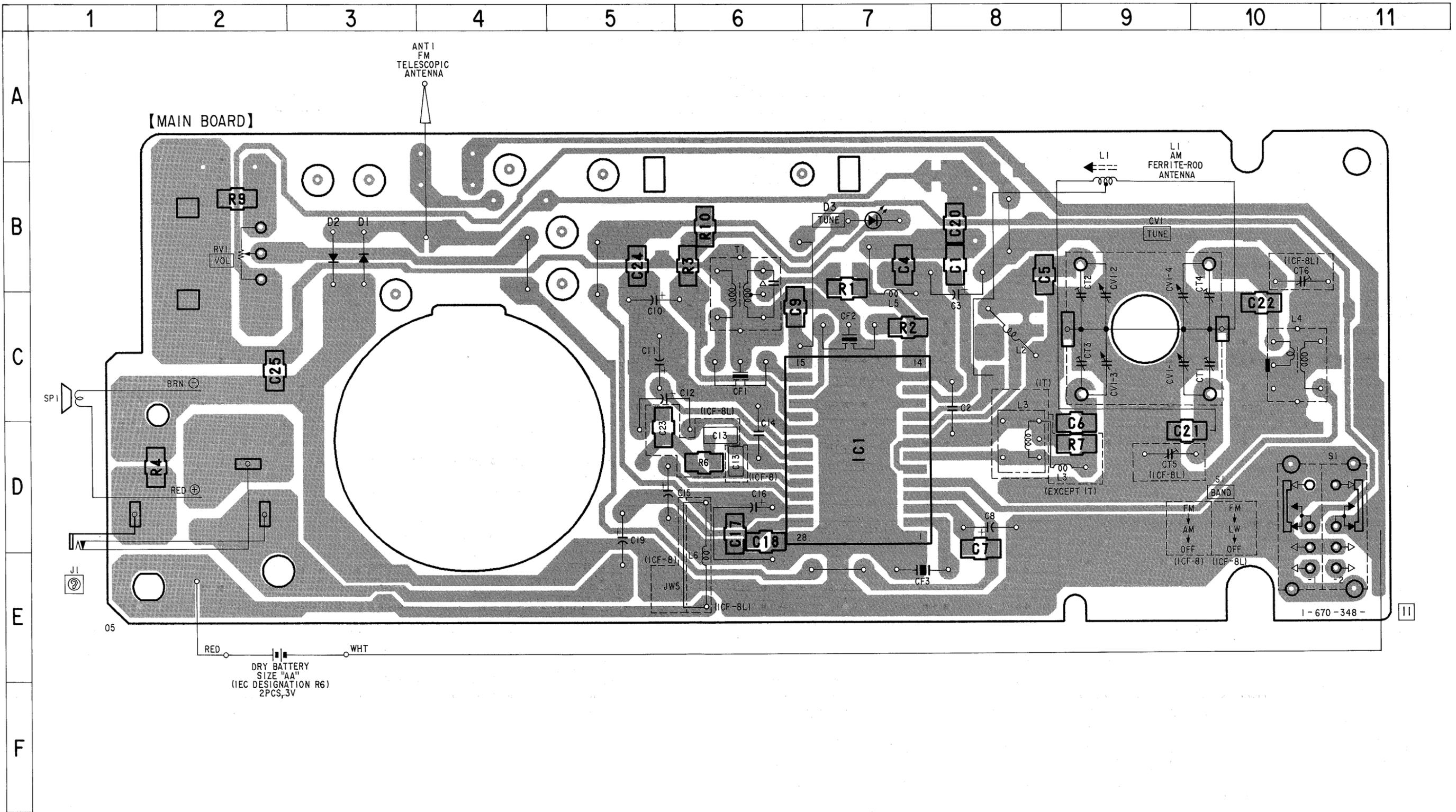


### HOW TO CHANGED THE CERAMIC FILTERS

This model is used two ceramic filters of CF2 and CF3. You must used same type of color marked ceramic filters in order to meet same specifications. Therefore, the ceramic filter must changed two pieces together since it's supply two pieces in one package as a spare parts.

Mark	Center frequency
red	10.70 MHz
blue	10.67 MHz
orange	10.73 MHz
black	10.64 MHz
white	10.76 MHz

4-1. PRINTED WIRING BOARD



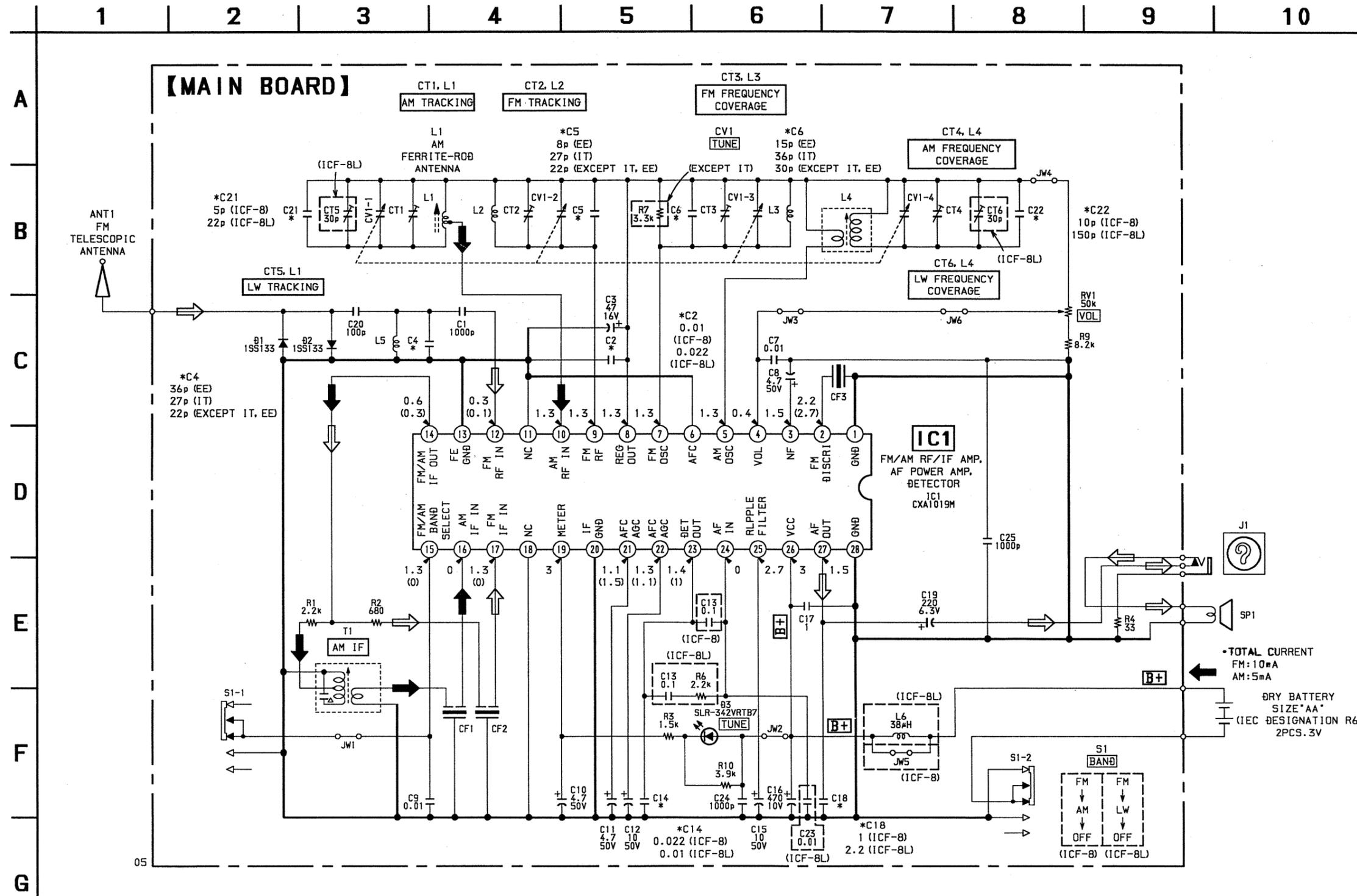
• Semiconductor Location

Ref. No.	Location
D1	B-3
D2	B-3
D3	B-7
IC1	D-7

Note on Printed Wiring Board:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : indicates side identified with part number.
- △ : internal component.
- Abbreviation
  - EE : East European model.
  - IT : Italian model.

4-2. SCHEMATIC DIAGRAM • See page 6 for IC Block Diagram.



**Note on Schematic Diagram:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{pF}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}W$  or less unless otherwise specified.
- $\Delta$  : internal component.
- : panel designation.
- B+ : B+ Line.
- : adjustment for repair.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.

- Voltages are dc with respect to ground under no-signal (detuned) conditions.  
 no mark : FM  
 ( ) : AM
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.  
 $\Rightarrow$  : FM  
 $\Rightarrow$  : AM
- Abbreviation  
 EE : East European model.  
 IT : Italian model.

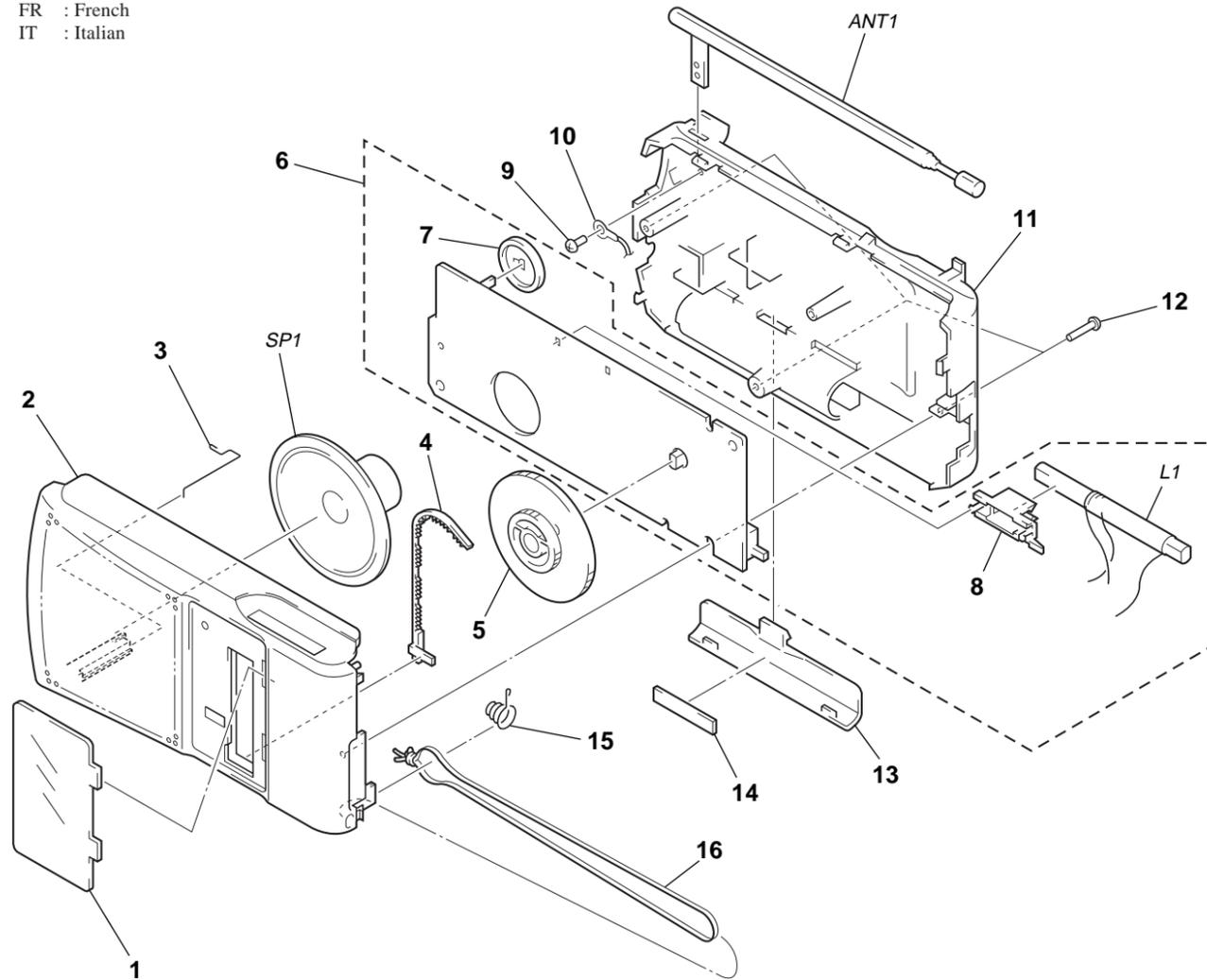
## SECTION 5 EXPLODED VIEW

### NOTE:

- XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE) . . . (RED)  
↑                    ↑  
Parts Color    Cabinet's Color

- Abbreviation  
EE : East European  
FR : French  
IT : Italian

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-027-092-01	PLATE, TRANSPARENT (ICF-8)		8	3-027-095-01	HOLDER (FERRITE-ROD ANTENNA)	
1	3-027-092-11	PLATE, TRANSPARENT (FR)		9	3-318-203-61	SCREW (B1.7X4), TAPPING	
1	3-027-092-21	PLATE, TRANSPARENT (EE)		10	7-623-505-01	LUG, 2	
2	3-027-089-01	CABINET (FRONT) (ICF-8)		11	3-027-090-01	CABINET (REAR)	
2	3-027-089-11	CABINET (FRONT) (ICF-8L)		12	7-685-105-14	TAPPING +P 2X8 NON-SLIT	
3	3-027-106-01	TERMINAL (+), BATTERY		13	3-027-091-01	LID, BATTERY CASE	
4	3-027-096-01	POINTER		14	3-027-108-01	CUSHION (BATTERY)	
5	3-027-093-01	KNOB (TUNE)		15	3-027-107-01	TERMINAL (-), BATTERY	
*	A-3683-011-A	MAIN BOARD, COMPLETE (AEP, UK, E)		16	3-893-381-01	STRAP, HAND	
*	A-3683-012-A	MAIN BOARD, COMPLETE (IT)		ANT1	1-501-247-21	ANTENNA, TELESCOPIC	
*	A-3683-013-A	MAIN BOARD, COMPLETE (FR)		L1	1-754-018-11	ANTENNA, FERRITE-ROD (LW) (ICF-8L)	
*	A-3683-014-A	MAIN BOARD, COMPLETE (EE)		L1	1-754-019-11	ANTENNA, FERRITE-ROD (MW) (ICF-8)	
7	3-027-094-01	KNOB (VOL)		SP1	1-503-616-11	SPEAKER	

## MAIN

### NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

Ref. No.	Part No.	Description	Remark
*	A-3683-011-A	MAIN BOARD, COMPLETE (AEP, UK, E)	
*	A-3683-012-A	MAIN BOARD, COMPLETE (IT)	
*	A-3683-013-A	MAIN BOARD, COMPLETE (FR)	
*	A-3683-014-A	MAIN BOARD, COMPLETE (EE)	
		*****	
	3-027-094-01	KNOB (VOL)	
	3-027-095-01	HOLDER (FERRITE-ROD ANTENNA)	
		< CAPACITOR >	
C1	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C2	1-161-051-00	CERAMIC	0.01uF 10% 50V (ICF-8)
C2	1-161-055-00	CERAMIC	0.022uF 10% 50V (ICF-8L)
C3	1-104-664-11	ELECT	47uF 20% 16V
C4	1-163-106-00	CERAMIC CHIP	36PF 5% 50V (EE)
C4	1-163-235-11	CERAMIC CHIP	22PF 5% 50V (EXCEPT IT, EE)
C4	1-163-237-11	CERAMIC CHIP	27PF 5% 50V (IT)
C5	1-163-091-00	CERAMIC CHIP	8PF 50V (EE)
C5	1-163-235-11	CERAMIC CHIP	22PF 5% 50V (EXCEPT IT, EE)
C5	1-163-237-11	CERAMIC CHIP	27PF 5% 50V (IT)
C6	1-163-097-00	CERAMIC CHIP	15PF 5% 50V (EE)
C6	1-163-104-00	CERAMIC CHIP	30PF 5% 50V (EXCEPT IT, EE)
C6	1-163-106-00	CERAMIC CHIP	36PF 5% 50V (IT)
C7	1-163-021-00	CERAMIC CHIP	0.01uF 10% 50V
C8	1-126-963-11	ELECT	4.7uF 20% 50V
C9	1-163-021-00	CERAMIC CHIP	0.01uF 10% 50V
C10	1-126-963-11	ELECT	4.7uF 20% 50V
C11	1-126-963-11	ELECT	4.7uF 20% 50V
C12	1-124-907-11	ELECT	10uF 20% 50V
C13	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C14	1-161-051-00	CERAMIC	0.01uF 10% 50V (ICF-8L)
C14	1-161-055-00	CERAMIC	0.022uF 10% 50V (ICF-8)
C15	1-124-907-11	ELECT	10uF 20% 50V
C16	1-126-925-11	ELECT	470uF 20% 10V

## SECTION 6 ELECTRICAL PARTS LIST

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA. . . :  $\mu$ A. . .    uPA. . . :  $\mu$ PA. . .  
uPB. . . :  $\mu$ PB. . .    uPC. . . :  $\mu$ PC. . .  
uPD. . . :  $\mu$ PD. . .
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

When indicating parts by reference number, please include the board.

- Abbreviation  
EE : East European  
FR : French  
IT : Italian

Ref. No.	Part No.	Description	Remark
C17	1-164-346-11	CERAMIC CHIP	1uF 16V
C18	1-164-346-11	CERAMIC CHIP	1uF 16V (ICF-8)
C18	1-164-505-11	CERAMIC CHIP	2.2uF 16V (ICF-8L)
C19	1-104-666-11	ELECT	220uF 20% 6.3V
C20	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C21	1-163-222-11	CERAMIC CHIP	5PF 0.25PF 50V (ICF-8)
C21	1-163-235-11	CERAMIC CHIP	22PF 5% 50V (ICF-8L)
C22	1-163-093-00	CERAMIC CHIP	10PF 5% 50V (ICF-8)
C22	1-163-121-00	CERAMIC CHIP	150PF 5% 50V (ICF-8L)
C23	1-163-021-00	CERAMIC CHIP	0.01uF 10% 50V (ICF-8L)
C24	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C25	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
		< FILTER >	
CF1	1-577-072-11	FILTER, CERAMIC (ICF-8)	
CF1	1-781-035-11	FILTER, CERAMIC (ICF-8L)	
CF2	1-579-632-51	FILTER, CERAMIC	
CF3	1-579-632-51	FILTER, CERAMIC	
		< VARIABLE CAPACITOR >	
CV1	1-141-497-11	CAP, VAR (TUNE) (EXCEPT EE)	
CV1	1-141-498-11	CAP, VAR (TUNE) (EE)	
CT1-4	1-141-497-11	CAP, VAR (EXCEPT EE)	
CT1-4	1-141-498-11	CAP, VAR (EE)	
CT5	1-141-604-11	CAP, ADJ (ICF-8L)	
CT6	1-141-604-11	CAP, ADJ (ICF-8L)	
		< DIODE >	
D1	8-719-991-33	DIODE 1SS133T-77	
D2	8-719-991-33	DIODE 1SS133T-77	
D3	8-719-059-87	DIODE SLR-342VRTB7 (TUNE)	
		< IC >	
IC1	8-752-050-16	IC CXA1019M	

Ref. No.	Part No.	Description	Remark
		< JACK >	
J1	1-770-666-11	JACK (Ⓢ)	
		< COIL >	
L1	1-754-018-11	ANTENNA, FERRITE-ROD (LW) (ICF-8L)	
L1	1-754-019-11	ANTENNA, FERRITE-ROD (MW) (ICF-8)	
L2	1-416-799-11	COIL, AIR-CORE (EXCEPT EE)	
L2	1-416-800-11	COIL, AIR-CORE (EE)	
L3	1-422-131-00	COIL, FM OSCILLATION (EXCEPT IT, EE)	
L3	1-428-768-11	COIL, AIR-CORE (EE)	
L3	1-460-018-11	COIL (WITH CORE)( IT)	
L4	1-406-028-00	COIL, OSC (MW)	
L5	1-416-459-11	COIL, AIR-CORE	
L6	1-410-294-11	INDUCTOR 38uH (ICF-8L)	
		< RESISTOR >	
R1	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R2	1-216-045-00	METAL CHIP 680 5% 1/10W	
R3	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R4	1-216-013-00	METAL CHIP 33 5% 1/10W	
R6	1-216-057-00	METAL CHIP 2.2K 5% 1/10W (ICF-8L)	
R7	1-216-061-00	METAL CHIP 3.3K 5% 1/10W (EXCEPT IT)	
R9	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R10	1-216-063-00	RES, CHIP 3.9K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV1	1-225-441-41	RES, VAR, CARBON 50K (VOL)	
		< SWITCH >	
S1	1-572-633-11	SWITCH, SLIDE (BAND)	
		< TRANSFORMER >	
T1	1-404-790-11	TRANSFORMER, IF (ICF-8)	
T1	1-404-902-11	TRANSFORMER, IF (ICF-8L)	
*****			
MISCELLANEOUS			
*****			
ANT1	1-501-247-21	ANTENNA, TELESCOPIC	
SP1	1-503-616-11	SPEAKER	
*****			
ACCESSORIES & PACKING MATERIALS			
*****			
3-864-359-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH, DUTCH, ITALIAN, PORTUGUESE, RUSSIAN, CHINESE)		



# ICF-8/8L

**SONY**<sup>®</sup>

## SERVICE MANUAL

1998. 09

*AEP Model*

*UK Model*

*ICF-8/8L*

*E Model*

*ICF-8*

## SUPPLEMENT-1

File this supplement with the service manual.

**Subject: Addition of Silver Color Model**

(ENG-98006)

• **EXPLODED VIEWS (Service Manual see page 11)**

Ref. No	Before change			After change		
	Part No.	Description	Remark	Part No.	Description	Remark
2	3-027-089-01	CABINET (FRONT) (ICF-8)		3-027-089-01	CABINET (FRONT) ( <del>DARK GRAY</del> ) (ICF-8)	
				3-027-089-31	CABINET (FRONT) (SILVER) (ICF-8 : AEP, UK)	
11	3-027-090-01	CABINET (REAR)		3-027-090-01	CABINET (REAR) ( <del>DARK GRAY</del> )	
				3-027-090-21	CABINET (REAR) (SILVER) (ICF-8 : AEP, UK)	
13	3-027-091-01	LID, BATTERY CASE		3-027-091-01	LID, BATTERY CASE ( <del>DARK GRAY</del> )	
				3-027-091-21	LID, BATTERY CASE (SILVER) (ICF-8 : AEP, UK)	

# ICF-8/8L

SONY®

## SERVICE MANUAL

2000. 03

AEP Model

UK Model

ICF-8/8L

E Model

ICF-8

## SUPPLEMENT-2

File this supplement with the service manual.

**Subject: Addition of ICF-8 (6E) ORANGE Color Model**

(ENG-00003)

### • EXPLODED VIEWS (Supplement-1 see page 1)

Ref. No.	Before Change			After Change		
	Part No.	Description	Remark	Part No.	Description	Remark
1				3-027-092-51	PLATE, TRANSPARENT (ICF-8: 6E)	
2	3-027-089-01	CABINET (FRONT) (DARK GRAY) (ICF-8)		3-027-089-01	CABINET (FRONT) (DARK GRAY) (ICF-8)	
	3-027-089-31	CABINET (FRONT) (SILVER) (ICF-8: AEP, UK)		3-027-089-31	CABINET (FRONT) (SILVER) (ICF-8: AEP, UK)	
4				3-027-089-41	CABINET (FRONT) (ORANGE) (ICF-8: 6E)	
				3-027-096-11	POINTER (ORANGE) (ICF-8: 6E)	
11	3-027-090-01	CABINET (REAR) (DARK GRAY)		3-027-090-01	CABINET (REAR) (DARK GRAY)	
	3-027-090-21	CABINET (REAR) (SILVER) (ICF-8: AEP, UK)		3-027-090-21	CABINET (REAR) (SILVER) (ICF-8: AEP, UK)	
13				3-027-090-31	CABINET (REAR) (ORANGE) (ICF-8: 6E)	
	3-027-091-01	LID, BATTERY CASE (DARK GRAY)		3-027-091-01	LID, BATTERY CASE (DARK GRAY)	
				3-027-091-11	LID, BATTERY CASE (ORANGE) (ICF-8: 6E)	
	3-027-091-21	LID, BATTERY CASE (SILVER) (ICF-8: AEP, UK)		3-027-091-21	LID, BATTERY CASE (SILVER) (ICF-8: AEP, UK)	

# ICF-8/8L

**SONY**<sup>®</sup>

## SERVICE MANUAL

2000. 10

*AEP Model*

*UK Model*

*ICF-8/8L*

*E Model*

*ICF-8*

## SUPPLEMENT-3

File this supplement with the service manual.

**Subject: Addition of ICF-8 (E, 6E) Silver Color Model**

(ENG-00017)

• **EXPLODED VIEWS (Supplement-2 see page 1)**

Ref. No.	Before Change			After Change		
	Part No.	Description	Remark	Part No.	Description	Remark
2	3-027-089-31	CABINET (FRONT) (SILVER) (ICF-8: AEP, UK)		3-027-089-31	CABINET (FRONT) (SILVER) (ICF-8: AEP, UK, <u>E</u> , <u>6E</u> )	
11	3-027-090-21	CABINET (REAR) (SILVER) (ICF-8: AEP, UK)		3-027-090-21	CABINET (REAR) (SILVER) (ICF-8: AEP, UK, <u>E</u> , <u>6E</u> )	
13	3-027-091-21	LID, BATTERY CASE (SILVER) (ICF-8: AEP, UK)		3-027-091-21	LID, BATTERY CASE (SILVER) (ICF-8: AEP, UK, <u>E</u> , <u>6E</u> )	