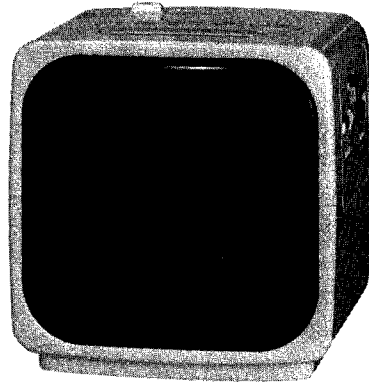


ICF-C122

SERVICE MANUAL

*US Model
Canadian Model
Central and
South America Model*



SPECIFICATIONS

Frequency range

FM: 87.5 – 108 MHz
AM: 530 – 1605 kHz

Speaker

Approx. 6.6 cm (2 5/8 inches) dia.

Power output

90 mW (at 10 % harmonic distortion)

Power requirements

120 V AC, 60 Hz

For the power back-up function : 9 V DC, one
6F22 battery

Battery life

Approx. 200 minutes, using Sony S-006P(U)
battery

Dimensions

Approx. 118.5 x 120 x 122.5 mm (w/h/d)
(4 3/4 x 4 3/4 x 4 7/8 inches) incl. projecting
parts and controls

Mass

Approx. 590 g (20.8 oz) not incl. battery

Design and specifications are subject to change
without notice.

FEATURES

- Full power back-up function to keep the clock, the alarm (radio and buzzer) and the radio operating during a power interruption, using a 6F22 battery (not supplied).



FM/AM CLOCK RADIO
SONY®

SECTION 1

SERVICING NOTE

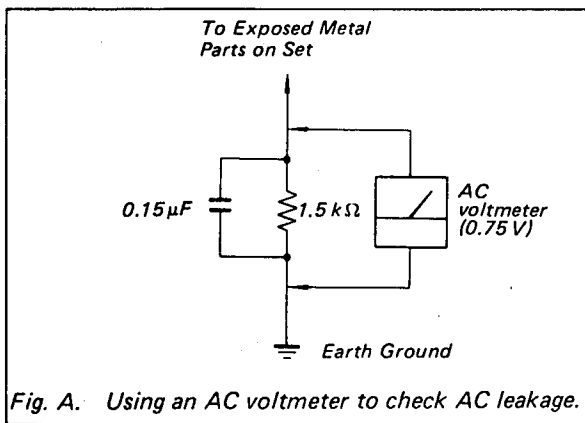
SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

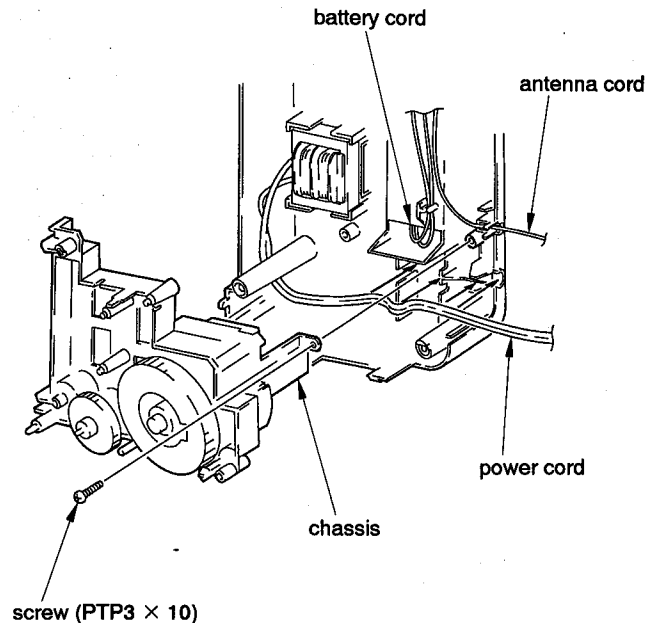
The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



CORD DRESSING (POWER, ANTENNA, BATTERY)

- 1) Connect the power cord, antenna cord, and battery cord as shown in the figure.
 - 2) Mount the chassis with screws (PTP3 \times 10).
- Note: Tighten completely the screws (PTP3 \times 10).



SAFETY-RELATED COMPONENT WARNING!!

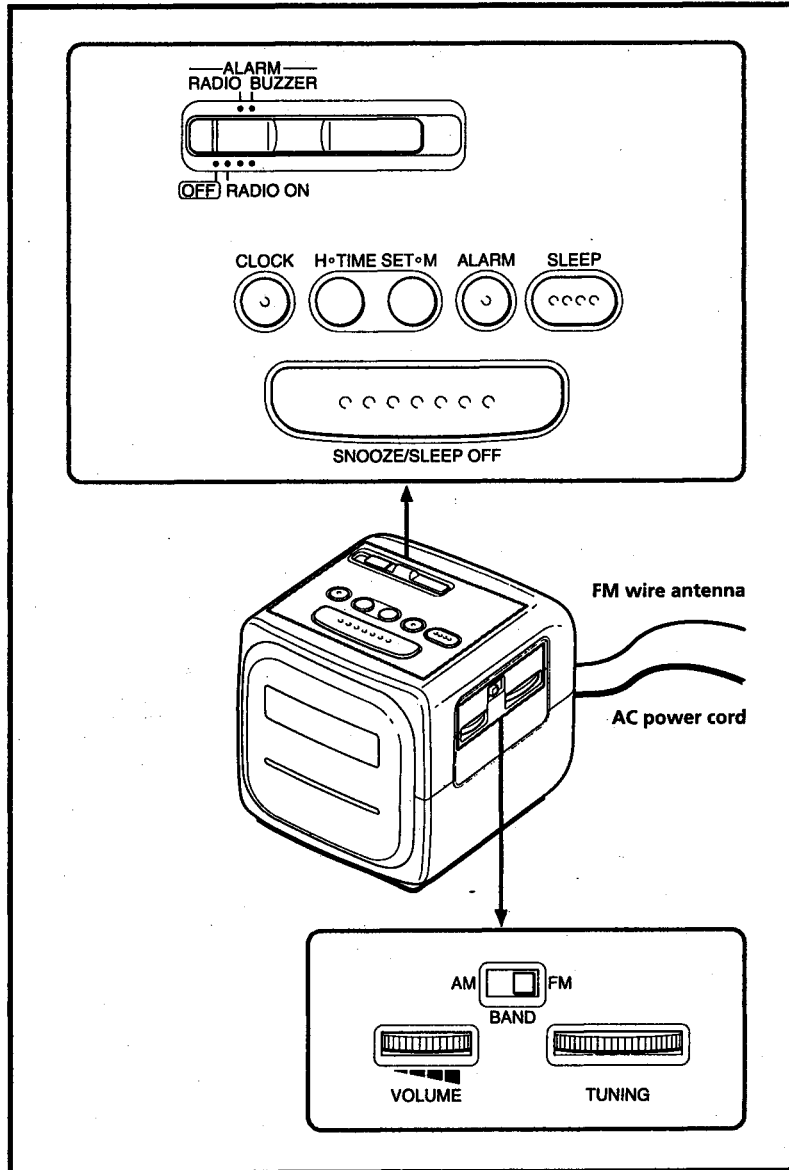
COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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

SECTION 2 GENERAL

This section is extracted from instruction manual.



Setting the Clock

1. Plug in the unit.
"AM 12:00" will flash in the display.
2. To set the hour, while holding down the **CLOCK** button, press the **TIME SET H** button. When the correct hour appears in the display, release the **CLOCK** button.
3. To set the minute, while holding down the **CLOCK** button, press the **TIME SET M** button. When the correct minute appears in the display, release the **CLOCK** button. The clock will begin to operate.

- Each press on the **TIME SET H** or **TIME SET M** button advances the displayed number by one.
- The minute digits advance to "00" after "59". The hour digits do not advance by pressing the **TIME SET M** button.
- To adjust the time exactly to the second, release the **TIME SET H** or **TIME SET M** button simultaneously with the radio or telephone time signal.

Playing the Radio

1. Set the **Function selector** to **RADIO ON** to turn on the radio and adjust **VOLUME**.
 2. Select **FM** or **AM** and tune in a station using the **TUNING** dial.
- To turn off the radio, set the **Function selector** to **OFF**.
 - To improve radio reception
FM: Extend the FM wire antenna fully to improve reception.
AM: Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built into the unit.

Setting the Alarm

To set the radio alarm, first tune in a station and adjust the volume.

1. To set the hour for alarm, while holding down the **ALARM** button, press the **TIME SET H** button. When the desired hour appears in the display, release the **ALARM** button.
2. To set the minute for alarm, while holding down the **ALARM** button, press the **TIME SET M** button. When the desired minute appears in the display, release the **ALARM** button.
3. Set the **Function selector** to **RADIO** or **BUZZER**. The alarm will come on at the preset time and automatically turn itself off after 119 minutes.

- To shut off the alarm, set the **Function selector** to **OFF**.
To sound the alarm at the preset time the next day, set the **Function selector** to **RADIO** or **BUZZER** again.
- To cancel either alarm, set the **Function selector** to **OFF**.
- To doze a few more minutes, press **SNOOZE/SLEEP OFF**.
The alarm will shut off, but will come on again after about 9 minutes. You can repeat this process as many times as you like.
- To adjust the radio alarm volume, turn **VOLUME**. The buzzer volume is fixed.
- To listen to the radio continuously, set the **Function selector** to **RADIO ON**.
- To check the preset time, press **ALARM** button.

Setting the Sleep Timer

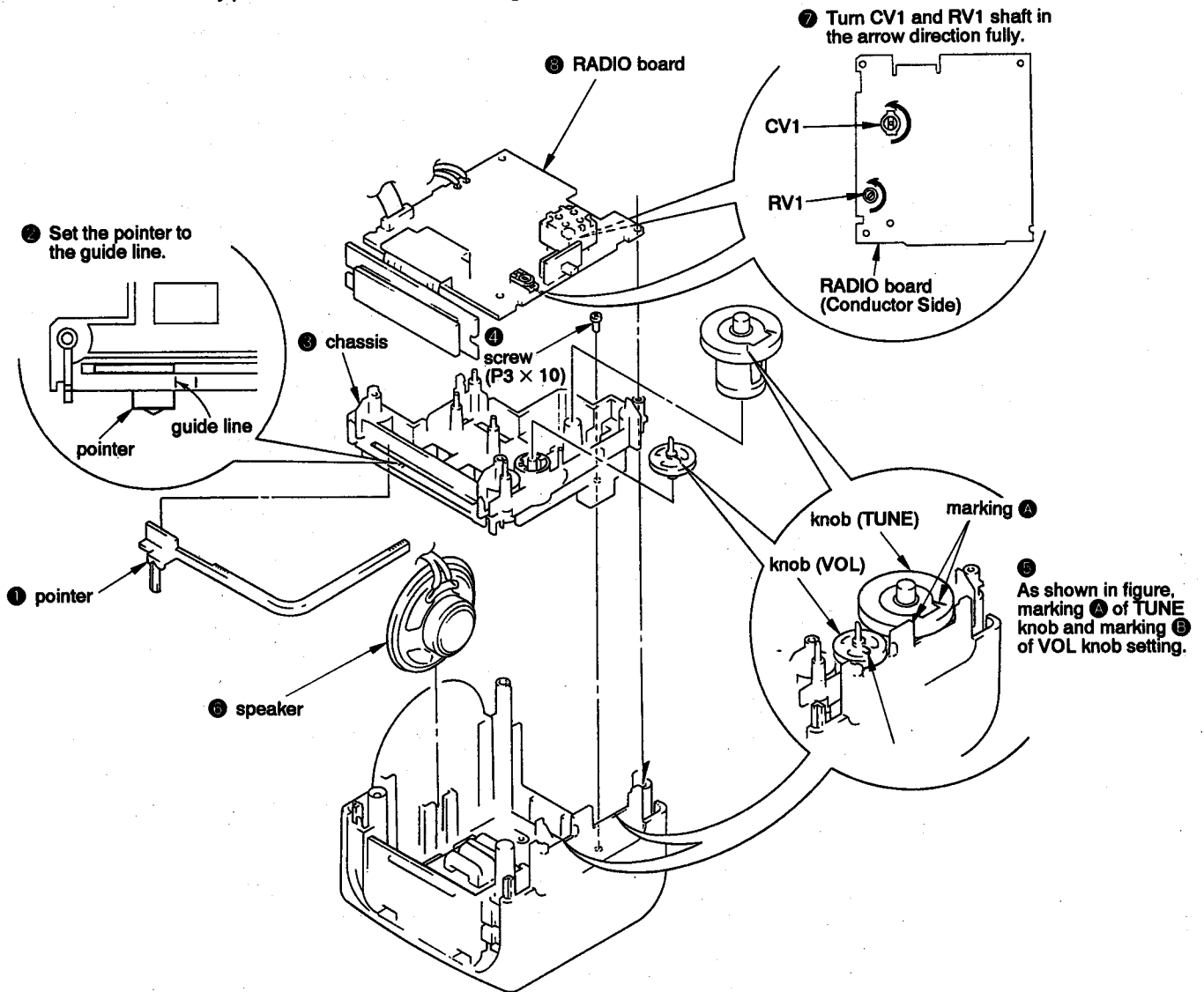
Enjoy falling asleep to the radio using the built-in sleep timer that shuts off the radio automatically at a preset time.

1. While listening to the radio, set the **Function selector** to **OFF**.
2. Press **SLEEP**.
The radio turns on. It will go off after 59 minutes.

- To turn off the radio before the preset time, press **SNOOZE/SLEEP OFF**.
- Every time you press **SLEEP**, the sleep timer is reset to 59 minutes.
- When you set the **Function selector** to **RADIO** or **BUZZER**, if the preset alarm time comes while the sleep timer is operating, the radio or buzzer sounds depending on which you set.

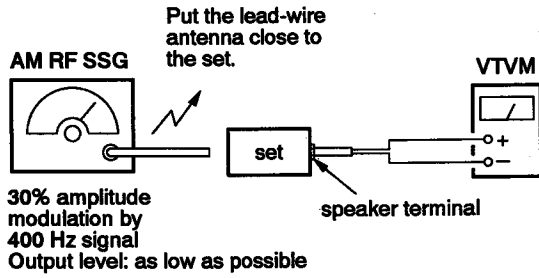
SECTION 3 DIAL POINTER SETTING

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



SECTION 4 ELECTRICAL ADJUSTMENTS

AM SECTION



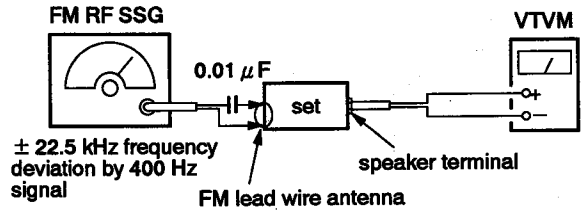
Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	CT2
520 kHz	1,650 kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	CT1
600 kHz	1,400 kHz

AM IF ALIGNMENT	
Adjust for a maximum reading on VTVM.	
T1	
455 kHz	

FM SECTION

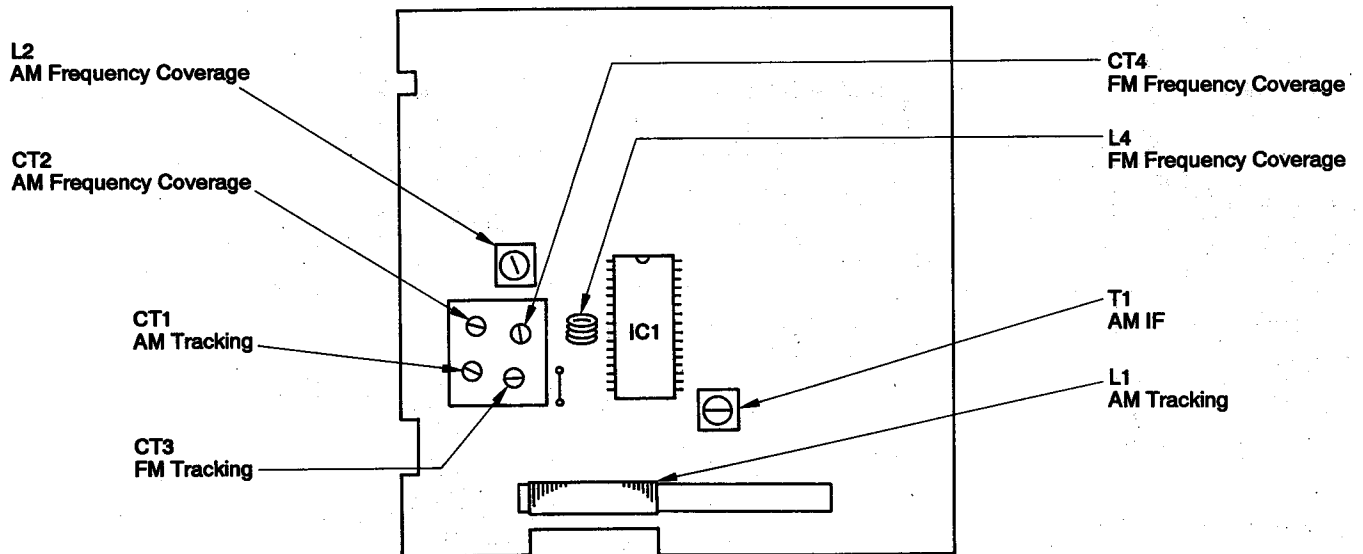


Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	CT4
86.5 MHz	109.5 MHz

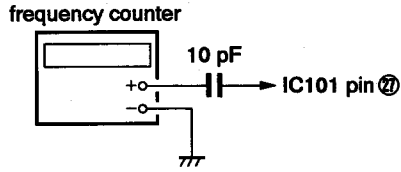
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT3	
Frequency max	

• Adjusting Location: RADIO board (Component Side)



Clock Frequency Check

Confirm that the reading on the frequency counter is $900 \pm \frac{200}{100}$ Hz.
 If frequency is higher, change capacitor value of C101.
 If frequency is lower, change resistor value of R101.



• HOW TO CHANGED THE CERAMIC FILTERS

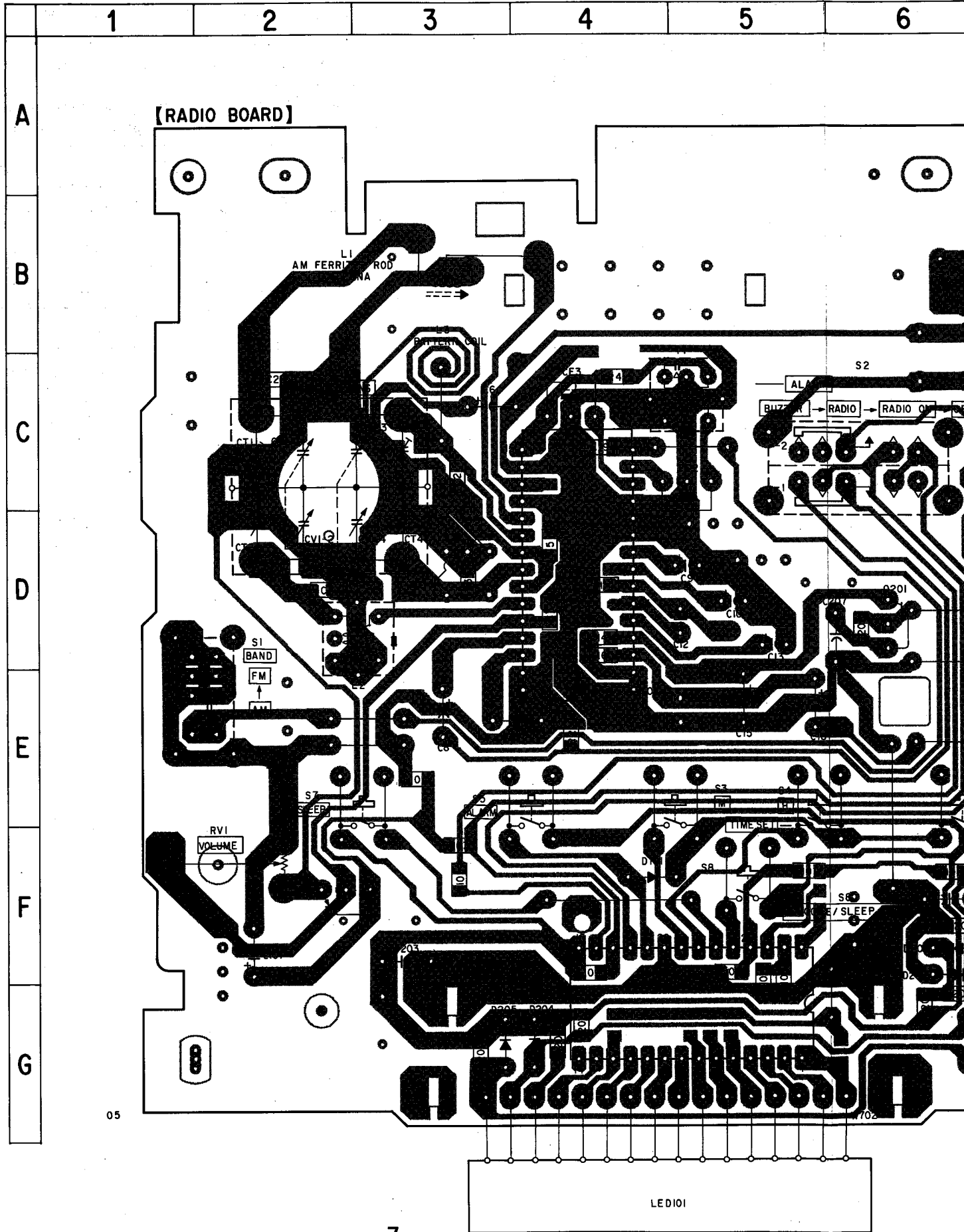
This model is used two ceramic filters of CF1, CF3. You must use same type of color marked ceramic filters in order to meet same specifications.

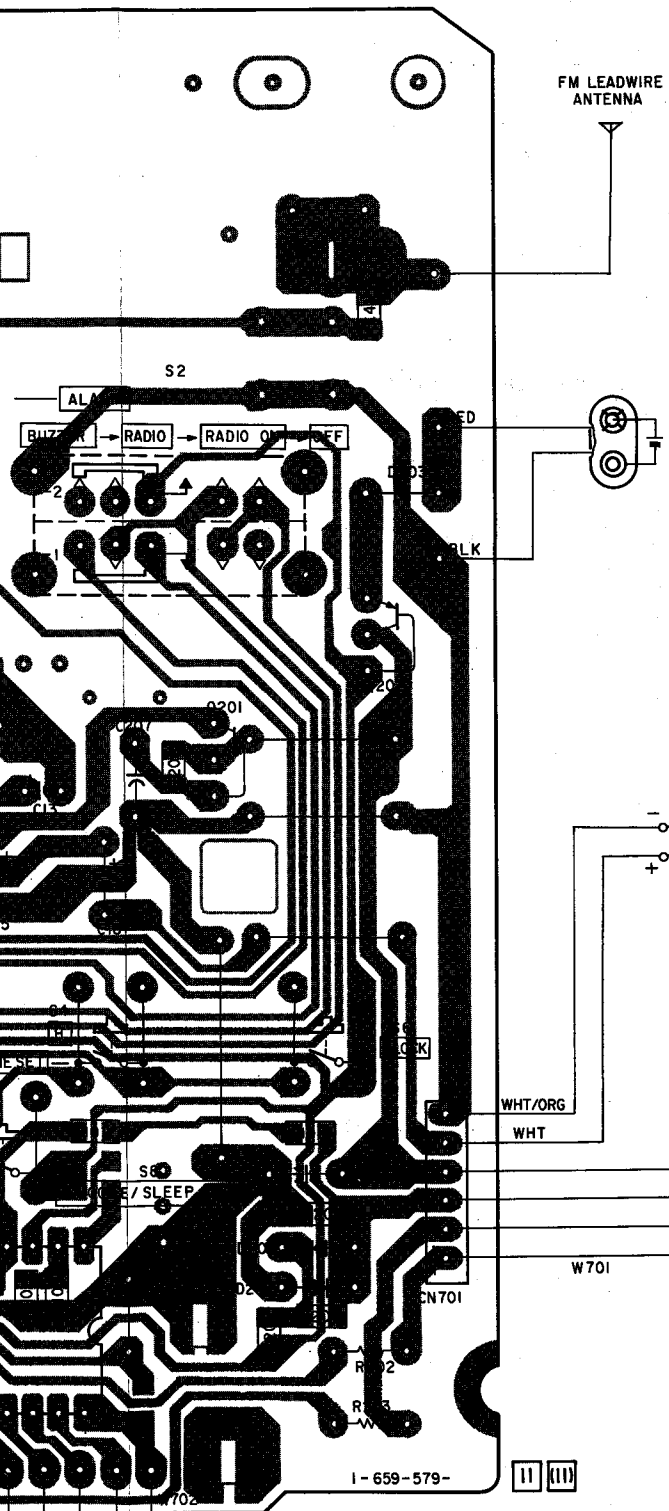
Therefore, the ceramic filter must changed two pieces together since it's supply two pieces in one package as a spare parts.

mark	center frequency
red	10.70 MHz
blue	10.67 MHz
orange	10.73 MHz
black	10.64 MHz
white	10.76 MHz

SECTION 5
DIAGRAMS

5-1. PRINTED WIRING BOARDS





FM LEADWIRE ANTENNA

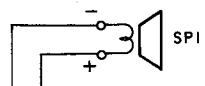
DRY BATTERY
"S-006P" 9V
(IEC DESIGNATION 6F22)
(KEEP THE CORRECT
TIME DURING POWER
STOPPAGE)

• Semiconductor Location

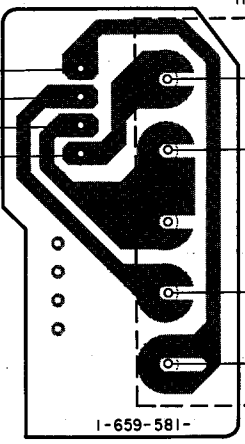
Ref. No.	Location
D101	F-4
D201	F-6
D202	F-6
D203	C-7
D204	G-4
D205	G-3
IC1	D-4
IC101	G-4
Q1	F-2
Q201	D-6
Q202	D-7

Note:

- ○ : parts extracted from the component side.
- — : parts extracted from the conductor side.
- □ : indicates side identified with part number.
- △ : internal component.

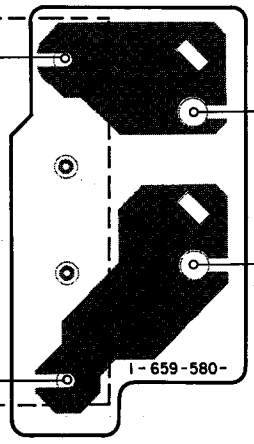


【 SECONDRY BOARD 】



T101
POWER
TRANSFORMER

【 PRIMARY BOARD 】

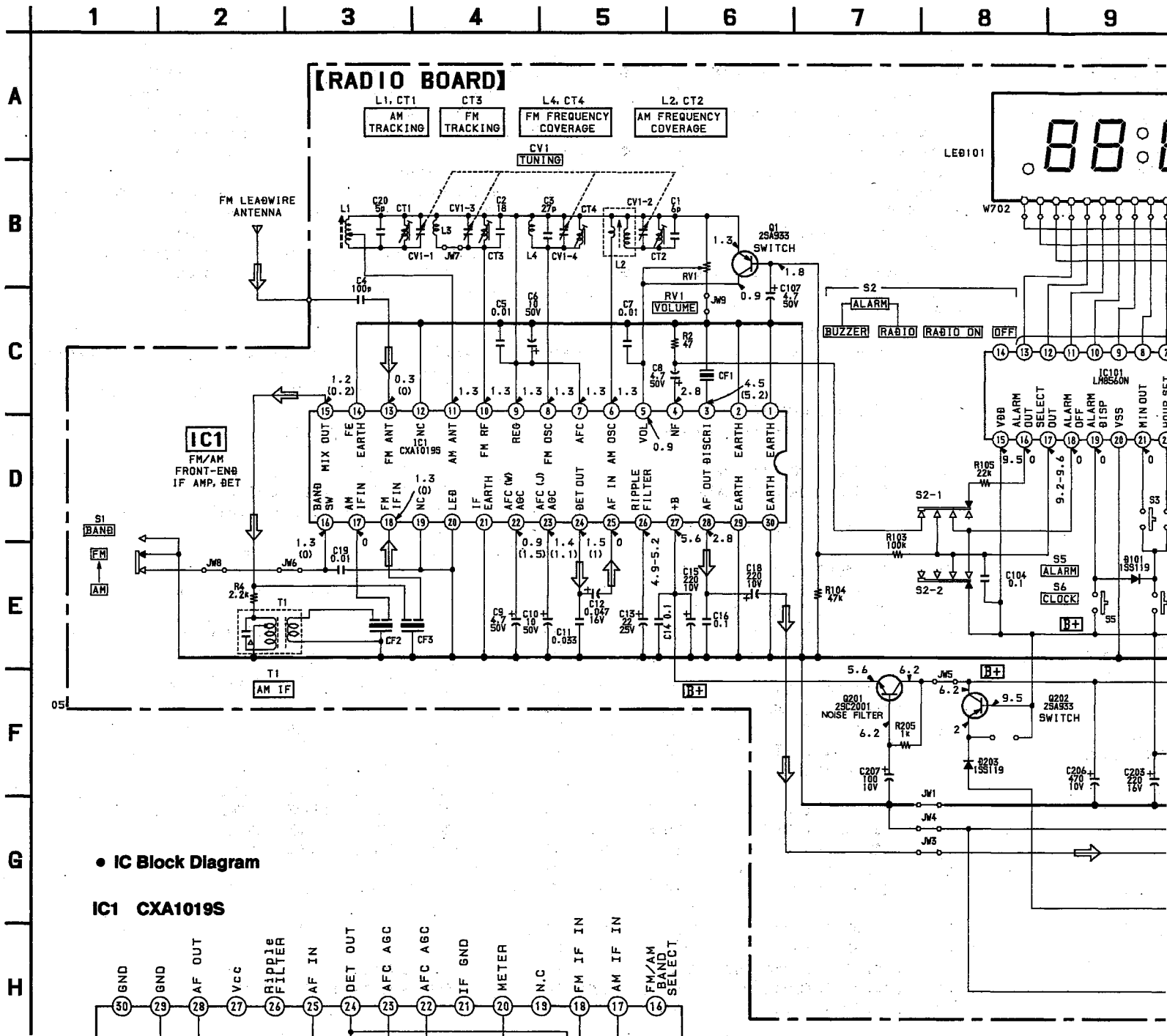


1-659-579-

1-659-581-

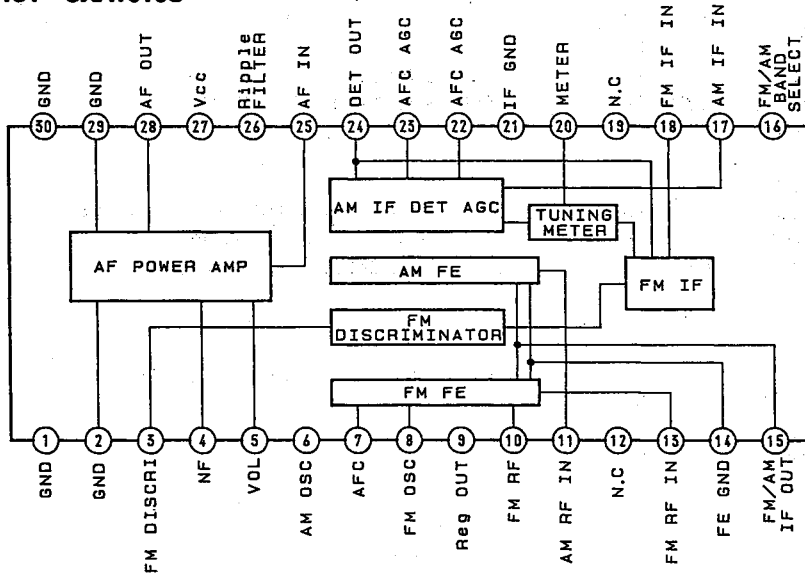
1-659-580-

5-2. SCHEMATIC DIAGRAM



• IC Block Diagram

IC1 CXA1019S

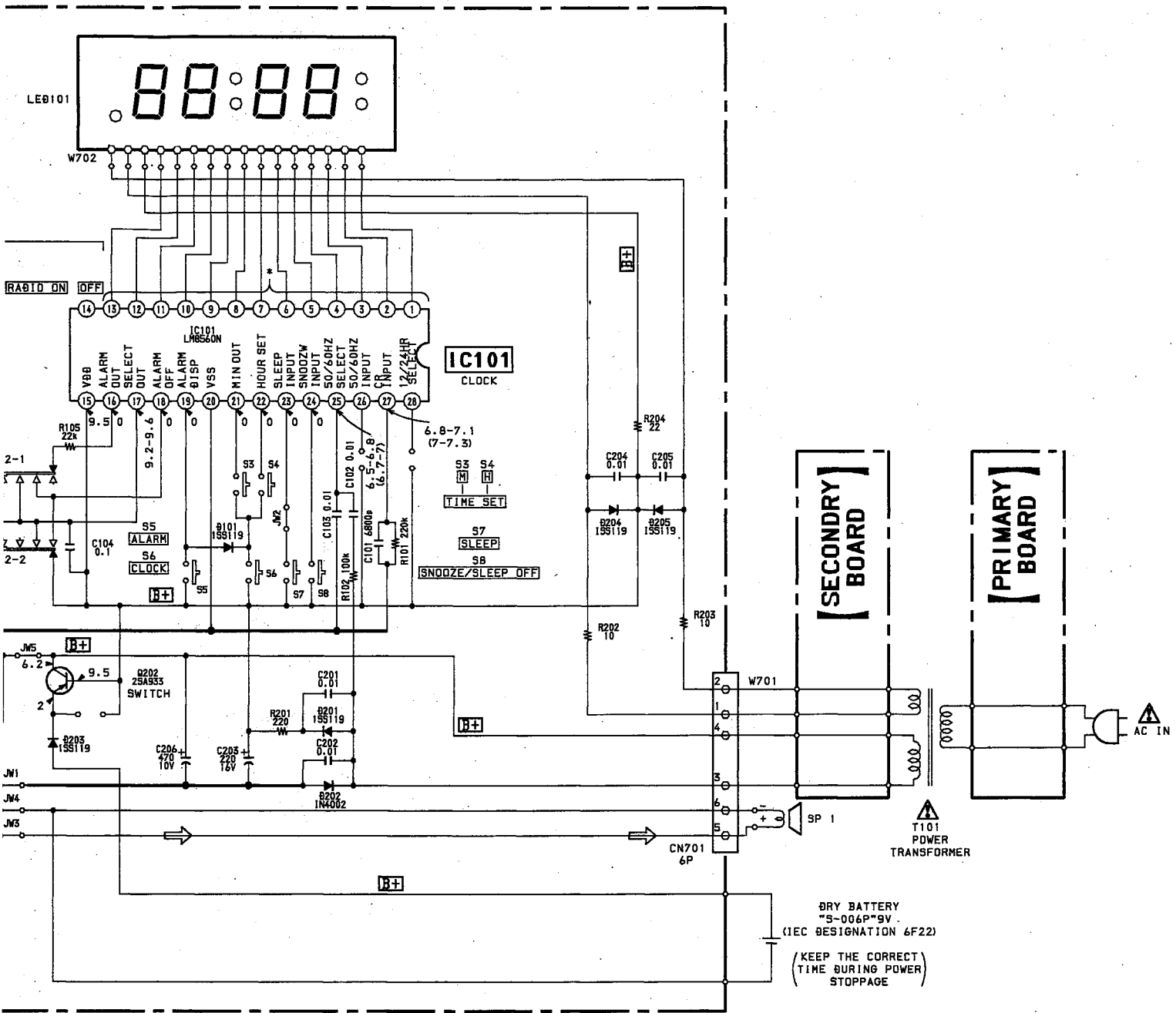


Note:

- All c
- 50
- and
- All
- spec
- Δ

Note:
 The c
 by ma
 with m
 safety
 Repla
 numbr

8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16



Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
- Δ : internal component.
- \square : panel designation.

Note:
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- \square : B + Line.
- \square : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
() : AM
* : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
 \Rightarrow : FM

SECTION 6 EXPLODED VIEW

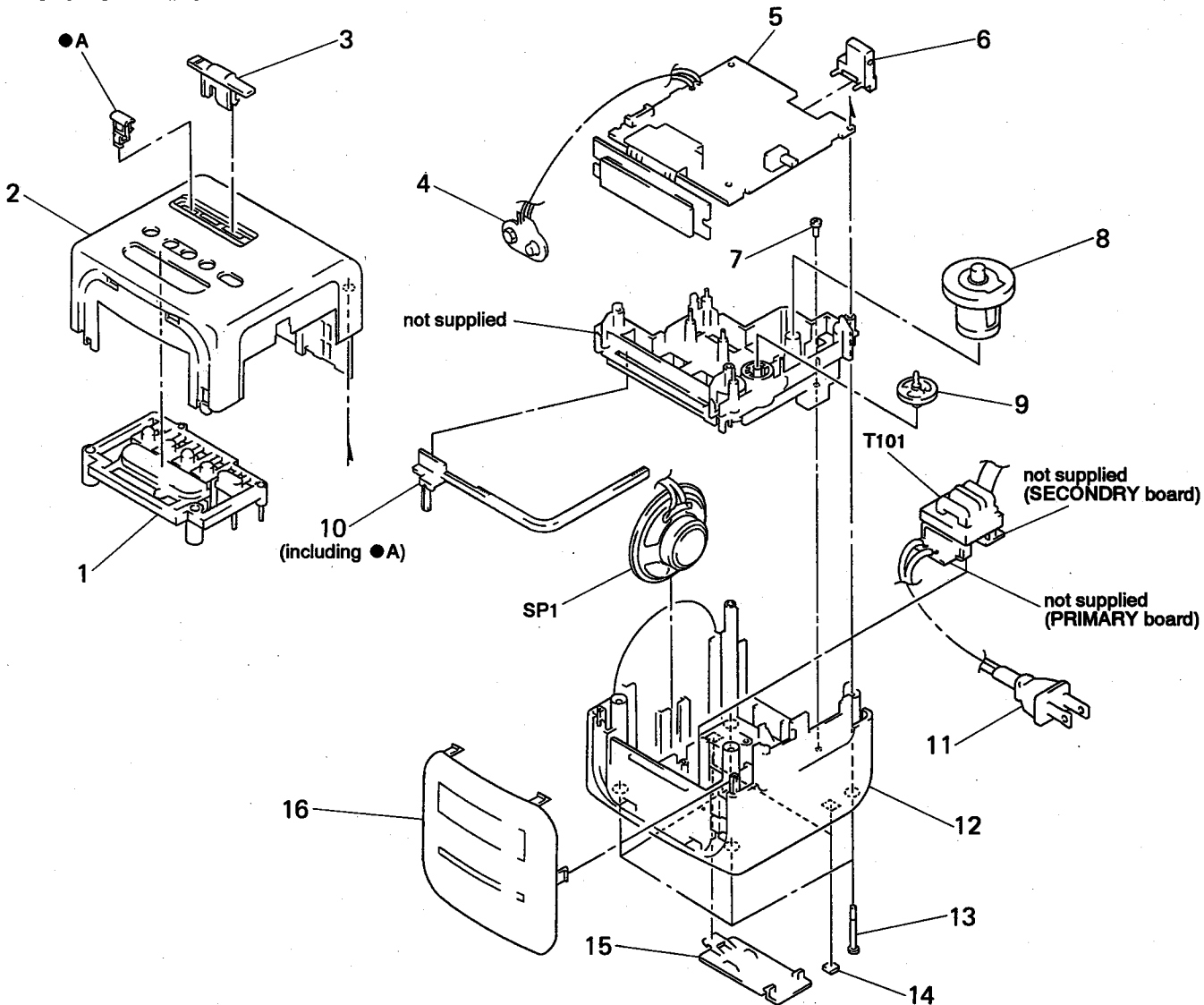
NOTE:

- -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
C&SA: Central and South America
- 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.

The components identified by mark **A** or dotted line with mark **A** are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-930-826-01	BUTTON (WHITE)		10	3-930-829-01	POINTER (INCLUDING ●A: MARKER)	
1	3-930-826-11	BUTTON (BLACK)		A 11	1-558-566-21	CORD, POWER (C&SA)	
2	3-930-823-01	CABINET (UPPER) (WHITE)		A 11	1-769-339-11	CORD, POWER (US, Canadian)	
2	3-930-823-11	CABINET (UPPER) (BLACK)		12	3-930-824-01	CABINET (LOWER) (WHITE)	
3	3-930-827-01	KNOB (FUNCTION) (WHITE)		12	3-930-824-11	CABINET (LOWER) (BLACK)	
3	3-930-827-11	KNOB (FUNCTION) (BLACK)		13	7-685-154-19	SCREW +P 3X35 TYPE2 NON-SLIT	
4	1-535-804-11	SNAP, BATTERY		14	3-368-852-01	FOOT	
* 5	A-3662-444-A	RADIO BOARD, COMPLETE		15	3-369-135-21	LID, BATTERY CASE	
6	3-922-610-01	HOLDER (ANTENNA)		16	3-899-693-51	PLATE, INDICATION	
7	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT		SP1	1-504-748-11	SPEAKER (6.6CM)	
8	3-930-828-01	KNOB (TUNING)		A T101	1-429-460-11	TRANSFORMER, POWER	
9	3-919-268-01	KNOB (VOL.)					

RADIO

SECTION 7 ELECTRICAL PARTS LIST

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
- Abbreviation
C&SA: Central and South America

- 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: μ , for example:
uA ... μ A. uPA... μ PA.
uPB... μ PB. uPC... μ PC. uPD... μ PD.
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
*	A-3662-444-A	RADIO BOARD, COMPLETE *****	
	1-535-804-11	SNAP, BATTERY	
	3-922-610-01	HOLDER (ANTENNA)	
		< CAPACITOR >	
C1	1-163-089-00	CERAMIC CHIP 6PF	50V
C2	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
C3	1-136-103-00	CERAMIC CHIP 27PF	5% 50V
C4	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C5	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C6	1-124-907-11	ELECT 10uF	20% 50V
C7	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C8	1-126-963-11	ELECT 4.7uF	20% 50V
C9	1-126-963-11	ELECT 4.7uF	20% 50V
C10	1-124-907-11	ELECT 10uF	20% 50V
C11	1-163-034-00	CERAMIC CHIP 0.033uF	50V
C12	1-162-847-11	CERAMIC 0.047uF	10% 16V
C13	1-126-233-11	ELECT 22uF	20% 50V
C14	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C15	1-104-666-11	ELECT 220uF	20% 10V
C16	1-164-004-11	CERAMIC CHIP 0.1uF	10% 25V
C18	1-104-666-11	ELECT 220uF	20% 10V
C19	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C20	1-163-222-11	CERAMIC CHIP 5PF	0.25PF 50V
C101	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V
C102	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C103	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C104	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C107	1-126-963-11	ELECT 4.7uF	20% 50V
C201	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C202	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C203	1-124-120-11	ELECT 220uF	20% 25V
C204	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C205	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C206	1-124-472-11	ELECT 470uF	20% 10V

Ref. No.	Part No.	Description	Remark
C207	1-124-443-00	ELECT 100uF	20% 10V
		< FILTER >	
CF1	1-760-144-61	FILTER, CERAMIC	
CF2	1-577-072-11	FILTER, CERAMIC	
CF3	1-760-144-61	FILTER, CERAMIC	
		< CONNECTOR >	
* CN701	1-568-272-11	SOCKET, CONNECTOR 6P	
		< VARIABLE CAPACITOR >	
CT1-4	1-151-673-11	CAP, VARIABLE (TUNING)	
CV1			
		< DIODE >	
D101	8-719-911-19	DIODE 1SS119	
D201	8-719-911-19	DIODE 1SS119	
D202	8-719-052-88	DIODE 1N4002	
D203	8-719-911-19	DIODE 1SS119	
D204	8-719-911-19	DIODE 1SS119	
D205	8-719-911-19	DIODE 1SS119	
		< IC >	
IC1	8-752-055-05	IC CXA1019S	
IC101	8-759-821-46	IC LM8560N	
		< COIL >	
L1	1-501-765-11	ANTENNA, FERRITE-ROD (AM)	
L2	1-406-028-00	COIL, OSC (MW)	
L4	1-428-222-11	COIL, AIR-CORE	
		< DIODE >	
LED101	1-809-514-11	DIODE LTC-6512GR2	

RADIO

Ref. No.	Part No.	Description	Remark
< TRANSISTOR >			
Q1	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q201	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
Q202	8-729-119-76	TRANSISTOR 2SA1175-HFE	
< RESISTOR >			
R2	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R4	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R101	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R102	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R103	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R104	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R105	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R201	1-216-033-00	METAL CHIP 220 5% 1/10W	
R202	1-249-393-11	CARBON 10 5% 1/4W	
R203	1-249-393-11	CARBON 10 5% 1/4W	
R204	1-216-009-00	METAL CHIP 22 5% 1/10W	
R205	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
< VARIABLE RESISTOR >			
RV1	1-228-790-00	RES, VAR, CARBON 50K(VOLUME)	
< SWITCH >			
S1	1-692-181-21	SWITCH, SLIDE (FM/AM)	
S2	1-762-232-11	SWITCH, SLIDE (OFF/RADIO ON/RADIO/BUZZER)	
S3	1-554-303-21	SWITCH, TACTILE (TIME SET M)	
S4	1-554-303-21	SWITCH, TACTILE (TIME SET H)	
S5	1-554-303-21	SWITCH, TACTILE (ALARM)	
S6	1-554-303-21	SWITCH, TACTILE (CLOCK)	
S7	1-554-303-21	SWITCH, TACTILE (SLEEP)	
S8	1-554-303-21	SWITCH, TACTILE (SNOOZE/SLEEP OFF)	
< TRANSFORMER >			
T1	1-404-790-11	TRANSFORMER, IF	
< FLAT CABLE >			
* W701	1-776-983-11	CORD, CONNECTION	
* W702	1-769-137-11	CORD, CONNECTION (16 CORE)	

MISCELLANEOUS			

4	1-535-804-11	SNAP, BATTERY	
△11	1-558-566-21	CORD, POWER (C&SA)	
△11	1-769-339-11	CORD, POWER (US, Canadian)	
SP1	1-504-748-11	SPEAKER (6.6CM)	
△T101	1-429-460-11	TRANSFORMER, POWER	

Ref. No.	Part No.	Description	Remark
ACCESSORIES & PACKING MATERIALS			

	3-810-220-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (Canadian, C&SA)	
	3-810-220-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
*	3-931-007-01	INDIVIDUAL CARTON	

<p>The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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