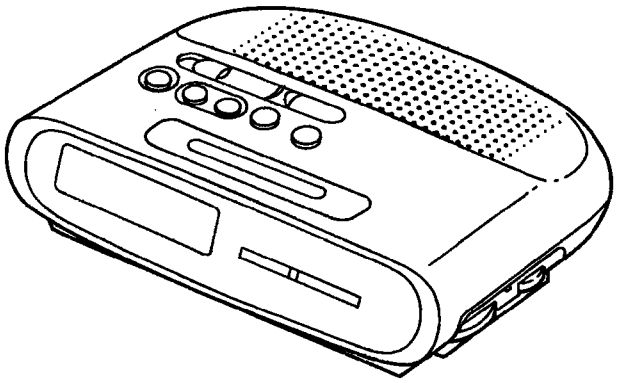
ICF-C295

SERVICE MANUAL

US Model
Canadian Model



SPECIFICATIONS

Frequency range:
FM: 87.5 - 108 MHz
AM: 530 - 1,605 kHz
Speaker:
Approx. 6.6 cm (2 5/8 inches) dia.
Power output:
150 mW (at 10 % harmonic distortion)
Power requirements:
120 V AC, 60 Hz
For the power backup function: 9 V DC, one 6F22 battery
Battery life:
Approx. 200 minutes, using Sony S-006P(U) battery
Dimensions:
Approx. 192 × 52 × 155 mm (w/h/d) (7 5/8 × 2 1/8 × 6 1/8 inches) incl. projecting parts and controls
Mass:
Approx. 520 g (1 lb 2 oz.) not incl. battery

Design and specifications are subject to change without notice.

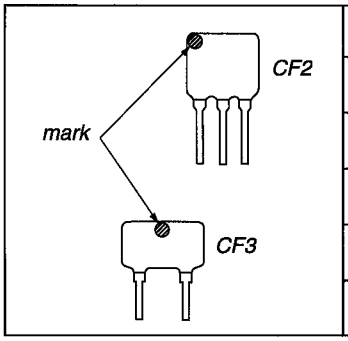
FM/AM CLOCK RADIO

MICROFILM

SONY®

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

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 microampers.). 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 2 V AC range are suitable. (See Fig. A)

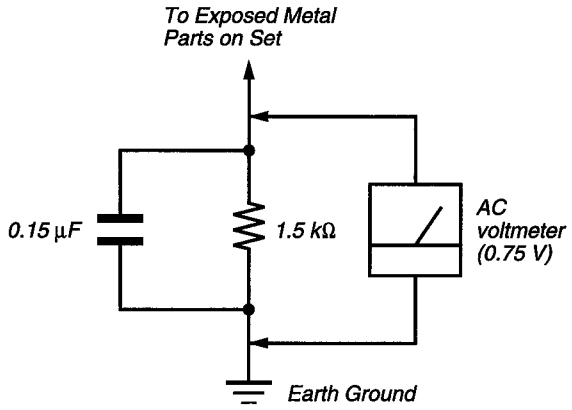


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

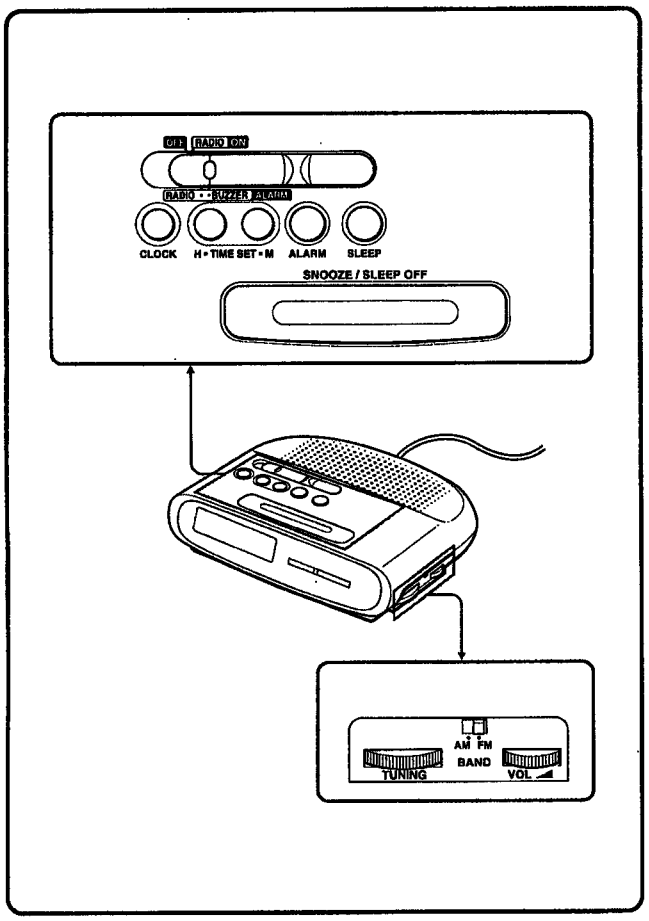
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ 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 1
GENERAL

This section is extracted from instruction manual.



Installing the Battery

To keep good time, your Dream Machine needs one 6F22 battery (not supplied), in addition to house current. The battery keeps the clock operating in the event of a power interruption. Before setting the time on your Dream Machine, open the lid at the bottom of the unit, install the battery with correct polarity and then close the lid.

- After a power interruption, the displayed time may not be always correct (it may gain or lose about 10 minutes per hour).

Knowing When to Replace the Battery

- To check battery power, unplug the AC power cord from the wall outlet and plug it in again after a few minutes. If the displayed time is incorrect, replace the battery with a new one.

Setting the Clock

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

- The clock system varies depending on the model you own.
  12-hour system: "AM 12:00" = midnight
- Each press on **TIME SET H** or **TIME SET M** advances the displayed number by one.
- The minute digits advance to "00" after "59". The hour digits do not advance by pressing **TIME SET M**.
- To adjust the time exactly to the second, release **TIME SET M** simultaneously with the time signal.

Playing the Radio

1. Set the function selector to **RADIO ON** to turn on the radio and adjust **VOL** (volume).
2. Select **BAND** and tune in to a station using **TUNING**.

- To turn off the radio, set the function selector to **OFF**.
- To improve radio reception
  FM: Since the AC power cord acts as an antenna, extend the cord to improve FM 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 to a station and adjust the volume.

1. To set the hour for alarm, while holding down **ALARM**, press **TIME SET H**. When the desired hour appears in the display, release **ALARM**.
2. To set the minute for alarm, while holding down **ALARM**, press **TIME SET M**. When the desired minute appears in the display, release **ALARM**.
3. Set the function selector to the alarm sound of your choice (**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 **VOL**.
  The buzzer volume is fixed.
- To check the preset time, press **ALARM**.

Setting the Sleep Timer

Enjoy falling asleep to the radio using the built-in sleep timer that shuts off the radio automatically after 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.

To Use Both Sleep Timer and Alarm Function

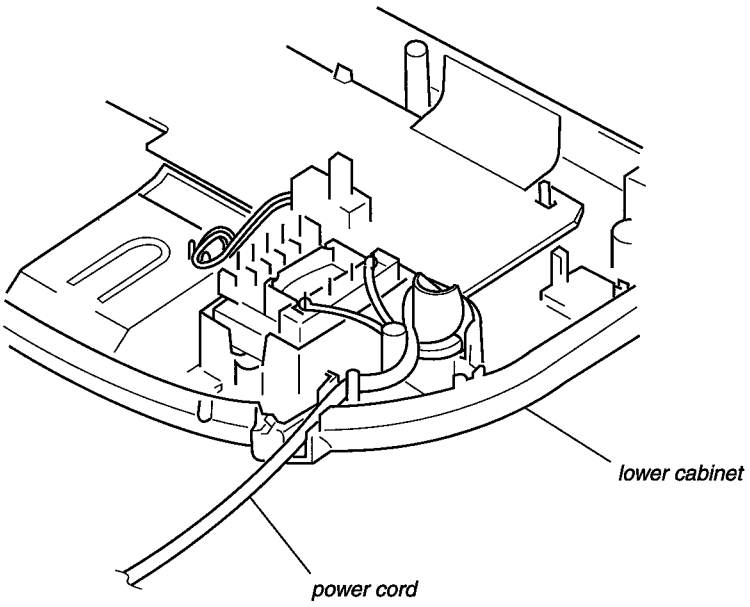
You can fall asleep to the radio sound and you will be awakened by the radio/buzzer alarm at the preset time.

1. Set the alarm. (See "Setting the Alarm".)
2. Press **SLEEP**.

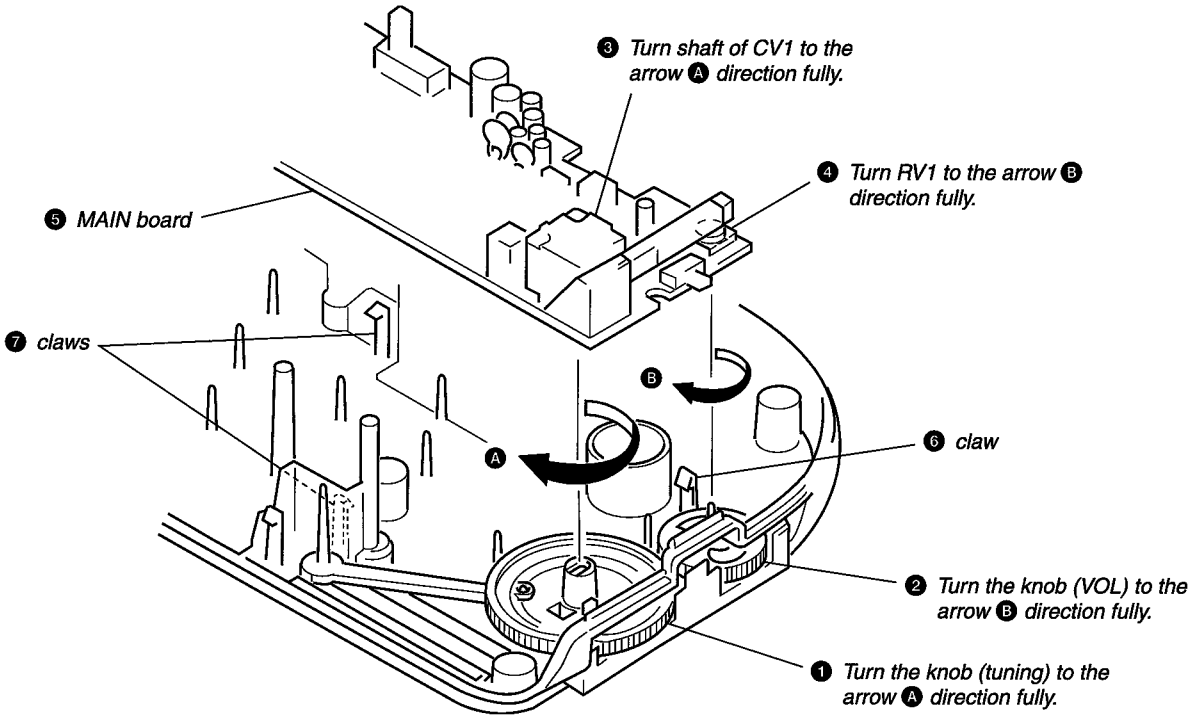
SECTION 2
SETTING

SETTING THE POWER CORD

Set the power cord as illustrated below, then install the lower cabinet.



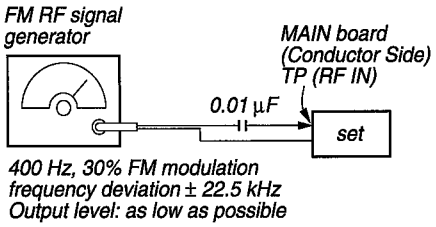
KNOB SETTING



SECTION 3
ELECTRICAL ADJUSTMENTS

FM SECTION

Setting:
BAND switch: FM

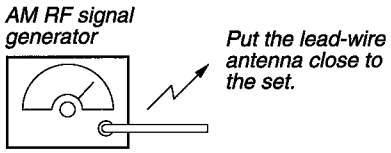


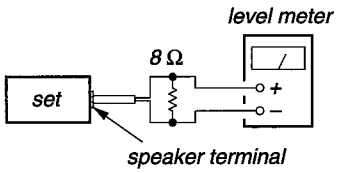
FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	86.5 MHz
CT3	109.5 MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
Confirm	86.5 MHz
CT2	109.5 MHz

AM SECTION

Setting:
BAND switch: AM





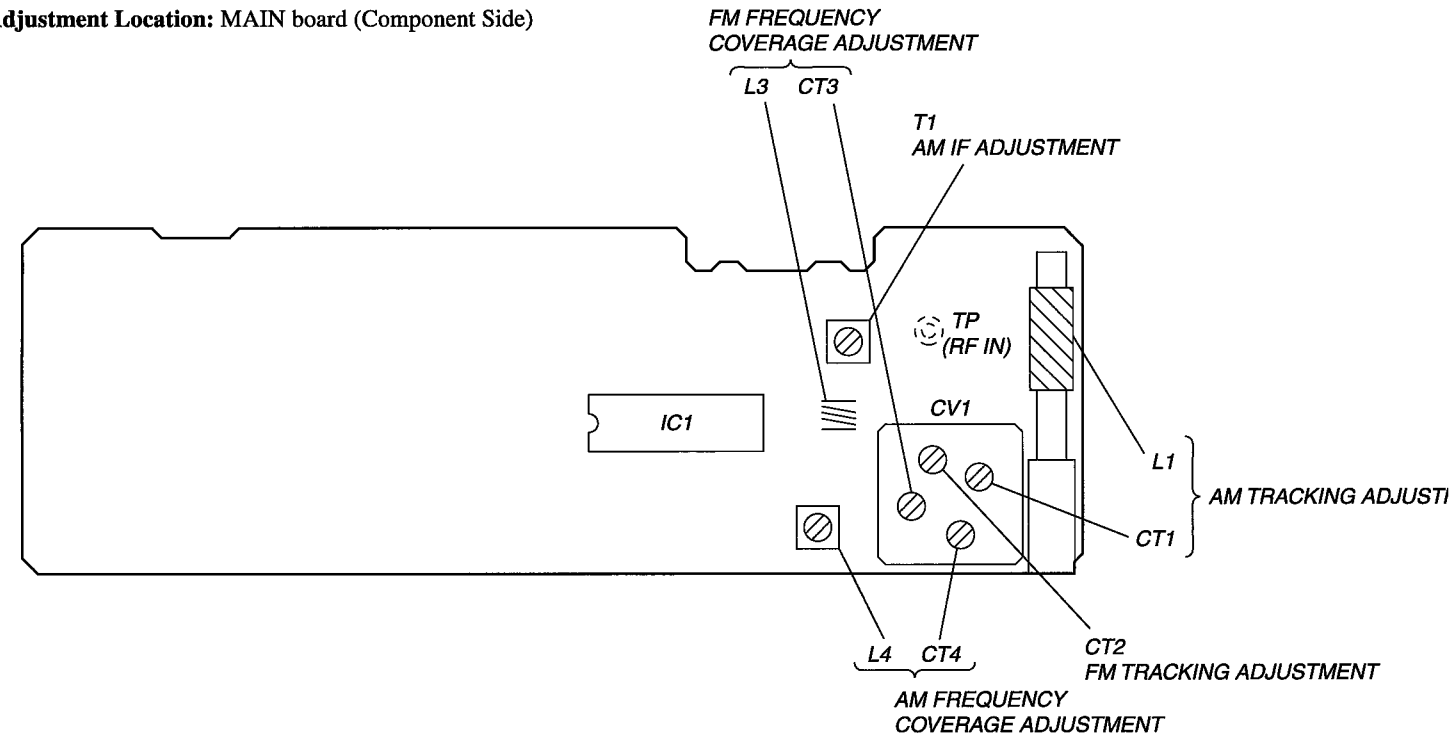
AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L4	520 kHz
CT4	1,650 kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1	600 kHz
CT1	1,500 kHz

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

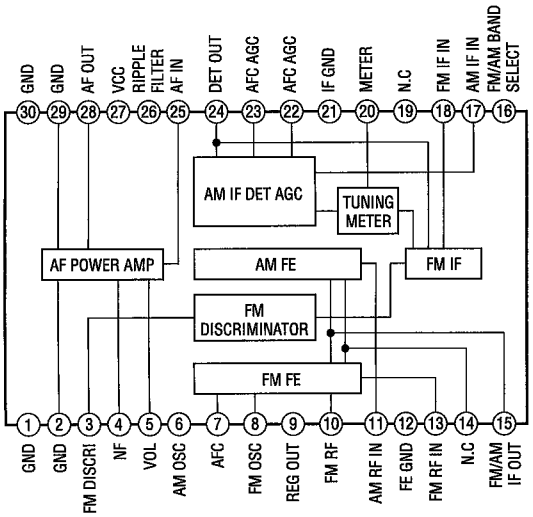
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

Adjustment Location: MAIN board (Component Side)

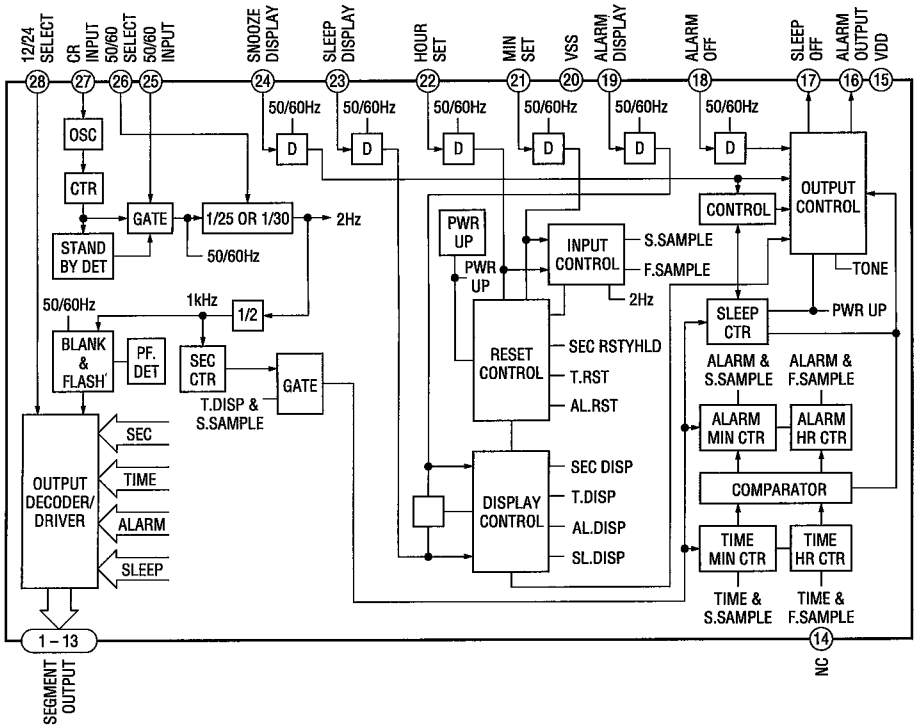


• IC Block Diagrams

IC1 CXA1019S



IC2 LM8560N



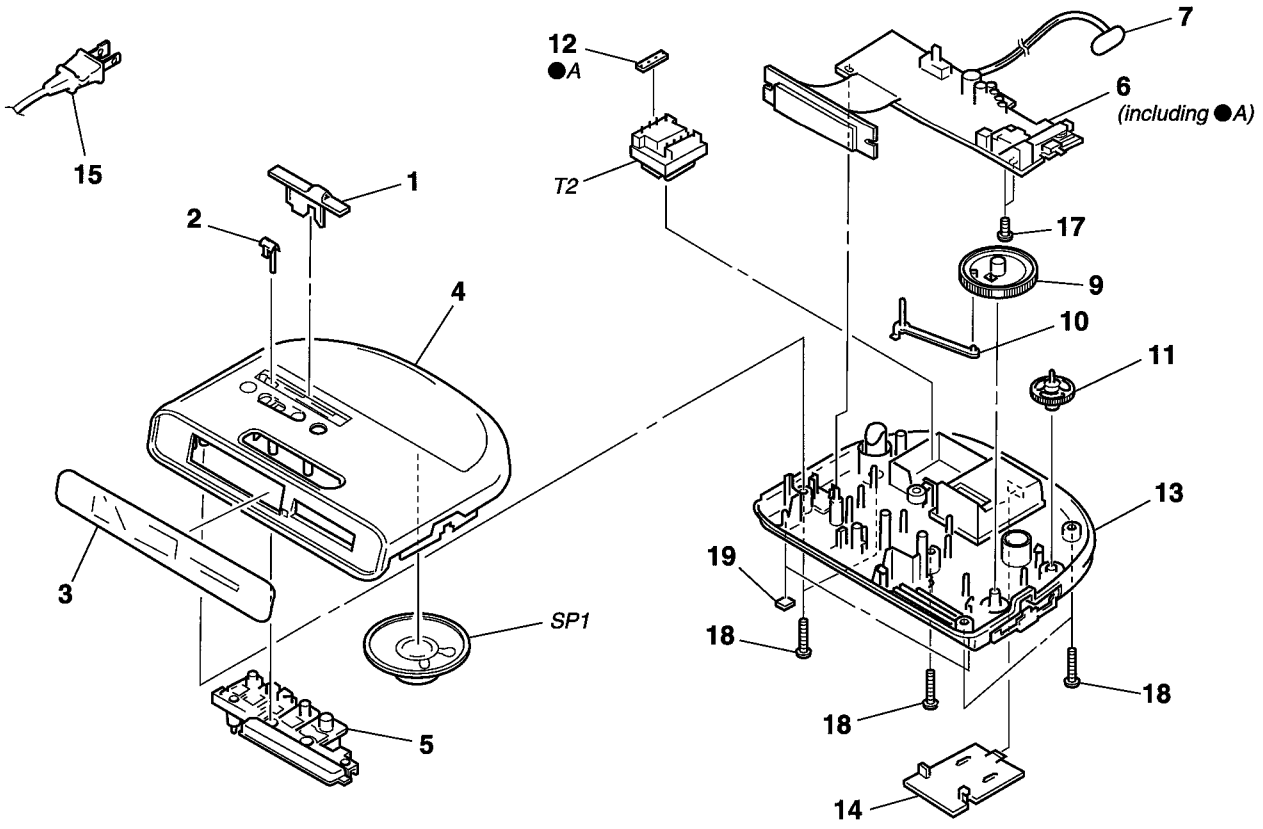
SECTION 5
EXPLODED VIEW

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
- 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 ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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



Ref. No.	Part No.	Description	Remark
1	3-018-229-21	KNOB (FUNCTION) (YELLOW)	
1	3-018-229-31	KNOB (FUNCTION) (VIOLET)	
2	3-919-270-01	MARKER	
3	3-018-230-41	SCALE, DIAL (YELLOW)	
3	3-018-230-51	SCALE, DIAL (VIOLET)	
4	3-018-226-21	CABINET (UPPER) (YELLOW)	
4	3-018-226-31	CABINET (UPPER) (VIOLET)	
5	3-018-228-21	BUTTON (YELLOW)	
5	3-018-228-31	BUTTON (VIOLET)	
* 6	A-3679-648-A	MAIN BOARD, COMPLETE	
7	1-535-804-21	SNAP, BATTERY	
9	3-919-267-01	KNOB (TUNE)	
10	3-919-269-01	POINTER	
11	3-919-268-01	KNOB (VOL)	
* 12	1-654-818-11	POEWR SUPPLY BOARD	
13	3-018-227-61	CABINET (LOWER)	
14	3-369-135-21	LID, BATTERY CASE	
⚠15	1-783-817-21	CORD, POWER	
17	7-621-770-87	SCREW +P 2.6X5	
18	7-685-649-79	SCREW +P 3X14 TYPE2 NON-SLIT	
19	3-368-852-01	FOOT	
SP1	1-504-748-11	SPEAKER (6.6CM)	
⚠T2	1-427-927-11	TRANSFORMER, POWER	

SECTION 6
ELECTRICAL PARTS LIST

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
- 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. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

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

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

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

Ref. No.	Part No.	Description			Remark
*	A-3679-648-A	MAIN BOARD, COMPLETE			
		**********			
	1-535-804-21	SNAP, BATTERY			
	7-621-770-87	SCREW +P 2.6X5			
		< CAPACITOR >			
C2	1-102-952-00	CERAMIC	16PF	5%	50V
C3	1-102-960-00	CERAMIC	24PF	5%	50V
C5	1-101-081-00	CERAMIC	130PF	5%	50V
C6	1-101-880-00	CERAMIC	47PF	5%	50V
C7	1-104-664-11	ELECT	47uF	20%	10V
C8	1-101-004-00	CERAMIC	0.01uF		50V
C9	1-126-963-11	ELECT	4.7uF	20%	50V
C10	1-101-004-00	CERAMIC	0.01uF		50V
C11	1-101-004-00	CERAMIC	0.01uF		50V
C12	1-101-004-00	CERAMIC	0.01uF		50V
C13	1-126-963-11	ELECT	4.7uF	20%	50V
C14	1-124-907-11	ELECT	10uF	20%	50V
C15	1-101-005-00	CERAMIC	0.022uF		50V
C16	1-124-903-11	ELECT	1uF	20%	50V
C17	1-104-664-11	ELECT	47uF	20%	10V
C18	1-162-851-11	CERAMIC	0.1uF	10%	16V
C19	1-162-851-11	CERAMIC	0.1uF	10%	16V
C20	1-126-968-11	ELECT	100uF	20%	6.3V
C21	1-161-050-00	CERAMIC	0.0082uF	10%	16V
C22	1-101-004-00	CERAMIC	0.01uF		50V
C23	1-101-004-00	CERAMIC	0.01uF		50V
C24	1-101-004-00	CERAMIC	0.01uF		50V
C25	1-101-004-00	CERAMIC	0.01uF		50V
C26	1-126-934-11	ELECT	220uF	20%	16V
C27	1-126-941-11	ELECT	470uF	20%	6.3V
C28	1-124-471-00	ELECT	1000uF	20%	6.3V
C29	1-101-004-00	CERAMIC	0.01uF		50V
C30	1-101-004-00	CERAMIC	0.01uF		50V
		< FILTER >			
CF1	1-577-072-11	FILTER, CERAMIC (455kHz)			
CF2	1-760-144-61	FILTER, CERAMIC (10.7MHz)			
CF3	1-760-144-61	FILTER, CERAMIC (10.7MHz)			

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
* CN1	1-769-137-11	CORD, CONNECTION (16 CORE)			
		< VARIABLE CAPACITOR >			
CT1-4	1-141-526-11	CAP, VAR			
CV1	1-141-526-11	CAP, VAR (TUNING)			
		< DIODE >			
D1	8-719-921-19	DIODE 1SS119-25TG			
D2	8-719-921-19	DIODE 1SS119-25TG			
D3	8-719-921-19	DIODE 1SS119-25TG			
D4	8-719-921-19	DIODE 1SS119-25TG			
D5	8-719-921-19	DIODE 1SS119-25TG			
D6	8-719-052-88	DIODE 1N4002			
D7	1-809-515-11	DIODE LTC-6512PDK2 (LED DISPLAY)			
		< IC >			
IC1	8-752-037-02	IC CXA1019S			
IC2	8-759-821-46	IC LM8560N			
		< COIL >			
L1	1-501-742-11	ANTENNA, FERRITE-ROD (AM)			
L3	1-428-163-11	COIL, AIR-CORE			
L4	1-411-175-11	COIL (AM OSC)			
L5	1-411-136-11	COIL, AIR-CORE			
L6	1-411-136-11	COIL, AIR-CORE			
		< TRANSISTOR >			
Q1	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q2	8-729-119-76	TRANSISTOR 2SA1175-HFE			
		< RESISTOR >			
R1	1-249-397-11	CARBON	22	5%	1/4W
R2	1-249-397-11	CARBON	22	5%	1/4W
R3	1-249-441-11	CARBON	100K	5%	1/4W
R4	1-247-891-00	CARBON	330K	5%	1/4W
R5	1-249-433-11	CARBON	22K	5%	1/4W
R6	1-247-887-00	CARBON	220K	5%	1/4W
R7	1-249-441-11	CARBON	100K	5%	1/4W

MAIN POWER SUPPLY

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV1	1-228-790-00	RES, VAR, CARBON 50K (VOL)	
		< SWITCH >	
S1	1-762-231-11	SWITCH, SLIDE (BAND)	
S2	1-762-232-11	SWITCH, SLIDE (OFF, RADIO ON, ALARM)	
S3	1-762-233-11	SWITCH, KEYBOARD (ALARM)	
S4	1-762-233-11	SWITCH, KEYBOARD (TIME SET M)	
S5	1-762-233-11	SWITCH, KEYBOARD (TIME SET H)	
S6	1-762-233-11	SWITCH, KEYBOARD (CLOCK)	
S7	1-762-233-11	SWITCH, KEYBOARD (SLEEP)	
S8	1-762-233-11	SWITCH, KEYBOARD (SNOOZE/SLEEP OFF)	
		< TRANSFORMER >	
T1	1-404-790-11	TRANSFORMER, IF	
**********			
*	1-654-818-11	POWER SUPPLY BOARD	
		**********	
**********			
		MISCELLANEOUS	
		**********	
⚠15	1-783-817-21	CORD, POWER	
SP1	1-504-748-11	SPEAKER (6.6CM)	
⚠T2	1-427-927-11	TRANSFORMER, POWER	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-861-255-51	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-861-255-32	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, ARABIC) (Canadian)	

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Personal A&V Products Company

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