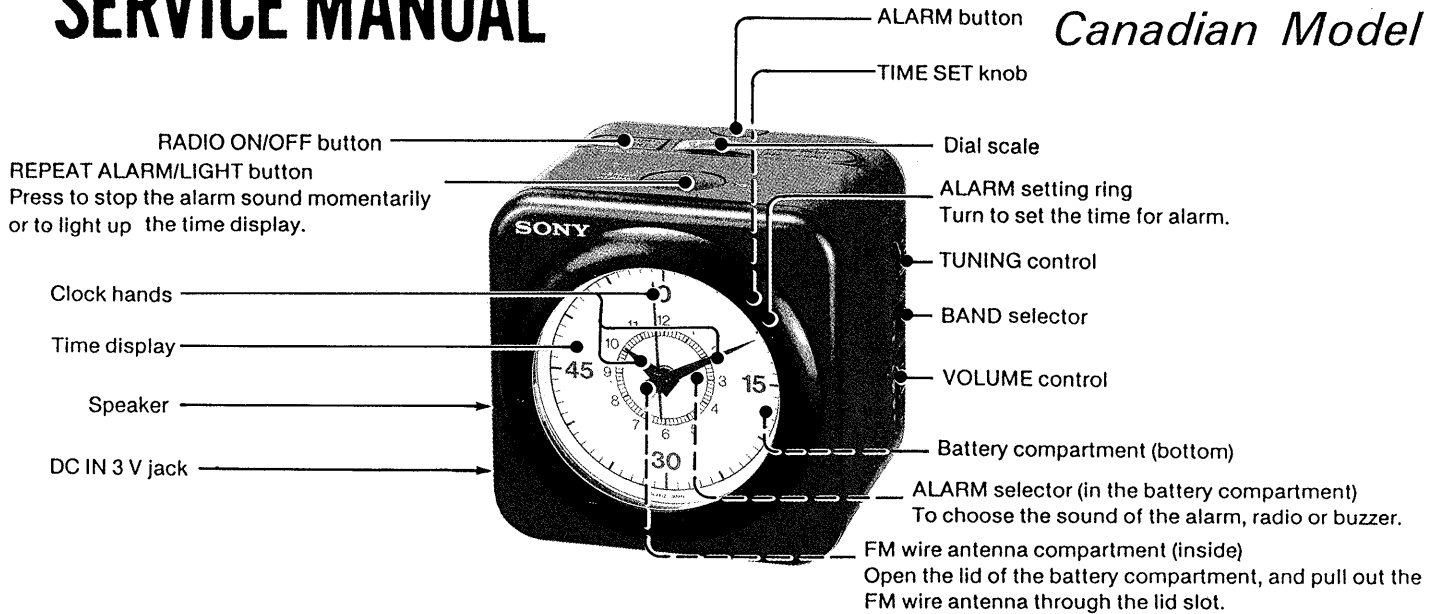


ICF-A7

SERVICE MANUAL

Canadian Model



SPECIFICATIONS

Frequency range	FM: 87.6 - 107.5 MHz AM: 531 - 1,602 kHz
Antenna	FM: FM wire antenna AM: Built-in ferrite bar antenna
Speaker	Approx. 5.7 cm (2 1/4 inches) dia. 8Ω
Power output	100 mW (at 10% harmonic distortion)
Power requirement	Radio: DC 3 V, Two R6 (size AA) batteries DC IN 3 V jack: optional AC power adaptor can be connected to AC outlet.
Battery life	Clock: DC 1.5 V, One R6 (size AA) battery Using Sony battery SUM-3 (NS) Radio: Approx. 35 hours Clock: Approx. 1 year
RADIO AUTO OFF function	More than 80 minutes later
Dimensions	Approx. 94 × 97 × 86 mm (w/h/d) (3 1/4 × 3 1/4 × 3 1/2 inches) incl. projecting parts and controls
Weight	Approx. 390 g (13.8 oz) incl. batteries
Optional accessory	AC power adaptor AC-D2M

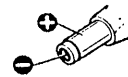
Design and specifications subject to change without notice.

FEATURES

- Easy-to-read analogue time display.
- Easy-to-operate alarm setting. Turn the alarm setting ring.
- Choice of awakening to radio or buzzer alarm.
- Repeat alarm function.
- Auto-off function to prevent battery drain.

Note:

Use only the optional AC power adaptor or the recommended cord manufactured by Sony, because the polarity of the plugs of other manufacturers may be different.



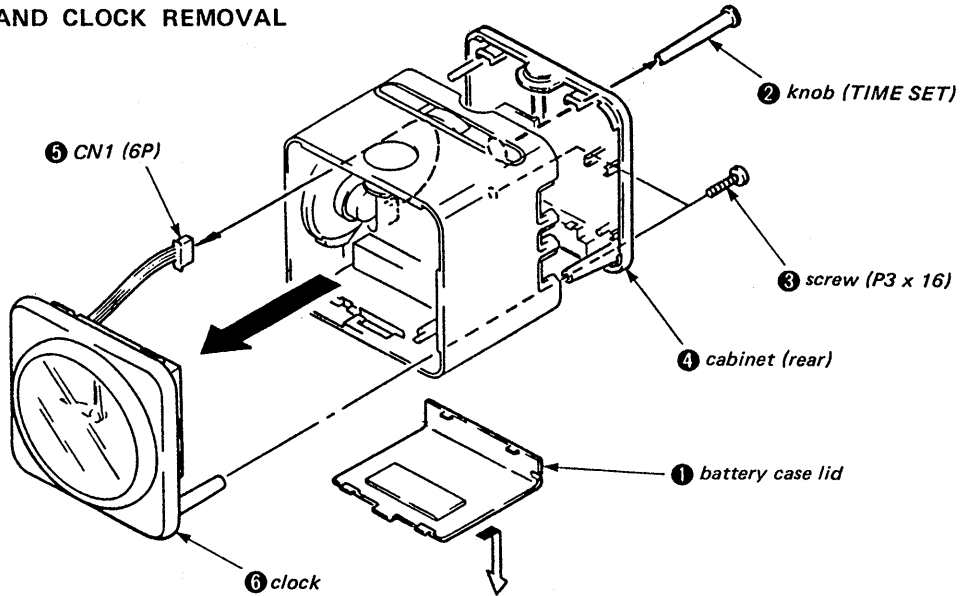
Polarity of the Sony plug

FM/AM QUARTZ CLOCK RADIO
SONY®

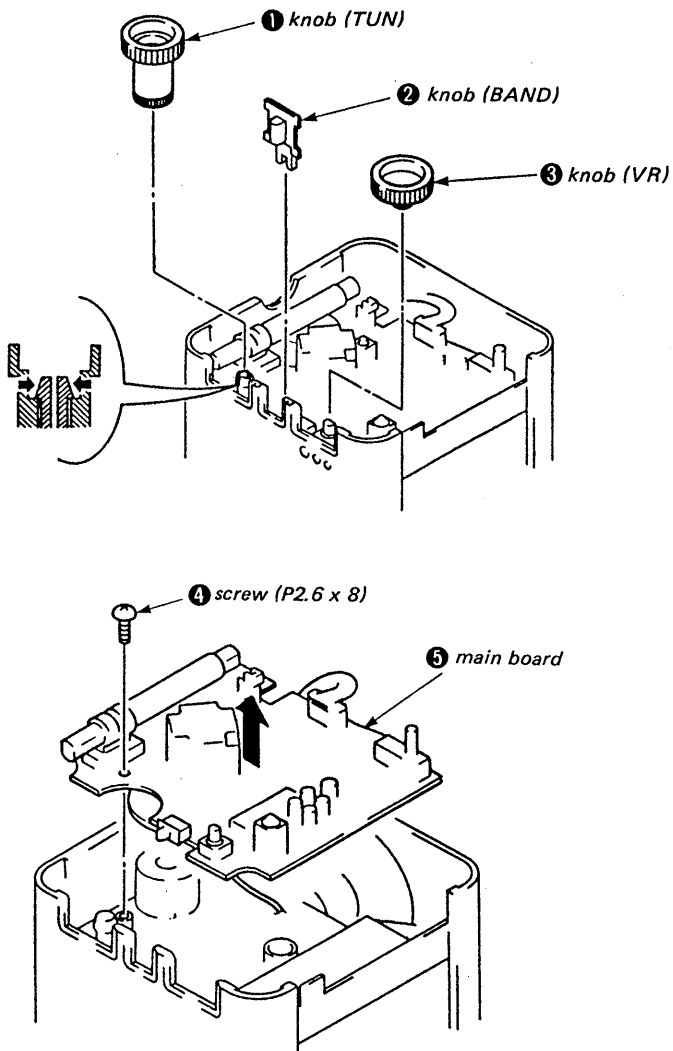
SECTION 1 DISASSEMBLY

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

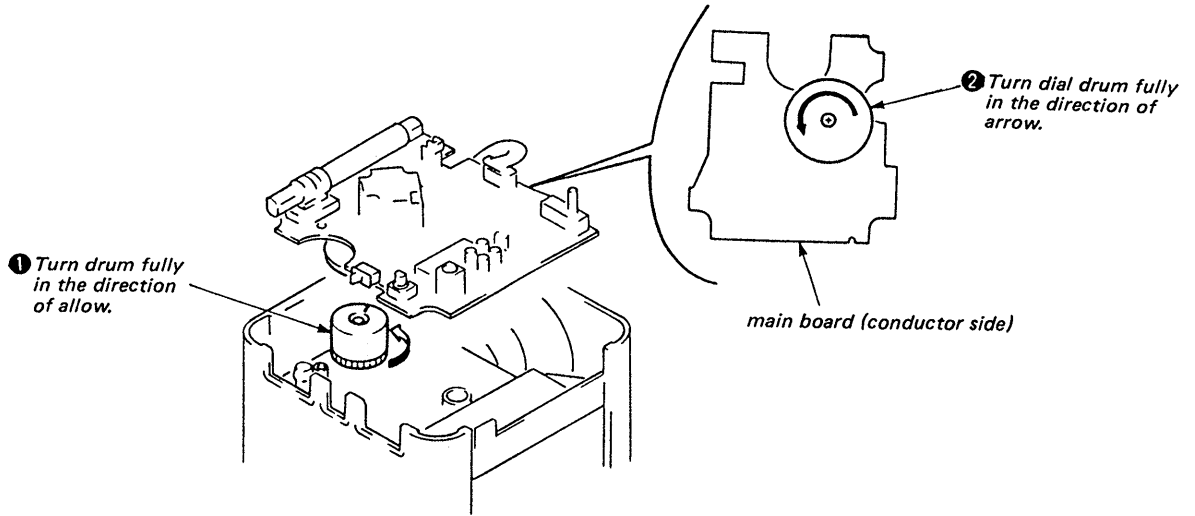
CABINET (REAR) AND CLOCK REMOVAL



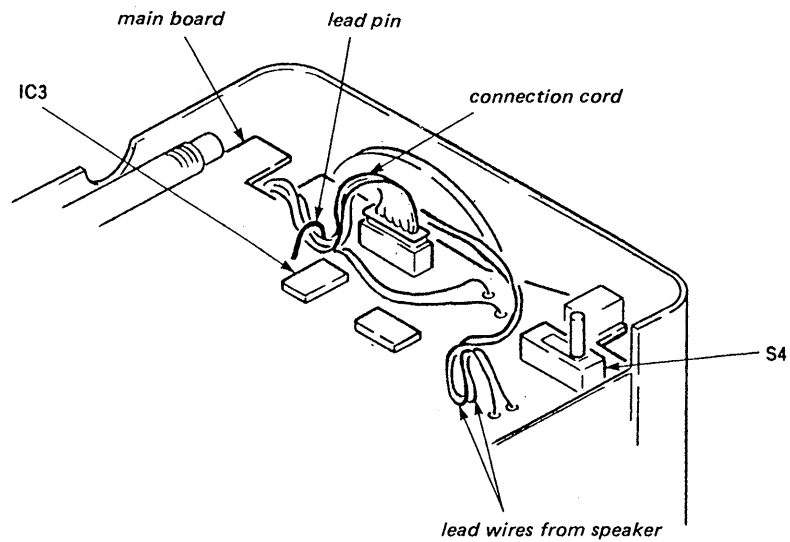
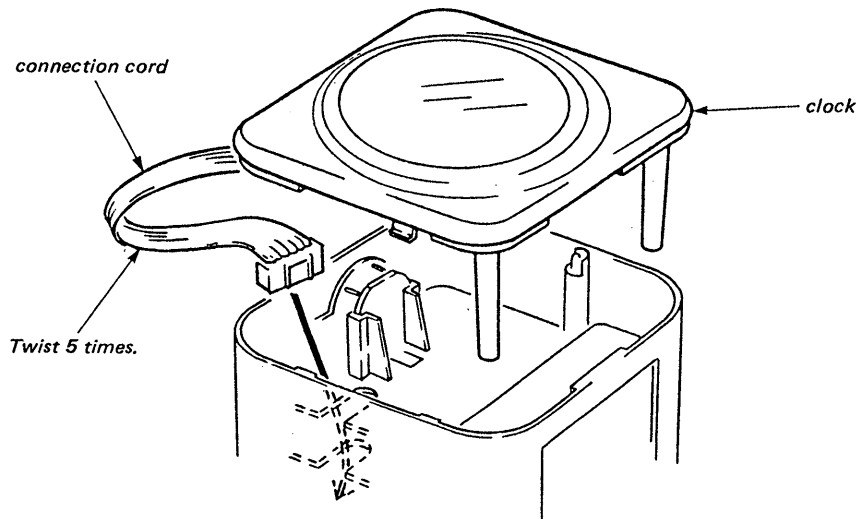
MAIN BOARD REMOVAL



POINTER SETTING



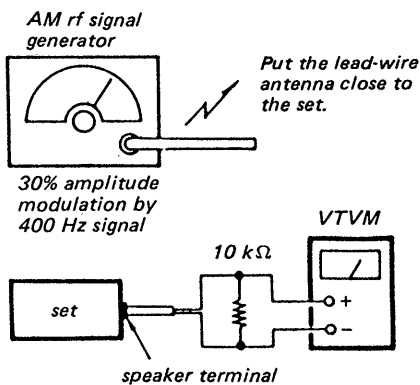
NOTE ON INSTALLING CONNECTION CORD



SECTION 2 ADJUSTMENTS

AM

BAND selector: AM



AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L5	CT1-4
520 kHz	1,650 kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	CT1-3
87.35 MHz	108.05 MHz

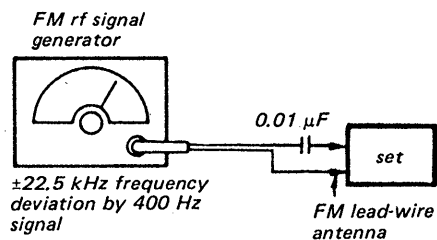
AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	CT1-1
620 kHz	1,400 kHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	CT1-2
87.35 MHz	108.05 MHz

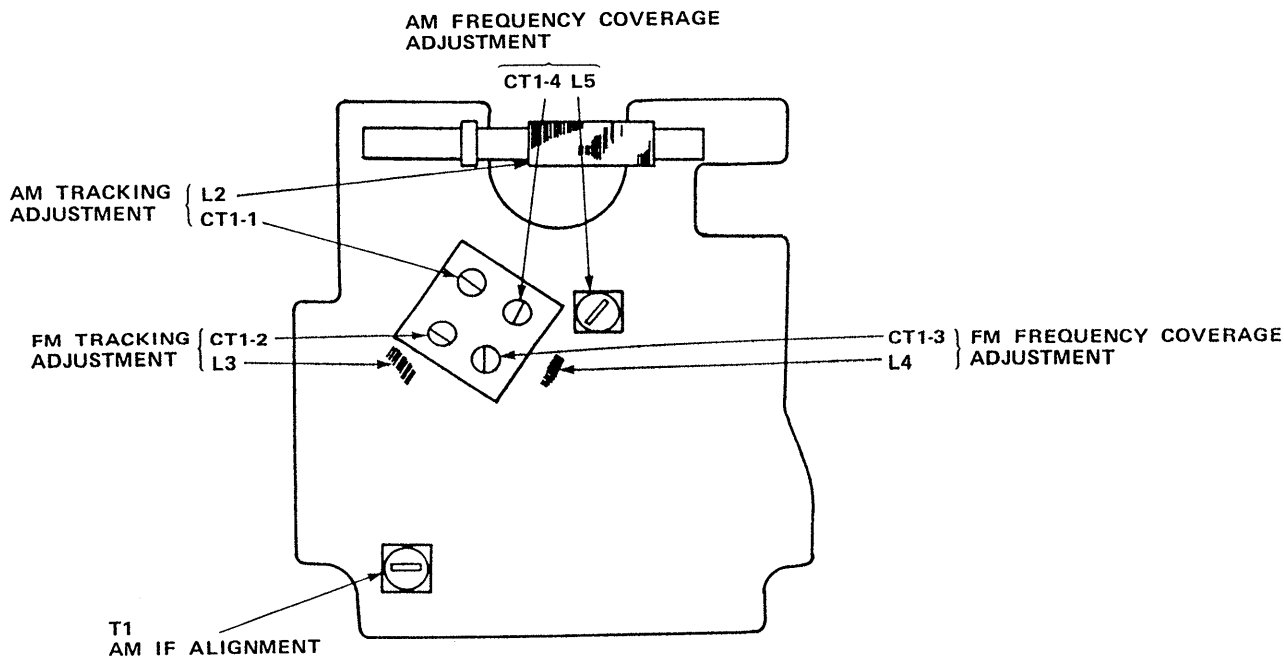
AM IF ALIGNMENT	
Adjust for a maximum reading on VTVM.	
T1	
455 kHz	

FM

BAND selector: FM

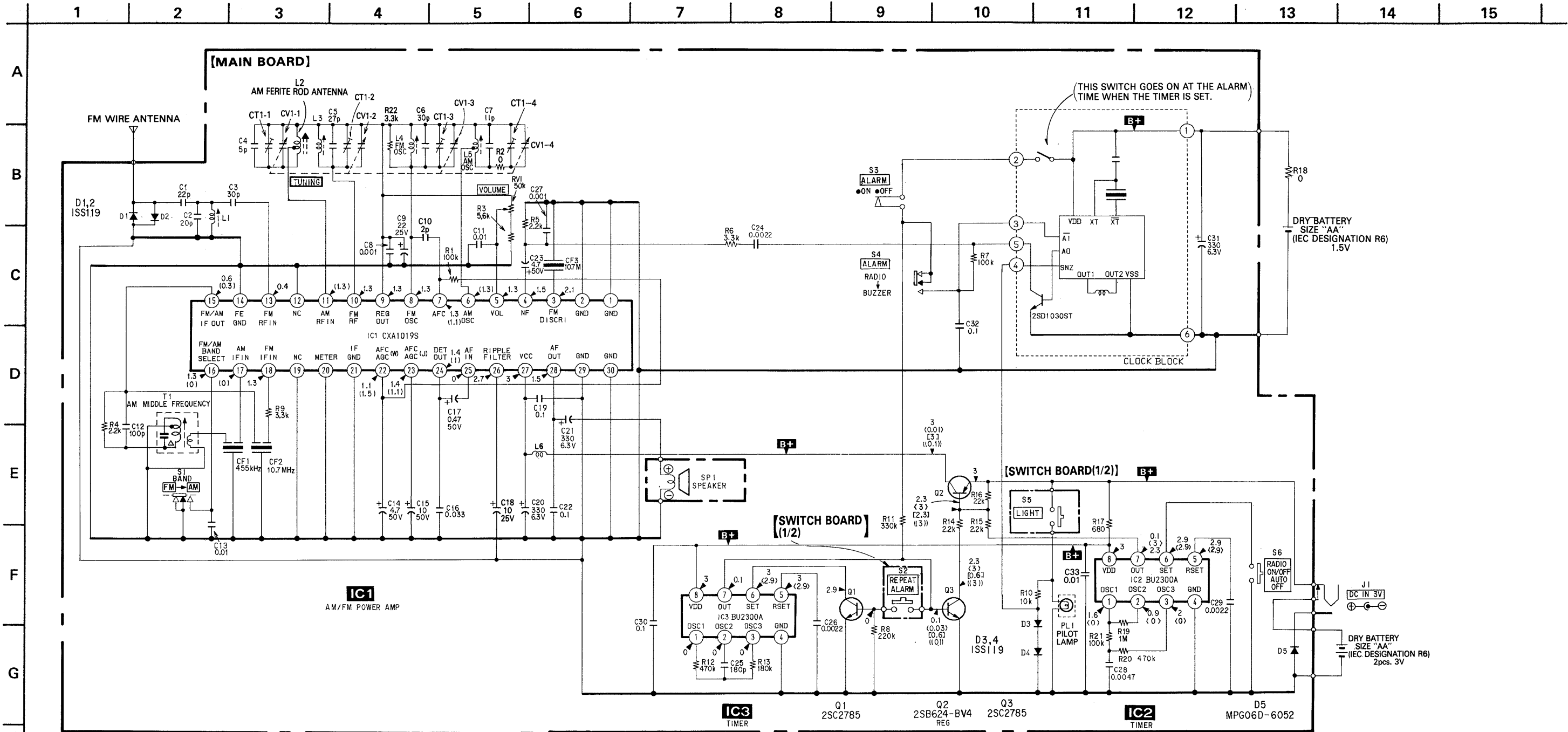


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.



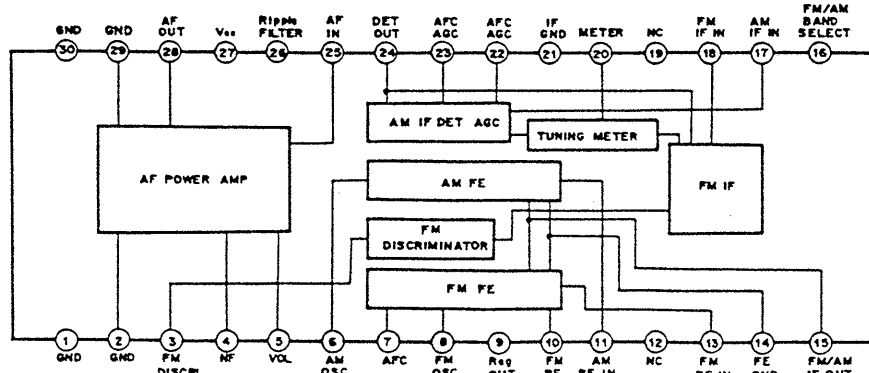
SECTION 3 DIAGRAMS

3-1. SCHEMATIC DIAGRAM

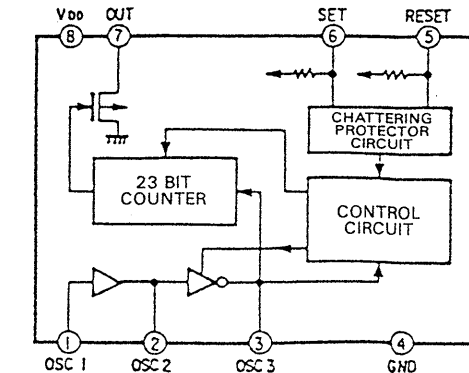


IC BLOCK DIAGRAM

IC1 CXA1019S



IC2,3 BU2300A



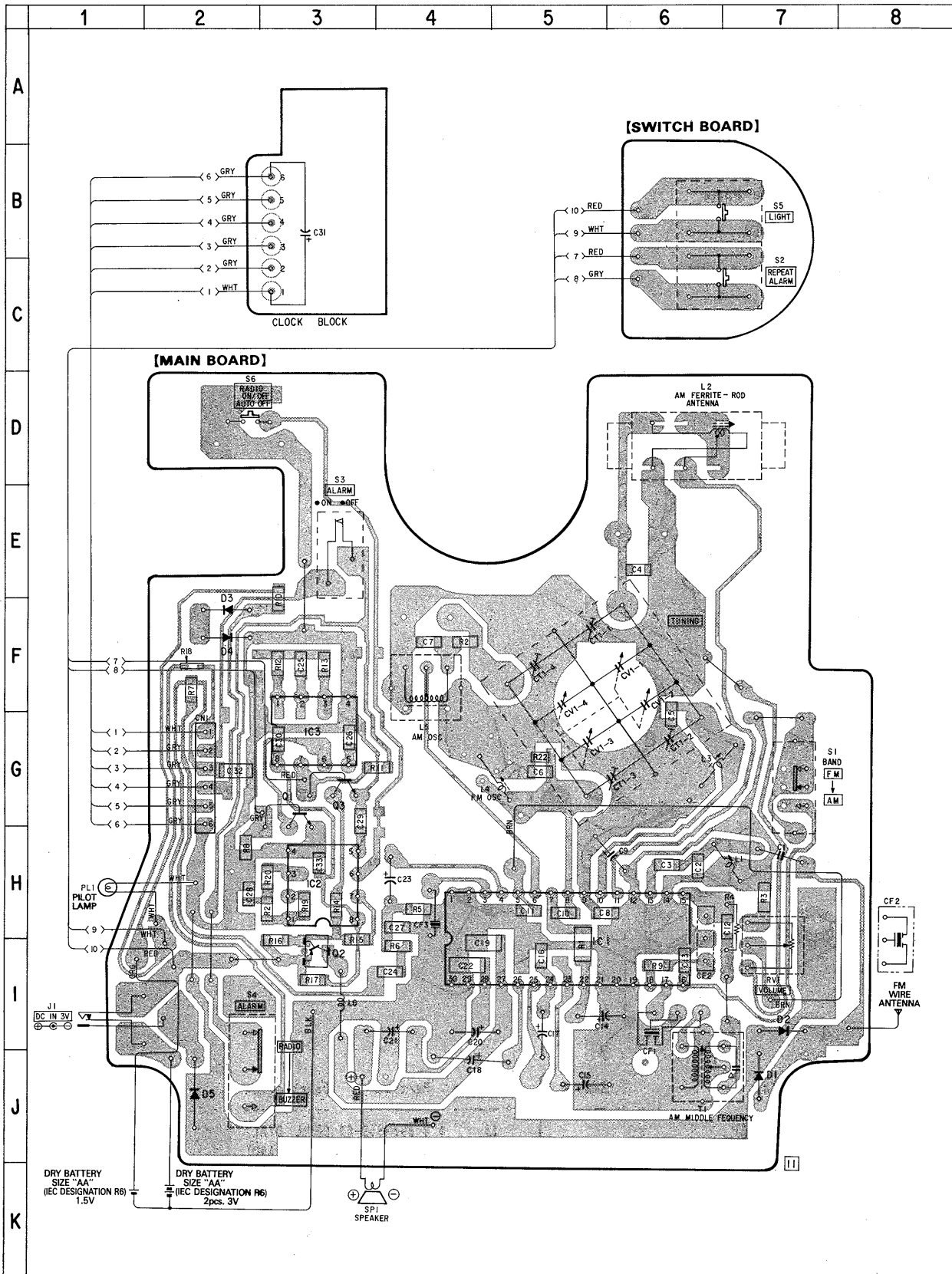
Note:

- All capacitors are in μF unless otherwise noted. pF : μpF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- Power voltage is dc 3V and fed with regulated dc power supply from battery terminal.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (50 $\text{k}\Omega/\text{V}$). Voltage variations may be noted due to normal production tolerances.
- Signal path.

● Semiconductor Location

Ref No.	Location
D1	J-7
D2	I-7
D3	F-2
D4	F-2
D5	J-2
IC1	H-5
IC2	H-3
IC3	G-3
Q1	G-3
Q2	I-3
Q3	G-3

3-2. MOUNTING DIAGRAM



Note:

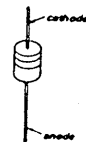
- ○ — : parts extracted from the component side.

• Semiconductor Lead Layouts

2SC2785



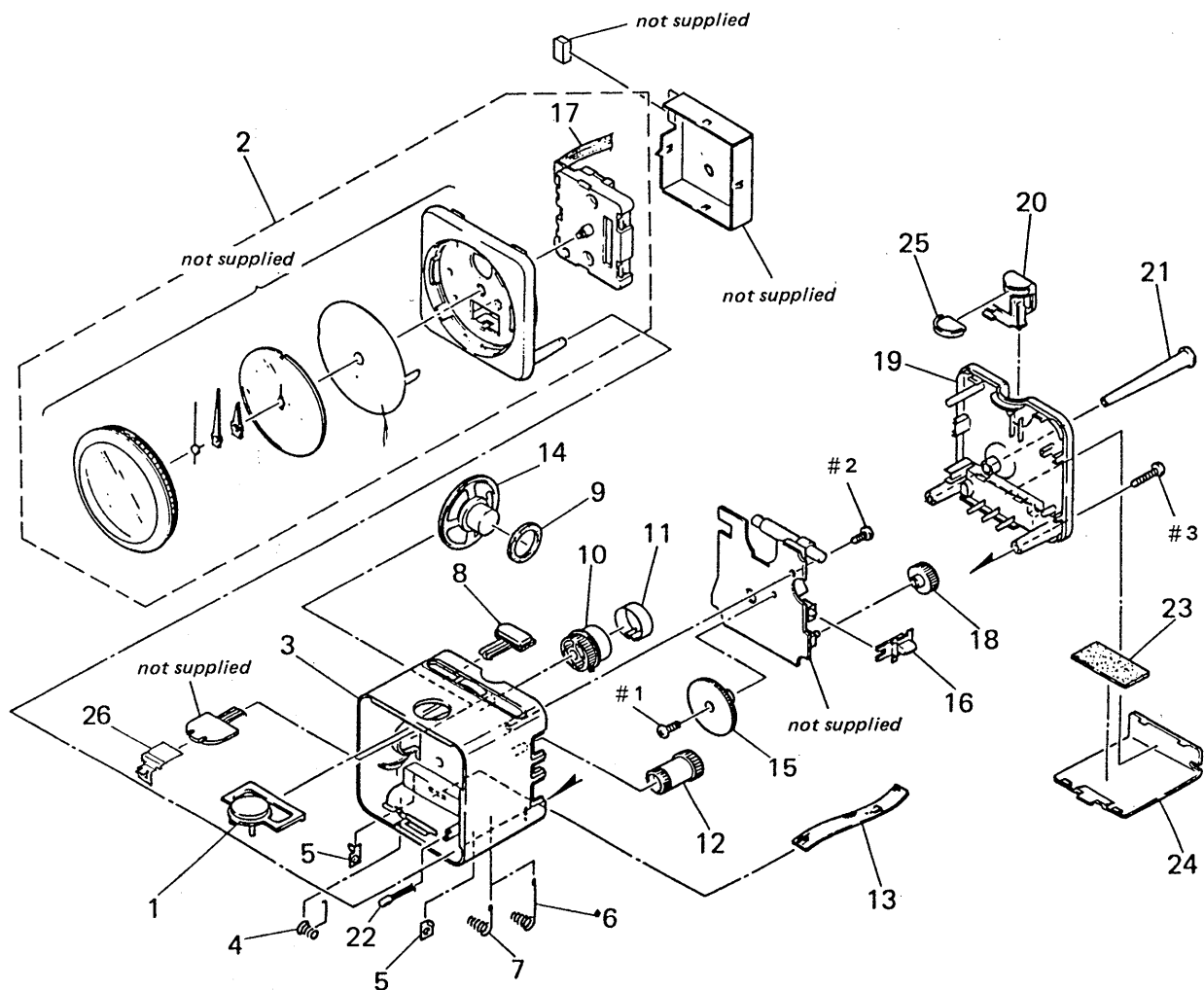
MPG06D-6052
1SS119



SECTION 4 EXPLODED VIEW

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- 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.
- Hardware (# mark) list is given in the last of this parts list.



Ref. No.	Part No.	Description	Remark
1	3-898-553-01	BUTTON (SNOOZE)	
2	1-548-157-11	CLOCK	
3	X-3896-546-1	CABINET ASSY	
4	3-898-562-01	TERMINAL, MIDWAY	
5	3-898-561-01	TERMINAL, BATTERY	
6	3-898-563-01	SPRING (A)	
7	3-898-564-01	SPRING (B)	
8	3-898-556-01	BUTTON (POWER)	
9	3-898-566-01	CUSHION (SPEAKER)	
10	* 3-898-557-01	DRUM	
11	3-898-568-31	PLATE, DIAL	
12	3-898-550-01	KNOB (TUN)	
13	* 3-898-567-01	RIBBON, BATTERY	
14	1-544-125-11	SPEAKER	

Ref. No.	Part No.	Description	Remark
15	* 3-898-559-01	DRUM, DIAL	
16	3-898-552-01	KNOB (BAND)	
17	1-574-766-11	CORD, CONNECTION	
18	3-898-551-01	KNOB (VR)	
19	3-898-546-31	CABINET (REAR)	
20	3-898-554-01	BUTTON (ALARM)	
21	3-898-558-01	KNOB (TIME SET)	
22	1-518-613-21	LAMP, PILOT	
23	9-911-849-XX	CUSHION (BATTERY CASE LID)	
24	3-898-547-01	LID, BATTERY CASE	
25	3-898-555-01	ESCUTCHEON (ALARM)	
26	3-898-576-01	SPRING	

SECTION 5

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		MAIN BOARD, COMPLETE *****					
	1-460-060-11	COIL (WITH CORE)					
	* 1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P					
		< CAPACITOR >					
C1	1-162-207-31	CERAMIC 22PF	5% 50V				
C2	1-163-100-00	CERAMIC CHIP 20PF	5% 50V				
C3	1-163-104-00	CERAMIC CHIP 30PF	5% 50V				
C4	1-163-088-00	CERAMIC CHIP 5PF	50V				
C5	1-163-103-00	CERAMIC CHIP 27PF	5% 50V				
C6	1-163-104-00	CERAMIC CHIP 30PF	5% 50V				
C7	1-164-277-11	CERAMIC CHIP 11PF	5% 50V				
C8	1-163-141-00	CERAMIC CHIP 0.001uF	5% 50V				
C9	1-126-233-11	ELECT 22uF	20% 50V				
C10	1-163-085-00	CERAMIC CHIP 2PF	50V				
C11	1-163-021-91	CERAMIC CHIP 0.01uF	10% 50V				
C12	1-163-117-00	CERAMIC CHIP 100PF	5% 50V				
C13	1-163-021-91	CERAMIC CHIP 0.01uF	10% 50V				
C14	1-124-927-11	ELECT 4.7uF	20% 100V				
C15	1-124-907-11	ELECT 10uF	20% 50V				
C16	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V				
C17	1-124-902-00	ELECT 0.47uF	20% 50V				
C18	1-126-096-11	ELECT 10uF	20% 35V				
C19	1-163-077-00	CERAMIC CHIP 0.1uF	10% 25V				
C20	1-124-442-00	ELECT 330uF	20% 6.3V				
C21	1-124-442-00	ELECT 330uF	20% 6.3V				
C22	1-163-077-00	CERAMIC CHIP 0.1uF	10% 25V				
C23	1-124-927-11	ELECT 4.7uF	20% 100V				
C24	1-163-013-91	CERAMIC CHIP 0.0022uF	10% 50V				
C25	1-163-123-00	CERAMIC CHIP 180PF	5% 50V				
		< FILTER >					
		< CAP, VARIABLE >					
		< DIODE >					
		< IC >					
		< JACK >					
C26	1-163-013-91	CERAMIC CHIP 0.0022uF	10% 50V				
C27	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V				
C28	1-163-017-00	CERAMIC CHIP 0.0047uF	5% 50V				
C29	1-163-013-91	CERAMIC CHIP 0.0022uF	10% 50V				
C30	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C32	1-163-077-00	CERAMIC CHIP 0.1uF	10% 25V				
C33	1-163-031-91	CERAMIC CHIP 0.01uF	50V				
CF1	1-577-072-11	FILTER, CERAMIC (455kHz)					
CF2	1-567-097-61	FILTER, CERAMIC (10.7MHz)					
CF3	1-567-097-61	FILTER, CERAMIC (10.7MHz)					
CV1	1-151-614-11	CAP, VARIABLE					
D1	8-719-911-19	DIODE 1SS119					
D2	8-719-911-19	DIODE 1SS119					
D3	8-719-911-19	DIODE 1SS119					
D4	8-719-911-19	DIODE 1SS119					
D5	8-719-200-82	DIODE 11ES2					
IC1	8-752-035-29	IC CXA1019S					
IC2	8-759-945-79	IC BU2300A					
IC3	8-759-945-79	IC BU2300A					
J1	1-568-228-11	JACK 1P (DC IN 3V)					

MAIN

Ref. No.	Part No.	Description	Remark
< COIL >			
L1	1-401-228-00	ANTENNA COIL	
L2	1-402-460-11	ANTENNA, FERRITE-ROD	
L3	* 1-422-624-11	COIL, AIR CORE	
L4	1-422-294-11	COIL, AIR-CORE	
L5	1-406-040-00	COIL (OSC)	
L6	1-410-396-41	FERRITE BEAD INDUCTOR	
< TRANSISTOR >			
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE	
< RESISTOR >			
R1	1-216-246-00	METAL GLAZE 100K 5% 1/8W	
R2	1-216-295-00	METAL CHIP 0 5% 1/10W	
R3	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R4	1-249-421-11	CARBON 2.2K 5% 1/4W	
R5	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R6	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R7	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R8	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R9	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R10	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R11	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R12	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R13	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R14	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R15	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R16	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R17	1-216-045-00	METAL CHIP 680 5% 1/10W	
R18	1-216-295-00	METAL CHIP 0 5% 1/10W	
R19	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R20	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R21	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R22	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
< VARIABLE RESISTOR >			
RV1	1-238-555-11	RES, VAR, CARBON 50K (VOLUME)	
< SWITCH >			
S1	1-571-478-11	SWITCH, SLIDE (BAND)	
S2	1-554-303-21	SWITCH, TACTILE (REPEAT ALARM)	
S3	1-571-274-11	SWITCH, LEAF (ALARM)	
S4	1-571-906-11	SWITCH, SLIDE (ALARM)	
S5	1-554-303-21	SWITCH, TACTILE (LIGHT)	
S6	1-554-088-00	SWITCH, KEY BOARD (RADIO)	

Ref. No.	Part No.	Description	Remark
< TRANSFORMER >			
T1	1-404-858-11	TRANSFORMER, IF	

MISCELLANEOUS			

2	1-548-157-11	CLOCK	
14	1-544-125-11	SPEAKER	
17	1-574-766-11	CORD, CONNECTION	
22	1-518-613-21	LAMP, PILOT	

ACCESSORIES & PACKING MATERIALS			

3-750-278-11 MANUAL, INSTRUCTION			
(ENGLISH, FRENCH, PORTUGUESE)			
* 3-898-573-01 CUSHION			
* 3-898-579-01 INDIVIDUAL CARTON			
9-910-999-32 BAG, PROTECTION			

HARDWARE LIST			

#1	7-627-556-38	SCREW +P 2.6X4.0	
#2	7-685-133-19	SCREW +P 2.6X6 TYPE2	
#3	7-685-650-79	SCREW +P 3X16 TYPE2 NON-SLIT	