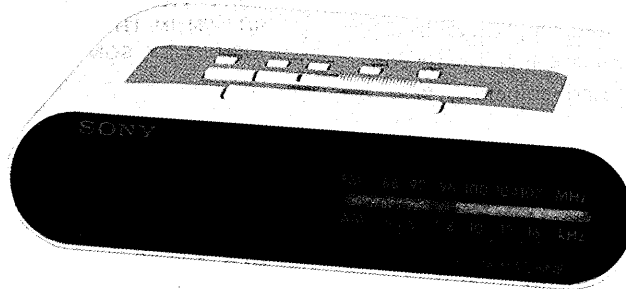


ICF-C242

SERVICE MANUAL

*US Model
Canadian Model*



DREAM MACHINE

SPECIFICATIONS

Frequency range

FM: 87.6 – 108 MHz
AM: 530 – 1,610 kHz

Antennas

FM: AC cord antenna
AM: Built-in ferrite bar antenna

Speaker

Approx. 6.6 cm (2⁵/₈ 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. 12 hours using
Sony battery S-006P (U)

Dimensions

Approx. 210 × 58 × 153
mm (w/h/d)
(8³/₈ × 2³/₈ × 6¹/₈ inches)
incl. projecting parts and
controls

Weight

Approx. 570 g (1 lb 7 oz)
not incl. battery

Design and specifications subject
to change without notice.

FM/AM DIGITAL CLOCK RADIO
SONY®

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)

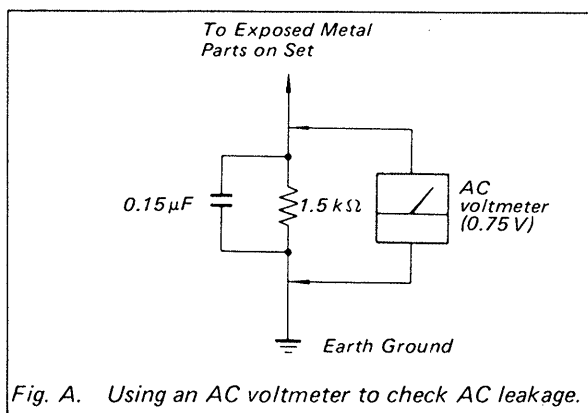


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle 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 \triangle 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.

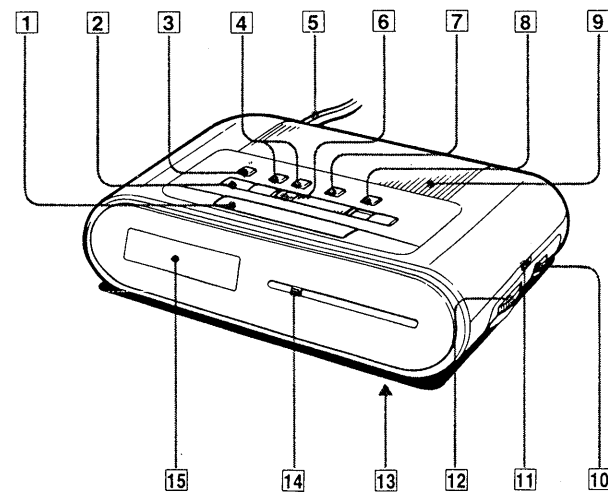
SECTION 1 GENERAL

Features

- Electronic digital alarm clock and sleep timer are combined.
- Two wake-up modes available: radio or buzzer alarm.
- DREAM BAR, operable with a feather-light touch, offers two functions: snooze alarm and sleep timer turn off.
- 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).

Location of controls

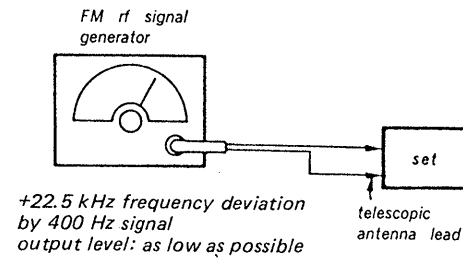
- | | |
|---|---|
| 1 DREAM BAR SNOOZE/SLEEP OFF bar | 7 ALARM set button |
| 2 ALARM RESET button | 8 SLEEP button |
| 3 CLOCK set button | 9 Speaker |
| 4 TIME SET buttons (H/M) | 10 VOL (volume) control |
| 5 AC power cord (rear) (also works as an FM antenna.) | 11 BAND selector (AM/FM) |
| 6 Function selector OFF/RADIO ON ALARM RADIO/BUZZER | 12 TUNING control |
| | 13 Power back-up battery compartment (bottom) |
| | 14 Dial scale |
| | 15 Time display |



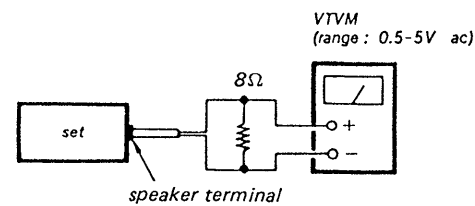
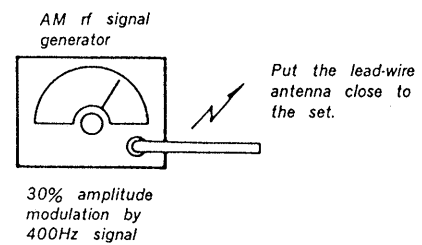
SECTION 2 ADJUSTMENTS

RADIO SECTION

- FM Section
Setting:
BAND switch: FM



- AM Section
Setting:
BAND switch: AM



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

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

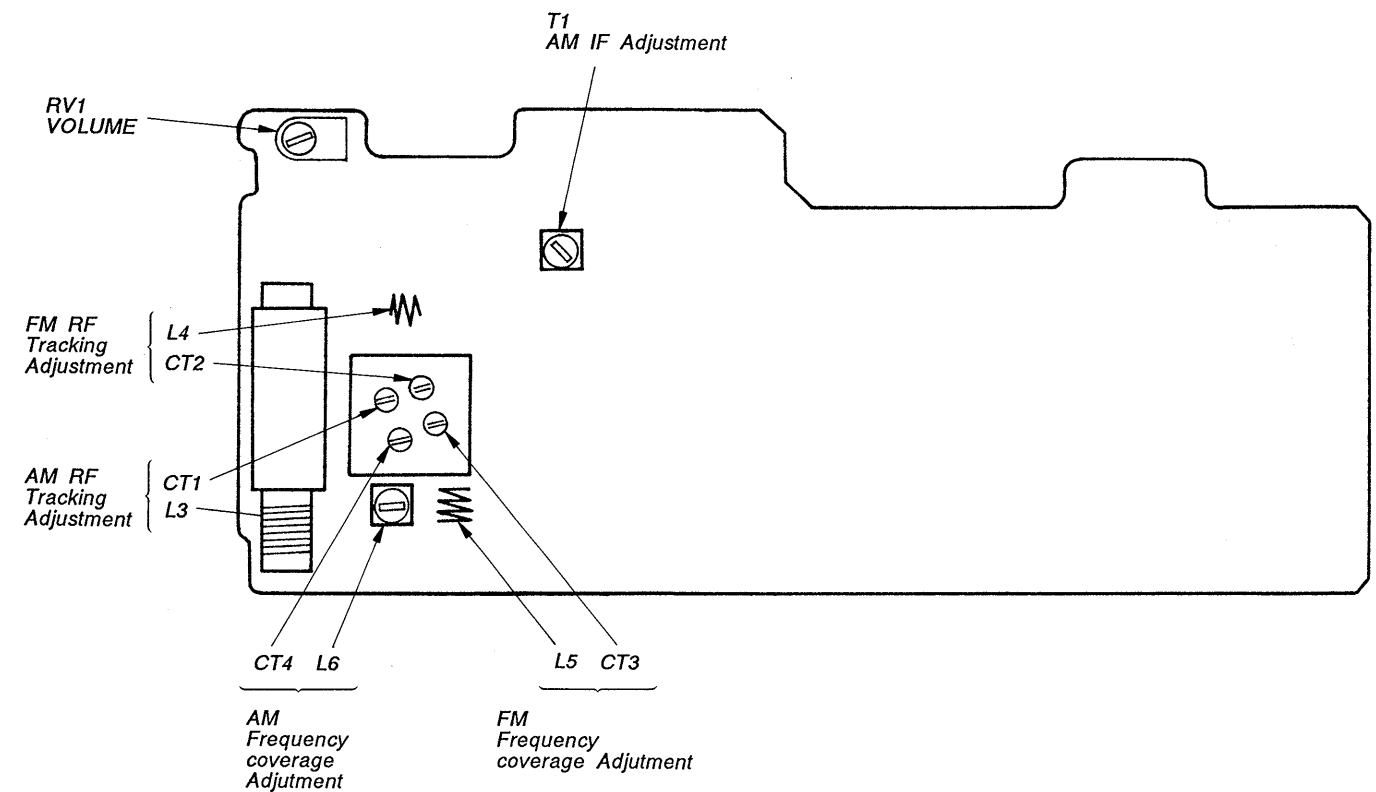
AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L6	CT4
520kHz	1,630kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	CT1
620 kHz	1,400 kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L5	CT3
86.5MHz	109.5MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	CT2
86.5MHz	109.5MHz

Adjustment Location: radio board

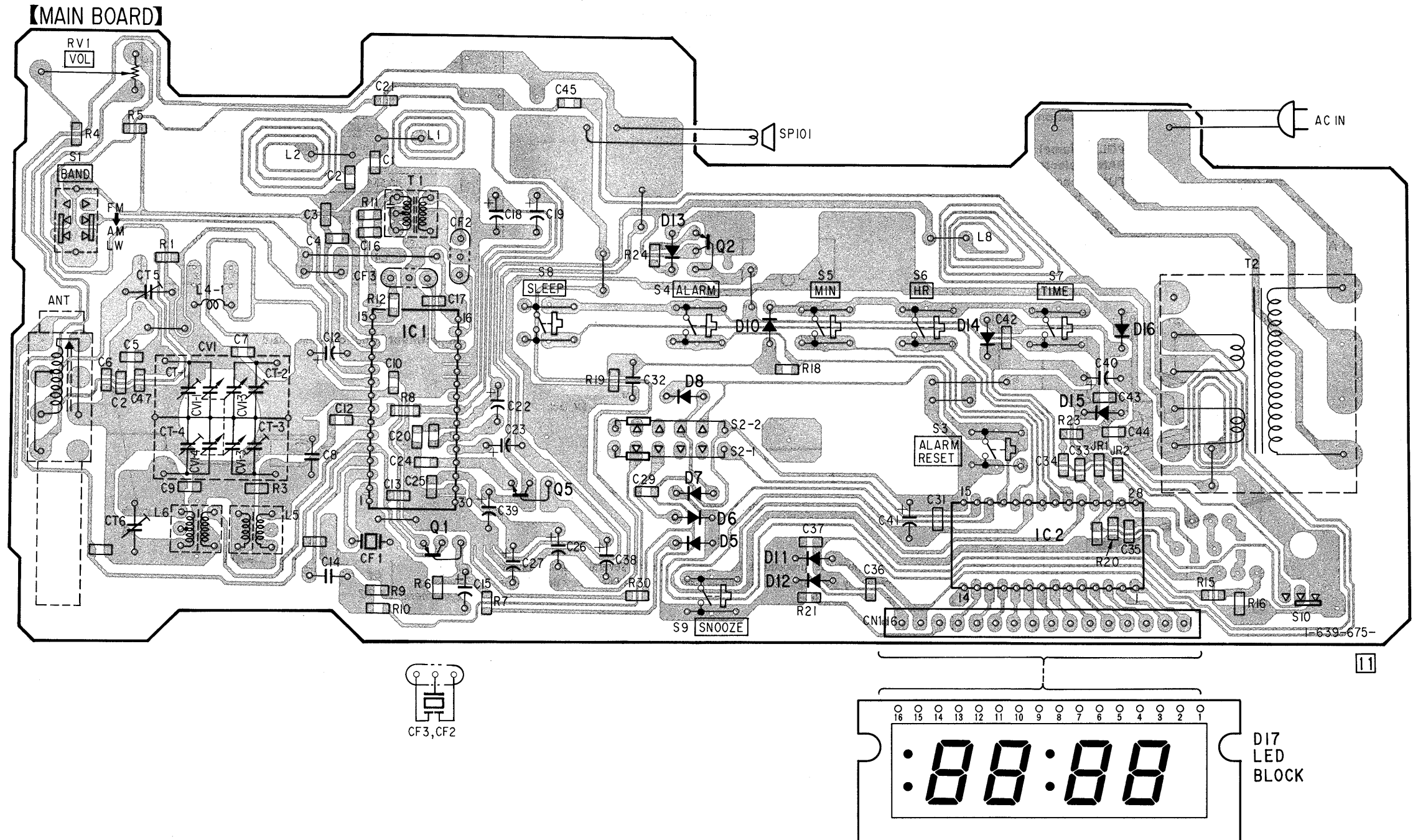


SECTION 3 DIAGRAMS

3-1. PRINTED WIRING BOARDS

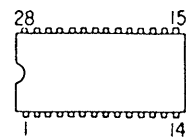
Note:

• ○ — : parts extracted from the component side.

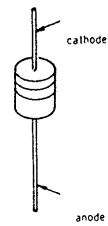


• Semiconductor Lead Layouts

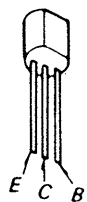
CXA1019S
LM8560N



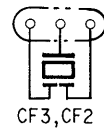
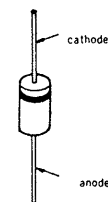
HZM13NB1



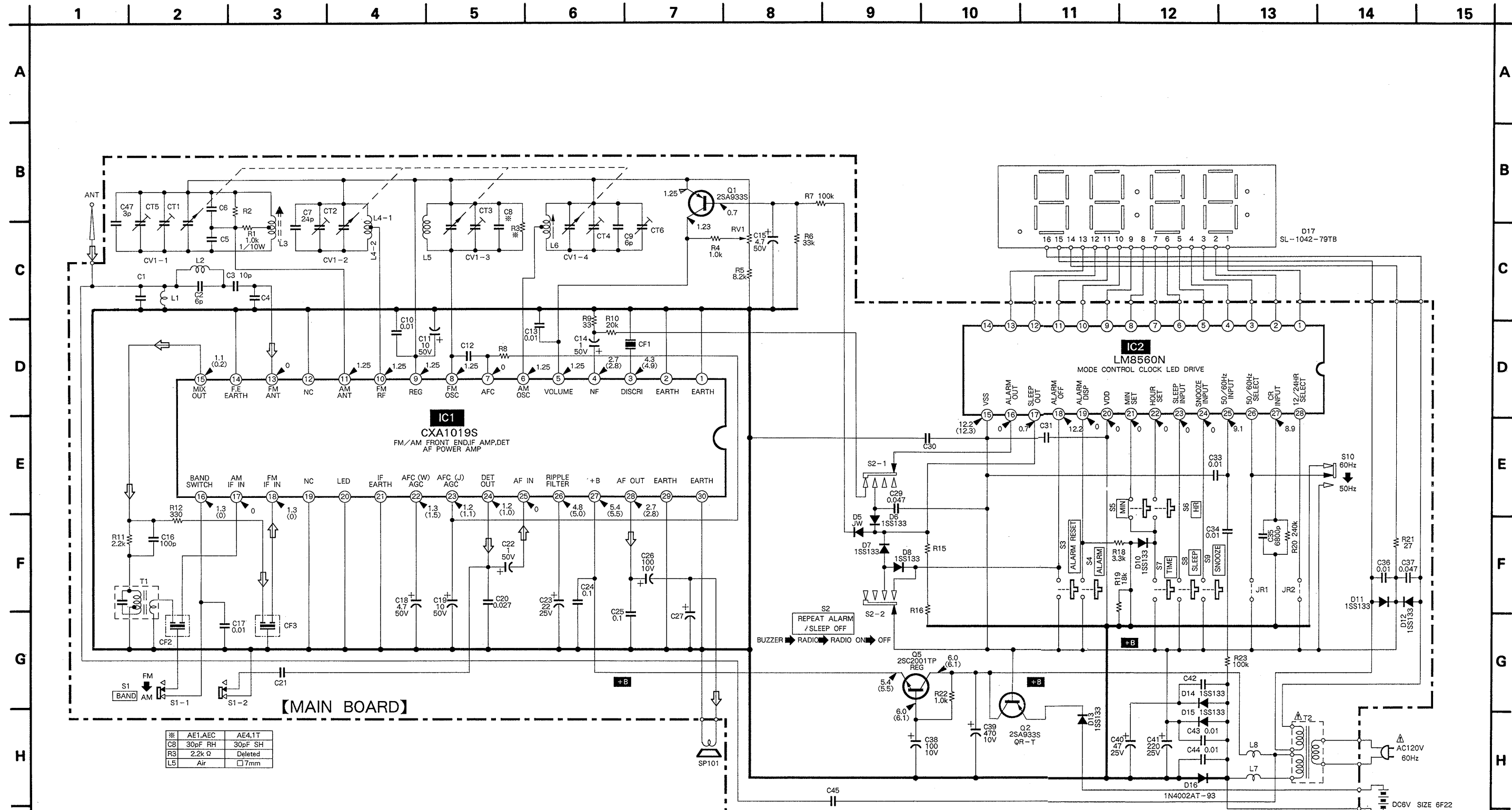
2SA933S-QR
2SC2001-LK



10E2



3-2. SCHEMATIC DIAGRAM



※ AE1,AEC	AE4,1T
C8 30pF RH	30pF SH
R3 2.2k Ω	Deleted
L5 Air	□ 7mm

- Note:**
- All capacitors are in μF unless otherwise noted. pF; μpF 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.
 - Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
 - no mark : FM
 - (): MW
 - Voltages are taken with a VOM (50 K Ω /V).
 - Voltage variations may be noted due to normal production tolerances.
 - Signal path. \Rightarrow : FM

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.

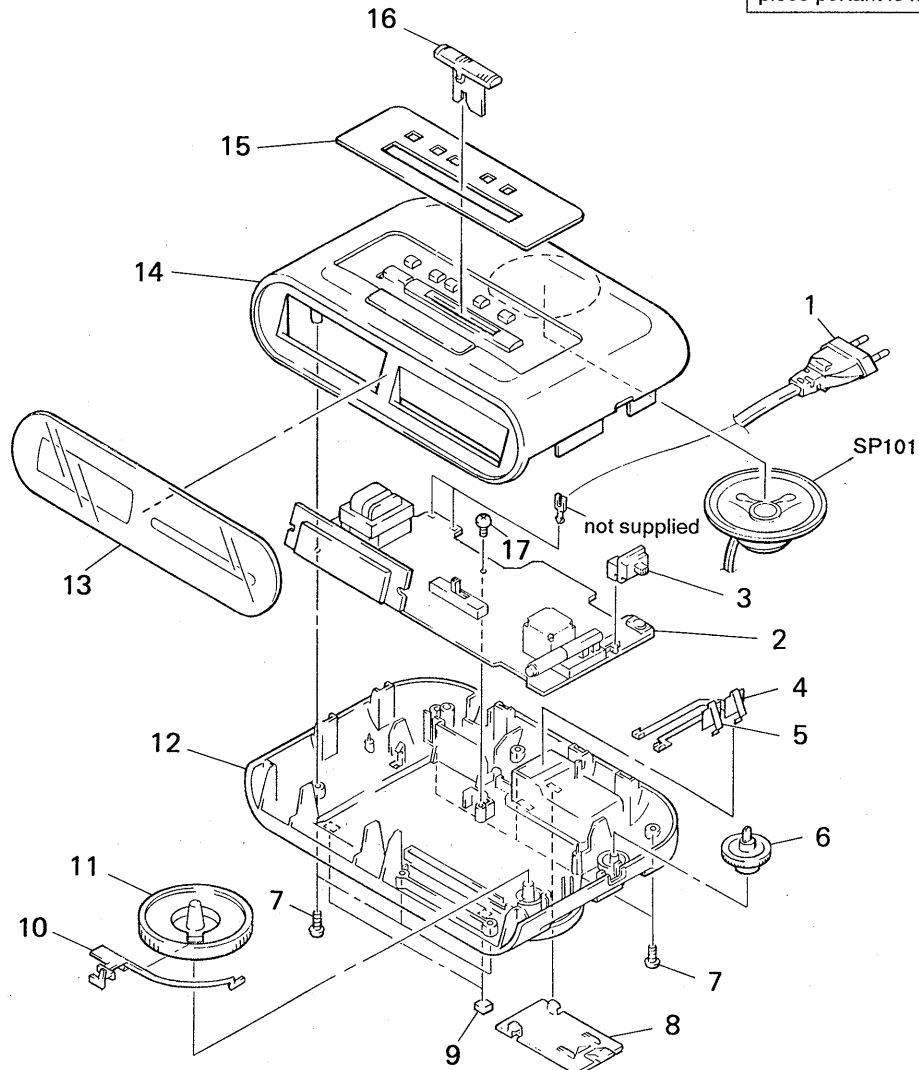
SECTION 4 EXPLODED VIEW

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.
- Hardware (# mark) list is given in the last of this parts list.

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	Ref. No.	Part No.	Description	Remark
1	Δ 1-558-566-21	CORD, POWER		13	3-369-137-01	PLATE, INDICATION	
2	* A-3661-296-A	MOUNTED PCB (CHIP), MAIN		14	3-369-198-01	CABINET (UPPER) (WHITE) ... (WHITE)	
3	3-369-129-01	KNOB (B)		14	3-369-198-11	CABINET (UPPER) (DARK GRAY) ... (GRAY) (US)	
4	3-369-133-01	TERMINAL (B), BATTERY		15	3-369-136-01	PLATE, ORNAMENTAL (WHITE)	
5	3-369-132-01	TERMINAL (A), BATTERY		15	3-369-136-11	PLATE, ORNAMENTAL (GRAY) (US)	
6	3-369-134-01	KNOB (V)		16	3-369-139-01	KNOB (F) (WHITE) ... (WHITE)	
7	7-685-650-79	SCREW +P 3X16 TYPE2 NON-SLIT		16	3-369-139-11	KNOB (F) (DARK GRAY) ... (GRAY) (US)	
8	3-369-135-01	LID, BATTERY CASE		17	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
9	3-368-852-01	FOOT		SP101	1-503-082-00	SPEAKER	
10	3-369-140-01	POINTER					
11	3-369-138-01	KNOB (T)					
12	3-369-197-01	CABINET (LOWER) (LIGHT GRAY) ... (WHITE)					
12	3-369-197-11	CABINET (LOWER) (DARK GRAY) ... (GRAY) (US)					

SECTION 5

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

- 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

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.

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* A-3661-296-A MOUNTED PCB (CHIP), MAIN				< CONNECTOR >			
< CAPACITOR >				CN1	* 1-575-159-11	CORD, CONNECTION	
C1	1-163-102-00	CERAMIC CHIP 24PF	5% 50V	< CAPACITOR >			
C2	1-163-089-00	CERAMIC CHIP 6PF	50V	CV1	1-151-628-11	CAP, VARIABLE (TUNING)	
C3	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	< DIODE >			
C7	1-163-102-00	CERAMIC CHIP 24PF	5% 50V	D6	8-719-984-95	DIODE HZM13NB1	
C8	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	D7	8-719-984-95	DIODE HZM13NB1	
C9	1-163-089-00	CERAMIC CHIP 6PF	50V	D8	8-719-984-95	DIODE HZM13NB1	
C10	1-164-232-11	CERAMIC CHIP 0.01uF	50V	D10	8-719-984-95	DIODE HZM13NB1	
C11	1-124-907-11	ELECT 10uF	20% 50V	D11	8-719-984-95	DIODE HZM13NB1	
C13	1-164-232-11	CERAMIC CHIP 0.01uF	50V	D12	8-719-984-95	DIODE HZM13NB1	
C14	1-124-903-11	ELECT 1uF	20% 50V	D13	8-719-984-95	DIODE HZM13NB1	
C15	1-124-927-11	ELECT 4.7uF	20% 100V	D14	8-719-984-95	DIODE HZM13NB1	
C16	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	D15	8-719-984-95	DIODE HZM13NB1	
C17	1-164-232-11	CERAMIC CHIP 0.01uF	50V	D16	8-719-200-02	DIODE 10E2	
C18	1-124-927-11	ELECT 4.7uF	20% 100V	D17	1-808-342-11	DIODE SL-1042-78T	
C19	1-124-907-11	ELECT 10uF	20% 50V	< IC >			
C20	1-163-986-00	CERAMIC CHIP 0.027uF	10% 25V	IC1	8-752-035-29	IC CXA1019S	
C22	1-124-903-11	ELECT 1uF	20% 50V	IC2	8-759-821-46	IC LM8560N	
C23	1-126-233-11	ELECT 22uF	20% 50V	< COIL >			
C24	1-164-004-11	CERAMIC CHIP 0.1uF	10% 25V	L3	1-402-413-21	ANTENNA, FERRITE-ROD (MW)	
C25	1-164-004-11	CERAMIC CHIP 0.1uF	10% 25V	L4	1-428-223-11	COIL, AIR-CORE	
C26	1-124-443-00	ELECT 100uF	20% 10V	L5	1-428-163-11	COIL, AIR-CORE	
C29	1-163-809-11	CERAMIC CHIP 0.047uF	10% 25V	L6	1-406-028-00	COIL, OSC (MW)	
C32	1-124-927-11	ELECT 4.7uF	20% 100V	< TRANSISTOR >			
C33	1-164-232-11	CERAMIC CHIP 0.01uF	50V	Q1	8-729-920-68	TRANSISTOR 2SA933S-QRT	
C34	1-164-232-11	CERAMIC CHIP 0.01uF	50V	Q2	8-729-920-68	TRANSISTOR 2SA933S-QRT	
C35	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V	Q5	8-729-142-46	TRANSISTOR 2SC2001TP-LK	
C36	1-164-232-11	CERAMIC CHIP 0.01uF	50V	Q5	8-729-100-13	TRANSISTOR 2SC2001TP-K2	
C37	1-163-809-11	CERAMIC CHIP 0.047uF	10% 25V	< RESISTOR >			
C38	1-124-443-00	ELECT 100uF	20% 10V	R1	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C39	1-124-472-11	ELECT 470uF	20% 10V	R3	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
C40	1-124-477-11	ELECT 47uF	20% 25V	R4	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C41	1-124-120-11	ELECT 220uF	20% 25V	R5	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
C43	1-164-232-11	CERAMIC CHIP 0.01uF	50V				
C44	1-164-232-11	CERAMIC CHIP 0.01uF	50V				
C45	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V				
C47	1-163-086-00	CERAMIC CHIP 3PF	50V				
< FILTER >				< RESISTOR >			
CF1	1-579-312-91	FILTER, CERAMIC		R1	1-216-049-00	METAL CHIP 1K 5% 1/10W	
CF2	1-577-072-11	FILTER, CERAMIC		R3	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
CF3	1-579-312-91	FILTER, CERAMIC		R4	1-216-049-00	METAL CHIP 1K 5% 1/10W	
				R5	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	

Ref. No.	Part No.	Description	Remark		
R6	1-216-085-00	METAL CHIP	33K	5%	1/10W
R7	1-216-097-00	METAL CHIP	100K	5%	1/10W
R9	1-216-013-00	METAL CHIP	33	5%	1/10W
R10	1-216-081-00	METAL CHIP	22K	5%	1/10W
R11	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R12	1-216-037-00	METAL CHIP	330	5%	1/10W
R18	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R19	1-216-079-00	METAL CHIP	18K	5%	1/10W
R20	1-216-106-00	METAL CHIP	240K	5%	1/10W
R21	1-216-011-00	METAL CHIP	27	5%	1/10W
R22	1-216-049-00	METAL CHIP	1K	5%	1/10W
R23	1-216-097-00	METAL CHIP	100K	5%	1/10W
R24	1-216-295-00	METAL CHIP	0	5%	1/10W

< VARIABLE RESISTOR >

RV1 1-228-790-00 RES, VAR, CARBON 50K

< SWITCH >

S1 1-571-478-11 SWITCH, SLIDE (BAND)
 S2 1-572-262-11 SWITCH, SLIDE (REPEAT ALARM/SLEEP OFF)
 S3 1-554-937-11 SWITCH, KEY BOARD (ALARM RESET)
 S4 1-554-937-11 SWITCH, KEY BOARD (ALARM)
 S5 1-554-937-11 SWITCH, KEY BOARD (MIN)
 S6 1-554-937-11 SWITCH, KEY BOARD (HR)
 S7 1-554-937-11 SWITCH, KEY BOARD (TIME)
 S8 1-554-937-11 SWITCH, KEY BOARD (SLEEP)
 S9 1-554-937-11 SWITCH, KEY BOARD (SNOOZE)

< TRANSFORMER >

T1 1-404-341-00 TRANSFORMER, IF
 T2 Δ 1-449-801-21 TRANSFORMER, POWER

< TERMINAL >

TML1 * 1-535-771-11 TERMINAL
 TML2 * 1-535-771-11 TERMINAL

MISCELLANEOUS

1 Δ 1-558-566-21 CORD, POWER
 SP101 1-503-082-00 SPEAKER

ACCESSORIES & PACKING MATERIALS

- * 3-369-823-01 INDIVIDUAL CARTON (US)
- * 3-369-823-11 INDIVIDUAL CARTON (Canadian)
- * 3-369-824-01 CUSHION
- * 3-704-281-01 BAG, PROTECTION (STANDARD)
- 3-753-402-21 MANUAL, INSTRUCTION (ENGLISH) (US)
- 3-753-402-31 MANUAL, INSTRUCTION (ENGLISH, FRENCH)
 (Canadian)

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