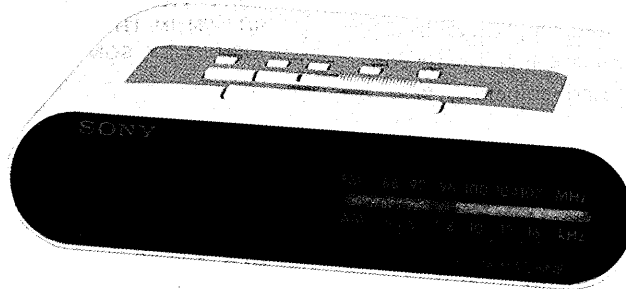


ICF-C242

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)

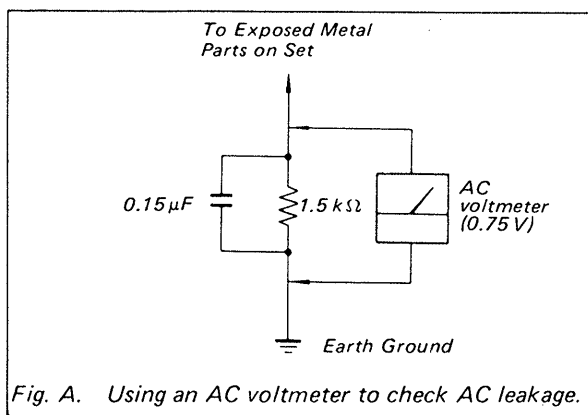


Fig. A. Using an AC voltmeter to check AC leakage.

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.

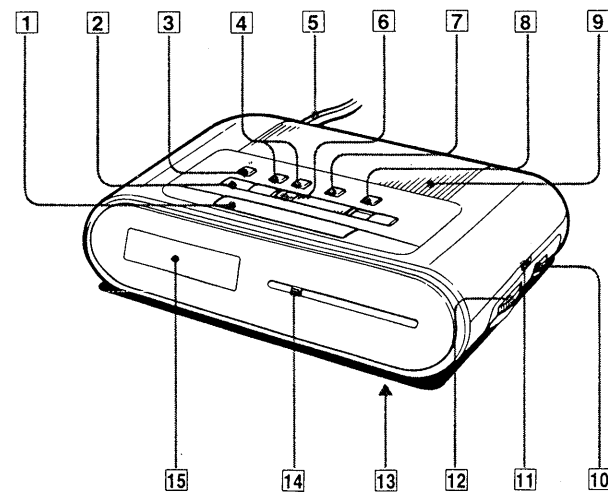
SECTION 1 GENERAL

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

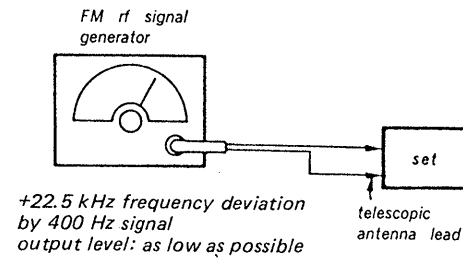
- | | |
|---|---|
| 1 DREAM BAR SNOOZE/SLEEP OFF bar | 7 ALARM set button |
| 2 ALARM RESET button | 8 SLEEP button |
| 3 CLOCK set button | 9 Speaker |
| 4 TIME SET buttons (H/M) | 10 VOL (volume) control |
| 5 AC power cord (rear) (also works as an FM antenna.) | 11 BAND selector (AM/FM) |
| 6 Function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



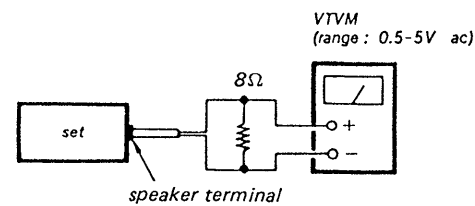
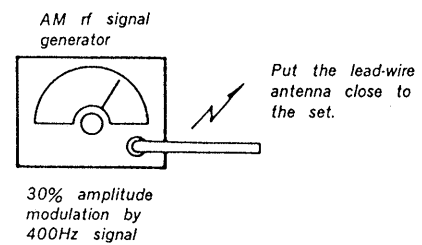
SECTION 2 ADJUSTMENTS

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 | |

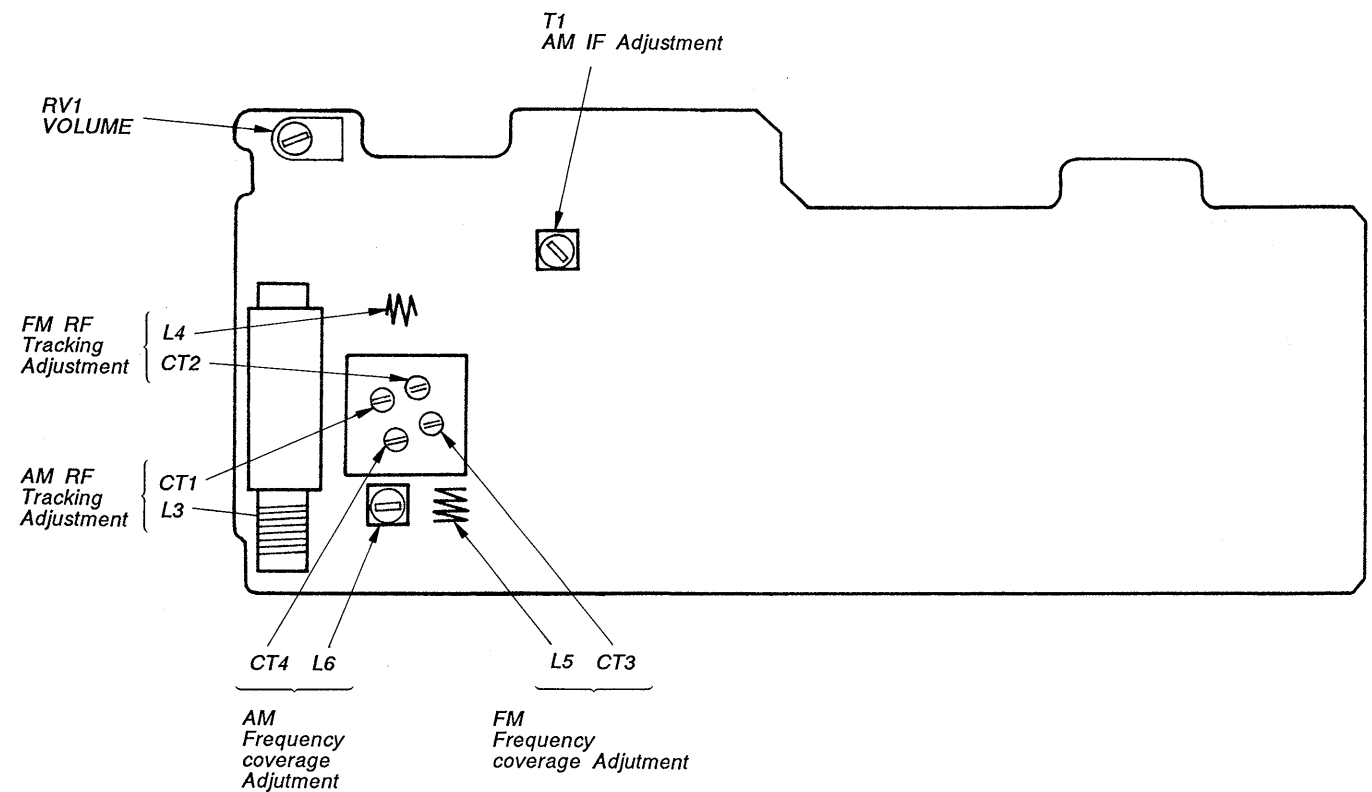
| AM FREQUENCY COVERAGE ADJUSTMENT | |
|---------------------------------------|----------|
| Adjust for a maximum reading on VTVM. | |
| L6 | CT4 |
| 520kHz | 1,630kHz |

| 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

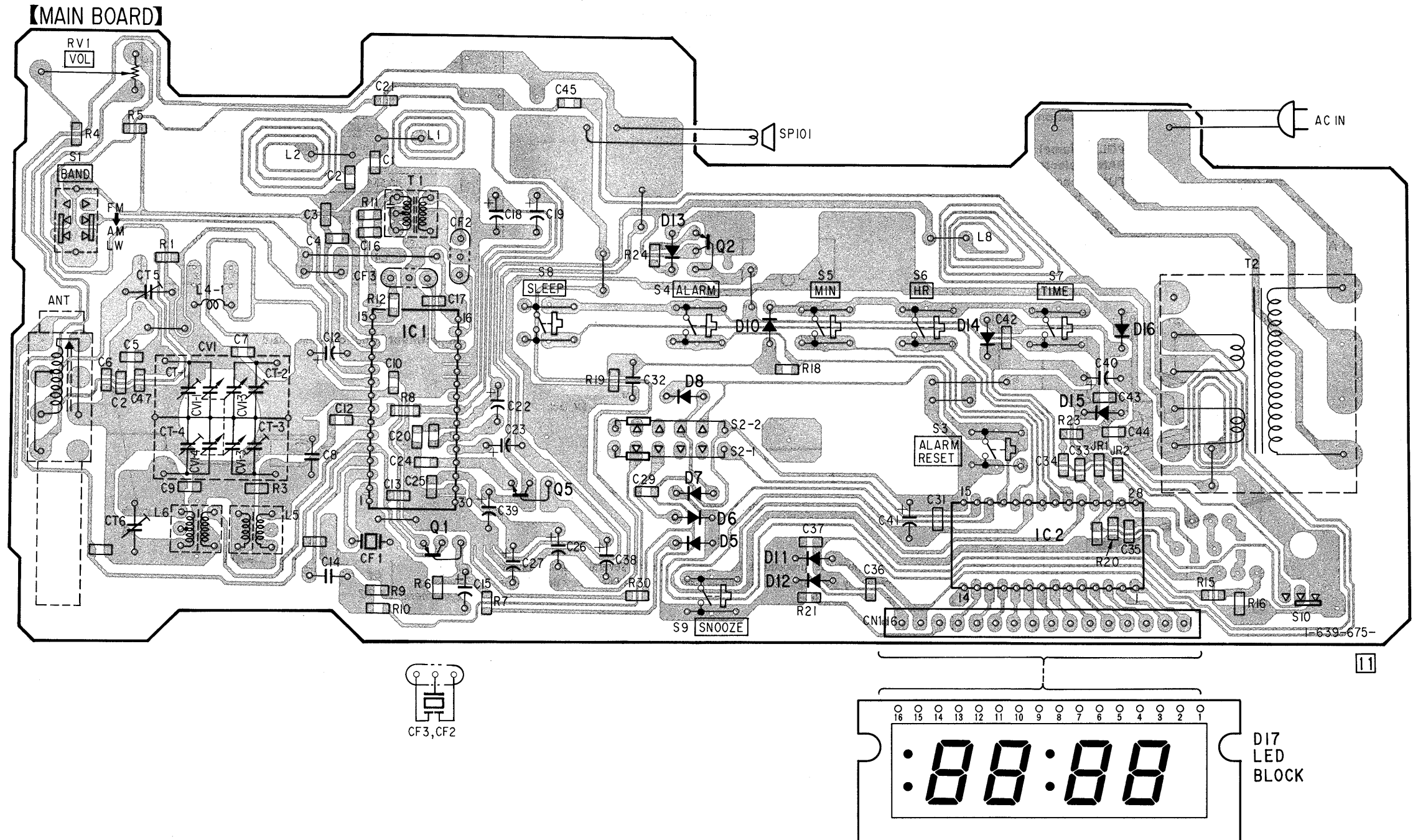


SECTION 3 DIAGRAMS

3-1. PRINTED WIRING BOARDS

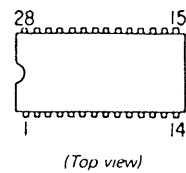
Note:

• ○ — : parts extracted from the component side.

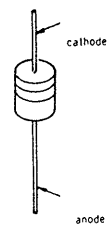


• Semiconductor Lead Layouts

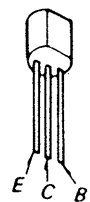
CXA1019S
LM8560N



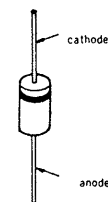
HZM13NB1



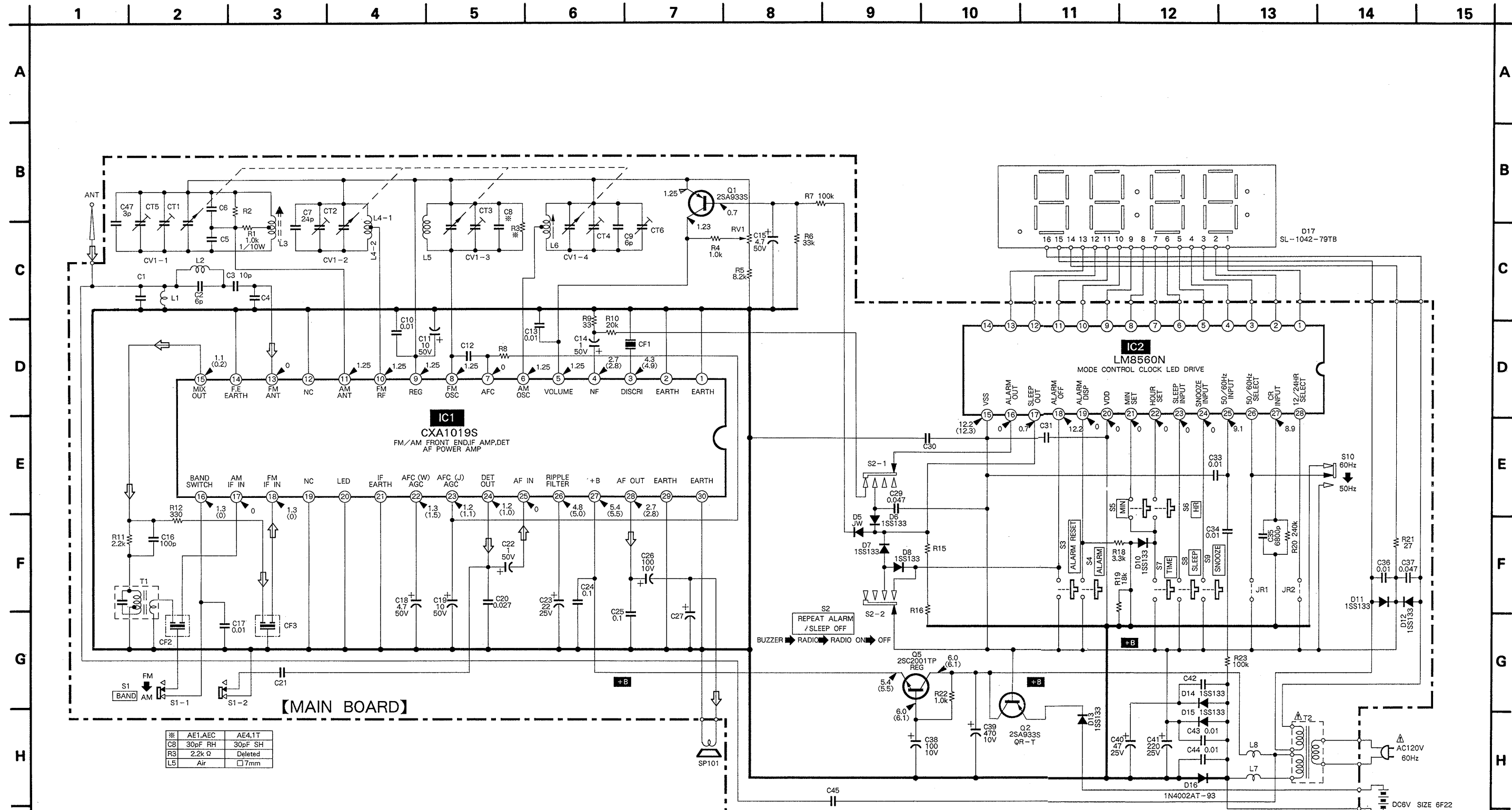
2SA933S-QR
2SC2001-LK



10E2



3-2. SCHEMATIC DIAGRAM



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

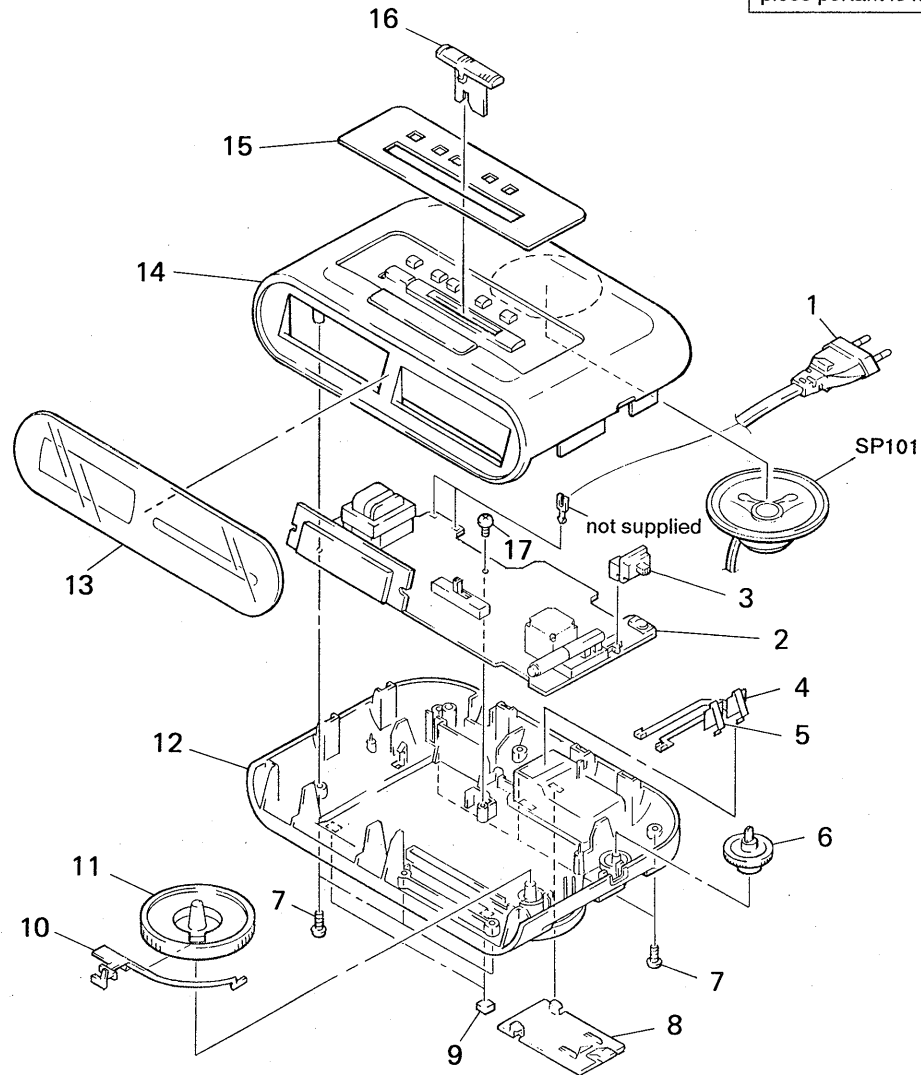
NOTE:

- -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 |
|----------|-----------------------|---|--------|
| 1 | Δ 1-558-566-21 | CORD, POWER | |
| 2 | * A-3661-296-A | MOUNTED PCB (CHIP), MAIN | |
| 3 | 3-369-129-01 | KNOB (B) | |
| 4 | 3-369-133-01 | TERMINAL (B), BATTERY | |
| 5 | 3-369-132-01 | TERMINAL (A), BATTERY | |
| 6 | 3-369-134-01 | KNOB (V) | |
| 7 | 7-685-650-79 | SCREW +P 3X16 TYPE2 NON-SLIT | |
| 8 | 3-369-135-01 | LID, BATTERY CASE | |
| 9 | 3-368-852-01 | FOOT | |
| 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) | |

| Ref. No. | Part No. | Description | Remark |
|----------|--------------|---|--------|
| 13 | 3-369-137-01 | PLATE, INDICATION | |
| 14 | 3-369-198-01 | CABINET (UPPER) (WHITE) ... (WHITE) | |
| 14 | 3-369-198-11 | CABINET (UPPER) (DARK GRAY) ... (GRAY) (US) | |
| 15 | 3-369-136-01 | PLATE, ORNAMENTAL (WHITE) | |
| 15 | 3-369-136-11 | PLATE, ORNAMENTAL (GRAY) (US) | |
| 16 | 3-369-139-01 | KNOB (F) (WHITE) ... (WHITE) | |
| 16 | 3-369-139-11 | KNOB (F) (DARK GRAY) ... (GRAY) (US) | |
| 17 | 7-685-647-79 | SCREW +P 3X10 TYPE2 NON-SLIT | |
| SP101 | 1-503-082-00 | SPEAKER | |

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 > | | | | < CAPACITOR > | | | |
| C1 | 1-163-102-00 | CERAMIC CHIP 24PF | 5% 50V | CN1 | * 1-575-159-11 | CORD, CONNECTION | |
| C2 | 1-163-089-00 | CERAMIC CHIP 6PF | 50V | < CAPACITOR > | | | |
| C3 | 1-163-093-00 | CERAMIC CHIP 10PF | 5% 50V | CV1 | 1-151-628-11 | CAP, VARIABLE (TUNING) | |
| C7 | 1-163-102-00 | CERAMIC CHIP 24PF | 5% 50V | < DIODE > | | | |
| C8 | 1-163-103-00 | CERAMIC CHIP 27PF | 5% 50V | D6 | 8-719-984-95 | DIODE HZM13NB1 | |
| C9 | 1-163-089-00 | CERAMIC CHIP 6PF | 50V | D7 | 8-719-984-95 | DIODE HZM13NB1 | |
| C10 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V | D8 | 8-719-984-95 | DIODE HZM13NB1 | |
| C11 | 1-124-907-11 | ELECT 10uF | 20% 50V | D10 | 8-719-984-95 | DIODE HZM13NB1 | |
| C13 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V | D11 | 8-719-984-95 | DIODE HZM13NB1 | |
| C14 | 1-124-903-11 | ELECT 1uF | 20% 50V | D12 | 8-719-984-95 | DIODE HZM13NB1 | |
| C15 | 1-124-927-11 | ELECT 4.7uF | 20% 100V | D13 | 8-719-984-95 | DIODE HZM13NB1 | |
| C16 | 1-163-117-00 | CERAMIC CHIP 100PF | 5% 50V | D14 | 8-719-984-95 | DIODE HZM13NB1 | |
| C17 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V | D15 | 8-719-984-95 | DIODE HZM13NB1 | |
| C18 | 1-124-927-11 | ELECT 4.7uF | 20% 100V | D16 | 8-719-200-02 | DIODE 10E2 | |
| C19 | 1-124-907-11 | ELECT 10uF | 20% 50V | D17 | 1-808-342-11 | DIODE SL-1042-78T | |
| C20 | 1-163-986-00 | CERAMIC CHIP 0.027uF | 10% 25V | < IC > | | | |
| C22 | 1-124-903-11 | ELECT 1uF | 20% 50V | IC1 | 8-752-035-29 | IC CXA1019S | |
| C23 | 1-126-233-11 | ELECT 22uF | 20% 50V | IC2 | 8-759-821-46 | IC LM8560N | |
| C24 | 1-164-004-11 | CERAMIC CHIP 0.1uF | 10% 25V | < COIL > | | | |
| C25 | 1-164-004-11 | CERAMIC CHIP 0.1uF | 10% 25V | L3 | 1-402-413-21 | ANTENNA, FERRITE-ROD (MW) | |
| C26 | 1-124-443-00 | ELECT 100uF | 20% 10V | L4 | 1-428-223-11 | COIL, AIR-CORE | |
| C29 | 1-163-809-11 | CERAMIC CHIP 0.047uF | 10% 25V | L5 | 1-428-163-11 | COIL, AIR-CORE | |
| C32 | 1-124-927-11 | ELECT 4.7uF | 20% 100V | L6 | 1-406-028-00 | COIL, OSC (MW) | |
| C33 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V | < TRANSISTOR > | | | |
| C34 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V | Q1 | 8-729-920-68 | TRANSISTOR 2SA933S-QRT | |
| C35 | 1-163-019-00 | CERAMIC CHIP 0.0068uF | 10% 50V | Q2 | 8-729-920-68 | TRANSISTOR 2SA933S-QRT | |
| C36 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V | Q5 | 8-729-142-46 | TRANSISTOR 2SC2001TP-LK | |
| C37 | 1-163-809-11 | CERAMIC CHIP 0.047uF | 10% 25V | Q5 | 8-729-100-13 | TRANSISTOR 2SC2001TP-K2 | |
| C38 | 1-124-443-00 | ELECT 100uF | 20% 10V | < RESISTOR > | | | |
| C39 | 1-124-472-11 | ELECT 470uF | 20% 10V | R1 | 1-216-049-00 | METAL CHIP 1K 5% 1/10W | |
| C40 | 1-124-477-11 | ELECT 47uF | 20% 25V | R3 | 1-216-057-00 | METAL CHIP 2.2K 5% 1/10W | |
| C41 | 1-124-120-11 | ELECT 220uF | 20% 25V | R4 | 1-216-049-00 | METAL CHIP 1K 5% 1/10W | |
| C43 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V | R5 | 1-216-071-00 | METAL CHIP 8.2K 5% 1/10W | |
| 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 > | | | | | | | |
| CF1 | 1-579-312-91 | FILTER, CERAMIC | | | | | |
| CF2 | 1-577-072-11 | FILTER, CERAMIC | | | | | |
| CF3 | 1-579-312-91 | FILTER, CERAMIC | | | | | |

| 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> |
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