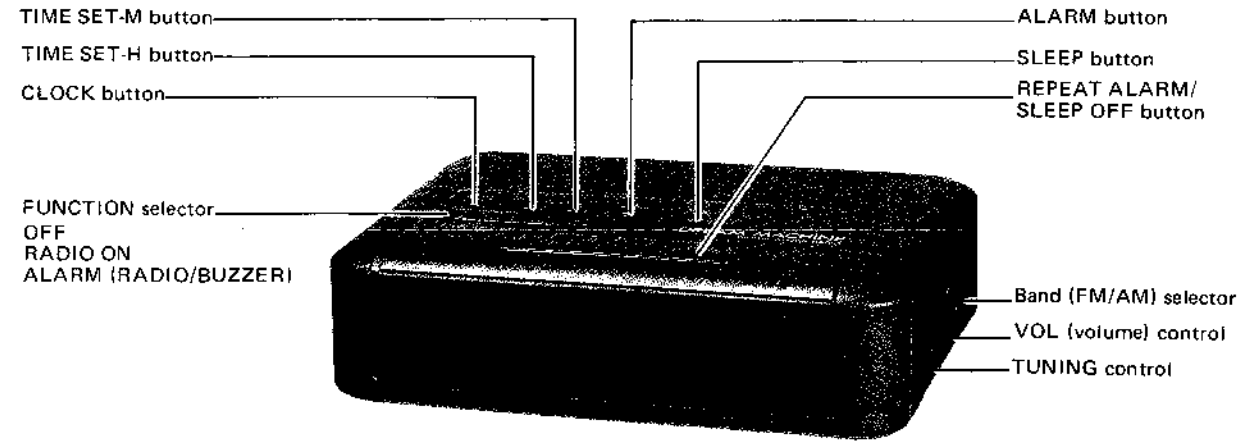


# ICF-C240

## SERVICE MANUAL

AEP Model



### SPECIFICATIONS

| Frequency range | FM            | AM               |
|-----------------|---------------|------------------|
| AEP model       | 87.6-107.5MHz | 531-1,602kHz     |
| IT model        | 87.5-108MHz   | 526.5-1,606.5kHz |

|                   |  |  |
|-------------------|--|--|
| Antenna           | FM: AC power cord antenna<br>AM: Built-in ferrite bar antenna  |  |
| Speaker           | Approx. 6.8 cm (2 7/8 inches) dia.   |  |
| Power output      | 100mW (at 10% harmonic distortion)   |  |
| Power requirement | 220V AC, 50Hz<br>For the power backup function:<br>9V DC, one 6F22 battery                                   |  |
| Battery life      | Approx. 80 hours, using Sony battery S-006P (U)  |  |
| Dimensions        | Approx. 181.5 x 59 x 144 mm (w/h/d)<br>(7 1/8 x 2 3/8 x 5 7/8 inches)<br>incl. projecting ports and controls |  |
| Weight            | Approx. 520g (1 lb 3oz)<br>not incl. battery   |  |

Design and specifications subject to change without notice.

### FEATURES

- Electronic digital alarm clock and sleep timer are combined.
- Two wake-up modes available: radio or buzzer alarm.
- REPEAT ALARM 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 operating during a power interruption, using an optional 6F22 battery.

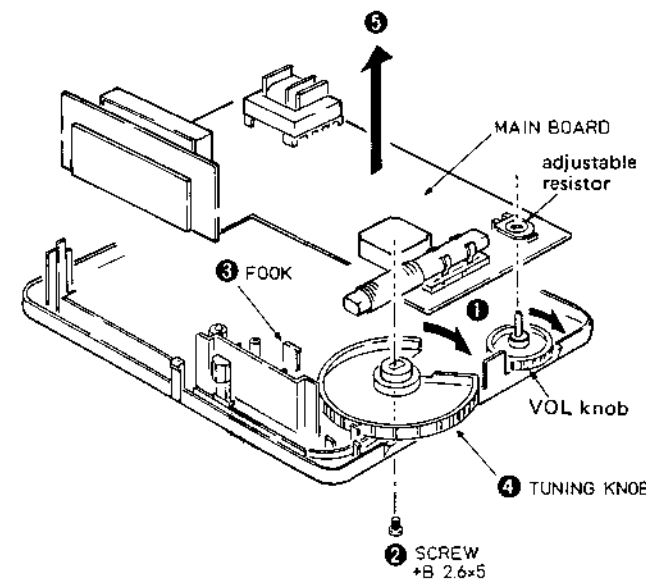
### SAFETY-RELATED COMPONENT WARNING!!

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.

### MAIN BOARD REMOVAL

- 1 Turn TUNING knob fully clockwise.
- 2 Remove screw (+B 2.6X5)
- 3 Release fook.
- 4 Remove main board pressing down TUNING knob.

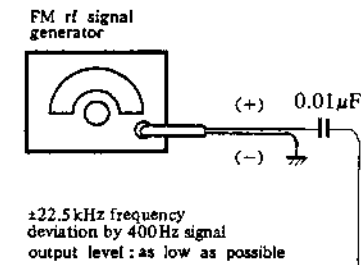
Note: When installing main board, align shaft of VOL knob with a hole of adjustable resistor.



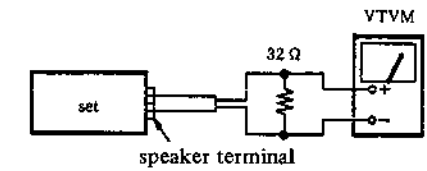
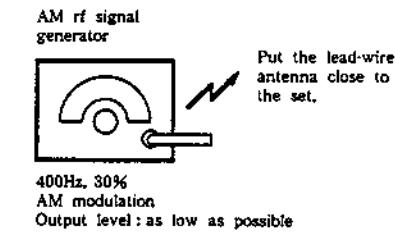
FM/AM DIGITAL CLOCK RADIO  
**SONY**

## SECTION 1 ELECTRICAL ADJUSTMENTS

### FM Section



### 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.

| FM FREQUENCY COVERAGE ADJUSTMENT      |                  |
|---------------------------------------|------------------|
| Adjust for a maximum reading on VTVM. |                  |
| L4                                    | 87.35(87.3)MHz   |
| CT2                                   | 108.05(108.3)MHz |

| FM TRACKING ADJUSTMENT                |                  |
|---------------------------------------|------------------|
| Adjust for a maximum reading on VTVM. |                  |
| L5, L6                                | 87.35(87.3)MHz   |
| CT1                                   | 108.05(108.3)MHz |

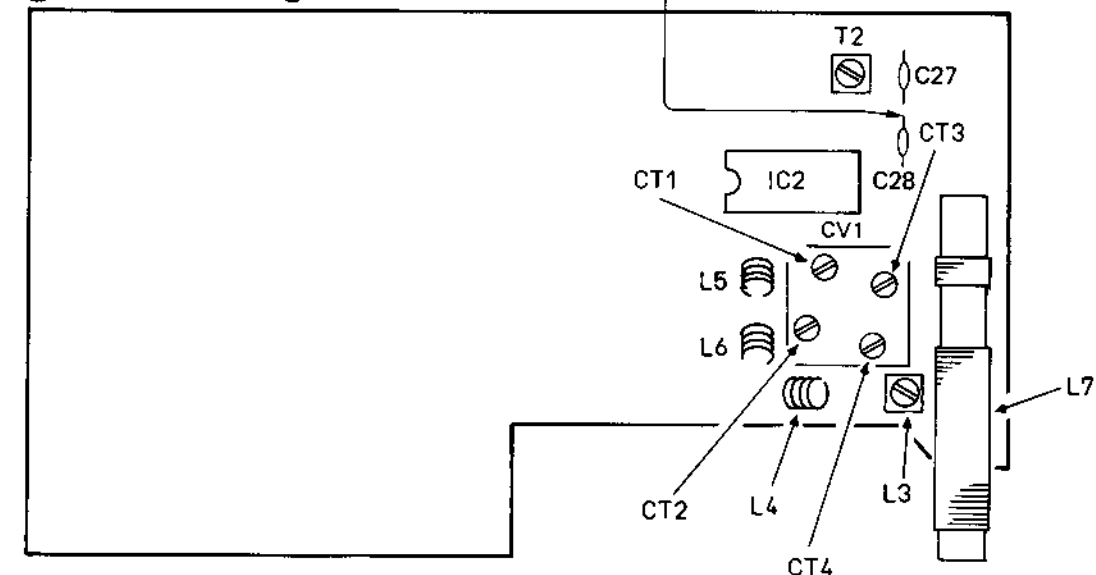
( ) : IT model

| AM IF ALIGNMENT                       |        |
|---------------------------------------|--------|
| Adjust for a maximum reading on VTVM. |        |
| T2                                    | 455kHz |

| AM FREQUENCY COVERAGE ADJUSTMENT      |                   |
|---------------------------------------|-------------------|
| Adjust for a maximum reading on VTVM. |                   |
| L3                                    | 520(516.5)kHz     |
| CT4                                   | 1,650(1,631.5)kHz |

| AM TRACKING ADJUSTMENT                |          |
|---------------------------------------|----------|
| Adjust for a maximum reading on VTVM. |          |
| L7                                    | 620kHz   |
| CT3                                   | 1,400kHz |

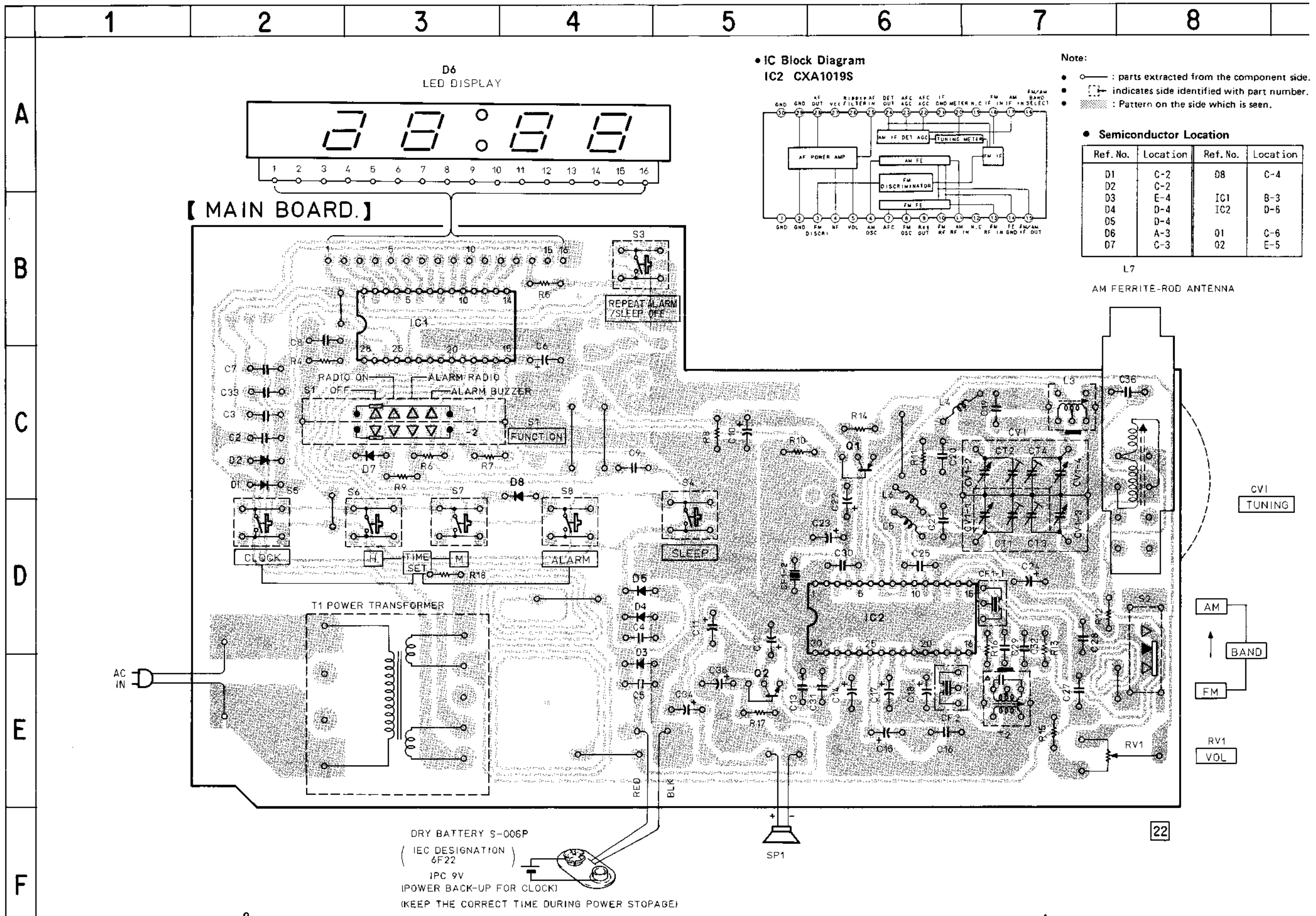
### [MAIN BOARD] - component side -



IT model: Italian model

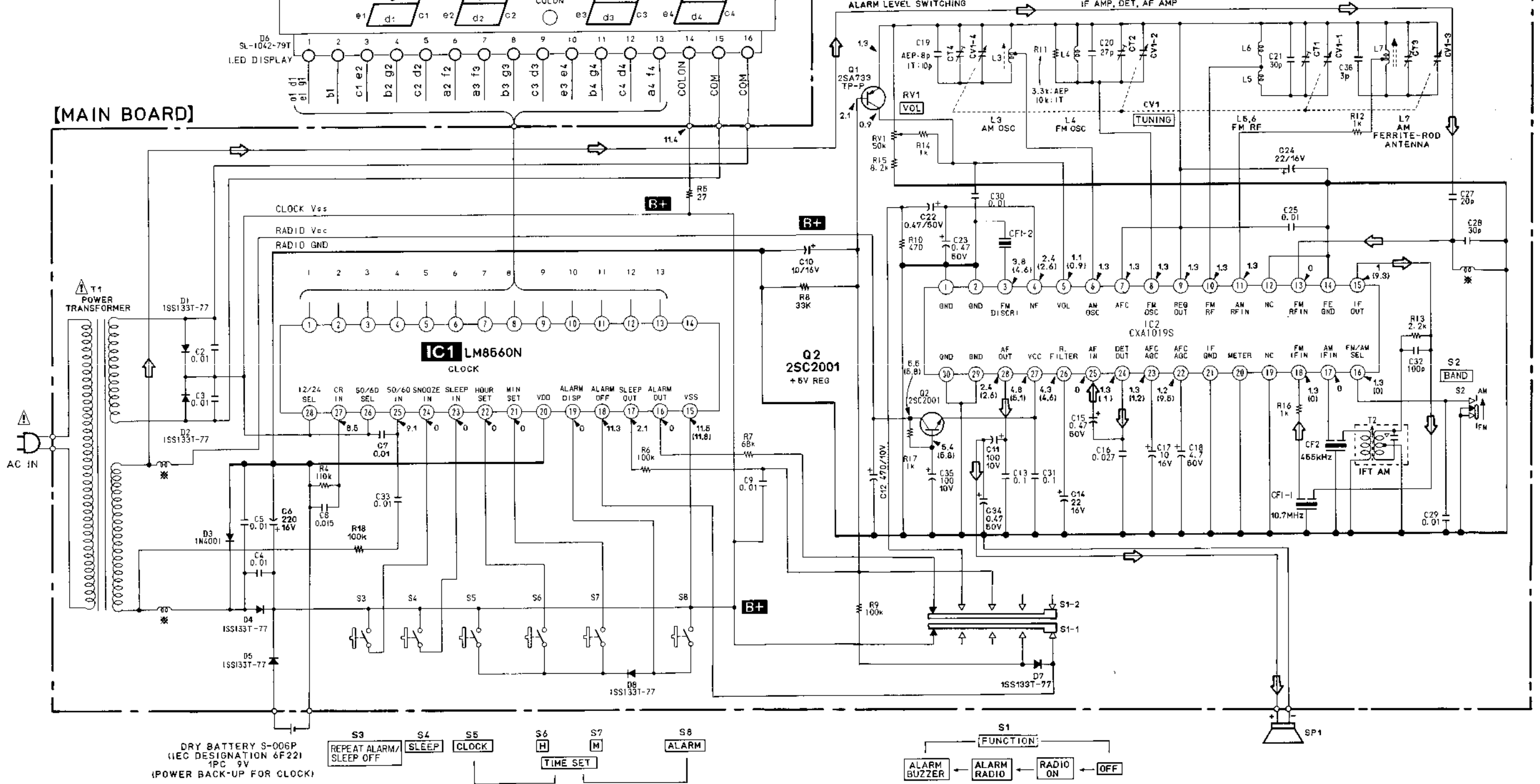
# SECTION 2 DIAGRAMS

## 2-1. PRINTED WIRING BOARDS

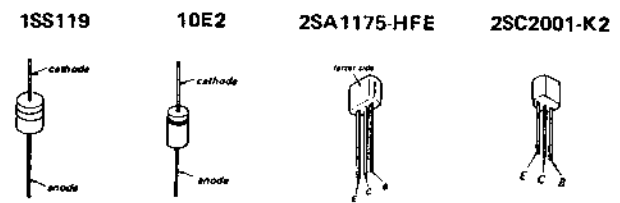


2-2. SCHEMATIC DIAGRAM

• See page 4 for IC2 block diagram.



• SEMICONDUCTOR LEAD LAYOUTS



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

- IT model: Italian model.
- \*: Printed pattern functions as a kind of coil.
- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{pF}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
- $\Delta$ : internal component.
- B+: B+ lines.
- Voltage and waveforms are dc with respect to ground
- under detuned conditions. no mark : FM ( ) : AM
- Voltages are taken with a VOM. (input impedance 10 M $\Omega$ ) Voltage variations may be noted due to normal production tolerances.
- Signal path  $\Rightarrow$  : FM

**SECTION 3  
EXPLODED VIEW**

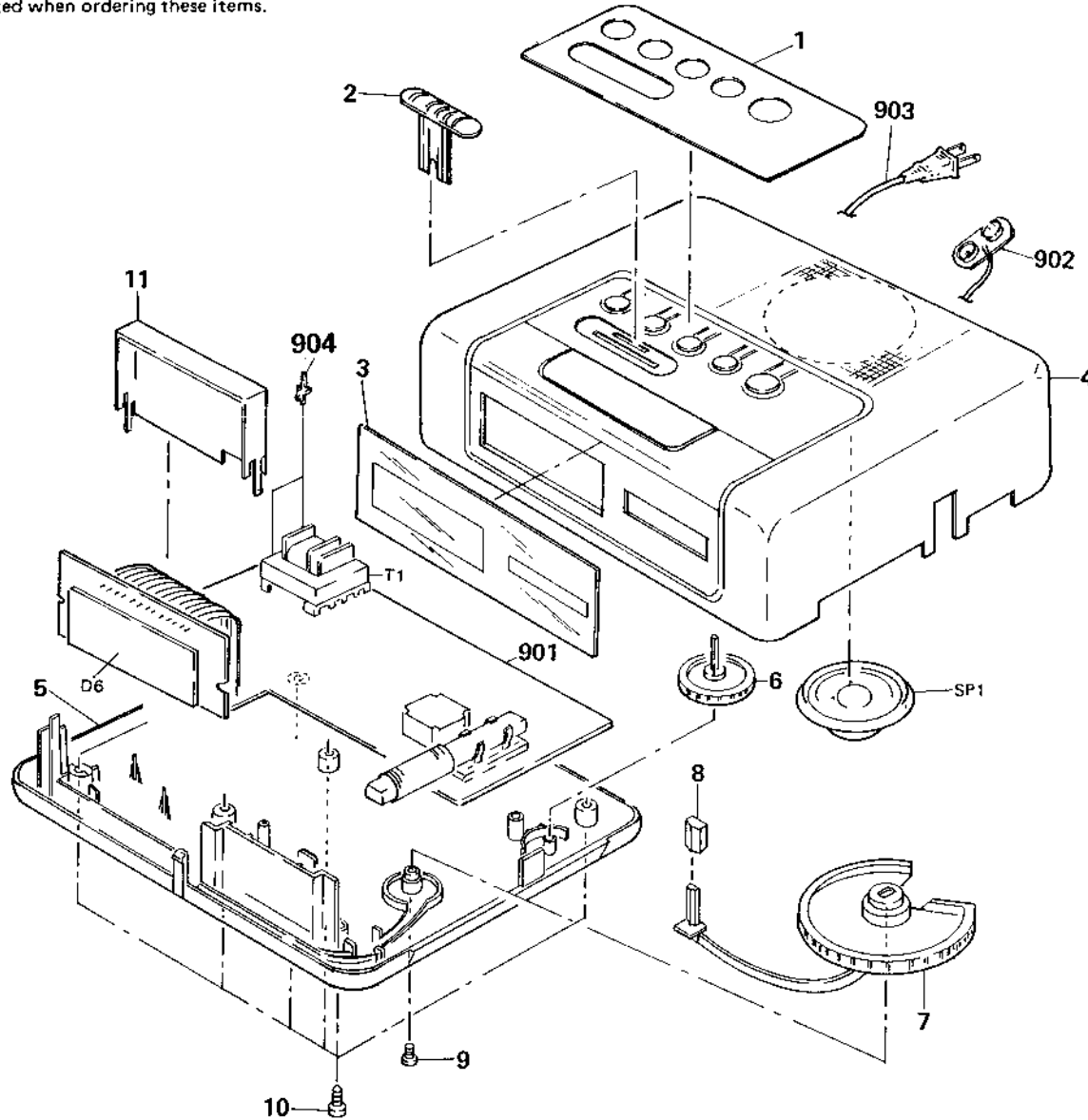
**NOTE:**

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:  
(RED) ... KNOB, BALANCE (WHITE)  
↑ Cabinet's Color      ↑ Parts Color

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

- IT model: Italian model



| No. | Part No.     | Description                      | Remarks |
|-----|--------------|----------------------------------|---------|
| 1   | 3-902-093-51 | {WHITE}...PLATE, ORNAMENTAL      |         |
|     | 3-902-093-51 | {GRAY}...PLATE, ORNAMENTAL       |         |
|     | 3-902-093-71 | {BLACK}...PLATE, ORNAMENTAL      |         |
| 2   | 3-902-092-01 | {WHITE}...KNOB (FUNCTION)        |         |
|     | 3-902-092-21 | {GRAY}...KNOB (FUNCTION)         |         |
|     | 3-902-092-32 | {BLACK}...KNOB (FUNCTION)        |         |
| 3   | 3-902-090-11 | {AEP}...SCALE, DIAL              |         |
|     | 3-902-090-31 | {IT}...SCALE, DIAL               |         |
| 4   | 3-902-097-01 | {WHITE}...CABINET (UPPER)        |         |
|     | 3-902-097-21 | {GRAY}...CABINET (UPPER)         |         |
|     | 3-902-097-31 | {BLACK}...CABINET (UPPER)        |         |
| 5   | 3-903-139-31 | {WHITE}...CABINET (LOWER)        |         |
|     | 3-903-139-41 | {GRAY}...CABINET (LOWER)         |         |
|     | 3-903-139-51 | {BLACK}...CABINET (LOWER)        |         |
| 6   | 3-902-091-01 | {GRAY, BLACK}...KNOB (VOL){GRAY} |         |
|     | 3-902-091-11 | {WHITE}...KNOB (VOL){LIGHT GRAY} |         |

| No. | Part No.       | Description                         | Remarks |
|-----|----------------|-------------------------------------|---------|
| 7   | 3-902-474-01   | {GRAY, BLACK}...KNOB (TUNING){GRAY} |         |
|     | 3-902-474-11   | {WHITE}...KNOB (TUNING){LIGHT GRAY} |         |
| 8   | *3-902-463-01  | CAP (POINTER)                       |         |
| 9   | 7-621-775-20   | SCREW +B 2.6X5                      |         |
| 10  | 7-685-648-79   | SCREW +BTP 3X12 TYPE2 N-S           |         |
| 11  | 3-902-094-02   | STOPPER (REPEAT ALARM BAR)          |         |
| 901 | *A-3615-360-A  | {IT}...MOUNTED PCB, MAIN            |         |
|     | *A-3615-361-A  | {AEP}...MOUNTED PCB, MAIN           |         |
| 902 | 1-535-804-21   | SNAP, BATTERY                       |         |
| 903 | △ 1-555-795-00 | CORD, POWER                         |         |
| 904 | 1-535-476-11   | TERMINAL                            |         |
| D6  | 1-808-344-11   | DIODE SL-1042-79T                   |         |
| SP1 | 1-503-082-00   | SPEAKER                             |         |
| T1  | △ 1-449-940-11 | TRANSFORMER, POWER                  |         |

**SECTION 4  
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.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**

MF: μF, PF: μμF.

**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH: μH

**SEMICONDUCTORS**

In each case, U: μ, for example:

UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

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

- IT model: Italian model

| Ref.No. | Part No.       | Description                   |
|---------|----------------|-------------------------------|
| 901     | *A-3615-360-A  | {IT}...MOUNTED PCB, MAIN      |
|         | *A-3615-361-A  | {AEP}...MOUNTED PCB, MAIN     |
| 902     | 1-535-804-21   | SNAP, BATTERY                 |
| 903     | △ 1-555-795-00 | CORD, POWER                   |
| 904     | 1-535-476-11   | TERMINAL                      |
| C2      | 1-101-004-00   | CERAMIC 0.01MF 50V            |
| C3      | 1-101-004-00   | CERAMIC 0.01MF 50V            |
| C4      | 1-101-004-00   | CERAMIC 0.01MF 50V            |
| C5      | 1-101-004-00   | CERAMIC 0.01MF 50V            |
| C6      | 1-124-120-11   | ELECT 220MF 20% 16V           |
| C7      | 1-101-004-00   | CERAMIC 0.01MF 50V            |
| C8      | 1-130-485-00   | MYLAR 0.015MF 5% 50V          |
| C9      | 1-161-379-00   | CERAMIC 0.01MF 30% 16V        |
| C10     | 1-123-356-00   | ELECT 10MF 20% 16V            |
| C11     | 1-126-101-11   | ELECT 100MF 20% 10V           |
| C12     | 1-124-472-11   | ELECT 470MF 20% 10V           |
| C13     | 1-162-851-11   | CERAMIC 0.1MF 20% 16V         |
| C14     | 1-123-330-00   | ELECT 22MF 20% 16V            |
| C15     | 1-123-379-00   | ELECT 0.47MF 20% 50V          |
| C16     | 1-161-056-00   | CERAMIC 0.027MF 10% 25V       |
| C17     | 1-123-356-00   | ELECT 10MF 20% 16V            |
| C18     | 1-123-369-00   | ELECT 4.7MF 20% 50V           |
| C19     | 1-102-945-00   | {AEP}...CERAMIC 8PF 0.5PF 50V |
| C19     | 1-102-947-00   | {IT}...CERAMIC 10PF 0.5PF 50V |
| C20     | 1-102-961-00   | CERAMIC 27PF 5% 50V           |
| C21     | 1-102-962-00   | CERAMIC 30PF 5% 50V           |
| C22     | 1-123-379-00   | ELECT 0.47MF 20% 50V          |
| C23     | 1-123-379-00   | ELECT 0.47MF 20% 50V          |
| C24     | 1-123-330-00   | ELECT 22MF 20% 16V            |
| C25     | 1-101-004-00   | CERAMIC 0.01MF 50V            |
| C27     | 1-102-958-00   | CERAMIC 20PF 5% 50V           |
| C28     | 1-102-962-00   | CERAMIC 30PF 5% 50V           |
| C29     | 1-101-004-00   | CERAMIC 0.01MF 50V            |
| C30     | 1-101-004-00   | CERAMIC 0.01MF 50V            |
| C31     | 1-162-851-11   | CERAMIC 0.1MF 20% 16V         |
| C32     | 1-102-973-00   | CERAMIC 100PF 5% 50V          |
| C33     | 1-101-004-00   | CERAMIC 0.01MF 50V            |
| C34     | 1-123-379-00   | ELECT 0.47MF 20% 50V          |
| C35     | 1-126-101-11   | ELECT 100MF 20% 10V           |
| C36     | 1-102-936-00   | CERAMIC 3PF 0.25PF 50V        |
| CF1     | 1-567-538-71   | FILTER, CERAMIC               |
| CF2     | 1-577-072-11   | FILTER, CERAMIC               |
| CT1-4   | 1-151-614-11   | CAP, VARIABLE                 |
| CV1     |                |                               |

| Ref.No. | Part No.       | Description                                |
|---------|----------------|--|
| D6      | 1-808-344-11   | DIODE SL-1042-79T                          |
| D7      | 8-719-911-19   | DIODE 1SS119                               |
| D8      | 8-719-911-19   | DIODE 1SS119                               |
| IC1     | 8-759-821-46   | IC LM8560N                                 |
| IC2     | 8-752-035-29   | IC CXA1019S                                |
| L3      | 1-406-150-11   | COIL, MW OSC                               |
| L4      | *1-405-962-00  | {AEP}...COIL, FM OSC                       |
| L4      | 1-459-815-11   | {IT}...COIL (WITH CORE), FM OSC            |
| L5      | *1-422-291-11  | COIL, AIR-CORE (FM RF)                     |
| L6      | *1-422-291-11  | COIL, AIR-CORE (FM RF)                     |
| L7      | 1-402-405-11   | ANTENNA, FERRITE-ROD (MW)                  |
| Q1      | 8-729-119-76   | TRANSISTOR 2SA1175-HFE                     |
| Q2      | 8-729-100-13   | TRANSISTOR 2SC2001-K2                      |
| R4      | 1-247-880-11   | CARBON 110K 5% 1/4W                        |
| R5      | 1-249-398-11   | CARBON 27 5% 1/4W                          |
| R6      | 1-249-441-11   | CARBON 100K 5% 1/4W                        |
| R7      | 1-249-439-11   | CARBON 58K 5% 1/4W                         |
| R8      | 1-249-435-11   | CARBON 33K 5% 1/4W                         |
| R9      | 1-249-441-11   | CARBON 100K 5% 1/4W                        |
| R10     | 1-249-413-11   | CARBON 470 5% 1/4W                         |
| R11     | 1-249-423-11   | {AEP}...CARBON 3.3K 5% 1/4W                |
| R11     | 1-249-429-11   | {IT}...CARBON 10K 5% 1/4W                  |
| R12     | 1-249-417-11   | CARBON 1K 5% 1/4W                          |
| R13     | 1-249-421-11   | CARBON 2.2K 5% 1/4W                        |
| R14     | 1-249-417-11   | CARBON 1K 5% 1/4W                          |
| R15     | 1-249-428-11   | CARBON 8.2K 5% 1/4W                        |
| R16     | 1-249-417-11   | CARBON 1K 5% 1/4W                          |
| R17     | 1-249-417-11   | CARBON 1K 5% 1/4W                          |
| R18     | 1-249-441-11   | CARBON 100K 5% 1/4W                        |
| RV1     | 1-228-790-00   | RES, VAR, CARBON 50K (VOL)                 |
| S1      | 1-572-023-11   | SWITCH, SLIDE (FUNCTION)                   |
| S2      | 1-552-370-31   | SWITCH, SLIDE (BAND)                       |
| S3      | 1-553-856-00   | SWITCH, KEY BOARD (REPEAT ALARM/SLEEP OFF) |
| S4      | 1-553-856-00   | SWITCH, KEY BOARD (SLEEP)                  |
| S5      | 1-553-856-00   | SWITCH, KEY BOARD (CLOCK)                  |
| S6      | 1-553-856-00   | SWITCH, KEY BOARD (TIME SET-H)             |
| S7      | 1-553-856-00   | SWITCH, KEY BOARD (TIME SET-M)             |
| S8      | 1-553-856-00   | SWITCH, KEY BOARD (ALARM)                  |
| SP1     | 1-503-082-00   | SPEAKER                                    |
| T1      | △ 1-449-940-11 | TRANSFORMER, POWER                         |
| T2      | 1-404-790-11   | TRANSFORMER, IF (AM)                       |

**ACCESSORY & PACKING MATERIAL**

|               |   |
|---------------|---|
| 3-751-271-41  | {AEP}...MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, DUTCH, PORTUGUESE, SPANISH) |
| 3-751-271-51  | {AEP, IT}...MANUAL, INSTRUCTION (ENGLISH, SPANISH, ITALIAN, SWEDISH)              |
| *3-902-428-01 | INDIVIDUAL CARTON   |
| *3-902-464-01 | CUSHION   |