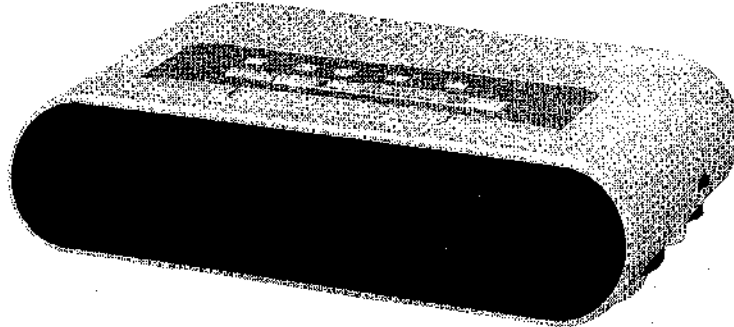


ICF-C242L

SERVICE MANUAL

AEP Model
UK Model



DREAM MACHINE

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FM/MW/LW DIGITAL CLOCK RADIO
SONY®





Features

- Electronic digital alarm clock and sleep timer are combined.
- Two wake-up modes available: radio or buzzer alarm.
- REPEAT ALARM/SLEEP OFF 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 a 6F22 battery (not supplied).

Specifications

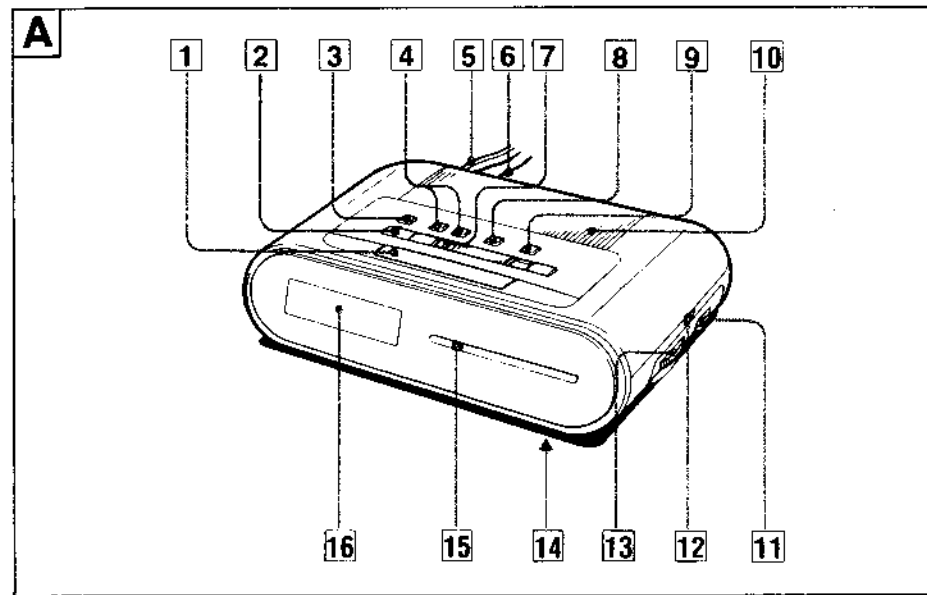
Frequency range	FM: 87.6–107.5 MHz MW: 531–1602 kHz LW: 153–255 kHz	Battery life	Approx. 80 hours using Sony battery S-006P (U)
Intermediate frequency	FM: 10.7 MHz AM: 455 kHz	Dimensions	Approx. 210 × 58 × 153 mm (w/h/d) (8 3/8 × 2 3/8 × 6 1/8 inches) incl. projecting parts and controls
Antennas	FM: FM wire antenna MW/LW: Built-in ferrite bar antenna	Weight	Approx. 570 g (1 lb 7 oz) not incl. battery
Speaker	Approx. 6.6 cm (2 5/8 inches) dia.	Design and specifications subject to change without notice.	
Power output	90 mW (at 10% harmonic distortion)	Note	This appliance conforms with EEC Directive 87/308 EEC regarding interference suppression.
Power requirements	UK: 240 V AC, 50 Hz Other countries: 220–230 V AC, 50 Hz For the power backup function: 9 V DC, one 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.

SECTION 1 GENERAL

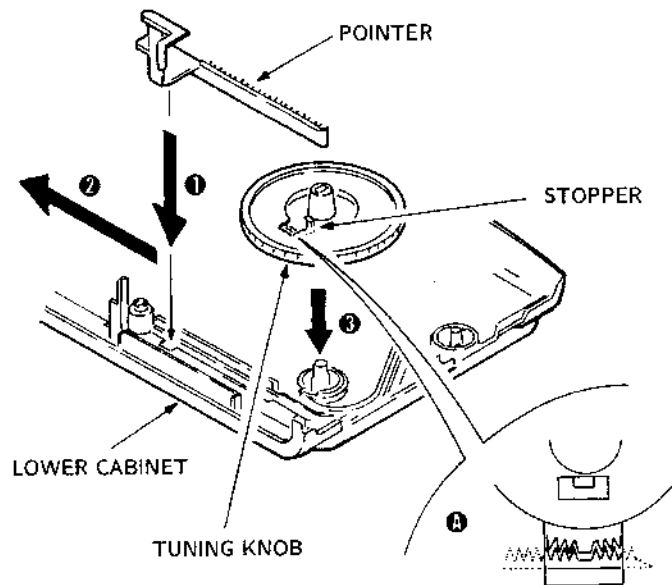
1-1. LOCATION OF CONTROLS

- | | |
|--|---|
| 1 REPEAT ALARM/SLEEP OFF bar | 10 Speaker |
| 2 ALARM RESET button | 11 VOL (volume) control |
| 3 CLOCK set button | 12 BAND selector (FM/MW/LW) |
| 4 TIME SET buttons (H/M) | 13 TUNING control |
| 5 AC power cord (rear) | 14 Power back-up battery compartment (bottom) |
| 6 FM wire antenna | 15 Dial scale |
| 7 Function selector OFF/RADIO ON
ALARM RADIO/BUZZER | 16 Time display |
| 8 ALARM set button | |
| 9 SLEEP button | |



SECTION 2 DIAL POINTER SETTING

DIAL POINTER SETTING



- Fit the gear part of pointer to cabinet groove and hook installing claw while taking pointer output of cabinet.
- Move pointer in the direction of arrow fully.
- Install the gear part of stopper and the gear part of pointer as show in the drawing A. Make sure to fit the stopper to the cabinet hole.

SECTION 3 ELECTRICAL ADJUSTMENTS

AM Section

Setting

BAND switch : MW/LW

AM rf signal generator



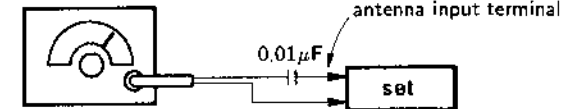
30% amplitude modulation by 400Hz signal
Output level : as low as possible

FM Section

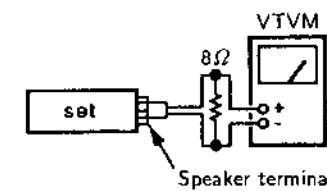
Setting

BAND switch : FM

FM rf signal generator

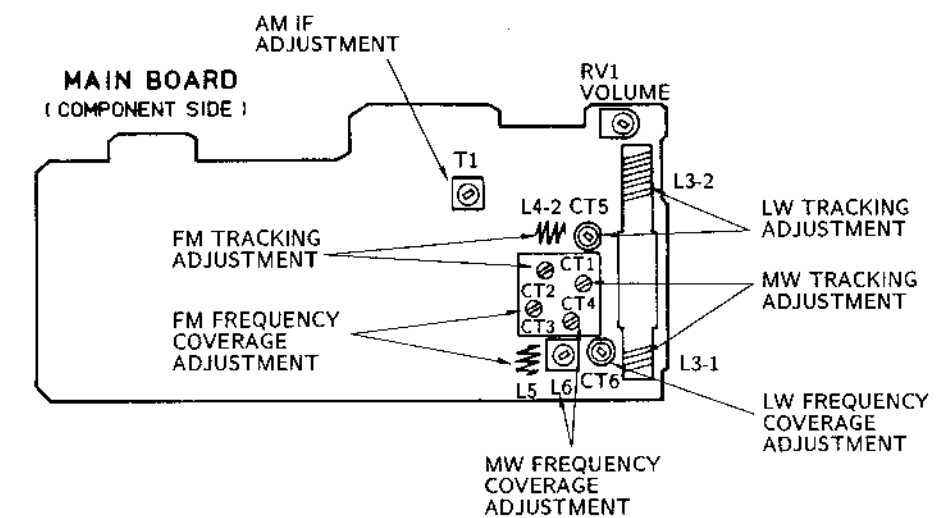


±22.5kHz frequency deviation by 400Hz signal
output level : as low as possible



- 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 :



AM(MW/LW) IF ADJUSTMENT	
Adjust for a maximum reading on VTVM	
T1	455kHz

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L6	520kHz
CT4	1650kHz

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L3-1	780kHz
CT1	1360kHz

LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM	
CT6	145kHz

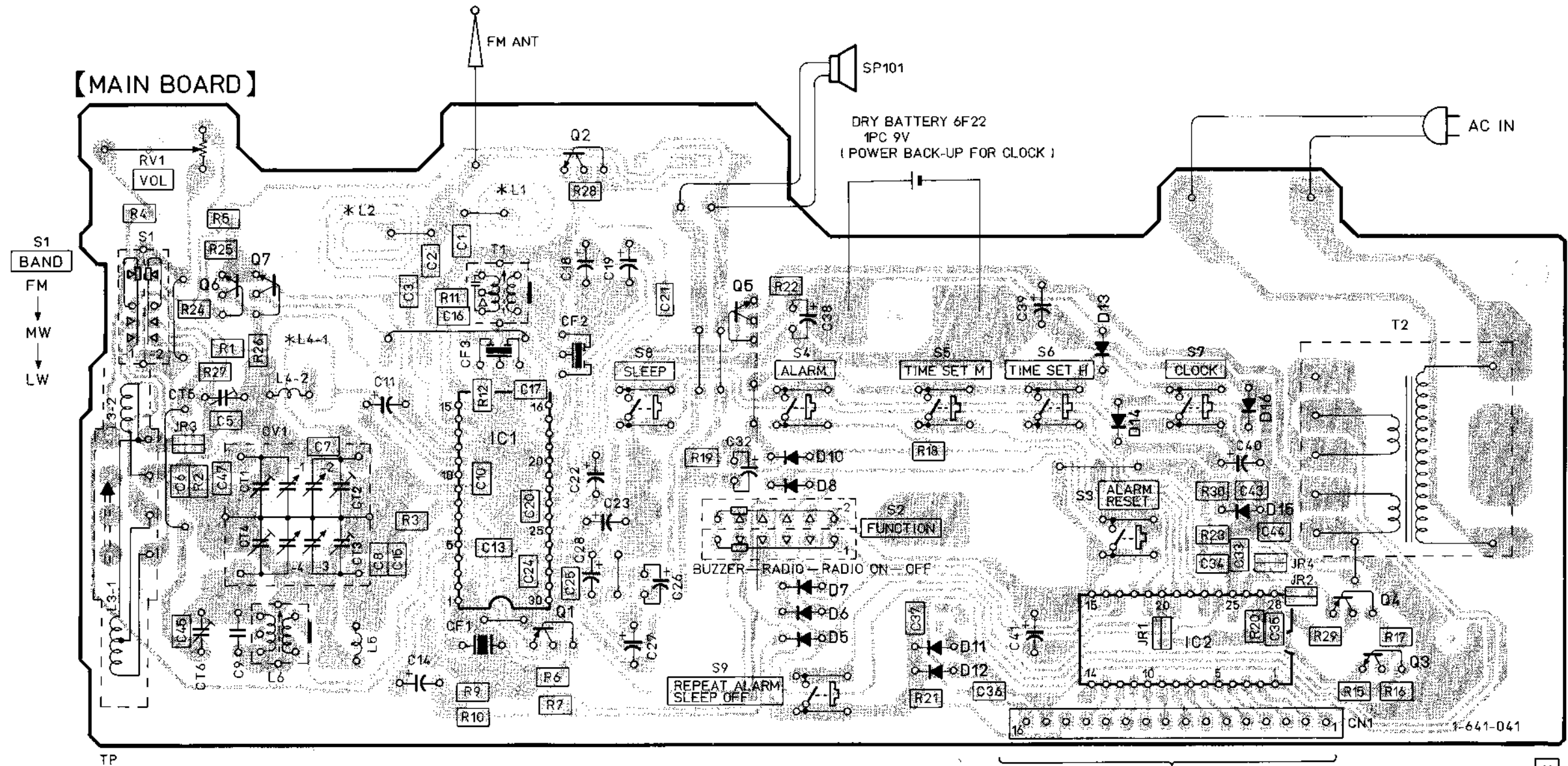
LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L3-2	145kHz
CT5	258kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L5	87.35MHz
CT3	108.25MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L4-2	87.35MHz
CT2	108.25MHz

SECTION 4
DIAGRAMS

4-1. PRINTED WIRING BOARD

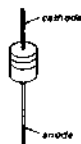


• Semiconductor Lead Layout

2SA933S-QR
2SC2001-K2



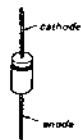
1SS133T-91



2SC2785-HFE

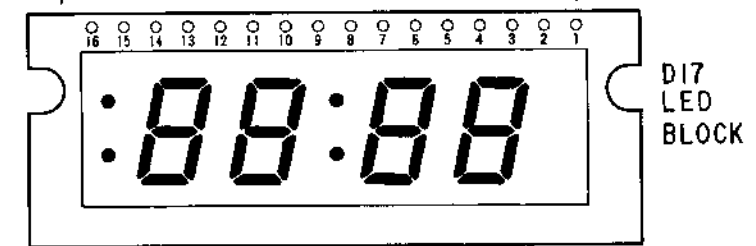


10E2

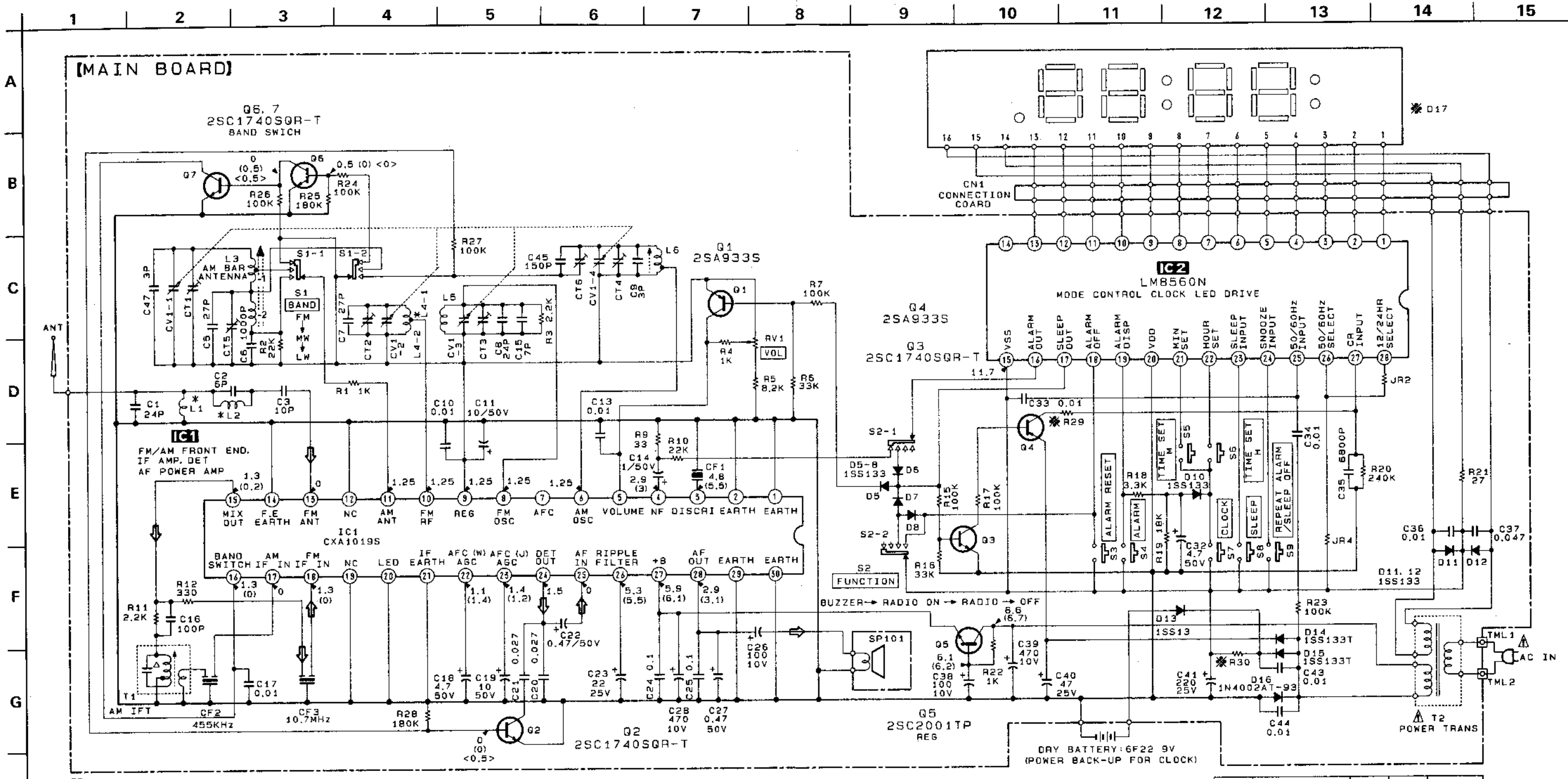


Note :

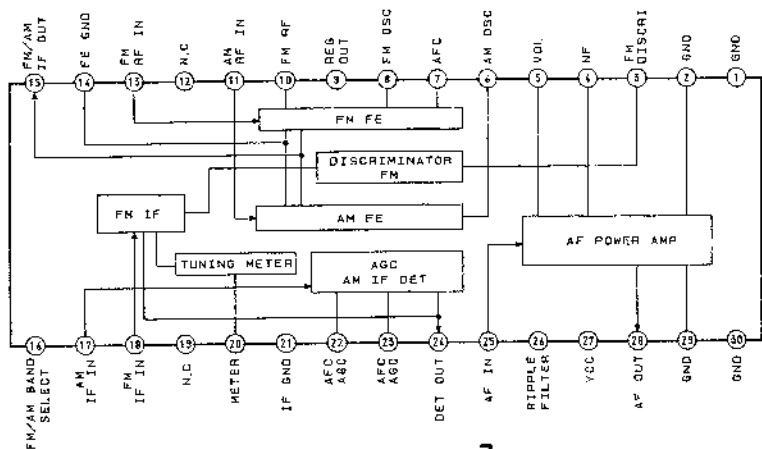
- : parts extracted from the component side.
- ◁ : indicates side identified with part number.
- ▨ : Pattern on the side which is seen.
- : Never reuse a disconnected chip component.
- : Notice that the minus side of a tantalum capacitor may be damaged by heat.
- * : printed pattern functions as a kind of coil.



4-2. SCHEMATIC DIAGRAM



• IC BLOCK DIAGRAM
IC1 CXA1019S



Note:

- All capacitors are in μF unless otherwise noted. pF : μuF 50V 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.

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

	D17	R29	R30	JR2
UK	SL-1042-78T	33K Ω	100 Ω	Deleted
AE9	SL-1042-79T	0 Ω	0 Ω	0 Ω

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- () : MW
- < > : LW
- Voltage value measured at AC primary voltage 230 volts.
- Voltages are taken with a VOM (Input impedance 10M Ω V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- \Rightarrow : FM
- *: printed pattern functions as a kind of coil.

SECTION 5 EXPLODED VIEW

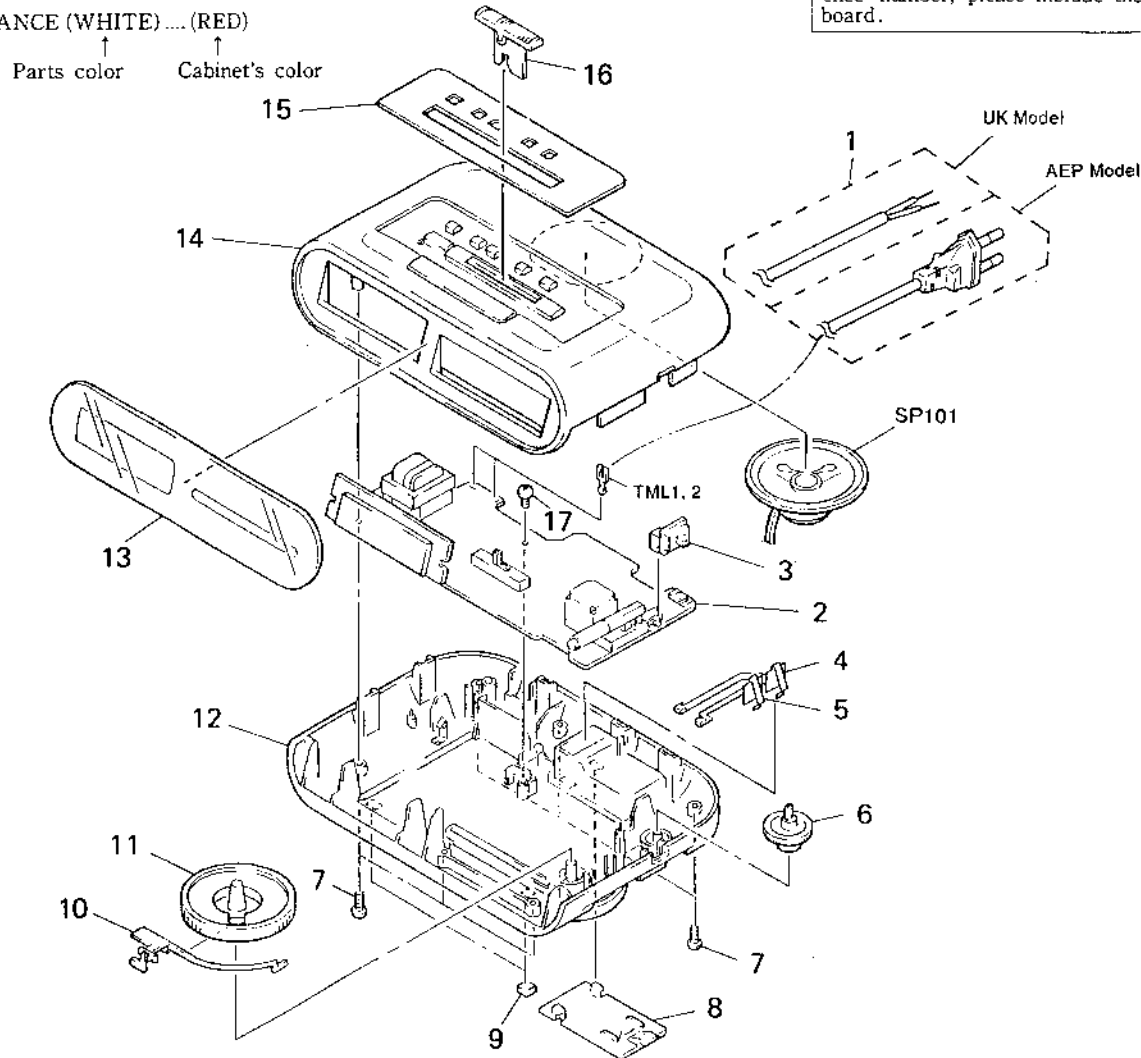
NOTE:

- -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)

- 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.

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

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



Ref. No.	Part No.	Description	Remark
A 1	1-555-795-00	CORD, POWER (AEP)	
A 1	1-556-035-00	CORD, POWER (2 CORE) (UK)	
*	A-3661-439-A	MOUNTED PCB (CHIP), MAIN (UK)	
*	A-3661-440-A	MOUNTED PCB (CHIP), MAIN (AEP)	
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)	

Ref. No.	Part No.	Description	Remark
12	3-369-197-61	CABINET (LOWER) (WHITE)....(WHITE) (UK)	
12	3-369-197-71	CABINET (LOWER) (GRAY)....(GRAY) (UK)	
12	3-369-197-81	CABINET (LOWER) (WHITE)....(WHITE) (AEP)	
12	3-369-197-91	CABINET (LOWER) (GRAY)....(GRAY) (AEP)	
13	3-369-137-21	PLATE, INDICATION (UK)	
13	3-369-137-31	PLATE, INDICATION (AEP)	
14	3-369-198-01	CABINET (UPPER) (WHITE)....(WHITE)	
14	3-369-198-11	CABINET (UPPER) (GRAY)....(GRAY)	
15	3-369-136-21	PLATE, ORNAMENTAL (TRANSPARENCY)....(WHITE)	
15	3-369-136-31	PLATE, ORNAMENTAL (TRANSPARENCY)....(GRAY)	
16	3-369-139-01	KNOB (F) (WHITE)....(WHITE)	
16	3-369-139-11	KNOB (F) (GRAY)....(GRAY)	
17	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
SP101	1-503-082-00	SPEAKER	

SECTION 6 ELECTRICAL PARTS LISTS

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

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

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

Ref. No.	Part No.	Description	Remark
*	A-3661-438-A	MOUNTED PCB (HAND), MAIN (AEP) *****	
*	3-364-726-01	PLATE (B), SHIELD (COMPONENT SIDE)	
*	3-375-716-01	PLATE, SHIELD (SOLDER SIDE)	
< CAPACITOR >			
C1	1-163-102-00	CERAMIC CHIP 24PF	5% 50V
C2	1-163-089-00	CERAMIC CHIP 6PF	50V
C3	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
C5	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C6	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V
C7	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C8	1-163-102-00	CERAMIC CHIP 24PF	5% 50V
C9	1-164-039-11	CERAMIC 3PF	5% 50V
C10	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C11	1-124-907-11	ELECT 10uF	20% 50V
C13	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C14	1-124-903-11	ELECT 1uF	20% 50V
C15	1-163-224-11	CERAMIC CHIP 7PF	0.25PF 50V
C16	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C17	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C18	1-124-927-11	ELECT 4.7uF	20% 100V
C19	1-124-907-11	ELECT 10uF	20% 50V
C20	1-163-986-00	CERAMIC CHIP 0.027uF	10% 25V
C21	1-163-986-00	CERAMIC CHIP 0.027uF	10% 25V
C22	1-124-902-00	ELECT 0.47uF	20% 50V
C23	1-126-233-11	ELECT 22uF	20% 50V
C24	1-164-004-11	CERAMIC CHIP 0.1uF	10% 25V
C25	1-164-004-11	CERAMIC CHIP 0.1uF	10% 25V
C26	1-124-443-00	ELECT 100uF	20% 10V
C27	1-124-902-00	ELECT 0.47uF	20% 50V
C28	1-124-472-11	ELECT 470uF	20% 10V
C32	1-124-927-11	ELECT 4.7uF	20% 100V
C33	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C34	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C35	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V

Ref. No.	Part No.	Description	Remark
C36	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C37	1-163-809-11	CERAMIC CHIP 0.047uF	10% 25V
C38	1-124-443-00	ELECT 100uF	20% 10V
C39	1-124-472-11	ELECT 470uF	20% 10V
C40	1-124-477-11	ELECT 47uF	20% 25V
C41	1-124-120-11	ELECT 220uF	20% 25V
C43	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C44	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C45	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C47	1-163-086-00	CERAMIC CHIP 3PF	50V
< FILTER >			
CF1	1-579-312-91	FILTER, CERAMIC	
CF2	1-578-677-11	FILTER, CERAMIC	
CF3	1-579-312-91	FILTER, CERAMIC	
< CONNECTOR >			
* CN1	1-575-159-11	CORD, CONNECTION	
< TRIMMER >			
CT5	1-141-245-00	CAP, TRIMMER 30PF	
CT6	1-141-245-00	CAP, TRIMMER 30PF	
< CAP, VARIABLE >			
CV1	1-151-628-11	CAP, VARIABLE	
< DIODE >			
D5	8-719-984-98	DIODE 1SS133T-91	
D6	8-719-984-98	DIODE 1SS133T-91	
D7	8-719-984-98	DIODE 1SS133T-91	
D8	8-719-984-98	DIODE 1SS133T-91	
D10	8-719-984-98	DIODE 1SS133T-91	
D11	8-719-984-98	DIODE 1SS133T-91	
D12	8-719-984-98	DIODE 1SS133T-91	
D13	8-719-984-98	DIODE 1SS133T-91	

MAIN

Ref. No.	Part No.	Description	Remark
D14	8-719-984-98	DIODE 1SS133T-91	
D15	8-719-984-98	DIODE 1SS133T-91	
D16	8-719-200-02	DIODE 10E2	
D17	1-808-342-11	DIODE SL1042-78T (UK)	
D17	1-808-344-11	DIODE SL1042-79T (AEP)	
< IC >			
IC1	8-752-035-29	IC CXA1019S	
IC2	8-759-821-46	IC LM8560N	
< JUMPER >			
JR1	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR2	1-216-295-00	METAL CHIP 0 5% 1/10W(AEP)	
JR3	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR4	1-216-295-00	METAL CHIP 0 5% 1/10W	
< COIL >			
L3	1-402-584-11	ANTENNA, FERRITE-ROD (WM/LW)	
L4	1-428-223-11	COIL, AIR-CORE (FM RF)	
L5	1-428-222-11	COIL, AIR-CORE (FM OSC)	
L6	1-406-028-00	COIL, OSC (MW)	
< TRANSISTOR >			
Q1	8-729-920-68	TRANSISTOR 2SA933S-QR	
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4	8-729-920-68	TRANSISTOR 2SA933S-QR	
Q5	8-729-100-13	TRANSISTOR 2SC2001-K2	
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q7	8-729-119-78	TRANSISTOR 2SC2785-HFE	
< RESISTOR >			
R1	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R2	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R3	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R4	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R5	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
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	
R15	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R16	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R17	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R18	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
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	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R25	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R26	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R27	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R28	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R29	1-216-085-00	METAL CHIP 33K 5% 1/10W(UK)	
R29	1-216-295-00	METAL CHIP 0 5% 1/10W(AEP)	
R30	1-216-025-00	METAL CHIP 100 5% 1/10W(UK)	
R30	1-216-295-00	METAL CHIP 0 5% 1/10W(AEP)	
< VARIABLE RESISTOR >			
RV1	1-228-790-00	RES. VAR, CARBON 50K (VOL)	
< SWITCH >			
S1	1-572-949-11	SWITCH, SLIDE (BAND)	
S2	1-572-262-11	SWITCH, SLIDE (FUNCTION)	
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 (TIME SET M)	
S6	1-554-937-11	SWITCH, KEY BOARD (TIME SET H)	
S7	1-554-937-11	SWITCH, KEY BOARD (CLOCK)	
S8	1-554-937-11	SWITCH, KEY BOARD (SLEEP)	
S9	1-554-937-11	SWITCH, KEY BOARD (REPEAT ALARM/SLEEP OFF)	
< TRANSFORMER >			
T1	1-404-341-00	TRANSFORMER, IF (AM IFT)	
△T2	1-449-940-11	TRANSFORMER, POWER	
< TERMINAL >			
* TML1	1-535-771-11	TERMINAL	
* TML2	1-535-771-11	TERMINAL	

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

Ref. No.	Part No.	Description	Remark
----------	----------	-------------	--------

MISCELLANEOUS

△1	1-555-795-00	CORD, POWER (AEP)	
△1	1-556-035-00	CORD, POWER (2 CORE) (UK)	
SP101	1-503-082-00	SPEAKER	

ACCESSORIES & PACKING MATERIALS

*	3-373-469-01	INDIVIDUAL CARTON	
*	3-704-281-01	BAG, PROTECTION (STANDARD)	
	3-753-402-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, DUTCH, ITALIAN)	

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