

ICF-C710L

SERVICE MANUAL

*UK Model
AEP Model*



SPECIFICATIONS



Radio section	
Frequency range	FM: 87.6–107.5 MHz MW: 531–1,602 kHz LW: 153–255 kHz
Antennas	FM: FM wire antenna MW/LW: Built-in ferrite bar antenna
Speaker	Approx. 6.6 cm (2 ⁵ / ₈ inches) dia.
Power output	200 mW (at 10% harmonic distortion)
Output	Earphone jack (mini jack)
Power requirements	220 V AC, 50 Hz (AEP model) 240 V AC, 50 Hz (UK model) For the power backup function: 9V DC, one 6F22 battery
Battery life	Approx. 80 hours, using Sony battery S-006P (U)
Dimensions	Approx. 251 × 71 × 158 mm (w/h/d) (10 × 2 ⁷ / ₈ × 6 ¹ / ₄ inches) incl. projecting parts and controls
Weight	Approx. 750 g (12 oz) not incl. battery

Design and specifications subject to change without notice.

FEATURES

- Dual alarm FM/MW/LW 3-band radio combined with an electric digital alarm clock and sleep timer.
- Choice of awakening to radio alarm, buzzer alarm, or dual alarm: Alarm A (radio) and B (buzzer).
- 24-hour alarm preset system automatically turns alarm on at same time each day.
- REPEAT ALARM/SLEEP OFF, operable with a feather-light touch, offers functions; snooze alarm and sleep timer turn off.
- For private listening, this radio is equipped with an earphone jack.
- Fail-safe earphone jack: The alarm is heard through the speaker when an earphone is connected.

SAFETY-RELATED COMPONENT WARNING!!

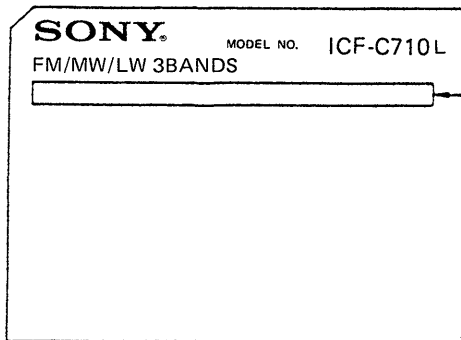
COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

**DUAL ALARM FM/MW/LW
DIGITAL CLOCK RADIO
SONY®**

SECTION 1 GENERAL

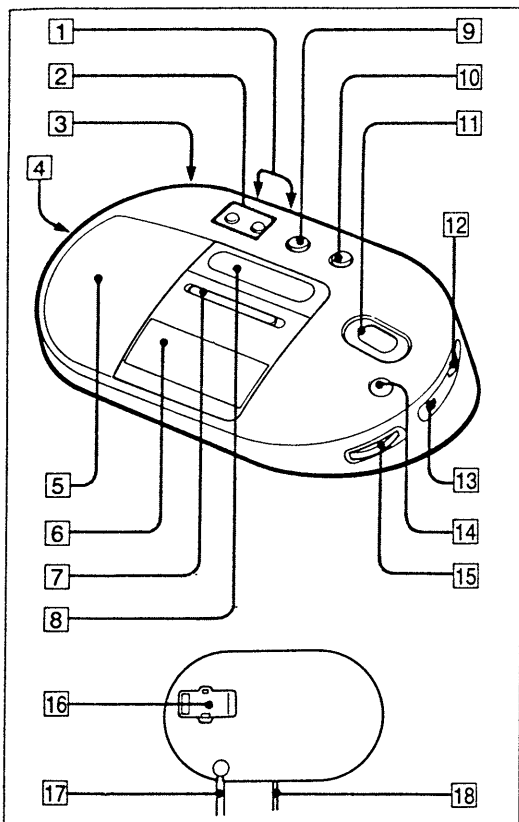
1-1. MODEL IDENTIFICATION

— Model Number Label —



AEP model: AC: 220V ~ 50 Hz 5W
UK model: AC: 240V ~ 50 Hz 5W

1-2. LOCATION OF CONTROLS

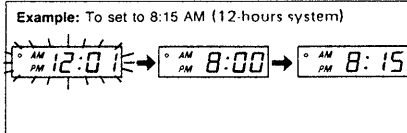
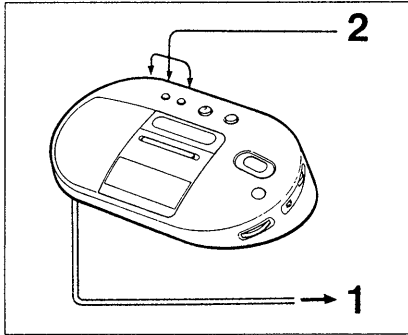


- 1 TIME SET buttons (H/M) (rear)
- 2 ALARM set buttons (A RADIO, B BUZZER)
- 3 CLOCK set button (rear)
- 4 Earphone jack (side)
- 5 Speaker
- 6 Time display
- 7 Function selector switch (OFF, SINGLE ALARM A RADIO, B BUZZER, DUAL ALARM A RADIO B BUZZER)
- 8 REPEAT ALARM/SLEEP OFF bar
- 9 SLEEP button
- 10 ALARM RESET/RADIO OFF button
- 11 Dial scale
- 12 TUNING control
- 13 BAND selector switch (FM/MW/LW)
- 14 RADIO ON button
- 15 VOL (volume) control

- Bottom
- 16 Power backup battery compartment
- 17 AC power cord
- 18 FM wire antenna

1-3. FUNCTION OF CONTROLS

How to Set the Clock



1 Connect the AC power cord to a wall outlet.
Figures will appear and begin to blink.

2 Adjust the clock to the current time with the TIME SET buttons, H (hour) and M (minute), while holding down the CLOCK set button.

UK model	AEP model
12-hours system	24-hour system
AM 12:00 = midnight PM 12:00 = noon	0:00 = midnight 12:00 = noon

The hour and minute digits advance independently. The minute digits return to "00" after reaching "59"

Zero second adjustment

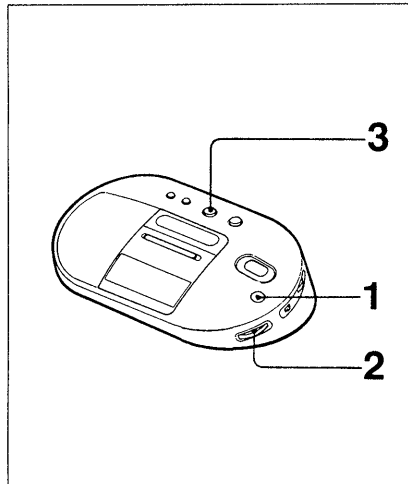
Example: To set to 8:15 AM (12-hours system)

- 1 Adjust the time to 8:14 AM as previously described.
- 2 Press CLOCK set button and M button simultaneously with the radio or telephone time signal, and then release.

To advance the minute digits rapidly

Press the H and the M button continuously while holding down the CLOCK set button.

How to Use the Sleep Timer

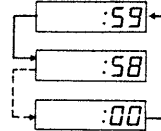


You can fall asleep to the radio sound knowing that the radio will turn itself off after the preset time period has elapsed.

- 1 Tune in the desired station after pushing the RADIO ON button
- 2 Adjust volume.
- 3 Press the SLEEP button to set the sleep timer operation time.

The radio will be turned on for 59 minutes.

Keep the SLEEP button pressed to reduce the time sequence by one minute.



To turn off the radio before the preset time elapses, press the DREAM BAR/SLEEP OFF bar* (which cancels the SLEEP function).

Note

- The alarm function does not work while the sleep timer is on.

* REPEAT ALARM/SLEEP OFF

Notes

- The buzzer sound level is fixed and independent of the VOL control
- If the earphone is connected to the earphone jack, at the preset time, the radio will sound from both the earphone and speaker, and the buzzer will sound only from the speaker

The radio or buzzer will automatically sound at the preset time, and automatically turn itself off after 59 minutes, unless it is turned off manually

To turn off the alarm manually, press the ALARM RESET/RADIO OFF button. The alarm will sound at the regular preset time on the following day.

Snooze Alarm Function

If you awake to the radio or buzzer but want to doze for a few more minutes, just lightly press DREAM BAR/SLEEP OFF. The radio or buzzer will be silenced but will automatically come on again after about eight minutes. If you want to doze more, press the bar again.

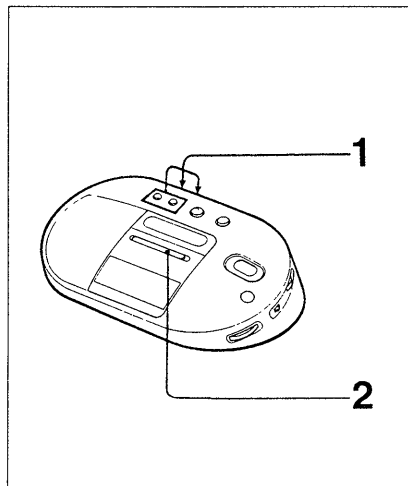
Notes

- You can reset the alarm time while activating the snooze function
- To cancel the alarm before the alarm time, press the ALARM RESET/RADIO OFF button
- To read out instantly the alarm preset time, press the ALARM set button [A/RADIO] or [B/BUZZER]

To Use Both Sleep Timer and Alarm Function

- 1 Set the alarm. (See "How to Set the Alarm".)
- 2 Set the sleep timer. (See "How to Use the Sleep Timer".)
- 3 Set the function selector switch to SINGLE ALARM [A/RADIO], SINGLE ALARM [B/BUZZER], or DUAL ALARM [A/RADIO/B/BUZZER].
You can fall asleep to the radio sound and you will be awakened by the radio/buzzer alarm at the preset time

How to Set the Alarm



Regarding the radio alarm, you can be awakened by a manually tuned station, but cannot be awakened by a preset station.

- 1 Set the alarm time for radio or buzzer.
Set the radio alarm time with TIME SET H and M while holding down ALARM [A/RADIO].
Set the buzzer alarm time with TIME SET H and M while holding down ALARM [B/BUZZER].

To advance the digits rapidly

Press the H and the M button continuously while holding down the ALARM set button.

- 2 Set the function selector switch to the desired alarm position: SINGLE ALARM [A/RADIO], SINGLE ALARM [B/BUZZER], or DUAL ALARM [A/RADIO/B/BUZZER].

For radio alarm

Press the RADIO ON button, and tune in the desired station and adjust volume as described in "Radio Operation (Manual Tuning)"

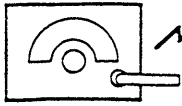
For dual alarm

If you set the radio and the buzzer to the same time, only the radio sound will be heard
If the buzzer alarm is set to the time before the radio alarm stops, the alarm shifts from radio to buzzer at the alarm preset time, and vice versa.

SECTION 2 ELECTRICAL ADJUSTMENTS

MW/LW SECTION

AM RF signal generator

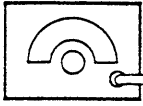


Put the lead-wire antenna close to the set.

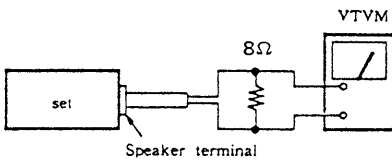
400Hz, 30%
AM modulation
Output level : as low as possible

FM SECTION

FM RF signal generator



$\pm 22.5\text{kHz}$ frequency deviation by 400Hz signal
lead wire antenna input terminal



- 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
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MW FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM

L5	520 kHz
CT4	1,650 kHz

MW TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM

L2-1	600 kHz
CT1	1,400 kHz

FM FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM

L4	87.35 MHz
CT3	107.9 MHz

FM TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM

L3-1, 3-2	87.35 MHz
CT2	107.9 MHz

LW FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM

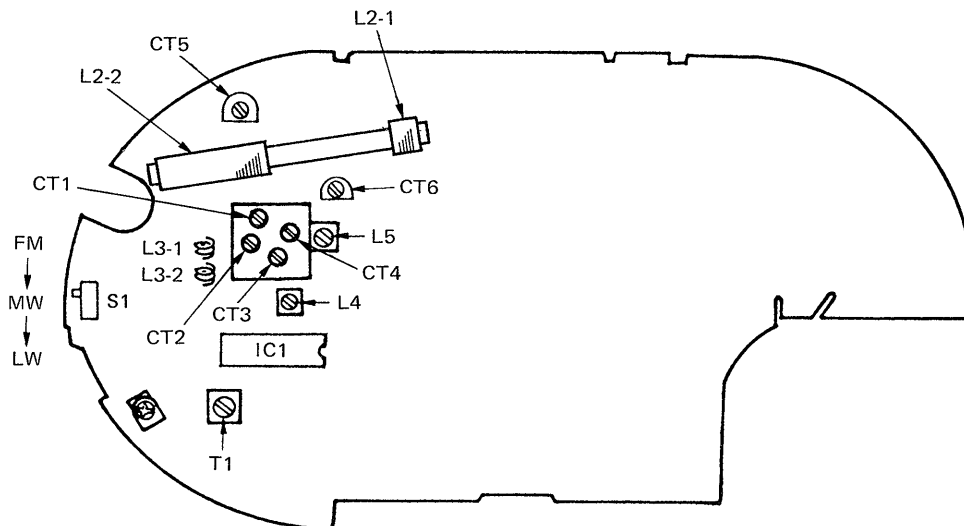
CT6	145 kHz
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LW TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM

CT5	240 kHz
L2-2	160 kHz

Adjustment Location: main board



SECTION 3
DIAGRAMS

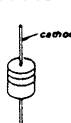
3-1. SCHEMATIC DIAGRAM

• Semiconductor Lead Layouts

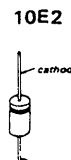
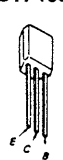
2SA933S-QR
2SC2001-K2



RD5.6ES-B2
1SS119



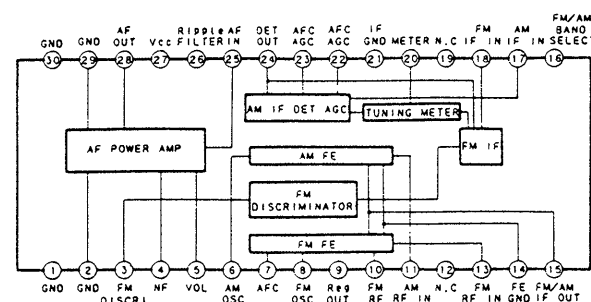
DTC114ES
2SC1740S-QR



2SD1468S-S

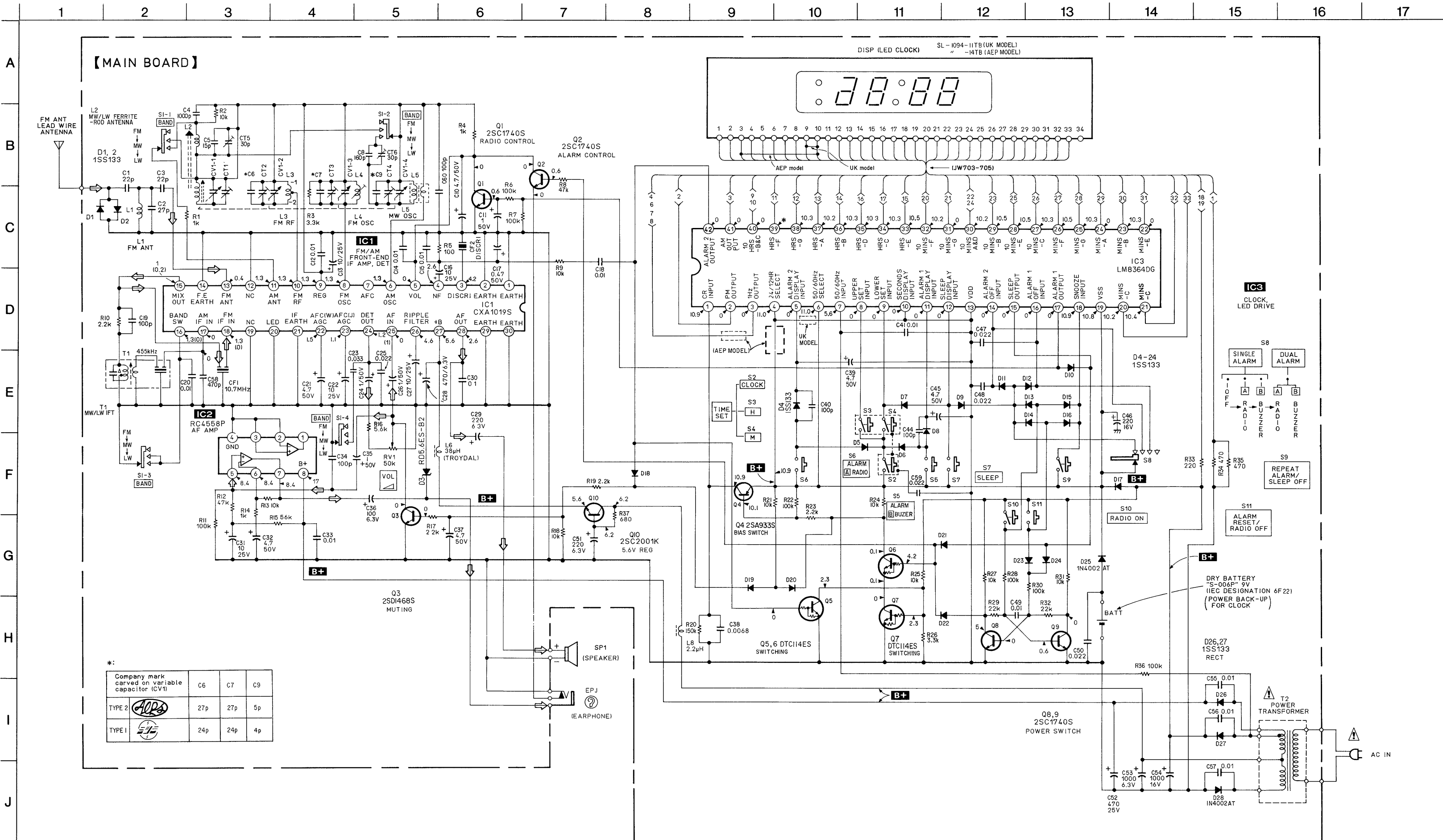


• IC Block Diagram
IC1 CXA1019S



- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- **B+**: B+ lines.
- Voltage and waveforms are dc with respect to ground under no signal conditions.
- no mark: FM
- (): AM
- Voltages are taken with a VOM. (input impedance $10\text{M}\Omega$) 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.

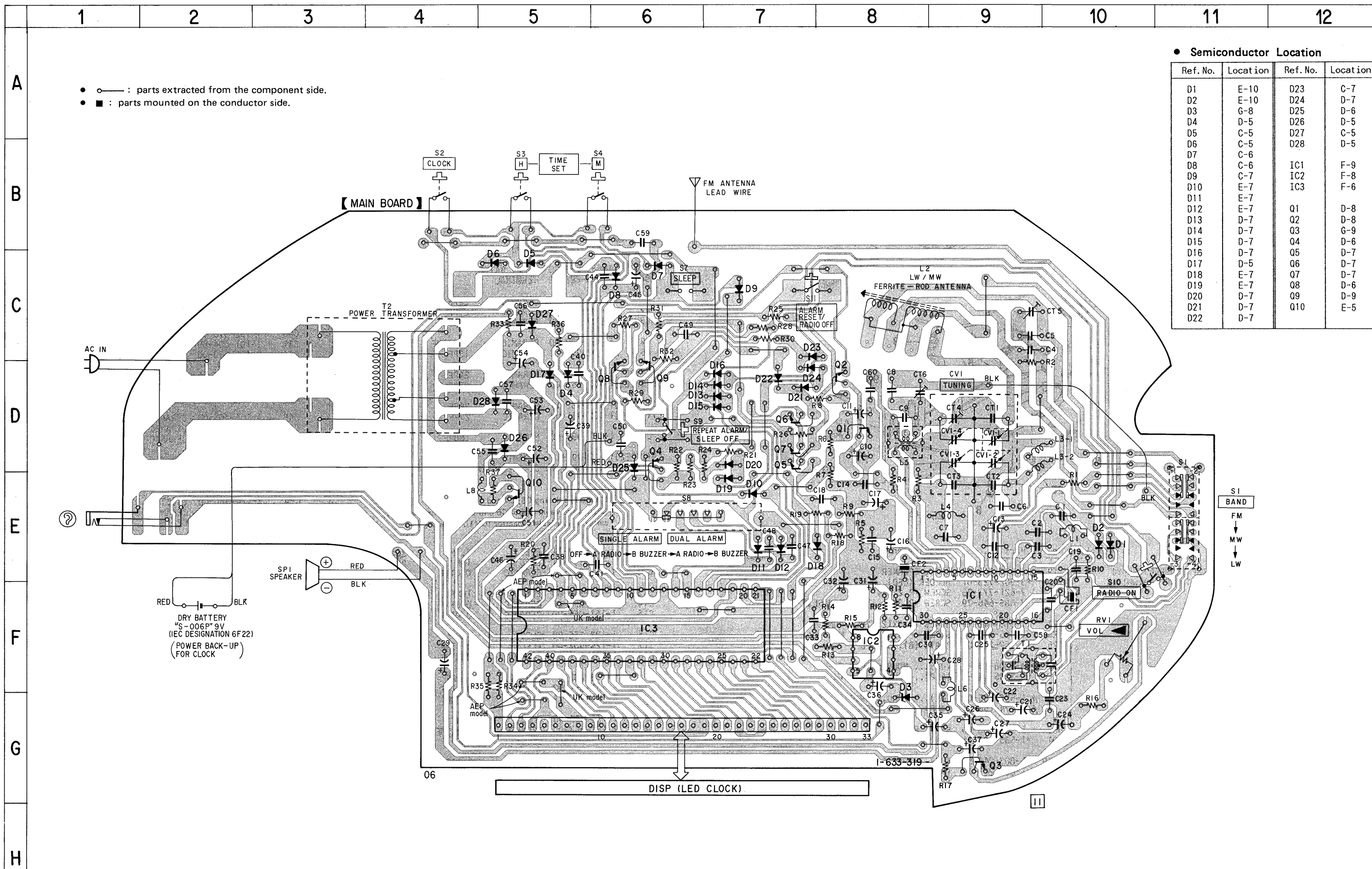


*:

Company mark carved on variable capacitor (CV1)	C6	C7	C9
TYPE 2	27p	27p	5p
TYPE 1	24p	24p	4p

3-2. PRINTED WIRING BOARD

• See page 6 for semiconductor lead layouts.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1	E-10	D23	C-7
D2	E-10	D24	D-7
D3	G-8	D25	D-6
D4	D-5	D26	D-5
D5	C-5	D27	C-5
D6	C-5	D28	D-5
D7	C-6		
D8	C-6	IC1	F-9
D9	C-7	IC2	F-8
D10	E-7	IC3	F-6
D11	E-7		
D12	E-7	Q1	D-8
D13	D-7	Q2	D-8
D14	D-7	Q3	G-9
D15	D-7	Q4	D-6
D16	D-7	Q5	D-7
D17	D-5	Q6	D-7
D18	E-7	Q7	D-7
D19	E-7	Q8	D-6
D20	D-7	Q9	D-9
D21	D-7	Q10	E-5
D22	D-7		

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.
- 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: μ F, PF: μ MF.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:

UA...: μ A..., UPA...: μ PA...,

UPC...: μ PC, UPD...: μ PD...

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



Ref.No.	Part No.	Description				
901	*A-3806-137-A	(UK)...MOUNTED PCB (HAND)				
	*A-3806-140-A	(AEP)...MOUNTED PCB (HAND)				
902	Δ 1-556-035-00	(UK)...CORD, POWER (2 CORE)				
	Δ 1-574-158-11	(AEP)...CORD, POWER				
903	1-535-253-00	SNAP, BATTERY				
904	*1-535-688-11	TERMINAL				
C1	1-102-959-00	CERAMIC	22PF	5%	50V	
C2	1-102-961-00	CERAMIC	27PF	5%	50V	
C3	1-102-959-00	CERAMIC	22PF	5%	50V	
C4	1-161-039-00	CERAMIC	0.001MF	10%	25V	
C5	1-102-951-00	CERAMIC	15PF	5%	50V	
C6(TYPE1)	1-102-960-00	CERAMIC	24PF	5%	50V	
C6(TYPE2)	1-102-961-00	CERAMIC	27PF	5%	50V	
C7(TYPE1)	1-101-982-11	CERAMIC	24PF	5%	50V	
C7(TYPE2)	1-102-961-00	CERAMIC	27PF	5%	50V	
C8	1-107-090-00	MICA	160PF	5%	50V	
C9(TYPE2)	1-102-998-11	CERAMIC	5PF	0.5PF	50V	
C9(TYPE1)	1-164-681-11	CERAMIC CHIP	4PF	0.25PF	50V	

Note on replacing C6, C7 and C9.
Change the value of C5, C6 and C7 by company mark carved on variable capacitor (CV1). (See page 7.)

Ref.No.	Part No.	Description				
C31	1-123-356-00	ELECT	10MF	20%	25V	
C32	1-124-927-11	ELECT	4.7MF	20%	50V	
C33	1-161-051-00	CERAMIC	0.01MF	20%	25V	
C34	1-102-973-00	CERAMIC	100PF	10%	50V	
C35	1-124-791-11	ELECT	1MF	20%	50V	
C36	1-124-443-00	ELECT	100MF	20%	6.3V	
C37	1-124-927-11	ELECT	4.7MF	20%	50V	
C38	1-130-481-00	MYLAR	0.0068MF	5%	50V	
C39	1-124-927-11	ELECT	4.7MF	20%	50V	
C40	1-102-973-00	CERAMIC	100PF	10%	50V	
C41	1-101-004-00	CERAMIC	0.01MF		50V	
C44	1-102-973-00	CERAMIC	100PF	10%	50V	
C45	1-124-927-11	ELECT	4.7MF	20%	50V	
C46	1-124-120-11	ELECT	220MF	20%	16V	
C47	1-101-005-00	CERAMIC	0.022MF		50V	
C48	1-101-005-00	CERAMIC	0.022MF		50V	
C49	1-101-004-00	CERAMIC	0.01MF		50V	
C50	1-101-005-00	CERAMIC	0.022MF		50V	
C51	1-126-176-11	ELECT	220MF	20%	6.3V	
C52	1-124-480-11	ELECT	470MF	20%	25V	
C53	1-124-471-00	ELECT	1000MF	20%	6.3V	
C54	1-124-360-00	ELECT	1000MF	20%	16V	
C55	1-101-004-00	CERAMIC	0.01MF		50V	
C56	1-101-004-00	CERAMIC	0.01MF		50V	
C57	1-101-004-00	CERAMIC	0.01MF		50V	
C58	1-102-824-00	CERAMIC	470PF	5%	50V	
C59	1-101-005-00	CERAMIC	0.022MF		50V	
C60	1-102-973-00	CERAMIC	100PF	10%	50V	
CF1	1-567-166-00	FILTER, CERAMIC				
CF2						
CT5	1-141-245-00	CAP, TRIMMER				
CT6	1-141-245-00	CAP, TRIMMER				
CT1-4	1-151-372-00	CAP, TUNING, POLYETHYLENE				
CV1	(TYPE1)					
CT1-4	1-151-614-11	CAP, VARIABLE				
CT	(TYPE2)					
D1	8-719-911-19	DIODE 1SS119				
D2	8-719-911-19	DIODE 1SS119				
D3	8-719-109-89	DIODE RD5.6ES-B2				
D4	8-719-911-19	DIODE 1SS119				
D5	8-719-911-19	DIODE 1SS119				
D6	8-719-911-19	DIODE 1SS119				
D7	8-719-911-19	DIODE 1SS119				
D8	8-719-911-19	DIODE 1SS119				
D9	8-719-911-19	DIODE 1SS119				

Ref.No.	Part No.	Description
D10	8-719-911-19	DIODE 1SS119
D11	8-719-911-19	DIODE 1SS119
D12	8-719-911-19	DIODE 1SS119
D13	8-719-911-19	DIODE 1SS119
D14	8-719-911-19	DIODE 1SS119
D15	8-719-911-19	DIODE 1SS119
D16	8-719-911-19	DIODE 1SS119
D17	8-719-911-19	DIODE 1SS119
D18	8-719-911-19	DIODE 1SS119
D19	8-719-911-19	DIODE 1SS119
D20	8-719-911-19	DIODE 1SS119
D21	8-719-911-19	DIODE 1SS119
D22	8-719-911-19	DIODE 1SS119
D23	8-719-911-19	DIODE 1SS119
D24	8-719-911-19	DIODE 1SS119
D25	8-719-200-02	DIODE 10E2
D26	8-719-911-19	DIODE 1SS119
D27	8-719-911-19	DIODE 1SS119
D28	8-719-200-02	DIODE 10E2
DISP	1-807-243-41	(AEP)...DIODE SL-1094-14TB (LED BLOCK)
DISP	1-807-243-51	(UK)...DIODE SL-1094-11TB (LED BLOCK)
EPJ	1-563-836-21	JACK (EARPHONE)
IC1	8-752-035-29	IC CXA1019S
IC2	8-759-945-58	IC RC4558P
IC3	8-759-821-56	IC LM8364DG
JW703	1-575-159-21	CORD, CONNECTION
JW704	1-575-159-21	CORD, CONNECTION
JW705	1-575-159-21	CORD, CONNECTION
L1	1-401-228-00	ANTENNA COIL
L2	1-402-482-11	ANTENNA, FERRITE-ROD (MW/LW)
L4	1-406-273-11	COIL, FM OSC
L5	1-406-028-00	COIL, OSC (MW)
L6	1-410-294-11	INDUCTOR, MICRO
L8	1-410-501-11	INDUCTOR 2.2UH
Q1	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q2	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q3	8-729-907-34	TRANSISTOR 2SD1468S-S
Q4	8-729-920-68	TRANSISTOR 2SA933S-QR
Q5	8-729-900-80	TRANSISTOR DTC114ES
Q6	8-729-900-80	TRANSISTOR DTC114ES
Q7	8-729-900-80	TRANSISTOR DTC114ES
Q8	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q9	8-729-920-70	TRANSISTOR 2SC1740S-QR
Q10	8-729-100-13	TRANSISTOR 2SC2001-K2
R1	1-249-417-11	CARBON 1K 5% 1/4W
R2	1-249-429-11	CARBON 10K 5% 1/4W
R3	1-249-423-11	CARBON 3.3K 5% 1/4W
R4	1-249-417-11	CARBON 1K 5% 1/4W
R5	1-249-405-11	CARBON 100 5% 1/4W
R6	1-249-441-11	CARBON 100K 5% 1/4W
R7	1-249-441-11	CARBON 100K 5% 1/4W
R8	1-249-437-11	CARBON 47K 5% 1/4W
R9	1-249-429-11	CARBON 10K 5% 1/4W
R10	1-249-421-11	CARBON 2.2K 5% 1/4W
R11	1-249-441-11	CARBON 100K 5% 1/4W
R12	1-249-437-11	CARBON 47K 5% 1/4W

Ref.No.	Part No.	Description
R13	1-249-429-11	CARBON 10K 5% 1/4W
R14	1-249-417-11	CARBON 1K 5% 1/4W
R15	1-249-438-11	CARBON 56K 5% 1/4W
R16	1-249-426-11	CARBON 5.6K 5% 1/4W
R17	1-249-421-11	CARBON 2.2K 5% 1/4W
R18	1-249-429-11	CARBON 10K 5% 1/4W
R19	1-249-421-11	CARBON 2.2K 5% 1/4W
R20	1-247-883-00	CARBON 150K 5% 1/4W
R21	1-249-429-11	CARBON 10K 5% 1/4W
R22	1-249-441-11	CARBON 100K 5% 1/4W
R23	1-249-421-11	CARBON 2.2K 5% 1/4W
R24	1-249-429-11	CARBON 10K 5% 1/4W
R25	1-249-429-11	CARBON 10K 5% 1/4W
R26	1-249-423-11	CARBON 3.3K 5% 1/4W
R27	1-249-429-11	CARBON 10K 5% 1/4W
R28	1-249-441-11	CARBON 100K 5% 1/4W
R29	1-249-433-11	CARBON 22K 5% 1/4W
R30	1-249-441-11	CARBON 100K 5% 1/4W
R31	1-249-429-11	CARBON 10K 5% 1/4W
R32	1-249-433-11	CARBON 22K 5% 1/4W
R33	1-249-409-11	CARBON 220 5% 1/4W
R34	1-249-413-11	CARBON 470 5% 1/4W
R35	1-249-413-11	CARBON 470 5% 1/4W
R36	1-249-441-11	CARBON 100K 5% 1/4W
R37	1-249-415-11	CARBON 680 5% 1/4W
RV1	1-228-790-00	RES, VAR, CARBON 50K (VOL)
S1	1-571-818-11	SWITCH, SLIDE (BAND)
S2	1-554-088-00	SWITCH, KEY BOARD (TIME SET-CLOCK)
S3	1-554-088-00	SWITCH, KEY BOARD (TIME SET-H)
S4	1-554-088-00	SWITCH, KEY BOARD (TIME SET-M)
S8	1-572-133-11	SWITCH, SLIDE (FUNCTION)
S9	1-571-527-11	SWITCH, KEY BOARD (REPEAT ALARM/SLEEP OFF)
S10	1-571-527-11	SWITCH, KEY BOARD (RADIO ON)
SP1	1-503-082-00	SPEAKER
T1	1-236-385-11	ENCAPSULATED COMPONENT
T2	△.1-449-529-11	(AEP)...TRANSFORMER, POWER
T2	△.1-449-530-11	(UK)...TRANSFORMER, POWER

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

ACCESSORY & PACKING MATERIAL

3-701-623-00 BAG, POLYETHYLENE
3-751-387-11 MANUAL, INSTRUCTION
(ENGLISH, FRENCH, GERMAN, SPANISH)

*3-902-753-01 CUSHION

*3-902-731-21 (AEP)...INDIVIDUAL CARTON
*3-902-755-01 (UK)...INDIVIDUAL CARTON