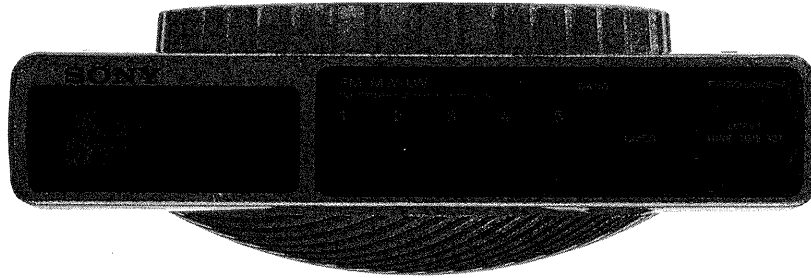


ICF-C503L

SERVICE MANUAL

AEP Model
UK Model



SPECIFICATIONS

Band	Frequency range	Channel step
FM	87.5–108 MHz	0.05* MHz (fixed)
MW	531–1602 kHz	9 kHz (fixed)
LW	153–279 kHz	9 kHz (fixed)

* The frequency display is raised or lowered by a step of 0.1 MHz. (Example: Frequency 88.05 MHz is displayed as "88.0 MHz".)

Intermediate frequency: FM: 10.7 MHz
MW : 450kHz

Speaker: Approx. 7.7cm (3 inches) dia.

Power output: 240 mW (at 10% harmonic distortion)

Power requirements:

UK model : 240V AC, 50Hz

AEP model: 220–230V AC, 50Hz.

Dimensions: Approx. 222 × 81 × 229 mm
(8 3/4 × 4 1/8 × 9 1/8 inches) (w/h/d)
incl. projecting parts and controls

Mass: Approx. 930 g (2 lb 1 oz)

Accessories supplied: Mounting screws (3),
Template (1), Bracket (1), Cord clamp (1)

Design and specifications are subject to change without notice.



Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

FEATURES

- PLL (phase locked loop) synthesized kitchen radio for easy operation
- Memory preset for up to 5 stations on each band
- Count down timer
- Easy mounting bracket
- Self power backup: Even if the power supply is interrupted, the time setting and the memory will be backed up for 1 hour without batteries.

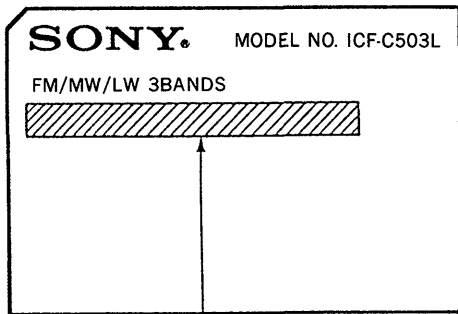
SAFETY-RELATED COMPONENT WARNING!!

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.

FM/MW/LW PLL
SYNTHESIZED KITCHEN RADIO
SONY[®]

MODEL IDENTIFICATION

—Model Number Label—



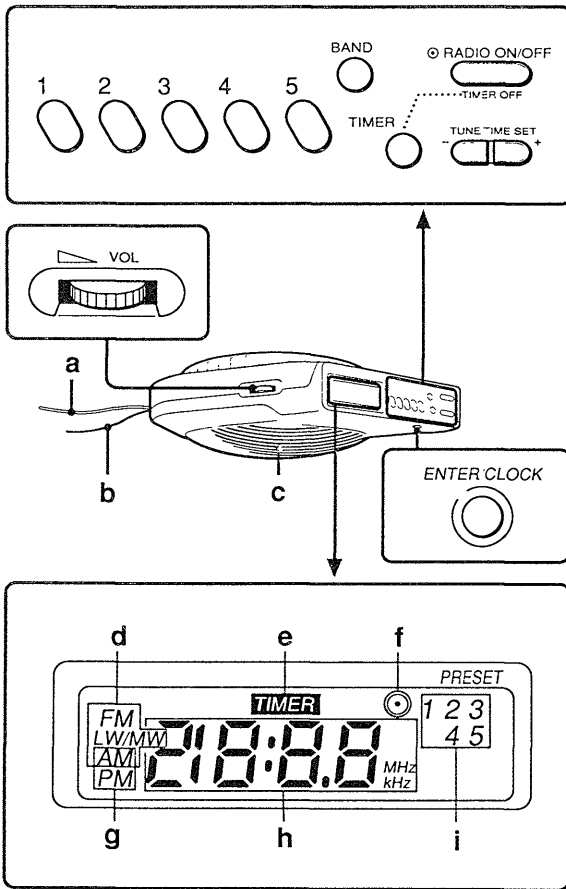
AEP model: AC: 220—230V~50Hz 5W
UK model : AC: 240V~50Hz 5W

TABLE OF CONTENTS

<i>Section</i>	<i>Title</i>	<i>Page</i>
1. GENERAL		
	• Location of Control	3
	• Setting the Clock	3
	• Operating the Radio	3
	• Setting the Count Down Timer	3
2. ELECTRICAL ADJUSTMENTS	4
3. PIN DESCRIPTION	5
4. DIAGRAMS		
4-1.	Semiconductor Lead Layouts.....	7
4-2.	Schematic Diagram	8
4-3.	Printed Wiring Boards	11
5. EXPLODED VIEW		
5-1.	Cabinet Section	14
6. ELECTRICAL PARTS LIST	15

SECTION 1 GENERAL

This section is extracted from instruction manual.



Location of Control

See illustrations above.

- a AC power cord
- b FM wire antenna
- c Speaker
- d Band indication
- e Timer indication
- f Power indication
- g AM/PM indication
- h Time/frequency indication
- i PRESET number indication

Setting the Clock

- Plug in the unit.
The display flashes "AM 12:00" or "0:00".
- While holding down ENTER/CLOCK, press either + or - under TUNE/TIME SET till the correct time appears in the display. When you release ENTER/CLOCK, the clock begins to operate and ":" flashes.

- The clock system varies depending on the model you own.
12-hour system: "AM 12:00" = midnight
24-hour system: "0:00" = midnight
- To set the current time rapidly, keep pressing ENTER/CLOCK and the + or - button together to advance or return to a time that is within a few minutes of the current time. Then press the + or - button to set the time to current time.

Operating the Radio

Manual Tuning

- Press RADIO ON/OFF/TIMER OFF to turn on the radio.
The band, frequency, power indication and the preset number will appear in the display window. After 5 seconds, the indication becomes the current time.
- Adjust VOL (volume).
- Press BAND to select the band.
Every push changes the display as follows. (The last frequency selected in each band appears alternately.)

LW → AM(MW) → FM

FM/AM = ICF-C503 only
FM/MW/LW = ICF-C503L only

- Tune in a station by pressing the + or - button under TUNE/TIME SET.
The FM channel step is set to 0.05 MHz and the AM channel step is set to 9 kHz. (The FM frequency indication changes every 0.1MHz.) The LW channel step is set to 9 kHz.
A beep sounds at the band edge.

- To turn off the radio, press RADIO ON/OFF/TIMER OFF.
- To improve reception
FM: Extend the FM wire antenna fully to improve reception.
AM (MW)/LW: Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built into the unit.
- To check the station you are listening to, press the + button lightly. The band and frequency appear for 5 seconds.

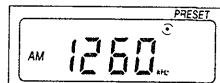
Preset Tuning

Presetting the Station

You can preset up to 5 stations in each band with a numbered button, 1 to 5.

Example: To set AM 1260 kHz in preset number 1.

- Tune in to AM 1260 kHz (See "Manual Tuning").



- While holding down ENTER/CLOCK, press the "1" button. The beeps sound and the station is preset.
Though the indication becomes the current time after 5 seconds, the preset number remains.



- To change the preset station, install a new station's frequency in the number of which you wish to change the stations. The previous frequency is canceled.

Tuning in a Preset Station

- Press RADIO ON/OFF/TIMER OFF to turn on the radio.
- Press BAND to select the desired band.
- Press the preset number button of the station.
The band, frequency, power indication and preset number appear in the display window. After 5 seconds, the indication becomes the current time. The preset number remains.

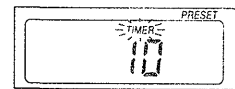
- To turn off the radio, press RADIO ON/OFF/TIMER OFF.
- To check the station you are listening to, press the preset number button. The band and frequency appear for 5 seconds.

Setting the Count Down Timer

Use the timer as a reminder. The beep sounds for 10 seconds when the preset time has passed. The beep sounds when the radio is on or off. The timer can be set at 1 minute intervals between 1 and 60.

Example: To set the 15 minutes timer

- Press TIMER. The beep sounds and the display will flash "TIMER".

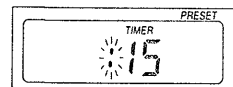


- When you first set the timer, the display shows "10". The next time you set the timer, the display shows the time you set previously.

- While "TIMER" is flashing, press the + or - button. When "15" appears in the display, release the + or - button and press TIMER. The beep sounds twice, ":" flashes, and the timer is set.

Note

- Set the count down timer while "TIMER" is flashing for 10 seconds.



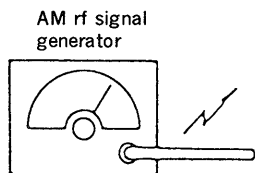
- While the timer is set, the display shows the remaining time. To display the current time, press TIMER. Press TIMER again, and the remaining time reappears.
- To stop the beep in the middle of beeping, press RADIO ON/OFF/TIMER OFF.
- To cancel the timer setting time, while holding down TIMER, press RADIO ON/OFF/TIMER OFF. When "TIMER" in the display disappears, release the both buttons.
The timer setting time is canceled and the current time appears in the display.

SECTION 2 ELECTRICAL ADJUSTMENTS

● MW/LW Section

Setting :

BAND switch : MW/LW



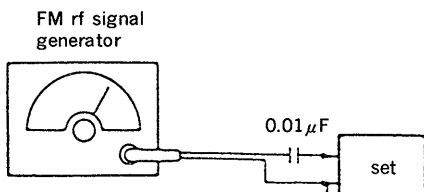
30% amplitude modulation by 400Hz signal
output level : as low as possible

Put the lead-wire antenna close to the set.

● FM Section

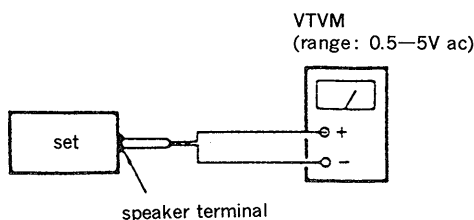
Setting :

BAND switch : FM



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

lead antenna terminal



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

MW IF ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
T1	450kHz	

MW VCO VOLTAGE ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
L6	531kHz	1.4 ± 0.3V
(confirmation)	1,602kHz	7.5 ± 1.0V (check)

Note : Not use the AM RF signal generator in this adjustment.

MW TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
L3-1	621kHz	CT1
		1,404kHz

LW VCO VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
CT4	153MHz	1.2 ± 0.1V
(confirmation)	279MHz	more than 7.5V (check)

Note : Not use the AM RF signal generator in this adjustment.

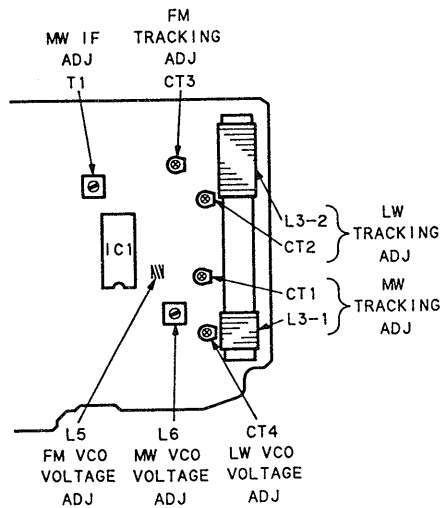
LW TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
L3-2	153kHz	CT2
		279kHz

FM VCO VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
L5	108.0MHz	9.5 ± 1.0V
(confirmation)	87.5MHz	more than 2.0V (check)

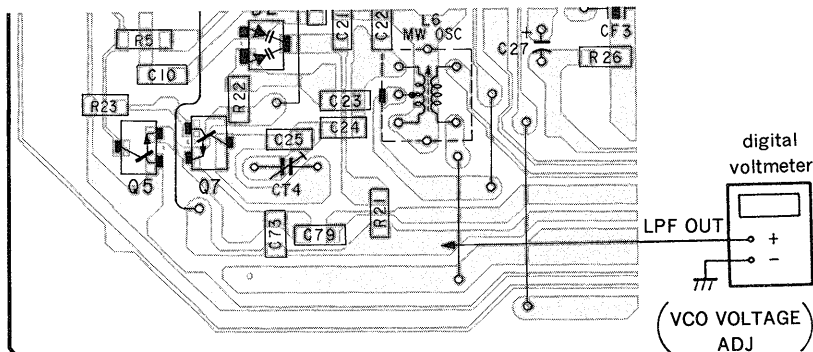
Note : Not use the FM RF signal generator in this adjustment.

FM TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
CT3	108.0MHz	

Adjustment Location : main board (component side)

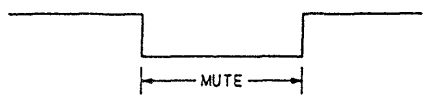


Adjustment Location : main board (conductor side)



SECTION 3 PIN DESCRIPTION

IC2 μ PD1724GB-639-1A7

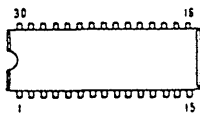
Pin No.	Pin Name	Signal Name	I/O	Description
1-8	LCD10-LCD3	LCD10-LCD3	O	LCD drive
9, 10	LCD2, LCD1	LCD2, LCD1	—	Unused pin
11	NC		—	Connected to GND.
12-14	COM3-COM1	COM3-COM1	I	LCD common
15	VSS3		—	Pin for doubler circuit capacitor connection to develop LCD drive voltage
16	CAP2			
17	CAP1			
18	VSS2			
19	VDP	$\overline{\text{MUTE}}$	O	Audio signal mute. Active : Low. LOW when MUTE ON. 
20	CGP	BEEP	O	Activates buzzer. (1 kHz)
21	NC		—	Unused pin
22	VDD		—	5V power supply input terminal
23	VCOH	TV VCO	—	Unused pin
24	VCOM	FM VCO	I	FM VCO input
25	VCOL	AM VCO	I	AM VCO input
26	VSS1		—	GND
27	EO1		O	Unused pin
28	EO2		O	PLL error output pin
29	CE	CE	I	Detects power supply line status. Power supply line OFF : Low Power supply line ON : High
30	XO		O	Crystal oscillator connection pin
31	XI		I	
32	VSS4		—	Pin for regulator circuit capacitor connection to attain stable drive voltage of the oscillator
33	PA3		O	Connected to +3V.
34	PA2	WEATHER	—	Unused pin
35	PA1	TVL, LW	I	TVL/LW select input High : LW
36	PA0	AM	O	FM/MW select output MW : High FM : Low
37	PB3		—	Unused pin
38	PB2	POWER OUT	O	Unused pin
39	PB1	INITIALIZE	—	INITIALIZE OUT Generates INITIALIZE pulse to conduct BAND 12H/24H setting immediately following cold start. ON : High
40	PB0	TVH, WEATHER	—	Unused pin

Pin No.	Pin Name	Signal Name	I/O	Description
41-44	PC3-PC0	KEY SOURCE	O	<p>Conducts Key Scan. Timing chart (Eg.) When the PC3 line key is pressed.</p>
45	K3	KEY RETURN	I	Unused pin
46-48	K2-K0	KEY RETURN	I	<p>Key Return input Key Scan</p> <ol style="list-style-type: none"> ① Set PC0, PC1, PC2 and PC3 to "High". ② When no of the 15 keys is pressed, PC0-PC3 will be set to "Low". ③ Each port is set to "High" (Key scan) in the following order PC0 → PC1 → PC2 → PC3 to determine the pressed key. <p>K0-K3 input condition The figure in the right indicates that the key following PC1 is pressed.</p> <p>* When the initial key is pressed and held down while the next key is pressed, the second key input will not be accepted until the initial key is released (for +, - keys only). Release the initial key and press the next key so that the second key input will be accepted.</p>
49	NC		—	Connected to pin⑳.
50	NC		—	Connected to pin⑱.
51-56	LCD16-LCD11	LCD16-LCD11	O	LCD drive

SECTION 4
DIAGRAMS

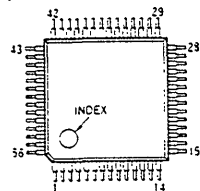
4-1. SEMICONDUCTOR LEAD LAYOUTS

CXA1019S



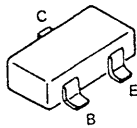
(TOP VIEW)

μ PD1724GB-639-1A7

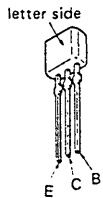


(TOP VIEW)

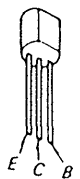
DTC114TK
2SC1623-L5L6
2SC2223-F13
2SD596-DV5



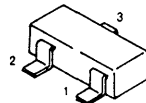
2SA1175-HFE
2SC2785-HFE



2SC2001-K1K2

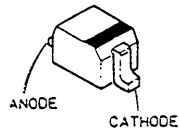


2SK238-K16

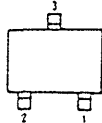


1 Drain
2 Gate
3 Source

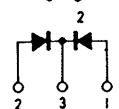
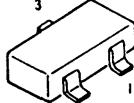
DTZ4.7A
DTZ5.1C



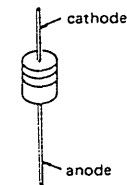
KV1560



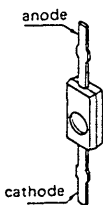
MA152WK



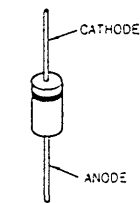
1SS119



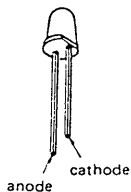
1T32



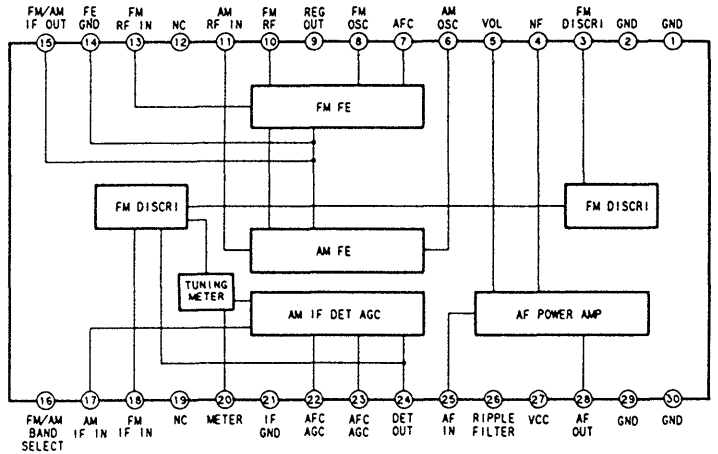
10E2



SLH-34MCF07



• IC Block Diagram
IC1 CXA1019S



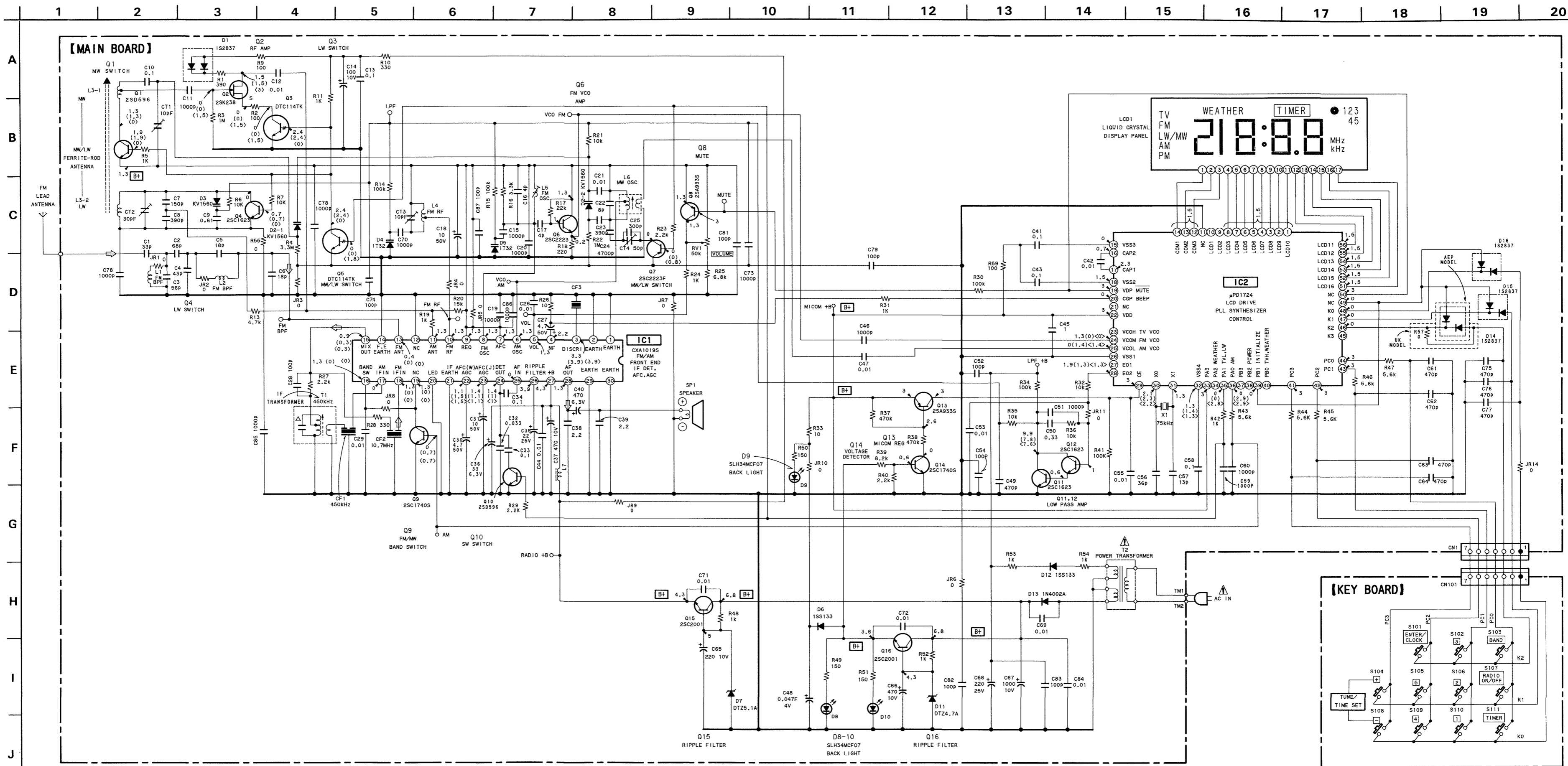
Note:

- All capacitors are in μ F unless otherwise noted. pF: μ μ F
50VV 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.
- \triangle : internal component.

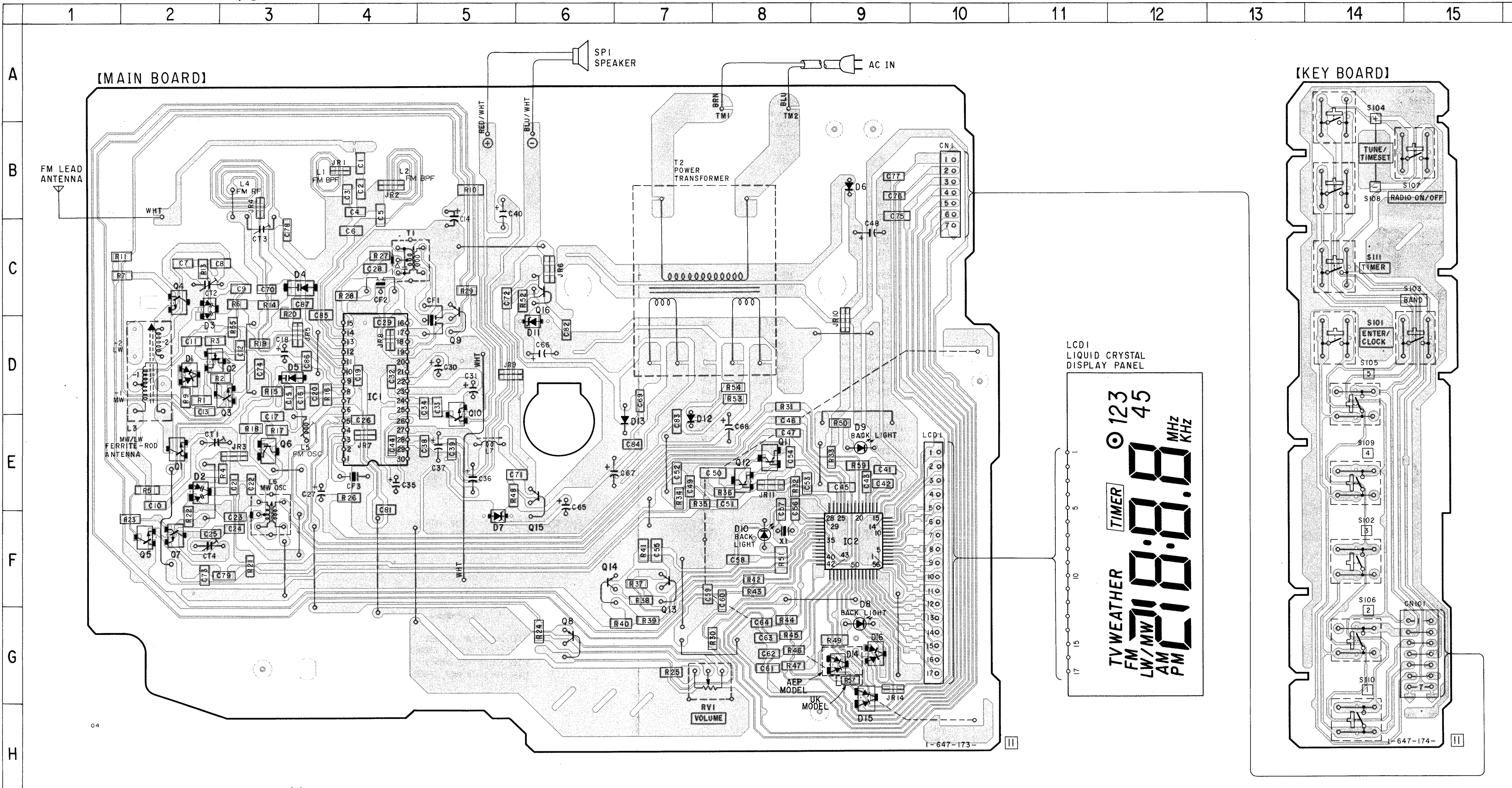
Note: The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

- Voltage is dc with respect to ground under no-signal (detuned) conditions.
no mark: FM
(): MW
< >: LW
- Voltages are taken with a VOM (Input Impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal-path.
 \Rightarrow : FM

4-2. SCHEMATIC DIAGRAM



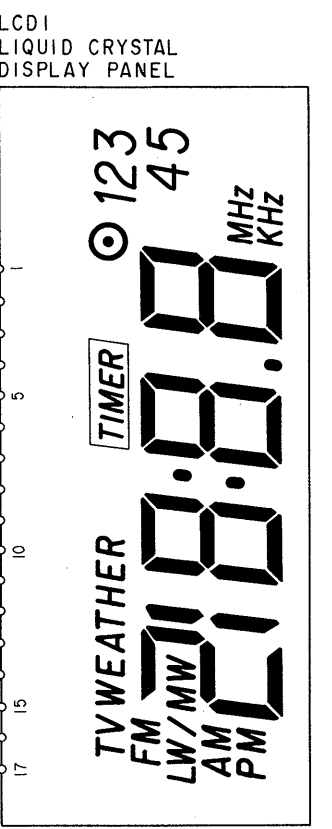
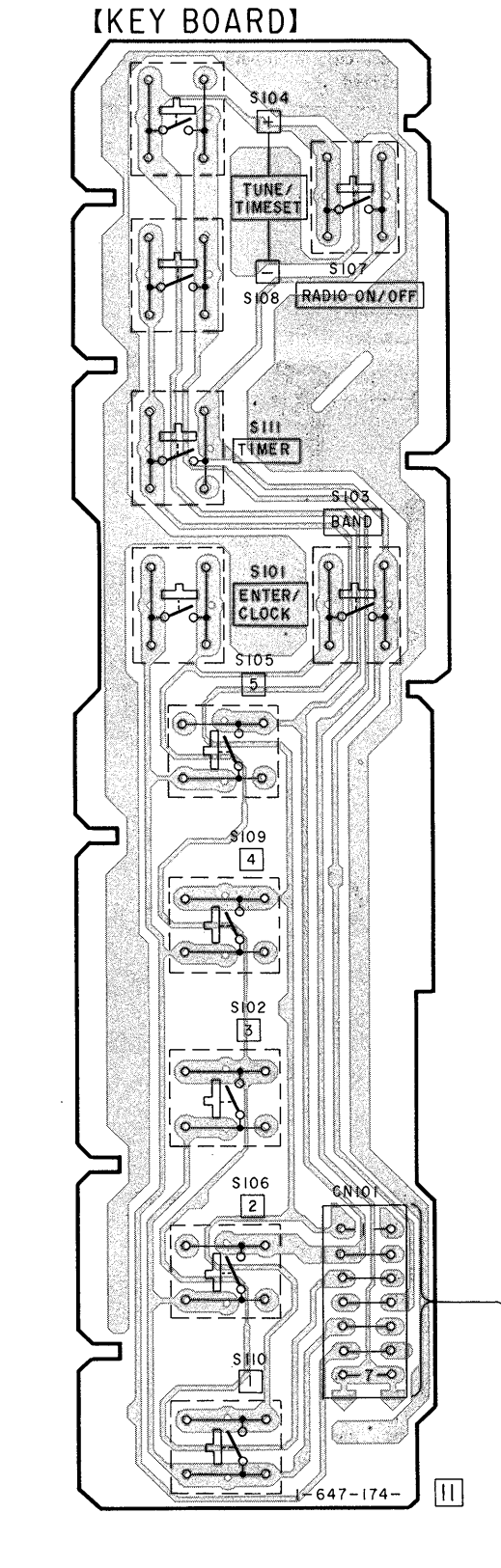
4-3. PRINTED WIRING BOARDS • Refer to page 7 for Semiconductor Lead Layouts.



• Semiconductor Location

Ref. No.	Location
D1	D-2
D2	E-2
D3	D-2
D4	C-3
D5	D-3
D6	B-9
D7	F-5
D8	G-9
D9	E-9
D10	F-8
D11	D-6
D12	E-7
D13	E-7
D14	G-9
D15	G-9
D16	G-9
IC1	D-4
IC2	F-9
Q1	E-2
Q2	D-2
Q3	D-2
Q4	C-2
Q5	F-2
Q6	E-3
Q7	F-2
Q8	G-6
Q9	D-5
Q10	E-5
Q11	E-8
Q12	E-8
Q13	F-7
Q14	F-6
Q15	E-6
Q16	C-6

Note:
 • ○ : parts extracted from the component side.
 • □ : indicates side identified with part number.



SECTION 5 EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX and -X mean standardized parts, so they may have some difference from the original one.

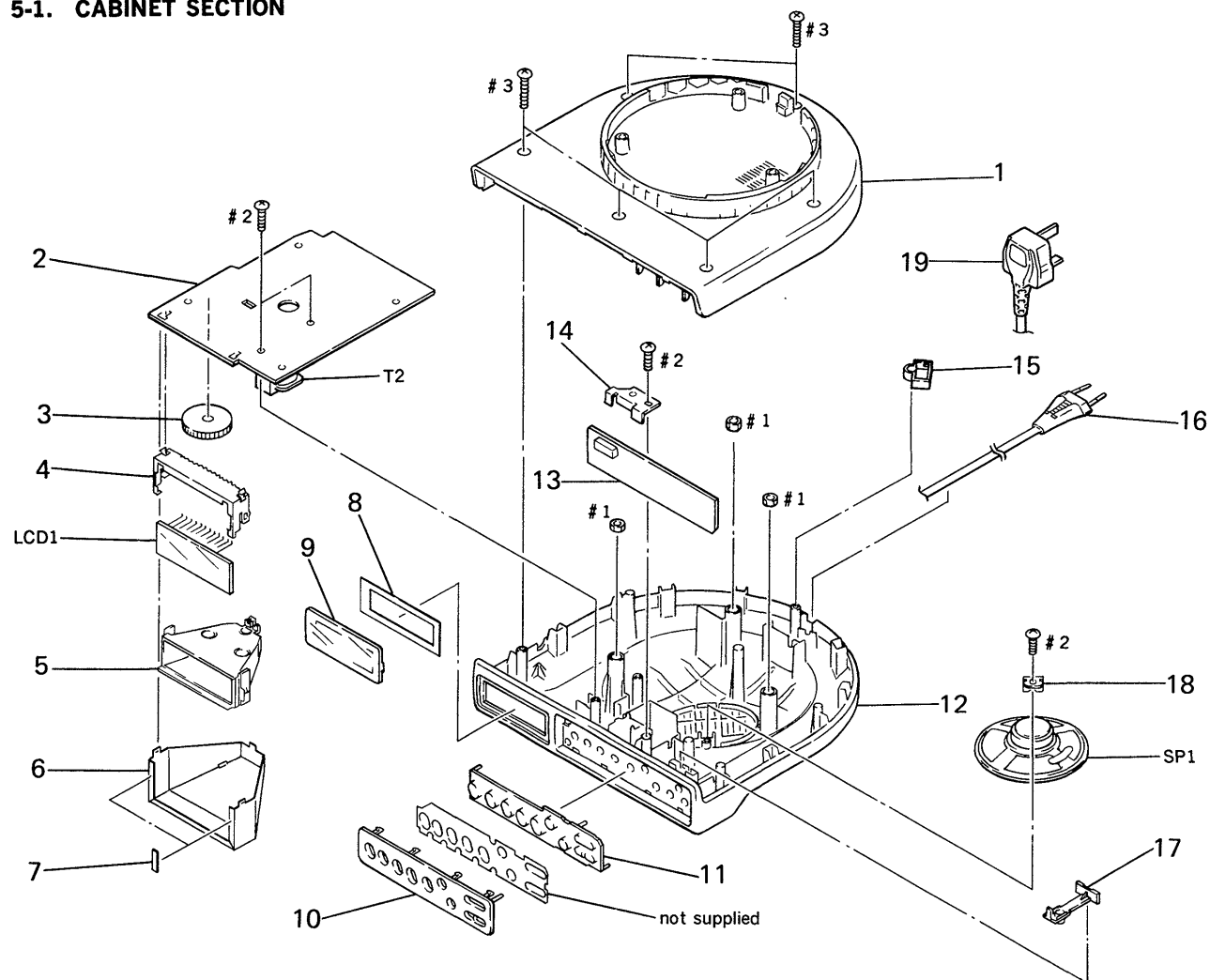
- Color Indication of Appearance Parts
Example :

KNOB, BALANCE (WHITE)... (RED)
 ↑ ↑
 Parts Color Cabinet's Color

- 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.

5-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-385-696-21	CABINET (UPPER)		12	3-385-695-01	CABINET (LOWER)	
* 2	A-3679-488-A	MAIN BOARD, COMPLETE (AEP)		* 13	1-647-174-11	KEY BOARD	
* 2	A-3679-494-A	MAIN BOARD, COMPLETE (UK)		14	3-385-698-01	HOLDER (PCB)	
3	3-368-840-11	KNOB (VOLUME)		* 15	3-368-845-01	STOPPER, CORD	
4	3-385-689-01	HOLDER (LCD)		Δ 16	1-551-958-21	CORD, POWER (AEP)	
5	3-385-690-01	FRAME, REFLECTION		17	3-385-691-01	BUTTON (ENTER)	
* 6	3-377-638-11	CASE (LCD), SHIELD		18	3-903-217-01	CLAW, SPEAKER	
7	9-911-839-XX	CUSHION, LOCK PLATE		Δ 19	1-751-110-11	CORD, POWER (UK)	
8	3-385-700-01	SHEET, ADHESIVE		LCD1	1-810-029-11	DISPLAY PANEL, LIQUID CRYSTAL	
9	3-385-694-01	PLATE, TRANSPARENT		SP1	1-504-262-11	SPEAKER (7.7CM)	
10	3-385-693-21	PANEL		Δ T2	1-423-520-11	TRANSFORMER, POWER	
11	3-385-692-01	BUTTON (MAIN)					

SECTION 6 ELECTRICAL PARTS LIST

KEY	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 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.

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

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark
*	1-647-174-11	KEY BOARD ***** < CONNECTOR >			C11	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
* CN101	1-695-228-11	PIN, CONNECTOR (PC BOARD) 7P < SWITCH >			C12	1-164-232-11	CERAMIC CHIP	0.01uF 50V
S101	1-554-937-11	SWITCH, KEY BOARD (ENTER/CLOCK)			C13	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
S102	1-554-937-11	SWITCH, KEY BOARD (3)			C14	1-124-443-00	ELECT	100uF 20% 10V
S103	1-554-937-11	SWITCH, KEY BOARD (BAND)			C15	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
S104	1-554-937-11	SWITCH, KEY BOARD (TUNE/TIME SET +)			C16	1-163-087-00	CERAMIC CHIP	4PF 50V
S105	1-554-937-11	SWITCH, KEY BOARD (5)			C17	1-163-087-00	CERAMIC CHIP	4PF 50V
S106	1-554-937-11	SWITCH, KEY BOARD (2)			C18	1-124-907-11	ELECT	10uF 20% 50V
S107	1-554-937-11	SWITCH, KEY BOARD (RADIO ON/OFF)			C19	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
S108	1-554-937-11	SWITCH, KEY BOARD (TUNE/TIME SET -)			C20	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
S109	1-554-937-11	SWITCH, KEY BOARD (4)			C21	1-164-232-11	CERAMIC CHIP	0.01uF 50V
S110	1-554-937-11	SWITCH, KEY BOARD (1)			C22	1-163-091-00	CERAMIC CHIP	8PF 50V
S111	1-554-937-11	SWITCH, KEY BOARD (TIMER)			C23	1-163-131-00	CERAMIC CHIP	390PF 5% 50V
*****					C24	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V
*	A-3679-488-A	MAIN BOARD, COMPLETE (AEP)			C25	1-163-128-00	CERAMIC CHIP	300PF 5% 50V
*	A-3679-494-A	MAIN BOARD, COMPLETE (UK) *****			C26	1-164-232-11	CERAMIC CHIP	0.01uF 50V
*	3-377-638-11	CASE (LCD), SHIELD			C27	1-124-927-11	ELECT	4.7uF 20% 100V
	3-385-689-01	HOLDER (LCD)			C28	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
	3-385-690-01	FRAME, REFLECTION			C29	1-164-232-11	CERAMIC CHIP	0.01uF 50V
	9-911-839-XX	CUSHION, LOCK PLATE			C30	1-124-927-11	ELECT	4.7uF 20% 100V
		< CAPACITOR >			C31	1-124-907-11	ELECT	10uF 20% 50V
C1	1-163-105-00	CERAMIC CHIP	33PF	5% 50V	C32	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V
C2	1-163-113-00	CERAMIC CHIP	68PF	5% 50V	C33	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C3	1-163-111-00	CERAMIC CHIP	56PF	5% 50V	C34	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C4	1-163-108-00	CERAMIC CHIP	43PF	5% 50V	C35	1-126-233-11	ELECT	22uF 20% 50V
C5	1-163-099-00	CERAMIC CHIP	18PF	5% 50V	C36	1-131-374-00	TANTALUM	33uF 10% 16V
C6	1-163-099-00	CERAMIC CHIP	18PF	5% 50V	C37	1-124-472-11	ELECT	470uF 20% 10V
C7	1-163-121-00	CERAMIC CHIP	150PF	5% 50V	C38	1-164-505-11	CERAMIC CHIP	2.2uF 16V
C8	1-163-131-00	CERAMIC CHIP	390PF	5% 50V	C39	1-164-505-11	CERAMIC CHIP	2.2uF 16V
C9	1-164-232-11	CERAMIC CHIP	0.01uF	50V	C40	1-124-472-11	ELECT	470uF 20% 10V
C10	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	C41	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
					C42	1-164-232-11	CERAMIC CHIP	0.01uF 50V
					C43	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
					C44	1-164-232-11	CERAMIC CHIP	0.01uF 50V
					C45	1-162-638-11	CERAMIC CHIP	1uF 16V
					C46	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
					C47	1-164-232-11	CERAMIC CHIP	0.01uF 50V
					C48	1-125-733-31	DOUBLE LAYER	0.047F 5.5V
					C49	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
					C50	1-164-006-11	CERAMIC CHIP	0.33uF 10% 16V

MAIN

Ref. No.	Part No.	Description	Remark
C51	1-163-141-00	CERAMIC CHIP 0.001uF	5% 50V
C52	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C53	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C54	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C55	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C56	1-163-106-00	CERAMIC CHIP 36PF	5% 50V
C57	1-163-096-00	CERAMIC CHIP 13PF	5% 50V
C58	1-164-004-11	CERAMIC CHIP 0.1uF	10% 25V
C59	1-163-141-00	CERAMIC CHIP 0.001uF	5% 50V
C60	1-163-141-00	CERAMIC CHIP 0.001uF	5% 50V
C61-64			
	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C65	1-126-176-11	ELECT 220uF	20% 10V
C66	1-124-472-11	ELECT 470uF	20% 10V
C67	1-124-473-11	ELECT 1000uF	20% 10V
C68	1-124-120-11	ELECT 220uF	20% 25V
C69	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C70	1-163-141-00	CERAMIC CHIP 0.001uF	5% 50V
C71	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C72	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C73	1-163-141-00	CERAMIC CHIP 0.001uF	5% 50V
C74	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C75	1-163-197-00	CERAMIC CHIP 470PF	5% 50V
C76	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C77	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C78	1-163-141-00	CERAMIC CHIP 0.001uF	5% 50V
C79	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C81-83			
	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C84	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C85	1-163-141-00	CERAMIC CHIP 0.001uF	5% 50V
C86	1-163-141-00	CERAMIC CHIP 0.001uF	5% 50V
C87	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
< FILTER >			
CF1	1-578-677-21	FILTER, CRYSTAL	
CF2	1-579-312-81	FILTER, CERAMIC	
CF3	1-579-312-81	FILTER, CERAMIC	
< CONNECTOR >			
* CN1	1-695-234-11	SOCKET, CONNECTOR (PC BOARD) 7P	
< TRIMMER >			
CT1	1-141-304-21	CAP, TRIMMER 10PF	
CT2	1-141-443-11	TRIMMER, CERAMIC	
CT3	1-141-304-21	CAP, TRIMMER 10PF	
CT4	1-141-444-11	TRIMMER, CERAMIC	

Ref. No.	Part No.	Description	Remark
< DIODE >			
D1	8-719-400-18	DIODE MA152WK	
D2	8-719-951-05	DIODE KV1560	
D3	8-719-951-05	DIODE KV1560	
D4	8-719-949-46	DIODE 1T32	
D5	8-719-949-46	DIODE 1T32	
D6	8-719-911-19	DIODE 1SS119	
D7	8-719-977-00	DIODE DTZ5.1C	
D8-10			
	8-719-037-81	LED SLH-34MCF07	
D11	8-719-976-94	DIODE DTZ4.7A	
D12	8-719-911-19	DIODE 1SS119	
D13	8-719-200-02	DIODE 10E2	
D14	8-719-400-18	DIODE MA152WK (AEP)	
D15	8-719-400-18	DIODE MA152WK	
D16	8-719-400-18	DIODE MA152WK	
< IC >			
IC1	8-752-035-29	IC CXA1019S	
IC2	8-759-184-34	IC uPD1724GB-639-1A7	
< JUMPER RESISTOR >			
JR1	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR2	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR3	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR4	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR5	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR6	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR7	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR8	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR9-11			
	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR14	1-216-295-00	METAL CHIP 0 5% 1/10W	
< COIL >			
L3	1-402-615-11	ANTENNA, FERRITE-ROD (MW/LW)	
L5	1-406-545-11	COIL, AIR-CORE	
L6	1-406-485-11	COIL (OSC)	
L7	1-424-122-11	FILTER, NOISE	
< LIQUID CRYSTAL DISPLAY >			
LCD1	1-810-029-11	DISPLAY PANEL, LIQUID CRYSTAL	
< TRANSISTOR >			
Q1	8-729-159-65	TRANSISTOR 2SD596-DV5	
Q2	8-729-123-86	TRANSISTOR 2SK238-K16	
Q3	8-729-902-99	TRANSISTOR DTC114TK	
Q4	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q5	8-729-902-99	TRANSISTOR DTC114TK	

Ref. No.	Part No.	Description	Remark
Q6	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q7	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q8	8-729-119-78	TRANSISTOR 2SA1175-HFE	
Q9	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q10	8-729-159-65	TRANSISTOR 2SD596-DV5	
Q11	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q12	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q13	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q14	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q15	8-729-011-92	TRANSISTOR 2SC2001-K1K2	
Q16	8-729-011-92	TRANSISTOR 2SC2001-K1K2	
< RESISTOR >			
R1	1-216-039-00	METAL CHIP 390 5%	1/10W
R2	1-216-025-00	METAL CHIP 100 5%	1/10W
R3	1-216-121-00	METAL CHIP 1M 5%	1/10W
R4	1-216-133-00	METAL CHIP 3.3M 5%	1/10W
R5	1-216-198-00	METAL CHIP 1K 5%	1/8W
R6	1-216-073-00	METAL CHIP 10K 5%	1/10W
R7	1-216-073-00	METAL CHIP 10K 5%	1/10W
R9	1-216-025-00	METAL CHIP 100 5%	1/10W
R10	1-216-186-00	METAL GLAZE 330 5%	1/8W
R11	1-216-049-00	METAL CHIP 1K 5%	1/10W
R13	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R14	1-216-097-00	METAL CHIP 100K 5%	1/10W
R15	1-216-097-00	METAL CHIP 100K 5%	1/10W
R16	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R17	1-216-081-00	METAL CHIP 22K 5%	1/10W
R18	1-216-033-00	METAL CHIP 220 5%	1/10W
R19	1-216-049-00	METAL CHIP 1K 5%	1/10W
R20	1-216-077-00	METAL CHIP 15K 5%	1/10W
R21	1-216-073-00	METAL CHIP 10K 5%	1/10W
R22	1-216-121-00	METAL CHIP 1M 5%	1/10W
R23	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R24	1-216-049-00	METAL CHIP 1K 5%	1/10W
R25	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R26	1-216-001-00	METAL CHIP 10 5%	1/10W
R27	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R28	1-216-037-00	METAL CHIP 330 5%	1/10W
R29	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R30	1-216-097-00	METAL CHIP 100K 5%	1/10W
R31	1-216-049-00	METAL CHIP 1K 5%	1/10W
R32	1-216-073-00	METAL CHIP 10K 5%	1/10W
R33	1-216-001-00	METAL CHIP 10 5%	1/10W
R34	1-216-097-00	METAL CHIP 100K 5%	1/10W
R35	1-216-073-00	METAL CHIP 10K 5%	1/10W
R36	1-216-073-00	METAL CHIP 10K 5%	1/10W
R37	1-216-113-00	METAL CHIP 470K 5%	1/10W

Ref. No.	Part No.	Description	Remark
R38	1-216-113-00	METAL CHIP 470K 5%	1/10W
R39	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R40	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R41	1-216-097-00	METAL CHIP 100K 5%	1/10W
R42	1-216-049-00	METAL CHIP 1K 5%	1/10W
R43-47			
	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R48	1-216-049-00	METAL CHIP 1K 5%	1/10W
R49	1-216-178-00	METAL GLAZE 150 5%	1/8W
R50	1-216-029-00	METAL CHIP 150 5%	1/10W
R51	1-216-178-00	METAL GLAZE 150 5%	1/8W
R52-54			
	1-216-049-00	METAL CHIP 1K 5%	1/10W
R55	1-216-295-00	METAL CHIP 0 5%	1/10W
R57	1-216-295-00	METAL CHIP 0 5%	1/10W (UK)
R59	1-216-025-00	METAL CHIP 100 5%	1/10W
< VARIABLE RESISTOR >			
RV1	1-241-542-11	RES, VAR, CARBON 50K (VOLUME)	
< TRANSFORMER >			
T1	1-404-902-11	TRANSFORMER, IF	
△T2	1-423-520-11	TRANSFORMER, POWER	
< TERMINAL >			
* TM1	1-535-771-11	TERMINAL	
* TM2	1-535-771-11	TERMINAL	
< VIBRATOR >			
X1	1-567-769-11	VIBRATOR, CRYSTAL (75kHz)	

MISCELLANEOUS			

△16	1-551-958-21	CORD, POWER (AEP)	
△19	1-751-110-11	CORD, POWER (UK)	
SP1	1-504-262-11	SPEAKER (7.7CM)	

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
		ACCESSORIES & PACKING MATERIALS *****	
	1-501-499-11	COUPLER, ANTENNA (AEP)	
*	3-387-521-01	INDIVIDUAL CARTON	
*	3-387-929-01	TEMPLATE	
	3-756-562-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, GERMAN)	
	3-756-562-41	MANUAL, INSTRUCTION (PORTUGUESE, DUTCH, SWEDISH, ITALIAN) (AEP)	
*	3-897-241-01	CLAMP, CORD	
	3-902-011-01	SCREW (+B 5X65), FITTING	

HARDWARE LIST

#1	7-684-025-04	N 5, TYPE 2
#2	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT
#3	7-685-649-79	SCREW +P 3X14 TYPE2 NON-SLIT