ICF-C103L

SERVICE MANUAL

AEP Model
UK Model

SPECIFICATIONS

Frequency range	FM : 87.5 – 108 MHz MW : 531 – 1,602 kHz LW : 153 – 281 kHz Intermediate frequency FM : 10.7 MHz AM : 450 kHz
Scan step	FM : 0.05* MHz (fixed) MW : 9 kHz (fixed) LW: 2 kHz ⇄ 7 kHz * The frequency display is raised or lowered by steps of 0.1 MHz. (Example: Frequency 88.05 MHz is displayed as "88.0 MHz".)
Antennas	FM: FM wire antenna MW/LW: Built-in ferrite bar antenna
Speaker	Approx. 6.6 cm (2 5/8 inches) dia.
Power output	120 mW (at 10% harmonic distortion)
Power requirements	240 V AC, 50 Hz
Dimensions	Approx. 115 × 110 × 105 mm (w/h/d) (4 5/8 × 4 3/8 × 4 1/4 inches) incl. projecting parts and controls
Weight	Approx. 590 g (1 lb 5 oz)

Design and specifications are subject to change without notice.

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

FM/MW/LW PLL SYNTHESIZED CLOCK RADIO

SONY®

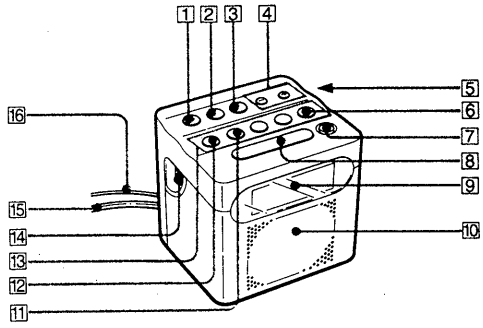
SAFETY-RELATED COMPONENT WARNING!!

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

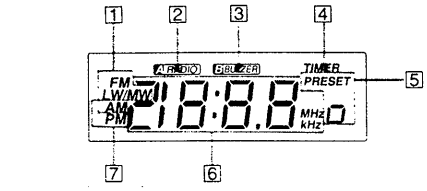
This section is extracted from instruction manual.

Location of Controls



1 ALARM RESET/RADIO OFF button
2 SLEEP/RADIO ON button
3 BAND button
4 TIME SET/TUNE (tuning) + and – buttons
5 VOL (volume) control (right side)
6 ALARM MODE button
7 TIMER (count down timer) button
8 REPEAT ALARM/SLEEP OFF bar
9 Display window
10 Speaker
11 B BUZZER ALARM button
12 A RADIO ALARM (WAKE UP STATION) button
13 Preset number 1 – 5 buttons
14 ENTER/CLOCK button
15 AC power cord
16 FM wire antenna

Display window



Display window

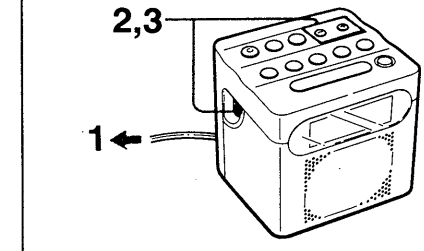
1 Band indication
2 A RADIO alarm indication
3 B BUZZER alarm indication
4 TIMER indication
5 PRESET number indication
6 Time/frequency indication
7 AM/PM indication

6

7

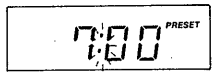
Setting the Time

After connecting the AC power cord, be sure to set the time.



1 **Connect the AC power cord to a wall outlet.**
Time indication appears and flashes in the display window.

2 **While keeping the ENTER/CLOCK button pressed, press the TIME SET/TUNE + or – button to set the time.**
The + button advances the hour and minute digits and the – button reverses them. Keep pressing the + or – button to advance or reverse the digit rapidly.



3 **Release the ENTER/CLOCK button.**
The clock starts operating.

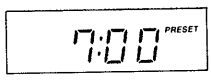
12-hour system
AM 12:00 = midnight PM 12:00 = noon

Zero second adjustment
At step 3, release the ENTER/CLOCK button with the time signal.

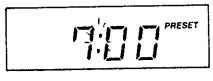
Note on the time indication

When the radio is on, ":" of the time indication is lit, and when the radio is off, the ":" is flashing.

Radio is on.



Radio is off.



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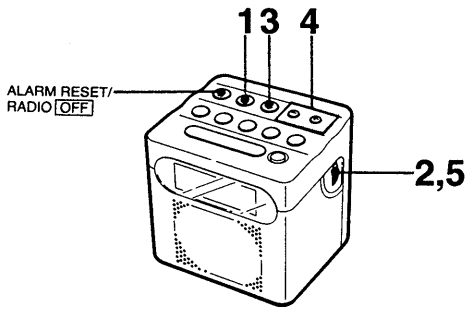
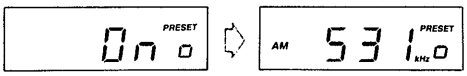
9

Radio Operation (Manual Tuning)



1 **Press the SLEEP/RADIO ON button.**
The band, frequency and the preset number of the station before the radio was turned off appear in the display window. After 10 seconds, the indication becomes the current time.

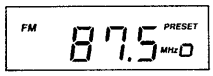


2 **Turn the VOL control a little to get sound.**

3 **Press the BAND button to select the band.**
Each press of the BAND button changes the band in the following order.

LW → MW → FM

(The display window shows the last frequency chosen in each band.)



4 **Tune in the station you want by pressing the TIME SET/ TUNE + or – button.**
The FM tuning interval is set to 0.05 MHz and the AM tuning interval is set to 9 kHz.
(The FM frequency indication changes every 0.1 MHz.) The LW tuning interval alternates between 2 kHz and 7 kHz.
A beep sounds at the band edge.

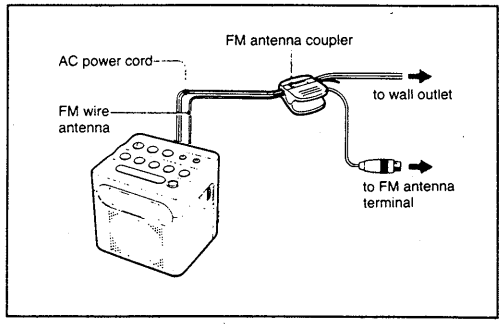
5 **Adjust volume.**

Radio Operation (Manual Tuning)

To turn off the radio
Press the ALARM RESET/RADIO OFF button.

To improve reception
FM: Extend the FM wire antenna fully to increase the FM sensitivity.
MW/LW: Since the reception is affected by the position of the radio, rotate the unit horizontally for optimum reception.

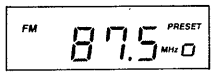
For the customers supplied with an FM antenna coupler
Pinch the FM wire antenna and the AC power cord together with the coupler supplied and connect it to a wall FM antenna terminal for optimum FM reception.



To check the station you are listening to
Press the + button lightly. The band and frequency appear for 10 seconds.

Notes

- When you turn on the radio or change the frequency, the display shows the band and frequency for 10 seconds, then it shows the current time.
- When you tune in the frequency which is not included in the preset stations, the PRESET number in the display shows □ (out).



- If the A RADIO alarm time comes while listening to the radio, the station changes to that preset in number 1.

Radio Operation (Preset Tuning)

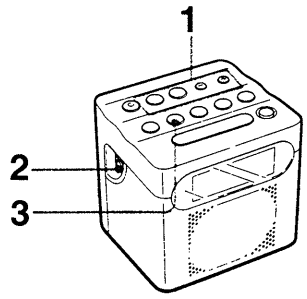
You can preset up to five FM/MW/LW stations (one station for each number button 1 to 5).

Note

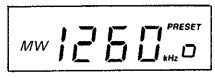
When you use the radio alarm, preset the station you want for the alarm in preset button 1, as the PRESET 1 station is the wake up station.

Presetting the Station

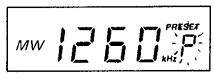
Example: To set MW 1,260 kHz in preset button 2



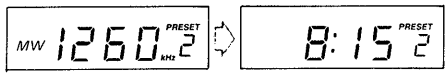
1 **Tune in the MW 1,260 kHz (see "Radio Operation (Manual Tuning)").**



2 **Press the ENTER/CLOCK button.**
The P indication flashes for 10 seconds.



3 **While P is flashing, press the 2 button.**
The P indication becomes 2 (the preset number) and the beeps sound.
The station is preset.
Though the indication becomes the current time after 10 seconds, the preset number remains.



4 **Repeat steps 1 to 3 for each stations to be preset.**

To change the preset station
Preset a new station in the number of which you want to change the station. The previous station is canceled.

Radio Operation (Preset Tuning)

Tuning in a Preset Station

1 **Press the RADIO [ON] button to turn on the radio.**

2 **Press the preset number button of the station.**
The band, frequency and preset number appear in the display window. After 10 seconds, the indication becomes the current time.
The preset number remains.

To turn off the radio
Press the RADIO [OFF] button.

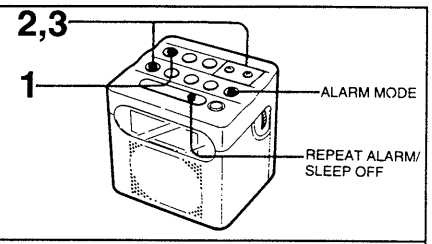
To check the station you are listening to
Press the preset number button.
The band and frequency appear for 10 seconds.

Setting the Alarm

You can set the radio and buzzer alarms. The wake up station is that preset in number 1.

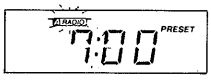
Setting the Alarm Time

To set the [A RADIO] alarm time at 7:00 AM



1 **Turn off the radio.**

2 **While keeping the [A RADIO] ALARM button pressed, set the time by pressing the TIME SET/ TUNE + or – button.**

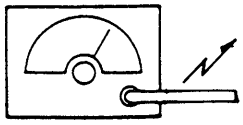


3 **Release the [A RADIO] ALARM button.**
The alarm time is set. The indication becomes the current time.

SECTION 2
ELECTRICAL ADJUSTMENTS

MW/LW Section

AM RF signal generator

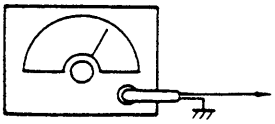


Put the lead-wire antenna close to the set.

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

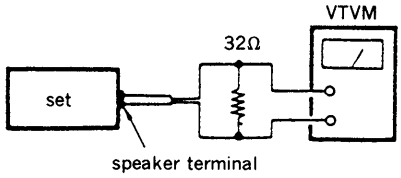
FM Section

FM RF signal generator



FM ANT terminal

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



- Repeat the procedures in each adjustment several times, and the tracking adjustments should be fimally the trimmer capacitors.

Adjustment Location :

AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	450kHz

Note : Receive 531kHz.

MW VCO VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
(confirmation)	531kHz	More than 1.5V (Standard 1.7V)
L5	1,602kHz	8.5V

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

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT1	L2-1
1,404kHz	621kHz

LW VCO VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
CT4	279kHz (Receive 281kHz)	7.0V
(confirmation)	153kHz	More than 1.0V (Standard 1.1V)

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

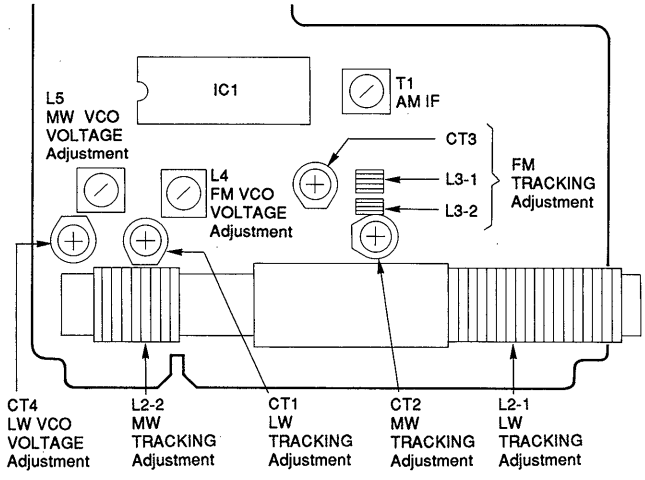
LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT2	L2-2
279kHz	153kHz

FM VCO VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
L4	108MHz	10±1.0V
(confirmation)	87.5MHz	More than 1.8V (Standard 2.2V)

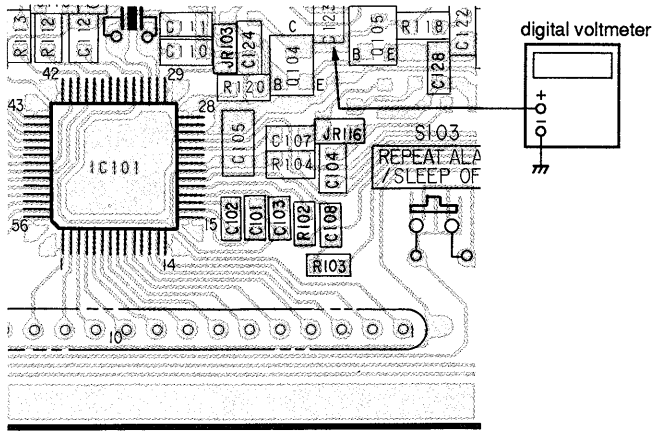
Note : Not use the FM signal generator in this adjustment.

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT3	L3-1, L3-2 (confirmation)
108MHz	87.5MHz

【MAIN BOARD】 –COMPONENT SIDE–

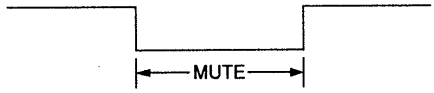


【KEY BOARD】 –CONDUCTOR SIDE–



SECTION 3
PIN DESCRIPTION

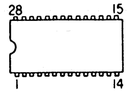
IC101 μPD1724GB-589-1A7

Pin No.	Pin Name	Signal Name	I/O	Description
1-10	LCD10-LCD1	LCD10-LCD1	O	LCD drive
11	NC		—	
12-14	COM3-COM1	COM3-COM1	O	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.
21	NC		—	
22	VDD		—	3V power supply input terminal
23	VCOH		I	Unused pin
24	VCOM	FM VCO	I	FM VCO input
25	VCOL	AM VCO	I	AM VCO input
26	VSS1		—	GND
27	EO1		O	PLL error output pin
28	EO2			
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	AC/DC	I	AC/DC sellect input AC : High DC : Low
34	PA2	ALARM OUT	O	Unused pin
35	PA1	TV OUT	O	Unused pin
36	PA0	BATT/BAND 1	I/O	BATTERY CHECK input, BAND output FM : Low MW/LW : High
37	PB3	LIGHT	O	Unused pin
38	PB2	POWER	O	Unused pin
39	PB1	INITIALIZE	O	KEY IN control output
40	PB0	BAND 2	O	BAND output FM/MW : Low LW : High
41-44	PC3-PC0	KEY SOURCE	O	Conducts Key Scan
45-48	K3-K0	KEY RETURN	I	Key Return input
49, 50	NC		—	
51-56	LCD16-LCD11	LCD16-LCD11	O	LCD drive

SECTION 4
DIAGRAMS

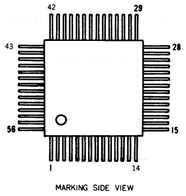
4-1. SEMICONDUCTOR LEAD LAYOUTS

CXA1019S



(Top view)

μPD1724GB-589-1A7



MARKING SIDE VIEW

2SA1162-G
2SC1623-L5L6
2SC2059K-N
2SC2223-F13
2SC2223-F14
2SD596DV345

2SK238-K16

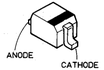
1. Drain
2. Gate
3. Source

2SC2001-LK

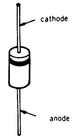
KV1560
MA152WK

1S2835
1S2836

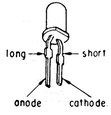
IT32



1SS133
10E2



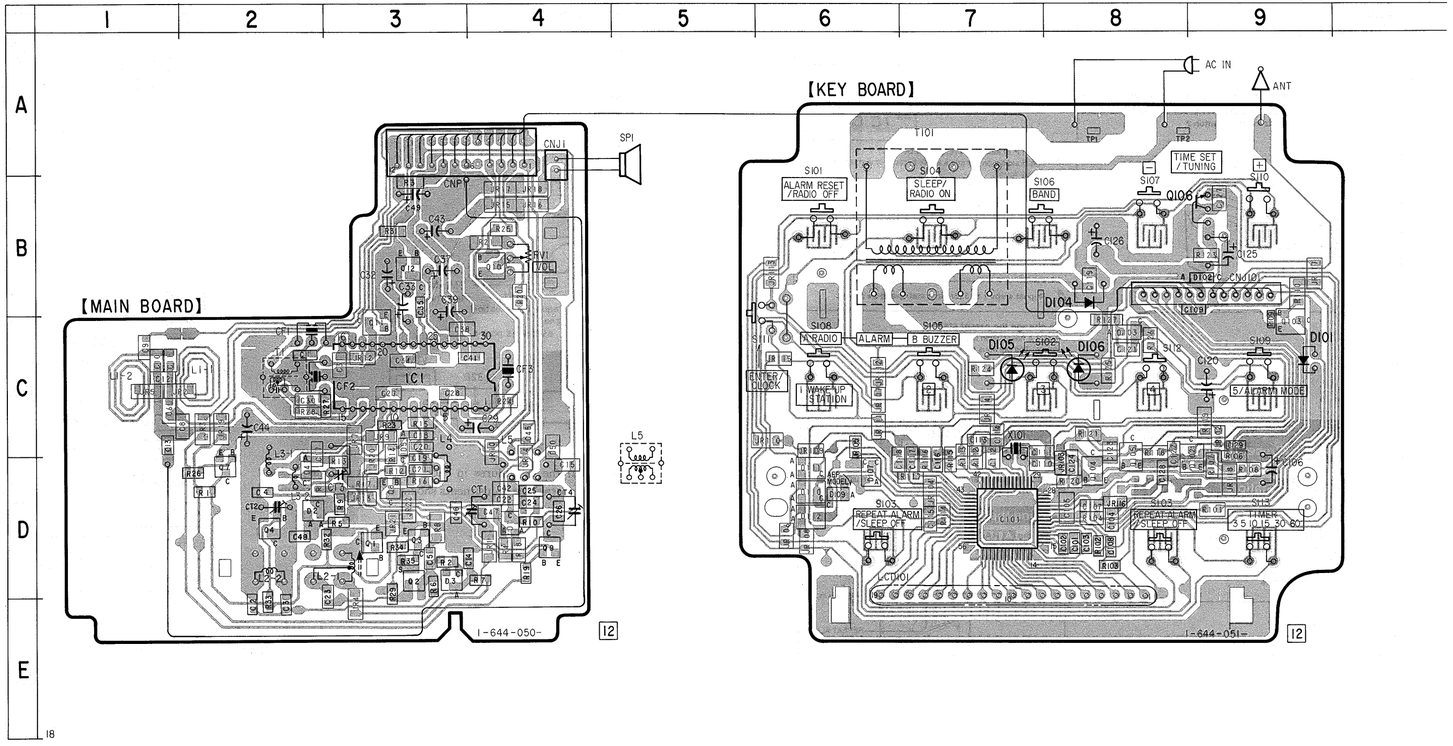
GL3EG8



4-2. PRINTED WIRING BOARDS

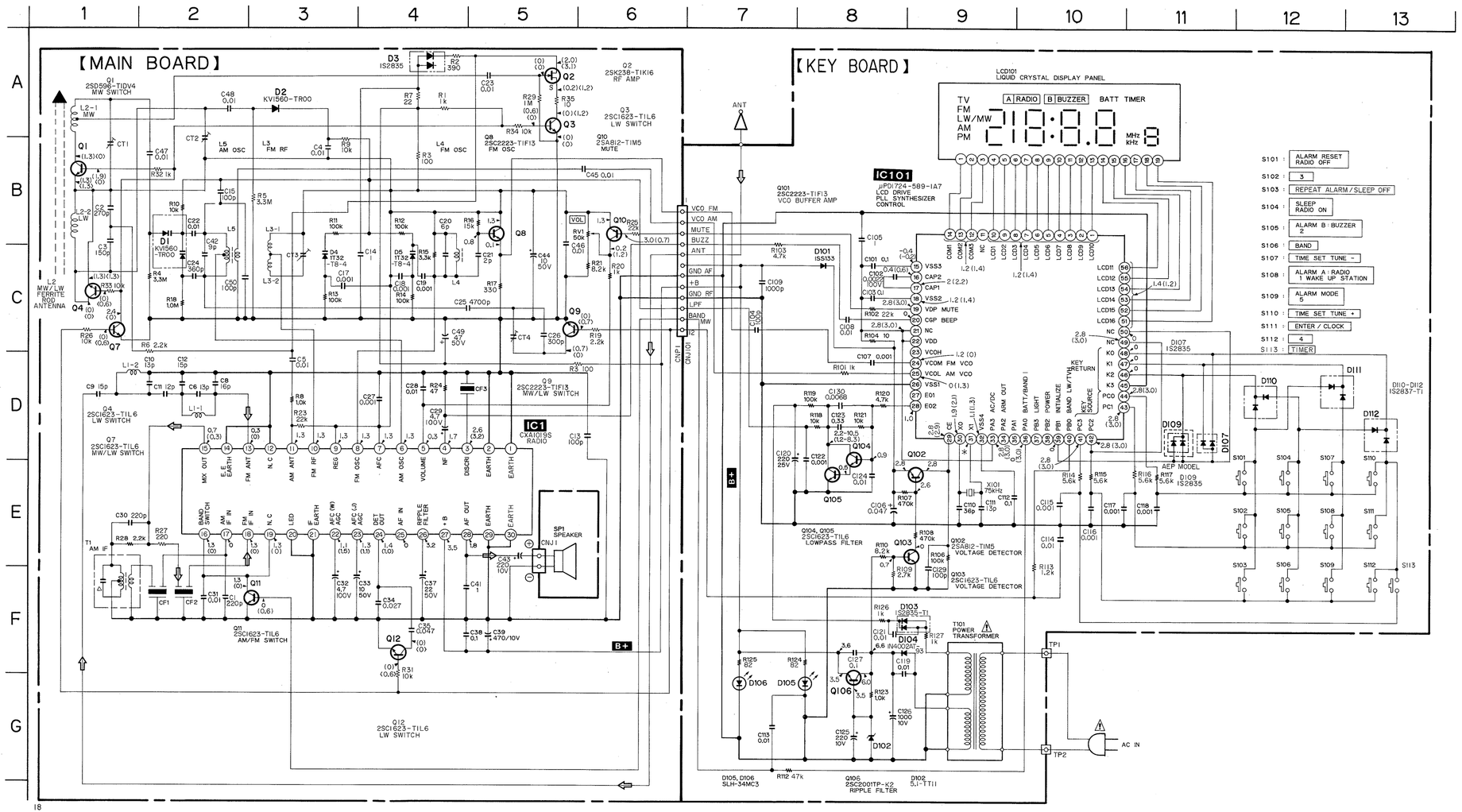
● **Semiconductor Location**

Ref. No.	Location
D1	D-4
D2	D-2
D3	D-3
D4	D-3
D5	C-3
D101	C-9
D102	B-9
D103	C-8
D104	B-8
D105	C-7
D106	C-8
D107	D-6
D110	D-6
D111	D-6
D112	D-6
IC1	C-3
IC101	D-7
Q1	D-3
Q2	D-3
Q3	D-3
Q4	D-2
Q7	D-2
Q8	D-3
Q9	D-4
Q10	B-4
Q11	C-3
Q12	B-3
Q102	D-9
Q103	C-9
Q104	D-8
Q105	D-8
Q106	B-9



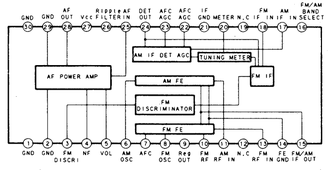
Note:
● ○—— : parts extracted from the component side.

4-3. SCHEMATIC DIAGRAMS



● IC Block Diagram

IC1 CXA1019S



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.

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

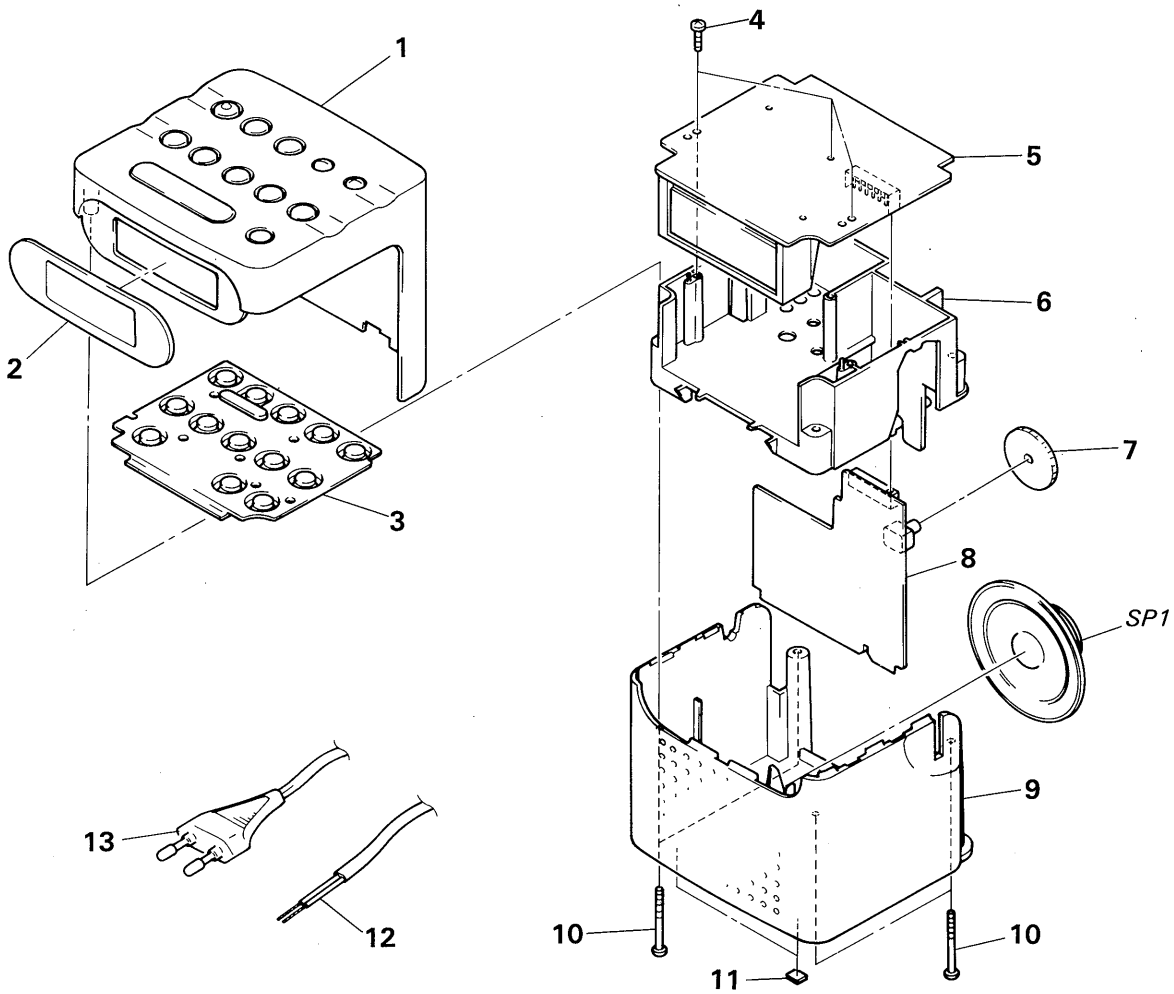
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : MW
  < > : LW
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

SECTION 5
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some differences 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 ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

AE9 : French model
5AE9 : Swiss, Belgian model



Ref. No.	Part No.	Description	Remark
1	A-3635-751-A	CABINET (UPPER) ASSY (UK)	
1	A-3635-781-A	CABINET (UPPER) ASSY (AE9, 5AE9)	
2	3-377-637-01	PANEL	
3	1-692-143-11	SWITCH, RUBBER KEY	
4	7-685-648-79	SCREW +P 3X12 TYPE2 NON-SLIT	
* 5	A-3679-396-A	KEY BOARD, COMPLETE (UK)	
* 5	A-3679-420-A	KEY BOARD, COMPLETE (AE9, 5AE9)	
* 6	3-377-644-01	CHASSIS	
7	3-368-840-21	KNOB (VOL)	

Ref. No.	Part No.	Description	Remark
* 8	A-3661-574-A	MAIN BOARD, COMPLETE (UK)	
* 8	A-3661-623-A	MAIN BOARD, COMPLETE (AE9, 5AE9)	
9	3-377-643-21	CABINET (LOWER)	
10	7-685-154-19	SCREW +P 3X35 TYPE2 NON-SLIT	
11	3-368-852-01	FOOT	
⚠12	1-556-035-00	CORD, POWER (UK)	
⚠13	1-555-795-00	CORD, POWER (AE9, 5AE9)	
SP1	1-503-082-00	SPEAKER	

SECTION 6
ELECTRICAL PARTS LIST

KEY

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

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

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

AE9 : French model
5AE9 : Swiss, Belgian model

Ref. No.	Part No.	Description			Remark
*	A-3679-396-A	KEY BOARD, COMPLETE (UK)			
*	A-3679-420-A	KEY BOARD, COMPLETE (AE9, 5AE9)			
		**********			
*	3-377-639-01	HOLDER (LCD)			
	3-380-732-01	HOLDER (CRYSTAL)			
		< CAPACITOR >			
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C102	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C103	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C104	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C105	1-162-638-11	CERAMIC CHIP	1uF		16V
C106	1-125-701-11	CAP, DOUBLE LAYEYER			0.047F (UK)
C106	1-125-733-31	CAP, DOUBLE LAYEYER			0.047F (AE9, 5AE9)
C107	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C108	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C109	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C110	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C111	1-163-096-00	CERAMIC CHIP	13PF	5%	50V
C112	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C113	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C114	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C115	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C116	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C117	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C118	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C119	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C120	1-128-483-11	ELECT	220uF	20%	25V
C121	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C122	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C123	1-164-006-11	CERAMIC CHIP	0.33uF	10%	16V
C124	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C125	1-126-176-11	ELECT	220uF	20%	10V
C126	1-124-473-11	ELECT	1000uF	20%	10V
C127	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C129	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C130	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
		< JACK >			
* CNJ101	1-695-232-11	PIN, CONNECTOR (PC BOARD) 12P			
		< DIODE >			
D101	8-719-028-22	DIODE	1SS133		
D102	8-719-976-94	DIODE	MA8051-M		
D103	8-719-104-34	DIODE	1S2836		
D104	8-719-200-02	DIODE	10E2		
D105	8-719-938-67	LED	GL-3EG8		
D106	8-719-938-67	LED	GL-3EG8		
D107	8-719-104-34	DIODE	DAP202K-T-146		
D109	8-719-104-34	DIODE	DAP202K-T-146 (AE9, 5AE9)		
D110	8-719-400-18	DIODE	MA152WK		
D111	8-719-400-18	DIODE	MA152WK		
D112	8-719-400-18	DIODE	MA152WK		
		< IC >			
IC101	8-759-073-89	IC	uPD1724GB-589-1A7		
		< JUMPER RESISTOR >			
JR102	1-216-295-00	METAL CHIP	0	5%	1/10W
JR103	1-216-295-00	METAL CHIP	0	5%	1/10W
JR104	1-216-296-00	METAL CHIP	0	5%	1/8W
JR105	1-216-295-00	METAL CHIP	0	5%	1/10W
JR106	1-216-295-00	METAL CHIP	0	5%	1/10W
JR107	1-216-295-00	METAL CHIP	0	5%	1/10W
JR108	1-216-295-00	METAL CHIP	0	5%	1/10W
JR109	1-216-295-00	METAL CHIP	0	5%	1/10W

KEY

Ref. No.	Part No.	Description			Remark
JR110	1-216-296-00	METAL CHIP	0	5%	1/8W
JR111	1-216-295-00	METAL CHIP	0	5%	1/10W
JR112	1-216-296-00	METAL CHIP	0	5%	1/8W
JR113	1-216-296-00	METAL CHIP	0	5%	1/8W
JR114	1-216-296-00	METAL CHIP	0	5%	1/8W
JR115	1-216-295-00	METAL CHIP	0	5%	1/10W
JR116	1-216-295-00	METAL CHIP	0	5%	1/10W
JR117	1-216-296-00	METAL CHIP	0	5%	1/8W
JR118	1-216-296-00	METAL CHIP	0	5%	1/8W
		< LCD >			
LCD101	1-809-707-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q102	8-729-216-22	TRANSISTOR	2SA1162-G		
Q103	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q104	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q105	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q106	8-729-142-46	TRANSISTOR	2SC2001-LK		
		< RESISTOR >			
R101	1-216-049-00	METAL CHIP	1K	5%	1/10W
R102	1-216-081-00	METAL CHIP	22K	5%	1/10W
R103	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R104	1-216-001-00	METAL CHIP	10	5%	1/10W
R106	1-216-097-00	METAL CHIP	100K	5%	1/10W
R107	1-216-113-00	METAL CHIP	470K	5%	1/10W
R108	1-216-113-00	METAL CHIP	470K	5%	1/10W
R109	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R110	1-216-220-00	METAL GLAZE	8.2K	5%	1/8W
R112	1-216-089-00	METAL CHIP	47K	5%	1/10W
R113	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R114	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R115	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R116	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R117	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R118	1-216-073-00	METAL CHIP	10K	5%	1/10W
R119	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R120	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R121	1-216-073-00	METAL CHIP	10K	5%	1/10W
R123	1-216-049-00	METAL CHIP	1K	5%	1/10W
R124	1-216-023-00	METAL CHIP	82	5%	1/10W
R125	1-216-023-00	METAL CHIP	82	5%	1/10W
R126	1-216-049-00	METAL CHIP	1K	5%	1/10W
R127	1-216-198-00	METAL CHIP	1K	5%	1/8W
		< SWITCH >			
SW101	1-692-143-11	RUBBER SWITCH (ALARM RESET/RADIO OFF)			
SW102	1-692-143-11	RUBBER SWITCH (P3)			

Ref. No.	Part No.	Description	Remark
SW103	1-692-143-11	RUBBER SWITCH (REPEAT ALARM/SLEEP OFF)	
SW104	1-692-143-11	RUBBER SWITCH (SLEEP/RADIO ON)	
SW105	1-692-143-11	RUBBER SWITCH (ALARM B BUZZER/P2)	
SW106	1-692-143-11	RUBBER SWITCH (BAND)	
SW107	1-692-143-11	RUBBER SWITCH (-)	
SW108	1-692-143-11	RUBBER SWITCH (ALARM A RADIO/ P1 WAKE UP STATION)	
SW109	1-692-143-11	RUBBER SWITCH (ALARM MODE/P5)	
SW110	1-692-143-11	RUBBER SWITCH (+)	
SW111	1-554-088-00	SWITCH, KEY BOARD (ENTER/CLOCK)	
SW112	1-692-143-11	RUBBER SWITCH (P4)	
SW113	1-692-143-11	RUBBER SWITCH (TIMER)	
		< TRANSFORMER >	
⚠T101	1-450-923-11	TRANSFORMER, POWER	
		< AC TERMINAL >	
* TP1	1-535-771-11	AC TERMINAL (AE9, 5AE9)	
* TP1	1-535-771-21	AC TERMINAL (UK)	
* TP2	1-535-771-11	AC TERMINAL (AE9, 5AE9)	
* TP2	1-535-771-21	AC TERMINAL (UK)	
		< VIBRATOR >	
X101	1-567-769-11	VIBRATOR, CRYSTAL	
**********			
*	A-3661-574-A	MAIN BOARD, COMPLETE (UK)	
*	A-3661-623-A	MAIN BOARD, COMPLETE (AE9, 5AE9)	
		**********	
		< CAPACITOR >	

C1	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C2	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C3	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C4	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C5	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C6	1-163-096-00	CERAMIC CHIP	13PF	5%	50V
C8	1-163-098-00	CERAMIC CHIP	16PF	5%	50V
C9	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C10	1-163-096-00	CERAMIC CHIP	13PF	5%	50V
C11	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C12	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C13	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C14	1-164-346-11	CERAMIC CHIP	1uF		16V
C15	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C17	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C18	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C19	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C20	1-163-089-00	CERAMIC CHIP	6PF	0.25PF	50V
C21	1-163-085-00	CERAMIC CHIP	2PF		50V

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

KEY

Ref. No.	Part No.	Description			Remark
C22	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C23	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C24	1-163-130-00	CERAMIC CHIP	360PF		
C25	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C26	1-163-128-00	CERAMIC CHIP	300PF	5%	50V
C27	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C28	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C29	1-124-927-11	ELECT	4.7uF	20%	100V
C30	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C31	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V
C32	1-124-927-11	ELECT	4.7uF	20%	100V
C33	1-124-907-11	ELECT	10uF	20%	50V
C34	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C35	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C37	1-126-233-11	ELECT	22uF	20%	50V
C38	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C39	1-124-472-11	ELECT	470uF	20%	10V
C41	1-164-346-11	CERAMIC CHIP	1uF		16V
C42	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V
C43	1-126-176-11	ELECT	220uF	20%	10V
C44	1-124-907-11	ELECT	10uF	20%	50V
C45	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C46	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C47	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C48	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C49	1-124-910-11	ELECT	47uF	20%	50V
C50	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
		< FILTER >			
CF1	1-578-677-21	FILTER, CERAMIC			
CF2	1-579-312-81	FILTER, CERAMIC			
CF3	1-579-312-81	FILTER, CERAMIC			
		< CONNECTOR >			
CNJ1	1-580-181-11	SOCKET, CONNECTOR 2P			
CNP1	1-695-237-11	SOCKET, CONNECTOR(PC BOARD)12P			
		< TRIMMER >			
CT1	1-141-304-21	TRIMMER, CERAMIC			
CT2	1-141-443-11	TRIMMER, CERAMIC			
CT3	1-141-304-21	TRIMMER, CERAMIC			
CT4	1-141-444-91	TRIMMER, CERAMIC			
		< DIODE >			
D1	8-719-951-05	DIODE	KV1560		
D2	8-719-951-05	DIODE	KV1560		
D3	8-719-104-34	DIODE	1S2835		
D4	8-719-949-46	DIODE	1T32		
D5	8-719-949-46	DIODE	1T32		

Ref. No.	Part No.	Description			Remark
		< IC >			
IC1	8-752-035-29	IC	CXA1019S		
		< JUMPER RESISTOR >			
JR1	1-216-296-00	METAL CHIP	0	5%	1/8W
JR2	1-216-296-00	METAL CHIP	0	5%	1/8W
JR3	1-216-296-00	METAL CHIP	0	5%	1/8W
JR4	1-216-296-00	METAL CHIP	0	5%	1/8W
JR5	1-216-296-00	METAL CHIP	0	5%	1/8W
JR7	1-216-296-00	METAL CHIP	0	5%	1/8W
JR9	1-216-296-00	METAL CHIP	0	5%	1/8W
JR10	1-216-295-00	METAL CHIP	0	5%	1/10W
JR12	1-216-295-00	METAL CHIP	0	5%	1/10W
JR13	1-216-296-00	METAL CHIP	0	5%	1/8W
JR14	1-216-295-00	METAL CHIP	0	5%	1/10W
JR15	1-216-296-00	METAL CHIP	0	5%	1/8W
JR16	1-216-296-00	METAL CHIP	0	5%	1/8W
JR17	1-216-296-00	METAL CHIP	0	5%	1/8W
JR18	1-216-296-00	METAL CHIP	0	5%	1/8W
JR19	1-216-296-00	METAL CHIP	0	5%	1/8W
JR20	1-216-296-00	METAL CHIP	0	5%	1/8W
JR21	1-216-295-00	METAL CHIP	0	5%	1/10W
JR22	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L2	1-402-615-11	ANTENNA, FERRITE-ROD (MW/LW)			
L3-1	1-402-654-11	COIL, AIR-CORE			
L3-2	1-402-653-11	COIL, AIR-CORE			
L4	1-460-335-11	COIL (WITH CORE)			
L5	1-406-485-11	COIL (OSC)			
		< TRANSISTOR >			
Q1	8-729-141-75	TRANSISTOR	2SD596DV345		
Q2	8-729-123-86	TRANSISTOR	2SK238-K16		
Q3	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q4	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q7	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q8	8-729-102-07	TRANSISTOR	2SC2223-F13		
Q9	8-729-102-07	TRANSISTOR	2SC2223-F13		
Q10	8-729-216-22	TRANSISTOR	2SA1162-G		
Q11	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q12	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
		< RESISTOR >			
R1	1-216-049-00	METAL CHIP	1K	5%	1/10W
R2	1-216-039-00	METAL CHIP	390	5%	1/10W
R3	1-216-174-00	METAL GLAZE	100	5%	1/8W
R4	1-216-133-00	METAL CHIP	3.3M	5%	1/10W
R5	1-216-133-00	METAL CHIP	3.3M	5%	1/10W

KEY

Ref. No.	Part No.	Description			Remark
R6	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R7	1-216-009-00	METAL CHIP	22	5%	1/10W
R8	1-216-198-00	METAL CHIP	1K	5%	1/8W
R9	1-216-073-00	METAL CHIP	10K	5%	1/10W
R10	1-216-073-00	METAL CHIP	10K	5%	1/10W
R11	1-216-097-00	METAL CHIP	100K	5%	1/10W
R12	1-216-097-00	METAL CHIP	100K	5%	1/10W
R13	1-216-097-00	METAL CHIP	100K	5%	1/10W
R14	1-216-097-00	METAL CHIP	100K	5%	1/10W
R15	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R16	1-216-077-00	METAL CHIP	15K	5%	1/10W
R17	1-216-186-00	METAL GLAZE	330		
R18	1-216-121-00	METAL CHIP	1M	5%	1/10W
R19	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R20	1-216-049-00	METAL CHIP	1K	5%	1/10W
R21	1-216-220-00	METAL GLAZE	8.2K	5%	1/8W
R23	1-216-081-00	METAL CHIP	22K	5%	1/10W
R24	1-216-017-00	METAL CHIP	47	5%	1/10W
R25	1-216-081-00	METAL CHIP	22K	5%	1/10W
R26	1-216-073-00	METAL CHIP	10K	5%	1/10W
R27	1-216-033-00	METAL CHIP	220	5%	1/10W
R28	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R29	1-216-121-00	METAL CHIP	1M	5%	1/10W
R32	1-216-049-00	METAL CHIP	1K	5%	1/10W
R33	1-216-073-00	METAL CHIP	10K	5%	1/10W
R34	1-216-073-00	METAL CHIP	10K	5%	1/10W
R35	1-216-001-00	METAL CHIP	10	5%	1/10W
		< VARIABLE RESISTOR >			
RV1	1-241-586-11	RES, VAR, CARBON 50K			
		< TRANSFORMER >			
T1	1-404-790-11	TRANSFORMER, IF			
		MISCELLANEOUS			
3	1-692-143-11	SWITCH, RUBBER KEY			
⚠12	1-556-035-00	CORD, POWER (UK)			
⚠13	1-555-795-00	CORD, POWER (AE9, 5AE9)			
SP1	1-503-082-00	SPEAKER			

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
	1-501-499-11	COUPLER, ANTENNA (5AE9)	
*	3-378-685-01	INDIVIDUAL CARTON	
	3-755-140-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN)	
	3-755-140-41	MANUAL, INSTRUCTION (SPANISH, DUTCH, ITALIAN) (5AE9)	

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

9-957-293-11

Sony Corporation
Personal Telecommunication Group

English
92G1834-1
Printed in Japan

Published by Customer Relations and Service Group