

# ICF-C233L

## SERVICE MANUAL

AEP Model  
UK Model



### SPECIFICATIONS

#### Time display

United Kingdom	12 hour
Other countries	24 hour

#### Frequency range

Band	Channel step	
FM	87.5-108.0 MHz	0.05 MHz*
MW	531-1,602 kHz	9 kHz
LW	153 - 279 kHz	9 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".)

#### Speaker

Approx. 6.6 cm (2<sup>5</sup>/<sub>8</sub> in) dia.

#### Power output

120 mW (at 10% harmonic distortion)

#### Power requirements

220-230 V AC, 50 Hz

#### Dimensions

Approx. 196 x 56 x 149.5 mm (w x h x d)  
(7<sup>3</sup>/<sub>4</sub> x 2<sup>1</sup>/<sub>4</sub> x 6 in) incl. projecting parts and controls

#### Mass

Approx. 600 g (1 lb 5 oz)

#### Supplied accessory

FM antenna coupler (1)  
(Netherlands, Scandinavia, Austria,  
Switzerland, Belgium only)

Design and specifications are subject to change without notice.

FM/MW/LW PLL SYNTHESIZED  
CLOCK RADIO

**SONY®**

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### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  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.

## Operating the Radio Manual Tuning

1. Press **SLEEP/RADIO ON** to turn on the radio.

The band and frequency and the preset number displayed before the radio was last turned off appear on the display for 10 seconds, after which the current time indication returns to the display.

2. Turn the **VOL** (volume) control to make sure the sound is audible.
3. Press **BAND** to select the band. The most recently tuned FM and AM frequencies alternate on the display with each press of the button.
4. Use **TIME SET/TUNE +** or **-** to tune in the desired station.

The FM channel step is set to 0.05 MHz and the AM(MW) channel step is set to 9 kHz. (The FM frequency indication changes every 0.1 MHz.) A beep sounds and the tuning stops when the upper or lower extremity of the band range is reached.

5. Set the desired volume with the **VOL** control.

To turn off the radio, press **ALARM RESET/RADIO OFF**.

To improve reception FM: Extend the FM wire antenna fully to increase FM reception sensitivity.

AM: Rotate the unit horizontally to the position in which reception is clearest.

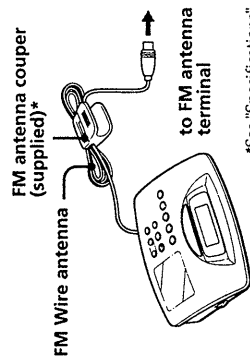
To check the current station, press the **+** button lightly. The band and frequency are displayed for 10 seconds, after which the current time indication returns to the display.

Each time the radio is turned on or the frequency changed, the band and frequency replace the current time indication for 10 seconds.

If the radio alarm **RADIO** comes on while the radio is playing, the station switches to the frequency set under preset number 1 (the wake-up frequency).

## For the customers supplied with an FM antenna coupler

Bundle the FM wire antenna and pinch it with the coupler supplied and connect it to a wall FM antenna terminal for optimum FM reception.



\*See "Specifications"

## Features

- Dual alarm FM/MW/LW PLL (Phase locked loop) synthesized clock radio
- 5 random memory presets
- Radio and buzzer alarms with the snooze function
- LCD display with backlight

## Setting the Clock

1. Plug in the unit.

The display will flash "AM 12:00" or "0:00".

2. While holding down **CLOCK/ENTER**, press **TIME SET/TUNE +** or **-**.

Use the **+** button to advance the hour and minute digits and the **-** button to reverse them. Hold down the **+** or **-** button to advance or reverse the time setting at high speed.

3. Release **CLOCK/ENTER**.

The time is set and clock operation begins.

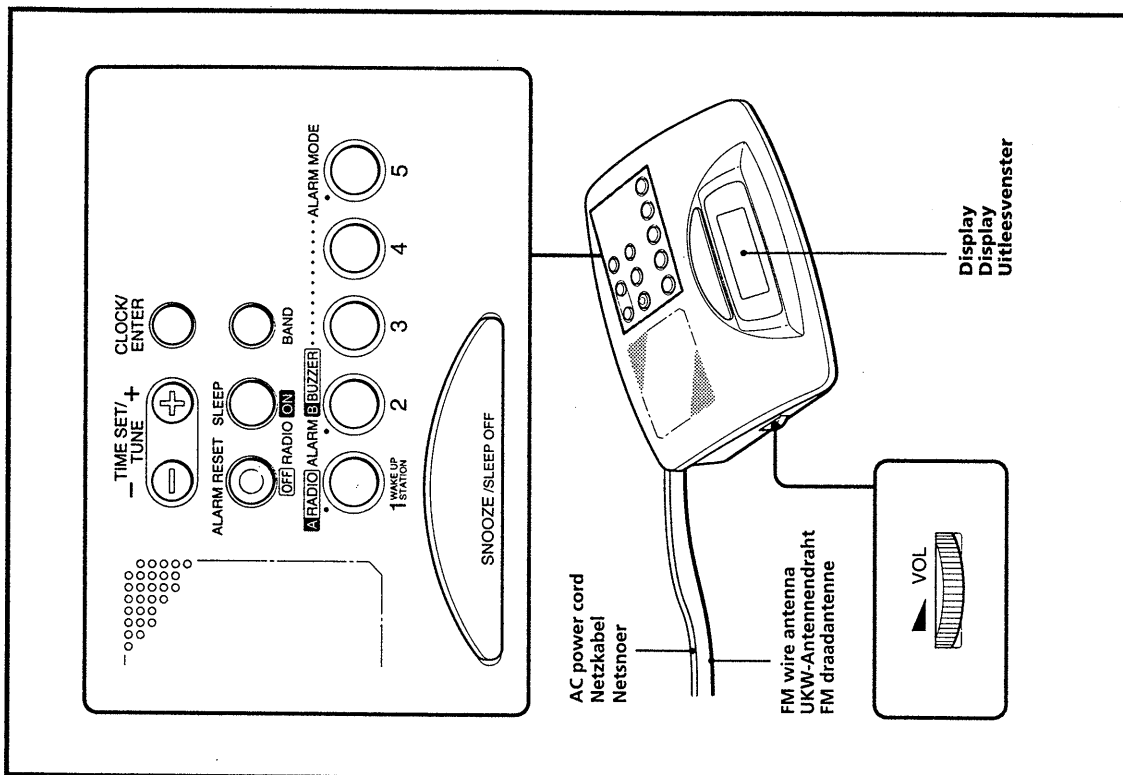
- The clock system varies depending on the model you own.

12-hour system: "AM 12:00" = midnight

24-hour system: "0:00" = midnight

- For zero second adjustment, release **CLOCK/ENTER** at the sound of a time tone.

- The colon (":") in the time indication is flashing when the radio is off and steadily displayed when it is on.



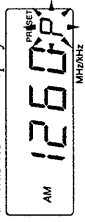
## Preset Tuning

You can preset up to five stations for one-touch tuning, one under each of preset buttons 1 to 5.

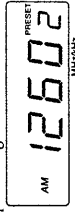
### Presetting a station

**Example:** To set AM 1260 kHz in preset button 2.

1. Tune in the station you want to preset. (See "Manual Tuning".)
2. Press **CLOCK/ENTER**. "P" flashes in the display for about 10 seconds.



3. Press the preset button under which you wish to store the station before the "P" indication stops flashing. Two beeps sound to indicate successful presetting.



- The current time indication replaces the band and frequency indication on the display 10 seconds after a station is preset, but the preset number remains in the display.
- When using the radio alarm, preset the station you wish to serve as the alarm (the wake-up frequency) under preset button 1.

### To change a preset station

Press the preset button again after tuning manually to a different station. The previous station is replaced by the new one.

### Tuning in a preset station

1. Press **SLEEP/RADIO ON** to turn on the radio.
  2. Press the preset button under which the desired station is stored. The band, frequency and preset number replace the current time indication in the display for about 10 seconds.
- To check the current station, press the preset number button. The band and frequency are displayed for 10 seconds.

## Setting the Alarm

You can set the radio and buzzer alarms at the preset time. Before setting the alarm, be sure to set the clock (See "Setting the Clock").

1. Turn off the radio.
2. While holding down **ALARM**, press either **TIME SET/TUNE +** or **-** until the desired time appears in the display.

At this time, the **[RADIO]** or **[BUZZER]** indication appears in the display.

3. Release **ALARM**.
4. Press **ALARM MODE** until the alarm you want appears in the display. Each time you press **ALARM MODE**, the alarm indication changes as follows.

No alarm indication → **[RADIO]** → **[BUZZER]** → **[RADIO]** and **[BUZZER]** ↓

When the alarm time is reached, the radio or buzzer sounds for 60 minutes or until turned off.

### To stop the alarm

Press **ALARM RESET/RADIO OFF** while the alarm is activated. The alarm will function at the same time the next day.

### To cancel the alarm

Press **ALARM MODE** until neither the **[RADIO]** nor **[BUZZER]** indication is displayed.

#### Notes

- The alarm does not function, unless you set the clock, **[RADIO]** and **[BUZZER]** function.
- If both the radio and buzzer alarm are set for the same time, the radio alarm takes precedence.
- You can check the alarm time setting by pressing **[RADIO]**, **ALARM** or **[BUZZER]**, **ALARM**.

### To doze for a few more minutes

1. Press **SNOOZE/SLEEP OFF** while the alarm is sounding. The alarm will be silenced for about 8 minutes, after which it will sound again. You can use the snooze alarm repeatedly in this manner for about one hour.
- The alarm indication continues to flash in the display while the snooze alarm function is operational.

## Setting the Sleep Timer

You can enjoy falling asleep to the radio using the built-in sleep timer that turns off the radio automatically after a preset duration. You can set the sleep timer for 90, 60, 30, or 15 minutes.

1. Press **RADIO ON/SLEEP** repeatedly. The radio turns on. Each time you press **RADIO ON/SLEEP**, the duration changes as follows.

Current time → On → 90(min) ↓  
15 ← 30 ← 60 ↓

The radio will turn off automatically after the selected preset duration has elapsed.

- To cancel the sleep timer function and turn off the radio, press **SNOOZE/SLEEP OFF**.

### To Use Both Sleep Timer and Alarm

You can fall asleep to the radio sound and you will be awakened by the radio or buzzer alarm at the preset time.

1. Set the alarm. (See "Setting the Alarm".)
2. Set the sleep timer. (See "Setting the Sleep Timer".)

## Precautions

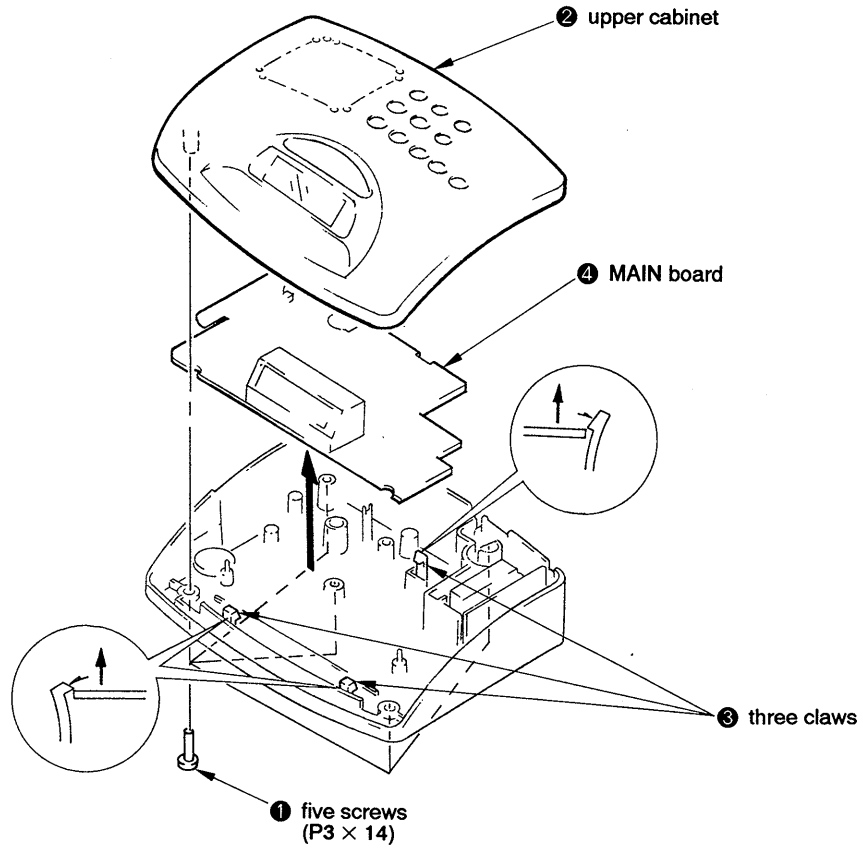
- Operate the unit on the power sources specified in "Specifications".
- The nameplate indicating voltage, etc. is located on the bottom exterior.
- Disconnect the cord by grasping the plug. Never pull it by the cord.
- Do not leave the unit in a location near a heat source such as a radiator or air duct, or in a place subject to direct sunlight, excessive dust, mechanical vibration, or shock.
- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on a surface (a rug, a blanket, etc.) or near materials (a curtain) which might block the ventilation holes.
- Should any liquid or solid object fall into the unit, unplug the unit and have it checked by a qualified personnel before operating it further.
- When the casing becomes soiled, clean it with a soft cloth dampened with a mild detergent solution. Never use abrasive cleaners or chemical solvents, as they may mar the casing.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.

**if you have any question, please consult your nearest Sony dealer.**

## SECTION 2 DISASSEMBLY

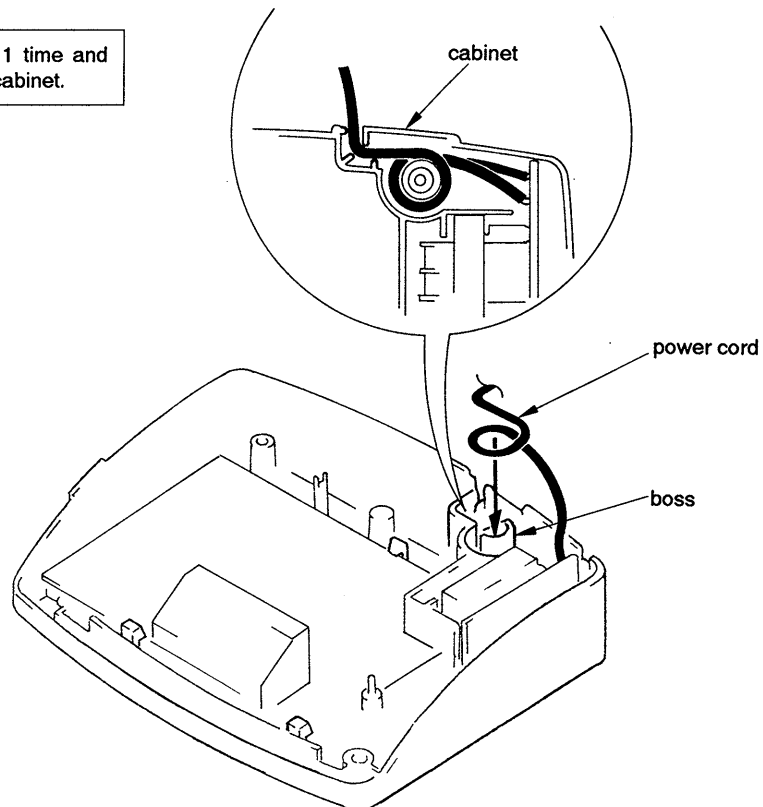
**Note:** Follow the disassembly procedure in the numerical order given.

### MAIN BOARD



### POWER CORD SETTING

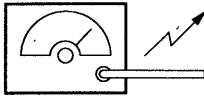
Wind the power cord to boss 1 time and push down between boss and cabinet.



## SECTION 3 ELECTRICAL ADJUSTMENTS

### AM Section

AM RF signal generator

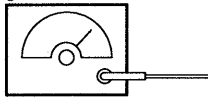


Put the lead-wire antenna close to the set.

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

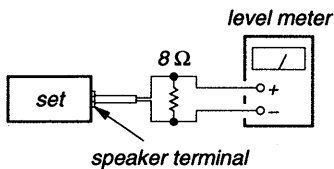
### FM Section

FM RF signal generator



FM ANT terminal

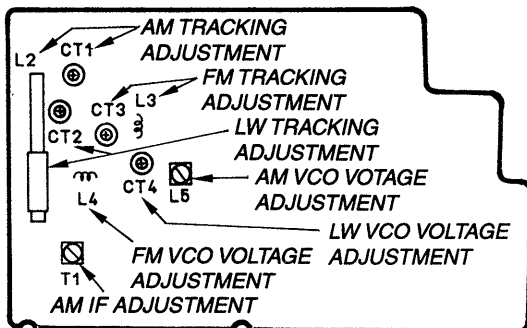
± 22.5 kHz frequency deviation by 400 Hz signal.  
output level: as low as possible



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

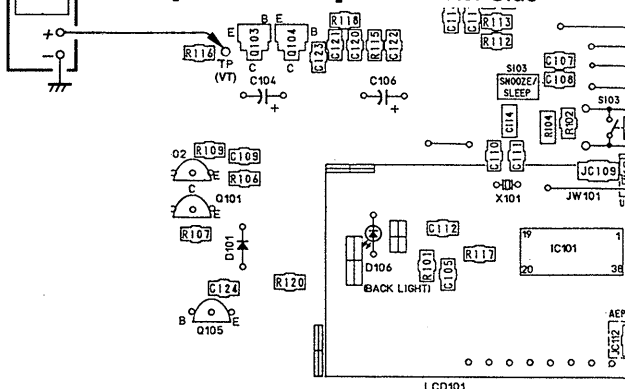
#### Adjustment Location:

[MAIN BOARD] – Component Side –



digital voltmeter

[MAIN BOARD] – Conductor Side –



#### AM IF ADJUSTMENT

Adjust for maximum reading on level meter.

T1

531 kHz

#### AM VCO VOLTAGE ADJUSTMENT

Adjustment Part	Frequency Display	Reading on Digital voltmeter
L5	531 kHz	2.85 V
(confirmation)	1,620 kHz	Less than 10 V (Standard 9 V)

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

#### AM TRACKING ADJUSTMENT

Adjust for maximum reading on level meter.

CT1

L2-1

1,404 kHz

621 kHz

#### LW VCO VOLTAGE ADJUSTMENT

Adjustment Part	Frequency Display	Reading on Digital voltmeter
CT4	279 kHz	9.0 V
(confirmation)	153 kHz	More than 2.2 V (Standard 2.4 V)

**Note:** Not use the LW signal generator in this adjustment.

#### LW TRACKING ADJUSTMENT

Adjust for maximum reading on level meter.

CT2

L2-3

279 kHz

162 kHz

#### FM VCO VOLTAGE ADJUSTMENT

Adjustment Part	Frequency Display	Reading on Digital voltmeter
L4	108 MHz	9.5 ± 1.0 V
(confirmation)	87.5 MHz	More than 1.8 V (Standard 2.2 V)

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

#### FM TRACKING ADJUSTMENT

Adjust for maximum reading on level meter.

CT3

L3 (confirmation)

108 MHz

87.5 MHz

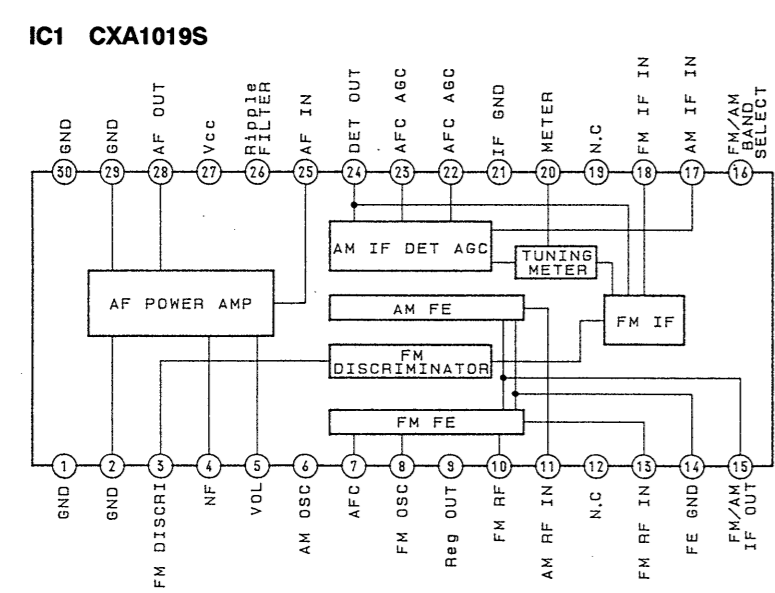
## SECTION 4 DIAGRAMS

### 4-1. IC PIN FUNCTION DESCRIPTION

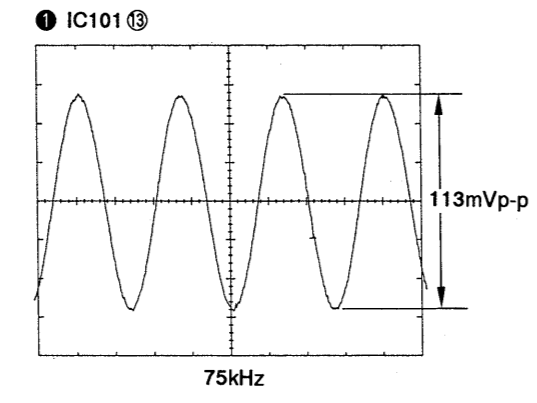
#### MAIN BOARD IC101 $\mu$ PD17015GS-537-GJG (PLL, LCD DRIVE)

Pin No.	Pin Name	I/O	Function
1	POB2	I	Key return input
2	POC0	O	Key control output
3	POC1	O	Key control output
4	POC2	O	Key control output
5	POC3	O	Key control output
6	BEEP	O	Buzzer output
7	AM/FM	O	AM/FM band select output
8	-	O	Initialize output
9	MUTE	O	Audio mute "L": mute on
10	LW/MW	O	Not used
11	CE	I	Reset signal input
12	XOUT	O	Crystal oscillator connection pin
13	XIN	I	Crystal oscillator connection pin
14	VDD	-	Power supply (+3 V)
15	GND	-	GND
16	EO	O	PLL error output
17	VREG	O	PLL regulator output
18	VCOH	I	FM VCO input
19	VCOL	I	AM VCO input
20	LCD8	O	LCD drive
21	LCD7	O	LCD drive
22	LCD6	O	LCD drive
23	LCD5	O	LCD drive
24	LCD4	O	LCD drive
25	LCD3	O	LCD drive
26	LCD2	O	LCD drive
27	LCD1	O	LCD drive
28	LCD0	O	LCD drive
29	COM3	O	LCD common
30	COM2	O	LCD common
31	COM1	O	LCD common
32	COM0	O	LCD common
33	VLCD1	-	LCD power supply
34	CAP1	-	LCD drive condenser
35	CAP0	-	LCD drive condenser
36	VLCD0	-	LCD power supply
37	POB0	I	Key return input
38	POB1	I	Key return input

• IC Block Diagram



• Waveform



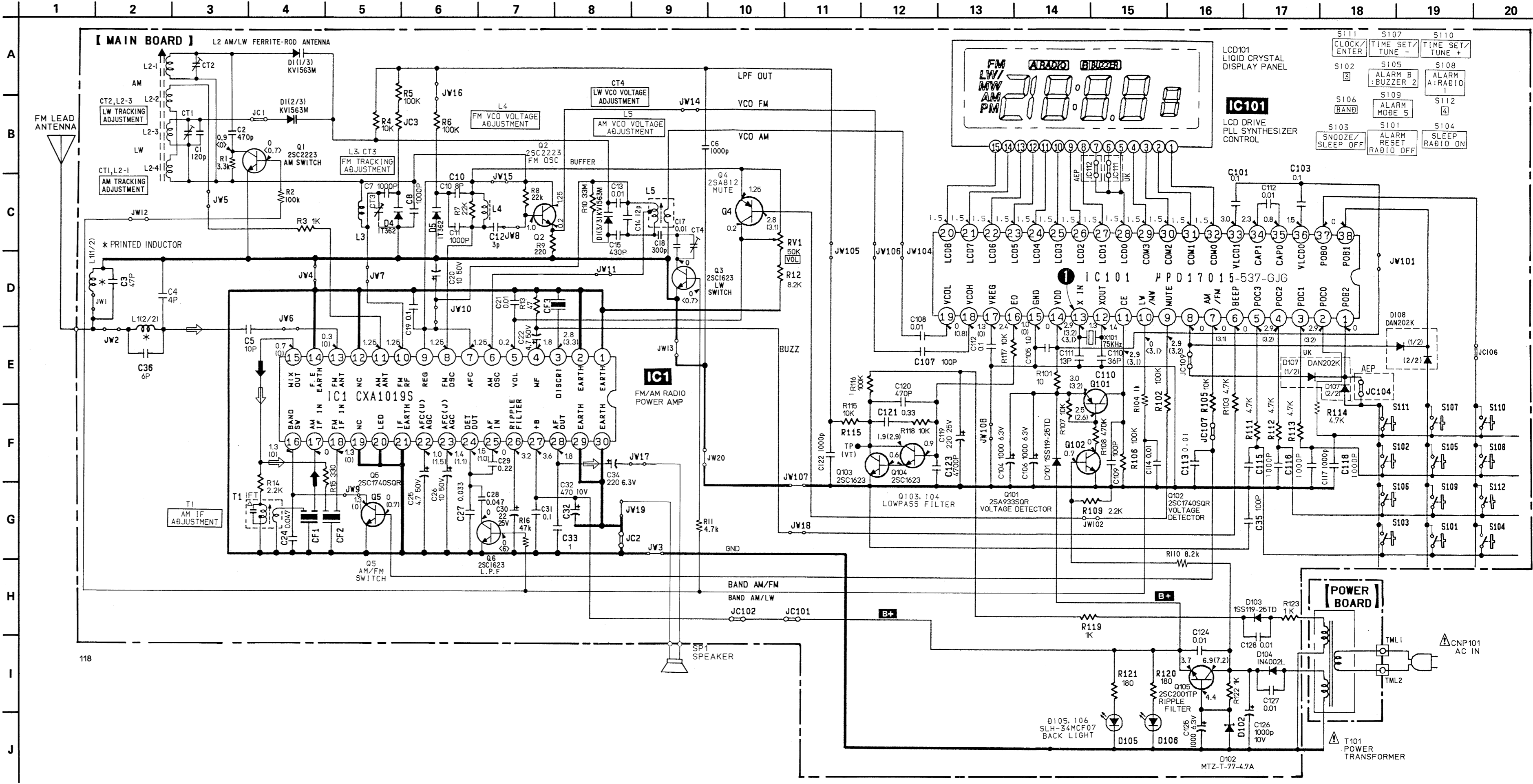
**Note:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{pF}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}$  W or less unless otherwise specified.
- $\Delta$ : internal component.
- $\square$ : panel designation.

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

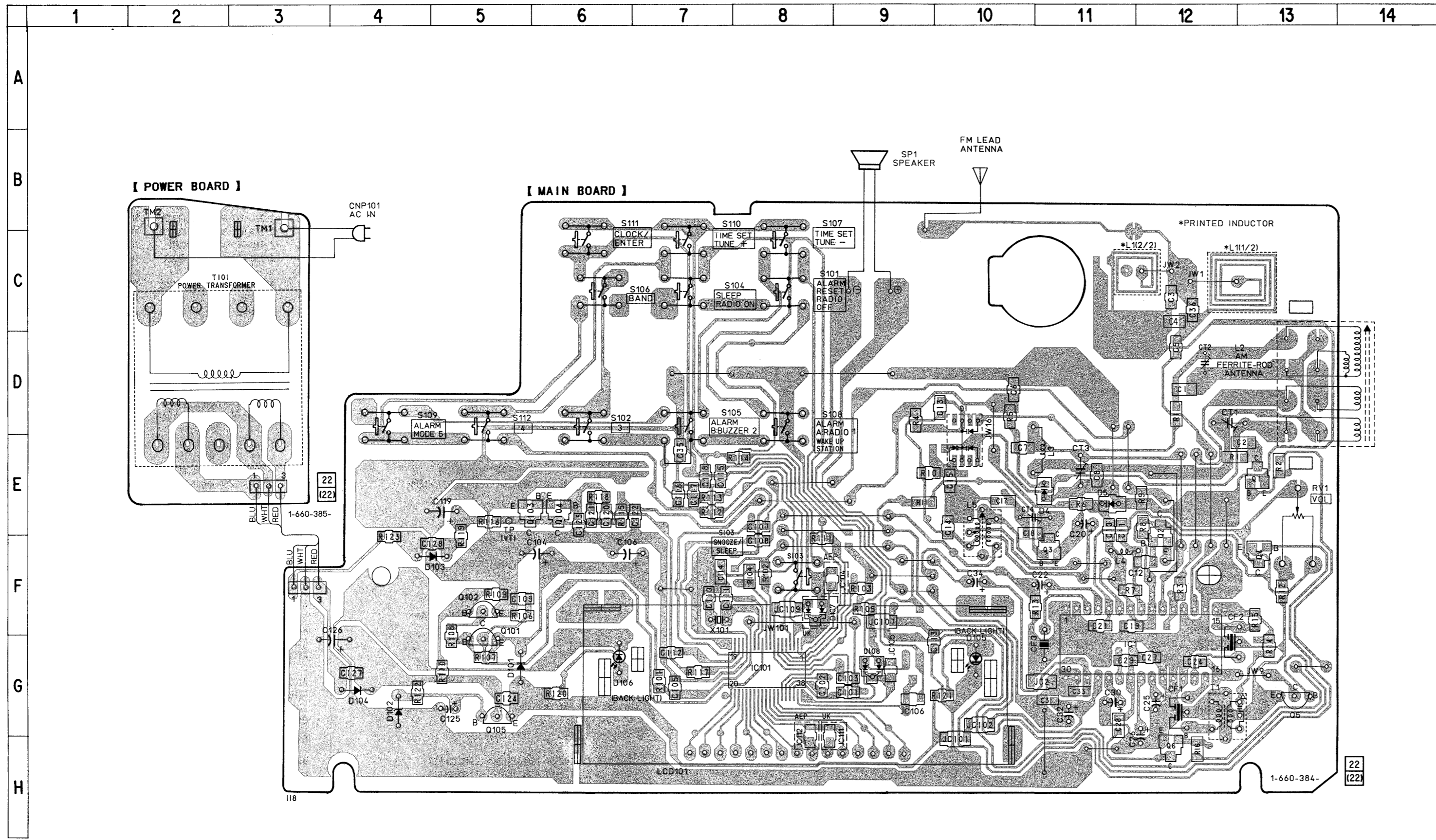
- B+**: B+ Line.
- $\square$ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- ( ): MW
- < : LW
- > : LW
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveform is taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled number refer to waveform.
- Signal path.
- $\square$ : FM
- $\blacktriangleright$ : MW/LW

4-2. SCHEMATIC DIAGRAM





4-3. PRINTED WIRING BOARDS



• Semiconductor Location

Ref. No.	Location
D1	D-10
D4	E-11
D5	E-11
D101	G-5
D102	G-4
D103	F-5
D104	G-4
D105	G-10
D106	G-6
D107	F-8
D108	G-9
IC1	G-12
IC101	G-8
Q1	E-13
Q2	F-12
Q3	F-11
Q4	F-13
Q5	G-13
Q6	H-12
Q101	G-5
Q102	F-5
Q103	E-5
Q104	F-6
Q105	G-5

Note:  
 • ○ : parts extracted from the component side.  
 • △ : internal component.  
 • ▨ : Pattern from the side which enables seeing.

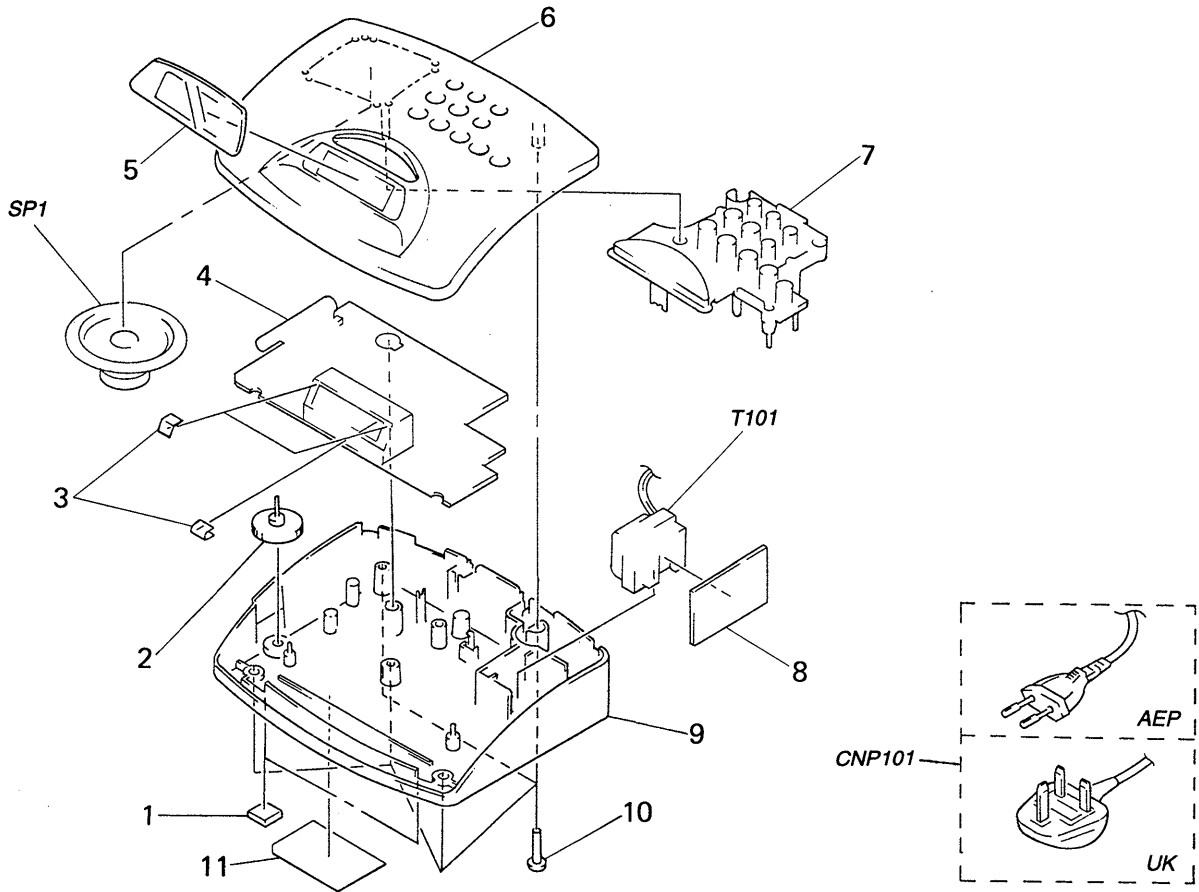
## SECTION 5 EXPLODED VIEW

**NOTE:**

- -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

- 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.
- Accessories and packing materials are given in the last of the electrical parts list.

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



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-368-852-01	FOOT		7	3-934-811-41	BUTTON (CREAM) (AEP)	
2	3-919-268-01	KNOB (VOL)		* 8	1-660-385-22	POWER BOARD	
3	3-831-441-XX	CUSHION, STOPPER		9	3-935-817-01	CABINET (LOWER) (BLACK)	
* 4	A-3679-762-A	MAIN BOARD, COMPLETE (AEP)		9	3-935-817-11	CABINET (LOWER) (WHITE)	
* 4	A-3679-763-A	MAIN BOARD, COMPLETE (UK)		9	3-935-817-21	CABINET (LOWER) (GREEN) (AEP)	
5	3-934-816-01	PLATE, TRANSPARENT		9	3-935-817-31	CABINET (LOWER) (BLUE)	
		(for BLACK, BLUE, GREEN)		9	3-935-817-41	CABINET (LOWER) (CREAM) (AEP)	
5	3-934-816-11	PLATE, TRANSPARENT (for CREAM, WHITE)		10	7-685-649-79	SCREW +P 3X14 TYPE2 NON-SLIT	
6	3-934-809-01	CABINET (UPPER) (BLACK)		11	3-934-815-01	LABEL, MODEL NUMBER	
6	3-934-809-11	CABINET (UPPER) (WHITE)		$\Delta$ CNP101	1-551-958-21	CORD, POWER (for WHITE) (AEP)	
6	3-934-809-21	CABINET (UPPER) (GREEN) (AEP)		$\Delta$ CNP101	1-555-795-00	CORD, POWER (for BLACK, BLUE, CREAM, GREEN) (AEP)	
6	3-934-809-31	CABINET (UPPER) (BLUE)		$\Delta$ CNP101	1-696-572-21	CORD, POWER (for BLACK, BLUE) (UK)	
6	3-934-809-41	CABINET (UPPER) (CREAM)		$\Delta$ CNP101	1-751-112-11	CORD, POWER (for WHITE) (UK)	
7	3-934-811-01	BUTTON (BLACK)		SP1	1-504-748-21	SPEAKER (6.6CM)	
7	3-934-811-11	BUTTON (WHITE)		$\Delta$ T101	1-450-923-11	TRANSFORMER, POWER	
7	3-934-811-21	BUTTON (GREEN) (AEP)					
7	3-934-811-31	BUTTON (BLUE)					

# SECTION 6 ELECTRICAL PARTS LIST

**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
- Abbreviation  
AEP1: Swiss, Belgium

- 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:  $\mu$ , for example:  
uA ..:  $\mu$ A.    uPA ..:  $\mu$ PA.  
uPB ..:  $\mu$ PB.    uPC ..:  $\mu$ PC.    uPD ..:  $\mu$ PD..
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  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
*	A-3679-762-A	MAIN BOARD, COMPLETE (AEP)		C33	1-164-346-11	CERAMIC CHIP	1uF 16V
*	A-3679-763-A	MAIN BOARD, COMPLETE (UK)		C34	1-104-666-11	ELECT	220uF 20% 6.3V
		*****		C35	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
				C36	1-163-089-00	CERAMIC CHIP	6PF 50V
	3-377-648-01	HOLDER (LED)		C101	1-163-038-00	CERAMIC CHIP	0.1uF 25V
	3-934-812-01	REFLECTOR		C102	1-163-031-11	CERAMIC CHIP	0.01uF 50V
	3-934-814-01	HOLDER					
		< CAPACITOR >		C103	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C1	1-163-119-00	CERAMIC CHIP	120PF 5% 50V	C104	1-124-471-00	ELECT	1000uF 20% 6.3V
C2	1-163-133-00	CERAMIC CHIP	470PF 5% 50V	C105	1-164-346-11	CERAMIC CHIP	1uF 16V
C3	1-163-243-11	CERAMIC CHIP	47PF 5% 50V	C106	1-124-471-00	ELECT	1000uF 20% 6.3V
C4	1-163-087-00	CERAMIC CHIP	4PF 50V	C107	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C5	1-163-227-11	CERAMIC CHIP	10PF 0.5PF 50V	C108	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C6	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V	C109	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C7	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V	C110	1-163-106-00	CERAMIC CHIP	36PF 5% 50V
C8	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V	C111	1-163-096-00	CERAMIC CHIP	13PF 5% 50V
C10	1-163-091-00	CERAMIC CHIP	8PF 50V	C112	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C11	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V	C113	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C12	1-163-220-11	CERAMIC CHIP	3PF 0.25PF 50V	C114	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C13	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C115	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C14	1-163-229-11	CERAMIC CHIP	12PF 5% 50V	C116	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C15	1-163-131-00	CERAMIC CHIP	390PF 5% 50V	C117	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C17	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C118	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C18	1-163-128-00	CERAMIC CHIP	300PF 5% 50V	C119	1-124-120-11	ELECT	220uF 20% 25V
C19	1-163-038-00	CERAMIC CHIP	0.1uF 25V	C120	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C20	1-124-907-11	ELECT	10uF 20% 50V	C121	1-164-336-11	CERAMIC CHIP	0.33uF 25V
C21	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C122	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C22	1-126-963-11	ELECT	4.7uF 20% 50V				
C24	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C123	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V
C25	1-126-963-11	ELECT	4.7uF 20% 50V	C124	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C26	1-124-907-11	ELECT	10uF 20% 50V	C125	1-124-471-00	ELECT	1000uF 20% 6.3V
C27	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V	C126	1-124-473-11	ELECT	1000uF 20% 10V
C28	1-163-035-00	CERAMIC CHIP	0.047uF 50V	C127	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C29	1-164-222-11	CERAMIC CHIP	0.22uF 25V				
C30	1-126-233-11	ELECT	22uF 20% 50V	C128	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C31	1-163-038-00	CERAMIC CHIP	0.1uF 25V				
C32	1-126-925-11	ELECT	470uF 20% 10V	< FILTER >			
				CF1	1-578-677-21	FILTER, CRYSTAL	
				CF2	1-579-312-81	FILTER, CERAMIC	
				CF3	1-579-312-81	FILTER, CERAMIC	

**MAIN**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< TRIMMER >					
CT1	1-141-304-21	CAP, TRIMMER 10PF		Q3	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
CT2	1-141-443-11	TRIMMER, CERAMIC		Q4	8-729-216-22	TRANSISTOR 2SA1162-G	
CT3	1-141-304-21	CAP, TRIMMER 10PF		Q5	8-729-119-78	TRANSISTOR 2SC2785-HFE	
CT4	1-141-444-11	TRIMMER, CERAMIC		Q6	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< DIODE >		Q101	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D1	8-719-023-99	DIODE KV1563M-3		Q102	8-729-119-78	TRANSISTOR 2SC2785P-51	
D4	8-713-100-11	DIODE 1T362		Q103	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D5	8-713-100-11	DIODE 1T362		Q104	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D101	8-719-911-19	DIODE 1SS119		Q105	8-729-142-46	TRANSISTOR 2SC2001-LK	
D102	8-719-010-34	DIODE UZ-4. 7BSC				< RESISTOR >	
D103	8-719-911-19	DIODE 1SS119		R1	1-216-133-00	METAL CHIP 3. 3M 5%	1/10W
D104	8-719-031-85	DIODE 1N4002L		R2	1-216-097-00	METAL GLAZE 100K 5%	1/10W
D105	8-719-037-81	DIODE SLH-34MCF07		R3	1-216-049-00	METAL GLAZE 1K 5%	1/10W
D106	8-719-037-81	DIODE SLH-34MCF07		R4	1-216-073-00	METAL CHIP 10K 5%	1/10W
D107	8-719-914-43	DIODE DAN202K (UK)		R5	1-216-097-00	METAL GLAZE 100K 5%	1/10W
D108	8-719-914-43	DIODE DAN202K		R6	1-216-097-00	METAL GLAZE 100K 5%	1/10W
		< IC >		R7	1-216-057-00	METAL CHIP 2. 2K 5%	1/10W
IC1	8-752-055-05	IC CXA1019S		R8	1-216-081-00	METAL CHIP 22K 5%	1/10W
IC101	8-759-432-29	IC uPD17015GS-537-GJG-E1		R9	1-216-033-00	METAL CHIP 220 5%	1/10W
		< CHIP CONDUCTOR >		R10	1-216-133-00	METAL CHIP 3. 3M 5%	1/10W
JC1	1-216-295-00	CONDUCTOR, CHIP (2012)		R11	1-216-065-00	METAL CHIP 4. 7K 5%	1/10W
JC2	1-216-296-00	CONDUCTOR, CHIP (3216)		R12	1-216-071-00	METAL CHIP 8. 2K 5%	1/10W
JC101	1-216-296-00	CONDUCTOR, CHIP (3216)		R13	1-216-017-00	METAL GLAZE 47 5%	1/10W
JC102	1-216-296-00	CONDUCTOR, CHIP (3216)		R14	1-216-057-00	METAL CHIP 2. 2K 5%	1/10W
JC104	1-216-295-00	CONDUCTOR, CHIP (2012) (AEP)		R15	1-216-037-00	METAL CHIP 330 5%	1/10W
JC106	1-216-295-00	CONDUCTOR, CHIP (2012)		R16	1-216-089-00	METAL GLAZE 47K 5%	1/10W
JC107	1-216-296-00	CONDUCTOR, CHIP (3216)		R101	1-216-001-00	METAL CHIP 10 5%	1/10W
JC109	1-216-296-00	CONDUCTOR, CHIP (3216)		R102	1-216-097-00	METAL GLAZE 100K 5%	1/10W
JC111	1-216-295-00	CONDUCTOR, CHIP (2012) (UK)		R103	1-216-065-00	METAL CHIP 4. 7K 5%	1/10W
JC112	1-216-295-00	CONDUCTOR, CHIP (2012) (AEP)		R104	1-216-049-00	METAL GLAZE 1K 5%	1/10W
		< COIL >		R105	1-216-073-00	METAL CHIP 10K 5%	1/10W
L2	1-501-715-11	ANTENNA, FERRITE-ROD (LW/MW)		R106	1-216-097-00	METAL GLAZE 100K 5%	1/10W
L3	1-411-978-11	COIL, AIR-CORE		R107	1-216-113-00	METAL CHIP 470K 5%	1/10W
L4	1-411-979-11	COIL, AIR-CORE		R108	1-216-113-00	METAL CHIP 470K 5%	1/10W
L5	1-406-485-11	COIL (OSC)		R109	1-216-057-00	METAL CHIP 2. 2K 5%	1/10W
		< LIQUID CRYSTAL DISPLAY >		R110	1-216-071-00	METAL CHIP 8. 2K 5%	1/10W
LCD101	1-801-231-11	DISPLAY PANEL, LIQUID CRYSTAL		R111	1-216-065-00	METAL CHIP 4. 7K 5%	1/10W
		< TRANSISTOR >		R112	1-216-065-00	METAL CHIP 4. 7K 5%	1/10W
Q1	8-729-102-07	TRANSISTOR 2SC2223-F13		R113	1-216-065-00	METAL CHIP 4. 7K 5%	1/10W
Q2	8-729-102-07	TRANSISTOR 2SC2223-F13		R114	1-216-065-00	METAL CHIP 4. 7K 5%	1/10W
				R115	1-216-073-00	METAL CHIP 10K 5%	1/10W
				R116	1-216-097-00	METAL GLAZE 100K 5%	1/10W
				R117	1-216-073-00	METAL CHIP 10K 5%	1/10W
				R118	1-216-073-00	METAL CHIP 10K 5%	1/10W
				R119	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R120	1-216-031-00	METAL CHIP 180 5%	1/10W
				R121	1-216-031-00	METAL CHIP 180 5%	1/10W

Ref. No.	Part No.	Description	Remark
R122	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R123	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
< VARIABLE RESISTOR >			
RV1	1-228-790-00	RES, VAR, CARBON 50K (VOL)	
< SWITCH >			
S101	1-554-303-21	SWITCH, TACTILE (ALARM RESET, RADIO OFF)	
S102	1-554-303-21	SWITCH, TACTILE (3)	
S103	1-554-303-21	SWITCH, TACTILE (SNOOZE/SLEEP)	
S104	1-554-303-21	SWITCH, TACTILE (SLEEP, RADIO ON)	
S105	1-554-303-21	SWITCH, TACTILE (ALARM B BUZZER, 2)	
S106	1-554-303-21	SWITCH, TACTILE (BAND)	
S107	1-554-303-21	SWITCH, TACTILE (TIME SET/TUNE -)	
S108	1-554-303-21	SWITCH, TACTILE (ALARM A RADIO, 1 WAKE UP STATION)	
S109	1-554-303-21	SWITCH, TACTILE (ALARM MODE, 5)	
S110	1-554-303-21	SWITCH, TACTILE (TIME SET/TUNE +)	
S111	1-554-303-21	SWITCH, TACTILE (CLOCK/ENTER)	
S112	1-554-303-21	SWITCH, TACTILE (4)	
< TRANSFORMER >			
T1	1-404-790-11	TRANSFORMER, IF	
< VIBRATOR >			
X101	1-567-769-11	VIBRATOR, CRYSTAL (75.00KHz)	
*****			
*	1-660-385-22	POWER BOARD	
*****			
< TRANSFORMER >			
△T101	1-450-923-11	TRANSFORMER, POWER	
< TERMINAL >			
* TML1	1-535-771-11	TERMINAL	
* TML2	1-535-771-11	TERMINAL	
*****			
MISCELLANEOUS			
*****			
△CNP101	1-551-958-21	CORD, POWER (for WHITE) (AEP)	
△CNP101	1-555-795-00	CORD, POWER (for BLACK, BLUE, CREAM, GREEN) (AEP)	
△CNP101	1-696-572-21	CORD, POWER (for BLACK, BLUE) (UK)	
△CNP101	1-751-112-11	CORD, POWER (for WHITE) (UK)	
SP1	1-504-748-21	SPEAKER (6.6CM)	
*****			

Ref. No.	Part No.	Description	Remark
ACCESSORIES & PACKING MATERIALS			
*****			
	1-501-499-11	COUPLER, ANTENNA (AEP 1)	
*	3-324-066-01	SHEET, PROTECTION	
	3-810-941-31	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN, DUTCH)	
	3-935-857-01	INDIVIDUAL CARTON	

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



# ICF-C233L

**SONY**<sup>®</sup>

*AEP Model*  
*UK Model*

## SERVICE MANUAL

Ver 1.0 1999.05

### SUPPLEMENT-1

File this supplement with the service manual.

**Subject: Addition of CET (East European, Russia) Model**

#### **Addition of CET (East European, Russia) model**

CET (East European, Russia) model have been added.

This is the same as AEP model which is not described in this supplement-1.

Refer to ICF-C233L original service manual (9-923-906-00) for other information.

#### **DIFFERENCE TABLE**

Page	AEP model				CET model			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
19			ACCESSORIES & PACKING MATERIALS *****				ACCESSORIES & PACKING MATERIALS *****	
		3-810-941-31	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN, DUTCH)			3-810-941-31	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN, DUTCH)	
						3-810-941-51	MANUAL, INSTRUCTION (ENGLISH, POLISH, CZECH, HUNGARIAN)	