

# ICF-C720/C720L

## SERVICE MANUAL

AEP Model  
ICF-C720/C720L

UK Model  
ICF-C720L

Australian Model  
ICF-C720

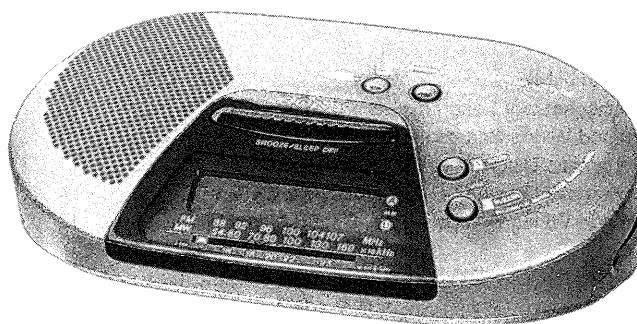


Photo : ICF-C720L

### SPECIFICATIONS

#### Time display:

Australia, UK:12-hour system

Other countries:24-hour system

#### Frequency range:

	Band	ICF-C720	ICF-C720L
EE	FM		65-108 MHz
	MW		531-1,602 kHz
	LW		153-255 kHz
Italy	FM	87.5-108 MHz	—
	AM	526.5-1,606.5 kHz	—
Other countries	FM	87.6-107.5 MHz	87.6-107.5 MHz
	AM		
	(MW)	531-1,602kHz	531-1,602 kHz
	LW	—	153-255 kHz

#### Intermediate frequency:

FM:10.7 MHz, AM(MW):455kHz

Speaker: Approx.6.6cm (2<sup>5</sup>/<sub>8</sub> inches) dia., 8Ω

Power output: 100 mW (at 10% harmonic distortion)

#### Power requirements:

Australia, UK: 240 V AC, 50 Hz

Other countries: 220-230 V AC, 50 Hz

For power backup: 9 V DC, one 6F22 battery

#### Battery life:

Approx. 40 hours using the Sony S-006P(U) battery

#### Dimensions:

Approx.233 × 77 × 140 mm (w/h/d)  
(9<sup>1</sup>/<sub>4</sub> × 3<sup>1</sup>/<sub>8</sub> × 5<sup>5</sup>/<sub>8</sub> inches) incl. projecting parts and controls

Mass: Approx.690 g (1 lb 8 oz) not incl. battery

Design and specifications are subject to change without notice.

#### Note

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

ICF-C720 : FM/AM CLOCK RADIO  
ICF-C720L : FM/MW/LW 3BAND CLOCK RADIO

# SONY®



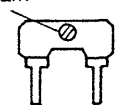
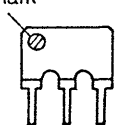
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### HOW TO CHANGED THE CERAMIC FILTERS

This model is used two ceramic filters of CF1 and CF3. You must use same type of color marked ceramic filters in order to meet same specifications.

Therefore, the ceramic filter must be changed two pieces together since it's supplied in two pieces in one package as a spare part.

 <p style="text-align: right; margin-right: 5px;">CF1</p>	<b>mark</b>	<b>center frequency</b>
	red	10.70MHz
	blue	10.67MHz
 <p style="text-align: right; margin-right: 5px;">CF3</p>	orange	10.73MHz
	black	10.64MHz
	white	10.76MHz

#### Notes on chip component replacement

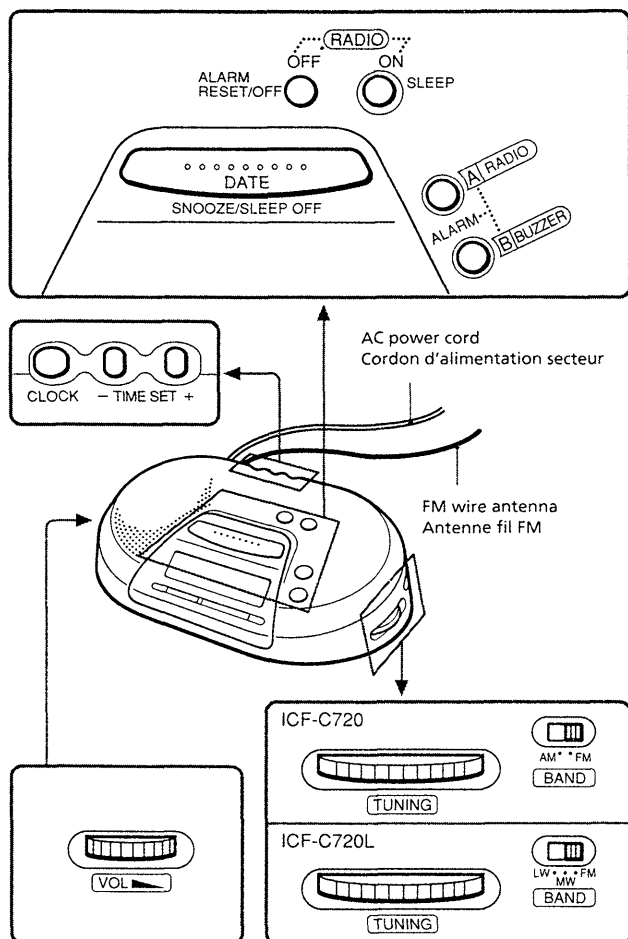
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

#### SAFETY-RELATED COMPONENT WARNING !!

**COMPONENTS IDENTIFIED BY MARK  $\Delta$  OR DOTTED LINE WITH MARK  $\Delta$  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.



### Installing the Battery

To keep good time, your Dream Machine needs one 6F22 battery (not supplied), in addition to house current. The battery keeps the clock operating in the event of a power interruption. Before setting the time on your Dream Machine, open the lid at the bottom of the unit, install the battery with correct polarity and then close the lid.

- After a power interruption, the displayed time may not be always correct (It may gain or lose about 10 minutes per hour).

### Knowing When To Replace the Battery

To check battery power, unplug the power cord from the wall outlet and plug it in again after a few minutes. If the displayed time is incorrect, replace the battery with a new one.

## Setting the Clock and the Date

### Setting the Clock

1. Plug in the unit.  
The display will flash "AM 12:00" or "0:00".
2. While holding down **CLOCK**, press either **+** or **-** under **TIME SET** till the correct time appears in the display.  
When you release **CLOCK**, the clock begins to operate.

- 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 the **+** or **-** button while holding down **CLOCK**.

### Setting the Date

1. While holding down **SNOOZE/DATE/SLEEP OFF**, press either **+** or **-** under **TIME SET** till the correct date appears in the display. Then, release **SNOOZE/DATE/SLEEP OFF**.

- To display the date, press **SNOOZE/DATE/SLEEP OFF**. The display returns to the current time when you release **SNOOZE/DATE/SLEEP OFF**.

## Operating the Radio

1. Press **RADIO ON/SLEEP** to turn on the radio and adjust **VOL** (volume).
2. Select the **BAND** (**FM** or **AM** for ICF-C720, **FM, MW** or **LW** for ICF-C720L) and tune in a station using the **TUNING** dial.

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

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## Setting the Alarm

To set the radio alarm, first tune in a station and adjust the volume.

### 1. While holding down **ALARM**

**A RADIO** (for the radio) or **B BUZZER** (for the buzzer), press either **+** or **-** under **TIME SET** till the desired time appears in the display. When you release **ALARM A** or **B**, the **ALARM A** or **B** indicator stops flashing and lights up, and the current time appears in the display.

The alarm will come on at the preset time and automatically turn itself off after 59 minutes.

- If you set **ALARM A** and **ALARM B** at the same desired time, only **ALARM A** will work.
- To shut off the alarm, press **RADIO OFF/ALARM RESET/OFF**. The alarm will come on at the preset time the next day.
- To cancel either alarm, while holding down **ALARM A** or **ALARM B**, press **RADIO OFF/ALARM RESET/OFF**.
- To doze for a few more minutes, press **SNOOZE/DATE/SLEEP OFF**. The alarm will shut off, but will come on again after about 6 minutes. You can repeat this process as many times as you like.
- To adjust the radio alarm volume, turn **VOL**. The buzzer volume is fixed.
- To check the preset time, press **ALARM A** or **B**.

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## Setting the Sleep Timer

Enjoy falling asleep to the radio using the built-in sleep timer that shuts off the radio automatically at a preset time.

### 1. Press **RADIO ON/SLEEP**.

The radio turns on. You can set the sleep timer of 90, 60, 45, 30 or 15 minutes.

Every push changes the display as follows.

Current → 90 → 60 → 45 → 30 → 15  
time



The radio will play for the time you set, then shut off.

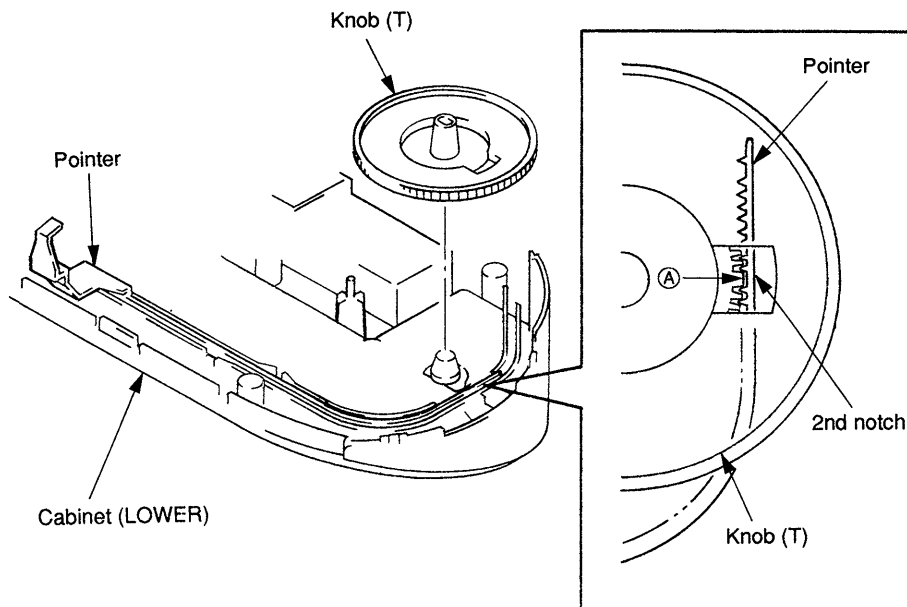
- To turn off the radio before the preset time, press **SNOOZE/DATE/SLEEP OFF**.

## SECTION 2

### SERVICING NOTE

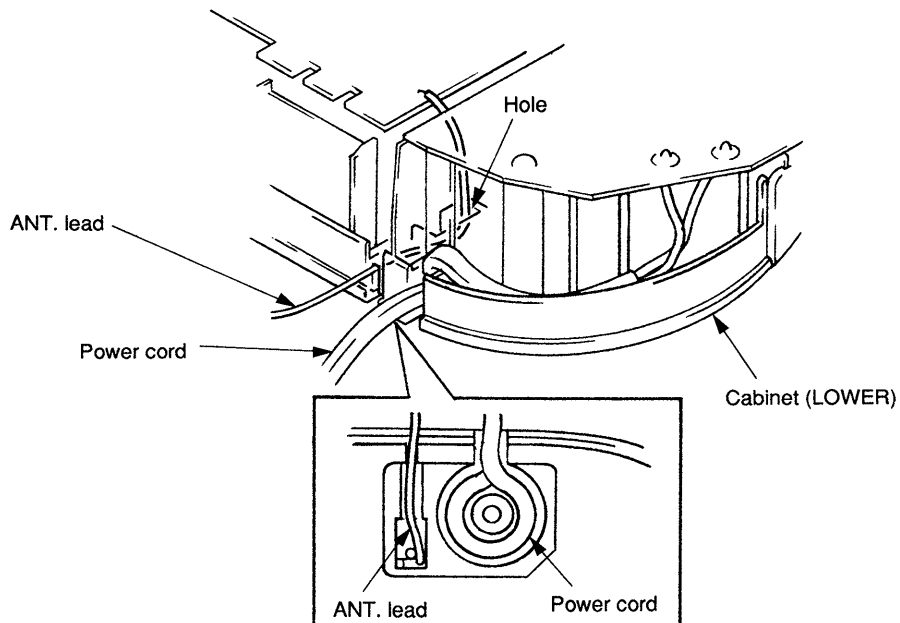
#### • DIAL POINTER SETTING

Install the Dial Pointer setting (A) of the Knob (T) according to the 2nd notch of Pointer.



#### • SET THE POWER CORD AND ANT. LEAD

- 1 Pull around and arrange the Power cord along the edge of the Cabinet (LOWER) as shown in the figure.
- 2 Thread and arrange the ANT. lead through a hole of the Cabinet (LOWER) as shown in the figure.



## SECTION 3 ELECTRICAL ADJUSTMENTS

ICF-C720

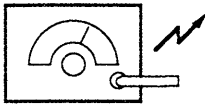
( ) : Italian Model

### AM Section

#### Setting :

BAND switch : AM  
Volume (RV101) : MIN

AM RF signal generator



Put the lead-wire antenna close to the set.

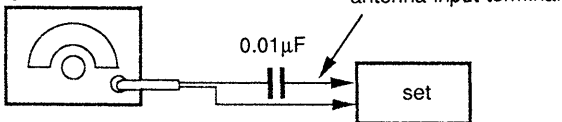
30% amplitude modulation  
by 400Hz signal.  
output level : as low as possible

### FM Section

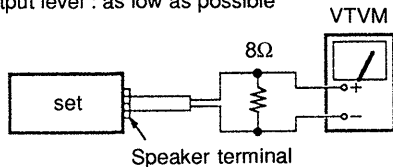
#### Setting :

BAND switch : FM  
Volume (RV101) : MIN

FM RF signal generator



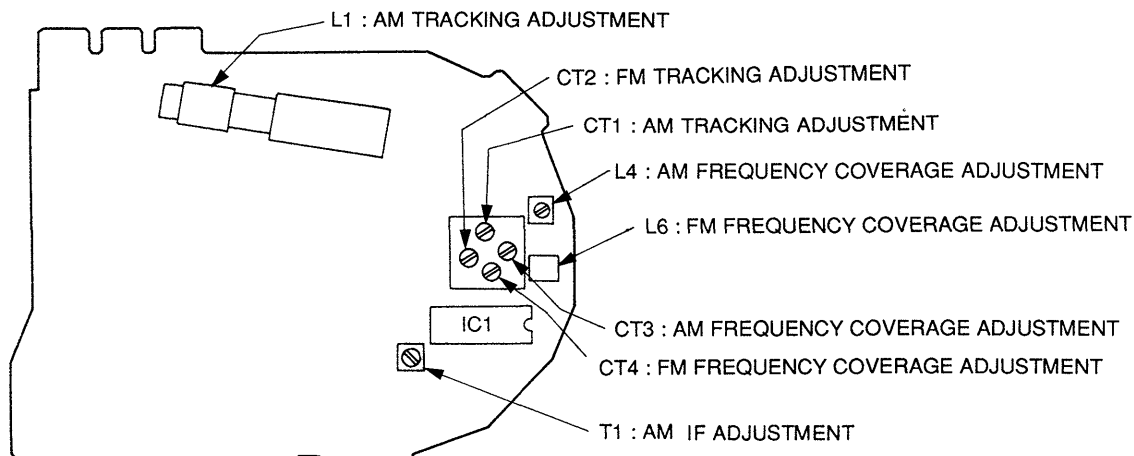
$\pm 22.5\text{kHz}$  frequency deviation by 400Hz signal.  
output level : as low as possible



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

#### Adjustment Location :

**[MAIN board]** — Component Side —



AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	455kHz

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	520kHz (516.5kHz)
CT4	1,650kHz (1631.5kHz)

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	680kHz
CT1	1,360kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L6	86.5MHz (87.35MHz)
CT3	109.5MHz (108.25MHz)

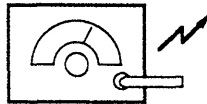
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT2	109.5MHz (108.25MHz)

**AM Section**

**Setting :**

BAND switch : MW or LW  
Volume (RV101) : MIN

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**

**Setting :**

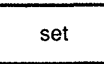
BAND switch : FM  
Volume (RV101) : MIN

FM RF signal generator

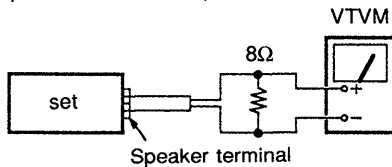


antenna input terminal

0.01μF



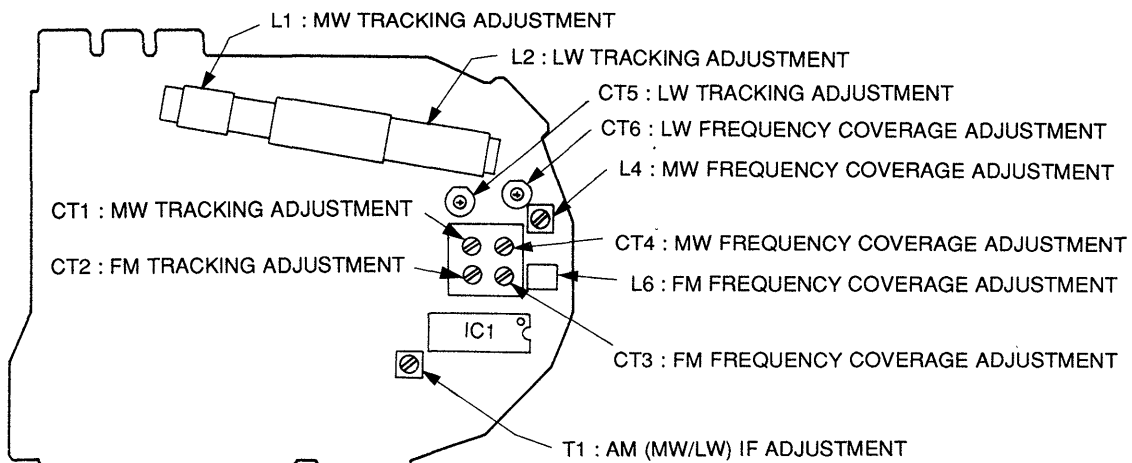
± 22.5kHz frequency deviation by 400Hz signal.  
output level : as low as possible



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

**Adjustment Location :**

**[MAIN board]** — Component Side —



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

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	520kHz
CT4	1,650kHz

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	780kHz
CT1	1,360kHz

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

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	160kHz
CT5	240kHz

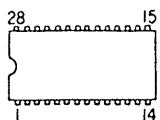
FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L6	86.5MHz (64.0MHz)
CT3	109.5MHz (109.5MHz)

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT2	109.5MHz (109.5MHz)

## SECTION 4 DIAGRAMS

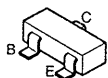
### 4-1. SEMICONDUCTOR LEAD LAYOUTS

**CXA1019S**

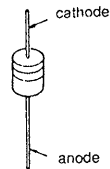


(Top view)

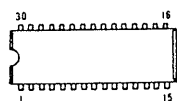
**DTA144EK  
2SD596DV345**



**RD5.1ES-B1  
1SS119**

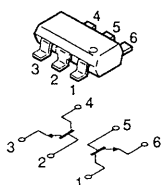


**LC85632**

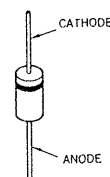


(Top view)

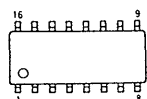
**XN4504**



**10E2**

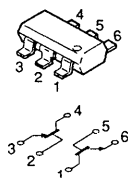


**MC14060BF**

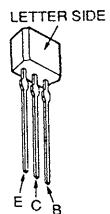


(TOP VIEW)

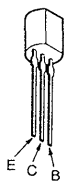
**XN4601**



**2SA1175-HFE  
2SC2785-HFE**



**2SC2001TP-K1K2**

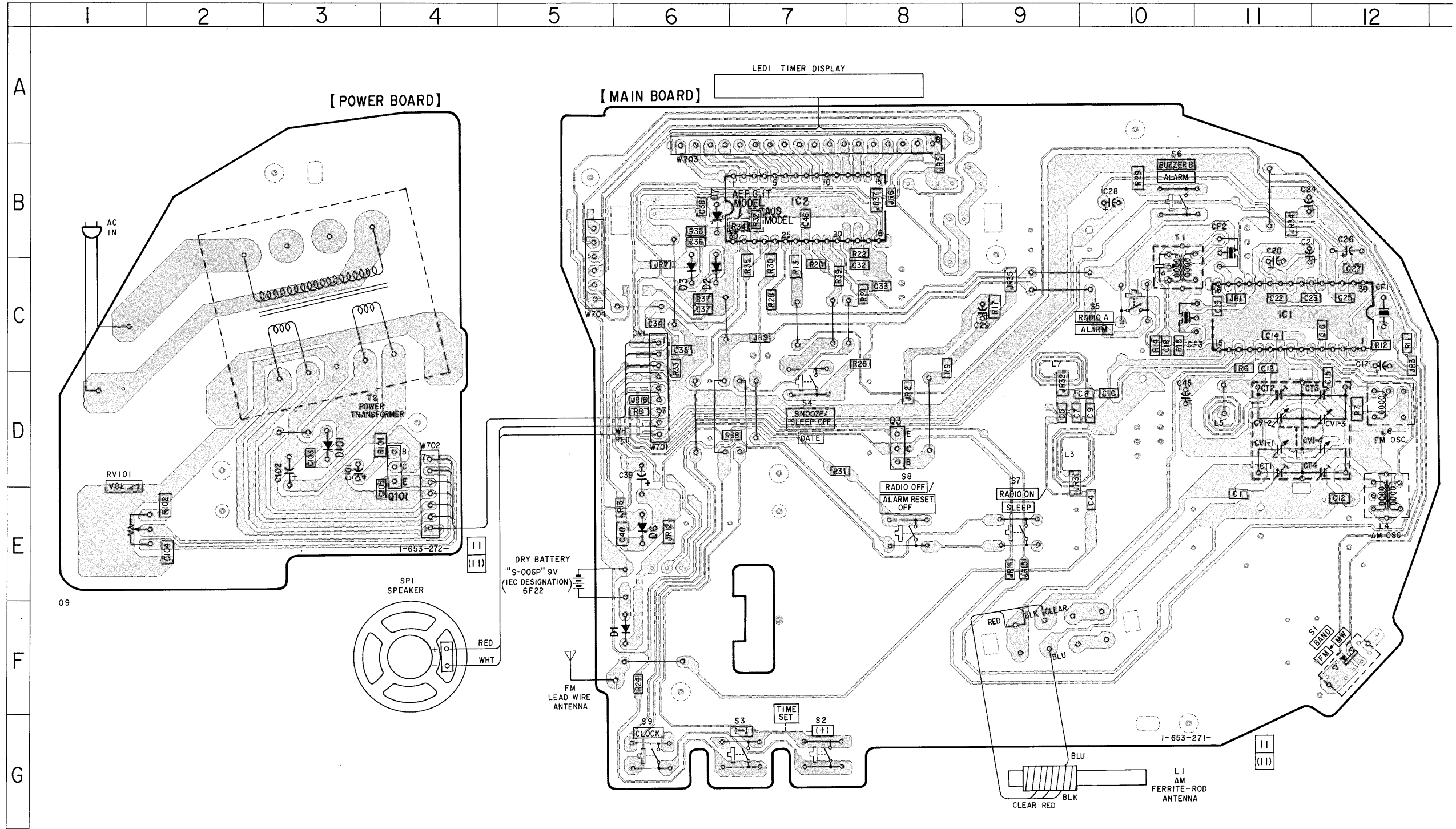




4-2. PRINTED WIRING BOARDS — ICF-C720 MODEL —  
 • See page 8 for Semiconductor Lead Layouts.

• Semiconductor Location

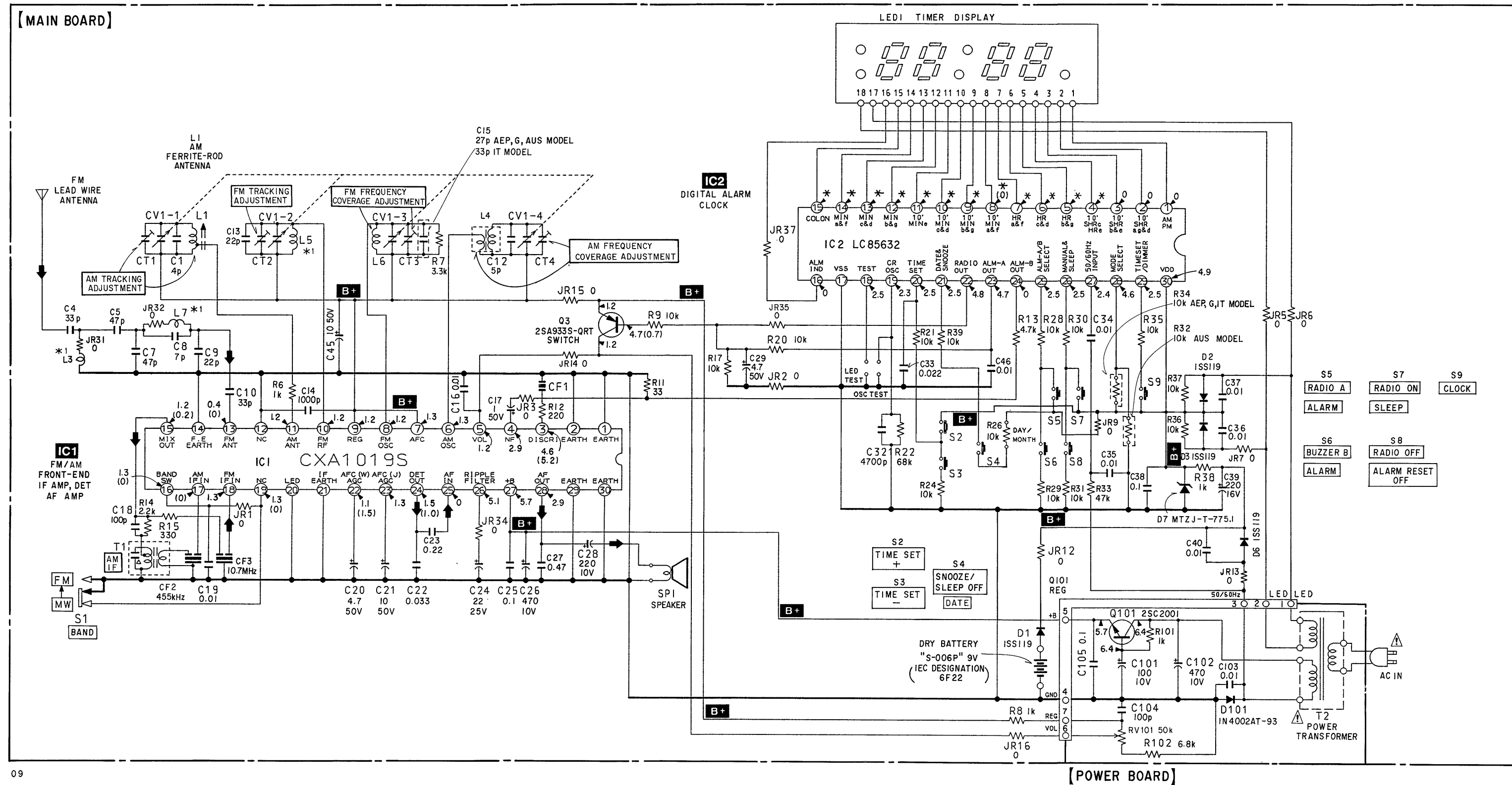
Ref. No.	Location
D1	F-6
D2	C-6
D3	C-6
D6	E-6
D7	B-6
D101	D-3
IC1	C-11
IC2	B-7
Q3	D-8
Q101	D-4



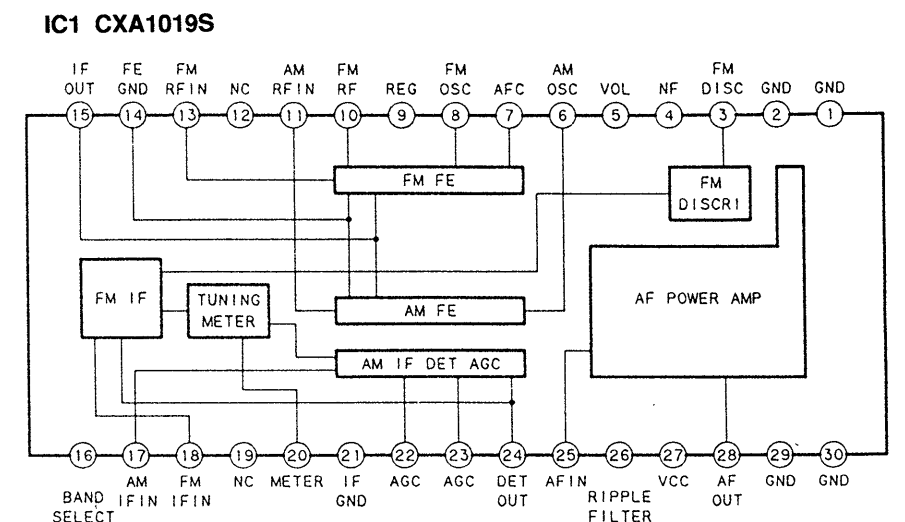
Note:

- ○ : parts extracted from the component side.
- △ : internal component.
- ▭ : Pattern from the side which enable seeing.
- Abbreviation  
 G : German model.  
 IT : Italian model.  
 AUS : Australian model.

4-3. SCHEMATIC DIAGRAM — ICF-C720 MODEL —



• IC Block Diagram

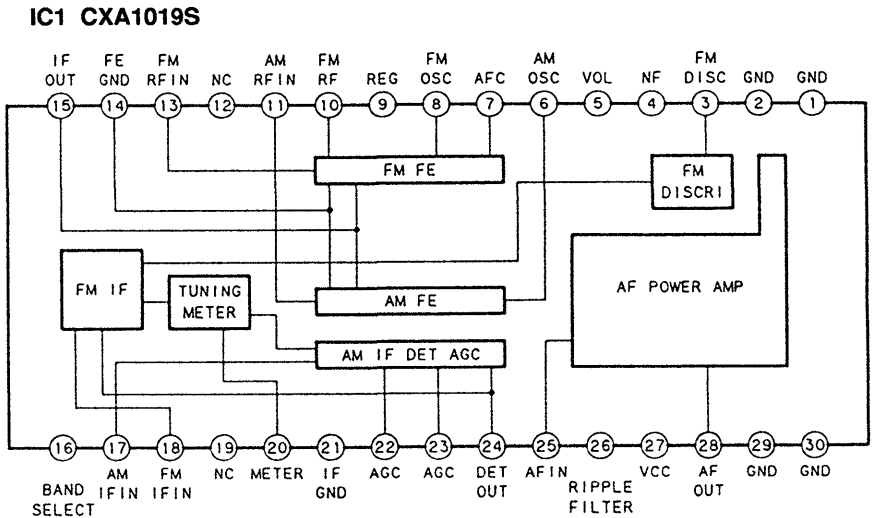


- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} = \mu\text{F} \times 10^{-6}$ . 50VW or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and 1/4W or less unless otherwise specified.
  - $\Delta$  : internal component.
  - $\square$  : 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.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- ( ) : AM
- \* : can not be measured.
- Volts are taken with a VOM (Input impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\rightarrow$  : FM
- \*1 : Printed pattern functions as a kind of coil.
- Abbreviation
- G : German model.
- IT : Italian model.
- AUS : Australian model.

4-4. SCHEMATIC DIAGRAM — ICF-C720L MODEL —

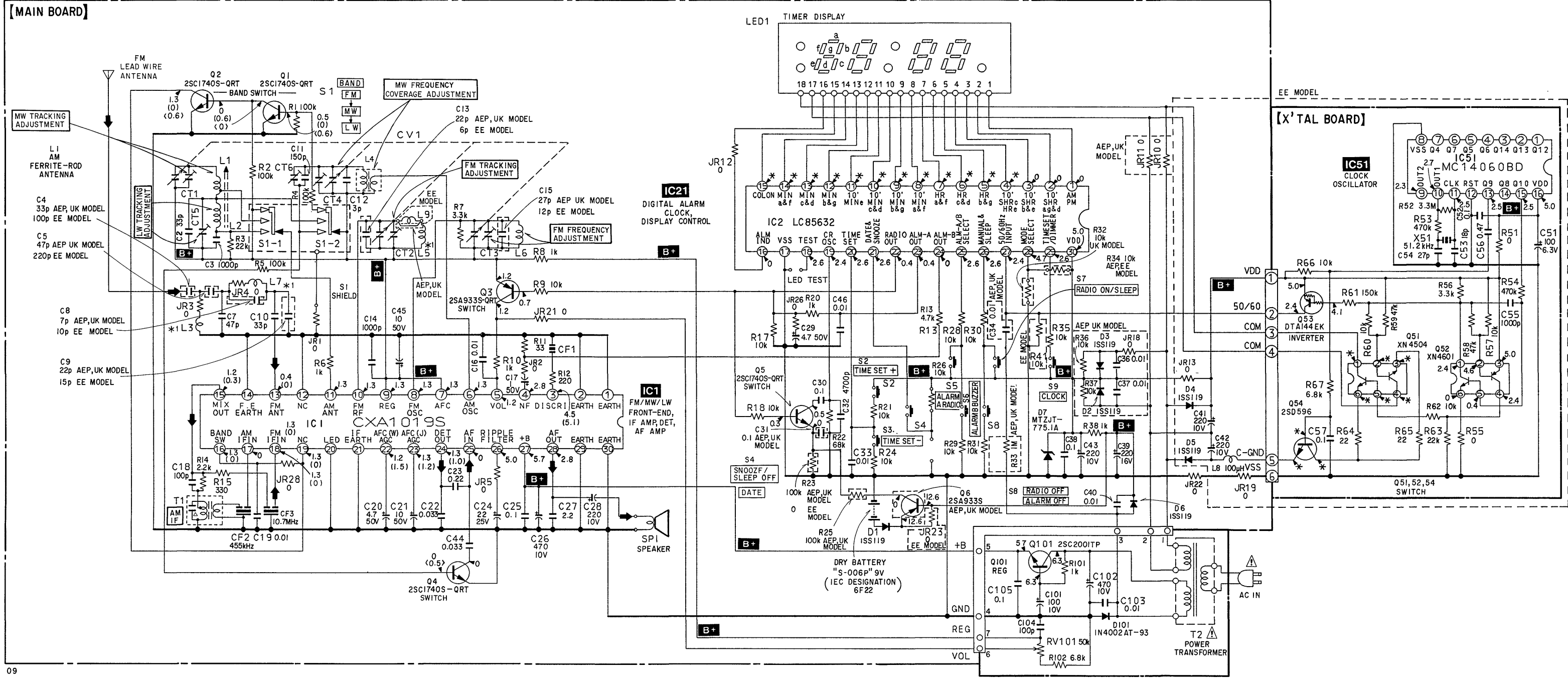
• IC Block Diagram



- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}:\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and 1/4W 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.

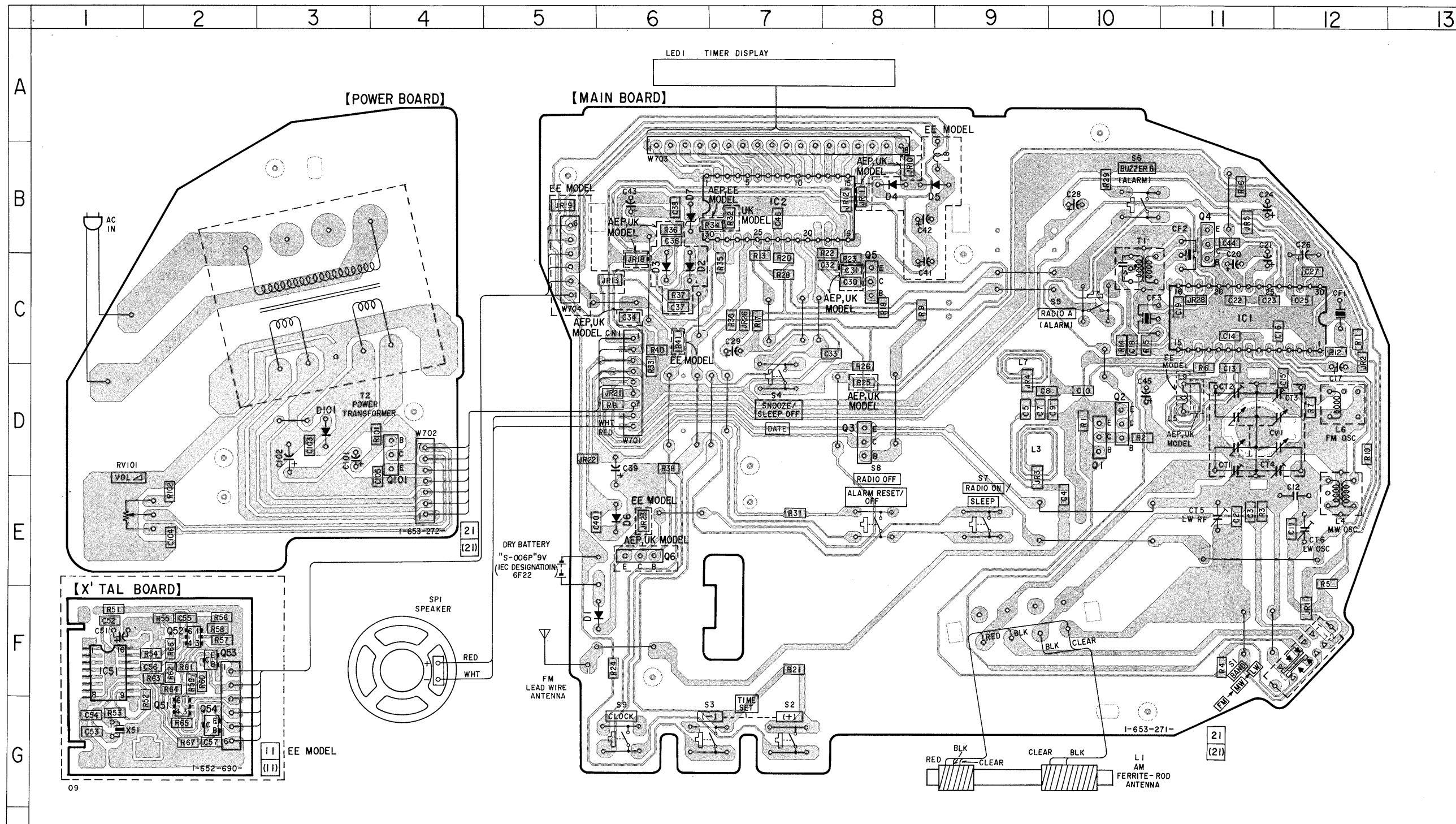
- B+** : B+ Line
- $\square$  : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions. no mark : FM ( ) : MW < > : LW \* : can not be measured.
- Voltages are taken with a VOM (Input impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.  $\rightarrow$  : FM \*1 : Printed pattern functions as a kind of coil.
- Abbreviation EE : East European model.



09

[POWER BOARD]

4-5. PRINTED WIRING BOARDS — ICF-C720L MODEL —  
 • See page 8 for Semiconductor Lead Layouts.



• Semiconductor Location

Ref. No.	Location
D1	F-5
D2	C-6
D3	C-6
D4	B-8
D5	B-8
D6	E-6
D7	B-6
D101	D-3
IC1	C-11
IC2	B-7
IC51	F-1
Q1	D-10
Q2	D-10
Q3	D-8
Q4	B-11
Q5	C-8
Q6	E-6
Q51	G-2
Q52	F-2
Q53	F-2
Q54	G-2
Q101	D-4

**Note:**  
 • ○ : parts extracted from the component side.  
 • △ : internal component.  
 • ▨ : Pattern from the side which enable seeing.  
 • Abbreviation  
 EE : East European model.

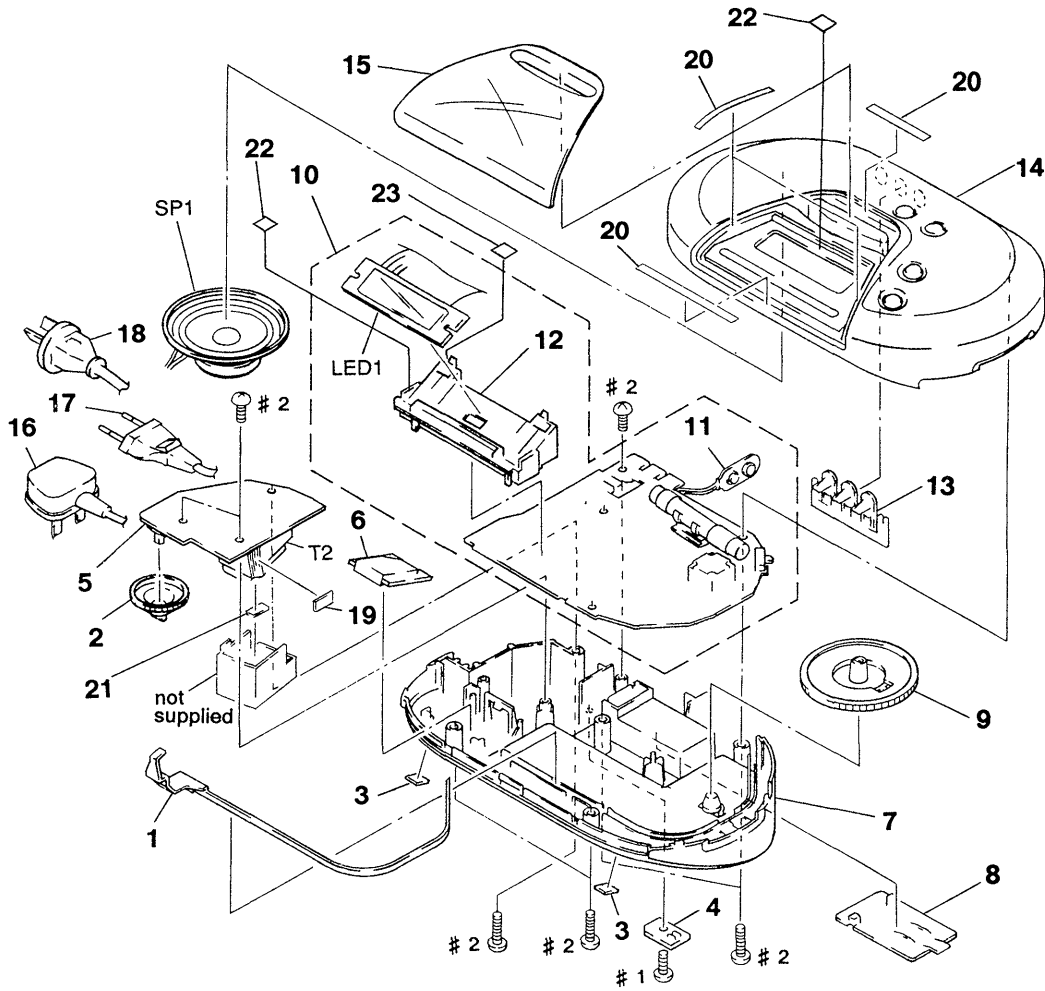
# SECTION 5 EXPLODED VIEWS

**NOTE:**

- Items marked “ \* ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviations  
 G : German model  
 IT : Italian model  
 EE : East European model  
 AUS : Australian model

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	Ref. No.	Part No.	Description	Remark
1	3-914-596-01	POINTER		13	3-914-600-21	BUTTON (TIME SET) (GRAY)	
2	3-382-175-31	KNOB (V)		14	X-3368-868-1	CABINET (UPPER) ASSY (GRAY) (C720:AEP, G)	
3	3-368-852-01	FOOT		14	X-3368-869-1	CABINET (UPPER) ASSY (WHITE) (C720:AEP, G)	
4	3-903-160-01	STOPPER (CODE) (GRAY)		14	X-3368-870-1	CABINET (UPPER) ASSY (GRAY) (C720:IT)	
4	3-903-160-11	STOPPER (CODE) (WHITE)		14	X-3368-871-1	CABINET (UPPER) ASSY (WHITE) (C720:IT)	
* 5	A-3662-035-A	POWER BOARD, COMPLETE (C720)		14	X-3369-056-1	CABINET (UPPER) ASSY (GRAY) (C720:AEP)	
* 5	A-3662-105-A	POWER BOARD, COMPLETE (C720L:UK)		14	X-3369-057-1	CABINET (UPPER) ASSY (WHITE) (C720L:AEP)	
* 5	A-3662-117-A	POWER BOARD, COMPLETE (C720L:AEP, EE)		14	X-3369-058-1	CABINET (UPPER) ASSY (GRAY) (C720L:EE)	
* 6	A-3662-120-A	X'TAL BOARD, COMPLETE (C720L:EE)		14	X-3369-059-1	CABINET (UPPER) ASSY (WHITE) (C720L:EE)	
7	3-914-593-01	CABINET (LOWER) (GRAY) (C720:AEP, G, IT)		14	X-3369-060-1	CABINET (UPPER) ASSY (GRAY) (C720L:UK)	
7	3-914-593-11	CABINET (LOWER) (WHITE) (C720:AEP, G, IT)		14	X-3369-061-1	CABINET (UPPER) ASSY (WHITE) (C720L:UK)	
7	3-914-593-21	CABINET (LOWER) (GRAY) (C720L:AEP, EE)		14	X-3369-230-1	CABINET (UPPER) ASSY (GRAY) (C720:AUS)	
7	3-914-593-31	CABINET (LOWER) (WHITE) (C720L:AEP, EE)		14	X-3369-231-1	CABINET (UPPER) ASSY (WHITE) (C720:AUS)	
7	3-914-593-41	CABINET (LOWER) (GRAY) (C720L:UK)		15	3-914-594-01	PLATE, TRANSPARENT	
7	3-914-593-51	CABINET (LOWER) (WHITE) (C720L:UK)		△16	1-696-572-21	CORD, POWER (GRAY) (UK)	
7	3-914-593-61	CABINET (LOWER) (GRAY) (C720:AUS)		△16	1-751-112-11	CORD, POWER (WHITE) (UK)	
7	3-914-593-71	CABINET (LOWER) (WHITE) (C720:AUS)		△17	1-555-795-00	CORD, POWER (GRAY) (AEP, EE, G, IT)	
8	3-369-135-01	LID, BATTERY CASE		△17	1-551-958-21	CORD, POWER (WHITE) (AEP, EE, G, IT)	
9	3-369-138-01	KNOB (T)		△18	1-765-458-11	CORD, POWER (AUS)	
* 10	A-3662-030-A	MAIN BOARD, COMPLETE (C720:AEP, G)		19	3-846-067-01	SPACER C	
* 10	A-3662-031-A	MAIN BOARD, COMPLETE (C720:IT)		20	3-918-369-01	SHEET, ADHESIVE	
* 10	A-3662-102-A	MAIN BOARD, COMPLETE (C720L:UK)		21	9-911-840-XX	CUSHION	
* 10	A-3662-108-A	MAIN BOARD, COMPLETE (C720L:AEP)		22	3-831-441-XX	SHEET (1)	
* 10	A-3662-114-A	MAIN BOARD, COMPLETE (C720L:EE)		23	2-532-810-00	CUSHION	
* 10	A-3662-152-A	MAIN BOARD, COMPLETE (C720:AUS)		LED1	1-810-026-21	DIODE SL-1994-55T	
11	1-535-804-11	SNAP, BATTERY		SP1	1-503-082-00	SPEAKER (6.6CM)	
12	3-914-601-01	HOLDER (LED)		△T2	1-449-940-11	TRANSFORMER, POWER	
13	3-914-600-11	BUTTON (TIME SET) (WHITE)					

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

# SECTION 6 ELECTRICAL PARTS LIST

**MAIN**

NOTE:

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 name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -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
- SEMICONDUCTORS  
In each case, u:  $\mu$  , for example:  
uA...:  $\mu$  A..., uPA...:  $\mu$  PA..., uPB...:  $\mu$  PB...,  
uPC...:  $\mu$  PC..., uPD...:  $\mu$  PD...
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F : nonflammable
- CAPACITORS  
uF :  $\mu$  F
- COILS  
uH :  $\mu$  H
- Abbreviations  
G : German model  
IT : Italian model  
EE : East European model  
AUS : Australian model

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	A-3662-030-A	MAIN BOARD, COMPLETE (C720:AEP,G) *****		C12	1-163-088-00	CERAMIC CHIP 5PF	50V (C720)
*	A-3662-031-A	MAIN BOARD, COMPLETE (C720:IT) *****		C13	1-163-089-00	CERAMIC CHIP 6PF	50V (C720L:EE)
*	A-3662-102-A	MAIN BOARD, COMPLETE (C720L:UK) *****		C13	1-163-101-00	CERAMIC CHIP 22PF 5%	50V (C720/C720L:AEP, UK)
*	A-3662-108-A	MAIN BOARD, COMPLETE (C720L:AEP) *****		C14	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
*	A-3662-114-A	MAIN BOARD, COMPLETE (C720L:EE) *****		C15	1-136-103-00	CERAMIC CHIP 27PF 5%	50V (C720:AEP, G, AUS)
*	A-3662-152-A	MAIN BOARD, COMPLETE (C720:AUS) *****		C15	1-163-095-00	CERAMIC CHIP 12PF 5%	50V (C720L:EE)
	1-535-804-11	SNAP, BATTERY		C15	1-163-103-00	CERAMIC CHIP 27PF 5%	50V (C720L:AEP, UK)
*	1-568-275-11	SOCKET, CONNECTOR 9P		C15	1-163-105-00	CERAMIC CHIP 33PF 5%	50V (C720:IT)
	3-914-601-01	HOLDER (LED)		C16	1-163-031-11	CERAMIC CHIP 0.01uF	50V
	< CAPACITOR >			C17	1-124-903-11	ELECT 1uF 20%	50V
C1	1-163-087-00	CERAMIC CHIP 4PF	50V (C720)	C18	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C2	1-163-105-00	CERAMIC CHIP 33PF 5%	50V (C720L)	C19	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C3	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V (C720L)	C20	1-124-927-11	ELECT 4.7uF 20%	100V
C4	1-163-105-00	CERAMIC CHIP 33PF 5%	50V (C720/C720L:AEP, UK)	C21	1-124-907-11	ELECT 10uF 20%	50V
C4	1-163-117-00	CERAMIC CHIP 100PF 5%	50V (C720L:EE)	C22	1-163-989-11	CERAMIC CHIP 0.033uF 10%	25V
C5	1-163-109-00	CERAMIC CHIP 47PF 5%	50V (C720/C720L:AEP, UK)	C23	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C5	1-163-125-00	CERAMIC CHIP 220PF 5%	50V (C720L:EE)	C24	1-126-233-11	ELECT 22uF 20%	50V
C7	1-163-109-00	CERAMIC CHIP 47PF 5%	50V	C25	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C8	1-163-090-00	CERAMIC CHIP 7PF	50V (C720/C720L:AEP, UK)	C26	1-126-925-11	ELECT 470uF 20%	10V
C8	1-163-093-00	CERAMIC CHIP 10PF 5%	50V (C720L:EE)	C27	1-164-005-11	CERAMIC CHIP 0.47uF	25V (C720)
C9	1-163-097-00	CERAMIC CHIP 15PF 5%	50V (C720L:EE)	C27	1-164-505-11	CERAMIC CHIP 2.2uF	16V (C720L)
C9	1-163-101-00	CERAMIC CHIP 22PF 5%	50V (C720/C720L:AEP, UK)	C28	1-126-176-11	ELECT 220uF 20%	10V
C10	1-163-105-00	CERAMIC CHIP 33PF 5%	50V	C29	1-124-927-11	ELECT 4.7uF 20%	100V
C11	1-163-121-00	CERAMIC CHIP 150PF 5%	50V (C720L)	C30	1-163-038-00	CERAMIC CHIP 0.1uF	25V (C720L)
C12	1-102-936-00	CERAMIC 3.0PF +-0.25PF	50V (C720L)	C31	1-163-038-00	CERAMIC CHIP 0.1uF	25V (C720L:AEP, UK)
				C32	1-163-017-00	CERAMIC CHIP 0.0047uF 5%	50V
				C33	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720L)
				C33	1-163-033-00	CERAMIC CHIP 0.022uF	50V (C720)
				C34	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720/C720L:AEP, UK)
				C35	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720)
				C36	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720/C720L:AEP, UK)
				C37	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720/C720L:AEP, UK)
				C38	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V

# MAIN

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C39	1-124-120-11	ELECT	220uF 20% 25V	JR9	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)	
C40	1-163-031-11	CERAMIC CHIP	0.01uF 50V	JR10	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720L:AEP, UK)	
C41	1-126-923-11	ELECT	220uF 20% 10V (C720L:EE)	JR11	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720L:AEP, UK)	
C42	1-126-923-11	ELECT	220uF 20% 10V (C720L:EE)	JR12	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)	
C43	1-126-923-11	ELECT	220uF 20% 10V (C720L)	JR12	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720L)	
C44	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V (C720L)	JR13	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)	
C45	1-124-907-11	ELECT	10uF 20% 50V	JR13	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720L:EE)	
C46	1-163-031-11	CERAMIC CHIP	0.01uF 50V	JR14	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)	
< FILTER >				JR15	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)	
CF1	1-567-097-61	FILTER, CERAMIC		JR16	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)	
CF2	1-577-072-11	FILTER, CERAMIC (455kHz) (C720)		JR18	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720L:AEP, UK)	
CF2	1-578-677-11	FILTER, CRYSTAL (455kHz) (C720L)		JR19	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720L:EE)	
CF3	1-567-097-61	FILTER, CERAMIC (10.7MHz)		JR21	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720L)	
< TRIMMER >				JR22	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720L)	
CT5	1-141-443-11	TRIMMER, CERAMIC (C720L)		JR23	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720L:EE)	
CT6	1-141-443-11	TRIMMER, CERAMIC (C720L)		JR26	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720L)	
< VARIABLE CAPACITOR >				JR28	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720L)	
CV1	1-151-628-11	CAP, VARIABLE (C720/C720L:AEP, UK)		JR31	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720)	
CV1	1-151-648-11	CAP, VARIABLE (C720L:EE)		JR32	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720)	
< DIODE >				JR34	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720)	
D1	8-719-911-19	DIODE 1SS119		JR35	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720)	
D2	8-719-911-19	DIODE 1SS119 (C720/C720L:AEP, UK)		JR37	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720)	
D3	8-719-911-19	DIODE 1SS119 (C720/C720L:AEP, UK)		< COIL >			
D4	8-719-911-19	DIODE 1SS119 (C720L:EE)		L1	1-402-413-21	ANTENNA, FERRITE-ROD (MW) (C720)	
D5	8-719-911-19	DIODE 1SS119 (C720L:EE)		L1	1-402-584-11	ANTENNA, FERRITE-ROD (WM/LW) (C720L)	
D6	8-719-911-19	DIODE 1SS119		L4	1-406-028-00	COIL, OSC (MW)	
D7	8-719-109-84	DIODE RD5.1ES-B1		L6	1-406-425-11	COIL (C720:IT)	
< IC >				L6	1-428-163-11	COIL, AIR-CORE (C720:AEP, G, AUS/C720L:AEP, UK)	
IC1	8-752-035-29	IC CXA1019S		* L6	1-428-230-11	COIL, AIR-CORE (C720L:EE)	
IC2	8-759-193-05	IC LC85632		L8	1-410-521-11	INDUCTOR 100uH (C720L:EE)	
< JUMPER RESISTOR >				L9	1-409-933-11	COIL, AIR-CORE (C720L:EE)	
JR1	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)		< LED >			
JR1	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720L)		LED1	1-810-026-21	DIODE SL-1994-55T	
JR2	1-216-295-91	METAL GLAZE 0 5% 1/10W		< TRANSISTOR >			
JR3	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)		Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE (C720L)	
JR3	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720L)		Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE (C720L)	
JR4	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720L)		Q3	8-729-119-76	TRANSISTOR 2SA1175-HFE	
JR5	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)		Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE (C720L)	
JR5	1-216-296-91	METAL GLAZE 0 5% 1/8W (C720L)		Q5	8-729-119-78	TRANSISTOR 2SC2785-HFE (C720L)	
JR6	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)		Q6	8-729-119-76	TRANSISTOR 2SA1175-HFE (C720L:AEP, UK)	
JR7	1-216-295-91	METAL GLAZE 0 5% 1/10W (C720)		< RESISTOR >			
				R1	1-216-097-00	METAL CHIP 100K 5% 1/10W (C720L)	



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R2	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L)	S2	1-554-937-11	SWITCH, KEY BOARD (TIME SET +)	
R3	1-216-081-00	METAL CHIP	22K 5% 1/10W (C720L)	S3	1-554-937-11	SWITCH, KEY BOARD (TIME SET -)	
R4	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L)	S4	1-554-937-11	SWITCH, KEY BOARD	
R5	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L)			(SNOOZE/SLEEP OFF/DATE)	
R6	1-216-049-00	METAL CHIP	1K 5% 1/10W	S5	1-554-937-11	SWITCH, KEY BOARD (ALARM/A RADIO)	
R7	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	S6	1-554-937-11	SWITCH, KEY BOARD (ALARM/B BUZZER)	
R8	1-216-049-00	METAL CHIP	1K 5% 1/10W	S7	1-554-937-11	SWITCH, KEY BOARD (RADIO ON/SLEEP)	
R9	1-216-073-00	METAL CHIP	10K 5% 1/10W	S8	1-554-937-11	SWITCH, KEY BOARD	
R10	1-216-049-00	METAL CHIP	1K 5% 1/10W (C720L)			(RADIO OFF/ALARM RESET OFF/DATE)	
R11	1-216-013-00	METAL CHIP	33 5% 1/10W	S9	1-554-937-11	SWITCH, KEY BOARD (CLOCK)	
R12	1-216-033-00	METAL CHIP	220 5% 1/10W			< TRANSFORMER >	
R13	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	T1	1-404-790-11	TRANSFORMER, IF (C720)	
R14	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	T1	1-404-902-21	TRANSFORMER, IF (C720L)	
R15	1-216-037-00	METAL CHIP	330 5% 1/10W			< CONNECTOR >	
R17	1-216-073-00	METAL CHIP	10K 5% 1/10W				
R18	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720L)	W703	1-765-726-11	CORD, CONNECTION 18P	
R20	1-216-049-00	METAL CHIP	1K 5% 1/10W (C720L)				
R20	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720)				
R21	1-216-073-00	METAL CHIP	10K 5% 1/10W				
R22	1-216-093-00	METAL CHIP	68K 5% 1/10W	*	A-3662-035-A	POWER BOARD, COMPLETE (C720)	
R23	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L:AEP, UK)			*****	
R23	1-216-296-91	METAL GLAZE	0 5% 1/8W (C720L:EE)	*	A-3662-105-A	POWER BOARD, COMPLETE (C720L:UK)	
R24	1-216-073-00	METAL CHIP	10K 5% 1/10W			*****	
R25	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L:AEP, UK)	*	A-3662-117-A	POWER BOARD, COMPLETE (C720L:AEP, EE)	
						*****	
R26	1-216-073-00	METAL CHIP	10K 5% 1/10W			< CAPACITOR >	
R28	1-216-073-00	METAL CHIP	10K 5% 1/10W	C101	1-124-443-00	ELECT	100uF 20% 10V
R29	1-216-073-00	METAL CHIP	10K 5% 1/10W	C102	1-124-472-11	ELECT	470uF 20% 10V
R30	1-216-073-00	METAL CHIP	10K 5% 1/10W	C103	1-163-031-11	CERAMIC CHIP	0.01uF 50V
R31	1-216-073-00	METAL CHIP	10K 5% 1/10W	C104	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
				C105	1-163-038-00	CERAMIC CHIP	0.1uF 25V
R32	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720:AUS/C720L:UK)			< DIODE >	
R33	1-216-089-91	METAL GLAZE	47K 5% 1/10W (C720)	D101	8-719-200-02	DIODE	10E2
R33	1-216-121-00	METAL CHIP	1M 5% 1/10W (C720L:AEP, G, UK)			< TRANSISTOR >	
R34	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720:AEP, G, IT/C720L:AEP, EE)	Q101	8-729-011-92	TRANSISTOR	2SC2001TP-K1K2
R35	1-216-073-00	METAL CHIP	10K 5% 1/10W			< RESISTOR >	
R36	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720/C720L:AEP, UK)				
R37	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720/C720L:AEP, UK)	R101	1-216-049-00	METAL CHIP	1K 5% 1/10W
R38	1-216-049-00	METAL CHIP	1K 5% 1/10W	R102	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R39	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720)			< VARIABLE RESISTOR >	
R41	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720L:EE)	RV101	1-241-542-11	RES, VAR, CRABON	50K (VOL $\nabla$ )
						< TRANSFORMER >	
S1	1-571-478-11	SWITCH, SLIDE (BAND) (C720)		△T2	1-449-940-11	TRANSFORMER, POWER	
S1	1-572-949-11	SWITCH, SLIDE (BAND) (C720L)					

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

**POWER X'TAL**

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
W702	1-751-399-11	CORD, CONNECTION	
*****			
*	A-3662-120-A	X'TAL BOARD, COMPLETE (C720L:EE)	
*****			
	1-765-685-11	CORD, CONNECTION	
< CAPACITOR >			
C51	1-124-584-00	ELECT 100uF 20% 10V	
C52	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C53	1-163-099-00	CERAMIC CHIP 18PF 5% 50V	
C54	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C55	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C56	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C57	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
< IC >			
IC51	8-759-009-08	IC MC14060BF-T1	
< TRANSISTOR >			
Q51	8-729-425-18	TRANSISTOR XN4504	
Q52	8-729-402-84	TRANSISTOR XN4601	
Q53	8-729-901-06	TRANSISTOR DTA144EK	
Q54	8-729-141-75	TRANSISTOR 2SD596DV345	
< RESISTOR >			
R51	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R52	1-216-133-00	METAL CHIP 3.3M 5% 1/10W	
R53	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R54	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R55	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R56	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R57	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R58	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R59	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R60	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R61	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R62	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R63	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R64	1-216-009-00	METAL CHIP 22 5% 1/10W	
R65	1-216-009-00	METAL CHIP 22 5% 1/10W	
R66	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R67	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
< VIBRATOR >			
X51	1-760-385-11	VIBRATOR, CRYSTAL (51.2kHz)	

Ref. No.	Part No.	Description	Remark
*****			
MISCELLANEOUS			
*****			
11	1-535-804-11	SNAP, BATTERY	
△16	1-696-572-21	CORD, POWER (GRAY) (UK)	
△16	1-751-112-11	CORD, POWER (WHITE) (UK)	
△17	1-555-795-00	CORD, POWER (GRAY) (AEP, EE, G, IT)	
△17	1-551-956-21	CORD, POWER (WHITE) (AEP, EE, G, IT)	
△18	1-765-458-11	CORD, POWER (AUS)	
LED1	1-810-026-21	DIODE SL-1994-55T	
SP1	1-503-082-00	SPEAKER (6.6CM)	
△T2	1-449-940-11	TRANSFORMER, POWER	
*****			
ACCESSORIES & PACKING MATERIALS			
*****			
3-759-078-11		MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH) (C720:AEP, AUS, G/C720L:AEP, UK)	
3-759-078-41		MANUAL, INSTRUCTION (SWEDISH, DUTCH, ITALIAN, PORTUGUESE) (C720:AEP, IT, G/C720L:AEP)	
3-759-078-61		MANUAL, INSTRUCTION (CZECH, HUNGARIAN, POLISH, RUSSIAN, ENGLISH) (C720L:EE)	
*	3-916-122-01	INDIVIDUAL CARTON (C720)	
*	3-917-957-01	INDIVIDUAL CARTON (C720L)	
*****			
*****			
HARDWARE LIST			
*****			
#1	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
#2	7-685-649-79	SCREW +P 3X14 TYPE2 NON-SLIT	

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

# ICF-C720/C720L

**SONY®**  
**SERVICE MANUAL**

*AEP Model*  
ICF-C720/C720L

*UK Model*  
ICF-C720L

*Australian Model*  
ICF-C720

## **SUPPLEMENT-1**

File this supplement with the service manual.

**Subject : 1. Board change**

(ENG-94006)

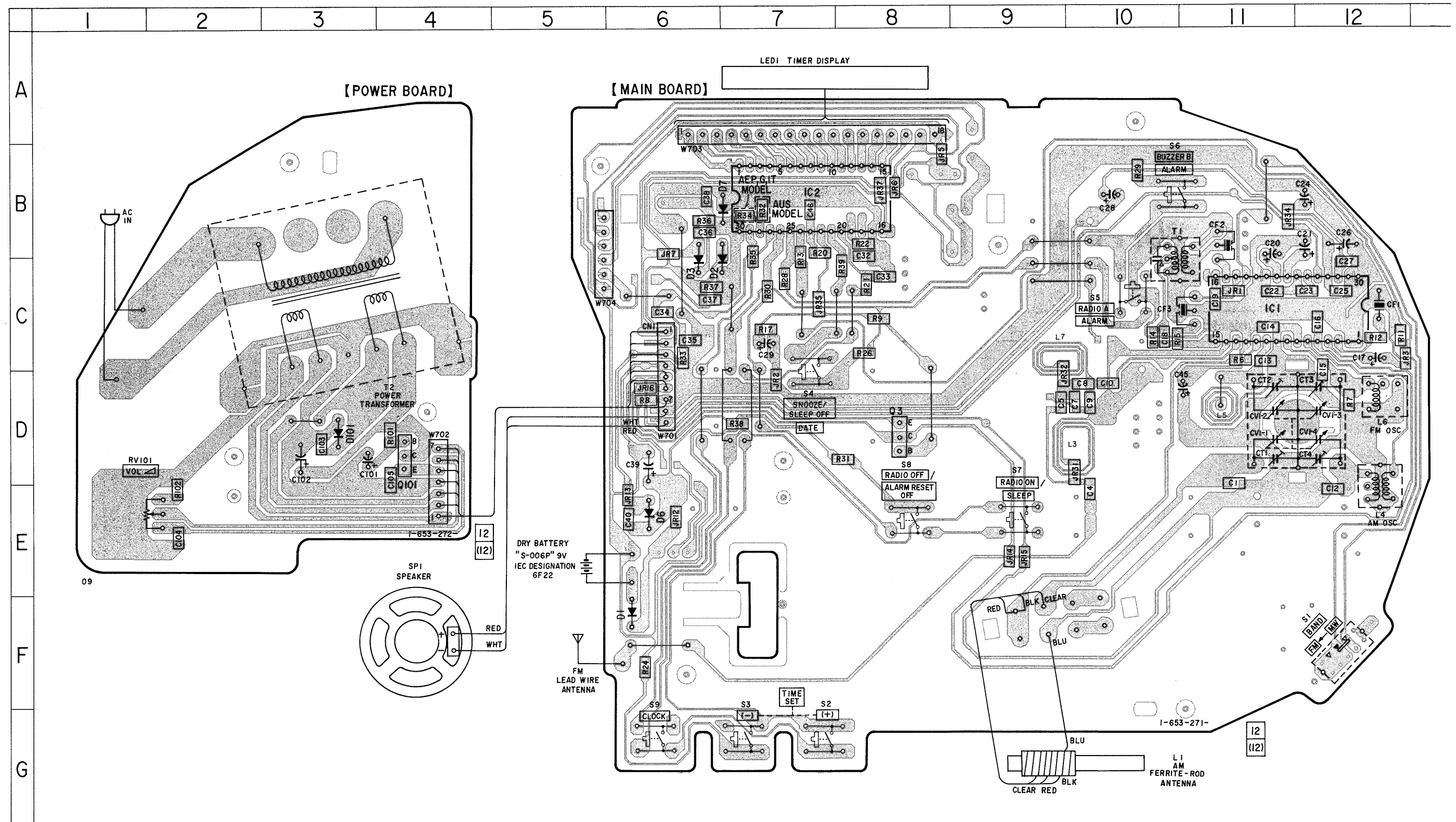


4-2. PRINTED WIRING BOARDS — ICF-C720 MODEL —

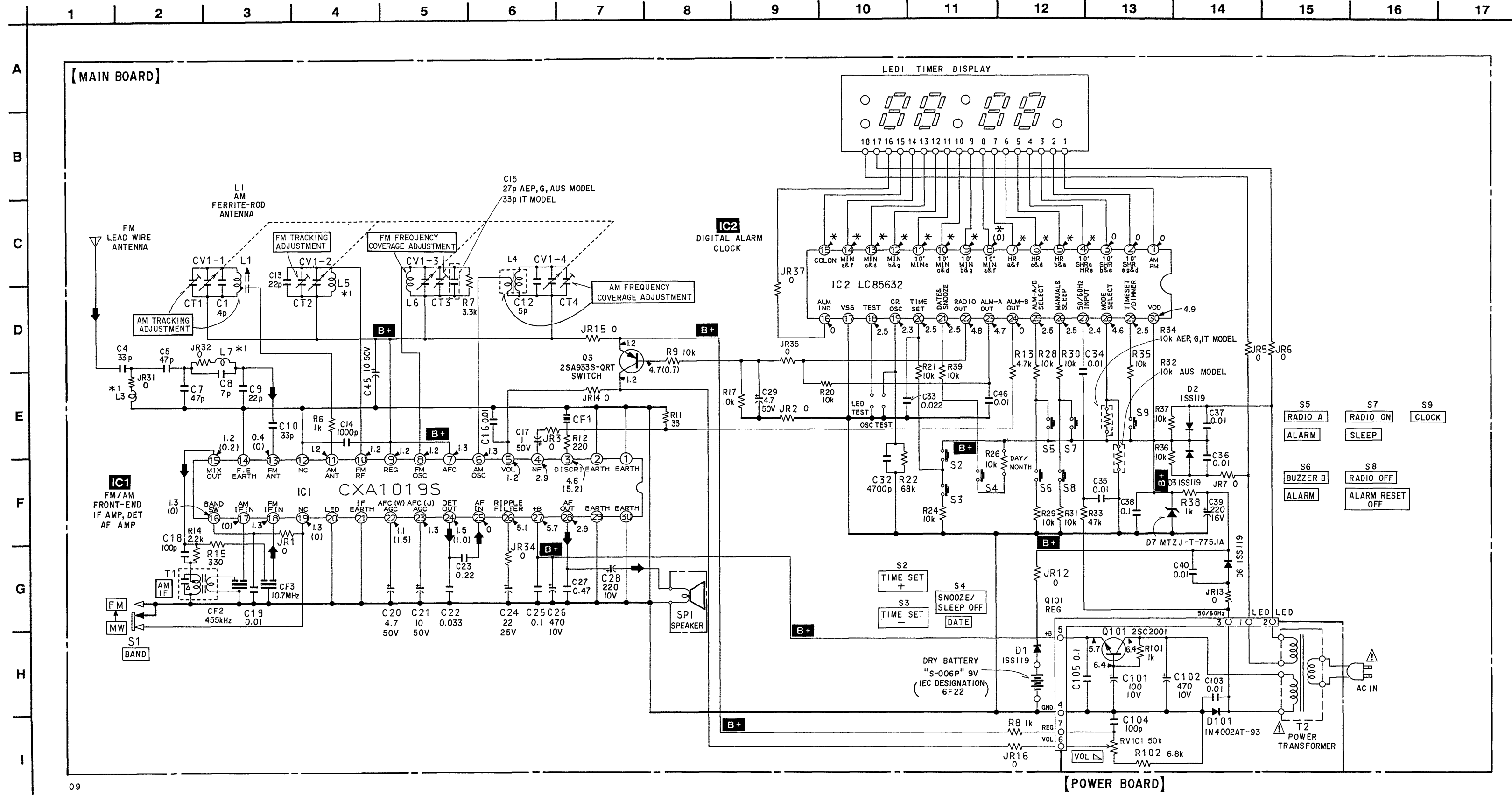
• Refer to the service manual as for Semiconductor Lead Layouts.

• Semiconductor Location

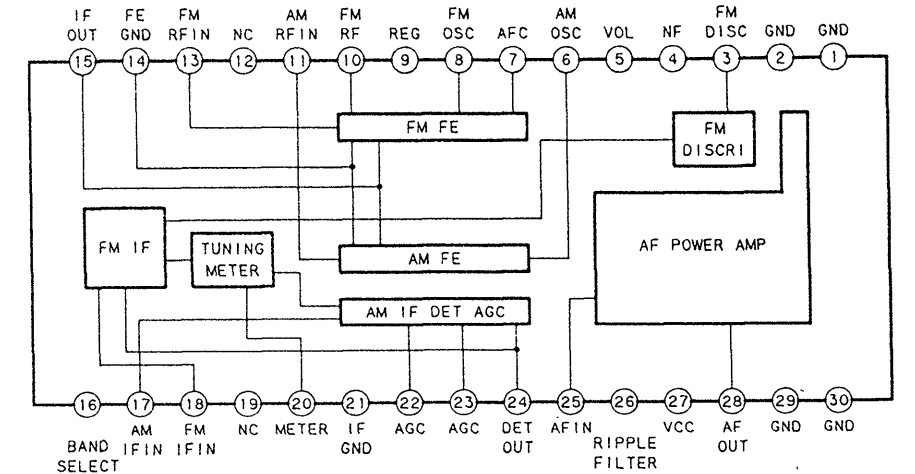
Ref. No.	Location
D1	F-6
D2	C-7
D3	C-6
D6	E-6
D7	B-7
D101	D-3
IC1	C-11
IC2	B-7
Q3	D-8
Q101	D-4



4-3. SCHEMATIC DIAGRAM — ICF-C720 MODEL —



• IC Block Diagram  
IC1 CX1019S



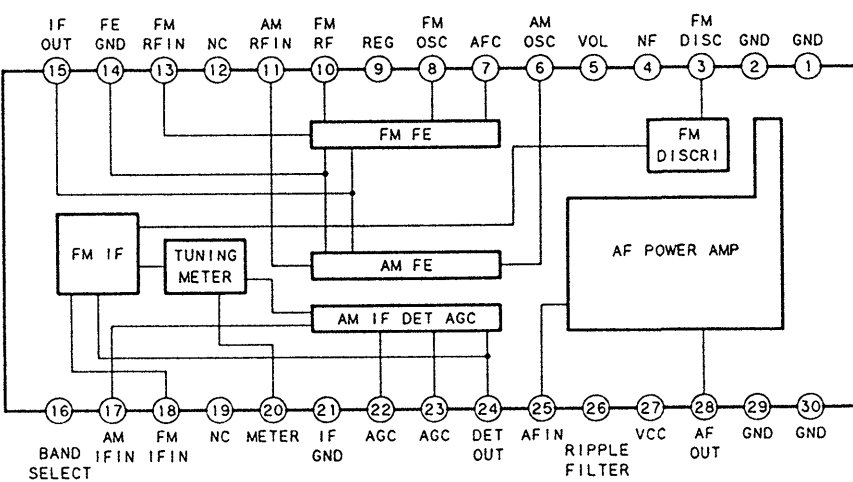
- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and 1/4W or less unless otherwise specified.
  - $\Delta$  : internal component.
  - $\square$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

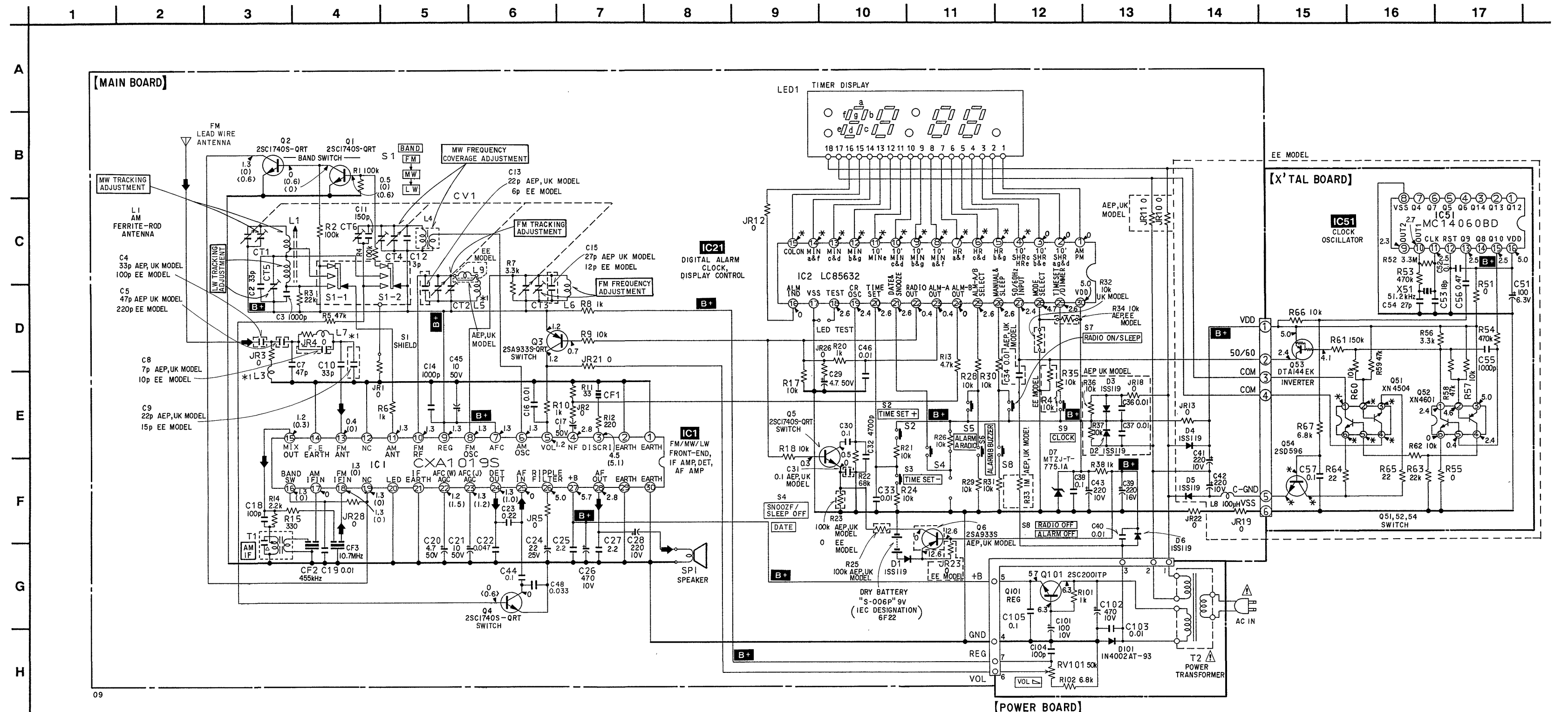
- **B+** : B+ Line
- $\square$  : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions. no mark : FM ( ) : AM \* : can not be measured.
- Voltages are taken with a VOM (Input impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.  $\rightarrow$  : FM \*1 : Printed pattern functions as a kind of coil.
- Abbreviation G : German model. I : Italian model. AUS : Australian model.

4-4. SCHEMATIC DIAGRAM — ICF-C720L MODEL —

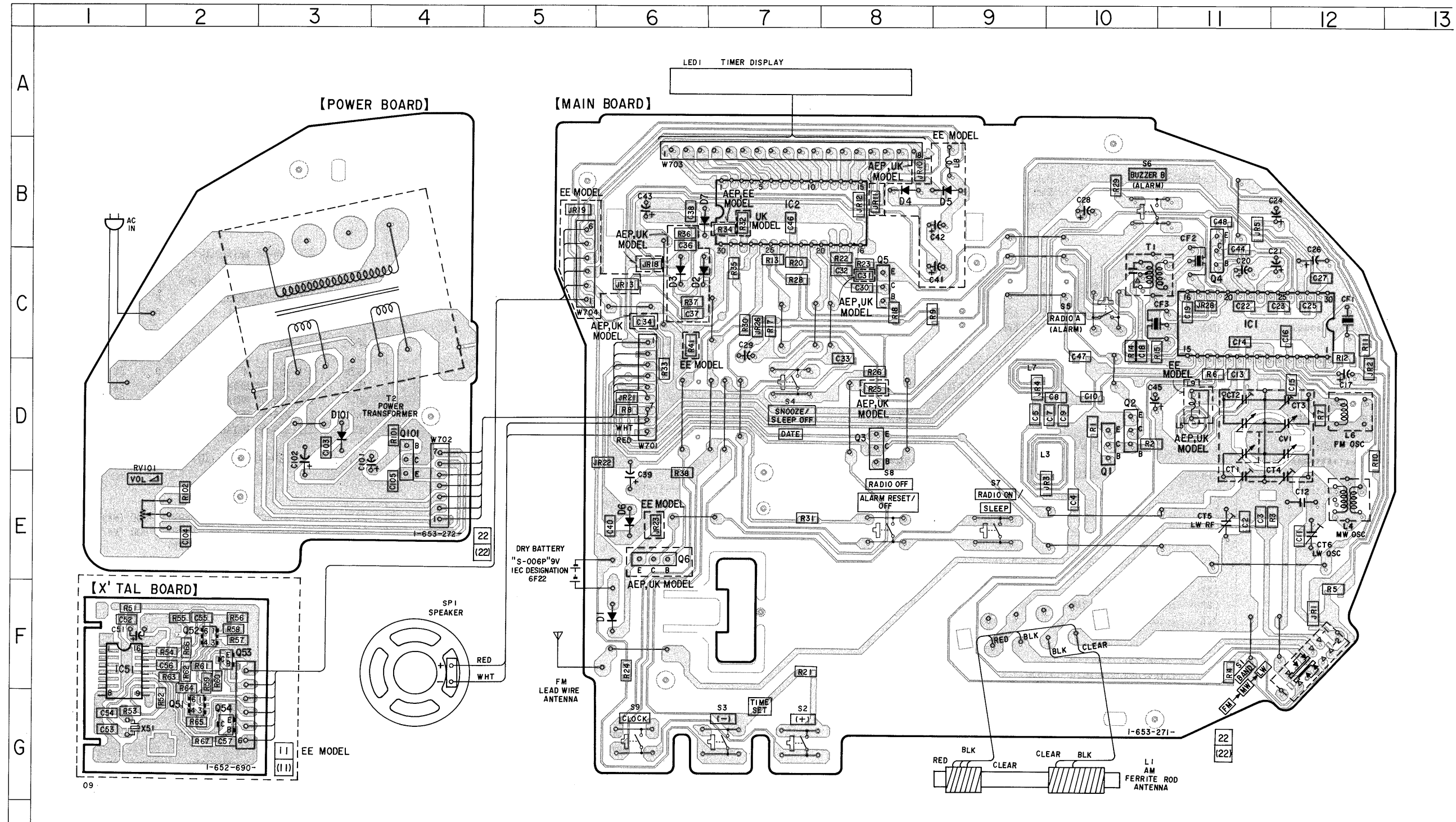
• IC Block Diagram  
IC1 CXA1019S



- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}:\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and 1/4W 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.
  - Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  - no mark : FM
  - ( ) : MW
  - < > : LW
  - \* : can not be measured.
  - Voltages are taken with a VOM (Input impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
  - Signal path.
    - $\rightarrow$  : FM
    - \*1 : Printed pattern functions as a kind of coil.
  - Abbreviation  
EE : East European model.



4-5. PRINTED WIRING BOARDS — ICF-C720L MODEL —  
 • Refer to the service manual as for Semiconductor Lead Layouts.



• Semiconductor Location

Ref. No.	Location
D1	F-6
D2	C-6
D3	C-6
D4	B-8
D5	B-9
D6	E-6
D7	B-6
D101	D-3
IC1	C-11
IC2	B-7
IC51	F-1
Q1	D-10
Q2	D-10
Q3	D-8
Q4	C-11
Q5	C-8
Q6	E-6
Q51	G-2
Q52	F-2
Q53	F-2
Q54	G-2
Q101	D-4

Note:

- : parts extracted from the component side.
- △ : internal component.
- ▨ : Pattern from the side which enable seeing.
- Abbreviation
- EE : East European model.



## SECTION 6 ELECTRICAL PARTS LIST

**NOTE:**

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 name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked “\* ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:  
KNOB, BALANCE (WHITE) ... (RED)  

$\uparrow$                      $\uparrow$   
 Parts color    Cabinet's color
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F : nonflammable
- 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
- Abbreviation  
G : German model  
IT : Italian model  
EE : East European model  
AUS : Australian model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-3662-030-A	MAIN BOARD, COMPLETE (C720:AEP, G) *****		C12	1-163-088-00	CERAMIC CHIP 5PF	50V (C720)
*	A-3662-031-A	MAIN BOARD, COMPLETE (C720:IT) *****		C13	1-163-089-00	CERAMIC CHIP 6PF	50V (C720L:EE)
*	A-3662-102-A	MAIN BOARD, COMPLETE (C720L:UK) *****		C13	1-163-101-00	CERAMIC CHIP 22PF 5%	50V (C720/C720L:AEP, UK)
*	A-3662-108-A	MAIN BOARD, COMPLETE (C720L:AEP) *****		C14	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
*	A-3662-114-A	MAIN BOARD, COMPLETE (C720L:EE) *****		C15	1-163-095-00	CERAMIC CHIP 12PF 5%	50V (C720L:EE)
*	A-3662-152-A	MAIN BOARD, COMPLETE (C720:AUS) *****		C15	1-163-103-00	CERAMIC CHIP 27PF 5%	50V (C720:AEP, G, AUS/C720L:AEP, UK)
	1-535-804-11	SNAP, BATTERY		C15	1-163-105-00	CERAMIC CHIP 33PF 5%	50V (C720:IT)
*	1-568-275-11	SOCKET, CONNECTOR 9P		C16	1-163-031-11	CERAMIC CHIP 0.01uF	50V
	3-914-601-01	HOLDER (LED)		C17	1-124-903-11	ELECT 1uF 20%	50V
	< CAPACITOR >			C18	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C1	1-163-087-00	CERAMIC CHIP 4PF	50V (C720)	C19	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C2	1-163-105-00	CERAMIC CHIP 33PF 5%	50V (C720L)	C20	1-124-927-11	ELECT 4.7uF 20%	100V
C3	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V (C720L)	C21	1-124-907-11	ELECT 10uF 20%	50V
C4	1-163-105-00	CERAMIC CHIP 33PF 5%	50V (C720/C720L:AEP, UK)	C22	1-163-809-11	CERAMIC CHIP 0.047uF 10%	25V (C720L)
C4	1-163-117-00	CERAMIC CHIP 100PF 5%	50V (C720L:EE)	C22	1-163-989-11	CERAMIC CHIP 0.033uF 10%	25V (C720)
C5	1-163-109-00	CERAMIC CHIP 47PF 5%	50V (C720/C720L:AEP, UK)	C23	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C5	1-163-125-00	CERAMIC CHIP 220PF 5%	50V (C720L:EE)	C24	1-126-233-11	ELECT 22uF 20%	50V
C7	1-163-109-00	CERAMIC CHIP 47PF 5%	50V	C25	1-163-038-91	CERAMIC CHIP 0.1uF	25V (C720)
C8	1-163-090-00	CERAMIC CHIP 7PF	50V (C720/C720L:AEP, UK)	C25	1-164-505-11	CERAMIC CHIP 2.2uF	16V (C720L)
C8	1-163-093-00	CERAMIC CHIP 10PF 5%	50V (C720L:EE)	C26	1-126-925-11	ELECT 470uF 20%	10V
C9	1-163-097-00	CERAMIC CHIP 15PF 5%	50V (C720L:EE)	C27	1-164-005-11	CERAMIC CHIP 0.47uF	25V (C720)
C9	1-163-101-00	CERAMIC CHIP 22PF 5%	50V (C720/C720L:AEP, UK)	C27	1-164-505-11	CERAMIC CHIP 2.2uF	16V (C720L)
C10	1-163-105-00	CERAMIC CHIP 33PF 5%	50V	C28	1-126-176-11	ELECT 220uF 20%	10V
C11	1-163-121-00	CERAMIC CHIP 150PF 5%	50V (C720L)	C29	1-124-927-11	ELECT 4.7uF 20%	100V
C12	1-102-936-00	CERAMIC 3.0PF +-0.25PF	50V (C720L)	C30	1-163-038-91	CERAMIC CHIP 0.1uF	25V (C720L)
				C31	1-163-038-91	CERAMIC CHIP 0.1uF	25V (C720L:AEP, UK)
				C32	1-163-017-00	CERAMIC CHIP 0.0047uF 5%	50V
				C33	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720L)
				C33	1-163-033-91	CERAMIC CHIP 0.022uF	50V (C720)
				C34	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720/C720L:AEP, UK)
				C35	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720)
				C36	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720/C720L:AEP, UK)
				C37	1-163-031-11	CERAMIC CHIP 0.01uF	50V (C720/C720L:AEP, UK)
				C38	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V

# MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C39	1-124-120-11	ELECT 220uF 20% 25V		JR10	1-216-295-00	METAL CHIP 0 5% 1/10W	
C40	1-163-031-11	CERAMIC CHIP 0.01uF 50V					(C720L:AEP, UK)
C41	1-126-923-11	ELECT 220uF 20% 10V		JR11	1-216-295-00	METAL CHIP 0 5% 1/10W	
							(C720L:EE)
C42	1-126-923-11	ELECT 220uF 20% 10V		JR12	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)	
				JR12	1-216-296-00	METAL CHIP 0 5% 1/8W (C720L)	
C43	1-126-923-11	ELECT 220uF 20% 10V (C720L)		JR13	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)	
C44	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V (C720L)		JR13	1-216-296-00	METAL CHIP 0 5% 1/8W	
C45	1-124-907-11	ELECT 10uF 20% 50V					(C720L:EE)
C46	1-163-031-11	CERAMIC CHIP 0.01uF 50V		JR14	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)	
C48	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V (C720L)		JR15	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)	
				JR16	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)	
				JR18	1-216-295-00	METAL CHIP 0 5% 1/10W	
							(C720L:AEP, UK)
		< FILTER >		JR19	1-216-296-00	METAL CHIP 0 5% 1/8W	
CF1	1-567-097-61	FILTER, CERAMIC					(C720L:EE)
CF2	1-577-072-11	FILTER, CERAMIC (455kHz) (C720)		JR21	1-216-295-00	METAL CHIP 0 5% 1/10W (C720L)	
CF2	1-578-677-11	FILTER, CRYSTAL (455kHz) (C720L)		JR22	1-216-295-00	METAL CHIP 0 5% 1/10W (C720L)	
CF3	1-567-097-61	FILTER, CERAMIC (10.7MHz)		JR23	1-216-295-00	METAL CHIP 0 5% 1/10W	
							(C720L:EE)
		< TRIMMER >		JR26	1-216-295-00	METAL CHIP 0 5% 1/10W (C720L)	
CT5	1-141-443-11	TRIMMER, CERAMIC (C720L)		JR28	1-216-295-00	METAL CHIP 0 5% 1/10W (C720L)	
CT6	1-141-443-11	TRIMMER, CERAMIC (C720L)		JR31	1-216-296-00	METAL CHIP 0 5% 1/8W (C720)	
				JR32	1-216-296-00	METAL CHIP 0 5% 1/8W (C720)	
		< VARIABLE CAPACITOR >		JR34	1-216-296-00	METAL CHIP 0 5% 1/8W (C720)	
CV1	1-151-628-11	VARIABLE (C720/C720L:AEP, UK)		JR35	1-216-296-00	METAL CHIP 0 5% 1/8W (C720)	
CV1	1-151-648-11	VARIABLE (C720L:EE)					
				JR37	1-216-296-00	METAL CHIP 0 5% 1/8W (C720)	
		< DIODE >					
D1	8-719-911-19	DIODE 1SS119					< COIL >
D2	8-719-911-19	DIODE 1SS119 (C720/C720L:AEP, UK)		L1	1-402-413-21	ANTENNA, FERRITE-ROD (MW) (C720)	
D3	8-719-911-19	DIODE 1SS119 (C720/C720L:AEP, UK)		L1	1-402-584-11	ANTENNA, FERRITE-ROD (MW/LW) (C720L)	
D4	8-719-911-19	DIODE 1SS119 (C720L:EE)		L4	1-406-028-00	COIL, OSC (MW)	
D5	8-719-911-19	DIODE 1SS119 (C720L:EE)		L6	1-406-425-11	COIL (C720:IT)	
D6	8-719-911-19	DIODE 1SS119		L6	1-428-163-11	COIL, AIR-CORE	
D7	8-719-109-84	DIODE RD5.1ES-B1					(C720:AEP, G, AUS/C720L:AEP, UK)
				* L6	1-428-230-11	COIL, AIR-CORE (C720L:EE)	
		< IC >		L8	1-410-521-11	INDUCTOR 100uH (C720L:EE)	
IC1	8-752-035-29	IC CXA1019S		L9	1-409-993-11	COIL, AIR-CORE (C720L:EE)	
IC2	8-759-193-05	IC LC85632					< DIODE >
				LED1	1-810-026-21	DIODE SL-1994-55T	
		< JUMPER RESISTOR >					< TRANSISTOR >
JR1	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)		Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE (C720L)	
JR1	1-216-296-00	METAL CHIP 0 5% 1/8W (C720L)		Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE (C720L)	
JR2	1-216-295-00	METAL CHIP 0 5% 1/10W		Q3	8-729-119-76	TRANSISTOR 2SA1175-HFE	
JR3	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)		Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE (C720L)	
JR3	1-216-296-00	METAL CHIP 0 5% 1/8W (C720L)		Q5	8-729-119-78	TRANSISTOR 2SC2785-HFE (C720L)	
JR4	1-216-296-00	METAL CHIP 0 5% 1/8W (C720L)		Q6	8-729-119-76	TRANSISTOR 2SA1175-HFE (C720L:AEP, UK)	
JR5	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)					
JR5	1-216-296-00	METAL CHIP 0 5% 1/8W (C720L)					
JR6	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)					
JR7	1-216-295-00	METAL CHIP 0 5% 1/10W (C720)					

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< RESISTOR >				< SWITCH >			
R1	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L)	S1	1-571-478-11	SWITCH, SLIDE (BAND) (C720)	
R2	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L)	S1	1-572-949-11	SWITCH, SLIDE (BAND) (C720L)	
R3	1-216-081-00	METAL CHIP	22K 5% 1/10W (C720L)	S2	1-554-937-11	SWITCH, KEY BOARD (TIME SET +)	
R4	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L)	S3	1-554-937-11	SWITCH, KEY BOARD (TIME SET -)	
R5	1-216-089-00	METAL CHIP	47K 5% 1/10W (C720L)	S4	1-554-937-11	SWITCH, KEY BOARD(SNOOZE/SLEEP OFF/DATE)	
R6	1-216-049-00	METAL CHIP	1K 5% 1/10W	S5	1-554-937-11	SWITCH, KEY BOARD (ALARM/A RADIO)	
R7	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	S6	1-554-937-11	SWITCH, KEY BOARD (ALARM/B BUZZER)	
R8	1-216-049-00	METAL CHIP	1K 5% 1/10W	S7	1-554-937-11	SWITCH, KEY BOARD (RADIO ON/SLEEP)	
R9	1-216-073-00	METAL CHIP	10K 5% 1/10W	S8	1-554-937-11	SWITCH, KEY BOARD (RADIO OFF/ALARM RESET OFF)	
R10	1-216-049-00	METAL CHIP	1K 5% 1/10W (C720L)	S9	1-554-937-11	SWITCH, KEY BOARD (CLOCK)	
R11	1-216-013-00	METAL CHIP	33 5% 1/10W	< TRANSFORMER >			
R12	1-216-033-00	METAL CHIP	220 5% 1/10W	T1	1-404-790-11	TRANSFORMER, IF (C720)	
R13	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	T1	1-404-902-21	TRANSFORMER, IF (C720L)	
R14	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	< CONNECTOR >			
R15	1-216-037-00	METAL CHIP	330 5% 1/10W	W703	1-765-726-11	CORD, CONNECTION 18P	
R17	1-216-073-00	METAL CHIP	10K 5% 1/10W	*****			
R18	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720L)	*	A-3662-035-A	POWER BOARD, COMPLETE (C720)	*****
R20	1-216-049-00	METAL CHIP	1K 5% 1/10W (C720L)	*	A-3662-105-A	POWER BOARD, COMPLETE (C720L:UK)	*****
R20	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720)	*	A-3662-117-A	POWER BOARD, COMPLETE (C720L:AEP,EE)	*****
R21	1-216-073-00	METAL CHIP	10K 5% 1/10W	< CAPACITOR >			
R22	1-216-093-00	METAL CHIP	68K 5% 1/10W	C101	1-124-443-00	ELECT 100uF 20% 10V	
R23	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L:AEP, UK)	C102	1-124-472-11	ELECT 470uF 20% 10V	
R23	1-216-295-00	METAL CHIP	0 5% 1/10W (C720L:EE)	C103	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
R24	1-216-073-00	METAL CHIP	10K 5% 1/10W	C104	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
R25	1-216-097-00	METAL CHIP	100K 5% 1/10W (C720L:AEP, UK)	C105	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
R26	1-216-073-00	METAL CHIP	10K 5% 1/10W	< DIODE >			
R28	1-216-073-00	METAL CHIP	10K 5% 1/10W	D101	8-719-200-02	DIODE 10E2	
R29	1-216-073-00	METAL CHIP	10K 5% 1/10W	< TRANSISTOR >			
R30	1-216-073-00	METAL CHIP	10K 5% 1/10W	Q101	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
R31	1-216-073-00	METAL CHIP	10K 5% 1/10W	< RESISTOR >			
R32	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720:AUS/C720L:UK)	R101	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R33	1-216-089-00	METAL CHIP	47K 5% 1/10W (C720)	R102	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R33	1-216-121-00	METAL CHIP	1M 5% 1/10W (C720L:AEP, UK)	< VARIABLE RESISTOR >			
R34	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720:AEP, G, IT/C720L:AEP, EE)	RV101	1-241-542-11	RES, VAR, CRABON 50K (VOL ▽)	
R35	1-216-073-00	METAL CHIP	10K 5% 1/10W				
R36	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720/C720L:AEP, UK)				
R37	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720/C720L:AEP, UK)				
R38	1-216-049-00	METAL CHIP	1K 5% 1/10W				
R39	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720)				
R41	1-216-073-00	METAL CHIP	10K 5% 1/10W (C720L:EE)				

**POWER**

**X'TAL**

Ref. No.	Part No.	Description	Remark
		< TRANSFORMER >	
△T2	1-449-940-11	TRANSFORMER, POWER	
		< CONNECTOR >	
W702	1-751-399-11	CORD, CONNECTION	
*****			
*	A-3662-120-A	X'TAL BOARD, COMPLETE (C720L:EE)	
		*****	
	1-765-685-11	CORD, CONNECTION	
		< CAPACITOR >	
C51	1-124-584-00	ELECT 100uF 20% 10V	
C52	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C53	1-163-099-00	CERAMIC CHIP 18PF 5% 50V	
C54	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C55	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C56	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C57	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
		< IC >	
IC51	8-759-009-08	IC MC14060BF-T1	
		< TRANSISTOR >	
Q51	8-729-425-18	TRANSISTOR XN4504	
Q52	8-729-402-84	TRANSISTOR XN4601	
Q53	8-729-901-06	TRANSISTOR DTA144EK	
Q54	8-729-141-75	TRANSISTOR 2SD596DV345	
		< RESISTOR >	
R51	1-216-295-00	METAL CHIP 0 5% 1/10W	
R52	1-216-133-00	METAL CHIP 3.3M 5% 1/10W	
R53	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R54	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R55	1-216-295-00	METAL CHIP 0 5% 1/10W	
R56	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R57	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R58	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R59	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R60	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R61	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R62	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R63	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R64	1-216-009-00	METAL CHIP 22 5% 1/10W	
R65	1-216-009-00	METAL CHIP 22 5% 1/10W	
R66	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R67	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
		< VIBRATOR >	
X51	1-760-385-11	VIBRATOR, CRYSTAL (51.2kHz)	

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