

ICF-C270/C270L

SERVICE MANUAL

AEP Model

ICF-C270/C270L

UK Model

E Model

Australian Model

ICF-C270



Photo : ICF-C270 : AEP model (BLACK type)

SPECIFICATIONS

Time display:

UK, AUS model : 12-hour system

Except UK, AUS model : 24-hour system

Frequency range:

	Band	ICF-C270	ICF-C270L
IT model	FM	87.5 - 108 MHz	-
	AM	526.5 - 1,606.5 kHz	-
Except IT model	FM	87.5 - 108 MHz	87.5 - 108 MHz
	AM	530 - 1,605 kHz	-
	LW	-	153 - 255 kHz

Intermediate frequency:

FM: 10.7 MHz, AM: 455 kHz

Speaker: Approx. 6.6 cm (2 5/8 inches) dia.

Power output: 150 mW (at 10 % harmonic distortion)

Power requirements:

AUS model : 240 V AC, 50 Hz

E, C&SA model : 220 - 230 V AC, 50/60 Hz

AEP, UK, IT model : 220-230V AC, 50Hz

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

Battery life: Approx. 80 hours, using Sony S-006P(U) battery

Dimensions: Approx. 198 × 46 × 152 mm (w/h/d) (7 7/8 × 1 13/16 × 6 inches) incl. projecting parts and controls

Mass: Approx. 560g (1 lb 3.7 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.

• Abbreviation

AUS : Australian model

IT : Italian model

C&SA : Central & South America model



Features

- Power back-up function to keep the clock operating during a power interruption, using a 6F22 battery (not supplied).

FM/AM CLOCK RADIO

ICF-C270

FM/LW CLOCK RADIO

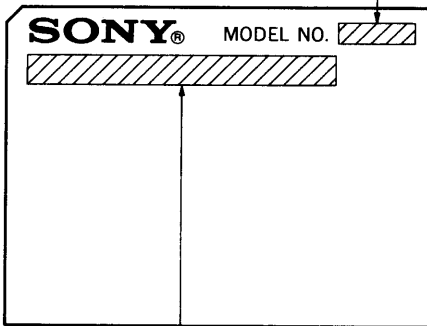
ICF-C270L

SONY®

MODEL IDENTIFICATION

—Model Number label—

AEP, UK, IT, E, C&SA, AUS model: ICF-C270
AEP model: ICF-C270L



AEP, UK, IT model: AC: 220—230V~50Hz 5W
E, C&SA model : AC: 220—230V~50/60Hz 5W
AUS model : AC: 240V~50Hz 5W

• Abbreviation

IT : Italian model
C&SA : Central & South America model
AUS : Australian model

Note:

This set employs two ceramic filters (CF2 and 3) which should have the same color marking to identify their center frequency.

mark	Center Frequency
red	10.70 MHz
blue	10.67 MHz
orange	10.73 MHz
black	10.64 MHz
white	10.76 MHz

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.

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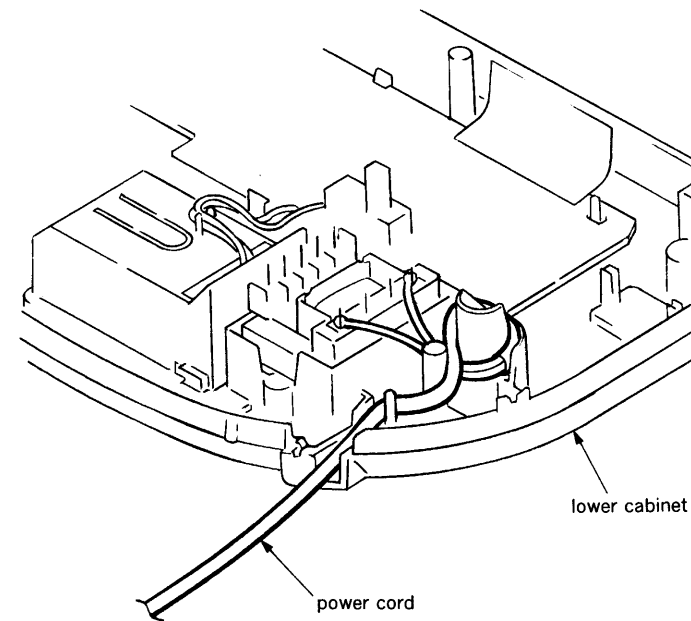
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SECTION 1 SERVICE NOTE

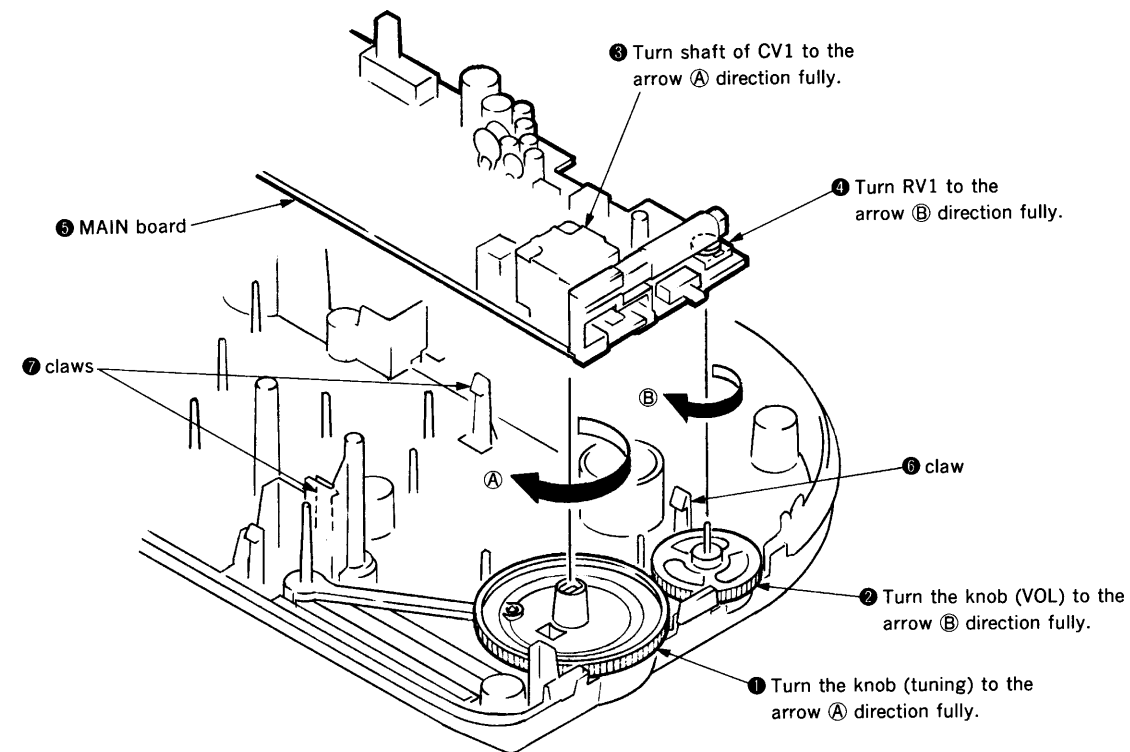
1-1. SETTING THE POWER CORD

Set the power cord as illustrated below, then install the lower cabinet.



SECTION 2 KNOB SETTING

2-1. KNOB SETTING



SECTION 3 GENERAL

This section is extracted from instruction manual.

Setting the Alarm

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

1. To set the hour for alarm, while holding down the **ALARM** button, press the **TIME SET H** button. When the desired hour appears in the display, release the **ALARM** button.
2. To set the minute for alarm, while holding down the **ALARM** button, press the **TIME SET M** button. When the desired minute appears in the display, release the **ALARM** button.
3. Set the Function selector to **RADIO** or **BUZZER**.

The alarm will come on at the preset time and automatically turn itself off after 119 minutes.

- To shut off the alarm, set the Function selector to **OFF**.
- To sound the alarm at the preset time the next day, set the Function selector to **RADIO** or **BUZZER** again.
- To cancel either alarm, set the Function selector to **OFF**.
- To clear a few more minutes, press **SNOOZE/SLEEP OFF**.
- The alarm will shut off, but will come on again after about 9 minutes. You can repeat this process as many times as you like.
- To adjust the radio alarm volume, turn **VOL**.
- To check the preset time, press the **ALARM** button.

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. While listening to the radio, set the Function selector to **OFF**.
2. Press **SLEEP**.

The radio turns on. It will go off after 59 minutes.

- To turn off the radio before the preset time, press **SNOOZE/SLEEP OFF**.
- Every time you press **SLEEP**, the sleep timer is reset to 59 minutes.
- When you set the Function selector to **RADIO** or **BUZZER**, if the preset alarm time comes while the sleep timer is operating, the radio or buzzer sounds depending on which you set.

Setting the Clock

1. Plug in the unit.

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

2. To set the hour, while holding down the **CLOCK** button, press the **TIME SET H** button. When the correct hour appears in the display, release the **CLOCK** button.

3. To set the minute, while holding down the **CLOCK** button, press the **TIME SET M** button. When the correct minute appears in the display, release the **CLOCK** button. The clock will begin to operate.

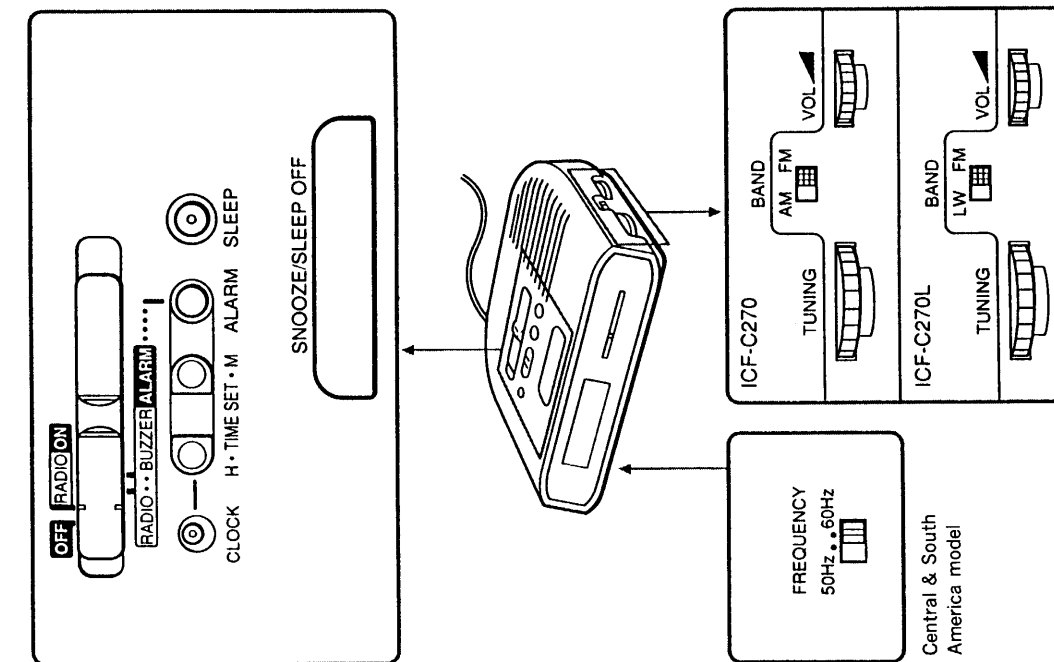
- The clock system varies depending on the model you own.
 - 12-hour system: "AM 12:00" = midnight
 - 24-hour system: "0:00" = midnight
- Each press on the **TIME SET H** or **TIME SET M** button advances the displayed number by one.
- The minute digits do not advance by pressing the **TIME SET M** button.
- To adjust the time exactly to the second, release the **TIME SET H** or **TIME SET M** button simultaneously with the time signal.

Operating the Radio

1. Set the Function selector to **RADIO ON** (volume).
2. Select the **BAND** and tune in a station using the **TUNING** dial.

FM/AM: ICF-C270 only
FM/LW: ICF-C270L only

- To turn off the radio, set the Function selector to **OFF**.
- To improve radio reception:
 - FM: Since the antenna is enclosed in the AC power cord, extend the cord to improve FM reception.
 - AM/LW: Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built into the unit.

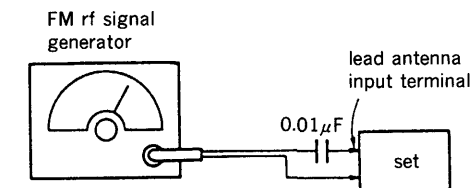


SECTION 4 ELECTRICAL ADJUSTMENTS

• FM Section

Setting :

BAND switch : FM

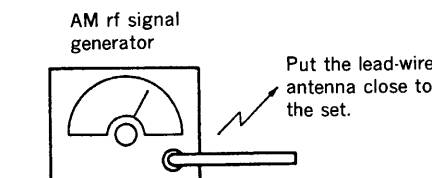


22.5kHz frequency deviation by 400Hz signal
output level : as low as possible

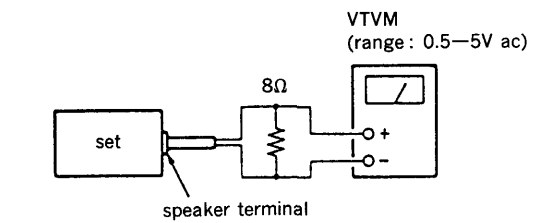
• AM Section

Setting :

BAND switch : AM

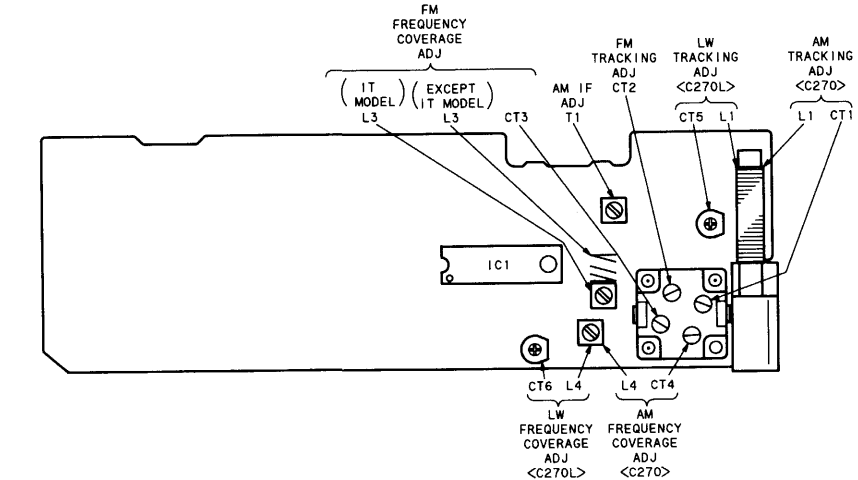


30% amplitude modulation by 400Hz signal
output level : as low as possible



- 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)



FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	CT3
86.5MHz (87.35MHz)	109.5MHz (108.25MHz)

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

AM FREQUENCY COVERAGE ADJUSTMENT <C270>	
Adjust for a maximum reading on VTVM.	
L4	CT4
520kHz (516.5kHz)	1,650kHz (1,631.5kHz)

AM TRACKING ADJUSTMENT <C270>	
Adjust for a maximum reading on VTVM.	
L1	CT1
600kHz	1,400kHz

LW FREQUENCY COVERAGE ADJUSTMENT <C270L>	
Adjust for a maximum reading on VTVM.	
L4	CT6
145kHz	265kHz

LW TRACKING ADJUSTMENT <C270L>	
Adjust for a maximum reading on VTVM.	
L1	CT5
160kHz	240kHz

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

() : Italian model

SECTION 5
DIAGRAMS

SEE ADDITIONAL
INFORMATION

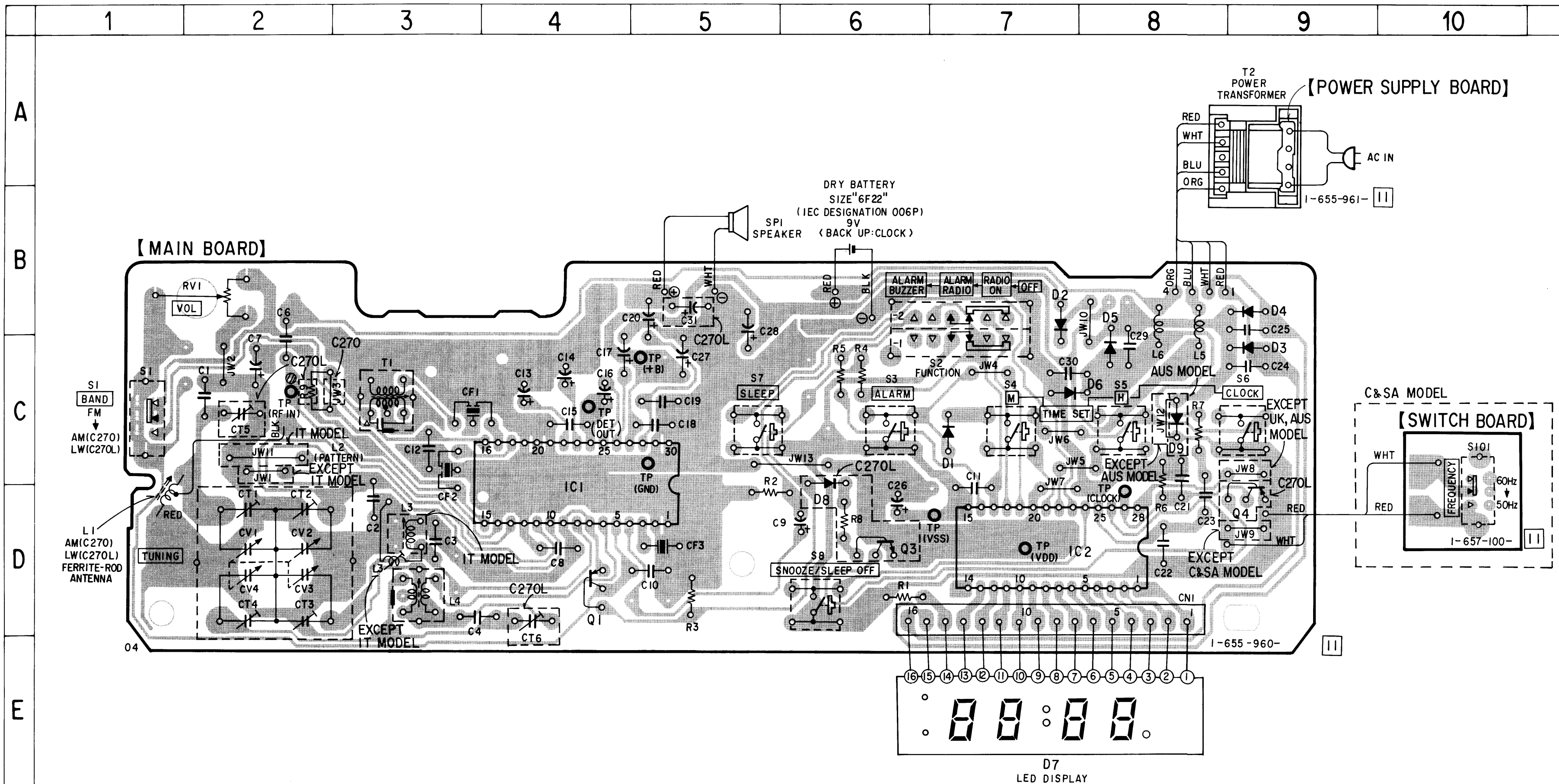
5-1. PRINTED WIRING BOARDS

• Semiconductor Location

Ref. No.	Location
D1	C-7
D2	B-7
D3	C-9
D4	B-9
D5	B-8
D6	C-7
D7	E-7
(D8)	D-6
(D9)	C-8
IC1	C-4
IC2	D-7
Q1	D-4
(Q3)	D-6
(Q4)	C-9

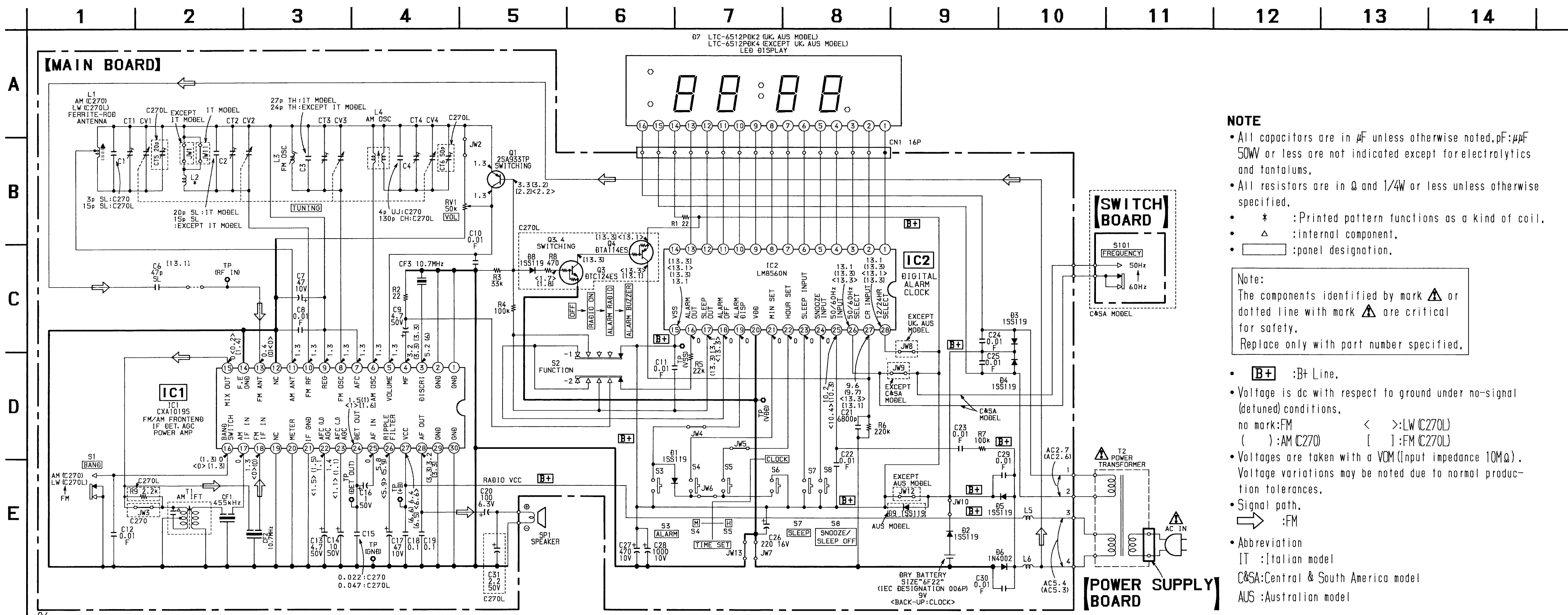
() : ICF-C270L
< > : Australian model

- Note:
- : parts extracted from the component side.
 - : parts extracted from the conductor side.
 - : indicates side identified with part number.
 - ▨ : Pattern on the side which is seen.
 - Abbreviation
 - IT : Italian model
 - C&SA : Central & South America model
 - AUS : Australian model



SEE ADDITIONAL INFORMATION

5-2. SCHEMATIC DIAGRAM • Refer to page 12 for IC Block Diagrams.



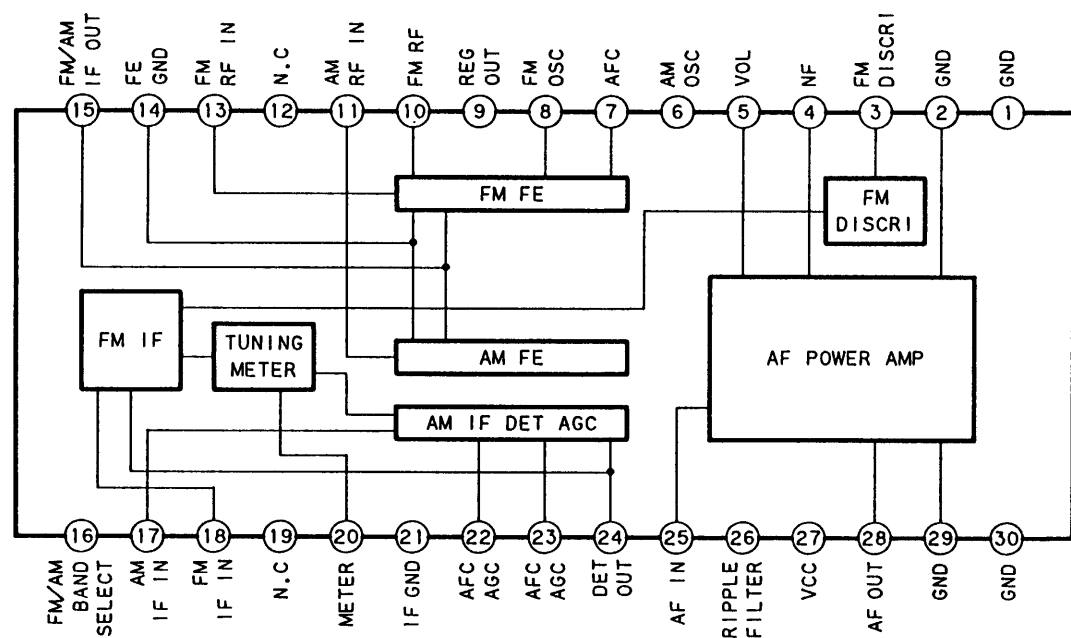
- NOTE**
- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\mu\text{F}$. 50W or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
 - * : Printed pattern functions as a kind of coil.
 - Δ : internal component.
 - : panel designation.

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

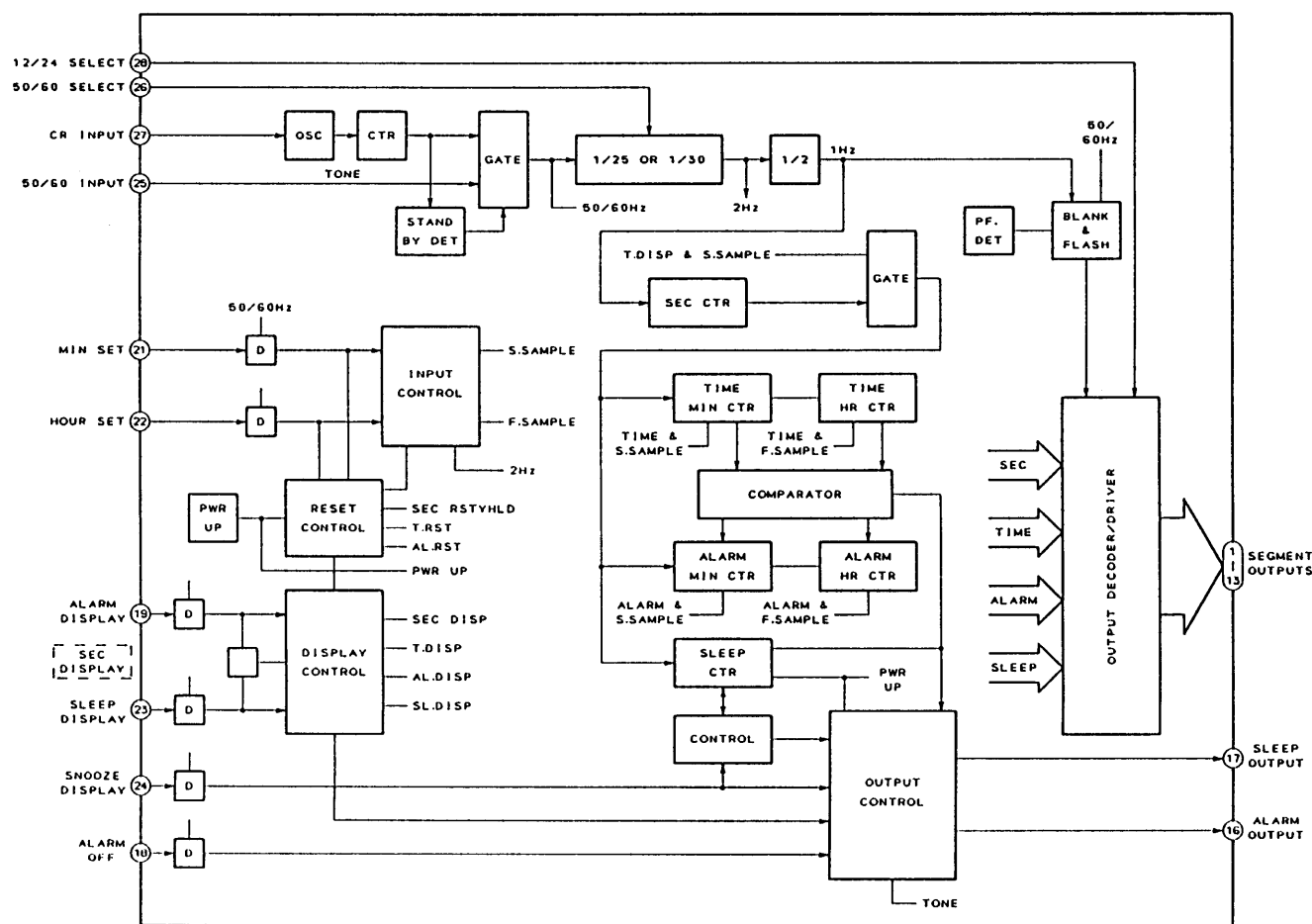
- **B+** : B+ Line.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
no mark: FM < >: LW (C270L)
() : AM (C270) [] : FM (C270L)
- Voltages are taken with a VOM (Input impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
 \Rightarrow : FM
- Abbreviation
IT : Italian model
C&SA: Central & South America model
AUS : Australian model

IC Block Diagrams

IC1 CXA1019S



IC2 LM8560N



SECTION 6 EXPLODED VIEW

SEE ADDITIONAL INFORMATION

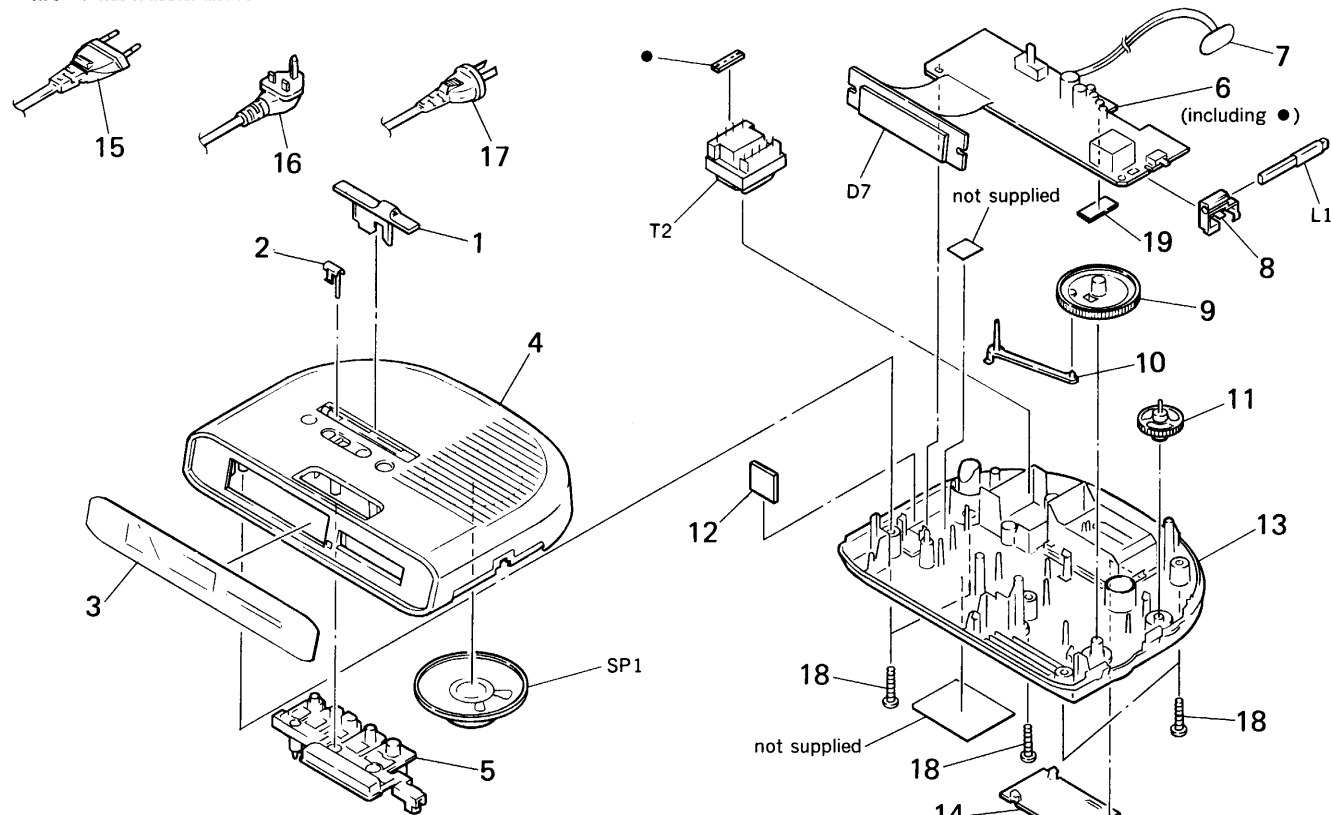
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
IT : Italian model
C&SA : Central & South America model
AUS : Australian model

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE)... (RED)
↑
Parts Color Cabinet's Color

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

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



Ref. No.	Part No.	Description	Remark
1	3-919-266-01	KNOB (FUNCTION) (BLACK)	
1	3-919-266-11	KNOB (FUNCTION) (WHITE)	
2	3-919-270-01	MARKER	
3	3-922-611-01	SCALE, DIAL (C270: AEP, IT, E, C&SA)	
3	3-922-611-11	SCALE, DIAL (UK, AUS)	
3	3-924-997-01	SCALE, DIAL (C270L)	
4	3-922-290-01	CABINET (UPPER) (BLACK) (C270)	
4	3-922-290-11	CABINET (UPPER) (WHITE) (C270)	
4	3-922-290-21	CABINET (UPPER) (BLACK) (C270L)	
4	3-922-290-31	CABINET (UPPER) (WHITE) (C270L)	
5	3-919-265-01	BUTTON (BLACK)	
5	3-919-265-11	BUTTON (WHITE)	
* 6	A-3662-242-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (C270L)	
* 6	A-3662-244-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (AUS)	
* 6	A-3662-246-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (C270: AEP, E)	
* 6	A-3662-247-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (IT)	
* 6	A-3662-248-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (UK)	
* 6	A-3662-249-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (C&SA)	
7	1-535-804-21	SNAP, BATTERY	

SECTION 7 ELECTRICAL PARTS LIST

SEE ADDITIONAL INFORMATION

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
IT : Italian model
C&SA : Central & South America model
AUS : Australian model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A... uPA...: μ PA...
uPB...: μ PB... uPC...: μ PC... uPD...: μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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

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

Ref. No.	Part No.	Description	Remark
* 15	A-3662-242-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (C270L)	
* 15	A-3662-244-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (AUS)	
* 16	A-3662-246-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (C270: AEP, E)	
* 17	A-3662-247-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (IT)	
* 18	A-3662-248-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (UK)	
* 19	A-3662-249-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD) (C&SA)	

* 1	1-535-804-21	SNAP, BATTERY	
* 2	3-905-767-01	PLATE, SHIELD (C270L)	
* 3	3-922-610-01	HOLDER (ANTENNA)	
< CAPACITOR >			
C1	1-102-936-00	CERAMIC	3PF 0.25PF 50V (C270)
C1	1-102-951-00	CERAMIC	15PF 5% 50V (C270L)
C2	1-102-951-00	CERAMIC	15PF 5% 50V (EXCEPT IT)
C2	1-102-958-00	CERAMIC	20PF 5% 50V (IT)
C3	1-102-960-00	CERAMIC	24PF 5% 50V (EXCEPT IT)
C3	1-102-961-00	CERAMIC	27PF 5% 50V (IT)
C4	1-101-081-00	CERAMIC	130PF 5% 50V (C270L)
C4	1-102-937-00	CERAMIC	4PF 0.25PF 50V (C270)
C6	1-101-880-00	CERAMIC	47PF 5% 50V
C7	1-104-664-11	ELECT	47uF 20% 10V
C8	1-101-004-00	CERAMIC	0.01uF 50V
C9	1-126-963-11	ELECT	4.7uF 20% 50V
C10-12	1-101-004-00	CERAMIC	0.01uF 50V
C13	1-126-963-11	ELECT	4.7uF 20% 50V
C14	1-124-907-11	ELECT	10uF 20% 50V
< DIODE >			
D1	8-719-911-19	DIODE	1SS119
D2	8-719-911-19	DIODE	1SS119
D3	8-719-911-19	DIODE	1SS119
D4	8-719-911-19	DIODE	1SS119
D5	8-719-911-19	DIODE	1SS119

Ref. No.	Part No.	Description	Remark
D6	8-719-052-88	DIODE 1N4002	
D7	1-809-515-11	DIODE LTC-6512PDK2 (UK, AUS)	
D7	1-809-515-21	DIODE LTC-6512PDK4 (EXCEPT UK, AUS)	
D8	8-719-911-19	DIODE 1SS119 (C270L)	
D9	8-719-911-19	DIODE 1SS119 (AUS)	
< IC >			
IC1	8-752-055-05	IC CXA1019S	
IC2	8-759-821-46	IC LM8560N	
< COIL >			
L1	1-501-765-11	ANTENNA, FERRITE-ROD (AM) (C270)	
L1	1-501-777-11	ANTENNA, FERRITE-ROD (LW) (C270L)	
L3	1-428-163-11	COIL, AIR-CORE (EXCEPT IT)	
L3	1-460-018-11	COIL (WITH CORE) (IT)	
L4	1-406-028-00	COIL, OSC (AM)	
L5	1-411-136-11	COIL, AIR-CORE	
L6	1-411-136-11	COIL, AIR-CORE	
< TRANSISTOR >			
Q1	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q3	8-729-900-36	TRANSISTOR DTC124ES (C270L)	
Q4	8-729-900-61	TRANSISTOR DTA114ES (C270L)	
< RESISTOR >			
R1	1-249-397-11	CARBON 22 5% 1/4W	
R2	1-249-397-11	CARBON 22 5% 1/4W	
R3	1-249-435-11	CARBON 33K 5% 1/4W	
R4	1-249-441-11	CARBON 100K 5% 1/4W	
R5	1-249-433-11	CARBON 22K 5% 1/4W	
R6	1-247-887-00	CARBON 220K 5% 1/4W	
R7	1-249-441-11	CARBON 100K 5% 1/4W	
R8	1-249-413-11	CARBON 470 5% 1/4W (C270L)	
R9	1-249-421-11	CARBON 2.2K 5% 1/4W (C270L)	
< VARIABLE RESISTOR >			
RV1	1-228-790-00	RES, VAR, CARBON 50K (VOL)	
< SWITCH >			
S1	1-762-231-11	SWITCH, SLIDE (BAND)	
S2	1-762-232-11	SWITCH, SLIDE (FUNCTION)	
S3	1-762-233-11	SWITCH, KEYBOARD (ALARM)	
S4	1-762-233-11	SWITCH, KEYBOARD (TIME SET M)	
S5	1-762-233-11	SWITCH, KEYBOARD (TIME SET H)	
S6	1-762-233-11	SWITCH, KEYBOARD (CLOCK)	
S7	1-762-233-11	SWITCH, KEYBOARD (SLEEP)	
S8	1-762-233-11	SWITCH, KEYBOARD (SNOOZE/SLEEP OFF)	

Ref. No.	Part No.	Description	Remark
< TRANSFORMER >			
T1	1-404-790-11	TRANSFORMER, IF	

*	1-657-100-11	SWITCH BOARD (C&SA)	

< SWITCH >			
S101	1-762-231-11	SWITCH, SLIDE (FREQUENCY) (C&SA)	

MISCELLANEOUS			

△15	1-555-795-00	CORD, POWER (EXCEPT UK, AUS)	
△16	1-696-572-21	CORD, POWER (UK)	
△17	1-765-458-11	CORD, POWER (AUS)	
SP1	1-504-748-11	SPEAKER (6.6CM)	
△T2	1-427-928-11	TRANSFORMER, POWER	

ACCESSORIES & PACKING MATERIALS			

*	3-324-066-01	SHEET, PROTECTION	
	3-798-664-11	MANUAL, INSTRUCTION (ENGLISH, GERMAN, DUTCH, SWEDISH, PORTUGUESE, SPANISH) (C270:AEP)	
	3-798-664-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN, DUTCH) (UK, IT, C270L)	
	3-798-664-31	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH) (E, C&SA, AUS)	
*	3-924-390-01	INDIVIDUAL CARTON (C270)	
*	3-924-390-11	INDIVIDUAL CARTON (C270L)	

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

9-960-225-11

**Sony Corporation
Consumer A & V Products Company
Personal A & V Products Div.**

—16—

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ICF-C270/C270L

SONY.

SERVICE MANUAL

AEP Model

ICF-C270/C270L

UK Model

E Model

Australian Model

ICF-C270

SUPPLEMENT-1

File this supplement with the service manual.

Subject : Addition of the Saudi Arabia model in ICF-C270

(ENG-97012)

The mechanical and electrical specifications of ICF-C270 Saudi Arabia model are almost same as them of E model.

Therefore this manual contained only the points which differ from E model.

Page	ICF-C270 E model	ICF-C270 Saudi Arabia model												
10														
8														
13	<table border="1"> <thead> <tr> <th>No.</th> <th>Part No.</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>*6</td> <td>A-3662-246-A</td> <td>MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD)</td> </tr> </tbody> </table>	No.	Part No.	Description	*6	A-3662-246-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD)	<table border="1"> <thead> <tr> <th>No.</th> <th>Part No.</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>*6</td> <td>A-3662-801-A</td> <td>MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD)</td> </tr> </tbody> </table>	No.	Part No.	Description	*6	A-3662-801-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD)
No.	Part No.	Description												
*6	A-3662-246-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD)												
No.	Part No.	Description												
*6	A-3662-801-A	MAIN BOARD, COMPLETE (INCLUDING POWER SUPPLY BOARD)												
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