

ICF-C111

SERVICE MANUAL

E Model

Ver 1.1 2001.05



SPECIFICATIONS

Time display

12-hour system (AR, E13, SP)
24-hour system (E92, MX)

Frequency range

FM: 87.5 - 108 MHz
AM: 530 - 1710 kHz

Speaker

Approx. 6.6 cm (2 5/8 inches) dia., 8 ohm

Power output

100 mW (at 10% harmonic distortion)

Power requirements

120 V AC, 60 Hz (E92, MX)
220 - 230 V AC, 50 Hz (AR, SP)
220 - 230 V AC, 60 Hz (E13)
For the power back-up function: 9 V DC, one 6F22 battery

Battery life

Approx. 60 hours, using Sony S-006P (6F22) battery

Dimensions

Approx. 146.5 × 100.5 × 123 mm (w/h/d)
(5 7/8 × 4 × 4 7/8 inches) incl. projecting parts and controls

Mass

Approx. 580 g (1 lb 4.4 oz) not incl. battery

Design and specifications are subject to change without notice.

• Abbreviation

AR : Argentina model
E13 : AC 220 - 230 V area in E model
E92 : AC 120 V area in E model
MX : Mexican model
SP : Singapore model

FM/AM CLOCK RADIO

9-873-094-12
2001E0400-1
© 2001.5

Sony Corporation
Personal Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

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.

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7. ELECTRICAL PARTS LIST

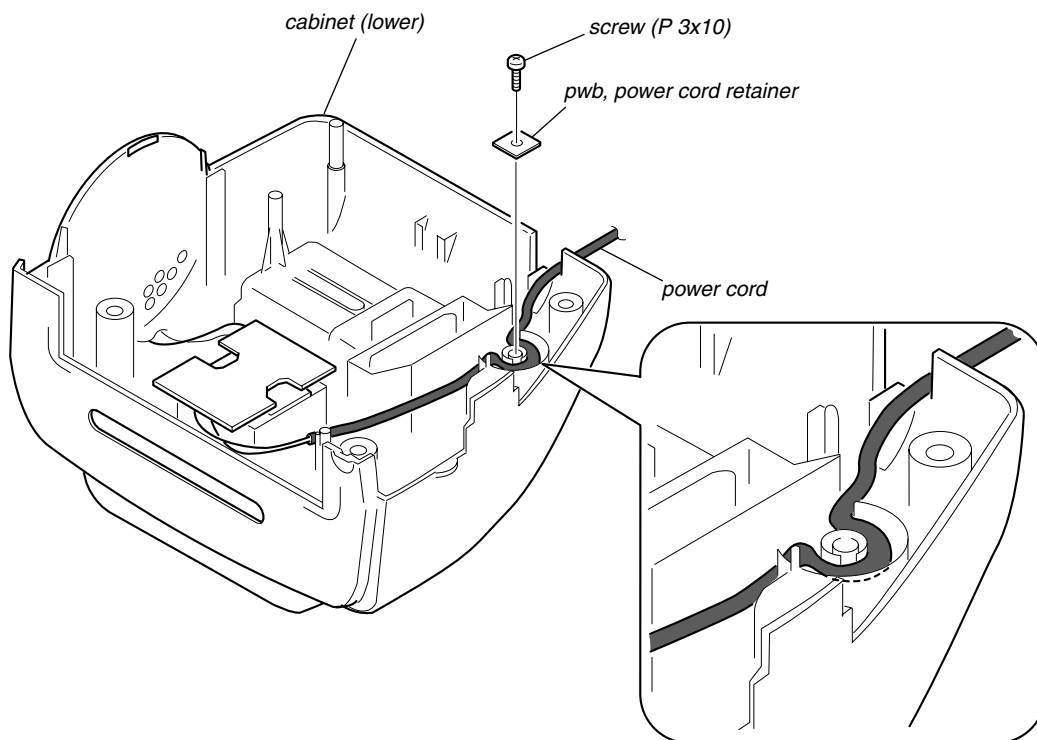
SAFETY-RELATED COMPONENT WARNING!!

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.

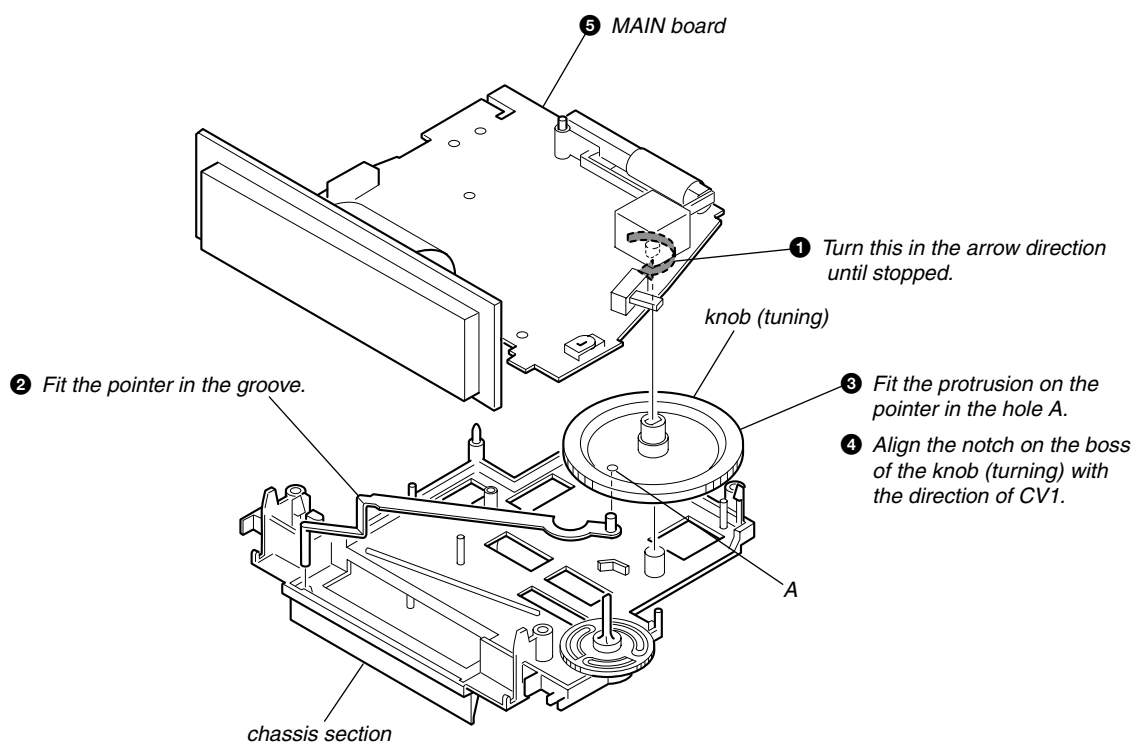
SECTION 1 SERVICING NOTES

1-1. CORD DRESSING (POWER CORD)

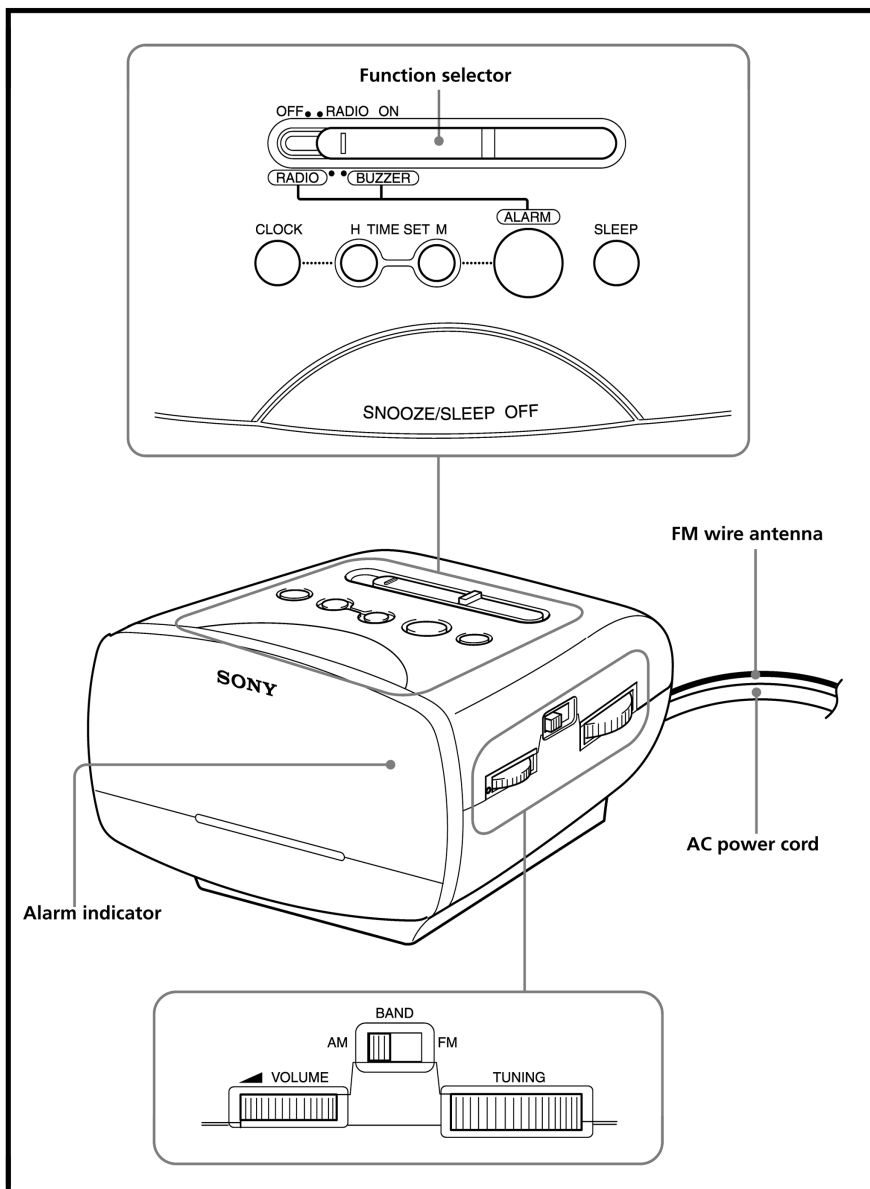
- 1) Connect the power cord as shown in the figure.
 - 2) Mount the chassis with screws (P 3 × 10).
- Note: Tighten completely the screws (P 3 × 10).



1-2. POINTER ALIGNMENT



This section is extracted
from instruction manual.



Setting the Alarm

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

- 1 To set the hour for alarm, while holding down **ALARM**, press **TIME SET H**. When the desired hour appears in the display, release **ALARM**.
- 2 To set the minute for alarm, while holding down **ALARM**, press **TIME SET M**. When the desired minute appears in the display, release **ALARM**.
- 3 Set the function selector to **RADIO** or **BUZZER**.
The alarm indicator will light up. The alarm will come on at the preset time, and the alarm indicator will stay lit. The alarm will be turned off automatically after about 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**.
The alarm indicator will be turned off.
- To doze a few more minutes, press **SNOOZE/SLEEP OFF**.
The alarm will be turned off but will come on again after about 9 minutes (While the snooze function is operating, the alarm indicator stays lit. When the alarm comes on again, the alarm indicator will stay lit). You can repeat this process as many times as you like.
- To adjust the radio alarm volume, turn **VOLUME**.
The buzzer volume is fixed.
- To check the preset time, press **ALARM**.

Setting the Sleep Timer

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

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

- 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 **TIME SET H** or **TIME SET M** advances the displayed number by one.
- The minute digits advance to "00" after "59". The hour digits do not advance by pressing **TIME SET M**.
- To adjust the time exactly to the second, press **TIME SET M** simultaneously with the time signal.

Operating the Radio

- 1 Set the function selector to **RADIO ON** to turn on the radio and adjust **VOLUME**.
- 2 Select **BAND** and tune in to a station using **TUNING**.
FM/AM: ICF-C111 only
FM/MW/LW: ICF-C111L only

- To turn off the radio, set the function selector to **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.

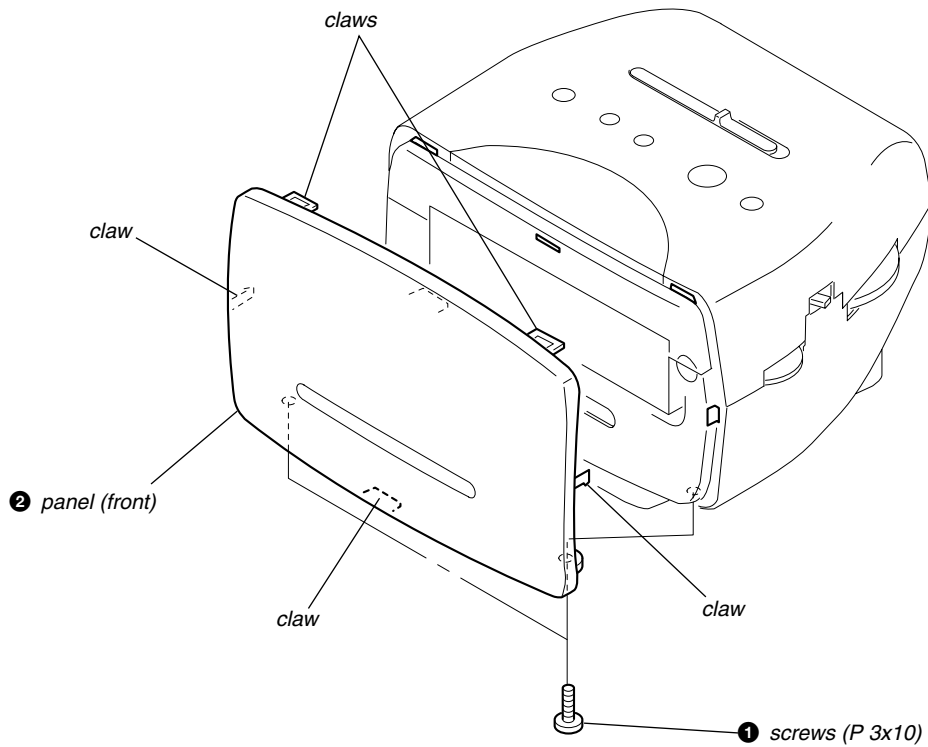
SECTION 3 DISASSEMBLY

- The equipment can be removed using the following procedure.

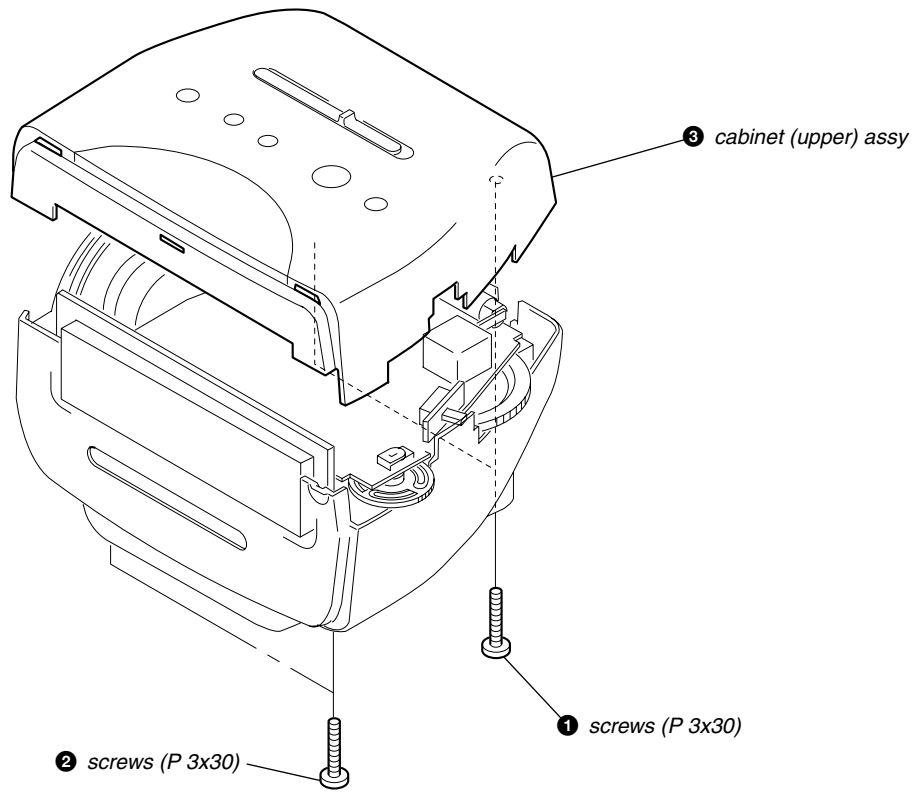
Set → Panel (Front) → Cabinet (Upper) Assy → Chassis Section → Main Board

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

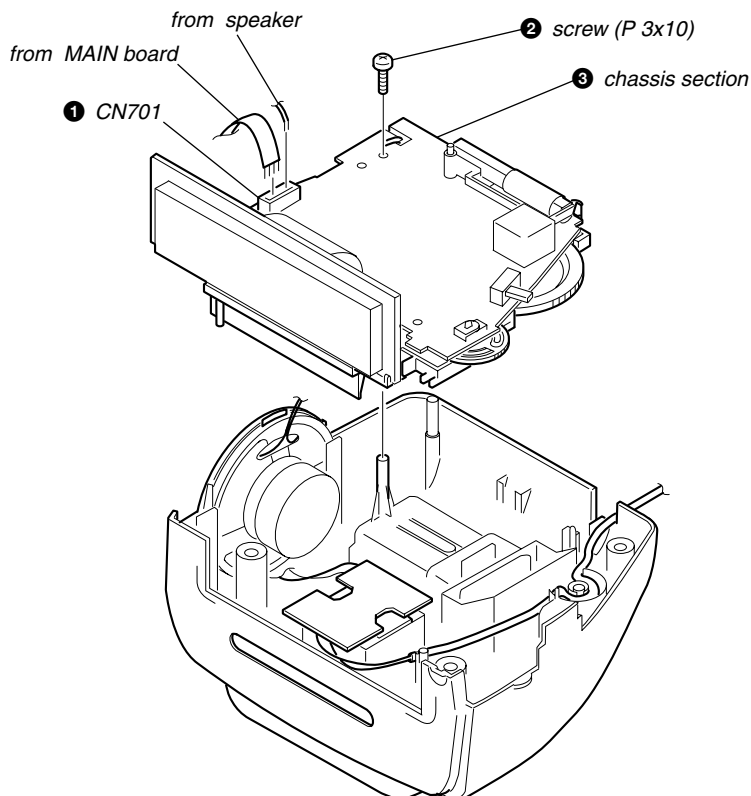
3-1. PANEL (FRONT)



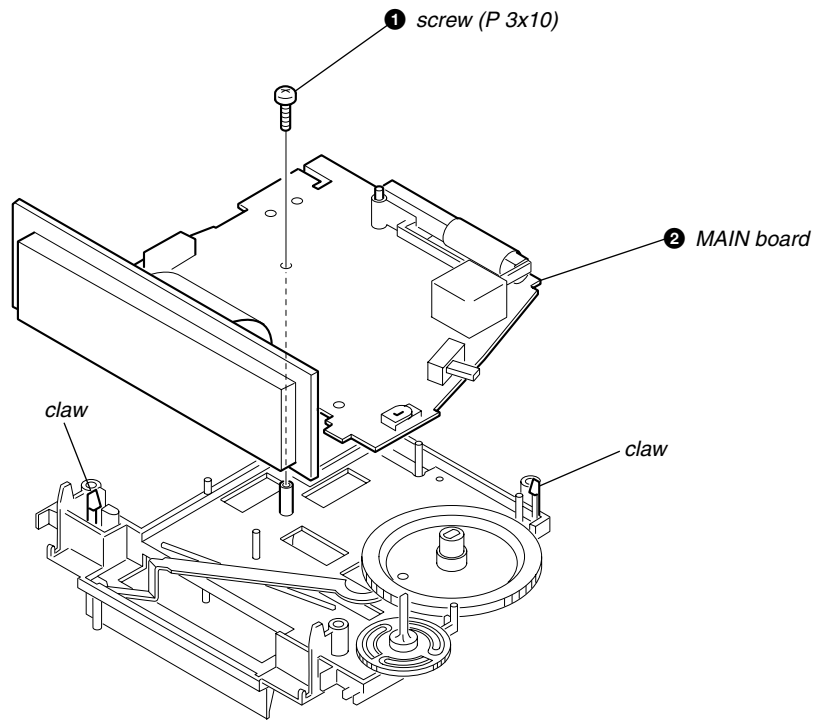
3-2. CABINET (UPPER) ASSY



3-3. CHASSIS SECTION



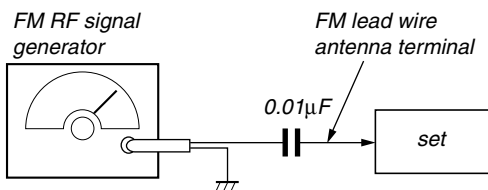
3-4. MAIN BOARD



SECTION 4 ELECTRICAL ADJUSTMENTS

FM SECTION **0 dB = 1 μ V**

Setting:
BAND switch: FM
VOLUME switch: MIN



400Hz, 30% FM modulation
frequency deviation ± 22.5 kHz
Output level: as low as possible

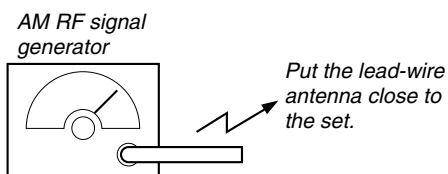
FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L4	CT4
86.5 MHz	109.5 MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	CT3
86.5 MHz	109.5 MHz

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

AM SECTION

Setting:
BAND switch: AM
VOLUME switch: MIN



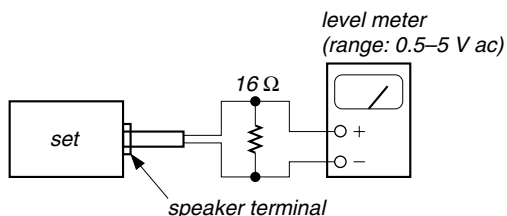
400Hz, 30%
AM modulation
Output level: as low as possible

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L2	CT2
520 kHz	1,750 kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1	CT1
600 kHz	1,400 kHz

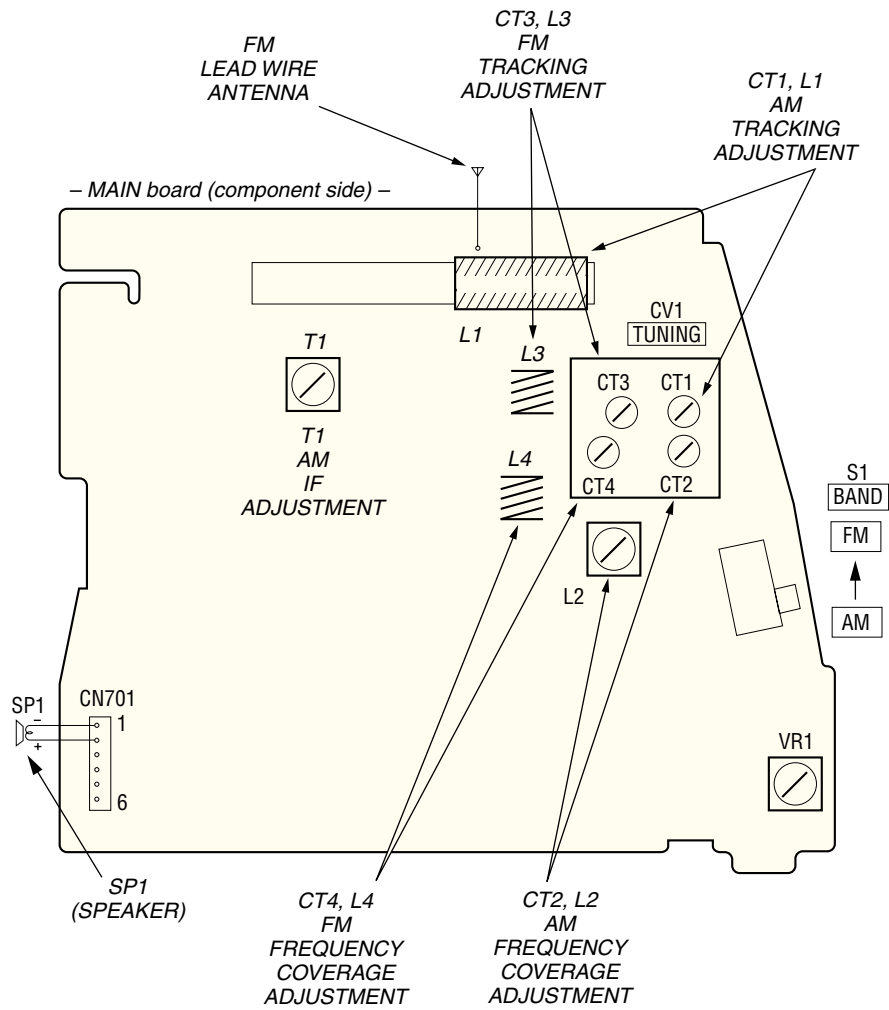
Adjustment Location: See page 9.

• **Connecting Level Meter (FM and AM)**




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:






**THIS NOTE IS COMMON FOR PRINTED WIRING
BOARDS AND SCHEMATIC DIAGRAMS.****Common Note on Schematic Diagram:**

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu\text{F}$
50 WV 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.
- \triangle : internal component.
-  : panel designation.

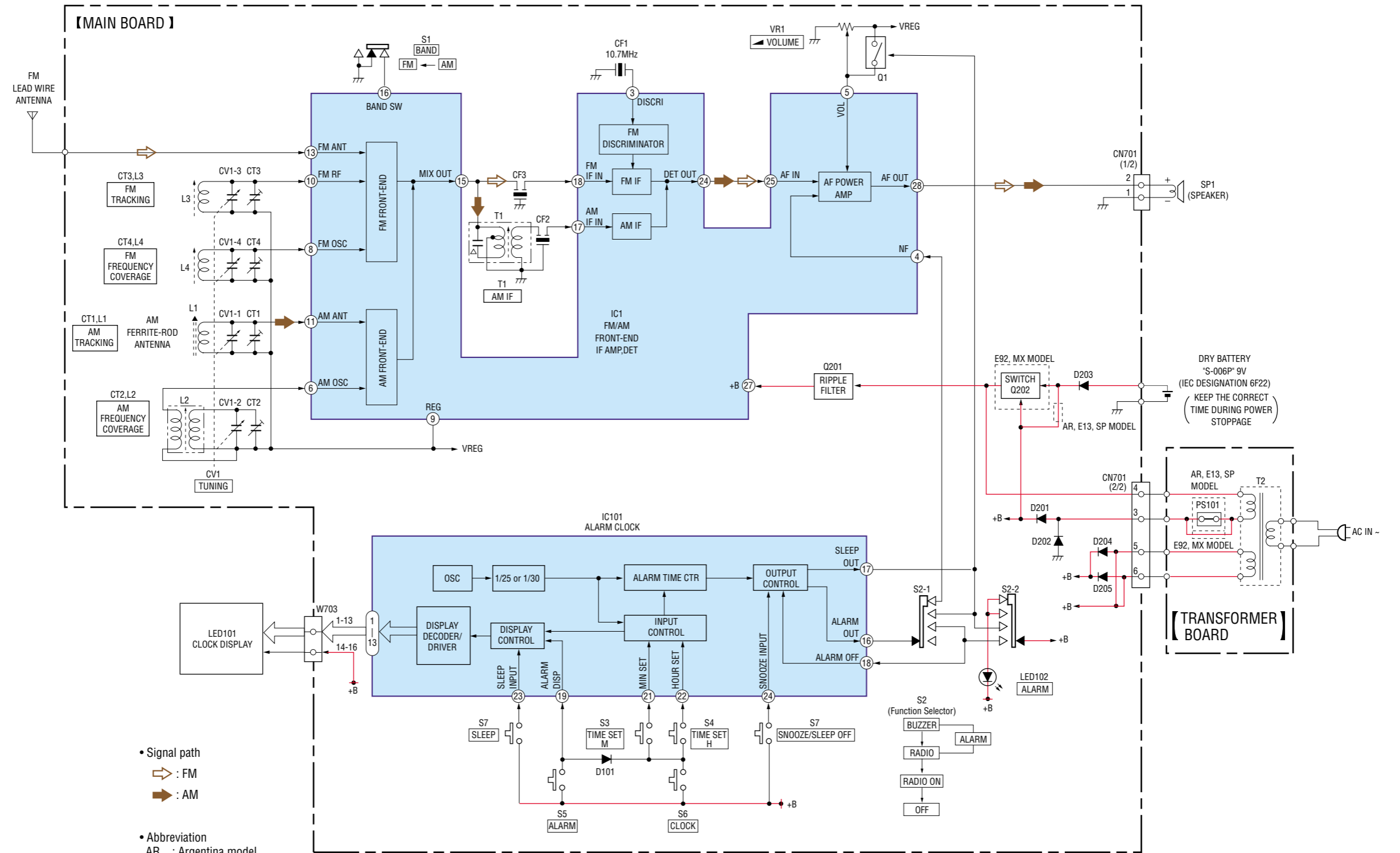
Note: The components identified by mark \triangle or dotted line
with mark \triangle are critical for safety.
Replace only with part number specified.

-  : B+ Line.
-  : adjustment for repair.
- Total current is measured.
- Power voltage is dc 9V and fed with regulated dc power
supply from battery terminal.
- Voltage is dc with respect to ground under no-signal
(detuned) condition.
no mark : FM
() : AM
- Voltages are taken with a VOM (Input impedance $10\text{ M}\Omega$).
Voltage variations may be noted due to normal produc-
tion tolerances.
- Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal produc-
tion tolerances.
- Signal path.
 : FM
 : AM
- Abbreviation
AR : Argentina model.
E13 : AC 220 – 230 V area in E model.
E92 : AC 120 V area in E model.
MX : Mexican model.
SP : Singapore model.

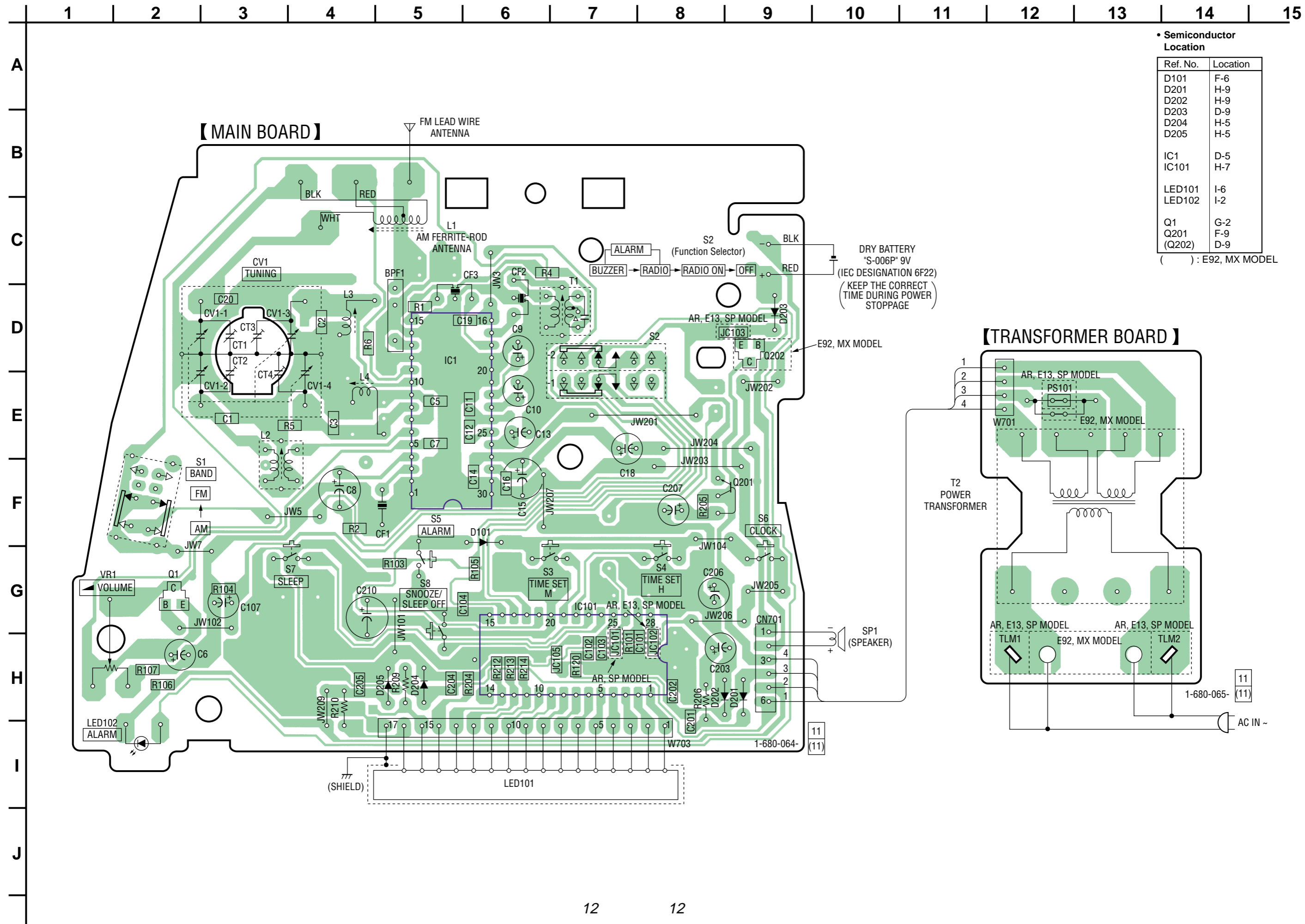
Common Note on Printed Wiring Boards:

-  : parts extracted from the component side.
-  : parts extracted from the conductor side.
- \triangle : internal component.
-  : Pattern from the side which enables seeing.
- Abbreviation
AR : Argentina model.
E13 : AC 220 – 230 V area in E model.
E92 : AC 120 V area in E model.
MX : Mexican model.
SP : Singapore model.

5-1. BLOCK DIAGRAM



5-2. PRINTED WIRING BOARD • Refer to page 10 for Common Note on Printed Wiring Boards.

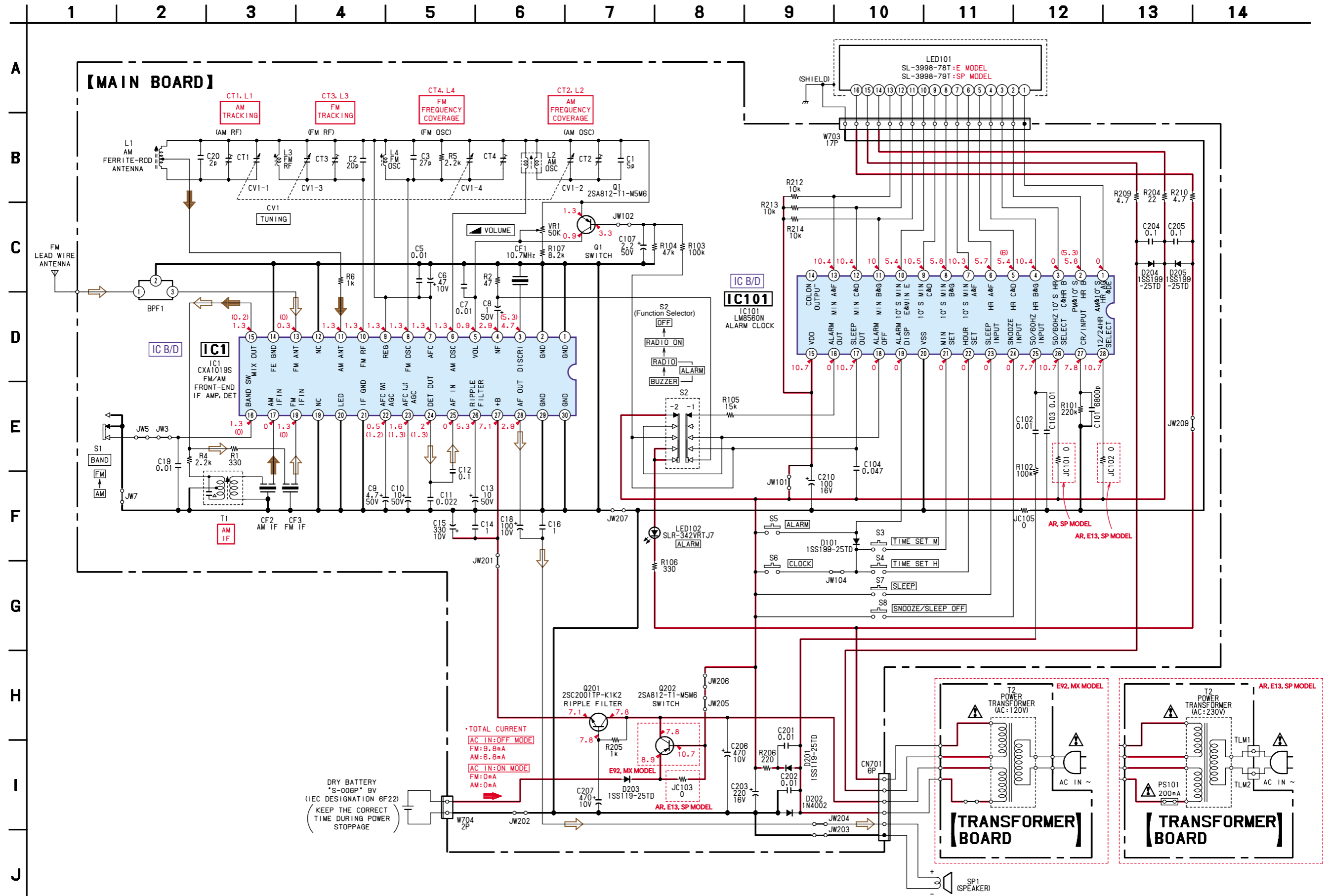


• Semiconductor Location

Ref. No.	Location
D101	F-6
D201	H-9
D202	H-9
D203	D-9
D204	H-5
D205	H-5
IC1	D-5
IC101	H-7
LED101	I-6
LED102	I-2
Q1	G-2
Q201	F-9
Q202	D-9

() : E92, MX MODEL

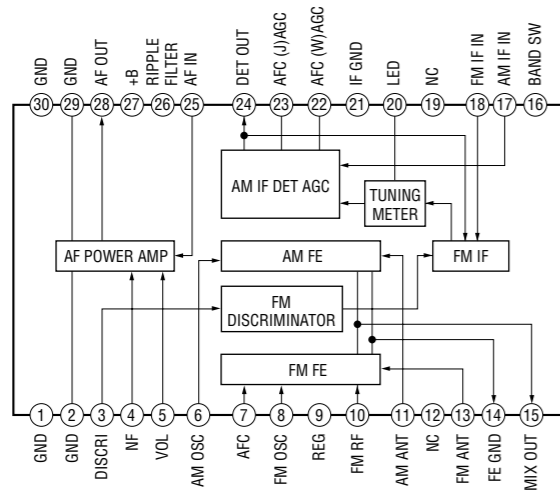
5-3. SCHEMATIC DIAGRAM • Refer to page 10 for Common Note on Schematic Diagram and page 14 for IC Block Diagrams.



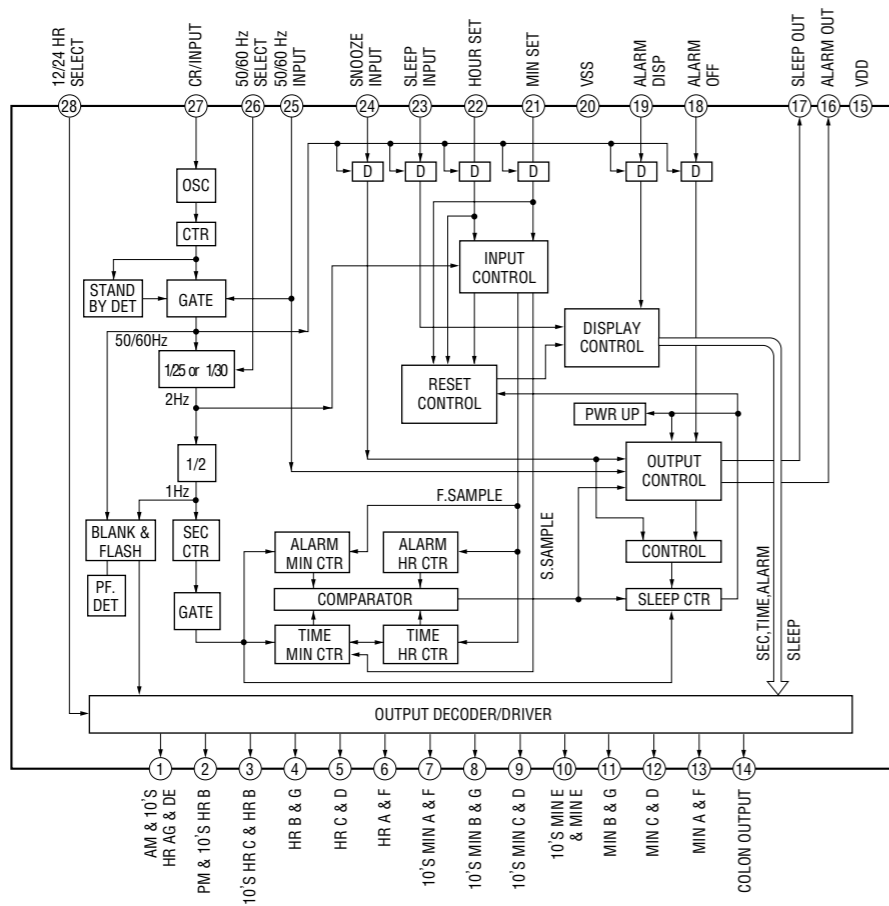
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• IC Block Diagrams

IC1 CXA1019S



IC101 LM8560N



SECTION 6 EXPLODED VIEWS

NOTE:

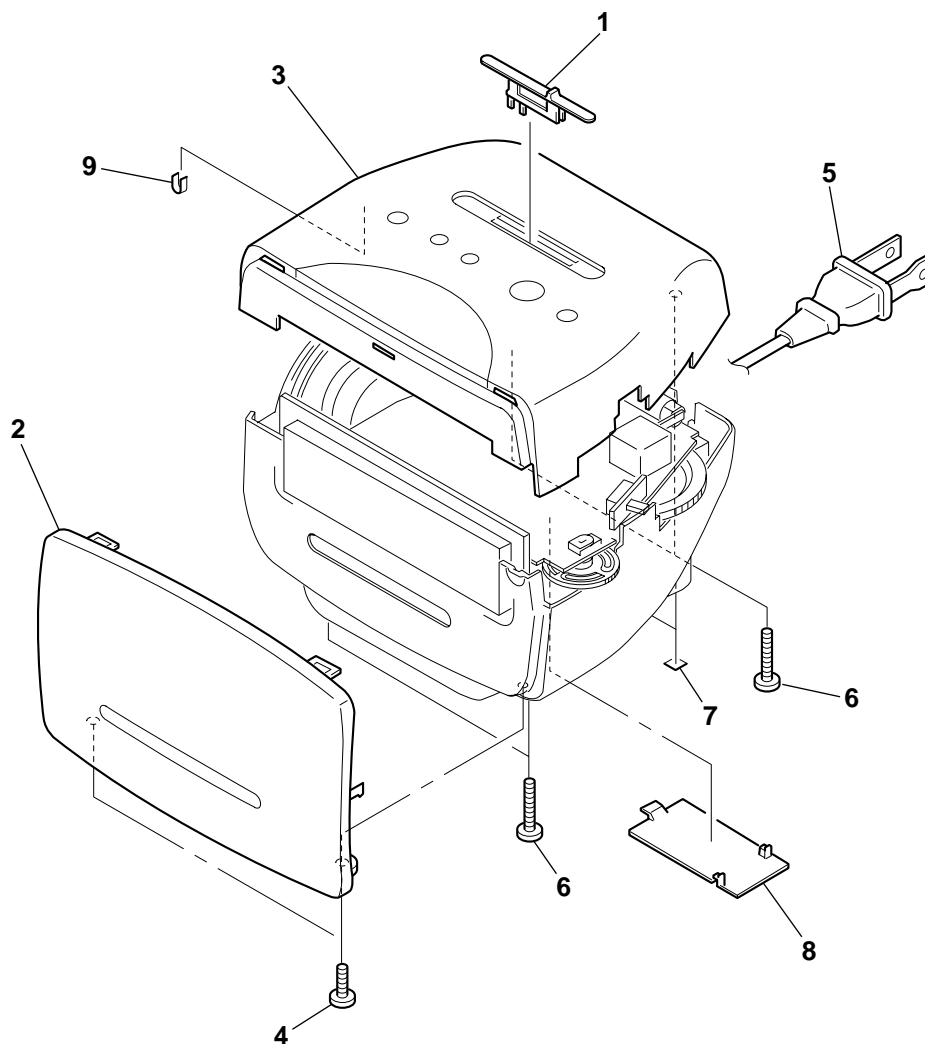
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
 AR : Argentina model
 E13 : AC 220 – 230 V area in E model
 E92 : AC 120 V area in E model
 MX : Mexican model
 SP : Singapore model

- Color Indication of Appearance Parts
 Example :
 KNOB, BALANCE (WHITE) ... (RED)

↑ ↑
 Parts Color Cabinet's Color
- Accessories and packing materials are given in the last of this parts list.

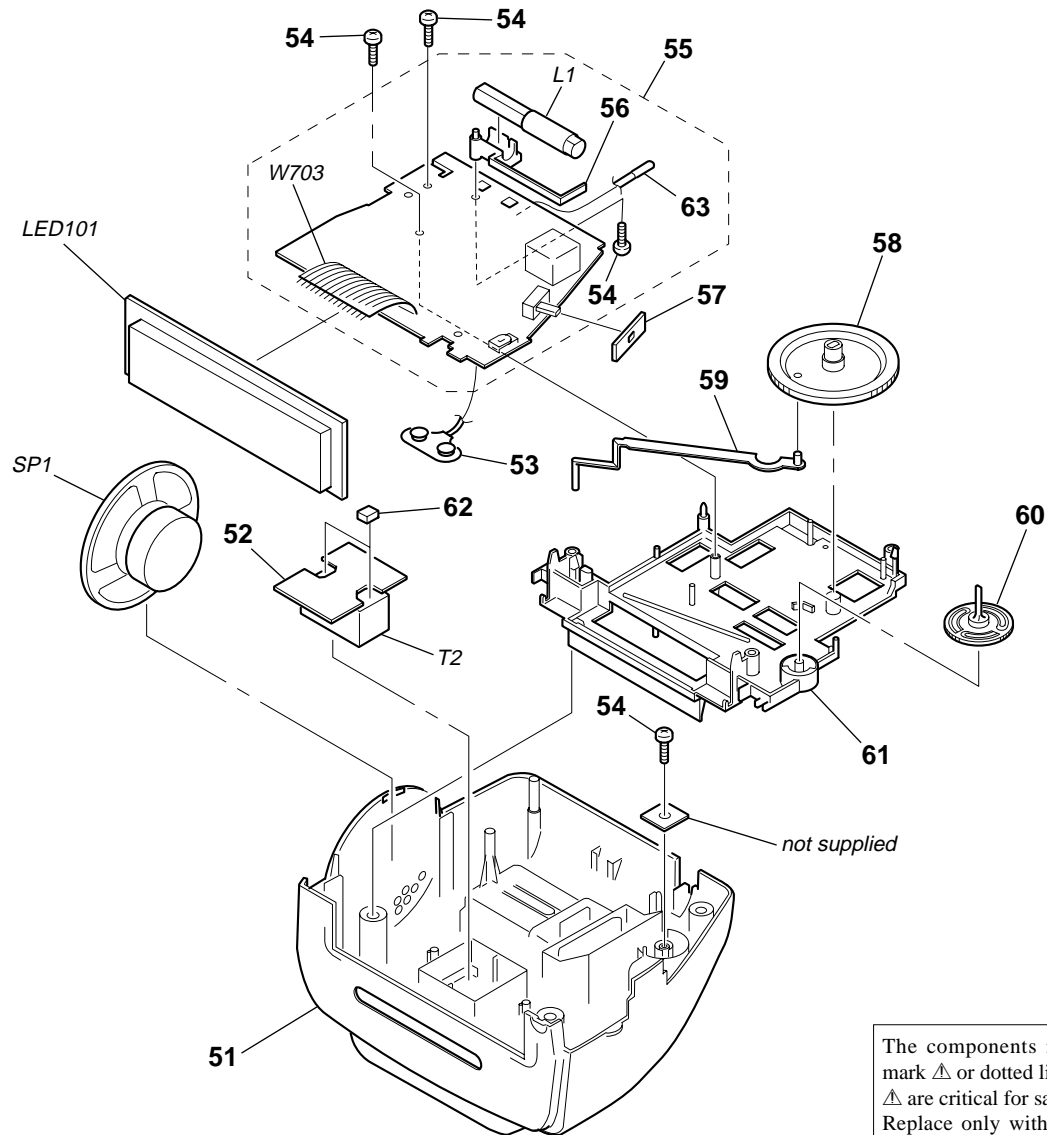
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

6-1. CABINET (UPPER) SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-226-587-01	KNOB (FUNCTION) (BLACK)		4	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
1	3-226-587-11	KNOB (FUNCTION) (WHITE)		\triangle 5	1-555-795-00	CORD, POWER (E13,SP)	
2	3-226-584-01	PANEL (FRONT) (E92,MX)		\triangle 5	1-769-339-22	CORD, POWER (E92,MX)	
2	3-226-584-11	PANEL (FRONT) (AR,E13,SP)		\triangle 5	1-790-124-11	CORD, POWER (AR)	
3	X-3380-019-1	UPPER ASSY, CABINET (BLACK) (E92)		6	7-685-153-19	SCREW +P 3X30 TYPE2 NON-SLIT	
3	X-3380-019-2	UPPER ASSY, CABINET (WHITE) (E92,MX)		7	3-368-852-01	FOOT	
3	X-3380-020-1	UPPER ASSY, CABINET (BLACK) (AR,E13,SP)		8	3-369-135-21	LID, BATTERY CASE	
3	X-3380-020-2	UPPER ASSY, CABINET (WHITE) (AR,SP)		9	3-515-102-31	CUSHION	

6-2. CABINET (LOWER) SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-226-583-01	CABINET (LOWER) (BLACK) (E92)		59	3-226-589-01	POINTER	
51	3-226-583-11	CABINET (LOWER) (WHITE) (E92,MX)		60	3-919-268-01	KNOB (VOL) (BLACK)	
51	3-226-583-21	CABINET (LOWER) (BLACK) (AR,E13,SP)		60	3-919-268-11	KNOB (VOL) (WHITE)	
51	3-226-583-31	CABINET (LOWER) (WHITE) (AR,SP)		61	3-226-585-01	CHASSIS	
* 52	1-680-065-11	TRANSFORMER BOARD		62	3-553-567-00	CUSHION	
53	1-535-804-21	SNAP, BATTERY		63	1-754-135-11	ANTENNA (WIRE)	
54	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT		LED101	8-749-016-86	LED SL-3998-78T (E92,MX)	
* 55	A-3052-458-A	MAIN BOARD COMPLETE (E13)		LED101	8-749-016-87	LED SL-3998-79T (AR,E13,SP)	
* 55	A-3683-274-A	MAIN BOARD COMPLETE (E92,MX)		SP1	1-529-456-11	SPEAKER (6.6cm)	
* 55	A-3683-279-A	MAIN BOARD COMPLETE (AR,SP)		Δ T2	1-433-573-11	TRANSFORMER, POWER (E92,MX)	
56	3-226-590-01	HOLDER (ANTENNA)		Δ T2	1-433-574-21	TRANSFORMER, POWER (AR,E13,SP)	
57	3-933-547-01	SHEET (BAND)		W703	1-757-686-11	CORD, CONNECTION (17 CORE)	
58	3-226-588-01	KNOB (TUNING) (BLACK)					
58	3-226-588-11	KNOB (TUNING) (WHITE)					

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MAIN TRANSFORMER

Ref. No.	Part No.	Description	Remark
Q201	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
Q202	8-729-216-22	TRANSISTOR 2SA1162-G (E92,MX)	
< RESISTOR >			
R1	1-216-815-11	METAL CHIP 330 5%	1/16W
R2	1-216-805-11	METAL CHIP 47 5%	1/16W
R4	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R5	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R6	1-216-821-11	METAL CHIP 1K 5%	1/16W
R101	1-216-849-11	METAL CHIP 220K 5%	1/16W
R102	1-216-845-11	METAL CHIP 100K 5%	1/16W
R103	1-216-845-11	METAL CHIP 100K 5%	1/16W
R104	1-216-841-11	METAL CHIP 47K 5%	1/16W
R105	1-216-835-11	METAL CHIP 15K 5%	1/16W
R106	1-216-815-11	METAL CHIP 330 5%	1/16W
R107	1-216-832-11	METAL CHIP 8.2K 5%	1/16W
R204	1-216-801-11	METAL CHIP 22 5%	1/16W
R205	1-216-821-11	METAL CHIP 1K 5%	1/16W
R206	1-249-409-11	CARBON 220 5%	1/4W
R209	1-249-389-11	CARBON 4.7 5%	1/4W
R210	1-249-389-11	CARBON 4.7 5%	1/4W
R212	1-216-833-11	METAL CHIP 10K 5%	1/16W
R213	1-216-833-11	METAL CHIP 10K 5%	1/16W
R214	1-216-833-11	METAL CHIP 10K 5%	1/16W
< SWITCH >			
S1	1-692-181-21	SWITCH, SLIDE (BAND)	
S2	1-771-904-11	SWITCH, SLIDE (Function selector)	
S3	1-692-014-11	SWITCH, KEYBOARD (TIME SET M)	
S4	1-692-014-11	SWITCH, KEYBOARD (TIME SET H)	
S5	1-692-014-11	SWITCH, KEYBOARD (ALARM)	
S6	1-692-014-11	SWITCH, KEYBOARD (CLOCK)	
S7	1-692-014-11	SWITCH, KEYBOARD (SLEEP)	
S8	1-692-014-11	SWITCH, KEYBOARD (SNOOZE/SLEEP OFF)	
< TRANSFORMER >			
T1	1-435-399-11	TRANSFORMER, IF	
< VARIABLE RESISTOR >			
VR1	1-228-790-00	RES, VAR, CARBON 50K (VOLUME)	
< CONNECTION CORD >			
W703	1-757-686-11	CORD, CONNECTION (17 CORE)	

Ref. No.	Part No.	Description	Remark
*	1-680-065-11	TRANSFORMER BOARD *****	
△	1-555-795-00	CORD, POWER (E13,SP)	
△	1-769-339-22	CORD, POWER (E92,MX)	
△	1-790-124-11	CORD, POWER (AR)	
< IC LINK >			
△PS101	1-533-971-11	LINK, IC (200mA) (AR,E13,SP)	
< TRANSFORMER >			
△T2	1-433-573-11	TRANSFORMER, POWER (E92,MX)	
△T2	1-433-574-21	TRANSFORMER, POWER (AR,E13,SP)	
< TERMINAL >			
* TLM1	1-535-771-11	TERMINAL (AR,E13,SP)	
* TLM2	1-535-771-11	TERMINAL (AR,E13,SP)	

MISCELLANEOUS *****			
△5	1-555-795-00	CORD, POWER (E13,SP)	
△5	1-769-339-22	CORD, POWER (E92,MX)	
△5	1-790-124-11	CORD, POWER (AR)	
53	1-535-804-21	SNAP, BATTERY	
SP1	1-529-456-11	SPEAKER (6.6cm)	

ACCESSORIES & PACKING MATERIALS *****			
3-227-320-01		SHEET (BLIND) (BLACK) (E92)	
3-227-320-11		SHEET (BLIND) (WHITE) (E92,MX)	
3-227-587-11		MANUAL, INSTRUCTION (ENGLISH,FRENCH, GERMAN,SPANISH,DUTCH,ITALIAN) (AR,E13,E92,MX)	
3-227-587-41		MANUAL, INSTRUCTION (ENGLISH, SIMPLIFIED CHINESE,POLISH,CZECH, HUNGARIAN,SLOVAKIAN) (SP)	

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

MEMO

