

# ICF-C215/C215L

## SERVICE MANUAL

Ver 1.0 2000.07

UK Model

E Model

ICF-C215

AEP Model

ICF-C215/C215L



Photo : ICF-C215

### SPECIFICATIONS

#### Time display:

UK : 12-hour system

Other countries: 24-hour system

#### Frequency range:

	Band	ICF-C215	ICF-C215L
Italy	FM	87.5 - 108 MHz	-
	AM	526.5 - 1 606.5 kHz	-
Other countries	FM	87.5 - 108 MHz	87.5 - 108 MHz
	AM	530 - 1 710 kHz	-
	LW	-	153 - 255 kHz

#### Speaker:

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

#### Power output:

150 mW (at 10 % harmonic distortion)

#### Power requirements:

220 - 230 V AC, 50 Hz

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

#### Battery life:

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

#### Dimensions:

Approx. 200 × 62 × 166 mm (w/h/d)

(7<sup>7</sup>/<sub>8</sub> × 2<sup>1</sup>/<sub>2</sub> × 6<sup>5</sup>/<sub>8</sub> inches) incl.

projecting parts and controls

#### Mass:

Approx. 570 g (1 lb. 4 oz.) not incl. battery

UK model only: Approx. 620 g (1 lb. 6 oz.)

not incl. battery

Design and specifications are subject to change without notice.

ICF-C215  
FM/AM CLOCK RADIO

ICF-C215L  
FM/LW CLOCK RADIO

# SONY®

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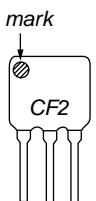
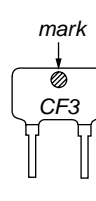
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7CET model is ICF-C215 with crystal board	

### 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.**

### • HOW TO CHANGE THE CERAMIC FILTER

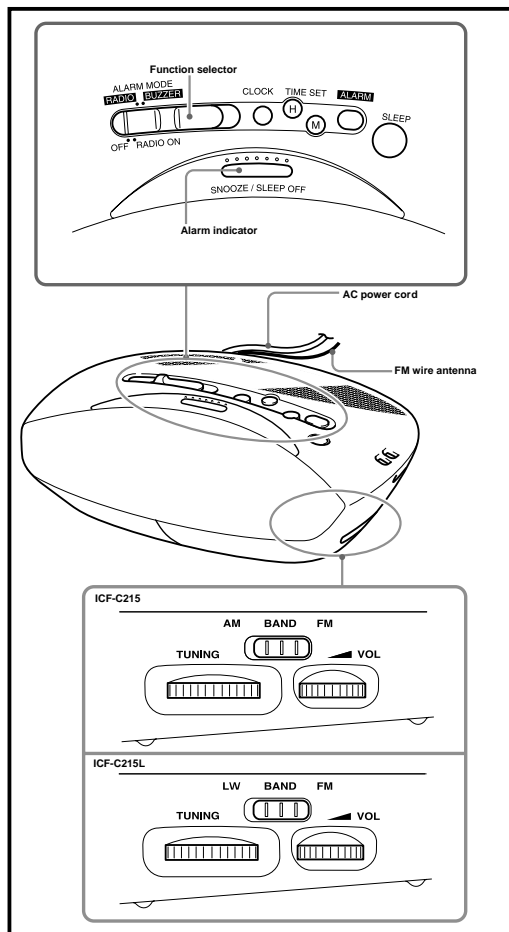
This model is used two ceramic filters of CF2 and CF3. You must use same type of color marked ceramic filters in order to meet same specifications. Therefore, the ceramic filter must change two pieces together since it's supply two pieces in package as a spare parts.

		Mark	Center frequency
		no mark	10.70MHz
		blue	10.67MHz
		orange	10.73MHz
		black	10.64MHz
		white	10.76MHz

# SECTION 1 GENERAL

This section is extracted from instruction manual.

## LOCATION AND FUNCTION OF CONTROLS



### 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, release **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 **VOL** (volume).
- 2 Select **BAND** and tune in to a station using **TUNING**.  
**FM/AM**: ICF-C215 only  
**FM/LW**: ICF-C215L 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/LW**: Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built into the unit.
- Do not operate the unit over a steel desk or metal surface, as this may lead to interference of reception.

### 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 **ALARM MODE RADIO** or **ALARM MODE BUZZER**.  
The alarm indicator will light up. The alarm will come on at the preset time, and the alarm indicator will blink. The alarm will be turned off automatically 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 **ALARM MODE RADIO** or **ALARM MODE BUZZER** again.
- To cancel either alarm, set the Function selector to **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 blink). You can repeat this process as many times as you like.
- To adjust the radio alarm volume, turn **VOL**.

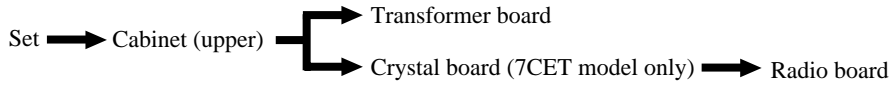
### Setting the Sleep Timer

Enjoy falling asleep to the radio using the built in sleep timer that shuts off the radio automatically after 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 **ALARM MODE RADIO** or **ALARM MODE BUZZER**, if the preset alarm time comes while the sleep timer is operating, the radio or buzzer sounds depending on which you set.

## SECTION 2 DISASSEMBLY

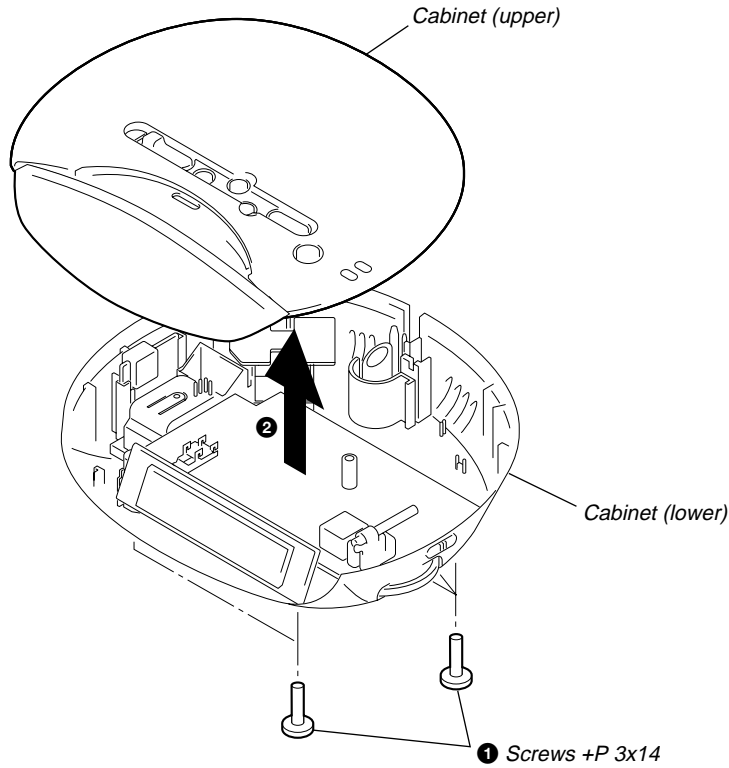
• The equipment can be removed using the following procedure.



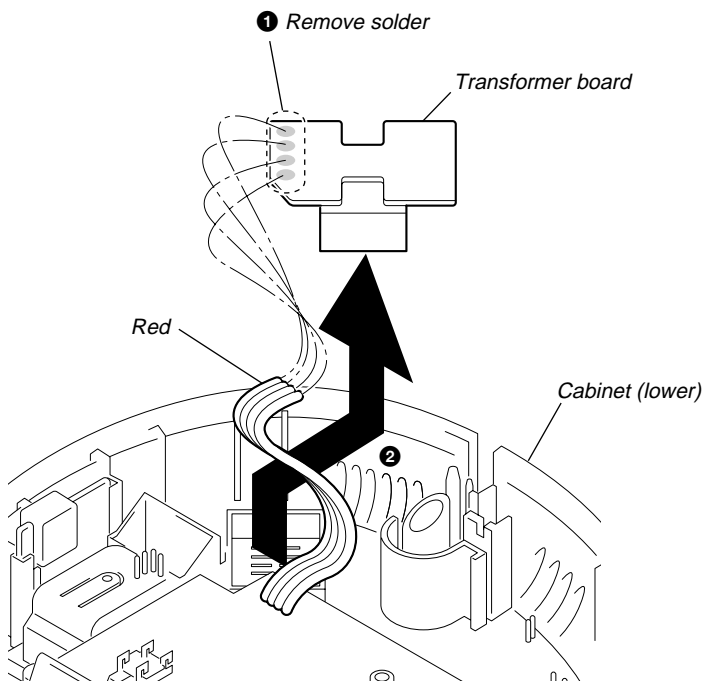
• Abbreviation  
 7CET model is ICF-C215 with  
 crystal board

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

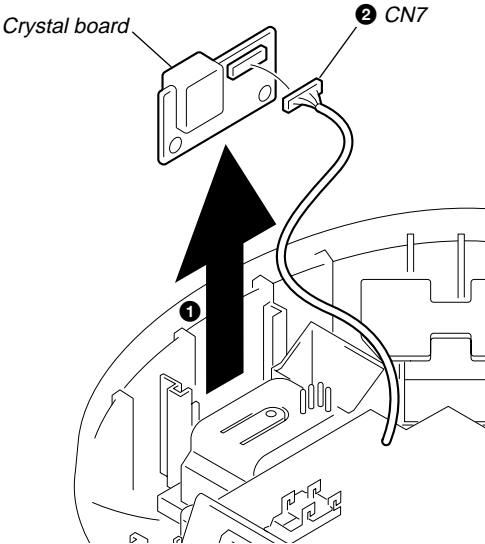
### 2-1. CABINET (UPPER)



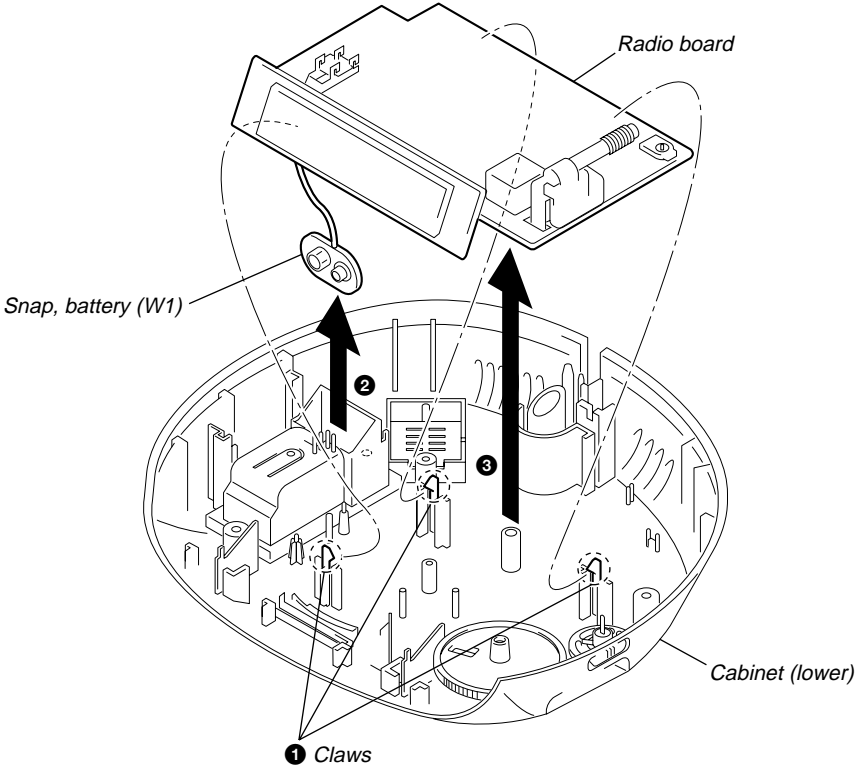
### 2-2. TRANSFORMER BOARD



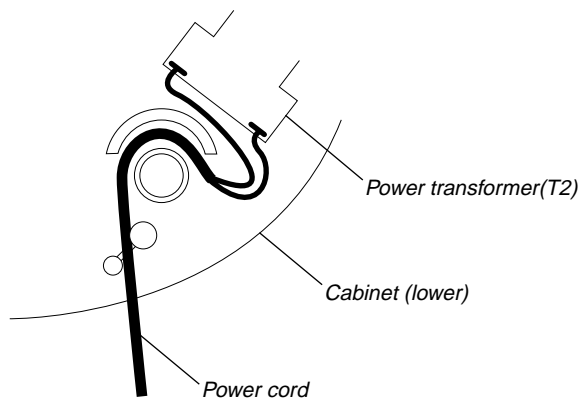
2-3. CRYSTAL BOARD (7CET MODEL ONLY)



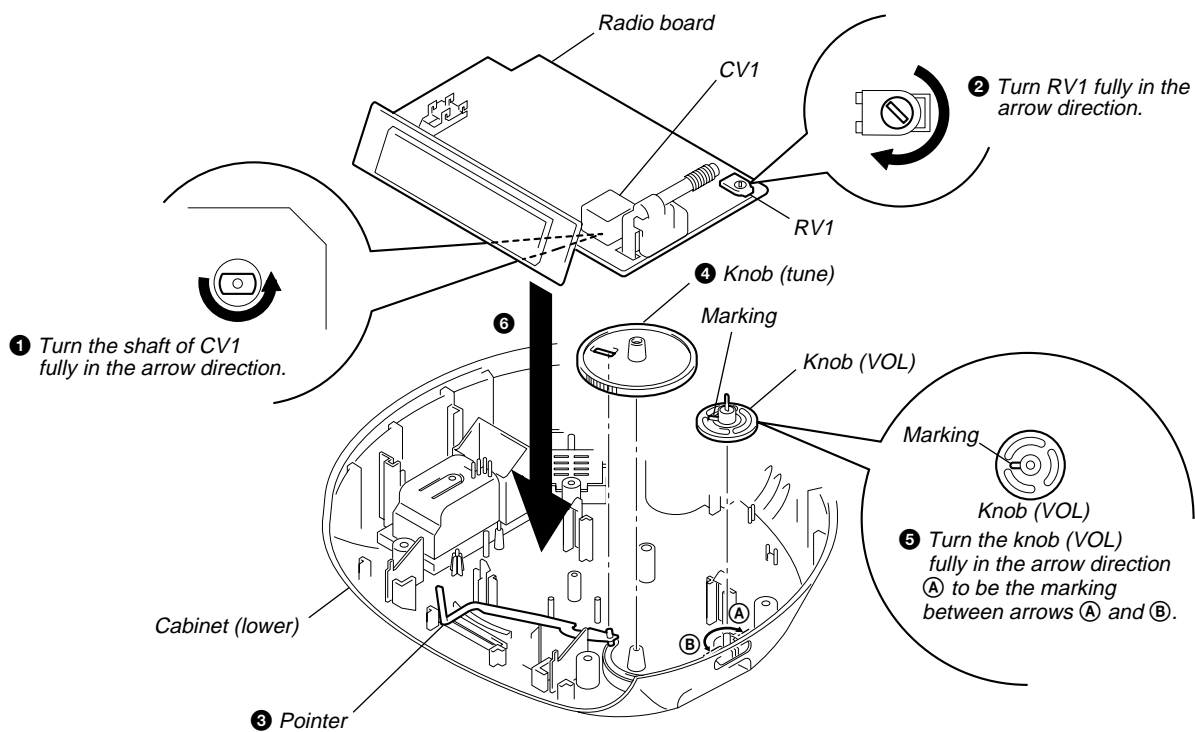
2-4. RADIO BOARD



## INSTALLATION POWER CORD



## NOTE FOR INSTALLATION (KNOB (VOL), KNOB (TUNE), POINTER)



# SECTION 3 ELECTRICAL ADJUSTMENTS

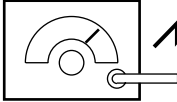
## TUNER SECTION

### AM/LW Section

**Procedure :**

BAND : AM (C215)  
LW (C215L)  
VOLUME : MIN

AM RF signal generator



Put the lead-wire antenna close to the set.

30% amplitude modulation by 400Hz signal.

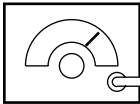
Output level : as low as possible

### FM Section

**Procedure :**

BAND : FM  
VOLUME : MIN

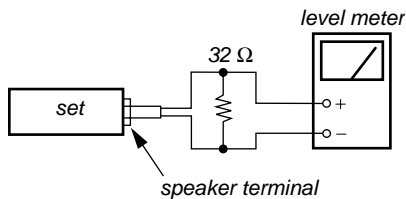
FM RF signal generator



0.01µF antenna terminal (JW1)

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.

< > : Italian model

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

### C215

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L4	520kHz <516.5kHz>
CT4	1,750kHz <1631.5kHz>

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1	620kHz
CT1	1,400kHz

### C215L

LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L4	140kHz
CT6	240kHz

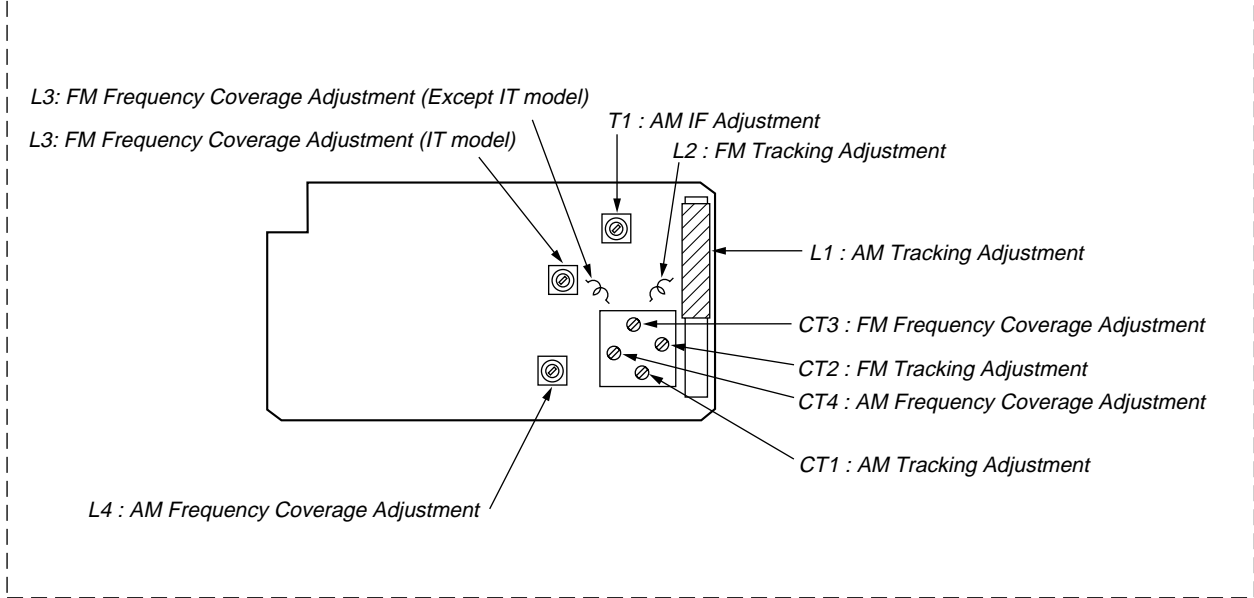
LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1	140kHz
CT5	240kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	86.5MHz <87.35MHz>
CT3	109.5MHz <108.25MHz>

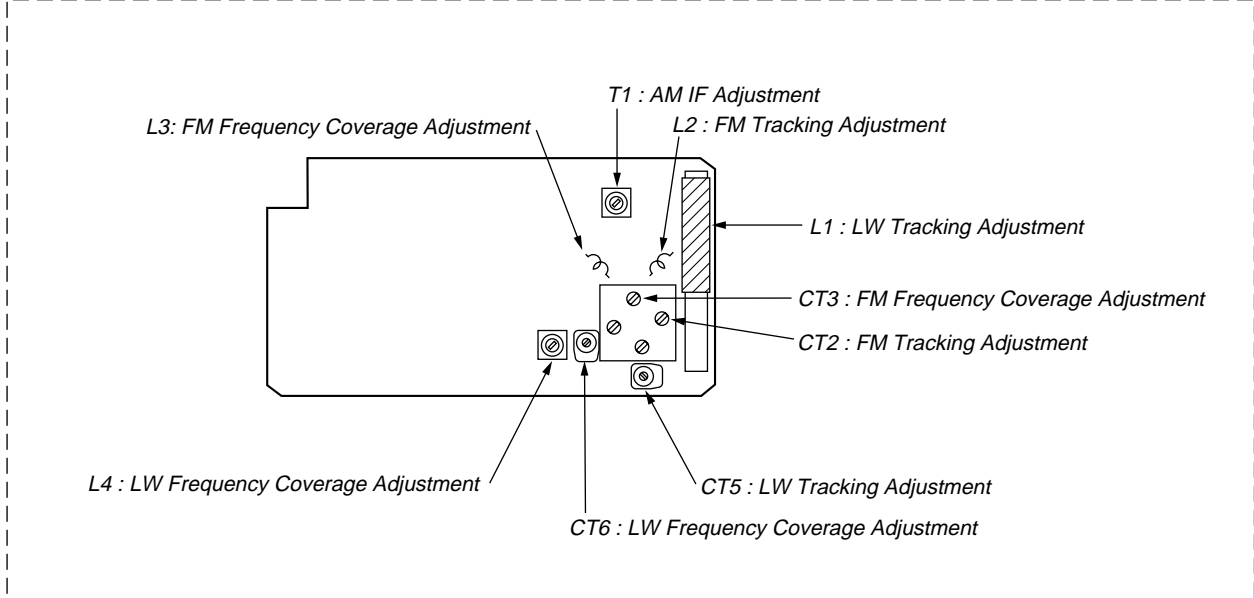
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L2	86.5MHz <87.35MHz>
CT2	109.5MHz <108.25MHz>

**Adjustment Location** RADIO board (Component side)

**ICF-C215**



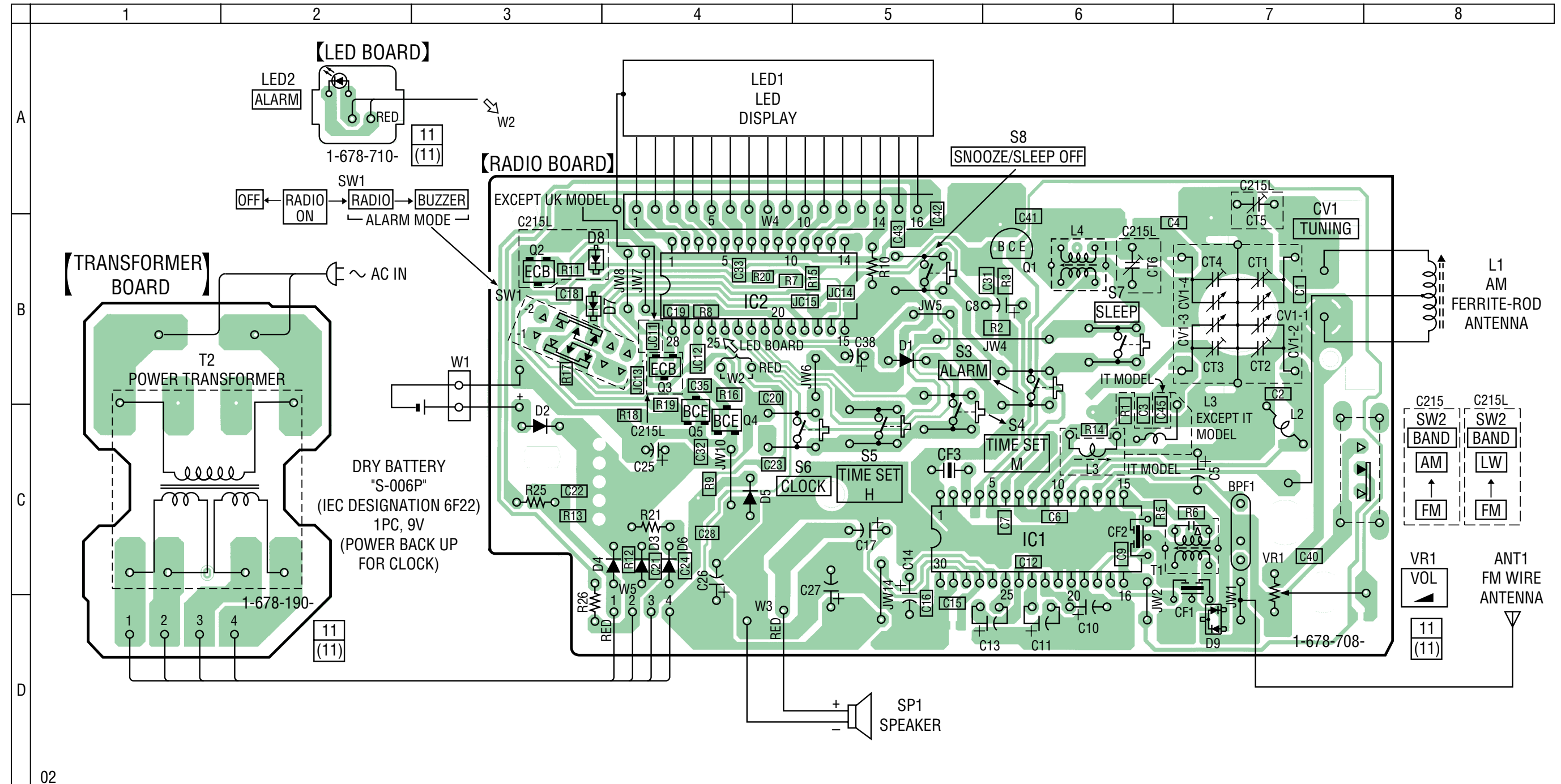
**ICF-C215L**





SECTION 4  
DIAGRAMS

4-1. PRINTED WIRING BOARDS (EXCEPT 7CET MODEL)



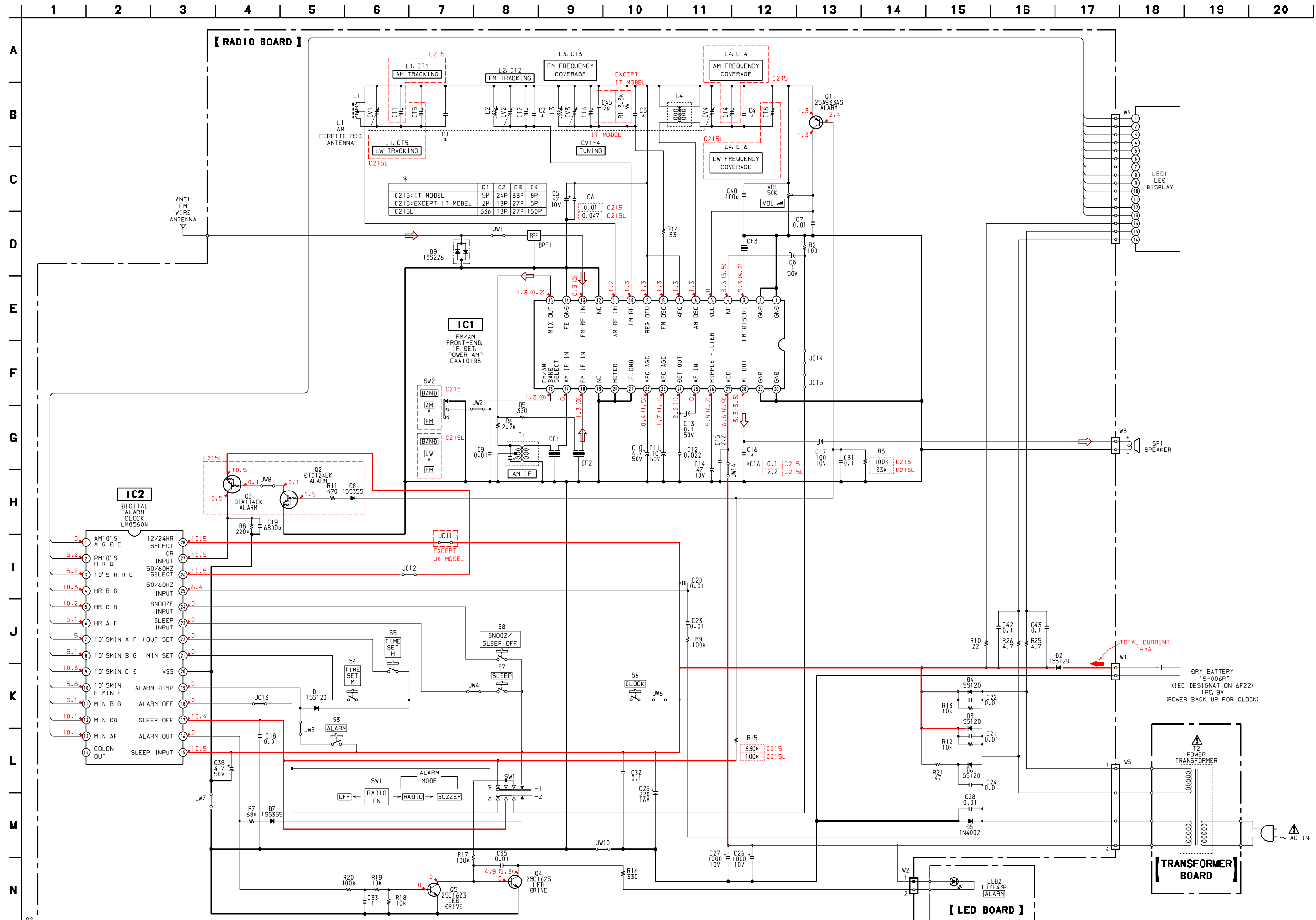
● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1	B-5	IC1	C-6
D2	C-3	IC2	B-4
D3	C-4		
D4	C-4	Q1	B-6
D5	C-4	Q2	B-3
		Q3	B-4
D6	C-4	Q4	C-4
D7	B-3	Q5	C-4
D8	B-3		
D9	D-7		
LED1	A-4		
LED2	A-2		

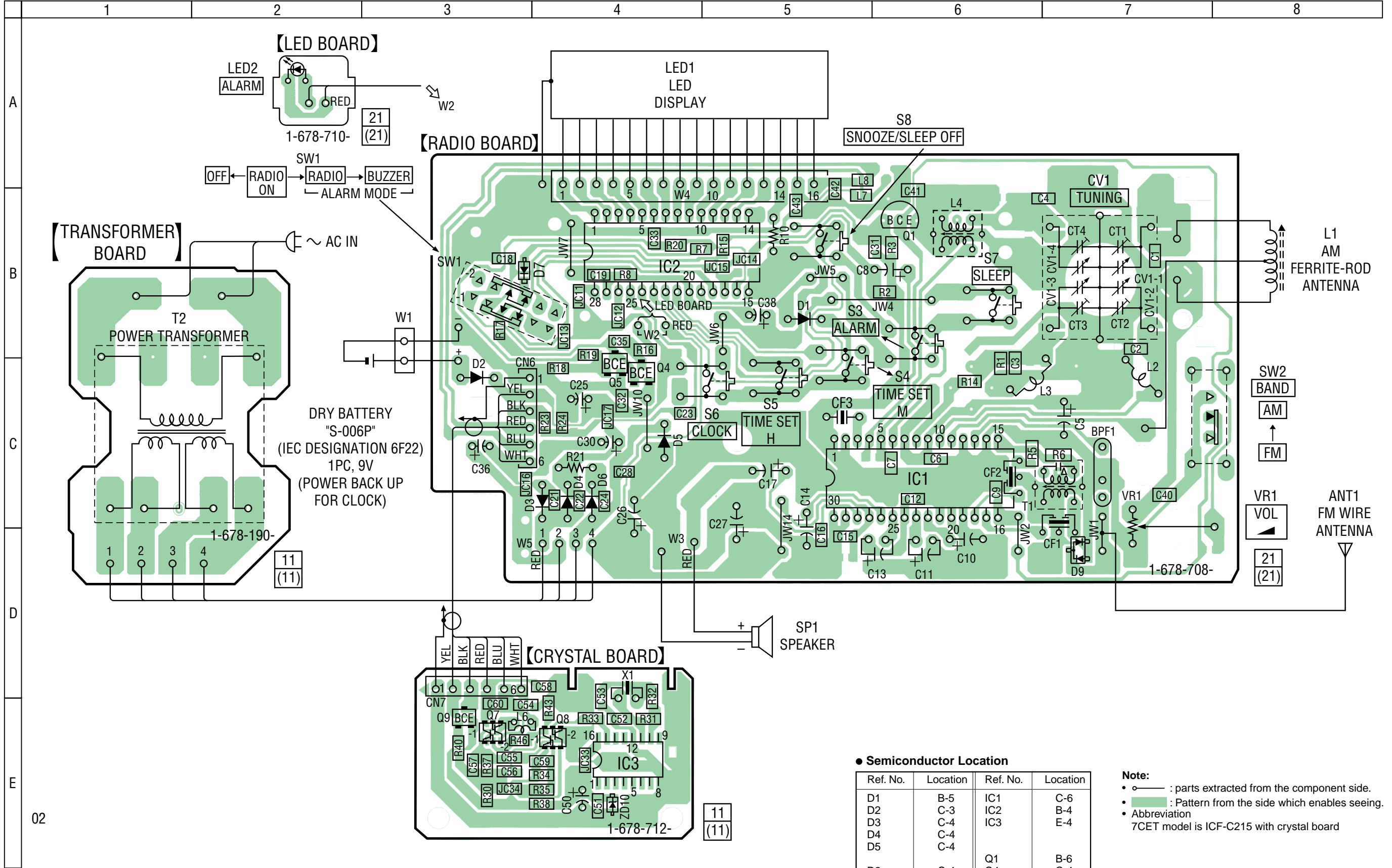
Note:

- : parts extracted from the component side.
- : Pattern from the side which enables seeing.
- Abbreviation  
AR : Argentina  
IT : Italian  
CET : East European & RUSSIAN  
7CET model is ICF-C215 with crystal board

4-2. SCHEMATIC DIAGRAM (EXCEPT 7CET model) ● Refer to page 18 for IC Block Diagrams. ● Refer to page 17 for Notes.

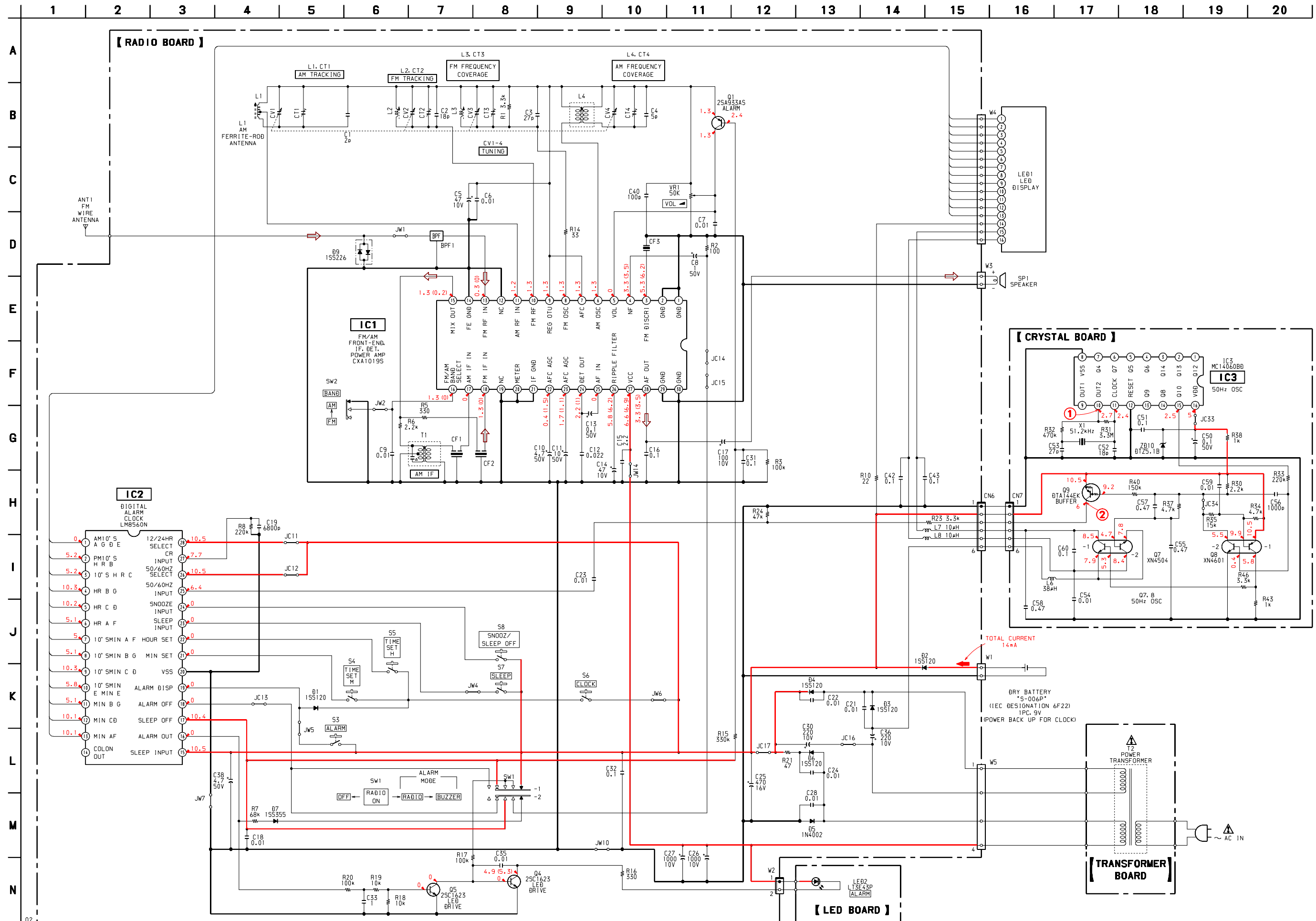


4-3. PRINTED WIRING BOARDS (7CET model only)

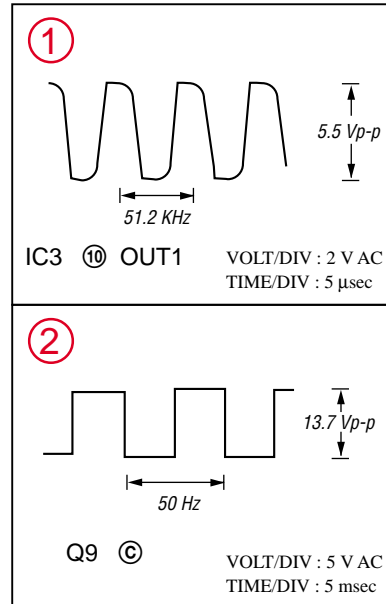


02

4-4. SCHEMATIC DIAGRAM (7CET model only) ● Refer to page 18 for IC Block Diagrams. ● Refer to page 17 for Waveforms. ● Refer to page 17 for Notes.



● Waveforms (7CET model only)



Note on Schematic Diagram: EXCEPT 7CET model

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- Δ : internal component.

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

- [Red box] : B+ Line.
- [Red box] : adjustment for repair.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
- Voltages and waveforms are dc with respect to ground in playback mode.
- no mark : FM
- ( ) : MW/LW
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- Abbreviation
- AR : Argentina
- IT : Italian
- CET : East European & RUSSIAN
- 7CET model is ICF-C215 with crystal board

Note on Schematic Diagram: 7CET model only

Note:

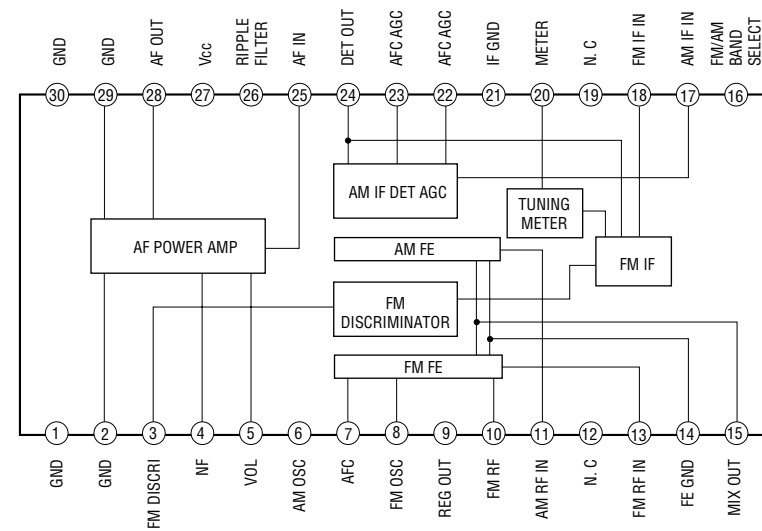
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- Δ : internal component.

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

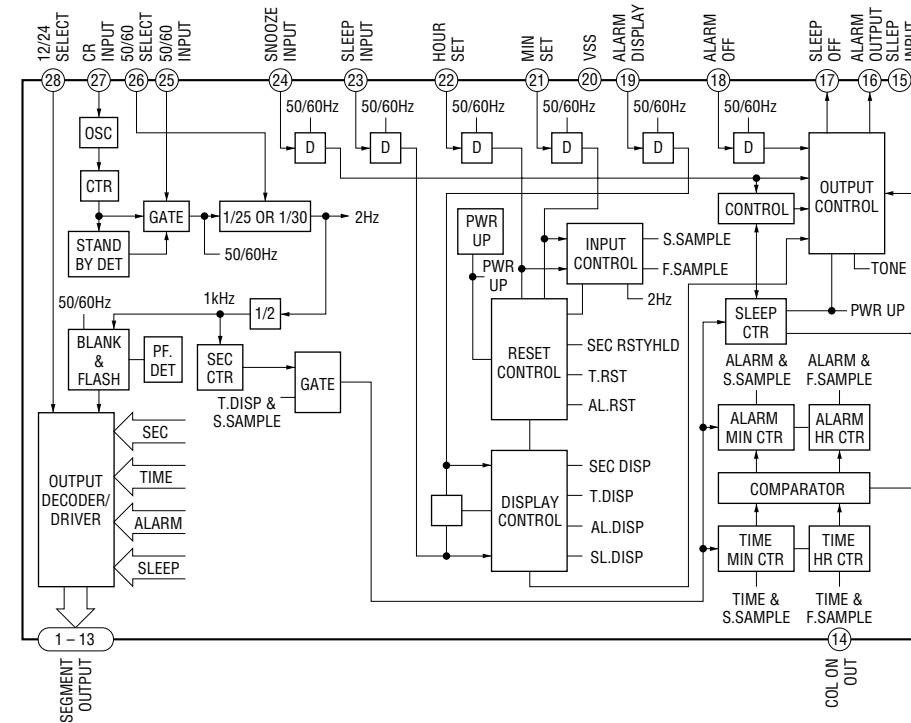
- [Red box] : B+ Line.
- [Red box] : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages and waveforms are dc with respect to ground in playback mode.
- no mark : FM
- ( ) : AM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- Abbreviation
- 7CET model is ICF-C215 with crystal board

● IC Block Diagrams

IC1 CXA1019S



IC2 LM8560N

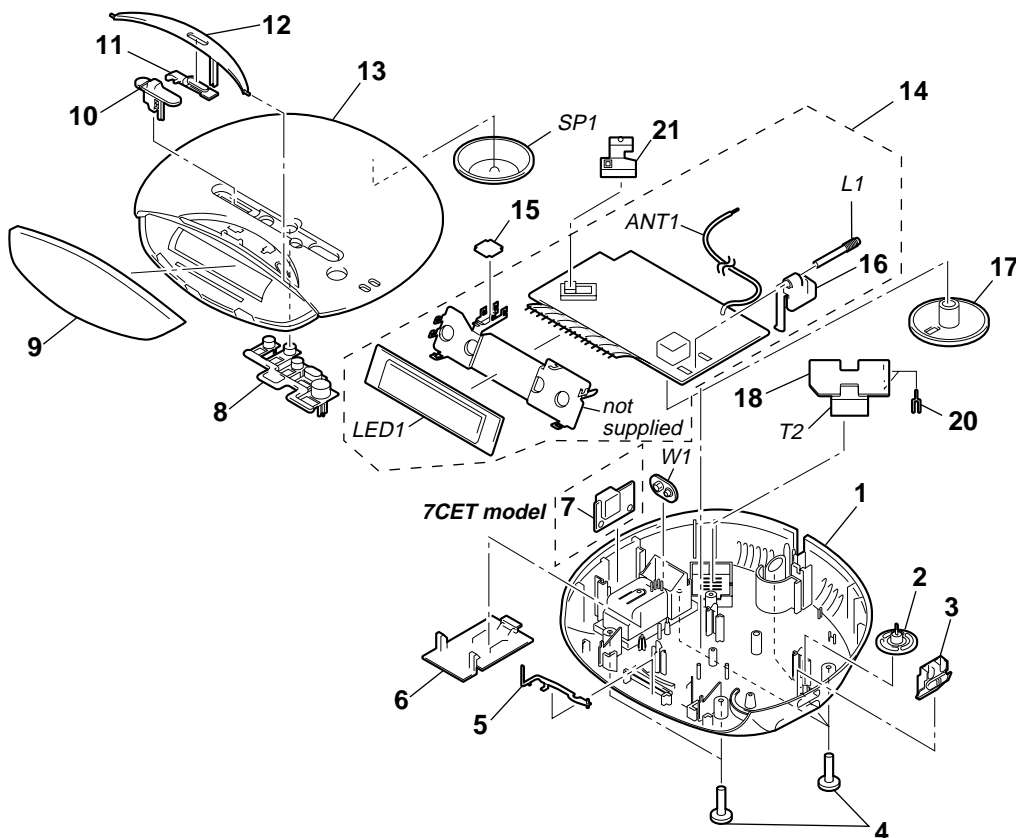


# SECTION 5 EXPLODED VIEW

**NOTE :**

- -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
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation  
AR : Argentine  
IT : Italian  
CET : East European & Russian  
7CET model is ICF-C215 with crystal board

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



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-049-594-11	CABINET(LOWER)(C215)		* 14	A-3683-233-A	RADIO BOARD, COMPLETE(C215L)	
1	3-049-594-21	CABINET(LOWER)(C215L)		* 14	A-3683-234-A	RADIO BOARD, COMPLETE(C215:AEP,CET,AR)	
2	3-919-268-01	KNOB(VOL)		* 14	A-3683-237-A	RADIO BOARD, COMPLETE(C215:UK)	
3	3-049-600-01	KNOB(BAND)		* 14	A-3683-243-A	RADIO BOARD, COMPLETE(C215:7CET)	
4	7-685-649-79	SCREW +P 3X14 TYPE2 NON-SLIT		* 15	1-678-710-11	LED BOARD(EXCEPT 7CET)	
5	3-049-596-01	POINTER		* 15	1-678-710-21	LED BOARD(7CET)	
6	3-369-135-21	LID, BATTERY CASE		16	3-044-220-01	HOLDER (ANT)	
* 7	A-3683-244-A	CRYSTAL BOARD, COMPLETE(C215:7CET)		17	3-044-228-01	KNOB(TUNE)	
8	3-049-598-01	BUTTON(FUNCTION)		* 18	1-678-190-11	TRANSFORMER BOARD	
9	3-049-595-01	PANEL(FRONT)(C215:UK)		19	1-555-795-00	CORD, POWER (AEP,IT,CET,7CET, C215L)	
9	3-049-595-11	PANEL(FRONT)(C215:AEP,CET,7CET,AR)		19	1-696-572-11	CORD, POWER (UK)	
9	3-049-595-21	PANEL(FRONT)(C215:IT)		19	1-790-124-12	CORD, POWER (AR)	
9	3-049-595-31	PANEL(FRONT)(C215L)		* 20	1-535-771-11	TERMINAL	
10	3-049-597-01	KNOB(FUNCTION)		21	3-049-601-01	SLIDER	
11	3-049-602-01	WINDOW(ALARM)		ANT1	1-754-135-11	ANTENNA(WIRE)	
12	3-049-599-01	BUTTON(SNOOZE)		L1	1-419-532-21	COIL, FERRITE-ROD ANTENNA (MW) (AM TRACKING)(C215)	
13	3-049-593-01	CABINET(UPPER)(GRAY)(C215:CET,7CET,AR)		L1	1-419-535-21	COIL, FERRITE-ROD ANTENNA (LW) (LW TRACKING)(C215L)	
13	3-049-593-11	CABINET(UPPER)(GRAY)(C215:AEP,IT,UK)		LED1	8-749-016-86	DIODE SL-3998-78T (UK)	
13	3-049-593-21	CABINET(UPPER)(GREEN)(C215:AEP,IT,UK)		LED1	8-749-016-87	DIODE SL-3998-79T (EXCEPT UK)	
13	3-049-593-31	CABINET(UPPER)(GRAY)(C215L)		SP1	1-529-456-11	SPEAKER(6.6cm)	
13	3-049-593-41	CABINET(UPPER)(GREEN)(C215L)		$\triangle$ T2	1-433-574-11	TRANSFORMER, POWER	
13	3-049-593-51	CABINET(UPPER)(BLUE)(C215:AEP,IT,UK)		W1	1-535-804-21	SNAP, BATTERY	
13	3-049-593-61	CABINET(UPPER)(BLUE)(C215L)					
* 14	A-3683-232-A	RADIO BOARD, COMPLETE(C215:IT)					

CRYSTAL

LED

RADIO

SECTION 6
ELECTRICAL PARTS LIST

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, -X mean standardized parts, so they may have some difference from the original one.
RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE :Metal oxide-film resistor
F : nonflammable
Items marked " \* "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- SEMICONDUCTORS
In each case, u : μ , for example :
uA.... : μ A.... , uPA.... : μ PA....
uPB.... : μ PB.... , uPC.... : μ PC....
uPD.... : μ PD....
CAPACITORS
uF : μ F
COILS
uH : μ H
Abbreviation
AR : Argentine
IT : Italian
CET : East European & Russian
7CET model is ICF-C215 with crystal board

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.

Table with columns: Ref. No., Part No., Description, Remark. Contains parts like A-3683-244-A CRYSTAL BOARD, C50 ELECT, C51 CERAMIC CHIP, etc.

Table with columns: Ref. No., Part No., Description, Remark. Contains parts like R46 METAL CHIP, X1 VIBRATOR, ZD10 DIODE, LED2 DIODE, IC3 IC, etc.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C4	1-164-217-11	CERAMIC CHIP	150PF 5% 50V (C215L)	CF2	1-781-861-71	FILTER, CERAMIC (COMBINATION)	
C4	1-162-939-11	CERAMIC CHIP	8PF 0.5PF 50V (IT)	CF3	1-781-861-71	FILTER, CERAMIC (COMBINATION)	
C4	1-162-936-11	CERAMIC CHIP	5PF 0.25PF 50V (EXCEPT IT)			< CONNECTOR >	
C5	1-104-664-11	ELECT	47uF 20% 10V	* CN6	1-564-509-11	PLUG, CONNECTOR 6P (7CET)	
C6	1-164-361-11	CERAMIC CHIP	0.047uF (C215L)			< TRIMMER >	
C6	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V (C215)	CT1	1-141-620-11	CAP, VAR(TUNE)(AM TRACKING)	
C7	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	CT2	1-141-620-11	CAP, VAR(TUNE)(FM TRACKING)	
C8	1-126-960-11	ELECT	1uF 20% 50V	CT3	1-141-620-11	CAP, VAR(TUNE)(FM FREQUENCY COVERAGE)	
C9	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	CT4	1-141-620-11	CAP, VAR(TUNE)(AM FREQUENCY COVERAGE)	
C10	1-126-963-11	ELECT	4.7uF 20% 50V	CT5	1-141-604-11	CAP, ADJ(LW TRACKING)(C215L)	
C11	1-126-964-11	ELECT	10uF 20% 50V	CT6	1-141-604-11	CAP, ADJ(LW FREQUENCY COVERAGE)	(C215L)
C12	1-162-995-11	CERAMIC CHIP	0.022uF 50V			< VARIABLE CAPACITOR >	
C13	1-126-956-11	ELECT	0.1uF 20% 50V	CV1	1-141-620-11	CAP, VAR(TUNING)	
C14	1-104-664-11	ELECT	47uF 20% 10V			< DIODE >	
C15	1-164-505-11	CERAMIC CHIP	2.2uF 16V	D1	8-719-074-44	DIODE 1SS120RX	
C16	1-164-505-11	CERAMIC CHIP	2.2uF 16V (C215L)	D2	8-719-074-44	DIODE 1SS120RX	
C16	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V (C215)	D3	8-719-074-44	DIODE 1SS120RX	
C17	1-104-665-11	ELECT	100uF 20% 10V	D4	8-719-074-44	DIODE 1SS120RX	
C18	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	D5	8-719-052-88	DIODE 1N4002	
C19	1-162-969-11	CERAMIC CHIP	0.0068uF 10% 25V	D6	8-719-074-44	DIODE 1SS120RX	
C20	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V (EXCEPT 7CET)	D7	8-719-988-61	DIODE 1SS355TE-17	
C21	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	D8	8-719-988-61	DIODE 1SS355TE-17 (C215L)	
C22	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	D9	8-719-800-76	DIODE 1SS226	
C23	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V			< IC >	
C24	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	IC1	8-752-055-05	IC CXA1019S	
C25	1-126-934-11	ELECT	220uF 20% 16V (EXCEPT 7CET)	IC2	8-759-821-46	IC LM8560N	
C25	1-126-935-11	ELECT	470uF 20% 16V (7CET)			< JUMPER >	
C26	1-126-926-11	ELECT	1000uF 20% 10V	JC11	1-216-864-11	METAL CHIP 0 5% 1/16W (EXCEPT UK)	
C27	1-126-926-11	ELECT	1000uF 20% 10V	JC12	1-216-864-11	METAL CHIP 0 5% 1/16W	
C28	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	JC13	1-216-864-11	METAL CHIP 0 5% 1/16W	
C30	1-126-934-11	ELECT	220uF 20% 10V (7CET)	JC14	1-216-864-11	METAL CHIP 0 5% 1/16W	
C31	1-164-156-11	CERAMIC CHIP	0.1uF 25V	JC15	1-216-864-11	METAL CHIP 0 5% 1/16W	
C32	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	JC16	1-216-864-11	METAL CHIP 0 5% 1/16W (7CET)	
C33	1-115-156-11	CERAMIC CHIP	1uF 10V	JC17	1-216-864-11	METAL CHIP 0 5% 1/16W (7CET)	
C35	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V			< COIL >	
C36	1-126-934-11	ELECT	220uF 20% 10V (7CET)	L1	1-419-535-21	COIL, FERRITE-ROD ANTENNA (LW) (LW TRACKING)(C215L)	
C38	1-126-963-11	ELECT	4.7uF 20% 50V	L1	1-419-532-21	COIL, FERRITE-ROD ANTENNA (MW) (AM TRACKING)(C215)	
C40	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	* L2	1-422-320-11	COIL, AIR-CORE (FM TRACKING)	
C42	1-164-156-11	CERAMIC CHIP	0.1uF 25V	L3	1-406-957-11	COIL (WITH CORE)(FM FREQUENCY COVERAGE)(IT)	
C43	1-164-156-11	CERAMIC CHIP	0.1uF 25V	L3	1-422-131-00	COIL, FM OSCILLATION(FM FREQUENCY COVERAGE)(EXCEPT IT)	
C45	1-162-907-11	CERAMIC CHIP	2PF 0.25PF 50V (IT)	L4	1-419-533-11	COIL, OSCILLATION (MW)(MW/LW FREQUENCY COVERAGE)	
		< FILTER >					
CF1	1-578-677-11	FILTER, CRYSTAL (C215L)					
CF1	1-781-790-11	FILTER, AM CERAMIC (C215)					



# ICF-C215/C215L

## RADIO

## TRANSFORMER

Ref. No.	Part No.	Description	Remark
L7	1-412-951-11	INDUCTOR 10uH (7CET)	
L8	1-412-951-11	INDUCTOR 10uH (7CET)	
		< DIODE >	
LED1	8-749-016-86	DIODE SL-3998-78T (UK)	
LED1	8-749-016-87	DIODE SL-3998-79T (EXCEPT UK)	
		< TRANSISTOR >	
Q1	8-729-026-39	TRANSISTOR 2SA933AS-QT	
Q2	8-729-027-52	TRANSISTOR DTC124EKA-T146 (C215L)	
Q3	8-729-027-23	TRANSISTOR DTA114EKA-T146 (C215L)	
Q4	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q5	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R1	1-216-827-11	METAL CHIP 3.3K 5% 1/16W (EXCEPT IT)	
R2	1-216-809-11	METAL CHIP 100 5% 1/16W	
R3	1-216-839-11	METAL CHIP 33K 5% 1/16W (C215L)	
R3	1-216-845-11	METAL CHIP 100K 5% 1/16W (C215)	
R5	1-216-815-11	METAL CHIP 330 5% 1/16W	
R6	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R7	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R8	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R9	1-216-845-11	METAL CHIP 100K 5% 1/16W (EXCEPT 7CET)	
R10	1-249-397-11	CARBON 22 5% 1/4W	
R11	1-216-817-11	METAL CHIP 470 5% 1/16W (C215L)	
R12	1-216-833-11	METAL CHIP 10K 5% 1/16W (EXCEPT 7CET)	
R13	1-216-833-11	METAL CHIP 10K 5% 1/16W (EXCEPT 7CET)	
R14	1-216-803-11	METAL CHIP 33 5% 1/16W	
R15	1-216-845-11	METAL CHIP 100K 5% 1/16W (C215L)	
R15	1-216-851-11	METAL CHIP 330K 5% 1/16W (C215)	
R16	1-216-815-11	METAL CHIP 330 5% 1/16W	
R17	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R18	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R19	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R20	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R21	1-249-401-11	CARBON 47 5% 1/4W (7CET)	
R21	1-249-409-11	CARBON 220 5% 1/4W (EXCEPT 7CET)	
R23	1-216-827-11	METAL CHIP 3.3K 5% 1/16W (7CET)	
R24	1-216-841-11	METAL CHIP 47K 5% 1/16W (7CET)	
R25	1-249-389-11	CARBON 4.7 5% 1/4W (EXCEPT 7CET)	
R26	1-249-389-11	CARBON 4.7 5% 1/4W (EXCEPT 7CET)	
		< SWITCH >	
S3	1-771-906-11	SWITCH, KEY BOARD(ALARM)	

Ref. No.	Part No.	Description	Remark
S4	1-771-906-11	SWITCH, KEY BOARD(TIME SET M)	
S5	1-771-906-11	SWITCH, KEY BOARD(TIME SET H)	
S6	1-771-906-11	SWITCH, KEY BOARD(CLOCK)	
S7	1-771-906-11	SWITCH, KEY BOARD(SLEEP)	
S8	1-771-906-11	SWITCH, KEY BOARD(SNOOZE/SLEEP OFF)	
		< SWITCH >	
SW1	1-771-904-11	SWITCH, SLIDE(RADIO ON/OFF,ALARM MODE)	
SW2	1-771-905-11	SWITCH, SLIDE(BAND)	
		< TRANSFORMER >	
T1	1-404-790-11	TRANSFORMER, IF (C215L)	
T1	1-435-399-11	TRANSFORMER, IF (C215)	
		< VARIABLE RESISTOR >	
VR1	1-228-790-00	RES, V CARBON 50K(VOL ▲)	
		< FLAT CABLE >	
W1	1-535-804-21	SNAP, BATTERY	
		*****	
*	1-678-190-11	TRANSFORMER BOARD	
		*****	
		< TRANSFORMER >	
△ T2	1-433-574-11	TRANSFORMER, POWER	
*	1-535-771-11	TERMINAL	
		*****	
		MISCELLANEOUS	
		*****	
19	1-555-795-00	CORD, POWER (AEP,IT,CET,7CET,C215L)	
19	1-696-572-11	CORD, POWER (UK)	
19	1-790-124-12	CORD, POWER (AR)	
* 20	1-535-771-11	TERMINAL	
ANT1	1-754-135-11	ANTENNA(WIRE)	
L1	1-419-532-21	COIL, FERRITE-ROD ANTENNA (MW) (AM TRACKING)(C215)	
L1	1-419-535-21	COIL, FERRITE-ROD ANTENNA (LW) (LW TRACKING)(C215L)	
LED1	8-749-016-86	DIODE SL-3998-78T (UK)	
LED1	8-749-016-87	DIODE SL-3998-79T (EXCEPT UK)	
SP1	1-529-456-11	SPEAKER(6.6cm)	
△ T2	1-433-574-11	TRANSFORMER, POWER	
W1	1-535-804-21	SNAP, BATTERY	
		*****	
		ACCESSORIES & PACKING MATERIALS	
		*****	
3-220-109-11		MANUAL, INSTRUCTION (ENGLISH,FRENCH, GERMAN,SPANISH,DUTCH,SWEDISH,ITALIAN, PORTUGUESE)(C215:AEP,IT,UK,AR,C215L)	
3-220-109-31		MANUAL, INSTRUCTION(ENGLISH,FRENCH, GERMAN,DUTCH,RUSSIAN,POLISH,CZECH, HUNGARIAN,SLOVAK)(C215:CET,7CET)	

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