

ICF-C317

SERVICE MANUAL

Australian Model

Ver 1.0 2003.02



SPECIFICATIONS

Time display

12-hour system

Frequency range

Band	ICF-C317
FM	87.5-108 MHz
AM	530-1 710 kHz

Speaker

Approx. 6.6 cm (2⁵/₈ inches) dia. 8 Ω

Power output

120 mW (at 10 % harmonic distortion)

Power requirements

230 V AC, 50 Hz

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

Battery life

Approx. 20 hours using Sony 006P (6F22) battery

DimensionsIndicador de alarma

Approx. 146 x 69.5 x 145 mm (w/h/d)
(5³/₄ x 2³/₄ x 5³/₄ inches) not incl. projecting parts and controls

Mass

Approx. 556 g (1 lb 3.7 oz) not incl. battery

Design and specifications are subject to change without notice.

FM/AM CLOCK RADIO

9-877-121-01
2003B0200-1
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Sony Corporation
Personal Audio Company
Published by Sony Engineering Corporation

SONY®

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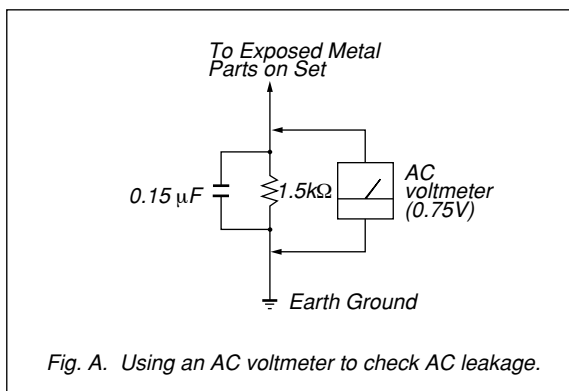
SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer : Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

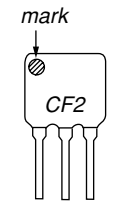
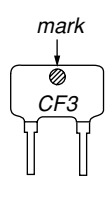
The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)





• 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.

<i>mark</i> 	<i>mark</i> 	Mark	Center frequency
		red	10.70MHz
		blue	10.67MHz
		orange	10.73MHz
		black	10.64MHz
		white	10.76MHz

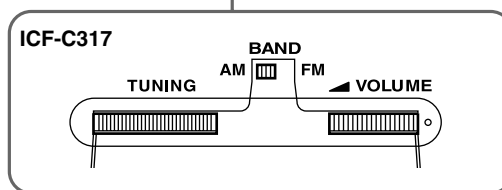
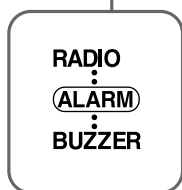
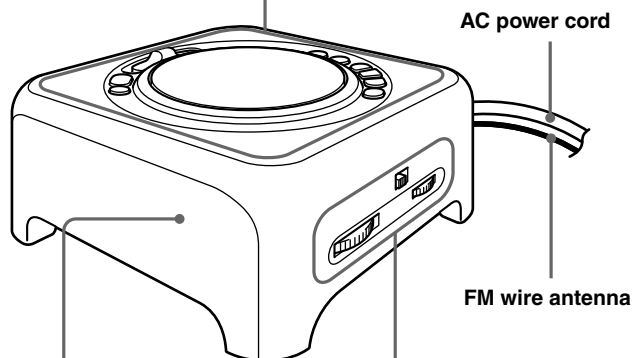
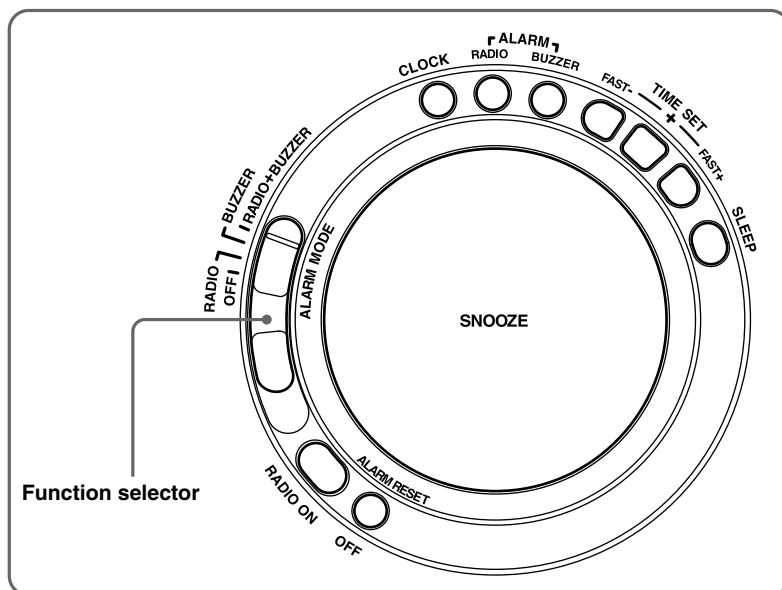
SAFETY-RELATED COMPONENT WARNING!!

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.

SECTION 1 GENERAL

LOCATION AND FUNCTION OF CONTROLS

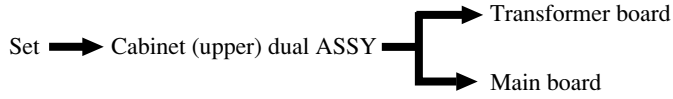
This section is extracted from instruction manual.



There is a tactile dot beside volume to show the direction to turn up the volume.

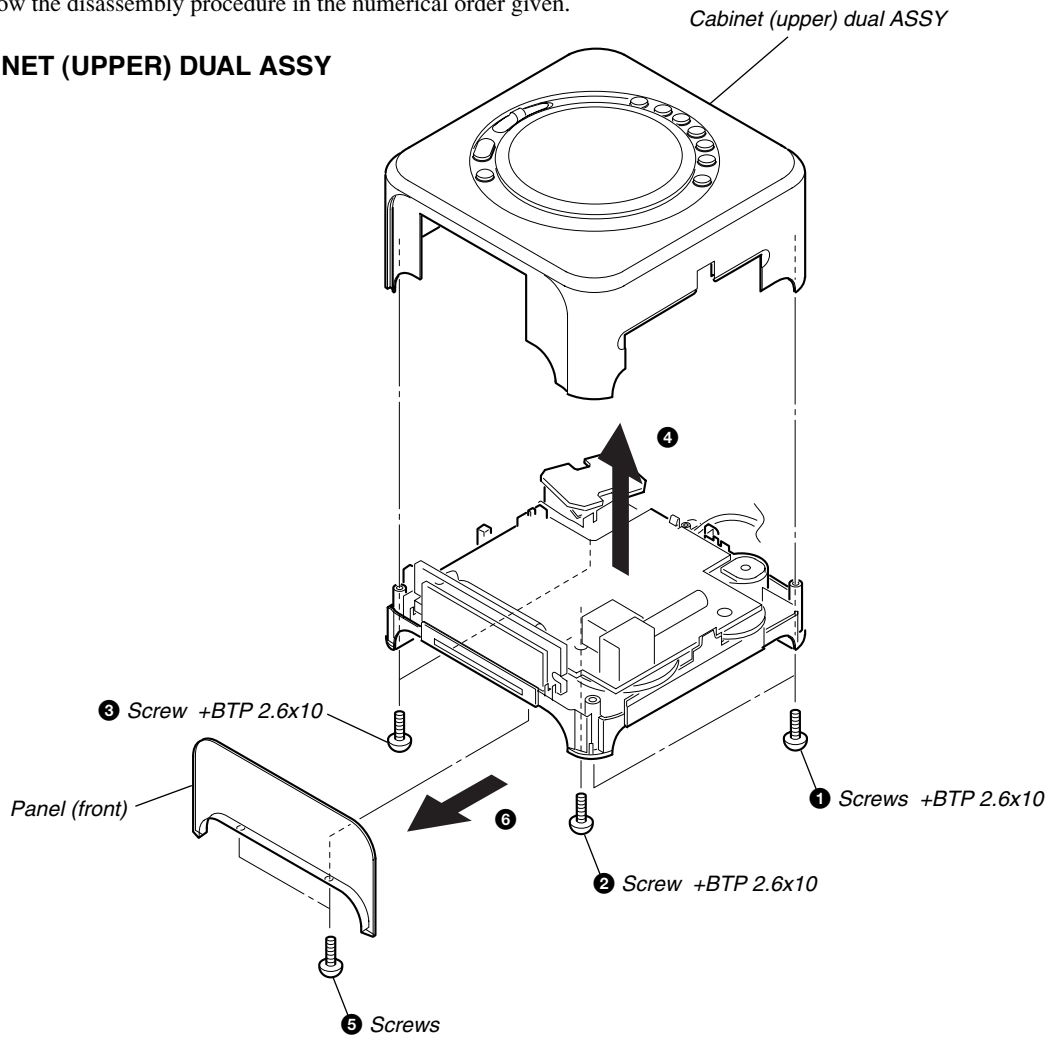
SECTION 2 DISASSEMBLY

● The equipment can be removed using the following procedure.

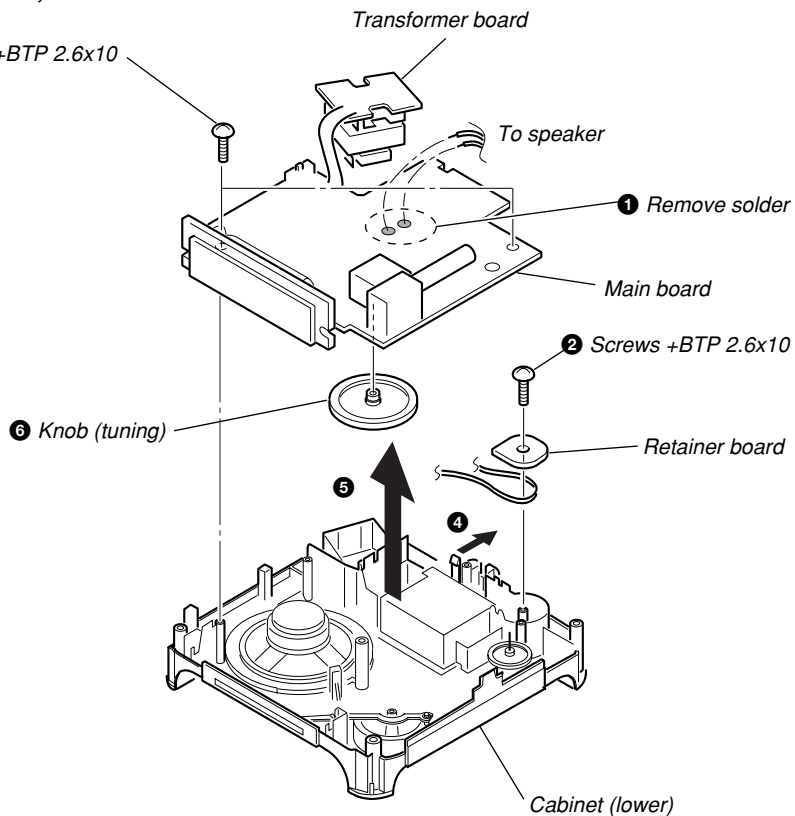


Note : Follow the disassembly procedure in the numerical order given.

2-1. CABINET (UPPER) DUAL ASSY

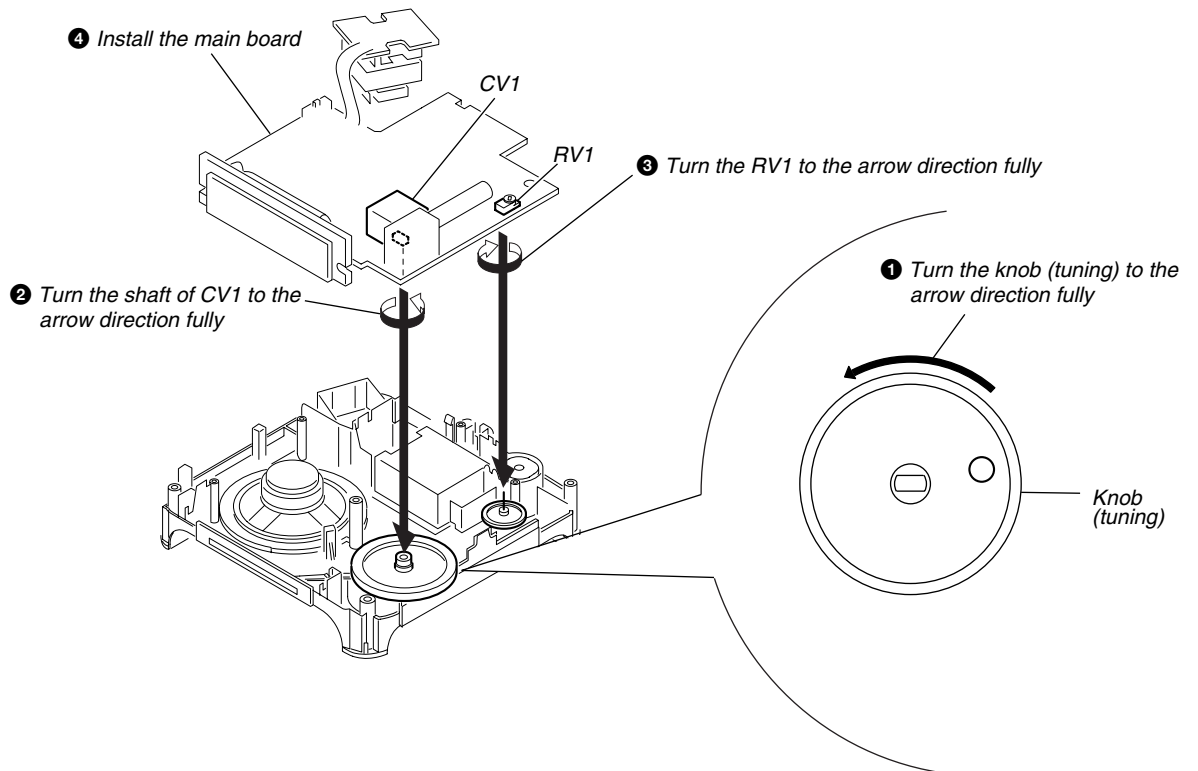
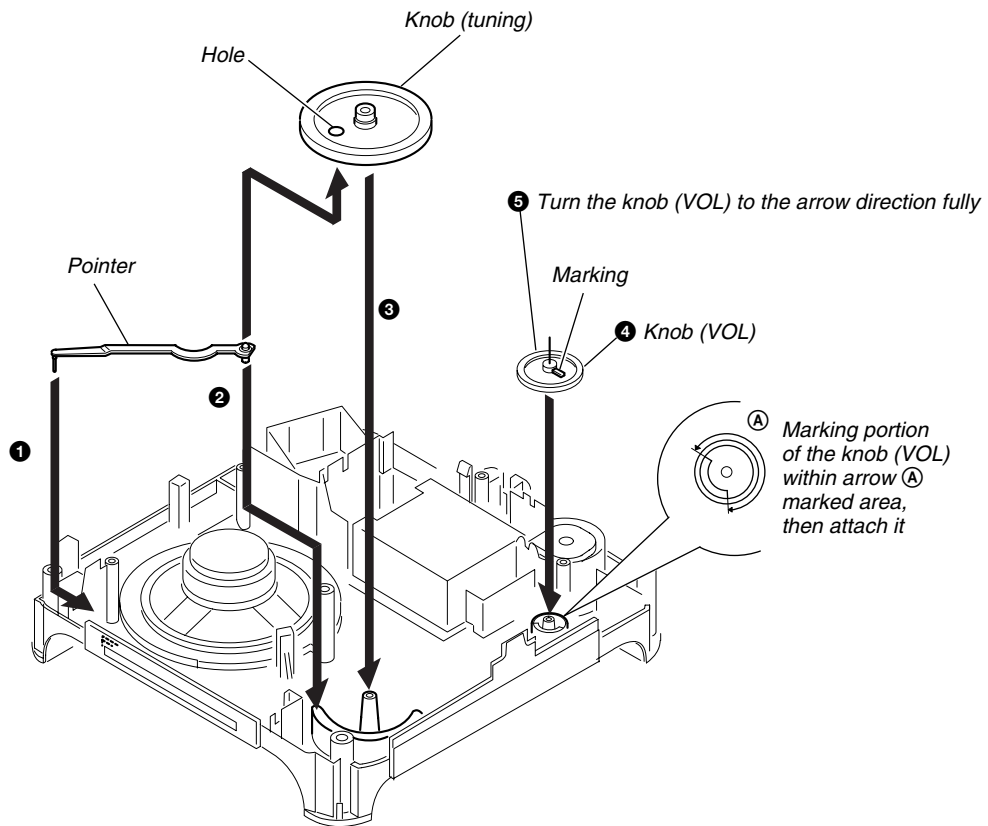


2-2. TRANSFORMER BOARD, MAIN BOARD



SECTION 3 DIAL POINTER INSTALLATION

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



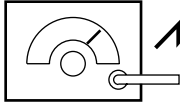
SECTION 4 ELECTRICAL ADJUSTMENTS

AM Section

0dB=1μV

Band switch : AM
Volume : MAX

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

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

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

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L4	515kHz
CT6	1,750kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1	600kHz
CT3	1,400kHz

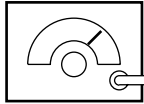
FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	86.5MHz
CT5	109.5MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L2	86.5MHz
CT4	109.5MHz

FM Section

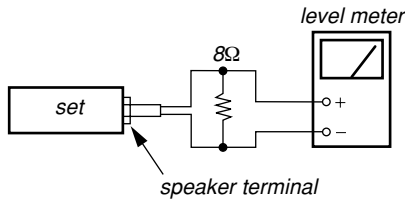
Band switch : FM
Volume : MAX

FM RF signal generator



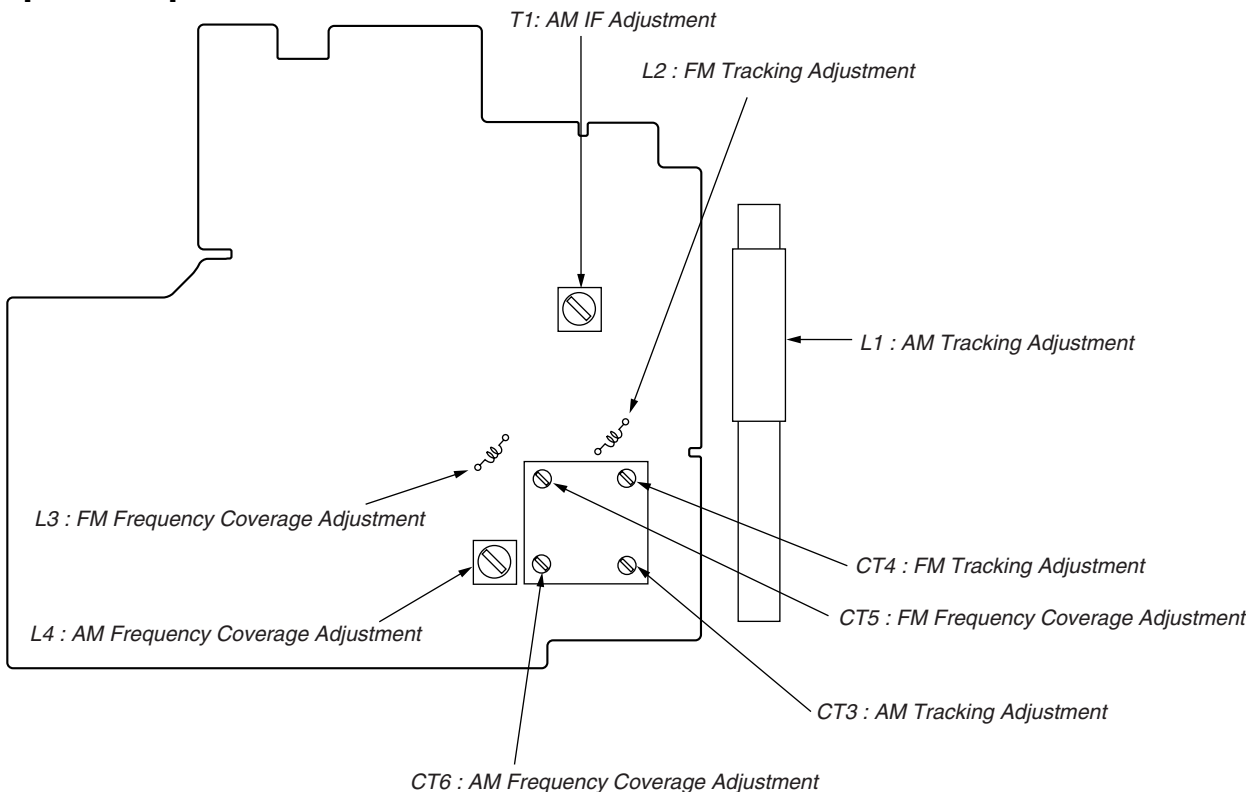
22.5kHz frequency deviation by 400Hz signal.
Output level : as low as possible

FM ANT



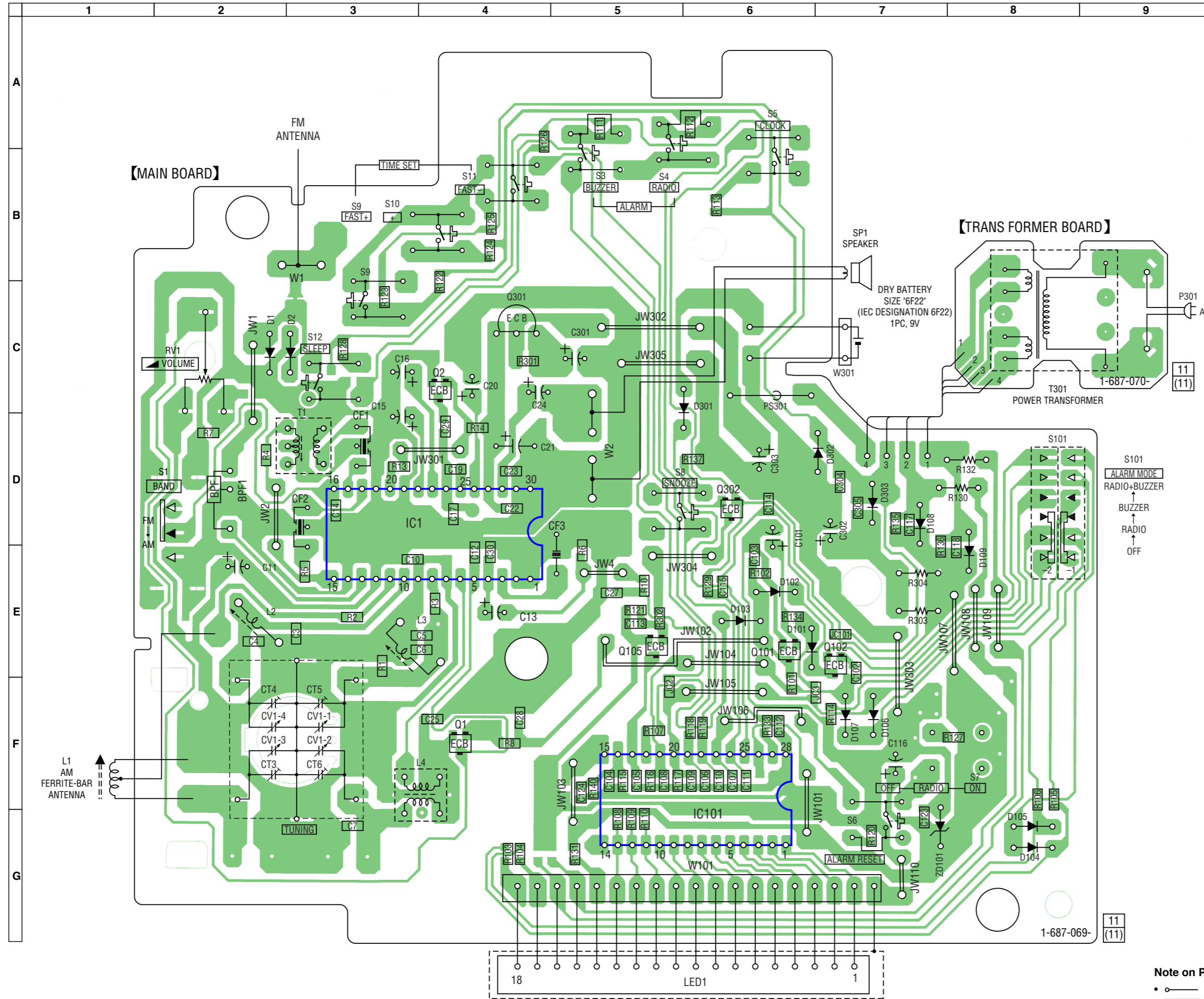
Adjustment Location

[MAIN BOARD]



SECTION 5
DIAGRAMS

5-1. PRINTED WIRING BOARDS



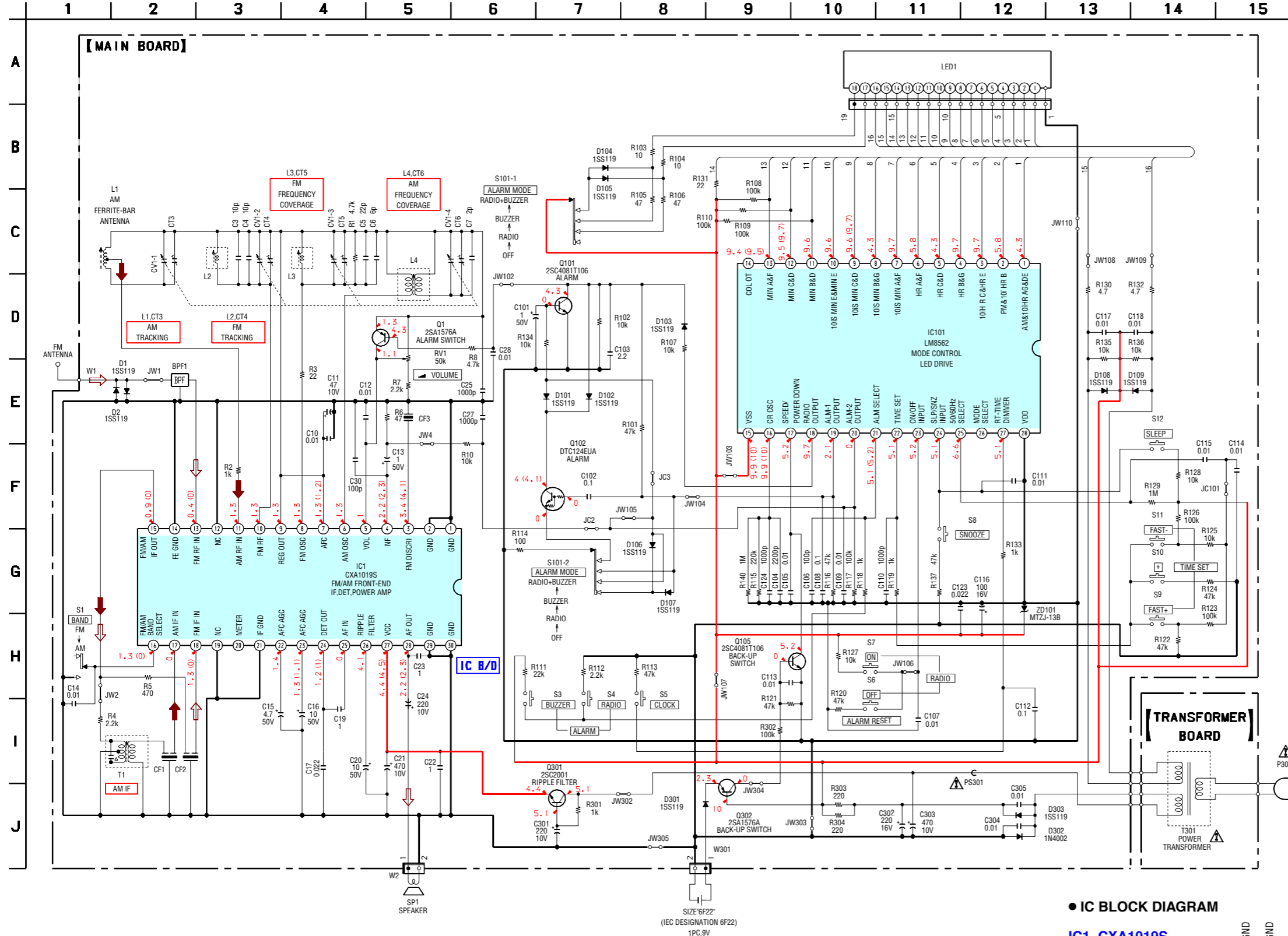
● Semiconductor Location

Ref. No.	Location
D1	C-2
D2	C-3
D101	E-6
D102	E-6
D103	E-6
D104	G-8
D105	G-8
D106	F-7
D107	F-7
D108	D-7
D109	D-7
D301	C-6
D302	D-7
D303	D-7
ZD101	G-7
IC1	D-3
IC101	G-6
Q1	F-4
Q101	E-6
Q102	E-7
Q105	E-5
Q301	C-4
Q302	D-6

Note on Printed Wiring Board

- — : parts extracted from the component side.
- : Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)

5-2. SCHEMATIC DIAGRAM



Note on Schematic Diagram

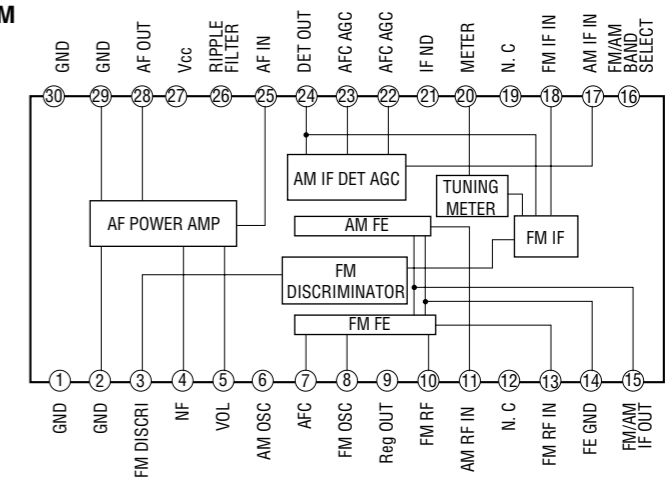
- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$ 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- : panel designation.

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

- — : B+ Line.
- : adjustment for repair.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- → : FM
- ➤ : AM

• IC BLOCK DIAGRAM

IC1 CX1019S



SECTION 7
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

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	Ref. No.	Part No.	Description	Remark
*	A-3347-495-A	MAIN BOARD, COMPLETE *****		C112	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
	3-044-220-01	HOLDER (ANT) < FILTER, BAND PASS >		C113	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
BPF1	1-236-022-11	FILTER, BAND PASS < CAPACITOR >		C114	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C3	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V	C115	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C4	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V	C116	1-126-933-11	ELECT 100uF 20%	16V
C5	1-162-945-11	CERAMIC CHIP 22PF	5% 50V	C117	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C6	1-162-911-11	CERAMIC CHIP 6PF	0.50PF 50V	C118	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C7	1-162-932-11	CERAMIC CHIP 2PF	0.25PF 50V	C123	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C10	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C124	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C11	1-126-947-11	ELECT 47uF	20% 10V	C301	1-126-934-11	ELECT 220uF 20%	10V
C12	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C302	1-126-934-11	ELECT 220uF 20%	16V
C13	1-126-960-11	ELECT 1uF	20% 50V	C303	1-126-935-11	ELECT 470uF 20%	10V
C14	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C304	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C15	1-126-963-11	ELECT 4.7uF	20% 50V	C305	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C16	1-126-964-11	ELECT 10uF	20% 50V			< FILTER >	
C17	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V	CF1	1-781-790-11	FILTER, AM CERAMIC	
C19	1-115-156-11	CERAMIC CHIP 1uF	10V	CF2	1-781-861-71	FILTER, CERAMIC (COMBINATION)	
C20	1-126-964-11	ELECT 10uF	20% 50V	CF3	1-781-861-71	FILTER, CERAMIC (COMBINATION)	
C21	1-126-935-11	ELECT 470uF	20% 10V			< VARIABLE CAPACITOR >	
C22	1-115-156-11	CERAMIC CHIP 1uF	10V	CV1	1-141-620-11	CAP, VAR	
C23	1-115-156-11	CERAMIC CHIP 1uF	10V			< DIODE >	
C24	1-126-934-11	ELECT 220uF	20% 10V	D1	8-719-911-19	DIODE 1SS119-25	
C25	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	D2	8-719-911-19	DIODE 1SS119-25	
C27	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	D101	8-719-911-19	DIODE 1SS119-25	
C28	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	D102	8-719-911-19	DIODE 1SS119-25	
C30	1-162-927-11	CERAMIC CHIP 100PF	5% 50V	D103	8-719-911-19	DIODE 1SS119-25	
C101	1-126-960-11	ELECT 1uF	20% 50V	D104	8-719-911-19	DIODE 1SS119-25	
C102	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V	D105	8-719-911-19	DIODE 1SS119-25	
C103	1-164-505-11	CERAMIC CHIP 2.2uF	16V	D106	8-719-911-19	DIODE 1SS119-25	
C104	1-162-966-11	CERAMIC CHIP 0.0022uF	10% 50V	D107	8-719-911-19	DIODE 1SS119-25	
C105	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	D108	8-719-911-19	DIODE 1SS119-25	
C106	1-162-927-11	CERAMIC CHIP 100PF	5% 50V	D109	8-719-911-19	DIODE 1SS119-25	
C107	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	D301	8-719-911-19	DIODE 1SS119-25	
C108	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V	D302	8-719-052-88	DIODE 1N4002	
C109	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	D303	8-719-911-19	DIODE 1SS119-25	
C110	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	ZD101	8-719-921-88	DIODE MTZJ-T-77-13B	
C111	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V			< IC >	
				IC1	8-752-037-02	IC CXA1019S	

MAIN

TRANSFORMER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC101	8-759-823-50	IC LM8562		R118	1-216-821-11	METAL CHIP 1K 5%	1/10W
		< JUMPER RESISTOR >		R119	1-216-821-11	METAL CHIP 1K 5%	1/10W
JC2	1-216-864-11	METAL CHIP 0 5%	1/10W	R120	1-216-841-11	METAL CHIP 47K 5%	1/10W
JC3	1-216-864-11	METAL CHIP 0 5%	1/10W	R121	1-216-841-11	METAL CHIP 47K 5%	1/10W
JC101	1-216-864-11	METAL CHIP 0 5%	1/10W	R122	1-216-841-11	METAL CHIP 47K 5%	1/10W
		< LED DISPLAY >		R123	1-216-845-11	METAL CHIP 100K 5%	1/10W
LED1	6-500-544-01	DIODE COG506T0A2		R124	1-216-841-11	METAL CHIP 47K 5%	1/10W
		< COIL >		R125	1-216-833-11	METAL CHIP 10K 5%	1/10W
L1	1-419-532-41	COIL, FERRITE-ROD ANTENNA (MW)		R126	1-216-845-11	METAL CHIP 100K 5%	1/10W
		(AM TRAKING)		R127	1-216-833-11	METAL CHIP 10K 5%	1/10W
* L2	1-422-320-11	COIL, AIR-CORE (FM TRAKING)		R128	1-216-833-11	METAL CHIP 10K 5%	1/10W
L3	1-422-131-00	COIL, FM OSCILLATION		R129	1-216-857-11	METAL CHIP 1M 5%	1/10W
		(FM FREQUENCY COVERAGE)		R130	1-249-389-11	CARBON 4.7 5%	1/4W
L4	1-419-533-21	COIL, OSCILLATION (MW)		R131	1-216-801-11	METAL CHIP 22 5%	1/10W
		(AM FREQUENCY COVERAGE)		R132	1-249-389-11	CARBON 4.7 5%	1/4W
		< IC LINK >		R133	1-216-821-11	METAL CHIP 1K 5%	1/10W
△ PS301	1-533-971-11	IC LINK (0.2A/90V)		R134	1-216-833-11	METAL CHIP 10K 5%	1/10W
		< TRANSISTOR >		R135	1-216-833-11	METAL CHIP 10K 5%	1/10W
Q1	8-729-026-52	TRANSISTOR 2SA1576A-T106-R		R136	1-216-833-11	METAL CHIP 10K 5%	1/10W
Q101	8-729-905-35	TRANSISTOR 2SC4081-R		R137	1-216-841-11	METAL CHIP 47K 5%	1/10W
Q102	8-729-029-06	TRANSISTOR DTC124EUA-T106		R140	1-216-857-11	METAL CHIP 1M 5%	1/10W
Q105	8-729-905-35	TRANSISTOR 2SC4081-R		R301	1-216-821-11	METAL CHIP 1K 5%	1/10W
Q301	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2		R302	1-216-845-11	METAL CHIP 100K 5%	1/10W
Q302	8-729-026-52	TRANSISTOR 2SA1576A-T106-R		R303	1-247-743-11	CARBON 220 5%	1/2W
		< RESISTOR >		R304	1-247-743-11	CARBON 220 5%	1/2W
R1	1-216-829-11	METAL CHIP 4.7K 5%	1/10W			< VARIABLE RESISTOR >	
R2	1-216-821-11	METAL CHIP 1K 5%	1/10W	RV1	1-228-790-00	RES, VAR, CARBON 50K (VOLUME)	
R3	1-216-801-11	METAL CHIP 22 5%	1/10W			< SWITCH >	
R4	1-216-825-11	METAL CHIP 2.2K 5%	1/10W	S1	1-771-905-11	SWITCH, SLIDE (BAND)	
R5	1-216-817-11	METAL CHIP 470 5%	1/10W	S3	1-771-550-11	SWITCH, TACTILE (BUZZER)	
R6	1-216-805-11	METAL CHIP 47 5%	1/10W	S4	1-771-550-11	SWITCH, TACTILE (AUDIO)	
R7	1-216-825-11	METAL CHIP 2.2K 5%	1/10W	S5	1-771-550-11	SWITCH, TACTILE (CLOCK)	
R8	1-216-829-11	METAL CHIP 4.7K 5%	1/10W	S6	1-771-550-11	SWITCH, TACTILE (ALARM RESET,RADIO OFF)	
R10	1-216-833-11	METAL CHIP 10K 5%	1/10W	S7	1-771-550-11	SWITCH, TACTILE (RADIO ON)	
R101	1-216-841-11	METAL CHIP 47K 5%	1/10W	S8	1-554-937-11	SWITCH, TACTILE (SNOOZE)	
R102	1-216-833-11	METAL CHIP 10K 5%	1/10W	S9	1-771-550-11	SWITCH, TACTILE (FAST+)	
R103	1-216-797-11	METAL CHIP 10 5%	1/10W	S10	1-771-550-11	SWITCH, TACTILE (TIME SET +)	
R104	1-216-797-11	METAL CHIP 10 5%	1/10W	S11	1-771-550-11	SWITCH, TACTILE (FAST-)	
R105	1-216-805-11	METAL CHIP 47 5%	1/10W	S12	1-771-550-11	SWITCH, TACTILE (SLEEP)	
R106	1-216-805-11	METAL CHIP 47 5%	1/10W	S101	1-771-904-11	SWITCH, SLIDE (ALARM MODE)	
R107	1-216-833-11	METAL CHIP 10K 5%	1/10W			< TRANSFORMER >	
R108	1-216-845-11	METAL CHIP 100K 5%	1/10W	T1	1-435-399-21	TRANSFORMER, IF (AM IF)	
R109	1-216-845-11	METAL CHIP 100K 5%	1/10W			< FLAT CABLE >	
R110	1-216-845-11	METAL CHIP 100K 5%	1/10W	W1	1-754-135-11	ANTENNA (WIRE)	
R111	1-216-837-11	METAL CHIP 22K 5%	1/10W	W301	1-535-804-71	SNAP, BATTERY	
R112	1-216-825-11	METAL CHIP 2.2K 5%	1/10W	*****			
R113	1-216-841-11	METAL CHIP 47K 5%	1/10W			TRANSFORMER BOARD	
R114	1-216-809-11	METAL CHIP 100 5%	1/10W			*****	
R115	1-216-849-11	METAL CHIP 220K 5%	1/10W			< POWER SUPPLY CORD >	
R116	1-216-841-11	METAL CHIP 47K 5%	1/10W	△ P301	1-790-431-12	POWER SUPPLY CORD (7.5A/250V)	
R117	1-216-845-11	METAL CHIP 100K 5%	1/10W				

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

ICF-C317

TRANSFORMER

Ref. No.	Part No.	Description	Remark
		< TRANSFORMER >	
△ T301	1-433-574-31	TRANSFORMER, POWER	
		< TERMINAL >	
	TML301	1-535-771-31	TERMINAL
	TML302	1-535-771-31	TERMINAL

		MISCELLANEOUS	

16	3-246-344-11	FOOT, RUBBER	
LED1	6-500-544-01	DIODE COG506T0A2	
△ P301	1-790-431-12	POWER SUPPLY CORD (7.5A/250V)	
SP1	1-529-456-13	SPEAKER (6.6cm)	
W1	1-754-135-11	ANTENNA (WIRE)	

		ACCESSORIES	

	3-248-495-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, DUTCH, ITALIAN)	

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

MEMO

