

ICF-C430

SERVICE MANUAL

US Model



DREAM MACHINE

SPECIFICATIONS

Frequency range: FM: 87.6 – 108 MHz

AM: 530 – 1,610 kHz

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

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

Power requirements:

120 V AC, 60 Hz

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

Battery life: Approx. 35 hours using the Sony S-006P(U) battery

Dimensions: Approx. 224 × 58 × 151 mm (w/h/d)
(8 7/8 × 2 3/8 × 6 inches) incl. projecting parts and controls

Mass: Approx. 650 g (1lb 7oz) not incl. battery

Design and specifications are subject to change without notice.

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.

FM/AM CLOCK RADIO
SONY[®]

SAFETY CHECK-OUT

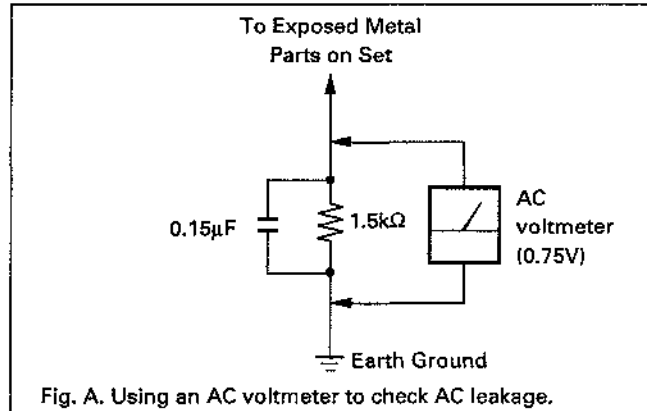
After correcting the original service problem, perform the following safety check before releasing the set to the customer: Check the antenna terminals, metal trim, "metalized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

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.

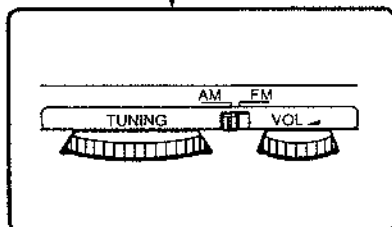
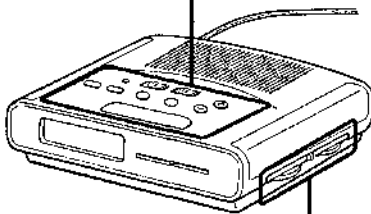
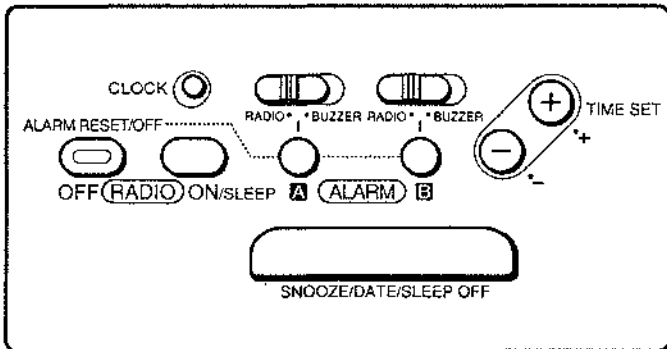
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig.A)



This section is extracted from instruction manual.

SECTION 1 GENERAL

Parts Identifications



Features

- Dual alarm
- Date display
- Forward/reverse time setting
- Full power backup to keep the clock and the alarm (radio and buzzer) during a power interruption with a 6F22 battery (not supplied) installed.

Setting the Alarm

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

1. While holding down the **ALARM A** or **B** button (for example, **A** for the radio or **B** 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.
2. Set the **ALARM A** selector (for radio) to **RADIO** or **ALARM B** selector (for buzzer) to **BUZZER**. 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 the **ALARM A** or **ALARM B** button, 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 5 minutes. You can repeat this process as many times as you like.
- To adjust the radio alarm volume, turn the **VOL** dial.
- To check the preset time, press **ALARM A** or **B**.

Setting the Clock and the Date

Setting the Clock

1. Plug in the unit.
The display will flash "AM 12 : 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.

• To set the current time rapidly, keep pressing the + or - button to advance or return to a time that is within a few minutes of the current time. Then press the + or - button to set the time to the current time.

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**.

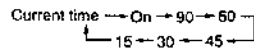
• To display the date, press **SNOOZE/DATE/SLEEP OFF**. The display returns to the current time when you release **SNOOZE/DATE/SLEEP OFF**.

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. It will go off after the preset time has passed. You can set the sleep timer of 90, 60, 45, 30 or 15 minutes. Every push changes the display as follows.

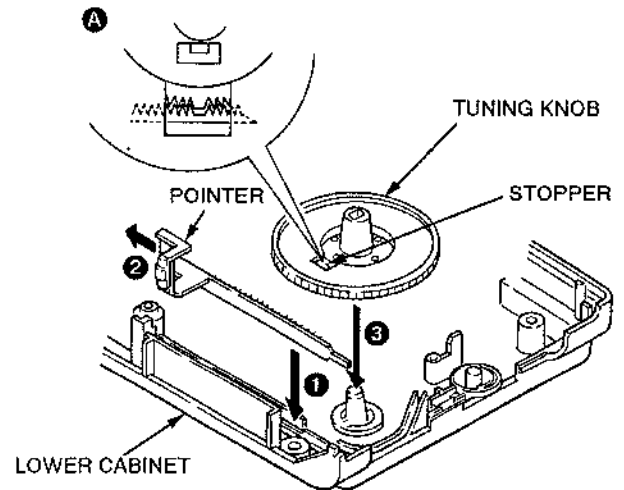


The radio will play for the time you set, then shut off.

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

SECTION 2 DIAL POINTER SETTING

2-1. DIAL POINTER SETTING



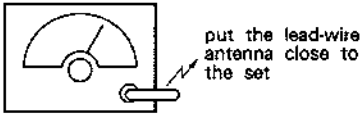
- 1 Fit the gear part of pointer to cabinet groove and hook installing claw while taking pointer output of cabinet.
- 2 Move pointer in the direction of arrow fully.
- 3 Install the gear part of stopper and the gear part of pointer as show in the drawing **A**.
Make sure to fit the stopper to the cabinet hole.

SECTION 3 ELECTRICAL ADJUSTMENTS

AM SECTION

Setting :
BAND select switch : AM

AM rf signal generator

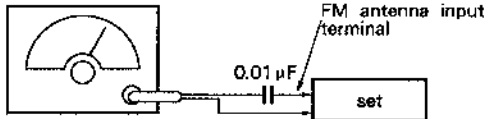


30 % amplitude modulation by 400Hz signal
Output level : as low as possible

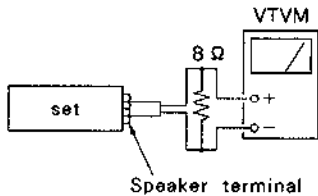
FM SECTION

Setting :
BAND select switch : FM

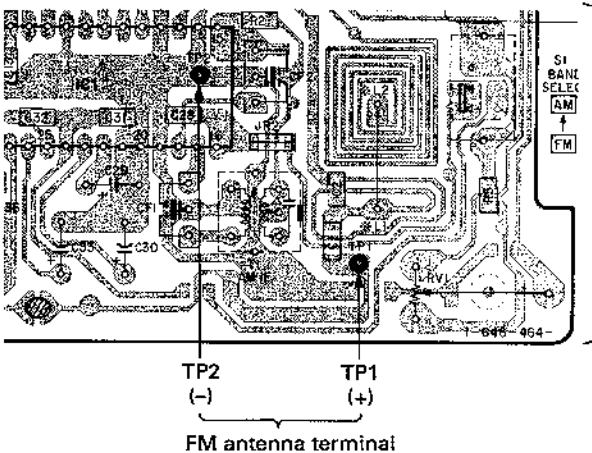
FM rf signal generator



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



[MAIN BOARD] (CONDUCTOR SIDE)



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

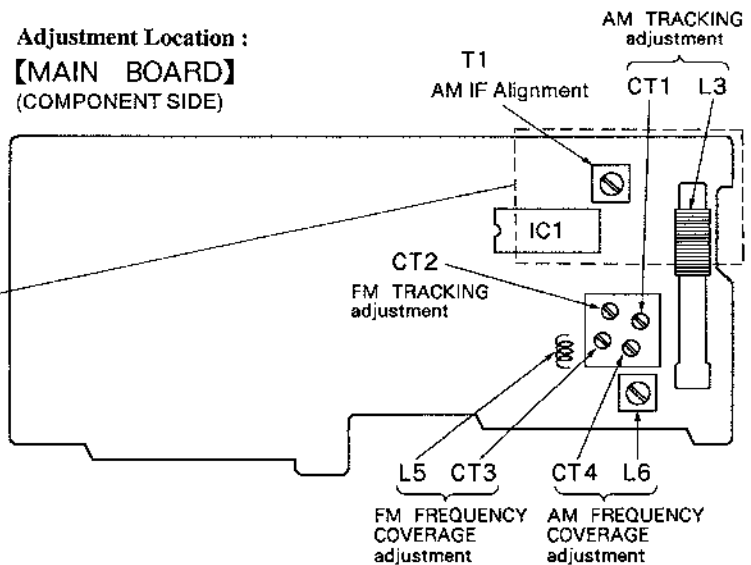
AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L6	520kHz
CT4	1, 650kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L3	680kHz
CT1	1, 320kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L5	86.5MHz
CT3	109.5MHz

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

Adjustment Location :
[MAIN BOARD]
(COMPONENT SIDE)



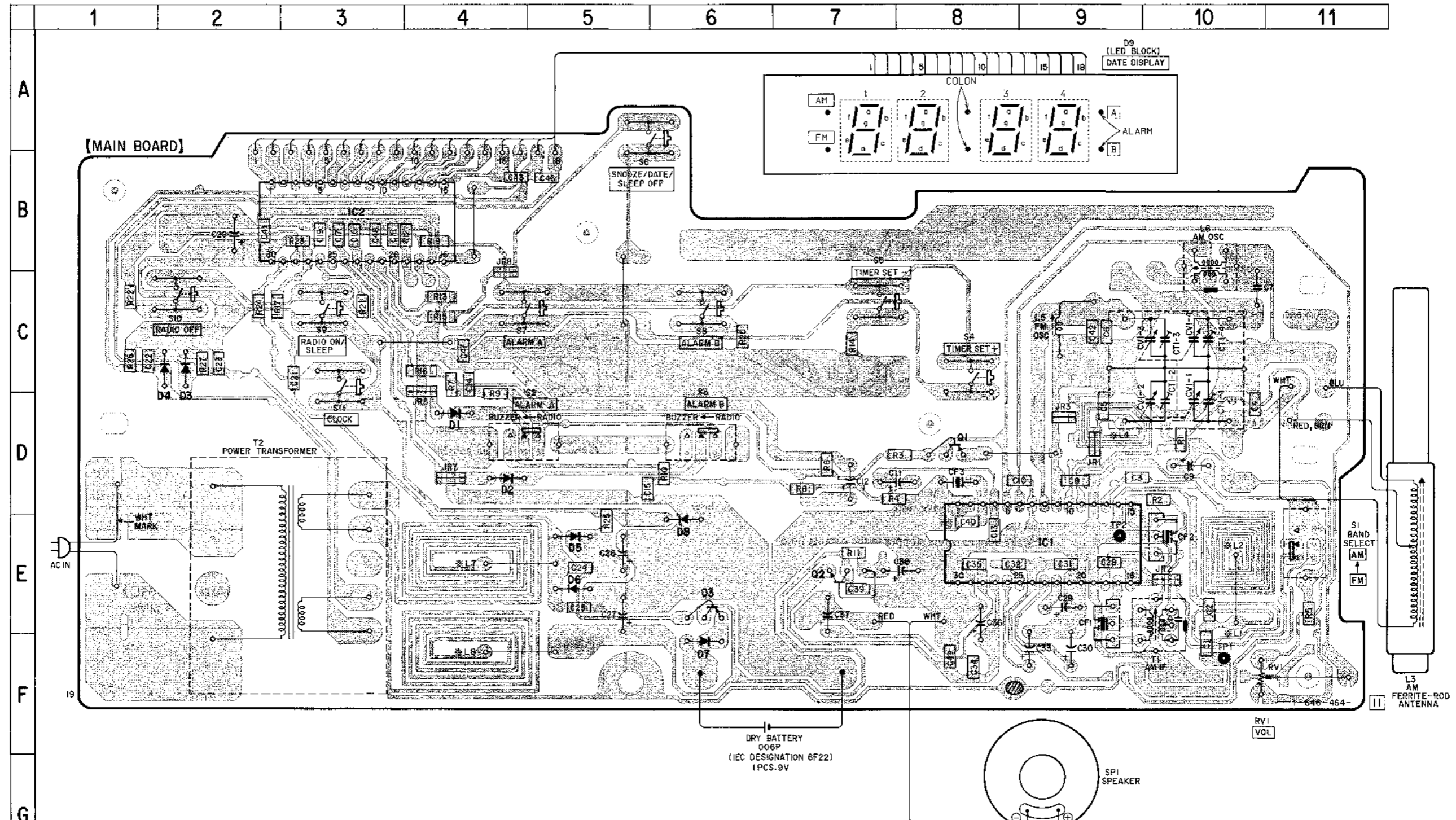
- Repeat the procedures each adjustment several times, and the frequency coverage and tracking adjustments should be done by the trimmer capacitors.

SECTION 4
DIAGRAMS

4-1. PRINTED WIRING BOARD

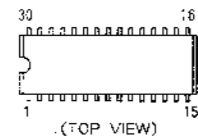
● SEMICONDUCTOR LOCATION

Ref. No.	Location
D1	D-4
D2	D-4
D3	C-2
D4	C-2
D5	E-5
D6	E-5
D7	F-6
D8	E-6
D9	A-9
IC1	E-9
IC2	B-3
Q1	D-8
Q2	E-7
Q3	E-6



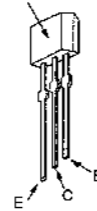
4-2. SEMICONDUCTOR LEAD LAYOUTS

CXA1019S
LC85631

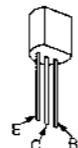


2SA1175-HFE

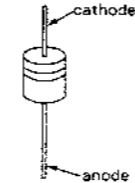
LETTER SIDE



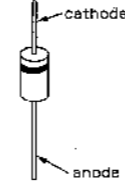
2SC2001-LK



1SS119
MTZJT-955.1A

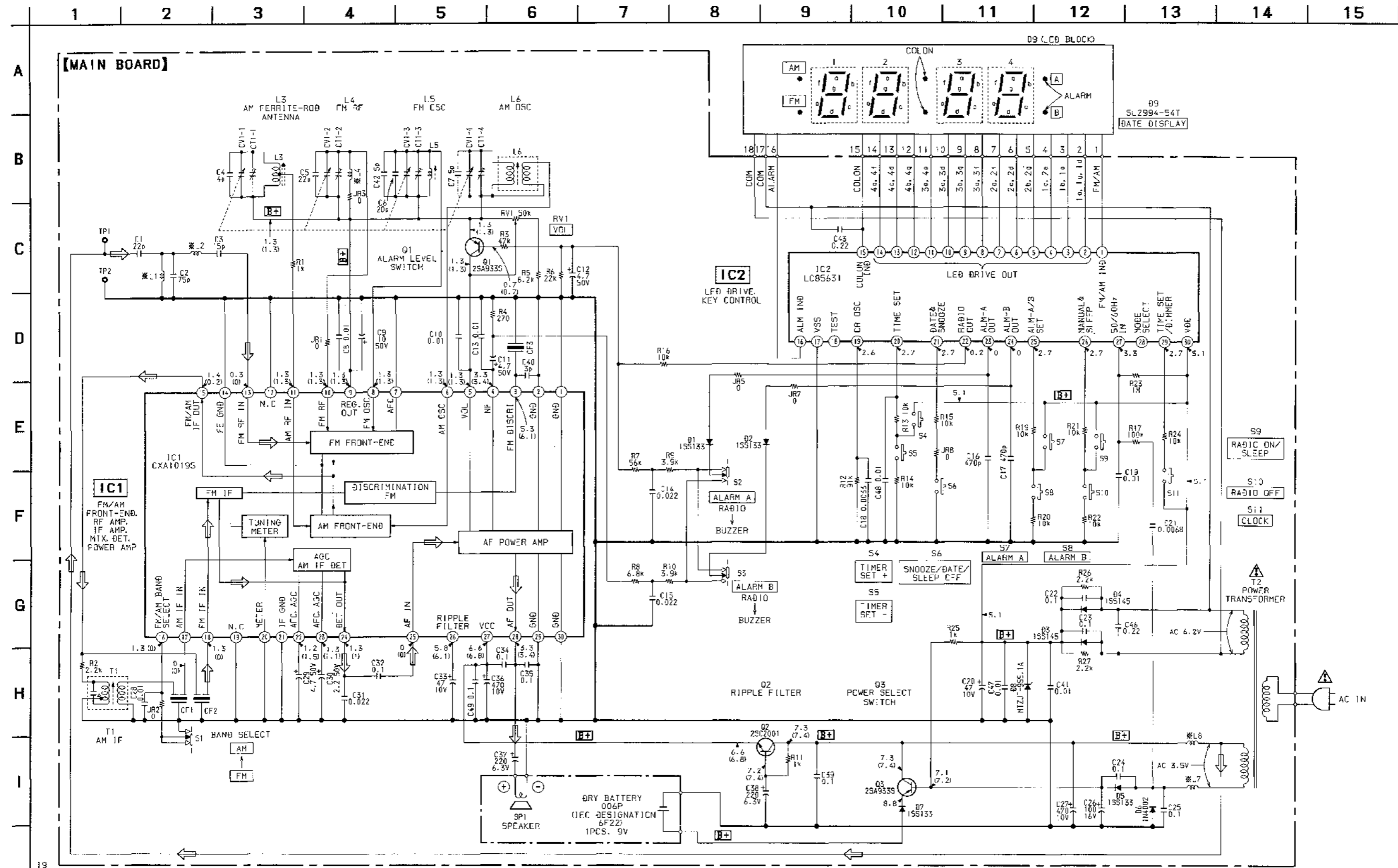


10E2



Notes on printed wiring board:

- — : Indicated a lead wire mounted on the component side.
- □ - : Indicates side identified with part number.
- ▨ : Pattern from the side which enables seeing.
- * : Printed pattern functions as a kind of coil.



Notes on schematic diagram:

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

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 are dc with respect to ground under no-signal (detuned) conditions.
- No mark : FM
- () : AM
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- \Rightarrow : FM
- L1, 2, 4, 7, 8 : Printed pattern functions as a kind of coil.

SECTION 6 ELECTRICAL PARTS LIST

MAIN

NOTE:

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 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.
- -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

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
*	A-3679-476-A	MAIN BOARD, COMPLETE *****		C33	1-124-126-00	ELECT	47uF 20% 10V
	1-696-939-11	CORD, CONNECTION (18 CORE)		C34	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
		< CAPACITOR >		C35	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C1	1-163-165-00	CERAMIC CHIP	22PF 5% 50V	C36	1-124-472-11	ELECT	470uF 20% 10V
C2	1-163-114-00	CERAMIC CHIP	75PF 5% 50V	C37	1-126-176-11	ELECT	220uF 20% 10V
C3	1-163-097-00	CERAMIC CHIP	15PF 5% 50V	C38	1-126-176-11	ELECT	220uF 20% 10V
C4	1-163-087-00	CERAMIC CHIP	4PF 50V	C39	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C5	1-163-165-00	CERAMIC CHIP	22PF 5% 50V	C40	1-163-086-00	CERAMIC CHIP	3PF 50V
C6	1-163-100-00	CERAMIC CHIP	20PF 5% 50V	C41	1-163-059-00	CERAMIC CHIP	0.01uF 10% 50V
C7	1-102-942-00	CERAMIC	5.0PF \pm 0.5PF 50V	C42	1-163-222-11	CERAMIC CHIP	5PF 0.25PF 50V
C8	1-163-059-00	CERAMIC CHIP	0.01uF 10% 50V	C43	1-164-222-11	CERAMIC CHIP	0.22uF 25V
C9	1-124-907-11	ELECT	10uF 20% 50V	C46	1-164-222-11	CERAMIC CHIP	0.22uF 25V
C10	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C47	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C11	1-124-927-11	ELECT	4.7uF 20% 100V	C48	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C12	1-124-927-11	ELECT	4.7uF 20% 100V	C49	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C13	1-163-031-11	CERAMIC CHIP	0.01uF 50V			< FILTER >	
C14	1-163-033-00	CERAMIC CHIP	0.022uF 50V	CF1	1-577-072-11	FILTER, CERAMIC	
C15	1-163-033-00	CERAMIC CHIP	0.022uF 50V	CF2	1-567-097-61	FILTER, CERAMIC	
C16	1-163-133-00	CERAMIC CHIP	470PF 5% 50V	CF3	1-567-097-61	FILTER, CERAMIC	
C17	1-163-133-00	CERAMIC CHIP	470PF 5% 50V			< VARIABLE CAPACITOR >	
C18	1-164-182-11	CERAMIC CHIP	0.0033uF 10% 50V	CV1	1-151-628-11	CAP, VARIABLE	
C19	1-163-031-11	CERAMIC CHIP	0.01uF 50V			< DIODE >	
C20	1-124-126-00	ELECT	47uF 20% 10V	D1	8-719-911-19	DIODE	1SS119
C21	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	D2	8-719-911-19	DIODE	1SS119
C22	1-163-038-00	CERAMIC CHIP	0.1uF 25V	D3	8-719-911-19	DIODE	1SS119
C23	1-163-038-00	CERAMIC CHIP	0.1uF 25V	D4	8-719-911-19	DIODE	1SS119
C24	1-163-038-00	CERAMIC CHIP	0.1uF 25V	D5	8-719-911-19	DIODE	1SS119
C25	1-163-038-00	CERAMIC CHIP	0.1uF 25V	D6	8-719-200-02	DIODE	10E2
C26	1-126-101-11	ELECT	100uF 20% 16V	D7	8-719-911-19	DIODE	1SS119
C27	1-124-472-11	ELECT	470uF 20% 10V	D8	8-719-033-45	DIODE	MTZJT-955.1A
C28	1-163-031-11	CERAMIC CHIP	0.01uF 50V	D9	1-810-027-11	LED BLOCK	SL-2994-54TB (GREEN LED)
C29	1-124-927-11	ELECT	4.7uF 20% 100V			< IC >	
C30	1-124-925-11	ELECT	2.2uF 20% 100V	IC1	8-752-035-29	IC	CXA1019S
C31	1-163-033-00	CERAMIC CHIP	0.022uF 50V	IC2	8-759-095-52	IC	LC85631
C32	1-163-038-00	CERAMIC CHIP	0.1uF 25V				

Ref. No.	Part No.	Description	Remarks
< JUMPER RESISTOR >			
JR1	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR2	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR3	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR5	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR7	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR8	1-216-295-00	METAL CHIP 0 5% 1/10W	
< COIL >			
L3	1-402-464-11	ANTENNA, FERRITE-ROD (AM)	
L5	1-422-300-11	COIL, AIR-CORE (FM OSC)	
L6	1-406-028-00	COIL, OSC (AM OSC)	
< TRANSISTOR >			
Q1	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q2	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q3	8-729-119-76	TRANSISTOR 2SA1175-HFE	
< RESISTOR >			
R1	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R2	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R3	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R4	1-216-035-00	METAL CHIP 270 5% 1/10W	
R5	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R6	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R7	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R8	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R9	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R10	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R11	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R12	1-216-096-00	METAL GLAZE 91K 5% 1/10W	
R13	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R14	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R15	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R16	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R17	1-216-246-00	METAL GLAZE 100K 5% 1/8W	
R19	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R20	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R21	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R22	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R23	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R24	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R25	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R26	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R27	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
< VARIABLE RESISTOR >			
RV1	1-228-790-00	RES. VAR. CARBON 50K (VOL)	

Ref. No.	Part No.	Description	Remarks
< SWITCH >			
S1	1-571-478-11	SWITCH, SLIDE (BAND SELECT)	
S2	1-571-478-11	SWITCH, SLIDE (ALARM A RADIO/BUZZER)	
S3	1-571-478-11	SWITCH, SLIDE (ALARM B RADIO/BUZZER)	
S4	1-554-937-11	SWITCH, KEY BOARD (TIMER SET +)	
S5	1-554-937-11	SWITCH, KEY BOARD (TIMER SET -)	
S6	1-554-937-11	SWITCH, KEY BOARD (SNOOZE/DATE/SLEEP OFF)	
S7	1-554-937-11	SWITCH, KEY BOARD (ALARM A)	
S8	1-554-937-11	SWITCH, KEY BOARD (ALARM B)	
S9	1-554-937-11	SWITCH, KEY BOARD (RADIO ON/SLEEP)	
S10	1-554-937-11	SWITCH, KEY BOARD (RADIO OFF)	
S11	1-554-937-11	SWITCH, KEY BOARD (CLOCK)	
< TRANSFORMER >			
T1	1-404-790-11	TRANSFORMER, 1F (AM IF)	
△T2	1-450-547-11	TRANSFORMER, POWER	

MISCELLANEOUS			

5	1-696-939-11	CORD, CONNECTION (18 CORE)	
△6	1-696-008-11	CORD, POWER	
SP1	1-503-082-00	SPEAKER	

ACCESSORIES & PACKING MATERIALS			

*	3-387-400-01	INDIVIDUAL CARTON	
	3-756-518-21	MANUAL, INSTRUCTION (English)	

HARDWARE LIST			
#1	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.

