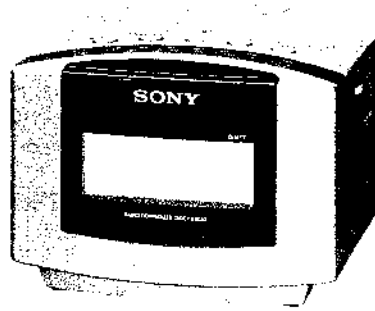


ICF-C50L

SERVICE MANUAL

UK Model

SONY-08199



SPECIFICATIONS

| | |
|-------------------------|---|
| Time display | 12hour |
| Frequency range: | |
| FM | 87.5 - 108.0 MHz |
| MW | 530 - 1605 kHz |
| LW | 153 - 255 kHz |
| Speaker: | Approx. 6.6 cm (2 7/8 inches) dia. 8 ohms. |
| Power output: | 100mW (at 10% harmonic distortion) |
| Power requirements: | 220 V - 230 V AC, 50 Hz |
| Dimensions: | Approx. 133 x 91 x 140 mm (5 1/8 x 3 1/2 x 5 1/2 inches) (w/h/d) incl projecting parts and controls |
| Mass: | Approx. 675g (1 lb 8 oz) |

Design and specifications subject to change without notice.

FEATURES

- Radio Controlled Clock Auto Adjust System
- Dual alarm
- Sleep Function

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ 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/MW/LW RADIO
CONTROLLED CLOCK RADIO
SONY®



SECTION 1 SERVICING NOTES

TABLE OF CONTENTS

| | | |
|-----------|-------------------------------------|----|
| 1. | SERVICING NOTES | 2 |
| 2. | GENERAL | 3 |
| 3. | DISASSEMBLY | 5 |
| 4. | DIAL POINTER SETTING | 6 |
| 5. | ELECTRICAL ADJUSTMENTS | 7 |
| 6. | DIAGRAMS | |
| 6-1. | Printed Wiring Boards | 10 |
| 6-2. | Schematic Diagram | 13 |
| 6-3. | IC Pin Function Description | 16 |
| 7. | EXPLODED VIEW | 18 |
| 8. | ELECTRICAL PARTS LIST | 19 |

1-1. CHECK MODE OF LIQUID CRYSTAL DISPLAY PANEL

How to enter the check mode:

Press the **RADIO OFF** + **CLOCK** +

D.S.T. SUMMER T keys simultaneously for more than 5 seconds, and the check mode is activated.

When the check mode becomes active, all LCD are tuned on, and each time a key is pressed, the display changes so that the LCD can be checked.

How to release the check mode:

Press the **RADIO OFF** key, and the normal mode is restored.

1-2. RESET OF SOFTWARE

Press the **CLOCK AUTO ADJUST** + **CLOCK** +

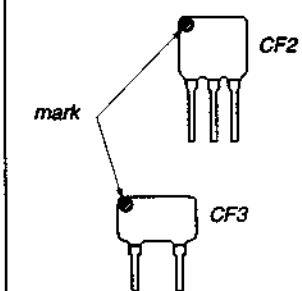
D.S.T. SUMMER T keys simultaneously for more than 5 seconds, and the RAM is cleared and the software is initialized.

1-3. HOW TO CHANGE THE CERAMIC FILTERS

This model is used two ceramic filters of CF2, 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 one package as a spare parts.

| | | |
|--|--------|------------------|
|  | Mark | Center frequency |
| | red | 10.70MHz |
| | blue | 10.67MHz |
| | orange | 10.73MHz |
| | black | 10.64MHz |
| | white | 10.76MHz |

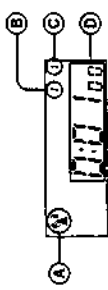
SECTION 2 GENERAL

This section is extracted from
instruction manual.

What is Clock Auto Adjust System?

The clock data that is set has a unit of 60 units (this unit is called "frame"). The data is set in 12 units (one hour). The unit receives this data from the radio data No. 1 (data No. 6H). When the radio receives the first frame and then starts to receive the second frame (or confirmation), when the 2nd frame has been confirmed, then the clock data reception has been completed. When the unit is plugged in, this function will operate until the time receives completely.

The Display during Clock Auto Adjust Mode



| | |
|--------------------------------------|---|
| ① Reception indicator | Will flash during Clock Auto Adjust mode. |
| ② Reception indicator (frame data) | Will appear when Clock Auto Adjust mode is completed. |
| ③ Reception indicator (unit data) | 0: 1 frame data when not received 1: 1 unit data when received 0: 1 unit data when not received |
| ④ Duration of Clock Auto Adjust mode | Maximum 10 hours displayed, even though the Clock Auto Adjust mode is not completed after 10 hours, the operation is still completed. |

When the LCD display is difficult to see.
Change the Bright switch to either 1 (High) or 1 (Low) for better display.

About Radio Reception
The radio controlled signal is transmitted from the area shown below.

England: Teddington, Middlesex
57° 22' N, 01° 11' W
Germany: Mairhofen
50° 01' N, 09° 00' E

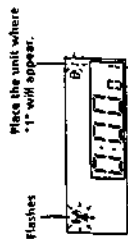
The U.K. models will receive the radio signal from England. The current time of England will be displayed.
The other models will receive the radio signal from Germany. The current time of Germany will be displayed.
There may be areas where radio reception is weak.

Setting the Clock and Date

Setting the Clock Automatically

This radio has Radio Controlled Clock Auto Adjust System that adjusts to the current time. The Radio Controlled Clock Auto Adjust System receives the clock data (Year, month, day, hour, minute, second and D.S.T.) on a certain radio wave and radio controls the clock time. Be sure to set the radio where reception would be easier.

1. Set the radio.
Choose a place where there is good reception as possible.
2. Plug in the unit.
The Clock Auto Adjust function will automatically operate and "y" will flash in the display.

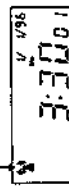


Counting starts when the number at the upper right corner of the display (for the first time) changes to 1.

3. When the clock auto adjust has been completed, the clock will start to operate and "y" will appear in the display.

United Kingdom: 12 hour display;
AM 12:00 = midnight
Other Countries: 24 hour display;
00:00 = midnight

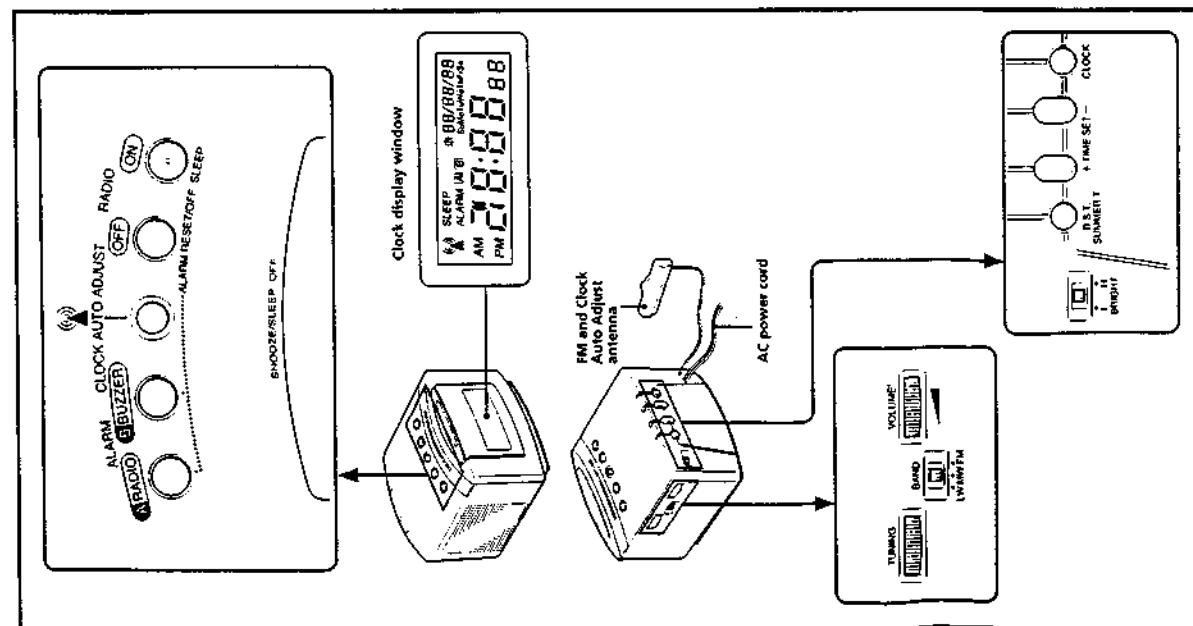
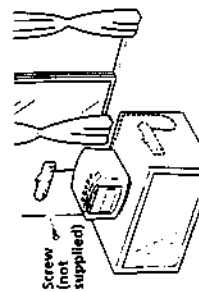
Lights up



To stop Clock Auto Adjust during operation
Press CLOCK AUTO ADJUST.

For the customers in the United Kingdom
To improve reception

When the reception is poor, set the FM and Clock Auto Adjust antenna to a place and angle where the reception is much more stronger.



Once the Clock Auto Adjust has been completed

If the reception has not changed, you do not have to set the clock again. The Clock Auto Adjust function will automatically operate every night at AM 3:05 (the correct time). If the reception is incomplete after 12 minutes, the time setting will return to the original time and "y" will disappear from the display.

If you want to Restart the Clock Auto Adjust

Press **CLOCK AUTO ADJUST** while the Clock is operating. "y" will start to flash indicating that the Clock Auto Adjust function is operating. If the reception has been completed, "y" will be displayed and the clock time will change to the correct time. If the reception is incomplete after 12 minutes, the time setting will return to the original time and "y" will disappear from the display.

About Daylight Saving Time (summer time)

Indication

The changing of the summer time will be automatically changed by Clock Auto Adjust function. The change of summer time will have a time lag.
Winter Time → Summer Time: about 1 hour and 10 minutes time lag.
Summer Time → Winter Time: about 10 minutes time lag.
During the Summer Time mode "y" will appear in the display.

To Change the Display to the Daylight Saving Time (summer time)

Press **D.S.T. + SUMMER T.**
"y" will appear and the time indication changes to the summer time.
To change the summer time indication, press **D.S.T. + SUMMER T.** button again.

Manual Setting the Clock

1. Press **CLOCK** for more than 1 second. The "Year" will start to flash in the display.
 2. Press **TIME SET +** or **-** until the correct number appears in the display.
 3. Press **CLOCK** once.
 4. Repeat steps 2 and 3 to set the month, day, hour, minute.
- After setting the minute, press and release **CLOCK** to start the crumpling of the seconds.

Note

- If you stop during the clock setting, after about a minute the previous display will return.
- To set the current time exactly to the second, release the **CLOCK** with the radio or telephone line signal at step 4 (above).

Operating the Radio

1. Press **RADIO ON**.
2. Select **BAND (FM or AM for ICF-CS0, FM, MW or LW for ICF-CS10)**.
3. Tune in a station using **TUNING**.
4. Adjust **VOLUME**.

- To turn off the radio, press **RADIO OFF**.

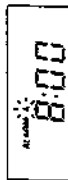
To Improve Radio Reception

FM: Extend the FM wire antenna to improve FM reception.
AM/MW/LW: Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built into the top.

Setting the Alarm

You can set the radio alarm in **ALARM A**, and have a second alarm in **ALARM B**. To set the radio alarm, first tune to a station as described in "Operating the Radio," and adjust the volume.

1. Turn off the radio.
2. While holding down **ALARM A** or **B**, press **TIME SET** \rightarrow or \leftarrow until the desired time appears in the display.
When you release **ALARM A** or **B**, the alarm setting is completed.



The radio or buzzer will automatically sound at the preset time and automatically turn itself off after 60 minutes.

- To turn off the alarm manually, press **ALARM RESET/OFF**. The alarm will come on at the preset time on the next day.
- To cancel the alarm before the alarm time, while holding down **ALARM A** or **B**, press **ALARM RESET/OFF**.
- To check the preset time, press **ALARM A** or **B**.

Notes

- The buzzer sound level is fixed, and independent of the **VOLUME** control.
- If you set **ALARM A** and **ALARM B** to the same desired time, only **ALARM A** will work.
- Even if you are listening to the radio, you can set the radio or buzzer alarm.
- The alarm circuit has a backup for about 10 minutes. When there is a power interruption or power loss in minutes, the alarm setting memory will be cancelled.

To Doze a Few More Minutes

1. Press **SNOOZE/SLEEP OFF**.
The radio or buzzer will shut off but will automatically come on again after about 6 minutes. You can repeat this process as many times as you like.
- You can reset the alarm time while activating the snooze function.

To Use Both Sleep Timer and Alarm

You can fall asleep to the radio sound, and you will be awakened by the radio or buzzer alarm at the preset time.

1. Set the alarm. (See "Setting the Alarm".)
2. Set the sleep timer. (See "Setting the Sleep Timer".)

Setting the Sleep Timer

By setting the sleep timer, you can fall asleep in the radio sound. The radio turns off after the selected time.

1. Press **SLEEP** repeatedly until the desired operating time is displayed.
Each time you press **SLEEP**, the sleep timer indication changes as follows.

On \rightarrow 90 \rightarrow 60 \rightarrow 30
Off \leftarrow (5 \leftarrow)

After setting the Sleep Timer, the current time will appear.

- To turn off the sleep timer before the selected time has elapsed, press **SNOOZE/SLEEP OFF**.

Precautions

On Installation

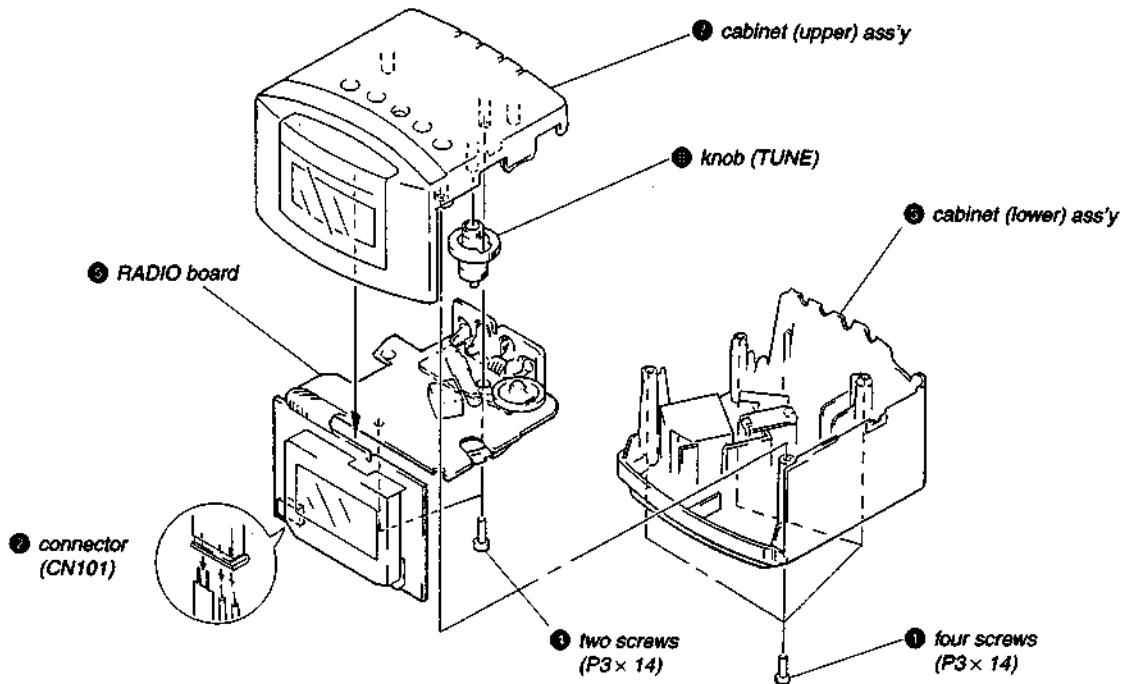
- Try near a window or place the radio where the reception is better.
- Do not place the unit where the reception would become weak (as follows).
 - \rightarrow near a T.V., refrigerator, computer, etc.
 - \rightarrow on a steel table, steel shelf, and other steel objects.
- Operate the unit on the power sources specified in "Specifications".
- The nameplate indicating operating voltage, etc. is located on the bottom exterior.
- To disconnect the power cord, pull it out by the plug, not the cord.
- Do not place the unit on surfaces (trays, bookshelves, etc.) or near materials (journals, newspapers, etc.) that are vulnerable to the heat from the unit.
- Shut off the power before the unit is being the unit and the plug is checked by qualified personnel before operating it further.
- The unit is not disconnected from the AC power source (inside) as long as it is connected to the wall outlet, even if the unit itself is turned off.

If you have any questions or problems concerning your unit, please consult your nearest Sony dealer.

SECTION 3 DISASSEMBLY

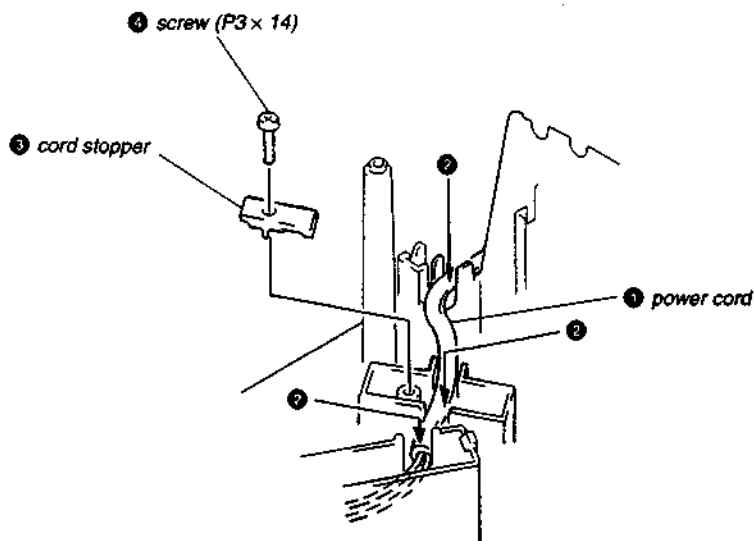
Note: Follow the disassembly procedure in the numerical order given.

CABINET (UPPER/LOWER) ASSY, RADIO BOARD



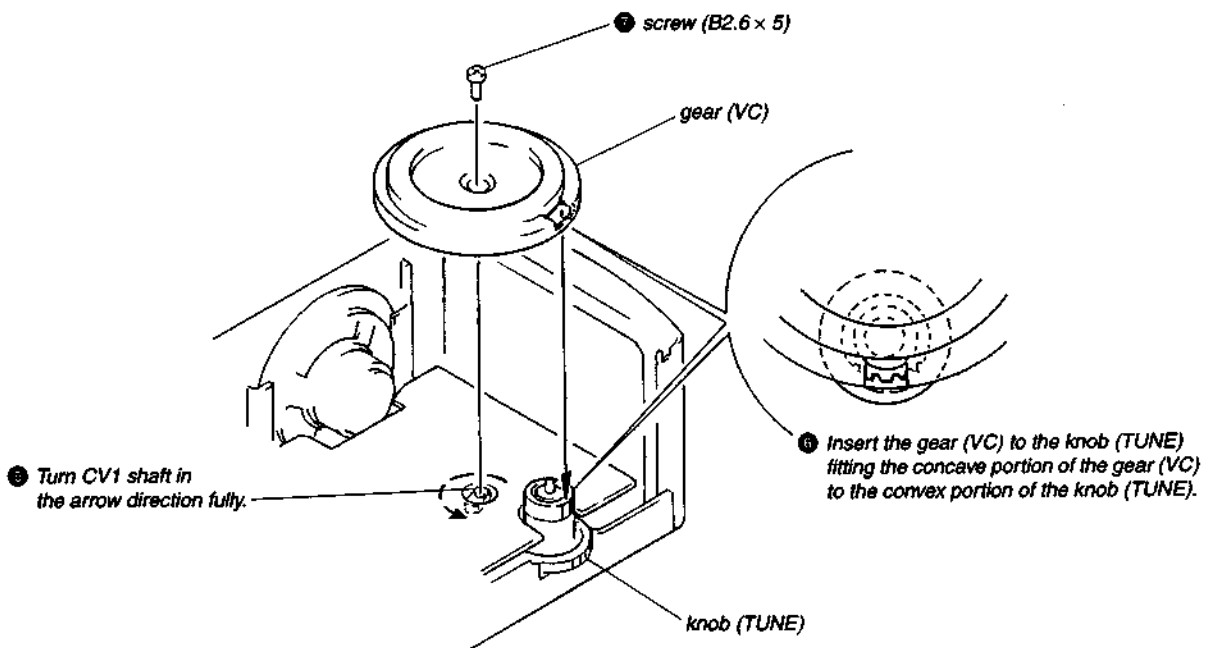
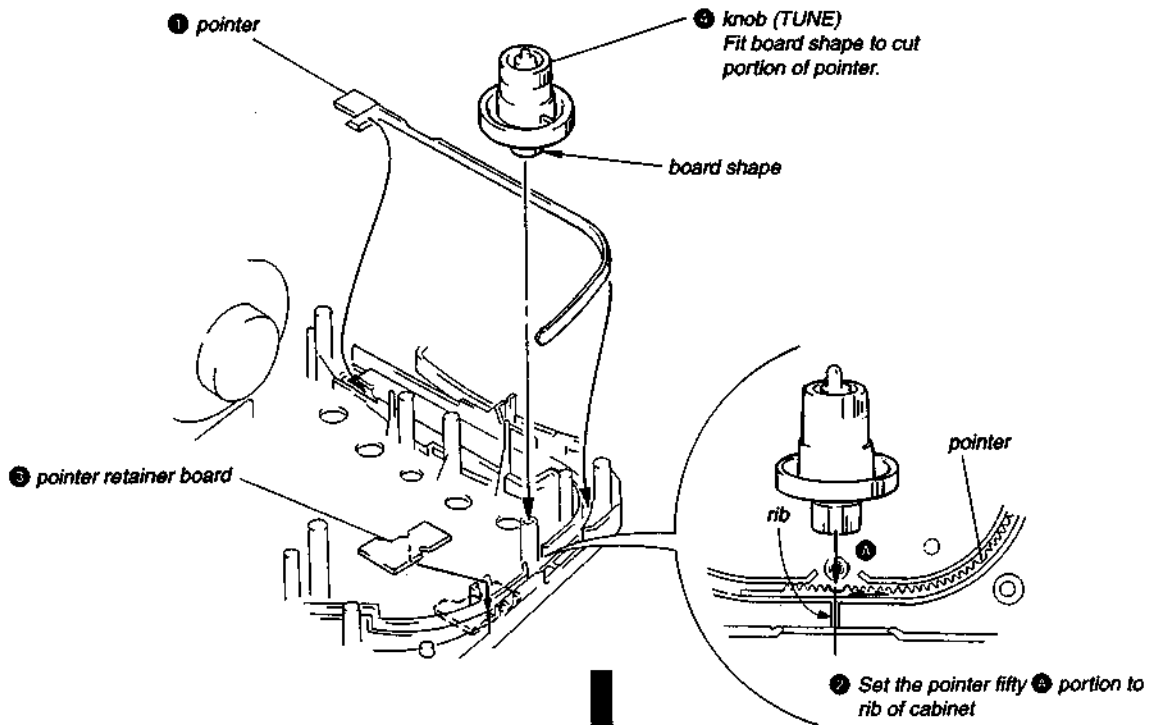
POWER CORD DRESSING

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



SECTION 4 DIAL POINTER SETTING

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

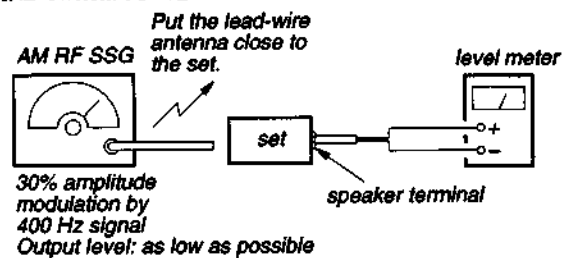


SECTION 5 ELECTRICAL ADJUSTMENTS

[MW/LW]

Setting:

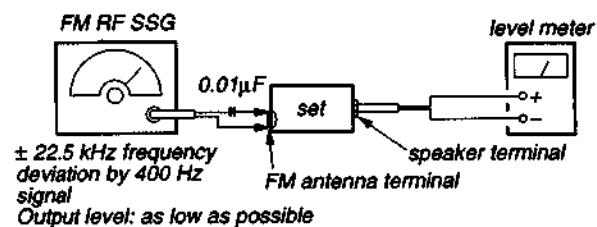
BAND switch: MW/LW



[FM]

Setting:

BAND switch: FM



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

| MW FREQUENCY COVERAGE ADJUSTMENT | |
|--|-----------|
| Adjust for a maximum reading on level meter. | |
| L4 | CT4 |
| 520 kHz | 1,650 kHz |

| MW TRACKING ADJUSTMENT | |
|--|-----------|
| Adjust for a maximum reading on level meter. | |
| L2 (MW side) | CT1 |
| 600 kHz | 1,400 kHz |

| LW FREQUENCY COVERAGE ADJUSTMENT | |
|--|--|
| Adjust for a maximum reading on level meter. | |
| CT6 | |
| Frequency minimum | |

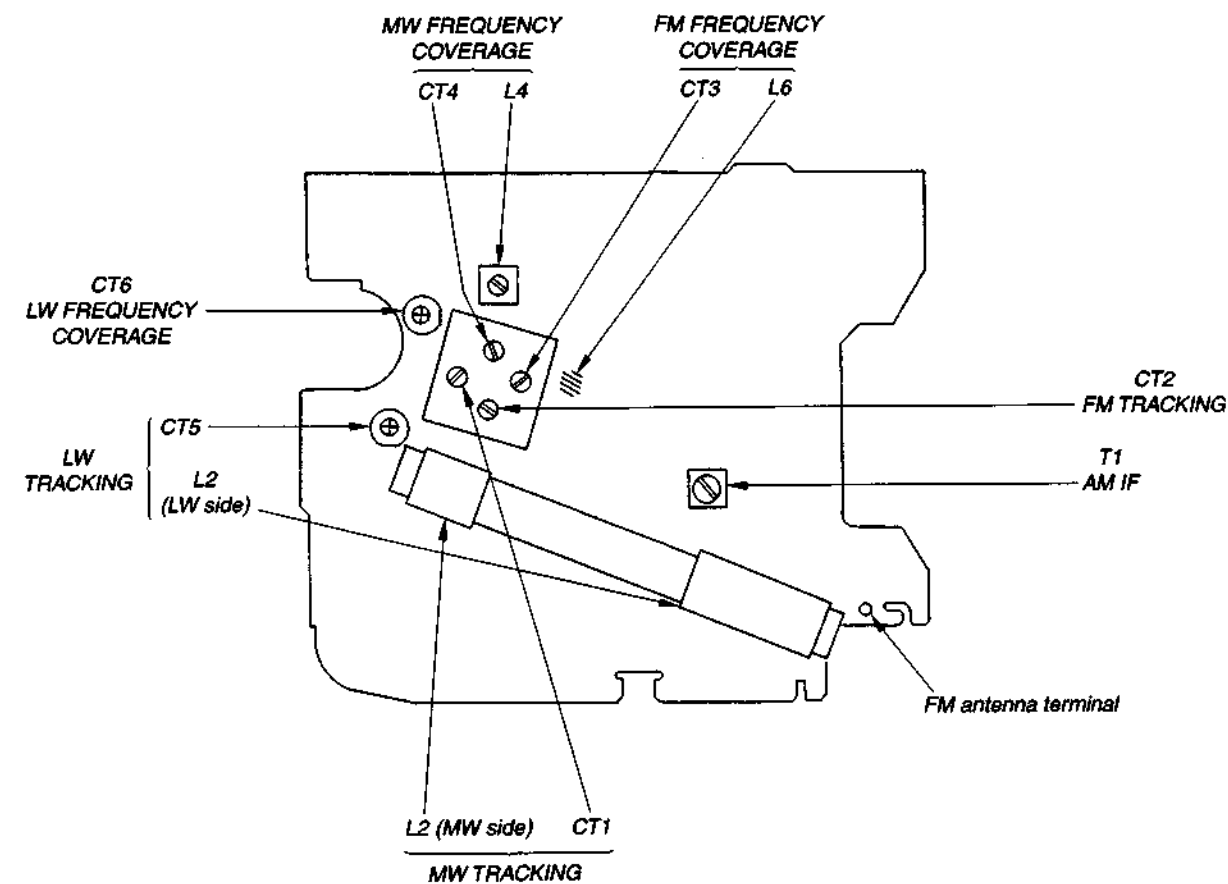
| LW TRACKING ADJUSTMENT | |
|--|---------|
| Adjust for a maximum reading on level meter. | |
| L2 (LW side) | CT5 |
| 160 kHz | 240 kHz |

| FM FREQUENCY COVERAGE ADJUSTMENT | |
|--|----------|
| Adjust for a maximum reading on level meter. | |
| L6 | CT3 |
| 86.5 MHz | 109.5 Hz |

| FM TRACKING ADJUSTMENT | |
|--|--|
| Adjust for a maximum reading on level meter. | |
| CT2 | |
| Frequency maximum | |

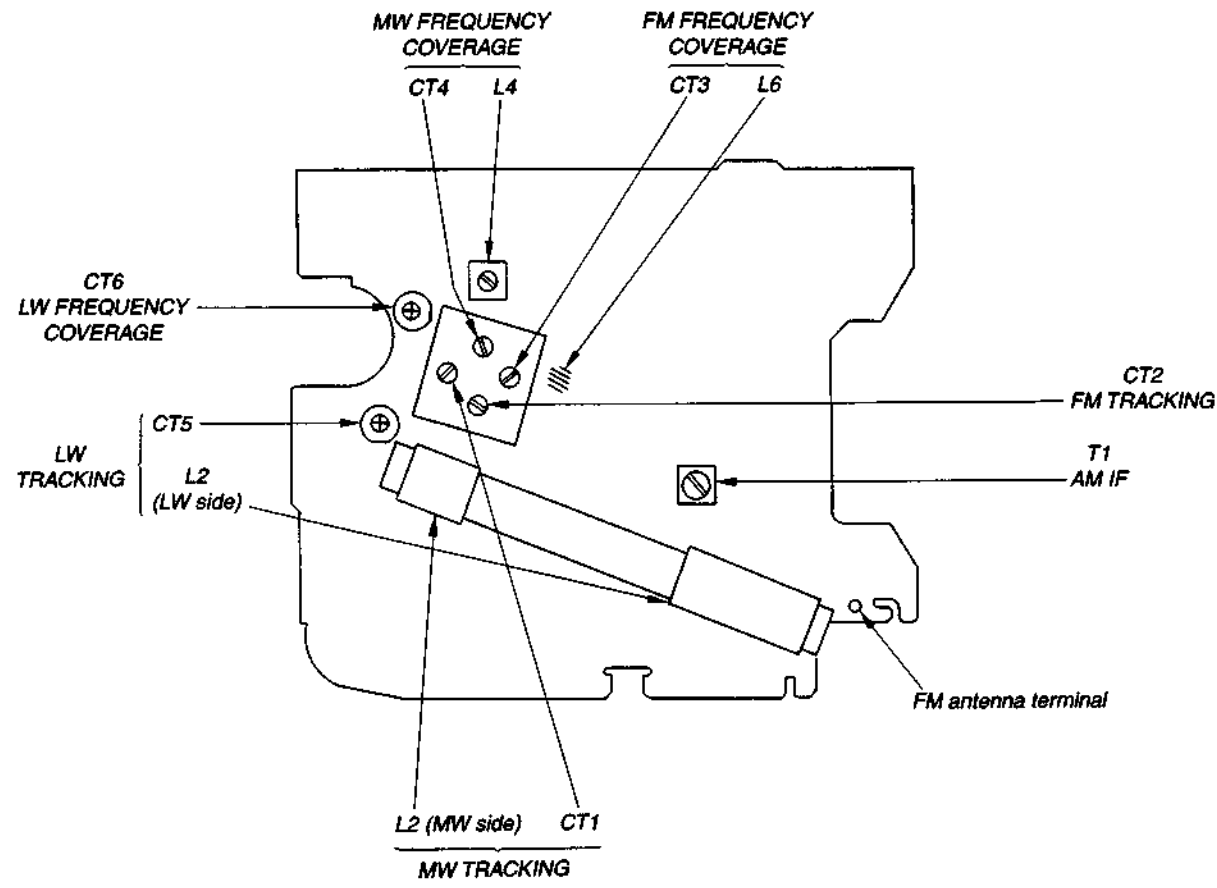
| AM IF ADJUSTMENT | |
|--|--|
| Adjust for a maximum reading on level meter. | |
| T1 | |
| 455 kHz | |

Adjustment Location: RADIO BOARD (Component Side)



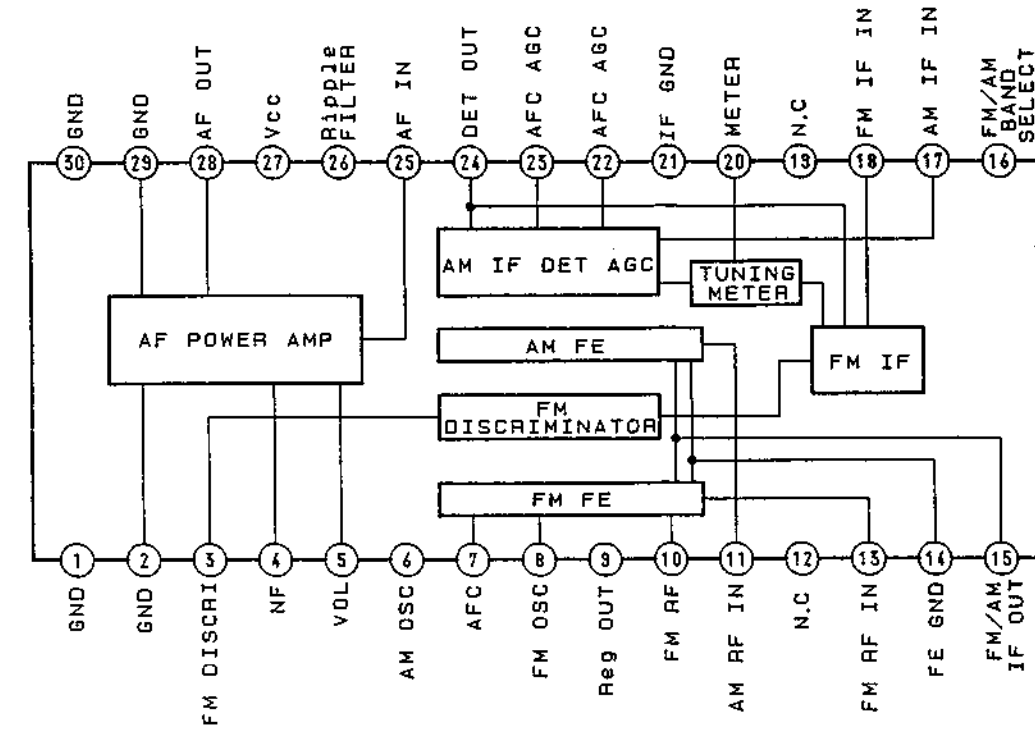
SECTION 6 DIAGRAMS

Adjustment Location: RADIO BOARD (Component Side)

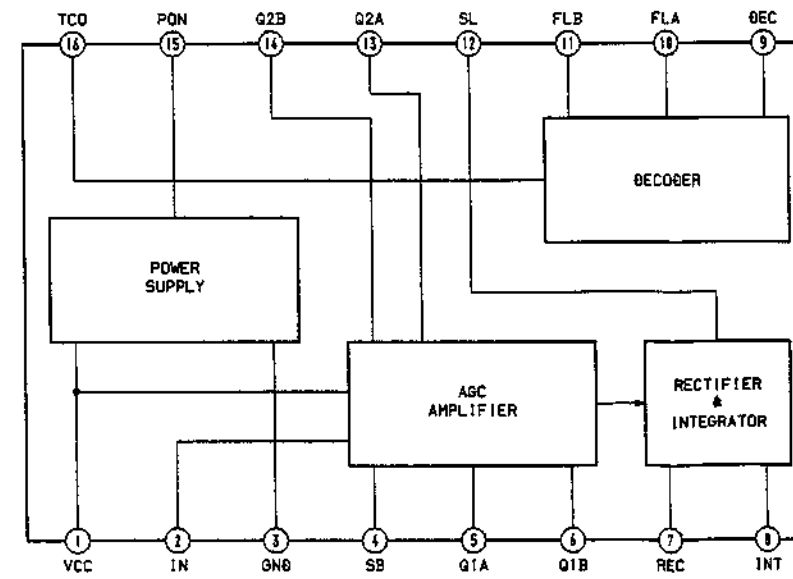


• IC Block Diagrams

IC1 CXA1019S



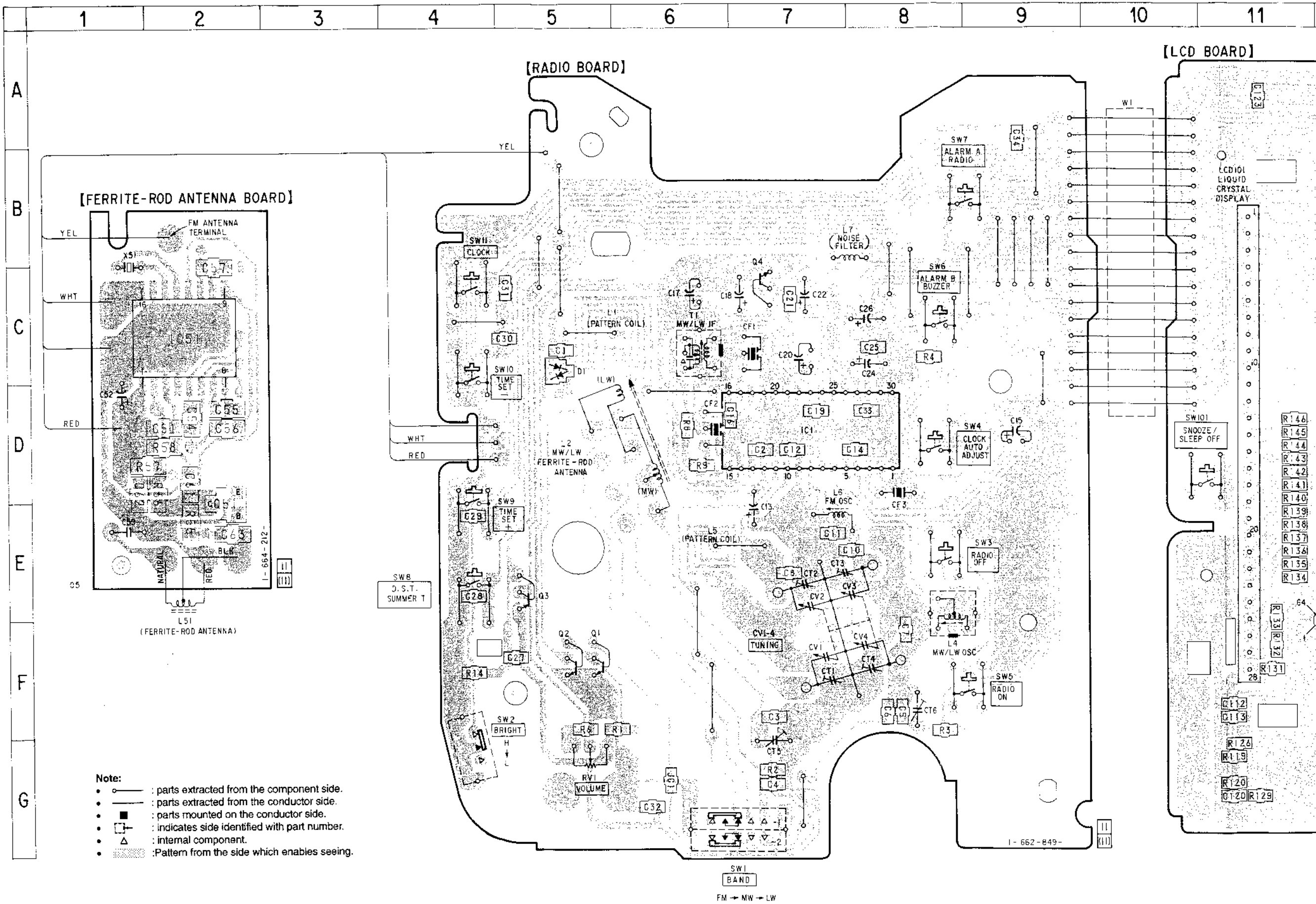
IC51 U4224B-CFLG3



6-1. PRINTED WIRING BOARDS

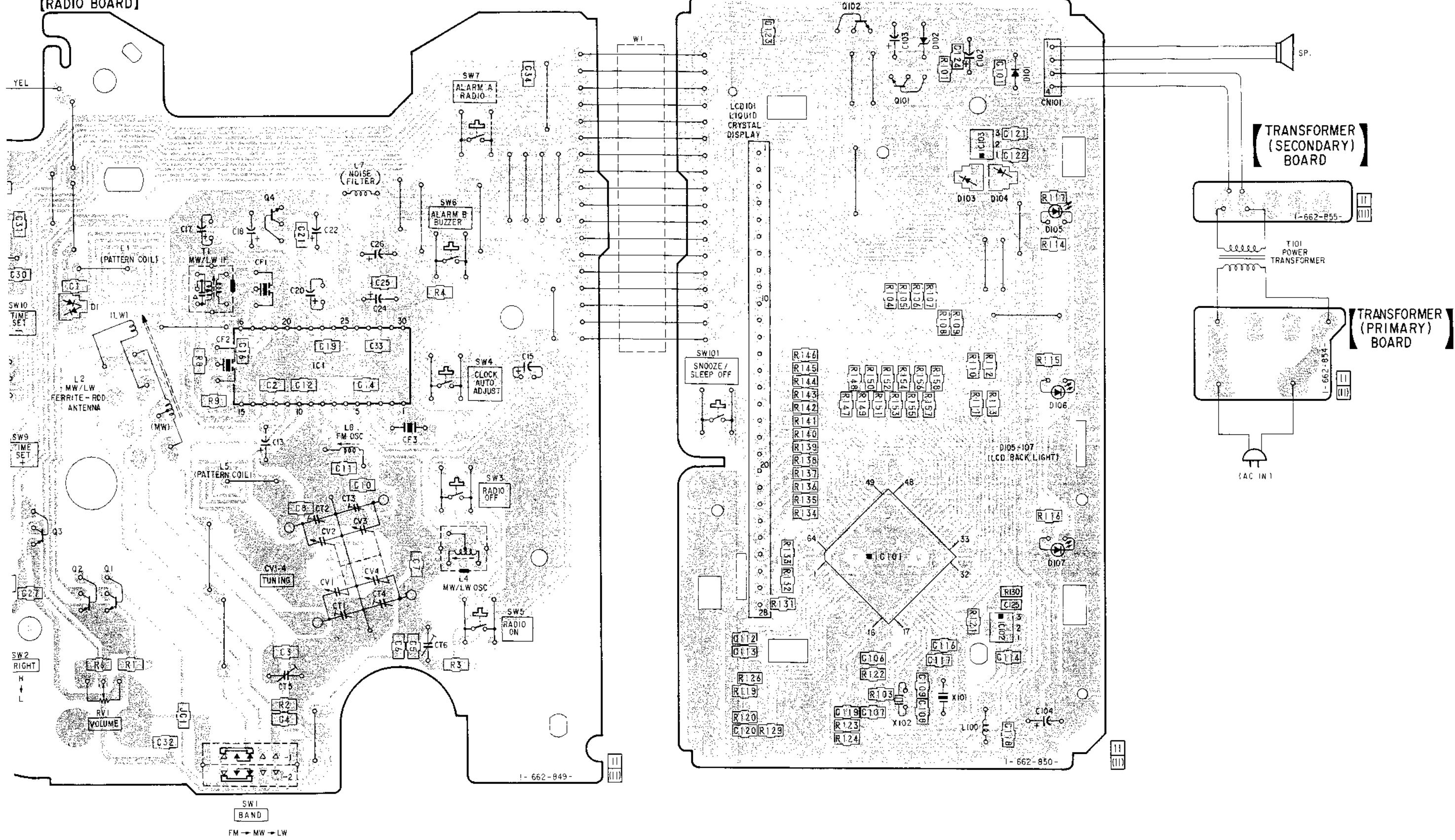
• Semiconductor Location

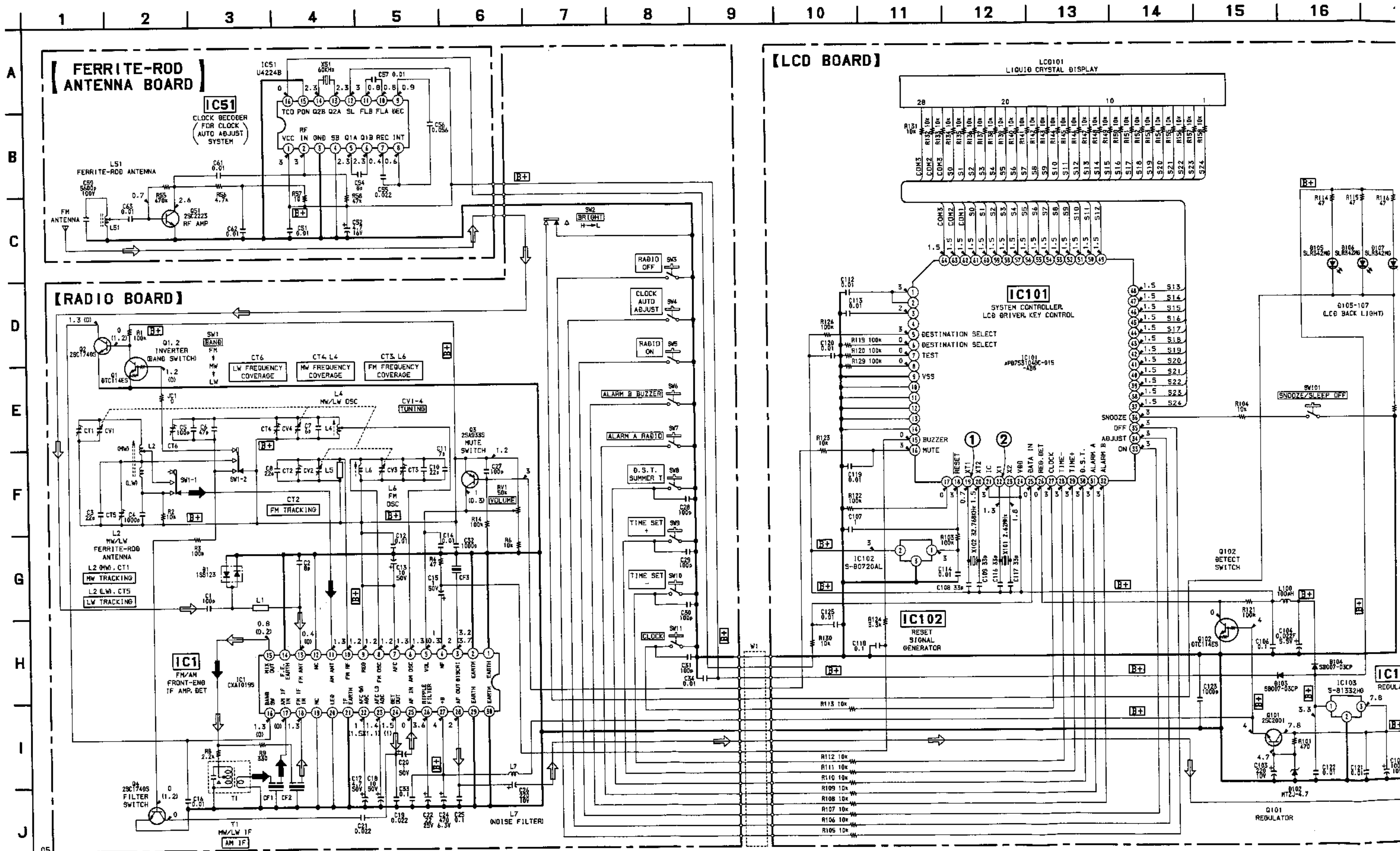
| Ref. No. | Location |
|----------|----------|
| D1 | C-5 |
| D101 | A-13 |
| D102 | A-12 |
| D103 | B-13 |
| D104 | B-13 |
| D105 | C-13 |
| D106 | D-13 |
| D107 | E-13 |
| IC1 | D-7 |
| IC51 | C-2 |
| IC101 | F-12 |
| IC102 | F-13 |
| IC103 | B-13 |
| Q1 | F-5 |
| Q2 | F-5 |
| Q3 | E-5 |
| Q4 | C-7 |
| Q51 | D-2 |
| Q101 | B-12 |
| Q102 | A-12 |



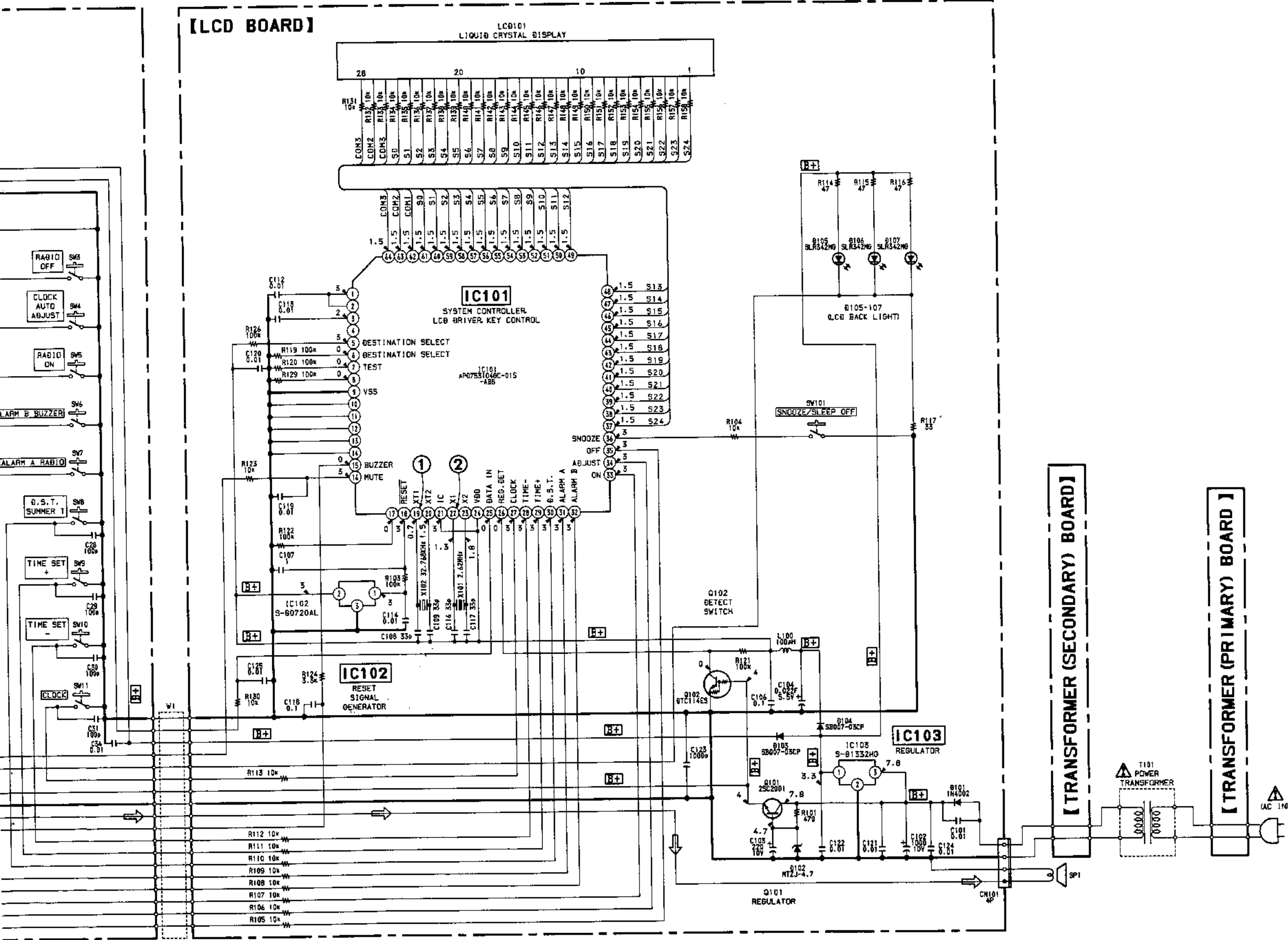
[RADIO BOARD]

[LCD BOARD]

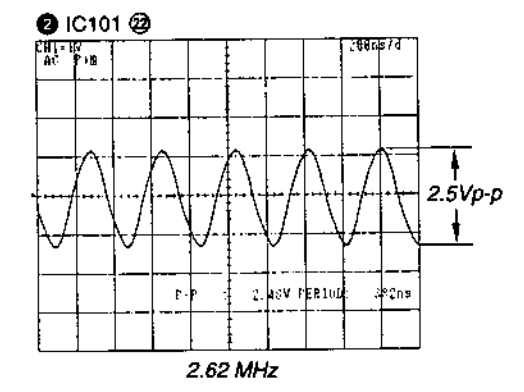
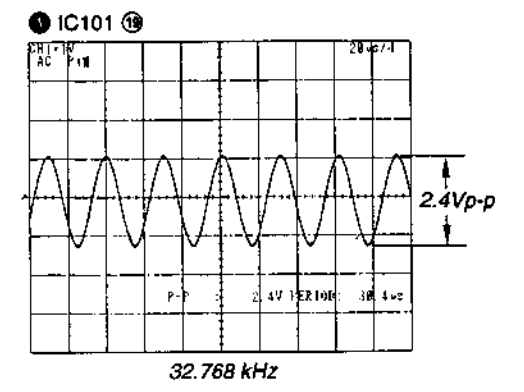




[LCD BOARD]



• Waveforms



- Note:**
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
 - Δ : internal component.
 - \square : micro strip line.
 - \square : 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.

- \square : B+ Line.
- \square : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- () : MW/LW
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- \square : FM
- \square : MW/LW

6-3. IC PIN FUNCTION DESCRIPTION

• LCD BOARD IC101 μ PD753104GC-015-AB8 (SYSTEM CONTROLLER, LCD DRIVER, KEY CONTROL)

| Pin No. | Pin Name | I/O | Function |
|---------|--------------------|-----|--|
| 1 | — | — | Not used this set (Connected the capacitor) |
| 2 | — | — | Not used this set (Connected the capacitor) |
| 3 | — | — | Not used this set (Connected the capacitor) |
| 4 | — | — | Not used this set (Open) |
| 5 | DESTINATION SELECT | I | Destination select terminal Fixed at "H" |
| 6 | DESTINATION SELECT | I | Destination select terminal Fixed at "L" |
| 7 | TEST | I | Test terminal (Fixed at "L") |
| 8 | — | I | Not used this set (Fixed at "L") |
| 9 | VSS | — | Ground terminal |
| 10 | — | I | Not used this set (Fixed at "L") |
| 11 | — | I | Not used this set (Fixed at "L") |
| 12 | — | I | Not used this set (Fixed at "L") |
| 13 | — | I | Not used this set (Fixed at "L") |
| 14 | — | I | Not used this set (Fixed at "L") |
| 15 | BUZZER | O | Buzzer sound signal output |
| 16 | MUTE | O | Mute signal output |
| 17 | — | I | Not used this set (Fixed at "L") |
| 18 | RESET | I | Reset signal input from the reset signal generator (IC102) Reset: "L" |
| 19 | XT1 | I | Sub system clock input terminal (32.768 kHz) |
| 20 | XT2 | O | Sub system clock output terminal (32.768 kHz) |
| 21 | IC | I | Connected to power supply (+3V) |
| 22 | X1 | I | Main system clock input terminal (2.62 MHz) |
| 23 | X2 | O | Main system clock output terminal (2.62 MHz) |
| 24 | VDD | — | Power supply terminal (+3V) |
| 25 | DATA IN | I | Serial data input from the clock decoder (IC51) |
| 26 | REG.DET | I | Power failure detection input Normally: "L", power failure: "H" |
| 27 | CLOCK | I | CLOCK key (SW11) input terminal |
| 28 | TIME - | I | TIME SET - key (SW10) input terminal |
| 29 | TIME + | I | TIME SET + key (SW9) input terminal |
| 30 | D.S.T. | I | D.S.T. SUMMER T key (SW8) input terminal |
| 31 | ALARM A | I | ALARM A RADIO key (SW7) input terminal |
| 32 | ALARM B | I | ALARM B BUZZER key (SW6) input terminal |
| 33 | ON | I | RADIO ON key (SW5) input terminal |
| 34 | ADJUST | I | CLOCK AUTO ADJUST key (SW4) input terminal |
| 35 | OFF | I | RADIO OFF key (SW3) input terminal |
| 36 | SNOOZE | I | SNOOZE/SLEEO OFF key (SW101) input terminal |
| 37 | S24 | O | Segment (S24) drive signal output to the liquid crystal display (LCD101) |
| 38 | S23 | O | Segment (S23) drive signal output to the liquid crystal display (LCD101) |
| 39 | S22 | O | Segment (S22) drive signal output to the liquid crystal display (LCD101) |

| Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|--|
| 40 | S21 | O | Segment (S21) drive signal output to the liquid crystal display (LCD101) |
| 41 | S20 | O | Segment (S20) drive signal output to the liquid crystal display (LCD101) |
| 42 | S19 | O | Segment (S19) drive signal output to the liquid crystal display (LCD101) |
| 43 | S18 | O | Segment (S18) drive signal output to the liquid crystal display (LCD101) |
| 44 | S17 | O | Segment (S17) drive signal output to the liquid crystal display (LCD101) |
| 45 | S16 | O | Segment (S16) drive signal output to the liquid crystal display (LCD101) |
| 46 | S15 | O | Segment (S15) drive signal output to the liquid crystal display (LCD101) |
| 47 | S14 | O | Segment (S14) drive signal output to the liquid crystal display (LCD101) |
| 48 | S13 | O | Segment (S13) drive signal output to the liquid crystal display (LCD101) |
| 49 | S12 | O | Segment (S12) drive signal output to the liquid crystal display (LCD101) |
| 50 | S11 | O | Segment (S11) drive signal output to the liquid crystal display (LCD101) |
| 51 | S10 | O | Segment (S10) drive signal output to the liquid crystal display (LCD101) |
| 52 | S9 | O | Segment (S9) drive signal output to the liquid crystal display (LCD101) |
| 53 | S8 | O | Segment (S8) drive signal output to the liquid crystal display (LCD101) |
| 54 | S7 | O | Segment (S7) drive signal output to the liquid crystal display (LCD101) |
| 55 | S6 | O | Segment (S6) drive signal output to the liquid crystal display (LCD101) |
| 56 | S5 | O | Segment (S5) drive signal output to the liquid crystal display (LCD101) |
| 57 | S4 | O | Segment (S4) drive signal output to the liquid crystal display (LCD101) |
| 58 | S3 | O | Segment (S3) drive signal output to the liquid crystal display (LCD101) |
| 59 | S2 | O | Segment (S2) drive signal output to the liquid crystal display (LCD101) |
| 60 | S1 | O | Segment (S1) drive signal output to the liquid crystal display (LCD101) |
| 61 | S0 | O | Segment (S0) drive signal output to the liquid crystal display (LCD101) |
| 62 | COM1 | O | Common (COM1) drive signal output to the liquid crystal display (LCD101) |
| 63 | COM2 | O | Common (COM2) drive signal output to the liquid crystal display (LCD101) |
| 64 | COM3 | O | Common (COM3) drive signal output to the liquid crystal display (LCD101) |

NOTE:
 • -XX and -
 may have s
 • Color Indic
 KNOB. B.

●A: LCD Dr

7.

LCD101

Ref. No

* 1
 2
 * 3
 4
 5
 * 6
 7
 8
 9
 10
 * 11
 12
 13
 14
 15

SECTION 7 EXPLODED VIEW

NOTE:

- -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)

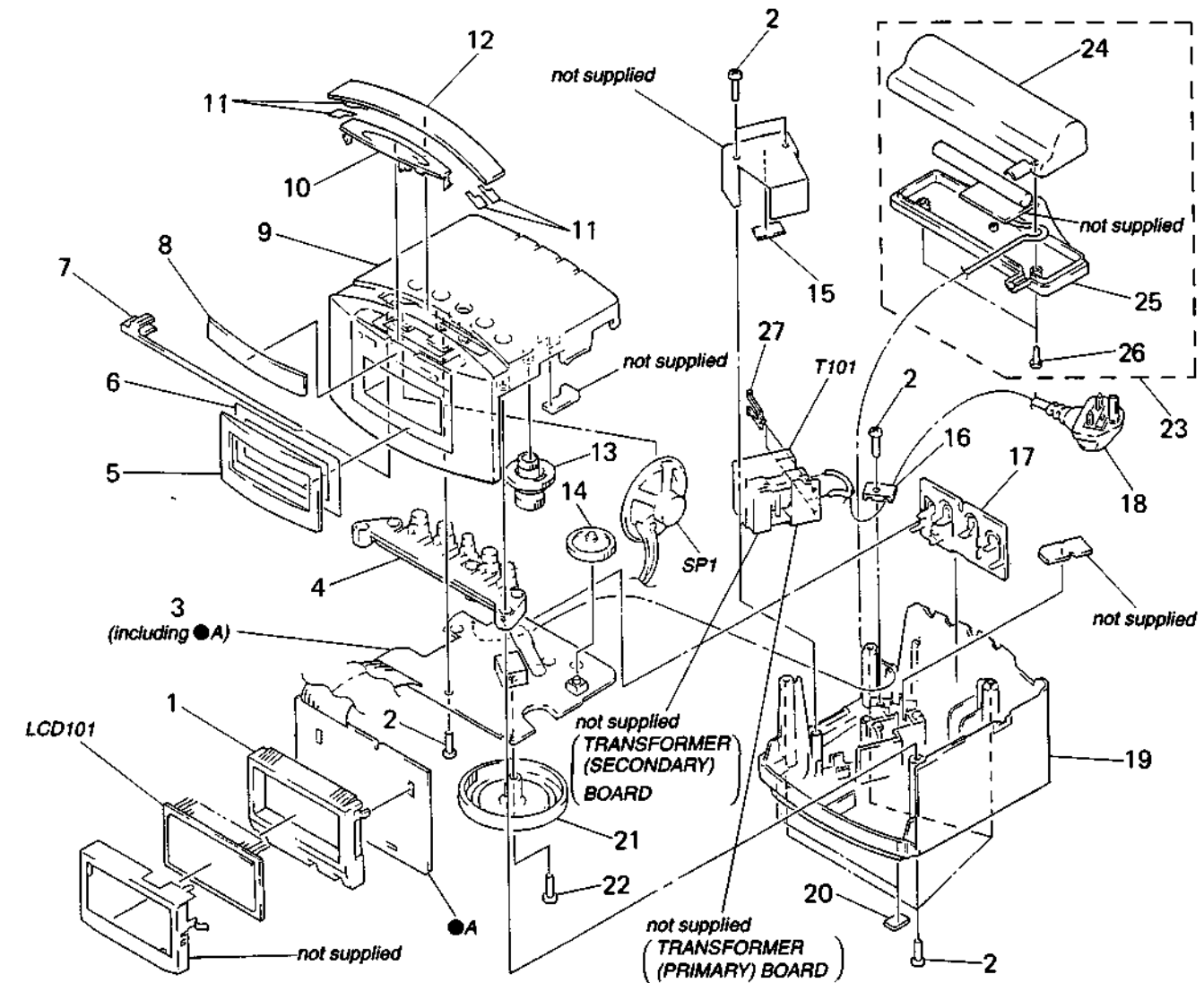
↑ ↑
Parts Color Cabinet's Color

- 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.
- Accessories and packing materials are given in the last of the electrical parts list.

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

●A: LCD board

| Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|--|
| 40 | S21 | O | Segment (S21) drive signal output to the liquid crystal display (LCD101) |
| 41 | S20 | O | Segment (S20) drive signal output to the liquid crystal display (LCD101) |
| 42 | S19 | O | Segment (S19) drive signal output to the liquid crystal display (LCD101) |
| 43 | S18 | O | Segment (S18) drive signal output to the liquid crystal display (LCD101) |
| 44 | S17 | O | Segment (S17) drive signal output to the liquid crystal display (LCD101) |
| 45 | S16 | O | Segment (S16) drive signal output to the liquid crystal display (LCD101) |
| 46 | S15 | O | Segment (S15) drive signal output to the liquid crystal display (LCD101) |
| 47 | S14 | O | Segment (S14) drive signal output to the liquid crystal display (LCD101) |
| 48 | S13 | O | Segment (S13) drive signal output to the liquid crystal display (LCD101) |
| 49 | S12 | O | Segment (S12) drive signal output to the liquid crystal display (LCD101) |
| 50 | S11 | O | Segment (S11) drive signal output to the liquid crystal display (LCD101) |
| 51 | S10 | O | Segment (S10) drive signal output to the liquid crystal display (LCD101) |
| 52 | S9 | O | Segment (S9) drive signal output to the liquid crystal display (LCD101) |
| 53 | S8 | O | Segment (S8) drive signal output to the liquid crystal display (LCD101) |
| 54 | S7 | O | Segment (S7) drive signal output to the liquid crystal display (LCD101) |
| 55 | S6 | O | Segment (S6) drive signal output to the liquid crystal display (LCD101) |
| 56 | S5 | O | Segment (S5) drive signal output to the liquid crystal display (LCD101) |
| 57 | S4 | O | Segment (S4) drive signal output to the liquid crystal display (LCD101) |
| 58 | S3 | O | Segment (S3) drive signal output to the liquid crystal display (LCD101) |
| 59 | S2 | O | Segment (S2) drive signal output to the liquid crystal display (LCD101) |
| 60 | S1 | O | Segment (S1) drive signal output to the liquid crystal display (LCD101) |
| 61 | S0 | O | Segment (S0) drive signal output to the liquid crystal display (LCD101) |
| 62 | COM1 | O | Common (COM1) drive signal output to the liquid crystal display (LCD101) |
| 63 | COM2 | O | Common (COM2) drive signal output to the liquid crystal display (LCD101) |
| 64 | COM3 | O | Common (COM3) drive signal output to the liquid crystal display (LCD101) |



| Ref. No. | Part No. | Description | Remark | Ref. No. | Part No. | Description | Remark |
|----------|--------------|------------------------------------|--------|---------------|--------------|-------------------------------|--------|
| * 1 | 3-937-950-01 | HOLDER (LCD) | | * 16 | 3-884-408-00 | STOPPER, CORD | |
| | 7-685-649-79 | SCREW +P 3X14 TYPE2 NON-SLIT | | 17 | 3-937-949-01 | BUTTON (CLOCK) | |
| * 3 | A-3662-650-A | RADIO BOARD, COMPLETE | | Δ 18 | 1-769-578-11 | CORD, POWER | |
| 4 | 3-937-948-01 | BUTTON (MAIN) | | 19 | 3-937-947-11 | CABINET (LOWER) | |
| 5 | 3-937-951-01 | PLATE, TRANSPARENT | | 20 | 3-368-852-01 | FOOT | |
| * 6 | 3-937-943-01 | SHEET, ADHESIVE | | 21 | 3-937-954-01 | GEAR (VC) | |
| 7 | 3-937-955-01 | POINTER | | 22 | 3-364-941-11 | SCREW (+B) (2.6X5), NYLON | |
| 8 | 3-937-957-01 | PANEL, FRONT | | * 23 | A-3638-414-A | CASE (BAR) ASSY | |
| 9 | 3-937-946-02 | CABINET (UPPER) | | * 24 | 3-008-422-01 | CASE (BAR), UPPER | |
| 10 | 3-937-956-01 | BUTTON (SNOOZE) (SNOOZE/SLEEP OFF) | | * 25 | 3-008-423-01 | CASE (BAR), LOWER | |
| * 11 | 3-007-061-01 | SHEET (DIAL SCALE), ADHESIVE | | 26 | 3-318-203-31 | SCREW (B1.7X8), TAPPING | |
| 12 | 3-937-952-11 | SCALE, DIAL | | * 27 | 1-535-771-11 | TERMINAL | |
| 13 | 3-937-953-01 | KNOB (TUNE) | | LCD101 | 1-801-471-11 | DISPLAY PANEL, LIQUID CRYSTAL | |
| 14 | 3-368-840-41 | KNOB (VOL) | | SP1 | 1-504-748-21 | SPEAKER (6.6CM) | |
| 15 | 9-911-840-XX | CUSHION | | Δ T101 | 1-450-923-11 | TRANSFORMER, POWER | |

FERRITE-ROD ANTENNA

**SECTION 8
ELECTRICAL PARTS LIST**

LCD

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

- 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 |
|----------|--------------|--|---------|
| | | FERRITE-ROD ANTENNA BOARD (not supplied) | |
| | | ***** | |
| | | < CAPACITOR > | |
| C51 | 1-163-031-11 | CERAMIC CHIP 0.01uF | 50V |
| C52 | 1-126-163-11 | ELECT 4.7uF | 20% 50V |
| C54 | 1-163-091-00 | CERAMIC CHIP 8PF | 50V |
| C55 | 1-163-037-11 | CERAMIC CHIP 0.022uF | 10% 50V |
| C56 | 1-164-343-11 | CERAMIC CHIP 0.056uF | 10% 25V |
| C57 | 1-163-031-11 | CERAMIC CHIP 0.01uF | 50V |
| C59 | 1-136-683-11 | FILM 0.0056uF | 5% 100V |
| C61 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V |
| C62 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V |
| C63 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V |
| | | < IC > | |
| IC51 | 8-759-435-84 | IC U4224B-CFLG3 | |
| | | < COIL > | |
| L51 | 1-501-882-11 | ANTENNA, FERRITE-ROD (LW) | |
| | | < TRANSISTOR > | |
| Q51 | 8-729-102-07 | TRANSISTOR 2SC2223-F13 | |
| | | < RESISTOR > | |
| R55 | 1-216-113-00 | METAL CHIP 470K 5% 1/10W | |
| R56 | 1-216-065-00 | METAL CHIP 4.7K 5% 1/10W | |
| R57 | 1-216-001-00 | METAL CHIP 10 5% 1/10W | |
| R58 | 1-216-089-00 | METAL CHIP 47K 5% 1/10W | |
| | | < VIBRATOR > | |
| X51 | 1-767-219-21 | FILTER, CRYSTAL (60 kHz) | |
| | | ***** | |
| | | LCD BOARD (INCLUDED RADIO BOARD) | |
| | | ***** | |
| | | < CAPACITOR > | |
| C101 | 1-163-031-11 | CERAMIC CHIP 0.01uF | 50V |

| Ref. No. | Part No. | Description | Remark |
|----------|--------------|-----------------------------------|---------|
| C102 | 1-126-926-11 | ELECT 1000uF | 20% 10V |
| C103 | 1-126-923-11 | ELECT 220uF | 20% 10V |
| C104 | 1-125-691-11 | DOUBLE LAYER 0.022F | 5.5V |
| C106 | 1-164-004-11 | CERAMIC CHIP 0.1uF | 10% 25V |
| C107 | 1-164-346-11 | CERAMIC CHIP 1uF | 16V |
| C108 | 1-163-239-11 | CERAMIC CHIP 33PF | 5% 50V |
| C109 | 1-163-239-11 | CERAMIC CHIP 33PF | 5% 50V |
| C112 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V |
| C113 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V |
| C114 | 1-163-031-11 | CERAMIC CHIP 0.01uF | 50V |
| C116 | 1-163-239-11 | CERAMIC CHIP 33PF | 5% 50V |
| C117 | 1-163-239-11 | CERAMIC CHIP 33PF | 5% 50V |
| C118 | 1-163-038-00 | CERAMIC CHIP 0.1uF | 25V |
| C119 | 1-163-031-11 | CERAMIC CHIP 0.01uF | 50V |
| C120 | 1-164-232-11 | CERAMIC CHIP 0.01uF | 50V |
| C121 | 1-163-031-11 | CERAMIC CHIP 0.01uF | 50V |
| C122 | 1-163-031-11 | CERAMIC CHIP 0.01uF | 50V |
| C123 | 1-163-009-11 | CERAMIC CHIP 0.001uF | 10% 50V |
| C124 | 1-163-031-11 | CERAMIC CHIP 0.01uF | 50V |
| C125 | 1-163-031-11 | CERAMIC CHIP 0.01uF | 50V |
| | | < CONNECTOR > | |
| CN101 | 1-580-183-11 | SOCKET, CONNECTOR 4P | |
| | | < DIODE > | |
| D101 | 8-719-052-88 | DIODE 1N4002 | |
| D102 | 8-719-921-37 | DIODE MTZJ-4.7 | |
| D103 | 8-719-941-04 | DIODE SB007-03CP | |
| D104 | 8-719-941-04 | DIODE SB007-03CP | |
| D105 | 8-719-989-83 | LED SLR34MG3FN.P (LCD BACK LIGHT) | |
| D106 | 8-719-989-83 | LED SLR34MG3FN.P (LCD BACK LIGHT) | |
| D107 | 8-719-989-83 | LED SLR34MG3FN.P (LCD BACK LIGHT) | |
| | | < IC > | |
| IC101 | 8-759-434-54 | IC uPD753104GC-015-AB8 | |
| IC102 | 8-759-281-70 | IC S-80720AL-AX-T1 | |
| IC103 | 8-759-085-76 | IC S-81332HG-KC-T1 | |

LCD

RADIO

| Ref. No. | Part No. | Description | Remark |
|----------------------------|--------------|-------------------------------|--------|
| < COIL > | | | |
| L100 | 1-410-521-11 | INDUCTOR 100uH | |
| < LIQUID CRYSTAL DISPLAY > | | | |
| LCD101 | 1-801-471-11 | DISPLAY PANEL, LIQUID CRYSTAL | |
| < TRANSISTOR > | | | |
| Q101 | 8-729-011-92 | TRANSISTOR 2SC2001TP-K1K2 | |
| Q102 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| < RESISTOR > | | | |
| R101 | 1-216-041-00 | METAL CHIP 470 5% 1/10W | |
| R103 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| R104 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R105 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R106 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R107 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R108 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R109 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R110 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R111 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R112 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R113 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R114 | 1-216-017-00 | METAL CHIP 47 5% 1/10W | |
| R115 | 1-216-017-00 | METAL CHIP 47 5% 1/10W | |
| R116 | 1-216-017-00 | METAL CHIP 47 5% 1/10W | |
| R117 | 1-216-013-00 | METAL CHIP 33 5% 1/10W | |
| R119 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| R120 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| R121 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| R122 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| R123 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R124 | 1-216-061-00 | METAL CHIP 3.3K 5% 1/10W | |
| R126 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| R129 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| R130 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R131 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R132 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R133 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R134 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R135 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R136 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R137 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R138 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R139 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R140 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R141 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |

| Ref. No. | Part No. | Description | Remark |
|--------------------------------------|--------------|------------------------------------|--------|
| R142 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R143 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R144 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R145 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R146 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R147 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R148 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R149 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R150 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R151 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R152 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R153 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R154 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R155 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R156 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R157 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R158 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| < SWITCH > | | | |
| SW101 | 1-554-303-21 | SWITCH, TACTILE (SNOOZE/SLEEP OFF) | |
| < VIBRATOR > | | | |
| X101 | 1-579-825-11 | VIBRATOR, CERAMIC (2.62MHz) | |
| X102 | 1-567-098-41 | VIBRATOR, CRYSTAL (32.768kHz) | |
| ***** | | | |
| * A-3662-650-A RADIO BOARD, COMPLETE | | | |
| (INCLUDING LCD BOARD) | | | |
| ***** | | | |
| < CAPACITOR > | | | |
| C1 | 1-163-251-11 | CERAMIC CHIP 100PF 5% 50V | |
| C2 | 1-163-091-00 | CERAMIC CHIP 8PF 50V | |
| C3 | 1-163-235-11 | CERAMIC CHIP 22PF 5% 50V | |
| C4 | 1-163-009-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C5 | 1-163-251-11 | CERAMIC CHIP 100PF 5% 50V | |
| C6 | 1-163-243-11 | CERAMIC CHIP 47PF 5% 50V | |
| C7 | 1-163-089-00 | CERAMIC CHIP 6PF 50V | |
| C8 | 1-163-101-00 | CERAMIC CHIP 22PF 5% 50V | |
| C10 | 1-163-101-00 | CERAMIC CHIP 22PF 5% 50V | |
| C11 | 1-163-700-11 | CERAMIC CHIP 7PF 0.5PF 50V | |
| C12 | 1-164-232-11 | CERAMIC CHIP 0.01uF 50V | |
| C13 | 1-126-964-11 | ELECT 10uF 20% 50V | |
| C14 | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V | |
| C15 | 1-124-903-11 | ELECT 1uF 20% 50V | |
| C16 | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V | |
| C17 | 1-126-963-11 | ELECT 4.7uF 20% 50V | |
| C18 | 1-126-964-11 | ELECT 10uF 20% 50V | |
| C19 | 1-163-037-11 | CERAMIC CHIP 0.022uF 10% 25V | |

RADIO

| Ref. No. | Part No. | Description | Remark |
|------------------------|--------------|------------------------------|-----------------|
| C20 | 1-124-903-11 | ELECT | 1uF 20% 50V |
| C21 | 1-163-037-11 | CERAMIC CHIP | 0.022uF 10% 25V |
| C22 | 1-128-551-11 | ELECT | 22uF 20% 25V |
| C24 | 1-126-935-11 | ELECT | 470uF 20% 6.3V |
| C25 | 1-163-038-00 | CERAMIC CHIP | 0.1uF 25V |
| C26 | 1-126-923-11 | ELECT | 220uF 20% 10V |
| C27 | 1-163-251-11 | CERAMIC CHIP | 100PF 5% 50V |
| C28 | 1-163-251-11 | CERAMIC CHIP | 100PF 5% 50V |
| C29 | 1-163-251-11 | CERAMIC CHIP | 100PF 5% 50V |
| C30 | 1-163-251-11 | CERAMIC CHIP | 100PF 5% 50V |
| C31 | 1-163-251-11 | CERAMIC CHIP | 100PF 5% 50V |
| C32 | 1-163-009-11 | CERAMIC CHIP | 0.001uF 10% 50V |
| C33 | 1-163-038-00 | CERAMIC CHIP | 0.1uF 25V |
| C34 | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V |
| < FILTER > | | | |
| CF1 | 1-578-677-11 | FILTER, CRYSTAL | |
| CF2 | 1-579-632-51 | FILTER, CERAMIC | |
| CF3 | 1-579-632-51 | FILTER, CERAMIC | |
| < TRIMMER > | | | |
| CT5 | 1-141-443-11 | TRIMMER, CERAMIC | |
| CT6 | 1-141-443-11 | TRIMMER, CERAMIC | |
| < VARIABLE CAPACITOR > | | | |
| CT1-4 | 1-141-529-11 | CAP, VAR | |
| CV1-4 | 1-141-529-11 | CAP, VAR (TUNING) | |
| < DIODE > | | | |
| D1 | 8-719-800-76 | DIODE 1SS226 | |
| < IC > | | | |
| IC1 | 8-752-037-02 | IC CXA1019S | |
| < CHIP CONDUCTOR > | | | |
| JC1 | 1-216-295-00 | CONDUCTOR, CHIP (2012) | |
| < COIL > | | | |
| L2 | 1-402-276-11 | ANTENNA, FERRITE-ROD (MW/LW) | |
| L4 | 1-406-028-00 | COIL, OSC (MW) | |
| L6 | 1-428-222-11 | COIL, AIR-CORE (FM OSC) | |
| L7 | 1-424-122-11 | FILTER, NOISE | |
| < TRANSISTOR > | | | |
| Q1 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q2 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | |
| Q3 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | |

| Ref. No. | Part No. | Description | Remark |
|-----------------------|--------------|-------------------------------------|--------|
| Q4 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | |
| < RESISTOR > | | | |
| R1 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| R2 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R3 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| R4 | 1-216-017-00 | METAL CHIP 47 5% 1/10W | |
| R6 | 1-216-073-00 | METAL CHIP 10K 5% 1/10W | |
| R8 | 1-216-057-00 | METAL CHIP 2.2K 5% 1/10W | |
| R9 | 1-216-037-00 | METAL CHIP 330 5% 1/10W | |
| R14 | 1-216-097-00 | METAL CHIP 100K 5% 1/10W | |
| < VARIABLE RESISTOR > | | | |
| RV1 | 1-241-542-11 | RES, VAR, CARBON 50K (VOLUME) | |
| < SWITCH > | | | |
| SW1 | 1-572-949-11 | SWITCH, SLIDE (BAND) | |
| SW2 | 1-571-850-91 | SWITCH, SLIDE (BRIGHT) | |
| SW3 | 1-554-303-21 | SWITCH, TACTILE (RADIO OFF) | |
| SW4 | 1-554-303-21 | SWITCH, TACTILE (CLOCK AUTO ADJUST) | |
| SW5 | 1-554-303-21 | SWITCH, TACTILE (RADIO ON) | |
| SW6 | 1-554-303-21 | SWITCH, TACTILE (ALARM B BUZZER) | |
| SW7 | 1-554-303-21 | SWITCH, TACTILE (ALARM A RADIO) | |
| SW8 | 1-554-303-21 | SWITCH, TACTILE (D. S. T. SUMMER T) | |
| SW9 | 1-554-303-21 | SWITCH, TACTILE (TIME SET +) | |
| SW10 | 1-554-303-21 | SWITCH, TACTILE (TIME SET -) | |
| SW11 | 1-554-303-21 | SWITCH, TACTILE (CLOCK) | |
| < TRANSFORMER > | | | |
| T1 | 1-404-902-21 | TRANSFORMER, IF | |
| < FLAT CABLE > | | | |
| W1 | 1-785-726-11 | CORD, CONNECTION 18P | |
| ***** | | | |
| MISCELLANEOUS | | | |
| ***** | | | |
| △18 | 1-769-578-11 | CORD, POWER | |
| * 27 | 1-535-771-11 | TERMINAL | |
| LCD101 | 1-801-471-11 | DISPLAY PANEL, LIQUID CRYSTAL | |
| SP1 | 1-504-748-21 | SPEAKER (6.6CM) | |
| △T101 | 1-450-923-11 | TRANSFORMER, POWER | |
| ***** | | | |

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

CF-C50L

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> | <u>Remark</u> |
|-----------------|-----------------|--|---------------|
| | | ACCESSORIES & PACKING MATERIALS ***** | |
| | 3-856-647-21 | MANUAL, INSTRUCTION (ENGLISH, FRENCH, DUTCH, GERMAN, ITALIAN) | |
| * | 3-937-938-01 | INDIVIDUAL CARTON | |

8-199

ICF-C50L

SONY.

AEP Model

SERVICE MANUAL

SUPPLEMENT-1

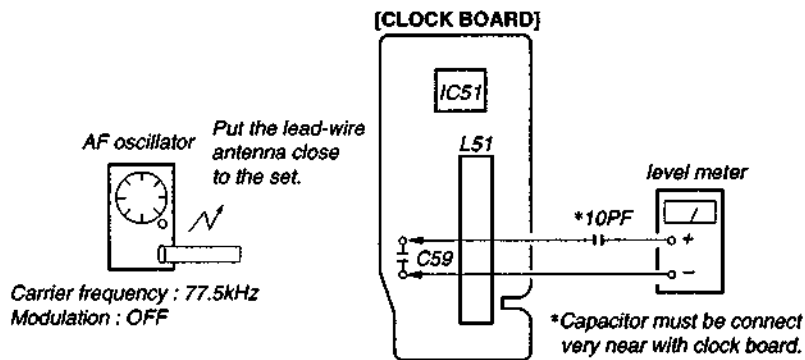
File this supplement with the service manual.

Subject: Antenna Adjustment (L51)

(ENG-97003)

[ANTENNA ADJUSTMENT]

Setting:



Procedure :

1. To adjust L51 coil for level meter's output to be maximum.
2. To confirm tracking condition by tracking bar.
(* If you do not have tracking bar, you can omit this process.)
3. Fix L51 by wax.
(Re-melt wax by solder iron)