

# ICF-M703

## SERVICE MANUAL

AEP Model  
E Model



Discard ICF-M703 Service Manual  
(No. 9-956-452-11) previously issued.  
This Service Manual contain it.

### SPECIFICATIONS

Frequency range FM: 87.5 — 108 MHz  
(0.05 MHz\* scan step)  
AM: 531 — 1602 kHz  
\*The frequency display is raised or lowered by steps of 0.1 MHz.  
(Example: Frequency 88.05 MHz is displayed as 88.00 MHz.)

#### Intermediate frequency

FM: 10.7 MHz  
AM: 450 kHz

#### Antenna

FM: Earphone cord antenna  
AM: Built-in ferrite bar antenna

#### Output

Earphone jack ( $\phi$ 2.5 mm, load impedance 16 ohms)

#### Power output

80 mW (at 10% harmonic distortion)

#### Power requirements

3 V DC, two R03 (size AAA) batteries

#### Battery life

Using Sony batteries UM-4 (NU)

FM	with speaker	approx. 12 hours
	with earphone	approx. 17 hours
AM	with speaker	approx. 15 hours
	with earphone	approx. 23 hours

#### Dimensions

Approx. 59 × 100 × 18.3 mm  
(w/h/d) incl. projecting parts and controls

#### Weight

Approx. 95 g incl. batteries

#### Supplied accessories

Earphone (1), Ear pad (1),  
Carrying case (1)

#### Accessories not supplied

Earphone ME-L54H, MDR-E141

Design and specifications are subject to change without notice.

#### Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Your dealer may not handle the above listed accessories. Please ask the dealer for detailed information.

### FEATURES

- FM/AM PLL (Phase Locked Loop) synthesized receiver.
- UP to 14 stations (7 for each band) can be stored for button-touch tuning (memory preset tuning).
- The tuned frequency is digitally displayed to make searching for the desired station easier. When the radio is off, the current time is displayed.
- Beep sound notifies you of the preset time (timer and alarm function).
- Power goes off automatically in about 90 minutes (power saving features).

### NOTES ON CHIP COMPONENT REPLACEMENT

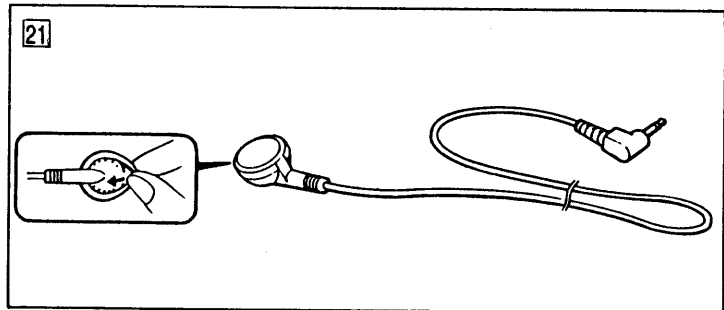
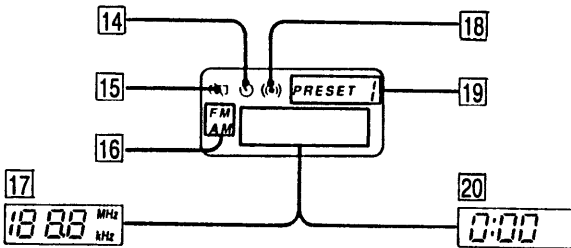
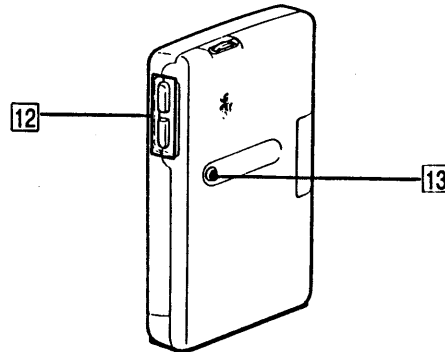
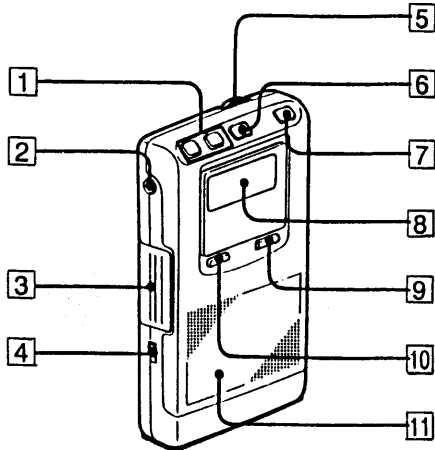
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

FM/AM PLL SYNTHESIZED RECEIVER  
**SONY**®

SECTION 1  
GENERAL

Location of Controls

This section is extracted from instruction manual.



Front Panel

- 1 MEMORY PRESET +/- buttons
- 2 (earphone) jack  
The earphone cord serves as the FM antenna.
- 3 Battery compartment
- 4 (earphone/speaker) selector  
⊗ : When the earphone is not connected, the sound comes out from the speaker. When the earphone is connected, the sound comes out only from the earphone.  
⊐ : Whether the earphone is connected or not, the sound always comes out from the speaker. To listening to the FM programs, make sure to connect the earphone since the earphone cord serves as the FM antenna.
- 5 VOLUME control
- 6 BAND selector
- 7 AUTO OFF/POWER button
- 8 Display window
- 9 ALARM button
- 10 TIMER button
- 11 Speaker

Rear panel

- 12 TUNE (tuning)/TIME SET +/- buttons
- 13 ENTER/CLOCK button

Display window

- 14 Timer indicator  
Appears when you set the timer.
- 15 Battery indicator  
Flashes when the batteries become weak.
- 16 Band indicator
- 17 Frequency indicator  
Appears while the radio is on.
- 18 Alarm indicator  
Appears when you set the alarm.
- 19 PRESET and preset number indicators
- 20 Time indicator  
Appears when the radio is off.




Earphone




- 21 To attach the supplied ear pad

## Battery Installation B

Insert two R03 (size AAA) batteries with correct polarity. When you insert the batteries for the first time, 0:00 flashes in the display window. To stop flashing, press ENTER/CLOCK.

### Battery replacement

When the batteries become weak, the radio is turned off, the time indicator appears and  flashes in the display window. (The sound may become weak or distorted before  starts flashing.) If you turn on the power again, you can listen to the radio for a short time. But the power will be soon turned off and  flashes again.

When  flashes, replace both batteries with new ones. Even after you replace the batteries,  remains flashing. To turn off , press AUTO OFF/POWER.

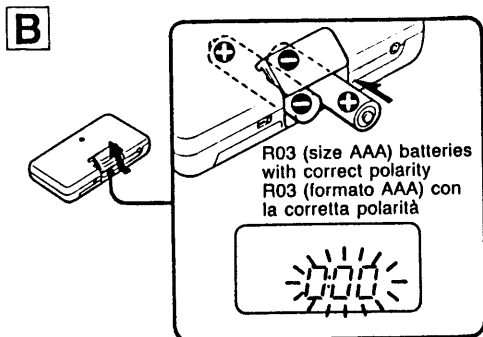
Replace the batteries within about 60 seconds after turning off the power.

If more than 60 seconds has passed, the preset stations are canceled and the time indicator becomes 0:00.


In this case, perform the clock setting and preset tuning again.

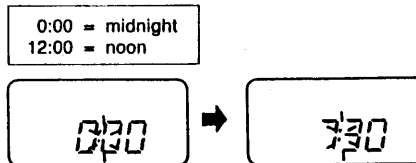
### Notes on the battery


- Insert the batteries with correct polarity.
- Do not mix new and used batteries.
- The batteries cannot be charged.
- To avoid damage from possible battery leakage, remove the batteries when the unit will not be used for a long time.
- Concerning the battery life, see "Specifications".



## Clock Setting C

- 1 While keeping ENTER/CLOCK pressed, press TUNE/TIME SET + or - button until the display shows the current time. Press + button to increase or - button to decrease the digits. When you keep the button pressed, the digits change rapidly. While setting the time,  is flashing.

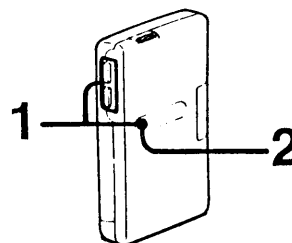


- 2 When the display shows the current time, release ENTER/CLOCK.  stops flashing and the clock starts operating.

### To set clock to the second

After adjusting the time, keep ENTER/CLOCK pressed. Release ENTER/CLOCK by using the time signal.

C



## Radio Operation D

- 1 Connect the earphone. Whether you listen through the earphone or the speaker, extend the earphone cord as it serves as the FM antenna.
- 2 Press AUTO OFF/POWER to turn on the power. The display window shows a frequency.
- 3 Select FM or AM with BAND.
- 4 Tune in the desired station by pressing TUNE/TIME SET +/- button. At each press of +, the FM frequency becomes 0.05 MHz higher (the display changes by 0.1 MHz) and the AM frequency becomes 9 kHz higher. At each press of -, the FM and AM frequencies become lower by the same intervals. To change the frequency rapidly, keep the button pressed.
- 5 Adjust VOLUME.

### To turn off the radio

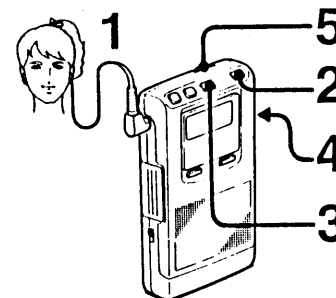
Press AUTO OFF/POWER again. The display shows the current time.

### When the power is turned off automatically

The radio will be turned off automatically in about 90 minutes to prevent unnecessary wear of the batteries.

To continue listening to the radio, press AUTO OFF/POWER again. If the batteries are exhausted, the power is turned off automatically to protect the preset contents.

D



## Memory Preset Tuning

Once you store the desired stations, you can tune them in by a simple operation. You can store 7 stations for each of the FM and AM bands.

### How to Preset **E**

- 1 Turn on the power.
- 2 Tune in the desired station to preset. See "Radio Operation".
- 3 Keep ENTER/CLOCK pressed for more than 1 second.  
Release ENTER/CLOCK when PRESET and a preset number indicator flash in the display window with the beep sound.
- 4 Select a preset number from 1 to 7 by pressing MEMORY PRESET +/- button.  
Press + to increase (1→2→...→6→7) the digit  
Press - to decrease (7→6→...→2→1) the digit.
- 5 Press ENTER/CLOCK again.  
Beep-beep sounds, and PRESET and a preset number stop flashing. The station has been stored.  
To preset other stations, repeat steps 2 to 5.

**Note**  
Go to the next step while the PRESET and preset number are flashing (for about 5 seconds). Otherwise the unit returns to step 2. If this happens, try again from step 3.

### To Tune in a Preset Station **F**

- 1 Turn on the power.
- 2 Select the band, FM or AM.
- 3 Select the desired preset number by pressing MEMORY PRESET +/- button.
- 4 Adjust VOLUME.

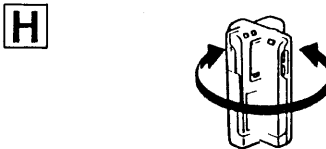
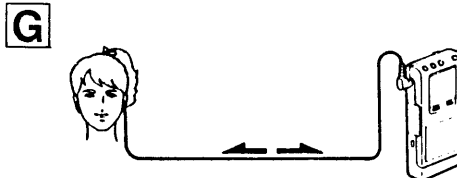
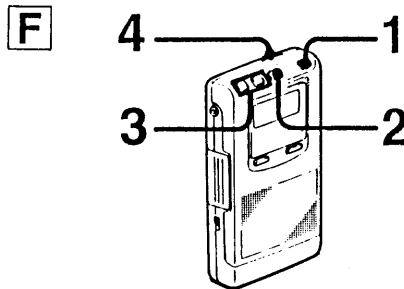
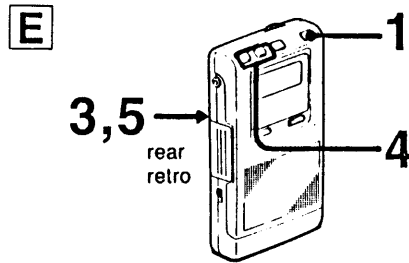
**To change the preset station**  
Tune in the desired station to be newly preset. Preset the tuned station to the desired button. The station previously preset to the button is lost.

### For Better Reception

**FM **G****  
Extend the earphone cord so that the FM sensitivity will be increased, as it serves as the FM antenna.

**AM **H****  
The ferrite bar antenna is built in for AM reception. Rotate the unit horizontally for optimum reception.

**If the earphone is removed from the jack (Ⓢ setting)**  
When you are listening through the earphone, no sound comes out from the speaker. If the earphone is removed from the jack, the sound comes out from the speaker.



## Sounding the Beep at Desired Time

You can make the unit sound its beep through the connected earphone or the speaker at the desired time. Use this feature to remind you of an appointment, etc.

- There are two ways of setting:
- Timer setting — to sound the beep a certain number of minutes later than the present.
  - Alarm setting — to sound the beep at a certain time.
- You can set the timer and alarm while the radio is either on or off.

### Timer Setting **I**

- 1 While keeping TIMER pressed, press TUNE/TIME SET +/- button to store the desired period in minutes after which you want the beep to sound. You can store periods from 1 to 180 minutes by 1 minute.  
Ⓢ is flashing in the display window while you press TIMER.  
To sound the beep after 30 minutes, for example, while keeping TIMER pressed, press TUNE/TIME SET +/- until 30 appears in the display window.
- 2 Release TIMER.  
Ⓢ stops flashing.  
The display returns to the current time or to the frequency which was shown before you pressed TIMER to start the timer setting. When the stored period has passed, Ⓢ flashes and the beep sounds.

**To cancel the timer setting**  
Press TIMER again. Ⓢ disappears.

### Alarm Setting **J**

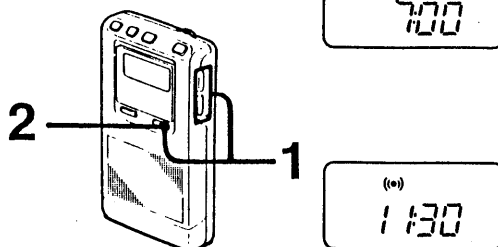
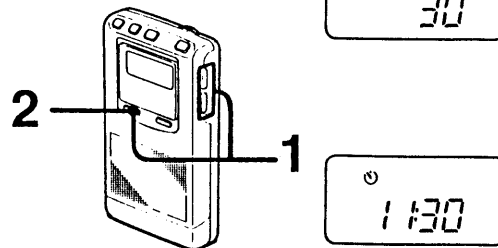
Make sure that the clock is correctly set. (See "Clock Setting".)

- 1 While keeping ALARM pressed, press TUNE/TIME SET +/- button to set the time when you want the beep to sound. Ⓢ is flashing while you press ALARM. To set the alarm for 7:00 in the morning, for example, while keeping ALARM pressed, press TUNE/TIME SET +/- until 7:00 appears in the display window.
- 2 Release ALARM.  
Ⓢ stops flashing. The display returns to the current time or the frequency which was shown before you pressed ALARM to start the alarm setting. When the time comes, Ⓢ flashes and the beep sounds.

**To cancel the alarm setting**  
Press ALARM again. Ⓢ disappears.

**To stop the beep**  
Press any button.  
If you do not stop the beep, the beep stops automatically after about 3 minutes both in timer and alarm settings.  
When the beep sounds while you are listening to the radio, the radio reception stops and resumes when the beep stops.

- Notes**
- When 0:00 flashes, you cannot set the alarm.
  - When you stop the beep, the timer setting is canceled. The alarm setting remains.
  - Even if you are listening to radio, you can set the timer and alarm.

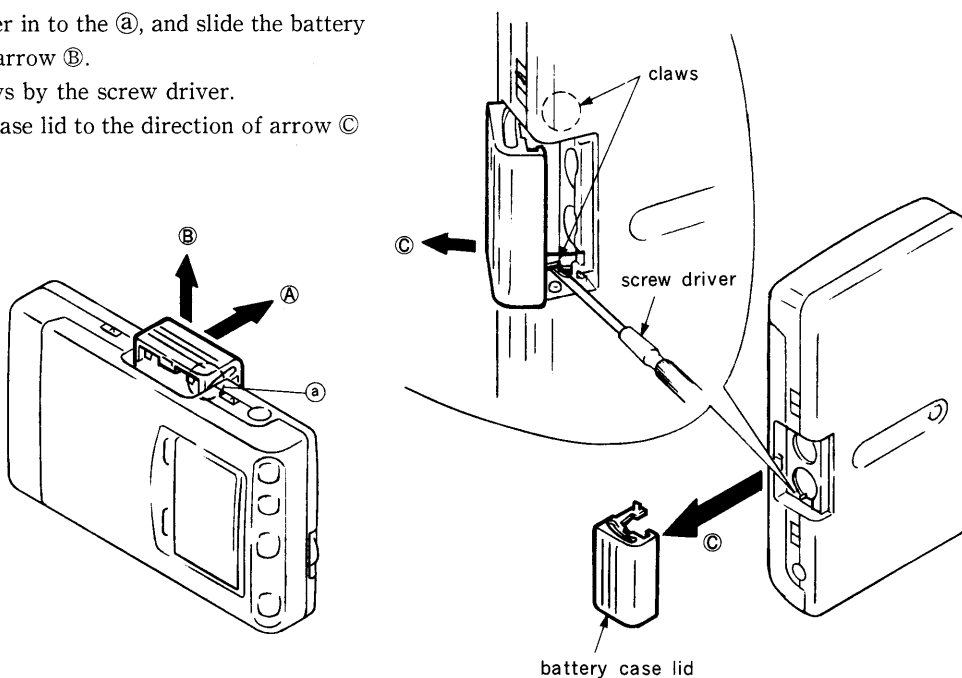


## SECTION 2 DISASSEMBLY

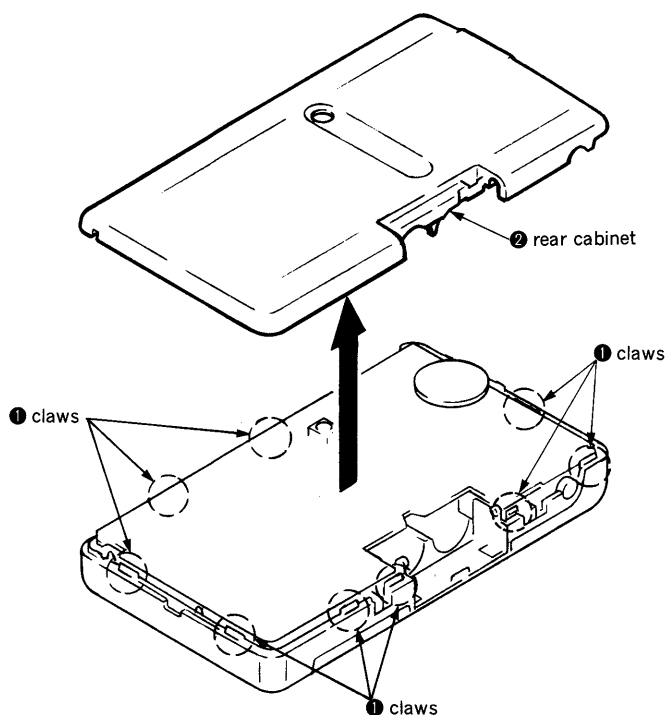
• Follow the disassembly procedure in the numerical order given.

### 2-1. BATTERY CASE LID

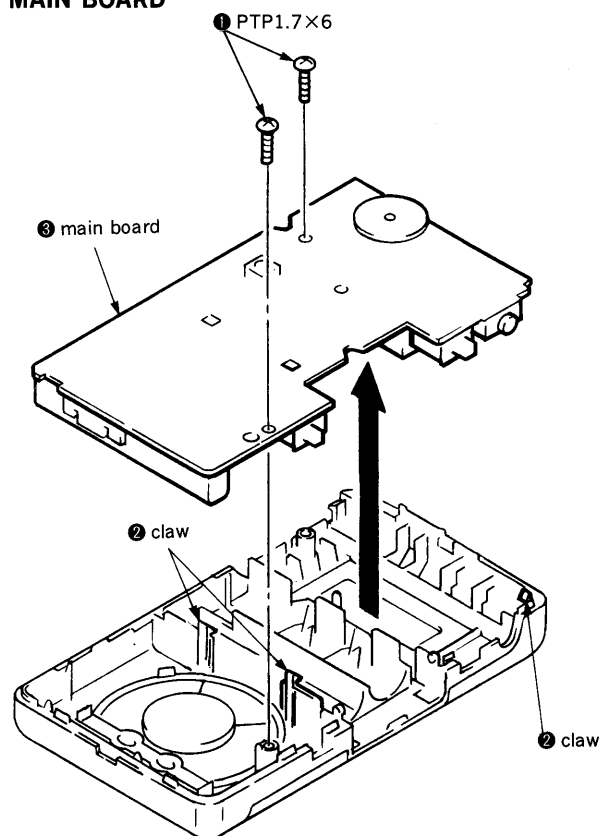
- 1) Slide the battery case lid to the direction of arrow ㉠.
- 2) Insert the screw driver in to the ㉡, and slide the battery case lid direction of arrow ㉢.
- 3) Remove the two claws by the screw driver.
- 4) Remove the battery case lid to the direction of arrow ㉣.



### 2-2. REAR CABINET

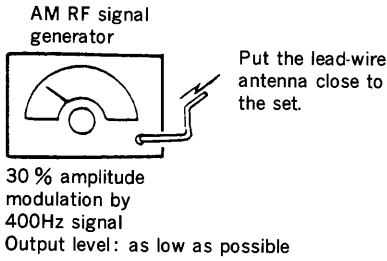


### 2-3. MAIN BOARD

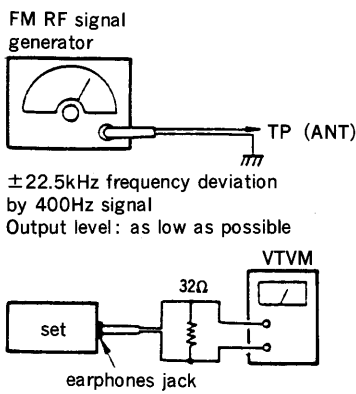


## SECTION 3 ELECTRICAL ADJUSTMENTS

### AM Section



### FM Section



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

AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	450kHz

AM VCO VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
L5	1,602kHz	7.3±0.05V

Note: Not use the AM rf signal generator in this adjustment.

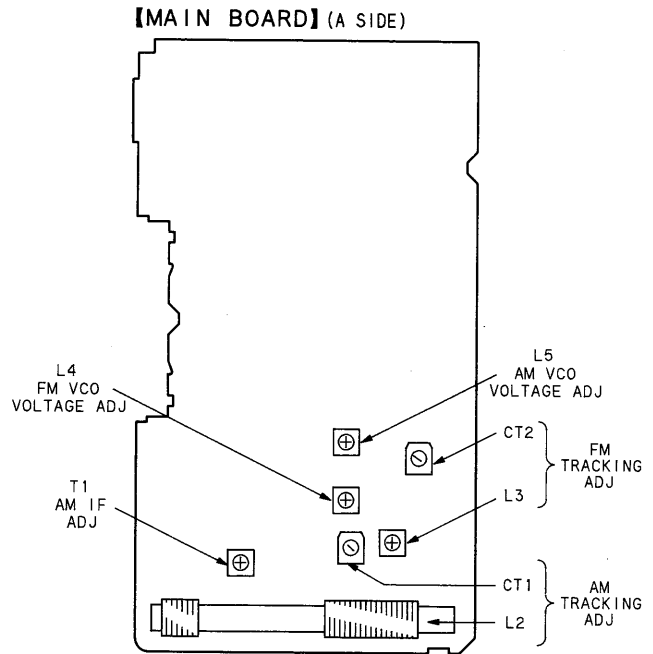
AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT1	L2
1,485kHz	585kHz

FM VCO VOLTAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital voltmeter
L4	108MHz	11±1.5V

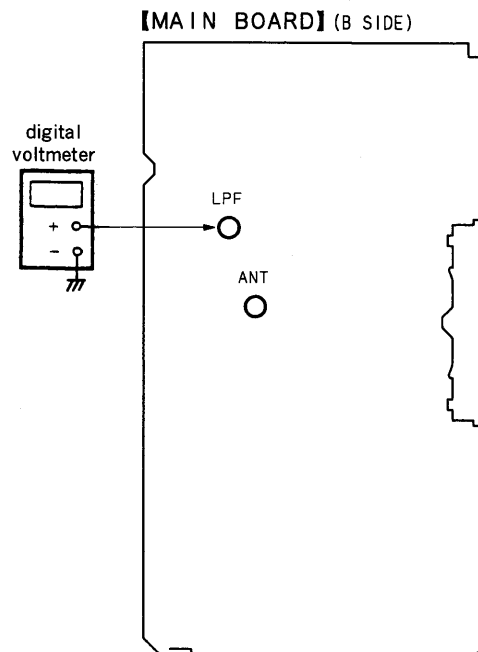
Note: Not use the FM signal generator in this adjustment.

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT2	L3
108MHz	87.5MHz

#### Adjustment Location :

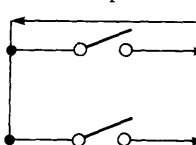


#### Test point Location :



## SECTION 4 PIN DESCRIPTION

Pin description of  $\mu$ PD1724GB-555-1A7 (IC3)

Pin number	Mark	Pin name	I/O	Pin description
1   10 51   56	LCD10   LCD1 LCD16   LCD11	LCD10   LCD1 LCD16   LCD11	O	LCD drive segment signal output.
11 21 49 50	NC	NC	—	
12   14	COM3   COM1	COM3   COM1	O	LCD drive common signal output.
15 16 17 18	VSS1 CAP2 CAP1 VSS2	VSS1 CAP2 CAP1 VSS2	—	Terminals used for connecting a capacitor of a doubler circuit which supplies LCD drive voltage.
19	VDP	MUTE	O	Audio mute output signal. Active when Low. Audio noises are reduced before and after the mute signal when PLL, radio power supply or key strobe change is controlled.
20	CGP	BEEP	O	Buzzer output using CGP. Sound to check keys, to check settings, to indicate that a setting time of timer is reached or to alarm is produced by using two kinds of musical intervals and the sound modulation.
22	VDD	VDD	—	5 V power supply input terminal.
23	VCOH	VHF	I	Not used.
24	VCOM	HF	I	FM VCO input.
25	VCOL	AM	I	AM VCO input.
26	VSS1	VSS1	—	GND
27 28	EO1 EO2	EO1 EO2	O	PLL error output terminal.
29	CE	CE	I	Detects the voltage reduction of the AC battery. When the battery energy is reduced, the microcomputer is in the reduced voltage mode. The battery mark blinks and the microcomputer waits for a clock's reset/display and Power ON Key.
30 31	XO XI	XO XI	O I	A quartz oscillating element connecting terminal. (75 kHz)
32	VSS4	VSS4	—	Connected to a capacitor for a regulator circuit which supplies the oscillator's stable drive voltage.
33	PA3	INIT IN1	I	Time display switching input. It is a 24-hour system display when Low and a 12-hour system display (AM/PM) when High. When the setting is changed, backup power supply must be set to OFF and internal RAM must be initialized.
34	PA2	POWER OUT	O	ON/OFF switching output for the radio power supply. (ON : High ; OFF : LOW)
35	PA1	INIT OUT	O	Strobe output for initial switch input. 

Pin number	Mark	Pin name	I/O	Pin description
36	PA0	INIT IN2	I	1-bit input which sets two kinds of receiving band versions. When the setting is changed, backup power supply must be set to OFF and internal RAM must be initialized.
37	PB3		O	Not used
38	PB2	BAND	O	1-bit output which sets two kinds of receiving bands. Two settings are as follows. AM = H ; FM = L ; POWER OFF = L
39	PB1	BEEP Vol	O	BEEP volume. Output for increasing the volume of the BEEP sound when a setting time of timer is reached or an alarm is ON. The volume is increased when high.
40	PB0		O	Not used
41	PC3		O	Not used
42   44	PC2   PC0	Key SOURCE	O	Strobe and return signals in 3×4 key matrix. A strobe signal change makes an audio noise. A strobe signal must be set to the fixed value when a key input is not changed. When the key input is decoded, the mute signal must be added.
45   48	K3   K0	Key RETURN	I	



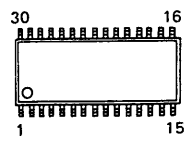
SECTION 5  
DIAGRAMS

5-1. SEMICONDUCTOR LEAD LAYOUTS

● Semiconductor Location

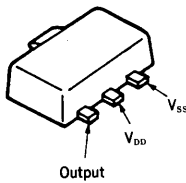
5-2. PRINTED WIRING BOARD

CXA1280N

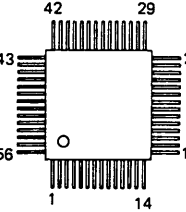


(TOP VIEW)

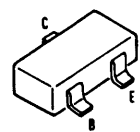
S-8051HN-CD-S



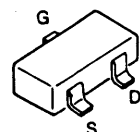
μPD1724GB-555-1A7



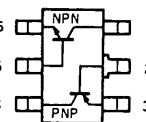
DTC144EU  
DTC144TU  
2SC4177-L6  
2SC4178-F13



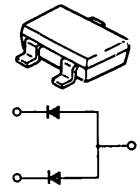
2SK209-G



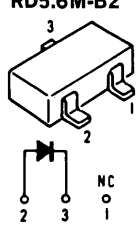
XN4608



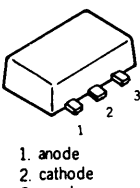
DAP202U



RD13M-B2  
RD5.6M-B2

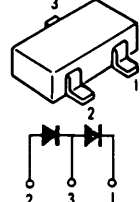


SVC341-L

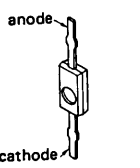


1. anode  
2. cathode  
3. anode

1S5226



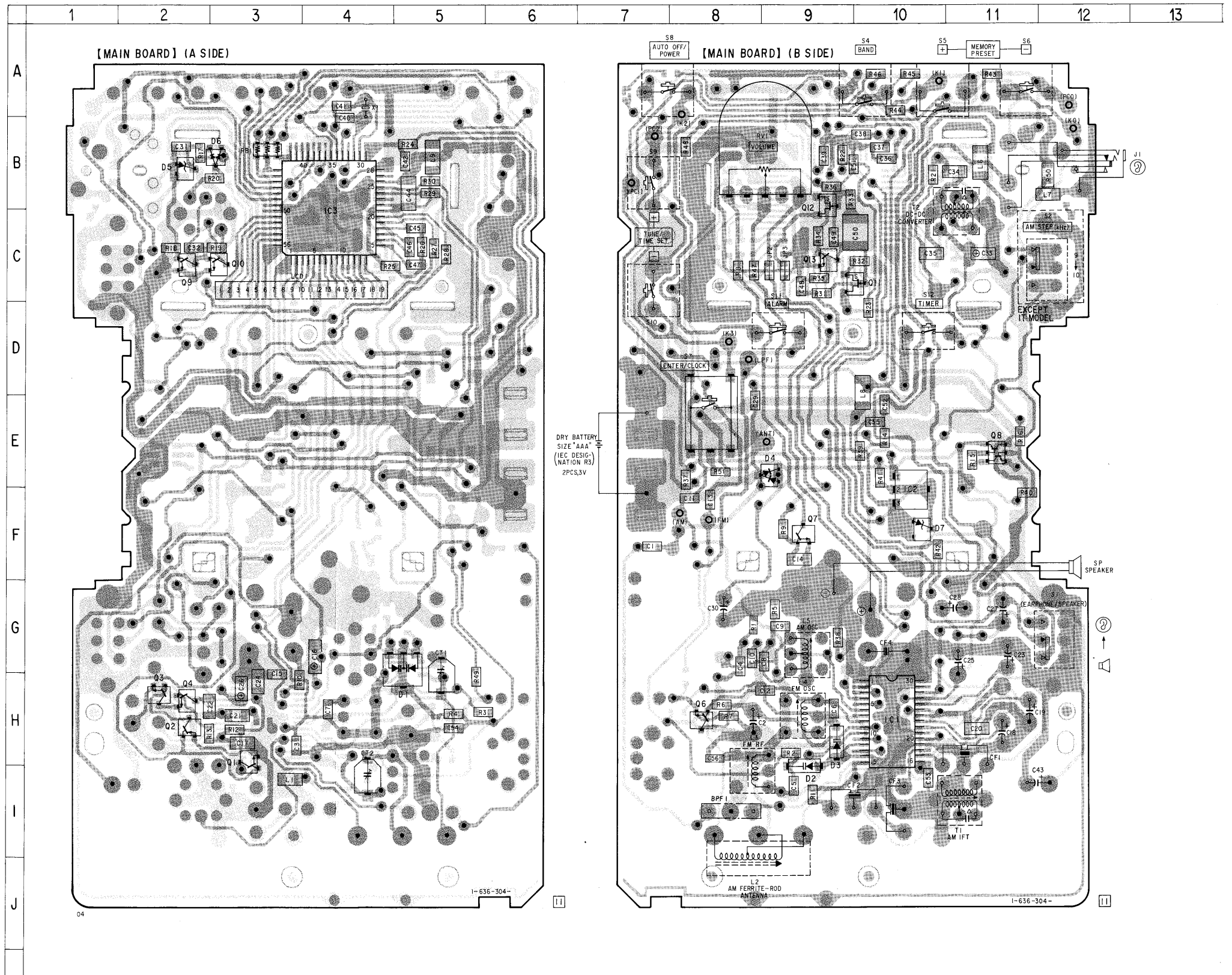
1T33



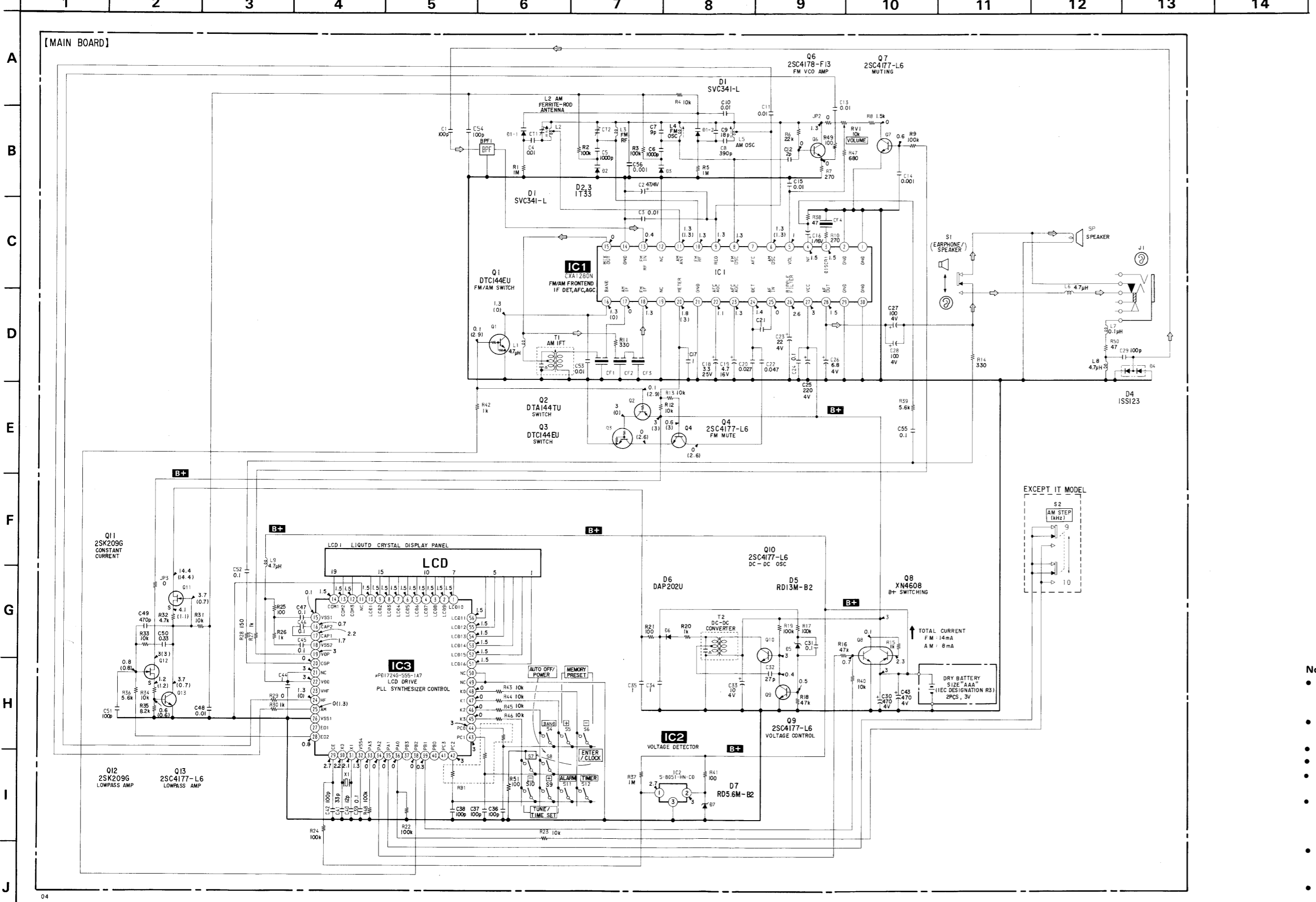
Ref. No.	Location
D1	G-5
D2	H-9
D3	H-9
D4	E-9
D5	B-2
D6	B-3
D7	F-10
IC1	H-10
IC2	E-10
IC3	B-4
Q1	H-3
Q2	H-2
Q3	H-2
Q4	H-2
Q6	H-8
Q7	F-9
Q8	E-11
Q9	C-2
Q10	C-3
Q11	C-10
Q12	B-9
Q13	C-9

Note:

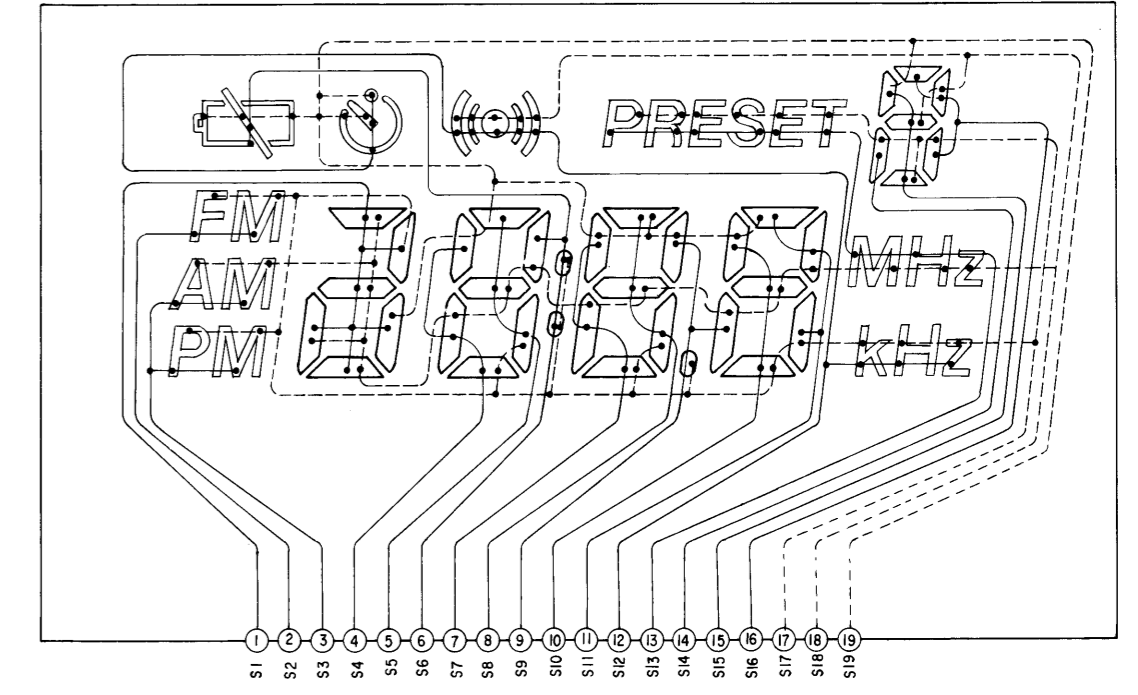
- — : parts extracted from the component side.
- : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.
- IT : Italian model



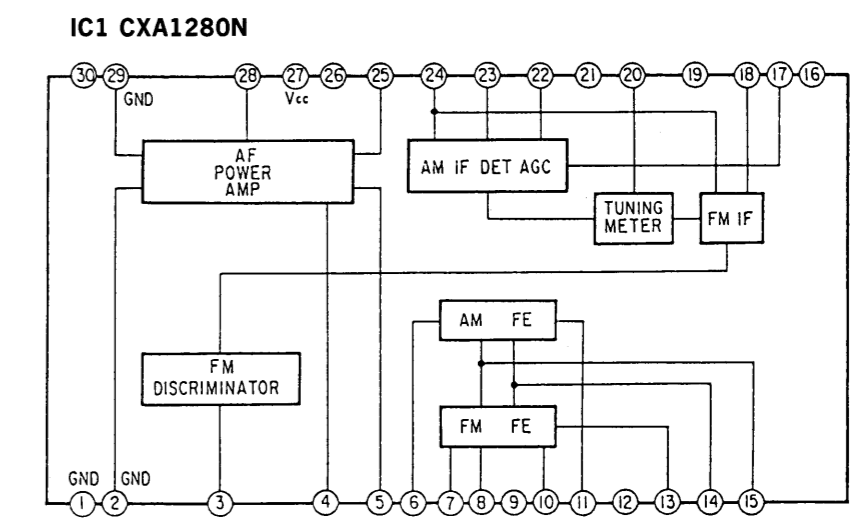
5-3. SCHEMATIC DIAGRAM



LCD1 LIQUID CRYSTAL DISPLAY PANEL



IC BLOCK DIAGRAM



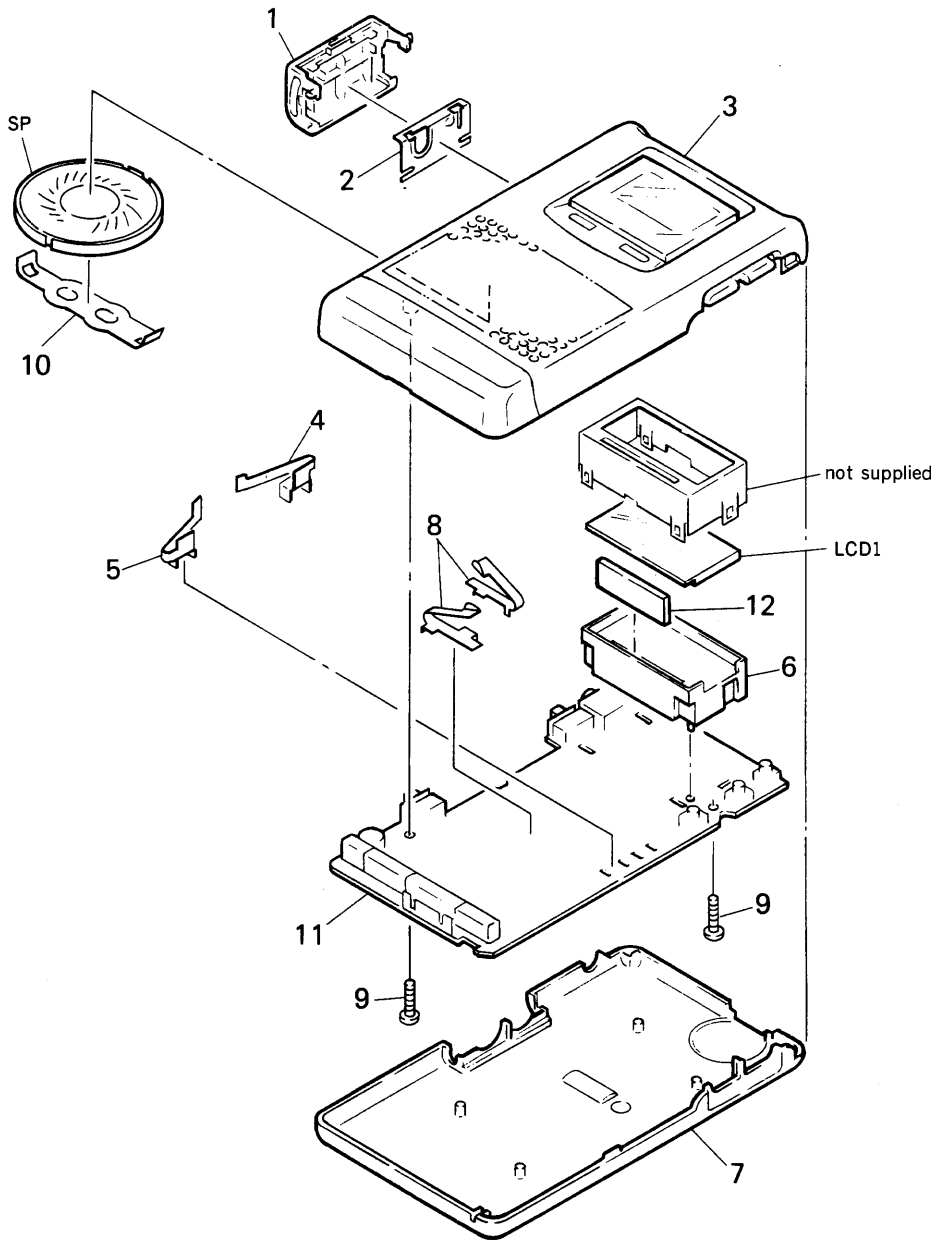
- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
  - $\triangle$ : internal component.
  - $\square$ : adjustment for repair.
  - Power voltage is dc 3V and fed with regulated dc power supply from battery terminal.
  - Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  - no mark: FM 87.5kHz
  - ( ): AM 531kHz
  - Voltages are taken with a VOM (Input Impedance  $10\text{M}\Omega$ ). Voltage variations may be noted due to normal production tolerances.
  - Signal path.
  - $\Rightarrow$ : FM
  - IT: Italian model

## SECTION 6 EXPLODED VIEWS

**NOTE:**

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked “\* ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE)...(RED)  
Parts Color      Cabinet's Color
- G: Germany model
- IT: Italian model

**6-1. MAIN BLOCK**



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
1	3-363-357-01	LID, BATTERY CASE		8	* 3-366-518-01	TERMINAL, SPEAKER	
2	3-363-311-01	TERMINAL (+, -), BATTERY		9	3-363-895-01	SCREW (M1.7)	
3	X-3363-232-1	CABINET ASSY, FRONT (EXCEPT IT)		10	3-366-517-01	BRACKET (SP)	
3	X-3363-425-1	CABINET ASSY, FRONT (IT)		11	* A-3679-250-A	MAIN BOARD, COMPLETE (E.AEP)	
4	3-363-312-03	TERMINAL (+), BATTERY		11	* A-3679-275-A	MAIN BOARD, COMPLETE (IT)	
5	3-363-313-01	TERMINAL (-), BATTERY		11	* A-3679-296-A	MAIN BOARD, COMPLETE (G)	
6	3-363-356-01	HOLDER (A)		12	1-535-950-11	CONDUCTIVE BOARD, CONNECTION	
7	3-363-321-33	CABINET (REAR) (EXCEPT IT)		LCD1	1-809-307-11	DISPLAY PANEL, LIQUID CRYSTAL	
7	3-363-321-51	CABINET (REAR) (IT)		SP	1-544-444-11	SPEAKER	

## SECTION 7 ELECTRICAL PARTS LIST

MAIN

**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.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- CAPACITORS  
uF:  $\mu$ F

- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable
- COILS  
uH:  $\mu$ H
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A..., uPA...:  $\mu$ PA...,  
uPB...:  $\mu$ PB..., uPC...:  $\mu$ PC...,  
uPD...:  $\mu$ PD....

When indicating parts by reference number, please include the board name.

- G: Germany model
- IT: Italian model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	* A-3679-250-A	MAIN BOARD, COMPLETE (AEP, E)		C20	1-163-986-00	CERAMIC CHIP 0.027uF 10%	25V
	* A-3679-275-A	MAIN BOARD, COMPLETE (IT)		C21	1-164-346-11	CERAMIC CHIP 1uF	16V
	* A-3679-296-A	MAIN BOARD, COMPLETE (G)		C22	1-163-809-11	CERAMIC CHIP 0.047uF 10%	25V
	*****			C23	1-124-430-00	ELECT 22uF 20%	4V
	1-535-950-11	CONDUCTIVE BOARD, CONNECTION		C24	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
	3-363-312-03	TERMINAL (+), BATTERY		C25	1-124-434-00	ELECT 220uF 20%	4V
	3-363-313-01	TERMINAL (-), BATTERY		C26	1-135-184-11	TANTAL. CHIP 6.8uF 20%	4V
	3-363-356-01	HOLDER (A)		C27	1-124-433-00	ELECT 100uF 20%	4V
	* 3-366-518-01	TERMINAL, SPEAKER		C28	1-124-433-00	ELECT 100uF 20%	4V
	< BPF >			C29	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
BPF1	1-239-061-11	FILTER, HIGH PASS		C30	1-126-518-11	ELECT 470uF 20%	4V
	< CAPACITOR >			C31	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1	1-162-953-11	CERAMIC CHIP 100PF 5%	50V	C32	1-162-946-11	CERAMIC CHIP 27PF 5%	50V
C2	1-126-154-11	ELECT 47uF 20%	6.3V	C33	1-135-185-11	TANTAL. CHIP 10uF 20%	4V
C3	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C34	1-164-346-11	CERAMIC CHIP 1uF	16V
C4	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C35	1-164-346-11	CERAMIC CHIP 1uF	16V
C5	1-164-357-11	CERAMIC CHIP 1000PF 5%	50V	C36	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C6	1-164-357-11	CERAMIC CHIP 1000PF 5%	50V	C37	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C7	1-162-940-11	CERAMIC CHIP 9PF 0.5PF	50V	C38	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C8	1-164-145-11	CERAMIC CHIP 390PF 5%	50V	C39	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C9	1-162-944-11	CERAMIC CHIP 18PF 5%	50V	C40	1-162-942-11	CERAMIC CHIP 12PF 5%	50V
C10	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C41	1-162-947-11	CERAMIC CHIP 33PF 5%	50V
C11	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C42	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C12	1-162-932-11	CERAMIC CHIP 2PF 0.25PF	50V	C43	1-126-518-11	ELECT 470uF 20%	4V
C13	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C44	1-162-638-11	CERAMIC CHIP 1uF	16V
C14	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V	C45	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C15	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C46	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C16	1-135-091-00	TANTALUM CHIP 1uF 20%	16V	C47	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C17	1-164-346-11	CERAMIC CHIP 1uF	16V	C48	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C18	1-126-162-11	ELECT 3.3uF 20%	50V	C49	1-164-362-11	CERAMIC CHIP 470PF	50V
C19	1-126-163-11	ELECT 4.7uF 20%	50V	C50	1-164-006-11	CERAMIC CHIP 0.33uF 10%	16V
				C51	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
				C52	1-164-156-11	CERAMIC CHIP 0.1uF	25V

## MAIN

Ref. No.	Part No.	Description	Remark
C53	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C54	1-162-953-11	CERAMIC CHIP 100PF	5% 50V
C55	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C56	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
< CERAMIC FILTER >			
CF1	1-567-929-11	FILTER, CERAMIC	
CF2	1-579-265-81	FILTER, CERAMIC	
CF3	1-579-265-81	FILTER, CERAMIC	
CF4	1-579-265-81	FILTER, CERAMIC	
< TRIMMER >			
CT1	1-141-327-11	CAP. VAR. TRIMMER (CHIP TYPE)	
CT2	1-141-327-11	CAP. VAR. TRIMMER (CHIP TYPE)	
< DIODE >			
D1	8-719-945-31	DIODE SVC341-L	
D2	8-713-300-57	DIODE 1T33	
D3	8-713-300-57	DIODE 1T33	
D4	8-719-800-76	DIODE 1SS226	
D5	8-719-106-80	DIODE RD13M-B2	
D6	8-719-941-09	DIODE DAP202U	
D7	8-719-105-91	DIODE RD5.6M-B2	
< IC >			
IC1	8-759-605-59	IC CXA1280N	
IC2	8-759-947-95	IC S-8051HN-CD-S	
IC3	8-759-154-31	IC uPD1724GB-555-1A7	
< JACK >			
J1	1-580-237-21	JACK (EARPHONE)	
< JUMPER >			
JP2	1-216-864-11	METAL CHIP 0	
JP3	1-216-864-11	METAL CHIP 0	
< COIL >			
L1	1-412-002-31	INDUCTOR CHIP 4.7uH	
L2	1-402-515-11	ANTENNA, FERRITE-ROD (AM)	
L3	1-460-161-11	COIL (WITH CORE)	
L4	1-428-209-11	COIL, AIR-CORE	
L5	1-406-269-41	COIL (OSC)	
L6	1-410-200-31	INDUCTOR CHIP 4.7uH	
L7	1-410-981-11	INDUCTOR CHIP 0.1uH	
L8	1-410-200-31	INDUCTOR CHIP 4.7uH	
L9	1-410-200-31	INDUCTOR CHIP 4.7uH	

Ref. No.	Part No.	Description	Remark
< LCD >			
LCD1	1-809-307-11	DISPLAY PANEL, LIQUID CRYSTAL	
< TRANSISTOR >			
Q1	8-729-905-18	TRANSISTOR DTC144EU	
Q2	8-729-921-58	TRANSISTOR DTA144TU	
Q3	8-729-905-18	TRANSISTOR DTC144EU	
Q4	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q6	8-729-117-72	TRANSISTOR 2SC4178-F13	
Q7	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q8	8-729-402-16	TRANSISTOR XN4608	
Q9	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q10	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q11	8-729-220-93	TRANSISTOR 2SK209G	
Q12	8-729-220-93	TRANSISTOR 2SK209G	
Q13	8-729-117-32	TRANSISTOR 2SC4177-L6	
< RESISTOR >			
R1	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R2	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R3	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R4	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R5	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R6	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R7	1-216-814-11	METAL CHIP 270 5% 1/16W	
R8	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R9	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R10	1-216-814-11	METAL CHIP 270 5% 1/16W	
R11	1-216-815-11	METAL CHIP 330 5% 1/16W	
R12	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R13	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R14	1-216-815-11	METAL CHIP 330 5% 1/16W	
R15	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R16	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R17	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R18	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R19	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R20	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R21	1-216-809-11	METAL CHIP 100 5% 1/16W	
R22	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R23	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R24	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R25	1-216-809-11	METAL CHIP 100 5% 1/16W	
R26	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R27	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R28	1-216-811-11	METAL CHIP 150 5% 1/16W	
R29	1-216-864-11	METAL CHIP 0	
R30	1-216-821-11	METAL CHIP 1K 5% 1/16W	

Ref. No.	Part No.	Description	Remark		
R31	1-216-833-11	METAL CHIP	10K	5%	1/16W
R32	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R33	1-216-833-11	METAL CHIP	10K	5%	1/16W
R34	1-216-833-11	METAL CHIP	10K	5%	1/16W
R35	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R36	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R37	1-216-857-11	METAL CHIP	1M	5%	1/16W
R38	1-216-805-11	METAL CHIP	47	5%	1/16W
R39	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R40	1-216-833-11	METAL CHIP	10K	5%	1/16W
R41	1-216-809-11	METAL CHIP	100	5%	1/16W
R42	1-216-821-11	METAL CHIP	1K	5%	1/16W
R43	1-216-833-11	METAL CHIP	10K	5%	1/16W
R44	1-216-833-11	METAL CHIP	10K	5%	1/16W
R45	1-216-833-11	METAL CHIP	10K	5%	1/16W
R46	1-216-833-11	METAL CHIP	10K	5%	1/16W
R47	1-216-819-11	METAL CHIP	680	5%	1/16W
R48	1-216-845-11	METAL CHIP	100K	5%	1/16W
R49	1-216-809-11	METAL CHIP	100	5%	1/16W
R50	1-216-017-00	METAL CHIP	47	5%	1/10W
R51	1-216-809-11	METAL CHIP	100	5%	1/10W
		< NETWORK >			
RB1	1-236-631-11	RES. NETWORK			
		< VARIABLE RESISTOR >			
RV1	1-241-432-11	RES. VAR. CARBON 10K (VOLUME)			
		< SWITCH >			
S1	1-572-485-11	SWITCH, SLIDE (EARPHONE/SPEAKER)			
S2	1-572-485-11	SWITCH, SLIDE (AM STEP kHz) (EXCEPT IT)			
S4	1-572-482-11	SWITCH, KEY BOARD (1 KEY) (BAND)			
S5	1-572-482-11	SWITCH, KEY BOARD (1 KEY) (MEMORY PRESET +)			
S6	1-572-482-11	SWITCH, KEY BOARD (1 KEY) (MEMORY PRESET -)			
S7	1-572-484-21	SWITCH, KEY BOARD (1 KEY) (ENTER/CLOCK)			
S8	1-572-481-11	SWITCH, KEY BOARD (1 KEY) (AUTO OFF POWER)			
S9	1-572-481-11	SWITCH, KEY BOARD (1 KEY) (TUNE/TIME SET -)			
S10	1-572-481-11	SWITCH, KEY BOARD (1 KEY) (TUNE/TIME SET +)			
S11	1-572-483-11	SWITCH, KEY BOARD (1 KEY) (ALARM)			
S12	1-572-483-11	SWITCH, KEY BOARD (1 KEY) (TIMER)			

Ref. No.	Part No.	Description	Remark
		< TRANSFORMER >	
T1	1-404-444-71	TRANSFORMER, 1F	
T2	1-449-138-51	TRANSFORMER, DC-DC CONVERTER	
		< CRYSTAL >	
X1	1-567-769-11	VIBRATOR, CRYSTAL (75kHz)	
*****			
		MISCELLANEOUS	
		*****	
SP	1-544-444-11	SPEAKER	
*****			
		ACCESSORY & PACKING MATERIAL	
		*****	
*	3-362-015-01	CASE, INDIVIDUAL	
	3-369-669-01	CASE, CARRYING	
	3-753-442-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH, PORTUGUESE, SWEDISH) (AEP, E)	
	3-753-442-41	MANUAL, INSTRUCTION (FRENCH, GERMAN, DUTCH, ITALIAN) (AEP, G)	
	3-753-442-51	MANUAL, INSTRUCTION (ENGLISH, ITALIAN) (IT)	
	8-952-277-90	EARPHONE MDR-E111 SET	
	X-3321-270-1	ATTACHMENT	

