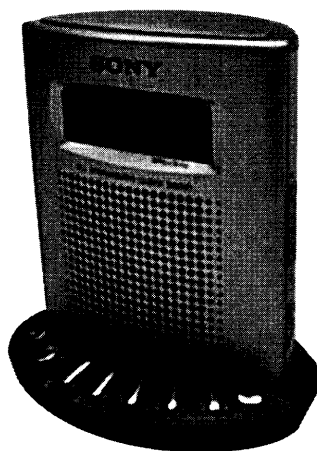


ICF-C713L

SERVICE MANUAL

AEP Model
UK Model



SPECIFICATIONS

Time display

UK model	12 hour
AEP model	24 hour

Frequency range

Band	ICF-C713L	Channel step
FM	87.5 - 108 MHz	0.05 MHz*
MW	531 - 1,602 kHz	9 kHz
LW	153 - 279 kHz	9 kHz

* The frequency display is raised or lowered by steps of 0.1 MHz.
(Example: Frequency 88.05 MHz is displayed as "88.0 MHz".)

Speaker

Approx. 5.7 cm dia.

Power output

150 mW (at 10% harmonic distortion)

Power requirements

220 - 230 V AC, 50 Hz

Dimensions

Approx. 115 × 123 × 85 mm (w/h/d)
incl. projecting parts and controls

Mass

Approx. 480 g (AEP model)
Approx. 575 g (UK model)

Design and specifications are subject to change without notice.

FEATURES

- Dual alarm FM/MW/LW PLL (phase locked loop) synthesized clock radio
- 5 random memory presets
- Radio and buzzer alarms with the snooze function
- LCD display with backlight which has a brightness switch

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.

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.

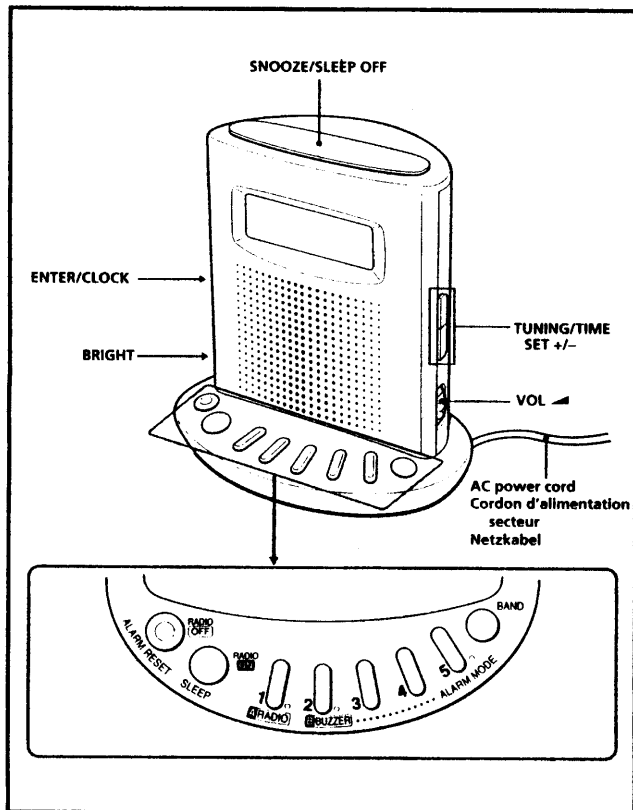
FM/MW/LW PLL SYNTHESIZED CLOCK RADIO



SONY®

SECTION 1 GENERAL

This section extracted from
instruction manual.



Setting the Clock

- 1 Plug in the clock radio.
The display will flash "AM 12:00" or "0:00".
- 2 While holding down **ENTER/CLOCK**, press **TUNING/TIME SET +** or **-** until the correct time appears in the display.
When you release **ENTER/CLOCK**, the clock begins to operate.

- To set the current time rapidly, keep pressing the **+** or **-** button while holding down **ENTER/CLOCK**.
- The clock system varies depending on the model you own.
12-hour system: "AM 12:00" = midnight
24-hour system: "0:00" = midnight
- To set the current time from zero seconds, release **ENTER/CLOCK** with the time signal at step 2.
- The colon (":") in the time indication is flashing when the radio is off and steadily displayed when it is on.

Operating the Radio Manual Tuning

- 1 Press **RADIO ON** to turn on the radio.
The band and frequency will appear in the display for a few seconds. Then the current time indication returns to the display.
- 2 Press **BAND** repeatedly to select the desired band.
- 3 Use **TUNING/TIME SET +** or **-** to tune in the desired station.

The FM channel step is set to 0.1 MHz and the AM channel step is set to 10 kHz for the model for the North and South America. The FM channel step is set to 0.05 MHz and the AM(MW) channel step is set to 9 kHz for the model for other countries. (The FM frequency indication changes every 0.1 MHz.)
The LW channel step is set to 9 kHz.
A beep sounds and the tuning stops when the upper or lower extremity of the band range is reached.

4 Adjust volume using **VOL**.

- To turn off the radio, press **RADIO OFF**.
- To improve reception
FM: Extend the AC power cord fully to increase FM reception sensitivity, since the cord acts as an FM wire antenna.
AM(MW)/LW: Rotate the unit horizontally for optimum reception. A ferrite bar is built in to the unit.
- To check the current station, press the **+** button lightly. The band and frequency are displayed for a few seconds, after which the current time indication returns to the display.
- If the radio alarm **A RADIO** comes on while the radio is playing, the station switches to the frequency set under preset number 1 (the wake-up frequency).

To set the brightness of the backlight
Set **BRIGHT** to **HIGH** or **LOW** to make the display visible.

Preset Tuning

You can preset up to five stations for one-touch tuning, one under each of preset buttons 1 to 5.

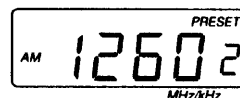
Presetting a station

Example: To set AM 1260 kHz in preset button 2.

- 1 Tune in the station you want to preset.
(See "Manual Tuning")
- 2 Press **ENTER/CLOCK**.
"P" flashes in the display for a few seconds.



- 3 Press the preset button under which you wish to store the station while the "P" indication is flashing.
Two beeps sound to indicate successful presetting.



- When using the radio alarm, preset the station you wish to serve as the alarm (the wake-up frequency) under preset button 1.

To change a preset station

Press the preset number again after tuning manually to a different station. The previous station is replaced by the new one.

Tuning in a preset station

- 1 Press **RADIO ON** to turn on the radio.
- 2 Press the preset button under which the desired station is stored.

Setting the Alarm

You can set the radio and buzzer alarms at the preset time. Before setting the alarm, be sure to set the clock (See "Setting the Clock") and preset a radio station under preset button 1 (See "Preset Tuning").

- 1 Turn off the radio.
- 2 While holding down **A RADIO** or **B BUZZER**, press either **TUNING/TIME SET +** or **-** until the desired time appears in the display.

At this time, the "A RADIO" or "B BUZZER" indication flashes in the display.

- 3 Release **A RADIO** or **B BUZZER**.
- 4 Press **ALARM MODE** until the alarm you want appears in the display. Each time you press **ALARM MODE**, the alarm indication changes as follows.

No alarm indication → RADIO → BUZZER
↑ RADIO and BUZZER ↓

When the alarm time is reached, the radio or buzzer sounds for 60 minutes or until turned off.

To stop the alarm

Press **ALARM RESET** while the alarm is activated.

The alarm will function at the same time the next day.

To cancel the alarm

Press **ALARM MODE** until neither the "A RADIO" nor "B BUZZER" indication is displayed.

Notes

- The alarm does not function, unless you set the clock, A RADIO and B BUZZER function.
- If both the radio and buzzer alarm are set for the same time, the radio alarm takes precedence.
- You can check the alarm time setting by pressing **A RADIO** or **B BUZZER**.

To doze for a few more minutes

- 1 Press **SNOOZE/SLEEP OFF**.
The radio or buzzer will shut off but will automatically come on again after about 8 minutes. You can repeat this process as many times as you like.
- You can reset the alarm time while activating the snooze function.

Setting the Sleep Timer

You can enjoy falling asleep to the radio using the built-in sleep timer that turns off the radio automatically after a preset duration.

- 1 Press **SLEEP**.

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

Current time → On → 90(min)
↑ 15 ← 30 ← 60 ↓

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

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

To Use Both Sleep Timer and Alarm

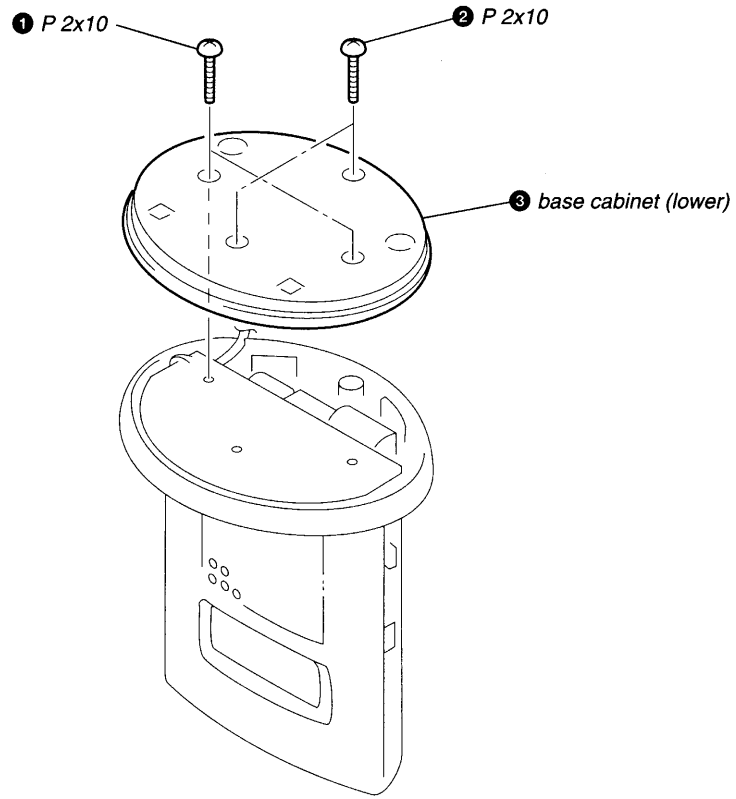
You can fall asleep to the radio sound and you will be awakened by the radio or buzzer alarm at the preset time.

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

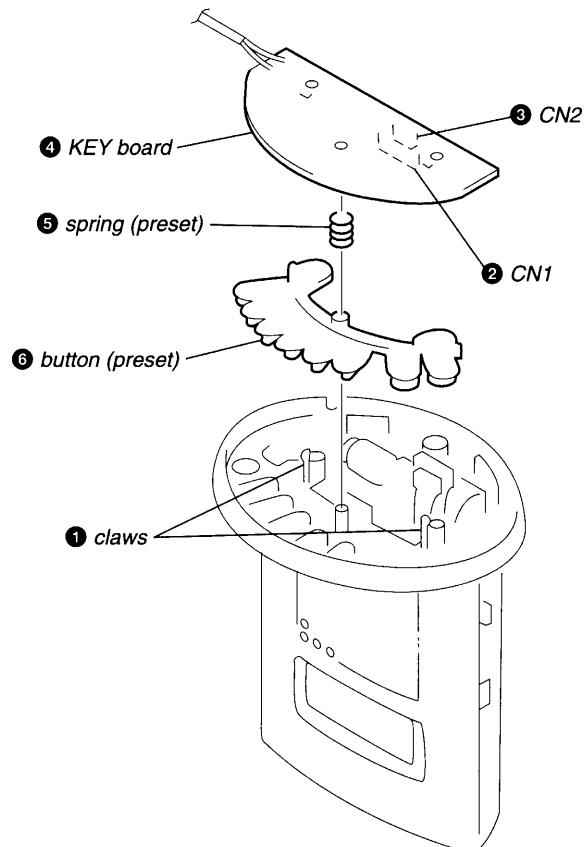
SECTION 2 DISASSEMBLY

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

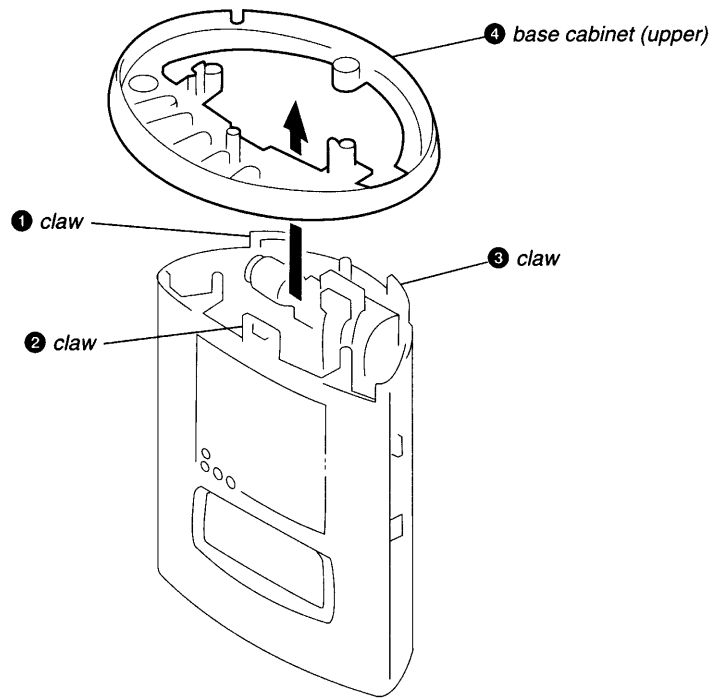
2-1. BASE CABINET (LOWER)



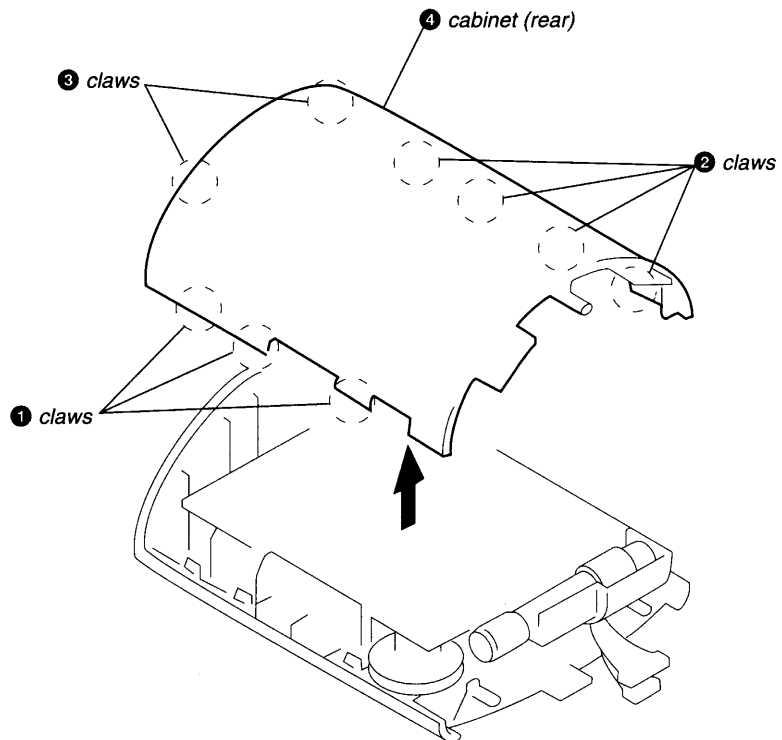
2-2. KEY BOARD



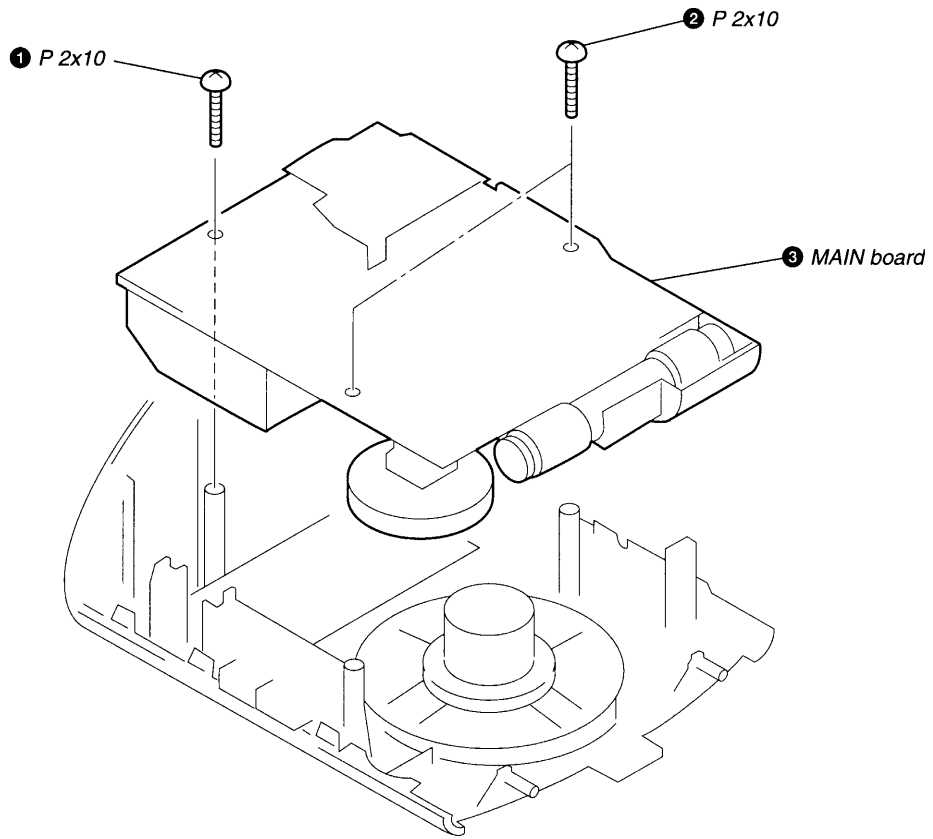
2-3. BASE CABINET (UPPER)



2-4. CABINET (REAR)



2-5. MAIN BOARD

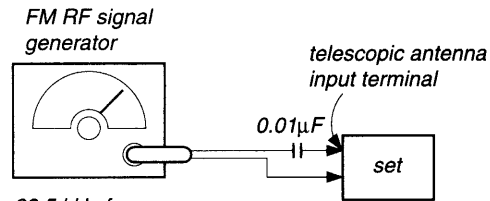


SECTION 3 ELECTRICAL ADJUSTMENTS

0 dB = 1 μ V

• FM Section

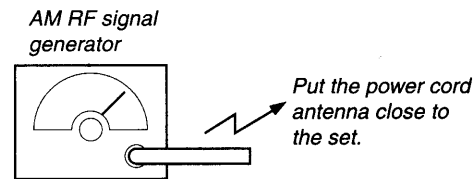
Setting :
RADIO ON button : On
BAND button : FM



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

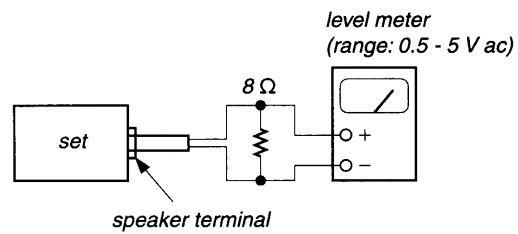
• LW/MW Section

Setting :
RADIO ON button : On
BAND button : LW/MW

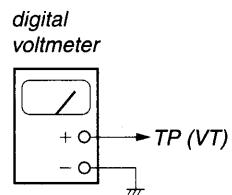


30 % amplitude modulation by 400 Hz signal
Output level : as low as possible

• Connecting Level Meter (FM, LW and MW)



• Connecting Digital Voltmeter (FM, LW and MW)



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

FM VCO VOLTAGE ADJUSTMENT		
Adjust for the following value reading on digital voltmeter.		
Adjustment Part	(confirmation)	L4
Frequency Display	87.5 MHz	108 MHz
Reading on Digital voltmeter	More than 1.2 V (Standard 1.6 V)	9.5 \pm 1.0 V

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	CT3
87.5 MHz	108 MHz

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

LW VCO VOLTAGE ADJUSTMENT		
Adjust for the following value reading on digital voltmeter.		
Adjustment Part	(confirmation)	CT4
Frequency Display	153 kHz	279 kHz
Reading on Digital voltmeter	More than 2.2 V (Standard 2.4 V)	9.0 V

LW TRACKING ADJUSTMENT		
Adjust for a maximum reading on level meter.		
L2-2	CT1	
162 kHz	243 kHz	

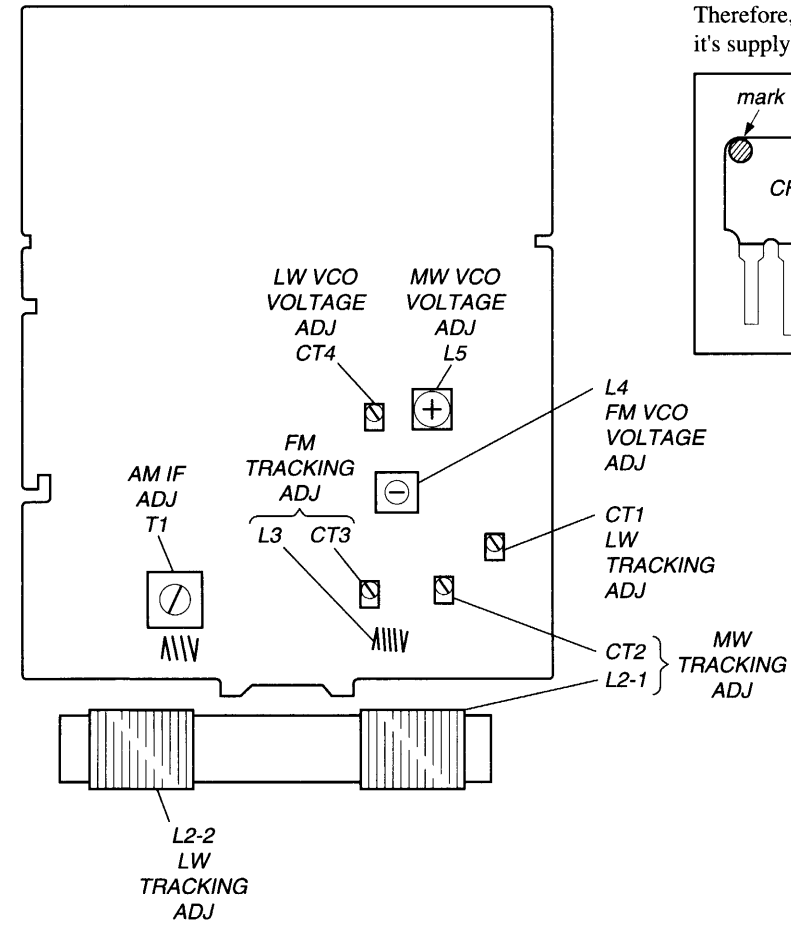
MW VCO VOLTAGE ADJUSTMENT		
Adjust for the following value reading on digital voltmeter.		
Adjustment Part	L5	(confirmation)
Frequency Display	531 kHz	1,602 kHz
Reading on Digital voltmeter	2.85 V	Less than 10 V (Standard 9 V)

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L2-1	CT2
621 kHz	1,404 kHz

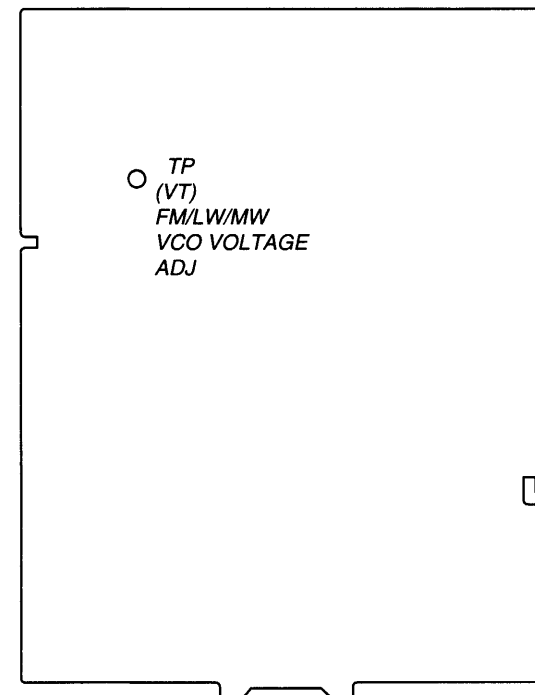
Adjustment Location : See page 8.

Adjustment Location : main board

–main board (component side) –



–main board (conductor side) –



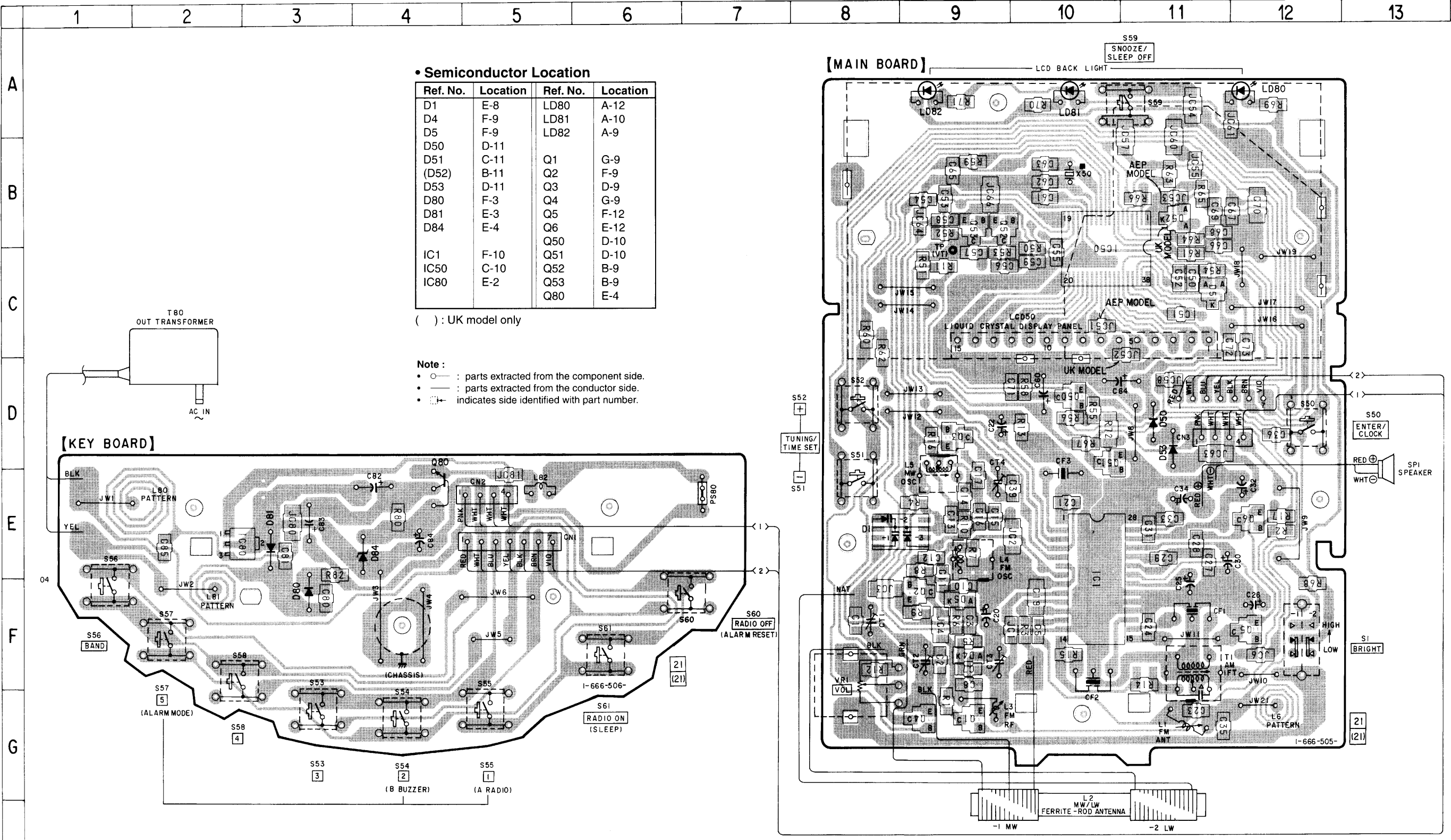
HOW TO CHANGE THE CERAMIC FILTERS

This model is used two ceramic filters of CF2 and 3. 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.

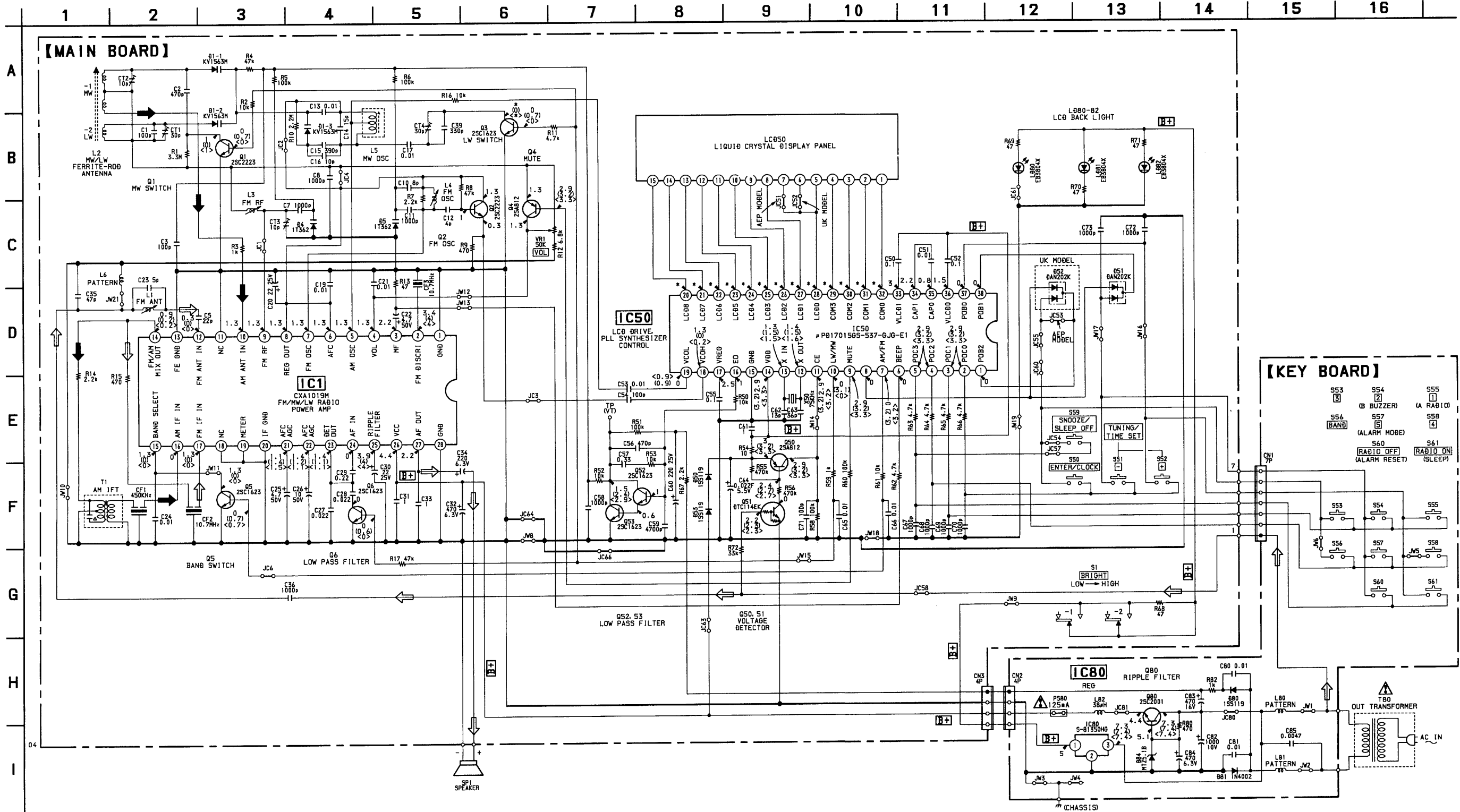
mark	Center Frequency
red	10.70 MHz
blue	10.67 MHz
orange	10.73 MHz
black	10.64 MHz
white	10.76 MHz

SECTION 4
DIAGRAMS

4-1. PRINTED WIRING BOARDS



4-2. SCHEMATIC DIAGRAM • Refer to page 13 for IC Block Diagram.



Note :

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

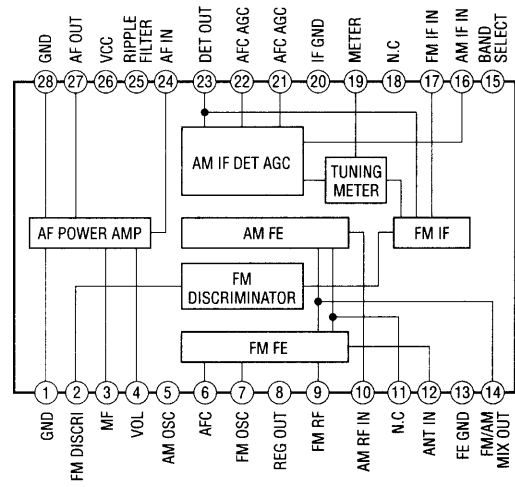
Note : The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

• B+ : B+ Line.

- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
() : LW
< > : MW
- Voltage are taken with a VOM (Input Impedance $10 \ \text{M}\Omega$). Voltage variations may be noted due to normal production tolerance.
- Signal path.
 : FM
 : MW

• IC Block Diagram

IC1 CXA1019M



SECTION 5
EXPLODED VIEWS

NOTE:

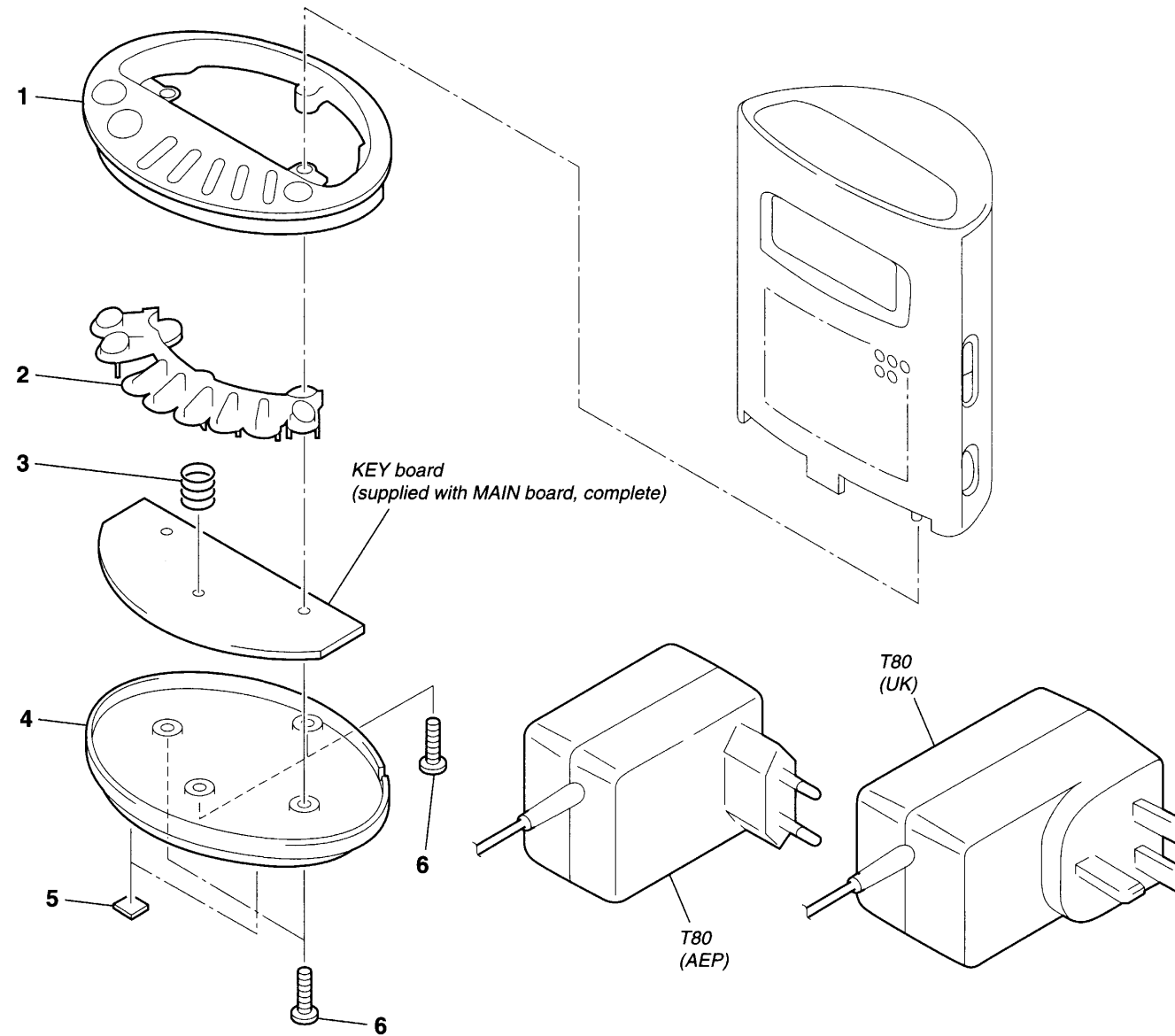
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX 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)

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

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

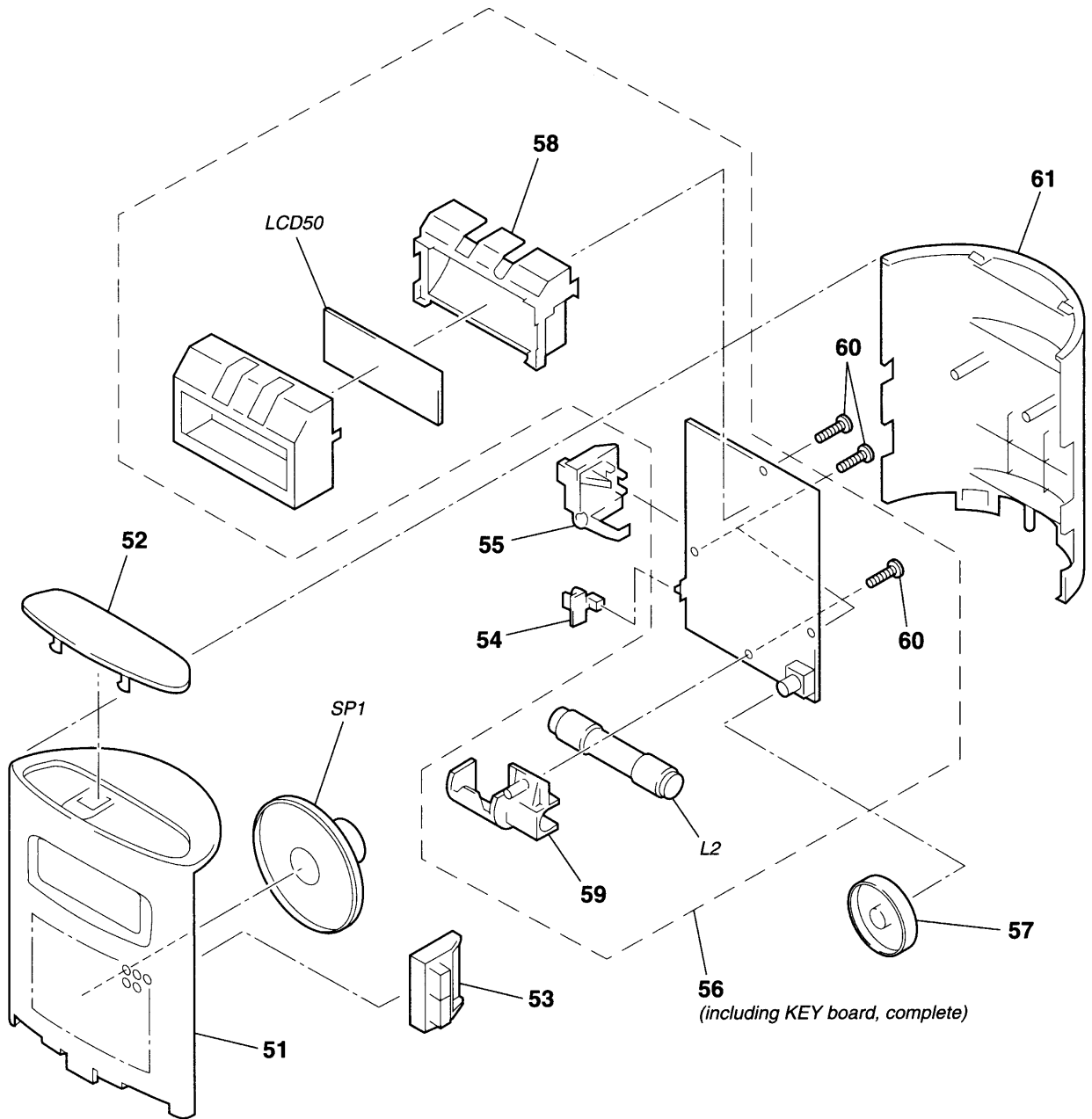
5-1. KEY BOARD SECTION



Ref. No.	Part No.	Description
1	3-015-449-01	CABINET (UPPER), BASE
2	3-015-459-01	BUTTON (PRESET)
3	3-017-680-01	SPRING (PRESET)
4	3-015-450-21	CABINET (LOWER), BASE

Remark	Ref. No.	Part No.	Description	Remark
	5	3-368-852-01	FOOT	
	6	7-685-106-01	SCREW +P 2X10 TYPE1	
	Δ T80	1-468-232-11	POWER UNIT (AEP)	
	Δ T80	1-468-233-11	POWER UNIT (UK)	

5-2. MAIN BOARD SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-3374-506-1	CABINET (FRONT) ASSY		57	3-015-460-01	KNOB (VOLUME)	
52	3-015-456-01	BUTTON (SNOOZE/SLEEP OFF)		58	3-015-451-01	HOLDER (LCD)	
53	3-015-457-01	BUTTON (+/-)		59	3-015-452-01	HOLDER (ANT)	
54	3-015-453-01	KNOB (BRIGHT)		60	7-685-106-01	SCREW +P 2X10 TYPE1	
55	3-015-458-01	BUTTON (ENTER/CLOCK)		61	3-015-448-01	CABINET (REAR)	
* 56	A-3679-915-A	MAIN BOARD, COMPLETE (INCLUDING KEY BOARD, COMPLETE) (AEP)		L2	1-501-920-11	ANTENNA, FERRITE-ROD (MW/LW)	
* 56	A-3679-916-A	MAIN BOARD, COMPLETE (INCLUDING KEY BOARD, COMPLETE) (UK)		LCD50	1-801-771-11	DISPLAY PANEL, LIQUID CRYSTAL	
				SP1	1-503-616-11	SPEAKER	

SECTION 6 ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX 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
		KEY BOARD, COMPLETE (SUPPLIED WITH MAIN BOARD, COMPLETE)	

		< CAPACITOR >	
C80	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C81	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C82	1-126-926-11	ELECT 1000uF 20%	10V
C83	1-126-935-11	ELECT 470uF 20%	6.3V
C84	1-126-935-11	ELECT 470uF 20%	6.3V
C85	1-163-017-00	CERAMIC CHIP 0.0047uF 5%	50V
		< CONNECTOR >	
* CN1	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P	
* CN2	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
		< DIODE >	
D80	8-719-911-19	DIODE 1SS119-25	
D81	8-719-052-88	DIODE 1N4002	
D84	8-719-109-85	DIODE RD5.1ESB2	
		< IC >	
IC80	8-759-512-69	IC S-81350HG-KD	
		< JUMPER RESISTOR >	
JC80	1-216-296-00	CONDUCTOR, CHIP (3216)	
JC81	1-216-295-00	CONDUCTOR, CHIP (2012)	
		< COIL >	
L82	1-410-294-11	INDUCTOR, MICRO 38uH	
		< IC LINK >	
Δ PS80	1-533-901-21	LINK, IC (125mA)	
		< TRANSISTOR >	
Q80	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
		< RESISTOR >	
R80	1-216-041-00	METAL CHIP 470 5%	1/10W
R82	1-216-049-11	METAL GLAZE 1K 5%	1/10W

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S53	1-762-233-11	SWITCH, KEYBOARD (3)	
S54	1-762-233-11	SWITCH, KEYBOARD (2 (B BUZZER))	
S55	1-762-233-11	SWITCH, KEYBOARD (1 (A RADIO))	
S56	1-762-233-11	SWITCH, KEYBOARD (BAND)	
S57	1-762-233-11	SWITCH, KEYBOARD (5 (ALARM MODE))	
S58	1-762-233-11	SWITCH, KEYBOARD (4)	
S60	1-762-233-11	SWITCH, KEYBOARD (RADIO OFF (ALARM RESET))	
S61	1-762-233-11	SWITCH, KEYBOARD (RADIO ON (SLEEP))	

*	A-3679-915-A	MAIN BOARD, COMPLETE (INCLUDING KEY BOARD, COMPLETE) (AEP)	
*	A-3679-916-A	MAIN BOARD, COMPLETE (INCLUDING KEY BOARD, COMPLETE) (UK)	

	3-015-451-01	HOLDER (LCD)	
	3-015-452-01	HOLDER (ANT)	
	7-685-106-01	SCREW +P 2X10 TYPE1	
		< CAPACITOR >	
C1	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C2	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C3	1-163-251-11	CERAMIC CHIP 100PF 5%	50V
C5	1-163-235-11	CERAMIC CHIP 22PF 5%	50V
C7	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C8	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C10	1-163-091-00	CERAMIC CHIP 8PF	50V
C11	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C12	1-163-087-00	CERAMIC CHIP 4PF	50V
C13	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C14	1-163-231-11	CERAMIC CHIP 15PF 5%	50V
C15	1-163-131-00	CERAMIC CHIP 390PF 5%	50V
C16	1-163-227-11	CERAMIC CHIP 10PF 0.5PF	50V
C17	1-164-232-11	CERAMIC CHIP 0.01uF 10%	50V
C19	1-163-059-00	CERAMIC CHIP 0.01uF 10%	50V
C20	1-128-551-11	ELECT 22uF 20%	25V
C21	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C22	1-126-963-11	ELECT 4.7uF 20%	50V
C23	1-163-222-11	CERAMIC CHIP 5PF 0.25PF	50V
C24	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C25	1-126-963-11	ELECT 4.7uF 20%	50V
C26	1-126-964-11	ELECT 10uF 20%	50V
C27	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C28	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	D53	8-719-911-19	DIODE 1SS119-25	
C29	1-164-489-11	CERAMIC CHIP	0.22uF 10% 16V			< IC >	
C30	1-128-551-11	ELECT	22uF 20% 25V	IC1	8-752-050-16	IC CXA1019M	
C31	1-109-982-11	CERAMIC CHIP	1uF 10% 10V	IC50	8-759-432-29	IC uPD17015GS-537-GJG-E1	
C32	1-126-935-11	ELECT	470uF 20% 6.3V			< JUMPER RESISTOR >	
C33	1-109-982-11	CERAMIC CHIP	1uF 10% 10V	JC1	1-216-295-00	CONDUCTOR, CHIP	(2012)
C34	1-124-635-00	ELECT	220uF 20% 6.3V	JC2	1-216-296-00	CONDUCTOR, CHIP	(3216)
C35	1-163-243-11	CERAMIC CHIP	47PF 5% 50V	JC3	1-216-296-00	CONDUCTOR, CHIP	(3216)
C36	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	JC4	1-216-296-00	CONDUCTOR, CHIP	(3216)
C39	1-163-263-11	CERAMIC CHIP	330PF 5% 50V	JC6	1-216-295-00	CONDUCTOR, CHIP	(2012)
C50	1-163-038-00	CERAMIC CHIP	0.1uF 25V	JC51	1-216-295-00	CONDUCTOR, CHIP	(2012) (AEP)
C51	1-163-031-11	CERAMIC CHIP	0.01uF 50V	JC52	1-216-295-00	CONDUCTOR, CHIP	(2012) (UK)
C52	1-163-038-00	CERAMIC CHIP	0.1uF 25V	JC53	1-216-295-00	CONDUCTOR, CHIP	(2012) (AEP)
C53	1-163-031-11	CERAMIC CHIP	0.01uF 50V	JC54	1-216-296-00	CONDUCTOR, CHIP	(3216)
C54	1-163-251-11	CERAMIC CHIP	100PF 5% 50V	JC55	1-216-295-00	CONDUCTOR, CHIP	(2012)
C55	1-163-038-00	CERAMIC CHIP	0.1uF 25V	JC57	1-216-296-00	CONDUCTOR, CHIP	(3216)
C56	1-163-133-00	CERAMIC CHIP	470PF 5% 50V	JC58	1-216-295-00	CONDUCTOR, CHIP	(2012)
C57	1-110-501-11	CERAMIC CHIP	0.33uF 10% 16V	JC60	1-216-296-00	CONDUCTOR, CHIP	(3216)
C58	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	JC61	1-216-295-00	CONDUCTOR, CHIP	(2012)
C59	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	JC63	1-216-296-00	CONDUCTOR, CHIP	(3216)
C60	1-104-666-11	ELECT	220uF 20% 25V	JC64	1-216-295-00	CONDUCTOR, CHIP	(2012)
C61	1-164-346-11	CERAMIC CHIP	1uF 16V	JC66	1-216-296-00	CONDUCTOR, CHIP	(3216)
C62	1-163-096-00	CERAMIC CHIP	13PF 5% 50V			< COIL >	
C63	1-163-106-00	CERAMIC CHIP	36PF 5% 50V	L1	1-428-222-11	COIL, AIR-CORE	
C64	1-125-691-11	DOUBLE LAYERS	0.022F 5.5V	L2	1-501-920-11	ANTENNA, FERRITE-ROD (MW/LW)	
C65	1-163-031-11	CERAMIC CHIP	0.01uF 50V	L3	1-406-545-11	COIL, AIR-CORE	
C66	1-163-031-11	CERAMIC CHIP	0.01uF 50V	L4	1-459-837-11	COIL (WITH CORE)	
C67	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	L5	1-406-489-11	COIL (OSC)	
C68	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V			< LIQUID CRYSTAL DISPLAY >	
C69	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	LCD50	1-801-771-11	DISPLAY PANEL, LIQUID CRYSTAL	
C70	1-163-205-00	CERAMIC CHIP	0.001uF 5% 50V			< DIODE >	
C71	1-163-251-11	CERAMIC CHIP	100PF 5% 50V	LD80	8-719-066-39	LED EB3804X-J300K	
C72	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	LD81	8-719-066-39	LED EB3804X-J300K	
C73	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	LD82	8-719-066-39	LED EB3804X-J300K	
		< FILTER >				< TRANSISTOR >	
CF1	1-578-677-21	FILTER, CRYSTAL		Q1	8-729-102-07	TRANSISTOR 2SC2223-F13	
CF2	1-579-632-41	FILTER, CERAMIC		Q2	8-729-102-07	TRANSISTOR 2SC2223-F13	
CF3	1-579-632-41	FILTER, CERAMIC		Q3	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< TRIMMER >		Q4	8-729-216-22	TRANSISTOR 2SA1162-G	
CT1	1-141-298-11	CAP, TRIMMER 30PF		Q5	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
CT2	1-141-298-11	CAP, TRIMMER 10PF		Q6	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
CT3	1-141-298-11	CAP, TRIMMER 10PF		Q50	8-729-216-22	TRANSISTOR 2SA1162-G	
CT4	1-141-298-11	CAP, TRIMMER 30PF		Q51	8-729-900-53	TRANSISTOR DTC114EK	
		< DIODE >		Q52	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D1	8-719-023-99	DIODE KV1563M-3		Q53	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D4	8-713-100-11	DIODE 1T362					
D5	8-713-100-11	DIODE 1T362					
D50	8-719-911-19	DIODE 1SS119-25					
D51	8-719-914-43	DIODE DAN202K					
D52	8-719-914-43	DIODE DAN202K (UK)					

MAIN

Ref. No.	Part No.	Description	Remark
< RESISTOR >			
R1	1-216-133-00	METAL CHIP 3.3M	5% 1/10W
R2	1-216-073-00	METAL CHIP 10K	5% 1/10W
R3	1-216-049-11	METAL GLAZE 1K	5% 1/10W
R4	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R5	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R6	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R7	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R8	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R9	1-216-041-00	METAL CHIP 470	5% 1/10W
R10	1-216-129-00	METAL CHIP 2.2M	5% 1/10W
R11	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R12	1-216-069-00	METAL CHIP 6.8K	5% 1/10W
R13	1-216-017-00	METAL GLAZE 47	5% 1/10W
R14	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R15	1-216-041-00	METAL CHIP 470	5% 1/10W
R16	1-216-073-00	METAL CHIP 10K	5% 1/10W
R17	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R50	1-216-073-00	METAL CHIP 10K	5% 1/10W
R51	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R52	1-216-073-00	METAL CHIP 10K	5% 1/10W
R53	1-216-073-00	METAL CHIP 10K	5% 1/10W
R54	1-216-001-00	METAL CHIP 10	5% 1/10W
R55	1-216-113-00	METAL CHIP 470K	5% 1/10W
R56	1-216-113-00	METAL CHIP 470K	5% 1/10W
R58	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R59	1-216-049-11	METAL GLAZE 1K	5% 1/10W
R60	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R61	1-216-073-00	METAL CHIP 10K	5% 1/10W
R62	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R63	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R64	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R65	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R66	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R67	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R68	1-216-017-00	METAL GLAZE 47	5% 1/10W
R69	1-216-017-00	METAL GLAZE 47	5% 1/10W
R70	1-216-017-00	METAL GLAZE 47	5% 1/10W
R71	1-216-017-00	METAL GLAZE 47	5% 1/10W
R72	1-216-234-00	METAL CHIP 33K	5% 1/8W
< SWITCH >			
S1	1-571-850-91	SWITCH, SLIDE (BRIGHT)	
S50	1-762-233-11	SWITCH, KEYBOARD (ENTER/CLOCK)	
S51	1-762-233-11	SWITCH, KEYBOARD (TUNING/TIME SET -)	
S52	1-762-233-11	SWITCH, KEYBOARD (TUNING/TIME SET +)	
S59	1-762-233-11	SWITCH, KEYBOARD (SNOOZE/SLEEP OFF)	
< TRANSFORMER >			
T1	1-404-790-11	TRANSFORMER, IF	

Ref. No.	Part No.	Description	Remark
< VARIABLE RESISTOR >			
VR1	1-225-441-41	RES, VAR, CARBON 50K (VOL)	
< VIBRATOR >			
X50	1-567-769-11	VIBRATOR, CRYSTAL (75kHz)	

MISCELLANEOUS			

SP1	1-503-616-11	SPEAKER	
△ T80	1-468-232-11	POWER UNIT (AEP)	
△ T80	1-468-233-11	POWER UNIT (UK)	

ACCESSORIES & PACKING MATERIALS			

	3-860-216-31	MANUAL, INSTRUCTION (ENGLISH,FRENCH, GERMAN,DUTCH,ITALIAN)	

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