

ICF-M410L

SERVICE MANUAL

AEP Model

Ver 1.0 2001.05



SPECIFICATIONS

Speaker: 7.7 cm (3¼ inches) 8 Ω

Power output: 200 mW (at 10 % harmonic distortion)

Output: Ⓜ (earphone) jack (ø3.5 mm minijack)

Power requirements: 4.5 V DC, three R6 (size AA) batteries

External power source: DC IN 4.5 V

Dimensions:

Approx. 205 × 104 × 40.5 mm (w/h/d)

(Approx. 8 1/3 × 4 1/8 × 1 5/8 inches) not incl. projecting parts and controls

Approx. 212 × 104 × 42.5 mm (w/h/d)

(Approx. 8 3/8 × 4 1/8 × 1 11/16 inches) incl. projecting parts and controls

Mass: Approx. 504 g (17.8 oz) incl. batteries

Design and specifications are subject to change without notice.

**FM STEREO/MW/LW
PLL SYNTHESIZED RADIO**

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Notes on chip component replacement

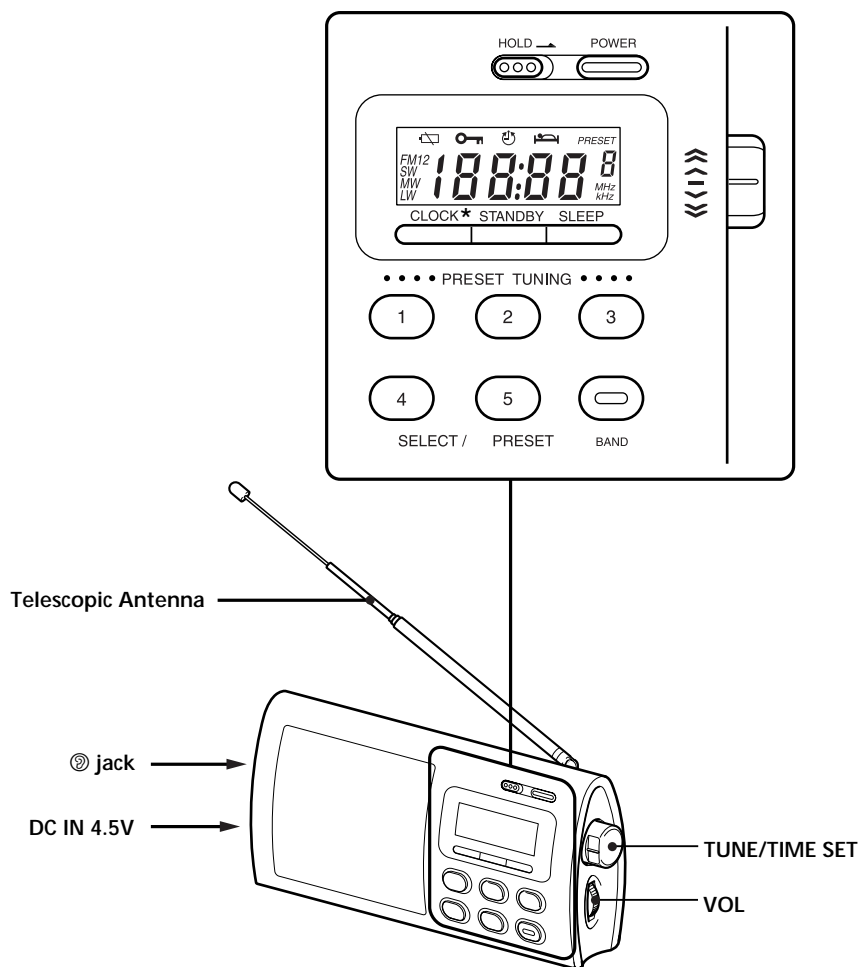
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SECTION 1 GENERAL

This section is extracted
from instruction manual.



Setting the Clock

The display will flash "0:00" when the batteries are installed or the AC power adaptor is plugged in for the first time.

The clock can be adjusted when the radio is off.

1 To stop flashing of the display, press **CLOCK** (mb/CLOCK for ICF-M410S).

2 While holding down **CLOCK**, turn **TUNE/TIME SET** to set the clock to the current time.

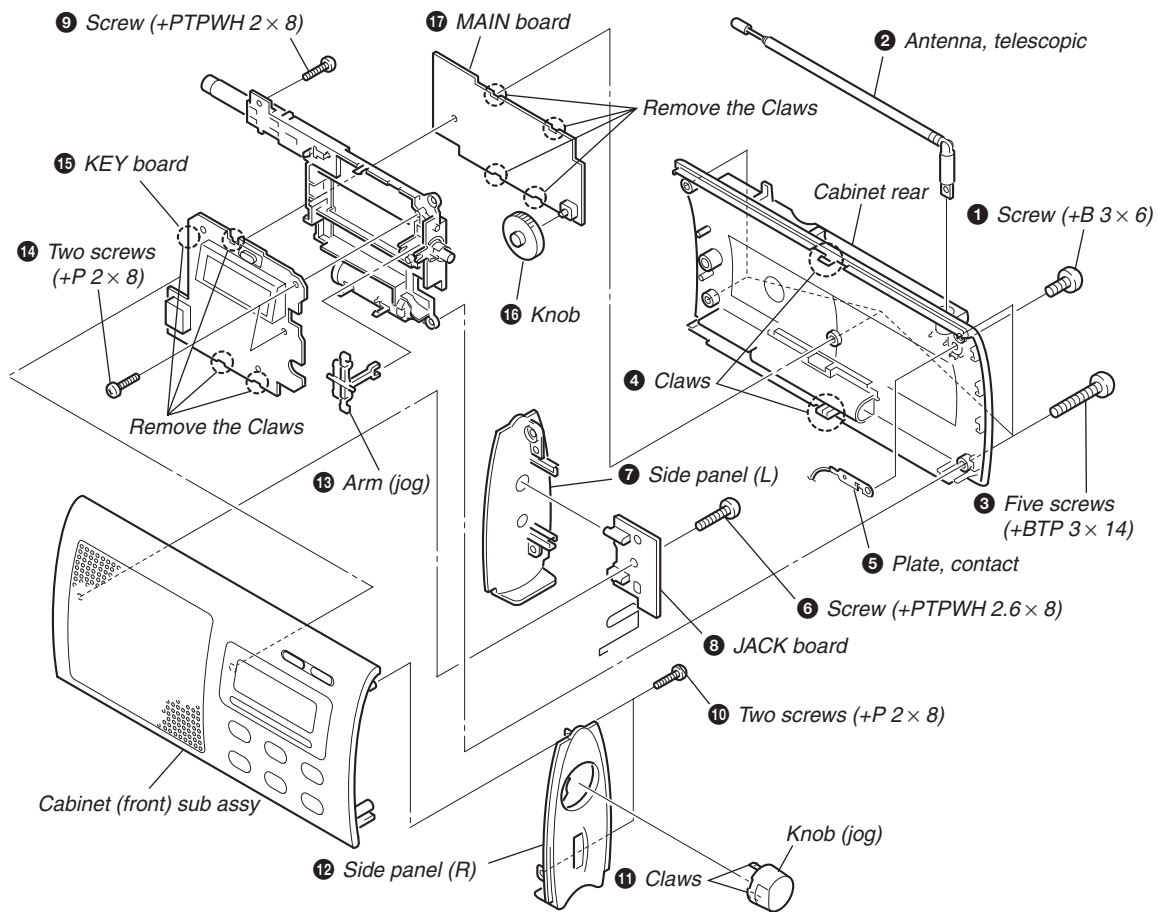
When you turn the control knob a little to \wedge or \vee , the clock digits move forward or back one by one, and when you turn the control knob further to \approx or \approx , the clock digits move rapidly.

When you release **CLOCK**, the clock starts operating, and ":" starts flashing.

24-hour system : "0:00" = midnight, "12:00" = noon

SECTION 2 DISASSEMBLY

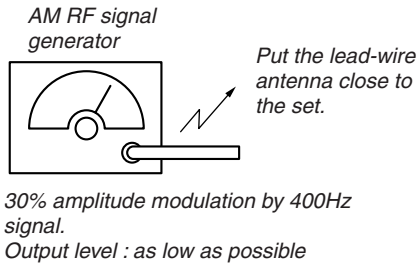
Note : Follow the disassembly procedure in the numerical order given.



SECTION 3 ELECTRICAL ADJUSTMENTS

MW/LW SECTION

BAND : AM



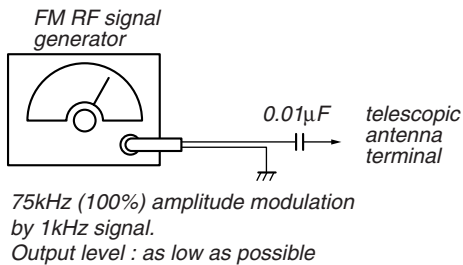
- Repeat the procedures in each adjustment several times for the maximum level meter indication.
- The frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM IF ADJUSTMENT	
Adjust for a maximum reading on level meter.	
T15	450 kHz

MW/LW FREQUENCY COVERAGE ADJUSTMENT		
Adjust for a maximum reading on level meter.		
LW	CT4	153 kHz
MW	L4	531 kHz

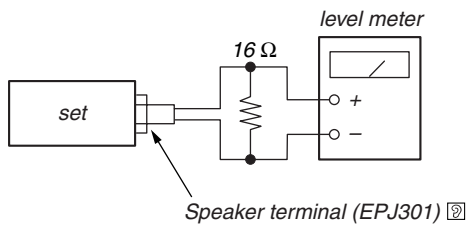
FM SECTION

BAND : FM

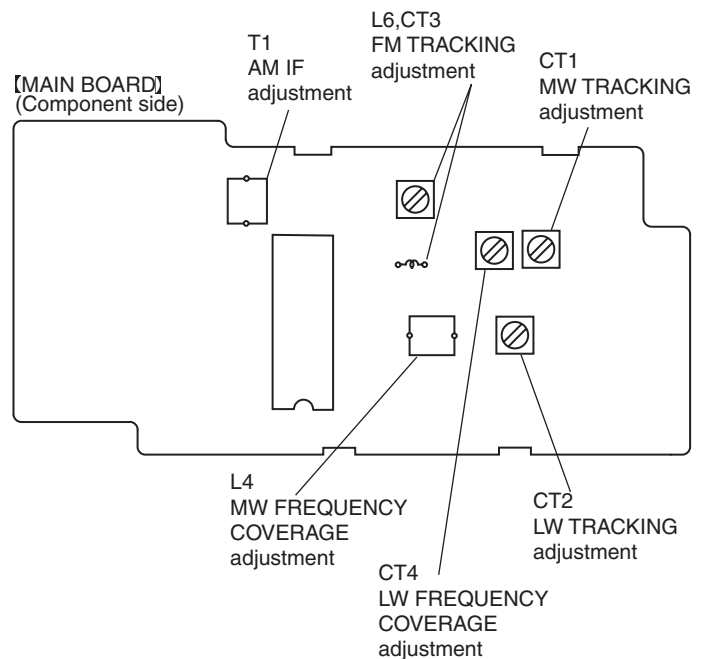


MW/LW TRACKING ADJUSTMENT		
Adjust for a maximum reading on level meter.		
LW	ANT102	162 kHz
	CT2	243 kHz
MW	ANT102	603 kHz
	CT1	1,404 kHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L6	87.5 MHz
CT3	108 MHz



[Adjustment Location : Main board] (Component side)



SECTION 4 DIAGRAMS

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. p: pF. 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.
- \triangle : internal component.
- : panel designation.

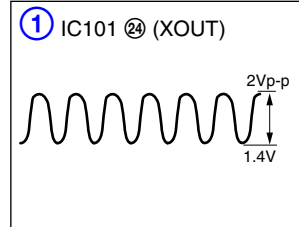
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

- — : B+ Line.
- : adjustment for repair.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
* : Impossible to measure
- Voltages are taken with a VOM (Input impedance $10\text{ M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
⇨ : FM
➡ : AM (LW/MW)

Note on Printed Wiring Board:

- : parts extracted from the component side.
- : Pattern from the side which enables seeing.

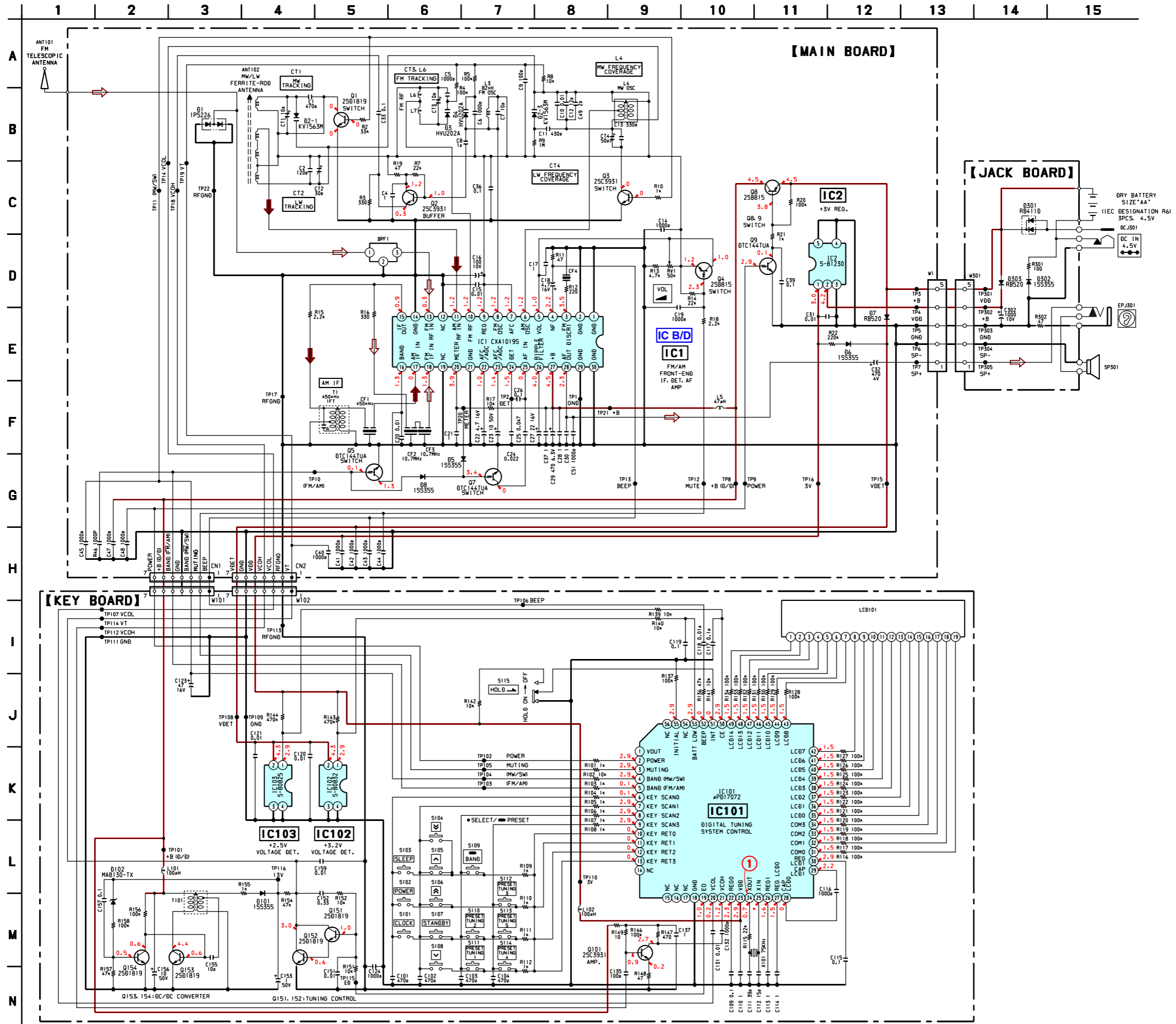
• Waveform



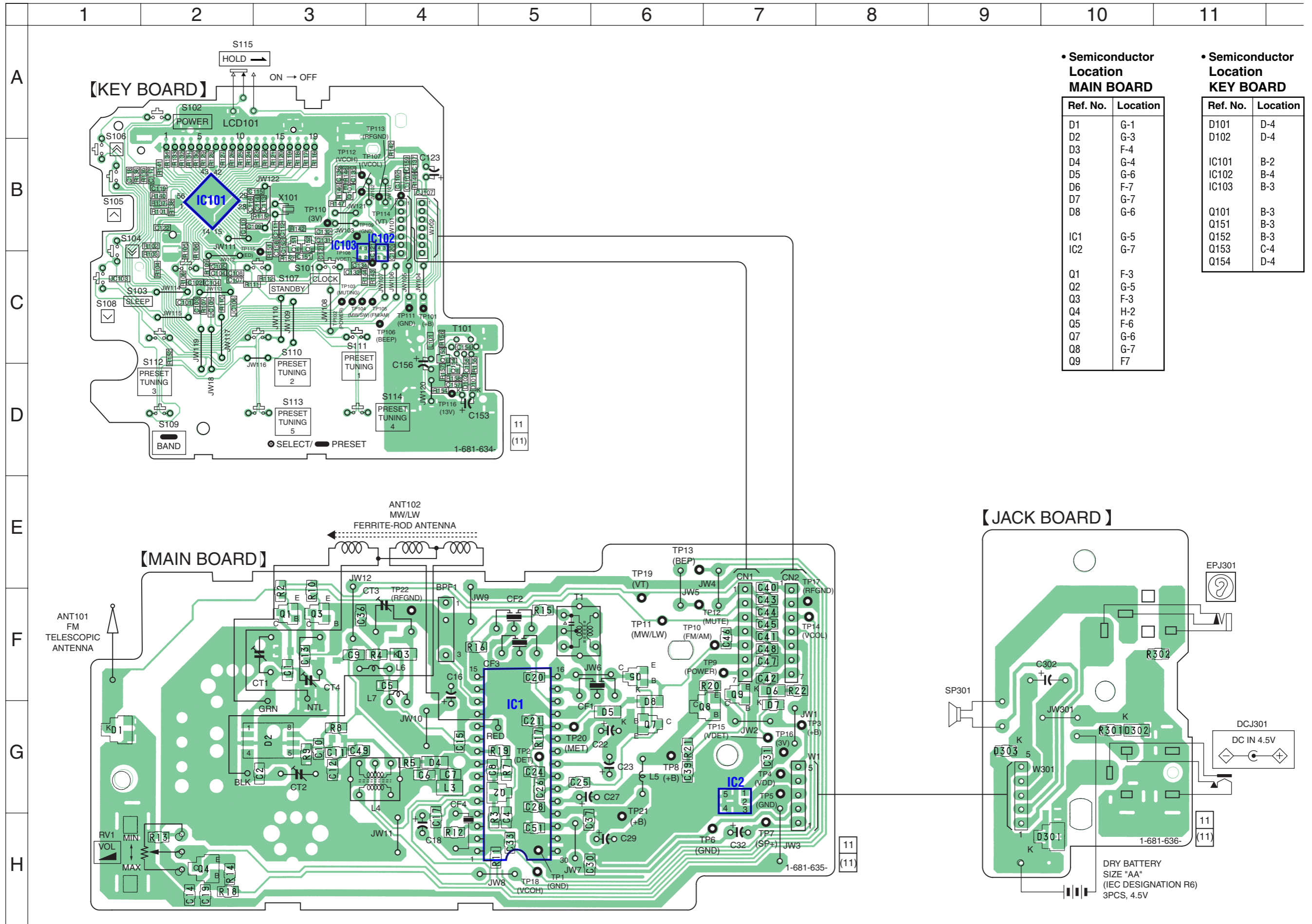
ICF-M410L

4-2. SCHEMATIC DIAGRAM

- See page 6 for Waveforms.
- See page 10 for IC Pin Function Description.
- See page 10 for IC Block Diagrams.



4-3. PRINTED WIRING BOARD



ICF-M410L

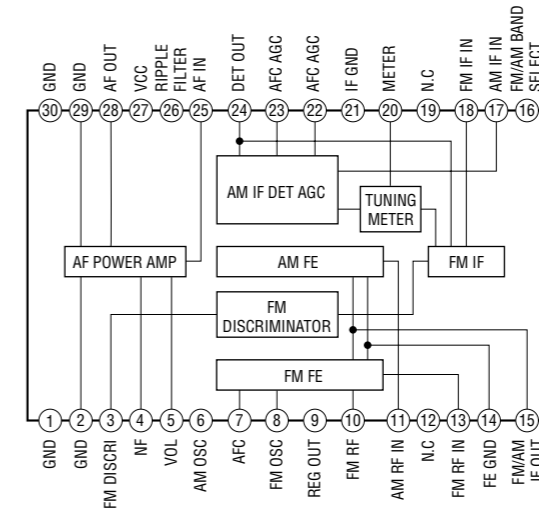
4-4. IC PIN FUNCTION DESCRIPTION

• IC101 uPD17072GB-565-1A7(DIGITAL TUNING SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Description
1	VOUT	O	For pull-up of INITIAL, L:CE = at L
2	POWER	O	Radio power control signal output.
3	MUTING	O	Muting signal output.
4	BAND(MW/SW)	O	“Band select signal output. L:MW, H:LW/SW”
5	BAND(FM/AM)	O	“Band select signal output. L:FM/TV, H:AM”
6	KEY SCAN0	O	Key source signal output.
7	KEY SCAN1	O	Key source signal output.
8	KEY SCAN2	O	Key source signal output.
9	KEY SCAN3	O	Key source signal output.
10	KEY RET0	I	Key return signal input.
11	KEY RET1	I	Key return signal input.
12	KEY RET2	I	Key return signal input.
13	KEY RET3	I	Key return signal input.
14	NC	—	Not used.
15	NC	—	Not used.
16	NC	—	Not used.
17	NC	—	Not used.
18	GND	—	Ground.
19	EO	O	Error signal output.
20	VCOL	I	AM VCO (local oscillation) frequency input.
21	VCOH	I	FM VCO (local oscillation) frequency input.
22	REG 0	O	Regulator for PLL output.
23	VDD	—	Power supply (+3V).
24	X OUT	O	Pin for connecting crystal resonator for system clock.
25	X IN	I	Pin for connecting crystal resonator for system clock.
26	REG 1	O	Regulator for PLL output.
27	REG LCD0	O	LCD drive voltage output.
28	CAP LCD0	—	Pin for capacitor connection for LCD drive voltage.
29	CAP LCD1	—	Pin for capacitor connection for LCD drive voltage.
30	REG LCD1	O	LCD drive voltage output.
31	COM 0	O	LCD common signal output.
32	COM 1	O	LCD common signal output.
33	COM 2	O	LCD common signal output.
34	COM 3	O	LCD common signal output.
35-49	LCD 0 - 14	O	LCD segment signal output.
50	CE	I	Chip select enable input.
51	INT	I	Hold input. L:ON
52	BEEP	O	BEEP signal output.
53	BAT LOW	I	Low voltage detect signal input.
54	NC	—	Not used.
55	INITIAL	I	Connected to L.
56	NC	—	Not used.

4-5. IC BLOCK DIAGRAM

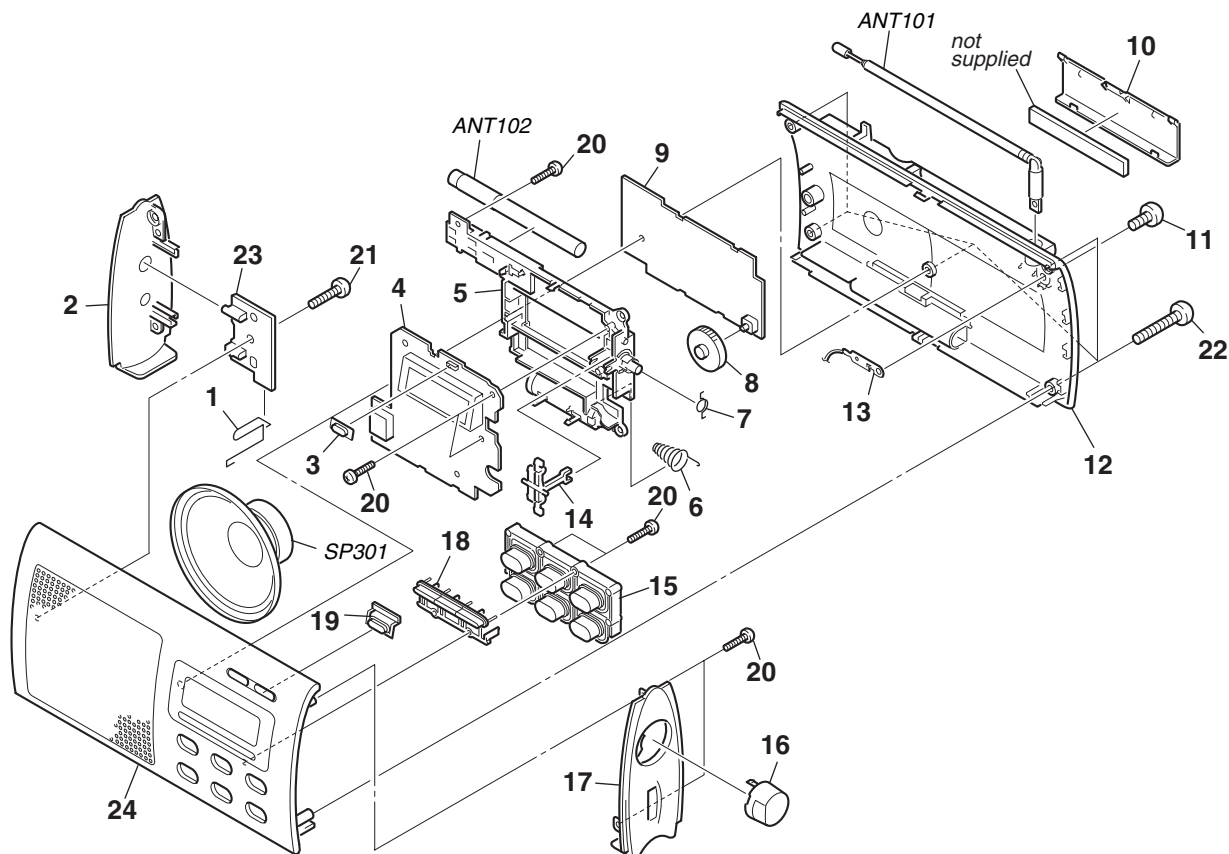
IC1 CXA1019S



SECTION 5 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- 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.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-228-706-01	TERMINAL (+), BATTERY		15	3-228-699-01	BUTTON (KEY)	
2	3-228-694-01	SIDE PANEL (L)		16	3-228-703-01	KNOB (JOG)	
3	3-228-700-01	KNOB (HOLD)		17	3-228-695-01	SIDE PANEL (R)	
* 4	A-3062-438-A	KEY BOARD, COMPLETE		18	3-228-698-01	BUTTON (PRESET)	
5	3-228-693-01	CHASSIS		19	3-228-701-01	BUTTON (POWER)	
6	3-228-707-01	TERMINAL (-), BATTERY		20	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
7	3-228-708-01	SPRING (JOG)		21	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
8	3-380-333-21	KNOB		22	7-685-549-14	SCREW +BTP 3X14 TYPE2 N-S	
* 9	A-3021-467-A	MAIN BOARD, COMPLETE		23	1-681-636-11	JACK BOARD	
10	3-228-696-01	BATTERY COVER		24	X-3380-863-1	CABINET (FRONT) SUB ASSY	
11	3-370-475-01	SCREW (NYLOCK +B 3X6)		ANT101	1-501-222-31	ANTENNA, TELESCOPIC	
12	3-228-692-01	CABINET REAR		ANT102	1-424-815-11	COIL, FERRITE-ROD ANTENNA	
13	3-228-709-01	PLATE, CONTACT		SP301	1-544-793-11	SPEAKER (7.7cm)	
14	3-228-704-01	ARM (JOG)					

**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, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- **CAPACITORS:**
uF: µF
- **RESISTORS**
All resistors are in ohms.
METAL: metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- **COILS**
uH: µH

- **SEMICONDUCTORS**
In each case, u: µ, for example:
uA...: µA... , uPA... , µPA... ,
uPB... , µPB... , uPC... , µPC... ,
uPD... , µPD...

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

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

Ref. No.	Part No.	Description	Remarks
	1-681-636-11	JACK BOARD *****	
		< CAPACITOR >	
C302	1-126-926-11	ELECT 1000uF	20.00% 10V
		< DIODE >	
D301	8-719-975-40	DIODE RB411D-T146	
D302	8-719-988-61	DIODE 1SS355TE-17	
D303	8-719-069-29	DIODE RB520S-30TE61	
		< JACK >	
DCJ301	1-580-681-21	JACK,DC(POLARITY UNIFIED TYPE)(DC IN 4.5V)	
EPJ301	1-563-836-21	JACK(⊙)	
		< RESISTOR >	
R301	1-216-809-11	METAL CHIP 100	5% 1/16W
R302	1-216-805-11	METAL CHIP 47	5% 1/16W

*	A-3062-438-A	KEY BOARD, COMPLETE *****	
	3-228-702-01	HOLDER (LCD)	
*	3-228-710-01	SHIELD CASE (LCD)	
*	3-228-711-01	SHIELD PLATE (A)	
*	3-230-978-01	SHIELD, PLATE (B)	
*	3-230-979-01	SHIELD, PLATE (C)	
		< CAPACITOR >	
C101	1-164-315-11	CERAMIC CHIP 470PF	5.00% 50V
C102	1-164-315-11	CERAMIC CHIP 470PF	5.00% 50V
C103	1-164-315-11	CERAMIC CHIP 470PF	5.00% 50V
C104	1-164-315-11	CERAMIC CHIP 470PF	5.00% 50V
C109	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C110	1-115-156-11	CERAMIC CHIP 1uF	10V
C111	1-162-922-11	CERAMIC CHIP 39PF	5.00% 50V
C112	1-162-917-11	CERAMIC CHIP 15PF	5% 50V
C113	1-115-156-11	CERAMIC CHIP 1uF	10V
C114	1-115-156-11	CERAMIC CHIP 1uF	10V
C115	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C116	1-115-416-11	CERAMIC CHIP 0.001uF	5.00% 25V
C117	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C118	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C119	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C120	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C121	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C123	1-124-224-11	ELECT	47uF 6.3V
C124	1-115-416-11	CERAMIC CHIP 0.001uF	5.00% 25V
C131	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V

Ref. No.	Part No.	Description	Remarks
C132	1-115-416-11	CERAMIC CHIP 0.001uF	5.00% 25V
C135	1-162-927-11	CERAMIC CHIP 100PF	5% 50V
C137	1-115-156-11	CERAMIC CHIP 1uF	10V
C151	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C152	1-128-934-11	CERAMIC CHIP 0.33uF	20% 10V
C153	1-124-255-11	ELECT	1uF 20% 50V
C155	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V
C156	1-124-227-61	ELECT	10uF 10V
C157	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C159	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
		< DIODE >	
D101	8-719-988-61	DIODE 1SS355TE-17	
D102	8-719-420-87	DIODE MA8130-TX	
		< IC >	
IC101	6-800-549-01	IC uPD17072GB-565-1A7	
IC102	8-759-489-98	IC S-80832ANNP-EDW-T2	
IC103	8-759-479-03	IC S-80825ANNP-EDN-T2	
		< JUMPER RESISTOR >	
JC101	1-216-864-11	METAL CHIP	0 5% 1/16W
JC102	1-216-864-11	METAL CHIP	0 5% 1/16W
JC103	1-216-864-11	METAL CHIP	0 5% 1/16W
JC104	1-216-864-11	METAL CHIP	0 5% 1/16W
JC105	1-216-864-11	METAL CHIP	0 5% 1/16W
JC106	1-216-864-11	METAL CHIP	0 5% 1/16W
JC107	1-216-864-11	METAL CHIP	0 5% 1/16W
		< COIL >	
L101	1-412-963-11	INDUCTOR	100uH
L102	1-412-963-11	INDUCTOR	100uH
		< LIQUID CRYSTAL DISPLAY >	
LCD101	1-804-264-11	DISPLAY PANEL, LIQUID CRYSTAL	
		< TRANSISTOR >	
Q101	8-729-423-52	TRANSISTOR	2SC3931-C-TX
Q151	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
Q152	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
Q153	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
Q154	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
		< RESISTOR >	
R101	1-216-821-11	METAL CHIP	1K 5% 1/16W
R102	1-216-833-11	METAL CHIP	10K 5% 1/16W
R103	1-216-821-11	METAL CHIP	1K 5% 1/16W
R104	1-216-821-11	METAL CHIP	1K 5% 1/16W
R105	1-216-821-11	METAL CHIP	1K 5% 1/16W

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R106	1-216-821-11	METAL CHIP	1K 5% 1/16W	S111	1-762-196-21	SWITCH, TACT(PRESET TUNING 1)	
R107	1-216-821-11	METAL CHIP	1K 5% 1/16W	S112	1-762-196-21	SWITCH, TACT(PRESET TUNING 3)	
R108	1-216-821-11	METAL CHIP	1K 5% 1/16W	S113	1-762-196-21	SWITCH, TACT(PRESET TUNING 5)	
R109	1-216-821-11	METAL CHIP	1K 5% 1/16W	S114	1-762-196-21	SWITCH, TACT(PRESET TUNING 4)	
R110	1-216-821-11	METAL CHIP	1K 5% 1/16W	S115	1-553-977-00	SWITCH, SLIDE(HOLD →)	
R111	1-216-821-11	METAL CHIP	1K 5% 1/16W			< TRANSFORMER >	
R112	1-216-821-11	METAL CHIP	1K 5% 1/16W	T101	1-449-138-11	TRANSFORMER, DC-DC CONVERTER	
R115	1-216-837-11	METAL CHIP	22K 5% 1/16W			< VIBRATOR >	
R116	1-216-845-11	METAL CHIP	100K 5% 1/16W	X101	1-567-769-11	VIBRATOR, CRYSTAL	75kHz
R117	1-216-845-11	METAL CHIP	100K 5% 1/16W			*****	
R118	1-216-845-11	METAL CHIP	100K 5% 1/16W	*	A-3021-467-A	MAIN BOARD, COMPLETE	*****
R119	1-216-845-11	METAL CHIP	100K 5% 1/16W			< FILTER >	
R120	1-216-845-11	METAL CHIP	100K 5% 1/16W	BPF1	1-236-022-11	FILTER, BAND PASS	
R121	1-216-845-11	METAL CHIP	100K 5% 1/16W			< CAPACITOR >	
R122	1-216-845-11	METAL CHIP	100K 5% 1/16W	C1	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
R123	1-216-845-11	METAL CHIP	100K 5% 1/16W	C2	1-162-928-11	CERAMIC CHIP	120PF 5% 50V
R124	1-216-845-11	METAL CHIP	100K 5% 1/16W	C4	1-115-156-11	CERAMIC CHIP	1uF 10V
R125	1-216-845-11	METAL CHIP	100K 5% 1/16W	C5	1-115-416-11	CERAMIC CHIP	0.001uF 5.00% 25V
R126	1-216-845-11	METAL CHIP	100K 5% 1/16W	C6	1-115-416-11	CERAMIC CHIP	0.001uF 5.00% 25V
R127	1-216-845-11	METAL CHIP	100K 5% 1/16W	C7	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V
R128	1-216-845-11	METAL CHIP	100K 5% 1/16W	C8	1-162-905-11	CERAMIC CHIP	1PF 0.25PF 50V
R129	1-216-845-11	METAL CHIP	100K 5% 1/16W	C9	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
R130	1-216-845-11	METAL CHIP	100K 5% 1/16W	C10	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
R131	1-216-845-11	METAL CHIP	100K 5% 1/16W	C11	1-164-393-11	CERAMIC CHIP	430PF 5.00% 50V
R132	1-216-845-11	METAL CHIP	100K 5% 1/16W	C12	1-162-916-11	CERAMIC CHIP	12PF 5% 50V
R133	1-216-845-11	METAL CHIP	100K 5% 1/16W	C13	1-164-391-11	CERAMIC CHIP	330PF 5% 50V
R134	1-216-845-11	METAL CHIP	100K 5% 1/16W	C14	1-115-416-11	CERAMIC CHIP	0.001uF 5.00% 25V
R136	1-216-841-11	METAL CHIP	47K 5% 1/16W	C15	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
R137	1-216-845-11	METAL CHIP	100K 5% 1/16W	C16	1-107-795-11	ELECT	100uF 4V
R139	1-216-833-11	METAL CHIP	10K 5% 1/16W	C17	1-115-156-11	CERAMIC CHIP	1uF 10V
R140	1-216-833-11	METAL CHIP	10K 5% 1/16W	C18	1-124-231-11	ELECT	4.7uF 20.00% 16V
R141	1-216-833-11	METAL CHIP	10K 5% 1/16W	C19	1-115-416-11	CERAMIC CHIP	0.001uF 5.00% 25V
R142	1-216-833-11	METAL CHIP	10K 5% 1/16W	C20	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
R143	1-216-853-11	METAL CHIP	470K 5% 1/16W	C21	1-115-156-11	CERAMIC CHIP	1uF 10V
R144	1-216-853-11	METAL CHIP	470K 5% 1/16W	C22	1-124-231-11	ELECT	4.7uF 20.00% 16V
R146	1-216-845-11	METAL CHIP	100K 5% 1/16W	C23	1-124-227-11	ELECT	10uF 10V
R147	1-216-817-11	METAL CHIP	470 5% 1/16W	C24	1-162-995-11	CERAMIC CHIP	0.022uF 50V
R148	1-216-805-11	METAL CHIP	47 5% 1/16W	C25	1-164-361-11	CERAMIC CHIP	0.047uF 16V
R149	1-216-797-11	METAL CHIP	10 5% 1/16W	C26	1-164-156-11	CERAMIC CHIP	0.1uF 25V
R151	1-216-833-11	METAL CHIP	10K 5% 1/16W	C27	1-124-228-11	ELECT	22uF 10V
R152	1-216-833-11	METAL CHIP	10K 5% 1/16W	C28	1-115-156-11	CERAMIC CHIP	1uF 10V
R154	1-216-841-11	METAL CHIP	47K 5% 1/16W	C29	1-104-655-11	ELECT	470uF 20.00% 6.3V
R155	1-216-821-11	METAL CHIP	1K 5% 1/16W	C30	1-115-156-11	CERAMIC CHIP	1uF 10V
R156	1-216-845-11	METAL CHIP	100K 5% 1/16W	C31	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
R157	1-216-841-11	METAL CHIP	47K 5% 1/16W	C32	1-126-518-11	ELECT	470uF 20.00% 4V
R158	1-216-845-11	METAL CHIP	100K 5% 1/16W	C33	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
		< SWITCH >		C36	1-164-156-11	CERAMIC CHIP	0.1uF 25V
S101	1-762-196-21	SWITCH, TACT(CLOCK)		C37	1-115-156-11	CERAMIC CHIP	1uF 10V
S102	1-572-596-11	SWITCH, KEY BOARD(POWER)		C39	1-164-156-11	CERAMIC CHIP	0.1uF 25V
S103	1-762-196-21	SWITCH, TACT(SLEEP)		C40	1-115-416-11	CERAMIC CHIP	0.001uF 5.00% 25V
S104	1-762-365-21	SWITCH, TACTILE(∨)		C41	1-115-416-11	CERAMIC CHIP	0.001uF 5.00% 25V
S105	1-762-365-21	SWITCH, TACTILE(∧)		C42	1-115-416-11	CERAMIC CHIP	0.001uF 5.00% 25V
S106	1-762-365-21	SWITCH, TACTILE(⤴)		C43	1-115-416-11	CERAMIC CHIP	0.001uF 5.00% 25V
S107	1-762-196-21	SWITCH, TACT(STANDBY)		C44	1-115-416-11	CERAMIC CHIP	0.001uF 5.00% 25V
S108	1-762-365-21	SWITCH, TACTILE(∨)					
S109	1-762-196-21	SWITCH, TACT(● BAND)					
S110	1-762-196-21	SWITCH, TACT(PRESET TUNING 2)					

ICF-M410L

MAIN

Ref. No.	Part No.	Description	Remarks
C45	1-115-416-11	CERAMIC CHIP 0.001uF 5.00%	25V
C46	1-115-416-11	CERAMIC CHIP 0.001uF 5.00%	25V
C47	1-115-416-11	CERAMIC CHIP 0.001uF 5.00%	25V
C48	1-115-416-11	CERAMIC CHIP 0.001uF 5.00%	25V
C49	1-162-907-11	CERAMIC CHIP 2PF	0.25PF 50V
C51	1-115-416-11	CERAMIC CHIP 0.001uF 5.00%	25V
< FILTER >			
CF1	1-578-677-21	FILTER, CRYSTAL	
CF2	1-577-600-11	FILTER, CERAMIC	
CF3	1-577-600-11	FILTER, CERAMIC	
CF4	1-577-600-11	FILTER, CERAMIC	
< CONNECTOR >			
* CN1	1-568-273-11	SOCKET, CONNECTOR 7P	
* CN2	1-568-273-11	SOCKET, CONNECTOR 7P	
< TRIMMER >			
CT1	1-141-601-21	CAP, ADJ	
CT2	1-141-604-11	CAP, ADJ	
CT3	1-141-601-21	CAP, ADJ	
CT4	1-141-622-11	CAP, ADJ 50PF	
< DIODE >			
D1	8-719-062-51	DIODE 1PS226-115	
D2	8-719-023-99	DIODE KV1563MTL-2,3	
D3	8-719-084-67	DIODE HVU202ATRU	
D4	8-719-084-67	DIODE HVU202ATRU	
D5	8-719-988-61	DIODE 1SS355TE-17	
D6	8-719-988-61	DIODE 1SS355TE-17	
D7	8-719-069-29	DIODE RB520S-30TE61	
D8	8-719-988-61	DIODE 1SS355TE-17	
< IC >			
IC1	8-752-055-05	IC CXA1019S	
IC2	8-759-198-63	IC S-81230SG-QB-T1	
< COIL >			
L3	1-414-690-11	INDUCTOR 82nH	
L4	1-406-485-11	COIL (OSC)	
L5	1-414-187-11	INDUCTOR 47uH	
L6	1-406-540-11	COIL, AIR-CORE	
L7	1-428-290-11	COIL, AIR-CORE	
< TRANSISTOR >			
Q1	8-729-402-32	TRANSISTOR 2SD1819A-R-TX	
Q2	8-729-423-52	TRANSISTOR 2SC3931-C-TX	
Q3	8-729-402-32	TRANSISTOR 2SD1819A-R-TX	
Q4	8-729-800-71	TRANSISTOR 2SB815B6B7-TA	
Q5	8-729-029-15	TRANSISTOR DTC144TUA-T106	
Q7	8-729-029-15	TRANSISTOR DTC144TUA-T106	
Q8	8-729-800-71	TRANSISTOR 2SB815B6B7-TA	
Q9	8-729-029-15	TRANSISTOR DTC144TUA-T106	

Ref. No.	Part No.	Description	Remarks
< RESISTOR >			
R2	1-216-839-11	METAL CHIP 33K	5% 1/16W
R3	1-216-815-11	METAL CHIP 330	5% 1/16W
R4	1-216-845-11	METAL CHIP 100K	5% 1/16W
R5	1-216-845-11	METAL CHIP 100K	5% 1/16W
R7	1-216-837-11	METAL CHIP 22K	5% 1/16W
R8	1-216-833-11	METAL CHIP 10K	5% 1/16W
R9	1-216-857-11	METAL CHIP 1M	5% 1/16W
R10	1-216-821-11	METAL CHIP 1K	5% 1/16W
R11	1-216-805-11	METAL CHIP 47	5% 1/16W
R12	1-216-813-11	METAL CHIP 220	5% 1/16W
R13	1-216-841-11	METAL CHIP 4.7K	5% 1/16W
R14	1-216-837-11	METAL CHIP 22K	5% 1/16W
R15	1-216-825-11	METAL CHIP 2.2K	5% 1/16W
R16	1-216-815-11	METAL CHIP 330	5% 1/16W
R17	1-216-833-11	METAL CHIP 10K	5% 1/16W
R18	1-216-825-11	METAL CHIP 2.2K	5% 1/16W
R19	1-216-805-11	METAL CHIP 47	5% 1/16W
R20	1-216-845-11	METAL CHIP 100K	5% 1/16W
R21	1-216-821-11	METAL CHIP 1K	5% 1/16W
R22	1-216-849-11	METAL CHIP 220K	5% 1/16W
< VARIABLE RESISTOR >			
RV1	1-223-450-11	RES, VAR, CARBON 50K(VOL ▲)	
< TRANSFORMER >			
T1	1-404-902-11	TRANSFORMER, IF	

MISCELLANEOUS			

ANT101	1-501-222-31	ANTENNA, TELESCOPIC	
ANT102	1-424-815-11	COIL, FERRITE-ROD ANTENNA	
SP301	1-544-793-11	SPEAKER (7.7cm)	
ACCESSORIES & PACKING MATERIALS			

3-229-096-11	MANUAL, INSTRUCTION	(ENGLISH, FRENCH, SPANISH, POLISH)	
3-229-096-21	MANUAL, INSTRUCTION	(GERMAN, DUTCH, SWEDISH, ITALIAN, FINNISH)	

MEMO

