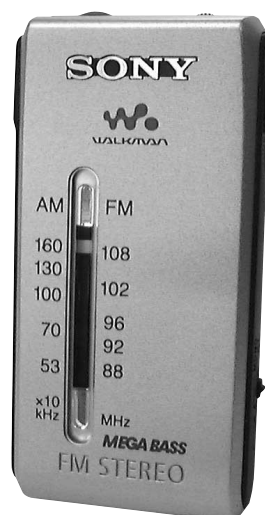


SRF-S84

SERVICE MANUAL

Ver 1.0 2002.02



*E Model
Australian Model
Chinese Model*

SPECIFICATIONS

Frequency range

FM: 87.5-108 MHz

AM: 530 -1605kHz

Output

⌚ (stereo earphones) jack (Ø3.5mm stereo minijack) load impedance 16Ω

Power output

3.6mW + 3.6mW (at 10% harmonic distortion)

Power requirements

1.5 V DC, one R03 (size AAA)

Dimensions

Approx. 39.5 × 78.5 × 16.5 mm (w / h / d) (Approx. 1⁹/₁₆ × 3¹/₈ × ²¹/₃₂ inches)
not incl. projecting parts and controls

Mass Approx.

61.2g (2.16 oz) incl. battery and stereo earphones

Accessories supplied

stereo earphones (1)

Design and specifications are subject to change without notice

FM STEREO/AM RADIO

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Flexible Circuit Board Repairing

- Keep the temperature of the 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.

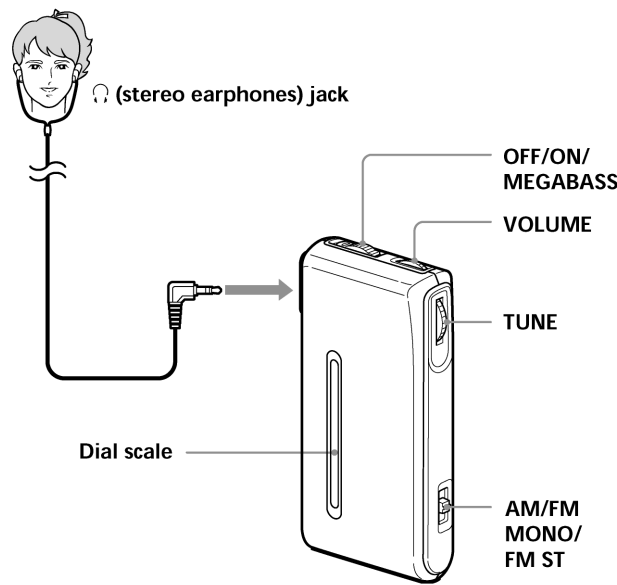
Notes on chip component replacement

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

SECTION 1
GENERAL

This section is extracted from instruction manual.

LOCATION AND FUNCTION OF CONTROLS



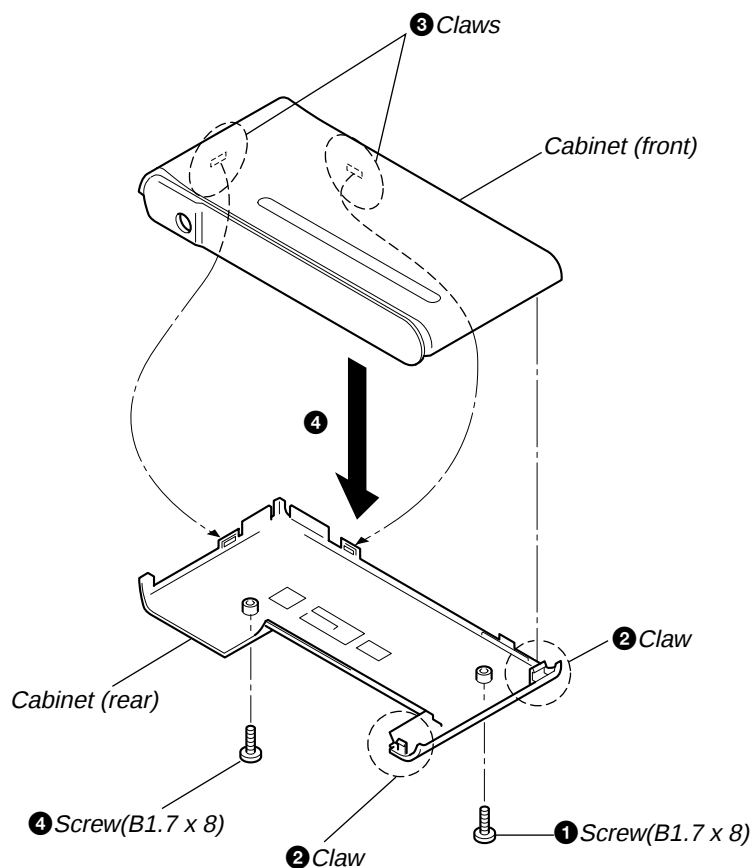
SECTION 2 DISASSEMBLY

- The equipment can be removed using the following procedure.

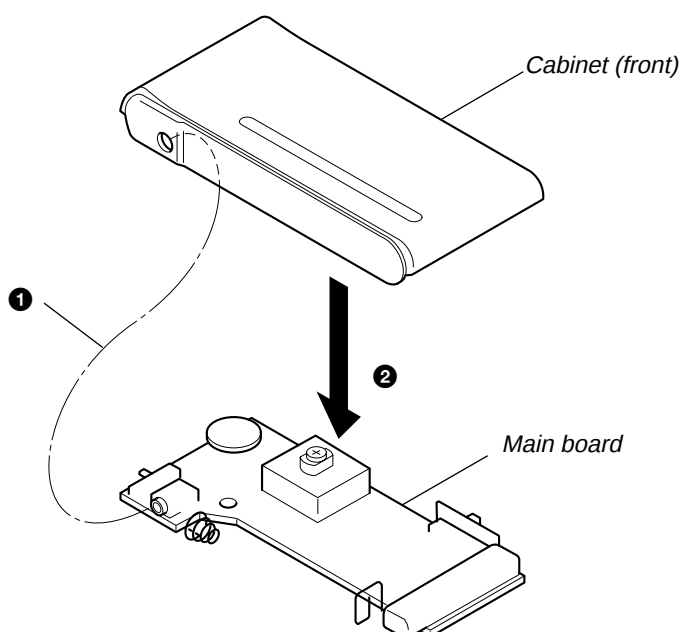
Set → Cabinet (rear) → Main board

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

2-1. CABINET (REAR)



2-2. MAIN BOARD

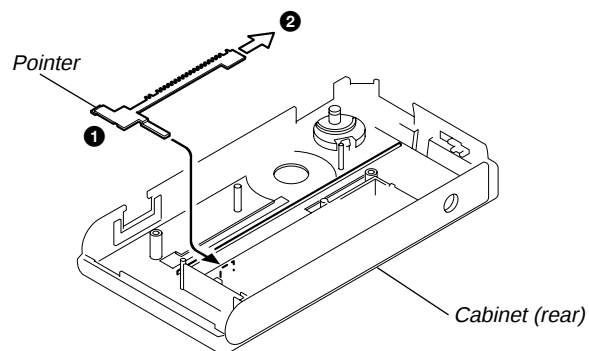


SECTION 3

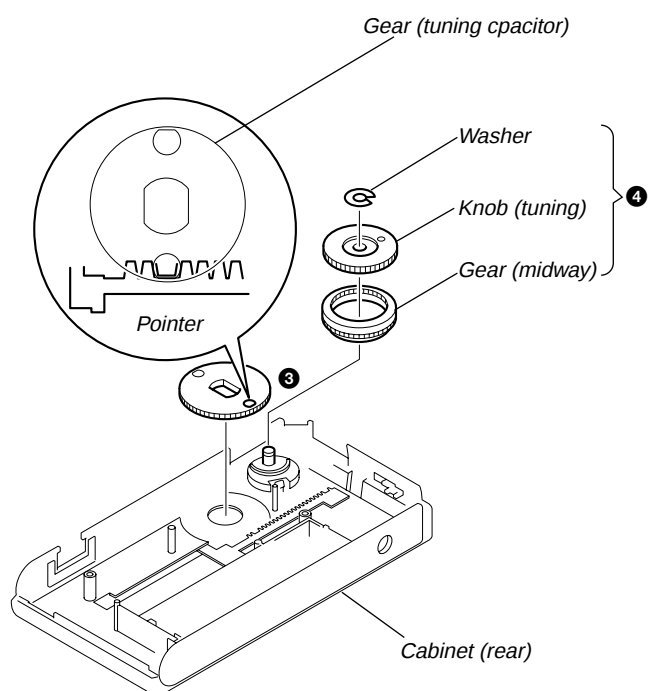
DIAL POINTER INSTALLATION

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

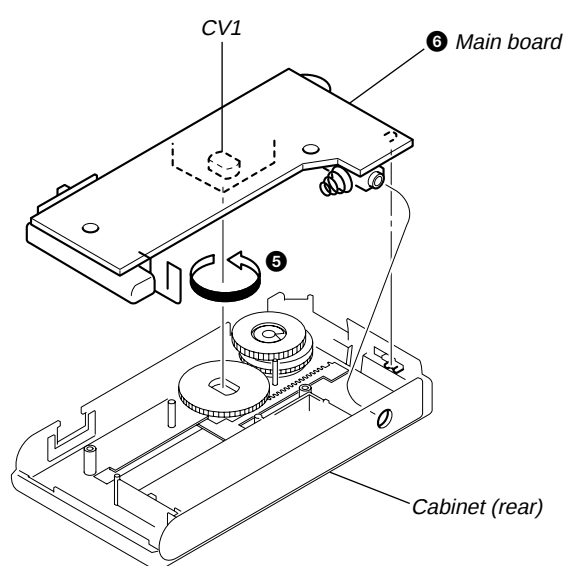
- ❶ Insert the pointer into the cabinet (rear).
- ❷ Slide the pointer to arrow direction.



- ❸ Install the gear (tuning capacitor), and engage with pointer as a figure.
- ❹ Install the gear (midway) and the knob (tuning), and fasten it with washer.



- ❺ Turn the CV1 in a direction as a figure.
- ❻ Install the main board.



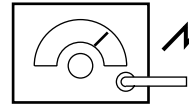
SECTION 4
ADJUSTMENTS

TUNER SECTION 0dB = 1μV

AM Section

Band : AM
Volume : MAX

AM RF signal generator
Put the lead-wire antenna close to the set.



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

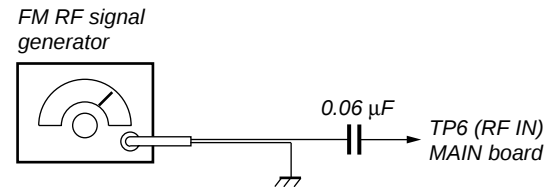
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	520kHz
CT4	1,650kHz

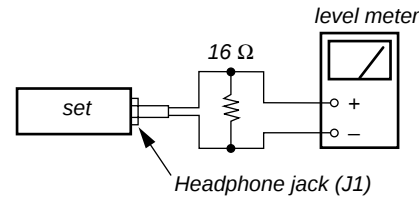
AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L5	520kHz
CT3	1,650kHz

FM Section

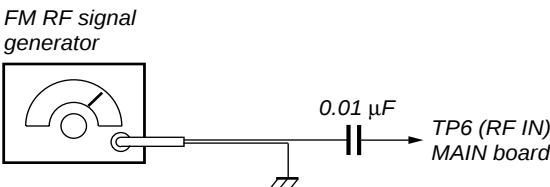
Band : FM
Volume : MAX



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



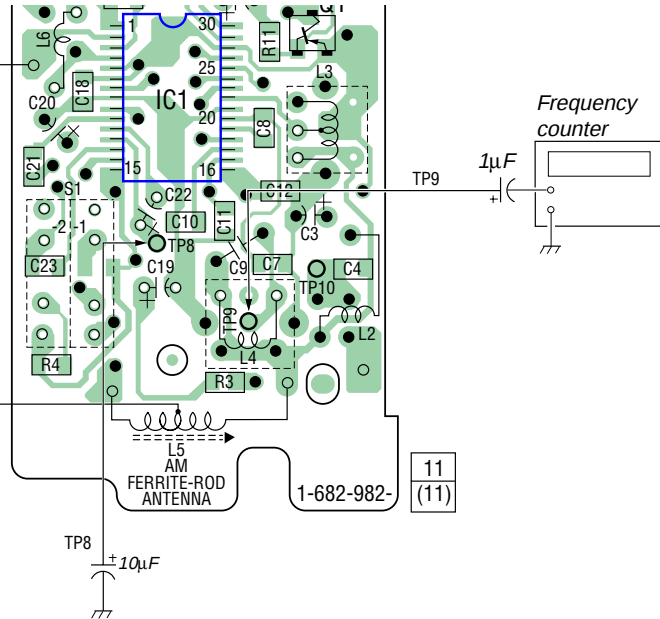
FM VCO Adjustment
Procedure :



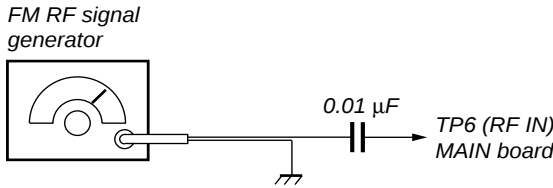
Carrier frequency : 98MHz
Modulation : no modulation
Output level : 100dB μV(100mV)

1. Connect the frequency counter to TP9 as shown the figure.
2. Turn the set to 98MHz.
3. Adjust L4 for 38kHz reading on frequency counter.
Standard Value : 37.95 –38.05kHz

Connect Location :
[MAIN BOARD] (SIDE B)



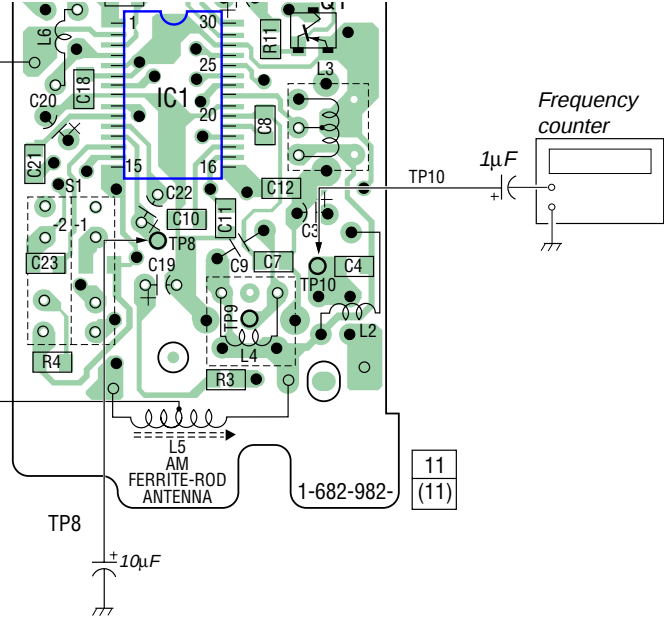
2nd OSC Adjustment
Procedure :



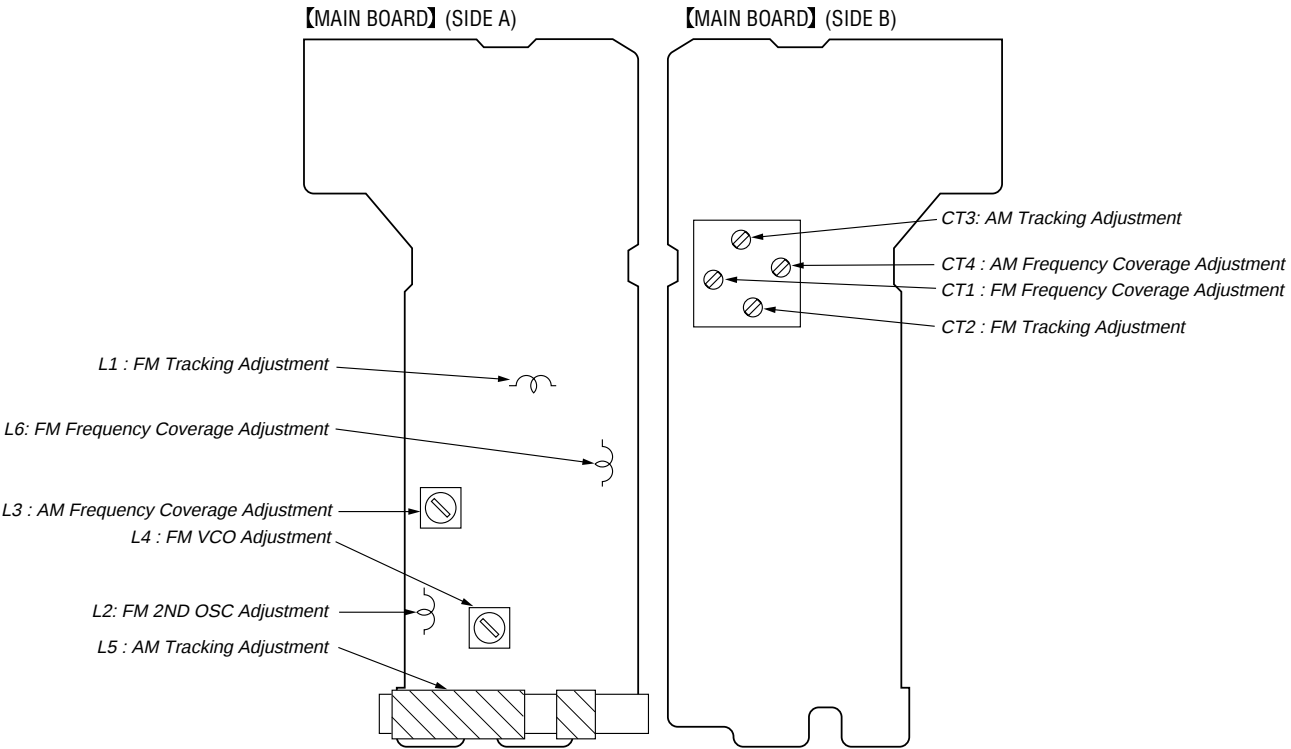
Carrier frequency : 98MHz
Modulation : no modulation
Output level : 100dB μV(100mV)

1. Connect the frequency counter to TP10 as shown the figure.
2. Turn the set to 98MHz.
3. Adjust L2 for 57.1MHz reading on frequency counter.
Standard Value : 56.85 –57.35MHz

Connect Location :
[MAIN BOARD] (SIDE B)

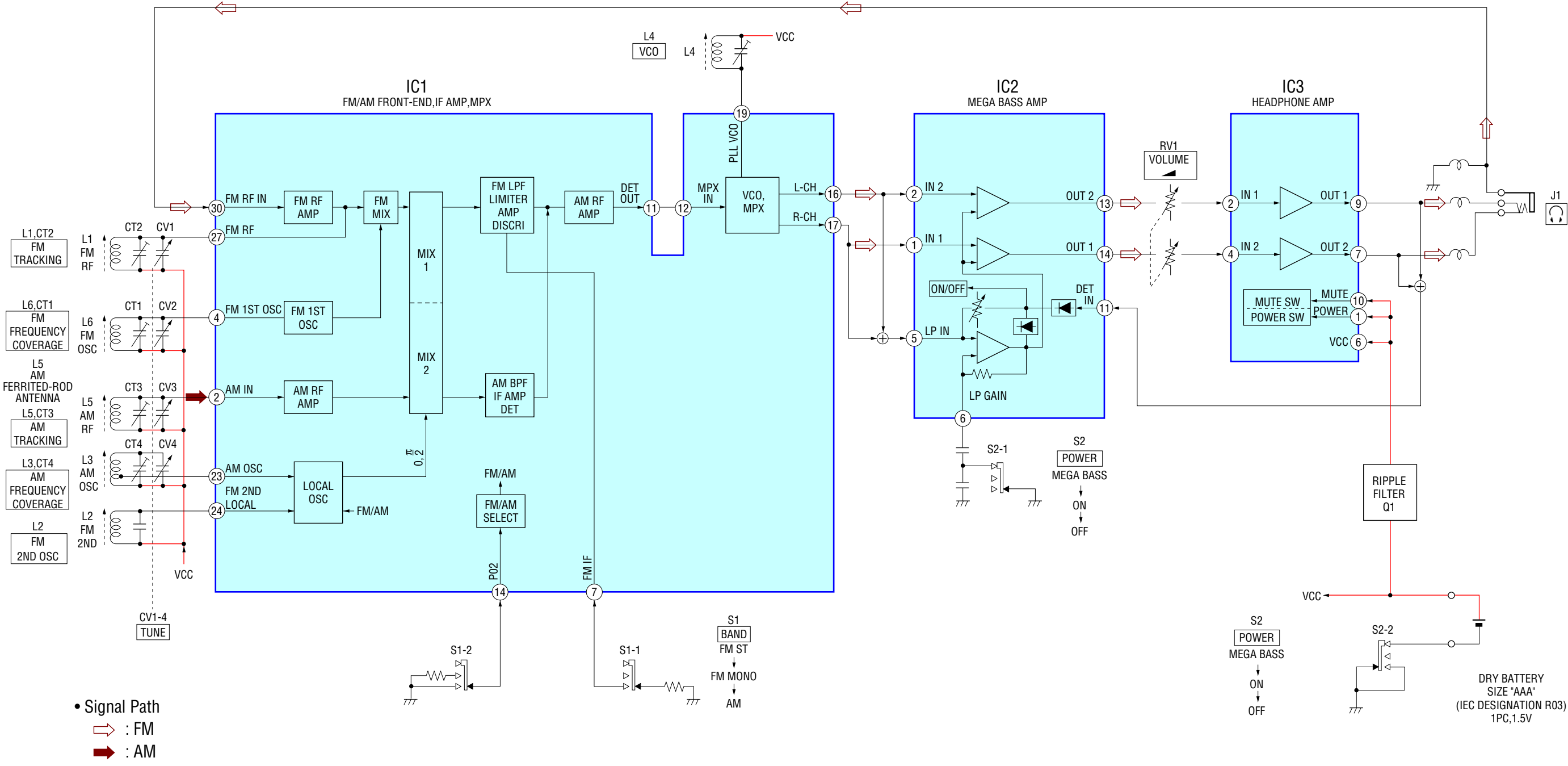


Adjustment Location :

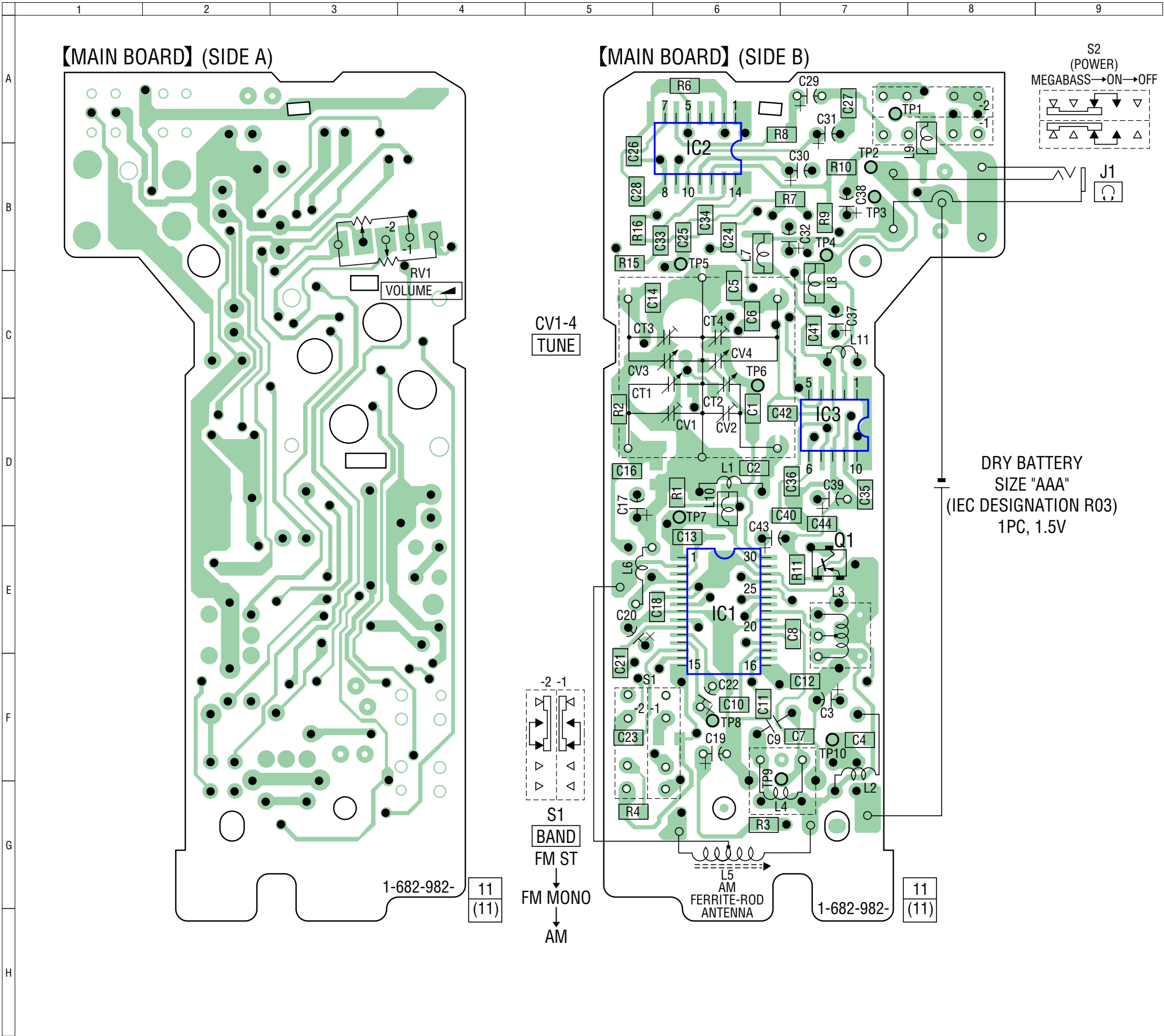


SECTION 5
DIAGRAMS

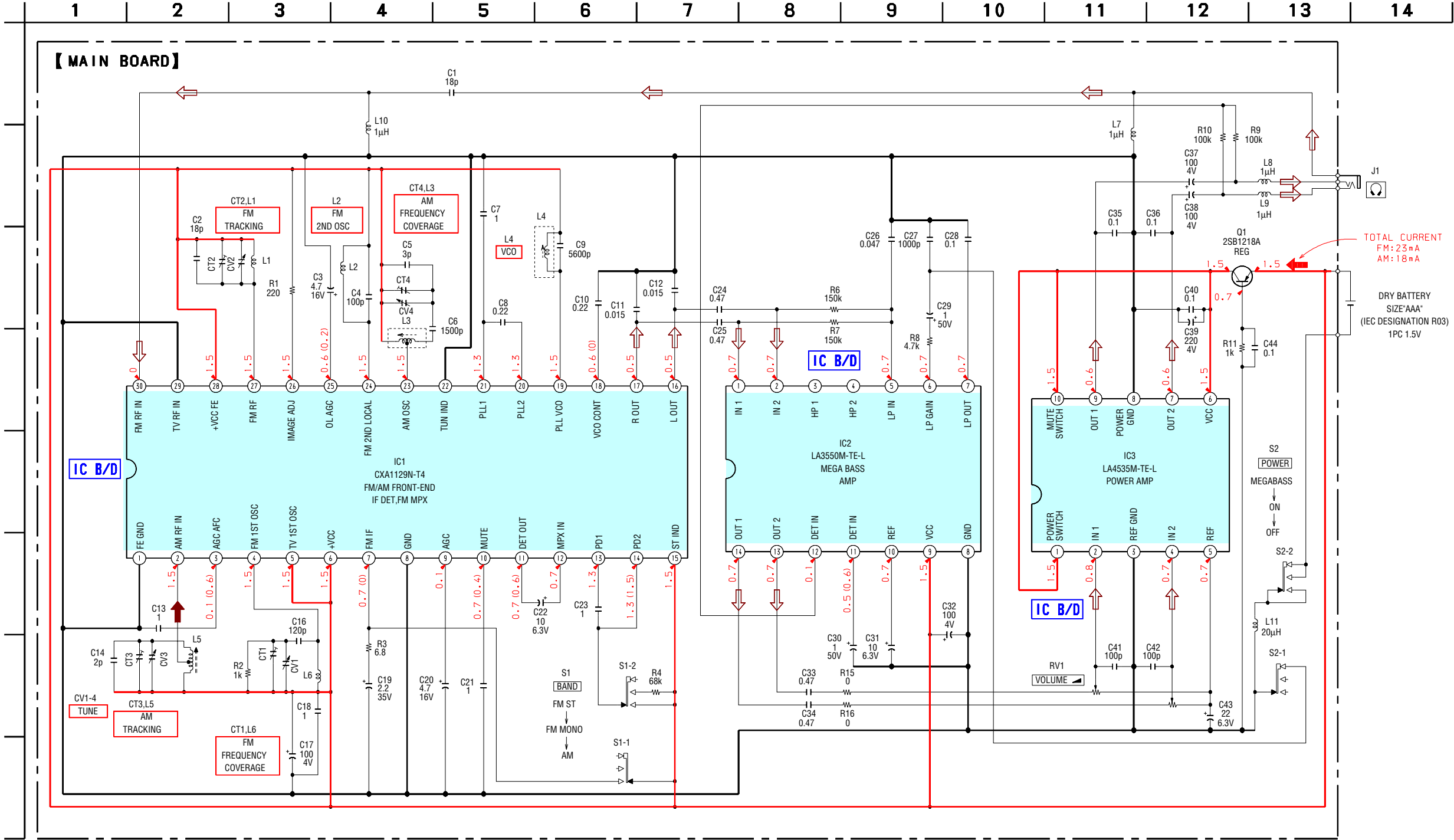
5-1. BLOCK DIAGRAMS



5-2. PRINTED WIRING BOARDS



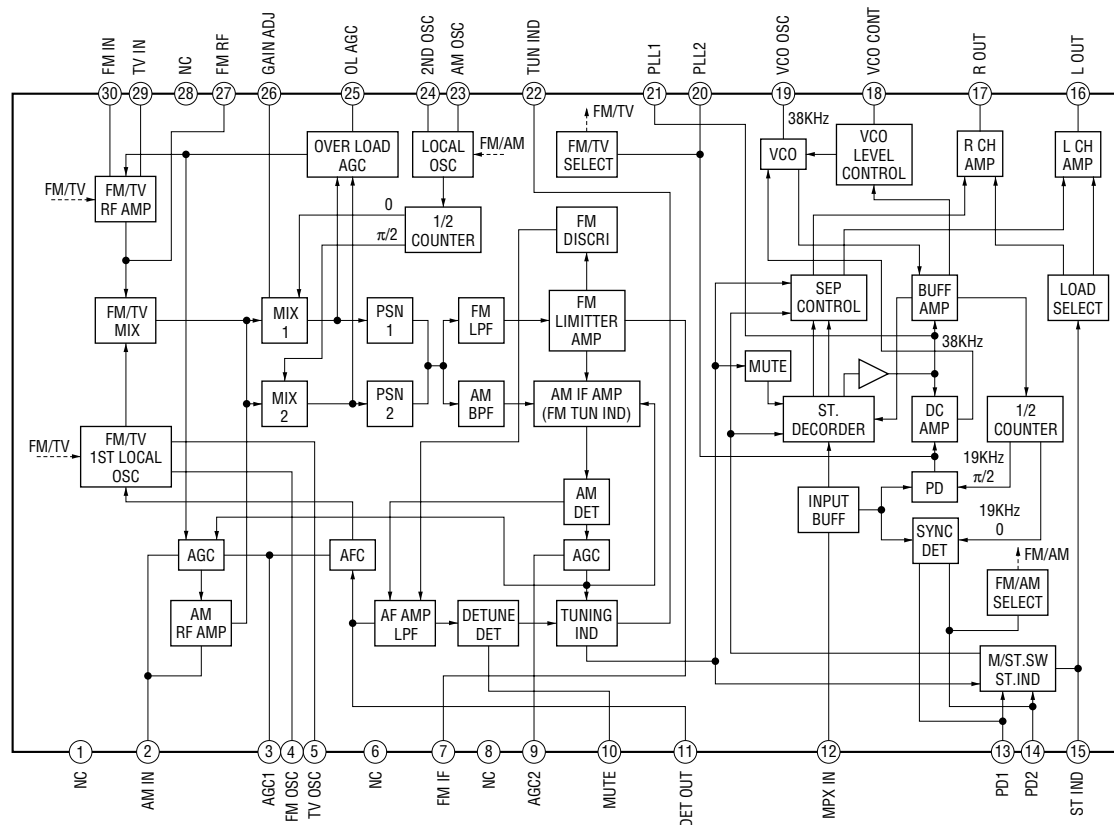
5-3. SCHEMATIC DIAGRAM



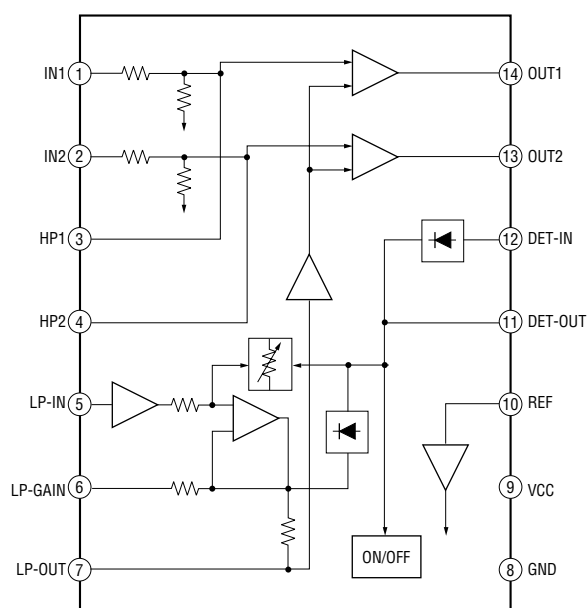
- Note:**
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
 - — : B+ Line.
 - : adjustment for repair.
 - Power voltage is dc 1.5 V and fed with regulated dc power supply from battery terminal.
 - Voltages are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
() : AM
 - Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
 - Signal path.
→ : FM
→ : AM

IC BLOCK DIAGRAMS

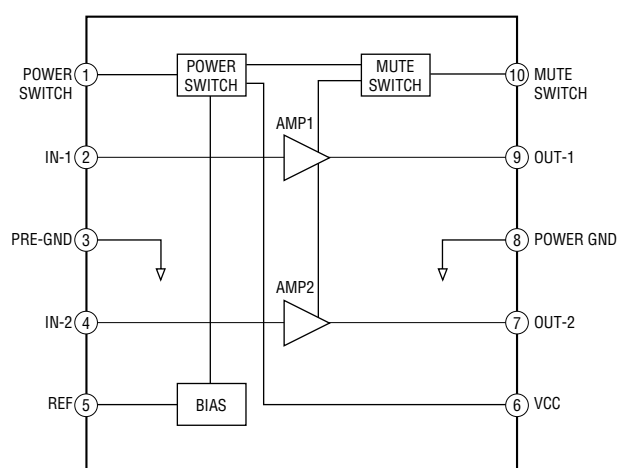
IC1 CXA1129N-T4



IC2 LA3550M-TE-L



IC3 LA4535M-TE-L



SECTION 6
EXPLODED VIEW

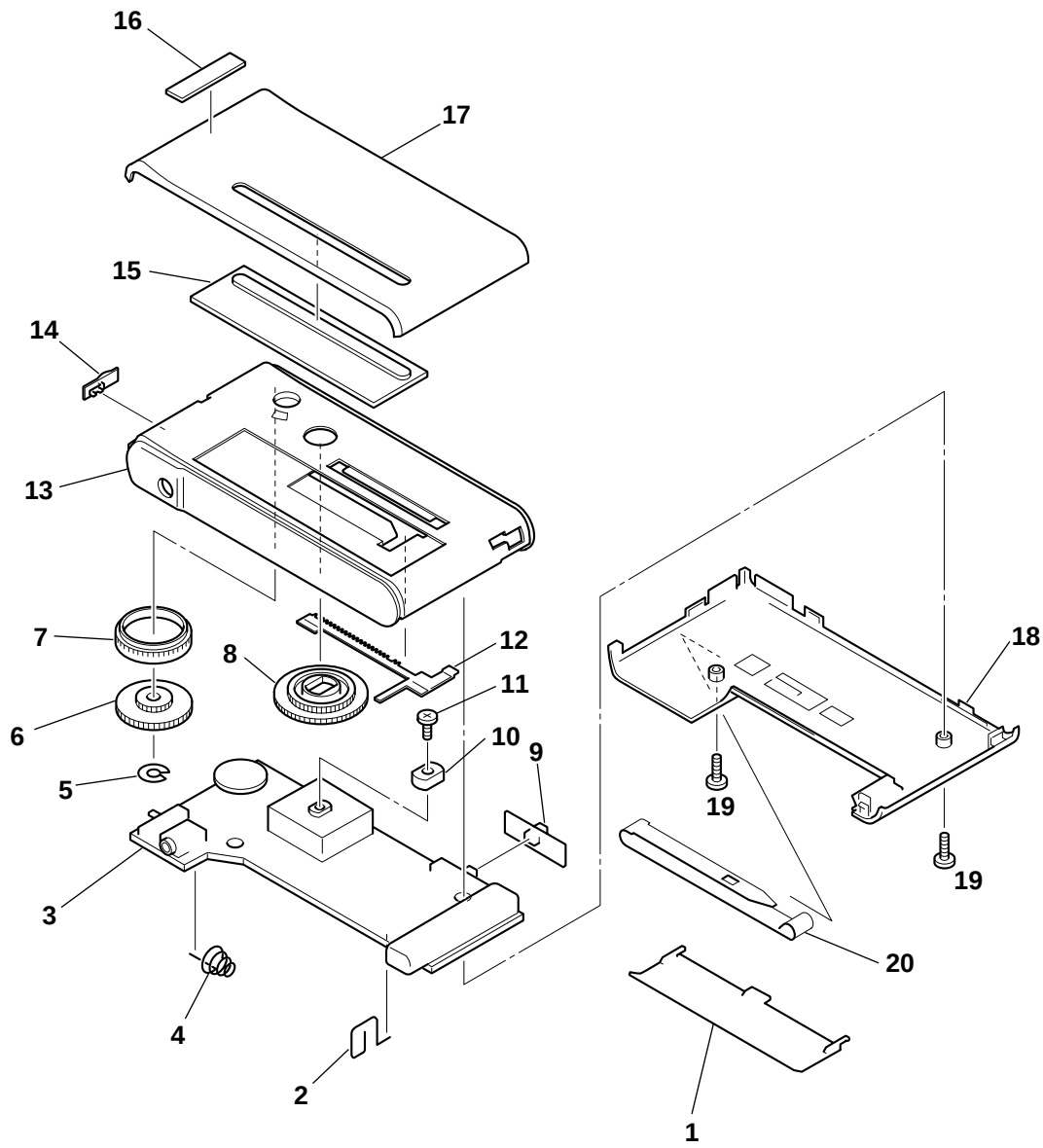
NOTE :

- -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.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.

- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) . . . (RED)

↑ ↑
Parts color Cabinets color

- Abbreviation
AUS : Australian
CH : Chinese
TW : Taiwan



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-236-173-01	LID, BATTERY CASE		12	3-236-175-01	POINTER	
2	3-236-180-01	TERMINAL (+), BATTERY		13	3-236-171-01	CABINET (FRONT)	
* 3	A-3021-741-A	MAIN BOARD, COMPLETE		14	3-236-176-01	KNOB (POWER)	
4	3-236-181-01	TERMINAL (-), BATTERY		15	3-236-178-01	PLATE, TRANSPARENT	
5	3-238-306-01	WASHER		16	3-236-179-01	EMBLEM (NO.3), SONY	
6	3-919-915-02	KNOB (TUNING)		17	3-236-174-21	PANEL, FRONT...(BLUE)	
7	3-919-918-01	GEAR (MIDWAY)		17	3-236-174-41	PANEL, FRONT...(GOLD)	
8	3-919-919-01	GEAR (TUNING CAPACITOR)		18	3-236-172-11	CABINET (REAR) (AUS,CH,TW)	
9	3-236-177-01	KNOB (BAND)		18	3-236-172-21	CABINET (REAR) (E)	
10	3-919-920-02	ADAPTOR		19	3-318-203-31	SCREW (B1.7X8), TAPPING	
11	3-880-990-00	SCREW (1.7X3),FLAT,(+) SPECIAL		20	3-918-543-11	CLIP	

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.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE :Metal oxide-film resistor
F : nonflammable
- Items marked “ * ”are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA.... : μ A.... , uPA.... : μ PA....
uPB.... : μ PB.... , uPC.... : μ PC....
uPD.... : μ PD....
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
AUS : Australian
CH : Chinese
TW : Taiwan

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

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
*	A-3021-741-A	MAIN BOARD, COMPLETE *****					C39	1-124-434-00	ELECT	220uF	20%	4V	
							C40	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
	3-240-356-01	SHEET, ADHESIVE					C41	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
		<CAPACITOR>					C42	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
							C43	1-126-153-11	ELECT	22uF	20%	6.3V	
							C44	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C1	1-162-918-11	CERAMIC CHIP	18PF	5%	50V								
C2	1-162-918-11	CERAMIC CHIP	18PF	5%	50V								
C3	1-124-259-11	ELECT	4.7uF	20%	16V								
C4	1-162-927-11	CERAMIC CHIP	100PF	5%	50V								
C5	1-162-934-11	CERAMIC CHIP	3PF	0.25PF	50V								
C6	1-164-672-11	CERAMIC CHIP	1500PF	5%	16V								
C7	1-115-156-11	CERAMIC CHIP	1uF		10V								
C8	1-165-128-11	CERAMIC CHIP	0.22uF		16V								
C9	1-136-683-11	FILM	0.0056uF	5%	100V								
C10	1-165-128-11	CERAMIC CHIP	0.22uF		16V								
C11	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V								
C12	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V								
C13	1-115-156-11	CERAMIC CHIP	1uF		10V								
C14	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V								
C16	1-162-928-11	CERAMIC CHIP	120PF	5%	50V								
C17	1-124-584-00	ELECT	100uF	20%	10V								
C18	1-115-156-11	CERAMIC CHIP	1uF		10V								
C19	1-124-257-00	ELECT	2.2uF	20%	50V								
C20	1-124-259-11	ELECT	4.7uF	20%	16V								
C21	1-115-156-11	CERAMIC CHIP	1uF		10V								
C22	1-126-157-11	ELECT	10uF	20%	16V								
C23	1-115-156-11	CERAMIC CHIP	1uF		10V								
C24	1-113-619-11	CERAMIC CHIP	0.47uF		10V								
C25	1-113-619-11	CERAMIC CHIP	0.47uF		10V								
C26	1-164-361-11	CERAMIC CHIP	0.047uF		16V								
C27	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V								
C28	1-164-156-11	CERAMIC CHIP	0.1uF		25V								
C29	1-104-942-11	ELECT	1uF	20%	50V								
C30	1-104-942-11	ELECT	1uF	20%	50V								
C31	1-126-157-11	ELECT	10uF	20%	16V								
C32	1-124-584-00	ELECT	100uF	20%	10V								
C33	1-113-619-11	CERAMIC CHIP	0.47uF		10V								
C34	1-113-619-11	CERAMIC CHIP	0.47uF		10V								
C35	1-164-156-11	CERAMIC CHIP	0.1uF		25V								
C36	1-164-156-11	CERAMIC CHIP	0.1uF		25V								
C37	1-124-584-00	ELECT	100uF	20%	10V								
C38	1-124-584-00	ELECT	100uF	20%	10V								

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MAIN

Ref. No.	Part No.	Description	Remark			
<RESISTOR>						
R1	1-216-813-11	METAL CHIP	220	5%	1/16W	
R2	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R3	1-216-795-11	RES-CHIP	6.8	5%	1/10W	
R4	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R6	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R7	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R8	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R9	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R10	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R11	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R15	1-216-864-11	METAL CHIP	0	5%	1/16W	
R16	1-216-864-11	METAL CHIP	0	5%	1/16W	
<SWITCH>						
S1	1-554-843-11	SWITCH, SLIDE (BAND)				
S2	1-554-843-11	SWITCH, SLIDE (POWER)				
<VALIABLE RESISTOR>						
VR1	1-241-948-11	RES, VAR, CARBON10K/10K (VOLUME ▲)				

ACCESSORIES						

3-237-589-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH, GERMAN, SPANISH, DUTCH, SWEDISH, ITALIAN, PORTU GUESE, FINNISH, SIMPLIFIED CHINESE) (CH,E)					
3-237-589-21	MANUAL, INSTRUCTION (ENGLISH, TRADITIONAL CHINESE) (AUS, TW)					
8-953-130-90	RECEIVER,EAR MDR-E806LP					

REVISION HISTORY

Clicking the version allows you to jump to the revised page.

Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

[illegible]