SRF-42

SERVICE MANUAL

US Model
Canadian Model

SPECIFICATIONS

Frequency range
FM: 87.6 – 108 MHz
AM: 530 – 1,710 kHz

Power output
15 mW + 15 mW (at 10% harmonic distortion) with headphones having impedance of 24 ohms at DC operation

Output
Headphone jack (stereo minijack) load impedance 24 ohms

Power requirements
3 V DC, two size AA (R6) batteries

Battery life
With Sony batteries SUM-3 (NS):
Approx. 48 hours (when listening to FM)
Approx. 40 hours (when listening to AM)

Dimensions
Approx. 70 × 114 × 26.5mm (w/h/d) ($2\ ^{7}/_{8} \times 4\ ^{1}/_{2} \times 1\ ^{1}/_{16}$ inches) not incl. projecting parts and controls and the belt holder

Mass
Approx. 155 g (5.47 oz) not incl. batteries and the belt holder

Accessories supplied
Stereo headphones (open-air type,1)
Belt holder (1)

Design and specifications are subject to change without notice.

FM STEREO/AM STEREO RADIO

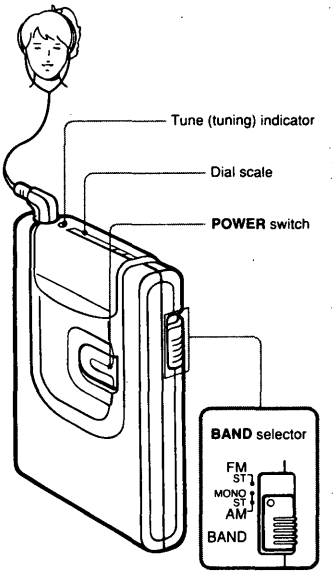
SONY®

SECTION 1
GENERAL

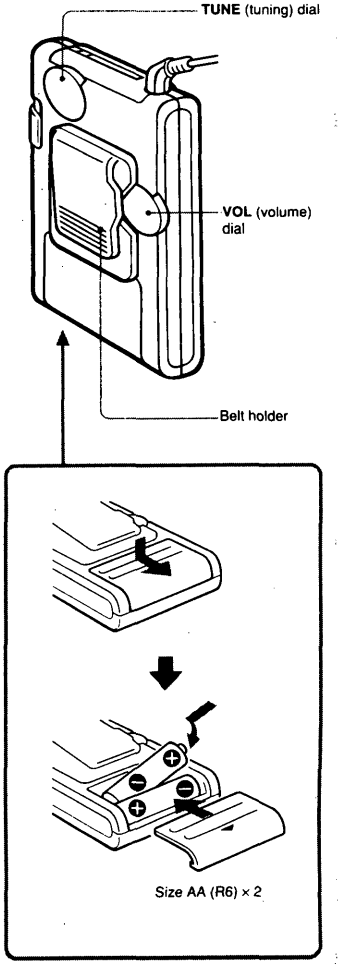
This section is extracted from instruction manual.

Location of Controls

Front



Rear



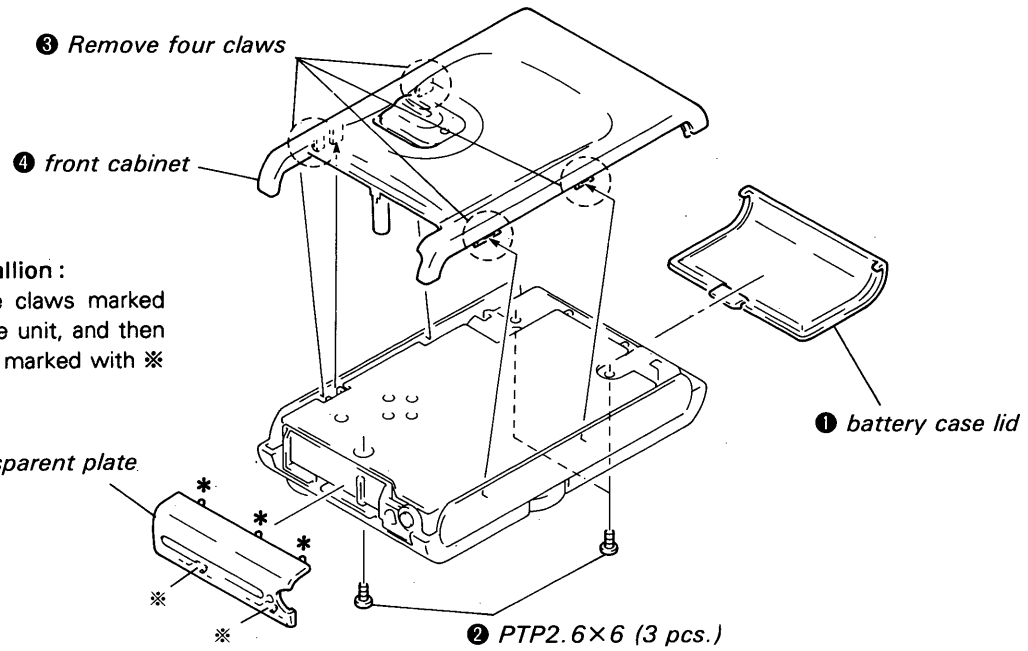
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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.

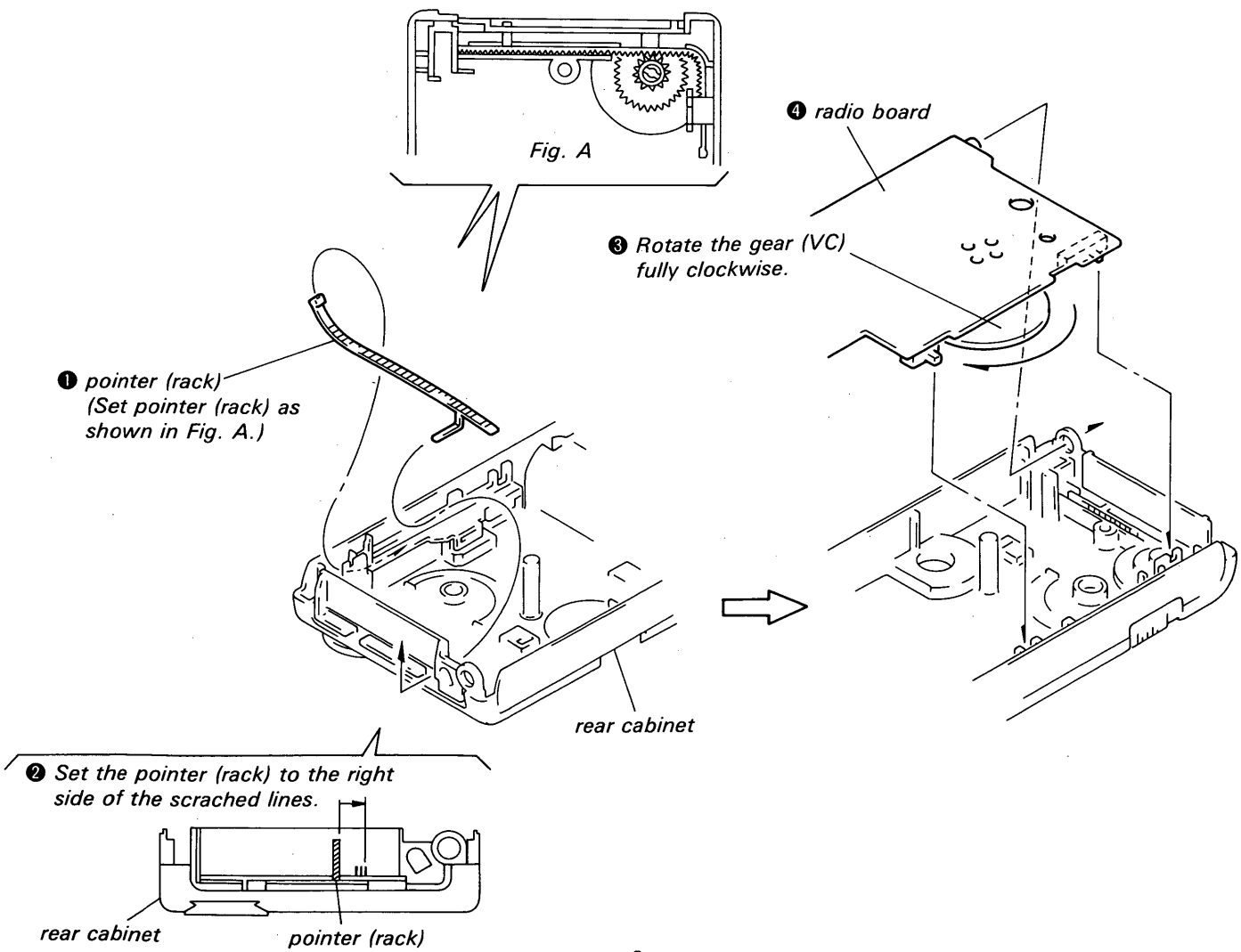
SECTION 2
DISASSEMBLY

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

2-1. FRONT CABINET REMOVAL



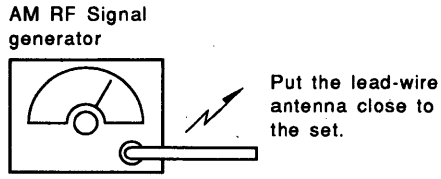
2-2. POINTER (RACK) SETTING



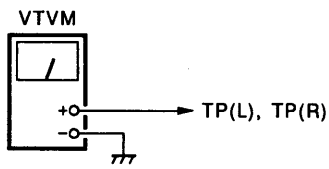
SECTION 3
ELECTRICAL ADJUSTMENTS

AM Section

Setting:
BAND switch: AM MONO
VOLUME: Minimum



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



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

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	520 kHz
CT4	1,750 kHz

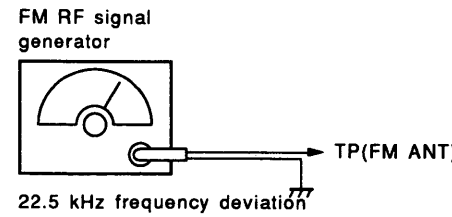
AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	600 kHz
CT1	1400 kHz

- Repeat each adjustment 2 or 3 times so that the VTVM needle swings maximum.
  The frequency coverage adjustment and tracking adjustment must be completed with trimer adjustment.

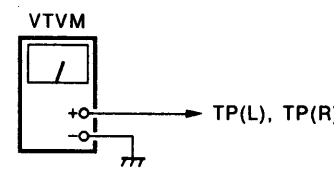
[AM STEREO(3.6 MHz) ADJUSTMENT]
Setting:
BAND switch: AM ST
Procedure:
1. Adjust RF SSG frequency to 450 kHz.
2. Adjust L5 so that the digital voltmeter reading at TP (3.6 MHz) is 0.84 ± 0.05V.

FM Section

Setting:
BAND switch: FM ST
VOLUME: Minimum



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



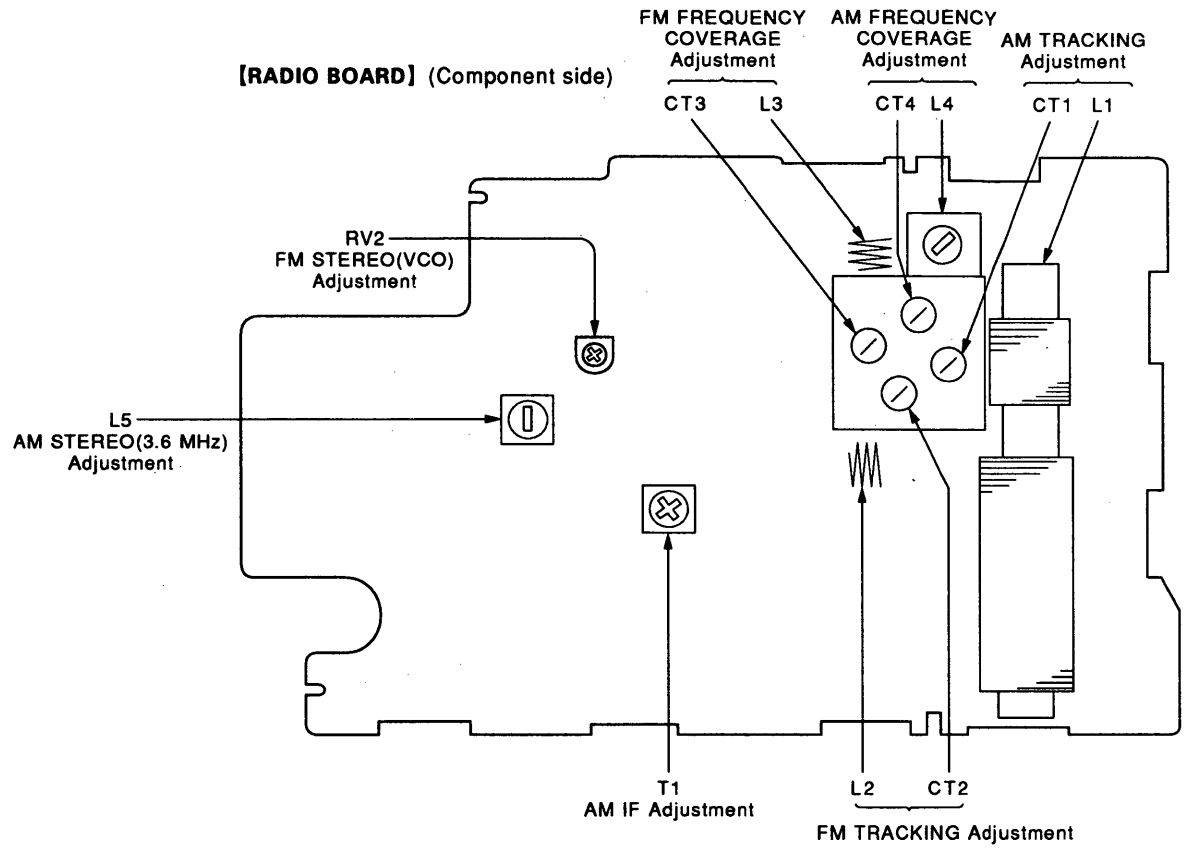
FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	86.5 MHz
CT3	109.5 MHz

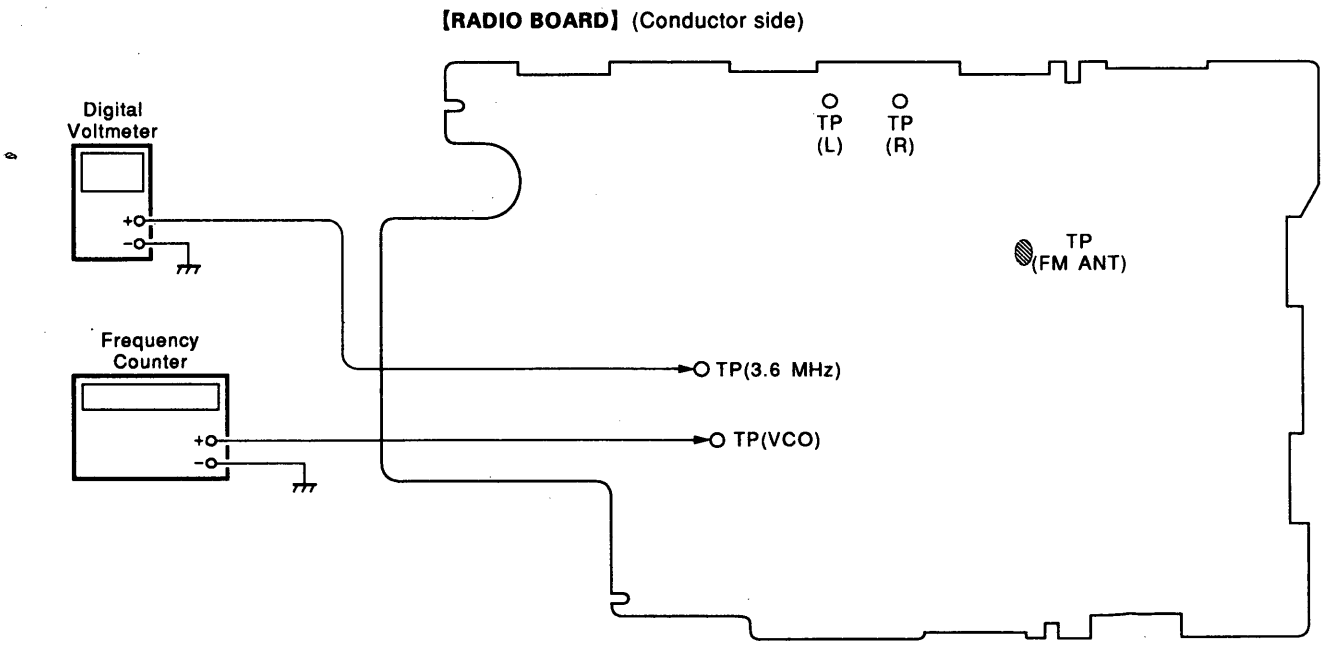
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	86.5 MHz
CT2	109.5 MHz

- Repeat each adjustment 2 or 3 times so that the VTVM needle swings maximum.
  The frequency coverage adjustment and tracking adjustment must be completed with trimer adjustment.

[FM STEREO(VCO) ADJUSTMENT]
Procedure:
1. Adjust RF SSG frequency to 98 MHz.
2. Adjust RV2 so that the frequency conuter reading at TP(VCO) is 76 ± 0.1 kHz.

Adjustment Location:

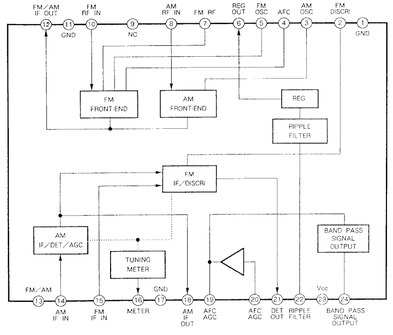




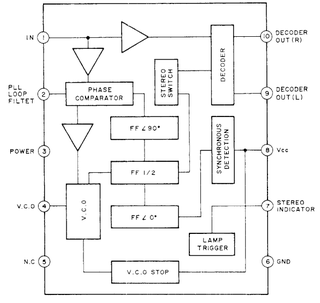
SECTION 4
DIAGRAMS

• IC Block Diagrams

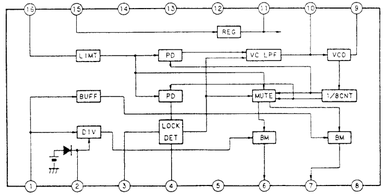
IC1 CX20111-T6



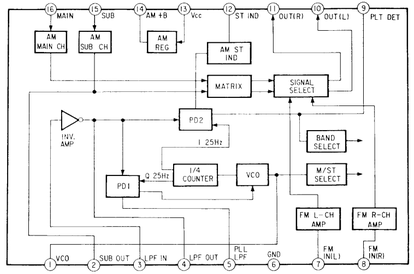
IC2 LA3335M



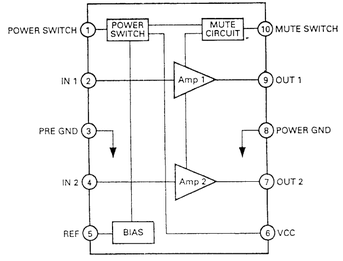
IC3 CXA1758N



IC4 CXA1657M



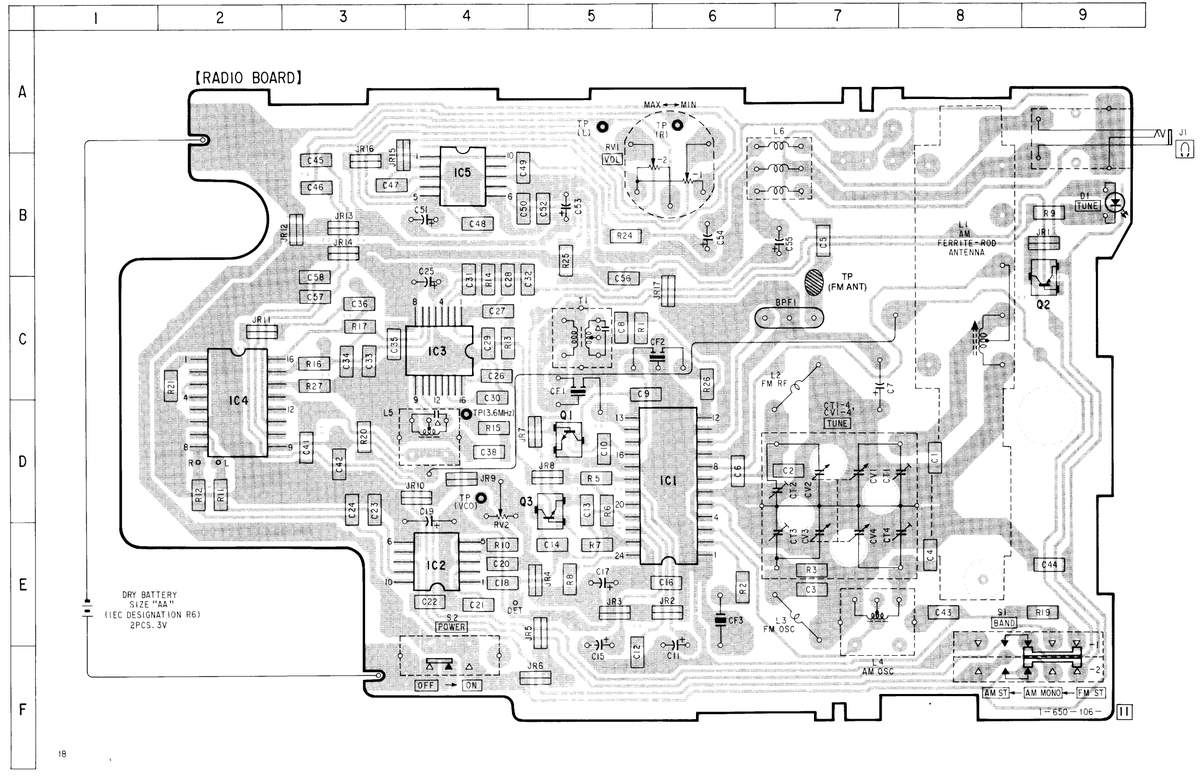
IC5 LA4533M



•Semiconductor Location

Ref. No.	Location
D1	B - 9
IC1	D - 6
IC2	E - 4
IC3	C - 4
IC4	D - 2
IC5	B - 4
Q1	D - 5
Q2	C - 9
Q3	D - 5

4-1. PRINTED WIRING BOARD

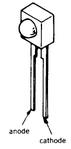


Note:

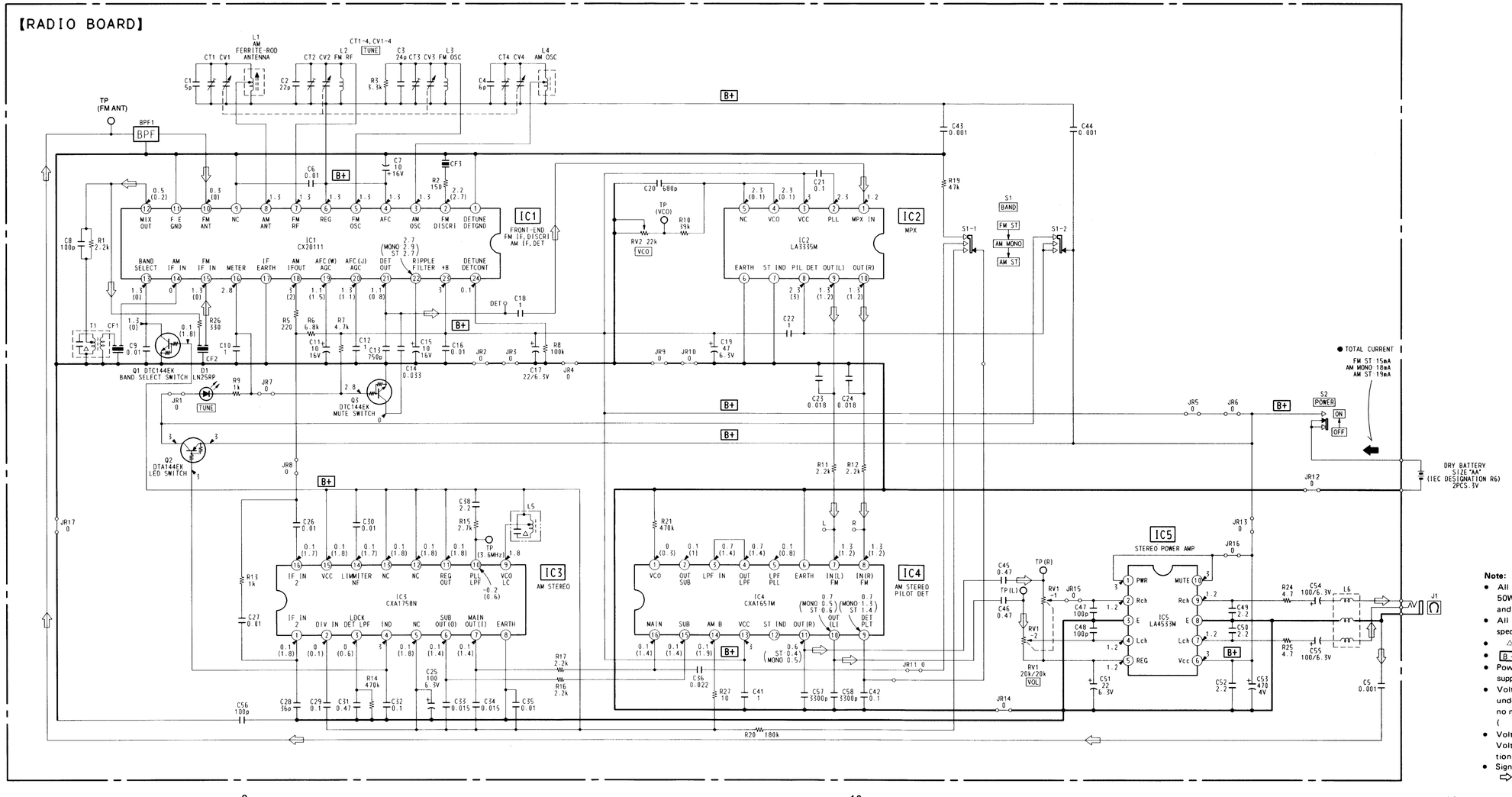
- ○——: parts extracted from the component side.
- ▨: Pattern on the side which is seen.

• Semiconductor Lead Layout

TLR224



【RADIO BOARD】



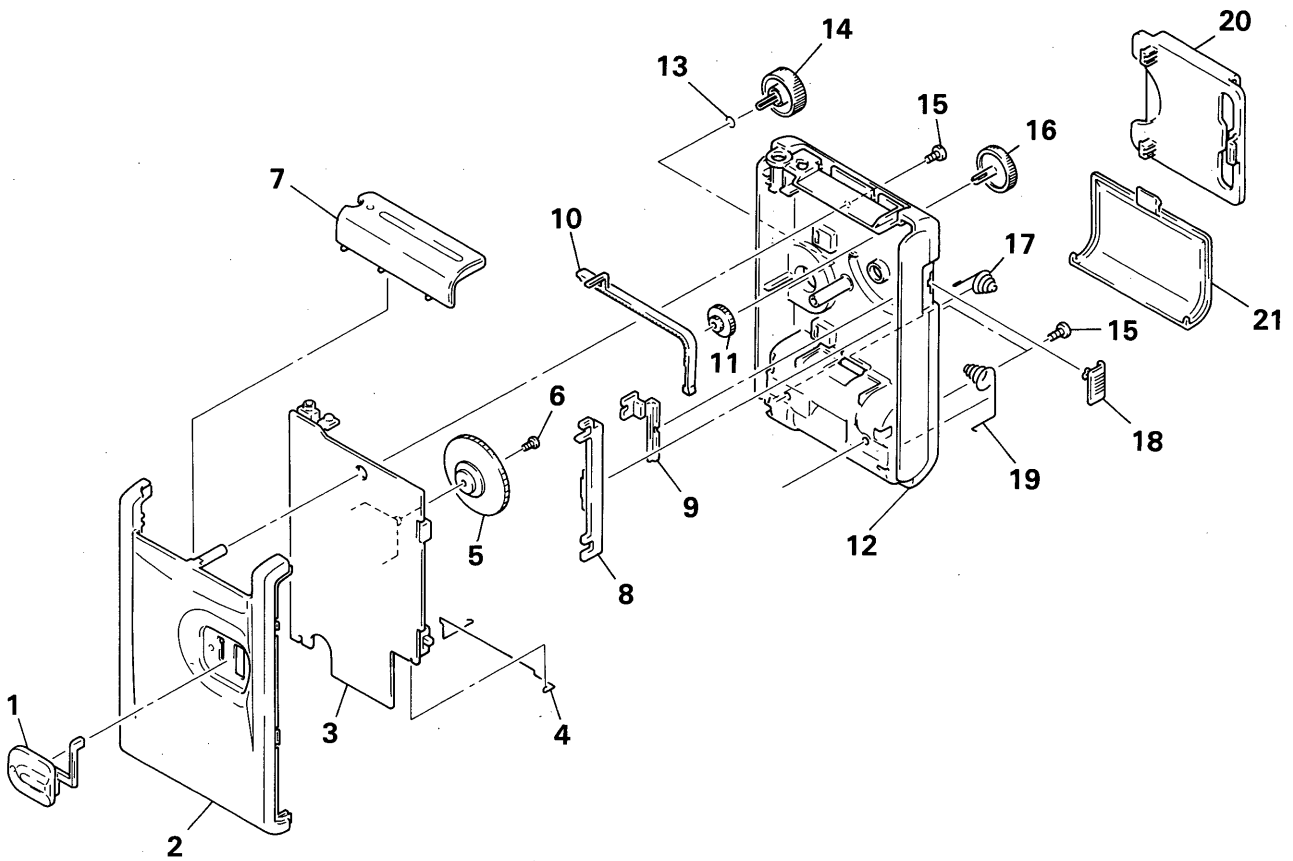
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line
- Power voltage is dc 3V and fed with regulated dc power supply from external battery terminal.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM or AM
  ( ) : AM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

SECTION 5
EXPLODED VIEW

NOTE:

- -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
- 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 is given in the last of this parts list.



Ref.No.	Part No.	Description	Remark
1	3-906-911-01	KNOB (POWER)	
2	3-906-912-01	CABINET (FRONT)	
*3	A-3679-533-A	RADIO BOARD, COMPLETE	
4	3-901-616-01	TERMINAL (PLUS)	
5	3-901-611-01	GEAR (VC)	
6	3-880-990-00	SCREW (1.7X3), FLAT, (+) SPECIAL	
7	3-901-618-02	PLATE, TRANSPARENT	
8	3-901-613-01	LEVER (POWER)	
9	3-901-614-01	LEVER (BAND)	
10	3-901-612-01	POINTER (RACK)	
11	3-901-610-01	GEAR (TUNE)	

Ref.No.	Part No.	Description	Remark
12	3-901-622-02	CABINET (REAR)	
13	3-897-634-01	SPRING	
14	3-901-606-01	KNOB (VOL)	
15	7-685-133-19	SCREW +P 2.6X6 TYPE2	
16	3-901-605-01	KNOB (TUNE)	
17	3-901-617-01	TERMINAL (MINUS)	
18	3-901-609-01	KNOB (BAND)	
19	3-901-615-01	TERMINAL (COM)	
20	3-901-620-01	HOLDER	
21	3-901-619-01	LID, BATTERY CASE	

SECTION 6
ELECTRICAL PARTS LIST

RADIO

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··· : μA···, uPA··· : μPA···, uPB··· : μPB···, uPC··· : μPC···, uPD··· : μPD···
- CAPACITORS
  uF : μF
- COILS
  uH : μH

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

Ref.No.	Part No.	Description			Remark
*	A-3679-533-A	RADIO BOARD, COMPLETE			
		**********			
		< BAND PASS FILTER >			
BPF1	1-236-711-21	FILTER, BAND PASS			
		< CAPACITOR >			
C1	1-163-088-00	CERAMIC CHIP	5PF		50V
C2	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C3	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C4	1-163-089-00	CERAMIC CHIP	6PF		50V
C5	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C6	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V
C7	1-126-157-11	ELECT	10uF	20%	16V
C8	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C9	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C10	1-164-346-11	CERAMIC CHIP	1uF		16V
C11	1-126-157-11	ELECT	10uF	20%	16V
C12	1-164-346-11	CERAMIC CHIP	1uF		16V
C13	1-163-138-00	CERAMIC CHIP	750PF	5%	50V
C14	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C15	1-126-157-11	ELECT	10uF	20%	16V
C16	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V
C17	1-126-153-11	ELECT	22uF	20%	6.3V
C18	1-164-346-11	CERAMIC CHIP	1uF		16V
C19	1-126-154-11	ELECT	47uF	20%	6.3V
C20	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C21	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C22	1-162-638-11	CERAMIC CHIP	1uF		16V
C23	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C24	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C25	1-126-177-11	ELECT	100uF	20%	10V
C26	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C27	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C28	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C29	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C30	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C31	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C32	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C33	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C34	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C35	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V
C36	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C38	1-164-337-11	CERAMIC CHIP	2.2uF		16V
C41	1-162-638-11	CERAMIC CHIP	1uF		16V
C42	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C43	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C44	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C45	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C46	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C47	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C48	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C49	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C50	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C51	1-124-638-11	ELECT	22uF	20%	10V
C52	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C53	1-104-483-11	ELECT	470uF	20%	4V
C54	1-126-177-11	ELECT	100uF	20%	10V
C55	1-126-177-11	ELECT	100uF	20%	10V
C56	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C57	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C58	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
		< FILTER >			
CF1	1-579-753-11	FILTER, CERAMIC			
CF2	1-579-881-81	FILTER, CERAMIC			
CF3	1-579-881-81	FILTER, CERAMIC			
		< VARIABLE CAPACITOR >			
CT1-4 CV1-4	1-151-639-11	CAP, VARIABLE (TUNE)			
		< DIODE >			
D1	8-719-820-12	LED TLR224 (TUNE)			
		< IC >			
IC1	8-752-061-79	IC CX20111-T6			
IC2	8-759-804-98	IC LA3335M			

RADIO

Ref.No.	Part No.	Description			Remark
IC3	8-752-065-27	IC CXA1758N			
IC4	8-752-057-51	IC CXA1657M			
IC5	8-759-802-75	IC LA4533M			
		< JACK >			
J1	1-563-857-11	JACK, HEADPHONE (Ω)			
		< JUMPER RESISTOR >			
JR1	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR2	1-216-296-00	METAL CHIP	0	5%	1/8W
JR3	1-216-296-00	METAL CHIP	0	5%	1/8W
JR4	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR5	1-216-296-00	METAL CHIP	0	5%	1/8W
JR6	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR7	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR8	1-216-296-00	METAL CHIP	0	5%	1/8W
JR9	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR10	1-216-296-00	METAL CHIP	0	5%	1/8W
JR11	1-216-296-00	METAL CHIP	0	5%	1/8W
JR12	1-216-296-00	METAL CHIP	0	5%	1/8W
JR13	1-216-296-00	METAL CHIP	0	5%	1/8W
JR14	1-216-296-00	METAL CHIP	0	5%	1/8W
JR15	1-216-295-91	METAL GLAZE	0	5%	1/10W
JR16	1-216-296-00	METAL CHIP	0	5%	1/8W
JR17	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L1	1-402-419-11	ANTENNA, FERRITE-ROD (AM)			
L2	1-428-163-11	COIL, AIR-CORE			
L3	1-402-654-11	COIL, AIR-CORE			
L4	1-406-335-11	COIL, OSC			
L5	1-406-571-11	COIL (OSC)			
L6	1-409-382-11	COIL, TRAP			
		< TRANSISTOR >			
Q1	8-729-901-01	TRANSISTOR DTC144EK			
Q2	8-729-901-06	TRANSISTOR DTA144EK			
Q3	8-729-901-01	TRANSISTOR DTC144EK			
		< RESISTOR >			
R1	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R2	1-216-029-00	METAL CHIP	150	5%	1/10W
R3	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R5	1-216-033-00	METAL CHIP	220	5%	1/10W
R6	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R7	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R8	1-216-097-00	METAL CHIP	100K	5%	1/10W
R9	1-216-198-91	METAL GLAZE	1K	5%	1/8W

Ref.No.	Part No.	Description			Remark
R10	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R11	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R12	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R13	1-216-049-00	METAL CHIP	1K	5%	1/10W
R14	1-216-113-00	METAL CHIP	470K	5%	1/10W
R15	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R16	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R17	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R19	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R20	1-216-103-00	METAL CHIP	180K	5%	1/10W
R21	1-216-113-00	METAL CHIP	470K	5%	1/10W
R24	1-216-142-00	METAL GLAZE	4.7	5%	1/8W
R25	1-216-142-00	METAL GLAZE	4.7	5%	1/8W
R26	1-216-037-00	METAL CHIP	330	5%	1/10W
R27	1-216-001-00	METAL CHIP	10	5%	1/10W
		< VARIABLE RESISTOR >			
RV1	1-238-160-11	RES, VAR, CARBON 20K/20K (VOL)			
RV2	1-238-167-11	RES, ADJ, CARBON 22K			
		< SWITCH >			
S1	1-570-041-11	SWITCH, SLIDE (BAND)			
S2	1-554-222-00	SWITCH, SLIDE (POWER)			
		< TRANSFORMER >			
T1	1-404-444-31	TRANSFORMER, IF 455KHZ			

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ACCESSORIES & PACKING MATERIALS

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1-505-139-11 HEADPHONE (TRH-1)
3-757-642-21 MANUAL, INSTRUCTION (ENGLISH)(US)
3-757-642-31 MANUAL, INSTRUCTION (ENGLISH, FRENCH) (Canadian)

* 3-908-137-01 INDIVIDUAL CARTON (US)
* 3-908-137-11 INDIVIDUAL CARTON (Canadian)

* 3-908-138-01 CUSHION

9-959-168-12

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