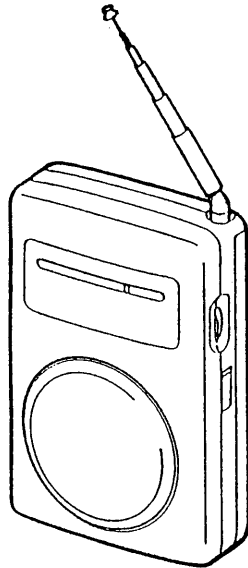


ICF-TR40

SERVICE MANUAL



*US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Tourist Model*

SPECIFICATIONS

Frequency range

FM: 87.5 – 108 MHz ²⁾
87.5 – 108 MHz ³⁾

AM: 530 – 1605 kHz ³⁾

²⁾ Italian and Saudi Arabian models

³⁾ Other models

Intermediate frequency

FM: 10.7 MHz AM: 455 kHz

Speaker

Approx. 4.5 cm (1 ³/₄ inches) dia., 8 ohms

Power output

100 mW (at 10% harmonic distortion)

Output

Ⓞ jack (minijack)

Power requirements

3V DC, two R6 (size AA) batteries

Dimensions

Approx. 71.5 × 114 × 24.5 mm (w/h/d)
(2 ⁷/₈ × 4 ¹/₂ × ³¹/₃₂ in)

Mass

Approx. 125 g (4.4 oz)

Approx. 163 g (5.75 oz) incl. batteries

Supplied accessories

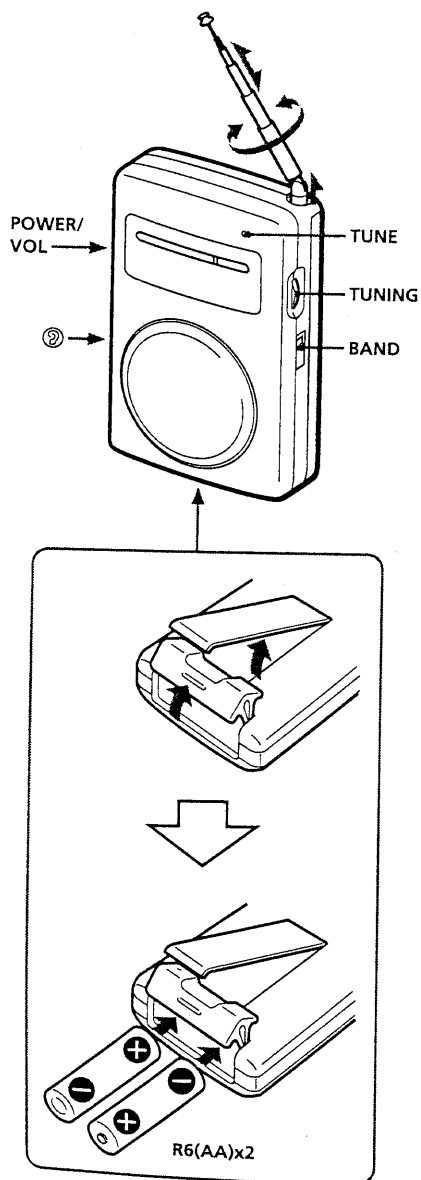
Dry batteries (2) (Japanese model and the world model only)

Design and specifications are subject to change without notice.

FM/AM RADIO
SONY[®]

SECTION 1 GENERAL

This section is extracted from
instruction manual.



Battery Installation

- 1 Lift up the stand and open the battery compartment lid.
- 2 Insert two R6 (AA) batteries with the ⊕ and ⊖ marks aligned correctly.
- 3 Close the battery compartment lid.

Battery life	(Approx. hours)	
Sony R6 (AA)	FM	AM
Using speaker	40	45
Using earphones	90	120

When to change the batteries

Change the batteries when the sound becomes weak or distorted. Remove both of the old batteries and insert new ones.

Notes on the batteries

- Align batteries correctly.
- Do not mix new and used batteries.
- The batteries cannot be charged.
- To avoid damage from possible battery leakage, remove the batteries when unit will not be used for a long time.

Listening to the Radio

- 1 Turn the **POWER/VOL** control to turn on the power and adjust the volume. When you have finished listening, turn the control down to turn off the power.
- 2 Set the **BAND** selector to select **FM** or **AM**.
- 3 Turn the **TUNING** control to select a station. The **TUNE** indicator lights when a station is received.

To listen with earphones

Connect optional earphones to the ⊕ jack. The speaker does not emit sound when earphones are connected.

To improve reception

FM: Extend the telescopic antenna and adjust the angle for the best reception.

AM: Turn the radio in the direction that gives the best reception by the built-in antenna.

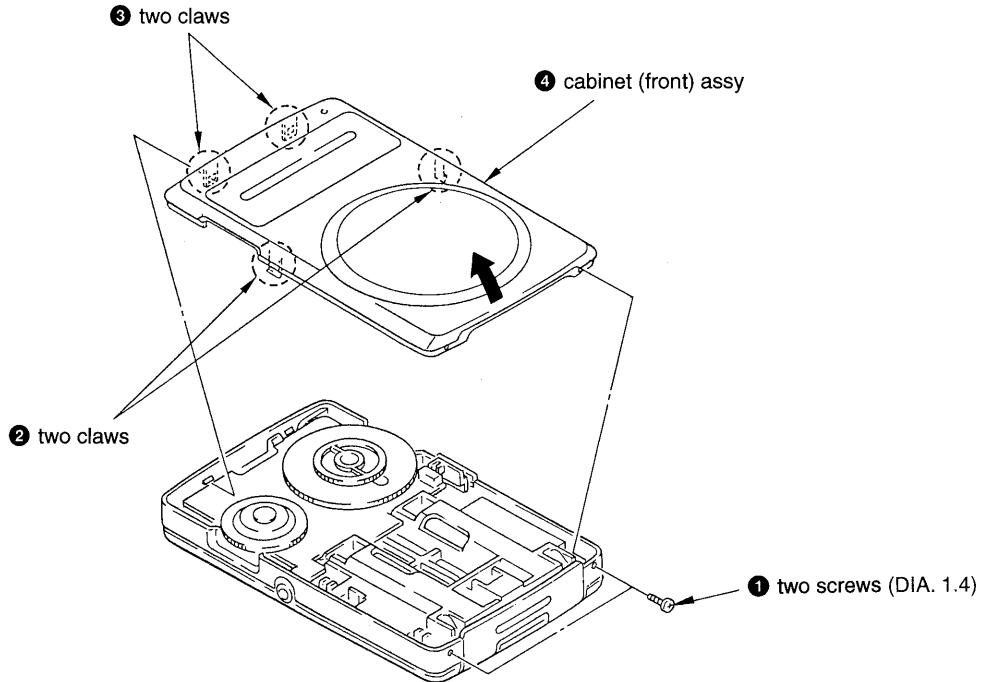
Notes on Chip Component Replacement

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

SECTION 2 DISASSEMBLY

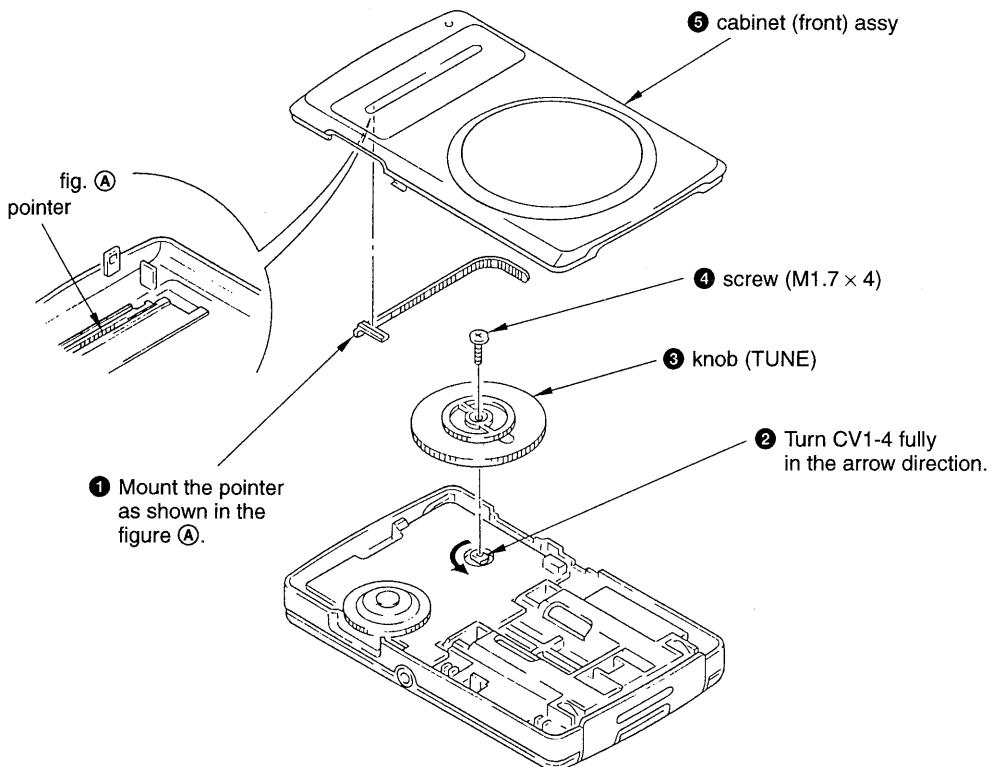
Note: Follow the disassembly procedure in the numerical order given.

CABINET (FRONT) ASSY



DIAL POINTER SETTING

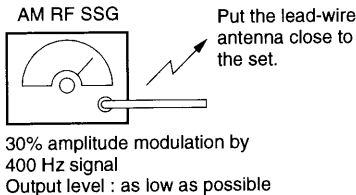
Note: Follow the assembly procedure in the numerical order given.



SECTION 3 ELECTRICAL ADJUSTMENTS

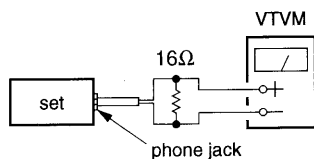
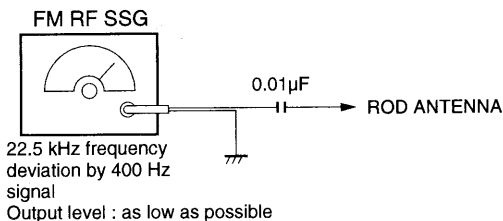
AM Section

BAND switch : AM
VOLUME control : MAX



FM Section

BAND switch : FM
VOLUME control : MAX



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

AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	455 kHz

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	516.5 kHz (IT, EA) 520 kHz (except IT, EA)
CT3	1,631.5 kHz (IT, EA) 1,650 kHz (except IT, EA)

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	620 kHz
CT4	1,400 kHz

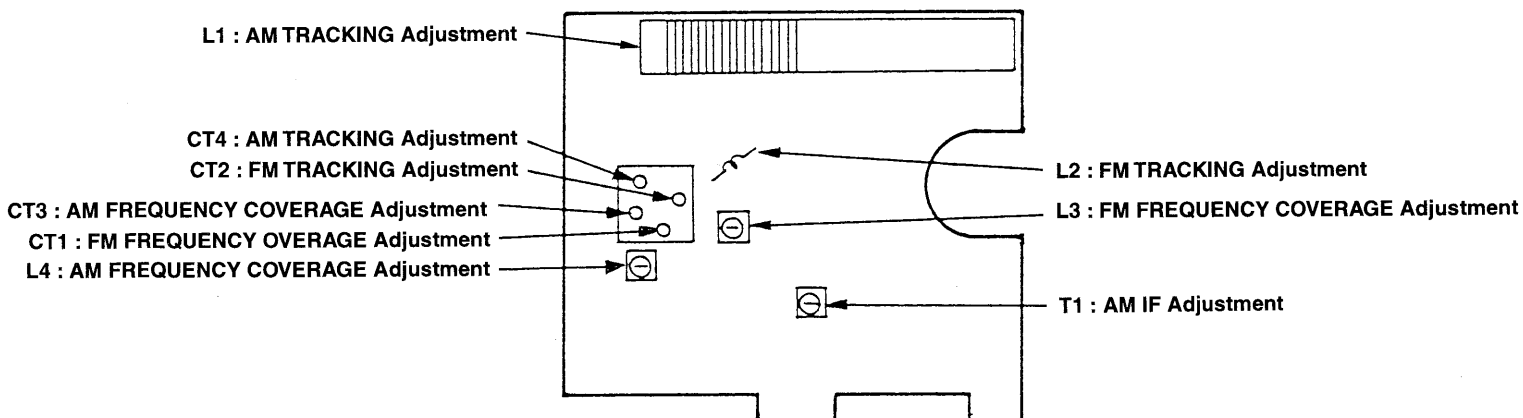
FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	75.0 MHz (JE) 86.5 MHz (except IT, EA, JE) 87.35 MHz (IT, EA)
CT1	108.25 MHz (IT, EA) 109.5 MHz (except IT, EA)

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	80.0 MHz (JE) 90.0 MHz (except JE)
CT2	104.0 MHz

• Abbreviation

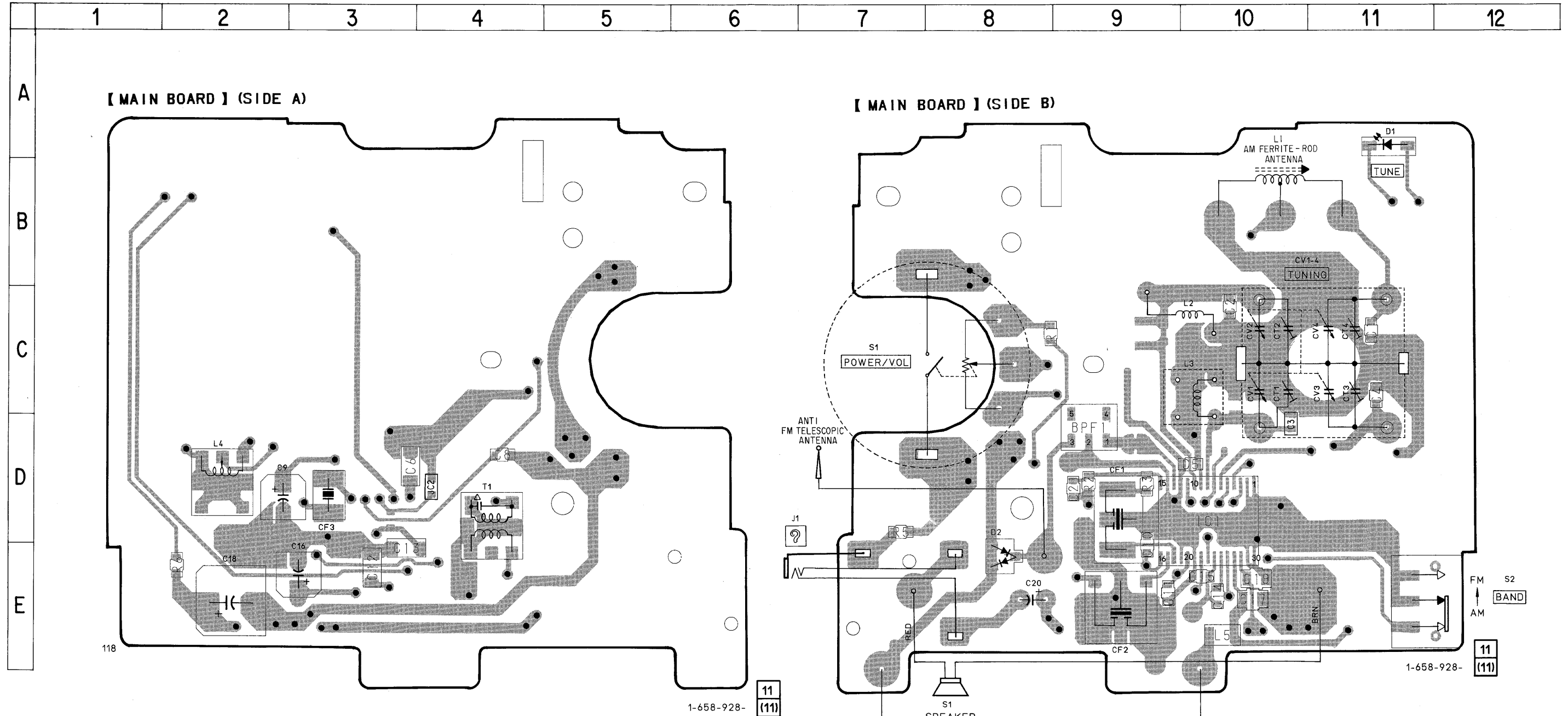
EA : Saudi Arabia
IT : Italian
JE : Tourist

Adjustment Location : MAIN board (Side A)



SECTION 4
DIAGRAMS

4-1. PRINTED WIRING BOARD



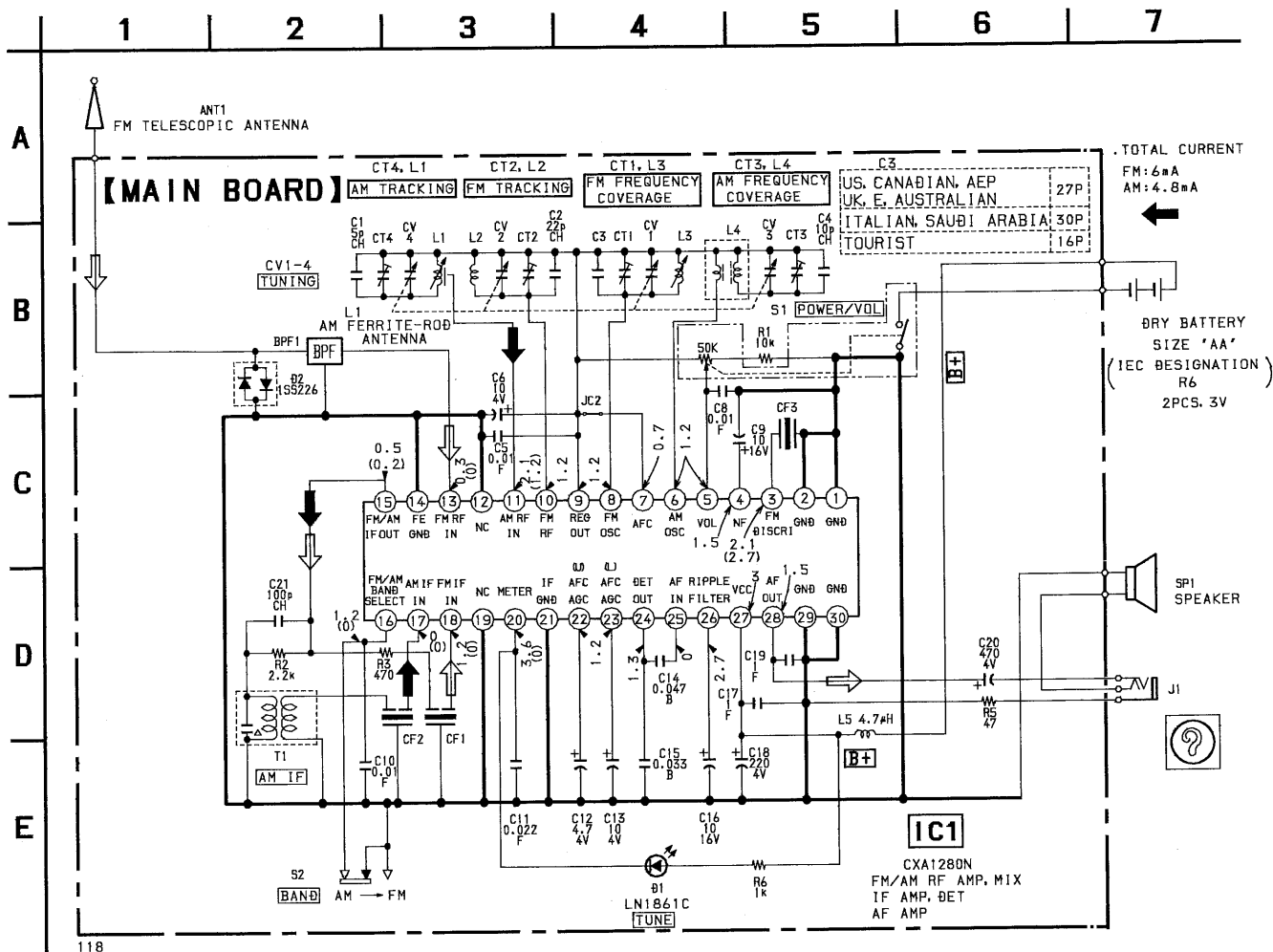
• Semiconductor Location

Ref. No.	Location
D1	A-11
D2	E-8
IC1	D-10

- : parts extracted from the component side
- : Through hole.
- △ : internal component.
- ▨ : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

Caution:
 Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
 (Conductor Sied)
 Parts face side: Parts on the parts face side seen from the parts face are indicated.
 (Component Sied)

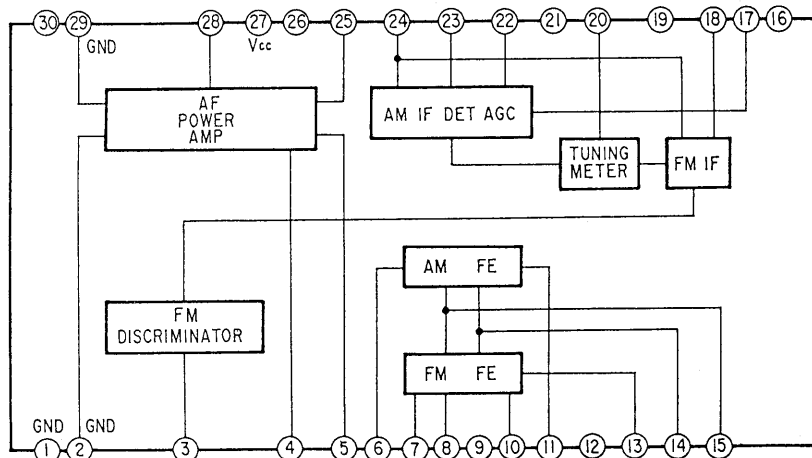
4-2. SCHEMATIC DIAGRAM



- All capacitors are in μF unless otherwise noted. pF: μpF
- 50 W 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.
- Δ : internal component.
- **B+** : B + Line.
- : panel designation.
- : adjustment for repair.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- Δ () : AM
- Voltages are taken with a VOM (10 M Ω /V)
- Voltage variations may be noted due to normal production tolerances.
- Signal path.
 - \Rightarrow : FM
 - \Rightarrow : AM

• IC Block diagram

IC1 CXA1280N



SECTION 5 EXPLODED VIEWS

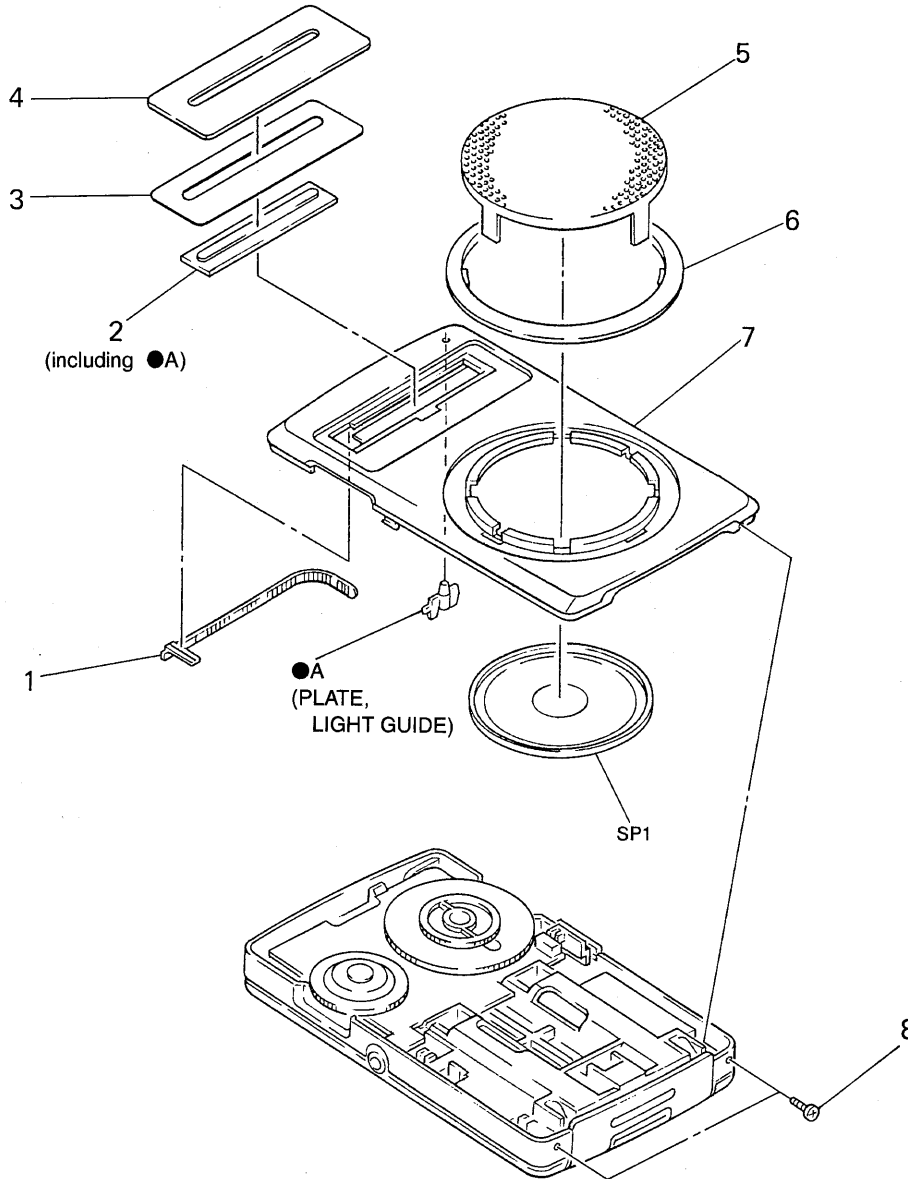
NOTE:

- -XX and -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 the electrical parts list.

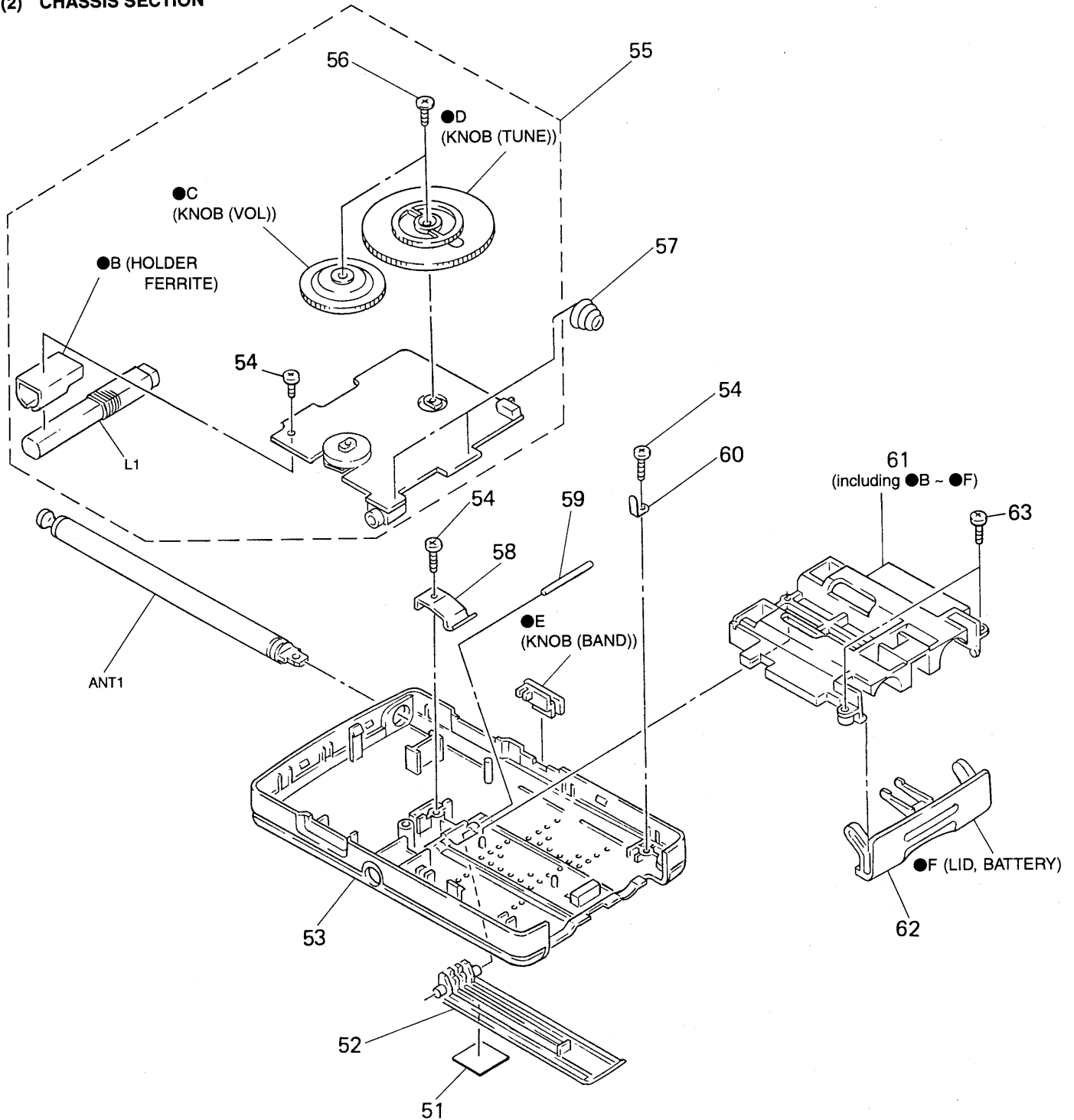
- Abbreviation
 AUS : Australian
 EA : Saudi Arabia
 IT : Italian
 JE : Tourist

(1) CABINET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 1	3-930-627-01	POINTER		5	3-930-629-01	PANEL (SP)	
2	3-931-136-01	PLATE (COMBINED), TRANSPARENT (including PLATE, LIGHT GUIDE)		6	3-931-062-01	RING (SP)	
3	3-930-630-01	SHEET, ADHESIVE		7	3-930-625-01	CABINET (FRONT)	
4	3-930-628-01	PANEL (JE)		8	3-890-155-00	SCREW PAN (DIA. 1.4)	
4	3-930-628-11	PANEL (EXCEPT JE)		SP1	1-505-141-11	SPEAKER (4.5CM)	

(2) CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	3-931-451-01	EMBLEM		58	3-931-450-01	SPRING (STAND)	
52	3-930-641-01	STAND		59	3-649-266-00	PIN, PARALLEL	
53	3-930-635-01	CABINET (REAR)		60	7-623-505-01	LUG, 2	
54	3-363-895-01	SCREW (M1.7)		61	3-931-137-01	CHASSIS (COMBINED) (including HOLDER, FERRITE-ROD ANTENNA/KNOB (VOL.) / KNOB (TUNE) / KNOB (BAND) / LID, BATTERY)	
* 55	A-3679-736-A	MAIN BOARD, COMPLETE (US, Canadian, AEP, UK, E, AUS)		62	X-3371-533-1	LID, BATTERY ASSY	
* 55	A-3679-735-A	MAIN BOARD, COMPLETE (JE)		63	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
* 55	A-3679-747-A	MAIN BOARD, COMPLETE (IT, EA)		ANT1	1-501-778-11	ANTENNA, TELESCOPIC (FM)	
56	3-922-155-21	SCREW (M1.7X3 IB LOCK)		L1	1-501-732-12	ANTENNA, FERRITE-ROD (MW)	
57	3-930-639-01	TERMINAL, BATTERY					

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
- Abbreviation
AUS: Australian EA: Saudi Arabia IT: Italian JE: Tourist

- 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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-3679-735-A	MAIN BOARD, COMPLETE (JE)				< FILTER >	
*	A-3679-736-A	MAIN BOARD, COMPLETE (US, Canadian, AEP, UK, E, AUS)		CF1	1-579-214-21	FILTER, CERAMIC	
*	A-3679-747-A	MAIN BOARD, COMPLETE (IT, EA) *****		CF2	1-577-463-11	FILTER, CERAMIC	
				CF3	1-577-312-91	FILTER, CERAMIC	
						< TRIMMER >	
	3-363-895-01	SCREW (M1.7)		CT1-4 } CV1-4 }	1-141-537-11	CAP, VAR (TUNING) (EXCEPT JE)	
	3-922-155-21	SCREW (M1.7X3 IB LOCK)		CT1-4 } CV1-4 }	1-141-512-11	CAP, VAR (TUNING) (JE)	
	3-931-137-01	CHASSIS (COMBINED)				< DIODE >	
		< BAND PASS FILTER >		D1	8-719-045-50	DIODE LN1861C-TR (TUNE)	
BPF1	1-236-053-11	FILTER, BAND PASS (EXCEPT JE)		D2	8-719-800-76	DIODE 1SS226	
BPF1	1-236-069-21	FILTER, BAND PASS (JE)				< IC >	
		< CAPACITOR >		IC1	8-752-036-29	IC CXA1280N	
C1	1-162-910-11	CERAMIC CHIP 5PF	0.25PF 50V			< JACK >	
C2	1-162-919-11	CERAMIC CHIP 22PF	5% 50V	J1	1-569-215-11	JACK (EAR PHONE)	
C3	1-136-103-00	CERAMIC CHIP 27PF	5% 50V			< CHIP CONDUCTOR >	
			(EXCEPT IT, EA JE)	JC2	1-216-864-11	METAL CHIP 0 5% 1/16W	
C3	1-163-104-00	CERAMIC CHIP 30PF	5% 50V			< COIL >	
			(IT, EA)	L1	1-501-732-12	ANTENNA, FERRITE-ROD (MW)	
C3	1-163-708-11	CERAMIC CHIP 16PF	5% 50V	* L2	1-422-320-11	COIL, AIR-CORE	
			(JE)	L3	1-459-399-00	COIL, DUST CORE (EXCEPT JE)	
C4	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V	L3	1-459-436-00	COIL (WITH CORE) (JE)	
C5	1-162-974-11	CERAMIC CHIP 0.01uF	50V	L4	1-406-310-11	COIL (OSCILLATION)	
C6	1-135-201-11	TANTALUM CHIP 10uF	20% 4V	L5	1-412-947-11	INDUCTOR 4.7uH	
C8	1-162-974-11	CERAMIC CHIP 0.01uF	50V			< RESISTOR >	
C9	1-124-779-00	ELECT CHIP 10uF	20% 16V	R1	1-216-833-11	METAL CHIP 10K 5% 1/16W	
C10	1-162-974-11	CERAMIC CHIP 0.01uF	50V	R2	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
C11	1-162-995-11	CERAMIC CHIP 0.022uF	50V	R3	1-216-817-11	METAL CHIP 470 5% 1/16W	
C12	1-135-151-21	TANTALUM CHIP 4.7uF	20% 4V				
C13	1-135-201-11	TANTALUM CHIP 10uF	20% 4V				
C14	1-165-176-11	CERAMIC CHIP 0.047uF	10% 16V				
C15	1-164-677-11	CERAMIC CHIP 0.033uF	10% 16V				
C16	1-124-779-00	ELECT CHIP 10uF	20% 16V				
C17	1-164-346-11	CERAMIC CHIP 1uF	16V				
C18	1-126-246-11	ELECT CHIP 220uF	20% 4V				
C19	1-164-346-11	CERAMIC CHIP 1uF	16V				
C20	1-104-483-11	ELECT 470uF	20% 4V				
C21	1-162-927-11	CERAMIC CHIP 100PF	5% 50V				

Ref. No.	Part No.	Description	Remark		
R5	1-216-805-11	METAL CHIP	47	5%	1/16W
R6	1-216-821-11	METAL CHIP	1K	5%	1/16W
< SWITCH >					
S1	1-223-825-11	RES, VAR, CARBON (WITH S)	50K(POWER/VOL)		
S2	1-572-272-11	SWITCH, SLIDE (BAND)			
< TRANSFORMER >					
T1	1-404-820-11	TRANSFORMER, IF			

MISCELLANEOUS					

ANT1	1-501-778-11	ANTENNA, TELESCOPIC (FM)			
SP1	1-505-141-11	SPEAKER (4.5CM)			

ACCESSORIES & PACKING MATERIALS					

	3-810-219-11	MANUAL, INSTRUCTION (JAPANESE, ENGLISH, FRENCH, GERMAN, SPANISH, DUTCH, SWEDISH, ITALIAN, PORTUGUESE)			
*	3-930-655-01	INDIVIDUAL CARTON			
	8-952-251-90	HEADPHONE MDR-E122 SET			

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Personal A&V Products Div.

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