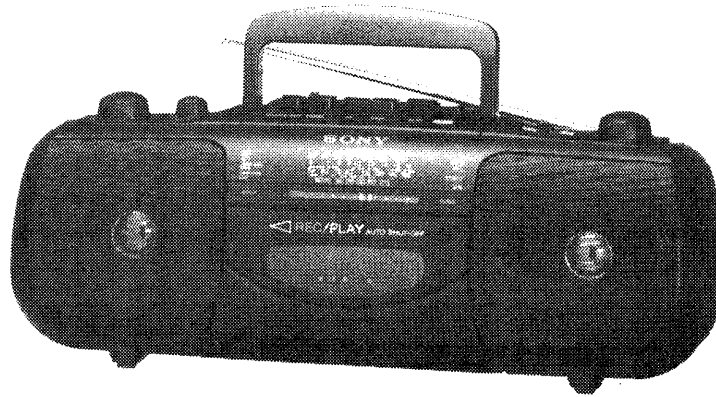


# CFS-E14L

## SERVICE MANUAL

AEP Model  
UK Model



Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MF-E14-64G

### SPECIFICATIONS

- **Frequency range**  
FM: 87.6 - 107 MHz  
MW: 531 - 1,602 kHz/LW: 153 - 279 kHz/  
SW: 5.95 - 18 MHz
  - **IF** FM: 10.7 MHz  
AM/MW/LW/SW: 455 kHz
  - **Aerials** FM/SW: Telescope  
MW/LW: Built-in ferrite bar
  - **Recording system** 4-track, 2-channel stereo
  - **Frequency response** 80 - 10,000 Hz
  - **Speakers** Full-range: 9.2cm (3 5/8 inches) dia. x 2,  
3.2  $\Omega$
  - **Output** Headphones jack (stereo minijack), for 16  
to 68 ohms impedance headphones
  - **Maximum power output** 2.6W + 2.6W
  - **Battery life**  
FM Recording: Sony R14P : Approx. 6 hours/Sony  
LR14 alkaline: Approx. 18 hours  
Playback: R14P : Approx. 4 hours/Sony LR14  
alkaline: Approx. 12 hours
  - **Power requirements**  
United Kingdom: 230 - 240 V AC, 50Hz  
Europe: 220 - 230 V AC, 50Hz  
9V DC, six R14 (size C) batteries
  - **Power consumption**  
AC 10W
  - **Dimensions** Approx. 350 x 134 x 120mm (w/h/d)  
(13 7/8 x 5 3/8 x 4 3/8 inches) incl. projecting parts and  
controls, not incl. handle
  - **Mass** Approx. 2.0kg (4 lb 7oz) incl. batteries
  - **Supplied accessory** Mains lead (1)
- Design and specifications are subject to change  
without notice.

RADIO CASSETTE-CORDER  
**SONY**®



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## HOW TO CHANGE THE CERAMIC FILTERS

This model is used three ceramic filters of CF1, CF3 and CF4. You must use same type of color marked ceramic filters in order to meet same specifications.

Therefore, the ceramic filter must change three pieces together since it's supply three pieces in one package as a spare parts.

	mark1	mark2	center frequency
	red	-	10.70MHz
	blue	-	10.67MHz
	orange	-	10.73MHz
	black	-	10.64MHz
	white	-	10.76MHz
	white	white	10.75MHz
	yellow	-	10.79MHz

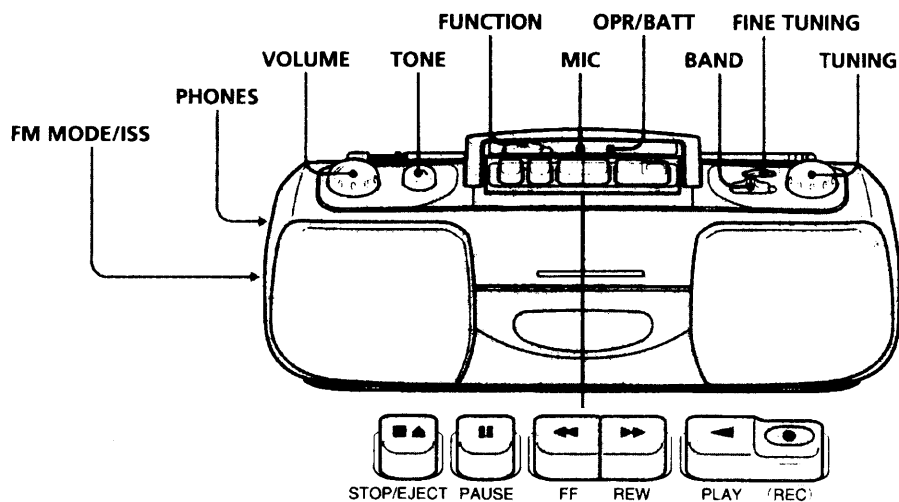
### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  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 1 GENERAL

This section is extracted from instruction manual.

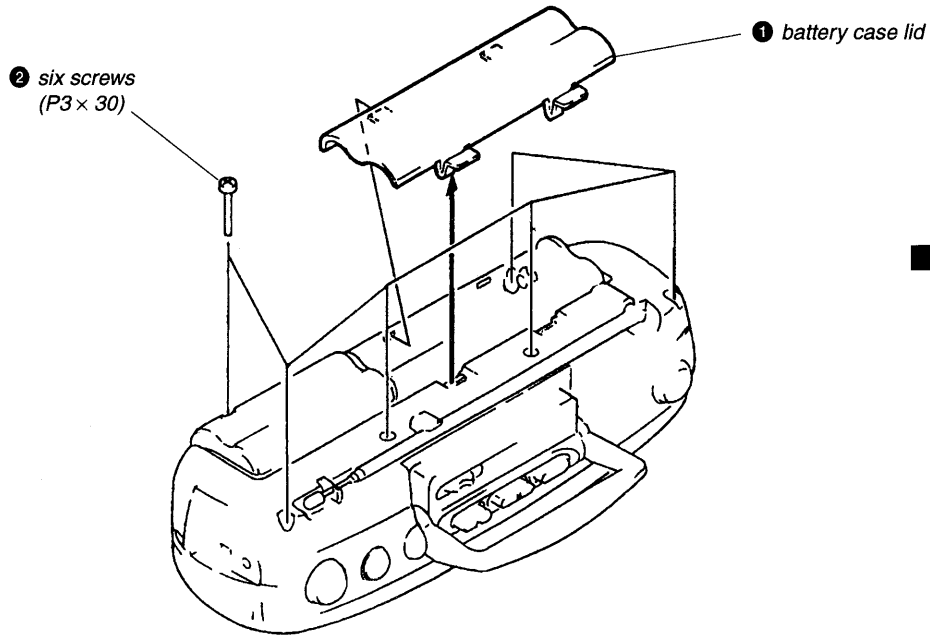
### Location and controls



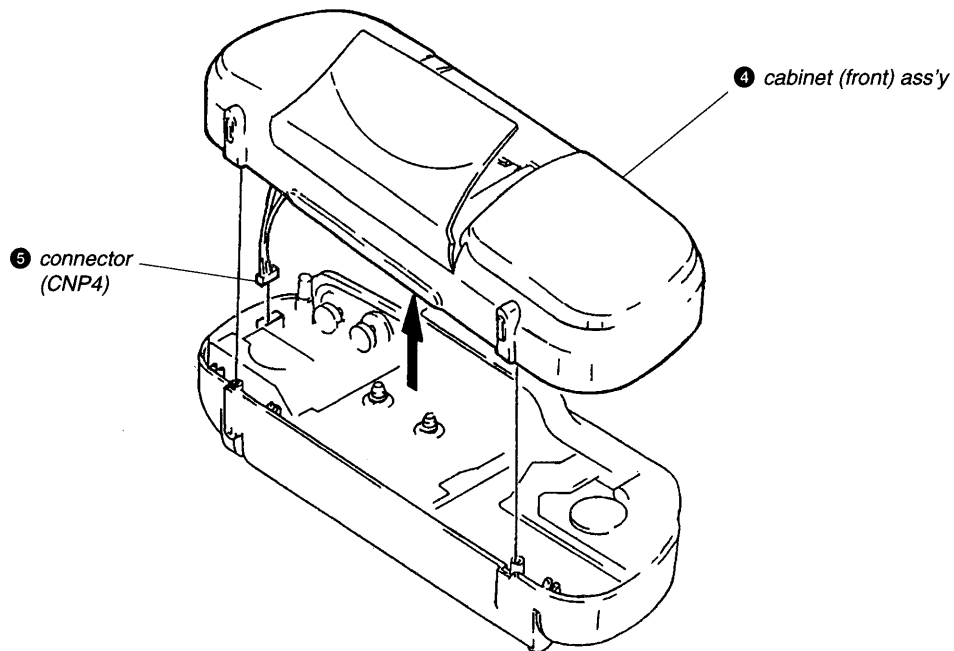
## SECTION 2 DISASSEMBLY

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

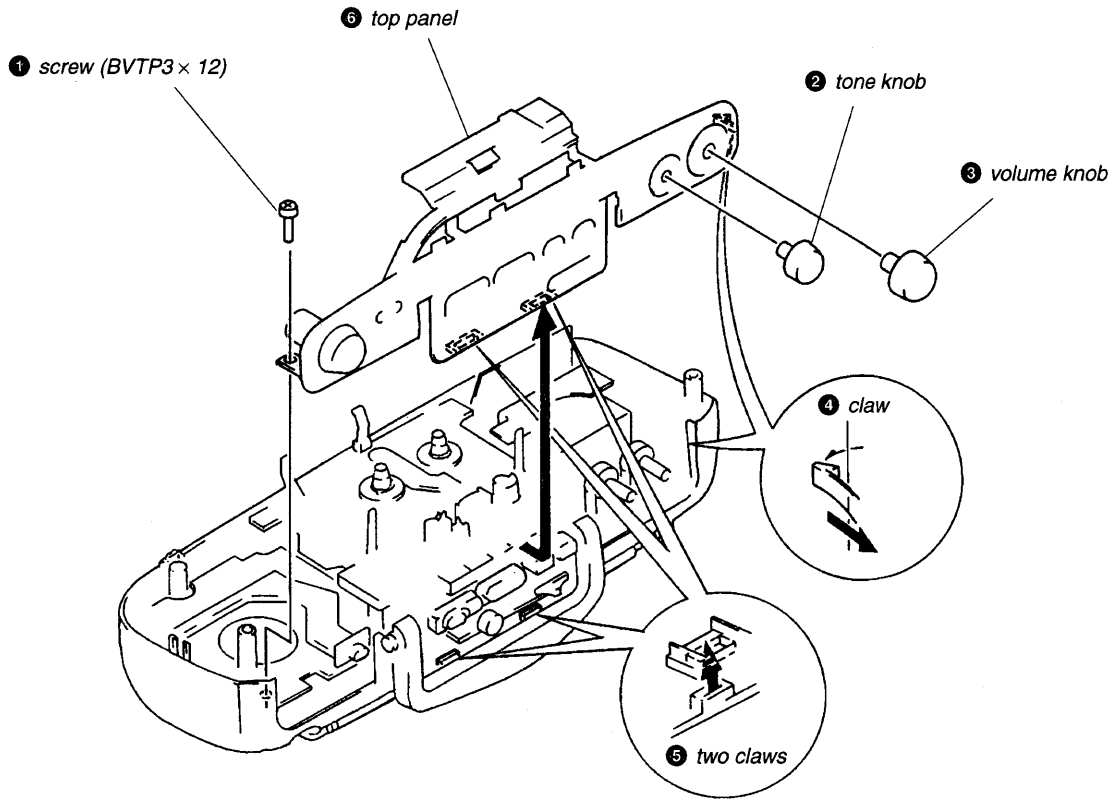
### CABINET (FRONT) ASS'Y



3 Open the cassette door by pressing "STOP/EJECT" button.

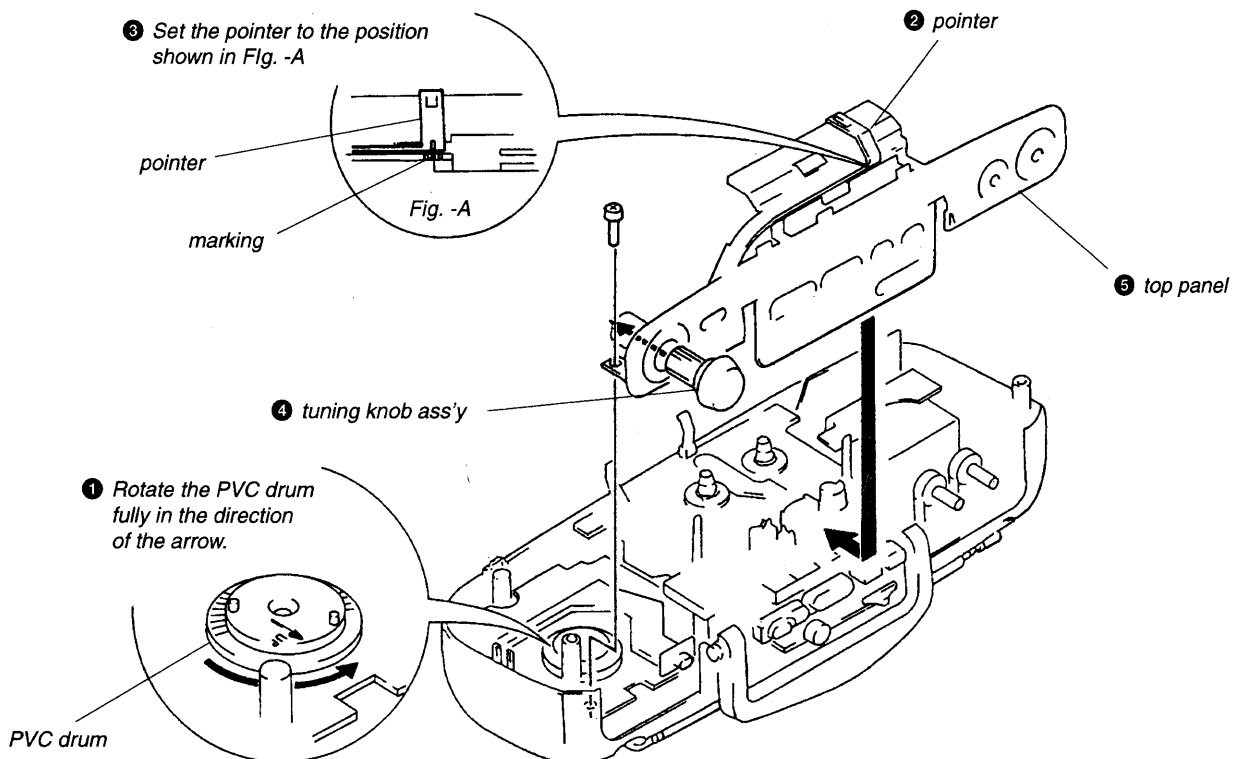


## TOP PANEL



## DIAL POINTER SETTING

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



## SECTION 3 ADJUSTMENTS

### 3-1. MECHANICAL ADJUSTMENTS

#### PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:
 

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

#### Torque Measurement

Torque	Meter Reading	Torque Meter
Forward	22.5-55 g•cm (0.31-0.76 oz•inch)	CQ-102C
Fast Forward and Rewind	45-120 g•cm (0.63-1.67 oz•inch)	CQ-201B
Back Tension	2-5g•cm (0.03-0.07 oz•inch)	CQ-102C

#### Tape Tension Measurement

Meter	Meter Reading
CQ-403A	more than 70 g (2.46 oz)

### 3-2. ELECTRICAL ADJUSTMENTS

#### PRECAUTION

- Adjustments should be performed in the order given. Generally playback circuit adjustments should be completed before performing recording circuit adjustments.
- Adjustments should be performed for both L-ch and R-ch. Control should be set as follows unless otherwise specified.

- Position of control knob  
TONE ..... maximum

- Standard recording position**  
Adjust the VOLUME knob so that the following regulated input/output signal levels are obtained.

- Standard input level**

Input Pin	MIC
Signal source impedance	300 Ω
Input signal level	2.5 mV (-50 dB)
Frequency	1 kHz

- Standard output level**

Output Pin	Speaker (L, R)	PHONES
Signal source impedance	3.2 Ω	32 Ω
Output signal level	0.775 V (0 dB)	0.245 V (-10 dB)

0 dB=0.775 V

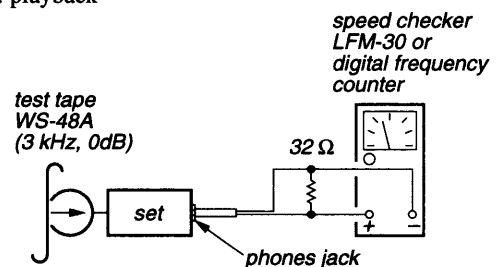
TAPE RECORDER SECTION

- Test Tape**

Type	Signal	Used for
WS-48A	3 kHz, 0 dB	tape speed adjustment

#### Tape Speed Adjustment

**Procedure:**  
Mode: playback

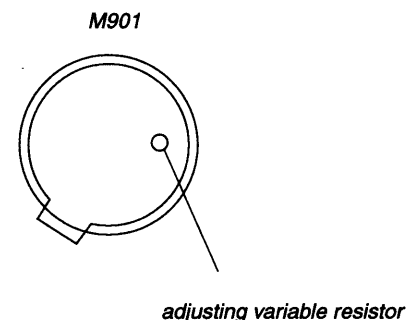


**Adjustment Value:**

Speed checker	Digital frequency counter
-1.3 to 0.6%	2,990 ± 30 Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (45 Hz).

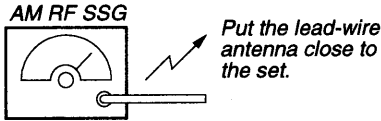
**Adjustment Location:**



## TUNER SECTION

### [AM]

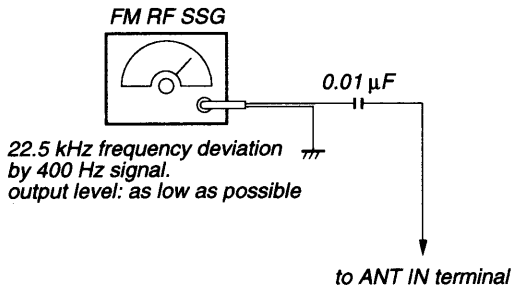
FUNCTION switch : RADIO  
 FINE TUNING control : Mechanical  
 BAND switch : SW, MW, LW



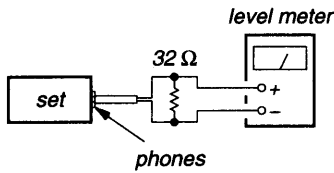
30% amplitude modulation by  
 400 Hz signal  
 output level: as low as possible

### [FM]

FUNCTION switch: RADIO  
 BAND switch: FM



22.5 kHz frequency deviation  
 by 400 Hz 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 IF ADJUSTMENT

Adjust for a maximum reading on VTVM.

T1	455 kHz
----	---------

### LW FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L4	145 kHz
----	---------

CT8	300 kHz
-----	---------

### LW TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

L10	160 kHz
-----	---------

CT7	260 kHz
-----	---------

### MW FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L8	520 kHz
----	---------

CT4	1,680 kHz
-----	-----------

### MW TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

L3	620 kHz
----	---------

CT3	1,400 kHz
-----	-----------

### SW FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L6	5.8 MHz
----	---------

CT6	18.4 MHz
-----	----------

### SW TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

L5	5.8 MHz
----	---------

### FM FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L2	87.0 MHz
----	----------

CT2	108.3 MHz
-----	-----------

### FM TRACKING ADJUSTMENT

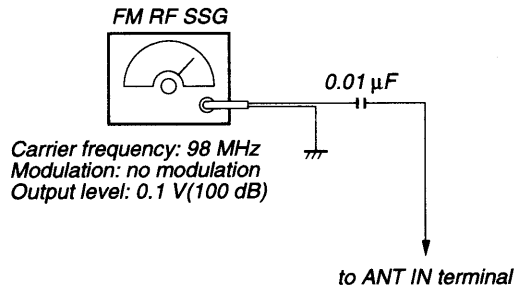
Adjust for a maximum reading on VTVM.

L1	87.0 MHz
----	----------

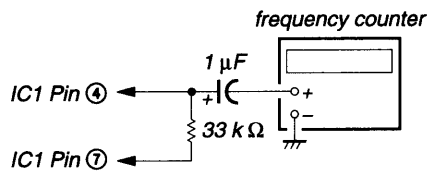
CT1	108.3 MHz
-----	-----------

## FM VCO Adjustment

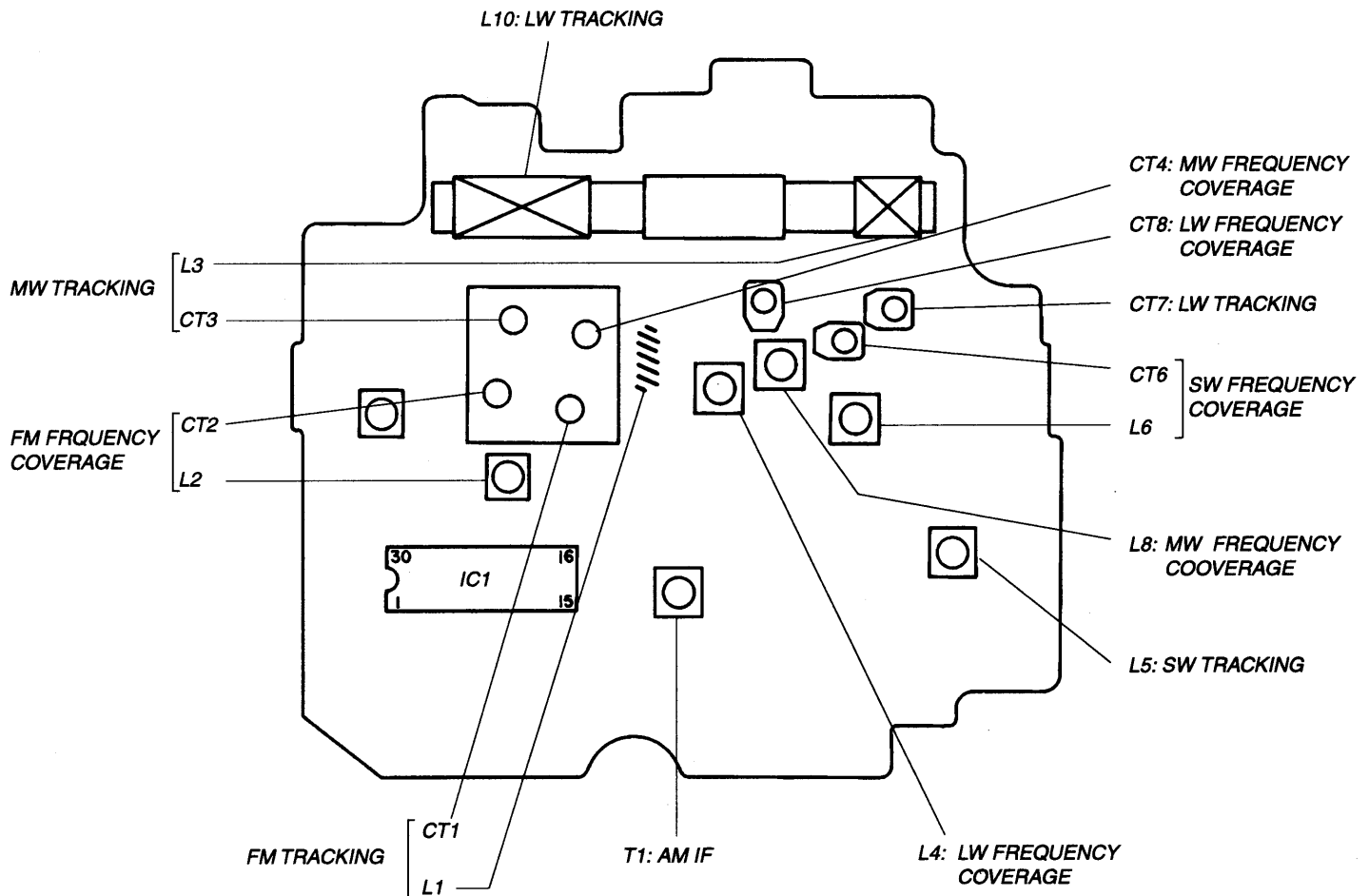
### Procedure:



1. Connect frequency counter to the positions shown below.
2. Tune the set to 98 MHz.
3. Adjust RV1 for 76 kHz  $\pm$  500 Hz reading on the frequency counter.

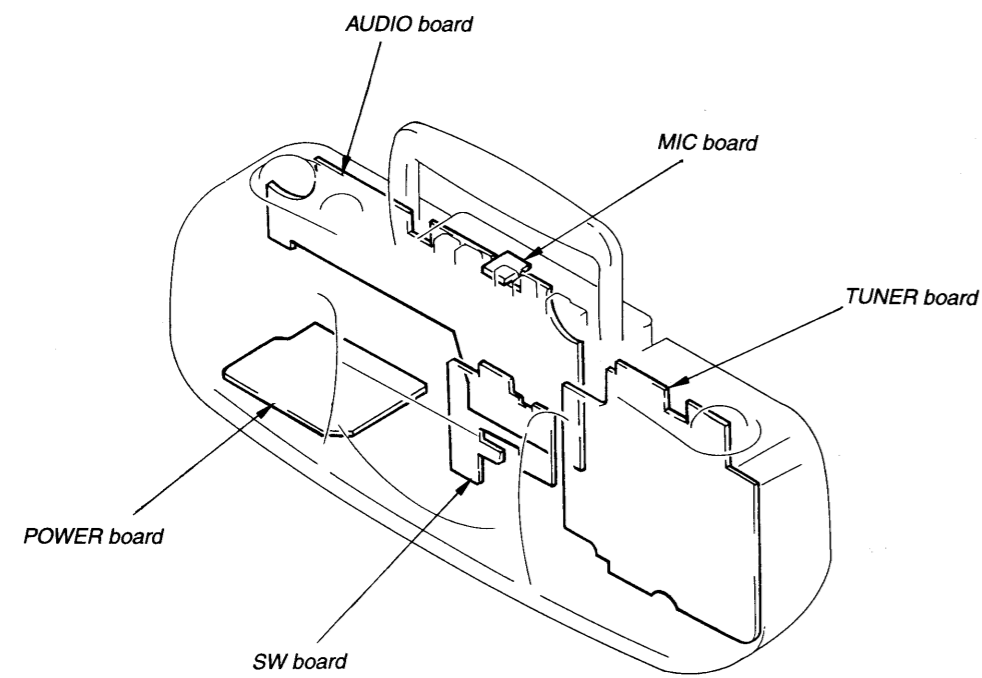


### • Adjustment Parts Location [TUNER BOARD] (Component Side)



SECTION 4  
DIAGRAMS

• Circuit Boards Location



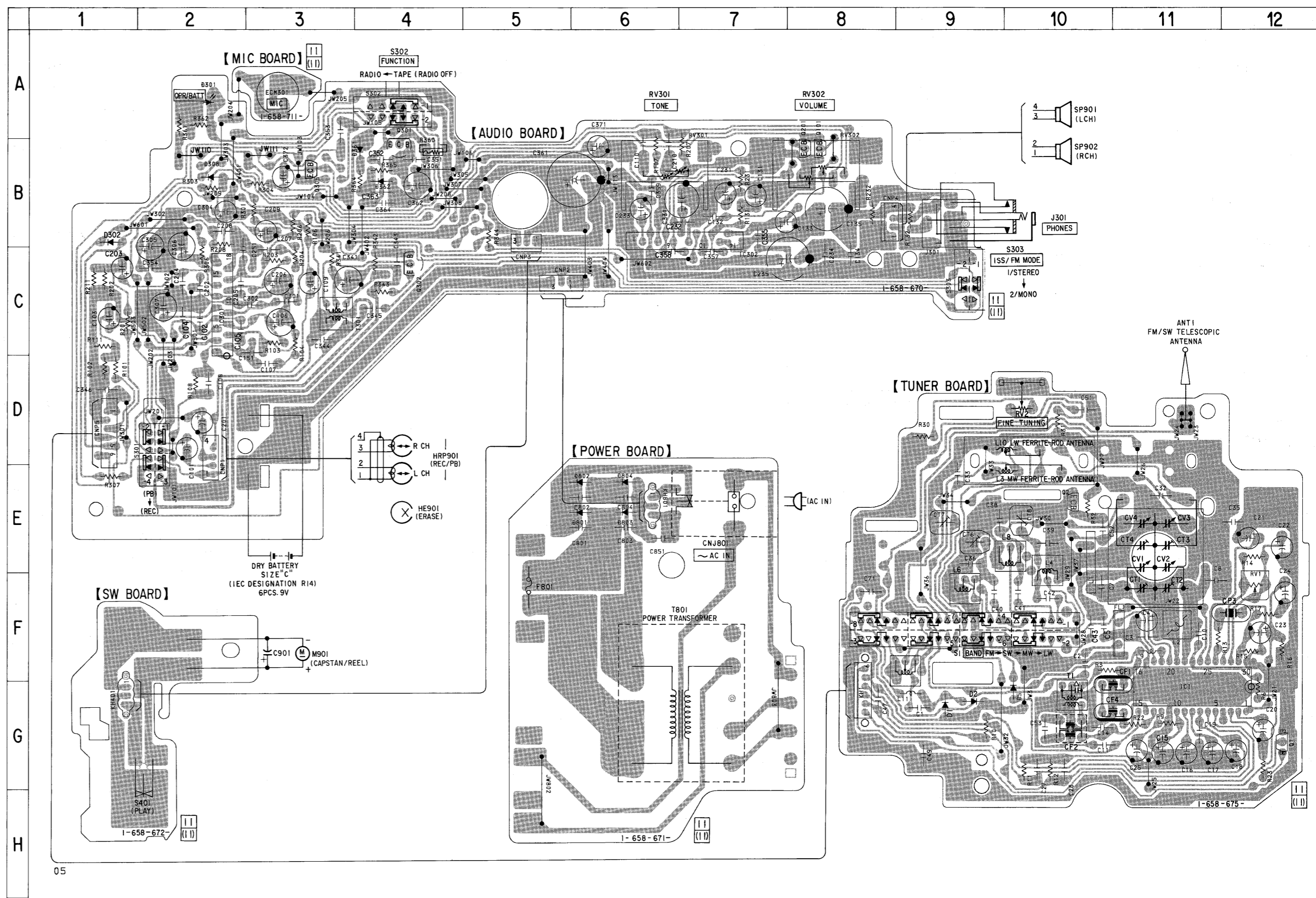
• Semiconductor Location

Ref. No.	Location
D1	G-9
D2	G-9
D5	G-10
D301	A-2
D302	B-1
D308	B-2
D361	B-4
D362	B-4
D801	E-6
D802	E-6
D803	E-6
D804	E-6
IC1	G-11
IC301	C-2
IC302	C-7
Q1	G-12
Q2	E-10
Q101	B-8
Q201	B-8
Q301	B-4
Q302	C-4
Q305	B-3

Note on Printed Wiring Boards:

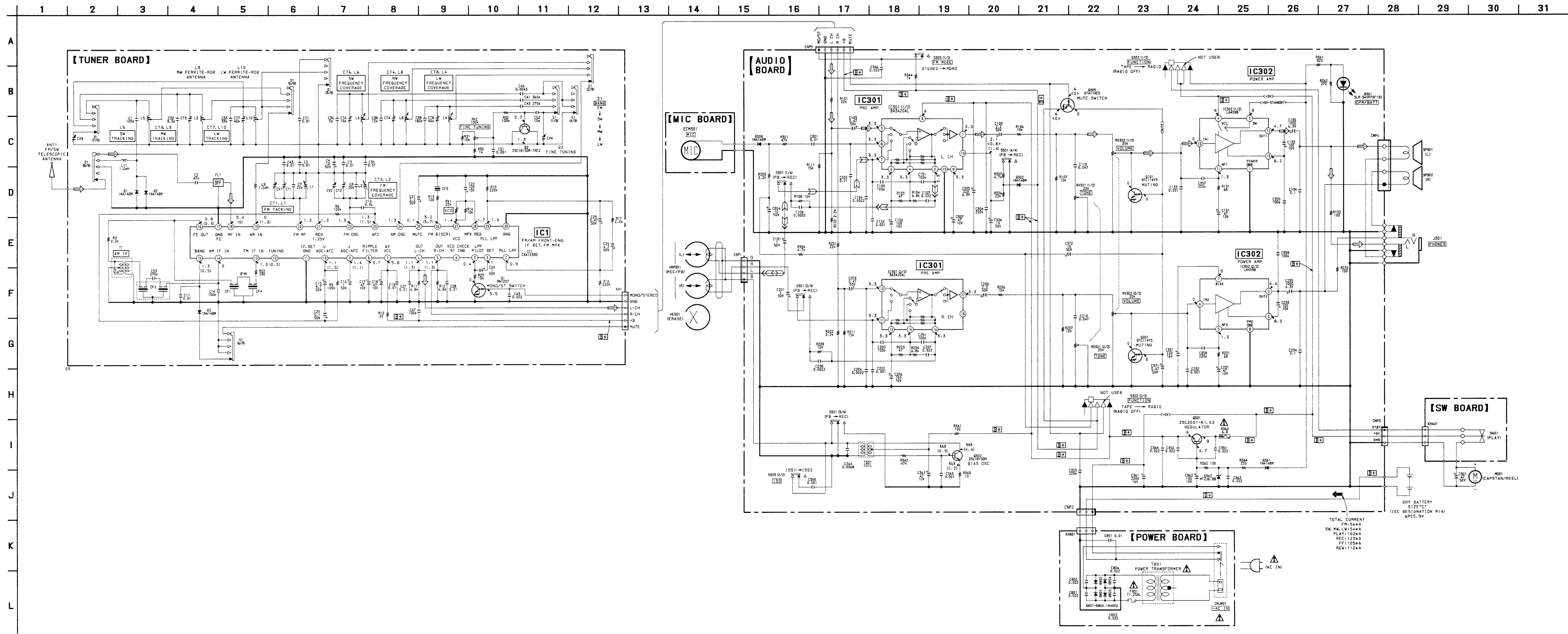
- : parts extracted from the component side.
- : Pattern from the side which enables seeing.

4-1. PRINTED WIRING BOARDS



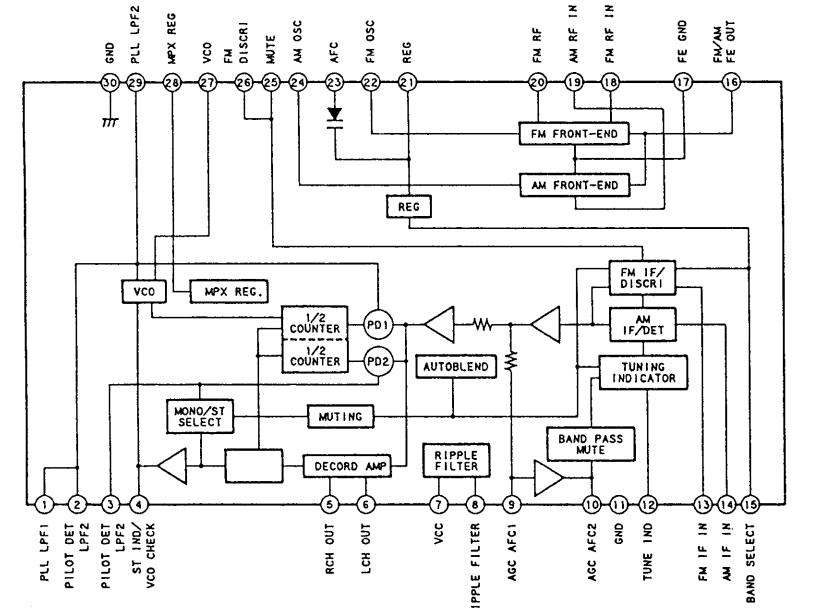


4-2. SCHEMATIC DIAGRAM



• IC Block Diagram

IC1 CXA1238S



- Note on Schematic Diagram:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $1/4$  W or less unless otherwise specified.
  - $\Delta$ : fusible resistor.

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

- $B+$ : B+ Line.
- $\square$ : panel designation.
- $\square$ : adjustment for repair.
- Total current is measured with no cassette installed. Power voltage is dc 9 V and fed with regulated dc power supply from the battery terminal.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
  - no mark: FM
  - ( ): AM
  - < : REC
  - > : REC
  - [ ]: PB
- Voltages are taken with a VOM (10 M $\Omega$ V). Voltage variations may be noted due to normal production tolerances.
- Signal path:
  - $\Rightarrow$ : FM
  - $\Rightarrow$ : PB
  - $\Rightarrow$ : REC

## SECTION 5 EXPLODED VIEWS

**NOTE:**

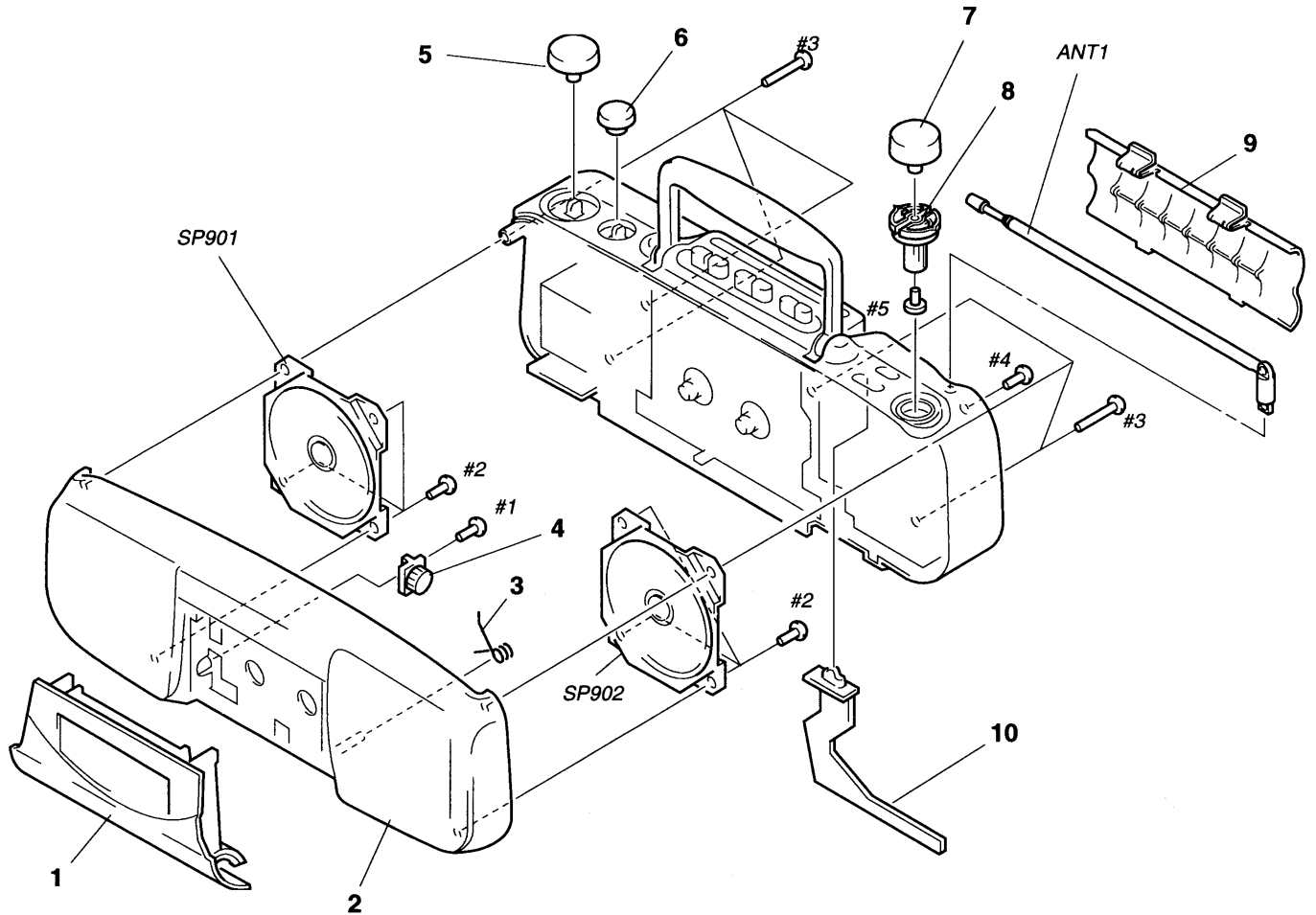
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:  
KNOB, BALANCE (WHITE) . . . (RED)

↑                    ↑  
 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 and accessories and packing materials are given in the last of the electrical parts list.

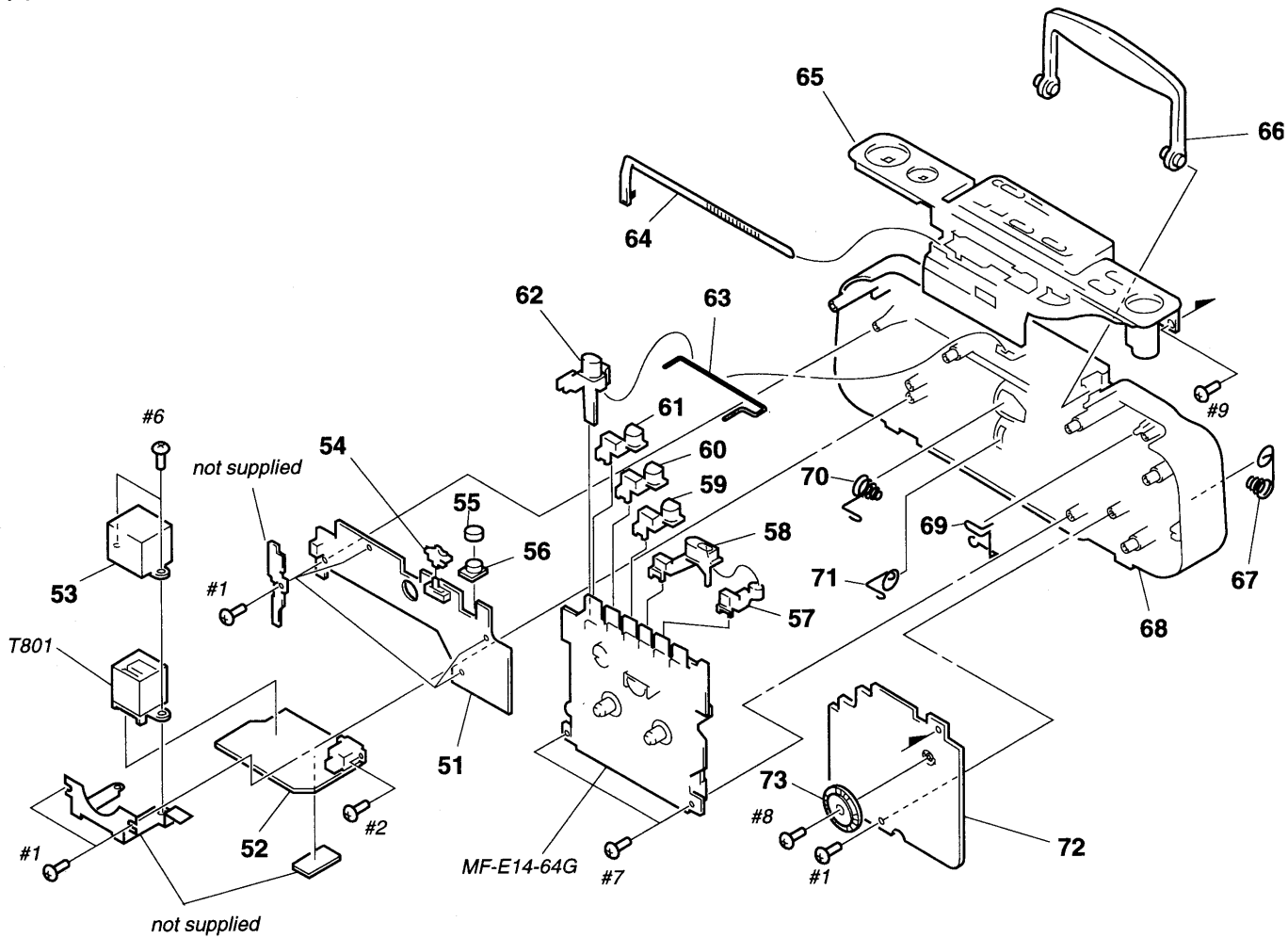
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

**(1) FRONT CABINET SECTION**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3371-983-1	HOLDER (CASS) SUB ASSY (for BLACK)		7	3-929-164-01	KNOB, TUNING (for BLACK,BLUE)	
1	X-3371-984-1	HOLDER (CASS) SUB ASSY (for WHITE)		7	3-929-164-11	KNOB, TUNING (for WHITE)	
1	X-3371-985-1	HOLDER (CASS) SUB ASSY (for BLUE)		8	3-929-168-01	SHAFT, TUNING	
2	X-3372-122-1	CABINET (FRONT) SUB ASSY (for BLUE)		9	3-388-401-11	LID, BATTERY CASE (for BLUE)	
2	X-3372-135-1	CABINET (FRONT) SUB ASSY (for BLACK)		9	3-388-401-32	LID, BATTERY CASE (for WHITE)	
2	X-3372-137-1	CABINET (FRONT) SUB ASSY (for WHITE)		9	3-388-401-52	LID, BATTERY CASE (for BLACK)	
3	3-929-176-01	SPRING, CASS		10	3-929-160-01	KNOB, BAND (for BLACK,BLUE)	
4	3-351-377-11	DAMPER		10	3-929-160-11	KNOB, BAND (for WHITE)	
5	3-929-161-01	KNOB, VOLUME (for BLACK,BLUE)		ANT1	1-501-480-11	ANTENNA, TELESCOPIC (FM)	
5	3-929-161-11	KNOB, VOLUME (for WHITE)		SP901	1-504-286-11	SPEAKER (9.2CM)(L CH)	
6	3-929-162-01	KNOB, TONE (for BLACK,BLUE)		SP902	1-504-286-11	SPEAKER (9.2CM)(R CH)	
6	3-929-162-11	KNOB, TONE (for WHITE)					

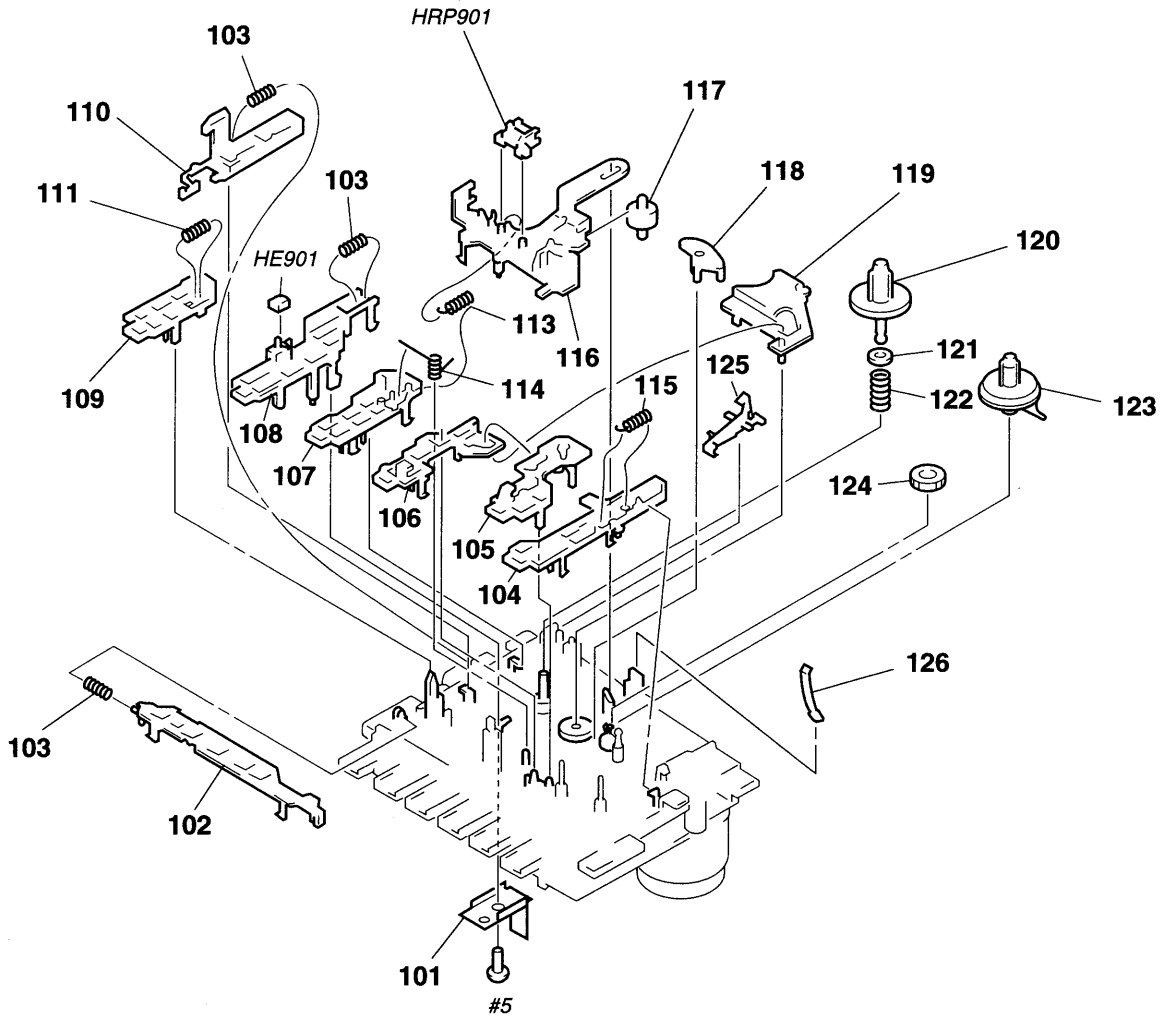
## (2) REAR CABINET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	A-3305-808-A	AUDIO BOARD, COMPLETE		65	3-929-149-41	PANEL, TOP (for WHITE)	
* 52	1-658-671-11	POWER BOARD		66	3-929-151-01	HANDLE (for BLACK,BLUE)	
* 53	3-388-406-01	PLATE (TRANS), SHIELD		66	3-929-151-11	HANDLE (for WHITE)	
54	3-929-163-01	KNOB, FUNCTION (for BLACK,BLUE)		67	3-929-286-01	SPRING, BATT	
54	3-929-163-11	KNOB, FUNCTION (for WHITE)		68	3-929-148-61	CABINET, REAR (BLACK)(AEP)	
55	3-366-963-01	CUSHION (MIC)		68	3-929-148-71	CABINET, REAR (WHITE)(AEP)	
* 56	1-658-711-11	MIC BOARD		68	3-929-148-81	CABINET, REAR (BLUE)(AEP)	
57	3-929-159-01	BUTTON, REC (●)		68	3-934-565-01	CABINET (REAR)(BLACK)(UK)	
58	3-929-158-01	BUTTON, PLAY (▶)		68	3-934-565-11	CABINET (REAR)(WHITE)(UK)	
59	3-929-157-01	BUTTON, REW (▶▶)		68	3-934-565-21	CABINET (REAR)(BLUE)(UK)	
60	3-929-156-01	BUTTON, FF (◀◀)		* 69	3-929-175-01	TERMINAL, ANTENNA	
61	3-929-155-01	BUTTON, PAUSE (  )		70	3-929-178-01	SPRING (-)	
62	3-929-154-01	BUTTON, EJECT/STOP (■/▲)		71	3-929-177-01	SPRING (+)	
* 63	3-929-146-01	BUTTON, ROD		* 72	A-3305-809-A	TUNER BOARD, COMPLETE	
64	3-929-166-01	POINTER		73	3-929-167-01	DRUM, PVC	
65	3-929-149-31	PANEL, TOP (for BLACK,BLUE)		△T801	1-450-492-11	TRANSFORMER, POWER	

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

**(3) MECHANISM DECK SECTION-1  
(MF-E14-64G)**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-929-171-01	LEVER, REC		116	4-932-693-03	DECK (S), HEAD	
102	4-932-695-01	SLIDER (FR), LOCK		117	4-928-962-01	PINCH ROLLER	
103	4-932-648-01	SPRING, COMPRESSION		118	4-928-982-01	LEVER (C)	
104	4-928-994-01	LEVER, PAUSE		119	X-4920-347-1	LEVER (S) ASSY, FR	
105	4-928-993-01	LEVER, FF		120	4-928-978-01	GEAR (C), SUPPLY REEL	
106	4-928-992-01	LEVER, REW		121	4-931-795-01	WASHER	
107	4-928-991-01	LEVER, PLAY		122	3-343-381-01	SPRING, COMPRESSION	
108	4-934-511-01	LEVER (S), REC		123	X-4920-350-3	GEAR (S) ASSY, T REEL	
109	4-928-985-11	LEVER, STOP		124	3-343-285-01	GEAR, FF	
110	4-936-206-01	SLIDER (S), EJECT		125	4-928-960-02	CLAW, SAFETY	
111	3-388-999-01	SPRING, COMPRESSION		126	3-376-135-01	SPRING, CASSETTE	
113	4-928-972-01	SPRING, TENSION		HE901	1-543-876-11	HEAD (ERASE)	
114	4-928-973-01	SPRING		HRP901	1-543-628-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
115	3-313-372-01	SPRING, TENSION					



# SECTION 6 ELECTRICAL PARTS LIST

**AUDIO**

**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:  $\mu$ , for example:  
uA. . . :  $\mu$ A. . .    uPA. . . :  $\mu$ PA. . .  
uPB. . . :  $\mu$ PB. . .    uPC. . . :  $\mu$ PC. . .  
uPD. . . :  $\mu$ PD. . .
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  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	Ref. No.	Part No.	Description	Remark
*	A-3305-808-A	AUDIO BOARD, COMPLETE *****		C306	1-126-964-11	ELECT	10uF 20% 50V
		< CAPACITOR >		C307	1-104-664-11	ELECT	47uF 20% 10V
C101	1-124-903-11	ELECT	1uF 20% 50V	C331	1-124-120-11	ELECT	220uF 20% 25V
C102	1-162-294-31	CERAMIC	0.001uF 10% 50V	C341	1-104-664-11	ELECT	47uF 20% 10V
C103	1-124-902-00	ELECT	0.47uF 20% 50V	C343	1-162-294-31	CERAMIC	0.001uF 10% 50V
C104	1-162-302-11	CERAMIC	0.0022uF 20% 16V	C344	1-130-481-00	MYLAR	0.0068uF 5% 50V
C105	1-162-282-31	CERAMIC	100PF 10% 50V	C345	1-162-294-31	CERAMIC	0.001uF 10% 50V
C106	1-124-443-00	ELECT	100uF 20% 10V	C346	1-161-494-00	CERAMIC	0.022uF 25V
C107	1-162-843-11	CERAMIC	0.022uF 10% 16V	C351	1-161-494-00	CERAMIC	0.022uF 25V
C108	1-162-302-11	CERAMIC	0.0022uF 20% 16V	C352	1-161-494-00	CERAMIC	0.022uF 25V
C109	1-124-925-11	ELECT	2.2uF 20% 100V	C353	1-162-286-21	CERAMIC	220PF 10% 50V
C110	1-162-847-11	CERAMIC	0.047uF 10% 16V	C354	1-162-286-21	CERAMIC	220PF 10% 50V
C131	1-104-664-11	ELECT	47uF 20% 10V	C355	1-162-282-31	CERAMIC	100PF 10% 50V
C132	1-162-294-31	CERAMIC	0.001uF 10% 50V	C357	1-162-286-21	CERAMIC	220PF 10% 50V
C133	1-124-443-00	ELECT	100uF 20% 10V	C358	1-162-286-21	CERAMIC	220PF 10% 50V
C134	1-130-495-00	MYLAR	0.1uF 5% 50V	C359	1-162-282-31	CERAMIC	100PF 10% 50V
C135	1-126-916-11	ELECT	1000uF 20% 6.3V	C361	1-126-768-11	ELECT	2200uF 20% 16V
C151	1-162-282-31	CERAMIC	100PF 10% 50V	C362	1-124-443-00	ELECT	100uF 20% 10V
C201	1-124-903-11	ELECT	1uF 20% 50V	C363	1-161-494-00	CERAMIC	0.022uF 25V
C202	1-162-294-31	CERAMIC	0.001uF 10% 50V	C364	1-161-494-00	CERAMIC	0.022uF 25V
C203	1-124-902-00	ELECT	0.47uF 20% 50V	C371	1-124-902-00	ELECT	0.47uF 20% 50V
C204	1-162-302-11	CERAMIC	0.0022uF 20% 16V	C372	1-126-964-11	ELECT	10uF 20% 50V
C205	1-162-282-31	CERAMIC	100PF 10% 50V			< CONNECTOR >	
C206	1-124-443-00	ELECT	100uF 20% 10V	CNP1	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P	
C207	1-162-843-11	CERAMIC	0.022uF 10% 16V	* CNP2	1-580-155-11	PIN, CONNECTOR (PC BOARD) 3P	
C208	1-162-302-11	CERAMIC	0.0022uF 20% 16V	* CNP3	1-580-155-11	PIN, CONNECTOR (PC BOARD) 3P	
C209	1-124-925-11	ELECT	2.2uF 20% 100V	CNP4	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P	
C210	1-162-847-11	CERAMIC	0.047uF 10% 16V	* CNP5	1-580-158-11	PIN, CONNECTOR (PC BOARD) 6P	
C231	1-104-664-11	ELECT	47uF 20% 10V			< DIODE >	
C232	1-162-294-31	CERAMIC	0.001uF 10% 50V	D301	8-719-938-69	LED GL3PR8 (OPR/BATT)	
C233	1-124-443-00	ELECT	100uF 20% 10V	D302	8-719-987-63	DIODE 1N4148M	
C234	1-130-495-00	MYLAR	0.1uF 5% 50V	D308	8-719-987-63	DIODE 1N4148M	
C235	1-126-916-11	ELECT	1000uF 20% 6.3V	D361	8-719-987-63	DIODE 1N4148M	
C251	1-162-282-31	CERAMIC	100PF 10% 50V	D362	8-719-109-97	DIODE RD6.8ES-B2	
C301	1-161-053-00	CERAMIC	0.015uF 10% 16V			< IC >	
C302	1-162-306-11	CERAMIC	0.01uF 20% 16V	IC301	8-759-978-54	IC BA3420AL	
C304	1-126-964-11	ELECT	10uF 20% 50V	IC302	8-759-060-21	IC LA4598	
C305	1-124-635-00	ELECT	220uF 20% 6.3V				

**AUDIO**

**MIC**

**POWER**

Ref. No.	Part No.	Description	Remark
		< JACK >	
J301	1-566-891-11	JACK (PHONES)	
		< TRANSISTOR >	
Q101	8-729-904-36	TRANSISTOR DTC114YS	
Q201	8-729-904-36	TRANSISTOR DTC114YS	
Q301	8-729-011-92	TRANSISTOR 2SC2001-K1K2	
Q302	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q305	8-729-900-61	TRANSISTOR DTA114ES	
		< RESISTOR >	
R101	1-247-863-91	CARBON 22K 5%	1/4W
R102	1-249-421-11	CARBON 2.2K 5%	1/4W
R103	1-249-401-11	CARBON 47 5%	1/4W
R104	1-249-427-11	CARBON 6.8K 5%	1/4W
R106	1-249-429-11	CARBON 10K 5%	1/4W
R107	1-249-429-11	CARBON 10K 5%	1/4W
R108	1-249-429-11	CARBON 10K 5%	1/4W
R111	1-249-431-11	CARBON 15K 5%	1/4W
R131	1-249-403-11	CARBON 68 5%	1/4W
R132	1-247-807-31	CARBON 100 5%	1/4W
R201	1-247-863-91	CARBON 22K 5%	1/4W
R202	1-249-421-11	CARBON 2.2K 5%	1/4W
R203	1-249-401-11	CARBON 47 5%	1/4W
R204	1-249-427-11	CARBON 6.8K 5%	1/4W
R206	1-249-429-11	CARBON 10K 5%	1/4W
R207	1-249-429-11	CARBON 10K 5%	1/4W
R208	1-249-429-11	CARBON 10K 5%	1/4W
R211	1-249-431-11	CARBON 15K 5%	1/4W
R231	1-249-403-11	CARBON 68 5%	1/4W
R232	1-247-807-31	CARBON 100 5%	1/4W
R301	1-249-437-11	CARBON 47K 5%	1/4W
R303	1-249-421-11	CARBON 2.2K 5%	1/4W
R304	1-249-425-11	CARBON 4.7K 5%	1/4W
R306	1-247-863-91	CARBON 22K 5%	1/4W
R307	1-249-425-11	CARBON 4.7K 5%	1/4W
R341	1-247-807-31	CARBON 100 5%	1/4W
R342	1-249-437-11	CARBON 47K 5%	1/4W
R343	1-249-303-11	CARBON 10 5%	1/4W
R344	1-249-417-11	CARBON 1K 5%	1/4W
△R360	1-219-113-11	FUSIBLE 6.8 5%	1/4W F
R361	1-249-417-11	CARBON 1K 5%	1/4W
R362	1-249-413-11	CARBON 470 5%	1/4W
R364	1-247-815-91	CARBON 220 5%	1/4W
R365	1-247-807-31	CARBON 100 5%	1/4W

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV301	1-223-416-11	RES, VAR, CARBON 20K/20K (TONE)	
RV302	1-223-415-11	RES, VAR, CARBON 20K/20K (VOLUME)	
		< SWITCH >	
S301	1-571-472-11	SWITCH, SLIDE (PB-REC)	
S302	1-571-547-11	SWITCH, SLIDE (FUNCTION)	
S303	1-554-222-00	SWITCH, SLIDE (ISS/FM MODE)	
		< TRANSFORMER >	
T301	1-433-268-00	TRANSFORMER, BIAS OSCILLATOR	
		*****	
*	1-658-711-11	MIC BOARD	
		*****	
	3-366-963-01	CUSHION (MIC)	
		< MICROPHONE >	
ECM301	1-542-118-11	MICROPHONE, ELECTRET CONDENSER (MIC)	
		*****	
*	1-658-671-11	POWER BOARD	
		*****	
	1-533-217-31	HOLDER, FUSE	
*	1-565-384-11	HOLDER, CABLE 3P	
*	3-388-406-01	PLATE (TRANS), SHIELD	
	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
		< CAPACITOR >	
C801	1-101-005-00	CERAMIC 22000PF	50V
C802	1-101-005-00	CERAMIC 22000PF	50V
C803	1-101-005-00	CERAMIC 22000PF	50V
C804	1-101-005-00	CERAMIC 22000PF	50V
C851	1-162-306-11	CERAMIC 0.01uF 20%	16V
		< AC INLET >	
△CNJ801	1-526-838-11	INLET, AC 2P (~AC IN)	
		< DIODE >	
D801	8-719-200-02	DIODE 10E2	
D802	8-719-200-02	DIODE 10E2	
D803	8-719-200-02	DIODE 10E2	
D804	8-719-200-02	DIODE 10E2	
		< FUSE >	
△F801	1-532-502-31	FUSE (T1.25AL/250V)	

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

<b>POWER</b>	<b>SW</b>	<b>TUNER</b>
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Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark	
		< TRANSFORMER >								
△T801	1-450-492-11	TRANSFORMER, POWER			C42	1-130-011-00	FILM	270PF	5%	63V
*****										
*	1-658-672-11	SW BOARD			C43	1-162-306-11	CERAMIC	0.01uF	20%	16V
*****										
*	1-565-384-11	HOLDER, CABLE 3P			C47	1-162-282-31	CERAMIC	100PF	10%	50V
		< SWITCH >			C49	1-161-494-00	CERAMIC	0.022uF		25V
S401	1-571-330-21	SWITCH, LEAF (PLAY)			C51	1-162-294-31	CERAMIC	0.001uF	10%	50V
*****										
*	A-3305-809-A	TUNER BOARD, COMPLETE			C52	1-102-951-00	CERAMIC	15PF	5%	50V
*****										
	3-929-167-01	DRUM, PVC			C53	1-162-287-31	CERAMIC	270PF	10%	50V
	7-621-770-87	SCREW +B 2.6X5			C71	1-162-306-11	CERAMIC	0.01uF	20%	16V
		< CAPACITOR >					< FILTER >			
C1	1-162-282-31	CERAMIC	100PF	10%	50V	CF1	1-577-327-81	FILTER, CERAMIC		
C2	1-162-215-31	CERAMIC	47PF	5%	50V	CF2	1-567-670-11	FILTER, CERAMIC		
C3	1-162-306-11	CERAMIC	0.01uF	20%	16V	CF3	1-577-327-81	FILTER, CERAMIC		
C4	1-124-907-11	ELECT	10uF	20%	50V	CF4	1-577-327-81	FILTER, CERAMIC		
C5	1-162-306-11	CERAMIC	0.01uF	20%	16V			< TRIMMER >		
C7	1-162-207-31	CERAMIC	22PF	5%	50V	CT1	1-151-637-11	CAP, VARIABLE		
C8	1-102-958-00	CERAMIC	20PF	5%	50V	CT2	1-151-637-11	CAP, VARIABLE		
C10	1-162-193-31	CERAMIC	3.3PF	10%	50V	CT3	1-151-637-11	CAP, VARIABLE		
C11	1-162-306-11	CERAMIC	0.01uF	20%	16V	CT4	1-151-637-11	CAP, VARIABLE		
C14	1-162-282-31	CERAMIC	100PF	10%	50V	CT6	1-141-486-11	CAP, ADJ		
C15	1-126-963-11	ELECT	4.7uF	20%	50V	CT7	1-141-439-21	CAP, ADJ		
C16	1-124-903-11	ELECT	1uF	20%	50V	CT8	1-141-439-21	CAP, ADJ		
C17	1-104-664-11	ELECT	47uF	20%	10V			< VARIABLE CAPACITOR >		
C18	1-104-664-11	ELECT	47uF	20%	10V	CV1	1-151-637-11	CAP, VARIABLE		
C19	1-162-306-11	CERAMIC	0.01uF	20%	16V	CV2	1-151-637-11	CAP, VARIABLE		
C20	1-124-903-11	ELECT	1uF	20%	50V	CV3	1-151-637-11	CAP, VARIABLE		
C21	1-126-961-11	ELECT	2.2uF	20%	50V	CV4	1-151-637-11	CAP, VARIABLE		
C22	1-124-443-00	ELECT	100uF	20%	10V			< DIODE >		
C23	1-124-902-00	ELECT	0.47uF	20%	50V	D1	8-719-987-63	DIODE 1N4148M		
C24	1-126-963-11	ELECT	4.7uF	20%	50V	D2	8-719-987-63	DIODE 1N4148M		
C25	1-126-956-91	ELECT	0.1uF	20%	50V	D5	8-719-987-63	DIODE 1N4148M		
C27	1-162-306-11	CERAMIC	0.01uF	20%	16V			< FILTER >		
C28	1-162-306-11	CERAMIC	0.01uF	20%	16V	FL1	1-236-711-21	FILTER, BAND PASS		
C32	1-162-193-31	CERAMIC	3.3PF	10%	50V			< IC >		
C33	1-162-211-31	CERAMIC	33PF	5%	50V	IC1	8-752-050-20	IC CXA1238S		
C35	1-162-306-11	CERAMIC	0.01uF	20%	16V			< COIL >		
C36	1-102-942-00	CERAMIC	5.0PF	+0.5PF	50V	L1	1-406-999-11	COIL, AIR-CORE		
C38	1-102-949-00	CERAMIC	12PF	5%	50V	L2	1-406-956-11	COIL (WITH CORE)		
C39	1-136-436-11	FILM	180PF	5%	63V	L3	1-501-827-11	ANTENNA, FERRITE-ROD		
C40	1-136-232-11	FILM	0.0043uF	5%	63V	L4	1-406-252-11	COIL (OSC)		
C41	1-136-987-11	FILM	360PF	5%	63V	L5	1-402-596-31	COIL (ANT)		
					L6	1-406-280-11	COIL (OSC)			

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**TUNER**

Ref. No.	Part No.	Description	Remark
L8	1-411-704-11	COIL, OSC	
L9	1-410-499-41	INDUCTOR 1.5uH	
L10	1-501-827-11	ANTENNA, FERRITE-ROD	
L11	1-414-142-11	INDUCTOR 1uH	
< TRANSISTOR >			
Q1	8-729-206-25	TRANSISTOR RN1207	
Q2	8-729-281-53	TRANSISTOR 2SC1815-GR	
< RESISTOR >			
R3	1-249-421-11	CARBON 2.2K 5% 1/4W	
R6	1-249-441-11	CARBON 100K 5% 1/4W	
R9	1-249-441-11	CARBON 100K 5% 1/4W	
R10	1-247-791-91	CARBON 22 5% 1/4W	
R11	1-249-427-11	CARBON 6.8K 5% 1/4W	
R12	1-249-427-11	CARBON 6.8K 5% 1/4W	
R13	1-247-807-31	CARBON 100 5% 1/4W	
R14	1-249-429-11	CARBON 10K 5% 1/4W	
R15	1-247-887-00	CARBON 220K 5% 1/4W	
R16	1-247-887-00	CARBON 220K 5% 1/4W	
R17	1-249-421-11	CARBON 2.2K 5% 1/4W	
R22	1-249-411-11	CARBON 330 5% 1/4W	
R23	1-249-429-11	CARBON 10K 5% 1/4W	
R30	1-249-417-11	CARBON 1K 5% 1/4W	
R31	1-249-429-11	CARBON 10K 5% 1/4W	
R32	1-249-441-11	CARBON 100K 5% 1/4W	
< VARIABLE RESISTOR >			
RV1	1-238-601-11	RES, ADJ, CARBON 22K	
RV2	1-225-182-11	RES, VAR, CARBON (FINE TUNING)	
< SWITCH >			
S1	1-692-772-11	SWITCH, SLIDE (BAND)	
< TRANSFORMER >			
T1	1-406-952-11	TRANSFORMER, IF	
*****			
MISCELLANEOUS			
*****			
ANT1	1-501-480-11	ANTENNA, TELESCOPIC (FM)	
C901	1-124-910-11	ELECT 47uF 20% 50V	
HE901	1-543-876-11	HEAD (ERASE)	
HRP901	1-543-628-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
M901	X-3367-872-2	MOTOR ASSY (1600)(CAPSTAN/REEL)	
SP901	1-504-286-11	SPEAKER (9.2CM)(L CH)	
SP902	1-504-286-11	SPEAKER (9.2CM)(R CH)	
*****			

Ref. No.	Part No.	Description	Remark
*****			
HARDWARE LIST			
*****			
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#3	7-685-153-19	SCREW +P 3X30 TYPE2 NON-SLIT	
#4	7-682-547-04	SCREW +B 3X6	
#5	7-685-132-19	SCREW +BTP 2.6X5 TYPE2 N-S	
#6	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
#7	7-685-649-79	SCREW +BVTP 3X14 TYPE2 IT-3	
#8	7-621-770-87	SCREW +B 2.6X5	
#9	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#10	7-621-775-20	SCREW +B 2.6X5	
*****			
ACCESSORIES & PACKING MATERIALS			
*****			
△	1-769-412-11	CORD, POWER	
△	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK)	
	3-810-931-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH)	
	3-810-931-21	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN, PORTUGUESE)(AEP)	
*	3-934-197-01	INDIVIDUAL CARTON (AEP)	
*	3-934-198-01	INDIVIDUAL CARTON (UK)	
*	3-934-203-01	CUSHION (L)(R)	

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

# CFS-E14L

**SONY**

*AEP Model  
UK Model*

## SERVICE MANUAL







### SUPPLEMENT-1

File this supplement with the Service Manual.

**Subject:** • External cabinet color SILVER is added.  
• Correction.

(ENG-99016)

 : indicates corrected portion.

Page	FORMER TYPE			NEW TYPE	
	Ref. No.	Part No.	Description	Part No.	Description
15	1	X-3371-983-1	HOLDER (CASS) SUB ASSY (for BLACK)	X-3371-983-1	HOLDER (CASS) SUB ASSY (BLACK)
	1	X-3371-984-1	HOLDER (CASS) SUB ASSY (for WHITE)	X-3371-984-1	HOLDER (CASS) SUB ASSY (WHITE)
	1	X-3371-985-1	HOLDER (CASS) SUB ASSY (for BLUE)	X-3371-985-1	HOLDER (CASS) SUB ASSY (BLUE)
	1	_____	_____	X-3378-440-1	HOLDER (CASS) SUB ASSY (SILVER)
	2	X-3372-122-1	CABINET (FRONT) SUB ASSY (for BLUE)	X-3372-122-1	CABINET (FRONT) SUB ASSY (BLUE)
	2	X-3372-135-1	CABINET (FRONT) SUB ASSY (for BLACK)	X-3372-135-1	CABINET (FRONT) SUB ASSY (BLACK)
	2	X-3372-137-1	CABINET (FRONT) SUB ASSY (for WHITE)	X-3372-137-1	CABINET (FRONT) SUB ASSY (WHITE)
	2	_____	_____	X-3378-441-1	CABINET (FRONT) SUB ASSY (SILVER)
	5	3-929-161-01	KNOB, VOLUME (for BLACK,BLUE)	3-929-161-01	KNOB, VOLUME (BLACK) 
	5	3-929-161-11	KNOB, VOLUME (for WHITE)	3-929-161-11	KNOB, VOLUME (WHITE)
	5	_____	_____	<del>3-929-161-21</del>	<del>KNOB, VOLUME (BLUE)</del> 
	5	_____	_____	3-929-161-41	KNOB, VOLUME (SILVER)
	6	3-929-162-01	KNOB, TONE (for BLACK,BLUE)	3-929-162-01	KNOB, TONE (BLACK) 
	6	3-929-162-11	KNOB, TONE (for WHITE)	3-929-162-11	KNOB, TONE (WHITE)
	6	_____	_____	<del>3-929-162-21</del>	<del>KNOB, TONE (BLUE)</del> 
	6	_____	_____	3-929-162-41	KNOB, TONE (SILVER)
	7	3-929-164-01	KNOB, TUNING (for BLACK,BLUE)	3-929-164-01	KNOB, TUNING (BLACK) 
	7	3-929-164-11	KNOB, TUNING (for WHITE)	3-929-164-11	KNOB, TUNING (WHITE)
	7	_____	_____	<del>3-929-164-21</del>	<del>KNOB, TUNING (BLUE)</del> 
	7	_____	_____	3-929-164-41	KNOB, TUNING (SILVER)
9	3-388-401-11	LID, BATTERY CASE (for BLUE)	3-388-401-11	LID, BATTERY CASE (BLUE)	
9	3-388-401-32	LID, BATTERY CASE (for WHITE)	3-388-401-32	LID, BATTERY CASE (WHITE)	
9	3-388-401-52	LID, BATTERY CASE (for BLACK)	3-388-401-52	LID, BATTERY CASE (BLACK)	
9	_____	_____	3-388-401-71	LID, BATTERY CASE (SILVER)	
10	3-929-160-01	KNOB, BAND (for BLACK,BLUE)	3-929-160-01	KNOB, BAND (BLACK,BLUE)	
10	3-929-160-11	KNOB, BAND (for WHITE)	3-929-160-11	KNOB, BAND (WHITE)	
10	_____	_____	3-929-160-31	KNOB, BAND (SILVER)	

Page	FORMER TYPE			NEW TYPE	
	Ref. No.	Part No.	Description	Part No.	Description
	54	3-929-163-01	KNOB, FUNCTION (for BLACK,BLUE)	3-929-163-01	KNOB, FUNCTION (BLACK,BLUE)
	54	3-929-163-11	KNOB, FUNCTION (for WHITE)	3-929-163-11	KNOB, FUNCTION (WHITE)
	54	_____	_____	3-929-163-31	KNOB, FUNCTION (SILVER)
	58	3-929-158-01	BUTTON, PLAY (◀)	3-929-158-01	BUTTON, PLAY (◀)(BLACK,BLUE)
	58	_____	_____	3-929-158-11	BUTTON, PLAY (◀)(WHITE)
	58	_____	_____	3-929-158-31	BUTTON, PLAY (◀)(SILVER)
	59	3-929-157-01	BUTTON, REW (▶▶)	3-929-157-01	BUTTON, REW (▶▶)(BLACK,BLUE)
	59	_____	_____	3-929-157-11	BUTTON, REW (▶▶)(WHITE)
	59	_____	_____	3-929-157-31	BUTTON, REW (▶▶)(SILVER)
	60	3-929-156-01	BUTTON, FF (◀◀)	3-929-156-01	BUTTON, FF (◀◀)(BLACK,BLUE)
	60	_____	_____	3-929-156-11	BUTTON, FF (◀◀)(WHITE)
	60	_____	_____	3-929-156-31	BUTTON, FF (◀◀)(SILVER)
	61	3-929-155-01	BUTTON, PAUSE (■)	3-929-155-01	BUTTON, PAUSE (■)(BLACK,BLUE)
	61	_____	_____	3-929-155-11	BUTTON, PAUSE (■)(WHITE)
	61	_____	_____	3-929-155-31	BUTTON, PAUSE (■)(SILVER)
16	62	3-929-154-01	BUTTON, EJECT/STOP (■/▲)	3-929-154-01	BUTTON, EJECT/STOP (■/▲)(BLACK,BLUE)
	62	_____	_____	3-929-154-11	BUTTON, EJECT/STOP (■/▲)(WHITE)
	62	_____	_____	3-929-154-31	BUTTON, EJECT/STOP (■/▲)(SILVER)
	65	3-929-149-31	PANEL, TOP (for BLACK, BLUE)	3-929-149-31	PANEL, TOP (BLACK)
	65	3-929-149-41	PANEL, TOP (for WHITE)	3-929-149-41	PANEL, TOP (WHITE)
	65	_____	_____	3-938-483-21	PANEL, TOP (BLUE)
	65	_____	_____	3-043-098-01	PANEL, TOP (SILVER)
	66	3-929-151-01	HANDLE (for BLACK, BLUE)	3-929-151-01	HANDLE (BLACK)
	66	3-929-151-11	HANDLE (for WHITE)	3-929-151-11	HANDLE (WHITE)
	66	_____	_____	3-929-151-21	HANDLE (BLUE)
	66	_____	_____	3-929-151-41	HANDLE (SILVER)
	68	3-929-148-61	CABINET, REAR (BLACK)(AEP)	3-929-148-61	CABINET, REAR (BLACK)(AEP)
	68	3-929-148-71	CABINET, REAR (WHITE)(AEP)	3-929-148-71	CABINET, REAR (WHITE)(AEP)
	68	3-929-148-81	CABINET, REAR (BLUE)(AEP)	3-929-148-81	CABINET, REAR (BLUE)(AEP)
	68	_____	_____	3-929-148-91	CABINET, REAR (SILVER)
	68	3-934-565-01	CABINET(REAR) (BLACK)(UK)	3-934-565-01	CABINET(REAR) (BLACK)(UK)
	68	3-934-565-11	CABINET(REAR) (WHITE)(UK)	3-934-565-11	CABINET(REAR) (WHITE)(UK)
	68	3-934-565-21	CABINET(REAR) (BLUE)(UK)	3-934-565-21	CABINET(REAR) (BLUE)(UK)