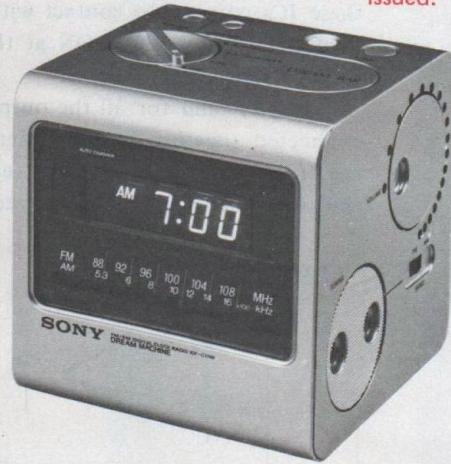


ICF-C11W

**REVISED**

Discard your ICF-C11W
Service Manual previously
issued.

US Model
Canadian Model
E Model
AEP Model
AUS Model

US, Canadian, E, AEP Model

	Suffix of Radio Board & Clock Board
Former Type	-11
New Type	-21

FM/AM DIGITAL CLOCK RADIO

SPECIFICATIONS

Frequency Range:	FM 87.5–108 MHz AM 530–1,605 kHz (566–187 m)
Antennas:	FM: AC power cord antenna AM: Built-in ferrite rod antenna
Speaker:	Approx. 6.6 cm (2½ inches) dia.
Power Output:	200 mW (at 10% harmonic distortion)
Power Requirements:	120V ac, 60 Hz (US, Canadian, E2 model) 110–120, 220–240V ac, 50/60 Hz (E1 model) 220V ac, 50Hz (AEP model) 240V ac, 50Hz (AUS model)

Power Consumption:	5W ac (2.5W ac when only the clock is in operation)
Dimensions:	Approx. 126(w) x 126(h) x 126(d) mm 5(w) x 5(h) x 5(d) inches including projecting parts and controls
Weight:	Approx. 810 g 1 lb 14 oz (US, Canadian, E2 model) Approx. 910 g, 2lb (E1 model, AEP, AUS model)

ATTENTION AU COMPOSANT AYANT RAPPORT
À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET
UNE MARQUE SUR LES DIAGRAMMES SCHÉ-
MATIQUES, LES VUES EXPLOSÉES ET LA LISTE
DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ
DE FONCTIONNEMENT. NE REMPLACER CES
COMPOSANTS QUE PAR DES PIÈCES SONY DONT
LES NUMÉROS SONT DONNÉS DANS CE MANUEL
OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS 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.

SONY
SERVICE MANUAL

ICF-C11W

ICF-C11W
FM/AM 2BANDS
AC: 120V 60 Hz 5W
MADE IN JAPAN
CERTIFICATION: COMPLYING WITH
F.C.C. RULES PART 15.

MODEL IDENTIFICATION

— Specification Label —

US, Canadian model

SONY® DREAM MACHINE

MODEL NO. ICF-C11W
FM/AM 2BANDS
AC: 120V 60 Hz 5W
MADE IN JAPAN
CERTIFICATION: COMPLYING WITH
F.C.C. RULES PART 15.

ICF-C11W
FM/AM 2 BANDS
AC: 220V ~ 50 Hz 5W
FTZ PRÜFNUMMER U-185
MADE IN

SONY®

MODEL NO. ICF-C11W
FM/AM 2 BANDS
AC: 220V ~ 50 Hz 5W
FTZ PRÜFNUMMER U-185
MADE IN

MALAYSIA OR JAPAN

PART NO.

AUS, E1, E2 model

SONY®

MODEL No. ICF-C11W
FM/AM 2 BANDS

MADE IN

AUS model	AC: 240V ~ 50 Hz 5W
E1 model	AC: 110–120V/220–240V 50/60 Hz 5W
E2 model	AC: 120V 60Hz 5W

MALAYSIA OR JAPAN PART NO.

Handling Precautions for MOS ICs (IC: MM5387N . . . US, Canadian, E, AUS model IC: HD38980C . . . AEP model)

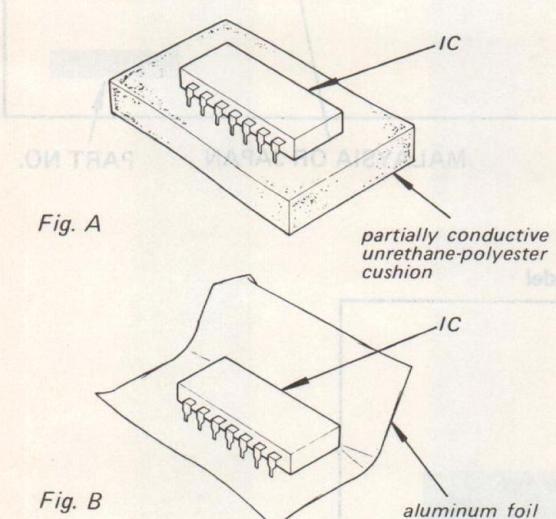
Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

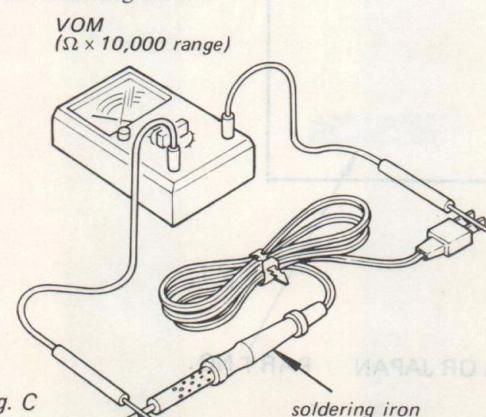
(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

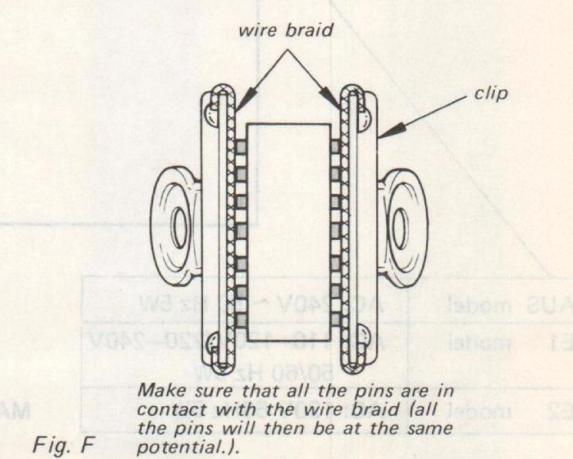
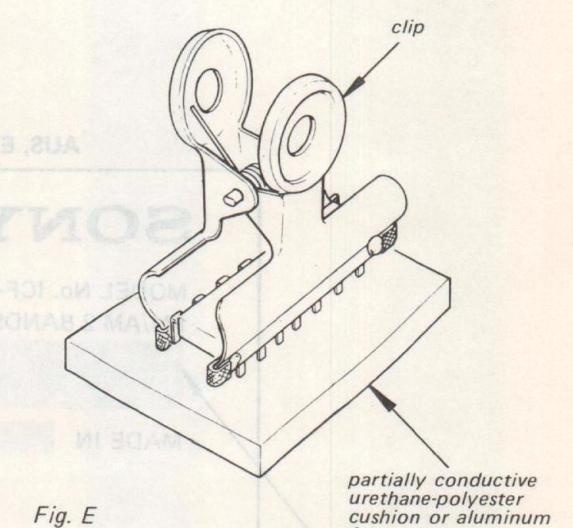
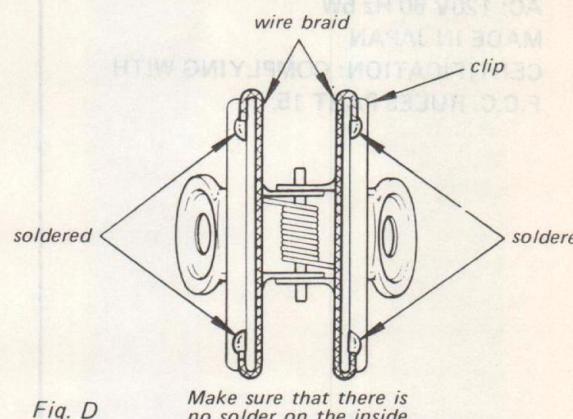
1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential. (The ICs should be stored in that manner until mounted on the circuit board.)



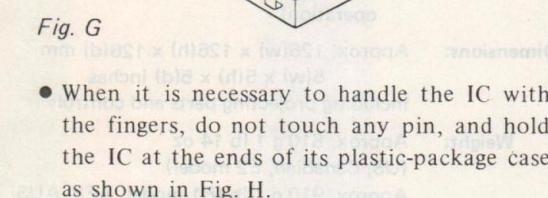
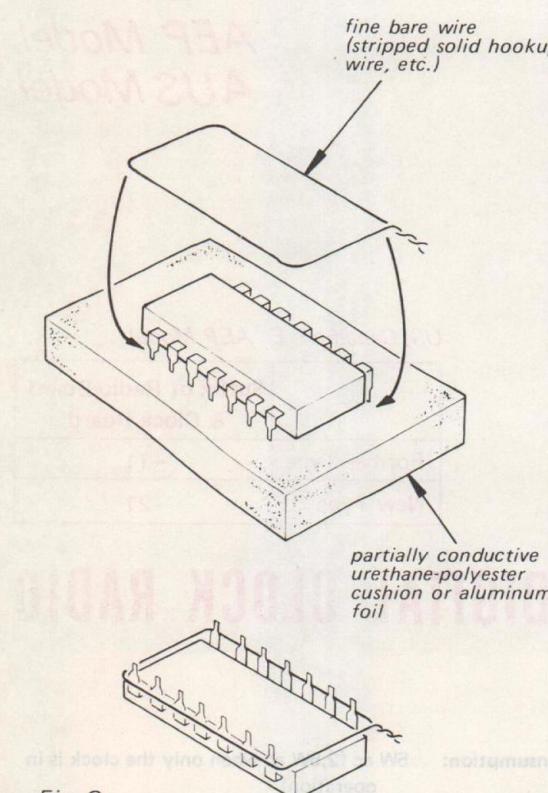
2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.



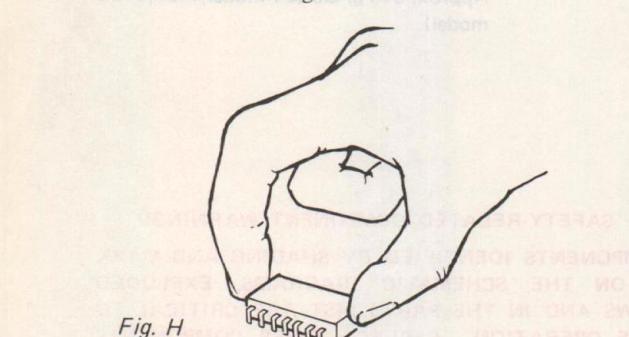
3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
 - Use a paper clip modified by soldering in a wire braid insert.



- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.



- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

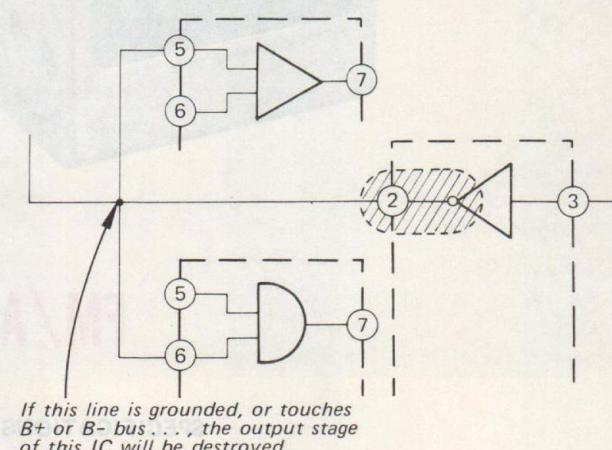


Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B- voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

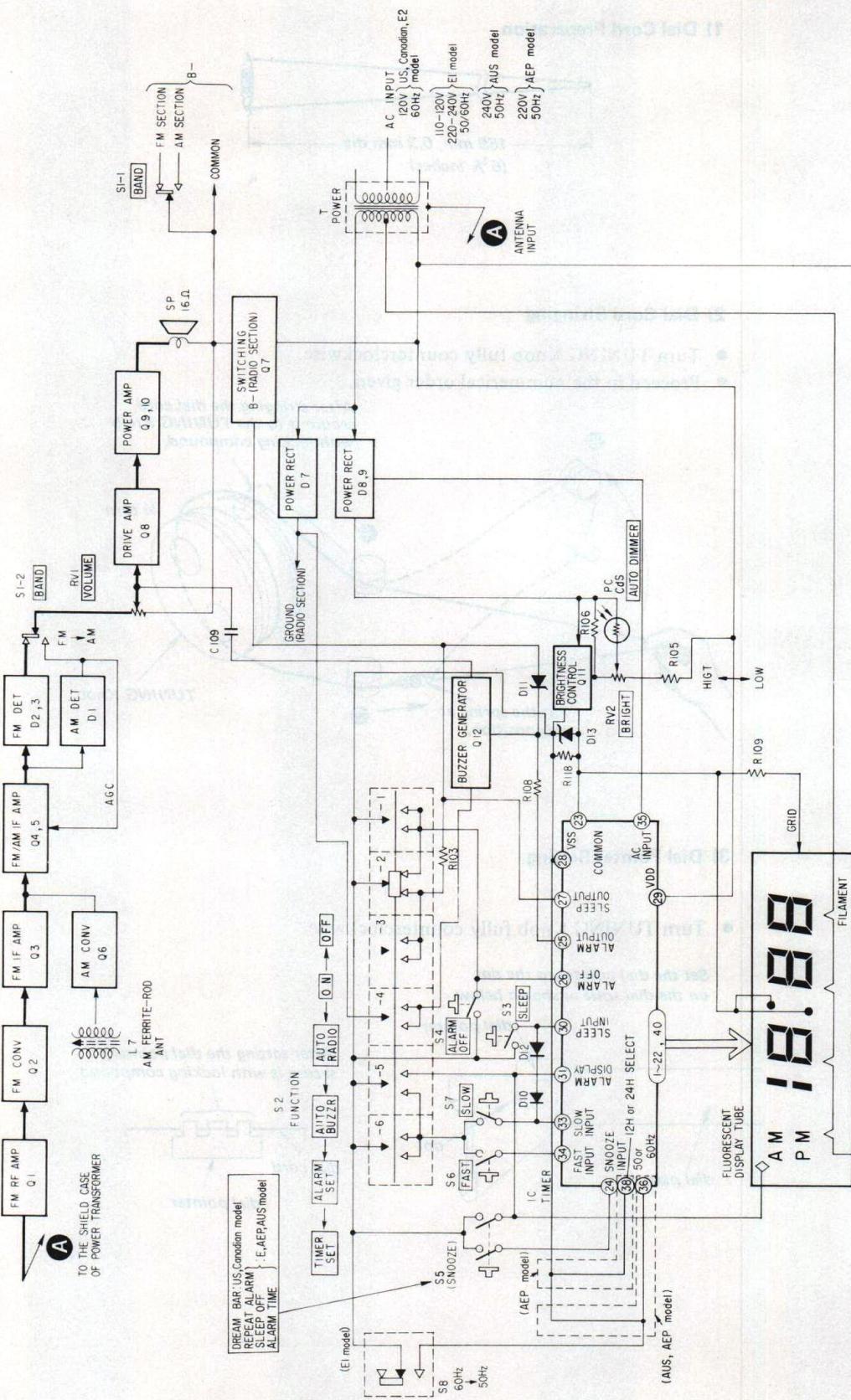


5. Method of Mounting

Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

SECTION 1 OUTLINE

1-1. BLOCK DIAGRAM



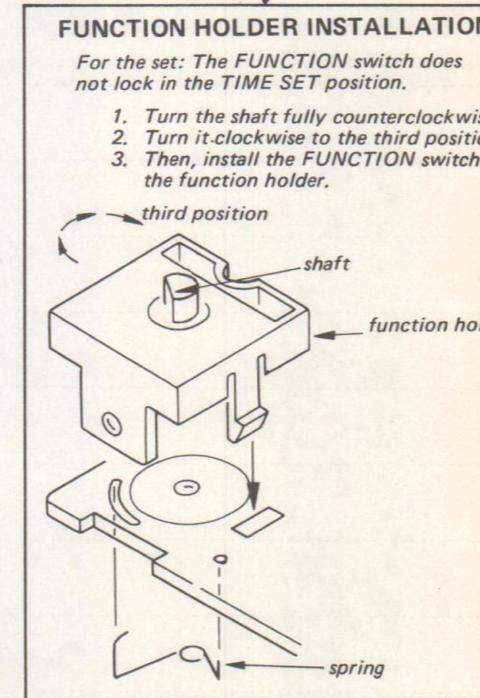
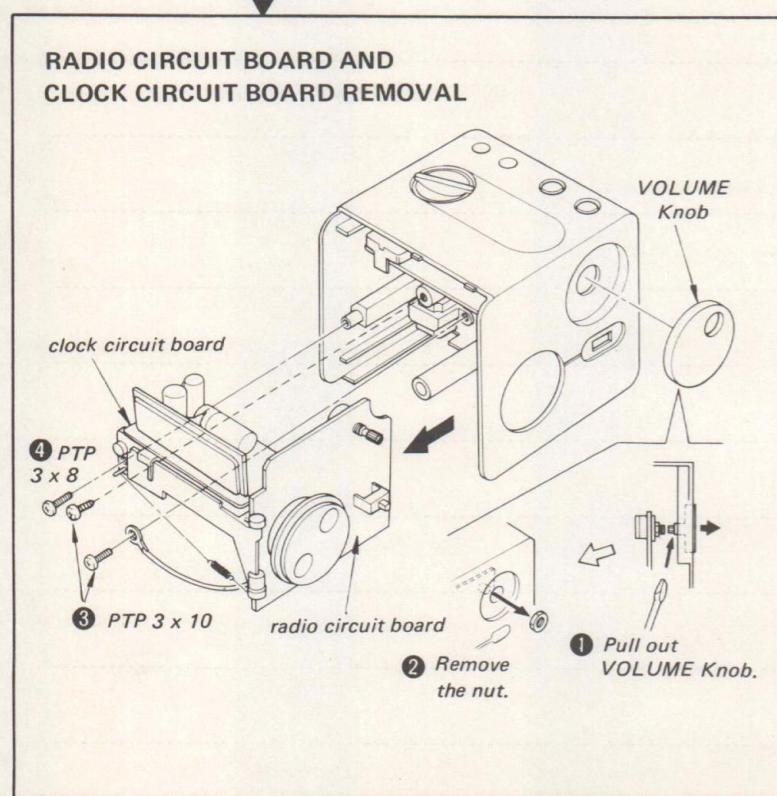
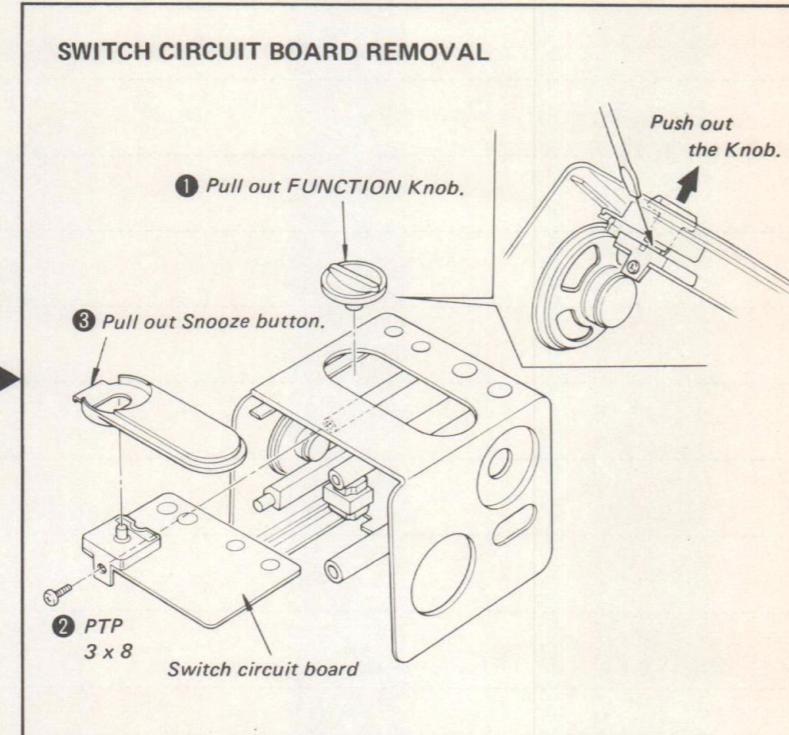
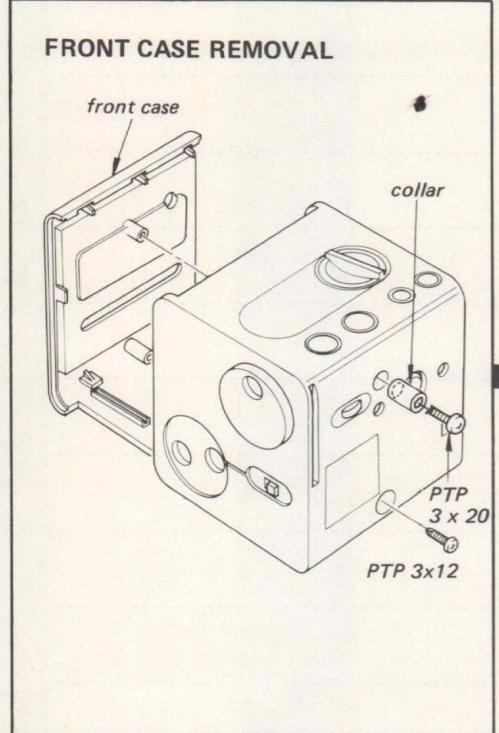
ICF-C11W ICF-C11W

(MEMO)

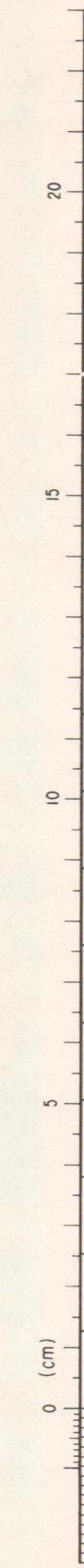
SECTION 2 DISASSEMBLY

2-1. REMOVAL

- Follow the disassembly procedure in the numerical order given.

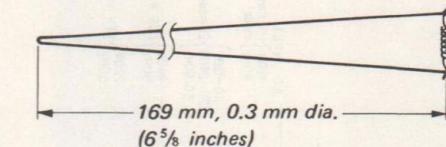


DIAL CORD STRINGING
• See page 8.



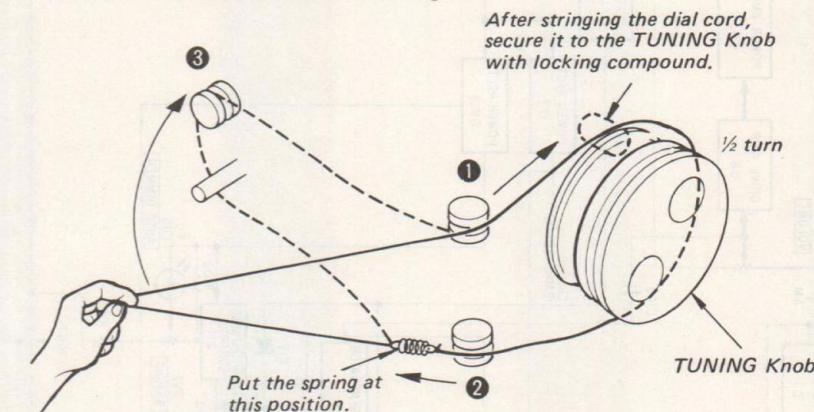
2-2. DIAL CORD STRINGING

1) Dial Cord Preparation



2) Dial Cord Stringing

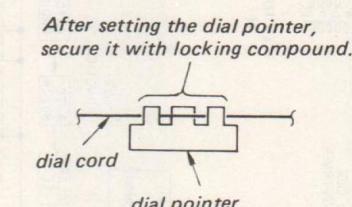
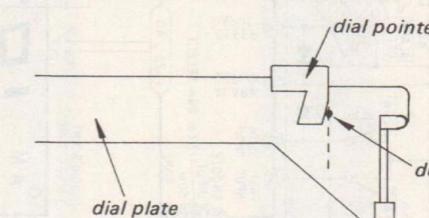
- Turn TUNING Knob fully counterclockwise.
- Proceed in the numerical order given.



3) Dial Pointer Setting

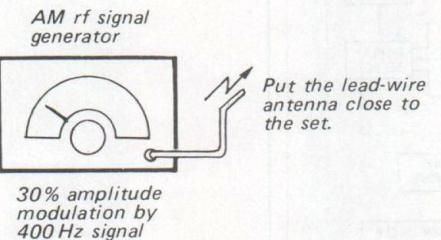
- Turn TUNING Knob fully counterclockwise.

Set the dial pointer to the dot on the dial scale as shown below.



SECTION 3 ELECTRICAL ADJUSTMENTS

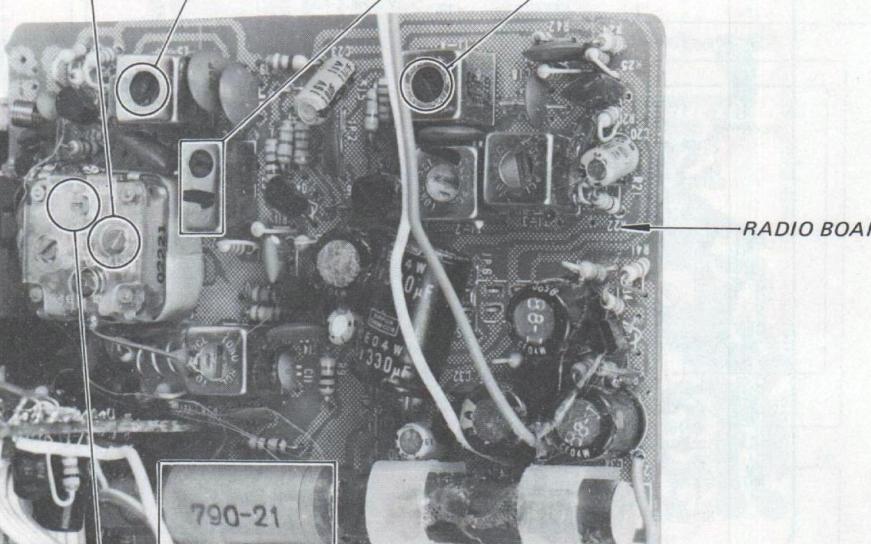
AM SECTION



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

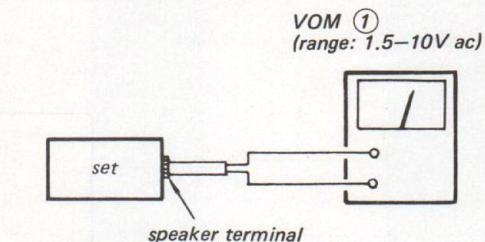
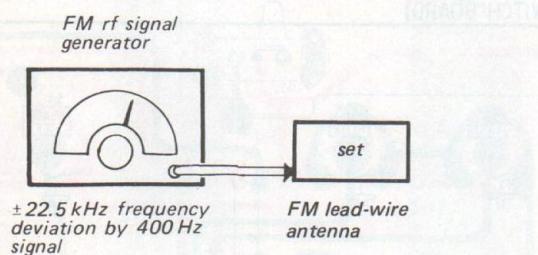
AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM.	
1,680 kHz	520 kHz
CT4	L5

AM IF ALIGNMENT	
Adjust for a maximum reading on VOM.	
455 kHz	
TA1	TA2



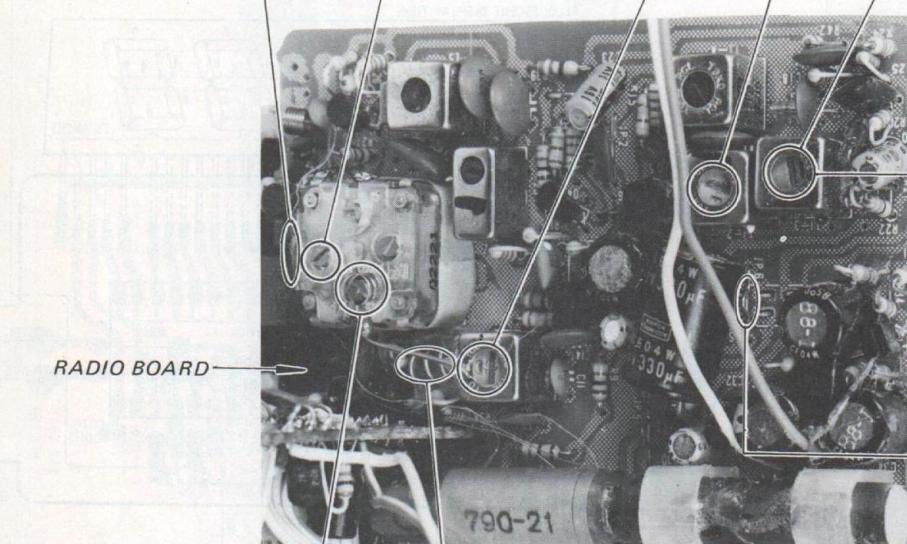
AM TRACKING ADJUSTMENT	
1,400 kHz	620 kHz
Adjust for a maximum reading on VOM.	

FM SECTION



FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM ①.	
87.1 MHz (87.5 MHz)	108.5 MHz (108 MHz)
L2, 3	CT1

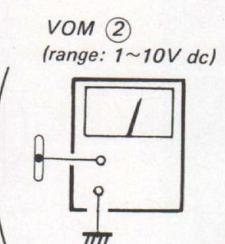
(): in West Germany



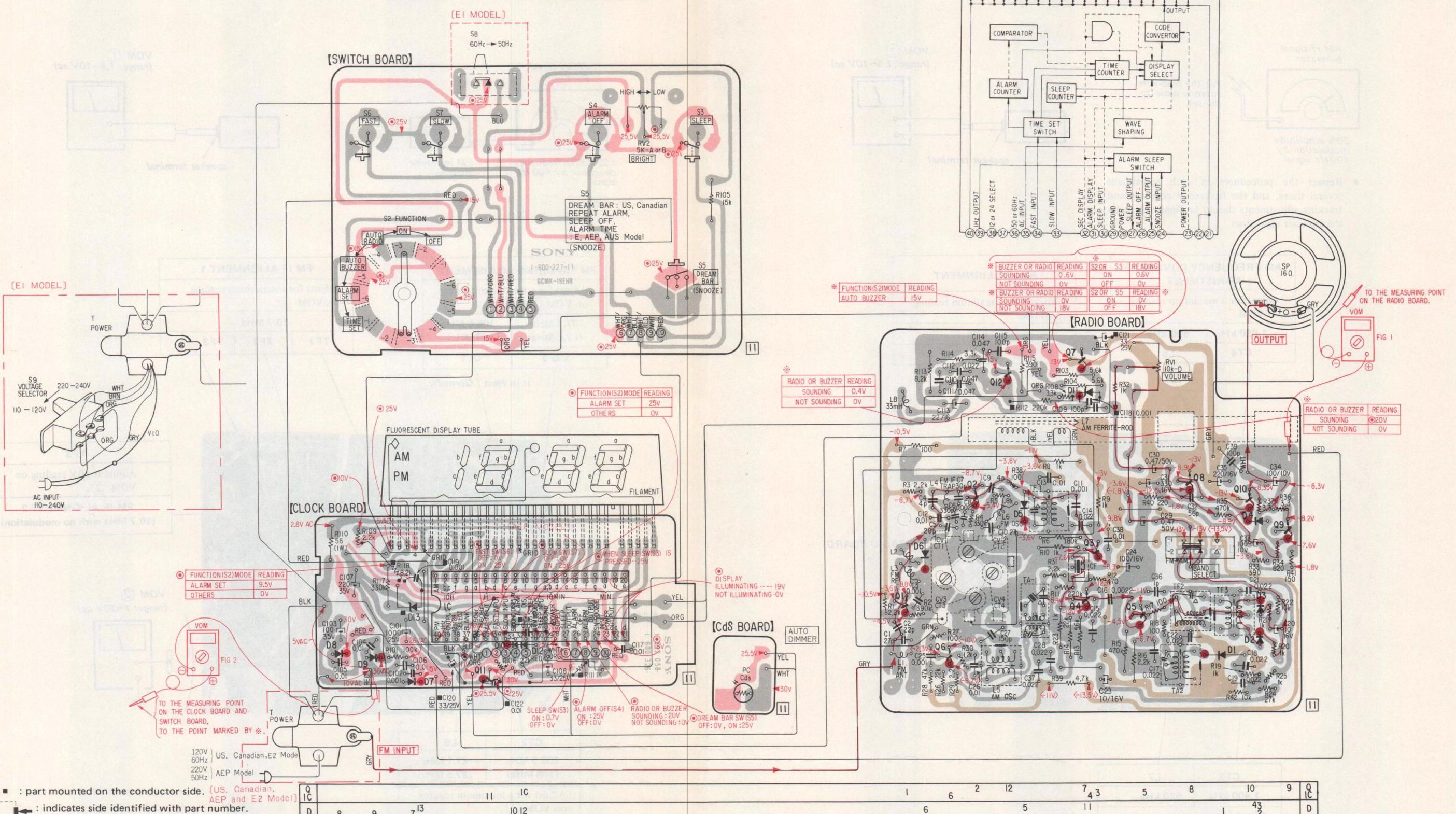
FM FREQUENCY COVERAGE ADJUSTMENT	
CT2	L6
108.5 MHz (108 MHz)	87.1 MHz (87.5 MHz)

Adjust for a maximum reading on VOM ①.

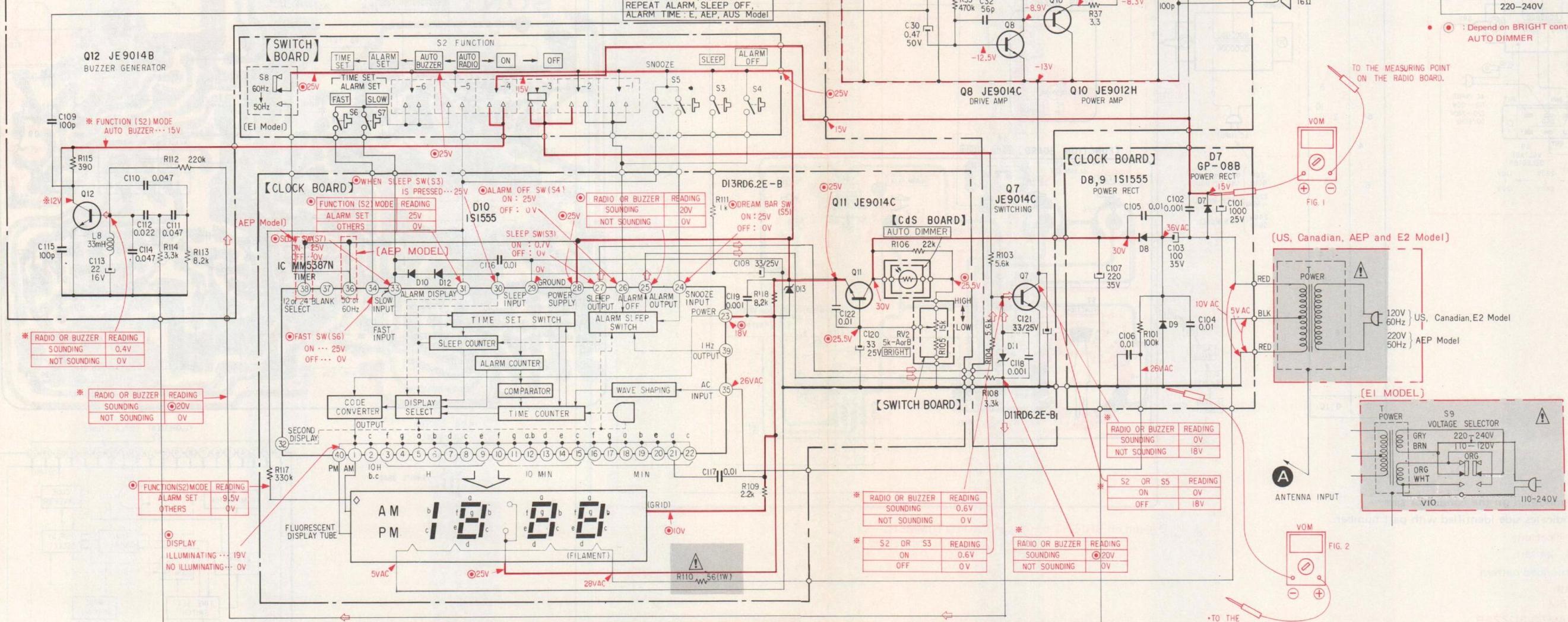
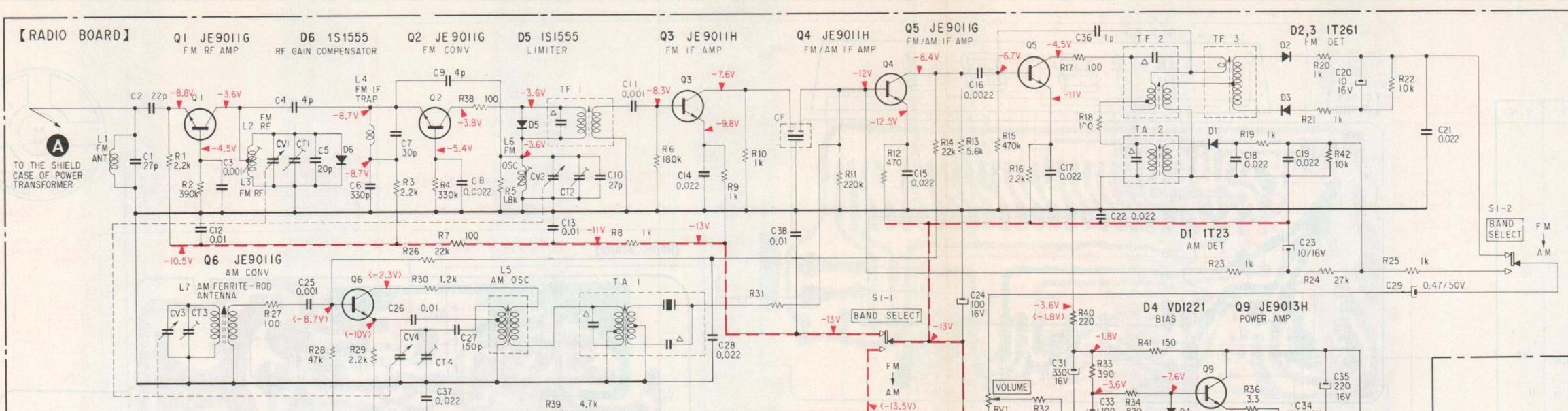
TF3
Adjust for 0V reading on VOM ②.
FM IF ALIGNMENT 2 (10.7 MHz with no modulation)



(): in West Germany

**SECTION 4
DIAGRAMS**
4-1. MOUNTING DIAGRAM (US, Canadian, E, AEP model – Former Type)


4-2. SCHEMATIC DIAGRAM (US, Canadian, E, AEP model - Former Type)

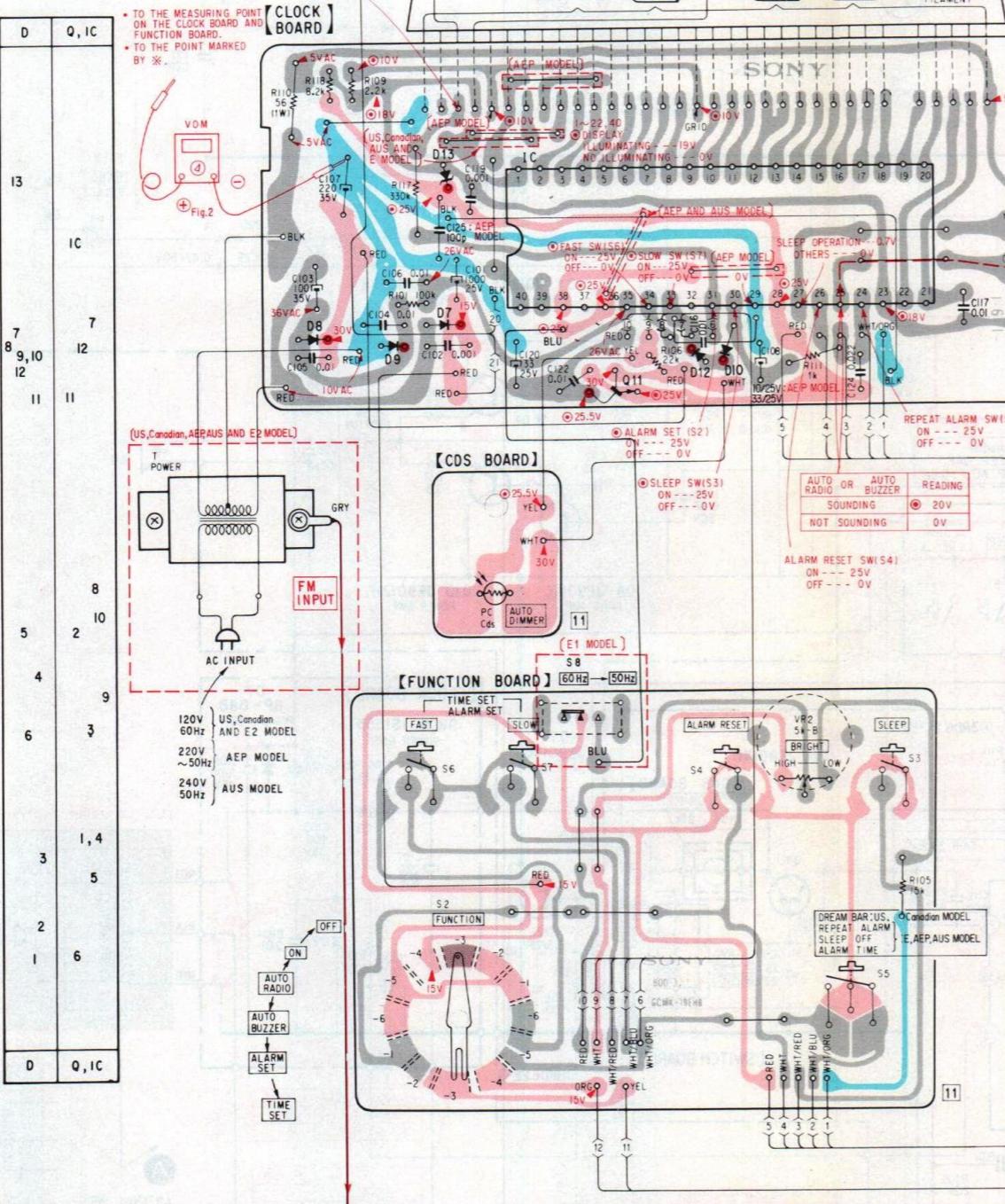
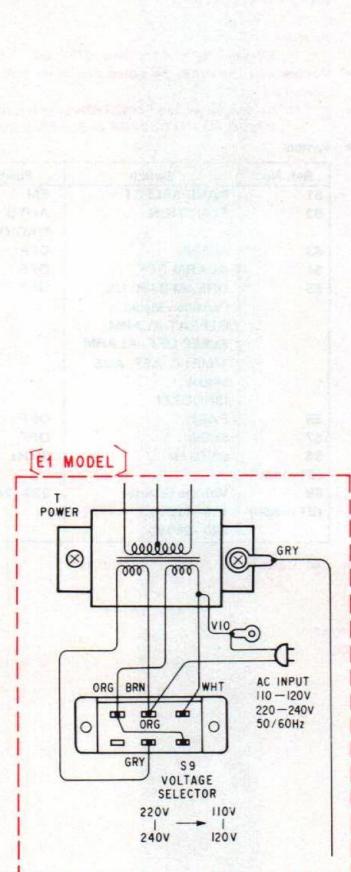


Legend		
•	All capacitors are in μ F unless otherwise noted. $pF = \mu\mu$ F	50 pV or less are not indicated except for electrolytics.
•	All resistors are in ohms, $\frac{1}{2}$ W unless otherwise noted.	$k\Omega = 1000\Omega$, $M\Omega = 1000 k\Omega$
•	\triangle : internal component.	
•	$\textcolor{red}{—}$: B+ bus.	$\textcolor{black}{—}$: panel designation.
•	$\textcolor{black}{—}$: B- bus.	
•	Readings are taken under no signal (detuned) conditions with a VOM (20 $k\Omega/V$).	
< >	: AM	
no mark	: FM	
\oplus	: Measured by VOM as illustrated in Fig 2.	
•	Voltage variations may be noted due to normal production tolerances.	
•	$\textcolor{red}{\rightarrow}$: B+ bus (when the FUNCTION switch is in AUTO RADIO, AUTO BUZZER or SLEEP position)	
•	Switch	
Ref. No.	Switch	Position
S1	BAND SELECT FUNCTION	FM AUTO RADIO
S2		OFF OFF OFF
S3	SLEEP	
S4	ALARM OFF	
S5	DREAM BAR: US, Canadian Model REPEAT ALARM, SLEEP OFF, ALARM TIME: E, AEP, AUS Model (SNOOZE)	
S6	FAST	OFF
S7	SLOW	OFF
S8	(E1 model)	50/60 Hz
S9	(E1 model)	Voltage Selector 110-120V, 220-240V

• \odot : Depend on BRIGHT control and AUTO DIMMER.

Note: Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

4-3. MOUNTING DIAGRAM

(US, Canadian, E, AEP model – New Type)
AUModel

- Note:
- : part mounted on the conductor side.
 - : indicates side identified with part number.
 - : B + pattern
 - : B - pattern
 - : grounded pattern.

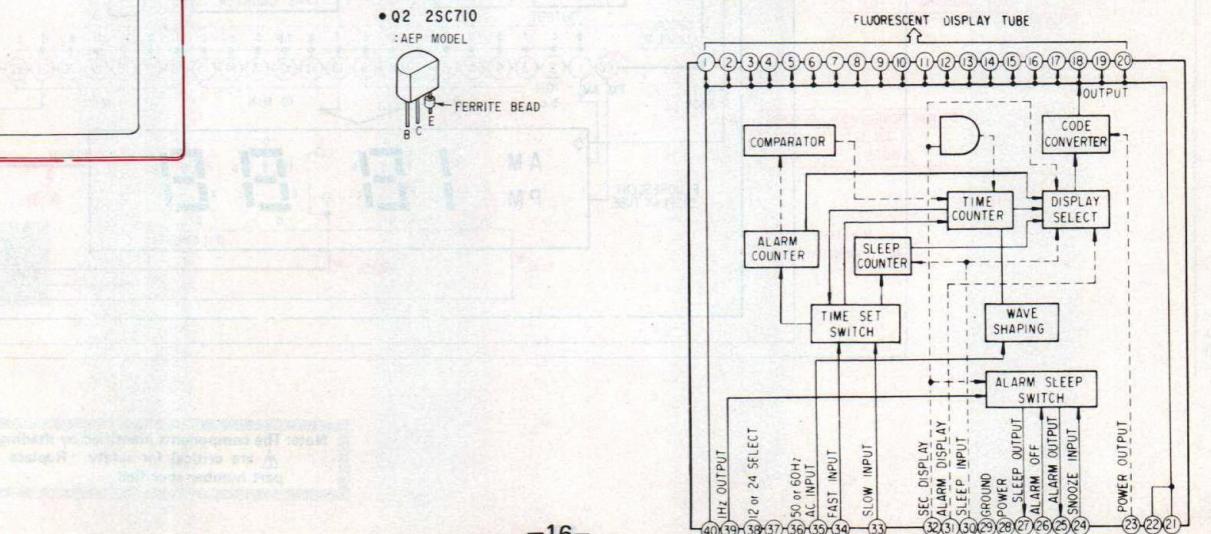
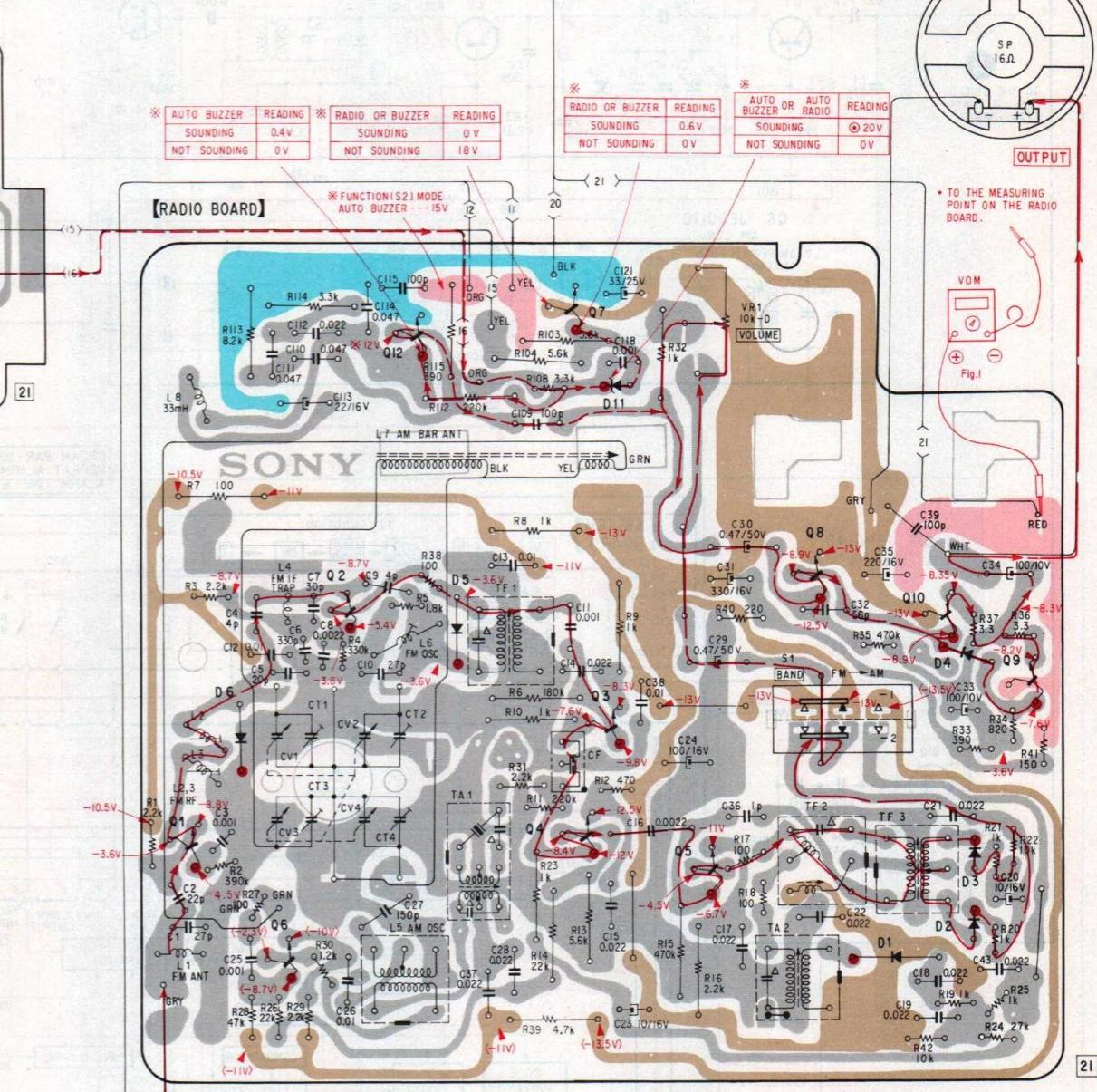
- Signal Path
- : FM
- - - : AUTO BUZZER

- Reading are taken under no signal (detuned) conditions with a VOM (20 kΩ/V).

< > : AM

no mark: FM

* : Measured by VOM as illustrated in FIG. 2.

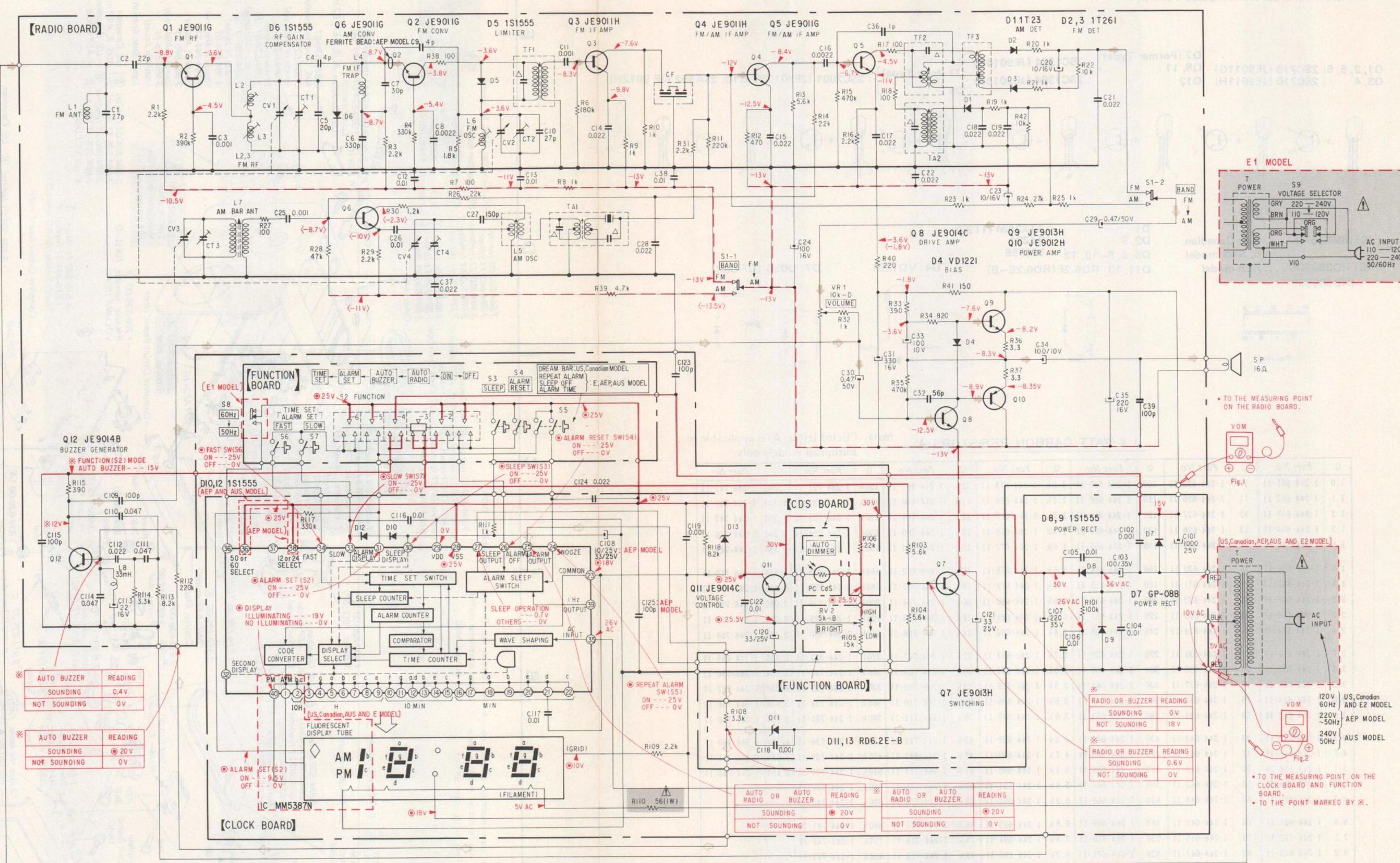


US, Canadian, E, AEP model (New Type)
AUSmodel
ICF-C11W ICF-C11W
US, Canadian, E, AEP model (New Type)
AUSmodel
I-4. SCHEMATIC DIAGRAM
(US, Canadian, E, AEP model – New Type)
AUS model

- All capacitors are in μF unless otherwise noted. $pF = \mu\mu F$
- 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, $\frac{1}{4}W$ unless otherwise noted.
- $k\Omega = 1000\Omega$, $M\Omega = 1000 k\Omega$
- Δ : internal component.
- --- : B+bus.
- --- : panel designation.
- --- : B+bus.
- Readings are taken under no signal (detuned) conditions with a VOM (20 k Ω/V).
- < > : AM
- no mark: FM
- + : Measured by VOM as illustrated in Fig 2.
- Voltage variations may be noted due to normal production tolerances.
- BUZZER signal
- FM signal
- B+ bus (when the FUNCTION switch is in AUTO BUZZER)
- Switch

Ref. No.	Switch	Position
S1	BAND SELECT	FM
S2	FUNCTION	AUTO RADIO
S3	SLEEP	OFF
S4	ALARM RESET	OFF
S5	REPEAT ALARM	OFF
S6	SLEEP OFF	OFF
S7	ALARM TIME	OFF
S8	FAST	OFF
(E1 model)	SLOW	OFF
S9	50/60 Hz	60 Hz
(E1 model)	Voltage Selector	220–240V
S9	(E1 model)	110–120V, 220–240V

- : Depend on BRIGHT control and AUTO DIMMER



SECTION 6

ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
SEMICONDUCTORS					
Transistors					
⇒ Q1–6	8-729-671-13	(B) 2SC710	C1	1-102-961-00	(A) 27p
Q7 (Former Type)	8-729-663-47	(C) 2SC1364	C2	1-102-959-00	(A) 22p
Q8			C3	1-101-001-00	(A) 0.001
⇒ Q7 (New Type)	8-729-100-13	(B) 2SC2001	C4	1-102-941-00	(A) 4p
⇒ Q9			C5	1-102-958-00	(A) 20p
⇒ Q10	8-729-195-23	(B) 2SA952	C6	1-102-112-00	(A) 330p
⇒ Q11, 12	8-729-663-47	(C) 2SC1364	C7	1-102-962-00	(A) 30p
IC	8-759-953-87	MM 5387N (US, Canadian E, AUS model)	C8	1-101-002-00	(A) 0.0022
⇒ IC	8-759-389-80	(H) HD38980C (AEP model)	C9	1-102-941-00	(A) 4p
Diodes					
⇒ D1	8-719-422-21	(B) 1T22AM	C10	1-102-806-00	(A) 27p
D2, 3	8-719-026-11	(A) 1T261	C11	1-101-001-00	(A) 0.001
D4	8-719-122-10	(B) VD1221	C12, 13	1-101-004-00	(A) 0.01
D5, 6	8-719-815-55	(B) 1S1555	C14, 15	1-101-005-00	(A) 0.022
⇒ D7	8-719-911-55	(B) U05G	C16	1-101-002-00	(A) 0.0022
D8–10, 12	8-719-815-55	(B) 1S1555	C17	1-101-005-00	(A) 0.022
⇒ D11, 13	8-719-162-07	(B) RD6.2E	C18, 19	1-108-242-00	(A) 0.022
COILS					
L5	1-405-811-00	(H) AM OSC	C20	1-121-651-00	(A) 10
L7	1-401-790-00	(C) AM Ferrite-rod Antenna	C21	1-108-242-00	(A) 0.022
TRANSFORMERS			C22	1-101-005-00	(A) 0.022
T	△ 1-446-346-11	Transformer, power; black (with ac cord) (US, Canadian, E2 model)	C23	1-121-651-00	(A) 10
T	△ 1-446-346-21	Transformer, power; white (with ac cord) (US, Canadian, E2 model)	C24	1-121-415-00	(A) 100
T	△ 1-446-485-00	Transformer, power (E1 model)	C25	1-101-001-00	(A) 0.001
T	△ 1-446-486-00	(H) Transformer, power (AEP model)	C26	1-108-239-00	(A) 0.01
T	△ 1-446-511-00	Transformer, power (AUS model)	C27	1-107-089-00	(A) 150p
TA1	1-403-163-00	(B) CFZ	C28	1-101-005-00	(A) 0.022
TA2	1-403-965-00	(B) AM IFT	C29, 30	1-121-726-00	(A) 0.47
TF1	1-404-201-00	(B) FM IFT	C31	1-123-069-00	(A) 330
TF2	1-403-903-00	(B) FM Discriminator	C32	1-102-884-00	(A) 56p
TF3	1-403-902-00	(B) FM Discriminator	C33, 34	1-121-414-00	(A) 100
CF	1-527-184-XX	(B) FM Ceramic Filter	C35	1-123-321-00	(B) 220
Note: Circled letters (A to Z) are applicable to European models only.					
⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.					
CAPACITORS					
All capacitors are in μ F and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics. p : μ uF, elect : electrolytic					
Note: Les composants identifiés par une trame et une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.					

Note: The components identified by shading and mark
⚠ are critical for safety. Replace only with
part number specified.

Note: Les composants identifiés par une trame et une
marque △ sont critiques pour la sécurité. Ne les
remplacer que par une pièce portant le numéro
spécifié.

SECTION 2

ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
C108	1-121-404-00	(A) 33	25V	elect (US, Canadian, E, AUS model)
C109	1-102-973-00	(A) 100p		
C110, 111	1-108-246-00	(A) 0.047		mylar
C112	1-108-242-00	(A) 0.022		mylar
C113	1-121-479-00	(A) 22	16V	elect
C114	1-108-246-00	(A) 0.047		mylar
C115	1-102-973-00	(A) 100p		
C116, 117	1-101-004-00	(A) 0.01		
C118, 119	1-101-001-00	(A) 0.001		
C120, 121	1-121-404-11	(A) 33	25V	elect
C122	1-101-004-00	(A) 0.01		
C123	1-102-973-00	(A) 100p		
C124	1-101-005-00	(A) 0.022		
(CT1-4) CV1-4	1-151-260-00	(E) Capacitor, tuning		

RESISTORS

All resistors are in ohms. Common $\frac{1}{4}$ W carbon resistors are omitted. Refer to the list on page 19 for their part numbers.

R110	(A) 1-213-128-00	(B) 56	1W	metal oxide
RV1	1-226-535-00	(B) 10k-D variable,	VOLUME	
RV2	1-226-594-00	(C) 5k-B variable,	BRIGHT	

SWITCHES

S1	1-516-848-11	(B) Switch, slide; BAND select (black)		
S1	1-516-848-31	(B) Switch, slide; BAND select (white)		
S2	3-984-516-00	(B) Switch, contact plate; FUNCTION		
S5	1-552-900-00	(J) Switch, contact plate; DREAM BAR (US, Canadian model) REPEAT ALARM, SLEEP OFF, ALARM TIME (E, AUS, AEP model)		
S3, 4, 6, 7	(3-984-525-00 3-984-526-00 3-984-553-00)	(A) Holder, contact plate (A) Cover, plate (A) Plate, contact	SLEEP, ALARM OFF, SLOW, FAST	
S8	1-552-370-00	Switch, slide: 50/60 Hz Selector (E1 model)		
S9	(A) 1-553-028-00	Switch, slide: Voltage Selector (E1 model)		

Note: Circled letters (A to Z) are applicable to European models only.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
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MISCELLANEOUS

PC	1-800-779-00	(C) Photoconductive Cell
SP	1-502-820-00	(E) Speaker 16Ω
	1-519-179-00	Display, clock; 12H (US, Canadian, E, AUS model)
	1-519-191-00	(K) Display, clock; 24H (AEP model)
(A) 1-536-384-00	(B) Plate, lug; 1L (AEP, AUS model)	
(A) 1-551-958-11	(E) Cord, power; black (E1, AEP model)	
(A) 1-551-958-21	(E) Cord, power; white (E1, AEP model)	
(A) 1-555-004-00	Cord, power (AUS model)	

ACCESSORIES & PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>
3-848-514-00	(B) Mat, protection
3-984-521-00	Carton (US model)
3-984-523-00	Carton (Canadian model)
3-984-541-00	Carton (made in Japan)
3-984-542-00	Carton (made in Malaysia)
3-984-558-00	(D) Carton (made in Malaysia)
3-984-559-00	(D) Carton (made in Japan)
3-995-856-11	Manual, instruction (E1 model)
3-995-856-21	Manual, instruction (US, Canadian model)
3-995-856-51	Manual, instruction (E2 model)
3-993-199-31	Manual, instruction; French (Canadian model)
3-984-522-00	(B) Cushion

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Sony Corporation

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79H0289-1

9-950-462-02

Printed in Japan