ICF-C4L

SERVICE MANUAL

AEP Model
UK Model

Photo : black type

SPECIFICATIONS

Frequency range	FM: 87.6 – 107.5 MHz MW: 531 – 1,602 kHz LW: 150 – 255 kHz
Antennas	FM: AC power cord antenna MW/LW: Built-in ferrite bar antenna
Speaker	Approx. 6.6 cm (2½ inches) dia.
Power output	200 mW (at 10% harmonic distortion)
Power requirements	220V AC, 50Hz (AEP, FR model) 240V AC, 50Hz (UK model) 9 V DC, 6F22 battery for power backup
Power consumption	6 W AC (3 W AC when only the clock is in operation)
Battery life	Approx. 40 hours, using Sony battery S-006P (U)
Dimensions (incl. projecting parts and controls)	Approx. 192 × 68.7 × 131 mm (w/h/d) (7⅝ × 2⅞ × 5¼ inches)
Weight	Approx. 800 g (1 lb 13 oz)

• FR model: French model

FEATURES

- Electronic digital alarm clock and sleep timer are combined.
- Two wake-up modes available: radio or buzzer alarm.
- REPEAT ALARM bar, operable with a feather-light touch, offers three functions: snooze alarm, sleep timer turn off, and instant alarm time readout.

Time Display
12 hours: UK model
24 hours: AEP, FR model

MICROFILM

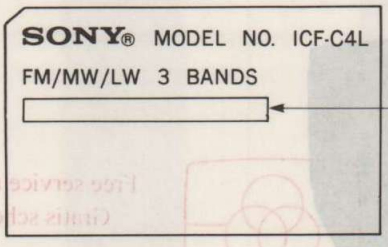
FM/MW/LW DIGITAL CLOCK RADIO

SONY®

MODEL IDENTIFICATION

—Model Number Label—

(Carved on lower cabinet)



FR model: French model

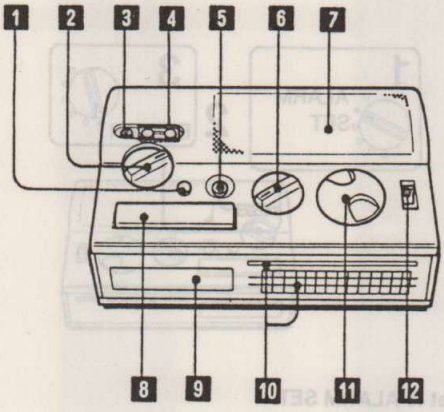
AEP,FR model: AC: 220V~50Hz 6W
UK model : AC: 240V~50Hz 6W

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 1
GENERAL

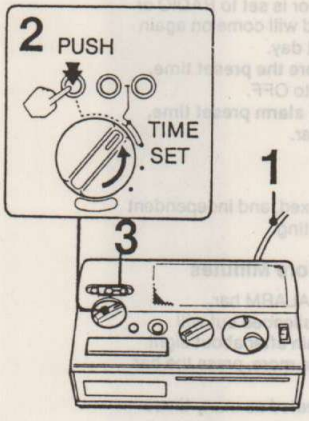
1-1. PARTS IDENTIFICATION



1 SLEEP button
2 Function selector
3 PUSH button
4 Time set buttons: H (hour) and M (minute)
5 ALARM RESET button
6 VOLUME control
7 Speaker
8 REPEAT ALARM bar
9 Time display: Changes each time these clock functions are activated.
- Current time
- Sleep timer sequence
- Alarm time

10 Dial pointer and dial scale
11 TUNING knob
12 BAND selector

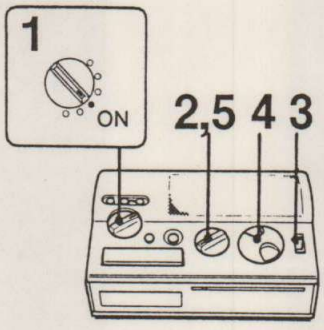
1-2. SETTING THE CURRENT TIME



1 **Connect to a wall outlet.**
2 **While pressing PUSH, set the function selector to TIME SET.**
3 **Adjust the clock to the current time** by pressing the H (hour) and M (minute) buttons.

Zero second adjustment
If you want to adjust the time exactly to the second with a radio or a telephone time signal, proceed as in the following example.
Example: To set to 7:15
1 Adjust the time indication to 7:14 as described before.
2 Press the M button simultaneously with the radio or the telephone time signal (Do not keep it pressed).
The clock will then begin to operate, showing the precise time of day.

1-3. RADIO OPERATION



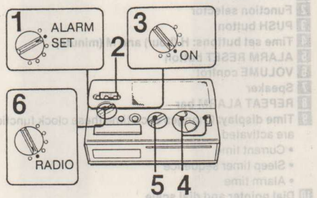
1 **Set to ON.**
2 **Turn a little to get sound.**
3 **Choose the desired band, FM, MW or LW.**
4 **Tune in the desired station.**
5 **Adjust volume.**

To turn off the radio, set the function selector to OFF.

To Improve Receiving Condition
FM: Since the AC power cord serves as an FM antenna, extend it for better reception.
MW/LW: Since the reception is affected by the direction of the radio, rotate the radio horizontally for optimum reception.

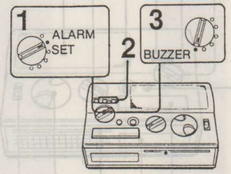
1-4. SETTING THE ALARM TIME

1-4-1. To Set the Radio Alarm Time



1 Set to ALARM SET.
2 Adjust the clock to the desired alarm time.
3 Set to ON.
4 Tune in the desired station.
5 Adjust volume.
6 Set to RADIO.

1-4-2. To Set the Buzzer Alarm Time



1 Set to ALARM SET.
2 Adjust the clock to the desired alarm time.
3 Set to BUZZER.

The radio or buzzer will automatically sound at the preset time, and automatically turn itself off after about two hours (AEP, FR model), about one hour (UK model).

- **To turn off the alarm sound manually,** press ALARM RESET.
  When the function selector is set to RADIO or BUZZER, the alarm sound will come on again at the same time the next day.
- **To cancel the alarm before the preset time,** set the function selector to OFF.
- **To read out instantly the alarm preset time,** press REPEAT ALARM bar.

Note

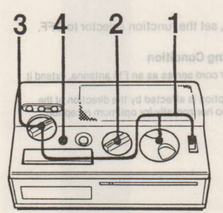
The buzzer sound level is fixed, and independent of the VOLUME control setting.

To Doze for Several More Minutes

Just lightly press REPEAT ALARM bar.
The radio or buzzer will be silenced but will automatically come on again after about eight minutes. If you want to doze more, press the bar again.
- This function can be repeated as many times as you like.
- You can reset the alarm time while activating the snooze function.

1-5. TURNING OFF THE RADIO AUTOMATICALLY AFTER A PRESET TIME—Sleep Timer

The timer operation time of up to 59 minutes can be preset.



1 **Tune in the desired station.**
2 **Adjust volume.**
3 **Set to OFF.**
4 **Keep SLEEP pressed.**
The radio will turn on and the "59" will be displayed.
Release SLEEP when your desired time appears. The time indication will return to the current time.

To turn off the radio before the preset time, press REPEAT ALARM bar (which cancels the "sleep timer" function).

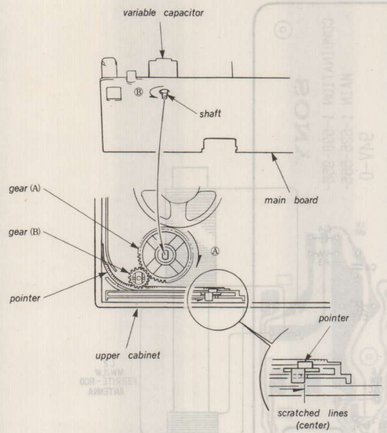
Notes

- When the sleep timer is operating, do not set the function selector to ALARM SET. Otherwise the sleep timer will be cancelled.
- Do not release the SLEEP button while setting the sleep timer. Doing so will have the time indication return to the current time.

To Use Both Sleep Timer and Alarm Function

You can fall asleep to radio and you will be awakened by the radio/buzzer alarm at the preset time.
1 Set the alarm time.
2 Set the function selector to RADIO or BUZZER for alarm.
3 Set the sleep timer.

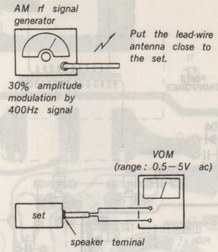
SECTION 2
POINTER SETTING



1. Turn gear (A) fully in the direction of the arrow Ⓐ.
2. Set the pointer to the center of three scratched lines as illustrated.
3. Turn variable capacitor shaft fully in the direction of the arrow Ⓑ.
4. Align variable capacitor shaft with the hole of gear (A) and then install main board.

SECTION 3
ELECTRICAL ADJUSTMENTS

3-1. AM SECTION



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

MW IF ADJUSTMENT
Adjust for a maximum reading on VOM.
T1
450kHz

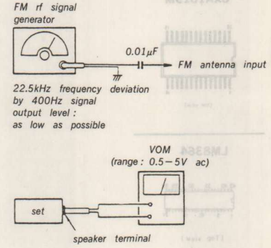
MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM.	
L6	CT4
520kHz	1,650kHz

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
L2-1	CT1
600kHz	1,400kHz

LW FREQUENCY COVERAGE ADJUSTMENT
Adjust for a maximum reading on VOM.
CT6
265kHz

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
L2-2	CT5
160kHz	240kHz

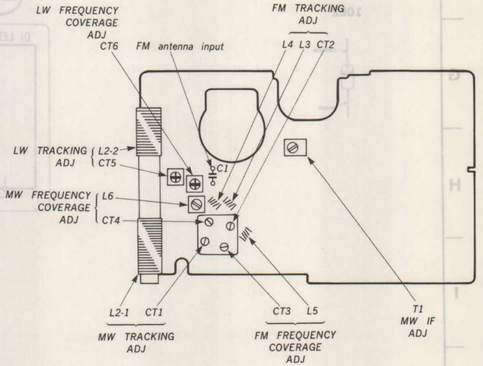
3-2. FM SECTION



FM FREQUENCY COVEAGE ADJUSTMENT	
Adjust for a maximum reading on VOM.	
L5	CT3
87.35MHz	108.05MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
L3,L4	CT2
87.35MHz	108.05MHz

Adjustment Location :

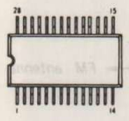


SECTION 4 DIAGRAMS

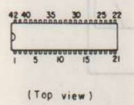
4-1. PRINTED WIRING BOARDS

Semiconductor Lead Layouts

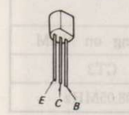
CXA1019M



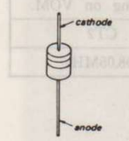
LM8364



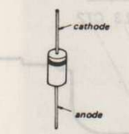
2SA733-P



1SS119

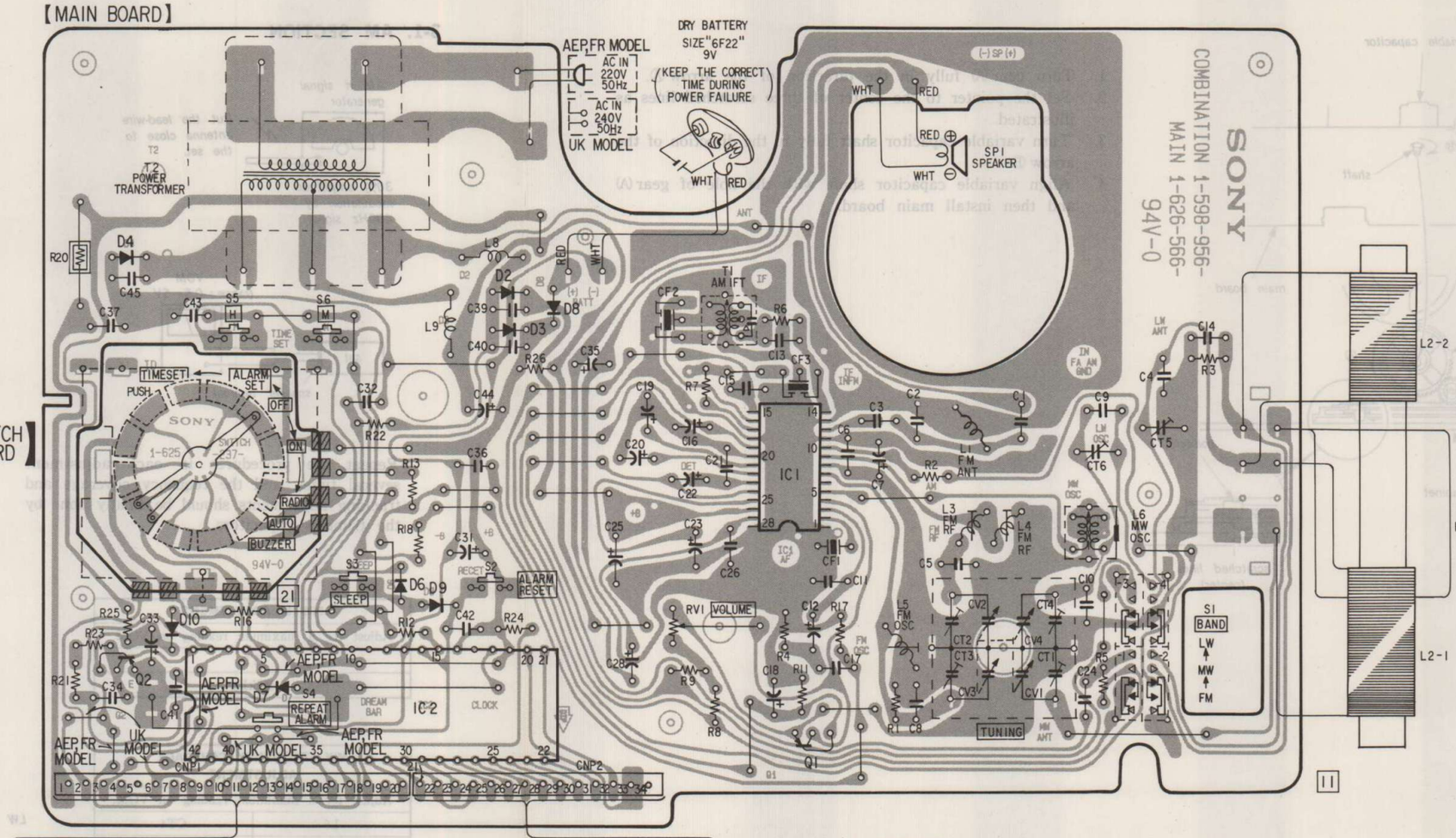


10E2

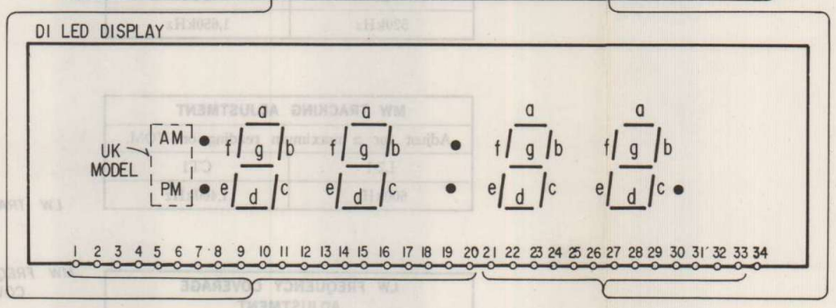


【MAIN BOARD】

【SWITCH BOARD】



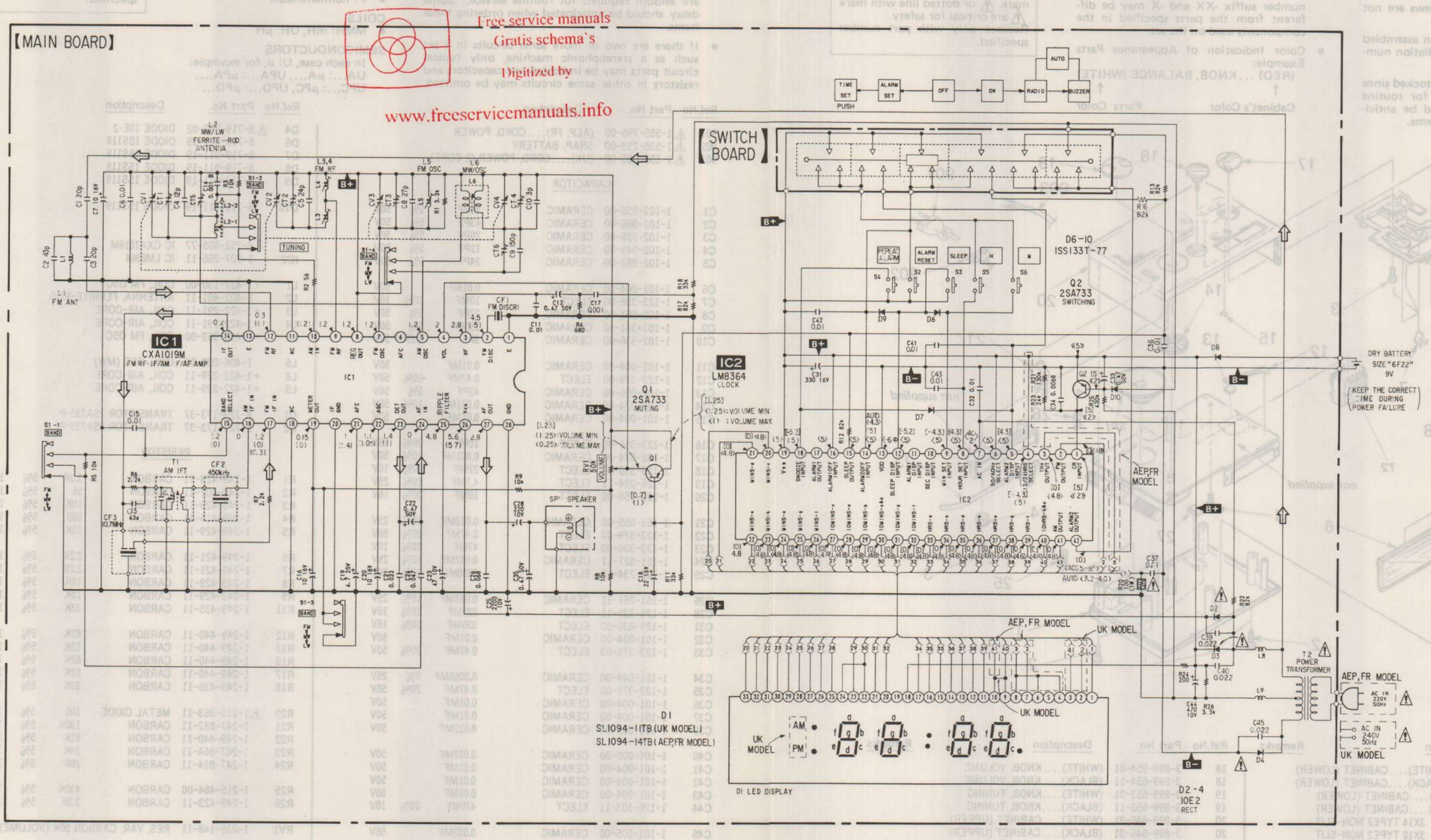
DI LED DISPLAY



Note:

- ○—— : parts extracted from the component side.
- ⬚ indicates side identified with part number.

4-2. SCHEMATIC DIAGRAM

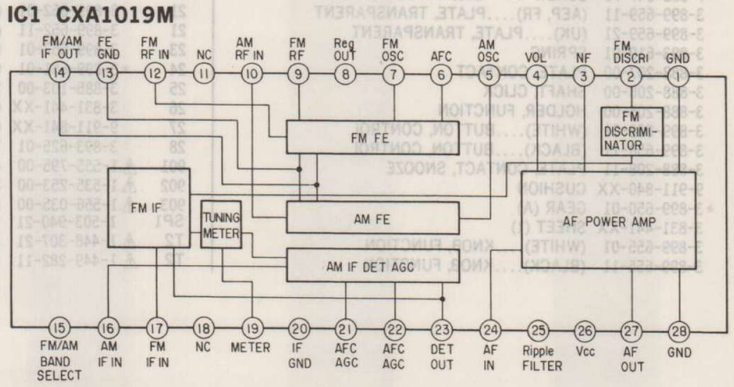


Note:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu$F 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
- B− : B− Line
- Voltages are taken with a VOM (50 kΩ/V). Voltage variations may be noted due to normal production tolerances.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  - no mark: FM
  - ( ): MW
  - (( )): LW
  - [ ]: OFF (function selector)
  - ‹ ›: ON (function selector)
  - « »: BUZZER (function selector)
- Signal path.
  - ⇨ : FM
- FR model: French model

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

IC1 CXA1019M

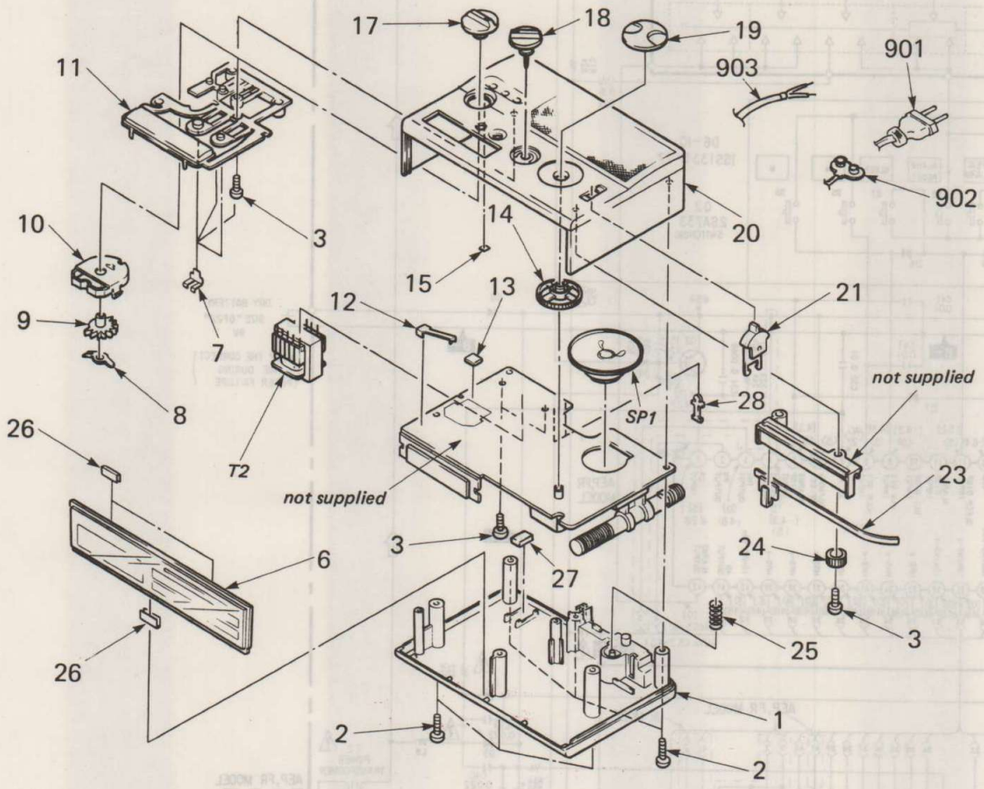


SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color

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



Ref.No	Part No.	Description	Remarks
1	*3-899-647-21	(AEP,FR : WHITE)....CABINET (LOWER)	
1	*3-899-647-31	(AEP,FR : BLACK)....CABINET (LOWER)	
1	*3-899-647-41	(UK : WHITE)....CABINET (LOWER)	
1	*3-899-647-51	(UK : BLACK)....CABINET (LOWER)	
2	7-685-149-11	SCREW +P 3X14 TYPE2 NON-SLIT	
3	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
6	3-899-659-11	(AEP, FR)....PLATE, TRANSPARENT	
6	3-899-659-21	(UK)....PLATE, TRANSPARENT	
7	3-893-610-01	SPRING	
8	3-888-207-00	PLATE, CONTACT	
9	3-888-206-00	SHAFT, CLICK	
10	3-888-205-00	HOLDER, FUNCTION	
11	3-899-658-01	(WHITE)....BUTTON, CONTROL	
11	3-899-658-11	(BLACK)....BUTTON, CONTROL	
12	3-888-208-11	PLATE, CONTACT, SNOOZE	
13	9-911-840-XX	CUSHION	
14	*3-899-650-01	GEAR (A)	
15	3-831-441-XX	SHEET (1)	
17	3-899-655-01	(WHITE)....KNOB, FUNCTION	
17	3-899-655-11	(BLACK)....KNOB, FUNCTION	
18	3-899-654-01	(WHITE)....KNOB, VOLUME	
18	3-899-654-11	(BLACK)....KNOB, VOLUME	
19	3-899-653-01	(WHITE)....KNOB, TUNING	
19	3-899-653-11	(BLACK)....KNOB, TUNING	
20	3-899-646-21	(WHITE)....CABINET (UPPER)	
20	3-899-646-31	(BLACK)....CABINET (UPPER)	
21	3-899-652-01	(WHITE)....KNOB, BAND	
21	3-899-652-11	(BLACK)....KNOB, BAND	
23	3-899-657-01	POINTER (RACK)	
24	*3-899-651-01	GEAR (B)	
25	3-885-103-00	SPRING	
26	3-831-441-XX	CUSHION,CABINET UPPER 10X7X0.3	
27	9-911-841-XX	CUSHION, TRANSFORMER	
28	3-893-625-01	TERMINAL	
901	⚠1-555-795-00	(AEP, FR)....CORD, POWER	
902	⚠1-535-253-00	SNAP, BATTERY	
903	⚠1-556-035-00	(UK)....CORD, POWER (2 CORE)	
SP1	1-503-940-21	SPEAKER	
T2	⚠1-448-307-21	(AEP, FR)....TRANSFORMER POWER	
T2	⚠1-449-282-11	(UK)....TRANSFORMER POWER	

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.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

SECTION 6
ELECTRICAL PARTS LIST

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

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

Ref.No	Part No.	Description			
901	⚠1-555-795-00	(AEP, FR)....CORD, POWER			
902	⚠1-535-253-00	SNAP, BATTERY			
903	⚠1-556-035-00	(UK)....CORD, POWER (2 CORE)			
		CAPACITOR			
C1	1-102-958-00	CERAMIC	20PF	5%	50V
C2	1-102-966-00	CERAMIC	43PF	5%	50V
C3	1-102-958-00	CERAMIC	20PF	5%	50V
C4	1-102-949-00	CERAMIC	12PF	5%	50V
C5	1-102-960-00	CERAMIC	24PF	5%	50V
C6	1-101-004-00	CERAMIC	0.01MF		50V
C7	1-123-356-00	ELECT	10MF	20%	16V
C8	1-102-961-00	CERAMIC	27PF	5%	50V
C9	1-101-361-00	CERAMIC	150PF	5%	50V
C10	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C11	1-101-004-00	CERAMIC	0.01MF		50V
C12	1-123-379-00	ELECT	0.47MF	20%	50V
C13	1-102-966-00	CERAMIC	43PF	5%	50V
C14	1-102-074-00	CERAMIC	0.001MF	10%	50V
C15	1-101-004-00	CERAMIC	0.01MF		50V
C16	1-123-356-00	ELECT	10MF	20%	16V
C17	1-102-074-00	CERAMIC	0.001MF	10%	50V
C18	1-123-330-00	ELECT	22MF	20%	16V
C19	1-126-094-11	ELECT	4.7MF	20%	25V
C20	1-123-356-00	ELECT	10MF	20%	16V
C21	1-161-055-00	CERAMIC	0.022MF	10%	25V
C22	1-123-379-00	ELECT	0.47MF	20%	50V
C23	1-123-306-00	ELECT	47MF	20%	10V
C24	1-161-021-11	CERAMIC	0.047MF	10%	25V
C25	1-126-234-11	ELECT	2200MF	20%	10V
C26	1-161-061-11	CERAMIC	0.068MF	10%	25V
C28	1-126-335-11	ELECT	220MF	20%	10V
C31	1-124-036-00	ELECT	330MF	20%	16V
C32	1-101-004-00	CERAMIC	0.01MF		50V
C33	1-123-379-00	ELECT	0.47MF	20%	50V
C34	1-161-049-00	CERAMIC	0.0068MF	5%	25V
C35	1-123-379-00	ELECT	0.47MF	20%	50V
C36	1-101-004-00	CERAMIC	0.01MF		50V
C37	1-101-004-00	CERAMIC	0.01MF		50V
C39	1-101-005-00	CERAMIC	0.022MF		50V
C40	1-101-005-00	CERAMIC	0.022MF		50V
C41	1-101-004-00	CERAMIC	0.01MF		50V
C42	1-101-004-00	CERAMIC	0.01MF		50V
C43	1-101-004-00	CERAMIC	0.01MF		50V
C44	1-126-103-11	ELECT	470MF	20%	10V
C45	1-101-005-00	CERAMIC	0.022MF		50V
CF1, CF3	1-567-734-71	FILTER, CERAMIC 10.7MHz			
CF2	1-577-072-21	FILTER, CERAMIC 450kHz			
CNP1	*1-565-890-11	PIN, CONNECTOR 20P			
CNP2	*1-565-891-11	PIN, CONNECTOR 14P			
CT5	1-141-245-00	CAP, VAR, TRIMMER			
CT6	1-141-245-00	CAP, VAR, TRIMMER			
CT1-4, CV1-4	1-151-478-11	CAP, TUNING, POLYETHYLENE (TUNING)			
D1	1-807-243-41	(AEP, FR)....DIODE SL1094-14TB (LED BLOCK)			
D1	1-807-243-51	(UK)....DIODE SL1094-11TB (LED BLOCK)			
D2	⚠8-719-200-02	DIODE 10E-2			
D3	⚠8-719-200-02	DIODE 10E-2			
D4	⚠8-719-200-02	DIODE 10E-2			
D6	8-719-911-19	DIODE 1SS119			
D7	8-719-911-19	DIODE 1SS119			
D8	8-719-911-19	DIODE 1SS119			
D9	8-719-911-19	DIODE 1SS119			
D10	8-719-911-19	DIODE 1SS119			
IC1	8-752-605-77	IC CXA1019M			
IC2	1-807-266-11	IC LM8364			
L1	*1-422-130-00	COIL, FM OSC			
L2	1-402-401-11	ANTENNA, FERRITE-ROD			
L3	*1-422-291-11	COIL, AIR-CORE			
L4	*1-422-291-11	COIL, AIR-CORE			
L5	*1-405-962-00	COIL, FM OSC			
L6	1-406-028-00	COIL, OSC (MW)			
L8	*1-422-229-11	COIL, AIR-CORE			
L9	*1-422-229-11	COIL, AIR-CORE			
Q1	8-729-173-37	TRANSISTOR 2SA733-P			
Q2	8-729-173-37	TRANSISTOR 2SA733-P			
		RESISTOR			
R1	1-249-423-11	CARBON	3.3K	5%	1/4W
R2	1-249-402-11	CARBON	56	5%	1/4W
R3	1-249-429-11	CARBON	10K	5%	1/4W
R4	1-249-415-11	CARBON	680	5%	1/4W
R5	1-249-429-11	CARBON	10K	5%	1/4W
R6	1-249-421-11	CARBON	2.2K	5%	1/4W
R7	1-249-421-11	CARBON	2.2K	5%	1/4W
R8	1-249-429-11	CARBON	10K	5%	1/4W
R9	1-249-429-11	CARBON	10K	5%	1/4W
R11	1-249-435-11	CARBON	33K	5%	1/4W
R12	1-249-440-11	CARBON	82K	5%	1/4W
R13	1-249-440-11	CARBON	82K	5%	1/4W
R16	1-249-440-11	CARBON	82K	5%	1/4W
R17	1-249-440-11	CARBON	82K	5%	1/4W
R18	1-249-435-11	CARBON	33K	5%	1/4W
R20	⚠1-215-863-11	METAL OXIDE	100	5%	1W F
R21	1-247-882-11	CARBON	130K	5%	1/4W
R22	1-249-440-11	CARBON	82K	5%	1/4W
R23	1-247-864-11	CARBON	24K	5%	1/4W
R24	1-247-814-11	CARBON	200	5%	1/4W
R25	1-215-484-00	CARBON	430K	5%	1/4W
R26	1-249-423-11	CARBON	3.3K	5%	1/4W
RV1	1-238-148-11	RES, VAR, CARBON 50K (VOLUME)			
S1	1-553-174-00	SWITCH, SLIDE (BAND)			
SP1	1-503-940-21	SPEAKER			
T1	1-404-790-11	TRANSFORMER, IF			
T2	⚠1-448-307-21	(AEP, FR)....TRANSFORMER, POWER			
T2	⚠1-449-282-11	(UK)....TRANSFORMER, POWER			

ACCESSORY & PACKING MATERIAL

*3-899-671-01	INDIVIDUAL CARTON
3-990-143-51	(UK)....MANUAL, INSTRUCTION (ENGLISH)
3-990-143-81	(AEP, FR)....MANUAL, INSTRUCTION (ENGLISH/FRENCH/GERMAN)

9-953-512-11

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