SONY

FM/LW/MW/SW PLL SYNTHESIZED RECEIVER

ICF-7700

OPERATING INSTRUCTIONS

Before operating the unit, please read this manual thoroughly and retain it for future reference.

OWNER'S RECORD

The model number is located at the rear and the serial number is located in the battery compartment. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. ICF-7700   Serial No. _____
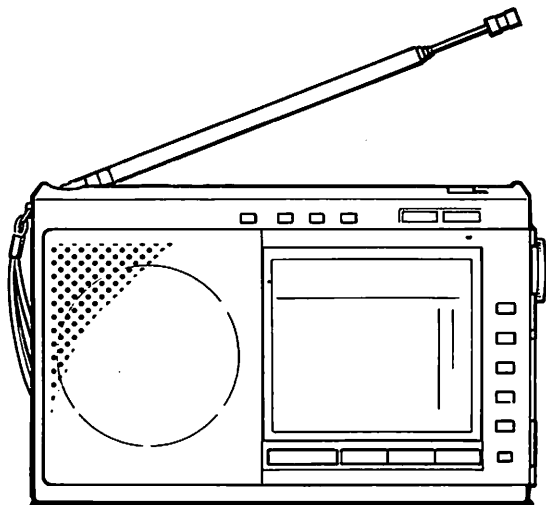
WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate the equipment with respect to the receiver
Move the equipment away from the receiver
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:
"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

TABLE OF CONTENTS

FEATURES

- An FM/LW/MW/SW 1-12, 15 bands portable radio with world-wide band coverage.
- A quartz-controlled PLL (Phase Locked Loop) synthesizer system using a microcomputer for easy pinpoint tuning.
  The tuned frequency is also digitally displayed.
- Up to 15 stations can be preset for button-touch tuning.
- An easy searching a SW station with the SW meter band select function.
- A timer standby function to receive a desired broadcast at the desired time.
- A sleep timer turns the radio off automatically in 65 minutes.

LOCATION AND FUNCTION OF CONTROLS

Refer to the page indicated in ● for details.

Front panel

STANDBY (timer standby) button **⑲**

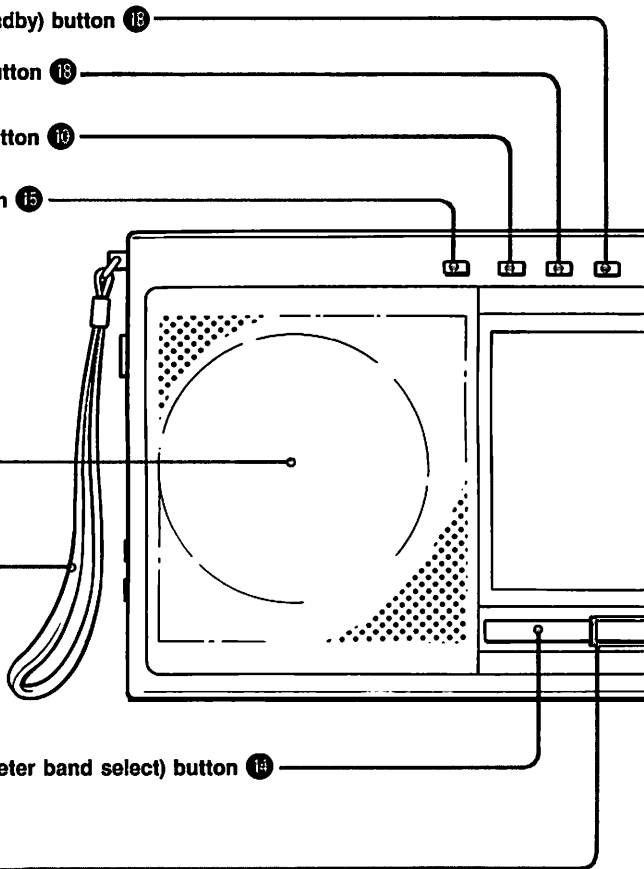ALARM TIME SET button **⑱**

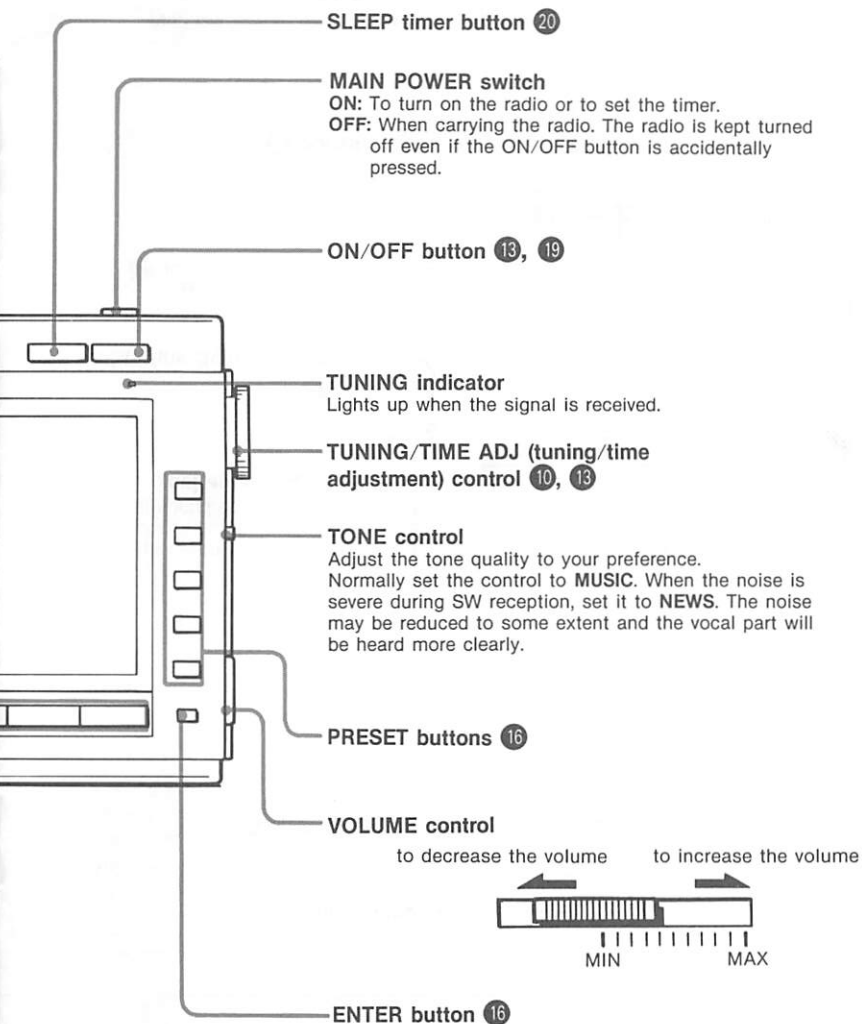CLOCK TIME SET button **⑰**

KEY PROTECT button **⑯**

Speaker

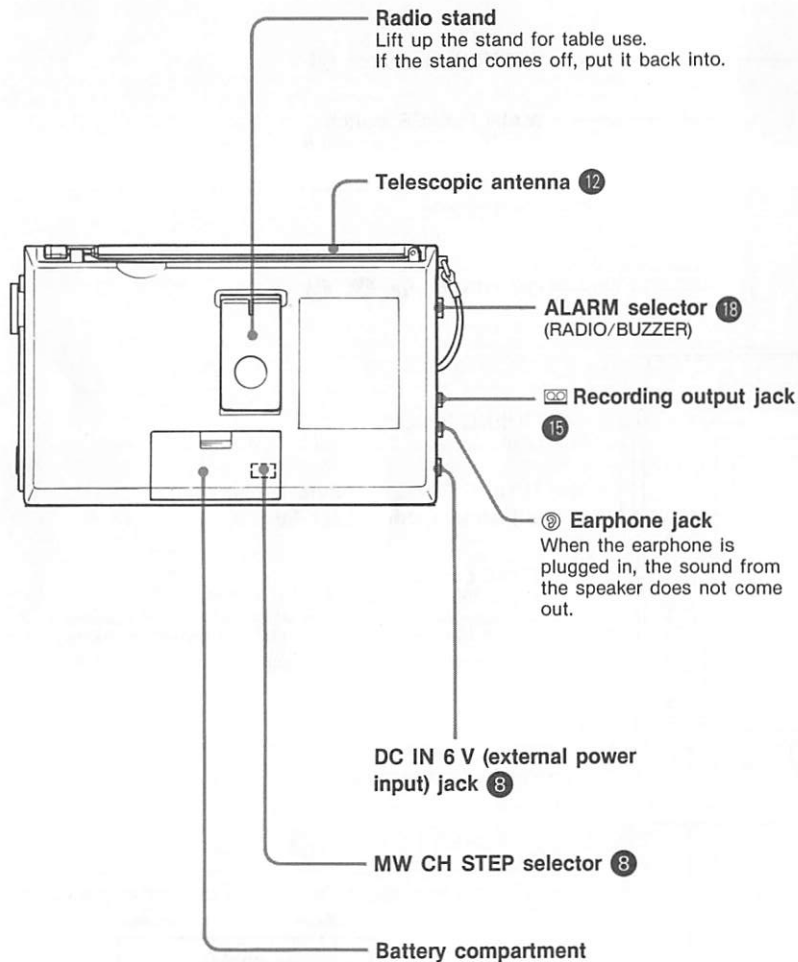Hand strap

⇦ mb SELECT ⇨ (meter band select) button **⑭**

Band select buttons
(SW, MW/LW, FM)

SLEEP timer button ⑳

MAIN POWER switch
ON: To turn on the radio or to set the timer.
OFF: When carrying the radio. The radio is kept turned off even if the ON/OFF button is accidentally pressed.

ON/OFF button ⑬, ⑲

TUNING indicator
Lights up when the signal is received.

TUNING/TIME ADJ (tuning/time adjustment) control ⑩, ⑬

TONE control
Adjust the tone quality to your preference.
Normally set the control to **MUSIC**. When the noise is severe during SW reception, set it to **NEWS**. The noise may be reduced to some extent and the vocal part will be heard more clearly.

PRESET buttons ⑯

VOLUME control

to decrease the volume   to increase the volume

◄━━   ━━►
▭[▬▭▭▭▭▭▭▭▭▭▭]▭
| | | | | | | | | |
MIN   MAX

ENTER button ⑯

Rear panel

Radio stand
Lift up the stand for table use.
If the stand comes off, put it back into.

Telescopic antenna ⑫

ALARM selector ⑱
(RADIO/BUZZER)

⊙ **Recording output jack**
⑮

⑨ **Earphone jack**
When the earphone is
plugged in, the sound from
the speaker does not come
out.

**DC IN 6 V (external power
input) jack** ⑧

MW CH STEP selector ⑧

Battery compartment

Display window The indications appear as follows.

KEY PROTECT indicator

Time/frequency indicator

MAIN POWER indicator

PRESET number indicator

Band indicator

FM, MW/LW band scale

SW meter band scale

CLOCK/ALARM/STANDBY/SLEEP indicators

BUZZER ALARM indicator

7
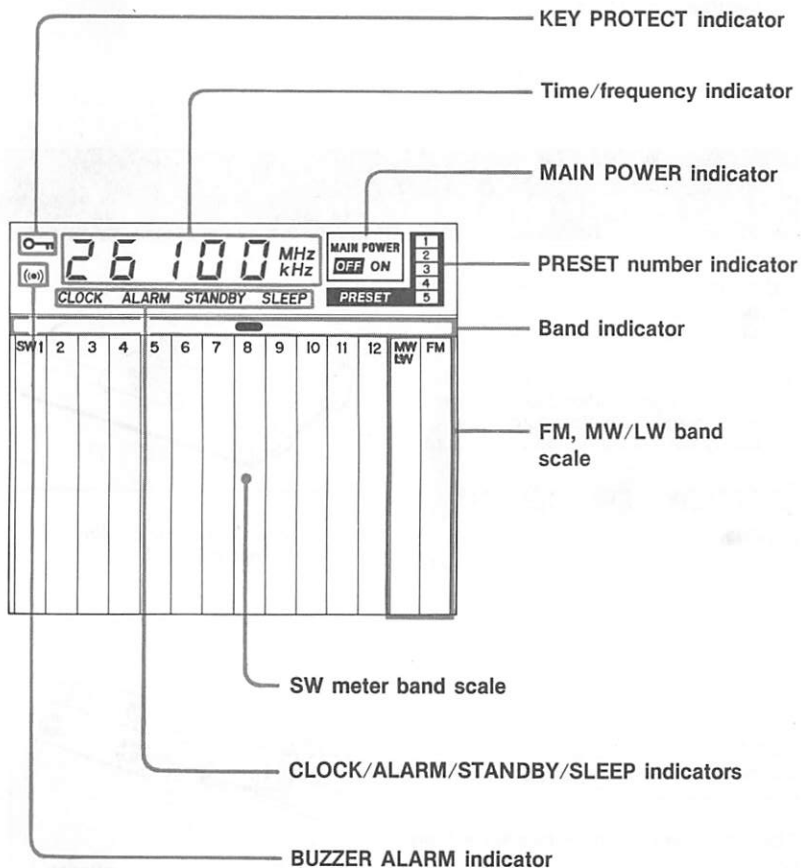
HOW TO CHANGE THE MW CHANNEL STEP

The MW CH STEP is preset at the factory to 10 kHz to match the frequency allocation system of the U.S.A. and Canada. If you use the radio where the frequency allocation system is based on a 9 kHz interval, such as in the European and other countries, set the MW CH STEP selector in the battery compartment to 9 kHz.

BATTERY INSTALLATION

Before installing the batteries, be sure to check that the MW CH STEP selector is set correctly. (See above.)

Note: The unit cannot be operated on the internal batteries when the AC power adaptor, the car battery cord or the battery case is connected to the unit.

BATTERY REPLACEMENT

Replace all the batteries with new ones when the sound becomes weak or distorted.

Concerning the battery life, see "Specifications".

To replace the batteries
Do it within one minute since the preset stations and the current time will be erased when more than one minute has passed.

After removing the batteries for a long time
Be sure to preset the stations and set the current time and the timer again. When the batteries are removed, the preset stations, the current time and the timer-setting time will be erased.
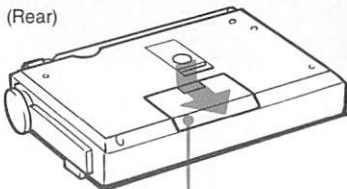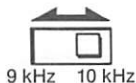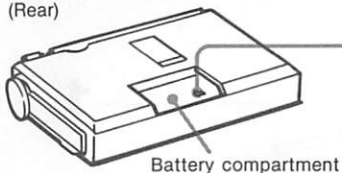
(Rear)

Insert the batteries with correct polarity.

Four size AA (R6) batteries

For removing the batteries, lay the battery strap underneath the batteries.

(Rear)

Battery compartment

9 kHz   10 kHz

OTHER POWER SOURCES

The internal batteries are automatically disconnected when the AC power adaptor, the car battery cord or the battery case is connected to the DC IN 6 V jack.

House current
Connect the Sony AC-D4S AC power adaptor (optional) to the DC IN 6 V jack, and plug it into a wall outlet.

Car battery
For use on 12 V car battery, connect the Sony DCC-127A car battery cord (optional) to the DC IN 6 V jack. For use on 24 V car battery, use the Sony DCC-240 car battery cord (optional).
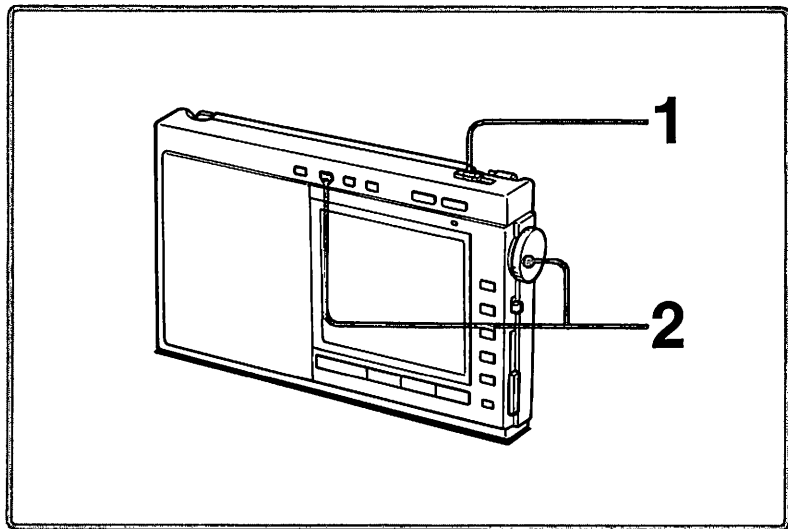
Battery case
Connect the Sony EBP-6 battery case (optional) to the DC IN 6 V jack.

Note: Use only the recommended AC power adaptor or the car battery cord manufactured by Sony. Polarity of the plugs of other manufacturers may be different.
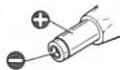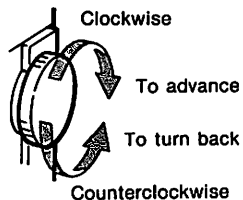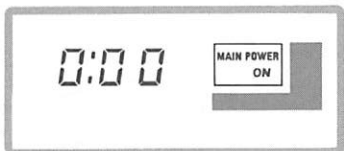
Polarity of the Sony plug

1

2

To advance or turn back the time indication
To advance the time digits rapidly, turn the TUNING/TIME ADJ control quickly. Turn it slowly to adjust the time indication precisely.
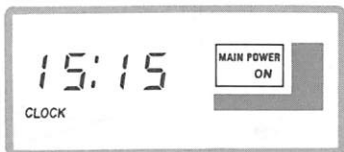
Clockwise

To advance

To turn back

Counterclockwise

Example: To set to 15:15

1 Set the MAIN POWER switch to ON.

```
0:0 0    MAIN POWER
           ON
```

⬇

2 Turn the TUNING/TIME ADJ control while keeping the CLOCK button pressed to adjust the clock to the current time.

```
15:15    MAIN POWER
           ON
CLOCK
```

When you release the CLOCK button, the clock will begin to operate.

ZERO SECOND ADJUSTMENT

If you want to adjust the time exactly to the second with a telephone time signal, proceed as in the following example.
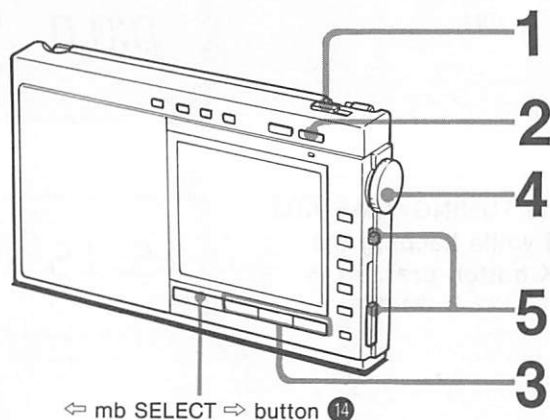
Example: To set to 19:15

1 Adjust the time indication to 19:15.

2 Release the CLOCK button simultaneously with the telephone time signal.
The clock will then begin to operate, showing the precise time of day.

Even when you listen to the radio, you can adjust the clock to the current time.

⓫

1

2
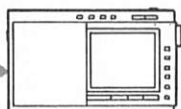
4

5

3

⇐ mb SELECT ⇒ button ⑭

HOW TO RECORD RADIO PROGRAMS

Cassette recorder

to MIC

RK-69A (optional)

Tune in a desired radio program and set the cassette recorder to the record mode.

TO IMPROVE RECEIVING CONDITION

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

SW: Extend the telescopic antenna vertically.
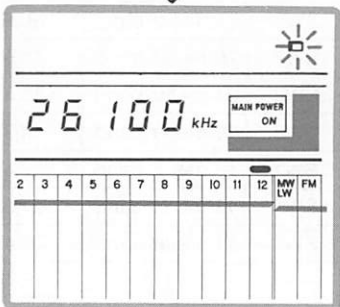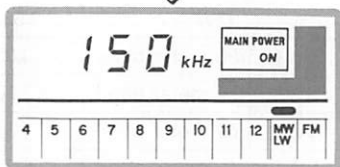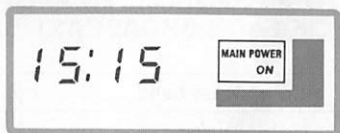
1 Set the MAIN POWER switch to ON.

```
15:15     MAIN POWER
          ON
```

2 Press the ON/OFF button.

```
150 kHz   MAIN POWER
          ON

4 5 6 7 8 9 10 11 12 MW FM
                     LW
```

3 Press the desired band button.

4 Adjust the TUNING/TIME ADJ control to tune in a desired station.

```
26 100 kHz   MAIN POWER
             ON

2 3 4 5 6 7 8 9 10 11 12 MW FM
                         LW
```

5 Adjust the volume and the tone.

To turn off the radio, press the ON/OFF button.

MW/LW: Since the reception is affected by the direction of the radio, rotate the unit horizontally for optimum reception.

Use the AN-1 external antenna (optional) if receiving condition is unsatisfactory even when the antennas are adjusted.

Note: In vehicles or in buildings, radio reception may be difficult or noisy. Try listening near a window.

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THE FREQUENCY RANGE AND THE TUNING INTERVAL OF EACH BROADCAST BAND

Broadcast band		Frequency range	Tuning interval
FM		76–108 MHz	0.05 MHz
LW		150–285 kHz	3 kHz
MW		530–1,700 kHz	5 kHz
SW1	90 meter band	3,050–3,565 kHz	
SW2	75 meter band	3,700–4,215 kHz	
SW3	60 meter band	4,650–5,165 kHz	
SW4	49 meter band	5,800–6,315 kHz	
SW5	41 meter band	6,950–7,465 kHz	
SW6	31 meter band	9,375–10,010 kHz	5 kHz
SW7	25 meter band	11,525–12,160 kHz	
SW8	21 meter band	13,375–14,010 kHz	
SW9	19 meter band	14,975–15,610 kHz	
SW10	16 meter band	17,475–18,110 kHz	
SW11	13 meter band	21,325–21,960 kHz	
SW12	11 meter band	25,475–26,100 kHz	

Note: When the MW CH STEP selector is set to 9 kHz, the frequency range is 531–1,602 kHz and the tuning interval is 3 kHz.

FOR SW RECEPTION

Tune in the desired station by turning the TUNING/TIME ADJ control. Since the SW meter band is switched by pressing the mb SELECT button (⇦ or ⇨), keep the button pressed for rapid selecting.

To check the time while listening to the radio
- Press the CLOCK button: The current time appears.
- Press the ALARM button: The alarm time appears.

TO PREVENT ACCIDENTAL CHANGE OF THE RECEIVING STATION

Press the KEY PROTECT button. The o⊓ mark appears in the display window, and all the buttons on the front panel and the TUNING/TIME ADJ control do not work even if they are operated (KEY PROTECT). This function is also available when the ON/OFF button is set to OFF.
To release the KEY PROTECT function, press the KEY PROTECT button again or set the MAIN POWER switch to OFF. The o⊓ mark disappears.

HOW TO USE THE SUPPLIED SW COMPACT ANTENNA

1 Fully pull out the cord from the case.

2 Attach the coupler to the telescopic antenna.

3 When the window can be opened:
Extend the cord and the case out through the window, after making sure there is no danger.
When the window cannot be opened:
Fully extend the cord along the frame of the window.


Case
Coupler
Cord
ICF-7700
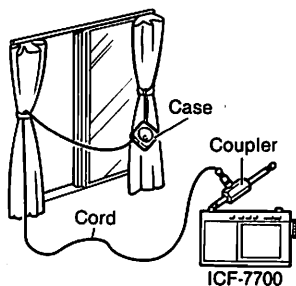
The last station of each band you listened to is memorized
when you switched the band to another. Therefore, you can go back to the station by pressing the band select button again.
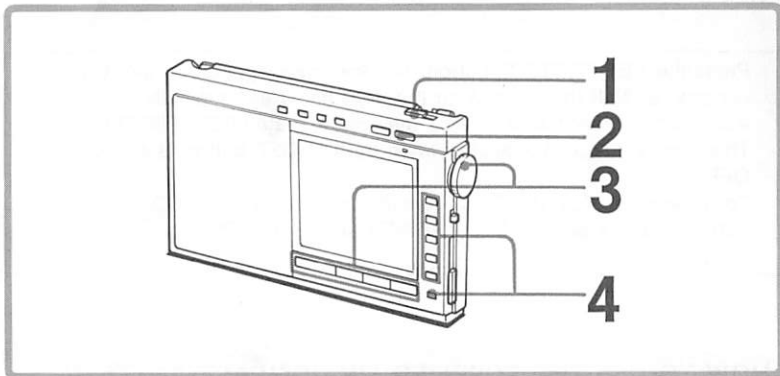
Compact antenna

When extending the cord outside
Be careful not to disturb other people and do not let the cord be touched by the children.

After using
Wind the reel in the direction of the arrow.

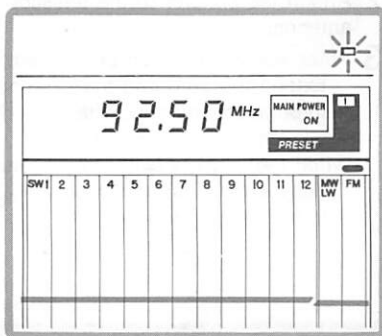

⑮
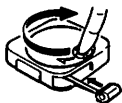
PRESET TUNING

HOW TO PRESET

1 Set the MAIN POWER switch to ON.

2 Press the ON/OFF button.

3 Tune in a desired station. (See page 12.)

4 Press a desired PRESET number button while keeping the ENTER button pressed.

Example: To preset an FM station to PRESET 1 button.

The number of stations you can preset is 15; five stations for each band (FM, MW/LW, SW) can be preset to each PRESET button.

To change the preset station
Preset a station to the desired PRESET button; the station previously preset to the button is erased.
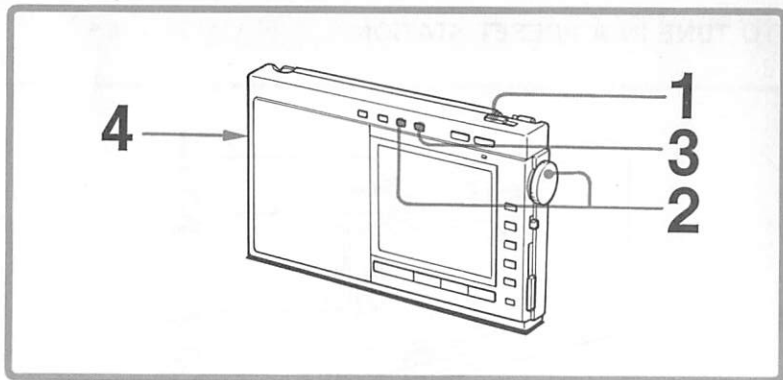
TO TUNE IN A PRESET STATION
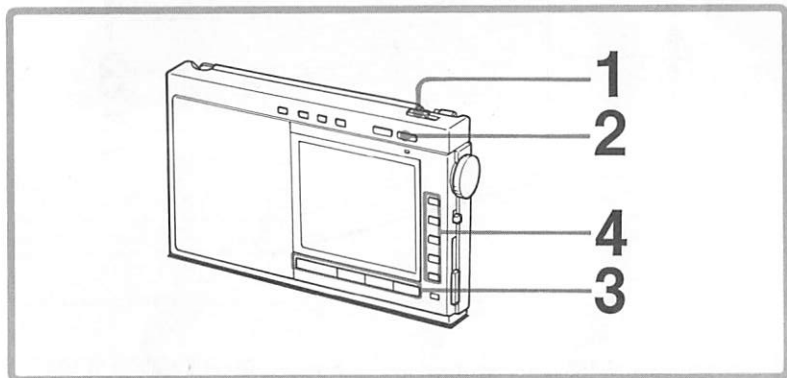
1 Set the MAIN POWER switch to ON.

2 Press the ON/OFF button.

3 Press the desired band button.

4 Press the desired PRESET button.

HOW TO SET THE ALARM

1 Set the MAIN POWER switch to ON.

2 Set the alarm time by turning the TUNING/TIME ADJ control while keeping the ALARM button pressed.

3 Press the STANDBY button.

4 Set the ALARM selector to RADIO or BUZZER.

Example: To set the alarm to 6:30
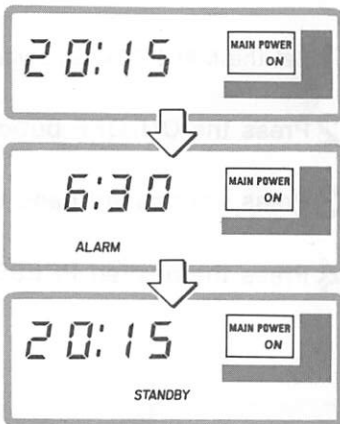

The volume of the alarm sound
- The volume of the radio sound can be adjusted.
  (However, it is audible even if the volume is set to MIN.)
- The volume of the buzzer sound is always the same.

To check the preset time.
Press the ALARM button.

To change the alarm time
Set the desired alarm time, the alarm time previously set is erased.

For RADIO alarm
Tune in the desired station following
the steps 2–5 on page 12.

RADIO |IIIIIIIIIII| BUZZER
ALARM selector

$$2\ 0\!:\! 15$$ MAIN POWER ON
STANDBY
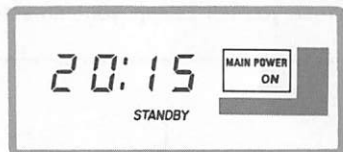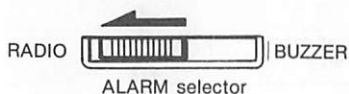
For BUZZER alarm
The buzzer sound will come on at the
preset time.

RADIO |IIIIIIIIIII| BUZZER
ALARM selector

(•) $2\ 0\!:\! 15$ MAIN POWER ON
STANDBY

The BUZZER ALARM
indicator appears.

To stop the RADIO or BUZZER alarm
• Press the ON/OFF button.—The alarm sound will come on again at the
same time the next day.
• Press the STANDBY button.—The alarm setting is released.
• Set the MAIN POWER switch to OFF.—The power is turned off.
• Press the SLEEP button in BUZZER alarm mode.—The BUZZER alarm will be shut off
and the radio sound comes out for the SLEEP function.
(For RADIO alarm, the SLEEP function starts automatically.)

Note: If you forget pressing the STANDBY button, the alarm sound will not come out.

**When the alarm time is reached while
listening to the radio**
For BUZZER alarm, the buzzer sound
comes on. When you press the
ON/OFF button twice, the radio sound
comes on again.

Set the alarm time in order not to miss
the reception time of your desired radio
program. It is useful especially for
receiving the SW stations since they
are not broadcasted all day long.

HOW TO SET THE SLEEP TIMER

When you fall asleep, you can listen to the radio by the sleep timer.
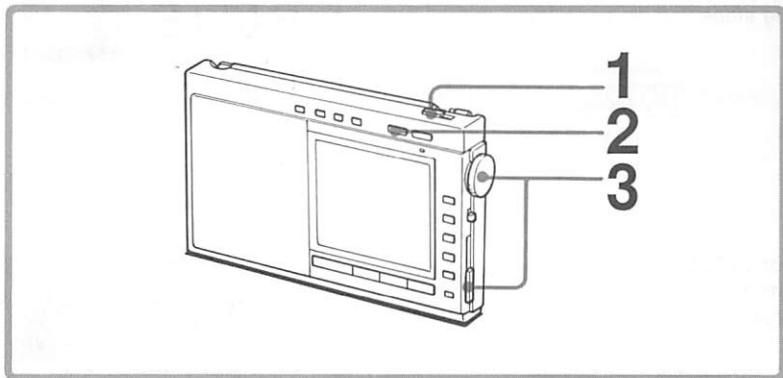
1 Set the MAIN POWER switch to ON.

2 Press the SLEEP button.

3 Tune in the desired station with the TUNING/TIME ADJ control and adjust the volume with the VOLUME control.

The radio will be turned off automatically after about 65 minutes.

Example: To set the sleep timer to an FM station
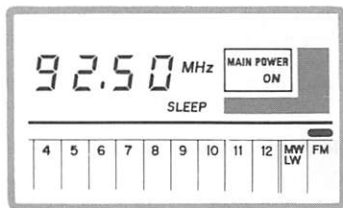
To turn off the radio before the sleep time
Press the ON/OFF button.

When you press the SLEEP button while listening to the radio
The radio will be turned off automatically after about 65 minutes.

SPECIFICATIONS

Circuit system	FM: Superheterodyne LW/MW/SW: Dual conversion superheterodyne
Frequency range	FM: 76-108 MHz MW: 530-1,700 kHz LW: 150-285 kHz SW: 90-11 m SW broadcast bands
Antennas	FM/SW: Telescopic antenna MW/LW: Built-in ferrite bar antenna
Speaker	Approx. 7.7 cm (3⅛ inches) dia.
Power output	400 mW (at 10% harmonic distortion)

Outputs	Recording output jack (minijack)
	    output level 0.775 mV (-60 dB)
	    output impedance 1 kilohm
	Earphone jack (minijack) for 8 ohm earphone

Power requirements	6 V DC
	Four size AA (R6) batteries
	DC IN 6 V jack accepts:
	    Sony AC-D4S AC power adaptor (optional) for use on 120 V
	        AC, 60 Hz
	    Sony DCC-127A or DCC-240 car battery cord (optional) for
	        use with 12 V or 24 V car battery, respectively
	    Sony EBP-6 battery case (optional) for use with four size C
	        (R14) batteries.

Battery life	Approx. 19 hours of listening for four hours a day at a normal volume, using Sony batteries SUM-3 (NS)
Dimensions	Approx. 191.5 × 117 × 31.5 mm (w/h/d) (7⅝ × 4⅝ × 1¼ inches) including projecting parts and controls
Weight	607 g (1 lb 5⅜ oz) including batteries
Supplied accessories	Earphone (1) Short wave guide (1) Carrying case (1) SW compact antenna (1)

Design and specifications subject to change without notice.

OPTIONAL ACCESSORIES

AC power adaptor	AC-D4S
Car battery cord	DCC-127A, DCC-240
Battery case	EBP-6
Connecting cord	RK-69A (miniplug↔miniplug)
External antenna	AN-1
Earphones	MDR-E122

TROUBLESHOOTING GUIDE

Should any problem occur with the unit, make the following simple checks to determine whether or not servicing is required. If the problem persists after you have made these checks, consult the nearest Sony dealer for further information.

The power is not turned on even if you press the ON/OFF button.
• Weak batteries.
• Incorrect polarity of batteries.
(See page 8.)
• The MAIN POWER switch is set to OFF.
• The KEY PROTECT is set.
(See page 15.)
• The AC power adaptor, the battery case or the car battery cord is disconnected.
• Battery operation is attempted while the AC power adaptor, the battery case or the car battery cord is connected to the unit, but not to a wall outlet or cigarette lighter socket.

Each function does not work even if operating the unit.
• The KEY PROTECT is set.
(See page 15.)

Display is dim.
• Weak batteries.
• The unit is being used in extremely high temperatures or in a place with excessive moisture.

Sound is not heard at all.
• The VOLUME control is turned down completely.
• The earphone is plugged in.

Very weak or interrupted sound, or unsatisfactory reception.
• Weak batteries.
• Tuning or antenna adjustment is not correct.
  (See page 12.)
• Weak signal. ➡ When in a vehicle or in a building, listen near a window.
• Figures on the frequency display differ a little from the acted station
  frequency. ➡ Tune more precisely. (See page 12.)

The preset station cannot be received when preset tuning.
• Incorrect preset station button is pressed.
• The preset station is erased. ➡ Preset the station again.

The radio does not turned on at the alarm-setting time.
• The STANDBY button has not been pressed.
• The alarm-setting time is erased. ➡ Set the alarm again.
• The MAIN POWER switch is set to OFF.

PRECAUTIONS

- Operate the unit only on 6 V DC.
  For battery operation, use four size AA (R6) batteries.
  For AC operation, use the AC power adaptor recommended for this unit; do not use any other type.
  For car battery operation, use the car battery cord recommended for this unit; do not use any other type.
- Do not leave the unit in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- Use the unit within a temperature range of 0°C to 40°C (32°F to 104°F). If it is used in temperatures outside this range, numbers may appear on the frequency and clock display which have nothing to do with the frequency being received. If it is used in temperatures lower than this range, the numbers displayed may change very slowly. These irregularities will disappear and there will be no damage to the unit when the unit is used in its recommended temperature range.
- Should any solid object or liquid fall into the unit, remove the batteries, and have the unit checked by qualified personnel before operating it any further.
- Since a strong magnet is used for the speaker, keep personal credit cards using magnetic coding or spring-wound watches away from the unit to prevent possible damage from the magnet.
- When the casing becomes soiled, clean it with a soft cloth dampened with mild detergent solution. Never use abrasive cleansers or chemical solvents, as they may mar the casing.

If you have any question or problem concerning your unit that is not covered in this manual, please consult the nearest Sony dealer.