

# Operating Instructions

MODEL NO. **RF-2200**



**FM/AM/SW 8-BAND PORTABLE RADIO**

## **Panasonic**

Read these instructions completely before operating this set.

## LOCATION OF CONTROLS



The serial number of this product may be found on the label affixed inside the battery compartment. You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid in identification in the event of theft.

MODEL NUMBER: RF-2200 , SERIAL NUMBER: \_\_\_\_\_

## PRECAUTIONS

For your safety and to prevent damage to the set:

- Do not connect the set to an AC outlet other than regular 120 volts, AC 60 Hz.
- Avoid cuts, scratches, or poor connections in the AC power cord which may result in possible fire or electric shock hazard. Also, excessive bending, pulling, or slicing of the cord should be avoided.
- Do not unplug the AC power cord by pulling on the cord. To do so may cause premature failure or shock hazard.
- Do not operate the set on AC power in a bathroom or swimming pool as a potential shock hazard may result.

## POWER SUPPLY

### Battery Operation:

Open the Battery Compartment Cover by pressing the two cover-releases down as shown in Fig. 1. Then insert four Panasonic "D" size batteries in the order indicated by numbers in Fig. 2, observing correct polarity.

Replace the cover.

Note: When operating on battery power, be sure to unplug the AC power cord from the AC IN Jack.

Press to open battery compartment

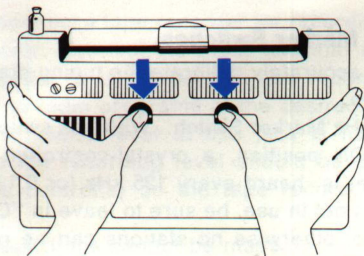
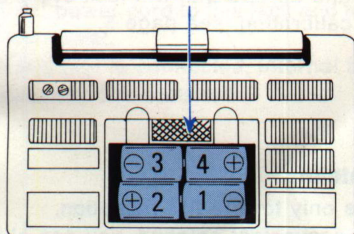


Fig. 1

Earphone Storage Pocket



Four Panasonic "D" size batteries

Fig. 2

### To Check the Battery Condition:

Set the Power Switch to ON, and tune so that no station is received.

The Tuning/Marker/Battery Indicator will show the battery condition.

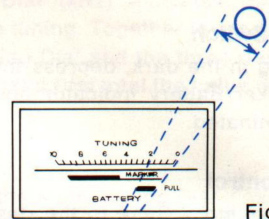


Fig. 3

### NORMAL

When the indicator reads in the "O" range as shown above, the batteries are good.

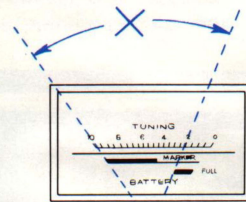


Fig. 4

### WEAK

When the indicator reads in the "X" range as shown above, replace all the batteries with new ones.

### AC Power Operation:

Connect the accessory AC power cord to the AC IN Jack and to a 120V AC electrical outlet. When the power cord is plugged into the AC IN Jack, the power supply is automatically switched from battery to AC.

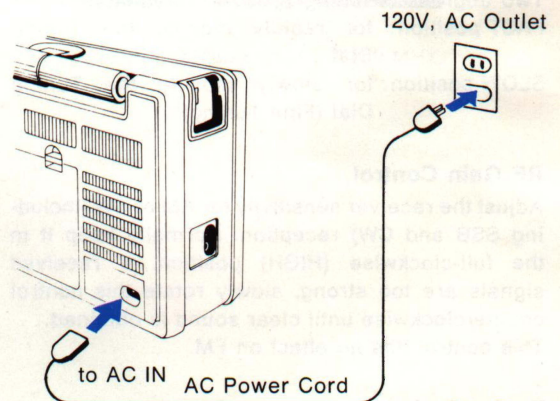


Fig. 5

**WARNING:** TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

## CONTROLS AND THEIR FUNCTIONS

### Power Switch

Turn the power on and off.

### Dial Light Switch

When tuning in the dark, depress this switch. The Tuning/Marker/Battery Indicator and Tuning Dial will be illuminated.

### Volume Control

Adjust the sound volume to the desired listening level.

### Bass Control

Adjust the bass tone.

### Treble Control

Adjust the treble tone.

### Band Selector

Set to the desired band: FM, SW or AM.

### SW Band Selector

Select the desired frequency-range on SW.

### Band Indicators

Shows, in red, the frequency-range selected with the Band Selector.

### Tuning Control

Adjust to the desired station.

### SW Band Spread Dial

Divides the SW bands into 10 kHz (0.010 MHz) segments for more accurate frequency reading.

### Tuning Speed Selector

Two degrees of tuning speed are available:

FAST position: for rapidly moving the Tuning Dial

SLOW position: for slowly moving the Tuning Dial (Fine Tuning).

### RF Gain Control

Adjust the receiver sensitivity for AM or SW (including SSB and CW) reception. Normally keep it in the full-clockwise (HIGH) position. If received signals are too strong, slowly rotate this control counterclockwise until clear sound is obtained.

This control has no effect on FM.

### Tuning Indicator

Indicates the relative strength of signals tuned on the radio, and assists in obtaining the best reception. The stronger the station, the greater the deflection to the left.

It also acts as battery-checking indicator and crystal-marker indicator.

### FM AFC/Band Width Switch

Has a combined function as an AFC (Automatic Frequency Control) switch on FM, and a bandwidth switch on AM and SW. Normally leave in the ON/WIDE position.

■ On FM, if you find it difficult to tune in a particular station because of a strong adjacent station, then switch off the AFC.

■ On AM and SW, if your received station is interfered with by another adjacent station, then move the switch to OFF/NARROW position.

### BFO (Beat Frequency Oscillator) Switch

Used to receive Continuous Wave (CW) or Single Side Band (SSB) signals. CW is mostly used to send Morse-code telegraph signals. SSB is used for commercial communications such as ship-to-shore and radio hams.

Setting this switch in the ON position makes the low, indistinct telegraph-sound on CW a clear "peep", and the characteristic "Donald Duck" sound on SSB understandable. For CW reception, tune with the BFO "on", rotating the Tuning Control until a pleasant beat note is heard. For SSB reception, turn on the BFO and carefully tune back and forth until the signal becomes understandable.

NOTE: \* The BFO Switch should be turned on only when receiving CW and SSB signals.

\* About-5-minute wait after turning the BFO on assures fine reception of CW and SSB.

### Crystal Marker Switches

Used to accurately calibrate the tuning dial for SW reception.

■ 125 kHz Marker Switch...With this switch set in the ON position, a crystal-controlled marker signal is heard every 125 kHz (or 0.125 MHz). When not in use, be sure to leave in "OFF" position; otherwise no stations can be received.

■ 500 kHz Marker Switch...While depressing and holding this switch, crystal marker signal will be heard every 500 kHz (or 0.5 MHz), and the SW Band Spread Dial will lock every 125 kHz.

For dial calibration, see page 5.

### Gyro-Antenna

Functions only for the AM reception.

With this convenient antenna, you can obtain best AM reception without changing the position of the receiver. Lift it up and slowly rotate for the strongest signal. Use the Tuning Indicator to assist in finding the best antenna direction. (See Fig. 6.)

NOTE: Do not use it as a carrying handle.

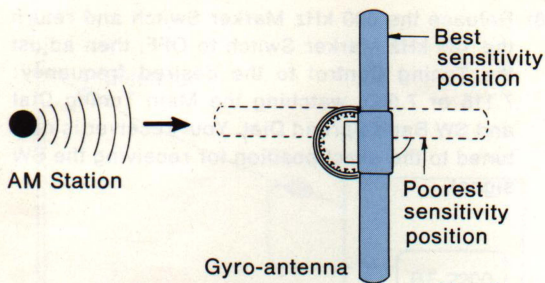


Fig. 6

### Telescopic Antenna

Functions for FM or SW reception, but has no effect on AM. Extend it fully and set it in the best reception position by rotating or tilting.

### External Antenna/Ground Terminals

If the built-in Telescopic Antenna and ferrite core Gyro-Antenna do not provide satisfactory reception, or if you especially want to receive very weak or very distant SW-stations, connect an external antenna (and a ground system) to these terminals.

For detailed instructions, see page 5.

### Earphone/External Speaker Jack

Used to connect the accessory earphone or optional extra external speaker (impedance: 8 ohms). When the plug is inserted, the built-in speaker will be automatically disconnected.

To store a not-in-use earphone, use the earphone storage pocket provided inside the battery compartment.

### REC OUT Jack

Used to connect a tape recorder for recording from the receiver. Connect the input terminal on your tape recorder to this jack. You can record while listening to radio programs at the desired volume level. The sound level at this jack is fixed and therefore the recording level should be adjusted using the control(s) on the tape recorder being used.

Stereo recordings cannot be made.

### AC IN Jack

To operate the receiver on AC power, connect the accessory AC power cord to this jack and to a 120V AC electrical outlet.

Whenever this jack is connected, internal batteries are automatically disconnected.

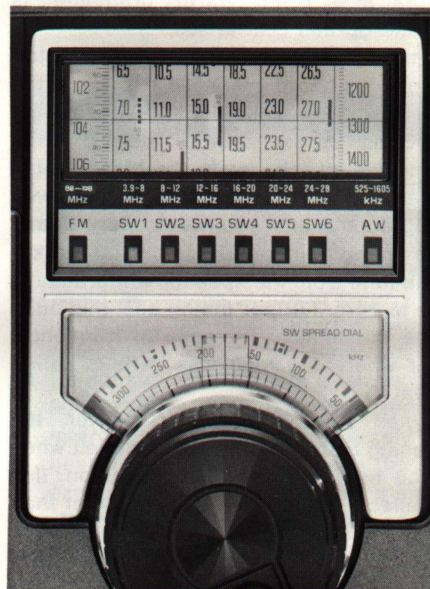
## HOW TO READ THE SW TUNING DIAL

The Main Tuning Dial indicates the main digit(s) and one decimal point graduated to 0.5 MHz. The SW Spread Dial (kHz) indicates three decimal points for fine tuning. Together the main digit(s) on the Main Tuning Dial and the three decimal points on the SW Spread Dial total the value of the received SW frequency.

Example:

Reading on the Main Tuning Dial (MHz)	7.0	7.5
Reading on the SW Band Spread Dial (kHz)	115	560
Receiving Frequency (MHz)	7.115	7.560

NOTE: To obtain accurate reading of SW frequencies, it is necessary to calibrate the dial/pointer setting.



The above photograph shows 7.180 MHz.

## HOW TO CALIBRATE THE SW TUNING DIAL

SW tuning is sometimes difficult to achieve because the value of the frequency does not conform to the reading on the tuning scale. This receiver has two Marker Switches for adjusting the scale to obtain accurate tuning on the SW bands.

### Procedure:

- 1) Set the Band Selector to SW and set the SW Band Selector to SW1—SW6.
- 2) Tune to the approximate frequency. The SW scale on the Main Tuning Dial is graduated every 0.5 MHz, so determine the nearest graduation for use in the steps which follow. If the desired frequency is 7.115 MHz, the nearest graduation is 7.0 MHz; if the frequency is 7.560 MHz, the nearest graduation is 7.5 MHz.
- 3) Set the SW Band Spread Dial in accordance with Step 2. If the nearest graduation is ".0", set the Spread Dial at 0; if the nearest graduation is ".5", set the Spread Dial at 500.
- 4) Depress the 500 kHz Marker Switch. A crystal-marker sound is heard every 500 kHz (i.e. at the 0 and 500 positions) on the SW Spread Dial, and the SW Band Spread Dial is locked. While depressing the switch, rotate the Main Tuning Dial (toward 7.0 or 7.5 as the case may be) with the Tuning Control until you reach "Zero Beat". When the tuning point nears the crystal marker signal, the tone from the speaker will gradually decrease to zero. Further tuning past this point will cause the tone to increase in frequency. The point where the tone was zero is called "Zero Beat".

**NOTE:** When using the crystal marker, the tuning meter will deflect to the left when you near the zero beat condition. If it deflects to the right, a signal other than the marker's signal is being introduced. To avoid confusion, make sure the meter deflects to the left.

(See Fig. 7.)

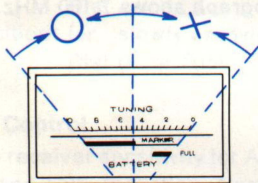


Fig. 7

- 5) Set the 125 kHz Marker Switch in the ON position.
- 6) Turn the SW Band Spread Dial to the nearest marker point of the desired frequency: 125 kHz for 7.115 MHz, 500 kHz for 7.560 MHz.

Note: ● .....Marker Point for 500 kHz and 125 kHz

! .....Marker Point for 125 kHz

- 7) While depressing the 500 kHz Marker Switch, slowly turn the Tuning Control right and left until you reach Zero Beat.

- 8) Release the 500 kHz Marker Switch and return the 125 kHz Marker Switch to OFF, then adjust the Tuning Control to the desired frequency: 7.115 or 7.560, watching the Main Tuning Dial and SW Band Spread Dial. Your receiver is now tuned to the exact position for receiving the SW signal.

## EXTERNAL ANTENNA AND GROUND

### FM Antenna

If the received FM station is very weak and the Telescopic Antenna does not provide satisfactory reception, connect a 75-ohm FM antenna to the External Antenna Terminals on the rear, as shown in Fig. 8.

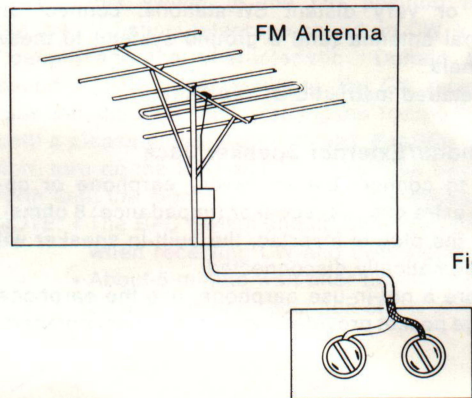


Fig. 8

External Antenna/Ground Terminals

### SW Antenna and Ground

To receive signals on the SW band, the built-in telescopic antenna is sufficient. However, when the distance is great or the signal is weak it is necessary to rig an external antenna and a ground lead as shown in Figs. 9 and 10. The antenna should be as high as possible and far from noise generating machines and high tension cables.

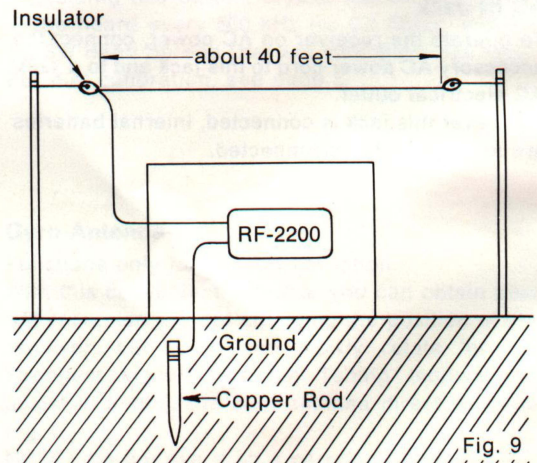


Fig. 9

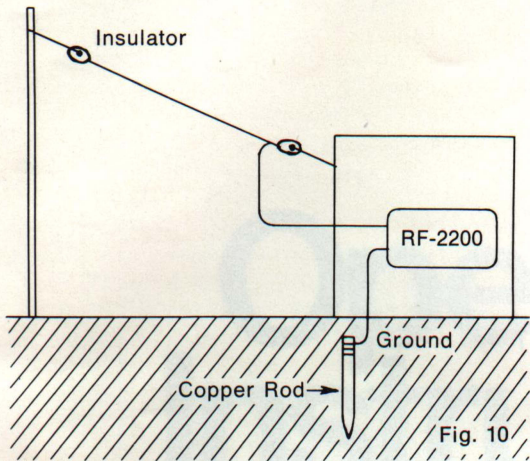


Fig. 10

### AM Antenna and Ground

The built-in, highly sensitive Gyro-Antenna assures excellent AM reception in most areas. To further improve reception, connect a 10 or 15' length of wire to the left screw of the External Antenna Terminals on the rear.

Position it for the best reception.

For reception in fringe areas, make an external antenna and a ground connection, as instructed under "SW Antenna and Ground".

### DETACHABLE SHOULDER STRAP

#### To Attach the Shoulder Strap:

Insert the shoulder strap hooks into the hook-holder cavities on both sides of the cabinet, and pull up the strap. (See Fig. 11.)

The hooks will lock in with a snap. The length of the strap can be adjusted with the buckle.



Fig. 11

#### To Detach the Shoulder Strap:

Press down hook-releases of the shoulder strap hooks, and the hooks will be released. (See Fig. 12.)

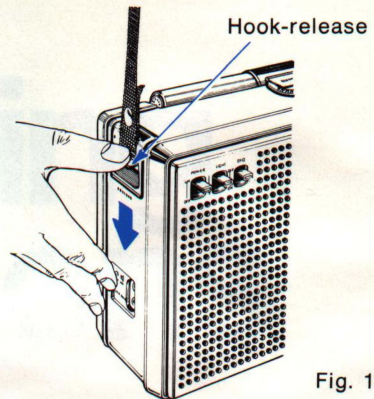


Fig. 12

### HELPFUL HINTS

- If the set is not in use for a long time or is used only from an AC power source, remove all the self-contained batteries to prevent potential damage due to possible battery leakage.
- When the volume begins to lower, it is advisable to replace all the batteries with new ones before they are completely discharged.
- Do not subject the set to a temperature of over 50°C (120°F), because characteristics of the internal parts may be adversely affected by heat. Especially, never leave the set in a car exposed to direct sunlight for a long time with all the doors and windows closed. The cabinet may become disfigured, and deterioration of the performance may be caused.
- Do not use benzine, thinner, or the like, or any abrasive powder to clean the cabinet. Wipe it with a soft cloth moistened with a mild soap and water solution.

### PRODUCT SERVICE

Should your Panasonic product ever require service, refer to the Directory of Authorized Panasonic Servicentres enclosed with this radio or contact your Panasonic dealer for detailed instructions.