

# OWNER'S MANUAL

## FRS RADIO

### WRF 108

## INTRODUCTION

Your FRS radio is a portable, easy-to-use, two-way radio with clock and NOAA receiver that you can carry almost anywhere. It makes you can contact others as well as watching NOAA WX broadcasts in one unit meanwhile grasping time. Use it at shopping malls, amusement parks, sports events, or at the beach to contact family and friends, or for vital communications in a neighborhood watch.

Your radio has 14 channels and 38 different quiet codes. If someone else is using the channel you selected and you do not want to hear that person, select another channel or use the quiet feature. You can talk with a person who has a FRS radio if both radios are tuned to the same channel and quiet code.

Your radio has auto-squelch (FRS only), which means you will not hear anything on a channel unless someone is transmitting nearby on the same channel. You can turn off auto-squelch to hear weaker, distant transmissions.

Also, if the radio is idle for a period of time of 2 hours, it automatically shuts off. It turns on again when you press **POWER/VOL** key for 2 seconds.

You can connect an optional earphone/microphone and a charger (not supplied) to the radio. And, the belt clip lets you take your radio almost anywhere.

## FCC INFORMATION

**Important:** Do not open your radio to make any internal adjustments. Your radio is set up to transmit a regulated signal on one of 14 assigned frequencies. It is against the law to alter or adjust the settings inside the radio to exceed those limitations. Any adjustments to your radio must be made by a qualified technician using the proper test equipment.

To be safe and sure:

- Never open your radio's case.
- Never change or replace anything in your radio except the batteries.

Your radio might cause TV or radio interference even when it is operating properly. To determine whether your radio is causing the interference, turn it off. If the interference goes away, your radio is causing it. Try to eliminate the interference by:

- moving your radio away from the receiver
- calling your local service store for help

If you cannot eliminate the interference, the FCC requires that you stop using the radio.

This device complies with Part 15 of the *FCC Rules*. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## **SAFETY INFORMATION**

Your wireless hand-held portable transceiver contains a low power transmitter. When the Push-to-Talk button is pushed it sends out radio frequency (RF) signals. The device is authorized to operate at a duty factor not to exceed 50%. In August 1996, the Federal Communications Commission (FCC) adopted RF exposure guidelines with safety levels for hand-held wireless devices.

### **CAUTION:**

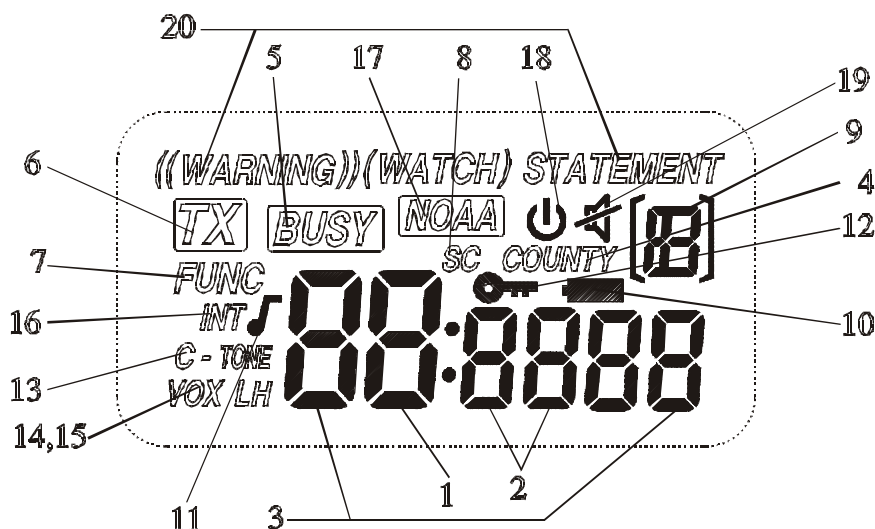
To maintain compliance with the FCC's RF exposure guidelines, hold the transmitter and antenna at least 2 inch (5 centimeters) from your face and speak in normal voice, with the antenna pointed up and away from the face. If you wear the handset on your body while using the headset accessory, use only the supplied belt clip for this product and when transmitting, take it out of the belt to ensure that the antenna is at least 1 inch (2.5 centimeters) from you body.




Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violate FCC regulations.

## USING THE RADIO

### A. DISPLAY

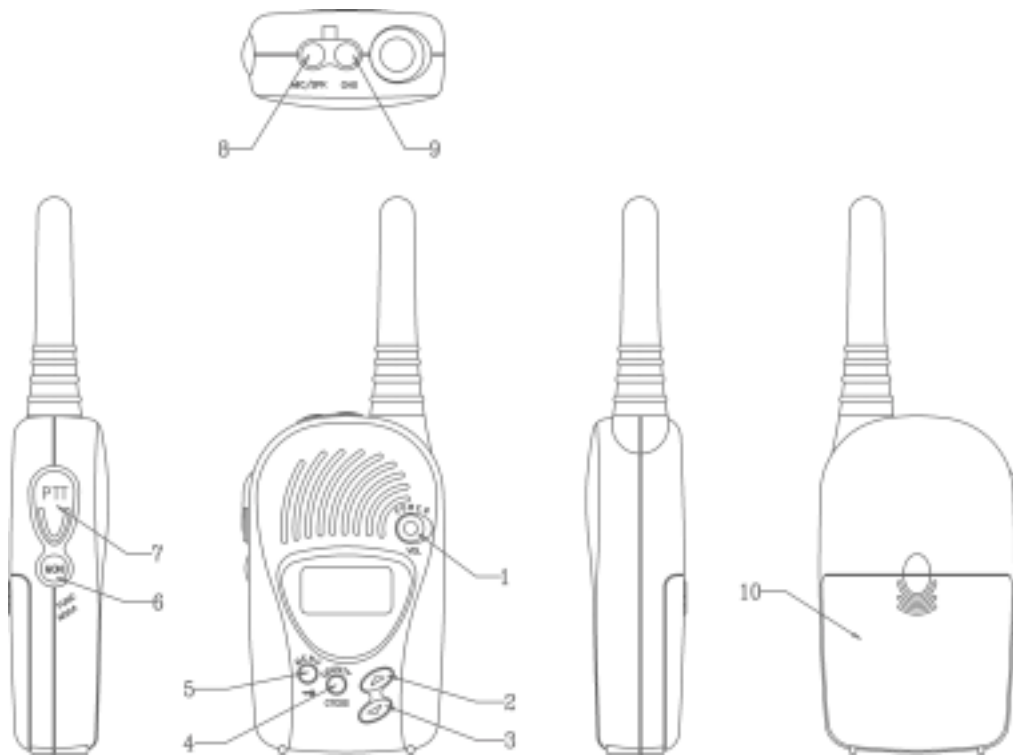
Your radio comes with a multifunction-backlighted display. In clock mode before turning on your radio, pressing MONI/FUNC/NOAA or POWER/VOL button can illuminate the backlight for 7 seconds; in working mode, By pressing any button except the **PTT**, the backlight will illuminate for 7 seconds.



1. Shows the selected channel number.
2. Shows the selected privacy code number.
3. Shows the selected county code for NOAA.
4. “**COUNTY**”: Displays when your radio is in county code entering mode.
5. “**BUSY**”: Displays when a call is being received.
6. “**TX**”: Displays when your radio is transmitting or the **PTT** button is pressed.
7. “**FUNC**”: Displays when the secondary function is enabled.
8. “**SC**”: Displays when the scan mode is activated.
9. Shows the sequence number of the county your entered or the pertinent NOAA frequency code.
10. “”: The icon flashing Indicates the batteries are low. Replace the batteries when it appears.
11. “”: Displays when the key tone function is activated.
12. “”: Displays when the keypad lock is activated.
13. “**C-TONE**”: Displays when the courtesy tone function is activated.

14. **"VOX L"**: Displays when VOX function is set to be low.
15. **"VOX H"**: Displays when VOX function is set to be high.
16. **"INT"**: Displays when intercom function is enabled. (Assume the intercom accessories are used.)
17. **"NOAA"**: Displays when your radio is in NOAA ON position.
18. **"⏻"**: Displays when your radio stands by in NOAA mode.
19. **"🔇"**: Displays when your radio is mute in NOAA mode.
20. **"((WARNING)) (WATCH) STATEMENT"**: Displays when an alert signal is received during your radios's in NOAA mode.

## B. FUNCTION AND LOCATION OF THE CONTROLS



1. **POWER/VOL** Button
2. **UP** Button
3. **DOWN** Button
4. **COUNTY/CTCSS** Button
5. **MENU/KEYLOCK** Button
6. **MONI/FUNC/NOAA** Button
7. **PTT** (Push To Talk) Button
8. External Speaker/Microphone Jack
9. Charger Jack

## 10. Battery Compartment

### C. FUNCTION AND OPERATION OF THE FRS RADIO

#### Preparation

Your radio uses four AAA batteries for power supply. We recommend alkaline batteries. However, you can use rechargeable batteries in the radio.

To start using your radio, insert four AAA batteries into the battery compartment, noting the polarities.

As soon as you connect the power, the unit will enter the clock mode and the cleared time will display on LCD.

***Note:** Once your batteries are used up, you should replace all the four alkaline batteries with new ones. Then the clock will be cleared to zero, so you should re-adjust the clock.*

#### Turning On/Off Your FRS Radio

Press and hold **POWER/VOL** button for about 2 seconds. An audible tone will sound to indicate your FRS radio is on. (The unit will return to the last state before it was shut off) Then same operation will make your unit exit the FRS radio to clock mode.

#### Illuminating the Display

Press any button except **PTT** to illuminate the display for seven seconds during FRS radio being on.

#### Adjusting Volume

When your radio is turned on, momentarily press **POWER/VOL** button to enter into the volume-adjusting mode. Repeatedly press **UP** or **DOWN** button to adjust volume until you get a comfortable level. Once more momentary press on **POWER/VOL** button or no button operation for 5 seconds will make the radio exit this mode.

#### Key Locking

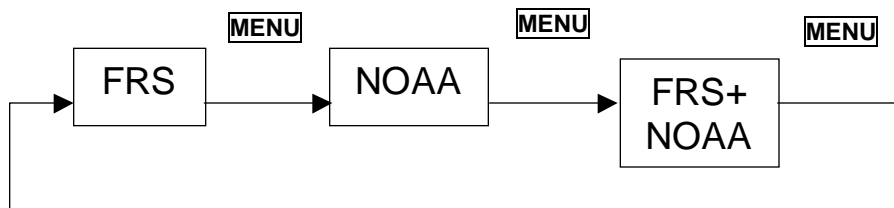
You can lock your radio setting to avoid accidental pressing of keys by activating the keypad lock. Press and hold **MENU/KEYLOCK** button for more than 2 seconds to activate or deactivate the keypad lock. The function is effective to all keys except the **PTT** key and 2 second-press of the **MONI/FUNC/NOAA** button for monitor function as well as the **POWER/VOL** key for turning off the radio.

#### Setting VOX

Pressing **UP** key while holding **MONI/FUNC/NOAA** button can toggle between VOX on/off. If the **UP** key is held down for more than 1.5 seconds, the unit will enter the mode of toggle between high and low levels of VOX control sensitivity.

## Modes Description

1. Press **MENU/KEYLOCK** button to toggle among modes of FRS, NOAA and FRS+NOAA.



2. FRS: FRS only.  
NOAA: NOAA only.  
FRS+NOAA: In FRS mode meanwhile keeping watching signals on NOAA. When a NOAA alert signal is received, FRS radio will automatically switch to the NOAA mode. *(No CH scan function in this mode)*

## FRS Operation

Select the desired channel and/or quiet code. Press **PTT** button to transmit and to receive, simply release the **PTT** button.

## Monitor Function

To hear everything happening on a channel, including weak transmission, hold down **MONI/FUNC/NOAA** button for more than 1.5 seconds. Release the **MONI/FUNC/NOAA** button to turn the auto-squelch back on.

## Auto Power Save

When in FRS mode your radio has a unique circuit designed to extend the battery life.

## Selecting Channel and Channel Scan Function

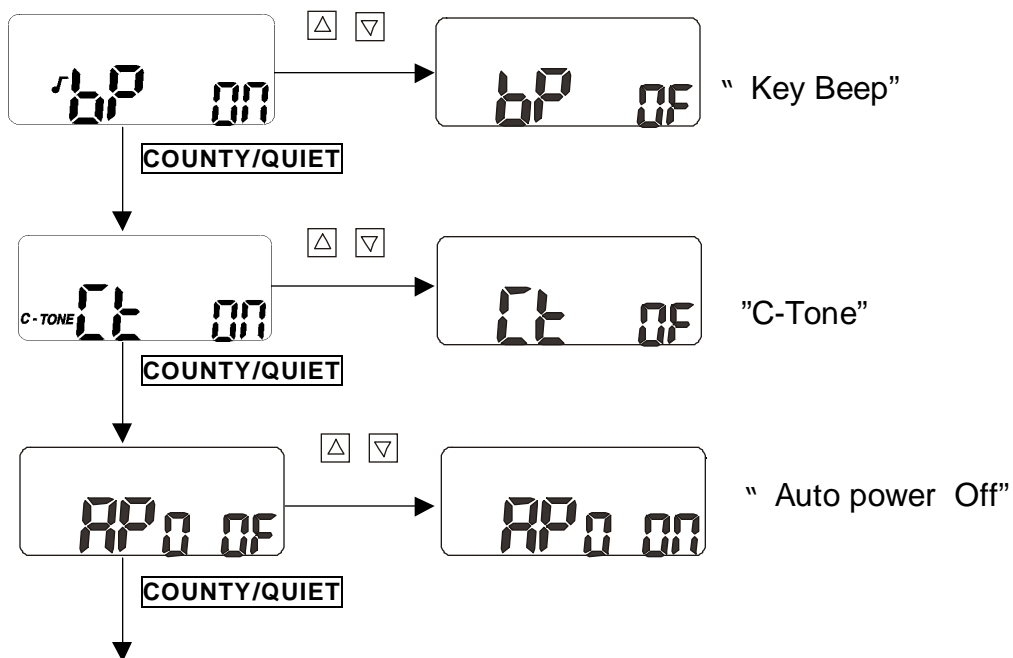
1. Repeatedly press **UP** or **DOWN** button to select the current working channel desired. The selected channel number appears.
2. Press and hold **UP** or **DOWN** button for more than 1.5 seconds to enter the channel scan mode and "SC" is displayed on LCD. The radio automatically scans through the channels and stops for about 5 seconds on each active channel. During scanning, pressing **UP** or **DOWN** button can change the scan direction. Pressing any button except **COUNTY/CTCSS**, **UP** and **DOWN** will make your radio exit the scanning mode and stay on the current scanned channel. If you want to exit scanning while stay on the original channel before scanning, you can press **COUNTY/CTCSS** key. *(CH scan function is effective only in FRS mode)*

## Quiet Code Setting

Press and hold **COUNTY/CTCSS** button for about 1.5 seconds during normal operation to enter the quiet code setting mode and the quiet code on LCD flashes. Press continually the **UP** or **DOWN** button to select the desired quiet code. Once more press **COUNTY/CTCSS** button to confirm and then exit.

## Other Settings of FRS Radio

When the last mode before you turned off your radio was FRS mode, hold down **COUNTY/CTCSS** button and power the radio by pressing **POWER/VOL** button to enter into the setting mode. Repeatedly pressing **COUNTY/CTCSS** button can toggle among the settings of KEY BEEP, C-TONE and AUTO POWER for editing. Furthermore, you can make the desired selection with **UP** or **DOWN** button. Pressing **MENU/KEYLOCK** button or no button operation for 10 seconds will store the setting and exit automatically the setting mode. The following is the detailed flow:



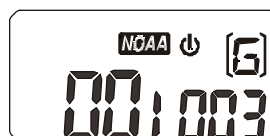
Press **MENU/KEYLOCK** button or no button operation for 10 seconds will exit automatically the setting mode.

**Note:**

- \* You can only communicate with another radio that is using the same channel and/or the same quiet code as your radio.
- \* The key beep function does not have effect on **PTT** and **MONI/FUNC/NOAA** buttons.

## NOAA RECEIVER

Press **MENU/KEYLOCK** button to enter NOAA mode, and LCD displays:

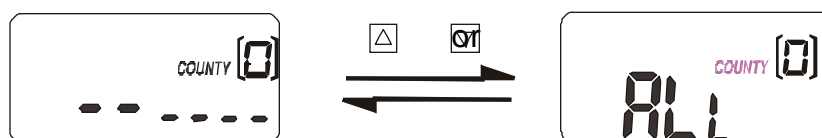


If **COUNTY/CTCSS** button is pressed, your radio will enter county code that represents the location from where you select to receive warning and LCD displays:



You have altogether ten\* locations to select, all county warnings [ALL] or warning from nine specified local locations [-----], which can be selected in sequence by momentary press of **COUNTY/CTCSS** key.

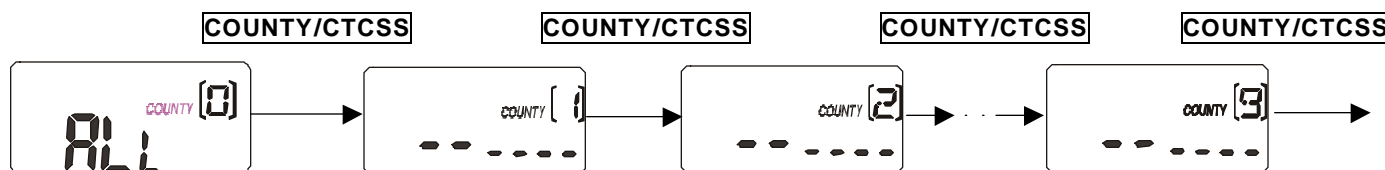
The programmed county code can be deactivated and re-activated by **UP** or **DOWN** key (county 0 has a special selection of all warnings [ALL] that was set originally. LCD displays:



*NOTE: If one of 1 to 9\* [-----] (specific local locations) is selected, its local county code needs to be programmed into your unit.*

### Entering Appropriate County

You can toggle different location selections by press **COUNTY/CTCSS** button showed as following.



Once you get your desired selection, you can enter the county code setting mode of this selection by press and hold **COUNTY/CTCSS** button for 2 seconds. The extreme left county-code digit will flash.



Use **UP** or **DOWN** button to select the desired digit and press **COUNTY/CTCSS** button to confirm and then advance to the following digit.



*REMEMBER: Some counties has more than one transmission station and are subdivided into several*






*smaller localized sections. The extreme left digit represents the smaller localized section. If the county has not been subdivided into smaller sections, select zero(0) in it.*

To enter the remaining five digits, follow the same procedure. Press **COUNTY/CTCSS** button followed by **UP** or **DOWN** key.

When finished, press **MENU/KEYLOCK** button or wait for 10 seconds to store and return, and **COUNTY/CTCSS** button to advance to the next county selection.

#### NOAA Receiver Status

- Radio on [  ]  
The NOAA Receiver is on and broadcast voice message can be continuously heard.
- Radio standby [  ]  
The radio is in standby and will changed to the on position to hear voice message when an alert signal is received.
- Radio mute [  ]  
The radio is in standby and the LCD will display “WARN”, “WATCH” or “STATEMENT” that the unit has received an alert signal. Voice message can not be heard until the radio is switched to the ON position.

#### Toggle between various NOAA receiver

Press **MONI/FUNC/NOAA** button to toggle the NOAA receiver status between NOAA-ON, NOAA-standby, NOAA-mute.

### Resetting the unit

Powering the unit while holding down the **MENU** button can reset the your radio. As the result, the channel will be reset to CH1, quiet code to be number 12, CTCSS privacy mode operation is deactivated, the automatic shut off timer continues, keypad lock disabled, courtesy tone is off, key beep function is on, backlight switched off and the NOAA channel to be A with reset county code of “oooooo” for county1~9 and “ALL” for county 0.

### CLOCK Setting

In clock mode:

Hold down **MONI/FUNC/NOAA** button and press **UP** button to adjust the hour of the clock.

Hold down **MONI/FUNC/NOAA** button and press **DOWN** button to adjust the minute of the clock.

**Note:** *You can only communicate with another radio that is using the same channel and/or the same quiet code as your radio.*

**Intercom**

If your radio is connected with the intercom accessories through MIC/SPK jack, you can use intercom function. In FRS mode, you can press **UP** button while holding down **MONI/FUNC/NOAA** button to activate the intercom function. If there is no connection with the correlative accessories, an error tone will sound.

**External SPK/MIC Jack and Charger Jack**

Connect an optional speaker/microphone or earphone in this jack.

You can recharge Ni-Cd batteries using an optional battery charger (not supplied). Plug the charger’s barrel plug into the charger jack on the head of the unit, then connect the charger to a standard AC outlet.

***Caution:** Be sure the batteries in the unit are rechargeable type before charging, or explosion may occur.*

**Belt Clip**

To attach the belt clip, fix the base on the back of the unit with screw and mount the clip until it clicks.

**Battery Compartment**

Press and push back the battery door to release.

**TECHNICAL SPECIFICATIONS**

RX Frequency.....	462.5636-467.7125
<b>MHz</b>	
Channels.....	
<b>..14</b>	
Modulation	
type.....	<b>FM</b>
Antenna impedance.....	<b>50</b>
<b>Ohm</b>	
Microphone.....	<b>condenser</b>

**type**Power supply.....**4x AAA****Alkaline**

Sensitivity at 12dB

Sinad.....**0.5 $\mu$ V**

Adjacent Channel

Rejection.....**45dB**

Audio Squelch

.....**Auto**Audio output power.....**200mW @ 8****Ohm**

Audio Distortion

.....**5%**RF Output Power.....**500 mW ERP****@6VDC**Harmonic Emissions.....**more than****50dB**

Dimensions

(HWD).....**100.0x58.0x29.0mm**

Weight (without

batteries).....**95g****CHANNEL FREQUENCIES****Frequency: MHz**

1 = 462.5625	5 = 462.6625	9 = 467.5875	13 = 467.6875
2 = 462.5875	6 = 462.6875	10 = 467.6125	14 = 467.7125
3 = 462.6125	7 = 462.7125	11 = 467.6375	
4 = 462.6375	8 = 467.5625	12 = 467.6625	

**CTCSS PRIVACY CODES****Frequency: Hz**

1: 67.0	11: 97.4	21: 136.5	31: 192.8
2: 71.9	12: 100.0	22: 141.3	32: 203.5
3: 74.4	13: 103.5	23: 146.2	33: 210.7
4: 77.0	14: 107.2	24: 151.4	34: 218.1
5: 79.7	15: 110.9	25: 156.7	35: 225.7
6: 82.5	16: 114.8	26: 162.2	36: 233.6
7: 85.4	17: 118.8	27: 167.9	37: 241.8
8: 88.5	18: 123.0	28: 173.8	38: 250.3
9: 91.5	19: 127.3	29: 179.9	
10: 94.8	20: 131.8	30: 186.2	

**NOAA Frequency coverage (MHz):**

Channel 1.....	162.400
Channel 2.....	162.425
Channel 3.....	162.450
Channel 4.....	162.475
Channel 5.....	162.500
Channel 6.....	162.525
Channel 7.....	162.550