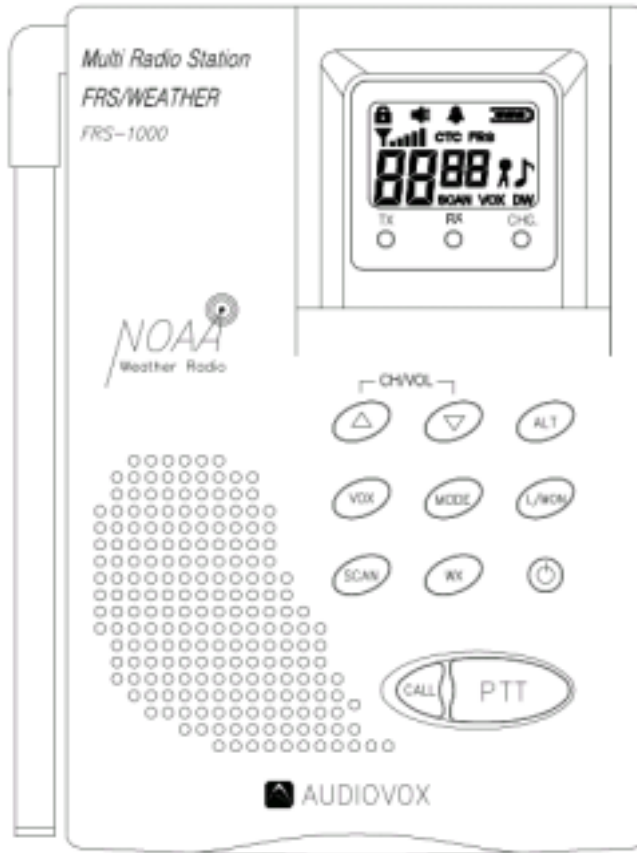


# Instruction Manual

## Family Radio Service

### FRS-1000



- CTCSS Sub Tone (38 Frequency)
- VOX Operating
- Scanning
- Monitor
- Weather Radio Band (10 Channels)
- Weather Alert
- Key Pad Lock
- Back Light LCD Display
- Battery Status Indicator
- Choice of Battery - Rechargeable Battery - Standard Alkaline

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# 1 INTRODUCTION

## 1) Product Description

FRS-1000 Family Radio Service has been designed to enable you to use for general purpose. This is a sophisticated multi channel, battery powered, 462 MHz FM two-way radio. The controls and accessories are easy to use and FRS-1000 can be used correspond to GMRS for channel 1 to 7. Also it has a 38 CTCSS feature to get the clear communication without interference.

And also this radio can be operated the weather band radio.

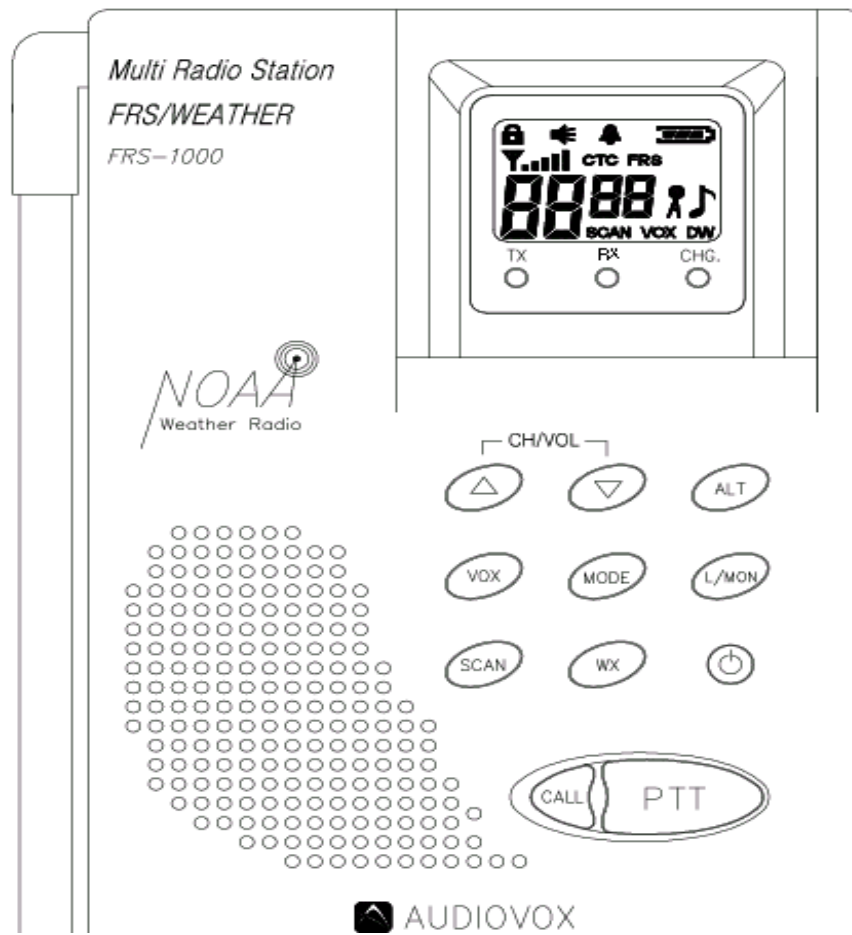
## 2) Package Contents

When you open the package, you should have;

- FRS-1000 Radio Unit
- Rechargeable Battery Cell ( AA x 4 )
- Wall Charger
- User's Manual

## 3) Features

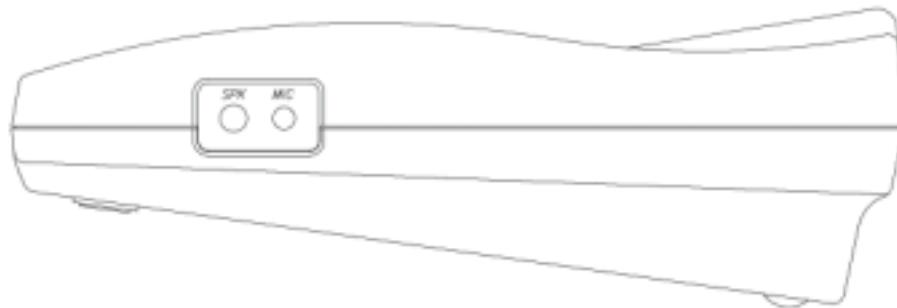
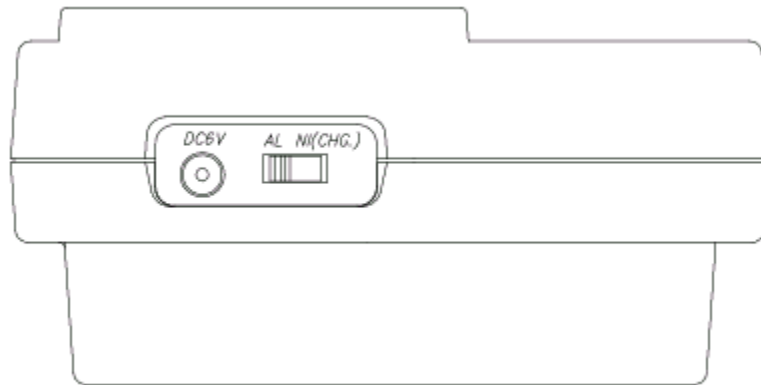
- CTCSS(38 Frequency)
- Channel Scan and Dual Channel Scan
- VOX(Voice Operated Switching)
- RSSI(Received Signal Strength Indicator)
- Call Signal (5 ringer signal)
- Beep ON/OFF
- PSC(Auto Power Saving Control)
- Monitor



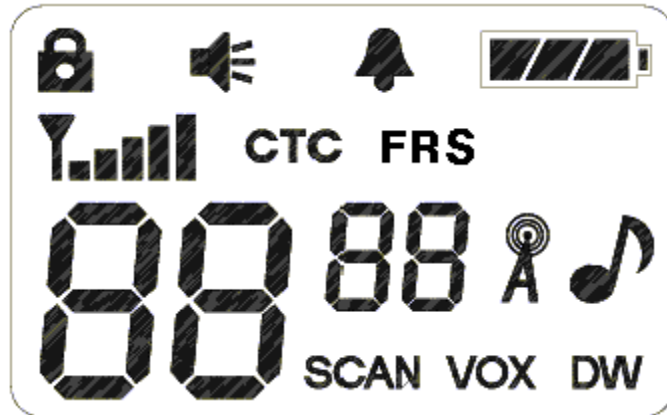
- LCD
- Back lighting
- Low Battery Indicator
- Keypad Lock
- Transmitting/Receiving LED
- Weather Indicator
- Weather Band Radio (10CH)
- Weather Alert

## 4) Front side Overview

## 5) Rear side Overview



## 6) Function and Feature Display



Key lock indicator : Indicates that the key lock function is in use



Beep ON/OFF indicator : Appears while key tone is in use.



Battery indicator : Indicates the battery status.



Channel readout : Shows the current channel number



CTCSS Channel readout



Channel & CTCSS displaying



CTCSS indicator: Appears when the CTCSS function is in use.



Receive signal indicator



VOX (Voice Activated Transmit) Indicator



Monitor indicator



Scan indicator : Indicates that scan is enabled.



Dual Watch Mode indicator : Appears when dual watch mode is in use.



Roger Beep ON/OFF indicator : Appears while roger beep tone is in use



Weather Mode indicator : Appears when weather mode is in use.



FRS Mode indicator : Appears when FRS mode is in use.

### 7) FRS Mode (Function) key sequence

- 1'st press – Channel select
- 2'nd press – CTCSS
- 3'rd press -- Dual watch channel select
- 4'th press -- Dual watch ctcss channel select
- 5'th press -- Beep ON/OFF
- 6'th press -- Roger beep ON/OFF
- 7'th press – Call Ringer type select

### 8) Weather Mode (Function) key sequence

- 1'st press – Weather Channel select
- 2'nd press – Weather Alert ON/OFF
- 3'rd press -- Beep ON/OFF

## 2 INSTALLATION

Your FRS-1000 is designed for use with four "AA" size rechargeable battery (supplied with radio) or Alkaline Batteries(not supplied).When rechargeable battery cell is installed, please charge the batteries for at least 12 hours before use.

New rechargeable batteries should be fully charged before use. While rechargeable battery charge, the radio must be turned off during charging.

**Warning** Do not use wall charger with Alkaline batteries. The radio will be damaged.

### 1) Installation of the batteries

- Ensure the Power switch on the radio is to set Off .
- Hold the radio and battery cover with the back facing you.
- Press down the 'battery cover latch' to release the battery cover.
- Install four "AA" size Alkaline batteries or rechargeable batteries.  
**Note : Carefully observe the polarity of the batteries before installing.**
- Install the battery cover into the radio until the cover latch click into place.

### 2) Antenna

The antenna is always connected to the radio. It is not detachable.

## 3 Basic Operation

### 1) On/Off & Volume control

- Radio ON : Push the power button for 2 seconds. All indicators will appear momentarily on the LCD.
- Radio Off : Push the power button for 2 seconds. All indicators disappear on the LCD.
- Volume setting : Press up[ ] or down[ ] button to adjust level that is most comfortable for you.

## **2) Selecting the Channel and tone code(CTCSS)**

FRS-1000 has a tone code system

- 38 CTCSS Code ( indicated by **CTC** icon on the LCD )

**To select the channel**

- Turn the radio on
- Press mode button to enter function mode.
- Press up[ ] or down[ ] button to select a channel.

**To set the tone codes(CTCSS)**

- Press mode button 2 times to enter ctcss function mode .
- Press up[ ] or down[ ] button to select a ctcss channel.

## **3) Receiving**

The coding feature reduces possibility of interference and provides enhanced communication. You can only listen to a call containing correct matching code.

**Important ;**

Before making or listening to a call, always ensure

- Correct channel is selected and
- Correct code is set

#### **4) Monitoring the channel**

It is used for listening the weak signal or to here all activities on the channel by manually overriding channel code setting.

**To activate the Monitor feature**

- Press and hold the **MON** button for over two seconds.
- When you here the sound, release the **MON** button.

**To disable the Monitor feature**

- Press and hold the **MON** button for over two seconds.

#### **5) Auto Channel and tone code(CTCSS) Scanning**

This feature allows you to monitor all channels and tone codes(CTCSS) automatically for valid signal. While scan, you can transmit and receive.

**To activate the Channel Scan**

- Press the **Scan** button
- Radio will begin scanning for all channels.

**To disable the Channel Scan**

- Press the **SCAN** button again
- Radio will return to normal operation.

**To activate the tone code(CTCSS) Scan**

- Press the **Mode** button 2 times.
- Press the **Scan** button
- Radio will begin scanning for all tone codes(CTCSS).

**To disable the tone code(CTCSS) Scan**

- Press the **SCAN** button again
- Radio will return to normal operation.

#### **6) Transmitting**

- Press and hold the PTT button (The red LED will be illuminated)
- Speak slowly and clearly
- To stop the transmission, release the PTT button
- The unit will go to the stand-by mode

#### **7) Dual Watch Scan Channel and tone code(CTCSS)**

This feature allows you to monitor two special channel when the radio is in scan mode. The assigned channel will be scanned between channel and channel.

Example : Dual Watch channel is 2 and 5 channel. When you are in **SCAN** mode ,it will be scan as follows;

**CH2 - 5 - 2 - 5 - 2 .....**

**To set the Dual Watch Scan Channel**

- Press the **Mode** button until the **DW** Icon blinks on the LCD.
- Press the up[ ] button or down [ ] button to select the Dual Watch channel.
- Press the Power Button to scan your selection.

**To set the Dual Watch Scan tone codes(CTCSS)**

- Press the **Mode** button until the **DW** and ctcss channel Icon blinks on the LCD.
- Press the up[ ] button or down [ ] button to select the Dual Watch tone code(CTCSS).



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- Press the Power Button to scan your selection.

**To activate the Dual Watch Scan**

- Press the Power button
- Radio will begin scanning for dual watch channels.

**To disable the Dual Watch Scan**

- Press the Mode button
- Radio will return to normal operation.

## **8) VOX (Voice Operated Switching)**

This option enables you to have hands-free conversation. You do not have to operate the PTT button each time when you want to transmit. When using the external SPK/MIC or EAR/MIC, you have same function. You can also control the VOX sensitivity to suit your environment of operation.(E.g. noisy road, motor bike, factory etc.)

**To set the VOX mode and VOX level.**

- Press the **VOX** button and the **VOX** Icon blinks on the LCD.
- Press the up[ ] button or down [ ] button to select the VOX ON/OFF and 5 level.sensitivity.
- Press the Power Button to confirm your selection.
- **VOX** icon will be appeared in the LCD.

## **9) Call Ringer Selection Mode**

This feature provides 5 user selectable call ringer signal. The calling party identify who send a alert signal.

**To set your favorite call ringer signal.**

- Press the Mode button until "CA 1" appears in the LCD.
- Press the up[ ] button or down [ ] button to preview the 5 available signal..
- Press the Power button to confirm.
- To activate the call , click the CALL button.
- You can here the call sound.

## **10) Keypad Lock**

The lock function is to avoid the accidental changes to channel with other radio settings. All buttons and keys will be locked except the mode, call, PTT and monitor button.

**To lock the keypad**

- Press and hold down the **SCAN** button for over 2 seconds.
- Keypad is now locked (  icon will appear on the LCD)

**To unlock the keypad**

- Press and hold down the **SCAN** button for over 2 seconds.
- Keypad is now unlocked(  icon will disappear on the LCD)

## **11) Backlight**

Backlight is used to improve the display visibility in dark condition.


**To activate the Backlight**

- Press and hold the **MON** button momentarily.

**To disable the Backlight**

- Press and hold the **MON** button momentarily once again.

## **12) Battery status indicator**

The  icon will blink when the radio is in low battery power. Charge the rechargeable battery or replace the batteries.

- Full battery - three segments are illuminated.
- Low battery - one segment is illuminated.

The radio will be off if the battery has no power.

## **13) Beep tone**

**To activate and disable the beep tone**

### **1'st method**

- Press the **Mode** button until the **bp** icon on the LCD.
- Press the up[ ] button or down [ ] button to select the beep tone ON/OFF.
- Press the Power Button to confirm your selection.

### **2'nd method**

- Press the **WX** button and the **Mode** button 3 times.
- Press the up[ ] button or down [ ] button to select the beep tone ON/OFF.
- Press the Power Button to confirm your selection.


## **14) Roger Beep tone**

**To activate and disable the Roger beep tone**

- Press the Mode button until the **rb** icon on the LCD.
- Press the up[ ] button or down [ ] button to select the roger beep tone ON/OFF.
- Press the Power Button to confirm your selection.

## **15) Weather Mode**

**To activate the Weather Mode**

- Press the **WX** button.
-  icon will appear on the LCD.

**To disable the Weather Mode**

- Press the **WX** button.
- The radio will be return to normal mode.

## **16) Weather Alert**

**To activate and disable the Weather Alert**

### **1'st method**

- Press the **Alt** button and then toggle Alert mode.

### **2'nd method**

- Press the **WX** button.
- Press the Mode button until the **AL** icon on the LCD.
- Press the up[ ] button or down [ ] button to select the Weather Alert ON/OFF.
- Press the Power Button to confirm your selection.

## 17) External DC socket

This is to charge the rechargeable battery. Please use the approved and sullied wall charger only. If not, the radio will damage.

Wall charger specification : output is 9.0 VDC, 150mAh

## 18) External Speaker - Mic

Use the approved accessories only to have the optimum performance.

- Speaker/Mic unit
- Ear/Mic unit

# 4 INFORMATION

## 1) Radio

- Never operate radio very close or touching to exposed parts of the human body.
- Do not shock or vibrate the radio to keep the best condition.
- If possible, remained this radio under the direct ray of light(the sun) or high humid area.
- Do not operate the radio in explosive atmosphere.
- Never hold the antenna, while transmit , to get the good performance.

## 2) Battery

- Alkaline Batteries(4 x AA size)
- Rechargeable Ni-MH battery cell and wall charger are supplied.
- Charging time ; 10~12 hours
- **Please do not overcharge the battery to conserve the battery lifetime.**
- Never attempt to charge alkaline batteries. This will damage the radio.
- Use approved battery charger only. If not, the radio will damage.
- Always power off the radio when charging.
- Never use the wall charger simultaneously.
- Avoid overcharging the rechargeable batteries. Charge battery for less than 15 hours.
- Keep battery contacts clean.

## 3) Operating temperature

The radio will work correctly under the temperature condition from -20°C to +60°C .

# 5 SPECIFICATIONS

## 1) GENERAL SPECIFICATIONS

- |                       |                         |
|-----------------------|-------------------------|
| ● Channel Frequency   | 462.5625 ~ 467.7125 MHz |
| ● Channel Capacity    | 14                      |
| ● Frequency Control   | PLL synthesizer         |
| ● Frequency Stability | 0.00025%                |
| ● Channel Spacing     | 12.5 KHz                |

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- Ambient temperature -20°C to +60°C
- Antenna Fixed 1/4 Wave
- Power Supply DC 6.0V
- Battery Life 18hr → AL :1.8W(1200mA - 5:5:90)  
10hr → Ni-MH:1.4W(600mA - 5:5:90)

## 2) TRANSMITTER

- RF Output MAX 0.5 Watts
- Modulation F3E
- Audio Distortion <5% at 1 KHZ
- TX current 400mA
- FM Hum & Noise 35dB Min
- Spurious and Harmonics emission -45 dBc

## 3) RECEIVER

- Sensitivity 12dB SINAD 0.39 V
- 20dB Quieting 0.39 .V
- Selectivity >-50dB
- Inter-Modulation -50dB
- Spurious and Image Rejection -50dB
- Audio output power 100 mW
- FM Hum & Noise -35dB

## 4) DIMENSIONS

- 177 mm(L) x 120 mm(W) x 61 mm(D) without antenna

## 5) BASIC PACKAGE

- Radio
- Rechargeable Battery cell ( NiMH 4xAA, 600mAh )
- Wall Charger

## 6) OPTION

- Speaker / MIC
  - Ear / MIC
  - Leather Case
  - Cigarette charger
- note : Jack diameter for Ear phone/Speaker-Microphone is 3.5 - 2.5 .

## 6 MAIN CHANNEL FREQUENCY TABLE (in MHz)

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	462.5625	9	467.5875
2	462.5875	10	467.6125
3	462.6125	11	467.6375
4	462.6375	12	467.6625

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5	462.6625	13	467.6875
6	462.6875	14	467.7125
7	462.7125		
8	467.5625		

NOTE : Channels 1 through 7 are shared with GMRS radios

## **7 WEATHER FREQUENCY TABLE**

<b>Channel</b>	<b>Frequency (MHz)</b>	<b>Channel</b>	<b>Frequency (MHz)</b>
1	162.550	6	162.550
2	162.400	7	162.525
3	162.475	8	161.650
4	162.425	9	161.775
5	162.450	10	163.275