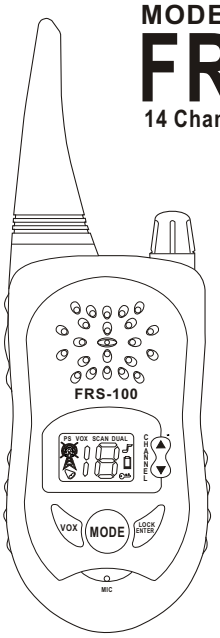
USER'S MANUAL

MODEL:

FRS100

14 Channel 2 Way Radios



BEFORE OPERATING THIS PRODUCT
PLEASE READ THESE INSTRUCTIONS CAREFULLY
KEEP FOR YOUR REFERENCE

Printed in China

PRODUCT DESCRIPTION

The Family Radio Service (FRS) is the newest generation in personal two-way communications. FRS radios operate in a license-free radio band (no FCC license is needed for FRS operation), on any of the 14 license-free channels.

The FRS is a lightweight, compact two-way radio that can be used with family or friends at parks, shopping malls, sporting events, concerts-any indoor or outdoor activity!

The FRS is compatible with other two-way radios using the F RS frequency band (operating in the frequency range from 462.5625 MHz-462.7125MHz, and from 467.5625 MHZ to 467.7125MHz)

The FRS is a 14-channel UHF two-way radio, featuring a muiti-functional LCD panel (which indicates the current channel and various radio status icons). Other features also include rotary volume control and battery save circuitry.

Please read this user's manual thoroughly to get the most out of your FRS two-way radio.

Note: The maximum transmission range will vary depending on terrain environment. Range will be greater in open fields, while the range is shorter within and around buildings or large structures.

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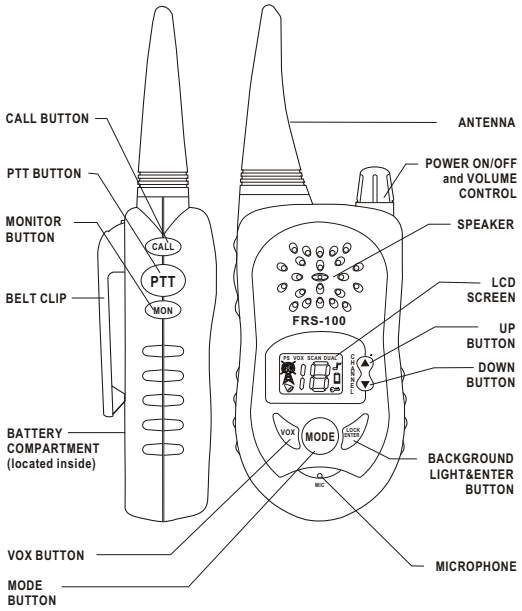


FEATURES

EAR/MIC - When the earphone is connected into this jack the voice of the speaker will shift to the earphone.

PTT (PUSH TO TALK) button - Press to transmit.

UP (▲) /DOWN (▼) buttons - Press to change channels

MONITOR (MON) button - Press to tune in and hold onto weak signals.

MIC - MICROPHONE

SPEAKER

ANTENNA

PWR/VOL Knob - Turn this knob clockwise to turn ON and increase the volume level. Turn counter-clockwise to decrease the volume level and Turn power OFF.

LCD (Liquid Crystal Display) Screen - Displays current channel selection and other radio status symbols.

Call Button - Sends a tone to other radios that are tuned in on the same channel.

Belt Clip - For your convenience, a belt clip is included to secure the radio to a belt or any other convenient location.

BATTERY COMPARTMENT- Houses three(3) "AAA" alkaline or Ni-MH rechargeable batteries

Charger Jack.
SPK/MIC Jack.
VOX Knob.
Background light knob.
MODE- Press it enter function setting status.

Setting Up Your FRS Radio

WARNING

DO NOT CHARGE THIS UNIT USING AN AC/DC ADAPTER WITH REGULAR "AAA" ALKALINE BATTERIES INSTALLED.
ONLY USE THE AC/DC ADAPTER WITH "AAA" NI-MH RECHARGEABLE BATTERIES. (BATTERIES NOT INCLUDED)

BATTERY INSTALLATION

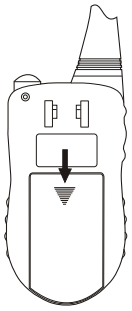


Figure 1

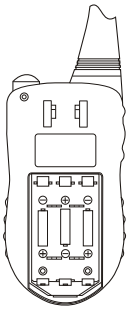


Figure 2

1.Remove the BELT Clip. (Refer to "Removing the Belt Clip" section).
2.Remove the BATTERY COMPARTMENT COVER from the BATTERY COMPARTMENT. See Figure 1.
3.Install three (3) "AAA" alkaline or Ni-MH rechargeable batteries (batteries not included) following the polarities as shown in Figure 2.
4.Reinstall the BATTERY COMPARTMENT COVER and return the BELT LIP position. (Refer to "Installing the Belt Clip" section).

Setting Up Your FRS Radio

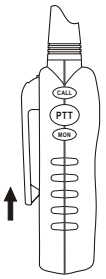


Figure 3

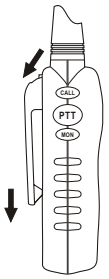


Figure 4

Installing the BELT CLIP

1. Slide the belt clip into the belt clip slot as shown in figure 3.
2. Ensure you hear a click to indicate that it is securely in place.

Removing the BELT CLIP

1. Pull the belt clip tab away from the unit, as shown in figure 4.
2. While pulling the belt clip latch, push down the belt clip to remove it from the unit.

Connecting the ADAPTER

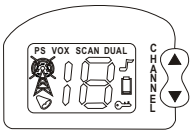
To charge the unit using "AAA" Ni-MH rechargeable batteries, insert the round connector of the AC/DC ADAPTER into the Charger Jack on the right side of the unit. (The adapter is not not included with the unit.)

Accessory Connection

The FRS100 Radio is designed to be used with accessories (Earphone, Microphone, etc.).

Setting Up Your FRS Radio

LCD Screen



A. 14	- CHANNEL NUMBER. Changes from 1 to 14 as selected by user.
B.	- KEYLOCK ICON-Indicate when the keypad has been locked
C.	- Displays the current BATTERY LEVEL charge.
D.	- MUSICAL ICON. Indicate ROGER BEEP is ON.
E. **DUAL**	- Indicates dual watch channel selection is active.
F. **SCAN**	- Indicates channel continuous scanning busy channel.
G. **VOX**	- Indicates "VOX" is activated.
H.	- Indicates Radio is transmitting signal.
I.	- Indicates Radio is receiving a signal.
J.	- Indicates Radio is in standby mode.

OPERATION

TURN RADIO ON/OFF

The ON/OFF/VOLUME control at the top of the radio controls power and volume. A series of tones will be heard confirming that radio is working.

CHANGE CHANNEL

Press and release the channel button "UP"▲or "DOWN" ▼ to select the desired channel. To change channel rapidly, press and hold the channel button▲or▼ until the desired channel appears on the display.

ACTIVATING THE MODE FUNCTIONS

The FRS-100 has two scan mode function. The most popular and most used is the "SCAN" busy channel scan. This allows the radio to scan and stop on a channel that someone is talking on or busy channel. When the radio stops on a Busy channel, the scan will stop and resume after about 5 seconds. The second is "DUAL". This allows you to scan only two channels. This is useful when you want to keep track of two other people.

BUSY CHANNEL "SCAN"

1. Press and release the **"MODE"** button the **"SCAN"** icon will begin flashing.
2. Press and release the "UP"▲or "DOWN"▼ channel button to activate scan. The unit will now begin scanning through the channels.
   - Pressing the "UP"▲ or "DOWN" ▼ channel button during scan will determine if the channels are scanned up or down.
   - Pressing the "PTT" (push to talk) button will cause the radio to stop scanning and return to normal operate mode.

DUAL WATCH CHANNEL

Dual watch is a function that allows you to scan only two channels.
1. Select channel one.
2. Press the **"MODE"** button repeatedly (2 times) until **"DUAL"** is flashing.
3. Select the second channel to be scanned. About 1 second after your selection of the second channel is complete the radio will begin switching between the two channels. When the radio hears activity on either channel, scanning will stop on that channel for about 5 seconds and then resume scanning.
   If communication is desired on the channel scanning stopped on, press the "PTT" button. This will deactivate Dual Watch and allow you to communicate normally.
4.To reactivate Dual Watch repeat steps above.

OPERATION

USE CALL BUTTON

Press and release the CALL button. A call signal will be sent for about 3 seconds. Both radios must be on the same channel and the radios must be turned on.

ROGER BEEP ENABLE AND DISABLE

The radio transmits a rapid tone sequence when the "PTT " button is released if this feature is active. The default condition is for the "roger beep" to be off.

1. Press the **"MODE"** button (usually 3 times) until you see on the display **"iF" = off** or **"iN" = on** (depending on previous programming) with a music icon note flashing in the display.
2. Press the channel "UP" ¡ø or "DOWN" ¨‹ buttons to select "off or on" position. "iF" is roger beep off. "iN" is roger beep on.
3. Press enter to store your selection.

If on buttons are pressed for 10 seconds the display will revert back to channel mode. The Roger beep should be deactivated when using the radio in VOX mode.

KEYLOCK ENABLE/DISABLE

To enable the KEY BOARD LOCK press and hold the "ENTER" button for 2 seconds. The display will contain a key icon symbol. PTT, MON and CALL buttons will still be active. The "ENTER" button (pressing 1 second) will also activate the back-light for 5 seconds . When radio is in lock mode and any other keys are pressed a tone will be heard. To disable the **KEY LOCK**, press and hold the **"ENTER"** button for 2 seconds and hear a confirmation beep.

PS POWER SAVE MODE

This part of the operation of the radio is completely automatic and not adjustable. When the radio has not transmitted or received a signal for about 6 seconds it will begin to cycle from a sleep mode to fully on. This occurs several times a second. If a signal is received or you cause the unit to transmit the radio will become fully awake. This cycling from sleep to fully on increases the standby battery life more than 50%.

OPERATION

HANDSFREE VOX OPERATION

For VOX feature activation, the unit must first get the proper sensitivity level needed to activate the proper use of "VOX" control. VOX Sensitivity is how loud you have to talk to activate the "VOX" circuit. The "VOX" has three levels of sensitivity that can be adjusted :

Option "1" you can talk in a normal voice with no background noise to activate the "VOX" circuit.

Option "2" will require more voice level to activate the "VOX" circuit. This is useful in slightly noisier areas that might activate the "VOX" without talking.

Option "3" will require the most voice level to activate the "VOX" circuit. This will be useful in very noisy areas.

The next adjustment is the DELAY time. This is a function of the "VOX" that keeps the radio in transmit mode after you stop talking. A delay that is set to short will cause the "VOX" circuit to stop between some words. The delay is adjustable to three levels :

Level "11" will give about one half second of delay, level "13" will give you about one and one half seconds of delay. By activating the "VOX" you only have to talk into the front of the radio or use a headset or earphone to make the radio transmit. The PTT (Push To Talk) button is not functional in "VOX" mode. It is recommended to use a headset or earphone when using the "VOX" feature.

NOTE: it is recommended to disable the Roger Beep when VOX is in use.

SETTING VOX FUNCTIONS

Setting VOX Levels

1. Radio is OFF position, press and hold the "CALL" button and turn the radio on. When the radio powers up release the button. The display will show followed by a "1", "2", or "3" depending on previous settings.
2. Press the channel "UP" ¡ø or "DOWN" ¨‹ buttons to select the level desired. As described earlier "1" will be the most sensitive and "3" will be the least sensitive.
3. Press the "MODE" button to switch to the Delay setting will show followed by a "11", "12", or a "13" will show on the display depending on your previous settings.
4. Press the channel "UP" or "DOWN" buttons to select the level desired. As described earlier "11" will be the shortest and "13" will be the longest

ENABLE / DISABLE VOX MODE

Press and hold the "VOX" button on the front of the radio for 2 seconds.

SPECIFICATION

General

Frequency range	462/467MHz
Channels	14
Modulation type	FM
Antenna impedance	50 Ohm
Loudspeaker	8 Ohm 0.5W
Microphone	electronic type
Power supply	3AAA Ni-cads or Alkaline (4.5VDC)

CHANNEL TABLE

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

NOTE: *The maximum transmission range will vary depending on terrain and environment.*

SPECIFICATION

Receiver

Sensitivity at 12dB Sinad	0.25uV
Selectivity	50dB
Squelch range	automatic
Audio output power	0.25W @ 8 Ohm (10% distortion)
Audio frequency response	400-2400Hz

Transmitter

RF Output Power	nominal 500mW @ 4.5VDC
Frequency Tolerance	0.00025%
Harmonic Suppression	more than 50dB
Modulation	FM +/- 2.5kHz

**Specifications are nominal and subject to change*

FCC Notice

The FCC requires that you be advised of certain requirements involving the use of this device. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in residential installation. This device uses and can generate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC INFORMATION: 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. Privacy of communications may not be ensured when using this equipment.

FCC WARNING: This equipment generates or uses radio frequency energy. Changes or modifications not expressly approved in writing may cause harmful interference and void the user's authority to operate this equipment.

SAFETY INFORMATION:

Your wireless hand-held portable transceiver contains a low power transmitter. When the PUSH TO TALK (PTT) 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 Commissions (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 1 inch (2.5 cm) from your face and speak in a 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 cm) from your body.

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

Notes