

OWNER'S MANUAL

FRS/GMRS RADIO

TP-396
(2002-09-12)

INTRODUCTION

With RadioShack's base station FRS/GMRS radio, you can stay in constant communication with your family throughout your home. In addition, they're great for office use as well.

Your radio has 22 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/GMRS radio if both radios are tuned to the same channel and QUIET code.

Your radio has auto-squelch, 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.

You can connect an optional speaker/microphone and earphone to the radio. The VOX operation brings you convenient hands-free use.

Your transceiver has these features:

Selective Channel and QUIET ---- You can select the channel from one of the 22 FRS/GMRS channels and one of the 38 QUIET codes. The channel and Quiet code are selected on the display.

PLL Controlled Circuitry ---- provides accurate and stable channel selection.

QUIET (Continuous Tone Control Squelch System) ---- helps reduce interference from other systems in the area operating on the same frequency.

Built-in Modulation Limiter Circuit ---- automatically adjusts for a wide variety of voice levels to ensure an understandable transmission.

External Earphone and Microphone ---- Let you transmit or receive message by pressing or releasing Talk button on the headset or use VOX option for hands-free operation.

Fixed Rod Antenna ---- Let you have a better performance of communication.

We recommend you record your transceiver's serial number here. This number is on the transceiver's back panel.

Serial Number _____

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

- Moving your transceiver away from the receiver.
- Contacting your local RadioShack store for help.

Connecting Power

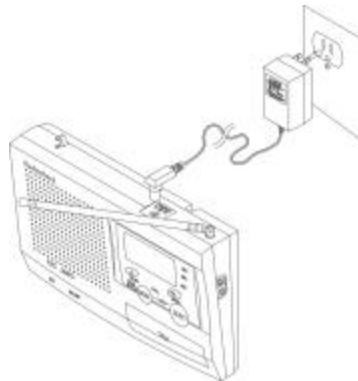
The FRS/GMRS intercom requires the supplied 6V, 500mA AC adapter and a standard AC outlet for power.

Caution:



You must use a Class 2 power source that supplies 6V DC and delivers at least 500 mA. Its center tip must be set to positive and its plug must fit the FRS/GMRS intercom's **DC 6V 500 mA** jack. The supplied adapter meets these specifications. Using an adapter that does not meet these specifications could damage the FRS/GMRS intercom or the adapter.

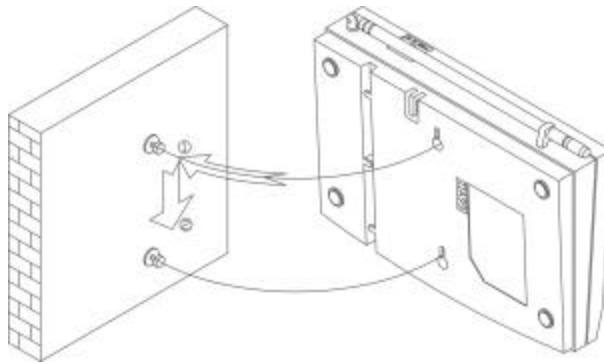
- Always connect the AC adapter to the FRS/GMRS intercom before you connect it to AC power. When you finish, disconnect the adapter from AC power before you disconnect it from the FRS/GMRS intercom.
1. Insert the supplied AC adapter's barrel plug into the **DC 6V 500 mA** jack on the back of the FRS/GMRS intercom.
 2. Route the adapter cord into the groove on the back of the intercom.
 3. Plug the adapter into a standard AC outlet.
 4. Raise the antenna to a vertical position.



Mounting on a Wall

Note: To mount the FRS/GMRS intercom on a wall, you need two screws (not supplied) with heads that fit the keyhole slots on the bottom of the FRS/GMRS intercom.

1. Drill two holes ~~2 1/2~~ inches (70 mm) apart. Then thread a screw into each hole, letting the screw heads extend about 1/8-inch (3.5 mm) from the wall.



2. Insert the supplied AC adapter's barrel plug into the **DC 6V 500 mA** jack on the back of the FRS/GMRS intercom.
3. Route the AC adapter's cord into the strain relief groove on the bottom left of the FRS/GMRS intercom, then plug the adapter into a standard AC outlet.
4. Place the FRS/GMRS intercom's two keyhole slots over the screws and slide the FRS/GMRS intercom down to secure it.
5. Raise the antenna to a vertical position.

SETTING THE QUIET CODE AND CHANNEL

The quiet feature lets you communicate with another radio which uses the same channel and CTCSS (quiet) code as your radio.

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 22 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 RadioShack 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 transceiver contains a radio frequency transmitter. When The PTT button is pushed the transmitter sends out (RF) signals.

CAUTION:

To comply with FCC RF exposure a separation distance of at least 8 inches (20 cm) must be maintained between the antenna of this transmitter and all persons, during normal operation. The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Unauthorized antennas, modifications, or attachments could damage the transceiver and may violate FCC regulations.

CAUTION:

DO NOT transmit for more than 50% of total use time (50% duty cycle). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded.

Failure to observe these restrictions is in violation with the FCC rules.

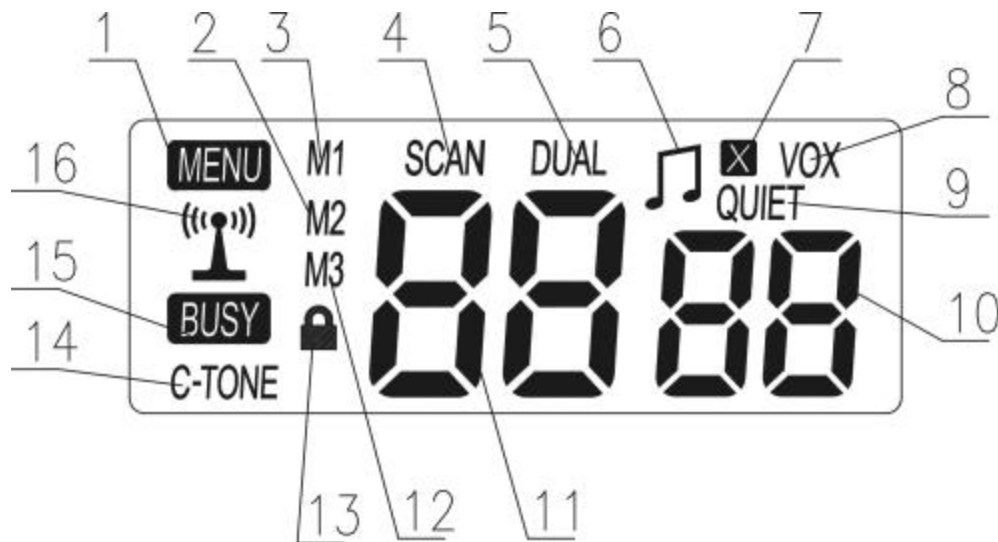
GMRS License:

Use of GMRS radios within the United States requires a FCC GMRS license. An individual 18 years of age or older, who is not a representative of a foreign government is eligible to apply for a GMRS system license. You will need two forms from the FCC, FCC Form 159 and FCC FORM 605 Main Form and Schedule F. You can find the forms online at <http://www.fcc.gov/formpage.html>, or call 1-800-418-3676.

USING THE RADIO

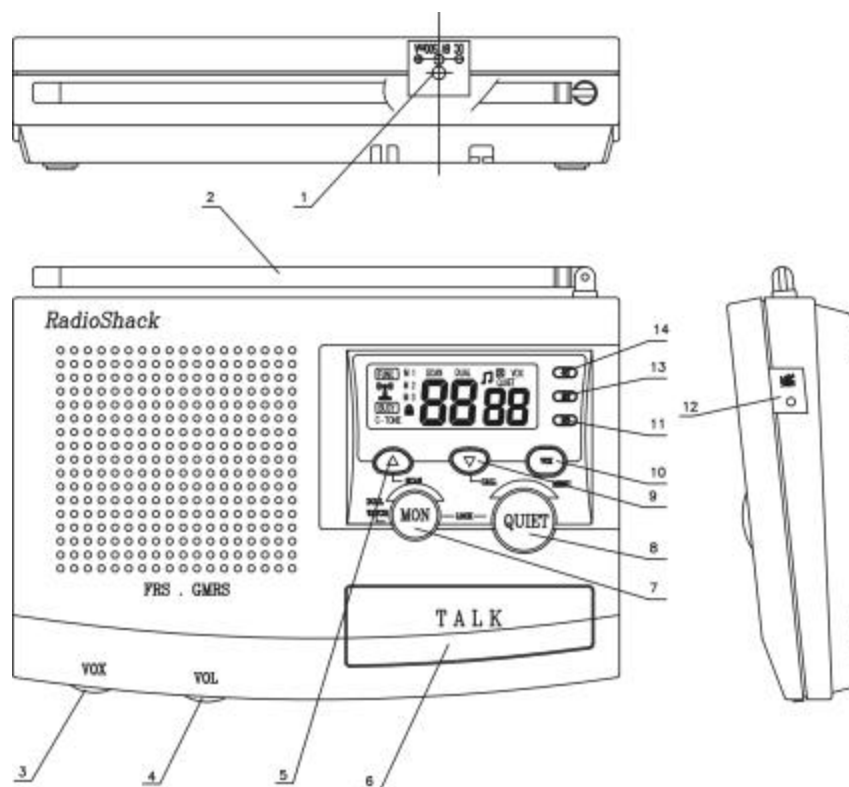
A. DISPLAY

Your radio comes with a multifunction backlit display. By pressing any button except PTT, the backlight will illuminate for 15 seconds.



1. **MENU** Displays when the MENU is selected.
2. M2 display the second memory channel.
3. Display the first memory channel.
4. **"SCAN"**: Displays when the scan mode is activated.
5. **"DUAL"**: Displays when the dual-watch function is activated.
6. "🎵": Displays when the key tone function is activated.
7. "X": Displays when the working channel is set to be skipped.
8. **"VOX"** Display when VOX is activated.
9. **"QUIET"**: Displays when the QUIET mode is enabled.
10. Shows the selected privacy code number.
11. Shows the selected channel number.
12. Display the third memory channel.
13. "🔒": Displays when the keypad lock is activated.
14. **C-TONE** Display when overtone is set.
15. **"BUSY"**: Displays when a call is being received.
16. **"BUSY"**: Displays when your radio is transmitting or the CALL button is pressed.

B. FUNCTION AND LOCATION OF THE CONTROLS



1. Power Jack

Just plug the station into the DC outlet of included DC adapter ,then connect the adapter to a standard AC outlet.

2. Rod Antenna

Adjust antenna will let you have a better performance of communication.

3. VOX Sensitivity Control

Rotate this control to adjust the VOX sensitivity.

4. “ON/OFF” Volume Control.

In “OFF” position, your transceiver is off. Rotate this control clockwise to turn on your radio and adjusts the volume, until you get a comfortable listening level.

5. CH▲ /Scan/Skip

Press **CH ▲** to move one channel higher. Press and hold **CH ▲** for more than 1.5 seconds to enter into the scan upwardly mode. Press **CH ▼** will change the scanning direction.

Scan

User can choose a desired channel from being scanned. Press **CH ▲** or **▼** to go to the desired channel. Press **MON** key and hold for more 1.5 seconds, then press **CH ▼** key to skip this channel from scanning. Icon “ is on to indicate this working channel is set to be skipped.

Skip

Press **MON** key and hold for more than 1.5 seconds, then press **CH ▲** key to activate or deactivate Skip function. Icon “” will be shown if activated.

6. Talk Button

To talk, hold down the **Talk**. Speak into the microphone in a normal tone of voice when the icon  is displayed. When you finish speaking, release the **Talk** button.

7. MON Button / MCU Reset Button / Keylock

To hear everything happening on a channel, including weak transmission, hold down **MON** button for more than 1.5 seconds. Release the **MON** button to turn the auto-squelch back on. Holding the **MON** button while turning on the radio will resume your radio's MCU and the quiet code will be reset to number 12, QUIET privacy mode operation is deactivated, keypad lock disabled, backlight switched off and channel setting will go to number 1.

When the unit is reset, memory channel M1, M2, M3 will go to CH1, CH2, CH3 without QUIET code.

You can also lock your radio setting to avoid accidental pressing of keys by activating the keypad lock. Press and hold the **MON** button, then press the **QUIET** button to activate or deactivate the keypad lock.

8. QUIET /QUIET Scan Button

Press **QUIET** button to enable or disable the **QUIET** privacy mode operation.

- a) Hold down **QUIET** button for 2 seconds until **QUIET** is displayed and the quiet code flashes.
- b) Repeatedly press (or hold down) **CH ▲** or **CH ▼** until you see the code number you want to use.
- c) Press **QUIET** button to store the code.

To turn on the quiet feature, press **QUIET**. **QUIET** appears. To turn off the feature, press **QUIET** until **QUIET** disappears.

Note: We recommend that you select a quiet code from the range 7-30. If you select a code below or above that range, you must wait 1 to 2 seconds after holding down **TALK** before you start talking.

QUIET Scanning

Press Quiet key for more than 1.5 seconds, then press “**▲**” for 1.5 seconds, quiet begin scanning, scan icons of “SCAN” will be lightened on LCD. When received the same QUIET code, the scanning stops and will keep scanning after the signal disappears. Press any key will exit and return to the normal working channel.

9. CH ▼ / CALL

Press **CH ▼** to move one channel down. Press and hold **CH ▼** for more than 1.5 seconds to enter into call function. “Will t⁽⁰⁰⁰⁾” is displayed.

A ringer sound on all radios tuned to the same FRS/GMRS channel and/or the privacy code as your radio.

10. VOX button / C-Tone / Key-Tone

Press “VOX” and it will display, VOX is activated, then press “VOX”. “VOX” will deactivated, to adjust VOX knob will change sensitivity of VOX.

Press and hold the VOX for more than 1.5 seconds, C-Tone will flash. Press ▲ or ▼ to switch the function to “ON” or “OF”. Press VOX again  will flash. Press ▲ or ▼ will determine key-tone.

12. External Mic/Spk Jack

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

14. M1 (M2 or M3)/ Dual Watch

Press M1 (M2 or M3) for more than 1.5 seconds to switch the unit to the channel and QUIET code stored at this location.

Dual Watch

It can be activated or deactivated by pressing the MON key and follow by M1 (M2 or M3). ‘DUAL’ icon will be shown on the LCD if activate. During Dual-Watching, upon receiving a signal from the normal working channel or M1 (M2 or M3) channel, the unit will stop at that channel. If the signal is gone, the unit will resume Dual-Watch.

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

TECHNICAL SPECIFICATIONS

RX Frequency.....	462-467 MHz
Channels.....	22
Modulation type.....	FM
Antenna impedance.....	50 Ohm
Microphone.....	condenser type
Power supply.....	DC 6V
Sensitivity at 12dB Sinad.....	0.5µV
Adjacent Channel Rejection.....	45dB
Audio Squelch	Auto
Audio output power.....	200mW @ 8 Ohm
Audio Distortion	5%
RF Output Power.....	500 MW ERP (FRS) 600 MW ERP (GMRS)
Harmonic Emissions.....	more than 50dB
Dimensions (HWD).....	178*118*36mm
Weight (without batteries).....	310g

21-1846 Channel	Transmit Frequency (MHZ)	Transmit Power (Watts)	Description
1	462.5625	0.6	FRS 1/GMRS Interstitial 1
2	462.5875	0.6	FRS 2/GMRS Interstitial 2
3	462.6125	0.6	FRS 3/GMRS Interstitial 3
4	462.6375	0.6	FRS 4/GMRS Interstitial 4
5	462.6625	0.6	FRS 5/GMRS Interstitial 5
6	462.6875	0.6	FRS 6/GMRS Interstitial 6
7	462.7125	0.6	FRS 7/GMRS Interstitial 7
8	467.5625	0.5	FRS 8
9	467.5875	0.5	FRS 9
10	467.6125	0.5	FRS 10
11	467.6375	0.5	FRS11
12	467.6625	0.5	FRS 12
13	467.6875	0.5	FRS 13
14	467.7125	0.5	FRS 14
15	462.5500	0.6	GMRS Primary 1
16	462.5750	0.6	GMRS Primary 2
17	462.6000	0.6	GMRS Primary 3
18	462.6250	0.6	GMRS Primary 4
19	462.6500	0.6	GMRS Primary 5
20	462.6750	0.6	GMRS Primary 6
21	462.7000	0.6	GMRS Primary 7
22	462.7250	0.6	GMRS Primary 8

QUIET Privacy Codes

Frequency: Hz

01=67.0	11=97.4	21=136.5	31=192.8
02=71.9	12=100.0	22=141.3	32=203.5
03=74.4	13=103.5	23=146.2	33=210.7
04=77.0	14=107.2	24=151.4	34=218.1
05=79.7	15=110.9	25=156.7	35=225.7
06=82.5	16=114.8	26=162.2	36=233.6
07=85.4	17=118.8	27=167.9	37=241.8

08=88.5	18=123.0	28=173.8	38=250.3
09=91.5	19=127.3	29=179.9	
10=94.8	20=131.8	30=186.2	