

OWNER'S MANUAL

19-903

● INTRODUCTION

Your Radio Shack 19-903 GMRS band transceiver is a portable, easy-to-use, two-way radio that you can carry almost anywhere. It is approved with commercial-grade standards to give you clear and reliable communication. This transceiver consists of 15 channels – 7 GMRS Channels, 1 Emergency Channel and 7 Interstitial Channels.

Your 19-903 transceiver operates in the General Mobile Radio Service, which is a personal radio service available for personal communications with family members or other licenses. You can use the 19-903 for recreational communications while you hike, ski, or fish. You can even use the 19-903 to coordinates your personal or business activities with other family members. When you get a license to operate the radio, you can let other members of your family living in the same household operate the radio.

Your transceiver is equipped with the following features:

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

Adjustable Squelch ---- helps eliminate noise between transmissions.

38 CTCSS (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 range of voice levels to ensure an effective transmission.

High/Low Power ---- helps you save power by choosing a suitable transmitting power for different range of distance.

Battery Low and Transmit Indicator ---- indicates the battery pack's current condition and the backlight is on when you transmit or receive.

Supplied Battery Charger ---- conveniently recharges your transceiver's battery pack.

Flexible Antenna with BNC Connector ---- provides excellent reception. The BNC connector is designed in a way that you can easily attach and remove the supplied antenna or an optional one.

Earphone Jack and External Microphone Jack ---- let you use an earphone or external microphone to help ensure effective communications in noisy areas.

Belt Clip ---- let you attach the transceiver to your belt or waistband.

JIS level 4 ---- offers you with excellent water-resistance.

We recommend you to drop down the transceiver's serial number here for your record. For the number, please refer to the transceiver's back panel.

Serial Number _____

FCC Information

FCC License required

This Transceiver is intended for use in the operation of commercial activities, in educational, philanthropic, or ecclesiastical institutions, and hospitals, clinics, or medical associations.

The Federal Communications commission (FCC) requires you to be licensed before you operate this transceiver. Unless you are already licensed to operate on one of the preset frequencies, you must apply for a frequency through the PCIA (Personal Communication Industry Association), a non-profit organization that assigns frequencies nationwide to help prevent conflicts between different businesses using transceivers in the same area. For more information about getting a license, contact the PCIA at 800-759-0300, extension 3068 (in Virginia 703-739-0300, extension 3068)

For other questions concerning the license application, contact the FCC at 717-337-1212, or write:

**FCC
P.O.Box 1040
Gettysburg, PA 17325**

For the latest FCC application form and instructions, call the FCC's fax-on-demand service at 1-202-418-0177 from a fax machine and request one or more of the following documents:

All forms and instructions	000600
Form 600 instructions only.....	006001
Main Form 600 only.....	006002
Form 600 schedules only.....	006003

If you do not have a fax machine, you can call the Government Forms Distribution Center at 1-800-418-FORM and request that the form and instructions be mailed to you.

FCC Part 95 Rules

You must be familiar with Part 95 of FCC Rules before you operate your transceiver. The operation instructions in this manual conform to Part 95, but do not cover all items in Part 95.

Overall, Part 95 states that:

- You must have a valid license before you use the transceiver.

- As licensee, you are responsible for proper operation of all transceivers operating under your license's authority.
- You can let unlicensed persons operate transmitter, as long as you take precautions to prevent unauthorized transmissions.
- You must use this transceiver only for commercial use of your business, and only when other commercial channels (such as the telephone) are either not available or not practical.
- You must always yield the operating frequency to communications that involve the safety of life or property.
- You must take reasonable precautions to prevent harmful interference to other services operating on the same frequency.
- You must not transmit program material of any kind used in connection with commercial broadcasting.
- You must not provide a service that is normally handles by telephone or telegraph unless such broadcasts involve the safety of life and property or in emergencies such as an earthquake, hurricane, flood or a similar disaster where normal communications channels are disrupted.
- During each transmissions or exchange of transmissions, you must identify your station with the call sign issued to you by the FCC, or once each 15 minutes during periods of continuous operation.
- You must keep a written record of any maintenance or modifications made to the transceiver, and you must make this record available for inspection upon demand by the FCC.

Violating any of the provisions of Part 95 can result in fines and/or confiscation of equipment.

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

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

ADDITIONAL FCC REGULATIONS

The Business Radio Service is under the jurisdiction of the FCC. Any adjustments or alterations that would alter the performance of the transceiver so it no longer meets the original FCC type acceptance or would change the frequency-determining method are strictly prohibited.

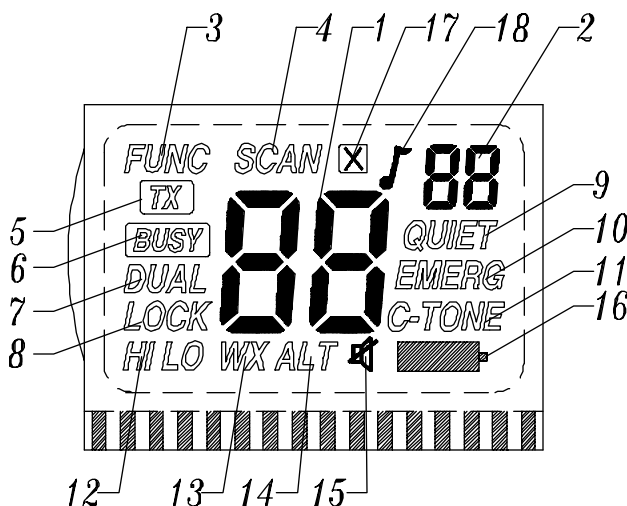
Replacement or substitution of crystals, transistors, ICS, regulator diodes, or any other component that is of a unique nature with components other than those recommended can violate the technical regulations of the FCC rules or violate type acceptance requirement of the rules.

Before you operate the transceiver, you must obtain your license. It is illegal to transmit without the appropriate license, which you can get by submitting a completed FCC Form 600 to the FCC (or through the PCIA). Furthermore, you are required to understand Part 95 of the FCC Rules and Regulations prior to operating your transceiver. It is the user's responsibility to see that this unit is operating at all times in accordance with the FCC Rules and Regulations.

● USING THE RADIO

A. DISPLAY

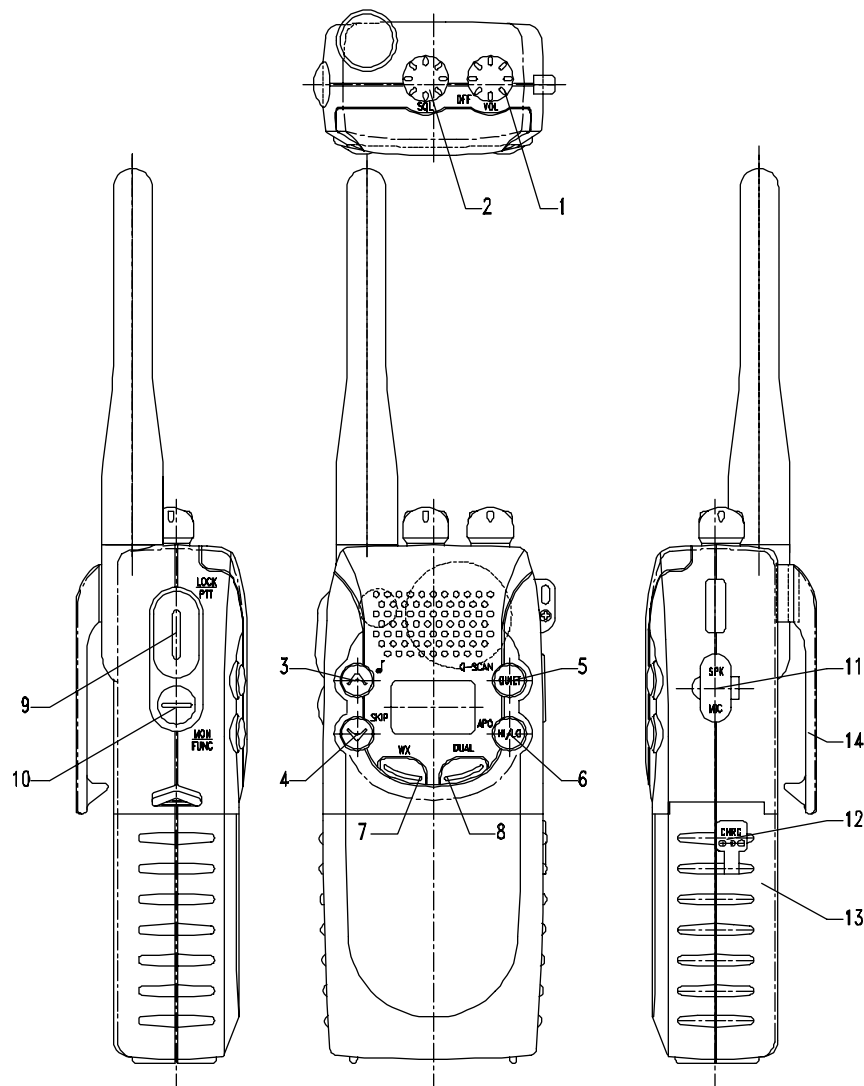
Your radio comes with a multifunctional display and backlight. By pressing any button except the PTT, the backlight will appear for 5 seconds. The liquid crystal display has been enlarged in the followings to show all of the operating modes.



1. Shows the selected channel number.
2. Shows the selected privacy code number.
3. **"FUNC"**: Displays when the secondary function is enabled.
4. **"SCAN"**: Displays when the scan mode is activated.
5. **"TX"**: Displays when your radio is transmitting.
6. **"BUSY"**: Displays when a call is being received.
7. **"DUAL"**: Displays when the dual-watch function is activated.
8. **"LOCK"**: Displays when the keypad lock is activated.
9. **"QUIET"**: Displays when the QUIET mode is enabled.
10. **"EMERG"**: Displays when the Emergency channel is selected.

11. **"C-TONE"**: Displays when the Roger Beep function is activated.
12. **"HI LO"**: Displays when the Hi/Lo transmit power is toggled.
13. **"WX"**: Displays when the weather broadcast is listened.
14. **"ALT"**: Displays when the WX alert signal is received.
15. "  ": Displays when WX MUTE mode is enabled.
16. "  ": Indicates the batteries are low. Replace the batteries when this signal is on.
17. "  ": Displays when the working channel is set to be skipped.
18. "  ": Displays when the key tone function is activated.

B. FUNCTION AND LOCATION OF THE CONTROLS



1. "ON/OFF" Volume Control.

Your transceiver is off whenever the knob points to the 'OFF' position. Rotate this control clockwise to turn on your radio and adjust the volume.

2. SQL Knob

Rotate the **VOL/SW Knob** to obtain the squelch sensitivity at threshold.

3. CH /Key Tone Button

Press **CH ▲** to select a channel upwardly. Press and hold **CH ▲** continuously for more than 1.5sec to enter into the scan upwardly mode. Press **CH ▼** will change the scanning direction downwardly. During the scanning, press any key will exit the scanning mode.

Key Tone

Press and hold **FUNC** key, then press **CH ▲** key to activate or deactivate the Key Tone function. Icon “ ” will be shown if activated.

4. **CH ▼ / Skip**

Press **CH ▼** to move one channel down. Press and hold **CH ▼** for more than 1.5sec to enter into the scan downwardly mode. Press **CH ▲** will change the scanning direction upwardly. During the scanning, press any key will exit the scanning mode.

Skip

User can choose a desired channel from being scanned. Press **CH ▲** or **▼** to go to the desired channel. Press and hold **FUNC** key for, then press **CH ▼** key to skip this channel from scanning. Icon “ ” is on to indicate  working channel is set to be skipped. Repeat the above steps will cancel the skip function of the channel.

5. **Hi/Low / Automatic Power Off Button**

Press this button to toggle the high or low RF power.

Automatic Power off Button

Press and hold **FUNC/MON** button, then press **HI/LO** button to enable or disable the auto power off function. The display will show “**AP ON**” or “**AP OF**” for one second, when the timer is activated/deactivated. The timer automatically turns off the unit when it is idle for 2 hours.

6. **QUIET /QUIET Scan Button / Reset**

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

- Hold down **QUIET** button for 1.5 seconds until **QUIET** is displayed and the quiet code flashes.
- Repeatedly press (or hold down) **CH ▲** or **CH ▼** until you see the code number you want to use.
- Press **QUIET** button to store the code.

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

Note: We recommend you to 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 **PUSH-TO-TALK** before you start talking.

QUIET Scanning (Only available under QUIET mode)

Press and hold **FUNC** key, and then press the **QUIET** key to enter into the QUIET Scan mode, and icons “SCAN” and “QUIET” will appear on LCD. When matching with an appropriate QUIET code, the scanning stops and the icon ‘QUIET’ flashes. Scanning goes on after the signal disappears. Press any key, except the ‘QUIET’ key, will quit scanning and stay on the channel just scanned.

Reset

To reset the unit, press and hold the  key and turn on the unit. Reset operation will clean all the set channels and restore the current channel to CH0 with QUIET off, and Dual Watch CH0. Power is toggled to low mode, key tone and C-tone function are activated.

7. **WX Button**

Press **WX** button to enable or disable the weather mode.

8. **DUAL Button**

In main mode, press **DUAL** button to enter GMRS dual watch mode, press and hold **DUAL** button to set the current channel as the dual watch channel; In weather mode, press **DUAL** button to enter weather dual

watch. During the dual watching, press any key will exit the scanning mode.

9. Push-To-Talk button / Keylock /C-Tone

Speak and communicate with the others by pressing the **Push-To-Talk** button. Speak into the microphone in a normal tone of voice when the **TX** icon is displayed. When you finish speaking, release the **Push-To-Talk** button.

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

Press and hold the **Push-To-Talk** while turning on the radio will enable or disable the courtesy tone (C-Tone) function.

10. MON/FUNC Button

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

11. External MIC/Speaker Jack

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

12. Charger Jack

You can recharge the battery pack using the supplied battery charger. Plug the charger's barrel plug into the CHRG jack on the side of the unit, then connect the charger to a standard AC outlet.

13. Rechargeable Ni-Mi battery pack

14. Belt Clip

To attach the belt clip, place it over the locking pin and align the screw hole. Fix it with a screwdriver.

15. Antenna

Provides excellent reception.

C. OPERATION

1. Please charge the battery pack with the supplied charger.
2. Turn VOL control knob to the unit "on". Turn the SQL knob counterclockwise to the end, and adjust the volume to a normal listening level.
3. Turn **SQL** knob clockwise until background noise is just quieted.
4. Select the desired channel and/or **QUIET** privacy code.
5. Press **Push-To-Talk** button to transmit.
6. To receive, simply release **Push-To-Talk** button.

Note: You can only communicate with the other radios using the same channel and/or the same **QUIET** privacy code as your radio.

Safety Information

Your radio contains a low power transmitter. When the 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 FCC adopted RF exposure guidelines with safety levels for hand-held wireless devices.

Cautions:

- To maintain compliance with the FCC's RF exposure guidelines, hold the entire radio, including the antenna, at least 2 inches (5 cm) from your face, with the antenna pointed up and away from your face.
- If you wear the radio on your body, to maintain compliance with the FCC's RF exposure guidelines, you must unclip it from your body before transmitting. Hold the entire radio, including the antenna, at least 2 inches (5 cm) from your body while transmitting.
- Use only the supplied antenna. Unauthorized antennas, modifications or attachments could damage the transmitter and may violate FCC regulations.

INSTALLING THE BELT CLIP

The supplied belt clip lets you easily attach the transceiver to your belt. To attach the belt clip, slide the belt clip down onto the plastic tab. To detach the belt clip, lift up the tab and slide off the clip.

Installing an External Speaker/ Microphone

Lift up the rubber cover on the **MIC** and **SPK** jacks. Connect an optional speaker/micro-phone with a $\frac{3}{32}$ inch mini-plug and a $\frac{1}{8}$ inch plug to the **MIC** and **SPK** jacks on the side of the transceiver. This automatically disconnects the transceiver's built-in speaker and microphone.

● TECHNICAL SPECIFICATIONS

Frequency Range GMRS.....	462.6750~462.7250 MHz
Weather channel.....	162.400~163.275MHz
Channels GMRS.....	15
Weather channel.....	10
Power supply.....	8.4V
Sensitivity at 12dB Sinad.....	0.5μV
Adjacent Channel Rejection.....	45dB
Audio Distortion	7%
RF Output Power.....	1W / 5W @ 8.4VDC
Harmonic Emissions.....	55dB Hi, 48dB Lo
Dimensions (HWD).....	135*54*33 mm
Weight (without batteries).....	approx. 150g

Attachment

GMRS Channel Frequency

Channel	Channel Number	Frequency MHz	TX Power Hi/Lo
0	EMERGENCY	462.6750	5W/1W
1	Interstitial 1	462.5625	5W/1W
2	Interstitial 2	462.5875	5W/1W
3	Interstitial 3	462.6125	5W/1W
4	Interstitial 4	462.6375	5W/1W
5	Interstitial 5	462.6625	5W/1W
6	Interstitial 6	462.6875	5W/1W
7	Interstitial 7	462.7125	5W/1W
8	GMRS 1	462.5500	5W/1W
9	GMRS 2	462.5750	5W/1W
10	GMRS 3	462.6000	5W/1W
11	GMRS 4	462.6250	5W/1W
12	GMRS 5	462.6500	5W/1W
13	GMRS 6	462.7000	5W/1W
14	GMRS 7	462.7250	5W/1W

Weather Channel Frequency

Channel	Frequency • MHz •
WX 1	162.400
WX 2	162.425
WX 3	162.450
WX 4	162.475
WX 5	162.500
WX 6	162.525
WX 7	162.550
WX 8	161.650
WX 9	161.775
WX 10	163.275

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	