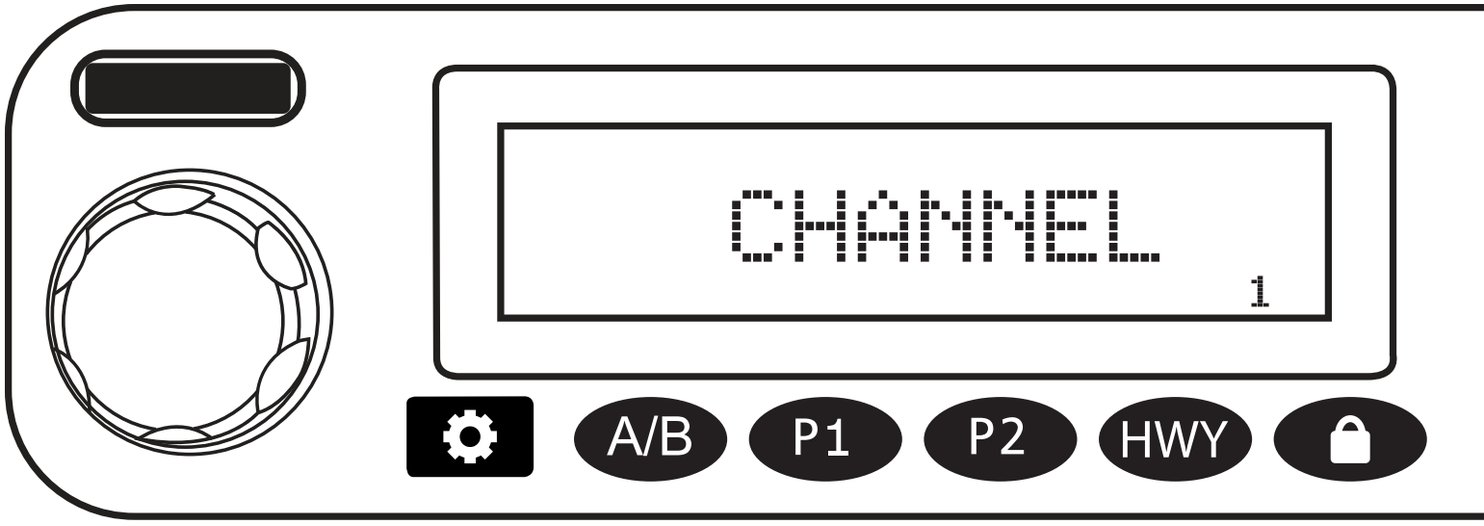


# G4

USER MANUAL

V2.0 | 03/26

# SAFETY

**FCC NOTICE**: The G4 operates on GMRS (General Mobile Radio Service) frequencies, which require a Federal Communications Commission (FCC) license. You must be licensed prior to operating on channels 1-7, 15-22 or RP15-22 which comprise the GMRS channels of the G4. Serious penalties may result from unlicensed use of GMRS channels, in violation of FCC rules, as stipulated in the Communications Act's Sections 501 and 502 (amended). You will be issued a call sign by the FCC that should be used for station identification when operating your radio on GMRS channels. You should also cooperate by engaging in permissible transmissions only, avoiding channel interference with other GMRS users, and being prudent with the length of your transmission time. To obtain a license or ask questions about the license application, contact the FCC at 1-888-CALL-FCC or go to the FCC's website: http://www.fcc.gov and request Form 605.

**FCC compliance statement:** 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 including received interference that may cause undesired operation. Note 1: The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment. Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the FCC equipment authorization for this radio could violate FCC rules. Note 2: 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 a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that 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 try 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 into 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 RF Exposure and Separation Distance:** This radio transmitter has been approved by FCC to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

External Antenna:

Maximum Antenna Gain: 0 dBi

Antenna Impedance: 50 Ohms

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment shall be installed and operated with a minimum distance 114 cm between the radiator & body.

WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.

**To program your radio and to access advanced features, visit**

**rtsystemsinc.com**

**or contact them at 800-921-4834**

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# USER SAFETY INFORMATION

- Do not attempt to configure your radio while driving.
- This radio is designed for a 12 Volt DC power supply.  Do not use a 24 Volt battery to power this radio.
- Keep this radio away from devices that cause interference, such as TV's, Generators, etc.
- Do not expose the radio to long periods of direct sunlight.  Do not expose the radio to heat sources.
- If an abnormal odor or smoke is detected coming from the radio, turn off the power immediately, disconnect the power source, and contact your dealer.
- Do not transmit at high power for extended periods as overheating may occur.

# PACKAGE INCLUDES

- 1x Rambler G4 Radio: GMRS mobile radio
- 1x Hand Mic: With magnetic mount (1)
- 1x Radio Mount: Universal U-Bracket
- 1x Power: DC power cable with in-line fuse
- 1x DC Power Cable with Fuse Holder
- 1x Hardware Pack
- 1x Rambler Adventure Patch
- 1x Rip-Stop Hand Mic Bag
- 1x Warranty Card
- 1x User Quick Start Guide

# INTRODUCTION

From the trails of Moab to the deserts of the Baja Peninsula, the Rambler G4 is ready to Go Further! The large, clear, easy-to-read display provides quick access to programmable controls with an intuitive user interface. With 50 watts of power, the Rambler G4 is ready to go the distance.

### FEATURES:

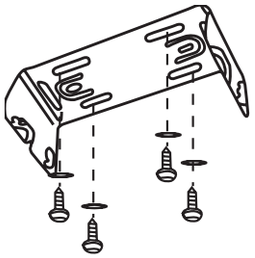
- Powerful: 50 watts
- AMPLIFY 2.0: Stable Power Mitsubishi Transmit amplifier
- RIDEui: Friendly, intuitive menu system with LED display
- AMPS Mounting: AMPS mounting pattern (RAM compatible)
- All Standard GMRS Channels: 15 GMRS channels (1-7 & 15-22)
- Repeater Channels: 8 repeater channels
- 259 Privacy Codes: 51 CTCSS / 208 DCS
- Tone Code: Adjustable, Split Tone Capable (repeater)
- P1 / P2 Preset Buttons: Programmable
- HWY Button: Channel 19 preset
- Power Settings: High / Medium / Low
- Bands: Narrow / Wide
- Display Color: Adjustable
- Brightness: Adjustable
- Squelch: Adjustable
- Roger Beep: Adjustable
- TX / RX Alert: Adjustable
- Button Lock
- External Speaker Port
- Channel Scan
- Dual Monitor
- Listen Only Mode: UHF frequencies
- Dimensions: 5.5”W x 7”D x 1.5”H
- Connectivity: Easily connect to intercom, headset, or any 5-pin accessory with optional jumper

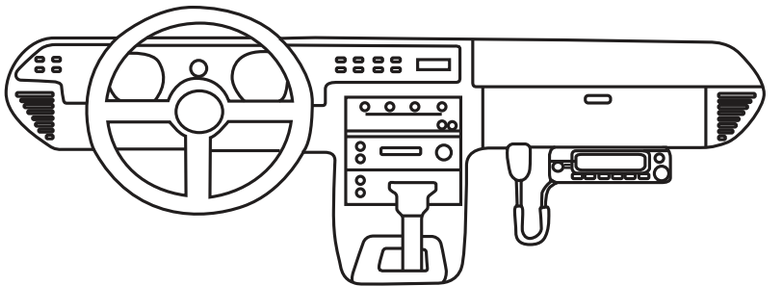
# INSTALLATION

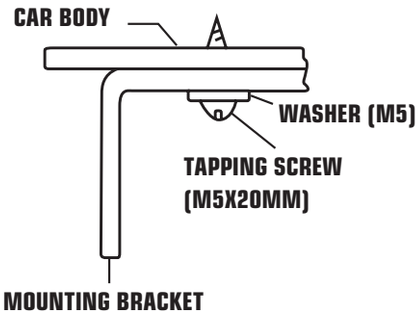
## MOBILE INSTALLATION

Select a location that is safe in order to protect you and your passengers while the vehicle is in motion. Consider installing the radio in a location and position in which knees and legs will not strike it during sudden braking. Choose a well ventilated location that is shielded from direct sunlight and heat sources, but still easy to reach and access.

**Important Note**: Extreme care should be taken if drilling into the dash or other areas of any vehicle to avoid damaging vehicle components.








1. Install the provided mounting bracket in the vehicle using the supplied self-tapping screws.

2. Position the radio, then insert and tighten the supplied Hex/Phillips screws already on the radio.

   C. Determine the appropriate angle of the radio using the three screw hole positions on the side of the mounting bracket.

   D. Double check that all screws are tightened to prevent vehicle vibration from loosening the bracket or radio.

# INSTALLATION

## DC POWER CABLE CONNECTION

This radio is designed to operate on 12 Volt systems.  Never connect to a 24 Volt system without reducing to 12 Volts.  If the power supply is lower than 12 Volts, the display may darken during transmissions, transmit power may decrease dramatically, and/or the radio may reboot.

**Note:** Loose or poor connections can cause similar issues.

1. Route the DC power cable supplied with the radio directly to the vehicle's battery terminals using the shortest path from the radio.

    A. We suggest that you do not use the cigarette lighter socket as some cigarette lighter sockets introduce an unacceptable voltage drop.

    B. The entire length of the cable must be routed so it is isolated from heat, moisture, and the engine secondary (high voltage) ignition system, components, or cables.

2. Confirm the correct polarity of the connections, then attach the DC power cable to the battery terminals:

    A. Red connects to the positive (+) terminal

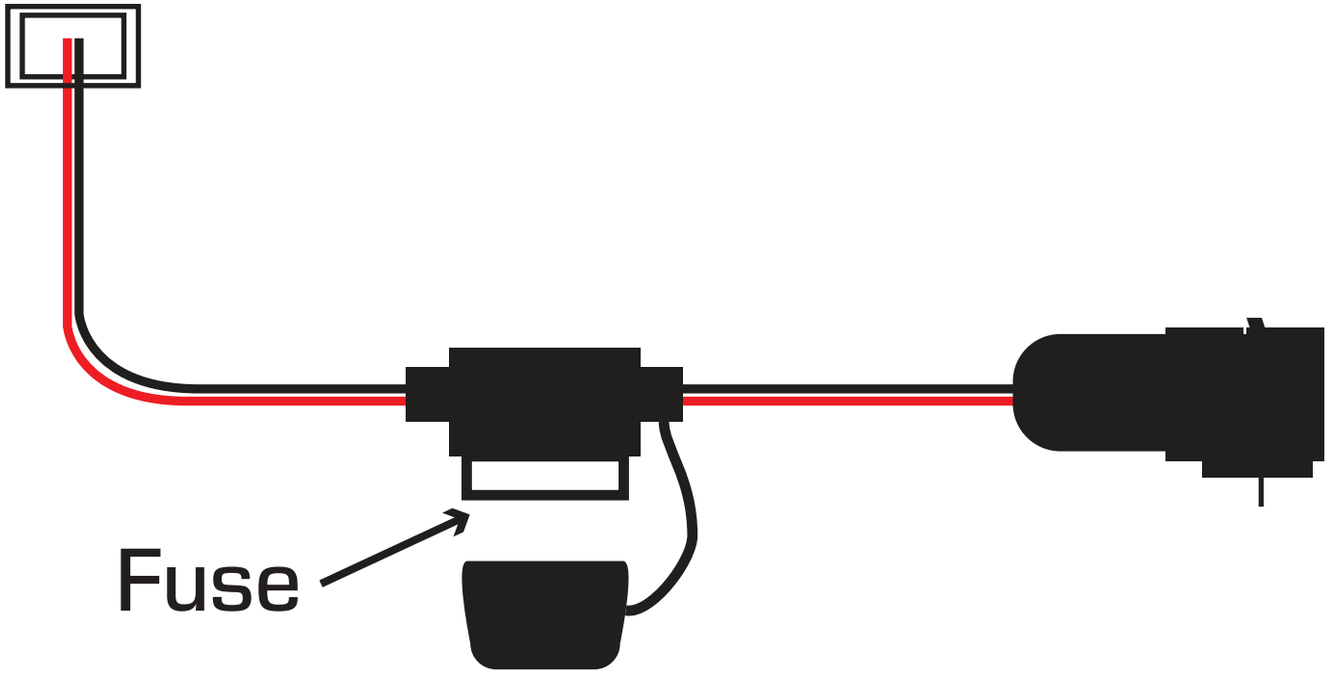
    B. Black connects to the negative (-) terminal.

3. Connect the DC power cable to the radio's power supply connector. Press the connectors firmly together until the locking tab clicks.

# INSTALLATION

## REPLACING FUSES

If a fuse blows, determine the cause and correct the problem. After the problem is resolved replace the fuse. If newly installed fuses continue to blow, disconnect the power cable and contact Rugged Radios for assistance. Only use fuses of the specified type and rating are suitable for use otherwise the radio could be damaged.




| Fuse Location | Fuse Current Rating |
|---|---|
| Transceiver | 15A |

# ACCESSORY CONNECTIONS

## EXTERNAL SPEAKERS

Use the External Speaker Connection on the back of the radio to connect your external speaker device.

- If you plan to use an external speaker, choose a speaker with an impedance of 8 ohms.
- The external speaker jack accepts a 3.5mm mono (2-conductor) plug.

# ANTENNA AND CABLE

**Radio Antenna is an optional additional purchase. Please visit our website for a list of compatible antenna.**

Radio performance relies greatly on the antenna and antenna cable!

Before operating, install an efficient, well-tuned antenna and a high-quality antenna cable. Failure to do so will reduce transmit and receive range, radio call clarity, and can damage the radio.

**NOTES:**

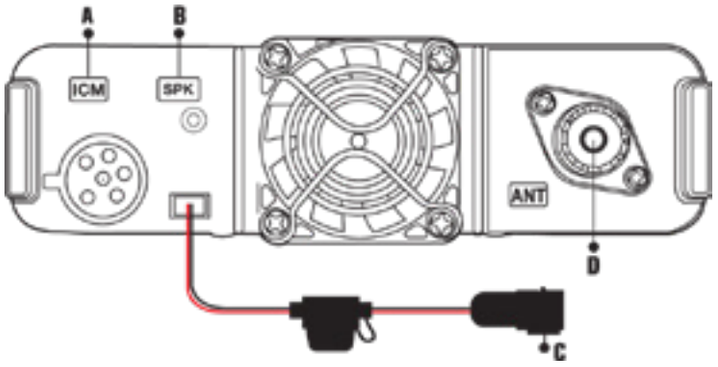
- This radio must be used with a 50Ω impedance antenna and antenna cable.
- Transmitting without an antenna may damage the radio.

# INSTALLING THE ANTENNA

**NOTE:** If your specific vehicle configuration, accessories, or intended use do not allow proper antenna mounting, the radio range and quality may decrease.

For the best range, only the Rugged Radios GMRS POINT5 antenna should be used. Specific installation requirements vary between vehicles. Use the following guidelines to install the antenna. The location of your antenna will significantly effect your radio's performance!

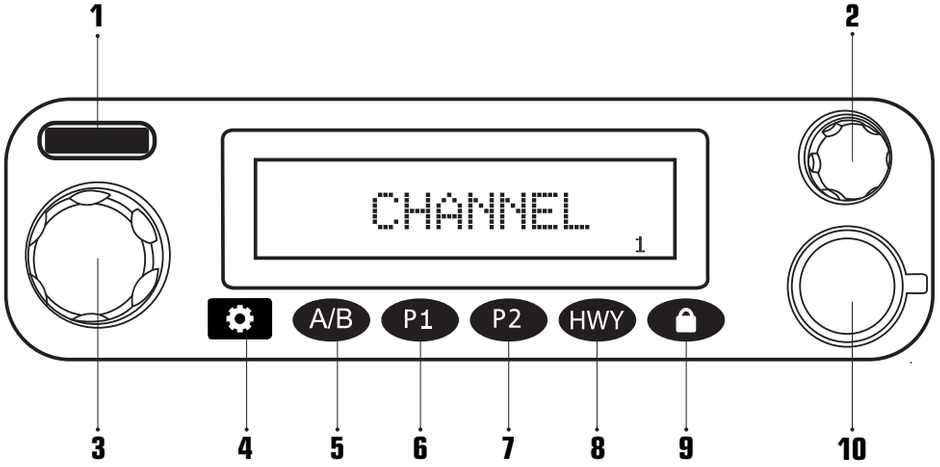
1. Mount the antenna as high on the vehicle as possible. The higher the better.
2. If possible, mount the antenna in the center of a metal roof. This is the ideal placement for an antenna.
3. Be sure the mounting location is clean and dry before installing the antenna.
4. Route the antenna cable through an accessible entry point, such as a door or trunk opening.
5. When routing the antenna cable inside the vehicle, keep the cable away from noise sources, such as the ignition system, gauges, etc.
6. Exercise care to prevent cable damage. Make use of existing gaskets, grommets and weather stripping to protect the cable along its route.




**Important:** Mount antenna as high as possible and away from obstructions.
**Do not coil excess cabling**. This will drastically reduce radio performance.

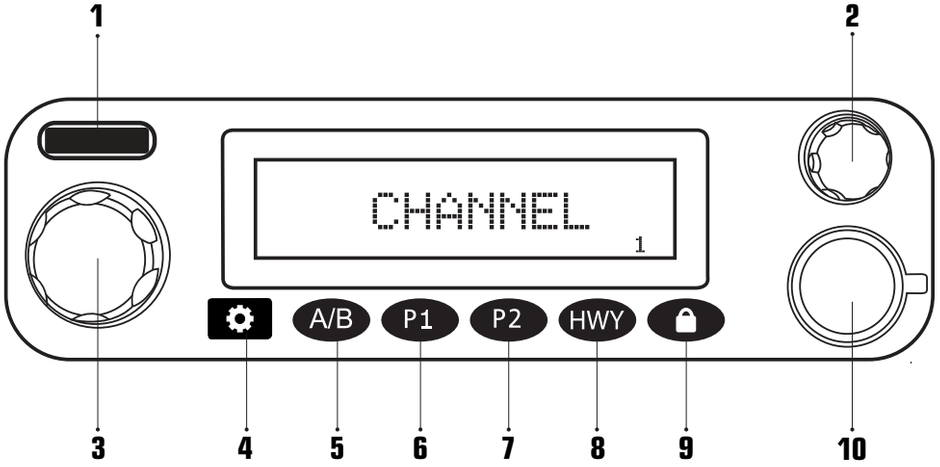
# GETTING ACQUAINTED

## FRONT PANEL OPERATION




| No. | Key | Function | Quick-Press | Long-Press |
|---|---|---|---|---|
| 1 | Indicator Light | Illuminates red while transmitting. | N/A | N/A |
| 2 | Volume Knob | Powers the radio on/ off, adjusts volume | N/A | N/A |
| 3 | Channel Knob | Changes channels / scrolls through menu | N/A | N/A |
| 4 | ⚙ | Enters the menu / confirms the current selection | Menu/ Confirm | N/A |
| 5 | A/B | Switches between monitored channels in “Dual Monitor Mode” | A/B | Programmable |

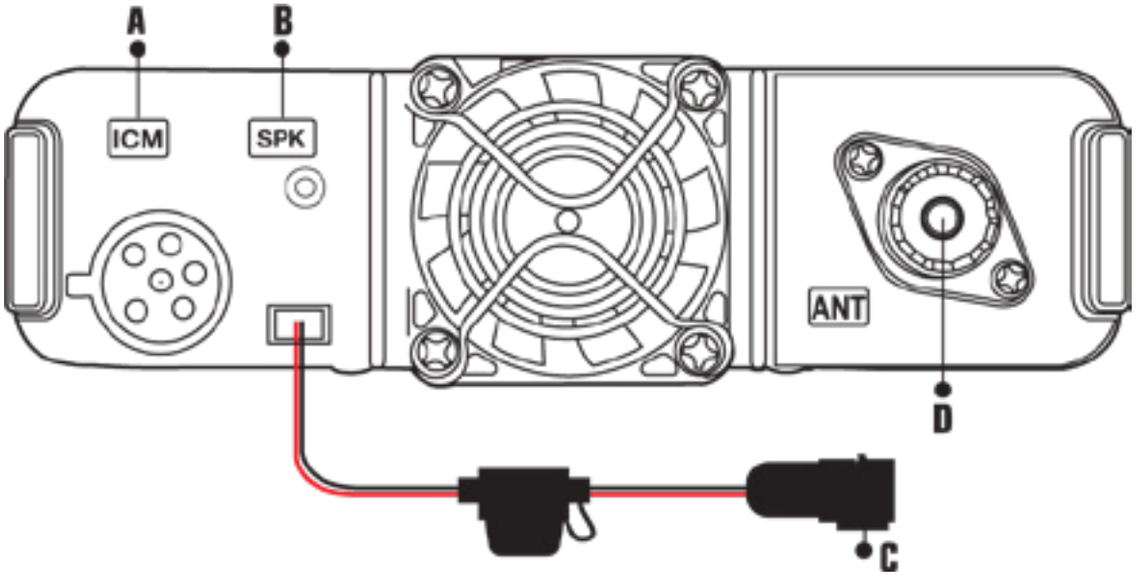
## FRONT PANEL OPERATION CONTINUED




| No. | Key | Function | Quick-Press | Long-Press |
|---|---|---|---|---|
| 6 | P1 | Quick access to P1 channel preset | Preset Ch. 15 | Saves current channel to P1 |
| 7 | P2 | Quick access to P2 channel preset | Preset Ch. 16 | Saves current channel to P2 |
| 8 | HWY | Quick access to Highway Channel 19 | Preset Ch. 19 | Programmable |
| 9 | | Locks the radio controls | Exit | Lock/ Unlocks controls |
| 10 | Microphone Port | 6-Pin connection port for included hand-mic | N/A | N/A |

# GETTING ACQUAINTED

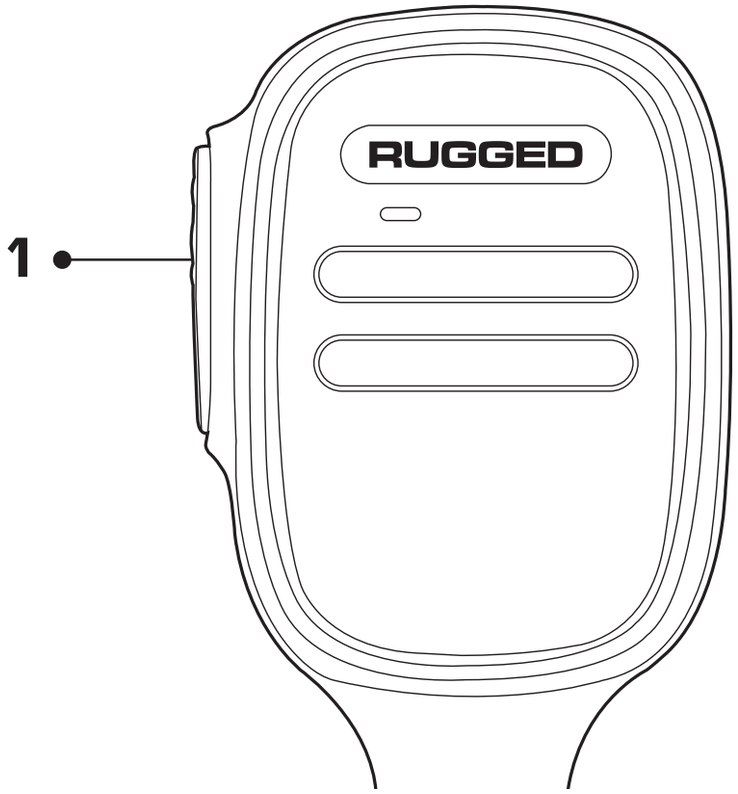
## REAR PANEL OPERATION




| No. | Port | Function |
|---|---|---|
| A | Intercom Connector | Rugged Ready connector used for headsets, intercoms, etc. Requires adapter cable PN CJ-M1. |
| B | External Speaker | Mono (2-conductor) audio connector for external speakers. |
| C | Power Cable | Connects to the radio power cable. Ensure a direct connection to the battery to avoid electrical interference. |
| D | Antenna Connector | Connects to the antenna cable. |

# GETTING ACQUAINTED

## HAND MIC OPERATION




| No. | Key | Function |
|---|---|---|
| 1. | PTT Button<br>“Push-To-Talk” | To transmit, hold microphone approximately 4 inches from mouth, press the key [1], and speak into microphone.<br><br>Release PTT key [1] when transmit is complete. |

# GETTING ACQUAINTED

## MENU

| Menu Item | Operation |
|---|---|
| Scan | This function is designed to scan for signals on every channel in the scan list. |
| Tone Codes | Prevents hearing radio traffic on the same frequency. |
| Squelch | Increases or decreases the sensitivity of the receiver. Higher Squelch settings will block more interference but also limit range. Note: Rugged Radios suggests using the factory-set Squelch level, but if adjustments are made as a general rule, lower, more sensitive settings are suggested. |
| Backlight | Dims the display after 5, 10, 20, or 30 seconds of inactivity. |
| Dimmer Level | Increases or decreases the display brightness. |
| Display Color | Changes the display color. (Grey/Green/Orange) |
| CH Display | Show either the frequency or channel name on the main screen. |
| Dual Monitor | Allows you to switch between monitoring 1 or 2 Channels. |

# GETTING ACQUAINTED

## MENU

| Menu Item | Operation |
|---|---|
| CH Announce | Audibly announces the channel frequency or name. |
| Menu Timeout | Sets the length of time before the menu times out and returns to default display. |
| Autolock | Enables automatic keypad locking feature after the selected duration. Keypad can be unlocked by long-pressing the button. |
| TalkPrmtTone | When the Talk Permit Tone is enabled, the transmitting radio will emit a tone indicating it is ready to transmit ensuring clear communication by letting you know when to begin speaking. |
| Roger Beep | When Roger Beep is enabled, the receiving radio will emit a tone indicating the current transmission has ended. |

# GETTING ACQUAINTED

## ADVANCED MENU

| Menu Item | Operation |
|---|---|
| Tx Power | The level of power output used during transmission. (High/Medium/Low) |
| Bandwidth | Changes operating bandwidth.<br>Wide (25 kHz) or Narrow (12.5kHz) |
| B CH Alert | When monitoring two channels (dual monitor), B Channel Alert emits a tone when radio calls are received on “B” or “Sub” Channel. |
| TX Mic Level | Adjusts the transmit volume of the microphone. |
| Listen Only (LSO) | Enables Listen-Only (LSO) mode. LSO allows users to listen to transmissions on UHF frequencies outside of the GMRS band. |
| Radio Info | Displays firmware version and the date it was updated. |
| Reset | Resets the radio to factory settings. |

# TONE CODES

Along with the standard GMRS channels, all Rugged GMRS radios come preprogrammed with two “tone coded” channel options.

Example:

- Channel 1 is GMRS 1, with Frequency of 462.5625 MHz
- Channel 1-10 is GMRS 1, with Frequency of 462.5625 MHz, and Tone Code 94.8 (10)
- Channel 1-25 is GMRS 1, with Frequency of 462.5625 MHz, and Tone Code 156.7 (25)

This continues throughout the channel list.

NOTE: Custom tone codes can be added through the menu to any of the non tone-coded channels.

### CHANGING TONE CODES

To Access Tone codes:

1. Press the [⚙] to access the menu
2. Use Channel Knob to navigate and select [⚙] “Tone Codes”
3. Scroll and Select [⚙] type of tone code: “Cross Tone”, “TX Tone” (Transmit Only), or “RX Tone” (Receive Only)
4. Select [⚙] for either “CTC” (Analog) or “DCS” (Digital) tone code types. To find Inverted Digital Tone codes, select “DCS” to open the list and use the A/B button to switch to Inverted Digital Tone Codes.
5. From here a list of tone code frequencies and their number can be scrolled through and selected [⚙]

**See the lists of Tone Codes below:**

# GMRS TONE CODES

## CTCSS Analog Tone Codes

This is the number you toggle to on your radio!

| No. | Freq. (Hz) |
|---|---|
| 1 | 67.0 |
| 2 | 71.9 |
| 3 | 74.4 |
| 4 | 77.0 |
| 5 | 79.7 |
| 6 | 82.5 |
| 7 | 85.4 |
| 8 | 88.5 |
| 9 | 91.5 |
| 10 | 94.8 |
| 11 | 97.4 |
| 12 | 100.0 |
| 13 | 103.5 |
| 14 | 107.2 |
| 15 | 110.9 |
| 16 | 114.8 |
| 17 | 118.8 |
| 18 | 123.0 |
| 19 | 127.3 |
| 20 | 131.8 |
| 21 | 136.5 |
| 22 | 141.3 |
| 23 | 146.2 |
| 24 | 151.4 |
| 25 | 156.7 |
| 26 | 162.2 |

| No. | Freq. (Hz) |
|---|---|
| 27 | 167.9 |
| 28 | 173.8 |
| 29 | 179.9 |
| 30 | 186.2 |
| 31 | 192.8 |
| 32 | 203.5 |
| 33 | 210.7 |
| 34 | 218.1 |
| 35 | 225.7 |
| 36 | 233.6 |
| 37 | 241.8 |
| 38 | 250.3 |
| 39 | 62.5 |
| 40 | 69.3 |
| 41 | 159.8 |
| 42 | 165.5 |
| 43 | 171.3 |
| 44 | 177.3 |
| 45 | 183.5 |
| 46 | 189.9 |
| 47 | 196.6 |
| 48 | 199.5 |
| 49 | 206.5 |
| 50 | 229.1 |
| 51 | 254.1 |

Codes 38-51 may not be supported by other brand GMRS radios

For info on updating firmware, call us at: (888) 541-7223

**VISIT RUGGEDRADIOS.COM TO LEARN MORE ABOUT OUR INDUSTRY LEADING GMRS RADIOS**

# GMRS TONE CODES

## DCS Digital Tone Codes

This is the number you toggle to on your radio!

| No. | DCS (Digital) Code | No. | DCS (Digital) Code | No. | DCS (Digital) Code | No. | DCS (Digital) Code |
|---|---|---|---|---|---|---|---|
| 1 | 23 | 27 | 165 | 53 | 413 | 79 | 731 |
| 2 | 25 | 28 | 172 | 54 | 423 | 80 | 732 |
| 3 | 26 | 29 | 174 | 55 | 431 | 81 | 734 |
| 4 | 31 | 30 | 205 | 56 | 432 | 82 | 743 |
| 5 | 32 | 31 | 223 | 57 | 445 | 83 | 754 |
| 6 | 43 | 32 | 226 | 58 | 464 | 84 | 36 |
| 7 | 47 | 33 | 243 | 59 | 465 | 85 | 53 |
| 8 | 51 | 34 | 244 | 60 | 466 | 86 | 122 |
| 9 | 54 | 35 | 245 | 61 | 503 | 87 | 145 |
| 10 | 65 | 36 | 251 | 62 | 506 | 88 | 212 |
| 11 | 71 | 37 | 261 | 63 | 516 | 89 | 225 |
| 12 | 72 | 38 | 263 | 64 | 532 | 90 | 246 |
| 13 | 73 | 39 | 265 | 65 | 546 | 91 | 252 |
| 14 | 74 | 40 | 271 | 66 | 565 | 92 | 255 |
| 15 | 114 | 41 | 306 | 67 | 606 | 93 | 266 |
| 16 | 115 | 42 | 311 | 68 | 612 | 94 | 274 |
| 17 | 116 | 43 | 315 | 69 | 624 | 95 | 325 |
| 18 | 125 | 44 | 331 | 70 | 627 | 96 | 332 |
| 19 | 131 | 45 | 343 | 71 | 631 | 97 | 356 |
| 20 | 132 | 46 | 346 | 72 | 632 | 98 | 446 |
| 21 | 134 | 47 | 351 | 73 | 654 | 99 | 452 |
| 22 | 143 | 48 | 364 | 74 | 662 | 100 | 454 |
| 23 | 152 | 49 | 365 | 75 | 664 | 101 | 455 |
| 24 | 155 | 50 | 371 | 76 | 703 | 102 | 462 |
| 25 | 156 | 51 | 411 | 77 | 712 | 103 | 523 |
| 26 | 162 | 52 | 412 | 78 | 723 | 104 | 526 |

Codes 84-104 may not be supported by other brand GMRS radios

**VISIT RUGGEDRADIOS.COM TO LEARN MORE ABOUT OUR INDUSTRY LEADING GMRS RADIOS**

# STANDARD GMRS CHANNELS

| Channel | 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 |
| 15 | 462.5500 |
| 16 | 462.5750 |
| 17 | 462.6000 |
| 18 | 462.6250 |
| 19 | 462.6500 |
| 20 | 462.6750 |
| 21 | 462.7000 |
| 22 | 462.7250 |

## GMRS REPEATER CHANNELS

| Channel | Transmit Frequency (MHz) | Receive Frequency (MHz) |
|---|---|---|
| 15RP | 467.5500 | 462.5500 |
| 16RP | 467.5750 | 462.5750 |
| 17RP | 467.6000 | 462.6000 |
| 18RP | 467.6250 | 462.6250 |
| 19RP | 467.6500 | 462.6500 |
| 20RP | 467.6750 | 462.6750 |
| 21RP | 467.7000 | 462.7000 |
| 22RP | 467.7250 | 462.7250 |

# TROUBLESHOOTING

| Problem | Possible Cause and Potential Solutions |
|---|---|
| (a) Power is on, nothing appears on Display. | + and - polarities of power connection are reversed. Connect red lead to plus terminal and black lead to minus terminal of DC power supply. |
| (b) Fuse is blown. | Check and solve problem resulting in blown fuse and replace fuse with new fuse. |
| (c) No sound comes from speaker | Squelch is muted. Decrease squelch level.<br>Tone or CTCSS/DCS squelch is active.<br>Turn CTCSS or DCS squelch off.<br>Increase volume on radio. |
| (d) Key and Dial do not function. | Key-lock function is activated.<br>Cancel Key-lock function. |

**For additional help call our Tech Department at (805) 541-1696.**

**We are here to help!**

**HOURS OF OPERATION: Monday - Friday: 8:00 AM - 5:00 PM PST**

# SPECIFICATIONS

## GENERAL

| | |
|---|---|
| Frequency Range | TX-462-467MHz RX: 400-480MHz |
| Channel Capacity | 350 |
| Frequency Stability | ±2ppm |
| Working Temperature | -30°C ~ +60°C |
| Working Voltage | 13.8V DC |
| Dimension(HxWxD) | 53*138*153mm |
| Weight | 2.55 lbs. |
| Standard U-Bracket Mount Screws | M4-0.7x8mm |
| AMPS Mounting Screws (Flange) | M4-0.7x8mm or 16mm |
| AMPS Mounting Screws | M6-0.7x8mm |

# SPECIFICATIONS

## RECEIVER

| | |
|---|---|
| Receiving Sensitivity | 0.25μV @ 12dB SINAD |
| Adjacent Channel Selectivity | ≤-60dB@12.5KHz |
| Inter-modulation | ≥60dB |
| Spurious Rejection | ≥70dB |
| Audio response | +1~-3dB |
| Audio Distortion | <5% |
| Audio power | ≤3W |
| Hum/Noise | ≥40dB@25KHz /≥35dB @12.5KHz |
| Standby current | 0.16A |
| RX current | 0.4A |

# SPECIFICATIONS

## TRANSMITTER

| | |
|---|---|
| Output Power | High:40W  Middle:25W  Low:5W |
| TX Current | ≤9A |
| FM Modulation | 11K0F3E @ 12.5KHz  14K0F3E @ 20KHz<br>16K0F3E @ 25KHz |
| Modulation Distortion | <5% |
| Hum/Noise | ≥40dB@25KHz /≥35dB@12.5KHz |
| Adjacent Channel Power | ≤-60dB@12.5KHz |
| Audio Response | +1~-3dB |
| Spurious | ≤-30dBm12.5kHZ data and audio:7K60FXE |

# NOTES

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