Disclaimer: Due to changes in the development of this radio, there will be functions or options which are removed or added. This will not be noted in this manual, as manual re-writes are not done with each change.

THANK YOU FOR YOUR PURCHASE OF THE GMRS-50PRO. THIS GMRS RADIO (WITH UHF/VHF SCANNER CHANNELS) WILL DELIVER YOU SECURE INSTANT RELIABLE COMMUNICATION.

PLEASE READ THIS MANUAL CAREFULLY BEFORE USE

Contents

INSTALLATION

This chapter describes the installation procedure for integrating thetransceiver into a typical amateur radio station. lt is presumed that youpossess technical knowledge and conceptual understanding consistentwith your status as a licensed radio amateur. Please take some extratime to make certain that the important safety and technical requirementsdetailed in this chapter are followed closely.

PRELIMINARYINSPECTION

Inspect the transceiver visually immediately upon opening the packingcarton. Confirm that all controls and switches work freely, and inspect thecabinet for any damage. Gently shake the transceiver to verify that nointernal components have been shaken loose during shipping.
If any evidence of damage is discovered, document it thoroughly andcontact the shipping company(or your local dealer, if the unit waspurchased over-the-counter)so as to get instructions regarding theprompt resolution of the damage situation. Be certain to save theshipping carton, especially if there are any punctures or other evidence ofdamage incurred during shipping. lf it is necessary to return the unit forservice or replacement, use the original

packing materials. Then put theentire package inside another packing carton to preserve the evidence ofshipping damage for insurance purposes

INSTALLATION TIPS

To ensure long life of the components, be certain to provide adequateventilation around the cabinet of the transceiver.

Do not install the transceiver on top of another heat-generating device(such as a power supply or amplifier) and in a location exposed to dustand/or high humidity. Avoid heating vents and window locations thatcould expose the transceiver to excessive direct sunlight, especially inhot climates. This transceiver should not be used in an environmentwhere the ambient temperature exceeds +140 °F(+60 °C).

⚠ This transceiver is designed for a 13.8 V power source. Never usea 24 V battery to power the transceiver.

⚠ The vehicle battery must have a nominal rating of 12 V. Neverconnect the transceiver to a 24 V battery, Be sure to use a 12 Vvehicle battery that has sufficient current capacity. lf

the current tothe transceiver is insufficient, the display may darken duringtransmission, or transmit output power may drop excessively.

⚠ If you use the transceiver for a long period when the vehicle batteryis not fully charged, or when the engine is OFF, the battery maybecome discharged, and will not have sufficient reserves to startthe vehicle.Avoid using the transceiver under these conditions.

⚠ Transmitting without first connecting an antenna or other matchedload will damage will transceiver. Always connect the antenna tothe transceiver before applying power or transmitting.

SAFETY INFORMATION

This transceiver is an electrical apparatus, as well as a generator of High RF (Radio Frequency)energy. You should exercise all safetyprecautions that are appropriate for this type of device. These safetytips apply to any device installed in a well-designed amateur radiostation.

⚠ Never allow unsupervised children to play in the vicinity of yourtransceiver or antenna installation.

⚠Be certain to wrap any wire or cable splices thoroughly withinsulating electrical tape, to prevent short circuits.

⚠Do not route cables or wires through doorjambs or otherlocations where they may become frayed and shorted to groundor to each other.

⚠Do not stand in front of a directional antenna while you aretransmitting into that antenna.

⚠Do not install a directional antenna in any location wherehumans or pets may walk in the main directional lobe of theantenna's radiation pattern.

⚠In mobile installations, it is preferable to mount the antenna ontop of the vehicle, if feasible, this will utilize the car body as acounterpoise and raise the radiation pattern as far away frompassengers as possible.

⚠During mobile operation when stopped(in a parking lot, forexample), make it a practice to switch to Low power if there arepeople walking nearby.

⚠Never wear dual-earmuff headphones while driving a vehicle.Do not attempt to drive your vehicle while making a telephone orauto patch call.

⚠While using the optional DTMF microphone. Pull over to the sideof the road, whether dialing manually or using the auto-dialfeature.

⚠Do not connect the modular connector of the telephone line to MIC jack.

⚠Warning!: High RF voltage is present in the TX RF section of thetransceiver while transmitting. Do not touch the TX RF sectionwhile transmitting.

Exposure to Radio Frequency Energy

Your BTECH radio is designed to comply with the following national and international standards and guidelines regarding exposure of the human body to radio frequency electromagnetic energy.

- United States Federal Communications Commission, Code of Federal Regulations: 47 CFR part 2 sub-part J
- American National Standards Institute (ANSI)/Institute of Electrical & Electronic Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronic Engineer (IEEE) C95. 1-1999 Edition
- National Council on Radiation Protection and Measurements (NCRP) of the United States, Report 86, 1986
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998

To control your exposure and ensure compliance with the occupied or controlled environment exposure limits, transmit no more than 50% of the time. The radio generates measurable RF energy only when transmitting.

FCC NOTICE AND DECLARATION

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

The scanning receiver in this equipment is incapable of tuning, or be readily altered, by the user to operate within the frequency bands allocated to the Domestic Public Cellular Telecommunications Service in Part 22 of the FCC rules.

Any modification to a scanning receiver to receive transmissions from the Cellular Radiotelephone Service frequency bands voids the certification of the scanning receiver, regardless of the date of manufacture of the original unit. In addition, the provisions of FCC §15.23 shall not be interpreted as permitting modification of a scanning receiver to receiver Cellular Radiotelephone Service transmissions.

FCC LICENSE REQUIRED FOR GMRS OPERATION

The GMRS-50PRO operates on GMRS (General Mobile Radio Service) frequencies, which require an FCC (Federal Communications Commission) license. You must be licensed prior to transmitting on any of the channels, which are comprised of GMRS channels. Serious penalties could result for unlicensed use of these 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, which should be used for station identification when operating the radio on these 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.

Note: 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 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:

—Re-orientate or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an electrical outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio technician for help.

“The Radio is pre-configured with 8 GMRS repeater channels: 467.5500, 467.5750,467.6000,467.6250, 467.6500, 467.6750, 467.7000, and 467.7250 MHz. In basic terms, a repeater is a device that is used to increase the range of two way radios.Repeaters will receive a transmission on one frequency and simultaneously rebroadcast that transmission on a different frequency. Repeaters are often set up in a fixed location and connected to an antenna that is mounted at a higher elevation to provide better range than is normally available with radio-to-radio (simplex) communications.

Using GMRS repeaters can significantly increase the range of your radio, but just tuning to one of the repeater channels isn’t necessarily going to work. You first have to be sure there is a repeater listening on that channel’s frequency, and you have to be within range of that repeater.

It is important to keep in mind that a GMRS repeater is not necessarily intended for public use.

They are owned by individuals and are sometimes intended for private use or require permission to use. Before connecting to a GMRS repeater, be sure that you have permission or that the owner is fine with public use. The description on the myGMRS website usually indicates if permission is required and provides a way to get in touch with the owner.”

-----§ 95.1743 Minor GMRS operators.

Operators under the age of 18 will not be held personally responsible, pursuant to § 95.343, for improper operation

of a GMRS repeater or base station. The holder of the individual license under which the minor operates is solely

responsible for any improper operation that occurs while an individual under the age of 18 is operating the station"

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
This equipment should be installed and operated with minimum distance 40cm between the radiator &you body.

Features and Functions

- GMRS Transceiver and UHF&VHF Scanner
- APP Programming
- Multiple Bluetooth connection methods
- Radio short message function
- GPS positioning system
- Partner location and direction reporting system
- Multiple emergency functions
- Broadcast FM receiver 87-108 MHz
- 30x6 channel groups
- NOAA Weather Alert
- Dual watch / Dual reception
- USB direct charging, convenient and fast

DC POWER CABLE CONNECTION

Locate the power input connector as close to the transceiver as possible.

MOBILE OPERATION

The vehicle battery must have a nominal rating of 12 V.Never connect the transceiver to a 24 V battery. Be sure to use a 12 V vehicle battery that has sufficient current capacity. If the current to the transceiver is insufficient,the display may darken during transmission, or transmit output power may drop excessively.

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

• If using a noise filter, it should be installed with an insulator to prevent it from touching metal on the vehicle.

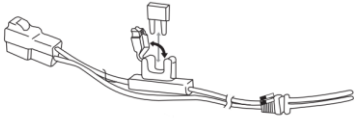
• We recommend you do not use the cigarette lighter socket as some cigarette lighter sockets introduce an unacceptable voltage drop.
• The entire length of the cable must be dressed so it is isolated from heat, moisture, and the engine secondary (high voltage) ignition system/ cables.

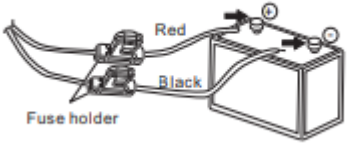
2 After the cable is in place, wrap heat-resistant tape around the fuse holder to protect it from moisture and tie down the full run of cable.

3 To prevent the risk of short circuits, disconnect other wiring from the negative (–) battery terminal before connecting the transceiver.

4 Confirm the correct polarity of the connections, then attach the power cable to the battery terminals; red connects to the positive (+) terminal and black connects to the negative (–) terminal.

• Use the full length of the cable without cutting off excess even if the cable is longer than required. In particular, never remove the fuse holders from the cable.

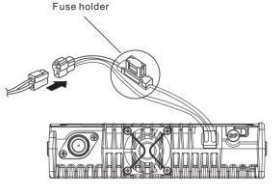




5 Reconnect any wiring removed from the negative terminal.

6 Connect the DC power cable to the transceiver's power supply connector.

• Press the connectors firmly together until the locking tab clicks.



ANTENNA CONNECTION

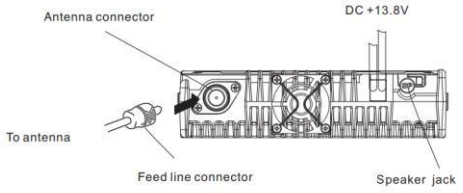
Before operating, install an efficient, well-tuned antenna.The success of your installation will depend largely on the type of antenna and its correct installation. The transceiver can give excellent results if the antenna system and its installation are given careful attention.

Use a 50Ω impedance antenna and low-loss coaxial feed line that has a characteristic impedance of 50 ∧, to match the transceiver input impedance. Coupling the antenna to the transceiver via feed lines having an impedance other than 50Ω reduces the efficiency of the antenna system and can cause interference to nearby broadcast television receivers, radio receivers, and other electronic equipment.

◆ Transmitting without first connecting an antenna or other matched load may damage the transceiver. Always connect the antenna tothe transceiver before transmitting.

◆ All fixed stations should be equipped with a lightning arrester to reduce the risk of fire, electric shock, and transceiver damage.

Antenna Type	Frequency Range	Antenna Gain
Rod	462-470MHz	1.0 dBi(-1.15dBd)

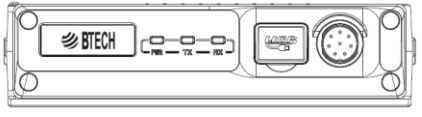


What's in the box

This transceiver comes shipped with the following items in the box:

- GMRS-50PRO Radio Body
- GMRS-50PRO Speaker Microphone
- Mobile Bracket
- DC (12V) Power Cord
- Mounting Hardware w/ Microphone Holder
- Antenna

Mobile Radio

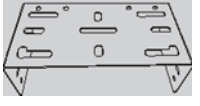


Microphone

Power Cable

Mounting Screws and Fuse

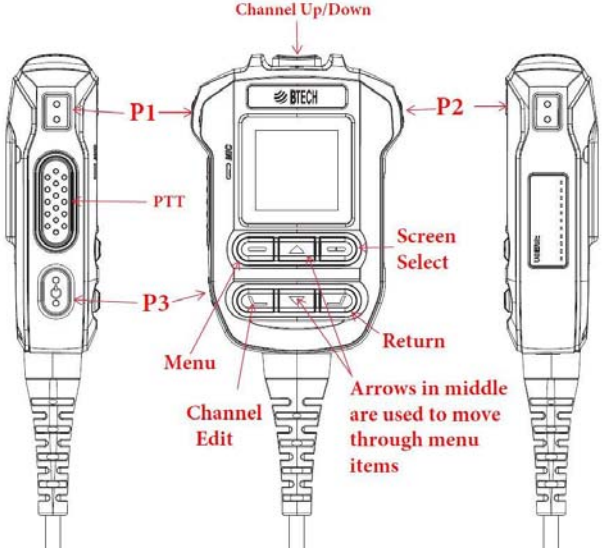
Mounting Bracket



Antenna

Must use an authorized antenna

Microphone Controls:



GMRS Frequency Chart, Channel Guide

GMRS FREQUENCY CHART								
CH: Name	Ch. Freq	CH: Name	Ch. Freq	CH: Name	Ch. Freq	CH: Name	Ch. Freq	Offset
01: GMRS01*	462.56250	08: GMRS08**	467.5625	15: GMRS15	462.5500	23: REPT15	462.5500	+5MHz
02: GMRS02*	462.58750	09: GMRS09**	467.5875	16: GMRS16	462.5750	24: REPT16	462.5750	+5MHz
03: GMRS03*	462.61250	10: GMRS10**	467.6125	17: GMRS17	462.6000	25: REPT17	462.6000	+5MHz
04: GMRS04*	462.63750	11: GMRS11**	467.6375	18: GMRS18	462.6250	26: REPT18	462.6250	+5MHz
05: GMRS05*	462.66250	12: GMRS12**	467.6625	19: GMRS19	462.6500	27: REPT19	462.6500	+5MHz
06: GMRS06*	462.68750	13: GMRS13**	467.6875	20: GMRS20	462.6750	28: REPT20	462.6750	+5MHz
07: GMRS07*	462.71250	14: GMRS14**	467.7125	21: GMRS21	462.7000	29: REPT21	462.7000	+5MHz
				22: GMRS22	462.7250	30: REPT22	462.7250	+5MHz

* Per FCC GMRS Radio Guidelines; Channels 1-7 are limited to Low Power 5-Watt output

**Per FCC GMRS Mobile Radio Guidelines Channels 8-14 transmitting is disabled; they can receive and monitor communications, but GMRS mobile radios cannot transmit on these channels.

APP Introduction

Connecting GMRS-50PRO to a Cell-phone

For Android users
Go to Google Play and, Search for “BTECH GMRS Programmer”
For iOS users
Search “BTECH GMRS Programmer” in APPLE store to download

Using the app

Pairing your cell phone to the radio

1) Open the app, Turn-on the radio, then press the PTT button twice OR scroll to [**Pairing**] in the menu, then select the OK button to enter the pairing state, a 'BEEP' will be heard and a red-green light flashing means the radio is now in pairing status (APP requires Bluetooth permission, please make sure the Bluetooth status is on), The APP will search for active Bluetooth devices, and it will display as shown in Figure 1.

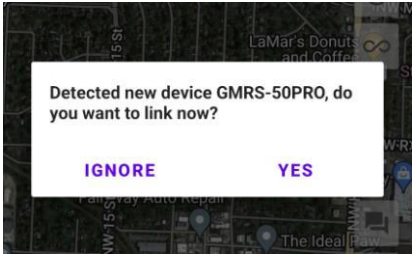


Figure 1

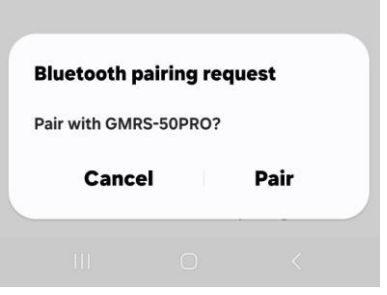


Figure 2

2) Select **YES** to allow Bluetooth connection
3) Bluetooth pairing requires confirmation of Bluetooth authorization, select **PAIR** to confirm the pairing status as seen in Figure 2

App Permissions

NOTE: The App will request permission to use the Location, Nearby Devices, Microphone, and Media Storage of your phone. These privileges will allow the app to send and receive audio and data to work with the radio.

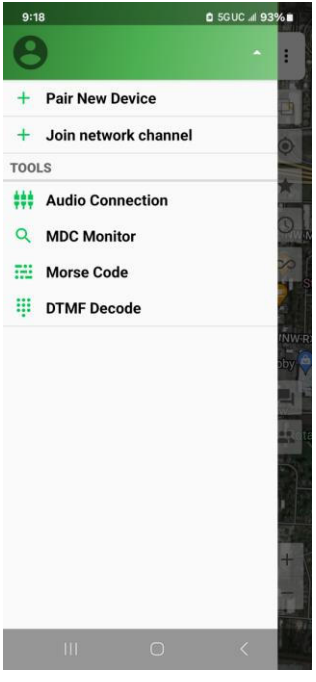


Figure 3

4) Select ***Pair New Device***- this will connect your phone or tablet to your radio. The App will store these connections for the next time you wish to use the App. You can store more than one radio, and you can name them differently in the App to make sure you are working on the proper unit. The unit will show as numbers until paired. These numbers are the Bluetooth code- select to “bind” that device and it should then show as “GMRS-50PRO”

Network Channels

BTech radios have the unique capability of being involved in an online network.
Individual groups can be created. This expands the capabilities of the radio. An example is a member is outside of radio coverage, but is logged into the network and group- you can still communicate with them via the Network Channel. Info can be found here:
https://baofengtech.com/harnessing-the-power-of-community-with-btech-gmrs-programmers-networking-groups/.
Here are some excerpts from that page:

Getting Started with Your Account

Accessing Sign-In Options: If you're new or haven't set up an online profile yet, start by selecting the "Sign In" button located beside your "Nickname"

Creating a New Account:

If you need to create an account, choose the option to "Sign Up". This will allow you to setup a Username and password with the email address of your choice. You can create an account here at: https://account.benshikj.com/user/register

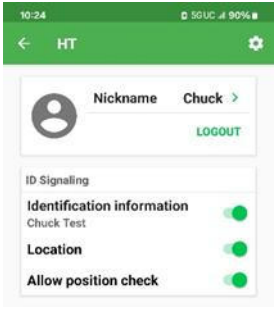
Using OAuth Authentication:

For a quicker setup, you can also use OAuth authentication with Google or Apple.
This will link to your existing Google or Apple account for a seamless sign-in experience with no additional username or password to use.

General Profile Account Options:

Nickname and Identification: Customize your nickname and identification details to be recognized by fellow users within groups.

Privacy Settings: Adjust your location sharing preferences in the 'User Settings' to manage your footprint and privacy.

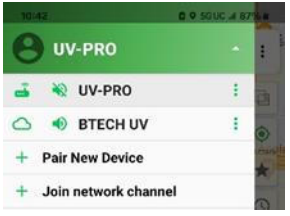


Step 2: Engage with the UV Pro Community through Network Groups

Before diving into group chats, you'll need to connect to a network channel:

Join a Network Channel: Navigate to the main menu and select 'Join Network Channel'. Here, you'll find a list of available channels.

Select the Default Group: Choose 'BTECH GMRS', which is the default network channel for all app users. This is the primary hub for BTECH community interactions.



The ‘BTECH GMRS’ default network group is your gateway to the community:
Connection Status: The cloud icon’s appearance is your indicator of connection status—a slashed cloud means you are offline, while a clear icon signifies active connection.
Notification Settings: Control the audio alerts for new messages and conversations with the speaker icon. A slashed speaker denotes silent mode, allowing you to browse the log without interruption.

Step 3: Real-Time Communication at Your Fingertips
The app’s interface is designed for real-time interaction:
Voice Communication: Use the ‘Hold to Speak’ button for instant voice messaging with other group members, visible in the chat as audio waveforms.
Text Messaging: Tap the keyboard icon to compose and send text messages to the group, facilitating quick and convenient typed communication.

Location Sharing: Share and request locations with group members to enhance your collaborative experience, especially useful during events or meet-ups.

Step 4: Understanding Data Privacy and Access in Real-Time

As you engage with the community through the BTECH UV Programmer app, it's essential to understand how your data is handled:

Real-Time Access: The app operates on a real-time access model. This means that to view conversations and archives, you must be online. This design ensures that you have immediate and continuous access to the group's dialogue as it unfolds.

Online Presence: To ensure you don't miss any part of the conversation, maintain your online status. Being online is crucial as it allows the app to sync and display the latest communications from other users in real-time.

Data Privacy: BTECH takes your privacy seriously. No logs or conversation data are stored on our servers. All information is relayed live and is only stored locally on your device. BTECH does not store conversations, but simply relays them to active users.

Archiving Conversations: If you wish to review past conversations, you must be part of the network channel when the conversations occur, as the app does not retroactively provide chat logs for periods when you were offline.

This approach not only respects your privacy but also aligns with the real-time nature of radio communication. It ensures that your communications remain private, secure, and under your control.

Step 5: Create Exclusive Groups for Focused Communication
For those desiring more private and focused discussions:
Private Group Creation: Establish your own private group and safeguard it with a passcode. Only members with the passcode can join, ensuring exclusivity and control.
Searchable Database: Your private group will be listed in the app's searchable database, making it discoverable to users you choose to share the passcode with.
Continuous Connectivity: Stay connected to the conversation by keeping the app active on your device, ensuring you never miss a message with the cloud icon enabled.

Accessing iOS Settings Menu

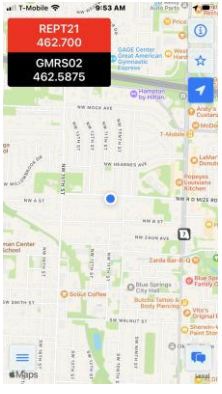


Figure 4
iOS Main Screen
Click the 3 bars on lower left

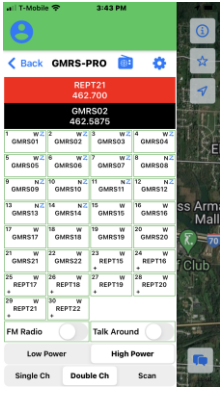


Figure 5
Click the gear Icon

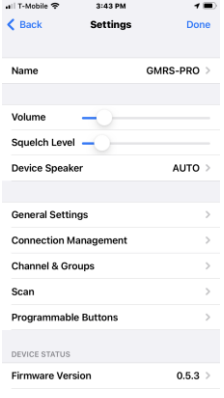


Figure 6
Settings Menu

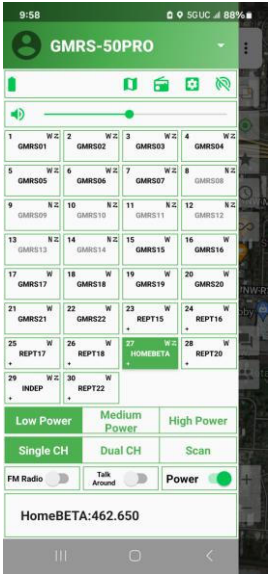


Figure 7

Control Interface

[***Select Channel***]: click the channel square to switch the channel, and the radio will emit a "beep" tone.

[***Low/Mid/High Power***]: Refers to the output power of the current channel.

[***Single CH***]: Refers to monitoring the frequency of the current channel.

[***Dual CH***]: Refers to monitoring the frequency of two channels.

[***Scan***]: Means the channel list allows the scanned channel to enter the status of scanning

[***FM Radio***]: Click to turn on or off the FM radio

[***Talk Around***]: Turning on sets the TX and RX frequency as the same frequency (no offset on TX).

[***Power***]: Turn the radio on or off

Editing a channel

Long press the channel square, you will be taken to the [**Edit Channel**] screen, enter your changes, and when you complete the edit of the channel parameters, click the 3 dots, then select [**SAVE**] to save the Channel Parameters. Click [**More**]to show a more detailed channel editing interface at the main editor screen.

GMRS channels are "fixed" frequencies, they cannot be adjusted from the factory settings. If you need to use other frequencies, please create a new channel group. Please follow FCC regulations to use with walkie-talkies. The non-GMRS channels will be Monitor Only.

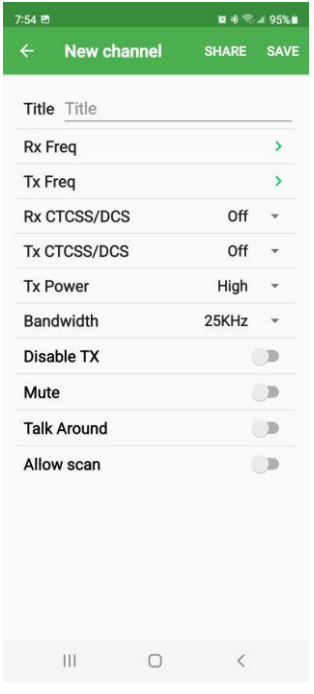


Figure 8

Make sure radio is connected to phone before adding channels, and for RX only channels, set TX Freq to 0.

[***Title***]: Means the channel name, you can name the channel.

[***RX/TX Freq***]: Click to edit transmit and receive frequencies.

[***RX/TX CTCSS/DCS***]: Click to edit transmit and receive CTCSS/DCS.

[***TX Power***]: Set the output power of the current channel.

[***Bandwidth***]: Set the communication bandwidth of the current channel.

[***Disable TX***]: When this option is turned on, it means that transmission is not allowed

[***Mute***]: Turning on means that this channel is muted.

[***Talk Around***]: Turning this on sets the transmit and receive frequencies the same.

[***Allow Scan***]: Allows the channel to be added to scan lists

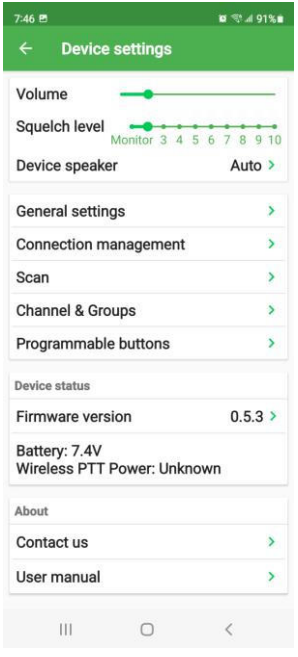


Figure 9

Setting Menu

[***Volume***]: Adjust the volume of the device.

[***Squelch Level***]: Squelch level adjustment, 0 is the weakest required signal level to monitor (loose squelch), the larger the number (tight squelch), the stronger the received signal strength needs to be to be heard.

[***Device Speaker***]: Working mode of built-in speaker

ON--Turn on the built-in speaker

OFF- - Built-in speaker mute

AUTO--When connected to a wireless hand microphone or
wireless headset, the speaker will be automatically muted, and the built-in speaker will automatically exit the mute state when the wireless device is disconnected.

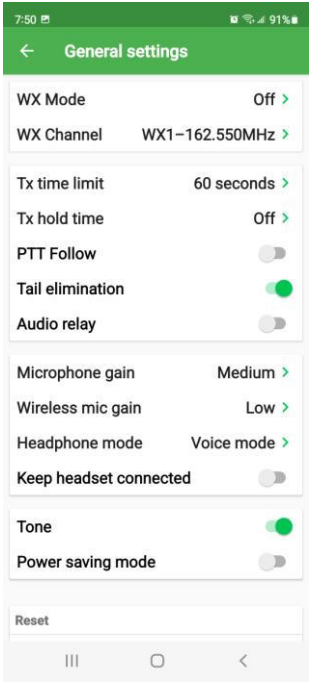


Figure 10

General Settings

[**WX Mode**]: Use this to select *Off*, *Monitor* (to Listen), or *Alert* (NOAA WX Warnings only) ***After using Monitor, you need to adjust the squelch tighter to quiet the receiver- found under Device Settings*** (See Figure 6 Page 18)
[WX Channel] Choose local NOAA channel
[TX Time Limit]: Set the time limit for device transmit.
[**TX Hold Time**]: When connect to the repeater, the lag time for the end of transmission.
[**PTT Follow**]: PTT follows the current signal channel.
[**Tail Elimination**]: Automatically eliminate the noise after the end of transmission.
[**Audio Relay**]: Replay and transmit the received voice (Recording time is up to 30 seconds).

Please be cautious when using Audio Relay. If two radios are too close, the radios will fall into an endless loop of transmitting and receiving. Please do not turn on this function on a repeater channel.

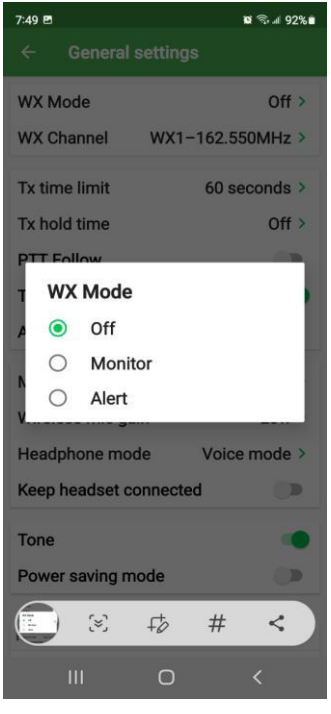

7:49
92%
General settings
WX Mode
Off
WX Channel
WX1−162.550MHz
Tx time limit
60 seconds
Tx hold time
Off
WX Mode
Off
Monitor
Alert
Headphone mode
Voice mode
Keep headset connected
Tone
Power saving mode

Figure 11

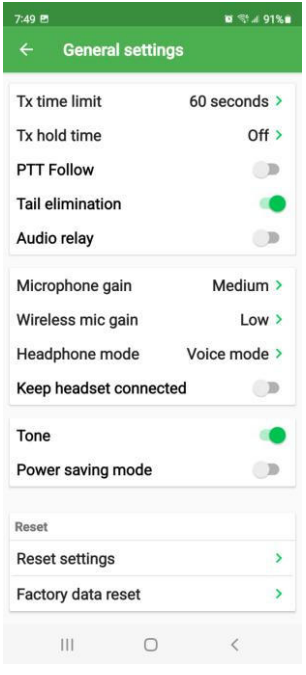
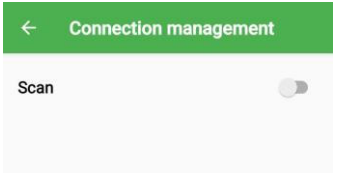


Figure 12

[**Microphone Gain**]: Set the microphone gain of the internal microphone.
[**Wireless Mic Gain**]: Set the microphone gain of the wireless microphone.
[**Headphone Mode**]: Set the access mode of the headphone system (voice mode or call (phone) mode).
[**Keep Headset Connected**] Select the continuous connection and operation via the headset
[**Tone**]: Set the operation beep tone on the device.
[**Power Saving Mode**]: Turn on/off the power saving mode.
[**Reset Settings**]: This will reset all user settings- ***back up settings before performing this.***
[**Factory Data Reset**]: This function will restore all the data of the radio to the factory settings. ***Please back up data such as frequency and channels before performing this operation***

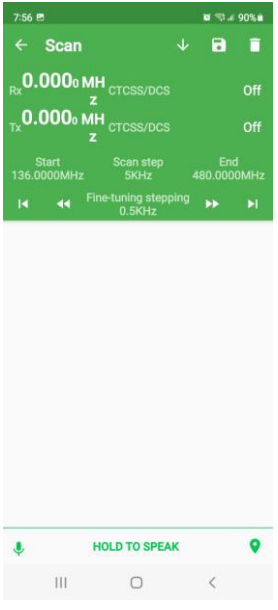
Connection management



Slide [**SCAN**], to scan for active Bluetooth devices and perform pairing operations

Figure 13

Scan



Used to check for active frequencies.
Click the Start frequency to set the lowest scanned frequency, and End to set the highest scanned frequency. Click the >| to start the scan. Hit the ← next to SCAN to go back and stop the scanning.

Figure 14

Channel & Groups

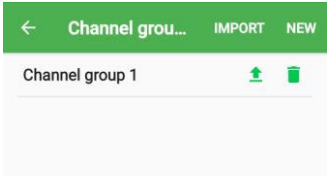


Figure 15

Click [**NEW**] to create a new group, after completing all channel information, click the up arrow to synchronize to 2- 6 channel groups of the walkie-talkie, Channel group 1 is the GMRS channel by default and cannot be changed

Import allows importing shared channels

⤒ Uploads the channel group to the radio.

Deletes the channel group.

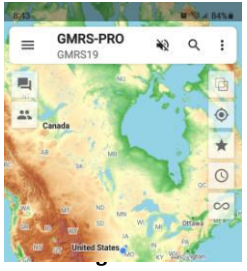
On the channel group editing page, when you finish editing all the channel information and click [SHARE], a string of characters will be generated. You can save this string of characters or send it to the partner. When the partner copies this string of characters and opens the APP, all channel information Will be copied to his device

Firmware Version Updates: When there is firmware that can be updated, click on the firmware version to update the firmware.

When you finish the upgrade, if the keyboard light flashes and the screen does not light up, please press and hold the P1 and P2 keys at the same time to restore the factory settings. Please perform a data and user settings backup before performing a factory rest. It will remove all user settings and restore radio to initial settings from the factory.

If you have a new radio, or need to reinstall the app, then you need to bring up the channel list (Figure 4), then go to the Channel Group (Figure 12) and create a New Group and Save what was read from the radio.

App Screen



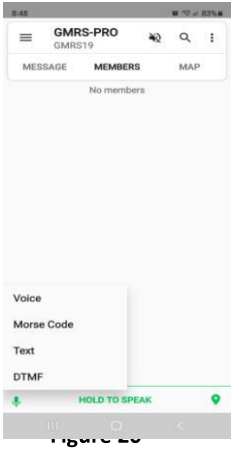
Click ☰ to return to the main interface

Means the cell phone will be muted, if the speaker is ON, the radio and cell phone will sound at the same time.

Chat history will be searched. (If the radio is not connected to the phone, no chat history will be displayed)

Go to the MESSAGE page

In the MESSAGE page, click on the microphone icon (At the lower left of screen) to switch between voice and text input modes.



Radio/Microphone Button Explanation

Microphone Function keys

Figure 21

P3 Key
Short Press: Speak the current channel
Long Press: Turn Mic on/off
Double Click: Place Mic in Pairing Mode (red/green flashing LED)

Up key Menu Page up.
Down key Menu Page down
Return In the menu mode, press this key to enter the menu setting and to set and accept changes made.
Menu key
Turn on the menu function.
Change Screen key (Screen Select)
In the standby screen mode, it is the switch screen key. Press this key repeatedly to switch back and forth between the three screen modes.
Return key
Exit the current setting/Menu function.
Channel Up/Down (top of Microphone) Use this key to change between stored memory channels.
P1 Key
Short Press: Lower Volume.
Long Press: A/B Band Switching
Double Click: Mute/Unmute
P2 Key
Short Press: Increase Volume.
Long Press: Talk Around ON /OFF

Icon functions

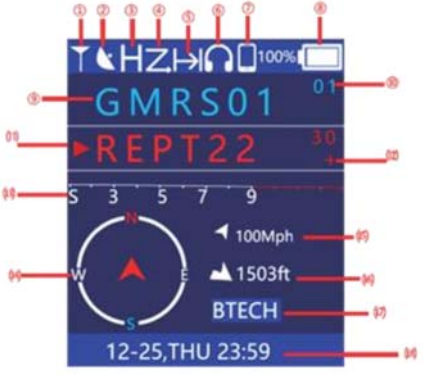


Figure 23

① **Radio**.
Represents the normal standby state of the radio.
② **GPS on**.
On behalf of the GPS function. GPS is turned on by default when powering on.
③ **Transmit Power icon**.
H stands for high power and **L** stands for low power
④ **Scan**. It means the scanning function is on.
⑤ **Talk Around**
It means the talk around function is on.
⑥ **Headset Connected**.
The device is connected to wireless headset.
⑦ **Connected to mobile phone**.
The device is connected to the mobile phone.
⑧ **Battery power level**.
Battery level display. (The specific battery percentage can be queried by entering [Status] in the menu)
⑨ **Channel Name**.
The current memory channel name
⑩ **Channel No**.
The current channel number for the frequency.

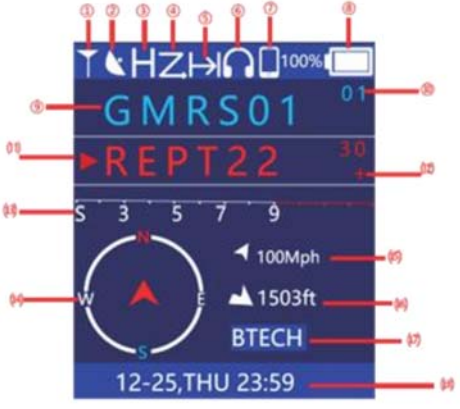


Figure 24

⑪ **Main band**
After dual standby is turned on, the frequency of the main band will be red and with red arrow.
⑫ **Repeater Shift Direction**
"+" means transmit shift up in frequency
"-" means transmit shift down in frequency
⑬ **Signal strength level**.
When receiving, display the receiving signal strength indicator.
⑭ **Electronic compass**.
Display the electronic compass.
⑮ **Speed** The current movement speed of the device

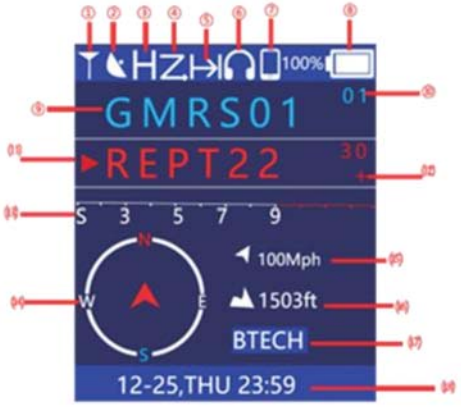


Figure 25

⑯ **Altitude**

The altitude of the current location of the device

⑰ **ID Name**

The device name of this device, you can customize the ID name in the menu (Signaling setting)

⑱ **Status bar**

After receiving the GPS or connecting the mobile phone, the actual time and date of satellite time service or network time service will be displayed.

Transmitting status indicator (② *GPS on indicator*) The up arrows (Λ) means the radio is transmitting, and the down arrows (V) means the radio is receiving.

Electronic compass

Figure 26

① **Sensor prompt icon**.
The "=" icon in the middle of the electronic compass means that it is disturbed by the external environment. You need to enter the [**Compass**] menu and perform correction operations according to the on-screen instructions. At this time, after entering the [**Compass**] menu, the screen will prompt "Please place the device (microphone) on a level surface (screen facing up), and then press the [OK] button in the upper left corner of the keyboard.

② **Sensor prompt icon.** The "8" icon in the middle of the electronic compass indicates that it is disturbed by the external environment. You need to enter the [Compass] menu and perform correction operations according to the screen prompts. At this time, after entering the [Compass] menu, the screen will prompt "Please calibrate the sensor according to the figure 8 rotating device". At this time, please hold the device and extend it forward, and draw the figure eight (i.e., "8") quickly and forcefully. It is better to complete one to eight characters in about 2 seconds.

Tips: Try to keep the device away from strong magnets, which will affect the device sensors.

If it is sometimes close to a strong magnet, the screen will prompt an “=” icon, and the icon will be restored immediately after it is far away, and no correction is required at this time. If the electronic compass is found to be unresponsive during use, please enter the [**Compass**] menu to calibrate the sensor to avoid being misled by any strong external magnetism.

Edit frequency and memory settings

Figure 27

① 
Refers to the next digit of the cursor.

② 
Press to move down list.

③ **Cursor**.
Under the current cursor, you can use the up or down keys to select the specific value you need.

Split Screen Display

① ② ③

① **The user's name or call sign is displayed when Dual Watch is off.**

② **Display the last contact information received**.

Such as the name or call sign of the other party plus location information and direction.

③ **Display a list of recently received contact information**.

Press the key to select the list of information to be viewed. Press [Enter] key to view the detailed location information direction of the other party when communicating.

Note: In the standby mode, please press the [Back] key on the upper right corner of the keyboard to switch back and forth between the above three screens.

Adding A New Frequency

Tip: GMRS only allows the creation of new channels between channel groups 2-6

① Add a regular frequency

Create a new frequency list in new Group, press the [enter] button to add to the channel list, press the up or down keys to select channel number press [edit] button to edit the frequency, Press [edit channel], then edit the frequency and memory settings to set your frequency.

②Add a GMRS frequency

Create a new frequency list in new Group, press [Enter] button to the channel list, press up or down keys to select channel number. press [Edit] button to edit the frequency, Press [GMRS Channel] to select the Channel, then press [Edit channel], to set your frequency. If you add a GMRS frequency, all the restrictions stipulated by the FCC will take effect, and you can only modify the parts that are allowed to be modified, if you want to clear the GMRS channel information, you can select [Clear Channel].

Radio Menu Settings (All menu options are also in Appendix A)

FM Radio

Press the menu key to enter the menu, turn on the FM radio, and press the up key to scan the available frequencies up.

Press the down key to scan down the available frequencies, press the OK button to exit the radio mode

Signaling

Send Message: Send text message to partners (Channel 23 - Channel 30 prohibit sending data packets)

Call: When the receiving device receives the CALL command, the radio will ring, please enter the ID to be searched

Check: When the receiving device receives the CHECK command, the radio will feed back the current location, this option requires the receivers ALLOW CHECK to be effective, please enter the ID to be searched

Nearby People: This option sends the CHECK command at the current frequency, and all radios of the same frequency will feedback their current position after receiving the command. This option requires the receiver ALLOW CHECK to be active

Radio Setting

Dual-Watch: If active, it will be watching activity for two channels, Press the up and down keys to switch between the main band and sub band, and press the side key to switch the waiting channel.

Scan: If active, the radio will be in scanning state, and all channels that are allowed to be scanned will be scan.

Talk Around: On a channel with an offset frequency, if the option is activated, The TX becomes the same

as the RX frequency.
Power: Change the output power
TX Subtone: Set the TX subtone (CTCSS or DCS) on the present channel
RX Subtone: Set the RX subtone (CTCSS or DCS) on the present channel
Channel Group: Change the Channel Group for use.
Squelch Level: Adjust the squelch Level of the received signal, level 0-9, the smaller the number, the easier it is to receive weak signals.
TX Time Limit: Limit the maximum time of each transmit.
Tail Elimination: With this option turned on, no end tone will be heard between radios of the same brand
PTT Follow: When this option is on, and the sub band receives a signal, press the PTT to reply within 10 seconds, you can transmit on the sub band frequency without switching to the main band.
PTT Release: This activates an audio transmission when you release the PTT button. The options are: NONE, ID+GPS (ANI ID must be entered and GPS must be on and showing your location), ID sends the ANI ID, GPS Sends your location, Roger Beep places a beep at the end of your transmission. All of these will NOT be audible on your radio- only the radios receiving your transmissions will hear them.

General Settings

Bluetooth Settings
Pairing: Enable Bluetooth Paring
Available Devices: List Paired Devices that are in range
Scanning: Indicates unit is scanning for devices
Paired Devices: List Devices already paired with unit.

Signaling Settings
ID: Set ID to be sent
Allow Check: Allow other members to find your position

Sound Settings
Speaker: Select Speaker function (Auto/On/Off)
Mic Gain: Set Microphone Sensitivity (Low/Med/High)
BT Mic Gain: Set Bluetooth Mic Sensitivity (low/Med/High)
Keep Connected: Maintain a connection with paired Bluetooth Device
Tone: Turn on/ Off Keypad Beep

Display Settings
Brightness: Set brightness of display (1-Dim to 15-Bright)
Screen Timeout: Set time to turn off display while unit is on (3 secs to 300 secs, Never-leave display on)
Time Zone: Set present time zone
Imperial Units: Check for Feet/ Miles
Low Power Mode: Turn on to reduce current consumption

Sound Setting
Speaker: ON means the speaker is always on

OFF means the speaker is always off
AUTO means automatic adaptation, when the earphone is connected, the speaker is silent.

Mic Gain: Adjust the sensitivity of the microphone, there are three levels: High, Mid, Low to select from.

BT Mic Gain: Adjust the sensitivity of the Bluetooth microphone, there are three levels, High, Mid, Low to choose from.

Keep Connected: Turning on this option means that the connection to the Bluetooth SCO will not be dis-connected, and the startup speed can be increased, but causing the Bluetooth headset to not be able to play music

Tone: Turn on or off the keyboard beep

Display Setting

Brightness: Adjust the screen brightness, 1 is the lowest, 15 is the highest, the brighter the screen, the more power consumption.

Screen Timeout: Set the time the screen turns off after it goes idle, NEVER means the screen is always on.

Time Zone: If the time zone is incorrect, please use this menu to manually correct it.

Reset Settings: Reset user settings (See alert below)

Restore Factory Settings: Reset all settings to factory default (See alert below)

Alert: Back up (save to app) any settings you made. Doing the reset options

Will remove any user changes.

NOAA

WX Scan: Scan for the closest NOAA Weather Transmission channel

WX Channel: 1) 162.550MHz 2) 162.400MHz 3) 162.475MHz 4) 162.425MHz 5) 162.450MHz 6) 162.500MHz 7) 162.525MHz

WX Alert: Turn on this option, and when the NOAA weather warning message is received, the device will sound an alarm, and the weather message will be heard. During the alarm state, you can press any key to mute the alarm message, and the alarm state will be released after 3 minutes

WX Monitor: Turn On/Off NOAA Weather Audio

Sync Settings

Send Channels: Send your stored channel groups to a teammate

Receive Channels: Receive your teammates stored channel group

Tone Scanning

Select Either RX or TX tone frequency to tart the tone scanner. Once a signal is received, the scanner will search and will stop on the tone that is being used.

GPS Status

This screen will show you the info from the GPS satellite, once you are locked on. To enable, GPS must be on and if needed, go outside with a clear view of the sky to obtain a GPS lock.

Compass

This is the Compass Calibrate screen. Follow the instructions with the Microphone to calibrate the Internal compass.

Status

This screen will show your Firmware revision, Voltage, and Factory model designator.

Pairing

Check the box to turn on/off Bluetooth Pairing (Same as P3 mic function).

Appendix A
Radio Menu

FM Radio	Select Frequency of FM Radio	88-108 MHz	
Signaling	Send Message	Enter Text Message to Send	See Page 31
	Call	Call other members of your group	See Page 41
	Check	Check location of your group members and allow other to check your location	See Page 41
	Nearby People	Show nearby members of your group	See Page 41
	Signaling Settings	Identification Information (ID)	Text Input
		Send ID	ON: box checked
			OFF: Box not checked
		Position Send:	ON: Checked
			OFF: Not checked
		Allow Check:	ON: Checked

			OFF: Not Checked
Radio Settings	Dual Watch	RX 2 channels at same time	On: Checked
			Off: Not Checked
	Scan	Allow Scan	ON: Checked
			Off: Not checked
	Talk Around	Set TX and RX frequencies to same	ON: Checked
			Off: Not checked
	Power	Set TX Power level	High / Low
	Channel Group	Select Channel Group	01 to 06
	Squelch Level	Set Required Signal Level to Be Heard	0 (Open Squelch)
			9 (Strong Signal Needed)
	TX Time Limit	Set Maximum TX Time	10 Seconds to 300 Seconds, Unlimited (No Timer)
	PTT Follow	Used with Sub Band on	See Page 45 for explanation
	Tail Elimination	Remove noise burst at end of signal reception.	ON: Checked
			Off: Not checked

Sound Settings	Speaker	Auto	Automatic detection of ear piece
		On	Speaker On
		Off	Speaker Off (Muted)
	Mic Gain	Low	Sets Level of Microphone Sensitivity
		Med	
		High	
	BT Mic Gain	Low	Sets Level of Bluetooth Microphone Sensitivity
		Med	
		High	
	Keep Connected	Keep Bluetooth Device Connected	ON: Checked
			OFF: Unchecked
	Tone	Beep when a key is pressed	ON: Checked
			OFF: Unchecked
Display Settings	Brightness	Sets the display brightness	1 (Dim)-15 (Brightest)
	Screen Timeout	Timer to leave screen active	3 Seconds to 5 Minutes, or Never shut off display