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

**PLEASE READ THIS MANUAL CAREFULLY BEFORE USE**

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# Chapter 1. - Initial Setup

## Safety Information

*The following safety precautions should always be observed during operation, service and repair of this equipment*

- Qualified technicians shall service this equipment only.
- Do not modify the radio for any reason.
- Use only BTECH supplied or approved batteries and chargers.
- Do not use any portable radio that has a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn can result.
- Turn off your radio prior to entering any area with explosive and/or flammable materials
- Do not charge your battery in a location with explosive and/or flammable materials.
- To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio in any area where posted notices instruct you to do so.
- Turn off your radio before boarding any aircraft; any use of a radio must be in accordance with airline regulations or crew instructions.
- Turn off your radio before entering a blasting area.
- For vehicles with an air bag, do not place a radio in the area over an air bag or in the air bag deployment area.

- Do not expose the radio to direct sunlight over a long period of time, nor place it close to a heating source.
- When transmitting with a portable radio, hold the radio in a vertical position with the microphone 3 to 4 centimeters (1.25 to 1.5 inches) away from your lips. Keep the antenna at least 2.5 centimeters (1 inch) away from your body when transmitting.



*If you wear the radio on your body, ensure that the radio and its antenna are at least 2.5 centimeters (1 inch) away from your body when 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-PRO 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 transmitting antenna.
- Increase the separation between the equipment and transmitter.
- Connect the equipment into an electrical outlet on a circuit different from that to which the transmitter is connected.
- Consult the dealer or an experienced radio technician for help.

### **FCC SAR (Specific Absorption Rate)**

SAR tests are conducted using standard operating positions accepted by the FCC with the device transmitting at its highest certified power level in all tested frequency bands, although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. Before a new device is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the exposure limit established by the FCC. Tests for each device are performed in positions and locations as required by the FCC.

### **Body SAR (Specific Absorption Rate)**

For body worn operation, this device has been tested and meets the FCC RF exposure guidelines when used with an accessory designated for this product or when used with an accessory that contains no metal and that positions the handset a minimum of 10 mm (approx. 3/8 ") from the body. Non-compliance with the above restrictions may result in a violation of RF exposure guidelines.

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

## 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
- High-Capacity Lithium-Ion battery(3000mAh)
- Broadcast FM receiver 87-108 Mhz.
- 30x6 channel groups
- NOAA Alert
- Dual watch / Dual reception
- IP67 rating for dust and water resistance
- USB direct charging, convenient and fast

## What's In the Box

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

- GMRS-PRO Radio Body
- 3000 mAh Lithium-Ion battery pack
- TYPE-C USB Charging Cable
- Optional belt clip
- Optional screwdriver

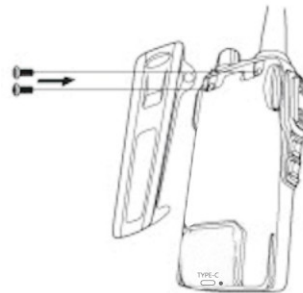


## Assembly

Before the radio is ready for use, we need to attach the antenna and battery pack, as well as charge the battery.

### Attaching the belt clip

There are two screws in the belt clip package. Use the included screwdriver to fix the belt clip on the radio body.



*Do not use any form of glue to fix the screws on the battery clip. The solvents in the glue may cause damage to the battery casing.*

## Battery

Before attaching or removing the battery make sure your radio is turned off by turning the power/volume knob all the way counter-clockwise.

## Installation

Make sure the battery is aligned in parallel with the radio body with the lower edge of the battery about 1-2cm below the edge of the radio. Once aligned with the guide-rails, slide the battery upward until you hear a click as the battery locks in place.



## Removal

To remove the battery: press the battery release on the bottom of the battery pack as you slide the battery downward.



## Charging and Battery Maintenance

### Charging



*The battery should be fully charged before initial use. Optimum battery efficiency will be achieved after three full battery charge and discharge cycles. The radio should be off during charging.*

Follow these steps to hook up and use the charger:

1. Insert the USB cable into your power adapter (do not use the USB ports on your PC- it may not have the needed power capabilities), and insert the other end into the battery USB TYPE-C socket
2. Plug the AC connector of the power adapter into the main AC wall outlet.
3. Make sure that the battery and charging cable are in good contact. When the red LED lights up, your radio is charging.
4. Once the battery's green status LED lights up, the radio is fully charged. Please remove the radio at that time to avoid overcharging the battery.
5. Please be careful not to use fast-charging power adapters and charging cables to charge the battery.

### Battery Maintenance

The battery for your radio comes uncharged from the factory; please let it charge for at least



four to five hours before you start using your radio.



- *Use only batteries approved by the original manufacturer.*
- *Never attempt to disassemble your battery pack.*
- *Do not expose your batteries to fire or intense heat*
- *Dispose of batteries in accordance with local recycling regulations. Batteries do not belong in your trashcan!*

### **Prolonging The Life of Your Battery**

- Only charge batteries at normal room temperatures.
- When charging a battery attached to the radio, turn the radio off for a faster charge.
- Do not unplug the power to the charger or remove the battery and/or radio before it's finished charging.
- Never charge a wet battery.
- Batteries wear out over time. If you notice a considerably shorter operating time with your radio, please consider purchasing a new battery.
- Battery performance will be reduced in temperatures below freezing. When working in cold environments, keep a spare battery on you. Preferably inside your jacket or in a similar location in order to keep the battery warm.

- Dust can interfere with the contacts on the battery. If necessary, wipe the contacts with a clean cloth to ensure proper contact with radio and charger.

### **Battery Storage**

Partially charge your battery before long-term storage in order to prevent damage from over discharge.

While lead acid must always be kept at full charge during storage this radio uses a lithium-based battery and should be stored at around a 40 percent charge. This level minimizes age-related capacity loss while keeping the battery in operating condition and allowing self-discharge.

To avoid severe capacity degradation of your battery while in long-term storage, please cycle the battery at least every six (6) months.

Store your batteries in a cool and dry place, never above normal room temperatures.

## 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

## APP Introduction

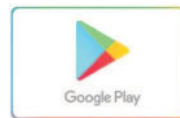
### Connecting GMRS-PRO with a Cellphone/Tablet

#### For Android Users

Go to Google Play and, Search for “BTECH GMRS Programmer”

#### For iOS Users

Go to the App Store and Search “BTECH GMRS Programmer”



## Using The App

*While the App is connected to the radio, it will have full control.*

*To use the controls on the radio, disconnect the app.*

### Pairing Your Cellphone/Tablet to the Radio

1) Open the app, Turn-on the radio, then press the **orange** key 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.

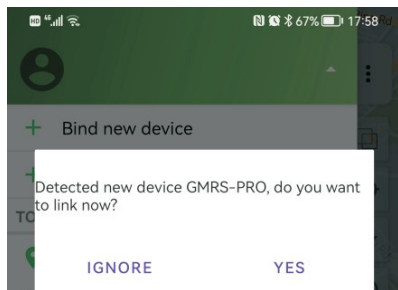


Figure 1

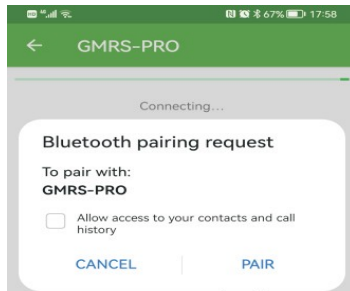


Figure 2

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. You do not need to allow access to the contacts and call history

## 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.*

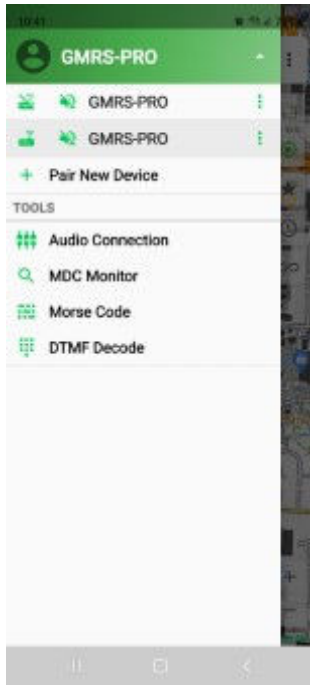



Figure 3

**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.

### **Accessing the Android Settings Menu**

Click the 3 dots  next to the desired device to enter the menu screen

***Continue on page 23 for Accessing the iOS Settings Menu - Control Interface***

## Accessing the iOS Settings Menu

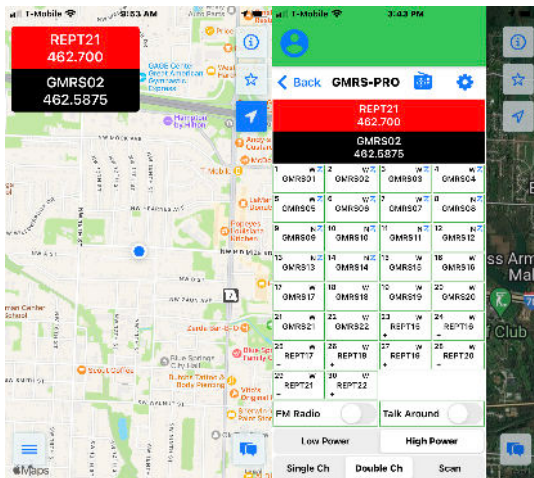


Figure 4

iOS Main Screen  
Click the 3 bars on  
lower left

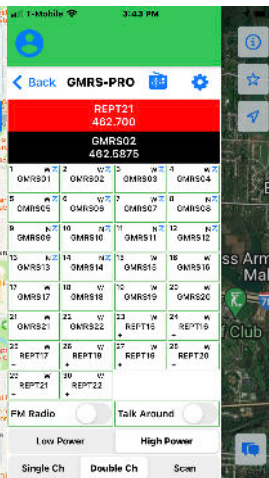


Figure 5

Click the gear icon

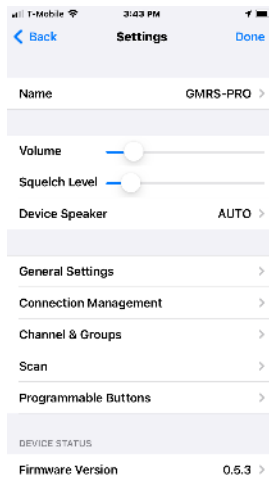


Figure 6

Settings Menu



Figure 7

## Control Interface

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

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

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

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


**[Scan]:** Radio will begin scanning channels programmed in the scan list. Click Single CH or Dual Ch to turn off 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).



## Editing a Channel

Long press the desired channel square, and you will be taken to the **[Edit Channel]** screen. Enter your changes, and when you complete the editing 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 the walkie-talkies.*

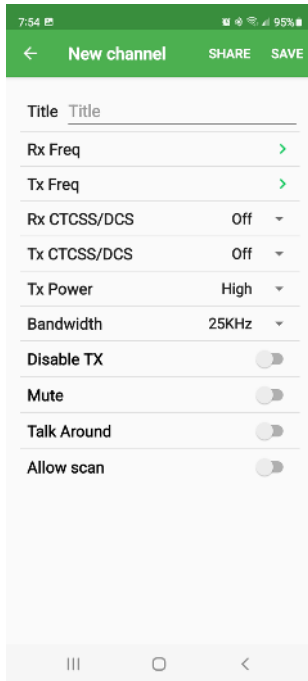


Figure 8

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

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

**[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 this 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

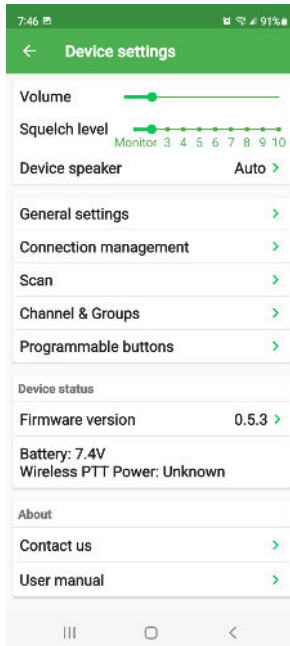


Figure 9

## Settings Menu

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

**[Squelch Level]:** Squelch level adjustment, 0 is the weakest required signal level to monitor (loose or open squelch), the larger the number (tight squelch), the stronger the received signal strength needs 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 automatically muted, and the built-in speaker will automatically exit the mute state when the wireless device is disconnected.

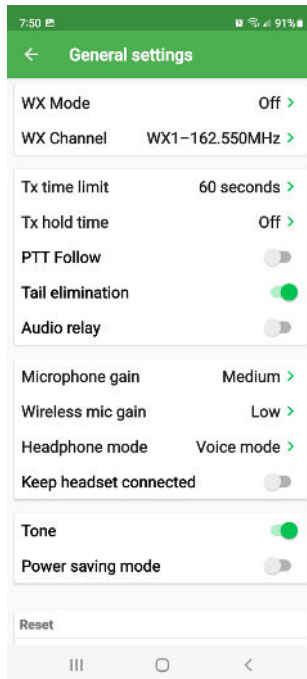


Figure 10

## General Settings

**[WX Mode]:** Use this to select *Off*, *Monitor* (to Listen), or *Alert* (NOAA Warnings only) *After using Monitor, you may need to adjust the squelch tighter to quiet the receiver- found under Device Settings- see figure 9 previous page*

**[WX Channel]:** Choose the local NOAA channel

**[TX Time Limit]:** Set the time limit for device transmit.

**[TX Hold Time]:** When using a repeater, set the lag time for the end of transmission.

**[PTT Follow]:** Once a sub channel becomes active, allows transmission on the sub channel (within 10 seconds after the channel becomes active) without needing to switch to the sub channel.

**[Tail Elimination]:** Automatically eliminate the noise after the end of transmission.

**[Audio Relay]:** Record 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, they will fall into an endless loop of transmitting and receiving. Please do not turn on this function on a repeater (REPT) channel.*

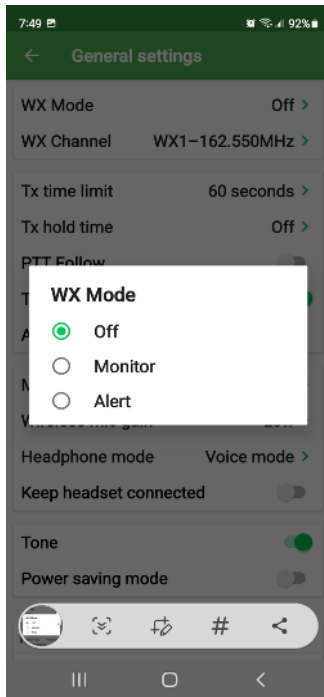


Figure 11

## WX Mode

**[Off]:** Use this to turn off all NOAA broadcasts

**[Monitor]:** Choose this to activate the NOAA receiver

**[Alert]:** Choose this to activate the NOAA Alert Mode—the only time NOAA Broadcast will be heard is when there is a weather alert or civil emergency. The receiver is activated when NOAA sends out an 8 second 1050Hz tone (you may not hear all 8 seconds), followed by the alert message. After a time period, the receiver will shut off, and NOAA broadcasts will not be heard.

For a full description of the NOAA alert mode, refer to page 54.

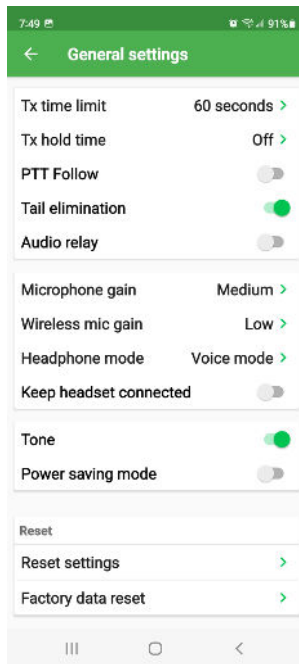


Figure 12

**[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

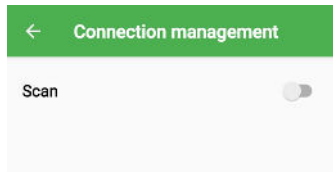
**[Tone]:** Turn on/off the beep tone on the device.

**[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 the right , to scan for active Bluetooth devices and begin pairing operations. Slide to the left to turn off.

Figure 13

## Scan

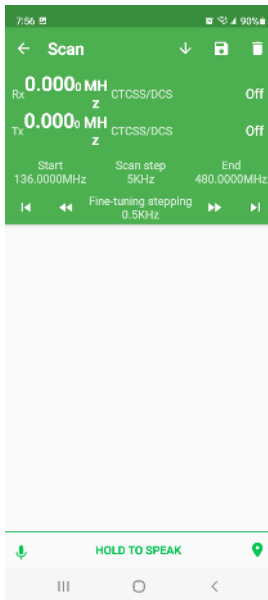


Figure 14

Used to check for active frequencies.

Click the **Start** frequency to set the lower frequency limit, and **End** to set the higher frequency limit. This will set the scan range of frequencies

Click the >| to start the scan. Hit the ← next to SCAN to go back and stop scanning. To clear the channel found

while scanning, press the “Delete”



Hit the ↓ to remember the desired active channel.



## Channels & Groups

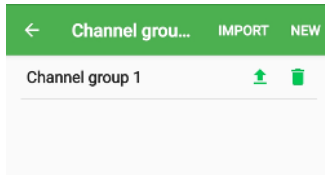


Figure 15

Click [**NEW**] to create a new group. Click on the new group name to enter channel information. After entering all channel information, click the up arrow to synchronize to number 2 to 6 channel groups of the walkie-talkie. Group 1 is the GMRS channels by default and cannot be changed. Import allows importing shared channels.

Clicking the ↑ 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 a group partner. When the partner copies this string of characters and opens the APP, all the channel information will be copied to his device.*

## Programming P1, P2, P3 buttons

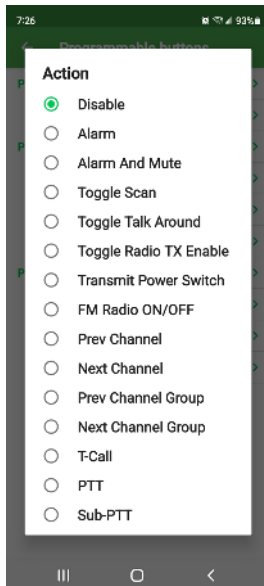


Figure 16

The programming button can define the short cut operation of P1-P3 button, among them, T-CALL is 1750HZ, Radio Switch is turn ON/OFF FM radio. Description of button function in Menu Listing in Appendix B.

← Programmable buttons		
P1	Short Single	Disable >
	Long Press	Disable >
P2	Hold	Disable >
	Short Single	Disable >
	Double Click	Disable >
P3	Long Press	Disable >
	Hold	Disable >
	Short Single	Disable >
	Double Click	Disable >
	Long Press	Disable >

Figure 17



Figure 18

**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 an update, or factory reset. It will remove all user settings and restore radio to initial settings from the factory.*

*Note: 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

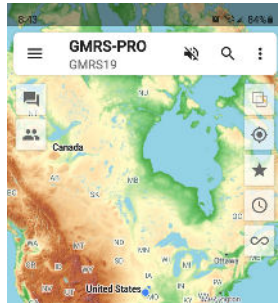


Figure 19


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


Click the Icon shown on the left opens the MESSAGE page



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

Click ☰ to return to the main interface

Click  to enter the message option screen

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

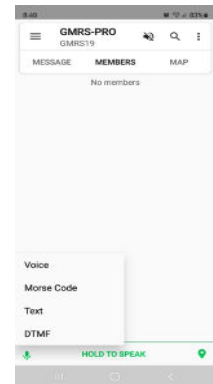


Figure 20

## Radio Operation



Figure 21

### ① Power and volume switch

Turn the top knob clockwise to switch on. Turn the knob to increase or decrease volume level. When using a wireless BT hand microphone or earphone, please note the Speaker setting in the HT App needs to be Off or Auto, both settings will make the volume knob to not function.

② **GPS built-in antenna** (Do not press in this area, the position of the face needs to be up and open to the sky to receive GPS signal)

Note: Local GPS time zone is synchronized from the phone.

③ **P1 key (orange key)** (Custom functions can be set in the APP- list of options is located in Appendix B), also used to place radio in pairing mode (hold for 2 sec until beep is heard and red/green flashing indicator on top of radio is seen).

#### ④ PTT key

Press and hold the PTT transmitter button, and then speak in normal voice. Release the PTT button to receive the signal.

#### ⑤ P2 key (Custom functions can be set in the APP- a list of options is located in Appendix B)

#### ⑥ P3 key. (Custom functions can be set via the APP- a list of options is located in Appendix B)

#### ⑦ Keypad Function Keys

Refer to the detailed explanation below for detailed key functions.

#### ⑧ Headphone jack

Dedicated headphones can be connected. **Please note this is not an M plug, it is a special customized earphone. Contact BTech to purchase it.**

## Keypad Functions



Figure 22

① **Up key** Page up.

② **OK/Enter key**

In the menu mode, press this key to enter the menu setting and to set and accept changes made.

③ **Menu key**

Turn on the menu function.

④ **Down key** Page down.

⑤ **Back/Change screen key**

In the menu mode, it is the return key. 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

⑥ **Exit/Lock key**

Press to exit the current setting and return to main screen, or lock the keys (all but PTT). Long press the *RED* key to lock the keys, long press it again to unlock them.

## Icon Descriptions

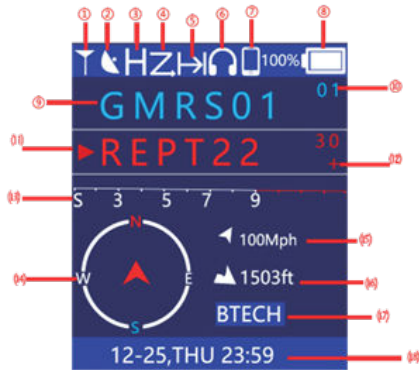


Figure 23

### 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.



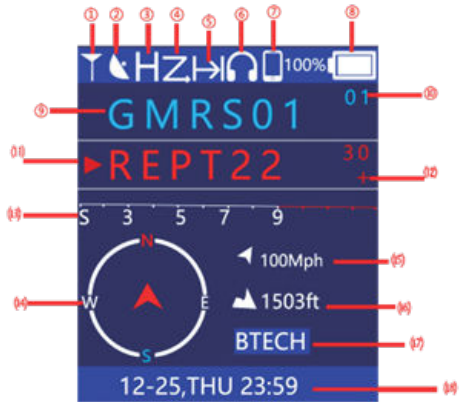


Figure 24

### 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 Field strength level.

When receiving, display the receiving field strength indicator.

### ⑭ Electronic compass.

Display the electronic compass.

⑮ **Speed** The current movement speed of the device



Figure 25

### ⑩ Altitude

The altitude of the current location of the device

### ⑪ ID Name

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

### ⑫ 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** (⑬ *GPS on indicator*) The up arrows (▲) indicate the radio is transmitting, and the down arrows (▼) indicate 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 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.

*Tip: 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 moved 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



Refers to the next digit of the cursor.



Press to move down the list.

③ **Cursor.**

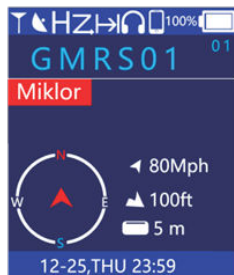
Under the current cursor, you can use the up or down keys to select the specific value you need.

Figure 27

## Split Screen Display



①



②



③

① **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 the [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.*

## Radio Menu Settings

### 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**

**ID:** Your Name ID

**Send ID:** Allow sending your ID to your partners.

**Position:** Allow sending your current location to partners

**Allow Check:** Allow your partner to send instructions to check your current location, and your location will be feedback to the partner's device.

**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 on the current frequency, and all radios on the same frequency will feedback their current position after receiving the command. This option requires the receiver(s) **ALLOW CHECK** to be active

## Signaling Settings

**ID:** Set ID to be sent.

**Location:** Allow Location (obtained from GPS) to be sent.

**Position:** Allow Position to be sent.

**Allow Position Check:** Allow other members to find your position.

## Radio Settings

**Dual-Watch:** If active, it will be watching for activity on 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 a scanning state, and all channels that are allowed to be scanned will be scanned.

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

**Power:** Selects either High or Low TX power.

**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:** Sets the maximum time of each transmission.

**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.

**Tail Elimination:** When on, no end tone will be heard between radios of the same brand.

**Audio Relay:** Record the received voice and then transmit it, the recording time is limited to 30 seconds. *When you turn on this feature, you will hear repeated voices, please be cautious.*



## Adding A New Frequency

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

### ① Add a regular frequency

Create a new frequency list in a new group, then press the **[Enter]** button to add to the channel list. Press the **[UP]** or **[DOWN]** keys to select the channel number. Press the **[Edit]** button to edit the frequency. Then press **[Edit channel]**, and edit the frequency and memory settings to set your frequency.

### ② Add a GMRS frequency

Create a new frequency list in a new Group, then 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]**.

## 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 and the headphone is active.

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

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

**Keep Connected:** Turning on this option means that the connection to the Bluetooth SCO will not be disconnected, and the startup speed can be increased, but prevents the Bluetooth headset to not be able to play music when in this mode.

**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.

## Connecting External Bluetooth Devices

### 1. Connect to Bluetooth PTT

Turn on the radio, then press the **orange key** twice **OR** select **[Pairing]** in the menu to enter the pairing state. A 'BEEP' will be heard and a red-green light flashing means the radio is now in pairing status. Long press the Bluetooth PTT, the Bluetooth PTT is now in pairing status, after 10 seconds, the connection will be successful. Press PTT, and the transmitter light of the radio will be red when transmitting.

### 2. Connect to Bluetooth Speaker Mic

Turn on the radio, then press the **orange key** twice **OR** select **[Pairing]** in the menu to enter the pairing state. A 'BEEP' will be heard and red-green light flashing means the radio is now in pairing status. Turn on the Bluetooth speaker mic, double click the **"PAIR"** key to enter pairing status. The headset icon will be displayed in the toolbar when pairing is successful

### 3. Connect a Bluetooth headset (universal version)

Open the app, switch to the connection management page, then click SCAN. The Bluetooth headset enters the pairing mode, then click the headset model to pair with device.

*Tip: When you connect a Bluetooth headset you will need to connect a Bluetooth PTT to transmit, each brand of Bluetooth headset enters the pairing mode differently, please read the headset manual carefully before pairing with this device.*



*No matter which Bluetooth device is connected, the need to enter the pairing state. To view the status of the paired device, please check the connection management of the APP*

## NOAA Weather Channels

**[WX Scan]:** Turns on weather scan, the device will always be in the scan state until it finds a signal

WX Channels			
1	162.550MHz	5	162.450MHz
1	162.400MHz	6	162.500MHz
3	162.475MHz	7	162.525MHz
4	162.425MHz		

**[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. Refer to next page for description of NOAA WX Alerts.

## Reset Procedure

In standby mode, press and hold the top button (P1) and the button (P2) below the PTT at the same time to restore the factory settings. **Remember to backup all data and settings before performing a reset. This will remove all settings entered by the user.**

## Weather Monitor Alert Description

NOAA weather stations in North America have the ability to send out weather alerts.

What this means is when there is any incident of severe weather (listed below) or a possible weather event, they will send a 1050 Hz tone which will open receivers tuned to the frequency or channel, and start to play audio for those in alert mode. For receivers which are not in alert mode, and already playing the NOAA broadcast, you will hear 8 seconds of the 1050 Hz tone, followed by the message. The alert message will play twice before the station returns to “normal” broadcast, and that will now include any alert information.

Tornado Watch

Tornado Warning

Severe Thunderstorm Watch

Severe Thunderstorm Warning

Flood Watch

Flash Flood Warning

Special Marine Warning

Winter Storm Warning

Blizzard Warning

Ice Storm Warning

High Wind Warning

Various Non-Weather Hazards

Weekly and Monthly Test

## Appendix A

### Radio Menu

<b>FM Radio</b>	Select the Frequency of the FM Radio	88-108 MHz		
<b>Signaling</b>	Send Message	Enter Text Message to Send	See Page 47	
	Call	Call other members of your group	See Page 47	
	Check	Check location of your group members and allow other to check your location	See Page 47	
	Nearby People	Show nearby members of your group	See Page 47	
	Signaling Settings	Identification Information (ID)		Text Input
		Send ID		ON: Checked OFF: Not checked
		Position Send:		ON: Checked OFF: Not checked
		Allow Check:		ON: Checked

			OFF: Not Checked
<b>Radio Settings</b>	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 Receive	0 (Open Squelch) 9 (Strong Signal Needed)
	TX Time Limit	Set Maximum TX Time	10 Seconds to 300 Seconds, Unlimited (No Timer- use with caution)
	PTT Follow	Used with Sub Band on	See Page 28 or 48 for explanation
	Tail Elimination	Remove noise burst at end of signal reception.	ON: Checked Off: Not checked



<b>Sound Settings</b>	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 key is pressed	ON: Checked	
		OFF: Unchecked	
<b>Display Settings</b>	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

	Time Zone	Set the time zone of the radio clock	Used to correct Time Zone selection
	Pairing	Enable Bluetooth Pairing	ON: Checked OFF: Unchecked (Turns off once pairing is completed)
	NOAA	WX Scan	Scan of nearby NOAA Stations
		WX Channel	Manually select NOAA Channel
		WX Alert	Turn on Weather Alerts (Check to activate)
		WX Monitor	Listen to Local NOAA Station (Check to turn on)
	GPS Status	Shows GPS Information	
	Compass	Calibrate Compass	
	Status	Shows Various Radio Info	

## Appendix B

### CPS Menu

<b>Team</b>	Create a Team	Select members to be on your team	
	Join A Team	Join an existing team	
<b>Nearby People</b>	Show People nearby you	Show a map with locations of nearby people	
<b>Device Settings</b>			
	Volume	Set volume level of radio	
	Squelch Level	MON to 10	Open Squelch (MON) to Tight Squelch (10)
<b>Device Speaker</b>	Auto	Auto select either earpiece or speaker	
	On	Speaker On	
	Off	Speaker Off	
<b>General Settings</b>	WX Mode	Off	Disable NOAA reception
		Monitor	Monitor NOAA Broadcast

		Alert	WX Alert warnings turn on audio (See page 55)
	WX Channel	WX1 to WX7	Select local NOAA broadcast (See page 53)
	TX Time Limit	Set Tx Time out timer	10 to 300 sec or Unlimited (no timer)
	TX Hold Time	TX off delay	Off, 0.1sec to 1 sec in 0.1 sec steps
	PTT Follow	Used with Sub Band on	See Page 45 for explanation
	Tail Elimination	Remove noise burst at end of signal reception	Slider on (to right)
			Slider off (to left)
	Audio Relay	Record the received voice and then re-transmit it, the recording time is limited to 30 seconds.	<i>When you turn on this feature, you will hear repeated voices, please be cautious.</i>
	Microphone Gain	Low	Set the sensitivity of the microphone
Medium			

		High	
	Wireless Mic Gain	Low	Sets the sensitivity of the wireless mic
		Medium	
		High	
	Headphone Mode	Voice Mode	Switches between Radio and Phone Mode
		Call Mode	
	Keep Headset Connected	Automatically detect when head set is plugged in	
	Tone	Turn on /off radio beep	
	Power Saving Mode	On/ Off	
	Reset Settings	Clear all user settings	
	Factory Data Reset	Return Device to factory default settings	CAUTION: This will clear ALL user settings
<b>Connection Management</b>	SCAN	Start	Start Frequency of scan range
		End	Stop Frequency of Scan Range
		>	Start Scanning

		Click ← next to SCAN	Go back a screen and stop scanner.
<b>SCAN</b>	Used to Scan frequencies for activity		
<b>Channel &amp; Groups</b>	List of Channels and Channel Groups		
<b>Programmable Buttons</b>	Variable Programming for P1, P2, P3	Set user desired functions to P1, P2, P3 on Radio. Description of options at end of this Appendix.	Refer to page 32 for button layout.
<b>Firmware Version</b>	Shows FW revision number		
<b>Battery</b>	Shows Battery Voltage		
<b>Wireless PTT Power</b>	Shows Wireless PTT module battery level		
<b>Contact Us</b>	Contact Information for BTech (opens web browser)		In APP
<b>User Manual</b>	Opens browser to online user manual		In APP
<b>Settings</b>	ID Signaling		ID Information On/Off

	ID Signaling	Location On/Off	Set with "Nickname"
		Allow Position Check	On/Off
		Time to Live	0-8
		Maximum Forwarding Times	0-8
	Channel Manager	Add/Delete Channels	
	Channel Group Manager	Import or Create New Channel Groups	
	Offline Maps	Satellite (Google)	Download Maps
		Terrain (Google)	
		Terrain (OpenTropoMap)	
	Simple Mode	Place User Interface in Simple Mode	Limit number of available functions
	Keep Screen On	On/Off	Keep Phone screen on
	Save Voice History	On/Off	
	Microphone Gain	Low	Set Microphone Sensitivity
		Medium	

		High	
	PTT Button		
		Select Button for PTT Function	
	PTT Lock	Lock PTT on	<b><i>Use with Caution</i></b>
Speed	Set Speed of Morse Code	1-200 words per minute	
<b>Morse Code</b>	Pitch	Set sidetone pitch	320 to 3000 Hertz
	Speed	Set Characters per minute	10-500 cpm
<b>DTMF</b>	CPS Version		
<b>About (CPS)</b>	Privacy Policy		
	Open-Source License		
<b>P1, P2, P3 Functions</b>		Disable	Turn off all functions for this button
		Alarm	Turn on Emergency Alarm (does not function on REPT channels).
		Alarm and Mute	When Alarm is



			activated, the radio speaker is muted (does not function on REPT channels).
		Toggle Scan	Turn Scan On/Off
		Toggle Talk Around	Turns On/Off Talk Around
		Toggle TX Enable	Turn Channel TX Enable On/Off
		Transmit Power Switch	Switches TX power to High or Low
		FM Radio On/Off	Turns FM Radio Reception On/ Off
		Prev Channel	Move one channel lower (Previous)
		Next Channel	Move to Next higher channel
		T-Call	Activate 1750 Hz Tone Burst
		PTT	Set this button as PTT on Main Band
		Sub PTT	Set this button as PTT

		on Sub-Band

## DCS Table

Table C.1. DCS Codes

Number	Code	Number	Code	Number	Code	Number	Code
001	D023N	002	D025N	003	D026N	004	D031N
005	D032N	006	D036N	007	D043N	008	D047N
009	D051N	010	D053N	011	D054N	012	D065N
013	D071N	014	D072N	015	D073N	016	D074N
017	D114N	018	D115N	019	D116N	020	D122N
021	D125N	022	D131N	023	D132N	024	D134N
025	D143N	026	D145N	027	D152N	028	D155N
029	D156N	030	D162N	031	D165N	032	D172N
033	D174N	034	D205N	035	D212N	036	D223N
037	D225N	038	D226N	039	D243N	040	D244N
041	D245N	042	D246N	043	D251N	044	D252N
045	D255N	046	D261N	047	D263N	048	D265N
049	D266N	050	D271N	051	D274N	052	D306N
053	D311N	054	D315N	055	D325N	056	D331N
057	D332N	058	D343N	059	D346N	060	D351N
061	D356N	062	D364N	063	D365N	064	D371N

<b>065</b>	D411N	<b>066</b>	D412N	<b>067</b>	D413N	<b>068</b>	D423N
<b>069</b>	D431N	<b>070</b>	D432N	<b>071</b>	D445N	<b>072</b>	D446N
<b>073</b>	D452N	<b>074</b>	D454N	<b>075</b>	D455N	<b>076</b>	D462N
<b>077</b>	D464N	<b>078</b>	D465N	<b>079</b>	D466N	<b>080</b>	D503N
<b>081</b>	D506N	<b>082</b>	D516N	<b>083</b>	D523N	<b>084</b>	D526N
<b>085</b>	D532N	<b>086</b>	D546N	<b>087</b>	D565N	<b>088</b>	D606N
<b>089</b>	D612N	<b>090</b>	D624N	<b>091</b>	D627N	<b>092</b>	D631N
<b>091</b>	D627N	<b>092</b>	D631N	<b>093</b>	D632N	<b>094</b>	D645N
<b>094</b>	D645N	<b>095</b>	D654N	<b>096</b>	D662N	<b>094</b>	D645N
<b>097</b>	D664N	<b>098</b>	D703N	<b>099</b>	D718N	<b>100</b>	D723N
<b>101</b>	D731N	<b>102</b>	D732N	<b>103</b>	D734N	<b>104</b>	D743N
<b>105</b>	D754N	<b>106</b>	D023I	<b>107</b>	D025I	<b>108</b>	D026I
<b>109</b>	D031I	<b>110</b>	D032I	<b>111</b>	D036I	<b>112</b>	D043I
<b>113</b>	D047I	<b>114</b>	D051I	<b>115</b>	D053I	<b>116</b>	D054I
<b>117</b>	D065I	<b>118</b>	D071I	<b>119</b>	D072I	<b>120</b>	D073I
<b>121</b>	D074I	<b>122</b>	D114I	<b>123</b>	D115I	<b>124</b>	D116I
<b>125</b>	D122I	<b>126</b>	D125I	<b>127</b>	D131I	<b>128</b>	D132I
<b>129</b>	D134I	<b>130</b>	D143I	<b>131</b>	D145I	<b>132</b>	D152I
<b>133</b>	D155I	<b>134</b>	D156I	<b>135</b>	D162I	<b>136</b>	D165I
<b>137</b>	D172I	<b>138</b>	D174I	<b>139</b>	D205I	<b>140</b>	D212I
<b>141</b>	D223I	<b>142</b>	D225I	<b>143</b>	D226I	<b>144</b>	D243I

<b>145</b>	D244I	<b>146</b>	D245I	<b>147</b>	D246I	<b>148</b>	D251I
<b>149</b>	D252I	<b>150</b>	D255I	<b>151</b>	D261I	<b>152</b>	D263I
<b>153</b>	D265I	<b>154</b>	D266I	<b>155</b>	D271I	<b>156</b>	D274I
<b>157</b>	D306I	<b>158</b>	D311I	<b>159</b>	D315I	<b>160</b>	D325I
<b>161</b>	D331I	<b>162</b>	D332I	<b>163</b>	D343I	<b>164</b>	D346I
<b>165</b>	D351I	<b>166</b>	D356I	<b>167</b>	D364I	<b>168</b>	D365I
<b>169</b>	D371I	<b>170</b>	D411I	<b>171</b>	D412I	<b>172</b>	D413I
<b>173</b>	D423I	<b>174</b>	D431I	<b>175</b>	D432I	<b>176</b>	D445I
<b>177</b>	D446I	<b>178</b>	D452I	<b>179</b>	D454I	<b>180</b>	D455I
<b>181</b>	D462I	<b>182</b>	D464I	<b>183</b>	D465I	<b>184</b>	D466I
<b>185</b>	D503I	<b>186</b>	D506I	<b>187</b>	D516I	<b>188</b>	D523I
<b>189</b>	D526I	<b>190</b>	D532I	<b>191</b>	D546I	<b>192</b>	D565I
<b>193</b>	D606I	<b>194</b>	D612I	<b>195</b>	D624I	<b>196</b>	D627I
<b>197</b>	D631I	<b>198</b>	D632I	<b>199</b>	D645I	<b>200</b>	D654I
<b>201</b>	D662I	<b>202</b>	D664I	<b>203</b>	D703I	<b>204</b>	D712I
<b>205</b>	D723I	<b>206</b>	D731I	<b>207</b>	D732I	<b>208</b>	D734I
<b>209</b>	D743I	<b>210</b>	D754I				

# CTCSS Table

Table C.2. CTCSS Frequencies

Number	Frequency	Number	Frequency	Number	Frequency	Number	Frequency
01	67.0	02	69.3	03	71.9	04	74.4
05	77.0	06	79.7	07	82.5	08	85.4
09	88.5	10	91.5	11	94.8	12	97.4
13	100.0	14	103.5	15	107.2	16	110.9
17	114.8	18	118.8	19	123.0	20	127.3
21	131.8	22	136.5	23	141.3	24	146.2
25	151.4	26	156.7	27	159.8	28	162.2
29	165.5	30	167.9	31	171.3	32	173.8
33	177.8	34	179.9	35	183.5	36	186.2
37	189.9	38	192.8	39	196.6	40	199.5
41	203.5	42	206.5	43	210.7	44	218.1
45	225.7	46	229.1	47	233.6	48	241.8
49	250.3	50	254.1				

## SPECIFICATIONS

### General

Frequency Range: 87-108MHz (FM Radio ONLY)

136-174MHz (RX Only)

400-520MHz (RX Only)

GMRS Channel (RX/TX)Memory Channel: 30

Channels \* 6 Groups

Frequency Stability:  $\pm 2.5$ ppm

Antenna impedance:50 ohm

Operating temperature:  $-20\sim+60^{\circ}\text{C}$  Operating voltage: 7.4V

Battery capacity: 2600 mAh

Charging port: USB TYPE-C

Size : 58(W)x125(H)x35(D)mm

Weight : Radio Body 150g, battery 120g

## Transmit Specifications

RF Power: 5W

	Wide Band	Narrow Band
Modulation:	16K0F3E	11K0F3E
Adjacent channel power	≥70db	≥60db
FM noise	≥45db	≥43db
Spurious and harmonic	≥60db	≥60db
Audio response	±1~- 3db(0.3~3khz)	±1~- 3db(0.3~2.55khz)
Modulation distortion	≤3%	

## Receive Specifications

Sensitivity (12dB SINAD)	≤0.20μV	≤0.22μV
Adjacent channel selectivity	≥70db	≥65db
Intermodulation	≥65db	≥60db
False signal response	≥70db	≥70db
Audio response	±1~- 3db(0.3~3khz)	±1~- 3db(0.3~2.55khz)
Signal-to-noise ratio	≥45db	≥40db
Modulation distortion	≤3%	
Audio output power	≤2W	

Note: All specifications are subject to change without notice or responsibility.