

GMR2-PLUS

USER MANUAL

VERSION 1.0

FCC NOTICE

The GMR2-PLUS operates on GMRS (General Mobile Radio Service) frequencies, which require a Federal Communications Commission (FCC) license. You must be licensed prior to operating on channels 1-7, 15-22 or RP15-22 which comprise the GMRS channels of the GMR2. Serious penalties may result from unlicensed use of GMRS channels, in violation of FCC rules, as stipulated in the Communications Act's Sections 501 and 502 (amended). You will be issued a call sign by the FCC that should be used for station identification when operating your radio on GMRS channels. You should also cooperate by engaging in permissible transmissions only, avoiding channel interference with other GMRS users, and being prudent with the length of your transmission time

To obtain a license or ask questions about the license application, contact the FCC at 1-888-CALL-FCC or go to the FCC's website: http://www.fcc.gov and request Form 605.



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USER SAFETY INFORMATION

- Please read the following brief instructions, non-compliance with these rules may cause danger or violate the law.
- Obey the local government regulation before using this radio, improper use may violate the law and be punished.
- Turn off the radio before entering flammable or explosive areas.
- Do not charge or change the battery in flammable or explosive areas.
- Turn off the radio before getting close to the blasting zone or detonator areas.
- Do not use radio whose antenna is damaged, touching of damaged antenna will cause heat injury.
- Do not attempt to open the radio; the maintenance work should be done by technical expert only.
- To avoid troubles caused by electromagnetic interference or electromagnetic compatibility, please turn off the radio in places where the banner displays "Do not use wireless equipment", such as hospitals and other healthcare locations.
- In vehicles, do not put the radio within the area of airbag deployment.
- Do not store the radio under the direct sunshine or in hot areas.
- When you transmit with the radio, do keep away from its antenna for 5cm at least.
- If the radio appears defective or starts to smoke, please shut off its power immediately and contact your local dealer.
- Do not transmit too long, for the radio may heat and cause injury.

PACKAGE INCLUDES

Please check if any damage to the package when you receive it. Carefully unpack the transceiver. We recommend that you check the items listed in the following table. If any items are missing or damaged during shipment, please contact with your local dealer immediately.

- Radio Unit x 1
- Antenna
- Li-ion Battery (1400mAh)
- Charging Kit
- Belt Clip
- User Manual

CHARGING YOUR BATTERY PACK

CHARGING PREPARATION

Precaution: The supplied battery pack of this radio is a high –performance Li-ion with 7.4V standard voltage 1400mAh high capacity in a very compact package. Under normal use, the battery pack may be used for approximately 500 charge cycles and more, after which operating time maybe expected to decrease. If you have an old battery pack which is displaying capacity which has become diminished, you should replace the pack with a new one.

- Please do not short-circuit the battery terminals or expose to fire. Do not disassemble
 the battery.
- Charge the battery between 32°F and 113°F. The battery cannot normally be charged beyond this temperature range.
- Please turn off the transceiver when you charge it. Transmitting with the transceiver in charge will affect its normal charge.
- Do not unplug the Power Adapter or battery when it is charging.
- If the battery does not last its normal charge, it shows that the battery is depleted, please change the battery pack.
- Please do not charge when the battery or the radio is wet. Please dry it with a cloth and wait for it to be fully dry before charging to avoid any danger.

Warning: When the conductive metals such as jewelry, keys, or decorative chains touch the battery terminals, all the batteries are likely to cause damage to the items or personal injury. These conductive metals may form a short circuit and generate heat. Handle the battery carefully, especially when placed in a pocket or metallic container.

CHARGING YOUR BATTERY PACK

CHARGING OPERATION

After installing the battery pack, if the battery icon shows [], it means that the battery
pack is out of power. Please charge it.	

Charging indicator light conditions:

Indicator Display	Status
Red	Charging
Green	Completed

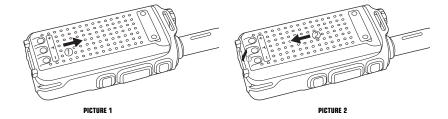
Battery Tips

- The battery is not fully charged at the factory, please charge it before using it.
- Charge and discharge the battery two or three times, the battery capacity will reach
 the best condition. When the battery capacity is low, please charge or change the
 battery.
- If the battery lasts a short time, even if it is fully charged, the battery is depleted,
 please contact your local dealer to buy a new battery.

ACCESSORIES CONNECTIONS

BATTERY PACK

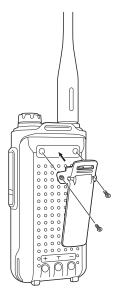
- 1. Align the two grooves of battery and the guide rail on the back of the aluminum shell, ensure full contact and in parallel, then push the battery up to the radio base along the rail on the back of the aluminum shell, until the battery latch locks up. (Picture 1)
- 2. To remove the battery, please make sure the radio is closed, push the battery latch down, and make sure the radio and battery is on the releasing state, and then push the battery out from the radio. (Picture 2)



ACCESSORIES CONNECTIONS

BELT CLIP

Align the two holes of belt clip and the two holes of the radios, fix them with the supplied M2.5x5 screws. Loosen the screw set to remove belt clip. (Picture 5)



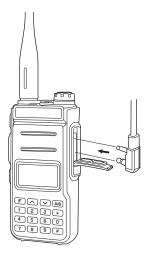
PICTURE 5

ACCESSORIES CONNECTIONS

EXTERNAL MICROPHONE/SPEAKER

Open the cover of the microphone/speaker jack and insert the microphone/speaker plugs into the jack. (Picture 6)

 Using the external headset or mic/speaker will affect the water-tightness performance of radio.

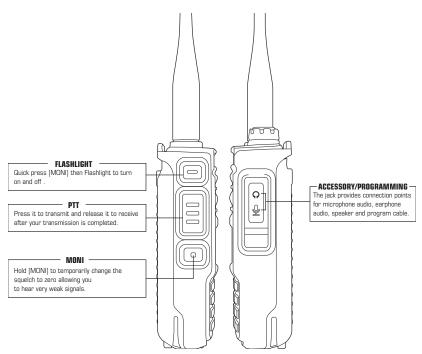


PICTURE 6

FRONT PANEL OPERATION

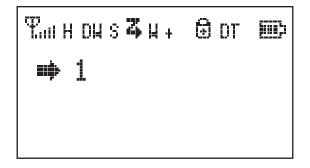


SIDE PANEL OPERATION



LCD DISPLAY

You will see various icons shown on the screen when power is on. The following table can help you identify icons' meaning which display on LCD.



LCD DISPLAY

Icons	Function
gz Taril	Operating band signal & power meter
H	High TX power active
DH	Dual watch/standby active
S	RX power save active
iigi tigi	Scanning active
H	Narrow/wide band mode active
+	Repeater shift direction
a	Keypad lock
	Battery power indicator

KEYPAD FUNCTIONS

Key	Function
E	Enter menu mode/confirm the setting
A/B	(1) Switch the A or B frequency to be the "Operating" Band (2) EXIT function
	Upper menu item, channel or frequency
	Lower menu item, channel or frequency.
â	Long press to lock keypad.
MODE	Short press to toggle between GMRS and LSO Short press in FM mode to toggle between SCROLL and MEMORY Long press to enter/exit FM mode.

CHANNEL SHORTCUTS

To shortcut to any channel in the preset channel list, enter the three digits of the channel's position in the preset channel list.

EX) CH. 15 is 43rd in the preset channel list. To shortcut to CH. 22 press: [] + [] + []

WORKING MODE

FREQUENCY MODE (LSO)

Under this mode, you can use $[\infty] / [\infty]$ key to change the frequency or input the frequency by keypad directly and store channels.

FM RADIO MODE

MENU MODE

MENU

No.	LCD Display	Available Values	Description of Function	Shortcut
1	SCAN	/	Channel Scan	[6]+[1]
2	SQUELCH	0-9	SQL Level Setting	[F]+[2]
3	MONITOR	1 Channel 2 Channel	Dual Monitor	[F]+[3]
4	BACKLIGHT	On/Auto/Off	Backlight Mode	[F]+[4]
5	DIMMER	1-7	Backlight Dimmer	[
6	BEEP	On/Off	Keypad Beep	[F] + [6]
7	ROGER BP	On/Off	Roger Beep	[F] + [7]
8	AUTOLOCK	On/Off	Auto Keypad Lock	[
9	VOICE	On/Off	Voice Prompt	[F]+[9]
10	BATTERY	DC	Battery Power Voltage	[F]+[1]+[0]
11	C-CDC	OFF/CTCSS/DCS	TX/RX Tone Coder	(F) + (1) + (1) or (F) + (1)
12	R-CDC	OFF/CTCSS/DCS	RX Tone Coder	[F]+[1]+[2]
13	T-CDC	OFF/CTCSS/DCS	TX Tone Coder	[6] + [4] + [8]
14	SCRAM- BLER	1-8/OFF	Voice Scrambler	[F]+[1]+[4]
15	FIRMWARE	-	Radio Version	[F] + [1] + [5]

MENU

MENU OPERATION

- 1. Under Standby Mode, press [🕞] to enter menu setting, LCD displays "MENU".
- Press [] or [] to select the desired menu item. LCD displays current setting of selected item.
- 3. Press $[\ \ \ \ \]$ to enter and then press $[\ \ \ \ \ \ \]$ or $[\ \ \ \ \ \ \]$ to select the desired setting.
- 4. Press [] to confirm.
- 5. Press [] once or twice to exit and then return the standby mode.

1. Scan (SCAN-MENU 1)

Functions: under LSO/CH mode, the transceiver allows you to scan the entire current operating band and memory channels.

Enter MENU 1 and press [] key to start scanning.

Scanning operation is basically the same in each of the above modes. Before you begin, take a moment to select the way in which you would like the scanner to halt on a signal.

2. Squelch Adjustment (SQUELCH-MENU 2)

Functions: Squelch system allows you to mute the background noise when no signal is being received. Not only is the Squelch system "standby" operation more pleasant, it also significantly reduce battery current consumption.

Enter MENU 2 to set SQL level. Default: 3

3. Dual Watch/Standby (MONITOR-MENU 3)

Functions: This transceiver allows you to receive the sub band signal even if you are working on the operating band. It could monitor the signal under both master and sub band at the same time.

Enter MENU 3 to set MONITOR. Default: ON

4. LED Display Mode (BACKLIGHT--MENU 4)

Functions: Select the LED/Keypad Lamp mode.

Enter MENU 4 to select LED display mode. Default: AUTO

5. Background Light Level (DIMMER-MENU 5)

Functions: Choose LED background light level.

Enter MENU 5 to select background light color. Default: 7

6. Keypad Beeper Setting (BEEP-MENU 6)

Functions: Enable/disable the keypad beeper.

Enter MENU 6 to set keypad beeper. Default: ON

7. Transmit Over Beeper (ROGER BP-MENU 7)

Functions: Send a beeper to inform the receiver TX is over.

Enter MENU 7 to set SQL level. Default: OFF

8. Auto Lock (AUTOLK-MENU 8)

Functions: In order to prevent accidental frequency change or inadvertent transmission, various aspects of the radio's keys and switches may be locked out.

9. Voice Prompt (VOICE-MENU 9)

Functions: Enable/disable voice prompt.

Enter MENU 9 to set VOICE. Default: ON

10. Battery Power Voltage (VLT-MENU 10)

Functions: Check battery voltage.

Enter MENU 10 to check battery voltage.

11. TX/RX Tone Coder, Tone Search Scanning, Tone Calling (C-CDC--MENU 11)

Function 1: CTCSS/DCS Operation. Many repeater systems require that a very-low-frequency audio tone be superimposed on your FM carrier in order to activate the repeater. This helps prevent false activation of the repeater by radar or spurious signals from other transmitters. Use the lock button to switch between CTCSS-DCS-OFF. Use the arrow buttons to scroll through tone codes. To toggle between numbered tone codes [EX: 22] and actual tone codes [EX:141.3], press [5] when in tone code menu.*

Enter MENU 11 to set C-CDC Tone Coder.

12. RX Tone Coder, Tone Search Scanning, Tone Calling (R-CDC-MENU 12)

Function 1: CTCSS/DCS Operation. Many repeater systems require that a very-low-frequency audio tone be superimposed on your FM carrier in order to activate the repeater. This helps prevent false activation of the repeater by radar or spurious signals from other

transmitters.

Enter MENU 12 to set R-CDC Tone Coder.

13. TX Tone Coder, Tone Search Scanning, Tone Calling (T-CDC-MENU 13)

Function 1: CTCSS/DCS Operation. Many repeater systems require that a very-low-frequency audio tone be superimposed on your FM carrier in order to activate the repeater. This helps prevent false activation of the repeater by radar or spurious signals from other transmitters.

Enter MENU 13 to set T-CDC Tone Coder.

14. Scrambler (SCRAMBLER-MENU 14)

Functions: Only 2/5 tone version has this function. This transceiver has 8 groups of scrambler. It is accomplished by the addition of components to the original signal in order to make an extraction of the original signal difficult. And its voice command technology will make the voice more clearly in the noise environment.

Enter MENU 14 to set scrambler group.

*Only radios with firmware GM1.51 and later are equipped with this feature.

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

STANDARD GMRS CHANNELS

Channel	Frequency (MHz)
1	462.5625
2	462.5875
3	462.6125
4	462.6375
5	462.6625
6	462.6875
7	462.7125
8	467.5625
9	467.5875
10	467.6125
11	467.6375
12	467.6625
13	467.6875
14	467.7125
15	462.5500
16	462.5750
17	462.6000
18	462.6250
19	462.6500
20	462.6750
21	462.7000
22	462.7250

GMRS REPEATER CHANNELS

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



GMRS TONE CODES

CTCSS Analog Tone Codes

This is the number you toggle to on your radio!

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

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

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

To toggle between numbered tone codes [EX: 22] and actual tone codes [EX:141.3], press [5] when in tone code menu. Only radios with firmware GM1.51 and later are equipped with this feature.

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

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GMRS TONE CODES

DCS Digital Tone Codes

This is the number you toggle to on your radio!

No.	DCS (Digital) Code
1	23
2	25
3	26
4	31
5	32
6	43
7	47
8	51
9	54
10	65
11	71
12	72
13	73
14	74
15	114
16	115
17	116
18	125
19	131
20	132
21	134
22	143
23	152
24	155
25	156
26	162

	No.	DCS (Digital) Code
	27	165
	28	172
	29	174
	30	205
	31	223
	32	226
	33	243
4	34	244
	35	245
	36	251
J	37	261
4	38	263
	39	265
V	40	271
1	41	306
4	42	311
	43	315
J	44	331
	45	343
	46	346
	47	351
	48	364
	49	365
	50	371
	51	411
	52	412

No.	DCS (Digital) Code
53	413
54	423
55	431
56	432
57	445
58	464
59	465
60	466
61	503
62	506
63	516
64	532
65	546
66	565
67	606
68	612
69	624
70	627
71	631
72	632
73	654
74	662
75	664
76	703
77	712
78	723

	36	1
	53	
V.	122	
	145	
Ì	212	
	225	
	246	
	252	
	255	C. 100 84 1
	266	Codes 84-1
	274	may not b
		and the second of the

DCS (Digital)

No.

may not be supported by other brand GMRS radios

To toggle between numbered tone codes [EX: 22] and actual tone codes [EX:141.3], press [5] when in tone code menu.

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ADVANCED FUNCTIONS

Keypad Lock Setting

2. FM Radio Function

On/Off Radio Receiver: Under standby mode, hold [] to open FM radio functions. LCD will display "90.400", then tap [] again. The radio's receiver is off.

Mode Selection: Under FM radio mode, hold [] to switch between FM memory mode and FM frequency mode (this function is unavailable when there is not an FM memory channel)

Frequency Selection: Under FM frequency mode, input the digits directly by keypad or [] or [] to choose the desired frequency. Under FM memory mode, press [] or [] to choose the desired channel.

3. FM Radio Storage

Under FM frequency mode, long press [\blacksquare], the channel number for storage blinks at the right of the screen. Press [\blacksquare] or [\blacksquare] to select the desired channel number; press [\blacksquare] to confirm and then back to the receiving mode.

4. FM Radio Channel Delete

Under FM frequency mode, long press [\blacksquare], the channel number blinks, press [\blacksquare] to choose the channel number you want to delete. Press [\blacksquare] to confirm. Repeat this operation, you can delete all memory channel 24 in maximum.

SPECIFICATIONS

GENERAL

Channels	30
Operating voltage	7.4VDC
Operating temperature	-10°C ~ +50°C
Weight	106g/3.74oz (including battery and antenna)
Dimension	116x53x36mm

TRANSMITTER

Frequency	RX: 136-174 & 400-480MHz TX: GMRS
Modulation type	FM
Spurious power	≤-15dB
Modulation noise	<-40dB
Modulation distortion	< 5%
Frequency stability	5ppm
Max Fr. Deviation	≤±5KHz
Current	≤ 1600mA
Audio response (300-3400Hz)	+6.5~ - 14dB
Adjacent Ch Power	≥65dB

SPECIFICATIONS

RECEIVER

Frequency	RX: 136-174 & 400-480MHz TX: GMRS
Sensitivity	≤0.2 µ V
Occupied bandwidth	≤16KHz
Selectivity	≥65dB
Intermediation	≥55dB
Audio power	>500m W
Audio distortion	≤10%
Frequency stability	5ppm
Current	Standby: 60mA working: 250Ma
Audio response (300-3400Hz)	+7~- 12.5dB

NOTES

FCC Compliance Statements

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTES

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. Do not use this device when the antenna shows obvious damages. Hold this transmitter approximately 25 mm away from your face and speak normal with the antenna pointed up and away. Use the supplied belt clip for body-worn configuration as other accessories may not comply to the limits.

WARNING:

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

Licensing Information:

Use our radio in USA is subject to the rules & regulations of FCC. Changes or modifications not expressly approved by our may void the user authority granted by the FCC to operate this radio and should not be made. To comply with FCC requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services. Replacement of any transmitter component (crystal, semiconductor, etc) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

NOTES

Note: Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

Important: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device. Your radio is set up to transmit a regulated signal on an assigned frequency. It is against the law to alter or adjust the settings inside the radio to exceed those limitations. Any adjustments to your radio must be made by qualified technicians.



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