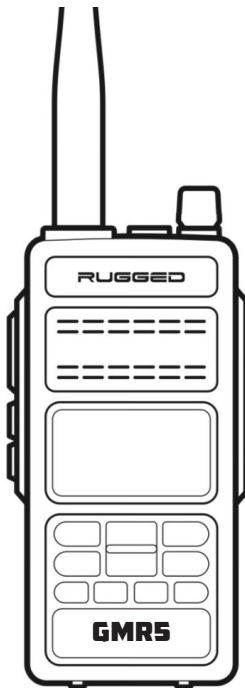




GMR5

USER MANUAL



VERSION 1.0

FCC NOTICE

The GMR5 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 RPT15-22 which comprise the GMRS channels of the GMR5. Serious penalties may result from unlicensed use of GMRS channels, in violation of FCC rules, as stipulated in the Communications Act's Sections 501 and 502 (amended). You will be issued a call sign by the FCC that should be used for station identification when operating your radio on GMRS channels. You should also cooperate by engaging in permissible transmissions only, avoiding channel interference with other GMRS users, and being prudent with the length of your transmission time.

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

FCC Compliance Statement: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference including received interference that may cause undesired operation. **Note 1:** The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment. Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

Note 2: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.



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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.

- Do not attempt to configure your radio while driving.
- Do not transmit at high power for extended periods as overheating may occur.
- Do not expose the radio to long periods of direct sunlight. Do not expose the radio to heat sources.
- Keep at least 2in (5cm) away from the antenna during transmission.
- Do not use a radio with a damaged antenna; contact with a damaged antenna may cause heat-related injury.
- Power off the radio before entering any flammable or explosive environment.
- Do not charge or replace the battery in a flammable or explosive environment.
- Turn off radio before getting close to a detonator, or entering blasting areas.
- To avoid any issues 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.
- If smoke or an abnormal odor is detected coming from the radio, turn off the power immediately, remove the battery, and contact your dealer.

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 your local dealer immediately.

- (1) RADIO UNIT
- (1) ANTENNA
- (1) LI-ION BATTERY (2000MAH)
- (1) USB-C CHARGING CABLE/POWER ADAPTER
- (1) BELT CLIP
- (1) USER GUIDE

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 2000mAh 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 should not be charged outside of this temperature range.
- Be sure the radio is turned off when charging. Transmitting and receiving while charging will affect its recharge time.
- Do not unplug the Power Adapter or radio while it is charging.
- If the battery does not last its normal charge, it shows that the battery is depleted, change the battery pack. Please contact your local dealer, or visit ruggedradios.com to purchase a new battery.
- Do not charge when the battery or the radio is wet. Be sure the battery/ radio are completely dry before charging to avoid any danger.

WARNING: Conductive metals such as jewelry, keys, or chains can cause a short circuit if they contact the battery terminals. This can result in heat generation, damage to the items, damage to your radio/ battery, or personal injury. Handle the battery with care, especially when placing it in a pocket or any metallic container.

CHARGING YOUR BATTERY PACK

CHARGING OPERATION

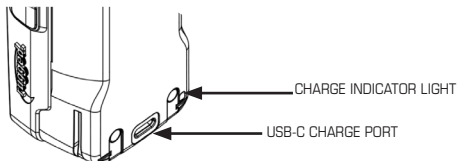
If the battery icon shows [], it means that the battery pack is out of power. Please charge it. See Picture 1 below.

CHARGING INDICATOR LIGHT CONDITIONS:

INDICATOR DISPLAY	STATUS
Red	Charging
Green	Charge Complete

Battery Tips

- Before initial use, fully charge the battery with the supplied USB-C charging cable.
- For best performance, fully charge and discharge the battery two or three times.
- Recharge or replace the battery when its capacity is low.
- Radio will perform at the highest efficiency when the battery is fully charged. A low signal may indicate insufficient battery power for proper transmission and reception.



PICTURE 1

ACCESSORIES CONNECTIONS

ANTENNA

IMPORTANT! MAKE SURE ANTENNA IS SCREWED ON FIRMLY PRIOR TO TRANSMITTING, FAILURE TO DO SO CAN DAMAGE RADIO.

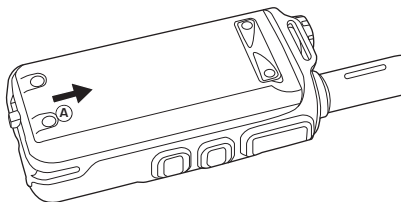
BATTERY PACK

1. To install the battery (Picture 1)

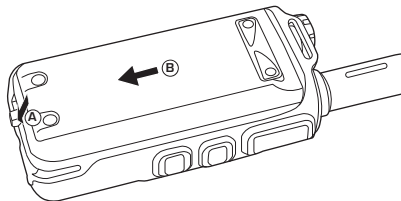
- Ensure the battery is parallel with the radio, Align the two grooves on the battery with the guide rails on the back of the radio,
- Push the battery up the radio base along the rails [A] on the back of the aluminum radio body.
- Firmly press until the battery latch locks up.

2. To remove the battery (Picture 2):

- Push the battery latch (A) downward in the direction of the arrow labeled "OPEN." This will release the latch securing the battery.
- Once the latch is released, pull the battery straight out from the radio [B].



PICTURE 1



PICTURE 2

ACCESSORIES CONNECTIONS

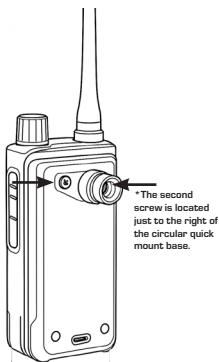
BELT CLIP

1. Align the two holes of the belt clip and the two holes of the radio, install the supplied M2.5x5 screws. **(Picture 3)**
2. To remove the belt clip; loosen and remove the screw set.

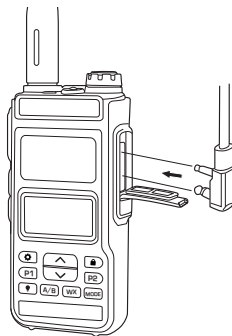
EXTERNAL MICROPHONE/SPEAKER

Open the cover of the microphone/speaker jack and insert the microphone/speaker plugs into the jack. **(Picture 4)**

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



PICTURE 3



PICTURE 4

GETTING ACQUAINTED

FRONT PANEL OPERATION



GETTING ACQUAINTED

FRONT PANEL OPERATION

NO	ITEM	DESCRIPTION	QUICK-PRESS	LONG-PRESS
1	INDICATOR LIGHT	ILLUMINATES RED WHILE TRANSMITTING AND GREEN WHILE RECEIVING	N/A	N/A
2	VOLUME KNOB	POWERS THE RADIO ON/OFF, TURN CLOCKWISE TO INCREASE VOLUME AND COUNTERCLOCKWISE TO DECREASE VOLUME.	N/A	N/A
3	UP (▲) AND DOWN (▼) KEYS	SCROLLS THROUGH ITEMS OR CHANNELS.	SCROLL ONE ITEM OR CH. AT TIME	PRESS & HOLD TO SCROLL RAPIDLY
4	LOCK ICON 	BACK OR EXIT ON THE MENU. LOCKS/UNLOCKS THE RADIO CONTROLS.	MENU/BACK	LOCK/UNLOCK
5	P2 KEY	QUICK ACCESS TO P2 CHANNEL PRESET / ADJUST LSO BY 1.5 MHZ.	PRESET CH.16 / 1.5 MHZ CHANGE.	SAVE CURRENT CHANNEL TO P2 KEY
6	MODE KEY	SWITCHES BETWEEN LISTEN ONLY (LSO), FM RADIO OR GMRS MODES	PROGRAM-MABLE	SWITCH BETWEEN MODES
7	WEATHER (WX) KEY	TURNS SECOND MONITORED CHANNEL TO WEATHER (WX) ALERT CHANNEL (PRESELECTED IN MENU)	WX ALERT CHANNEL SELECTION	MONITOR WX ALERT
8	A/B KEY	SWITCHES BETWEEN ACTIVE CHANNELS/ INVERSE TONE CODES IN THE DIGITAL TONE CODE LIST.	DUAL MONITOR OR ACTIVE CH. SWITCH	PROGRAMMABLE
9	LIGHT KEY 	TURNS ON AND OFF THE FLASHLIGHT LED	N/A	TURN LIGHT ON/OFF
10	P1 KEY	QUICK ACCESS TO P1 CHANNEL PRESET / ADJUST LSO BY 10 MHZ	PRESET CH. 15 / 10MHZ CHANGE	SAVE CURRENT CH. TO P1 KEY

continued on page 12.

GETTING ACQUAINTED

FRONT PANEL OPERATION

refer to diagram on pg 10

NO	ITEM	DESCRIPTION	QUICK-PRESS	LONG-PRESS
11	MENU KEY 	ENTERS THE MENU / CONFIRMS THE CURRENT SELECTION	MENU/ CONFIRM	N/A
12	LCD DISPLAY	BRIGHT LCD DISPLAY FOR EASE OF USE	N/A	N/A
13	SPEAKER	HIGH QUALITY SPEAKER FOR LOUD ENVIRONMENTS	N/A	N/A
14	MICROPHONE	DESIGNED FOR CLEAR TRANSMISSIONS IN ANY ENVIRONMENT	N/A	N/A
15	REMOVABLE ANTENNA	SCREW IN TIGHTLY BEFORE TRANSMITTING.	N/A	N/A

GETTING ACQUAINTED

SIDE PANEL OPERATION

refer to chart on pg 14



GETTING ACQUAINTED

SIDE PANEL OPERATION

refer to diagram on pg 13

NO	ITEM	DESCRIPTION	QUICK-PRESS	LONG-PRESS
A.	PTT	PRESS AND HOLD TO TRANSMIT, RELEASE TO RECEIVE	TX	TX
B.	MIDDLE SIDE BUTTON	DISPLAY CURRENT BATTERY VOLTAGE	BATTERY VOLTAGE	N/A
C.	BOTTOM SIDE BUTTON	PRESS AND HOLD TO MONITOR CURRENT CHANNEL	N/A	MONITOR CURRENT CH
D	CHARGE INDICATOR LIGHT	ILLUMINATES RED WHEN CHARGING / GREEN WHEN FULLY CHARGED.	N/A	N/A
E	USB-C CHARGE PORT	RECHARGE YOUR BATTERY VIA USB-C.	N/A	N/A
F	2 PIN MIC / ACCESSORY PORT	CONNECTION PORTS FOR MICROPHONE INPUT, AUDIO OUTPUT, AND PROGRAM CABLE	N/A	N/A

GETTING ACQUAINTED

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

ICONS	FUNCTION
	OPERATING BAND SIGNAL & POWER METER
H/M/L	HIGH, MEDIUM, LOW TX POWER ACTIVE
DW	DUAL WATCH/STANDBY ACTIVE
S	RX POWER SAVE ACTIVE
⌂	SCANNING ACTIVE
N/W	NARROW/WIDE BAND MODE ACTIVE
+	REPEATER SHIFT DIRECTION
Ⓚ	KEYPAD LOCK
	BATTERY POWER INDICATOR

MENU

MENU ITEM	OPERATION
001 SCAN	SCANS FOR SIGNALS ON EVERY CHANNEL IN THE SCAN LIST.
002 CROSS TONE	PREVENTS HEARING RADIO TRAFFIC ON THE SAME FREQUENCY. COMES WITH DIGITAL AND ANALOG OPTIONS
003 RX TONE	PREVENTS HEARING RADIO TRAFFIC ON THE SAME FREQUENCY WHEN RECEIVING. COMES WITH DIGITAL AND ANALOG OPTIONS.
004 TX TONE	PREVENTS HEARING RADIO TRAFFIC ON THE SAME FREQUENCY WHEN TRANSMITTING. COMES WITH DIGITAL AND ANALOG OPTIONS
005 SQUELCH	INCREASES OR DECREASES THE SENSITIVITY OF THE RECEIVER. HIGHER SQUELCH SETTINGS WILL BLOCK MORE INTERFERENCE BUT ALSO LIMIT RANGE. NOTE: RUGGED RADIOS SUGGESTS USING THE FACTORY-SET SQUELCH LEVEL.
006 BACKLIGHT	DIMS THE DISPLAY AFTER 5, 10, 20, OR 30 SECONDS OF INACTIVITY.
007 DIMMER LEVEL	INCREASES OR DECREASES THE DISPLAY BRIGHTNESS.
008 MONITOR	ALLOWS YOU TO SWITCH BETWEEN MONITORING 1 OR 2 CHANNELS.
009 CH ANNOUNCE	AUDIBLY ANNOUNCES THE CHANNEL FREQUENCY OR NAME
010 MENU TIMEOUT	SETS THE LENGTH OF TIME BEFORE THE MENU TIMES OUT AND RETURNS TO DEFAULT DISPLAY.
011 AUTOLOCK	ENABLES AUTOMATIC KEYPAD LOCKING FEATURE AFTER THE SELECTED DURATION. KEYPAD CAN BE UNLOCKED BY LONG PRESSING THE LOCK BUTTON
012 BEEP	TURNS ON AND OFF BEEP TONE WHEN SCROLLING AND SELECTING IN THE MENU
013 TALK PERMIT	THE TRANSMITTING RADIO EMITS A TONE TO ALERT WHEN TO BEGIN SPEAKING AFTER PRESSING THE PTT (PUSH TO TALK).
014 ROGER BEEP	EMITS A TONE TO THE RECEIVING RADIO ALERTING TO OTHERS THAT THE USER IS FINISHED TALKING.
015 MIC LEVEL	ADJUSTS THE TRANSMIT VOLUME OF THE MICROPHONE.
016 WX ALERT	CHANGES WHICH WEATHER CHANNEL TO BE MONITORED

MENU CONT.

MENU ITEM	OPERATION
017 LISTEN ONLY(LSO)	ENABLES LISTEN-ONLY (LSO) MODE. LSO ALLOWS USERS TO LISTEN TO TRANSMISSIONS ON VHF/UHF FREQUENCIES OUTSIDE OF THE GMRS BAND.
018 BATTERY VOLTAGE	DISPLAYS REMAINING BATTERY VOLTAGE
019 FIRMWARE	DISPLAYS FIRMWARE VERSION AND THE DATE IT WAS UPDATED
020 RESET	RESETS THE RADIO TO FACTORY SETTINGS

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

Example:

GMRS Ch. 1 (Frequency 462.5625)

No Tone Code*

GMRS Ch. 1 (Frequency 462.5625)

Tone Code 10 (Frequency 98.4)

GMRS Ch. 1 (Frequency 462.5625)

Tone Code 25 (Frequency 156.7)

This continues throughout the channel list.

***NOTE: Custom tone codes can be added to any of the non tone-coded channels through the menu. See “Changing Tone Codes” on the next page.**

TONE CODES

CHANGING TONE CODES

To Access Tone codes:

1. Press [] to get into the menu
2. Use the arrows [ ] to navigate the menu and to select your desired tone code type: "Cross Tone", "TX Tone" (Transmit Only), or "RX Tone" (Receive Only). Then press [] to select it.

FOR "CTC" (ANALOG) TONE CODE TYPES:	FOR "DCS" (DIGITAL) TONE CODE TYPES:
• PRESS [] TO SELECT IT. • FROM HERE A LIST OF TONE CODE FREQUENCIES AND THEIR NUMBER CAN BE SCROLLED THROUGH [ ] AND SELECTED BY PRESSING THE [] BUTTON.	• PRESS [] • PRESS THE [] • PRESS [] TO SELECT IT. • FROM HERE A LIST OF TONE CODE FREQUENCIES AND THEIR NUMBER CAN BE SCROLLED THROUGH [ ] AND SELECTED BY PRESSING THE [] BUTTON. TO SWITCH TO INVERTED DIGITAL TONE CODES: • PRESS THE A/B BUTTON.



GMRS TONE CODES

CTCSS Analog Tone Codes

This is the number you toggle to on your radio!

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

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

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

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

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

*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
34	244
35	245
36	251
37	261
38	263
39	265
40	271
41	306
42	311
43	315
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

No.	DCS (Digital) Code
79	731
80	732
81	734
82	743
83	754
84	36
85	53
86	122
87	145
88	212
89	225
90	246
91	252
92	255
93	266
94	274
95	325
96	332
97	356
98	446
99	452
100	454
101	455
102	462
103	523
104	526

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

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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

SPECIFICATIONS

GENERAL

Channels	30
Operating voltage	7.4VDC
Operating temperature	14 °F ~ 122 °F / -10°C ~ +50°C
Weight	0.55 lbs
Dimension	5.15" x 2.38" x 1.36" (10" w/ Antenna)

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	$\leq 0.2 \mu V$
Occupied bandwidth	$\leq 16\text{KHz}$
Selectivity	$\geq 65\text{dB}$
Intermediation	$\geq 55\text{dB}$
Audio power	$> 500\text{m W}$
Audio distortion	$\leq 10\%$
Frequency stability	5ppm
Current	Standby: 60mA working: 250Ma
Audio response (300-3400Hz)	+7~ - 12.5dB

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE AND POTENTIAL SOLUTIONS
Radio not powering on	The battery has been depleted. Recharge or replace the battery.
Not transmitting or receiving audio	Make sure volume is turned up.
Buttons on keypad wont work	Make sure keypad is unlocked by holding the lock key.
Backlight wont come on	Make sure backlight is enabled in menu and confirm dimmer light in menu is not set to "off"
Radio won't charge	Make sure the battery is fully seated in the charging cradle. Charger is fully inserted in the radio's USB-C charging port and is connected to a power source
Radio got stuck in FM radio mode	Press and hold mode button to switch modes, make sure keypad is unlocked by holding the lock button
Need to reset radio.	Go to reset setting in menu and press settings key three times to accept.

For additional help call our Tech Department at (805) 541-1696. We are here to help!

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

[illegible]



WWW.RUGGEDRADIOS.COM