

USER MANUAL

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KNOW YOUR RADIO 5 WATT RADIO SCHEMATIC



DISPLAY ICONS



ICON	FUNCTION DESCRIPTION
СТ	Privacy code active (Analog)
DCS	Privacy code active (Digital)
СН	Channel
VOL	Volume
.	TX Beep active
	Battery charge display
	Low battery indicator
a	Radio lock active
A/B	Dual Channel Watch active
Н	High power (5 W)
L	Low power (0.5 W)
_	Weather Mode / Alert Active
	Low signal strength
	High signal strength
REP	Repeater channel active

TECHNICAL SPECIFICATIONS

Radio Service	GMRS (FRS Compatible): Licensing Information
Maximum Power	5 Watts
Range (High Power)	Line-of-sight: 35+ miles Mountains: 2 - 8 miles Forest/Hills: 1 - 5 miles City: Up to 1.5 miles
Waterproofing	IP67 (Waterproof up to 1 meter)
Channels	22 GMRS/FRS 8 GMRS Repeater 11 NOAA Weather
Privacy Codes	121 CTCSS/DCS
Weight	9.1 oz
Radio Body Dimensions	10.3 cm tall x 6.2 cm wide x 3.4 cm thick
Attachment System	Steel Gator Clip
Battery	Rechargeable 1800 mAh Li-ion (3+ days battery life)
Operating Temperature	-20° to 120° Fahrenheit
Charging Temperature	0° to 100° Fahrenheit
Base Functions	Privacy Codes, Channel Lock, High/Low Power Modes, Scan Mode, TX Beep
Advanced Functions	Dual Channel Watch, Repeater Capable, NOAA Weather Alert Monitoring
Headset Port Type	M3 (Blade Type)

FCC NOTICE

(Only Applicable for GMRS Radio Use in the United States)

Your new 5 Watt Radio operates on GMRS (General Mobile Radio Service) frequencies and requires an FCC (Federal Communications Commission) license. You must be licensed prior to operating the radio. Obtaining a license costs \$35.00, does not require a test, and covers your immediate family. Penalties could result from unlicensed use of GMRS channels, in violation of FCC rules, as stipulated in the Communications Acts Sections 501 and 502 (amended).

You will be issued a call sign by the FCC which should be used for station (self) identification when using your radio. 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-CALLFCC or go to the FCC's website: http://www.fcc.gov and request form 605.

OBTAINING A GMRS LICENSE ONLINE

You can obtain an FCC issued GMRS license for your family online in a matter of minutes! Here are the steps:

- Obtain a 10-digit FRN (FCC Registered Number) from the <u>Commision Registration</u> <u>System (CORES)</u> the <u>FCC Help Desk</u> can be helpful with any FRN related questions!
- 2. If you don't have a Username, click "Register"
- Once you've obtained your FRN, you can apply for a GMRS License in the FCC's <u>License Manager</u>
- Once logged in, you will see an option at the top of the left-hand sidebar to "Apply for a new license"
- 5. In the dropdown, scroll all the way to the bottom to "ZA General Mobile Radio"
- 6. Simply follow the rest of the application to obtain your license!

QUICK START GUIDE

You just received your 5 Watt Radio, here are some quick steps to get you started!

- Remove your radio and charger from the box.
- To fully charge your radio, plug in the USB-C cable to the bottom of the radio until the indicator light turns green.
- Press and hold the Power Button down for 2 seconds, until you hear the double beep. The current battery percentage will be displayed.
- 4. Unlock your radio by holding the Channel Flipper forward for 2 seconds.
- Use the Channel Flipper to select a channel.
- Set a privacy code to filter incoming transmissions. While this step is optional, we always recommend it! <u>Check out the section on privacy codes</u> linked here.
- Match the channel and privacy code on all of your radios and test to ensure you are connected.
- Once all of your radios are matched, remember to lock your radio by holding the Channel Flipper forward for 2 seconds to prevent any accidental changes.
- Optional: Clip the backup leash to the metal ring at the base of your radio to prevent drops in extreme terrain.

Now you're all set to stay connected with your 5 Watt Radio!

RADIO RANGE

The 5 Watt Radio was designed to give users more range than a standard 2 watt radio for activities where you are further away from your partner. The 5 Watt Radio is also compatible with repeaters which can help overcome some of the most difficult terrain. As the name implies, the radio utilizes 5 watts of transmission power which is the maximum allowed power for a GMRS handheld radio (only for high power channels).

The range of any handheld radio is highly dependent on terrain, so it is always a bit tricky make any generalizations about what range you can expect. However, there are a few simple concepts that can help you estimate the range you will get based on the geometric features of your environment. Big obstacles like buildings, hills, or mountains can absorb or reflect your radio waves. If you are not in "line-of-sight" with your partner, your range will be greatly reduced from the maximum possible range.

Alpine: In our testing, we generally get 2 to 8 miles in alpine environments. Alpine settings tend to have few trees and obstructions, and they are usually up high, which tends to give a good vantage point to transmit long distances. Even if a mountain is between you and your partner, if there is another mountain not too far away, the radios waves can use it to bounce off of and get around to your partner. This type of communication can come and go so we tell people 2 to 10 miles to account for the high variance in type of alpine terrain.



Rolling hills and forests: You can expect between 1 to 5 miles when in hilly and forested areas. Rolling hills and forests tend to be deceptive terrain. The trees do some work to reduce the radio signal between you and your partner, however the real culprit is the low rolling hills. With no mountains nearby, there is rarely an unimpeded bounce path between you and your partner. A hill of even 30 feet (10m) in height is sufficient to block the signal in some cases.

Rivers: Every river is unique but in our testing, we typically experience 0.5 to 3 miles of range. Once again, the geometry of the environment becomes the most significant factor for radio range. Moving around river banks often means putting a low hill between you and your partner. As a result, your range may be drastically reduced in some sections. Rivers with taller walls (i.e. canyons) typically get better range as your signal is able able to bounce off of the canyon walls and around river bends. This is why we give rivers similar range ratings as hills and forests.

Urban environments: These are the most difficult environments for radios to operate in, and it's safe to expect a 1.5 mile max range while in the city. The buildings in cities block your signal more effectively than other natural environments. In addition to buildings, the large amount of radio chatter and electrical interference make cities one of the worst environments for radio range.

Line-of-sight: Finally, when maintaining line of sight with your partner(s), unobstructed radio waves regularly achieve over 35 miles in our testing. While these situations are rare, its quite a pleasant surprise whenever you happen upon them.

WATERPROOFING

The 5 Watt Radio was not only designed to be waterproof, but to continue to function reliably while in the wettest conditions. The IP67 rating protects the electronics from water damage up to 1 meter submersion. The radio was also designed with a fully waterproof speaker/microphone system that allows water to drain quickly.

Battery: The battery is waterproof and fully removable. Please see Installing/Removing-the-Battery for steps on how to replace the battery. Finding water in the gap between the battery and the radio is normal and does not comprimise the seal between the radio and the battery.

Headset and Charging Port: The <u>M3 headset port</u> and <u>USB-C charging port</u> are waterproof as well, although both should should be dried before connecting a headset or charging your radio. It's best to keep the ports covered when accessories aren't in use to protect the contacts against corrosion.

Taking care of your radio when wet: Proper care can help ensure your 5 Watt Radio lasts for many years. Before you use your radio, ensure the charging port cover is fully seated to prevent water from getting to the charging port. While the port itself is waterproof, keeping this area dry can help prevent material build up that could damage the port over time. If the radio gets exposed to salt water during usage, its best practice to lightly rinse your radio with fresh water then allow to dry in a room temperature setting.



OPERATING THE 5 WATT RADIO

POWER ON/OFF

To turn on your radio, hold the red Power Button down for 2 seconds. You will hear the double beep and your current battery percentage will be displayed.



Your radio will then default to the main display showing your channel, privacy code, and active settings. To turn off you radio, hold the power button again for 2 seconds.

LOCK/UNLOCK YOUR RADIO

To unlock your radio, hold the Channel Flipper forward for 2 seconds. You will now be able to adjust all the settings.





To lock your radio, hold the Channel Flipper forward for 2 seconds. The lock icon will appear, indicating your radio is locked. When the radio is locked, you can still adjust the volume, swap between A/B channels, and use the PTT button.

Pro Tip: Before heading out, be sure to lock your radio to prevent accidental setting changes during your activity. (We've all been there, losing communication halfway through an adventure is not very fun!)

SELECT A CHANNEL

The 5 Watt Radio has 22 channels, It can be paired with most other GMRS and FRS radios! Make sure your radio is unlocked. You can then select your channel by toggling the Channel Flipper forward or backward. Check out the Frequency Chart for more details



Pro Tip: Simply match the channel and privacy code to link up with most radios.

TRANSMIT

When you're ready to communicate with your adventure buddy, press the big red button on the side of the radio!

The microphone is on the front face of the radio. It is located inside the speaker cavity (shown on the right). Hold the radio four to eight inches away from your mouth for optimal audio quality.



HIGH/LOW POWER CHANNELS

The transmission power of the radio will change based on the channel selected.

Channels 1-7 and 15-22 are High Power channels and utilize the full 5 Watts of transmission power. High Power channels are indicated by the *H* illuminated on the display. While transmitting on High Power channels, you will see 5 bars at the bottom of the screen.

Channels 8-14 are Low Power channels and are limited to 0.5 Watts by the FCC for FRS/GMRS radios. Low Power channels are indicated by the *L* illuminated on the display. When transmitting on Low Power channels, you will see 3 bars at the hottom of the screen.





If you're having a hard time communicating on a Low Power channel, simply changing to a High Power channel might give you the extra power you need to connect! When receiving a transmission, the incoming signal strength is indicated by the bars at the bottom of the screen.

Pro Tip: Utilize High Power channels to maximize your radio's range! Use Low Power channels to optimize battery life on longer excursions where your party is close together.

SET A PRIVACY CODE

If you're in an area with other radio users, it may be difficult to find an open channel. This is where privacy codes come in! Privacy codes are used to filter incoming transmissions. Your radio will only allow transmissions from other radios with the same privacy code active.



Privacy codes 1 through 38 are CTCSS (Continuous Tone-Coded Squelch System) and will illuminate as CT in the upper right corner of your radio screen. Privacy codes 39 through 121 are DCS and will illuminate as DCS (Digital-Coded Squelch) in the upper right corner of your radio screen. CTCSS and DCS are very similar and, in practice, accomplish the same thing, so simply select one that gives you a free channel to communicate!

To set a privacy code:

- 1. Make sure your radio is unlocked
- Press the Volume Minus (-) button until CT or DCS flashes on the screen (about 2 seconds).
- Use the Channel Flipper to select a code. There are 121 different privacy codes to chose from.
- 4. Press any button to save your selection. Remember to lock your radio to prevent any accidental changes!

If you continue to hear unwanted chatter, try a different code! <u>Click here to see the complete list of privacy codes</u>,

SCAN MODE

Scan Mode cycles through the first 22 channels until radio activity is detected. This function is useful when looking for other radio users in your area.

To activate Scan Mode:

- Make sure your radio us unlocked
- Hold the Channel Flipper toward the back of the radio for 2 seconds. Your radio will scan all 22 channels until radio activity is detected.
- Once a transmission is detected, the radio will pause scanning and receive on that channel.
- After 3 seconds of inactivity, it will resume scanning.
- To stop scanning, simply press any button.



While scanning, take note of which of your channels have privacy codes active. SCAN mode will only lock onto transmissions that match the channel and privacy code settling on your channel list.

Pro Tip: You will be able to pick up all incoming transmissions, however, the other party will only hear you if they do not have a privacy code engaged or you set your radio to a matching privacy code. A lot of times, people use something simple like channel 5 privacy code 1, or Channel 5 privacy code 5.

CHARGE YOUR RADIO

The 5 Watt Radio is compatible with nearly all USB-C chargers! A charger is included with every radio, however you can use chargers from your other devices such as: phone or laptop chargers, portable power banks, solar chargers, etc. As long as the device is capable of outputting 5V 1A, it should be compatible.

When you see the empty battery icon on the right hand side of the screen, it's time to charge your radio!

To charge your radio:

- Turn your radio OFF.
- Plug the charger in to the charging port located on the right side of the radio. After plugging the radio in, a red LED will appear on the screen, indicating that the radio is still charging.



Once the radio is fully charged, the LED on the front of your radio will turn green.

If charging while on the go, remember to make sure your radio is dry and the temperature is in a safe range to charge the battery, between 0F and 100F.

Pro Tip: When storing the radio for long periods of time, its best to charge it fully and check on the radio periodically to keep the battery above 70% charge.

CHECK BATTERY PERCENTAGE

Your current battery percentage is temporarily displayed every time you power on your radio.

To view the battery percentage while in use, press the Power Button once at any time. The remaining battery percentage will be displayed.

Below 10% battery capacity, your radio will go into Power Saving mode to protect the battery. You will be able to receive transmissions during this time but will not be able to transmit.





Pro Tip: Rather than the 5 Watt Radio simply shutting down, when the battery hits 10%, the radio allows for transmissions to still be received and can help in situations when adventures extend longer than expected and things don't go as planned.

TX BEEP

The TX Beep plays a tone that confirms you have successfully pressed the PTT button before and after transmitting. This can be particularly helpful when wearing heavy winter gloves and you can't feel the button as distinctly.



The TX Beep is set to ON by default and is represented by the Bell icon on the top row of the display. No sound will be heard on the receiving radio, this is an indicator for the transmitting radio only.

To turn off the TX Beep:

- Start with the radio turned OFF.
- Hold the PTT button and Power button at the same time for 2 seconds until the radio powers ON. The Bell icon will disappear. You will no longer hear the beep when you release the PTT button.

To turn the TX Beep back on, simply repeat the steps above and the Bell icon will reappear on the display.



Pro Tip: For some activities, turning off the roger beep can help you stay undetected and reduce disturbances in the backcountry.

ATTACHMENTS AND ACCESSORIES

INSTALLING/REMOVING THE BATTERY

The battery is removeable and held in place with three star screws. The correct tool will be included with your spare battery.

To remove the battery:

- 1. Start with the radio powered OFF.
- 2. Remove the attachment system by unscrewing the Phillips screws 1 and 2.
- Unscrew star screw 3.
- Unscrew star screws 4 and 5 toward the base of the radio.
- If water is present, use a dry cloth to remove any moisture before reinstalling the battery.

To reinstall the battery:

- Install star screws 4 and 5 toward the base of the radio.
- 2. Install star screw 3.
- Ensure all three star screws are evenly tightened to create a water-tight seal between the battery and the radio.
- 4. Place the attachment system in position and install Phillips screws 1 and 2
- 5. Power on your radio to confirm successful installation.





INSTALLING/REMOVING THE ATTACHMENT SYSTEM

The 5 Watt Radio was designed with a modular attachment system allowing you to choose the attachment that best suits your activity. The Gator Clip is included with your radio and is attached with two Phillips head (PH1) screws and can be easily exchaged for other attachments.

To install other attachments:

- Unscrew the two screws on either side of the Gator Clip.
- Place the new attachment on the back of the radio and line up the screw holes
- Carefully screw in the 2 screws hand tight one at a time.



INSTALLING/REMOVING THE ANTENNA

The 5 Watt Radio comes with a 1/4 wavelength antenna (50 Ω , SMA male) tuned for UHF frequencies. While the included antenna is a great balance of form and function, you may want to exchange the antenna for a higher gain (longer) antenna to improve your radio's range.

To replace the antenna:

- 1. Unscrew the antenna counter-clockwise by hand
- 2. Carefully thread the new antenna on by hand

Be careful installing any antenna. The antenna should thread on easily and only get tighter toward the very end.

HEADSET/HAND MIC COMPATIBILITY

The 5 Watt Radio uses an M3 style waterproof connector.

To install an M3 accessory:

- . Unscrew the included headset port
- A headset or hand mic can then be screwed onto the port to make a water tight seal.
- Fully tighten the screw to prevent leaks.

The headset port is waterproof without the cover but it's best to keep the port cover on when accessories aren't in use to protect the contacts against corrosion.

For an updated list of compatible accessories, please check out our FAQ page!



ADVANCED FEATURES

DUAL CHANNEL WATCH

The Dual Channel Watch mode will allow you to monitor and easily transmit on two different channels, referred to as A and B, at the same time. This mode can be useful if you are trying to stay in touch with two parties that are using different channels, or to listen in on a community channel that is reserved for safety-related or emergency communications. The Dual Channel Watch mode offers an easy way to listen and transmit on both channels without having to unlock your radio and navigate to the other channel.



To activate Dual Channel Watch mode:

- Unlock the radio and use the Channel Flipper to select the primary channel. This will become A when Dual Channel Watch mode is active. A can be any of the 22 channels or 8 repeater channels.
- Hold the A/B button down until the A/B icon flashes on the display.
- Use the Channel Flipper to select the channel you'd like to monitor for B. Press any button to continue.
- CT DCS will be flashing. Use the Channel Flipper to select a privacy code for B.
- 5. Press any button to save the selection.

To turn off A/B mode, repeat step 1 and use the Channel flipper to select **OF**. Press any button to confirm.



RECEIVING:

While Dual Channel Watch mode is active, the display will show your **A** channel by default, however the radio is now continually scanning both **A** and **B** for transmissions. This will be indicated by the **A/B** icon at the top of the display.

If a transmission is detected on **B**, the radio will automatically receive on **B** until the transmission is complete. It will then return to monitoring both channels. You can press **A/B** while receiving a transmision to manually swap between channels. A tone will chime indicating you've transitioned from **A** to **B** and **B** to **A**.

TRANSMITTING:

While Dual Channel Watch mode is active, the transmission (PTT button) will default to **A**. This helps keep community channels clear from accidental chatter and makes it easy to communicate with your main group!

To transmit on **B**, press the **A/B** button once. This opens a 6 second window to transmit on **B**. During this time the PTT button will transmit on B only. After the 6 second window of inactivity, the PTT button will revert to **A** automatically. Pressing the **A/B** button within 10 seconds will revert PTT to **A**.

Pro Tip: Dual Channel Watch mode uses battery about 25% faster when active, so it should be turned off when not in use.

NOAA WEATHER CHANNELS

The 5 Watt Radio features 11 NOAA weather channels to monitor the weather conditions in your area. This can be crucial in the backcountry, as having real time weather updates may inform your decisions to push on, turn back. or seek shelter.



To activate Weather mode:

- Press and hold the Volume Up (+) button on your radio until the Cloud icon flashes on your display.
- Your radio will automatically scan for active weather channels in your region. When an active transmission is found, the radio will pause scanning and stay on that weather channel.
- To stop scanning, use the Channel Flipper to manually set your desired weather channel at any time.



Exit Weather mode by pressing the PTT button to restore normal communications.

CHANNEL	FREQUENCY (MHz)
1	162.550
2	162.400
3	162.475
4	162.425
5	162.450
6	162.500
7	162.525
8	161.650
9	161.775
10	161.750
11	162.000

NOAA WEATHER ALERT MONITORING

The 5 Watt Radio also includes a NOAA Emergency Weather Alert function. While this mode is active, your radio will passively monitor regional weather alerts in the background. During this time, you will be able to continue using your radio normally. In the event of a regional weather alert, the radio will automatically switch to the corresponding weather channel and allow you to hear the alert.



To activate NOAA Emergency Weather Alert:

- Start with your radio powered OFF.
- Press and hold the Volume Up (+) button while powering ON your radio.
- The Cloud icon will appear on the display when monitoring is active.
- If a weather alert is detected, the radio will automatically switch to weather mode on the weather channel the alert was detected on.
- Pressing the PTT button will exit Weather mode and restore normal communications.



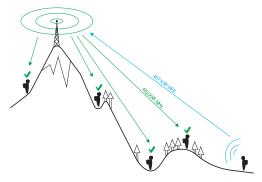
To deactivate NOAA Emergency Weather Alert Monitoring, simply repeat the activation process (steps 1 and 2).

Pro-Tip: While this mode is convenient for staying on top of any weather alerts in your area, it will also consume battery roughly 25% faster while active.

To find which channels are active in your area visit the NOAA Weather Radio website!

REPEATER USE

One great feature of your GMRS radio is the ability to access repeaters! Repeaters take a signal and retransmit it in real time to extend the usable range of your radio. You may encounter situations where you're unable to communicate due to obstructions in your environment. By accessing a repeater at a higher elevation, you can get above obstacles in your environment, like a mountain, and talk to people on the other side!



Repeater channels use different frequencies for transmitting and receiving. This means that if the REP icon is displayed on the screen you will only be able to communicate via repeaters in the area. Two radios on the same repeater channel (i.e. REP 15) will not be able to communicate with each other unless a repeater is in range. The 5 Watt Radio comes preset with the standard GMRS repeater frequencies listed below. Check online (i.e. mygmrs.com) for public repeaters. You can also set up your own repeater if there is not one in your area.

ENABLE REPEATER CHANNELS AND BANDWIDTH

In addition to the first 22 channels on your 5 Watt Radio, it also has 8 repeater channels. These 8 repeater channels are hidden from your channel list by default.

To access repeater channels, follow these steps:

- Start with the radio OFF.
- Press and hold the Volume Minus (-) and power buttons while powering on your radio.
- Repeater channels are now enabled and can be seen by scrolling past the first 22 channels. These channels are indicated by the REP icon.
- Enabling repeater channels will also allow you to select between wide and narrow band on channels 1-7 and 15-22





CHANNEL	RX FREQUENCY (MHz)	TX FREQUENCY (MHz)	POWER
REP 15	462.5500	467.5500	5 Watts (High)
REP 16	462.5750	467.5750	5 Watts (High)
REP 17	462.6000	467.6000	5 Watts (High)
REP 18	462.6250	467.6250	5 Watts (High)
REP 19	462.6500	467.6500	5 Watts (High)
REP 20	462.6750	467.6750	5 Watts (High)
REP 21	462.7000	467.7000	5 Watts (High)
REP 22	462.7250	467.7250	5 Watts (High)

REPEATER PRIVACY CODES

Most repeaters will require you to use a privacy code to gain access. Some repeaters require two different privacy codes to be set, one for transmitting, and one for receiving. These "split tones" repeaters are common in Colorado and a few other places around the US.

To set a privacy code for a repeater channel:

- 1. Navigate to a repeater channel (denoted by the REP icon).
- 2. Press and hold the Volume Minus (-) button for 2 seconds.
- The LED screen will display r.E. Use the Channel flipper to set the receiving privacy code.
- 4. Press the PTT Button to save and continue.
- 5. The screen will then display by. Use the channel flipper to select the transmitting privacy code.
- 6. Press the PTT Button to save and continue.
- 7. Use the channel flipper to select Narrow Band (?) or Wide Band (!!!) mode.
- Press any button to save.

Pro Tip: There is no special etiquette involved with using a GMRS repeater! Simply state your FCC issued call sign after your transmission and every 15 minutes if the conversation continues.

MAIN CHANNEL BANDWIDTH

Bandwidth determines the frequency range occupied by your signal, with narrow band occupying 12.5 kHz and wide band 25 kHz (20 KHz authorized bandwidth). The Rocky Talkie Mountain Radio and most handheld radios are programmed to narrow band by default. Many mobile (vehicle mounted) and some handheld GMRS radios have the option to select narrow or wide band. Make sure to match the bandwidth on your radios to ensure optimal audio and volume compatibility.

To set bandwidth on channels 1-7 and 15-22:

- Make sure repeater channels are enabled.
- 2. Press and hold the Volume Minus (-) button for 2 seconds.
- 3. Use the Channel flipper to set the privacy code.
- 4. Press the PTT Button to save and continue.
- 5. Use the channel flipper to select Narrow Band ($_{\Omega}$) or Wide Band ($_{III}$) mode.
- 6. Press any button to save.

CONNECTING TO OTHER RADIOS

Your radio is compatible with most GMRS / FRS radios! Pairing other radios is as easy as matching the channel and privacy code (also referred to as a sub-channel). In most cases, channels 1-22 are set to the same standardized frequencies designated by the FCC. For the 5 Watt Radio's frequency mapping, please refer to the <u>frequency chart section linked here!</u>

If you experience any trouble, don't hesitate to reach out to us at support@rockytalkie.com for assistance or would like us to check radio compatibility for you!

Pro Tip: If you're having a hard time connecting with other GMRS/FRS radios, a quick look at their user manual can oftentimes reveal the solution. Check to make sure the frequency and privacy code are matched!

FREQUENCY CHARTS

CHANNELS 1-22

CHANNEL	FREQUENCY (MHz)	POWER
1	462.5625	5 Watt (High)
2	462.5875	5 Watt (High)
3	462.6125	5 Watt (High)
4	462.6375	5 Watt (High)
5	462.6625	5 Watt (High)
6	462.6875	5 Watt (High)
7	462.7125	5 Watt (High)
8	467.5625	0.5 Watt (Low)
9	467.5875	0.5 Watt (Low)
10	467.6125	0.5 Watt (Low)
11	467.6375	0.5 Watt (Low)
12	467.6625	0.5 Watt (Low)
13	467.6875	0.5 Watt (Low)
14	467.7125	0.5 Watt (Low)
15	462.5500	5 Watt (High)
16	462.5750	5 Watt (High)
17	462.6000	5 Watt (High)
18	462.6250	5 Watt (High)
19	462.6500	5 Watt (High)
20	462.6750	5 Watt (High)
21	462.7000	5 Watt (High)
22	462.7250	5 Watt (High)

CTCSS PRIVACY CODES

OTOGOT HINAGT GODEG		
PRIVACY CODE	FREQUENCY (Hz)	
Off	0.0	
1	67.0	
2	71.9	
3	74.4	
4	77	
5	79.7	
6	82.5	
7	85.4	
8	88.5	
9	91.5	
10	94.8	
11	97.4	
12	100	
13	103.5	
14	107.2	
15	110.9	
16	114.8	
17	118.8	
18	123	
19	127.3	
20	131.8	
21	136.5	
22	141.3	
23	146.2	
24	151.4	
25	156.7	
26	162.2	
27	167.9	
28	173.8	
29	179.9	
30	186.2	
31	192.8	

PRIVACY CODE	FREQUENCY (Hz)
32	203.5
33	210.7
34	218.1
35	225.7
36	233.6
37	241.8
38	250.3

DCS PRIVACY CODES

PRIVACY CODE	DCS (Octal)
39	23
40	25
41	26
42	31
43	32
44	43
45	47
46	51
47	54
48	65
49	71
50	72
51	73
52	74
53	114
54	115
55	116
56	125
57	131
58	132
59	134

PRIVACY CODE DCS (Octal) 60 143 61 152 62 155 63 156 64 162 65 165 66 172 67 174 68 205 69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 90 412 91 413		
61 152 62 155 63 156 64 162 65 165 66 172 667 174 68 205 69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	PRIVACY CODE	DCS (Octal)
62 155 63 156 64 162 65 165 66 172 67 174 68 205 69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	60	143
63 156 64 162 65 165 66 172 67 174 68 205 69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	61	152
64 162 65 165 66 172 67 174 68 205 69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	62	155
65 165 66 172 67 174 68 205 69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	63	156
66 172 67 174 68 205 69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	64	162
67 174 68 205 69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 3665 88 371 89 411	65	165
68 205 69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	66	172
69 223 70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411 90 412	67	174
70 226 71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	68	205
71 243 72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	69	223
72 244 73 245 74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	70	226
73 245 74 251 75 261 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 3665 88 371 89 411	71	243
74 251 75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	72	244
75 261 76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	73	245
76 263 77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	74	251
77 265 78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411 90 412	75	261
78 271 79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411 90 412	76	263
79 306 80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411	77	265
80 311 81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411 90 412	78	271
81 315 82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411 90 412	79	306
82 331 83 343 84 346 85 351 86 364 87 365 88 371 89 411 90 412	80	311
83 343 84 346 85 351 86 364 87 365 88 371 89 411 90 412	81	315
84 346 85 351 86 364 87 365 88 371 89 411 90 412	82	331
85 351 86 364 87 365 88 371 89 411 90 412	83	343
86 364 87 365 88 371 89 411 90 412	84	346
87 365 88 371 89 411 90 412	85	351
88 371 89 411 90 412	86	364
89 411 90 412	87	365
90 412	88	371
	89	411
91 413	90	412
31 410	91	413

PRIVACY CODE	DCS (Octal)
92	423
93	431
94	432
95	445
96	464
97	465
98	466
99	503
100	506
101	516
102	532
103	546
104	565
105	606
106	612
107	624
108	627
109	631
110	632
111	654
112	662
113	664
114	703
115	712
116	723
117	731
118	732
119	734
120	743
121	754

REPEATER-ONLY PRIVACY CODES

PRIVACY CODE	CTCSS (Hz)
122	69.3
123	159.8
124	165.5
125	171.3
126	177.3
127	179.9
128	183.5
129	189.9
130	196.6
131	199.5
132	206.5
133	229.1
134	254.1

PRIVACY CODE	DCS (Octal)
135	36
136	53
137	122
138	145
139	212
140	225
141	246
142	252
143	255
144	266
145	274
146	325
147	332
148	356
149	446
150	452
151	454
152	455
153	462
154	523
155	562

REPEATER CHANNELS

CHANNEL	RX FREQUENCY (MHz)	TX FREQUENCY (MHz)	POWER
REP 15	462.5500	467.5500	5 Watts (High)
REP 16	462.5750	467.5750	5 Watts (High)
REP 17	462.6000	467.6000	5 Watts (High)
REP 18	462.6250	467.6250	5 Watts (High)
REP 19	462.6500	467.6500	5 Watts (High)
REP 20	462.6750	467.6750	5 Watts (High)
REP 21	462.7000	467.7000	5 Watts (High)
REP 22	462.7250	467.7250	5 Watts (High)

NOAA WEATHER CHANNELS

CHANNEL	FREQUENCY (MHz)	
1	162.550	
2	162.400	
3	162.475	
4	162.425	
5	162.450	
6	162.500	
7	162.525	
8	161.650	
9	161.775	
10	161.750	
11	162.000	

FCC STATEMENT

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. 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. SAR tests are conducted using standard operating positions accepted by 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 model is a 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 product are performed in positions and locations as required by the FCC. 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 and accessory that contains no metal. To maintain compliance with FCC RF exposure quidelines hold the transmitter and antenna at least 1 inch (2.5 centimeters) from your face with the antenna pointed up and away from your face. The equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to comply with the FCC RF exposure requirement, the antenna installation must comply with following: Users must be fully aware of the hazards of the exposure and able to exercise control over their RF exposure to qualify for the higher exposure limits. Your wireless handheld portable transceiver contains a low power transmitter. This product sends out radio frequency (RF) signals when the Push-to-Talk(PTT) button is pressed. The device is authorized to operate at a duty factor not to exceed 50%.

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 technician for help.