

FRS = Family Radio Service

- FRS radios are low powered, easy to use radios for family use, and they use “line of sight” transmission.
- These radios may also be known as ‘walkie-talkies’.
- Range is often about a mile. If there are no obstacles, it may be further.
- Because of their limited range and power, no license or test is required for its use.
- These radios operate on the UHF (ultra-high frequencies) between 462.5625 MHz and 462.7250 MHz.
- FRS radios share the first 22 preset channels with GMRS radios, which means they can crosstalk. If you have a GMRS radio and your neighbor has an FRS radio, you can talk with each other.
- Channels 1-7 are limited to 2 watts transmitting power.
- Channels 8-14 are limited to 0.5 watts transmitting power, (but range is lowered, to about 1/2 mile, depending on conditions.)
- Channels 15– 22 are limited to 2 watts transmitting power.

- FRS is limited to 2 watts transmitting power, and these radios do not have removable antennas. This means that you are bound to the limited power which came with the radio.
- FRS radios can be used to listen to repeater channels, but you cannot talk on them.

Cons of GMRS and FRS radios:

- Although the GMRS radio has much more value for communication, perhaps the biggest disadvantage is living in a low-use area. Unless you live in an area with a GMRS repeater or many GMRS operators, it may be disappointing.
- The success of its operation improves if you have additional neighbors or friends living in your area who are also motivated to develop a communication network, and practice frequently.
- If you desire a longer distance of communication to meet your needs, then you may wish to consider testing for an amateur radio license. Additional information can be found at: <https://www.arrl.org>, or by contacting the GARS club below.

GAINESVILLE AMATEUR RADIO SOCIETY (GARS)

AN ARRL-AFFILIATED CLUB

Contact info:
president@gars.club



Emergency Communications Using GMRS and FRS Radios



Cell phones are convenient as long as they are working. However, they depend upon an infrastructure which can go down with power outages.

Learn additional ways to stay connected with friends and neighbors in everyday situations...

or when all else fails....

GMRS = General Mobile Radio Service

- GMRS radios are useful in a variety of ways, such as camping, travel, hiking and more. It can help to create a more cohesive neighborhood, and can also serve as a potential lifeline in a disastrous situation with a communications outage.
- No test is needed.
- It is a licensed radio service, meaning that you need a license to operate it.
- License can be purchased on the FCC website for \$35, and it is good for 10 years.
- Once licensed, FCC will assign you a call sign, which can be used by you and your immediate family. You will use this call sign at least once every 15 minutes when you are on the air, and when you sign off.
- **Steps for filing an application for a new GMRS license:**
 - 1) register for an FCC registration number (FRN number—similar to having a SSN) by going to <https://apps.fcc.gov/coresWeb/publicHome.do>, or by clicking the “Register with the FCC” link under the Submit button on the Login page.

2) once you obtain an FRN number, go to <https://wireless2.fcc.gov/UlsEntry/licManager/login.jsp> and login using your FRN and password.

- It is used for short-distance, two way voice communications using hand held radios, mobile radios and repeater systems.
- These frequencies use line of sight” waves, which means that they cannot go over hills or over the curvature of the earth. Placing an antenna on a mast or hanging from a tree can increase the transmit and receive distance. Generally, the higher your antenna, the greater your radio’s range.
- 2 handheld radios with antennas about 5 feet above the ground can generally communicate up to 1-2 miles apart. However, this distance will depend upon local environmental obstructions, such as buildings or trees, which can weaken the signal.
- GMRS license rules are found in Part 95, Subpart E of the Title 47 Code of Federal Regulations, and are available at <https://www.ecfr.gov>.
- GMRS radios have a total of 30 preset universal channels, with 22 regular channels & 8 repeater channels. (Repeaters may help to amplify your radio signal, in order to increase your communication distance, sometimes up to 50 miles or more.)

GMRS SIMPLEX CHANNELS AND FREQUENCIES			
Channel	Frequency	Max Power	Bandwidth
1	462.5625	5W	20kHz
2	462.5875	5W	20kHz
3	462.6125	5W	20kHz
4	462.6375	5W	20kHz
5	462.6625	5W	20kHz
6	462.6875	5W	20kHz
7	462.7125	5W	20kHz
8	467.5625	0.5W	12.5kHz
9	467.5875	0.5W	12.5kHz
10	467.6125	0.5W	12.5kHz
11	467.6375	0.5W	12.5kHz
12	467.6625	0.5W	12.5kHz
13	467.6875	0.5W	12.5kHz
14	467.7125	0.5W	12.5kHz
15	462.5500	50W	20kHz
16	462.5750	50W	20kHz
17	462.6000	50W	20kHz
18	462.6250	50W	20kHz
19	462.6500	50W	20kHz
20	462.6750	50W	20kHz
21	462.7000	50W	20kHz
22	462.7250	50W	20kHz
GMRS REPEATER CHANNELS AND FREQUENCIES			
Channel	RX / TX Frequency	Max Power	Bandwidth
RPT15	462.5500/ 467.5500	50W	20kHz
RPT16	462.5750/ 467.5750	50W	20kHz
RPT17	462.6000/ 467.6000	50W	20kHz
RPT18	462.6250/ 467.6250	50W	20kHz
RPT19	462.6500/ 467.6500	50W	20kHz
RPT20	462.6750/ 467.6750	50W	20kHz
RPT21	462.7000/ 467.7000	50W	20kHz
RPT22	462.7250/ 467.7250	50W	20kHz