

FRS & GMRS Radio Reference Card

Phonetic Alphabet

Letter	Word	Pronunciation
A	Alpha	<i>al-fah</i>
B	Bravo	<i>bra-voh</i>
C	Charlie	<i>char-lee</i>
D	Delta	<i>dell-tah</i>
E	Echo	<i>eck-oh</i>
F	Foxtrot	<i>focks-trot</i>
G	Golf	<i>golf</i>
H	Hotel	<i>hoh-tell</i>
I	India	<i>in-dee-ah</i>
J	Juliet	<i>jew-lee-ett</i>
K	Kilo	<i>kee-loh</i>
L	Lima	<i>lee-mah</i>
M	Mike	<i>mike</i>
N	November	<i>noh-vem-ber</i>
O	Oscar	<i>oss-cah</i>
P	Papa	<i>pah-pah</i>
Q	Quebec	<i>keh-beck</i>
R	Romeo	<i>row-me-oh</i>
S	Sierra	<i>see-air-ah</i>
T	Tango	<i>tang-go</i>
U	Uniform	<i>you-nee-form</i>
V	Victor	<i>vik-tah</i>
W	Whiskey	<i>wiss-key</i>
X	Xray	<i>ecks-ray</i>
Y	Yankee	<i>yang-kee</i>
Z	Zulu	<i>zoo-loo</i>

Number	Word	Pronunciation
0	Zero	<i>zee-ro</i>
1	One	<i>wun</i>
2	Two	<i>too</i>
3	Three	<i>tree</i>
4	Four	<i>fow-er</i>
5	Five	<i>fife</i>
6	Six	<i>six</i>
7	Seven	<i>sev-en</i>
8	Eight	<i>ait</i>
9	Nine	<i>nin-er</i>

Range Calculator

Advertised Range	Urban Terrain	Suburban Terrain	Open (Level) Terrain	Elevated Terrain
16 miles	1-2 blocks	300-800 feet	0.5-1 mile	Up to 16 miles (est.)
20 miles	2-3 blocks	0.1-0.3 mile	1-3 miles	Up to 20 miles (est.)
26 miles	3-4 blocks	0.4-0.5 mile	3-4 miles	Up to 26 miles (est.)
30 miles	4-6 blocks	0.6-1.0 mile	4-5 miles	Up to 30 miles (est.)
36+ miles	0.2-0.25 mile	1-2 miles	~6 miles	Up to 36+ miles (est.)

Common CTCSS Codes

CTCSS	Hz	CTCSS	Hz	CTCSS	Hz	CTCSS	Hz	CTCSS	Hz
1	67.0	9	91.5	17	118.8	25	156.7	33	210.7
2	71.9	10	94.8	18	123.0	26	162.2	34	218.1
3	74.4	11	97.4	19	127.3	27	167.9	35	225.7
4	77.0	12	100.0	20	131.8	28	173.8	36	233.6
5	79.7	13	103.5	21	136.5	29	179.9	37	241.8
6	82.5	14	107.2	22	141.3	30	186.2	38	250.3
7	85.4	15	110.9	23	146.2	31	192.8		
8	88.5	16	114.8	24	151.4	32	203.5		

Common DCS Codes

DCS	Code	DCS	Code	DCS	Code	DCS	Code	DCS	Code	DCS	Code	DCS	Code
1	023	13	073	25	156	37	261	49	365	61	503	73	654
2	025	14	074	26	162	38	263	50	371	62	506	74	662
3	026	15	114	27	165	39	265	51	411	63	516	75	664
4	031	16	115	28	172	40	271	52	412	64	532	76	703
5	032	17	116	29	174	41	306	53	413	65	546	77	712
6	043	18	125	30	205	42	311	54	423	66	565	78	723
7	047	19	131	31	223	43	315	55	431	67	606	79	731
8	051	20	132	32	226	44	331	56	432	68	612	80	732
9	054	21	134	33	243	45	343	57	445	69	624	81	734
10	065	22	143	34	244	46	346	58	464	70	627	82	743
11	071	23	152	35	245	47	351	59	465	71	631	83	754
12	072	24	155	36	251	48	364	60	466	72	632		

GMRS Transmit Protocols

Source: FCC Rules and Regulations in Title 47 of the Code of Federal Regulations, §95.1751 GMRS station identification.

Each GMRS station must be identified by transmission of its FCC-assigned call sign at the end of transmissions and at periodic intervals during transmissions except as provided in paragraph (c) below. A unit number may be included after the call sign in the identification.

The GMRS station call sign must be transmitted:

- (1) Following a single transmission or a series of transmissions; and,
- (2) After 15 minutes and at least once every 15 minutes thereafter during a series of transmissions lasting more than 15 minutes.

(b) The call sign must be transmitted using voice in the English language or international Morse code telegraphy using an audible tone.

(c) Any GMRS repeater station is not required to transmit station identification if:

- (1) It retransmits only communications from GMRS stations operating under authority of the individual license under which it operates; and,
- (2) The GMRS stations whose communications are retransmitted are properly identified in accordance with this section.

FRS/GMRS Channels

Channel (1-22)	Bandwidth* (FRS/GMRS)	Frequency (MHz)
1	12.5/20 kHz	462.5625
2	12.5/20 kHz	462.5875
3	12.5/20 kHz	462.6125
4	12.5/20 kHz	462.6375
5	12.5/20 kHz	462.6625
6	12.5/20 kHz	462.6875
7	12.5/20 kHz	462.7125
8	12.5/12.5 kHz	467.5625
9	12.5/12.5 kHz	467.5875
10	12.5/12.5 kHz	467.6125
11	12.5/12.5 kHz	467.6375
12	12.5/12.5 kHz	467.6625
13	12.5/12.5 kHz	467.6875
14	12.5/12.5 kHz	467.7125
15	12.5/20 kHz	462.5500
16	12.5/20 kHz	462.5750
17	12.5/20 kHz	462.6000
18	12.5/20 kHz	462.6250
19	12.5/20 kHz	462.6500
20	12.5/20 kHz	462.6750
21	12.5/20 kHz	462.7000
22	12.5/20 kHz	462.7250

*Authorized Bandwidth

GMRS Repeater Channels

Channel (R15-R22)	TX Freq. (MHz)	RX Freq. (MHz)
R15	467.5500	462.5500
R16	467.5750	462.5750
R17	467.6000	462.6000
R18	467.6250	462.6250
R19	467.6500	462.6500
R20	467.6750	462.6750
R21	467.7000	462.7000
R22	467.7250	462.7250

Power Limit (Wattage)

Channels	FRS	GMRS
1-7	2 W	5 W
8-14	0.5 W	0.5 W
15-22	2 W	50 W