Portable HF Cheat Sheet

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1 Band Plan

1.1 160 meters ((1.8–2.0) MHz)

Long-distance propagation at night. Better in the winter.

For SSB, use LSB.

Frequency (MHz)	Mode(s)
1.800–2.000	CW
1.800–1.810	Digital
1.810	QRP CW Calling
1.818	CW Calling
1.825	QRP SSB Calling
1.843–2.000	SSB, SSTV, Other
1.910	QRP SSB Calling
1.995–2.000	Experimental
1.999–2.000	Beacons

1.2 80 meters ((3.5–4.0) MHz)

Long-distance propagation at night. Better in the winter. Longer distances than 160 m. Reliable.

For SSB, use LSB.

Frequency (MHz)	Mode(s)
3.500–3.510	CW DX
3.560	QRP CW Calling
3.590	RTTY/Data DX
3.570–3.600	RTTY/Data
3.710	CW Calling (Novice)
3.711	CW Calling (Novice)
3.790–3.800	SSB DX
3.845	SSTV
3.885	AM Calling
3.985	QRP SSB Calling

1.3 60 meters (5 MHz channels)

Similar to 80 m and 40 m.

Only allowed on 5 channels. Only one signal at a time is permitted on a channel. Maximum power 100 W PEP.

USB is limited to 2.8 kHz.

CW and digital must be centered 1.5 kHz above the frequencies shown.

Frequency (MHz)	Mode(s)
5.3305	USB and CW/RTTY/Data
5.3465	USB and CW/RTTY/Data
5.3570	USB and CW/RTTY/Data
5.3715	USB and CW/RTTY/Data
5.4035	USB and CW/RTTY/Data (Calling)

1.4 40 meters ((7.0–7.3) MHz)

During the summer, (500–700) km range during the day, and 1500 km range during at night. Better in the winter.

For SSB, use LSB.

Frequency (MHz)	Mode(s)
7.000–7.010	CW DX
7.040	QRP CW Calling
7.040	RTTY/Data DX
7.080–7.125	RTTY/Data
7.110	QRP CW Calling (Novice)
7.171	SSTV
7.285	SSB Calling
7.290	AM Calling

1.5 30 meters ((10.1–10.15) MHz)

Like 40 m, but slightly longer propagation.

Can only be used for CW and RTTY.

Frequency (MHz)	Mode(s)
10.106	QRP CW Calling
10.116	CW Calling
10.130–10.140	RTTY
10.140–10.150	Packet

1.6 20 meters ((14.0–14.35) MHz)

Around-the-world propagation, at peak solar cycle. Not useful for short ranges (a few 100 km).

For SSB, use USB.

Frequency (MHz)	Mode(s)
14.060	QRP CW Calling
14.070–14.095	RTTY
14.0950–14.0995	Packet
14.100	Beacons
14.1005–14.1120	Packet
14.230	SSTV
14.275	Assholes
14.285	QRP SSB Calling
14.286	AM Calling
14.313	Assholes

1.7 17 meters ((18.068–18.168) MHz)

Similar to 20 m.

For SSB, use USB.

Frequency (MHz)	Mode(s)
18.069	CW Calling
18.080	QRP CW Calling
18.096	CW Calling
18.100–18.105	RTTY
18.105–18.110	Packet
18.110	Beacons
18.130	QRP SSB Calling

1.8 15 meters ((21.000–21.450) MHz)

Similar to 20 m, but less reliable and even more influenced by the solar cycle.

For SSB, use USB.

Frequency (MHz)	Mode(s)
21.060	QRP CW Calling
21.070–21.110	RTTY/Data
21.110	QRP CW Calling (Novice)
21.150	Beacons
21.340	SSTV
21.385	QRP SSB Calling

1.9 12 meters ((24.89–24.99) MHz)

Even more strongly influenced by the solar cycle than 15 m.

For SSB, use USB.

Frequency (MHz)	Mode(s)
24.906	CW Calling
24.910	QRP CW Calling
24.920–24.925	RTTY
24.925–24.930	Packet
24.930	Beacons
24.950	QRP SSB Calling
24.956	SSB Calling

1.10 10 meters ((28.0–29.7) MHz)

Most influenced by the solar cycle. Good for DX and QRP when the conditions are right.

For SSB, use USB.

Frequency (MHz)	Mode(s)
28.000–28.070	CW
28.060	QRP CW Calling
28.070–28.150	RTTY
28.1010	Intl CW Calling
28.110	QRP CW Calling (Novice)
28.150–28.190	CW
28.200–28.300	Beacons
28.300–29.300	Phone
28.380	Intl SSB Calling
28.385	QRP SSB Calling
28.400 and 28.425	Intl SSB Calling
28.680	SSTV
28.885	SSB Calling
29.000–29.200	AM
29.300–29.510	Satellites
29.520–29.590	Repeater Inputs
29.600	FM Calling
29.610–29.700	Repeater Outputs

US Amateur Radio Bands

US AMATEUR POWER LIMITS

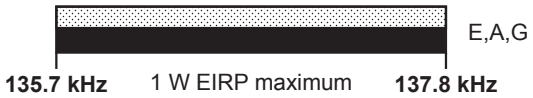
FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.

Effective Date for 2,200 and 630 Meters to be announced

ARRL The national association for AMATEUR RADIO®

On March 28, 2017, the Federal Communications Commission adopted rules that will allow Amateur Radio access to 472-479 kHz (630 meters) and to 135.7-137.8 kHz (2,200 meters). However, amateurs cannot use these frequencies until 30 days after the Report and Order is published in the Federal Register and the final procedures for registering stations with the Utilities Telecoms Council (UTC) have been approved and announced. At the time this chart was created, the Report and Order had not been published and the UTC online registration site is not yet available. Follow ARRL news for further information. New charts will be published at www.arrl.org/graphical-frequency-allocations when the bands are fully available for use.

2,200 Meters (135 kHz)

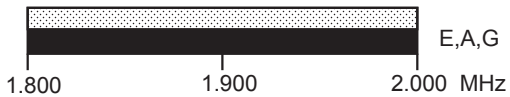


630 Meters (472 kHz)

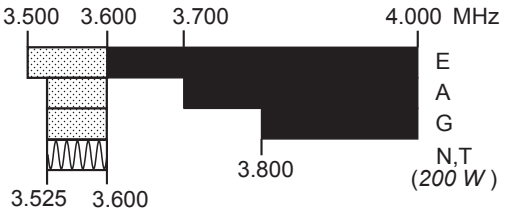
5 W EIRP maximum, except in Alaska within 496 miles of Russia where the power limit is 1 W EIRP.

160 Meters (1.8 MHz)

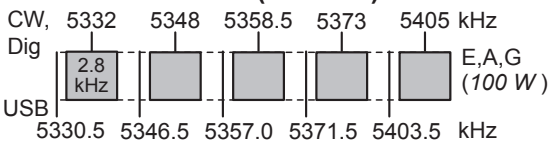
Avoid interference to radiolocation operations from 1.900 to 2.000 MHz



80 Meters (3.5 MHz)

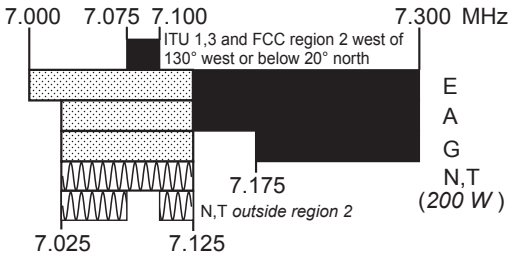


60 Meters (5.3 MHz)



General, Advanced, and Amateur Extra licensees may operate on these five channels on a secondary basis with a maximum effective radiated power (ERP) of 100 W PEP relative to a half-wave dipole. Permitted operating modes include upper sideband voice (USB), CW, RTTY, PSK31 and other digital modes such as PACTOR III. Only one signal at a time is permitted on any channel.

40 Meters (7 MHz)

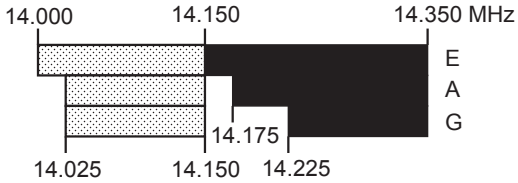


See Sections 97.305(c), 97.307(f)(11) and 97.301(e). These exemptions do not apply to stations in the continental US.

30 Meters (10.1 MHz)

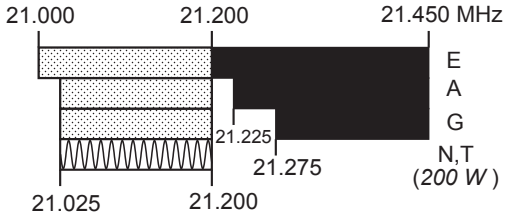
Avoid interference to fixed services outside the US.

20 Meters (14 MHz)



17 Meters (18 MHz)

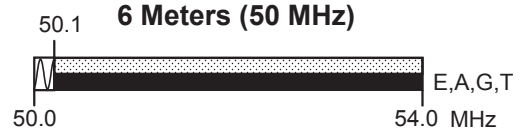
15 Meters (21 MHz)



12 Meters (24 MHz)

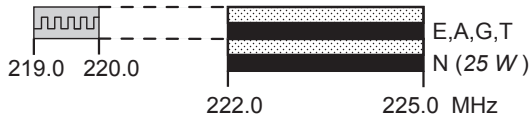
10 Meters (28 MHz)

6 Meters (50 MHz)



2 Meters (144 MHz)

1.25 Meters (222 MHz)

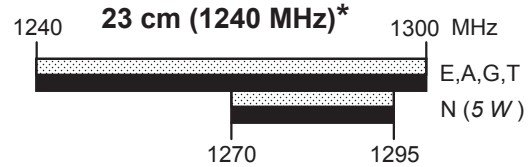


*Geographical and power restrictions may apply to all bands above 420 MHz. See *The ARRL Operating Manual* for information about your area.

70 cm (420 MHz)*

33 cm (902 MHz)*

23 cm (1240 MHz)*



All licensees except Novices are authorized all modes on the following frequencies:

2300-2310 MHz	10.0-10.5 GHz ‡	122.25-123.0 GHz
2390-2450 MHz	24.0-24.25 GHz	134-141 GHz
3300-3500 MHz	47.0-47.2 GHz	241-250 GHz
5650-5925 MHz	76.0-81.0 GHz	All above 275 GHz

‡ No pulse emissions

KEY

Note:

CW operation is permitted throughout all amateur bands.

MCW is authorized above 50.1 MHz, except for 144.0-144.1 and 219-220 MHz.

Test transmissions are authorized above 51 MHz, except for 219-220 MHz

- = RTTY and data
- = phone and image
- = CW *only*
- = SSB phone
- = USB phone, CW, RTTY, and data.
- = Fixed digital message forwarding systems *only*

E = Amateur Extra
A = Advanced
G = General
T = Technician
N = Novice

See *ARRLWeb at www.arrl.org* for detailed band plans.

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 rev. 4/25/2017

2 Useful Stations

2.1 WWV

WWV is operated by NIST and broadcasts official U.S. Government frequency and time signals.

Frequencies: (2.5, 5.0, 10.0, 15.0 and 20.0) MHz

2.2 W1AW

W1AW is operated by the ARRL, and routinely transmits practice sessions and bulletins.

Code Frequencies: (1.8025, 3.5815, 7.0475, 14.0475, 18.0975, 21.0675, 28.0675 and 147.555) MHz

Digital Frequencies: (3.5975, 7.095, 14.095, 18.1025, 21.095, 28.095 and 147.555) MHz

Voice Frequencies: (1.855, 3.99, 7.29, 14.29, 18.16, 21.39, 28.59 and 147.555) MHz

Local Time						
Pacific	East	M	Tu	W	Th	F
0600	0900		Fast Code	Slow Code	Fast Code	Slow Code
1300	1600	Fast Code	Slow Code	Fast Code	Slow Code	Fast Code
1400	1700	Code Bulletin				
1500	1800	Digital Bulletin				
1600	1900	Slow Code	Fast Code	Slow Code	Fast Code	Slow Code
1700	2000	Code Bulletin				
1800	2100	Digital Bulletin				
1845	2145	Voice Bulletin				
1900	2200	Fast Code	Slow Code	Fast Code	Slow Code	Fast Code
2000	2300	Code Bulletin				

3 Morse Code

A	·−	0	−−−−−
B	−···	1	·−−−−
C	−·−·	2	··−−−
D	−··	3	···−−
E	·	4	····−
F	··−·	5	·····
G	−−·	6	−····
H	····	7	−−···
I	··	8	−−−··
J	·−−−	9	−−−−·
K	−·−		
L	·−··	.	·−·−·−
M	−−	,	−−··−−
N	−·	!	−·−·−−
O	−−−	?	··−−··
P	·−−·	/	−··−·
Q	−−·−	(	−·−−·
R	·−·	)	−·−−·−
S	···	’	·−−−−·
T	−	”	·−··−·
U	··−	+	·−·−·
V	···−	-	−····−
W	·−−	=	−···−
X	−··−	:	−−−···
Y	−·−−	;	−·−·−·
Z	−−··	@	·−−·−·

pause	$\overline{\text{BT}}$	−···−
back to other station	$\overline{\text{AR}}$	·−·−·
end transmission	$\overline{\text{SK}}$	···−·−
break	BK	−··· −·−
go ahead / over	K	−·−
over (specific station)	KN	−·− −·
shutting down	CL	−·−· ·−··

4 Common Q Codes

Code	Question	Answer / Advice / Order
QRL	Are you busy?	I am busy. Don't interfere.
QRM	Are you being interfered with?	I am being interfered with.
QRN	Are you troubled by static noise?	I am troubled by static.
QRO	Should I increase power?	Increase power.
QRP	May I decrease power?	Decrease power.
QRQ	May I send faster?	Send faster.
QRS	Should I send more slowly?	Send more slowly.
QRT	Should I stop transmission?	Stop transmission
QRU	Do you have anything for me?	I have nothing for you.
QRV	Are you ready?	I am ready.
QRX	When will you call again?	I will call you again. (time, freq)
QRZ	Who (else) is calling?	You are being called by ...
QSB	Is my signal strength varying?	Your signal strength is varying.
QSK	Shall I continue transmitting?	Continue. I will interrupt if needed.
QSL	Can you acknowledge receipt?	I acknowledge receipt.
QSO	Can you communicate with ...?	I can communicate with ....
QSY	Shall I change frequency to ...?	Change frequency to ....
QTH	What is your location?	My location is ....
QST		Essentially "CQ ARRL"