

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.

Amateurs wishing to operate on either 2,200 or 630 meters must first register with the Utilities Technology Council online at <https://utc.org/pic-database-amateur-notification-process/>. You need only register once for each band.

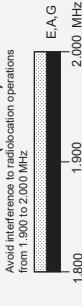
2,200 Meters (135 kHz)



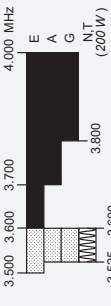
630 Meters (472 kHz)



160 Meters (1.8 MHz)



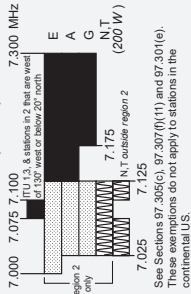
80 Meters (3.5 MHz)



60 Meters (5.3 MHz)



40 Meters (7 MHz)



30 Meters (10.1 MHz)



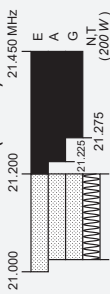
20 Meters (14 MHz)



17 Meters (18 MHz)



15 Meters (21 MHz)



12 Meters (24 MHz)



10 Meters (28 MHz)



6 Meters (50 MHz)



2 Meters (144 MHz)

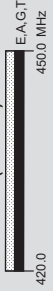


1.25 Meters (222 MHz)



* Geographical and power restrictions may apply to all bands above 420 MHz. See FCC Part 97.303 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
3400-3450 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.
NCW 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 www.arrl.org/band-plan for detailed band plans.

ARRL

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ARRL Headquarters:
860-594-0200 (Fax 860-594-0259)
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Toll-Free 1-800-368-3942 (860-594-0355)
email: news@arrl.org

Exams: 860-594-0300 email: ve@arrl.org

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The Considerate Operator's Frequency Guide

The following frequencies are generally recognized for certain modes or activities (all frequencies are in MHz) during normal conditions. These are not regulations and occasionally a high level of activity, such as during a period of emergency response, DXpedition or contest, may result in stations operating outside these frequency ranges.

Nothing in the rules recognizes a net's, group's or any individual's special privilege to any specific frequency. Section 97.101(b) of the Rules states that "Each station licensee and each control operator must cooperate in selecting transmitting channels and in making the most effective use of the amateur service frequencies. No frequency will be assigned for the exclusive use of any station." No one "owns" a frequency.

It's good practice — and plain old common sense — for any operator, regardless of mode, to check to see if the frequency is in use prior to engaging operation. If you are there first, other operators should make an effort to protect you from interference to the extent possible, given that 100% interference-free operation is an unrealistic expectation in today's congested bands.

<i>Frequencies</i>	<i>Modes/Activities</i>	<i>Frequencies</i>	<i>Modes/Activities</i>
1.800-2.000	CW	14.233	D-SSTV
1.800-1.810	Digital Modes	14.236	Digital Voice
1.810	CW QRP calling frequency	14.285	QRP SSB calling frequency
1.843-2.000	SSB, SSTV and other wideband modes	14.286	AM calling frequency
1.910	SSB QRP	18.100-18.105	RTTY/Data
1.995-2.000	Experimental	18.105-18.110	Automatically controlled data stations
1.999-2.000	Beacons	18.110	IBP/NCDXF beacons
		18.162.5	Digital Voice
3.500-3.510	CW DX window	21.060	QRP CW calling frequency
3.560	QRP CW calling frequency	21.070-21.110	RTTY/Data
3.570-3.600	RTTY/Data	21.090-21.100	Automatically controlled data stations
3.585-3.600	Automatically controlled data stations	21.150	IBP/NCDXF beacons
3.590	RTTY/Data DX	21.340	SSTV
3.790-3.800	DX window	21.385	QRP SSB calling frequency
3.845	SSTV		
3.885	AM calling frequency	24.920-24.925	RTTY/Data
3.985	QRP SSB calling frequency	24.925-24.930	Automatically controlled data stations
		24.930	IBP/NCDXF beacons
7.030	QRP CW calling frequency	28.060	QRP CW calling frequency
7.040	RTTY/Data DX	28.070-28.120	RTTY/Data
7.070-7.125	RTTY/Data	28.120-28.189	Automatically controlled data stations
7.100-7.105	Automatically controlled data stations	28.190-28.225	Beacons
7.171	SSTV	28.200	IBP/NCDXF beacons
7.173	D-SSTV	28.385	QRP SSB calling frequency
7.285	QRP SSB calling frequency	28.680	SSTV
7.290	AM calling frequency	29.000-29.200	AM
10.130-10.140	RTTY/Data	29.300-29.510	Satellite downlinks
10.140-10.150	Automatically controlled data stations	29.520-29.580	Repeater inputs
14.060	QRP CW calling frequency	29.600	FM simplex
14.070-14.095	RTTY/Data	29.620-29.680	Repeater outputs
14.095-14.0995	Automatically controlled data stations		
14.100	IBP/NCDXF beacons		
14.1005-14.112	Automatically controlled data stations		
14.230	SSTV		

ARRL band plans for frequencies above 28.300 MHz are shown in *The ARRL Repeater Directory* and on www.arrl.org.

References

CW Parse Tree
<https://commons.wikimedia.org/wiki/File:Morse-code-tree.svg>

World Maidenhead Grid Map
<https://www.dxengineering.com/techarticles/dxegeneralnews/download-a-free-worldwide-grid-square-map-from-dx-engineering>

ARRL Frequency Allocation Chart
<https://www.arrl.org/graphical-frequency-allocations>

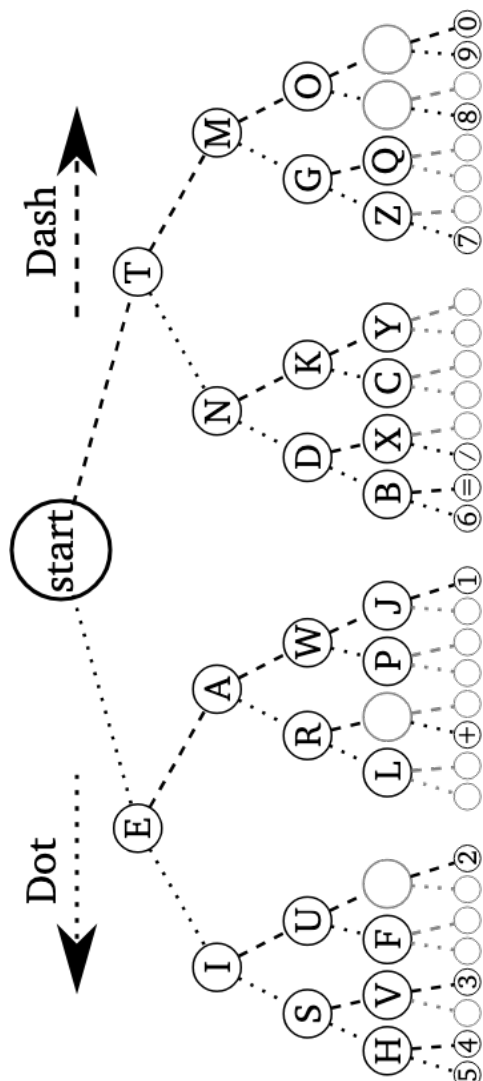
ARRL Considerate Operator's Frequency Guide
<https://www.arrl.org/considerate-operator>

ARRL Communicating with Other Hams
<https://www.arrl.org/files/file/Get%20on%20the%20Air/Comm%20w%20Other%20Hams-Q%20Signals.pdf>

Icom US Grid Square Map
https://www.icomamerica.com/lineup/amateur/Band_Plan_Map/

Icom Common Prefixes of Countries
<https://www.hamqsl.com/bandchar.pdf>

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BAND PLAN FREQUENCY ASSIGNMENTS

23-26 MHz 1240-1390 MHz ARRL Band Plan		ARRL 70- on Wavelength Band Plan, 420-450 MHz		ARRL 33- on Wavelength Band Plan, 902-975 MHz (cont.)	
23-26 MHz	Use	420-450 MHz	Use	902-975 MHz	Use
1240-1242	ITU 23-26 MHz	420-423.475	AV1 repeater to simplex and up to 421.380 MHz	904-906	Digital communications
1242-1244	ITU 23-26 MHz	423-426.475	Non-repeater simplex, simplex repeater, simplex	906-908	Non-repeater simplex, simplex repeater, simplex
1244-1246	digital, duplex with 1254-1258 MHz	426-430.475	Simplex and duplex with 427.500 MHz simplex carrier frequency	910-912	Non-repeater simplex repeater
1246-1248	ITU 23-26 MHz	432-435.475	ITU 432-435.475 MHz	912-914	Non-repeater simplex repeater with 919.025 MHz, 117 channels up to 244.5 MHz, up to 902.925, 907.925, etc.,
1248-1250	ITU 23-26 MHz	438-442.475	Black-outlet CW	914-916	ITU 914-916 MHz unallocated use
1250-1252	ITU 23-26 MHz	444-447.475	Non-repeater simplex and simplex repeater	916-918	Digital communications
1252-1254	digital, duplex with 1262-1264 MHz	450-453.475	Black-outlet and simplex calling frequency	918-919	Digital communications
1254-1256	ITU 23-26 MHz	456-459.475	Black-outlet simplex	919-921	Digital simplex repeater, simplex and remote base
1256-1258	ITU 23-26 MHz	462-465.475	ITU 462-465.475 MHz	921-923	Non-repeater simplex repeater, simplex and remote base
1258-1260	ITU 23-26 MHz	468-471.475	Simplex and duplex with 472.500 MHz simplex carrier frequency	923-925	Non-repeater simplex repeater, simplex and remote base
1260-1262	ITU 23-26 MHz	474-477.475	Simplex and duplex with 477.500 MHz simplex carrier frequency	925-927	Non-repeater simplex repeater, simplex and remote base
1262-1264	ITU 23-26 MHz	480-483.475	Simplex and duplex with 482.500 MHz simplex carrier frequency	927-929	Non-repeater simplex repeater, simplex and remote base
1264-1266	ITU 23-26 MHz	486-489.475	Simplex and duplex with 489.000 MHz simplex carrier frequency	929-931	Non-repeater simplex repeater, simplex and remote base
1266-1268	ITU 23-26 MHz	492-495.475	Simplex and duplex with 495.000 MHz simplex carrier frequency	931-933	Non-repeater simplex repeater, simplex and remote base
1268-1270	ITU 23-26 MHz	498-501.475	Simplex and duplex with 501.000 MHz simplex carrier frequency	933-935	Non-repeater simplex repeater, simplex and remote base
1270-1272	ITU 23-26 MHz	504-507.475	Simplex and duplex with 507.000 MHz simplex carrier frequency	935-937	Non-repeater simplex repeater, simplex and remote base
1272-1274	ITU 23-26 MHz	510-513.475	Simplex and duplex with 513.000 MHz simplex carrier frequency	937-939	Non-repeater simplex repeater, simplex and remote base
1274-1276	ITU 23-26 MHz	516-519.475	Simplex and duplex with 519.000 MHz simplex carrier frequency	939-941	Non-repeater simplex repeater, simplex and remote base
1276-1278	ITU 23-26 MHz	522-525.475	Simplex and duplex with 525.000 MHz simplex carrier frequency	941-943	Non-repeater simplex repeater, simplex and remote base
1278-1280	ITU 23-26 MHz	528-531.475	Simplex and duplex with 531.000 MHz simplex carrier frequency	943-945	Non-repeater simplex repeater, simplex and remote base
1280-1282	ITU 23-26 MHz	534-537.475	Simplex and duplex with 537.000 MHz simplex carrier frequency	945-947	Non-repeater simplex repeater, simplex and remote base
1282-1284	ITU 23-26 MHz	540-543.475	Simplex and duplex with 543.000 MHz simplex carrier frequency	947-949	Non-repeater simplex repeater, simplex and remote base
1284-1286	ITU 23-26 MHz	546-549.475	Simplex and duplex with 549.000 MHz simplex carrier frequency	949-951	Non-repeater simplex repeater, simplex and remote base
1286-1288	ITU 23-26 MHz	552-555.475	Simplex and duplex with 555.000 MHz simplex carrier frequency	951-953	Non-repeater simplex repeater, simplex and remote base
1288-1290	ITU 23-26 MHz	558-561.475	Simplex and duplex with 561.000 MHz simplex carrier frequency	953-955	Non-repeater simplex repeater, simplex and remote base
1290-1292	ITU 23-26 MHz	564-567.475	Simplex and duplex with 567.000 MHz simplex carrier frequency	955-957	Non-repeater simplex repeater, simplex and remote base
1292-1294	ITU 23-26 MHz	570-573.475	Simplex and duplex with 573.000 MHz simplex carrier frequency	957-959	Non-repeater simplex repeater, simplex and remote base
1294-1296	ITU 23-26 MHz	576-579.475	Simplex and duplex with 579.000 MHz simplex carrier frequency	959-961	Non-repeater simplex repeater, simplex and remote base
1296-1298	ITU 23-26 MHz	582-585.475	Simplex and duplex with 585.000 MHz simplex carrier frequency	961-963	Non-repeater simplex repeater, simplex and remote base
1298-1300	ITU 23-26 MHz	588-591.475	Simplex and duplex with 591.000 MHz simplex carrier frequency	963-965	Non-repeater simplex repeater, simplex and remote base
1300-1302	ITU 23-26 MHz	594-597.475	Simplex and duplex with 597.000 MHz simplex carrier frequency	965-967	Non-repeater simplex repeater, simplex and remote base
1302-1304	ITU 23-26 MHz	600-603.475	Simplex and duplex with 603.000 MHz simplex carrier frequency	967-969	Non-repeater simplex repeater, simplex and remote base
1304-1306	ITU 23-26 MHz	606-609.475	Simplex and duplex with 609.000 MHz simplex carrier frequency	969-971	Non-repeater simplex repeater, simplex and remote base
1306-1308	ITU 23-26 MHz	612-615.475	Simplex and duplex with 615.000 MHz simplex carrier frequency	971-973	Non-repeater simplex repeater, simplex and remote base
1308-1310	ITU 23-26 MHz	618-621.475	Simplex and duplex with 621.000 MHz simplex carrier frequency	973-975	Non-repeater simplex repeater, simplex and remote base
1310-1312	ITU 23-26 MHz	624-627.475	Simplex and duplex with 627.000 MHz simplex carrier frequency	975-977	Non-repeater simplex repeater, simplex and remote base
1312-1314	ITU 23-26 MHz	630-633.475	Simplex and duplex with 633.000 MHz simplex carrier frequency	977-979	Non-repeater simplex repeater, simplex and remote base
1314-1316	ITU 23-26 MHz	636-639.475	Simplex and duplex with 639.000 MHz simplex carrier frequency	979-981	Non-repeater simplex repeater, simplex and remote base
1316-1318	ITU 23-26 MHz	642-645.475	Simplex and duplex with 645.000 MHz simplex carrier frequency	981-983	Non-re

SOUTHERN CALIFORNIA REGIONAL NOTE: Southern California, plus other major metropolitan cities throughout the country, may adopt local 2 Water band plans slightly different than what appears here. See your local Icom dealer for more local details. © 2004 Icom America Inc. The Icom logo is a registered trademark of Icom Inc. 6836

Major VHF/UHF Contests

- Mid January Full Weekend
- ARRL VHF Sweepstakes
- Early March, Full Weekend
- ARRL International DX Contest Phone
- Early April, Spring Sprint-14.4 MHz
- Early April, Spring Sprint-22.2 MHz
- Early April, Spring Sprint-43.2 MHz
- Early May, Spring Sprint-50 MHz
- Mid May, Full Weekend
- Q1 National Fox Hunting Weekend
- Early June, Full Weekend
- ARRL VHF QSO Party
- Mid June, Full Weekend
- SMARK 6 meter QSO Party
- Mid June, Full Weekend
- ARRL Field Day
- Mid July
- Q1 World Wide VHF Contest
- Mid July, Full Weekend
- ARRL DX World Championship
- Early August, Full Weekend
- ARRL JFF Contest
- Mid September, Full Weekend
- ARRL September VHF QSO Party
- Courtesy: *Q1 Magazine & ARRL*

Icon Grid Square Tips

1. Many grid squares are not used when operating on VHF & UHF bands.
2. Many popular QRP weakspots can read out Maidenhead grid squares automatically.
3. Say your grid square letters physically.
Example for grid 13 in region DM say "ditch, mine, one, three" or etc.
4. Give your general location along with your grid square.

5. Have fun on VHF & UHF!

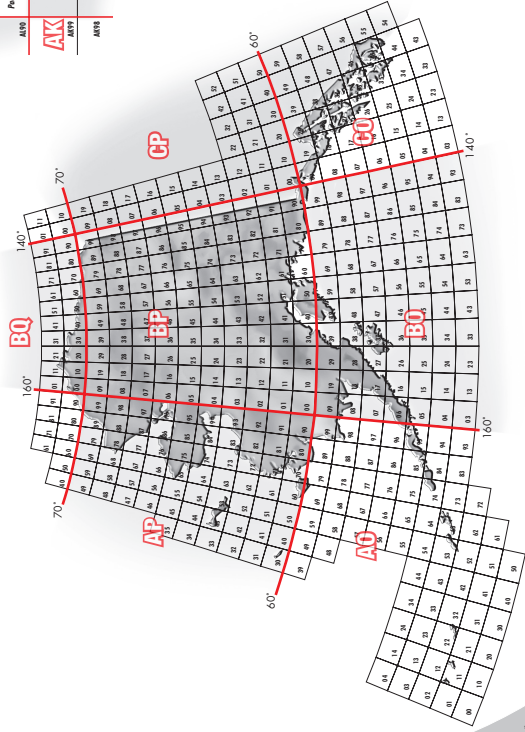
An instrument of the Maidenhead Locator System (based after the 1930s Maidenhead Locator System) was developed by the European HF managers in 1980, a grid square measures 1° latitude by 1° longitude. The system is used by radio amateurs in all continents. A grid square is indicated by two letters (the M and N) and two digits (the 10 and 100) in the following order: M N 10 100.

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U.S. Grid Square Map

Maidenhead

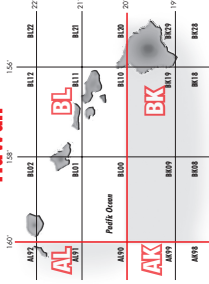
Alaska



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**All maps except Hawaii use an Albers Equal Area Projection. The map of Hawaii is based on the grid square map information from ARRL.

Hawaii



0 10 20 30 40 50 60 70 80 Kilometers
0 100 200 300 400 Miles
Albers Equal Area Projection - Alaska

ICOM[®]

A	Alpha	N	November
B	Bravo	O	Oscar
C	Charlie	P	Papa
D	Delta	Q	Quebec
E	Echo	R	Romeo
F	Foxtrot	S	Sierra
G	Golf	T	Tango
H	Hotel	U	Uniform
I	India	V	Victor
J	Juliet	W	Thiskey
K	Kilo	X	X-ray
L	Lima	Y	Yankee
M	Mike	Z	Zulu

[illegible]

AR	End of message	Often sent as “di-dah-di-dah-dit” (•••••)
AS	Stand by	“di-dah-di-di-dit”; used to ask someone to wait
BK	Break	Used to invite the other station to transmit immediately
BT	Separator	Break between thoughts or paragraphs (“dah-di-di-dah”)
CL	Closing down	Used when signing off the air permanently or for the day
CQ	Calling any station	General call: “di-dah-di-dah” then “dah-dah-di-dah”
CT	Start of message	Used to begin formal traffic messages
EE	Error	Correcting a mistake; usually sent as “di-di-di-di” rapidly
K	Go ahead	Invitation for the other station to transmit
KN	Go ahead, named station only	Stronger version of K—only the called station should respond
R	Roger (message received)	Confirms receipt of last transmission
SK	End of contact	“Silent Key”; final sign-off (di-di-di-dah-di-dah)
SN	Understood	Used in formal message handling (equivalent to “QSL” or “Roger”)

SSB

A (Calling CQ): “CQ CQ CQ, this is K1ABC, Kilo One Alpha Bravo Charlie, calling CQ and standing by.”

B (Responding): “K1ABC, this is W2XYZ, Whiskey Two X-ray Yankee Zulu.”

A: “W2XYZ, good afternoon, you’re 59 here in Boston, Massachusetts. Name is John, Juliet Oscar Hotel November. Back to you, W2XYZ from K1ABC.”

B: “Thanks John, you’re 59 as well in New Jersey. Name is Mike, Mike India Kilo Echo. Nice to meet you, John. K1ABC, this is W2XYZ.”

A: “Very good Mike, thanks for the QSO. 73 and have a great day. K1ABC is now clear.”

SSB Contest

Activator (A) calling: “CQ POTA, CQ Parks on the Air, this is K1ABC, Kilo One Alpha Bravo Charlie, calling CQ POTA and standing by.”

Hunter (B) responds: “K1ABC, this is W2XYZ.”

Activator (A): “W2XYZ, you’re 59 into park K-1234.”

Hunter (B): “Thanks for the 59. You’re 57 in New Jersey. 73!”

Activator (A): “Copy the 57 New Jersey. Thanks for hunting! QRZ, this is K1ABC, park K-1234.”

CW

A (Calling CQ): “CQ CQ CQ DE K1ABC K1ABC K1ABC K”
(Calling any station, this is K1ABC, standing by)

B (Responding): “K1ABC DE W2XYZ W2XYZ K”
(K1ABC, this is W2XYZ, over)

A: “W2XYZ DE K1ABC UR 599 IN MA. NAME JOHN. HW? W2XYZ DE K1ABC K”
(You’re 599 in Massachusetts. My name is John. How do you copy?)

B: “K1ABC DE W2XYZ R UR 589 IN NJ. NAME MIKE. RIG KX3, 10W. WX SUNNY. K1ABC DE W2XYZ K”
(Roger, you’re 589 in New Jersey. My name is Mike. My rig is a KX3 running 10 watts. Weather is sunny.)

A: “R TNX MIKE. 73 ES HPE CUAGN. W2XYZ DE K1ABC SK”
(Roger, thanks Mike. Best regards and hope to see you again. Signing off.)

