# AMATEUR RADIO

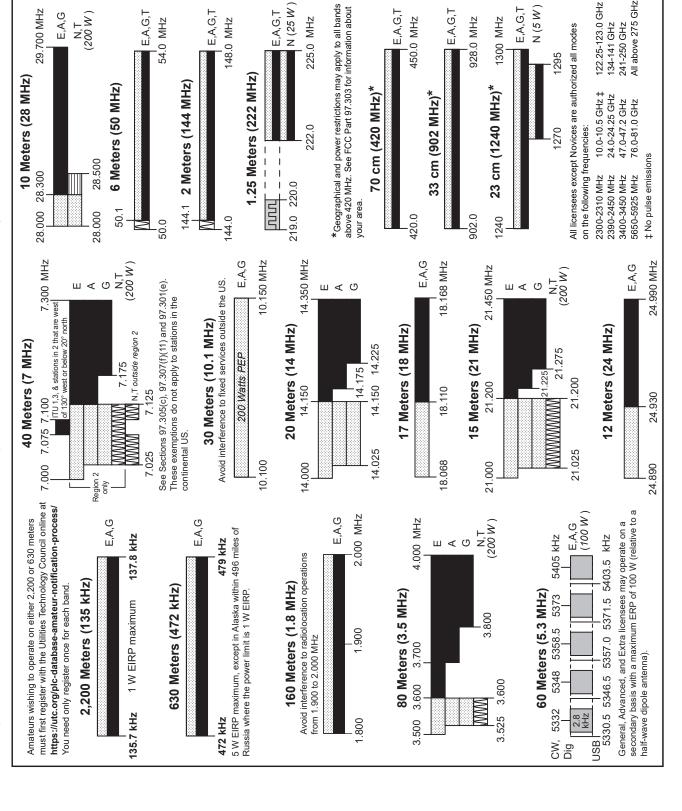


# POCKET REF

# **JS 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.







CW operation is permitted throughout all amateur bands

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

forwarding systems only = Fixed digital message 750

E = Amateur Extra

A = Advanced

**G** = General

T = Technician

N = Novice

See www.arrl.org/band-plan for detailed band plans.

# We're At Your Service

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# **Considerate Frequency Usage**

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
3.500–3.510	CW DX window	18.162.5	Digital Voice
3.560	QRP CW calling frequency	21.060	QRP CW calling frequency
3.570-3.600	RTTY/Data	21.070–21.110	RTTY/Data
3.585–3.600	Automatically controlled data stations	21.090–21.100	Automatically controlled data stations
3.590	RTTY/Data DX	21.150	IBP/NCDXF beacons
3.790–3.800	DX window	21.340	SSTV
3.845	SSTV	21.385	QRP SSB calling frequency
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
7.030	QRP CW calling frequency	24.930	IBP/NCDXF beacons
7.040	RTTY/Data DX	28.060	QRP CW calling frequency
7.070–7.125	RTTY/Data	28.070–28.120	RTTY/Data
7.100–7.105	Automatically controlled data stations	28.120–28.189	Automatically controlled data stations
7.171	SSTV	28.190–28.225	Beacons
7.173	D-SSTV	28.200	IBP/NCDXF beacons
7.285	QRP SSB calling frequency	28.385	QRP SSB calling frequency
7.290	AM calling frequency	28.680	SSTV
10.130–10.140	RTTY/Data	29.000–29.200	AM
10.140–10.150	Automatically controlled data stations	29.300–29.510	Satellite downlinks
14.060	QRP CW calling frequency	29.520–29.580	Repeater inputs
14.070–14.095	RTTY/Data	29.600	FM simplex
14.095–14.0995	Automatically controlled data stations	29.620–29.680	Repeater outputs
14.100	IBP/NCDXF beacons		
	IDI /NODAI DEGCOIS		
	Automatically controlled data stations		

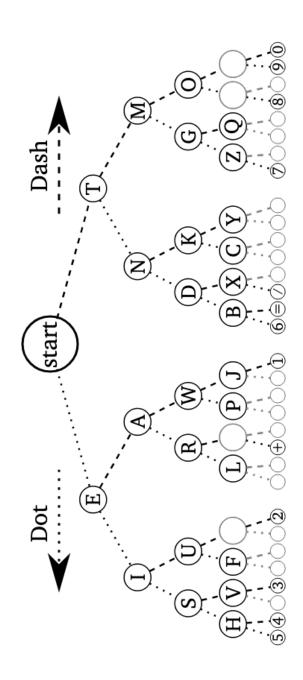
# **Q** Codes

QTR	The time is	What is the correct time?
QTH	My location is	What is your location?
QTC	I have messages for you (or for).	How many messages have you to send?
QSY	Change to another frequency (orkHz).	Shall I change to another frequency?
QSX	I am listening to onkHz.	Will you listen to onkHz?
QST	General call to all amateurs (CQ ARRL).	-
QSP	I will relay to	Will you relay to?
QSO	I can communicate with direct (or via).	Can you communicate with direct or by relay?
QSL	I am acknowledging receipt.	Can you acknowledge receipt?
QSK	I can hear you between signals.	Can I break in on your transmission?
QSB	Your signals are fading.	Are my signals fading?
QRZ	You are being called by (onkHz).	Who is calling me?
QRX	I will call you again at (onkHz).	When will you call me again?
QRV	I am ready.	Are you ready?
QRU	I have nothing for you.	Have you anything for me?
QRT	Stop sending.	Shall I stop sending?
QRS	Send more slowly (wpm).	Shall I send more slowly?
QRQ	Send faster (wpm).	Shall I send faster?
QRP	Decrease power.	Shall I decrease power?
QRO	Increase power.	Shall I increase power?
QRN	I am troubled by static (1–5).	Are you troubled by static?
QRM	Your transmission is being interfered with (1–5).	Is my transmission being interfered with?
QRL	I am busy (or busy with).	Are you busy? (Used to ask if frequency is in use)
QKG	kHz.	)?

# **Prosigns**

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
ВК	Break	Used to invite the other station to transmit immediately
ВТ	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")

A Alpha	November	0	·
B Bravo	Oscar	1	!
C Charlie	P Papa	2	/
D Delta	Q Quebec	3	(
E Echo	R Romeo	4	)
F Foxtrot	S Sierra	5	&
G Golf	Tango	6	:
H Hotel	U Umbrella	7	•
India 	V Victor	8	<b>=</b>
J Juliet	W Whiskey	9	+ ·-·-·
K Kilo	X X-ray	•	
L Lima	Yankee	<b></b>	
Mike	Z Zulu	?	



# **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?)

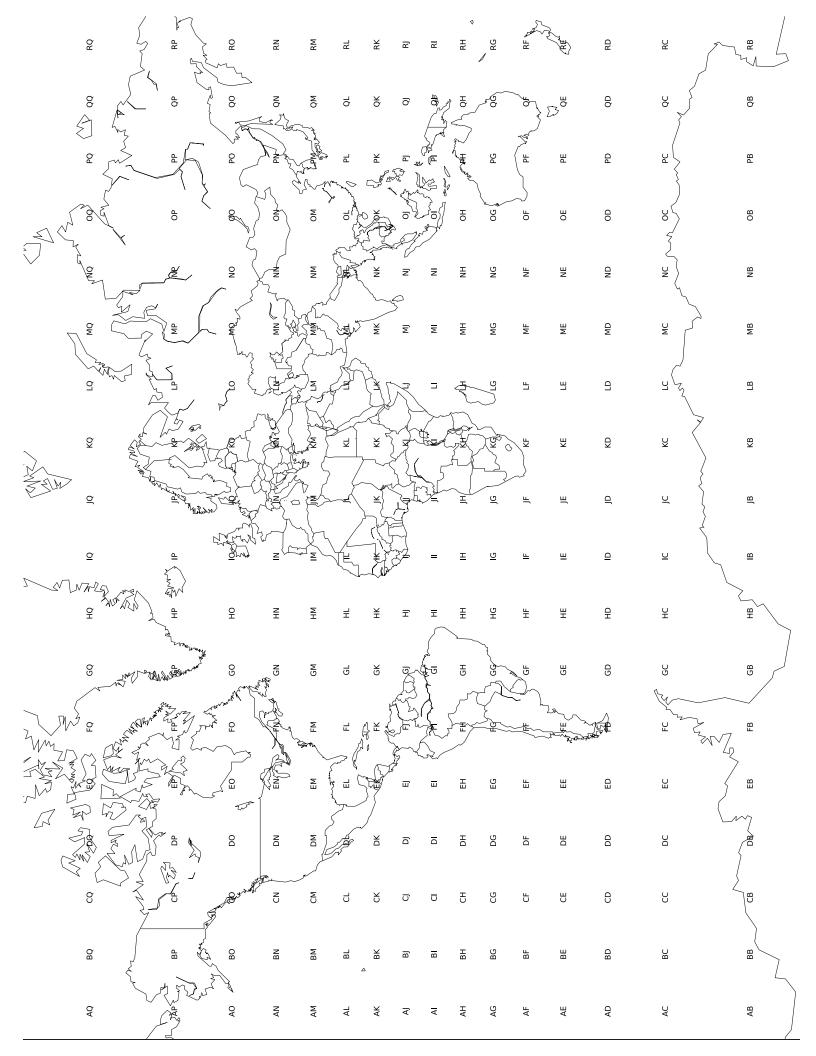
**B:** "K1ABC DE W2XYZ R UR 589 IN NJ. NAME MIKE. RIG KX3, 10W. WX SUNNY. K1ABC DE W2XYZ K"

(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.)

# **Callsign Country Prefixes**

K, N, W	United States	СТ	Portugal
AA-AL	United States	LU	Argentina
VE	Canada	PY	Brazil
VA, VO, VY	Canada	СХ	Uruguay
ZL	New Zealand	YV	Venezuela
VK	Australia	XE	Mexico
JA, JE, JH	Japan	TI	Costa Rica
G, M	United Kingdom	OA	Peru
F	France	CE	Chile
DL	Germany	HL	South Korea
I	Italy	BY, BG, BH	China
ON	Belgium	HS	Thailand
ON PA	Belgium Netherlands	HS 9V	Thailand Singapore
PA	Netherlands	9V	Singapore
PA SM, SA	Netherlands Sweden	9V VU	Singapore India
PA SM, SA OH	Netherlands Sweden Finland	9V VU 4X, 4Z	Singapore India Israel
PA SM, SA OH LA, LB	Netherlands Sweden Finland Norway	9V VU 4X, 4Z ZS	Singapore India Israel South Africa
PA SM, SA OH LA, LB OE	Netherlands Sweden Finland Norway Austria	9V VU 4X, 4Z ZS SU	Singapore India Israel South Africa Egypt
PA SM, SA OH LA, LB OE OK	Netherlands Sweden Finland Norway Austria Czech Republic	9V VU 4X, 4Z ZS SU A6	Singapore India Israel South Africa Egypt United Arab Emirates
PA SM, SA OH LA, LB OE OK SP	Netherlands Sweden Finland Norway Austria Czech Republic Poland	9V VU 4X, 4Z ZS SU A6 A7	Singapore India Israel South Africa Egypt United Arab Emirates Qatar



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F010	FN19	FM18		FN16	FN13	FN14	FN13	FN	FN11	FN10	FM19	FF 5	FM	FM16	FM.	FM14	, FM13	FM12	FM11	FM10	FL19	FL18	FL17	, FI16
F000	FN09	W SW	ENO?	FN 6	FN05	ANORA S	FN03	FW02	FN01	FN00	X60M1	YEMO8	FM07	FMOON	FM05	FM04	FW03	FM02	FM01	FM00	FL09	FL08	FL07	FLOG
E090	EN99	EN98	EN97	EN96	EN952	\$250 PM	) EN93	ZEN92	EN91	EN90		EM98	EM97	<u>}€M96</u>	EM95	EM94	EM93	EM92	M91	06W ₩₩	E 66	ET3 <sub>s</sub>	EL97	EL96
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E070	EN79	EN78	ENXZ	ENZES	EN75	<i>III</i> EN74	EN73 (	EN72	EN71	EN70	EM79	£M78	EM77	EM 76	EM75 2	EM74 👺	EM73	EM72	EM71	EM70	EL79	EL78	EL77	EL76
E060	r ENØ9	EN68	EN67	ENGG	ENTER	EN64	ENG	EN62	EN61	EN60	EM69	EM68	EM67	EM66	EM65	EM64	EM63	EM62	EM61	EMGG	EL69	EL68	EL67	EL66
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DO70	DN79	DN78	DN77	DN76	DN75	DN74	DN73	DN72	DN71	DN70	DM79	DM78	DM77	DM76	DM75	DM74	DM73	DM72	DM71	DM70	DL79	DL78	DL77 〈	_0F76_
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# 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.hamgsl.com/bandchar.pdf