

Ham Radio For Dummies Cheat Sheet

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If you're new to ham radio, these articles contain information that new ham radio operators should keep handy while gathering experience. You'll find these references to be just what you need while learning to navigate the radio bands and make contacts. Bookmarking the websites in your web browser will help you while you're online, too.

Technician Class Frequency Privileges in Ham Radio

When you're getting started, remembering where you're allowed to operate is important. As a Technician licensee, you have free access to all amateur frequencies above 50 MHz, but what about on the shortwave high-frequency (HF) bands? This chart helps you follow the rules. A band-by-band plan showing where to find different types of activity is available from the [American Radio Relay League \(ARRL\)](#).

Band	Frequencies (In MHz)	Modes You Can Use
80 meters	3.525 – 3.600	CW
40 meters	7.025 – 7.125	CW
15 meters	21.025 – 21.200	CW
10 meters	28.000 – 28.300	CW, RTTY/data, 200 watts PEP maximum power
	28.300 – 28.500	CW, phone, 200 watts PEP maximum power
Above 50 MHz	All amateur privileges	

CW = Morse code; PEP = peak envelope power; RTTY = radioteletype.

General Class Frequency Privileges in Ham Radio

Soon, if you haven't done so already, you'll be thinking about upgrading. You have *many* more frequencies to use on the high-frequency (HF) bands, as shown in the following table. A complete chart of the U.S. frequency and mode privileges for all license classes is available from the [American Radio Relay League \(ARRL\)](#).

Band	Frequencies (in MHz)	Mode
160, 60, 30 meters	All amateur privileges	
80 meters	3.525 – 3.600	CW, RTTY, data
	3.800 – 4.000	CW, phone, image
40 meters	7.025 – 7.125	CW, RTTY, data
	7.175 – 7.300	CW, phone, image

20 meters	14.025 – 14.150	CW, RTTY, data
	14.225 – 14.350	CW, phone, image
15 meters	21.025 – 21.200	CW, RTTY, data
	21.275 – 21.450	CW, phone, image
17, 12, 10 meters	All amateur privileges	
Above 50 MHz	All amateur privileges	

CW = Morse code; RTTY = radioteletype.

Common Ham Radio Q Signals

Hams use three-letter *Q signals* on every mode and even in face-to-face conversation. Here are the Q signals most commonly used in day-to-day operation. Each signal can be a question or an answer, as shown in the Meaning column. A complete list of ham radio Q signals, including those used on nets and repeaters, is available from [AC6V](#).

Q Signal	Meaning
QRL	Is the frequency busy? The frequency is busy. Please do not interfere.
QRM	Abbreviation for interference from other signals.
QRN	Abbreviation for interference from natural or human-made static.
QRO	Shall I increase power? Increase power.
QRP	Shall I decrease power? Decrease power.
QRQ	Shall I send faster? Send faster (___ words per minute [wpm]).
QRS	Shall I send more slowly? Send more slowly (___ wpm).
QRT	Shall I stop sending or transmitting? Stop sending or transmitting.
QRU	Have you anything more for me? I have nothing more for you.
QRV	Are you ready? I am ready.
QRX	Stand by.
QRZ	Who is calling me?
QSB	Abbreviation for signal fading.

QSL	Did you receive and understand? Received and understood.
QSO	Abbreviation for a contact.
QST	General call preceding a message addressed to all amateurs.
QSX	I am listening on ___ kHz.
QSY	Change to transmission on another frequency (or to ___ kHz).
QTH	What is your location? My location is _____.

Common Ham Radio Repeater Channel Spacings and Offsets

Until you become accustomed to using repeaters on all the different ham radio bands, this chart can help you remember the right offsets and channel spacings to use. Many radios have the standard options preprogrammed, but you need to be aware of what they should be.

Band	Output Frequencies of Each Group (In MHz)	Offset from Output to Input Frequency
6 meters	51.62 – 51.98	– 500 kHz
	52.5 – 52.98	
	53.5 – 53.98	
2 meters (a mix of 20 kHz and 15 kHz channel spacing)	145.2 – 145.5	– 600 kHz
	146.61 – 146.97	– 600 kHz
	147.00 – 147.39	+ 600 kHz
222 MHz or 1-1/4 meters	223.85 – 224.98	– 1.6 MHz
440 MHz or 70 cm (local options determine whether inputs are above or below outputs)	442 – 445 (California repeaters start at 440 MHz)	+ 5 MHz
	447 – 450	– 5 MHz
1296 MHz or 23 cm	1282 – 1288	– 12 MHz
	1290 – 1294	

Your Ham Radio Go Kit

Would you be ready if a call came from your local emergency communications (emcomm) group to provide some ham radio expertise for a day or so? Items in the following list are the basics of what should be in your radio go kit. Now is a good time to check your supplies and be prepared! Don't forget to put together a personal go kit, too.

- Dual-band (VHF/UHF) handheld radio and mini manual
- Full-size flexible whip antenna

- Copy of your Federal Communications Commission (FCC) license and any emcomm IDs
- Mag-mount antenna with necessary adapters for connecting to various connectors
- Extra battery packs and charger
- AA-cell battery pack if available and fresh batteries
- AC power supply and cigarette-plug cord with spare fuses
- Headset with microphone (preferred) or speaker-mic
- Copy of your local emcomm frequencies, phone numbers, and procedures
- Pocket knife and/or multipurpose tool
- Flashlight or headlamp and spare batteries
- Pencil and notebook, clipboard, and permanent marker
- Duct tape, electrical tape, and a few small cable ties
- Cash for food, gas, and telephone calls (about \$20 in small bills and change)

10 Handy Ham Radio Websites

The most common question asked by newcomers to ham radio is “How do I...?” These ten websites are full of information that you can use as you try new things or hone your existing skills. Be sure to bookmark these pages in your home and mobile browsers.

Website	Organization and Use
ARRL	Many useful regulatory, educational, operating, and technical items and links
AC6V	General-interest website with many links on all phases of ham radio
QRZ.com	Call sign lookup service and general-interest ham radio portal
eHam.net	News, articles, equipment swap-and-shop, product reviews, and mailing lists
Radiowave Propagation Center	Real-time information on propagation and solar data
TAPR	Information on digital data modes and software-defined radio (SDR)
Radio Amateur Satellite Corp.	Main site for information on amateur satellites
WA7BNM Contest Calendar	Contest calendar and log due dates

[DXMAPS.com](https://dxmaps.com) Collection of real-time maps showing worldwide activity on any amateur band

[DX Summit](#) Worldwide DX spotting network
