

Glossary

This document is to help the reader understand some of the acronyms, abbreviations, and terms used in the Amateur Radio Operator (ham) testing. These terms are also helpful when you become a licensed ham.

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Herein you will first find a listing of many abbreviations. This is the first couple of pages of content.

You will then find several pages of definitions. Both of these sections are listed alphabetically. Some items refer you elsewhere but all are defined somehow somewhere.

If you find this useful, send me a note and tell me how it helped you. I would also like to hear of the errors you find. I will look forward to both of these communications as this is my only indication that anyone has downloaded or read this document.

73's!
Jim.

ACRONYMS

Abriev	Spelled Out	Meaning
2X3	Two by Three	Call signs are referred to by the count of the letters. The "by" represents the number in the middle. A 2X3 is like KF6XYZ. A 1X1 could be W1W.
AC	Alternating Current	Electric current flowing in alternating directions. In the US the frequency is 60 Hz. This energy flows back and forth 60 times per second.
AGC	Automatic Gain Control	This flattens the sound, making loud sounds lower.
AM	Amplitude Modulation	Amplitude is changed to add the modulation known as voice.
APRS	Automatic Packet Reporting System	Real-time tactical digital communications using a map to show the locations of stations
ARES	Amateur Radio Emergency Service	ARES is activated before, during and after an emergency. Generally, ARES handles all emergency messages, including those between government emergency management officials.
ARQ	Automatic Repeat reQuest	A digital scheme whereby the receiving station detects errors and sends a request to the sending station to retransmit the information
ATV	Amateur Television	Hams using video cameras and TV's with their transceivers to have two-way video communication.
CQ	Calling Any Station (Seek You)	When you don't care who you communicate with, use CQ which requests contact with anyone that can hear and repond to you.
CTCSS	Continuous Tone Coded Squelch System	Repeater stations generally require sending a CTCSS as part of the transmission. This is like a password to gain access to the repeater. It is sometimes referred to as tone squelch.
CW	Continuous Wave	This is Morse Code (see the definitions)
dB	Decible	A unit of measurement used to express the ratio of one value of a physical property to another on a logarithmic scale. In transceivers, the decibel is used to express power or amplitude ratios (gains).
DC	Direct Current	Electric current flowing in one direction. All batteries use DC. If there is a + and a -, it is DC. Also if there are red and black cords it is generally DC.
DCS	Digital-Coded Squelch	Similar to CTCSS but this is digital where CTCSS is analog.
DMR	Digital Mobile Radio	A digital radio standard originally designed for commercial use and developed by the European Telecommunications Standards Institute (ETSI) beginning in 2005, which hams now are adapting for amateur radio use. This allows two unique simultaneous tranmissi
DTMF	Dual-Tone Multi-Frequency signaling	This is the audible tones used to dial a telephone number and is call "Touch Tone." Ham radio signals can still use this.
FCC	Federal Communications Commission	The US agency regulates and enforces the rules for Amateur Radio Service.
FET	Field Effect Transistor	A special transistor. The leads are the source, gate, and drain.
FM	Frequency Modulation	Frequency is changed to add the modulation known as voice.
HAM	Had A lot of Money	No one really knows where the term Ham came from or what it really means, but we use it anyway.
HF	High Frequency	This is from 3 MHz to 30 MHz. This is generally from the 10 Meter band to the 160 Meter band (or longer).
IRLP	Internet Radio Linking Project	This uses Voice-Over-IP (VoIP) custom software and hardware. Coupled with the power of the Internet, IRLP will link a repeater site or simplex station to the world in a simple and cost effective way.

Abriev	Spelled Out	Meaning
ITU	International Telecommunications Union	This the United Nations specialized agency for information and communication technologies. The world is divided into three ITU regions, the US is in ITU 2.
LED	Light Emiting Diode	A diode which emits light. See Diode.
LEO	Low Earth Orbit	Most amateur radio satellites use low earth orbits.
LSB	Lower Side Band	See SSB
MPE	Maximum Permissible Exposure	The MPE limits are based on whole-body specific RF absorption rates. This factor is important because the body absorbs some frequencies (the higher ones) more than others.
MR	Memory Recall	A setting to use the memorized frequencies. A transceiver is usually either in VFO mode or in MR mode.
NB	Noise Blanker	Reduces certain noises, such as the whine of an alternator.
NCS	Net Control Station	The station or operator directing the Ham radio net.
NPN or PNP	Negative and Positive Transistor	This transistor has three leads. The Emitter, the Base, and the Collector. There is either one negative and two positive or vice versa.
NTSC	National Television System Committee	The analog TV signal standard in the US.
PEP	Peak Envelope Power	Peak envelope power is the average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle at the crest of the modulation envelope.
PSK	Phase Shift Keying	A popular computer-sound card-generated radioteletype mode. This mode is slow but sure and has a narrow bandwidth.
QRM	Question Recieved Mess	This means "I am receiving noise" which is not from nature, but a man-made source.
QSY	Question Switching frequency	This means "Follow me as I change to X frequency."
RACES	Radio Amateur Civil Emergency Service	RACES is active only during the emergency and during the immediate aftermath if government emergency management offices need communications support.
RC	Radio Control	Someone's RC car is a Radio Controlled vehicle. It is not remote control.
RF	Radio Frequency	The frequency of the Electromagnetic energy emition commonly called a radio wave.
RIT	Receiver Incremental Tuner	Slightly adjusts the receive frequency up or down. This does not change the transmit frequency. Sometimes called a "Clarifier".
SSB	Single Side Band	An amplitude modulation that uses about half of the normal bandwidth. The energy is compressed so the signal is stronger. Either Lower Side Band (LSB) or Upper Side Band (USB) is used.
SWR	Standing Wave Ratio	A measurment of how much radiowave energy is reflected from the antenna back to the radio. 1:1 is good, 1.3:1 is acceptable, 2:1 is not good.
UHF	Ultra High Frequency	This is from 300 MHz to 3,000 MHz. This is generally 70 Centimeter and shorter.
USB	Upper Side Band	See SSB
VFO	Variable Frequency Oscillator	The ability to change to any frequency within the radios capability. Radios used to use paired crystals, one for receive and one for transmit. A single crystal could cover four frequencies, so to listen to 16 frequencies you would need to install 4 crista
VHF	Very High Frequency	This is from 30 MHz to 300 MHz. This is generally from the 2 Meter band to the 6 Meter band.
VoIP	Voice over Internet Protocol	A methodology and group of technologies for the delivery of voice communications and multimedia sessions over Internet Protocol (IP) networks, such as the Internet.

DEFINITIONS

Term	Definition
Ammeter	Measures amps or electric current and is connected in series with the circuit.
Amperes	A measurement of the current. Current is measured in Amperes (or commonly referred to as amps).
Antenna	The apparatus used to send and receive radio signals.
Antenna Analyzer	Tests the antenna to show what frequency it works best at and many other features.
ARRL	The Amateur Radio Relay League. Originally messages were routinely passed from one operator to the next (relayed) to get information sent great distances.
ARRL Traffic Form	A specific form to help accurately pass traffic (a message) to the next operator.
Auxiliary Station	A special repeater generally devoted to extending coverage for an individual station.
Band	A segment of the radio wave spectrum, identified by the approximate wavelength. For example, a 2 Meter Band signal is approximately 2 Meters long for one wavelength.
Band Plan	A description or illustration of how parts of each band or wavelength segment is appropriately used.
Beacon	An amateur radio propagation beacon is a radio beacon, whose purpose is the investigation of the propagation of radio signals. They continuously transmit signals to demonstrate how well or not good the signals are traveling.
Beam Antenna	See Directional Antenna.
Call Sign	The letters and number assigned by the FCC to a given license holder. All call signs are unique, meaning only one person or entity may hold a valid call sign. If a license has expired and the grace period has passed, that call sign may be issued to someone.
Capacitor	A component that can store energy in an electrical field.
Carrier Signal	This is like the foundation of a radio signal. This is the basis which is altered by the mixer to be the desired frequency and has modulation added upon it so communication works.
Check sum or Check	A method of error checking. The "check" is the number of words in the message. If they don't match the sender needs to resend the message.
Coax	A feed line composed of a center wire which carries the RF signal surrounded by an insulating layer which is then surrounded by a braided wire mesh which is covered by a sturdy insulated covering. This is always round. Most Ham coax is 50 Ohm.
Code	Generally this refers to Morse Code. Someone "talking code" is using Morse Code to communicate. This could also be part of a telecommand. Passing coded messages to hide their meaning is prohibited.
Contesting	A timed event where amateur radio operators try to contact as many other operators as they can within the time allotted.
Control Operator	The FCC licensed Amateur Radio Operator that has control of the transceiver.
Control Point	The point at which you control the transmitting on the radio. Usually the "PTT" or Push To Talk button.
Copper	Copper conducts electricity very well.
Current	A measurement of the flow of electrons in an electric circuit. A measurement of Amps show the level of current.
CW	Continuous Wave, meaning Morse Code
Diode	An electrical component like a one-way gate. Current can only flow in one direction through a diode.
Directional Antenna	An antenna that focuses the signals in one direction. This focus sends the signal farther than an omnidirectional antenna. Many houses have a satellite TV dish installed which is a directional antenna.
DMR Talk Group	DMR is a digital method to communicate through a repeater which allows two conversations to simultaneously occur. A talk group is similar to a chat room where multiple people take turns talking.

Term	Definition
Doppler Shift	An observed change in frequency. The frequency of sound changes as the fast moving noise rushes by. The radio frequency changes as the satellite rushes by.
Double or Doubling	When two stations transmit at the same time neither transmission works well. You know you were "doubled" when you stop talking only to hear someone else finishing their transmission.
Dummy Load	A non-inductive resistor and a heat sink to be used in place of an antenna. This is used when testing transmitters so no actual signal is transmitted out.
Duplex	Receiving on one frequency and transmitting on a different one. This dual frequency use is called duplex, or duplexing. Repeaters use duplex.
Duty Cycle	The percentage of time that a transmitter is transmitting vs receiving.
EchoLink	A service where repeaters can be accessed through the Internet most anywhere in the world.
Emergency, Priority, May Day, SOS	The terms Emergency, Priority, May Day, SOS, and usually Break are serious words. Anyone hearing these should immediately help anyone that used the term. Those using these terms need to have an actual emergency such as a life threatening problem.
Farad	A measurement of stored electrical energy.
FCC Rules	Always follow the FCC rules when transmitting. One rule is that all other rules can be ignored if violating those other rules will save human lives.
Feed Line	The wire that connects a transceiver to the antenna. Hand-held transceivers have no visible feed line.
Ferrit Choke	A passive electric component that suppresses high frequency noise in electronic circuits. These are often seen as a cylindrical lump near the end of an electrical or signal cord.
Flat Strap	A flat copper strap used for grounding RF equipment.
Frequency	How often something occurs. In radio, it is how often a radio wave completes one cycle. This is measured in Hertz (Hz). Higher frequencies are Kilohertz (kHz), Megahertz (MHz), Gigahertz (GHz), Terahertz (THz), etc.
Frequency Coordinator	A volunteer group that recommends frequency use for local repeaters.
Fuse	A device designed to stop the flow of energy if the flow exceeds the capacity of the fuse. Without a fuse, an electrical device could malfunction and burn or explode.
Gain	The change in performance. A transistor has gain which means it can amplify the current. An antenna can have gain which means it can amplify or improve the transmission.
Gateway	An amateur station allowing other stations to access the Internet through their station.
Gin pole	An attachment used to erect tall antenna supports called towers. This is a tall movable brace with a pulley at the top allowing heavy sections to be lifted into place at the top of the tower.
Glass	Glass is a good insulator and does not conduct electricity well.
Grid Locator	A letter-number designator assigned to a geographic location. Every place on earth is within a grid locator. I am in DM14KB.
Ground	A connection from an electric item to a ground rod driven into the earth.
Henry	A measurement of stored magnetic energy.
Hertz	The measurement of frequency and is defined as one cycle per second. Common household electricity operates at 60 Hz, or 60 cycles per second.
Identify	You identify yourself during transmissions by stating your FCC designation which is your call sign. The rules state it is done at the end of every ten minutes and at the end of the transmission. It is polite to identify at the beginning but that is not the
Impedance	An opposition to the flow of AC current. Impedance is measured in ohms. This is also measured on feed lines as SWR. An impedance mismatch (4:1) means most of the energy is not going out of the antenna.
Inductor	A component that can store energy in an magnetic field.
Ionosphere	A layer of the atmosphere that can reflect HF signals back down to the earth. There are multiple layers within the ionosphere.
Keplerian elements	Data inputs for satellite tracking.

Term	Definition
Keypad	The numbered buttons on a transceiver. These may be used to enter a frequency, CTCSS, DTMF, DCS, or DMR numbers.
Ladder Line	A special feed line composed of two wires separated by an insulator. This feed line looks like a rope ladder for an action figure toy.
License	A paper showing you have been approved through the FCC to transmit on the radio. It shows your call sign to be an Amateur Radio Operator.
License Grace Period	A period of time (two years) where the Amateur Radio Operator cannot transmit but can still renew their expired license without taking the test again.
License Grant	A period of time (ten years) where an Amateur Radio Operator is granted permission to transmit. This grant may be cancelled or revoked at any time for specific violations.
License Levels	There are currently three levels of licensed issued: Technician, General, and Amateur Extra. Some old license holders are still Novice, Technician Plus, and Advanced. The order would be N, T, T+, G, A, AE.
Linked Repeaters	Connecting two or more repeaters is linking them. This link may be with a radio connection or by using an Internet connection. The radio linking is limited by the range of the signal while the Internet linking is only limited by the connection to the Inte
Log Book	This is your record of Amateur Radio communications. This should include the date, time, and frequency of the transmission, and the call sign of who you communicated with.
Memory	Saving a frequency and other option within a transceiver.
Meter	A display. This could be a needle flexing or a series of lights. Either version offers a visual indication of the item being measured. These include a speedometer, a voltmeter, an ohmmeter, etc.
Mixer	A component that changes the frequency generated by the oscillator. This allows one transceiver to access several frequencies.
Modulation	The addition of the sound inputs changed into RF. This get added to the carrier signal and transmitted. This is your voice spoken into the microphone and changed into electrical impulses.
Morse Code	A communications system where letters (or other characters) are represented by long sounds (dah) and short sounds (dit) transmitted over the air. For example, dah, dit dit, dah dah, dit would be the word "time."
Net	An organized communication involving a group of Hams. This would either be a directed net which includes the NCS or an informal net which would be like a chat room.
Noise Blanker	A setting in the receiver to cut or reduce certain noise sources.
Ohm	A measurement of the opposition to the flow of electrical current. The measurement of ohm is in both AC (measured as impedance) and DC (measured as resistance) circuits.
Ohmmeter	Measures ohms or resistance. This is a powered setting on the meter so be sure there is no power in the circuit.
Omnidirectional Antenna	A normal antenna which sends the radio signal out equally in all directions.
Operator	The person allowed to operate the radio.
Oscillator	A component that generates a signal or sound. The oscillator makes the carrier signal which is the transmission.
Over-deviation	An excessive level of modulation or voice input. A microphone should be held sideways to your mouth to avoid over-deviation. Think of a young child with a microphone; they often over-deviate by talking too close to the mic.
Parallel	An electrical connection where the current flows through multiple paths. Some components may not have the current flow through since an alternate path is available. Usually the components share the current flow.
Part 15	Of the 200 rule sections by the FCC, Part 15 governs unlicensed items that give off or transmit energy within the radio spectrum. Uncontrolled, these could interfere with Ham radio communications.
Part 97	Of the 200 rule sections by the FCC, Part 97 governs the Amateur Radio Operations.

Term	Definition
Phone	Speaking, as in Phonetic, using your voice.
Phonetic	Using words to represent letters. Like Alpha for A, Bravo for B, etc.
Potentiometer	A variable resistor. This has the ability to change the potential energy passing through.
Power Supply	A device to convert AC 110 V power to the DC 13.8 V (12 V) power the transceiver requires.
Propagation	The travel of a radio signal. Poor propagation means the signals are not traveling far. Good propagation means distant signals can be heard. Great propagation may include world wide communication.
Radio Horizon	The point where a radio signal ends. Radio waves travel along the earth better than light waves, so radio signals can go beyond the visible horizon.
Radio Wave	An energy wave consisting of Electrical energy and Magnetic energy, therefore it is Electromagnetic energy. This travels at the speed of light which is stated as 300,000,000 Meters per second.
Receive	To listen to a radio transmission. Anyone may receive, licensed or not.
Receiver	Slightly adjusts the receive frequency up or down. This does not change the transmit frequency.
Incremental Tuner	
Rectifier	A component composed of diodes aligned to alter the flow of current from alternating current to direct current.
Reference Antenna	Not an actual antenna but an average or theoretical antenna which other antennas are compared to.
Regulated or Linear PS	A power supply that uses a transformer to convert house current to radio current. A linear PS is heavier and more expensive than a switching PS, but it is also more accurate and dependable.
Relay	Retransmitting from one station to another. Generally when distance prevents one station from hearing the other, a station within range of both can relay the messages back and forth.
Repeater Offset	This is the difference between the frequency a repeater receives on vs. what it transmits on. For 2 M it is generally plus or minus 600 kHz and for 70 CM it is plus or minus 5 MHz.
Repeater Station	A transceiver that receives a signal and immediately retransmits that signal. These are generally on mountain tops so they can transmit greater distances. Often just called a repeater.
Resistance	An opposition to the flow of DC current. Resistance is measured in ohms.
RG-58	A style of coax that is efficient in carrying the signal and is easy to handle. The RG-58 thin like a pencil, smaller than a normal AAA battery.
RG-8	A style of coax that is very efficient in carrying the signal and is easy to handle. The RG-8 is the thicker version, similar in diameter to a normal AA battery.
Rubber Duck Antenna	A nick-name for the flexible antenna provided with many hand-held transceivers. These are known to be less effective than a full sized antenna.
Schematic	A drawing of symbols representing how electrical components are connected.
Secondary User	There is a primary user (often the government) who has priority. As long as they are not using the frequency, a secondary user can transmit. But the secondary user cannot interfere with the primary user.
Selectivity	The ability to choose. In a transceiver this chooses one signal over another.
Sensitivity	The ability to detect. In a transceiver this pulls in the weak signal.
Series	An electrical connection where the current flows through all components in order.
Simplex	Receiving and transmitting on the same frequency. This is simple.
Space Station	A repeater or Amateur Radio Station over 50 km above the earth, generally in orbit.
Spin Fading	An observed change in signal strength as a satellite rotates during its orbit.
Squelch	A setting where the receiver silences unwanted levels of sound. If the squelch is set too high, distant signals will not be heard. If it is not set high enough, steady static is heard.
Stroke, Slant, Slash	These terms all refer to the same typographical character which is like a fraction bar or the separation in a date ("/").
Switch	A device to connect or open an electrical circuit, often used to turn on a light or other electrical device.

Term	Definition
Switching PS	A power supply that uses a rectifier to convert house current to radio current. A switching PS is lighter and less expensive than a linear PS, but it is also more susceptible to power fluctuations.
Tactical Call Sign	This is a term used to temporarily identify your station. You must still use your FCC call sign (see Identify) according to the rules. Tactical call signs are used during events, such as the Olympics or an emergency.
Telecommand	A radio signal transmitted with the intent to control a device. Such as initiating, modifying, or terminating the functions of a device. This could be a repeater, a space station, or your RC vehicle.
Traffic or Formal Message	A specific organized message that is passed from one operator to the next intending to deliver the message to a specific recipient.
Transceiver	A Ham radio that both transmits and receives.
Transformer	This component changes or transforms AC power, usually from 110 V to a smaller value. These exchange the extra volts into heat which is why some transformers are hot when in use. The greater the energy difference, the hotter the transformer will be.
Transistor	A component consisting of three layers of semiconductor material. Transistors can amplify a signal and they can direct the flow of current.
Transmit	To send a radio signal.
Tropospheric Ducting	A phenomenon where a radio signal bounces up and down within a layer of the atmosphere which has a different temperature and humidity than the layers above and below it. This is similar to an "inversion" layer.
Uplink or Downlink	The radio transmission to or from a space station. This is generally a digital (or computerized) communication.
Variable	Some electrical components can be adjusted and have "variable" before their name. These include a variable resistor (potentiometer) and a variable inductor.
Voltmeter	Measures volts or electromotive force and is connected in parallel with the circuit.
Volts	A measurement of the electromotive force. We measure the electromotive force in volts.
Watts	A measurement of electrical power. Power is measured in watts. The power meter on your house is measuring how many watts you use.
Wavelength	The distance traveled by a radio wave during one cycle. This can be measured from the top (peak to peak), the bottom (trough to trough), or any other single point of the radio wave.
Window Line	A special feed line composed of two insulated wires running parallel separated by 1" of flat insulation which has squares cut out looking like windows.

Hope it helped!

Jim.