

# Definition of Abbreviations

AC	Alternating Current
AFSK	Audio Frequency Shift Keying
AGC	Automatic Gain Control
AM	Amplitude Modulation - method to put voice information on a carrier by changing the carrier amplitude
APRS	Automatic Position Reporting System
ARES	Amateur Radio Emergency Service
ARRL	Amateur Radio Relay League
AMSAT	Amateur Satellite Corporation, a non-profit amateur satellite builder & operator
AMTOR	AMateur Teleprinting Over Radio, a method of sending teletype data
CPU	Central Processing Unit
CQ	Calling any station (Morse Code shorthand)
CTCSS	Continuous Tone Coded Squelch System or Private Line™ - low frequency (sub audible) audio (67.0 Hz to 254.1 Hz) added to a transmitter to allow a receiver to open its squelch only when tone is present
CSCE	Certificate of Successful Completion of Examination
CW	Continuous Wave - used to send Morse Code by turning on/off the carrier wave
dB	Decibel - Relative unit of measure normally used to express power or intensity - usually sound level or signal strength.
DB-23	DB signifies a type of computer connector. 23 signifies 23 pins.
DC	Direct Current
DCS	Digital Coded Squelch
DTMF	Dual Tone Multi Frequency - Touch Tone™ as used by telephone dials
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FM	Frequency Modulation - method to put voice information on a carrier by changing the carrier frequency
GPS	Global Positioning System
IC	Integrated Circuit
ID	Identification
IRLP	Internet Radio Linking Project - used to link radio repeaters via the Internet
ITU	International Telecommunication Union - part of the United Nations
MARS	Military Affiliate Radio Service
MFSK	Multiple Frequency Shift Keying
NASA	National Aeronautics and Space Administration
NTSC	National Television Systems Committee
OET	Office of Engineering and Technology of the FCC

Packet	A method of sending digital information by radio
PEP	Peak Envelope Power - used to measure transmitter power on Single Side Band
PL	Private Line™ - see CTCSS
PL-259/ SO-239	Types of coaxial cable connectors
PM	Phase Modulation - method to put voice information on a carrier by changing the carrier phase
Phone	Voice Transmission
PSK	Phase Shift Keying - used to send Morse Code or Data by changing the carrier phase
PSK31	Method of data transmission
QRM	Man-Made Noise (Morse Code shorthand)
QRN	Natural Noise (Morse Code shorthand)
QRU	I have no traffic for you (Morse Code shorthand)
QRZ	Who is calling me? (Morse Code shorthand)
QSB	Your signal is fading (Morse Code shorthand)
QSL	I acknowledge receipt (Morse Code shorthand)
QSY	Change frequency (Morse Code shorthand)
QTH	Location (Morse Code shorthand)
RACES	Radio Amateur Civil Emergency Service
RF	Radio Frequency
RG-8, ...	RG signifies coaxial cable. Number signifies specification.
RIT	Receiver Incremental Tuning
RTTY	Radio Teletype
Repeater	Radio station, usually on a hilltop, that re-broadcasts on its output frequency anything it receives on its input frequency
SSB	Single Side Band - Sends only one side band of an AM signal
SWR	Standing Wave Ratio - a ratio of power from the transmitter to the power returned from the antenna
TNC	Terminal Node Controller - Used in packet radio
ULS	Universal Licensing System of the FCC
USB	Universal Serial Bus
VE(C)	Volunteer Examiner (Coordinator)
VFO	Variable Frequency Oscillator
VOIP	Voice Over Internet Protocol - Used to change voice to data for transmission by radio or Internet
VTVM	Vacuum Tube Volt Meter
WPM	Words Per Minute - to measure Morse Code speed (5 letters per word)
WSJT	Computer program used for weak-signal radio communication
WWV	Shortwave radio station which broadcasts accurate time

# Formulas

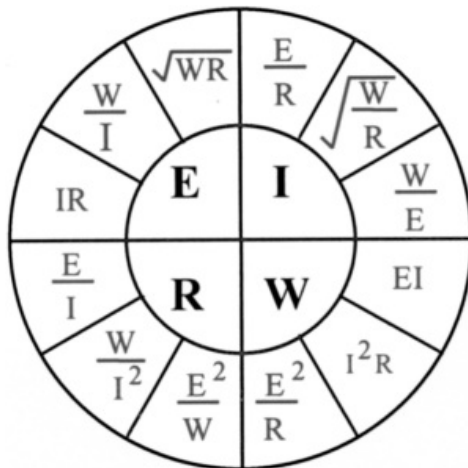
## Ohm's Law

**E = Volts**

**I = Amps**

**R = Ohms**

**W = Watts**



**Frequency / Wavelength Formula:  $300 \div F$  (in MHz) = Wavelength (in meters)**

<b>AF</b>	<b>Audio Frequency (not a radio wave)</b>	<b>20 Hz - 20kHz</b>
<b>VLF</b>	<b>Very Low Frequency</b>	<b>3 kHz - 30 kHz</b>
<b>LF</b>	<b>Low Frequency</b>	<b>30 kHz - 300 kHz</b>
<b>MF</b>	<b>Medium Frequency</b>	<b>300 kHz - 3 MHz</b>
<b>HF</b>	<b>High Frequency</b>	<b>3 MHz - 30 MHz</b>
<b>VHF</b>	<b>Very High Frequency</b>	<b>30 MHz - 300 MHz</b>
<b>UHF</b>	<b>Ultra High Frequency</b>	<b>300 MHz - 3 GHz</b>

- Frequency - measured in Hz (Hertz)
- kHz (kilo-Hertz) = 1000 Hz
- MHz (Mega-Hertz) = 1000 kHz or 1,000,000 Hz
- Ghz (Giga-Hertz) = 1000 MHz, 1,000,000 kHz, 1,000,000,000 Hz

## Common Amateur Bands (NOT a complete list)

	<b>Band (meter)</b>	<b>MHz</b>	<b>Use</b>	<b>License Class*</b>
<b>HF</b>	<b>160</b>	<b>1.8 - 2.0</b>	<b>night</b>	<b>EAG</b>
	<b>80</b>	<b>3.5 - 4.0</b>	<b>night and local day</b>	<b>EAGNT#</b>
	<b>40</b>	<b>7.0 - 7.3</b>	<b>night and local day</b>	<b>EAGNT#</b>
	<b>30</b>	<b>10.1 - 10.15</b>	<b>CW and digital</b>	<b>EAG</b>
	<b>20</b>	<b>14.0 - 14.350</b>	<b>world wide day and night</b>	<b>EAG</b>
	<b>17</b>	<b>18.068 - 18.168</b>	<b>world wide day and night</b>	<b>EAG</b>
	<b>15</b>	<b>21.0 - 21.450</b>	<b>primarily a daytime band</b>	<b>EAGNT#</b>
	<b>12</b>	<b>24.890 - 24.990</b>	<b>primarily a daytime band</b>	<b>EAG</b>
	<b>10</b>	<b>28.0 - 29.70</b>	<b>daytime during sunspot highs</b>	<b>EAGNT</b>
<b>VHF</b>	<b>6</b>	<b>50 - 54</b>	<b>local to world-wide</b>	<b>EAGT</b>
	<b>2</b>	<b>144 - 148</b>	<b>local and medium distance</b>	<b>EAGT</b>
	<b>1-1/4</b>	<b>222.0 - 225.0</b>	<b>local</b>	<b>EAGT</b>
<b>UHF</b>	<b>70 cm</b>	<b>420 - 450</b>	<b>local</b>	<b>EAGT</b>

\* E=Extra, A=Advanced, G=General, N=Novice, T= Technician, # = CW only for Novice & Technician