



Wi-Fi Vocabulary List

Vocabulary Word	Description
2.4GHz	Bigger radio wave than 5GHz, Propagates better than 5GHz – Longer Range
2.4GHz Channels	Only three 20MHz non-overlapping channels 1-6-11
5GHz	Smaller wavelength than 2.4, shorter range
5GHz Channels	More spectrum to use. 25 20MHz channels, 12 40MHz, 6 80MHz, 2 160
802.11 b/a/g/n/ac/ax/be	Amendments to the standard
Access Point -UAP	Bridges ethernet 802.3 to wireless 802.11 and vice versa. It is not a router
Adjacent Channel Interference	Worse than co-channel interference. When Wi-Fi is on a near-by channel. Like trying to talk at a Rock Concert
AP is a Hub	Adding more AP's does not add capacity - all about airtime and CCI
Authentication	Happens before Encryption, Open, PSK, 802.1X
Bandwidth	Number of bits that can be transmitted on a channel per second. For example, a 20MHz channel with one Spatial Stream has a Bandwidth potential of 86.7Mbps
Capacity	The amount of client devices that can be supported by the wireless network.
Contention Window	One mechanism to gain access to medium and avoid collisions in Wi-Fi.
Coverage	Antenna Gain and Transmit power of an AP will give it a Coverage area
CSMA/CA	Carrier Sense Multiple Access Collision Avoidance Protocol – Half Duplex
Data Rate	the number of bits transmitted from one device to another or over a network per second. Dependent on MCS, Spatial Streams, and Guard Interval
dB Math	Converting dBm into milliwatts using the rule of 3's and 10s
DFS Channels	16 channels available in 5GHz that are shared with TDWR and Maritime Military Devices. Great for use in indoor wireless networks
Directional Antenna	Focusing RF in a specific area. Recommended in high density deployments

Encryption	WPA-2 introduced in 2004 – WPA2-Personal, PSK-most common, WPA-2 Enterprise, WPA-3 introduced in 2018 256 bit vs 128
ESSID	Extended Service Set Identifier, for multiple Access Points broadcasting the same BSSID's or Wireless LANs, connected to the same distribution system
Ethernet	Standardized in the 802.3 protocol for connecting wired systems.
EVM	Error Vector Magnitude - is a measure used to quantify the performance of a transmitter or receiver.
Free Space Path Loss (FSPL)	Double the distance, one quarter the power. Or -6dB every time you double the distance. How to double distance? +6dB Tx Power
Hotspot	Phones, or Devices turned into APs
Hub	Multiport repeater. APs act like hubs in the air.
LCMI	In System Design, the Least Capable, Most Important Devices
MCS Chart	Modulation and Coding Schemes. How AP's and Clients negotiate and move between rates
MIMO	Introduced in 802.11n the use of multiple radio antennas to transmit and receive at higher rates than SISO
Modulations	BPSK 1 bit, QPSK 2 bit, 16-QAM 4 bit, 64-QAM 6 bit (highest rate for 802.11n), 256-QAM 8 bit (highest rate for 802.11ac), 1024-QAM 10 bit (highest rate for 802.11ax)
MU-MIMO	Multi-User technology available in 802.11ac gen 2 and ax
Multipath	When RF reflects but still makes it to the receiver at the same time as the non-reflected signal.
Omni Antenna	Emanates on a 360 degree plane horizontally. NOT isotropic
OSI Model	7 layers, from the top; Application, Presentation, Session, Transport, Network, Data Link, Physical. Wi-Fi Standard addresses layer one and layer two.
QoS	Quality of Service WMM categories are Voice, Video, Background and Best Effort.
Roaming	Moving from the coverage area of one AP (BSA) to another, using the same SSID
RSSI	Received Signal Strength Indicator. Power level (in dBm) being received at a receiving radio.
SNR	Signal to Noise Ratio
Spatial Streams	MIMO antenna chains transmitting multiple signals simultaneously
SSID	Service Set Identifier. WLAN Name

TDMA	Time Division Multi-Access. A Proprietary Protocol used by Ubiquiti for AirMax Radios.
Wi-Fi Standard	Wi-Fi 4 802.11n HT – High Throughput Wi-Fi 5 802.11ac VHT – Very High Throughput Wi-Fi 6 802.11ax HE – High Efficiency Wi-Fi 7 802.11be EHT–Extremely High Throughput
Wi-Fi	Is NOT Wireless Fidelity. The name Wi-Fi, commercially used at least as early as August 1999, was coined by the brand-consulting firm Interbrand. The Wi-Fi Alliance had hired Interbrand to create a name that was "a little catchier than 'IEEE 802.11b Direct Sequence'."