Wi-Fi 7 (802.11be) Reference Card
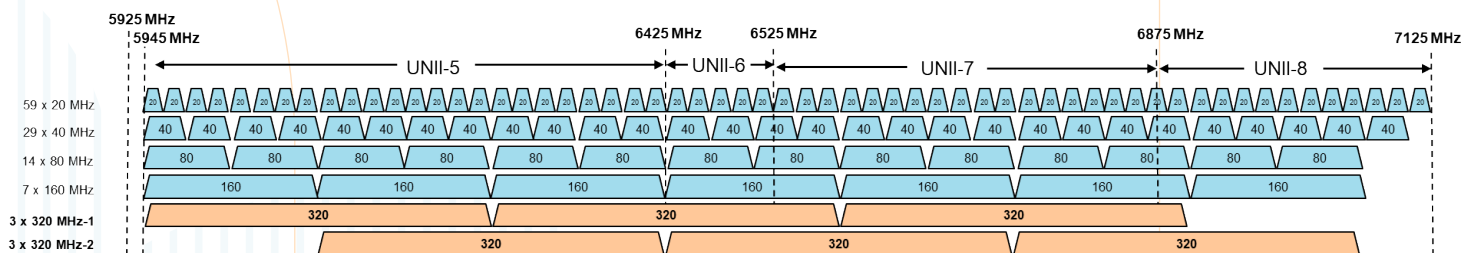
What's new in Wi-Fi 7

Wi-Fi 6E is transformational, the first generation of Wi-Fi to provide access to the 6 GHz band for faster speeds and wider channels. Wi-Fi 7 introduces several incremental improvements shown here.

## New features in Wi-Fi 7

1 320 MHz channels in Wi-Fi 7

320 MHz channels only exist in the 6 GHz band and consist of any two adjacent 160 MHz channels.

320 MHz

Static puncturing opens up subchannels in 20 MHz increments for workaround interference, incumbents, or other requirements while allowing 320 MHz (or other channels) to freely operate.

2 4K QAM

20% higher transmission rates than Wi-Fi 6's 1024-QAM and higher transmission rate enables higher transmission efficiency.

Wi-Fi 5 — 256 QAM

Wi-Fi 6 — 1,024 QAM

Wi-Fi 7 — 4,096QAM
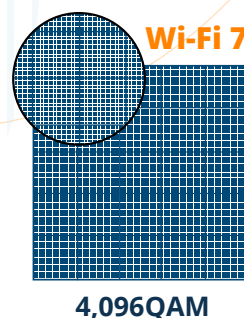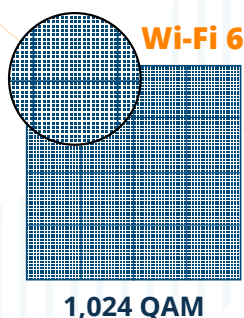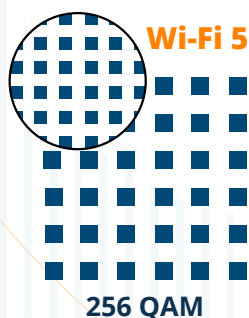
③ Multi-Link Operation (MLO)

Prior to Wi-Fi 7, devices used a single link to transmit data or support multiple bands. MLO enables devices to combine different channels across frequency bands together, allowing concurrent transmission and reception of data over multiple links.

Wi-Fi 6

| 5 GHz |
| or |
| 2.4 GHz |

Single Link

Wi-Fi 7

| 6 GHz |
| 5 GHz |
| 2.4 GHz |

Multi-Link

Targeted use cases for Wi-Fi 7

| 8K displays | Immersive teleconferencing | AR/VR | Gaming | Industrial IoT |

Wi-Fi comparison chart

Parameter	Wi-Fi 6/6E	Wi-Fi 7	Wi-Fi 7 Enterprise Considerations
Bands supported	2.4 / 5 / 6 (Wi-Fi 6E)	2.4 / 5 / 6	Both Wi-Fi 6E and Wi-Fi 7 deliver more than 2x the capacity of earlier generations to support higher capacity and faster speeds.
Highest Modulation	1K-QAM	4K-QAM	Higher peak data with 4K-QAM will require stringent error vector magnitude (EVM) and low signal-to-noise ratio (SNR).
Channel Widths (MHz)	20 / 40 / 80 / 160	20 / 40 / 80 / 160 / 320	Use of wider 320 MHz is dependent on a number of factors including frequency reuse of the deployment and new static puncturing capabilities.
Multi-Link Operation (MLO)	N/A	Tri-band MLO	Will increase throughput, lower latency and reduce intra-AP roaming disruptions once MLO-supported client devices are adopted.
Maximum Client Data Rate	9.6 Gbps	36 Gbps	Data rate gains are dependent on scenarios using 320 MHz channels and 4K-QAM (vs 160 MHz channels and 1K-QAM in Wi-Fi 6/6E)
Maximum Special Streams	8	8	N/A
Target Wake Time (TWT)	Individual Broadcast	Restricted Individual Broadcast	Will lead to more predictable latency and power saving for future devices that support restricted TWT.
Resource Units	One resource unit per user	Multiple resource units per user	Multiple RUs can be assigned to a single user or combined for transmission efficiency and flexibility in future Wi-Fi 7 supported devices.
Triggered Uplink Access	N/A (proprietary)	Available	Will drive greater predictability for uplink multi-user transmissions.

Learn more at arubanetworks.com/faq/what-is-wi-fi-7

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