



Wi-Fi 7

The next fast lane of connectivity.

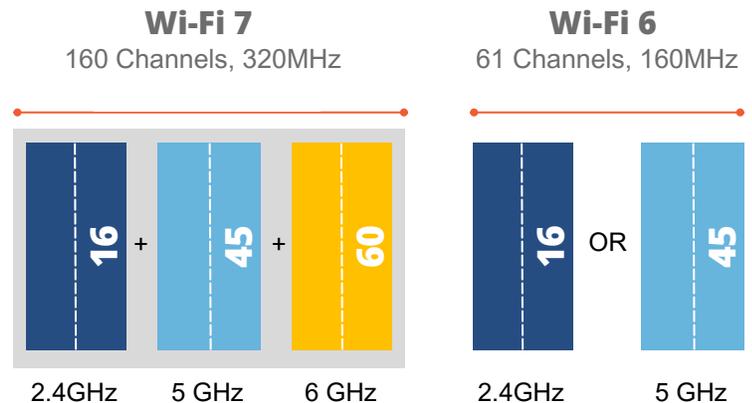
Wi-Fi is constantly evolving—faster speeds, lower latency, and the ability to support more and more devices simultaneously. As data demand grows exponentially, connectivity must keep pace with these advancements. Meet Wi-Fi 7.

Wi-Fi 7 (*IEEE 802.11be*) is the latest generation of Wi-Fi technology. It uses a variety of new protocols to reduce latency, increase network capacity, and boost efficiency. Wi-Fi 7 uses groundbreaking technology, like Multi-Link Operation (MLO) and channel splitting, to tackle congestion and interference and provide a more flexible solution.

Think of Wi-Fi like a highway. Each band of frequency has a fixed number of channels, or *lanes*, by which information can travel. Just as a city road differs from a multi-lane highway in capacity, so do Wi-Fi channels in bandwidth.

Wi-Fi 7 is like upgrading from a congested city street to a multi-lane superhighway. It uses MLO which combines 2.4GHz, 5GHz, and 6GHz bands into a single connection to be used simultaneously, opening up 116 channels at a full 320MHz of bandwidth—that means more open road for information to travel at faster speeds.

CHANNEL ALLOCATIONS OF WI-FI 6 TO WI-FI 7



BY THE NUMBERS: WI-FI 6 TO WI-FI 7

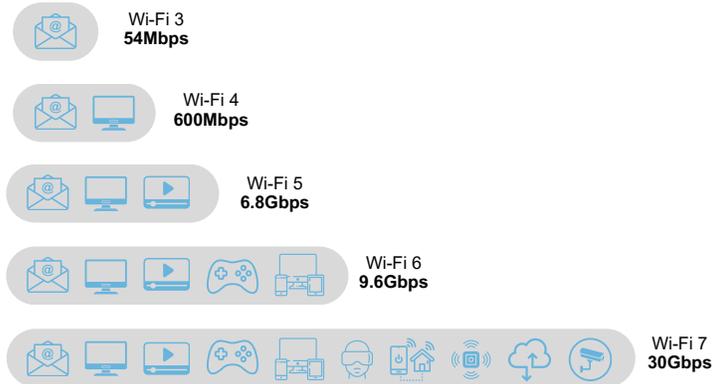
	Wi-Fi 6	Wi-Fi 6E	Wi-Fi 7
IEEE Standard	802.11ax	802.11ax	802.11be
Speed Capacity	9.6 Gbps	9.6 Gbps	30 Gbps
Frequency Bands	2.4GHz and 5GHz	2.4GHz, 5GHz, 6GHz	2.4GHz + 5GHz + 6GHz
QAM Modulation	1024-QAM	1024-QAM	4096-QAM <i>20% higher transmission rate</i>
Channel Width	160 MHz	160 MHz	320 MHz
Access Point	Single	Single	Multiple
Spatial Streams	8	8	16
Wi-Fi Security	WPA 3	WPA 3	WPA 4 (TBD)

Wi-Fly? Why faster speeds matter.

Our digital lives rely on fast, reliable connectivity more than ever. Early Wi-Fi connected people; later generations connected us to information. Today's Wi-Fi is about seamless machine-to-machine communication with multiple devices online at once.

Wi-Fi 7 is a game changer, delivering up to 100% faster speeds, ultra-low latency, and unmatched reliability. It powers next-gen applications like video streaming, AR/VR, and immersive experiences while reducing congestion and interference. It's a great solution for busy, crowded environments and sophisticated use cases.

EVOLUTION OF WI-FI BY APPLICATION



Opportunity ahead? Still emerging.

Wi-Fi 7 is built to handle the ever-growing need for faster speeds and more reliable connections in our hyper-connected world. It tackles a lot of the headaches from prior generations. Taking full advantage of Wi-Fi 7 takes planning—it needs more power, careful management, and stronger protection and security as more devices come online. Older technology must catch up, and the ecosystem will need time to grow.

As an enterprise, here are some things to consider before jumping into deployment.

INFRASTRUCTURE READINESS

To get the most out of Wi-Fi 7, networks need a cloud-based architecture with built-in AI for IT operations (AIOps). A modern setup will help handle more devices, boost data flow, and simplify network management.

POWER DEMANDS

Wi-Fi 7 access points use much more power than previous generations (due to features like 320 MHz channels and 4K QAM). As an example, in smart buildings, efficient power will need to extend beyond devices to the switches in order to avoid overloading electrical systems.

DEVICE ECOSYSTEM

Enterprises need to consider that Wi-Fi 7 will bring a dramatic increase in the number and types of connected devices—creating a larger attack surface. Businesses will be required to strengthen security. A solid Network Access Control strategy will be key, enforcing Zero Trust policies by verifying devices before they join the network.



THE TDC TAKE

Wi-Fi 7 will take off by 2026, but for now, stick with Wi-Fi 6E—it runs on the same 6GHz spectrum and eases the transition. Let the technology and surrounding ecosystems mature before switching lanes.

Tillman Digital Cities (TDC) designs, installs, owns and maintains in-building connectivity solutions to solve today's challenges and plan for tomorrow's ambitions. As part of Tillman Global Holdings—which has deployed over \$10B in communications infrastructure in two dozen countries worldwide—connectivity is at our core. At TDC, we partner with Wireless Carriers, Service Partners and Enterprises to deliver custom, future-proof solutions backed by advanced technologies and a proven track record of excellence every step of the way.