

Intel Accelerates Wi-Fi 6 Adoption in New PCs, Routers and Gateways

Optimizing Wi-Fi 6 from Network to PC, Bringing Blazing Fast Connectivity, Lower Latency and Support for More Devices for More Immersive Experiences

May 27, 2019 — At Computex 2019, Intel showcased how it is working with the ecosystem to bring the latest Wi-Fi 6 technology to new PCs and home routers and gateways. Wi-Fi 6 delivers ultra-fast, reliable and responsive connections, even in environments with many devices connected simultaneously, which is important since it is estimated that each person in North America will have 13 or more connected devices by 2022⁰.

INTEL® WI-FI 6 (GIG+)
FASTER GIGABIT SPEEDS + NEW WI-FI 6 FEATURES

3X FASTER¹
than standard AC 2x2 with 80 Mhz channels

Expected Max Wireless Throughput (Mbps)

Standard AC 2x2	600 Mbps
Intel® Wireless-AC 2x2 (Gigabit)	1,200 Mbps
Intel® Wi-Fi 6 (Gig+)	1,700 Mbps

2X FASTER
~3X FASTER

75% LOWER LATENCY²

More responsive gaming
Seamless video conferencing

IMPROVED SECURITY³

Simplified passwords³
Improved protection vs. wireless hacking⁴

TAKE YOUR HOME WI-FI TO THE NEXT LEVEL

- Faster, more responsive Intel®-based Wi-Fi 6 routers and gateways⁵
- 4x capacity for more devices⁶
- Compatible with today's Wi-Fi standards
- Ready for Gigabit home Internet

~1000 Mbps

Find out more by visiting us at www.intel.com/wireless

Intel Wi-Fi 6 (Gig+) Solutions

Not all Wi-Fi 6 is created equal. Intel® Wi-Fi 6 (Gig+) solutions for PCs and home routers and gateways are Gig+ capable, meaning they use 160 MHz channel bandwidth to get true gigabit speeds. This enables best-in-class performance for browsing, working, gaming and streaming, with gigabit speeds that are two times faster than mainstream Wi-Fi 6 solutions⁷ and nearly three times faster versus standard 802.11 AC solutions¹. Intel's Wi-Fi 6 solutions for PCs and home infrastructure are also performance optimized with the user experience in mind.

New Wi-Fi 6 (Gig+) Routers and Gateways Powered by Intel® Technology

[Intel Home Wi-Fi Chipset WAV600 Series](#) is Gig+ capable and was the industry's first Wi-Fi 6 solution for dual-band 4-stream (2+2) routers and gateways, making it possible to start experiencing the benefits of Wi-Fi 6 in an affordable way. Wi-Fi 6 (Gig+) routers and gateways powered by Intel's Wi-Fi 6 technology are designed to use 160MHz channel bandwidth to deliver true gigabit speeds on capable PCs, including today's PCs with integrated 802.11ac Gigabit Wi-Fi and new PCs with Intel Wi-Fi 6 (Gig+).

The following companies are introducing new Wi-Fi 6 (Gig+) routers and gateways powered by Intel technology in 2019:

- **AVM*** will introduce the industry's first dual-band 2x2 stream DOCSIS 3.1 cable gateway with Wi-Fi 6 (Gig+), offering an affordable way for cable operators to deploy Wi-Fi 6.
- **Edimax*** will be the first to offer a "whitebox" dual-band 4-stream Wi-Fi 6 router to OEMs worldwide to help expand the global reach of Wi-Fi 6, and will also introduce the BR-6473AX, a dual-band 4-stream Wi-Fi 6 (Gig+) router.
- **Elecom*** will deliver the [WRC-X3000GS](#), which is expected to be one of the first dual-band 4-stream Wi-Fi 6 (Gig+) routers in Japan.
- **Netgear*** recently introduced the [Nighthawk AX4 router](#), the industry's first mainstream dual-band 4-stream Wi-Fi 6 router. It is Gig+ capable so that users can enjoy smoother streaming, faster downloads, and improved gaming and video conferencing.
- **TP-Link*** will offer the Archer AX50, a new dual-band Wi-Fi 6 (Gig+) router that will increase the speed and efficiency of the home network.

New PCs with Intel Wi-Fi 6 (Gig+)

In 2019, more than 100 new PCs are expected with Intel Wi-Fi 6 (Gig+) as a configuration option, including OEM systems based on:

- [8th Gen Intel® Core™ vPro](#) – Commercial laptops configured with Intel Wi-Fi 6 (Gig+) solutions will be some of the first available in the marketplace to enable faster Wi-Fi 6 connections.
- [9th Gen Intel® Core™ mobile processors](#) with Intel® Wi-Fi 6 AX200 (Gig+) offer almost three times faster throughput¹ and up to 75% latency reduction² to unleash a great gaming experience.
- New [10th Gen Intel® Core™ processors](#), code name "Ice Lake," have integrated Intel® Wi-Fi 6 (Gig+) for incredibly fast and responsive connectivity on thin and light PCs.

Intel's innovation program, code name "[Project Athena](#)," is defining the next era of advanced laptops by driving new experiences. Advancements in connectivity, including Wi-Fi 6, will help make those experiences possible. On stage at [COMPUTEX 2019](#), OEMs previewed upcoming designs based on 10th Gen Intel Core processors and co-engineered as part of the Project Athena innovation program, including Acer Swift 5*, Dell XPS 13" 2 in 1*, HP Envy 13* and Lenovo Yoga S940*.

In addition, Acer*, ASUS*, Dell*, HP* and MSI* have announced new PCs with Intel Wi-Fi 6 AX200 (Gig+).

For more on Intel Wi-Fi 6 (Gig+) visit <https://www.intel.com/content/www/us/en/architecture-and-technology/wireless/80211ax.html>

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.

Tests document performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance. Consult other sources of information to evaluate performance as you consider your purchase. For more complete information about performance and benchmark results, visit <http://www.intel.com/benchmarks>.

⁰Source: Cisco VNI, 2018. <https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-741490.html>
1 802.11ax 2x2 160MHz enables 2402Mbps maximum theoretical data rates, 3X faster than standard 802.11ac 2x2 80MHz (867Mbps) and nearly 6x faster than baseline 1x1ac (433Mbps) Wi-Fi as documented in IEEE 802.11 wireless standard specifications and require the use of similarly configured 802.11ax wireless network routers.

² "Up to 75% lower latency" is based on Intel simulation data of 802.11ax with and without OFDMA using 9 clients. Average latency without OFDM is 36ms, with OFDMA average latency is reduced to 7.6ms. Latency improvement requires that the AP and all clients support OFDMA.

³ Personal password security is based on IEEE requirement for 802.11ax to support WPA3 which is the latest in security and leverages SAE providing more resilient password-based authentication

4 IEEE includes WPA3 security as a requirement for 802.11ax which provides the latest in security design features. Additional network protection comes from the equivalent of 192-bit cryptographic strength across an 802.11ax network.

5 Requires a router based on 802.11ax supporting OFDMA and multiple clients on the network with support for AX. Better in dense environments is achievable from OFDMA feature supported by 802.11ax clients and APs. 2Gbps based on assumptions of approximately 70% of IEEE 802.11 specification theoretical maximum data rates for 802.11ax 160 MHz 2402Mbps.

6 This amendment defines standardized modifications to both the IEEE 802.11 physical layers (PHY) and the IEEE 802.11 Medium Access Control layer (MAC) that enable at least one mode of operation capable of supporting at least four times improvement in the average throughput per station (measured at the MAC data service access point) in a dense deployment scenario, while maintaining or improving the power efficiency per station. For additional details visit: <https://mentor.ieee.org/802.11/dcn/14/11-14-0165-01-0hew-802-11-hew-sg-proposed-par.docx>

7 Best in Class Wi-Fi 6: Intel® Wi-Fi 6 (Gig+) products support optional 160 MHz channels, enabling the fastest possible theoretical maximum speeds (2402 Mbps) for typical 2x2 802.11 AX PC Wi-Fi products. Premium Intel® Wi-Fi 6 (Gig+) products enable 2-4X faster maximum theoretical speeds compared standard 2x2 (1201 Mbps) or 1x1 (600 Mbps) 802.11 AX PC Wi-Fi products, which only support the mandatory requirement of 80 MHz channels.

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