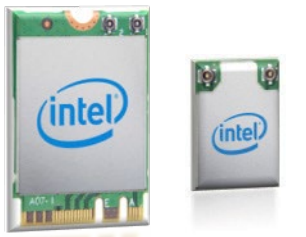
PRODUCT BRIEF

Intel® Wi-Fi 6E AX210 Module

2nd Generation Wi-Fi 6 with extended Wi-Fi 6E (6GHz band) support

Intel® Wi-Fi 6E AX210 (Gig+) Module

Maximize speed, latency, and reliability benefits of Wi-Fi 6 across new radio frequencies free from legacy device interference



Wi Fi 6 CERTIFIED

WI-FI GIG+ 6E BY INTEL®

The Intel® Wi-Fi 6E AX210 (Gig+) adapter is designed to support upcoming Wi-Fi 6E technology and related Wi-Fi Alliance Wi-Fi 6E[1] certification. The product supports dual-stream Wi-Fi in the 6 GHz band, and includes improved TCP throughput—exceeding 2Gbps—and future Wi-Fi 6 R2 features, including UL MU-MIMO[2] that improves UL network capacity in dense environments as well as Bluetooth® 5.2 support. These new features maximize the benefits of Wi-Fi 6, including Gigabit speed, ultra-low latencies, and enhanced reliability benefits across new radio frequencies exclusive to Wi-Fi 6E devices, and deliver a significant improvement in user experience in dense deployments. Combined with Intel® Core™ processors and exceptional Intel wireless innovations, the Intel® Wi-Fi 6E AX210 module can dramatically improve your connected experience at home, work, or on the go.

2ND GENERATION INTEL Wi-Fi 6 WIRELESS WITH EXTENDED Wi-Fi 6E (6GHz BAND) SUPPORT	
Greater Network Flexibility **Faster speed** **Reduced Latency**	By implementing the new Wi-Fi 6E technology supporting the new 6GHz band that includes 1200MHz of new contiguous spectrum (>2x compared to 5GHz) with more Gigabit Wi-Fi options and exclusivity to Wi-Fi 6 products, Intel® Wi-Fi 6E AX210 module maximizes Wi-Fi 6 and Gigabit Wi-Fi benefits enabling greater network flexibility, faster downloads, sharing and backups as well as reduced latency and improved reliability.
Wi-Fi 6E Dual band 2x2 160MHz	When using Wi-Fi 6 technology with 1024QAM and 160MHz channels, Intel® Wi-Fi 6 AX210 module can deliver nearly 3x higher peak data rates[3] (up to 2.4Gbps) and up to 4x capacity improvement in dense or congested environments comparing to 802.11ac[4].
Bluetooth® 5.2	On top of existing features, Bluetooth® 5.2 includes Isochronous Channel feature which lays the foundation for the implementation of next generation of Bluetooth Audio – LE Audio. Bluetooth® 5.2 Core specification also provides the capability to change the transmit power of the devices (local and peer) in order to improve the link quality while not using extra power consumption.
Microsoft Windows 10*	Full support for latest Microsoft Windows 10* OS.
Form Factors (M.2 2230 and 1216)	M.2 2230 modules enable system configuration and platform usage flexibility with the use of a standard Key A or Key E socket for attaching the module. M.2 1216 modules enable platform design optimizations providing savings on motherboard space and BOM.

EXPERIENCE THE INTEL® DIFFERENCE

Worldwide Regulatory Support **Intel® Dynamic Regulatory Solution**	Enables performance-optimized worldwide regulatory compliance SKU. The Intel® Wi-Fi 6E AX210 module detects its location and automatically optimizes the Wi-Fi settings to local regulatory requirements, maximizing performance in each geography, simplifying travel experience and global enterprise procurement. Future regulatory changes are easily managed during the product life cycle.
Wireless Functionality in Pre-boot Environment	Support for Wi-Fi network and BLE HID connectivity in the platform's UEFI (Unified Extensible Firmware Interface) environment during its boot stage. This capability enables use cases like OS recovery over Wi-Fi and BLE-based keyboard and mouse connectivity in this pre-boot environment.
Wirelessly Project to the Big Screen	Project your 2-in-1 or laptop content instantly, without wires, on the big HD screen with stunning image clarity and sound using Wi-Fi Miracast*. Stream movies, videos, games, photos, connect with friends, and more. Experience it all, bigger and better than ever before.

BUSINESS-CLASS WIRELESS

Intel® vPro™ Technology[5]	Supports Intel's hardware-based security and management features built into Intel® Core™ vPro™ processors and chipsets that enable IT to manage PCs virtually anywhere, anytime, while reducing deployment costs, improving security and ROI.
Intel® Active Management Technology[6]	Using integrated platform capabilities and popular third-party management and security applications, Intel® AMT allows IT or managed service providers to better discover, repair, and help protect their networked computing assets. Intel® AMT is a feature of Intel® Core™ processors with Intel® vPro™ technology.

INTEL® WI-FI 6 AX210 MODULE TECHNICAL SPECIFICATIONS

GENERAL

Dimensions (H x W x D)	M.2 2230: 22mm x 30mm x 2.4mm [1.5mm Max (Top Side)/ 0.1mm Max (Bottom Side)] M.2 1216: 12mm x 16mm x 1.7 (+-0.1) mm
Weight	M.2 2230: 2.83 +/– 0.3 g M.2 1216: 0.67 +/– 0.1 g
Radio ON/OFF Control	Supported
Connector Interface	M.2: PCIe, USB
Operating Temperature (Adapter Shield)	0°C to +80°C
Humidity Non-Operating	50% to 90% RH non-condensing (at temperatures of 25°C to 35°C)
Operating Systems	Microsoft Windows* 10, Linux*
Wi-Fi Alliance[7]	Wi-Fi CERTIFIED* 6, Wi-Fi CERTIFIED* a/b/g/n/ac, WMM*, WMM*-Power Save, WPA2*, WPA3*, WPS*, PMF*, Wi-Fi Direct*, Wi-Fi Agile Multiband*, and Wi-Fi TimeSync*
IEEE WLAN Standard	IEEE 802.11-2016 and select amendments (selected feature coverage) IEEE 802.11a, b, d, e, g, h, i, k, n, r, u, v, w, ac, ax; Fine Timing Measurement based on 802.11-2016, Wi-Fi Location R2 (802.11az) HW readiness[8]
Bluetooth®	Bluetooth® 5.2

SECURITY FEATURES[9]

Security Methods	WPA2*; WPA3*
Authentication Protocols	802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA')
Encryption	128-bit AES-CCMP, 256-bit AES-GCMP

COMPLIANCE

Regulatory	For a list of country approvals, please contact your local Intel representatives.
US Government	FIPS[10] 140-2
Product Safety	UL, C-UL, CB (IEC 60950-1)

PRODUCT NAME	MODEL NUMBER	VERSION
Intel® Wi-Fi 6E AX210	AX210NGW AX210D2W	Wi-Fi 6E (6GHz), 2x2, Bluetooth® 5.2, M.2 2230 Wi-Fi 6E (6GHz), 2x2, Bluetooth® 5.2, M.2 1216

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[1] Wi-Fi 6E WFA certification will be available by Dec 2020 – Jan 2021.
[2] Uplink Multi-User MIMO (Multiple Input Multiple Output) supports up to 8 streams of UL data from multiple stations improving UL network capacity in dense environment.
[3] "Nearly 3X higher peak data rates" Intel® Wi-Fi 6 AX claims are based on the comparison of the expected maximum theoretical data rates for similarly configured 802.11ax and standard 802.11ac Wi-Fi solutions as documented in IEEE 802.11ax draft 2.0 spec and IEEE 802.11 wireless standard specifications, and require the use of similarly configured 802.11ax wireless network routers.
[4] In accordance with the IEEE 802.1ax PAR. For additional details visit: https://mentor.ieee.org/802.11/dcn/14/11-14-0165-01-0hew-802-11-hew-sg-proposed-par.docx.
[5] Intel® vPro™ Technology is sophisticated and requires setup and activation. Availability of features and results will depend upon the setup and configuration of your hardware, software and IT environment. To learn more visit: http://www.intel.com/technology/vpro
[6] Requires activation and a system with a corporate network connection, an Intel® AMT-enabled chipset, network hardware and software. For notebooks, Intel® AMT may be unavailable or limited over a host OS-based VPN, when connecting wirelessly, on battery power, sleeping, hibernating or powered off. Results dependent upon hardware, setup and configuration. For more information, visit http://www.intel.com/technology/platform-technology/intel-amt.
[7] Support of Wi-Fi Alliance certifications is OS dependent
[8] IEEE 802.11az HW readiness per expected Wi-Fi Location R2 feature support and based on draft 2.1 of the IEEE802.11az amendment and is subject to change
[9] Some security solutions may not be supported by your device operating system and/or by your device manufacturer or may require additional HW (e.g., UICC - SIM card). Check with your device manufacturer for details on availability.
[10] On Microsoft* Windows 10*

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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 **www.intel.com/benchmarks**

Estimated results were obtained prior to implementation of recent software patches and firmware updates intended to address exploits referred to as "Spectre" and "Meltdown". Implementation of these updates may make these results inapplicable to your device or system.

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Cost reduction scenarios described are intended as examples of how a given Intel-based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

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