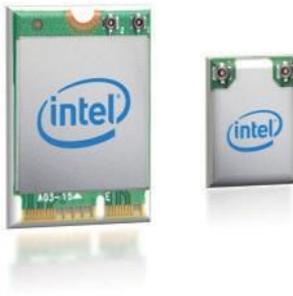


# Intel® Wi-Fi 6 AX200 Module

## Nearly 3X higher peak data rates and up to 4X capacity



The Intel® Wi-Fi 6 AX200 adapter is designed to support the upcoming IEEE 802.11ax standard – Wi-Fi 6 technology and the Wi-Fi Alliance Wi-Fi 6<sup>1</sup> certification. The product supports 2x2 Wi-Fi 6 technology, including new features such as UL and DL OFDMA and 1024QAM, delivering data rates of up to 2.4Gbps<sup>2</sup> and increased network capacity as well as Bluetooth® 5 support. These new features deliver a significant improvement in user experience in dense deployments, supporting fast uploads and downloads, lower latency and longer battery life compared to solutions supporting 802.11ac. Combined with Intel® Core™ processors and exceptional Intel wireless innovations, the Intel® Wi-Fi 6 AX200 module can provide Gigabit wireless speed<sup>2</sup> and dramatically improve your connected experience at home, work, or on the go.

### 1<sup>ST</sup> GENERATION INTEL Wi-Fi 6 WIRELESS

<p><b>Increased Capacity</b> <b>Faster Speed</b> <b>Better Coverage</b> <b>Extended Battery Life</b></p>	<p>By implementing the new 802.11ax standard with its unique features such as OFDMA, 1024QAM, Target Wake Time (TWT) and spatial reuse, Intel® Wi-Fi 6 AX200 module enables smooth streaming of high resolution videos, fewer dropped connections, and faster connections farther away from the router and in dense environments.</p>
<p><b>802.11ax Dual band 2x2 160MHz</b></p>	<p>When using Wi-Fi 6 technology with 1024QAM and 160MHz channels, Intel® Wi-Fi 6 AX200 module can deliver nearly 3x higher peak data rates<sup>3</sup> (up to 2.4Gbps) and up to 4x capacity improvement in dense or congested environments comparing to 802.11ac<sup>4</sup>.</p>
<p><b>Bluetooth® 5</b></p>	<p>Bluetooth® 5 provides 4x<sup>5</sup> range over Bluetooth® 4.2 using the same Tx power, enabling coverage throughout the home. Bluetooth® 5 also doubles data rates speed for faster transmissions thereby reducing the overall power consumption. Additionally, Bluetooth® 5 adds new enhanced data broadcasting enabling seamless services such as location-based services and simpler pairing for Bluetooth® devices.</p>
<p><b>Microsoft Windows* 10</b></p>	<p>Full support for latest Microsoft Windows 10* OS.</p>
<p><b>Form Factors (M.2 2230 and 1216)</b></p>	<p>M.2 2230 modules enable system configuration and platform usage flexibility with the use of a standard Key E socket for attaching the module.</p> <p>M.2 1216 modules enable platform design providing savings on motherboard space and BOM.</p>

## EXPERIENCE THE INTEL® DIFFERENCE

<b>Worldwide Regulatory Support</b> <b>Intel® Dynamic Regulatory Solution</b>	Enables performance optimized worldwide regulatory compliance SKU. The Intel® Wi-Fi 6 AX200 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.
<b>Wireless Functionality in Pre-boot Environment</b>	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.
<b>Wirelessly Project to the Big Screen</b>	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

<b>Intel® vPro™ Technology<sup>6</sup></b>	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.
<b>Intel® Active Management Technology<sup>7</sup></b>	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 AX200 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 1.67 (+-0.08)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*, Chrome OS*
Wi-Fi Alliance <sup>8</sup>	Wi-Fi CERTIFIED* a, b, g, n, ac with wave 2 features, WMM*, WMM*-Power Save, WPA*, WPA2*, WPS*, PMF*, Wi-Fi Direct*, Wi-Fi Miracast* , Wi-Fi Agile Multiband*, Wi-Fi Optimized Connectivity*, Wi-Fi Location, Passpoint*, Wi-Fi Aware*, and Wi-Fi TimeSync*
IEEE WLAN Standard	IEEE 802.11-2016 and select amendments (selected feature coverage) IEEE 802.11a, b, g, n, ac, ax, d, e, h, i, k, r, u, v, w, ai; Fine Timing Measurement based on 802.11-2016
Bluetooth <sup>®</sup>	Bluetooth <sup>®</sup> 5

### SECURITY FEATURES<sup>9</sup>

Security Methods	WPA* and WPA2* Personal and Enterprise; WPA3* (pending OS support)
Authentication Protocols	802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0 -MSCHAPv2 (EAP-SIM, EAP-AKA, EAP-AKA')
Encryption	64-bit and 128-bit WEP, TKIP, 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 <sup>10</sup> 140-2, FISMA
Product Safety	UL, C-UL, CB (IEC 60950-1)

PRODUCT NAME	MODEL NUMBER	VERSION
Intel® Wi-Fi 6 AX200	AX200NGW	802.11ax <sup>13</sup> , 2x2, Bluetooth® 5, M.2 2230
	AX200D2WL	802.11ax <sup>13</sup> , 2x2, Bluetooth® 5, M.2 1216; LTE Coex

For more information on Intel® Wireless products, visit [intel.com/wireless](http://intel.com/wireless)



<sup>1</sup> Wi-Fi 6 (802.11ax) WFA certification is not yet available. Intel® Wi-Fi 6 AX200 module will be delivered as a pre-certified solution.

<sup>2</sup> Based on the theoretical maximum bandwidth enabled by 2x2 802.11ax 160MHz implementations. Actual wireless throughput and/or range will vary depending on your specific operating system, hardware and software configurations. Check with your device manufacturer for details.

<sup>3</sup> "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.

<sup>4</sup> 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>

<sup>5</sup> Bluetooth® 5 Specifications, <https://www.bluetooth.com/~media/files/specification/bluetooth-5-faq.ashx?la=en>

<sup>6</sup> 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>

<sup>7</sup> 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 & configuration. For more information, visit <http://www.intel.com/technology/platform-technology/intel-amt>

<sup>8</sup> Support of Wi-Fi Alliance certifications is OS dependent

<sup>9</sup> 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.

<sup>10</sup> 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](http://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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