

Intel® Wi-Fi 7 BE202 Module

Maximize speed, latency, and reliability benefits of Wi-Fi 7 across new radio frequencies reducing legacy device interference



The Intel® Wi-Fi 7 BE202 adapter is designed to support the upcoming IEEE 802.11be standard – Wi-Fi 7¹ technology and the Wi-Fi Alliance Wi-Fi 7 certification.

This Wi-Fi/ Bluetooth® module supports dual-stream Wi-Fi in the 2.4GHz, 5GHz and 6GHz bands as well as Bluetooth® 5.4². These new features maximize the benefits of Wi-Fi 7, including Gigabit plus speed³, ultra-low latencies, and enhanced reliability across new radio frequencies exclusive to Wi-Fi 7 devices, and deliver a significant improvement in user experience in dense deployments, as well as extended operating range for Bluetooth® connected devices, and support for Bluetooth® LE audio.

Combined with Intel® Core™ processors and exceptional Intel wireless innovations, the Intel® Wi-Fi 7 BE202 modules can dramatically improve your connected experience at home, work, or on the go.

1st Generation Wi-Fi 7 support

Wi-Fi 7 Tri-Band 2x2 160MHz
Greater Network Flexibility
Accelerated Connectivity
Increased Reliability
Wired-like Responsiveness
Enhanced Privacy and Security

The Intel® Wi-Fi 7 BE202 module is designed for faster connections, improved reliability, wired-like responsiveness for better user experience, and enhanced privacy and security.

Aligned with the upcoming IEEE 802.11be standard, the Intel® Wi-Fi 7 BE202 module supports these key features: 1024QAM and 160MHz channels resulting in 2.4 Gbps theoretical data rates, Multi-link Operation (MLO-eMLSR), Multi-resource unit (Multi-RU) and Puncturing.

Legacy standards continue to be supported: Wi-Fi 4, 5, 6, and Wi-Fi 6E, including Wi-Fi 6 R2 features.

Bluetooth® 5.4

Experience audio like never before with Intel® Wi-Fi 7 BE202 Bluetooth® LE technology. Our cutting-edge audio devices provide seamless connectivity, exceptional sound quality, and extended battery life. Immerse yourself in your favorite music and calls without compromise. Elevate your audio experience with the power of Bluetooth LE, setting new standards for wireless enjoyment.

Microsoft* Windows*

Full support for the latest Microsoft* Windows 11* 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 E socket for attaching the module.

M.2 1216 modules enable platform design optimizations providing savings on motherboard space and BOM.

Experience the Difference with Intel® Technology

Worldwide Regulatory Support Dynamic Regulatory Solution	Enables performance-optimized worldwide regulatory compliance SKU. The Intel® Wi-Fi 7 BE202 series-based modules detects its location and automatically optimizes the Wi-Fi settings to local regulatory requirements in most countries worldwide, 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 Bluetooth® Low Energy 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 Bluetooth® Low Energy-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.

Intel® Wi-Fi 7 BE200 Module Technical Specifications

GENERAL

Dimensions (H x W x D)	M.2 2230: 22mm x 30mm x 2.42mm (max) M.2 1216: 12mm x 16mm x 1.7 (+-0.1) mm
Weight	M.2 2230: 3.07+/-0.15g M.2 1216: 0.75+/-0.04g
Radio ON/OFF Control	Supported
Connector Interface	M.2: PCIe*, USB
Operating Temperature (Ambient)	0°C to +50°C
Humidity Non-Operating	50% to 90% RH non-condensing (at temperatures of 25°C to 35°C)
Operating Systems	Microsoft* Windows 11*, Microsoft* Windows 10*, Linux*
Wi-Fi Alliance ⁴	Wi-Fi 7 Technology support, Wi-Fi CERTIFIED* 6 with Wi-Fi 6E, Wi-Fi CERTIFIED* a/b/g/n/ac, WMM*, WMM*-Power Save, WPA3*, PMF*, Wi-Fi Direct*, Wi-Fi Agile Multiband*, Wi-Fi Location R2 HW readiness ⁵
IEEE WLAN Standard	IEEE 802.11-2020 and select amendments (selected feature coverage) IEEE 802.11a, b, d, e, g, h, i, k, n, r, u, v, w, ac, ax, be; Fine Timing Measurement based on 802.11-2016, 802.11az HW readiness
Bluetooth®	Bluetooth® 5.4 (Ant. 1)

SECURITY FEATURES⁶

Security Methods	WPA3* personal and enterprise including WPA2* transition mode
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 ⁷ 140-3
Product Safety	UL, C-UL, CB (62368-1)

Product Name	Model Number	Version
Intel® Wi-Fi 7 BE202	BE200NGW M BE200D2W M	Wi-Fi 7, 160MHz 2x2, Bluetooth® 5.4, M.2 2230 Wi-Fi 7, 160MHz 2x2, Bluetooth® 5.4, M.2 1216

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





¹ Wi-Fi 7 (802.11be) WFA certification is not yet available. Intel® Wi-Fi 7 BE202 module will be delivered as a pre-certified solution.

² Name and features might change based on Bluetooth SIG direction

³ "Gigabit plus speeds" - is based on the current draft of the 802.11be specification which specifies the theoretical maximum data rate for a 2x2 device that supports 160 MHz channels and 1024 QAM is 2.4 Gbps. Based on an industry-standard assumption of efficiency for new Wi-Fi products the resulting maximum over the air 2x2 UDP client speed would be 2.1 Gbps

⁴ Support of Wi-Fi Alliance certifications is OS-dependent.

⁵ IEEE 802.11az hardware 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.

⁶ Some security solutions may not be supported by your device operating system and/or by your device manufacturer or may require additional hardware (e.g., UICC – SIM card). Check with your device manufacturer for details on availability.

⁷ Pre certified

The Bluetooth® word mark and logos are registered trademarks owned by the Bluetooth SIG, Inc. and any use of such marks by Intel Corporation is under license.

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.

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade. Intel may make changes to specifications and product descriptions at any time, without notice. For the most current product information, please visit <http://www.intel.com/wireless>.

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.

This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.

Intel, the Intel logo, are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.

* Other names and brands may be claimed as the property of others.

2024 Copyright © Intel Corporation. All rights reserved.