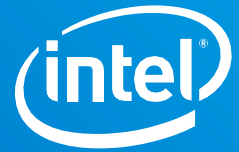


# PRODUCT BRIEF

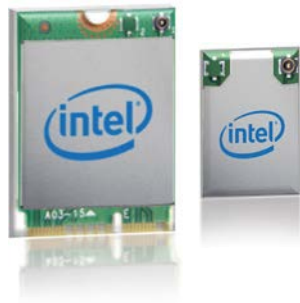


Intel® Wireless-AC 9461

1st Generation Integrated<sup>1</sup> Intel Wireless 802.11ac, Dual Band,  
1x1 Wi-Fi + Bluetooth® 5, Single Antenna

# Intel® Wireless-AC 9461

## Integrated Wi-Fi and Bluetooth®. Optimized Solution for System Design.



Intel® Wireless-AC 9461 adapter is a CRF<sup>2</sup> (Companion RF module) supporting the 1st generation integrated Intel wireless 802.11ac solution comprised of CNVi<sup>3</sup> and a CRF. The solution provides Bluetooth® 5 and 1x1 802.11ac Wi-Fi including wave 2 features such as downlink MU-MIMO. It is a single antenna CRF and more cost-effective than the previous-gen Intel 802.11ac 1x1 products. Combined with Intel® Core™ processors and exceptional Intel wireless innovations, the Intel Wireless-AC 9461 dramatically improves your connected experience at home, work or on the go.

### 1<sup>ST</sup> GENERATION INTEGRATED 802.11AC WIRELESS

**Faster Speed**  
**Better Coverage**  
**Larger Capacity**  
**802.11ac, 1x1, Dual Band, 80MHz, MU-MIMO**

Delivers up to 3x faster Wi-Fi speed (up to 433 Mbps) than 802.11n, with up to 3x bandwidth for more users and devices.<sup>4</sup> Advanced optional 802.11ac specification features and improved RF KPIs that enhance channel reliability and Wi-Fi performance resulting in better coverage and user experience. Intel® Wireless-AC 9461 enables smooth streaming of high-resolution videos, fewer dropped connections and less congestion, and fast speed farther away from the router.

Downlink MU-MIMO allows an access point to simultaneously transmit data to multiple clients and can improve overall downlink network capacity potentially by over 3x.<sup>5</sup>

**Bluetooth® 5**

Bluetooth® 5 provides 4x<sup>6</sup> range over Bluetooth® 4.2 with the same power, enabling coverage throughout the home. Bluetooth® 5 also doubles the transmit speed for faster transmissions, thereby reducing the overall power.<sup>6</sup> Bluetooth® 5 also adds new enhanced data broadcasting enabling seamless services such as location-based services and simpler pairing for Bluetooth® wireless technology enabled products.

**Microsoft Windows\* 10 Ready**

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 E socket for attaching the module.

M.2 1216 modules enable platform design optimization with the use of an Intel® CNVi interface between the integrated MAC and integrated Intel® Wireless-AC 9461 module, providing savings on motherboard space, BOM, PCIe and DP lanes, plus allowing for flexible motherboard routing up to 10".

## EXPERIENCE THE INTEL® WIRELESS-AC 9461 DIFFERENCE

<b>Worldwide Regulatory Support Intel® Dynamic Regulatory Solution</b>	Enables worldwide regulatory compliance on a single adapter SKU. The Intel® Wireless-AC 9461 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 Bluetooth® Low Energy Human Interface Device (HID) connectivity in the platform's Unified Extensible Firmware Interface (UEFI) 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.
<b>Wirelessly Project to the Big Screen</b>	Watch 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.

## INTEL® WIRELESS-AC 9461 TECHNICAL SPECIFICATIONS

### GENERAL

<b>Dimensions (W x H x D)</b>	M.2 2230: 22 mm x 30 mm x 2.4 mm [1.5mm Max (Top Side)/0.1mm Max (Bottom Side)] M.2 1216: 12 mm x 16 mm x 1.57 (+-0.08) mm
<b>Weight</b>	M.2 2230: 2.70g M.2 1216: 0.7g
<b>Antenna Diversity</b>	Supported
<b>Radio ON/OFF Control</b>	Supported
<b>Connector Interface</b>	M.2: CNVio
<b>Operating Temperature (Adapter Shield)</b>	0°C to +80°C
<b>Humidity Non-Operating</b>	50% to 90% RH noncondensing (at temperatures of 25°C to 35°C)
<b>Operating Systems</b>	Microsoft Windows* 10, Linux* (limited feature support), Chrome
<b>Wi-Fi Alliance</b>	Wi-Fi CERTIFIED* a/b/g/n/ac with wave 2 features, WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, Wi-Fi Miracast* as Source, and Wi-Fi Direct*
<b>IEEE WLAN Standard</b>	IEEE 802.11a/b/g/n/ac, 802.11d, 802.11e, 802.11h, 802.11i, 802.11w; 802.11r, 802.11k, 802.11v pending OS support; Fine Timing Measurement based on 802.11REVmc
<b>Roaming<sup>7</sup></b>	Supports seamless roaming between access points
<b>Bluetooth®</b>	Bluetooth® 5

### SECURITY FEATURES<sup>8</sup>

<b>Authentication</b>	WPA* and WPA2*, 802.1X (EAP-TLS, TTLS, PEAP, EAP-SIM, EAP-AKA, EAP-AKA')
<b>Authentication Protocols</b>	PAP, CHAP, TLS, MS-CHAP*, MS-CHAPv2
<b>Encryption</b>	64-bit and 128-bit WEP, TKIP, 128-bit AES-CCMP, 128-bit and 256-bit AES-GCMP
<b>Wi-Fi Direct* Encryption and Authentication</b>	WPA2-PSK, AES-CCMP

### COMPLIANCE

<b>Regulatory</b>	For a list of country approvals, please contact your local Intel representatives.
<b>U.S. Government</b>	FIPS <sup>9</sup> , FISMA
<b>Product Safety</b>	UL, C-UL, CB (IEC 60950-1)

PRODUCT NAME	MODEL NUMBER	VERSION
Intel® Wireless-AC 9461	9461NGW	802.11ac wave2, 1x1, Bluetooth® 5, PCIe, USB, M.2 2230, Single Antenna
	9461D2W	802.11ac wave2, 1x1, Bluetooth® 5, PCIe, USB, M.2 1216, Single Antenna



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

<sup>1</sup> Integrated: Solution comprised of CNVi and a CRF

<sup>2</sup> CRF: Companion RF module in M.2 form factor supporting integrated solution

<sup>3</sup> CNVi: Refers to the integrated wireless IP portion residing in the SOC/PCH

<sup>4</sup> Compared to 802.11n 40MHz channels, 802.11ac 80MHz provides 3x more bandwidth per stream (Max data rate for 802.11n 40MHz channels is 150 Mbps; Max data rate for 802.11ac 80MHz channels is 433 Mbps).

<sup>5</sup> 802.11ac downlink MU-MIMO technology allows concurrently serving multiple devices simultaneously, in turn increasing network capacity potentially by over 3x while improving per-user throughput based on industry standards.

<sup>6</sup> Bluetooth® 5 Specifications, [www.bluetooth.com/~media/files/specification/bluetooth-5-faq.ashx?la=en](http://www.bluetooth.com/~media/files/specification/bluetooth-5-faq.ashx?la=en)

<sup>7</sup> Roaming is supported only within each respective band and mode of access points.

<sup>8</sup> Some security solutions may not be supported by your device operating system and/or by your device manufacturer. Check with your device manufacturer for details on availability.

<sup>9</sup> Microsoft Windows\* 10.

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