Intel® WiFi Adapter Information Guide

This version of Intel® PROSet/Wireless WiFi Software is compatible with the adapters listed below. Note that newer features provided in this software are generally not supported on older generations of wireless adapters.

The following adapters are supported in Windows* 10:

- Intel® Wi-Fi 6E AX210
- Intel® Wi-Fi 6 AX201
- Intel® Wi-Fi 6 AX200
- Intel® Wireless-AC 9560
- Intel® Wireless-AC 9462
- Intel® Wireless-AC 9461
- Intel® Wireless-AC 9260
- Intel® Dual Band Wireless-AC 8265
- Intel® Dual Band Wireless-AC 8260
- Intel® Dual Band Wireless-AC 3168
- Intel® Dual Band Wireless-AC 7265
- Intel® Dual Band Wireless-N 7265
- Intel® Wireless-N 7265
- Intel® Dual Band Wireless-AC 3165

With your WiFi network card, you can access WiFi networks, share files or printers, or even share your Internet connection. All these features can be explored using a WiFi network in your home or office. This WiFi network solution is designed for both home and business use. Additional users and features can be added as your networking needs grow and change.

This guide contains basic information about Intel adapters. Intel® wireless adapters enable fast connectivity without wires for desktop and notebook PCs.

Depending on the model of your Intel WiFi adapter, your adapter is compatible with 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac and 802.11ax wireless standards. Operating at 5GHz or 2.4GHz frequency, you can now connect your computer to existing high-speed networks that use multiple access points within large or small environments. Your WiFi adapter maintains automatic data rate control according to the access point location and signal strength to achieve the fastest possible connection.

Information in this document is subject to change without notice.

Intel Corporation assumes no responsibility for errors or omissions in this document. Nor does Intel make any commitment to update the information contained herein.

IMPORTANT NOTICE FOR ALL USERS OR DISTRIBUTORS:

Intel wireless LAN adapters are engineered, manufactured, tested, and quality checked to ensure that they meet all necessary local and governmental regulatory agency requirements for the regions that they are designated and/or marked to ship into. Because wireless LANs are generally unlicensed devices that share spectrum with radars, satellites, and other licensed and unlicensed devices, it is sometimes necessary to dynamically detect, avoid, and limit usage to avoid interference with these devices. In many instances Intel is required to provide test data to prove regional and local compliance to regional and governmental regulations before certification or approval to use the product is granted. Intel's wireless LAN's EEPROM, firmware, and software driver are designed to carefully control parameters that affect radio operation and to ensure electromagnetic compliance (EMC). These parameters include, without limitation, RF power, spectrum usage, channel scanning, and human exposure.

For these reasons Intel cannot permit any manipulation by third parties of the software provided in binary format

with the wireless LAN adapters (e.g., the EEPROM and firmware). Furthermore, if you use any patches, utilities, or code with the Intel wireless LAN adapters that have been manipulated by an unauthorized party (i.e., patches, utilities, or code (including open source code modifications) which have not been validated by Intel), (i) you will be solely responsible for ensuring the regulatory compliance of the products, (ii) Intel will bear no liability, under any theory of liability for any issues associated with the modified products, including without limitation, claims under the warranty and/or issues arising from regulatory non-compliance, and (iii) Intel will not provide or be required to assist in providing support to any third parties for such modified products.

Note: Many regulatory agencies consider Wireless LAN adapters to be "modules", and accordingly, condition system-level regulatory approval upon receipt and review of test data documenting that the antennas and system configuration do not cause the EMC and radio operation to be non-compliant.

October 2019

Back to Contents

Adapter Settings

The **Advanced** tab displays the device properties for the WiFi adapter installed on your computer.

How to Access

Double-click on the Intel WiFi adapter in the Network adapters section of the Device Manager and select the **Advanced** tab.

A description of the WiFi adapter settings on the Advanced tab can be found here:

https://www.intel.com/content/www/us/en/support/articles/000005585/network-and-i-o/wireless-networking.html

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Back to Top

Back to Contents

Back to Contents

Regulatory Information

This section provides regulatory information for the following wireless adapters:

- Intel® Centrino® Wireless-N 100
- Intel® Centrino® Wireless-N 105
- Intel® Centrino® Wireless-N 130
- Intel® Centrino® Wireless-N 135
- Intel® Centrino® Wireless-N 1000
- Intel® Centrino® Wireless-N 1030
- Intel® Centrino® Wireless-N 2200
- Intel® Centrino® Wireless-N 2230
- Intel® Centrino® Wireless-N + WiMAX 6150
- Intel® Centrino® Advanced-N 6200
- Intel® Centrino® Advanced-N 6205
- Intel® Centrino® Advanced-N 6230
- Intel® Centrino® Advanced-N 6235
- Intel® Centrino® Advanced-N + WiMAX 6250
- Intel® Centrino® Ultimate-N 6300
- Intel® Dual Band Wireless-AC 7260
- Intel® Dual Band Wireless-N 7260
- Intel® Wireless-N 7260
- Intel® Dual Band Wireless-AC 3160
- Intel® Dual Band Wireless-AC 3165
- Intel® Dual Band Wireless-AC 3168
- Intel® Dual Band Wireless-AC 7265
- Intel® Dual Band Wireless-N 7265
- Intel® Wireless-N 7265
- Intel® Dual Band Wireless-AC 8260
- Intel® Dual Band Wireless-AC 8265
- Intel® Wireless-AC 9260
- Intel® Wireless-AC 9461
- Intel® Wireless-AC 9462
- Intel® Wireless-AC 9560
- Intel® Tri-Band Wireless-AC 17265
- Intel® Tri-Band Wireless-AC 18260
- Intel® Tri-Band Wireless-AC 18265
- Intel® Wireless Gigabit Sink W13100
- Intel® Wireless Gigabit 11000
- Intel® Wireless Gigabit Sink W13110VR
- Intel® Wireless Gigabit 11100VR
- Intel® Wi-Fi 6 AX200
- Intel® Wi-Fi 6 AX201
- Intel® Wi-Fi 6E AX210

NOTE: Due to the evolving state of regulations and standards in the wireless LAN field (IEEE 802.11 and similar standards), the information provided herein is subject to change. Intel Corporation assumes no responsibility for errors or omissions in this document.

Intel WiFi/ WiMAX Wireless Adapters

Information in this section supports the following wireless adapters:

- Intel® Centrino® Wireless-N + WiMAX 6150
- Intel® Centrino® Advanced-N + WiMAX 6250

See Specifications for complete wireless adapter specifications.

NOTE: In this section, all references to the "wireless adapter" refer to all adapters listed above.

The following information is provided:

INFORMATION FOR THE USER

Safety Notices

USA FCC Radio Frequency Exposure

The FCC with its action in ET Docket 96-8 has adopted a safety standard for human exposure to radio frequency (RF) electromagnetic energy emitted by FCC certified equipment. The wireless adapter meets the Human Exposure requirements found in FCC Part 2, 15C, 15E along with guidance from KDB 447498, KDB 248227 and KDB 616217. Proper operation of this radio according to the instructions found in this manual will result in exposure substantially below the FCC's recommended limits.

The following safety precautions should be observed:

- Do not touch or move antenna while the unit is transmitting or receiving.
- Do not hold any component containing the radio such that the antenna is very close or touching any exposed parts of the body, especially the face or eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; this behavior may cause damage to the radio.
- Use in specific environments:
    - The use of wireless adapters in hazardous locations is limited by the constraints posed by the safety directors of such environments.
    - The use of electronic devices equipped with wireless adapters on airplanes is governed by rules for each commercial airline operator.
    - The use of wireless adapters in hospitals is restricted to the limits set forth by each hospital.

Explosive Device Proximity Warning

Warning: Do not operate a portable transmitter (including this wireless adapter) near unshielded blasting caps or in an explosive environment unless the transmitter has been modified to be qualified for such use.

Antenna Warnings

Warning: The wireless adapter is not designed for use with high-gain directional antennas.

Use On Aircraft Caution

Caution: Regulations of commercial airline operators may prohibit airborne operation of certain electronic devices equipped with radio-frequency wireless devices (wireless adapters) because their signals could interfere with critical aircraft instruments.

Caution: 60 GHz/802.11ad equipment is not permitted on aircraft per FCC §15.255. OEM and host integrators should consider this FCC rule in host devices.

Other Wireless Devices

Safety Notices for Other Devices in the Wireless Network: See the documentation supplied with wireless adapters or other devices in the wireless network.

Local Restrictions on 802.11a, 802.11b, 802.11d, 802.11g, 802.11n, 802.11ac, and 802.16e Radio Usage

⚠ **Caution**: Due to the fact that the frequencies used by 802.11a, 802.11b, 802.11d, 802.11g, 802.11n, 802.11ac, and 802.16e wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, 802.11d, 802.11g, 802.11n, 802.11ac, and 802.16e products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country of use. The device transmit power control (TPC) interface is part of the Intel® PROSet/Wireless WiFi Connection Utility Software. Operational restrictions for Equivalent Isotropic Radiated Power (EIRP) are provided by the system manufacturer. Any deviation from the permissible power and frequency settings for the country of use is an infringement of national law and may be punished as such.

Wireless Interoperability

The wireless adapter is designed to be interoperable with other wireless LAN products that are based on direct sequence spread spectrum (DSSS) radio technology and to comply with the following standards:

- IEEE Std. 802.11b compliant Standard on Wireless LAN
- IEEE Std. 802.11g compliant Standard on Wireless LAN
- IEEE Std. 802.11a compliant Standard on Wireless LAN
- IEEE Std. 802.11n draft 2.0 compliant on Wireless LAN
- IEEE 802.16e-2005 Wave 2 compliant
- Wireless Fidelity certification, as defined by the Wi-Fi Alliance
- WiMAX certification as defined by the WiMAX Forum

The Wireless Adapter and Your Health

The wireless adapter, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by the wireless adapter, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The wireless adapter operates within the guidelines found in radio frequency safety standards and recommendations. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature. In some situations or environments, the use of the wireless adapter may be restricted by the proprietor of the building or responsible representatives of the applicable organization. Examples of such situations may include:

- Using the wireless adapter on board airplanes, or
- Using the wireless adapter in any other environment where the risk of interference with other devices or services is perceived or identified as being harmful.

If you are uncertain of the policy that applies to the use of wireless adapters in a specific organization or environment (an airport, for example), you are encouraged to ask for authorization to use the adapter before you turn it on.

REGULATORY INFORMATION

USA - Federal Communications Commission (FCC)

This wireless adapter is restricted to indoor use due to its operation in the 5.15 to 5.25 and 5.470 to 5.75GHz frequency ranges. No configuration controls are provided for Intel® wireless adapters allowing any change in the frequency of operations outside the FCC grant of authorization for U.S. operation according to Part 15.407 of the FCC rules.

- Intel® wireless adapters are intended for OEM integrators only.
- Intel® wireless adapters cannot be co-located with any other transmitter unless approved by the FCC.

This wireless adapter complies with Part 15 of the FCC Rules. Operation of the device is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference that may cause undesired operation.

Class B Device Interference Statement

This wireless adapter has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This wireless adapter generates, uses, and can radiate radio frequency energy. If the wireless adapter is not installed and used in accordance with the instructions, the wireless adapter may cause harmful interference to radio communications. There is no guarantee, however, that such interference will not occur in a particular installation. If this wireless adapter does cause harmful interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to try to correct the interference by taking one or more of the following measures:

- Reorient or relocate the receiving antenna of the equipment experiencing the interference.
- Increase the distance between the wireless adapter and the equipment experiencing the interference.
- Connect the computer with the wireless adapter to an outlet on a circuit different from that to which the equipment experiencing the interference is connected.
- Consult the dealer or an experienced radio/TV technician for help.

  NOTE: The adapter must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. Any other installation or use will violate FCC Part 15 regulations.

Safety Approval Considerations

This device has been safety approved as a component and is for use only in complete equipment where the acceptability of the combination is determined by the appropriate safety agencies. When installed, consideration must be given to the following:

- It must be installed into a compliant host device meeting the requirement of UL/EN/IEC 60950-1 2nd edition including the general provisions of enclosure design 1.6.2 and specifically paragraph 1.2.6.2 (Fire Enclosure).
- The device shall be supplied by a SELV source when installed in the end-use equipment.
- A heating test shall be considered in the end-use product for meeting the requirement of UL/EN/IEC 60950-1 2nd edition.

Low Halogen

Applies only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709 requirements, and the PCB / substrate meet IEC 61249-2-21 requirements. The replacement of halogenated flame retardants and/or PVC may not be better for the environment.

Japan

5GHz 帯は室内でのみ使用のこと

Korea

해당 무선설비는 전파혼신 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없음.
해당 무선 설비는 5150-5250MHz 대역에서 실내에서만 사용할 수 있음.

Mexico

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo

no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Taiwan

第十二條

經型**式認識合格**之**低**功**率射**頻**電**機. **非**經**許可　公**司、 **商號或使用者均不得擅自變更**頻**率**' 加大功**率或變更**原**設**計之**特性及**功**能**.

第十四條

低功**率射**頻**電**機之**使用不得影**響飛**航安全及干擾合法通信　經發現有干擾現象時　應立即**停**用　並改**善至無干擾時方得繼續使用。
前項合法通信, 指**依電信法**規**定作業**之**無線電通信。**
低功**率射**頻**電**機須**忍受合法通信或工業、科**學**及醫療用電波輻射性電機設備**之**干擾。**

在 5.25-5.35 **秭**赫頻**帶內操作**之**無線資訊傳輸設備**　限**於室內使用。**

Radio Approvals

To determine whether you are allowed to use your wireless network device in a specific country, please check to see if the radio type number that is printed on the identification label of your device is listed in the manufacturer's OEM Regulatory Guidance document.

Modular Regulatory Certification Country Markings

A list of countries requiring regulatory markings is available. Note that the lists include only countries requiring marking but not all certified countries. To find the regulatory country marking information for your adapter, perform these steps:

1. Open this web site: http://www.intel.com/content/www/us/en/support/network-and-i-o/wireless-networking/000007443.html
2. Click on the link for your adapter.
3. Click on **Regulatory Marking Document** for your adapter.

INFORMATION FOR OEMs and HOST INTEGRATORS

The guidelines described within this document are provided to OEM integrators installing Intel® wireless adapters in notebook and tablet PC host platforms. Adherence to these requirements is necessary to meet the conditions of compliance with FCC rules, including RF exposure. When all antenna type and placement guidelines described herein are fulfilled the Intel® wireless adapters may be incorporated into notebook and tablet PC host platforms with no further restrictions. If any of the guidelines described herein are not satisfied it may be necessary for the OEM or integrator to perform additional testing and/or obtain additional approval. The OEM or integrator is responsible to determine the required host regulatory testing and/or obtaining the required host approvals for compliance.

- Intel® wireless adapters are intended for OEMs and host integrators only.
- The Intel® wireless adapter FCC Grant of Authorization describes any limited conditions of modular approval.
- The Intel® wireless adapters must be operated with an access point that has been approved for the country of operation.
- Changes or modification to Intel® wireless adapters by OEMs, integrators or other third parties is not permitted. Any changes or modification to Intel® wireless adapters by OEMs, integrators or other third parties will void authorization to operate the adapter.

Antenna Type and Gains

Only antennas of the same type and with equal or less gains as 3dBi for the 2.4GHz band and 5dBi for the 5GHz band shall be used with the Intel® wireless adapters. Other types of antennas and/or higher gain antennas may

require additional authorization for operation. For testing purposes the following dual band antenna that approximates closely the above limits was used:

Antenna Type	Antenna Location (Main/ Aux)	2.4GHz Peak Gain in dBi*	5.2GHz Peak Gain in dBi*	5.5GHz Peak Gain in dBi*	5.7GHz Peak Gain in dBi*
PIFA	Main				
	Aux	3.24	3.73	4.77	4.77
	MIMO				
* All antenna gains include cable loss.					

Antenna Placement Within the Host Platform

To ensure RF exposure compliance the antenna(s) used with the Intel® wireless adapters must be installed in notebook or tablet PC host platforms to provide a minimum separation distance from all persons, in all operating modes and orientations of the host platform, with strict adherence to the table below. The antenna separation distance applies to both horizontal and vertical orientation of the antenna when installed in the host system.

Intel® Wireless Adapter	Minimum required antenna-to-user separation distance
Intel® Centrino® Wireless-N + WiMAX 6150	18 mm
Intel® Centrino® Wireless-N + WiMAX 6350	17 mm

Simultaneous Transmission of Intel® Wireless Adapters with Other Integrated or Plug-In Transmitters

Based upon FCC Knowledge Database publication number 616217 when there are multiple transmitting devices installed in a host device, an RF exposure transmitting assessment shall be performed to determine the necessary application and test requirements. OEM integrators must identify all possible combinations of simultaneous transmission configurations for all transmitters and antennas installed in the host system. This includes transmitters installed in the host as mobile devices (>20 cm separation from user) and portable devices (<20 cm separation from user). OEM integrators should consult the actual FCC KDB 616217 document for all details in making this assessment to determine if any additional requirements for testing or FCC approval is necessary.

Information To Be Supplied to the End User by the OEM or Integrator

The following regulatory and safety notices must be published in documentation supplied to the end user of the product or system incorporating the Intel® wireless adapter, in compliance with local regulations. Host system must be labeled with "Contains FCC ID: XXXXXXXX", FCC ID displayed on label.

The Intel® wireless adapter must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. Intel Corporation is not responsible for any radio or television interference caused by unauthorized modification of the devices included with the wireless adapter kit or the substitution or attachment of connecting cables and equipment other than that specified by Intel Corporation. The correction of interference caused by such unauthorized modification, substitution or attachment is the responsibility of the user. Intel Corporation and authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from the user failing to comply with these guidelines.

China:

模块**通**过型**号核准并不代表**嵌**入或使用**该**模**块**的**最终设备**符合相**关**无**线电**管理**技术规**定或**标**准** 最终设备**厂商**须对产**品的**技术**特性是否符合无**线电**管理**技术规**定或**标**准**负责

Local Restriction of 802.11a, 802.11b, 802.11g, 802.11n, and 802.11e Radio Usage

The following statement on local restrictions must be published as part of the compliance documentation for all 802.11a, 802.11b, 802.11g and 802.11n products.

⚠ **Caution**: Due to the fact that the frequencies used by 802.11a, 802.11b, 802.11g, 802.11n, and 802.16e wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, 802.11g, 802.11n, and 802.16e products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country of use. Any deviation from the permissible power and frequency settings for the country of use is an infringement of national law and may be punished as such.

Intel WiFi Adapters, 802.11n and 802.11ac Compliant

The information in this section applies to the following products:

- Intel® Centrino® Wireless-N 100
- Intel® Centrino® Wireless-N 105
- Intel® Centrino® Wireless-N 130
- Intel® Centrino® Wireless-N 135
- Intel® Centrino® Wireless-N 1000
- Intel® Centrino® Wireless-N 1030
- Intel® Centrino® Wireless-N 2200
- Intel® Centrino® Wireless-N 2230
- Intel® Centrino® Advanced-N 6200
- Intel® Centrino® Advanced-N 6205
- Intel® Centrino® Advanced-N 6230
- Intel® Centrino® Advanced-N 6235
- Intel® Centrino® Ultimate-N 6300
- Intel® Dual Band Wireless-AC 7260
- Intel® Dual Band Wireless-N 7260
- Intel® Wireless-N 7260
- Intel® Dual Band Wireless-AC 3160
- Intel® Dual Band Wireless-AC 3165
- Intel® Dual Band Wireless-AC 3168
- Intel® Dual Band Wireless-AC 7265
- Intel® Dual Band Wireless-N 7265
- Intel® Wireless-N 7265
- Intel® Dual Band Wireless-AC 8260
- Intel® Dual Band Wireless-AC 8265
- Intel® Wireless-AC 9260
- Intel® Wireless-AC 9461
- Intel® Wireless-AC 9462
- Intel® Wireless-AC 9560
- Intel® Tri-Band Wireless-AC 17265
- Intel® Tri-Band Wireless-AC 18260
- Intel® Tri-Band Wireless-AC 18265
- Intel® Wireless Gigabit Sink W13100
- Intel® Wireless Gigabit 11000
- Intel® Wireless Gigabit Sink W13110VR
- Intel® Wireless Gigabit 11100VR
- Intel® Wi-Fi 6 AX200
- Intel® Wi-Fi 6 AX201
- Intel® Wi-Fi 6E AX210

See Specifications for complete wireless adapter specifications.

NOTE: In this section, all references to the "wireless adapter" refer to all adapters listed above.

The following information is provided:

INFORMATION FOR THE USER

Safety Notices

USA FCC Radio Frequency Exposure

The FCC with its action in ET Docket 96-8 has adopted a safety standard for human exposure to radio frequency (RF) electromagnetic energy emitted by FCC certified equipment. The wireless adapter meets the Human Exposure requirements found in FCC Part 2, 15C, 15E along with guidance from KDB 447498, KDB 248227 and KDB 616217. Proper operation of this radio according to the instructions found in this manual will result in exposure substantially below the FCC's recommended limits.

The following safety precautions should be observed:

- Do not touch or move antenna while the unit is transmitting or receiving.
- Do not hold any component containing the radio such that the antenna is very close or touching any exposed parts of the body, especially the face or eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; this behavior may cause damage to the radio.
- Use in specific environments:
    - The use of wireless adapters in hazardous locations is limited by the constraints posed by the safety directors of such environments.
    - The use of wireless adapters on airplanes is governed by the Federal Aviation Administration (FAA).
    - The use of wireless adapters in hospitals is restricted to the limits set forth by each hospital.

Explosive Device Proximity Warning

Warning: Do not operate a portable transmitter (including this wireless adapter) near unshielded blasting caps or in an explosive environment unless the transmitter has been modified to be qualified for such use.

Antenna Warnings

Warning: The wireless adapter is not designed for use with high-gain directional antennas.

Use On Aircraft Caution

Caution: Regulations of commercial airline operators may prohibit airborne operation of certain electronic devices equipped with radio-frequency wireless devices (wireless adapters) because their signals could interfere with critical aircraft instruments.

Caution: 60 GHz/802.11ad equipment is not permitted on aircraft per FCC §15.255. OEM and host integrators should consider this FCC rule in host devices.

Other Wireless Devices

Safety Notices for Other Devices in the Wireless Network: See the documentation supplied with wireless adapters or other devices in the wireless network.

Local Restrictions on 802.11a, 802.11b, 802.11d, 802.11g, 802.11n, and 802.11ac Radio Usage

Caution: Due to the fact that the frequencies used by 802.11a, 802.11b, 802.11d, 802.11g, 802.11n, and

802.11ac wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, 802.11d, 802.11g, 802.11n, and 802.11ac products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country of use. The device transmit power control (TPC) interface is part of the Intel® PROSet/Wireless WiFi Connection Utility Software. Operational restrictions for Equivalent Isotropic Radiated Power (EIRP) are provided by the system manufacturer. Any deviation from the permissible power and frequency settings for the country of use is an infringement of national law and may be punished as such.

Wireless Interoperability

The wireless adapter is designed to be interoperable with other wireless LAN products that are based on direct sequence spread spectrum (DSSS) radio technology and to comply with the following standards:

- IEEE Std. 802.11b compliant Standard on Wireless LAN
- IEEE Std. 802.11g compliant Standard on Wireless LAN
- IEEE Std. 802.11a compliant Standard on Wireless LAN
- IEEE Std. 802.11n compliant Standard on Wireless LAN
- IEEE Std. 802.11ac draft compliant on Wireless LAN
- Wireless Fidelity certification, as defined by the Wi-Fi Alliance

The Wireless Adapter and Your Health

The wireless adapter, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by the wireless adapter, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The wireless adapter operates within the guidelines found in radio frequency safety standards and recommendations. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature. In some situations or environments, the use of the wireless adapter may be restricted by the proprietor of the building or responsible representatives of the applicable organization. Examples of such situations may include:

- Using the wireless adapter on board airplanes, or
- Using the wireless adapter in any other environment where the risk of interference with other devices or services is perceived or identified as being harmful.

If you are uncertain of the policy that applies to the use of wireless adapters in a specific organization or environment (an airport, for example), you are encouraged to ask for authorization to use the adapter before you turn it on.

REGULATORY INFORMATION

USA - Federal Communications Commission (FCC)

This wireless adapter is restricted to indoor use due to its operation in the 5.15 to 5.25 and 5.470 to 5.75GHz frequency ranges. No configuration controls are provided for Intel® wireless adapters allowing any change in the frequency of operations outside the FCC grant of authorization for U.S. operation according to Part 15.407 of the FCC rules.

- Intel® wireless adapters are intended for OEM integrators only.
- Intel® wireless adapters cannot be co-located with any other transmitter unless approved by the FCC.

This wireless adapter complies with Part 15 of the FCC Rules. Operation of the device is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference that may cause undesired operation.

NOTE: The radiated output power of the adapter is far below the FCC radio frequency exposure limits.

Nevertheless, the adapter should be used in such a manner that the potential for human contact during normal operation is minimized. To avoid the possibility of exceeding the FCC radio frequency exposure limits, you should keep a distance of at least 20cm between you (or any other person in the vicinity), or the minimum separation distance as specified by the FCC grant conditions, and the antenna that is built into the computer. Details of the authorized configurations can be found at http://www.fcc.gov/oet/ea/ by entering the FCC ID number on the device.

Class B Device Interference Statement

This wireless adapter has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This wireless adapter generates, uses, and can radiate radio frequency energy. If the wireless adapter is not installed and used in accordance with the instructions, the wireless adapter may cause harmful interference to radio communications. There is no guarantee, however, that such interference will not occur in a particular installation. If this wireless adapter does cause harmful interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to try to correct the interference by taking one or more of the following measures:

- Reorient or relocate the receiving antenna of the equipment experiencing the interference.
- Increase the distance between the wireless adapter and the equipment experiencing the interference.
- Connect the computer with the wireless adapter to an outlet on a circuit different from that to which the equipment experiencing the interference is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The adapter must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. Any other installation or use will violate FCC Part 15 regulations.

Safety Approval Considerations

This device has been safety approved as a component and is for use only in complete equipment where the acceptability of the combination is determined by the appropriate safety agencies. When installed, consideration must be given to the following:

- It must be installed into a compliant host device meeting the requirement of UL/EN/IEC 60950-1 2nd edition including the general provisions of enclosure design 1.6.2 and specifically paragraph 1.2.6.2 (Fire Enclosure).
- The device shall be supplied by a SELV source when installed in the end-use equipment.
- A heating test shall be considered in the end-use product for meeting the requirement of UL/EN/IEC 60950-1 2nd edition.

Low Halogen

Applies only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709 requirements, and the PCB / substrate meet IEC 61249-2-21 requirements. The replacement of halogenated flame retardants and/or PVC may not be better for the environment.

Canada – Industry Canada (IC)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil se conforme aux normes Canada d'Industrie de RSS permis-exempt. L'utilisation est assujetti aux deux conditions suivantes: (1) cet appareil ne peut pas causer d'interférences, et (2) cet appareil doit accepter des interférences , y compris des interférences qui peuvent causer desopérations non désirées de l'appareil.

Caution: When using IEEE 802.11a wireless LAN, this product is restricted to indoor use due to its operation in the

5.15- to 5.25-GHz frequency range. Industry Canada requires this product to be used indoors for the frequency range of 5.15GHz to 5.25GHz to reduce the potential for harmful interference to co-channel mobile satellite systems. High power radar is allocated as the primary user of the 5.25- to 5.35-GHz and 5.65 to 5.85-GHz bands. These radar stations can cause interference with and/or damage to this device. The maximum allowed antenna gain for use with this device is 6dBi in order to comply with the E.I.R.P limit for the 5.25- to 5.35 and 5.725 to 5.85GHz frequency range in point-to-point operation. To comply with RF exposure requirements all antennas should be located at a minimum distance of 20cm, or the minimum separation distance allowed by the module approval, from the body of all persons.

Attention: l'utilisation d'un réseau sans fil IEEE802.11a est restreinte à une utilisation en intérieur à cause du fonctionnement dans la bande de fréquence 5.15-5.25 GHz. Industry Canada requiert que ce produit soit utilisé à l'intérieur des bâtiments pour la bande de fréquence 5.15-5.25 GHz afin de réduire les possibilités d'interférences nuisibles aux canaux co-existants des systèmes de transmission satellites. Les radars de puissances ont fait l'objet d'une allocation primaire de fréquences dans les bandes 5.25-5.35 GHz et 5.65-5.85 GHz. Ces stations radar peuvent créer des interférences avec ce produit et/ou lui être nuisible. Le gain d'antenne maximum permissible pour une utilisation avec ce produit est de 6 dBi afin d'être conforme aux limites de puissance isotropique rayonnée équivalente (P.I.R.E.) applicable dans les bandes 5.25-5.35 GHz et 5.725-5.85 GHz en fonctionnement point-à-point. Pour se conformer aux conditions d'exposition de RF toutes les antennes devraient être localisées à une distance minimum de 20 cm, ou la distance de séparation minimum permise par l'approbation du module, du corps de toutes les personnes.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Selon les règlements de Canada d'Industrie, cet émetteur de radio peut seulement fonctionner en utilisant une antenne du type et de gain maximum (ou moindre) que le gain approuvé pour l'émetteur par Canada d'Industrie. Pour réduire lesinterférences radio potentielles avec les autres utilisateurs, le type d'antenne et son gain devraient être choisis de façon à ce que la puissance isotrope rayonnée équivalente(P.I.R.E.) ne soit pas supérieure à celle qui est nécessaire pour une communication réussie.

European Union

The low band 5.15 - 5.35GHz is for indoor use only.

This equipment complies with the essential requirements of the European Union directive 2014/53/EU. See Statements of European Union Compliance.

European Union Declarations of Conformity

To view the European Union Declaration of Conformity for your adapter, perform these steps.

1. Open this web site: http://www.intel.com/content/www/us/en/support/network-and-i-o/wireless-networking/000007443.html
2. Click on "User Guide."
3. Scroll to your adapter.

To view additional regulatory information for your adapter, perform these steps:

1. Open this web site: http://www.intel.com/content/www/us/en/support/network-and-i-o/wireless-networking/000007443.html
2. Click on the link for your adapter.
3. Click on **Regulatory Marking Document** for your adapter.

Waste Electrical and Electronic Equipment Directive (WEEE)

Restriction of Hazardous Substances Directive (RoHS) Compliant

All products described herein are compliant with the European Union's RoHS Directive.

For CE Mark-Related Questions related to the wireless adapter, contact:

Intel Corporation Attn: Corporate Quality 2200 Mission College Blvd. Santa Clara, CA 95054-1549 USA

Japan

5GHz 帯は室内でのみ使用のこと

Korea

해당 무선설비는 전파혼신 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없음.
해당 무선 설비는 5150-5250MHz 대역에서 실내에서만 사용할 수 있음.

Mexico

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Morocco

The operation of this product in the radio channel 2 (2417 MHz) is not authorized in the following cities: Agadir, Assa-Zag, Cabo Negro, Chaouen, Goulmima, Oujda, Tan Tan, Taourirt, Taroudant and Taza.

The operation of this product in the radio channels 4, 5, 6 et 7 (2425 - 2442 MHz) is not authorized in the following cities: Aéroport Mohamed V, Agadir, Aguelmous, Anza, Benslimane, Béni Hafida, Cabo Negro, Casablanca, Fès, Lakbab, Marrakech, Merchich, Mohammédia, Rabat, Salé, Tanger, Tan Tan, Taounate, Tit Mellil, Zag.

Pakistan

"PTA APPROVED MODEL"

Taiwan

第十二條

經型**式認識合格**之**低**功**率射**頻**電**機. **非**經**許可　公**司、 **商號或使用者均不得擅自變更**頻**率**' 加大功**率或變更**原**設**計之**特性及**功**能**.

第十四條

低功**率射**頻**電**機之**使用不得影**響飛**航安全及干擾合法通信　經發現有干擾現象時　應立即**停**用　並改**善至無干擾時方得繼續使用。
前項合法通信, 指**依電信法**規**定作業**之**無線電通信。**
低功**率射**頻**電**機須**忍受合法通信或工業、科**學及醫療用電波輻射性電**機**設備**之**干擾。**

在 5.25-5.35 **秭**赫頻**帶內操作**之**無線資訊傳輸設備**　限**於室內使用。**

Singapore

Radio Approvals

To determine whether you are allowed to use your wireless network device in a specific country, please check to see if the radio type number that is printed on the identification label of your device is listed in the manufacturer's OEM Regulatory Guidance document.

Modular Regulatory Certification Country Markings

A list of countries requiring regulatory markings is available. Note that the lists include only countries requiring marking but not all certified countries. To find the regulatory country marking information for your adapter, perform these steps:

1. Open this web site: http://www.intel.com/content/www/us/en/support/network-and-i-o/wireless-networking/000007443.html
2. Click on the link for your adapter.
3. Click on **Regulatory Marking Document** for your adapter.

Regulatory ID

Europe: Models 3160HMW, 3160NGW, 3160SDW, 3165NGW, 7260SDW, 7260NGW, 7260HMW, 7265D2W, 7265NGW, 8260D2W, 8260NGW, 8260NGWH, 18260NGW

Software Version	**Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions (WiFi/ BT)** **Intel® Wireless Dock Manager 3.x and previous versions (WiGig)**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE / Bluetooth	10dBm EIRP max (10mW)
(5150 - 5725 MHz)	23dBm EIRP max (200mW)

IEEE802.11 a/n/ac mode	The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver. Not supported by the models: 3160HMW, 3160NGW, 3160SDW, 3165NGW, 7265D2W, 7265NGW
(57 - 64 GHz) IEEE802.11 ad mode	25 dBm EIRP max

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

CE

Intel® Dual Band Wireless-AC 3165

Due to the very small size of the 3165D2W/3165NGW (12x16), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 3165D2W, FCC ID: PD93165D2

Canada: Model 3165D2W, IC: 1000M-3165D2

Japan:

Model 3165D2W:

- RF: 003-150155
- TEL: D150112003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

dspr

R 003-150155

5.15-5.35GHz: Indoor use only
(Except communicate to high power radio)

T D150112003

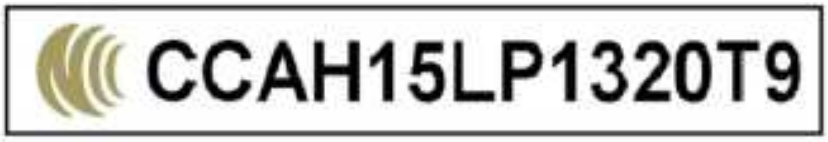
Model 3165NGW:

- RF: 003-150009
- TEL: D150008003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 3165D2W, MSIP-CRM-INT-7265D2W

Taiwan: Model 3165D2W,



China: Model 3165D2W, CMIIT ID: 2015AJ3466 (M)

Europe: Model 3165D2W

Software Version	**Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) Bluetooth/BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 3165D2W

Singapore: Model 3165D2W

Complies with
IDA Standards
DB 02941

Argentina:

Model 3165D2W,

CNC COMISIÓN NACIONAL DE COMUNICACIONES
CNC ID: C-16041

Model 3165NGW,

CNC COMISIÓN NACIONAL DE COMUNICACIONES
CNC ID: C-14446

Intel® Dual Band Wireless-AC 3168

Due to the very small size of the 3168NGW, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

Japan: Model 3168NGW:

- RF: 003-160024
- TEL: D160013003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Europe: Model 3168NGW

Software Version	Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) Bluetooth/BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Argentina: Model 3168NGW,

Intel® Dual Band Wireless-AC 7265

Due to the very small size of the 7265D2W/7265NGW (12x16), the marking has been placed in this user manual

because the product label on the device is considered too small to be readable.

USA: Model 7265D2W, FCC ID: PD97265D2

Canada: Model 7265D2W, IC: 1000M-7265D2

Japan:

Model 7265D2W:

- RF: 003-140134
- TEL: D140087003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Model 7265NGW:

- RF: 003-140018
- TEL: D140017003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 7265D2W, MSIP-CRM-INT-7265D2W

Taiwan: Model 7265D2W,

China: Model 7265D2W, CMIIT ID: 2014AJ3467 (M)

Australia: Model 7265D2W,

Argentina: Model 7265D2W,

CNC COMISIÓN NACIONAL DE COMUNICACIONES
CNC ID: C-13902

Intel® Wireless Gigabit Sink W13100

Due to the very small size of the 13100NGW, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

Europe: Model 13100NGW

Software Version	Intel® Wireless Dock Manager 3.x and previous versions
Maximum Power Output	
(57 - 64 GHz) IEEE802.11 ad mode	25 dBm EIRP max

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Singapore: Model 13100NGW

Complies with
IDA Standards
DB 02941

Intel® Tri-Band Wireless-AC 17265

Due to the very small size of the 17265NGW, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

Europe: Model 17265NGW

Software Version	Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions

	(WiFi/ BT) **Intel® Wireless Dock Manager 3.x and previous versions (WiGig)**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver
(57 - 64 GHz) IEEE802.11 ad mode	25 dBm EIRP max

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Singapore: Model 17265NGW

Intel® Dual Band Wireless-AC 8260

Due to the very small size of the 8260D2W (12x16), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 8260D2W, FCC ID: PD98260D2 (FCC ID without suffix "U" denotes factory installation only);

FCC ID: PD98260D2U (FCC ID with suffix “U” denotes user installation or replacement permitted and supported by bios locking feature)

Canada: Model 8260D2W, IC: 1000M-8260D2

Japan: Model 8260D2W:

- RF: 003-150094

- TEL: D150070003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 8260D2W, MSIP-CRM-INT-8260D2W

Taiwan: Model 8260D2W,

China: Model 8260D2W, CMIIT ID: 2014AJ3467 (M)

Australia: Model 8260D2W,

Argentina: Model 8260D2W,

Due to the very small size of the 8260NGWH/8260NGW, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

Japan:

Model 8260NGW:

- RF: 003-150093
- TEL: D150069003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Model 8260NGWH:

- RF: 003-150154
- TEL: D150111003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Argentina: Model 8260NGWH,

Argentina: Model 8260NGW,

Intel® Dual Band Wireless-AC 8265

Due to the very small size of the 8265NGW (22mm x 30mm x 2.4mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 8265NGW

- FCC ID: PD98265NG (FCC ID without suffix "U" denotes factory installation only)
- FCC ID: PD98265NGU (FCC ID with suffix “U” denotes user installation or replacement permitted and supported by BIOS locking feature)

Canada: Model 8265NGW, IC: 1000M-8265NG

Japan: Model 8265NGW:

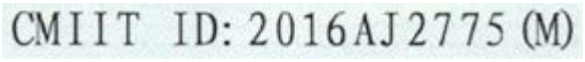
- RF 003-160104
- TEL D160055003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 8265NGW, MSIP-CRM-INT-8265NGW,

Taiwan: Model 8265NGW

China: Model 8265NGW



Europe: Models 8265NGW, 8265D2W

Software Version	**Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)

(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver
(57 - 64 GHz) IEEE802.11 ad mode	25 dBm EIRP max

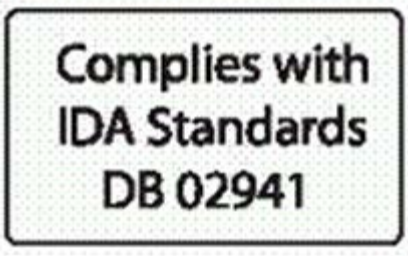
This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 8265NGW,

Brazil: Model 8265NGW: ANATEL: XXXXXXXXXX,

Argentina: Model 8265NGW,

Singapore: Model 8265NGW:



Pakistan: Model 8265NGW

"PTA APPROVED MODEL"

Due to the very small size of the 8265D2W (12mm x 16mm x 1.8mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 8265D2W, FCC ID: PD98265D2

Canada: Model 8265D2W, IC: 1000M-8265D2

Japan: Model 8265D2W:

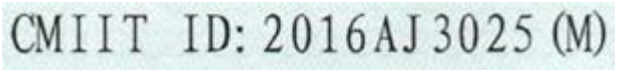
- RF 003-160129
- TEL D160076003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 8265D2W, MSIP-CRM-INT-8265D2W,

Taiwan: Model 8265D2W

China: Model 8265D2W

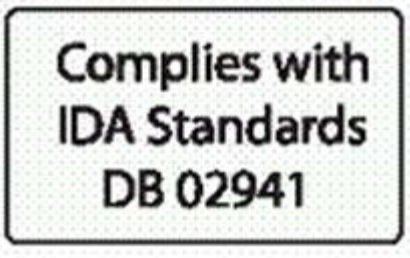


Australia: Model 8265D2W,

Brazil: Model 8265D2W: ANATEL: XXXXXXXXXX,

Argentina: Model 8265D2W,

Singapore: Model 8265D2W:



Pakistan: Model 8265D2W

"PTA APPROVED MODEL"

Intel® Wireless-AC 9260 (Model 9260NGW)

Due to the very small size of the 9260NGW (22mm x 30mm x 2.4mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 9260NGW, FCC ID: PD99260NG

Canada: Model 9260NGW, IC: 1000M-9260NG

Japan: Model 9260NGW:

- RF 003-170125
- TEL D170079003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 9260NGW, MSIP-CRM-INT-9260NGW

Taiwan: Model 9260NGW

China: Model 9260NGW

CMIIT ID: 2016AJ2775 (M)

Europe: Model 9260NGW

Software Version	Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 9260NGW

Singapore: Model 9260NGW

Complies with
IMDA Standards
DB02941

Intel® Wireless-AC 9260 (Model 9260D2WL)

Due to the very small size of the 9260D2WL (12mm x 16mm x 1.8mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 9260D2WL, FCC ID: PD99260D2L

Canada: Model 9260D2WL, IC: 1000M-9260D2L

Japan: Model 9260D2WL:

- RF: 003-190024
- TEL: D190023003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Europe: Model 9260D2WL

Software Version	Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 9260D2WL

Brazil: Model 9260D2WL, ANATEL: 05831-17-04423

Singapore: Model 9260D2WL

Argentina: Model 9260D2WL

Pakistan: Model 9260D2WL

APPROVED BY PTA: 9.9203/2019

Intel® Wireless-AC 9461 (Model 9461NGW)

Due to the very small size of the 9461NGW (22mm x 30mm x 2.4mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 9461NGW, FCC ID: PD99461NG

Canada: Model 9461NGW, IC: 1000M-9461NG

Japan: Model 9461NGW:

- RF 003-170204
- TEL D170127003

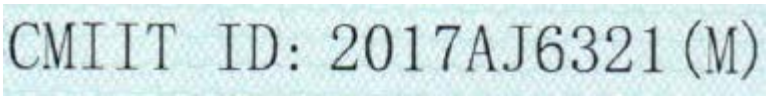
5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 9461NGW

MSIP-CRM-INT-9461NGW

Taiwan: Model 9461NGW

China: Model 9461NGW



Europe: Model 9461NGW

Software Version	**Intel® PROSet/Wireless WiFi Software 20.x and subsequent versions**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 9461NGW

Singapore: Model 9461NGW

Intel® Wireless-AC 9461 (Model 9461D2W)

Due to the very small size of the 9461D2W (12mm x 16mm x 1.8mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 9461D2W, FCC ID: PD99461D2

Canada: Model 9461D2W, IC: 1000M-9461D2

Japan: Model 9461D2W:

- RF 003-170203
- TEL D170126003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 9461D2W

MSIP-CRM-INT-9461D2W

Taiwan: Model 9461D2W

China: Model 9461D2W

CMIIT ID: 2017AJ6329(M)

Europe: Model 9461D2W

Software Version	Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

CE

Australia: Model 9461D2W

Singapore: Model 9461D2W

Complies with
IMDA Standards
DB02941

Intel® Wireless-AC 9462 (Model 9462NGW)

Due to the very small size of the 9462NGW (22mm x 30mm x 2.4mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 9462NGW, FCC ID: PD99462NG

Canada: Model 9462NGW, IC: 1000M-9462NG

Japan: Model 9462NGW:

- RF 003-170245
- TEL D170151003

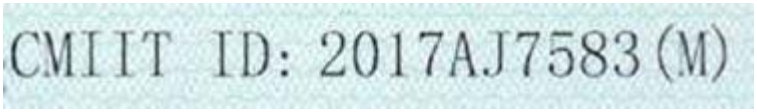
5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 9462NGW

R-CRM-INT-9462NGW

Taiwan: Model 9462NGW

China: Model 9462NGW



Europe: Model 9462NGW

Software Version	Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)

(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 9462NGW

Singapore: Model 9462NGW

Intel® Wireless-AC 9462 (Model 9462D2W)

Due to the very small size of the 9462D2W (12mm x 16mm x 1.8mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 9462D2W, FCC ID: PD99462D2

Canada: Model 9462D2W, IC: 1000M-9462D2

Japan: Model 9462D2W:

- RF 003-170243
- TEL D170149003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 9462D2W

R-CRM-INT-9462D2W

Taiwan: Model 9462D2W

China: Model 9462D2W

Europe: Model 9462D2W

Software Version	Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 9462D2W

Singapore: Model 9462D2W

Complies with
IMDA Standards
DB02941

Intel® Wireless-AC 9560 (Model 9560NGW)

Due to the very small size of the 9560NGW (22mm x 30mm x 2.4mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 9560NGW, FCC ID: PD99560NG

Canada: Model 9560NGW, IC: 1000M-9560NG

Japan: Model 9560NGW:

- RF 003-170126
- TEL D170080003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

R 003-170126

5.15-5.35GHz: Indoor use only
(Except communicate to high power radio)

T D170080003

Korea: Model 9560NGW, MSIP-CRM-INT-9560NGW

Taiwan: Model 9560NGW and 9560NGW R:

China: Model 9560NGW

Europe: Model 9560NGW

Software Version	Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 9560NGW

Singapore: Model 9560NGW

Complies with
IMDA Standards
DB02941

Intel® Wireless-AC 9560 (Model 9560D2W)

Due to the very small size of the 9560D2W (12mm x 16mm x 1.8mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 9560D2W, FCC ID: PD99560D2

Canada: Model 9560D2W, IC: 1000M-9560D2

Japan: Model 9560D2W:

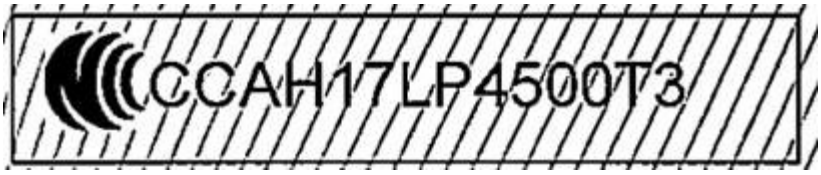
- RF 003-170244
- TEL D170150003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 9560D2W

R-CRM-INT-9560D2W

Taiwan: Model 9560D2W



China: Model 9560D2W

CMIIT ID: 2017AJ7598(M)

Europe: Model 9560D2W

Software Version	Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 9560D2W

Singapore: Model 9560D2W

Complies with
IMDA Standards
DB02941

Intel® Wireless-AC 9560 (Model 9560D2WL)

Due to the very small size of the 9560D2WL (12mm x 16mm x 1.8mm), the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 9560D2WL, FCC ID: PD99560D2L

Canada: Model 9560D2WL, IC: 1000M-9560D2L

Japan: Model 9560D2WL:

- RF 003-180060
- TEL D180033003

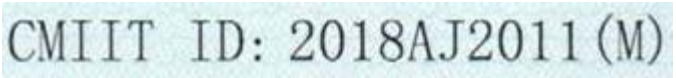
5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model 9560D2WL

R-CRM-INT-9560D2WL

Taiwan: Model 9560D2WL

China: Model 9560D2WL



Europe: Model 9560D2WL

Software Version	**Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only

mode	
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 9560D2WL

Singapore: Model 9560D2WL

Complies with
IMDA Standards
DB02941

Intel® Tri-band Wireless AC 18265

Due to the very small size of the 18265NGW module, the regulatory marking has been placed in this user manual because the product label on the device is considered too small to be readable

USA: Model 18265NGW, FCC ID: PD918265NG (This module is for factory installation only)

Canada: Model 18265NGW, IC : 1000M-18265NG

Japan: Model 18265NGW

R 003-160221
5.15-5.35 GHz:
Indoor use only
TD160154003

Korea: Model 18265NGW, MSIP-CRM-INT-18265NGW

Taiwan: Model 18265NGW

CCAH16LP3190T1

China: Model 18265NGW, CMIIT ID: 2016AJ7066 (M)

Europe: Model 18265NGW,

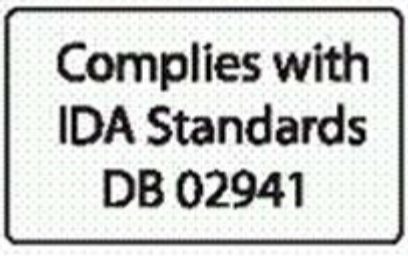
Software Version	**Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions (WiFi/ BT)** **Intel® Wireless Dock Manager 3.x and previous versions (WiGig)**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver
(57 - 64 GHz) IEEE802.11 ad mode	25 dBm EIRP max

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 18265NGW,

Brazil: Model 18265NGW, ANATEL: XXXXXXXXXXXXX

Singapore: Model 18265NGW,



Intel® Wireless Gigabit 11000

Due to the very small size of the 11000D2W/11000D2W LC, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

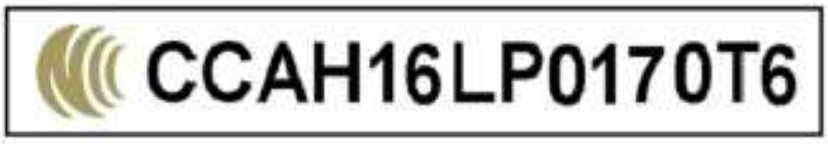
USA: Model 11000D2W and 11000D2W LC, FCC ID: PD911000D2

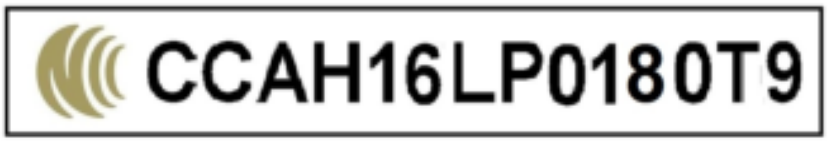
Canada: Model 11000D2W, IC: 1000M-11000D2

Japan: Model 11000D2W:

Korea: Model 11000D2W, MSIP-CRM-INT-11000D2W

Taiwan: Model 11000D2W and 11000D2W LC,





China: Model 11000D2W, CMIIT ID: 2016DJ0267 (M); Model 11000D2W LC, CMIIT ID: 2016DJ0268 (M)

Europe: Model 11000D2W

Software Version	Intel® Wireless Dock Manager 3.x and previous versions
Maximum Power Output	
(57 - 64 GHz) IEEE802.11 ad mode	25 dBm EIRP max

Australia: Model 11000D2W,

Singapore: Model 11000D2W/11000D2W LC:

Intel® Wireless Gigabit Sink W13110VR

Due to the very small size of the 13110NGW, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 13110NGW, FCC ID: PD913110NG

Canada: Model 13110NGW, IC: 1000M-13110NG

Korea: Model 13110NGW, R-CRM-INT-13110NGW

Taiwan: Model 13110NGW

Europe: Model 13110NGW

Software Version	**Intel® Wireless VR dashboard 4.x**
Maximum Power Output	
(57 - 64 GHz) IEEE802.11ad mode	25 dBm EIRP max

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Singapore: Model 13110NGW

Complies with
IMDA Standards
DB02941

Intel® Wireless Gigabit 11100VR

Due to the very small size of the 11100D2W, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model 11100D2W, FCC ID: PD911100D2

Canada: Model 11100D2W, IC: 1000M-11100D2

Korea: Model 11100D2W, R-CRM-INT-11100D2W

Taiwan: Model 11100D2W

Europe: Model 11100D2W

Software Version	**Intel® Wireless VR Dashboard 4.x**
Maximum Power Output	
(57 - 64 GHz) IEEE802.11ad mode	26 dBm EIRP max

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model 11100D2W

Singapore: Model 11100D2W

Complies with
IMDA Standards
DB02941

Intel® Wi-Fi 6 AX200 (Model AX200D2WL)

Due to the very small size of the AX200D2WL, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model AX200D2WL, FCC ID: PD9AX200D2L

Canada: Model AX200D2WL, IC: 1000M-AX200D2L

Japan: Model AX200D2WL:

- RF: 003-190023
- TEL: D190022003

Korea: Model AX200D2WL

R-C-INT-AX200D2WL

Taiwan: Model AX200D2WL

China: Model AX200D2WL, CMIIT ID: 2019AJ2493 (M)

Europe: Model AX200D2WL

Software Version	**Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n/ax mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz)	10dBm EIRP max (10mW)

BLE	
(5150 - 5725 MHz) IEEE802.11 a/n/ac/ax mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac/ax mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model AX200D2WL

Brazil: Model AX200D2WL, ANATEL: XXXXXXXXXXXXX

Singapore: Model AX200D2WL

Complies with
IMDA Standards
DB02941

Argentina: Model AX200D2WL

CNC COMISIÓN NACIONAL DE COMUNICACIONES
CNC ID: C-22839

Pakistan: Model AX200D2WL

APPROVED BY PTA: 9.9202/2019

Intel® Wi-Fi 6 AX200 (Model AX200NGW)

Due to the very small size of the AX200NGW, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model AX200NGW, FCC ID: PD9AX200NG

Canada: Model AX200NGW, IC: 1000M-AX200NG

Japan: Model AX200NGW:

- RF: 003-190022
- TEL: D190021003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model AX200NGW

R-C-INT-AX200NGW

Taiwan: Model AX200NGW

China: Model AX200NGW, CMIIT ID: 2019AJ2274 (M)

Europe: Model AX200NGW

Software Version	**Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n/ax mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac/ax mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac/ax mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model AX200NGW

Brazil: Model AX200NGW, ANATEL: XXXXXXXXXXXXX

Singapore: Model AX200NGW

Complies with
IMDA Standards
DB02941

Argentina: Model AX200NGW

CNC COMISIÓN NACIONAL DE COMUNICACIONES
CNC ID: C-22838

Pakistan: Model AX200NGW

APPROVED BY PTA: 9.9211/2019

Intel® Wi-Fi 6 AX201 (Model AX201NGW)

Due to the very small size of the AX201NGW, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model AX201NGW, FCC ID: PD9AX201NG

Canada: Model AX201NGW, IC: 1000M-AX201NG

Japan: Model AX201NGW:

- RF: 003-180232
- TEL: D180131003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model AX201NGW

R-C-INT-AX201NGW

Taiwan: Model AX201NGW

China: Model AX201NGW

Europe: Model AX201NGW

Software Version	**Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n/ax mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac/ax mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac/ax mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model AX201NGW

Brazil: Model AX201NGW, ANATEL: 06970-18-04423

Singapore: Model AX201NGW

Complies with
IMDA Standards
DB02941

Argentina: Model AX201NGW

CNC COMISIÓN NACIONAL DE COMUNICACIONES
CNC ID: C-22446

Pakistan: Model AX201NGW

APPROVED BY PTA: 9.9116/2019

Intel® Wi-Fi 6 AX201 (Model AX201D2W)

Due to the very small size of the AX201D2W, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model AX201D2W, FCC ID: PD9AX201D2

Canada: Model AX201D2W, IC: 1000M-AX201D2

Japan: Model AX201D2W:

- RF: 003-180233
- TEL: D180132003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model AX201D2W

R-C-INT-AX201D2W

Taiwan: Model AX201D2W

China: Model AX201D2W

Europe: Model AX201D2W

Software Version	**Intel® PROSet/Wireless WiFi Software 20.x and subsequent versions**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n/ax mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac/ax mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac/ax mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model AX201D2W

Brazil: Model AX201D2W, ANATEL: 07039-18-04423

Singapore: Model AX201D2W

Complies with
IMDA Standards
DB02941

Argentina: Model AX201D2W

CNC COMISIÓN NACIONAL DE COMUNICACIONES
CNC ID: C-22445

Pakistan: Model AX201D2W

APPROVED BY PTA: 9.9115/2019

Intel® Wi-Fi 6 AX201 (Model AX201D2WL)

Due to the very small size of the AX201D2WL, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

USA: Model AX201D2WL, FCC ID: PD9AX201D2L

Canada: Model AX201D2WL, IC: 1000M-AX201D2L

Japan: Model AX201D2WL:

- RF: 003-180234
- TEL: D180133003

5.2GHz帯高出力データ通信システム基地局又は陸上移動中継局と通信する場合を除く

Korea: Model AX201D2WL

R-C-INT-AX201D2WL

Taiwan: Model AX201D2WL

China: Model AX201D2WL

Europe: Model AX201D2WL

Software Version	**Intel® PROSet/ Wireless WiFi Software 20.x and subsequent versions**
Maximum Power Output	
(2400 - 2483.5 MHz) IEEE802.11 b/g/n/ax mode Bluetooth	20dBm EIRP max (100mW)
(2400 - 2483.5 MHz) BLE	10dBm EIRP max (10mW)
(5150 - 5725 MHz) IEEE802.11 a/n/ac/ax mode	23dBm EIRP max (200mW) The low band 5.15 - 5.35 GHz is for indoor use only
(5725 - 5875 MHz) IEEE802.11 a/n/ac/ax mode	13.98 dBm EIRP Max (25mW) For the standard EN 300 440, the device operating in 5.8 GHz is considered a category 2 receiver

This equipment complies with the essential requirements of the European Union directive 2014/53/EU.

Australia: Model AX201D2WL

Brazil: Model AX201D2WL, ANATEL: 07271-18-04423

Singapore: Model AX201D2WL

Complies with
IMDA Standards
DB02941

Argentina: Model AX201D2WL

CNC COMISIÓN NACIONAL DE COMUNICACIONES
CNC ID: C-22504

Pakistan: Model AX201D2WL

APPROVED BY PTA: 9.9110/2019

Intel® Wi-Fi 6E AX210 (Model AX210NGW)

Due to the very small size of the AX210NGW, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

TBD

Intel® Wi-Fi 6E AX210 (Model AX210D2W)

Due to the very small size of the AX210D2W, the marking has been placed in this user manual because the product label on the device is considered too small to be readable.

TBD

INFORMATION FOR OEMS and HOST INTEGRATORS

The guidelines described within this document are provided to OEM integrators installing Intel® wireless adapters in notebook and tablet PC host platforms. Adherence to these requirements is necessary to meet the conditions of compliance with FCC rules, including RF exposure. When all antenna type and placement guidelines described herein

are fulfilled the Intel® wireless adapters may be incorporated into notebook and tablet PC host platforms with no further restrictions. If any of the guidelines described herein are not satisfied it may be necessary for the OEM or integrator to perform additional testing and/or obtain additional approval. The OEM or integrator is responsible to determine the required host regulatory testing and/or obtaining the required host approvals for compliance.

- Intel® wireless adapters are intended for OEMs and host integrators only.
- The Intel® wireless adapter FCC Grant of Authorization describes any limited conditions of modular approval.
- The Intel® wireless adapters must be operated with an access point that has been approved for the country of operation.
- Changes or modification to Intel® wireless adapters by OEMs, integrators or other third parties is not permitted. Any changes or modification to Intel® wireless adapters by OEMs, integrators or other third parties will void authorization to operate the adapter.

Antenna Type and Gains

Only antennas of the same type and with equal or less gains as 3dBi for the 2.4GHz band and 5dBi for the 5GHz band shall be used with the Intel® wireless adapters. Other types of antennas and/or higher gain antennas may require additional authorization for operation. For testing purposes the following dual band antenna that approximates closely the above limits was used:

Antenna Type	Antenna Location (Main/ Aux)	2.4GHz Peak Gain in dBi*	5.2GHz Peak Gain in dBi*	5.5GHz Peak Gain in dBi*	5.7GHz Peak Gain in dBi*
PIFA	Main				
	Aux	3.24	3.73	4.77	4.77
	MIMO				
* All antenna gains include cable loss.					

Antenna Placement Within the Host Platform

To ensure RF exposure compliance the antenna(s) used with the Intel® wireless adapters must be installed in notebook or tablet PC host platforms to provide a minimum separation distance from all persons, in all operating modes and orientations of the host platform, with strict adherence to the table below. The antenna separation distance applies to both horizontal and vertical orientation of the antenna when installed in the host system.

Wireless Adapter	Minimum required antenna-to-user separation distance
Intel® Centrino® Wireless-N 100	9 mm
Intel® Centrino® Wireless-N 105	9 mm
Intel® Centrino® Wireless-N 130	8 mm
Intel® Centrino® Wireless-N 135	9 mm
Intel® Centrino® Wireless-N 1000*	20 mm
Intel® Centrino® Wireless-N 1030	8 mm
Intel® Centrino® Wireless-N 2200	9 mm
Intel® Centrino® Wireless-N 2230	6 mm
Intel® Centrino® Advanced-N 6200*	20 mm
Intel® Centrino® Advanced-N 6205	12 mm
Intel® Centrino® Advanced-N 6230	12 mm
Intel® Centrino® Advanced-N 6235	8 mm
Intel® Centrino® Ultimate-N 6300	13 mm
Intel® Dual Band Wireless-AC 7260	8 mm
Intel® Dual Band Wireless-N 7260	8 mm

Intel® Wireless-N 7260	8 mm
Intel® Dual Band Wireless-AC 3160	8 mm
Intel® Dual Band Wireless-AC 3165	8 mm
Intel® Dual Band Wireless-AC 7265	8 mm
Intel® Dual Band Wireless-N 7265	8 mm
Intel® Wireless-N 7265	8 mm
Intel® Dual Band Wireless-AC 8260	8 mm
Intel® Dual Band Wireless-AC 8265	8 mm
Intel® Wireless-AC 9260	14 mm
Intel® Wireless-AC 9461 (9161NGW)	19 mm
Intel® Wireless-AC 9461 (9161D2W)	12 mm
Intel® Wireless-AC 9462 (9162NGW)	14 mm
Intel® Wireless-AC 9462 (9162D2W)	15 mm
Intel® Wireless-AC 9560 (9560NGW)	18 mm
Intel® Wireless-AC 9560 (9560D2W)	15 mm
Intel® Wireless-AC 9560 (9560D2WL)	TBD
Intel® Tri-Band Wireless-AC 17265	8 mm
Intel® Tri-Band Wireless-AC 18260	8 mm
Intel® Tri-Band Wireless-AC 18265	8 mm
Intel® Wireless Gigabit Sink W13100	8 mm
Intel® Wireless Gigabit 11000	8 mm
Intel® Wireless Gigabit Sink W13110VR	8 mm
Intel® Wireless Gigabit 11100VR	8 mm
Intel® Wi-Fi 6 AX201	TBD
Intel® Wi-Fi 6 AX200	TBD
Intel® Wi-Fi 6E AX210	TBD
* This wireless adapter may be installed in mobile devices only (requires > 20 cm antenna separation from the body of user).	

For WiFi/Bluetooth combination adapters it is recommended that a 5 cm separation distance between transmitting antennas be provided within the host system to maintain an adequate separation ratio for simultaneous WiFi and Bluetooth transmission. For less than 5 cm separation the separation ratio must be verified according to FCC publication KDB 447498 for the specific adapter.

Additional regulatory authorization process may be required if wishing to place the 60 GHz/802.11ad RFEM (antenna array) closer than 20 cm to the user.

Simultaneous Transmission of Intel® Wireless Adapters with Other Integrated or Plug-In Transmitters

Based upon FCC Knowledge Database publication number 616217, when there are multiple transmitting devices installed in a host device, an RF exposure transmitting assessment shall be performed to determine the necessary application and test requirements. OEM integrators must identify all possible combinations of simultaneous transmission configurations for all transmitters and antennas installed in the host system. This includes transmitters installed in the host as mobile devices (>20 cm separation from user) and portable devices (<20 cm separation from user). OEM integrators should consult the actual FCC KDB 616217 document for all details in making this assessment to determine if any additional requirements for testing or FCC approval is necessary.

Information To Be Supplied to the End User by the OEM or Integrator

The following regulatory and safety notices must be published in documentation supplied to the end user of the product or system incorporating the Intel® wireless adapter, in compliance with local regulations. Host system must be labeled with "Contains FCC ID: XXXXXXXX", FCC ID displayed on label.

The wireless adapter must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. For country-specific approvals, see Radio Approvals. Intel Corporation is not responsible for any radio or television interference caused by unauthorized modification of the devices included with the wireless adapter kit or the substitution or attachment of connecting cables and equipment other than that specified by Intel Corporation. The correction of interference caused by such unauthorized modification, substitution or attachment is the responsibility of the user. Intel Corporation and authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from the user failing to comply with these guidelines.

China:

模块**通**过型**号核准并不代表**嵌**入或使用**该**模**块**的**最终设备**符合相**关**无**线电**管理**技术规**定或**标**准** 最终设备**厂商**须对产**品的**技术**特性是否符合无**线电**管理**技术规**定或**标**准**负责

Local Restriction of 802.11a, 802.11b, 802.11g, 802.11n, and 802.11ad Radio Usage

The following statement on local restrictions must be published as part of the compliance documentation for all 802.11a, 802.11b, 802.11g, 802.11n, and 802.11ad products.

⚠ **Caution**: Due to the fact that the frequencies used by 802.11a, 802.11b, 802.11g, 802.11n, and 802.11ad wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, 802.11g and 802.11n products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country of use. Any deviation from permissible settings and restrictions in the country of use could be an infringement of national law and may be punished as such.

Statements of European Compliance

Each of the adapters listed below comply with the essential requirements of the European Union directive 2014/53/EU.

- Intel® Centrino® Wireless-N 100
- Intel® Centrino® Wireless-N 105
- Intel® Centrino® Wireless-N 130
- Intel® Centrino® Wireless-N 135
- Intel® Centrino® Wireless-N 1000
- Intel® Centrino® Wireless-N 1030
- Intel® Centrino® Wireless-N 2200
- Intel® Centrino® Wireless-N 2230
- Intel® Centrino® Advanced-N 6200
- Intel® Centrino® Advanced-N 6205
- Intel® Centrino® Advanced-N 6230
- Intel® Centrino® Advanced-N 6235
- Intel® Centrino® Ultimate-N 6300
- Intel® Dual Band Wireless-AC 7260
- Intel® Dual Band Wireless-N 7260
- Intel® Wireless-N 7260
- Intel® Dual Band Wireless-AC 3160
- Intel® Dual Band Wireless-AC 3165
- Intel® Dual Band Wireless-AC 7265
- Intel® Dual Band Wireless-N 7265

Intel® Wireless-N 7265
- Intel® Dual Band Wireless-AC 8260
- Intel® Dual Band Wireless-AC 8265
- Intel® Wireless-AC 9260
- Intel® Wireless-AC 9560
- Intel® Tri-Band Wireless-AC 17265
- Intel® Tri-Band Wireless-AC 18260
- Intel® Tri-Band Wireless-AC 18265
- Intel® Wireless Gigabit Sink W13100
- Intel® Wireless Gigabit 11000
- Intel® Wireless Gigabit Sink W13110VR
- Intel® Wireless Gigabit 11100VR
- Intel® Wi-Fi 6 AX201
- Intel® Wi-Fi 6 AX200
- Intel® Wi-Fi 6E AX210

Back to Top

Back to Contents

Trademarks and Disclaimers

Back to Contents

Specifications

This section provides specification information for the family of Intel® wireless adapters. The following list may not be all inclusive.

Intel® Centrino® Wireless-N 100, Intel® Centrino® Wireless-N 105, Intel® Centrino® Wireless-N 130 and Intel® Centrino® Wireless-N 135

Form Factor	PCI Express* Half-Mini Card
Dimensions	Half-Mini Card: Width 1.049 in x Length 1.18 in x Height 0.18 in (26.64 mm x 30 mm x 4.5 mm)
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066

Antenna Diversity	On-board diversity
Connector Interface	52-pin Mini Card edge connector
Voltage	3.3 V
Operating Temperature	0 to +80 degrees Celsius
Humidity	50% to 95% non-condensing (at temperatures of 25 ºC to 35 ºC)
WiFi	
Frequency Modulation	2.4 GHz (802.11b/g/n)
Frequency band	2.400 - 2.4835 GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM | CCK, DQPSK, DBPSK
Wireless Medium	2.4 GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.
IEEE 802.11n Data Rates	MIMO Configuration: 1X1 **Tx**/ **Rx**: 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2 Mbps
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps
Bluetooth Support	• Intel® Centrino® Wireless-N 100: None • Intel® Centrino® Wireless-N 105: None • Intel® Centrino® Wireless-N 130: Bluetooth 2.1, 2.1 + EDR, 3.0, 3.0+HS • Intel® Centrino® Wireless-N 135: Bluetooth 4.0 (Bluetooth Low-Energy and Bluetooth 3.0 +HS)
General	
Operating Systems	Windows* 7 (32-bit and 64-bit), Windows* 8 (32-bit and 64-bit), Windows* 8.1 (32-bit and 64-bit)
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11n, WPA-Personal, WPA-Enterprise, WPA2-Personal, WPA2-Enterprise, WMM, WPS
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0
IEEE Feature Sets	IEEE 802.11b, 802.11g, 802.11n, 802.11e, 802.11i, 802.11d, 802.11h
Architecture	Infrastructure or ad hoc (peer-to-peer) operating modes
Security	WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise, AES-CCMP 128-bit, WEP 128-bit and 64-bit; 802.1X: EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Centrino® Wireless-N 1000

Form Factor	PCI Express* Mini Card and Half-Mini Card
SKUs	Intel® Centrino® Wireless-N 1000 - 1X2 MC/HMC
Dimensions	Mini Card: Width 2.0 in x Length 1.18 in x Height 0.18 in (50.80 mm x 30 mm x 4.5 mm)

	Half-Mini Card: Width 1.049 in x Length 1.18 in x Height 0.18 in (26.64 mm x 30 mm x 4.5 mm)
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066
Antenna Diversity	On-board diversity
Connector Interface	52-pin Mini Card edge connector
Voltage	3.3 V
Operating Temperature	0 to +80 degrees Celsius
Humidity	50% to 90% non-condensing (at temperatures of 25 ºC to 35 ºC)
WiFi	
Frequency Modulation	2.4 GHz (802.11b/g/n)
Frequency band	2.41-2.474 GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, CCK, DQPSK, DBPSK
Wireless Medium	2.4 GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.
IEEE 802.11n Data Rates	300, 270, 243, 240, 180, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2 Mbps
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps
General	
Operating Systems	Microsoft Windows* XP (32 and 64 bit) and Windows Vista* (32 and 64 bit), Ubuntu Linux*
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11n, WPA-Personal, WPA-Enterprise, WPA2-Personal, WPA2-Enterprise, WMM, WPS
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0
WLAN Standard	IEEE 802.11g, 802.11b, 802.11n, 802.11d, 802.11e, 802.11i,
Architecture	Infrastructure or ad hoc (peer-to-peer) operating modes
Security	WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise, 802.1X: EAP-SIM, LEAP, PEAP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA
Encryption	AES-CCMP 128-bit, WEP 128-bit and 64-bit, CKIP, TKIP
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Centrino® Wireless-N 2200 and Intel® Centrino® Wireless-N 2230

Form Factor	PCI Express* Half-Mini Card
Dimensions	Half-Mini Card: Width 1.049 in x Length 1.18 in x Height 0.18 in (26.64 mm x 30 mm x 4.5 mm)
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066
Antenna Diversity	On-board diversity
Connector Interface	52-pin Mini Card edge connector
Voltage	3.3 V

Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 95% non-condensing (at temperatures of 25 ºC to 35 ºC)	
WiFi		
Frequency Modulation	2.4 GHz (802.11b/g/n)	
Frequency band	2.400 - 2.4835 GHz (dependent on country)	
Modulation	BPSK, QPSK, 16 QAM, 64 QAM	CCK, DQPSK, DBPSK
Wireless Medium	2.4 GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)	
Channels	All channels as defined by the relevant specification and country rules.	
IEEE 802.11n Data Rates	MIMO Configuration: 2X2 **Tx**/ **Rx**: 300, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
Bluetooth Support	• Intel® Centrino® Wireless-N 2200: None • Intel® Centrino® Wireless-N 2230: Bluetooth 4.0 (Bluetooth Low-Energy and Bluetooth 3.0 + HS)	
General		
Operating Systems	Windows* 7 (32-bit and 64-bit), Windows* 8 (32-bit and 64-bit), Windows* 8.1 (32-bit and 64-bit)	
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11n, WPA-Personal, WPA-Enterprise, WPA2-Personal, WPA2-Enterprise, WMM, WPS	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
IEEE Feature Sets	IEEE 802.11b, 802.11g, 802.11n, 802.11e, 802.11i, 802.11d, 802.11h	
Architecture	Infrastructure or ad hoc (peer-to-peer) operating modes	
Security	WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise, AES-CCMP 128-bit, WEP 128-bit and 64-bit; 802.1X: EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA	
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)	

Intel® Centrino® Wireless-N 1030 and Intel® Centrino® Advanced-N 6230

Form Factor	PCI Express* Half-Mini Card
Dimensions	Half-Mini Card: Width 1.049 in x Length 1.18 in x Height 0.18 in (26.64 mm x 30 mm x 4.5 mm)
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066
Antenna Diversity	On-board diversity
Network Standards	802.11a/b/g/n (varies by adapter) and Bluetooth 3.0 + HS

Connector Interface	52-pin Mini Card edge connector	
Voltage	3.3 V	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 95% non-condensing (at temperatures of 25 ºC to 35 ºC)	
WiFi Network Standards	Intel® Centrino® Wireless-N 1030: 802.11b/g/n Intel® Centrino® Advanced-N 6230: 802.11a/g/n	
Frequency Modulation	**5 GHz (802.11a/n)**	**2.4 GHz (802.11b/g/n)**
Frequency band	5.15 GHz - 5.85 GHz (dependent on country)	2.400 - 2.4835 GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5 GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4 GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
IEEE 802.11n Data Rates	Intel® Centrino® Advanced-N 6230: Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
	Intel® Centrino® Wireless-N 1030: Rx (Mbps): 300, 270, 243, 240, 180 Tx/Rx (Mbps): 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
Bluetooth	Bluetooth Version 3.0 + HS	
General		
Operating Systems	• Microsoft Windows* XP (32-bit and 64-bit) • Windows Vista* (32-bit and 64-bit) • Windows* 7 (32-bit and 64-bit) • Windows* 8 (32-bit and 64-bit) • Windows* 8.1 (32-bit and 64-bit)	
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11a, 802.11h, 802.11d, WPA-Personal, WPA-Enterprise, WPA2-Personal, WPA2-Enterprise, WPS, WMM, WMM Power Save, EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA, P2P	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
WLAN Standard	IEEE 802.11g, 802.11b, 802.11a, 802.11n	
Architecture	Infrastructure or ad hoc (peer-to-peer) operating modes	
Security	WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise, AES-CCMP 128-bit, WEP 128-bit and 64-bit; 802.1X: EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA	

Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Centrino® Advanced-N 6235

Form Factor	PCI Express* Half-Mini Card	
Dimensions	Half-Mini Card: Width 1.049 in x Length 1.18 in x Height 0.18 in (26.64 mm x 30 mm x 4.5 mm)	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
Network Standards	802.11a/b/g/n and Bluetooth 4.0	
Connector Interface	52-pin Mini Card edge connector	
Voltage	3.3 V	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 95% non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation	**5 GHz (802.11a/n)**	**2.4 GHz (802.11b/g/n)**
Frequency band	5.15 GHz - 5.85 GHz (dependent on country)	2.400 - 2.4835 GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5 GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4 GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
Bluetooth	Bluetooth Version 4.0 (3.0 + HS)	
General		
Operating Systems	Windows* 7 (32-bit and 64-bit), Windows* 8 (32-bit and 64-bit), Windows* 8.1 (32-bit and 64-bit)	
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11a, 802.11h, 802.11d, WPA-Personal, WPA-Enterprise, WPA2-Personal, WPA2-Enterprise, WPS, WMM, WMM Power Save, EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA, P2P	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
WLAN Standard	IEEE 802.11g, 802.11b, 802.11a, 802.11n	

Architecture	Infrastructure or ad hoc (peer-to-peer) operating modes
Security	WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise, AES-CCMP 128-bit, WEP 128-bit and 64-bit; 802.1X: EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Centrino® Advanced-N + WiMAX 6250 and Intel® Centrino® Wireless-N + WiMAX 6150

Form Factor	PCI Express* Half-Mini Card	
Dimensions	Half-Mini Card: Width 1.049 in x Length 1.18 in x Height 0.18 in (26.64 mm x 30 mm x 4.5 mm)	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
Connector Interface	52-pin Mini Card edge connector	
Voltage	3.3 V	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 95% non-condensing (at temperatures of 25 ºC to 35 ºC)	
WiFi		
Frequency Modulation	Intel® Centrino® Advanced-N + WiMAX 6250 2.4 GHz (802.11b/g/n), 5 GHz (802.11a/n)	Intel® Centrino® Wireless-N + WiMAX 6150 2.4 GHz (802.11b/g/n)
Frequency band	5.15 GHz - 5.85 GHz (dependent on country)	2.400 - 2.4835 GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5 GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4 GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
IEEE 802.11n Data Rates	**Intel® Centrino® Wireless-N + WiMAX 6150** MIMO Configuration: 1X2 **Rx**: 300, 270, 243, 240, 180 Mbps **Rx**/ **Tx**: 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2 Mbps	
	Intel® Centrino® Advanced-N + WiMAX 6250 MIMO Configuration: 2X2 **Tx**/ **Rx**: 300, 270, 243, 240, 180, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2 Mbps	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	

IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
General		
Operating Systems	• Microsoft Windows* XP (32-bit and 64-bit) • Windows Vista* (32-bit and 64-bit) • Windows* 7 (32-bit and 64-bit) • Windows* 8 (32-bit and 64-bit) • Windows* 8.1 (32-bit and 64-bit)	
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11a, 802.11h, 802.11d, WPA-Personal, WPA-Enterprise, WPA2-Personal, WPA2-Enterprise, WMM, WMM Power Save, EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
IEEE Feature Sets	**Intel® Centrino® Wireless-N + WiMAX 6150**: IEEE 802.11b, 802.11g, 802.11n, 802.11e, 802.11i, 802.11h, 802.11d **Intel® Centrino® Advanced-N + WiMAX 6250**: 802.11a, IEEE 802.11b, 802.11g, 802.11n, 802.11e, 802.11i, 802.11h, 802.11d	
Architecture	Infrastructure or ad hoc (peer-to-peer) operating modes	
Security	WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise, AES-CCMP 128-bit, WEP 128-bit and 64-bit; 802.1X: EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA	
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)	
WiMAX General		
Operating Systems	• Microsoft Windows* XP (32-bit and 64-bit) • Windows Vista* (32-bit and 64-bit) • Windows* 7 (32-bit and 64-bit) • Windows* 8 (32-bit and 64-bit) • Windows* 8.1 (32-bit and 64-bit)	
Standard Compliance	802.16e-2005 Corrigenda 2 (D4)	
WiMAX System Profile Feature set	**Intel® Centrino® Wireless-N + WiMAX 6150**: Mobile WiMAX release 1, Wave II. Supports 3A and 1A/B profiles **Intel® Centrino® Advanced-N + WiMAX 6250**: Mobile WiMAX release 1, Wave II. Supports 3A, 5A/C, 1A/B, and 5BL profiles	
Security	Key Management Protocol (PKMv2)	
Encryption	128-bit CCMP (Counter-Mode/CBC-MAC) based on AES encryption	
WiMAX		
Frequency band	Intel® Centrino® Wireless-N + WiMAX 6150: 2.3-2.4 GHz / 2.496-2.690 GHz Intel® Centrino® Advanced-N + WiMAX 6250: 2.3-2.4 GHz / 2.496-2.690 GHz / 3.4-3.8 GHz	
Modulation	UL - QPSK, 16 QAM DL - QPSK, 16 QAM, 64 QAM	
Wireless Medium	Duplex mode: TDD operations	Scalable OFDMA (SOFDMA): 512 and 1024 FFT
	sub-carrier permutation: PUSC	Intel® Centrino® Wireless-N + WiMAX 6150: Channel bandwidths: 5 and 10 MHz Intel® Centrino® Advanced-N + WiMAX

		6250: Channel bandwidths: 5, 7, 8.75 and 10 MHz
WiMAX Network Release Feature set	SPWG/NWG Release 1.5	
Rate Performance	Intel® Centrino® Wireless-N + WiMAX 6150: Up to 10 Mbps DL and 4 Mbps UL @ peak rate (OTA performance, 10MHz channel) Intel® Centrino® Advanced-N + WiMAX 6250: Up to 20 Mbps DL and 6 Mbps UL @ peak rate (OTA performance, 10MHz channel)	
RF Transmitter Output Power	Compliance with Power class 2	

Intel® Centrino® Advanced-N 6200, Intel® Centrino® Advanced-N 6205 and Intel® Centrino® Ultimate-N 6300

Form Factor	Intel® Centrino® Advanced-N 6200, Intel® Centrino® Ultimate-N 6300: PCI Express* Full-Mini Card and Half-Mini Card. Intel® Centrino® Advanced-N 6205: PCI Express* Half-Mini Card.	
Dimensions	Full-Mini Card: Width 2.00 in x Length 1.18 in x Height 0.18 in (50.95 mm x 30 mm x 4.5 mm) Half-Mini Card: Width 1.049 in x Length 1.18 in x Height 0.18 in (26.64 mm x 30 mm x 4.5 mm)	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
Connector Interface	52-pin Mini Card edge connector	
Voltage	3.3 V	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 95% non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation	**5 GHz (802.11a/n)**	**2.4 GHz (802.11b/g/n)**
Frequency band	5.15 GHz - 5.85 GHz (dependent on country)	2.400 - 2.4835 GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5 GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4 GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
IEEE 802.11n Data Rates	Intel® Centrino® Ultimate-N 6300: Tx/Rx: 450, 405, 360, 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2 Mbps	
	Intel® Centrino® Advanced-N 6200, Intel® Centrino® Advanced-N 6205:	

	Tx/Rx: 300, 270, 243, 240, 180, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2 Mbps
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps
General	
Operating Systems	• Microsoft Windows* XP (32-bit and 64-bit) • Windows Vista* (32-bit and 64-bit) • Windows* 7 (32-bit and 64-bit) • Windows* 8 (32-bit and 64-bit) • Windows* 8.1 (32-bit and 64-bit)
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11a, 802.11h, 802.11d, WPA-Personal, WPA-Enterprise, WPA2-Personal, WPA2-Enterprise, WMM, WMM Power Save, EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0
WLAN Standard	IEEE 802.11g, 802.11b, 802.11a, 802.11n
Architecture	Infrastructure or ad hoc (peer-to-peer) operating modes
Security	WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise, AES-CCMP 128-bit, WEP 128-bit and 64-bit; 802.1X: EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Dual Band Wireless-AC 7260

Form Factors	Half-Mini Card and M.2 (Next Generation Form Factor - NGFF)	
Electrical interfaces	PCIe and USB 2.0 for both form factors	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
IEEE 802.11 Networking Standards	Intel® Dual Band Wireless-AC 7260 • Model 7260HMW - 802.11agn, ac, 2x2, Bluetooth 4.0, PCIe, USB, HMC • Model 7260NGW - 802.11agn, ac, 2x2, Bluetooth 4.0, PCIe, USB, M.2	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 95% non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK

Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Dual Band Wireless-AC 7260: 2 X 2	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	Intel® Dual Band Wireless-AC 7260: Up to 867 Mbps	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE) supported by the following adapters • Model 7260HMW • Model 7260NGW	
General		
Operating Systems	Windows* 7 (32-bit and 64-bit), Windows* 8 (32-bit and 64-bit), Windows* 8.1 (64-bit)	
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.	
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
Security		
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA	
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2	
Encryption	64-bit and 128-bit WEP, AES-CCMP, TKIP	
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP	
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)	

Intel® Dual Band Wireless-N 7260
Intel® Wireless-N 7260

Form Factors	Half-Mini Card, M.2 (Next Generation Form Factor - NGFF)
Electrical interfaces	PCIe, USB 2.0 for both form factors
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066
Antenna Diversity	On-board diversity
IEEE 802.11 Networking	Intel® Dual Band Wireless-N 7260

Standards	• Model 7260HMW AN - 802.11agn, 2x2, Bluetooth 4.0, PCIe, USB, HMC • Model 7260NGW AN - 802.11agn, 2x2, Bluetooth 4.0, PCIe, USB, M.2 • Model 7260HMW NB - 802.11agn, 2x2, PCIe, USB, HMC • Model 7260NGW NB - 802.11agn, 2x2, PCIe, USB, M.2 Intel® Wireless-N 7260 • Model 7260HMW BN - 802.11agn, 2x2, Bluetooth 4.0, PCIe, USB, M.2 • Model 7260NGW BN - 802.11bgn, 2x2, Bluetooth 4.0, PCIe, USB, M.2	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 95% non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation (See above, not all bands supported by all adapters)	**5GHz (802.11a/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
802.11n spatial streams	All adapters: 2 X 2 spatial streams	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE) supported by the following adapters • Model 7260HMW AN • Model 7260NGW AN • Model 7260HMW BN • Model 7260NGW BN	
General		
Operating Systems	Windows* 7 (32-bit and 64-bit), Windows 8 (32-bit and 64-bit), Windows* 8.1 (64-bit)	
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.	
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
Security		

Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2
Encryption	64-bit and 128-bit WEP, AES-CCMP, TKIP
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Dual Band Wireless-AC 3160

Form Factors	Half-Mini Card and M.2 (Next Generation Form Factor - NGFF)	
Electrical interfaces	PCIe and USB 2.0 for both form factors	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
IEEE 802.11 Networking Standards	Intel® Dual Band Wireless-AC 3160 • Model 3160HMW - 802.11agn, ac, 1x1, Bluetooth 4.0, PCIe, USB, HMC • Model 3160NGW - 802.11agn, ac, 1x1, Bluetooth 4.0, PCIe, USB, M.2	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 90% non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Dual Band Wireless-AC 3160: 1 X 1	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	Intel® Dual Band Wireless-AC 3160: Up to 433 Mbps	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE) supported by the following adapters • Model 3160HMW • Model 3160NGW	
General		

Operating Systems	Windows* 7 (32-bit and 64-bit), Windows 8 (32-bit and 64-bit), Windows* 8.1 (64-bit)
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0
Security	
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2
Encryption	64-bit and 128-bit WEP, AES-CCMP, TKIP
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Dual Band Wireless-AC 3165 (Model 3165NGW)

Form Factors	M.2 (Next Generation Form Factor - NGFF)	
Electrical interfaces	PCIe and USB 2.0	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
IEEE 802.11 Networking Standards	802.11abgn, 802.11ac, 802.11d, 802.11e, 802.11i, 802.11h, 802.11w	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Dual Band Wireless-AC 3165: 1 X 1	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	Intel® Dual Band Wireless-AC 3165: Up to 433 Mbps	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data	11, 5.5, 2, 1 Mbps	

Rates	
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)
General	
Operating Systems	Windows* 7 (32-bit and 64-bit), Windows* 8 (32-bit and 64-bit), Windows* 8.1 (64-bit)
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0
Security	
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2
Encryption	64-bit and 128-bit WEP, AES-CCMP, TKIP
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Dual Band Wireless-AC 3168

Form Factors	M.2 2230 (Next Generation Form Factor - NGFF)	
Electrical interfaces	PCIe and USB 2.0	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
IEEE 802.11 Networking Standards	802.11abgn, 802.11ac, 802.11d, 802.11e, 802.11i, 802.11h, 802.11w	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Dual Band Wireless-AC 3168: 1 X 1	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	Intel® Dual Band Wireless-AC 3168: Up to 433 Mbps	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	

IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.2 (BLE)
General	
Operating Systems	Linux, Windows* 8.1 (64-bit), Windows* 10 (64-bit)
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0
Security	
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2
Encryption	64-bit and 128-bit WEP, AES-CCMP, TKIP
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Dual Band Wireless-AC 7265 (Model 7265NGW)

Form Factors	M.2 (Next Generation Form Factor - NGFF)	
Electrical interfaces	PCIe and USB 2.0	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
IEEE 802.11 Networking Standards	Intel® Dual Band Wireless-AC 7265 • Model 7265NGW - 802.11agn, ac, 2x2, Bluetooth 4.0, PCIe, USB, M.2	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Dual Band Wireless-AC 7265: 2 X 2	
Data Rates	All data rates are theoretical maximums.	

IEEE 802.11ac Data Rates	Intel® Dual Band Wireless-AC 7265: Up to 867 Mbps
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE) supported by the following adapters • Model 7265NGW
General	
Operating Systems	Windows* 7 (32-bit and 64-bit), Windows* 8 (32-bit and 64-bit), Windows* 8.1 (64-bit)
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0
Security	
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2
Encryption	64-bit and 128-bit WEP, AES-CCMP, TKIP
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Dual Band Wireless-N 7265 (Models 7265NGW AN and 7265NGW NB)
Intel® Wireless-N 7265 (Model 7265NGW BN)

Form Factors	M.2 (Next Generation Form Factor - NGFF)
Electrical interfaces	PCIe, USB 2.0
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066
Antenna Diversity	On-board diversity
IEEE 802.11 Networking Standards	Intel® Dual Band Wireless-N 7265 • Model 7265NGW AN - 802.11agn, 2x2, Bluetooth 4.0, PCIe, USB, M.2 • Model 7265NGW NB - 802.11agn, 2x2, PCIe, USB, M.2 Intel® Wireless-N 7265 • Model 7265NGW BN - 802.11bgn, 2x2, Bluetooth 4.0, PCIe, USB, M.2

Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 90% non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation (See above, not all bands supported by all adapters)	**5GHz (802.11a/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
802.11n spatial streams	All adapters: 2 X 2 spatial streams	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE) supported by the following adapters • Model 7265NGW AN • Model 7265NGW NB • Model 7265NGW BN	
General		
Operating Systems	Windows* 7 (32-bit and 64-bit), Windows 8 (32-bit and 64-bit), Windows* 8.1 (64-bit)	
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.	
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
Security		
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA	
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2	
Encryption	64-bit and 128-bit WEP, AES-CCMP, TKIP	
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP	
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)	

Intel® Dual Band Wireless-AC 8260

Form Factors	Half-Mini Card and M.2 (Next Generation Form Factor - NGFF)	
Electrical interfaces	PCIe and USB 2.0 for both form factors	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
IEEE 802.11 Networking Standards	Intel® Dual Band Wireless-AC 8260 • Model 8260NGW - 802.11agn, ac, 2x2, Bluetooth 4.0, PCIe, USB, M.2	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 95% non-condensing (at temperatures of 25 ºC to 35 ºC)	
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Dual Band Wireless-AC 8260: 2 X 2	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	Intel® Dual Band Wireless-AC 8260: Up to 867 Mbps	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE) supported by the following adapters • Model 8260NGW	
General		
Operating Systems	Windows* 7 (32-bit and 64-bit), Windows* 8 (32-bit and 64-bit), Windows* 8.1 (64-bit)	
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.	
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
Security		
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA	
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2	
Encryption	64-bit and 128-bit WEP, AES-CCMP, TKIP	

Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Dual Band Wireless-AC 8265 (Models 8265NGWH/ 8265NGW/ 8265D2W)

General		
Dimensions (H x W x D)	• M.2 2230: 22 mm x 30 mm x 2.4 mm • M.2 1216: 12 mm x 16 mm x 1.8 mm	
Weight	• M.2 2230: 2.6g • M.2 1216: 0.6g	
Antenna Diversity	Supported	
Radio ON/OFF Control	Supported	
Connector Interface	M.2: PCIe, USB, or UART (M.2 1216 only)	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)	
Operating Systems	Microsoft Windows 7*, Microsoft Windows 8.1*, Microsoft Windows 10*, Linux* (limited feature support), Android	
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* a/b/g/n/ac, WMM*, WMM-PS*, WPA*, WPA2*, WPS2*, Protected Management Frames, Wi-Fi Direct* for peer to peer device connections, Wi-Fi Miracast* as Source.	
IEEE WLAN Standard	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	
Roaming	Supports seamless roaming between access points	
Bluetooth	Dual Mode Bluetooth* 4.2, BLE	
Security		
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA, EAP-AKA	
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2	
Encryption	64-bit and 128-bit WEP, 128-bit AES-CCMP	
Wi-Fi Direct* Encryption and Authentication	WPA2-PSK, AES-CCMP	
Compliance		
Product Safety	UL, C-UL, CB (IEC 60950-1)	
Model Numbers		
Models	Model 8265NGWH	802.11ac, 2x2, Bluetooth* 4.2, PCIe, USB, LTE Coexistence, eFEM, M.2 2230 HE
	Model 8265NGW	802.11ac, 2x2, Bluetooth* 4.2, PCIe, USB, M.2 2230 MS

	Model 8265D2W	802.11ac, 2x2, Bluetooth* 4.2, PCIe, LTE Coexistence, M.2 1216 SD
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Dual Band Wireless-AC 8265: 2 X 2	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	Intel® Dual Band Wireless-AC 8265: Up to 867 Mbps	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	

Intel® Wireless-AC 9260 (Models 9260NGW and 9260D2WL)

General	
Dimensions (H x W x D)	• M.2 2230: 22 mm x 30 mm x 2.4 mm [1.5 mm max (top side)/ 0.1 mm max (bottom side)] • M.2 1216: 12 mm x 16 mm x 1.67 (±0.08) mm
Weight	• M.2 2230: 2.9 ±0.3 g • M.2 1216: 0.61 ±0.1 g
Antenna Diversity	Supported
Radio ON/OFF Control	Supported
Connector Interface	M.2: PCIe, USB
Operating Temperature	0 to +80 degrees Celsius
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)
Operating Systems	Microsoft Windows 10*, Linux* (limited feature support), Chrome*
Wi-Fi Alliance* certification	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*.
IEEE WLAN Standard	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
Roaming	Supports seamless roaming between access points

Bluetooth	Bluetooth* 5	
Security		
Authentication	WPA* and WPA2*, 802.1X (EAP-TLS, TTLS, PEAP, EAP-SIM, EAP-AKA, EAP-AKA)	
Authentication Protocols	PAP, CHAP, TLS, MS-CHAP*, MS-CHAPv2*	
Encryption	64-bit and 128-bit WEP, 128-bit AES-CCMP	
Wi-Fi Direct* Encryption and Authentication	WPA2-PSK, AES-CCMP	
Compliance		
US Government	FIPS, FISMA	
Product Safety	UL, C-UL, CB (IEC 60950-1)	
Model Numbers		
Models	9260NGW	802.11ac wave 2, 2x2, Bluetooth* 5, PCIe, USB, M.2 2230
	9260D2WL	802.11ac wave 2, 2x2, Bluetooth* 5, PCIe, USB, M.2 1216 LTE Coex
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Wireless-AC 9260: 2 X 2	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	1.73 Gbps when using 160MHz channels	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	

Intel® Wireless-AC 9461 (Models 9461NGW/9461D2W)

General	
Dimensions (H x W x D)	• M.2 2230: 22 mm x 30 mm x 2.4 mm • M.2 1216: 12 mm x 16 mm x 1.57 (+-0.08) mm
Weight	• M.2 2230: 2.7g • M.2 1216: 0.7g

Antenna Diversity	Supported	
Radio ON/OFF Control	Supported	
Connector Interface	M.2: CNVio	
Operating Temperature	0ºC to +80ºC	
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)	
Operating Systems	Microsoft Windows 10*, Linux* (limited feature support), Chrome	
Wi-Fi Alliance* certification	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	
IEEE WLAN Standard	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	
Roaming	Supports seamless roaming between access points	
Bluetooth	Bluetooth* 5	
Security		
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, EAP-SIM, EAP-AKA)	
Authentication Protocols	PAP, CHAP, TLS, MS-CHAP*, MS-CHAPv2	
Encryption	64-bit and 128-bit WEP, 128-bit AES-CCMP	
Wi-Fi Direct* Encryption and Authentication	WPA2-PSK, AES-CCMP	
Compliance		
Regulatory	For a list of country approvals, please contact your local Intel representatives.	
US Government	FIPS, FISMA	
Product Safety	UL, C-UL, CB (IEC 60950-1)	
Model Numbers		
Models	9461NGW	802.11ac wave 2, 1x1, Bluetooth* 5, PCIe, USB, M.2 2230, Single Antenna
	9461D2W	802.11ac wave 2, 1x1, Bluetooth* 5, PCIe, USB, M.2 1216, Single Antenna
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Wireless-AC 9461: 1 X 1	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	433 Mbps when using 80MHz channels	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	

IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps

Intel® Wireless-AC 9462 (Models 9462NGW/ 9462D2W)

General		
Dimensions (H x W x D)	• M.2 2230: 22 mm x 30 mm x 2.4 mm • M.2 1216: 12 mm x 16 mm x 1.57 (+-0.08) mm	
Weight	• M.2 2230: 2.7g • M.2 1216: 0.7g	
Antenna Diversity	Supported	
Radio ON/OFF Control	Supported	
Connector Interface	M.2: CNVio	
Operating Temperature	0ºC to +80ºC	
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)	
Operating Systems	Microsoft Windows 10*, Linux* (limited feature support), Chrome	
Wi-Fi Alliance* certification	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	
IEEE WLAN Standard	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	
Roaming	Supports seamless roaming between access points	
Bluetooth	Bluetooth* 5	
Security		
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, EAP-SIM, EAP-AKA)	
Authentication Protocols	PAP, CHAP, TLS, MS-CHAP*, MS-CHAPv2	
Encryption	64-bit and 128-bit WEP, 128-bit AES-CCMP	
Wi-Fi Direct* Encryption and Authentication	WPA2-PSK, AES-CCMP	
Compliance		
Regulatory	For a list of country approvals, please contact your local Intel representatives.	
US Government	FIPS, FISMA	
Product Safety	UL, C-UL, CB (IEC 60950-1)	
Model Numbers		
Models	9462NGW	802.11ac wave 2, 1x1, Bluetooth* 5, PCIe, USB, M.2 2230, Diversity Antenna
	9462D2W	802.11ac wave 2, 1x1, Bluetooth* 5, PCIe, USB, M.2 1216, Diversity Antenna
Frequency Modulation	**5GHz (802.11ac/ n)**	**2.4GHz (802.11b/ g/ n)**

Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Wireless-AC 9462: 1 X 1	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	433 Mbps when using 80MHz channels	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	

Intel® Wireless-AC 9560 (Models 9560NGW/9560D2W)

General	
Dimensions (H x W x D)	• M.2 2230: 22 mm x 30 mm x 2.4 mm • M.2 1216: 12 mm x 16 mm x 1.8 mm
Weight	• M.2 2230: 2.6g • M.2 1216: 0.6g
Antenna Diversity	Supported
Radio ON/OFF Control	Supported
Connector Interface	M.2: CNVio
Operating Temperature	0 to +80 degrees Celsius
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)
Operating Systems	Microsoft Windows 10*, Linux* (limited feature support), Chrome*
Wi-Fi Alliance* certification	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* (For Microsoft Windows* only).
IEEE WLAN Standard	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 802.11-2016
Roaming	Supports seamless roaming between access points
Bluetooth	Bluetooth* 5
Security	
Authentication	WPA* and WPA2*, 802.1X (EAP-TLS, TTLS, PEAP, EAP-SIM, EAP-AKA, EAP-AKA)

Authentication Protocols	PAP, CHAP, TLS, MS-CHAP*, MS-CHAPv2*	
Encryption	64-bit and 128-bit WEP, 128-bit AES-CCMP	
Wi-Fi Direct* Encryption and Authentication	WPA2-PSK, AES-CCMP	
Compliance		
US Government	FIPS, FISMA	
Product Safety	UL, C-UL, CB (IEC 60950-1)	
Model Numbers		
Models	9560NGW	802.11ac wave 2, 2x2, Bluetooth* 5, PCIe, USB, M.2 2230
	9560D2W	802.11ac wave 2, 2x2, Bluetooth* 5, PCIe, USB, M.2 1216
Frequency Modulation	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	All channels as defined by the relevant specification and country rules.	
Spatial streams	Intel® Wireless-AC 9560: 2 X 2	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ac Data Rates	1.73 Gbps when using 160MHz channels	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	

Intel® Tri-Band Wireless-AC 17265 (17265NGW/17265NGW LC)

Form Factors	M.2 Type 3030
Electrical interfaces	M.2 Key 1-DP: 2xPCIe, USB, DP. Interface to Intel® Wireless Gigabit-Antenna M10041 Module using X-FL, and one dedicated for Bluetooth
Antenna Interface Connector	X.FL; Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066
Antenna Diversity	On-board diversity
IEEE 802.11 Networking Standards	802.11ac, 802.11ad, 802.11abgn, 802.11a, 802.11d, 802.11e, 802.11i, 802.11h, 802.11w
Operating Temperature	0 to +80 degrees Celsius
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)

Frequency Modulation	**60GHz (802.11ad)**	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	57GHz - 64GHz (dependent on country)	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	DPSK, BPSK, QPSK, 16 QAM,	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	DMG control PHY, DMG SC PHY	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	1, 2 and 3, subject to country rules	All channels as defined by the relevant specification and country rules.	
Spatial streams	N/A	Intel® Tri-Band Wireless-AC 17265	
Data Rates	All data rates are theoretical maximums.		
IEEE 802.11ac Data Rates	Intel® Tri-Band Wireless-AC 17265: Up to 867 Mbps		
IEEE 802.11ad Data Rates	4620, 3850, 3080, 2503, 2310, 1925, 1540, 1251, 1155, 963, 770, 385 Mbps		
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2		
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps		
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps		
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps		
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)		
General			
Operating Systems	Microsoft Windows 7*, Microsoft Windows 8.1* with connected standby		
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.		
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes		
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0		
Security			
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA		
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2		
Encryption	64-bit and 128-bit WEP, AES-CCMP, AES-GCMP, TKIP		
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP		
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)		

Intel® Tri-Band Wireless-AC 17265 (17265NGW/17265NGW LC)

Form Factors	M.2 Type 3030

Electrical interfaces	M.2 Key 1-DP: 2xPCIe, USB, DP. Interface to Intel® Wireless Gigabit-Antenna M10041 Module using X-FL, and one dedicated for Bluetooth		
Antenna Interface Connector	X.FL; Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066		
Antenna Diversity	On-board diversity		
IEEE 802.11 Networking Standards	802.11ac, 802.11ad, 802.11abgn, 802.11a, 802.11d, 802.11e, 802.11i, 802.11h, 802.11w		
Operating Temperature	0 to +80 degrees Celsius		
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)		
Frequency Modulation	**60GHz (802.11ad)**	**5GHz (802.11ac/n)**	**2.4GHz (802.11b/g/n)**
Frequency band	57GHz - 64GHz (dependent on country)	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	DPSK, BPSK, QPSK, 16 QAM,	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	DMG control PHY, DMG SC PHY	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	1, 2 and 3, subject to country rules	All channels as defined by the relevant specification and country rules.	
Spatial streams	N/A	Intel® Tri-Band Wireless-AC 17265	
Data Rates	All data rates are theoretical maximums.		
IEEE 802.11ac Data Rates	Intel® Tri-Band Wireless-AC 17265: Up to 867 Mbps		
IEEE 802.11ad Data Rates	4620, 3850, 3080, 2503, 2310, 1925, 1540, 1251, 1155, 963, 770, 385 Mbps		
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2		
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps		
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps		
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps		
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE)		
General			
Operating Systems	Microsoft Windows 7*, Microsoft Windows 8.1* with connected standby		
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.		
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes		
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0		
Security			
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA		
Authentication	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2		

Protocols	
Encryption	64-bit and 128-bit WEP, AES-CCMP, AES-GCMP, TKIP
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Tri-Band Wireless-AC 18260 (18260NGW)

Form Factors	M.2 Type 2230		
Electrical interfaces	M.2 Key 1-DP: 2xPCIe, USB, DP. Interface to Intel® Wireless Gigabit-Antenna M10041 or M10042 Module using X-FL (single coax cable to carry power, IF and control)		
Dimensions	22 mm x 30 mm x S3 [1.5mm Max (Top Side)/ 0.1mm max (bottom side)]		
Antenna Interface Connector	X.FL; Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066		
Antenna Diversity	On-board diversity		
IEEE 802.11 Networking Standards	IEEE 802.11abgn, 802.11ac, 802.11ad, 802.11d, 802.11e, 802.11i, 802.11h, 802.11w		
Operating Temperature	0 to +80 degrees Celsius		
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)		
Frequency Modulation	**60GHz (802.11ad)**	**5GHz (802.11ac/ n)**	**2.4GHz (802.11b/ g/ n)**
Frequency band	57GHz - 64GHz (dependent on country)	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	DPSK, BPSK, QPSK, 16 QAM,	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	DMG control PHY, DMG SC PHY	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	1, 2 and 3, subject to country rules	All channels as defined by the relevant specification and country rules.	
Spatial streams	N/A	Intel® Tri-Band Wireless-AC 18260	
Data Rates	All data rates are theoretical maximums.		
IEEE 802.11ac Data Rates	Intel® Tri-Band Wireless-AC 18260: Up to 867 Mbps		
IEEE 802.11ad Data Rates	4620, 3850, 3080, 2503, 2310, 1925, 1540, 1251, 1155, 963, 770, 385 Mbps		
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2		
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps		
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps		
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps		
Bluetooth	Dual Mode Bluetooth* 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE), 4.1		

General	
Operating Systems	Microsoft Windows 7*, Microsoft Windows 8.1* with connected standby
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* for 802.11ac, a/b/g, n, WMM*, WPA*, WPA2*, and WPS, WPS 2.0, Protected Management Frames. Wi-Fi Direct* for peer-to-peer device connections.
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0
Security	
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP*, MS-CHAPv2
Encryption	64-bit and 128-bit WEP, AES-CCMP, AES-GCMP, TKIP
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP
Product Safety	UL, C-UL, CB (IEC/EN 60950-1)

Intel® Tri-Band Wireless-AC 18265 (18265NGW)

General			
Dimensions (H x W x D)	M.2 2230: 22 mm x 30 mm x 2.4 mm [1.5mm Max (Top Side)/ 0.1mm Max (Bottom Side)]		
Weight	M.2 2230: 2.4g		
Antenna Diversity	Supported		
Radio ON/OFF Control	Supported		
Connector interface	M.2: PCIe, USB Interface to Intel® Wireless Gigabit-Antenna M10101 Module using X-FL (single coax cable to carry power, IF and control)		
Operating Temperature (Adapter Shield)	0 to +80 ºC		
Humidity Non-Operating	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)		
Operating Systems	Microsoft Windows 7*, Microsoft Windows 8.1*, Microsoft Windows 10, Linux* (limited feature support), Android		
Wi-Fi Alliance	Wi-Fi CERTIFIED* a/b/g/n/ac, WMM*, WMM-PS*, WPA*, WPA2*, WPS2, Protected Management Frames, Wi-Fi Direct* for peer to peer device connections, Wi-Fi Miracast as Source		
IEEE WLAN Standard	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		
Roaming	Supports seamless roaming between respective access points		
Bluetooth	Dual Mode Bluetooth* 4.2, BLE		
Frequency Modulation	**60GHz (802.11ad)**	**5GHz (802.11ac/ n)**	**2.4GHz (802.11b/ g/ n)**
Frequency band	57GHz - 64GHz (dependent on country)	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)

Modulation	DPSK, BPSK, QPSK, 16 QAM,	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	CCK, DQPSK, DBPSK
Wireless Medium	DMG control PHY, DMG SC PHY	5GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	1, 2 and 3, subject to country rules	All channels as defined by the relevant specification and country rules.	
Spatial streams	N/A	Intel® Tri-Band Wireless-AC 18265	
Data Rates	All data rates are theoretical maximums.		
IEEE 802.11ac Data Rates	Up to 867 Mbps		
IEEE 802.11ad Data Rates	4620, 3850, 3080, 2503, 2310, 1925, 1540, 1251, 1155, 963, 770, 385 Mbps		
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2		
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps		
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps		
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps		
Security			
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP), EAP-SIM, EAP-AKA		
Authentication Protocols	PAP, CHAP, TLS, GTC, MS-CHAP* , MS-CHAPv2		
Encryption	64-bit and 128-bit WEP, AES-CCMP		
Wi-Fi Direct* Encryption and Authentication	WPA2-PSK, AES-CCMP		
Compliance			
Product Safety	UL, C-UL, CB (IEC 60950-1)		

Intel® Wireless Gigabit Sink W13100

Form Factors	M.2 Type 3030
Electrical interfaces	M.2 Key 1-DP: 2xPCIe, USB, DP. Interface to Intel® Wireless Gigabit-Antenna M10041 Module using X-FL, and one dedicated for Bluetooth
Antenna Interface Connector	X.FL
Antenna Diversity	On-board diversity
IEEE 802.11 Networking Standards	802.11ac, 802.11ad, 802.11abgn, 802.11a, 802.11d, 802.11e, 802.11i, 802.11h, 802.11w
Operating Temperature	0 to +80 degrees Celsius
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)
Frequency Modulation	**60GHz (802.11ad)**
Frequency band	57GHz - 64GHz (dependent on country)
Modulation	DPSK, BPSK, QPSK, 16 QAM,

Wireless Medium	DMG control PHY, DMG SC PHY
Channels	1, 2 and 3, subject to country rules
Spatial streams	Intel® Wireless Gigabit Sink W13100
Data Rates	All data rates are theoretical maximums.
IEEE 802.11ad Data Rates	4620, 3850, 3080, 2503, 2310, 1925, 1540, 1251, 1155, 963, 770, 385 Mbps
Over-the-Air Security	
Authentication	WPA2-Personal (WSC - WiFi Simple Configuration)
Encryption	128-bit AES-GCMP
Additional Crypto Functions	
Public Key Decrypt	RSA-2048
General	
Operating Systems	Microsoft Windows 7*, Microsoft Windows 8.1* with connected standby
Architecture	Infrastructure and SoftAP; Supports simultaneous Client and SoftAP modes
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0

Intel® Wireless Gigabit 11000

Dimensions	20.5 mm x 14.2 mm x 1.8 mm (shield included)
Weight	2 grams
Electrical interfaces	Soldered module has a proprietary land plan. Interface to Intel® Wireless Gigabit Antenna-M 10042R using X-FL (single coax cable to carry power, IF and control)
Antenna Interface Connector	X.FL
Antenna Diversity	On-board diversity
IEEE 802.11 Networking Standards	802.11ad
Operating Temperature	0 to +80 degrees Celsius
Humidity	50% to 90% RH non-condensing (at temperatures of 25 ºC to 35 ºC)
Frequency Modulation	**60GHz (802.11ad)**
Frequency band	57GHz - 64GHz (dependent on country)
Modulation	DPSK, BPSK, QPSK, 16 QAM,
Channels	1, 2 and 3, subject to country rules
Data Rates	All data rates are theoretical maximums.
IEEE 802.11ad Data Rates	4620, 3850, 3080, 2503, 2310, 1925, 1540, 1251, 1155, 963, 770, 385 Mbps
Over-the-Air Security	
Authentication	WPA2-Personal (WSC - WiFi Simple Configuration)
Encryption	128-bit AES-GCMP
Additional Crypto Functions	
Public Key Decrypt	RSA-2048
General	

Operating Systems	Microsoft Windows 7*, Microsoft Windows 8.1* with connected standby, Microsoft Windows 10* with connected standby

Intel® Wireless Gigabit Sink W13110VR

Dimensions (H x W x D)	M.2 4230: 42 mm x 30 mm x 2.6 mm [1.5 mm Max (Top Side)/ 0.1 mm Max (Bottom Side)]
Weight	5.16 grams
Radio ON/OFF Control	Hardware Support
Electrical interfaces	M.2 Key G (User Defined). Interface to Intel® Wireless Gigabit Antenna-M 10101 Module using X-FL (single coax cable to carry power, IF and control), up to 2 modules
LEDs & GPIO Support	Driving 2 LEDs or Multicolor LED with 4 states, Recovery button, Activity button with configurable action
Antenna Diversity	On-board diversity
IEEE 802.11 Networking Standards	802.11ad
Operating Temperature (Adapter Shield)	0 to +80 degrees Celsius
Humidity Non-Operating	50% to 90% RH non-condensing (at temperatures of 25 °C to 35 °C)
Frequency Modulation	**60GHz (802.11ad)**
Frequency band	57GHz - 64GHz (dependent on country)
Modulation	DPSK, BPSK, QPSK, 16 QAM,
Channels	1, 2 and 3, subject to country rules
Data Rates	All data rates are theoretical maximums.
IEEE 802.11ad Data Rates	4620, 3850, 3080, 2503, 2310, 1925, 1540, 1251, 1155, 963, 770, 385 Mbps
Operating Systems	None
Wi-Fi Alliance* certification	N/A
Over-the-Air Security	
Authentication	WPA2-Personal (WSC - WiFi Simple Configuration)
Encryption	128-bit AES-GCMP
Additional Crypto Functions	
Public Key Decrypt	RSA-2048
Intel® Wireless Gigabit Antenna-M 10101R Module	
Dimensions (H x W x D)	7 mm x 19.3 mm x 1.8 mm
Weight	1 gram
Antenna Connector Interface	X.FL
Operating Temperature (Adapter Shield)	0 to +80 degrees Celsius

Humidity Non-Operating	50% to 90% RH non-condensing (at temperatures of 25 °C to 35 °C)

Intel® Wireless Gigabit 11100VR

Dimensions (H x W x D)	20.5 mm x 14.2 mm x 1.8 mm (shield included)
Weight	2 grams
Radio ON/OFF Control	Supported in both hardware and software
Electrical interfaces	Soldered module has a proprietary land plan. Interface to Intel® Wireless Gigabit Antenna-M 10042 Module using X-FL (single coax cable to carry power, IF and control)
LED Output	On/Off
IEEE 802.11 Networking Standards	802.11ad
Operating Temperature (Adapter Shield)	0 to +80 degrees Celsius
Humidity Non-Operating	50% to 90% RH non-condensing (at temperatures of 25 °C to 35 °C)
Frequency Modulation	**60GHz (802.11ad)**
Frequency band	57GHz - 64GHz (dependent on country)
Modulation	DPSK, BPSK, QPSK, 16 QAM,
Channels	1, 2 and 3, subject to country rules
Data Rates	All data rates are theoretical maximums.
IEEE 802.11ad Data Rates	4620, 3850, 3080, 2503, 2310, 1925, 1540, 1251, 1155, 963, 770, 385 Mbps
Operating Systems	Microsoft Windows 10* with connected standby
Over-the-Air Security	
Authentication	WPA2-Personal (WSC - WiFi Simple Configuration)
Encryption	128-bit AES-GCMP
Additional Crypto Functions	
Public Key Decrypt	RSA-2048
Intel® Wireless Gigabit Antenna-M 10042R Module	
Dimensions (H x W x D)	7.5 mm x 24.5 mm x 1.8 mm
Weight	1 gram
Antenna Connector Interface	X.FL
Operating Temperature (Adapter Shield)	0 to +80 degrees Celsius
Humidity Non-Operating	50% to 90% RH non-condensing (at temperatures of 25 °C to 35 °C)

Intel® Wi-Fi 6 AX200 (Models AX200NGW/ AX200D2WL)

General		
Dimensions (H x W x D)	• M.2 2230: 22 mm x 30 mm x 2.4 mm [1.5 mm max (top side)/ 0.1 mm max (bottom side)] • M.2 1216: 12 mm x 16 mm x 1.65 (±0.08) mm	
Weight	• M.2 2230: 2.33 (±0.3) g • M.2 1216: 0.61 (±0.1) g	
Radio ON/OFF Control	Supported	
Connector Interface	M.2: PCIe, USB	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	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* certification	Wi-Fi CERTIFIED* a/b/g/n/ac with wave 2 features, WMM*, WMM-PS*, 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	Bluetooth* 5	
Security		
Authentication	WPA* and WPA2* Personal and Enterprise; WPA3* (pending OS support)	
Authentication Protocols	802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-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 140-2, FISMA	
Product Safety	UL, C-UL, CB (IEC 60950-1)	
Model Numbers		
Models	Model AX200NGW	802.11ax, 2x2, Bluetooth* 5, M.2 2230
	Model AX200D2WL	802.11ax, 2x2, Bluetooth* 5, M.2 1216; LTE Coexistence
Frequency Modulation	**5GHz (802.11a/n/ac/ax)**	**2.4GHz (802.11b/g/n/ax)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024 QAM	CCK, DQPSK, DBPSK, 16 QAM, 64 QAM, 256 QAM, 1024 QAM
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiple Access (OFDMA)	2.4GHz ISM: Orthogonal Frequency Division Multiple Access (OFDMA)
Channels	All channels as defined by the relevant specification and country rules.	

Data Rates	All data rates are theoretical maximums.
IEEE 802.11ax Data Rates	Up to 2.4 Gbps
IEEE 802.11ac Data Rates	Up to 867 Mbps
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps

Intel® Wi-Fi 6 AX201 (Models AX201NGW/ AX201D2W/ AX201D2WL)

General	
Dimensions (H x W x D)	• M.2 2230: 22 mm x 30 mm x 2.4 mm [1.5 mm max (top side)/ 0.1 mm max (bottom side)] • M.2 1216: 12 mm x 16 mm x 1.65 (±0.05) mm
Weight	• M.2 2230: 2.33 (±0.3) g • M.2 1216: 0.61 (±0.1) g
Radio ON/OFF Control	Supported
Connector Interface	M.2: CNVio2
Operating Temperature	0 to +80 degrees Celsius
Humidity	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* certification	Wi-Fi CERTIFIED* a/b/g/n/ac with wave 2 features, WMM*, WMM-PS*, 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	Bluetooth* 5
Security	
Authentication	WPA* and WPA2* Personal and Enterprise; WPA3* (pending OS support)
Authentication Protocols	802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-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 140-2, FISMA	
Product Safety	UL, C-UL, CB (IEC 60950-1)	
Model Numbers		
Models	Model AX201NGW	802.11ax, 2x2, Bluetooth* 5, M.2 2230
	Model AX201D2W	802.11ax, 2x2, Bluetooth* 5, M.2 1216
	Model AX201D2WL	802.11ax, 2x2, Bluetooth* 5, M.2 1216; LTE Coexistence
Frequency Modulation	**5GHz (802.11a/ n/ ac/ ax)**	**2.4GHz (802.11b/ g/ n/ ax)**
Frequency band	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024 QAM	CCK, DQPSK, DBPSK, 16 QAM, 64 QAM, 256 QAM, 1024 QAM
Wireless Medium	5GHz UNII: Orthogonal Frequency Division Multiple Access (OFDMA)	2.4GHz ISM: Orthogonal Frequency Division Multiple Access (OFDMA)
Channels	All channels as defined by the relevant specification and country rules.	
Data Rates	All data rates are theoretical maximums.	
IEEE 802.11ax Data Rates	Up to 2.4 Gbps	
IEEE 802.11ac Data Rates	Up to 867 Mbps	
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	

Intel® Wi-Fi 6E AX210 (Models AX210NGW/ AX210D2W)

General	
Dimensions (H x W x D)	• M.2 2230: 22 mm x 30 mm x 2.4 mm [1.5 mm max (top side)/ 0.1 mm max (bottom side)] • M.2 1216: 12 mm x 16 mm x 1.65 (±0.08) mm
Weight	• M.2 2230: 2.33 (±0.3) g • M.2 1216: 0.61 (±0.1) g
Radio ON/OFF Control	Supported
Connector Interface	M.2: PCIe, USB

Operating Temperature	0 to +80 degrees Celsius		
Humidity	50% to 90% RH non-condensing (at temperatures of 25 °C to 35 °C)		
Operating Systems	Microsoft Windows 10*, Linux*		
Wi-Fi Alliance* certification	Wi-Fi CERTIFIED* a/b/g/n/ac, WMM*, WMM-PS*, 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, g, n, ac, ax, d, e, h, i, k, r, u, v, w; Fine Timing Measurement based on 802.11-2016 802.11-2016, Wi-Fi Location R2 (802.11az) HW readiness		
Bluetooth	Bluetooth* 5.2		
Security			
Authentication	WPA2* and WPA3*		
Authentication Protocols	802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-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 140-2		
Product Safety	UL, C-UL, CB (IEC 60950-1)		
Model Numbers			
Models	Model AX210NGW	Wi-Fi 6E (6GHz), 2x2, Bluetooth* 5.2, M.2 2230	
	Model AX210D2W	Wi-Fi 6E (6GHz), 2x2, Bluetooth* 5.2, M.2 1216	
Frequency Modulation	**6-7GHz (802.11ax R2)**	**5GHz (802.11a/ n/ ac/ ax)**	**2.4GHz (802.11b/ g/ n/ ax)**
Frequency band	FCC: 5.925GHz-7.125GHz EU: 5925GHz- 6.425GHz (dependent on country)	5.15GHz - 5.85GHz (dependent on country)	2.400 - 2.4835GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024 QAM	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024 QAM	CCK, DQPSK, DBPSK, 16 QAM, 64 QAM, 256 QAM, 1024 QAM
Wireless Medium	6-7GHz: Orthogonal Frequency Division Multiple Access (OFDMA)	5GHz UNII: Orthogonal Frequency Division Multiple Access (OFDMA)	2.4GHz ISM: Orthogonal Frequency Division Multiple Access (OFDMA)
Channels	All channels as defined by the relevant specification and country rules.		
Data Rates	All data rates are theoretical maximums.		
IEEE 802.11ax Data Rates	Up to 2.4 Gbps		
IEEE 802.11ac Data Rates	Up to 867 Mbps		
IEEE 802.11n Data Rates	Tx/Rx (Mbps): 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2		

IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps

Back to Contents

Customer Support

Intel support is available online or by telephone. Available services include the most up-to-date product information, installation instructions about specific products, and troubleshooting tips.

Online Support

Technical Support: http://www.intel.com/support

Network Product Support: http://www.intel.com/network

Corporate Web Site: http://www.intel.com

Back to Top

Back to Contents

Trademarks and Disclaimers

Back to Contents

Warranty Information

One-Year Limited Hardware Warranty

Limited Warranty

In this warranty statement, the term "Product" applies to the wireless adapters listed in Specifications.

Intel warrants to the purchaser of the Product that the Product, if properly used and installed, will be free from defects in material and workmanship and will substantially conform to Intel's publicly available specifications for the Product for a period of one (1) year beginning on the date the Product was purchased in its original sealed packaging.

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If the Product which is the subject of this Limited Warranty fails during the warranty period for reasons covered by this Limited Warranty, Intel, at its option, will:

- **REPAIR** the Product by means of hardware and/or software; OR
- **REPLACE** the Product with another product, OR, if Intel is unable to repair or replace the Product,
- **REFUND** the then-current Intel price for the Product at the time a claim for warranty service is made to Intel under this Limited Warranty.

THIS LIMITED WARRANTY, AND ANY IMPLIED WARRANTIES THAT MAY EXIST UNDER APPLICABLE STATE, NATIONAL, PROVINCIAL OR LOCAL LAW, APPLY ONLY TO YOU AS THE ORIGINAL PURCHASER OF THE PRODUCT.

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Intel does not warrant that the Product, whether purchased stand-alone or integrated with other products, including without limitation, semi-conductor components, will be free from design defects or errors known as "errata." Current characterized errata are available upon request. Further, this Limited Warranty does NOT cover: (i) any costs associated with the replacement or repair of the Product, including labor, installation or other costs incurred by you, and in particular, any costs relating to the removal or replacement of any Product soldered or otherwise permanently affixed to any printed circuit board or integrated with other products; (ii) damage to the Product due to external causes, including accident, problems with electrical power, abnormal, mechanical or environmental conditions, usage not in accordance with product instructions, misuse, neglect, accident, abuse, alteration, repair, improper or unauthorized installation or improper testing, or (iii) any Product which has been modified or operated outside of Intel's publicly available specifications or where the original product identification markings (trademark or serial number) have been removed, altered or obliterated from the Product; or (iv) issues resulting from modification (other than by Intel) of software products provided or included in the Product, (v) incorporation of software products, other than those software products provided or included in the Product by Intel, or (vi) failure to apply Intel-supplied modifications or corrections to any software provided with or included in the Product.

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WEEE

Back to Top

Back to Contents

Trademarks and Disclaimers