
Data Encryption

AES-CCMP

Advanced Encryption Standard - Counter CBC-MAC Protocol. The new method for privacy protection of wireless transmissions specified in the IEEE 802.11i standard. AES-CCMP provides a stronger encryption method than TKIP. Choose AES-CCMP as the data encryption method whenever strong data protection is important. AES-CCMP is available with WPA/WPA2 Personal/Enterprise network authentication.

NOTE: Some security solutions may not be supported by your computer's operating system and may require additional software or hardware as well as wireless LAN infrastructure support. Check with your computer manufacturer for details.

TKIP

Temporal Key Integrity Protocol provides per-packet key mixing, a message integrity check, and a rekeying mechanism. TKIP is available with WPA/WPA2 Personal/Enterprise network authentication.

CKIP

See [CKIP](#).

WEP

Wired Equivalent Privacy (WEP) uses encryption to help prevent unauthorized reception of wireless data. WEP uses an *encryption key* to encrypt data before transmitting it. Only computers that use the same encryption key can access the network and decrypt the data transmitted by other computers. Enterprise WEP is not exactly the same as personal WEP, in that you can select **Open** network authentication and then click **Enable 802.1X** and be able to choose from all client authentication types. The selection of authentication types are not available under personal WEP.

Authentication Types

TLS

A type of authentication method using the Extensible Authentication Protocol (EAP) and a

security protocol called the Transport Layer Security (TLS). EAP-TLS uses certificates which use passwords. EAP-TLS authentication supports dynamic WEP key management. The TLS protocol is intended to secure and authenticate communications across a public network through data encryption. The TLS Handshake Protocol allows the server and client to provide mutual authentication and to negotiate an encryption algorithm and cryptographic keys before data is transmitted.

TTLS

These settings define the protocol and the credentials used to authenticate a user. In TTLS (Tunneled Transport Layer Security), the client uses EAP-TLS to validate the server and create a TLS-encrypted channel between the client and server. The client can use another authentication protocol. Typically, password-based protocols challenge over a non-exposed TLS encrypted channel. TTLS implementations today support all methods defined by EAP, as well as several older methods ([PAP](#), [CHAP](#), [MS-CHAP](#) and [MS-CHAP-V2](#)). TTLS can easily be extended to work with new protocols by defining new attributes to support new protocols.

PEAP

PEAP is a new Extensible Authentication Protocol (EAP) IEEE 802.1X authentication type designed to take advantage of server-side EAP-Transport Layer Security (EAP-TLS) and to support various authentication methods, including users' passwords, one-time passwords, and Generic Token Cards.

LEAP

A version of Extensible Authentication Protocol (EAP). Light Extensible Authentication Protocol (LEAP) is a proprietary extensible authentication protocol developed by Cisco that provides a challenge-response authentication mechanism and dynamic key assignment.

EAP-SIM

Extensible Authentication Protocol Method for GSM Subscriber Identity (EAP-SIM) is a mechanism for authentication and session key distribution. It uses the Global System for Mobile Communications (GSM) Subscriber Identity Module (SIM). EAP-SIM uses a dynamic session-based WEP key, which is derived from the client adapter and RADIUS server, to encrypt data. EAP-SIM requires you to enter a user verification code, or PIN, for communication with the Subscriber Identity Module (SIM) card. A SIM card is a special smart card that is used by Global System for Mobile Communications (GSM) based digital cellular networks. RFC 4186 describes EAP-SIM.

EAP-AKA

EAP-AKA (Extensible Authentication Protocol Method for UMTS Authentication and Key Agreement) is an EAP mechanism for authentication and session key distribution, using the Universal Mobile Telecommunications System (UMTS) Subscriber Identity Module (USIM).

The USIM card is a special smart card used with cellular networks to validate a given user with the network.

Authentication Protocols

PAP

Password Authentication Protocol is a two-way handshake protocol designed for use with PPP. Password Authentication Protocol is a plain text password used on older SLIP systems. It is not secure. Only available for [TTLS](#) Authentication Type.

CHAP

Challenge Handshake Authentication Protocol is a three-way handshake protocol that is considered more secure than Password Authentication Protocol. Only available for [TTLS](#) authentication Type.

MS-CHAP (MD4)

Uses a Microsoft version of RSA Message Digest 4 challenge-and-reply protocol. This only works on Microsoft systems and enables data encryption. To select this authentication method causes all data to be encrypted. Only available for [TTLS](#) authentication type.

MS-CHAP-V2

Introduces an additional feature not available with MS-CHAP-V1 or standard CHAP authentication, the change password feature. This feature allows the client to change the account password if the RADIUS server reports that the password has expired. Available for [TTLS](#) and [PEAP](#) authentication types.

Generic Token Card (GTC)

Carries user specific token cards for authentication. The main feature in GTC is Digital Certificate/Token Card-based authentication. In addition, GTC includes the ability to hide user name identities until the TLS encrypted tunnel is established, which provides additional confidentiality that user names are not being broadcasted during the authentication phase. Only available for [PEAP](#) authentication type.

TLS

The TLS protocol is intended to secure and authenticate communications across a public

network through data encryption. The TLS Handshake Protocol allows the server and client to provide mutual authentication and to negotiate an encryption algorithm and cryptographic keys before data is transmitted. Only available for [PEAP](#) authentication type.

Cisco Features

Cisco LEAP

Cisco LEAP (Cisco Light EAP) is a server and client 802.1X authentication through a user-supplied logon password. When a wireless access point communicates with a Cisco LEAP-enabled RADIUS (Cisco Secure Access Control Server [ACS]), Cisco LEAP provides access control through mutual authentication between client wireless adapters and the wireless networks and provides dynamic, individual user encryption keys to help protect the privacy of transmitted data.

Cisco Rogue Access Point Security Feature

The Cisco Rogue access point feature provides security protection from an introduction of a rogue access point that could mimic a legitimate access point on a network in order to extract information about user credentials and authentication protocols that could compromise security. This feature only works with Cisco's LEAP authentication. Standard 802.11 technology does not protect a network from the introduction of a rogue access point. See [LEAP Authentication](#) for more information.

802.11b and 802.11g Mixed Environment Protection Protocol

Some access points, for example Cisco 350 or Cisco 1200, support environments in which not all client stations support WEP encryption; this is called Mixed-Cell Mode. When these wireless networks operate in "optional encryption" mode, client stations that join in WEP mode, send all messages encrypted, and stations that use standard mode send all messages unencrypted. These access points broadcast that the network does not use encryption but allow clients that use WEP mode. When "Mixed-Cell" is enabled in a profile, it lets you connect to access points that are configured for "optional encryption."

CKIP

Cisco Key Integrity Protocol (CKIP) is Cisco proprietary security protocol for encryption in 802.11 media. CKIP uses the following features to improve 802.11 security in infrastructure mode:

- Key Permutation (KP)
- Message Sequence Number

NOTE: CKIP is not used with WPA/WPA2 Personal/Enterprise network authentication.

NOTE: CKIP is only supported through the use of the WiFi connection utility on Windows XP.

Fast Roaming (CCKM)

When a wireless LAN is configured for fast reconnection, a LEAP-enabled client device can roam from one access point to another without involving the main server. Using Cisco Centralized Key Management (CCKM), an access point configured to provide Wireless Domain Services (WDS) takes the place of the RADIUS server and authenticates the client without perceptible delay in voice or other time-sensitive applications.

Mixed-Cell Mode

Some access points, for example Cisco 350 or Cisco 1200, support environments in which not all client stations support WEP encryption; this is called Mixed-Cell Mode. When these wireless networks operate in "optional encryption" mode, client stations that join in WEP mode send all messages encrypted, and stations that use standard mode send all messages unencrypted. These access points broadcast that the network does not use encryption, but allows clients that use WEP mode to join. When Mixed-Cell is enabled in a profile, it lets you connect to access points that are configured for "optional encryption."

Radio Management

When this feature is enabled your wireless adapter provides radio management information to the Cisco infrastructure. If the Cisco Radio Management utility is used on the infrastructure it configures radio parameters, detects interference and rogue access points.

EAP-FAST

EAP-FAST, like EAP-TTLS and PEAP, uses tunneling to protect traffic. The main difference is that EAP-FAST does not use certificates to authenticate. Provisioning in EAP-FAST is negotiated solely by the client as the first communication exchange when EAP-FAST is requested from the server. If the client does not have a pre-shared secret Protected Access Credential (PAC), it is able to initiate a provisioning EAP-FAST exchange to dynamically obtain one from the server.

EAP-FAST documents two methods to deliver the PAC: manual delivery through an out-of-band secure mechanism and automatic provisioning.

- Manual delivery mechanisms are any delivery mechanism that the administrator of the network considers sufficiently secure.
- Automatic provisioning establishes an encrypted tunnel to protect the authentication of the client and the delivery of the PAC to the client. This mechanism, while not as secure as a manual method may be, is more secure than the authentication method

used in LEAP.

The EAP-FAST method is divided into two parts: provisioning and authentication. The provisioning phase involves the initial delivery of the PAC to the client. This phase only needs to be performed once per client and user.

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Intel(R) WiMAX/WiFi Link 5350 and Intel(R) WiMAX/WiFi Link 5150 Adapters

The information in this section applies to the following products:

WiMAX and Wireless LAN Adapters

- Intel(R) WiMAX/WiFi Link 5350
- Intel(R) WiMAX/WiFi Link 5150

NOTE: In this section, all references to "the adapter" refer equally to the Intel® WiMAX/WiFi Link 5350 and Intel® WiMAX/WiFi Link 5150 adapters.

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. Nor does Intel make any commitment to update the information contained herein.

Information for the user

Safety Notices

USA—FCC and FAA

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 adapter meets the Human Exposure limits found in OET Bulletin 65, supplement C, 2001, and ANSI/IEEE C95.1, 1992. 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 devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.
 - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
 - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.


Antenna Use


- In order to comply with FCC RF exposure limits, low gain integrated antennas should be located at a minimum distance of 20 cm (8 inches) or more from the body of all persons.
- High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 30 cm (12 inches) or more from the body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.

Explosive Device Proximity Warning


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

Antenna Warnings

 **Warning:** To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended that for the adapter installed in a desktop or portable computer, the antenna for this adapter to be installed so as to provide a separation distance of at least 20 cm (8 inches) from all persons. It is recommended that the user limit exposure time if the antenna is positioned closer than 20 cm (8 inches).

 **Warning:** Intel(R) PRO/Wireless LAN products are not designed for use with high-gain directional antennas. Use of such antennas with these products in a manner other than as described in the previous section titled, "Antenna Use" is illegal.


Use On Aircraft Caution

 **Caution:** Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless adapters because their signals could interfere with critical aircraft instruments.

Other Wireless Devices

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

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

 **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. The device transmit power control (TPC) interface is part of the Intel(R) PROSet/Wireless

NOTE: In this section, all references to "the adapter" refer equally to the Intel(R) WiFi Link 5300 and Intel(R) WiFi Link 5100 adapters.

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. Nor does Intel make any commitment to update the information contained herein.

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 **Warning:** Intel(R) PRO/Wireless LAN products are not designed for use with high-gain directional antennas. Use of such antennas with these products in a manner other than as described in the previous section titled, "Antenna Use" is illegal.


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 **Caution:** Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

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

 **Caution:** Due to the fact that the frequencies used by 802.11a, 802.11b, 802.11g and 802.11n 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. The device transmit power control (TPC) interface is part of the Intel(R) 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.

For country-specific information, see the additional compliance information supplied with the product.

Wireless interoperability

The 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
- Wireless Fidelity certification, as defined by the Wi-Fi Alliance

The Intel(R) WiFi Link 5300 adapter, Intel(R) WiFi Link 5100 adapter and your health

The adapter, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this device, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The 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 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 adapter equipment on board airplanes, or
- Using the adapter equipment 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 devices 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

Information for the OEMs and Integrators

The following statement must be included with all versions of this document supplied to an OEM or integrator, but should not be distributed to the end user.

- This device is intended for OEM integrators only.
- Please See the full Grant of Equipment document for other restrictions.
- This device must be operated and used with a locally approved access point.


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 an Intel(R) WiFi Link 5300 adapter or Intel(R) WiFi Link 5100 adapter in compliance with local regulations. Host system must be labeled with "Contains FCC ID: XXXXXXXX", FCC ID displayed on label.

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. For country-specific approvals, see [Radio approvals](#). Dell Inc. is not responsible for any radio or television interference caused by unauthorized modification of the devices included with the adapter kit, or the substitution or attachment of connecting cables and equipment other than that specified by Dell Inc. The correction of interference caused by such unauthorized modification, substitution or attachment is the responsibility of the user. Dell Inc. and its 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.

Local Restriction of 802.11a, 802.11b, 802.11g, and 802.11n 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 and 802.11n 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.

FCC Radio Frequency Interference Requirements

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users 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 this device.

- This device is intended for OEM integrators only.
- This device cannot be co-located with any other transmitter unless approved by the FCC.

USA—Federal Communications Commission (FCC)

This device 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 20 cm between you (or any other person in the vicinity) 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.

Interference statement

This equipment 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 equipment generates, uses, and can radiate radio frequency energy. If the equipment is not installed and used in accordance with the instructions, the equipment may cause harmful interference to radio communications. There is no guarantee, however, that such interference will not occur in a particular installation. If this equipment 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.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver 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.

Underwriters Laboratories Inc. (UL) Regulatory Warning


For use in (or with) UL Listed personal computers or compatible.

Brazil

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

Canada—Industry Canada (IC)

This device complies with RSS210 of Industry Canada.

 **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 5.15 GHz to 5.25 GHz 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 5.85 GHz frequency range in point-to-point operation.

This Class B digital apparatus complies with Canadian ICES-003, Issue 4, and RSS-210, No 4 (Dec 2000) and No 5 (Nov 2001).

Cet appareil numérique de la classe B est conforme à la norme NMB-003, No. 4, et CNR-210, No 4 (Dec 2000) et No 5 (Nov 2001).

"To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing."

« Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne

d'émission) est installé à l'extérieur, il doit faire l'objet d'une licence. »

European Union

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

Intel(R) WiFi Link 5300 Adapter Declaration of Conformity

The European Declaration of Conformity is available at the following site:

http://www.intel.com/support/go/wireless/wlan/wf_reg.htm

This equipment complies with the essential requirements of the European Union directive 1999/5/EC.

•esky [Czech]	Intel(R) Corporation tímto prohlašuje, že tento Intel(R) WiFi Link 5300 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede Intel(R) Corporation erklærer herved, at følgende udstyr Intel(R) WiFi Link 5300 overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erkläre Intel(R) Corporation, dass sich das Gerät Intel(R) WiFi Link 5300 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Esti [Estonian]	Käesolevaga kinnitab Intel(R) Corporation seadme Intel(R) WiFi Link 5300 vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, Intel(R) Corporation, declares that this Intel(R) WiFi Link 5300 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]	Por medio de la presente Intel(R) Corporation declara que el Intel(R) WiFi Link 5300 cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνικ• [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Intel(R) Corporation ΔΗΛΩΝΕΙ ΟΤΙ Intel(R) WiFi Link 5300 ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]	Par la présente Intel(R) Corporation déclare que l'appareil Intel(R) WiFi Link 5300 est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente Intel(R) Corporation dichiara che questo Intel(R) WiFi Link 5300 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo Intel(R) Corporation deklarē, ka Intel(R) WiFi Link 5300 atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvi• [Lithuanian]	Šiuo Intel(R) Corporation deklaruoja, kad šis Intel(R) WiFi Link 5300 atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart Intel(R) Corporation dat het toestel Intel(R) WiFi Link 5300 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]	Hawnhekk, Intel(R) Corporation, jiddikjara li dan Intel(R) WiFi Link 5300 jikkonforma mal-•ti•ijiet essenzjali u ma provvedimenti o•rajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, Intel(R) Corporation nyilatkozom, hogy a Intel(R) WiFi Link 5300 megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Norsk [Norwegian]	Intel Corporation erklærer herved at utstyret Intel(R) WiFi Link 5300 er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.
Polski [Polish]	Niniejszym, Intel(R) Corporation, o•wiadcza, •e Intel(R) WiFi Link 5300 jest zgodne z zasadniczymi wymaganiami oraz innymi stosownymi postanowieniami Dyrektywy 1999/5/WE.
Português [Portuguese]	Intel(R) Corporation declara que este Intel(R) WiFi Link 5300 está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	Šiuo Intel(R) Corporation izjavlja, da je ta Intel(R) WiFi Link 5300 v skladu z bistvenimi zahtevami in ostalimi relevantnimi dolo•ili direktive 1999/5/ES.
Slovensky [Slovak]	Intel(R) Corporation týmto vyhlasuje, že Intel(R) WiFi Link 5300 sp••a základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]	Intel(R) Corporation vakuuttaa täten että Intel (R) WiFi Link 5300 tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Svenska [Swedish]	Härmed intygar Intel(R) Corporation att denna Intel(R) WiFi Link 5300 står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Íslenska [Icelandic]	Hér með lýsir Intel(R) Corporation yfir því að Intel(R) WiFi Link 5300 er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.

Intel(R) WiFi Link 5100 Adapter Declaration of Conformity

The European Declaration of Conformity is available at the following site:

http://www.intel.com/support/go/wireless/wlan/wf_reg.htm

This equipment complies with the essential requirements of the European Union directive 1999/5/EC.

•esky [Czech]	Intel(R) Corporation tímto prohlašuje, že tento Intel(R) WiFi Link 5100 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede Intel(R) Corporation erklærer herved, at følgende udstyr Intel(R) WiFi Link 5100 overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erkläre Intel(R) Corporation, dass sich das Gerät Intel(R) WiFi Link 5100 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Esti [Estonian]	Käesolevaga kinnitab Intel(R) Corporation seadme Intel(R) WiFi Link 5100 vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, Intel(R) Corporation, declares that this Intel(R) WiFi Link 5100 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]	Por medio de la presente Intel(R) Corporation declara que el Intel(R) WiFi Link 5100 cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνικ• [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Intel(R) Corporation ΔΗΛΩΝΕΙ ΟΤΙ Intel(R) WiFi Link 5100 ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]	Par la présente Intel(R) Corporation déclare que l'appareil Intel(R) WiFi Link 5100 est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente Intel(R) Corporation dichiara che questo Intel(R) WiFi Link 5100 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo Intel(R) Corporation deklarē, ka Intel(R) WiFi Link 5100 atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvi• [Lithuanian]	Šiuo Intel(R) Corporation deklaruoja, kad šis Intel(R) WiFi Link 5100 atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart Intel(R) Corporation dat het toestel Intel(R) WiFi Link 5100 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]	Hawnhekk, Intel(R) Corporation, jiddikjara li dan Intel(R) WiFi Link 5100 jikkonforma mal-•ti•ijiet essenzjali u ma provvedimenti o•rajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, Intel(R) Corporation nyilatkozom, hogy a Intel(R) WiFi Link 5100 megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Norsk [Norwegian]	Intel Corporation erklærer herved at utstyret Intel(R) WiFi Link 5100 er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.
Polski [Polish]	Niniejszym, Intel(R) Corporation, oświadczam, że Intel(R) WiFi Link 5100 jest zgodne z zasadniczymi wymaganiami oraz innymi stosownymi postanowieniami Dyrektywy 1999/5/WE.
Português [Portuguese]	Intel(R) Corporation declara que este Intel(R) WiFi Link 5100 está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	Šiuo Intel(R) Corporation izjavlja, da je ta Intel(R) WiFi Link 5100 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	Intel(R) Corporation týmto vyhlasuje, že Intel(R) WiFi Link 5100 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.

Suomi [Finnish]	Intel(R) Corporation vakuuttaa täten että Intel(R) WiFi Link 5100 tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar Intel(R) Corporation att denna Intel(R) WiFi Link 5100 står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Íslenska [Icelandic]	Hér með lýsir Intel(R) Corporation yfir því að Intel(R) WiFi Link 5100 er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.

Italy

The use of these equipments is regulated by:

1. D.L.gs 1.8.2003, n. 259, article 104 (activity subject to general authorization) for outdoor use and article 105 (free use) for indoor use, in both cases for private use.
2. D.M. 28.5.03, for supply to public of RLAN access to networks and telecom services.

L'uso degli apparati è regolamentato da:

1. D.L.gs 1.8.2003, n. 259, articoli 104 (attività soggette ad autorizzazione generale) se utilizzati al di fuori del proprio fondo e 105 (libero uso) se utilizzati entro il proprio fondo, in entrambi i casi per uso private.
2. D.M. 28.5.03, per la fornitura al pubblico dell'accesso R-LAN alle reti e ai servizi di telecomunicazioni.

Japan

Indoor use only.

Korea

당해 무선설비는 운용 중 전파혼신 가능성이 있음

Taiwan

第十二條

經型式認證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。

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.

Intel(R) Wireless WiFi Link 4965AGN and Intel(R) Wireless WiFi Link 4965AG_

The information in this document applies to the following products:

Quad-mode wireless LAN adapters (802.11a/802.11b/802.11g/802.11n)

Intel(R) Wireless WiFi Link 4965AGN (model WM4965AGN)

Tri-mode wireless LAN adapters (802.11a/802.11b/802.11g)

Intel(R) Wireless WiFi Link 4965AG_ (model WM4965AG_)

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. Nor does Intel make any commitment to update the information contained herein.

Information for the user

Safety Notices

USA—FCC and FAA

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 Intel(R) Wireless WiFi Link 4965AGN and Intel(R) Wireless WiFi Link 4965AG_ adapters meet the Human Exposure limits found in OET Bulletin 65, supplement C, 2001, and ANSI/IEEE C95.1, 1992. 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 devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.
 - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
 - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.


Antenna Use


- In order to comply with FCC RF exposure limits, low gain integrated antennas should be located at a minimum distance of 20 cm (8 inches) or more from the body of all persons.
- High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 30 cm (12 inches) or more from the body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.

Explosive Device Proximity Warning


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

Antenna Warnings

 **Warning:** To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended for the Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ adapters installed in a desktop or portable computer, that the antenna for this device be installed so as to provide a separation distance of at least 20 cm (8 inches) from all persons. It is recommended that the user limit exposure time if the antenna is positioned closer than 20 cm (8 inches).

 **Warning:** Intel(R) PRO/Wireless LAN products are not designed for use with high-gain directional antennas. Use of such antennas with these products in a manner other than as described in the previous section titled, "Antenna Use" is illegal.


Use On Aircraft Caution

 **Caution:** Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

Other Wireless Devices

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

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

 **Caution:** Due to the fact that the frequencies used by 802.11a, 802.11b, 802.11g and 802.11n 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. The device transmit power control (TPC) interface is part of the Intel(R) PROSet/Wireless WiFi Connection Utility. 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.

For country-specific information, see the additional compliance information supplied with the product.

Wireless interoperability

The Intel(R) Wireless WiFi Link 4965AGN and the Intel(R) Wireless WiFi Link 4965AG_ adapters are 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 (does apply to the Intel(R) Wireless WiFi Link 4965AG_ adapter)
- Wireless Fidelity certification, as defined by the Wi-Fi Alliance

The Intel(R) Wireless WiFi Link 4965AGN adapter or Intel(R) Wireless WiFi Link 4965AG_ adapter and your health

The Intel(R) Wireless WiFi Link 4965AGN adapter and Intel(R) Wireless WiFi Link 4965AG_ adapter, like other radio devices, emit radio frequency electromagnetic energy. The level of energy emitted by the device, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The 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 Intel (R) Wireless WiFi Link 4965AGN adapter or Intel(R) Wireless WiFi Link 4965AG_ 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 adapter equipment on board airplanes, or
- Using the adapter equipment 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 devices in a specific organization or environment (an airport, for example), you are encouraged to ask for authorization to use the Intel(R) Wireless WiFi Link 4965AGN or Intel (R) Wireless WiFi Link 4965AG_ adapter before you turn it on.

Regulatory information

Information for the OEMs and Integrators

The following statement must be included with all versions of this document supplied to an OEM or integrator, but should not be distributed to the end user.

- This device is intended for OEM integrators only.
- Please See the full Grant of Equipment document for other restrictions.
- This device must be operated and used with a locally approved access point.


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 an Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ in compliance with local regulations. Host system must be labeled with "Contains FCC ID: XXXXXXXX", FCC ID displayed on label.

The Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ wireless network device 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 Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ 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 its 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.

Local Restriction of 802.11a, 802.11b, 802.11g, and 802.11n 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 and 802.11n 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.

FCC Radio Frequency Interference Requirements

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users 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 this device.

- This device is intended for OEM integrators only.

USA—Federal Communications Commission (FCC)

This device 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 Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ adapter is far below the FCC radio frequency exposure limits. Nevertheless, the Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ 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 20 cm between you (or any other person in the vicinity) 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.

Interference statement

This equipment 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 equipment generates, uses, and can radiate radio frequency energy. If the equipment is not installed and used in accordance with the instructions, the equipment may cause harmful interference to radio communications. There is no guarantee, however, that such interference will not occur in a particular installation. If this equipment 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.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ 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.

Underwriters Laboratories Inc. (UL) Regulatory Warning


For use in (or with) UL Listed personal computers or compatible.

Brazil

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

Canada—Industry Canada (IC)

This device complies with RSS210 of Industry Canada.

 **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 5.15 GHz to 5.25 GHz 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 5.85 GHz frequency range in point-to-point operation.

This Class B digital apparatus complies with Canadian ICES-003, Issue 4, and RSS-210, No 4 (Dec 2000) and No 5 (Nov 2001).

Cet appareil numérique de la classe B est conforme à la norme NMB-003, No. 4, et CNR-210, No 4 (Dec 2000) et No 5 (Nov 2001).

"To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing."

« Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d'émission) est installé à l'extérieur, il doit faire l'objet d'une licence. »

European Union

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

Declaration of Conformity

The European Declaration of Conformity is available at the following site:

http://download.intel.com/support/wireless/wlan/4965agn/sb/eudoc4965_combined1.pdf

This equipment complies with the essential requirements of the European Union directive 1999/5/EC.

•esky [Czech]	Intel(R) Corporation tímto prohlašuje, že tento Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede Intel(R) Corporation erklærer herved, at følgende udstyr Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erkläre Intel(R) Corporation, dass sich das Gerät Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Esti [Estonian]	Käesolevaga kinnitab Intel(R) Corporation seadme Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, Intel(R) Corporation, declares that this Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]	Por medio de la presente Intel(R) Corporation declara que el Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνικ• [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Intel(R) Corporation ΔΗΛΩΝΕΙ ΟΤΙ Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΠΙΣΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK.
Français [French]	Par la présente Intel(R) Corporation déclare que l'appareil Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente Intel(R) Corporation dichiara che questo Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo Intel(R) Corporation deklar•, ka Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ atbilst Direkt•vas 1999/5/EK b•tiskaj•m pras•b•m un citiem ar to saist•tajiem noteikumiem.
Lietuvi• [Lithuanian]	Šiuo Intel(R) Corporation deklaruoja, kad šis Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart Intel(R) Corporation dat het toestel Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]	Hawnhekk, Intel(R) Corporation, jiddikjara li dan Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ jikkonforma mal-•ti•ijiet essenzjali u ma provvedimenti o•rajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, Intel(R) Corporation nyilatkozom, hogy a Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Norsk [Norwegian]	Intel Corporation erklærer herved at utstyret Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

Polski [Polish]	Niniejszym, Intel(R) Corporation, o•wiadcza, •e Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ jest zgodne z zasadniczymi wymaganiami oraz innymi stosownymi postanowieniami Dyrektywy 1999/5/WE.
Português [Portuguese]	Intel(R) Corporation declara que este Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	Šiuo Intel(R) Corporation izjavlja, da je ta Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ v skladu z bistvenimi zahtevami in ostalimi relevantnimi dolo•ili direktive 1999/5/ES.
Slovensky [Slovak]	Intel(R) Corporation týmto vyhlasuje, že Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ sp••a základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]	Intel(R) Corporation vakuuttaa täten että Intel (R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar Intel(R) Corporation att denna Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Íslenska [Icelandic]	Hér með lýsir Intel(R) Corporation yfir því að Intel(R) Wireless WiFi Link 4965AGN or Intel(R) Wireless WiFi Link 4965AG_ er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.

Italy

The use of these equipments is regulated by:

1. D.L.gs 1.8.2003, n. 259, article 104 (activity subject to general authorization) for outdoor use and article 105 (free use) for indoor use, in both cases for private use.
2. D.M. 28.5.03, for supply to public of RLAN access to networks and telecom services.

L'uso degli apparati è regolamentato da:

1. D.L.gs 1.8.2003, n. 259, articoli 104 (attività soggette ad autorizzazione generale) se utilizzati al di fuori del proprio fondo e 105 (libero uso) se utilizzati entro il proprio fondo, in entrambi i casi per uso private.
2. D.M. 28.5.03, per la fornitura al pubblico dell'accesso R-LAN alle reti e ai servizi di telecomunicazioni.

Japan

Indoor use only.

Korea

당해 무선설비는 운용 중 전파혼신 가능성이 있음

Taiwan

第十二條

經型式認證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。

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.

Intel(R) PRO/Wireless 3945ABG Network Connection and the Intel(R) PRO/Wireless 3945BG Network Connection

The information in this document applies to the following products:

Tri-mode wireless LAN adapters (802.11a/802.11b/802.11g)

Intel(R) PRO/Wireless 3945ABG Network Connection (model WM3945ABG)

Dual-mode wireless LAN adapters (802.11b/802.11g)

Intel(R) PRO/Wireless 3945BG Network Connection (model WM3945BG)

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. Nor does Intel make any commitment to update the information contained herein.

Information for the user

Safety Notices

USA—FCC and FAA

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 Intel(R) PRO/Wireless 3945ABG Network Connection adapter, or the Intel(R) PRO/Wireless 3945BG Network Connection adapter meet the Human Exposure limits found in OET Bulletin 65, supplement C, 2001, and ANSI/IEEE C95.1, 1992. 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 devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.
 - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
 - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.


Antenna Use


- In order to comply with FCC RF exposure limits, low gain integrated antennas should be located at a minimum distance of 20 cm (8 inches) or more from the body of all persons.
- High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 30 cm (12 inches) or more from the body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.

Explosive Device Proximity Warning


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

Antenna Warnings

 **Warning:** To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended that when the Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection adapter is installed in a desktop or portable computer, the antenna for this device be installed so as to provide a separation distance of at least 20 cm (8 inches) from all persons. It is recommended that the user limit exposure time if the antenna is positioned closer than 20 cm (8 inches).

 **Warning:** Intel(R) PRO/Wireless LAN products are not designed for use with high-gain directional antennas. Use of such antennas with these products in a manner other than as described in the previous section titled, "Antenna Use" is illegal.


Use On Aircraft Caution

 **Caution:** Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

Other Wireless Devices

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

Local Restrictions on 802.11a, 802.11b, and 802.11g Radio Usage

 **Caution:** Due to the fact that the frequencies used by 802.11a, 802.11b and 802.11g wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, and 802.11g 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(R) PROSet/Wireless WiFi Connection Utility. 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.

For country-specific information, see the additional compliance information supplied with the product.

Wireless interoperability

The Intel(R) PRO/Wireless 3945ABG Network Connection and Intel(R) PRO/Wireless 3945BG Network Connection are 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
- Wireless Fidelity (Wi-Fi) certification, as defined by the Wi-Fi Alliance

The Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection adapter and your health

The Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection adapter, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this device, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection adapter wireless device 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 Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection 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 Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection adapter equipment on board airplanes, or
- Using the Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection adapter equipment 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 devices in a specific organization or environment (an airport, for example), you are encouraged to ask for authorization to use the Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection wireless devices before you turn it on.

Regulatory information

Information for the OEMs and Integrators

The following statement must be included with all versions of this document supplied to an OEM or integrator, but should not be distributed to the end user.

- This device is intended for OEM integrators only.
- Please See the full Grant of Equipment document for other restrictions.
- This device must be operated and used with a locally approved access point.


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 an Intel(R) PRO/Wireless 3945ABG Network Connection or an Intel(R) PRO/Wireless 3945BG Network Connection in compliance with local regulations. Host system must be labeled with "Contains FCC ID: XXXXXXXX", FCC ID displayed on label.

The Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection wireless network device 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 Intel(R) PRO/Wireless 3945ABG Network Connection or the Intel(R) PRO/Wireless 3945BG Network Connection 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 its 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.

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

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

 **Caution:** Due to the fact that the frequencies used by 802.11a, 802.11b, and 802.11g wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, and 802.11g 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.

FCC Radio Frequency Interference Requirements

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users 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 this device.

- This device is intended for OEM integrators only.

USA—Federal Communications Commission (FCC)

This device 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 Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection adapter wireless network device is far below the FCC radio frequency exposure limits. Nevertheless, the Intel(R) PRO/Wireless LAN wireless network device 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 20 cm between you (or any other person in the vicinity) 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.

Interference statement

This equipment 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 equipment generates, uses, and can radiate radio frequency energy. If the equipment is not installed and used in accordance with the instructions, the equipment may cause harmful interference to radio communications. There is no guarantee, however, that such interference will not occur in a particular installation. If this equipment 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.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The Intel(R) PRO/Wireless 3945ABG Network Connection adapter or the Intel(R) PRO/Wireless 3945BG Network Connection adapter wireless network device 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.

Underwriters Laboratories Inc. (UL) Regulatory Warning


For use in (or with) UL Listed personal computers or compatible.

Brazil

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

Canada—Industry Canada (IC)

This device complies with RSS210 of Industry Canada.

 **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 5.15 GHz to 5.25 GHz 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.

This Class B digital apparatus complies with Canadian ICES-003, Issue 4, and RSS-210, No 4 (Dec 2000) and No 5 (Nov 2001).

Cet appareil numérique de la classe B est conforme à la norme NMB-003, No. 4, et CNR-210, No 4 (Dec 2000) et No 5 (Nov 2001).

"To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing."

« Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d'émission) est installé à l'extérieur, il doit faire l'objet d'une licence.»

European Union

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

Declaration of Conformity



Declaration of Conformity (1999/5/EC)

We, **INTEL CORPORATION SAS**

Address: Les Taissounières B3, 1681 route des Dolines – BP 293
06905 – Sophia Antipolis, France

declare under our sole responsibility that the product:

- Name: **INTEL® PRO/Wireless 3945ABG Network Connection**
- Model: **WM3945ABG MOW2**

to which this declaration relates, is in compliance with all the applicable essential requirements, and other provisions of the European Council Directive:

1999/5/EC	Radio and Telecommunications Terminal Equipment Directive (R&TTE)
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The conformity assessment procedure used for this declaration is Annex IV of this Directive

This product will bear the CE Mark label CE 0336 !

Product compliance has been demonstrated on the basis of:

This product will bear the CE Mark label CE 0336 !

Product compliance has been demonstrated on the basis of:

- IEC 60950-1:2001, and EN 60950-1:2001 (safety) - EN 50371: 2002	For article 3.1(a) : Health and Safety of the User
- EN 301 489-1 V1.4.1 (2002-08) - EN 301 489-17 V1.2.1 (2002-08)	For article 3.1(b) : Electromagnetic Compatibility
- EN 300 328 V1.5.1 (2004-08) - EN 301 893 V1.2.3 (2003-08)	For article 3.2 : Effective use of the spectrum allocated

The technical construction file is kept available at:

INTEL CORPORATION SAS

Branch Office: 1681 route des Dolines,
06905 - Sophia Antipolis, France

Authorized Signature by

Date: 9th September 2005

Gilles Catala,
Regulatory & Compliance Engineering Manager
Wireless Networking Group

This equipment complies with the essential requirements of the European Union directive 1999/5/EC.

•esky [Czech]	Intel(R) Corporation tímto prohlašuje, že tento Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede Intel(R) Corporation erklærer herved, at følgende udstyr Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erkläre Intel(R) Corporation, dass sich das Gerät Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Esti [Estonian]	Käesolevaga kinnitab Intel(R) Corporation seadme Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, Intel(R) Corporation, declares that this Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Español [Spanish]	Por medio de la presente Intel(R) Corporation declara que el Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνικ• [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Intel(R) Corporation ΔΗΛΩΝΕΙ ΟΤΙ Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]	Par la présente Intel(R) Corporation déclare que l'appareil Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente Intel(R) Corporation dichiara che questo Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo Intel(R) Corporation deklar•, ka Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection atbilst Direkt•vas 1999/5/ΕΚ b•tiskaj•m pras•b•m un citiem ar to saist•tajiem noteikumiem.
Lietuvi• [Lithuanian]	Šiuo Intel(R) Corporation deklaruoja, kad šis Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart Intel(R) Corporation dat het toestel Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]	Hawnhekk, Intel(R) Corporation, jiddikjara li dan Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection jikkonforma mal-•ti•ijiet essenzjali u ma provvedimenti o•rajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, Intel(R) Corporation nyilatkozom, hogy a Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Norsk [Norwegian]	Intel Corporation erklærer herved at utstyret Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.
Polski [Polish]	Niniejszym, Intel(R) Corporation, o•wiadcza, •e Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection jest zgodne z zasadniczymi wymaganiami oraz innymi stosownymi postanowieniami Dyrektywy 1999/5/WE.
Português [Portuguese]	Intel(R) Corporation declara que este Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	Šiuo Intel(R) Corporation izjavlja, da je ta Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection v skladu z bistvenimi zahtevami in ostalimi relevantnimi dolo•ili direktive 1999/5/ES.
Slovensky [Slovak]	Intel(R) Corporation týmto vyhlasuje, že Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection sp••a základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]	Intel(R) Corporation vakuuttaa täten että Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar Intel(R) Corporation att denna Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Íslenska [Icelandic]	Hér með lýsir Intel(R) Corporation yfir því að Intel(R) PRO/Wireless 3945ABG Network Connection or Intel(R) PRO/Wireless 3945BG Network Connection) er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.

Italy

The use of these equipments is regulated by:

1. D.L.gs 1.8.2003, n. 259, article 104 (activity subject to general authorization) for outdoor use and article 105 (free

- use) for indoor use, in both cases for private use.
2. D.M. 28.5.03, for supply to public of RLAN access to networks and telecom services.

L'uso degli apparati è regolamentato da:

1. D.Lgs 1.8.2003, n. 259, articoli 104 (attività soggette ad autorizzazione generale) se utilizzati al di fuori del proprio fondo e 105 (libero uso) se utilizzati entro il proprio fondo, in entrambi i casi per uso privato.
2. D.M. 28.5.03, per la fornitura al pubblico dell'accesso R-LAN alle reti e ai servizi di telecomunicazioni.

Japan

Indoor use only.

Korea

당해 무선설비는 운용 중 전파혼신 가능성이 있음

Taiwan

第十二條

經型式認證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。

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.

Intel(R) PRO/Wireless 2915ABG Network Connection

The information in this document applies to the following products:

Tri-mode wireless LAN adapters (802.11a/802.11b/802.11g)

Intel(R) PRO/Wireless 2915ABG Network Connection (model WM3B2915ABG)

Intel(R) PRO/Wireless 2915ABG Network Connection (model WM3A2915ABG)

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. Nor does Intel make any commitment to update the information contained herein.

Information for the user

Safety Notices

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 Intel(R) PRO/Wireless 2915ABG Network Connection adapter meets the Human Exposure limits found in OET Bulletin 65, supplement C, 2001, and ANSI/IEEE C95.1, 1992. 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 devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.
 - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
 - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.


Antenna Use


- In order to comply with FCC RF exposure limits, low gain integrated antennas should be located at a minimum distance of 20 cm (8 inches) or more from the body of all persons.
- High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 30 cm (12 inches) or more from the body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.

Explosive Device Proximity Warning


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

Antenna Warnings

 **Warning:** To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended that when the Intel(R) PRO/Wireless 2915ABG Network Connection adapter is installed in a desktop or portable computer, the antenna for this device be installed so as to provide a separation distance of at least 20 cm (8 inches) from all persons. It is recommended that the user limit exposure time if the antenna is positioned closer than 20 cm (8 inches).

 **Warning:** Intel(R) PRO/Wireless LAN products are not designed for use with high-gain directional antennas. Use of such antennas with these products in a manner other than as described in the previous section titled, "Antenna Use" is illegal.


Use On Aircraft Caution

 **Caution:** Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

Other Wireless Devices

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

Local Restrictions on 802.11a, 802.11b, and 802.11g Radio Usage

 **Caution:** Due to the fact that the frequencies used by 802.11a, 802.11b, and 802.11g wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, and 802.11g 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(R) PROSet/Wireless WiFi Connection Utility. 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.

For country-specific information, see the additional compliance information supplied with the product.

Wireless interoperability

The Intel(R) PRO/Wireless 2915ABG Network Connection 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.
- Wireless Fidelity (Wi-Fi) certification, as defined by the Wi-Fi Alliance

The Intel(R) PRO/Wireless 2915ABG Network Connection adapter and your health

The Intel(R) PRO/Wireless 2915ABG Network Connection adapter, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this device, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The Intel(R) PRO/Wireless 2915ABG Network Connection adapter wireless device 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 Intel(R) PRO/Wireless 2915ABG Network Connection adapter wireless device may be restricted by the proprietor of the building or responsible representatives of the applicable organization. Examples of such situations may include:

- Using the Intel(R) PRO/Wireless 2915ABG Network Connection adapter equipment on board airplanes, or
- Using the Intel(R) PRO/Wireless 2915ABG Network Connection adapter equipment 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 devices in a specific organization or environment (an airport, for example), you are encouraged to ask for authorization to use the Intel(R) PRO/Wireless 2915ABG Network Connection adapter wireless device before you turn it on.

Regulatory information

Information for the OEMs and Integrators

The following statement must be included with all versions of this document supplied to an OEM or integrator, but should not be distributed to the end user.

- This device is intended for OEM integrators only.
- Please See the full Grant of Equipment document for other restrictions.
- This device must be operated and used with a locally approved access point.

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 an Intel(R) PRO/Wireless 2915ABG Network Connection in compliance with local regulations. Host system must be labeled with "Contains FCC ID: XXXXXXXX", FCC ID displayed on label.

The Intel(R) PRO/Wireless 2915ABG Network Connection adapter wireless network device 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 Intel(R) PRO/Wireless 2915ABG Network Connection 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 its 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.

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

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

 **Caution:** Due to the fact that the frequencies used by 802.11a, 802.11b, and 802.11g wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, and 802.11g 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.

FCC Radio Frequency Interference Requirements

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users 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 this device.

- This device is intended for OEM integrators only.

USA—Federal Communications Commission (FCC)

This device 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 Intel(R) PRO/Wireless 2915ABG Network Connection adapter wireless network device is far below the FCC radio frequency exposure limits. Nevertheless, the Intel(R) PRO/Wireless LAN wireless network device 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 20 cm between you (or any other person in the vicinity) and the antenna that is built into the computer.

Interference Statement

This equipment 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 equipment generates, uses, and can radiate radio frequency energy. If the equipment is not installed and used in accordance with the instructions, the equipment may cause harmful interference to radio communications. There is no guarantee, however, that such interference will not occur in a particular installation. If this equipment 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.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The Intel(R) PRO/Wireless 2915ABG Network Connection adapter wireless network device 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.

Canada—Industry Canada (IC)

This device complies with RSS210 of Industry Canada.

This Class B digital apparatus complies with Canadian ICES-003, Issue 4, and RSS-210, No 4 (Dec 2000) and No 5 (Nov 2001).

Cet appareil numérique de la classe B est conforme à la norme NMB-003, No. 4, et CNR-210, No 4 (Dec 2000) et No 5 (Nov 2001).

"To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing."

« Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d'émission) est installé à l'extérieur, il doit faire l'objet d'une licence. »

European Union

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

Declaration of Conformity



Declaration of Conformity (1999/5/EC)

We, **INTEL CORPORATION SA**

Address: Branch Office; Veldkant 31; 2550 Kontich, Belgium

declare under our sole responsibility that the product:

- Name: **INTEL® PRO/Wireless 2915ABG Network Connection**
- Model: **WM3B2915ABG EU**

to which this declaration relates, is in compliance with all the applicable essential requirements, and other provisions of the European Council Directive:

1999/5/EC	Radio and Telecommunications Terminal Equipment Directive (R&TTE)
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The conformity assessment procedure used for this declaration is Annex IV of this Directive

This product will bear the CE Mark label CE 0523 !

Product compliance has been demonstrated on the basis of:

Product compliance has been demonstrated on the basis of:

- IEC 60950 (1999 3 rd Edition with amendments 1, 2, 3, 4), and EN 60950 (2000) - 1995/519/EC, Council recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz)	For article 3.1(a) : Health and Safety of the User
- EN 301 489-1 v1.4.1, Aug. 2002 - EN 301 489-17 v1.2.1, Aug. 2002	For article 3.1(b) : Electromagnetic Compatibility
- Final Draft EN 300 328 v1.5.1, Mar 2004 - EN 301 893 v1.2.3, Aug 2003	For article 3.2 : Effective use of the spectrum allocated

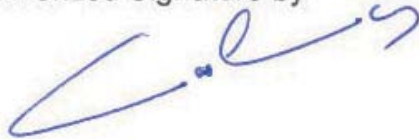
The technical construction file is kept available at:

INTEL CORPORATION SA

Branch Office: Veldkant 31,
2550 Kontich, Belgium

Authorized Signature by

Date: July 19th 2004



Vincent Colin,
Worldwide Homologations Manager,
WPD Regulatory Department



Declaration of Conformity (1999/5/EC)

We, **INTEL CORPORATION SA**

Address: Branch Office; Veldkant 31; 2550 Kontich, Belgium

declare under our sole responsibility that the product:

- Name: **INTEL® PRO/Wireless 2915ABG Network Connection**
- Model: **WM3A2915ABG EU**

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INTEL CORPORATION SA

Branch Office: Veldkant 31,
2550 Kontich, Belgium

Authorized Signature by

Date: July 19th 2004



Vincent Colin,
Worldwide Homologations Manager,
WPD Regulatory Department

This equipment complies with the essential requirements of the European Union directive 1999/5/EC.

Czech	Intel(R) Corporation tímto prohlašuje, že tento Intel(R) PRO/Wireless 2915ABG Network Connection je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES."
Danish	Undertegnede Intel(R) Corporation erklærer herved, at følgende udstyr Intel(R) PRO/Wireless 2915ABG Network Connection overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF
Dutch	Hierbij verklaart Intel(R) Corporation dat het toestel Intel(R) PRO/Wireless 2915ABG Network Connection in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG Bij deze verklaart Intel(R) Corporation dat deze Intel(R) PRO/Wireless 2915ABG Network Connection voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.
English	Hereby, Intel(R) Corporation, declares that this Intel(R) PRO/Wireless 2915ABG Network Connection is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Estonian	Käesolevaga kinnitab Intel(R) Corporation seadme Intel(R) PRO/Wireless 2915ABG Network Connection vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Finnish	Intel(R) Corporation vakuuttaa täten että Intel(R) PRO/Wireless 2915ABG Network Connection tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
French	Par la présente Intel(R) Corporation déclare que l'appareil Intel(R) PRO/Wireless 2915ABG Network Connection est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE. Par la présente, Intel(R) Corporation déclare que ce Intel(R) PRO/Wireless 2915ABG Network Connection est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables.
German	Hiermit erklärt Intel(R) Corporation, dass sich dieser/diese/dieses Intel(R) PRO/Wireless 2915ABG Network Connection in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMW) Hiermit erklärt Intel(R) Corporation die Übereinstimmung des Gerätes Intel(R) PRO/Wireless 2915ABG Network Connection mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien).=
Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Intel(R) Corporation ΔΗΛΩΝΕΙ ΟΤΙ Intel(R) PRO/Wireless 2915ABG Network Connection ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK.
Hungarian	Alulírott, Intel(R) Corporation nyilatkozom, hogy a Intel(R) PRO/Wireless 2915ABG Network Connection megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Icelandic	Intel lysir her með yfir að þessi bunadur, Intel(R) PRO/Wireless 2915ABG Network Connection, uppfyllir allar grunnkröfur, sem gerdar eru í R&TTE tilskipun ESB nr 1999/5/EC
Italian	Con la presente Intel(R) Corporation dichiara che questo Intel(R) PRO/Wireless 2915ABG Network Connection è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latvian	Ar šo Intel(R) Corporation deklarē, ka Intel(R) PRO/Wireless 2915ABG Network Connection atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

Lithuanian	Intel(R) Corporation deklaruoja, kad Intel(R) Pro/Wireless 2915ABG Network Connection atitinka 1999/5/EC Direktyvos esminius reikalavimus ir kitas nuostatas".
Malti	Hawnhekk, Intel(R) Corporation, jiddikjara li dan Intel(R) PRO/Wireless 2915ABG Network Connection jikkonforma mal-•ti•ijiet essenzjali u ma provvedimenti o•rajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Polish	Niniejszym, Intel(R) Corporation, deklaruje, że Intel(R) PRO/Wireless 2915ABG Network Connection spełnia wymagania zasadnicze oraz stosowne postanowienia zawarte w Dyrektywie 1999/5/EC.
Portuguese	Intel(R) Corporation declara que este Intel(R) PRO/Wireless 2915ABG Network Connection está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovak	Intel(R) Corporation týmto vyhlasuje, že Intel(R) PRO/Wireless 2915ABG Network Connection sp••a základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Slovenia	Šiuo Intel(R) Corporation deklaruoja, kad šis Intel(R) PRO/Wireless 2915ABG Network Connection atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Spanish	Por medio de la presente Intel(R) Corporation declara que el Intel(R) PRO/Wireless 2915ABG Network Connection cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Swedish	Härmed intygar Intel(R) Corporation att denna Intel(R) PRO/Wireless 2915ABG Network Connection står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

France

Pour la France métropolitaine

2.400 - 2.4835 GHz (Canaux 1 à 13) autorisé en usage intérieur

2.400 -2.454 GHz (canaux 1 à 7) autorisé en usage extérieur

Pour la Guyane et la Réunion

2.400 - 2.4835 GHz (Canaux 1 à 13) autorisé en usage intérieur

2.420 - 2.4835 GHz (canaux 5 à 13) autorisé en usage extérieur

Pour tout le territoire Français:

Seulement 5.15 -5.35 GHz autorisé pour le 802.11a

Belgium

Dans le cas d'une utilisation privée, à l'extérieur d'un bâtiment, au-dessus d'un espace public, aucun enregistrement n'est nécessaire pour une distance de moins de 300m. Pour une distance supérieure à 300m un enregistrement auprès de l'IBPT est requise. Pour les enregistrements et licences, veuillez contacter l'IBPT.

In geval van privé-gebruik, buiten een gebouw, op een openbare plaats, is geen registratie nodig, wanneer de afstand minder dan 300m is. Voor een afstand groter dan 300m is een registratie bij BIPT vereist. Voor registraties en licenties, gelieve BIPT te contacteren.

Japan

5GHz 帯は室内でのみ使用のこと

Italy

The use of these equipments is regulated by:

- D.L.gs 1.8.2003, n. 259, article 104 (activity subject to general authorization) for outdoor use and article 105 (free use) for indoor use, in both cases for private use.
- D.M. 28.5.03, for supply to public of RLAN access to networks and telecom services.

L'uso degli apparati è regolamentato da:

- D.L.gs 1.8.2003, n. 259, articoli 104 (attività soggette ad autorizzazione generale) se utilizzati al di fuori del proprio fondo e 105 (libero uso) se utilizzati entro il proprio fondo, in entrambi i casi per uso privato.
- D.M. 28.5.03, per la fornitura al pubblico dell'accesso R-LAN alle reti e ai servizi di telecomunicazioni.

Greece

A license is required for the outdoor use of band 5.470 – 5.725 GHz.

Belarus

2.4 GHz OFDM (802.11g) is not allowed at this time.

Indonesia

5 GHz interface is not allowed at this time.

Kuwait

5 GHz interface is not allowed at this time.

Oman

If the modules are less than 100 milliwatts they are unlicensed but if they are more than 100 milliwatts, the user is responsible for getting a license to operate from Telecommunications Regulatory Authority (TRA) in Sultanate of Oman.

Taiwan

第十二條

經型式認證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。

Pakistan

Pakistan Telecommunication Authority (PTA) Approved

UAE

5 GHz interface is not allowed at this time.

Ukraine

5 GHz interface is not allowed at this time.

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.

Underwriters Laboratories Inc. (UL) Regulatory Warning

For use in (or with) UL Listed personal computers or compatible.

Regulatory Information: Intel(R) PRO/Wireless 2200BG Network Connection

[Information for the User](#)
[Regulatory Information](#)

Information for the user

Safety Notices

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 Intel(R) PRO/Wireless 2200BG Network Connection meets the Human Exposure limits found in OET Bulletin 65, 2001, and ANSI/IEEE C95.1, 1992. 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 devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.
 - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
 - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.

Antenna Use


- In order to comply with FCC RF exposure limits, low gain integrated antennas should be located at a minimum distance of 20 cm (8 inches) or more from the body of all persons.
- High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 30 cm (12 inches) or more from the body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.


Explosive Device Proximity Warning

 **Warning:** Do not operate a portable transmitter (such as a wireless network device) near unshielded blasting caps or


in an explosive environment unless the device has been modified to be qualified for such use.

Antenna Warnings

 **Warning:** To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended that when the Intel(R) PRO/Wireless 2200BG Network Connection adapter is installed in a desktop or portable computer, the antenna for this device be installed so as to provide a separation distance of at least 20 cm (8 inches) from all persons. It is recommended that the user limit exposure time if the antenna is positioned closer than 20 cm (8 inches).

 **Warning:** Intel(R) PRO/Wireless LAN products are not designed for use with high-gain directional antennas. Use of such antennas with these products in a manner other than as described in the previous section titled, "Antenna Use" is illegal.

Use On Aircraft Caution

 **Caution:** Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

Local Restrictions on 802.11b and 802.11g Radio Usage

All frequencies used by 802.11b and 802.11g are harmonized. Some countries though may not allow 802.11g.

Wireless interoperability

The Intel(R) PRO/Wireless 2200BG Network Connection adapter is designed to be interoperable with any wireless LAN product that is based on direct sequence spread spectrum (DSSS) radio technology and to comply with the following standards:

- IEEE Std. 802.11b-1999. Standard on Wireless LAN.
- IEEE Std. 802.11g compliant. Standard on Wireless LAN.
- Wireless Fidelity (Wi-Fi) certification, as defined by the Wi-Fi Alliance

The Intel(R) PRO/Wireless LAN 2200BG Mini PCI adapter and your health

The Intel(R) PRO/Wireless 2200BG Network Connection adapter, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this device, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The Intel(R) PRO/Wireless 2200BG Network Connection adapter wireless device 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 Intel(R) PRO/Wireless 2200BG Network Connection adapter wireless device may be restricted by the proprietor of the building or responsible representatives of the applicable organization. Examples of such situations may include:

- Using the Intel(R) PRO/Wireless 2200BG Network Connection adapter equipment on board airplanes, or
- Using the Intel(R) PRO/Wireless 2200BG Network Connection adapter equipment 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 devices in a specific organization or environment (an airport, for example), you are encouraged to ask for authorization to use the Intel(R) PRO/Wireless 2200BG Network Connection adapter wireless device before you turn it on.

Regulatory information

The Intel(R) PRO/Wireless 2200BG Network Connection adapter wireless network device 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 Intel(R) PRO/Wireless 2200BG Network Connection 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 its 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.

USA—Federal Communications Commission (FCC)

This device 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 Intel(R) PRO/Wireless 2200BG Network Connection adapter wireless network device is far below the FCC radio frequency exposure limits. Nevertheless, the Intel(R) PROSet/Wireless LAN wireless network device 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 2 cm between you (or any other person in the vicinity) and the antenna that is built into the computer.

Interference Statement

This equipment 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 equipment generates, uses, and can radiate radio frequency energy. If the equipment is not installed and used in accordance with the instructions, the equipment may cause harmful interference to radio communications. There is no guarantee, however, that such interference will not occur in a particular installation. If this equipment 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.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The Intel(R) PRO/Wireless 2200BG Network Connection adapter wireless network device 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.

U.S. Frequency Bands

2.400 - 2.462 GHz

Canada—Industry Canada (IC)

This Class B digital apparatus complies with Canadian ICES-003, Issue 2, and RSS-210, Issue 4 (Dec. 2000).

Cet appareil numérique de la classe B est conforme à la norme NMB-003, No. 2, et CNR-210, No 4 (Dec 2000).

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing."

« Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d'émission) est installé à l'extérieur, il doit faire l'objet d'une licence.»

Europe—EU Declaration of Conformity

European Frequency Bands



C E0336 !

Declaration of Conformity

We, **INTEL CORPORATION SA** ; Branch Office; Veldkant 31; 2550 Kontich; Belgium
 Declare that the **INTEL® PRO/Wireless 2200BG Network Connection** with model name: **WM3A2200BG**
 is in conformance with the essential requirements of the European Council Directive:

1999/5/EC (R&TTE)	Radio and Telecommunications Terminal Equipment Directive (Following Annex IV of this Directive)
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The essential requirements being:

Health & Safety of the user (article 3.1.a)	Following directive 73/23/EEC & European Council Recommendation 1999 519 EC
Electromagnetic Compatibility (article 3.1.b)	Following directive 89/336/EEC
Effective use of the spectrum (article 3.2)	Following the Notified Body Opinion from TNO Certification B.V. with Notified Body number 0336

This declaration is based upon compliance to the following standards:

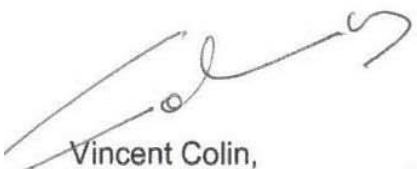
IEC 60950 (1999 3 rd Edition with amendments 1, 2, 3, 4) & EN 60950 (2000)	Safety Information Technology Equipment, Including Electrical Business Equipment. & Common modifications, special national conditions and National Deviation
EN 301 489-1 v1.4.1, Aug. 2002 EN 301 489-17 v1.2.1, Aug. 2002	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services: Part 1: Common technical requirements Part 17: Specific conditions for Wideband Data and Hiperlan equipment
EN 300 328-1 v1.4.1, Apr 2003	Electromagnetic compatibility and Radio Spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques. Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
	Generic standard to demonstrate the compliance of low power electronic and

	Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
EN 50371	Generic standard to demonstrate the compliance of low power electronic and electrical apparatus with the basis restrictions related to human exposure to electromagnetic fields (10MHz - 300GHz) - General public

This declaration is made under our sole responsibility.

Authorized Signature by

Date: 01 December 2003



Vincent Colin,
Worldwide Homologations Manager,
WPD Regulatory Department



CE 0336

Declaration of Conformity

We, **INTEL CORPORATION SA** ; Branch Office; Veldkant 31; 2550 Kontich; Belgium
Declare that the **INTEL® PRO/Wireless 2200BG Network Connection** with model name: **WM3B2200BG**
is in conformance with the essential requirements of the European Council Directive:

1999/5/EC (R&TTE)	Radio and Telecommunications Terminal Equipment Directive (Following Annex IV of this Directive)
-------------------	---

The essential requirements being:

Health & Safety of the user (article 3.1.a)	Following directive 73/23/EEC & European Council Recommendation 1999 519 EC
Electromagnetic Compatibility (article 3.1.b)	Following directive 89/336/EEC
Effective use of the spectrum (article 3.2)	Following the Notified Body Opinion from TNO Certification B.V. with Notified Body number 0336

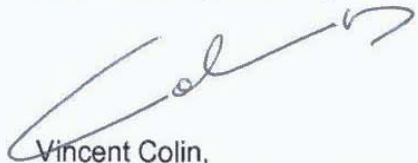
This declaration is based upon compliance to the following standards:

IEC 60950 (1999 3 rd Edition with amendments 1, 2, 3, 4) & EN 60950 (2000)	Safety Information Technology Equipment, Including Electrical Business Equipment. & Common modifications, special national conditions and National Deviation
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EN 50371	Generic standard to demonstrate the compliance of low power electronic and electrical apparatus with the basis restrictions related to human exposure to electromagnetic fields (10MHz - 300GHz) - General public

This declaration is made under our sole responsibility.
Authorized Signature by

Date: 01 December 2003



Vincent Colin,
Worldwide Homologations Manager,
WPD Regulatory Department

This equipment complies with the essential requirements of the European Union directive 1999/5/EC.

English	Hereby, Intel(R) Corporation, declares that this Intel(R) PRO/Wireless 2200BG Network Connection is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Finnish	Intel(R) Corporation vakuuttaa täten että Intel(R) PRO/Wireless 2200BG Network Connection tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Dutch	Hierbij verklaart Intel(R) Corporation dat het toestel Intel(R) PRO/Wireless 2200BG Network Connection in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. Bij deze verklaart Intel(R) Corporation dat deze Intel(R) PRO/Wireless 2200BG Network Connection voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.
French	Par la présente Intel(R) Corporation déclare que l'appareil Intel(R) PRO/Wireless 2915ABG Network Connection est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE. Par la présente, Intel(R) Corporation déclare que ce Intel(R) PRO/Wireless 2200BG Network Connection est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables.
Swedish	Härmed intygar Intel(R) Corporation att denna Intel(R) PRO/Wireless 2200BG Network Connection står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Danish	Undertegnede Intel(R) Corporation erklærer herved, at følgende udstyr Intel(R) PRO/Wireless 2200BG Network Connection overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

German	Hiermit erklärt Intel(R) Corporation, dass sich dieser/diese/dieses Intel(R) PRO/Wireless 2200BG Network Connection in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMW)
	Hiermit erklärt Intel(R) Corporation die Übereinstimmung des Gerätes Intel(R) PRO/Wireless 2200BG Network Connection mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)
Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Intel(R) Corporation ΔΗΛΩΝΕΙ ΟΤΙ Intel(R) PRO/Wireless 2200BG Network Connection ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Icelandic	<i>Intel</i> lýsir her með yfir að thessi bunadur, Intel(R) PRO/Wireless 2200BG Network Connection, uppfyllir allar grunnkröfur, sem gerdar eru í R&TTE tilskipun ESB nr 1999/5/EC.
Italian	Con la presente Intel(R) Corporation dichiara che questo Intel(R) PRO/Wireless 2200BG Network Connection è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Spanish	Por medio de la presente Intel(R) Corporation declara que el Intel(R) PRO/Wireless 2200BG Network Connection cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Portuguese	Intel(R) Corporation declara que este Intel(R) PRO/Wireless 2200BG Network Connection está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Malti	Hawnhekk, Intel(R) Corporation, jiddikjara li dan Intel(R) PRO/Wireless 2200BG Network Connection jikkonforma mal-•ti•ijiet essenzjali u ma provvedimenti o•rajn rilevanti li hemm fid-Direttiva 1999/5/EC

New Member States requirements of Declaration of Conformity

Estonian	Käesolevaga kinnitab Intel(R) Corporation seadme Intel(R) PRO/Wireless 2200BG Network Connection vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Hungarian	Alulírott, Intel(R) Corporation nyilatkozom, hogy a Intel(R) PRO/Wireless 2200BG Network Connection megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak
Slovak	Intel(R) Corporation týmto vyhlasuje, že Intel(R) PRO/Wireless 2200BG Network Connection sp••a základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Czech	Intel(R) Corporation tímto prohlašuje, že tento Intel(R) PRO/Wireless 2200BG Network Connection je ve shod• se základními požadavky a dalšími p•islušnými ustanoveními sm•rnice 1999/5/ES."
Slovenia	Šiuo Intel(R) Corporation deklaruoja, kad šis Intel(R) PRO/Wireless 2200BG Network Connection atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Latvian	Ar šo Intel(R) Corporation deklar•, ka Intel(R) PRO/Wireless 2200BG Network Connection atbilst Direkt•vas 1999/5/EK b•tiskaj•m pras•b•m un citiem ar to saist•tajiem noteikumiem
Lithuanian	Intel(R) Corporation deklaruoja, kad Intel(R) Pro/Wireless 2200BG Network Connection atitinka 1999/5/EC Direktyvos esminius reikalavimus ir kitas nuostatas".
Polish	Niniejszym, Intel(R) Corporation, deklaruje, •e Intel(R) PRO/Wireless 2200BG Network Connection spe•nia wymagania zasadnicze oraz stosowne postanowienia zawarte Dyrektywie 1999/5/EC.

France

Pour la France métropolitaine

2.400 - 2.4835 GHz (Canaux 1à 13) autorisé en usage intérieur
2.400 - 2.454 GHz (canaux 1 à 7) autorisé en usage extérieur

Pour la Guyane et la Réunion

2.400 - 2.4835 GHz (Canaux 1à 13) autorisé en usage intérieur
2.420 - 2.4835 GHz (canaux 5 à 13) autorisé en usage extérieur

Pour tout le territoire Français:

Seulement 5.15 -5.35 GHz autorisé pour le 802.1

Belgique

Dans le cas d'une utilisation privée, à l'extérieur d'un bâtiment, au-dessus d'un espace public, aucun enregistrement n'est nécessaire pour une distance de moins de 300m. Pour une distance supérieure à 300m un enregistrement auprès de l'IBPT est requise. Pour les enregistrements et licences, veuillez contacter l'IBPT.

In geval van privé-gebruik, buiten een gebouw, op een openbare plaats, is geen registratie nodig, wanneer de afstand minder dan 300m is. Voor een afstand groter dan 300m is een registratie bij BIPT vereist. Voor registraties en licenties, gelieve BIPT te contacteren.

Italia

The use of these equipments is regulated by:

- D.L.gs 1.8.2003, n. 259, article 104 (activity subject to general authorization) for outdoor use and article 105 (free use) for indoor use, in both cases for private use.

- D.M. 28.5.03, for supply to public of RLAN access to networks and telecom services.

L'uso degli apparati è regolamentato da:

- D.L.gs 1.8.2003, n. 259, articoli 104 (attività soggette ad autorizzazione generale) se utilizzati al di fuori del proprio fondo e 105 (libero uso) se utilizzati entro il proprio fondo, in entrambi i casi per uso privato.

- D.M. 28.5.03, per la fornitura al pubblico dell'accesso R-LAN alle reti e ai servizi di telecomunicazioni.

Belarus

2.4 GHz OFDM (802.11g) is not allowed at this time.

Korea

당해 무선설비는 운용 중 전파혼신 가능성이 있음

Taiwan

第十二條

經型式認證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。

Pakistan

Pakistan Telecommunication Authority (PTA) Approved

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.

[Back to Contents](#)

Specifications

- [Intel\(R\) WiMAX/WiFi Link 5350](#)
- [Intel\(R\) WiMAX/WiFi Link 5150](#)
- [Intel\(R\) WiFi Link 5300](#)
- [Intel\(R\) WiFi Link 5100](#)
- [Intel\(R\) Wireless WiFi Link 4965AGN](#)
- [Intel\(R\) Wireless WiFi Link 4965AG](#)
- [Intel\(R\) PRO/Wireless 3945ABG Network Connection](#)
- [Intel\(R\) PRO/Wireless 3945BG Network Connection](#)
- [Intel\(R\) PRO/Wireless 2915ABG Network Connection](#)
- [Intel\(R\) PRO/Wireless 2200BG Network Connection](#)

Intel(R) WiFi Link 5150 and Intel(R) WiFi Link 5350

WiFi / WiMAX	
Form Factor	PCI Express* Mini Card and Half-Mini Card
SKUs	Intel® WiMAX/WiFi Link 5350 - 3x3 MC Intel® WiMAX/WiFi Link 5150 - 1X2 MC/HMC
Dimensions	Mini Card: Width 20 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	53-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 °C to 35 °C)	
WiFi		
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)	2.41-2.474 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	4 to 12 (dependent on country)	Channel 1-11 (US only) Channel 1-13 (Japan, Europe)
IEEE 802.11n Data Rates	Intel(R) WiFi Link 5350	
	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(R) WiFi Link 5150	
	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	
WiFi General		
Operating Systems	Microsoft Windows XP* (32 and 64 bit) and Windows Vista* (32 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	
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, 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 60590)	
WiMAX		
Frequency band	2.5-2.7 GHz (3A Profile)	
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	Channel bandwidths: 5 MHz and 10 MHz
WiMAX Network Release Feature set	SPWG/NWG Release 1.0 SPWG/NWG Release 1.5	
Rate Performance (OTA performance 10MHz channel)	10 Mbps DL and 4 Mbps UL @ peak rate	
RF Transmitter Output Power	Compliance with Power class 2	
WiMAX General		
Operating Systems	Microsoft Windows XP* ,Vista*	
Standard Compliance	802.16e-2005 Corrigenda 2 (D4)	
WiMAX System Profile Feature set	Mobile WiMAX release 1, Wave II Profile 3A	
Security	Key Management Protocol (PKMv2)	
Encryption	128bit CCMP (Counter-Mode/CBC-MAC) based on AES encryption	

Intel(R) WiFi Link 5300 and Intel(R) WiFi Link 5100

Form Factor	PCI Express* Full-Mini Card and Half-Mini Card
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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 °C to 35 °C)	
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	4 to 12 (dependent on country)	Channel 1-11 (US only) Channel 1-13 (Japan, Europe)
IEEE 802.11n Data Rates	Intel(R) WiFi Link 5300 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(R) WiFi Link 5100 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 and 64 bit) and Windows Vista* (32 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 60590)

Intel(R) Wireless WiFi Link 4965AGN

Form Factor	PCI Express* Mini Card
Dimensions	Width 2.00 in x Length 1.18 in x Height 0.18 in (50.95 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 °C to 35 °C)	
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	4 to 12 (dependent on country)	Channel 1-11 (US only) Channel 1-13 (Japan, Europe)
IEEE 802.11n Data Rates	Rx: 300, 270, 243, 240, 180 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	
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 and 64 bit) and Windows Vista* (32 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 60590)

Intel(R) Wireless WiFi Link 4965AG_

This is a version of Intel Wireless WiFi 4965AGN with 8-2.11n capabilities disabled. 802.11n refers to: IEEE P802.11n / D2.0 Draft Amendment to STANDARD [FOR] Information Technology-Telecommunications and information exchange between systems-Local and Metropolitan networks-Specific requirements-Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications: Enhancements for Higher Throughput.

Form Factor	PCI Express Mini Card
Dimensions	Width 2.00 in x Length 1.18 in x Height 0.18 in (50.95 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 °C to 35 °C)	
Frequency Modulation	5 GHz (802.11a)	2.4 GHz (802.11b/g)
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	4 to 12 (dependent on country)	Channel 1-11 (US only) Channel 1-13 (Japan, Europe)
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 and 64 bit), and Windows Vista (32 and 64 bit)	
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11a, WPA, WPA2, WMM, EAP-SIM	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
WLAN Standard	IEEE 802.11g, 802.11b, 802.11a	
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 60590)	

Intel(R) PRO/Wireless 3945ABG Network Connection

Form Factor	PCI Express Mini Card
Dimensions	Width 2.00 in x Length 1.18 in x Height 0.18 in (50.95 mm x 30 mm x 4.5 mm)
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066

Dual Diversity Antenna	On-board dual diversity switching	
Connector Interface	52-pin Mini Card edge connector	
Voltage	3.3 V	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50 to 92% non-condensing (at temperatures of 25 °C to 55 °C)	
Frequency Modulation	5 GHz (802.11a)	2.4 GHz (802.11b/g)
Frequency band	5.15 GHz - 5.85 GHz	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	4 to 12 non-overlapping, dependent on country	Channel 1-11 (US only) Channel 1-13 (Japan, Europe)
Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	11, 5.5, 2, 1 Mbps
General		
Operating Systems	Microsoft Windows XP and Windows Vista	
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	
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 60590)	

Intel(R) PRO/Wireless 3945BG Network Connection

Form Factor	PCI Express Mini Card
Dimensions	Width 2.00 in x Length 1.18 in x Height 0.18 in (50.95 mm x 30 mm x 4.5 mm)
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066
Dual Diversity Antenna	On-board dual diversity switching
Connector Interface	52-pin Mini Card edge connector
Voltage	3.3 V
Operating Temperature	0 to +80 degrees Celsius
Humidity	50 to 92% non-condensing (at temperatures of 25 °C to 55 °C)
Frequency Modulation	2.4 GHz (802.11b/g)
Frequency band	2.400 - 2.4835 GHz (dependent on country)
Modulation	CCK, DQPSK, DBPSK
Wireless Medium	2.4 GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)
Channels	Channel 1-11 (US only) Channel 1-13 (Japan, Europe)
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6, 5.5, 2, 1 Mbps
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps
General	
Operating Systems	Microsoft Windows XP and Windows Vista
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, WPA, WPA2, WMM, 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
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 60590)

Intel(R) PRO/Wireless 2915ABG Network Connection

Form Factor	Mini PCI Type 3A	
Dimensions	Width 2.85 in x Length 1.75 in x Height 0.20 in (72.39 mm x 44.54 mm x 5.08 mm)	
Weight	0.7 oz. (12.90 g.)	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Dual Diversity Antenna	On-board dual diversity switching	
Connector Interface	124-pin SO-DIMM edge connector	
Voltage	3.3 Volt	
Operating Temperature	0 to +70 degrees Celsius	
Humidity	50 to 85% non-condensing	
Frequency Modulation	5 GHz (802.11a)	2.4 GHz (802.11b/g)
Frequency band	5.15 GHz - 5.85 GHz	2.400 - 2.472 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	4 to 12 non-overlapping, dependent on country	Channel 1-11 (US only) Channel 1-13 (Japan, Europe)

Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	11, 5.5, 2, 1 Mbps
General		
Operating Systems	Microsoft Windows XP and Windows Vista	
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11a, WPA, WPA2, WMM, EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v3.0	
WLAN Standard	IEEE 802.11g, 802.11b, 802.11a	
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 60590)	

Intel(R) PRO/Wireless 2200BG Network Connection

Form Factor	Mini PCI Type 3B
Dimensions	Width 2.34 in x Length 1.75 in x Height 0.20 in (59.45 mm x 44.45 mm x 5 mm)
Weight	0.7 oz. (12.90 g.)
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066
Dual Diversity Antenna	On-board dual diversity switching
Connector Interface	124-pin mini PCI edge connector
Voltage	3.3 V

Operating Temperature	0 to +70 degrees Celsius
Humidity	50 to 85% non-condensing
Frequency Modulation	OFDM with BPSK, QPSK, 16QAM, 64QAM, DBPSK, DQPSK, CCK
Frequency band	2.400 - 2.472 GHz (US) 2.400 - 2.4835 GHz (Japan) 2.400 - 2.4835 GHz (Europe ETSI)
Modulation	OFDM with BPSK, QPSK, 16QAM, 64QAM, DBPSK, DQPSK, CCK
Channels	Full 14 channel support
Data Rates	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps
General	
Operating Systems	Microsoft Windows XP and Windows Vista
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, WPA, WPA2, WMM, EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v2.0
WLAN Standard	IEEE 802.11g and 802.11b
Architecture	Infrastructure or ad hoc (peer-to-peer) operating modes
Security	WPA, LEAP, PEAP, TKIP, EAP-TLS, EAP-TTLS, AES (128-bit), WEP 128-bit and 64-bit.
Product Safety	UL, C-UL, CB (IEC 60590)

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General Troubleshooting

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Basic Troubleshooting

Problem or Symptom	Possible Solution
The wireless network card cannot connect to the access point.	<p>Ensure that your access point is turned on, and that you have a profile for the wireless network. The security settings in your profile must match your access point's settings.</p> <p>Ensure that 802.1X is disabled on both your access point and your wireless card.</p>
The wireless card drops connection occasionally.	<ol style="list-style-type: none">1. Move closer to the access point.2. Power cycle access point.3. Update access point firmware from access point vendor support site.4. Update the wireless LAN driver.

<p>Your wireless connection is slower than expected.</p>	<ol style="list-style-type: none"> 1. Move closer to the access point. 2. Power cycle access point. 3. Update access point firmware from access point vendor support site. 4. Update the wireless LAN driver.
<p>The name of my wireless network is not displayed in the list of available networks.</p>	<p>Ensure that your access point is functioning correctly.</p> <p>Check the SSID (network name) of the wireless network and ensure that the access point is set to broadcast the SSID.</p>
<p>For XP users: The computers seem to be connected to the network, but printers and/or file shares do not appear in My Computer or in My Network Places.</p>	<p>Verify that File and Printer Sharing is enabled on all the computers on your network.</p> <ol style="list-style-type: none"> 1. Click Start. 2. Click Control Panel. 3. Click Switch to Classic View, if available in the left pane. 4. Double-click Network Connections. 5. Right-click Wireless Network Connection. 6. Click Properties. 7. Click the General tab. 8. Under This connection uses the following items, verify that the File and Printer Sharing for Microsoft Networks is selected. 9. If cleared, click to select File and Printer Sharing for Microsoft Networks. 10. If this item is not present, perform the following steps: <ul style="list-style-type: none"> • Click Install.

- Select **Service**
 - Click **Add**.
 - Select **File and Printer Sharing for Microsoft Networks**.
 - Click **OK**
11. Close **OK** to close Wireless Network Connection Properties.
 12. Close Network Connections.

For Vista users: The computers seem to be connected to the network, but printers and/or file shares do not appear in **Computer**.

Verify that File and Printer Sharing are enabled in the Network and Sharing Center.

1. Click **Start**.
2. Click **Control Panel**.
3. Click **Network and Internet**.
4. Under Network and Sharing Center, click **View network computers and devices**.
5. If no resources are displayed, network discovery and file sharing may be turned off. This is indicated by a message by the top of the window: **Network discovery and file sharing are turned off. Network computers and devices are not visible. Click to change...** Click this message.
6. Click **Turn on network discovery and file sharing**. The instructions will guide you through the process.

<p>Data transfer is sometimes very slow.</p>	<p>Microwave ovens, some baby monitors, cordless game controllers, and some cordless phones operate at the same radio frequency as the installed wireless card. When these devices are in use, they interfere with the wireless network. For optimum performance, keep wirelessly-connected computers at least 20 feet away from devices that operate at a frequency of 2.4 GHz.</p>
<p>Data transfer is always very slow.</p>	<p>Some homes and most offices are steel-framed structures. The steel in such buildings may interfere with your network's radio signals, thus causing a slowdown in the data transmission rate. Try moving your computer to different locations in the building to see if performance improves.</p>
<p>Computers are not communicating with the network.</p>	<p>Verify that all of the wireless network properties settings are correct.</p> <ul style="list-style-type: none"> • Make sure that your computer is receiving a good signal from the access point or router. • Verify with the network administrator that installed the wireless card in your portable computer is compatible with the IEEE 802.11 WLAN standard under which the wireless network is operating. • You may need to disable or uninstall firewall software to connect. • If your network uses access points or routers, check all cables and make sure the power LED on the front of the access point or router is green.
<p>I cannot connect to any wireless network.</p>	<p>Radio may be disabled. See: Turn on/Turn off Radio for more information.</p>
<p>Intel(R) PROSet/Wireless WiFi software asks me for a key when I try to connect to a wireless network.</p>	<p>Network has security enabled. See Security Overview for more information.</p>
<p>No wireless networks are displayed in the list of available networks.</p>	<p>Computer is too far from wireless network or there are no wireless networks in the area.</p>

How do I configure roaming identity for multiple users.

Configure Roaming Identity to support multiple users:

If you use a [Pre-logon/Common](#) profile that requires the roaming identity to be based on the Windows logon credentials, the creator of the profile can add a roaming identity that uses %username% and %domain%. The roaming identity is parsed and the appropriate log on information is substituted for the keywords. This allows maximum flexibility in configuring the roaming identity while allowing multiple users to share the profile.

Please see your authentication server user guide for directions about how to format a suitable roaming identity. Possible formats are:

```
%domain%\%username%  
%username%@%domain%  
%username%@%domain%.com  
%username%@mynetwork.com
```

If Roaming Identity is cleared, %domain%\%username% is the default.

NOTE: Credentials: This user name and domain must match the user name that is set in the authentication server by the administrator prior to client authentication. The user name is case-sensitive. This name specifies the identity supplied to the authenticator by the authentication protocol operating over the TLS tunnel. This user identity is securely transmitted to the server only after an encrypted channel has been verified and established.

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Glossary of Terms

Term	Definition
802.11	The 802.11 standard refers to a family of specifications developed by the IEEE for wireless LAN technology. The 802.11 specifies an over-the-air interface between a wireless client and a base station or between two wireless clients and provides 1 or 2 Mbps transmission in the 2.4 GHz band using either frequency hopping spread spectrum (FHSS) or direct sequence spread spectrum (DSSS).
802.11a	The 802.11a standard specifies a maximum data transfer rate of 54 Mbps and an operating frequency of 5 GHz. The 802.11a standard uses the Orthogonal Frequency Division Multiplexing (OFDM) transmission method. Additionally, the 802.11a standard supports 802.11 features such as WEP encryption for security.
802.11b	802.11b is an extension to 802.11 that applies to wireless networks and provides 11 Mbps transmission (with a fallback to 5.5, 2 and 1 Mbps) in the 2.4 GHz band. 802.11b uses only DSSS. Throughput data rate 5+ Mbps in the 2.4 GHz band.
802.11g	The 802.11g standard specifies a maximum data transfer rate of 54 Mbps, an operating frequency of 2.4GHz, and WEP encryption for security. 802.11g networks are also referred to as Wi-Fi* networks.
802.11n	A taskgroup of the IEEE 802.11 committee is in the process of defining a standard for high throughput speeds of at least 100Mbps on wireless networks. Some proposals being fielded by the taskgroup include designs for up to 540 Mbps. Multiple-Input-Multiple-Output (MIMO) technology, using multiple receivers and multiple transmitters in both the client and access point to achieve improved performance is expected to form the basis of the final specification.
802.1X	802.1X is the IEEE Standard for Port-Based Network Access Control. This is used in conjunction with EAP methods to provide access control to wired and wireless networks.
AAA Server	Authentication, Authorization and Accounting Server. A system to control access to computer resources and track user activity.
Access Point (AP)	A device that connects wireless devices to another network. For example, a wireless LAN, Internet modem or others.

Ad Hoc Network	A communication configuration in which every computer has the same capabilities, and any computer can initiate a communication session. Also known as a peer-to-peer network, a device to device network or a computer-to-computer network.
AES-CCMP	Advanced Encryption Standard - Counter CBC-MAC Protocol is the new method for privacy protection of wireless transmissions specified in the IEEE 802.11i standard. AES-CCMP provides a stronger encryption method than TKIP. The AES algorithm is capable of using cryptographic keys of 128, 192, and 256 bits to encrypt and decrypt data in 128-bit blocks. AES-CCMP uses the AES block cipher, but restricts the key length to 128 bits. AES-CCMP incorporates two sophisticated cryptographic techniques (counter mode and CBC-MAC) to provide improved security between the mobile client and the access point.
Authentication	Verifies the identity of a user logging onto a network. Passwords, digital certificates, smart cards and biometrics are used to prove the identity of the client to the network. Passwords and digital certificates are also used to identify the network to the client.
Available network	One of the networks listed under Available networks on the Wireless Networks tab of the Wireless Network Connection Properties (Windows XP environment). Any wireless network that is broadcasting and is within receiving range of the wireless adapter appears on the list.
BER	Bit Error Rate. The ratio of errors to the total number of bits being sent in a data transmission from one location to another.
Bit Rate	The total number of bits (ones and zeros) per second that a network connection can support. Note that this bit rate will vary, under software control, with different signal path conditions.
Broadcast SSID	Used to allow an access point to respond to clients on a wireless network by sending probes.
BSSID	A unique identifier for each wireless client on a wireless network. The Basic Service Set Identifier (BSSID) is the Ethernet MAC address of each adapter on the network.
CA (Certificate Authority)	A corporate certification authority implemented on a server. In addition, Internet Explorer's certificate can import a certificate from a file. A trusted CA certificate is stored in the root store.
CCX (Cisco Compatible eXtension)	Cisco Compatible Extensions Program ensures that devices used on Cisco wireless LAN infrastructure meet the security, management and roaming requirements.
Certificate	Used for client authentication. A certificate is registered on the authentication server (for example, RADIUS server) and used by the authenticator.

CKIP	Cisco Key Integrity Protocol (CKIP) is a Cisco proprietary security protocol for encryption in 802.11 media. CKIP uses a key message integrity check and message sequence number to improve 802.11 security in infrastructure mode. CKIP is Cisco's version of TKIP.
Client computer	The computer that gets its Internet connection by sharing either the host computer's connection or the access point's connection.
DSSS	Direct Sequence Spread Spectrum. Technology used in radio transmission. Incompatible with FHSS.
EAP	Short for Extensible Authentication Protocol, EAP sits inside of Point-to-Point Protocol's (PPP) authentication protocol and provides a generalized framework for several different authentication methods. EAP is supposed to head off proprietary authentication systems and let everything from passwords to challenge-response tokens and public-key infrastructure certificates all work smoothly.
EAP-AKA	EAP-AKA (Extensible Authentication Protocol Method for UMTS Authentication and Key Agreement) is an EAP mechanism for authentication and session key distribution, using the Universal Mobile Telecommunications System (UMTS) Subscriber Identity Module (USIM). The USIM card is a special smart card used with cellular networks to validate a given user with the network.
EAP-FAST	<p>EAP-FAST, like EAP-TTLS and PEAP, uses tunneling to protect traffic. The main difference is that EAP-FAST does not use certificates to authenticate.</p> <p>Provisioning in EAP-FAST is negotiated solely by the client as the first communication exchange when EAP-FAST is requested from the server. If the client does not have a pre-shared secret Protected Access Credential (PAC), it can request to initiate a provisioning EAP-FAST exchange to dynamically obtain one from the server.</p> <p>EAP-FAST documents two methods to deliver the PAC: manual delivery through an out-of-band secure mechanism, and automatic provisioning.</p> <ul style="list-style-type: none"> • Manual delivery mechanisms can be any delivery mechanism that the administrator of the network feels is sufficiently secure for their network. • Automatic provisioning establishes an encrypted tunnel to protect the authentication of the client and the delivery of the PAC to the client. This mechanism, while not as secure as a manual method may be, is more secure than the authentication method used in LEAP. <p>The EAP-FAST method can be divided into two parts: provisioning, and authentication. The provisioning phase involves the initial delivery of the PAC to the client. This phase only needs to be performed once per client</p>

	and user.
EAP-GTC	The EAP-GTC (Generic Token Card) is similar to the EAP-OTP except with hardware token cards. The request contains a displayable message, and the response contains the string read from the hardware token card.
EAP-OTP	EAP-OTP (One-Time Password) is similar to MD5, except it uses the OTP as the response. The request contains a displayable message. The OTP method is defined in RFC 2289.
EAP-SIM	<p>Extensible Authentication Protocol-Subscriber Identity Module (EAP-SIM) authentication can be used with:</p> <ul style="list-style-type: none"> • Network Authentication types: Open, Shared, and WPA*-Enterprise, WPA2*-Enterprise. • Data Encryption types: None, WEP and CKIP. <p>A SIM card is a special smart card that is used by Global System for Mobile Communications (GSM) based digital cellular networks. The SIM card is used to validate your credentials with the network</p>
EAP-TLS	A type of authentication method that uses EAP and a security protocol called the Transport Layer Security (TLS). EAP-TLS uses certificates that use passwords. EAP-TLS authentication supports dynamic WEP key management.
EAP-TTLS	A type of authentication method that uses EAP and Tunneled Transport Layer Security (TTLS). EAP-TTLS uses a combination of certificates and another security method such as passwords.
Encryption	Scrambling data so that only the authorized recipient can read it. Usually a key is needed to interpret the data.
FHSS	Frequency-Hop Spread Spectrum. Technology used in radio transmission. Incompatible with DSSS.
File and printer sharing	A capability that allows a number of people to view, modify, and print the same file(s) from different computers.
Fragmentation threshold	The threshold at which the wireless adapter breaks the packet into multiple frames. This determines the packet size and affects the throughput of the transmission.
GHz (Gigahertz)	A unit of frequency equal to 1,000,000,000 cycles per second.
Host computer	The computer that is directly connected to the Internet via a modem or network adapter.
Infrastructure network	A wireless network centered around an access point. In this environment, the access point not only provides communication with the wired network, but also mediates wireless network traffic in the immediate neighborhood.

IEEE	Institute of Electrical and Electronics Engineers (IEEE) is an organization involved in defining computing and communications standards.
Internet Protocol (IP) address	The address of a computer that is attached to a network. Part of the address designates which network the computer is on, and the other part represents the host identification.
LAN (Local Area Network)	A high-speed, low-error data network covering a relatively small geographic area.
LEAP (Light Extensible Authentication Protocol)	A version of Extensible Authentication Protocol (EAP). LEAP is a proprietary extensible authentication protocol developed by Cisco that provides a challenge-response authentication mechanism and dynamic key assignment.
MAC (Media Access Control) Address	A hardwired address applied at the factory. It uniquely identifies network hardware, such as a wireless adapter, on a LAN or WAN.
Mbps (Megabits-per-second)	Transmission speed of 1,000,000 bits per second.
MHz (Megahertz)	A unit of frequency equal to 1,000,000 cycles per second.
MIC (Michael)	Message Integrity Check (commonly called Michael).
MS-CHAP	An EAP mechanism used by the client. Microsoft Challenge Authentication Protocol (MS-CHAP) Version 2, is used over an encrypted channel to enable server validation. The challenge and response packets are sent over a non-exposed TLS encrypted channel.
ns (Nanosecond)	1 billionth (1/1,000,000,000) of a second.
OFDM	Orthogonal Frequency Division Multiplexing.
Open authentication	Allows any device network access. If encryption is not enabled on the network, any device that knows the Service Set Identifier (SSID) of the access point can gain access to the network.

PEAP	Protected Extensible Authentication Protocol (PEAP) is an Internet Engineering Task Force (IETF) draft protocol sponsored by Microsoft, Cisco, and RSA Security. PEAP creates an encrypted tunnel similar to the tunnel used in secure web pages (SSL). Inside the encrypted tunnel, a number of other EAP authentication methods can be used to perform client authentication. PEAP requires a TLS certificate on the RADIUS server, but unlike EAP-TLS there is no requirement to have a certificate on the client. PEAP has not been ratified by the IETF. The IETF is currently comparing PEAP and TTLS (Tunneled TLS) to determine an authentication standard for 802.1X authentication in 802.11 wireless systems. PEAP is an authentication type designed to take advantage of server-side EAP-Transport Layer Security (EAP-TLS) and to support various authentication methods, including user passwords and one-time passwords, and Generic Token Cards.
Peer-to-Peer mode	A wireless network structure that allows wireless clients to communicate directly with each other without using an access point.
Power save mode	The state in which the radio is periodically powered down to conserve power. When the portable computer is in Power Save mode, receive packets are stored in the access point until the wireless adapter wakes up.
Preferred network	One of the networks that has been configured. Such networks are listed under Preferred networks on the Wireless Networks tab of the Wireless Network Connection Properties (Windows XP* environment).
RADIUS (Remote Authentication Dial-In User Service)	RADIUS is an authentication and accounting system that verifies user's credentials and grants access to requested resources.
RF (Radio Frequency)	The international unit for measuring frequency is Hertz (Hz), which is equivalent to the older unit of cycles per second. One MegaHertz (MHz) is one million Hertz. One GigaHertz (GHz) is one billion Hertz. For reference: the standard US electrical power frequency is 60 Hz, the AM broadcast radio frequency band is 0.55 -1.6 MHz, the FM broadcast radio frequency band is 88-108 MHz, and microwave ovens typically operate at 2.45 GHz.
Roaming	Movement of a wireless node between two micro cells. Roaming usually occurs in infrastructure networks built around multiple access points. Current wireless network roaming is only supported in the same subnet of a network.
RTS threshold	The number of frames in the data packet at or above which an RTS/CTS (request to send/clear to send) handshake is turned on before the packet is sent. The default value is 2347.
Shared key	An encryption key known only to the receiver and sender of data. This is also referred to as a pre-shared key.

SIM (Subscriber Identity Module)	A SIM card is used to validate credentials with the network. A SIM card is a special smart card used by GSM-based digital cellular networks.
Silent mode	Silent Mode Access Points or Wireless Routers have been configured to not broadcast the SSID for the wireless network. This makes it necessary to know the SSID in order to configure the wireless profile to connect to the access point or wireless router.
Single Sign On	Single Sign On feature set allows the 802.1X credentials to match your Windows log on user name and password credentials for wireless network connections.
SSID (Service Set Identifier)	SSID or network name is a value that controls access to a wireless network. The SSID for your wireless network card must match the SSID for any access point that you want to connect with. If the value does not match, you are not granted access to the network. Each SSID may be up to 32 alphanumeric characters long and is case-sensitive.
stealth	A stealth access point is one that has the capability and is configured to not broadcast its SSID. This is the wireless network name that appears when a DMU (Device Management Utility, such as Intel® PROSet/Wireless WiFi) scans for available wireless networks. Although this can enhance wireless network security, it is commonly considered a weak security feature. To connect to a stealth access point, a user must specifically know the SSID and configure their DMU accordingly. The feature is not a part of the 802.11 specification, and is known by differing names by various vendors: closed mode, private network, SSID broadcasting.
TKIP (Temporal Key Integrity Protocol)	Temporal Key Integrity protocol improves data encryption. Wi-Fi Protected Access* uses its TKIP. TKIP provides important data encryption enhancements including a re-keying method. TKIP is part of the IEEE 802.11i encryption standard for wireless networks. TKIP is the next generation of WEP, the Wired Equivalency Protocol, which is used to secure 802.11 wireless networks. TKIP provides per packet key mixing, a message integrity check and a re-keying mechanism, thus fixing the flaws of WEP.

<p>TLS (Transport Layer Security)</p>	<p>A type of authentication method using the Extensible Authentication Protocol (EAP) and a security protocol called the Transport Layer Security (TLS). EAP-TLS uses certificates which use passwords. EAP-TLS authentication supports dynamic WEP key management. The TLS protocol is intended to secure and authenticate communications across a public network through data encryption. The TLS Handshake Protocol allows the server and client to provide mutual authentication and to negotiate an encryption algorithm and cryptographic keys before data is transmitted.</p>
<p>TTLS (Tunneled Transport Layer Security)</p>	<p>These settings define the protocol and the credentials used to authenticate a user. In TTLS, the client uses EAP-TLS to validate the server and create a TLS-encrypted channel between the client and server. The client can use another authentication protocol. Typically password-based protocols challenge over this encrypted channel to enable server validation. The challenge and response packets are sent over a non-exposed TLS encrypted channel. TTLS implementations today support all methods defined by EAP, as well as several older methods (CHAP, PAP, MS-CHAP and MS-CHAP-V2). TTLS can easily be extended to work with new protocols by defining new attributes to support new protocols.</p>
<p>WEP (Wired Equivalent Privacy)</p>	<p>Wired Equivalent Privacy, 64- and 128-bit (64-bit is sometimes referred to as 40-bit). This is a low-level encryption technique designed to give the user about the same amount of privacy that he would expect from a LAN. WEP is a security protocol for wireless local area networks (WLANs) defined in the 802.11b standard. WEP is designed to provide the same level of security as that of a wired LAN. WEP aims to provide security by data over radio waves so that it is protected as it is transmitted from one end point to another.</p>
<p>WEP Key</p>	<p>Either a pass phrase or hexadecimal key. The pass phrase must be 5 ASCII characters for 64-bit WEP or 13 ASCII characters for 128-bit WEP. For pass phrases, 0-9, a-z, A-Z, and ~!@#\$%^&*()_+ `-={} []\:";'<>?,./ are all valid characters. The hex key must be 10 hexadecimal characters (0-9, A-F) for 64-bit WEP or 26 hexadecimal characters (0-9, A-F) for 128-bit WEP.</p>
<p>Wi-Fi* (Wireless Fidelity)</p>	<p>Is meant to be used generically when referring of any type to 802.11 network, whether 802.11b, 802.11a, or dual-band.</p>

WiMAX	WiMAX, the Worldwide Interoperability for Microwave Access, is a telecommunications technology aimed at providing wireless data over long distances in a variety of ways, from point-to-point links to full mobile cellular type access. It is based on the IEEE 802.16 standard. The name WiMAX was created by the WiMAX Forum, which was formed in June 2001 to promote conformance and interoperability of the standard. The forum describes WiMAX as "a standards-based technology enabling the delivery of last mile wireless broadband access as an alternative to cable and DSL."
Wireless router	A stand-alone wireless hub that allows any computer that has a wireless network adapter to communicate with another computer within the same network and to connect to the Internet.
WLAN (Wireless Local-Area Network)	A type of local-area network that uses high-frequency radio waves rather than wires to communicate between nodes.
WPA* (Wi-Fi Protected Access)	This is a security enhancement that strongly increases the level of data protection and access control to a wireless network. WPA is an interim standard that will be replaced with the IEEE's 802.11i standard upon its completion. WPA consists of RC4 and TKIP and provides support for BSS (Infrastructure) mode only. (Not compatible with WPA2.)
WPA2* (Wi-Fi Protected Access 2)	This is the second generation of WPA that complies with the IEEE TGi specification. WPA2 consists of AES encryption, pre-authentication and PMKID caching. It provides support for BSS (Infrastructure) mode and IBSS (ad hoc) mode. (Not compatible with WPA.)
WPA-Enterprise	<p>Wi-Fi Protected Access-Enterprise applies to corporate users. A new standards-based, interoperable security technology for wireless LAN (subset of IEEE 802.11i draft standard) that encrypts data sent over radio waves. WPA is a Wi-Fi standard that was designed to improve upon the security features of WEP as follows:</p> <ul style="list-style-type: none"> • Improved data encryption through the temporal key integrity protocol (TKIP). TKIP uses a hashing algorithm to scramble the encryption keys and adds an integrity-checking feature to ensure that the keys have not been tampered with. • User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network. <p>WPA is an interim standard that will be replaced with the IEEE's 802.11i</p>

standard upon its completion.

WPA-Personal

Wi-Fi Protected Access-Personal provides a level of security in the small network or home environment.

WPA-PSK (Wi-Fi Protected Access-Pre-Shared Key)

WPA-PSK mode does not use an authentication server. It can be used with the data encryption types WEP or TKIP. WPA-PSK requires configuration of a pre-shared key (PSK). You must enter a pass phrase or 64 hex characters for a pre-shared key of length 256-bits. The data encryption key is derived from the PSK.

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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://support.intel.com>

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

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

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Warranty

Product Warranty Information

One-Year Limited Hardware Warranty

Limited Warranty

In this warranty statement, the term "Product" applies to the following devices:

- Intel(R) WiMAX/WiFi Link 5350
- Intel(R) WiMAX/WiFi Link 5150
- Intel(R) WiFi Link 5300
- Intel(R) WiFi Link 5100
- Intel(R) Wireless WiFi Link 4965AGN
- Intel(R) Wireless WiFi Link 4965AG_
- Intel(R) PRO/Wireless 3945ABG Network Connection
- Intel(R) PRO/Wireless 2915ABG Network Connection
- Intel(R) PRO/Wireless 2200BG Network Connection

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.

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How to Obtain Warranty Service

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Taskbar Icon

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Taskbar Menu Options

The Intel(R) PROSet/Wireless WiFi Connection Utility status icon displays on the Taskbar located in the lower right corner of your Windows desktop. This icon looks like this: 

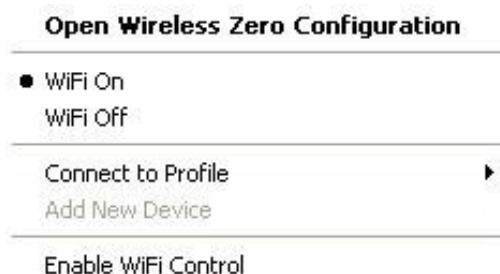
Right-click the status icon to display the menu options.

If the WiFi connection utility is managing your WiFi connections, then the following menu options appear.




Name	Description
Configure WiFi...	Click to open Intel PROSet/Wireless WiFi and configure your WiFi connections.
WiFi On / WiFi Off	Click to turn on or off the Intel wireless adapter. If you are currently connected to a wireless network and you click WiFi Off, your wireless network connection will be closed.
Connect to Profile	Displays the current profiles in the Profiles list. Click on a profile to connect to it.
Add New Device	This command lets you add a new device (for example, a laptop) using Wi-Fi Protected Setup*. The availability of this command on your computer means that your computer is already configured as a Wi-Fi Protected Setup registrar (using the WiFi connection utility). See Add an New Device .







If Windows Zero Configuration manager is managing your WiFi connections, then the following menu options appear.



Name	Description
Open Wireless Zero Configuration	Click to open Windows Zero Configuration, the wireless connections manager provided by Windows*. Only available if you have selected Use Windows to manage WiFi at the Intel(R) PROSet/Wireless WiFi Connection Utility, Advanced menu.
Configure WiFi	Click to open Intel(R) PROSet/Wireless WiFi Connection Utility and configure your WiFi connections.
WiFi On / WiFi Off	Click to turn on or off the Intel wireless adapter. If you are currently connected to a wireless network and you click WiFi Off, your wireless network connection will be closed.
Connect to Profile	Displays the current profiles in the Profiles list. Click on a profile to connect to it.
Add New Device	This command lets you add a new device (for example, a laptop) using Wi-Fi Protected Setup*. The availability of this command on your computer means that your computer is already configured as a Wi-Fi Protected Setup registrar (using the WiFi connection utility). See Add an New Device .
Enable WiFi Control	Click to assign management of your WiFi wireless connections to the WiFi connection utility. Wireless Zero Configuration manager will no longer manage your connections. If you want to assign management of your WiFi wireless connections back to Wireless Zero Configuration manager, open the Intel(R) PROSet/Wireless WiFi software, and under the Advanced menu, click Use Windows to Manage WiFi .

Taskbar Icons

The Taskbar icon  provides visual indication of the current wireless connection state. The connection status icon is located on the lower right corner of your Windows desktop. The Taskbar icon can be set to display or be hidden in the Tools Menu [Application Settings](#).

Name	Description
 2:48 PM	WiFi Off : The wireless adapter is off. The wireless device does not transmit or receive while it is off. Click WiFi On to enable the adapter. The icon is white and static.
 2:48 PM	Searching for wireless networks : The wireless adapter searches for any available wireless networks. The icon is white with animation.
 2:48 PM	No wireless networks found : There are no available wireless networks found. Intel PROSet/Wireless WiFi periodically scans for available networks. If you want to force a scan, double-click the icon to launch Intel PROSet/Wireless and click Refresh . The icon is red.
 2:48 PM	Wireless network found : An available wireless network is found. Double-click the icon to display the Wireless Networks list. Select the network. Click Connect . The icon is yellow.
 2:48 PM	Authentication failed : Unable to authenticate with wireless network. The icon is green with a yellow warning triangle.
 2:48 PM	Connecting to a wireless network : Flashes while an IP address is being obtained or if an error occurs.



Connected to a wireless network: Connected to a wireless network. Tool tip displays network name, speed, signal quality and IP address. The icon is green with waves that reflect signal quality. The more waves, the better the signal quality.

Tool Tips and Desktop Alerts

The Tool Tips and Desktop Alerts provide feedback and interaction. To display Tool Tips, move your mouse pointer over the icon. Desktop alerts are displayed when your wireless network changes state. For example, if you are out of range of any wireless networks, a desktop alert is displayed when you come into range.

Select **Show Information Notifications** in the [Application Settings](#) to enable desktop alerts.

Tool Tips

Tool tips display when the mouse pointer rolls over the icon. The tool tips display text for each of the connection states.



Desktop Alerts

When user action is required, a desktop alert displays. If you click the alert, then an appropriate action is taken. For example when wireless networks are found, the following alert displays:



Action: Click the desktop alert to connect to a network in the WiFi Networks list.

Once connected, the alert displays the wireless network that you are connected to, the speed of the connection, signal quality and IP address.





Desktop alerts are also used to indicate if there is a connection problem. Click the alert to open the [Intel Wireless Troubleshooter](#).



Start Intel PROSet/Wireless WiFi from Taskbar

To start Intel(R) PROSet/Wireless WiFi software:

- Double-click the Taskbar icon  located in the lower right corner of your Windows desktop, or
- Right-click the Taskbar icon , and select **Configure WiFi** .






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WiFi Networks list

The WiFi Networks list displays a list of wireless networks within range of the adapter. To update the list, click **Refresh** to rescan for wireless networks. Click **Profile** to launch the Profile Wizard and create a profile for the selected wireless network.

Name	Description
Wireless Networks ()	The number within the parentheses designates the number of wireless network found within range of your wireless network adapter.
	The signal strength of the wireless network access point or computer (Device to Device [ad hoc] mode). The signal strength icon bars indicate that the wireless network or computer is available for connection but is still not associated with an access point or computer (Device to Device [ad hoc] mode).
Network Name	<p>Network Name (SSID): The name of the network that the adapter is connected to. The Network Name (SSID) must be the same as the SSID of the access point.</p> <p>If an access point does not broadcast its network name (SSID) or the wireless adapter receives a hidden network name from a stealth access point, <SSID not broadcast> is displayed in the WiFi Networks list. To associate with an <SSID not broadcast> network entry, a new profile must be created before connection. After connection, the <SSID not broadcast> is still displayed in the WiFi Networks list. The associated SSID profile is viewed in the Profiles list.</p>
Status	Notification that the adapter is connecting to the wireless network. Once connected, the status is changed to Connected .
	Profiles: Identifies a network in the WiFi Networks list that is connected and has a profile in the profiles list.
	The wireless network uses Network (Infrastructure) mode.
	The wireless network uses Device to Device (ad hoc) mode.
	The wireless network uses Security encryption.

	<p>The band frequency being used by the wireless network (802.11a, 802.11b, 802.11g, or 802.11n).</p>
	<p>The wireless network is on the Exclude list or the profile is configured for Manual connection. When set to Manual in the profile, connection to network or an access point is not automatic. Double-click on the network in the list to connect to it.</p>
<p>Connect (Disconnect)</p>	<p>Click to connect to a wireless network. Once connected, the button changes to Disconnect.</p> <p>Lists the network names of the available networks and profiles. The network status icons indicate the current connection status.</p> <ul style="list-style-type: none"> • If the selected network has 802.1X authentication, the Profile Wizard General Settings opens. If the network has no WEP security (Open), WEP 64-bit or 128-bit encryption, or pre-shared key (PSK), click Connect. • If a PSK or WEP password are required, you are prompted to enter this information prior to connection. If you need to add security settings, click Advanced to access the Create Wireless Profile General Settings. See First Time Connection for more information.
<p>Properties</p>	<p>Provides detailed information about the connected network and its access points. See Network Properties for information.</p>
<p>Refresh</p>	<p>Refreshes the list of available networks. If any new networks are available within range of the adapter, the list is updated to show the new network name.</p>
<p>WiFi On / WiFi Off</p>	<p>Switch the WiFi radio off and on. See Turn WiFi On or Off for more information.</p>
<p>Close</p>	<p>Closes the Intel(R) PROSet/Wireless WiFi Connection Utility main window.</p>
<p>Help?</p>	<p>Provides help information for this page.</p>










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Connection Status Icons

The connection status icons indicate the current connection status of your wireless adapter. The connection status icon displays in the Intel(R) PROSet/Wireless WiFi Connection Utility main window. The Taskbar icon also indicates the current connection status. See [Taskbar Icons](#) for more information.

Icon	Description
	Wireless turned off : The wireless adapter radio is turned off. Click the WiFi On button to turn on the radio.
	Indicates connection problems including authentication failures.
	Searching for wireless networks : The wireless adapter is scanning for any available wireless networks. Animated Icons: 
	No wireless networks found : The adapter does not find any available wireless networks.
	Wireless network found : An available wireless network is found. You can choose to connect to available networks displayed in the WiFi Networks list .
	Connecting to a wireless network . You are connecting to a wireless network. The crescent shaped curves switch between green and white until an IP Address is obtained or if a connection error occurs.
	Connected to a wireless network : You are connected to a wireless network. The network name, speed, signal quality, and IP address display the current connection status. Click the Details button to display details of the current network connection.
Network Name	Name (Profile Name or SSID) : The name of the network that the adapter is connected to. The Name column displays the SSID or the Profile name if a profile for the network is available.
Signal Quality 	The signal strength icon bars indicate the quality of the transmit and receive signals between your wireless adapter and the access point or computer in Device to Device (ad hoc) mode. The number of vertical green bars indicates the strength of the transmit and receive signals. NOTE: The signal strength is displayed for the closest AP for networks that contains multiple APs. The signal strength ranges from excellent to out of range. The following factors affect signal strength: <ul style="list-style-type: none"> • Signal quality decreases with distance and is affected by metal and concrete barriers. • Metal objects can reflect signals and cause interference. • Other electrical devices can cause interference.

Properties	Provides adapter connection status information. See Network Properties for information.
WiFi On/ WiFi Off	Switch the radio off and on. See Turn Radio On or Off for more information.
Help?	Provides help information for this page.
Close	Closes the WiFi connection utility main window.

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Network Properties

[Network Properties](#)
[Manage Exclusions](#)

Click Properties at the Intel(R) PROSet/Wireless WiFi Connection Utility main window to see detailed information about the selected network and its access points. This screen shows you information about this network, information about the access points, and also lets you open up the Exclude List Management screen. On the [Exclude List](#) Management screen, you can add profiles to be excluded from automatic connection.

Network Properties details

Name	Description
Network Name	Displays the wireless network name.
Band	Current band and frequency being used. Displays Out of Range if no band and frequency are displayed. The following bands are listed: <ul style="list-style-type: none">• 802.11a• 802.11b• 802.11g• 802.11n

Operation Mode

Displays the current mode:

- Network (Infrastructure)

A wireless network centered around an access point. In this environment, the access point not only provides communication with the wired network, but also mediates wireless network traffic in the immediate neighborhood.

- Device to Device (ad hoc)

A communication configuration in which every computer has the same capabilities, and any computer can initiate a communication session. Also known as a peer-to-peer network or a computer-to-computer network.

Authentication Level

Displays the current authentication security mode for the network being used.

The following network authentication levels are listed:

- Open
- Shared
- WPA-Enterprise
- WPA2-Enterprise
- WPA-Personal
- WPA2-Personal


Displays the authentication used by the currently used network. See to [Security Overview](#) for more information.

Data Encryption

The following Data Encryption settings are listed:

- None
- WEP
- TKIP
- CKIP
- AES-CCMP

See to [Security Overview](#) for more information.

<p>Access Points in this Network <0-50></p>	<ul style="list-style-type: none"> • Signal Strength: The signal strength icon bars indicate the strength of the transmit and receive signals between your wireless adapter and the nearest access point.  <ul style="list-style-type: none"> • Displays one of the following icons: Indicates the band being used (802.11a, 802.11b, 802.11g or 802.11n). • Channel: Displays the current transmit and receive channel being used for a particular wireless network. • BSSID (Infrastructure operating mode): Displays the twelve-digit MAC address of the access point of the selected network.
<p>Manage Exclusions</p>	<p>See Manage Exclusions for more information. If network exclusion is enabled (see Application Settings), then the Network Properties also indicates if the network is excluded from automatic connection.</p>
<p>Close</p>	<p>Closes the Network Properties.</p>
<p>Help?</p>	<p>Provides help information for this page.</p>

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Network Connection Details

When you are connected to a network, click the **Details** button on the Intel(R) PROSet/Wireless WiFi Connection Utility main window to display the Connection Details.



Connection Details Description

Name	Description
Profile Name	Name of the profile.
Network Name	Network Name (SSID) of the current connection.

Signal Quality

A radio frequency (RF) signal can be assessed by two components:

- signal strength (quantity)
- signal quality

The quality of the signal is determined by a combination of factors. Primarily it is composed of signal strength and the ratio of the RF noise present. RF noise occurs both naturally and artificially by electrical equipment. If the amount of the RF noise is high, or the signal strength is low, it results in a lower signal to noise ratio, which causes poorer signal quality. With a low signal to noise ratio, it is difficult for the radio receiver to discern the data information contained in the signal from the noise itself.

Signal Strength



The signal strength icon bars indicate the quality of the transmit and receive signals between your wireless adapter and the access point or computer in Device to Device (ad hoc) mode. The number of vertical green bars indicates the strength of the transmit and receive signals.

NOTE: The signal strength is displayed for the closest AP for networks that contains multiple APs.

The signal strength ranges from excellent to out of range. The following factors affect signal strength:

- Signal quality decreases with distance and is affected by metal and concrete barriers.
- Metal objects can reflect signals and cause interference.
- Other electrical devices can cause interference.

IP Address

IPv4 Address: Internet Protocol (IP) address for the current connection.

IPv6 Address: The next generation IP address is backward compatible and is designed to fix data security problems with IPv4. IPv6 increases the address space from 32 to 128 bits, providing for an unlimited number of networks and systems. It also supports quality of service (QoS) parameters for real-time audio and video.

Adapter MAC Address	Media Access Control (MAC) address for the wireless adapter.
Band	Indicates the wireless band of the current connection. <ul style="list-style-type: none"> • 802.11a • 802.11b • 802.11g • 802.11n
Number of Antennas in Use	This indicates the number of antennas currently in use. This number depends on the band(s) that the various networks are currently using, the transmit/receive modes in use on those bands, the signal strength, and the capabilities of the access point(s). The user has no direct control over this parameter.
Supported Data Rates	Rates at which the wireless adapter can send and receive data. Displays the speed in Mbps for the frequency being used. <ul style="list-style-type: none"> • 802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 • 802.11b: 1, 2, 5.5, and 11 • 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 • 802.11n: 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
Radio Frequency	Displays the frequency of the current wireless connection. <ul style="list-style-type: none"> • 802.11a: 5.15 GHz to 5.85 GHz • 802.11b/g: 2.400 GHz to 2.4835 GHz (dependent on country) • 802.11n: 2.400 GHz to 5.00 GHz
Channel Number	Displays the transmit and receive channel.
Network Authentication	Displays Open, Shared, WPA*-Personal, WPA2*-Personal, WPA-Enterprise and WPA2-Enterprise. Displays the authentication used by the currently used profile. See Security Overview for more information.
Data Encryption	Displays None, WEP, TKIP or AES-CCMP. See Security Overview for more information.

802.1X Authentication Type	Displays None, EAP-SIM, TLS, TTLS, PEAP, LEAP, or EAP-FAST. See Security Overview for more information.
802.1X Authentication Protocol	Displays None, PAP , GTC , CHAP , MS-CHAP , MS-CHAP-V2 or TLS . See Security Overview for more information.
CCX Version	Version of the Cisco Compatible Extensions on this wireless connection.
Current Tx Power	The power level at which the wireless adapter is currently transmitting, in milliwatts.
Supported Power Levels	These are the power levels that the wireless adapter is capable of transmitting. This information is presented in a range and is dependent on the adapter.
Access Point MAC Address	The Media Access Control (MAC) address for the associated access point.
Mandatory Access Point	Displays None, if not enabled. If enabled, from the Mandatory Access Point setting , the access point MAC address is displayed. This option directs the wireless adapter to connect to an access point that uses a specific MAC address (48-bit 12 hexadecimal digits, for example, 00:06:25:0E:9D:84).
AP Name	The name of the access point. This name is set by the person configuring the access point and is typically limited to 32 characters. NOTE: This parameter is only visible when connected to a Cisco Systems access point.
AP IPV4/IPV6 Address	The Interconnect Protocol address (IPV4 or IPV6) for the access point. IPV6 is the next generation IP address and is backward compatible and is designed to fix data security problems with IPv4. IPv6 increases the address space from 32 to 128 bits, providing for an unlimited number of networks and systems. It also supports quality of service (QoS) parameters for real-time audio and video. NOTE: This parameter is only visible when connected to a Cisco Systems access point.

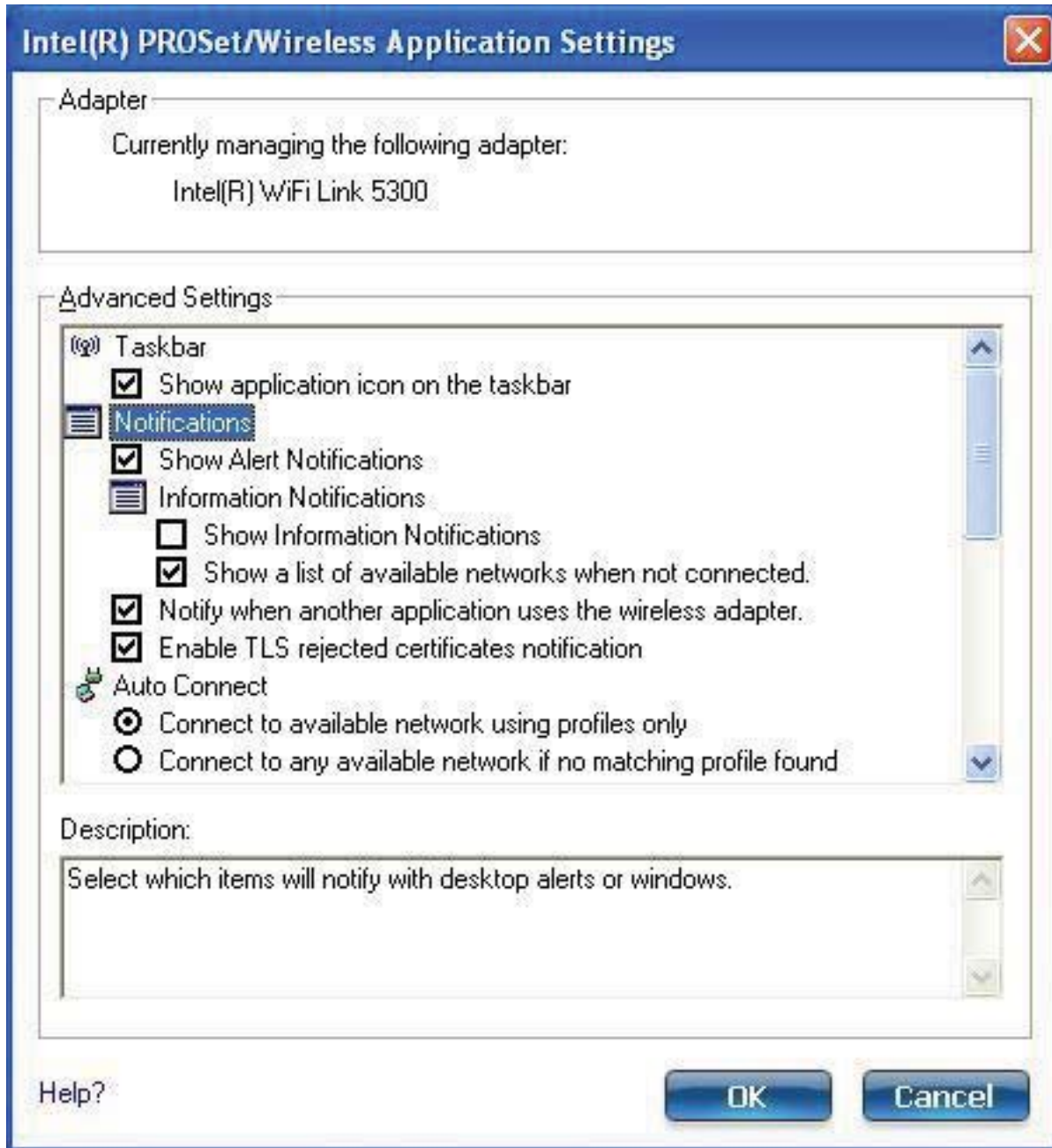
AP Signal Strength	<p>The strength of the signal received from the access point, at the adapter. This value is given in milliwatts (mW) and may actually be in the picowatts range. This value varies, based on the distance between the AP and the adapter, obstacles that may interfere with the signal, and the power level at which the AP is transmitting.</p> <p>NOTE: This parameter is only visible when connected to a Cisco Systems access point.</p>
AP Noise Level	<p>The radio frequency (RF) noise level present in the environment that will tend to interfere with the signal from the access point. RF noise comes from natural and electrical sources.</p> <p>NOTE: This parameter is only visible when connected to a Cisco Systems access point.</p>
Repair	<p>Renews the IP Address. If you have trouble accessing the network, verify if the IP address is valid. If it is 0.0.0.0 or 169.x.x.x then it is probably not valid. If your network is set up for automatic network address assignment, then click Repair and request a new IP address.</p>
Close	<p>Closes the page.</p>
Help?	<p>Provides help information for this page.</p>

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Application Settings (Tools menu)



The Application Settings control the behavior of the Intel(R) PROSet/Wireless WiFi Connection Utility.

Application Settings Description

Name	Description
Adapter	<p>Lists the network adapter. It may be any one of the following:</p> <ul style="list-style-type: none"> • Intel(R) WiMAX/WiFi Link 5350 • Intel(R) WiMAX/WiFi Link 5150 • Intel(R) WiFi Link 5300 • Intel(R) WiFi Link 5100 • Intel(R) Wireless WiFi Link 4965AGN • Intel(R) Wireless WiFi Link 4965AG_ • Intel(R) PRO/Wireless 3945ABG Network Connection • Intel(R) PRO/Wireless 2915ABG Network Connection • Intel(R) PRO/Wireless 2200BG Network Connection

Advanced Settings: The following settings control how the WiFi connection utility behaves and displays information.

Taskbar	<p>Show application icon on the taskbar: Select to display the Taskbar status icon. This icon resides on the Windows Taskbar (Notification Area). This icon provides the status of your wireless connection. Clear to not display the Taskbar status icon.</p> <p>The Taskbar Status Icon provides several functions:</p> <ul style="list-style-type: none"> • Visual feedback for the connection state and wireless activity of your wireless network. The icon changes color and animation for different wireless activity. See Taskbar Icons for more information. • Menu: A menu is displayed when you right-click the icon. From this menu you perform tasks such as turn the radio on or off or launch the WiFi connection utility. See: Taskbar Menu Options for more information. • Tool tips and desktop alerts. See: Tool Tips and Desktop Alerts for more information.
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Notifications

Show Alert Notifications: Select to display desktop alerts next to the taskbar icon. When your action is required, a message displays. Only events of high importance trigger a desktop alert. If the desktop alert is selected, then the appropriate action is taken. Clear to not display desktop alerts. See [Tool Tips and Desktop Alerts](#) for more information.

Select one of the following options:

Information Notifications: These desktop alerts are of lower importance. They do not require your interaction but can greatly improve the wireless experience.

- **Show Information Notifications:** Selected by default. All informational desktop alerts are displayed next to the taskbar status icon. These desktop alerts improve your wireless experience with notifications when available wireless networks are within range. They also inform you when a wireless connection has been made or has been lost. See [Tool Tips and Desktop Alerts](#) for more information.
- **Show a list of available networks when not connected:** When **Show Information Notifications** is cleared, you can select this item. When the desktop alerts are disabled, this option lets you continue to be notified of available networks when the wireless adapter is not connected.

Notify when another application uses the wireless adapter: When selected, a message is displayed when other applications are trying to manage your wireless adapter. This is helpful if you use software provided by a hotspot location (coffee shop, airport terminal). To take advantage of the WiFi connection utility features, disable this software when you leave the hotspot.

Enable TLS rejected certificates notification: Select if you want a warning issued when a PEAP-TLS certificate is rejected by the authentication server. See [Enterprise Security](#) and [Set up a Client with TLS Network Authentication](#) for more information.

<p>Auto Connect</p>	<p>Connect to available network using profiles only: (Default) Connect the wireless adapter to an available network with a matching profile from the Profiles List. If no matching profile is found, you are notified (see Notifications). The wireless device remains disconnected until a matching profile is found or you configure a new matching profile.</p> <p>Connect to any available network if no matching profile found: Select to connect to a network automatically if you have not configured a profile and are at a location that has an open, unsecured wireless network. NOTE: Open networks have no security. You would need to provide your own security for this wireless connection. One way to secure an open wireless connection is with Virtual Private Networking (VPN) software.</p> <p>Connect to any network based on profiles only (Cisco mode): Select to try every profile in preferred order. This signifies that you are in the vicinity of an access point which has more than one SSID but only advertises one.</p> <p>Do not automatically connect. User will connect manually: Select to turn off automatic connection.</p>
<p>Manage Exclusions</p>	<p>Enable automatic exclude list feature: Select to enable the automatic exclude list feature. This feature provides a way to exclude access points from automatic connection. See Manage Exclusions for more information.</p> <p>Enable manual exclude list feature: Select to enable the manual exclude list feature. This feature provides a way to exclude networks from automatic connection. See Manage Exclusions for more information.</p>
<p>WiFi Networks list</p>	<p>Show column sort headers: Select to display the column names in the WiFi Networks list. Click a column header to sort the column in either ascending or descending order.</p>