



Wireless Product Development

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## **Intel® PRO/Wireless 2100A LAN MiniPCI Adapter**

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### **OEM Regulatory and Safety Notice Guidelines**

#### **NOTE**

Due to the evolving state of regulations and standards in the wireless LAN field (IEEE 802.11 and similar), 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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## Revision History

| Date     | Changes  |
|----------|--|
| 02/10/03 | Created dual-band document to meet requirements for compliance submittal.        |
| 04/30/03 | Updated with country list and other elements from 2100 document for review draft |
| 05/05/03 | Input feedback from regulatory reviews   |
| 05/20/03 | Final update draft incorporating input received to date of release.              |
| 06/30/03 | Addition of UL warning and transmit power control update.                        |
| 07/09/03 | Updated 802.11a countries under transmit power control                           |
| 07/11/03 | Updated EU section with DoC and notice to include DoC in OEM user documentation. |



## Intel® PRO/Wireless 2100A LAN MiniPCI Adapter OEM Regulatory and Safety Notice Guidelines Contents of This Document

The document is organized into the following sections:

- Purpose and Scope of This Document**
- General Information for All OEMs and Integrators**
- End-User Documentation Requirements by Country**
- List of Countries in Alphabetical Order**

### ***Purpose and Scope of This Document***

This document is provided for the information of original equipment manufacturers (OEMs), system integrators, and others who manufacture and distribute systems or products that incorporate a version of the following Intel device module: Intel® PRO/Wireless 2100A LAN MiniPCI Adapter.

The purpose of the document is to provide guidance to OEMs and integrators with respect to country-specific safety and regulatory information that must be communicated to the end user by the OEM/integrator.

As new approval information becomes available over the course of the worldwide approvals process, additional guidelines will be developed as required.

### ***Limitations on the Use of the Information in This Document***

**Caution:** This document **should not be distributed directly to end users** of the Intel products of reference. The format and final content of the regulatory information supplied to the end user is the responsibility of the OEM or integrator, and not of Intel. **Under no circumstances** should information be provided to the end user on how to remove or install the device.

**Note:** The information provided in this document is furnished by Intel as a convenience to its customer base and for informational purposes only. Intel does not make any representations or warranties whatsoever regarding the accuracy or reliability of such information, and Intel assumes no responsibility or liability for any errors or inaccuracies that may appear in the information. You are advised to consult with the necessary authorities to ascertain all applicable regulations and guidelines.

**Note:** Additional approval information not covered here is the sole responsibility of the importer or distributor.

### ***Products Covered***

The information in this document applies to the following products:

#### **Dual-band (802.11a and 802.11b) wireless LAN adapters**

- Intel® PRO/Wireless 2100A LAN 3B MiniPCI Adapter (model WM3B2100A)

#### ***Note on Stock Keeping Units (SKUs) and Local Restrictions on 802.11a and 802.11b Radio Usage***

Due to the fact that the frequencies used by 802.11a and 802.11b wireless LAN devices may not yet be harmonized in all countries, 802.11a and 802.11b products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. Local regulatory



variations are accommodated as part of the use of different stock keeping units (SKUs) for different regions.

As suppliers of these products, OEMs and integrators are responsible for informing users of the requirements to use the products only in the countries for which they were intended and in accordance with the power, frequency and channel configurations permissible in the country of use. Information for the end user on regional and country regulatory restrictions is provided in this document. It is the responsibility of the OEM or integrator to provide this information to the end user, as appropriate for the region or country in which the product is to be sold.

### **Transmit Power Restrictions**

Transmit power control information to be provided to the end user is provided here only for the “SKU2” version of the Intel® PRO/Wireless 2100A LAN MiniPCI Adapter, intended for use in the European area (under EU and CEPT regulatory domains). See the section entitled **Transmit Power Restrictions** in the European Union section of the alphabetical country listing. Guidelines for other SKUs and regions may be obtained from your Intel representative.

### **General Information for All 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.**  
**This device cannot be co-located with any other transmitter.**

Please refer to the full Grant of Equipment document for other restrictions.

#### **This device is intended only for OEM integrators under the following conditions:**

**Note:** Any U-NII device that operates in the 5.15-5.25 GHz band shall use a transmitting antenna that is an integral part of the device.

The antenna must be installed such that 20 cm distance is maintained between the antenna and users. For laptop installations, the antenna must be installed to ensure that the proper spacing is maintained in the event the users place the device in their lap during use (for example, antennas must be placed in the upper portion of the LCD panel only, to ensure 20 cm will be maintained if the user places the device in their lap for use) and

The transmitter module may not be co-located with any other transmitter or antenna.

As long as the two conditions above are met, further **transmitter** testing will not be required. However, the OEM integrator is still responsible for testing their end product to meet any additional compliance requirements derived from installation of this module (for example, digital device emissions, PC peripheral requirements, etc.).

**IMPORTANT NOTE pertaining to FCC authorizations:** In the event that the conditions stated above *cannot be met* (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID *cannot* be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

#### **End Product Labeling and FCC ID**

This transmitter module is authorized only for use in devices where the antenna may be installed such that 20 cm distance may be maintained between the antenna and users (for example access points, routers, wireless ASDL modems, certain laptop configurations, and similar equipment). The final end product must be labeled in a visible area with the following: "Contains TX FCC ID:



XXXXXXXXXXXXXXXXXX," where XXXXXXXXXXXXXXXXXXXX is replaced by the FCC ID on the module being integrated.

**FCC RF Exposure Information That Must Be Included in the User’s Manual**

The manual or documentation for end users must include the following information in a prominent location:

**"IMPORTANT NOTE:** To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

**Additional Information That Must be Provided to OEM Integrators**

**No instructions** are to be provided to the end user on how to remove or install the device.

***End-User Documentation Requirements by Country***

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

The regulatory and safety information provided in this document for each country or region must be published in the documentation supplied in that country or region to the end user of the product or system incorporating an Intel® PRO/Wireless 2100A LAN MiniPCI Adapter, in compliance with local regulations.

The countries covered by this document are listed in the table below. The information for each country is provided in the alphabetical listing that follows the table.

Guidelines are provided for those countries for which information was available at time of publication.

|                |             |                      |
|----------------|-------------|----------------------|
| Argentina      | Japan       | Saudi Arabia         |
| Australia      | Jordan      | Singapore            |
| Azerbaijan     | Kuwait      | South Africa         |
| Bahrain        | Latvia      | Taiwan               |
| Brazil         | Malaysia    | Thailand             |
| Canada         | Malta       | Turkey               |
| Czech Republic | Mexico      | Ukraine              |
| EU (R&TTE)**   | Monaco      | United Arab Emirates |
| Hong Kong      | New Zealand | United States        |
| Hungary        | Oman        | Uruguay              |
| Indonesia      | Poland      | Venezuela            |

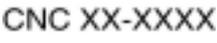
\*\*See list of EU countries in the alphabetical listing under European Union.



## ***List of Countries in Alphabetical Order***

### ***Argentina***

**Local language translations:** All documentation must be in Spanish, with the exception of the technical manual, which may be in English.

CNC Approval Logo: 

CNC logo may be put on box, label, or in manual and is held by Intel Corporation.

### ***Australia***

No special documentation requirements.

### ***Azerbaijan***

Requirements not available for this document version.

### ***Bahrain***

No special documentation requirements.

### ***Brazil***

**Local language translations:** All documentation must be in Brazilian Portuguese with the exception of technical manuals which may be in English.

**Warranty requirement in the manual:** Along with the user documentation the importer/distributor must provide a statement that warranty services are included in the responsibilities of the distributor representative.

**Labeling - ANATEL Approval Logo and Barcode Identifier:** Since the ANATEL label does not fit on the card, it must be placed on the box, published in the user guide supplied to the end user, or affixed to the product by some alternate method. If an alternate method is used, ANATEL must approve it prior to the release of a commercialization agreement. ANATEL label to be supplied.

### ***Canada (see also United States)***

#### **Canada Radio Frequency Interference Requirements (Publish to End User)**

The device is certified to the requirements of the RSS-210 for LELAN devices. The use of this device in a system operating either partially or completely outdoors may require the user to obtain a license for the system according to the Canadian regulations. For further information, contact your local Industry Canada office.

This Class B digital apparatus complies with Canadian ICES-003, Issue 2, and RSS-210, Issue 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.”

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



« 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. »

### ***Czech Republic***

Czech Declaration of conformity must be published in the documentation.

The user manual must be translated into the Czech language.

CCZ mark must be published in the manual.

### ***European Union (R&TTE)***

EU member states as of April 2003 are: Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland, Sweden, and the United Kingdom. These norms also apply to Iceland, Norway and Switzerland.

## **European Regulatory and Compliance Information**

### **European Union CE Marking and Compliance Notices**

Products (including packaging and documentation) intended for sale within the European Union are marked with the Conformité Européene (CE) Marking, which indicates compliance with the applicable Directives and European standards and amendments identified below. This equipment also carries the Class 2 identifier.

### **Required Publication of European Union Declaration of Conformity (DoC)**

To be fully compliant with the essential requirements of the R&TTE Directive 1999/5/EC, a copy of the Declaration of Conformity for the Intel product must be shipped with the Intel product. A graphic copy of the DoC is included on the following page. The DoC copy should be included with or in the user documentation provided for the notebook computer or other device containing the Intel product.

**Warning:** See the special 802.11a and 802.11b restrictions and guidelines for specific EU countries, or regions within countries, under the heading **European Economic Area Restrictions** later in this section.



### Declaration of Conformity

We, INTEL CORPORATION SA ; Branch Office; Veldkant 31; 2550 Kontich; Belgium  
Declare that the INTEL® PRO/Wireless 2100A LAN Mini PCI Type 3B Adapter  
Modelname: WM3B2100A is in conformance with the essential requirements of the European  
Council Directive:

|                   |   |
|-------------------|---|
| 1999/5/EC (R&TTE) | Radio and Telecommunications Terminal Equipment Directive<br>(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 (0336)       |

This declaration is based upon compliance to the following standards:

|  |   |
|--|---|
| EN 60950 (1992 2 <sup>nd</sup> Edition with amendments 1, 2, 3, 4) | Safety Information Technology Equipment, including Electrical Business Equipment.   |
| EN 301 489-1 v1.4.1, Aug. 2002<br>EN 301 489-17 v1.2.1, Aug. 2002  | Electromagnetic compatibility and Radio spectrum Matters (ERM);<br>Electromagnetic Compatibility (EMC) standard for radio equipment and services: Part 1: Common technical requirements<br>Part 17: Specific conditions for Wideband Data and Hiperlan equipment  |
| EN 300 328, v1.4.1 Jun 2002  | Electromagnetic compatibility and Radio Spectrum Matters (ERM);<br>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 |
| Draft EN 301 893 v1.2.1, Jan.2001                                  | Broadband Radio Access Networks (BRAN); HIPERLAN Type2;<br>Harmonized EN covering essential requirements of Article 3.2 of the R&TTE Directive  |
| IDA-TS-585, Following FCC OET Bulletin 65 Supplement C Guidelines  | Specific Absorption Rate (SAR) Evaluating radio equipment for human exposure to radiofrequency electromagnetic fields   |

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

Date: April 28th, 2003

Vincent Colin,  
Worldwide Approval Manager



## Translated Statements of EU Compliance (to accompany published DoC)

[English]

This product follows the provisions of the European Directive 1999/5/EC.

[Danish]

Dette produkt er i overensstemmelse med det europæiske direktiv 1999/5/EC

[Dutch]

Dit product is in navolging van de bepalingen van Europees Directief 1999/5/EC.

[Finnish]

Tämä tuote noudattaa EU-direktiivin 1999/5/EC määräyksiä.

[French]

Ce produit est conforme aux exigences de la Directive Européenne 1999/5/EC.

[German]

Dieses Produkt entspricht den Bestimmungen der Europäischen Richtlinie 1999/5/EC

[Greek]

Το προϊόν αυτό πληροί τις προβλέψεις της Ευρωπαϊκής Οδηγίας 1999/5/EC.

[Icelandic]

Þessi vara stenst reglugerð Evrópska Efnahags Bandalagsins númer 1999/5/EC

[Italian]

Questo prodotto è conforme alla Direttiva Europea 1999/5/EC.

[Norwegian]

Dette produktet er i henhold til bestemmelsene i det europeiske direktivet 1999/5/EC.

[Portuguese]

Este produto cumpre com as normas da Diretiva Europeia 1999/5/EC.

[Spanish]

Este producto cumple con las normas del Directivo Europeo 1999/5/EC.

[Swedish]

Denna produkt har tillverkats i enlighet med EG-direktiv 1999/5/EC.

## European Economic Area Restrictions

### End-User Notification of Local Restriction of 802.11a and 802.11b Radio Usage

**Note to OEM or integrator:** The following statements on local restrictions must be published in all end-user documentation provided with the system or product incorporating dual-band (802.11a and 802.11b) Intel PRO/Wireless 2100A LAN MiniPCI Adapter products.

### Note on Local Restrictions on 802.11a and 802.11b Radio Usage

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

The European variant is intended for use throughout the European Economic Area. However, authorization for use is restricted as follows:

## Permissible Frequencies

### 802.11b Permissible Frequencies

For all EU members except France, the allowed frequencies for 802.11b are 2400-2483.5 Mhz. See additional restrictions below for France under the heading Additional 802.11a and 802.11b Restrictions.

### 802.11a Permissible Frequencies

Intel PRO/Wireless 2100A LAN MiniPCI Adapters in 5 GHz mode support passive scanning for selection of channels. This means that the adapter obtains its channel settings from the access point to which it is connected. These values cannot be set on the adapter itself. In order to comply with local regulations, adapters must only be used with access points configured for the legal channels in the country of use.

| Country             | Permissible frequencies |
|---------------------|-------------------------|
| Austria             | 5.15 - 5.25 GHz         |
| Belgium             | 5.15 – 5.35 GHz         |
| Denmark             | 5.15 - 5.25 GHz         |
| Finland             | 5.15 – 5.35 GHz         |
| France              | 5.15 – 5.25 GHz         |
| Germany             | 5.15 – 5.25 GHz         |
| Iceland             | 5.15 – 5.25 GHz         |
| Ireland             | 5.15 – 5.35 GHz         |
| Italy               | 5.15 – 5.25 GHz         |
| Luxembourg          | 5.15 – 5.35 GHz         |
| Netherlands         | 5.15 – 5.25 GHz         |
| Norway              | 5.15 – 5.25 GHz         |
| Portugal            | 5.15 – 5.25 GHz         |
| Sweden <sup>+</sup> | 5.15 –5.25 GHz          |
| Switzerland         | 5.15 – 5.25 GHz         |
| United Kingdom      | 5.15 – 5.35 GHz         |

<sup>+</sup>Subject to verification.



## Transmit Power Restrictions

### 802.11b Transmit Power

European standards dictate maximum radiated transmit power of 100 mW equivalent isotropic radiated power (EIRP) and the frequency range 2400 – 2483.5 MHz.

### 802.11a Transmit Power

#### **Note on Stock Keeping Units (SKUs) and Local Restrictions on 802.11a and 802.11b Radio Usage**

Local regulatory variations are accommodated by Intel as part of its use of different stock keeping units (SKUs) for different regions.

End user information is provided here for the “SKU 2” version of the Intel® PRO/Wireless 2100A LAN MiniPCI Adapter intended for use in the European area (under EU and CEPT regulatory domains).

Guidelines for other SKUs and regions may be obtained from your Intel representative.

#### **Transmit Power Control (TPC) for SKU 2**

#### **Information for the OEMs and integrators**

The “User Instructions” below must be published in OEM-furnished user documentation for the SKU 2 version of the Intel® PRO/Wireless 2100A MiniPCI Adapter. The “Technical Background” information that precedes the User Instructions is **not required** for the end user but may be published to the end user at the discretion of the OEM or integrator.

The SKU 2 version of the Intel® PRO/Wireless 2100A LAN MiniPCI Adapter is defined as follows:

#### **Definition of SKU 2**

- Channels 36, 40, 44, 48 (5.15-5.25 GHz) – active scan
- Channels 52, 56, 60, 64 (5.25-5.35 GHz) – passive scan
- Meets R&TTE regulations for maximum 50 mW equivalent isotropic radiated power (EIRP)
- Intel has implemented a **transmit power control interface** as part of its Intel® PROSet software. End-user instructions are provided in this document.
- Intel will provide an application programming interface (API) to OEM customers who wish to develop their own version of the TPC feature.

#### **Countries allowing use of the SKU 2 configuration**

- Australia, Austria, Bahrain, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Hong Kong, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Saudi Arabia, Singapore, South Africa, Sweden, Switzerland, Turkey, United Kingdom, USA.

#### **Information To Be Provided by the OEM to the End User**

##### **Technical Background (Publication to OEM end user is optional)**

European and other countries around the world are concerned that 5 GHz (802.11a) wireless LANs will interfere with satellite and radar systems operating in similar ranges.

The European Conference of Postal and Telecommunications Administrations (known by the acronym CEPT, from its French name) published requirements for 5 GHz wireless LANs. Frequencies to be used were 5.15 GHz to 5.35 GHz and 5.47 to 5.725 GHz. To mitigate interference with radars and other systems, the following features were added:



- Transmit power control (TPC) allows for a mitigation factor of at least 3 dB on the aggregate power from a large number of devices, which requires each device to be capable of operating at least 6 dB below the maximum allowed in the same band.
- Dynamic frequency selection (DFS) ensures a uniform spreading across the available spectrum, and allows the detection and avoidance of channels with conflicting radar signals.

As a result of these requirements and especially DFS, which is still under standardization, 802.11a wireless LAN products would have been excluded from use in Europe.

However, an interim solution was agreed upon by the community of suppliers in conjunction with regulatory bodies that will allow 802.11a products to be used in Europe. The frequencies permitted are 5.15 to 5.25 GHz or 5.15 to 5.35 GHz (depending on regulations in each country). DFS is not required. The allowable maximum power output is dependent on frequency band spreading and on whether transmit power control is implemented or not:

The following table summarizes the interim requirements:

**Table 1: Maximum Allowable Equivalent Isotropic Radiated Power (EIRP)**

| Frequency band   | With TPC  | Without TPC |
|------------------|-----------|-------------|
| 5.15 to 5.35 GHz | Max 60 mW | Max 30 mW   |

**Notes:**

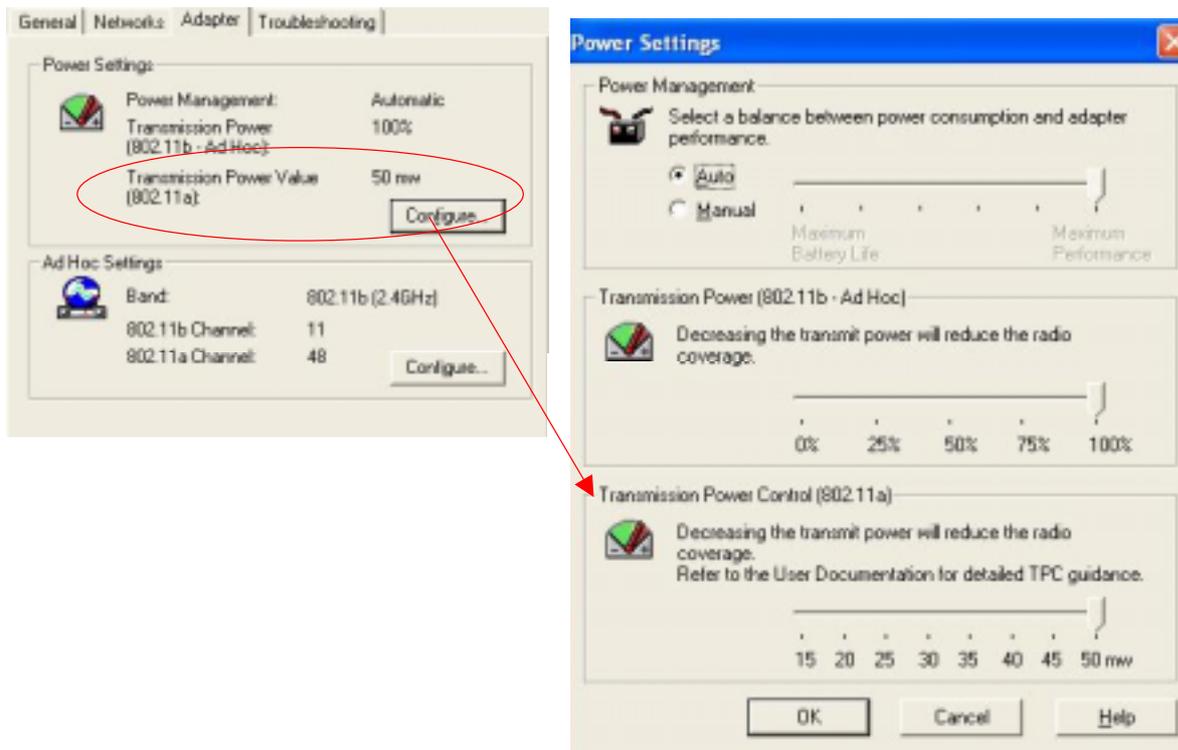
1. Values expressed are EIRP (equivalent isotropic radiated power), which means that the power measurement includes antenna gain and cable loss. TPC provides for a greater maximum power value, which allows greater coverage.
2. Max allowable power with TPC varies by country. The table above represents a summary of the lowest maximum allowable power across all countries targeted with SKU 2.
3. The Intel® PRO/Wireless 2100A LAN MiniPCI Adapter supports a maximum of 50 mW.

### Transmit Power Control User Instructions (Publication to OEM end user is required)

Modifying the transmission power level of your wireless LAN adapter allows you to expand or confine a coverage area in relation to other wireless devices that could be operating nearby. Decreasing the transmit power level will reduce the radio coverage.

#### Setting Transmit Power Using the Intel® PROSet Configuration Utility

1. Start Intel PROSet. In the PROSet interface, click the Adapter tab.
2. In the Power Settings section of the Adapter screen, click Configure.
3. On the Power Settings window, find the Transmission Power Control (802.11a) section.



**Note:** The default transmission power setting is 50 mW, but local regulations in EU and CEPT countries require that the lowest possible power setting be used consistent with acceptable link quality.

The default setting for SKU 2 (Europe SKU) allows use of the Intel adapter in countries where 802.11a is currently allowed, including Australia, Austria, Bahrain, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Hong Kong, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Saudi Arabia, Singapore, South Africa, Sweden, Switzerland, Turkey, United Kingdom, USA.

4. To reduce the amount of output power used, move the power slider bar to a lower value, then check the strength and quality of the wireless link, using the Intel PROSet icon in the system tray or the General tab in Intel PROSet.
5. Modify the power setting and check signal strength repeatedly until you find the lowest power setting value that still yields acceptable link quality.

### Setting Transmit Power Control Using Device Manager

The Intel® PRO/Wireless 2100A LAN MiniPCI Adapter driver provides a GUI for controlling TPC. This support is provided when PROSet is not installed, and is accessed as follows:

1. From your desktop, right-click **My Computer** and click **Properties**.
2. Click the **Hardware** tab.
3. Click the **Device Manager** button and double-click **Network adapters**.
4. Right-click the name of the installed wireless adapter in use, then select the **Advanced** tab.



**Note:** The default transmission power is set in the factory. However, local regulations in EU and CEPT countries require the lowest possible power setting consistent with acceptable link quality.

The default setting for SKU 2 (Europe SKU) allows use of the Intel adapter in countries where 802.11a is currently allowed, including Australia, Austria, Bahrain, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Hong Kong, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Saudi Arabia, Singapore, South Africa, Sweden, Switzerland, Turkey, United Kingdom, USA.

5. To reduce the amount of output power used, uncheck Use Default Value under Value on the Advanced tab and move the power slider bar to a lower value, then check the strength and quality of the wireless link, as follows:
  - Under Windows XP, if Intel PROSet is installed, view signal strength using the Intel PROSet icon in the system tray or the General tab in Intel PROSet.
  - Under Windows 2000, or Windows XP without Intel PROSet installed, right-click My Network Places, select Properties, right-click Wireless Network Connection, select Status.
6. Modify the power setting and check signal strength repeatedly until you find the lowest power setting value that still yields acceptable link quality.



## Additional 802.11a and 802.11b Restrictions

### All EU countries

Use of 802.11a is indoors only.

### France

**Note:** At the time of publication of this document, operation of Intel® PRO/Wireless 2100A LAN MiniPCI Adapters in 802.11b mode was restricted in France to indoor use only and was allowable in only 58 specific regional “départements” due to local restrictions on transmission power and frequencies. The departments in which the Intel adapter can currently be used are listed below. Since it is likely that additional permitted departments will be added to the list at regular intervals, visit the website of the French Authority for Regulation of Telecommunications (ART) for updated information, in French at <http://www.art-telecom.fr/> or in English at <http://www.art-telecom.fr/eng/>

### *Departments in Which the Intel Wireless LAN MiniPCI Adapter Can Be Used (Indoors Only)*

The Intel® PRO/Wireless 2100A LAN MiniPCI Adapter can currently be used in the following departments of mainland France, and in those departments, indoors only.

|    |                 |    |                     |    |                       |
|----|-----------------|----|---------------------|----|-----------------------|
| 01 | Ain             | 36 | Indre               | 69 | Rhône                 |
| 02 | Aisne           | 37 | Indre et Loire      | 70 | Haute Saône           |
| 03 | Allier          | 39 | Jura                | 71 | Saône et Loire        |
| 05 | Hautes Alpes    | 41 | Loir et Cher        | 72 | Sarthe                |
| 08 | Ardennes        | 42 | Loire               | 75 | Paris                 |
| 09 | Ariège          | 45 | Loiret              | 77 | Seine et Marne        |
| 10 | Aube            | 50 | Manche              | 78 | Yvelines              |
| 11 | Aude            | 54 | Meurthe et Moselle  | 79 | Deux Sèvres           |
| 12 | Aveyron         | 55 | Meuse               | 82 | Tarn et Garonne       |
| 16 | Charente        | 57 | Moselle             | 84 | Vaucluse              |
| 19 | Corrèze         | 58 | Nièvre              | 86 | Vienne                |
| 2A | Corse Sud       | 59 | Nord                | 88 | Vosges                |
| 2B | Haute Corse     | 60 | Oise                | 89 | Yonne                 |
| 21 | Côte d’Or       | 61 | Orne                | 90 | Territoire de Belfort |
| 24 | Dordogne        | 63 | Puy du Dôme         | 91 | Essonne               |
| 25 | Doubs           | 64 | Pyrénées Atlantique | 92 | Hauts de Seine        |
| 26 | Drôme           | 65 | Haute Pyrénées      | 93 | Seine St Denis        |
| 27 | Eure            | 66 | Pyrénées Orientales | 94 | Val de Marne          |
| 32 | Gers            | 67 | Bas Rhin            |    |                       |
| 35 | Ille et Vilaine | 68 | Haut Rhin           |    |                       |

### *Departments in Which the Intel Wireless LAN MiniPCI Adapter Cannot Be Used*

The Intel® PRO/Wireless 2100A LAN MiniPCI Adapter cannot currently be used in any departments of mainland France other than those listed above. Before operating your computer device or system in a department not listed above, see the heading in this section “How to Turn Off the Wireless LAN Radio.”



Maximum allowable EIRP 802.11b wireless LAN cards in the mainland departments of France not shown in the table above are as follows: (See the ART website at [www.art-telecom.fr](http://www.art-telecom.fr) for information on the French overseas territories.)

| Frequency Ranges (MHz) | Indoors | Outdoors   |
|------------------------|---------|--|
| 2400 – 2446.5          | 10 mW   | Not permitted  |
| 2446.5 – 2483.5        | 100 mW  | 100 mW on private property with Ministry of Defense approval |

**[Note to integrator:** In the documentation provided to the end user, the OEM or integrator must specify the maximum EIRP of the system (including antenna) so that the user can compare the EIRP of the system to the limits stated in the table above.]

### **How to turn off the wireless LAN radio**

**Note:** Turning the wireless LAN radio off is not the same as disabling the wireless LAN card. It is not necessary to disable the card to meet the regulatory requirements.

While operating the computer or system incorporating the Intel® PRO/Wireless 2100A LAN MiniPCI in those French departments that do not allow use of the wireless LAN equipment, the user of the equipment must turn off the wireless LAN radio in order to comply with local regulations. Instructions on how to do this are provided below.

**[Note to integrator:** The following instructions must be published in all end-user documentation provided with the system or product incorporating the Intel PRO/Wireless 2100A Wireless LAN (802.11b) products. The instructions be matched to the features of the computer or system to which they below.]

### **How to turn off the WLAN radio using software**

#### **If Intel® PROSet is installed**

**[Note to integrator:** If Intel PROSet utility software is installed on the system or computer incorporating the Intel® PRO/Wireless 2100A LAN MiniPCI Adapter, the OEM or integrator must supply the end user with OS-appropriate instructions on how use Intel PROSet to turn off the Intel wireless LAN card in restricted countries or regions, either as part of the documentation containing wireless LAN regulatory guidelines or by referral to system documentation containing the required instructions. The procedure for turning off the wireless LAN radio in restricted regions must be described clearly step by step so that the end user can easily comply with the regulatory requirements. See an outline of the procedure below.]

To turn off the wireless LAN radio using Intel PROSet:

1. Right-click the Intel(R) PRO/Wireless card icon in the system tray
2. Select the active Intel adapter and click Switch Radio Off.
3. You can also turn off the radio on the General tab of the Intel PROSet screen, by selecting Off next to Switch radio.

#### **If Intel PROSet is not installed**

**[Note to integrator:** If Intel PROSet configuration software is not installed on the system or computer incorporating the Intel® PRO/Wireless 2100A LAN MiniPCI Adapter, the OEM or integrator must supply the end user with OS-appropriate instructions on how to use the Control Panel to turn off the Intel wireless LAN radio in restricted countries or regions, either as part of the documentation containing wireless LAN regulatory guidelines or by referral to system documentation containing the required instructions. The procedure for turning off the wireless LAN radio in restricted regions must be described clearly step by step so that the end user can easily comply with the regulatory requirements. See an outline of the procedure below.]



To turn off the wireless LAN radio using the Control Panel:

1. Access the Control Panel and double-click the System icon.
2. Go to Device Manager under Hardware and expand the list of Network Adapters.
3. Double-click the Intel PRO/Wireless MiniPCI LAN Adapter and select the Advanced tab.
4. On the Advanced tab, check the Wireless device off (radio off) check box, and click OK.

#### **How to turn off the WLAN radio using a hardware switch (if supplied)**

**[Note to integrator:** If the system or computer incorporating the Intel® PRO/Wireless 2100A LAN MiniPCI Adapter has an external hardware switch that can be used to manually turn the wireless LAN card off and on, the OEM or integrator must supply the end user with instructions on how to use this switch, either as part of the documentation containing wireless LAN regulatory guidelines or by referral to system documentation containing the required instructions. The procedure for manually turning off the wireless LAN radio in restricted regions must be described clearly step by step so that the end user can easily comply with local regulatory requirements.]

### ***Hong Kong***

No special documentation requirements.

### ***Hungary***

Hungarian Declaration of conformity must be published in the documentation.

### ***Indonesia***

No special documentation requirements.

### ***Japan***

A regulatory paragraph stating that 802.11a is for “indoor use only” is required [text not available for this document revision]. Translation of the manual into Japanese is required.

For 802.11a and b, approval number must be published.

### ***Jordan***

No special documentation requirements.

### ***Kuwait***

No special documentation requirements.

### ***Latvia***

Language translation requirements: User manual in Latvian language required.

Regulatory labeling requirements: In addition to the CE Mark, the reference number of the Latvia type approval certificate shall be marked on either the product or the user manual.

Additional requirements pending at time of publication.



### ***Malaysia***

No special documentation requirements.

### ***Malta***

Same as EU (R&TTE).

### ***Mexico***

Regulatory Manual Requirements: The SCT logo and approval number may be put on the box, label, or in the manual: SCT xxxxxxxxxxx-xxx.

Local language translations: All documentation must be in Spanish, with the exception of the technical manual, which may be in English.

### ***Monaco***

Same as EU (R&TTE).

### ***New Zealand***

No special documentation requirements.

### ***Oman***

No special documentation requirements.

### ***Poland***

No special documentation requirements.

### ***Saudi Arabia***

No special documentation requirements.

### ***Singapore***

No special documentation requirements.

### ***South Africa***

No special documentation requirements.



## Taiwan

第十四條 經本局審合格之無線電設備，非經許可，公司、商號或使用者不得私自變更頻率，加大功率或變更原設計之特性功能。

第十七條 無線電設備之使用，不得影響航空及陸海空合法通訊；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。前項合法通訊，指依規定作業之無線電通訊。

但對於此種設備所受合法通訊或工業、科學及醫療用電磁波對電器設備之干擾，不在此限。

Text notice required:

## Thailand

No special documentation requirements.

## Turkey

User manual language: Product manuals and/or quick start guide should contain instructions in Turkish.

## Ukraine

Requirements not available for this document version.

## United Arab Emirates

Requirements not available for this document version.

## United States

### USA and Canada Safety Requirements and Notices

The FCC with its action in ET Docket 93-62 has adopted a safety standard for human exposure to radio frequency (RF) electromagnetic energy emitted by FCC certified equipment. The Intel PRO/Wireless LAN MiniPCI Adapter products meet 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; if not, the radio may be damaged.

### 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:**

**Note:** Any U-NII device that operates in the 5.15-5.25 GHz band shall use a transmitting antenna that is an integral part of the device.

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 Warning**

**Warning:** To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended for Intel PRO/Wireless 2100A LAN MiniPCI 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 and that the antenna must not be co-located or operating in conjunction with any other antenna or radio transmitter. It is recommended that the user limit exposure time if the antenna is positioned closer than 20 cm (8 inches).

### **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:** Refer to the documentation supplied with wireless Ethernet adapters or other devices in the wireless network.

### **USA Radio Frequency Interference Requirements**

This device is restricted to indoor use when used over its full frequency bandwidth capabilities (5.15 to 5.35 GHz) 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. The product can be used outdoors **only** if the frequency range is limited to 5.26 to 5.35 GHz. In addition, it should be noted that 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. See the user's guide for information on specifying the radio frequency to be used.

### **FCC Regulations Part 15 Declaration of Conformity (DoC)**

Intel Corporation declares that the equipment described in this document is within the requirements of the Code of Federal Regulations listed below:

Title 47 Part 15, Subpart B, Class B for a digital device.

This declaration is based upon the compliance of the Intel(R) PRO/Wireless LAN MiniPCI Adapters to the above standards. Intel has determined that the models listed have been shown to comply with the applicable technical standards if no unauthorized change is made in the equipment and if the equipment is properly maintained and operated.

These units are identical to the units tested and found acceptable with the applicable standards. Records maintained by Intel continue to reflect that units being produced under this Declaration of Conformity,



within the variation that can be expected due to quantity production and tested on a statistical basis, continue to comply with the applicable technical standards.

### **FCC Rules and Regulations - Part 15**

This device uses, generates and radiates radio frequency energy. The radio frequency energy produced by this device is well below the maximum exposure allowed by the Federal Communications Commission (FCC).

- This device complies with the limits for a Class B digital device pursuant to Part 15 subpart C of the FCC Rules and Regulations. Operation is subject to the following two conditions:
- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

The FCC limits are designed to provide reasonable protection against harmful interference when the equipment is installed and used in accordance with the instruction manual and operated in a commercial environment. However, there is no guarantee that interference will not occur in a particular commercial installation, or if operated in a residential area.

If harmful interference with radio or television reception occurs when the device is turned on, the user must correct the situation at the user's own expense. The user is encouraged to try one or more of the following corrective measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that on which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**CAUTION:** The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by Intel could void the user's authority to operate this device.

### **Underwriters Laboratories Inc. (UL) Regulatory Warning**

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

### ***Uruguay***

No special documentation requirements.

### ***Venezuela***

No special documentation requirements.