

MPE Calculations

FCC part 1.1310, Table 1 limits the power density for uncontrolled exposure to $1\text{mW}/\text{cm}^2$ for systems operating in the UNII bands. The distance, $d(\text{cm})$ from the antenna at which the power density, $P_d (\text{mW}/\text{cm}^2)$ is below this limit is calculated from the maximum EIRP, $P_t (\text{mW})$ using the equation:

$$P_d = P_t / (4 \pi d^2)$$

Re-arranging for the distance at which the power density is $1\text{mW}/\text{cm}^2$ gives:

$$d = \sqrt{(P_t / (4 \pi))}$$

The device under test is designed to use an integral antenna, which can be configured to give an Omni-Directional pattern. The gain stated for the omni configuration is 3.9 dBi. The maximum output power across all channels is 15.7dBm.

The maximum EIRP for 5.15 to 5.25 GHz is, therefore, $14.3 \text{ dBm} + 3.9 \text{ dBi} = 18.2 \text{ dBm}$ (66mW):

$$d = \sqrt{(66 / (4 \pi))} = \underline{\underline{2.23 \text{ cm}}}$$

The maximum EIRP for 5.25 to 5.35 GHz is, therefore, $15.4 \text{ dBm} + 3.9 \text{ dBi} = 19.3 \text{ dBm}$ (85.1mW):

$$d = \sqrt{(85.1 / (4 \pi))} = \underline{\underline{2.60 \text{ cm}}}$$

The distance from the antenna that the power density is $1\text{mW}/\text{cm}^2$ is, therefore, 2.6 cm. The user's guide instructs the user to install the device such that it has a separation of at least 20cm from persons (see text below) to comply with the FCC's requirements. This separation of 20cm more than meets the FCC's and Industry Canada RF exposure requirements.

Frequency range (GHz)	EIRP	Calculated (cm)
5.15 – 5.25	18.2 dBm (66mW)	2.23
5.25 – 5.35	19.3 dBm (85.1mW)	2.60

RF Exposure Requirements

To ensure compliance with FCC RF exposure requirements, the antenna used for this device 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 radio transmitter. Installers and end-users must follow the installation instructions provided in this user guide.

The warning statement is attached to this document. Antenna information has been uploaded.

Late-breaking News

For support and drivers:
<http://support.intel.com>

December 2001

The following FCC Notices are additions to the printed Regulatory Notices provided with your product.

FCC Notice

This unit is a mobile device that uses radio transmissions to operate. Please keep it at least 20 cm from any persons during operation. In addition, it should not operate in the same location with any other antenna or radio transmitter.

The Intel® WCB5000 PRO/Wireless 5000 LAN CardBus Adapter has passed all necessary tests, and FCC applications are pending to classify the product as a portable device that can be operated in close proximity to the human body.

WARNING

To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended for the Access Point, or a PCI Adapter card, installed in a desktop computer, that the antenna for this device 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 radio transmitter. Installers and end-users must follow the installation instructions provided in this user guide.

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.

WARNING

To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended when using a wireless device with an integrated antenna, for the CardBus Adapter inserted into a laptop computer that the antenna should not be positioned closer than 20 cm (8 inches) from your body or nearby persons for extended periods of time while it is transmitting (or operating). If the antenna is positioned less than 5 cm (two inches) from the user, it is recommended that the user limit exposure time. The Device must not be co-located or operating in conjunction with any other antenna or radio transmitter. Installers and end-users must follow the installation instructions provided in this user guide.

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.

The following Canadian Department of Communications Industry Canada (IC) Notice supersedes the printed matter provided with your product.

Canadian Department of Communications Industry Canada (IC) Notice

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.