

Federal Communication Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

Attention: Reviewing Engineer

The **Ambit WLAN card used in the HP notebooks** is a regular 802.11b Wireless LAN Card using spread spectrum technique for wireless access of a PC to a LAN using a miniPCI interface inside the PC.

Due to the construction and the intended use of the of a the HP notebooks with the built in WLAN Card, the radio installation is done in the factory and not user installed. Due to the construction of the notebook and the location of the antennas (TX and RX) a minimum distance under normal operating conditions of more than 2.5 cm (2.8 to 3 cm depending on the angle of the screen) is guaranteed. The calculation was made for this worst case.

The maximum peak output power for this device is 46.6 mW (16.69 dBm).

Calculation of EIRP of the equipment for 20 dBm (0.0100 W); equivalent to 8.66 V/m in 20 cm distance

Regarding MPE limits, GPUC environment limits maximum exposure to 1 mW/cm²

The power density is:

at 20 centimeters from an antenna for 100mW	$S = E^2/3770 = -13 H^2 = \mathbf{0.01989 \text{ mW/cm}^2} < 1 \text{ mW/cm}^2$
at 10 centimeters from an antenna for 100mW	$S = E^2/3770 = -13 H^2 = \mathbf{0.0795 \text{ mW/cm}^2} < 1 \text{ mW/cm}^2$
at 2.5 centimeters from an antenna for the actual power (46.6 mW)	$S = E^2/3770 = -13 H^2 = \mathbf{0.5941 \text{ mW/cm}^2} < 1 \text{ mW/cm}^2$

Where: S = Power density (mW/cm²)
E = electrical field strength (V/m)

Calculations are based on standard formula for calculating field strength at a distance and converting power density using free space impedance.

Compliance is shown for the built in module, which has an internal antenna with a unique **connector**. The module and the antenna are not accessible for the user of the notebook. The minimum distance of 2.5 is given by the position of the antenna in the lower part of the Displays as worst case of the different variant tested.

If you should have any questions regarding this submission, please feel free to contact the undersigned.

Yours truly,



Lothar Schmidt
Technical Manager EMC/Radio
CETECOM Inc.