

**Attachment 1: RF EXPOSURE INFORMATION**



## RADIO FREQUENCY EXPOSURE (HAZARD) INFORMATION

Testing was performed in accordance with the requirements of FCC Part 15.407(f)

Spread spectrum transmitters operating in the 5.150 – 5.350 GHz are required to be operated in a manner that ensures that the public is not exposed to RF energy levels in accordance with CFR 47, Section 1.1307(b)(1).

The WLAN is a mobile device. The antennas are located on the top edge of LCD screen (2 antennas left and right) projected distance of greater than 20cm from user.

The Bluetooth is a portable device. The antenna is located on left side of keyboard near the TAB key projected distance of greater than 1.5cm from the bottom of the laptop.

The separation distance between the WLAN and BT antennas is greater than 20cm. Therefore, they are not co-located transmitters.

MPE calculation for Bluetooth is not applicable and SAR is not required as the power for BT is below the low threshold.

The MPE calculation shown below is for the WLAN mobile device for a separation distance of greater than 20cm.

In accordance with Section 1.1310, the Maximum Permissible Exposure (MPE) limit for the General Population/Uncontrolled Exposure of 1.0 has been applied, i.e 1mW/cm<sup>2</sup>.

Friis transmission formula:  $P_d = (P \cdot G) / (4 \cdot \pi \cdot r^2)$

where:  $P_d$  = power density (mW/cm<sup>2</sup>)  
 $P$  = power input to the antenna (mW)  
 $G$  = antenna gain (numeric)  
 $r$  = distance to the center of radiation of the antenna (cm)

**The result was extracted from section 5.0 of EMC Technologies Report No: M050322\_Cert\_WLL4070\_11abg\_NII\_BT (WLAN Module):**

Maximum peak output power = 19.0 dBm = 79.4mW

Antenna (Monopole Ceramic) gain (typical) = 1.66 dBi = 1.47 numeric

Prediction distance = 20 cm

Prediction frequency = 5260 MHz

MPE limit for uncontrolled exposure at prediction frequency = 1 mW/cm<sup>2</sup>

The power density calculated = 0.023 mW/cm<sup>2</sup>

**Results:** Calculations show that the Radio devices with described antennas complied with Maximum Permissible Exposure (MPE) limit for the General Population/Uncontrolled Exposure

