# Maximum Permissive Exposure

**FCC ID: 2AE3B-AEH-AR9462**
**Product Name: PCIE 802.11a/b/g/n 2.4GHz/5GHz + USB BT 4.0 card**
**Model No: AEH-AR9462**

1. According to FCC CFR 47 §1.1310, the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b).

Table 1 Limits for Maximum Permissible Exposure

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density ($mW/cm^2$) | Average Time (Minutes) |
|---|---|---|---|---|
| (A) Limits For Occupational / Control Exposures (f = frequency) | | | | |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | … | … | f/300 | 6 |
| 1500-100,000 | … | … | 5.0 | 6 |
| (B) Limits For General Population / Uncontrolled Exposure (f = frequency) | | | | |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | … | … | f/1500 | 30 |
| 1500-100,000 | … | … | 1.0 | 30 |

**VoxMicro LTD.** declares that the product described above has been evaluated and found to comply with the RF exposure limits for humans, as specified based on ANSI/FCC recommendation.

2. MPE Calculation

RF Exposure Calculations:
$S = (P * G) / (4 * \pi * r^2)$ or $r = \sqrt{(P * G) / (4 * \pi * S)}$

### 2.1. WIFI 2.4G MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **3.170 Numerical,** and the highest power output (P) is **457.088mW**, the power density (S) is **0.288263mW/cm$^2$.**
**Where :**

| | | | | |
|---|---|---|---|---|
| Based on safety distance (r)= | 20 | cm | | |
| Highest Power Output (P)= | 26.60 | dBm = | **457.088** | mW |
| Antenna Gain (G)= | 5.01 | dBi = | **3.170** | Numerical |
| MPE (S) = (P*G) / (4*π*r$^2$) = | **= (457.088*3.170)/(4*π*20$^2$)=** | | **0.288263** | mW/cm$^2$ |

### 2.2. BLE MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **1.585 Numerical,** and the highest power output (P) is **2.466mW**, the power density (S) is **0.000778mW/cm$^2$.**
**Where :**

| | | | | |
|---|---|---|---|---|
| Based on safety distance (r)= | 20 | cm | | |
| Highest Power Output (P)= | 3.92 | dBm = | **2.466** | mW |
| Antenna Gain (G)= | 2.0 | dBi = | **1.585** | Numerical |
| MPE (S) = (P*G) / (4*π*r$^2$) = | **= (2.466*1.585)/(4*π*20$^2$)=** | | **0.000778** | mW/cm$^2$ |

### 2.3. BT MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **1.585 Numerical**, and the highest power output (P) is **4.677mW**, the power density (S) is **0.001475 mW/cm$^2$.**
**Where :**

| | | | | |
|---|---|---|---|---|
| Based on safety distance (r)= | 20 | cm | | |
| Highest Power Output (P)= | 6.70 | dBm = | **4.677** | mW |
| Antenna Gain (G)= | 2.0 | dBi = | **1.585** | Numerical |
| MPE (S) = (P*G) / (4*π*r$^2$) = | **= (4.677*1.585)/(4*π*20$^2$)=** | | **0.001475** | mW/cm$^2$ |

### 2.4. WIFI 5G MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **3.990 Numerical**, and the highest power output (P) is **79.983mW**, the power density (S) is **0.063489 mW/cm$^2$.**
**Where :**

| | | | | |
|---|---|---|---|---|
| Based on safety distance (r)= | 20 | cm | | |
| Highest Power Output (P)= | 19.03 | dBm = | **79.983** | mW |
| Antenna Gain (G)= | 6.01 | dBi = | **3.990** | Numerical |
| MPE (S) = (P*G) / (4*π*r$^2$) = | **= (79.983*3.990)/(4*π*20$^2$)=** | | **0.063489** | mW/cm$^2$ |

| MPE | | | | |
|---|---|---|---|---|
| WIFI 2.4G ($mW/cm^2$) | BT ($mW/cm^2$) | BLE ($mW/cm^2$) | Total ($mW/cm^2$) | Limit ($mW/cm^2$) |
| 0.288263 | 0.001475 | 0.000778 | 0.290516 | ≦1 |

| MPE | | | | |
|---|---|---|---|---|
| WIFI 5G ($mW/cm^2$) | BT ($mW/cm^2$) | BLE ($mW/cm^2$) | Total ($mW/cm^2$) | Limit ($mW/cm^2$) |
| 0.063489 | 0.001475 | 0.000778 | 0.065742 | ≦1 |

Sincerely Yours,

Mr. Ben Cheng
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