

## FCC §15.247 (i), §2.1091 – RF Exposure

**FCC ID:2AG9UED01-001****Applied procedures / limit**

According to FCC §15.247(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

**Limits for Occupational / Controlled Exposure**

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|--|--|
| 0.3-3.0               | 614                               | 1.63                              | (100)*                                   | 6  |
| 3.0-30                | 1842 / f                          | 4.89 / f                          | (900 / f)*                               | 6  |
| 30-300                | 61.4                              | 0.163                             | 1.0                                      | 6  |
| 300-1500              |                                   |                                   | F/300                                    | 6  |
| 1500-100,000          |                                   |                                   | 5  | 6  |

Note: f is frequency in MHz

\* = Power density limit is applicable at frequencies greater than 100 MHz

**Limits for General Population / Uncontrolled Exposure**

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|--|--|
| 0.3-1.34              | 614                               | 1.63                              | (100)*                                   | 30   |
| 1.34-30               | 824/f                             | 2.19/f                            | (180/f)*                                 | 30   |
| 30-300                | 27.5                              | 0.073                             | 0.2                                      | 30   |
| 300-1500              |                                   |                                   | F/1500                                   | 30   |
| 1500-100,000          |                                   |                                   | 1.0                                      | 30   |

Note: f = frequency in MHz

\* = Plane-wave equivalent power density

**MPE PREDICTION**

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

**TEST RESULTS**

## WIFI Power

| TX 802.11b Mode      |           |                                    |                                    |       |
|----------------------|-----------|------------------------------------|------------------------------------|-------|
| Test Channel         | Frequency | Maximum Conducted Output Power(PK) | Maximum Conducted Output Power(AV) | LIMIT |
|                      | (MHz)     | (dBm)                              | (dBm)                              | (dBm) |
| CH01                 | 2412      | 19.56                              | 14.66                              | 30    |
| CH06                 | 2437      | 19.65                              | 14.56                              | 30    |
| CH11                 | 2462      | 19.58                              | 14.63                              | 30    |
| TX 802.11g Mode      |           |                                    |                                    |       |
| CH01                 | 2412      | 17.34                              | 9.39                               | 30    |
| CH06                 | 2437      | 17.32                              | 9.46                               | 30    |
| CH11                 | 2462      | 17.36                              | 9.64                               | 30    |
| TX 802.11n-HT20 Mode |           |                                    |                                    |       |
| CH01                 | 2412      | 18.54                              | 7.37                               | 30    |
| CH06                 | 2437      | 18.47                              | 7.45                               | 30    |
| CH11                 | 2462      | 18.52                              | 7.34                               | 30    |

| Mode         | Range | Maximum peak output power (dBm) | Output power (mW) | Antenna Gain (numeric) | Power Density (S) (mW/ cm <sup>2</sup> ) | Limit of Power Density (S) (mW/ cm <sup>2</sup> ) | Result |
|--------------|-------|---------------------------------|-------------------|------------------------|--|---|--------|
| 802.11b      | 18~20 | 20                              | 100.00            | 1.51(1.42)             | 0.0282                                   | 1   | Pass   |
| 802.11g      | 16~18 | 18                              | 63.10             | 1.51(1.42)             | 0.0178                                   | 1   | Pass   |
| 802.11n-HT20 | 17~19 | 19                              | 79.43             | 1.51(1.42)             | 0.0224                                   | 1   | Pass   |

Note: The Output power is the maximum eirp power of this EUT, and the data comes from the RF report for this EUT.

Note: The assess distance is 20cm.