

## RADIO FREQUENCY EXPOSURE

### Limit

According to §1.1310 and §2.1091 RF exposure is calculated.

**Table: Limits for General Population/Uncontrolled Exposure**

| <b>Frequency Range<br/>(MHz)</b> | <b>Power Density (S)<br/>(mW/cm<sup>2</sup>)</b> |
|----------------------------------|--|
| 0.3–1.34                         | *(100)   |
| 1.34–30                          | *(180/f <sup>2</sup> )                           |
| 30–300                           | 0.2  |
| 300–1500                         | f/1500   |
| 1500–100,000                     | 1.0  |

F = frequency in MHz

\* = Plane-wave equivalent power density

### Maximum Permissible Exposure

The MPE was calculated at 20cm to show compliance with the power density limit.

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

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.

Note:

1. Manufacturer declared that the maximum antenna gain is 2.0dBi(Max.) for 2412~2462MHz when single antenna transmits.
2. Manufacturer declared that the nearest distance between human and the EUT is 20cm.
3. Only record worst case data.

## Test Results

2.4G WLAN:

| Test Mode    | Channel | ANT Power AVG (dBm) | ANT Max. Tune Up Power (dBm) | ANT Max. Tune Up Power (mW) | ANT MPE (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|--------------|---------|---------------------|------------------------------|-----------------------------|-------------------------------|-----------------------------|
| 802.11b      | 1       | 17.43               | 17.0±1.0                     | 63.0957                     | 0.0199                        | 1.0                         |
|              | 6       | 17.39               | 17.0±1.0                     | 63.0957                     | 0.0199                        | 1.0                         |
|              | 11      | 17.36               | 17.0±1.0                     | 63.0957                     | 0.0199                        | 1.0                         |
| 802.11g      | 1       | 15.23               | 15.0±1.0                     | 39.8107                     | 0.0126                        | 1.0                         |
|              | 6       | 15.12               | 15.0±1.0                     | 39.8107                     | 0.0126                        | 1.0                         |
|              | 11      | 15.32               | 15.0±1.0                     | 39.8107                     | 0.0126                        | 1.0                         |
| 802.11n HT20 | 1       | 14.87               | 15.0±1.0                     | 39.8107                     | 0.0126                        | 1.0                         |
|              | 6       | 14.78               | 15.0±1.0                     | 39.8107                     | 0.0126                        | 1.0                         |
|              | 11      | 14.93               | 15.0±1.0                     | 39.8107                     | 0.0126                        | 1.0                         |
| 802.11n HT40 | 3       | 12.23               | 12.0±1.0                     | 19.9526                     | 0.0063                        | 1.0                         |
|              | 6       | 12.45               | 12.0±1.0                     | 19.9526                     | 0.0063                        | 1.0                         |
|              | 9       | 12.18               | 12.0±1.0                     | 19.9526                     | 0.0063                        | 1.0                         |

## Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device