

RF Exposure Evaluation**Limit**

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1310 & 2.1091

Table 1-Limits for Maximum Permissible Exposure (MPE)

| Frequency range (MHz) | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm ²) | Averaging time (minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (A) Limits for Occupational/Controlled Exposures | | | | |
| 0.3–3.0 | 614 | 1.63 | *(100) | 6 |
| 3.0–30 | 1842/f | 4.89/f | *(900/f ²) | 6 |
| 30–300 | 61.4 | 0.163 | 1.0 | 6 |
| 300–1500 | - | - | f/300 | 6 |
| 1500–100,000 | - | - | 5 | 6 |
| (B) Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3–1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34–30 | 824/f | 2.19/f | *(180/f ²) | 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

Evaluation Method

Transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = power density in mW/cm², P_{out} = output power to antenna in mW, G = gain of antenna in linear scale;

$\pi = 3.1416$, R = distance between observation point and center of the radiator in cm

Conducted Power Results & Manufacturing tolerance

| Specification | Operating Mode | Conducted Output Power (dBm) | Target (dBm) | Tolerance \pm (dB) |
|---------------|----------------|------------------------------|--------------|----------------------|
| 2.4GWIFI | 802.11b | 14.85 | 14 | 1 |
| | 802.11g | 14.53 | 14 | 1 |
| | 802.11n(HT20) | 14.34 | 14 | 1 |

Evaluation Results

| Spec. | Operating Mode | Antenna Distance (cm) | Conducted Output Power | | Gain of antenna in linear scale | Power Density (mW /cm ²) | Limit (mW /cm ²) | Result |
|----------|----------------|-----------------------|------------------------|-------|---------------------------------|--------------------------------------|------------------------------|--------|
| | | | dBm | mW | | | | |
| 2.4GWIFI | 802.11b | 20 | 15 | 31.62 | 2.00 | 0.013 | 1 | PASS |
| | 802.11g | 20 | 15 | 31.62 | 2.00 | 0.013 | 1 | PASS |
| | 802.11n (HT20) | 20 | 15 | 31.62 | 2.00 | 0.013 | 1 | PASS |

Remark:

1. *Output power including tune up tolerance;*
2. *The maximum 2.4G antenna gain is 3dBi*
3. *The exposure safety distance is 20cm.*

Conclusion

The measurement results comply with the FCC Limit per 47 CFR 1.1310 & 2.1091 for the uncontrolled RF Exposure and MPE compliance per KDB 447498 v06.