

## Calculation and sample for Confirmation

Dear Reviewer,

As specified in Table 1B of 47 CFR 1.1310 – Limits for Maximum Permissible Exposure(MPE), Limits for General Population/Uncontrolled Exposure:

| Frequency range (MHz) | Power density (mW/cm <sup>2</sup> ) |
|-----------------------|-------------------------------------|
| <b>300 – 1,500</b>    | <b>f/1500</b>                       |
| 1,500 – 100,000       | 1.0                                 |

The RF Exposure level is calculated using the general equation:

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

the EUT antenna gain is 3.1dBi

R = 20 cm

$\pi = 3.1416$

The power density limit is:

For 1,500 – 100,000MHz: 1.0 mW/cm<sup>2c</sup>

Solving for S, the power density at 20 cm is

For WIFI:

802.11b:

| Frequency (MHz) | dBm    | mW     | G (dBi) | Numeric | R (cm) | S (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|-----------------|--------|--------|---------|---------|--------|-------------------------|-----------------------------|
| 2412            | 15. 67 | 36. 90 | 3. 1    | 2. 0    | 20     | <b>0. 01499</b>         | 1                           |
| 2437            | 15. 42 | 34. 83 | 3. 1    | 2. 0    | 20     | <b>0. 01415</b>         | 1                           |
| 2462            | 15. 32 | 34. 04 | 3. 1    | 2. 0    | 20     | <b>0. 01383</b>         | 1                           |

802.11g:

| Frequency (MHz) | dBm    | mW     | G (dBi) | Numeric | R (cm) | S (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|-----------------|--------|--------|---------|---------|--------|-------------------------|-----------------------------|
| 2412            | 17. 44 | 55. 46 | 3. 1    | 2. 0    | 20     | <b>0. 02253</b>         | 1                           |
| 2437            | 17. 54 | 56. 75 | 3. 1    | 2. 0    | 20     | <b>0. 02305</b>         | 1                           |
| 2462            | 17. 37 | 54. 58 | 3. 1    | 2. 0    | 20     | <b>0. 02217</b>         | 1                           |

802.11n:

| Frequency (MHz) | dBm    | mW     | G (dBi) | Numeric | R (cm) | S (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|-----------------|--------|--------|---------|---------|--------|-------------------------|-----------------------------|
| 2412            | 17. 18 | 52. 24 | 3. 1    | 2. 0    | 20     | <b>0. 02122</b>         | 1                           |
| 2437            | 17. 63 | 57. 94 | 3. 1    | 2. 0    | 20     | <b>0. 02354</b>         | 1                           |
| 2462            | 17. 67 | 58. 48 | 3. 1    | 2. 0    | 20     | <b>0. 02375</b>         | 1                           |

So, the power density is kept.

Please contact us if you have any additional questions.

Best Regards

**Morlab**

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