# 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/cm²)* |
|:---:|:---:|
| **300 – 1,500** | **f/1500** |
| 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 3.0dBi

R = 20 cm

π = 3.1416

The power density limit is:

For 1,500 – 100,000MHz: 1.0 mW/cm$^2$

Solving for S, the power density at 20 cm is

802.11b:

| Frequency(MHz) | dBm | mW | G(dBi) | Numeric | R(cm) | S(mW/cm2) | Limit(mW/cm2) |
|:---:|:---:|:---:|:---:|:---:|:---:|:---:|:---:|
| 2412 | 13.41 | 21.928 | 2.0 | 1.6 | 20 | 0.006914 | 1 |
| 2437 | 13.38 | 21.7771 | 2.0 | 1.6 | 20 | 0.0068662 | 1 |
| 2462 | 12.26 | 16.8267 | 2.0 | 1.6 | 20 | 0.0053054 | 1 |

802.11g:

| Frequency(MHz) | dBm | mW | G(dBi) | Numeric | R(cm) | S(mW/cm2) | Limit(mW/cm2) |
|:---:|:---:|:---:|:---:|:---:|:---:|:---:|:---:|
| 2412 | 11.94 | 15.6315 | 2.0 | 1.6 | 20 | 0.0049287 | 1 |
| 2437 | 12.23 | 16.7109 | 2.0 | 1.6 | 20 | 0.0052689 | 1 |
| 2462 | 11.61 | 14.4877 | 2.0 | 1.6 | 20 | 0.0045679 | 1 |

So, the power density is kept.

Please contact us if you have any additional questions.

Best Regards

**Morlab**

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