

Maximum Permissible Exposure Compliance Requirement

1. LIMITS

The limit for general population/uncontrolled exposures

| Frequency | Power density(mW/cm ²) | Averaging time(minutes) |
|---------------|------------------------------------|-------------------------|
| 300MHz~1.5GHz | F/1500 | 30 |
| 1.5GHz~100GHz | 1.0 | 30 |

| Frequency(MHz) | Power density(mW/cm ²) | Averaging time(minutes) |
|----------------|------------------------------------|-------------------------|
| 2402 | 1.0 | 30 |
| 2412 | 1.0 | 30 |
| 2437 | 1.0 | 30 |
| 2462 | 1.0 | 30 |
| 2480 | 1.0 | 30 |
| 5745 | 1.0 | 30 |
| 5785 | 1.0 | 30 |
| 5825 | 1.0 | 30 |

2. EUT RF Exposure

The EUT has three RF modules. One is a BT module. One is a 2.4G wifi module (airplay). One is a 2.4G/5.8G wifi module. These three modules can work together.

BT module: The Max Conducted Peak Output Power is 6.85dBm (48.4mW) in 2402 of GFSK; The antenna gain of this antenna is 2dBi.

2.4G wifi module(airplay): The Max Conducted Peak Output Power is 21.89dBm (154.5mW) in channel 11 of 802.11g; The antenna gain of this antenna is 3dBi

2.4G/5.8G wifi module: The Max Conducted Peak Output Power is 21.02dBm (126.5mW) in channel 1 of 802.11g; The antenna gain of this antenna is 3dBi

2dB logarithmic terms convert to numeric result is nearly 1.58.

3dB logarithmic terms convert to numeric result is nearly 2.

According to the formula $S = \frac{PG}{4R^2\pi}$, we can calculate S which is MPE.

Now, R=20 cm, P1=48.4mW, G1=1.58; P2=154.5mW, G2=2; P3=126.5mW, G3=2

$$\text{So, } S = \frac{PG}{4R^2\pi} = \frac{48.4 * 1.58}{4 * 400 * 3.14} + \frac{154.5 * 2}{4 * 400 * 3.14} + \frac{126.5 * 2}{4 * 400 * 3.14} = 0.127 \text{ mW/cm}^2$$

So the MPE comply the requirement.