

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 two RF modules. One is a BT module. One is a 2.4G wifi module (airplay). The two transmitters cannot be transmitted simultaneously.

BT module: The Max Conducted Peak Output Power is 2.71dBm (1.87mW) in 2402 of GFSK; The antenna gain of this antenna is 3.14dBi.

2.4G wifi module(airplay): The Max Conducted Peak Output Power is 20.95dBm (124.45mW) in channel 6 of 802.11g; The antenna gain of this antenna 1 is 4.2dBi

3.14dB logarithmic terms convert to numeric result is nearly 2.06.

4.2dB logarithmic terms convert to numeric result is nearly 2.63.

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

Now , R=20 cm, P₁=1.87mW, G₁=2.06 ; P₂=124.45mW, G₂=2.63.

$$\text{So, } S_1 = \frac{P_1 G_1}{4R^2\pi} = \frac{1.87 * 2.06}{4 * 400 * 3.14} = 0.00077 \text{ mW/cm}^2 < 1.0 \text{ mW/cm}^2$$

$$S_2 = \frac{P_2 G_2}{4R^2\pi} = \frac{124.45 * 2.63}{4 * 400 * 3.14} = 0.065 \text{ mW/cm}^2 < 1.0 \text{ mW/cm}^2$$

So the MPE comply the requirement.