

3.1.8 RF Exposure

Test Requirement: FCC 47CFR 15.247(i)
Test Date: 2018-09-05
Mode of Operation: Bluetooth mode/ Wifi mode

Test Method:

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

Test Results:

The EUT complied with the requirement(s) of this section.

EUT meets the requirements of these sections as proven through MPE calculation

The MPE calculation for EUT @ 20cm

For WIFI:

Based on the highest P = 56.56 mW

$$\begin{aligned} P_d &= PG / 4\pi R^2 = (56.56 \times 2.34) / 12.566 \times (20)^2 \\ &= (132.3504) / 12.566 \times 400 = 2.513 / 5026.4 \\ &= 0.02633 \text{ mW/cm}^2 \end{aligned}$$

For Bluetooth:

Based on the highest P = 1.074 mW

$$\begin{aligned} P_d &= PG / 4\pi R^2 = (1.074 \times 2.34) / 12.566 \times (20)^2 \\ &= (2.513) / 12.566 \times 400 = 2.513 / 5026.4 \\ &= 0.0005 \text{ mW/cm}^2 \end{aligned}$$

where:

*Pd = power density in mW/cm²

* G = Antenna numeric gain (2.34); Log G = g/10 (g = 3.7dBi).

* P = Conducted RF power to antenna (Wifi: 56.56 mW, Bluetooth: 1.074 mW).

* R = Minimum allowable distance.(20 cm)

*The WIFI power density Pd = 0.02633mW/cm² is less than 1 mW/cm² (listed MPE limit)

*The Bluetooth power density Pd = 0.0005mW/cm² is less than 1 mW/cm² (listed MPE limit)

*The SAR evaluation is not needed (this is a desk top device, R> 20 cm)

* The EUT(antenna) must be 0.2 meters away from the General Population.