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

$$Pd = PG/ 4pi*R^2 = (56.56 \times 2.34)/12.566* (20)^2$$
$$= (132.3504)/12.566 \times 400 = 2.513 /5026.4$$
$$= 0.02633 mW/cm^2$$

For Bluetooth:
Based on the highest P =1.074 mW

$$Pd = PG/ 4pi*R^2 = (1.074 \times 2.34)/12.566* (20)^2$$
$$= (2.513)/12.566 \times 400 = 2.513 /5026.4$$
$$= 0.0005 mW/cm^2$$

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 = $0.02633 mW/cm^2$ is less than 1 mW/cm^2 (listed MPE limit)
*The Bluetooth power density Pd = $0.0005 mW/cm^2$ is less than 1 mW/cm^2 (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.