

1 RF Exposure Report

1.1 RF Exposure Measurement _SAR test exclusion considerations

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached. Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

1.2 EUT Operation condition

EUT was enabled to transmit and receive at lowest, middle and highest channels.

1.2.1 Classification

The antenna of this product, under normal use condition, is at least 5mm away from the body of the user. Warning statement to the user for keeping at least 5mm or more separation distance from the antenna should be included in the User manual. So, this device is classified as fixed device.

1.2.2 SAR test exclusion considerations Formula

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}] \leq 3.0$$

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as numeric thresholds

Test Results

1. Protocol: BLE

Antenna Gain (dBi)	Antenna gain in linear scale	Channel Frequency (MHz)	Maximum output power (dBm)	Tune up Value in (dB)	Maximum output power including Tune-up value (mW)	Power Density (mW/cm ²)	FCC Limit (mW/cm ²)
0.5	1.122018	2440	0.65	2	1.840772001	0.575075557	3

Note:

1. Antenna gain details are taken from the antenna data sheet(2.4GHz Chip antenna, 2450AT18B100E)
2. Manufacturer has declared the tune-up value as ±2 dB is considered in MPE calculation.

***** END OF TEST REPORT*****