

FCC ID : 2AQSN-DCPRMCT

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

| Frequency Range(MHz) | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density(mW/cm ²) | Average Time |
|--|------------------------------|------------------------------|------------------------------------|--------------|
| (A) Limits for Occupational/Control Exposures | | | | |
| 300-1500 | -- | -- | F/300 | 6 |
| 1500-100000 | -- | -- | 5 | 6 |
| (B) Limits for General Population/Uncontrol Exposures | | | | |
| 300-1500 | -- | -- | F/1500 | 6 |
| 1500-100000 | -- | -- | 1 | 30 |

11.1 Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π =3.1416

R = distance between observation point and center of the radiator in cm

Pd the limit of MPE, $1\text{mW}/\text{cm}^2$, If we know the maximum gain of the nd total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

RF Exposure Information: The radiated output power of this device meets the limits of FCC/IC radio frequency exposure limits. This device should be operated with a minimum separation distance of 20cm (8 inches) between the equipment and a person's body.

11.2 Measurement Result

BLE

Antenna gain: 2.5 dBi

| Modulation | Channel Freq. (MHz) | Measured power (dBm) | Tune-up power (dBm) | Max tune-up power (dBm) | Antenna Gain Numeric | Evaluation result (mW/cm ²) | Power density Limits (mW/cm ²) |
|---------------|---------------------|----------------------|---------------------|-------------------------|----------------------|---|--|
| GFSK (BLE 1M) | 2402 | 6.93 | ±1 | 7.93 | 1.78 | 0.002196 | 1 |
| | 2440 | 7.06 | ±1 | 8.06 | 1.78 | 0.002263 | 1 |
| | 2480 | 6.82 | ±1 | 7.82 | 1.78 | 0.002142 | 1 |
| GFSK (BLE 2M) | 2402 | 6.77 | ±1 | 7.77 | 1.78 | 0.002117 | 1 |
| | 2440 | 7.05 | ±1 | 8.05 | 1.78 | 0.002258 | 1 |
| | 2480 | 6.78 | ±1 | 7.78 | 1.78 | 0.002122 | 1 |

According to KDB 447498 D01 General RF Exposure Guidance v06, Therefore the worst-case situation is 0.002263, which is less than “1” ,

This confirmed that the device comply with FCC 1.1310 MPE limit.

THE END