

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Lumitek Bolt Mini Drone operating at 2.4G Band. The EUT can be powered by DC 4.5V (3 x 1.5V AAA batteries). For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna

Modulation Type: GFSK

Antenna Gain: 0dBi

The nominal conducted output power specified: 0.0 dBm (± 3 dB)

The nominal radiated output power (e.i.r.p) specified: 0.0 dBm (± 3 dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 96.0 dB μ V/m at 3m in the frequency 2420MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 0.77dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 95.1 dB μ V/m at 3m in the frequency 2465MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -0.13dBm

which is within the production variation.

The maximum conducted output power specified is 3dBm= 1.995mW

The source- based time-averaging conducted output power
= 1.995* Duty cycle mW < 1.995 mW (Duty cycle < 100%)

The SAR Exclusion Threshold Level:

$$\begin{aligned} P_{th}(\text{mW}) &= ERP_{20\text{cm}} * (d/20\text{cm})^X \quad (X = -\log_{10} \left(\frac{60}{ERP_{20\text{cm}} \sqrt{f}} \right)) \\ &= 3060 * (0.5/20)^{1.9} \text{ mW} \\ &= 2.72 \text{ mW} \end{aligned}$$

Since max. power of the source-based time-averaging conducted output power and effective radiated power (ERP) is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

The duty cycle is simply the on-time divided by the period:

The duration of one cycle = 2.30435ms

Effective period of the cycle = 0.43478ms

DC = 0.43478ms / 2.30435ms = 0.1887 or 18.87%