

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Red Sky Rover Knight Force 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.

Antenna Gain: 0dBi.

The normal radiated output power (e.i.r.p) is: -10.0dBm (tolerance: +/- 3dB).

The normal conducted output power is -10.0dBm (tolerance: +/- 3dB).

Modulation Type: GFSK.

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 85.1 dBμV/m at 3m in the frequency 2410MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -10.13dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 83.3 dBμV/m at 3m in the frequency 2475MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -11.93dBm

which is within the production variation.

The maximum conducted output power specified is -7dBm= 0.200mW

The source- based time-averaging conducted output power
= $0.200 \cdot \text{Duty cycle}$ mW < 0.200 mW (Duty cycle < 100%)

The SAR Exclusion Threshold Level:

= $3.0 \cdot (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in GHz}}$

= $3.0 \cdot 5 / \sqrt{2.475}$ mW

= 9.54mW

Since the source-based time-averaging conducted output power 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 = 8.1159ms

Effective period of the cycle = 1.3768ms

DC = $1.3768\text{ms} / 8.1159\text{ms}$ = 0.1696 or 16.96%