

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Hi-speed Police Boat operating at 2.4G Band. The EUT can be powered by DC3.2V (1 x 3.2V rechargeable battery). 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: -6.0dBm (tolerance: +/- 3dB).

The normal conducted output power is -6.0dBm (tolerance: +/- 3dB).

Modulation Type: GFSK.

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 89.2dB μ V/m at 3m in the frequency 2440MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -6.03dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 87.9dB μ V/m at 3m in the frequency 2408MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -7.33dBm

which is within the production variation.

The maximum conducted output power specified is -3dBm = 0.5mW

The source- based time-averaging conducted output power
= $0.5 \cdot \text{Duty cycle}$ mW < 0.5 mW (Duty cycle < 100%)

The SAR Exclusion Threshold Level:

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

= $3.0 \cdot 5 / \sqrt{(2.472)}$ mW

= 9.54 mW

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 = 19.9275ms

Effective period of the cycle = 1.0145ms

DC = $1.0145\text{ms} / 19.9275\text{ms}$ = 0.0509 or 5.09%