INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is an B/O Toys operating at 2.4G Band. The EUT can be powered by DC 3.0V (2 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: -6.0 dBm (±3dB)
The nominal radiated output power (e.i.r.p) specified: -6.0 dBm (±3dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is   90.3   dBμV/m at 3m in the frequency 2480MHz
The EIRP = [(FS*D) ^2 / 30] mW = -4.93dBm
which is within the production variation.

The Minimum peak radiated emission for the EUT is   88.8   dBμV/m at 3m in the frequency 2402MHz
The EIRP = [(FS*D) ^2 / 30] mW = -6.43dBm
which is within the production variation.

The maximum conducted output power specified is   -3.0dBm=   0.501mW
The source- based time-averaging conducted output power
=0.501* Duty cycle mW =0.501 mW*0.0683=0.54mW

The SAR Exclusion Threshold Level:

$$P_{th}(mW) = ERP_{20cm} * (d/20cm)^x \quad (X = -\log_{10}\left(\frac{60}{ERP_{20\,cm}\sqrt{f}}\right))$$

$$= 3060 * (0.5/20)^{1.9} \text{ mW}$$

$$= 2.72 \text{ mW}$$

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 = 8.6957ms
Effective period of the cycle =   1391.3μs x1 = 1.3913ms
DC =1.3913ms   / 8.6957ms   =0.1600 or 16.00%

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