

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a USB Dongle with Bluetooth 5.2 EDR function operating in 2402-2480MHz. The EUT is powered by DC 5.0V for USB port. For more detail information pls. refer to the user manual.

Antenna Type: Ceramic antenna

Modulation Type: GFSK, $\pi/4$ -DQPSK and 8-DPSK

Antenna Gain: 4.61dBi

Bluetooth Version: 5.2 (Single Mode EDR)

The nominal conducted output power specified: -2.01 dBm (± 1.5 dB)

The nominal radiated output power (e.i.r.p) specified: 2.6 dBm (± 1.5 dB)

According to the KDB 447498 V07:

The Maximum peak radiated emission for the EUT is 99.3 dB μ V/m at 3m in the frequency 2402MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 4.07dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 96.7 dB μ V/m at 3m in the frequency 2480MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 1.47dBm

which is within the production variation.

The maximum conducted output power specified is -0.51dBm= 0.889mW

The maximum radiated output power specified is 4.1dBm= 2.57mW

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. 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.

Note: EIRP is higher than ERP, thus EIRP is compared with the Exclusion Threshold.