

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Soundblade with Bluetooth FHSS technology operating in 2402-2480MHz. The EUT is powered by AC100-240V~, 50/60Hz. For more detail information pls. refer to the user manual.

Bluetooth Version: 5.3 EDR

Antenna Type: Integral antenna

Antenna Gain: 0.53 dBi max

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

The nominal conducted output power specified: 1.47dBm (+/-2dB).

The nominal radiated output power (e.i.r.p) specified: 2dBm (+/- 2dB).

According to the KDB 447498 V07:

The Maximum peak radiated emission for the EUT is 99.0 dB μ V/m at 3m in the frequency 2441MHz

The EIRP = [(FS*D) ^2 / 30] mW = 3.77dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 97.1 dB μ V/m at 3m in the frequency 2480MHz

The EIRP = [(FS*D) ^2 / 30] mW = 1.87dBm

which is within the production variation.

The maximum conducted output power specified is 3.47dBm= 2.223mW

The maximum radiated output power specified is 4dBm= 2.51mW

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.

Bluetooth Version: 5.3 BLE

Antenna Type: Integral antenna

Antenna Gain: 0.53 dBi max

Modulation Type: GFSK

The nominal conducted output power specified: 1.47dBm (+/-2dB).

The nominal radiated output power (e.i.r.p) specified: 2dBm (+/- 2dB).

According to the KDB 447498 V07:

The Maximum peak radiated emission for the EUT is 99.0 dBμV/m at 3m in the frequency 2402MHz

The EIRP = [(FS*D) ^2 / 30] mW = 3.77dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 97.2 dBμV/m at 3m in the frequency 2480MHz

The EIRP = [(FS*D) ^2 / 30] mW = 1.97dBm

which is within the production variation.

The maximum conducted output power specified is 3.47dBm= 2.223mW

The maximum radiated output power specified is 4dBm= 2.51mW

The SAR Exclusion Threshold Level:

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

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.