

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a 3M Pro-Protect Wireless Electronic Hearing Protector with Bluetooth 5.0 (Single Mode) function operating in 2402-2480MHz. The EUT is powered by DC 3V from 1.5V*2 “AA” Batteries. For more detail information pls. refer to the user manual.

Modulation Type: GFSK, $\pi/4$ -DQPSK and 8-DPSK
Bluetooth Version: 5.0 (Single Mode)

Antenna Type: Integral antenna.

Antenna Gain: 0dBi Max

The nominal conducted output power specified: 3.0 dBm (+/-3dB).

The nominal radiated output power (e.i.r.p) specified: 3.0 dBm (+/- 3dB).

According to the KDB 447498:

The maximum peak radiated emission for the EUT is 100.8dB μ V/m at 3m in the frequency 2480MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 5.57dBm
which is within the production variation.

The minimum peak radiated emission for the EUT is 100.3dB μ V/m at 3m in the frequency 2402MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 5.07dBm
which is within the production variation.

The maximum conducted output power specified is 6 dBm = 3.98 mW

The source- based time-averaging conducted output power
= 3.98 * Duty factor mW (where Duty Factor ≤ 1)
= 3.98 mW

The SAR Exclusion Threshold Level:

= 3.0 * (min. test separation distance, mm) / sqrt(freq. in GHz)
= 3.0 * 5 / sqrt (2.480) mW
= 9.53 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.