

INTERTEK TESTING SERVICES

RF Exposure

The Equipment Under Test (EUT) is a Smartphone controlled plane, Model: SPBL01-013 with internal Bluetooth 4.0 function operating at 2402-2480MHz, 40 channels with 2MHz channel spacing. The EUT was powered by 3.7Vdc (rechargeable battery). For more detailed features description, please refer to the user's manual.

Antenna Type: Integral antenna.

Antenna Gain: <2.5dBi.

The nominal conducted output power specified: -2dBm +/-3dB.

Modulation Type: GFSK

According to FCC Part 2.1091, this unlicensed transmitting devices is categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use.

According to the KDB 447498 and OET 65, the simple calculation as below:

For Maximum Permissible Exposure (MPE) evaluation of the product, the maximum power density at 20 cm from this transmitter shall be less than the General Population / Uncontrolled MPE limit in OET Bulletin 65.

The maximum peak conducted output power for the EUT is -2.45dBm in the frequency 2402MHz which is within the product variation.

The minimum peak conducted output power for the EUT is -3.57dBm in the frequency 2480MHz which is within the production variation.

The maximum E.I.R.P= $-2+3+2.5=3.5$ dBm=2.24mW

From above data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna can be calculated according to OET Bulletin 65 as follow:

$$= 2.24 / 4\pi R^2$$

$$= 0.0004 \text{ mW/cm}^2$$

The MPE limit is 1.0 mW/cm^2 for general population and uncontrolled exposure in the Bluetooth frequency range according to FCC Part 1.1310. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structure and body of the user or nearby persons.