RF exposure Estimation

1. Introduction

Product: Laser Distance Meter

Model no.: S20, S20 PRO, S2, S3, S5, S6, S7, S7 PRO, S7A, S7Q, S7C, S7-G, D9, D9 PRO, D5, D5T, S8G, S8GA, S8GB, S9, S9G, S11G, S12G, S5Y, S2K, S2C, S2Z, K3, K1, K5, K6, K8, K9, X3, X5, X6, X7, X20, T7, T7Q, T10, G2, G3, G5, G6, G7

FCC ID: 2AEOGS20

The EUT is a Laser Distance Meter, which contain BLE function inside.

Note: All the models are identical except color and marketing purpose of different models according to the declaration from applicant, so RF exposure evaluation only applied on S20, other models are deemed to fulfill the requirement.

2. Limit and Guidelines on Exposure to Electromagnetic Fields

According to§15.247(e)(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D01 Mobile Portable RF Exposure v05r02, no SAR required if power is lower than the flowing threshold:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation25
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz.

3. Calculation method

[(max. power of` channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0

Conducted Power + tune up tolerance = 1.38dBm= 1.374mW
Distance = 5 mm
f = 2.440 GHz

[1.374/5] * SQRT (2.440) = 0.429
0.429≤ 3.0
Therefore, excluded from SAR testing.

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