

FCC SAR Test Exclusion

The Device is a wireless device (BTLE) that allows Bluetooth-enabled cell phones to track race participants. During normal operation, user extremities can come within 20 cm of the internal antenna and therefore product is considered as “Portable”.

Per FCC KDB447498

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:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

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. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

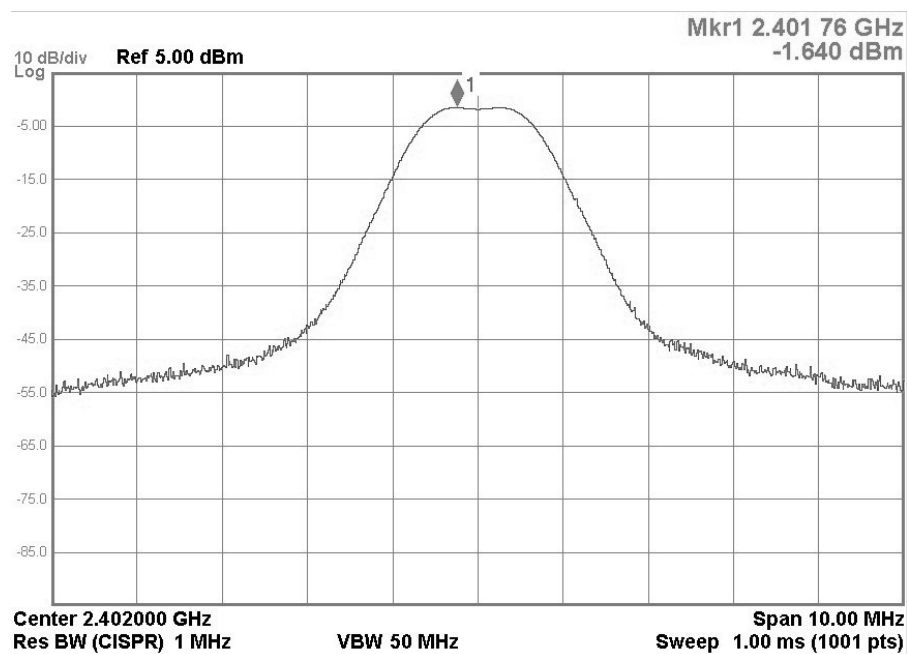
Calculation based on the above formula:

Separation Distance = **12 mm** (we use **10 mm**)
Conducted Peak Output Power -1.64 dBm = **0.7 mW**¹
Frequency = 2402 MHz

Calculation = 0.1 < 3

Since the calculated value is less than 3, the product complies with FCC’s RF radiation exposure limits for general population as a portable device without the need for SAR evaluation.

RF output screen capture from spectrum analyzer:



¹ (rounded to 1 decimal)

FCC ID: 2AF42GO1

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Overview of Enclosure:



Side view:

