

RF Exposure Evaluation – SAR Test Exclusion

FCC ID: DBDSM100-00000

The device is seeking limited modular approval. Initially, it will be certified for use in a mobile configuration, but to allow use in future portable configurations, this SAR Test exclusion document has been created.

FCC KDB 447498 D01 v05r02

Section 4.3.1

“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

- $f(\text{GHz})$ 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*
- 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. 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.”

The device has a maximum conducted output power of 1.4 mW in the 2.4 GHz band. The EUT has an antenna gain of 3.5 dBi for a maximum EIRP of 3.1 mW. The most conservative estimate of spacing of the antenna to the user’s extremity is less than 5mm.

The table below shows the results of the calculation. The value of 0.4 is well below the exclusion threshold of 3.0, therefore the unit is excluded from SAR evaluation and deemed compliant with FCC RF exposure requirements.

Output Power (mW)	Test Separation (mm)	Transmit Frequency (GHz)	Exclusion Threshold	Specification
1.4	5	2.4	0.4	≤ 3.0