

RF Exposure Evaluation

FCC ID: VKF-RADIUS

The device is excluded from SAR evaluation and therefore deemed compliant with FCC RF exposure requirements as described below:

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 11.9 mW at 2441 MHz. The EUT has an antenna gain of 2 dBi for a maximum EIRP of 18.9 mW. The closest spacing of the antenna to the user's extremity is 6mm. Per the following description provided by the manufacturer, the maximum duty cycle is 6%, and the closest spacing is 6mm:

“The software sends 120 bytes @ 62.5 Hz for 7500 bytes per second or 60K bits/sec. Worst duty cycle will be when in 1 Mbit/sec mode which is 60K/1 M for a duty cycle of about 6%.

The wireless transmission is for patient telemetry data only.

The thickness of the enclosure from where antenna is located to the bottom of the enclosure is 3.15 mm, the thickness of the armband strap is 3 mm.”

The table below shows the results of the calculation. The value of 0.186 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)	Duty Cycle	Test Separation (mm)	Transmit Frequency (GHz)	Exclusion Threshold	Specification
11.9	0.06	6	2.44	0.186	≤ 3.0