

RF Exposure

Standard Applicable:

According to §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.

This is a Portable device with its physical nature to be used nearby, the distance between radiating structure and human is less than 20cm.

As per KDB 447498 D01 §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:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot$$

$$\left[\sqrt{f(\text{GHz})} \right] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

f (GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

Measurement Result:

Step 1: (<50mW)

This is a portable device and the Max avg output power is (0.28mW) lower than the threshold given and derived as formula given above, where

$$=0.81 \text{ (mW)} / 5 \text{ (mm)} \cdot \sqrt{2.480 \text{ (GHz)}} = 0.086747274 < 3.0$$

Frequency	Power (avg in dBm)	Power (avg mw)	Distance (mm)	Threshold (<50mm)
2480	-5.6	0.27542287	5	0.086747274

Frequency (MHz)	Avg Power (dBm)	Output Power (W)	Limit (W)
2480	-5.60	0.00028	1 Watt = 30 dBm

As the result of calculation result indicates, the RF exposure generating from given transmitter (transmitter employed digital modulation) can be excluded from SAR measurement, and is deemed compliant with RF exposure as per FCC.