

SAR Evaluation

SAR Test Exclusion Thresholds:

(FCC KDB Publication 447498 D01 v06)

- For $100 \text{ MHz} \leq f \leq 6 \text{ GHz}$ and $d_{\min} \leq 50 \text{ mm}$:

$$\frac{P_{\max}}{d_{\min}} \cdot [Vf_{(\text{GHz})}] \leq 3.0 \quad \text{for 1-g SAR, and}$$

$$\leq 7.5 \quad \text{for 10-g extremity SAR}$$

where $P_{\max}$ = max. power of channel in mW
 $d_{\min}$ = minimum test separation distance in mm
 f = RF channel transmit frequency

The values 3.0 and 7.5 are referred to as *numeric thresholds*

- For $f < 100 \text{ MHz}$ and $d \leq 50 \text{ mm}$:

$$\frac{1}{2} * [1 + \log(100 / f_{(\text{MHz})})] * \{[\text{Power allowed at } \textit{numeric threshold} \text{ for } 50 \text{ mm}] + [(d_{\min} - 50 \text{ mm}) * (f_{(\text{MHz})} / 150)]\} \text{ mW}$$

Evaluation Results: **Complies**

Details:

Frequency MHz	Power (dBm)	Antenna gain (dBi)	Duty Cycle (%)	EIRP (mW)	Test Separation Distance (mm)	SAR Test Exclusion Threshold (mW)
13.56 ¹⁾	-	-	100	0.0001	5	1,199
906 ²⁾	18.797	3	0.256	0.41	5	16
2480	-14.21	-2.45	100	0.0216	5	10

1) The measured field strength is 55.2 dBuV/m @ 3 meters, which is 0.0000001 W_(EIRP)

2) Data taken from SAR evaluation report of the certified module, FCC ID: SU3RM900B-M1

Summation $\sum$ (EIRP) = 0.0001 + 0.41 + 0.0216 = 0.4317 (mW)

Conclusion: The sum of all 3 transmitting antennas is within the SAR Test Exclusion Thresholds at 5 mm test separation distance. SAR test exclusion applies.