

§1.1310 & §2.1093 - RF EXPOSURE

Applicable Standard

According to §2.1093 and §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.

According to KDB 447498 D01 General RF Exposure Guidance

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:

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

1. f (GHz) is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.
4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

Calculation results

For worst case:

Mode	Max Tune-up Conducted Power		Calculated Distance (mm)	Calculated Value	Threshold (1-g SAR)	SAR Test Exclusion
	(dBm)	(mW)				
2.4G SRD	3.0	2.0	5	0.6	3.0	Yes

Note:

1. This device maximum E-Field level is 100.43dBμV/m at 3m, so the EIRP power is 5.23 dBm, Antenna Gain is 3.0dBi, so the Maximum Conduct Power is 2.23dBm.
2. EIRP(dBm)=Field Strength of Fundamental(dBuV/m)-95.2, Maximum Conduct Power (dBm)= EIRP(dBm)- Antenna Gain(dBi)

Result: No SAR test is required.