

RF exposure evaluation

§2.1093 Radiofrequency radiation exposure evaluation: Portable Devices.

According to §15.247(i) and §1.1307b(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the commission’s guidance.

The 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$
 for 1-g 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
- When the minimum test separation distance is < 5 mm, a distance of 5 mm according is applied to determine SAR test exclusion.
- The result is rounded to one decimal place for comparison
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Test Mode	Channel	Frequency (GHz)	Max. Power (dBm)	Tune up Power (dBm)	Max. Tune up Power (dBm)	Max. Tune up Power (mW)	Test distance (mm)	Result	exclusion thresholds for 1-g SAR
GFSK	CH 01	2.402	3.829	4.0±1	5.0	3.16	5	0.98	3.0
	CH 40	2.440	3.597						
	CH 79	2.480	3.108						
$\pi/4$ -DQPSK	CH 01	2.402	2.516	2.0±1	3.0	2.00		0.62	
	CH 40	2.440	2.274						
	CH 79	2.480	1.660						
8DPSK	CH 01	2.402	2.641	2.0±1	3.0	2.00		0.62	
	CH 40	2.440	2.481						
	CH 79	2.480	1.805						

Result:

Base on the calculation value, No SAR measurement is required.