

RF Exposure Considerations for FCC ID: 2AENH014

Per FCC KDB 447498 D01 General RF Exposure Guidance v06

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 (Eq.1) below:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}]$$

If result of Eq.1 is less than or equal to the exemption limits below, then corresponding SAR test is not required.

SAR Test Configuration	Exemption limit
1-g SAR	Result of Eq.1 ≤ 3.0

where;

F(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.

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 is applied to determine SAR test exclusion.

For our device, the parameters for consideration are as follows:

The fundamental frequency of the EUT is 433.2MHz, the test separation distance is 5mm:

Numeric threshold, $\text{mW} / 5 \text{ mm} * \sqrt{0.4332} \leq 3.0$

Numeric threshold, $\leq 22.79\text{mW}$

The power of EUT measured is:

Refer to test report **164280-744654-A**

Maximum measured radiated emission at 10 meters for 433.2MHz = 73.8 dB μ V/m

EIRP can be deduced according to the following calculation:

$E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; where D is the measurement distance in meters.

→ $\text{EIRP} = -10.80\text{dBm} = 0.083\text{mW}$

→ $\text{Conducted Power} = \text{EIRP} - \text{Antenna Gain} = -10.80 - 0 = -10.80 \Rightarrow 0.083\text{mW} < 1\text{mW}$

Which is smaller than the Numeric threshold.

Therefore, the device is exempt from stand-alone SAR test requirements.

Conclusion: Therefore our device complies with FCC's RF radiation exposure limits for general population without SAR evaluation.