

Appendix A: FCC Part 1.1307, 1.1310, 2.1091, 2.1093; IC RSS-Gen: RF Exposure

According to KDB447498D01 General RF Exposure Guidance v05 4.3.1. Standalone SAR test exclusion considerations, unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

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:

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

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- 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

4.1.3 EUT RF Exposure

The max conducted peak output power is 4 uW at 2405 MHz

The best case gain of the antenna is 0.5 dBi (1.1 numeric)

$\text{EIRP} = 4 \text{ uW} \times 1.1 = 4.4 \text{ uW} = 0.0044 \text{ mW}$ (rounding to the nearest mW = 0 mW)

According to the formula calculate the EIRP test result:

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

General RF Exposure = $(0 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.405 \text{ GHz}} = 0$ ①

SAR requirement:

$S = 3.0$ ② ;

① < ②.

Therefore, SAR evaluation is not required.