

RF Exposure evaluation

According to 447498 D01 General RF Exposure Guidance v05

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:

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

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

Worse case of BT is as below:

[2402 MHz 2.65dBm (1.84mW) output power]

$(1.84\text{mW} / 5\text{mm}) \cdot [\sqrt{2.402 (\text{GHz})}] = 0.6 < 3.0$ for 1-g SAR

Worse case of WIFI 2.4G is as below:

[2412 MHz 6.71dBm (4.69 mW) output power]

$(4.69\text{mW} / 5\text{mm}) \cdot [\sqrt{2.412 (\text{GHz})}] = 1.45 < 3.0$ for 1-g SAR

Worse case of WIFI 5G is as below:

[5785MHz 6.55dBm (4.52mW) output power]

$(4.52 \text{ mW} / 5\text{mm}) \cdot [\sqrt{5.785 (\text{GHz})}] = 2.17 < 3.0$ for 1-g SAR

$2.17 + 0.6 = 2.77 < 3.0$ for 1-g SAR

Then SAR evaluation is not required