

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:

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

$f(\text{GHz})$ 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 BLE is as below: [2480 MHz 7dBm (5.012 mW) Tune-up power]

$$(5.012 \text{ mW} / 5\text{mm}) \cdot \sqrt{2.480(\text{GHz})} = 1.58 < 3.0 \text{ for 1-g SAR}$$

Worse case of BT is as below: [2402 MHz 4dBm (2.512 mW) Tune-up power]

$$(2.512 \text{ mW} / 5\text{mm}) \cdot \sqrt{2.402(\text{GHz})} = 0.78 < 3.0 \text{ for 1-g SAR}$$

Then SAR evaluation is not required