



RF Exposure evaluation

According to 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:

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

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

BLE:

Worse case output power is as below: [2441MHz:-0.99dBm]

Maximum output power is -0.99dBm (0.8mW).

$(0.8\text{mW} / 5\text{mm}) \cdot [\sqrt{2.440(\text{GHz})}] = 0.250 < 3.0$ for 1-g SAR

2.4G WIFI:

Worse case output power is as below: [2452MHz:8.64dBm]

Maximum output power is 8.64dBm (7.31 mW).

$(7.31\text{mW} / 5\text{mm}) \cdot [\sqrt{2.452(\text{GHz})}] = 2.281 < 3.0$ for 1-g SAR

The device could support transmission with 2.4G, BLE simultaneously.

$\text{MPE1/LIMIT} + \text{MPE2/LIMIT} = 2.281/3 + 0.250/3 = 0.844 \leq 1.0$

Then SAR evaluation is not required