

RF exposure evaluation

According to 447498 D01 General RF Exposure Guidance v05r02 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies

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:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$

for 1-g SAR and ≤ 7.5 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 for Bluetooth as below:

[2480MHz: 8.60dBm (7.24 mW) output power]

$(7.24 \text{ mW} / 5\text{mm}) \cdot [\sqrt{2.480(\text{GHz})}] = 2.28 < 3.0$ for 1-g SAR

So, SAR evaluation for Bluetooth is not required

Worse case for BLE as below:

[2442MHz: 7.16dBm (5.20 mW) output power]

$(5.20 \text{ mW} / 5\text{mm}) \cdot [\sqrt{2.442 (\text{GHz})}] = 1.63 < 3.0$ for 1-g SAR

So, SAR evaluation for BLE is not required

Worse case for WiFi as below:

[2437MHz: 8.41dBm (6.93 mW) output power]

$(6.93\text{mW} / 5\text{mm}) \cdot [\sqrt{2.437(\text{GHz})}] = 2.16 < 3.0$ for 1-g SAR

So, SAR evaluation for WiFi is not required