

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:

[2402MHz: 7.43dBm (5.53 mW) output power]

$(5.53 \text{ mW} / 5\text{mm}) \cdot [\sqrt{2.402(\text{GHz})}] = 1.71 < 3.0$ for 1-g SAR

So, SAR evaluation for Bluetooth is not required

Worse case for WiFi as below:

[2437MHz: 9.21dBm (8.34 mW) output power]

$(8.34\text{mW} / 5\text{mm}) \cdot [\sqrt{2.437(\text{GHz})}] = 2.60 < 3.0$ for 1-g SAR

So, SAR evaluation for WiFi is not required