



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: [2440MHz: 1.44dBm]

Antenna Gain is 2.74dBi

Maximum output power is 1.44dBm (1.39 mW).

$(1.39\text{mW} / 5\text{mm}) \cdot [\sqrt{2.440(\text{GHz})}] = 0.44 < 3.0$ for 1-g SAR.

EDR:

Worse case output power is as below: [2402MHz: 2.25dBm]

Antenna Gain is 2.74dBi

Maximum output power is 2.25dBm (1.68 mW).

$(1.68\text{mW} / 5\text{mm}) \cdot [\sqrt{2.402(\text{GHz})}] = 0.52 < 3.0$ for 1-g SAR.



2.4G WIFI:

Worse case output power is as below: [2422MHz: 7.99dBm]

Antenna Gain is 2.74dBi

Maximum output power is 7.99dBm (6.30 mW).

$(6.30\text{mW} / 5\text{mm}) \cdot [\sqrt{2.422(\text{GHz})}] = 1.96 < 3.0$ for 1-g SAR.

5G WIFI:

Worse case output power is as below: [5755MHz: 7.10dBm]

Antenna Gain is 2.54dBi

Maximum output power is 7.10dBm (5.13 mW).

$(5.10\text{mW} / 5\text{mm}) \cdot [\sqrt{5.755(\text{GHz})}] = 2.46 < 3.0$ for 1-g SAR.

Maximum RF Exposure evaluation for BT+WIFI: $0.52 + 2.46 < 3.0$ for 1-g SAR.

Then SAR evaluation is not required.