

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 \leq 50 mm are determined by:

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

-- $f(\text{GHz})$ 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

$$\text{eirp} = \text{pt} \times \text{gt} = (\text{Exd})^2/30$$

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, --- $10^{((\text{dBuV/m})/20)/10^6}$

d = measurement distance in meters (m) ---3m

So $\text{pt} = (\text{Exd})^2/30 \times \text{gt}$

For BLE

Field strength =90.41dBuV/m @3m

Ant gain =0.8dBi, so Ant numeric gain= 1.20

So $\text{pt} = \{ [10^{90.41/20}/10^6 \times 3]^2/30 \times 1.20 \} \times 1000 \text{ mW} = 0.274 \text{ mW}$

So $(0.274 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.480} = 0.086 < 3$

Then SAR evaluation is not required