

RF Exposure evaluation

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 ≤ 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

Ant gain 0dBi; so Ant numeric gain=1.0

For Bluetooth 4.0LE

pt=5.673dBm =3.69mW at 2402MHz

So $(3.69\text{mW}/5\text{mm}) \times \sqrt{2.402\text{GHz}} = 1.144 < 3$

For Bluetooth 3.0

pt=1.124dBm =1.30mW at 2402MHz

So $(1.30\text{mW}/5\text{mm}) \times \sqrt{2.402\text{GHz}} = 0.403 < 3$

For WIFI 802.11b/g/n at 2.4GHz

pt=9.62dBm =9.16mW at 2442MHz

So $(9.16\text{mW}/5\text{mm}) \times \sqrt{2.442\text{GHz}} = 2.863 < 3$

For WIFI 802.11a/n at 5GHz

pt=7.42dBm =5.52mW at 5745MHz

So $(5.52\text{mW}/5\text{mm}) \times \sqrt{5.745\text{GHz}} = 2.646 < 3$

Then SAR evaluation is not required