



RF Exposure Evaluation

According to 447498 D01 General RF Exposure Guidance v06 and part 2.1093, Unless specifically required by the *published RF exposure KDB procedures*, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding *SAR Test Exclusion Threshold* condition(s), listed below, is (are) satisfied.

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

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

Here,

For 2.4G WIFI

Test Mode	Frequency	Max Power(dBm)	Tune UP tolerance (dBm)	Max Tune UP power (dBm)	Max Tune UP power (mW)	Min. distance (mm)	Calc. thresholds	limit
802.11b	2437	7.341	7 $\pm$ 1	8	6.31	5	1.96996	3.0
802.11g	2412	5.777	5 $\pm$ 1	6	3.98	5	1.23657	3.0
802.11n20	2412	5.313	5 $\pm$ 1	6	3.98	5	1.23657	3.0
802.11n40	2412	5.135	5 $\pm$ 1	6	3.98	5	1.23657	3.0

For BLE

Test Mode	Frequency	Max Power(dBm)	Tune UP tolerance (dBm)	Max Tune UP power (dBm)	Max Tune UP power (mW)	Min. distance (mm)	Calc. thresholds	limit
GFSK	2402	2.96	2 $\pm$ 1	3	2.00	5	0.61847	3.0

Note:

The same antenna cannot transmit at the same time, but WIFI ANT1 and BT ANT2 can transmit at the same time, so the worst simultaneous transmitting consideration:

The ratio = $\text{ANT1}_{\text{MPE(MAX)}} / \text{limit} + \text{ANT2}_{\text{MPE(MAX)}} / \text{limit}$

$$= 1.96996 / 3 + 0.61847 / 3$$

$$= 0.86281 < 1.0$$

Conclusion:

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

SAR Test Exclusion Thresholds is 3.0 for separation distance 5mm. Therefore, SAR test is not required