



RF Exposure evaluation

According to KDB 447498 D01 General RF Exposure Guidance v06 and 47CRF part 2.1093.

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:

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

Frequency (MHz)	Max power (dBm)	Max power (mW)	Min. distance (mm)	Calculation Value	Threshold Value
2440	1.47	1.40	5	0.44	3.0

For BT

Frequency (MHz)	Max power (dBm)	Max power (mW)	Min. distance (mm)	Calculation Value	Threshold Value
2440	1.83	1.52	5	0.47	3.0

For 2.4G WIFI

Frequency (MHz)	Max power (dBm)	Max power (mW)	Min. distance (mm)	Calculation Value	Threshold Value
2462	9.67	9.27	5	2.91	3.0

For 5G WIFI

Frequency (MHz)	Max power (dBm)	Max power (mW)	Min. distance (mm)	Calculation Value	Threshold Value
5200	7.95	6.24	5	2.85	3.0

For 5.8G WIFI

Frequency (MHz)	Max power (dBm)	Max power (mW)	Min. distance (mm)	Calculation Value	Threshold Value
5745	7.75	5.96	5	2.86	3.0

Note: that BT and BLE cannot work simultaneously

Operate simultaneously

BLE: $(1.40\text{mW} / 5\text{mm}) * [\sqrt{2.440(\text{GHz})/7.5}] = 0.091 \text{ w/kg}$

BT: $(1.52\text{mW} / 5\text{mm}) * [\sqrt{2.440(\text{GHz})/7.5}] = 0.099 \text{ w/kg}$

2.4GWIFI: $(9.27\text{mW} / 5\text{mm}) * [\sqrt{2.462(\text{GHz})/7.5}] = 0.609 \text{ w/kg}$

5GWIFI: $(6.24\text{mW} / 5\text{mm}) * [\sqrt{5.200(\text{GHz})/7.5}] = 0.865 \text{ w/kg}$



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5.8GWIFI: $(5.96\text{mW} / 5\text{mm}) * [\sqrt{5.745(\text{GHz})/7.5}] = 0.913 \text{ w/kg}$

If BT and 2.4G WIFI operate simultaneously, then $0.099 + 0.609 = 0.708 < 1.6\text{w/kg}$

If BT and 5G WIFI operate simultaneously, then $0.099 + 0.865 = 0.964 < 1.6\text{w/kg}$

If BT and 5.8G WIFI operate simultaneously, then $0.099 + 0.913 = 0.1.012 < 1.6\text{w/kg}$

So SAR test is not required