

RF Exposure Evaluation

According to KDB 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,

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

For BLE_1Mbps

Max Conducted Power(dBm)	Tune-up Power(dBm)	Max Tune-up Power(dBm)	Max Power(mW)	Frequency(MHz)	Min. distance(mm)	Calc. thresholds	limit
1.03	1(± 1)	2	1.58	2402	5	0.489749	3.0

For 2.4G WiFi

Max Conducted Power(dBm)	Tune-up Power(dBm)	Max Tune-up Power(dBm)	Max Power(mW)	Frequency(MHz)	Min. distance(mm)	Calc. thresholds	limit
6.29	6(± 1)	7	5.01	2412	5	1.556168	3.0

Remark: BLE antenna gain= 2.97dBi; 2.4GWiFi antenna gain= 4.44dBi

The device can transmit with 2.4GWiFi and Bluetooth BLE simultaneously.

Calculations for simultaneously transmit

Mode	Ratios	Result	Limit	Result
BLE	0.16325	0.68197	1	PASS
2.4G Wi-Fi	0.51872			

Ratios = Power Density / Power density Limit

So a SAR test is not required