

RF Exposure Evaluation

According to KDB 447498 D01v06 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 wifi 2.4G

Max Power(dBm)	Max Power(mW)	Frequency(MHz)	Min. distance(mm)	Calc. thresholds	limit
3.995	2.5	2462	5	0.79	3.0

$$\text{EIRP} = E_{\text{Meas}} + 20 \log(d_{\text{Meas}}) - 104.7$$

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dB μ V/m

d_{Meas} is the measurement distance, in m

For BT

Field strength (dBuV/m)	Max Power(dBm)	Max Power(mW)	Frequency(MHz)	Min. distance(mm)	Calc. thresholds	limit
84.4	-10.8	0.083	2480	5	0.03	3.0

For Simultaneous transmitting, 1): The sum of the ratios of the spatially averaged results to the applicable frequency dependent MPE limits $= 0.79/3 + 0.03/3 = 0.27 < 1$ Since the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in the device is ≤ 1.0 , the EUT is considered to satisfy MPE compliance for simultaneous transmission operations.

So a SAR test is not required