



RF exposure

According to 447498 D01 General RF Exposure Guidance v06

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:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})]}{\sqrt{f(\text{GHz})}} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}$$

When an antenna qualifies for the standalone SAR test exclusion of 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to the following to determine the simultaneous transmission SAR test exclusion criteria:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})]}{\sqrt{f(\text{GHz})/x}} \text{ W/kg, for test separation distances } \leq 50 \text{ mm;}$$

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

$x = 7.5$ for 1-g SAR and $x = 18.75$ for 10-g SAR.

The result is rounded to one decimal place for comparison.

Results

-BLE

Frequency (GHz)	Distance (mm)	Max tune-up power		Calculation value	Exclusion Threshold
		(dBm)	(mW)		
2.402	5	-4	0.40	0.12	≤ 3.0
2.442	5	-4	0.40	0.12	≤ 3.0
2.480	5	-3	0.50	0.16	≤ 3.0

-BDR

Frequency (GHz)	Distance (mm)	Max tune-up power		Calculation value	Exclusion Threshold
		(dBm)	(mW)		
2.402	5	-3	0.50	0.16	≤ 3.0
2.441	5	-3	0.50	0.16	≤ 3.0
2.480	5	-4	0.40	0.13	≤ 3.0

-Simultaneous transmission

Calculation value (BLE)	Calculation value (BDR)	SUM	SAR Limit for general population/uncontrolled exposure (W/kg)
0.06	0.06	0.12	≤ 1.6