

General SAR test reduction & exclusion guidance

KDB 447498

Section 4.3 General SAR test reduction and exclusion guidance

For Standalone SAR exclusion consideration, when SAR Exclusion Threshold requirement in KDB 447498 is satisfied, standalone SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required.

The SAR Test Exclusion Threshold for frequencies in the range 100 MHz to 6 GHz, and for test separation distance of ≤ 50 mm, is determined as follows.

$$\text{SAR Exclusion Threshold (SARET)} = (\text{NT} \times \text{TSD}_A) / \sqrt{f_{\text{GHz}}}$$

Where,

NT = Numeric Threshold (3.0 for 1-g SAR and 7.5 for 10-g SAR)
TSD_A = Minimum Test separation distance or 50 mm (whichever is lower)
f_{GHz} = Transmit frequency in GHz

The SAR Test Exclusion Threshold for frequencies below 100 MHz, and for test separation distance of ≤ 50 mm, is determined as follows.

$$\text{SAR Exclusion Threshold (SARET)} = [(\text{NT} \times \text{TSD}_A) / \sqrt{0.1}] \times [1 + \text{Log} (100 / F_{\text{MHz}})] \times 1/2$$

Where,

NT = Numeric Threshold (3.0 for 1-g SAR and 7.5 for 10-g SAR)
TSD_A = 50 mm
f_{MHz} = Transmit frequency in MHz

Frequency (MHz)	Maximum Power (mW)	Duty Cycle %	Time Average Power (mW)	SAR Exclusion Threshold at 50 mm (mW)	Ratio	Sum of Ratios	SAR Evaluation
13.56*	0.00000334	N/A	0.00000022	442.97	0.0000000005	0.73	Not Required
902.25*	414.0	23.7	98.12	157.92	0.62		
2402.00*	6.31	N/A	6.31	96.78	0.07		
2402.00#	3.98	N/A	3.98	96.78	0.04		

* Denotes radio in Gauge section of EUT

Denotes radio in Pressure module section of EUT

Therefore standalone SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required.