

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.

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

Where,

NT = Numeric Threshold (3.0 for 1-g SAR and 7.5 for 10-g SAR)

TSDA = Minimum Test separation distance or 50 mm (whichever is lower)

f_{GHz} = Transmit frequency in GHz

Wi-Fi Operation					
Channel Frequency (MHz)	Maximum Conducted Power (mW)	Duty Cycle (%)	Time Averaged Maximum Conducted Output Power (mW)	SAR Exclusion Threshold at 5 mm (mW)	SAR Evaluation
2412	166.0	5	8.30	9.7	Not Required
2437	166.0	5	8.30	9.6	Not Required
2462	147.9	5	7.40	9.6	Not Required

Maximum Conducted Power is taken from TRA-052152-47-01A for the worst case operating mode for each frequency

5% duty cycle is declared by the manufacturer as a worst case scenario

BLE Operation			
Channel Frequency (MHz)	Maximum Conducted Power (mW)	SAR Exclusion Threshold at 5 mm (mW)	SAR Evaluation
2402	1.8	9.7	Not Required
2440	2.0	9.6	Not Required
2480	2.5	9.6	Not Required

Maximum Conducted Power is taken from TRA-052152-47-00A

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