17 General SAR test reduction & exclusion guidance / MPE Calculation

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 operation in the 2400 – 2483.5 MHz band will be determined as follows

SAR Exclusion Threshold (SARET)

SAR Exclusion Threshold = Step 1 + Step 2

Step 1

NT = [(MP/TSDA) * √ fGHz]

NT = Numeric Threshold (3.0 for 1-g SAR and 7.5 for 10-g SAR)
MP = Max Power of channel (mW) (inc tune up)
TSDA = Min Test separation Distance or 50mm (whichever is lower) = 5mm (in this case)

We can transpose this formula to allow us to find the maximum power of a channel allowed and compare this to the measured maximum power.

= [(NT x TSDA) / √ fGHz]

For Distances Greater than 50 mm Step 2 applies

Step 2

(TSDB – 50mm) * 10}

Where:
TSDB = Min Test separation Distance (mm) = 50

Note: Step 2 is not required here as the TSDA is 5mm.

Operating Frequency 2.405 GHz

SARET = [(3.0 x 5) / √2.402]
SARET = 9.68 mW

Operating Frequency 2.440 GHz

SARET = [(3.0 x 5) / √2.440]
SARET = 9.60 mW

Operating Frequency 2.480 GHz

SARET = [(3.0 x 5) / √2.480]
SARET = 9.53 mW

Channel Frequency (MHz)	Max. Output Power (mW)	SAR Exclusion Threshold (mW)	SAR Evaluation
2405	0.946	9.68	Not Required
2440	0.798	9.60	Not Required
2480	0.614	9.53	Not Required

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