16 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 100 MHz to 6 GHz will be determined as follows.

SAR Exclusion Threshold (SARET) = Step 1 + Step 2

Step 1

$$NT = [(MP/TSD^{A}) * \sqrt{f_{GHz}}]$$

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

MP = Max Power of channel (mW) (including tune-up tolerance)

TSD^{A} = 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.

$$= [(NT \times TSD^{A}) / \sqrt{f_{GHz}}]$$

For Distances greater than 50 mm Step 2 applies

Step 2

$$(TSD^{B} - 50mm) * 10$$

Where:

TSD^{B} = Min Test separation Distance (mm) = 50

Note: Step 2 doesn't apply here as the TSD^{A} is less than 50 mm

Operating Frequency 917.6 MHz

SARET = [(3.0 x 5) / √0.9176]

SARET = 15.66 mW

Operating Frequency 927.8 MHz

SARET = [(3.0 x 5) / √0.9278]

SARET = 15.57 mW

Channel Frequency (MHz)	EIRP (mW)	SAR Exclusion Threshold (mW)	SAR Evaluation
917.6	0.17	15.66	Not Required
927.8	0.16	15.57	Not Required

Note: EIRP is calculated from maximum radiated field strength.

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