

19 General SAR test reduction and exclusion

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.

In the frequency range below 100 MHz to 6 GHz and test separation distance of 5mm, the SAR Test Exclusion Threshold for operation at 917.5 and 922.5 MHz will be determined as follows

SAR Exclusion Threshold (SARET)

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

$$\begin{aligned} NT &= \text{Numeric Threshold (3.0 for 1-g SAR and 7.5 for 10-g SAR)} \\ MP &= \text{Max Power of channel (mW) (inc tune up)} \\ TSD^A &= \text{Min Test separation Distance or 50mm (whichever is lower)} = 5 \end{aligned}$$

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.

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

Operating Frequency 917.5 MHz

$$\begin{aligned} MP &= [(3.0 \times 5) / \sqrt{0.9175}] \\ MP &= [15 / 0.9578] \\ MP &= 15.6 \text{ mW} \end{aligned}$$

The calculated output power 10 mw is less than the SAR Exclusion Threshold of 15.6mW.

Operating Frequency 922.5 MHz

$$\begin{aligned} MP &= [(3.0 \times 5) / \sqrt{0.9225}] \\ MP &= [15 / 0.9604] \\ MP &= 15.6 \text{ mW} \end{aligned}$$

The calculated output power 13 mw is less than the SAR Exclusion Threshold of 15.6 mW.

Therefore standalone SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required. Section 4.3 General SAR test reduction and exclusion guidance