Appendix L: SAR Exclusion & MPE Calculation 900MHz FHSS Operation

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 ≤ 50mm, the SAR

Test Exclusion Threshold will be determined as follows

SAR Exclusion Threshold (SARET)

SAR Exclusion Threshold = 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) (inc tune up)
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 is not required here as the TSD_A is less than 50mm.

Operating Frequency 915.8 MHz
$SARET = [(3.0 \times 5) / \sqrt{0.9158}]$
SARET = 15.67mW
Operating Frequency 922.1 MHz
$SARET = [(3.0 \times 5) / \sqrt{0.9221}]$
SARET = 15.62 mW

Channel Frequency (MHz)	EIRP (mW)	SAR Exclusion Threshold	SAR Evaluation
915.8	8.13	15.67	Not Required
922.1	7.26	15.62	Not Required

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