## Appendix G: General SAR test reduction and 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.

In the frequency range below 100 MHz to 6 GHz and test separation distance of 50mm, the SAR Test Exclusion Threshold for operation at 915.25 and 927.6 MHz will be determined as follows

SAR Exclusion Threshold

$$NT = [(MP/TSD) * \sqrt{f_{GHz}}] + \{(TSD - 50mm) * f_{(MHz)}/150 ]\}$$

Where:

| | | |
|---|---|---|
| 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 | = | Min Test separation Distance (mm) = 50 |
| $f_{GHz}$ | = | Transmit frequency (or 100MHz if lower) |

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.

$$MP = [ (NT \times TSD) / \sqrt{f_{GHz}}] + \{(TSD - 50) * [f_{(MHz)}/150]\}$$

**Operating Frequency 915.25 MHz**

$$MP = [ (3.0 \times 50) / \sqrt{0.91525} ] + \{(50 - 50) * [915.25/150]$$
$$MP = [150 / 0.9566] + (0 * 6.10)$$
$$MP = 156.8mW$$

The calculated output power 3.56mw (Peak) is less than the SAR Exclusion Threshold of 156.8mW.

**Operating Frequency 927.60 MHz**

$$MP = [(3.0 \times 50) / \sqrt{0.92760}] + \{(50 - 50) * [927.60/150]\}$$
$$MP = [150 / 0.9631] + (0 * 6.18)$$
$$MP = 155.7mW$$

The calculated output power 3.99mW (Peak) is less than the SAR Exclusion Threshold of 155.7mW.

Base on a separation distance of 50mm and the numeric threshold for 1-g SAR, standalone SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required.