



### SAR Exclusion Justification

Test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq$  50 mm

Guidance document reference: 447498 D01 General RF Exposure Guidance v06, paragraph 4.3.1(1).

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq$  50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] ^ *$

$[\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is  $\leq$  50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $<$  5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

#### SAR test exclusion analysis:

Assumptions: The minimum separation distance of 14.3 mm as shown in the Technical Description Document is assumed.

Max. power of channel: 18.3 mW  
Min. separation distance: 14.3 mm  
Max. frequency: 2.44 GHz

$[(\text{Pwr}/\text{Dist}) * \sqrt{f(\text{GHz})}] = 2.0$

Max. power is source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance. The result of the above SAR threshold calculation demonstrates that the result is less than the 1-g numeric threshold of 3 and the 10-g numeric threshold of 7.5.

**Conclusion: The above analysis shows that the evaluated device qualifies for exemption from SAR testing.**

Signed: , Technical Manager 2/26/2019