



### 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 v05r01, page 11, 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:

$$\left[ \frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] * \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

- $f(\text{GHz})$  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 exact separation distance from the antenna to the body is at least 15 mm.

Max. power of channel:	20 mW
Min. separation distance:	5 mm
Max. frequency:	2.48 GHz

$$[(\text{Pwr}/\text{Dist}) * \sqrt{\text{Freq.}}] = 6.3$$

The result of the above SAR threshold calculation demonstrates that the result is less than the 10-g numeric threshold of 7.5.

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