



### **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 v05r02, 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:

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

***[v<sub>f</sub>(GHz)]  $\leq$  3.0 for 1-g SAR and  $\leq$  7.5 for 10-g extremity SAR, where***

- $f$ (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: Since the exact separation distance may vary from sensor to sensor, the minimum separation distance of 5 mm is assumed per the guidance document.

Max. power of channel: 7 mW

Min. separation distance: 5 mm

Max. frequency: 2.44 GHz

$[(Pwr/Dist)*vFreq.] =$  2.2

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. **This is a limb-worn device where the 10-g threshold applies.**

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



Signed: Senior Engineer 4/11/2018