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SAR EXCLUSION DOCUMENT

Document 75940672-05 Issue 01

FCC Standalone SAR Test Exclusion Considerations (KDB 447498 D01) Section 4.3.1 c)

<100 MHz – Separation Distance ≤50 mm or Separation Distance >50 mm and <200 mm

The 10 g Extremities SAR test exclusion thresholds for <100 MHz are determined by the following steps:

Step a) Threshold result from Formula in Section 4.3.1 a);

[(max power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] [$\sqrt{f_{(GHz)}}$] ≤ 7.5 for 10g extremity SAR.

- $f_{(GHz)}$ 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
- When the maximum test separation distance is < 5 mm, a distance of 5 mm is applied.

Step b) requires formula to be re-arranged to give power allowed at numeric threshold at 50 mm test separation distance and Step c) requires $f_{(GHz)}$ to be set to 100 MHz (0.1 GHz) giving:

Step a) Power threshold = (7.5 * 50) / ($\sqrt{0.1}$) = 1185.9 mW

Step b) Threshold result from Formula in Section 4.3.1 b) 1);

{[Power allowed at numeric threshold for 50 mm {Formula Step A})] + [(test separation distance – 50 mm)·($f_{(MHz)}$/150)]} mW

- f_{MHz} is the RF channel transmit frequency in MHz.
- Power and distance are rounded to the nearest mW and mm before calculation.
- The result is rounded to one decimal place for comparison

Power threshold = 1185.9 mW + [(test separation distance – 50 mm)·($f_{(MHz)}$/150)]} mW

Step c) requires $f_{(MHz)}$ to be set to 100 MHz giving:

Step b) Power threshold = 1185.9 mW + [(test separation distance – 50 mm)·(100)/150)] mW

Approved by Ryan Henley

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Authorised Signatory

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Step c) 1) Threshold result from Formula in Section 4.3.1 c) 1); >50 mm and <200 mm

Threshold result from Formula in Section 4.3.1 b) 1) is multiplied by [1+log(100/f_{MHz})]

Power threshold = 1185.9 mW + [(test separation distance – 50 mm)·(100)/150)] * [1+log(100/f_{MHz})] mW

- f_{MHz} is the RF channel transmit frequency in MHz.
- Power and distance are rounded to the nearest mW and mm before calculation.
- The result is rounded to one decimal place for comparison

Step c) 2) Threshold result from Formula in Section 4.3.1 c) 2); ≤50 mm

Threshold result from the formula in 4.3.1 c) 1) above for >50 mm and <200 mm for 50 mm and 100 MHz is multiplied by 0.5.

Power threshold = 1185.9 mW + [(50 mm – 50 mm)·(100)/150)] * [1+log(100/f_{MHz})] * 0.5 mW

Which simplifies to:

Power threshold = 1185.9 mW * [1+log(100/f_{MHz})] * 0.5 mW

- f_{MHz} is the RF channel transmit frequency in MHz.
- Power and distance are rounded to the nearest mW and mm before calculation.
- The result is rounded to one decimal place for comparison

SAR Exclusion Result (10 g Extremities)

Frequency (MHz)	Maximum Power (Tune up Value) *(mW)	Test Separation Distance (mm)	SAR Exclusion Power Threshold Section 4.3.1 c) (mW)	SAR Test Exclusion (Yes/No)
0.125	125	5	2314.2	Yes
0.134	125	5	2296.3	Yes

*Tune-up value is the maximum declared output power of the device

The SAR exclusion threshold has been evaluated using the formula described above from information supplied by the manufacturer. Based on the calculation above, the EUT is categorically excluded from SAR testing.