




Exhibit: RF Exposure – FCC

FCC ID: 2AXSI-SSERIES

Client	Excelitas Canada Inc.	
Product	S2000-ELITE	
Standard(s)	FCC KDB 447498:2015	


RF Exposure – FCC

The device is evaluated for portable applications as a worst case usage scenario where the radiating structure is within 20cm from the body of the user. SAR evaluation is applied.

General SAR test exclusion guidance for NFC:

As per FCC KDB 447498 Section 4.3.1 c) 2), the 1-g extremity SAR Test Exclusion Threshold for frequencies below 100 MHz at test separation distances ≤ 50 mm is determined by:

- A) The power threshold determined by the equation in Section 4.3.1 c) 1) at Distance = 50 mm, and Frequency = 100 MHz multiplied by 0.5.
- B) The power threshold in Section 4.3.1 c) 1) is determined by Power threshold in Section 4.3.1 b) multiplied by $[1 + \log(100/f(\text{MHz}))]$
Where $f(\text{MHz}) = 13.56$ MHz
- C) The power threshold in Section 4.3.1 b) for frequencies 100 MHz – 1500 MHz is:
[Power allowed at numeric threshold for 50 mm in Section 4.3.1 a)]
+ [Test separation distance – 50mm] x $[f(\text{MHz})/150]$
- D) Power allowed at a numeric threshold of 3.0 (for 1-g SAR) at 50 mm in Section 4.3.1 a)] is:
 $[(3.0)/((f(\text{GHz})^{0.5}))] \times [\text{Test separation distance}]$

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SAR Calculations

The EUT transmits at 13.56 MHz frequency.
Therefore, solving the above in reverse sequence:

D)

$$[3.0/(0.1\text{GHz}^{0.5})] \times [50 \text{ mm}] = 474.3416 \text{ mW}$$

C)

$$474.3416 \text{ mW} + [(50 \text{ mm} - 50 \text{ mm}) \times (13.56 \text{ MHz}/150)] = 474.3416 \text{ mW}$$

B)

$$[474.3416 \text{ mW}] \times [1 + \log(100/13.56 \text{ MHz})] = 885.9470 \text{ mW}$$

A)

$$(885.9470 \text{ mW}) \times (0.5) = \mathbf{442.974 \text{ mW}}$$

The power threshold for 13.56 MHz SAR test exclusion is therefore **443.0 mW**.

The 13.56 MHz power level is $-30.33 \text{ dBm} = 0.000927 \text{ mW} < 443.0 \text{ mW}$

Results

SAR test exclusion applies for the 13.56 MHz transmitter.