

RF Exposure Evaluation

for

Bluetooth BLE 4.0

Model Number : X-NUCLEO-IDB04A1

FCC ID : S9NIDB04A1

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1.1 Applied standards

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

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

$[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,²⁵ where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation²⁶
- 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

1.2 Exposure Evaluation:

Max tune up power (average)= $3 \pm 1.5 \text{ dBm} \Rightarrow \text{Max is } 4.5 \text{ dBm} = 2.82 \text{ mW}$

test separation distance=5mm

$f=2.48 \text{ GHz}$

$2.82/5 * \sqrt{2.48} = 0.89 < 3$

Conclusion: No SAR required.