



## Washington Laboratories, Ltd.

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Test Letter #: 17893-01 REV 0 (Created with Reference to WL Report # 17891 & 17892)

Applicant Name: Senseonics, Inc.

Exempt RF Device (Co-Located Transmitters)

Digital Transmission System (BLE) & Near Field Communications (NFC)

EUT Name: Phoenix2 Transmitter

FCC ID: 2AHYA-3402

IC ID: N/A

EUT Summary: The Phoenix2 Transmitter is categorically excluded from SAR testing.

### Exclusion Threshold:

Reference: KDB 447498 DO1 General RF Exposure Guidance v06 Section 4.3.

SAR determinations are not required for transmitters operating between 5MHz and 100MHz.

For 100 MHz to 6 GHz and test separation distances of  $\leq 50$  mm the 1-g, and 10-g, SAR test exclusion thresholds are determined by the following calculation:

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

### Exclusion Results:

Power and distance shall be rounded to the nearest mW and mm before the calculation. When the minimum separation distance is  $< 5$ mm, a calculation distance of 5mm shall be used.

The applicant has declared that the EUT will be manufactured, marketed, and deployed into the field with a maximum transmitter output power (conducted at the antenna port) of 0.0 dBm. Additionally, the applicant's production tune-up tolerance is  $\pm 4.0$ dB. For a peak transmit power rating of 4.0 dBm.

In accordance with KDB Inquiry Tracking #357683, the guidance from the FCC is to test and certify the device at the maximum power that the applicant's QC passes. Please see the KDB Inquiry Exhibit for that guidance.

As such, the EUT was tested with the transmitter power tuned, via software, to a setting that produced  $\sim 4$ dBm.

During testing, the BLE radio fundamental peak output power measured 4.31 dBm, conducted at the antenna port. The maximum gain of the Ceramic Chip Antenna is 1.0 dBi. As such, the maximum potential EIRP is 5.31 dBm.



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### Exclusion Results (continued):

5.31 dBm is equal to 3.396 mW (can be rounded to 3.5 mW (worst-case))

$$[3.5\text{mW} \div 5\text{mm}] \times [\sqrt{2.80_{\text{GHz}}}] = 0.7 \times 1.67 = 1.2 < 3.0$$

As 1.2 is less than 3.0, the EUT complies with the 1-g SAR exclusion limits.

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Washington Laboratories, Ltd.