



Excellence in Compliance Testing

Certification Exhibit

**FCC ID: 2AA9WVSN400
IC: 11665A-VSN400**

**FCC Rule Part: 15.247
IC Radio Standards Specification: RSS-210**

ACS Project Number: 13-2155

Manufacturer: VSN Technologies, Inc.
Model: VSN400

RF Exposure

General Information:

Applicant: VSN Technologies, Inc.
ACS Project: 13-2155
Device Category: Portable
Environment: General Population/Uncontrolled Exposure

Technical Information:

Antenna Type: Planar Inverted-F Antenna (PIFA)
Antenna Gain: -0.21 dBi
Maximum Transmitter Conducted Power (Measured): 3.56 dBm, 2.27 mW
Maximum Transmitter RF Output Power (Rated): 4 dBm, 2.512 mW
Maximum System EIRP: 3.79dBm, 2.293 mW

Justification for Exclusion:

The VSN400 is a personal emergency response device which includes a Bluetooth Low Energy (BLE) transceiver, which operates from 2402 MHz to 2480 MHz. The unit is usually hand-held or body-worn and communicates with a smart phone application. Based on the device's typical mode of operation, the justification for SAR test exclusion is provided below:

Minimum Distance: 5 mm
Highest Operating Frequency: 2480 MHz
Maximum System Rated Power: 4 dBm

Per KDB 447498 D01 General RF Exposure Guidance v05r01, 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:

$$\begin{aligned} &[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot \\ &[\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR} \\ &= (2.512 / 5) * (\sqrt{2.48}) \\ &= 0.5024 * 1.575 \\ &= 0.8 \end{aligned}$$

Based on the results above, the unit meets both body and extremities SAR exclusion requirements.