

10/28/2025

OnAsset Intelligence, Inc.  
8407 Sterling St.  
Irving, TX 75063  
USA

Dear Shawn Key,

Enclosed is the EMC test report for testing of the OnAsset Intelligence, Inc., Sentinel Flex tested to the requirements of FCC 2.1091, RSS-102 Issue 6, IEC62311 Issue 2

Thank you for using the services of Eurofins E&E North America. If you have any questions regarding these results or if MET can be of further service to you, please do feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Nancy LaBrecque".

Nancy LaBrecque  
Documentation Department  
Eurofins Electrical and Electronic Testing NA, Inc.

Reference: WIRA 134911\_MPE\_R2



Certificates and reports shall not be reproduced except in full, without the written permission of Eurofins E&E North America. While use of the A2LA logo in this report reflects MET accreditation under these programs, the report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any agency of the Federal Government. This letter of transmittal is not a part of the attached report.

Eurofins MET Laboratories Inc. (Eurofins E&E North America) is part of the Eurofins Electrical & Electronics (E&E) global compliance network.

**RF Exposure Criteria  
Test Report  
Using Maximum Permissible Exposure (MPE) Calculations**

for the

**OnAsset Intelligence, Inc.**  
Sentinel Flex

**Tested under**

**FCC 2.1091, RSS-102 Issue 6, IEC62311 Issue 2**

**Report: WIRA 134911\_MPE\_R2**

10/28/2025



Veer Patel, EMC / Wireless Test Engineer  
Electromagnetic Compatibility Lab



Nancy LaBrecque  
Documentation Department

**Engineering Statement:** The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules Part 15.247 under normal use and maintenance.



Matthew Hinojosa  
EMC Manager, Austin Electromagnetic Compatibility Lab

## Report Status Sheet

| Revision | Report Date | Reason for Revision |
|----------|-------------|---------------------|
| 0        | 6/25/2025   | Initial Issue.      |
| 1        | 7/9/2025    | TCB Review Comments |
| 2        | 10/28/2025  | TCB Review Comments |

## List of Terms and Abbreviations

|                              |                                                                                                                            |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>AC</b>                    | Alternating Current                                                                                                        |
| <b>ACF</b>                   | Antenna Correction Factor                                                                                                  |
| <b>Cal</b>                   | Calibration                                                                                                                |
| <b><i>d</i></b>              | Measurement Distance                                                                                                       |
| <b>dB</b>                    | Decibels                                                                                                                   |
| <b>dB<math>\mu</math>A</b>   | Decibels above one <b>microamp</b>                                                                                         |
| <b>dB<math>\mu</math>V</b>   | Decibels above one <b>microvolt</b>                                                                                        |
| <b>dB<math>\mu</math>A/m</b> | Decibels above one <b>microamp per meter</b>                                                                               |
| <b>dB<math>\mu</math>V/m</b> | Decibels above one <b>microvolt per meter</b>                                                                              |
| <b>DC</b>                    | Direct Current                                                                                                             |
| <b>E</b>                     | Electric Field                                                                                                             |
| <b>DSL</b>                   | Digital Subscriber Line                                                                                                    |
| <b>ESD</b>                   | Electrostatic Discharge                                                                                                    |
| <b>EUT</b>                   | Equipment Under Test                                                                                                       |
| <b><i>f</i></b>              | Frequency                                                                                                                  |
| <b>CISPR</b>                 | Comite International Special des Perturbations Radioelectriques<br>(International Special Committee on Radio Interference) |
| <b>GRP</b>                   | Ground Reference Plane                                                                                                     |
| <b>H</b>                     | Magnetic Field                                                                                                             |
| <b>HCP</b>                   | Horizontal Coupling Plane                                                                                                  |
| <b>Hz</b>                    | Hertz                                                                                                                      |
| <b>IEC</b>                   | International Electrotechnical Commission                                                                                  |
| <b>kHz</b>                   | kiloHertz                                                                                                                  |
| <b>kPa</b>                   | kiloPascal                                                                                                                 |
| <b>kV</b>                    | kilovolt                                                                                                                   |
| <b>LISN</b>                  | Line Impedance Stabilization Network                                                                                       |
| <b>MHz</b>                   | MegaHertz                                                                                                                  |
| <b><math>\mu</math>H</b>     | microHenry                                                                                                                 |
| <b><math>\mu</math>F</b>     | microFarad                                                                                                                 |
| <b><math>\mu</math>s</b>     | microseconds                                                                                                               |
| <b>PRF</b>                   | Pulse Repetition Frequency                                                                                                 |
| <b>RF</b>                    | Radio Frequency                                                                                                            |
| <b>RMS</b>                   | Root-Mean-Square                                                                                                           |
| <b>V/m</b>                   | Volts <b>per meter</b>                                                                                                     |
| <b>VCP</b>                   | Vertical Coupling Plane                                                                                                    |

## 1.0 Requirements Summary

| Page Number | Test Name                                                   | Result           |
|-------------|-------------------------------------------------------------|------------------|
| 10          | IEC62311: 2019 MPE Limits<br>(For General Public Exposure)  | <b>Compliant</b> |
| 11          | RSS-102 Issue 5 MPE Limits<br>(For General Public Exposure) | <b>Compliant</b> |
| 11          | FCC Part 2.1091 MPE Limits<br>(For General Public Exposure) | <b>Compliant</b> |

**Table 1. Summary of Test Results**

## 2.0 Equipment Configuration

### 2.1 Overview

Eurofins MET Labs was contracted by OnAsset Intelligence, Inc. to perform testing on the Sentinel Flex, under OnAsset Intelligence, Inc.'s purchase order number 8587.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the OnAsset Intelligence, Inc. Sentinel Flex.

The results obtained relate only to the item(s) tested.

|                                       |                                                         |                                |
|---------------------------------------|---------------------------------------------------------|--------------------------------|
| <b>Model(s) Tested:</b>               | Sentinel Flex                                           |                                |
| <b>Model(s) Covered:</b>              | Sentinel Flex                                           |                                |
| <b>EUT Specifications:</b>            | Primary Power: 3VDC Battery                             |                                |
|                                       | Antenna Gain <sup>1</sup> :                             | LoRa US: -1.73dBi              |
|                                       |                                                         | LoRa EU: -1.36dBi              |
|                                       |                                                         | BLE: -1.2dBi                   |
|                                       | EUT Frequency Ranges:                                   | LoRa US: 902.3 MHz – 914.9 MHz |
|                                       |                                                         | LoRa EU: 863.3 MHz – 879.9 MHz |
|                                       |                                                         | BLE: 2402MHz – 2480MHz         |
|                                       | Maximum Conducted Output Power:                         | LoRa US: 22dBm                 |
|                                       |                                                         | LoRa EU: 14dBm                 |
|                                       |                                                         | BLE: 13dBm                     |
| <b>Analysis:</b>                      | The results obtained relate only to the item(s) tested. |                                |
| <b>Environmental Test Conditions:</b> | Temperature: 15-35° C                                   |                                |
|                                       | Relative Humidity: 30-60%                               |                                |
|                                       | Barometric Pressure: 860-1060 mbar                      |                                |
| <b>Type of Filing:</b>                | Original                                                |                                |
| <b>Evaluated by:</b>                  | Bryan Taylor                                            |                                |
| <b>Report Date(s):</b>                | June 25, 2025                                           |                                |

**Table 2. EUT Summary Table**

<sup>1</sup> The antenna gain information was provided by OnAsset Intelligence, Inc. at the time of testing.

## 2.2 Test Site

All testing was performed at Eurofins E&E North America, Austin, TX. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

## 2.3 References

|                                       |                                                                                                                                       |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>IEC62311 Edition 2.0 (2019-04)</b> | Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz) |
| <b>RSS-102: Issue 6</b>               | Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)                                        |
| <b>FCC Part 2.1091</b>                | Radiofrequency radiation exposure evaluation: mobile devices.                                                                         |

**Table 3. References**

## 2.4 Description of Test Sample

The OnAsset Intelligence, Inc. Sentinel Flex Tag is an internal battery powered LoRaWAN transmitter, BLE beacon and Wi-Fi receiver with sensors intended for asset tracking and monitoring. EUT can be used to identify location area and save sensor information for later download.

## 2.5 Modifications

### 2.5.1 Modifications to EUT

No modifications were made to the EUT.

### 2.5.2 Modifications to Test Standard

No modifications were made to the test standard.

## 2.6 Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to OnAsset Intelligence, Inc. upon completion of testing.

## 3.0 Maximum Permissible Exposure Results

### 3.1 IEC62311 (ICNIRP) RF Exposure Limits

**Table 7.** Reference levels for general public exposure to time-varying electric and magnetic fields (unperturbed rms values).<sup>a</sup>

| Frequency range | E-field strength<br>(V m <sup>-1</sup> ) | H-field strength<br>(A m <sup>-1</sup> ) | B-field<br>(μT)     | Equivalent plane wave<br>power density $S_{eq}$ (W m <sup>-2</sup> ) |
|-----------------|------------------------------------------|------------------------------------------|---------------------|----------------------------------------------------------------------|
| up to 1 Hz      | —                                        | $3.2 \times 10^4$                        | $4 \times 10^4$     | —                                                                    |
| 1–8 Hz          | 10,000                                   | $3.2 \times 10^4/f^2$                    | $4 \times 10^4/f^2$ | —                                                                    |
| 8–25 Hz         | 10,000                                   | $4,000/f$                                | $5,000/f$           | —                                                                    |
| 0.025–0.8 kHz   | $250/f$                                  | $4/f$                                    | $5/f$               | —                                                                    |
| 0.8–3 kHz       | $250/f$                                  | 5                                        | 6.25                | —                                                                    |
| 3–150 kHz       | 87                                       | 5                                        | 6.25                | —                                                                    |
| 0.15–1 MHz      | 87                                       | $0.73/f$                                 | $0.92/f$            | —                                                                    |
| 1–10 MHz        | $87/f^{1/2}$                             | $0.73/f$                                 | $0.92/f$            | —                                                                    |
| 10–400 MHz      | 28                                       | 0.073                                    | 0.092               | 2                                                                    |
| 400–2,000 MHz   | $1.375f^{1/2}$                           | $0.0037f^{1/2}$                          | $0.0046f^{1/2}$     | $f/200$                                                              |
| 2–300 GHz       | 61                                       | 0.16                                     | 0.20                | 10                                                                   |

<sup>a</sup> Note:

1.  $f$  as indicated in the frequency range column.
2. Provided that basic restrictions are met and adverse indirect effects can be excluded, field strength values can be exceeded.
3. For frequencies between 100 kHz and 10 GHz,  $S_{eq}$ ,  $E^2$ ,  $H^2$ , and  $B^2$  are to be averaged over any 6-min period.
4. For peak values at frequencies up to 100 kHz see Table 4, note 3.
5. For peak values at frequencies exceeding 100 kHz see Figs. 1 and 2. Between 100 kHz and 10 MHz, peak values for the field strengths are obtained by interpolation from the 1.5-fold peak at 100 kHz to the 32-fold peak at 10 MHz. For frequencies exceeding 10 MHz it is suggested that the peak equivalent plane wave power density, as averaged over the pulse width does not exceed 1,000 times the  $S_{eq}$  restrictions, or that the field strength does not exceed 32 times the field strength exposure levels given in the table.
6. For frequencies exceeding 10 GHz,  $S_{eq}$ ,  $E^2$ ,  $H^2$ , and  $B^2$  are to be averaged over any  $68/f^{1.05}$ -min period ( $f$  in GHz).
7. No E-field value is provided for frequencies <1 Hz, which are effectively static electric fields. perception of surface electric charges will not occur at field strengths less than 25 kVm<sup>-1</sup>. Spark discharges causing stress or annoyance should be avoided.

### 3.2 RSS-102 RF Exposure Limits

| Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)                      |                           |                                          |                                   |                            |
|--------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------|-----------------------------------|----------------------------|
| Frequency Range (MHz)                                                                                                    | Electric Field (V/m rms)  | Magnetic Field (A/m rms)                 | Power Density (W/m <sup>2</sup> ) | Reference Period (minutes) |
| 0.003-10 <sup>21</sup>                                                                                                   | 83                        | 90                                       | -                                 | Instantaneous*             |
| 0.1-10                                                                                                                   | -                         | 0.73/ f                                  | -                                 | 6**                        |
| 1.1-10                                                                                                                   | 87/ f <sup>0.5</sup>      | -                                        | -                                 | 6**                        |
| 10-20                                                                                                                    | 27.46                     | 0.0728                                   | 2                                 | 6                          |
| 20-48                                                                                                                    | 58.07/ f <sup>0.25</sup>  | 0.1540/ f <sup>0.25</sup>                | 8.944/ f <sup>0.5</sup>           | 6                          |
| 48-300                                                                                                                   | 22.06                     | 0.05852                                  | 1.291                             | 6                          |
| 300-6000                                                                                                                 | 3.142 f <sup>0.3417</sup> | 0.008335 f <sup>0.3417</sup>             | 0.02619 f <sup>0.6834</sup>       | 6                          |
| 6000-15000                                                                                                               | 61.4                      | 0.163                                    | 10                                | 6                          |
| 15000-150000                                                                                                             | 61.4                      | 0.163                                    | 10                                | 616000/ f <sup>1.2</sup>   |
| 150000-300000                                                                                                            | 0.158 f <sup>0.5</sup>    | 4.21 x 10 <sup>-4</sup> f <sup>0.5</sup> | 6.67 x 10 <sup>-5</sup> f         | 616000/f <sup>1.2</sup>    |
| <b>Note:</b> f is frequency in MHz.<br>* Based on nerve stimulation (NS).<br>** Based on specific absorption rate (SAR). |                           |                                          |                                   |                            |

### 3.3 FCC Exposure Limits

| Frequency range (MHz)                                          | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (i) Limits for Occupational/Controlled Exposure                |                               |                               |                                     |                          |
| 0.3-3.0                                                        | 614                           | 1.63                          | *(100)                              | ≤6                       |
| 3.0-30                                                         | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | <6                       |
| 30-300                                                         | 61.4                          | 0.163                         | 1.0                                 | <6                       |
| 300-1,500                                                      |                               |                               | f/300                               | <6                       |
| 1,500-100,000                                                  |                               |                               | 5                                   | <6                       |
| (ii) Limits for General Population/Uncontrolled Exposure       |                               |                               |                                     |                          |
| 0.3-1.34                                                       | 614                           | 1.63                          | *(100)                              | <30                      |
| 1.34-30                                                        | 824/f                         | 2.19/f                        | *(180/f <sup>2</sup> )              | <30                      |
| 30-300                                                         | 27.5                          | 0.073                         | 0.2                                 | <30                      |
| 300-1,500                                                      |                               |                               | f/1500                              | <30                      |
| 1,500-100,000                                                  |                               |                               | 1.0                                 | <30                      |
| f = frequency in MHz. * = Plane-wave equivalent power density. |                               |                               |                                     |                          |

### Test Procedure:

An MPE evaluation for was performed in order to show that the device was compliant with the general population exposure limits. The maximum power density was calculated for each transmitter band at a separation distance of 20cm using the maximum declared output power including tune up tolerance.

For each transmitter the maximum RF exposure at a 20 cm distance using the formula:

$$ConductedPower_{mW} = 10^{ConductedPower(dBm)/10}$$

$$PowerDensity = \frac{ConductedPower_{mW} \times Ant.Gain}{4\pi \times (20_{cm})^2}$$

For transmitters that could operate simultaneously, the MPE to limit ratio for each was calculated and then summed. If the sum of the MPE to limit ratios was less than 1, that specific combination of transmitters was deemed to comply.

### Test Results:

The Sentinel Flex Tag was **compliant** with FCC 2.1091, RSS-102 Issue 6, IEC62311 Issue 2. The calculated maximum power density at 20cm distance was equal to or less than the required limits for general population exposure for FCC 2.1091, RSS-102 Issue 6, IEC62311 Issue 2. Additionally, the sum of the worst case for each MPE to Limit ratio is less than 1 indicating that all radios may transmit simultaneously.

### Test Data:

| Duty Cycle       | 100 (%)         |                                                 |                                              |                   |                                 |                                 |                                       |                                     |
|------------------|-----------------|-------------------------------------------------|----------------------------------------------|-------------------|---------------------------------|---------------------------------|---------------------------------------|-------------------------------------|
| Separation Dist. | 20 (cm)         |                                                 |                                              |                   |                                 |                                 |                                       |                                     |
| Operating Mode   | Frequency (MHz) | Declared Max Cond. Power (Inc. Tolerance) (dBm) | Duty Cycle Adjusted Cond. Output Power (dBm) | Antenna Gain (dB) | MPE Value (mW/cm <sup>2</sup> ) | MPE Limit (mW/cm <sup>2</sup> ) | Margin to Limit (mW/cm <sup>2</sup> ) | MPE / Limit Ratio (for Co-Location) |
| BLE              | 2402            | 13                                              | 13.00                                        | -1.2              | 0.0030                          | 1.0000                          | 0.9970                                | 0.0030                              |
| LoRa             | 902             | 22                                              | 22.00                                        | -1.73             | 0.0212                          | 0.6013                          | 0.5802                                | 0.0352                              |
|                  |                 |                                                 |                                              |                   |                                 |                                 | Sum:                                  | 0.0382                              |

### FCC MPE Data

| Duty Cycle       | 100 (%)         |                                                 |                                              |                   |                               |                               |                                     |                                     |
|------------------|-----------------|-------------------------------------------------|----------------------------------------------|-------------------|-------------------------------|-------------------------------|-------------------------------------|-------------------------------------|
| Separation Dist. | 20 (cm)         |                                                 |                                              |                   |                               |                               |                                     |                                     |
| Operating Mode   | Frequency (MHz) | Declared Max Cond. Power (Inc. Tolerance) (dBm) | Duty Cycle Adjusted Cond. Output Power (dBm) | Antenna Gain (dB) | MPE Value (W/m <sup>2</sup> ) | MPE Limit (W/m <sup>2</sup> ) | Margin to Limit (W/m <sup>2</sup> ) | MPE / Limit Ratio (for Co-Location) |
| BLE              | 2402            | 13                                              | 13.00                                        | -1.2              | 0.0301                        | 5.3508                        | 5.3207                              | 0.0056                              |
| LoRa             | 902             | 22                                              | 22.00                                        | -1.73             | 0.2117                        | 2.7398                        | 2.5281                              | 0.0773                              |
|                  |                 |                                                 |                                              |                   |                               |                               | Sum:                                | 0.0829                              |

### ISED MPE Data

| Duty Cycle       | 100 (%)         |                                                 |                                              |                   |                               |                               |                                     |                                     |
|------------------|-----------------|-------------------------------------------------|----------------------------------------------|-------------------|-------------------------------|-------------------------------|-------------------------------------|-------------------------------------|
| Separation Dist. | 20 (cm)         |                                                 |                                              |                   |                               |                               |                                     |                                     |
| Operating Mode   | Frequency (MHz) | Declared Max Cond. Power (Inc. Tolerance) (dBm) | Duty Cycle Adjusted Cond. Output Power (dBm) | Antenna Gain (dB) | MPE Value (W/m <sup>2</sup> ) | MPE Limit (W/m <sup>2</sup> ) | Margin to Limit (W/m <sup>2</sup> ) | MPE / Limit Ratio (for Co-Location) |
| BLE              | 2402            | 13                                              | 13.00                                        | -1.2              | 0.0301                        | 10.0000                       | 9.9699                              | 0.0030                              |
| LoRa             | 863             | 14                                              | 14.00                                        | -1.36             | 0.0365                        | 4.3150                        | 4.2785                              | 0.0085                              |
|                  |                 |                                                 |                                              |                   |                               |                               | Sum:                                | 0.0115                              |

### IEC62311 MPE Data

Test Engineer(s): Bryan Taylor

Test Date(s): 02/03/2025 - 02/10/2025