

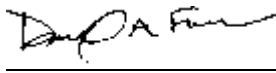


Engineering Solutions & Electromagnetic Compatibility Services

### FCC Certification Application Report

|                                                                                                                                                                                                                        |                                                                                                                  |                                                                                                                                  |                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Test Lab:</b><br><br>Rhein Tech Laboratories, Inc.      Tel: 703-689-0368<br>360 Herndon Parkway      Fax: 703-689-2056<br>Suite 1400      www.rheintech.com<br>Herndon, VA 20170<br>E-Mail: atcbinfo@rheintech.com |                                                                                                                  | <b>Applicant:</b><br><br>Alarm.com Incorporated      Tel: 703-584-7319<br>8281 Greensboro Drive<br>Suite 100<br>Tysons, VA 22102 |                            |
|                                                                                                                                                                                                                        |                                                                                                                  |                                                                                                                                  |                            |
| <b>FCC ID</b>                                                                                                                                                                                                          | YL6-143SEM300PY                                                                                                  | <b>Test Report Date</b>                                                                                                          | January 16, 2024           |
| <b>Model / Variant</b>                                                                                                                                                                                                 | ADC-SEM-300 / Paraguay                                                                                           | <b>RTL Work Order #</b>                                                                                                          | 2023119                    |
|                                                                                                                                                                                                                        |                                                                                                                  | <b>RTL Quote #</b>                                                                                                               | QRTL23-119                 |
| <b>American National Standard Institute</b>                                                                                                                                                                            | ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices |                                                                                                                                  |                            |
| <b>FCC Classification</b>                                                                                                                                                                                              | DXX – Part 15 Low Power Communication Device Transmitter                                                         |                                                                                                                                  |                            |
| <b>FCC Rule Part(s)/ Guidance</b>                                                                                                                                                                                      | 15.249: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz (09/23/2023)  |                                                                                                                                  |                            |
|                                                                                                                                                                                                                        |                                                                                                                  |                                                                                                                                  |                            |
| <b>Frequency Range (MHz)</b>                                                                                                                                                                                           | <b>Output Power (W)</b>                                                                                          | <b>Frequency Tolerance</b>                                                                                                       | <b>Emission Designator</b> |
| 919.8                                                                                                                                                                                                                  | N/A                                                                                                              | N/A                                                                                                                              | N/A                        |
| 921.4                                                                                                                                                                                                                  | N/A                                                                                                              | N/A                                                                                                                              | N/A                        |

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. No modifications were made to the equipment during testing in order to achieve compliance with these standards. Furthermore, there was no deviation from, additions to, or exclusions from, the applicable parts of FCC Part 2, FCC Part 15, and ANSI C63.10.

Signature: 

Date: January 16, 2024

Typed/Printed Name: Desmond A. Fraser

Position: President

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*These test(s) are accredited under Rhein Tech Laboratories, Inc. ISO/IEC 17025 accreditation issued by ANAB. Refer to certificate and scope of accreditation AT-1445.*

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## 1 General Information

### 1.1 Scope

This is an original FCC certification application request for Alarm.com Model: ADC-SEM-300, Variant: Paraguay.

Applicable Standards:

- FCC Part 15.249: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz

### 1.2 Description of EUT

|                             |                                           |
|-----------------------------|-------------------------------------------|
| <b>Equipment Under Test</b> | Alarm.com System Enhancement Module (SEM) |
| <b>Model / Variant</b>      | ADC-SEM-300 / Paraguay                    |
| <b>Power Supply</b>         | 12 VDC (external supply)                  |
| <b>Modulation Type</b>      | FSK, GFSK                                 |
| <b>Frequency Range</b>      | 919.8 and 921.4 MHz                       |
| <b>Antenna Type</b>         | Internal Wire Monopole                    |

### 1.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170.

### 1.4 Related Submittal(s)/Grant(s)

None.

### 1.5 Modifications

None.

## 2 Test Information

### 2.1 Description of Test Modes

In accordance with FCC 15.31(m), the following frequencies were tested.

**Table 2-1: Channels Tested**

| Frequency (MHz) |
|-----------------|
| 919.8           |
| 921.4           |

### 2.2 Exercising the EUT

The EUT was programmed for continuous transmission at 919.8 and 921.4 MHz. The EUT was tested in all three orthogonal planes in order to determine worst-case emissions. The carrier was also checked to verify that information was being transmitted.

### 2.3 Test Result Summary

**Table 2-2: Test Result Summary**

| Test                                        | FCC Reference | Pass/Fail or N/A |
|---------------------------------------------|---------------|------------------|
| AC Power Conducted Emissions                | 15.207        | N/A              |
| Radiated Emissions                          | 15.209        | Pass             |
| Field Strength of Fundamental and Harmonics | 15.249(a)     | Pass             |
| Band Edge                                   | 15.249(d)     | Pass             |
| 99% Bandwidth                               |               | Pass             |

### 2.4 Test System Details

The test samples were received on October 16, 2023. The FCC identifiers for all applicable equipment, plus descriptions of all cables used in the tested system, are identified in the following table.

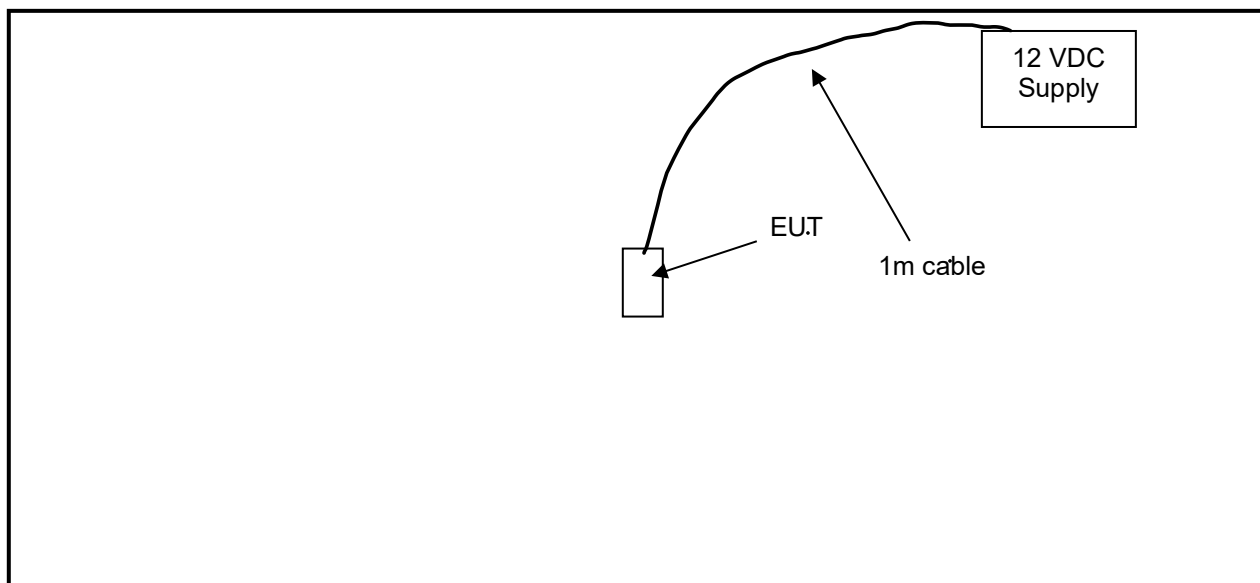
**Table 2-3: Equipment Under Test**

| Part                      | Manufacturer | Model / Variant        | Serial Number       | FCC ID          | Cable Description | RTL Bar Code |
|---------------------------|--------------|------------------------|---------------------|-----------------|-------------------|--------------|
| System Enhancement Module | Alarm.com    | ADC-SEM-300 / Paraguay | 3540231111<br>32357 | YL6-143SEM300PY | N/A               | 24277        |

**Table 2-4: Auxiliary Equipment**

| Part      | Manufacturer    | Model | Serial Number | Cable Description | RTL Bar Code |
|-----------|-----------------|-------|---------------|-------------------|--------------|
| DC Supply | Hewlett Packard | 291A  | 1928A05365    | Unshielded        | 900773       |

## 2.5 Configuration of Tested System



**Figure 2-1: Configuration of System Under Test**

### 3 Duty Cycle – FCC 15.209, 15.249(a)

#### 3.1 Duty Cycle Calculation

A duty cycle correction factor of -8 dB ( $=20 \cdot \text{LOG}(0.397)$ ) was used to arrive at average levels for the harmonics measured.

The duty cycle factor was calculated as follows:

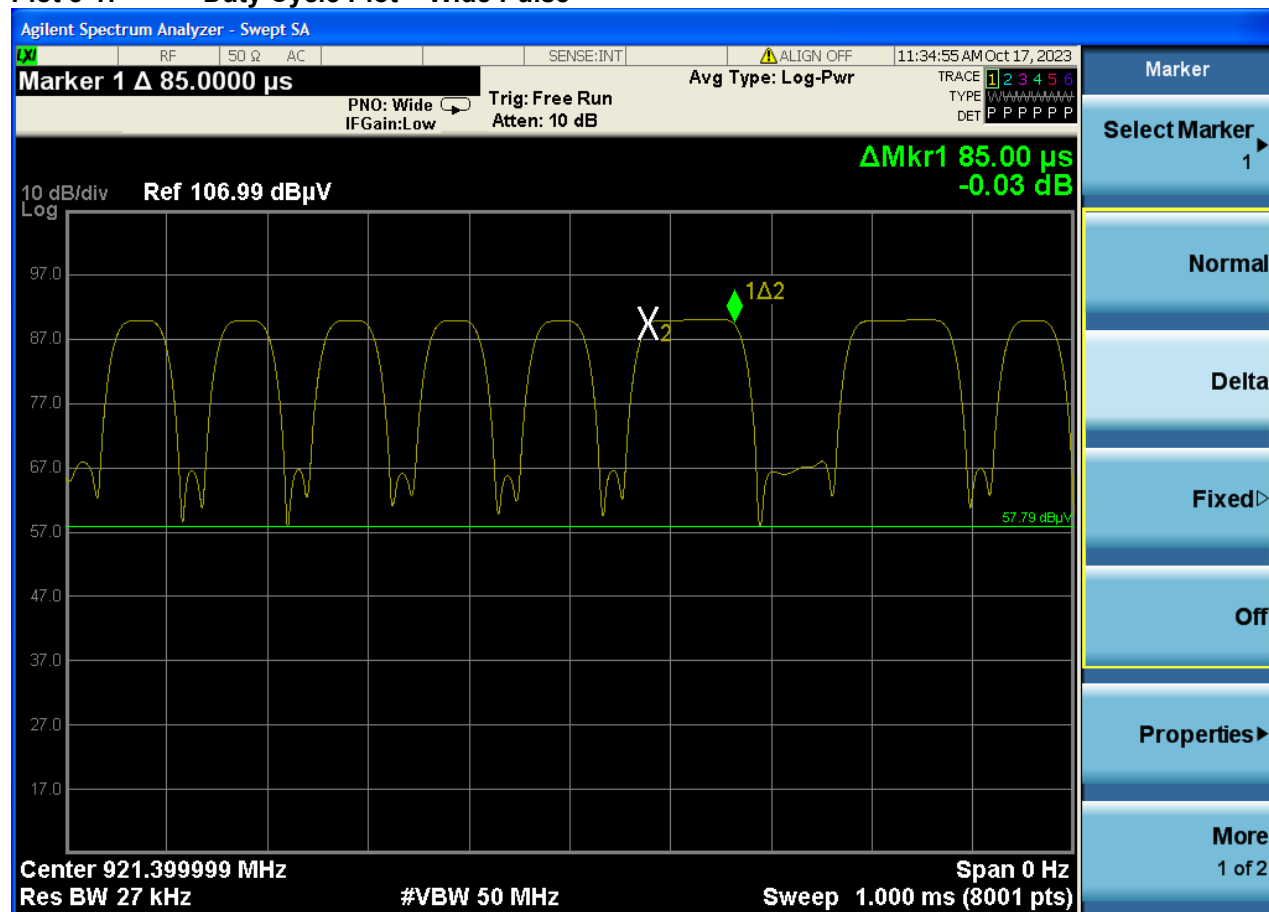
1. The wide pulse and narrow pulse respectively were measured in Plots 3-1 and 3-2 with values of 85 and 41 microseconds respectively.
2. All wide and narrow pulses in Plot 3-3 were counted which corresponded to a count of 30 for the wide pulses and 20 for the narrow pulses.
3. The duration of all the pulses were normalized over 100 milliseconds, which resulted in an on-time of 39.7 milliseconds over 100 milliseconds or 0.397.

**Table 3-1: Duty Cycle Environmental Conditions**

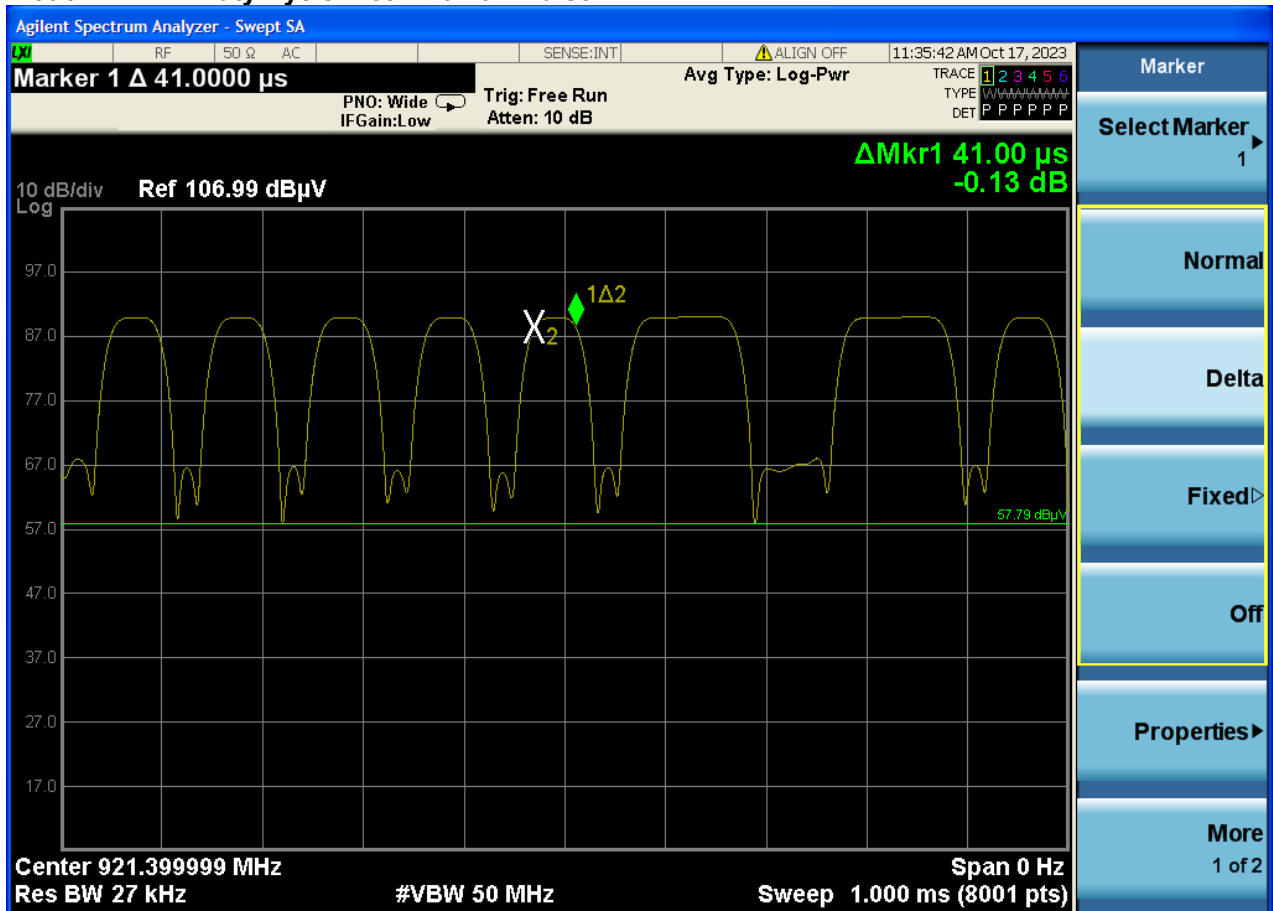
| Date             | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|------------------|------------------|--------------|----------------|
| October 17, 2023 | 16.6             | 36           | 101.3          |

#### 3.2 Duty Cycle Plots

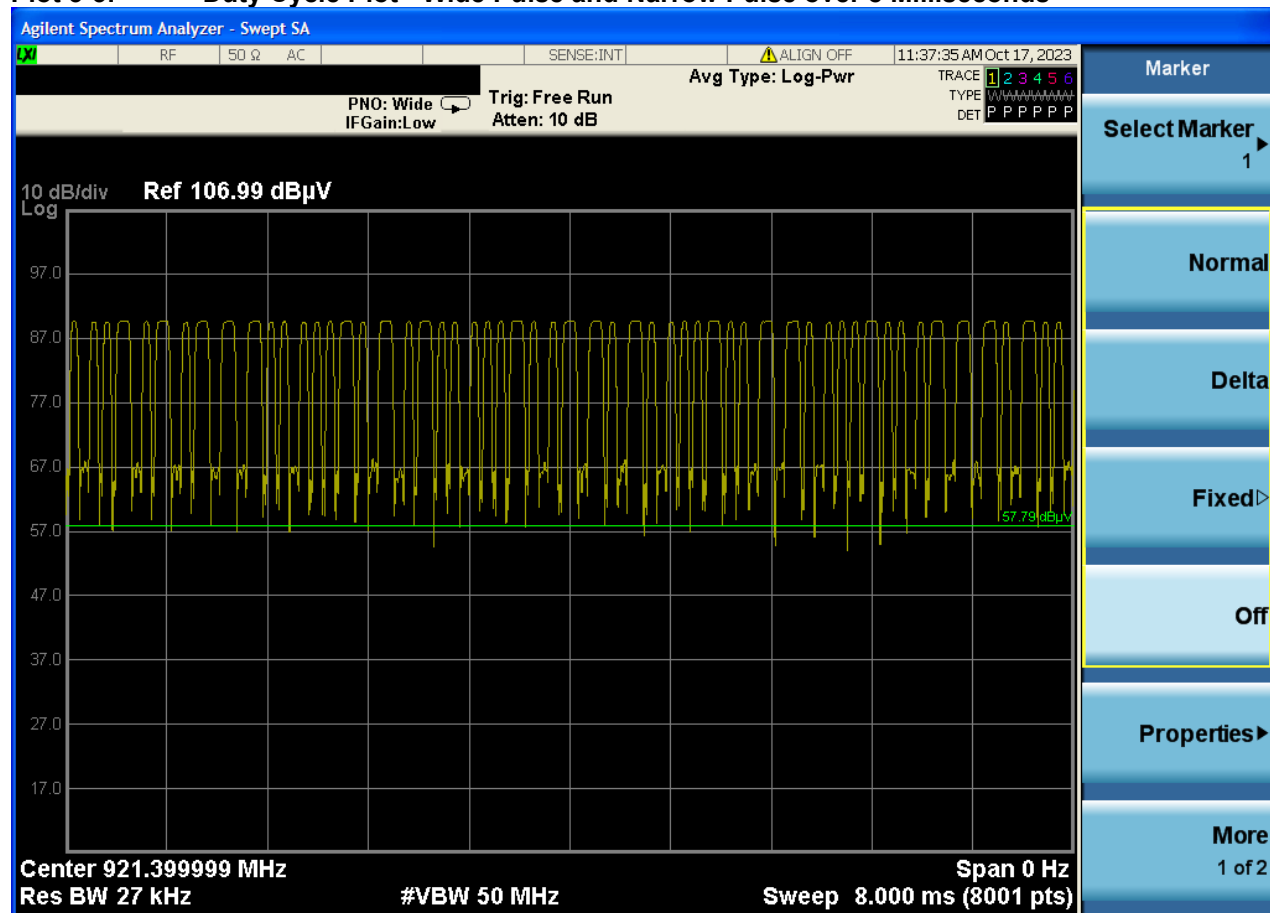
**Plot 3-1: Duty Cycle Plot – Wide Pulse**



**Plot 3-2: Duty Cycle Plot – Narrow Pulse**



**Plot 3-3: Duty Cycle Plot - Wide Pulse and Narrow Pulse over 8 Milliseconds**

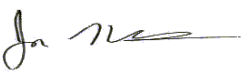


Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor  $k = 2$ .

Measurement uncertainty: +4.6 dB

**Result: Pass**

**Test Personnel**

|               |                                                                                     |                  |
|---------------|-------------------------------------------------------------------------------------|------------------|
| Jon Wilson    |  | October 17, 2023 |
| Test Engineer | Signature                                                                           | Date of Test     |

**Table 3-2: Duty Cycle Test Equipment**

| RTL Asset # | Manufacturer | Model  | Part Type           | Serial Number | Calibration Due Date |
|-------------|--------------|--------|---------------------|---------------|----------------------|
| 901583      | Agilent      | N9010A | EXA Signal Analyzer | MY51250846    | 10/04/2024           |

#### 4 Radiated Emissions – FCC 15.209, 15.249(a)

##### 4.1 Limits of Radiated Emissions Measurement

| Frequency (MHz) | Field Strength (uV/m) | Measurement Distance (m) |
|-----------------|-----------------------|--------------------------|
| 0.009-0.490     | 2400/f (kHz)          | 300                      |
| 0.490-1.705     | 2400/f (kHz)          | 30                       |
| 1.705-30.0      | 30                    | 30                       |
| 30-88           | 100                   | 3                        |
| 88-216          | 150                   | 3                        |
| 216-960         | 200                   | 3                        |
| Above 960       | 500                   | 3                        |

As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any circumstances of modulation.

##### 4.1.1 Radiated Emissions Measurement Test Procedure

Before final measurements of radiated emissions were made on the open-field three/ten-meter range, the EUT was scanned indoors at one- and three-meter distances. This was done in order to determine its emissions spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. This process was repeated during final radiated emissions measurements on the open-field range, at each frequency, in order to ensure that maximum emission amplitudes were attained.

Final radiated emissions measurements were made on the three/ten-meter, open-field test site. The EUT was placed on a nonconductive turntable 0.8 m (< 1 GHz) / 1.5 m (> 1 GHz) above the ground plane. The spectrum was examined from 9 kHz to the 10<sup>th</sup> harmonic of the highest fundamental transmitter frequency (9.16 GHz).

At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations. For frequencies between 30 and 1000 MHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1000 MHz, emissions are measured using the average detector function with a minimum resolution bandwidth of 1 MHz. No video filter less than 10 times the resolution bandwidth was used. The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

**Table 4-1: Radiated and Colocated Emissions Spurious Environmental Conditions**

| Date             | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|------------------|------------------|--------------|----------------|
| October 16, 2023 | 18               | 38           | 101.5          |

## 4.2 Radiated Emissions Test Results

**Table 4-2: Radiated Emissions Test Data – Quasi-Peak**

| Emission Frequency (MHz) | Quasi-Peak Detector Level (dBuV/m) (120 kHz RBW/ 300 kHz VBW) | Site Correction Factor (dB/m) | Quasi-Peak Corrected (dBuV/m) | Quasi-Peak Limit (dBuV/m) | Margin (dB) |
|--------------------------|---------------------------------------------------------------|-------------------------------|-------------------------------|---------------------------|-------------|
| 919.8                    | 47.1                                                          | 44.2                          | 91.3                          | 94.0                      | -2.7        |
| 921.4                    | 47.5                                                          | 44.3                          | 91.8                          | 94.0                      | -2.2        |

Note: Testing performed at 3m

## 4.3 Radiated Emissions Harmonics/Spurious Test Data

**Table 4-3: Radiated Emissions Harmonics – 919.8 MHz; Peak**

| Emission Frequency (MHz) | Peak Detector (dBuV/m) (1 MHz RBW/ 3 MHz VBW) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|--------------------------|-----------------------------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 1839.6                   | 38.3                                          | 3.2                           | 41.5                    | 74.0                | -32.5            |
| 2759.4                   | 56.5                                          | -6.0                          | 50.5                    | 74.0                | -23.5            |
| 3679.2                   | 38.9                                          | -7.6                          | 31.3                    | 74.0                | -42.7            |
| 4599.0                   | 38.4                                          | -1.5                          | 36.9                    | 74.0                | -37.1            |
| 5518.8                   | 38.5                                          | -0.3                          | 38.2                    | 74.0                | -35.8            |
| 6438.6                   | 38.2                                          | 1.0                           | 39.2                    | 74.0                | -34.8            |
| 7358.4                   | 38.0                                          | 1.2                           | 39.2                    | 74.0                | -34.8            |
| 8278.2                   | 36.9                                          | 7.5                           | 44.4                    | 74.0                | -29.6            |
| 9198.0                   | 39.4                                          | 7.8                           | 47.2                    | 74.0                | -26.8            |

**Table 4-4: Radiated Emissions Harmonics – 919.8 MHz; Average**

| Emission Frequency (MHz) | Average Detector (dBuV/m) (1 MHz RBW/ 3 MHz VBW) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|--------------------------|--------------------------------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 1839.6                   | 30.3                                             | 3.2                           | 33.5                       | 54.0                   | -20.5               |
| 2759.4                   | 48.5                                             | -6.0                          | 42.5                       | 54.0                   | -11.5               |
| 3679.2                   | 30.9                                             | -7.6                          | 23.3                       | 54.0                   | -30.7               |
| 4599.0                   | 30.4                                             | -1.5                          | 28.9                       | 54.0                   | -25.1               |
| 5518.8                   | 30.5                                             | -0.3                          | 30.2                       | 54.0                   | -23.8               |
| 6438.6                   | 30.2                                             | 1.0                           | 31.2                       | 54.0                   | -22.8               |
| 7358.4                   | 30.0                                             | 1.2                           | 31.2                       | 54.0                   | -22.8               |
| 8278.2                   | 28.9                                             | 7.5                           | 36.4                       | 54.0                   | -17.6               |
| 9198.0                   | 31.4                                             | 7.8                           | 39.2                       | 54.0                   | -14.8               |

**Table 4-5: Radiated Emissions Spurious – 919.8 MHz; Quasi-Peak**

| Emission Frequency (MHz) | Quasi-Peak (dBuV/m)<br>(120 kHz RBW/<br>300 kHz VBW) | Site Correction Factor (dB/m) | Quasi-Peak Corrected (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|--------------------------|------------------------------------------------------|-------------------------------|-------------------------------|----------------|-------------|
| 160.0                    | 53.7                                                 | -16.9                         | 36.8                          | 43.5           | -6.7        |

**Table 4-6: Radiated Emissions Harmonics – 921.4 MHz; Peak**

| Emission Frequency (MHz) | Peak Detector (dBuV/m)<br>(1 MHz RBW/<br>3 MHz VBW) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|--------------------------|-----------------------------------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 1842.8                   | 36.0                                                | 3.2                           | 39.2                    | 74.0                | -34.8            |
| 2764.2                   | 56.3                                                | -6.0                          | 50.3                    | 74.0                | -23.7            |
| 3685.6                   | 40.0                                                | -7.4                          | 32.6                    | 74.0                | -41.4            |
| 4607.0                   | 37.9                                                | -1.5                          | 36.4                    | 74.0                | -37.6            |
| 5528.4                   | 38.5                                                | -0.3                          | 38.2                    | 74.0                | -35.8            |
| 6449.8                   | 39.4                                                | 1.0                           | 40.4                    | 74.0                | -33.6            |
| 7371.2                   | 38.6                                                | 1.2                           | 39.8                    | 74.0                | -34.2            |
| 8292.6                   | 38.3                                                | 7.5                           | 45.8                    | 74.0                | -28.2            |
| 9214.0                   | 38.4                                                | 7.8                           | 46.2                    | 74.0                | -27.8            |

**Table 4-7: Radiated Emissions Harmonics – 921.4 MHz; Average**

| Emission Frequency (MHz) | Average Detector (dBuV/m)<br>(1 MHz RBW/<br>3 MHz VBW) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|--------------------------|--------------------------------------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 1842.8                   | 28.0                                                   | 3.2                           | 31.2                       | 54.0                   | -22.8               |
| 2764.2                   | 48.3                                                   | -6.0                          | 42.3                       | 54.0                   | -11.7               |
| 3685.6                   | 32.0                                                   | -7.4                          | 24.6                       | 54.0                   | -29.4               |
| 4607.0                   | 29.9                                                   | -1.5                          | 28.4                       | 54.0                   | -25.6               |
| 5528.4                   | 30.5                                                   | -0.3                          | 30.2                       | 54.0                   | -23.8               |
| 6449.8                   | 31.4                                                   | 1.0                           | 32.4                       | 54.0                   | -21.6               |
| 7371.2                   | 30.6                                                   | 1.2                           | 31.8                       | 54.0                   | -22.2               |
| 8292.6                   | 30.3                                                   | 7.5                           | 37.8                       | 54.0                   | -16.2               |
| 9214.0                   | 30.4                                                   | 7.8                           | 38.2                       | 54.0                   | -15.8               |

**Table 4-8: Radiated Emissions Spurious – 921.4 MHz; Quasi-Peak**

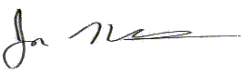
| Emission Frequency (MHz) | Quasi-Peak (dBuV/m)<br>(120 kHz RBW/<br>300 kHz VBW) | Site Correction Factor (dB/m) | Quasi-Peak Corrected (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|--------------------------|------------------------------------------------------|-------------------------------|-------------------------------|----------------|-------------|
| 160.0                    | 53.7                                                 | -16.9                         | 36.8                          | 43.5           | -6.7        |

Note: Testing performed at 3m

Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor  $k = 2$ . Measurement uncertainty: +4.6 dB

**Result: Pass**

**Test Personnel**

|               |                                                                                   |                  |
|---------------|-----------------------------------------------------------------------------------|------------------|
| Jon Wilson    |  | October 16, 2023 |
| Test Engineer | Signature                                                                         | Date of Test     |

**4.4 Colocation Radiated Emissions**

The radiated emissions were investigated with the uncertified Z-Wave module and the Telit cellular module LE910C1-LA, FCC ID: RI7LE910CXLA, collocated and transmitting simultaneously.

No non-compliant emissions were found; per FCC guidance, no data is being reported.

**Table 4-9: Radiated Emissions Test Equipment**

| RTL Asset # | Manufacturer                  | Model     | Part Type                        | Serial Number | Calibration Due Date |
|-------------|-------------------------------|-----------|----------------------------------|---------------|----------------------|
| 901669      | ETS-Lindgren                  | 3142E     | Antenna<br>(.26 - 6 GHz)         | 00166065      | 07/11/2025           |
| 900772      | EMCO                          | 3161-02   | Horn Antenna<br>(2 - 4 GHz)      | 9804-1044     | 08/05/2024           |
| 900321      | EMCO                          | 3161-03   | Horn Antenna<br>(4 - 8.2 GHz)    | 9528-1020     | 08/05/2024           |
| 900323      | EMCO                          | 3160-07   | Horn Antenna<br>(8.2 - 12.4 GHz) | 9605-1024     | 08/05/2024           |
| 901583      | Agilent                       | N9010A    | EXA Signal Analyzer              | MY51250846    | 10/04/2024           |
| 900905      | Rhein Tech Laboratories, Inc. | PR-1040   | Pre-Amp<br>(30 - 2000 MHz)       | 1006          | 01/30/2024           |
| 900932      | Hewlett Packard               | 8449B     | Preamplifier<br>(1 - 26.5 GHz)   | 3008A00505    | 01/30/2024           |
| 901334      | RF Depot                      | 30-ft SMA | Cable                            | No            | 02/03/2024           |
| 901668      | RF Depot                      | 3-ft SMA  | Cable                            | No            | 03/21/2024           |

## 5 Compliance with the Band Edge – FCC 15.249(d)

### 5.1 Band Edge Test Procedure

Radiated measurements were taken. The span was set wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation. The spectrum analyzer was set to the following:

RBW > = 100 kHz  
 VBW > = RBW  
 Sweep = auto  
 Detector function = peak  
 Trace = max hold

The trace was allowed to stabilize. A display line was compared to the 20 dBc requirement of 15.209 (when using peak emissions), in band emissions.

**Table 5-1: Band Edge Environmental Conditions**

| Date     | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|----------|------------------|--------------|----------------|
| 01/16/24 | 21.4             | 20           | 101.2          |

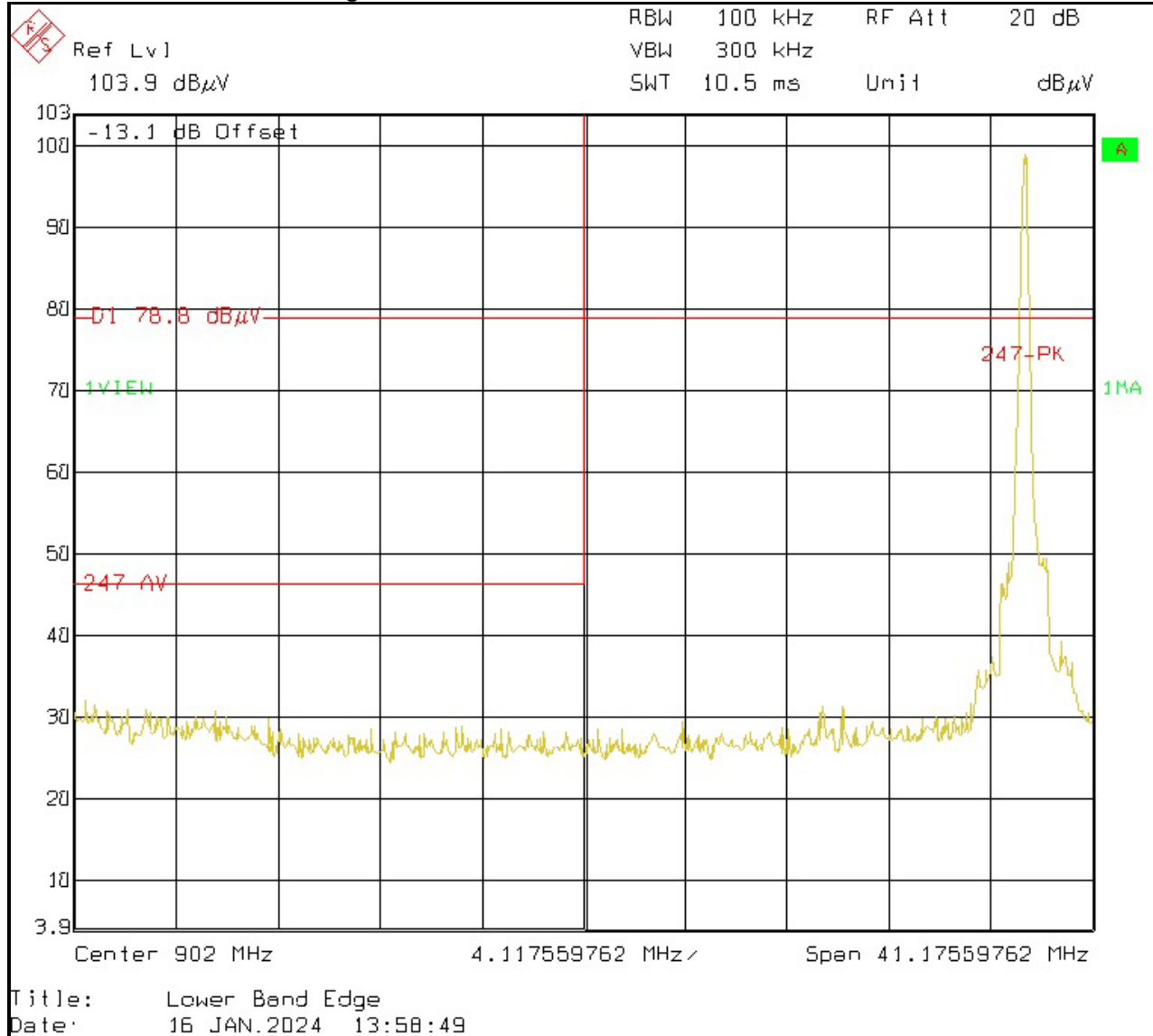
**Table 5-2: Band Edge Test Equipment**

| RTL Asset # | Manufacturer                      | Model                 | Part Type                                       | Serial Number | Calibration Due Date |
|-------------|-----------------------------------|-----------------------|-------------------------------------------------|---------------|----------------------|
| 901672      | Rohde & Schwarz                   | FSEM30                | Spectrum Analyzer                               | FSEM30        | 04/25/24             |
| 900905      | Rhein Tech Laboratories, Inc.     | PR-1040               | OATS 1 Preamplifier<br>40dB<br>(30 MHz – 2 GHz) | 1006          | 01/30/24             |
| 901727      | Insulated Wire Inc.               | KPS-1503-360-KPR      | SMK RF Cables 36"                               | NA            | 11/30/24             |
| 901477      | Micro-Coax                        | UFA210A-0-0360-300300 | RF cable<br>0.04 - 18 GHz                       | 212349-002    | 04/12/23             |
| 900725      | Antenna Research Associates, Inc. | LPB-2520              | Log Periodic / Biconal Antenna                  | 1036          | 02/10/25             |

## 5.2 Band Edge Test Results

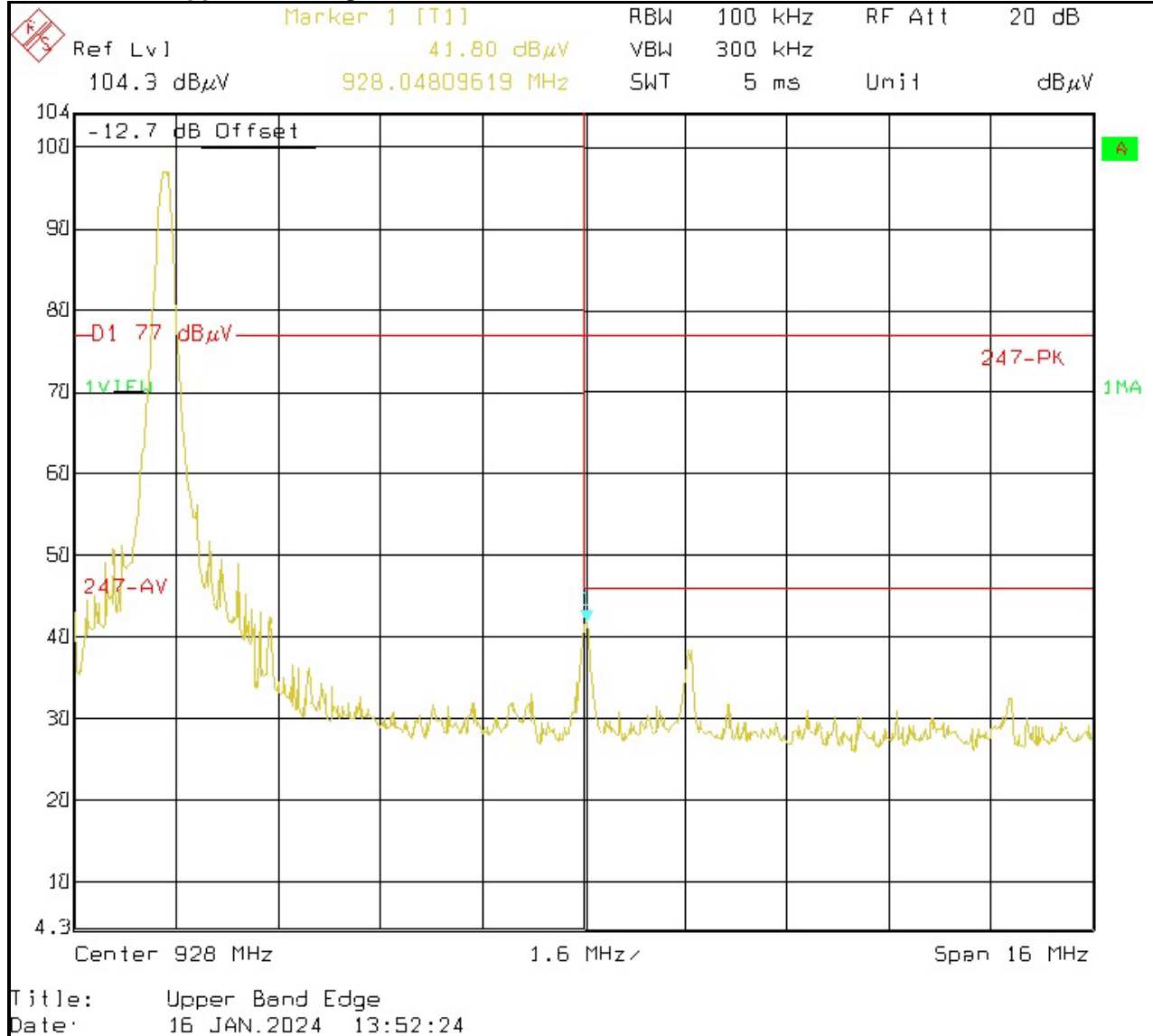
### 5.2.1 Lower Band Edge

Plot 5-1: Lower Band Edge



## 5.2.2 Upper Band Edge

Plot 5-2: Upper Band Edge



Measurement uncertainties shown for these tests are expanded Gaussian uncertainties expressed at 95% confidence level using a coverage factor  $k = 1.96$ . Measurement uncertainty = 0.5 dB.

### Result: Pass

#### Test Personnel:

Daniel W. Baltzell  
Test Engineer

Signature

January 16, 2024  
Date of Test

## 6 Occupied Channel Bandwidth

### 6.1 Occupied Bandwidth 99% Test Procedure

The Occupied Bandwidths 99% were measured using a 50  $\Omega$  SA. The following settings were used:

Span: 500 kHz 1.5 to 5.0 times the OBW  
RBW: 4.7 kHz 1% to 5% of the OBW  
VBW: 47 kHz  $\geq$  RBW  
Sweep: Auto  
Detector: Peak  
Trace: Max Hold  
Reference: Peak of emission must be more than  $[10 \log(\text{OBW} / \text{RBW})]$  below the reference level

The measurements were repeated a few times until the RBW and VBW follow the above requirement.

### 6.2 Occupied Bandwidth 99% Limits

No applicable limits.

### 6.3 Measurement Uncertainty

Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor  $k = 2$ .

OBW:  $\pm 1.0 \times 10^{-6}$  Hz

### 6.4 Occupied Bandwidth Test Data

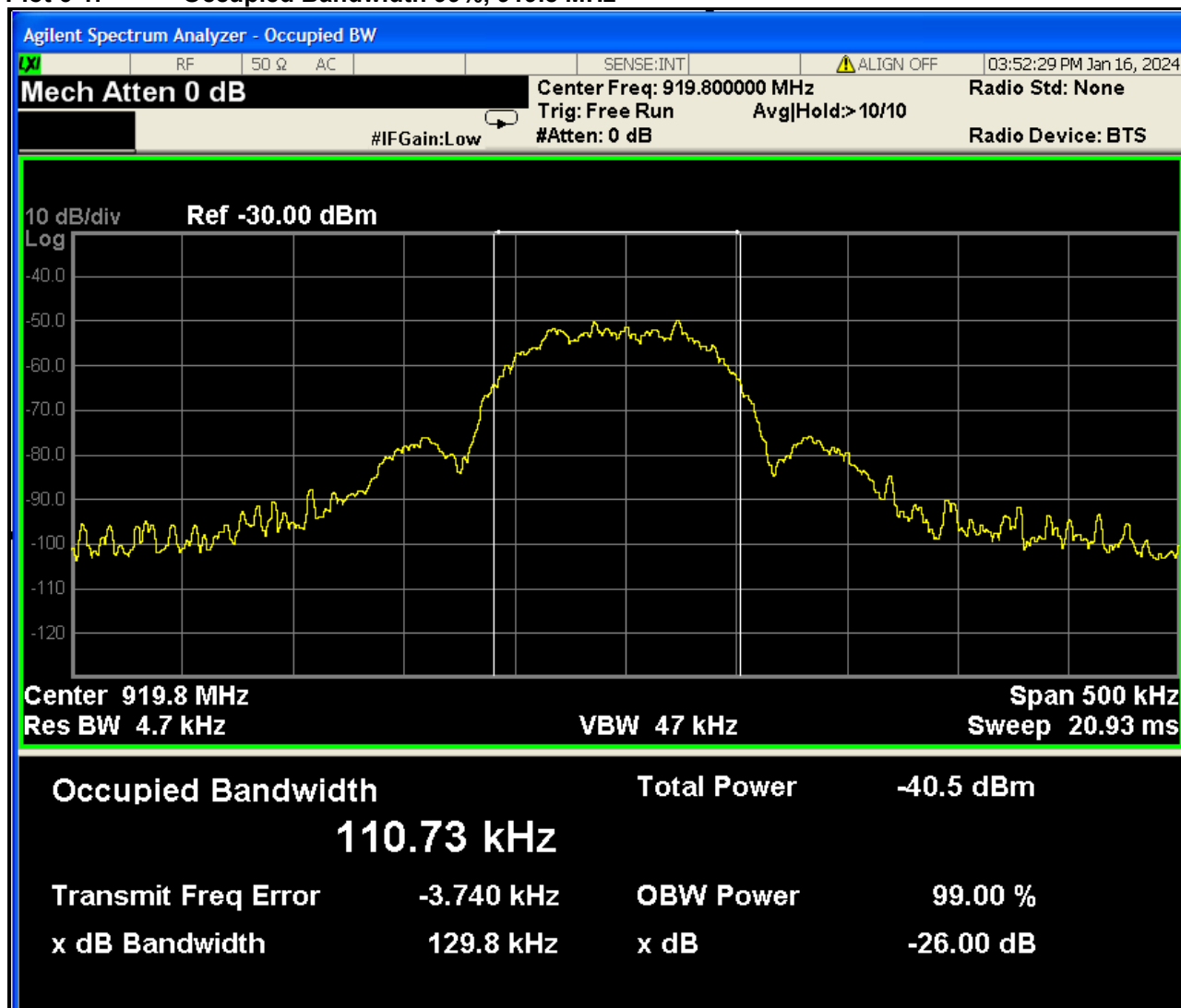
Table 6-1: Occupied Bandwidth Environmental Conditions

| Date     | Temperature ( $^{\circ}\text{C}$ ) | Humidity (%) | Pressure (kPa) |
|----------|------------------------------------|--------------|----------------|
| 01/16/24 | 21.4                               | 20           | 101.2          |

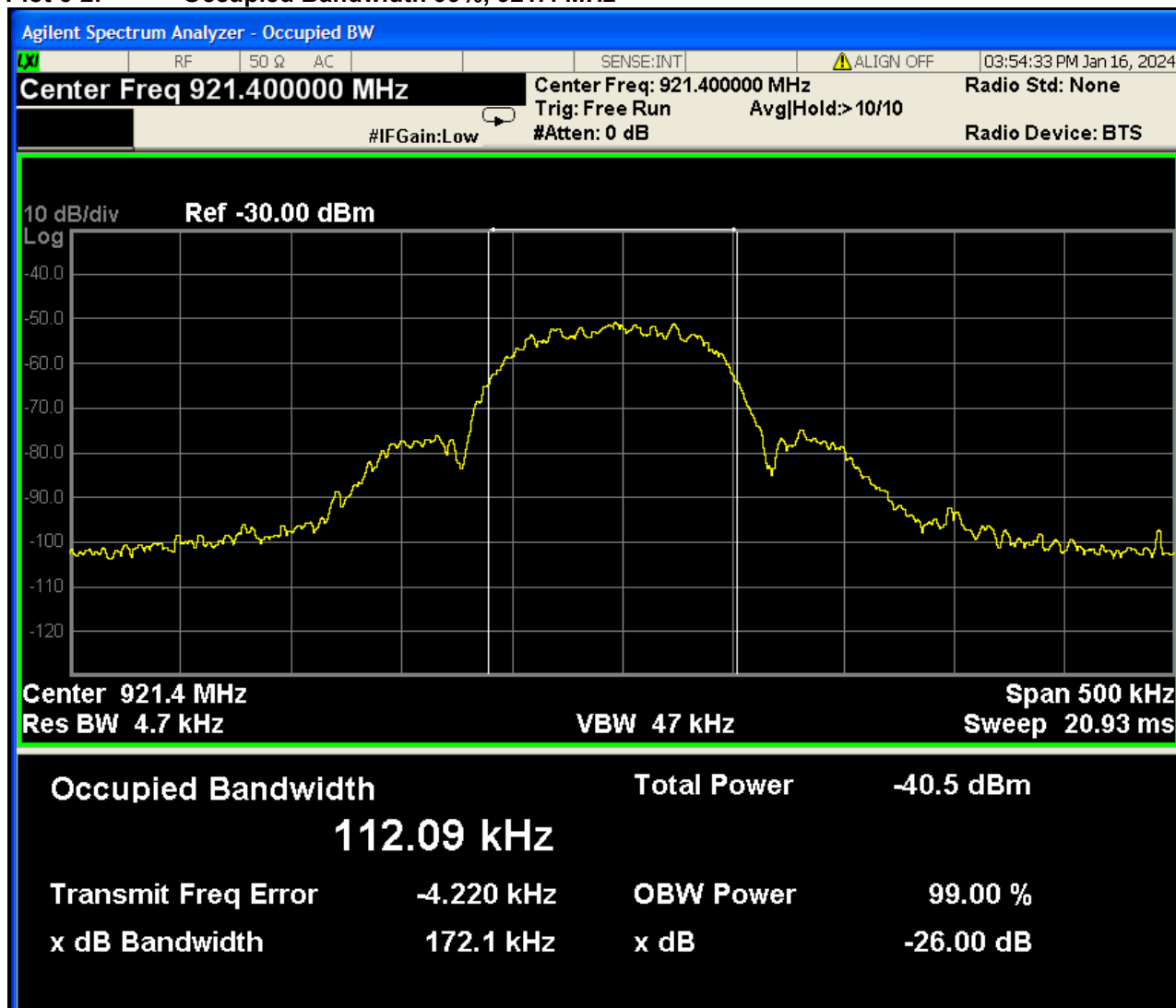
Table 6-2: Occupied Bandwidth Test Results

| Frequency (MHz) | Occupied Bandwidth 99% (kHz) |
|-----------------|------------------------------|
| 919.8           | 110.7                        |
| 921.4           | 112.1                        |

**Plot 6-1: Occupied Bandwidth 99%, 919.8 MHz**



**Plot 6-2: Occupied Bandwidth 99%, 921.4 MHz**



**Table 6-3: Occupied Bandwidth Test Equipment**

| RTL Barcode | Part                                 | Manufacturer         | Model      | Serial Number | Calibration Due Date |
|-------------|--------------------------------------|----------------------|------------|---------------|----------------------|
| 901583      | Spectrum Analyzer (10 Hz – 26.5 GHz) | Agilent Technologies | EXA N9010A | MY51250846    | 10/04/2024           |

**Result: Pass**

**Test Personnel:**

Daniel W. Baltzell  
 Test Engineer

*Daniel W. Baltzell*

Signature

January 16, 2024  
 Date of Test

## **7 AC Conducted Emissions - FCC 15.207**

The device is powered by external 12 VDC, no AC conducted emissions are required.

## **8 Conclusion**

The data in this measurement report shows that the EUT as tested, Alarm.com Incorporated Model: ADC-SEM-300, Variant: Paraguay, FCC ID: YL6-143SEM300PY, complies with the applicable requirements of Parts 2 and 15 of the FCC Rules and Regulations.