

June 11, 2025

Next Meters Global, LLC  
Brett Jepsen  
73 S Gateway Dr  
Providence, UT 84332

Dear Brett Jepsen,

Enclosed is the Electromagnetic Compatibility for the Next Meters Global, LLC, NL4, tested to the requirements of:

- FCC Part 15.247 (per ANSI C63.10: 2020)
- Innovation, Science, and Economic Development (ISED) Canada RSS-247 Issue 3

Thank you for using the services of Eurofins E&E Testing NA, LLC. Please contact me if you have any questions regarding these results or if Eurofins E&E can be of further service to you.

Sincerely,

*Rheine Nguyen*

Documentation Department  
Eurofins E&E Testing NA, LLC.

Reference: WIRS135089-FCC 15.247 (FHSS Radio) Rev. 1



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### Report Status Sheet

| Revision | Report Date   | Reason for Revision |
|----------|---------------|---------------------|
| Ø        | June 3, 2025  | Initial Issue.      |
| 1        | June 11, 2025 | TCB Updates.        |

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## 1.0 Testing Summary

The Next Meters Global, LLC, NL4 was found to be compliant to the following specification(s).

- FCC Part 15.247 (per ANSI C63.10: 2020)
- RSS-247 Issue 3



Chin Ming Lui  
Senior Wireless Test Engineer

**Engineering Statement:** The measurements shown in this report were made in accordance with the procedures indicated. 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.



Brandon Quan  
Senior Wireless Test Engineer

## 2.0 Overview

Eurofins E&E Testing NA, LLC. was contracted by Next Meters Global, LLC to perform testing on the NL4, under purchase order number PO-NMG3226.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of Next Meters Global, LLC, NL4.

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

|                         |     |
|-------------------------|-----|
| <b>Model(s) Tested:</b> | NL4 |
|-------------------------|-----|

### FCC ID and IC:

FCC ID: 2A8EC-NL4

IC: 28950-NL4

## 2.1 Test Site

All testing was performed at Eurofins E&E Testing NA, LLC., 3162 Belick St. Santa Clara, CA 95054. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology. Eurofins E&E Testing NA, LLC. has been accredited by the American Association for Laboratory Accreditation (A2LA) (Certificate #: 0591.02) in accordance with ISO/IEC 17025:2017.

## 2.2 Equipment Overview and Test Configuration

|                                                              |                                             |
|--------------------------------------------------------------|---------------------------------------------|
| <b>Name of EUT/Model:</b>                                    | NL4                                         |
| <b>Additional Models Covered, but not tested:</b>            | N/A                                         |
| <b>Description of EUT and Intended Use:</b>                  | Solar Powered Gateway                       |
| <b>Mode(s) of Operation:</b>                                 | ISM 900 MHz: FHSS<br>BLE: 1 Mbps and 2 Mbps |
| <b>Configuration(s):</b>                                     | Test mode                                   |
| <b>EUT Power Requirement</b>                                 |                                             |
| <b>Voltage:</b>                                              | 7V                                          |
| <b>AC or DC</b>                                              | DC                                          |
| <b>Voltage Frequency:</b>                                    | 0 Hz                                        |
| <b>Number of Phases:</b>                                     | N/A                                         |
| <b>Amperage:</b>                                             | N/A                                         |
| <b>Uses an external AC/DC Adapter:</b>                       | No                                          |
| <b>Battery Return Configuration (DC-C, DC-I, or either):</b> | DC-I                                        |
| <b>Physical Description</b>                                  |                                             |
| <b>EUT Arrangement:</b>                                      | Mounted                                     |
| <b>System with Multiple Chassis:</b>                         | N/A                                         |

|                                                               |                                                   |
|---------------------------------------------------------------|---------------------------------------------------|
| <b>Size (HxWxD) inches:</b>                                   | 18.1 x 13 x 2.75                                  |
| <b>Weight (lbs):</b>                                          | 18                                                |
| <b>Emissions Class Declaration:</b>                           | B                                                 |
| <b>Other Info:</b>                                            |                                                   |
| <b>Highest frequency used in device:</b>                      | 2480 MHz (highest channel frequency of BLE radio) |
| <b>EUT Software (internal to EUT):</b>                        | Custom firmware by Next Meters Global, LLC        |
| <b>Support Software (used by support PC to exercise EUT):</b> | PuTTY                                             |

**Note:** EUT information was provided by Next Meters Global, LLC.

### Equipment Configuration List

N/A

### Support Equipment List

N/A

### Ports and Cabling List

N/A

### Antenna Information

| Radio   | Antenna Type                 | Manufacturer            | Part No     | Frequency Range | Peak Gain  |
|---------|------------------------------|-------------------------|-------------|-----------------|------------|
| ISM 900 | Apex Straight TG.33 Dipole   | Taoglas                 | TG.33.8H11W | 824 – 960 MHz   | 2.20 (dBi) |
| BLE     | Inverted F Printed PCB Trace | Next Meters Global, LLC | N/A         | 2.4 – 2.48 GHz  | -0.5 dBi   |

**Note:** Antenna information was provided by Next Meters Global, LLC. Eurofins E&E Testing NA, LLC did not test or verify the accuracy of the antenna information.

**Test Configuration**

The ISM 900 radio was configured to both hopping and fixed channel continuous transmission mode for testing.

Hopping mode was used for following test items: Carrier Frequency Separation, Number of Hopping Frequencies, Time of Occupancy (Dwell Time), and Band Edge.

Fixed channel continuous transmission mode was used for following test items: Duty Cycle, 20 dB Bandwidth, 99% Occupied Bandwidth, Maximum Peak Conducted Output Power, Conducted Spurious Emissions, Band Edge, and Radiated Spurious Emissions. The ISM 900 radio in this mode was configured to low, middle, and high channels.

| Channel | Frequency (MHz) | Power Setting |
|---------|-----------------|---------------|
| Low     | 910.2           | +30 dBm       |
| Mid     | 915             | +30 dBm       |
| High    | 920             | +30 dBm       |

### **2.3 Modifications to the EUT**

No modifications were made to the EUT.

### **2.4 Modifications to the Standard**

No modifications were made to the Test Standard.

### **2.5 Disposition of EUT**

The test sample including all support equipment (if any), submitted to the Electromagnetic Compatibility Lab for testing was returned to Next Meters Global, LLC upon completion of testing.

### 3.0 Electromagnetic Compatibility Criteria for Intentional Radiators

#### 3.1 Radiated Spurious Emissions

**Test Method:** ANSI C63.10: 2020; FCC KDB 558074 D01 15.247 Meas Guidance v05r02

**Test Requirement(s):** The following standards specified below are covered in the scope of this section of the test report:

- FCC Part 15 Subpart C §15.247
- RSS-247 Issue 3

**FCC – §15.209 Radiated emission limits; general requirements.**

(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency<br>(MHz) | Field Strength<br>(dB $\mu$ V/m) | Measurement Distance<br>(m) |
|--------------------|----------------------------------|-----------------------------|
| 30 - 88            | 40                               | 3                           |
| 88 - 216           | 43.5                             | 3                           |
| 216 - 960          | 46                               | 3                           |
| Above 960          | 54                               | 3                           |

**ISED – Transmitter emission limits:**

Refer to RSS-Gen Issue 5 Section 8.9 Transmitter emission limits Table 5 – General field strength limits at frequencies above 30 MHz.

# FCC – §15.205 Restricted bands of operation.

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz                      | MHz                 | MHz           | GHz              |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110              | 16.42-16.423        | 399.9-410     | 4.5-5.15         |
| <sup>1</sup> 0.495-0.505 | 16.69475-16.69525   | 608-614       | 5.35-5.46        |
| 2.1735-2.1905            | 16.80425-16.80475   | 960-1240      | 7.25-7.75        |
| 4.125-4.128              | 25.5-25.67          | 1300-1427     | 8.025-8.5        |
| 4.17725-4.17775          | 37.5-38.25          | 1435-1626.5   | 9.0-9.2          |
| 4.20725-4.20775          | 73-74.6             | 1645.5-1646.5 | 9.3-9.5          |
| 6.215-6.218              | 74.8-75.2           | 1660-1710     | 10.6-12.7        |
| 6.26775-6.26825          | 108-121.94          | 1718.8-1722.2 | 13.25-13.4       |
| 6.31175-6.31225          | 123-138             | 2200-2300     | 14.47-14.5       |
| 8.291-8.294              | 149.9-150.05        | 2310-2390     | 15.35-16.2       |
| 8.362-8.366              | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4        |
| 8.37625-8.38675          | 156.7-156.9         | 2690-2900     | 22.01-23.12      |
| 8.41425-8.41475          | 162.0125-167.17     | 3260-3267     | 23.6-24.0        |
| 12.29-12.293             | 167.72-173.2        | 3332-3339     | 31.2-31.8        |
| 12.51975-12.52025        | 240-285             | 3345.8-3358   | 36.43-36.5       |
| 12.57675-12.57725        | 322-335.4           | 3600-4400     | ( <sup>2</sup> ) |
| 13.36-13.41              |                     |               |                  |

<sup>1</sup> Until February, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

# ISED – Restricted frequency bands:

Refer to RSS-Gen Issue 5 Section 8.10 Restricted frequency bands Table 7 – Restricted frequency bands.

**Sample Calculation for Distance Correction factor (DCF) measurement:**

$$F_d = 20 \cdot \log_{10} (D_m/D_s)$$

where:

$F_d$  = Distance Factor in dB  
 $D_m$  = Measurement Distance in meters  
 $D_s$  = Specification Distance in meters

**Sample formula for calculating the Corrected Data for the Radiated Emissions Measurements:**

| Frequency (MHz) | Antenna Polarity | EUT Azimuth (Degrees) | Antenna Height (cm) | Uncorrected Amplitude (dBμV) | ACF (dB/m) (+) | Pre Amp Gain (dB)(-) | CBL (dB) (+) | DCF (dB) (+) | Corrected Amplitude (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------|-----------------------|---------------------|------------------------------|----------------|----------------------|--------------|--------------|------------------------------|----------------|-------------|
| 249.99          | V                | 359.9                 | 240.7               | 55.46                        | 11.4           | 28.335               | 0            | 0            | <b>38.505</b>                | 47             | -8.495      |

$$\begin{aligned} \text{Corrected Amplitude (dB}\mu\text{V/m)} &= \text{Uncorrected Amplitude (dB}\mu\text{V)} + \text{ACF (dB/m)} - \text{Preamp Gain (dB)} + \text{CBL (dB)} + \text{DCF (dB)} \\ &= 55.46 + 11.4 - 28.335 + 0 + 0 = \mathbf{38.505} \end{aligned}$$

**Test Procedure:**

The method of testing, test conditions, and test procedures of ANSI C63.10: 2020 were used in addition to FCC KDB 558074 D01 15.247 Meas Guidance v05r02. Any measured frequency that exhibits a margin of compliance that is less than 3 dB below the specification limit is marked. Eurofins E&E recommends that every emission measured, has at least a 3 dB margin to allow for deviations in the emission characteristics that may occur during the production process.

For emissions between 30 MHz and 1000 MHz, the EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber a biconilog antenna was located 3m from the EUT on an adjustable mast. A pre-scan was first performed to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT was rotated, and the antenna height was varied between 1 m and 4 m to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. Unless otherwise specified, measurements were made using a quasi-peak detector with a 120 kHz resolution bandwidth.

For emissions between 1 GHz and 18 GHz, a double ridged guide horn was located 3 m from the EUT on an adjustable mast. The EUT as placed on a non-metallic table 150 cm above the ground plane inside a semi-anechoic chamber. A pre-scan was performed and used to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT was rotated, and the antenna height was varied depending on the geometry of the EUT. To ensure maximized emissions, the horn antenna was positioned both vertically and horizontally. Unless otherwise specified, measurements were made using a peak and average detector with a 1 MHz resolution bandwidth.

For emission between 18 GHz and 26 GHz, a high frequency standard gain horn antenna was located 3 m from the EUT on an adjustable mast. The EUT as placed on a non-metallic table 150 cm above the ground plane inside a semi-anechoic chamber. A pre-scan was performed and used to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT was rotated, and the antenna height was varied depending on the geometry of the EUT. To ensure maximized emissions, the horn antenna was positioned both vertically and horizontally. Unless otherwise specified, measurements were made using a peak and average detector with a 1 MHz resolution bandwidth.

Radiated measurements were performed with the EUT setup in an orientation that is most representative of normal and typical use.

**Test Software Used:**

Nexio BAT-EMC was used to perform this test.

**Test Results:**

|                       |                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Test Standard:</b> | FCC Part 15.247<br>(Per FCC KDB 558074 D01 15.247 Meas Guidance<br>v05r02; ANSI C63.10-2020)<br>RSS-247 Issue 3 |
| <b>Test Name</b>      | Radiated Spurious Emissions                                                                                     |
| <b>Test Dates:</b>    | 05/07/2025 – 05/08/2025                                                                                         |
| <b>Laboratory</b>     | Eurofins E&E Testing NA, LLC.                                                                                   |
| <b>Test Engineer:</b> | Chin Ming Lui                                                                                                   |
| <b>Test Results:</b>  | Compliant                                                                                                       |

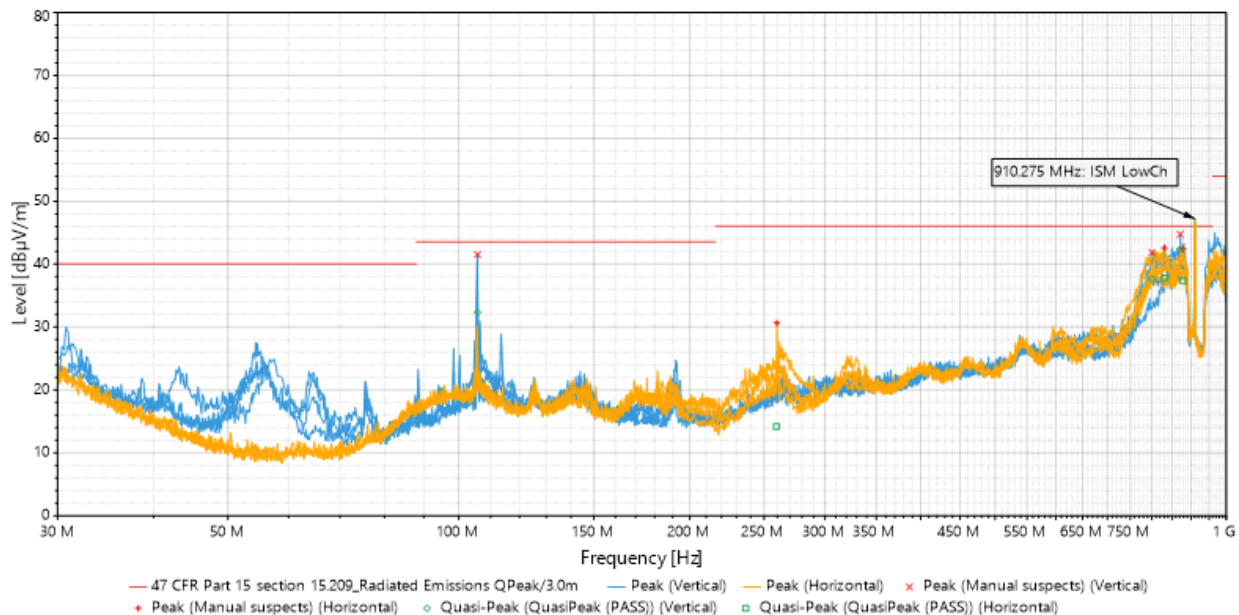
## Test Data (FCC 15.247 & RSS-247 Radiated Spurious Emissions)

### ISM Radio Antenna 1

#### ISM Ant 1 Low Channel 910.2 MHz

| Frequency (MHz) | Source           | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|------------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 105.739         | QuasiPeak (PASS) | 32.3           | 43.522         | -11.222     | 1.131      | 133         | Vertical   | 120000   | 0.1            | -9.721          |
| 259.396         | QuasiPeak (PASS) | 14.192         | 46.021         | -31.829     | 2.967      | 36          | Horizontal | 120000   | 0.1            | -9.003          |
| 800.548         | QuasiPeak (PASS) | 37.637         | 46.021         | -8.384      | 4          | 80          | Vertical   | 120000   | 0.1            | -0.111          |
| 830.459         | QuasiPeak (PASS) | 37.781         | 46.021         | -8.24       | 1.033      | 132         | Horizontal | 120000   | 0.1            | -0.261          |
| 871.191         | QuasiPeak (PASS) | 42.377         | 46.021         | -3.644      | 2.138      | 106         | Vertical   | 120000   | 0.1            | 0.253           |
| 878.775         | QuasiPeak (PASS) | 37.352         | 46.021         | -8.669      | 3.754      | 65          | Horizontal | 120000   | 0.1            | 0.723           |

**Table 1. Radiated Spurious Emissions, ISM Ant 1 Low Channel 910.2 MHz (30 MHz – 1 GHz) Test Results**



**Figure 1. Radiated Spurious Emissions, ISM Ant 1 Low Channel 910.2 MHz (30 MHz – 1 GHz) Plot**

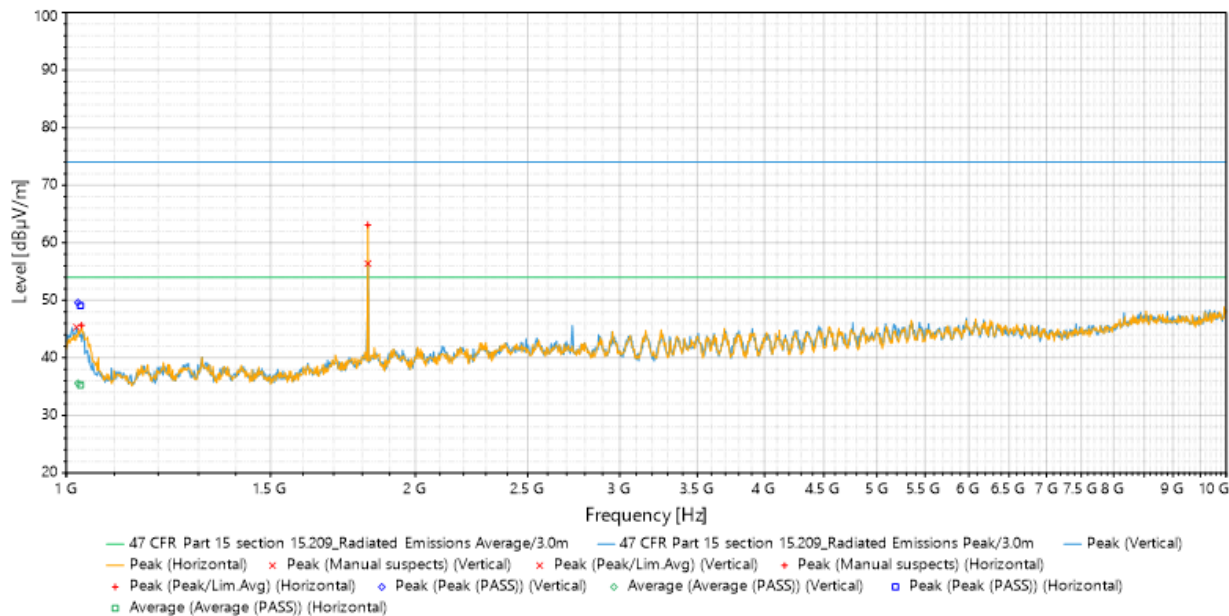
**Note:** Fundamental signal was attenuated using a 902-928 MHz notch filter.

| Frequency (MHz) | Source          | Peak (dBμV/m) | Lim.Peak (dBμV/m) | Lim.Avg (dBμV/m) | Height (m) | Angle1 (°) | Polarization | Correction (dB) |
|-----------------|-----------------|---------------|-------------------|------------------|------------|------------|--------------|-----------------|
| 1819.9          | Manual suspects | 56.376        | 74                | 54               | 1.5        | 53         | Vertical     | -1.37           |
| 1819.9          | Manual suspects | 63.109        | 74                | 54               | 2.5        | 348        | Horizontal   | -1.389          |

**Table 2. Radiated Spurious Emissions, ISM Ant 1 Low Channel 910.2 MHz Suspects Test Results**

| Frequency (MHz) | Source         | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|----------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 1023.3          | Peak (PASS)    | 49.614         | 74             | -24.386     | 2.364      | 47          | Vertical   | 1000000  | 0.1            | -5.286          |
| 1023.3          | Average (PASS) | 35.577         | 54             | -18.423     | 2.364      | 47          | Vertical   | 1000000  | 0.1            | -5.286          |
| 1028.5          | Peak (PASS)    | 49.074         | 74             | -24.926     | 3.29       | 61          | Horizontal | 1000000  | 0.1            | -4.814          |
| 1028.5          | Average (PASS) | 35.272         | 54             | -18.728     | 3.29       | 61          | Horizontal | 1000000  | 0.1            | -4.814          |

**Table 3. Radiated Spurious Emissions, ISM Ant 1 Low Channel 910.2 MHz (1 – 10 GHz) Test Results**



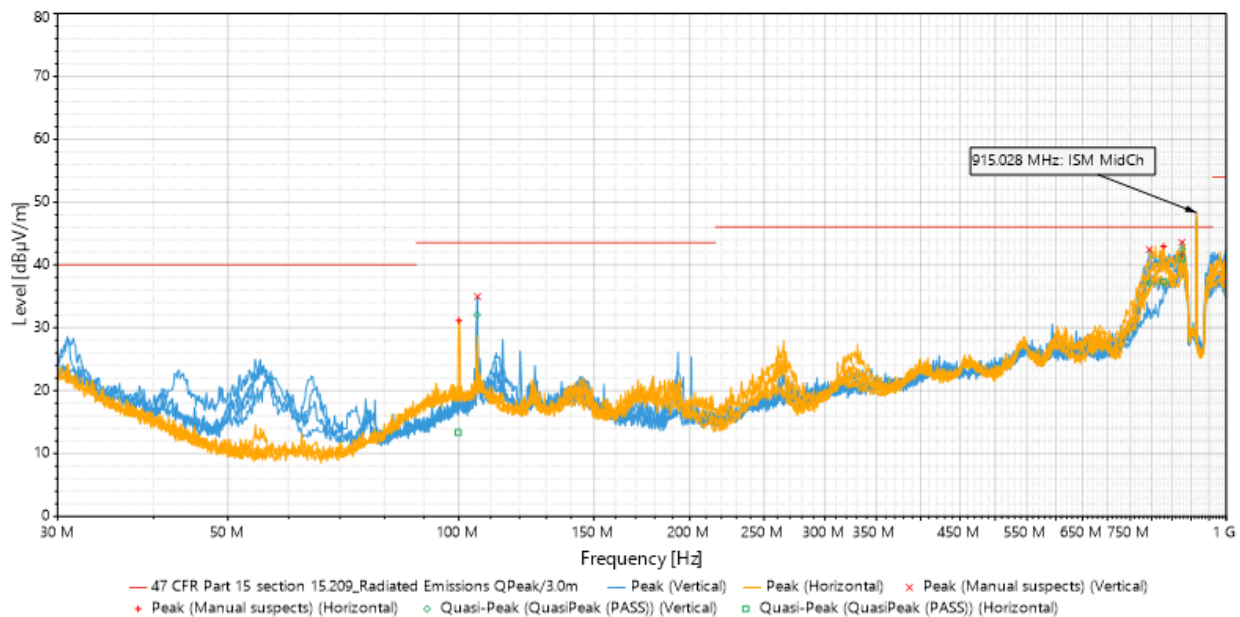
**Figure 2. Radiated Spurious Emissions, ISM Ant 1 Low Channel 910.2 MHz (1 – 10 GHz) Plot**

**Note:** 2<sup>nd</sup> Harmonics at 1819.9 MHz for both vertical and horizontal polarizations do not fall within any restricted band per FCC §15.205 Restricted bands of operation and RSS-Gen Issue 5 section 8.10 Restricted frequency bands. Therefore, according to §15.247(d) and RSS-247 Section 5.5, attenuation below the general limits specified in §15.209(a) and RSS-Gen, respectively, is not required.

## ISM Ant 1 Mid Channel 915 MHz

| Frequency (MHz) | Source           | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|------------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 99.77           | QuasiPeak (PASS) | 13.33          | 43.522         | -30.192     | 3.841      | 324         | Horizontal | 120000   | 0.1            | -8.293          |
| 105.649         | QuasiPeak (PASS) | 32.07          | 43.522         | -11.452     | 1.466      | 136         | Vertical   | 120000   | 0.1            | -9.729          |
| 794.052         | QuasiPeak (PASS) | 37.036         | 46.021         | -8.985      | 4          | 86          | Vertical   | 120000   | 0.1            | -0.03           |
| 828.771         | QuasiPeak (PASS) | 37.335         | 46.021         | -8.686      | 1.029      | 99          | Horizontal | 120000   | 0.1            | -0.208          |
| 875.968         | QuasiPeak (PASS) | 42.519         | 46.021         | -3.502      | 1.913      | 25          | Vertical   | 120000   | 0.1            | 0.487           |
| 876.01          | QuasiPeak (PASS) | 41.059         | 46.021         | -4.962      | 3.966      | 71          | Horizontal | 120000   | 0.1            | 0.43            |

**Table 4. Radiated Spurious Emissions, ISM Ant 1 Mid Channel 915 MHz (30 MHz – 1 GHz) Test Results**



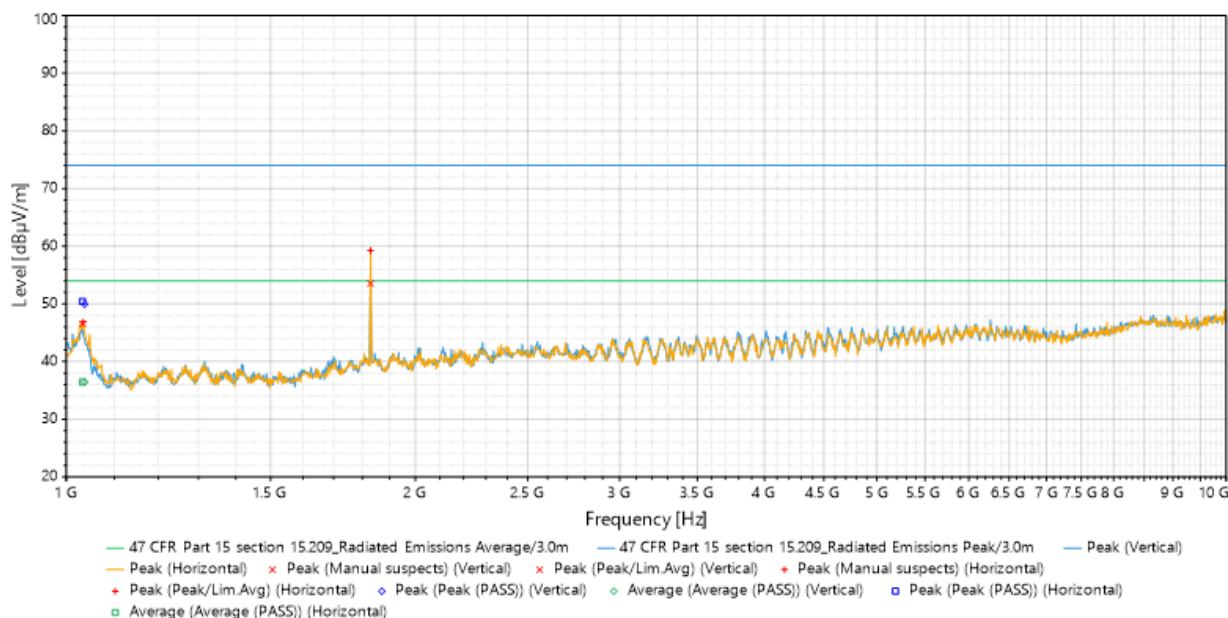
**Figure 3. Radiated Spurious Emissions, ISM Ant 1 Mid Channel 915 MHz (30 MHz – 1 GHz) Plot**

**Note:** Fundamental signal was attenuated using a 902-928 MHz notch filter.

| Frequency (MHz) | Source          | Peak (dBμV/m) | Lim.Peak (dBμV/m) | Lim.Avg (dBμV/m) | Height (m) | Angle1 (°) | Polarization | Correction (dB) |
|-----------------|-----------------|---------------|-------------------|------------------|------------|------------|--------------|-----------------|
| 1829.8          | Manual suspects | 53.553        | 74                | 54               | 1.5        | 56         | Vertical     | -1.296          |
| 1829.8          | Manual suspects | 59.284        | 74                | 54               | 2.5        | 338        | Horizontal   | -1.365          |

**Table 5. Radiated Spurious Emissions, ISM Ant 1 Mid Channel 915 MHz Suspects Test Results**

| Frequency (MHz) | Source         | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|----------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 1032.6          | Peak (PASS)    | 50.431         | 74             | -23.569     | 2.583      | 141         | Horizontal | 1000000  | 0.1            | -4.804          |
| 1032.6          | Average (PASS) | 36.441         | 54             | -17.559     | 2.583      | 141         | Horizontal | 1000000  | 0.1            | -4.804          |
| 1037            | 49.945         | 49.945         | 74             | -24.055     | 1.804      | 36          | Vertical   | 1000000  | 0.1            | -5.321          |
| 1037            | Average (PASS) | 36.456         | 54             | -17.544     | 1.804      | 36          | Vertical   | 1000000  | 0.1            | -5.321          |

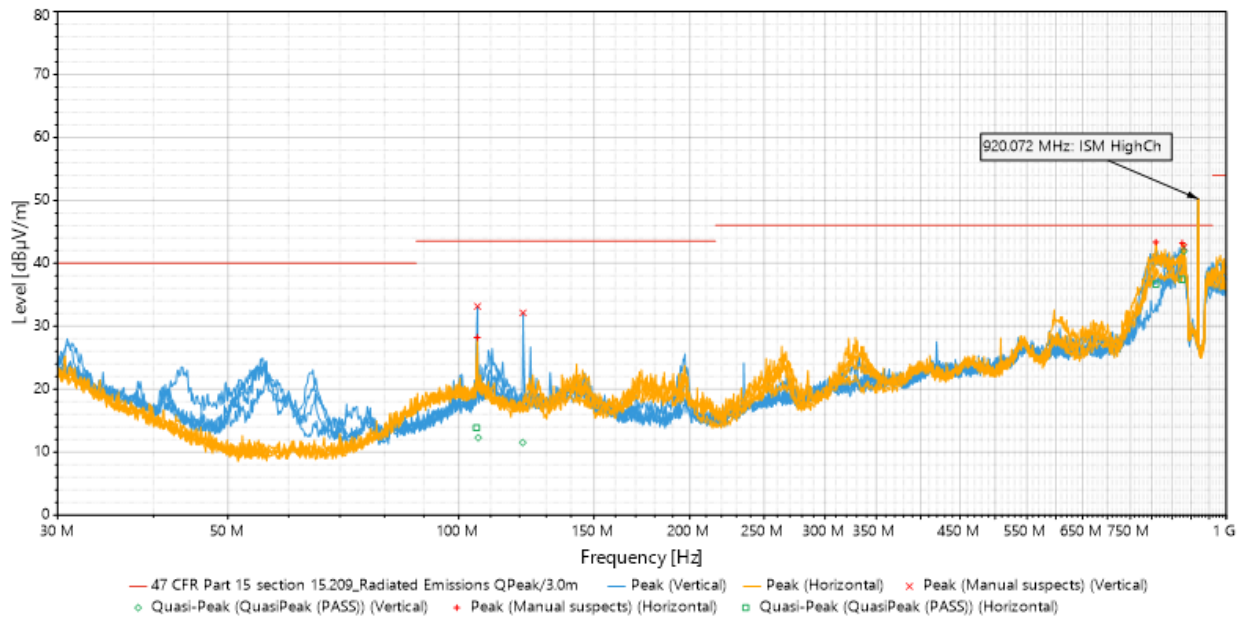
**Table 6. Radiated Spurious Emissions, ISM Ant 1 Mid Channel 915 MHz (1 – 10 GHz) Test Results**

**Figure 4. Radiated Spurious Emissions, ISM Ant 1 Mid Channel 915 MHz (1 – 10 GHz) Plot**

**Note:** 2<sup>nd</sup> Harmonics at 1829.8 MHz for both vertical and horizontal polarizations do not fall within any restricted band per FCC §15.205 Restricted bands of operation and RSS-Gen Issue 5 section 8.10 Restricted frequency bands. Therefore, according to §15.247(d) and RSS-247 Section 5.5, attenuation below the general limits specified in §15.209(a) and RSS-Gen, respectively, is not required.

## ISM Ant 1 High Channel 920 MHz

| Frequency (MHz) | Source           | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|------------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 105.432         | QuasiPeak (PASS) | 13.864         | 43.522         | -29.658     | 3.638      | 354         | Horizontal | 120000   | 0.1            | -7.295          |
| 105.979         | QuasiPeak (PASS) | 12.278         | 43.522         | -31.244     | 1.368      | 133         | Vertical   | 120000   | 0.1            | -9.701          |
| 121.133         | QuasiPeak (PASS) | 11.522         | 43.522         | -32         | 2.476      | 252         | Vertical   | 120000   | 0.1            | -10.22          |
| 810.072         | QuasiPeak (PASS) | 36.657         | 46.021         | -9.364      | 1.032      | 137         | Horizontal | 120000   | 0.1            | -0.438          |
| 876.592         | QuasiPeak (PASS) | 37.408         | 46.021         | -8.613      | 3.966      | 70          | Horizontal | 120000   | 0.1            | 0.495           |
| 880.981         | QuasiPeak (PASS) | 41.935         | 46.021         | -4.086      | 3.295      | 85          | Vertical   | 120000   | 0.1            | 0.739           |

**Table 7. Radiated Spurious Emissions, ISM Ant 1 High Channel 920 MHz (30 MHz – 1 GHz) Test Results**



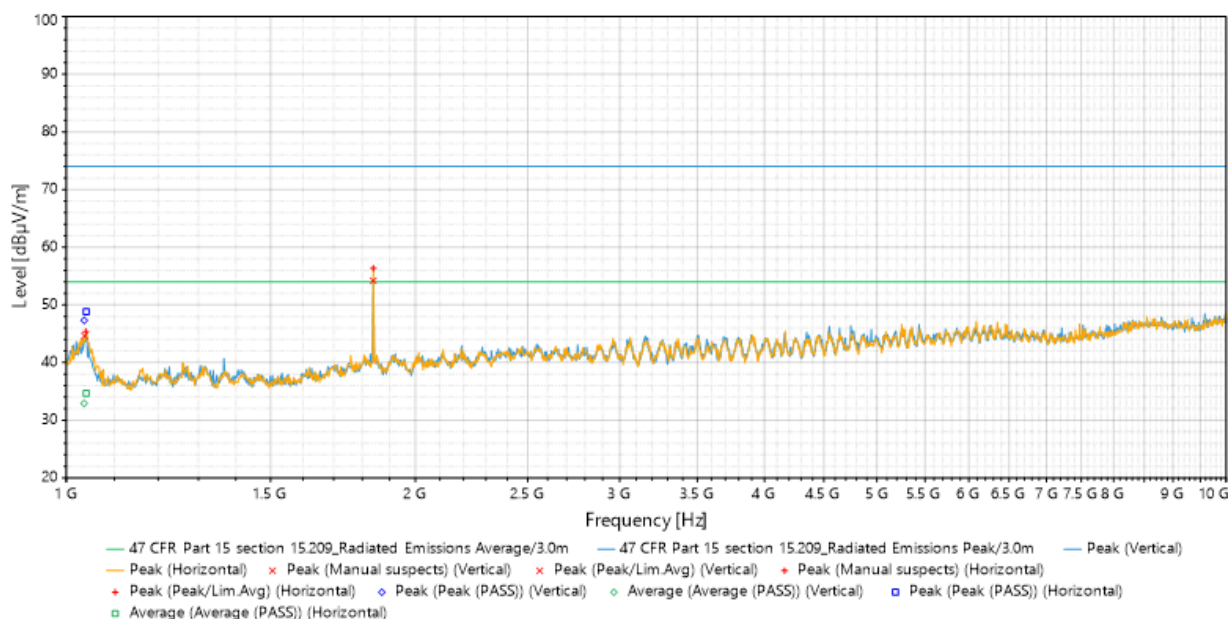
**Figure 5. Radiated Spurious Emissions, ISM Ant 1 High Channel 920 MHz (30 MHz – 1 GHz) Plot**

**Note:** Fundamental signal was attenuated using a 902-928 MHz notch filter.

| Frequency (MHz) | Source          | Peak (dB $\mu$ V/m) | Lim.Peak (dB $\mu$ V/m) | Lim.Avg (dB $\mu$ V/m) | Height (m) | Angle1 (°) | Polarization | Correction (dB) |
|-----------------|-----------------|---------------------|-------------------------|------------------------|------------|------------|--------------|-----------------|
| 1839.7          | Manual suspects | 54.203              | 74                      | 54                     | 2.5        | 331        | Vertical     | -1.254          |
| 1839.7          | Manual suspects | 56.347              | 74                      | 54                     | 2.5        | 335        | Horizontal   | -1.324          |

**Table 8. Radiated Spurious Emissions, ISM Ant 1 High Channel 920 MHz Suspects Test Results**

| Frequency (MHz) | Source         | Level (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|----------------|----------------------|----------------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 1036.1          | Peak (PASS)    | 47.302               | 74                   | -26.698     | 2.593      | 57          | Vertical   | 1000000  | 0.1            | -5.32           |
| 1036.1          | Average (PASS) | 32.934               | 54                   | -21.066     | 2.593      | 57          | Vertical   | 1000000  | 0.1            | -5.32           |
| 1040.4          | Peak (PASS)    | 48.834               | 74                   | -25.166     | 1.13       | 304         | Horizontal | 1000000  | 0.1            | -4.764          |
| 1040.4          | Average (PASS) | 34.67                | 54                   | -19.33      | 1.13       | 304         | Horizontal | 1000000  | 0.1            | -4.764          |

**Table 9. Radiated Spurious Emissions, ISM Ant 1 High Channel 920 MHz (1 – 10 GHz) Test Results**

**Figure 6. Radiated Spurious Emissions, ISM Ant 1 High Channel 920 MHz (1 – 10 GHz) Plot**

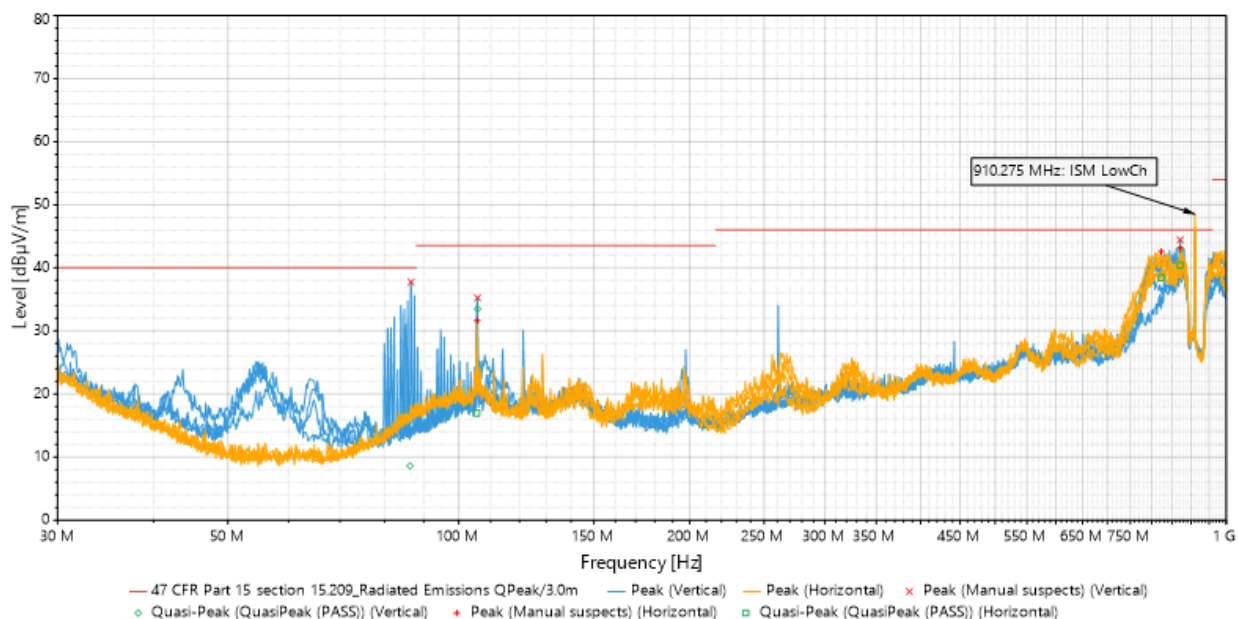
**Note:** 2<sup>nd</sup> Harmonics at 1839.7 MHz for both vertical and horizontal polarizations do not fall within any restricted band per FCC §15.205 Restricted bands of operation and RSS-Gen Issue 5 section 8.10 Restricted frequency bands. Therefore, according to §15.247(d) and RSS-247 Section 5.5, attenuation below the general limits specified in §15.209(a) and RSS-Gen, respectively, is not required.

## ISM Radio Antenna 2

### ISM Ant 2 Low Channel 910.2 MHz

| Frequency (MHz) | Source           | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|------------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 86.372          | QuasiPeak (PASS) | 8.6            | 40             | -31.4       | 2.027      | 162         | Vertical   | 120000   | 0.1            | -13.95          |
| 105.522         | QuasiPeak (PASS) | 16.971         | 43.522         | -26.551     | 3.414      | 50          | Horizontal | 120000   | 0.1            | -7.268          |
| 105.757         | QuasiPeak (PASS) | 33.506         | 43.522         | -10.016     | 1.356      | 115         | Vertical   | 120000   | 0.1            | -9.72           |
| 822.74          | QuasiPeak (PASS) | 38.435         | 46.021         | -7.586      | 1.031      | 133         | Horizontal | 120000   | 0.1            | -0.235          |
| 871.143         | QuasiPeak (PASS) | 40.434         | 46.021         | -5.587      | 4          | 73          | Horizontal | 120000   | 0.1            | -0.081          |
| 871.214         | QuasiPeak (PASS) | 42.862         | 46.021         | -3.159      | 1.921      | 25          | Vertical   | 120000   | 0.1            | 0.254           |

**Table 10. Radiated Spurious Emissions, ISM Ant 2 Low Channel 910.2 MHz (30 MHz – 1 GHz) Test Results**



**Figure 7. Radiated Spurious Emissions, ISM Ant 2 Low Channel 910.2 MHz (30 MHz – 1 GHz) Plot**

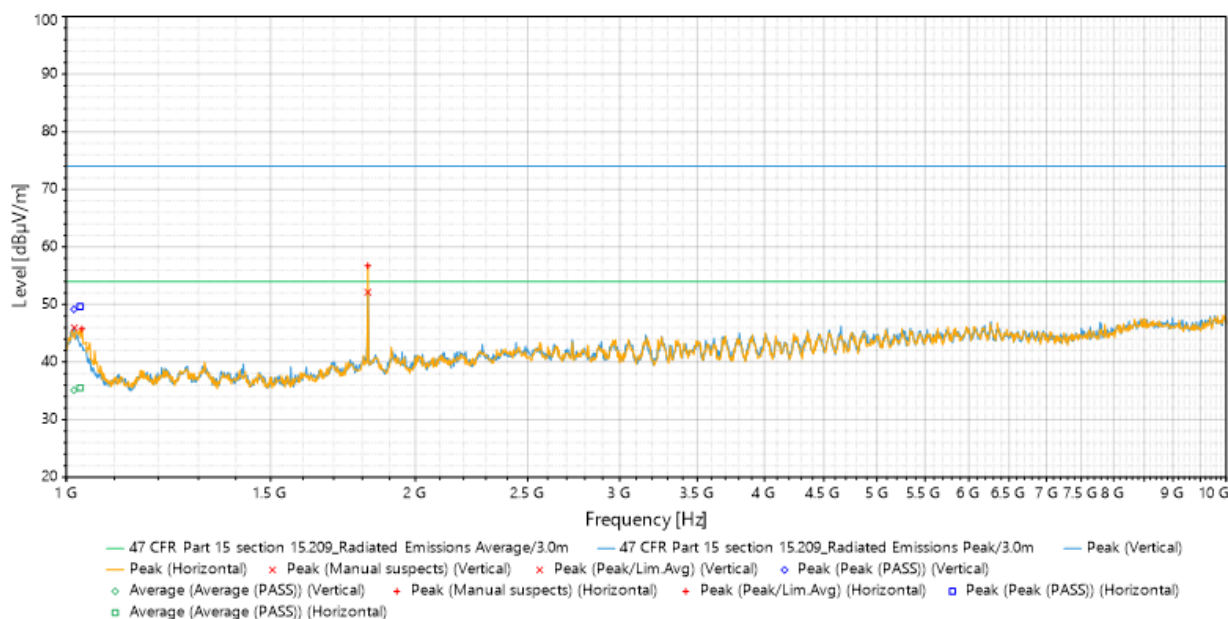
**Note:** Fundamental signal was attenuated using a 902-928 MHz notch filter.

| Frequency (MHz) | Source          | Peak (dBμV/m) | Lim.Peak (dBμV/m) | Lim.Avg (dBμV/m) | Height (m) | Angle1 (°) | Polarization | Correction (dB) |
|-----------------|-----------------|---------------|-------------------|------------------|------------|------------|--------------|-----------------|
| 1819.9          | Manual suspects | 52.116        | 74                | 54               | 1.5        | 314        | Vertical     | -1.37           |
| 1819.9          | Manual suspects | 56.736        | 74                | 54               | 2.5        | 24         | Horizontal   | -1.389          |

**Table 11. Radiated Spurious Emissions, ISM Ant 2 Low Channel 910.2 MHz Suspects Test Results**

| Frequency (MHz) | Source         | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|----------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 1015.4          | Peak (PASS)    | 49.168         | 74             | -24.832     | 1.919      | 335         | Vertical   | 1000000  | 0.1            | -5.206          |
| 1015.4          | Average (PASS) | 35.122         | 54             | -18.878     | 1.919      | 335         | Vertical   | 1000000  | 0.1            | -5.206          |
| 1028            | Peak (PASS)    | 49.648         | 74             | -24.352     | 2.489      | 222         | Horizontal | 1000000  | 0.1            | -4.811          |
| 1028            | Average (PASS) | 35.505         | 54             | -18.495     | 2.489      | 222         | Horizontal | 1000000  | 0.1            | -4.811          |

**Table 12. Radiated Spurious Emissions, ISM Ant 2 Low Channel 910.2 MHz (1 – 10 GHz) Test Results**



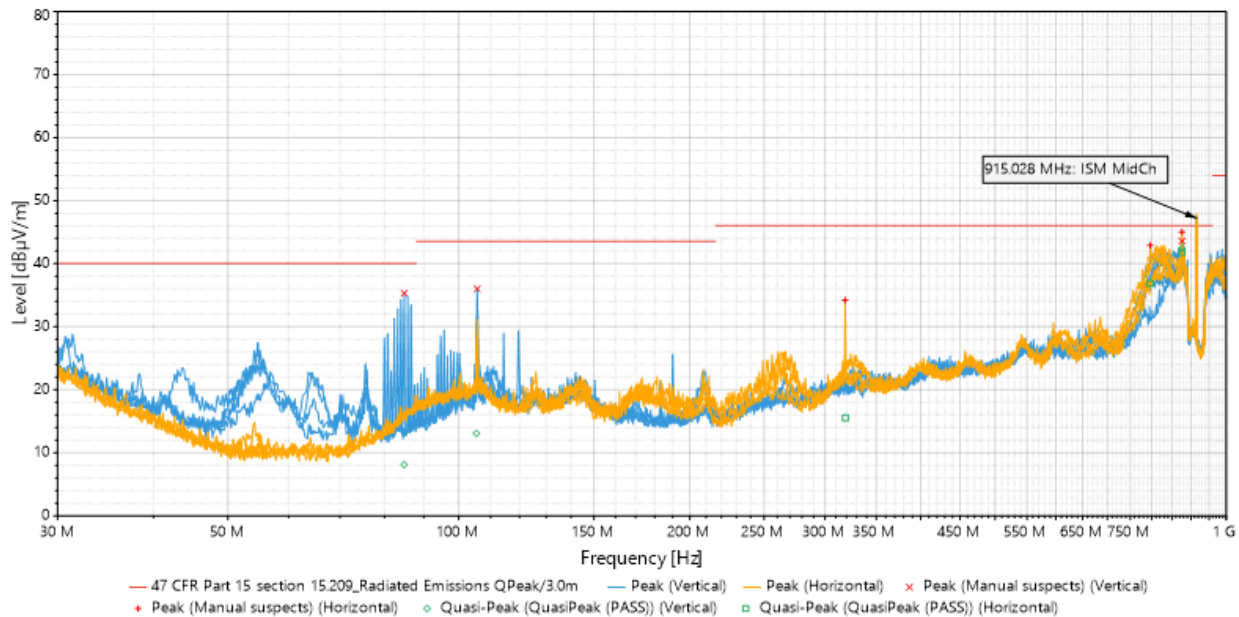
**Figure 8. Radiated Spurious Emissions, ISM Ant 2 Low Channel 910.2 MHz (1 – 10 GHz) Plot**

**Note:** 2<sup>nd</sup> Harmonics at 1819.9 MHz for both vertical and horizontal polarizations do not fall within any restricted band per FCC §15.205 Restricted bands of operation and RSS-Gen Issue 5 section 8.10 Restricted frequency bands. Therefore, according to §15.247(d) and RSS-247 Section 5.5, attenuation below the general limits specified in §15.209(a) and RSS-Gen, respectively, is not required.

## ISM Ant 2 Mid Channel 915 MHz

| Frequency (MHz) | Source           | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|------------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 84.854          | QuasiPeak (PASS) | 8.119          | 40             | -31.881     | 2.57       | 117         | Vertical   | 120000   | 0.1            | -14.257         |
| 105.408         | QuasiPeak (PASS) | 13.076         | 43.522         | -30.446     | 2.482      | 0           | Vertical   | 120000   | 0.1            | -9.749          |
| 318.997         | QuasiPeak (PASS) | 15.509         | 46.021         | -30.512     | 1.803      | 337         | Horizontal | 120000   | 0.1            | -6.689          |
| 795.961         | QuasiPeak (PASS) | 36.855         | 46.021         | -9.166      | 1.129      | 19          | Horizontal | 120000   | 0.1            | -0.955          |
| 875.998         | QuasiPeak (PASS) | 42.479         | 46.021         | -3.542      | 2.022      | 115         | Vertical   | 120000   | 0.1            | 0.489           |
| 876.01          | QuasiPeak (PASS) | 41.802         | 46.021         | -4.219      | 4          | 71          | Horizontal | 120000   | 0.1            | 0.43            |

**Table 13. Radiated Spurious Emissions, ISM Ant 2 Mid Channel 915 MHz (30 MHz – 1 GHz) Test Results**



**Figure 9. Radiated Spurious Emissions, ISM Ant 2 Mid Channel 915 MHz (30 MHz – 1 GHz) Plot**

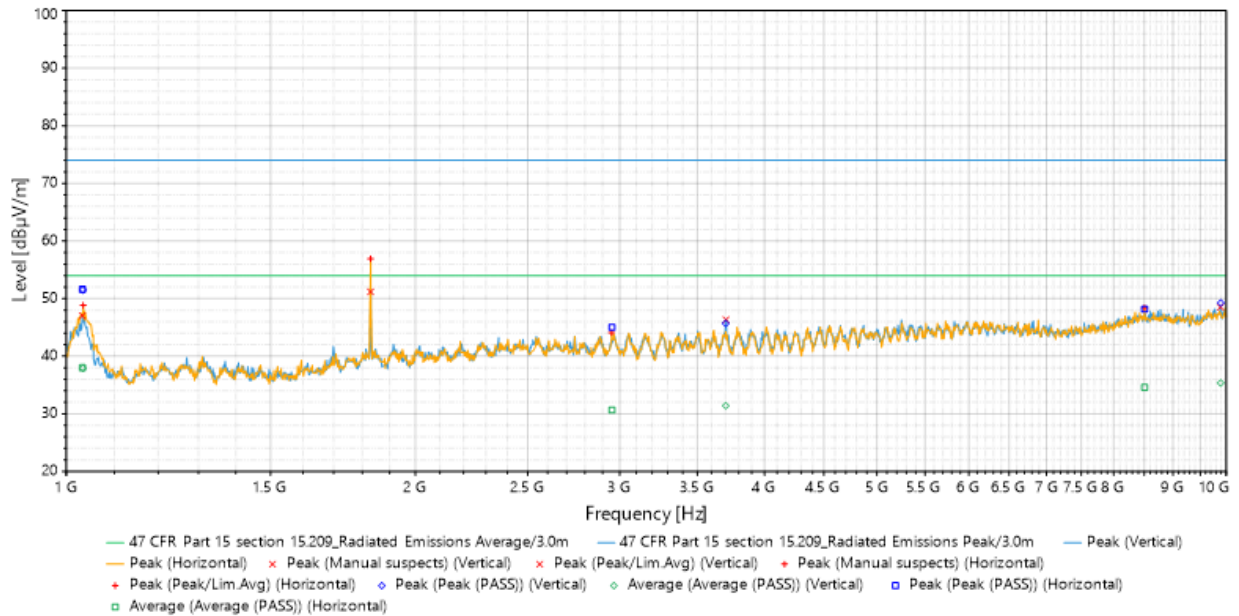
**Note:** Fundamental signal was attenuated using a 902-928 MHz notch filter.

| Frequency (MHz) | Source          | Peak (dBμV/m) | Lim.Peak (dBμV/m) | Lim.Avg (dBμV/m) | Height (m) | Angle1 (°) | Polarization | Correction (dB) |
|-----------------|-----------------|---------------|-------------------|------------------|------------|------------|--------------|-----------------|
| 1829.8          | Manual suspects | 51.189        | 74                | 54               | 1.5        | 314        | Vertical     | -1.296          |
| 1829.8          | Manual suspects | 56.918        | 74                | 54               | 2.5        | 23         | Horizontal   | -1.365          |

**Table 14. Radiated Spurious Emissions, ISM Ant 2 Mid Channel 915 MHz Suspects Test Results**

| Frequency (MHz) | Source         | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|----------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 1032.5          | Peak (PASS)    | 51.613         | 74             | -22.387     | 2.582      | 220         | Horizontal | 1000000  | 0.1            | -4.804          |
| 1032.5          | Average (PASS) | 37.999         | 54             | -16.001     | 2.582      | 220         | Horizontal | 1000000  | 0.1            | -4.804          |
| 1033.6          | Peak (PASS)    | 51.504         | 74             | -22.496     | 2.361      | 326         | Vertical   | 1000000  | 0.1            | -5.316          |
| 1033.6          | Average (PASS) | 37.939         | 54             | -16.061     | 2.361      | 326         | Vertical   | 1000000  | 0.1            | -5.316          |
| 2954            | Peak (PASS)    | 45.024         | 74             | -28.976     | 2.851      | 284         | Horizontal | 1000000  | 0.1            | 1.028           |
| 2954            | Average (PASS) | 30.645         | 54             | -23.355     | 2.851      | 284         | Horizontal | 1000000  | 0.1            | 1.028           |
| 3702.9          | Peak (PASS)    | 45.703         | 74             | -28.297     | 2.36       | 33          | Vertical   | 1000000  | 0.1            | 1.849           |
| 3702.9          | Average (PASS) | 31.425         | 54             | -22.575     | 2.36       | 33          | Vertical   | 1000000  | 0.1            | 1.849           |
| 8506.2          | Peak (PASS)    | 48.167         | 74             | -25.833     | 1.127      | 341         | Horizontal | 1000000  | 0.1            | 5.707           |
| 8506.2          | Average (PASS) | 34.578         | 54             | -19.422     | 1.127      | 341         | Horizontal | 1000000  | 0.1            | 5.707           |
| 9893.2          | Peak (PASS)    | 49.261         | 74             | -24.739     | 3.028      | 166         | Vertical   | 1000000  | 0.1            | 5.762           |
| 9893.2          | Average (PASS) | 35.358         | 54             | -18.642     | 3.028      | 166         | Vertical   | 1000000  | 0.1            | 5.762           |

**Table 15. Radiated Spurious Emissions, ISM Ant 2 Mid Channel 915 MHz (1 – 10 GHz) Test Results**



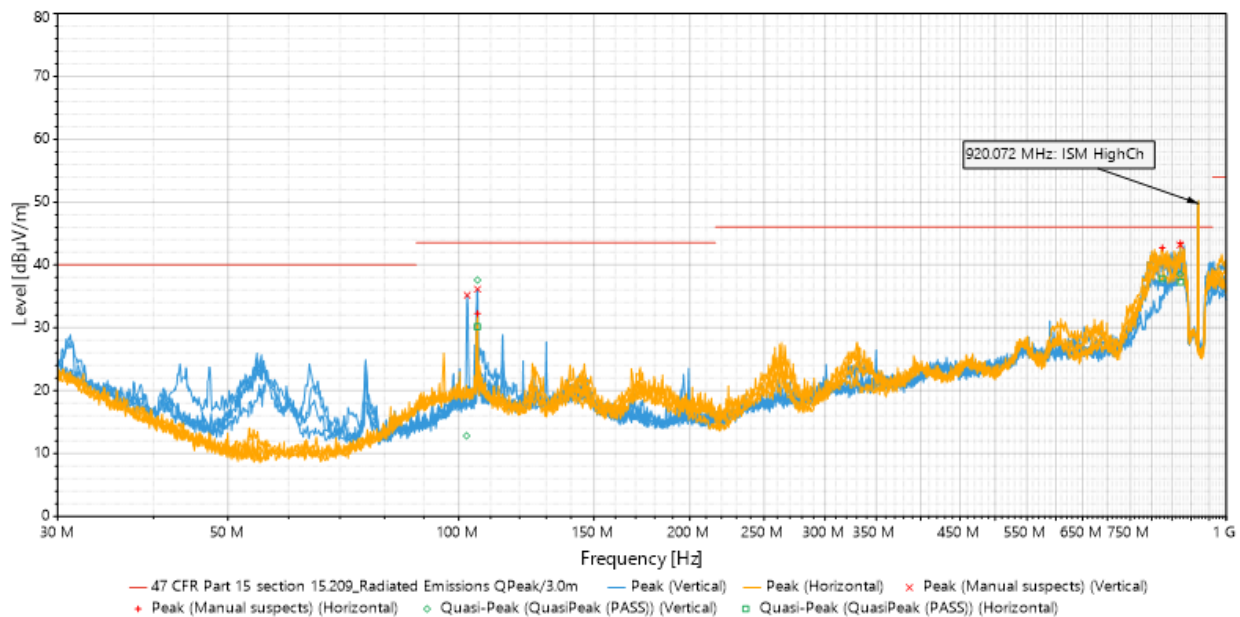
**Figure 10. Radiated Spurious Emissions, ISM Ant 2 Mid Channel 915 MHz (1 – 10 GHz) Plot**

**Note:** 2<sup>nd</sup> Harmonics at 1829.8 MHz for both vertical and horizontal polarizations do not fall within any restricted band per FCC §15.205 Restricted bands of operation and RSS-Gen Issue 5 section 8.10 Restricted frequency bands. Therefore, according to §15.247(d) and RSS-247 Section 5.5, attenuation below the general limits specified in §15.209(a) and RSS-Gen, respectively, is not required.

## ISM Ant 2 High Channel 920 MHz

| Frequency (MHz) | Source           | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|------------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 102.34          | QuasiPeak (PASS) | 12.824         | 43.522         | -30.698     | 1.244      | 301         | Vertical   | 120000   | 0.1            | -10.188         |
| 105.733         | QuasiPeak (PASS) | 30.165         | 43.522         | -13.357     | 3.415      | 24          | Horizontal | 120000   | 0.1            | -7.207          |
| 105.751         | QuasiPeak (PASS) | 37.601         | 43.522         | -5.921      | 1.246      | 119         | Vertical   | 120000   | 0.1            | -9.72           |
| 825.342         | QuasiPeak (PASS) | 37.832         | 46.021         | -8.189      | 1.029      | 133         | Horizontal | 120000   | 0.1            | -0.195          |
| 871.135         | QuasiPeak (PASS) | 38.552         | 46.021         | -7.469      | 1.908      | 27          | Vertical   | 120000   | 0.1            | 0.25            |
| 872.339         | QuasiPeak (PASS) | 37.285         | 46.021         | -8.736      | 3.865      | 72          | Horizontal | 120000   | 0.1            | 0.048           |

**Table 16. Radiated Spurious Emissions, ISM Ant 2 High Channel 920 MHz (30 MHz – 1 GHz) Test Results**



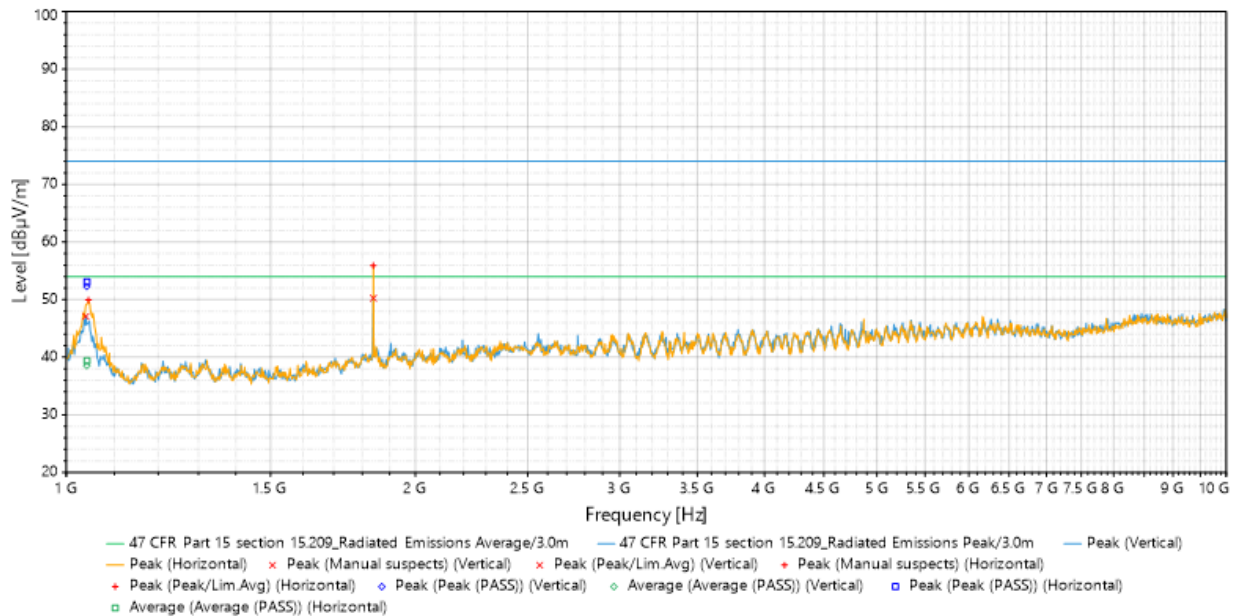
**Figure 11. Radiated Spurious Emissions, ISM Ant 2 High Channel 920 MHz (30 MHz – 1 GHz) Plot**

| Frequency (MHz) | Source          | Peak (dBμV/m) | Lim.Peak (dBμV/m) | Lim.Avg (dBμV/m) | Height (m) | Angle1 (°) | Polarization | Correction (dB) |
|-----------------|-----------------|---------------|-------------------|------------------|------------|------------|--------------|-----------------|
| 1839.7          | Manual suspects | 50.264        | 74                | 54               | 1.5        | 313        | Vertical     | -1.254          |
| 1839.7          | Manual suspects | 55.927        | 74                | 54               | 2.5        | 22         | Horizontal   | -1.324          |

**Table 17. Radiated Spurious Emissions, ISM Ant 2 High Channel Suspects Test Results**

| Frequency (MHz) | Source         | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (m) | Azimuth (°) | Pol.       | RBW (Hz) | Meas. Time (s) | Correction (dB) |
|-----------------|----------------|----------------|----------------|-------------|------------|-------------|------------|----------|----------------|-----------------|
| 1041.5          | Peak (PASS)    | 52.29          | 74             | -21.71      | 2.356      | 327         | Vertical   | 1000000  | 0.1            | -5.362          |
| 1041.5          | Average (PASS) | 38.563         | 54             | -15.437     | 2.356      | 327         | Vertical   | 1000000  | 0.1            | -5.362          |
| 1041.9          | Peak (PASS)    | 53.063         | 74             | -20.937     | 1.464      | 59          | Horizontal | 1000000  | 0.1            | -4.795          |
| 1041.9          | Average (PASS) | 39.378         | 54             | -14.622     | 1.464      | 59          | Horizontal | 1000000  | 0.1            | -4.795          |

**Table 18. Radiated Spurious Emissions, ISM Ant 2 High Channel 920 MHz (1 – 10 GHz) Test Results**



**Figure 12. Radiated Spurious Emissions, ISM Ant 2 High Channel 920 MHz (1 – 10 GHz) Plot**

**Note:** 2<sup>nd</sup> Harmonics at 1839.7 MHz for both vertical and horizontal polarizations do not fall within any restricted band per FCC §15.205 Restricted bands of operation and RSS-Gen Issue 5 section 8.10 Restricted frequency bands. Therefore, according to §15.247(d) and RSS-247 Section 5.5, attenuation below the general limits specified in §15.209(a) and RSS-Gen, respectively, is not required.

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

| Test Name: FCC 15.247 & RSS-247                                                                            |                           |                             | Test Date(s): 05/07/2025 – 05/08/2025 |               |              |
|------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------|---------------------------------------|---------------|--------------|
| Asset #                                                                                                    | Equipment                 | Manufacturer                | Model                                 | Last Cal Date | Cal Due Date |
| 1S2399                                                                                                     | Turntable Controller      | Sunol Sciences              | SC99V                                 | See Note 1    |              |
| 1S4856                                                                                                     | Antenna Positioning Tower | ETS-Lindgren                | 2171B                                 | See Note 1    |              |
| 1S2482                                                                                                     | 5 Meter Chamber           | Panashield - ETS            | 5 Meter Semi-Anechoic Chamber         | See Note 2    |              |
| 1S4804                                                                                                     | EMI Test Receiver         | Rohde & Schwarz             | ESW44                                 | 08/07/2024    | 08/07/2025   |
| 1S2485                                                                                                     | Bilog Antenna             | Teseq                       | CBL6112D                              | 11/27/2024    | 11/27/2026   |
| 1S2435                                                                                                     | Horn Antenna              | ETS-Lindgren                | 3117                                  | 03/17/2025    | 03/17/2027   |
| 1S2668                                                                                                     | Pre-Amplifier             | Sonoma Instruments          | 310 N                                 | 03/18/2025    | 03/18/2027   |
| 1S4802                                                                                                     | Pre-Amplifier             | EMC Instruments Corporation | EMC118A45SE                           | See Note 1    |              |
| Note 1: Functionally tested equipment is verified using calibrated instrumentation at the time of testing. |                           |                             |                                       |               |              |
| Note 2: Latest NSA and VSWR data available upon request.                                                   |                           |                             |                                       |               |              |

**Table 19. Radiated Spurious Emissions, Test Equipment**

### 3.2 Antenna-Port Conducted Measurements

**Test Method:** ANSI C63.10: 2020; FCC KDB 558074 D01 15.247 Meas Guidance v05r02

**Test Requirements:** The following standards are covered under this test:

- FCC Part 15 Subpart C §15.247
- ISSED RSS-247 Issue 3 §5.1, §5.4, §5.5

**Test Procedure:** The EUT was configured to operate in both hopping mode and fixed channel continuous transmission mode continuous transmission mode within the 902-928 MHz ISM band.

- Hopping operating mode was used for following test items: Carrier Frequency Separation, Number of Hopping Frequencies, Time of Occupancy (Dwell Time), and Band Edge.
- Fixed channel operating mode was used for following test items: Duty Cycle, 20 dB Bandwidth, 99% Occupied Bandwidth, Maximum Peak Conducted Output Power, Conducted Spurious Emissions, Band Edge, and Radiated Spurious Emissions. The ISM 900 radio in this mode was configured to low, middle, and high channels.
- Conducted measurements were performed at the antenna port of the EUT using a spectrum analyzer. Procedures for an unlicensed wireless device using frequency-hopping techniques were followed per ANSI C63.10: 2020 Section 7.8 Evaluation of frequency-hopping device parameters.
- The reference level was set based on the peak power of the fundamental channel.
- Emissions outside the 902-928 MHz band were measured and compared to the 20 dB attenuation requirement per FCC §15.247(d) and RSS-247 Section 5.5, using a resolution bandwidth (RBW) of 100 kHz and video bandwidth (VBW) of 300 kHz.
- Measurement traces were recorded for each tested channel.

#### Test Results:

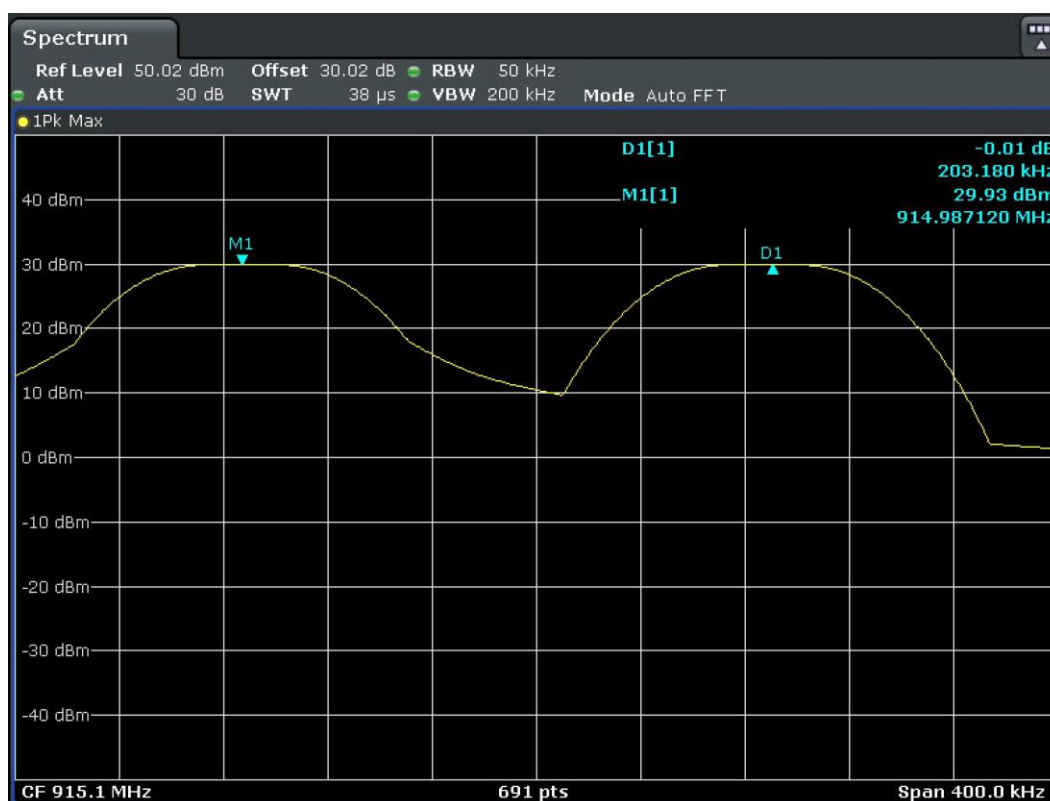
|                       |                                                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Standard:</b> | FCC Part 15 Subpart C §15.247 (Per FCC KDB 558074 D01 15.247 Meas Guidance v05r02; ANSI C63.10-2020),<br>ISSED RSS-247 Issue 3 §5.1, §5.4, §5.5 |
| <b>Test Name</b>      | Antenna-Port Conducted Measurements                                                                                                             |
| <b>Test Dates:</b>    | 05/08/2025                                                                                                                                      |
| <b>Laboratory</b>     | Eurofins E&E Testing NA, LLC.                                                                                                                   |
| <b>Test Engineer:</b> | Chin Ming Lui                                                                                                                                   |
| <b>Test Results:</b>  | Compliant                                                                                                                                       |

## Test Data (FCC 15.247 & RSS-247 Antenna-Port Conducted Measurements)

### 3.2.1 Carrier Frequency Separation

| Mode    | Adjacent Frequencies (MHz) | Measured Carrier Freq Separation (kHz) | Minimum Carrier Freq Separation      |
|---------|----------------------------|----------------------------------------|--------------------------------------|
| Hopping | 915 & 915.2                | 203.18                                 | 25 kHz or 20dB BW of hopping channel |

**Table 20. Carrier Frequency Separation Test Results**



**Figure 13. Carrier Frequency Separation: 915 MHz and 915.2 MHz, Hopping Plot**

### 3.2.2 Number of Hopping Frequencies

| Mode    | Lowest Frequency (MHz) | Highest Frequency (MHz) | Number of Hopping Frequencies |
|---------|------------------------|-------------------------|-------------------------------|
| Hopping | 910.2                  | 920                     | 50                            |

Table 21. Number of Hopping Frequencies Test Results

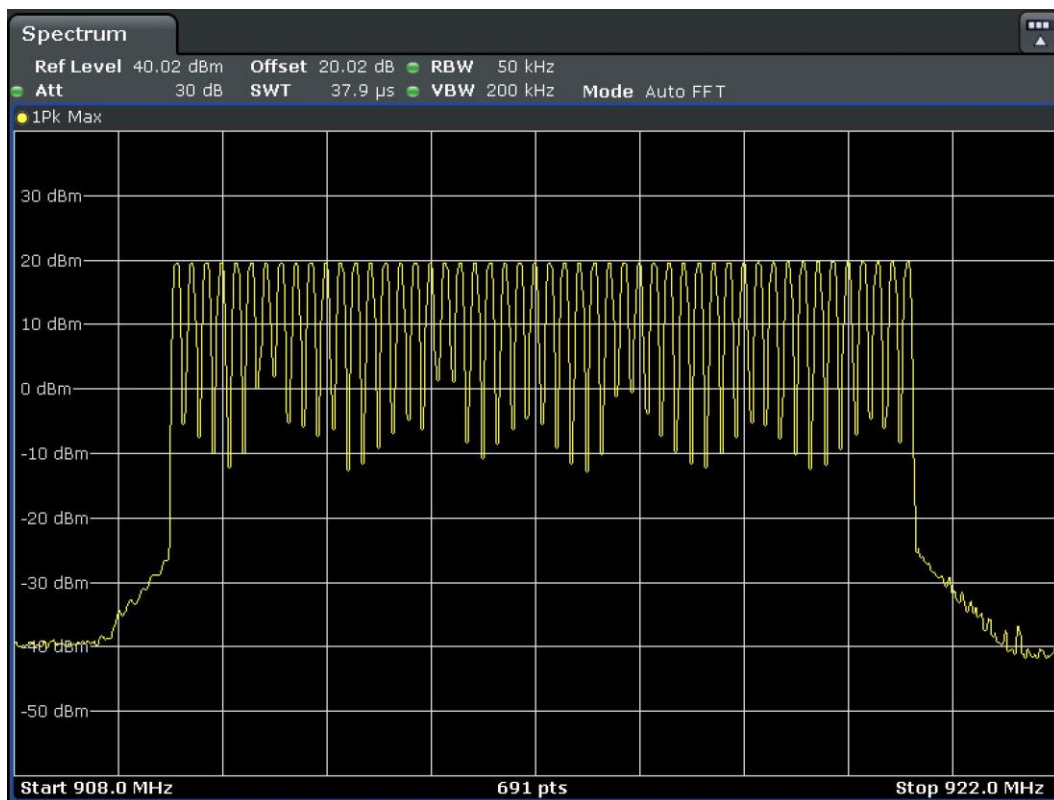
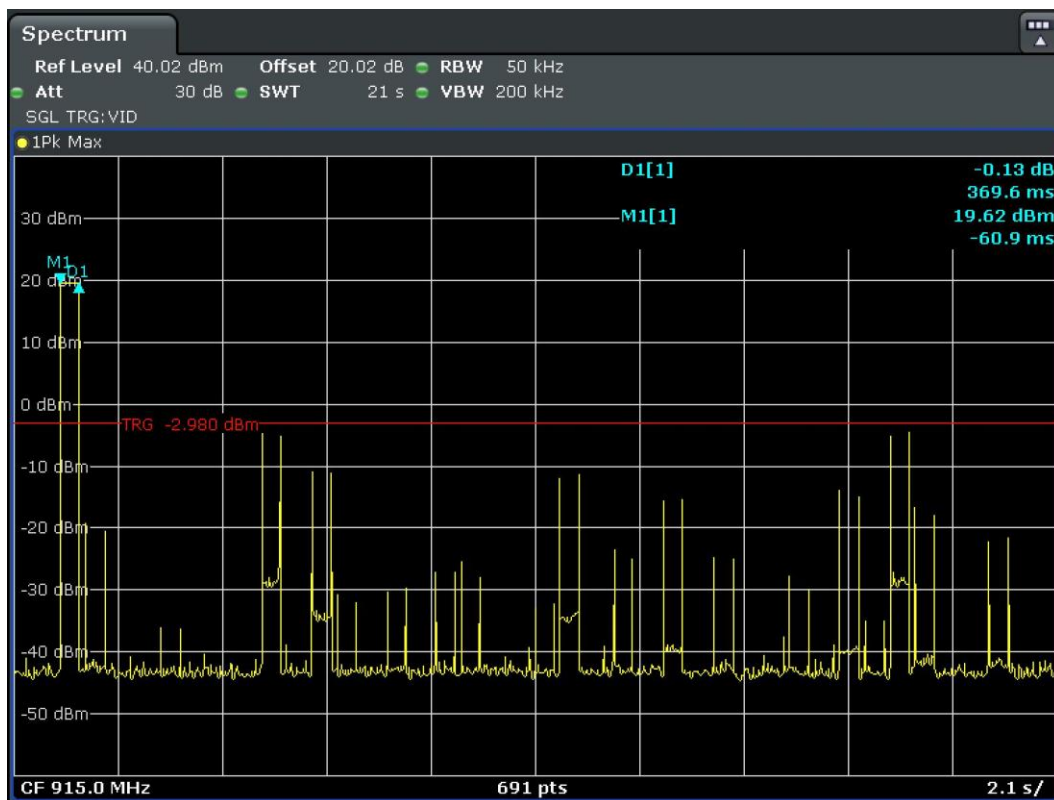


Figure 14. Number of Hopping Frequencies Plot

### 3.2.3 Time of Occupancy (Dwell Time)

| Mode    | Frequency | Channel | Measured Time of Occupancy (s) | Maximum Allowed Time of Occupancy (s) | Period (s) |
|---------|-----------|---------|--------------------------------|---------------------------------------|------------|
| Hopping | 915       | Mid     | 0.3696                         | 0.4                                   | 20         |

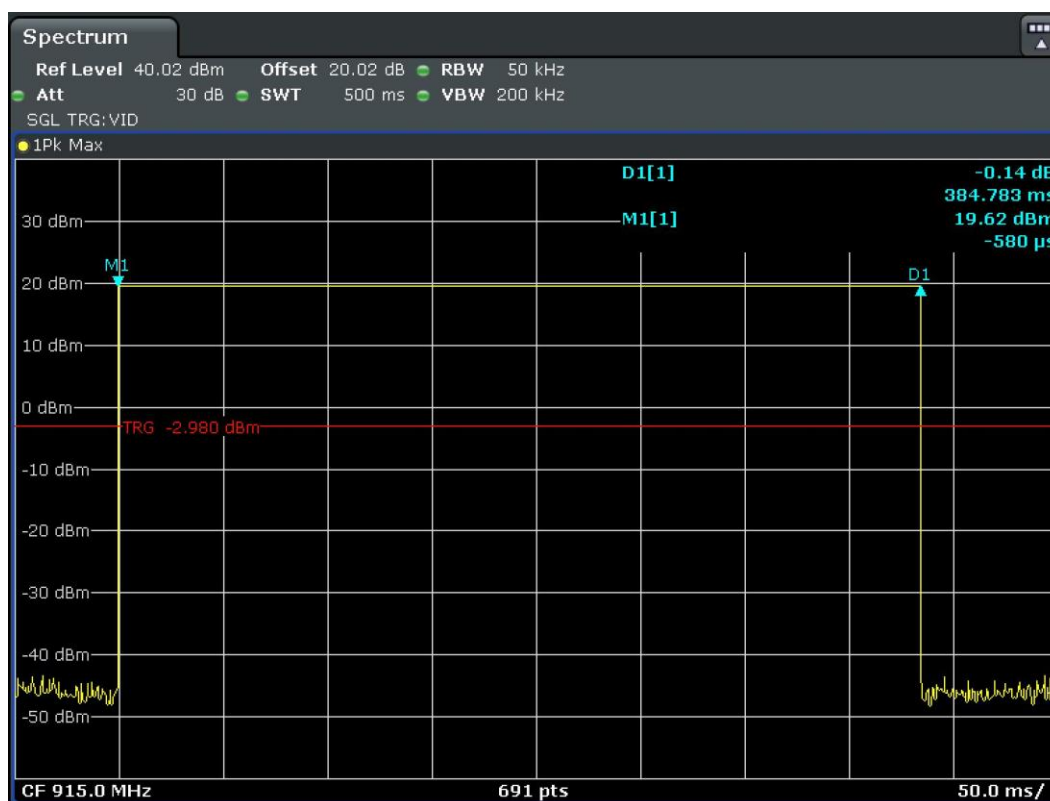
**Table 22. Time of Occupancy (Dwell Time) within 20 Second Period Test Results**



**Figure 15. Time of Occupancy (Dwell Time) within 20 Second Period: 915MHz, Hopping Plot**

| Mode    | Frequency (MHz) | Channel | Measured Time of Occupancy (s) | Maximum Allowed Time of Occupancy (s) |
|---------|-----------------|---------|--------------------------------|---------------------------------------|
| Hopping | 915             | Mid     | 0.3848                         | 0.4                                   |

**Table 23. Time of Occupancy (Dwell Time) Test Results**



**Figure 16. Time of Occupancy (Dwell Time): 915MHz, Hopping Plot**

### 3.2.4 Duty Cycle

| Antenna | Frequency (MHz) | Channel | Duty Cycle | Duty Cycle Correction Factor |
|---------|-----------------|---------|------------|------------------------------|
| 1       | 910.2           | Low     | 100%       | 0                            |
| 2       | 910.2           | Low     | 100%       | 0                            |

**Table 24. Duty Cycle Test Results**



**Figure 17. Duty Cycle: Low Channel, 910.2 MHz, Antenna 1 Plot**



**Figure 18. Duty Cycle: Low Channel, 910.2 MHz, Antenna 2 Plot**

### 3.2.5 20 dB Bandwidth

| Antenna | Frequency (MHz) | Channel | 20dB BW (kHz) |
|---------|-----------------|---------|---------------|
| 1       | 910.2           | Low     | 41.97         |
|         | 915             | Mid     | 41.97         |
|         | 920             | High    | 41.97         |
| 2       | 910.2           | Low     | 41.97         |
|         | 915             | Mid     | 41.97         |
|         | 920             | High    | 41.97         |

**Table 25. 20dB Bandwidth Test Results**



**Figure 19. 20dB Bandwidth: Low Channel, 910.2 MHz, Antenna 1 Plot**



**Figure 20. 20dB Bandwidth: Mid Channel, 915 MHz, Antenna 1 Plot**



**Figure 21. 20dB Bandwidth: High Channel, 920 MHz, Antenna 1 Plot**



Figure 22. 20dB Bandwidth: Low Channel, 910.2 MHz, Antenna 2 Plot



Figure 23. 20dB Bandwidth: Mid Channel, 915 MHz, Antenna 2Plot

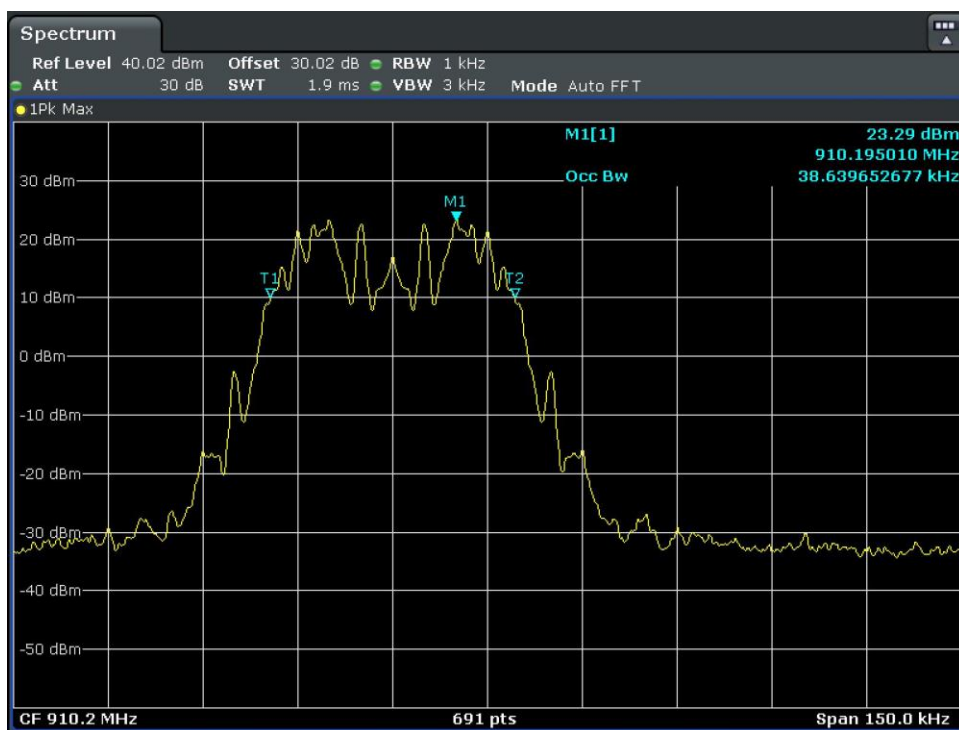


Figure 24. 20dB Bandwidth: High Channel, 920 MHz, Antenna 2 Plot

### 3.2.6 99% Occupied Bandwidth

| Antenna | Frequency (MHz) | Channel | 99% OBW (kHz) |
|---------|-----------------|---------|---------------|
| 1       | 910.2           | Low     | 38.64         |
|         | 915             | Mid     | 38.64         |
|         | 920             | High    | 38.64         |
| 2       | 910.2           | Low     | 38.64         |
|         | 915             | Mid     | 38.64         |
|         | 920             | High    | 38.64         |

**Table 26. 99% Occupied Bandwidth Test Results**



**Figure 25. 99% OBW: Low Channel, 910.2 MHz, Antenna 1 Plot**

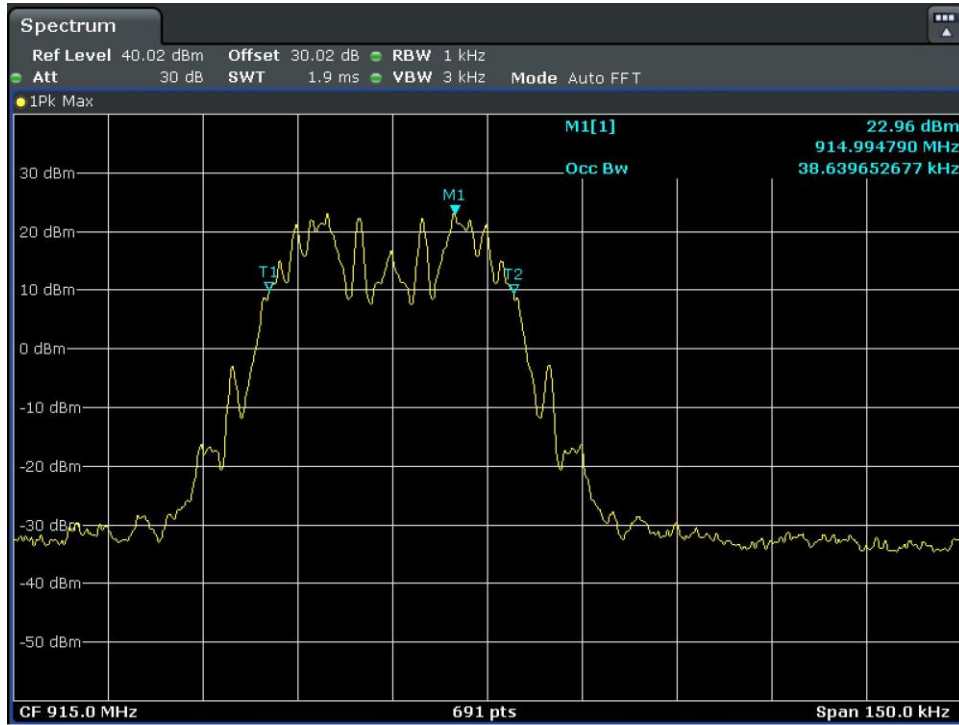


Figure 26. 99% OBW: Mid Channel, 915 MHz, Antenna 1 Plot

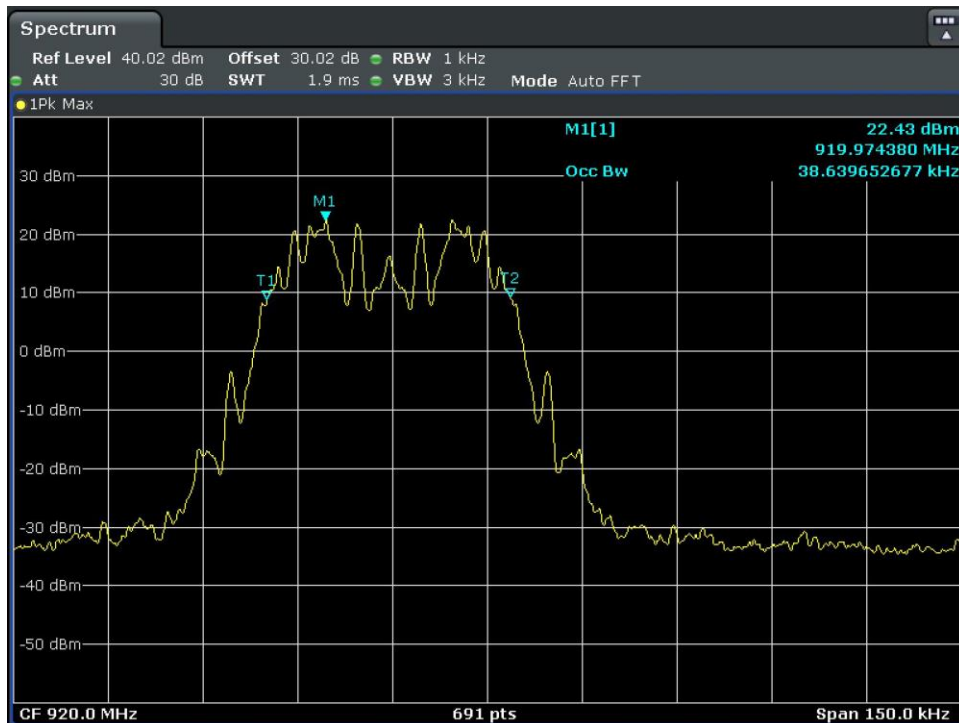


Figure 27. 99% OBW: High Channel, 920 MHz, Antenna 1 Plot

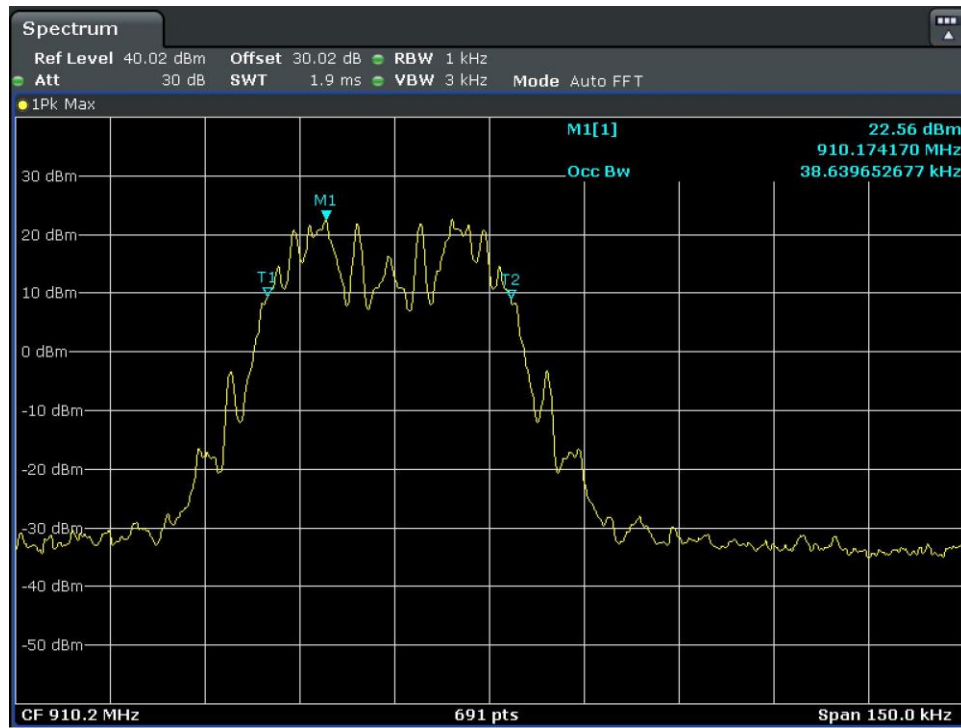


Figure 28. 99% OBW: Low Channel, 910.2 MHz, Antenna 2 Plot

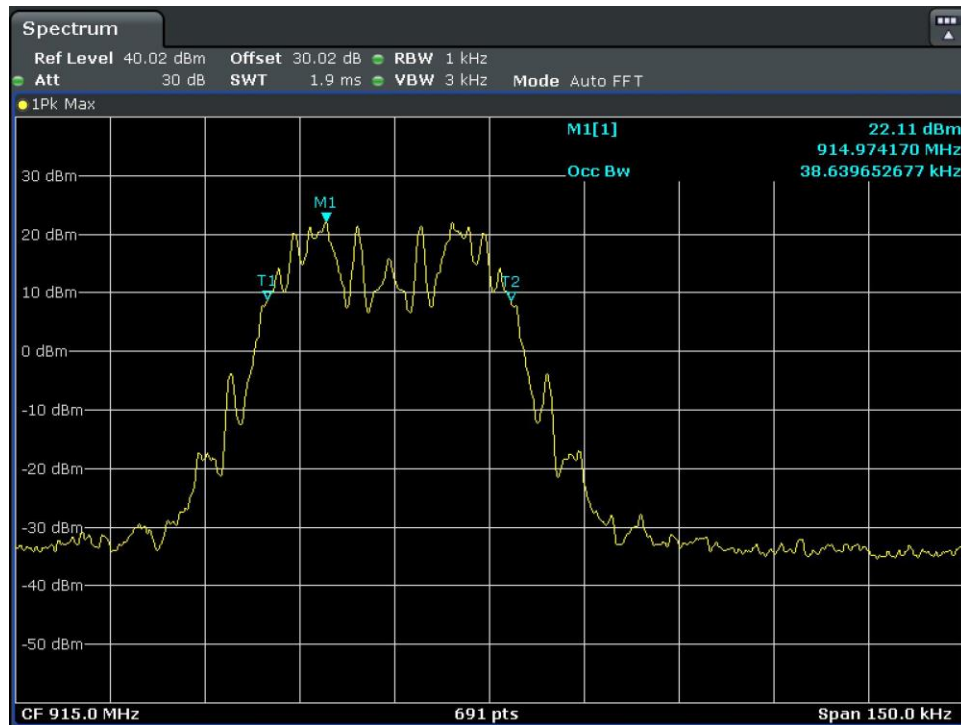
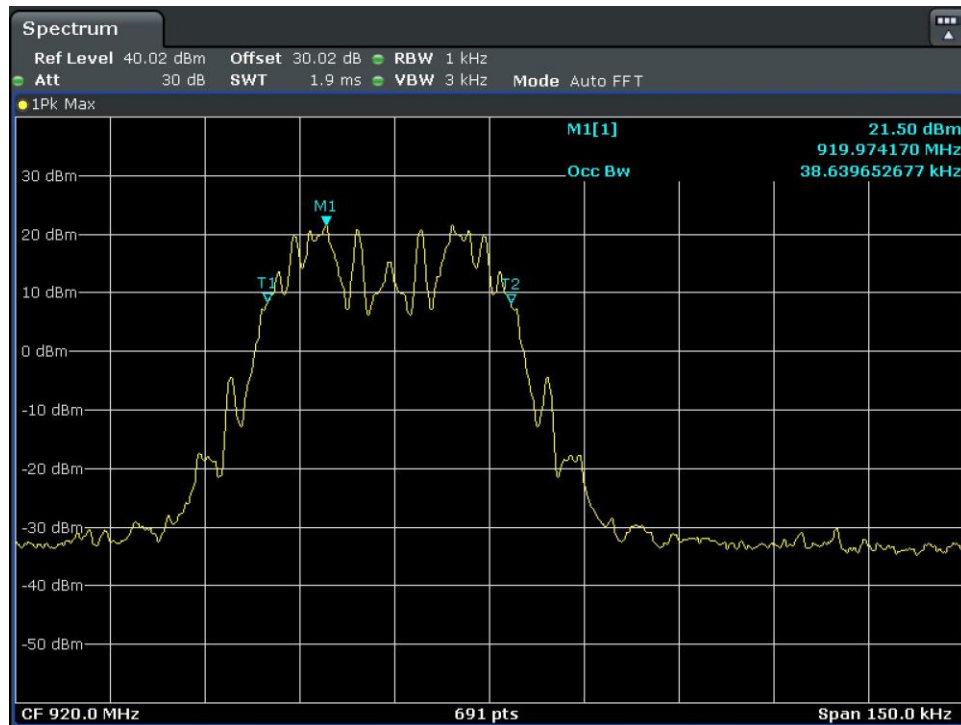


Figure 29. 99% OBW: Mid Channel, 915 MHz, Antenna 2 Plot

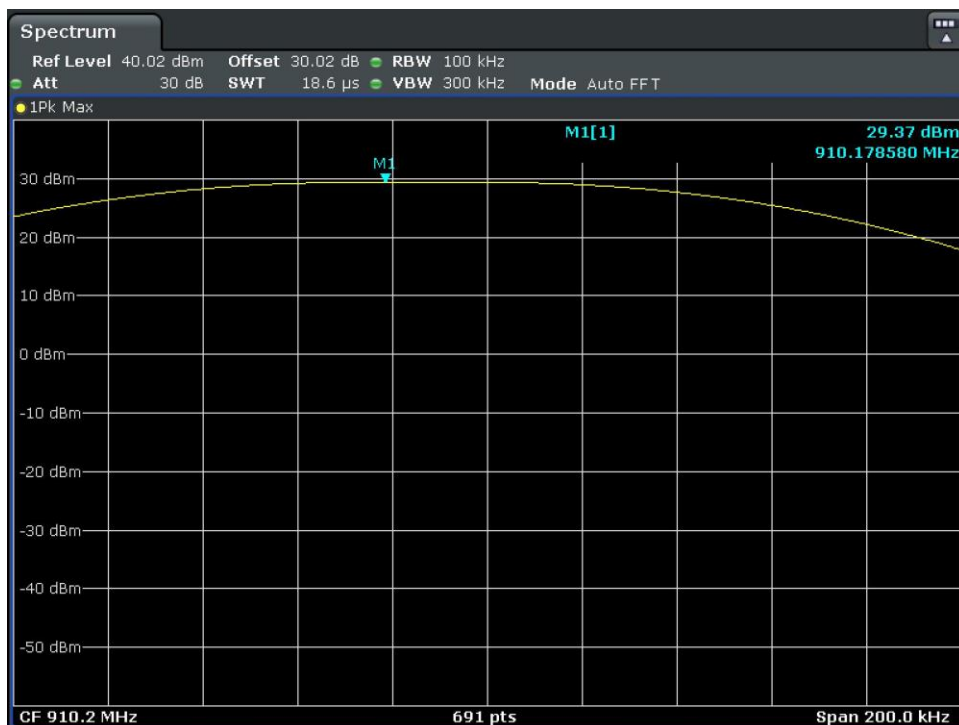


**Figure 30. 99% OBW: High Channel, 920 MHz, Antenna 2 Plot**

### 3.2.7 Maximum Peak Conducted Output Power

| Antenna | Frequency (MHz) | Channel | Measured Max Peak Conducted Output Power (dBm) | Max Peak Conducted Output Power Limit (dBm) |
|---------|-----------------|---------|------------------------------------------------|---------------------------------------------|
| 1       | 910.2           | Low     | 29.37                                          | 30                                          |
|         | 915             | Mid     | 29.37                                          | 30                                          |
|         | 920             | High    | 29.51                                          | 30                                          |
| 2       | 910.2           | Low     | 29.48                                          | 30                                          |
|         | 915             | Mid     | 29.34                                          | 30                                          |
|         | 920             | High    | 29.36                                          | 30                                          |

**Table 27. Maximum Peak Conducted Output Power Test Results**



**Figure 31. Maximum Peak Conducted Output Power: Low Channel, 910.2 MHz, Antenna 1 Plot**

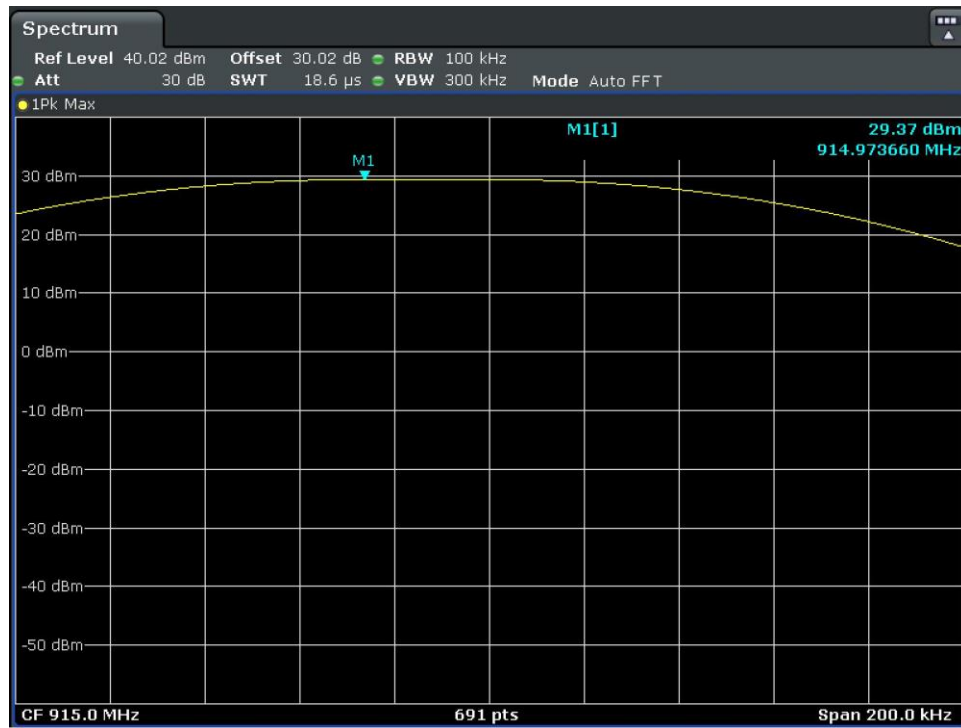


Figure 32. Maximum Peak Conducted Output Power: Mid Channel, 915 MHz, Antenna 1 Plot

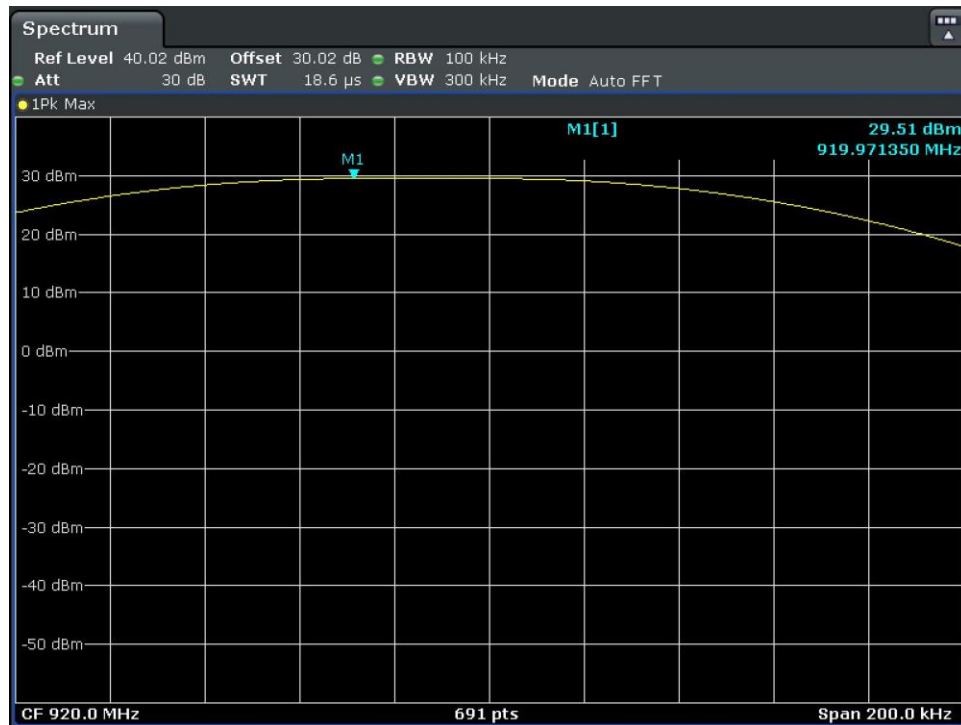
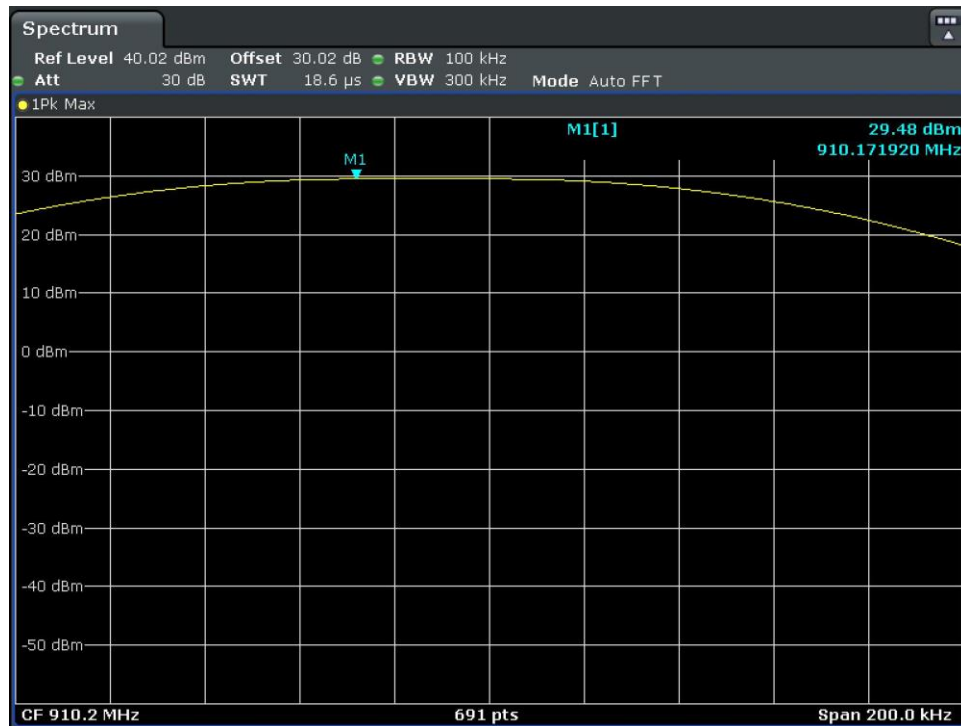
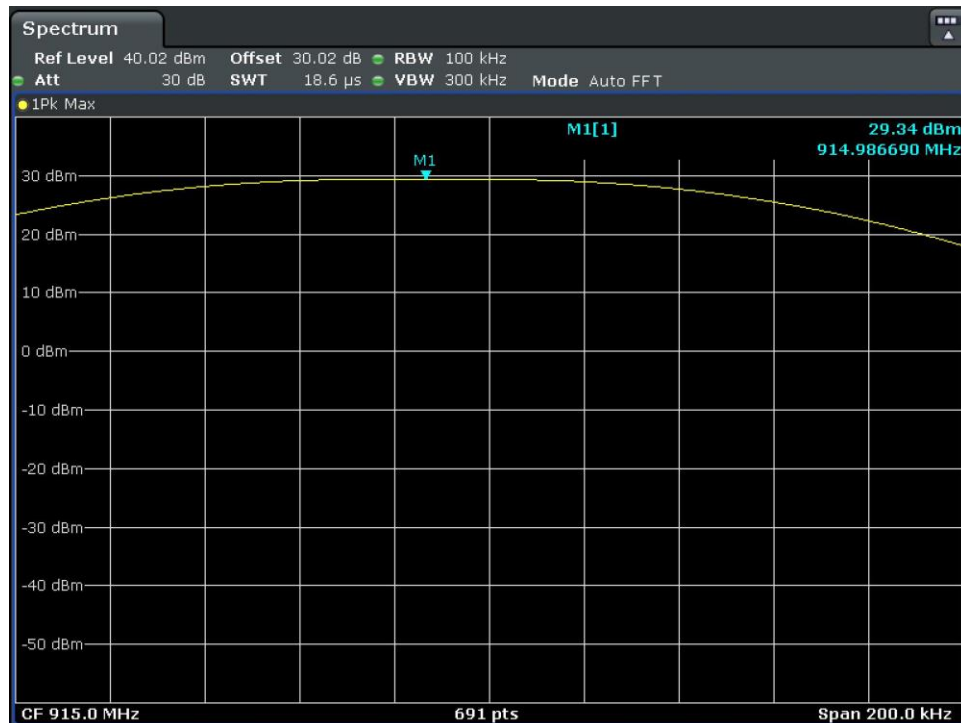


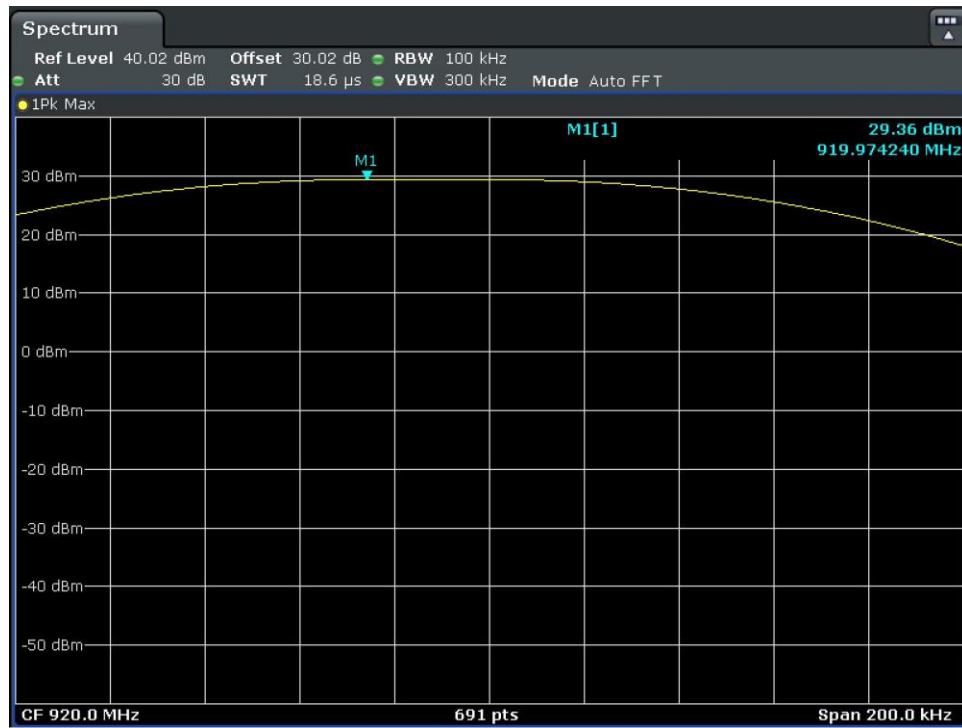
Figure 33. Maximum Peak Conducted Output Power: High Channel, 920 MHz, Antenna 1 Plot



**Figure 34. Maximum Peak Conducted Output Power: Low Channel, 910.2 MHz, Antenna 2 Plot**



**Figure 35. Maximum Peak Conducted Output Power: Mid Channel, 915 MHz, Antenna 2 Plot**

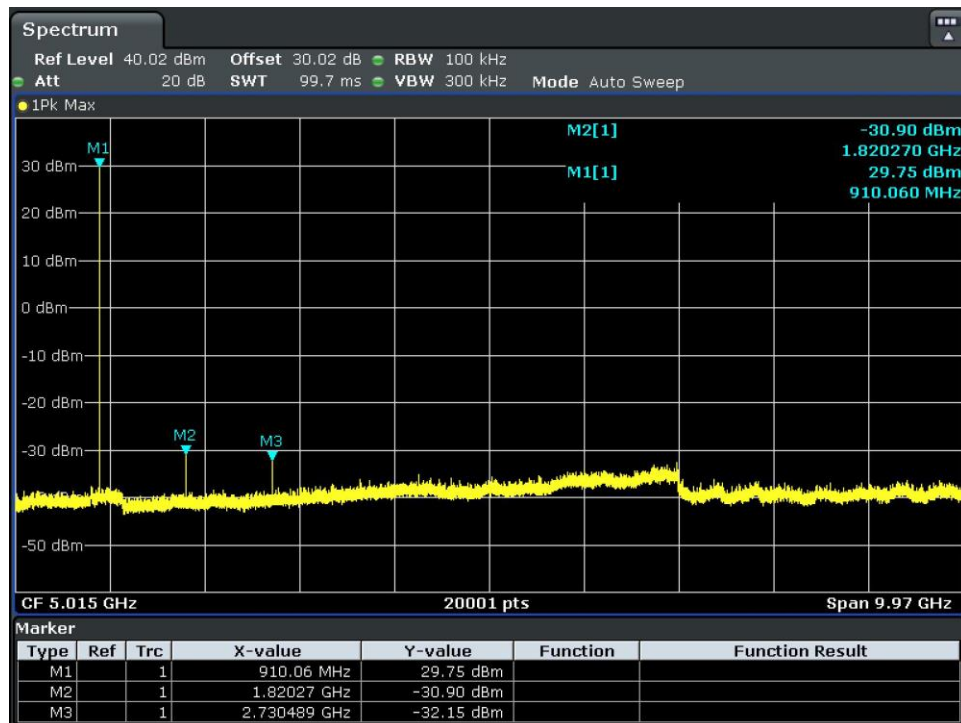


**Figure 36. Maximum Peak Conducted Output Power: High Channel, 920 MHz, Antenna 2 Plot**

### 3.2.8 Conducted Spurious Emissions

| Antenna | Frequency (MHz) | Channel | Fundamenta<br>l Peak<br>(dBm) | Max<br>Spurious<br>Emission<br>Freq<br>(MHz) | Max<br>Spurious<br>Emission<br>Level<br>(dBm) | Peak-to-<br>Unwanted<br>Emission<br>Delta ( $\Delta$ )<br>(dBc) | Limit<br>(dBc) |
|---------|-----------------|---------|-------------------------------|----------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------|----------------|
| 1       | 910.2           | Low     | 29.75                         | 1820.27                                      | -30.90                                        | 60.65                                                           | $\geq 20$      |
|         | 915             | Mid     | 29.31                         | 1829.74                                      | -31.55                                        | 60.86                                                           | $\geq 20$      |
|         | 920             | High    | 28.83                         | 1851.18                                      | -31.88                                        | 60.71                                                           | $\geq 20$      |
| 2       | 910.2           | Low     | 28.92                         | 1820.27                                      | -32.58                                        | 61.50                                                           | $\geq 20$      |
|         | 915             | Mid     | 28.62                         | 1829.74                                      | -32.96                                        | 61.58                                                           | $\geq 20$      |
|         | 920             | High    | 28.12                         | 1840.21                                      | -33.39                                        | 61.51                                                           | $\geq 20$      |

**Table 28. Conducted Spurious Emissions, Test Results**



**Figure 37. Conducted Spurious Emissions, Low Channel, 910.2 MHz, Antenna 1 Plot**

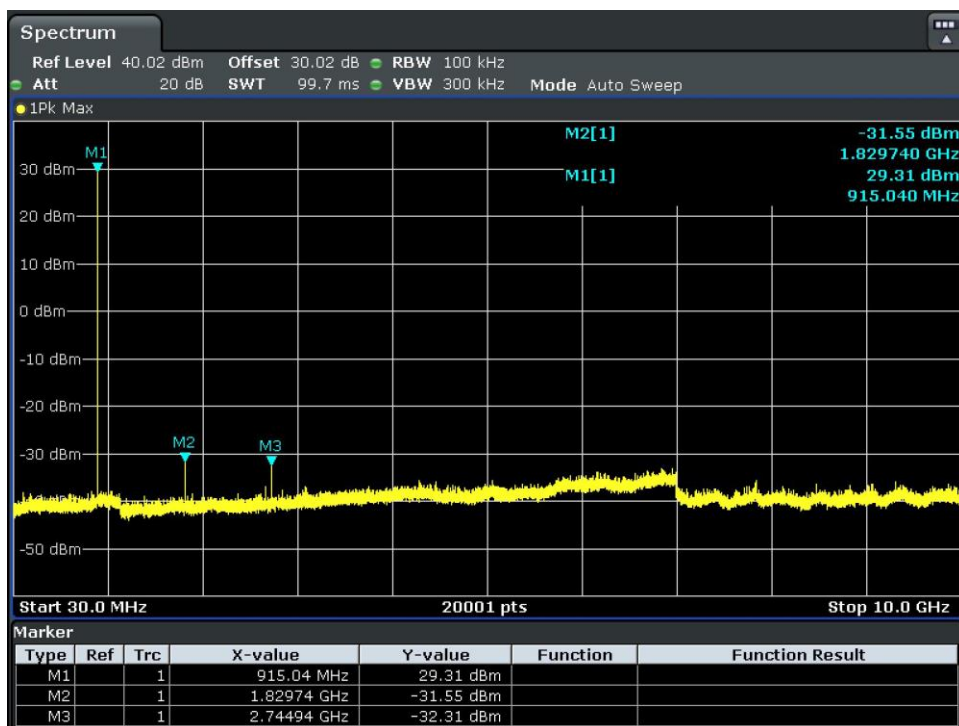


Figure 38. Conducted Spurious Emissions, Mid Channel, 915 MHz, Antenna 1 Plot

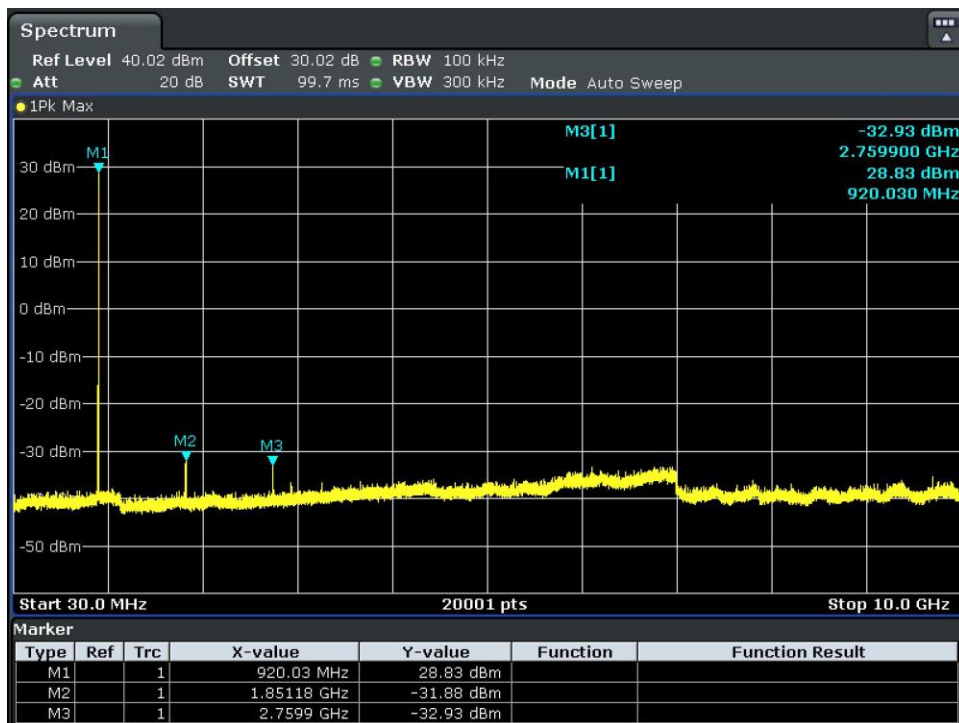


Figure 39. Conducted Spurious Emissions, High Channel, 920 MHz, Antenna 1 Plot

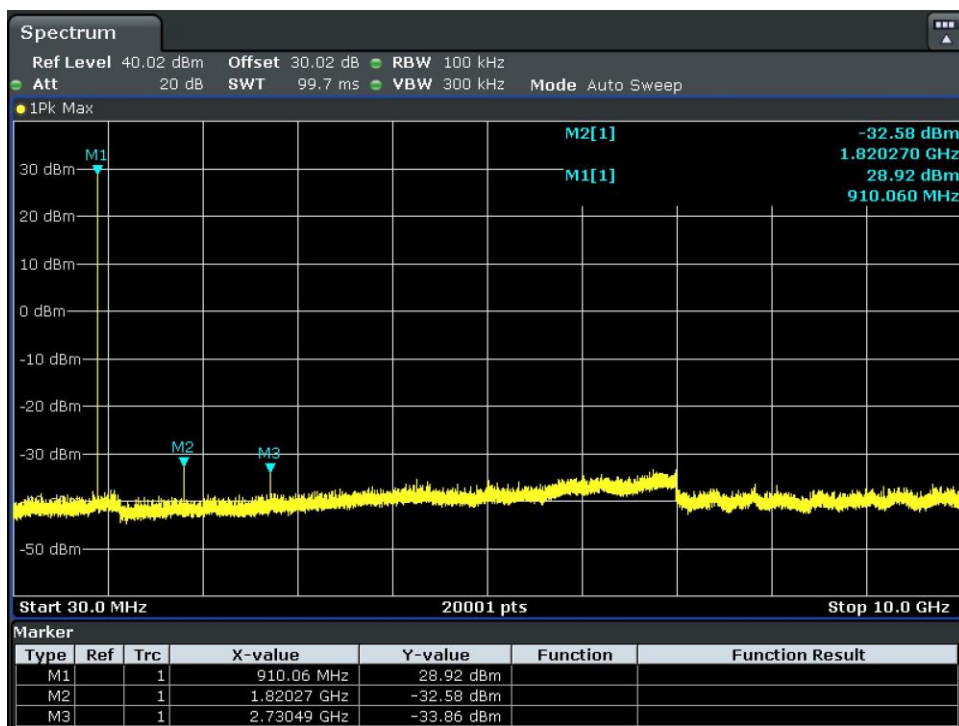


Figure 40. Conducted Spurious Emissions, Low Channel, 910.2 MHz, Antenna 2 Plot

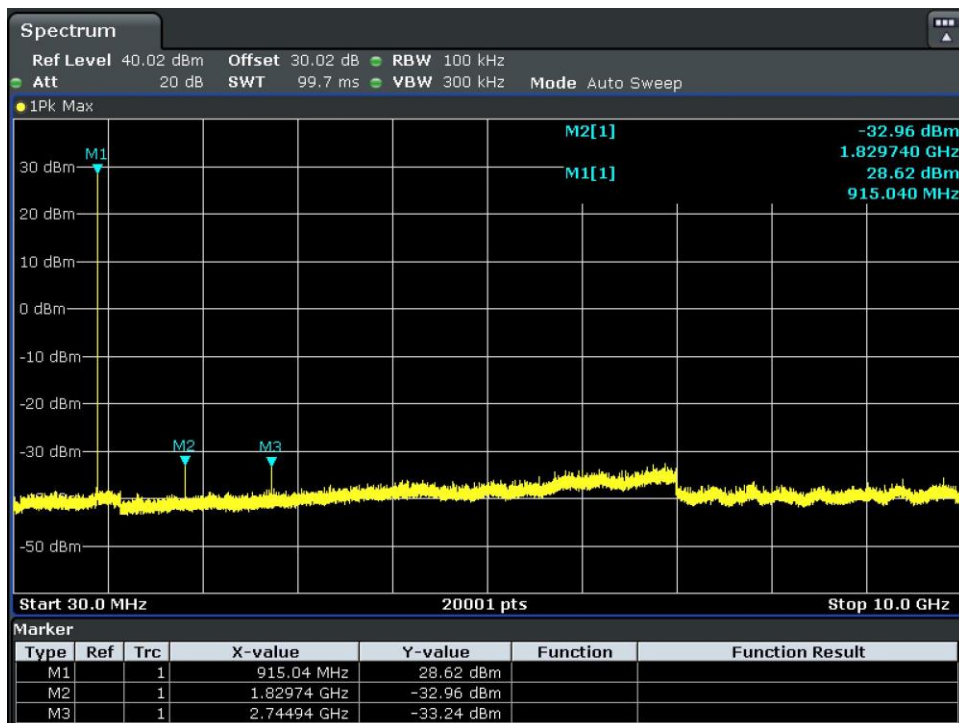
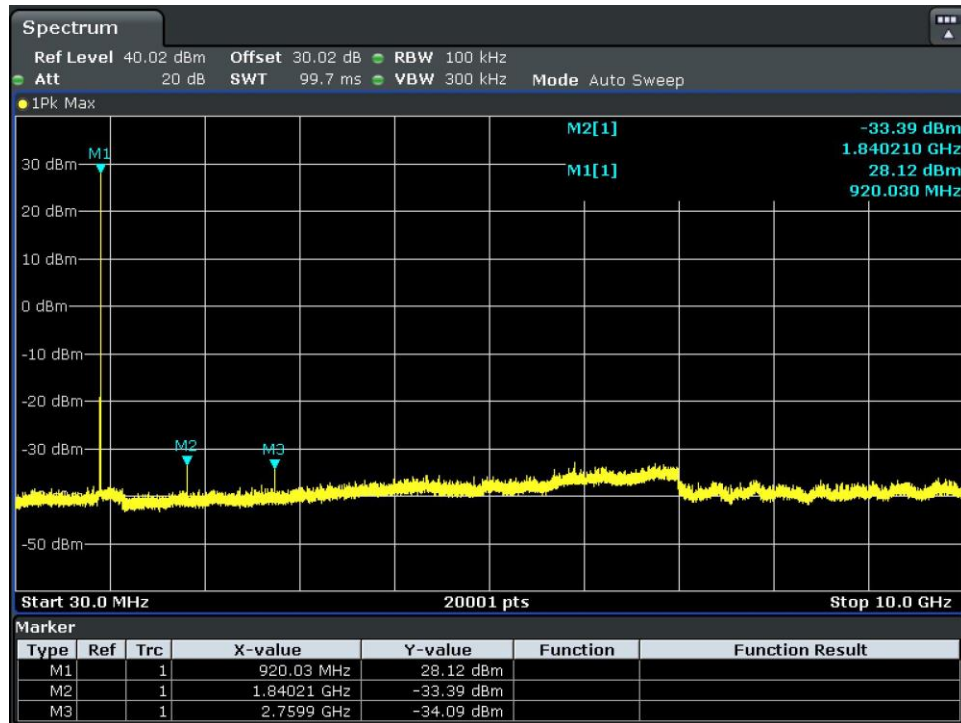


Figure 41. Conducted Spurious Emissions, Mid Channel, 915 MHz, Antenna 2 Plot

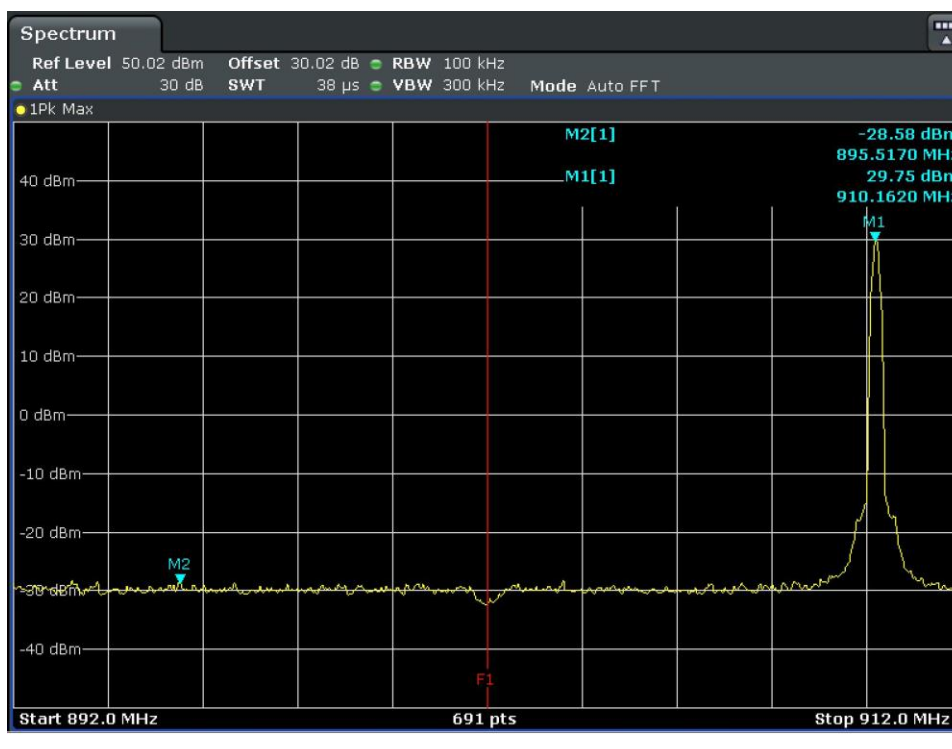


**Figure 42. Conducted Spurious Emissions, High Channel, 920 MHz, Antenna 2 Plot**

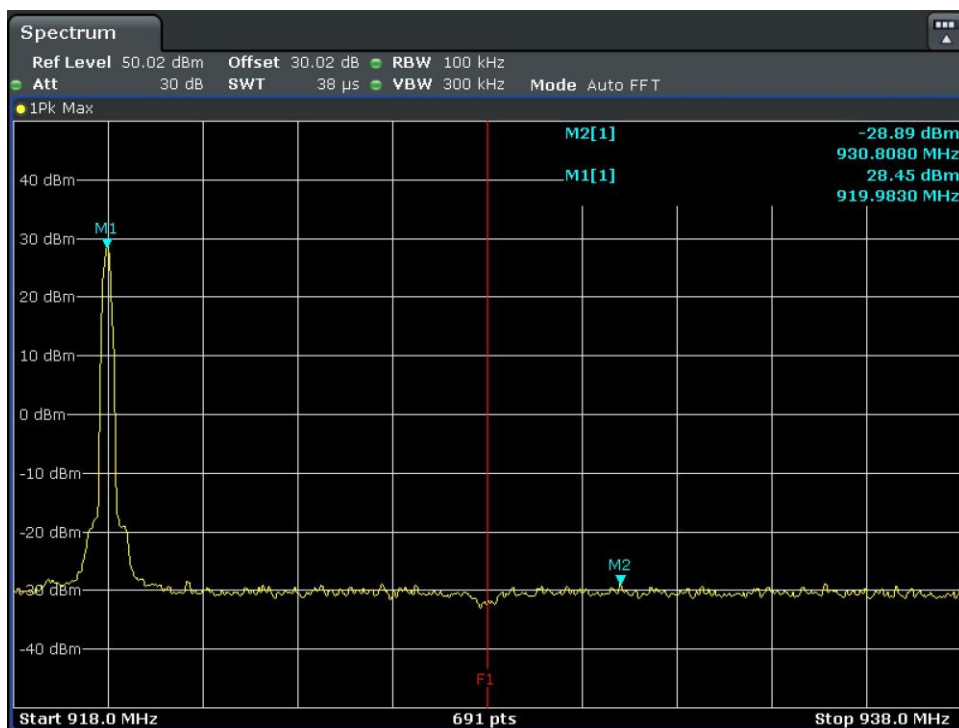
### 3.2.9 Band Edge

| Antenna | Mode          | Frequency (MHz) | Channel | Fundamental Peak (dBm) | Unwanted Emission Level (dBm) | Peak-to-Unwanted Emission Delta ( $\Delta$ ) (dBc) | Limit (dBc) |
|---------|---------------|-----------------|---------|------------------------|-------------------------------|----------------------------------------------------|-------------|
| 1       | Fixed Channel | 910.2           | Low     | 29.75                  | -28.58                        | 58.33                                              | $\geq 20$   |
|         |               | 920             | High    | 28.45                  | -28.89                        | 57.34                                              | $\geq 20$   |
|         | Hopping       | 910.2           | Low     | 30.05                  | -28.79                        | 58.84                                              | $\geq 20$   |
|         |               | 920             | High    | 28.54                  | -28.41                        | 56.95                                              | $\geq 20$   |
| 2       | Fixed Channel | 910.2           | Low     | 29.12                  | -29.55                        | 58.67                                              | $\geq 20$   |
|         |               | 920             | High    | 28.97                  | -27.27                        | 56.24                                              | $\geq 20$   |
|         | Hopping       | 910.2           | Low     | 29.20                  | -27.90                        | 57.10                                              | $\geq 20$   |
|         |               | 920             | High    | 27.81                  | -29.45                        | 57.26                                              | $\geq 20$   |

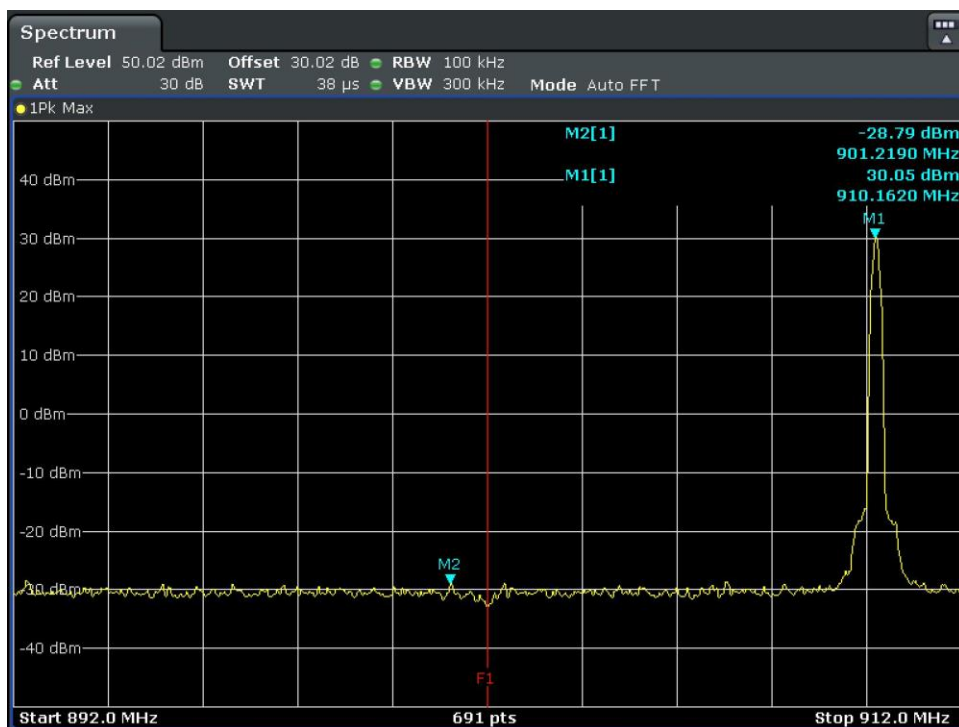
### Table 29. Band Edge Test Results



**Figure 43. Lower Band Edge: Low Channel, 910.2 MHz, Antenna 1, Fixed Channel Plot**



**Figure 44. Upper Band Edge: High Channel, 920 MHz, Antenna 1, Fixed Channel Plot**



**Figure 45. Lower Band Edge: Low Channel, 910.2 MHz, Antenna 1, Hopping Plot**

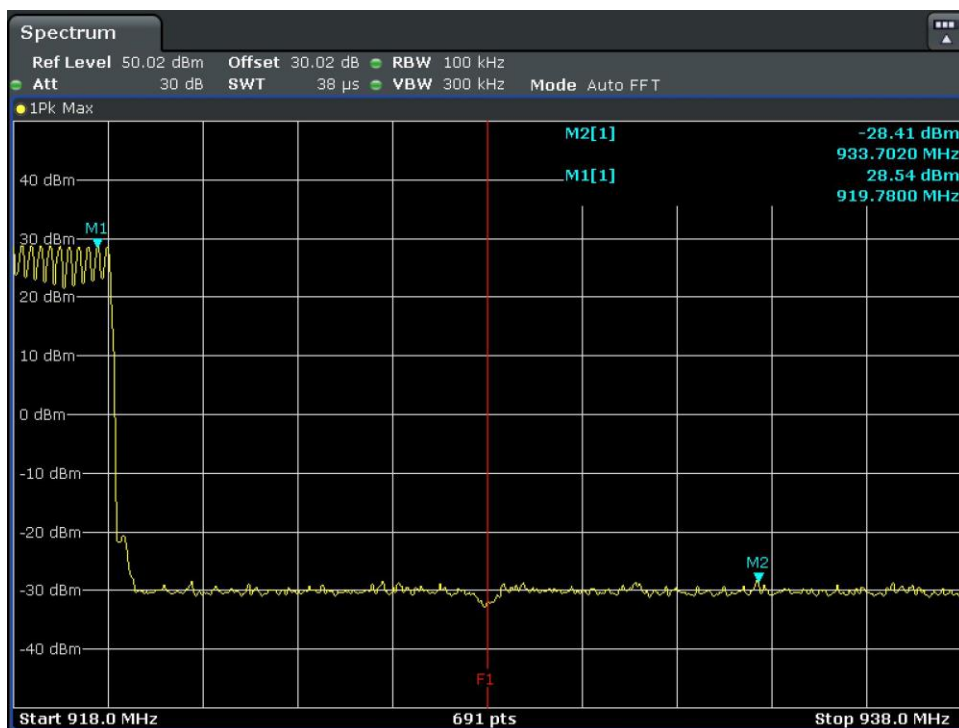


Figure 46. Upper Band Edge: High Channel, 920 MHz, Antenna 1, Hopping Plot

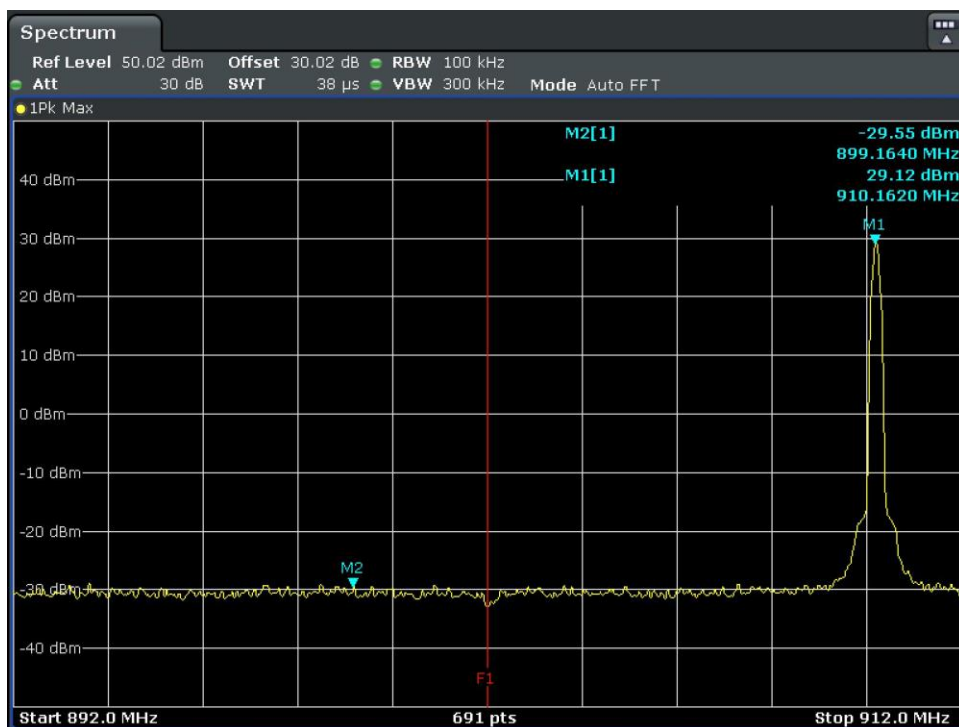
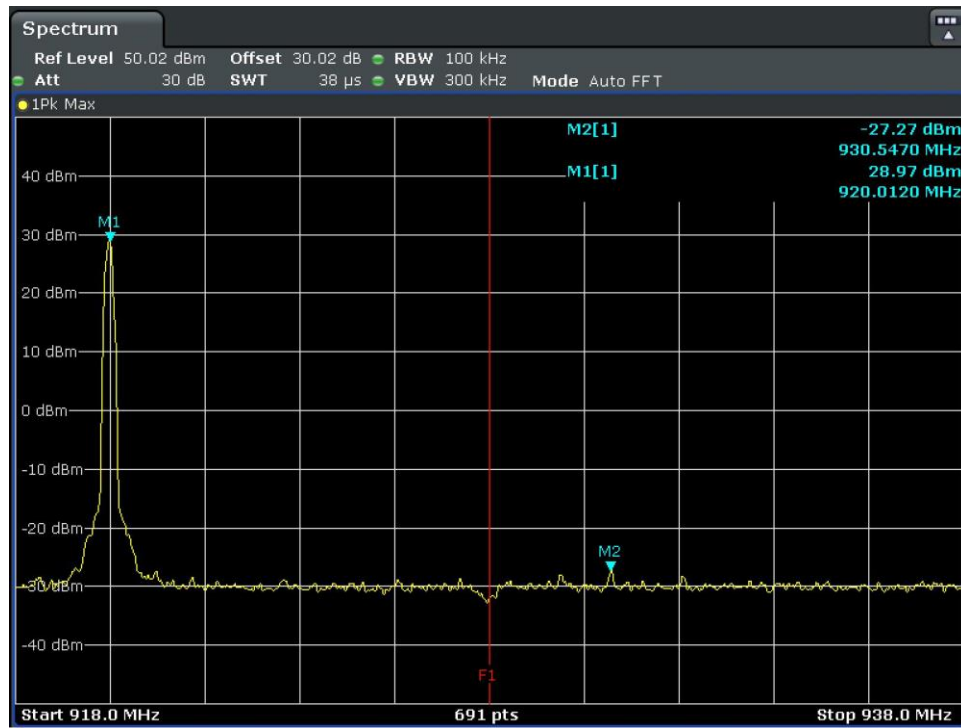
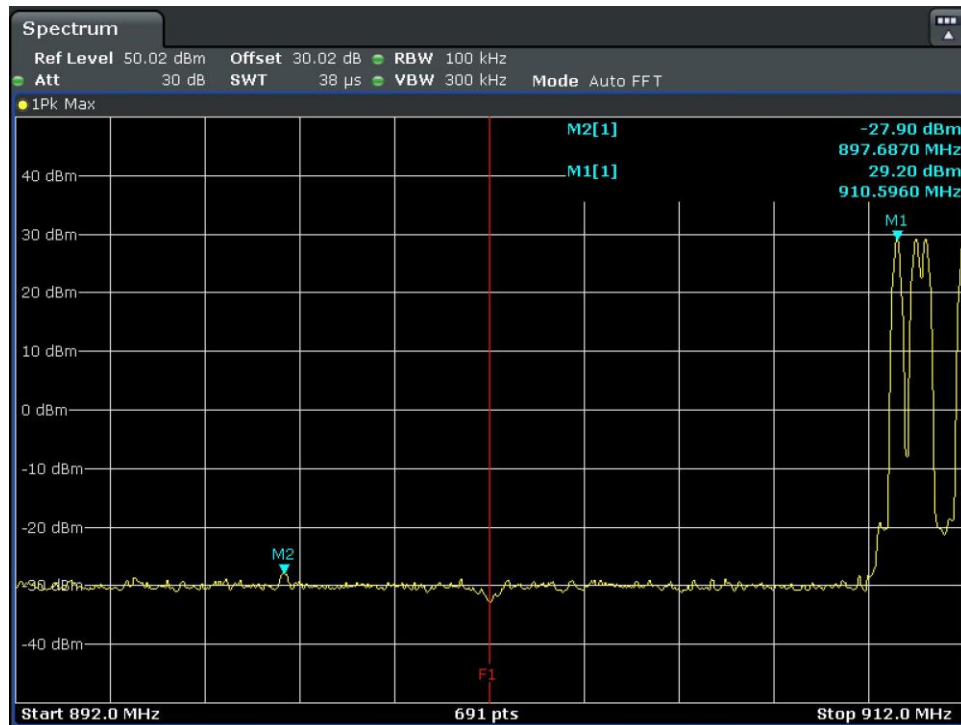


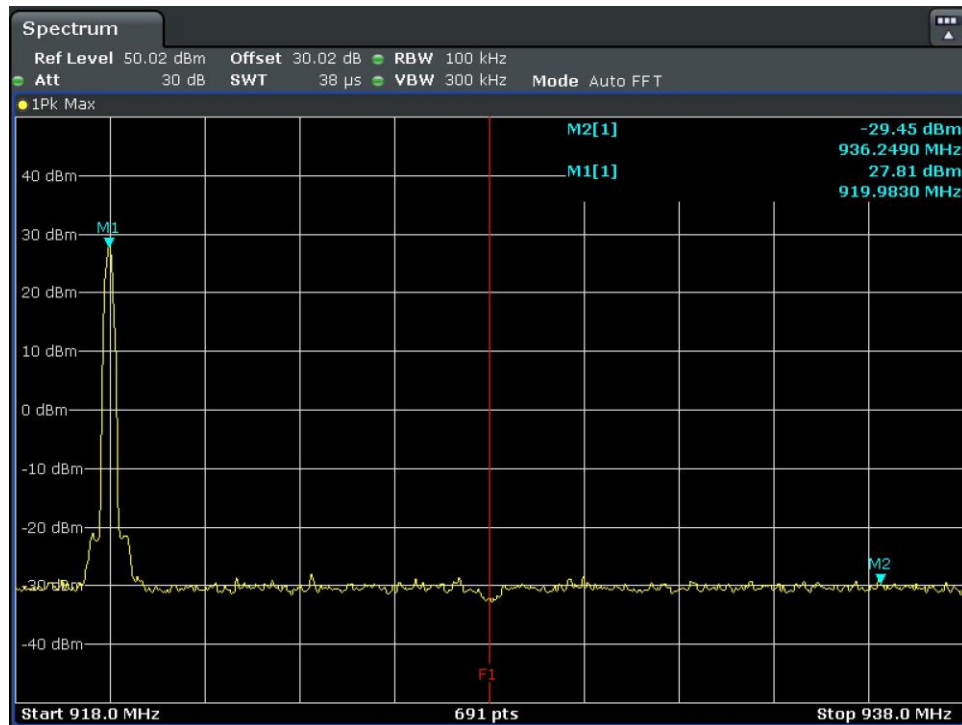
Figure 47. Lower Band Edge: Low Channel, 910.2 MHz, Antenna 2, Fixed Channel Plot



**Figure 48. Upper Band Edge: High Channel, 920 MHz, Antenna 2, Fixed Channel Plot**



**Figure 49. Lower Band Edge: Low Channel, 910.2 MHz, Antenna 2, Hopping Plot**



**Figure 50. Upper Band Edge: High Channel, 920 MHz, Antenna 2, Hopping Plot**

### 3.2.10 Antenna-Port Conducted Measurements Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

| Test Name: FCC 15.247 & RSS-247                                                                            |                 |                 | Test Date(s): 05/08/2025 |               |              |
|------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------------|---------------|--------------|
| Asset #                                                                                                    | Equipment       | Manufacturer    | Model                    | Last Cal Date | Cal Due Date |
| 1S3812                                                                                                     | Signal Analyzer | Rohde & Schwarz | FSV                      | 01/10/2025    | 01/10/2027   |
| Note 1: Functionally tested equipment is verified using calibrated instrumentation at the time of testing. |                 |                 |                          |               |              |
| Note 2: Latest NSA and VSWR data available upon request.                                                   |                 |                 |                          |               |              |

**Table 30. Antenna-Port Conducted Measurements, Test Equipment**

## **END OF REPORT**