



Engineering Solutions & Electromagnetic Compatibility Services

**Certification Application Report  
FCC Part 15.407 & ISED RSS-247**

|                                                                                                                                                                                                                          |                                        |                                                                                                      |                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Test Lab:</b><br>Rhein Tech Laboratories, Inc. Phone: 703-689 0368<br>360 Herndon Parkway www.rheintech.com<br>Suite 1400<br>Herndon, VA 20170                                                                        |                                        | <b>Applicant:</b><br>L3Harris Technologies<br>221 Jefferson Ridge Parkway<br>Lynchburg, VA 24501 USA |                            |
| <b>FCC ID IC</b>                                                                                                                                                                                                         | OWDTR-0177-E<br>3636B-0177             | <b>Test Report Date</b>                                                                              | April 9, 2025              |
| <b>Platform</b>                                                                                                                                                                                                          | N/A                                    | <b>RTL Work Order #</b>                                                                              | 2024073NII                 |
| <b>Model HVIN</b>                                                                                                                                                                                                        | XL-85M UHF-L<br>XLM-85M-UHF-L          | <b>RTL Quote Number</b>                                                                              | QRTL24-073B                |
| <b>American National Standard Institute</b>                                                                                                                                                                              |                                        |                                                                                                      |                            |
| ANSI C63.10-2020 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices                                                                                                          |                                        |                                                                                                      |                            |
| <b>FCC Classification</b>                                                                                                                                                                                                |                                        |                                                                                                      |                            |
| NII-Unlicensed National Information Infrastructure TX                                                                                                                                                                    |                                        |                                                                                                      |                            |
| <b>FCC Rule Part(s)</b>                                                                                                                                                                                                  |                                        |                                                                                                      |                            |
| FCC Rules Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz (10-01-21)                                                                                                              |                                        |                                                                                                      |                            |
| <b>ISED Standards</b>                                                                                                                                                                                                    |                                        |                                                                                                      |                            |
| RSS-247 Issue 3: Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices<br>RSS-Gen Issue 5: General Requirements for Compliance of Radio Apparatus |                                        |                                                                                                      |                            |
| <b>Digital Interface Information</b>                                                                                                                                                                                     |                                        |                                                                                                      |                            |
| Digital Interface was found to be compliant                                                                                                                                                                              |                                        |                                                                                                      |                            |
|                                                                                                                                                                                                                          |                                        |                                                                                                      |                            |
| <b>Frequency Range (MHz)</b>                                                                                                                                                                                             | <b>Output Power (W) Peak Conducted</b> | <b>Frequency Tolerance</b>                                                                           | <b>Emission Designator</b> |
| 5170 – 5240                                                                                                                                                                                                              | 0.055                                  | N/A                                                                                                  | 18M9G7D                    |
| 5745 – 5825                                                                                                                                                                                                              | 0.019                                  | N/A                                                                                                  | 17M0G7D                    |
| 5170 – 5240                                                                                                                                                                                                              | 0.064                                  | N/A                                                                                                  | 36M4G7D                    |
| 5745 – 5825                                                                                                                                                                                                              | 0.023                                  | N/A                                                                                                  | 36M2G7D                    |

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, ANSI C63.10, and ISED RSS-247 and RSS-Gen.

Signature: 

Date: April 9, 2025

Typed/Printed Name: Desmond A. Fraser

Position: President

*These tests are accredited and meet the requirements of ISO/IEC 17025 as verified by ANAB. Refer to certificate and scope of accreditation AT-1445. This report replaces Report R1.0.*

*This report may not be reproduced, except in full, without the written approval of Rhein Tech Laboratories, Inc. and L3Harris Technologies. The test results relate only to the item(s) tested.*

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## 1 General Information

### 1.1 Scope

#### Applicable Standards

- FCC Rules Part 15.407: Unlicensed National Information Infrastructure Devices - General Technical Requirements
- ISED RSS-247: Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
- ISED RSS-Gen Issue 5: General Requirements for Compliance of Radio Apparatus

### 1.2 Description of EUT

The EUT is a client device without the necessary hardware components to support DFS functionality; e.g., no dedicated radar detection module.

|                             |                                    |
|-----------------------------|------------------------------------|
| <b>Equipment Under Test</b> | Mobile Radio                       |
| <b>Model / HVIN</b>         | XL-85M UHF-L / XLM-85M-UHF-L       |
| <b>Power Supply</b>         | 13.8 VDC                           |
| <b>Modulation Type</b>      | OFDM (802.11 a)                    |
| <b>Frequency Range</b>      | 5170 – 5240 MHz<br>5745 – 5825 MHz |

### 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.

CAB ID: US0079

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

This is an original certification application for L3Harris Technologies Model XL-85M UHF-L Land Mobile Radio, FCC ID: OWDTR-0177-E, IC: 3636B-0177.

### 1.5 Modifications

No modifications were required for compliance.

## 2 Test Information

### 2.1 Description of Test Modes

In accordance with FCC 15.31(m), and because the EUT utilizes an operating band greater than 10 MHz, the following frequencies were tested.

**Table 2-1: Channels Tested for Wi-Fi 802.11a**

| Channel (#)   | Frequency (MHz) |
|---------------|-----------------|
| 34 (U-NII 1)  | 5170            |
| 36 (U-NII 1)  | 5180            |
| 38 (U-NII 1)  | 5190            |
| 40 (U-NII 1)  | 5200            |
| 42 (U-NII 1)  | 5210            |
| 44 (U-NII 1)  | 5220            |
| 46 (U-NII 1)  | 5230            |
| 48 (U-NII 1)  | 5240            |
| 149 (U-NII 3) | 5745            |
| 151 (U-NII 3) | 5755            |
| 153 (U-NII 3) | 5765            |
| 155 (U-NII 3) | 5775            |
| 157 (U-NII 3) | 5785            |
| 159 (U-NII 3) | 5795            |
| 161 (U-NII 3) | 5805            |
| 165 (U-NII 3) | 5825            |

### 2.2 Exercising the EUT

The EUT was tested in all three orthogonal planes to determine the worst-case emissions. The EUT was provided with software to transmit continuously during testing. The carrier was also checked to verify that information was being transmitted, all modes were investigated, and the worst-case mode was used for final testing. There were no deviations from the test standard(s) and/or methods. The test results reported relate only to the item tested.

### 2.3 Test Result Summary

**Table 2-2: Test Result Summary – FCC Part 15, Subpart C (Section 15.407); ISED RSS-247, RSS-Gen**

| FCC                   | ISED                      | Test                                 | Result |
|-----------------------|---------------------------|--------------------------------------|--------|
| FCC 15.207            | RSS-Gen 8.8               | AC Conducted Emissions               | N/A    |
| FCC 15.209            | RSS-247 6.2; RSS-Gen 6.13 | Radiated Emissions                   | Pass   |
| FCC 15.407(a/1/3)     | RSS-247 6.2; RSS-Gen 6.12 | Maximum Peak Power Output            | Pass   |
| FCC 15.407(a/1/3)     | RSS-247 6.2               | Power Spectral Density               | Pass   |
| FCC 15.407(g)         | RSS-Gen 6.11              | Frequency Stability                  | N/A    |
| FCC 15.407(b)(7)      | RSS-247 6.2               | Band Edge Measurement                | Pass   |
| FCC 15.407(b)(6)      | RSS-247 6.2               | Antenna Conducted Spurious Emissions | Pass   |
| FCC 15.407(a) and (e) | RSS-247 6.2               | 26 dB and 6dB Bandwidth              | Pass   |
| N/A                   | RSS-Gen 6.7/ TRC-43       | 99% Bandwidth                        | Pass   |

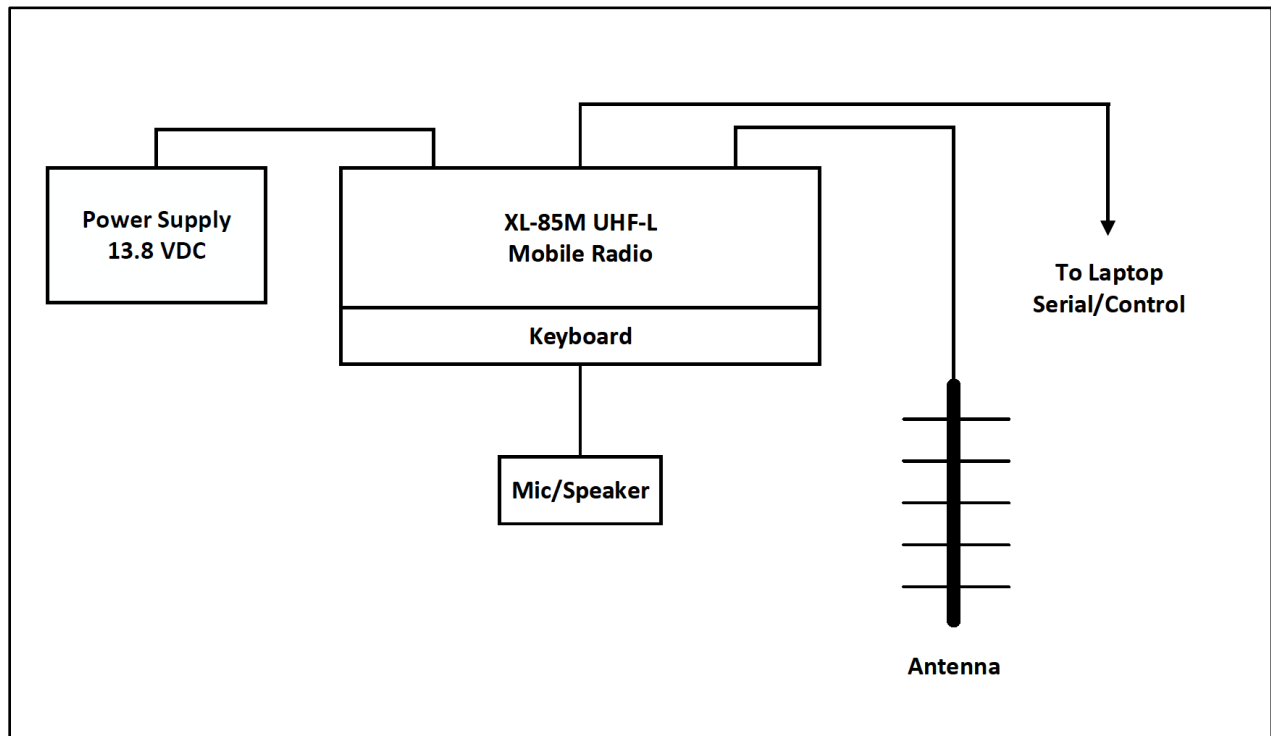
## 2.4 Tested System Details

The test sample was received on December 27, 2024. Listed below are the identifiers and descriptions of all equipment, cables, and internal devices used with the EUT for this test, as applicable. The device was programmed for multiple modes of operation and modulation types.

**Table 2-3: Equipment Under Test (EUT)**

| Part                  | Manufacturer          | Model        | PN/SN         | FCC ID       | RTL Bar Code |
|-----------------------|-----------------------|--------------|---------------|--------------|--------------|
| Mobile Radio          | L3Harris Technologies | XL-85M UHF-L | FCC UNIT 2    | OWDTR-0177-E | 24455        |
| Mobile Radio          | L3Harris Technologies | XL-85M UHF-L | N/A           | OWDTR-0177-E | 24456        |
| Control Head/Keyboard | L3Harris Technologies | XL-CH2       | A4031A000186  | OWDTR-0171-E | 24454        |
| Wi-Fi/BT Antenna      | JRC Mobility          | MTD302248    | MTD302248     | N/A          | N/A          |
| Handset/Mic/Speaker   | L3Harris Technologies | N/A          | 14050-6010-01 | N/A          | 24462        |

## 2.5 Configuration of Tested System



**Figure 2-1: Configuration of Tested System**

### 3 Peak Output Power – FCC 15.407(a/1/3); RSS-247 6.2, RSS-Gen 6.12

#### 3.1 Power Output Test Procedure

A conducted power measurement of the EUT was taken using a Rohde & Schwarz Analyzer with a 50 ohm attenuator.

**Table 3-1: Power Output Test Equipment**

| RTL Asset # | Manufacturer    | Model     | Part Type                   | Serial Number | Calibration Due Date |
|-------------|-----------------|-----------|-----------------------------|---------------|----------------------|
| 901773      | Rohde & Schwarz | FSW       | Spectrum Analyzer           | 101021        | 02/02/2027           |
| 901772      | Pasternack      | PE7087-10 | 10 dB 2 W 26 GHz Attenuator | 1011          | 11/30/2027           |

#### 3.2 Power Output Test Results

**Table 3-2: Environmental Conditions**

| Date             | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|------------------|------------------|--------------|----------------|
| February 9, 2025 | 21               | 41           | 101.2          |

**Table 3-3: Power Output Test Data – U-NII 1 – 802.11a (20 MHz BW)**

| Channel (#) | Frequency (MHz) | Conducted Peak Power (dBm) | Limit (dBm) | Margin (dB) |
|-------------|-----------------|----------------------------|-------------|-------------|
| 34          | 5170            | 17.1                       | 30.0        | -12.9       |
| 40          | 5200            | 17.4                       | 30.0        | -12.6       |
| 48          | 5240            | 17.2                       | 30.0        | -12.8       |

**Table 3-4: Power Output Test Data – U-NII 3 – 802.11a (20 MHz BW)**

| Channel (#) | Frequency (MHz) | Conducted Peak Power (dBm) | Limit (dBm) | Margin (dB) |
|-------------|-----------------|----------------------------|-------------|-------------|
| 149         | 5745            | 12.7                       | 30.0        | -17.3       |
| 157         | 5785            | 12.2                       | 30.0        | -17.8       |
| 165         | 5825            | 11.1                       | 30.0        | -18.9       |

**Table 3-5: Power Output Test Data – U-NII 1 – 802.11a (40 MHz BW)**

| Channel (#) | Frequency (MHz) | Conducted Peak Power (dBm) | Limit (dBm) | Margin (dB) |
|-------------|-----------------|----------------------------|-------------|-------------|
| 38          | 5190            | 18.1                       | 30.0        | -11.9       |
| 46          | 5230            | 18.0                       | 30.0        | -12.0       |

**Table 3-6: Power Output Test Data – U-NII 3 – 802.11a (40 MHz BW)**

| Channel (#) | Frequency (MHz) | Conducted Peak Power (dBm) | Limit (dBm) | Margin (dB) |
|-------------|-----------------|----------------------------|-------------|-------------|
| 151         | 5755            | 13.7                       | 30.0        | -16.3       |
| 159         | 5795            | 12.5                       | 30.0        | -17.5       |

Rhein Tech Laboratories, Inc.  
360 Herndon Parkway  
Suite 1400  
Herndon, VA 20170  
<http://www.rheintech.com>

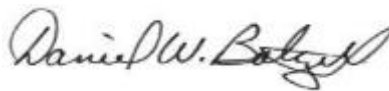
Client: L3Harris Technologies  
Model: XL-85M UHF-L  
Standards: FCC 15.407/ISED RSS-247  
ID's: FCC ID: OWDTR-0177-E/IC: 3636B-0177  
Report #: 2024073NII

Measurement uncertainty:  $\pm 0.5$  dB. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor  $k=2$ .

**Results: Pass**

**Test Personnel:**

Daniel W. Baltzell  
Test Engineer



Signature

February 9, 2025  
Date of Test

#### 4 Compliance with the Band Edge – FCC 15.407(b)(7); RSS-247 6.2

##### 4.1 Band Edge Test Procedure

The transmitter output was connected to its corresponding antenna. Corrected measurements, including 1 MHz integrated peak (100 kHz RBW/300 kHz VBW) and 1 MHz integrated average (100 kHz RBW/300 kHz VBW), were taken within the restricted band to demonstrate compliance.

**Table 4-1: Band Edge Test Equipment**

| RTL Asset # | Manufacturer    | Model | Part Type         | Serial Number | Calibration Due Date |
|-------------|-----------------|-------|-------------------|---------------|----------------------|
| 901773      | Rohde & Schwarz | FSW   | Spectrum Analyzer | 101021        | 02/02/2027           |

##### 4.2 Restricted Band Edge Test Results

**Table 4-2: Environmental Conditions**

| Date             | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|------------------|------------------|--------------|----------------|
| January 13, 2025 | 21               | 41           | 101.2          |
| January 15, 2025 | 21.3             | 41           | 101.2          |

Conversion of dBm to dBμV/m at 3 m  $\text{dB}\mu\text{V}/\text{m} = \text{dBm} + 104.7 - (20 * \text{LOG}(3\text{m})) = \text{dBm} + 95.2$

#### 4.1 Band Edge Plots

Plot 4-1: Lower Band Edge – Average – U-NII 1 – 802.11a (20 MHz BW)

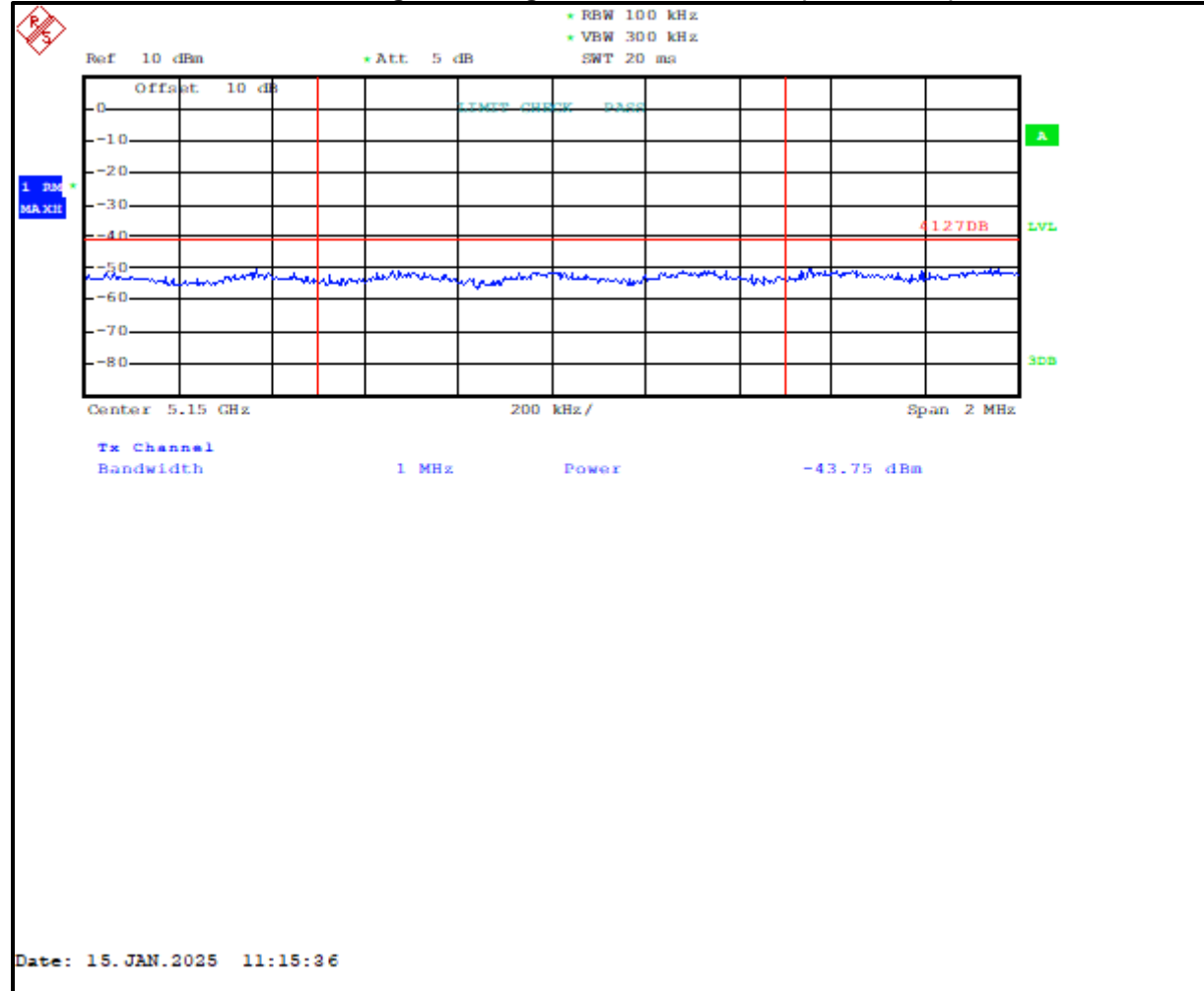
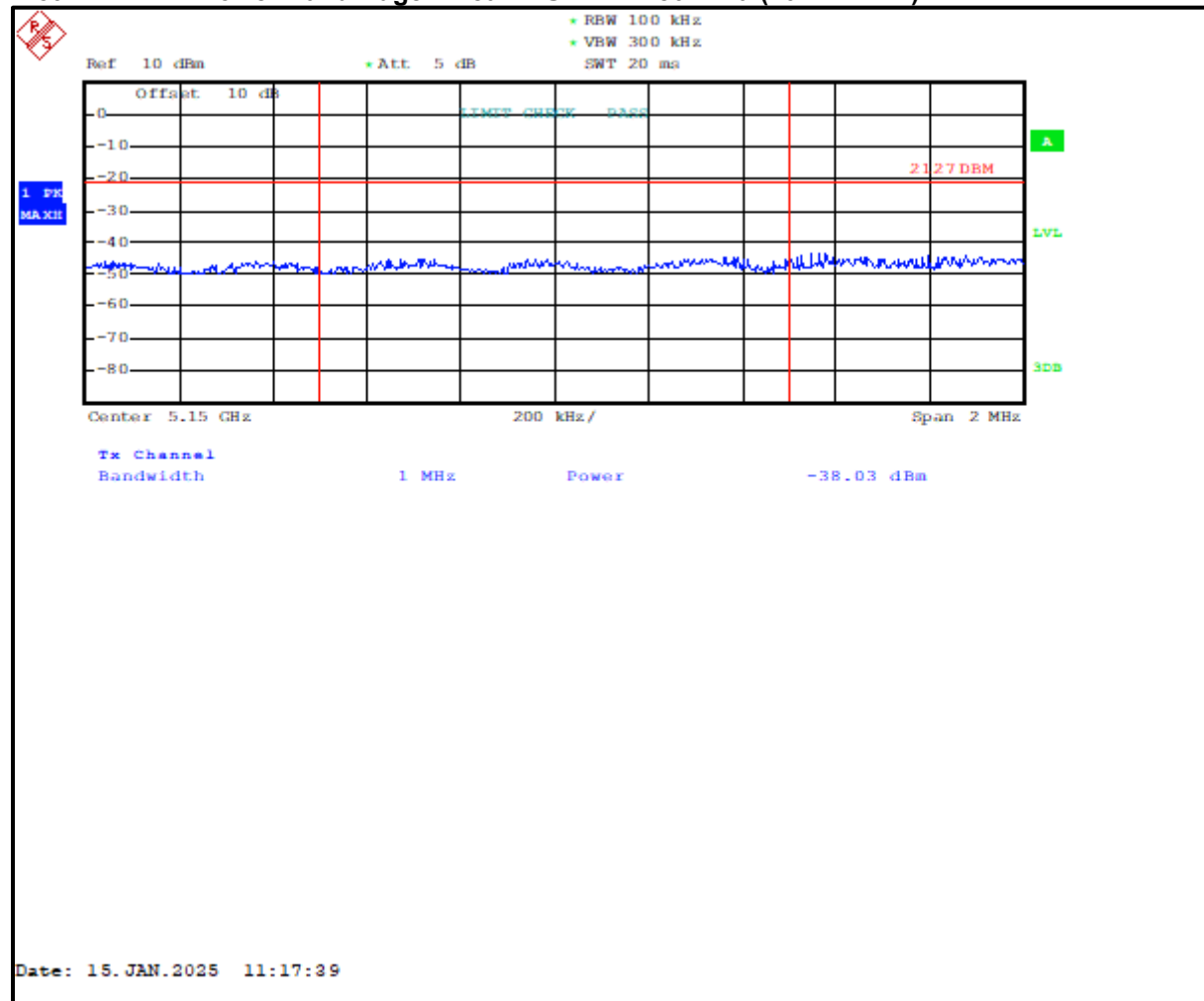


Table 4-3: Lower Band Edge Average – U-NII 1 – 802.11a (20 MHz BW)

| Frequency (MHz) | Measured Average Level (dBm) | Field Strength Conversion (dBμV/m) | Average Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------------------|------------------------------------|------------------------|-------------|
| 5150            | -43.8                        | 51.4                               | 54.0                   | -2.6        |

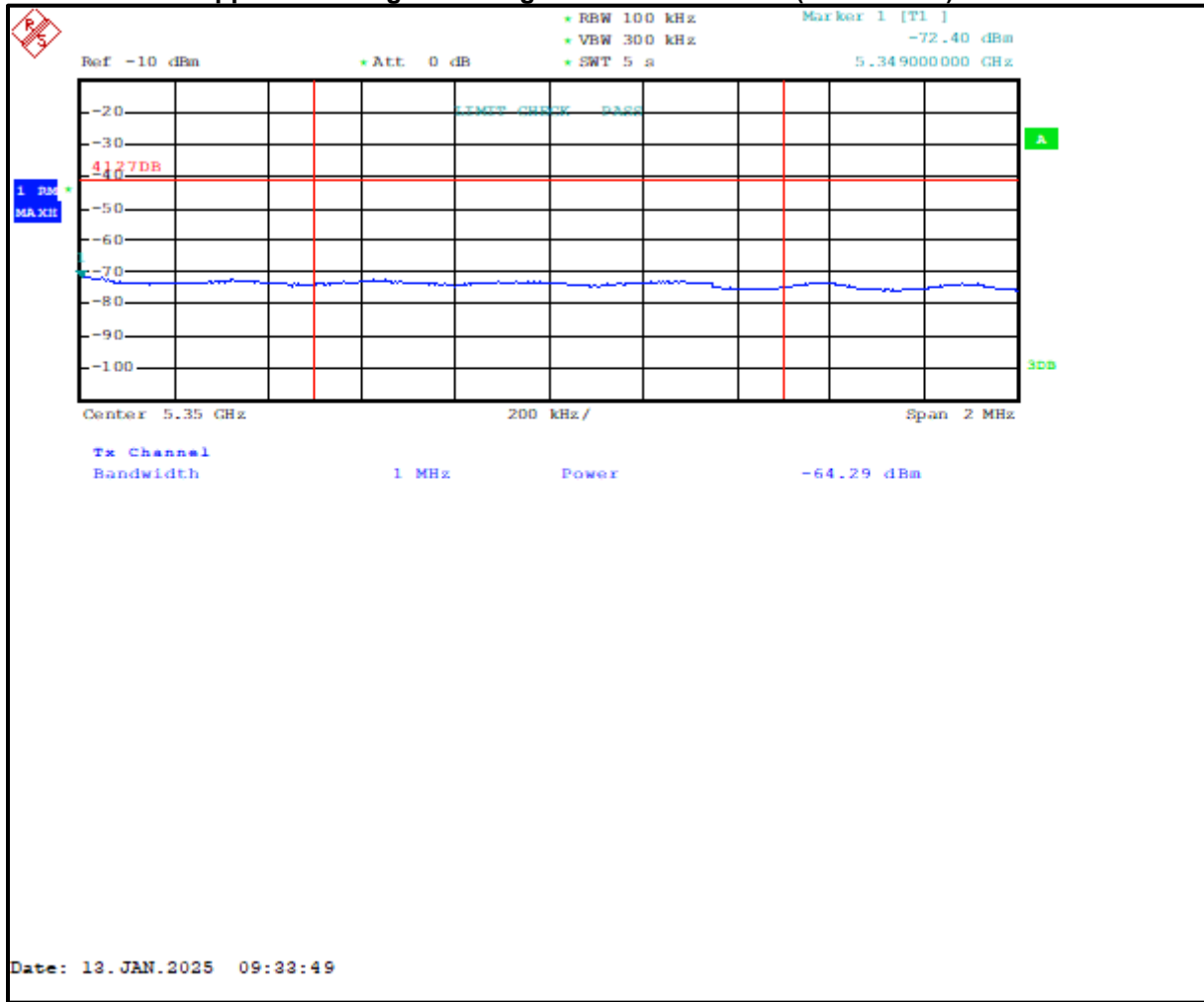
**Plot 4-2: Lower Band Edge – Peak – U-NII 1 – 802.11a (20 MHz BW)**



**Table 4-4: Lower Band Edge Peak – U-NII 1 – 802.11a (20 MHz BW)**

| Frequency (MHz) | Measured Peak Level (dBm) | Field Strength Conversion (dBμV/m) | Peak Limit (dBμV/m) | Margin (dB) |
|-----------------|---------------------------|------------------------------------|---------------------|-------------|
| 5150            | -38.0                     | 57.2                               | 74.0                | -16.8       |

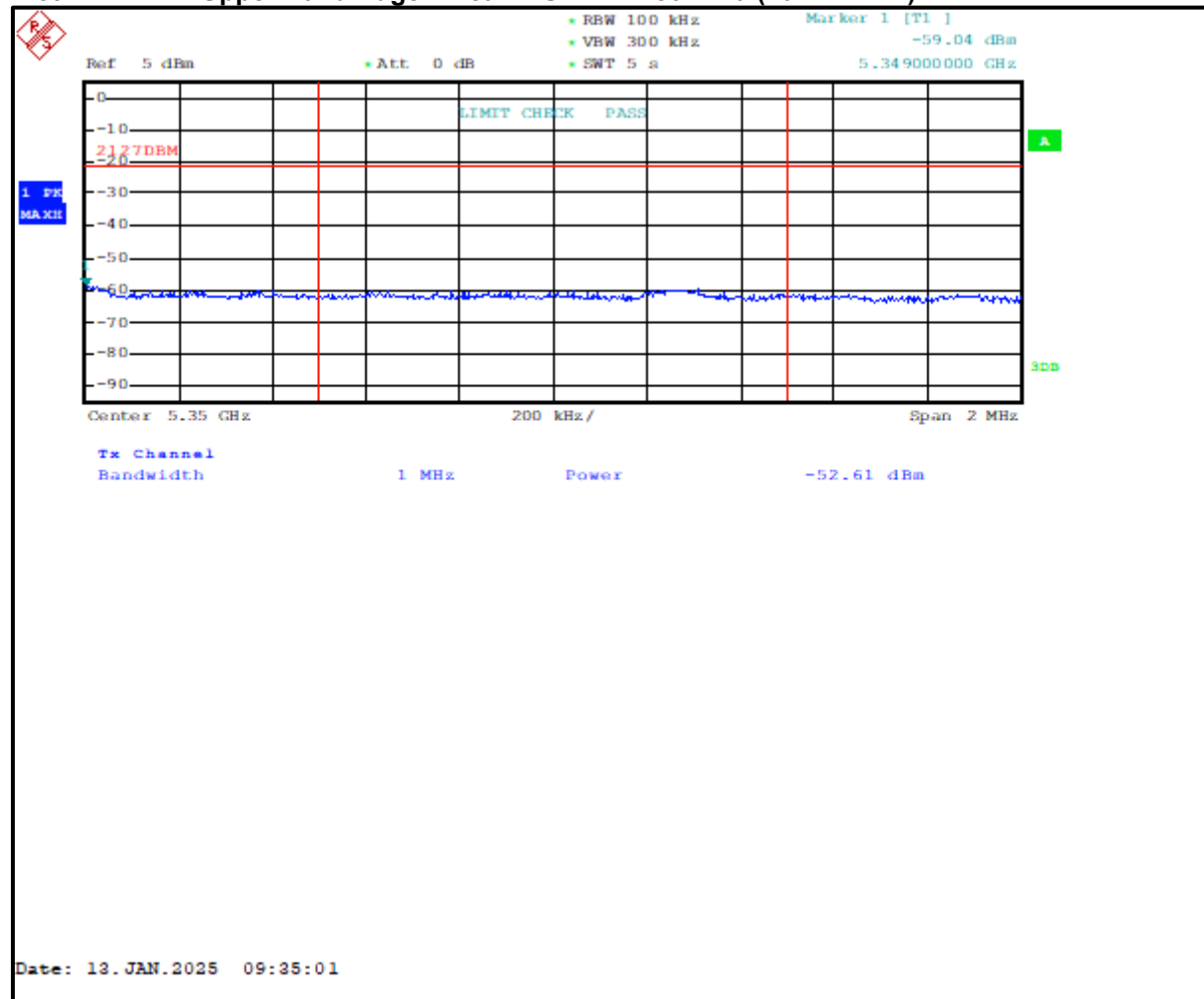
**Plot 4-3: Upper Band Edge – Average – U-NII 1 – 802.11a (20 MHz BW)**



**Table 4-5: Upper Band Edge Average – U-NII 1 – 802.11a (20 MHz BW)**

| Frequency (MHz) | Measured Average Level (dBm) | Field Strength Conversion (dBμV/m) | Average Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------------------|------------------------------------|------------------------|-------------|
| 5350            | -64.3                        | 31.0                               | 54.0                   | -23.0       |

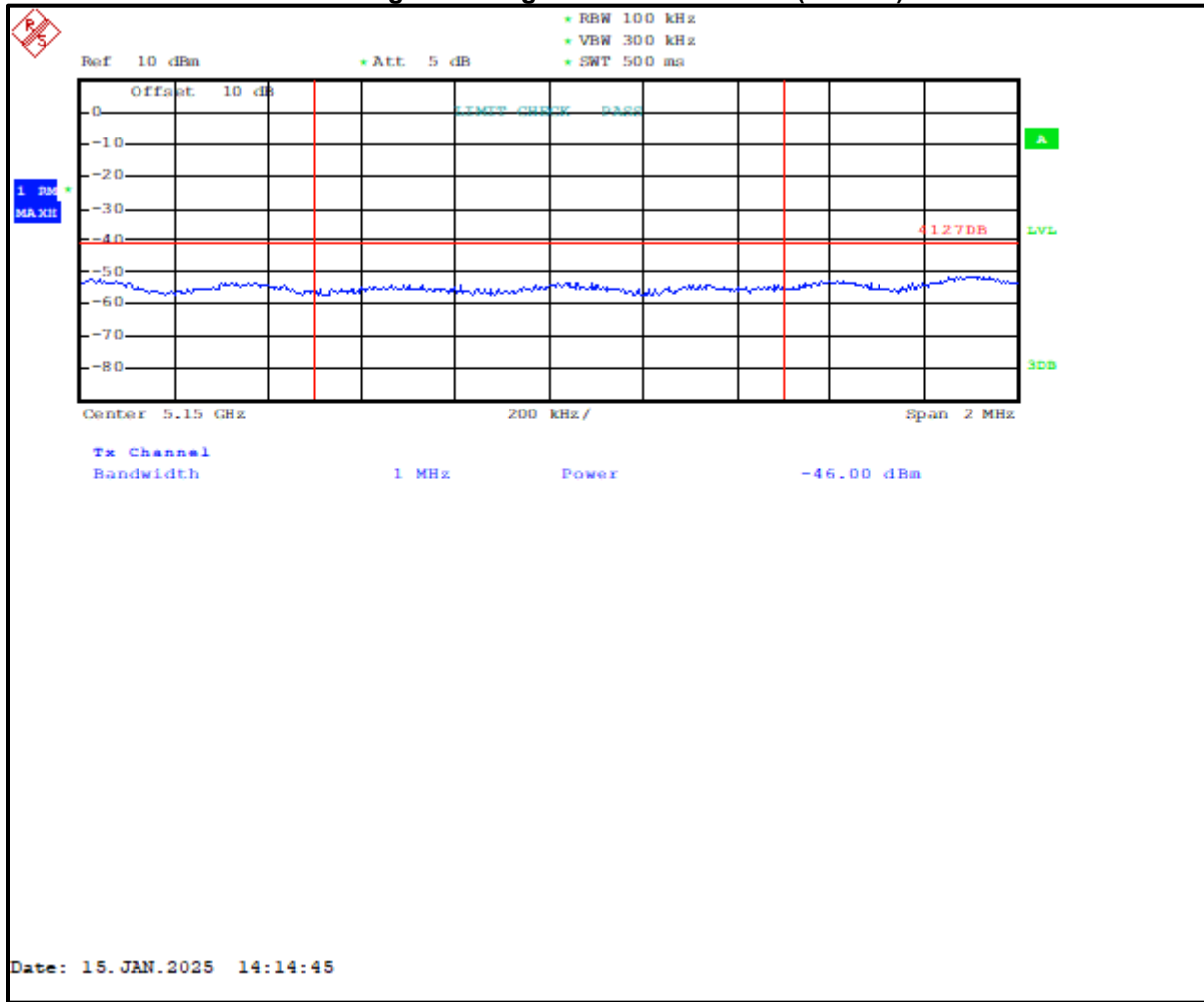
**Plot 4-4: Upper Band Edge – Peak – U-NII 1 – 802.11a (20 MHz BW)**



**Table 4-6: Upper Band Edge Peak – U-NII 1 – 802.11a (20 MHz BW)**

| Frequency (MHz) | Measured Peak Level (dBm) | Field Strength Conversion (dBμV/m) | Peak Limit (dBμV/m) | Margin (dB) |
|-----------------|---------------------------|------------------------------------|---------------------|-------------|
| 5350            | -52.6                     | 42.7                               | 74.0                | -31.3       |

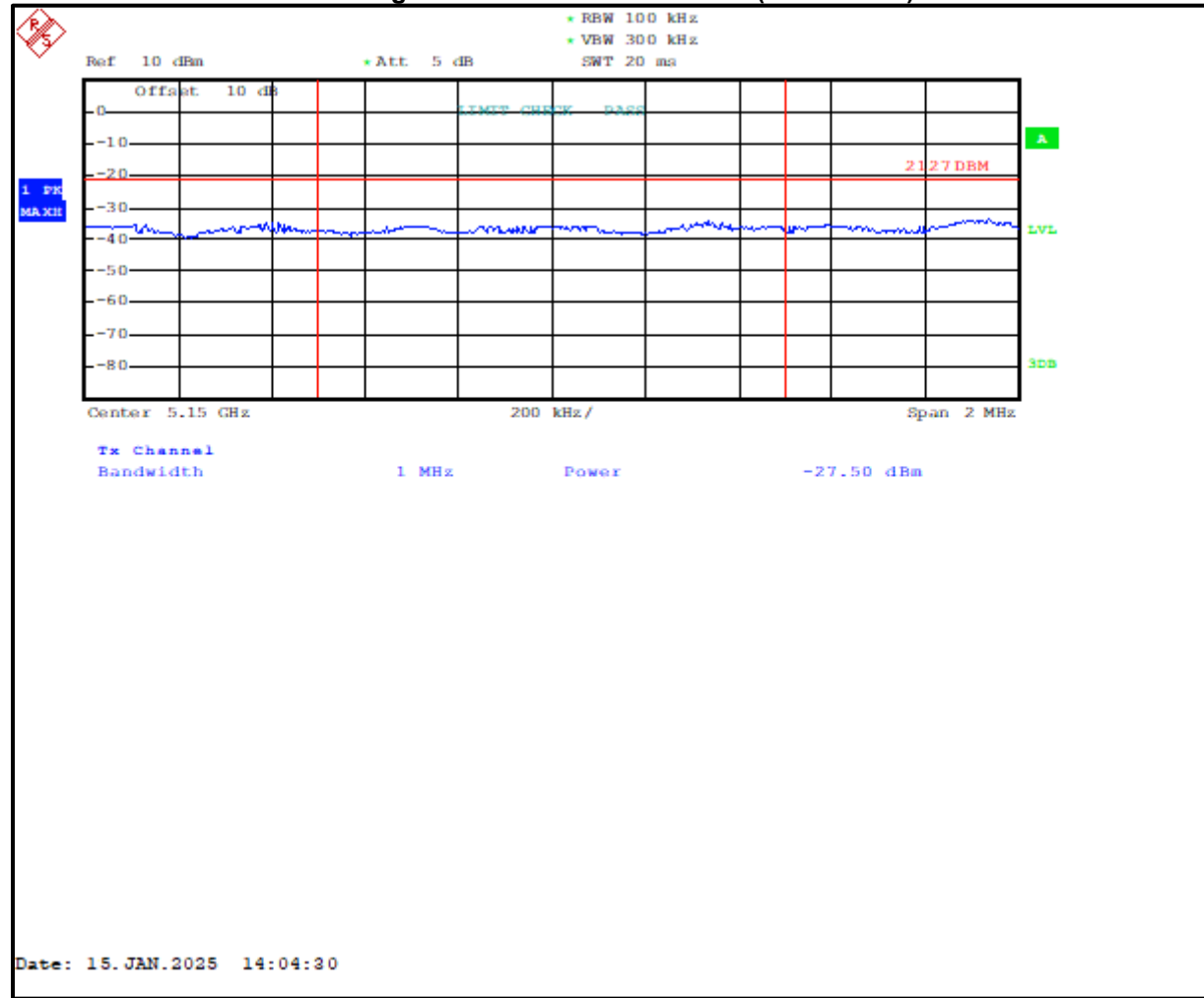
**Plot 4-5: Lower Band Edge – Average – U-NII 1 – 802.11a (40 MHz)**



**Table 4-7: Lower Band Edge Average – U-NII 1 – 802.11a (40 MHz BW)**

| Frequency (MHz) | Measured Average Level (dBm) | Field Strength Conversion (dBμV/m) | Average Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------------------|------------------------------------|------------------------|-------------|
| 5150            | -46.0                        | 49.2                               | 54.0                   | -4.8        |

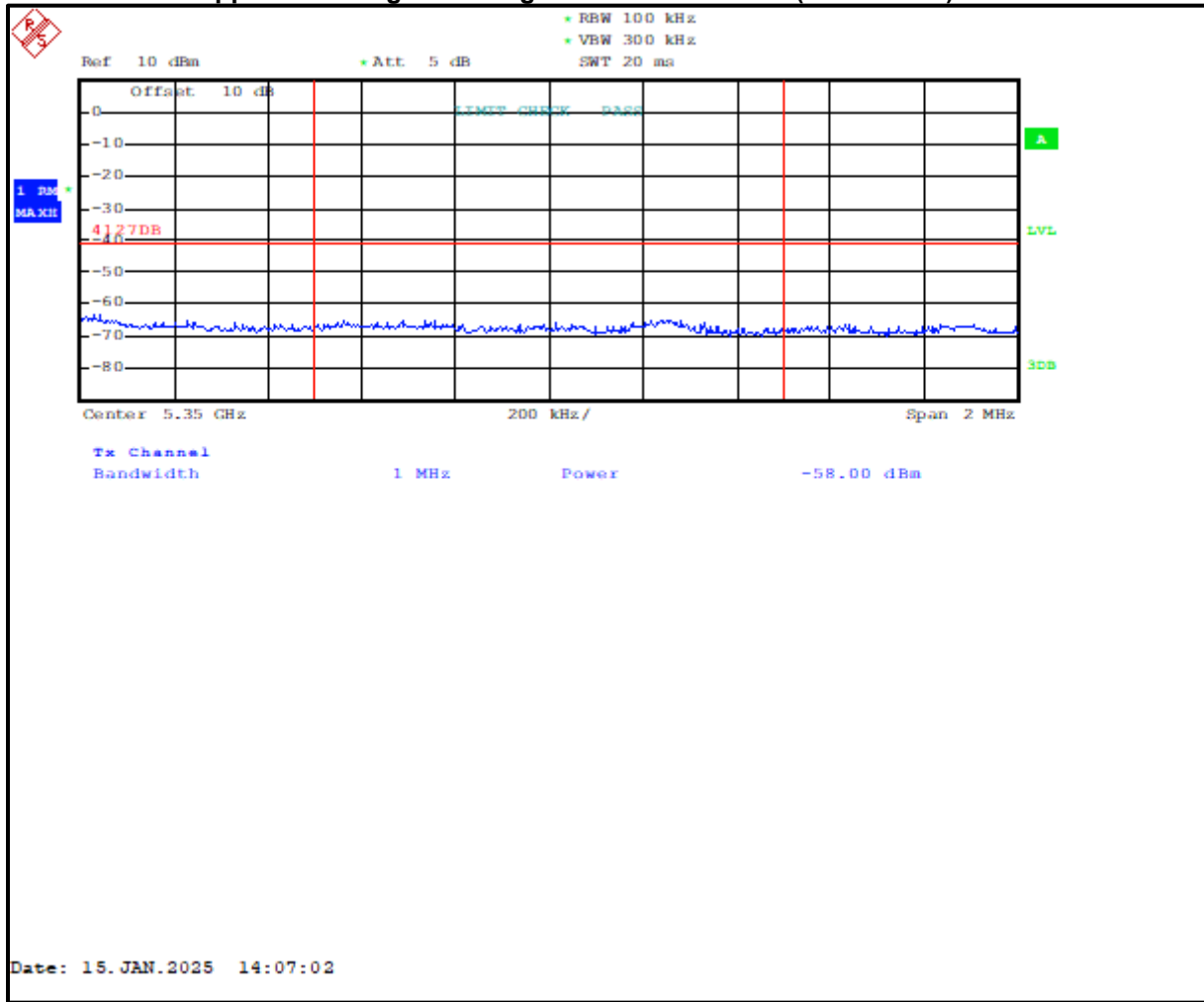
**Plot 4-6: Lower Band Edge – Peak – U-NII 1 – 802.11a (40 MHz BW)**



**Table 4-8: Lower Band Edge Peak – U-NII 1 – 802.11a (40 MHz BW)**

| Frequency (MHz) | Measured Peak Level (dBm) | Field Strength Conversion (dBμV/m) | Peak Limit (dBμV/m) | Margin (dB) |
|-----------------|---------------------------|------------------------------------|---------------------|-------------|
| 5150            | -27.5                     | 67.7                               | 74.0                | -6.3        |

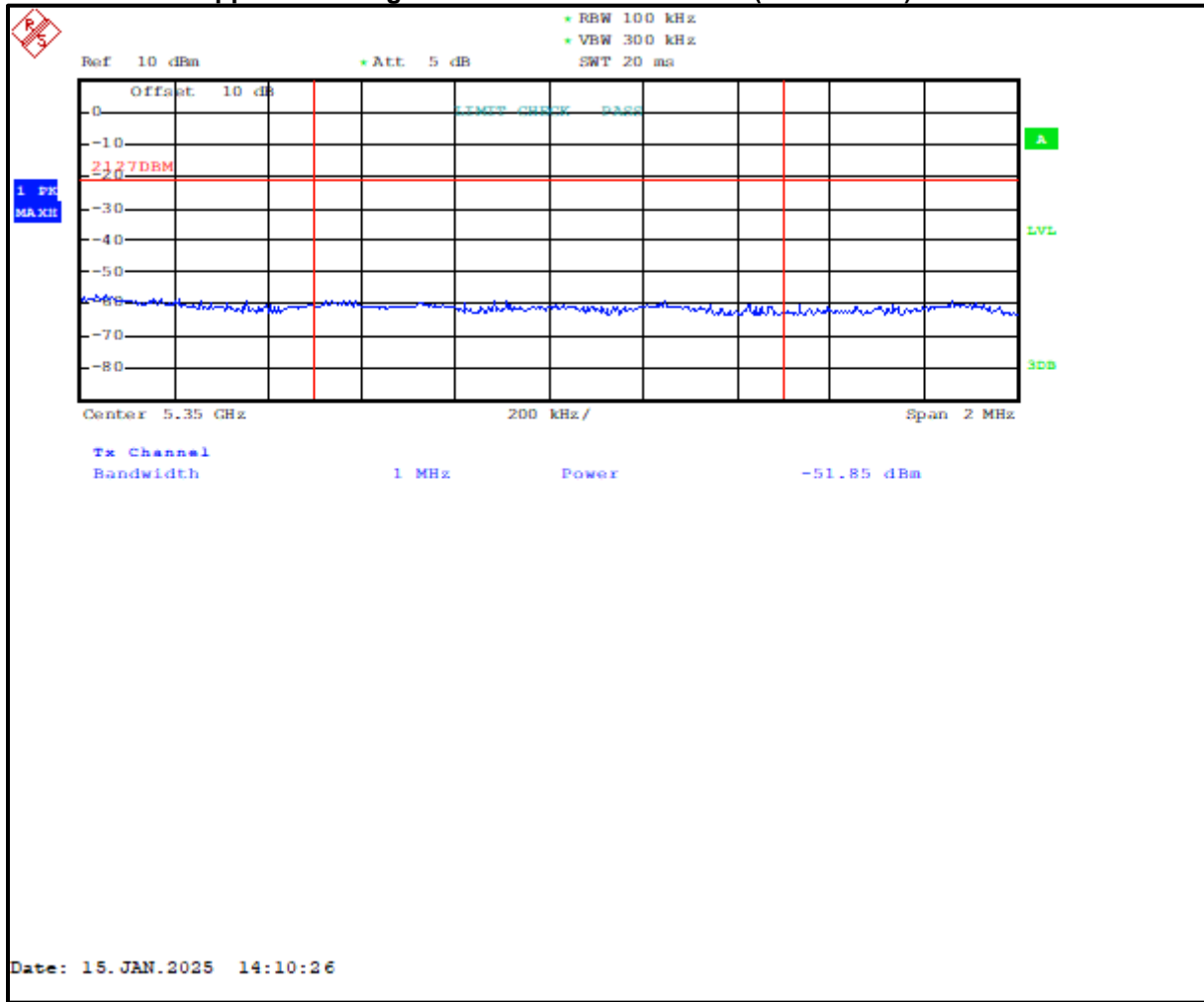
**Plot 4-7: Upper Band Edge – Average – U-NII 1 – 802.11a (40 MHz BW)**



**Table 4-9: Upper Band Edge Average – U-NII 1 – 802.11a (40 MHz BW)**

| Frequency (MHz) | Measured Average Level (dBm) | Field Strength Conversion (dBμV/m) | Average Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------------------|------------------------------------|------------------------|-------------|
| 5350            | -58.0                        | 37.2                               | 54.0                   | -16.8       |

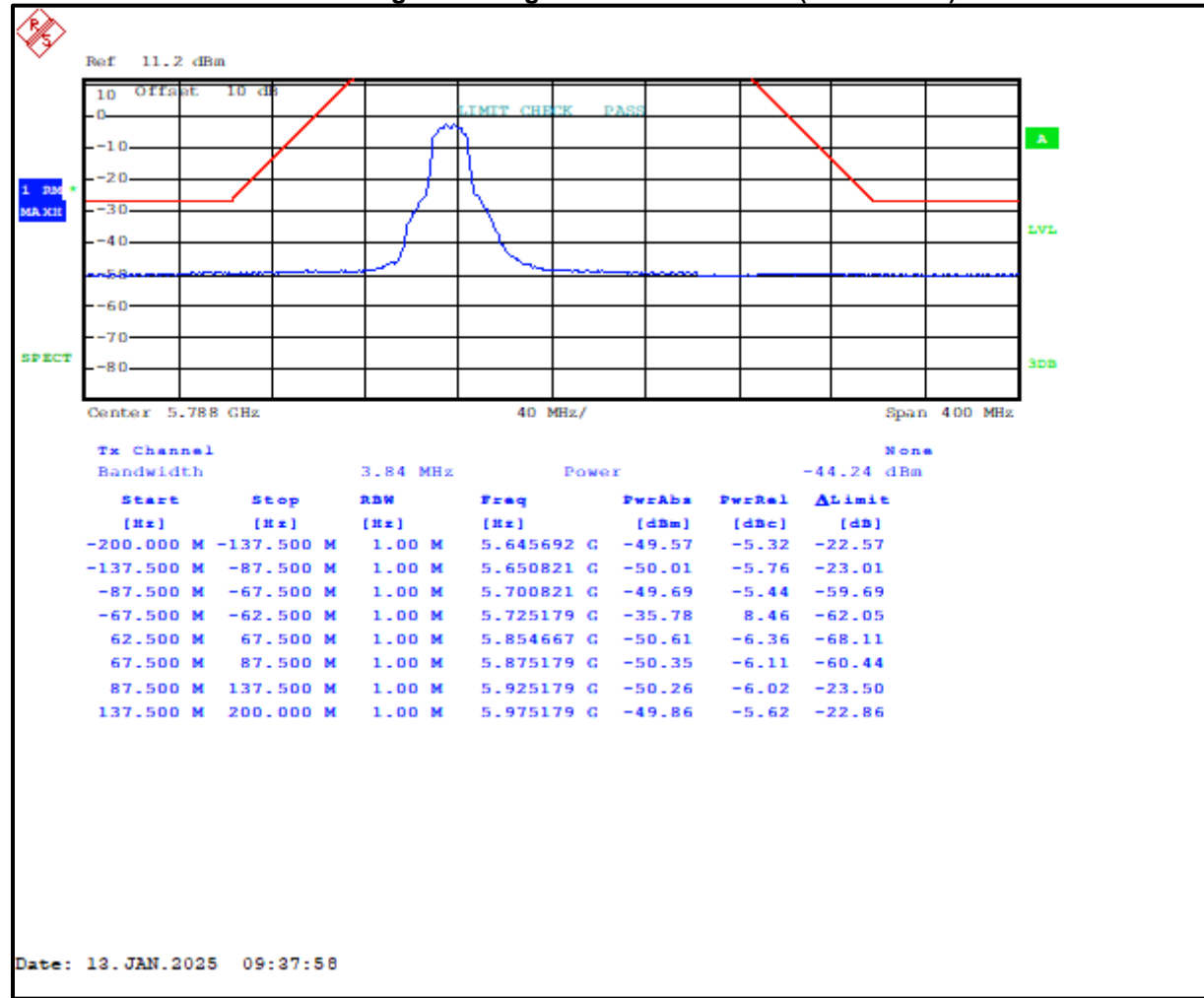
**Plot 4-8: Upper Band Edge – Peak – U-NII 1 – 802.11a (40 MHz BW)**



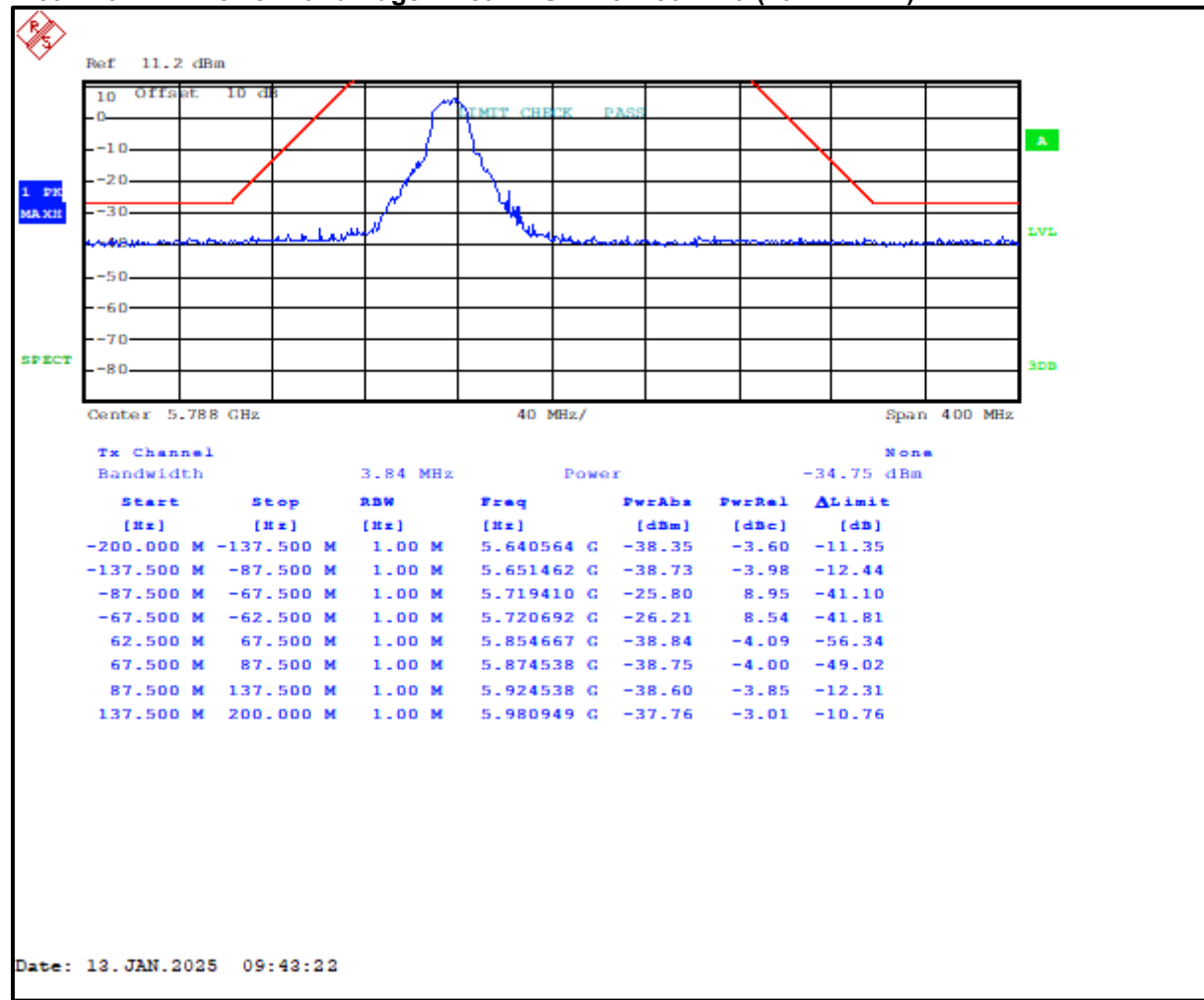
**Table 4-10: Upper Band Edge Peak – U-NII 1 – 802.11a (40 MHz BW)**

| Frequency (MHz) | Measured Peak Level (dBm) | Field Strength Conversion (dBμV/m) | Peak Limit (dBμV/m) | Margin (dB) |
|-----------------|---------------------------|------------------------------------|---------------------|-------------|
| 5350            | -51.9                     | 43.3                               | 74.0                | -30.7       |

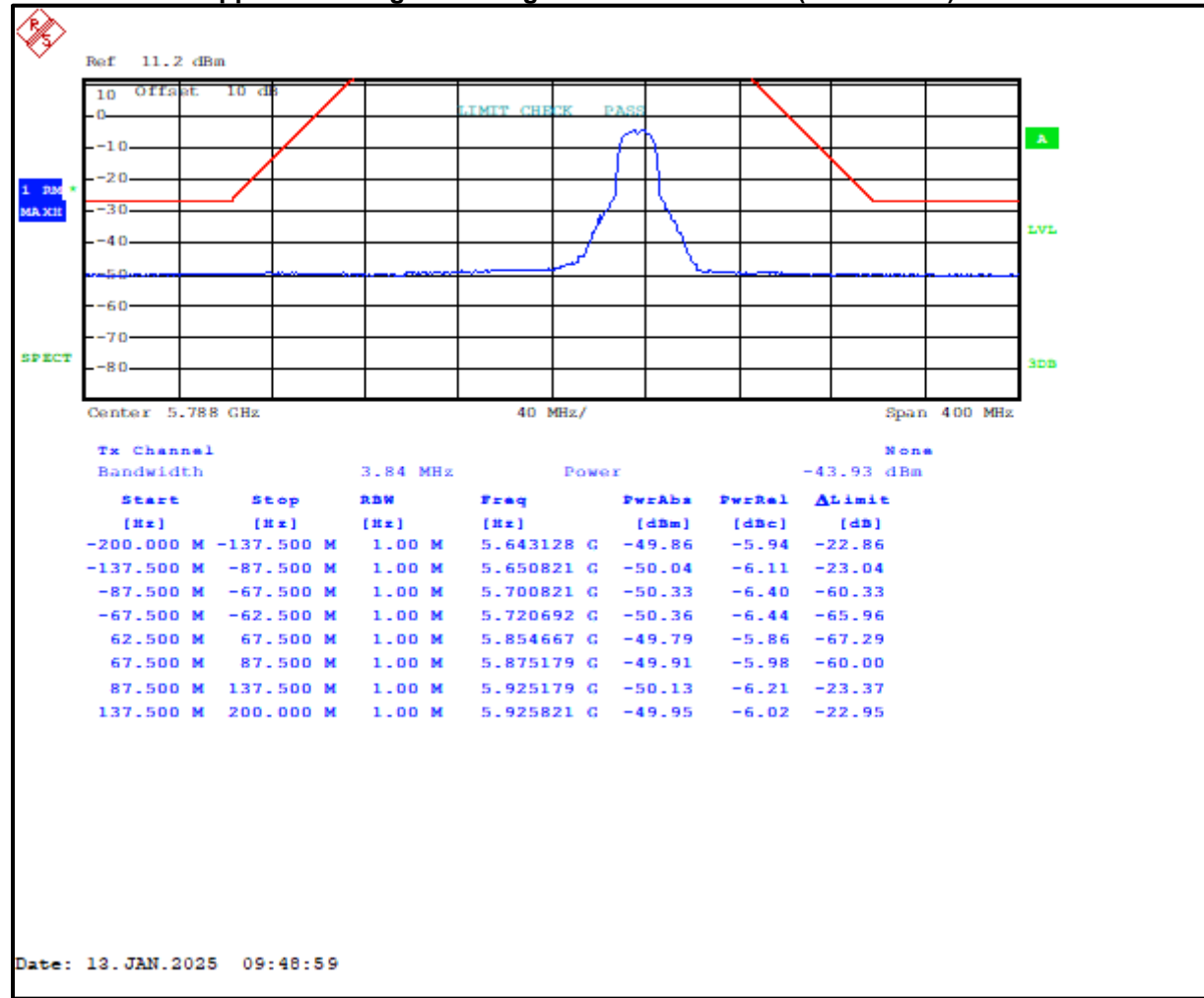
Plot 4-9: Lower Band Edge – Average – U-NII 3 – 802.11a (20 MHz BW)



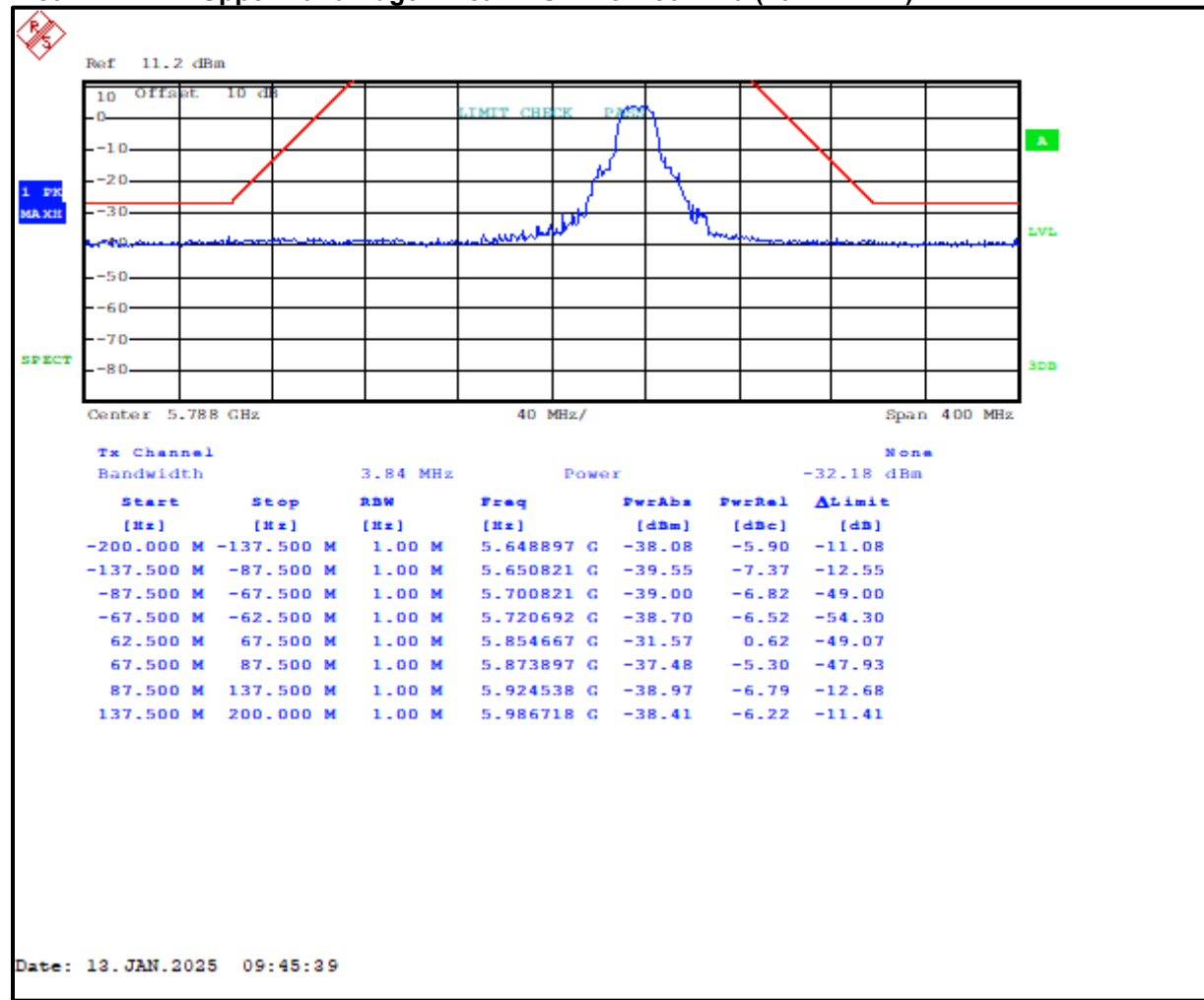
**Plot 4-10: Lower Band Edge – Peak – U-NII 3 – 802.11a (20 MHz BW)**



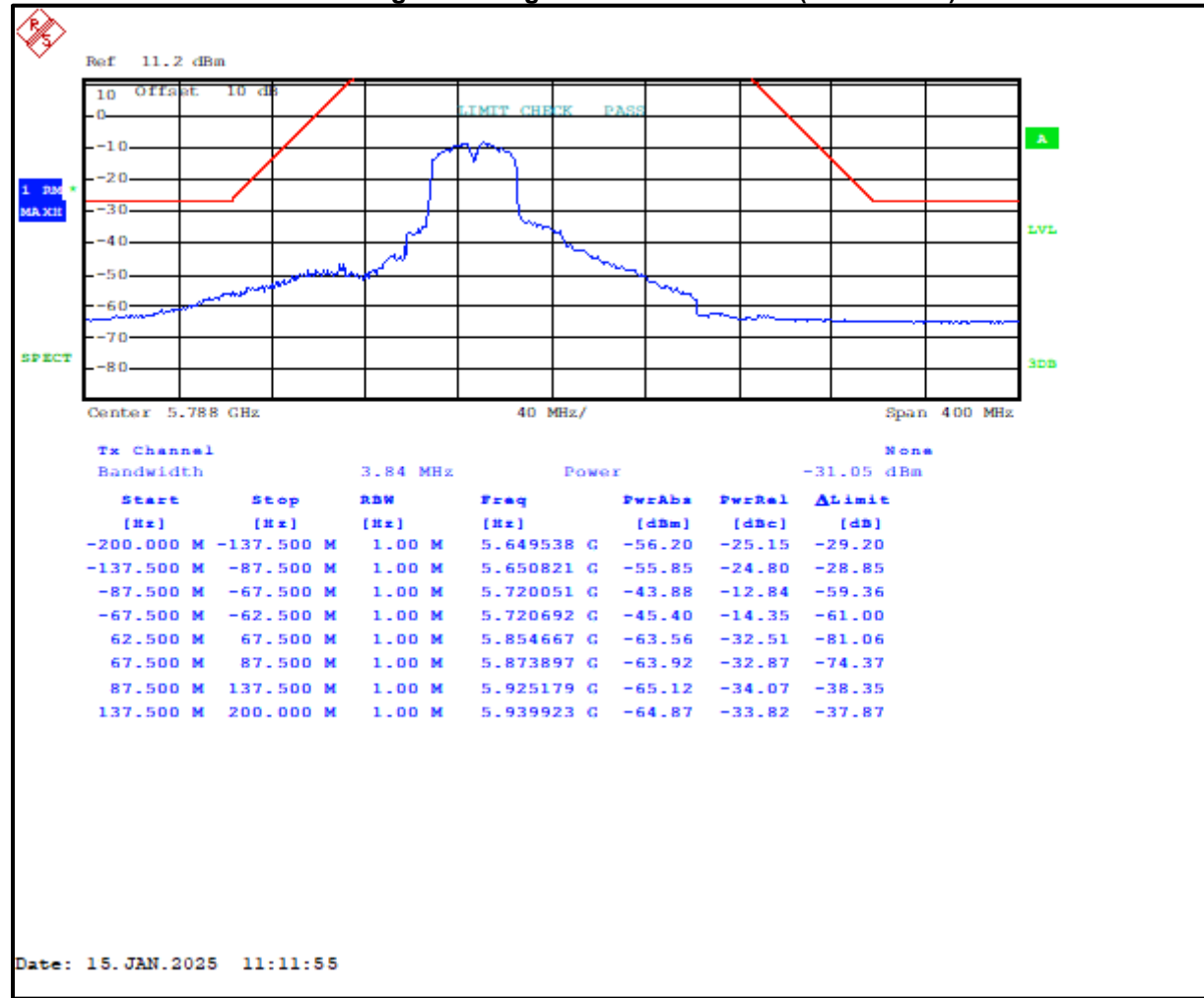
Plot 4-11: Upper Band Edge – Average – U-NII 3 – 802.11a (20 MHz BW)



**Plot 4-12: Upper Band Edge – Peak – U-NII 3 – 802.11a (20 MHz BW)**



Plot 4-13: Lower Band Edge – Average – U-NII 3 – 802.11a (40 MHz BW)



Ref 11.2 dBm

10 Offset 10 dB

LIMIT CHECK PASS

1 PR  
MAX

SPECT

LVL

3DS

Center 5.788 GHz 40 MHz/ Span 400 MHz

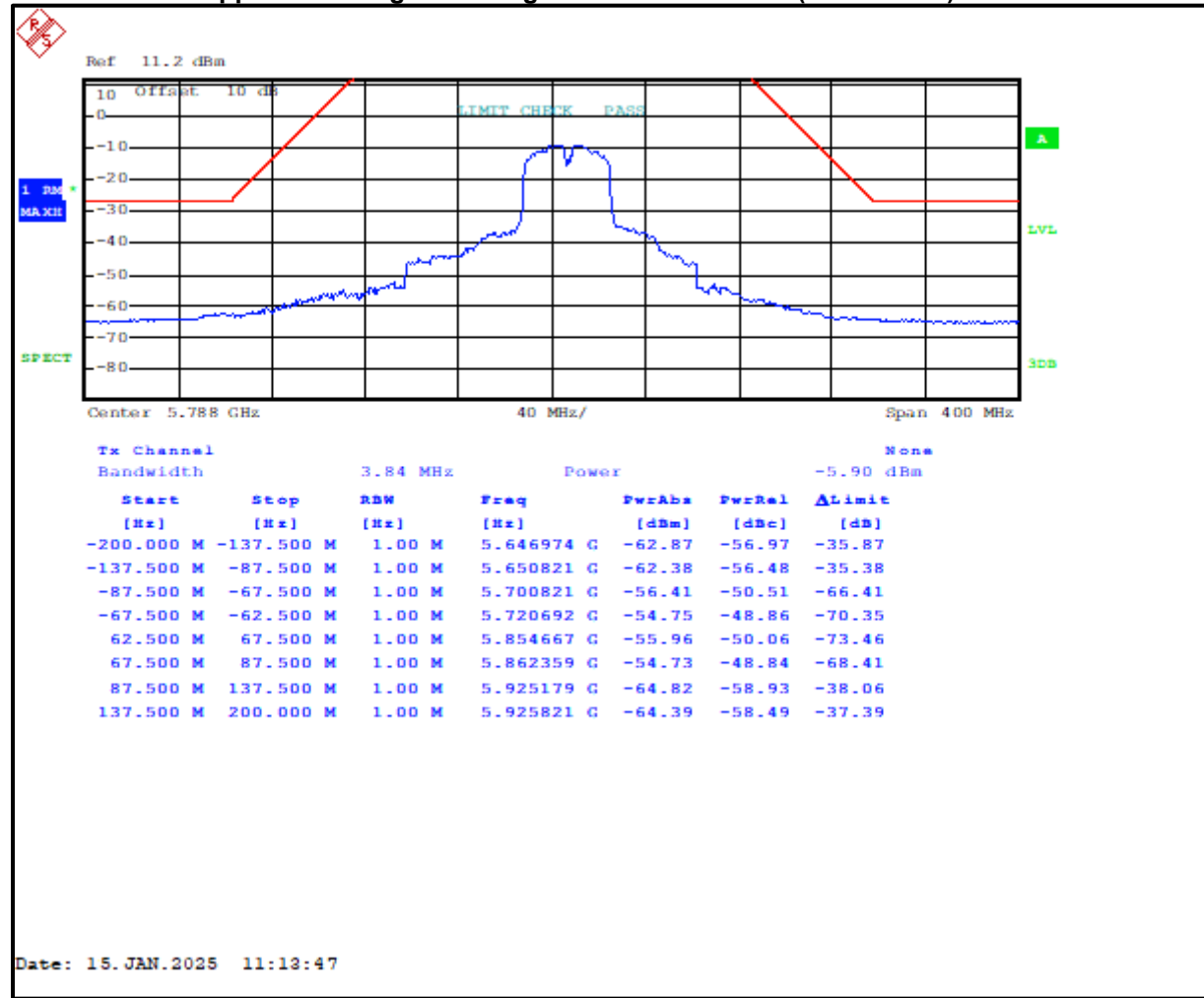
Tx Channel

Bandwidth 3.84 MHz Power None

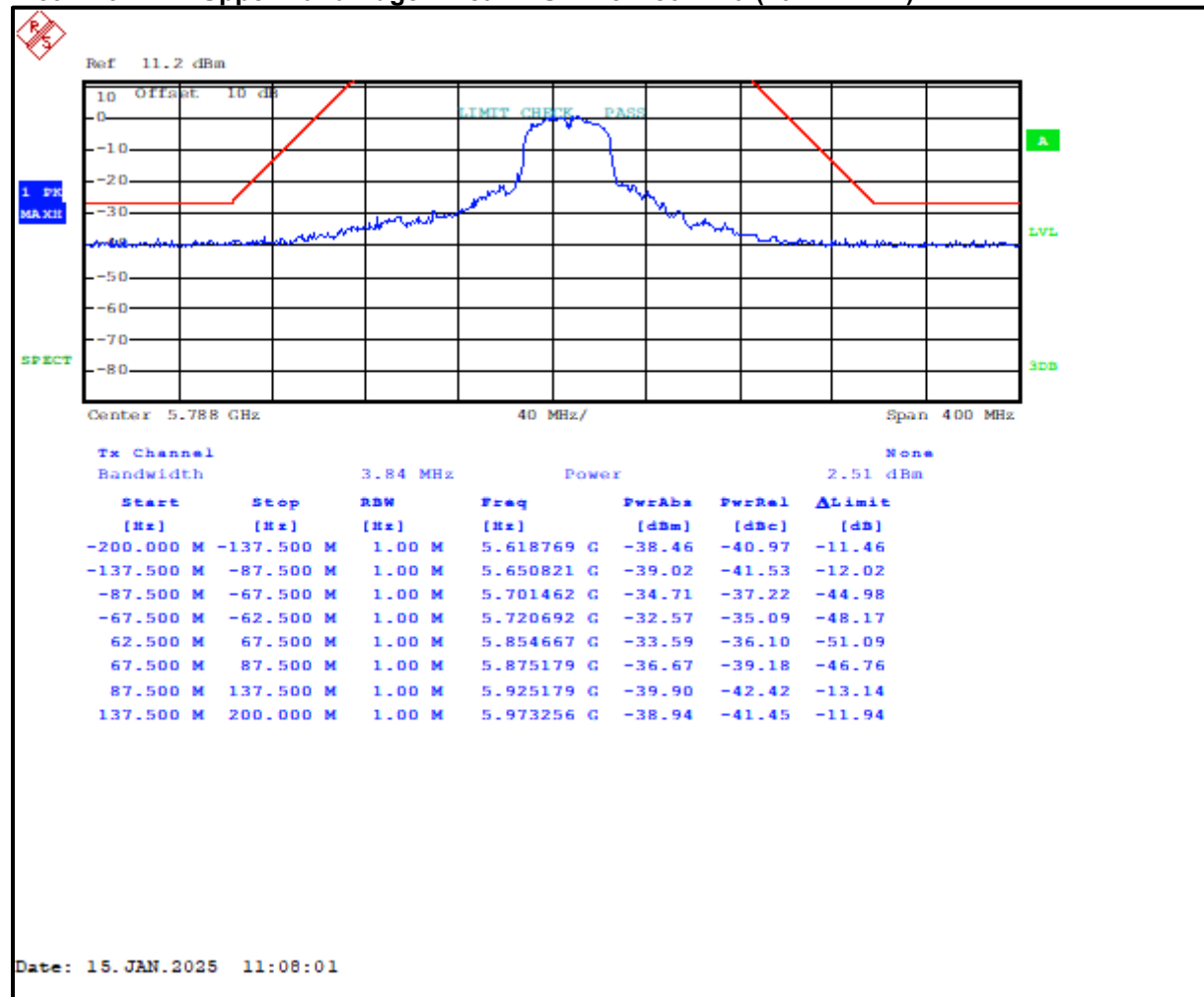
-20.38 dBm

| Start [Hz] | Stop [Hz]  | RBW [Hz] | Freq [Hz]  | PwrAbs [dBm] | PwrRel [dBc] | Limit [dB] |
|------------|------------|----------|------------|--------------|--------------|------------|
| -200.000 M | -137.500 M | 1.00 M   | 5.648256 G | -38.91       | -18.53       | -11.91     |
| -137.500 M | -87.500 M  | 1.00 M   | 5.650821 G | -39.88       | -19.51       | -12.88     |
| -87.500 M  | -67.500 M  | 1.00 M   | 5.720051 G | -23.71       | -3.34        | -39.19     |
| -67.500 M  | -62.500 M  | 1.00 M   | 5.720692 G | -23.70       | -3.32        | -39.30     |
| 62.500 M   | 67.500 M   | 1.00 M   | 5.854667 G | -44.07       | -23.70       | -61.57     |
| 67.500 M   | 87.500 M   | 1.00 M   | 5.861718 G | -41.56       | -21.18       | -55.42     |
| 87.500 M   | 137.500 M  | 1.00 M   | 5.924538 G | -52.47       | -32.09       | -26.18     |
| 137.500 M  | 200.000 M  | 1.00 M   | 5.938641 G | -53.04       | -32.66       | -26.04     |

Plot 4-15: Upper Band Edge – Average – U-NII 3 – 802.11a (40 MHz BW)



**Plot 4-16: Upper Band Edge – Peak – U-NII 3 – 802.11a (40 MHz BW)**



Measurement uncertainty:  $\pm 0.5$  dB. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor  $k=2$ .

**Results: Pass**

**Test Personnel:**

Daniel W. Baltzell  
Test Engineer

*Daniel W. Baltzell*

Signature

January 13 & January 15, 2024  
Dates of Test

## 5 Antenna Conducted Spurious Emissions – FCC 15.407(b)(6); RSS-247 6.2

### 5.1 Antenna Conducted Spurious Emissions Test Procedures

Antenna conducted spurious emissions per FCC 15.407(b)(6) were measured from the EUT antenna port using a 50-ohm spectrum analyzer with the resolution bandwidth set at 1 MHz and the video bandwidth set at > 3 x RBW.

### 5.2 Antenna Conducted Spurious Emissions Test Results

**Table 5-1: Antenna Conducted Spurious Emissions Test Equipment**

| RTL Asset # | Manufacturer    | Model     | Part Type                   | Serial Number | Calibration Due Date |
|-------------|-----------------|-----------|-----------------------------|---------------|----------------------|
| 901773      | Rohde & Schwarz | FSW       | Spectrum Analyzer           | 101021        | 02/02/2027           |
| 901772      | Pasternack      | PE7087-10 | 10 dB 2 W 26 GHz Attenuator | 1011          | 11/30/2027           |

**Table 5-2: Environmental Conditions**

| Date              | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|-------------------|------------------|--------------|----------------|
| February 10, 2025 | 21               | 41           | 101.2          |

**Table 5-3: Antenna Conducted Spurious Emissions – 5180 MHz**

| Frequency (MHz) | Measured Peak Level (dBm) | Field Strength Conversion (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------|---------------------------|------------------------------------|----------------|-------------|
| 10360.0         | -49.1                     | 46.2                               | 54.0           | -7.8        |
| 15540.0         | -61.5                     | 33.8                               | 54.0           | -20.2       |
| 20720.0         | -64.5                     | 30.8                               | 54.0           | -23.2       |
| 25900.0         | -59.9                     | 35.4                               | 54.0           | -18.6       |
| 31080.0         | -64.5                     | 30.8                               | 54.0           | -23.2       |
| 36260.0         | -61.1                     | 34.2                               | 54.0           | -19.8       |

**Table 5-4: Antenna Conducted Spurious Emissions – 5200 MHz**

| Frequency (MHz) | Measured Peak Level (dBm) | Field Strength Conversion (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------|---------------------------|------------------------------------|----------------|-------------|
| 10400.0         | -56.6                     | 38.7                               | 54.0           | -15.3       |
| 15600.0         | -55.7                     | 39.5                               | 54.0           | -14.5       |
| 20800.0         | -55.5                     | 39.8                               | 54.0           | -14.2       |
| 26000.0         | -61.8                     | 33.5                               | 54.0           | -20.5       |
| 31200.0         | -59.6                     | 35.7                               | 54.0           | -18.3       |
| 36400.0         | -58.6                     | 36.7                               | 54.0           | -17.3       |

**Table 5-5: Antenna Conducted Spurious Emissions – 5240 MHz**

| Frequency (MHz) | Measured Peak Level (dBm) | Field Strength Conversion (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|---------------------------|------------------------------------------|----------------------|-------------|
| 10480.0         | -56.3                     | 39.0                                     | 54.0                 | -15.0       |
| 15720.0         | -55.7                     | 39.6                                     | 54.0                 | -14.4       |
| 20960.0         | -55.5                     | 39.8                                     | 54.0                 | -14.2       |
| 26200.0         | -55.2                     | 40.1                                     | 54.0                 | -13.9       |
| 31440.0         | -59.4                     | 35.9                                     | 54.0                 | -18.1       |
| 36680.0         | -57.8                     | 37.5                                     | 54.0                 | -16.5       |

**Table 5-6: Antenna Conducted Spurious Emissions – 5745 MHz**

| Frequency (MHz) | Measured Peak Level (dBm) | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|---------------------------|----------------------|-------------|
| 10480.0         | -56.6                     | -27.0                | -29.6       |
| 15720.0         | -56.9                     | -27.0                | -29.9       |
| 20960.0         | -56.0                     | -27.0                | -29.0       |
| 26200.0         | -60.1                     | -27.0                | -33.1       |
| 31440.0         | -59.7                     | -27.0                | -32.7       |

**Table 5-7: Antenna Conducted Spurious Emissions – 5785 MHz**

| Frequency (MHz) | Measured Peak Level (dBm) | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|---------------------------|----------------------|-------------|
| 11570.0         | -56.6                     | -27.0                | -29.6       |
| 17355.0         | -55.7                     | -27.0                | -28.7       |
| 23140.0         | -56.3                     | -27.0                | -29.3       |
| 28925.0         | -59.7                     | -27.0                | -32.7       |
| 34710.0         | -60.0                     | -27.0                | -33.0       |

**Table 5-8: Antenna Conducted Spurious Emissions – 5825 MHz**

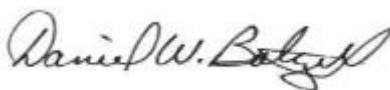
| Frequency (MHz) | Measured Level (dBm) | Limit (dB $\mu$ V/m) | Margin (dB) |
|-----------------|----------------------|----------------------|-------------|
| 11650.0         | -56.6                | -27.0                | -29.6       |
| 17475.0         | -56.5                | -27.0                | -29.5       |
| 23300.0         | -65.4                | -27.0                | -38.4       |
| 29125.0         | -61.3                | -27.0                | -34.3       |
| 34950.0         | -57.7                | -27.0                | -30.7       |

Measurement uncertainty:  $\pm 0.5$  dB. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor k=2.

**Results: Pass**

**Test Personnel:**

Daniel W. Baltzell  
Test Engineer



Signature

February 10, 2025  
Date of Test

## 6 Bandwidths – FCC 15.407(a) and (e); RSS-247 6.2; RSS-Gen 6.7

### 6.1 Bandwidth Test Procedure

The minimum 6 dB, 26 dB and 99% bandwidths per FCC 15.407(a) and (e), RSS-247 6.2 and RSS-Gen 6.7 were measured using a 50-ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at  $\geq 3 \times$  RBW. The device was modulated, (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

**Table 6-1: Modulated Bandwidth Test Equipment**

| RTL Asset # | Manufacturer    | Model | Part Type         | Serial Number | Calibration Due Date |
|-------------|-----------------|-------|-------------------|---------------|----------------------|
| 901773      | Rohde & Schwarz | FSW   | Spectrum Analyzer | 101021        | 02/02/2027           |

### 6.2 Modulated Bandwidth Test Results

**Table 6-2: Environmental Conditions**

| Date                | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|---------------------|------------------|--------------|----------------|
| January 13-14, 2025 | 21               | 41           | 101.2          |

**Table 6-3: Modulated Bandwidth Test Data – U-NII 1 – 802.11a**

| Channel (#) | Frequency (MHz) | 99% Bandwidth (MHz) |
|-------------|-----------------|---------------------|
| 36          | 5180            | 17.628              |
| 40          | 5200            | 18.846              |
| 48          | 5240            | 18.269              |

**Table 6-4: Modulated Bandwidth Test Data – U-NII 3 – 802.11a**

| Channel (#) | Frequency (MHz) | 6 dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|-------------|-----------------|----------------------|---------------------|
| 149         | 5745            | 15.004               | 16.991              |
| 157         | 5785            | 15.064               | 16.759              |
| 165         | 5825            | 15.114               | 16.664              |

**Table 6-5: Modulated Bandwidth Test Data – U-NII 1 – 802.11a**

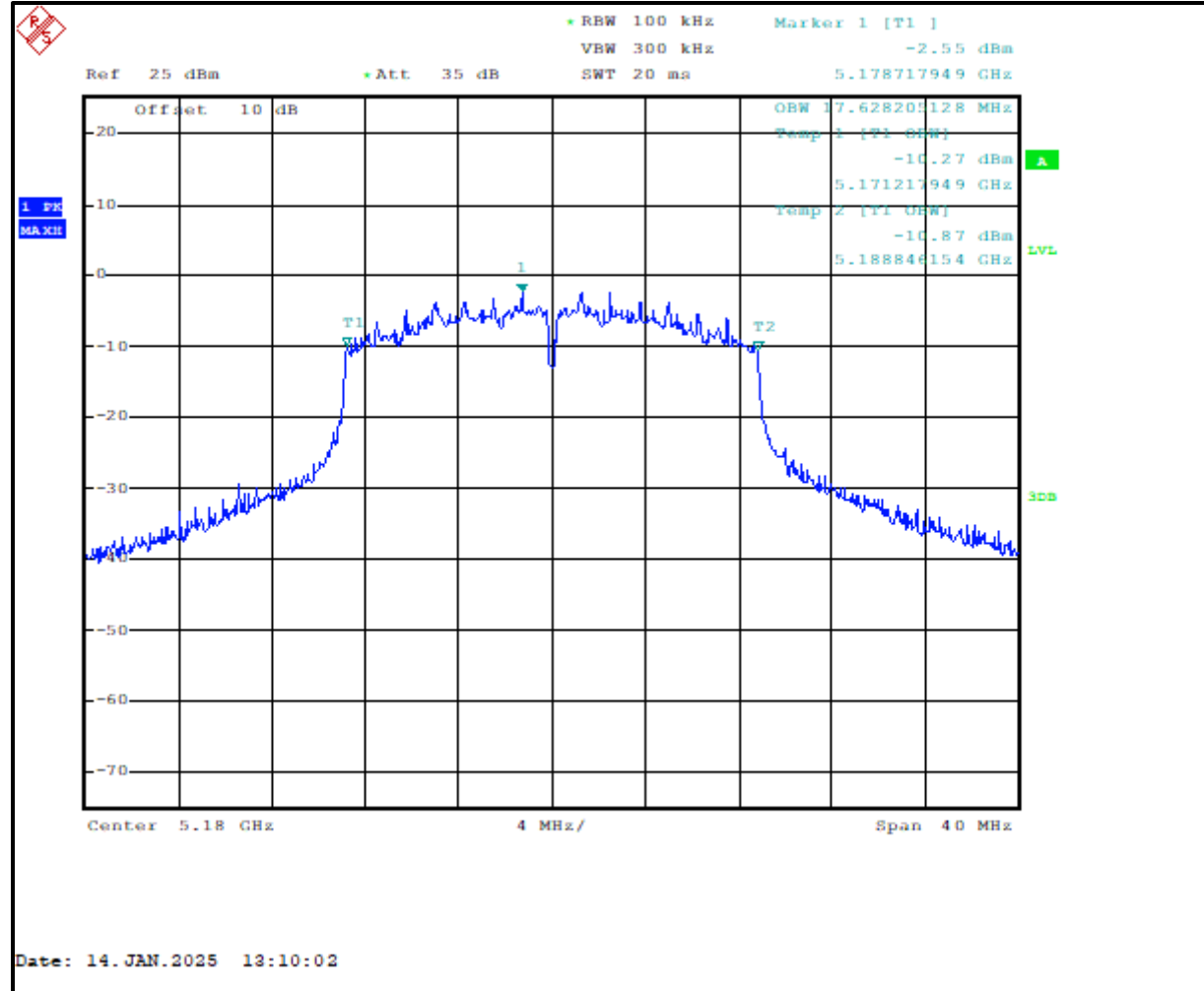
| Channel (#) | Frequency (MHz) | 99% Bandwidth (MHz) |
|-------------|-----------------|---------------------|
| 38          | 5190            | 36.4                |
| 46          | 5230            | 36.1                |

**Table 6-6: Modulated Bandwidth Test Data – U-NII 3 – 802.11a**

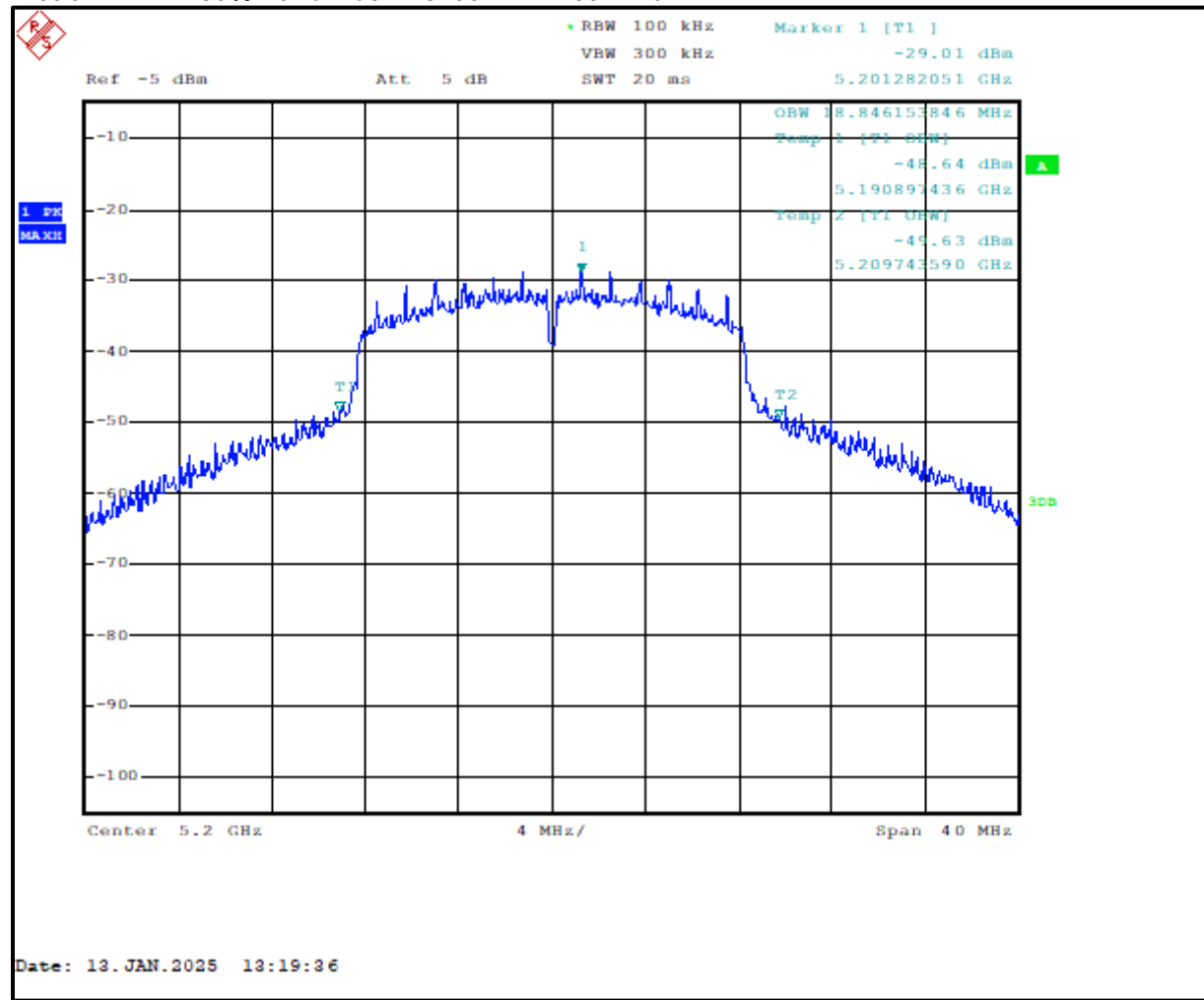
| Channel (#) | Frequency (MHz) | 6 dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|-------------|-----------------|----------------------|---------------------|
| 151         | 5755            | 35.4                 | 36.1                |
| 159         | 5815            | 35.4                 | 36.2                |

### 6.3 Bandwidth Plots – U-NII 1

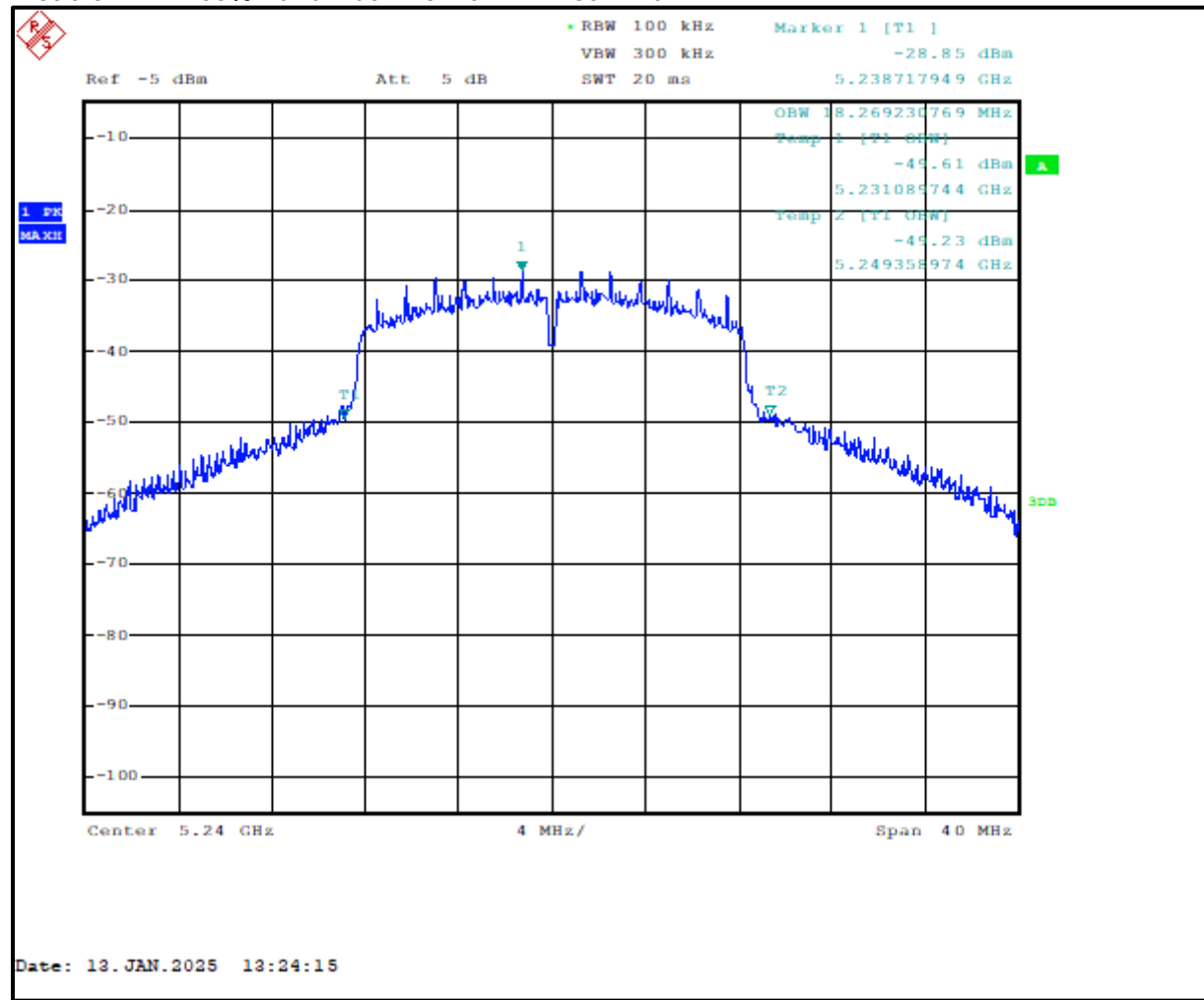
Plot 6-1: 99% Bandwidth – 5180 MHz – 802.11a



Plot 6-2: 99% Bandwidth – 5200 MHz – 802.11a

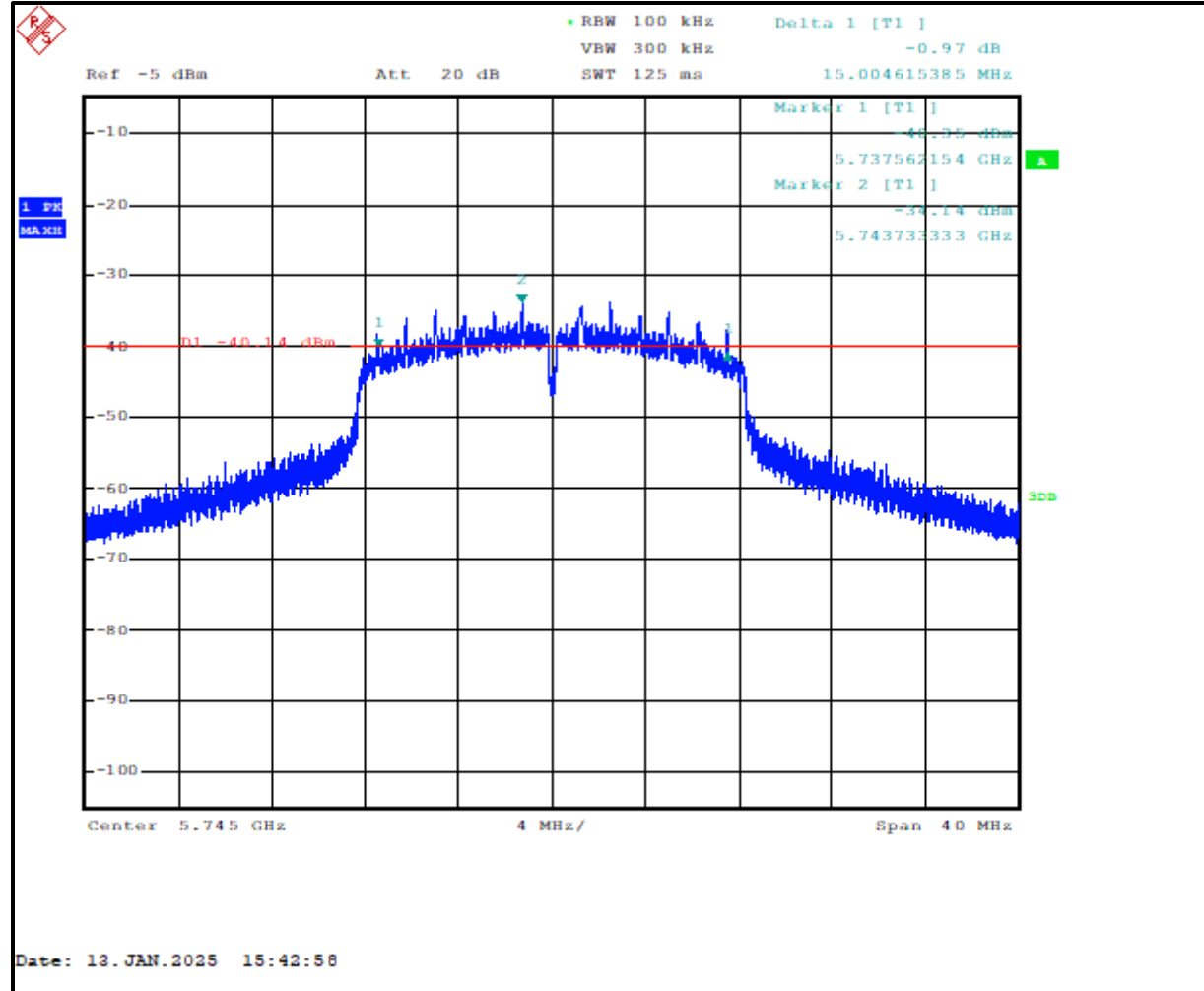


Plot 6-3: 99% Bandwidth – 5240 MHz – 802.11a

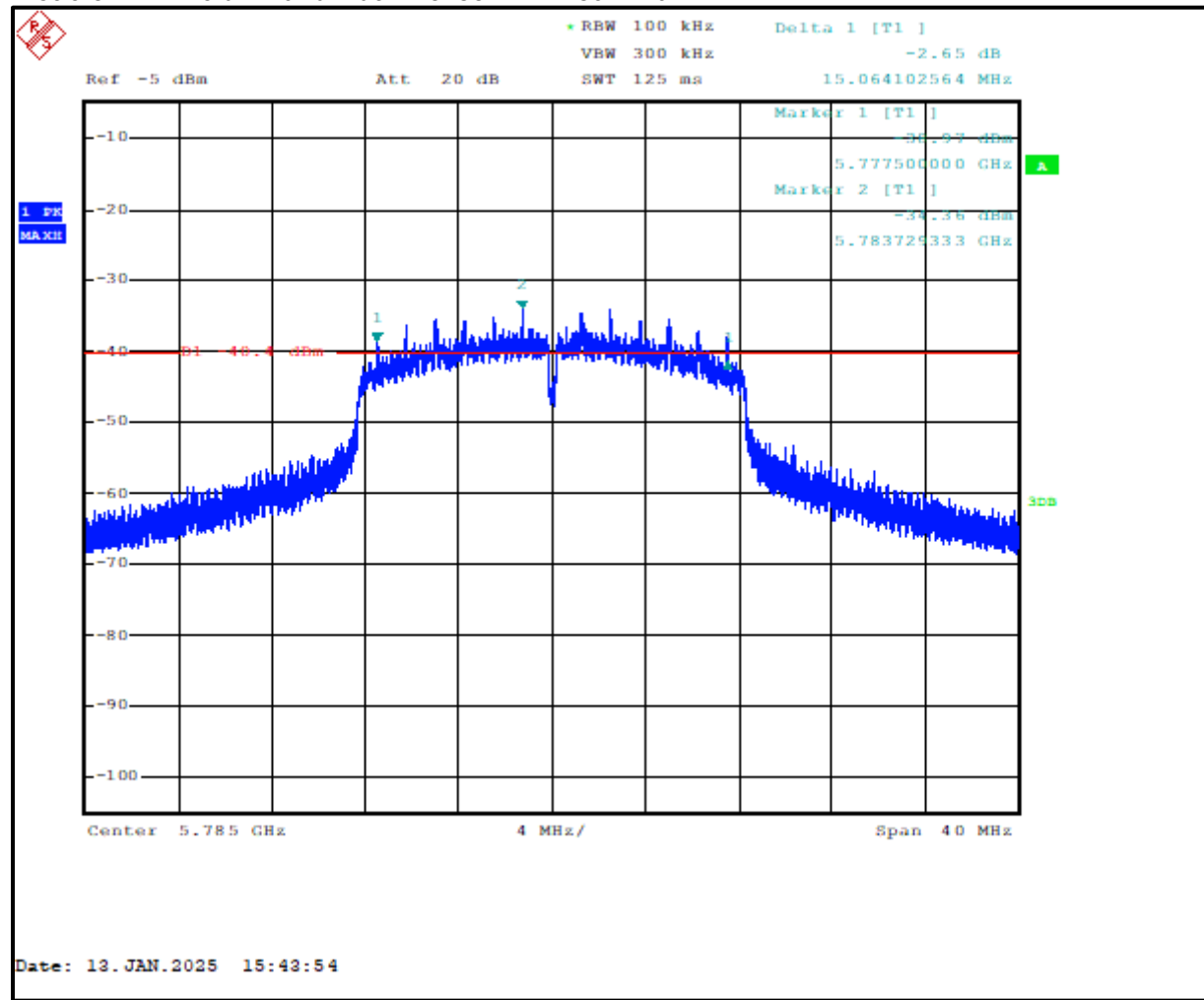


#### 6.4 Bandwidth Plots – U-NII 3

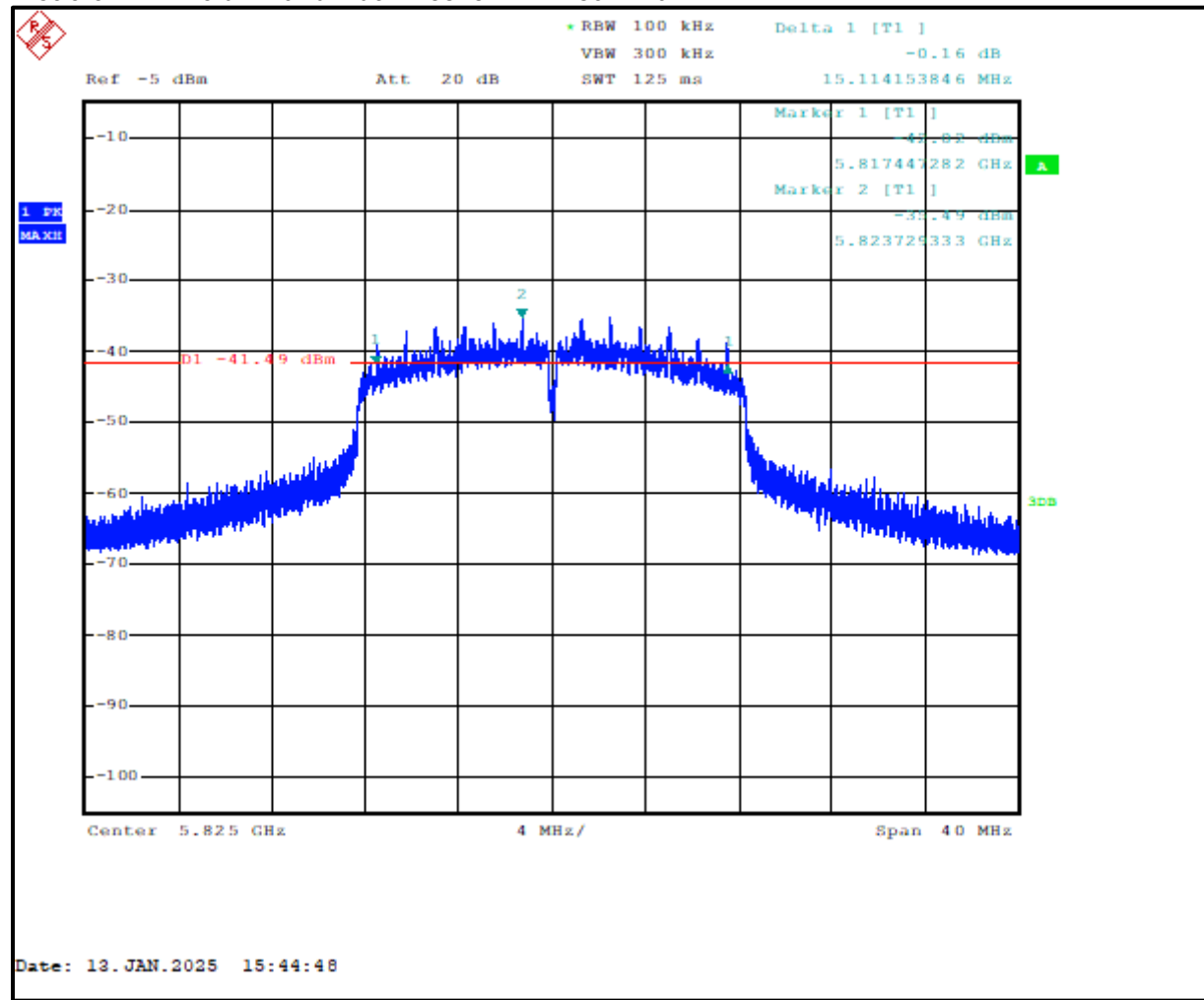
Plot 6-4: 6 dB Bandwidth – 5745 MHz – 802.11a



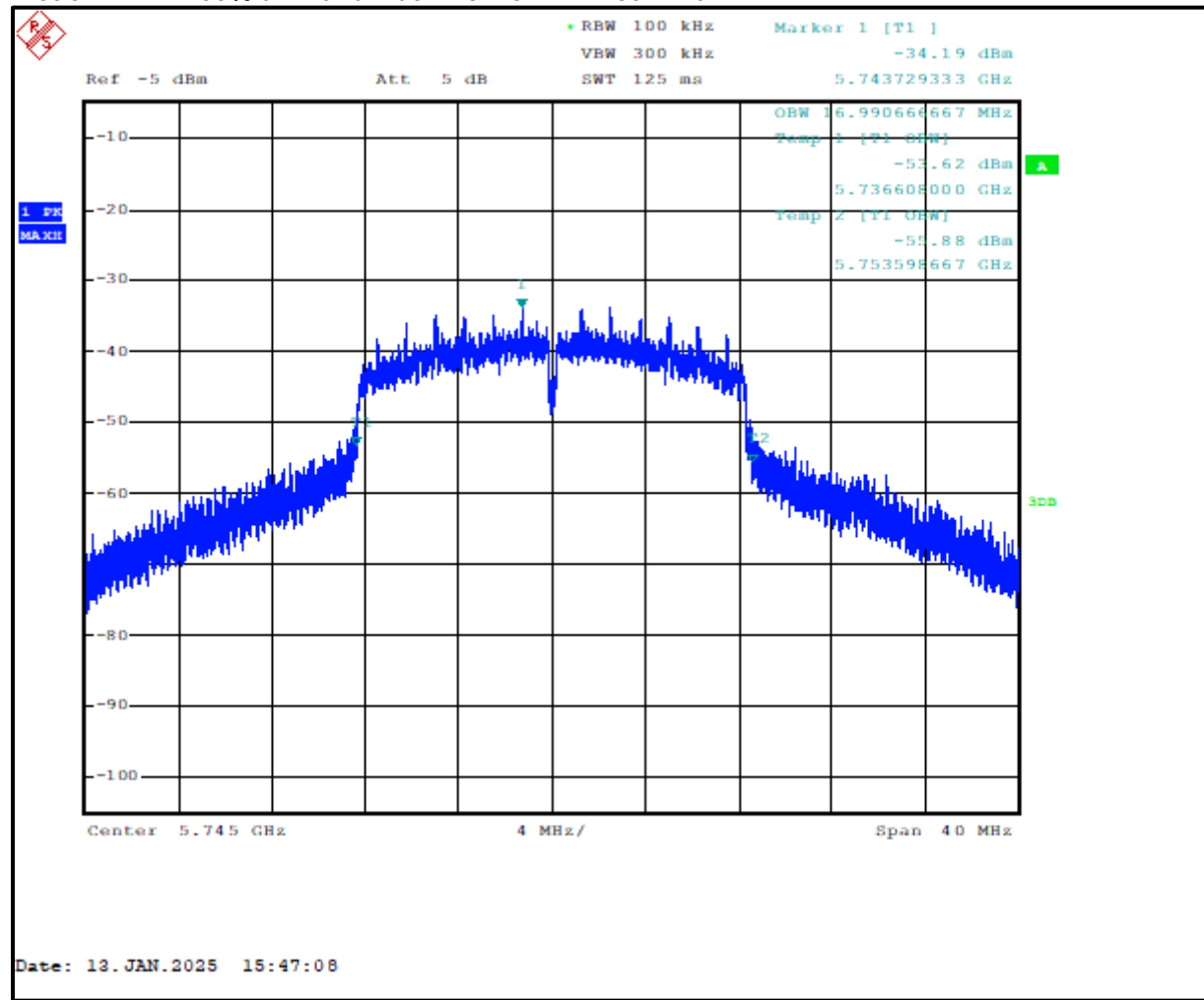
Plot 6-5: 6 dB Bandwidth – 5785 MHz – 802.11a



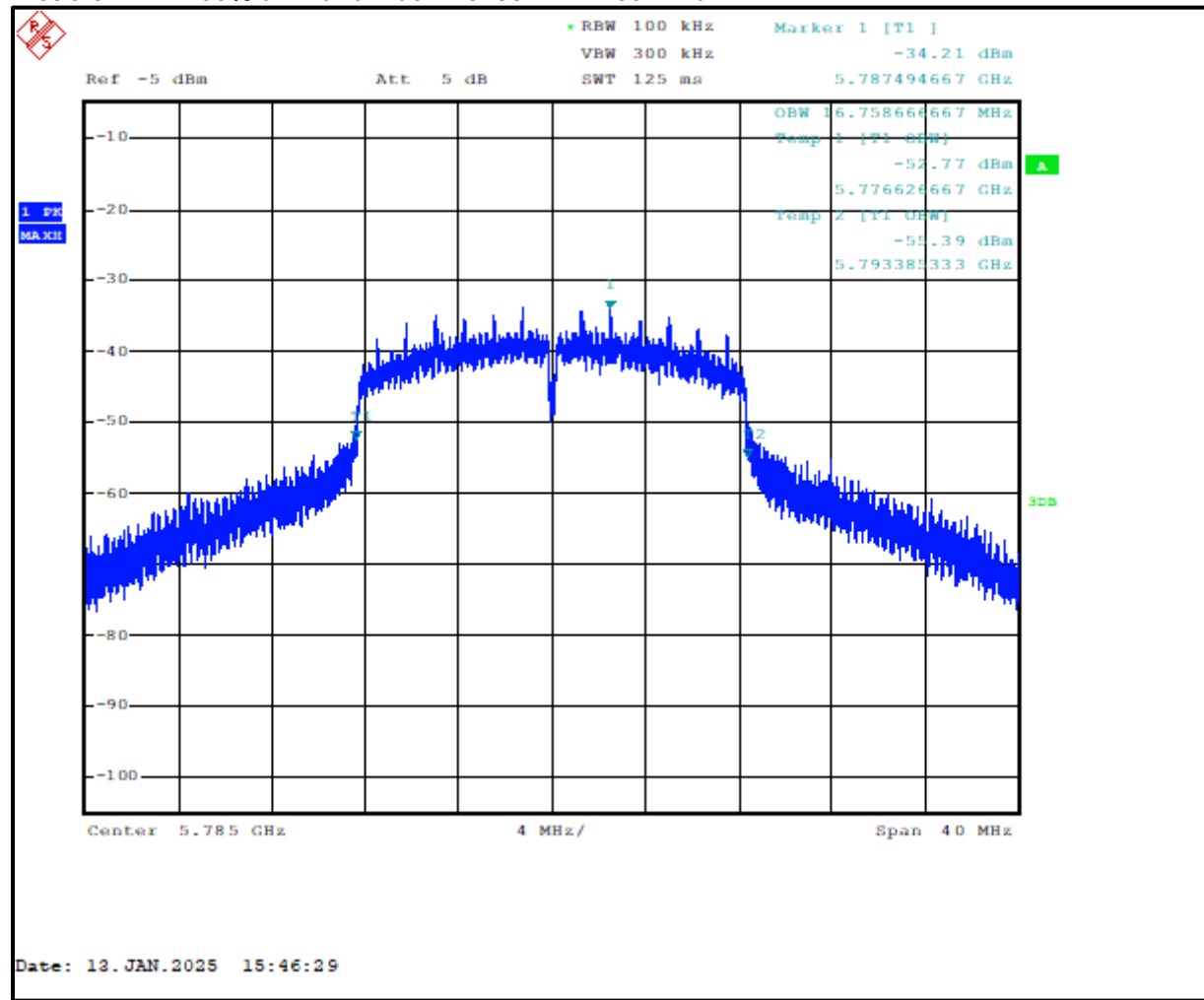
Plot 6-6: 6 dB Bandwidth – 5825 MHz – 802.11a



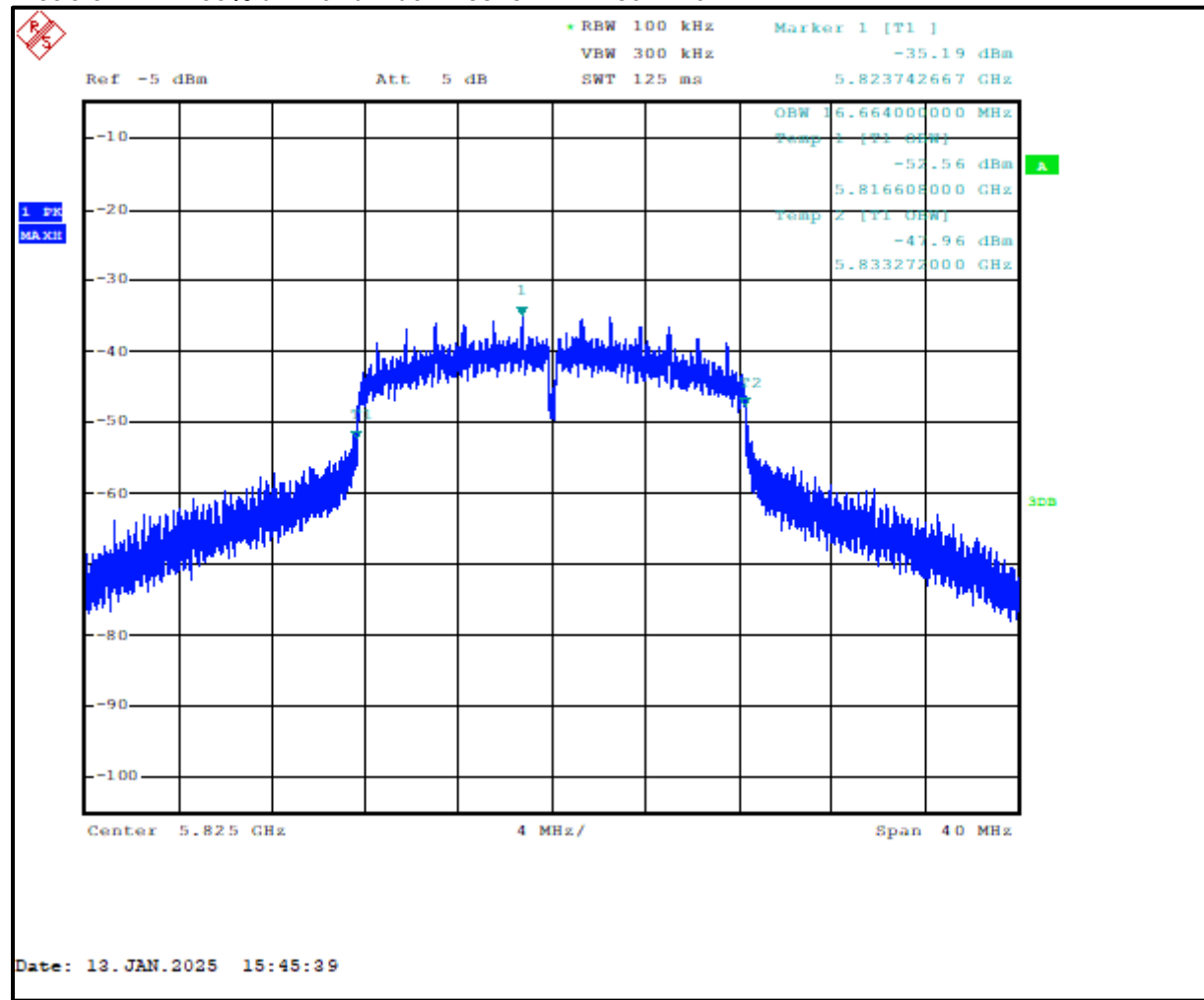
Plot 6-7: 99% dB Bandwidth – 5745 MHz – 802.11a



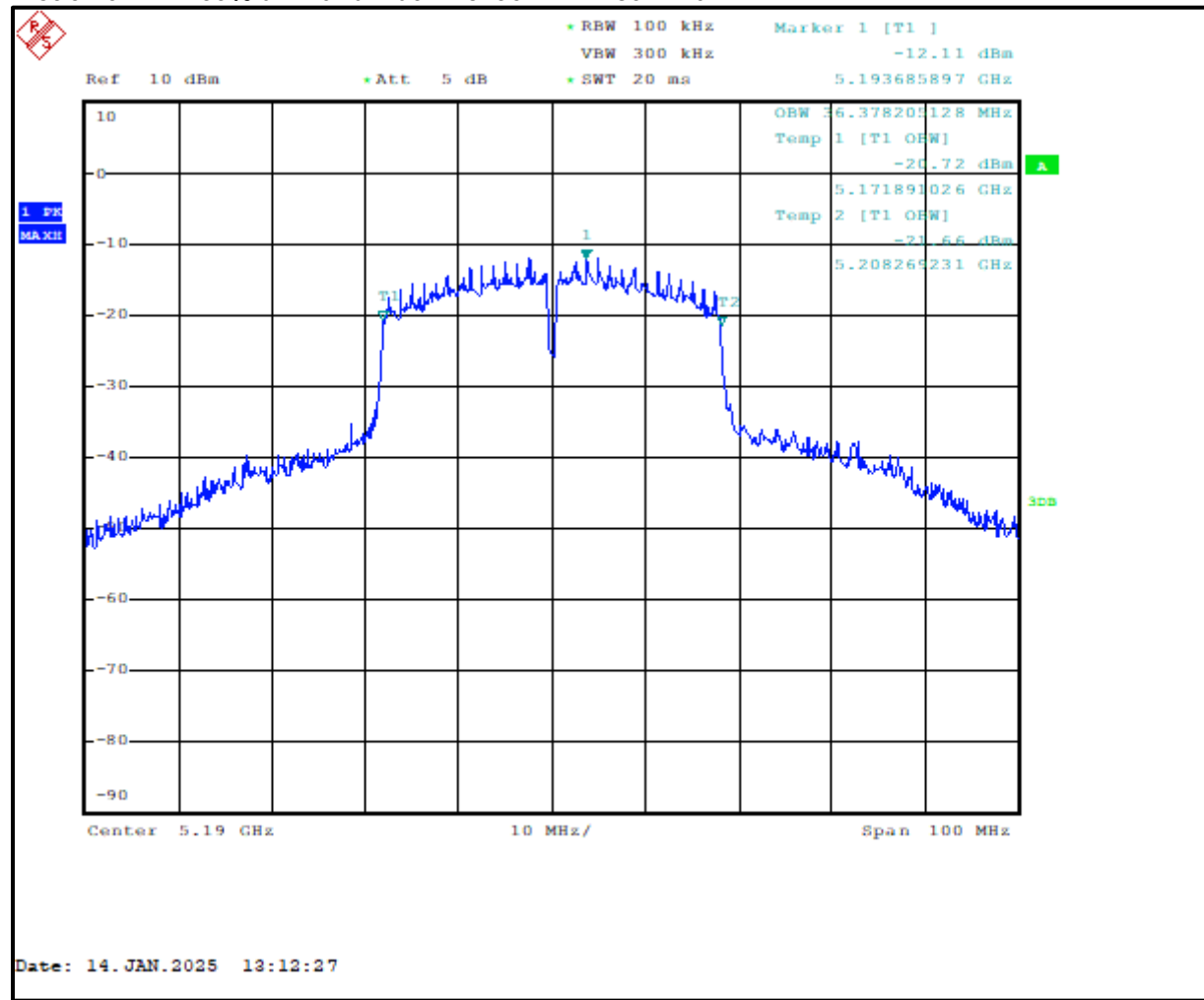
Plot 6-8: 99% dB Bandwidth – 5785 MHz – 802.11a



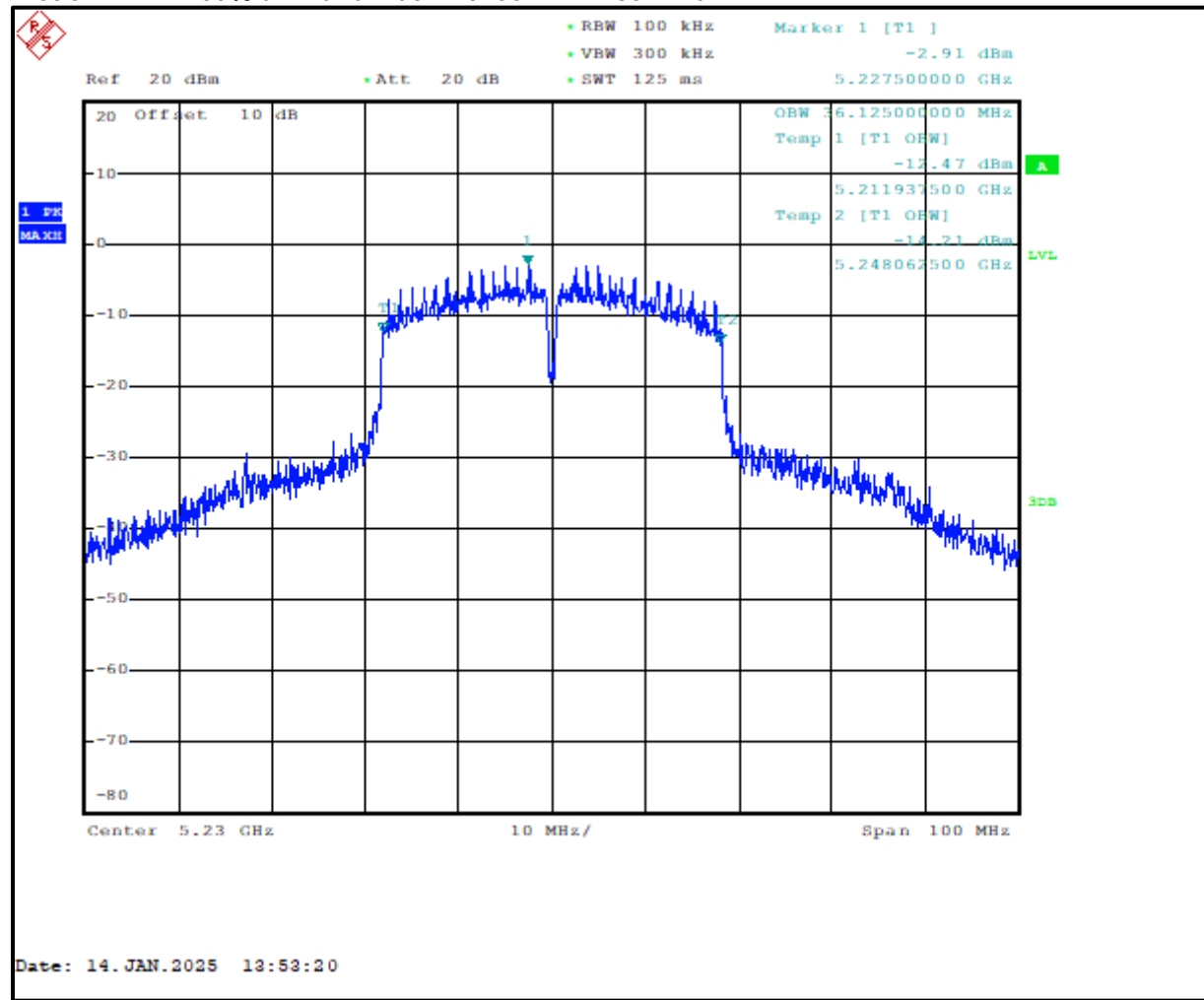
Plot 6-9: 99% dB Bandwidth – 5825 MHz – 802.11a



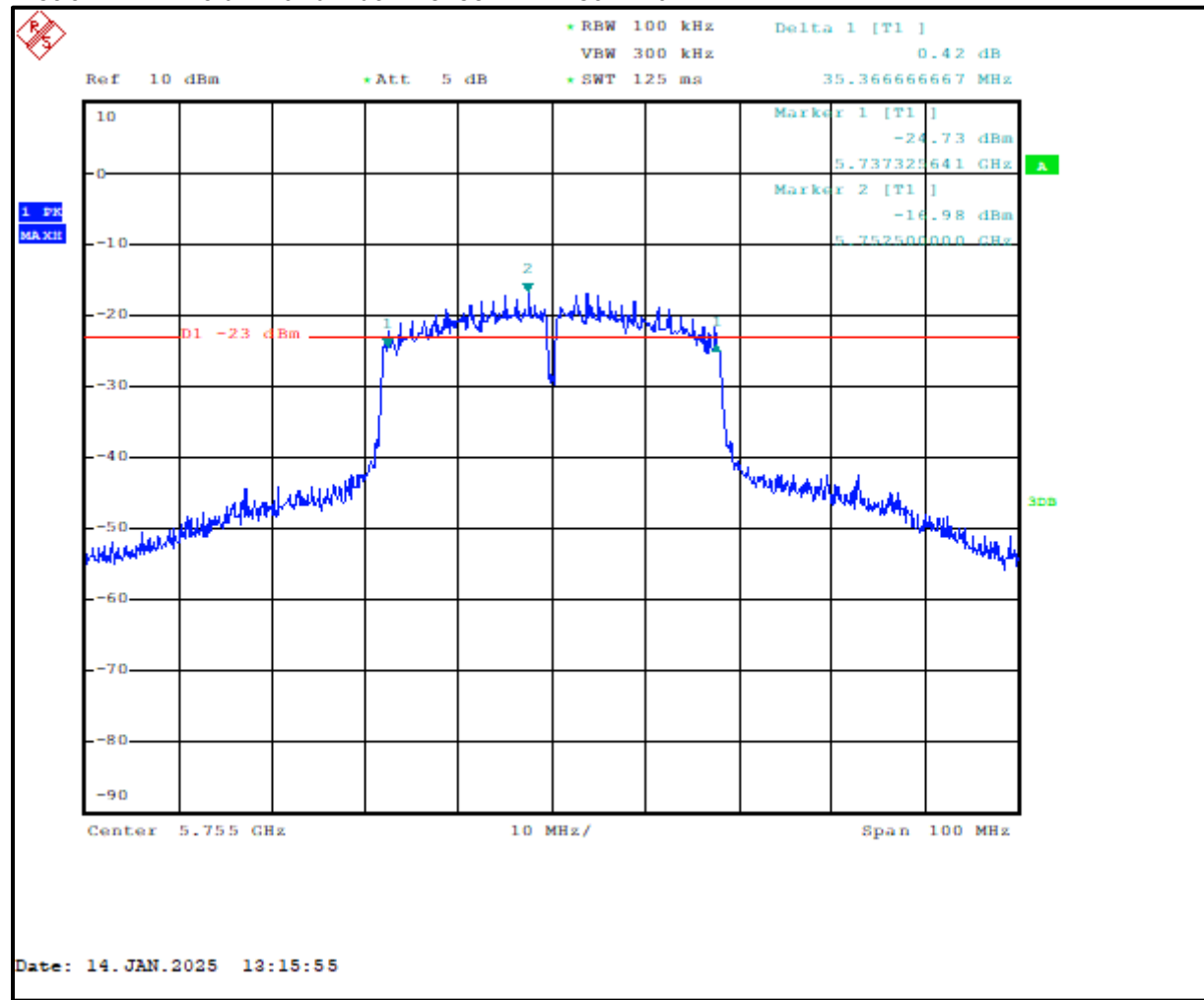
Plot 6-10: 99% dB Bandwidth – 5190 MHz – 802.11a



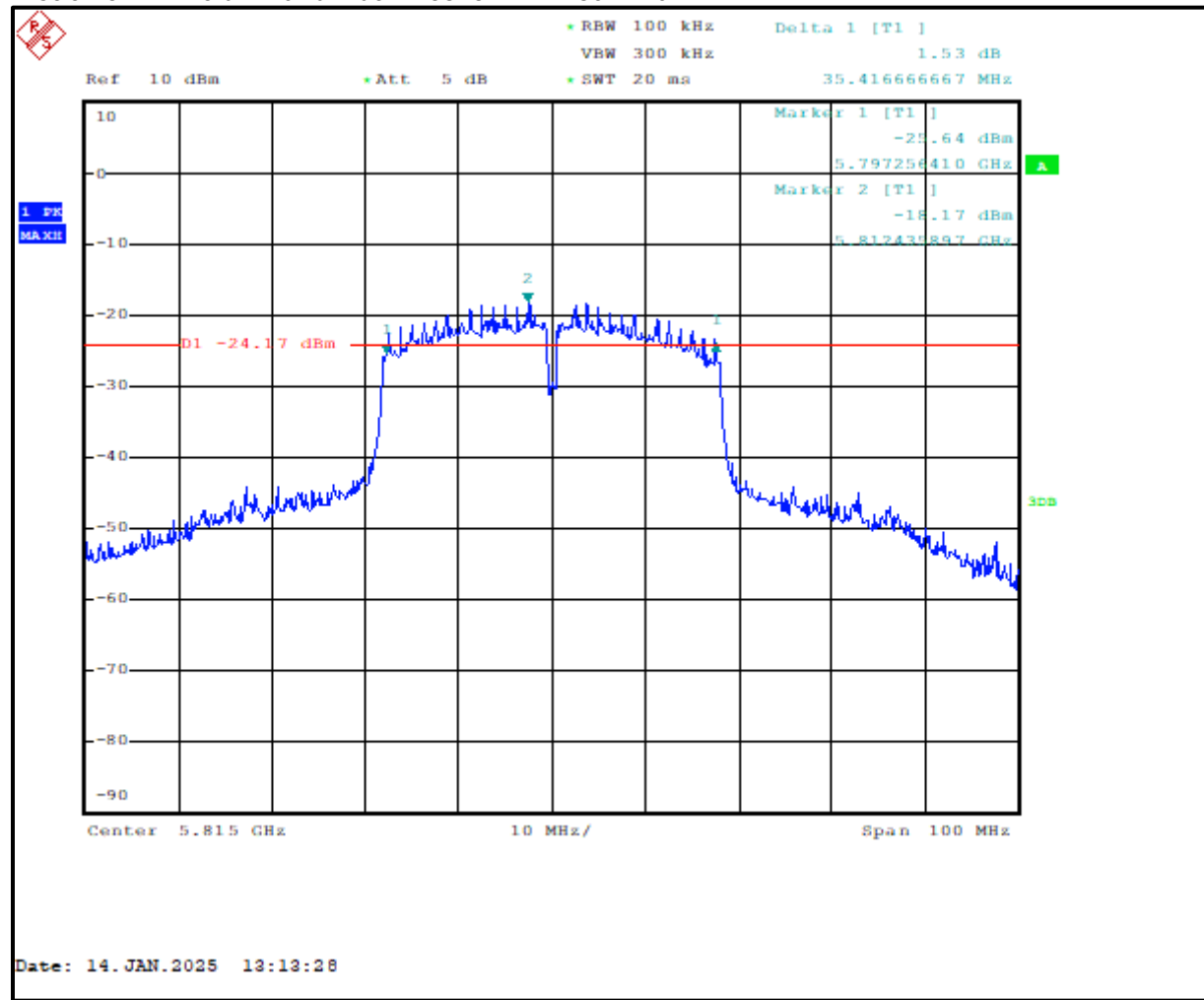
Plot 6-11: 99% dB Bandwidth – 5230 MHz – 802.11a



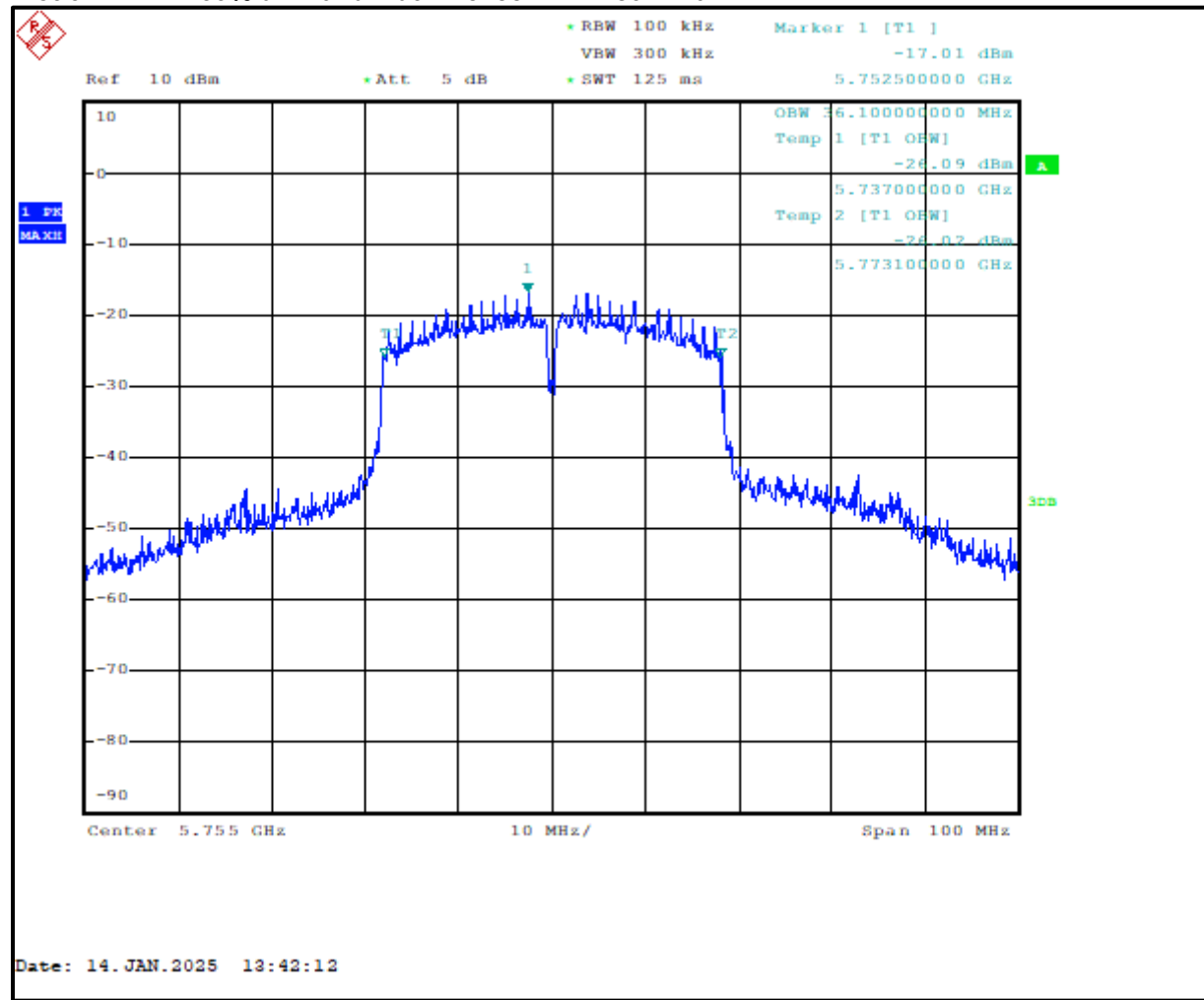
Plot 6-12: 6 dB Bandwidth – 5755 MHz – 802.11a



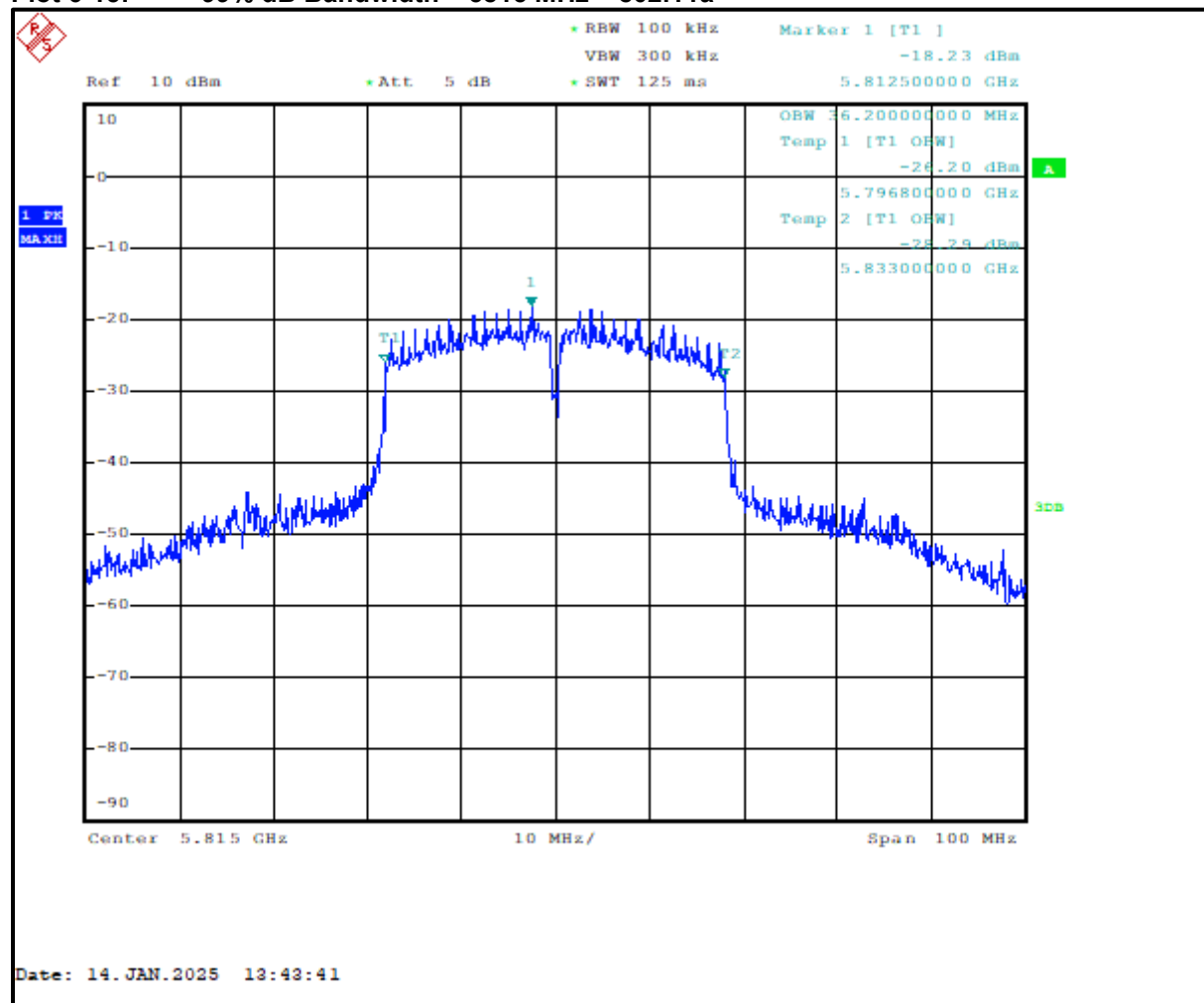
Plot 6-13: 6 dB Bandwidth – 5815 MHz – 802.11a



Plot 6-14: 99% dB Bandwidth – 5755 MHz – 802.11a



**Plot 6-15: 99% dB Bandwidth – 5815 MHz – 802.11a**



Measurement uncertainty:  $\pm 1 \times 10^{-6}$  Hz. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor k=2.

**Test Personnel:**

Daniel W. Baltzell  
Test Engineer

*Daniel W. Baltzell*

Signature

January 13-14, 2025  
Dates of Test

## 7 Power Spectral Density – FCC 15.407(a1/3); RSS-247 6.2

### 7.1 Power Spectral Density Test Procedure

The power spectral density per FCC 15.407(a)(1)(3) was measured using a 50-ohm spectrum analyzer. The spectral lines were resolved for the modulated carriers. These levels are below the limits. See the power spectral density table and plots.

**Table 7-1: Power Spectral Density Test Equipment**

| RTL Asset # | Manufacturer    | Model | Part Type         | Serial Number | Calibration Due Date |
|-------------|-----------------|-------|-------------------|---------------|----------------------|
| 901773      | Rohde & Schwarz | FSW   | Spectrum Analyzer | 101021        | 02/02/2027           |

### 7.2 Power Spectral Density Test Results

**Table 7-2: Environmental Conditions**

| Date             | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|------------------|------------------|--------------|----------------|
| January 14, 2025 | 21.2             | 41           | 101.2          |

**Table 7-3: Power Spectral Density Test Data – U-NII 1 – 802.11a**

| Frequency (MHz) | PSD (dBm) | Limit (dBm) | Margin (dB) | Result (Pass / Fail) |
|-----------------|-----------|-------------|-------------|----------------------|
| 5180            | 6.4       | 17.0        | -10.6       | Pass                 |
| 5200            | 6.7       | 17.0        | -10.3       | Pass                 |
| 5240            | 7.0       | 17.0        | -10.0       | Pass                 |

**Table 7-4: Power Spectral Density Test Data – U-NII 3 – 802.11a**

| Frequency (MHz) | PSD (dBm) | Limit (dBm) | Margin (dB) | Result (Pass / Fail) |
|-----------------|-----------|-------------|-------------|----------------------|
| 5745            | -2.2      | 30.0        | -32.2       | Pass                 |
| 5785            | -2.5      | 30.0        | -32.5       | Pass                 |
| 5825            | -1.9      | 30.0        | -31.9       | Pass                 |

**Table 7-5: Power Spectral Density Test Data – U-NII 1 – 802.11a**

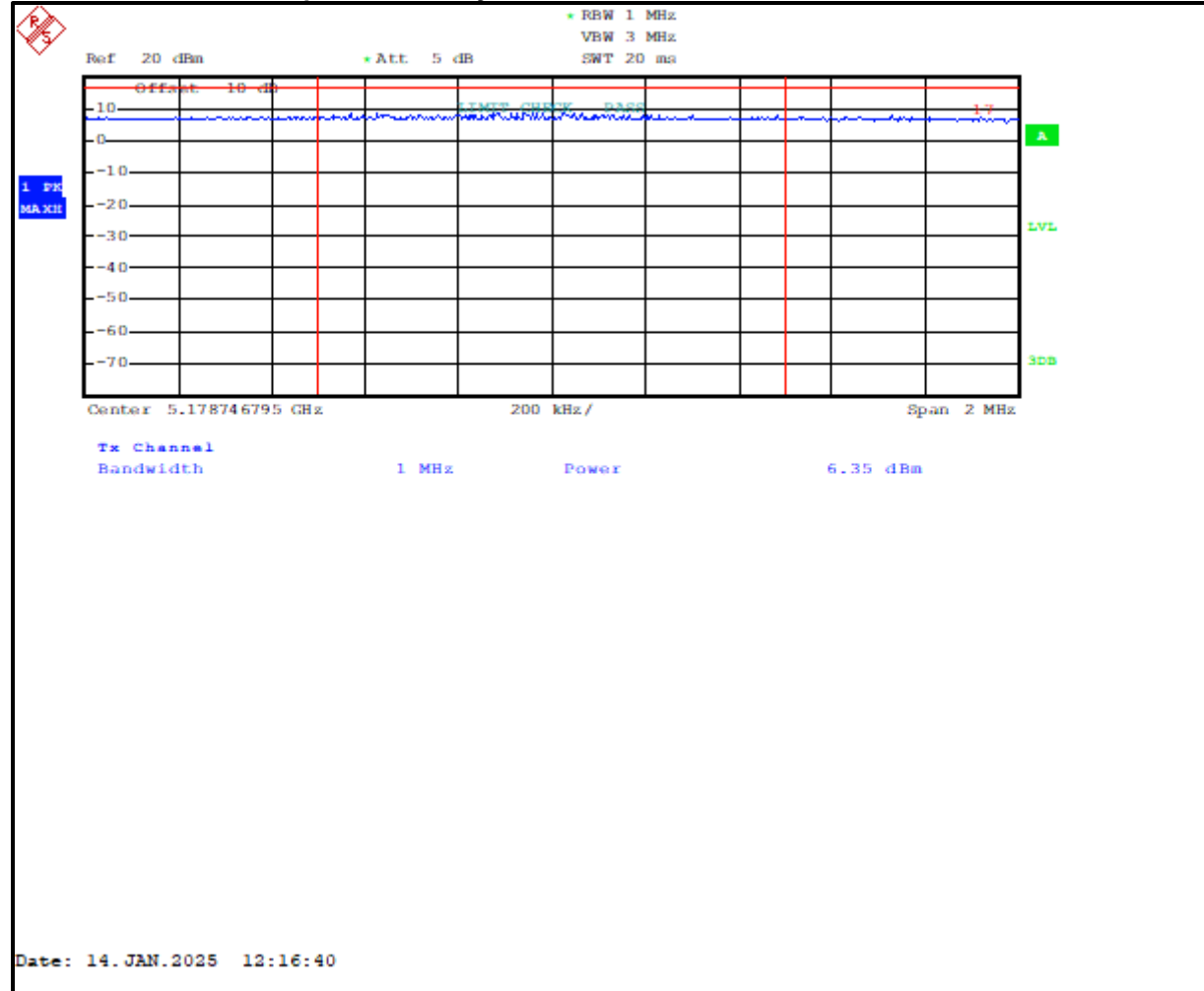
| Frequency (MHz) | PSD (dBm) | Limit (dBm) | Margin (dB) | Result (Pass / Fail) |
|-----------------|-----------|-------------|-------------|----------------------|
| 5180            | 5.0       | 17.0        | -12.0       | Pass                 |
| 5230            | 5.0       | 17.0        | -12.0       | Pass                 |

**Table 7-6: Power Spectral Density Test Data – U-NII 3 – 802.11a**

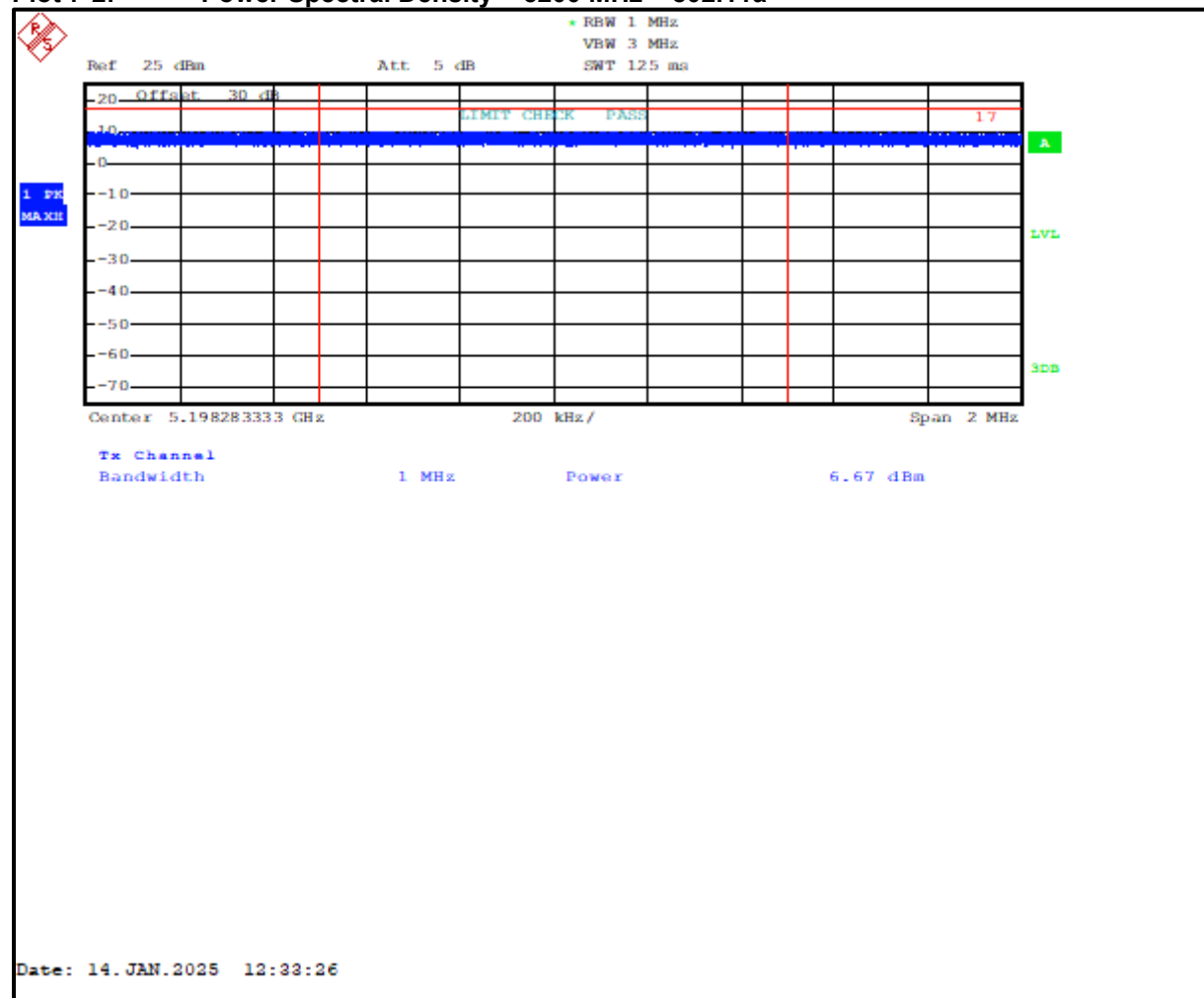
| Frequency (MHz) | PSD (dBm) | Limit (dBm) | Margin (dB) | Result (Pass / Fail) |
|-----------------|-----------|-------------|-------------|----------------------|
| 5755            | -0.2      | 30.0        | -30.2       | Pass                 |
| 5815            | -1.2      | 30.0        | -31.2       | Pass                 |

### 7.3 Power Spectral Density Plots – U-NII 1

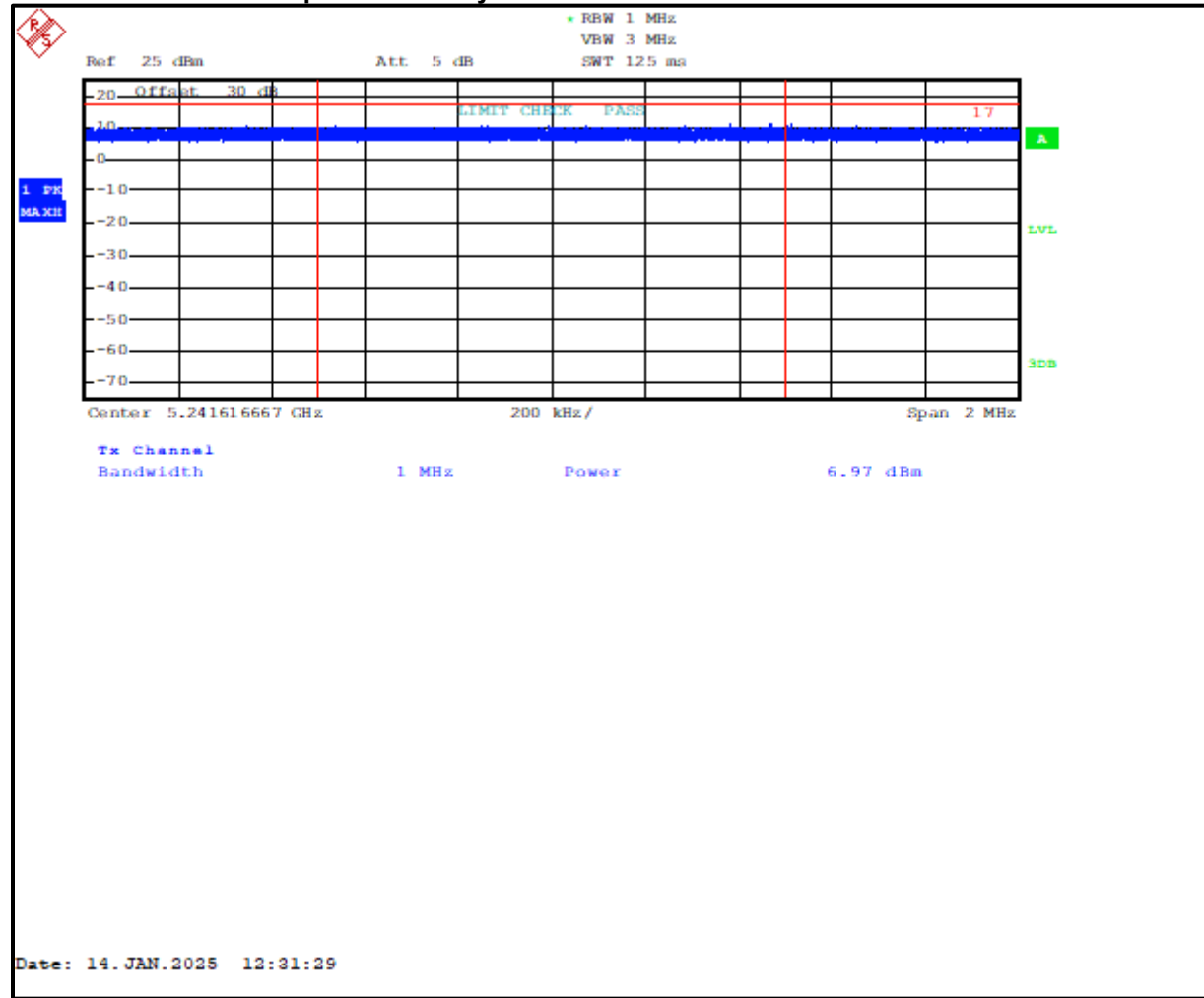
Plot 7-1: Power Spectral Density – 5180 MHz – 802.11a



Client: L3Harris Technologies  
Model: XL-85M UHF-L  
Standards: FCC 15.407/ISED RSS-247  
ID's: FCC ID: OWDTR-0177-E/IC: 3636B-0177  
Report #: 2024073NII

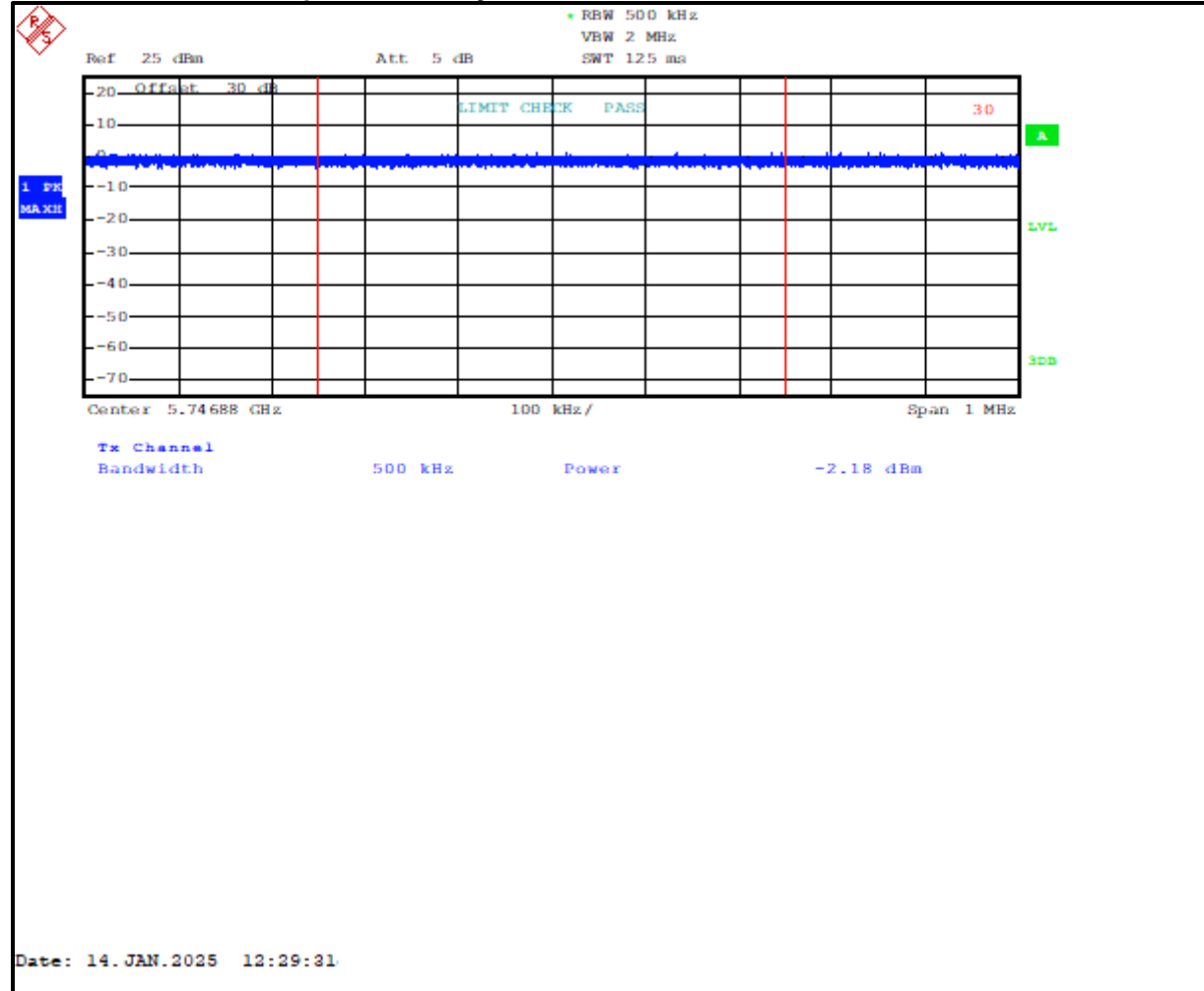


Plot 7-3: Power Spectral Density – 5240 MHz – 802.11a

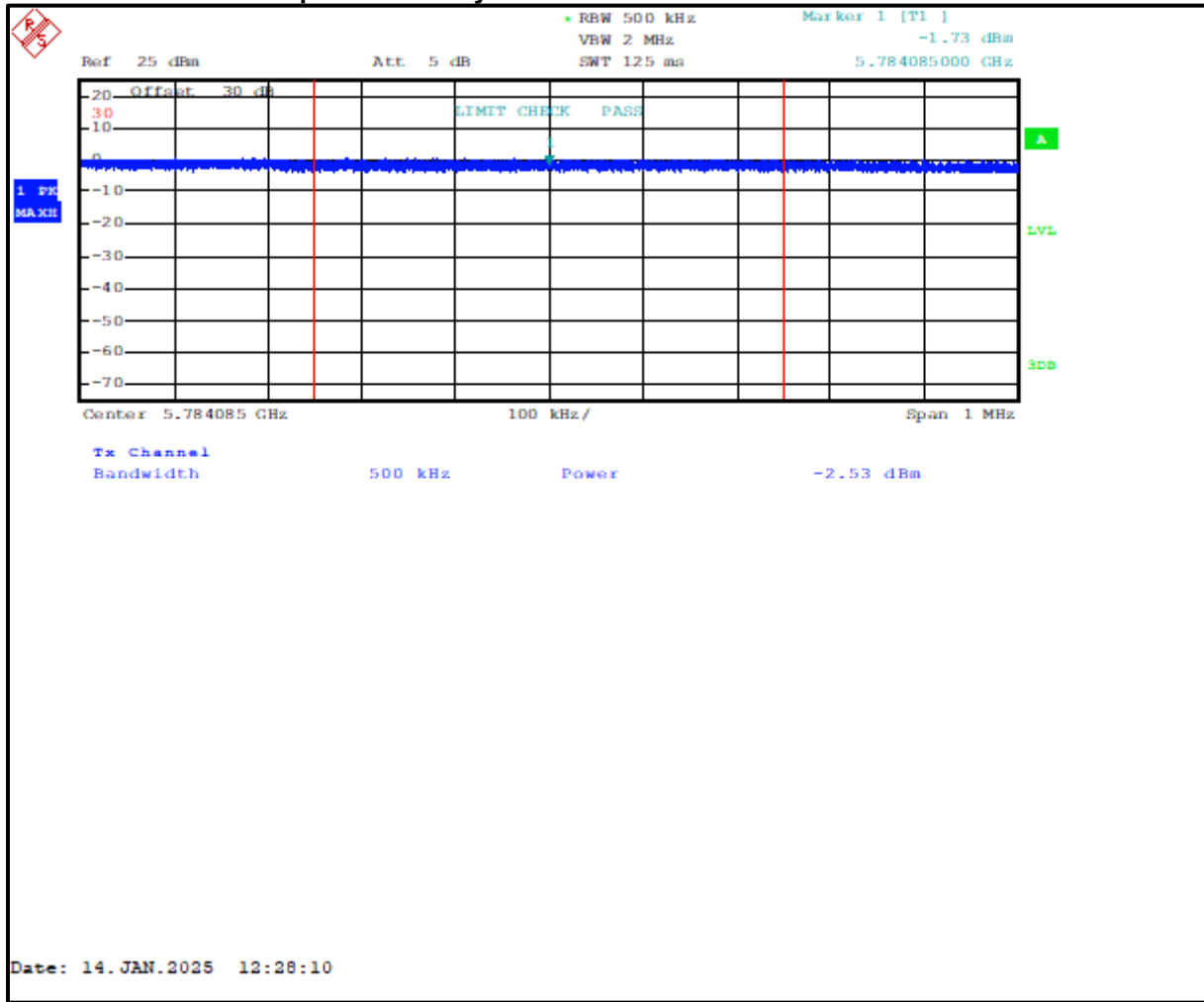


#### 7.4 Power Spectral Density Plots – U-NII 3

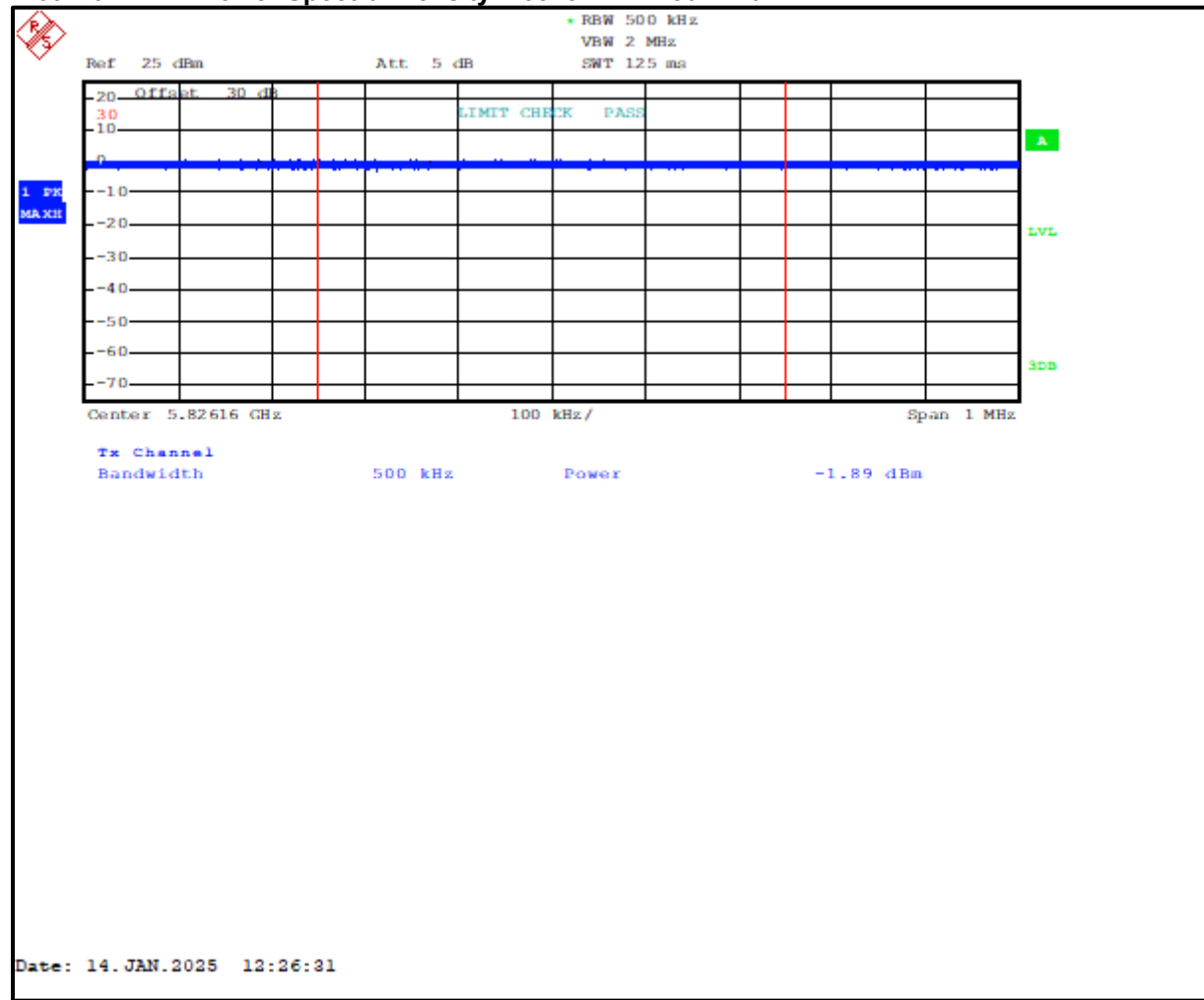
Plot 7-4: Power Spectral Density – 5745 MHz – 802.11a



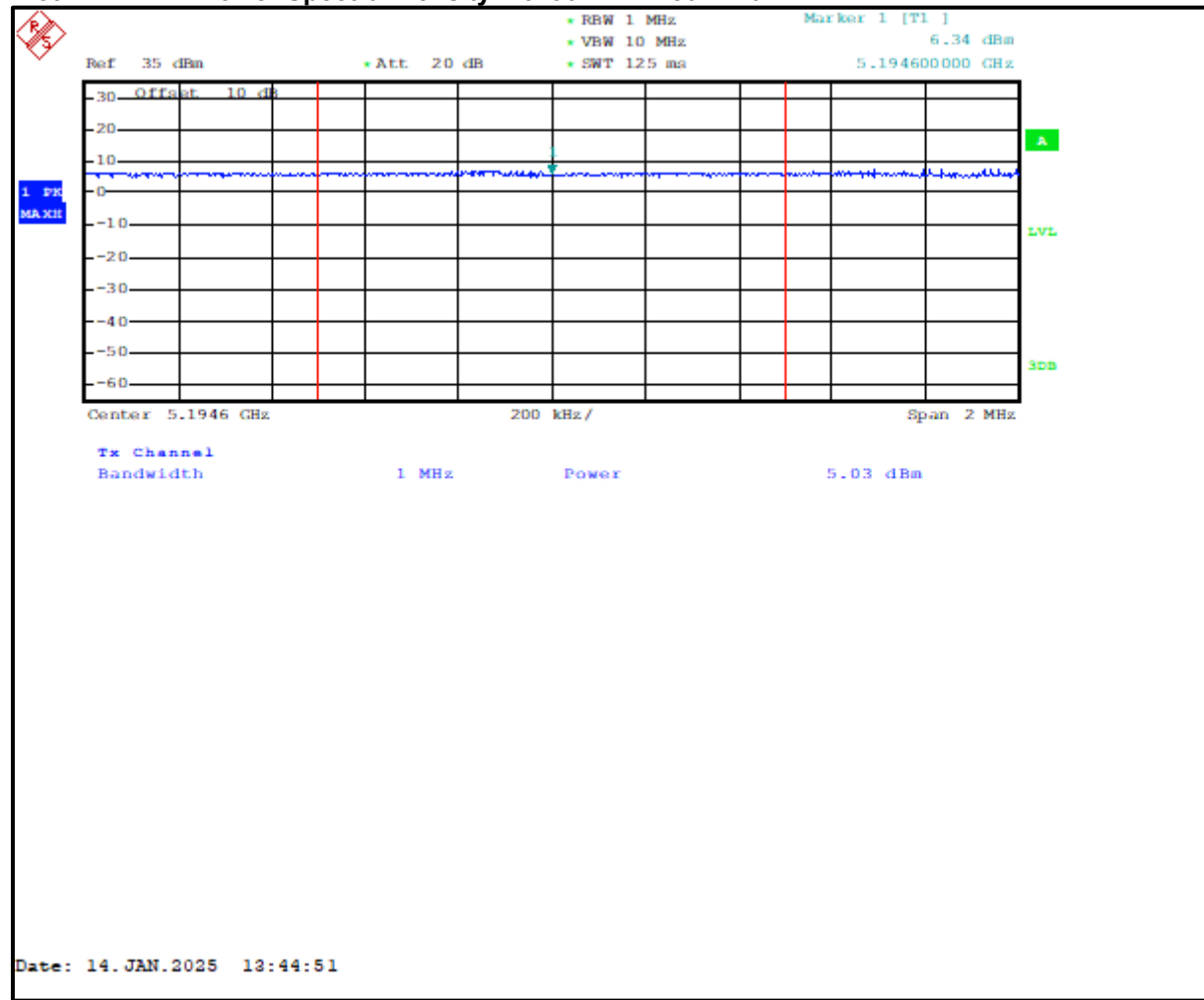
**Plot 7-5: Power Spectral Density – 5785 MHz – 802.11a**



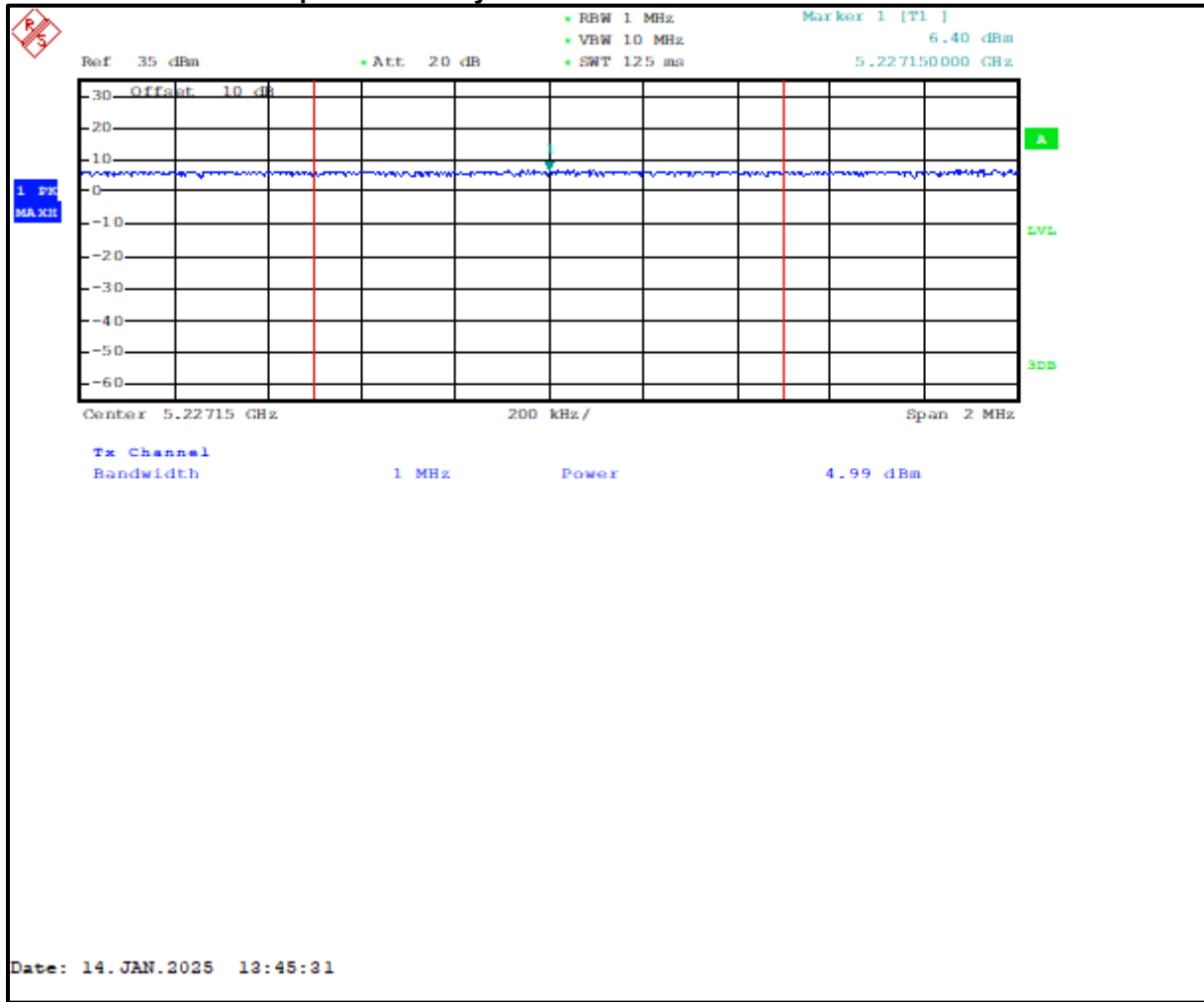
Plot 7-6: Power Spectral Density – 5825 MHz – 802.11a



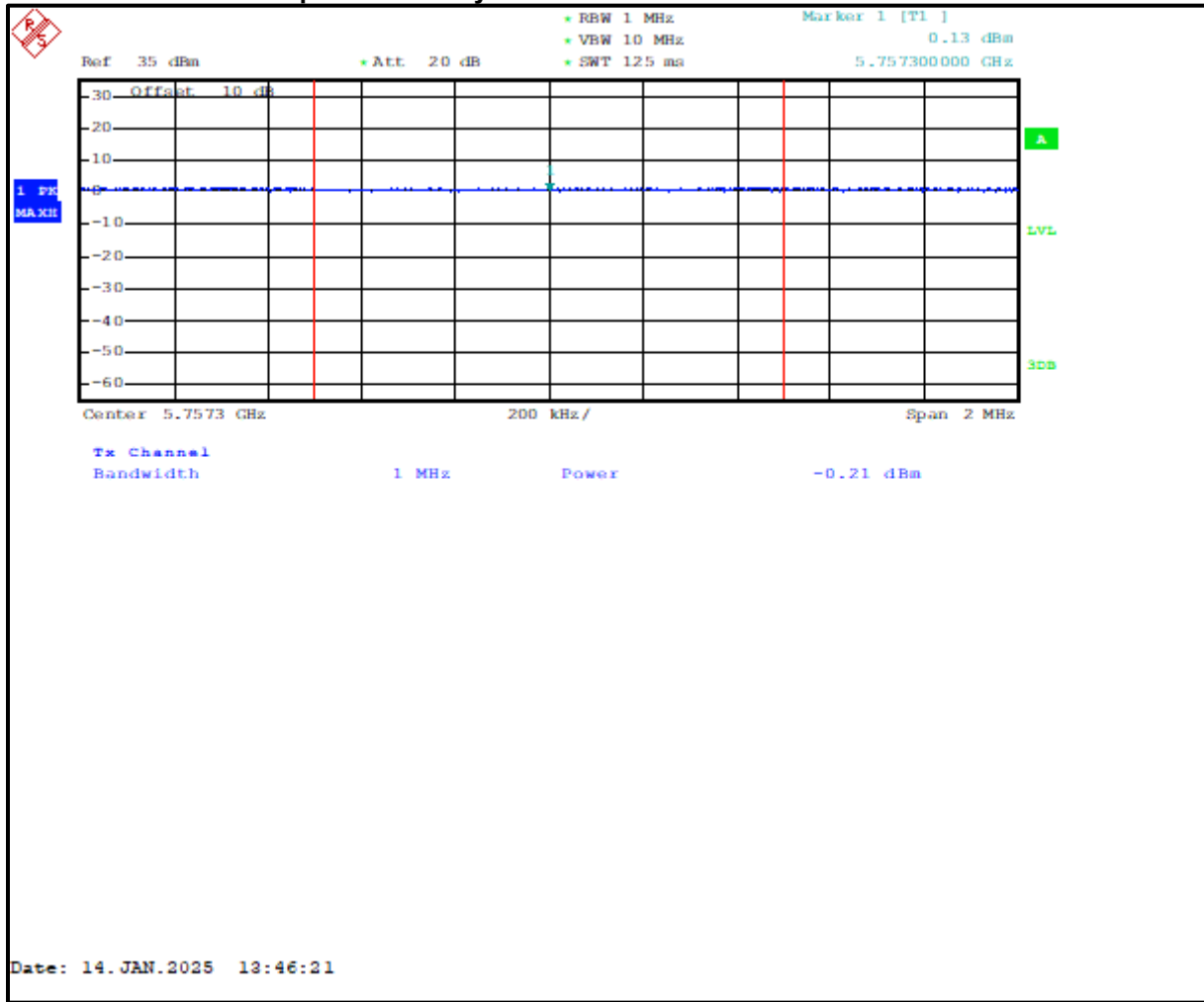
**Plot 7-7: Power Spectral Density – 5190 MHz – 802.11a**



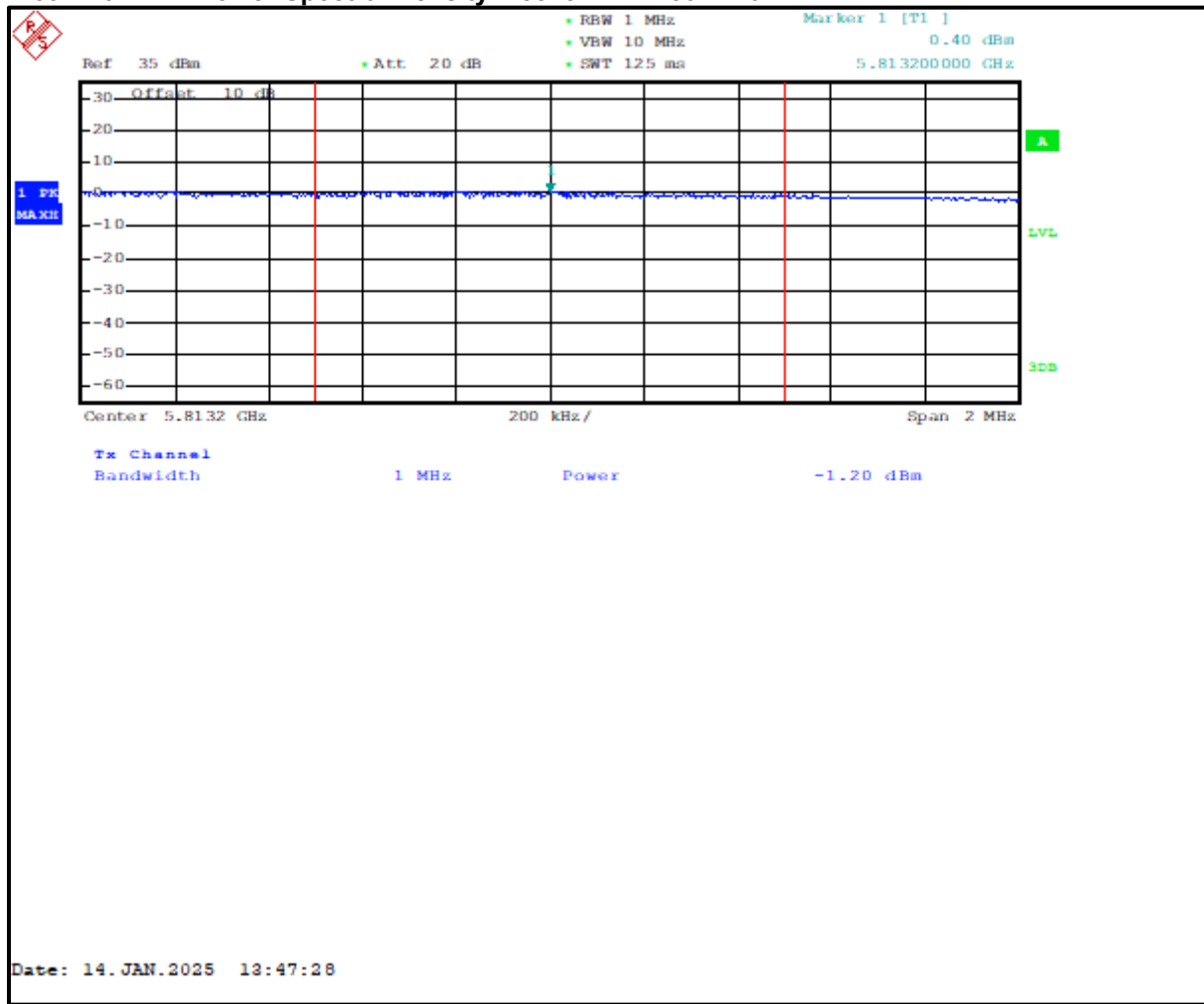
**Plot 7-8: Power Spectral Density – 5230 MHz – 802.11a**



**Plot 7-9: Power Spectral Density – 5755 MHz – 802.11a**



**Plot 7-10: Power Spectral Density – 5815 MHz – 802.11a**



Measurement uncertainty:  $\pm 0.5$  dB. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor  $k=2$ .

**Results: Pass**

**Test Personnel:**

Daniel W. Baltzell  
Test Engineer

Signature

January 14, 2025  
Date of Test

## 8 Frequency Stability – FCC 15.407(g); RSS-Gen 6.11

### 8.1 Frequency Stability Test Procedure

The EUT was placed inside the temperature chamber and supplied by nominal 13.8 VDC. The EUT was connected to an analyzer which was located outside of the chamber. The temperature was set to the lowest level of -30.0°C and the EUT was allowed to stabilize with power off for a period of 1 hour. The EUT was then powered up and the frequency was measured. This was continued at +20.0°C and +50.0°C. The chamber was allowed to stabilize between measurements for approximately 30 minutes. At +20.0°C, the EUT supply voltage was adjusted to 85% (11.73 VDC) and 115% (15.87 VDC) of the nominal voltage, and the frequency was recorded.

**Table 8-1: Frequency Stability Test Equipment**

| RTL Asset # | Manufacturer             | Model        | Part Type             | Serial Number | Calibration Due Date |
|-------------|--------------------------|--------------|-----------------------|---------------|----------------------|
| 901627      | Amprobe                  | 34XR-A       | DMM                   | 13041385A     | 02/21/2027           |
| 901672      | Rohde & Schwarz          | FSEM30       | Spectrum Analyzer     | FSEM30        | 04/25/2027           |
| 901724      | API Weinschel, Inc.      | 48-40-34     | 40 dB 100W Attenuator | CJ8921        | 09/09/2027           |
| 901124      | Alinco                   | DM-33MVT 32A | Power Supply          | 1638          | Not Required         |
| 900946      | Tenney Engineering, Inc. | TH65         | Temperature Chamber   | 11380         | 04/07/2027           |

### 8.2 Frequency Stability Test Results

**Table 8-2: Environmental Conditions**

| Date             | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|------------------|------------------|--------------|----------------|
| January 15, 2025 | 21.3             | 40           | 101.4          |

**Table 8-3: Frequency Stability at Extreme Temperatures**

| Temperature (°C)  | Measured Frequency (MHz) | ppm   |
|-------------------|--------------------------|-------|
| -30.0             | 5199.997837              | -0.42 |
| +20.0 (reference) | 5200.002804              | 0.54  |
| +60.0             | 5200.003686              | 0.71  |

**Table 8-4: Frequency Stability at Extreme Voltage Levels**

| Voltage (VDC)     | Measured Frequency (MHz) | ppm  |
|-------------------|--------------------------|------|
| 11.73             | 5200.002564              | 0.49 |
| 13.80 (reference) | 5200.002804              | 0.54 |
| 15.87             | 5200.002885              | 0.55 |

Measurement uncertainty:  $\pm 0.5$  dB. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor  $k=2$ .

**Results: Pass**

Rhein Tech Laboratories, Inc.  
360 Herndon Parkway  
Suite 1400  
Herndon, VA 20170  
<http://www.rheintech.com>

Client: L3Harris Technologies  
Model: XL-85M UHF-L  
Standards: FCC 15.407/ISED RSS-247  
ID's: FCC ID: OWDTR-0177-E/IC: 3636B-0177  
Report #: 2024073NII

**Test Personnel:**

|                    |                                                                                    |                  |
|--------------------|------------------------------------------------------------------------------------|------------------|
| Daniel W. Baltzell |  | January 15, 2025 |
| Test Engineer      | Signature                                                                          | Date of Test     |

**9 AC Conducted Emissions – FCC 15.207; RSS-Gen 8.8**

Device is a mobile 13.8 VDC equipment; AC line conducted emissions measurements are not required.

## 10 Radiated Emissions – FCC 15.209; RSS-247 6.2; RSS-Gen 6.13/7.1

### 10.1 Limits of Radiated Emissions Measurement

| Frequency (MHz) | Field Strength ( $\mu\text{V/m}$ ) | 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.

### 10.2 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 meters above the ground plane. The spectrum was examined from 9 kHz to the 10<sup>th</sup> harmonic of the highest fundamental transmitter frequency (24.8 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.

### 10.3 Field Strength Calculations

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$\begin{aligned} \text{FI (dB}\mu\text{V/m)} &= \text{SAR (dB}\mu\text{V)} + \text{SCF (dB/m)} \\ \text{FI} &= \text{Field Intensity} \\ \text{SAR} &= \text{Spectrum Analyzer Reading} \\ \text{SCF} &= \text{Site Correction Factor} \end{aligned}$$

The Site Correction Factor (SCF) used in the above equation is determined empirically and is expressed in the following equation:

$$\text{SCF (dB/m)} = -\text{PG (dB)} + \text{AF (dB/m)} + \text{CL (dB)}$$

$$\begin{aligned} \text{SCF} &= \text{Site Correction Factor} \\ \text{PG} &= \text{Pre-amplifier Gain} \\ \text{AF} &= \text{Antenna Factor} \\ \text{CL} &= \text{Cable Loss} \end{aligned}$$

The field intensity in microvolts per meter can then be determined according to the following equation:

$$\text{FI (}\mu\text{V/m)} = 10^{\text{FI (dB}\mu\text{V/m)}/20}$$

For example, assume a signal at a frequency of 125 MHz has a received level measured as 49.3 dB $\mu$ V. The total Site Correction Factor (antenna factor plus cable loss minus preamplifier gain) for 125 MHz is -11.5 dB/m. The actual radiated field strength is calculated as follows:

$$\begin{aligned} 49.3 \text{ dB}\mu\text{V} - 11.5 \text{ dB} &= 37.8 \text{ dB}\mu\text{V/m} \\ 10^{37.8/20} &= 10^{1.89} = 77.6 \mu\text{V/m} \end{aligned}$$

**Table 10-1: Radiated Emissions Test Equipment**

| RTL Asset # | Manufacturer                  | Model                 | Part Type                               | Serial Number | Calibration Due Date |
|-------------|-------------------------------|-----------------------|-----------------------------------------|---------------|----------------------|
| 900772      | EMCO                          | 3161-02               | Horn Antenna (2.0–4.0 GHz)              | 9804-1044     | 08/05/2027           |
| 900321      | EMCO                          | 3161-03               | Horn Antenna (4.0–8.2 GHz)              | 9508-1020     | 08/05/2027           |
| 900323      | EMCO                          | 3160-7                | Horn Antenna (8.2–12.4 GHz)             | 9605-1054     | 08/05/2027           |
| 900356      | EMCO                          | 3160-08               | Horn Antenna (12.4–18.0 GHz)            | 9607-1044     | 08/05/2027           |
| 901218      | EMCO                          | 3160-09               | Horn Antenna (18.0–26.5 GHz)            | 960281-003    | 08/05/2027           |
| 901669      | ETS-Lindgren                  | 3142E                 | Biconilog Antenna (30 MHz–6000 MHz)     | 00166065      | 07/11/2027           |
| 901773      | Rohde & Schwarz               | FSW                   | Spectrum Analyzer                       | 101021        | 02/02/2027           |
| 901672      | Rohde & Schwarz               | FSEM30                | Spectrum Analyzer                       | FSEM30        | 04/25/2027           |
| 900932      | Hewlett Packard               | 8449B OPT H02         | Preamplifier 1-26.5 GHz                 | 3008A00505    | 01/30/2027           |
| 901729      | Insulated Wire Inc.           | KPS-1503-3150-KPR     | SMK RF Cables 20'                       | NA            | 12/29/2027           |
| 901477      | Micro-Coax                    | UFA210A-0-0360-300300 | RF cable 0.04 - 18 GHz                  | 212349-002    | 09/01/2027           |
| 900905      | Rhein Tech Laboratories, Inc. | PR-1040               | OATS 1 Preamplifier 40dB (30 MHz–2 GHz) | 1006          | 09/30/2027           |

#### 10.4 Radiated Emissions Test Results

**Table 10-2: Environmental Conditions**

| Date             | Temperature (°C) | Humidity (%) | Pressure (kPa) |
|------------------|------------------|--------------|----------------|
| January 16, 2025 | 0                | 48           | 101.1          |

**Table 10-3: Radiated Emissions Harmonics/Spurious – 5180 MHz, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBμV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBμV/m) | Conversion to dBm | Peak Limit (dBm/MHz) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|-------------------|----------------------|------------------|
| 10360.0         | 34.0                   | 9.3                           | 43.2                    | -52.0             | -7.0                 | -45.0            |
| 15540.0         | 34.0                   | 15.0                          | 49.0                    | -46.3             | -7.0                 | -39.3            |
| 20720.0         | 34.0                   | 20.8                          | 54.8                    | -40.5             | -7.0                 | -33.5            |
| 25900.0         | 24.5                   | 25.7                          | 50.2                    | -45.1             | -7.0                 | -38.1            |
| 31080.0         | 8.0                    | 61.1                          | 69.1                    | -26.1             | -7.0                 | -19.1            |
| 36260.0         | 7.6                    | 62.8                          | 70.4                    | -24.8             | -7.0                 | -17.8            |

**Table 10-4: Radiated Emissions Harmonics/Spurious – 5200 MHz, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBµV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBµV/m) | Conversion to dBm | Peak Limit (dBm/MHz) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|-------------------|----------------------|------------------|
| 10400.0         | 34.0                   | 9.3                           | 43.2                    | -52.0             | -7.0                 | -45.0            |
| 15600.0         | 34.0                   | 14.9                          | 48.9                    | -46.4             | -7.0                 | -39.4            |
| 20800.0         | 34.0                   | 20.9                          | 54.9                    | -40.4             | -7.0                 | -33.4            |
| 26000.0         | 24.5                   | 26.1                          | 50.5                    | -44.7             | -7.0                 | -37.7            |
| 31200.0         | 14.4                   | 61.3                          | 75.7                    | -19.6             | -7.0                 | -12.6            |
| 36400.0         | 13.0                   | 63.5                          | 76.5                    | -18.8             | -7.0                 | -11.8            |

**Table 10-5: Radiated Emissions Harmonics/Spurious – 5240 MHz, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBµV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBµV/m) | Conversion to dBm | Peak Limit (dBm/MHz) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|-------------------|----------------------|------------------|
| 10480.0         | 34.0                   | 9.3                           | 43.2                    | -52.0             | -7.0                 | -45.0            |
| 15720.0         | 34.0                   | 15.1                          | 49.0                    | -46.3             | -7.0                 | -39.3            |
| 20960.0         | 34.0                   | 20.9                          | 54.9                    | -40.4             | -7.0                 | -33.4            |
| 26200.0         | 24.5                   | 26.8                          | 51.3                    | -44.0             | -7.0                 | -37.0            |
| 31440.0         | 14.5                   | 63.9                          | 78.4                    | -16.9             | -7.0                 | -9.9             |
| 36680.0         | 13.9                   | 66.7                          | 80.6                    | -14.7             | -7.0                 | -7.7             |

**Table 10-6: Radiated Emissions Harmonics/Spurious – 5745 MHz, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBµV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBµV/m) | Conversion to dBm | Peak Limit (dBm/MHz) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|-------------------|----------------------|------------------|
| 11490.0         | 34.0                   | 9.8                           | 43.8                    | -51.5             | -7.0                 | -44.5            |
| 17235.0         | 34.0                   | 15.4                          | 49.4                    | -45.9             | -7.0                 | -38.9            |
| 22980.0         | 34.0                   | 22.6                          | 56.6                    | -38.7             | -7.0                 | -31.7            |
| 28725.0         | 15.3                   | 60.3                          | 75.6                    | -19.7             | -7.0                 | -12.7            |
| 34470.0         | 8.9                    | 64.9                          | 73.8                    | -21.5             | -7.0                 | -14.5            |

**Table 10-7: Radiated Emissions Harmonics/Spurious – 5785 MHz, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBµV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBµV/m) | Conversion to dBm | Peak Limit (dBm/MHz) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|-------------------|----------------------|------------------|
| 11570.0         | 34.0                   | 10.0                          | 43.9                    | -51.3             | -7.0                 | -44.3            |
| 17355.0         | 34.0                   | 15.6                          | 49.6                    | -45.7             | -7.0                 | -38.7            |
| 23140.0         | 34.0                   | 22.8                          | 56.7                    | -38.5             | -7.0                 | -31.5            |
| 28925.0         | 15.9                   | 60.2                          | 76.1                    | -19.2             | -7.0                 | -12.2            |
| 34710.0         | 10.0                   | 65.2                          | 75.2                    | -20.1             | -7.0                 | -13.1            |

**Table 10-8: Radiated Emissions Harmonics/Spurious – 5825 MHz, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBµV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBµV/m) | Conversion to dBm | Peak Limit (dBm/MHz) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|-------------------|----------------------|------------------|
| 11650.0         | 34.0                   | 10.0                          | 43.9                    | -51.3             | -7.0                 | -44.3            |
| 17475.0         | 34.0                   | 15.8                          | 49.8                    | -45.5             | -7.0                 | -38.5            |
| 23300.0         | 34.0                   | 22.7                          | 56.6                    | -38.6             | -7.0                 | -31.6            |
| 29125.0         | 15.3                   | 60.0                          | 75.3                    | -20.0             | -7.0                 | -13.0            |
| 34950.0         | 12.9                   | 65.8                          | 78.7                    | -16.5             | -7.0                 | -9.5             |

**Table 10-9: Radiated Emissions Harmonics/Spurious – 5180 MHz, Average Detector**

| Frequency (MHz) | Average Analyzer (dBµV/m) | Site Correction Factor (dB/m) | Average Corrected (dBµV/m) | Conversion to dBm | Average Limit (dBm/MHz) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|-------------------|-------------------------|---------------------|
| 10360.0         | 31.4                      | 9.3                           | 40.7                       | -54.6             | -27.0                   | -27.6               |
| 15540.0         | 30.4                      | 15.0                          | 45.4                       | -49.9             | -27.0                   | -22.9               |
| 20720.0         | 32.2                      | 20.8                          | 53.0                       | -42.3             | -27.0                   | -15.3               |
| 25900.0         | 22.2                      | 25.7                          | 48.0                       | -47.3             | -27.0                   | -20.3               |
| 31080.0         | 4.3                       | 61.1                          | 65.4                       | -29.8             | -27.0                   | -2.8                |
| 36260.0         | 0.4                       | 62.8                          | 63.2                       | -32.1             | -27.0                   | -5.1                |

**Table 10-10: Radiated Emissions Harmonics/Spurious – 5200 MHz, Average Detector**

| Frequency (MHz) | Average Analyzer (dBµV/m) | Site Correction Factor (dB/m) | Average Corrected (dBµV/m) | Conversion to dBm | Average Limit (dBm/MHz) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|-------------------|-------------------------|---------------------|
| 10400.0         | 31.1                      | 9.3                           | 40.3                       | -54.9             | -27.0                   | -27.9               |
| 15600.0         | 32.3                      | 14.9                          | 47.2                       | -48.0             | -27.0                   | -21.0               |
| 20800.0         | 32.7                      | 20.9                          | 53.6                       | -41.6             | -27.0                   | -14.6               |
| 26000.0         | 21.8                      | 26.1                          | 47.9                       | -47.4             | -27.0                   | -20.4               |
| 31200.0         | 0.9                       | 61.3                          | 62.2                       | -33.0             | -27.0                   | -6.0                |
| 36400.0         | 0.4                       | 63.5                          | 63.9                       | -31.4             | -27.0                   | -4.4                |

**Table 10-11: Radiated Emissions Harmonics/Spurious – 5240 MHz, Average Detector**

| Frequency (MHz) | Average Analyzer (dBμV/m) | Site Correction Factor (dB/m) | Average Corrected (dBμV/m) | Conversion to dBm | Average Limit (dBm/MHz) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|-------------------|-------------------------|---------------------|
| 10480.0         | 29.9                      | 9.3                           | 39.2                       | -56.1             | -27.0                   | -29.1               |
| 15720.0         | 31.1                      | 15.1                          | 46.1                       | -49.1             | -27.0                   | -22.1               |
| 20960.0         | 32.4                      | 20.9                          | 53.3                       | -42.0             | -27.0                   | -15.0               |
| 26200.0         | 30.2                      | 26.8                          | 57.0                       | -38.3             | -27.0                   | -11.3               |
| 31440.0         | -0.2                      | 63.9                          | 63.7                       | -31.5             | -27.0                   | -4.5                |
| 36680.0         | -1.6                      | 66.7                          | 65.1                       | -30.1             | -27.0                   | -3.1                |

**Table 10-12: Radiated Emissions Harmonics/Spurious – 5745 MHz, Average Detector**

| Frequency (MHz) | Average Analyzer (dBμV/m) | Site Correction Factor (dB/m) | Average Corrected (dBμV/m) | Conversion to dBm | Average Limit (dBm/MHz) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|-------------------|-------------------------|---------------------|
| 11490.0         | 30.7                      | 9.8                           | 40.5                       | -54.7             | -27.0                   | -27.7               |
| 17235.0         | 30.4                      | 15.4                          | 45.8                       | -49.5             | -27.0                   | -22.5               |
| 22980.0         | 31.9                      | 22.6                          | 54.5                       | -40.8             | -27.0                   | -13.8               |
| 28725.0         | 2.3                       | 60.3                          | 62.6                       | -32.7             | -27.0                   | -5.7                |
| 34470.0         | 2.2                       | 64.9                          | 67.1                       | -28.1             | -27.0                   | -1.1                |

**Table 10-13: Radiated Emissions Harmonics/Spurious – 5785 MHz, Average Detector**

| Frequency (MHz) | Average Analyzer (dBμV/m) | Site Correction Factor (dB/m) | Average Corrected (dBμV/m) | Conversion to dBm | Average Limit (dBm/MHz) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|-------------------|-------------------------|---------------------|
| 11570.0         | 31.0                      | 10.0                          | 41.0                       | -54.3             | -27.0                   | -27.3               |
| 17355.0         | 31.4                      | 15.6                          | 47.0                       | -48.3             | -27.0                   | -21.3               |
| 23140.0         | 31.1                      | 22.8                          | 53.9                       | -41.4             | -27.0                   | -14.4               |
| 28925.0         | 5.4                       | 60.2                          | 65.6                       | -29.7             | -27.0                   | -2.7                |
| 34710.0         | 2.4                       | 65.2                          | 67.6                       | -27.7             | -27.0                   | -0.7                |

**Table 10-14: Radiated Emissions Harmonics/Spurious – 5825 MHz, Average Detector**

| Frequency (MHz) | Average Analyzer (dBμV/m) | Site Correction Factor (dB/m) | Average Corrected (dBμV/m) | Conversion to dBm | Average Limit (dBm/MHz) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|-------------------|-------------------------|---------------------|
| 11650.0         | 30.4                      | 10.0                          | 40.4                       | -54.9             | -27.0                   | -27.9               |
| 17475.0         | 30.7                      | 15.8                          | 46.6                       | -48.7             | -27.0                   | -21.7               |
| 23300.0         | 31.2                      | 22.7                          | 53.9                       | -41.4             | -27.0                   | -14.4               |
| 29125.0         | -3.0                      | 60.0                          | 57.0                       | -38.3             | -27.0                   | -11.3               |
| 34950.0         | -5.7                      | 65.8                          | 60.1                       | -35.1             | -27.0                   | -8.1                |

**Table 10-15: Unintentional Emissions Test Data**

| Temperature: 35°F Humidity: 48% Barometric Pressure: 30.16"Hg |               |                        |                       |                    |                         |                               |                         |                |             |           |
|---------------------------------------------------------------|---------------|------------------------|-----------------------|--------------------|-------------------------|-------------------------------|-------------------------|----------------|-------------|-----------|
| Emission Frequency (MHz)                                      | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (°) | Antenna Height (m) | Analyzer Reading (dBμV) | Site Correction Factor (dB/m) | Emission Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pass/Fail |
| 30.400                                                        | QP            | V                      | 260                   | 1.0                | 47.1                    | -19.4                         | 27.7                    | 40.0           | -12.3       | Pass      |
| 32.886                                                        | QP            | H                      | 40                    | 1.0                | 46.2                    | -15.2                         | 31.0                    | 40.0           | -9.0        | Pass      |
| 35.411                                                        | QP            | V                      | 220                   | 1.0                | 43.3                    | -16.6                         | 26.7                    | 40.0           | -13.3       | Pass      |
| 37.996                                                        | QP            | V                      | 80                    | 1.0                | 48.8                    | -18.0                         | 30.8                    | 40.0           | -9.2        | Pass      |
| 50.024                                                        | QP            | V                      | 190                   | 1.0                | 52.8                    | -22.8                         | 30.0                    | 40.0           | -10.0       | Pass      |
| 81.062                                                        | QP            | H                      | 120                   | 1.5                | 45.6                    | -28.5                         | 17.1                    | 40.0           | -22.9       | Pass      |
| 144.483                                                       | QP            | V                      | 230                   | 1.0                | 51.9                    | -26.3                         | 25.6                    | 43.5           | -17.9       | Pass      |
| 147.000                                                       | QP            | V                      | 140                   | 1.0                | 50.3                    | -26.0                         | 24.3                    | 43.5           | -19.2       | Pass      |
| 149.543                                                       | QP            | V                      | 30                    | 1.0                | 46.5                    | -25.5                         | 21.0                    | 43.5           | -22.5       | Pass      |
| 240.053                                                       | QP            | H                      | 70                    | 1.4                | 57.1                    | -20.1                         | 37.0                    | 46.0           | -9.0        | Pass      |
| 250.013                                                       | QP            | V                      | 80                    | 1.0                | 55.8                    | -19.5                         | 36.3                    | 46.0           | -9.7        | Pass      |
| 400.000                                                       | QP            | H                      | 125                   | 1.5                | 50.1                    | -17.4                         | 32.7                    | 46.0           | -13.3       | Pass      |
| 681.200                                                       | QP            | H                      | 320                   | 1.4                | 34.5                    | -11.4                         | 23.2                    | 46.0           | -22.8       | Pass      |
| 994.000                                                       | QP            | V                      | 325                   | 1.0                | 33.5                    | -8.0                          | 25.5                    | 54.0           | -28.5       | Pass      |
| 1042.084                                                      | AV            | H                      | 90                    | 1.5                | 42.7                    | -7.3                          | 35.4                    | 54.0           | -18.6       | Pass      |
| 1050.013                                                      | AV            | H                      | 330                   | 1.1                | 35.2                    | -7.0                          | 28.2                    | 54.0           | -25.8       | Pass      |
| 1114.228                                                      | AV            | H                      | 339                   | 1.0                | 32.8                    | -7.2                          | 25.6                    | 54.0           | -28.4       | Pass      |

Measurement uncertainty: ±4.7 dB. This measurement uncertainty is an expanded uncertainty for 95% confidence level received with a coverage factor k=2.

**Results: Pass**

**Test Personnel:**

|                                                                                                                             |           |                                  |
|-----------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------|
| <br>Daniel W. Baltzell<br>Test Engineer | Signature | January 16, 2025<br>Date of Test |
|-----------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------|

**11 Conclusion**

The data in this NII measurement report shows that the EUT as tested, L3Harris Technologies XL-85M UHF-L Mobile Radio, FCC ID: OWDTR-0177-E, IC: 3636B-0177, complies with the applicable requirements of FCC Parts 2 and 15 and ISED RSS-247 and RSS-Gen.