

# **TEST REPORT**

**Report Number:** 15496282-E4V3

**Applicant :** APPLE INC.  
1 APPLE PARK WAY  
CUPERTINO, CA 95014, U.S.A.

**Model :** A3260 (Parent)  
A3516, A3517, A3518 (Variants)

**Brand :** APPLE

**FCC ID :** BCG-E8948A (Parent)  
BCG-E8954A, BCG-E8955A, BCG-E8956A (Variants)

**IC :** 579C-E8948A (Parent)  
579C-E8954A, 579C-E8955A, 579C-E8956A (Variants)

**Test Standard(s) :** FCC 47 CFR PART 15 SUBPART C  
ISED RSS-247 ISSUE 3  
ISED RSS-GEN ISSUE 5 + A1 + A2

**Date Of Issue:**  
2025/07/22

**Prepared by:**  
UL Verification Services Inc.  
47173 Benicia Street  
Fremont, CA 94538 U.S.A.  
TEL: (510) 319-4000  
FAX: (510) 661-0888



---

**REPORT REVISION HISTORY**

| Rev. | Issue<br>Date | Revisions                                       | Revised By    |
|------|---------------|-------------------------------------------------|---------------|
| V1   | 2025/07/05    | Initial issue                                   | Jordan Bailey |
| V2   | 2025/07/10    | Address TCB questions sections 1, 6, 8, 9, & 10 | Vien Tran     |
| V3   | 2025/07/22    | Address TCB question sections 10                | Vien Tran     |

---

**TABLE OF CONTENTS**

|                                                           |           |
|-----------------------------------------------------------|-----------|
| <b>1. ATTESTATION OF TEST RESULTS.....</b>                | <b>5</b>  |
| <b>2. TEST RESULTS SUMMARY .....</b>                      | <b>6</b>  |
| <b>3. TEST METHODOLOGY .....</b>                          | <b>6</b>  |
| <b>4. FACILITIES AND ACCREDITATION.....</b>               | <b>7</b>  |
| <b>5. DECISION RULES AND MEASUREMENT UNCERTAINTY.....</b> | <b>7</b>  |
| 5.1. METROLOGICAL TRACEABILITY .....                      | 7         |
| 5.2. DECISION RULES .....                                 | 7         |
| 5.3. MEASUREMENT UNCERTAINTY .....                        | 8         |
| 5.4. SAMPLE CALCULATION.....                              | 8         |
| <b>6. EQUIPMENT UNDER TEST .....</b>                      | <b>9</b>  |
| 6.1. EUT DESCRIPTION.....                                 | 9         |
| 6.2. DESCRIPTION OF AVAILABLE ANTENNAS .....              | 9         |
| 6.3. SOFTWARE AND FIRMWARE .....                          | 9         |
| 6.4. MAXIMUM OUTPUT POWER.....                            | 10        |
| 6.5. WORST-CASE CONFIGURATION AND MODE.....               | 10        |
| 6.6. DESCRIPTION OF TEST SETUP.....                       | 12        |
| <b>7. MEASUREMENT METHOD .....</b>                        | <b>15</b> |
| <b>8. TEST AND MEASUREMENT EQUIPMENT .....</b>            | <b>16</b> |
| <b>9. ANTENNA PORT TEST RESULTS .....</b>                 | <b>18</b> |
| 9.1. ON TIME AND DUTY CYCLE .....                         | 18        |
| 9.2. 99% BANDWIDTH.....                                   | 19        |
| 9.3. 6dB BANDWIDTH .....                                  | 22        |
| 9.3.1. 802.11b/n/be SISO MODE .....                       | 23        |
| 9.3.2. 802.11b/n/be MIMO CDD MODE .....                   | 25        |
| 9.4. OUTPUT POWER AND POWER SPECTRAL DENSITY.....         | 27        |
| 9.4.1. 802.11b SISO MODE .....                            | 29        |
| 9.4.2. 802.11b MIMO MODE .....                            | 30        |
| 9.4.3. 802.11n HT20 SISO MODE .....                       | 31        |
| 9.4.4. 802.11n HT20 MIMO MODE .....                       | 32        |
| 9.4.5. 802.11be EHT20 SISO MODE.....                      | 33        |
| 9.4.6. 802.11be EHT20 MIMO MODE.....                      | 35        |
| 9.5. CONDUCTED SPURIOUS EMISSIONS.....                    | 37        |
| 9.5.1. 802.11b MODE 1TX.....                              | 38        |
| 9.5.2. 802.11b CDD MODE 2TX .....                         | 42        |
| 9.5.3. 802.11n HT20 SISO MODE .....                       | 48        |

|                                                 |                                                                                 |            |
|-------------------------------------------------|---------------------------------------------------------------------------------|------------|
| 9.5.4.                                          | 802.11n HT20 CDD MODE 2TX .....                                                 | 54         |
| 9.5.5.                                          | 802.11be EHT20 MODE .....                                                       | 62         |
| 9.5.6.                                          | 802.11be EHT20 2TX CDD MODE .....                                               | 80         |
| <b>10.</b>                                      | <b>RADIATED TEST RESULTS .....</b>                                              | <b>100</b> |
| 10.1.                                           | TRANSMITTER ABOVE 1 GHz.....                                                    | 102        |
| 10.1.1.                                         | 802.11b/n/be SISO MODE – LOW BANDEDGE – CHANNEL 1.....                          | 102        |
| 10.1.2.                                         | 802.11b/n/be SISO MODE – LOW BANDEDGE – CHANNEL 2.....                          | 107        |
| 10.1.3.                                         | 802.11b/n/be SISO MODE – HIGH BANDEDGE – CHANNEL 11.....                        | 112        |
| 10.1.4.                                         | 802.11b/n/be SISO MODE – HIGH BANDEDGE – CHANNEL 12.....                        | 117        |
| 10.1.5.                                         | 802.11b/n/be SISO MODE – HIGH BANDEDGE – CHANNEL 13.....                        | 122        |
| 10.1.6.                                         | 802.11b/n/be MIMO CDD MODE – LOW BANDEDGE – CHANNEL 1.....                      | 127        |
| 10.1.7.                                         | 802.11b/n/be MIMO CDD MODE – LOW BANDEDGE – CHANNEL 2.....                      | 132        |
| 10.1.8.                                         | 802.11b/n/be MIMO CDD MODE – HIGH BANDEDGE – CHANNEL 11.....                    | 137        |
| 10.1.9.                                         | 802.11b/n/be MIMO CDD MODE – HIGH BANDEDGE – CHANNEL 12.....                    | 142        |
| 10.1.10.                                        | 802.11b/n/be MIMO CDD MODE – HIGH BANDEDGE – CHANNEL 13.....                    | 147        |
| 10.1.11.                                        | 802.11b MIMO MODE – HARMONIC AND SPURIOUS EMISSIONS .....                       | 152        |
| 10.1.12.                                        | 802.11n HT20 MIMO CDD MODE – HARMONIC AND SPURIOUS EMISSIONS .....              | 155        |
| 10.1.13.                                        | 802.11be EHT20 MIMO CDD SU MODE – HARMONIC AND SPURIOUS EMISSIONS .....         | 158        |
| 10.1.14.                                        | 802.11be EHT20 MIMO CDD PARTIAL RU MODE – HARMONIC AND SPURIOUS EMISSIONS ..... | 161        |
| 10.2.                                           | WORST CASE BELOW 1 GHz.....                                                     | 164        |
| 10.3.                                           | WORST CASE 18-26 GHz .....                                                      | 166        |
| <b>11.</b>                                      | <b>AC POWER LINE CONDUCTED EMISSIONS.....</b>                                   | <b>168</b> |
| 11.1.                                           | AC POWER LINE WITH AC/DC ADAPTER .....                                          | 169        |
| 11.2.                                           | AC POWER LINE WITH LAPTOP .....                                                 | 171        |
| <b>12.</b>                                      | <b>SETUP PHOTOS.....</b>                                                        | <b>173</b> |
| <b>APPENDIX A – SPOT CHECK EVALUATION .....</b> |                                                                                 | <b>173</b> |

## 1. ATTESTATION OF TEST RESULTS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                                                                      |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--|
| Applicant Name and Address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | APPLE INC.<br>1 APPLE PARK WAY<br>CUPERTINO, CA 95014, U.S.A.                      |                                                                                      |  |
| Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | A3260 (Parent)<br>A3516, A3517, A3518 (Variants)                                   |                                                                                      |  |
| Brand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | APPLE                                                                              |                                                                                      |  |
| FCC ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | BCG-E8948A (Parent)<br>BCG-E8954A, BCG-E8955A, BCG-E8956A (Variants)               |                                                                                      |  |
| IC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 579C-E8948A (Parent)<br>579C-E8954A, 579C-E8955A, 579C-E8956A (Variants)           |                                                                                      |  |
| EUT Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SMARTPHONE                                                                         |                                                                                      |  |
| Serial Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | LFK6GGFV2V(RADIATED) and C07HC90003E0000XN3(CONDUCTED)                             |                                                                                      |  |
| Sample Receipt Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2025-01-16                                                                         |                                                                                      |  |
| Date Tested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2025/01/01 to 2025/07/03                                                           |                                                                                      |  |
| Applicable Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CFR 47 Part 15 Subpart C<br>ISED RSS-247 Issue 3<br>ISED RSS-GEN Issue 5 + A1 + A2 |                                                                                      |  |
| Test Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | COMPLIES                                                                           |                                                                                      |  |
| <p>UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.</p> <p>The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.</p> <p>This document may not be altered or revised in any way unless done so by UL Verification Services Inc., and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.</p> |                                                                                    |                                                                                      |  |
| Approved & Released By:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                    | Prepared & Reviewed By:                                                              |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                    |  |  |
| Richard Lee<br>Staff Engineer<br>UL Verification Services, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    | Jordan Bailey<br>Lab Engineer<br>UL Verification Services, Inc.                      |  |

## 2. TEST RESULTS SUMMARY

This report contains data provided by the customer, which can impact the validity of the results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

Below is a list of the data provided by the customer:

1. Antenna gain and type (see section 6.2)
2. Cable loss (see section 6.2)

| FCC Clause     | ISED Clause       | Requirement                  | Result                  | Comment                              |
|----------------|-------------------|------------------------------|-------------------------|--------------------------------------|
| See Comment    |                   | Duty Cycle                   | Reporting purposes only | ANSI C63.10 Section 11.6.            |
| -              | RSS-GEN 6.7       | 99% OBW                      | Reporting purposes only | ANSI C63.10 Section 6.9.3.           |
| 15.247 (a) (2) | RSS-247 5.2 (a)   | 6dB BW                       | Complies                | None.                                |
| 15.247 (b) (3) | RSS-247 5.4 (d)   | Output Power (Average)       | Complies                | Per ANSI C63.10, Section 11.9.2.3.2. |
| 15.247 (e)     | RSS-247 5.2 (b)   | PSD                          | Complies                | None.                                |
| 15.247 (d)     | RSS-247 5.5       | Conducted Spurious Emissions | Complies                | None.                                |
| 15.209, 15.205 | RSS-GEN 8.9, 8.10 | Radiated Emissions           | Complies                | None.                                |
| 15.207         | RSS-Gen 8.8       | AC Mains Conducted Emissions | Complies                | None.                                |

## 3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with;

- FCC 47 CFR Part 2
- FCC 47 CFR Part 15C
- \*ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024
- KDB 558074 D01 15.247 Meas Guidance
- KDB 414788 D01 Radiated Test Site
- KDB 662911 D01 Multiple Transmitter Output
- KDB 484596 D01 Referencing Test Data
- RSS-GEN Issue 5 + A1 + A2
- RSS-247 Issue 3

\*Note: The use of ANSI C63.10-2020 + Cor. 1-2023 + C63.10a-2024 does not deviate from the testing procedures of ANSI C63.10-2020

## 4. FACILITIES AND ACCREDITATION

UL Verification Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

|                                     | Address                                                  | ISED<br>CABID | ISED<br>Company<br>Number | FCC<br>Registration |
|-------------------------------------|----------------------------------------------------------|---------------|---------------------------|---------------------|
| <input checked="" type="checkbox"/> | Building 1: 47173 Benicia Street, Fremont, CA 94538, USA | US0104        | 2324A                     | 550739              |
| <input checked="" type="checkbox"/> | Building 2: 47266 Benicia Street, Fremont, CA 94538, USA |               |                           |                     |
| <input type="checkbox"/>            | Building 3: 843 Auburn Court, Fremont, CA 94538 USA      |               |                           |                     |
| <input checked="" type="checkbox"/> | Building 4: 47658 Kato Rd, Fremont, CA 94538 USA         |               |                           |                     |
| <input checked="" type="checkbox"/> | Building 5: 47670 Kato Rd, Fremont, CA 94538 USA         |               |                           |                     |

## 5. DECISION RULES AND MEASUREMENT UNCERTAINTY

### 5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated regularly, with a maximum time between calibrations of one year or the manufacturer's recommendation, whichever is less, and, where applicable, is traceable to recognized national standards.

### 5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

### 5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER                                            | U <sub>LAB</sub>        |
|------------------------------------------------------|-------------------------|
| Conducted Antenna Port Emission Measurement          | 1.94 dB                 |
| Power Spectral Density                               | 2.466 dB                |
| Time Domain Measurements Using SA                    | 3.39 %                  |
| RF Power Measurement Direct Method Using Power Meter | 1.3 (Peak), 0.450 (Avg) |
| Radio Frequency (Spectrum Analyzer)                  | 141.16 Hz               |
| Occupied Bandwidth                                   | 1.22 %                  |
| Worst Case Conducted Disturbance, 9KHz to 0.15 MHz   | 3.78 dB                 |
| Worst Case Conducted Disturbance, 0.15 to 30 MHz     | 3.40 dB                 |
| Worst Case Radiated Disturbance, 9KHz to 30 MHz      | 2.87 dB                 |
| Worst Case Radiated Disturbance, 30 to 1000 MHz      | 6.01 dB                 |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz   | 4.73 dB                 |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz  | 4.51 dB                 |

Uncertainty figures are valid to a confidence level of 95%.

### 5.4. SAMPLE CALCULATION

#### RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable} \\ &\text{Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

#### MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Final Voltage (dBuV)} &= \text{Measured Voltage (dBuV)} + \text{Cable Loss (dB)} + \text{Limiter Factor (dB)} + \\ &\text{LISN Insertion Loss.} \\ 36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} &= 46.6 \text{ dBuV} \end{aligned}$$

## 6. EQUIPMENT UNDER TEST

### 6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, WCDMA, LTE, 5G NR1, IEEE 802.11a/b/g/n/ac/ax/be, Bluetooth (BT), Ultra-Wideband (UWB), Global Positioning System (GPS), Near-Field Communication (NFC), Narrow-Band (NB) UNII, 802.15.4, 802.15.4ab-Narrow Band (NB), Wireless Power Transfer (WPT) and Mobile Satellite Service (MSS) technologies. The rechargeable battery is not user accessible.

### 6.2. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type (IFA), as provided by the manufacturer, are as follows:

| Frequency Range (GHz) | ANT 2<br>(dBi) | ANT 1<br>(dBi) |
|-----------------------|----------------|----------------|
| 2.4                   | -1.5           | -2.5           |

The SMA Cable Loss as provided by the manufacturer' are as follows:

| Frequency Range (GHz) | ANT 2<br>(dB) | ANT 1<br>(dB) |
|-----------------------|---------------|---------------|
| 2.4                   | 2.1           | 1.9           |

The cables were used for RF antenna port tests that had been offset to the test equipment during testing.

### 6.3. SOFTWARE AND FIRMWARE

The EUT firmware and software installed during testing were Luck23A256.

## 6.4. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

| Frequency Range (MHz) | Mode           | Output Power (dBm)            | Output Power (mW) |
|-----------------------|----------------|-------------------------------|-------------------|
| <b>1Tx</b>            |                |                               |                   |
| 2412 - 2472           | 802.11b        | 20.98                         | 125.31            |
|                       | 802.11g        | Covered by 802.11n HT20 1TX   |                   |
|                       | 802.11n HT20   | 20.96                         | 124.74            |
|                       | 802.11ax HE20  | Covered by 802.11be EHT20 1TX |                   |
|                       | 802.11be EHT20 | 20.99                         | 125.60            |

|             |                    |                                 |        |
|-------------|--------------------|---------------------------------|--------|
| <b>2Tx</b>  |                    |                                 |        |
| 2412 - 2472 | 802.11b CDD        | 23.95                           | 248.31 |
|             | 802.11n HT20 CDD   | 23.98                           | 250.03 |
|             | 802.11g SDM/STBC   | Covered by 802.11n HT20 2TX CDD |        |
|             | 802.11ax HE20      | Covered by 802.11be EHT20 CDD   |        |
|             | 802.11be EHT20 CDD | 23.99                           | 250.61 |

## 6.5. WORST-CASE CONFIGURATION AND MODE

EUT was investigated in three orthogonal orientations, X (Flatbed), Y (Landscape) and Z (Portrait) on ANT 2, ANT 1, and 2TX. It was determined that X (Flatbed) orientation was the worst-case orientation for ANT 1, and Y (Landscape) orientation was the worst-case orientation for ANT 4 and 2TX.

With the same power on Full RU and SU higher data rate, an investigation was performed on both bandedge to determine the worst case, and SU mode was determined to be the worst case.

Radiated band edge, harmonic, and spurious emissions from 1GHz to 18GHz were performed with the EUT set to transmit at the highest power on Low/Middle/High channels.

Radiated emissions below 1GHz, 18-26GHz, and power line conducted emissions were performed with the EUT transmitting at the channel with the highest output power as a worst-case scenario. There were no emissions found below 30MHz within 20dB of the limit.

For radiated harmonics spurious below 1GHz, 1-18GHz L/M/H channels, 18-26GHz, and power line conducted emissions were performed with the EUT set at the 2TX CDD mode among the CDD modes and SDM modes with power setting equal to or higher than SISO modes as a worst-case scenario. G mode is covered by HT20 mode since it has the same power as HT20.

Below 30MHz, 30-1000MHz emissions spurious tests were performed with EUT connected to AC power adapter and set at X orientation as the worst case; and for above 1GHz tests, the worst-case configuration reported was with EUT only. For AC line conducted emission, the test was conducted with an AC power adapter and a laptop.

The modulation and bandwidth of 802.11ax and 802.11be modes are similar, and the target power of the 802.11ax mode is equal to or lower than that of the 802.11be mode. The data rate of 802.11be mode is higher than 802.11ax mode; therefore, 802.11be mode is performed in the test to represent worst-case reporting.

For 99% Bandwidth, both SISO and MIMO modes have been investigated. And the results are similar between these modes. The SISO mode data represents the MIMO mode and is reported.

The output power and PSD for the 802.11be mode were investigated across all different tones, and we found that the SU mode had the highest output power and RU26 had the highest PSD readings. And after investigation, antenna port conducted tests were performed on both SU and lowest tones; radiated spurious emission and radiated band edge tests were performed on SU and lowest tones. Please see the worst-case summary table below.

| WIFI DTS 2.4GHz - 802.11be |             |          |                               |                             |     |
|----------------------------|-------------|----------|-------------------------------|-----------------------------|-----|
| BW<br>(MHz)                | Tone<br>(T) | RU Index | RU Index from Chipset support | Worst Case Tone<br>(UNII-1) |     |
|                            |             |          |                               | Power                       | PSD |
| 20                         | 26          | 0 ~ 8    | 0 ~ 8                         |                             | X   |
|                            | 52          | 37 ~ 40  | 37 ~ 40                       |                             |     |
|                            | 52 + 26     | 70 ~ 81  | 70, 71, 72                    |                             |     |
|                            | 106         | 53 ~ 54  | 53 ~ 54                       |                             |     |
|                            | 106 + 26    | 82 ~ 89  | 82, 83                        |                             |     |
|                            | 242         | 61       | 61                            |                             |     |
|                            | SU          | --       | --                            | X                           |     |

Low data rate was used to test on antenna port conducted tests and radiated spurious emissions since it has the highest maximum power. For radiated bandedge, following are the worst-case data rates set for test:

802.11b mode : 1 Mbps

802.11n HT20 mode : MCS7

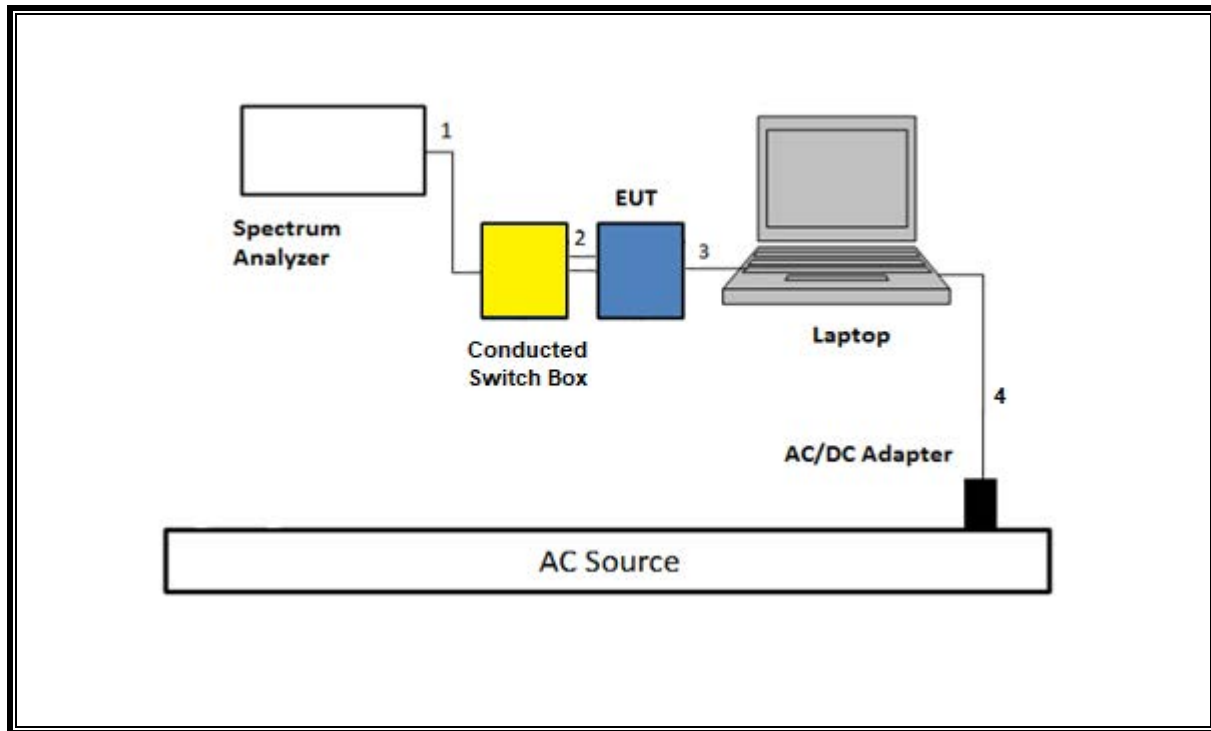
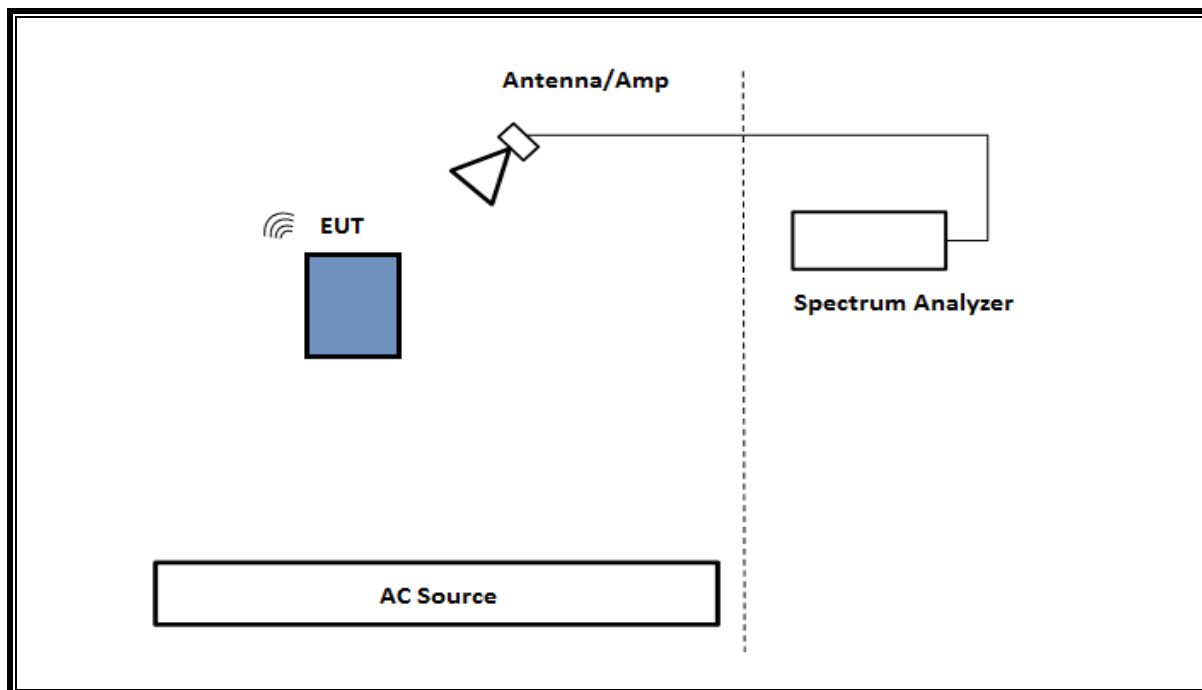
802.11be EHT RU26 and SU, MCS9

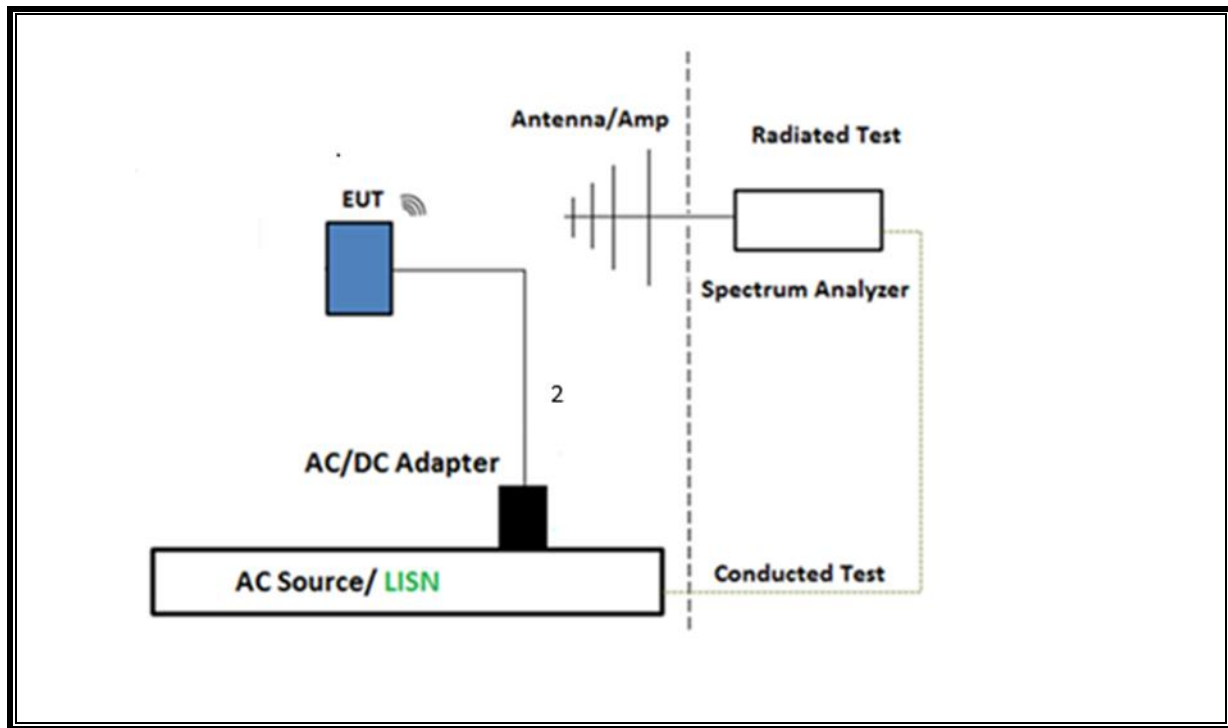
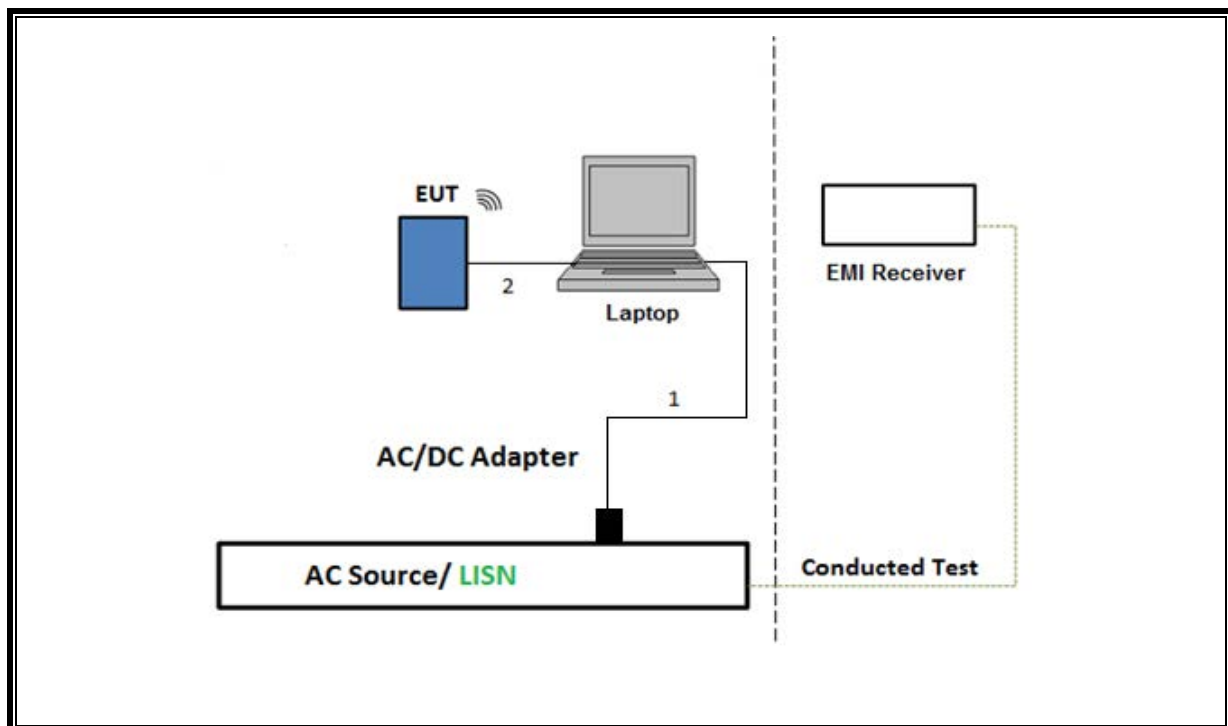
## 6.6. DESCRIPTION OF TEST SETUP

| SUPPORT TEST EQUIPMENT                              |         |                      |                |                   |                  |                      |
|-----------------------------------------------------|---------|----------------------|----------------|-------------------|------------------|----------------------|
| Description                                         |         | Manufacturer         | Model          | Serial Number     | FCC ID/ DoC      |                      |
| Laptop                                              |         | Apple                | Macbook Pro    | C02VD7SAHV22      | BCGA1708         |                      |
| Laptop AC/DC adapter                                |         | Liteon Technology    | A1424          | NSW25679          | DoC              |                      |
| EUT AC/DC adapter                                   |         | Apple                | A1720          | C3D8417A7R93KVPA8 | DoC              |                      |
| Conducted Switch Box                                |         | UL                   | n/a            | 208281            | N/A              |                      |
| I/O CABLES (RF CONDUCTED TEST)                      |         |                      |                |                   |                  |                      |
| Cable No.                                           | Port    | # of Identical Ports | Connector Type | Cable Type        | Cable Length (m) | Remarks              |
| 1                                                   | SMA     | 1                    | SMA            | Shielded          | 0.2              | To spectrum Analyzer |
| 2                                                   | Antenna | 1                    | SMA            | Shielded          | 0.2              | EUT to Switchbox     |
| 3                                                   | USB     | 1                    | USB-C          | Shield            | 1.0              | N/A                  |
| 4                                                   | DC      | 1                    | DC             | Shield            | 2.0              | N/A                  |
| I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST) |         |                      |                |                   |                  |                      |
| Cable No.                                           | Port    | # of Identical Ports | Connector Type | Cable Type        | Cable Length (m) | Remarks              |
| 1                                                   | DC      | 1                    | DC             | Shielded          | 2                | N/A                  |
| 2                                                   | USB     | 1                    | USB-C          | Shielded          | 1                | N/A                  |

### TEST SETUP

The EUT setup is shown as below. Test software exercised the radio card.

**SETUP DIAGRAM FOR CONDUCTED TESTS****SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz (1 to 26GHz)**

**SETUP DIAGRAM FOR 30-1000MHz and AC LINE CONDUCTED TEST****TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION**

## 7. MEASUREMENT METHOD

| Test Item                                         | Test Method                                                                                                                  |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 6 dB BW                                           | ANSI C63.10 Subclause -11.8.1 RBW $\geq$ DTS BW                                                                              |
| 99% BW                                            | ANSI C63.10, Subclause 6.9.3.                                                                                                |
| Output Power                                      | ANSI C63.10 Subclause -11.9.2.3.2 Method AVGPM G<br>(Measurement using an RF average-reading power meter)                    |
| PSD                                               | ANSI C63.10 Subclause -11.10.3 Method AVGPSD-1                                                                               |
| Radiated emissions non-restricted frequency bands | ANSI C63.10 Subclause -11.11 & Clause 13                                                                                     |
| Radiated emissions restricted frequency bands     | ANSI C63.10 Subclause -11.12.1 & Clause 13                                                                                   |
| Conducted emissions in restricted frequency bands | ANSI C63.10 Subclause -11.12.2                                                                                               |
| Band-edge                                         | ANSI C63.10 Subclause -11.13.3.2 & Clause 13: Integration method -Peak detection                                             |
| Band-edge                                         | ANSI C63.10 Subclause -11.13.3.3 & Clause 13: Integration method -Trace averaging with continuous transmission at full power |
| Radiated Spurious Emissions Below 30MHz           | ANSI C63.10 Subclause 6.4 & Clause 13                                                                                        |
| AC Power Line Conducted Emissions                 | ANSI C63.10, Subclause 6.2                                                                                                   |

## 8. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| TEST EQUIPMENT LIST                                |                           |                             |            |            |
|----------------------------------------------------|---------------------------|-----------------------------|------------|------------|
| Description                                        | Manufacturer              | Model                       | ID Num     | Cal Due    |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                        | 226674     | 2026-01-31 |
| RF Filter Box, 1-18GHz                             | UL-FR1                    | Rats 1.0                    | 250156     | 2025-10-31 |
| EMI Test Receiver                                  | Rohde & Schwarz           | ESW44                       | 225683     | 2026-02-28 |
| enna, Horn 1-18GHz                                 | ETS-Lindgren              | 3117                        | *80402     | 2025-07-31 |
| RF Filter Box, 1-18GHz, 12 Port                    | UL-FR1                    | Frankenstein                | 216812     | 2026-01-31 |
| EMI Test Receiver                                  | Rohde & Schwarz           | ESW44                       | 230548     | 2026-02-28 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                        | *84797     | 2025-07-31 |
| RF Filter Box, 1-18GHz                             | UL-FR1                    | Frankenstein                | 216812     | 2026-01-31 |
| EMI Test Receiver                                  | Rohde & Schwarz           | ESW44                       | 230548     | 2026-02-28 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                        | 84796      | 2025-09-30 |
| RF Filter Box, 1-18GHz, 12 Port.                   | UL-FR1                    | Frankenstein                | 230878     | 2026-05-31 |
| EMI Test Receiver                                  | Rohde & Schwarz           | ESW44                       | 191428     | 2026-02-28 |
| Antenna, Broadband Hybrid, 30MHz to 3GHz           | Sunol Sciences Corp.      | JB3                         | 171863     | 2026-11-30 |
| Link File, @3m, 9kHz-1GHz Hybrid/Loop Path Loss    | UL-FR1                    | Port 0 Factors              | *230919    | 2025-04-30 |
| Antenna, Horn 18 to 26.5GHz                        | A.R.A.                    | MWH-1826/B                  | 172353     | 2025-08-31 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                        | 230300     | 2026-01-31 |
| RF Filter Box, 1-18GHz, 17 Ports                   | UL-FR1                    | RATS 2                      | 225474     | 2026-05-30 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                       | 201502     | 2026-02-27 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                        | 200785     | 2025-11-30 |
| RF Filter Box, 1-18GHz,.                           | UL-FR1                    | Frankenstein, 2 Amp version | 235088     | 2026-04-30 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                       | 201500     | 2026-02-28 |
| Antenna, Broadband Hybrid, 30MHz to 3GHz           | Sunol Sciences Corp.      | JB3                         | 171863     | 2025-10-20 |
| Link File, @3m, 9kHz-1GHz Hybrid/Loop Path Loss    | UL-FR1                    | Port 0 Factors              | 230919     | 2026-05-30 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                        | *200784    | 2025-01-31 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                       | *230548    | 2025-02-28 |
| RF Filter Box, 1-18GHz, 17 Ports                   | UL-FR1                    | RATS 2                      | *225079    | 2025-04-30 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                        | *206807    | 2025-02-28 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                       | *201501    | 2025-02-11 |
| RF Filter Box, 1-18GHz, 8 Port                     | UL-FR1                    | SAC 8 port rf box 1         | *197920    | 2025-03-31 |
| Antenna, Passive Loop 30Hz - 1MHz                  | ELECTRO-METRICS           | EM-6871                     | 170014     | 2026-11-30 |
| Antenna, Passive Loop 30Hz - 1MHz                  | ELECTRO-METRICS           | EM-6871                     | 170014     | 2026-11-30 |
| DC Power Supply                                    | TDK-LAMBDA                | GEN 60-25                   | PRE0074753 | N/A        |
| DC Power Supply                                    | TDK-LAMBDA                | GEN 60-25                   | PRE0074756 | N/A        |
| Spectrum Analyzer, PXA, 3Hz to 44GHz               | N9030A                    | Keysight Technologies Inc   | 80397      | 2026-01-31 |
| Spectrum Analyzer, PXA, 3Hz to 44GHz               | N9030A                    | Keysight Technologies Inc   | 125179     | 2026-02-28 |
| Conducted Switch Box                               | UL-FR1                    | CSB                         | *245782    | 2025-07-31 |
| Conducted Switch Box                               | UL-FR1                    | CSB                         | *208281    | 2025-05-31 |
| Power Meter, P-series single channel               | Keysight Technologies Inc | N1911A                      | 90715      | 2026-01-31 |
| Power Sensor, P - series, 50MHz to 18GHz, Wideband | Keysight Technologies Inc | N1921A                      | 81319      | 2026-01-31 |
| Power Meter, P-series single channel               | Keysight Technologies Inc | N1911A                      | 90718      | 2026-01-31 |
| Power Sensor, P - series, 50MHz to 18GHz, Wideband | Keysight Technologies Inc | N1921A                      | 90419      | 2026-01-31 |

| AC Line Conducted                        |                                  |                                  |                      |            |
|------------------------------------------|----------------------------------|----------------------------------|----------------------|------------|
| Description                              | Manufacturer                     | Model                            | ID Num               | Cal Due    |
| EMI Test Receiver 9kHz-7GHz              | Rohde & Schwarz                  | ESR                              | 171646               | 2026-02-28 |
| LISN for Conducted Emissions<br>CISPR-16 | Fischer Custom<br>Communications | FCC-LISN-50/250-<br>25-2-01-480V | 175765               | 2026-01-31 |
| Transient Limiter                        | TE                               | TBFL1                            | 207996               | 2025-09-30 |
| UL AUTOMATION SOFTWARE                   |                                  |                                  |                      |            |
| Radiated Software                        | UL                               | UL EMC                           | Ver 9.5, May 1, 2023 |            |
| Conducted Software                       | UL                               | UL EMC                           | 2023.2.23            |            |
| AC Line Conducted Software               | UL                               | UL EMC                           | Ver 9.5, Mar 3, 2023 |            |

\*Testing is completed before equipment expiration date.

## 9. ANTENNA PORT TEST RESULTS

### 9.1. ON TIME AND DUTY CYCLE LIMITS

None; for reporting purposes only.

#### PROCEDURE

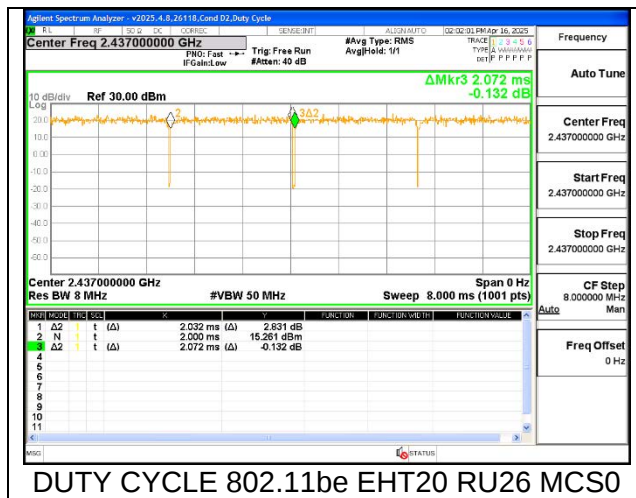
KDB 558074 Zero-Span Spectrum Analyzer Method.

#### ON TIME AND DUTY CYCLE RESULTS

| Mode  | Tone | Data Rate (Mbps) | ON Time T (msec) | Period (msec) | Duty Cycle x (linear) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | 1/T Minimum VBW (kHz) |
|-------|------|------------------|------------------|---------------|-----------------------|----------------|-----------------------------------|-----------------------|
| b     | --   | 1Mbps            | 12.43            | 12.450        | 0.9984                | 99.84%         | 0.00                              | 0.010                 |
| HT20  | --   | MCS0             | 1.925            | 1.950         | 0.9872                | 98.72%         | 0.00                              | 0.010                 |
|       | --   | MCS7             | 0.228            | 0.253         | 0.9012                | 90.12%         | 0.45                              | 4.386                 |
| EHT20 | SU   | MCS0             | 1.587            | 1.612         | 0.9845                | 98.45%         | 0.00                              | 0.010                 |
|       |      | MCS9             | 0.183            | 0.208         | 0.8798                | 87.98%         | 0.56                              | 5.464                 |
|       | 26   | MCS0             | 2.032            | 2.072         | 0.9807                | 98.07%         | 0.00                              | 0.010                 |
|       |      | MCS9             | 2.024            | 2.072         | 0.9768                | 97.68%         | 0.10                              | 0.494                 |

Note: Duty cycle 2TX is the same as 1TX.

#### DUTY CYCLE PLOTS



## 9.2. 99% BANDWIDTH LIMITS

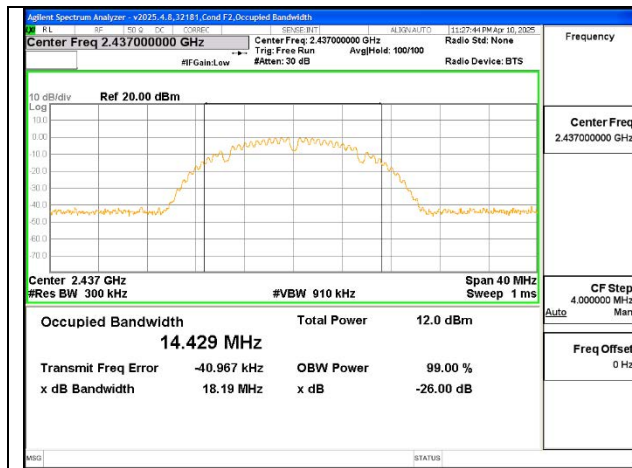
None; for reporting purposes only.

### RESULTS

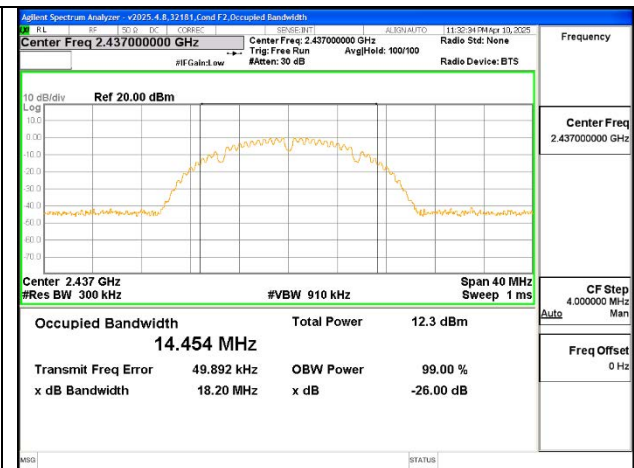
Both SISO and MIMO modes have been investigated. And the results are similar between these modes. The SISO mode data represents the MIMO mode and is reported as below.

#### SISO MODE

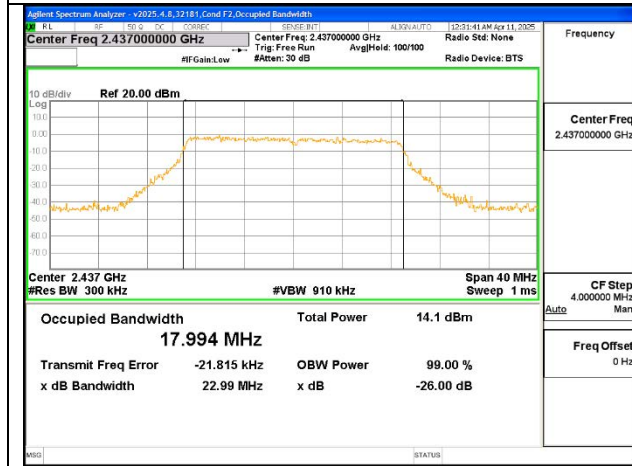
| Mode  | Frequency (MHz) | Channel Number | Tone | RU Index | 99% Bandwidth (MHz) |        |
|-------|-----------------|----------------|------|----------|---------------------|--------|
|       |                 |                |      |          | ANT 2               | ANT 1  |
| b     | 2412            | 1              | --   | --       | 14.504              | 14.365 |
|       | 2437            | 6              | --   | --       | 14.429              | 14.454 |
|       | 2472            | 13             | --   | --       | 14.514              | 14.628 |
| HT20  | 2412            | 1              | --   | --       | 18.063              | 17.864 |
|       | 2437            | 6              | --   | --       | 17.994              | 17.801 |
|       | 2472            | 13             | --   | --       | 17.897              | 17.777 |
| EHT20 | 2412            | 1              | SU   | --       | 18.999              | 19.047 |
|       |                 |                | 26   | 0        | 18.783              | 18.404 |
|       |                 |                |      | 4        | 17.043              | 16.754 |
|       |                 |                |      | 8        | 18.561              | 18.588 |
|       | 2437            | 6              | SU   | --       | 19.037              | 19.028 |
|       |                 |                | 26   | 0        | 18.659              | 18.523 |
|       |                 |                |      | 4        | 17.015              | 16.743 |
|       |                 |                |      | 8        | 18.735              | 18.436 |
|       | 2472            | 13             | SU   | --       | 18.984              | 18.953 |
|       |                 |                | 26   | 0        | 18.511              | 18.497 |
|       |                 |                |      | 4        | 16.994              | 16.748 |
|       |                 |                |      | 8        | 18.670              | 18.391 |



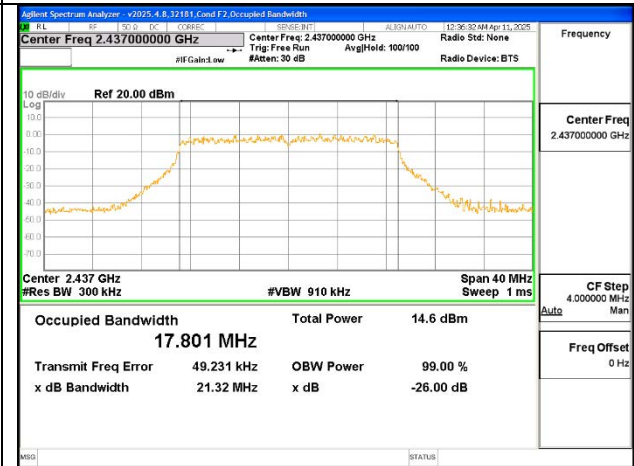
b-mode – Mid Channel – Ant 2



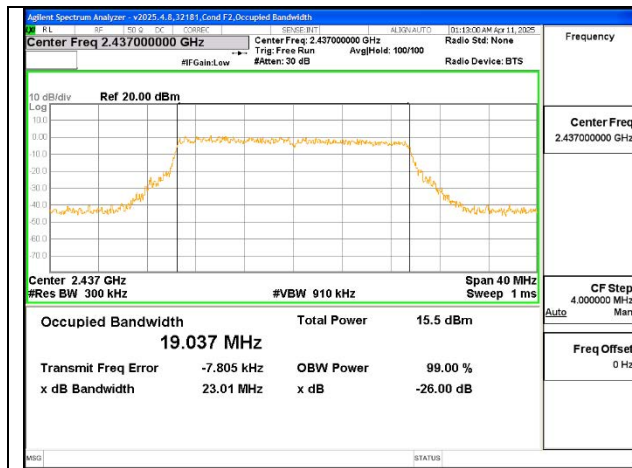
b-mode – Mid Channel – Ant 1



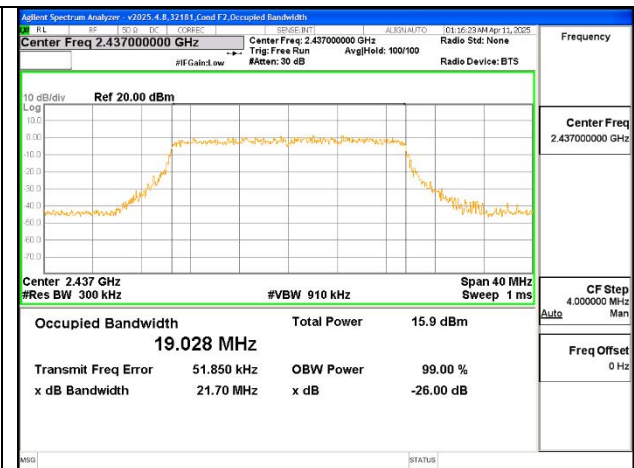
HT20-mode – Mid Channel – Ant 2



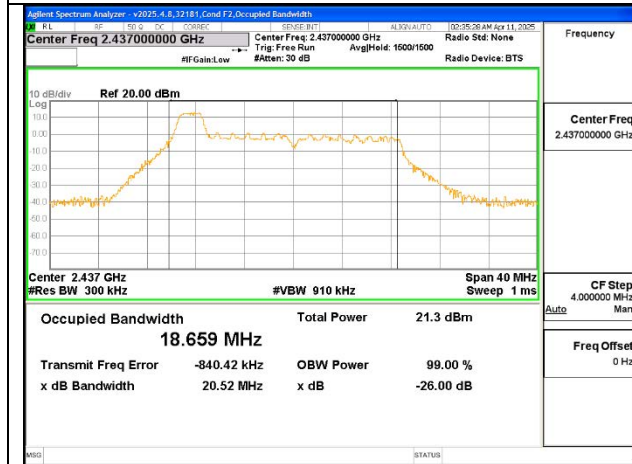
HT20-mode – Mid Channel – Ant 1



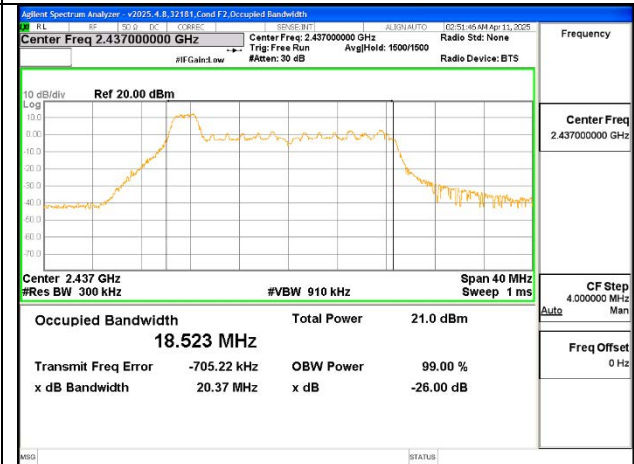
EHT20-mode – Mid Channel – SU – Ant 2



HT20-mode – Mid Channel – SU – Ant 1



EHT20-mode – Mid Channel – Partial RU0 – Ant 2



HT20-mode – Mid Channel – Partial RU0 – Ant 1

### **9.3. 6dB BANDWIDTH**

#### **LIMITS**

FCC §15.247 (a) (2)

RSS-247 5.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

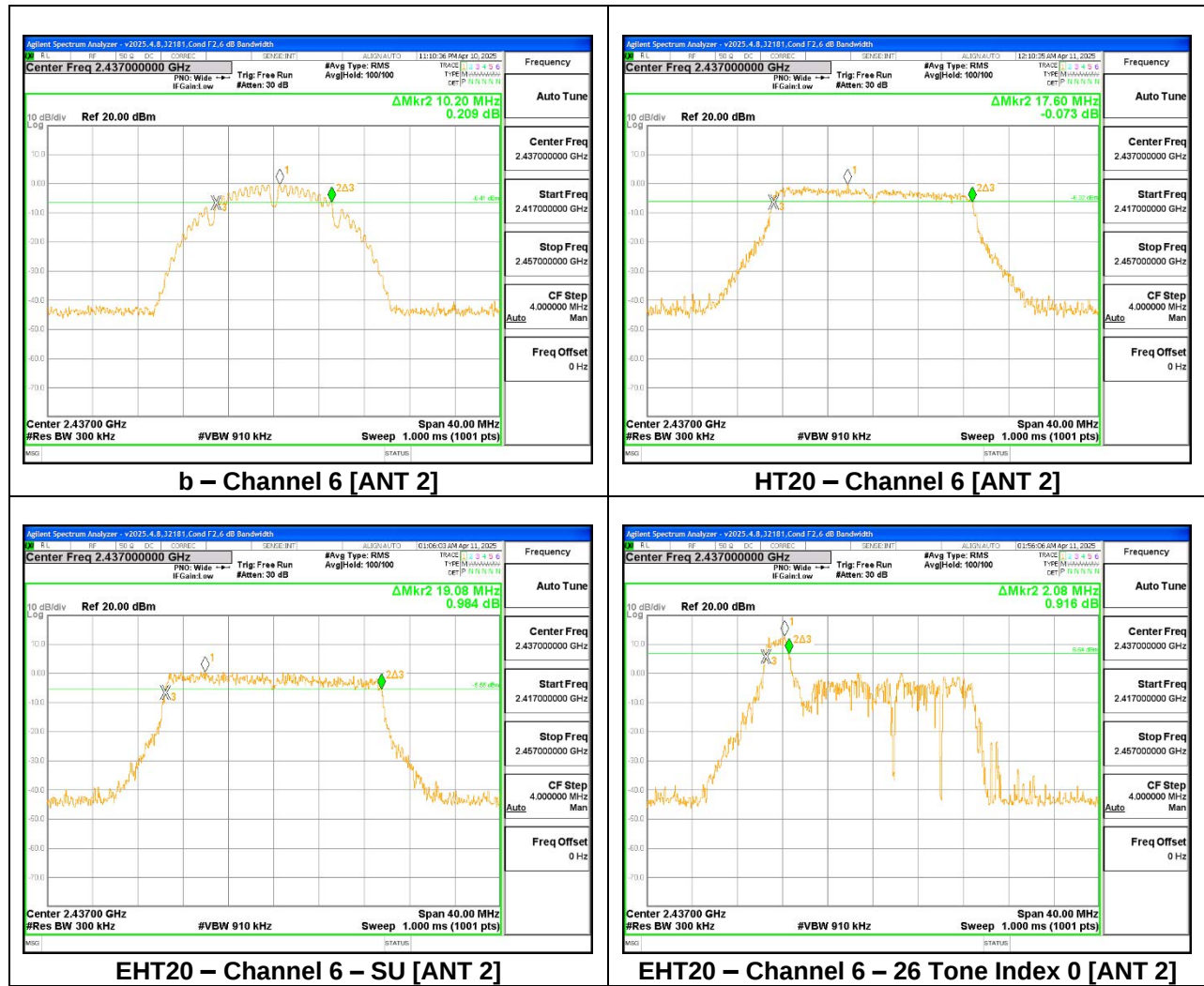
#### **RESULTS**

The 6dB bandwidth was measured for the narrowest bandwidth mode, b Mode and 11be Mode 26-Tones as worst case to demonstrate compliance with the minimum required bandwidth of 500 kHz to cover all OFDMA modes.

Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

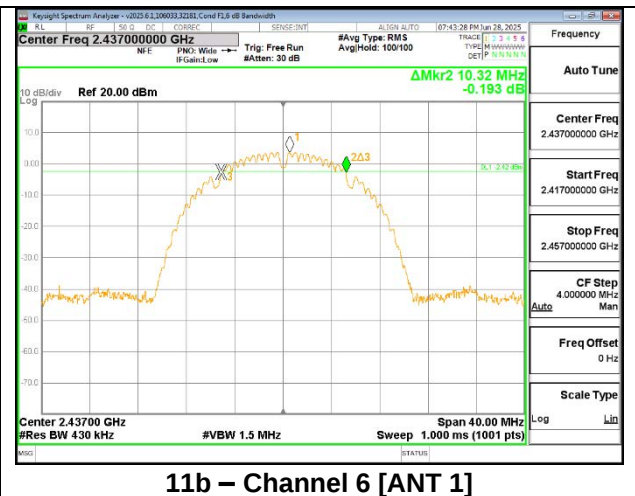
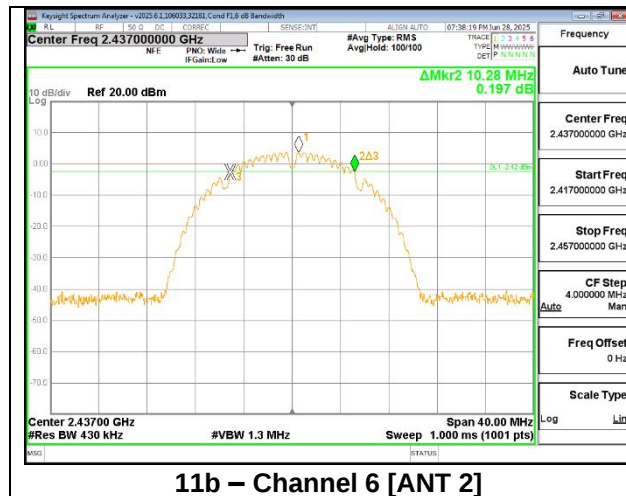
**9.3.1. 802.11b/n/be SISO MODE**

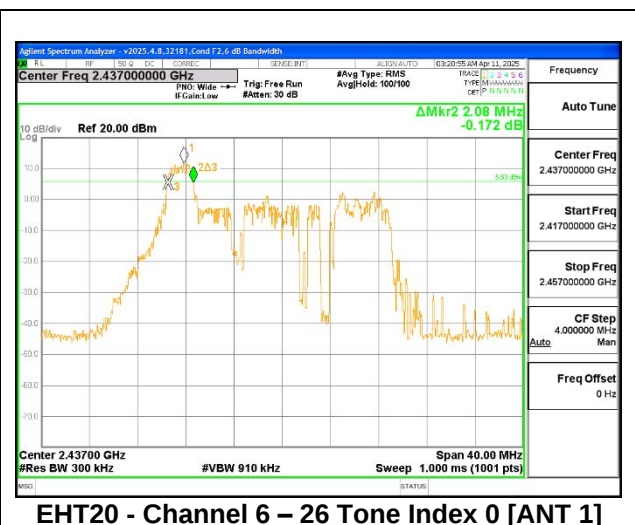
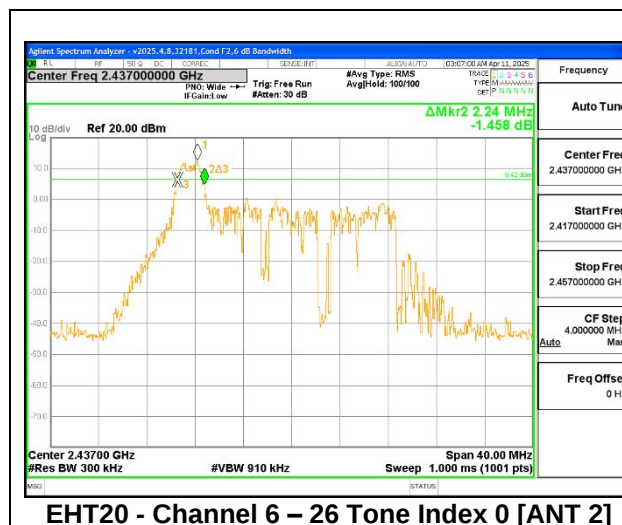
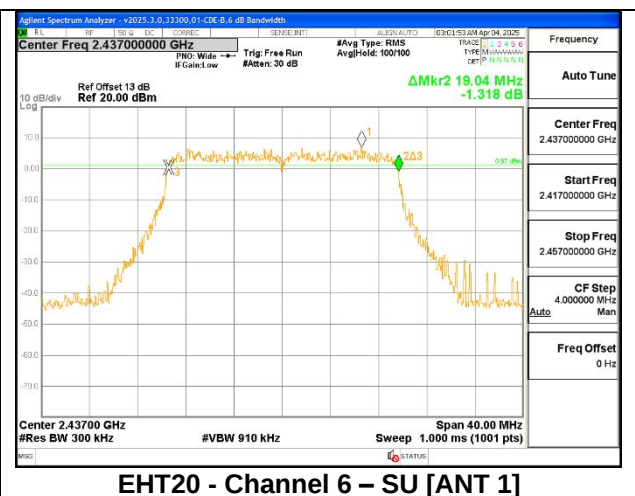
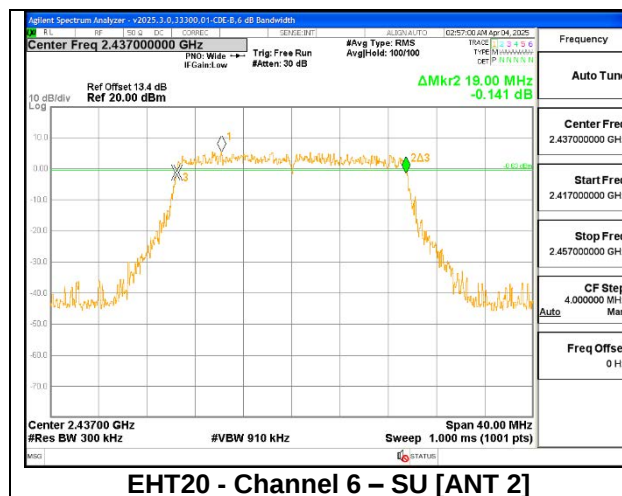
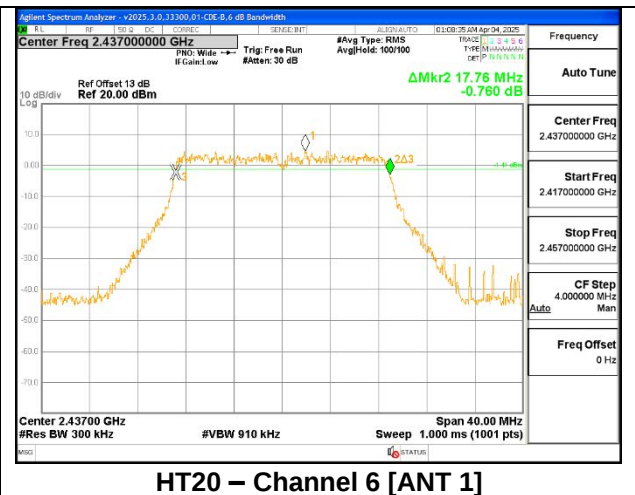
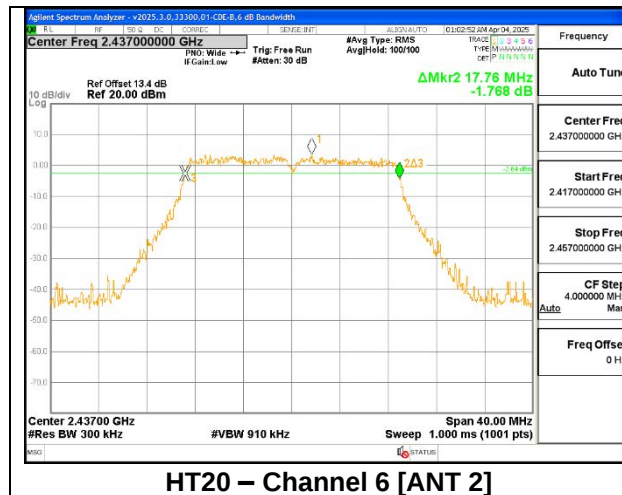
| Mode (SISO)  | Frequency (MHz) | Channel Number | Tone | RU Index | 6dB Bandwidth (MHz) |       |
|--------------|-----------------|----------------|------|----------|---------------------|-------|
|              |                 |                |      |          | ANT 2               | ANT 1 |
| <b>b</b>     | 2412            | 1              | --   | --       | 10.24               | 10.24 |
|              | 2437            | 6              | --   | --       | 10.20               | 10.24 |
|              | 2472            | 13             | --   | --       | 10.24               | 10.24 |
| <b>HT20</b>  | 2412            | 1              | --   | --       | 17.72               | 17.68 |
|              | 2437            | 6              | --   | --       | 17.60               | 17.76 |
|              | 2472            | 13             | --   | --       | 17.64               | 17.72 |
| <b>EHT20</b> | 2412            | 1              | SU   | --       | 19.12               | 18.96 |
|              |                 |                | 26   | 0        | 2.16                | 2.16  |
|              |                 |                |      | 4        | 2.76                | 2.72  |
|              |                 |                |      | 8        | 2.12                | 2.16  |
|              | 2437            | 6              | SU   | --       | 19.08               | 18.80 |
|              |                 |                | 26   | 0        | 2.08                | 2.16  |
|              |                 |                |      | 4        | 2.68                | 2.64  |
|              |                 |                |      | 8        | 2.16                | 2.12  |
|              | 2472            | 13             | SU   | --       | 19.00               | 18.92 |
|              |                 |                | 26   | 0        | 2.08                | 2.16  |
|              |                 |                |      | 4        | 2.68                | 2.64  |
|              |                 |                |      | 8        | 2.12                | 2.16  |



### 9.3.2. 802.11b/n/be MIMO CDD MODE

| Mode (MIMO) | Frequency (MHz) | Channel Number | Tone | RU Index | 6dB Bandwidth (MHz) |       |
|-------------|-----------------|----------------|------|----------|---------------------|-------|
|             |                 |                |      |          | ANT 2               | ANT 1 |
| 11b         | 2412            | 1              | --   | --       | 10.32               | 10.36 |
|             | 2437            | 6              | --   | --       | 10.28               | 10.32 |
|             | 2472            | 13             | --   | --       | 10.24               | 10.28 |
| HT20        | 2412            | 1              | --   | --       | 17.64               | 17.68 |
|             | 2437            | 6              | --   | --       | 17.76               | 17.76 |
|             | 2472            | 13             | --   | --       | 17.64               | 17.68 |
| EHT20       | 2412            | 1              | SU   | --       | 19.12               | 19.08 |
|             |                 |                | 26   | 0        | 2.16                | 2.16  |
|             |                 |                |      | 4        | 2.60                | 2.72  |
|             |                 |                |      | 8        | 2.12                | 2.08  |
|             | 2437            | 6              | SU   | --       | 19.00               | 19.04 |
|             |                 |                | 26   | 0        | 2.24                | 2.08  |
|             |                 |                |      | 4        | 2.72                | 2.72  |
|             |                 |                |      | 8        | 2.00                | 2.12  |
|             | 2472            | 13             | SU   | --       | 19.04               | 19.16 |
|             |                 |                | 26   | 0        | 2.24                | 2.12  |
|             |                 |                |      | 4        | 2.56                | 2.80  |
|             |                 |                |      | 8        | 2.08                | 2.08  |





## 9.4. OUTPUT POWER AND POWER SPECTRAL DENSITY

### LIMITS

FCC §15.247 (b) (3) & (e)

RSS-247 5.4 (d) & 5.2 (b)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### TEST PROCEDURE

Measurements are performed using a wideband RF power meter.

The power output was measured on the EUT antenna port using an SMA cable with a 10dB attenuator connected to a power meter via a wideband power sensor. Average output power was read directly from the power meter.

### DIRECTIONAL ANTENNA GAIN

For 1 TX:

There is only one transmitter output; therefore, the directional gain is equal to the antenna gain.

For 2 TX:

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

| Band<br>(GHz) | ANT 2<br>Gain<br>(dBi) | ANT 1<br>Gain<br>(dBi) | Uncorrelated Chains<br>Directional<br>Gain<br>(dBi) | Correlated Chains<br>Directional<br>Gain<br>(dBi) |
|---------------|------------------------|------------------------|-----------------------------------------------------|---------------------------------------------------|
| 2.40          | -1.50                  | -2.50                  | -1.97                                               | 1.02                                              |

**DIRECTIONAL GAIN CALCULATION:**

ANSI C63.10-2020 section 14.4.3

$$\text{Uncorrelated Directional Gain} = 10 * \text{LOG} \left[ \frac{10^{\frac{\text{ANT4}}{10}} + 10^{\frac{\text{ANT3}}{10}}}{2} \right]$$

$$\text{Correlated Directional Gain} = 10 * \text{LOG} \left[ \frac{\left( 10^{\frac{\text{ANT4}}{20}} + 10^{\frac{\text{ANT3}}{20}} \right)^2}{2} \right]$$

Sample Calculation:

ANT 2 = -1.50 dB

ANT 1 = -2.50 dB

$$\text{Uncorrelated Directional Gain} = 10 * \text{LOG} \left[ \frac{10^{\frac{-1.5}{10}} + 10^{\frac{-2.5}{10}}}{2} \right] = -1.97 \text{ dBi}$$

$$\text{Correlated Directional Gain} = 10 * \text{LOG} \left[ \frac{\left( 10^{\frac{-1.5}{20}} + 10^{\frac{-2.5}{20}} \right)^2}{2} \right] = 1.02 \text{ dBi}$$

**RESULTS**

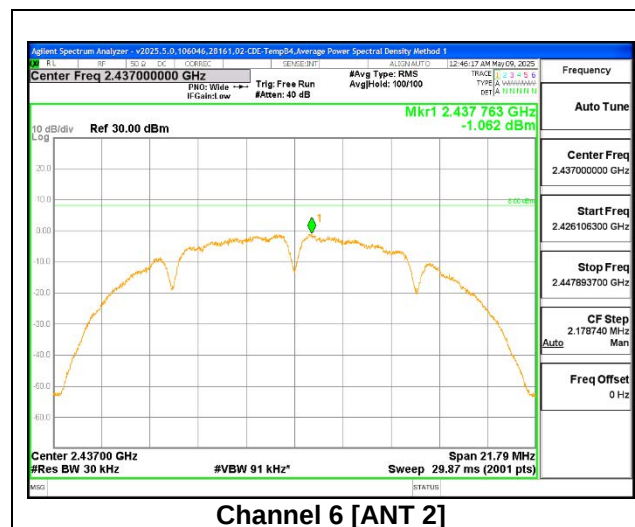
Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

Note: RBW setting is used greater than 3kHz on PSD measurement

### 9.4.1. 802.11b SISO MODE

|             |       |
|-------------|-------|
| DCCF (dB)   | 0.00  |
| ANT 2 (dBi) | -1.50 |
| ANT 1 (dBi) | -2.50 |

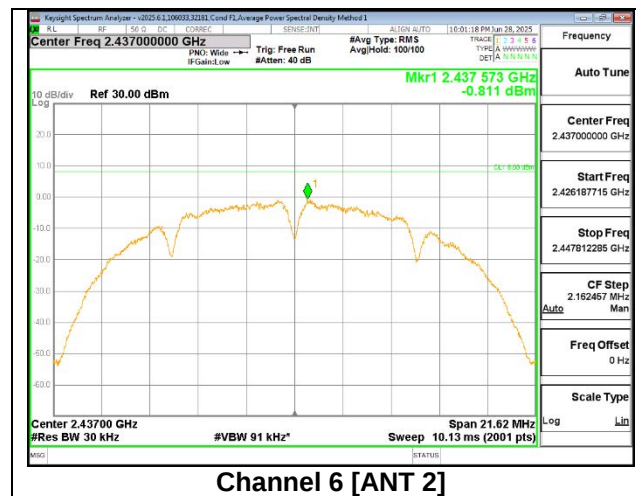
| Mode (SISO) | Freq (MHz) | Ch. # | Power Limit (dBm) |       | Output Power (Gated) (dBm) |       | Total Corrected Power (dBm) |       | PSD Limit (dBm/3kHz) |       | PSD (dBm/kHz) |        | Total Corrected PSD (dBm/kHz) |        |
|-------------|------------|-------|-------------------|-------|----------------------------|-------|-----------------------------|-------|----------------------|-------|---------------|--------|-------------------------------|--------|
|             |            |       | ANT 2             | ANT 1 | ANT 2                      | ANT 1 | ANT 2                       | ANT 1 | ANT 2                | ANT 1 | ANT 2         | ANT 1  | ANT 2                         | ANT 1  |
| b           | 2412       | 1     | 30.00             | 30.00 | 20.47                      | 20.48 | 20.47                       | 20.48 | 8.000                | 8.000 | -1.565        | -2.226 | -1.565                        | -2.226 |
|             | 2437       | 6     |                   |       | 20.93                      | 20.98 | 20.93                       | 20.98 |                      |       | -1.062        | -1.452 | -1.062                        | -1.452 |
|             | 2462       | 11    |                   |       | 20.94                      | 20.88 | 20.94                       | 20.88 |                      |       | -0.907        | -1.606 | -0.907                        | -1.606 |
|             | 2467       | 12    |                   |       | 19.47                      | 19.45 | 19.47                       | 19.45 |                      |       | -2.511        | -2.916 | -2.511                        | -2.916 |
|             | 2472       | 13    |                   |       | 16.99                      | 16.99 | 16.99                       | 16.99 |                      |       | -4.878        | -5.107 | -4.878                        | -5.107 |



### 9.4.2. 802.11b MIMO MODE

|                   |       |
|-------------------|-------|
| DCCF (dB)         | 0.00  |
| Uncorrelated Gain | -1.97 |
| Correlated Gain   | 1.02  |

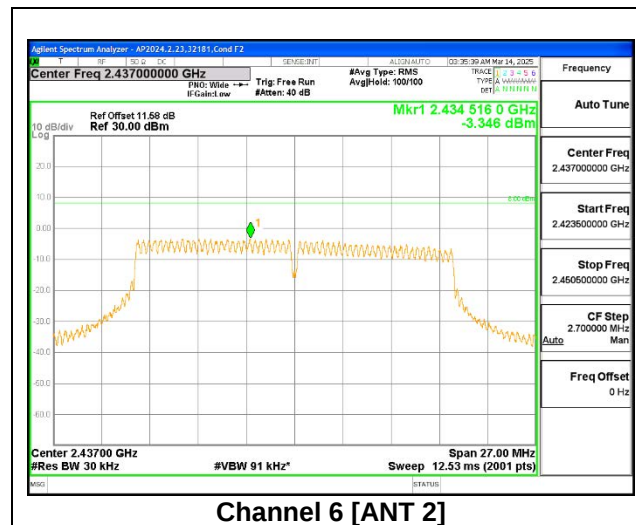
| Mode (SISO) | Freq (MHz) | Ch. # | Power Limit (dBm) | Output Power (Gated) (dBm) |       | Total MIMO Corrected Power (dBm) | PSD Limit (dBm/3kHz) | PSD (dBm/kHz) |        | Total Corrected PSD (dBm/kHz) |
|-------------|------------|-------|-------------------|----------------------------|-------|----------------------------------|----------------------|---------------|--------|-------------------------------|
|             |            |       |                   | ANT 2                      | ANT 1 |                                  |                      | ANT 2         | ANT 1  |                               |
| 11b         | 2412       | 1     | 30.00             | 19.49                      | 19.48 | 22.50                            | 8.000                | -2.875        | -2.590 | 0.280                         |
|             | 2437       | 6     |                   | 20.89                      | 20.99 | 23.95                            |                      | -0.811        | -1.298 | 1.963                         |
|             | 2462       | 11    |                   | 20.47                      | 20.48 | 23.49                            |                      | -1.673        | -1.672 | 1.338                         |
|             | 2467       | 12    |                   | 18.48                      | 18.45 | 21.48                            |                      | -3.733        | -3.439 | -0.573                        |
|             | 2472       | 13    |                   | 15.97                      | 15.98 | 18.99                            |                      | -6.350        | -5.935 | -3.127                        |



### 9.4.3. 802.11n HT20 SISO MODE

|                  |       |
|------------------|-------|
| DCCF (MCS0) (dB) | 0.00  |
| ANT 2 (dBi)      | -1.50 |
| ANT 1 (dBi)      | -2.50 |

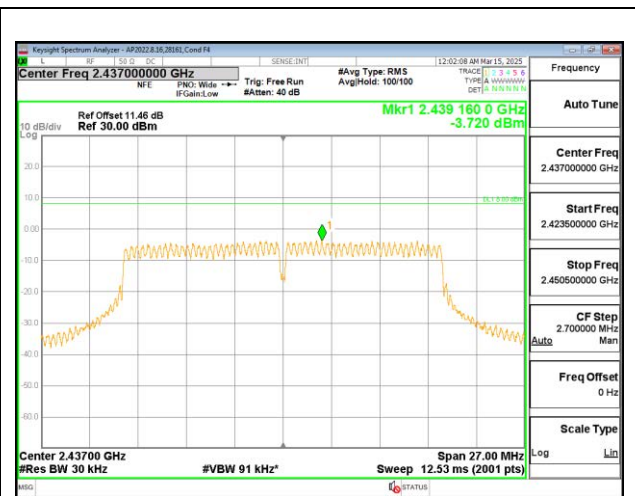
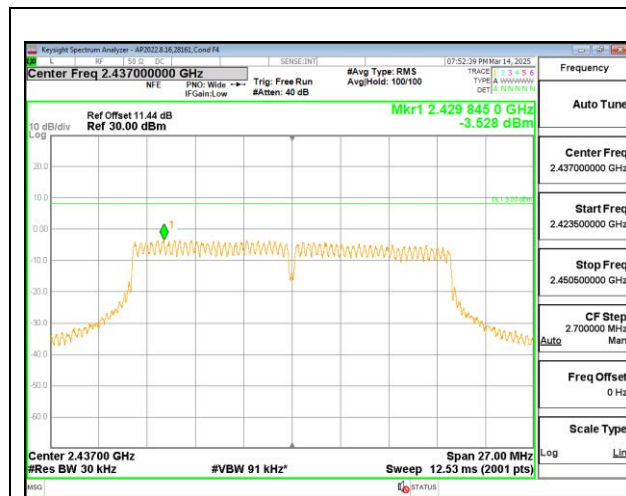
| Mode (SISO) | Freq (MHz) | Ch. # | Power Limit (dBm) |       | Output Power (Gated) (dBm) |       | Total Corrected Power (dBm) |       | PSD Limit (dBm/3kHz) |       | PSD (dBm/kHz) |         | Total Corrected PSD (dBm/kHz) |         |
|-------------|------------|-------|-------------------|-------|----------------------------|-------|-----------------------------|-------|----------------------|-------|---------------|---------|-------------------------------|---------|
|             |            |       | ANT 2             | ANT 1 | ANT 2                      | ANT 1 | ANT 2                       | ANT 1 | ANT 2                | ANT 1 | ANT 2         | ANT 1   | ANT 2                         | ANT 1   |
| HT20        | 2412       | 1     | 30.00             | 30.00 | 17.68                      | 17.69 | 17.68                       | 17.69 | 8.000                | 8.000 | -7.215        | -7.050  | -7.215                        | -7.050  |
|             | 2417       | 2     |                   |       | 19.47                      | 19.49 | 19.47                       | 19.49 |                      |       | -4.902        | -5.488  | -4.902                        | -5.488  |
|             | 2422       | 3     |                   |       | 20.80                      | 20.90 | 20.80                       | 20.90 |                      |       | -3.285        | -3.274  | -3.285                        | -3.274  |
|             | 2437       | 6     |                   |       | 20.96                      | 20.87 | 20.96                       | 20.87 |                      |       | -3.346        | -3.590  | -3.346                        | -3.590  |
|             | 2452       | 9     |                   |       | 20.80                      | 20.65 | 20.80                       | 20.65 |                      |       | -3.579        | -3.765  | -3.579                        | -3.765  |
|             | 2457       | 10    |                   |       | 19.47                      | 19.47 | 19.47                       | 19.47 |                      |       | -4.236        | -4.786  | -4.236                        | -4.786  |
|             | 2462       | 11    |                   |       | 17.43                      | 17.49 | 17.43                       | 17.49 |                      |       | -7.123        | -7.028  | -7.123                        | -7.028  |
|             | 2467       | 12    |                   |       | 15.45                      | 15.47 | 15.45                       | 15.47 |                      |       | -8.651        | -8.780  | -8.651                        | -8.780  |
|             | 2472       | 13    |                   |       | 11.68                      | 11.65 | 11.68                       | 11.65 |                      |       | -12.821       | -12.900 | -12.821                       | -12.900 |



### 9.4.4. 802.11n HT20 MIMO MODE

|                   |       |
|-------------------|-------|
| DCCF (MCS0) (dB)  | 0.00  |
| Uncorrelated Gain | -1.97 |
| Correlated Gain   | 1.02  |

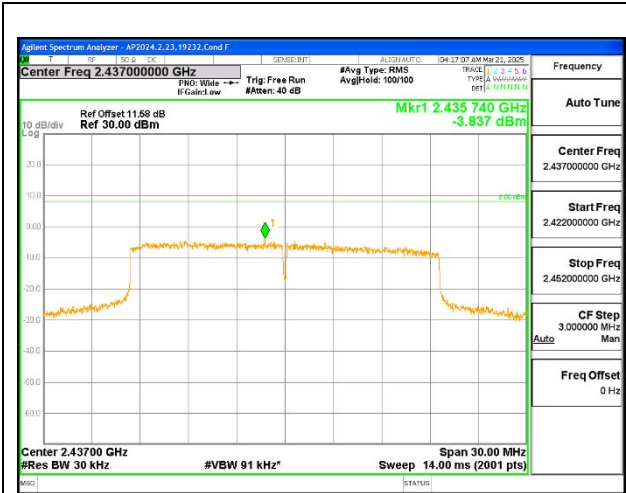
| Mode (SISO) | Freq (MHz) | Ch. # | Power Limit (dBm) | Output Power (Gated) (dBm) |       | Total MIMO Corrected Power (dBm) | PSD Limit (dBm/3kHz) | PSD (dBm/kHz) |         | Total Corrected PSD (dBm/kHz) |
|-------------|------------|-------|-------------------|----------------------------|-------|----------------------------------|----------------------|---------------|---------|-------------------------------|
|             |            |       |                   | ANT 2                      | ANT 1 |                                  |                      | ANT 2         | ANT 1   |                               |
| HT20        | 2412       | 1     | 30.00             | 17.46                      | 17.47 | 20.48                            | 8.000                | -6.914        | -7.056  | -3.974                        |
|             | 2417       | 2     |                   | 18.47                      | 18.47 | 21.48                            |                      | -5.950        | -5.781  | -2.854                        |
|             | 2422       | 3     |                   | 19.91                      | 19.91 | 22.92                            |                      | -4.306        | -4.525  | -1.404                        |
|             | 2437       | 6     |                   | 20.95                      | 20.95 | 23.96                            |                      | -3.528        | -3.720  | -0.613                        |
|             | 2447       | 8     |                   | 20.97                      | 20.97 | 23.98                            |                      | -3.786        | -3.563  | -0.663                        |
|             | 2452       | 9     |                   | 19.44                      | 19.44 | 22.45                            |                      | -4.775        | -4.775  | -1.765                        |
|             | 2457       | 10    |                   | 18.46                      | 18.46 | 21.47                            |                      | -6.009        | -5.980  | -2.984                        |
|             | 2462       | 11    |                   | 16.68                      | 16.68 | 19.69                            |                      | -6.960        | -6.933  | -3.936                        |
|             | 2467       | 12    |                   | 14.93                      | 14.93 | 17.94                            |                      | -9.198        | -9.375  | -6.275                        |
|             | 2472       | 13    |                   | 11.40                      | 11.40 | 14.41                            |                      | -12.141       | -12.263 | -9.191                        |



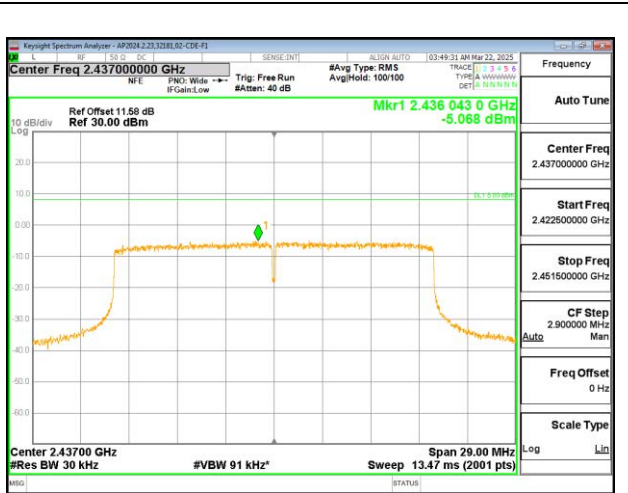
9.4.5. 802.11be EHT20 SISO MODE

|                  |       |         |
|------------------|-------|---------|
|                  | SU    | 26 Tone |
| DCCF (MCS0) (dB) | 0.00  | 0.00    |
| ANT 2 (dBi)      | -1.50 |         |
| ANT 1 (dBi)      | -2.50 |         |

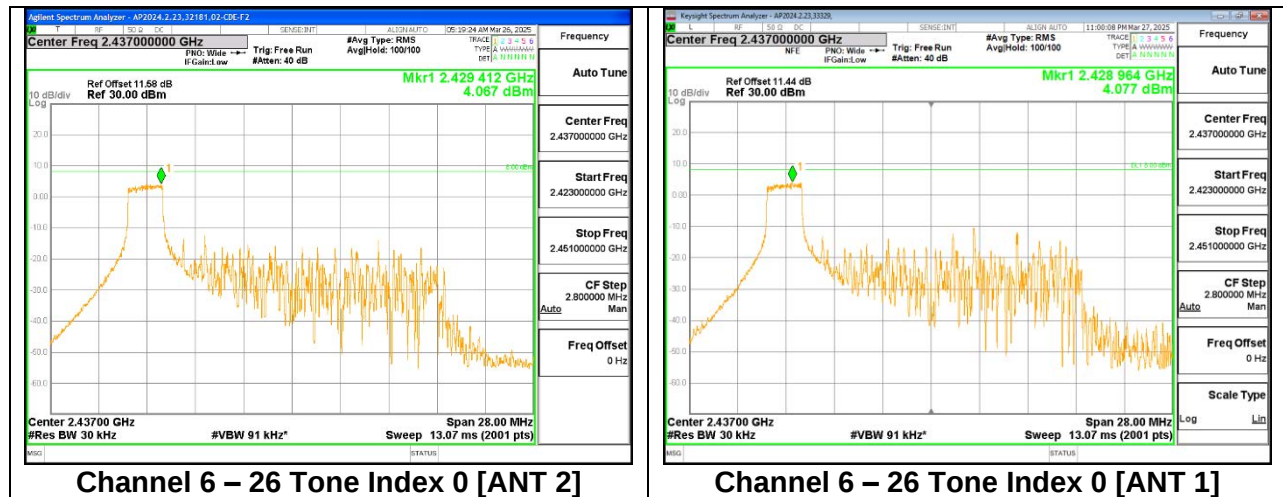
| Mode (SISO) | Freq (MHz) | Ch. # | Tone | RU Index | Power Limit (dBm) |       | Output Power (Gated) (dBm) |       | Total Corrected Power (dBm) |       | PSD Limit (dBm/3kHz) |       | PSD (dBm/kHz) |         | Total Corrected PSD (dBm/kHz) |         |
|-------------|------------|-------|------|----------|-------------------|-------|----------------------------|-------|-----------------------------|-------|----------------------|-------|---------------|---------|-------------------------------|---------|
|             |            |       |      |          | ANT 2             | ANT 1 | ANT 2                      | ANT 1 | ANT 2                       | ANT 1 | ANT 2                | ANT 1 | ANT 2         | ANT 1   | ANT 2                         | ANT 1   |
| EHT20       | 2412       | 1     | SU   | --       | 30.00             | 30.00 | 16.98                      | 16.97 | 16.98                       | 16.97 | 8.000                | 8.000 | -8.674        | -9.007  | -8.674                        | -9.007  |
|             |            |       | 0    | 0        |                   |       | 15.45                      | 15.49 | 15.45                       | 15.49 |                      |       | -0.337        | -1.340  | -0.337                        | -1.340  |
|             |            |       | 26   | 4        |                   |       | 15.47                      | 15.46 | 15.47                       | 15.46 |                      |       | -1.847        | -1.826  | -1.847                        | -1.826  |
|             |            |       | 8    | 8        |                   |       | 15.46                      | 15.47 | 15.46                       | 15.47 |                      |       | -1.545        | -1.471  | -1.545                        | -1.471  |
|             | 2417       | 2     | SU   | --       |                   |       | 17.99                      | 17.94 | 17.99                       | 17.94 |                      |       | -7.756        | -8.059  | -7.756                        | -8.059  |
|             | 2422       | 3     | SU   | --       |                   |       | 20.92                      | 20.96 | 20.92                       | 20.96 |                      |       | -3.129        | -5.110  | -3.129                        | -5.110  |
|             |            |       | 0    | 0        |                   |       | 20.96                      | 20.94 | 20.96                       | 20.94 |                      |       | -3.837        | -5.068  | -3.837                        | -5.068  |
|             |            |       | 26   | 4        |                   |       | 20.94                      | 20.93 | 20.94                       | 20.93 |                      |       | 4.067         | 4.077   | 4.067                         | 4.077   |
|             |            |       | 8    | 8        |                   |       | 20.99                      | 20.90 | 20.99                       | 20.90 |                      |       | 3.599         | 3.853   | 3.599                         | 3.853   |
|             | 2437       | 6     | SU   | --       |                   |       | 20.89                      | 20.91 | 20.89                       | 20.91 |                      |       | 4.050         | 3.805   | 4.050                         | 3.805   |
|             |            |       | 0    | 0        |                   |       | 20.95                      | 20.92 | 20.95                       | 20.92 |                      |       | -4.122        | -4.191  | -4.122                        | -4.191  |
|             |            |       | 26   | 4        |                   |       | 17.96                      | 17.98 | 17.96                       | 17.98 |                      |       | -6.775        | -8.073  | -6.775                        | -8.073  |
|             |            |       | 8    | 8        |                   |       | 16.89                      | 16.99 | 16.89                       | 16.99 |                      |       | -8.566        | -9.047  | -8.566                        | -9.047  |
|             | 2452       | 9     | SU   | --       |                   |       | 15.92                      | 15.99 | 15.92                       | 15.99 |                      |       | -0.952        | -1.121  | -0.952                        | -1.121  |
|             | 2462       | 11    | SU   | --       |                   |       | 15.94                      | 15.94 | 15.94                       | 15.94 |                      |       | -0.702        | -1.028  | -0.702                        | -1.028  |
|             |            |       | 0    | 0        |                   |       | 15.93                      | 15.97 | 15.93                       | 15.97 |                      |       | -0.722        | -1.041  | -0.722                        | -1.041  |
|             |            |       | 26   | 4        |                   |       | 14.93                      | 14.96 | 14.93                       | 14.96 |                      |       | -10.646       | -11.051 | -10.646                       | -11.051 |
|             |            |       | 8    | 8        |                   |       | 13.91                      | 13.95 | 13.91                       | 13.95 |                      |       | -2.988        | -3.160  | -2.988                        | -3.160  |
|             | 2467       | 12    | SU   | --       |                   |       | 13.90                      | 13.98 | 13.90                       | 13.98 |                      |       | -2.738        | -3.013  | -2.738                        | -3.013  |
|             |            |       | 0    | 0        |                   |       | 13.95                      | 13.97 | 13.95                       | 13.97 |                      |       | -2.847        | -2.730  | -2.847                        | -2.730  |
|             |            |       | 26   | 4        |                   |       | 8.37                       | 8.47  | 8.37                        | 8.47  |                      |       | -16.279       | -16.334 | -16.279                       | -16.334 |
|             |            |       | 8    | 8        |                   |       | -1.05                      | -1.07 | -1.05                       | -1.07 |                      |       | -16.975       | -17.182 | -16.975                       | -17.182 |
|             | 2472       | 13    | SU   | --       |                   |       | -1.03                      | -1.05 | -1.03                       | -1.05 |                      |       | -17.266       | -17.092 | -17.266                       | -17.092 |
|             |            |       | 0    | 0        |                   |       | -1.01                      | -1.06 | -1.01                       | -1.06 |                      |       | -17.189       | -1.908  | -17.189                       | -1.908  |
|             |            |       | 26   | 4        |                   |       |                            |       |                             |       |                      |       |               |         |                               |         |
|             |            |       | 8    | 8        |                   |       |                            |       |                             |       |                      |       |               |         |                               |         |



Channel 6 – SU [ANT 2]



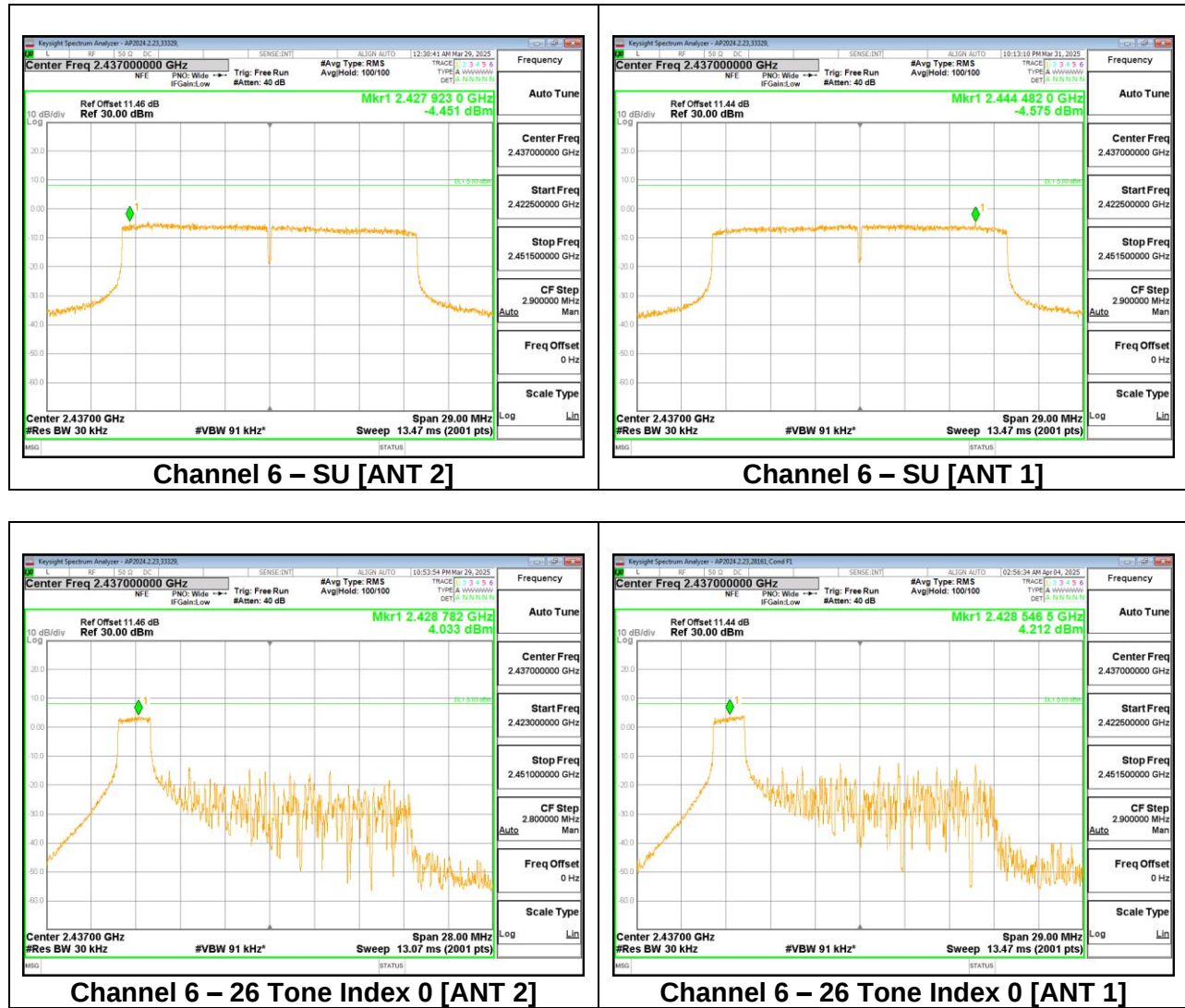
Channel 6 – SU [ANT 1]



### 9.4.6. 802.11be EHT20 MIMO MODE

|                   | SU    | 26 Tone |
|-------------------|-------|---------|
| DCCF (MCS0) (dB)  | 0.00  | 0.00    |
| Uncorrelated Gain | -1.97 | -1.97   |
| Correlated Gain   | 1.02  | 1.02    |

| Mode (MIMO) | Freq (MHz) | Ch. # | Tone | RU Index | Power Limit (dBm) | Output Power (Gated) (dBm) |       | Total MIMO Corrected Power (dBm) | PSD Limit (dBm/3kHz) | PSD (dBm/kHz) |         | Total Corrected PSD (dBm/kHz) |
|-------------|------------|-------|------|----------|-------------------|----------------------------|-------|----------------------------------|----------------------|---------------|---------|-------------------------------|
|             |            |       |      |          |                   | ANT 2                      | ANT 1 |                                  |                      | ANT 2         | ANT 1   |                               |
| EHT20       | 2412       | 1     | SU   | --       | 30.00             | 15.98                      | 15.89 | 18.95                            | 8.0                  | -9.352        | -9.712  | -6.518                        |
|             |            |       | 0    |          |                   | 14.93                      | 14.90 | 17.93                            |                      | -1.863        | -2.097  | 1.032                         |
|             |            |       | 26   | 4        |                   | 14.89                      | 14.97 | 17.94                            |                      | -1.960        | -2.042  | 1.009                         |
|             |            |       | 8    |          |                   | 14.92                      | 14.95 | 17.95                            |                      | -1.910        | -2.001  | 1.055                         |
|             | 2417       | 2     | SU   | --       |                   | 16.90                      | 16.92 | 19.92                            |                      | -8.474        | -8.448  | -5.451                        |
|             | 2422       | 3     | SU   | --       |                   | 18.99                      | 18.88 | 21.95                            |                      | -6.730        | -7.072  | -3.887                        |
|             | 2427       | 4     | SU   | --       |                   | 20.98                      | 20.97 | 23.99                            |                      | -4.865        | -4.948  | -1.896                        |
|             | 2437       | 6     | SU   | --       |                   | 20.99                      | 20.97 | 23.99                            |                      | -4.451        | -4.575  | -1.502                        |
|             |            |       | 0    |          |                   | 20.98                      | 20.98 | 23.99                            |                      | 4.033         | 4.212   | 7.134                         |
|             |            |       | 26   | 4        |                   | 20.90                      | 20.89 | 23.91                            |                      | 3.516         | 3.920   | 6.733                         |
|             |            |       | 8    |          |                   | 20.87                      | 20.95 | 23.92                            |                      | 3.958         | 4.052   | 7.016                         |
|             | 2447       | 8     | SU   | --       |                   | 20.93                      | 20.98 | 23.97                            |                      | -4.518        | -4.884  | -1.687                        |
|             | 2452       | 9     | SU   | --       |                   | 18.49                      | 18.47 | 21.49                            |                      | -6.576        | -6.849  | -3.700                        |
|             | 2457       | 10    | SU   | --       |                   | 16.97                      | 16.89 | 19.94                            |                      | -9.061        | -8.731  | -5.883                        |
|             | 2462       | 11    | SU   | --       |                   | 15.92                      | 15.93 | 18.94                            |                      | -9.674        | -9.614  | -6.634                        |
|             |            |       | 0    |          |                   | 14.93                      | 14.98 | 17.97                            |                      | -1.981        | -1.900  | 1.070                         |
|             |            |       | 26   | 4        |                   | 14.98                      | 14.91 | 17.96                            |                      | -1.955        | -2.025  | 1.020                         |
|             |            |       | 8    |          |                   | 14.99                      | 14.92 | 17.97                            |                      | -1.916        | -2.139  | 0.984                         |
|             | 2467       | 12    | SU   | --       |                   | 13.88                      | 13.98 | 16.94                            |                      | -11.751       | -11.803 | -8.767                        |
|             |            |       | 0    |          |                   | 12.92                      | 12.89 | 15.92                            |                      | -3.876        | -3.639  | -0.746                        |
|             |            |       | 26   | 4        |                   | 12.89                      | 12.93 | 15.92                            |                      | -4.135        | -4.088  | -1.101                        |
|             |            |       | 8    |          |                   | 12.90                      | 12.92 | 15.92                            |                      | -3.881        | -3.654  | -0.756                        |
|             | 2472       | 13    | SU   | --       |                   | 8.49                       | 8.49  | 11.50                            |                      | -16.760       | -17.074 | -13.904                       |
|             |            |       | 0    |          |                   | -2.07                      | -2.08 | 0.94                             |                      | -17.742       | -18.181 | -14.946                       |
|             |            |       | 26   | 4        |                   | -2.05                      | -2.03 | 0.97                             |                      | -18.238       | -18.188 | -15.203                       |
|             |            |       | 8    |          |                   | -2.04                      | -2.12 | 0.93                             |                      | -18.063       | -18.150 | -15.096                       |



## 9.5. CONDUCTED SPURIOUS EMISSIONS

### LIMITS

FCC §15.247 (d)

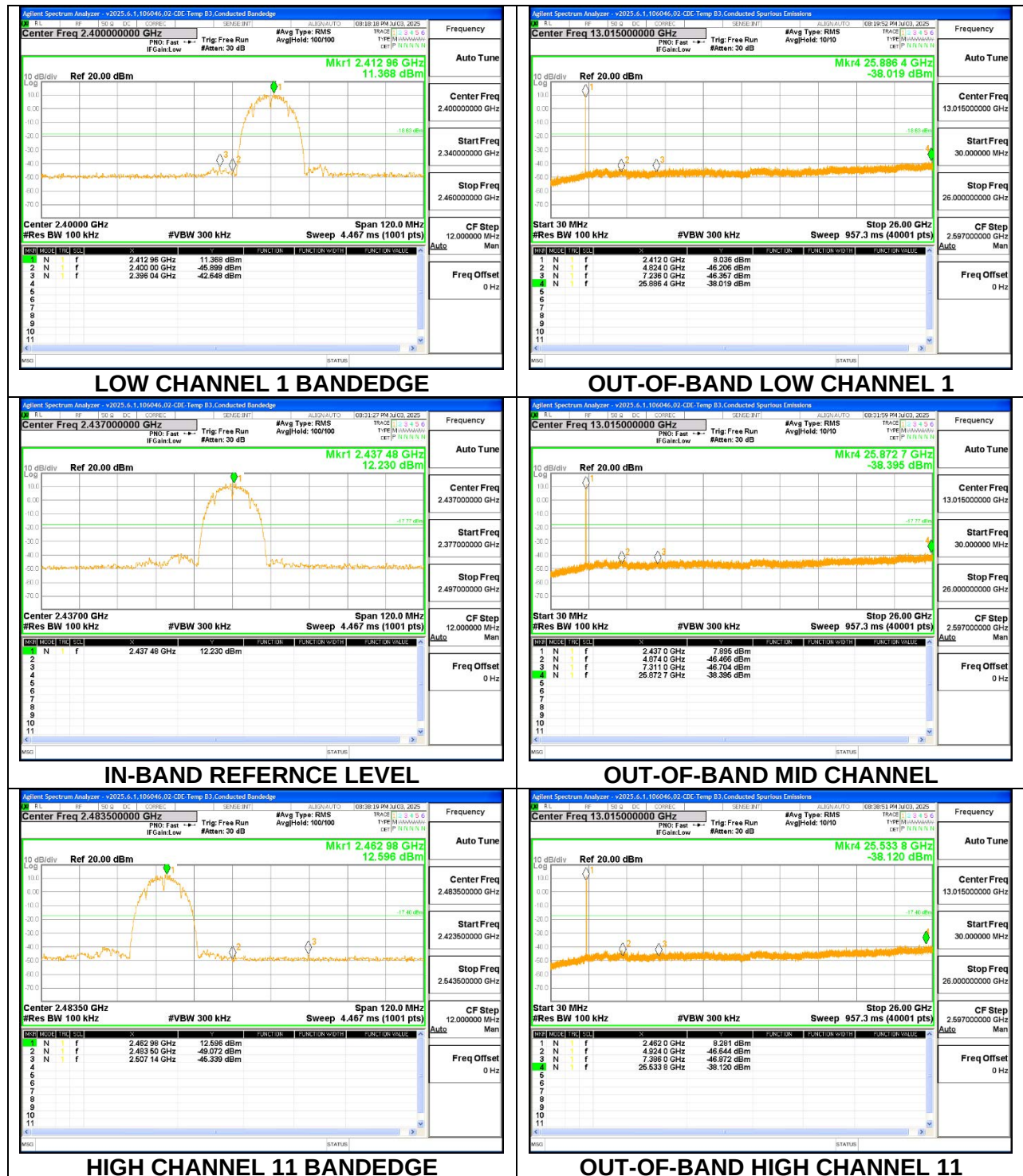
RSS-247 5.5

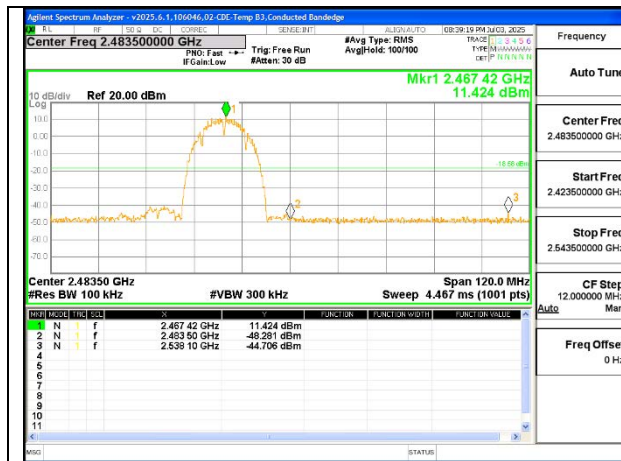
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### RESULTS

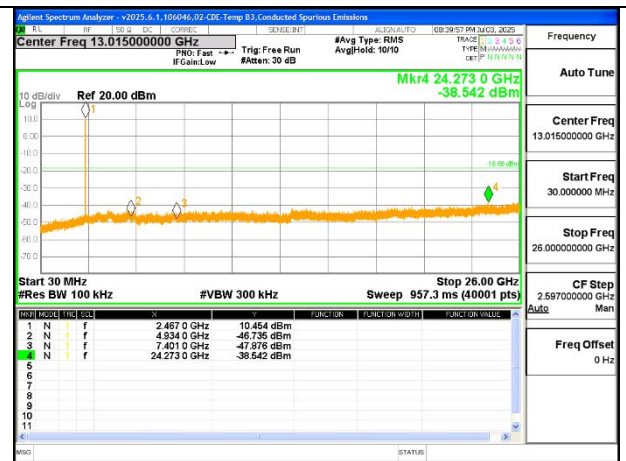
## 9.5.1. 802.11b MODE 1TX

### 1TX ANT 2 MODE

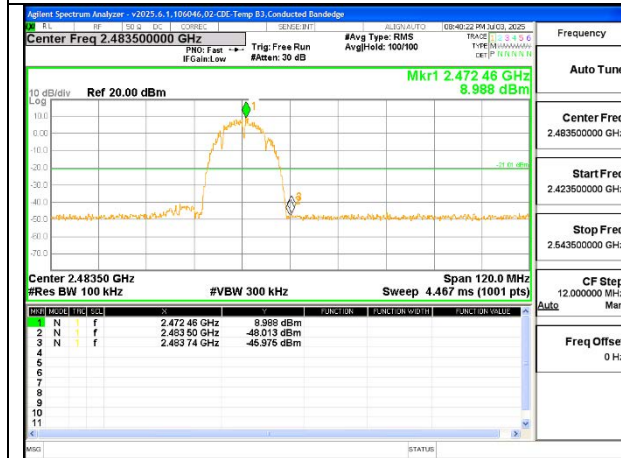




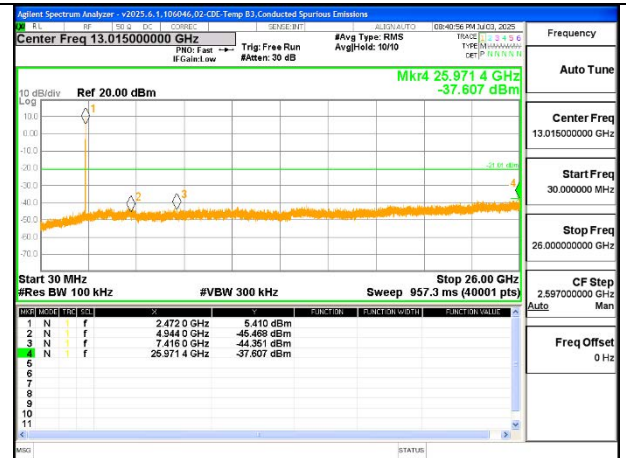
HIGH CHANNEL 12 BANDEDGE



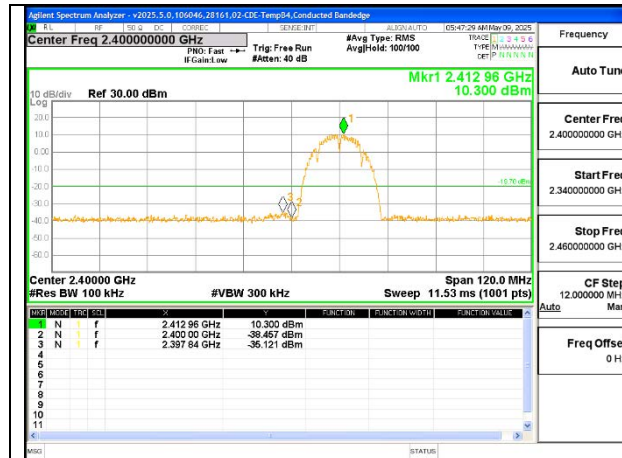
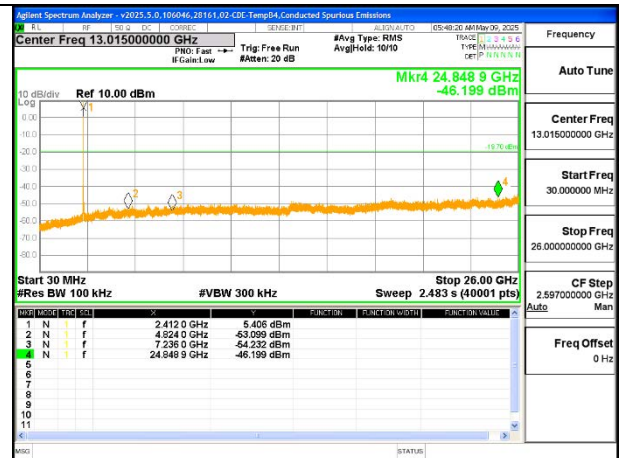
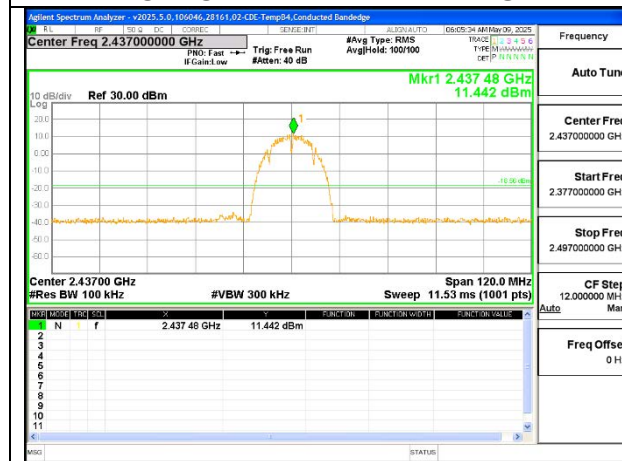
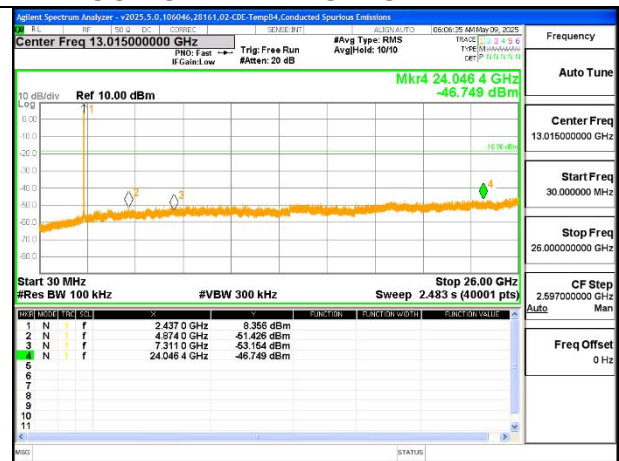
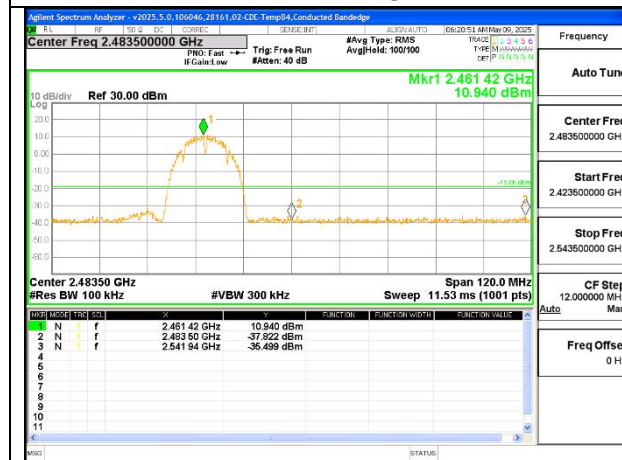
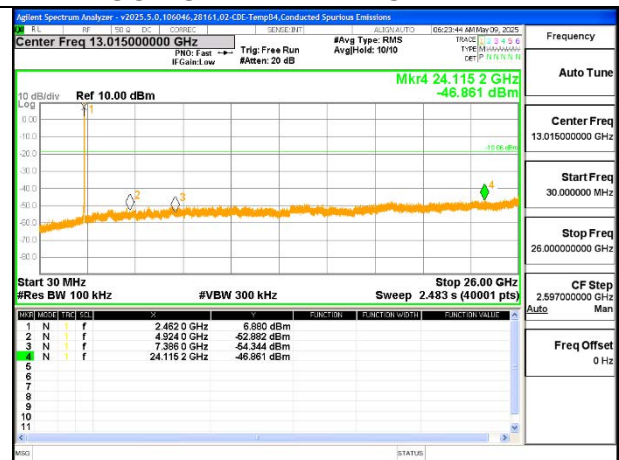
OUT-OF-BAND HIGH CHANNEL 12

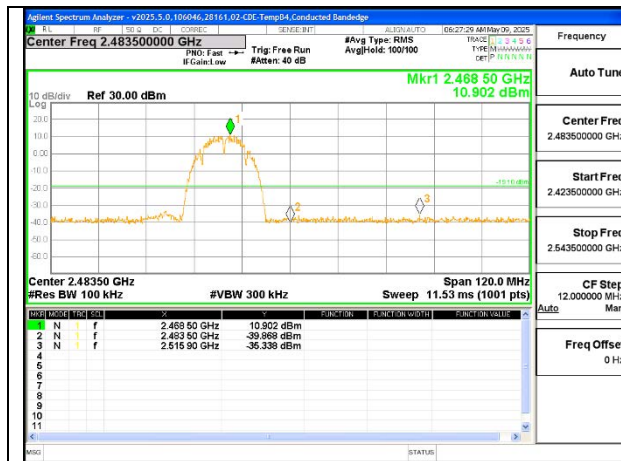


HIGH CHANNEL 13 BANDEDGE

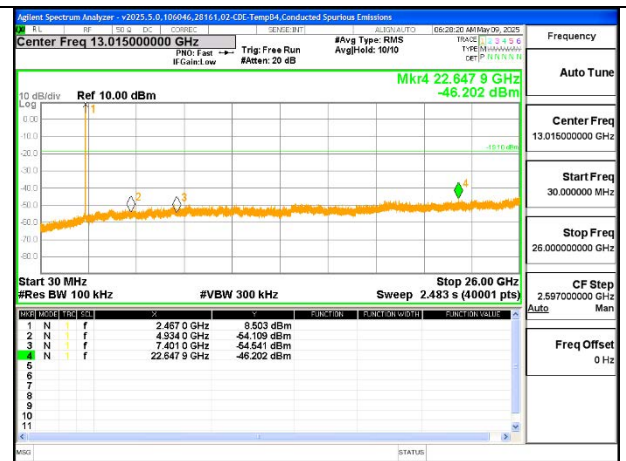


OUT-OF-BAND HIGH CHANNEL 13

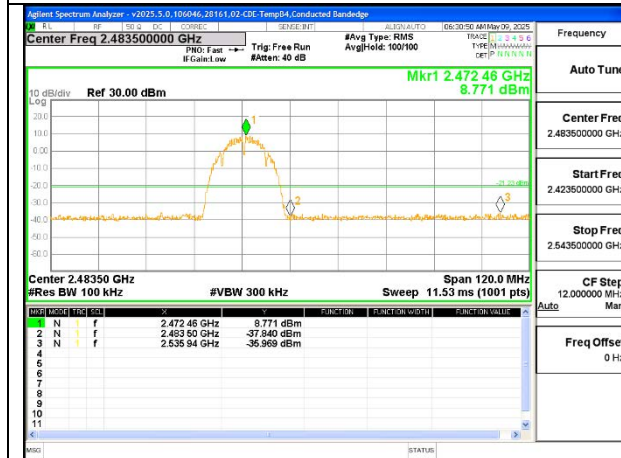
**1TX ANT 1 MODE****LOW CHANNEL 1 BANDEDGE****OUT-OF-BAND LOW CHANNEL 1****IN-BAND REFERENCE LEVEL****OUT-OF-BAND MID CHANNEL****HIGH CHANNEL 11 BANDEDGE****OUT-OF-BAND HIGH CHANNEL 11**



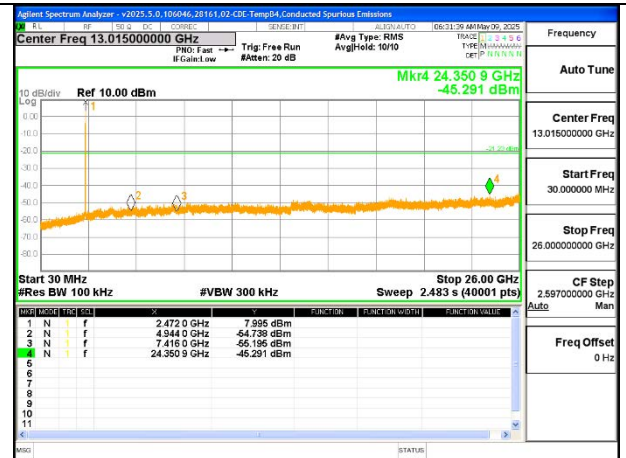
HIGH CHANNEL 12 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 12



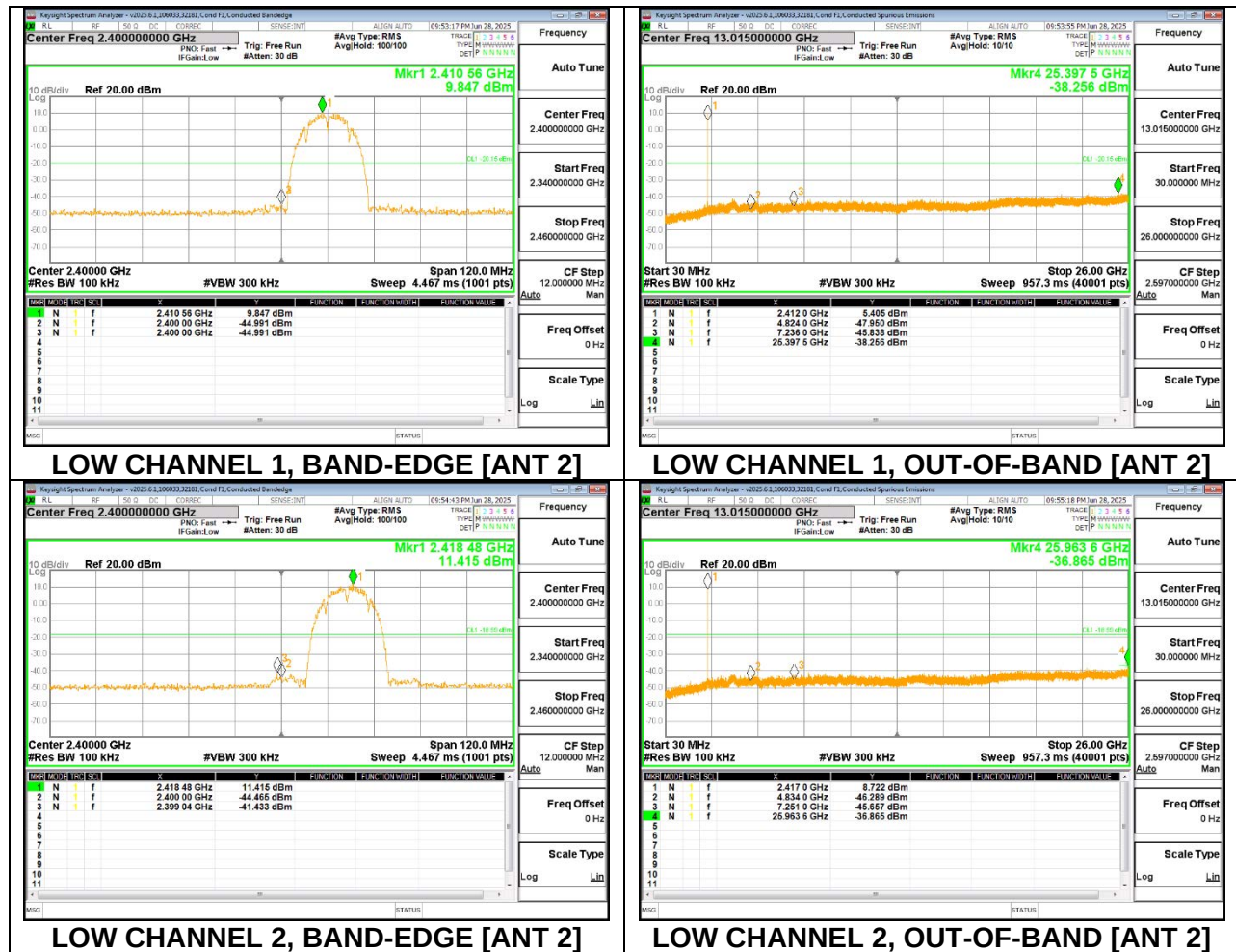
HIGH CHANNEL 13 BANDEDGE

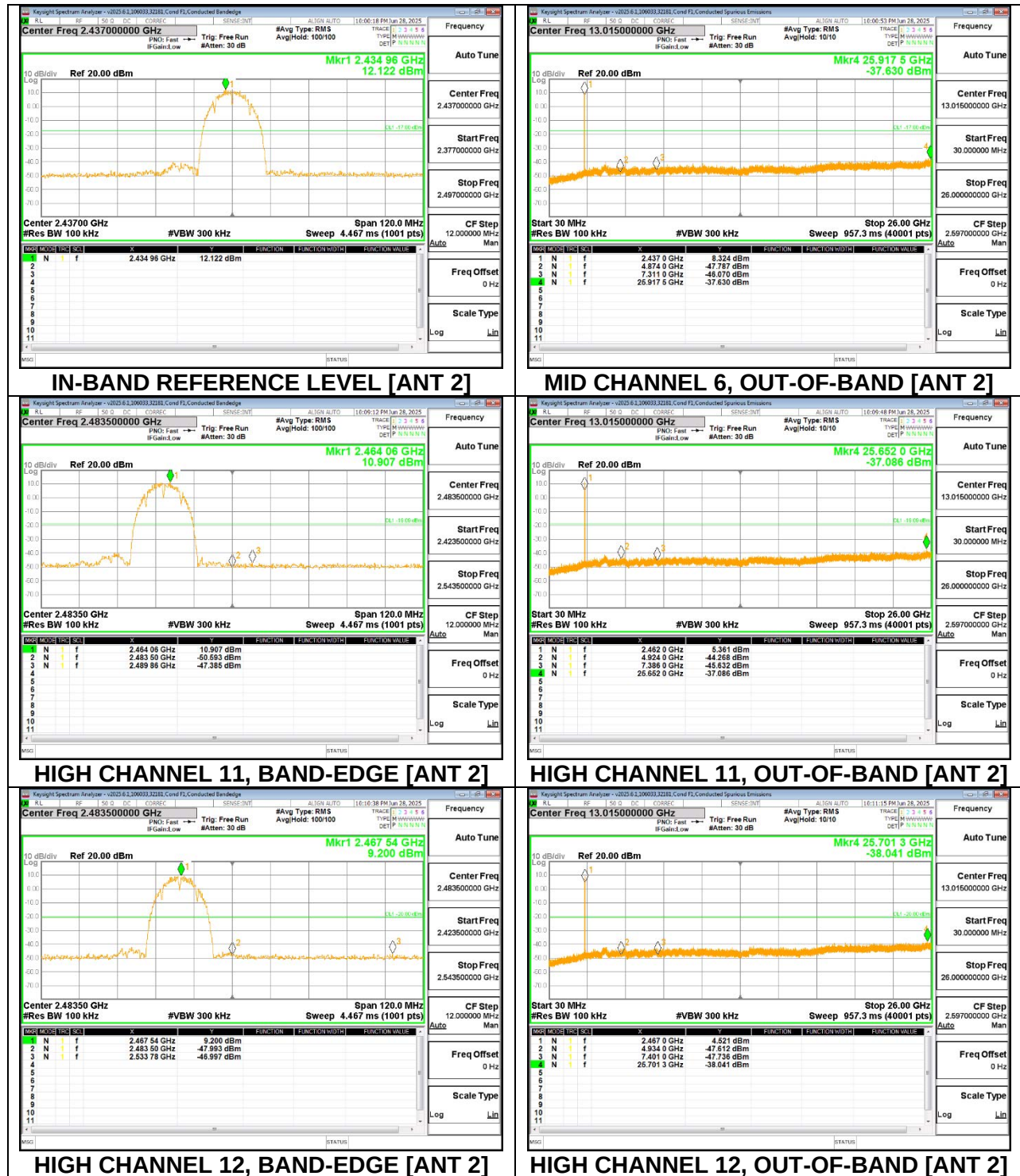


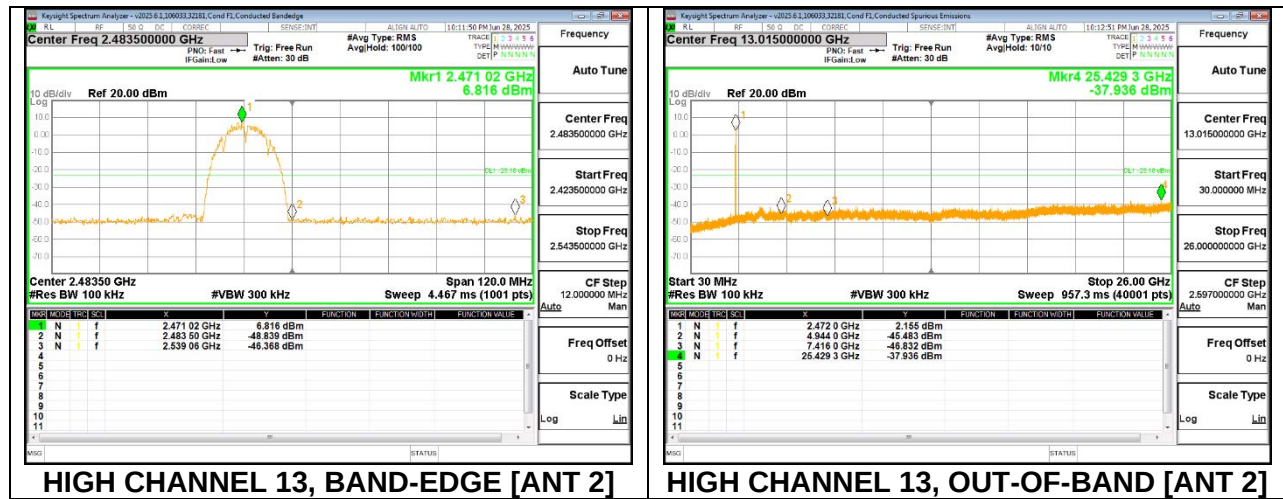
OUT-OF-BAND HIGH CHANNEL 13

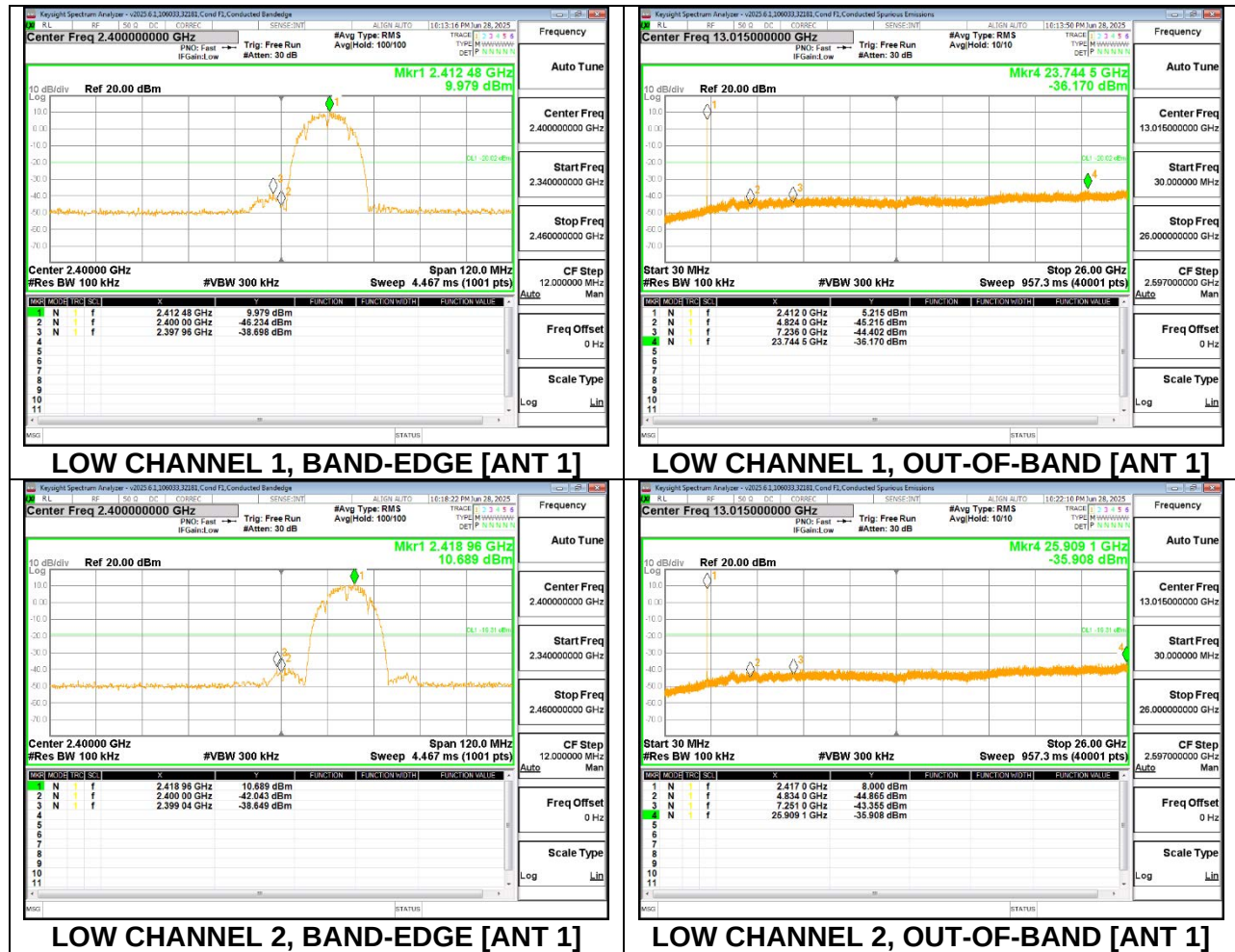
## 9.5.2. 802.11b CDD MODE 2TX

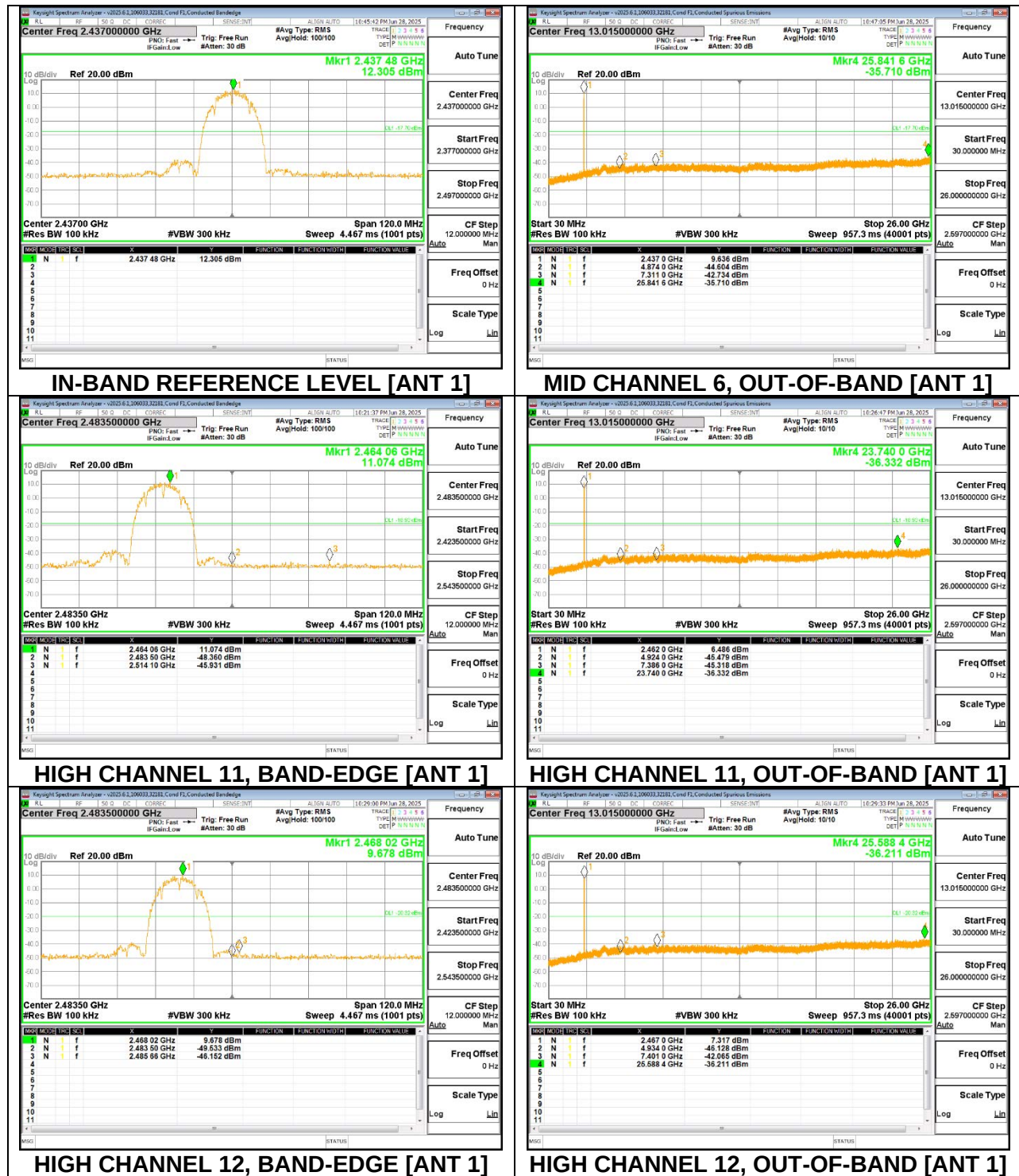
### ANT 2 + ANT 1 2TX MODE

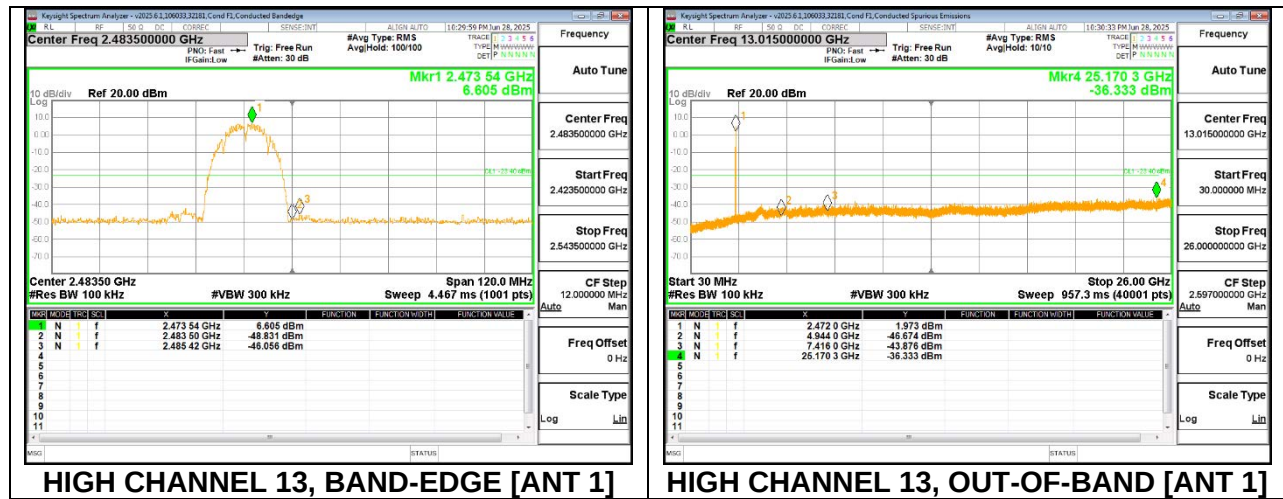












### 9.5.3. 802.11n HT20 SISO MODE

#### 1TX ANT 2 MODE

