

# **TEST REPORT**

**Report Number:** 15982152 – E3V2

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

**Model :** A3472 (Parent)  
A3713, A3714, A3715 (Variants)

**Brand :** APPLE

**FCC ID :** BCG-E9186A (Parent)  
BCG-E9192A, BCG-E9193A, BCG-E9194A (Variants)

**IC :** 579C-E9186A (Parent)  
579C-E9192A, 579C-E9193A, 579C-E9194A (Variants)

**EUT Description :** SMARTPHONE

**Test Standard(s) :** FCC 47 CFR Part 15 SUBPART C  
ISED RSS-247 ISSUE 4  
ISED RSS-GEN ISSUE 5 + A1 + A2

**Date Of Issue:**

2026-06-25

**Prepared by:**

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**REPORT REVISION HISTORY**

| <b>Rev.</b> | <b>Issue Date</b> | <b>Revisions</b>                            | <b>Revised By</b> |
|-------------|-------------------|---------------------------------------------|-------------------|
| V1          | 2026-06-18        | Initial Issue                               | --                |
| V2          | 2026-06-25        | Addressed TCB Quesitions: Sections 6, 9, 10 | Chris Xiong       |

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## 1. ATTESTATION OF TEST RESULTS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                          |                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Applicant Name and Address</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | APPLE INC.<br>1 APPLE PARK WAY<br>CUPERTINO, CA 95014, U.S.A.                            |                                                                                                                     |
| <b>Model</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | A3472 (Parent)<br>A3713, A3714, A3715 (Variants)                                         |                                                                                                                     |
| <b>Brand</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | APPLE                                                                                    |                                                                                                                     |
| <b>FCC ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | BCG-E9186A (Parent)<br>BCG-E9192A, BCG-E9193A, BCG-E9194A (Variants)                     |                                                                                                                     |
| <b>IC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 579C-E9186A (Parent)<br>579C-E9192A, 579C-E9193A, 579C-E9194A (Variants)                 |                                                                                                                     |
| <b>EUT Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SMARTPHONE                                                                               |                                                                                                                     |
| <b>Serial Number</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | C07HP3000UW0001AMR, C07HT4000FJ0001B9T (Conducted)<br>LWQQJL6Y6X , KQF475QLT0 (Radiated) |                                                                                                                     |
| <b>Sample Receipt Date</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2026-01-06                                                                               |                                                                                                                     |
| <b>Date Tested</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2026-01-13 to 2026-05-20                                                                 |                                                                                                                     |
| <b>Applicable Standards</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | FCC 47 CFR Part 15 Subpart C<br>ISED RSS-247 Issue 4<br>ISED RSS-GEN Issue 5 + A1 + A2   |                                                                                                                     |
| <b>Test Results</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 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 ensure 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:<br><br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                          | Prepared & Reviewed By:<br><br> |
| Frank Ibrahim<br>Staff Engineer<br>UL Verification Services Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                          | Chris Xiong<br>Lab Supervisor<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 6.3)
2. Cable loss (see Section 6.3)

| Requirement Description      | Requirement Clause Number (FCC) | Requirement Clause Number (ISED) | Result                  |
|------------------------------|---------------------------------|----------------------------------|-------------------------|
| Duty Cycle                   | See Comment                     |                                  | Reporting purposes only |
| 99% OBW                      | -                               | RSS-GEN 6.7                      | Complies                |
| 6dB BW                       | 15.247 (a) (2)                  | RSS-247 6.3.1 (a)                | Complies                |
| Output Power                 | 15.247 (b) (3)                  | RSS-247 6.3.2                    | Complies                |
| PSD                          | 15.247 (e)                      | RSS-247 6.3.1 (b)                | Complies                |
| Conducted Spurious Emissions | 15.247 (d)                      | RSS-247 6.6                      | Complies                |
| Radiated Emissions           | 15.209, 15.205                  | RSS-GEN 8.9, 8.10                | Complies                |
| AC Mains Conducted Emissions | 15.207                          | RSS-Gen 8.8                      | Complies                |

## 3. TEST METHODOLOGY

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

- ANSI/USEMCSC C63.10-2020+Cor 1-2023 (FCC)
- FCC 47 CFR Part 2
- FCC 47 CFR Part 15 C
- 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 4
- ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 (ISED)

## 4. FACILITIES AND ACCREDITATION

UL Verification Services 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 CABID | ISED Company Number | FCC Registration |
|-------------------------------------|----------------------------------------------------------|------------|---------------------|------------------|
| <input 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 checked="" 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                      |
| Time Domain Measurements Using SA                    | 3.39 %                       |
| RF Power Measurement Direct Method Using Power Meter | 0.450 dB (Ave), 1.30 dB (PK) |
| Radio Frequency (Spectrum Analyzer)                  | 141.16 Hz                    |
| Occupied Bandwidth                                   | 1.22 %                       |
| Carrier Frequency Separation                         | 19.70 Hz                     |
| Number of Hopping Frequencies                        | 0.000 dB                     |
| 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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)  
 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

### MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.  
 36.5 dBuV + 0 dB + 10.1 dB + 0 dB = 46.6 dBuV

## 6. EQUIPMENT UNDER TEST

### 6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, WCDMA, LTE, 5G NR1, 5G NR2, 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 RX only) and Mobile Satellite Service (MSS) technologies. The rechargeable battery is not user accessible. This device is not user-serviceable and requires special tools to disassemble.

### 6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

| Frequency Range (MHz) | Mode | Antenna           | Configuration | Output Power (dBm) | Output Power (mW) |
|-----------------------|------|-------------------|---------------|--------------------|-------------------|
| 2404 - 2476           | HDR4 | ANT 4             | High Power    | 16.84              | 48.31             |
|                       |      | ANT 3             | High Power    | 16.76              | 47.42             |
|                       |      | BF, ANT 4 + ANT 3 | High Power    | <b>19.77</b>       | 94.84             |
| 2404 - 2476           | HDR8 | ANT 4             | High Power    | 16.81              | 47.97             |
|                       |      | ANT 3             | High Power    | 16.76              | 47.42             |
|                       |      | BF, ANT 4 + ANT 3 | High Power    | 19.75              | 94.41             |

### 6.3. DESCRIPTION OF AVAILABLE ANTENNAS AND CABLE LOSS

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

| Frequency Range (GHz) | Antenna Type | Antenna Peak Gain |             |                           |                         | Cable Loss |            |
|-----------------------|--------------|-------------------|-------------|---------------------------|-------------------------|------------|------------|
|                       |              | ANT 4 (dBi)       | ANT 3 (dBi) | Uncorrelated Chains (dBi) | Correlated Chains (dBi) | ANT 4 (dB) | ANT 3 (dB) |
| 2.4                   | IFA          | 0.50              | -1.00       | -1.80                     | 0.50                    | 1.63       | 1.75       |

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

### 6.4. SOFTWARE AND FIRMWARE

The EUT firmware and software installed during testing were 24A343.

## 6.5. WORST-CASE CONFIGURATION AND MODE

EUT was investigated in three orthogonal orientations X (Flatbed), Y (Landscape) and Z (Portrait). The following table exhibits the worst-case orientation. The full tests of the EUT have been made upon the orientations shown in the table below.

| Band    | ANT 4       | ANT 3       | ANT 4 + 3   |
|---------|-------------|-------------|-------------|
| 2.4 GHz | X (Flatbed) | X (Flatbed) | X (Flatbed) |

Radiated band-edge, harmonic, and spurious emissions from 1 GHz to 18 GHz were measured with the EUT transmitting at the highest power on the low, middle, and high channels.

Radiated emissions below 30 MHz, below 1 GHz, from 18 GHz to 26 GHz, as well as power line conducted emissions, were measured with the EUT transmitting on the channel with the highest output power to represent the worst-case condition.

Below 1 GHz tests were performed with EUT connected to AC power adapter as the worst case; and for above 1 GHz, the worst-case configuration reported was tested with EUT only. For AC line conducted emission, test was investigated with AC power adapter and with laptop. There were no emissions found below 30 MHz within 20 dB of the limit.

All simultaneous transmission combinations have been investigated, and no signal emissions were observed.

The plots presented in this report are representative of the test methods and parameter settings used during the evaluation.

After the investigation, the worst case of power and PSD modes selected for test are as shown in the table shown below.

| Band    | Mode     | Frequency Range (MHz) | Worst Case |     |
|---------|----------|-----------------------|------------|-----|
|         |          |                       | Power      | PSD |
| 2.4 GHz | HDR4     | 2404 - 2476           | X          | X   |
|         | HDRPS2   |                       |            |     |
|         | XHDRPS2  |                       |            |     |
|         | HDR8     | 2404 - 2476           | X          | X   |
|         | HDRPM4   |                       |            |     |
|         | HDRPM6   |                       |            |     |
|         | HDRPM8   |                       |            |     |
|         | XHDRPM4  |                       |            |     |
|         | XHDRPM6  |                       |            |     |
|         | XHDRPM8  |                       |            |     |
|         | HDRPM12  |                       |            |     |
|         | HDRPM16  |                       |            |     |
|         | XHDRPM12 |                       |            |     |
|         | XHDRPM16 |                       |            |     |

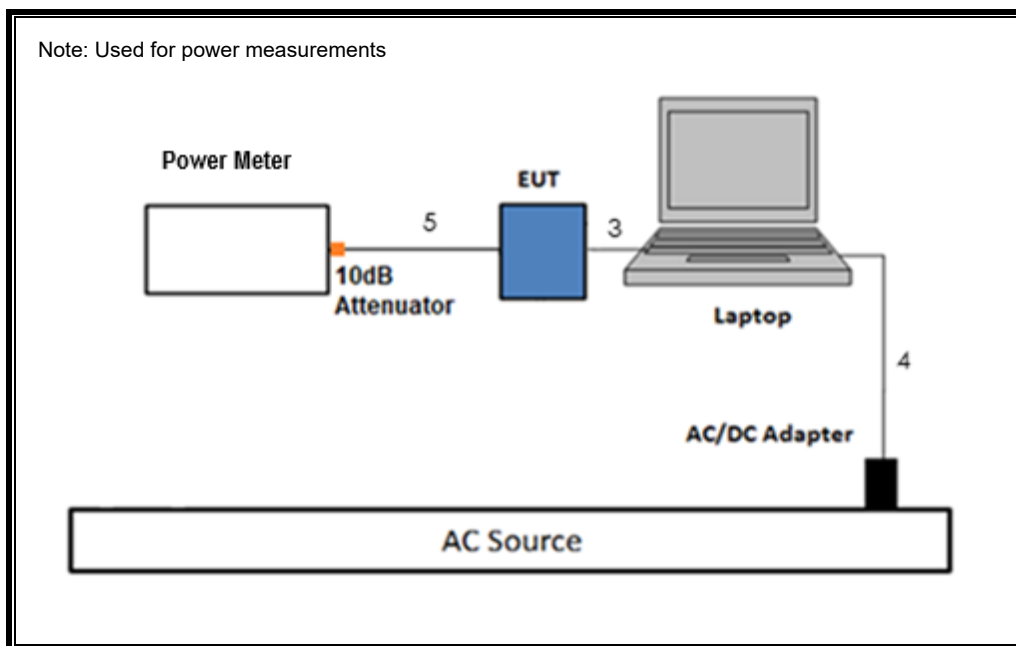
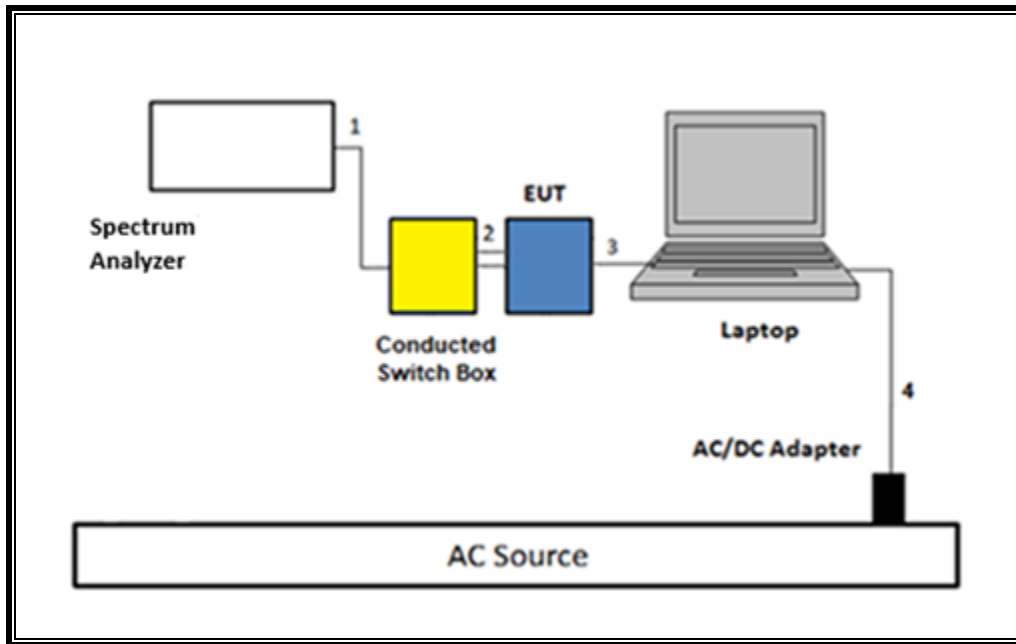
If the Keysight PXA supports both AC and DC coupling, a warning message stating “DC coupled” will appear on the status line.

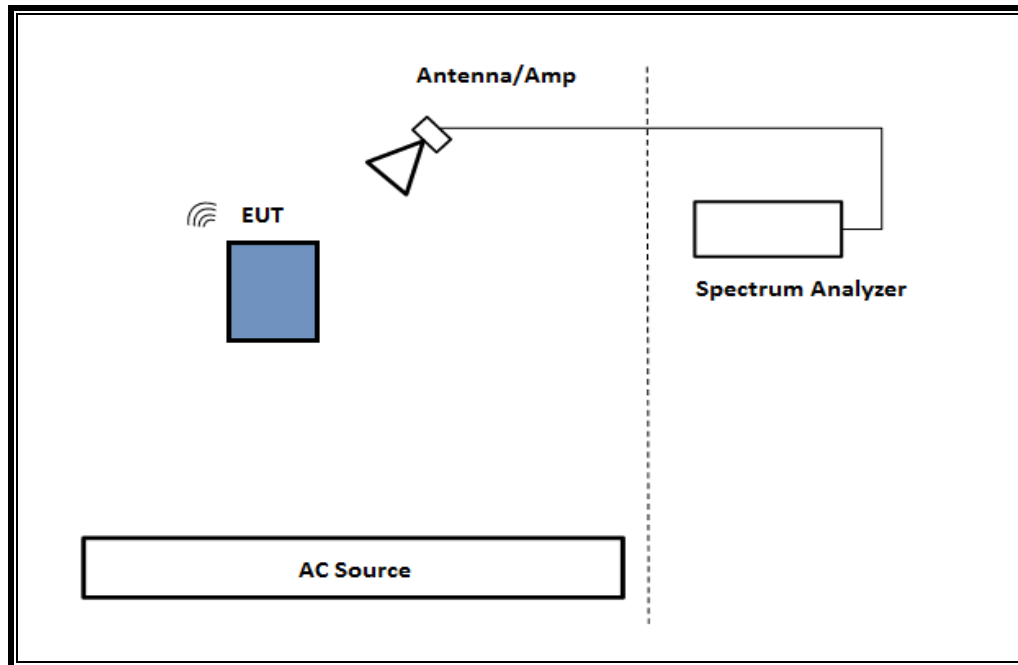
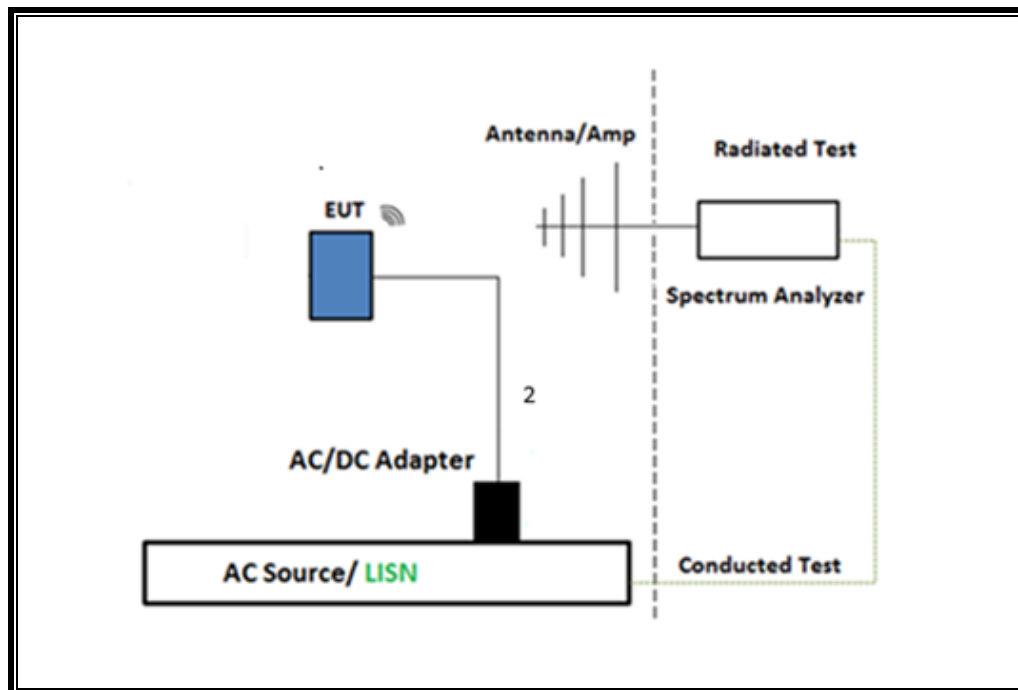
## 6.6.DESCRPTION OF TEST SETUP

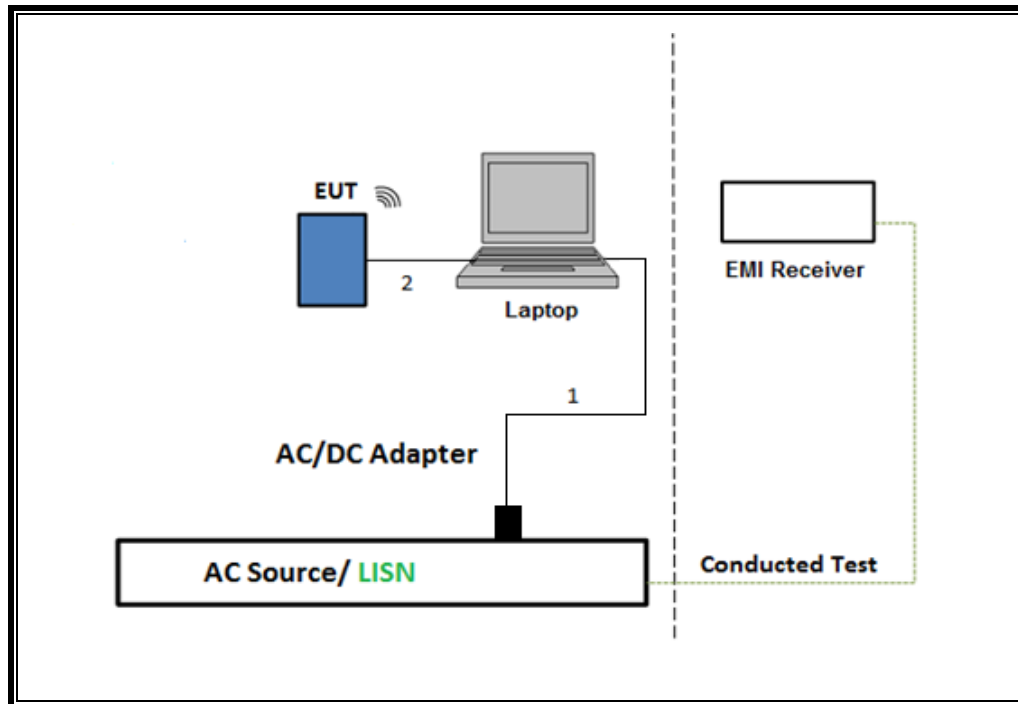
| SUPPORT TEST EQUIPMENT                              |         |                        |                |                   |                  |                          |
|-----------------------------------------------------|---------|------------------------|----------------|-------------------|------------------|--------------------------|
| Description                                         |         | Manufacturer           | Model          | Serial Number     |                  | FCC ID/ DoC              |
| Macbook Pro                                         |         | Apple                  | A2992          | DVJJ642FYM        |                  | BCGA2992                 |
| 96W USB-C Power Adapter                             |         | Apple                  | A2166          | C4H238408ABPMOWAV |                  | DoC                      |
| Conducted Switch Box                                |         | UL                     | CSB            | 235779            |                  | N/A                      |
| 20W USB-C Power Adapter                             |         | Apple                  | A2305          | C4H951600C3PF4F4U |                  | DoC                      |
| 10dB Fixed Attenuator                               |         | Pasternack Enterprises | PE7087-10      | 236285            |                  | 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 the spectrum Analyzer |
| 2                                                   | Antenna | 1                      | SMA            | Shielded          | 0.2              | EUT to Switchbox         |
| 3                                                   | USB     | 1                      | USB-C          | Shielded          | 1.0              | N/A                      |
| 4                                                   | DC      | 1                      | DC             | Shielded          | 2.0              | N/A                      |
| 5                                                   | Antenna | 1                      | SMA            | Shielded          | 0.1              | EUT to Power Meter       |
| 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 below. Test software exercised the radio card.

**SETUP DIAGRAM FOR CONDUCTED TESTS**

**SETUP DIAGRAM FOR RADIATED TESTS 1 GHz - 26 GHz****SETUP DIAGRAM FOR RADIATED TESTS 30 MHz - 1 GHz and AC LINE CONDUCTED TEST**

**TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION**

## 7. 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    |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                        | 191428 | 2027-02-28 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                         | 226674 | 2027-03-31 |
| Filter Box                                         | UL-FR1                    | RATS 1.0, 2 Amp, 6 Port      | 250156 | 2026-10-30 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                        | 169935 | 2027-03-31 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                         | 200897 | 2027-09-30 |
| Filter Box                                         | UL-FR1                    | R102, 1 Amp, 12 Port         | 230878 | 2027-05-31 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                        | 169933 | 2027-02-22 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                         | 80402  | 2027-07-31 |
| Filter Box                                         | UL-FR1                    | Frankenstein, 1 Amp, 12 Port | 231874 | 2027-01-31 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                        | 226078 | 2027-02-28 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                         | 222740 | 2026-09-29 |
| Filter Box                                         | UL-FR1                    | RATS 1.0, 2 Amp, 6 Port      | 171389 | 2027-03-31 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                        | 245268 | 2027-02-28 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                         | 80707  | 2027-08-31 |
| Filter Box                                         | UL-FR1                    | RATS 1.0, 2 Amp, 6 Port      | 171875 | 2027-03-31 |
| Antenna, Broadband Hybrid, 30MHz to 3GHz           | Sunol Sciences Corp.      | JB3                          | 202329 | 2027-04-30 |
| Amplifier, 9KHz to 1GHz, 32dB                      | SONOMA INSTRUMENT         | 310                          | 170647 | 2027-03-30 |
| Antenna, Passive Loop 30Hz - 1MHz                  | ELECTRO-METRICS           | EM-6871                      | 170014 | 2027-09-30 |
| Antenna, Passive Loop 100KHz - 30MHz               | ELECTRO-METRICS           | EM-6872                      | 170016 | 2027-09-30 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                        | 223462 | 2027-02-28 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                         | 277002 | 2028-03-31 |
| Filter Box                                         | UL-FR1                    | Frankenstein, 1 Amp, 12 Port | 217255 | 2027-05-31 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                        | 201498 | 2026-09-04 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                         | 81887  | 2027-03-31 |
| Filter Box                                         | UL-FR1                    | RATS 2.0, 1 Amp, 17 Port     | 225575 | 2027-01-30 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                        | 226079 | 2027-02-28 |
| Antenna, Horn 1-18GHz                              | ETS-Lindgren              | 3117                         | 230299 | 2027-02-28 |
| Filter Box                                         | UL-FR1                    | RATS 2.0, 1 Amp, 17 Port     | 226780 | 2027-05-31 |
| EMI TEST RECEIVER                                  | Rohde & Schwarz           | ESW44                        | 223460 | 2027-02-28 |
| Antenna, Horn 18 to 26.5GHz                        | A.R.A.                    | MWH-1826/B                   | 172363 | 2027-05-31 |
| Amplifier Assembly, 18-26.5GHz, 60dB Gain          | AMPLICAL                  | AMP18G26.5-60                | 171580 | 2027-06-30 |
| PXA Signal Analyzer 2Hz to 44GHz                   | Keysight Technologies Inc | N9030B                       | 231912 | 2027-01-31 |
| Conducted Switch Box                               | UL                        | CSB                          | 187984 | 2027-01-31 |
| Spectrum Analyzer, PXA, 3Hz to 44GHz               | Keysight Technologies Inc | N9030A                       | 85214  | 2027-01-31 |
| Conducted Switch Box                               | UL                        | CSB                          | 245783 | 2027-01-31 |
| Spectrum Analyzer, PXA, 3Hz to 44GHz               | Keysight Technologies Inc | N9030A                       | 85313  | 2027-01-31 |
| Conducted Switch Box                               | UL                        | CSB                          | 235779 | 2027-01-31 |
| P-Series Power Meter                               | Keysight Technologies Inc | N1912A-CFG003                | 259286 | 2027-01-31 |
| Power Sensor, P - series, 50MHz to 18GHz, Wideband | Keysight Technologies Inc | N1921A                       | 90389  | 2027-01-31 |
| P-Series Power Meter                               | Keysight Technologies Inc | N1911A                       | 90731  | 2027-01-31 |
| Power Sensor, P - series, 50MHz to 18GHz, Wideband | Keysight Technologies Inc | N1921A                       | 257705 | 2027-01-31 |
| 10dB Fixed Attenuator, Up to 6GHz                  | Pasternack Enterprises    | PE7162-10                    | 236283 | 2026-08-31 |
| 10dB Fixed Attenuator, Up to 6GHz                  | Pasternack Enterprises    | PE7162-10                    | 236284 | 2026-08-31 |

| AC LINE CONDUCTED          |                               |                              |                                                |            |
|----------------------------|-------------------------------|------------------------------|------------------------------------------------|------------|
| Description                | Manufacturer                  | Model                        | ID Num                                         | Cal Due    |
| EMI TEST RECEIVER          | Rohde & Schwarz               | ESCI7                        | 82297                                          | 2027-02-28 |
| LISN                       | Fischer Custom Communications | FCC-LISN-50/250-25-2-01-480V | 175765                                         | 2027-01-31 |
| Transient Limiter          | TE                            | TBFL1                        | 207996                                         | 2026-12-30 |
| UL AUTOMATION SOFTWARE     |                               |                              |                                                |            |
| Radiated Software          | UL                            | UL EMC                       | Ver 9.5, Aug 15, 2025<br>Ver 9.5, Dec 15, 2025 |            |
| Conducted Software         | UL                            | Station Tool                 | V2026.6.0                                      |            |
| AC Line Conducted Software | UL                            | UL EMC                       | Ver 9.5, Aug 25, 2025                          |            |

## 8. MEASUREMENT METHOD

| Test Item                                         | Test Method                                                                                                                                                   |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On Time and Duty Cycle                            | ANSI C63.10 Subclause - 11.6                                                                                                                                  |
| 6 dB BW                                           | ANSI C63.10 Subclause - 11.8.1 RBW $\geq$ DTS BW                                                                                                              |
| 99% BW                                            | ANSI C63.10 Subclause 6.9.3                                                                                                                                   |
| Conducted Output Power                            | ANSI C63.10 Subclause - 11.9.2.3.2 Method AVGPM G<br>(Measurement using an RF average-reading power meter)<br>-11.9.1.2 Method PKPM1 Peak-reading power meter |
| Power Spectral Density                            | ANSI C63.10 Subclause - 11.10.2 Method PKPSD (peak PSD)                                                                                                       |
| Radiated emissions non-restricted frequency bands | ANSI C63.10 Subclause - 11.11 and 13                                                                                                                          |
| Radiated emissions restricted frequency bands     | ANSI C63.10 Subclause - 11.12.1 and 13                                                                                                                        |
| Conducted emissions in restricted frequency bands | ANSI C63.10 Subclause - 11.12.2                                                                                                                               |
| Band-edge (Peak Detection)                        | ANSI C63.10 Subclause - 11.12.2.4 and 13: Peak Measurement                                                                                                    |
| Band-edge (Trace Averaging)                       | ANSI C63.10 Subclause - 11.12.2.5 and 13: Average Measurement                                                                                                 |
| Radiated Spurious Emissions Below 30MHz           | ANSI C63.10 Subclause - 6.4 and 13                                                                                                                            |
| AC Power Line Conducted Emissions                 | ANSI C63.10, Subclause - 6.2                                                                                                                                  |

## 9. ANTENNA PORT TEST RESULTS

### 9.1.ON TIME AND DUTY CYCLE

#### LIMITS

None; for reporting purposes only.

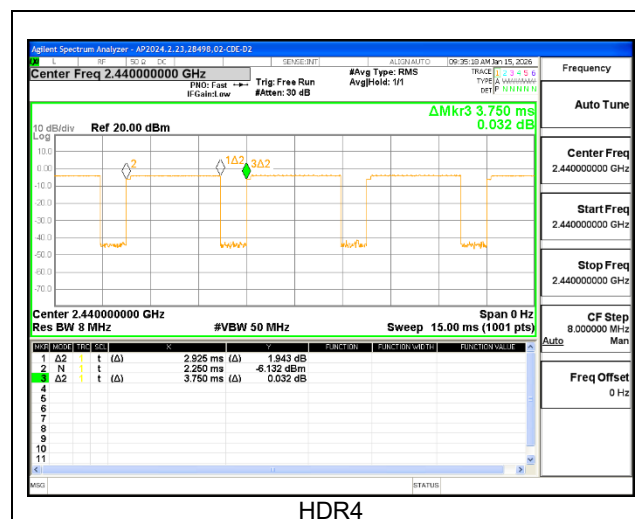
#### PROCEDURE

ANSI C63.10, Subclause 11.6.

#### ON TIME AND DUTY CYCLE RESULTS

| Mode | ON Time<br>T<br>(msec) | Period<br>(msec) | Duty Cycle<br>x<br>(linear) | Duty<br>Cycle<br>(%) | Duty Cycle<br>Correction Factor<br>(dB) | 1/T<br>Minimum VBW<br>(kHz) |
|------|------------------------|------------------|-----------------------------|----------------------|-----------------------------------------|-----------------------------|
| HDR4 | 2.925                  | 3.750            | 0.780                       | 78.0                 | 1.08                                    | 0.342                       |
| HDR8 | 2.925                  | 3.750            | 0.780                       | 78.0                 | 1.08                                    | 0.342                       |

**Note:** The duty cycle is identical for both 1TX and 2TX configurations.



## 9.2.99% BANDWIDTH

### LIMITS

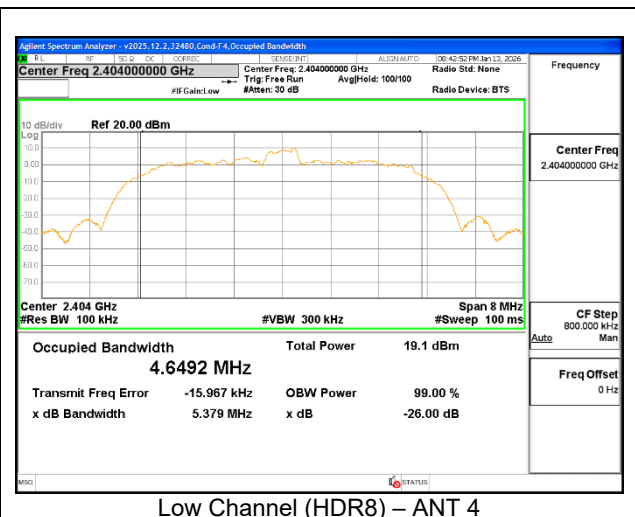
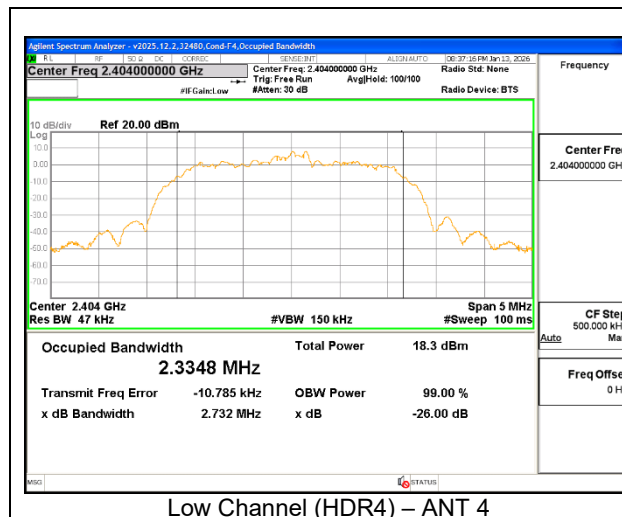
None; for reporting purposes only.

### RESULTS

Both SISO and MIMO TXBF modes were evaluated, and no significant differences were observed. Accordingly, only the SISO high-power results are presented.

| Mode (SISO) | Frequency (MHz) | Channel | 99% Bandwidth (MHz) |        |
|-------------|-----------------|---------|---------------------|--------|
|             |                 |         | ANT 4               | ANT 3  |
| HDR4        | 2404            | Low     | 2.3348              | 2.3317 |
|             | 2441            | Mid     | 2.3272              | 2.3265 |
|             | 2476            | High    | 2.3249              | 2.3275 |
| HDR8        | 2404            | Low     | 4.6492              | 4.6478 |
|             | 2441            | Mid     | 4.6374              | 4.6398 |
|             | 2476            | High    | 4.6359              | 4.6434 |

### WORST MAXIMUM PLOTS



### 9.3.6dB BANDWIDTH

#### LIMITS

FCC §15.247 (a) (2)

RSS-247 6.3.1 (a)

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

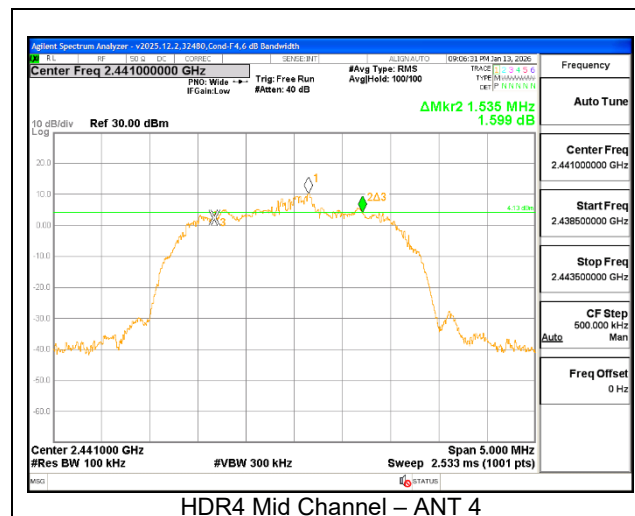
#### RESULTS

The 6 dB bandwidth was measured in the narrowest bandwidth mode (HDR4), which represents the worst-case condition, to demonstrate compliance with the minimum required bandwidth of 500 kHz across all modes.

#### 9.3.1. HDR4 – HIGH POWER

| Mode (SISO) | Frequency (MHz) | Channel | 6dB Bandwidth (MHz) |       |
|-------------|-----------------|---------|---------------------|-------|
|             |                 |         | ANT 4               | ANT 3 |
| HDR4        | 2404            | Low     | 1.835               | 1.645 |
|             | 2441            | Mid     | <b>1.535</b>        | 1.655 |
|             | 2476            | High    | 1.555               | 1.685 |

#### WORST MINIMUM PLOT



## 9.4.OUTPUT POWER AND POWER SPECTRAL DENSITY

### LIMITS

FCC §15.247 (b) (3) & (e)

RSS-247 6.3.2 & 6.3.1 (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 were performed using a wideband RF power meter.

The power output was measured on the EUT antenna port using SMA cable with 10dB attenuator connected to a power meter via wideband power sensor. Peak 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 correlated for power and PSD due to the device supporting beamforming modes. The directional gains are as follows:

| Frequency Range (GHz) | Antenna Type | Antenna Peak Gain |             |                           |                         |
|-----------------------|--------------|-------------------|-------------|---------------------------|-------------------------|
|                       |              | ANT 4 (dBi)       | ANT 3 (dBi) | Uncorrelated Chains (dBi) | Correlated Chains (dBi) |
| 2.4                   | IFA          | 0.50              | -1.00       | -1.80                     | 0.50                    |

### RESULTS

Only the mid-channel plot is presented to illustrate the analyzer settings.

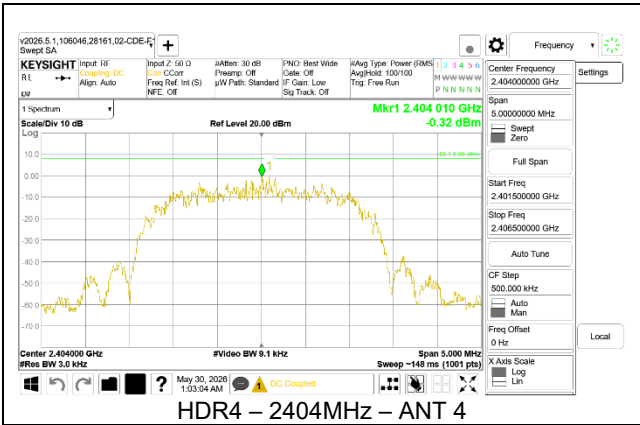
Note: The RBW setting used for PSD measurement is greater than or equal to 3 kHz.

9.4.1. SISO

| 2.4G (SISO) |       |
|-------------|-------|
| ANT 4 (dBi) | 0.50  |
| ANT 3 (dBi) | -1.00 |

| Mode (SISO) | Power Config. | Frequency (MHz) | Channel | Power Limit (dBm) |       | Output Power (dBm) |       | PSD Limit (dBm/3kHz) |       | PSD (dBm/kHz) |         |
|-------------|---------------|-----------------|---------|-------------------|-------|--------------------|-------|----------------------|-------|---------------|---------|
|             |               |                 |         | ANT 4             | ANT 3 | ANT 4              | ANT 3 | ANT 4                | ANT 3 | ANT 4         | ANT 3   |
| HDR4        | High          | 2404            | Low     | 30                | 30    | 16.81              | 16.75 | 8                    | 8     | -0.320        | -0.480  |
|             |               | 2441            | Mid     |                   |       | 16.84              | 16.72 |                      |       | -0.740        | -0.650  |
|             |               | 2476            | High    |                   |       | 16.83              | 16.76 |                      |       | -0.580        | -0.600  |
|             | Low           | 2404            | Low     |                   |       | 8.44               | 7.21  |                      |       | -9.206        | -10.218 |
|             |               | 2441            | Mid     |                   |       | 8.42               | 7.23  |                      |       | -9.617        | -10.581 |
|             |               | 2476            | High    |                   |       | 8.37               | 7.22  |                      |       | -9.537        | -10.265 |
| HDR8        | High          | 2404            | Low     |                   |       | 16.79              | 16.74 |                      |       | -2.000        | -1.900  |
|             |               | 2441            | Mid     |                   |       | 16.81              | 16.72 |                      |       | -2.090        | -2.080  |
|             |               | 2476            | High    |                   |       | 16.75              | 16.76 |                      |       | -2.230        | -2.330  |
|             | Low           | 2404            | Low     |                   |       | 8.36               | 7.17  |                      |       | -10.971       | -11.911 |
|             |               | 2441            | Mid     |                   |       | 8.35               | 7.16  |                      |       | -10.871       | -11.982 |
|             |               | 2476            | High    |                   |       | 8.32               | 7.13  |                      |       | -10.944       | -12.073 |

Worst-Case Plot:

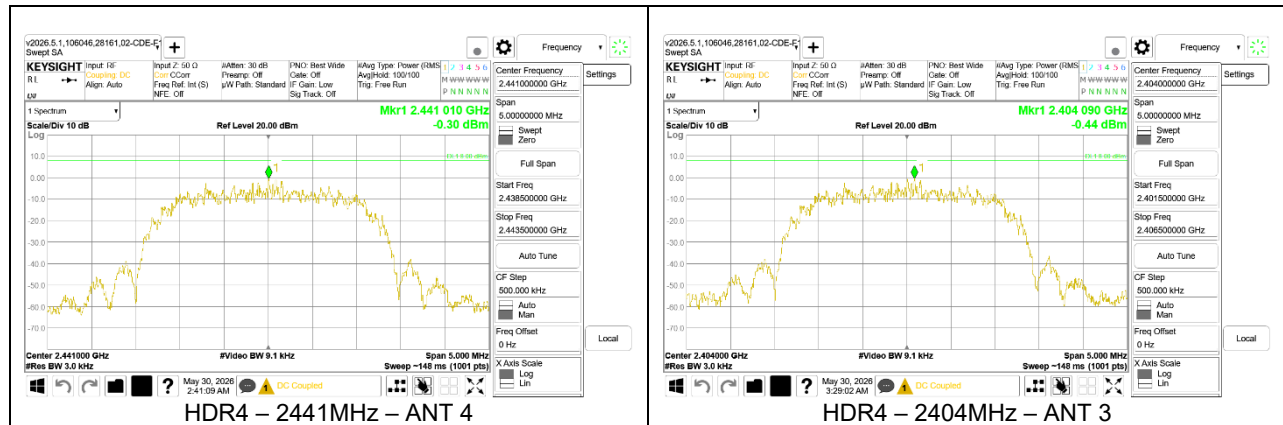


### 9.4.2. MIMO TXBF

| 2.4G (MIMO TXBF)         |       |
|--------------------------|-------|
| Un-Correlated Gain (dBi) | -1.80 |
| Correlated Gain (dBi)    | 0.50  |

| Mode<br>(MIMO TXBF) | Power<br>Config. | Frequency<br>(MHz) | Channel | Power<br>Limit<br>(dBm) | Output Power<br>(dBm) |       | Total<br>MIMO<br>Corrected<br>Power<br>(dBm) | PSD<br>Limit<br>(dBm/3kHz) | PSD<br>(dBm/kHz) |         | Total<br>MIMO<br>Corrected<br>PSD<br>(dBm/kHz) |
|---------------------|------------------|--------------------|---------|-------------------------|-----------------------|-------|----------------------------------------------|----------------------------|------------------|---------|------------------------------------------------|
|                     |                  |                    |         |                         | ANT 4                 | ANT 3 |                                              |                            | ANT 4            | ANT 3   |                                                |
| HDR4                | High             | 2404               | Low     | 30                      | 16.65                 | 16.67 | 19.67                                        | 8                          | -0.490           | -0.440  | 2.545                                          |
|                     |                  | 2441               | Mid     |                         | 16.64                 | 16.68 | 19.67                                        |                            | -0.300           | -0.510  | 2.607                                          |
|                     |                  | 2476               | High    |                         | 16.79                 | 16.72 | 19.77                                        |                            | -0.610           | -0.520  | 2.446                                          |
|                     | Low              | 2404               | Low     |                         | 8.24                  | 7.26  | 10.79                                        |                            | -9.471           | -10.573 | -6.977                                         |
|                     |                  | 2441               | Mid     |                         | 8.30                  | 7.15  | 10.77                                        |                            | -9.385           | -10.258 | -6.789                                         |
|                     |                  | 2476               | High    |                         | 8.27                  | 7.19  | 10.77                                        |                            | -9.281           | -10.510 | -6.842                                         |
| HDR8                | High             | 2404               | Low     |                         | 16.58                 | 16.69 | 19.65                                        |                            | -1.920           | -1.830  | 1.136                                          |
|                     |                  | 2441               | Mid     |                         | 16.64                 | 16.72 | 19.69                                        |                            | -2.050           | -2.250  | 0.861                                          |
|                     |                  | 2476               | High    |                         | 16.79                 | 16.69 | 19.75                                        |                            | -2.120           | -2.180  | 0.860                                          |
|                     | Low              | 2404               | Low     |                         | 8.25                  | 7.33  | 10.82                                        |                            | -10.895          | -12.227 | -8.500                                         |
|                     |                  | 2441               | Mid     |                         | 8.39                  | 7.19  | 10.84                                        |                            | -10.810          | -12.410 | -8.526                                         |
|                     |                  | 2476               | High    |                         | 8.33                  | 7.33  | 10.87                                        |                            | -10.755          | -12.170 | -8.395                                         |

### Worst-Case Plots:



## **9.5.AVERAGE POWER**

### **LIMITS**

None; for reporting purposes only.

### **TEST PROCEDURE**

Measurements perform using a wideband RF power meter.

The power output was measured on the EUT antenna port using SMA cable connected to a power meter via wideband power sensor. Gated average output power was read directly from power meter.

### **RESULTS**

### 9.5.1. SISO

| Mode (SISO) | Power Config. | Frequency (MHz) | Channel | Average Power (Gated) (dBm) |              |
|-------------|---------------|-----------------|---------|-----------------------------|--------------|
|             |               |                 |         | ANT 4                       | ANT 3        |
| HDR4        | High          | 2404            | Low     | <b>13.98</b>                | 13.92        |
|             |               | 2441            | Mid     | 13.89                       | 13.96        |
|             |               | 2476            | High    | 13.95                       | <b>13.97</b> |
|             | Low           | 2404            | Low     | <b>5.73</b>                 | 4.42         |
|             |               | 2441            | Mid     | 5.69                        | 4.46         |
|             |               | 2476            | High    | 5.68                        | <b>4.48</b>  |
| HDR8        | High          | 2404            | Low     | 13.94                       | 13.91        |
|             |               | 2441            | Mid     | <b>13.97</b>                | 13.89        |
|             |               | 2476            | High    | 13.92                       | <b>13.95</b> |
|             | Low           | 2404            | Low     | 5.67                        | 4.42         |
|             |               | 2441            | Mid     | 5.72                        | 4.41         |
|             |               | 2476            | High    | <b>5.74</b>                 | <b>4.45</b>  |

### 9.5.2. MIMO TXBF

| Mode (MIMO TXBF) | Power Config. | Frequency (MHz) | Channel | Average Power (Gated) (dBm) |       | Total MIMO Average Power (Gated) (dBm) |
|------------------|---------------|-----------------|---------|-----------------------------|-------|----------------------------------------|
|                  |               |                 |         | ANT 4                       | ANT 3 |                                        |
| HDR4             | High          | 2404            | Low     | 13.99                       | 13.91 | <b>16.96</b>                           |
|                  |               | 2441            | Mid     | 13.90                       | 13.94 | 16.93                                  |
|                  |               | 2476            | High    | 13.95                       | 13.95 | 16.96                                  |
|                  | Low           | 2404            | Low     | 5.72                        | 4.44  | <b>8.14</b>                            |
|                  |               | 2441            | Mid     | 5.71                        | 4.41  | 8.12                                   |
|                  |               | 2476            | High    | 5.68                        | 4.48  | 8.13                                   |
| HDR8             | High          | 2404            | Low     | 13.94                       | 13.93 | 16.95                                  |
|                  |               | 2441            | Mid     | 13.97                       | 13.99 | <b>16.99</b>                           |
|                  |               | 2476            | High    | 13.91                       | 13.90 | 16.92                                  |
|                  | Low           | 2404            | Low     | 5.74                        | 4.42  | <b>8.14</b>                            |
|                  |               | 2441            | Mid     | 5.72                        | 4.43  | 8.13                                   |
|                  |               | 2476            | High    | 5.69                        | 4.40  | 8.10                                   |

## 9.6.CONDUCTED SPURIOUS EMISSIONS

### LIMITS

FCC §15.247 (d)

RSS-247 6.6

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

## 9.6.1. HDR4 – HIGH POWER – SISO

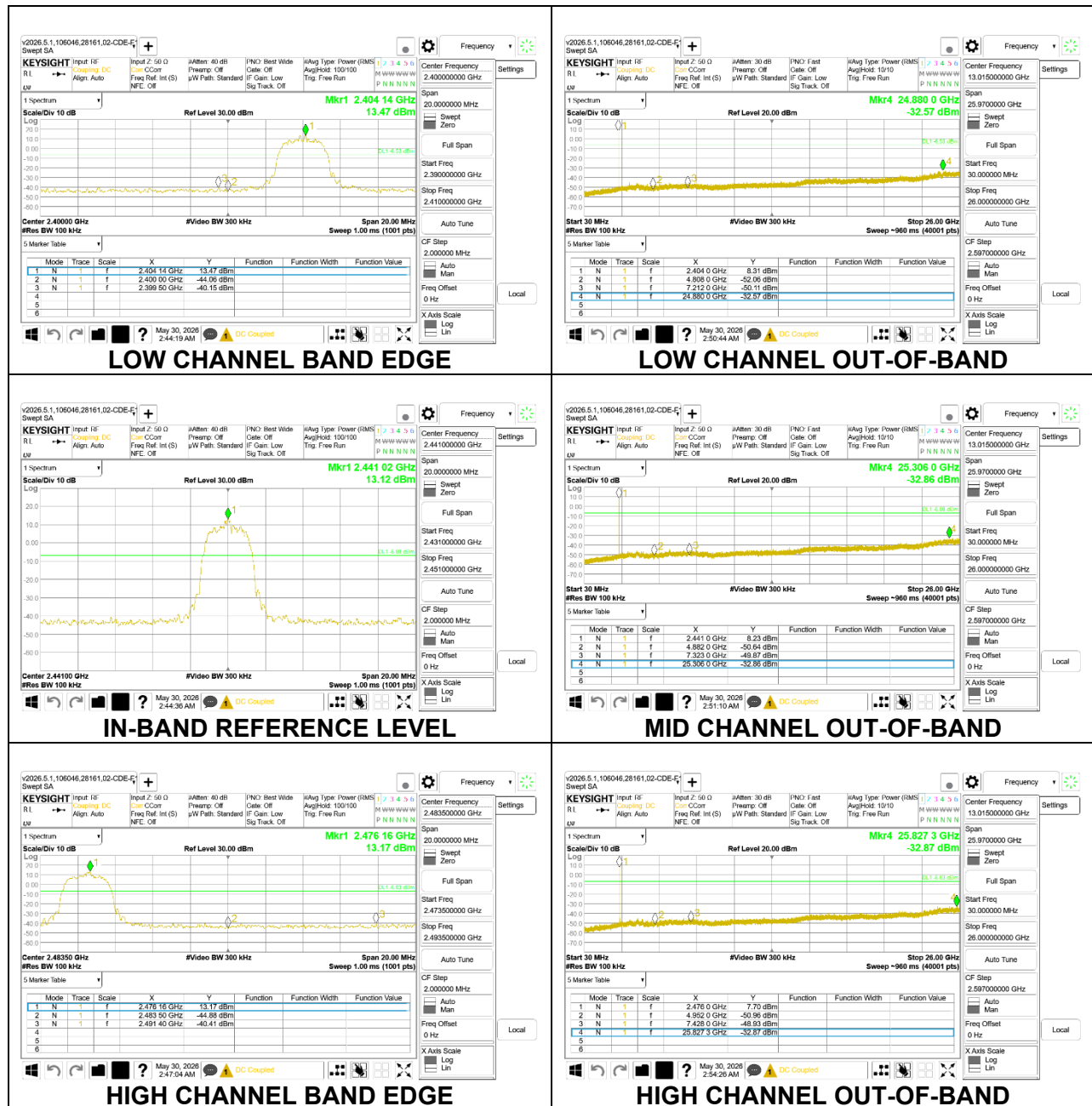
## ANT 4

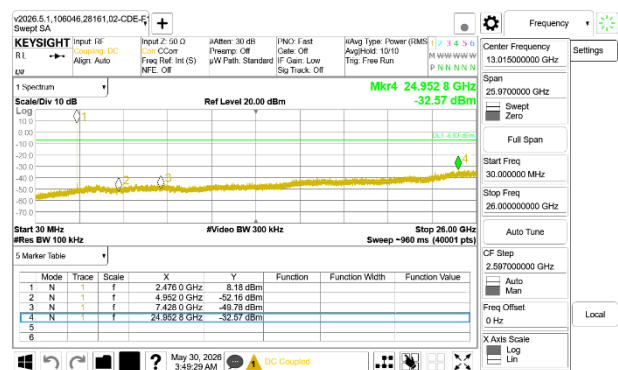
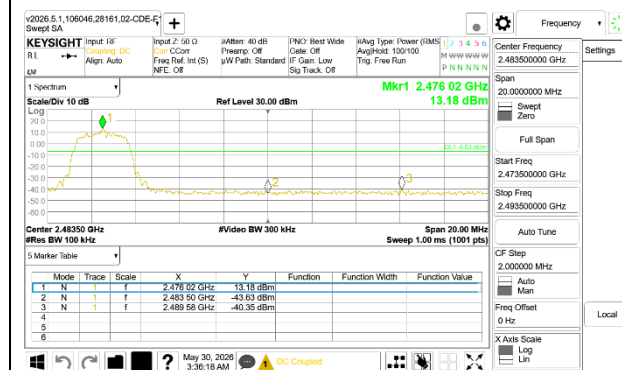
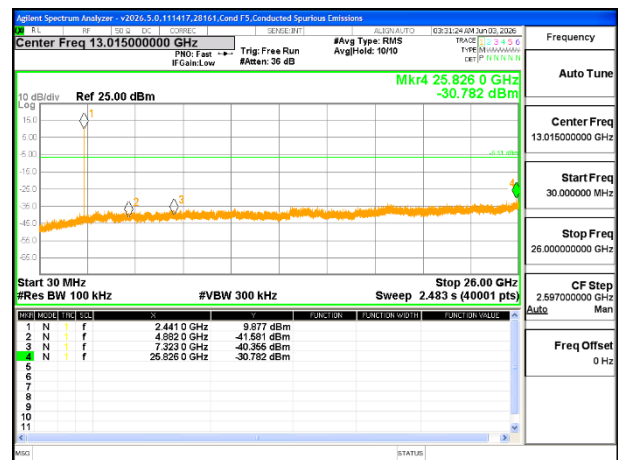
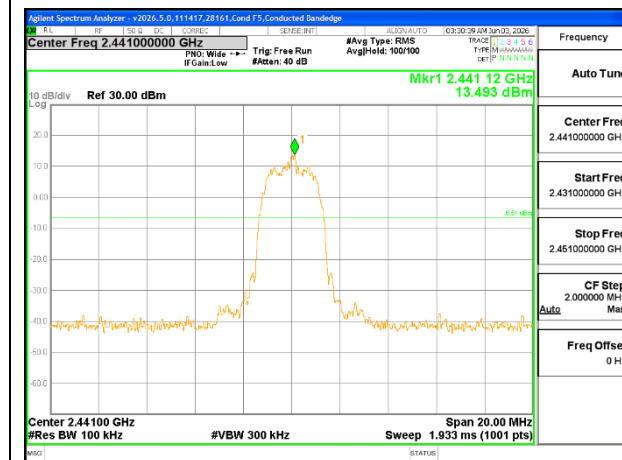
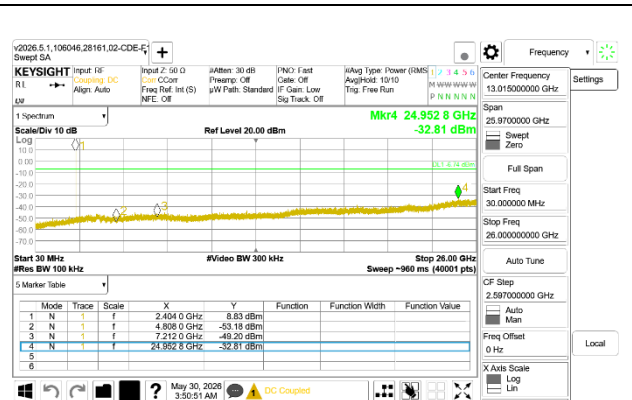
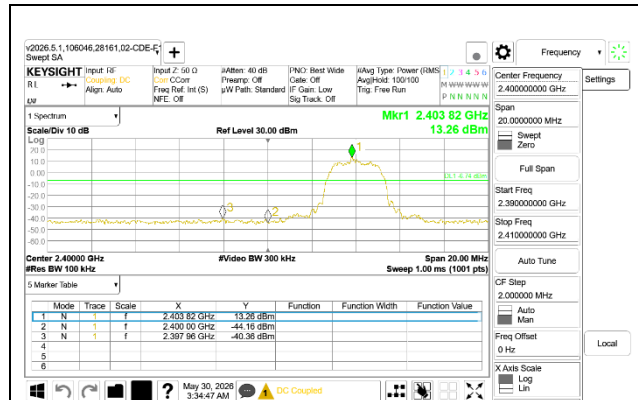


**ANT 3**

## 9.6.2. HDR4 – HIGH POWER – MIMO TXBF

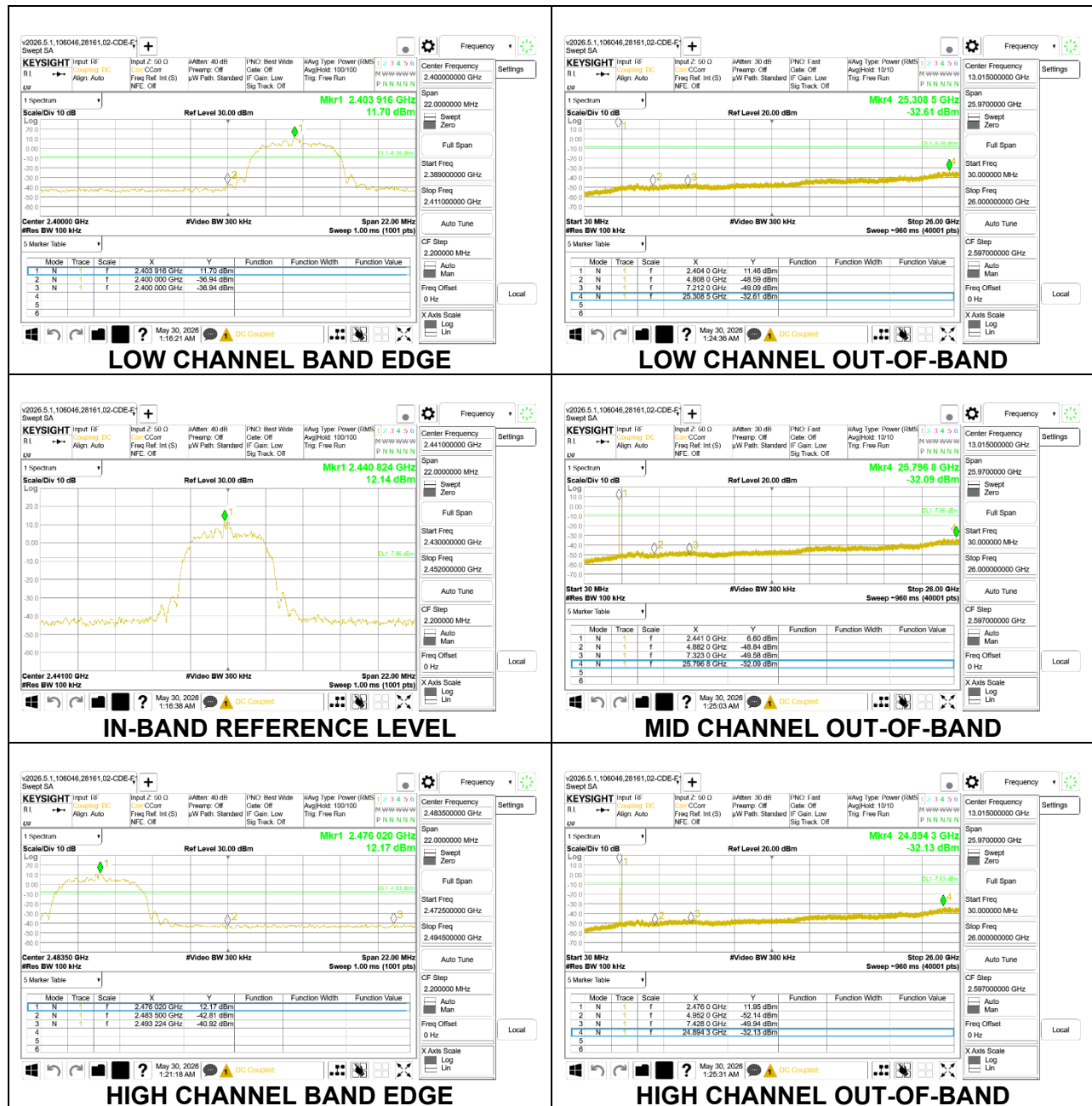
## ANT 4

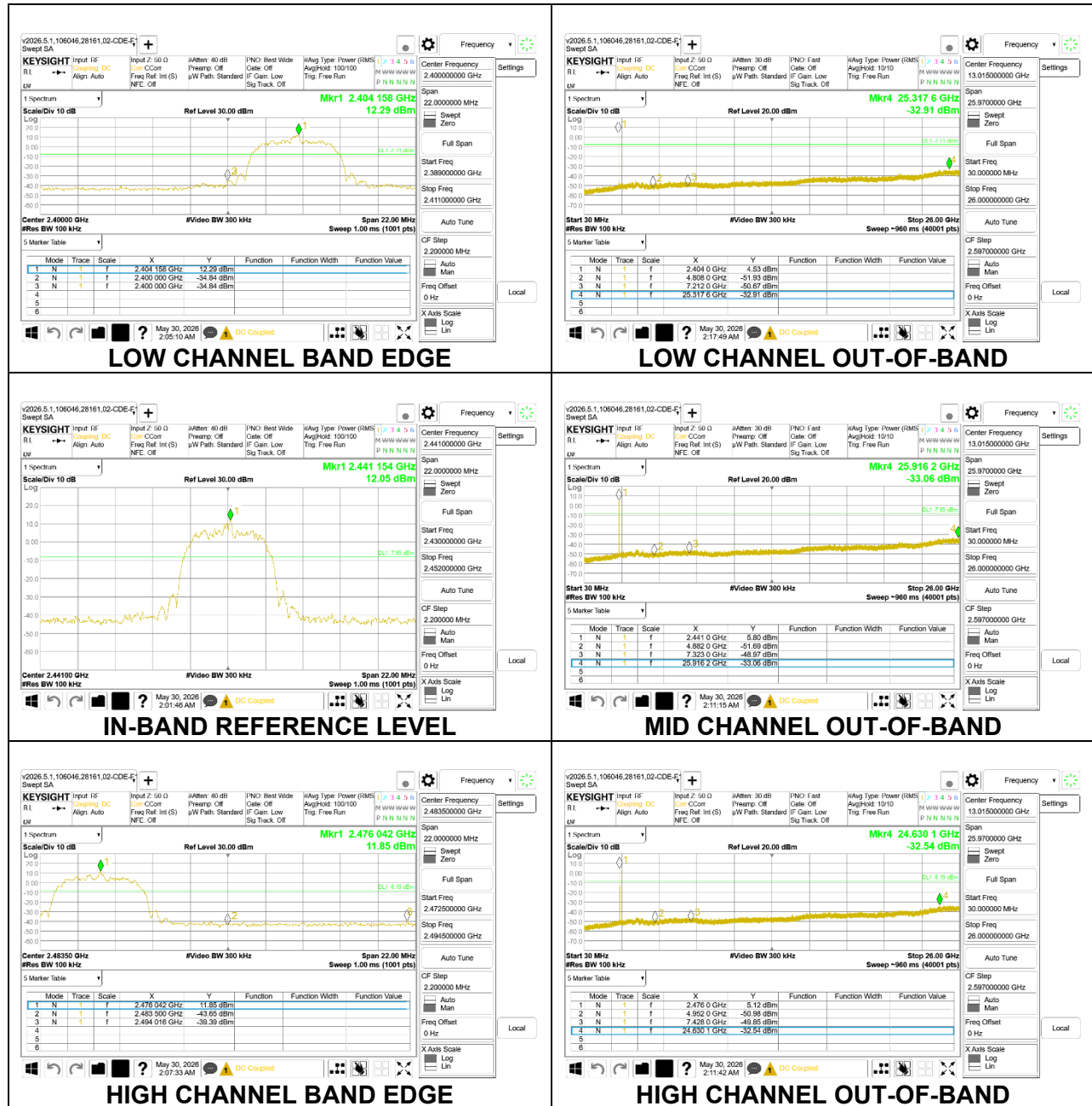


**ANT 3**

### 9.6.3. HDR8 – HIGH POWER – SISO

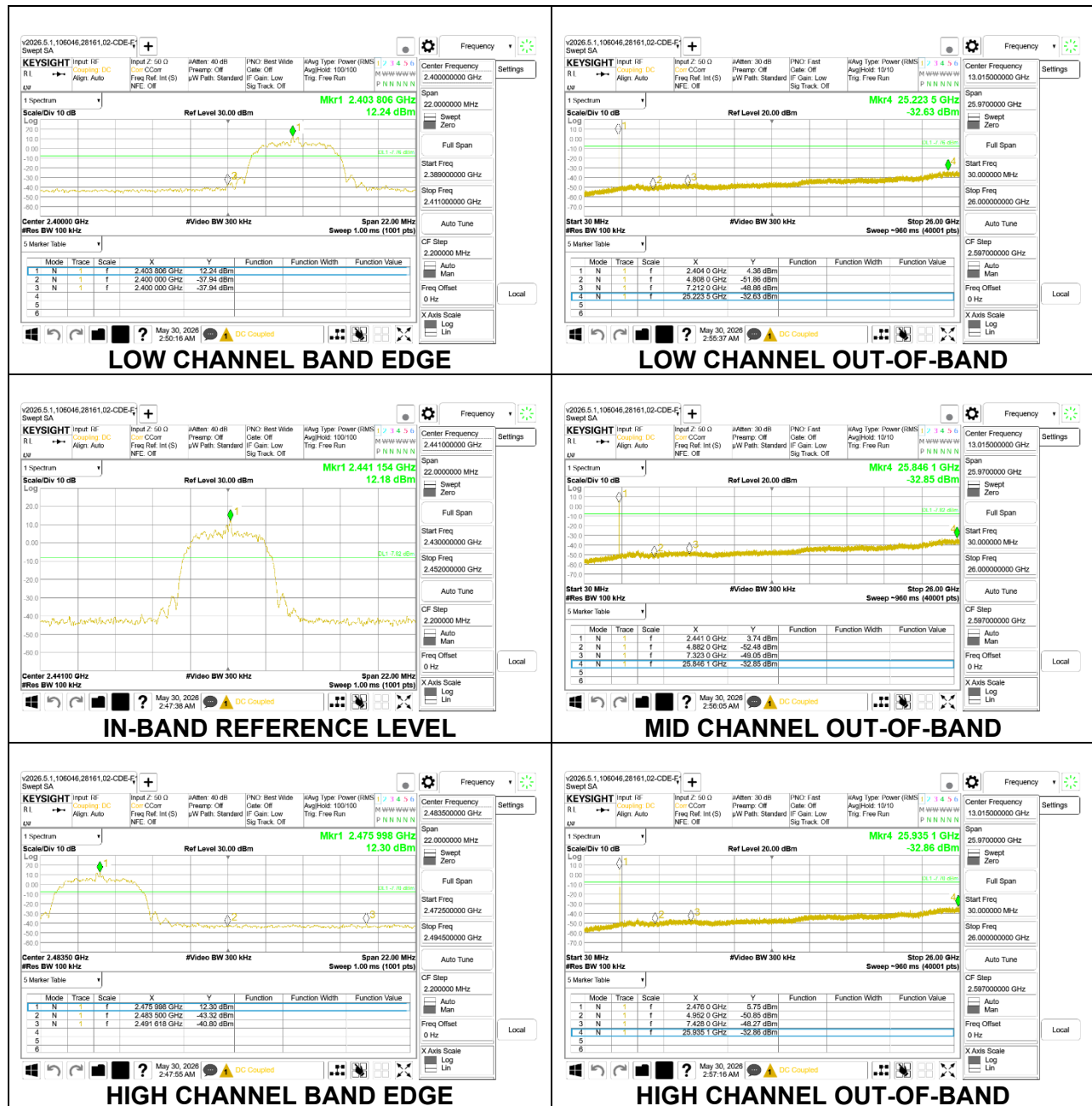
#### ANT 4

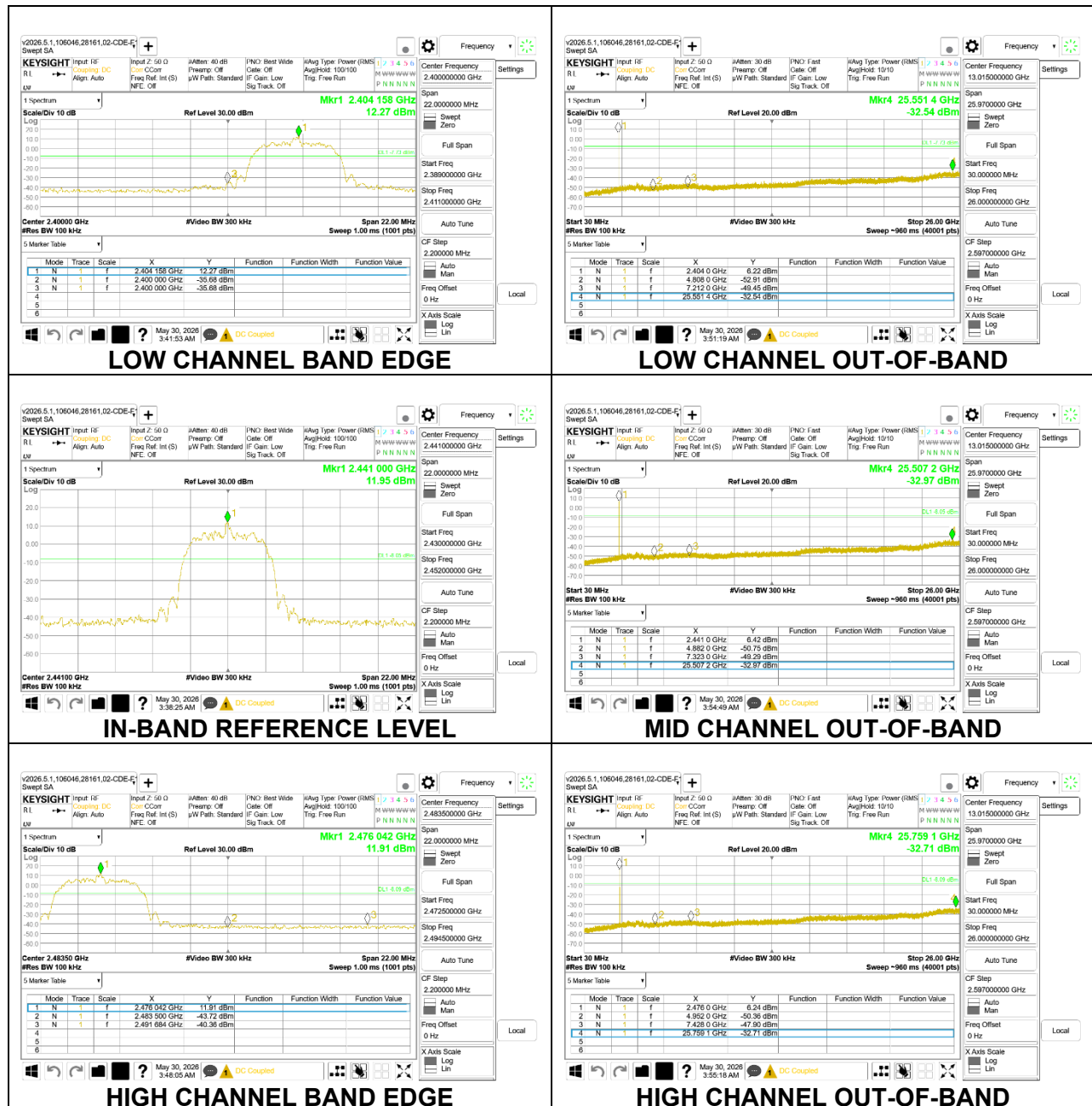


**ANT 3**

## 9.6.4. HDR8 – HIGH POWER – MIMO TXBF

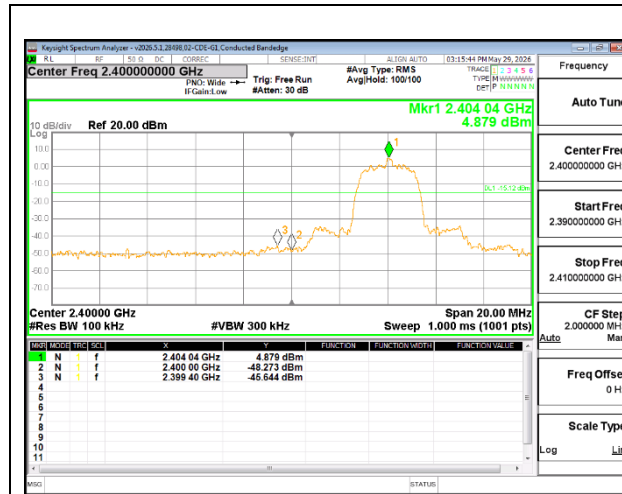
## ANT 4



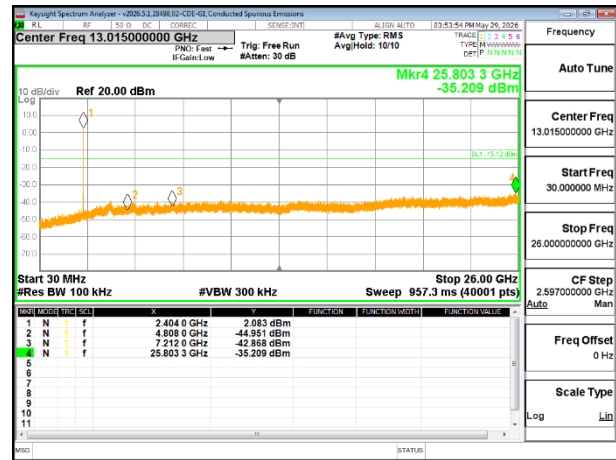
**ANT 3**

## 9.6.5. HDR4 – LOW POWER – SISO

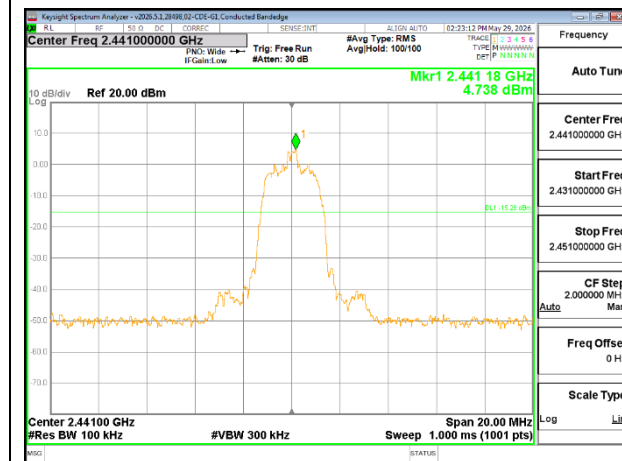
## ANT 4



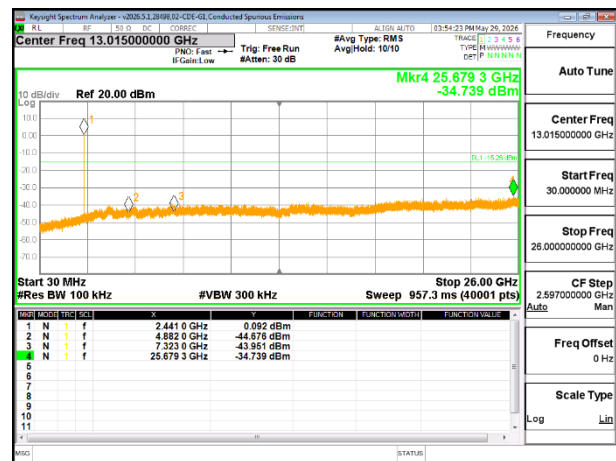
LOW CHANNEL BAND EDGE



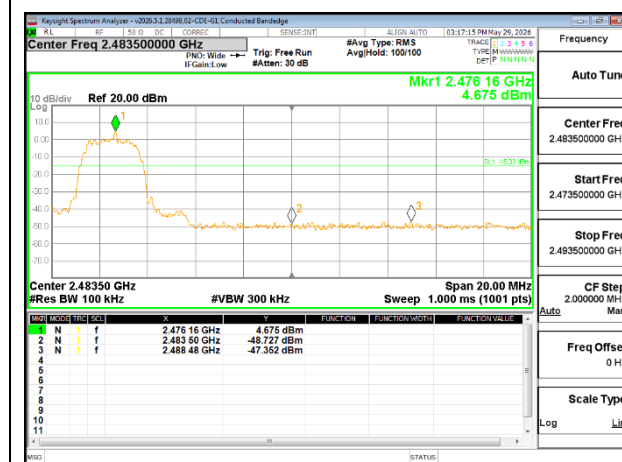
LOW CHANNEL OUT-OF-BAND



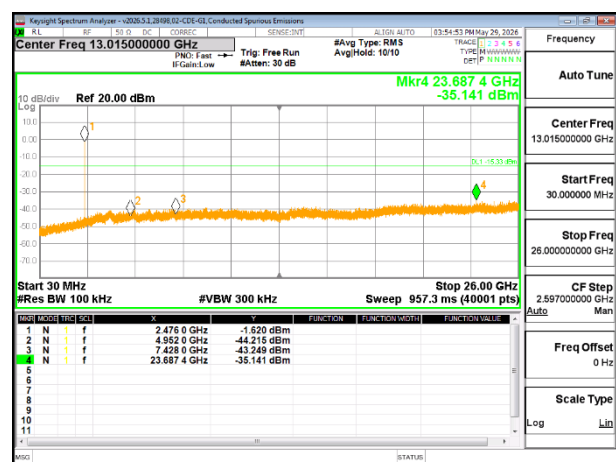
IN-BAND REFERENCE LEVEL



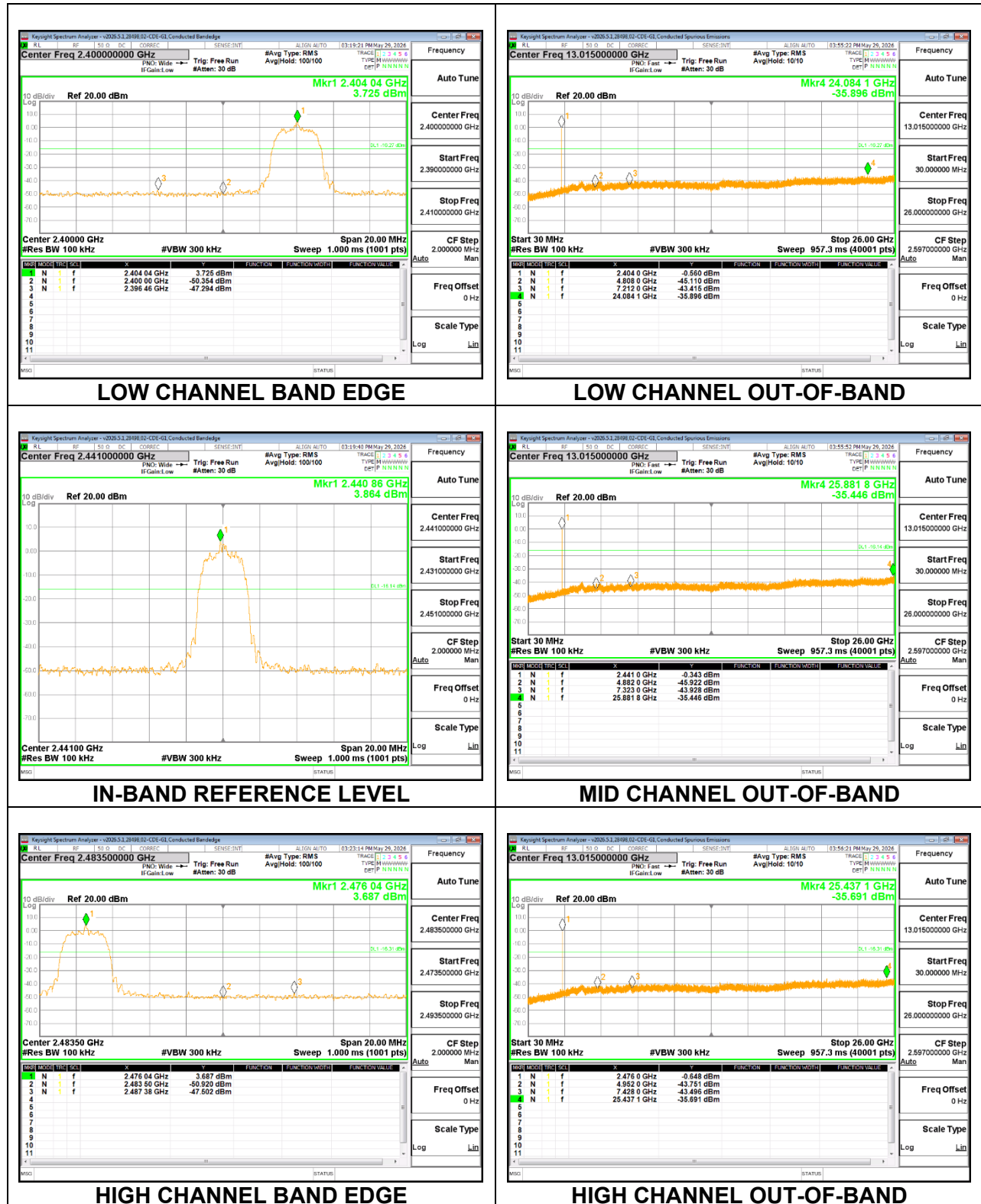
MID CHANNEL OUT-OF-BAND



HIGH CHANNEL BAND EDGE

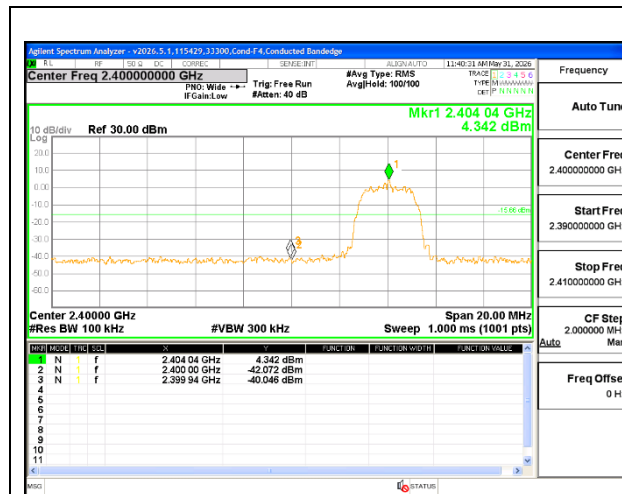


HIGH CHANNEL OUT-OF-BAND

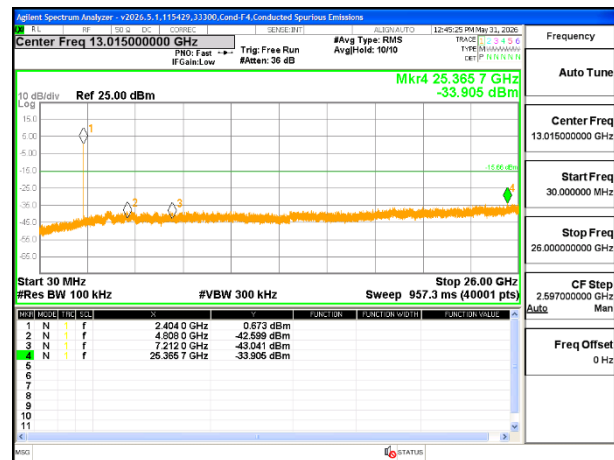
**ANT 3**

## 9.6.6. HDR4 – LOW POWER – MIMO TXBF

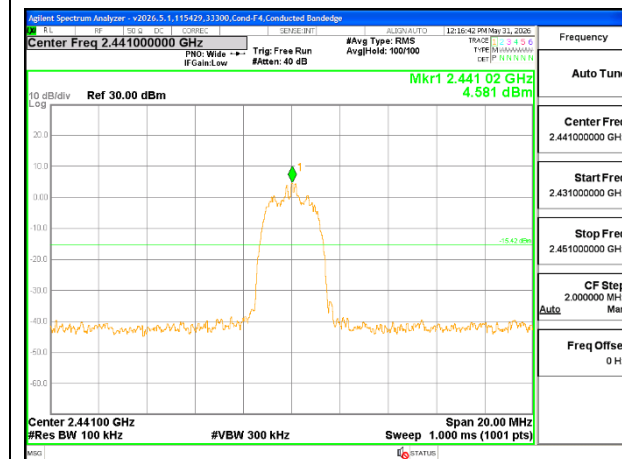
## ANT 4



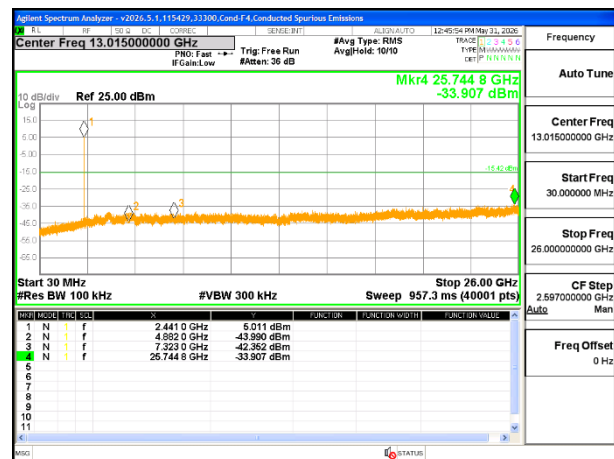
LOW CHANNEL BAND EDGE



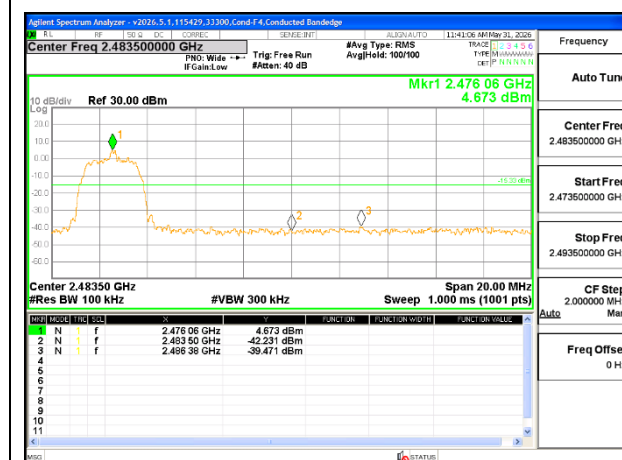
LOW CHANNEL OUT-OF-BAND



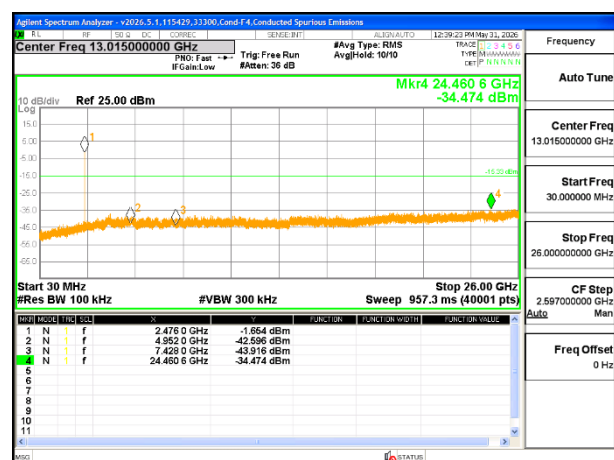
IN-BAND REFERENCE LEVEL



MID CHANNEL OUT-OF-BAND



HIGH CHANNEL BAND EDGE



HIGH CHANNEL OUT-OF-BAND