N° 1-6736
Scope available
on www.cofrac.fr

CERTIFICATE #3478.01

# TEST REPORT

| | |
|---|---|
| EUT Description | **WLAN and BT, 2x2 PCIe M.2 1216 adapter card** |
| Brand Name | **Intel®** |
| Model Name | **BE201D2W** |
| FCC/IC ID | **PD9BE201D2 ; 1000M-BE201D2** |
| Date of Test Start/End | **2024-01-09 / 2024-02-28** |
| Features | **2x2 WiFi - Bluetooth®**<br>(see section 5) |

| | |
|---|---|
| Applicant | **Intel Corporation SAS** |
| Address | **425 Rue de Goa – Le Cargo B6 – 06600 Antibes, FRANCE** |
| Contact Person | **Benjamin Lavenant** |
| Telephone/Fax/Email | **Benjamin.lavenant@intel.com** |

| | |
|---|---|
| Reference Standards | **FCC CFR Title 47 Part 15 E**<br>**RSS-247 issue 3, RSS-Gen A1 issue 5 - A1**<br>(see section 1) |

| | |
|---|---|
| Test Report identification | **231120-06.TR10** |
| Revision Control | **Rev. 00**<br>**This test report revision replaces any previous test report revision**<br>(see section 8) |

The test results relate only to the samples tested.
Reference to accreditation shall be used only by full reproduction of test report.

Issued by

Digitally signed by Robin Luciani
Date: 2024.02.29 15:35:41 +01'00'

Robin Luciani
(Test Engineer Lead)

Reviewed by

Digitally signed by zayd
DN: cn=zayd, email=zayd.ouachicha@intel.com, c=US
Date: 2024.02.29 16:04:03 +01'00'

Zayd OUACHICHA
(Technical Manager)

# Table of Contents

## 1. Standards, reference documents and applicable test methods

| | |
|---|---|
| FCC | 1. FCC Title 47 CFR part 15 – Subpart E – Unlicensed National Information Infrastructure Devices. 2021-10-01 Edition<br>2. FCC Title 47 CFR part 15 – Subpart C – §15.209 Radiated emission limits; general requirements. 2021-10-01 Edition<br>3. FCC OET KDB 789033 D02 v02r01 - General U-NII Test Procedures New Rules – Guidelines for compliance testing of Unlicensed National Information Infrastructure (U-NII) Devices (Part 15, Subpart E)<br>4. FCC OET KDB 662911 D01 v02r01 - Emissions Testing of Transmitters with Multiple Outputs in the Same Band.<br>5. ANSI C63.10-2013 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. |
| ISED | 1. RSS-Gen Issue 5 Amendment 1 - General Requirements for Compliance of Radio Apparatus.<br>2. RSS-247 Issue 3 - Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices.<br>3. FCC OET KDB 789033 D02 v02r01 - General U-NII Test Procedures New Rules – Guidelines for compliance testing of Unlicensed National Information Infrastructure (U-NII) Devices (Part 15, Subpart E)<br>4. FCC OET KDB 662911 D01 v02r01 - Emissions Testing of Transmitters with Multiple Outputs in the Same Band.<br>5. ANSI C63.10-2013 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices |

## 2. General conditions, competences and guarantees

- ✓ Tests performed under FCC standards identified in section 1 are covered by A2LA accreditation.
- ✓ Tests performed under ISED standards identified in section 1 are covered by Cofrac accreditation.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2017 laboratory accredited by the American Association for Laboratory Accreditation (A2LA) with the certificate number 3478.01.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an Accredited Test Firm recognized by the FCC, with Designation Number FR0011.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2017 testing laboratory accredited by the French Committee for Accreditation (Cofrac) with the certificate number 1-6736.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is a Registered Test Site listed by ISED, with ISED company number 1000Y and CAB identifier FR0005.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.

## 3. Environmental Conditions

- ✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

| | |
|---|---|
| Temperature | 23.3ºC ± 0.9ºC |
| Humidity | 46.4% ± 12.2% |

## 4. Test samples

| Sample | Control # | Description | Model | Serial # | Date of receipt | Note |
|---|---|---|---|---|---|---|
| #01 | 231120-05.S05 | WiFi 7 Module | BE201D2W | 60452EB8A3E4 | 2024-01-05 | Used for RF conducted tests |
| | 231120-05.S10 | WiFi 7 Module | BE201D2W | F8FE5ECDC909 | 2024-02-06 | |
| | 200203-01.S10 | Laptop | HP Oleander | 000951007L | 2023-04-24 | |
| | 231109-03.S31 | Extender Board | CRF DB 2230 BNJ | ASS00862-01-0A | 2023-11-10 | |
| #02 | 231120-05.S03 | WiFi 7 Module | BE201D2W | 60452EB8A3BC | 2024-01-05 | Used for Radiated Spurious Emissions tests |
| | 220225-03.S07 | Microwave Absorber | Eccosorb BSR-1 | - | 2022-03-14 | |
| | 231109-03.S48 | Adaptor | PCB00866-00_A | 124627 | 2023-11-24 | |
| | 200611-03.S31 | Extender | ADEXELEC | - | 2020-08-19 | |
| | 200504-04.S07 | Laptop | Latitude 5401 | BVHLK13 | 2020-06-02 | |
| | 230223-02.S47 | Triband Antenna | - | 005 | 2023-04-20 | |
| | 230223-02.S48 | Triband Antenna | - | 006 | 2023-04-20 | |
| | 231120-05.S21 | WiFi 7 Module | BE201D2W | F8FE5CDCA49 | 2024-02-07 | |
| | 180001-01.S21 | Socket | 1216SD to M.2 | - | 2021-06-07 | |
| #03 | 231120-05.S02 | WiFi 7 Module | BE201D2W | 60452EB8A407 | 2024-01-05 | Used for Radiated Spurious Emissions tests |
| | 220225-03.S07 | Microwave Absorber | Eccosorb BSR-1 | - | 2022-03-14 | |
| | 231109-03.S47 | Adaptor | PCB00866-00_A | 124727 | 2023-11-24 | |
| | 220915-09.S01 | Extender | ADEXELEC | - | 2022-04-06 | |
| | 200611-03.S30 | Laptop | Latitude 5401 | 6DJLK13 | 2020-08-19 | |
| | 230223-02.S49 | Triband Antenna | - | 007 | 2023-04-20 | |
| | 230223-02.S50 | Triband Antenna | - | 008 | 2023-04-20 | |
| | 231120-05.S20 | WiFi 7 Module | BE201D2W | F8FE5ECDCB43 | 2024-02-07 | |
| | 180001-01.S21 | Socket | 1216SD to M.2 | - | 2021-06-07 | |

## 5. EUT Features

The herein information is provided by the customer

Intel WRF Lab declines any responsibility for the accuracy of the stated customer provided information, especially if it has any impact on the correctness of test results presented in this report.

<table>
<tr><td>Brand Name</td><td>Intel®</td></tr>
<tr><td>Model Name</td><td>BE201D2W</td></tr>
<tr><td>Software Version</td><td>Radiated: DRTU.05312.99.0.85<br>Conducted: DRTU.05726.99.0.86</td></tr>
<tr><td>Driver Version</td><td>Radiated: 99.0.85.3<br>Conducted: 99.0.86.3</td></tr>
<tr><td>Prototype / Production</td><td>Production</td></tr>
<tr><td>Supported Radios</td><td>802.11b/g/n/ax/be 2.4GHz<br>802.11a/n/ac/ax/be 5.2GHz<br>5.6GHz<br>5.8GHz<br>802.11ax/be 6.0GHz<br>Bluetooth 2.4GHz</td></tr>
<tr><td>Antenna Information</td><td>
<table>
<tr><th>Transmitter</th><th>Chain A (AUX 1)</th><th>Chain B (MAIN 2)</th></tr>
<tr><td>Manufacturer</td><td>Intel WRF Lab</td><td>Intel WRF Lab</td></tr>
<tr><td>Antenna type</td><td>PIFA</td><td>PIFA</td></tr>
<tr><td>Part number</td><td>WRF-Tri Band-Antenna</td><td>WRF-Tri Band-Antenna</td></tr>
<tr><td>Declared antenna gain (dBi)</td><td>+5.15</td><td>+5.15</td></tr>
</table>
</td></tr>
</table>

## 6. Remarks and comments

1. No deviations were made from the test methods listed in section 1 of this report
2. Only the worst-case plot per bandwidth and test case measurements have been reported excepted for band edge measurements where all plots are reported

## 7. Test Verdicts summary

The statement of conformity to applicable standards in the table below are based on the measured values, without taking into account the measurement uncertainties.

### 7.1. 802.11 a/n/ac/ax/be – U-NII- 3

| FCC part | RSS clause | Test name | Verdict |
|---|---|---|---|
| 15.407 (a) (3) | RSS-247 Clause 6.2.4.1 | Power Limits. Maximum output power | P |
| 15.407 (a) (3) | RSS-247 Clause 6.2.4.1 | Power spectral density | P |
| 15.407 (b) (3) | RSS-247 Clause 6.2.4.2 | Undesirable emissions limits: out of band (conducted) | P |
| 15.407 (b) (3)<br>15.209 | RSS-247 Clause 6.2.4.2<br>RSS-GEN A1 Clause 8.9 | Undesirable emissions limits: Spurious emissions (radiated) | P |

P: Pass
F: Fail
NM: Not Measured
NA: Not Applicable

## 8. Document Revision History

| Revision # | Modified by | Revision Details |
|---|---|---|
| Rev. 00 | T.MATHIEU<br>K.KHATIB | First Issue |

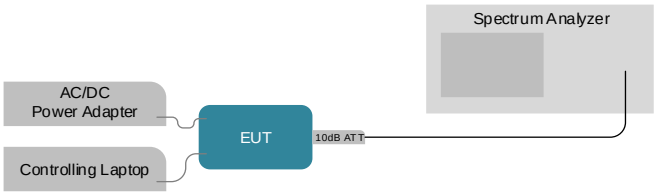
# Annex A. Test & System Description

## A.1 Measurement System

Measurements were performed using the following setups, made in accordance to the general provisions of FCC KDB 789033 D02 General UNII Test Procedures.

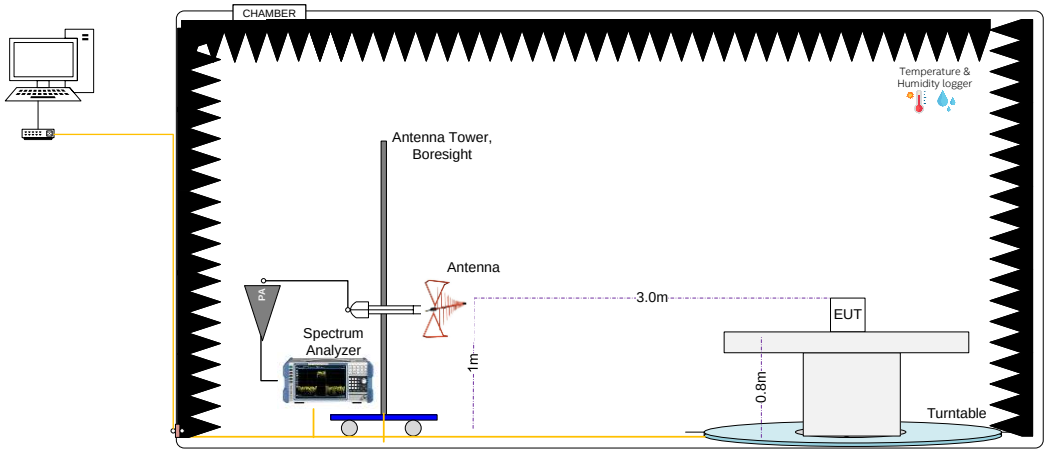
The DUT was installed in a test fixture and this test fixture is connected to a laptop computer and AC/DC power adapter. The laptop computer was used to configure the EUT to continuously transmit at a specified output power using all different modes and modulation schemes, using the Intel proprietary tool DRTU.

Conducted test setup

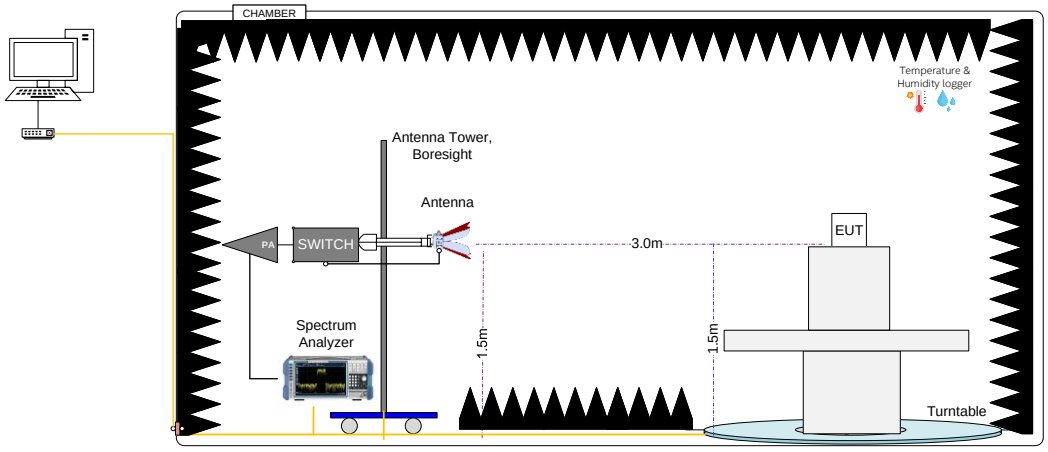



Radiated test setup

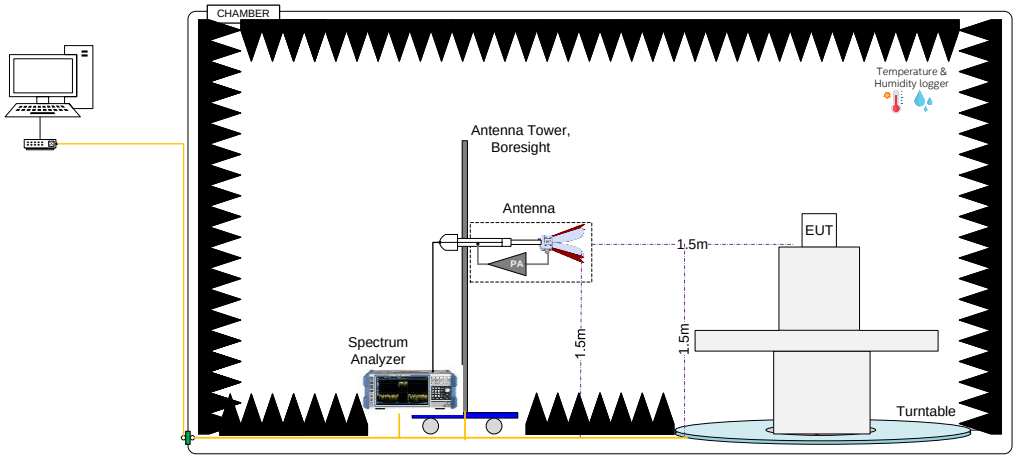
Radiated Setup 30MHz - 1GHz (Transmitter tests)



Radiated Setup 1GHz – 11GHz (Transmitter tests)




Radiated Setup 11GHz – 40GHz (Transmitter tests)




Sample Calculation

The spurious received voltage V(dBµV) in the spectrum Analyzer is converted to Electric field strength using the transducer factor F corresponding to the Rx path Loss:

**F (dB/m)=** Rx Antenna Factor (dB/m) + Cable losses (dB) – Amplifiers Gain (dBi)
**E (dBµV) =** V(dBµV) + F (dB/m)

For field strength measurements made at other than the distance at which the applicable limit is specified, the field strength of the emission at the distance specified by the limit is deduced as follows:

$$E_{SpecLimit} = E_{Meas} + 20*\log(D_{Meas}/D_{SpecLimit})$$

where

*$E_{SpecLimit}$ is the field strength of the emission at the distance specified by the limit, in dBµV/m*
*$E_{Meas}$ is the field strength of the emission at the measurement distance, in dBµV/m*
*$D_{Meas}$ is the measurement distance, in m*
*$D_{SpecLimit}$ is the distance specified by the limit, in m*

## A.2 Test Equipment List

Conducted setup

| ID# | Device | Type/Model | Serial # | Manufacturer | Cal. Date | Cal. Due Date |
|---|---|---|---|---|---|---|
| 131-000 | Spectrum Analyzer | FSV40 | 101425 | Rohde & Schwarz | 2022-07-10 | 2024-07-10 |
| 018-003 | RF cable 50cm | PE360-50CM | N/A | PASTERNACK | 2023-03-03 | 2024-03-03 |
| 018-001 | 10dB Attenuator + MH4 | N/A | N/A | N/A | 2023-03-03 | 2024-03-03 |
| 363-000 | Temp & Humidity Logger | RA12E-TH1-RAS | RA12-D0EB1A | AVITECH | 2023-09-28 | 2025-09-28 |
| 413-000 | Measurement SW v1.5.4.2 | Octopi | N/A | Step AT | N/A | N/A |

Radiated Setup #1

| ID# | Device | Type/Model | Serial # | Manufacturer | Cal. Date | Cal. Due Date |
|---|---|---|---|---|---|---|
| 006-000* | Anechoic Chamber | FACT3 | 5720 | ETS-Lindgren | 2022-01-21 | 2024-02-21** |
| 006-008 | Measurement SW, v11.30 | EMC32 | 100623 | Rohde & Schwarz | N/A | N/A |
| 259-000 | Temp & Humidity Logger | RA12E-TH-RAS | RA12-B9BD70 | Avtech | 2022-06-27 | 2024-06-27 |
| 006-001 | Turn Table | ETS | - | ETS-Lindgren | N/A | N/A |
| 006-011 | Boresight antenna mast | BAM 4.0-P | P/278/2890.01 | Maturo | N/A | N/A |
| 007-008 | Double Horn Ridged antenna +PA | 3116C-PA | 00169308bis + 00196308 | ETS-Lindgren | 2023-0-30 | 2025-05-30 |
| 057-000 | Double Horn Ridged antenna | 3117 | 167062 | ETS-Lindgren | 2022-07-08 | 2024-07-08 |
| 058-000 | Double Horn Ridged antenna | 3116C | 157511 | ETS-Lindgren | 2022-10-21 | 2024-10-21 |
| 006-061 | Bi-Log Periodic antenna | CBL6143A | 61382 | Teseq | 2022-10-24 | 2024-10-24 |
| 147-000 | Spectrum analyzer | FSW43 | 101847 | Rohde & Schwarz | 2022-11-30 | 2024-11-30 |
| 301-000 | Amplifier 9kHz-1300MHz | 8447F | 3113A07440 | HP | 2023-03-03 | 2024-03-03 |
| 261-000 | Amplifier 1GHz-18GHz | 3117-PA | 00157993 | ETS-Lindgren | 2023-02-20 | 2024-02-20** |
| 502-006 | Amplifier 0.5GHz-40GHz | DEPA0540-43 | 2023A05 | Diamond Engineering | 2023-06-09 | 2024-06-09 |
| 009-007 | RF Filter | ZHSS-k11G+ | 8493 1831830 | Mini-Circuits | 2023-06-09 | 2024-06-09 |
| 006-068 | RF Switch | RC-2SP6T-40 | 02112090061 | Micro-Circuits | 2023-08-22 | 2024-08-22 |
| 006-066 | Cable 7m – 25MHz to 40GHz | R286304174 | 20.46.370 | Radiall | 2023-08-16 | 2024-08-16 |
| 006-063 | Cable 30cm – 1GHz to 40GHz | PE371-12 | - | Pasternack | 2023-02-27 | 2024-02-27** |
| 006-064 | Cable 30cm – 1GHz to 40GHz | PE371-12 | - | Pasternack | 2023-02-27 | 2024-02-27** |
| 006-065 | Cable 60cm – 25MHz to 1GHz | PE300-24 | - | Pasternack | 2023-06-02 | 2024-06-02 |

N/A: Not Applicable
*Within a grace period of 30 days
**This equipment wasn't used outside its calibration period.

Radiated Setup #2

| ID# | Device | Type/Model | Serial # | Manufacturer | Cal. Date | Cal. Due Date |
|---|---|---|---|---|---|---|
| 007-000 | Anechoic chamber | RFD-FA-100 | 5996 | ETS Lindgren | 2021-09-14 | 2024-03-14 |
| 127-000 | Spectrum Analyzer | FSV40 | 101358 | Rohde & Schwarz | 2023-01-27 | 2025-01-27 |
| 007-007 | Double Ridge Horn (1- 18GHz) | 3117 | 00152266 | ETS Lindgren | 2022-03-29 | 2024-03-29 |
| 007-006 | Switch & Positioner | EMCenter | 00151232 | ETS Lindgren | N/A | N/A |
| 059-000 | Double Ridge Horn (1- 18GHz) | 3117 | 201542 | ETS-Lindgren | 2023-09-26 | 2025-09-26 |
| 264-000 | Amplifier 1GHz-18GHz | 3117-PA | 00169546 | ETS-Lindgren | 2023-02-20 | 2024-02-20** |
| 007-011* | RF Cable 1-18GHz - 6.5m | 140-8500-11-51 | 001 | Atem | 2023-02-15 | 2024-03-15 |
| 007-005 | Measurement SW, v11.20.00 | EMC32 | 100401 | Rohde & Schwarz | N/A | N/A |
| 007-003 | Antenna Tower | 2171B-3.0M | 00150123 | ETS Lindgren | N/A | N/A |
| 007-002 | Turntable | - | - | ETS Lindgren | N/A | N/A |
| 007-014* | RF Cable 18-40 GHz 6m | R286304009 | 1747364 | Radiall | 2023-02-16 | 2024-03-16 |
| 007-022* | RF Cable 1-18GHz, 1.5m | 0501050991200GX | 19.23.493 | Radiall | 2023-02-13 | 2024-03-13 |
| 007-015* | RF Cable 1GHz-18GHz 1.5m | - | - | Spirent | 2023-02-13 | 2024-03-13 |
| 007-018* | RF Cable 1-9.5GHz 1.2m | 0500990991200KE | - | Radiall | 2023-02-13 | 2024-03-13 |
| 007-020* | RF Cable 1-18GHz, 1.2 m | 2301761761200PJ | 12.22.1104 | Radiall | 2023-02-15 | 2024-03-15 |
| 349-000 | Temp & Humidity Logger | RA12E-TH1-RAS | RA12-D4F8C3 | Avtech | 2023-11-30 | 2025-11-30 |

N/A: Not Applicable
*Within a grace period of 30 days.
**This equipment wasn't used outside its calibration period.

Shared Radiated Equipment

| ID# | Device | Type/Model | Serial # | Manufacturer | Cal. Date | Cal. Due Date |
|---|---|---|---|---|---|---|
| 412-000 | DRTU Power finder V2.1 | - | - | Intel | NA | NA |
| 139-000 | Power Sensor | NRP-Z81 | 104383 | Rohde & Schwarz | 2023-04-21 | 2025-04-21 |
| 061-000 | Power Sensor | NRP-Z81 | 104386 | Rohde & Schwarz | 2022-03-25 | 2024-03-25 |
| 140-000 | Power Sensor | NRP-Z81 | 104382 | Rohde & Schwarz | 2022-03-25 | 2024-03-25 |
| 423-000 | Power Sensor | NRP-Z81 | 101152 | Rohde & Schwarz | 2022-05-18 | 2024-05-18 |

N/A: Not Applicable

## A.3 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the table below with a coverage factor of k = 2 to indicate a 95% level of confidence:

| Measurement type | Uncertainty | Unit |
|---|---|---|
| Timing | ±0.12 | % |
| Power Spectral density | ±1.47 | dB |
| Occupied bandwidth | ±2.07 | % |
| Conducted Power | ±1.03 | dB |
| Conducted Spurious Emission <26.5 GHz | ±3.45 | dB |
| Radiated tests <1GHz | ±6.40 | dB |
| Radiated tests 1GHz – 40 GHz | ±6.04 | dB |

# Annex B. Test Results U-NII-3

The herein test results were performed by:

| Test case measurement | Test Personnel |
|---|---|
| 6dB and 99% Bandwidth | T.MATHIEU |
| Maximum output power & Maximum PSD | T.MATHIEU |
| Undesirable emission limits: out of band | T.MATHIEU |
| Radiated spurious emissions | K.Khatib, R.Simonini |

## B.1 Test Conditions

For 802.11a mode the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, but not simultaneously.

For 802.11n20 & 802.11ax/be20 (20 MHz channel bandwidth), 802.11n40 and 802.11ax/be40 (40MHz channel bandwidth) 802.11ac80 & 802.11ax/be80 (80MHz channel bandwidth) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously.

The following data rates were selected based on preliminary testing that identified those rates as the worst cases for output power and spurious levels at the band edges:

| Transmission | Mode | Bandwidth (MHz) | Worst Case Data Rate |
|---|---|---|---|
| SISO | 802.11a | 20 | 6Mbps |
| | 802.11n | 20 | HT0 |
| | | 40 | HT0 |
| | 802.11ac | 80 | VHT0 |
| | 802.11ax/be | 20/40/80 | MCS0 |
| MIMO | 802.11n | 20/40 | HT8 |
| | 802.11ac | 80 | VHT0 |
| | 802.11ax/be | 20/40/80 | MCS0 |

## B.2 Test Results Tables

### B.2.1 6dB & 99% Bandwidth

**Test limits**

| FCC part | RSS clause | Limits |
|---|---|---|
| 15.407 (e) | RSS-247 Clause 6.2.4.1 | For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz. |

**Test procedure**

The conducted setup shown in section *Test & System Description* was used to measure the 6dB & 99% Bandwidth. The antenna terminal of the EUT is connected to the spectrum analyzer through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

For the overlapped channels between U-NII-2C and U-NII-3 bands, and according to FCC KDB 789033 D02, the boundary frequency between the bands is used as one edge for defining the portion of the 6dB bandwidth that falls within a particular U-NII band. This rule is only applicable for the 6dB bandwidth and for those channels marked as overlapped.

**Results tables**

**U-NII-3 channels**

| Mode | Rate | Antenna | Channel | Freq [MHz] | 6dB BW [MHz] | 99% BW [MHz] |
|---|---|---|---|---|---|---|
| 802.11a | 6Mbps | SISO A | 149 | 5745 | 15.11 | 17.80 |
| | | | 157 | 5785 | 16.03 | 18.12 |
| | | | 165 | 5825 | 15.05 | 16.76 |
| | | SISO B | 149 | 5745 | 15.08 | 17.48 |
| | | | 157 | 5785 | 15.44 | 18.16 |
| | | | 165 | 5825 | 15.12 | 16.80 |
| 802.11n20 | HT0 | SISO A | 149 | 5745 | 15.50 | 18.56 |
| | | | 157 | 5785 | 15.03 | 18.56 |
| | | | 165 | 5825 | 15.10 | 18.00 |
| | | SISO B | 149 | 5745 | 11.92 | 18.44 |
| | | | 157 | 5785 | 15.00 | 18.52 |
| | | | 165 | 5825 | 15.33 | 17.92 |
| | HT8 | MIMO A | 149 | 5745 | 15.90 | 18.64 |
| | | | 157 | 5785 | 13.83 | 18.88 |
| | | | 165 | 5825 | 16.49 | 17.80 |
| | | MIMO B | 149 | 5745 | 16.50 | 18.28 |
| | | | 157 | 5785 | 15.92 | 18.64 |
| | | | 165 | 5825 | 16.91 | 17.80 |
| 802.11n40 | HT0 | SISO A | 151 | 5755 | 34.37 | 36.08 |
| | | | 159 | 5795 | 35.06 | 36.96 |
| | | SISO B | 151 | 5755 | 33.80 | 36.16 |
| | | | 159 | 5795 | 35.06 | 36.56 |
| | HT8 | MIMO A | 151 | 5755 | 35.05 | 36.08 |
| | | | 159 | 5795 | 35.02 | 36.16 |
| | | MIMO B | 151 | 5755 | 35.08 | 36.16 |
| | | | 159 | 5795 | 35.08 | 36.08 |
| 802.11ac80 | VHT0 | SISO A | 155 | 5775 | 75.10 | 75.12 |
| | | SISO B | | | 72.67 | 75.12 |
| | | MIMO A | | | 71.33 | 75.12 |
| | | MIMO B | | | 73.83 | 75.00 |

Max Value

| Mode | Rate | Antenna | Channel | Freq [MHz] | RU config. | 6dB BW [MHz] | 99% BW [MHz] |
|---|---|---|---|---|---|---|---|
| 802.11ax/be20 | MCS0 | SISO A | 149 | 5745 | Full | 16.74 | 19.08 |
| | | | | | 26/0 | 4.53 | 18.60 |
| | | | | | 52/37 | 16.97 | 17.88 |
| | | | | | 106/53 | 17.06 | 18.08 |
| | | | 157 | 5785 | Full | 16.56 | 19.20 |
| | | | 165 | 5825 | Full | 16.00 | 18.96 |
| | | SISO B | 149 | 5745 | Full | 16.86 | 19.08 |
| | | | | | 26/0 | 2.10 | 18.56 |
| | | | | | 52/37 | 17.02 | 18.48 |
| | | | | | 106/53 | 15.78 | 18.40 |
| | | | 157 | 5785 | Full | 17.85 | 19.08 |
| | | | 165 | 5825 | Full | 17.40 | 18.96 |
| | | MIMO A | 149 | 5745 | Full | 16.35 | 19.12 |
| | | | | | 26/0 | 2.05 | 18.24 |
| | | | | | 52/37 | 15.77 | 18.08 |
| | | | | | 106/53 | 17.09 | 18.40 |
| | | | 157 | 5785 | Full | 17.29 | 19.12 |
| | | | 165 | 5825 | Full | 16.88 | 19.00 |
| | | MIMO B | 149 | 5745 | Full | 16.71 | 19.12 |
| | | | | | 26/0 | 2.04 | 17.64 |
| | | | | | 52/37 | 17.01 | 17.84 |
| | | | | | 106/53 | 17.07 | 18.32 |
| | | | 157 | 5785 | Full | 13.84 | 19.12 |
| | | | 165 | 5825 | Full | 16.03 | 18.96 |
| 802.11ax/be40 | MCS0 | SISO A | 151 | 5755 | Full | 35.57 | 37.52 |
| | | | | | 242/61 | 16.43 | 19.12 |
| | | | 159 | 5795 | Full | 36.52 | 37.84 |
| | | SISO B | 151 | 5755 | Full | 35.48 | 37.68 |
| | | | | | 242/61 | 15.95 | 19.36 |
| | | | 159 | 5795 | Full | 35.91 | 37.92 |
| | | MIMO A | 151 | 5755 | Full | 35.82 | 37.60 |
| | | | | | 242/61 | 16.87 | 19.20 |
| | | | 159 | 5795 | Full | 35.29 | 37.60 |
| | | MIMO B | 151 | 5755 | Full | 35.05 | 37.60 |
| | | | | | 242/61 | 17.19 | 19.12 |
| | | | 159 | 5795 | Full | 35.08 | 37.52 |
| 802.11ax/be80 | MCS0 | SISO A | 155 | 5775 | Full | 73.87 | 76.68 |
| | | | | | 484/65 | 35.57 | 37.44 |
| | | SISO B | | | Full | 72.63 | 76.80 |
| | | | | | 484/65 | 35.30 | 37.32 |
| | | MIMO A | | | Full | 75.13 | 76.92 |
| | | | | | 484/65 | 36.00 | 37.56 |
| | | MIMO B | | | Full | 73.87 | 76.56 |
| | | | | | 484/65 | 36.43 | 37.32 |

Max Value

**See Section B.3.1 and B.3.2 for the screenshot results.**

**Overlapped channels between U-NII-2C and U-NII-3**

| Mode | Channel | Frequency (MHz) | Antenna | Chain | 6dB BW [MHz] | 26dB BW UNII-3 [MHz] |
|---|---|---|---|---|---|---|
| 802.11n20 | 144 | 5720 | SISO | A | 2.53 | 7.08 |
| | | | | B | 3.39 | 6.83 |
| | | | MIMO | A | 2.43 | 7.13 |
| | | | | B | 3.76 | 7.13 |
| 802.11n40 | 142 | 5710 | SISO | A | 2.55 | 18.25 |
| | | | | B | 2.46 | 9.55 |
| | | | MIMO | A | 3.18 | 6.05 |
| | | | | B | 3.13 | 6.45 |
| 802.11ac80 | 138 | 5690 | SISO | A | 2.52 | 13.18 |
| | | | | B | 2.54 | 11.74 |
| | | | MIMO | A | 2.55 | 8.02 |
| | | | | B | 2.53 | 6.58 |
| 802.11ax/be20 | 144 | 5720 | SISO | A | 3.94 | 7.17 |
| | | | | B | 3.97 | 6.72 |
| | | | MIMO | A | 4.01 | 7.02 |
| | | | | B | 2.47 | 6.42 |
| 802.11ax/be40 | 142 | 5710 | SISO | A | 3.02 | 9.25 |
| | | | | B | 0.32 | 9.45 |
| | | | MIMO | A | 2.55 | 5.95 |
| | | | | B | 2.97 | 5.95 |
| 802.11ax/be80 | 138 | 5690 | SISO | A | 2.51 | 9.82 |
| | | | | B | 2.53 | 12.70 |
| | | | MIMO | A | 1.63 | 7.90 |
| | | | | B | 1.29 | 5.62 |

Note, the 26dB bandwidth of the overlapped channels falling in U-NII-3 band is shown in the above table. These values were used to measure the maximum output power in the U-NII-3 band as specified in chapter B.2.2.

### B.2.2 Maximum output power & Maximum power spectral Density

Test limits

| FCC part | RSS clause | Limits |
|---|---|---|
| 15.407 (a) (3) | RSS-247 Clause 6.2.4.1 | For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band |

Test procedure

The Maximum Conducted Output Power was measured using the channel integration method according to section E) 2) e) (Method SA-2 Alternative) of FCC KDB 789033 D02
The maximum power spectral density (PSD) was measured using the method according to section F) (Method SA-2 Alternative) of FCC KDB 789033 D02

In the measure-and-sum approach for MIMO mode, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically in linear power units to determine the total emission level from the device.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power.

The conducted setup shown in section *Test & System Description* was used to measure the maximum conducted output power and power spectral density. The antenna terminal of the EUT is connected to the spectrum analyser through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

For the overlapped channels between U-NII-2C and U-NII-3, and according to FCC KDB 789033 D02, the power is computed based on the portion of the emission bandwidth (26dB) contained within that band. This rule is only applicable for those channels marked as overlapped.

Results tables

Duty cycle

| Mode | Rate | Antenna | Duty Cycle [%] |
|---|---|---|---|
| 802.11a | 6Mbps | SISO A | 0.978 |
| | | SISO B | 0.978 |
| 802.11n20 | HT0 | SISO A | 0.988 |
| | | SISO B | 0.988 |
| | HT8 | MIMO A | 0.988 |
| | | MIMO B | 0.988 |
| 802.11ax/be20 | MCS0 | SISO A | 0.988 |
| | | SISO B | 0.988 |
| | | MIMO A | 0.994 |
| | | MIMO B | 0.994 |
| 802.11n40 | HT0 | SISO A | 0.988 |
| | | SISO B | 0.988 |
| | HT8 | MIMO A | 0.988 |
| | | MIMO B | 0.988 |
| 802.11ax/be40 | MCS0 | SISO A | 0.988 |
| | | SISO B | 0.988 |
| | | MIMO A | 0.994 |
| | | MIMO B | 0.994 |
| 802.11ac80 | VHT0 | SISO A | 0.989 |
| | | SISO B | 0.989 |
| | | MIMO A | 0.994 |
| | | MIMO B | 0.994 |
| 802.11ax/be80 | MCS0 | SISO A | 0.988 |
| | | SISO B | 0.988 |
| | | MIMO A | 0.994 |
| | | MIMO B | 0.994 |
| 802.11ac160 | VTH0 | SISO A | 0.988 |
| | | SISO B | 0.988 |
| | | MIMO A | 0.992 |
| | | MIMO B | 0.992 |
| 802.11ax/be160 | MCS0 | SISO A | 0.988 |
| | | SISO B | 0.988 |
| | | MIMO A | 0.989 |
| | | MIMO B | 0.989 |

Maximum output power – U-NII-3 Channels

| Mode | Rate | Channel | Freq [MHz] | Antenna | Average Conducted Ouput Power [dBm] | Avg Max* Conducted Ouput Power [dBm] | Avg Max*. EIRP [dBm] | Avg Max* Conducted Power [mW] |
|---|---|---|---|---|---|---|---|---|
| 802.11a | 6Mbps | 149 | 5745 | SISO A | 23.54 | 23.64 | 28.79 | 231.03 |
| | | | | SISO B | 23.53 | 23.63 | 28.78 | 230.49 |
| | | 157 | 5785 | SISO A | 23.57 | 23.67 | 28.82 | 232.63 |
| | | | | SISO B | 23.65 | 23.75 | 28.90 | 236.95 |
| | | 165 | 5825 | SISO A | 22.95 | 23.05 | 28.20 | 201.68 |
| | | | | SISO B | 23.05 | 23.15 | 28.30 | 206.38 |
| 802.11n20 | HT0 | 149 | 5745 | SISO A | 23.49 | 23.49 | 28.64 | 223.36 |
| | | | | SISO B | 23.55 | 23.55 | 28.70 | 226.46 |
| | | 157 | 5785 | SISO A | 23.52 | 23.52 | 28.67 | 224.91 |
| | | | | SISO B | 23.66 | 23.66 | 28.81 | 232.27 |
| | | 165 | 5825 | SISO A | 22.94 | 22.94 | 28.09 | 196.79 |
| | | | | SISO B | 23.25 | 23.25 | 28.40 | 211.35 |
| | HT8 | 149 | 5745 | MIMO A | 23.43 | 23.43 | 28.58 | 220.29 |
| | | | | MIMO B | 23.51 | 23.51 | 28.66 | 224.39 |
| | | | | Combined A+B | 26.48 | 26.48 | 31.63 | 444.68 |
| | | 157 | 5785 | MIMO A | 23.50 | 23.50 | 28.65 | 223.87 |
| | | | | MIMO B | 23.60 | 23.60 | 28.75 | 229.09 |
| | | | | Combined A+B | 26.56 | 26.56 | 31.71 | 452.96 |
| | | 165 | 5825 | MIMO A | 22.17 | 22.17 | 27.32 | 164.82 |
| | | | | MIMO B | 22.31 | 22.31 | 27.46 | 170.22 |
| | | | | Combined A+B | 25.25 | 25.25 | 30.40 | 335.03 |
| 802.11n40 | HT0 | 151 | 5755 | SISO A | 22.40 | 22.40 | 27.55 | 173.78 |
| | | | | SISO B | 22.08 | 22.08 | 27.23 | 161.44 |
| | | 159 | 5795 | SISO A | 23.28 | 23.28 | 28.43 | 212.81 |
| | | | | SISO B | 23.54 | 23.54 | 28.69 | 225.94 |
| | HT8 | 151 | 5755 | MIMO A | 21.59 | 21.59 | 26.74 | 144.21 |
| | | | | MIMO B | 21.21 | 21.21 | 26.36 | 132.13 |
| | | | | Combined A+B | 24.41 | 24.41 | 29.56 | 276.34 |
| | | 159 | 5795 | MIMO A | 22.22 | 22.22 | 27.37 | 166.72 |
| | | | | MIMO B | 20.83 | 20.83 | 25.98 | 121.06 |
| | | | | Combined A+B | 24.59 | 24.59 | 29.74 | 287.78 |
| 802.11ac80 | VHT0 | 155 | 5775 | SISO A | 21.25 | 21.25 | 26.40 | 133.35 |
| | | | | SISO B | 21.29 | 21.29 | 26.44 | 134.59 |
| | | | | MIMO A | 20.36 | 20.36 | 25.51 | 108.64 |
| | | | | MIMO B | 20.47 | 20.47 | 25.62 | 111.43 |
| | | | | Combined A+B | 23.43 | 23.43 | 28.58 | 220.07 |

* Maximum values are the duty cycle compensated values calculated from the average (measured)

Max Value

Min Value

| Mode | Rate | Channel | Freq [MHz] | Antenna | RU config. | Average Conducted Ouput Power [dBm] | Avg Max* Conducted Ouput Power [dBm] | Avg Max*. EIRP [dBm] | Avg Max* Conducted Power [mW] |
|---|---|---|---|---|---|---|---|---|---|
| 802.11ax/be20 | MCS0 | 149 | 5745 | SISO A | Full | 23.35 | 23.35 | 28.50 | 216.27 |
| | | | | | 26/0 | 23.48 | 23.48 | 28.63 | 222.84 |
| | | | | | 52/37 | 23.56 | 23.56 | 28.71 | 226.99 |
| | | | | | 106/53 | 23.54 | 23.54 | 28.69 | 225.94 |
| | | | | SISO B | Full | 23.47 | 23.47 | 28.62 | 222.33 |
| | | | | | 26/0 | 23.47 | 23.47 | 28.62 | 222.33 |
| | | | | | 52/37 | 23.63 | 23.63 | 28.78 | 230.67 |
| | | | | | 106/53 | 23.74 | 23.74 | 28.89 | 236.59 |
| | | | | MIMO A | Full | 23.27 | 23.27 | 28.42 | 212.32 |
| | | | | | 26/0 | 23.24 | 23.24 | 28.39 | 210.86 |
| | | | | | 52/37 | 23.59 | 23.59 | 28.74 | 228.56 |
| | | | | | 106/53 | 23.44 | 23.44 | 28.59 | 220.80 |
| | | | | MIMO B | Full | 23.35 | 23.35 | 28.50 | 216.27 |
| | | | | | 26/0 | 23.48 | 23.48 | 28.63 | 222.84 |
| | | | | | 52/37 | 23.54 | 23.54 | 28.69 | 225.94 |
| | | | | | 106/53 | 23.57 | 23.57 | 28.72 | 227.51 |
| | | | | Combined A+B | Full | 26.32 | 26.32 | 31.47 | 428.60 |
| | | | | | 26/0 | 26.37 | 26.37 | 31.52 | 433.71 |
| | | | | | 52/37 | 26.58 | 26.58 | 31.73 | 454.50 |
| | | | | | 106/53 | 26.52 | 26.52 | 31.67 | 448.31 |
| | | 157 | 5785 | SISO A | Full | 23.43 | 23.43 | 28.58 | 220.29 |
| | | | | SISO B | Full | 23.56 | 23.56 | 28.71 | 226.99 |
| | | | | MIMO A | Full | 23.19 | 23.19 | 28.34 | 208.45 |
| | | | | MIMO B | Full | 23.49 | 23.49 | 28.64 | 223.36 |
| | | | | Combined A+B | Full | 26.35 | 26.35 | 31.50 | 431.81 |
| | | 165 | 5825 | SISO A | Full | 22.86 | 22.86 | 28.01 | 193.20 |
| | | | | SISO B | Full | 22.71 | 22.71 | 27.86 | 186.64 |
| | | | | MIMO A | Full | 22.30 | 22.30 | 27.45 | 169.82 |
| | | | | MIMO B | Full | 22.42 | 22.42 | 27.57 | 174.58 |
| | | | | Combined A+B | Full | 25.37 | 25.37 | 30.52 | 344.41 |
| 802.11ax/be40 | MCS0 | 151 | 5755 | SISO A | Full | 22.05 | 22.05 | 27.20 | 160.32 |
| | | | | | 242/61 | 23.45 | 23.45 | 28.60 | 221.31 |
| | | | | SISO B | Full | 22.21 | 22.21 | 27.36 | 166.34 |
| | | | | | 242/61 | 23.55 | 23.55 | 28.70 | 226.46 |
| | | | | MIMO A | Full | 21.53 | 21.53 | 26.68 | 142.23 |
| | | | | | 242/61 | 23.35 | 23.35 | 28.50 | 216.27 |
| | | | | MIMO B | Full | 21.12 | 21.12 | 26.27 | 129.42 |
| | | | | | 242/61 | 23.44 | 23.44 | 28.59 | 220.80 |
| | | | | Combined A+B | Full | 24.34 | 24.34 | 29.49 | 271.65 |
| | | | | | 242/61 | 26.41 | 26.41 | 31.56 | 437.07 |
| | | 159 | 5795 | SISO A | Full | 23.20 | 23.20 | 28.35 | 208.93 |
| | | | | SISO B | Full | 23.34 | 23.34 | 28.49 | 215.77 |
| | | | | MIMO A | Full | 21.91 | 21.91 | 27.06 | 155.24 |
| | | | | MIMO B | Full | 20.73 | 20.73 | 25.88 | 118.30 |
| | | | | Combined A+B | Full | 24.37 | 24.37 | 29.52 | 273.54 |
| 802.11ax/be80 | MCS0 | 155 | 5775 | SISO A | Full | 21.35 | 21.35 | 26.50 | 136.46 |
| | | | | | 484/65 | 21.87 | 21.87 | 27.02 | 153.82 |
| | | | | SISO B | Full | 21.35 | 21.35 | 26.50 | 136.46 |
| | | | | | 484/65 | 22.44 | 22.44 | 27.59 | 175.39 |
| | | | | MIMO A | Full | 20.32 | 20.32 | 25.47 | 107.65 |
| | | | | | 484/65 | 21.53 | 21.53 | 26.68 | 142.23 |
| | | | | MIMO B | Full | 20.40 | 20.40 | 25.55 | 109.65 |
| | | | | | 484/65 | 21.64 | 21.64 | 26.79 | 145.88 |
| | | | | Combined A+B | Full | 23.37 | 23.37 | 28.52 | 217.29 |
| | | | | | 484/65 | 24.60 | 24.60 | 29.75 | 288.11 |

* Maximum values are the duty cycle compensated values calculated from the average (measured)

Max Value
Min Value

Maximum output power – Overlapped channels between U-NII-2C and U-NII-3

| Mode | Channel | Freq (MHz) | Antenna | Chain | Average Cond. Output Power UNII-3 [dBm] | Max.* Cond. Output Power UNII-3 [dBm] | Max.* EIRP UNII-3 [dBm] | Max.* Cond. Output Power UNII-3 [mW] |
|---|---|---|---|---|---|---|---|---|
| 802.11n20 | 144 | 5720 | SISO | A | 13.67 | 13.67 | 18.82 | 23.28 |
| | | | | B | 13.40 | 13.40 | 18.55 | 21.88 |
| | | | MIMO | A | 10.62 | 10.62 | 15.77 | 11.53 |
| | | | | B | 10.55 | 10.55 | 15.70 | 11.35 |
| | | | Combined | A+B | 13.60 | 13.60 | 18.75 | 22.88 |
| 802.11n40 | 142 | 5710 | SISO | A | 10.56 | 10.56 | 15.71 | 11.38 |
| | | | | B | 10.56 | 10.56 | 15.71 | 11.38 |
| | | | MIMO | A | 8.45 | 8.45 | 13.60 | 7.00 |
| | | | | B | 8.49 | 8.49 | 13.64 | 7.06 |
| | | | Combined | A+B | 11.48 | 11.48 | 16.63 | 14.06 |
| 802.11ac80 | 138 | 5690 | SISO | A | 6.49 | 6.49 | 11.64 | 4.46 |
| | | | | B | 6.61 | 6.61 | 11.76 | 4.58 |
| | | | MIMO | A | 4.53 | 4.53 | 9.68 | 2.84 |
| | | | | B | 4.82 | 4.82 | 9.97 | 3.03 |
| | | | Combined | A+B | 7.69 | 7.69 | 12.84 | 5.87 |
| 802.11ax/be20 | 144 | 5720 | SISO | A | 13.79 | 13.79 | 18.94 | 23.93 |
| | | | | B | 14.22 | 14.22 | 19.37 | 26.42 |
| | | | MIMO | A | 10.77 | 10.77 | 15.92 | 11.94 |
| | | | | B | 11.13 | 11.13 | 16.28 | 12.97 |
| | | | Combined | A+B | 13.96 | 13.96 | 19.11 | 24.91 |
| 802.11ax/be40 | 142 | 5710 | SISO | A | 11.29 | 11.29 | 16.44 | 13.46 |
| | | | | B | 11.38 | 11.38 | 16.53 | 13.74 |
| | | | MIMO | A | 9.12 | 9.12 | 14.27 | 8.17 |
| | | | | B | 9.28 | 9.28 | 14.43 | 8.47 |
| | | | Combined | A+B | 12.21 | 12.21 | 17.36 | 16.64 |
| 802.11ax/be80 | 138 | 5690 | SISO | A | 7.43 | 7.43 | 12.58 | 5.53 |
| | | | | B | 7.75 | 7.75 | 12.90 | 5.96 |
| | | | MIMO | A | 4.94 | 4.94 | 10.09 | 3.12 |
| | | | | B | 5.68 | 5.68 | 10.83 | 3.70 |
| | | | Combined | A+B | 8.34 | 8.34 | 13.49 | 6.82 |

* Maximum values are the duty cycle compensated values calculated from the average (measured)

**See Section B.3.3 for the screenshot results**

Maximum Power Spectral Density (PSD) – U-NII-3 channels

| Mode | Rate | Channel | Freq [MHz] | Antenna | Average conducted PSD [dBm/500kHz] | Max.* conducted PSD [dBm/500kHz] |
|---|---|---|---|---|---|---|
| 802.11a | 6Mbps | 149 | 5745 | SISO A | 9.77 | 9.87 |
| | | | | SISO B | 9.80 | 9.90 |
| | | 157 | 5785 | SISO A | 9.80 | 9.90 |
| | | | | SISO B | 9.90 | 10.00 |
| | | 165 | 5825 | SISO A | 9.27 | 9.37 |
| | | | | SISO B | 9.39 | 9.49 |
| 802.11n20 | HT0 | 149 | 5745 | SISO A | 9.49 | 9.49 |
| | | | | SISO B | 9.61 | 9.61 |
| | | 157 | 5785 | SISO A | 9.57 | 9.57 |
| | | | | SISO B | 9.71 | 9.71 |
| | | 165 | 5825 | SISO A | 8.97 | 8.97 |
| | | | | SISO B | 9.29 | 9.29 |
| | HT8 | 149 | 5745 | MIMO A | 9.47 | 9.47 |
| | | | | MIMO B | 9.54 | 9.54 |
| | | | | Combined A+B | 12.52 | 12.52 |
| | | 157 | 5785 | MIMO A | 9.52 | 9.52 |
| | | | | MIMO B | 9.61 | 9.61 |
| | | | | Combined A+B | 12.58 | 12.58 |
| | | 165 | 5825 | MIMO A | 8.19 | 8.19 |
| | | | | MIMO B | 8.30 | 8.30 |
| | | | | Combined A+B | 11.26 | 11.26 |
| 802.11n40 | HT0 | 151 | 5755 | SISO A | 4.96 | 4.96 |
| | | | | SISO B | 4.62 | 4.62 |
| | | 159 | 5795 | SISO A | 5.88 | 5.88 |
| | | | | SISO B | 6.18 | 6.18 |
| | HT8 | 151 | 5755 | MIMO A | 4.21 | 4.21 |
| | | | | MIMO B | 3.81 | 3.81 |
| | | | | Combined A+B | 7.02 | 7.02 |
| | | 159 | 5795 | MIMO A | 4.79 | 4.79 |
| | | | | MIMO B | 3.45 | 3.45 |
| | | | | Combined A+B | 7.18 | 7.18 |
| 802.11ac80 | VHT0 | 155 | 5775 | SISO A | 0.72 | 0.72 |
| | | | | SISO B | 0.73 | 0.73 |
| | | | | MIMO A | -0.14 | -0.14 |
| | | | | MIMO B | -0.03 | -0.03 |
| | | | | Combined A+B | 2.93 | 2.93 |

* Maximum values are the duty cycle compensated values calculated from the average (measured)

| Mode | Rate | Channel | Freq [MHz] | Antenna | RU config. | Average conducted PSD [dBm/500kHz] | Max.* conducted PSD [dBm/500kHz] |
|---|---|---|---|---|---|---|---|
| 802.11ax/be20 | MCS0 | 149 | 5745 | SISO A | Full | 9.20 | 9.20 |
| | | | | | 26/0 | 17.76 | 17.76 |
| | | | | | 52/37 | 14.93 | 14.93 |
| | | | | | 106/53 | 11.75 | 11.75 |
| | | | | SISO B | Full | 9.35 | 9.35 |
| | | | | | 26/0 | 17.87 | 17.87 |
| | | | | | 52/37 | 15.00 | 15.00 |
| | | | | | 106/53 | 11.88 | 11.88 |
| | | | | MIMO A | Full | 9.13 | 9.13 |
| | | | | | 26/0 | 17.65 | 17.65 |
| | | | | | 52/37 | 14.82 | 14.82 |
| | | | | | 106/53 | 11.66 | 11.66 |
| | | | | MIMO B | Full | 9.08 | 9.08 |
| | | | | | 26/0 | 17.74 | 17.74 |
| | | | | | 52/37 | 14.87 | 14.87 |
| | | | | | 106/53 | 11.76 | 11.76 |
| | | | | Combined A+B | Full | 12.12 | 12.12 |
| | | | | | 26/0 | 20.71 | 20.71 |
| | | | | | 52/37 | 17.86 | 17.86 |
| | | | | | 106/53 | 14.72 | 14.72 |
| | | 157 | 5785 | SISO A | Full | 9.30 | 9.30 |
| | | | | SISO B | Full | 9.42 | 9.42 |
| | | | | MIMO A | Full | 9.04 | 9.04 |
| | | | | MIMO B | Full | 9.31 | 9.31 |
| | | | | Combined A+B | Full | 12.19 | 12.19 |
| | | 165 | 5825 | SISO A | Full | 8.73 | 8.73 |
| | | | | SISO B | Full | 8.52 | 8.52 |
| | | | | MIMO A | Full | 8.27 | 8.27 |
| | | | | MIMO B | Full | 8.27 | 8.27 |
| | | | | Combined A+B | Full | 11.28 | 11.28 |
| 802.11ax/be40 | MCS0 | 151 | 5755 | SISO A | Full | 4.47 | 4.47 |
| | | | | | 242/61 | 9.25 | 9.25 |
| | | | | SISO B | Full | 4.55 | 4.55 |
| | | | | | 242/61 | 9.39 | 9.39 |
| | | | | MIMO A | Full | 3.94 | 3.94 |
| | | | | | 242/61 | 9.15 | 9.15 |
| | | | | MIMO B | Full | 3.51 | 3.51 |
| | | | | | 242/61 | 9.25 | 9.25 |
| | | | | Combined A+B | Full | 6.74 | 6.74 |
| | | | | | 242/61 | 12.21 | 12.21 |
| | | 159 | 5795 | SISO A | Full | 5.71 | 5.71 |
| | | | | SISO B | Full | 5.77 | 5.77 |
| | | | | MIMO A | Full | 4.33 | 4.33 |
| | | | | MIMO B | Full | 3.17 | 3.17 |
| | | | | Combined A+B | Full | 6.80 | 6.80 |
| 802.11ax/be80 | MCS0 | 155 | 5775 | SISO A | Full | 0.76 | 0.76 |
| | | | | | 484/65 | 4.22 | 4.22 |
| | | | | SISO B | Full | 0.69 | 0.69 |
| | | | | | 484/65 | 4.78 | 4.78 |
| | | | | MIMO A | Full | -0.29 | -0.29 |
| | | | | | 484/65 | 3.90 | 3.90 |
| | | | | MIMO B | Full | -0.19 | -0.19 |
| | | | | | 484/65 | 4.00 | 4.00 |
| | | | | Combined A+B | Full | 2.77 | 2.77 |
| | | | | | 484/65 | 6.96 | 6.96 |

* Maximum values are the duty cycle compensated values calculated from the average (measured)

Maximum Power Spectral Density (PSD) – Overlapped channels between U-NII-2C and U-NII-3

| Mode | Channel | Freq (MHz) | Antenna | Chain | Average conducted PSD UNII-3 [dBm/MHz] | Maximum* conducted PSD UNII-3 [dBm/MHz] |
|---|---|---|---|---|---|---|
| 802.11n20 | 144 | 5720 | SISO | A | 6.47 | 6.47 |
| | | | | B | 6.13 | 6.13 |
| | | | MIMO | A | 3.37 | 3.37 |
| | | | | B | 3.39 | 3.39 |
| | | | Combined | A+B | 6.39 | 6.39 |
| 802.11n40 | 142 | 5710 | SISO | A | 2.65 | 2.65 |
| | | | | B | 2.70 | 2.70 |
| | | | MIMO | A | 0.68 | 0.68 |
| | | | | B | 0.74 | 0.74 |
| | | | Combined | A+B | 3.72 | 3.72 |
| 802.11ac80 | 138 | 5690 | SISO | A | -1.39 | -1.39 |
| | | | | B | -1.29 | -1.29 |
| | | | MIMO | A | -3.29 | -3.29 |
| | | | | B | -3.01 | -3.01 |
| | | | Combined | A+B | -0.14 | -0.14 |
| 802.11ax/be20 | 144 | 5720 | SISO | A | 6.08 | 6.08 |
| | | | | B | 6.56 | 6.56 |
| | | | MIMO | A | 3.07 | 3.07 |
| | | | | B | 3.45 | 3.45 |
| | | | Combined | A+B | 6.27 | 6.27 |
| 802.11ax/be40 | 142 | 5710 | SISO | A | 2.58 | 2.58 |
| | | | | B | 2.68 | 2.68 |
| | | | MIMO | A | 0.49 | 0.49 |
| | | | | B | 0.70 | 0.70 |
| | | | Combined | A+B | 3.61 | 3.61 |
| 802.11ax/be80 | 138 | 5690 | SISO | A | -1.34 | -1.34 |
| | | | | B | -1.04 | -1.04 |
| | | | MIMO | A | -3.75 | -3.75 |
| | | | | B | -3.03 | -3.03 |
| | | | Combined | A+B | -0.36 | -0.36 |

* Maximum values are the duty cycle compensated values calculated from the average (measured)

**See Section B.3.3 for the screenshot results**

### B.2.3 Undesirable emission limits : out of band (Conducted)

Test limits

| FCC part | RSS clause | Limits |
|---|---|---|
| 15.407 (b) (4) | RSS-247 Clause 6.2.4.2 | For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or<br><br>low the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. |

Test procedure

The conducted setup shown in section *Test & System Description* was used to measure undesirable emissions on the Band Edge domain. The antenna terminal of the EUT is connected to the spectrum analyzer through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss and the declared antenna gain.

**See Section B.3.4 for the screenshot results.**

## B.2.4 Radiated spurious emission

Standard references

<table>
<tr><th>FCC part</th><th>RSS clause</th><th>Limits</th></tr>
<tr><td>15.407 (b) (4)</td><td>RSS-247 Clause 6.2.4.2</td><td>For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</td></tr>
<tr><td>15.209</td><td>RSS-GEN A1, Clause 8.9</td><td>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):
<table>
<tr><th>Freq Range (MHz)</th><th>Field Strength (µV/m)</th><th>Field Strength (dBµV/m)</th><th>Meas. Distance (m)</th></tr>
<tr><td>30-88</td><td>100</td><td>40</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>43.5</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>46</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>54</td><td>3</td></tr>
</table>
The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.<br>For average radiated emission measurements above 1000 MHz, there is also a limit specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.</td></tr>
</table>

Test procedure

The radiated setup shown in section *Test & System Description* was used to measure the radiated spurious emissions. Depending of the frequency range and bands being tested, different antennas and filters were used.
The final measurement is done by varying the antenna height, the EUT azimuth over 360º and for both Vertical and Horizontal polarizations.

The radiated spurious emission was measured on the worst case configuration selected from the section B.2.2 and using the low, middle and high channels.

Test Results

# Radiated spurious - 30 MHz to 1 GHz

## Radiated Spurious – All modes

| Frequency | Level | Detector | Limit | Margin | Polarization |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 51.3 | 37.3 | Quasi-Peak | 40.0 | 2.7 | V |
| 51.5 | 37.3 | Quasi-Peak | 40.0 | 2.7 | V |
| 51.7 | 36.8 | Quasi-Peak | 40.0 | 3.2 | V |

Note 1: The spurious signals detected do not depend on either the operating channel or the modulation mode.

802.11a

# 30 MHz – 40 GHz, 802.11a, 6Mbps, Chain A

## Radiated Spurious – CH149

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8216.0 | 54.8 | Peak | 74.0 | 19.2 | V |
| 8216.0 | 44.7 | Average | 54.0 | 9.3 | H |
| 39598.3 | 55.1 | Peak | 74.0 | 18.9 | V |
| 39598.3 | 48.0 | Average | 54.0 | 6.0 | V |

## Radiated Spurious – CH157

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8228.3 | 44.9 | Average | 54.0 | 9.1 | H |
| 8228.6 | 55.7 | Peak | 74.0 | 18.3 | V |
| 17354.9 | 46.2 | Peak | 68.2 | 22.0 | H |

### Radiated Spurious – CH165

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8223.9 | 44.8 | Average | 54.0 | 9.2 | H |
| 8224.2 | 55.9 | Peak | 74.0 | 18.1 | V |
| 39931.4 | 55.2 | Peak | 74.0 | 18.8 | V |
| 39931.4 | 47.5 | Average | 54.0 | 6.5 | H |

## 30 MHz – 40 GHz, 802.11a, 6Mbps, Chain B

### Radiated Spurious – CH149

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8224.5 | 55.7 | Peak | 74.0 | 18.3 | V |
| 8224.5 | 44.6 | Average | 54.0 | 9.3 | H |
| 39954.1 | 56.1 | Peak | 74.0 | 17.9 | H |
| 39954.1 | 48.0 | Average | 54.0 | 6.0 | H |

### Radiated Spurious – CH157

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8231.2 | 44.9 | Average | 54.0 | 9.1 | V |
| 8231.8 | 56.2 | Peak | 74.0 | 17.8 | H |
| 23935.5 | 48.9 | Peak | 74.0 | 25.1 | H |
| 23935.9 | 40.7 | Average | 54.0 | 13.3 | V |
| 39841.5 | 55.8 | Peak | 74.0 | 18.2 | V |
| 39841.5 | 47.9 | Average | 54.0 | 6.1 | H |

## Radiated Spurious – CH165

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8232.1 | 45.0 | Average | 54.0 | 9.0 | V |
| 8232.4 | 56.0 | Peak | 74.0 | 18.0 | V |
| 39982.6 | 54.9 | Peak | 74.0 | 19.1 | H |
| 39982.6 | 47.8 | Average | 54.0 | 6.2 | H |

802.11n

# 30 MHz – 40 GHz, 802.11n20, HT0, Chain A

## Radiated Spurious – CH149

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 9484.2 | 46.5 | Average | 54.0 | 7.5 | H |
| 9484.5 | 56.5 | Peak | 74.0 | 17.5 | H |
| 39874.8 | 56.5 | Peak | 74.0 | 17.5 | H |
| 39874.8 | 47.9 | Average | 54.0 | 6.1 | H |

## Radiated Spurious – CH157

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 9479.2 | 56.5 | Peak | 74.0 | 17.5 | V |
| 9479.2 | 46.6 | Average | 54.0 | 7.4 | V |
| 17352.9 | 45.9 | Peak | 68.2 | 22.3 | H |

## Radiated Spurious – CH165

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 9479.5 | 56.4 | Peak | 74.0 | 17.6 | H |
| 9479.5 | 47.0 | Average | 54.0 | 7.0 | H |
| 17473.8 | 48.6 | Peak | 68.2 | 19.6 | H |

# 30 MHz – 40 GHz, 802.11n20, HT0, Chain B

## Radiated Spurious – CH149

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 9382.4 | 56.0 | Peak | 74.0 | 18.0 | V |
| 9382.4 | 46.7 | Average | 54.0 | 7.3 | H |
| 22979.9 | 42.1 | Average | 54.0 | 11.9 | V |
| 22980.4 | 52.3 | Peak | 74.0 | 21.7 | V |

## Radiated Spurious – CH157

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 9481.3 | 46.6 | Average | 54.0 | 7.4 | H |
| 9481.6 | 56.6 | Peak | 74.0 | 17.4 | H |
| 23990.1 | 48.6 | Peak | 74.0 | 25.4 | V |
| 23990.1 | 41.0 | Average | 54.0 | 13.0 | H |
| 39950.7 | 55.7 | Peak | 74.0 | 18.3 | H |
| 39950.7 | 47.9 | Average | 54.0 | 6.1 | H |

## Radiated Spurious – CH165

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8736.4 | 60.3 | Peak | 68.2 | 7.9 | V |
| 39966.7 | 55.9 | Peak | 74.0 | 18.1 | H |
| 39966.7 | 47.9 | Average | 54.0 | 6.1 | H |

# 30 MHz – 40 GHz, 802.11n20, HT8, Chain A+B

## Radiated Spurious – CH149

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8616.8 | 57.0 | Peak | 68.2 | 11.2 | V |
| 22979.9 | 51.7 | Peak | 74.0 | 22.3 | V |
| 22979.9 | 42.5 | Average | 54.0 | 11.5 | V |

## Radiated Spurious – CH157

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 9485.7 | 57.1 | Peak | 74.0 | 16.9 | H |
| 9485.7 | 46.6 | Average | 54.0 | 7.4 | H |
| 17354.4 | 48.4 | Peak | 68.2 | 19.8 | H |

## Radiated Spurious – CH165

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8741.3 | 58.7 | Peak | 68.2 | 9.5 | V |
| 11644.3 | 45.5 | Peak | 74.0 | 28.5 | H |
| 11644.3 | 36.9 | Average | 54.0 | 17.1 | H |
| 17477.6 | 48.3 | Peak | 68.2 | 19.9 | H |

# 30 MHz – 40 GHz, 802.11n40, HT0, Chain A

## Radiated Spurious – CH151

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 9392.9 | 56.9 | Peak | 74.0 | 17.1 | V |
| 9392.9 | 46.7 | Average | 54.0 | 7.3 | H |
| 39899.9 | 54.8 | Peak | 74.0 | 19.2 | H |
| 39899.9 | 47.9 | Average | 54.0 | 6.1 | H |

## Radiated Spurious – CH159

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 9489.5 | 55.7 | Peak | 74.0 | 18.3 | H |
| 9489.5 | 46.8 | Average | 54.0 | 7.2 | H |
| 23966.4 | 49.1 | Peak | 74.0 | 24.9 | V |
| 23966.4 | 41.6 | Average | 54.0 | 12.4 | V |
| 39954.1 | 57.1 | Peak | 74.0 | 16.9 | H |
| 39954.1 | 47.7 | Average | 54.0 | 6.3 | H |

# 30 MHz – 40 GHz, 802.11n40, HT0, Chain B

## Radiated Spurious – CH151

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 5160.5 | 57.7 | Peak | 68.2 | 10.5 | H |
| 39783.5 | 55.5 | Peak | 74.0 | 18.5 | H |
| 39783.5 | 47.8 | Average | 54.0 | 6.2 | H |

### Radiated Spurious – CH159

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 7986.5 | 60.4 | Peak | 68.2 | 7.8 | H |
| 23960.1 | 48.5 | Peak | 74.0 | 25.5 | H |
| 23960.1 | 40.9 | Average | 54.0 | 13.1 | H |
| 39652.5 | 47.8 | Average | 54.0 | 6.2 | H |
| 39653.0 | 55.5 | Peak | 74.0 | 18.5 | H |

## 30 MHz – 40 GHz, 802.11n40, HT8, Chain A+B

### Radiated Spurious – CH151

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 5160.0 | 57.4 | Peak | 68.2 | 10.8 | V |
| 39935.2 | 54.0 | Peak | 74.0 | 20.0 | H |
| 39935.2 | 47.8 | Average | 54.0 | 6.2 | H |

### Radiated Spurious – CH159

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8691.2 | 57.5 | Peak | 68.2 | 10.7 | V |
| 23938.8 | 48.1 | Peak | 74.0 | 25.9 | H |
| 23938.8 | 40.9 | Average | 54.0 | 13.1 | V |
| 39952.2 | 55.5 | Peak | 74.0 | 18.5 | H |
| 39952.2 | 47.8 | Average | 54.0 | 6.2 | H |

802.11ac

## 30 MHz – 40 GHz, 802.11ac80, VHT0, Chain A

### Radiated Spurious – CH155

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8240.3 | 56.5 | Peak | 74.0 | 17.5 | H |
| 8240.5 | 45.0 | Average | 54.0 | 9.0 | H |
| 23941.2 | 48.0 | Peak | 74.0 | 26.0 | V |
| 23941.7 | 41.1 | Average | 54.0 | 12.9 | H |
| 39664.1 | 56.7 | Peak | 74.0 | 17.3 | H |
| 39664.1 | 47.9 | Average | 54.0 | 6.1 | H |

## 30 MHz – 40 GHz, 802.11ac80, VHT0, Chain B

### Radiated Spurious – CH155

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8169.1 | 56.0 | Peak | 74.0 | 18.0 | V |
| 8169.4 | 45.0 | Average | 54.0 | 9.0 | V |
| 23887.6 | 47.8 | Peak | 74.0 | 26.2 | V |
| 23887.6 | 40.8 | Average | 54.0 | 13.2 | V |
| 39873.8 | 55.3 | Peak | 74.0 | 18.7 | H |
| 39873.8 | 48.0 | Average | 54.0 | 6.0 | H |

# 30 MHz – 40 GHz, 802.11ac80, VHT0, Chain A+B

## Radiated Spurious – CH155

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8300.9 | 56.0 | Peak | 74.0 | 18.0 | V |
| 8301.5 | 45.0 | Average | 54.0 | 9.0 | H |
| 23896.3 | 50.0 | Peak | 74.0 | 24.0 | V |
| 23908.9 | 41.4 | Average | 54.0 | 12.7 | V |
| 39957.5 | 47.9 | Average | 54.0 | 6.1 | H |
| 39958.4 | 57.0 | Peak | 74.0 | 16.9 | H |

802.11ax/be

# 30 MHz – 40 GHz, 802.11ax/be20, MCS0, Chain A

## Radiated Spurious – CH149

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8240.3 | 55.0 | Peak | 74.0 | 18.9 | V |
| 8240.5 | 45.5 | Average | 54.0 | 8.5 | H |
| 17210.3 | 49.8 | Peak | 68.2 | 18.4 | H |

## Radiated Spurious – CH157

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8665.2 | 58.8 | Peak | 68.2 | 9.4 | V |
| 17329.7 | 53.1 | Peak | 68.2 | 15.1 | H |
| 28880.0 | 53.4 | Peak | 68.2 | 14.8 | H |

## Radiated Spurious – CH165

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8296.3 | 55.8 | Peak | 74.0 | 18.2 | H |
| 8296.5 | 45.2 | Average | 54.0 | 8.8 | V |
| 11632.7 | 45.0 | Peak | 74.0 | 28.9 | H |
| 11632.7 | 38.7 | Average | 54.0 | 15.3 | H |
| 17449.6 | 52.7 | Peak | 68.2 | 15.5 | H |

# 30 MHz – 40 GHz, 802.11ax/be20, MCS0, Chain B

## Radiated Spurious – CH149

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8605.1 | 64.1 | Peak | 68.2 | 4.1 | H |
| 22946.5 | 47.1 | Average | 54.0 | 6.9 | V |
| 22948.5 | 53.2 | Peak | 74.0 | 20.8 | V |
| 28682.3 | 53.3 | Peak | 68.2 | 14.9 | V |

## Radiated Spurious – CH157

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8664.9 | 63.9 | Peak | 68.2 | 4.3 | H |
| 17329.7 | 49.3 | Peak | 68.2 | 18.9 | V |
| 23104.6 | 53.7 | Peak | 74.0 | 20.3 | V |
| 23105.6 | 46.0 | Average | 54.0 | 8.0 | V |

## Radiated Spurious – CH165

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8724.4 | 62.3 | Peak | 68.2 | 5.9 | V |
| 11632.7 | 45.6 | Peak | 74.0 | 28.4 | H |
| 11633.2 | 38.4 | Average | 54.0 | 15.6 | H |
| 17450.1 | 51.3 | Peak | 68.2 | 16.9 | H |
| 23266.0 | 53.0 | Peak | 68.2 | 15.2 | V |
| 29084.9 | 54.6 | Peak | 68.2 | 13.6 | V |

# 30 MHz – 40 GHz, 802.11ax/be20, MCS0, Chain A+B

## Radiated Spurious – CH149

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8604.5 | 60.9 | Peak | 68.2 | 7.3 | V |
| 11472.7 | 38.2 | Average | 54.0 | 15.8 | H |
| 11473.2 | 46.9 | Peak | 74.0 | 27.1 | H |
| 17209.4 | 50.1 | Peak | 68.2 | 18.1 | H |
| 22946.5 | 42.3 | Average | 54.0 | 11.7 | H |
| 22948.0 | 56.1 | Peak | 74.0 | 17.9 | V |
| 28682.8 | 53.9 | Peak | 68.2 | 14.3 | V |

## Radiated Spurious – CH157

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8665.2 | 62.4 | Peak | 68.2 | 5.8 | V |
| 11552.0 | 45.8 | Peak | 74.0 | 28.2 | V |
| 11552.5 | 39.5 | Average | 54.0 | 14.5 | H |
| 17329.2 | 52.7 | Peak | 68.2 | 15.5 | H |
| 23105.1 | 45.6 | Average | 54.0 | 8.4 | V |
| 23107.0 | 55.4 | Peak | 74.0 | 18.6 | V |
| 28883.3 | 55.5 | Peak | 68.2 | 12.7 | V |

### Radiated Spurious – CH165

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8724.1 | 62.0 | Peak | 68.2 | 6.2 | V |
| 11633.6 | 48.5 | Peak | 74.0 | 25.4 | H |
| 11633.6 | 41.0 | Average | 54.0 | 13.0 | H |
| 17450.1 | 53.4 | Peak | 68.2 | 14.8 | H |
| 23263.6 | 53.2 | Peak | 68.2 | 15.0 | V |
| 29084.4 | 57.1 | Peak | 68.2 | 11.1 | V |

## 30 MHz – 40 GHz, 802.11ax/be40, MCS0, Chain A

### Radiated Spurious – CH151

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8617.7 | 57.2 | Peak | 68.2 | 10.9 | V |
| 17236.0 | 49.9 | Peak | 68.2 | 18.3 | H |
| 28727.2 | 52.6 | Peak | 68.2 | 15.6 | V |

### Radiated Spurious – CH159

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8677.5 | 60.9 | Peak | 68.2 | 7.3 | V |
| 11570.8 | 37.5 | Average | 54.0 | 16.5 | H |
| 11571.3 | 45.0 | Peak | 74.0 | 29.0 | H |
| 17356.3 | 54.0 | Peak | 68.2 | 14.2 | H |

# 30 MHz – 40 GHz, 802.11ax/be40, MCS0, Chain B

## Radiated Spurious – CH151

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 5158.9 | 58.1 | Peak | 68.2 | 10.1 | H |
| 8617.4 | 60.9 | Peak | 68.2 | 7.3 | V |
| 22981.8 | 52.4 | Peak | 74.0 | 21.6 | H |
| 22981.8 | 40.4 | Average | 54.0 | 13.6 | H |
| 28728.7 | 54.7 | Peak | 68.2 | 13.5 | V |

## Radiated Spurious – CH159

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8678.0 | 60.7 | Peak | 68.2 | 7.5 | V |
| 17355.8 | 49.2 | Peak | 68.2 | 19.0 | H |
| 23141.3 | 52.9 | Peak | 68.2 | 15.3 | V |
| 28925.9 | 55.3 | Peak | 68.2 | 12.9 | V |

# 30 MHz – 40 GHz, 802.11ax/be40, MCS0, Chain A+B

## Radiated Spurious – CH151

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 5160.5 | 58.5 | Peak | 68.2 | 9.7 | H |
| 8617.7 | 61.3 | Peak | 68.2 | 6.9 | V |
| 11489.6 | 47.5 | Peak | 74.0 | 26.5 | H |
| 11490.6 | 39.1 | Average | 54.0 | 14.9 | H |
| 17236.5 | 49.9 | Peak | 68.2 | 18.4 | H |
| 22981.3 | 55.6 | Peak | 74.0 | 18.4 | V |
| 22981.8 | 47.1 | Average | 54.0 | 6.9 | V |
| 28726.7 | 57.2 | Peak | 68.2 | 10.9 | V |

## Radiated Spurious – CH159

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8677.8 | 66.6 | Peak | 68.2 | 1.6 | H |
| 11569.9 | 48.0 | Peak | 74.0 | 25.9 | H |
| 11570.8 | 39.0 | Average | 54.0 | 15.0 | H |
| 17356.3 | 54.6 | Peak | 68.2 | 13.6 | H |
| 23143.3 | 54.0 | Peak | 68.2 | 14.2 | V |
| 28924.9 | 58.3 | Peak | 68.2 | 9.9 | V |

# 30 MHz – 40 GHz, 802.11ax/be80, MCS0, Chain A

## Radiated Spurious – CH155

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 8630.2 | 58.0 | Peak | 68.2 | 10.2 | V |
| 17261.6 | 49.9 | Peak | 68.2 | 18.3 | H |
| 28767.8 | 52.8 | Peak | 68.2 | 15.4 | V |

# 30 MHz – 40 GHz, 802.11ax/be80, MCS0, Chain B

## Radiated Spurious – CH155

| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 5160.5 | 58.5 | Peak | 68.2 | 9.7 | V |
| 8629.9 | 66.3 | Peak | 68.2 | 1.9 | V |
| 23014.2 | 54.0 | Peak | 74.0 | 19.9 | V |
| 23014.2 | 46.6 | Average | 54.0 | 7.4 | V |
| 28766.4 | 56.0 | Peak | 68.2 | 12.2 | V |

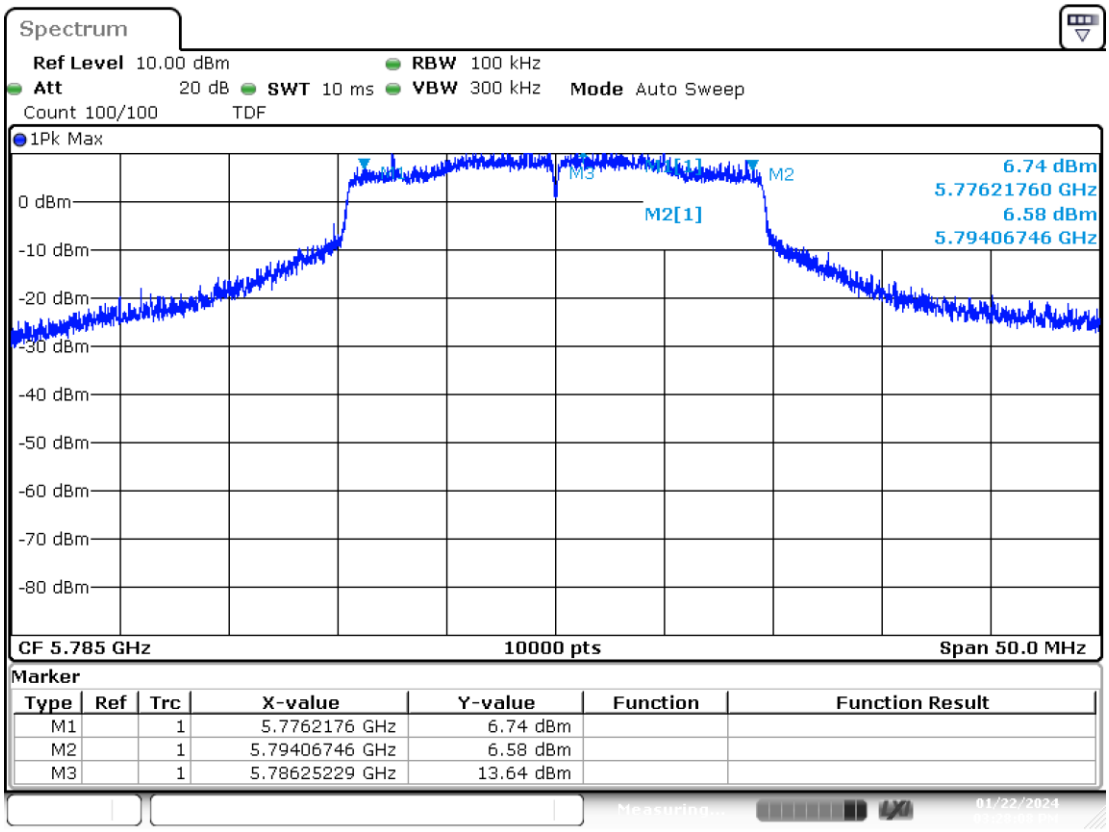
# 30 MHz – 40 GHz, 802.11ax/be80, MCS0, Chain A+B

## Radiated Spurious – CH155

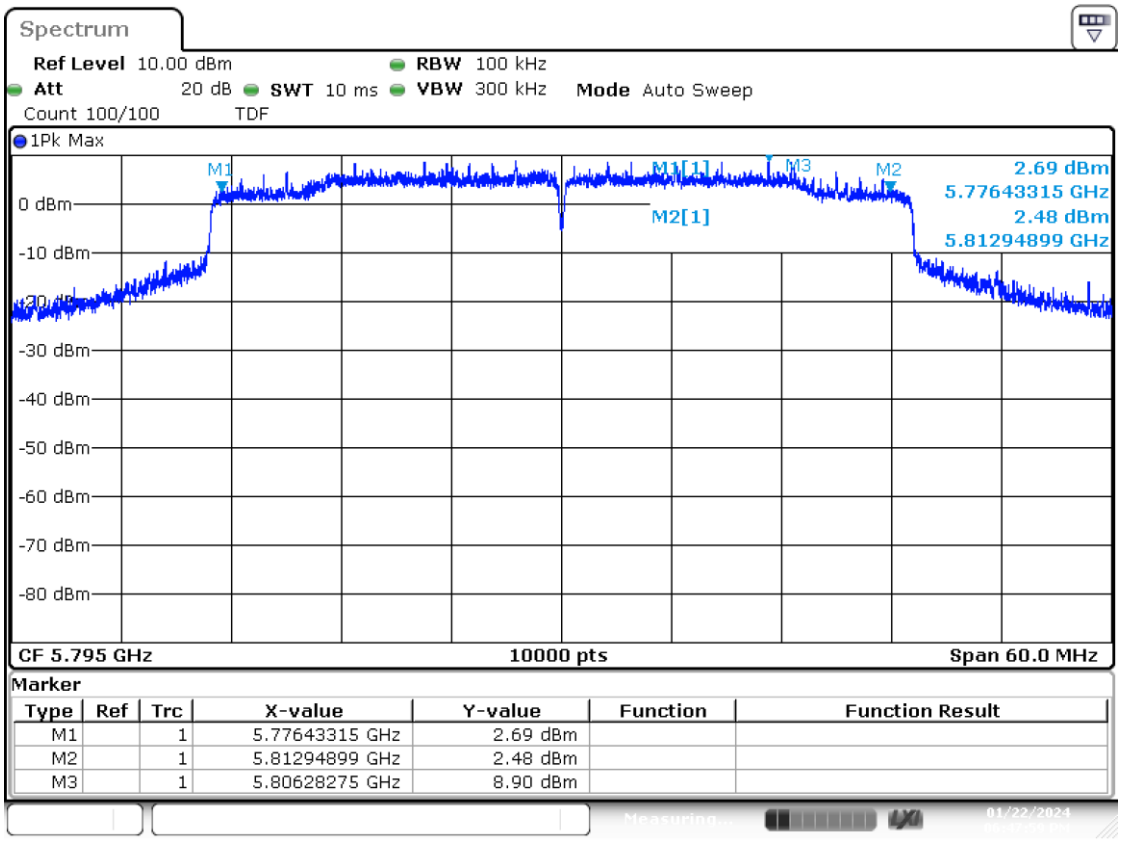
| Frequency | Level | Detector | Limit | Margin | Polar |
|---|---|---|---|---|---|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 5160.0 | 59.3 | Peak | 68.2 | 8.9 | H |
| 8630.2 | 66.4 | Peak | 68.2 | 1.8 | V |
| 11507.0 | 47.9 | Peak | 74.0 | 26.1 | H |
| 11507.0 | 40.2 | Average | 54.0 | 13.8 | H |
| 17261.6 | 49.7 | Peak | 68.2 | 18.5 | H |
| 23014.7 | 53.4 | Peak | 74.0 | 20.6 | H |
| 23014.7 | 43.4 | Average | 54.0 | 10.6 | H |
| 28768.8 | 54.0 | Peak | 68.2 | 14.2 | V |

## B.3 Test Results Screenshot

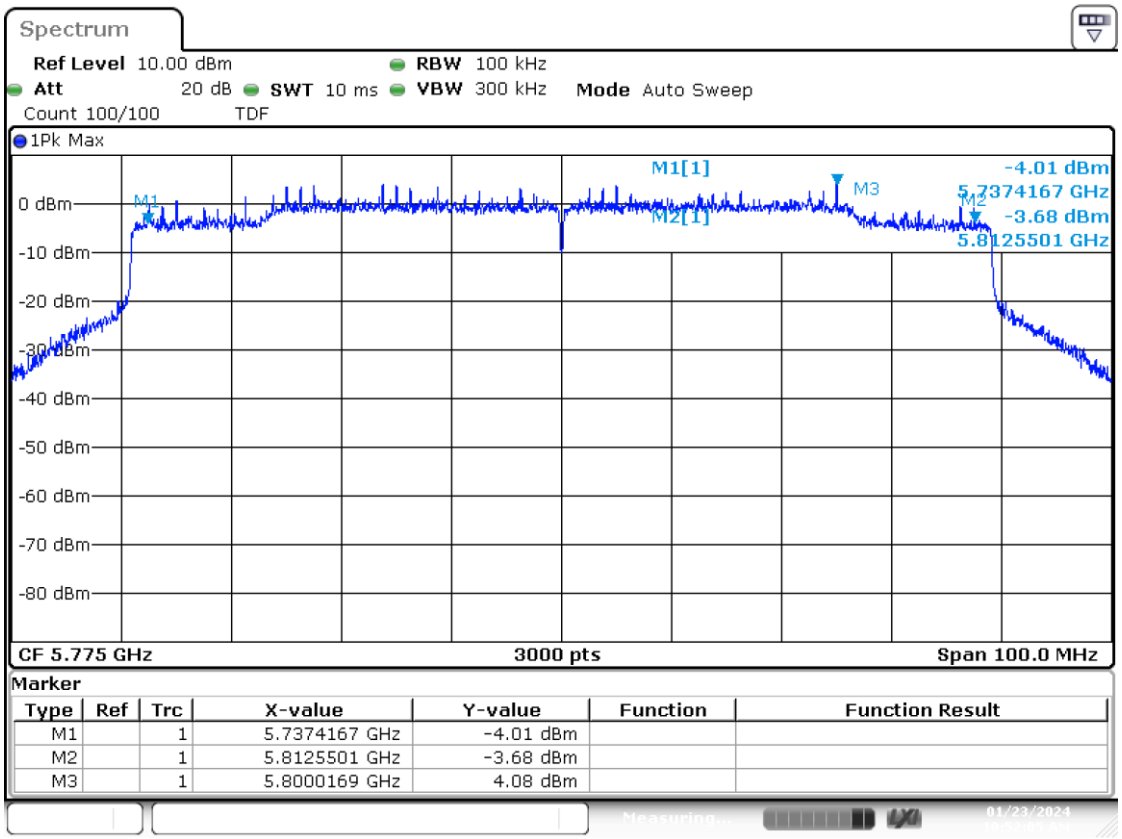
### B.3.1 6dB Bandwidth




SISO B-802.11ax/be20-CH157-MCS0

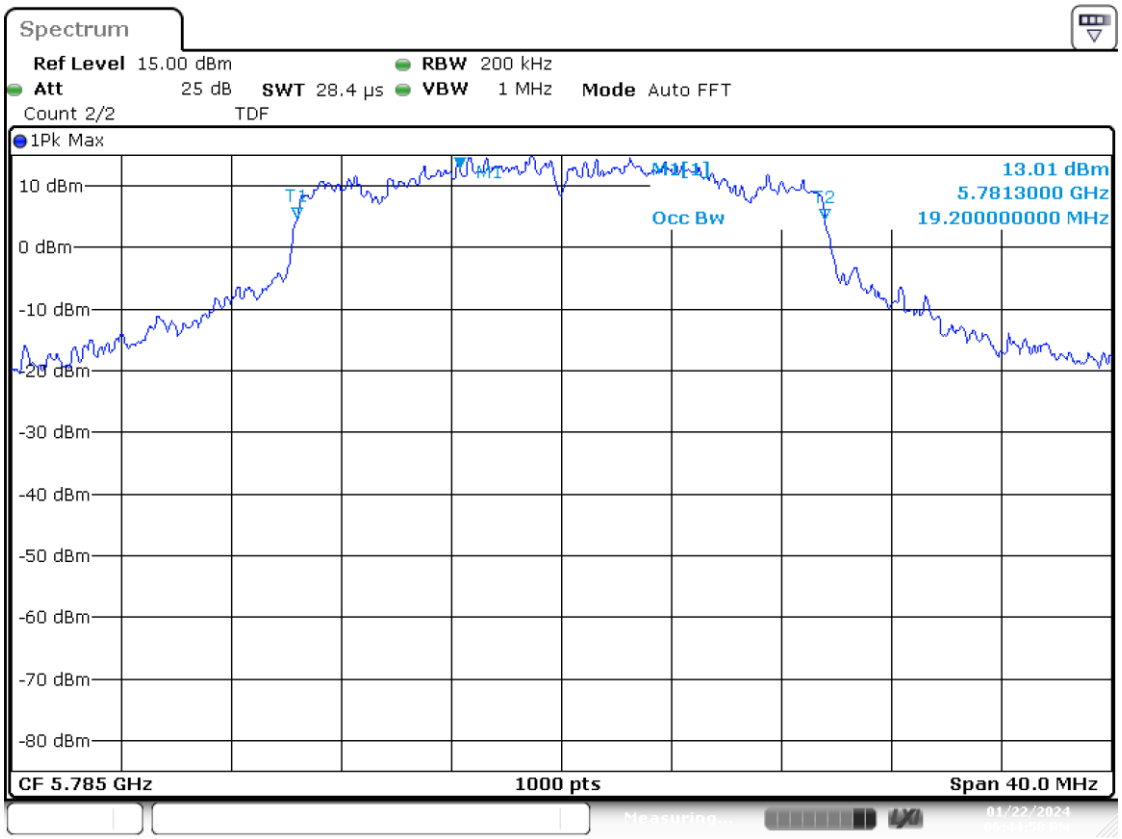



SISO B-802.11ax/be40-CH159-MCS0

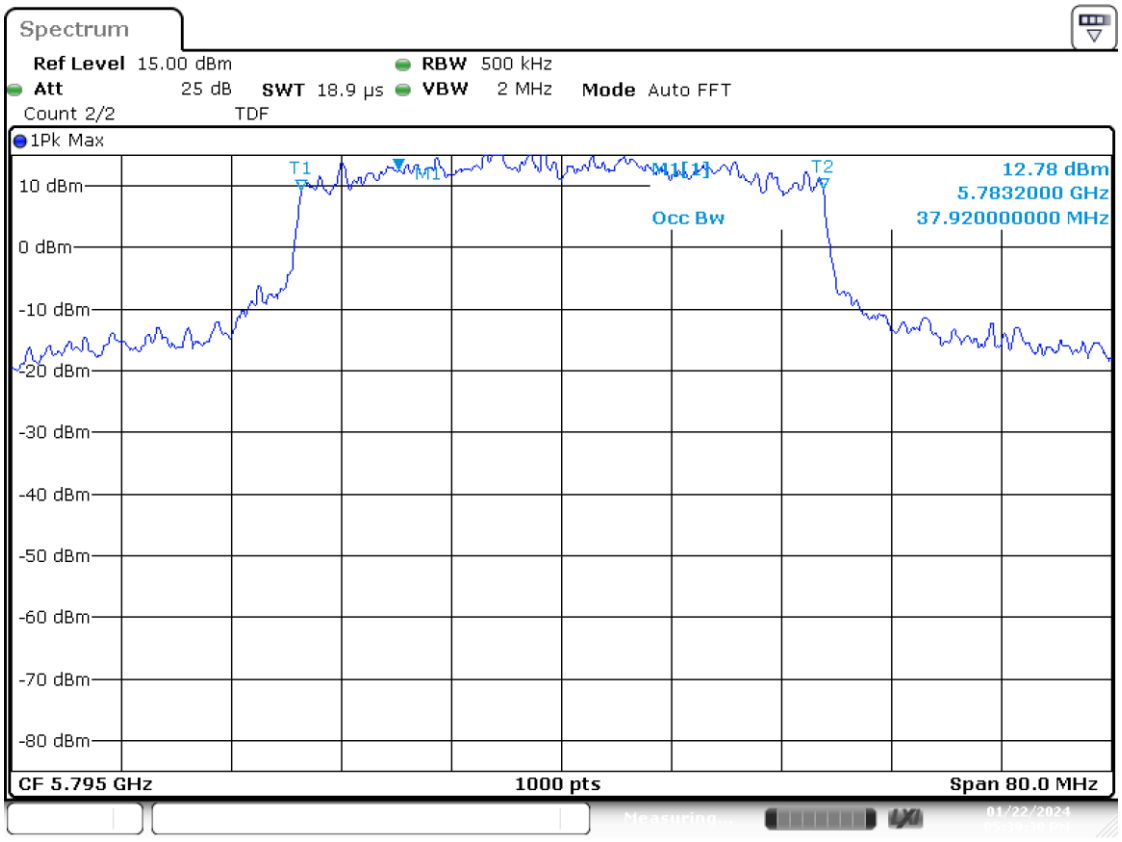



MIMO A-802.11ax/be80-CH155-MCS0

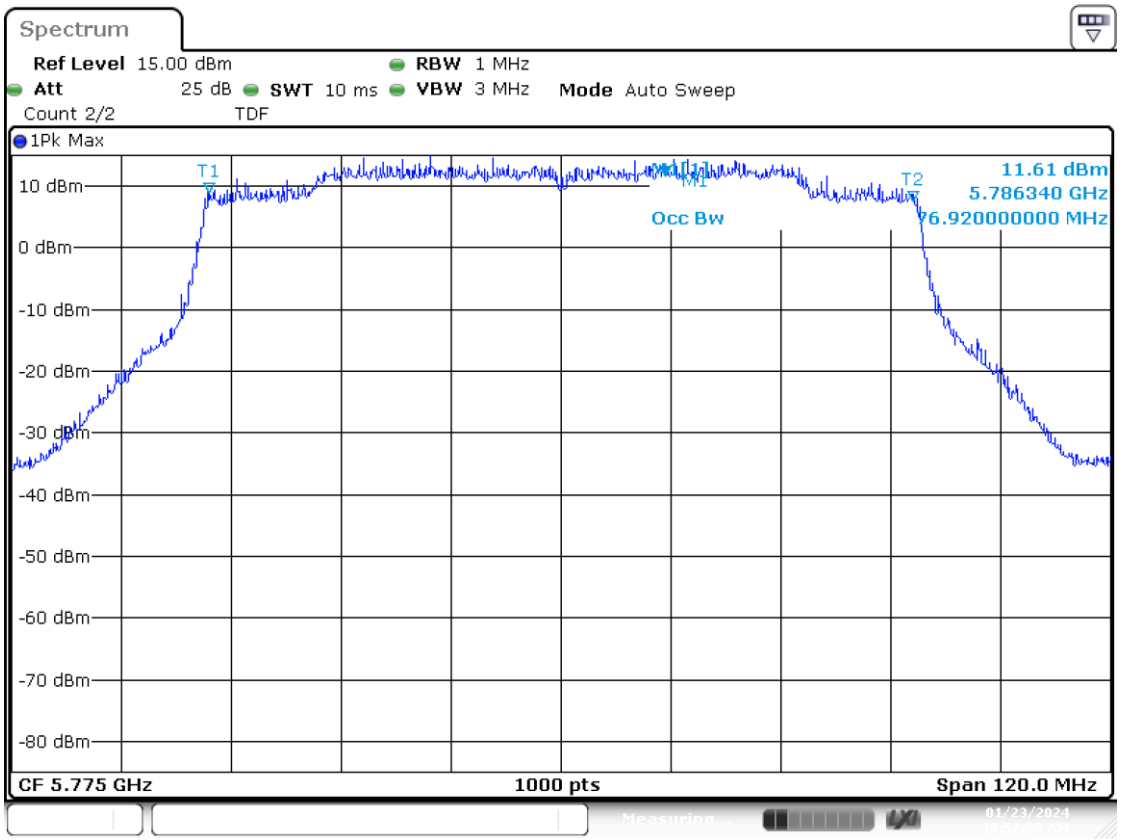
## B.3.2 99% Bandwidth




SISO A-802.11ax/be20-CH157-MCS0

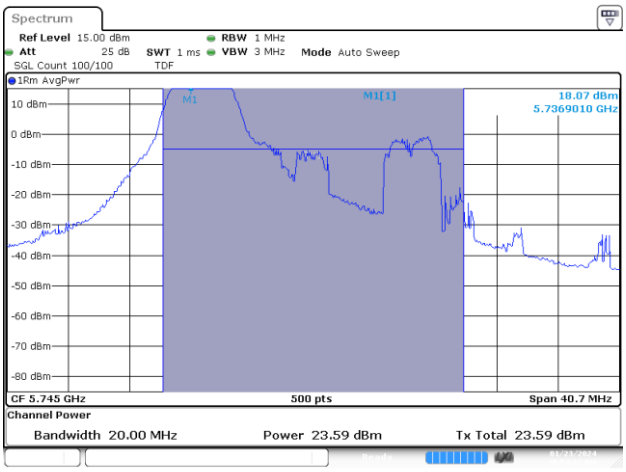



SISO B-802.11ax/be40-CH159-MCS0

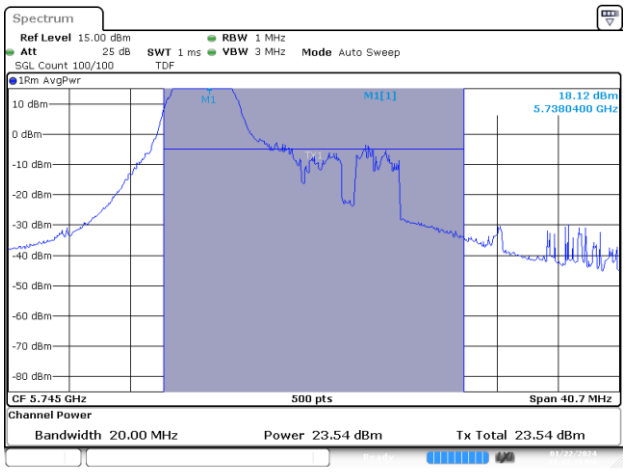



MIMO A-802.11ax/be80-CH155-MCS0

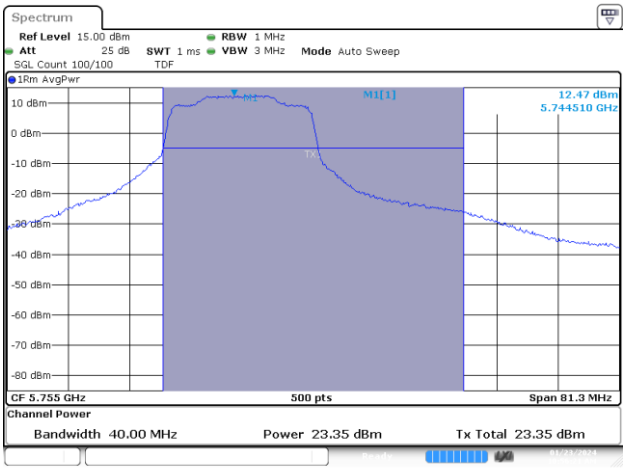
## B.3.3 Maximum output power



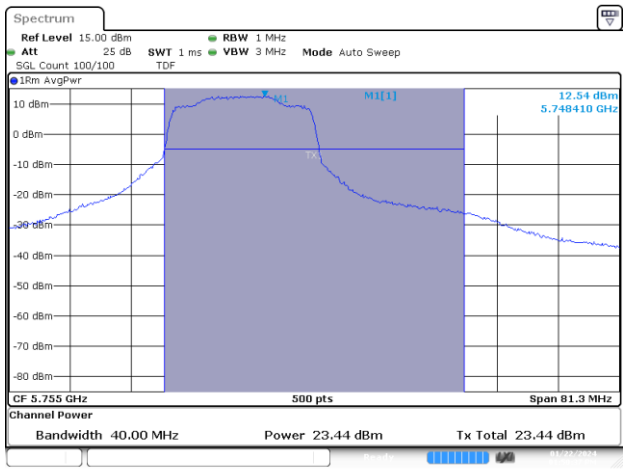

MIMO A-802.11ax/be20-CH149-MCS0 4m



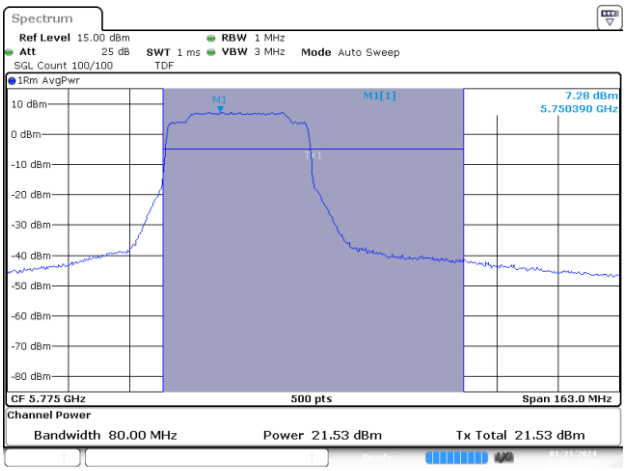

MIMO B-802.11ax/be20-CH149-MCS0 4m



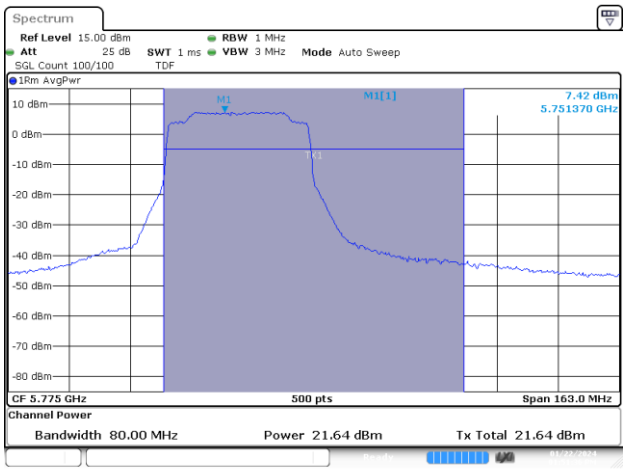

MIMO A-802.11ax/be40-CH151-MCS0 20m




MIMO B-802.11ax/be40-CH151-MCS0 20m

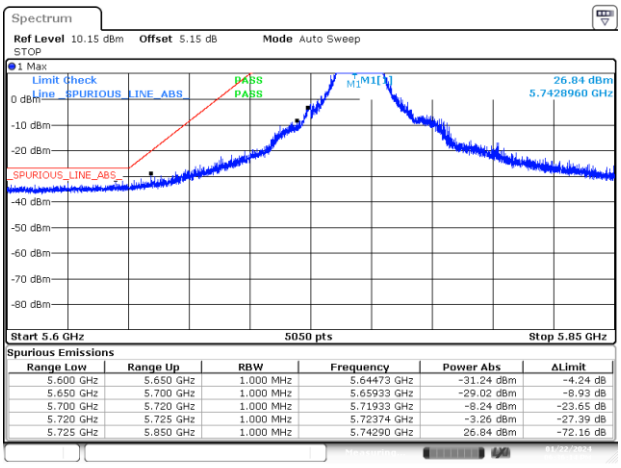



MIMO A-802.11ax/be80-CH155-MCS0 40m

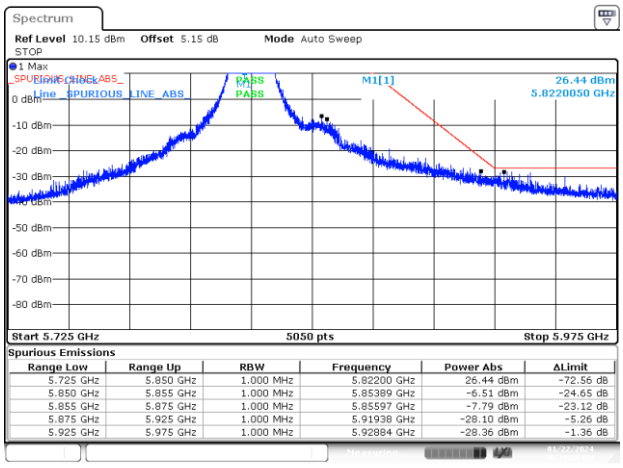



MIMO B-802.11ax/be80-CH155-MCS0 40m

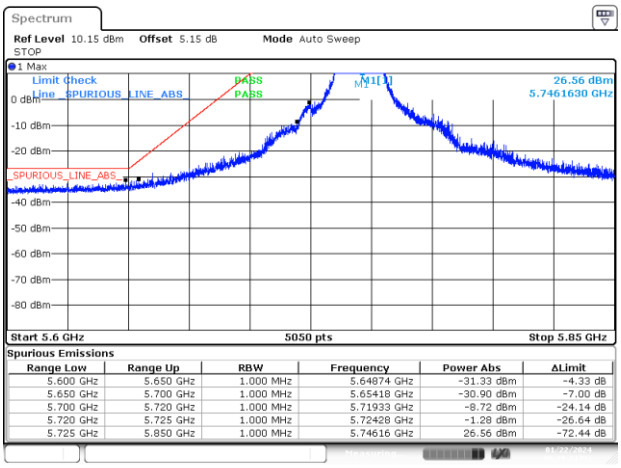
## B.3.4 Undesirable emission limits : out of band (Conducted)



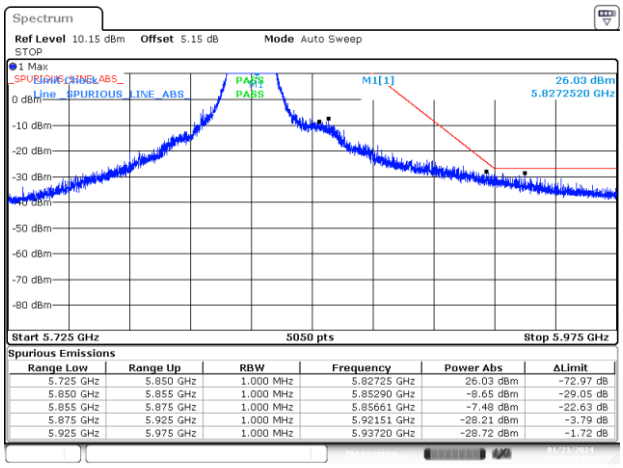

BE-NR-LOW, SISO-A, 802.11a-6Mbps, Ch149



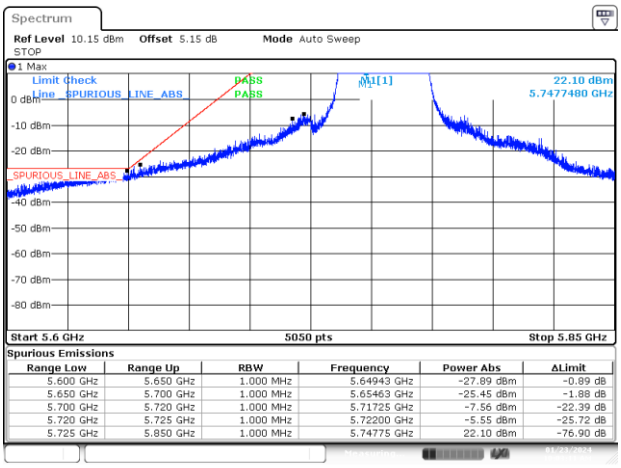

BE-NR-HIGH, SISO-A, 802.11a-6Mbps, Ch165



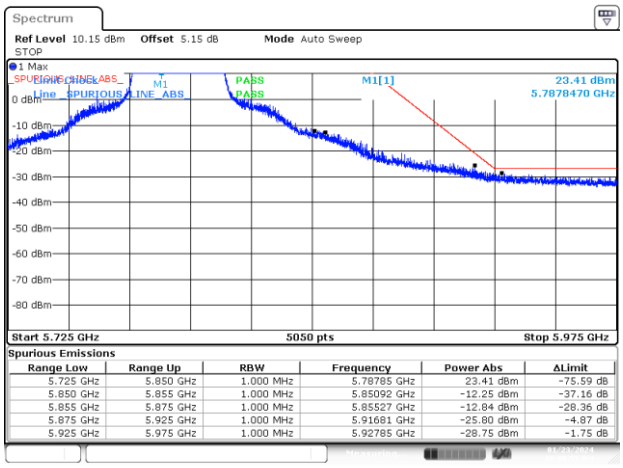

BE-NR-LOW, SISO-A, 802.11n20-HT0, Ch149



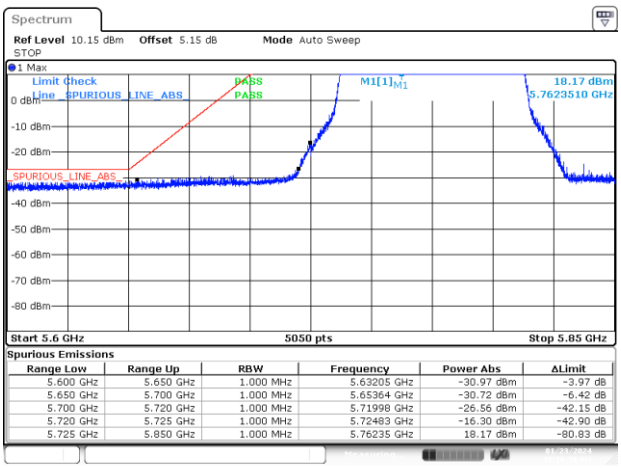

BE-NR-HIGH, SISO-A, 802.11n20-HT0, Ch165



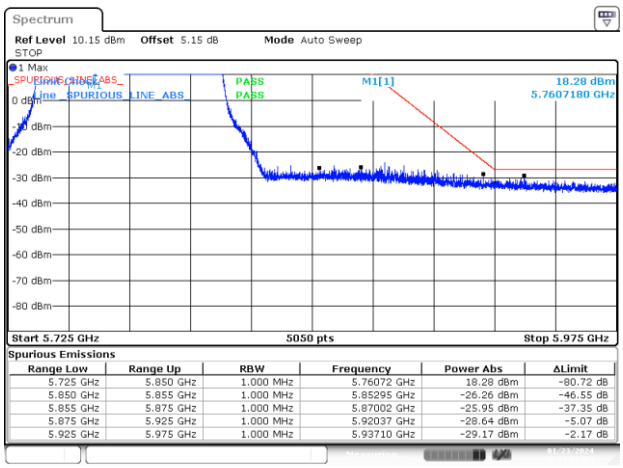

BE-NR-LOW, SISO-A, 802.11n40-HT0, Ch151



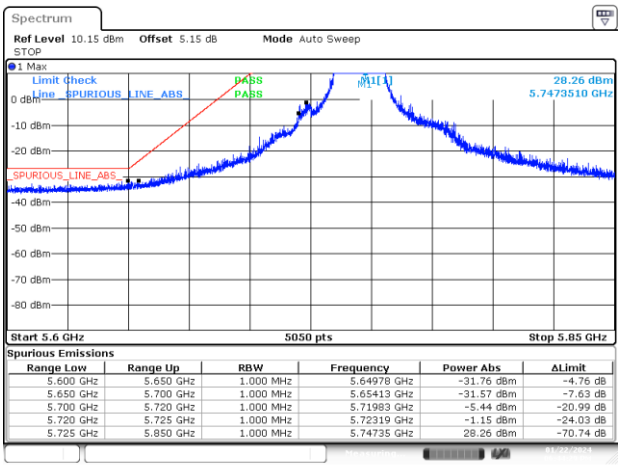

BE-NR-HIGH, SISO-A, 802.11n40-HT0, Ch159



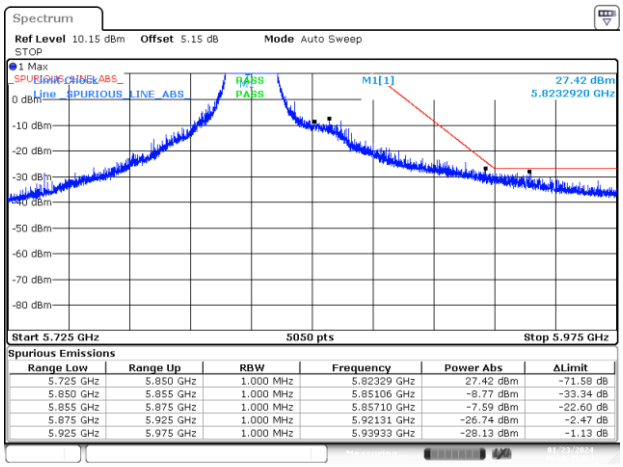

BE-NR-LOW, SISO-A, 802.11ac80-VHT0, Ch155



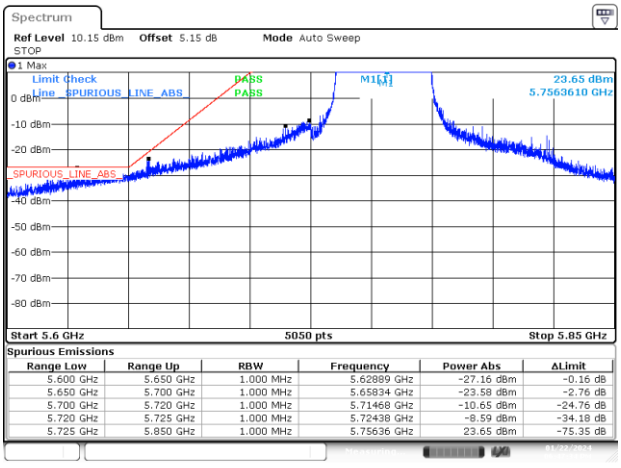

BE-NR-HIGH, SISO-A, 802.11ac80-VHT0, Ch155



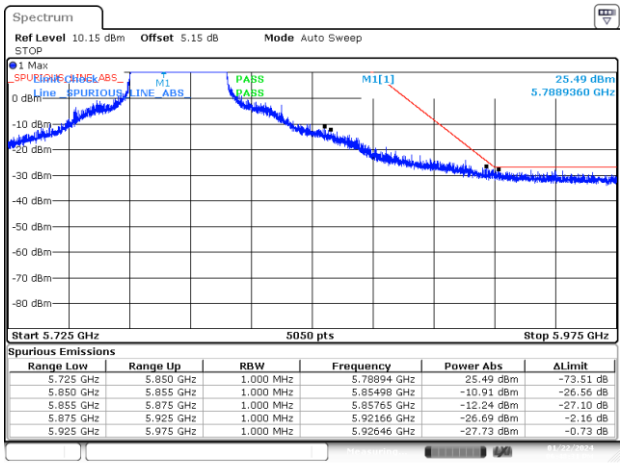

BE-NR-LOW, SISO-A, 802.11ax20-MCS0, Ch149




BE-NR-HIGH, SISO-A, 802.11ax20-MCS0, Ch165




BE-NR-LOW, SISO-A, 802.11ax40-MCS0, Ch151




BE-NR-HIGH, SISO-A, 802.11ax40-MCS0, Ch159