



TEST REPORT

| | |
|------------------------|--|
| EUT Description | WLAN and BT, 2x2 PCIe M.2 2230 adapter card |
| Brand Name | Intel® Wi-Fi 6 AX200 |
| Model Name | AX200NGW |
| FCC ID | PD9AX200NG |
| Date of Test Start/End | 2021-06-16 / 2021-08-26 |
| Features | 802.11ax, Dual Band, 2x2 Wi-Fi + Bluetooth® 5.0 (see section 5) |

| | |
|----------------------|---|
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| | |
|---------------------|---|
| Reference Standards | FCC CFR Title 47 Part 15 E (see section 1) |
|---------------------|---|

| | |
|----------------------------|--|
| Test Report identification | 210209-01.TR26 |
| Revision Control | Rev. 01 This test report revision replaces any previous test report revision (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 _____ Reviewed by _____

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1. Standards, reference documents and applicable test methods

| | |
|-----|---|
| FCC | <ol style="list-style-type: none">1. FCC Title 47 CFR part 15 – Subpart E – Unlicensed National Information Infrastructure Devices. 2021-05-03 online Edition2. FCC Title 47 CFR part 15 – Subpart C – §15.209 Radiated emission limits; general requirements. 2019-10-01 Edition3. FCC OET KDB 662911 D01 v02r01 - Emissions Testing of Transmitters with Multiple Outputs in the Same Band.4. FCC OET KDB 789033 D02 v02r01 - Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) devices part 15, subpart E5. ANSI C63.10-2013 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.6. FCC OET KDB 291074 D01 v01 - General Requirements7. FCC OET KDB 291074 D02 v01 - EMC Measurement8. FCC OET KDB 291074 D03 v01 - QA General Questions and Answers |
|-----|---|

2. General conditions, competences and guarantees

- ✓ Tests performed under FCC standards identified in section 1 are covered by A2LA 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 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 | 23.7°C ± 3.7°C |
| Humidity | 47.1% ±14.1% |

4. Test samples

| Sample | Control # | Description | Model | Serial # | Date of receipt | Note |
|--------|---------------|--------------|----------------|------------------|-----------------|--|
| #01 | 181210-03.S01 | RF Module | AX200NGW | WFM:3413E8B14621 | 17/12/2018 | RF Conducted |
| | 170524-01.S13 | XVT EXTENDER | PCB00495 | 4955013-032 | 29/05/2017 | |
| | 170000-01.S02 | Laptop | Latitude E5470 | 21HTPF2 | 28/03/2017 | |
| #02 | 181210-03.S01 | RF Module | AX200NGW | WFM:3413E8B14621 | 2018-12-17 | Used for 1GHz-40GHz Radiated Spurious Emission tests |
| | 200611-03.S26 | Extender | ADEXELEC | - | 2020-07-01 | |
| | 170000-01.S01 | Laptop | Latitude E5470 | DBPLMC2 | 2017-03-28 | |
| | 200611-03.S28 | Main Antenna | SkyCross | - | 2020-07-01 | |
| | 200611-03.S29 | Aux Antenna | SkyCross | - | 2020-07-01 | |
| #03 | 181210-03.S01 | RF Module | AX200NGW | WFM:3413E8B14621 | 2018-12-17 | Used for 30MHz-1GHz Radiated Spurious Emission tests |
| | 200504-04.S07 | Laptop | Latitude 5401 | BVHLK13 | 2020-06-02 | |
| | 200504-04.S07 | Extender | ADEXELEC | - | 2020-06-02 | |
| | 200611-03.S28 | Main Antenna | SkyCross | - | 2020-07-01 | |
| | 200611-03.S29 | Aux Antenna | SkyCross | - | 2020-07-01 | |

5. EUT Features

The herein information is provided by the customer

| | | | |
|------------------------|--|---|--------------|
| Brand Name | Intel® Wi-Fi 6 AX200 | | |
| Model Name | AX200NGW | | |
| Software Version | DRTU Version: 22.21040.0.0-OEM.DRTU.11758 | | |
| Driver Version | 99.0.62.2 | | |
| Prototype / Production | Production | | |
| Supported Radios | 802.11b/g/n/ax 802.11a/n/ac/ax Bluetooth 5 | 2.4 GHz (2400.0 – 2483.5 MHz) 5.2 GHz (5150.0 – 5350.0 MHz) 5.6 GHz (5470.0 – 5725.0 MHz) 5.8 GHz (5725.0 – 5895.0 MHz) 2.4 GHz (2400.0 – 2483.5 MHz) | |
| Antenna Information | Transmitter | Chain 1 (A) | Chain 2 (B) |
| | Manufacturer | SkyCross | Skycross |
| | Antenna type | PIFA antenna | PIFA antenna |
| | Part number | N/A | N/A |
| | Declared antenna gain (dBi) | +5 | +5 |

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 802.11 mode and test case measurements have been reported excepted for band edge measurements where all plots are reported.
3. Tests have been performed with the KDB draft. No deviation between the KDB draft and the KDB has been identified.

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 – U-NII- 4

| FCC part | Test name | Verdict |
|--------------------------|---|---------|
| 15.407 (a) (3) | Maximum output power | P |
| 14.407 (e) | 6dB Emission Bandwith | P |
| 15.407 (a) (3) | Power spectral density | P |
| 15.407 (b) (5) | Undesirable emissions limits: out of band (conducted) | P |
| 15.407 (b) (3) 15.209 | Undesirable emissions limits: Spurious emissions (radiated) | P |

8. Document Revision History

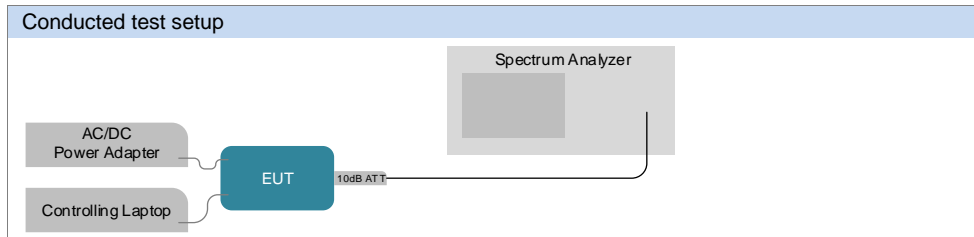
| Revision # | Modified by | Revision Details |
|------------|-------------|------------------|
| Rev. 00 | C.Requin | First Issue |
| Rev. 01 | C.Requin | Adding PSD plot |

Annex A. Test & System Description

A.1 Measurement System

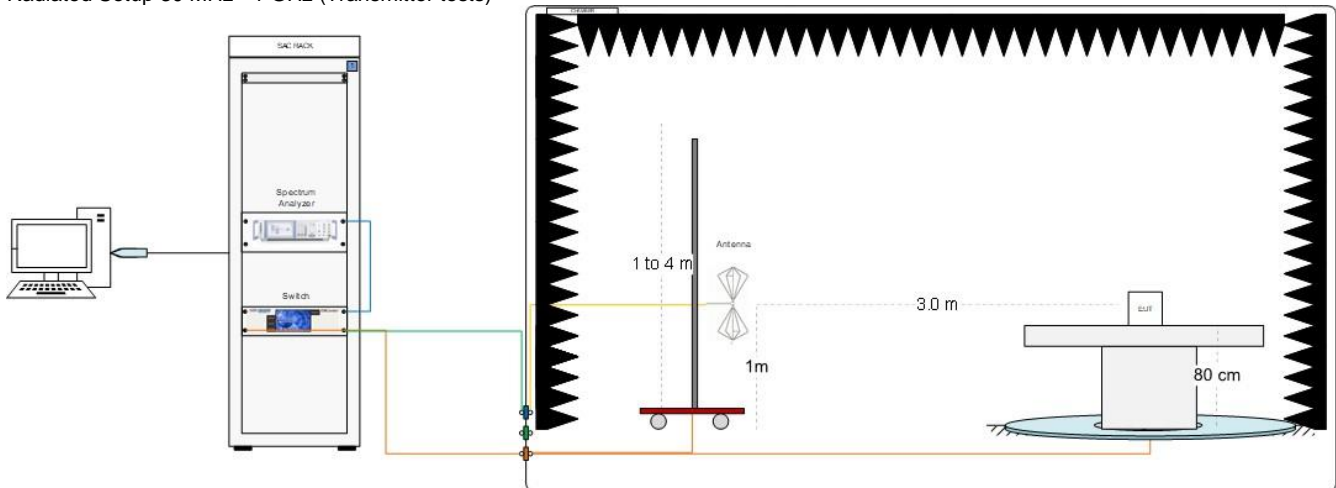
Measurements were performed using the following setups, made in accordance to the general provisions of ANSI C63.10–2013.

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.

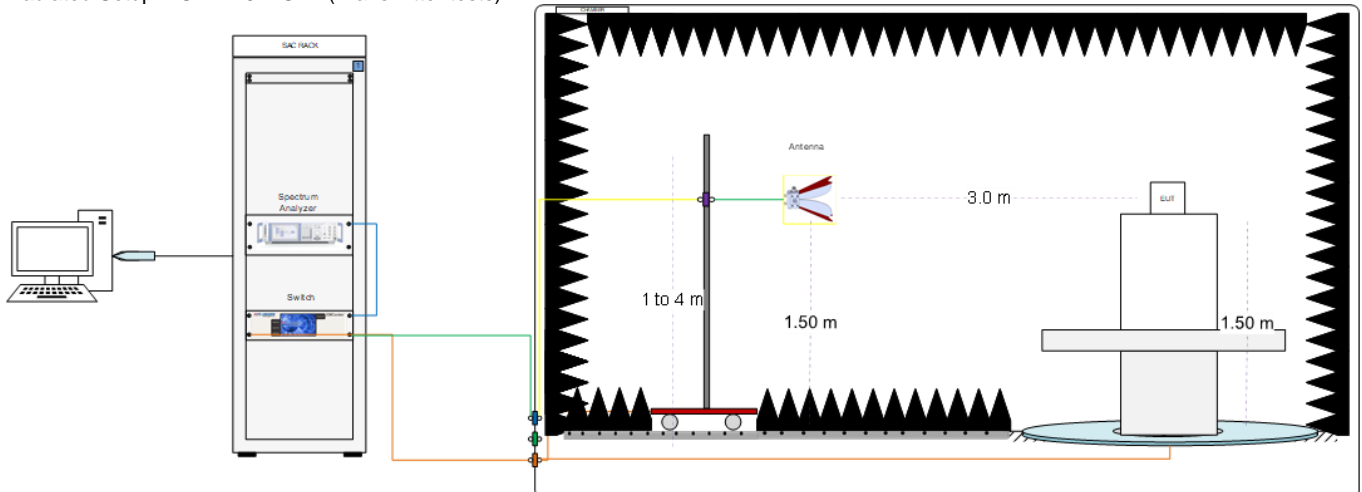


Radiated test setup

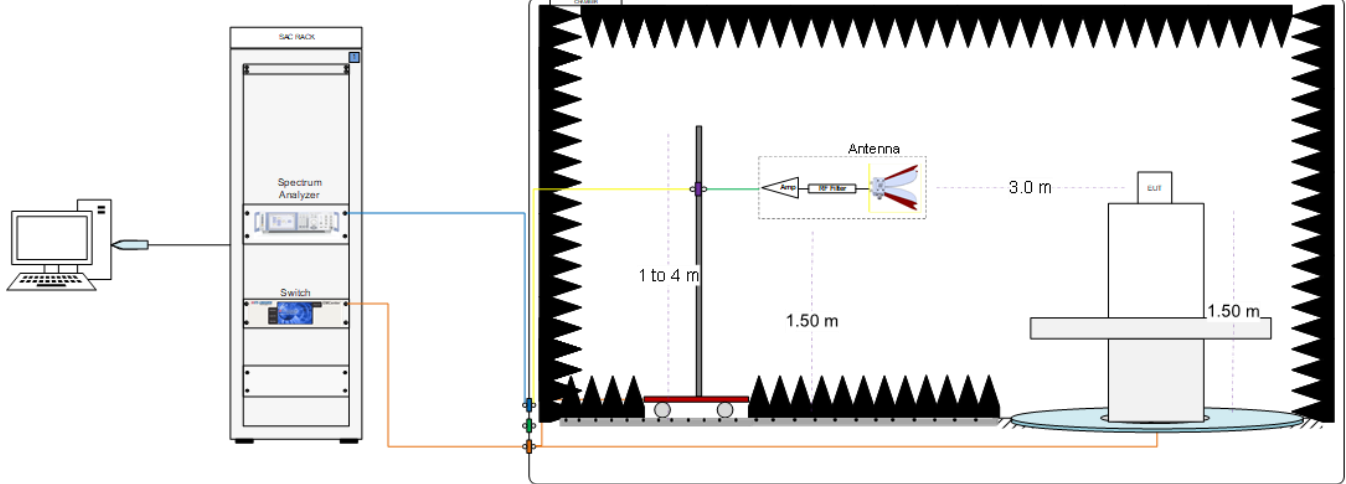
Radiated Setup 30 MHz - 1 GHz (Transmitter tests)



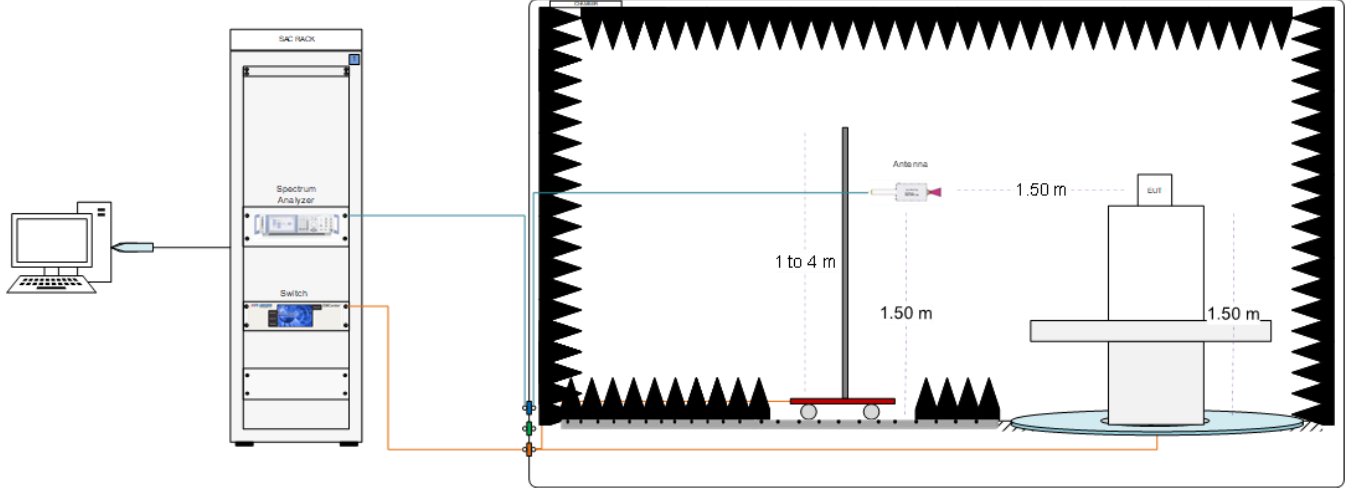
Radiated Setup 1 GHz – 6.4 GHz (Transmitter tests)



Radiated Setup 6.4 GHz - 18 GHz (Transmitter tests)



Radiated Setup 18 GHz – 40 GHz (Transmitter tests)



Sample Calculation

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

$$F \text{ (dB/m)} = \text{Rx Antenna Factor (dB/m)} + \text{Cable losses (dB)} - \text{Amplifiers Gain (dBi)}$$

$$E \text{ (dB}\mu\text{V/m)} = V \text{ (dB}\mu\text{V)} + F \text{ (dB/m)}$$

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:

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

where

$E_{\text{SpecLimit}}$ is the field strength of the emission at the distance specified by the limit, in dB μ V/m

E_{Meas} is the field strength of the emission at the measurement distance, in dB μ V/m

D_{Meas} is the measurement distance, in m

$D_{\text{SpecLimit}}$ 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 |
|----------|-------------------------|---------------|-------------|-----------------|------------|---------------|
| 273-000 | Spectrum Analyzer | FSV30 | 103309 | Rohde & Schwarz | 2019-09-02 | 2021-09-02 |
| 018-003 | RF cable 50cm | PE360-50CM | N/A | PASTERNAK | 2021-02-21 | 2022-02-21 |
| 018-001 | 10dB Attenuator + MH4 | N/A | N/A | N/A | 2021-03-09 | 2022-02-23 |
| *349-000 | Temp & Humidity Logger | RA12E-TH1-RAS | RA12-E16F48 | AVTECH | 2019-06-26 | 2021-06-26 |
| 408-000 | Temp & Humidity Logger | RA12E-TH1-RAS | RA12-E21FC8 | AVTECH | 2021-06-03 | 2023-06-03 |
| 413-000 | Measurement SW v1.5.4.2 | Octopi | N/A | Step AT | N/A | N/A |

N/A: not applicable

The items were not used in the out of calibration period

Radiated Setup #1

| ID# | Device | Type/Model | Serial # | Manufacturer | Cal. Date | Cal. Due Date |
|----------|--|--------------------------------|------------------------|-----------------|------------|---------------|
| 006-000 | Anechoic Chamber | FACT3 | 5720 | ETS-Lindgren | 2020-07-06 | 2022-07-06 |
| 006-001 | Turn Table | ETS | - | ETS-Lindgren | N/A | N/A |
| 006-002 | Switch & Positioning systems | EMC Center | 00159757 | ETS-Lindgren | N/A | N/A |
| 006-008 | Measurement SW, v10.40.10 | EMC32 | 100623 | Rohde & Schwarz | N/A | N/A |
| 006-011 | Boresight antenna mast | BAM 4.0-P | P/278/2890.01 | Maturo | N/A | N/A |
| 006-019 | Biconical antenna 30 MHz – 1 GHz | UBAA9115 + BBVU9135 + DGA9552N | 0286 + CH 9044 | Schwarzbeck | 2019-11-22 | 2021-11-22 |
| 147-000 | Spectrum analyzer | FSW43 | 101847 | Rohde & Schwarz | 2020-11-02 | 2022-11-02 |
| *006-020 | Horn antenna 3117 | 3117 | 00157734 | ETS-Lindgren | 2019-08-12 | 2021-08-12 |
| 056-000 | Horn Antenna 3117 + Amplifier + HPF6.4 | 3117 | 00157736 | ETS-Lindgren | 2020-04-01 | 2022-04-01 |
| *007-008 | Double Horn Ridged antenna | 3116C-PA | 00169308bis + 00196308 | ETS-Lindgren | 2019-07-24 | 2021-07-24 |
| *006-039 | Cable 2.5m - 30MHz to 18GHz | 0500990992500KE | 19.23.395 | Radiall | 2021-02-23 | 2021-08-23 |
| *006-030 | Cable 1.2m – 18 to 40 GHz | UFA147A-0-0480-200200 | MFR 64639223720-003 | Micro-coax | 2021-02-14 | 2021-08-14 |
| *006-034 | Cable 1m - 1GHz to 18GHz | UFA147A | - | Utilflex | 2021-02-18 | 2021-08-18 |
| *006-036 | Cable 1m – 30 MHz - 18GHz | UFB311A-0-0590-50U50U | MFR 64639 223230-001 | Micro-coax | 2021-02-23 | 2021-08-23 |
| *006-052 | RF Cable 7.5m | 0501051057000GX | 19.35.850 | Radiall | 2021-02-23 | 2021-08-23 |
| *006-038 | Cable 7m - 18GHz to 40GHz | R286304009 | - | Radiall | 2021-02-14 | 2021-08-14 |
| *006-051 | RF Cable 1.0m | CBL-1.5M-SMSM+ | 202879 | Mini-Circuits | 2021-02-23 | 2021-08-23 |
| *363-000 | Temperature & Humidity logger | RA12E-TH1-RAS | RA12-D0EB1A | Avtech | 2019-07-03 | 2021-07-03 |
| 365-000 | Temperature & Humidity logger | RA12E-TH1-RAS | 00-80-A3-E1-6E-55 | Avtech | 2021-03-08 | 2023-03-08 |

N/A: Not Applicable

The equipment were not used during out of 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 | 2020-07-06 | 2022-07-06 |
| 007-002 | Turntable | - | - | ETS Lindgren | N/A | N/A |
| 007-003 | Antenna Tower | 2171B-3.0M | 00150123 | ETS Lindgren | N/A | N/A |
| 007-006 | Switch & Positioner | EMCenter | 00151232 | ETS Lindgren | N/A | N/A |
| 007-005 | Measurement SW, V11.20.00 | EMC32 | 100401 | Rohde & Schwarz | N/A | N/A |
| 127-000 | Spectrum Analyzer | FSV40 | 101358 | Rohde & Schwarz | 2021-01-15 | 2023-01-15 |
| 138-000 | Spectrum Analyzer | FSV40 | 101556 | Rohde & Schwarz | 2021-01-27 | 2023-01-27 |
| 007-007 | Double Ridge Horn (1-18GHz) | 3117 | 00152266 | ETS Lindgren | 2020-03-18 | 2022-03-18 |
| 056-000 | Horn Antenna 3117 + Amplifier + HPF6.4 | 3117 | 00157736 | ETS-Lindgren | 2020-04-01 | 2022-04-01 |
| *007-008 | Double Horn Ridged antenna | 3116C-PA | 00169308bis + 00196308 | ETS-Lindgren | 2019-07-24 | 2021-07-24 |
| *007-022 | RF Cable 1-18GHz, 1.5m | 0501050991200GX | 19.23.493 | Radiall | 2021-02-14 | 2021-08-14 |
| *007-020 | RF Cable 1-18GHz, 1.2 m | 2301761761200PJ | 12.22.1104 | Radiall | 2021-02-14 | 2021-08-14 |
| *007-011 | RF Cable 1-18GHz - 6.5m | 140-8500-11-51 | 001 | Spectrum | 2021-02-14 | 2021-08-14 |
| *007-015 | RF Cable 1GHz-18GHz 1.5m | - | - | Spirent | 2021-02-14 | 2021-08-14 |
| *007-014 | RF Cable 18-40 GHz 6m | R286304009 | 1747364 | Radiall | 2021-02-15 | 2021-08-15 |
| *007-023 | RF Cable 1m DC-40GHz | PE360-100CM | - | Pasternack | 2021-02-16 | 2021-08-16 |
| *007-018 | RF Cable 1-9.5GHz 1.2m | 0500990991200KE | - | Radiall | 2021-02-15 | 2021-08-15 |
| *362-000 | Temp & Humidity Logger | RA12E-TH1-RAS | RA12-D4F316 | Avtech | 2019-07-05 | 2021-07-05 |
| 145-000 | Temp & Humidity Logger | RA12E-TH1-RAS | RA12-B89BE3 | Avtech | 2020-01-22 | 2022-01-22 |

N/A: Not Applicable

The equipment were not used during out of calibration period

Shared Radiated Equipment

| ID# | Device | Type/Model | Serial # | Manufacturer | Cal. Date | Cal. Due Date |
|---------|--------------|------------|----------|-----------------|------------|---------------|
| 022-000 | Power Sensor | NRP-Z81 | 104385 | Rohde & Schwarz | 2020-04-08 | 2022-04-08 |
| 061-000 | Power Sensor | NRP-Z81 | 104386 | Rohde & Schwarz | 2020-04-08 | 2022-04-08 |
| 140-000 | Power Sensor | NRP-Z81 | 104382 | Rohde & Schwarz | 2020-04-08 | 2022-04-08 |

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 <40 GHz | ± 3.45 | dB |
| Radiated tests <1GHz | ± 5.99 | dB |
| Radiated tests 1GHz – 40 GHz | ± 5.85 | dB |

Annex B. Test Results U-NII-4

The herein test results were performed by:

| Test case measurement | Test Personnel |
|--|---------------------|
| 6dB and 99% Bandwidth | C.Requin, Y.Haddad |
| Maximum output power & Maximum PSD | C.Requin |
| Undesirable emission limits: out of band | C.Requin, Y. Haddad |
| Radiated spurious emissions | A.Lounes, N.Bui |

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 & 802.11ax20 (20 MHz channel bandwidth), 802.11n40 & 802.11ax40 (40MHz channel bandwidth), 802.11ac80 & 802.11ax80 (80MHz channel bandwidth) and 802.11ac160 & 802.11ax160 (160MHz 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 | 80/160 | VHT0 |
| | 802.11ax | 20/40/80/160 | HE0 |
| MIMO | 802.11n | 20/40 | HT8 |
| | 802.11ac | 80/160 | VHT0 |
| | 802.11ax | 20/40/80/160 | HE0 |

B.2 Test Results Tables

B.2.1 6dB & 99% Bandwidth

Test limits

| FCC part | Limits |
|------------|--|
| 15.407 (e) | For equipment operating in the band 5725-5895 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.

Results tables

| Mode | Rate | Antenna | Channel | Freq [MHz] | 6dB BW [MHz] | 99% BW [MHz] |
|-------------|-------|---------|---------|------------|--------------|--------------|
| 802.11a | 6Mbps | SISO A | 169 | 5845 | 15.11 | 16.76 |
| | | | 173 | 5865 | 15.04 | 16.68 |
| | | | 177 | 5885 | 14.42 | 16.72 |
| | | SISO B | 169 | 5845 | 13.79 | 16.64 |
| | | | 173 | 5865 | 15.01 | 16.72 |
| | | | 177 | 5885 | 15.01 | 16.76 |
| 802.11n20 | HT0 | SISO A | 169 | 5845 | 13.49 | 17.84 |
| | | | 173 | 5865 | 15.11 | 17.72 |
| | | | 177 | 5885 | 15.04 | 17.80 |
| | | SISO B | 169 | 5845 | 15.10 | 17.92 |
| | | | 173 | 5865 | 15.08 | 17.84 |
| | | | 177 | 5885 | 14.98 | 17.84 |
| | HT8 | MIMO A | 169 | 5845 | 14.80 | 17.68 |
| | | | 173 | 5865 | 15.10 | 17.72 |
| | | | 177 | 5885 | 13.82 | 17.64 |
| | | MIMO B | 169 | 5845 | 16.29 | 17.72 |
| | | | 173 | 5865 | 15.05 | 17.72 |
| | | | 177 | 5885 | 15.71 | 17.72 |
| 802.11n40 | HT0 | SISO A | 167 | 5835 | 34.67 | 38.24 |
| | | | 175 | 5875 | 32.56 | 37.28 |
| | | SISO B | 167 | 5835 | 35.04 | 36.96 |
| | | | 175 | 5875 | 35.07 | 37.20 |
| | | | 167 | 5835 | 30.07 | 36.40 |
| | HT8 | MIMO A | 175 | 5875 | 33.85 | 36.40 |
| | | | 167 | 5835 | 34.99 | 36.24 |
| | | MIMO B | 167 | 5835 | 35.06 | 36.32 |
| | | | 175 | 5875 | | |
| | | | 175 | 5875 | | |
| 802.11ac80 | VHT0 | SISO A | 171 | 5855 | 71.41 | 75.36 |
| | | SISO B | | | 73.81 | 75.52 |
| | | MIMO A | | | 73.92 | 75.04 |
| | | MIMO B | | | 71.36 | 75.52 |
| 802.11ac160 | VHT0 | SISO A | 163 | 5815 | 141.38 | 153.28 |
| | | SISO B | | | 130.18 | 153.28 |
| | | MIMO A | | | 145.13 | 153.28 |
| | | MIMO B | | | 131.38 | 153.28 |

Max Value

| Mode | Rate | Antenna | Channel | Freq [MHz] | 6dB BW [MHz] | 99% BW [MHz] | | |
|-------------|------|------------|---------|------------|--------------|--------------|-------|-------|
| 802.11ax20 | HE0 | SISO A | 169 | 5845 | 15.88 | 19.00 | | |
| | | | | | 173 | 18.96 | | |
| | | | | | 177 | 19.00 | | |
| | | SISO B | 169 | 5845 | 16.71 | 18.92 | | |
| | | | | | 173 | 19.00 | | |
| | | | | | 177 | 18.92 | | |
| | | MIMO A | 169 | 5845 | 15.69 | 18.96 | | |
| | | | | | 173 | 18.84 | | |
| | | | | | 177 | 18.92 | | |
| | | MIMO B | 169 | 5845 | 15.08 | 18.92 | | |
| | | | | | 173 | 18.88 | | |
| | | | | | 177 | 18.88 | | |
| 802.11ax40 | HE0 | SISO A | 167 | 5835 | 36.26 | 38.00 | | |
| | | | | | 175 | 38.08 | | |
| | | SISO B | 167 | 5835 | 35.10 | 38.00 | | |
| | | | | | 175 | 38.00 | | |
| | | MIMO A | 167 | 5835 | 35.12 | 37.92 | | |
| | | | | | 175 | 38.00 | | |
| | | MIMO B | 167 | 5835 | 35.03 | 37.84 | | |
| | | | | | 175 | 37.84 | | |
| | | 802.11ax80 | HE0 | SISO A | 171 | 5855 | 66.40 | 77.12 |
| | | | | SISO B | | | 70.19 | 77.12 |
| | | | | MIMO A | | | 75.09 | 76.64 |
| | | | | MIMO B | | | 72.64 | 77.28 |
| 802.11ax160 | HE0 | SISO A | 163 | 5815 | 141.38 | 154.88 | | |
| | | SISO B | | | 150.08 | 154.88 | | |
| | | MIMO A | | | 153.93 | 154.88 | | |
| | | MIMO B | | | 153.88 | 155.20 | | |

Max Value

See Section B.3.1, B.3.2 for the screenshot results.

B.2.2 Maximum output power & Maximum power spectral Density

Test limits

| FCC part | Limits |
|-------------------------|---|
| 15.407 (a) (3) (iii) | For client devices operating under the control of an indoor access point in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 14 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm. Client devices operating on a channel that spans the 5.725-5.850 GHz and 5.850-5.895 GHz bands must not exceed an e.i.r.p. of 30 dBm. |
| 15.407 (a) (12) | Power spectral density measurement: The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. Measurements in the 5.725-5.895 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. |

Test procedure

The Maximum Conducted Output Power was measured using the channel integration method over the entire 99% occupied bandwidth according to section E) 2) d) (Method SA-2) of KDB 789033

The maximum power spectral density (PSD) was measured using the method according to section F) of KDB 789033.

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.

Results tables

Duty cycle

| Mode | Rate | Antenna | Duty Cycle [%] |
|-------------|-------|---------|----------------|
| 802.11a | 6Mbps | SISO A | 97.55% |
| | | SISO B | 97.55% |
| 802.11n20 | HT0 | SISO A | 98.67% |
| | | SISO B | 98.67% |
| | HT8 | MIMO A | 98.67% |
| | | MIMO B | 98.67% |
| 802.11ax20 | HE0 | SISO A | 98.62% |
| | | SISO B | 98.62% |
| | | MIMO A | 98.66% |
| | | MIMO B | 98.66% |
| 802.11n40 | HT0 | SISO A | 98.73% |
| | | SISO B | 98.73% |
| | HT8 | MIMO A | 98.73% |
| | | MIMO B | 98.73% |
| 802.11ax40 | HE0 | SISO A | 98.54% |
| | | SISO B | 98.54% |
| | | MIMO A | 98.66% |
| | | MIMO B | 98.66% |
| 802.11ac80 | VHT0 | SISO A | 98.73% |
| | | SISO B | 98.73% |
| | | MIMO A | 98.73% |
| | | MIMO B | 98.73% |
| 802.11ax80 | HE0 | SISO A | 98.73% |
| | | SISO B | 98.73% |
| | | MIMO A | 98.61% |
| | | MIMO B | 98.61% |
| 802.11ac160 | VTH0 | SISO A | 98.15% |
| | | SISO B | 98.15% |
| | | MIMO A | 98.66% |
| | | MIMO B | 98.66% |
| 802.11ax160 | HE0 | SISO A | 98.67% |
| | | SISO B | 98.67% |
| | | MIMO A | 97.81% |
| | | MIMO B | 97.81% |

Maximum output power – U-NII-4 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 Ouput Power [mW] | |
|-------------|-----------|---------|--------------|--------------|-------------------------------------|--------------------------------------|----------------------|-------------------------------------|--------|
| 802.11a | 6Mbps | 169 | 5845 | SISO A | 19.53 | 19.64 | 24.64 | 92.00 | |
| | | | | SISO B | 19.73 | 19.84 | 24.84 | 96.33 | |
| | | 173 | 5865 | SISO A | 19.75 | 19.86 | 24.86 | 96.78 | |
| | | | | SISO B | 19.69 | 19.80 | 24.80 | 95.45 | |
| | | 177 | 5885 | SISO A | 19.53 | 19.64 | 24.64 | 92.00 | |
| | | | | SISO B | 19.71 | 19.82 | 24.82 | 95.89 | |
| 802.11n20 | HT0 | 169 | 5845 | SISO A | 19.72 | 19.72 | 24.72 | 93.76 | |
| | | | | SISO B | 19.89 | 19.89 | 24.89 | 97.50 | |
| | | 173 | 5865 | SISO A | 19.89 | 19.89 | 24.89 | 97.50 | |
| | | | | SISO B | 19.91 | 19.91 | 24.91 | 97.95 | |
| | | 177 | 5885 | SISO A | 19.82 | 19.82 | 24.82 | 95.94 | |
| | | | | SISO B | 19.96 | 19.96 | 24.96 | 99.08 | |
| | HT8 | 169 | 5845 | MIMO A | 16.83 | 16.83 | 21.83 | 48.19 | |
| | | | | MIMO B | 16.75 | 16.75 | 21.75 | 47.32 | |
| | | | | Combined A+B | 19.80 | 19.80 | 24.80 | 95.50 | |
| | | 173 | 5865 | MIMO A | 16.65 | 16.65 | 21.65 | 46.24 | |
| | | | | MIMO B | 16.73 | 16.73 | 21.73 | 47.10 | |
| | | | | Combined A+B | 19.70 | 19.70 | 24.70 | 93.33 | |
| | 177 | 5885 | MIMO A | 16.85 | 16.85 | 21.85 | 48.42 | | |
| | | | MIMO B | 16.79 | 16.79 | 21.79 | 47.75 | | |
| | | | Combined A+B | 19.83 | 19.83 | 24.83 | 96.16 | | |
| | 802.11n40 | HT0 | 167 | 5835 | SISO A | 21.06 | 21.06 | 26.06 | 127.64 |
| | | | | | SISO B | 21.14 | 21.14 | 26.14 | 130.02 |
| | | | 175 | 5875 | SISO A | 20.91 | 20.91 | 25.91 | 123.31 |
| SISO B | | | | | 21.03 | 21.03 | 26.03 | 126.77 | |
| HT8 | | 167 | 5835 | MIMO A | 20.26 | 20.26 | 25.26 | 106.17 | |
| | | | | MIMO B | 20.37 | 20.37 | 25.37 | 108.89 | |
| | | | | Combined A+B | 23.33 | 23.33 | 28.33 | 215.28 | |
| | | 175 | 5875 | MIMO A | 20.13 | 20.13 | 25.13 | 103.04 | |
| | | | | MIMO B | 20.28 | 20.28 | 25.28 | 106.66 | |
| | | | | Combined A+B | 23.22 | 23.22 | 28.22 | 209.89 | |
| 802.11ac80 | VHT0 | 171 | 5855 | SISO A | 20.10 | 20.10 | 25.10 | 102.33 | |
| | | | | SISO B | 20.45 | 20.45 | 25.45 | 110.92 | |
| | | | | MIMO A | 19.14 | 19.14 | 24.14 | 82.04 | |
| | | | | MIMO B | 19.75 | 19.75 | 24.75 | 94.41 | |
| | | | | Combined A+B | 22.47 | 22.47 | 27.47 | 176.60 | |
| 802.11ac160 | VHT0 | 163 | 5815 | SISO A | 17.00 | 17.00 | 22.00 | 50.12 | |
| | | | | SISO B | 17.07 | 17.07 | 22.07 | 50.93 | |
| | | | | MIMO A | 16.13 | 16.13 | 21.13 | 41.02 | |
| | | | | MIMO B | 15.87 | 15.87 | 20.87 | 38.64 | |
| | | | | Combined A+B | 19.01 | 19.01 | 24.01 | 79.62 | |

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

Max Value

Min Value

| Mode | Rate | Channel | Freq [MHz] | Antenna | Average Conducted Ouput Power [dBm] | Avg Max* Conducted Ouput Power [dBm] | Avg Max*. EIRP [dBm] | Avg Max* Conducted Ouput Power [mW] |
|--------------|-------|---------|------------|--------------|-------------------------------------|--------------------------------------|----------------------|-------------------------------------|
| 802.11ax20 | HE0 | 169 | 5845 | SISO A | 20.03 | 20.03 | 25.03 | 100.69 |
| | | | | SISO B | 19.99 | 19.99 | 24.99 | 99.77 |
| | | | | MIMO A | 16.92 | 16.92 | 21.92 | 49.20 |
| | | | | MIMO B | 17.07 | 17.07 | 22.07 | 50.93 |
| | | | | Combined A+B | 20.01 | 20.01 | 25.01 | 100.23 |
| | | 173 | 5865 | SISO A | 19.96 | 19.96 | 24.96 | 99.08 |
| | | | | SISO B | 19.99 | 19.99 | 24.99 | 99.77 |
| | | | | MIMO A | 17.01 | 17.01 | 22.01 | 50.23 |
| | | | | MIMO B | 17.01 | 17.01 | 22.01 | 50.23 |
| | | 177 | 5885 | Combined A+B | 20.02 | 20.02 | 25.02 | 100.46 |
| | | | | SISO A | 20.13 | 20.13 | 25.13 | 103.04 |
| | | | | SISO B | 19.96 | 19.96 | 24.96 | 99.08 |
| MIMO A | 16.92 | | | 16.92 | 21.92 | 49.20 | | |
| MIMO B | 17.04 | | | 17.04 | 22.04 | 50.58 | | |
| 802.11ax40 | HE0 | 167 | 5835 | Combined A+B | 19.99 | 19.99 | 24.99 | 99.77 |
| | | | | SISO A | 21.02 | 21.02 | 26.02 | 126.47 |
| | | | | SISO B | 21.02 | 21.02 | 26.02 | 126.47 |
| | | | | MIMO A | 20.25 | 20.25 | 25.25 | 105.93 |
| | | | | MIMO B | 20.38 | 20.38 | 25.38 | 109.14 |
| | | 175 | 5875 | Combined A+B | 23.33 | 23.33 | 28.33 | 215.28 |
| | | | | SISO A | 20.90 | 20.90 | 25.90 | 123.03 |
| | | | | SISO B | 20.91 | 20.91 | 25.91 | 123.31 |
| | | | | MIMO A | 20.19 | 20.19 | 25.19 | 104.47 |
| | | | | MIMO B | 20.29 | 20.29 | 25.29 | 106.91 |
| | | | | Combined A+B | 23.25 | 23.25 | 28.25 | 211.35 |
| | | | | 802.1axc80 | HE0 | 171 | 5855 | SISO A |
| SISO B | 20.10 | 20.10 | 25.10 | | | | | 102.33 |
| MIMO A | 19.41 | 19.41 | 24.41 | | | | | 87.30 |
| MIMO B | 19.55 | 19.55 | 24.55 | | | | | 90.16 |
| Combined A+B | 22.49 | 22.49 | 27.49 | | | | | 177.42 |
| 802.11ax160 | HE0 | 163 | 5815 | SISO A | 17.36 | 17.36 | 22.36 | 54.45 |
| | | | | SISO B | 17.33 | 17.33 | 22.33 | 54.08 |
| | | | | MIMO A | 15.86 | 15.96 | 20.96 | 39.41 |
| | | | | MIMO B | 16.95 | 17.05 | 22.05 | 50.65 |
| | | | | Combined A+B | 19.45 | 19.55 | 24.55 | 90.08 |

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

Max Value

Min Value

See Section B.3.3 for the screenshot results

Maximum Power Spectral Density (PSD) – U-NII-4 channels

| Mode | Rate | Channel | Freq [MHz] | Antenna | Average conducted PSD [dBm/500kHz] | Max.* conducted PSD [dBm/500kHz] | Max.* conducted PSD [dBm/MHz] | EIRP PSD* [dBm/MHz] | |
|-------------|-----------|---------|--------------|--------------|------------------------------------|----------------------------------|-------------------------------|---------------------|-------|
| 802.11a | 6Mbps | 169 | 5845 | SISO A | 5.66 | 5.77 | 8.78 | 13.78 | |
| | | | | SISO B | 5.80 | 5.91 | 8.92 | 13.92 | |
| | | 173 | 5865 | SISO A | 5.82 | 5.93 | 8.94 | 13.94 | |
| | | | | SISO B | 5.77 | 5.88 | 8.89 | 13.89 | |
| | | 177 | 5885 | SISO A | 5.71 | 5.82 | 8.83 | 13.83 | |
| | | | | SISO B | 5.72 | 5.83 | 8.84 | 13.84 | |
| 802.11n20 | HT0 | 169 | 5845 | SISO A | 5.62 | 5.62 | 8.63 | 13.63 | |
| | | | | SISO B | 5.81 | 5.81 | 8.82 | 13.82 | |
| | | 173 | 5865 | SISO A | 5.79 | 5.79 | 8.80 | 13.80 | |
| | | | | SISO B | 5.78 | 5.78 | 8.79 | 13.79 | |
| | | 177 | 5885 | SISO A | 5.71 | 5.71 | 8.72 | 13.72 | |
| | | | | SISO B | 5.79 | 5.79 | 8.80 | 13.80 | |
| | HT8 | 169 | 5845 | MIMO A | 2.68 | 2.68 | 5.69 | 10.69 | |
| | | | | MIMO B | 2.68 | 2.68 | 5.69 | 10.69 | |
| | | | | Combined A+B | 5.69 | 5.69 | 8.70 | 13.70 | |
| | | 173 | 5865 | MIMO A | 2.65 | 2.65 | 5.66 | 10.66 | |
| | | | | MIMO B | 2.62 | 2.62 | 5.63 | 10.63 | |
| | | | | Combined A+B | 5.65 | 5.65 | 8.66 | 13.66 | |
| | 177 | 5885 | MIMO A | 2.70 | 2.70 | 5.71 | 10.71 | | |
| | | | MIMO B | 2.65 | 2.65 | 5.66 | 10.66 | | |
| | | | Combined A+B | 5.69 | 5.69 | 8.70 | 13.70 | | |
| | 802.11n40 | HT0 | 167 | 5835 | SISO A | 3.54 | 3.54 | 6.55 | 11.55 |
| | | | | | SISO B | 3.63 | 3.63 | 6.64 | 11.64 |
| | | | 175 | 5875 | SISO A | 3.43 | 3.43 | 6.44 | 11.44 |
| SISO B | | | | | 3.45 | 3.45 | 6.46 | 11.46 | |
| HT8 | | 167 | 5835 | MIMO A | 2.80 | 2.80 | 5.81 | 10.81 | |
| | | | | MIMO B | 2.93 | 2.93 | 5.94 | 10.94 | |
| | | | | Combined A+B | 5.88 | 5.88 | 8.89 | 13.89 | |
| | | 175 | 5875 | MIMO A | 2.63 | 2.63 | 5.64 | 10.64 | |
| | | | | MIMO B | 2.79 | 2.79 | 5.80 | 10.80 | |
| | | | | Combined A+B | 5.72 | 5.72 | 8.73 | 13.73 | |
| 802.11ac80 | VHT0 | 171 | 5855 | SISO A | -0.50 | -0.50 | 2.51 | 7.51 | |
| | | | | SISO B | -0.11 | -0.11 | 2.90 | 7.90 | |
| | | | | MIMO A | -1.38 | -1.38 | 1.63 | 6.63 | |
| | | | | MIMO B | -0.75 | -0.75 | 2.26 | 7.26 | |
| | | | | Combined A+B | 1.96 | 1.96 | 4.97 | 9.97 | |
| 802.11ac160 | VHT0 | 163 | 5815 | SISO A | -6.29 | -6.29 | -3.28 | 1.72 | |
| | | | | SISO B | -6.19 | -6.19 | -3.18 | 1.82 | |
| | | | | MIMO A | -7.25 | -7.25 | -4.24 | 0.76 | |
| | | | | MIMO B | -7.42 | -7.42 | -4.41 | 0.59 | |
| | | | | Combined A+B | -4.32 | -4.32 | -1.31 | 3.69 | |

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

Max Value

Min Value

| Mode | Rate | Channel | Freq [MHz] | Antenna | Average conducted PSD [dBm/500kHz] | Max.* conducted PSD [dBm/500kHz] | Max.* conducted PSD [dBm/MHz] | EIRP PSD* [dBm/MHz] |
|-------------|------|---------|------------|--------------|------------------------------------|----------------------------------|-------------------------------|---------------------|
| 802.11ax20 | HE0 | 169 | 5845 | SISO A | 5.74 | 5.74 | 8.75 | 13.75 |
| | | | | SISO B | 5.67 | 5.67 | 8.68 | 13.68 |
| | | | | MIMO A | 2.57 | 2.57 | 5.58 | 10.58 |
| | | | | MIMO B | 2.88 | 2.88 | 5.89 | 10.89 |
| | | | | Combined A+B | 5.74 | 5.74 | 8.75 | 13.75 |
| | | 173 | 5865 | SISO A | 5.62 | 5.62 | 8.63 | 13.63 |
| | | | | SISO B | 5.68 | 5.68 | 8.69 | 13.69 |
| | | | | MIMO A | 2.69 | 2.69 | 5.70 | 10.70 |
| | | | | MIMO B | 2.82 | 2.82 | 5.83 | 10.83 |
| | | | | Combined A+B | 5.77 | 5.77 | 8.78 | 13.78 |
| | | 177 | 5885 | SISO A | 5.78 | 5.78 | 8.79 | 13.79 |
| | | | | SISO B | 5.63 | 5.63 | 8.64 | 13.64 |
| | | | | MIMO A | 2.60 | 2.60 | 5.61 | 10.61 |
| | | | | MIMO B | 2.72 | 2.72 | 5.73 | 10.73 |
| | | | | Combined A+B | 5.67 | 5.67 | 8.68 | 13.68 |
| 802.11ax40 | HE0 | 167 | 5835 | SISO A | 3.39 | 3.39 | 6.40 | 11.40 |
| | | | | SISO B | 3.34 | 3.34 | 6.35 | 11.35 |
| | | | | MIMO A | 2.58 | 2.58 | 5.59 | 10.59 |
| | | | | MIMO B | 2.70 | 2.70 | 5.71 | 10.71 |
| | | | | Combined A+B | 5.65 | 5.65 | 8.66 | 13.66 |
| | | 175 | 5875 | SISO A | 3.26 | 3.26 | 6.27 | 11.27 |
| | | | | SISO B | 3.21 | 3.21 | 6.22 | 11.22 |
| | | | | MIMO A | 2.55 | 2.55 | 5.56 | 10.56 |
| | | | | MIMO B | 2.61 | 2.61 | 5.62 | 10.62 |
| | | | | Combined A+B | 5.59 | 5.59 | 8.60 | 13.60 |
| 802.1axc80 | HE0 | 171 | 5855 | SISO A | -0.59 | -0.59 | 2.42 | 7.42 |
| | | | | SISO B | -0.50 | -0.50 | 2.51 | 7.51 |
| | | | | MIMO A | -1.25 | -1.25 | 1.76 | 6.76 |
| | | | | MIMO B | -1.00 | -1.00 | 2.01 | 7.01 |
| | | | | Combined A+B | 1.89 | 1.89 | 4.90 | 9.90 |
| 802.11ax160 | HE0 | 163 | 5815 | SISO A | -6.09 | -6.09 | -3.08 | 1.92 |
| | | | | SISO B | -6.11 | -6.11 | -3.10 | 1.90 |
| | | | | MIMO A | -7.63 | -7.53 | -4.52 | 0.48 |
| | | | | MIMO B | -6.44 | -6.34 | -3.33 | 1.67 |
| | | | | Combined A+B | -3.98 | -3.88 | -0.87 | 4.13 |

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

Max Value

Min Value

Note :PSD [dBm/500KHz] corresponds to the measurement done using RBW = 500KHz. To obtain the PSD [dBm/1MHz] a correction factor is applied: $10\log\left(\frac{1MHz}{500kHz}\right) = +3.01dB$

See Section B.3.4. for the screenshot results

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

| FCC part | Limits |
|----------------------|--|
| 15.407 (b) (5) (iii) | All emissions below 5.725 GHz shall not exceed an e.i.r.p of -27 dBm/MHz at 5.65GHz increasing linearly to 10dBm/MHz at 5.7 GHz, and from 5.7GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72GHz, and from 5.72 GHz increasing linearly to a level of 27dBm/MHz at 5.725GHz. |
| 15.407 (b) (5) (ii) | All emissions at or above 5.895GHz shall not exceed an e.i.r.p of -5dBm/MHz and shall decrease linearly to an e.i.r.p of -27dBm/MHz at or above 5.925GHz. |

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.

For lower OOBE, Peak detector is used according to FCC OET KDB 789033 D02 v02r01.

For upper OOBE, RMS detector is used according to FCC OET KDB 291074 D01 v01.

See Section B.3.5. for the screenshot results.

B.2.4 Radiated spurious emission

Standard references

| FCC part | Limits | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|-------------------------|-----------------------|-------------------------|--------------------|-------|-----|----|---|--------|-----|------|---|---------|-----|----|---|-----------|-----|----|---|
| 15.407 (b) (5) (ii) | For transmitters operating solely in the 5.850-5.895 GHz band or operating on a channel that spans across 5.725-5.895 GHz: For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 dBm/MHz at or above 5.925 GHz. | | | | | | | | | | | | | | | | | | | | |
| 15.407 (b) (5) (iii) | For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz. | | | | | | | | | | | | | | | | | | | | |
| 15.209 | <p>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):</p> <table border="1"> <thead> <tr> <th>Freq Range (MHz)</th> <th>Field Strength (μV/m)</th> <th>Field Strength (dBμV/m)</th> <th>Meas. Distance (m)</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</p> <p>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.</p> | Freq Range (MHz) | Field Strength (μV/m) | Field Strength (dBμV/m) | Meas. Distance (m) | 30-88 | 100 | 40 | 3 | 88-216 | 150 | 43.5 | 3 | 216-960 | 200 | 46 | 3 | Above 960 | 500 | 54 | 3 |
| Freq Range (MHz) | Field Strength (μV/m) | Field Strength (dBμV/m) | Meas. Distance (m) | | | | | | | | | | | | | | | | | | |
| 30-88 | 100 | 40 | 3 | | | | | | | | | | | | | | | | | | |
| 88-216 | 150 | 43.5 | 3 | | | | | | | | | | | | | | | | | | |
| 216-960 | 200 | 46 | 3 | | | | | | | | | | | | | | | | | | |
| Above 960 | 500 | 54 | 3 | | | | | | | | | | | | | | | | | | |

Test procedure

The radiated setups shown in section *Test & System Description* were 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 360° and for both Vertical and Horizontal polarizations.

The radiated spurious emission was measured on the worst case configuration selected from the chapter B.1 and using the low, middle and high channels

Test Results

30 MHz – 1 GHz, Radiated spurious emissions**Radiated Spurious – All modes**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|------------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 199.7 | 42.2 | Quasi-Peak | 43.5 | 1.3 | H |

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

Radiated spurious – 1 GHz to 40 GHz802.11a**802.11a, 6Mbps, Chain A****CH169**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3378.5 | 46.1 | RMS | 68.2 | 22.1 | V |
| 3379.5 | 58.6 | Peak | 88.2 | 29.6 | H |
| 17818.3 | 41.4 | Average | 54.0 | 12.6 | H |
| 17842.0 | 52.0 | Peak | 74.0 | 21.9 | V |
| 23349.3 | 47.0 | Peak | 88.2 | 41.2 | H |
| 23379.6 | 37.7 | RMS | 68.2 | 30.5 | V |

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| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3399.5 | 58.8 | Peak | 88.2 | 29.4 | V |
| 3400.0 | 45.8 | RMS | 68.2 | 22.4 | V |
| 17090.8 | 53.5 | Peak | 88.2 | 34.7 | V |
| 17118.9 | 41.5 | RMS | 68.2 | 26.7 | V |
| 23459.8 | 39.1 | RMS | 68.2 | 29.1 | V |
| 23459.8 | 48.2 | Peak | 88.2 | 40.0 | V |

CH177

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBμV/m | --- | dBμV/m | dB | --- |
| 3397.5 | 45.8 | RMS | 68.2 | 22.4 | H |
| 3398.0 | 58.3 | Peak | 88.2 | 29.9 | H |
| 17814.4 | 40.7 | Average | 54.0 | 13.3 | H |
| 17814.9 | 51.8 | Peak | 74.0 | 22.2 | H |
| 23539.6 | 47.2 | Peak | 88.2 | 40.9 | V |
| 23540.1 | 39.0 | RMS | 68.2 | 29.2 | V |

802.11a, 6Mbps, Chain B**CH169**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBμV/m | --- | dBμV/m | dB | --- |
| 3388.0 | 58.6 | Peak | 88.2 | 29.6 | H |
| 3388.5 | 45.7 | RMS | 68.2 | 22.5 | V |
| 11690.1 | 39.1 | Average | 54.0 | 14.9 | V |
| 11734.1 | 49.6 | Peak | 74.0 | 24.4 | H |
| 23277.1 | 48.8 | Peak | 88.2 | 39.4 | H |
| 23380.0 | 38.5 | RMS | 68.2 | 29.7 | V |

CH173

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBμV/m | --- | dBμV/m | dB | --- |
| 3398.0 | 58.4 | Peak | 88.2 | 29.8 | V |
| 3399.5 | 46.0 | RMS | 68.2 | 22.2 | H |
| 17801.3 | 51.9 | Peak | 74.0 | 22.1 | H |
| 17803.8 | 40.8 | Average | 54.0 | 13.2 | V |
| 23459.8 | 40.2 | RMS | 68.2 | 28.0 | V |
| 23460.3 | 47.4 | Peak | 88.2 | 40.8 | V |

CH177

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3373.5 | 46.2 | RMS | 68.2 | 22.0 | H |
| 3373.5 | 58.3 | Peak | 88.2 | 29.9 | H |
| 17811.0 | 40.6 | Average | 54.0 | 13.4 | V |
| 17827.9 | 51.8 | Peak | 74.0 | 22.2 | H |
| 23539.6 | 39.4 | RMS | 68.2 | 28.8 | V |
| 23540.1 | 46.9 | Peak | 88.2 | 41.4 | V |

802.11n

802.11n20, HT0, Chain A

CH169

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3376.0 | 59.0 | Peak | 88.2 | 29.2 | V |
| 3376.5 | 46.1 | RMS | 68.2 | 22.1 | H |
| 16726.9 | 40.8 | RMS | 68.2 | 27.4 | H |
| 16726.9 | 53.0 | Peak | 88.2 | 35.2 | V |
| 39566.6 | 57.3 | Peak | 74.0 | 16.7 | H |
| 39592.1 | 46.6 | Average | 54.0 | 7.3 | H |

CH173

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3386.0 | 45.8 | RMS | 68.2 | 22.4 | V |
| 3386.5 | 58.2 | Peak | 88.2 | 30.0 | V |
| 17085.5 | 52.5 | Peak | 88.2 | 35.8 | V |
| 17089.4 | 41.4 | RMS | 68.2 | 26.9 | V |
| 39673.6 | 56.9 | Peak | 74.0 | 17.1 | H |
| 39696.7 | 46.5 | Average | 54.0 | 7.5 | V |

CH177

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3369.5 | 45.9 | RMS | 68.2 | 22.3 | H |
| 3369.5 | 58.4 | Peak | 88.2 | 29.8 | V |
| 17800.9 | 40.9 | Average | 54.0 | 13.1 | V |
| 17832.3 | 52.3 | Peak | 74.0 | 21.7 | H |
| 39621.5 | 57.1 | Peak | 74.0 | 16.9 | V |
| 39653.8 | 46.4 | Average | 54.0 | 7.6 | H |

802.11n20, HT0, Chain B**CH169**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3376.5 | 46.2 | RMS | 68.2 | 22.0 | V |
| 3376.5 | 59.1 | Peak | 88.2 | 29.1 | V |
| 11685.2 | 39.5 | Average | 54.0 | 14.6 | V |
| 11693.5 | 49.2 | Peak | 74.0 | 24.8 | V |
| 39641.3 | 46.5 | Average | 54.0 | 7.5 | V |
| 39653.8 | 56.5 | Peak | 74.0 | 17.5 | H |

CH173

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3389.0 | 45.7 | RMS | 68.2 | 22.5 | H |
| 3390.0 | 58.9 | Peak | 88.2 | 29.3 | V |
| 17806.2 | 41.0 | Average | 54.0 | 13.0 | H |
| 17838.6 | 52.2 | Peak | 74.0 | 21.8 | V |
| 39654.3 | 57.0 | Peak | 74.0 | 17.0 | V |
| 39654.3 | 46.1 | Average | 54.0 | 7.9 | V |

CH177

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3157.0 | 59.5 | Peak | 88.2 | 28.7 | V |
| 3180.0 | 45.5 | RMS | 68.2 | 22.6 | V |
| 17811.0 | 41.0 | Average | 54.0 | 13.0 | V |
| 17842.4 | 52.0 | Peak | 74.0 | 22.0 | H |
| 39660.6 | 46.1 | Average | 54.0 | 7.9 | V |
| 39683.2 | 56.9 | Peak | 74.0 | 17.1 | V |

802.11n20, HT8, Chain A+B**CH169**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3218.5 | 45.5 | RMS | 68.2 | 22.7 | V |
| 3219.0 | 59.0 | Peak | 88.2 | 29.2 | V |
| 17538.4 | 48.9 | RMS | 68.2 | 19.3 | V |
| 17548.1 | 57.5 | Peak | 88.2 | 30.7 | V |
| 39651.9 | 56.6 | Peak | 74.0 | 17.4 | H |
| 39657.2 | 44.7 | Average | 54.0 | 9.3 | V |

CH173

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3376.5 | 46.1 | RMS | 68.2 | 22.1 | V |
| 3376.5 | 59.6 | Peak | 88.2 | 28.6 | V |
| 17810.5 | 52.7 | Peak | 74.0 | 21.3 | V |
| 17820.7 | 40.9 | Average | 54.0 | 13.2 | V |
| 39628.3 | 46.4 | Average | 54.0 | 7.7 | V |
| 39631.2 | 56.9 | Peak | 74.0 | 17.1 | H |

CH177

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3377.0 | 46.0 | RMS | 68.2 | 22.1 | H |
| 3378.5 | 59.0 | Peak | 88.2 | 29.2 | V |
| 17063.8 | 53.4 | Peak | 88.2 | 34.8 | V |
| 17068.1 | 40.9 | RMS | 68.2 | 27.3 | V |
| 39562.2 | 57.0 | Peak | 74.0 | 17.0 | V |
| 39591.1 | 46.5 | Average | 54.0 | 7.5 | H |

802.11n40, HT0, Chain A**CH167**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3311.5 | 58.6 | Peak | 88.2 | 29.6 | H |
| 3313.0 | 45.8 | RMS | 68.2 | 22.4 | V |
| 17073.0 | 41.6 | RMS | 68.2 | 26.6 | H |
| 17075.4 | 53.3 | Peak | 88.2 | 34.9 | H |
| 39626.3 | 46.4 | Average | 54.0 | 7.6 | H |
| 39656.2 | 56.5 | Peak | 74.0 | 17.4 | V |

CH175

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3375.0 | 58.5 | Peak | 88.2 | 29.7 | V |
| 3376.5 | 46.0 | RMS | 68.2 | 22.2 | H |
| 10360.4 | 47.8 | RMS | 68.2 | 20.4 | H |
| 10360.4 | 58.0 | Peak | 88.2 | 30.2 | V |
| 39620.6 | 45.9 | Average | 54.0 | 8.1 | H |
| 39690.5 | 56.7 | Peak | 74.0 | 17.3 | H |

802.11n40, HT0, Chain B

CH167

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3375.5 | 59.2 | Peak | 88.2 | 29.0 | V |
| 3376.0 | 46.2 | RMS | 68.2 | 22.0 | H |
| 10361.4 | 49.2 | RMS | 68.2 | 19.0 | H |
| 10361.4 | 58.6 | Peak | 88.2 | 29.6 | H |
| 39632.1 | 46.8 | Average | 54.0 | 7.2 | H |
| 39700.1 | 57.2 | Peak | 74.0 | 16.8 | H |

CH175

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3373.5 | 58.1 | Peak | 88.2 | 30.1 | V |
| 3374.0 | 46.0 | RMS | 68.2 | 22.2 | H |
| 10364.8 | 47.0 | RMS | 68.2 | 21.1 | H |
| 10364.8 | 58.5 | Peak | 88.2 | 29.7 | H |
| 20704.9 | 47.4 | Peak | 74.0 | 26.6 | V |
| 20720.0 | 36.2 | Average | 54.0 | 17.8 | H |

802.11n40, HT8, Chain A+B

CH167

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3377.0 | 58.2 | Peak | 88.2 | 30.0 | V |
| 3377.5 | 46.1 | RMS | 68.2 | 22.1 | V |
| 10365.3 | 65.5 | Peak | 88.2 | 22.7 | V |
| 10366.2 | 53.8 | RMS | 68.2 | 14.4 | V |
| 39609.9 | 46.6 | Average | 54.0 | 7.4 | H |
| 39698.7 | 57.4 | Peak | 74.0 | 16.6 | V |

CH175

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3376.0 | 46.1 | RMS | 68.2 | 22.1 | H |
| 3376.5 | 58.4 | Peak | 88.2 | 29.8 | V |
| 10360.9 | 55.1 | RMS | 68.2 | 13.1 | V |
| 10360.9 | 66.4 | Peak | 88.2 | 21.8 | V |
| 10366.2 | 62.8 | Peak | 88.2 | 25.5 | V |
| 10366.7 | 52.0 | RMS | 68.2 | 16.2 | V |
| 20711.0 | 46.8 | Peak | 74.0 | 27.2 | V |
| 20719.5 | 36.7 | Average | 54.0 | 17.3 | V |

802.11ax**802.11ax20, HE0, Chain A****CH169**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3388.5 | 45.5 | RMS | 68.2 | 22.7 | H |
| 3389.0 | 58.4 | Peak | 88.2 | 29.8 | V |
| 17085.0 | 41.3 | RMS | 68.2 | 26.9 | V |
| 17085.5 | 53.0 | Peak | 88.2 | 35.2 | V |
| 23373.9 | 47.4 | Peak | 88.2 | 40.9 | H |
| 23379.6 | 37.5 | RMS | 68.2 | 30.7 | V |

CH173

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3303.0 | 58.6 | Peak | 88.2 | 29.6 | H |
| 3305.5 | 45.9 | RMS | 68.2 | 22.3 | V |
| 17781.0 | 52.7 | Peak | 74.0 | 21.3 | V |
| 17825.0 | 41.1 | Average | 54.0 | 12.9 | H |
| 23493.4 | 47.3 | Peak | 88.2 | 40.9 | H |
| 23494.8 | 35.9 | RMS | 68.2 | 32.3 | V |

CH177

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3369.0 | 59.1 | Peak | 88.2 | 29.1 | V |
| 3370.5 | 46.2 | RMS | 68.2 | 22.0 | V |
| 17054.1 | 53.0 | Peak | 88.2 | 35.2 | V |
| 17056.0 | 41.1 | RMS | 68.2 | 27.1 | H |
| 23442.8 | 35.4 | RMS | 68.2 | 32.8 | H |
| 23445.2 | 48.0 | Peak | 88.2 | 40.2 | V |

802.11ax20, HE0, Chain B**CH169**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3387.5 | 57.6 | Peak | 88.2 | 30.6 | V |
| 3388.0 | 45.4 | RMS | 68.2 | 22.8 | H |
| 17102.9 | 53.2 | Peak | 88.2 | 35.0 | V |
| 17109.7 | 41.6 | RMS | 68.2 | 26.6 | V |
| 23348.9 | 47.3 | Peak | 88.2 | 40.9 | H |
| 23380.0 | 39.3 | RMS | 68.2 | 28.9 | V |

CH173

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3295.5 | 58.8 | Peak | 88.2 | 29.4 | H |
| 3296.5 | 46.2 | RMS | 68.2 | 22.0 | V |
| 17815.8 | 41.5 | Average | 54.0 | 12.5 | H |
| 17828.4 | 53.0 | Peak | 74.0 | 21.0 | H |
| 23459.8 | 40.3 | RMS | 68.2 | 27.9 | V |
| 23459.8 | 47.6 | Peak | 88.2 | 40.6 | V |

CH177

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3376.5 | 58.7 | Peak | 88.2 | 29.5 | H |
| 3378.5 | 46.0 | RMS | 68.2 | 22.2 | H |
| 17788.3 | 41.0 | Average | 54.0 | 13.1 | H |
| 17833.7 | 52.1 | Peak | 74.0 | 21.9 | V |
| 23539.2 | 45.9 | Peak | 88.2 | 42.3 | H |
| 23539.6 | 38.6 | RMS | 68.2 | 29.6 | V |

802.11ax20, HE0, Chain A+B

CH169

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3398.0 | 58.0 | Peak | 88.2 | 30.2 | H |
| 3398.5 | 45.6 | RMS | 68.2 | 22.6 | V |
| 17755.0 | 53.5 | Peak | 74.0 | 20.5 | H |
| 17812.5 | 41.9 | Average | 54.0 | 12.1 | V |
| 23355.9 | 47.1 | Peak | 88.2 | 41.1 | H |
| 23379.6 | 37.4 | RMS | 68.2 | 30.8 | V |

CH173

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 6203.4 | 42.4 | RMS | 68.2 | 25.8 | V |
| 6204.3 | 56.0 | Peak | 88.2 | 32.2 | V |
| 16444.2 | 41.0 | RMS | 68.2 | 27.2 | H |
| 16446.6 | 53.3 | Peak | 88.2 | 34.9 | V |
| 23481.6 | 35.8 | RMS | 68.2 | 32.4 | V |
| 23482.5 | 47.4 | Peak | 88.2 | 40.8 | V |

CH177

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3344.0 | 46.1 | RMS | 68.2 | 22.1 | H |
| 3344.0 | 59.5 | Peak | 88.2 | 28.7 | H |
| 17142.1 | 41.7 | RMS | 68.2 | 26.5 | V |
| 17159.0 | 53.3 | Peak | 88.2 | 34.9 | H |
| 27825.9 | 37.7 | RMS | 68.2 | 30.5 | V |
| 27827.3 | 49.9 | Peak | 88.2 | 38.3 | V |

802.11ax40, HE0, Chain A**CH167**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3380.5 | 45.8 | RMS | 68.2 | 22.4 | V |
| 3380.5 | 58.5 | Peak | 88.2 | 29.7 | H |
| 14669.4 | 39.0 | RMS | 68.2 | 29.2 | V |
| 14670.3 | 51.5 | Peak | 88.2 | 36.7 | H |
| 39615.2 | 46.1 | Average | 54.0 | 7.9 | V |
| 39701.1 | 57.0 | Peak | 74.0 | 17.0 | H |

CH175

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBµV/m | --- | dBµV/m | dB | --- |
| 3305.5 | 58.5 | Peak | 88.2 | 29.8 | V |
| 3308.0 | 46.0 | RMS | 68.2 | 22.2 | H |
| 16868.5 | 53.8 | Peak | 88.2 | 34.4 | V |
| 16869.0 | 40.3 | RMS | 68.2 | 27.9 | V |
| 39596.4 | 57.2 | Peak | 74.0 | 16.8 | H |
| 39677.4 | 45.9 | Average | 54.0 | 8.1 | V |

802.11ax40, HE0, Chain B

CH167

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3392.0 | 45.4 | RMS | 68.2 | 22.8 | V |
| 3392.5 | 58.6 | Peak | 88.2 | 29.6 | H |
| 10342.5 | 56.1 | Peak | 88.2 | 32.1 | H |
| 10343.5 | 47.6 | RMS | 68.2 | 20.6 | H |
| 39506.3 | 57.1 | Peak | 74.0 | 16.9 | H |
| 39523.6 | 46.3 | Average | 54.0 | 7.7 | H |

CH175

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3386.0 | 58.4 | Peak | 88.2 | 29.8 | H |
| 3386.5 | 45.9 | RMS | 68.2 | 22.3 | V |
| 10343.0 | 49.6 | RMS | 68.2 | 18.6 | H |
| 10343.5 | 58.0 | Peak | 88.2 | 30.2 | H |
| 20719.5 | 36.4 | Average | 54.0 | 17.6 | H |
| 20721.9 | 46.0 | Peak | 74.0 | 28.0 | V |

802.11ax40, HE0, Chain A+B

CH167

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 6162.0 | 55.9 | Peak | 88.2 | 32.3 | H |
| 6164.6 | 43.5 | RMS | 68.2 | 24.7 | H |
| 10342.1 | 54.6 | Peak | 88.2 | 33.6 | H |
| 10343.0 | 47.7 | RMS | 68.2 | 20.5 | V |
| 25949.4 | 37.1 | RMS | 68.2 | 31.1 | H |
| 25952.2 | 49.2 | Peak | 88.2 | 39.0 | H |

CH175

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3238.5 | 45.5 | RMS | 68.2 | 22.7 | H |
| 3238.5 | 59.7 | Peak | 88.2 | 28.5 | V |
| 17139.2 | 41.5 | RMS | 68.2 | 26.7 | H |
| 17140.2 | 53.5 | Peak | 88.2 | 34.8 | V |
| 20699.2 | 46.5 | Peak | 74.0 | 27.5 | V |
| 20719.5 | 36.8 | Average | 54.0 | 17.2 | V |

802.11ax80, HE0, Chain A

CH171

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3363.0 | 59.6 | Peak | 88.2 | 28.6 | H |
| 3363.5 | 46.0 | RMS | 68.2 | 22.2 | H |
| 17146.4 | 42.2 | RMS | 68.2 | 26.0 | H |
| 17146.4 | 53.1 | Peak | 88.2 | 35.1 | V |
| 39678.4 | 45.9 | Average | 54.0 | 8.1 | H |
| 39706.4 | 56.0 | Peak | 74.0 | 17.9 | V |

802.11ax80, HE0, Chain B

CH171

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3371.5 | 46.1 | RMS | 68.2 | 22.1 | V |
| 3371.5 | 59.1 | Peak | 88.2 | 29.1 | V |
| 11613.7 | 49.7 | Peak | 74.0 | 24.3 | V |
| 11634.0 | 39.7 | Average | 54.0 | 14.3 | V |
| 39625.4 | 45.8 | Average | 54.0 | 8.2 | V |
| 39707.3 | 56.5 | Peak | 74.0 | 17.5 | V |

802.11ax80, HE0, Chain A+B

CH171

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBμV/m | --- | dBμV/m | dB | --- |
| 3400.0 | 45.8 | RMS | 68.2 | 22.4 | V |
| 3400.0 | 58.7 | Peak | 88.2 | 29.5 | H |
| 16148.4 | 39.9 | Average | 54.0 | 14.1 | V |
| 16148.8 | 52.0 | Peak | 74.0 | 22.0 | V |
| 39605.1 | 56.5 | Peak | 74.0 | 17.4 | H |
| 39640.3 | 45.5 | Average | 54.0 | 8.5 | V |

802.11ax160, HE0, Chain A

CH163

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBμV/m | --- | dBμV/m | dB | --- |
| 6047.8 | 47.8 | RMS | 68.2 | 20.4 | H |
| 6050.5 | 58.9 | Peak | 88.2 | 29.3 | H |
| 11474.0 | 42.1 | Average | 54.0 | 11.9 | H |
| 11474.5 | 49.9 | Peak | 74.0 | 24.1 | H |
| 23192.6 | 36.3 | RMS | 68.2 | 31.9 | V |
| 23195.4 | 48.3 | Peak | 88.2 | 39.9 | V |

802.11ax160, HE0, Chain B

CH163

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBμV/m | --- | dBμV/m | dB | --- |
| 5424.8 | 59.0 | Peak | 74.0 | 15.0 | H |
| 5425.2 | 48.5 | Average | 54.0 | 5.5 | H |
| 11474.0 | 50.2 | Peak | 74.0 | 23.8 | V |
| 11474.0 | 41.2 | Average | 54.0 | 12.8 | H |
| 23212.9 | 35.9 | RMS | 68.2 | 32.3 | V |
| 23212.9 | 48.4 | Peak | 88.2 | 39.8 | H |

802.11ax160, HE0, Chain A+B

CH163

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 6047.8 | 56.9 | Peak | 88.2 | 31.3 | H |
| 6048.7 | 47.2 | RMS | 68.2 | 21.0 | H |
| 11474.0 | 50.0 | Peak | 74.0 | 24.0 | V |
| 11474.0 | 40.9 | Average | 54.0 | 13.1 | V |
| 23319.1 | 35.8 | RMS | 68.2 | 32.4 | H |
| 23326.7 | 47.8 | Peak | 88.2 | 40.4 | V |

802.11ac

802.11ac80, VHT0, Chain A

CH171

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|------------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3396.0 | 45.7 | RMS | 68.2 | 22.5 | H |
| 3396.0 | 58.4 | Peak | 88.2 | 29.8 | V |
| 7916.2 | 47.5 | Peak | 88.2 | 40.7 | V |
| 7916.7 | 35.2 | RMS | 68.2 | 33.0 | H |
| 39603.2 | 46.0 | Average | 54.0 | 8.0 | H |
| 39611.4 | 56.8 | Peak | 74.0 | 17.2 | V |

802.11ac80, VHT0, Chain B**CH171**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBμV/m | --- | dBμV/m | dB | --- |
| 5547.2 | 57.0 | Peak | 88.2 | 31.2 | H |
| 5548.1 | 45.1 | RMS | 68.2 | 23.1 | H |
| 17137.7 | 53.9 | Peak | 88.2 | 34.3 | H |
| 17138.2 | 41.8 | RMS | 68.2 | 26.4 | H |
| 30388.5 | 50.7 | Peak | 88.2 | 37.5 | H |
| 30458.9 | 38.4 | RMS | 68.2 | 29.8 | H |

802.11ac80, VHT0, Chain A+B**CH171**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBμV/m | --- | dBμV/m | dB | --- |
| 3197.0 | 59.4 | Peak | 88.2 | 28.8 | H |
| 3198.0 | 45.9 | RMS | 68.2 | 22.3 | V |
| 17130.0 | 41.6 | RMS | 68.2 | 26.6 | V |
| 17130.0 | 53.2 | Peak | 88.2 | 35.0 | V |
| 39568.0 | 45.7 | Average | 54.0 | 8.3 | H |
| 39579.1 | 56.5 | Peak | 74.0 | 17.5 | H |

802.11ac160, VHT0, Chain A**CH163**

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------|----------|--------|--------|-------|
| MHz | dBμV/m | --- | dBμV/m | dB | --- |
| 3100.0 | 45.5 | RMS | 68.2 | 22.7 | V |
| 3100.5 | 59.2 | Peak | 88.2 | 29.0 | H |
| 16694.0 | 53.4 | Peak | 88.2 | 34.8 | V |
| 16696.0 | 41.6 | RMS | 68.2 | 26.6 | H |
| 23259.6 | 39.6 | RMS | 68.2 | 28.6 | V |
| 23262.0 | 46.4 | Peak | 88.2 | 41.8 | H |

802.11ac160, VHT0, Chain B

CH163

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3368.0 | 46.1 | RMS | 68.2 | 22.1 | H |
| 3368.0 | 58.7 | Peak | 88.2 | 29.5 | H |
| 17789.3 | 53.2 | Peak | 74.0 | 20.8 | V |
| 17811.5 | 41.2 | Average | 54.0 | 12.8 | H |
| 23310.6 | 35.8 | RMS | 68.2 | 32.4 | V |
| 23310.6 | 47.7 | Peak | 88.2 | 40.5 | V |

802.11ac160, VHT0, Chain A+B

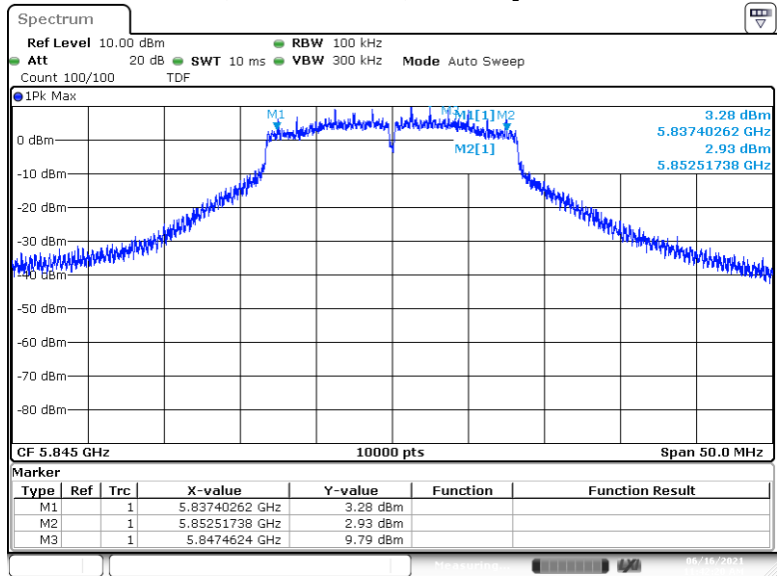
CH163

| Frequency | Level | Detector | Limit | Margin | Polar |
|-----------|--------------|----------|--------------|--------|-------|
| MHz | dB μ V/m | --- | dB μ V/m | dB | --- |
| 3378.0 | 46.0 | RMS | 68.2 | 22.2 | V |
| 3378.5 | 58.3 | Peak | 88.2 | 29.9 | H |
| 17123.2 | 53.8 | Peak | 88.2 | 34.4 | V |
| 17124.2 | 42.0 | RMS | 68.2 | 26.2 | H |
| 23260.1 | 38.6 | RMS | 68.2 | 29.6 | V |
| 23260.6 | 47.1 | Peak | 88.2 | 41.1 | V |

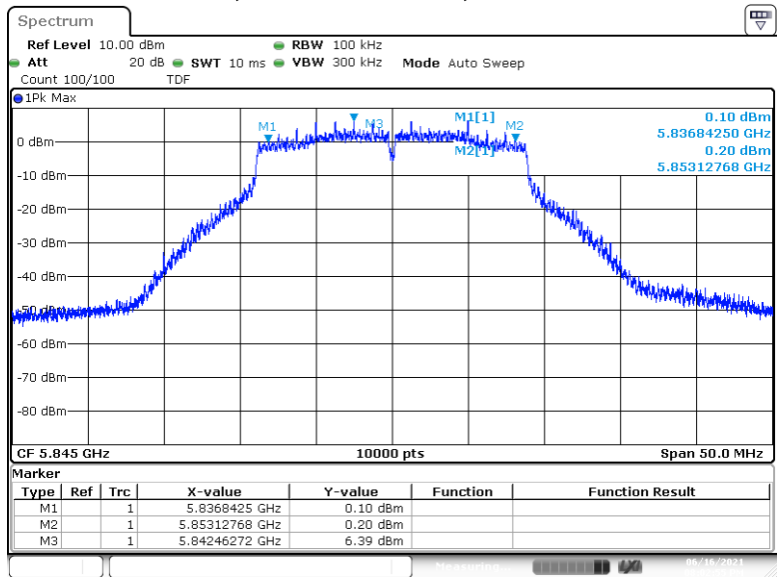
B.3 Test Results Screenshot

B.3.1 6dB Bandwidth

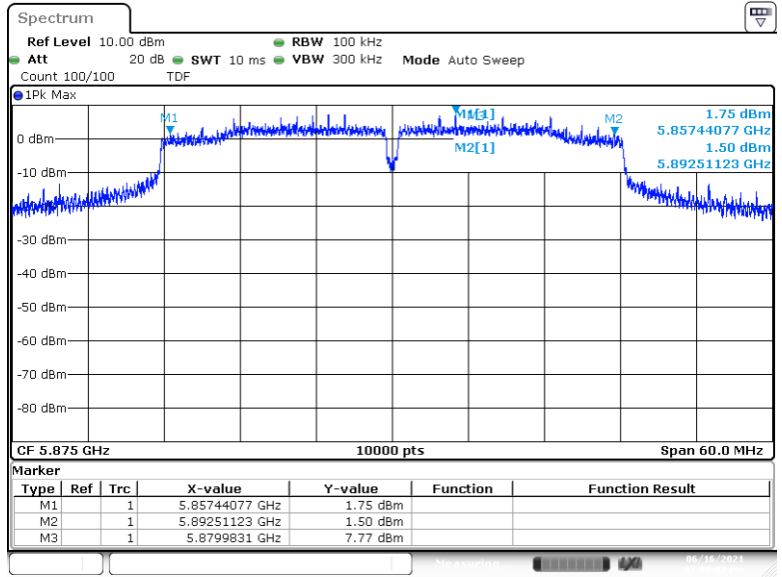
SISO-A, 802.11a, 6Mbps-CH169



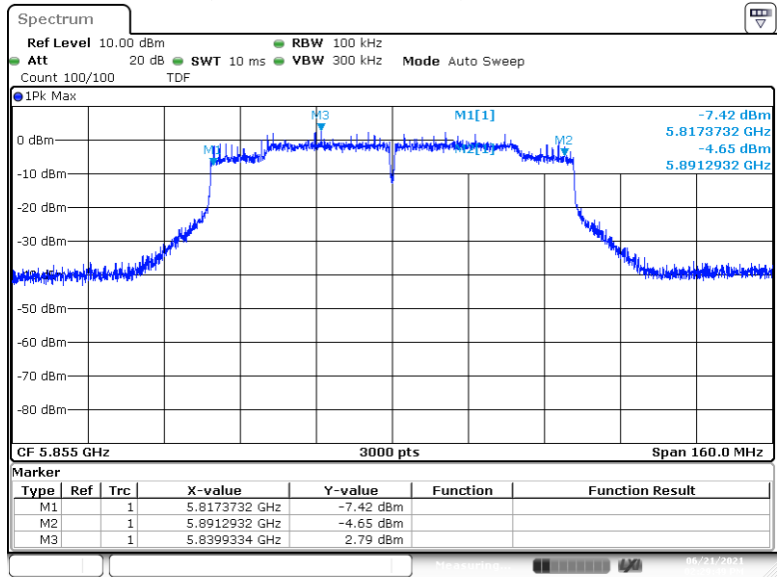
MIMO-B, 802.11n20, HT8-CH169



SISO-B, 802.11n40, HT0-CH175

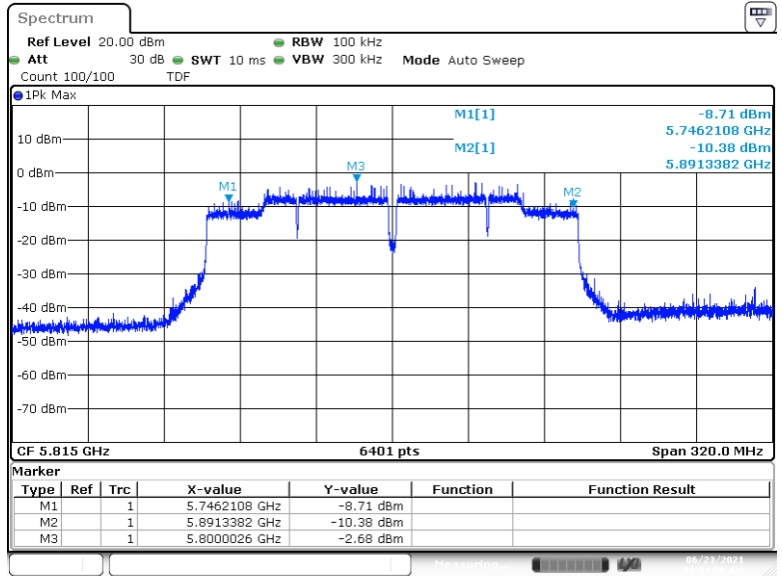


MIMO-A, 802.11ac80, VHT0-CH171



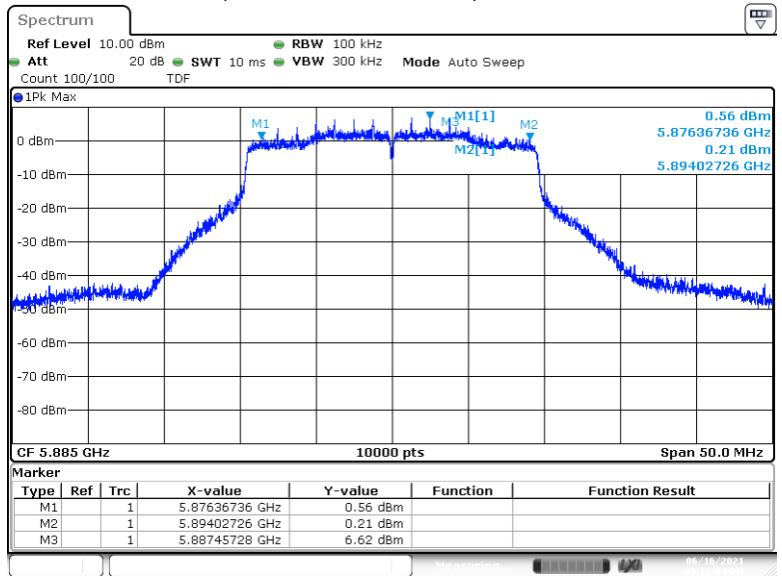
Date: 21 JUN 2021 14:29:49

MIMO-A, 802.11ac160, VHT0-CH163

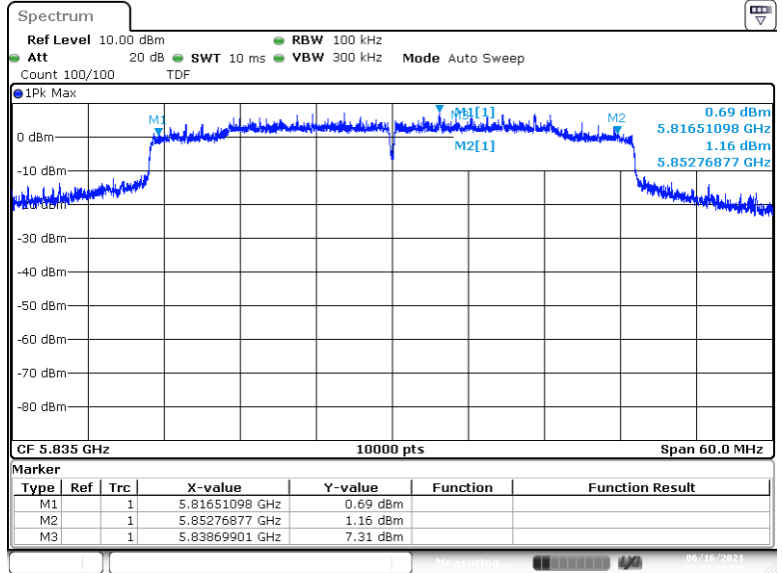


Date: 23 JUN 2021 09:04:50

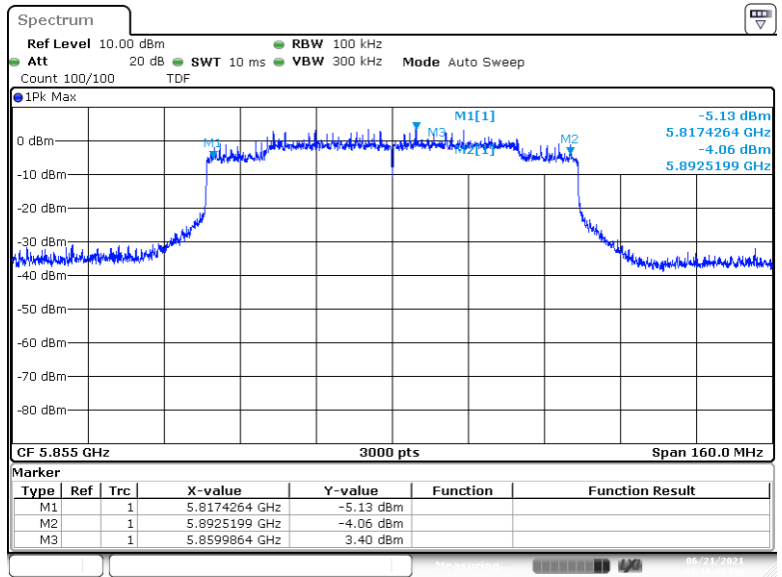
MIMO-A, 802.11ax20, HE0-CH177



SISO-A, 802.11ax40, HE0-CH167

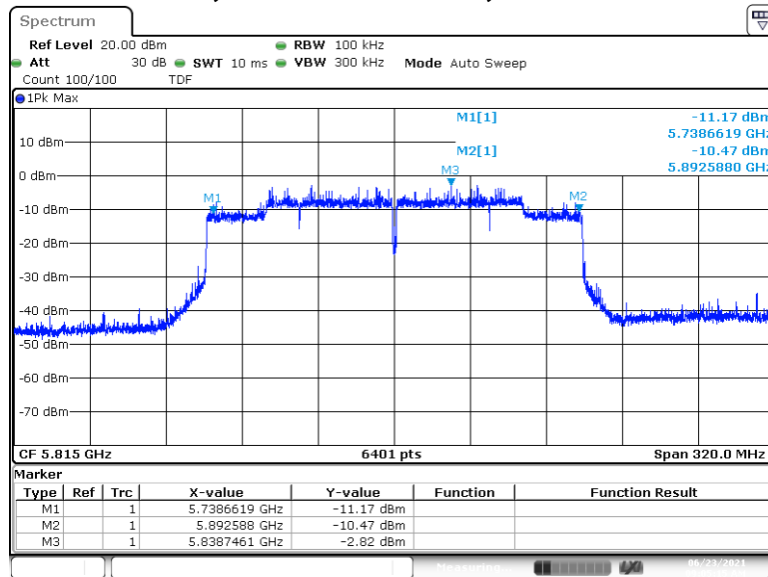


MIMO-A, 802.11ax80, HE0-CH171



Date: 21 JUN 2021 14:19:27

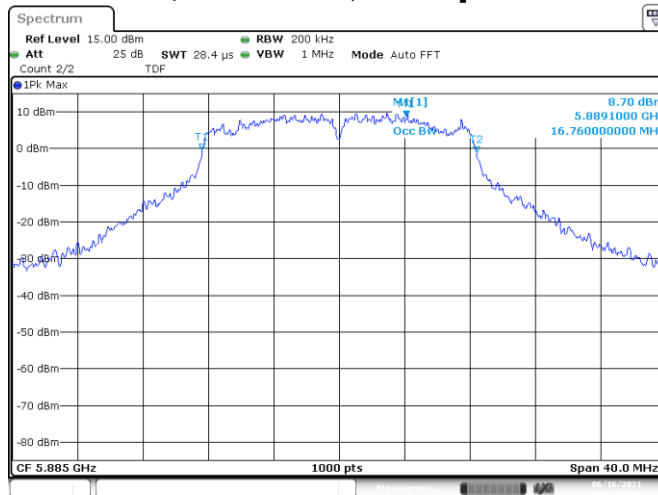
MIMO-A, 802.11ax160, HE0-CH163



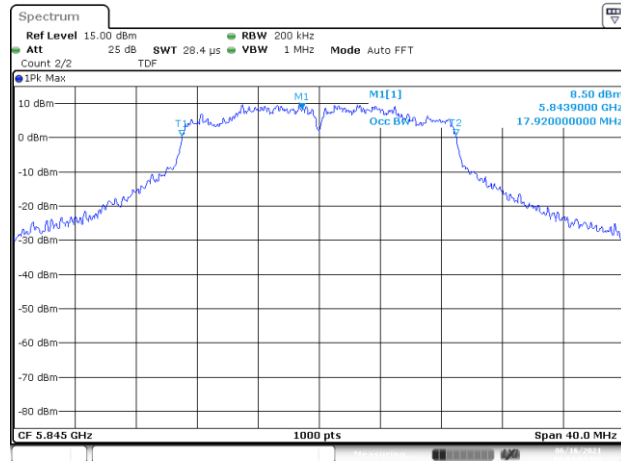
Date: 23 JUN 2021 09:05:16

B.3.2 99% Bandwidth

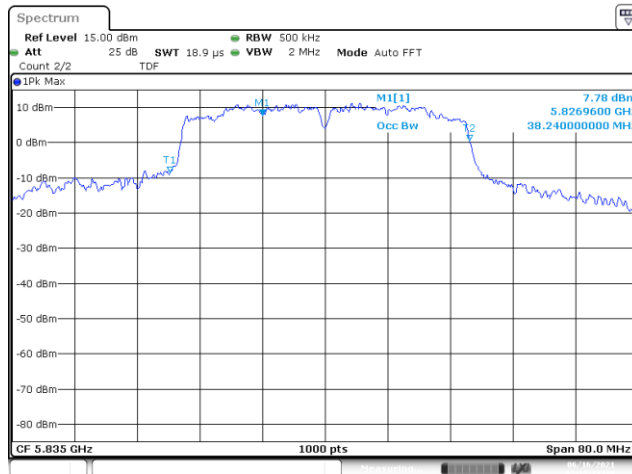
SISO-B, 802.11a, 6Mbps-CH177



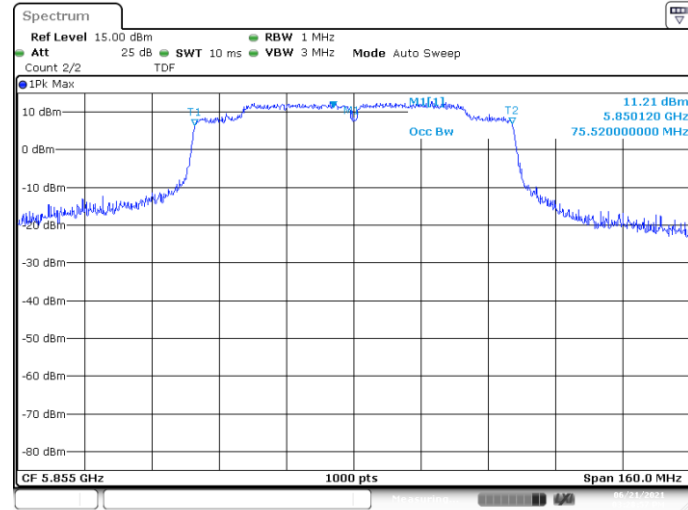
SISO-B, 802.11n20, HT0-CH169



SISO-A, 802.11n40, HT0-CH167

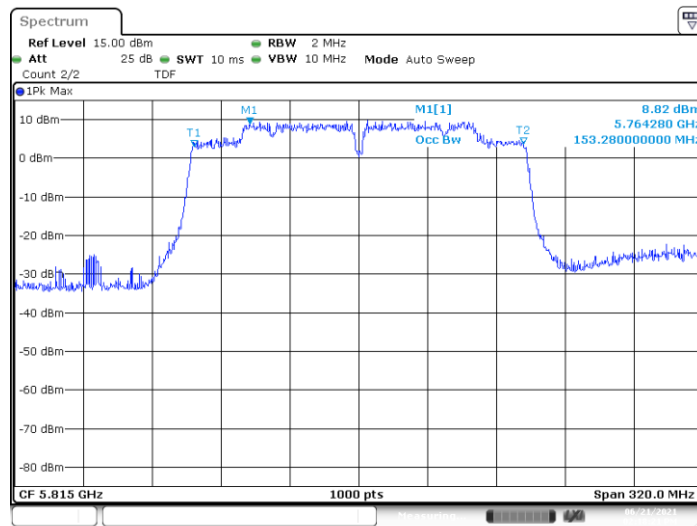


MIMO-B, 802.11ac80, VHT0-CH171



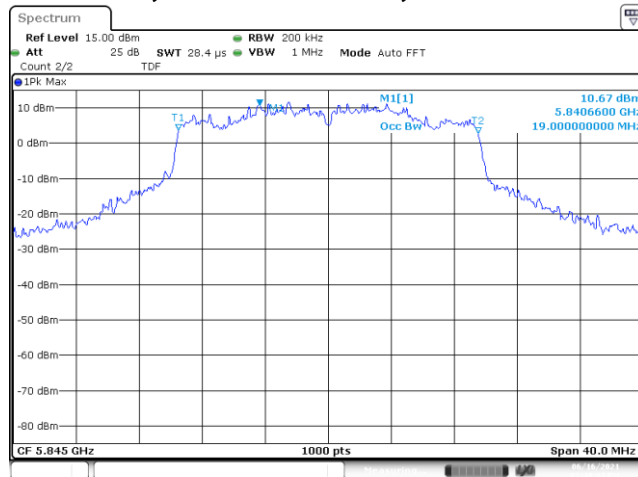
Date: 21.JUN.2021 15:28:57

MIMO-A, 802.11ac160, VHT0-CH163

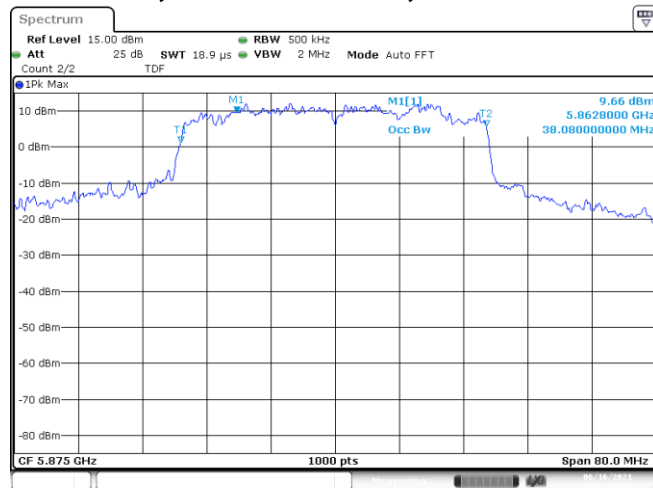


Date: 21.JUN.2021 14:18:21

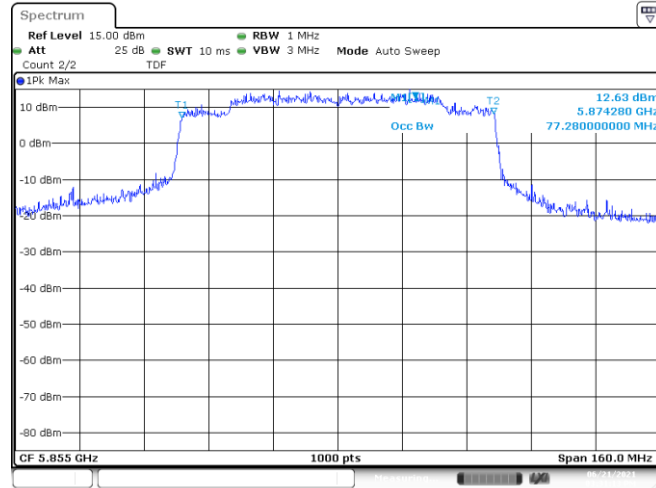
SISO-A, 802.11ax20, HE0-CH169



SISO-A, 802.11ax40, HE0-CH175

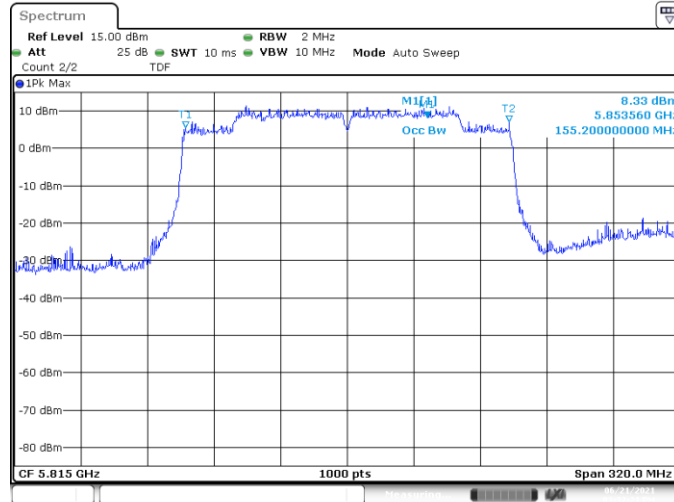


MIMO-B, 802.11ax80, HE0-CH171



Date: 21 JUN 2021 15:31:13

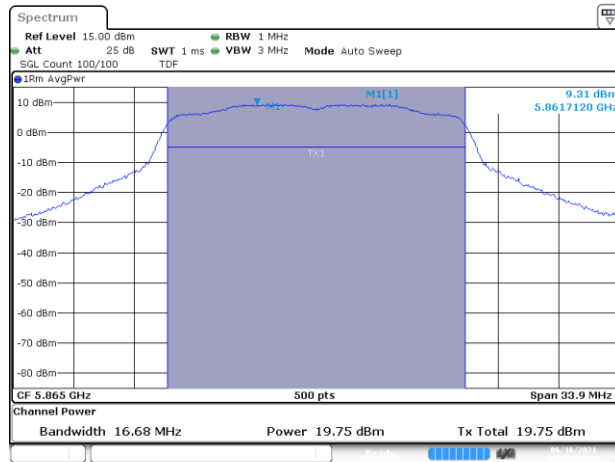
MIMO-B, 802.11ax160, HE0-CH163



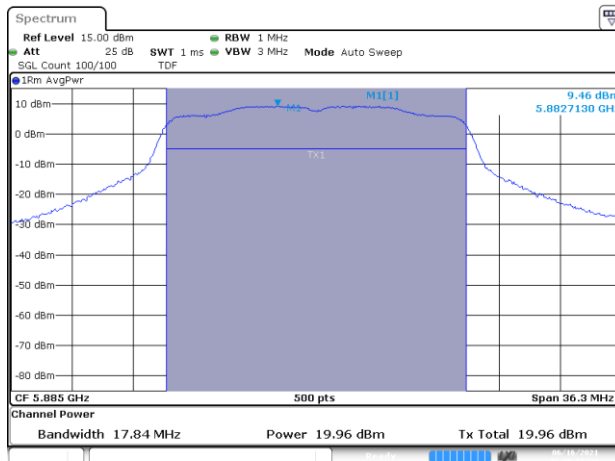
Date: 21 JUN 2021 15:32:22

B.3.3 Maximum output power

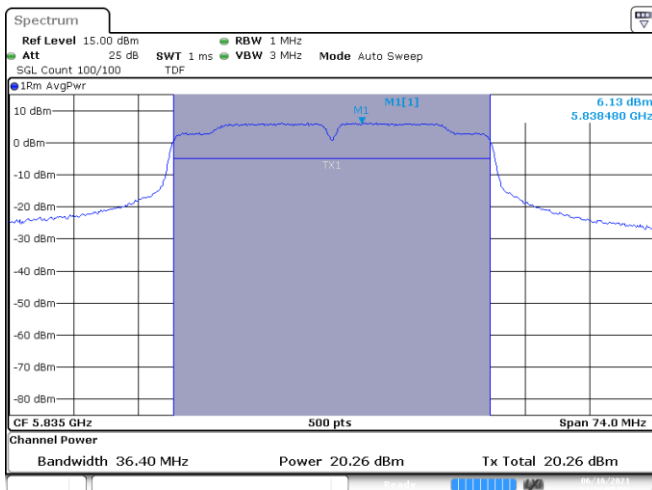
SISO-A, 802.11a, 6Mbps-CH-173



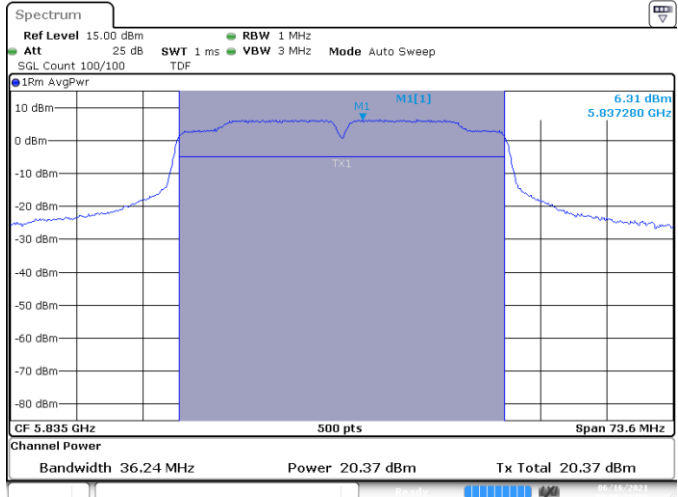
SISO-B, 802.11n20, HT0-CH-177



MIMO-A, 802.11n40, HT8-CH-167

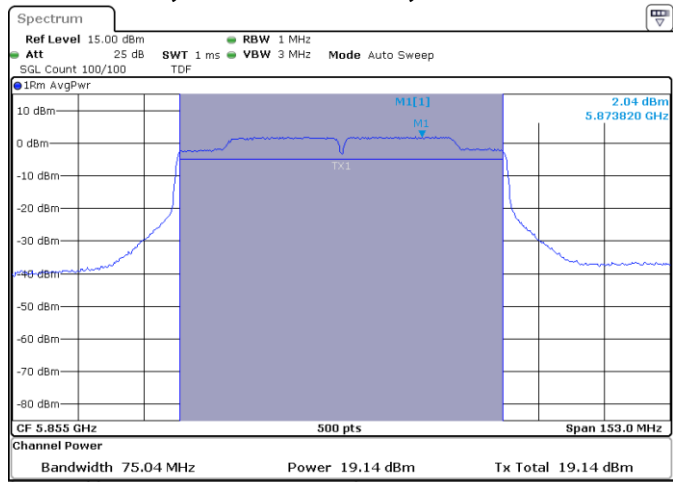


MIMO-B, 802.11n40, HT8-CH-167

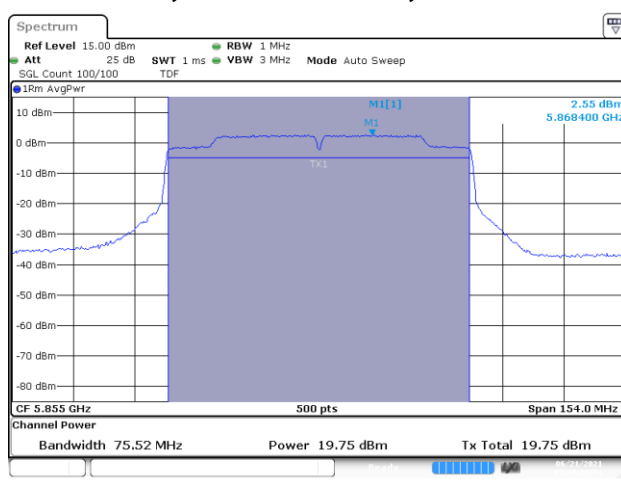


MIMO-A,802.11ac80, VHT0-CH171

MIMO-B,802.11ac80, VHT0-CH171

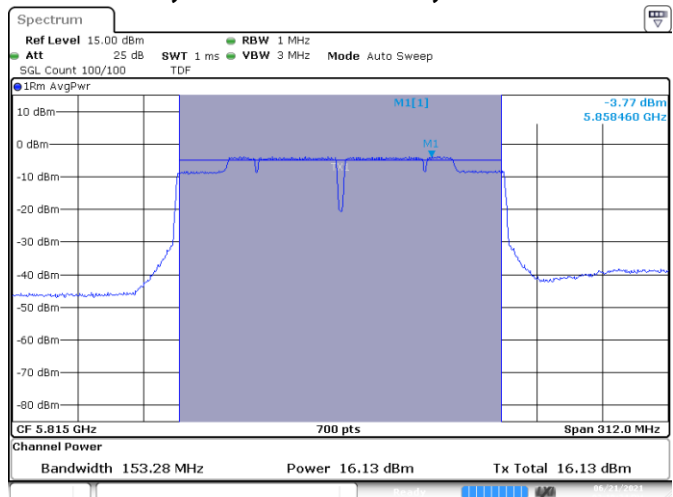


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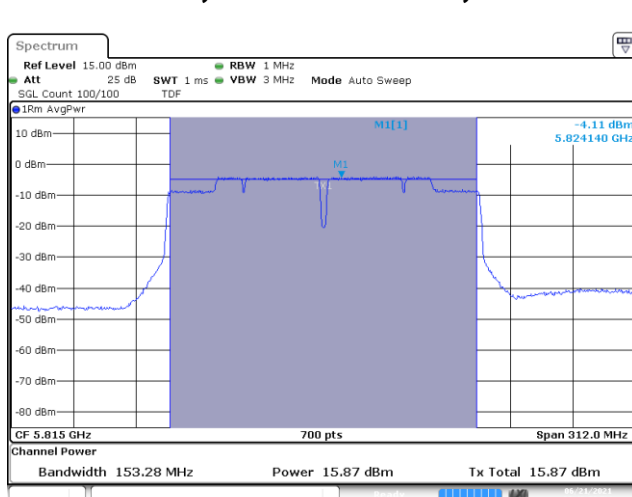


Date: 21.JUN.2021 15:44:44

MIMO-A,802.11ac160, VHT0-CH163 MIMO-B,802.11ac160, VHT0-CH163

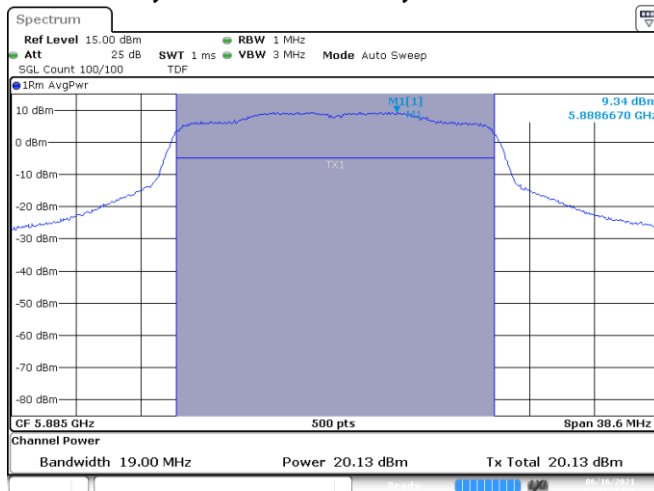


Date: 21.JUN.2021 14:18:24



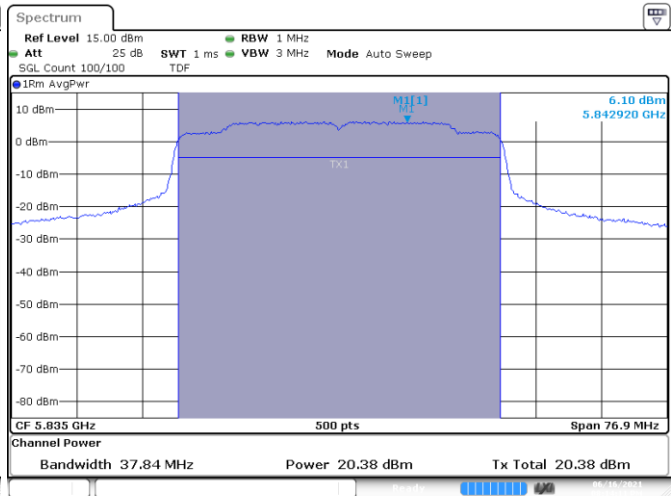
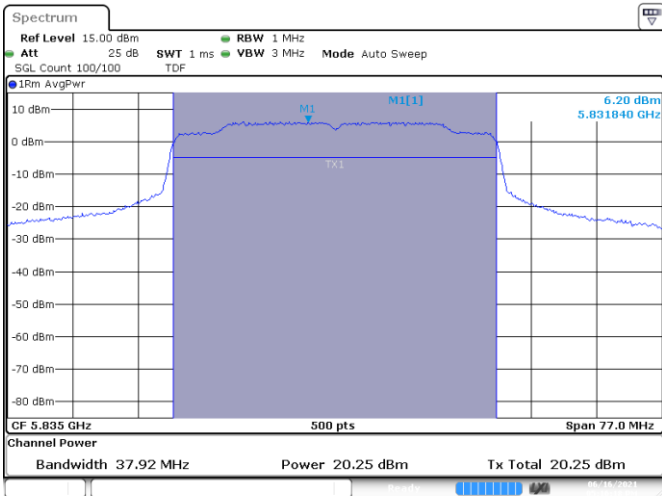
Date: 21.JUN.2021 15:49:00

SISO-A, 802.11ax20, HE0-CH-177



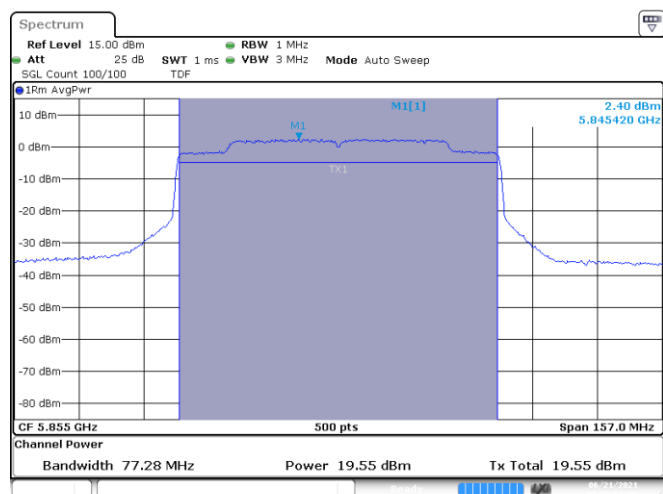
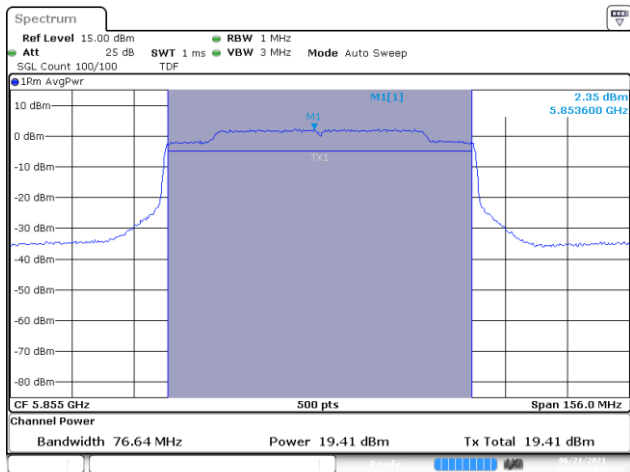
MIMO-A,802.11ax40,HE0-CH167

MIMO-B,802.11ax40,HE0-CH167



MIMO-A,802.11ax80,HE0-CH171

MIMO-B,802.11ax80,HE0-CH171

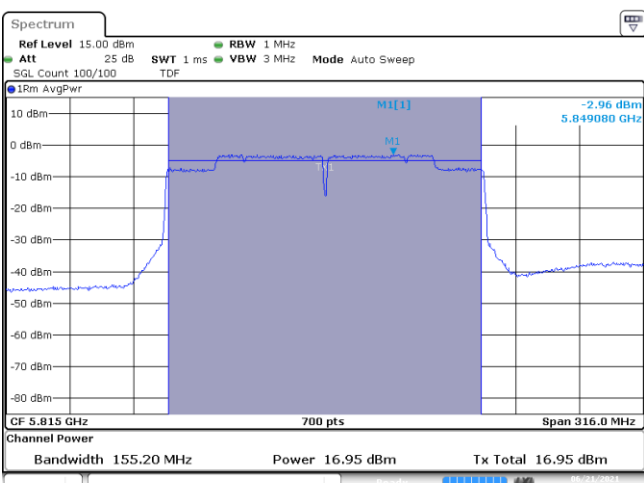
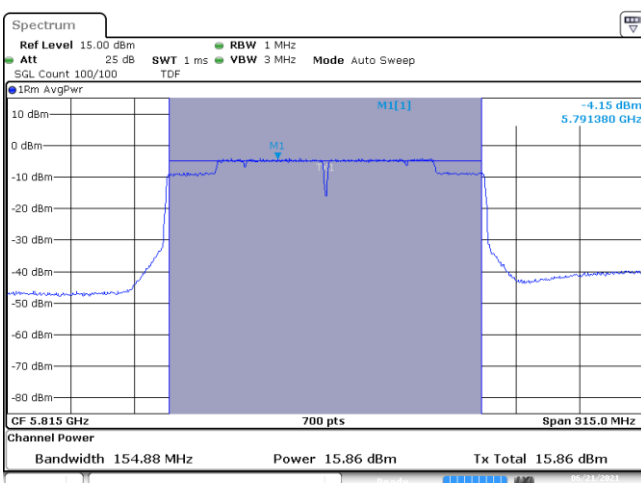


Date: 21.JUN.2021 14:19:32

Date: 21.JUN.2021 15:50:52

MIMO-A,802.11ax160,HE0-CH163

MIMO-B,802.11ax160,HE0-CH163

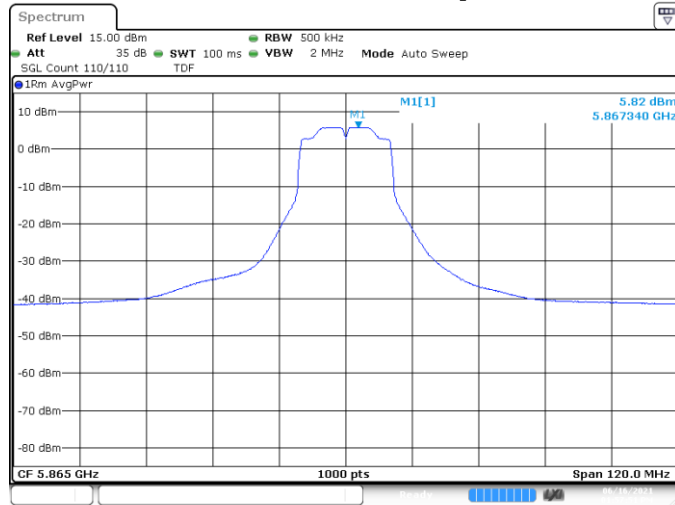


Date: 21.JUN.2021 14:28:52

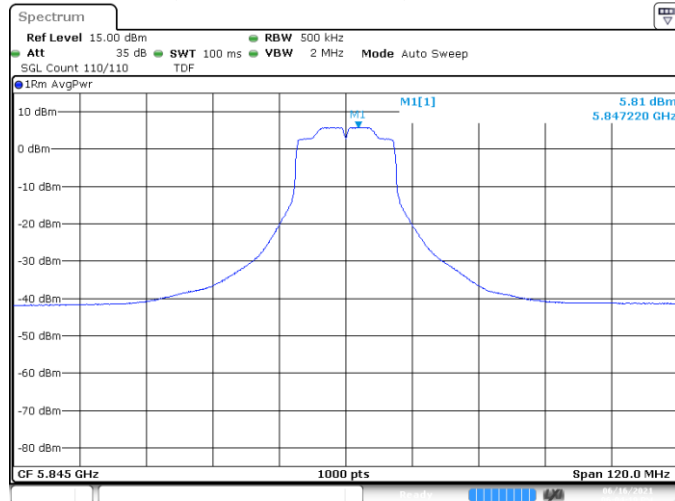
Date: 21.JUN.2021 15:32:24

B.3.4 Maximum Power Spectral Density (PSD)

SISO-A, 802.11a, 6Mbps-CH-173

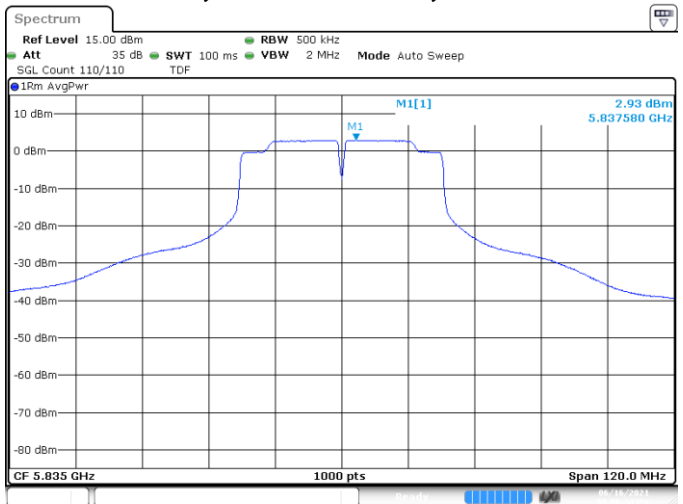
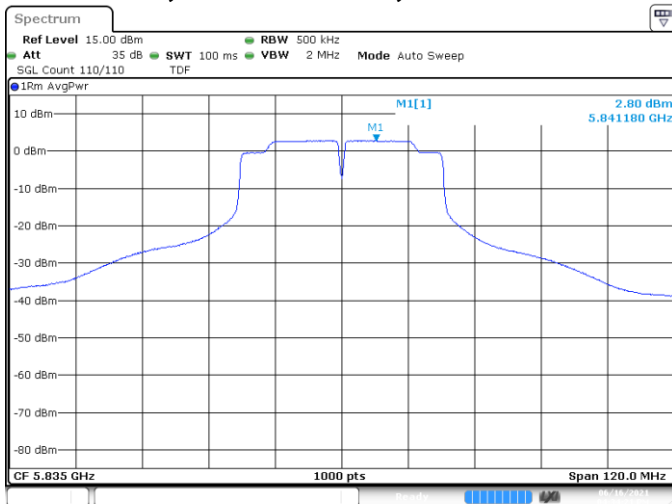


SISO-B, 802.11n20, HT0-CH-169



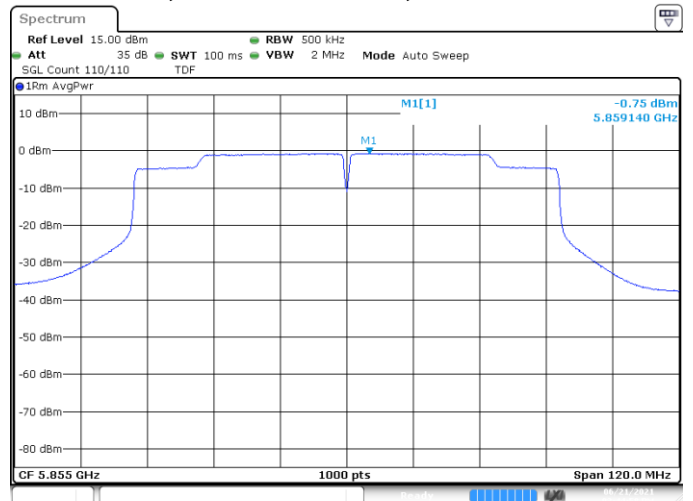
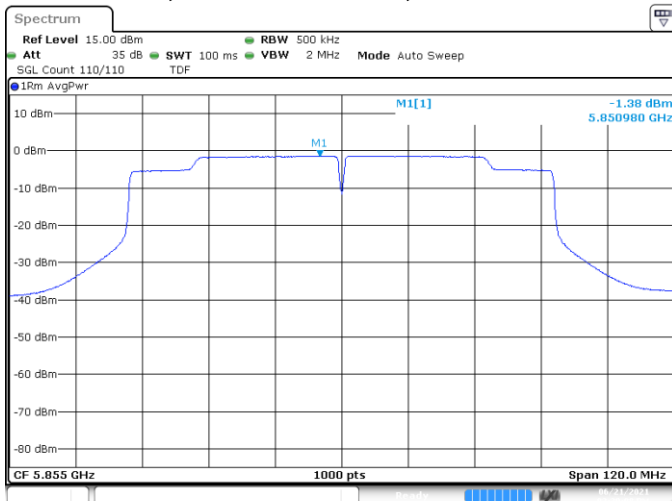
MIMO-A, 802.11n40, HT8-CH-167

MIMO-B, 802.11n40, HT8-CH-167



MIMO-A, 802.11ac80, VHT0-CH171

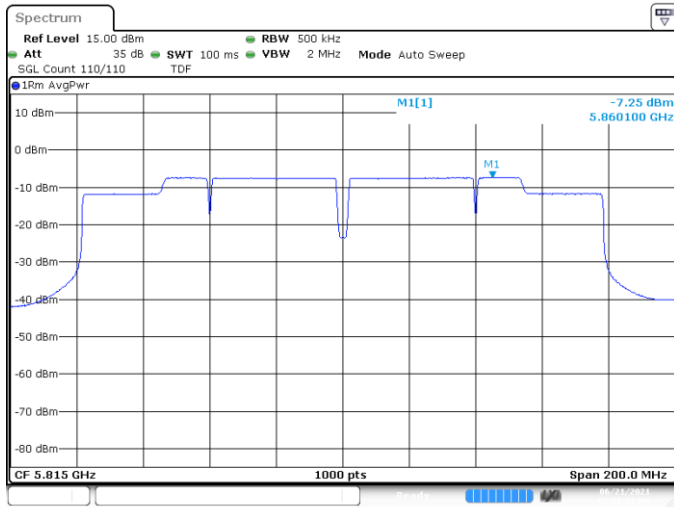
MIMO-B, 802.11ac80, VHT0-CH171



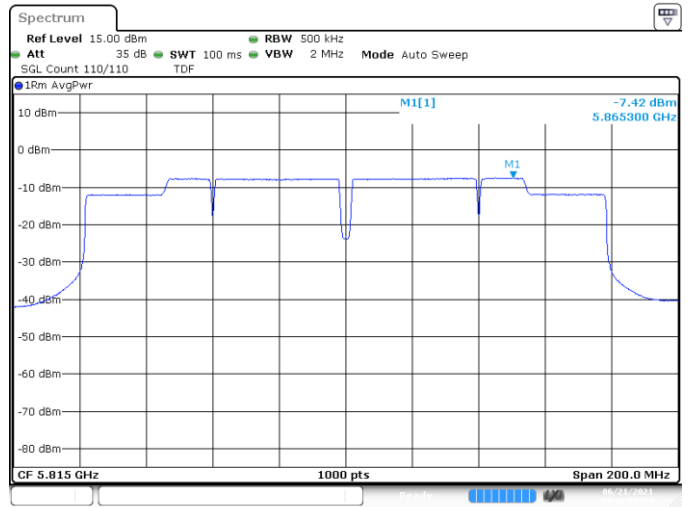
Date: 21 JUN 2021 14:30:03

Date: 21 JUN 2021 15:44:53

MIMO-A,802.11ac160,VHT0-CH163 MIMO-B,802.11ac160,VHT0-CH163

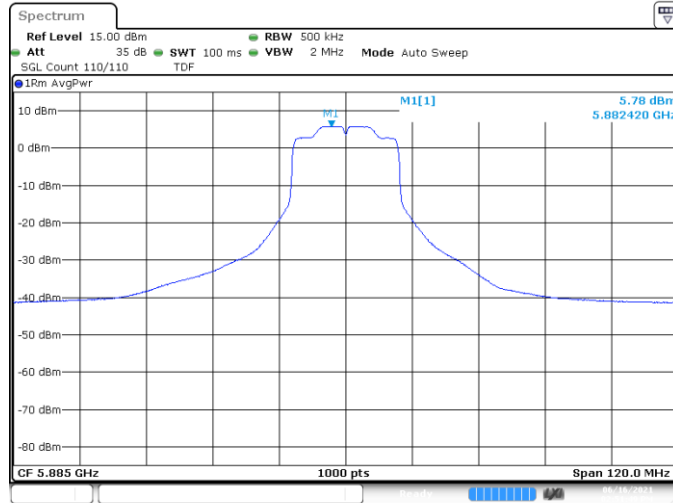


Date: 21.JUN.2021 14:18:38



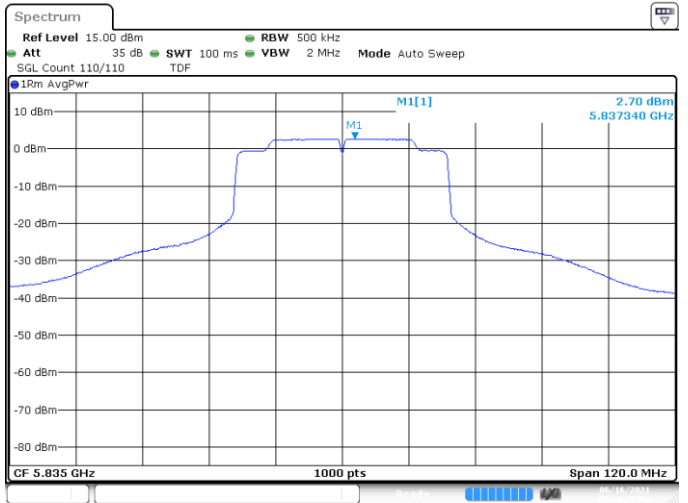
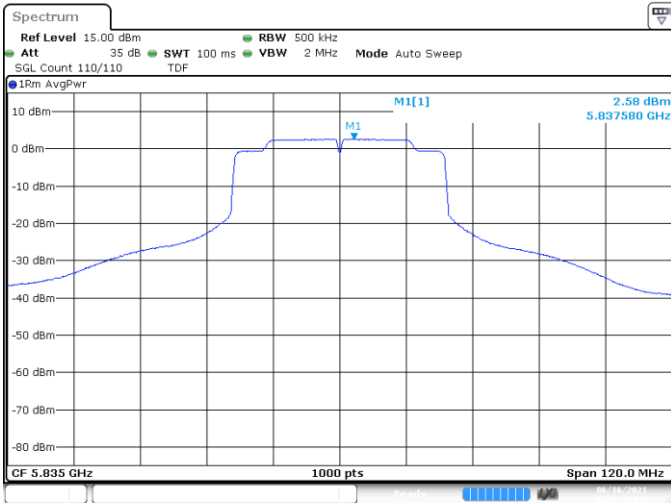
Date: 21.JUN.2021 15:49:13

SISO-A, 802.11ax20, HE0-CH-177



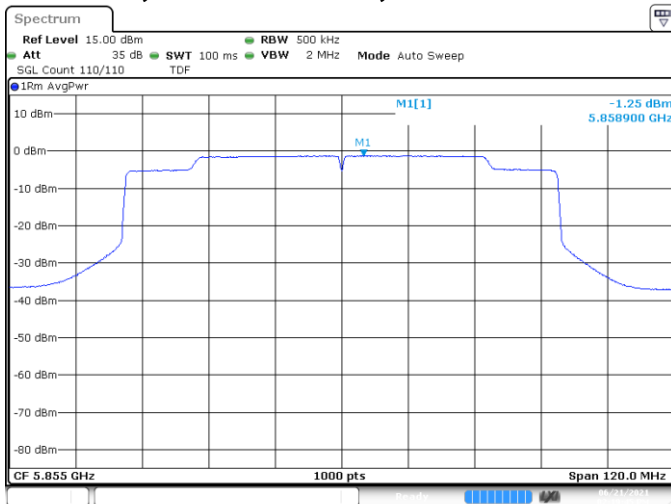
MIMO-A, 802.11ax40, HE0-CH-167

MIMO-B, 802.11ax40, HE0-CH-167

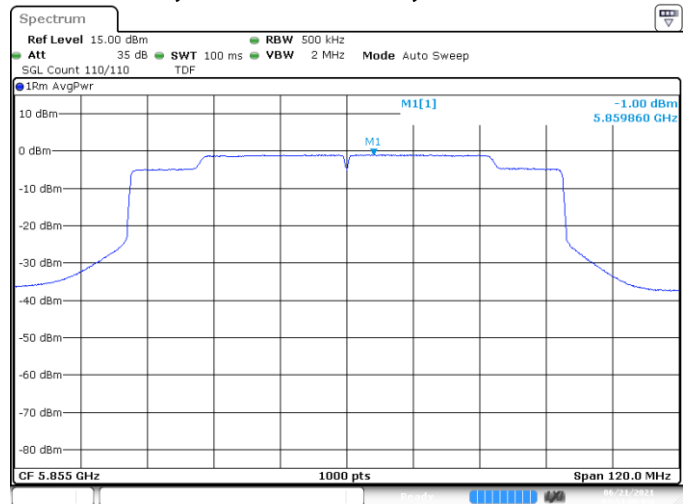


MIMO-A,802.11ax80,HE0-CH171

MIMO-B,802.11ax80,HE0-CH171



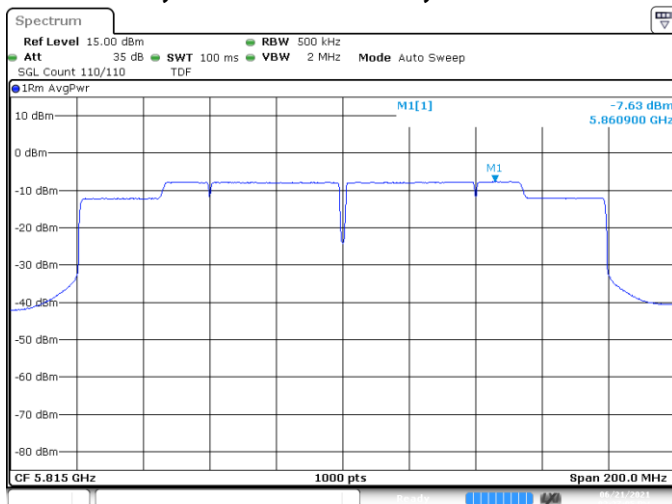
Date: 21.JUN.2021 14:19:46



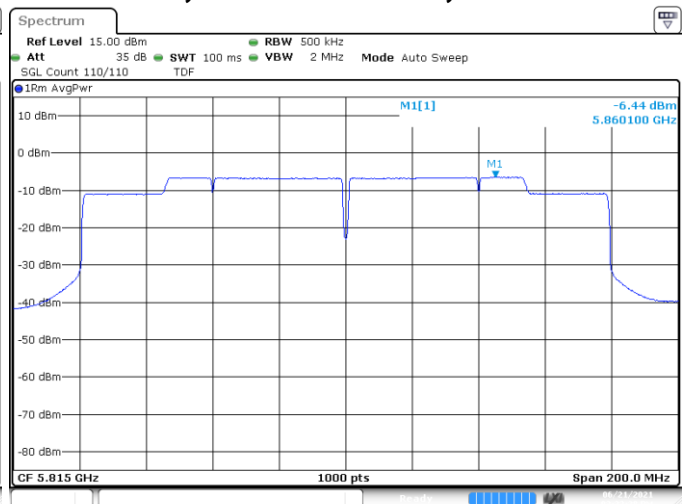
Date: 21.JUN.2021 15:51:05

MIMO-A,802.11ax160,HE0-CH163

MIMO-B,802.11ax160,HE0-CH163

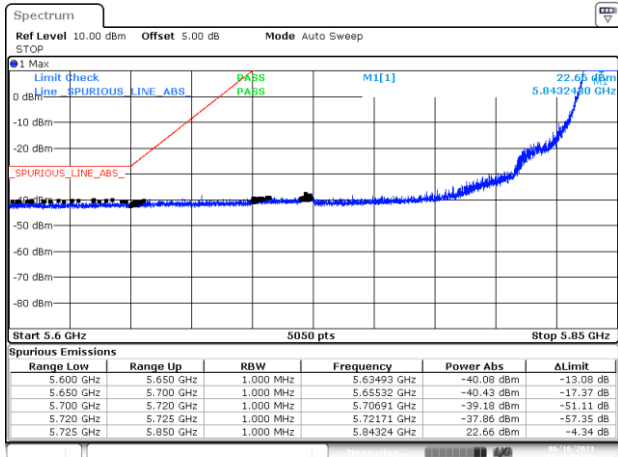


Date: 21.JUN.2021 14:27:05

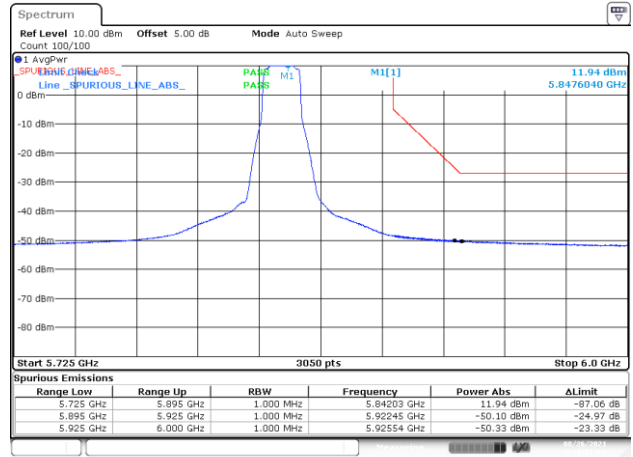


Date: 21.JUN.2021 15:32:38

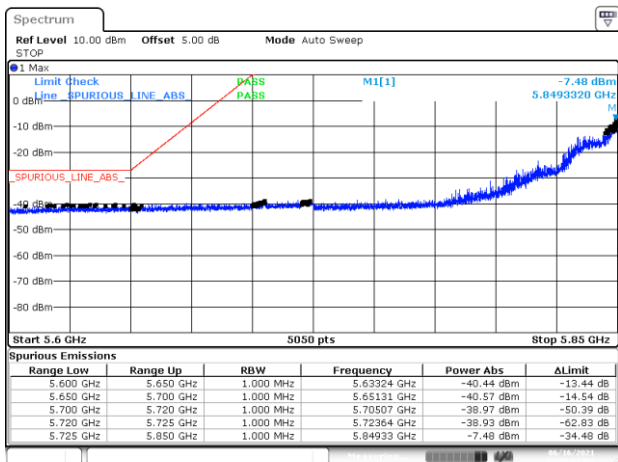
B.3.5 Undesirable emission limits : out of band (Conducted)



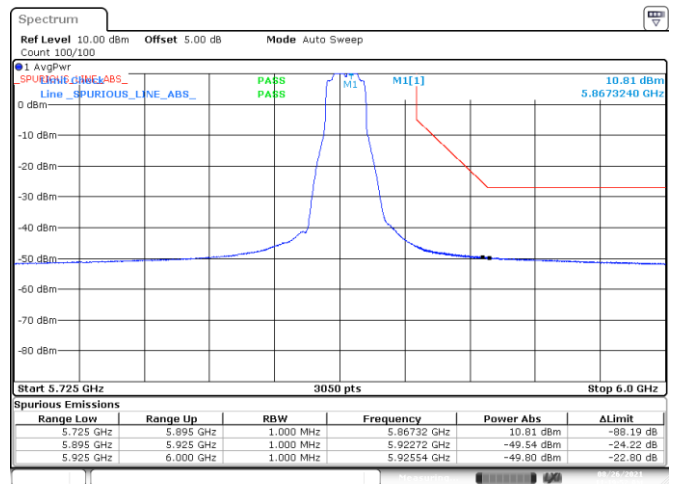
-BE-NR-LOW, SISO-A, 802.11a20-6Mbps, Ch169



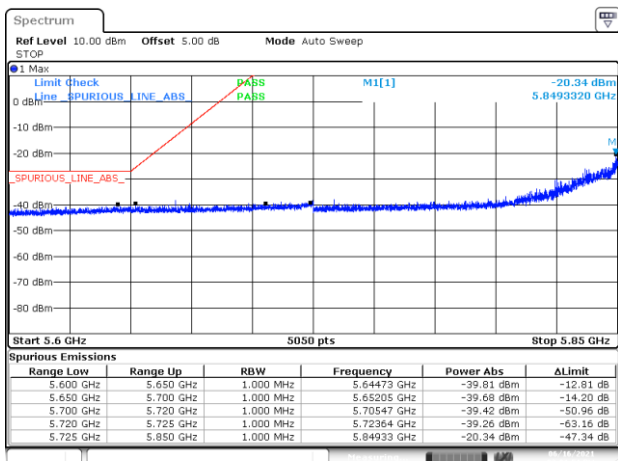
-BE-NR-HIGH, SISO-A, 802.11a20-6Mbps, Ch169



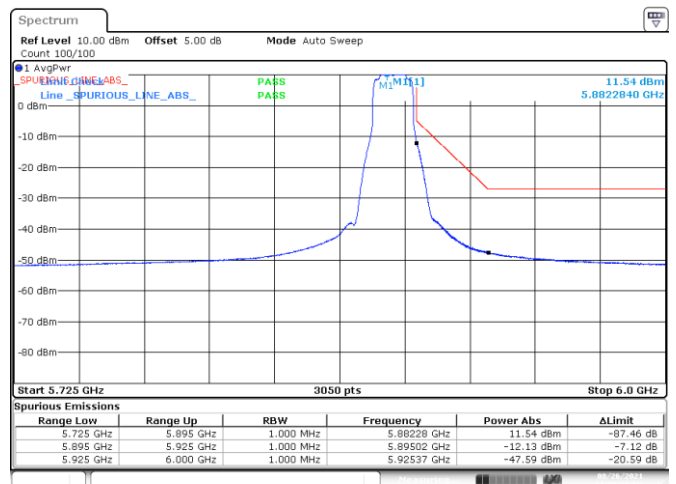
-BE-NR-LOW, SISO-A, 802.11a20-6Mbps, Ch173



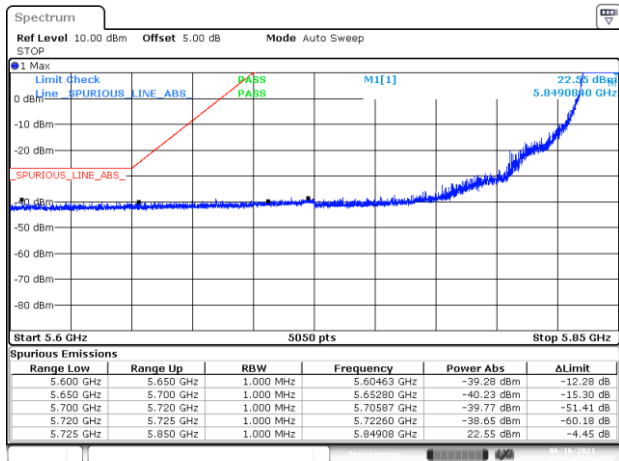
-BE-NR-HIGH, SISO-A, 802.11a20-6Mbps, Ch173



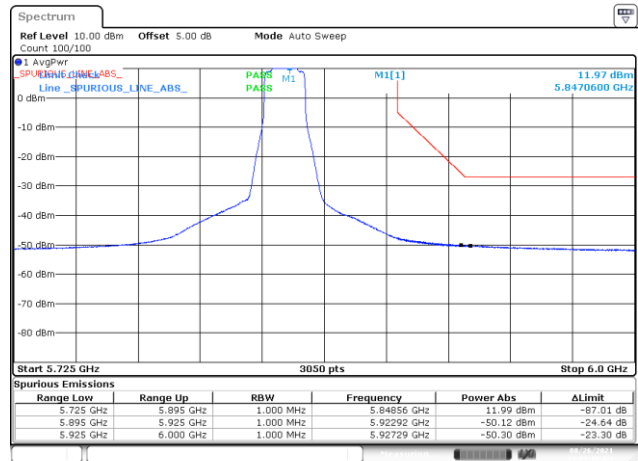
-BE-NR-LOW, SISO-A, 802.11a20-6Mbps, Ch177



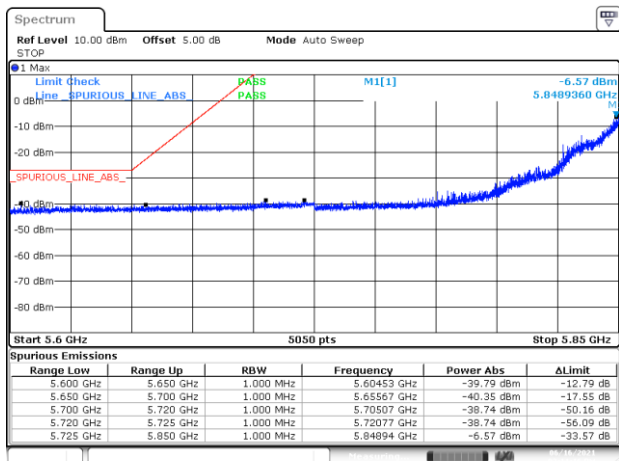
-BE-NR-HIGH, SISO-A, 802.11a20-6Mbps, Ch177



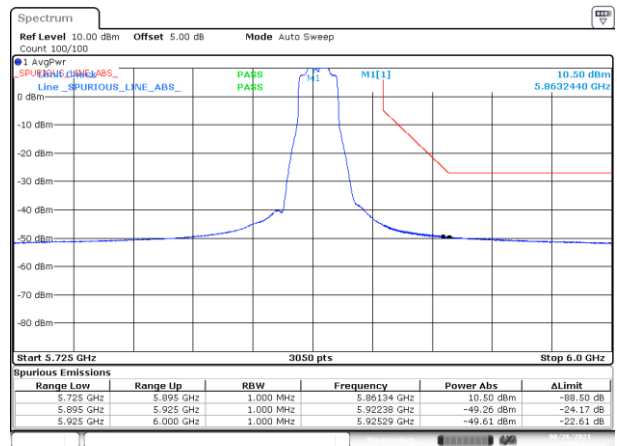
-BE-NR-LOW, SISO-A, 802.11n20-HT0, Ch169



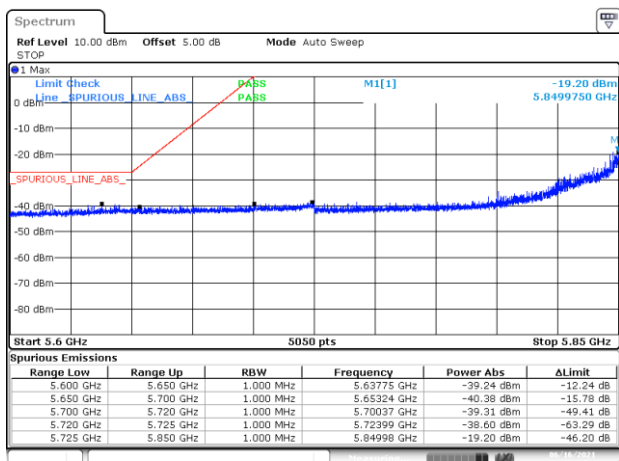
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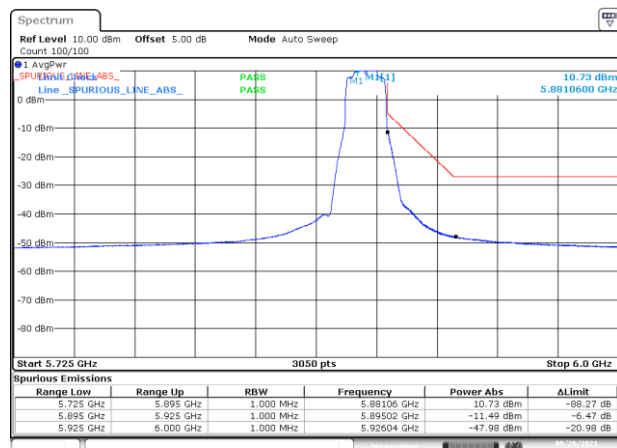
-BE-NR-LOW, SISO-A, 802.11n20-HT0, Ch173



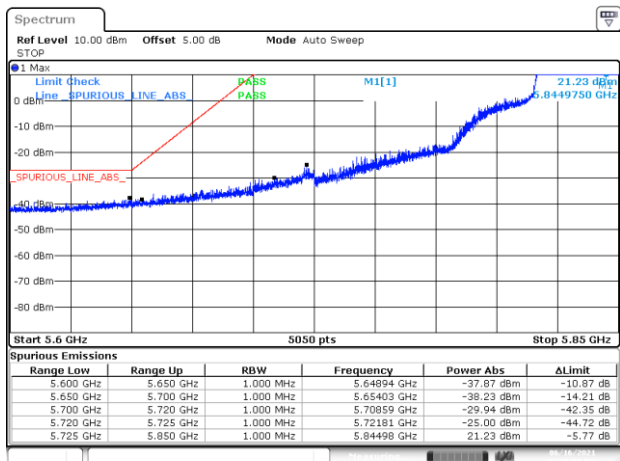
-BE-NR-HIGH SISO-A, 802.11n20-HT0, Ch173



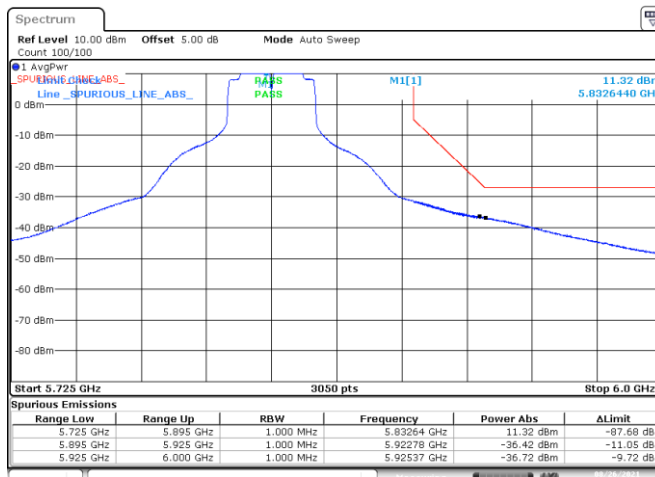
-BE-NR-LOW, SISO-A, 802.11n20-HT0, Ch177



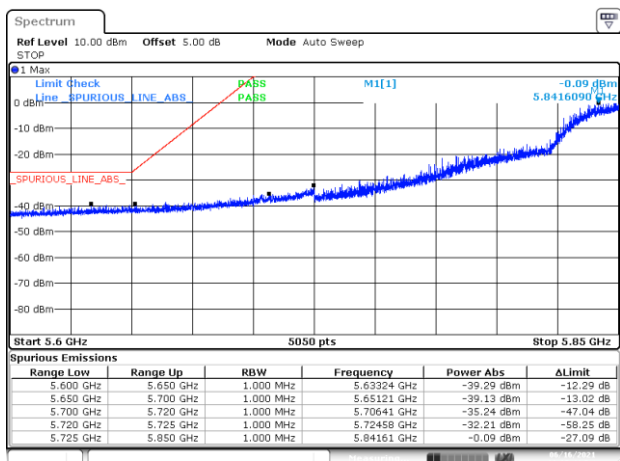
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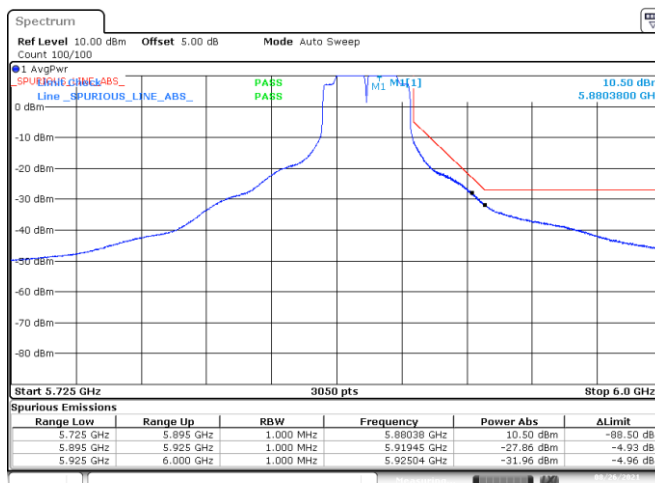
-BE-NR-LOW, SISO-A, 802.11n40-HT0, Ch167



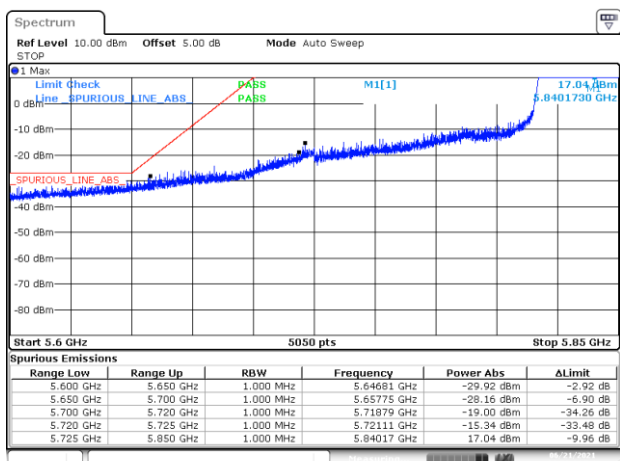
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-BE-NR-LOW, SISO-A, 802.11n40-HT0, Ch175

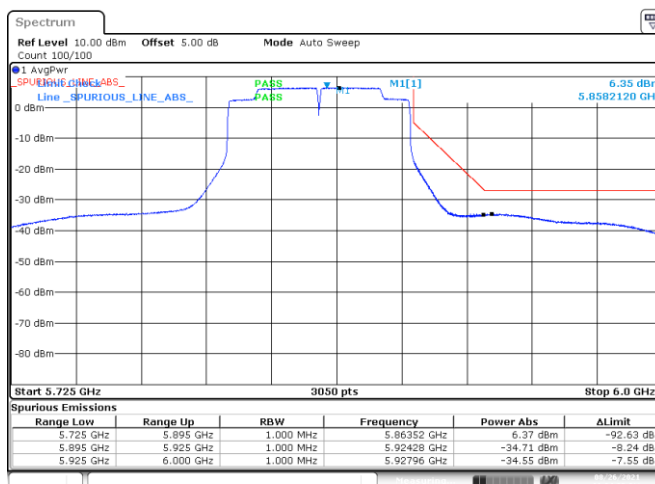


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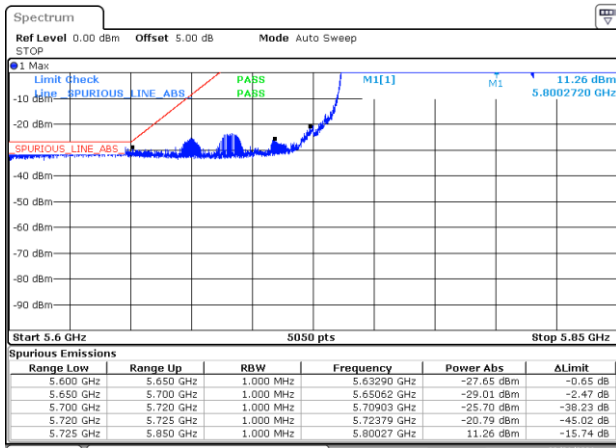


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-BE-NR-LOW, SISO-A, 802.11ac80-VHT0, Ch171

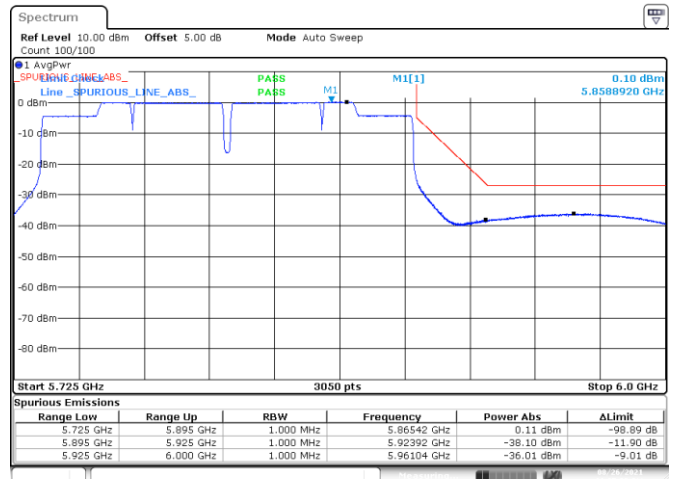


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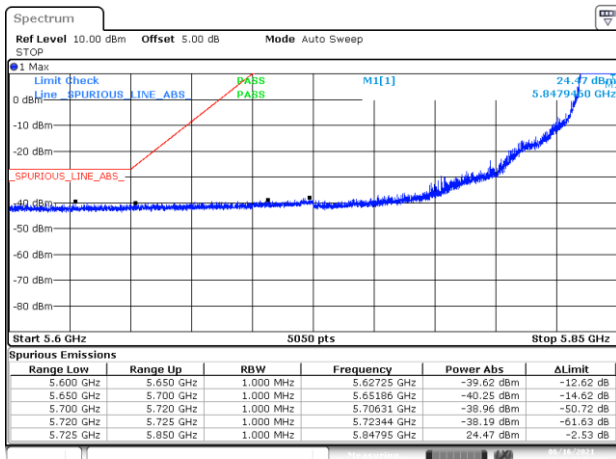


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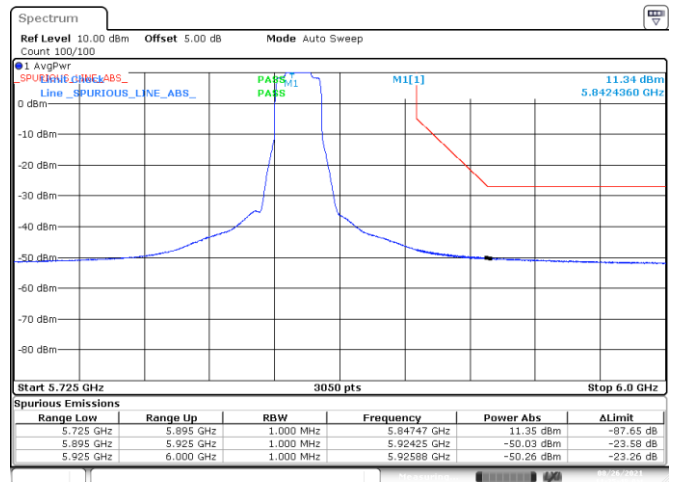
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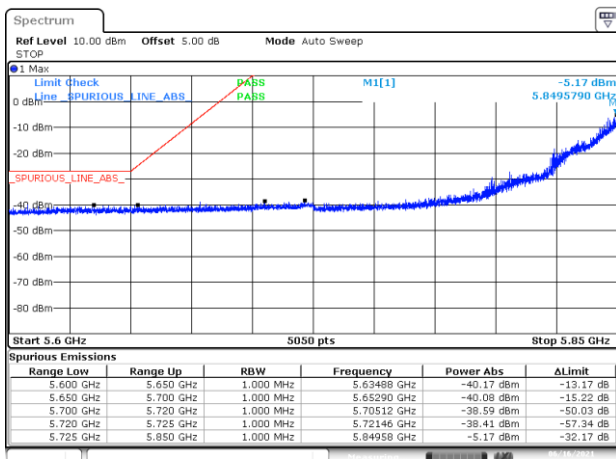
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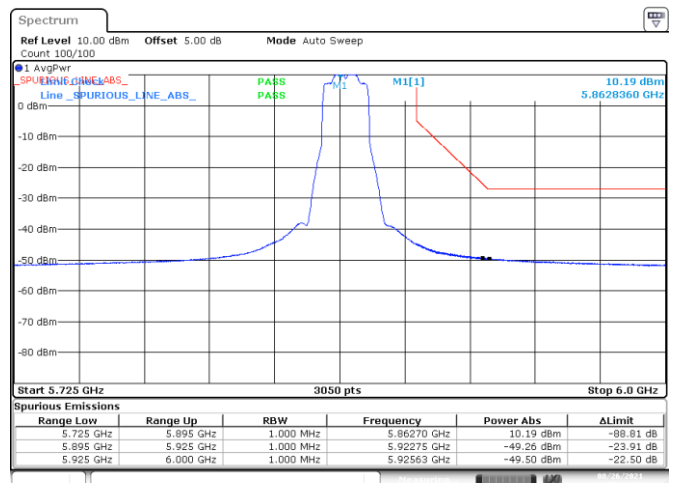
-BE-NR-LOW, SISO-A, 802.11ax20-HE0, Ch169



-BE-NR-HIGH, SISO-A, 802.11ax20-HE0, Ch169



-BE-NR-LOW, SISO-A, 802.11ax20-HE0, Ch173



--BE-NR-HIGH, SISO-A, 802.11ax20-HE0, Ch173