# TEST REPORT

| | |
|---|---|
| **Application No.:** | KSCR2404000562AT |
| **FCC ID:** | 2BFQD-JUEYINGLITE3 |
| **Applicant:** | Hangzhou Yunshenchu Technology Co.,Ltd. |
| **Address of Applicant:** | Building 3, Zijin Dream Plaza, No.36 Xinran Street, Sandun Town, Xihu District, Hangzhou, Zhejiang, China |
| **Manufacturer:** | Hangzhou Yunshenchu Technology Co.,Ltd. |
| **Address of Manufacturer:** | Building 3, Zijin Dream Plaza, No.36 Xinran Street, Sandun Town, Xihu District, Hangzhou, Zhejiang, China |
| **Factory:** | Huzhou Yunshenchu Robotics Co., Ltd. |
| **Address of Factory:** | Room 110-23, Building 1, No. 611 Yunxiu South Road, Wuyang Street, Deqing, Huzhou, Zhejiang, China |
| **Equipment Under Test (EUT):** | |
| **EUT Name:** | Quadruped Robot |
| **Model No.:** | Jueying Lite3 LiDAR, Jueying Lite3 Basic, Jueying Lite3 Pro, Jueying Lite3 Venture ♣ |
| ♣ | Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical. |
| **Trade Mark:** | DEEPRobotics |
| **Standard(s) :** | 47 CFR Part 15, Subpart E 15.407 |
| **Date of Receipt:** | 2024-04-03 |
| **Date of Test:** | 2024-04-07 to 2024-05-29 |
| **Date of Issue:** | 2024-05-30 |
| **Test Result:** | **Pass*** |

* In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Member of the SGS Group (SGS SA)

| Revision Record | | | |
|---|---|---|---|
| ***Version*** | **Description** | ***Date*** | ***Remark*** |
| 00 | Original | 2024-05-30 | / |
| | | | |
| | | | |

| | | | | |
|---|---|---|---|---|
| **Authorized for issue by:** | | | | |
| **Tested By** | | Damon zhou<br>**Damon_Zhou/Project Engineer** | | |
| **Approved By** | | Terry Hou<br>**Terry Hou /Reviewer** | | |

# 2 Test Summary

| Radio Spectrum Technical Requirement | | | | |
|---|---|---|---|---|
| **Item** | **Standard** | **Method** | **Requirement** | **Result** |
| Antenna Requirement | 47 CFR Part 15, Subpart E 15.407 | N/A | 47 CFR Part 15, Subpart C 15.203 | Pass |
| Transmission in the Absence of Data | | N/A | 47 CFR Part 15, Subpart E 15.407 (c) | Pass |

| Radio Spectrum Matter Part | | | | |
|---|---|---|---|---|
| **Item** | **Standard** | **Method** | **Requirement** | **Result** |
| Conducted Emissions at AC Power Line (150kHz-30MHz) | 47 CFR Part 15, Subpart E 15.407 | ANSI C63.10 (2013) Section 6.2 | 47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(9) | Pass |
| Duty Cycle | | KDB 789033 II B 1 | KDB 789033 D02 II B 1 | Pass |
| 99% Bandwidth | | KDB 789033 II D | N/A | Pass |
| 26dB Emission bandwidth | | KDB 789033 D02 II C 1 | 47 CFR Part 15, Subpart E 15.407 (a) | Pass |
| Minimum 6 dB bandwidth (5.725-5.85 GHz band ) | | KDB 789033 D02 II C 2 | 47 CFR Part 15, Subpart E 15.407 (e) | Pass |
| Maximum Conducted output power | | KDB 789033 D02 II E | 47 CFR Part 15, Subpart E 15.407 (a) | Pass |
| Peak Power spectrum density | | KDB 789033 D02 II F | 47 CFR Part 15, Subpart E 15.407 (a) | Pass |
| Radiated Emissions (Below 1GHz) | | KDB 789033 D02 II G | 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b) | Pass |
| Radiated Emissions (Above 1GHz) | | KDB 789033 D02 II G | 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b) | Pass |
| Radiated Emissions which fall in the restricted bands | | KDB 789033 D02 II G | 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b) | Pass |
| Frequency Stability | | ANSI C63.10 (2013) Section 6.8 | 47 CFR Part 15, Subpart E 15.407 (g) | Pass |

Note: There are series models mentioned in this report, and they are the identical in electrical and electronic characters. Only the model Jueying Lite3 LiDAR was tested since their differences are the model number, hardware interfaces and payloads. Jueying Lite3 Basic reduces a laser radar, an NVIDIA Jetson Xavier NX, a depth camera, and external hardware interfaces compared to Jueying Lite3 LiDAR. Jueying Lite3 Venture reduces a laser radar, an NVIDIA Jetson Xavier NX and a depth camera compared to Jueying Lite3 LiDAR. Jueying Lite3 Pro reduces a laser radar compared to Jueying Lite3 LiDAR.

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# 4 General Information

## 4.1 Details of E.U.T.

| | |
|---|---|
| Power supply: | Powered by Li-ion Rechargeable Battery<br>Battery model: N009-8S2P<br>Charging Limited Voltage: 32.8V<br>Nominal capacity: 5000mAh<br>Rated Capacity:4400mAh,28.8V126.72Wh<br>Adapter model: SOY-3360500-454<br>INPUT: 100-240V,50/60Hz,2.5A Max<br>OUTPUT: DC 33.6V,5.0A,168.0W |
| Operation Frequency/Number of channels (20MHz): | U-NII-1:5180-5240MHz (4 Channels); U-NII-3: 5745-5825MHz (5 Channels) |
| Operation Frequency/Number of channels/(40MHz): | U-NII-1:5190-5230MHz (2 Channels); U-NII-3: 5755-5795MHz (2 Channels) |
| Operation Frequency/Number of channels (80MHz): | U-NII-1:5210MHz (1 Channel); U-NII-3: 5775MHz (1 Channel) |
| Modulation Type: | 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) |
| Channel Spacing: | 802.11a/n/ac20: 20MHz; 802.11n/ac 40: 40MHz; 802.11ac 80: 80MHz |
| Antenna Type: | PIFA Antenna |
| Antenna Gain: | Ant1: 3.33dBi; (Provided by the manufacturer)<br>Ant2: 3.68dBi. (Provided by the manufacturer) |

## 4.2 Power level setting using in test:

| Channel | 802.11a | | 802.11n(HT20) | |
|---|---|---|---|---|
| | Ant 1 | Ant 2 | Ant 2 | Ant 2 |
| 36 | 78 | 78 | 68 | 68 |
| 40 | 78 | 78 | 68 | 68 |
| 48 | 78 | 78 | 65 | 65 |
| 149 | 78 | 90 | 65 | 77 |
| 157 | 78 | 90 | 65 | 77 |
| 165 | 74 | 82 | 58 | 66 |
| Channel | 802.11n(HT40) | | | |
| | Ant 1 | Ant 2 | | |
| 38 | 65 | 65 | | |
| 46 | 63 | 63 | | |
| 151 | 61 | 71 | | |
| 159 | 57 | 67 | | |
| Channel | 802.11ac(VHT80) | | | |
| | Ant 1 | Ant 2 | | |
| 42 | 61 | 61 | | |
| 155 | 58 | 67 | | |

## 4.3 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|---|---|---|---|
| Notebook | Lenovo | / | / |

## 4.4 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|---|---|---|
| 1 | Radio Frequency | $8.4 \times 10^{-8}$ |
| 2 | Timeout | 2s |
| 3 | Duty Cycle | 0.37% |
| 4 | Occupied Bandwidth | 3% |
| 5 | RF Conducted Power | 0.6dB |
| 6 | RF Power Density | 2.9dB |
| 7 | Conducted Spurious Emissions | 0.75dB |
| 8 | RF Radiated Power | 5.2dB (Below 1GHz) |
| | | 5.9dB (Above 1GHz) |
| 9 | Radiated Spurious Emission Test | 4.2dB (Below 30MHz) |
| | | 4.5dB (30MHz-1GHz) |
| | | 5.1dB (1GHz-18GHz) |
| | | 5.4dB (Above 18GHz) |
| 10 | Temperature Test | 1°C |
| 11 | Humidity Test | 3% |
| 12 | Supply Voltages | 1.5% |
| 13 | Time | 3% |
| Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. | | |

## 4.5 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).
3. Sample source: sent by customer.

## 4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

**• A2LA**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

**• FCC**

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

**• ISED**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

**• VCCI**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

## 4.7 Deviation from Standards

None

## 4.8 Abnormalities from Standard Conditions

None

# 5 Equipment List

| Item | Equipment | Manufacturer | Model | Inventory No | Cal Date | Cal. Due Date |
|---|---|---|---|---|---|---|
| **Conducted Emission at Mains Terminals** | | | | | | |
| 1 | EMI Test Receive | R&S | ESCI | KS301101 | 01/15/2024 | 01/14/2025 |
| 2 | LISN | R&S | ENV216 | KS301197 | 01/15/2024 | 01/14/2025 |
| 3 | LISN | Schwarzbeck | NNLK 8129 | KS301091 | 01/15/2024 | 01/14/2025 |
| 4 | Pulse Limiter | R&S | ESH3-Z2 | KUS1902E001 | 01/15/2024 | 01/14/2025 |
| 5 | CE test Cable | Thermax | / | CZ301102 | 01/15/2024 | 01/14/2025 |
| 6 | Test Software | Farad | EZ-EMC | / | N.C.R | N.C.R |
| **RF Conducted Test** | | | | | | |
| 1 | Spectrum Analyzer | Keysight | N9020A | KUS1911E004-2 | 08/24/2023 | 08/23/2024 |
| 2 | Spectrum Analyzer | Keysight | N9020A | KUS2001M001-2 | 08/24/2023 | 08/23/2024 |
| 3 | Spectrum Analyzer | Keysight | N9030B | KSEM021-1 | 01/15/2024 | 01/14/2025 |
| 4 | Signal Generator | R&S | SMBV100B | KSEM032 | 03/19/2024 | 03/18/2025 |
| 5 | Signal Generator | R&S | SMW200A | KSEM020-1 | 08/24/2023 | 08/23/2024 |
| 6 | Signal Generator | Agilent | N5182A | KUS2001M001-1 | 08/24/2023 | 08/23/2024 |
| 7 | Radio Communication Test Station | Anritsu | MT8000A | KSEM001-1 | 08/24/2023 | 08/23/2024 |
| 8 | Radio Communication Analyzer | Anritsu | MT8821C | KSEM002-1 | 03/19/2024 | 03/18/2025 |
| 9 | Universal Radio Communication Tester | R&S | CMW500 | KUS1911E004-1 | 08/24/2023 | 08/23/2024 |
| 10 | Switcher | TST | FY562 | KUS2001M001-4 | 01/15/2024 | 01/14/2025 |
| 11 | AC Power Source | EXTECH | 6605 | KS301178 | N.C.R | N.C.R |
| 12 | DC Power Supply | Aglient | E3632A | KS301180 | N.C.R | N.C.R |
| 13 | Conducted Test Cable | Thermax | RF01-RF04 | CZ301111-CZ301120 | 01/15/2024 | 01/14/2025 |
| 14 | Temp. / Humidity Chamber | TERCHY | MHK-120AK | KS301190 | 08/24/2023 | 08/23/2024 |
| 15 | Temperature & Humidity Recorder | Renke Control | RS-WS-N01-6J | KSEM024-5 | 03/19/2024 | 03/18/2025 |
| 16 | Software | BST | TST-PASS | / | NCR | NCR |
| **RF Radiated Test** | | | | | | |
| 1 | Spectrum Analyzer | R&S | FSV40 | KUS1806E003 | 08/24/2023 | 08/23/2024 |
| 2 | Universal Radio Communication Tester | R&S | CMW500 | KSEM009-1 | 03/19/2024 | 03/18/2025 |
| 3 | Signal Generator | Agilent | E8257C | KS301066 | 08/24/2023 | 08/23/2024 |
| 4 | Loop Antenna | COM-POWER | AL-130R | KUS1806E001 | 03/18/2023 | 03/17/2025 |
| 5 | Bilog Antenna | TESEQ | CBL 6112D | KUS1806E005 | 06/29/2023 | 06/28/2025 |
| 6 | Bilog Antenna | TESEQ | CBL 6112D | KUS1806E006 | 03/19/2024 | 03/18/2025 |
| 7 | Horn-antenna(1-18GHz) | Schwarzbeck | BBHA9120D | KS301079 | 08/24/2023 | 08/23/2024 |
| 8 | Horn-antenna(1-18GHz) | ETS-LINDGREN | 3117 | KS301186 | 04/07/2023 | 04/06/2025 |
| 9 | Horn Antenna(18-40GHz) | Schwarzbeck | BBHA9170 | CZ301058 | 01/07/2024 | 01/06/2026 |
| 10 | Amplifier(30MHz~18GHz) | PANSHAN TECHNOLOGY | LNA:1~18G | KSEM010-1 | 01/15/2024 | 01/14/2025 |
| 11 | Amplifier(18~40GHz) | PANSHAN TECHNOLOGY | LNA180400G40 | KSEM038 | 08/24/2023 | 08/23/2024 |
| 12 | RE Test Cable | REBES MICROWAVE | / | CZ301097 | 08/24/2023 | 08/23/2024 |
| 13 | Temperature & Humidity Recorder | Renke Control | RS-WS-N01-6J | KSEM024-4 | 03/19/2024 | 03/18/2025 |
| 14 | Software | Faratronic | EZ_EMC-v 3A1 | / | NCR | NCR |
| 15 | Software | ESE | E3_V 6.111221a | / | NCR | NCR |

# 6 Radio Spectrum Technical Requirement

## 6.1 Antenna Requirement

### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

### 6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is PIFA Antenna and no consideration of replacement. The best case gain of the antenna 1 is 3.33dBi and antenna 2 is 3.68 dBi.

Antenna location: Refer to internal photo.

## 6.2 Transmission in the Absence of Data

### 6.2.1 Test Requirement:

47 CFR Part 15, Subpart E 15.407 (c)

### 6.2.2 Conclusion

Conclusion

Standard Requirement:

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals.

Applicants shall include in their application for equipment authorization a description of how this requirement is met.

EUT Details:

WIFI chip support automatically discontinue transmission in case of either absence of information to transmit or operational failure, if the chip detect absence of information to transmit or operational failure, it will be automatically shut off.

# 7 Radio Spectrum Matter Test Results

## 7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207 & Subpart E 15.407 b(9)
Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

| Frequency of emission(MHz) | Conducted limit(dBμV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |
| *Decreases with the logarithm of the frequency. | | |

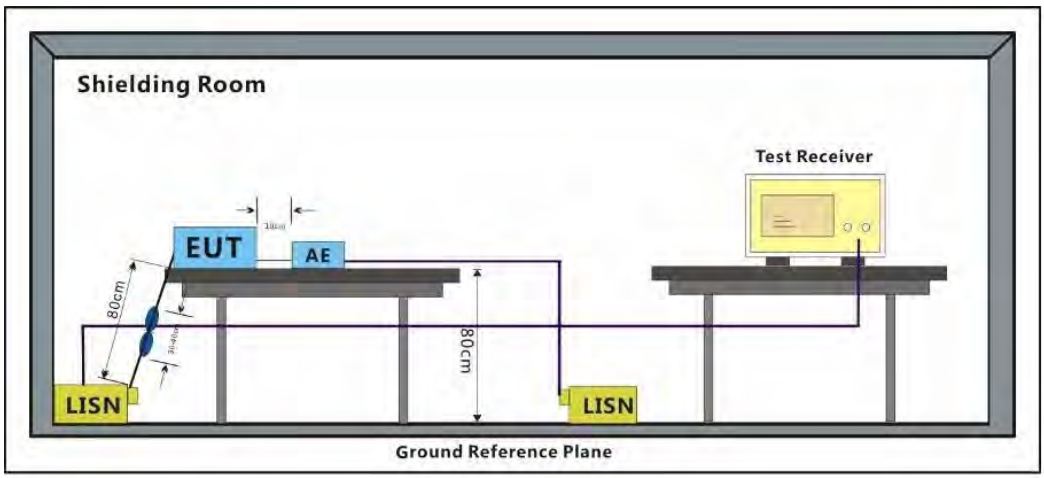
### 7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 23.5 °C Humidity: 45.0 % RH Atmospheric Pressure: 1010 mbar

### 7.1.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.1.3 Test Setup Diagram



### 7.1.4 Measurement Procedure and Data

1) The mains terminal disturbance voltage test was conducted in a shielded room.

2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

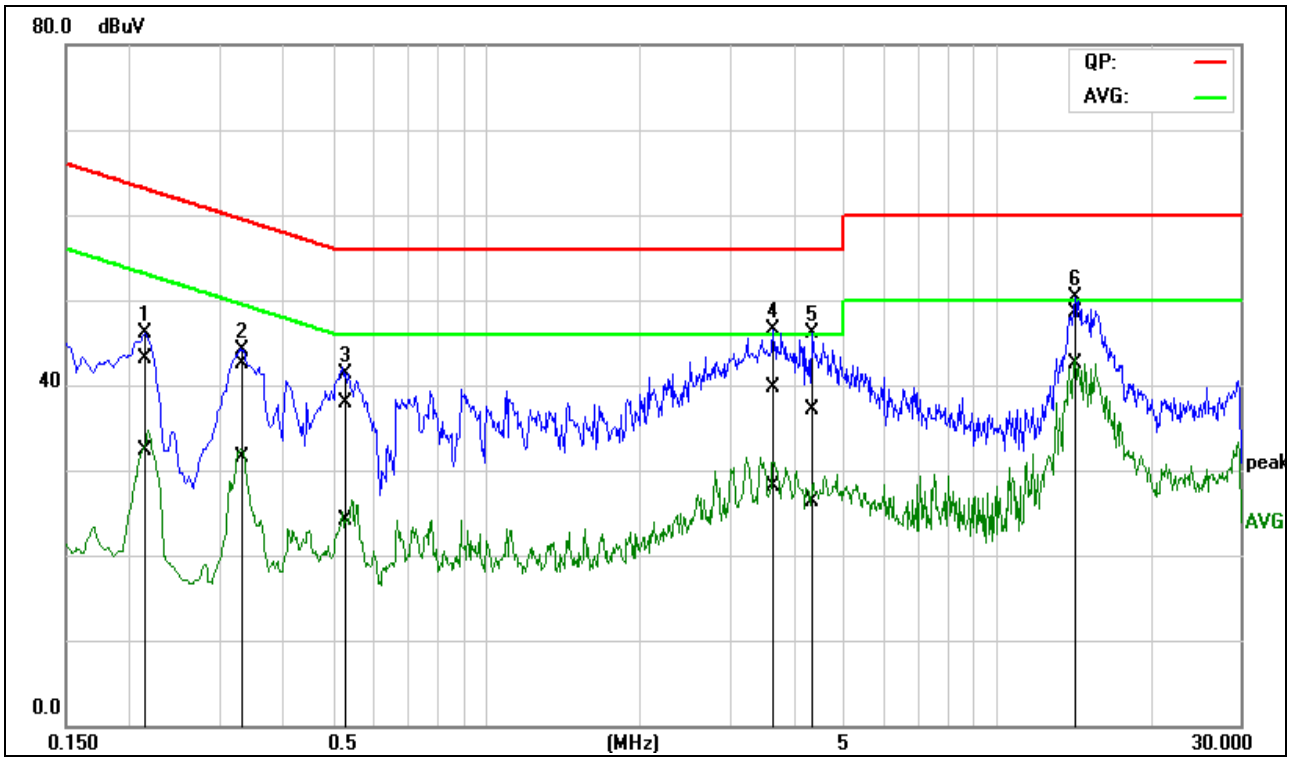
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

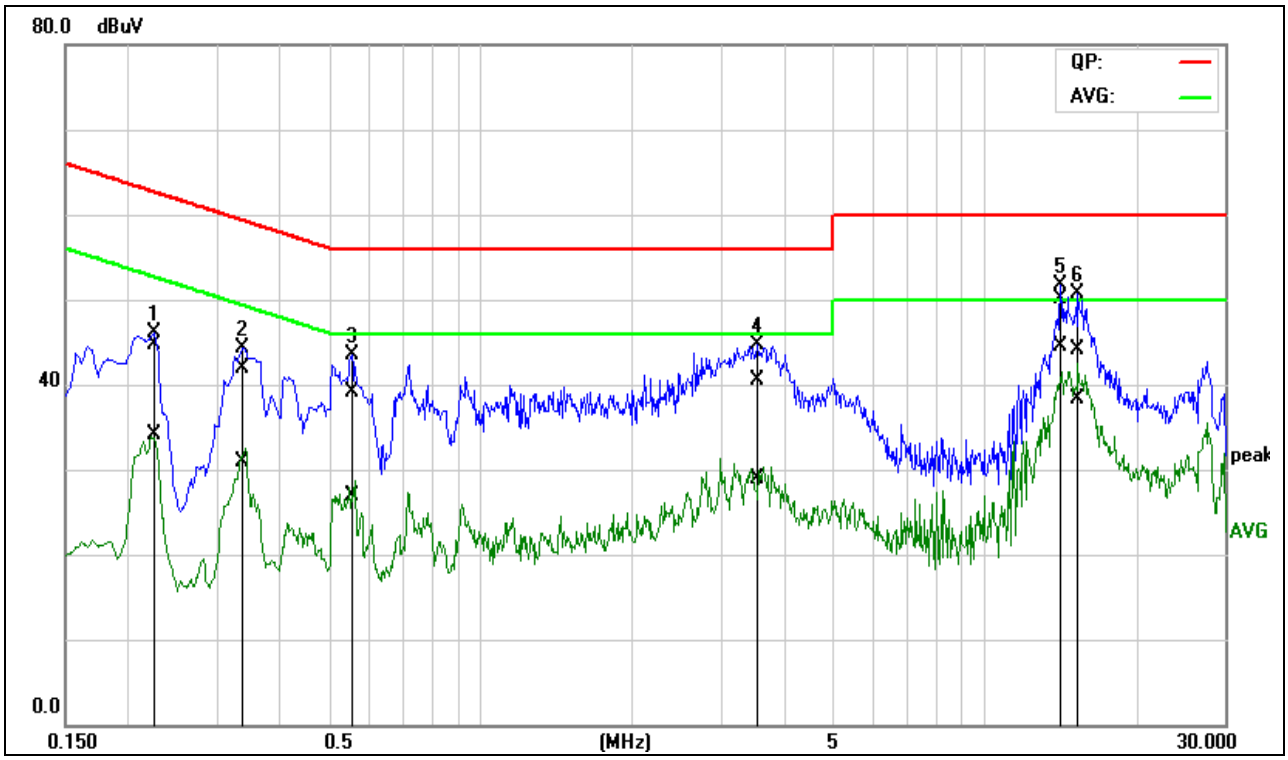
Remark: Level=Read Level+ Cable Loss+ LISN Factor

Test Mode: 00; Line: Live line




| No. | Frequency | QuasiPeak reading | Average reading | Correction factor | QuasiPeak result | Average result | QuasiPeak limit | Average limit | QuasiPeak margin | Average margin | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dBuV) | (dB) | (dBuV) | (dBuV) | (dBuV) | (dBuV) | (dB) | (dB) | |
| 1 | 0.2114 | 23.04 | 12.23 | 20.02 | 43.06 | 32.25 | 63.15 | 53.15 | -20.09 | -20.90 | Pass |
| 2 | 0.3341 | 22.44 | 11.39 | 20.03 | 42.47 | 31.42 | 59.35 | 49.35 | -16.88 | -17.93 | Pass |
| 3 | 0.5290 | 17.77 | 4.00 | 20.04 | 37.81 | 24.04 | 56.00 | 46.00 | -18.19 | -21.96 | Pass |
| 4 | 3.6332 | 19.73 | 8.23 | 19.97 | 39.70 | 28.20 | 56.00 | 46.00 | -16.30 | -17.80 | Pass |
| 5 | 4.3792 | 17.10 | 6.39 | 19.96 | 37.06 | 26.35 | 56.00 | 46.00 | -18.94 | -19.65 | Pass |
| 6* | 14.2869 | 28.53 | 22.60 | 19.95 | 48.48 | 42.55 | 60.00 | 50.00 | -11.52 | -7.45 | Pass |

Test Mode: 00; Line: Neutral Line




| No. | Frequency | QuasiPeak reading | Average reading | Correction factor | QuasiPeak result | Average result | QuasiPeak limit | Average limit | QuasiPeak margin | Average margin | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dBuV) | (dB) | (dBuV) | (dBuV) | (dBuV) | (dBuV) | (dB) | (dB) | |
| 1 | 0.2222 | 24.53 | 13.90 | 20.14 | 44.67 | 34.04 | 62.74 | 52.74 | -18.07 | -18.70 | Pass |
| 2 | 0.3364 | 21.84 | 10.79 | 20.14 | 41.98 | 30.93 | 59.29 | 49.29 | -17.31 | -18.36 | Pass |
| 3 | 0.5510 | 19.18 | 6.91 | 20.02 | 39.20 | 26.93 | 56.00 | 46.00 | -16.80 | -19.07 | Pass |
| 4 | 3.5757 | 20.48 | 8.85 | 19.96 | 40.44 | 28.81 | 56.00 | 46.00 | -15.56 | -17.19 | Pass |
| 5* | 14.2065 | 30.20 | 24.49 | 20.00 | 50.20 | 44.49 | 60.00 | 50.00 | -9.80 | -5.51 | Pass |
| 6 | 15.3278 | 24.16 | 18.36 | 20.00 | 44.16 | 38.36 | 60.00 | 50.00 | -15.84 | -11.64 | Pass |

## 7.2 Duty Cycle

Test Requirement KDB 789033 D02 II B 1
Test Method: KDB 789033 II B 1

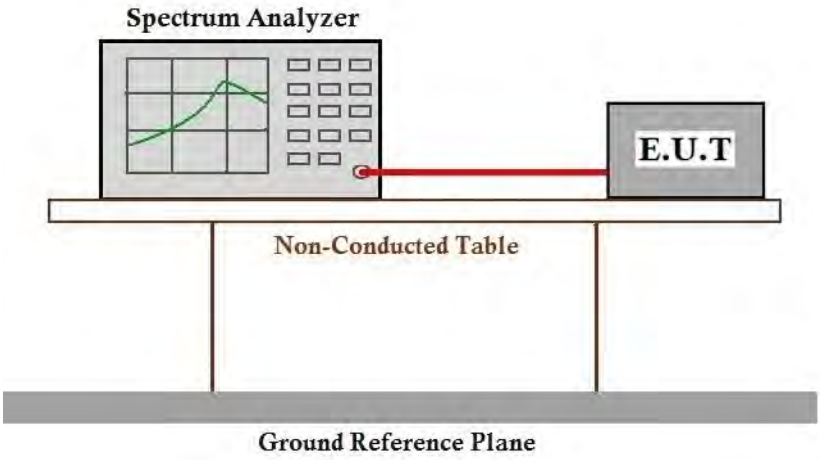
### 7.2.1 E.U.T. Operation

Operating Environment:
Temperature: 23.5 °C Humidity: 45.1 % RH Atmospheric Pressure: 1010 mbar

### 7.2.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |
| Final test | 01 | TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.2.3 Test Setup Diagram




### 7.2.4 Measurement Procedure and Data

Please Refer to Appendix for Details

## 7.3 99% Bandwidth

Test Requirement N/A
Test Method: KDB 789033 II D

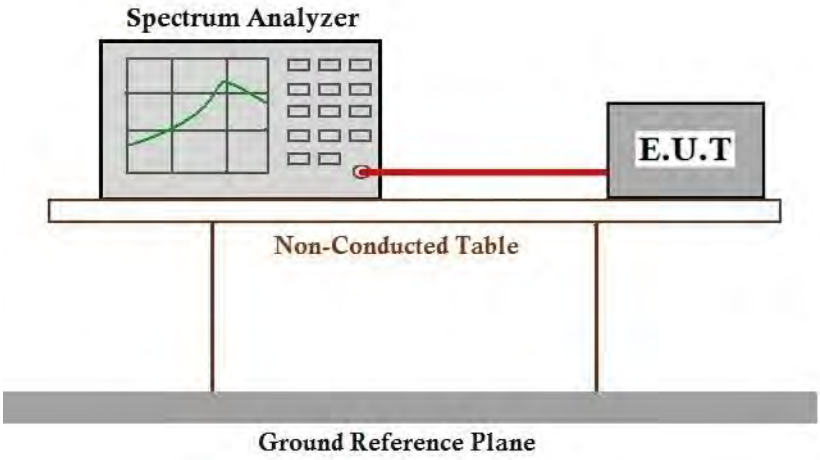
### 7.3.1 E.U.T. Operation

Operating Environment:
Temperature: 23.5 °C Humidity: 45.1 % RH Atmospheric Pressure: 1010 mbar

### 7.3.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |
| Final test | 01 | TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.3.3 Test Setup Diagram




### 7.3.4 Measurement Procedure and Data

Please Refer to Appendix for Details

## 7.4 26dB Emission bandwidth

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)
Test Method: KDB 789033 D02 II C 1

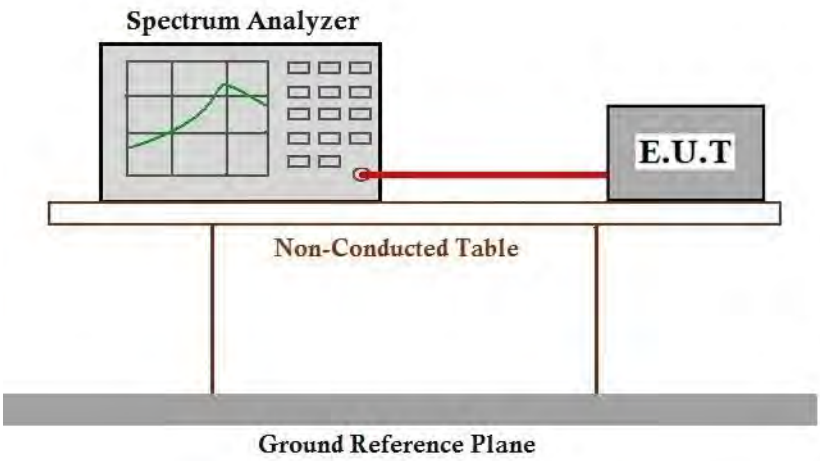
### 7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 23.5 °C Humidity: 45.2 % RH Atmospheric Pressure: 1010 mbar

### 7.4.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.4.3 Test Setup Diagram




### 7.4.4 Measurement Procedure and Data

Please Refer to Appendix for Details

## 7.5 Minimum 6 dB bandwidth (5.725-5.85 GHz band )

Test Requirement 47 CFR Part 15, Subpart E 15.407 (e)
Test Method: KDB 789033 D02 II C 2

Limit:

| Frequency band(MHz) | Limit |
|---|---|
| 5725-5850 | ⩾500 kHz |

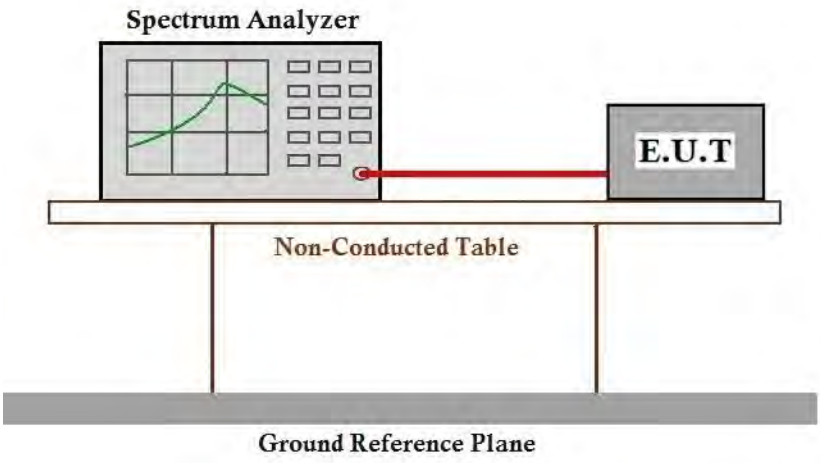
### 7.5.1 E.U.T. Operation

Operating Environment:
Temperature: 23.5 °C Humidity: 45.2 % RH Atmospheric Pressure: 1010 mbar

### 7.5.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 01 | TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.5.3 Test Setup Diagram




### 7.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details

## 7.6 Maximum Conducted output power

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)
Test Method: KDB 789033 D02 II E

Limit:

| Frequency band(MHz) | Limit |
|---|---|
| 5150-5250 | ≤1W(30dBm) for master device |
| | ≤250mW(24dBm) for client device |
| 5250-5350 | ≤250mW(24dBm) or 11dBm+10logB* |
| 5470-5725 | ≤250mW(24dBm) or 11dBm+10logB* |
| 5725-5850 | ≤1W(30dBm) |
| Remark: | * Where B is the 26dB emission bandwidth in MHz.<br>The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. |

### 7.6.1 E.U.T. Operation

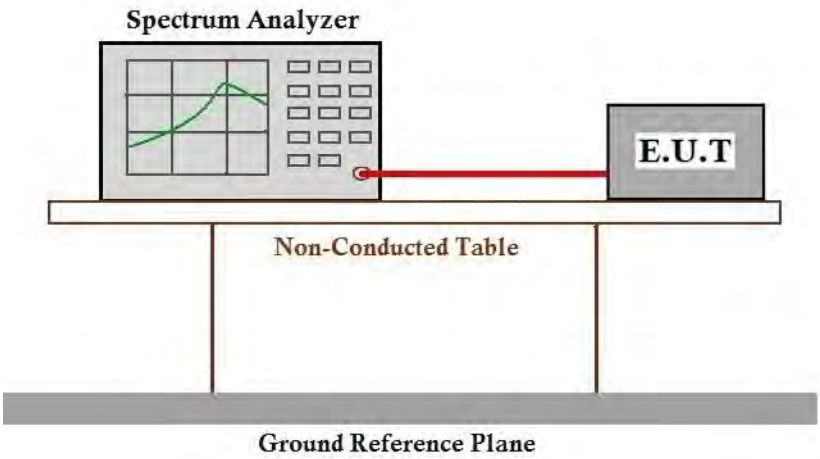
Operating Environment:

Temperature: 23.5 °C Humidity: 45.3 % RH Atmospheric Pressure: 1010 mbar

### 7.6.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |
| Final test | 01 | TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.6.3 Test Setup Diagram




### 7.6.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details

## 7.7 Peak Power spectrum density

Test Requirement 47 CFR Part 15, Subpart E 15.407 (a)
Test Method: KDB 789033 D02 II F

Limit:

| Frequency band(MHz) | Limit |
|---|---|
| 5150-5250 | ≤17dBm in 1MHz for master device |
| | ≤11dBm in 1MHz for client device |
| 5250-5350 | ≤11dBm in 1MHz for client device |
| 5470-5725 | ≤11dBm in 1MHz for client device |
| 5725-5850 | ≤30dBm in 500 kHz |
| Remark: | The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. |

### 7.7.1 E.U.T. Operation

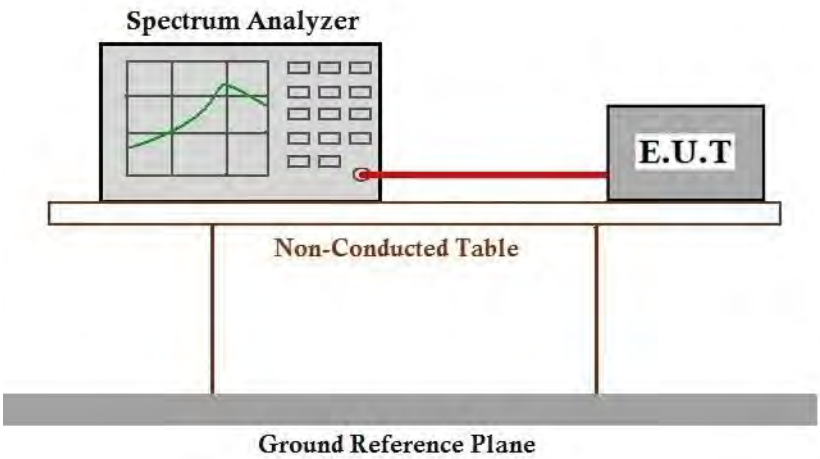
Operating Environment:

Temperature: 23.5 °C Humidity: 45.3 % RH Atmospheric Pressure: 1010 mbar

### 7.7.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |
| Final test | 01 | TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.7.3 Test Setup Diagram



### 7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details

## 7.8 Radiated Emissions (Below 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)
Test Method: KDB 789033 D02 II G
Measurement Distance: 3m

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|---|---|---|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30.0 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| 960-1000 | 500 | 3 |

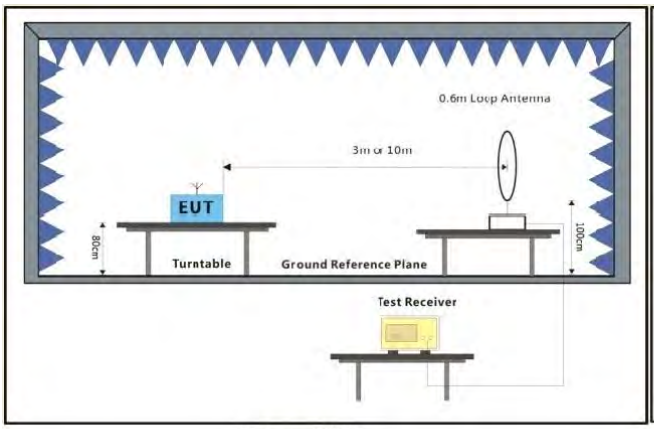
### 7.8.1 E.U.T. Operation

Operating Environment:
Temperature: 20.5 °C Humidity: 50.5 % RH Atmospheric Pressure: 1010 mbar

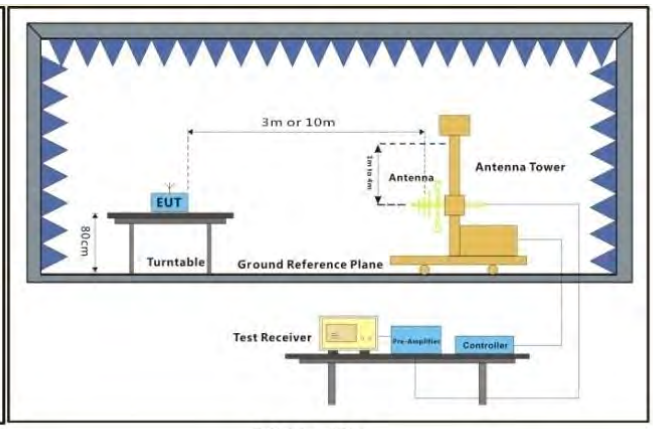
### 7.8.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.8.3 Test Setup Diagram




Below 30MHz




30MHz-1GHz

### 7.8.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

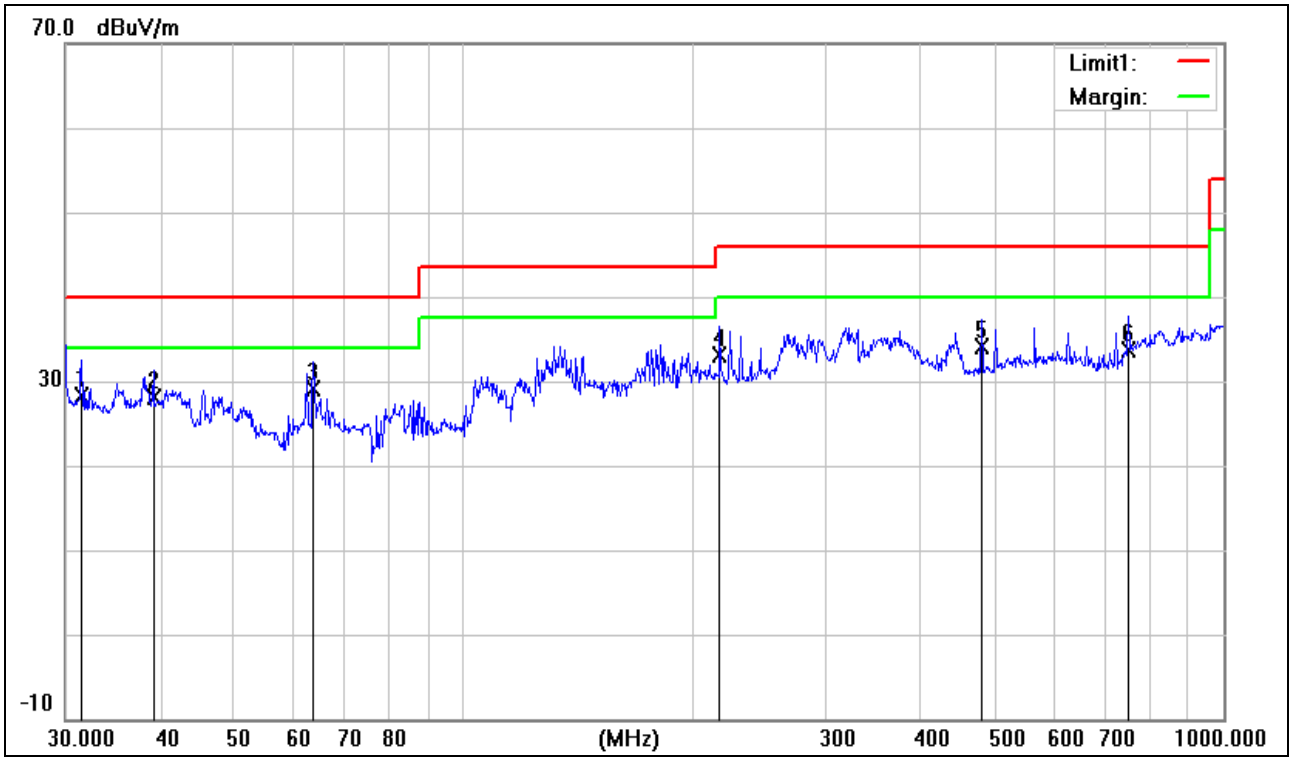
1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

2. For emission below 1GHz, through the pre-scan found the worst case is the lowest channel of 802.11a. Only the worst case is recorded in the report.

3. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

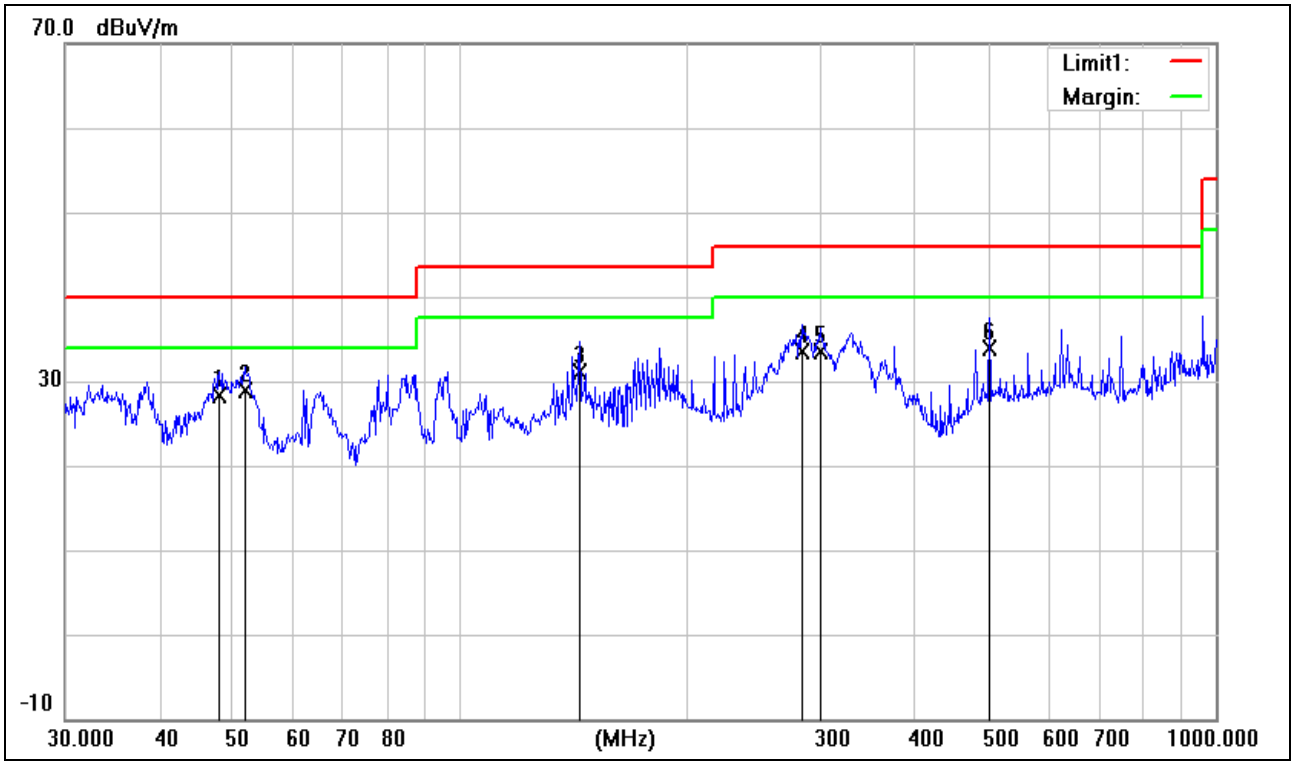
4. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

Test Mode: 00; Polarity: Horizontal




| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 31.5092 | 3.05 | 25.20 | 28.25 | 40.00 | -11.75 | 100 | 193 | QP |
| 2 | 39.1613 | 5.55 | 22.60 | 28.15 | 40.00 | -11.85 | 100 | 104 | QP |
| 3 | 63.5356 | 14.32 | 14.79 | 29.11 | 40.00 | -10.89 | 100 | 48 | QP |
| 4 | 217.5440 | 16.45 | 16.60 | 33.05 | 46.00 | -12.95 | 100 | 30 | QP |
| 5 | 480.5276 | 8.83 | 25.22 | 34.05 | 46.00 | -11.95 | 200 | 265 | QP |
| 6 | 750.1082 | 31.21 | 2.41 | 33.62 | 46.00 | -12.38 | 100 | 221 | QP |

Test Mode: 00; Polarity: Vertical




| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) | (deg.) | |
| 1 | 47.9940 | 9.76 | 18.57 | 28.33 | 40.00 | -11.67 | 100 | 143 | QP |
| 2 | 51.8430 | 11.67 | 17.15 | 28.82 | 40.00 | -11.18 | 200 | 224 | QP |
| 3 | 143.8292 | 12.85 | 18.20 | 31.05 | 43.50 | -12.45 | 100 | 63 | QP |
| 4 | 282.9852 | 13.14 | 20.38 | 33.52 | 46.00 | -12.48 | 100 | 118 | QP |
| 5 | 299.3158 | 12.74 | 20.67 | 33.41 | 46.00 | -12.59 | 100 | 143 | QP |
| 6 | 501.1790 | 8.13 | 25.83 | 33.96 | 46.00 | -12.04 | 200 | 163 | QP |

## 7.9 Radiated Emissions (Above 1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)
Test Method: KDB 789033 D02 II G

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|---|---|---|
| Above 1GHz | 500 | 3 |

*(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) 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.

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### 7.9.1 E.U.T. Operation

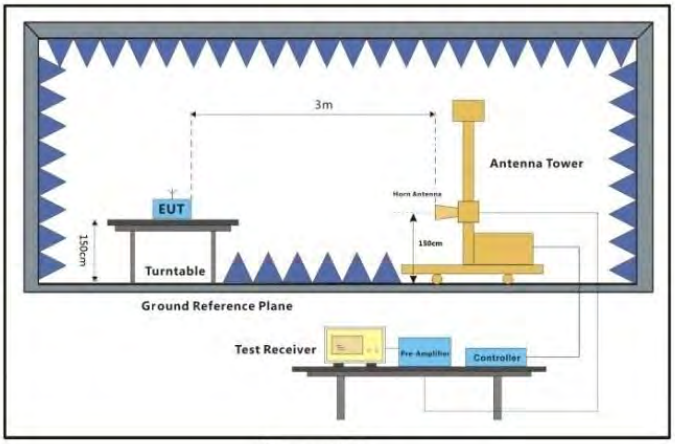
Operating Environment:

Temperature: 20.5 °C Humidity: 50.5 % RH Atmospheric Pressure: 1010 mbar

### 7.9.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |
| Final test | 01 | TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.9.3 Test Setup Diagram




Above 1GHz

### 7.9.4 Measurement Procedure and Data

a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

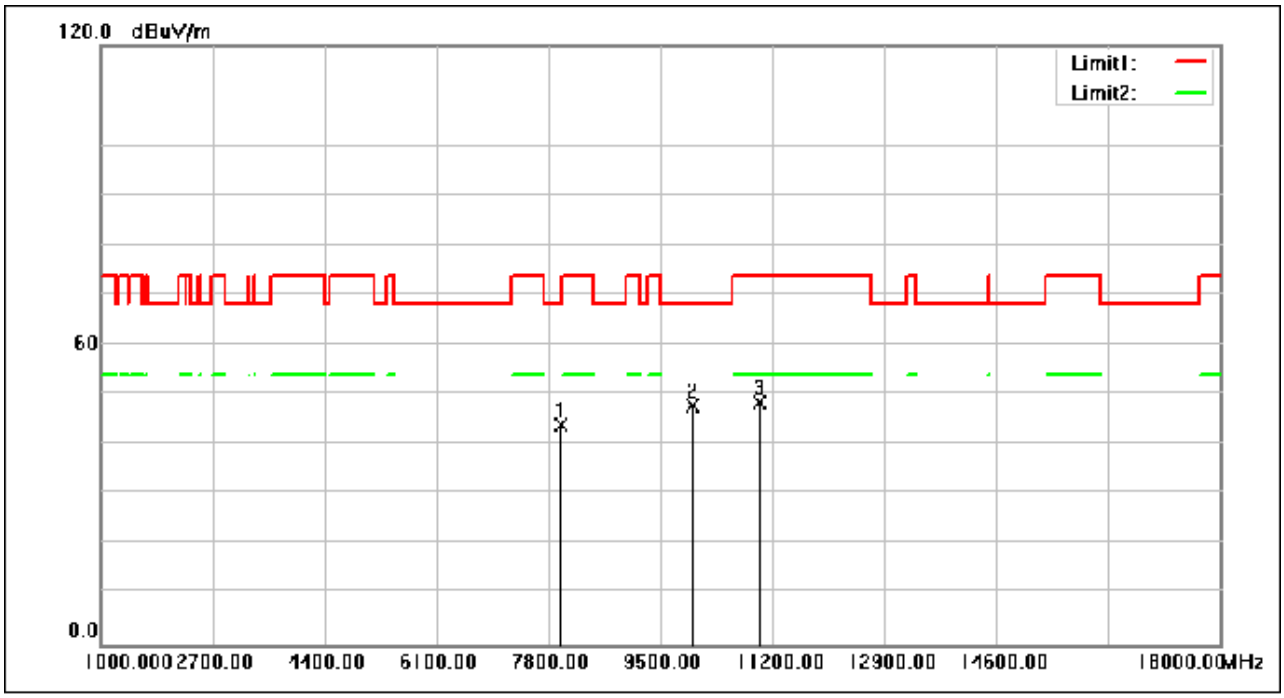
2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

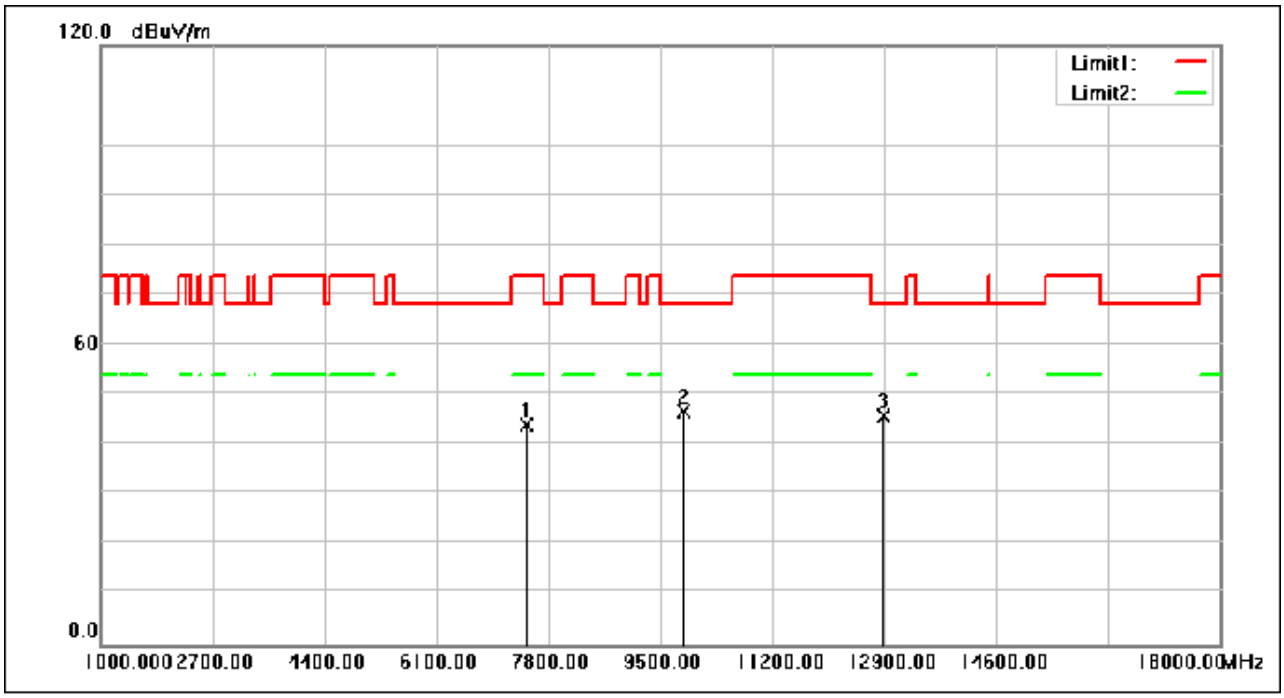
5. For devices with multiple operating modes, measurements on the middle channel is used to determine the worst-case mode(s). Only the worst case mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum) is recorded in the test report.

Test Mode: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



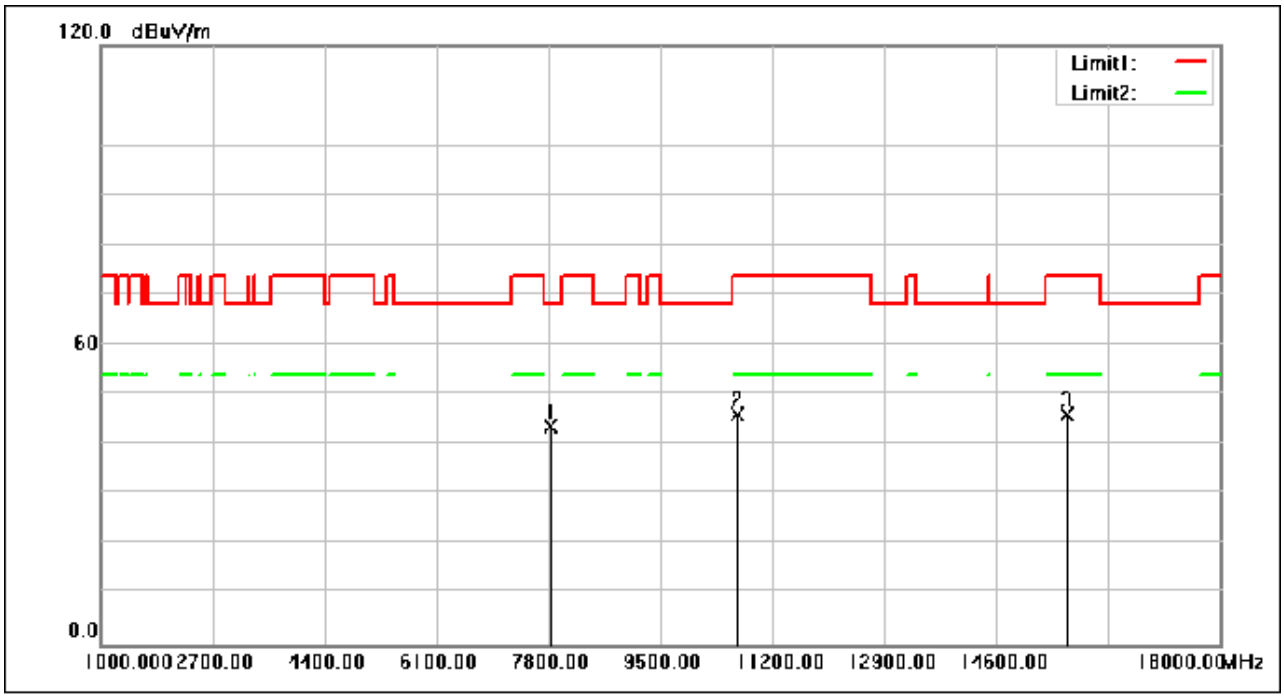

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 8000.200 | 55.29 | -11.47 | 43.82 | 68.30 | -24.48 | peak |
| 2 | 10000.160 | 56.83 | -8.94 | 47.89 | 68.30 | -20.41 | peak |
| 3 | 11000.480 | 55.88 | -7.48 | 48.40 | 74.00 | -25.60 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



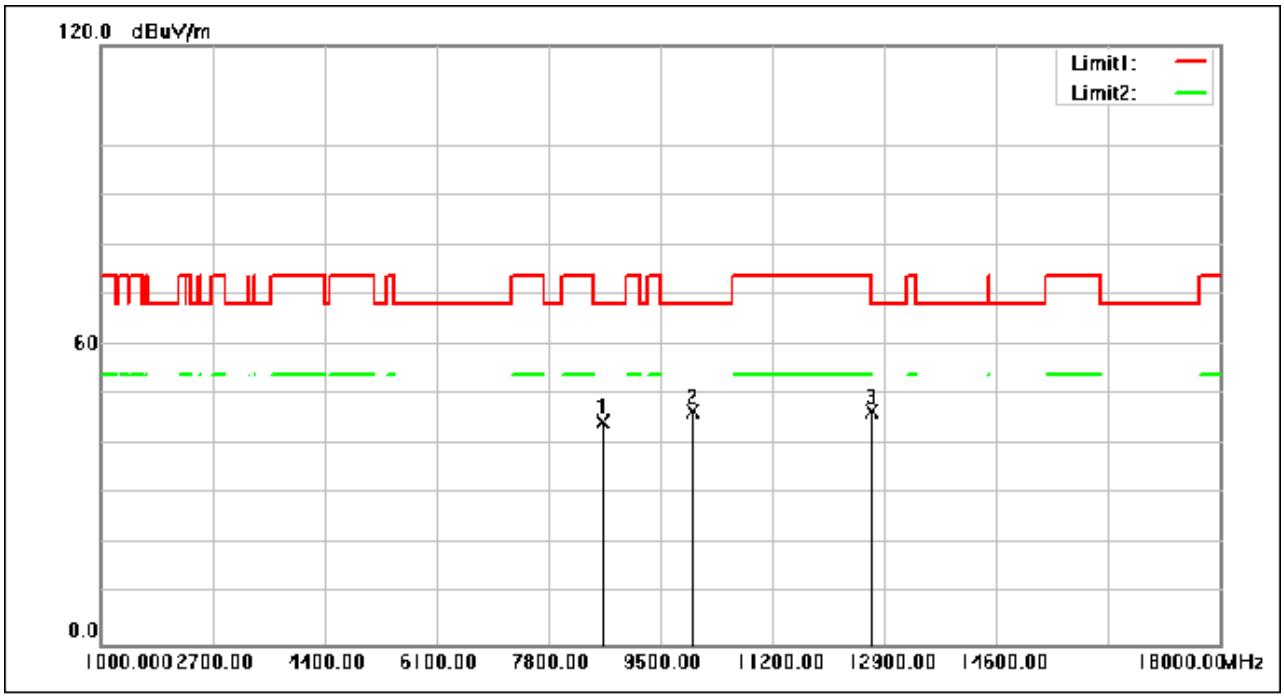

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7460.938 | 54.90 | -10.87 | 44.03 | 74.00 | -29.97 | peak |
| 2 | 9847.154 | 55.90 | -9.16 | 46.74 | 68.30 | -21.56 | peak |
| 3 | 12895.036 | 53.31 | -7.47 | 45.84 | 68.30 | -22.46 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



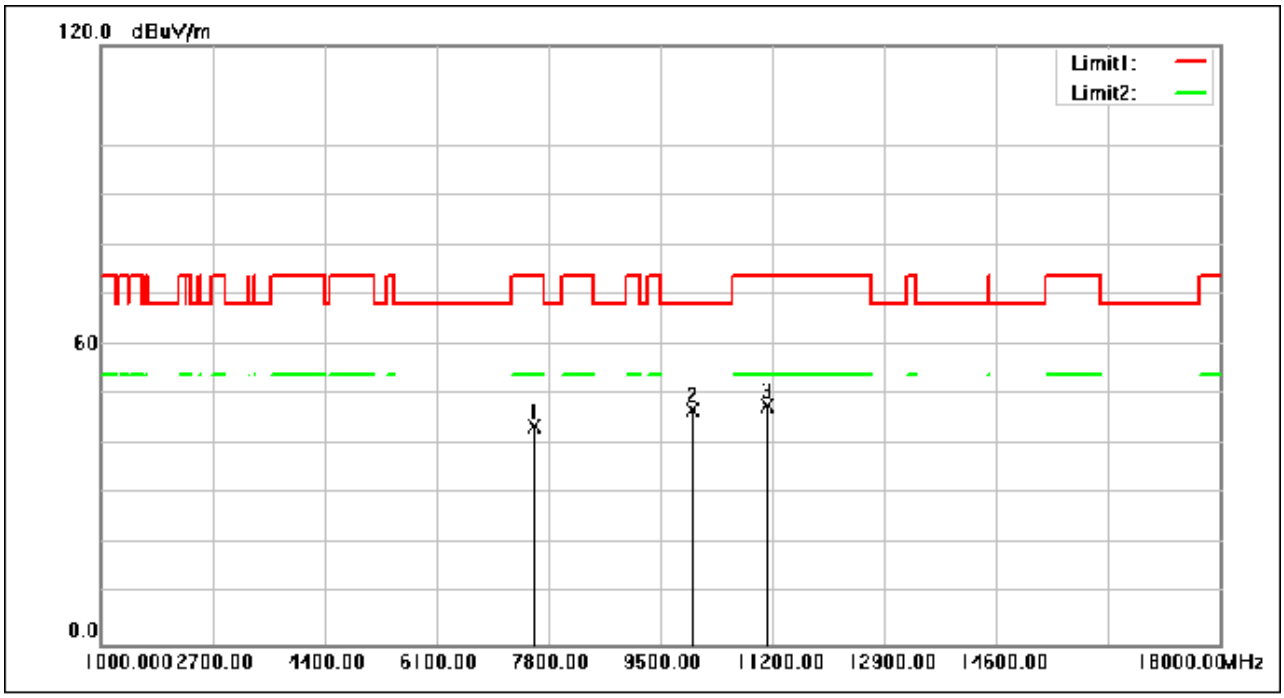

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7838.354 | 54.85 | -11.27 | 43.58 | 68.30 | -24.72 | peak |
| 2 | 10668.627 | 53.75 | -7.79 | 45.96 | 74.00 | -28.04 | peak |
| 3 | 15686.547 | 53.40 | -7.35 | 46.05 | 74.00 | -27.95 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



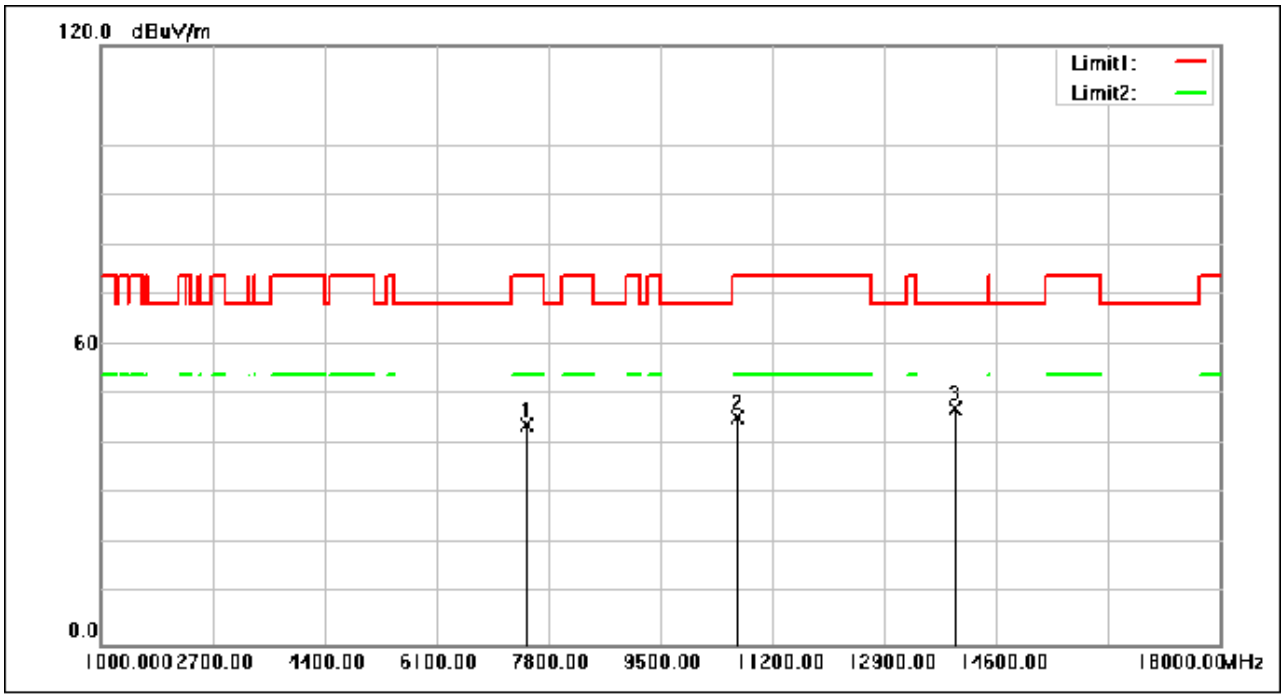

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 8623.785 | 55.16 | -10.73 | 44.43 | 68.30 | -23.87 | peak |
| 2 | 9999.480 | 55.47 | -8.94 | 46.53 | 68.30 | -21.77 | peak |
| 3 | 12698.508 | 54.10 | -7.51 | 46.59 | 74.00 | -27.41 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



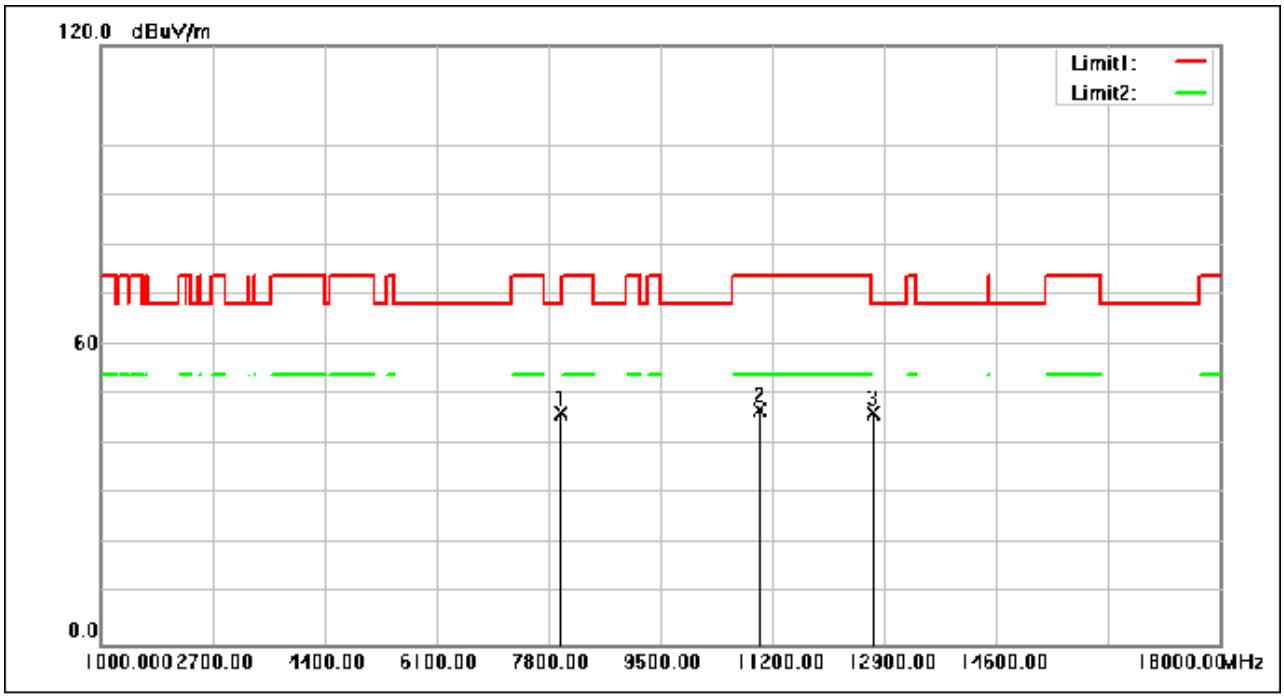

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7592.184 | 54.52 | -10.96 | 43.56 | 74.00 | -30.44 | peak |
| 2 | 9999.480 | 55.85 | -8.94 | 46.91 | 68.30 | -21.39 | peak |
| 3 | 11124.245 | 55.21 | -7.41 | 47.80 | 74.00 | -26.20 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



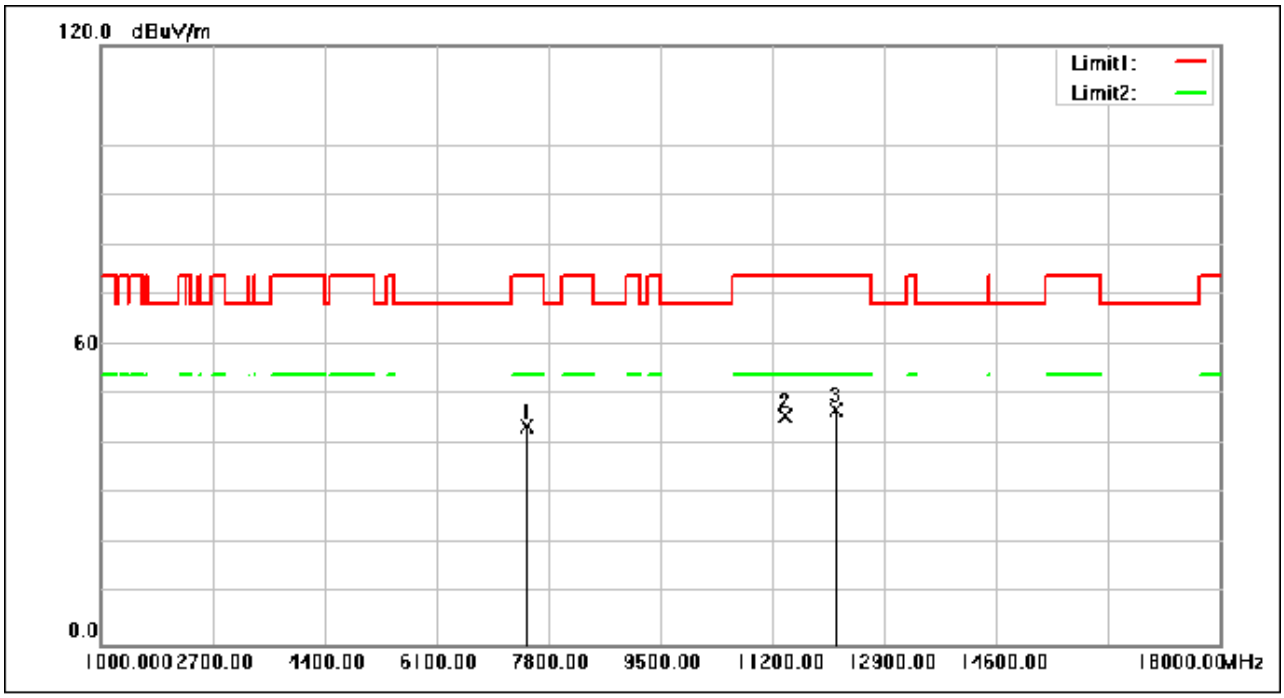

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7467.059 | 54.74 | -10.87 | 43.87 | 74.00 | -30.13 | peak |
| 2 | 10665.227 | 53.28 | -7.79 | 45.49 | 74.00 | -28.51 | peak |
| 3 | 13976.959 | 55.37 | -8.11 | 47.26 | 68.30 | -21.04 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



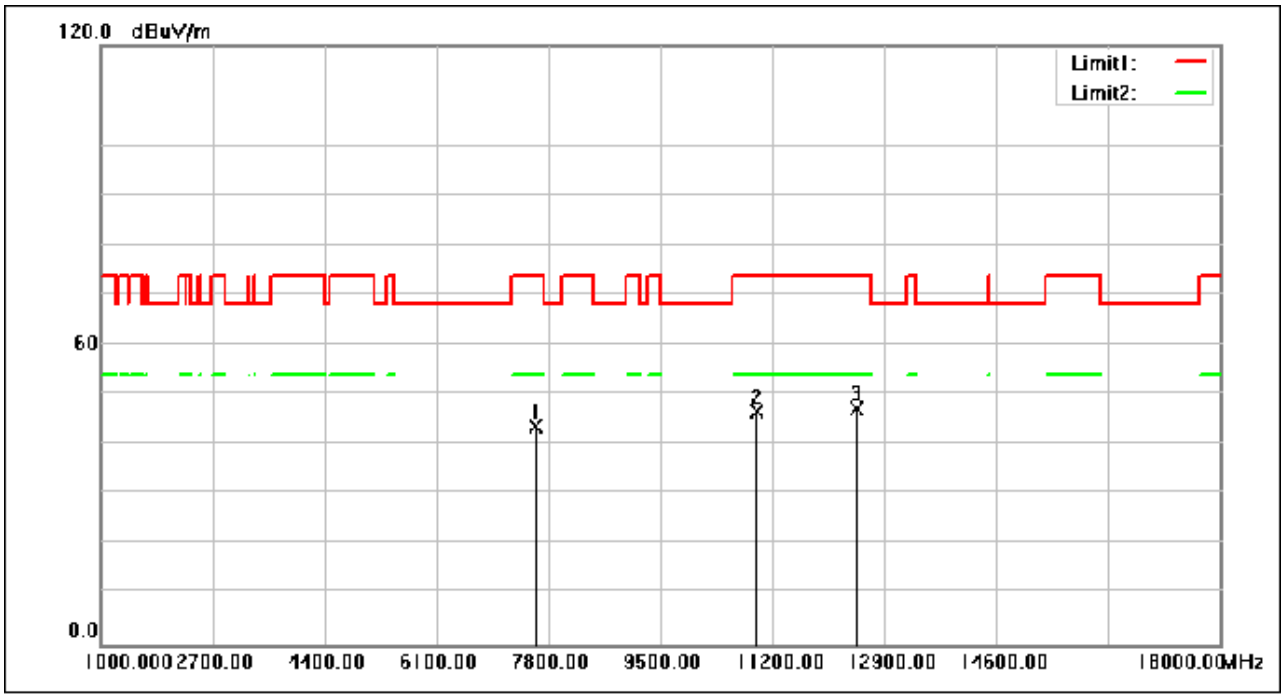

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 8000.200 | 57.69 | -11.47 | 46.22 | 68.30 | -22.08 | peak |
| 2 | 11000.480 | 54.30 | -7.48 | 46.82 | 74.00 | -27.18 | peak |
| 3 | 12722.309 | 53.83 | -7.51 | 46.32 | 68.30 | -21.98 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



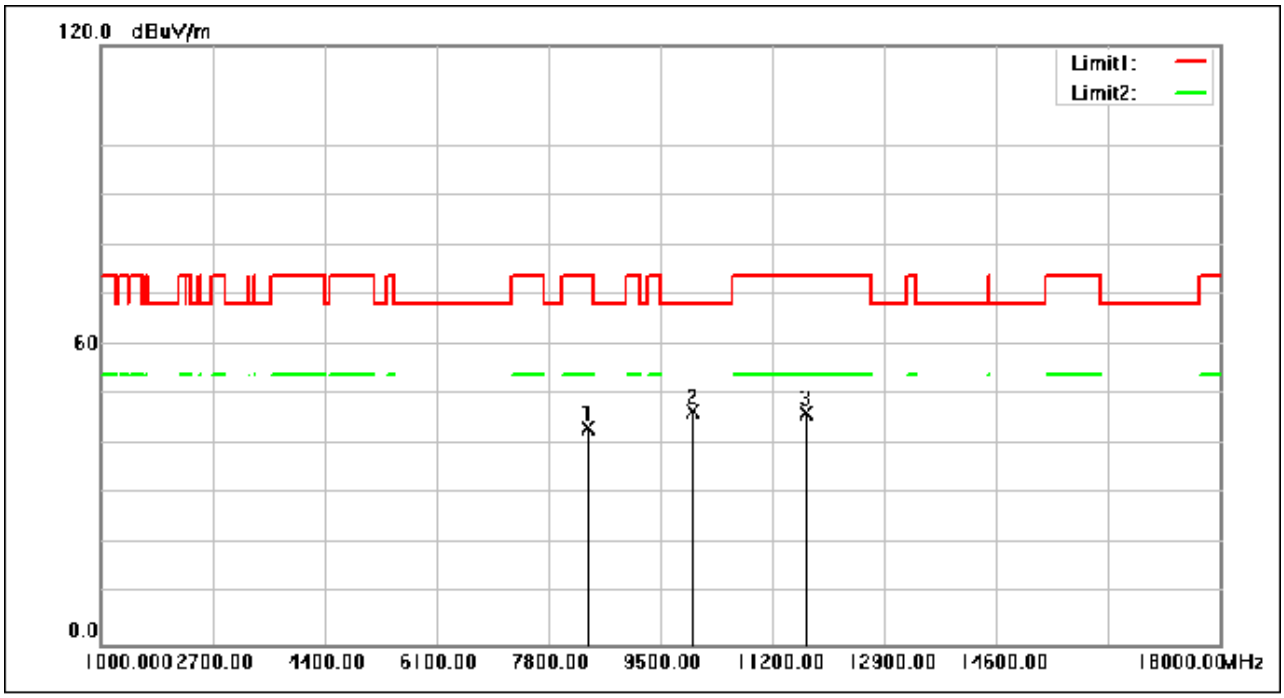

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7462.979 | 54.56 | -10.87 | 43.69 | 74.00 | -30.31 | peak |
| 2 | 11403.056 | 53.06 | -7.27 | 45.79 | 74.00 | -28.21 | peak |
| 3 | 12176.247 | 54.54 | -7.59 | 46.95 | 74.00 | -27.05 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



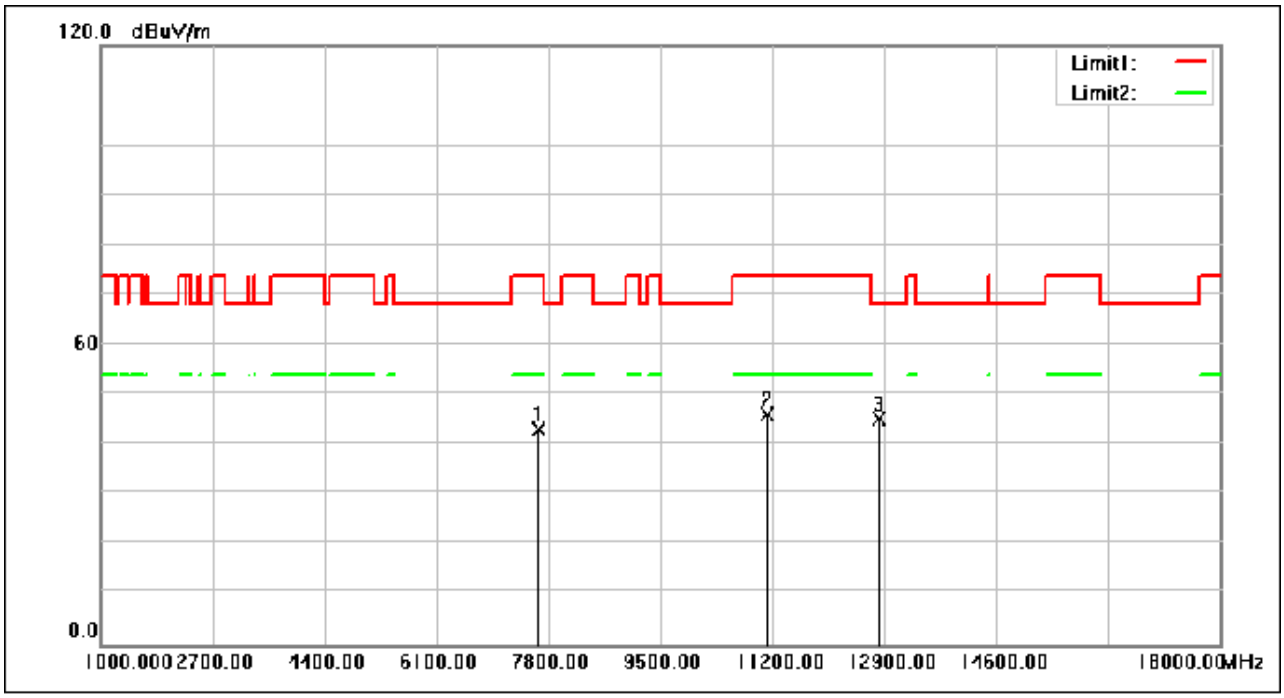

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7616.665 | 54.68 | -10.99 | 43.69 | 74.00 | -30.31 | peak |
| 2 | 10978.039 | 54.11 | -7.48 | 46.63 | 74.00 | -27.37 | peak |
| 3 | 12476.139 | 54.81 | -7.54 | 47.27 | 74.00 | -26.73 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



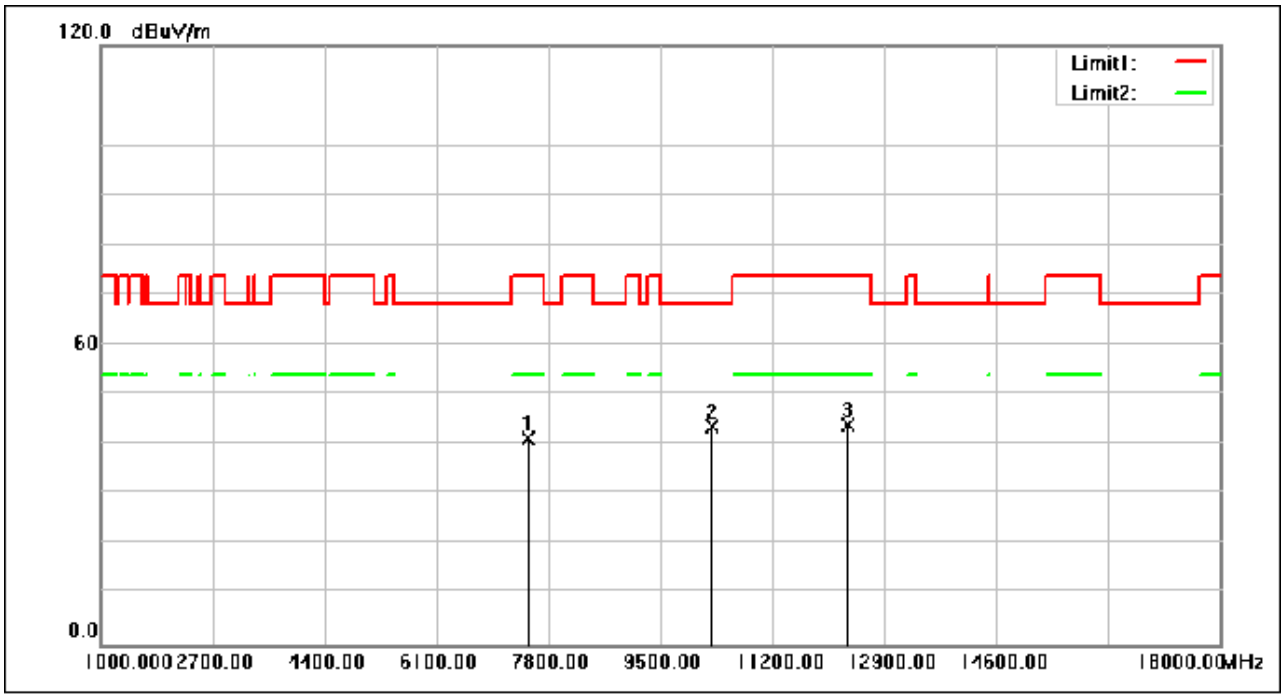

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 8394.616 | 54.32 | -11.11 | 43.21 | 74.00 | -30.79 | peak |
| 2 | 10000.160 | 55.58 | -8.94 | 46.64 | 68.30 | -21.66 | peak |
| 3 | 11719.269 | 53.85 | -7.40 | 46.45 | 74.00 | -27.55 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



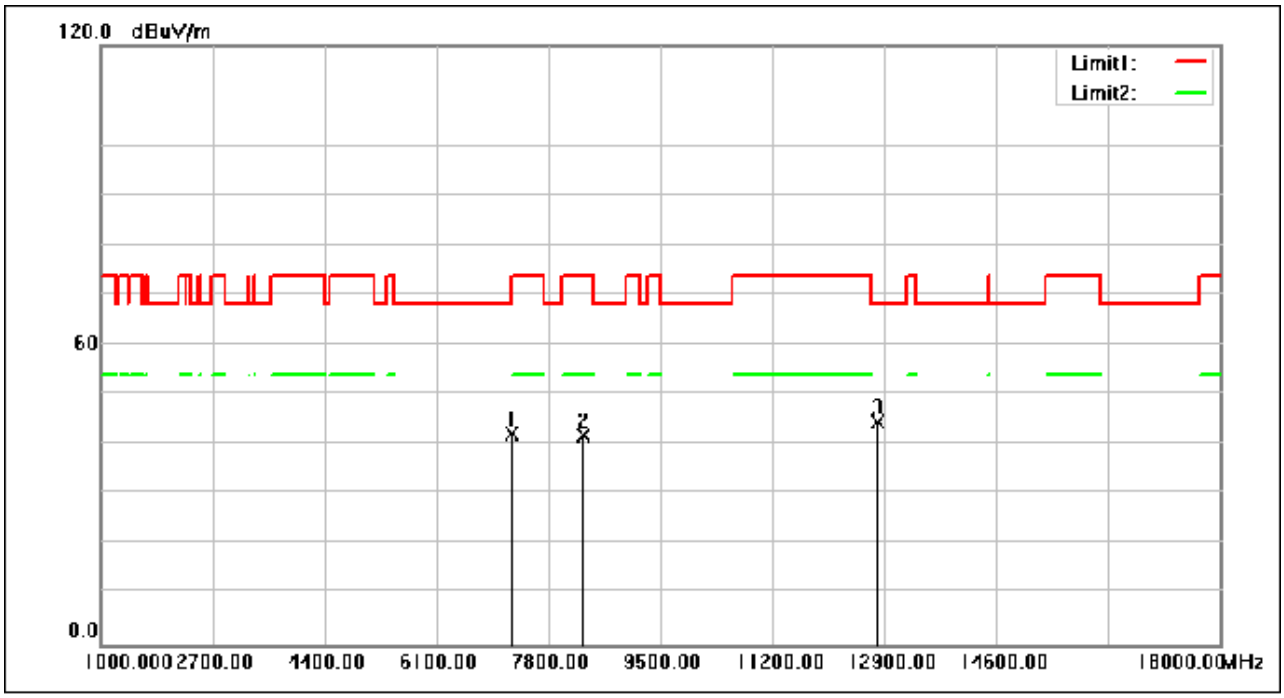

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7655.426 | 54.06 | -11.04 | 43.02 | 74.00 | -30.98 | peak |
| 2 | 11131.045 | 53.38 | -7.42 | 45.96 | 74.00 | -28.04 | peak |
| 3 | 12820.913 | 52.54 | -7.49 | 45.05 | 68.30 | -23.25 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



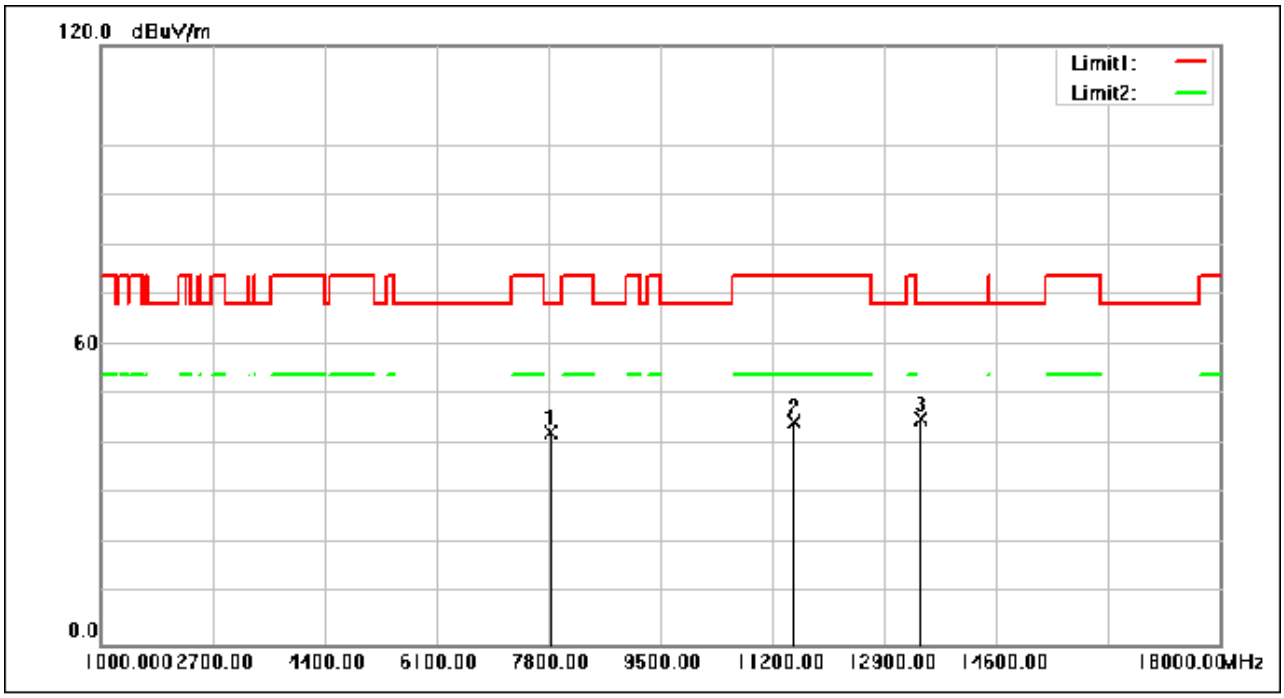

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7499.020 | 52.04 | -10.85 | 41.19 | 74.00 | -32.81 | peak |
| 2 | 10291.212 | 52.05 | -8.45 | 43.60 | 68.30 | -24.70 | peak |
| 3 | 12351.694 | 51.54 | -7.56 | 43.98 | 74.00 | -30.02 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



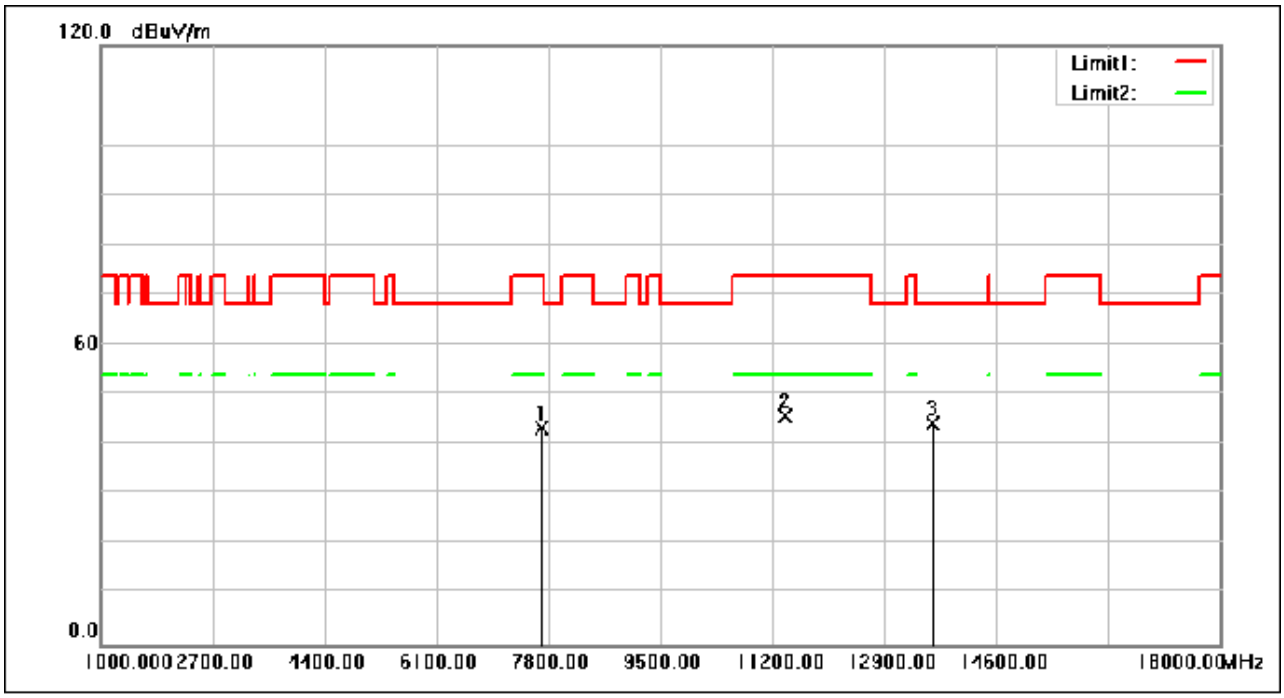

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7254.890 | 53.54 | -11.49 | 42.05 | 74.00 | -31.95 | peak |
| 2 | 8330.693 | 52.93 | -11.19 | 41.74 | 74.00 | -32.26 | peak |
| 3 | 12787.592 | 52.05 | -7.49 | 44.56 | 68.30 | -23.74 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



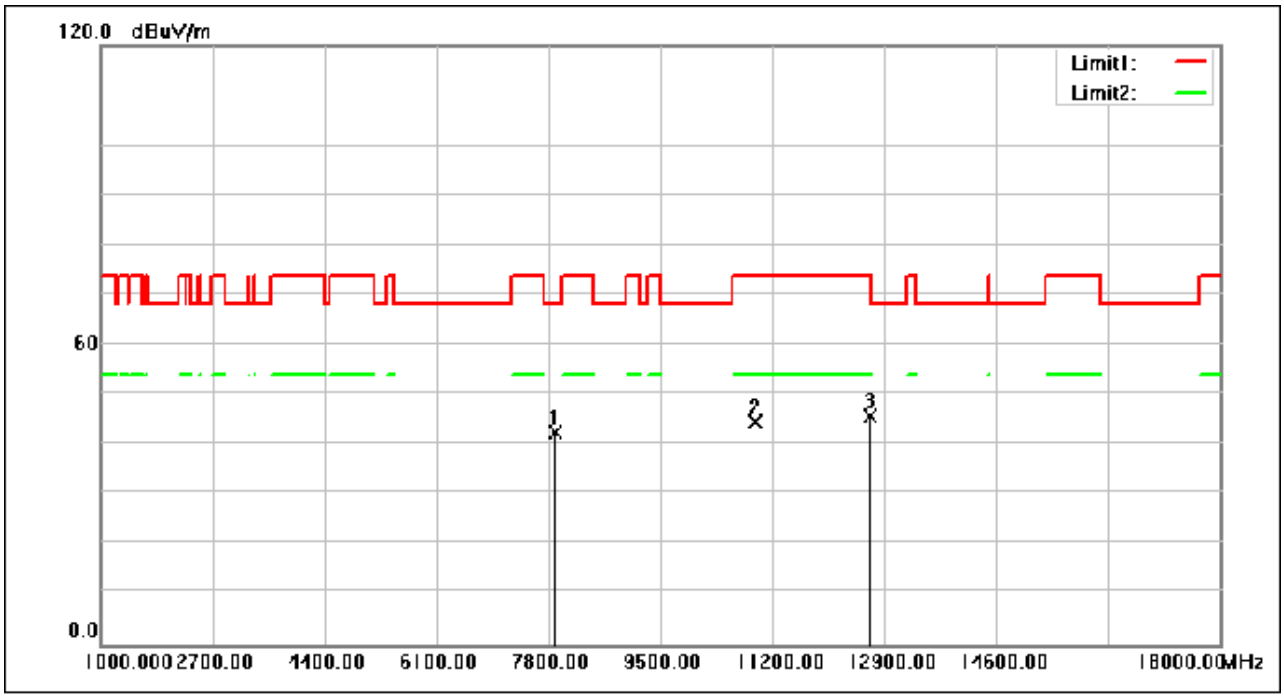

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7832.233 | 53.81 | -11.26 | 42.55 | 68.30 | -25.75 | peak |
| 2 | 11528.181 | 51.90 | -7.24 | 44.66 | 74.00 | -29.34 | peak |
| 3 | 13464.898 | 52.70 | -7.64 | 45.06 | 68.30 | -23.24 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



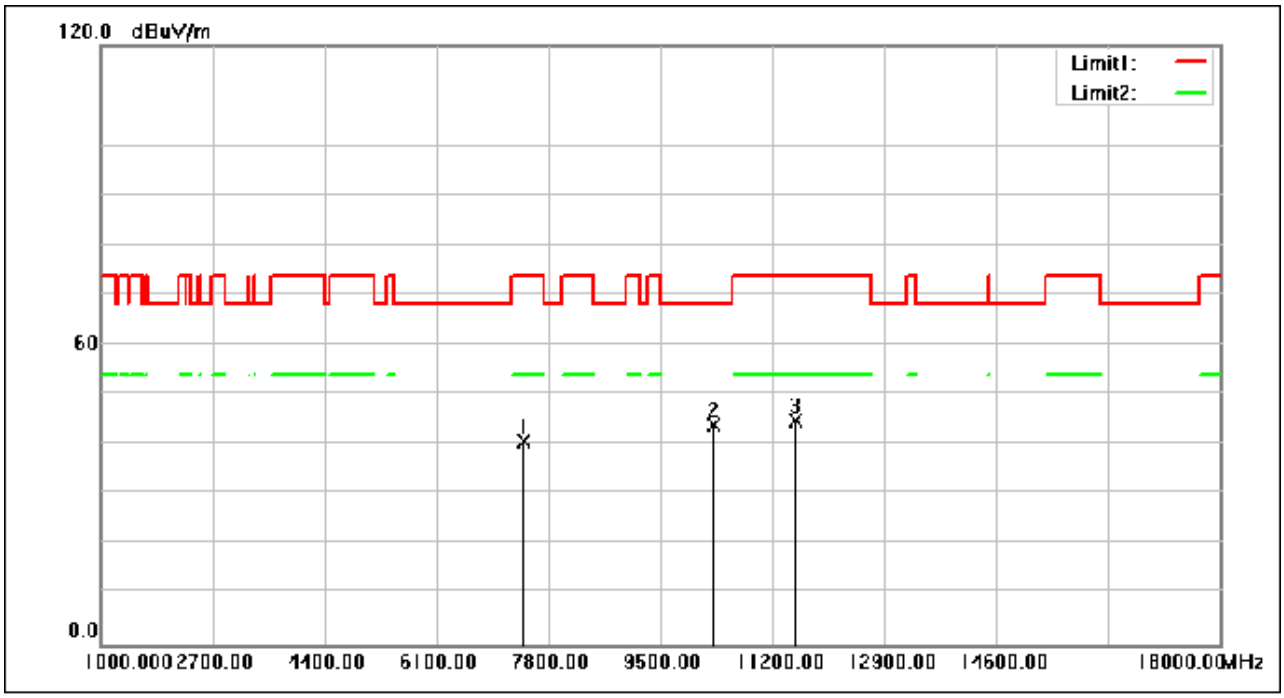

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7694.188 | 54.59 | -11.09 | 43.50 | 74.00 | -30.50 | peak |
| 2 | 11402.376 | 52.99 | -7.27 | 45.72 | 74.00 | -28.28 | peak |
| 3 | 13639.665 | 51.98 | -7.78 | 44.20 | 68.30 | -24.10 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



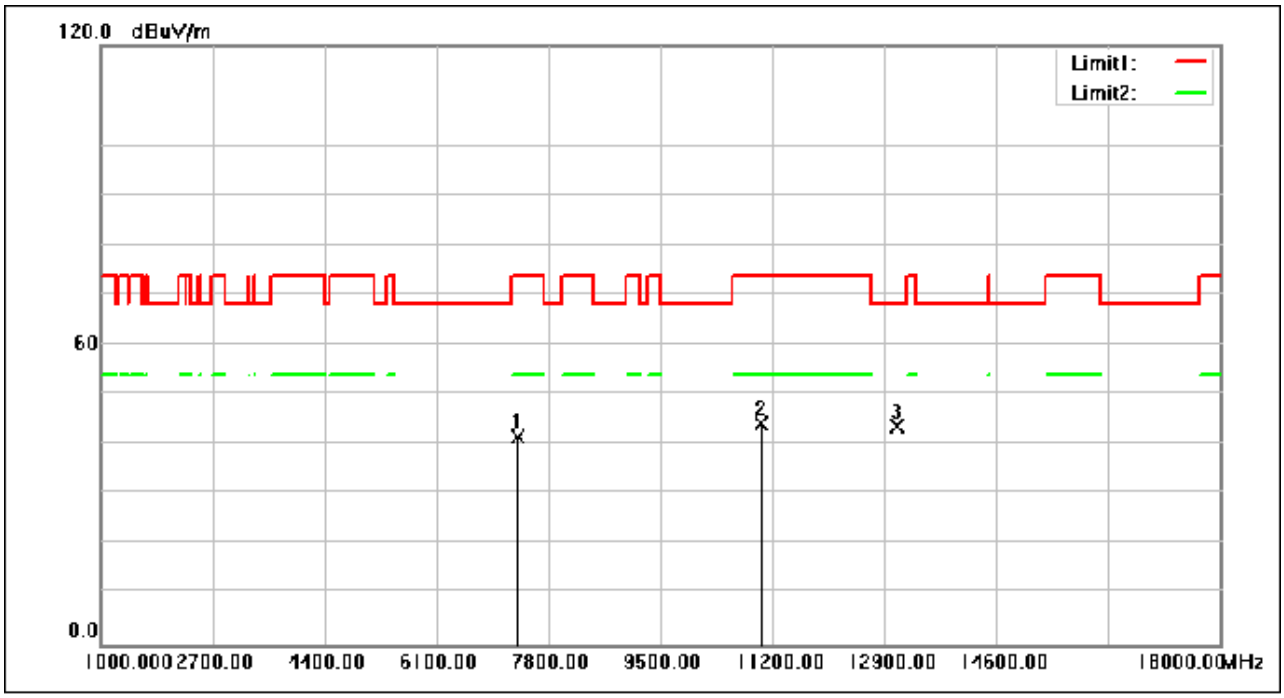

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7893.436 | 53.85 | -11.34 | 42.51 | 68.30 | -25.79 | peak |
| 2 | 10948.798 | 52.10 | -7.48 | 44.62 | 74.00 | -29.38 | peak |
| 3 | 12686.267 | 53.23 | -7.51 | 45.72 | 74.00 | -28.28 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



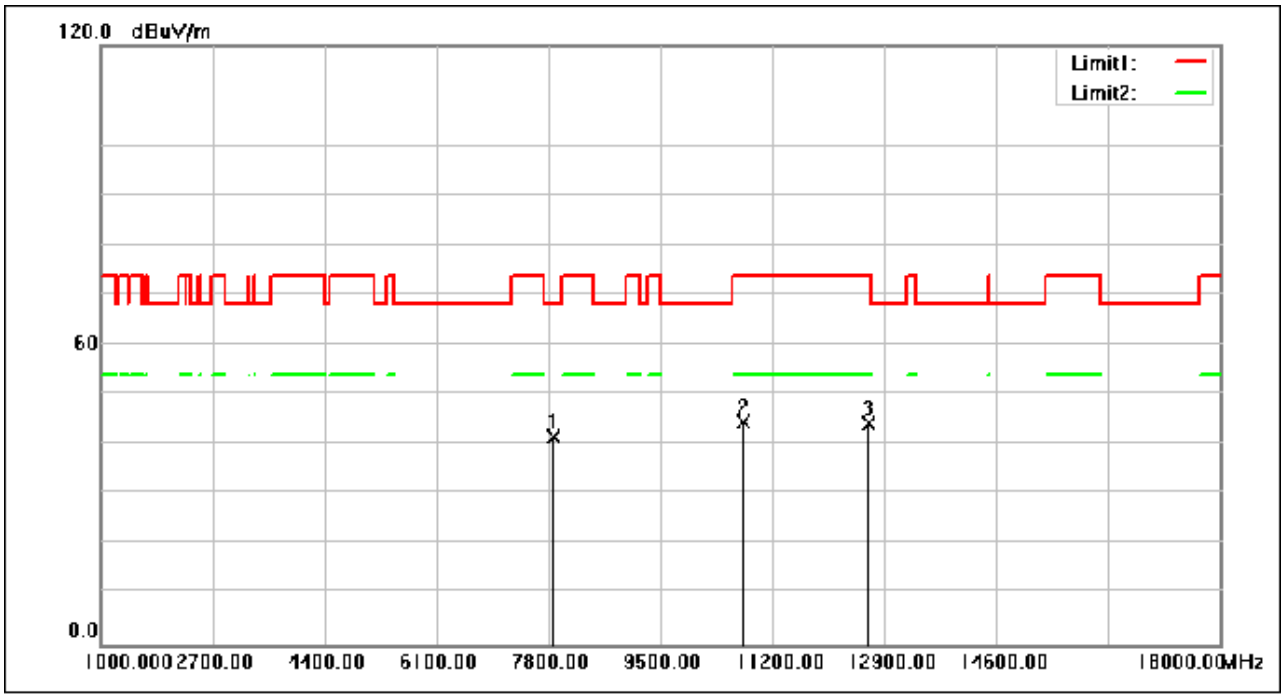

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7415.377 | 51.58 | -10.89 | 40.69 | 74.00 | -33.31 | peak |
| 2 | 10295.972 | 52.33 | -8.44 | 43.89 | 68.30 | -24.41 | peak |
| 3 | 11561.502 | 52.07 | -7.27 | 44.80 | 74.00 | -29.20 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



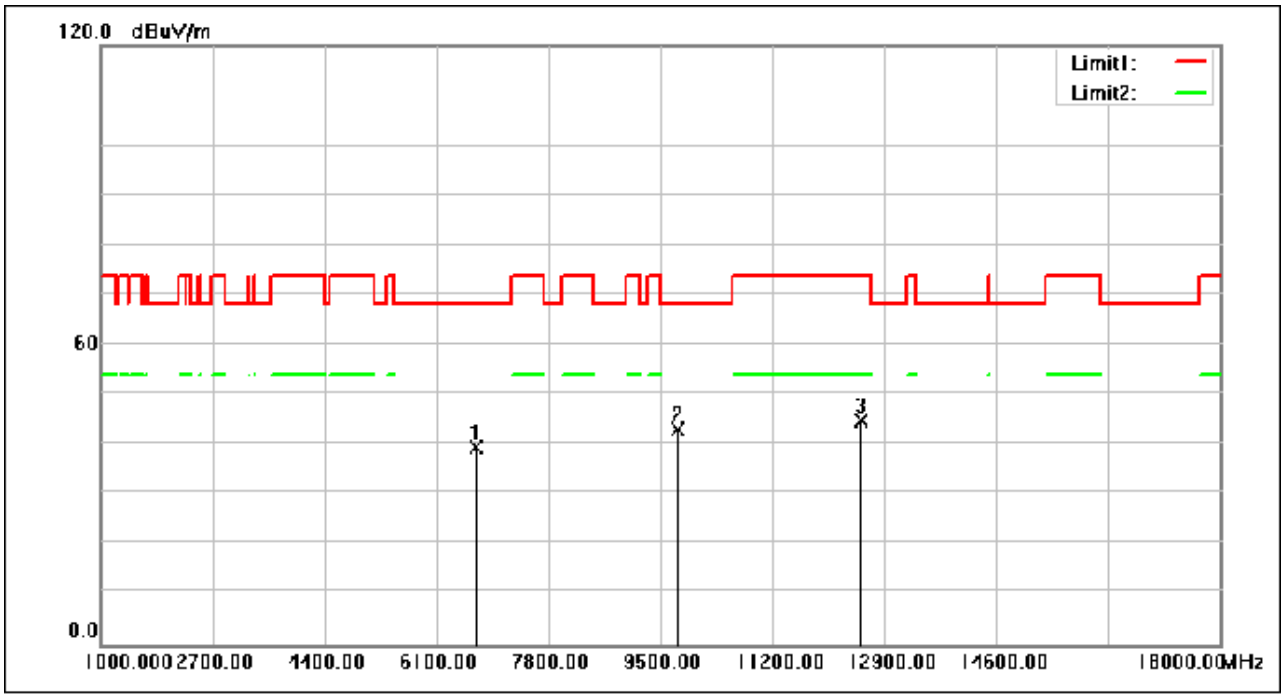

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7352.134 | 52.60 | -11.09 | 41.51 | 74.00 | -32.49 | peak |
| 2 | 11041.282 | 51.63 | -7.46 | 44.17 | 74.00 | -29.83 | peak |
| 3 | 13101.764 | 51.21 | -7.50 | 43.71 | 68.30 | -24.59 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



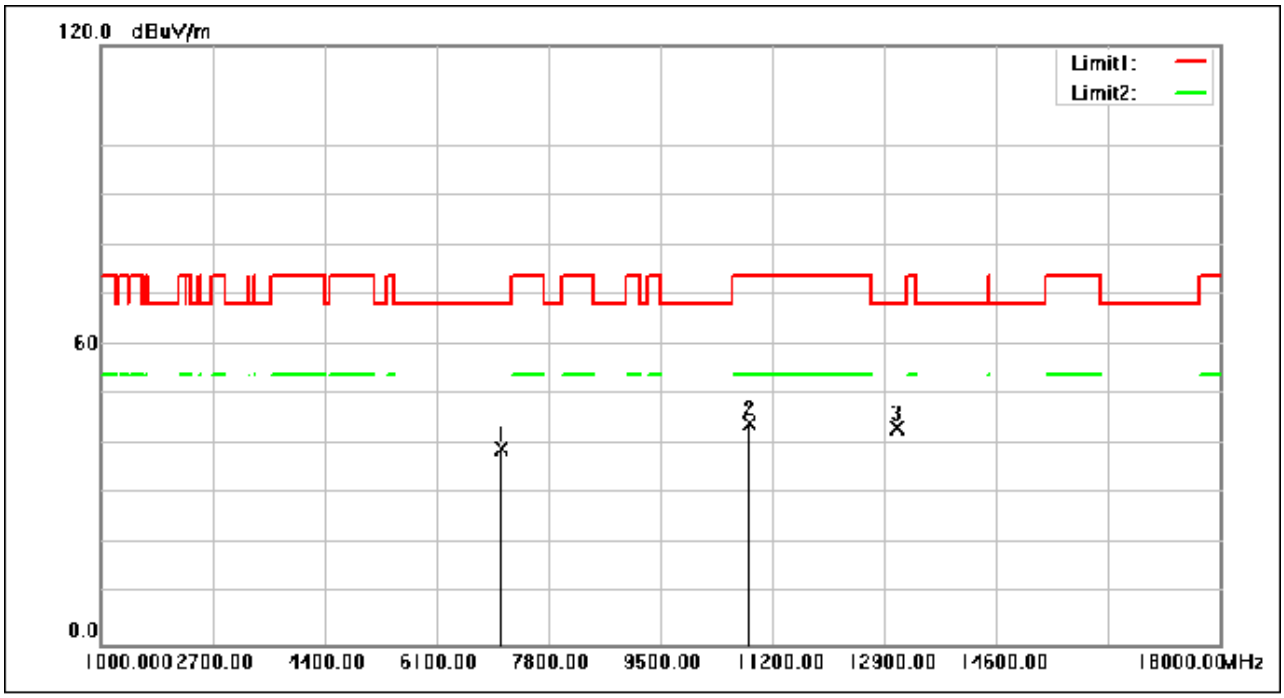

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7886.635 | 52.87 | -11.33 | 41.54 | 68.30 | -26.76 | peak |
| 2 | 10757.030 | 52.07 | -7.62 | 44.45 | 74.00 | -29.55 | peak |
| 3 | 12661.786 | 51.85 | -7.51 | 44.34 | 74.00 | -29.66 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



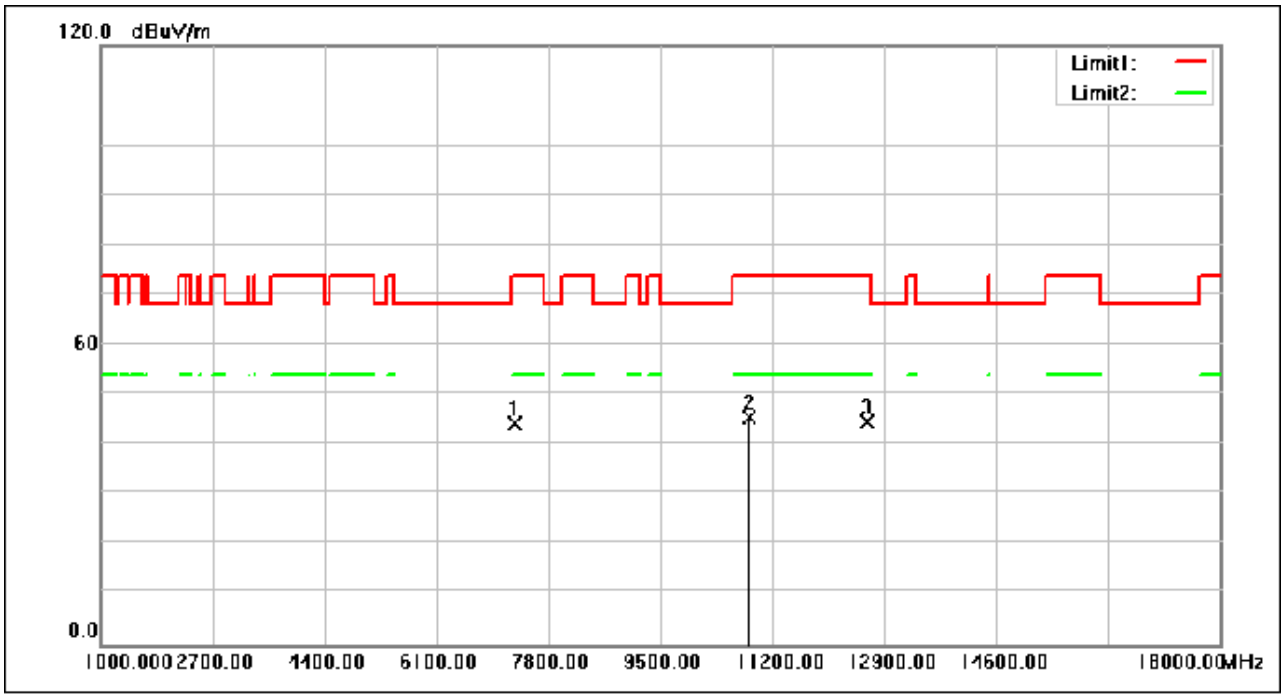

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 6701.348 | 53.20 | -13.66 | 39.54 | 68.30 | -28.76 | peak |
| 2 | 9768.951 | 52.18 | -9.24 | 42.94 | 68.30 | -25.36 | peak |
| 3 | 12548.902 | 52.27 | -7.53 | 44.74 | 74.00 | -29.26 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



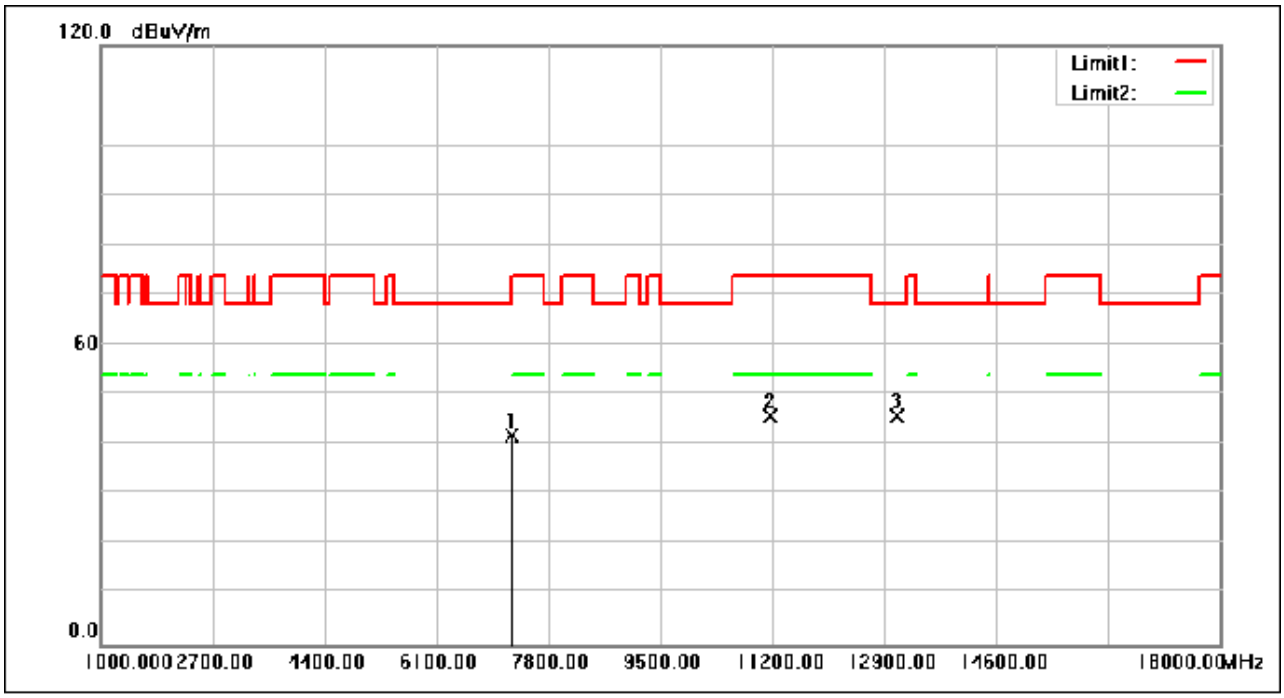

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7084.203 | 51.37 | -12.18 | 39.19 | 68.30 | -29.11 | peak |
| 2 | 10859.034 | 51.67 | -7.48 | 44.19 | 74.00 | -29.81 | peak |
| 3 | 13082.043 | 50.91 | -7.49 | 43.42 | 68.30 | -24.88 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:middle



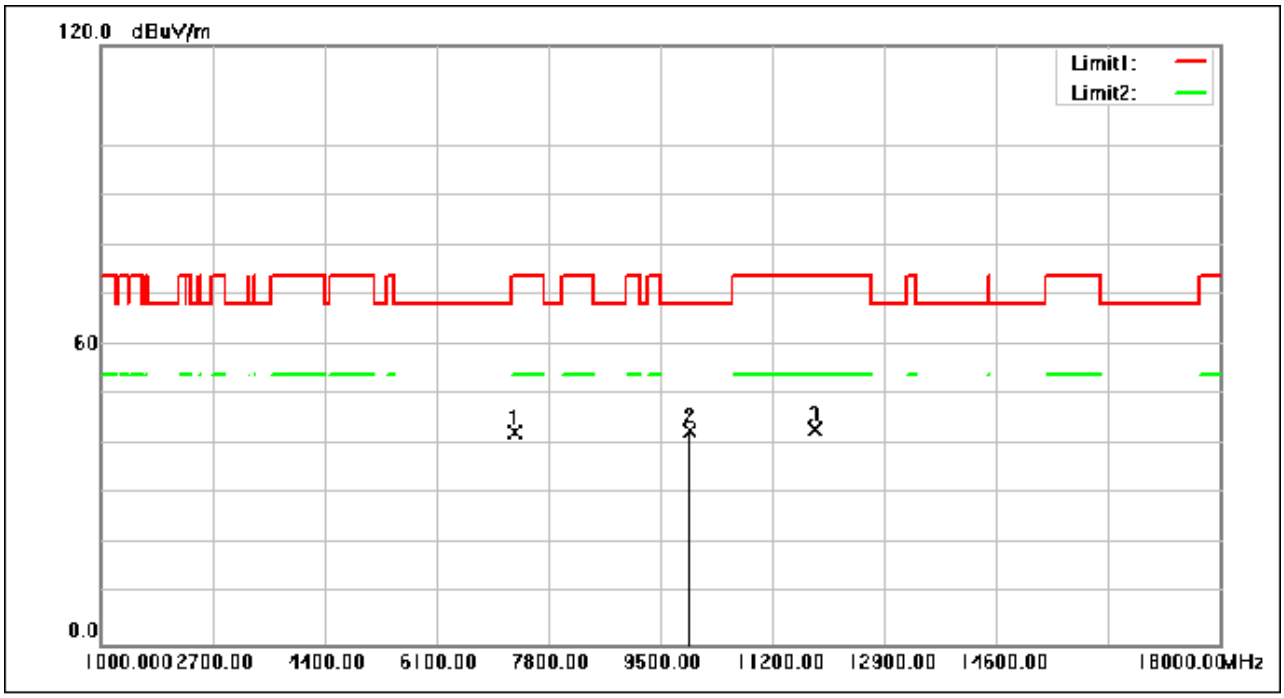

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7301.132 | 55.67 | -11.30 | 44.37 | 74.00 | -29.63 | peak |
| 2 | 10838.633 | 52.92 | -7.47 | 45.45 | 74.00 | -28.55 | peak |
| 3 | 12652.946 | 52.08 | -7.51 | 44.57 | 74.00 | -29.43 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



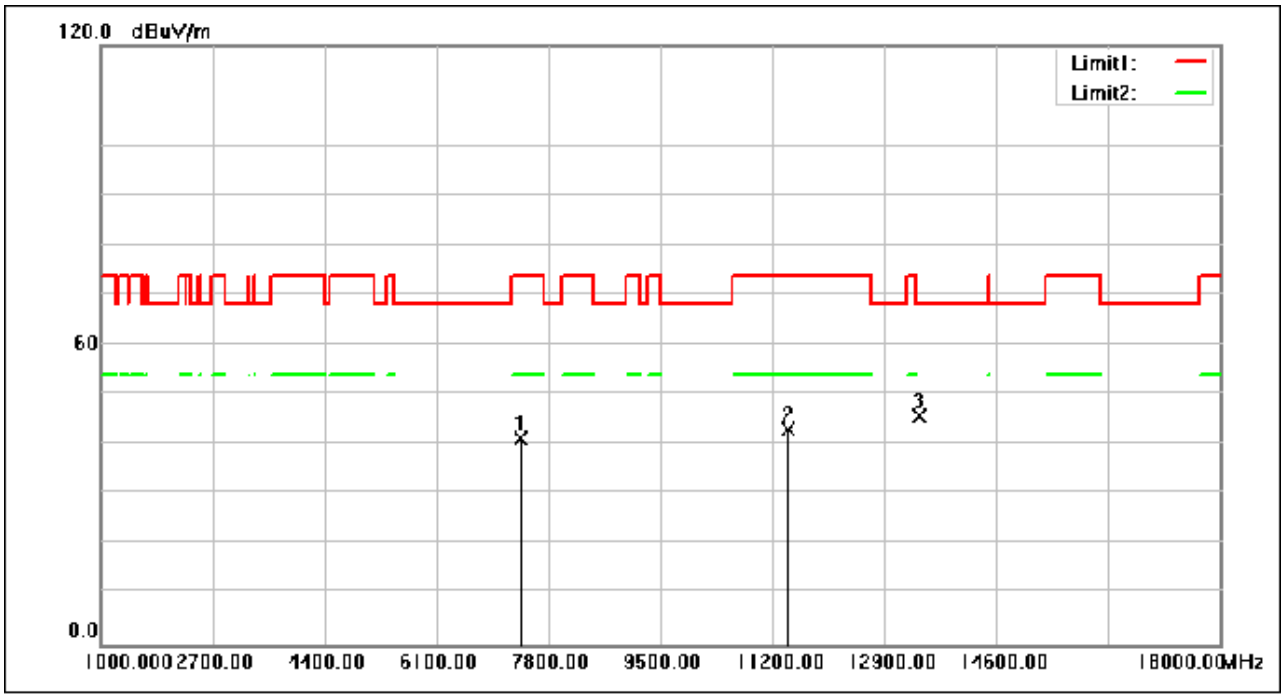

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7248.090 | 53.28 | -11.52 | 41.76 | 68.30 | -26.54 | peak |
| 2 | 11160.286 | 53.17 | -7.39 | 45.78 | 74.00 | -28.22 | peak |
| 3 | 13099.724 | 53.18 | -7.50 | 45.68 | 68.30 | -22.62 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



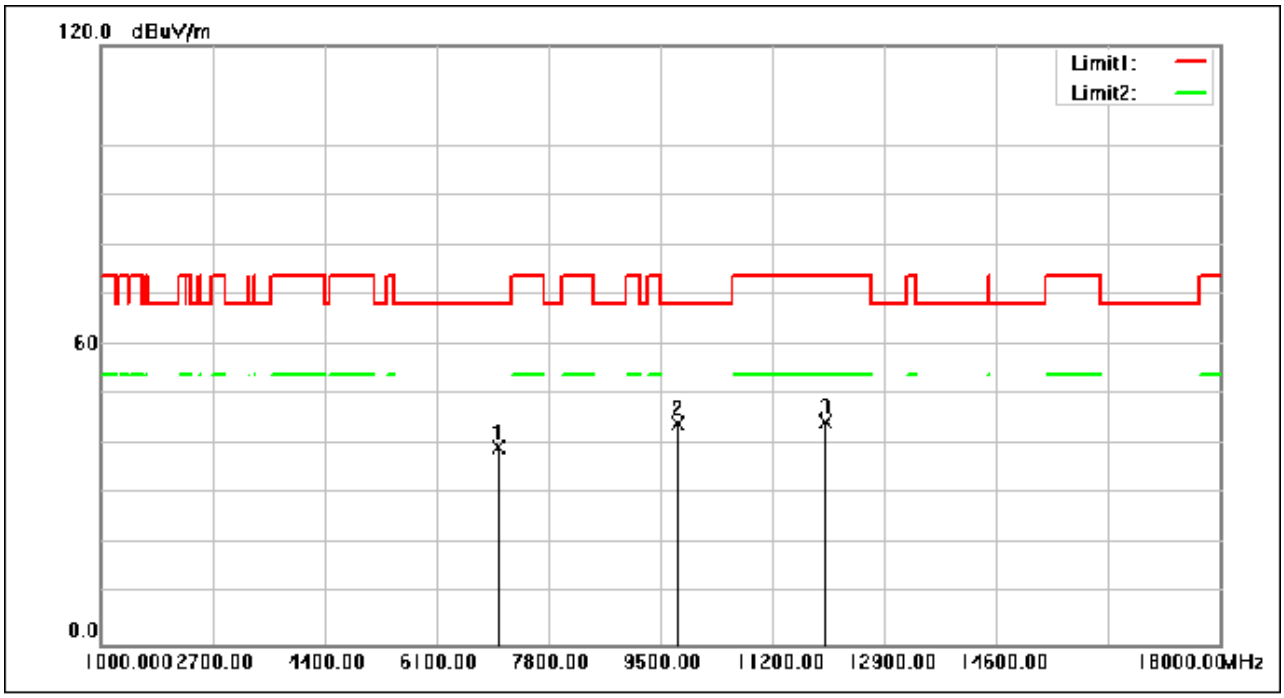

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7279.371 | 53.81 | -11.39 | 42.42 | 74.00 | -31.58 | peak |
| 2 | 9950.518 | 51.88 | -9.01 | 42.87 | 68.30 | -25.43 | peak |
| 3 | 11851.194 | 50.63 | -7.51 | 43.12 | 74.00 | -30.88 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



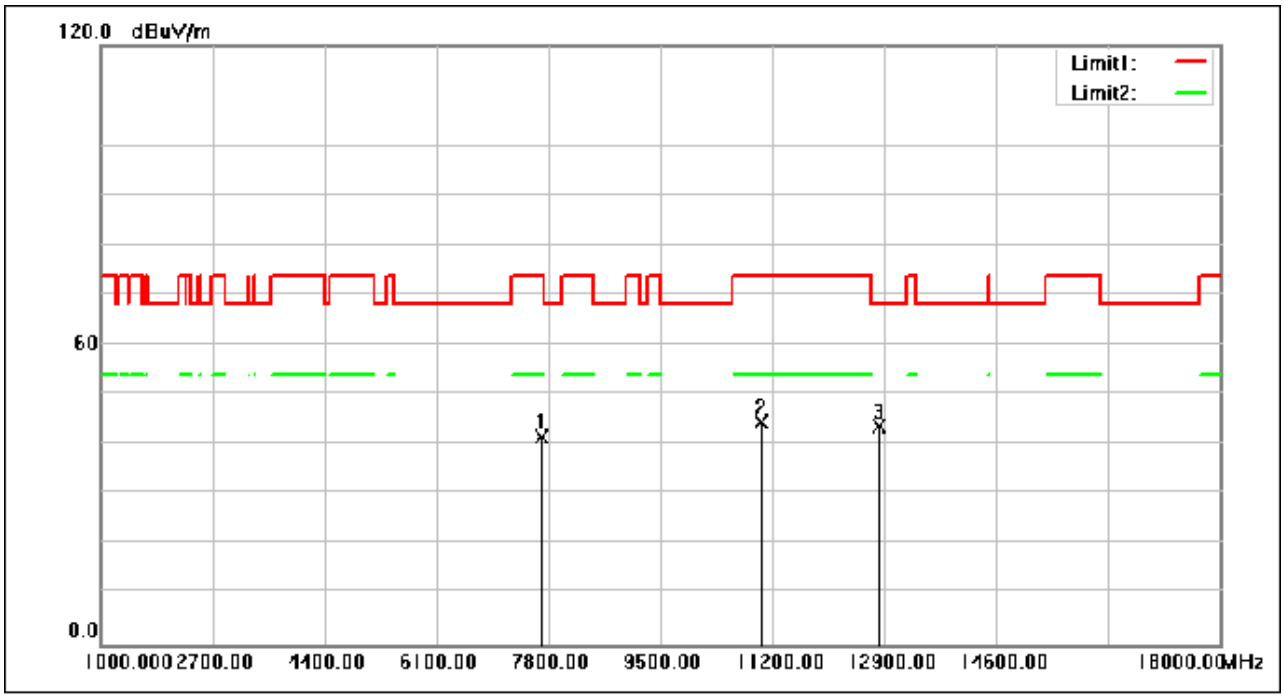

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7380.695 | 52.11 | -10.97 | 41.14 | 74.00 | -32.86 | peak |
| 2 | 11445.218 | 50.16 | -7.24 | 42.92 | 74.00 | -31.08 | peak |
| 3 | 13427.497 | 53.34 | -7.62 | 45.72 | 68.30 | -22.58 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



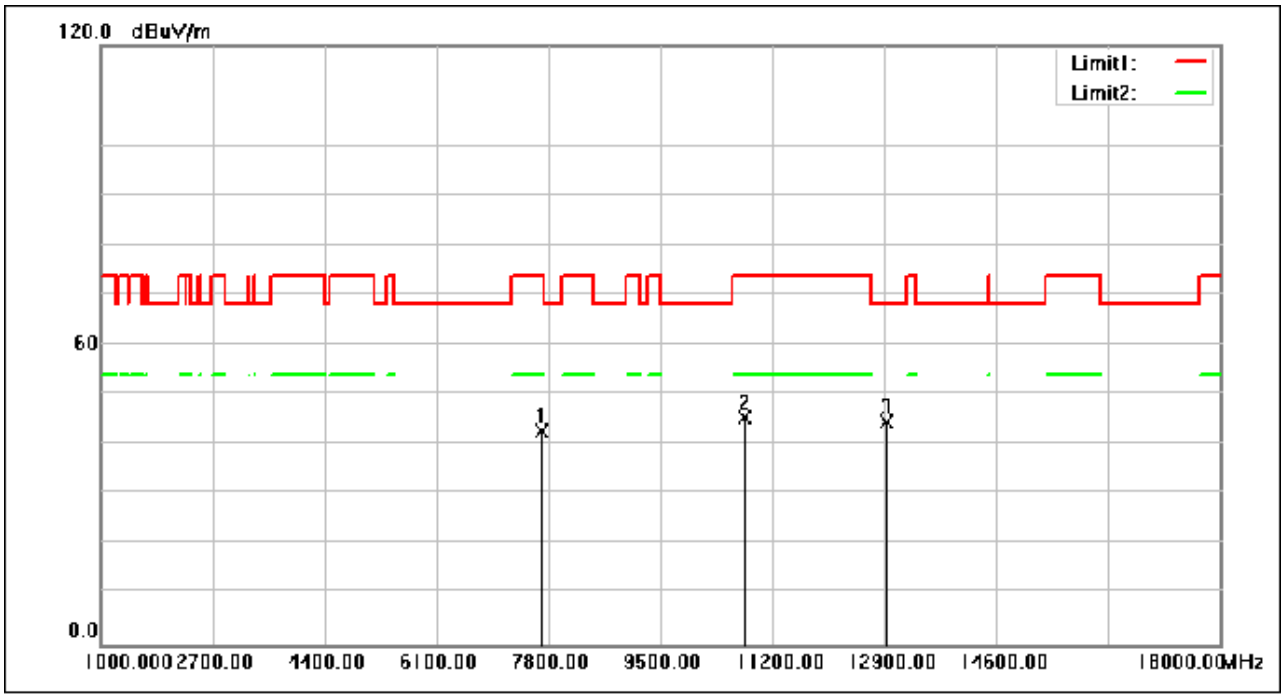

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7048.842 | 51.93 | -12.33 | 39.60 | 68.30 | -28.70 | peak |
| 2 | 9759.430 | 53.60 | -9.25 | 44.35 | 68.30 | -23.95 | peak |
| 3 | 12005.560 | 52.17 | -7.62 | 44.55 | 74.00 | -29.45 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



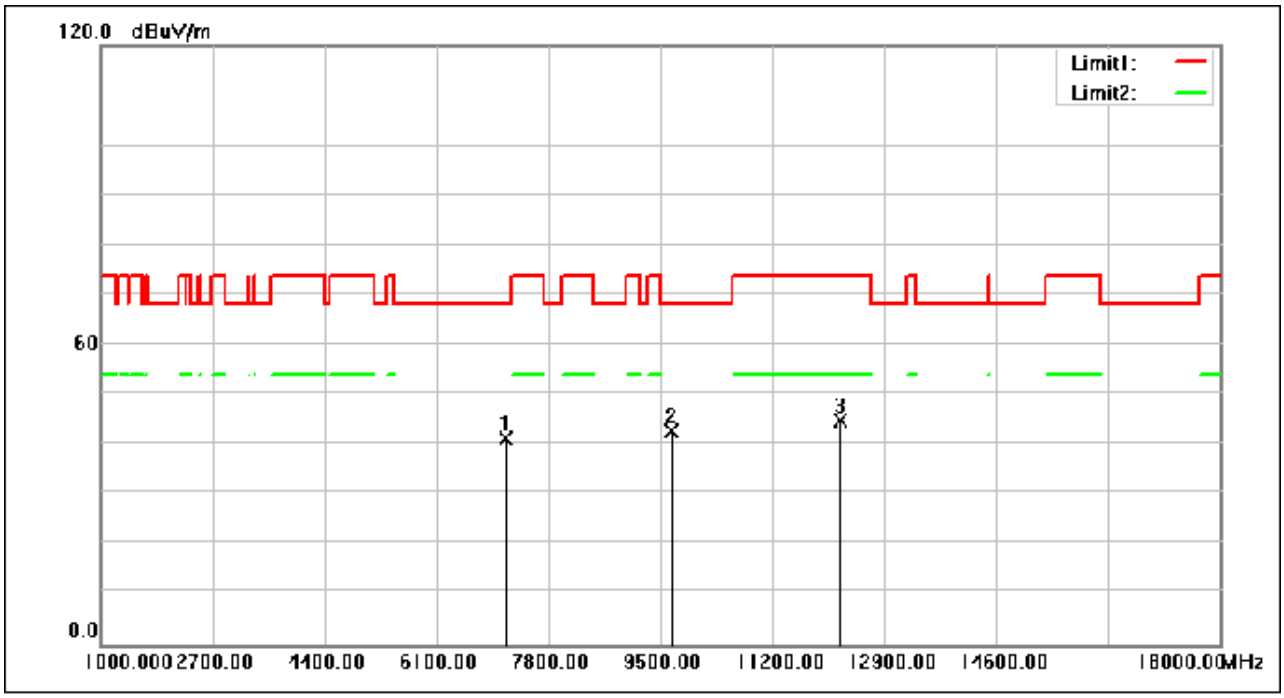

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7691.468 | 52.67 | -11.09 | 41.58 | 74.00 | -32.42 | peak |
| 2 | 11034.481 | 52.08 | -7.46 | 44.62 | 74.00 | -29.38 | peak |
| 3 | 12822.273 | 51.24 | -7.49 | 43.75 | 68.30 | -24.55 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



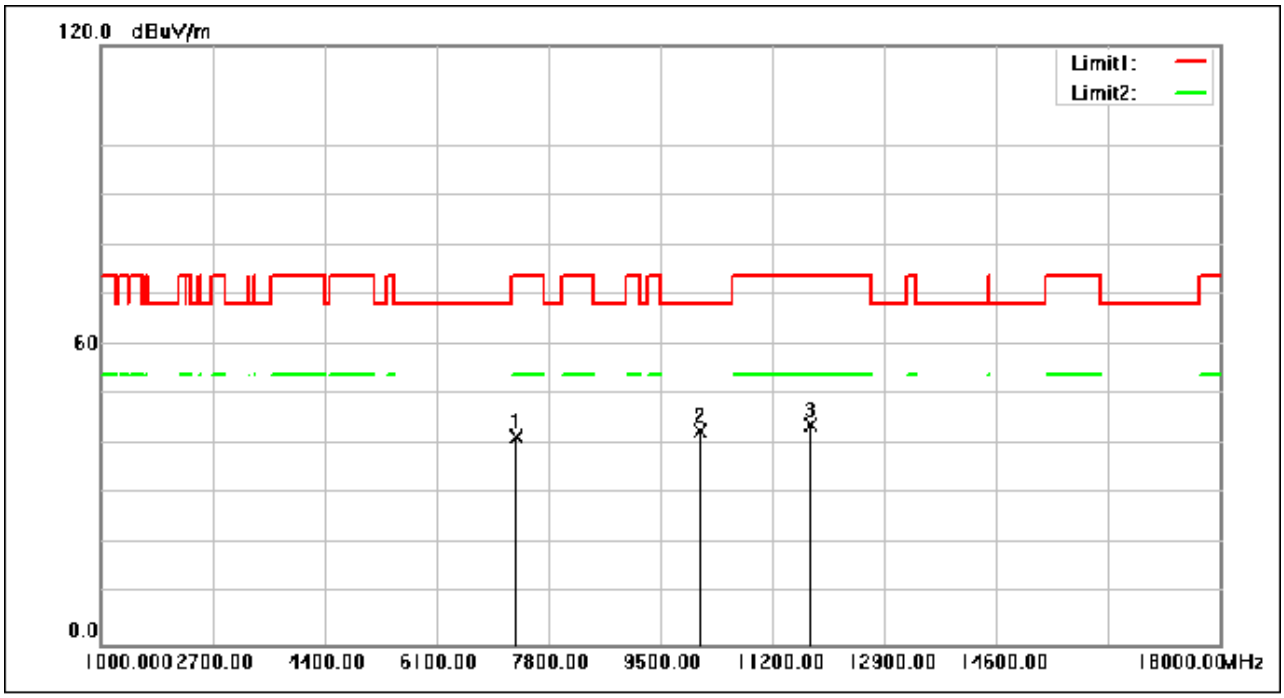

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7694.188 | 53.70 | -11.09 | 42.61 | 74.00 | -31.39 | peak |
| 2 | 10784.231 | 52.96 | -7.56 | 45.40 | 74.00 | -28.60 | peak |
| 3 | 12950.118 | 51.96 | -7.46 | 44.50 | 68.30 | -23.80 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



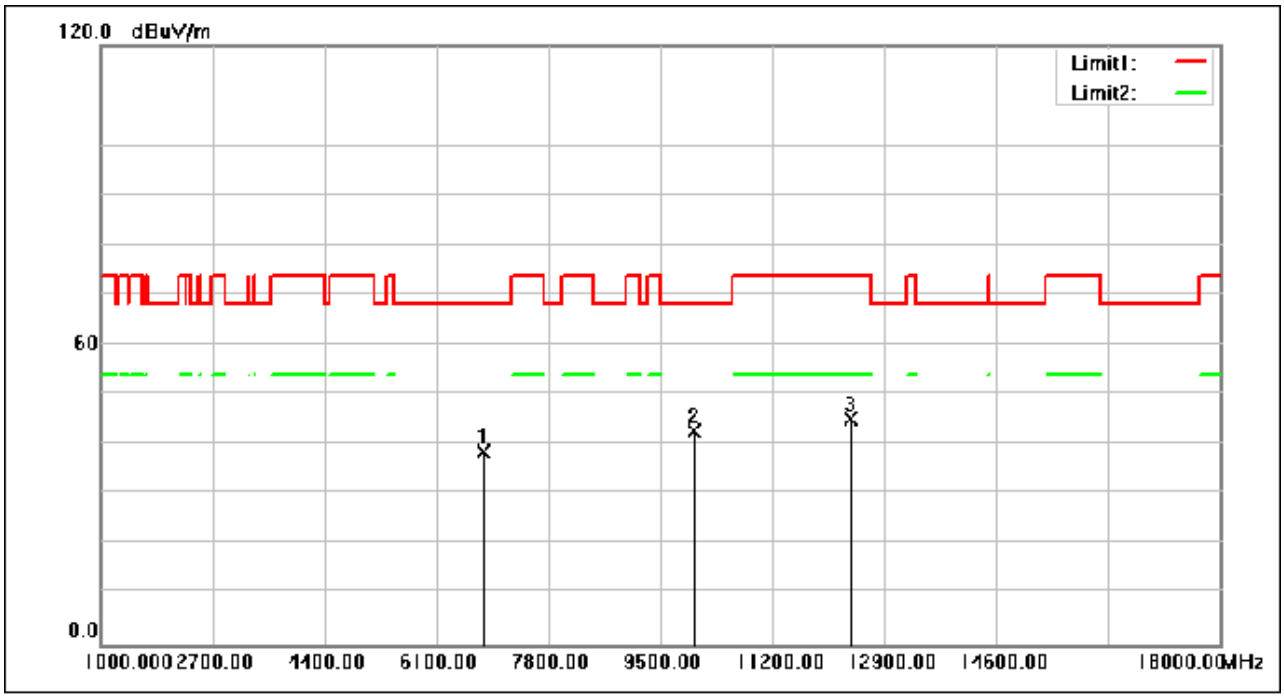

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7147.446 | 53.25 | -11.93 | 41.32 | 68.30 | -26.98 | peak |
| 2 | 9664.227 | 52.10 | -9.36 | 42.74 | 68.30 | -25.56 | peak |
| 3 | 12248.330 | 52.37 | -7.58 | 44.79 | 74.00 | -29.21 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



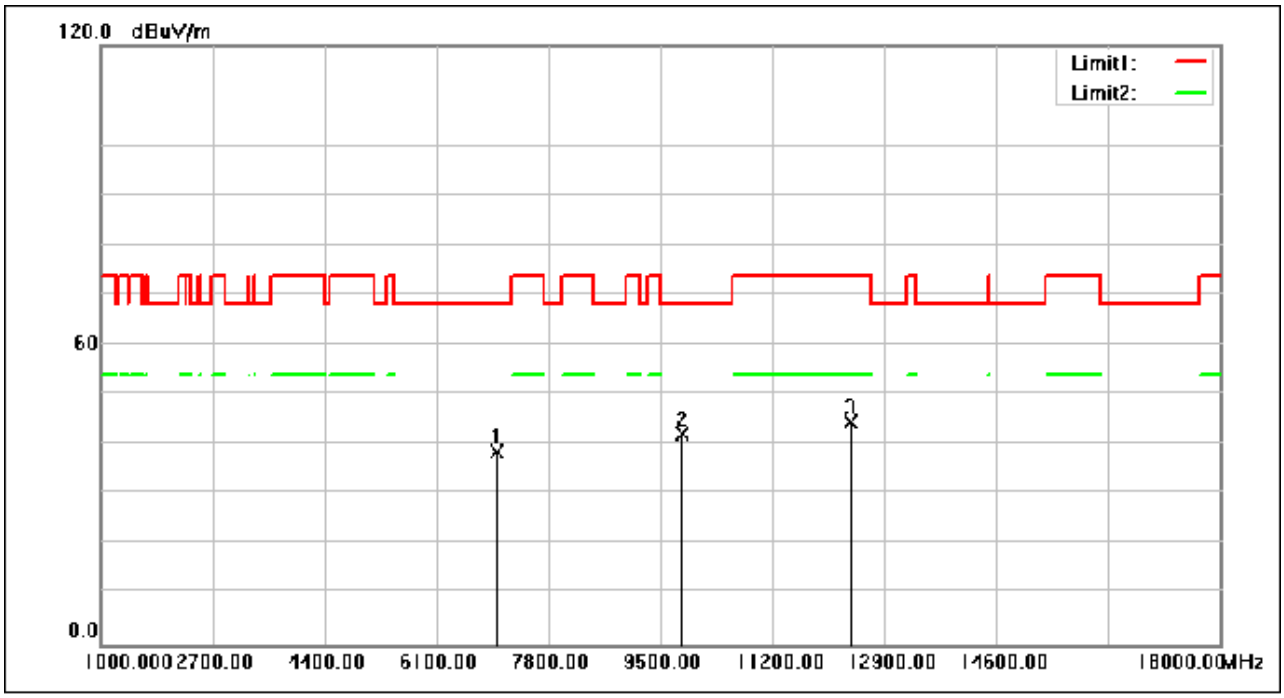

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7318.133 | 52.90 | -11.24 | 41.66 | 74.00 | -32.34 | peak |
| 2 | 10094.004 | 51.63 | -8.78 | 42.85 | 68.30 | -25.45 | peak |
| 3 | 11768.911 | 51.33 | -7.44 | 43.89 | 74.00 | -30.11 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



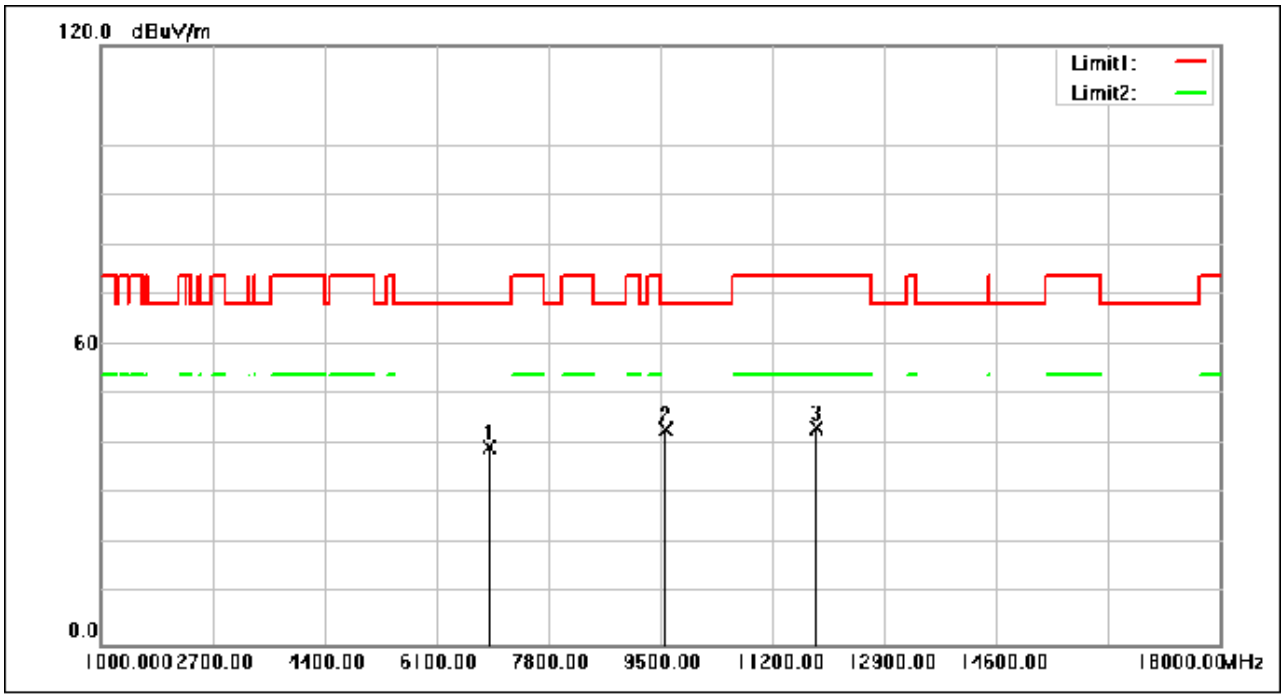

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 6825.113 | 51.61 | -13.20 | 38.41 | 68.30 | -29.89 | peak |
| 2 | 10011.720 | 51.76 | -8.92 | 42.84 | 68.30 | -25.46 | peak |
| 3 | 12382.975 | 52.65 | -7.56 | 45.09 | 74.00 | -28.91 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



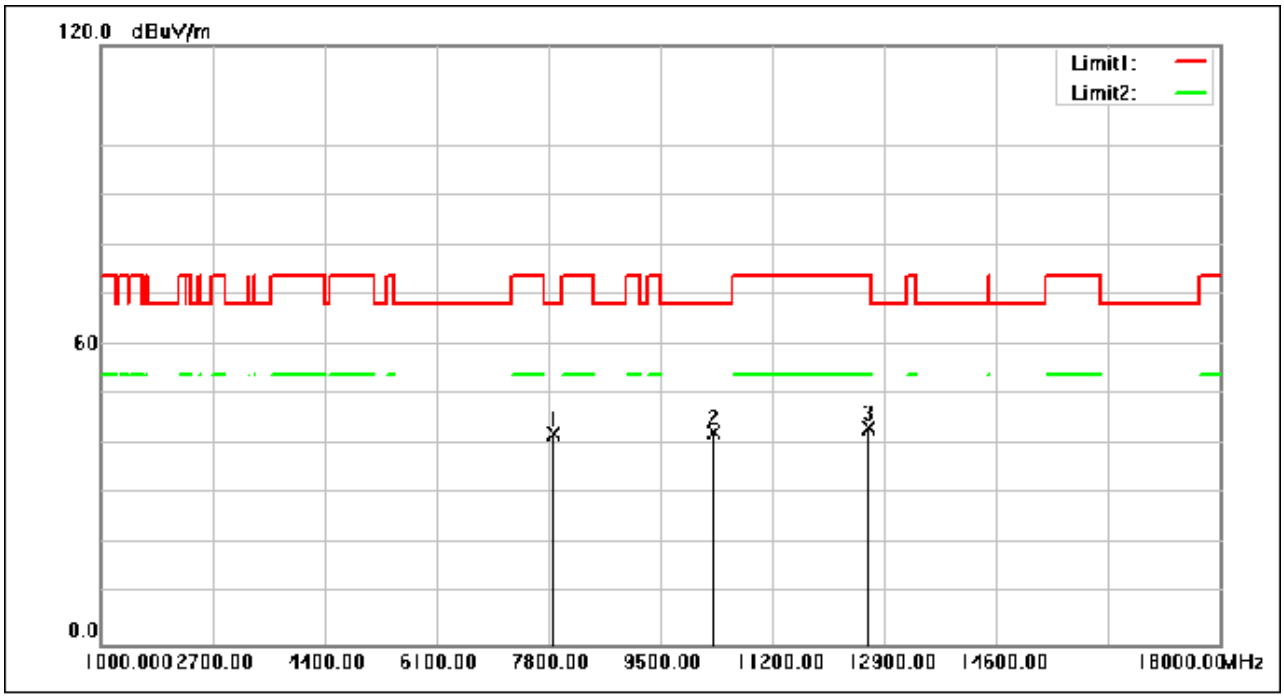

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7025.721 | 51.10 | -12.42 | 38.68 | 68.30 | -29.62 | peak |
| 2 | 9834.913 | 51.33 | -9.18 | 42.15 | 68.30 | -26.15 | peak |
| 3 | 12389.775 | 52.15 | -7.56 | 44.59 | 74.00 | -29.41 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



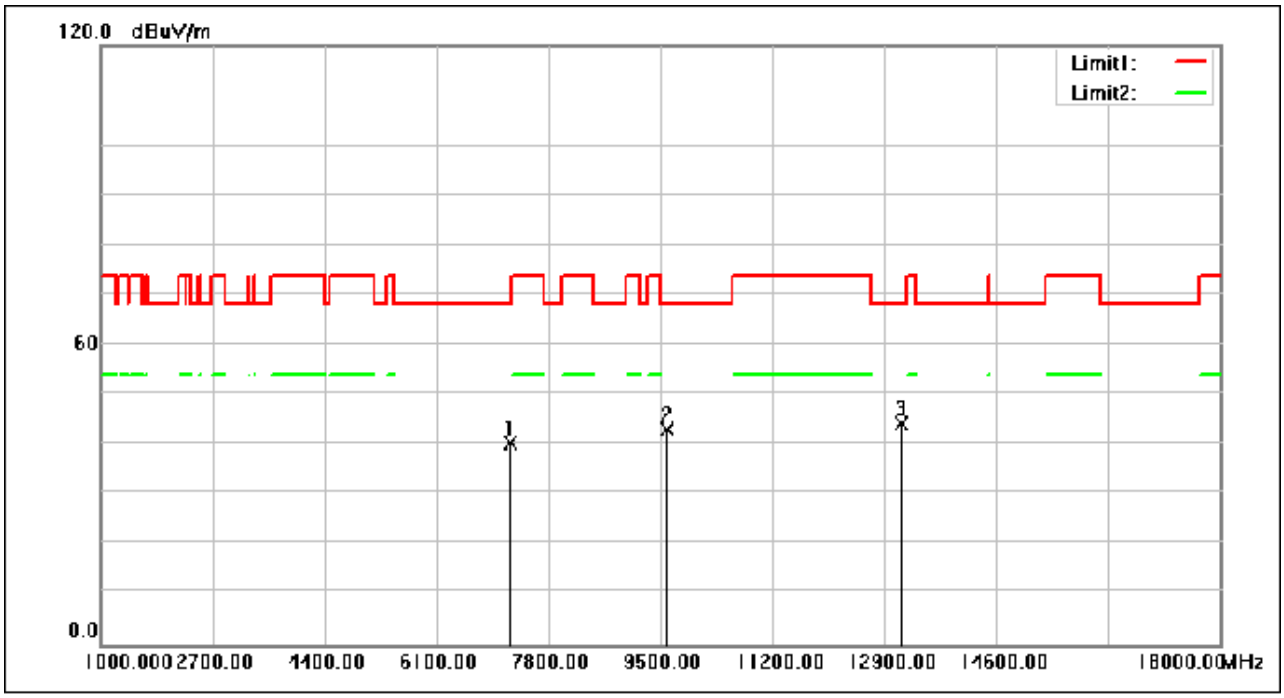

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 6903.996 | 52.22 | -12.90 | 39.32 | 68.30 | -28.98 | peak |
| 2 | 9585.343 | 52.50 | -9.45 | 43.05 | 68.30 | -25.25 | peak |
| 3 | 11877.715 | 50.96 | -7.54 | 43.42 | 74.00 | -30.58 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



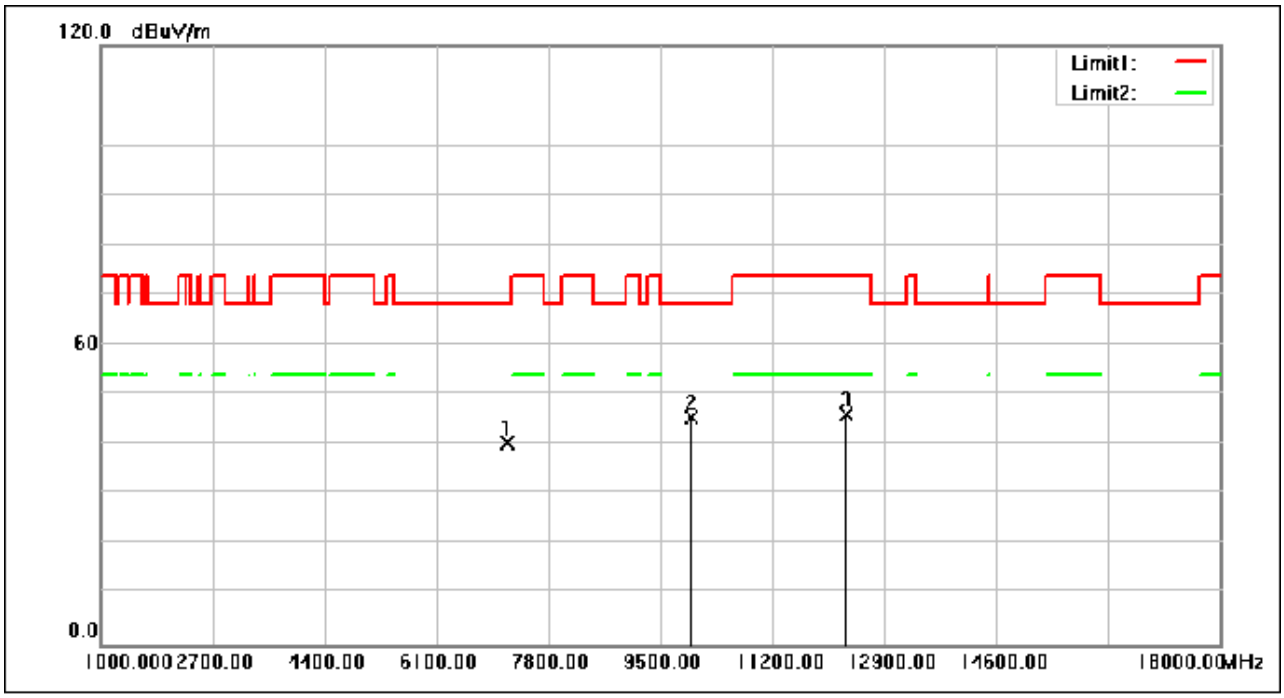

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7885.275 | 53.44 | -11.33 | 42.11 | 68.30 | -26.19 | peak |
| 2 | 10294.612 | 50.83 | -8.44 | 42.39 | 68.30 | -25.91 | peak |
| 3 | 12665.187 | 50.79 | -7.52 | 43.27 | 74.00 | -30.73 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low




| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7221.569 | 52.04 | -11.63 | 40.41 | 68.30 | -27.89 | peak |
| 2 | 9596.224 | 52.50 | -9.43 | 43.07 | 68.30 | -25.23 | peak |
| 3 | 13152.766 | 51.71 | -7.52 | 44.19 | 68.30 | -24.11 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low




| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7184.167 | 52.00 | -11.77 | 40.23 | 68.30 | -28.07 | peak |
| 2 | 9964.799 | 54.40 | -8.99 | 45.41 | 68.30 | -22.89 | peak |
| 3 | 12319.733 | 53.76 | -7.57 | 46.19 | 74.00 | -27.81 | peak |

## 7.10 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.209 & Subpart E 15.407(b)
Test Method: KDB 789033 D02 II G

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|---|---|---|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30.0 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above 960 | 500 | 3 |

*(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) 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.

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### 7.10.1 E.U.T. Operation

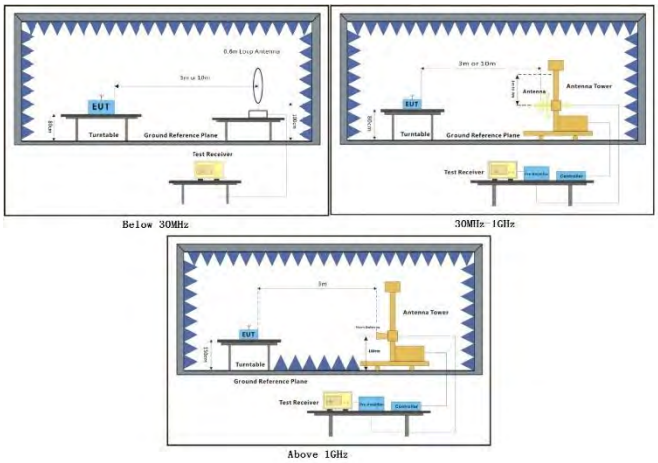
Operating Environment:
Temperature: 20.5 °C Humidity: 50.5 % RH Atmospheric Pressure: 1010 mbar

### 7.10.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all |

| | | |
|---|---|---|
| | | modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |
| Final test | 01 | TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.10.3 Test Setup Diagram




### 7.10.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

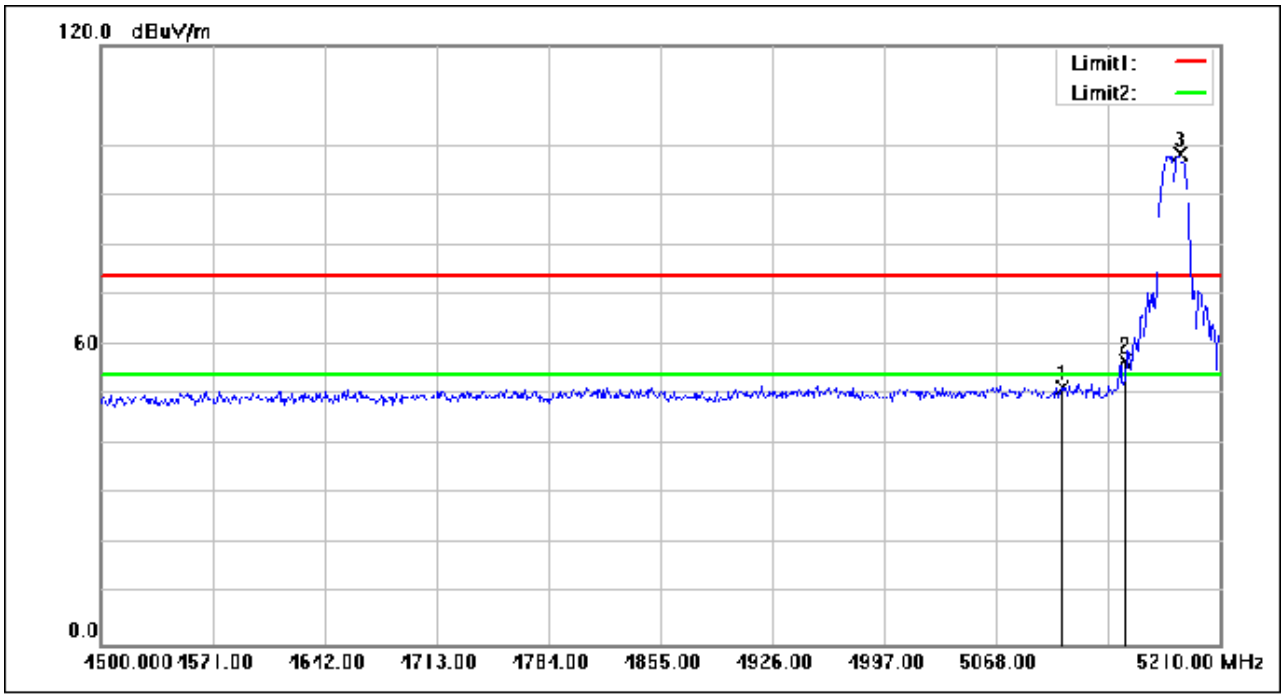
h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

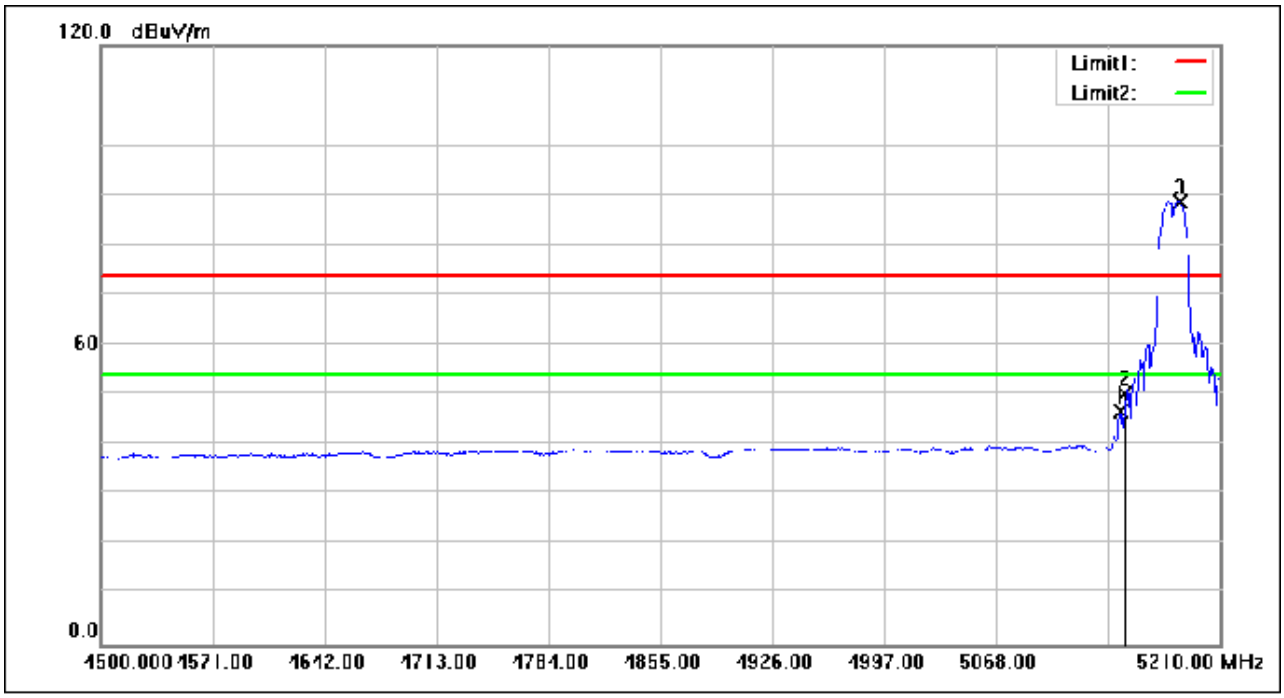
Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



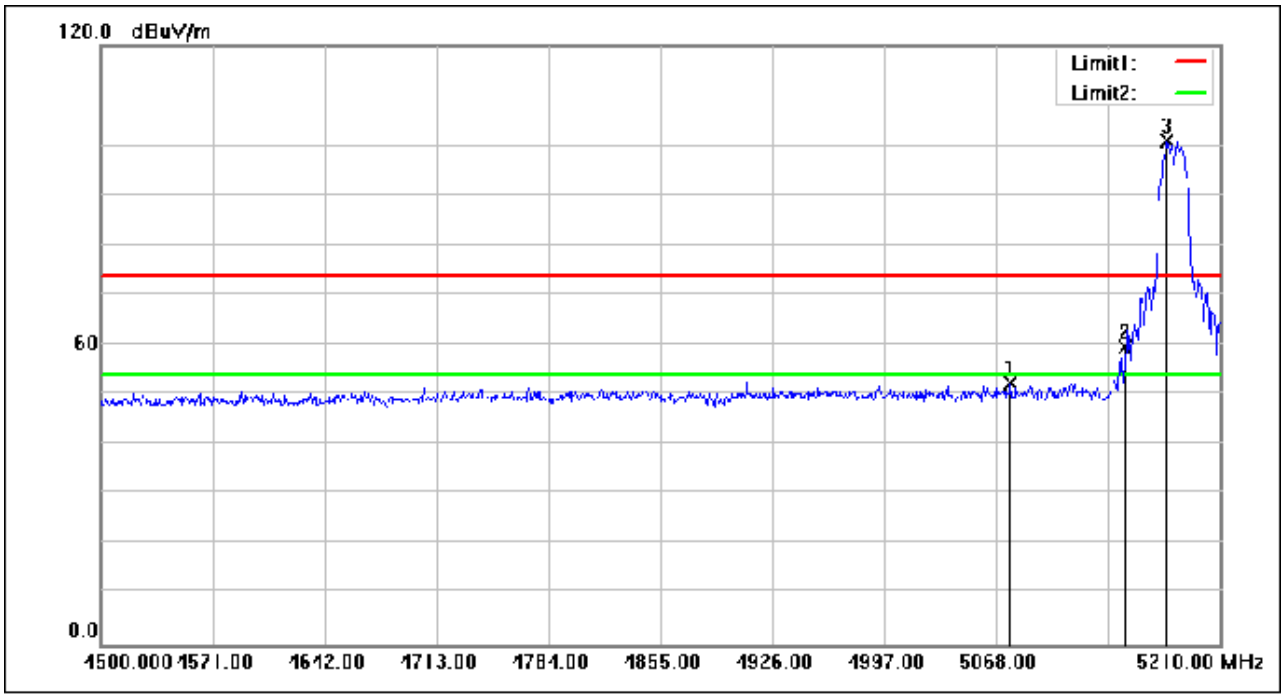

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5109.890 | 68.65 | -17.16 | 51.49 | 74.00 | -22.51 | peak |
| 2 | 5150.000 | 74.04 | -17.07 | 56.97 | 74.00 | -17.03 | peak |
| 3 | 5184.440 | 115.17 | -17.04 | 98.13 | 74.00 | 24.13 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



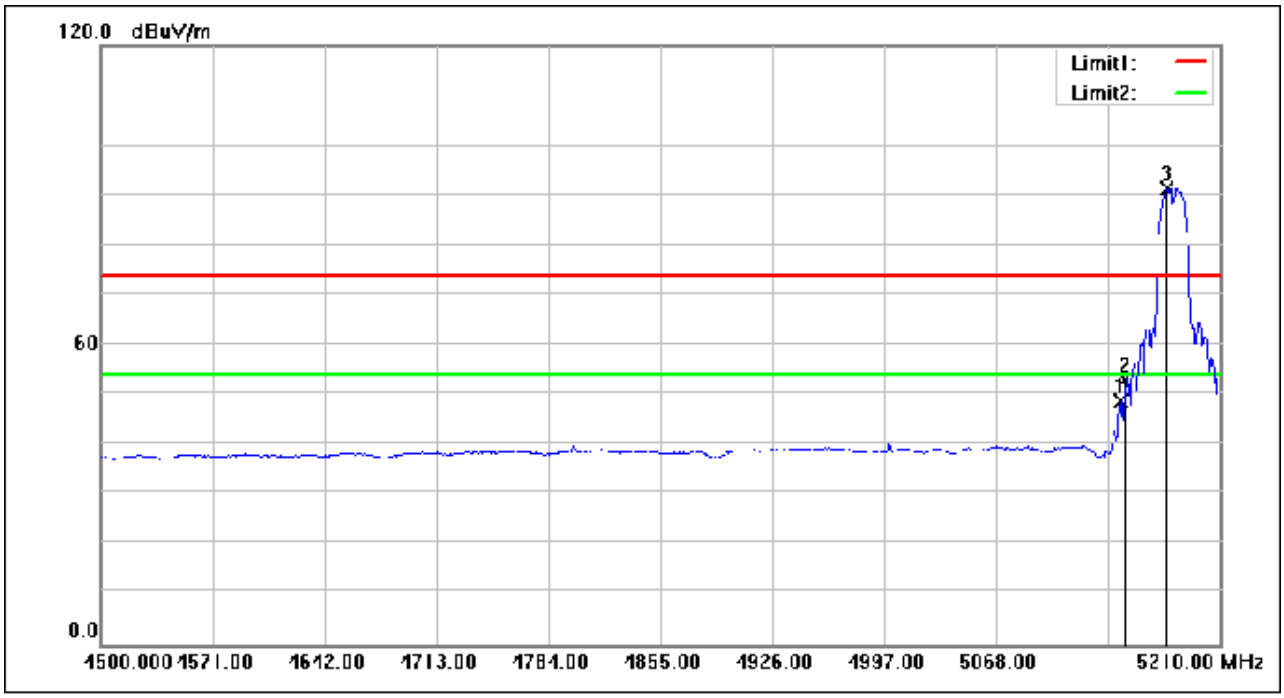

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5146.810 | 63.81 | -17.07 | 46.74 | 54.00 | -7.26 | AVG |
| 2 | 5150.000 | 67.20 | -17.07 | 50.13 | 54.00 | -3.87 | AVG |
| 3 | 5184.440 | 105.71 | -17.04 | 88.67 | 54.00 | 34.67 | AVG |

Test Mode: 00; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



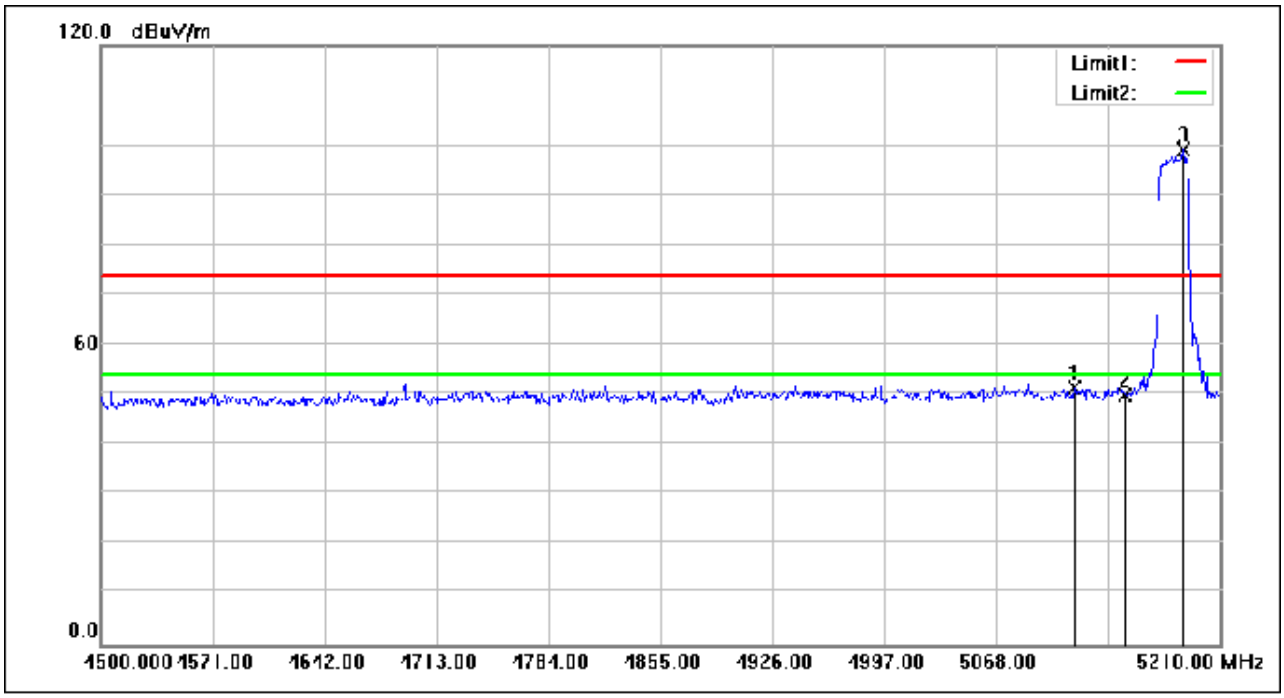

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5077.230 | 69.47 | -17.25 | 52.22 | 74.00 | -21.78 | peak |
| 2 | 5150.000 | 76.55 | -17.07 | 59.48 | 74.00 | -14.52 | peak |
| 3 | 5176.630 | 118.00 | -17.04 | 100.96 | 74.00 | 26.96 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



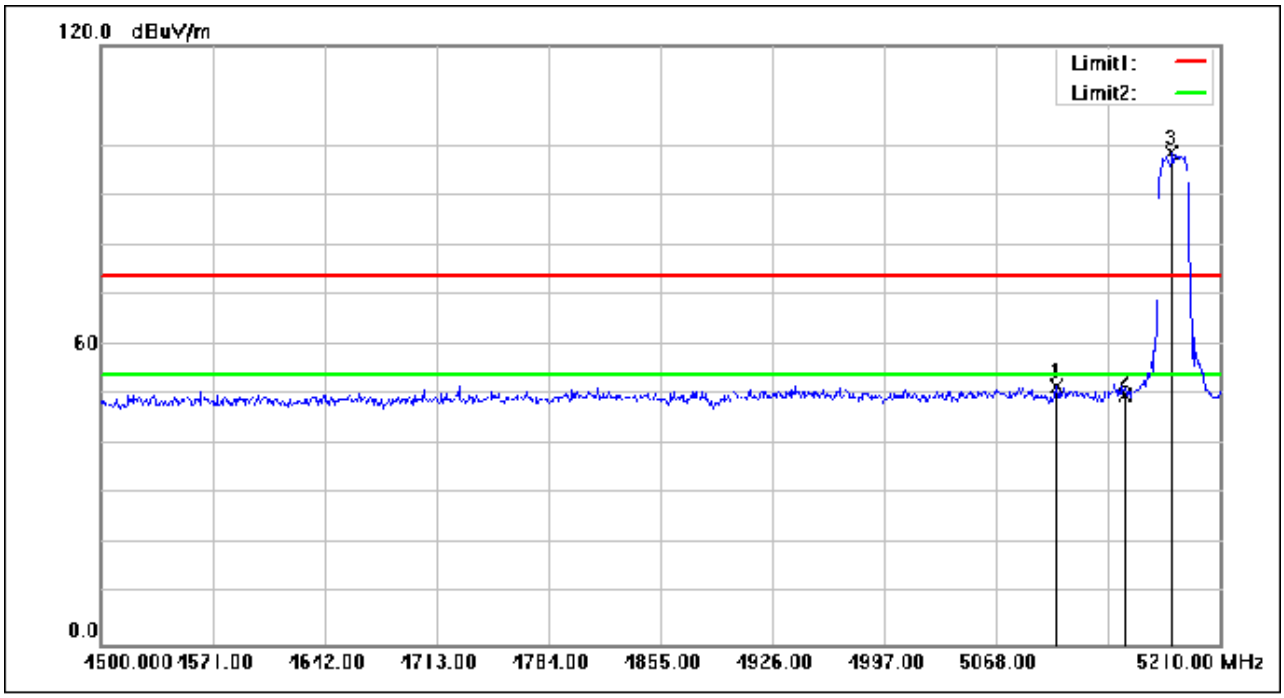

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5146.810 | 65.68 | -17.07 | 48.61 | 54.00 | -5.39 | AVG |
| 2 | 5150.000 | 70.02 | -17.07 | 52.95 | 54.00 | -1.05 | AVG |
| 3 | 5175.920 | 108.41 | -17.04 | 91.37 | 54.00 | 37.37 | AVG |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



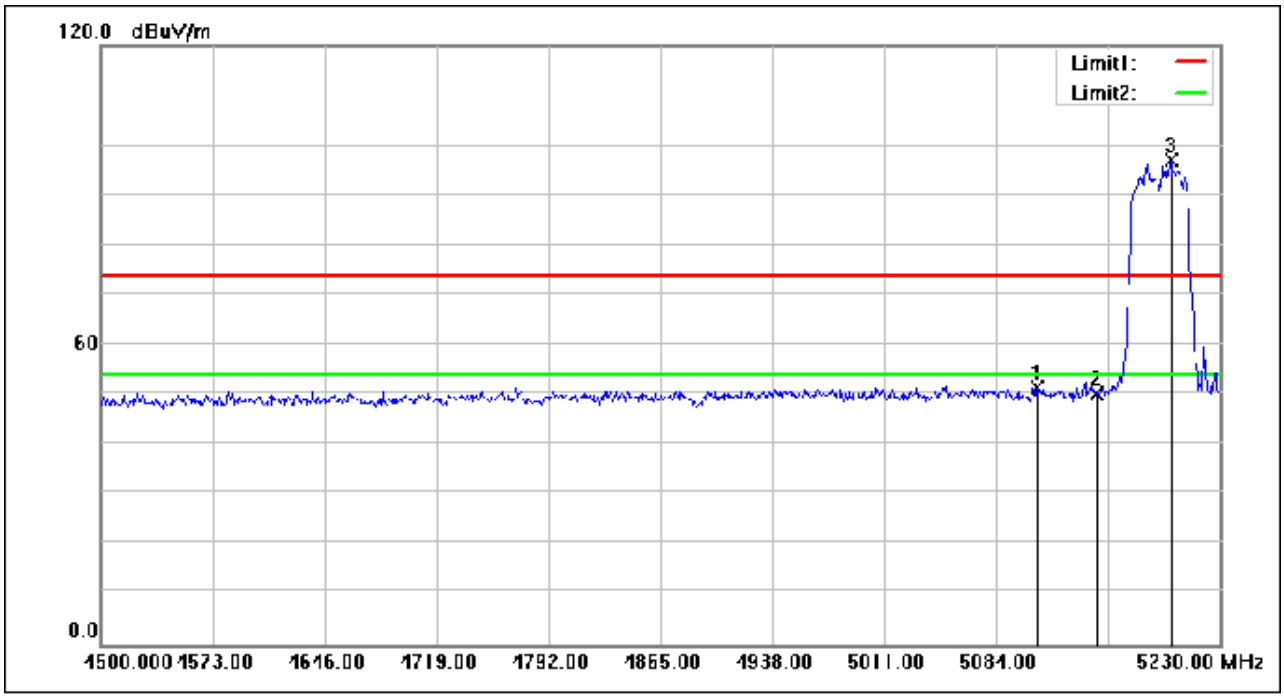

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5117.700 | 68.60 | -17.14 | 51.46 | 74.00 | -22.54 | peak |
| 2 | 5150.000 | 66.95 | -17.07 | 49.88 | 74.00 | -24.12 | peak |
| 3 | 5186.570 | 116.05 | -17.03 | 99.02 | 74.00 | 25.02 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



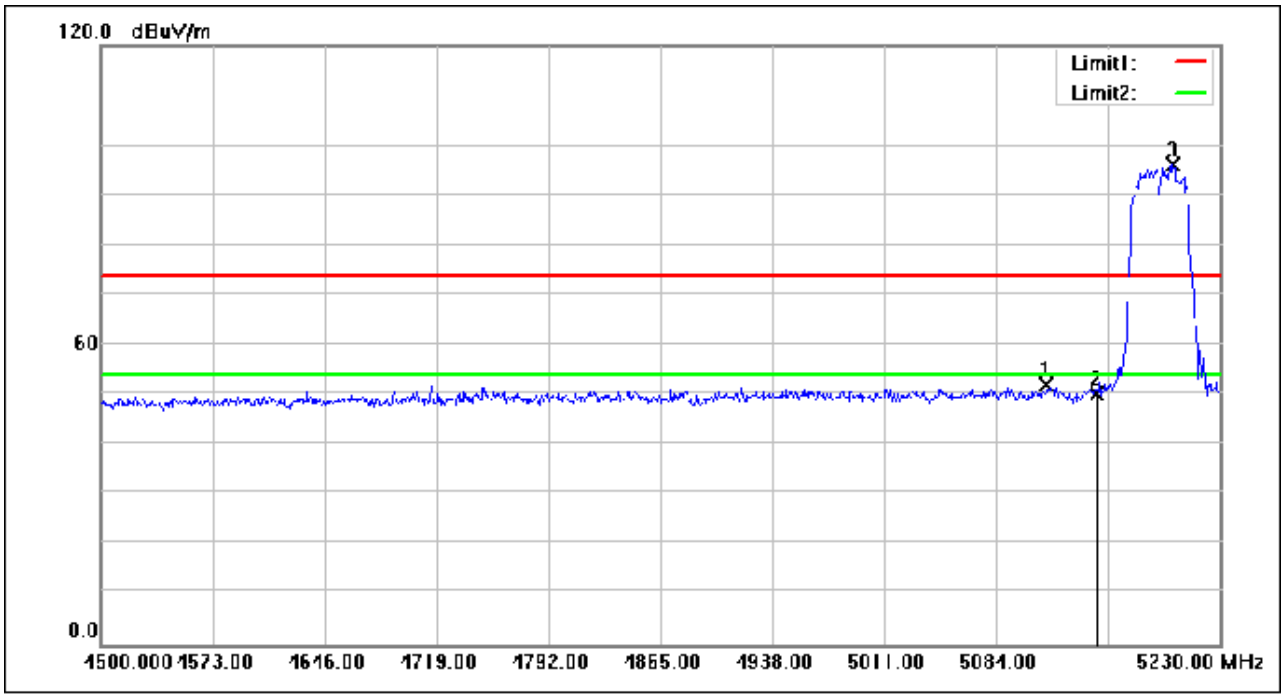

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5106.340 | 68.84 | -17.18 | 51.66 | 74.00 | -22.34 | peak |
| 2 | 5150.000 | 66.88 | -17.07 | 49.81 | 74.00 | -24.19 | peak |
| 3 | 5179.470 | 115.65 | -17.04 | 98.61 | 74.00 | 24.61 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



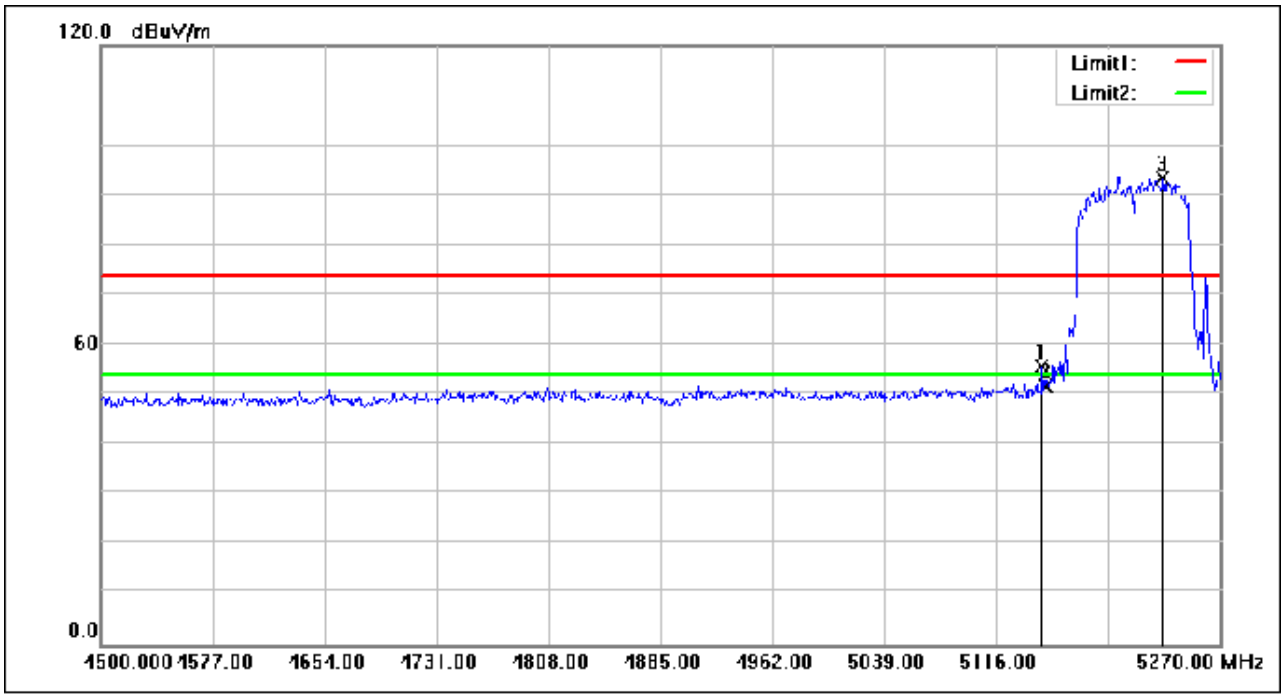

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5110.280 | 68.67 | -17.16 | 51.51 | 74.00 | -22.49 | peak |
| 2 | 5150.000 | 67.27 | -17.07 | 50.20 | 74.00 | -23.80 | peak |
| 3 | 5197.880 | 114.20 | -17.02 | 97.18 | 74.00 | 23.18 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



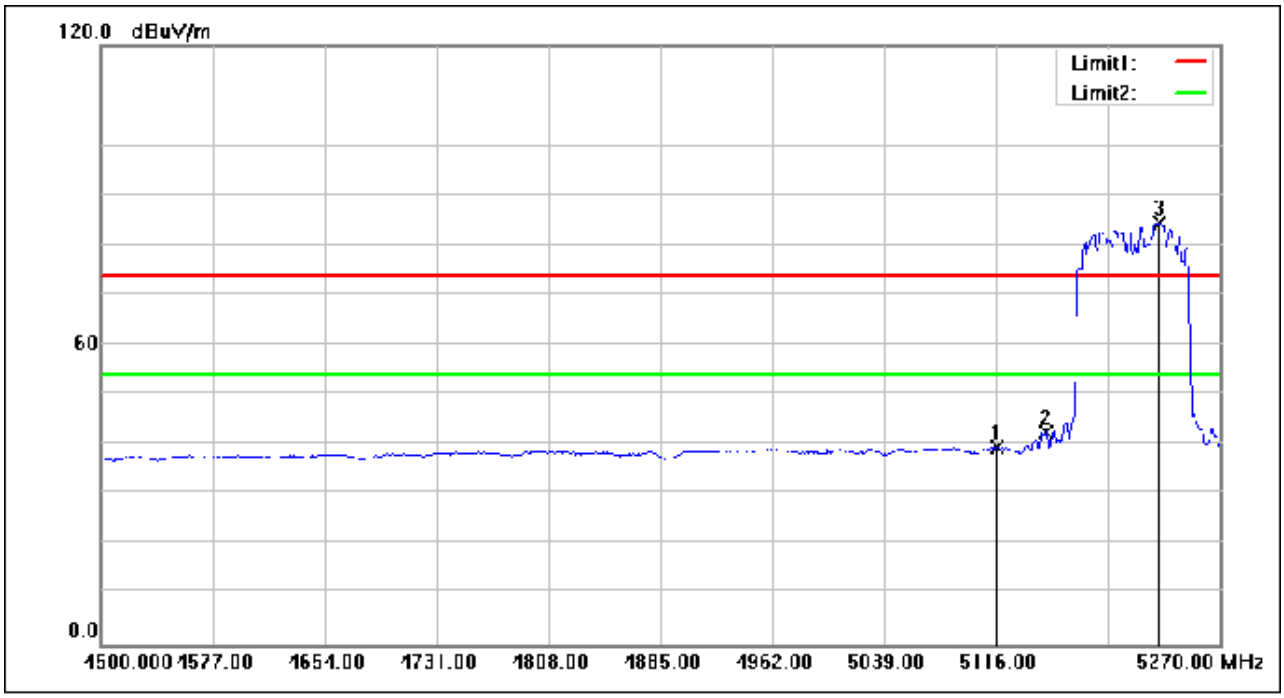

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5116.850 | 69.14 | -17.15 | 51.99 | 74.00 | -22.01 | peak |
| 2 | 5150.000 | 67.38 | -17.07 | 50.31 | 74.00 | -23.69 | peak |
| 3 | 5199.340 | 113.19 | -17.02 | 96.17 | 74.00 | 22.17 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



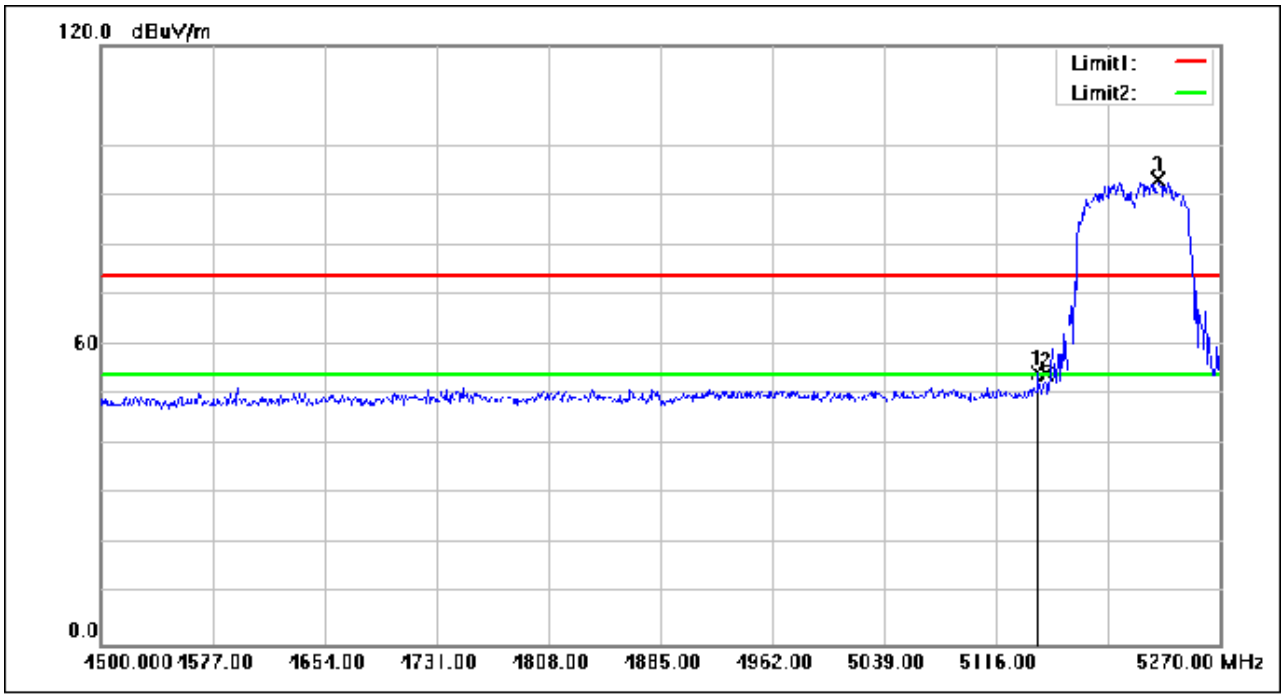

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5147.570 | 72.66 | -17.07 | 55.59 | 74.00 | -18.41 | peak |
| 2 | 5150.000 | 68.91 | -17.07 | 51.84 | 74.00 | -22.16 | peak |
| 3 | 5230.730 | 110.45 | -16.99 | 93.46 | 74.00 | 19.46 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



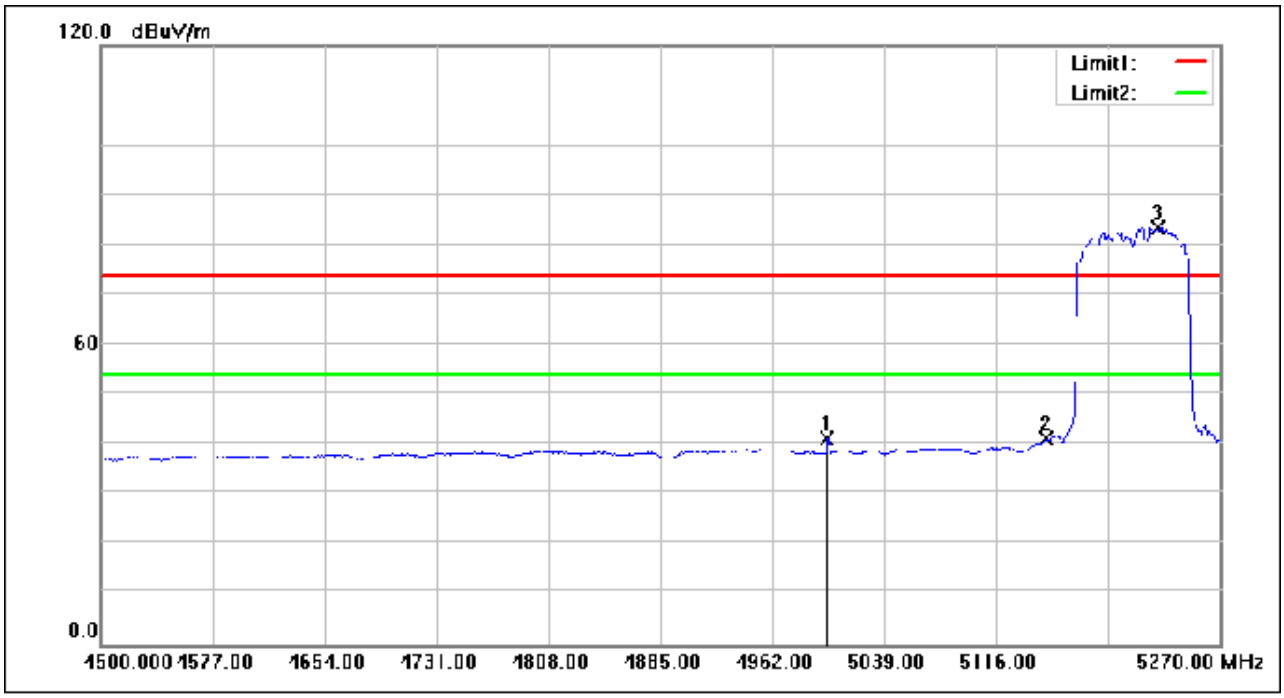

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5116.000 | 56.58 | -17.16 | 39.42 | 54.00 | -14.58 | AVG |
| 2 | 5150.000 | 59.49 | -17.07 | 42.42 | 54.00 | -11.58 | AVG |
| 3 | 5228.420 | 101.55 | -16.99 | 84.56 | 54.00 | 30.56 | AVG |

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



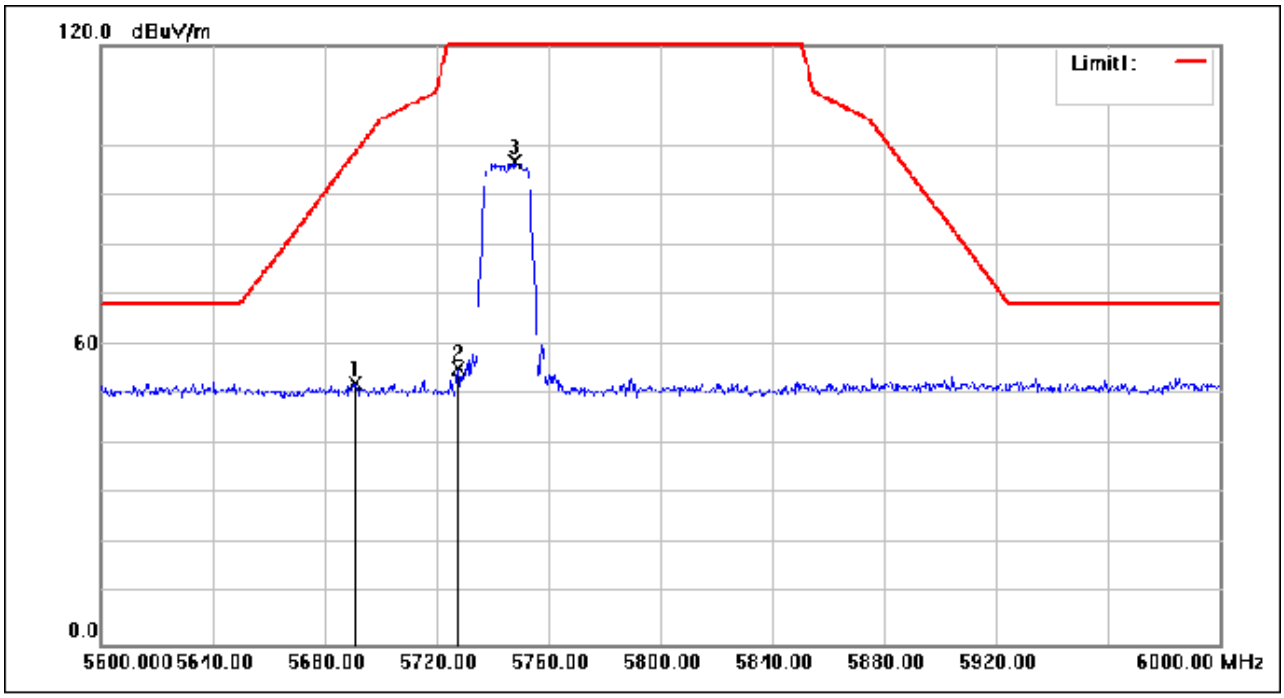

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5144.490 | 71.68 | -17.09 | 54.59 | 74.00 | -19.41 | peak |
| 2 | 5150.000 | 71.14 | -17.07 | 54.07 | 74.00 | -19.93 | peak |
| 3 | 5227.650 | 110.18 | -16.99 | 93.19 | 74.00 | 19.19 | peak |

Test Mode: 00; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low



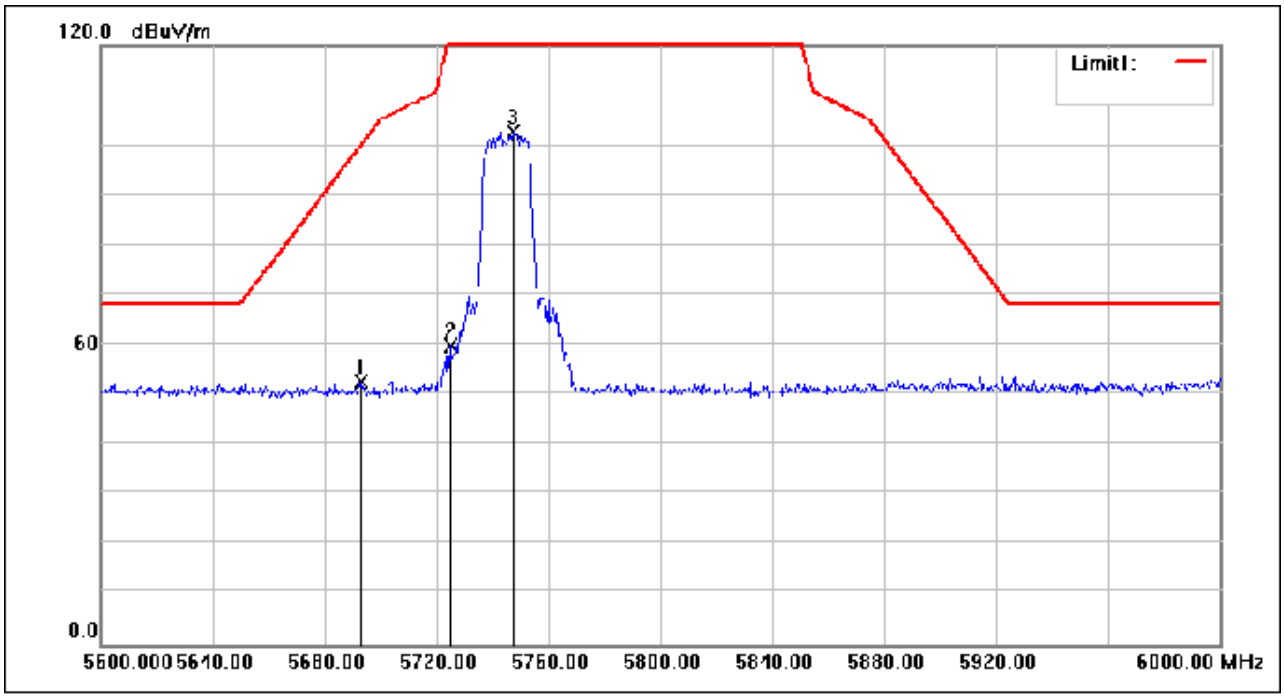

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4999.730 | 58.88 | -17.51 | 41.37 | 54.00 | -12.63 | AVG |
| 2 | 5150.000 | 58.41 | -17.07 | 41.34 | 54.00 | -12.66 | AVG |
| 3 | 5226.880 | 100.66 | -16.99 | 83.67 | 54.00 | 29.67 | AVG |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



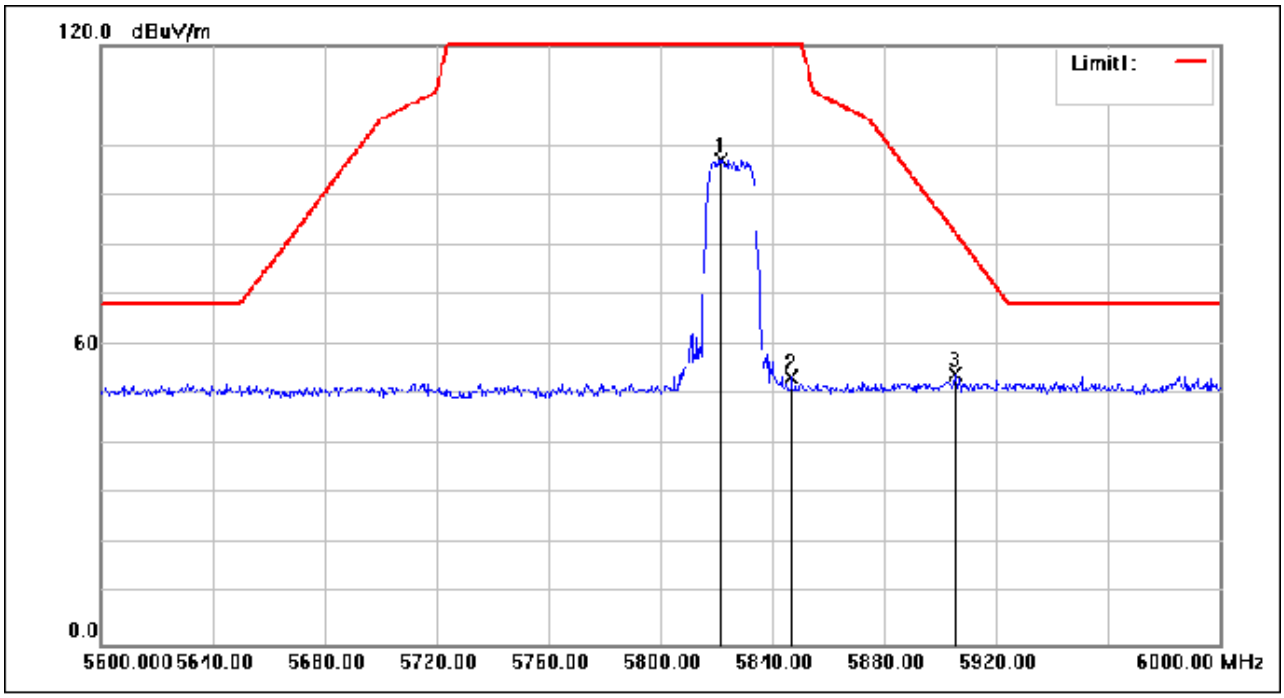

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5690.800 | 68.98 | -16.57 | 52.41 | 98.39 | -45.98 | peak |
| 2 | 5727.600 | 71.93 | -16.52 | 55.41 | 135.00 | -79.59 | peak |
| 3 | 5748.000 | 113.28 | -16.48 | 96.80 | 135.00 | -38.20 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:Low



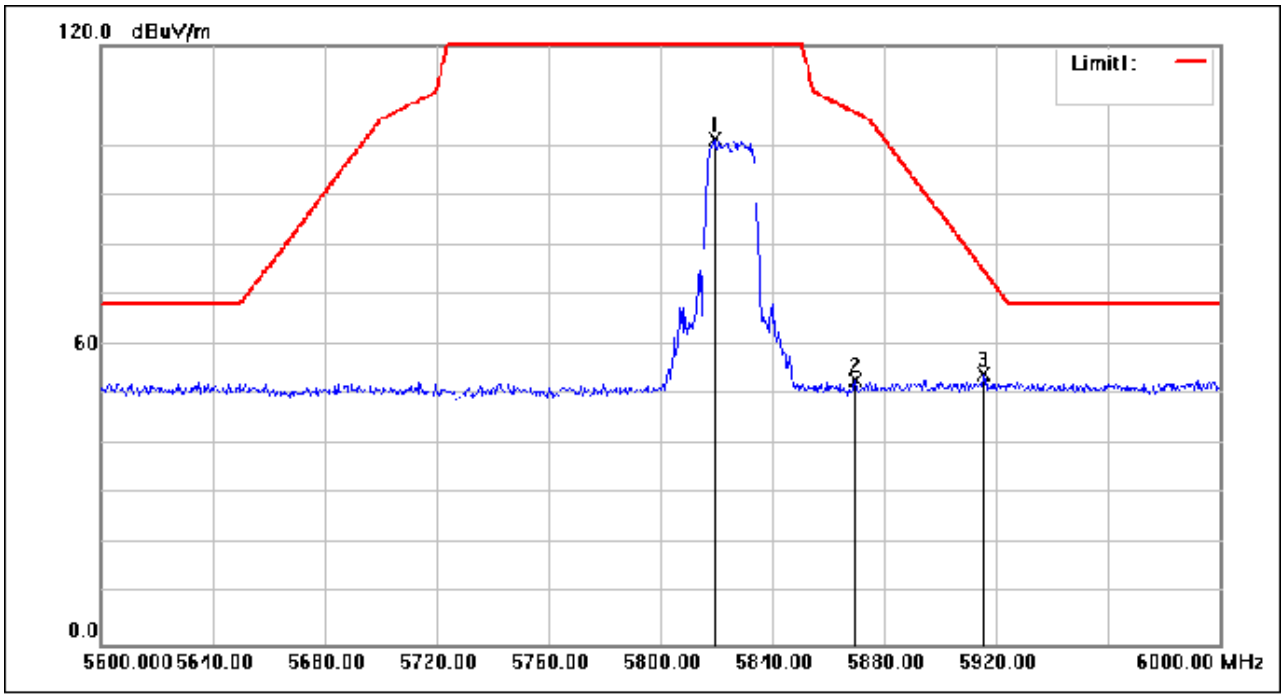

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5693.200 | 69.37 | -16.57 | 52.80 | 100.17 | -47.37 | peak |
| 2 | 5724.800 | 76.46 | -16.53 | 59.93 | 121.74 | -61.81 | peak |
| 3 | 5747.200 | 119.19 | -16.48 | 102.71 | 135.00 | -32.29 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11a; Bandwidth:20MHz; Channel:High



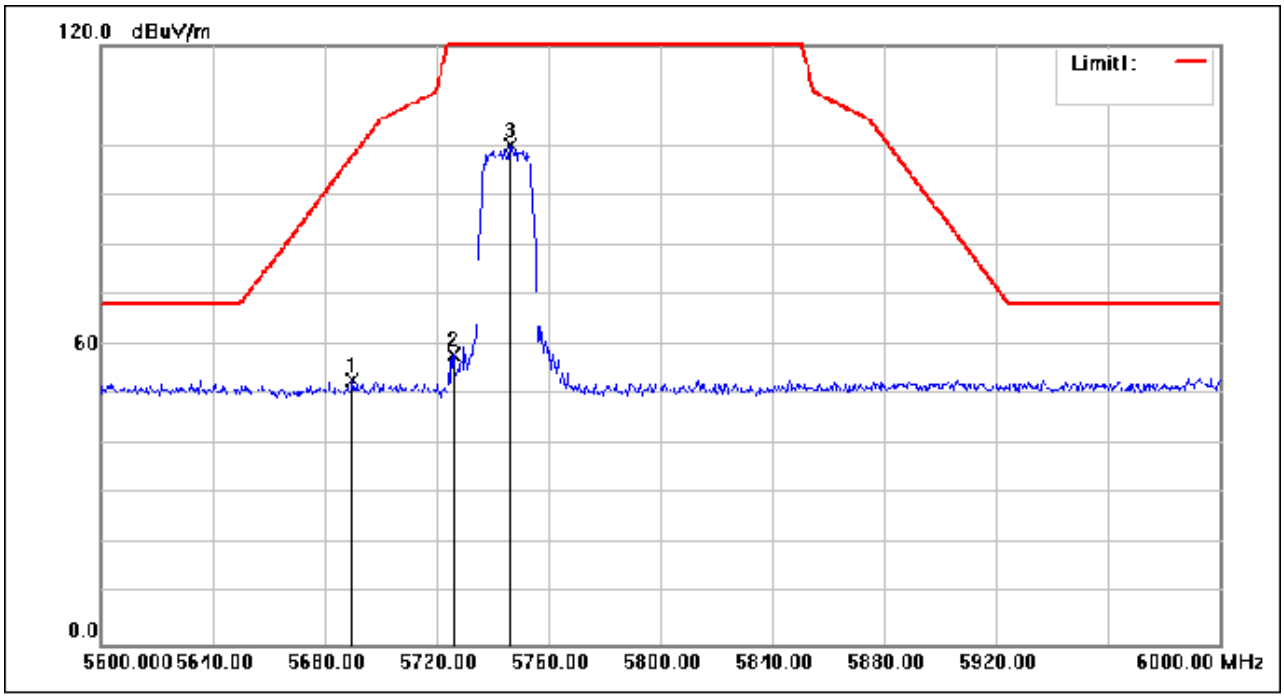

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5821.600 | 113.35 | -16.32 | 97.03 | 135.00 | -37.97 | peak |
| 2 | 5846.800 | 69.83 | -16.26 | 53.57 | 135.00 | -81.43 | peak |
| 3 | 5905.200 | 70.08 | -16.03 | 54.05 | 82.85 | -28.80 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11a; Bandwidth:20MHz; Channel:High



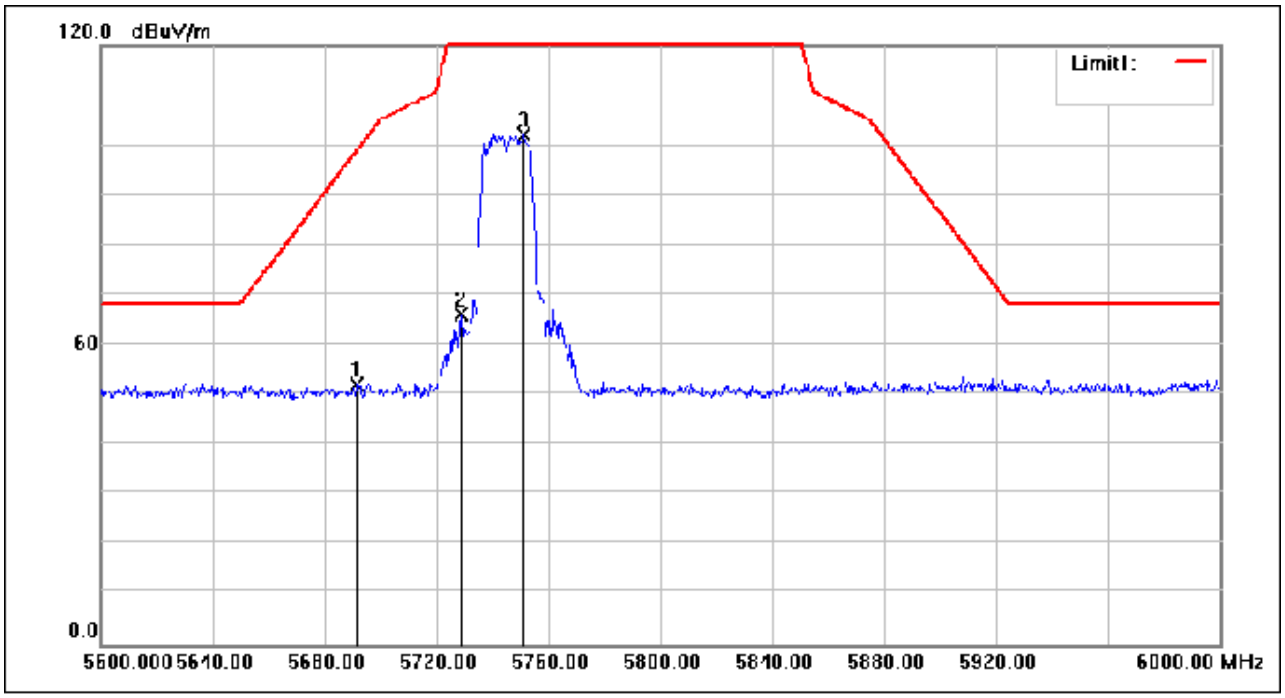

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5819.200 | 117.52 | -16.32 | 101.20 | 135.00 | -33.80 | peak |
| 2 | 5869.600 | 69.07 | -16.18 | 52.89 | 106.71 | -53.82 | peak |
| 3 | 5915.600 | 70.13 | -16.00 | 54.13 | 75.16 | -21.03 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



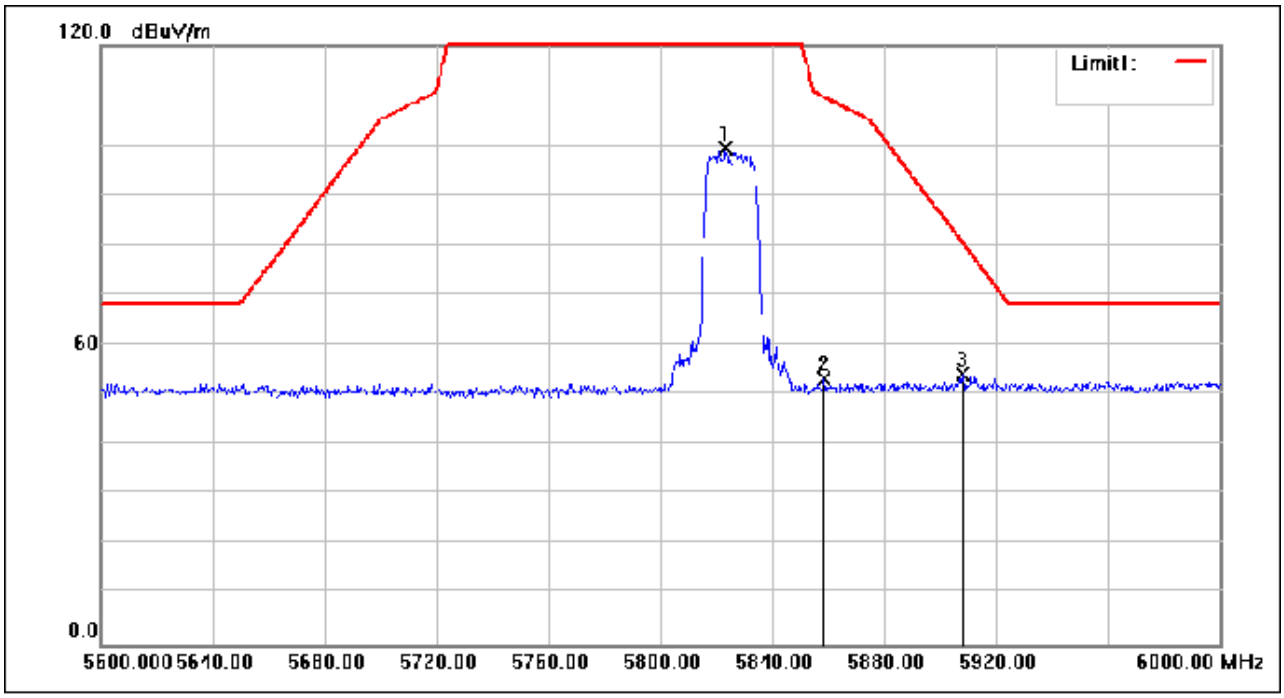

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5690.000 | 69.62 | -16.57 | 53.05 | 97.80 | -44.75 | peak |
| 2 | 5726.000 | 74.48 | -16.52 | 57.96 | 135.00 | -77.04 | peak |
| 3 | 5746.400 | 116.59 | -16.48 | 100.11 | 135.00 | -34.89 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



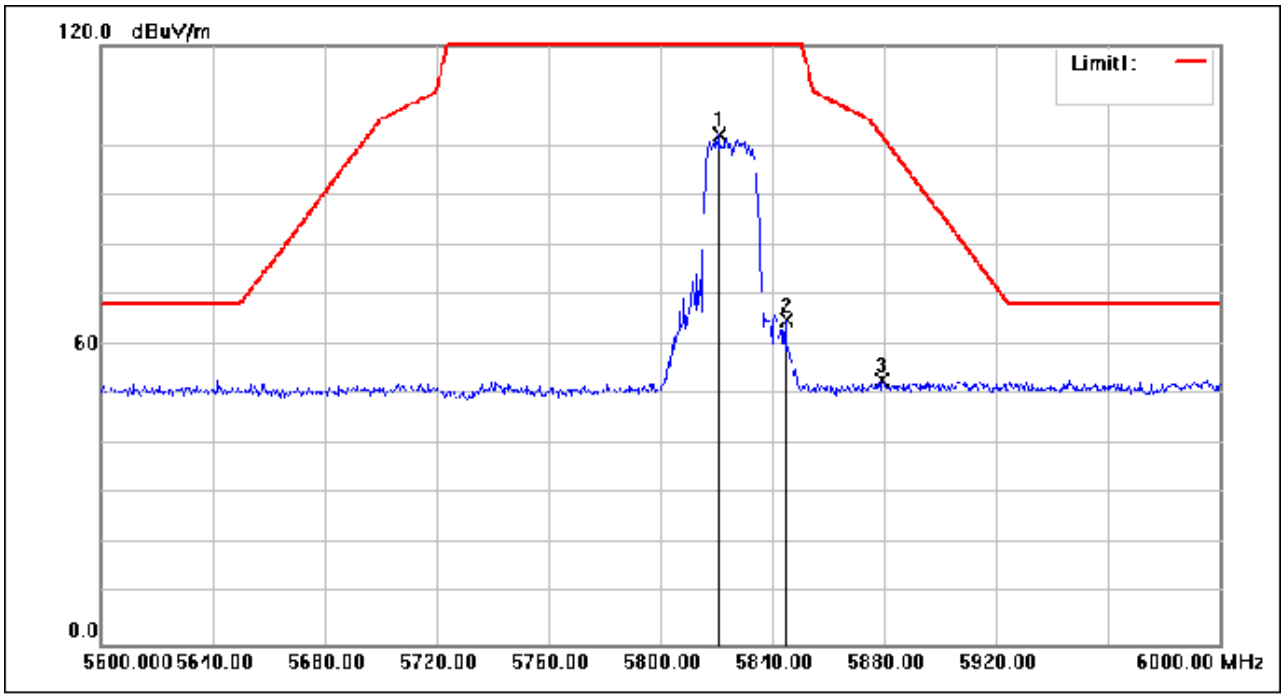

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5691.200 | 68.52 | -16.57 | 51.95 | 98.69 | -46.74 | peak |
| 2 | 5728.800 | 82.55 | -16.52 | 66.03 | 135.00 | -68.97 | peak |
| 3 | 5751.200 | 118.74 | -16.47 | 102.27 | 135.00 | -32.73 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



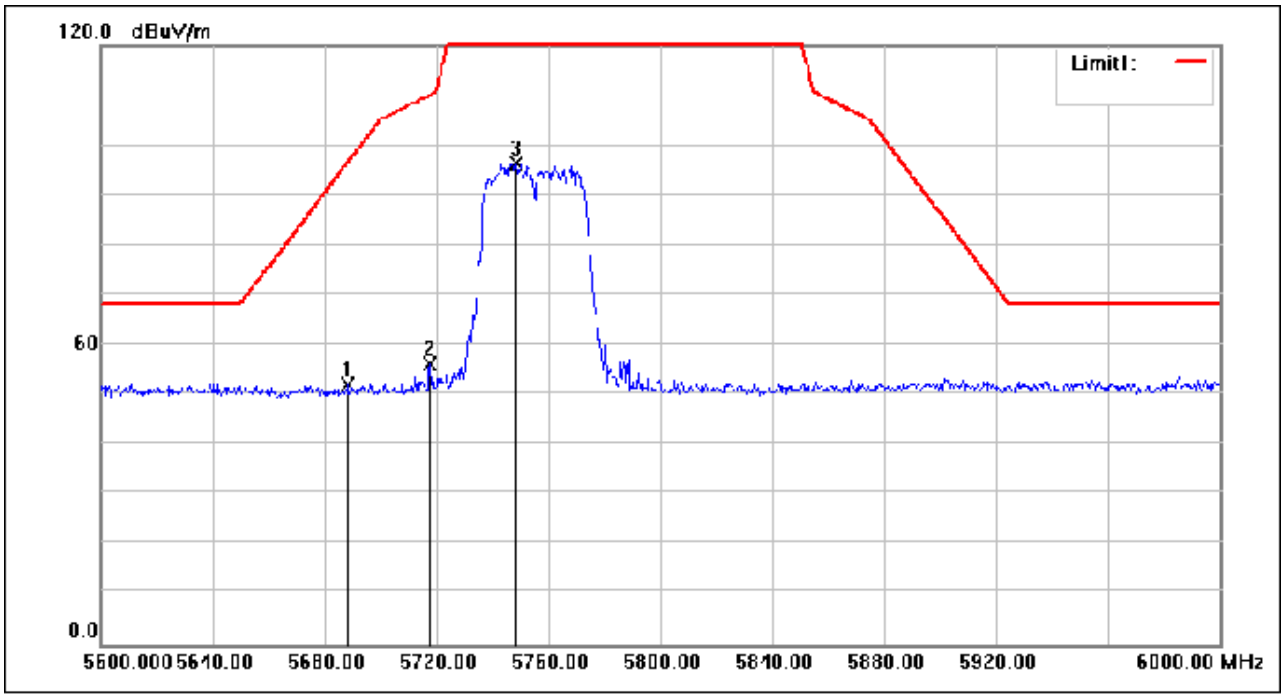

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5823.200 | 115.64 | -16.31 | 99.33 | 135.00 | -35.67 | peak |
| 2 | 5858.400 | 69.55 | -16.23 | 53.32 | 109.85 | -56.53 | peak |
| 3 | 5908.000 | 70.10 | -16.03 | 54.07 | 80.78 | -26.71 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



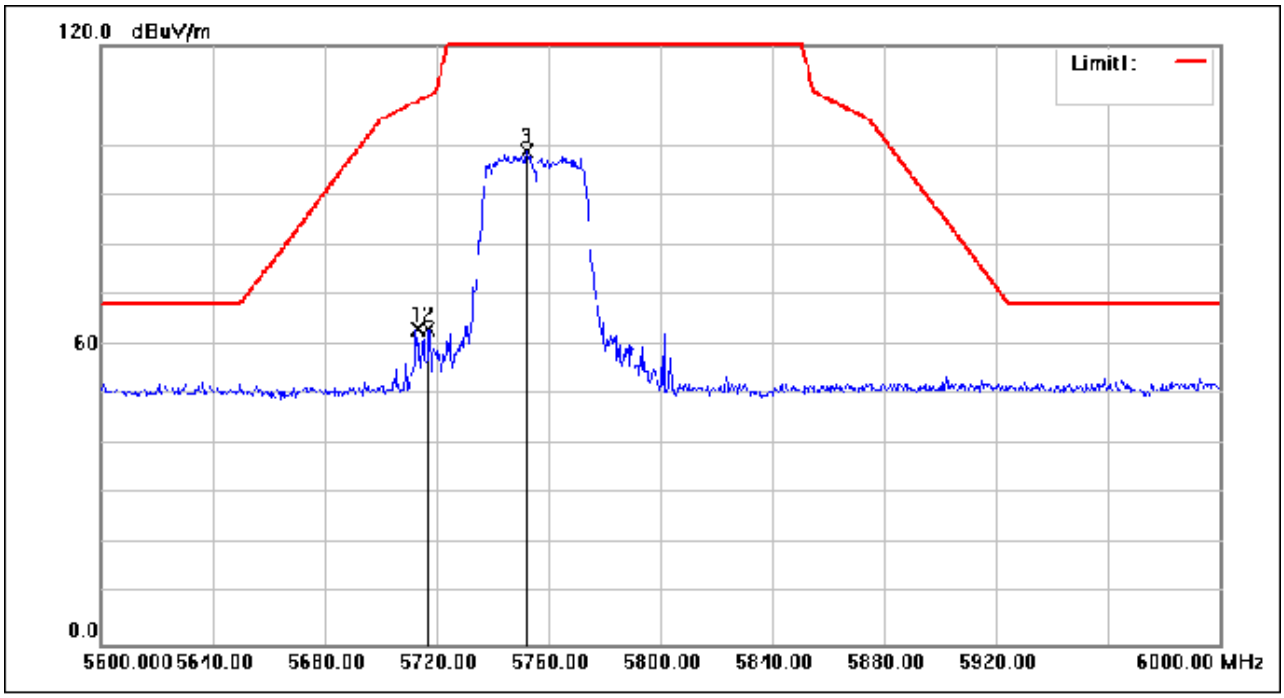

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5820.800 | 118.56 | -16.32 | 102.24 | 135.00 | -32.76 | peak |
| 2 | 5844.800 | 81.35 | -16.26 | 65.09 | 135.00 | -69.91 | peak |
| 3 | 5879.200 | 68.95 | -16.14 | 52.81 | 102.09 | -49.28 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



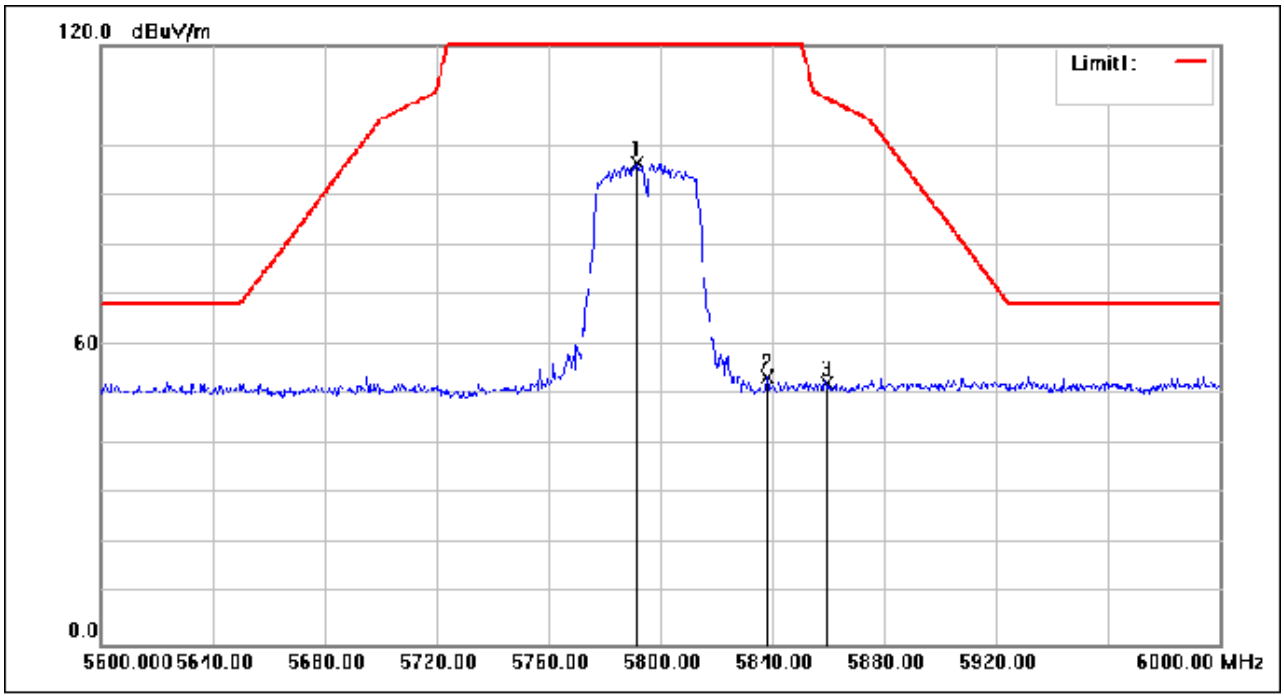

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5688.400 | 68.60 | -16.58 | 52.02 | 96.62 | -44.60 | peak |
| 2 | 5717.600 | 72.75 | -16.54 | 56.21 | 110.13 | -53.92 | peak |
| 3 | 5748.400 | 113.05 | -16.47 | 96.58 | 135.00 | -38.42 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



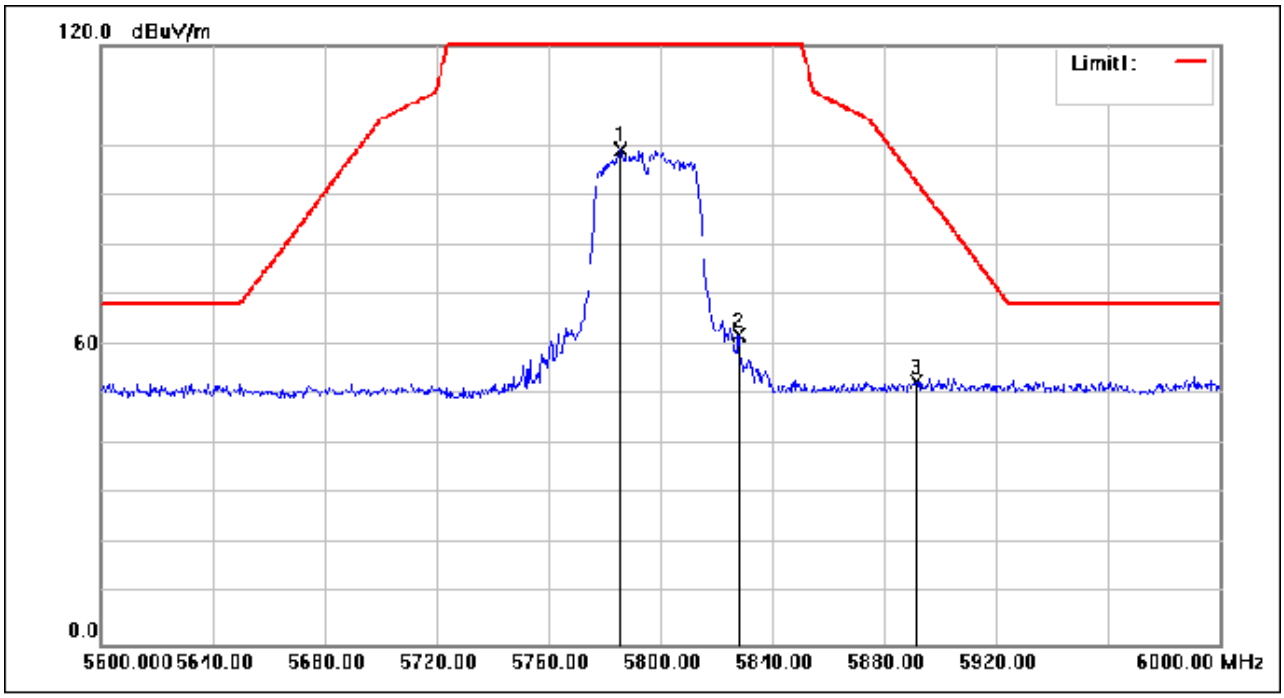

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5713.200 | 79.56 | -16.54 | 63.02 | 108.90 | -45.88 | peak |
| 2 | 5717.200 | 79.78 | -16.54 | 63.24 | 110.02 | -46.78 | peak |
| 3 | 5752.000 | 115.23 | -16.47 | 98.76 | 135.00 | -36.24 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



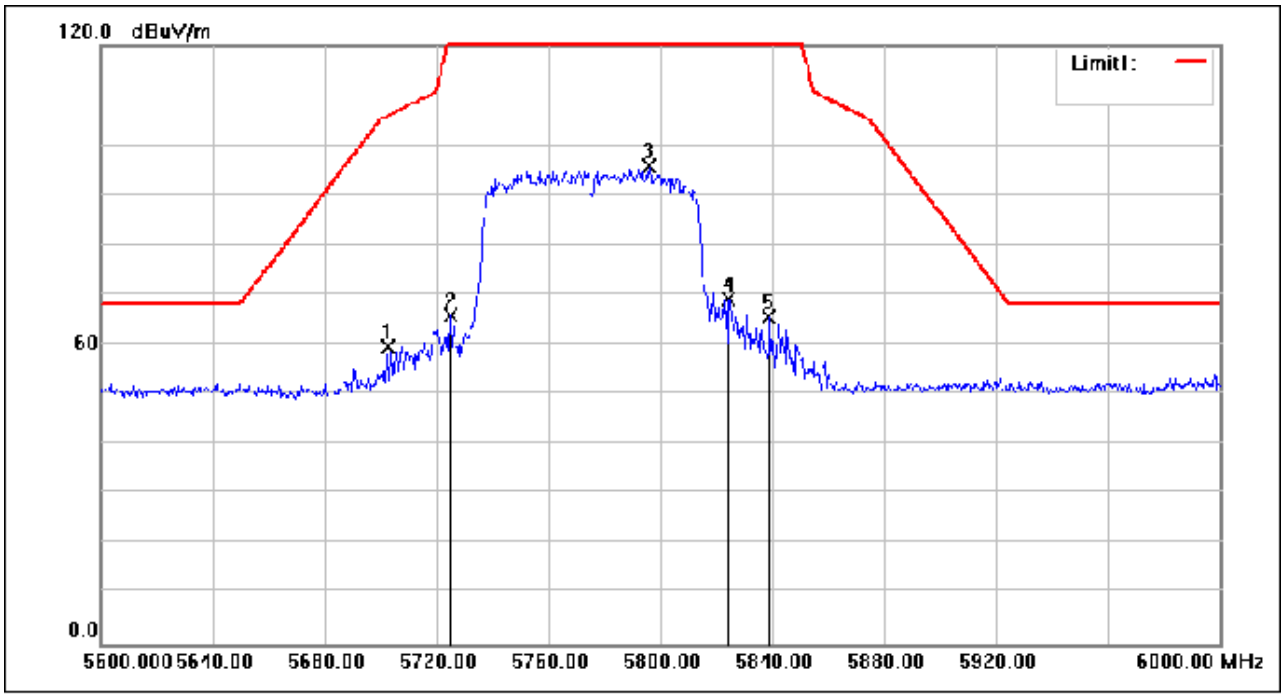

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5791.600 | 112.87 | -16.39 | 96.48 | 135.00 | -38.52 | peak |
| 2 | 5838.000 | 69.97 | -16.28 | 53.69 | 135.00 | -81.31 | peak |
| 3 | 5859.600 | 68.46 | -16.21 | 52.25 | 109.51 | -57.26 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



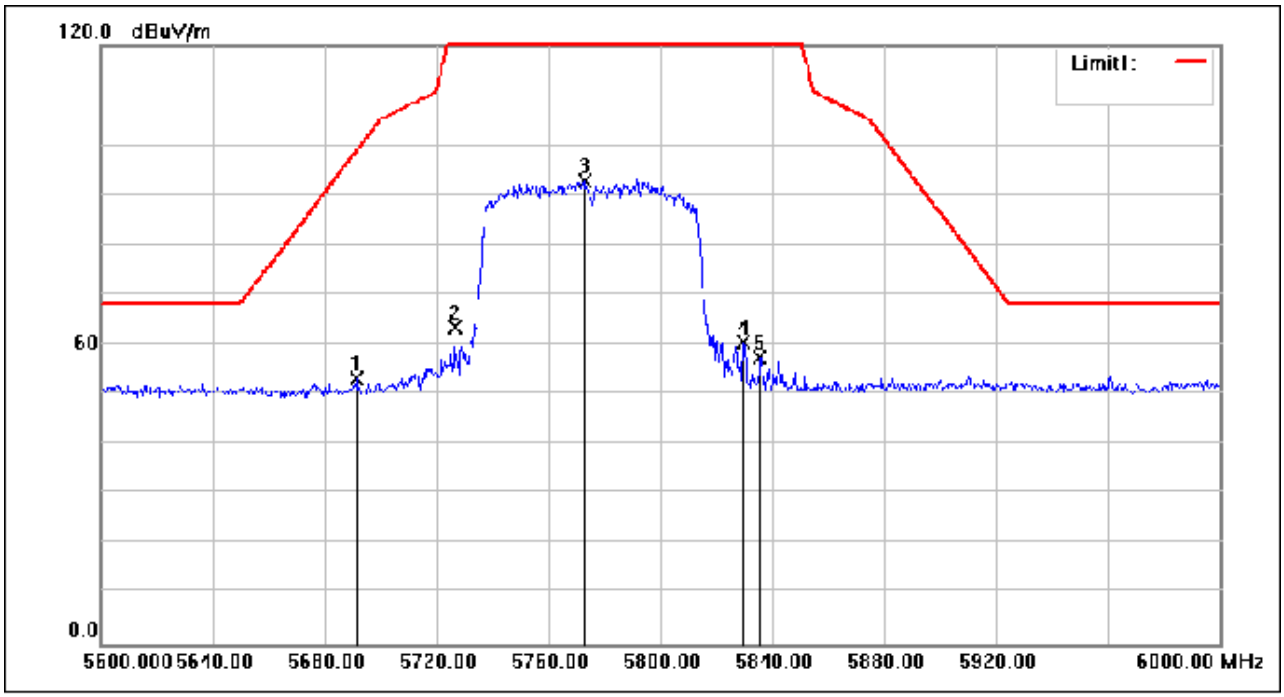

| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5786.000 | 115.64 | -16.39 | 99.25 | 135.00 | -35.75 | peak |
| 2 | 5828.000 | 78.29 | -16.31 | 61.98 | 135.00 | -73.02 | peak |
| 3 | 5891.600 | 68.65 | -16.09 | 52.56 | 92.92 | -40.36 | peak |

Test Mode: 01; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low




| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5702.400 | 76.20 | -16.56 | 59.64 | 105.87 | -46.23 | peak |
| 2 | 5724.800 | 82.36 | -16.53 | 65.83 | 121.74 | -55.91 | peak |
| 3 | 5796.000 | 112.08 | -16.37 | 95.71 | 135.00 | -39.29 | peak |
| 4 | 5824.400 | 85.52 | -16.31 | 69.21 | 135.00 | -65.79 | peak |
| 5 | 5838.800 | 81.72 | -16.28 | 65.44 | 135.00 | -69.56 | peak |

Test Mode: 01; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:Low




| No. | Frequency (MHz) | Reading (dBuV) | Correction factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 5691.600 | 69.72 | -16.57 | 53.15 | 98.98 | -45.83 | peak |
| 2 | 5726.400 | 80.06 | -16.52 | 63.54 | 135.00 | -71.46 | peak |
| 3 | 5772.800 | 109.26 | -16.42 | 92.84 | 135.00 | -42.16 | peak |
| 4 | 5829.600 | 76.90 | -16.30 | 60.60 | 135.00 | -74.40 | peak |
| 5 | 5835.600 | 73.78 | -16.29 | 57.49 | 135.00 | -77.51 | peak |

## 7.11 Frequency Stability

Test Requirement 47 CFR Part 15, Subpart E 15.407 (g)
Test Method: ANSI C63.10 (2013) Section 6.8

### 7.11.1 E.U.T. Operation

Operating Environment:
Temperature: 23.5 °C Humidity: 45.3 % RH Atmospheric Pressure: 1010 mbar

### 7.11.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |
| Final test | 01 | TX mode (U-NII-3) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and only the data of worst case is recorded in the report. |

### 7.11.3 Test Setup Diagram

### 7.11.4 Measurement Procedure and Data

Please Refer to Appendix for Details

# 8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2404000562AT

# 9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2404000562AT

# 10 Appendix

## 1. Duty Cycle

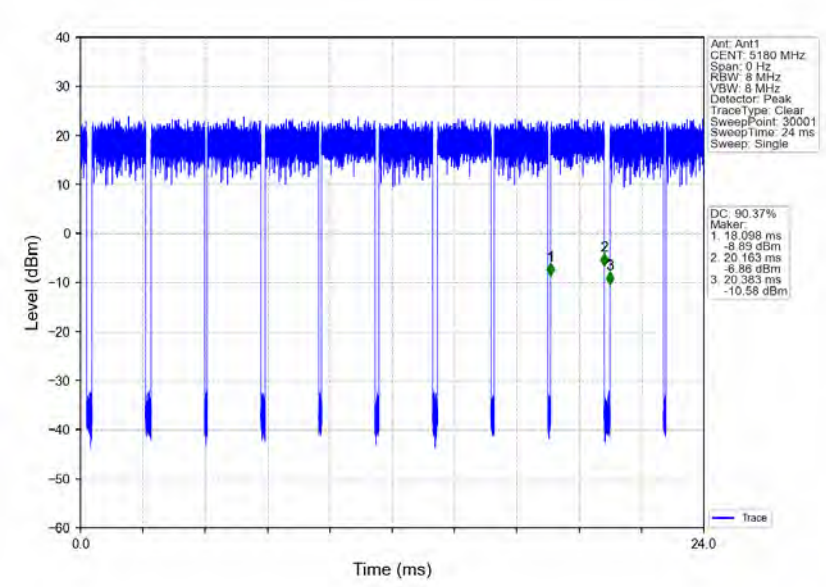
### 1.1 Ant1

#### 1.1.1 Test Result

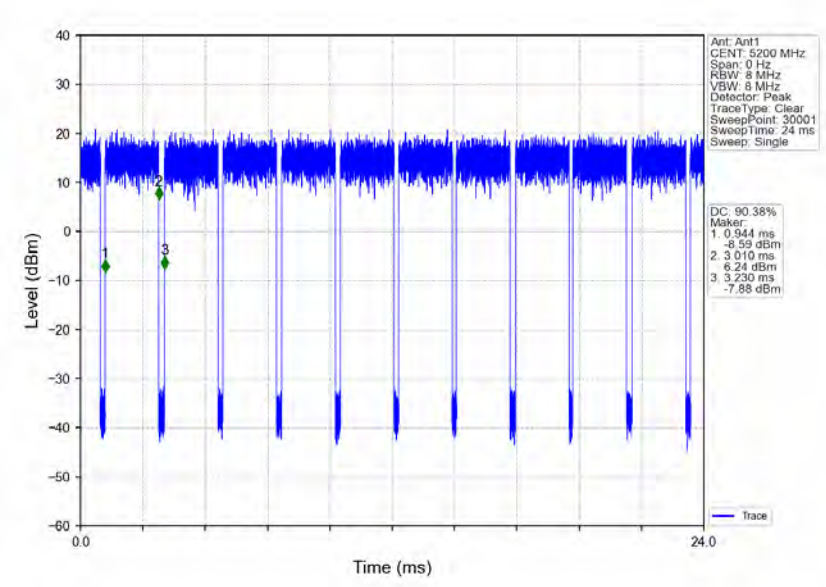
| Ant1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mode | TX Type | Frequency (MHz) | T_on (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | Max. DC Variation (%) |
| 802.11a | SISO | 5180 | 2.065 | 2.285 | 90.37 | 0.44 | 5.26 |
| | | 5200 | 2.066 | 2.286 | 90.38 | 0.44 | 3.34 |
| | | 5240 | 2.066 | 2.295 | 90.02 | 0.46 | 5.64 |
| | | 5745 | 2.066 | 2.295 | 90.02 | 0.46 | 5.18 |
| | | 5785 | 2.065 | 2.295 | 89.98 | 0.46 | 3.69 |
| | | 5825 | 2.065 | 2.295 | 89.98 | 0.46 | 5.64 |
| 802.11n (HT20) | MIMO | 5180 | 1.923 | 2.134 | 90.11 | 0.45 | 3.18 |
| | | 5200 | 1.922 | 2.151 | 89.35 | 0.49 | 4.71 |
| | | 5240 | 1.921 | 2.142 | 89.68 | 0.47 | 3.58 |
| | | 5745 | 1.921 | 2.151 | 89.31 | 0.49 | 4.72 |
| | | 5785 | 1.921 | 2.150 | 89.35 | 0.49 | 6.02 |
| | | 5825 | 1.922 | 2.151 | 89.35 | 0.49 | 5.98 |
| 802.11n (HT40) | MIMO | 5190 | 0.946 | 1.166 | 81.13 | 0.91 | 9.05 |
| | | 5230 | 0.945 | 1.148 | 82.32 | 0.85 | 8.57 |
| | | 5755 | 0.945 | 1.175 | 80.43 | 0.95 | 9.71 |
| | | 5795 | 0.946 | 1.166 | 81.13 | 0.91 | 9.84 |
| 802.11ac (VHT80) | MIMO | 5210 | 0.462 | 0.706 | 65.44 | 1.84 | 10.69 |
| | | 5775 | 0.462 | 0.715 | 64.62 | 1.90 | 13.82 |

## 1.1.2 Test Graph

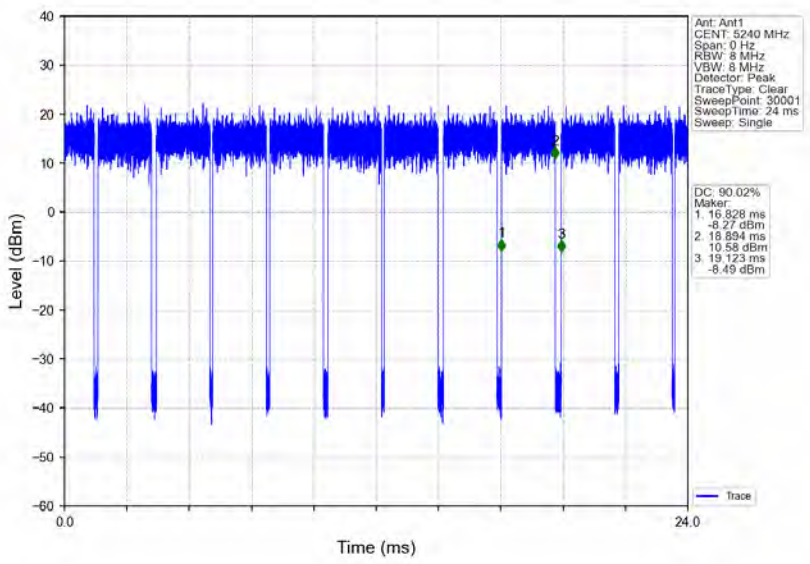
802.11a_LCH_5180MHz_Ant1_NTNV



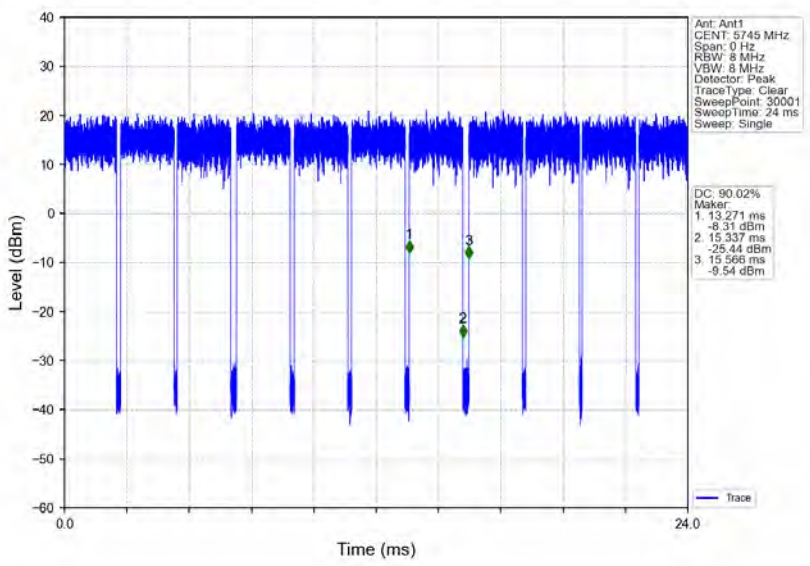

802.11a_MCH_5200MHz_Ant1_NTNV



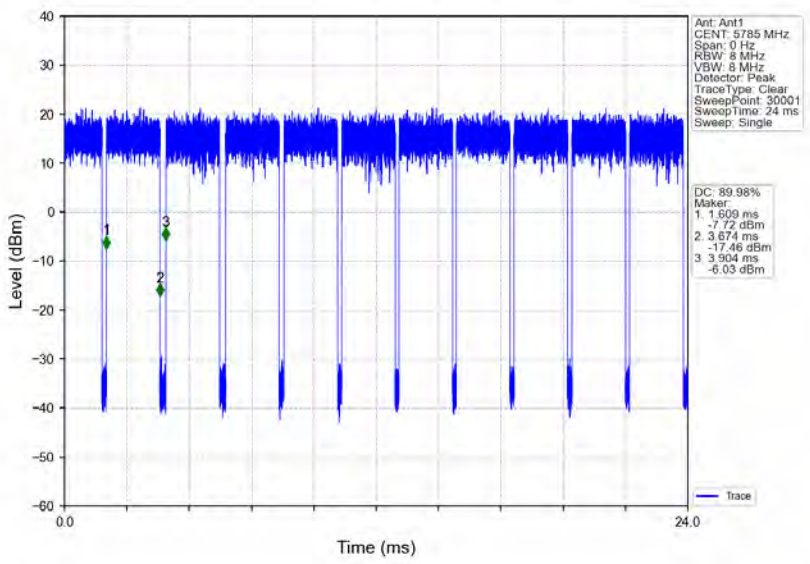
802.11a_HCH_5240MHz_Ant1_NTNV



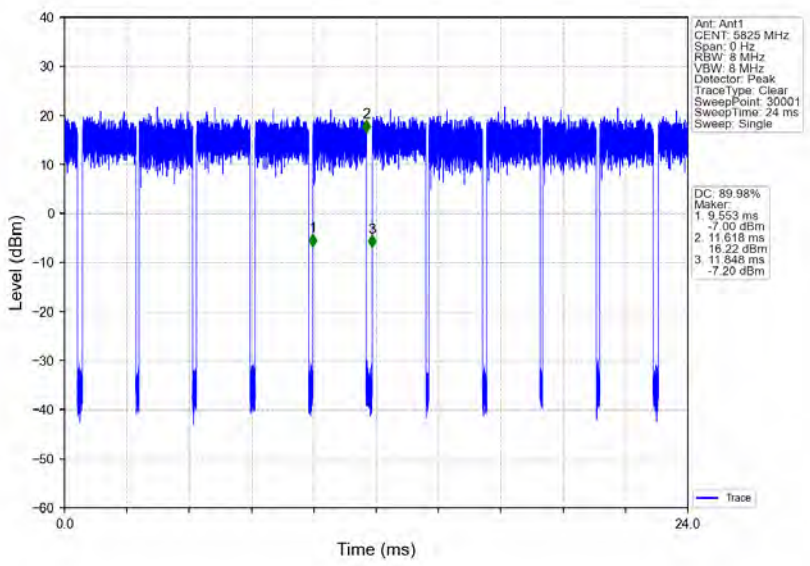

802.11a_LCH_5745MHz_Ant1_NTNV



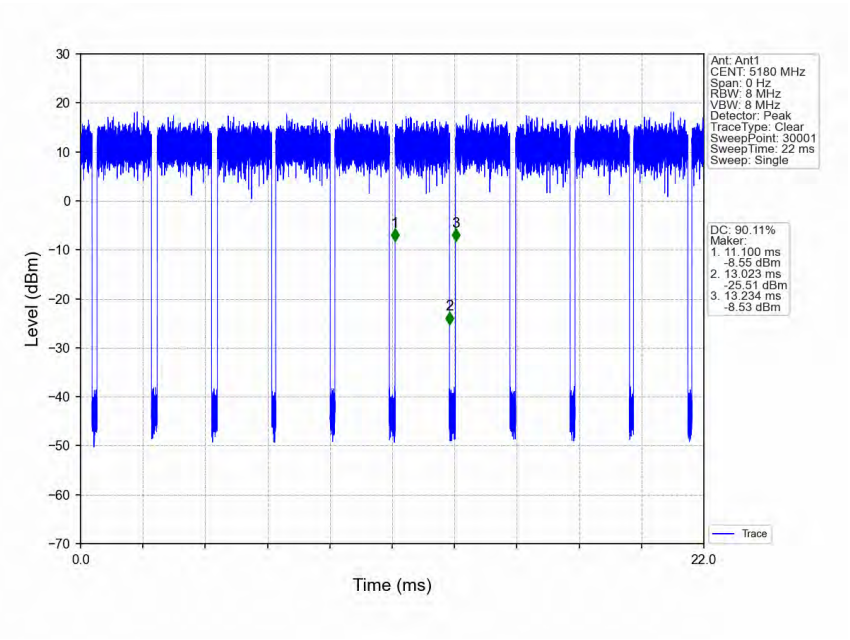
802.11a_MCH_5785MHz_Ant1_NTNV



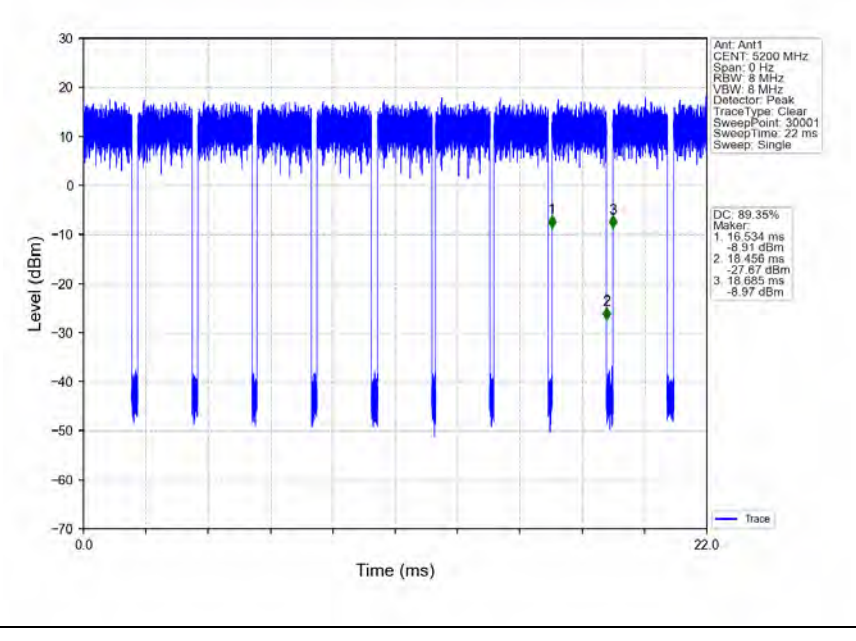

802.11a_HCH_5825MHz_Ant1_NTNV



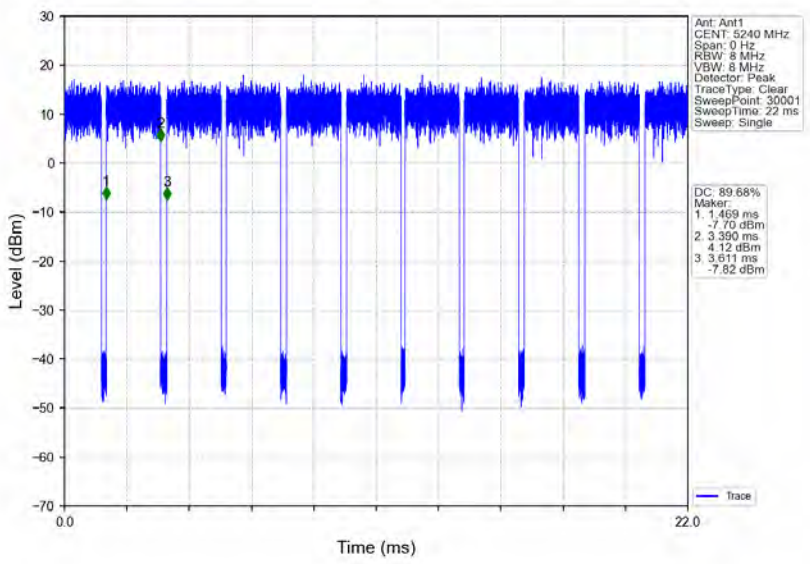
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



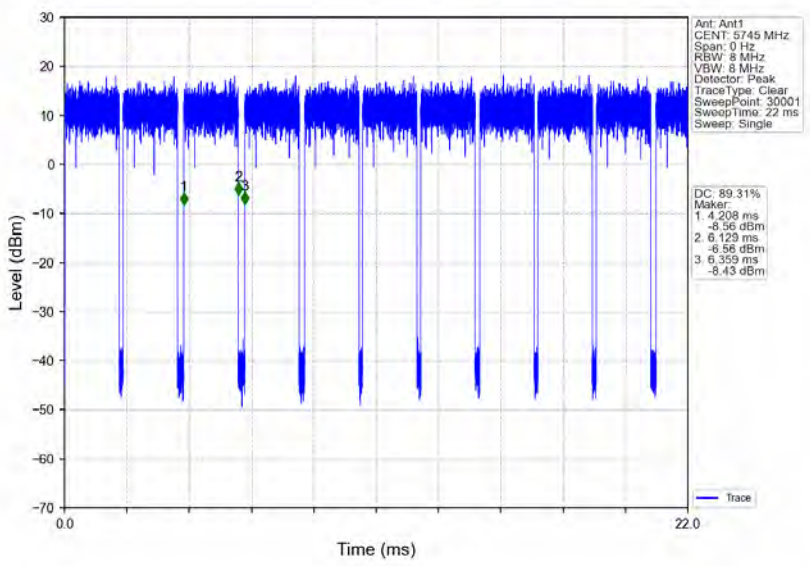

802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



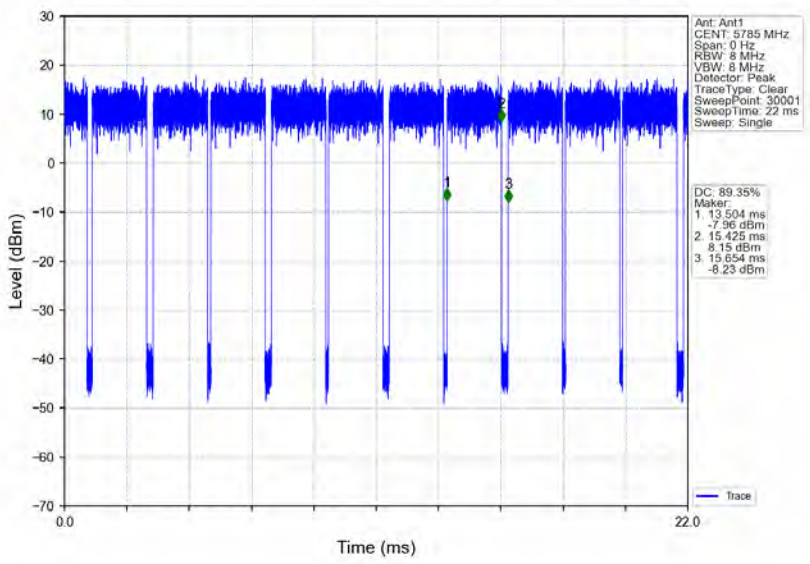
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



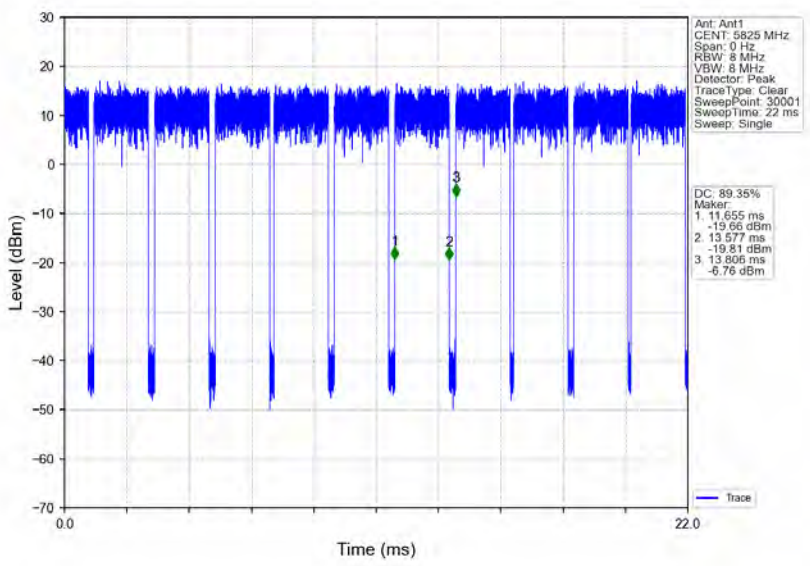

802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



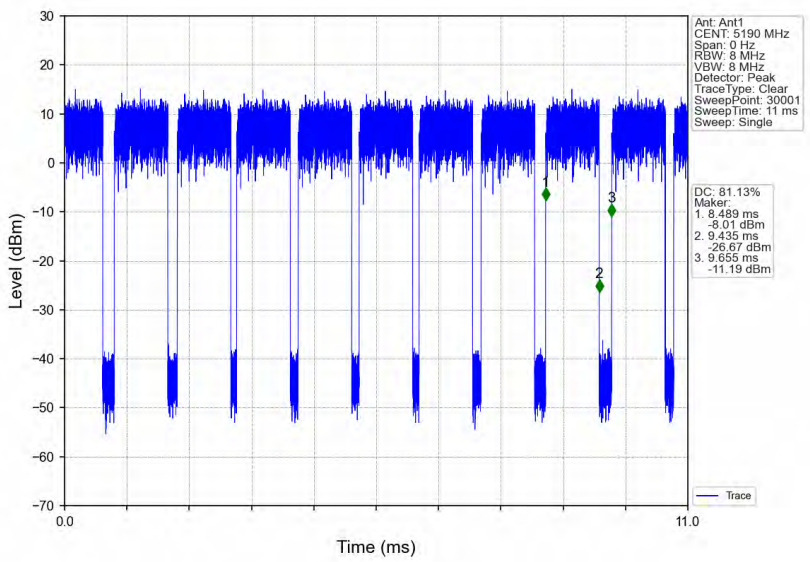
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



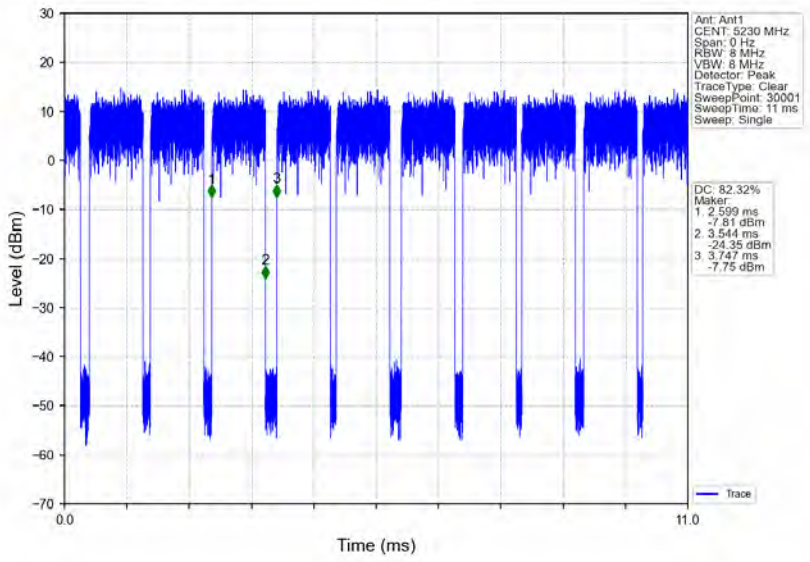

802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



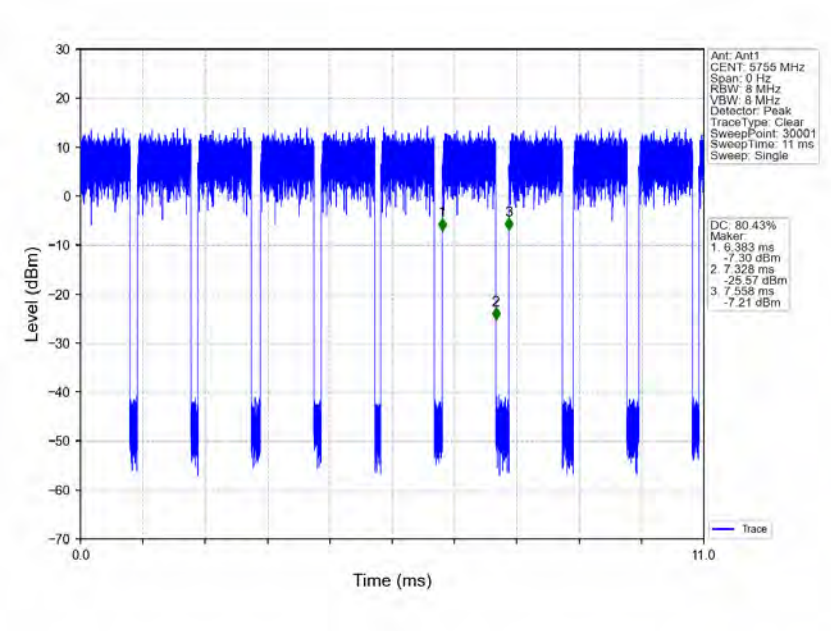
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



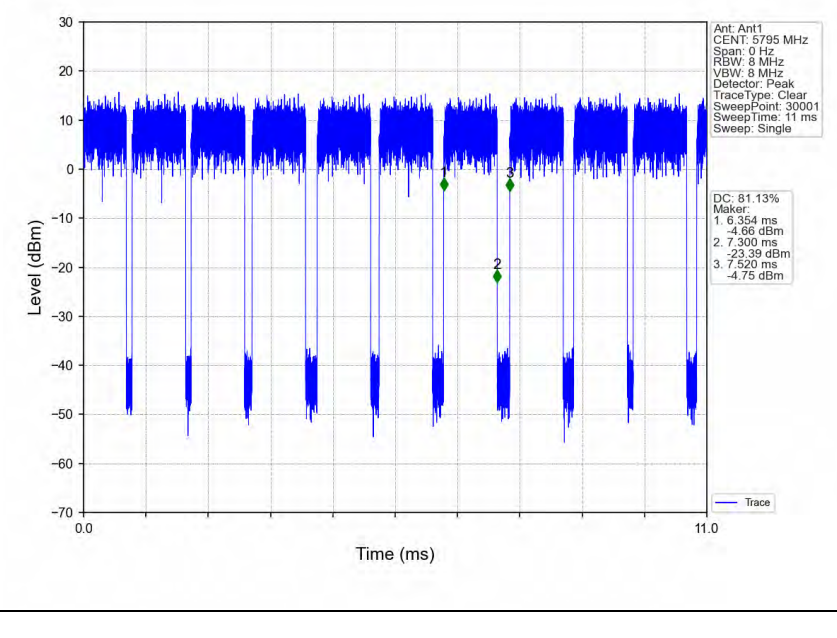

802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



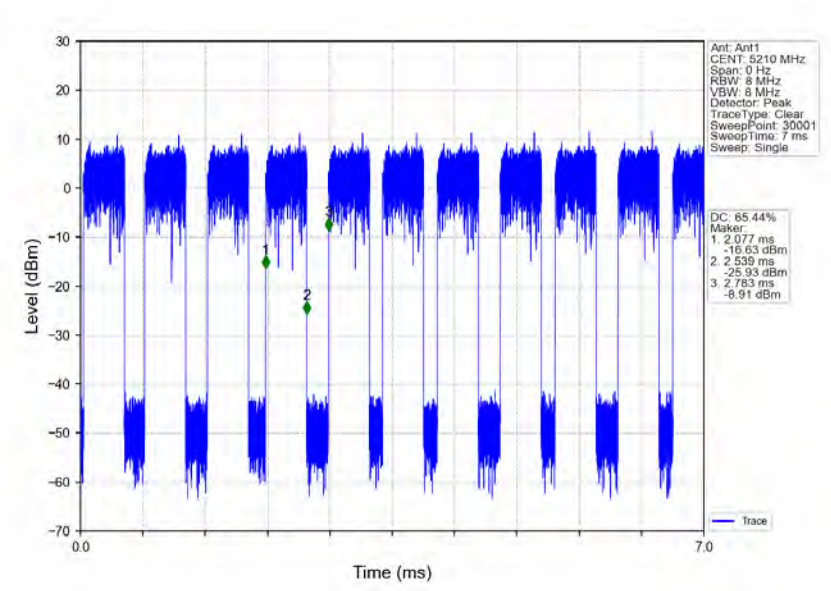
802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



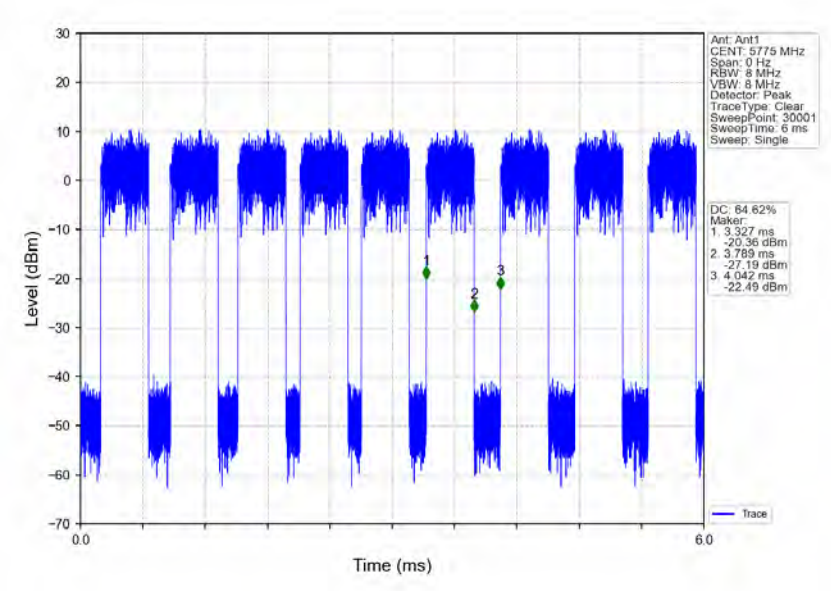

802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV




802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



# 2. Bandwidth

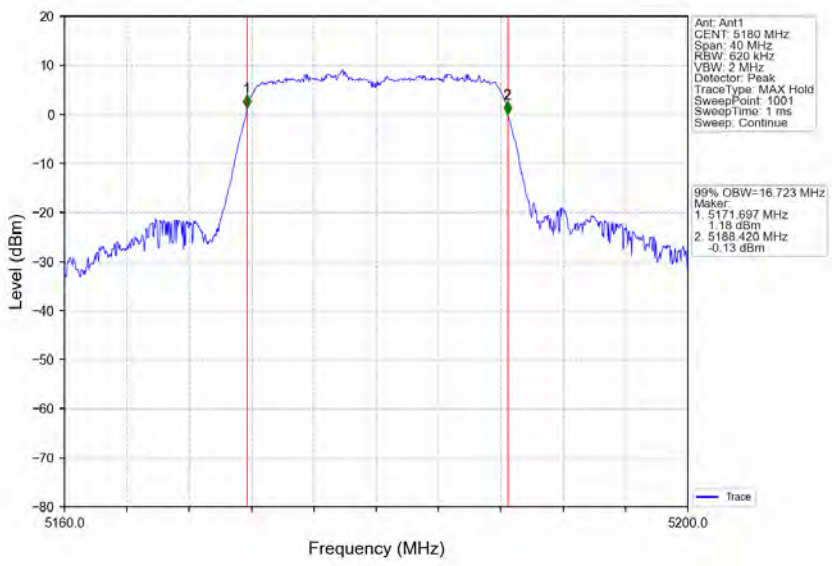
## 2.1 OBW

### 2.1.1 Test Result

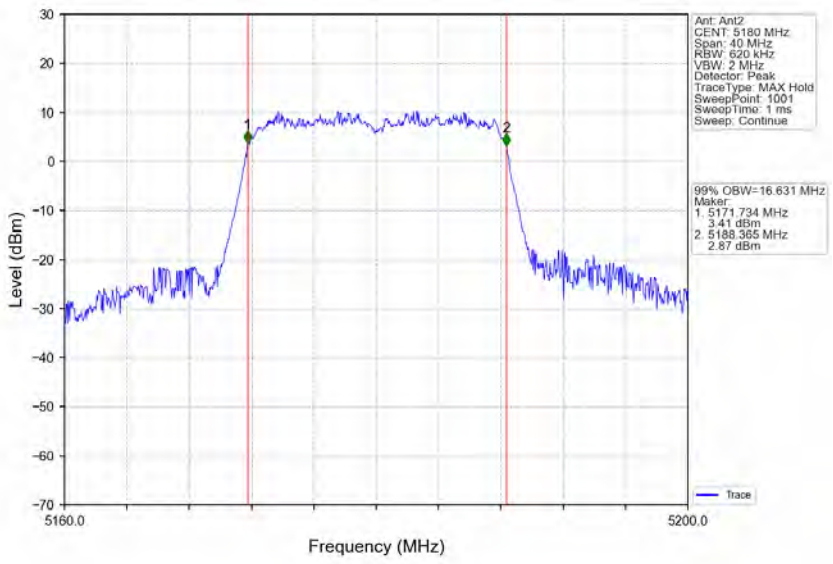
| Mode | TX Type | Frequency (MHz) | ANT | 99% Occupied Bandwidth (MHz) | | Verdict |
|---|---|---|---|---|---|---|
| | | | | Result | Limit | |
| 802.11a | SISO | 5180 | 1 | 16.723 | / | Pass |
| | | | 2 | 16.631 | / | Pass |
| | | 5200 | 1 | 16.684 | / | Pass |
| | | | 2 | 16.622 | / | Pass |
| | | 5240 | 1 | 16.698 | / | Pass |
| | | | 2 | 16.621 | / | Pass |
| | | 5745 | 1 | 16.689 | / | Pass |
| | | | 2 | 16.603 | / | Pass |
| | | 5785 | 1 | 16.669 | / | Pass |
| | | | 2 | 16.659 | / | Pass |
| | | 5825 | 1 | 16.751 | / | Pass |
| | | | 2 | 16.668 | / | Pass |
| 802.11n (HT20) | MIMO | 5180 | 1 | 17.806 | / | Pass |
| | | | 2 | 17.772 | / | Pass |
| | | 5200 | 1 | 17.771 | / | Pass |
| | | | 2 | 17.753 | / | Pass |
| | | 5240 | 1 | 17.764 | / | Pass |
| | | | 2 | 17.759 | / | Pass |
| | | 5745 | 1 | 17.782 | / | Pass |
| | | | 2 | 17.750 | / | Pass |
| | | 5785 | 1 | 17.813 | / | Pass |
| | | | 2 | 17.806 | / | Pass |
| | | 5825 | 1 | 17.760 | / | Pass |
| | | | 2 | 17.731 | / | Pass |
| 802.11n (HT40) | MIMO | 5190 | 1 | 36.454 | / | Pass |
| | | | 2 | 36.514 | / | Pass |
| | | 5230 | 1 | 36.550 | / | Pass |
| | | | 2 | 36.696 | / | Pass |
| | | 5755 | 1 | 36.550 | / | Pass |
| | | | 2 | 36.630 | / | Pass |
| | | 5795 | 1 | 36.489 | / | Pass |
| | | | 2 | 36.612 | / | Pass |
| 802.11ac (VHT80) | MIMO | 5210 | 1 | 74.922 | / | Pass |
| | | | 2 | 74.705 | / | Pass |
| | | 5775 | 1 | 74.882 | / | Pass |
| | | | 2 | 74.678 | / | Pass |

## 2.1.2 Test Graph

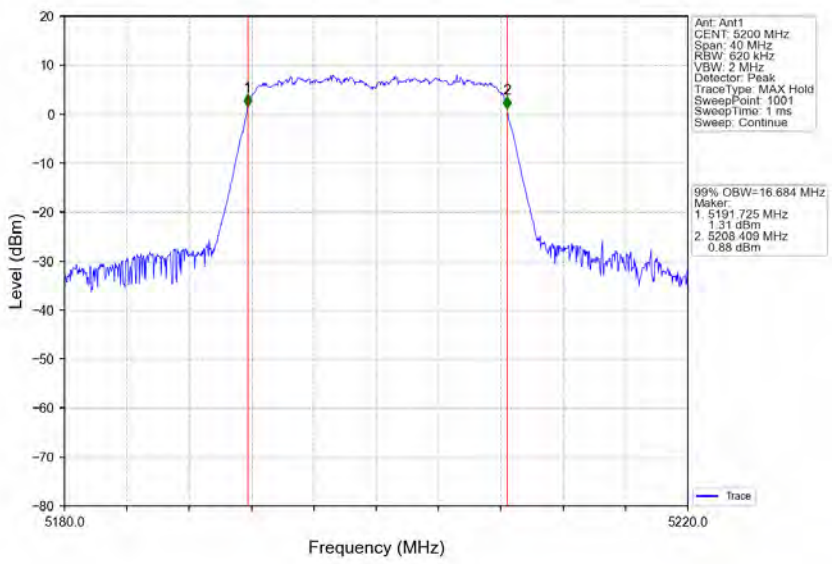
802.11a_LCH_5180MHz_Ant1_NTNV



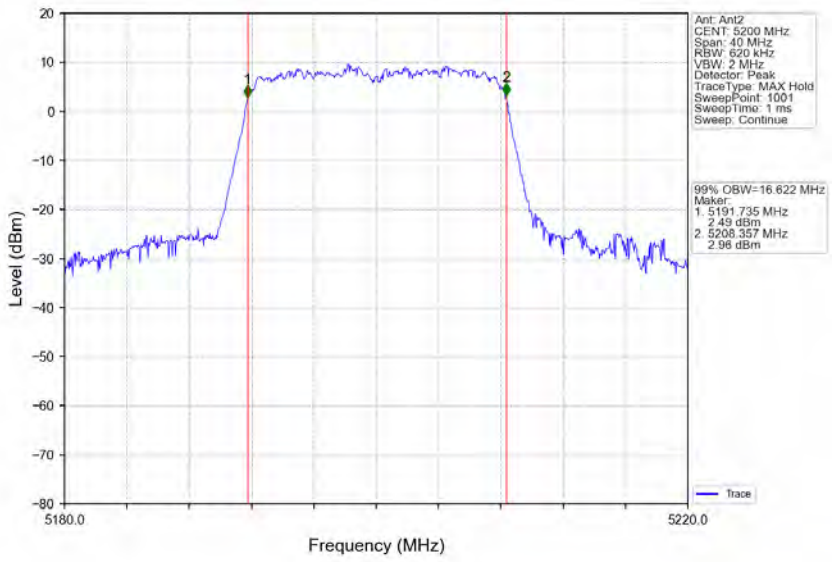

802.11a_LCH_5180MHz_Ant2_NTNV



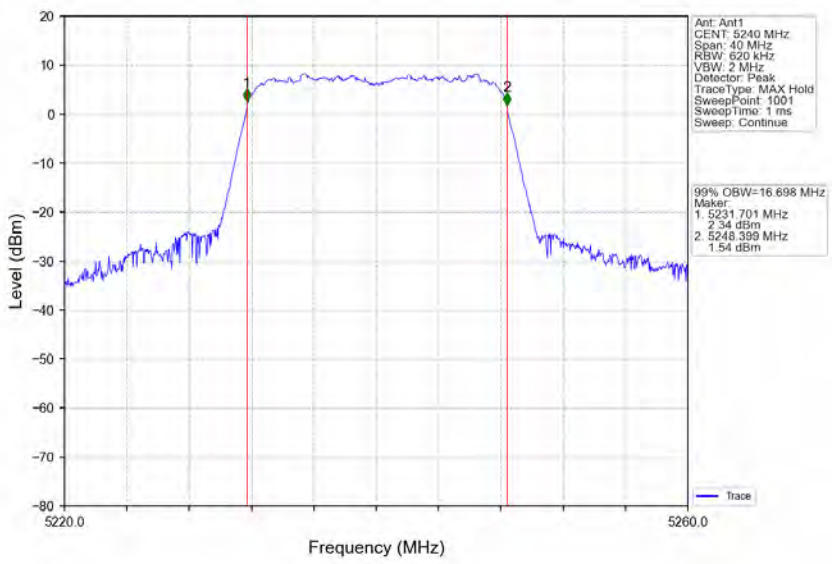
802.11a_MCH_5200MHz_Ant1_NTNV



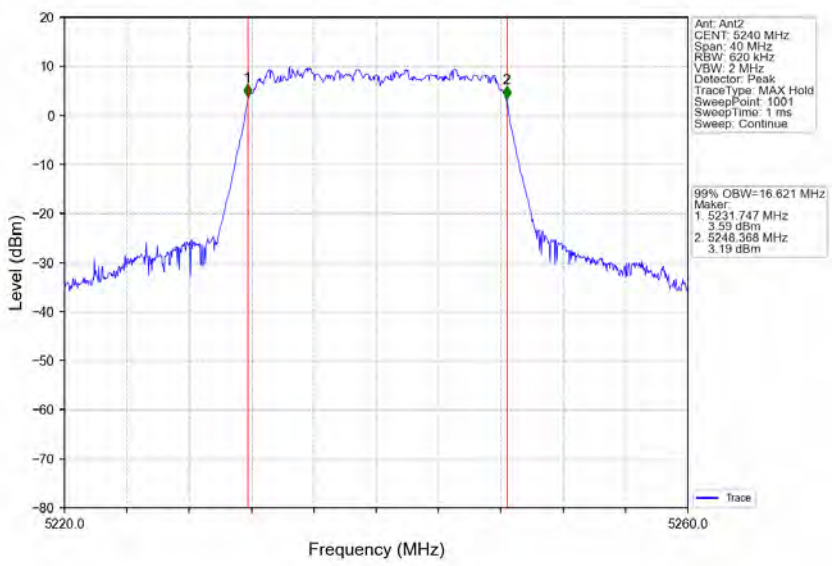

802.11a_MCH_5200MHz_Ant2_NTNV



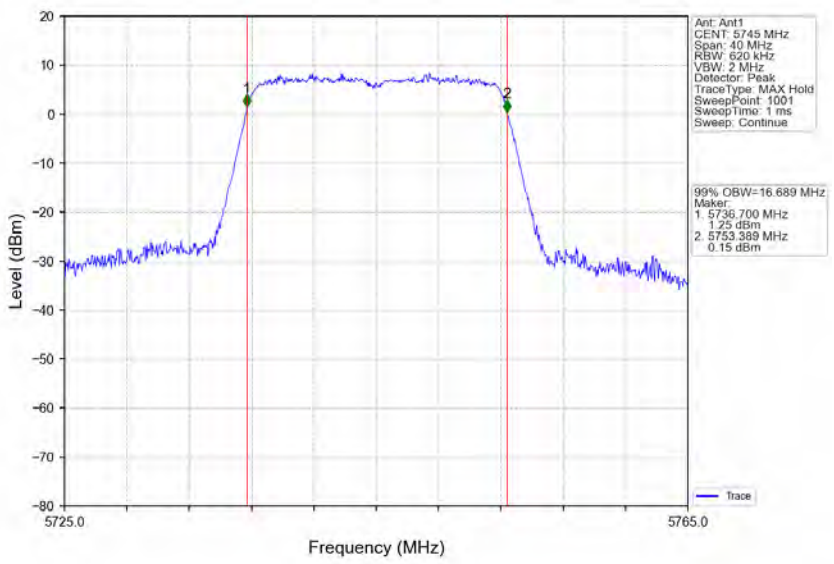
802.11a_HCH_5240MHz_Ant1_NTNV



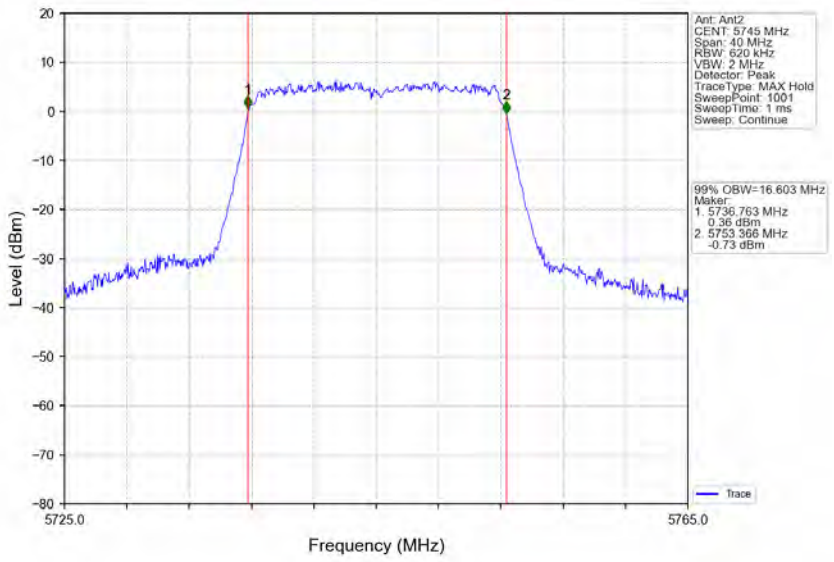

802.11a_HCH_5240MHz_Ant2_NTNV



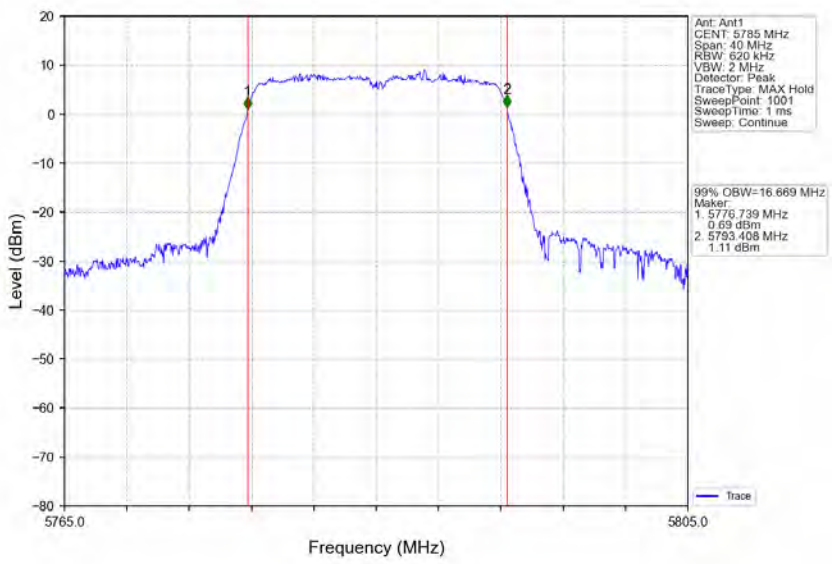
802.11a_LCH_5745MHz_Ant1_NTNV



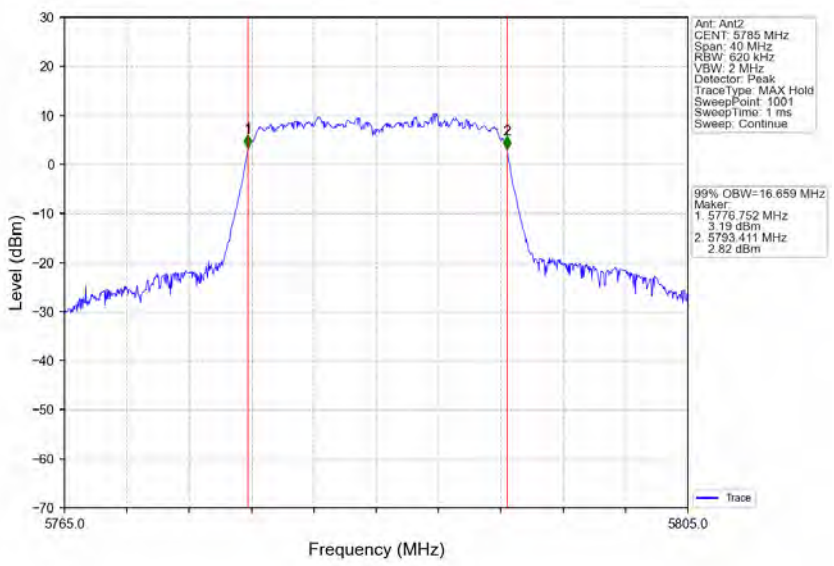

802.11a_LCH_5745MHz_Ant2_NTNV



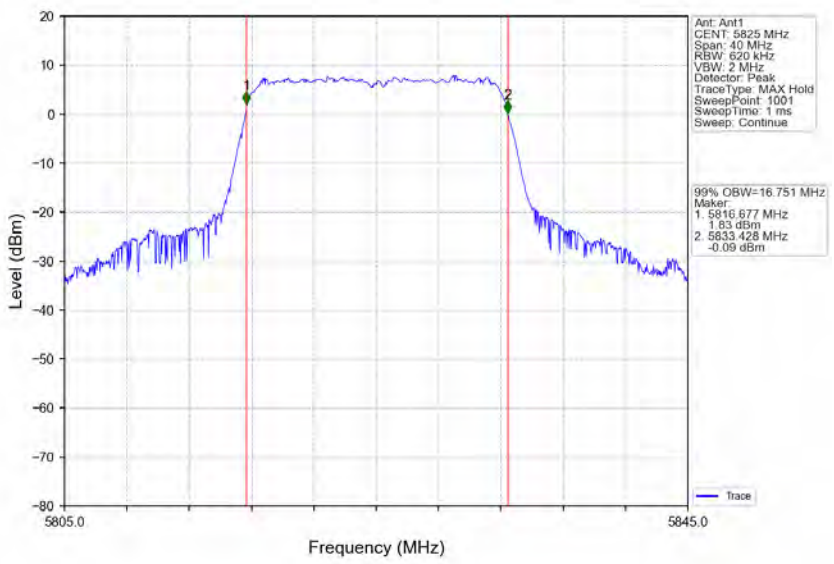
802.11a_MCH_5785MHz_Ant1_NTNV



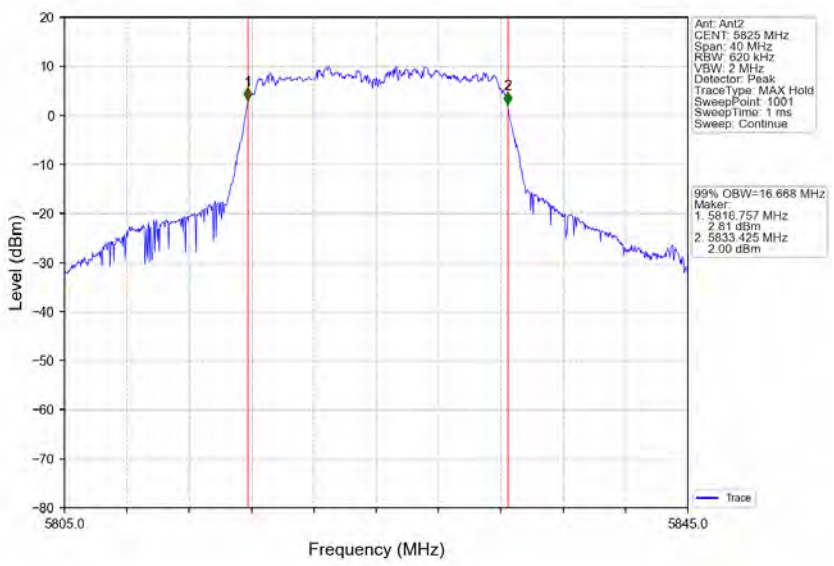

802.11a_MCH_5785MHz_Ant2_NTNV



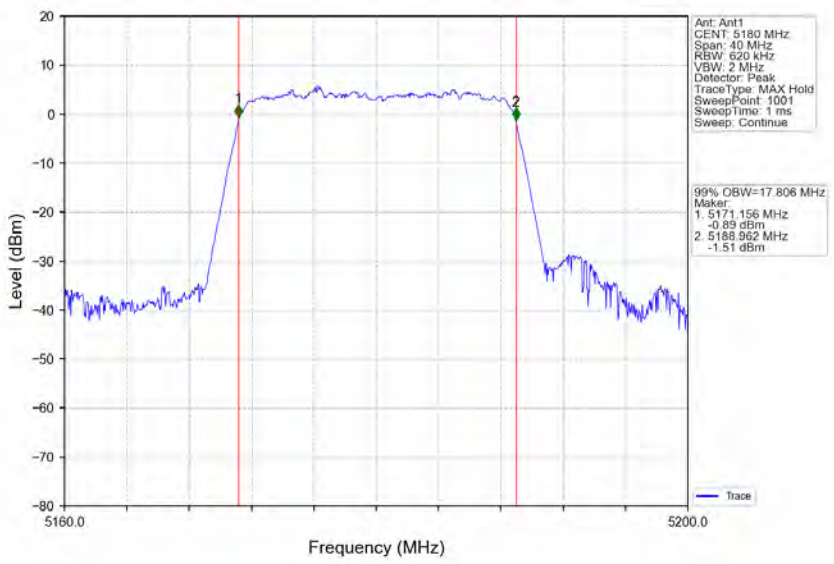
802.11a_HCH_5825MHz_Ant1_NTNV



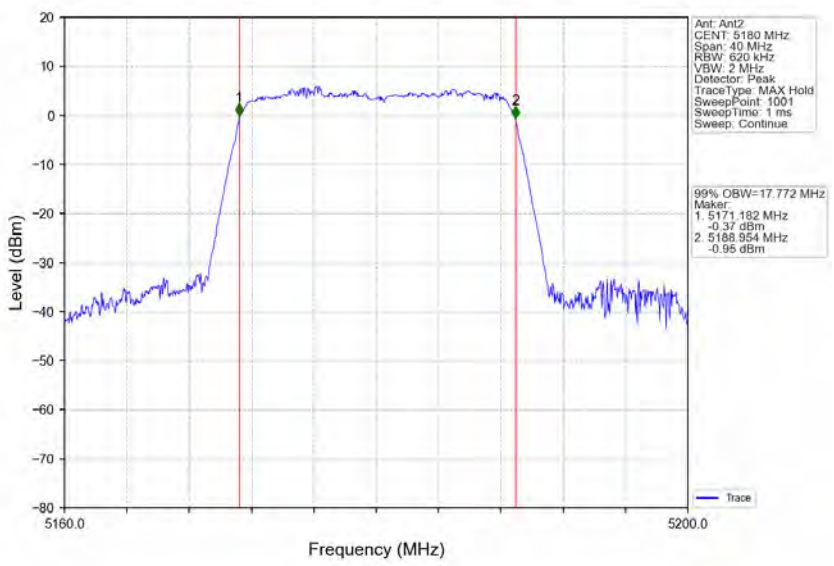

802.11a_HCH_5825MHz_Ant2_NTNV



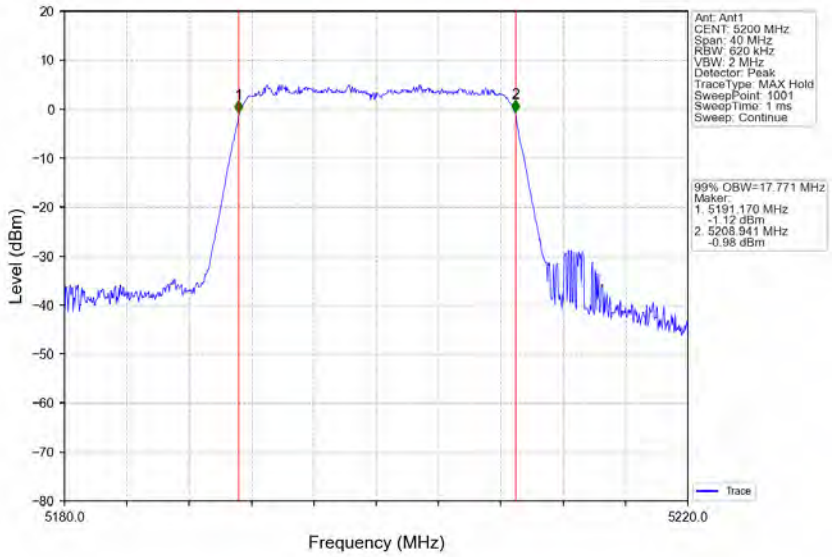
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



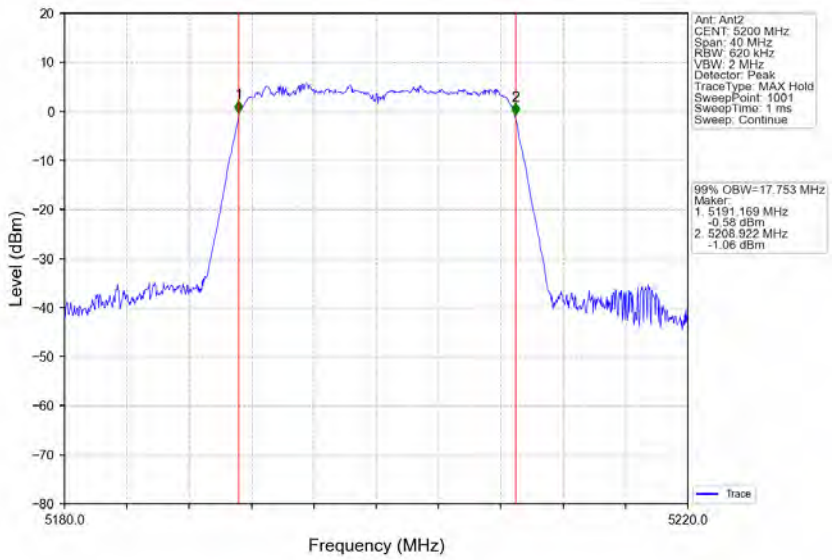

802.11n(HT20)_LCH_5180MHz_Ant2_NTNV



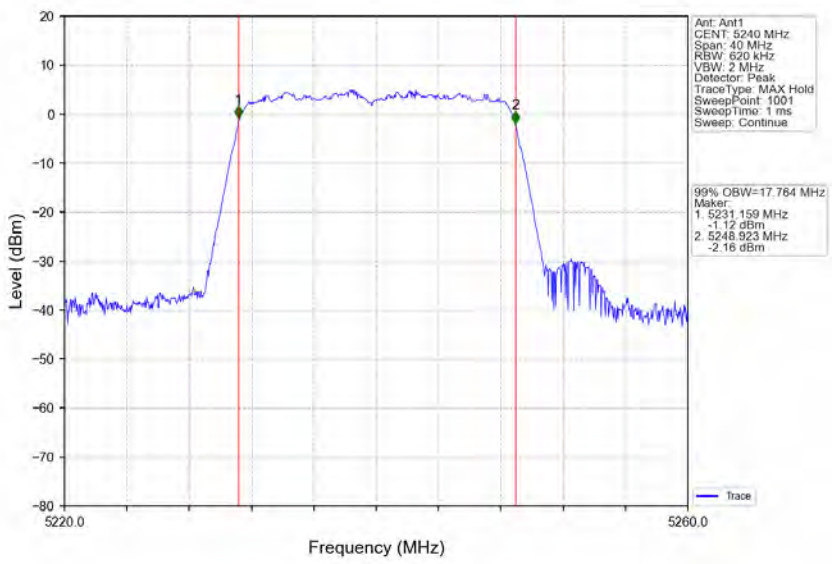
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



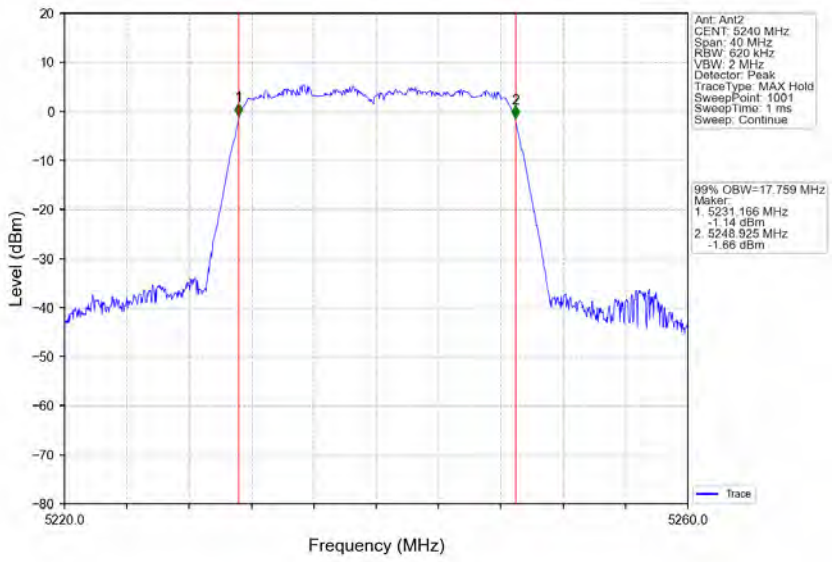

802.11n(HT20)_MCH_5200MHz_Ant2_NTNV



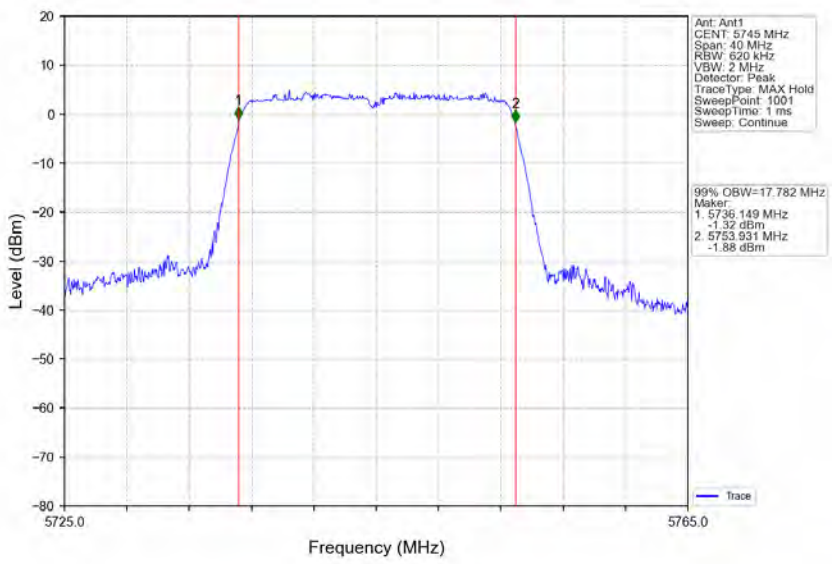
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



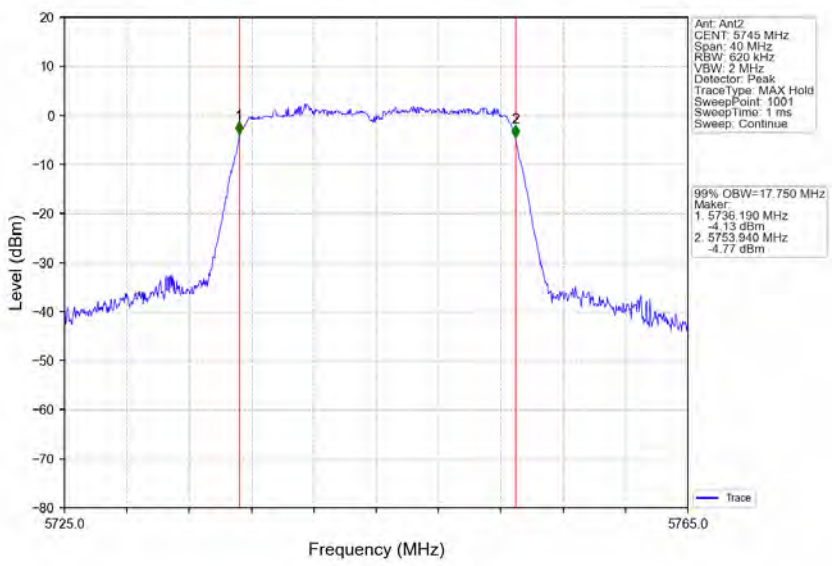

802.11n(HT20)_HCH_5240MHz_Ant2_NTNV



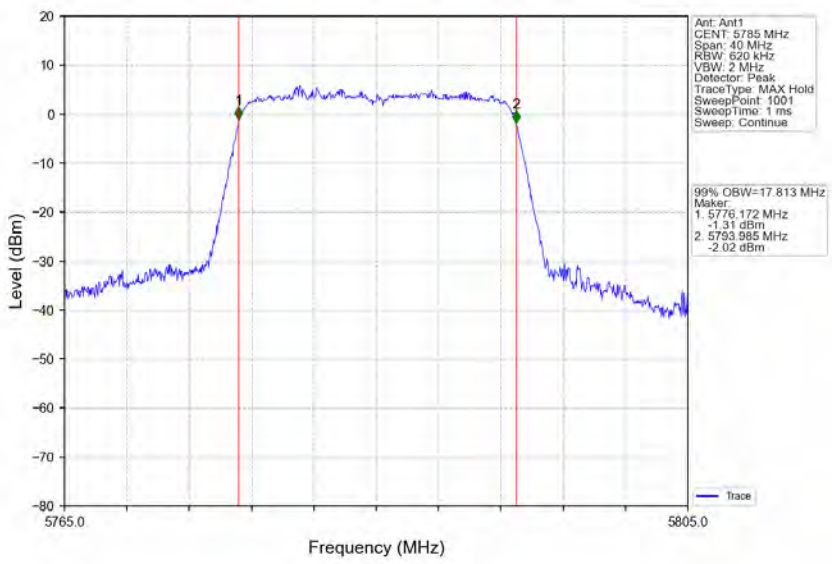
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



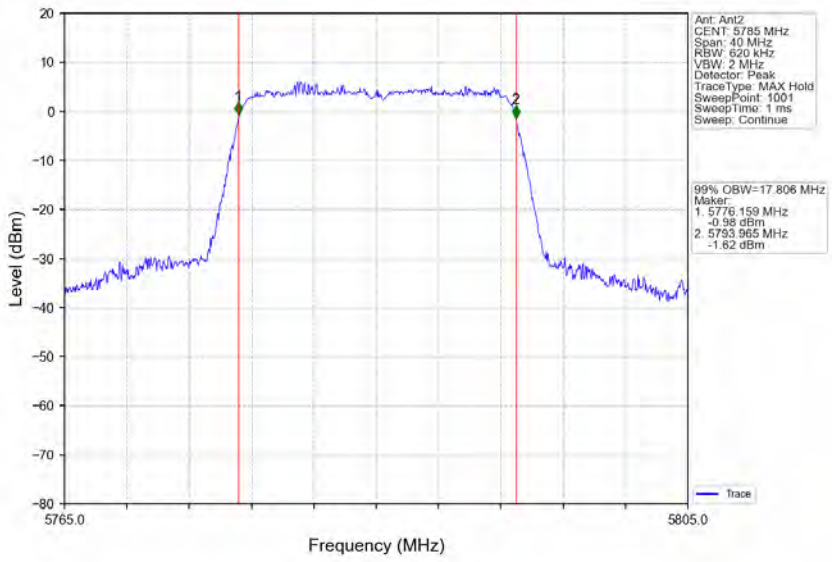

802.11n(HT20)_LCH_5745MHz_Ant2_NTNV



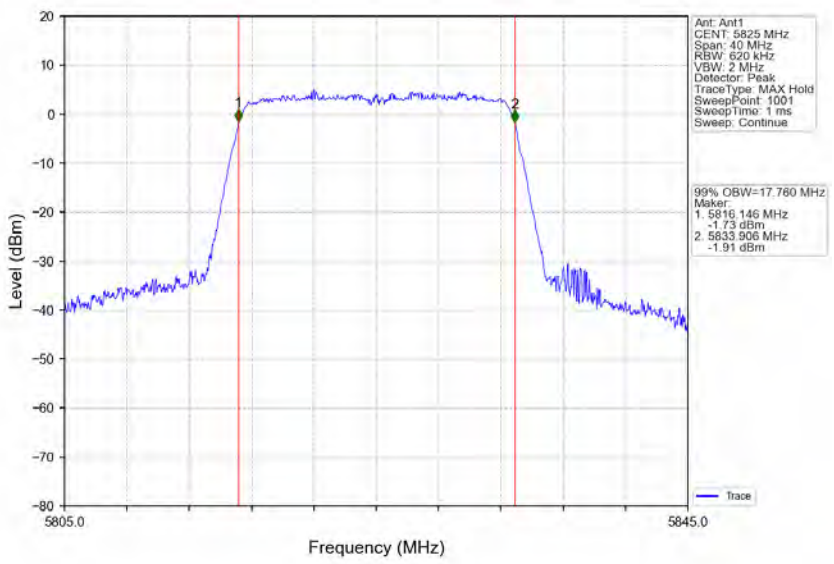
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



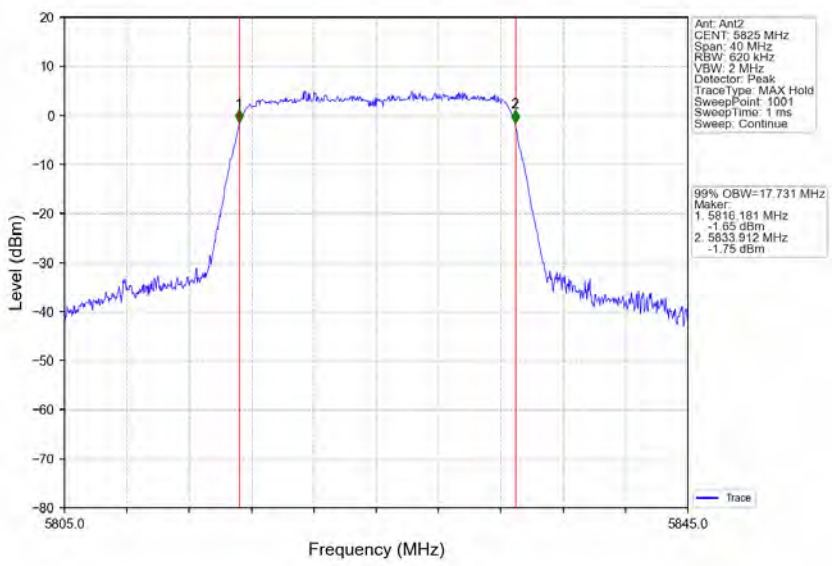

802.11n(HT20)_MCH_5785MHz_Ant2_NTNV



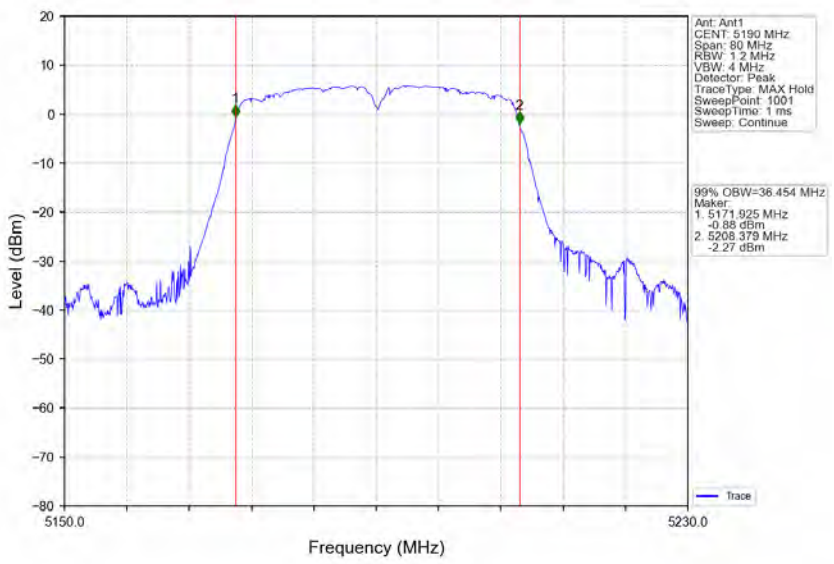
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



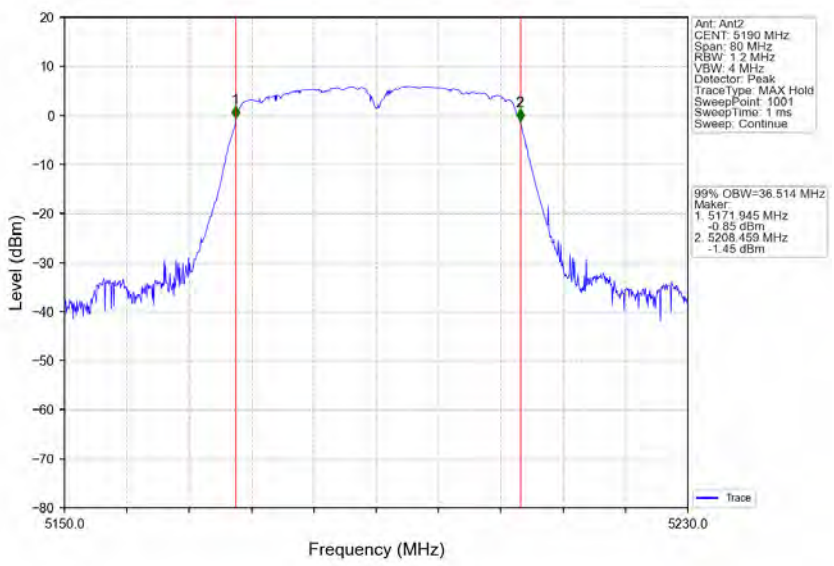

802.11n(HT20)_HCH_5825MHz_Ant2_NTNV



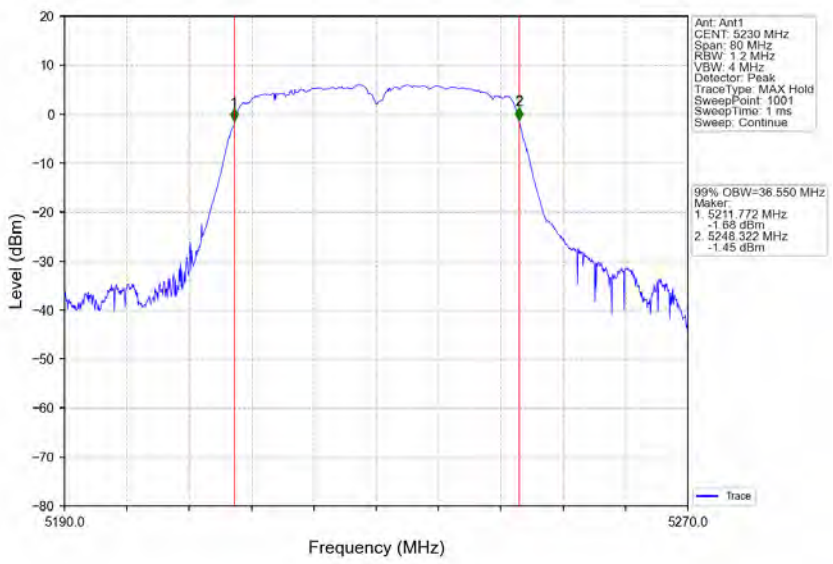
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



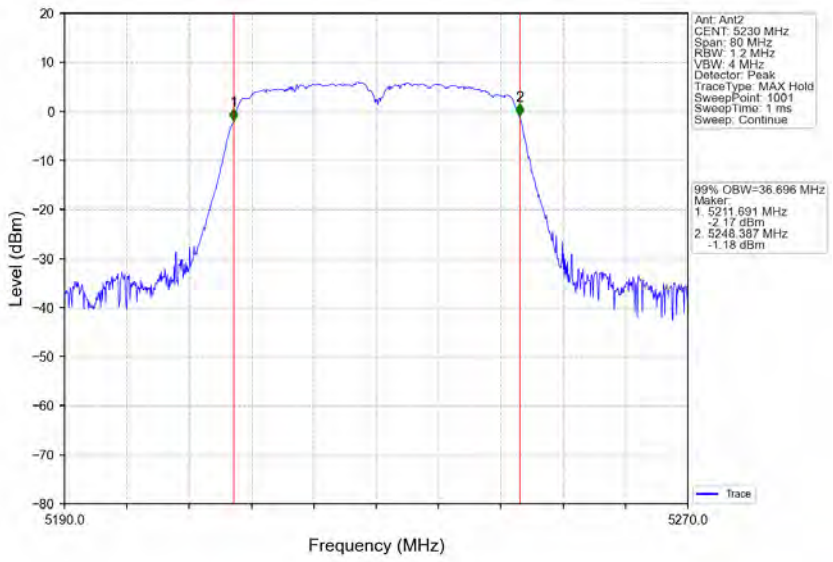

802.11n(HT40)_LCH_5190MHz_Ant2_NTNV



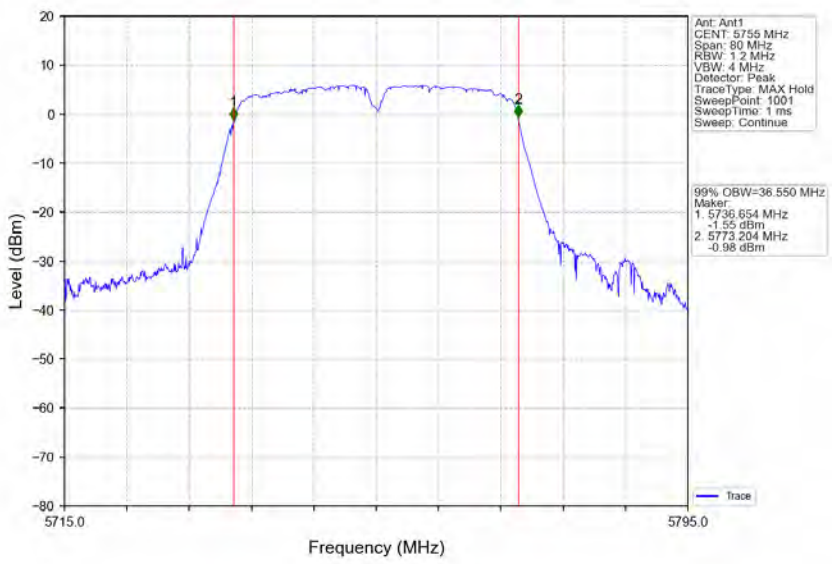
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



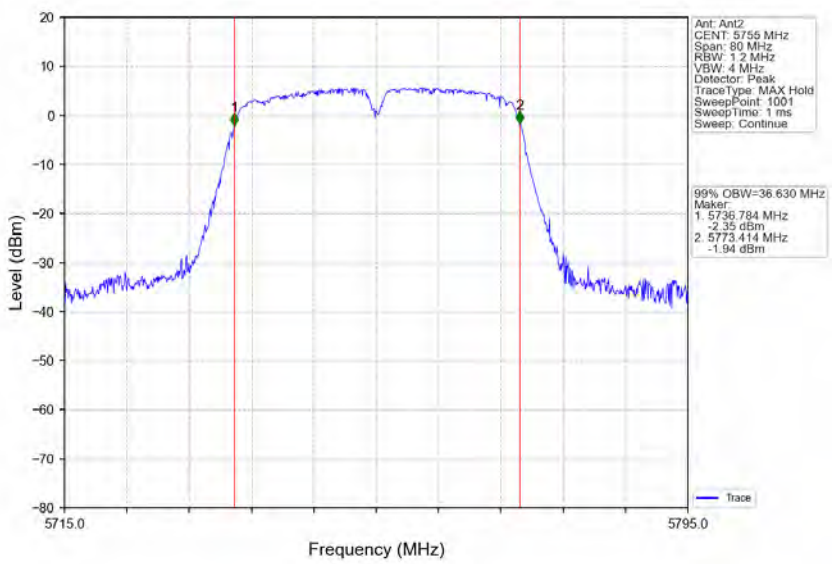

802.11n(HT40)_HCH_5230MHz_Ant2_NTNV



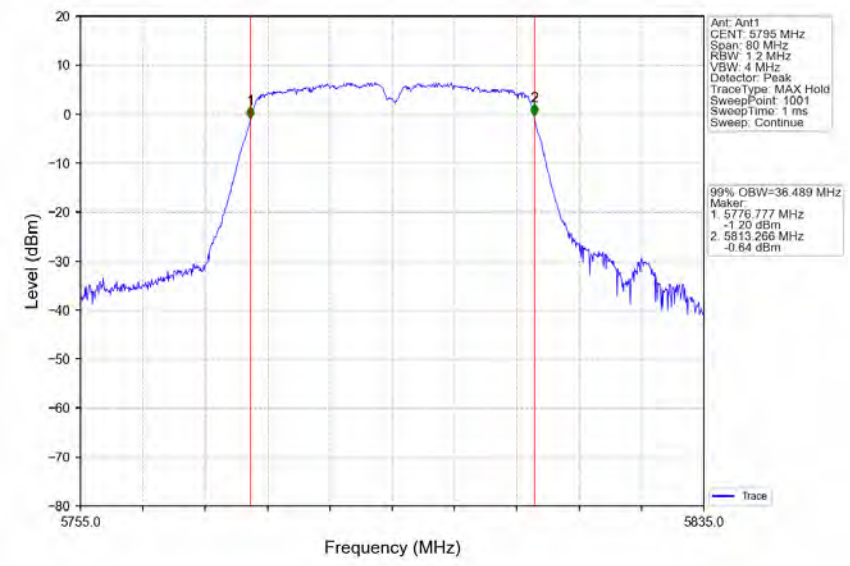
802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



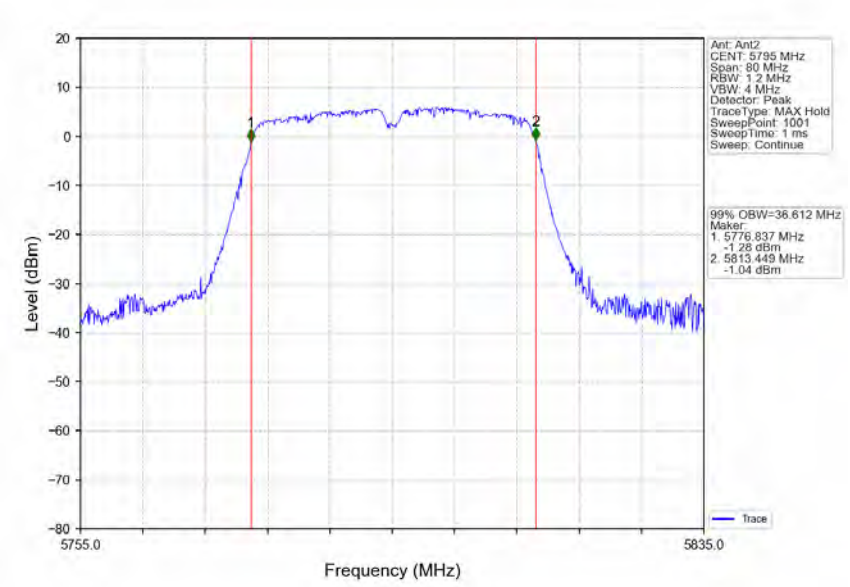

802.11n(HT40)_LCH_5755MHz_Ant2_NTNV



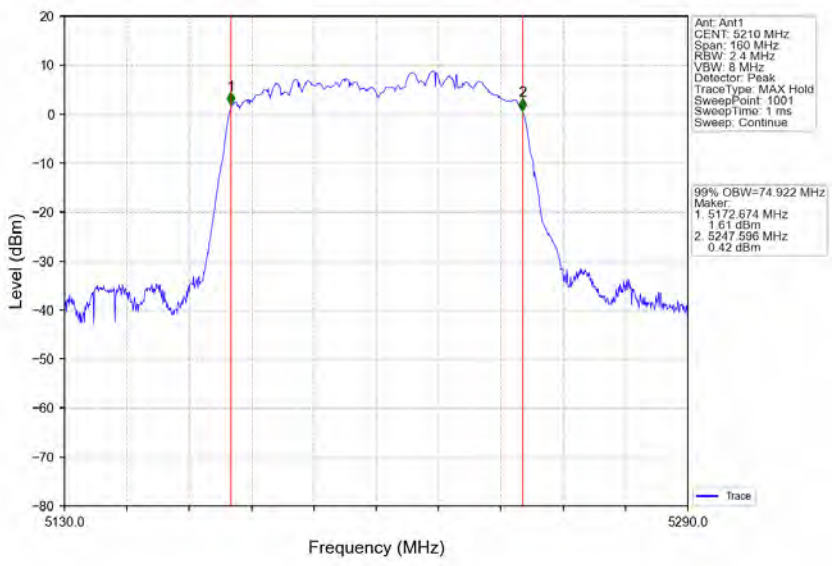
802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



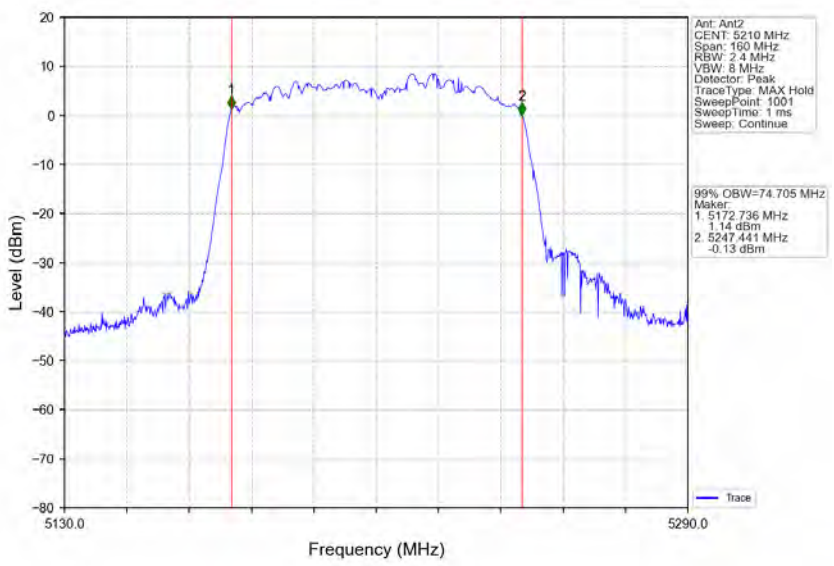

802.11n(HT40)_HCH_5795MHz_Ant2_NTNV



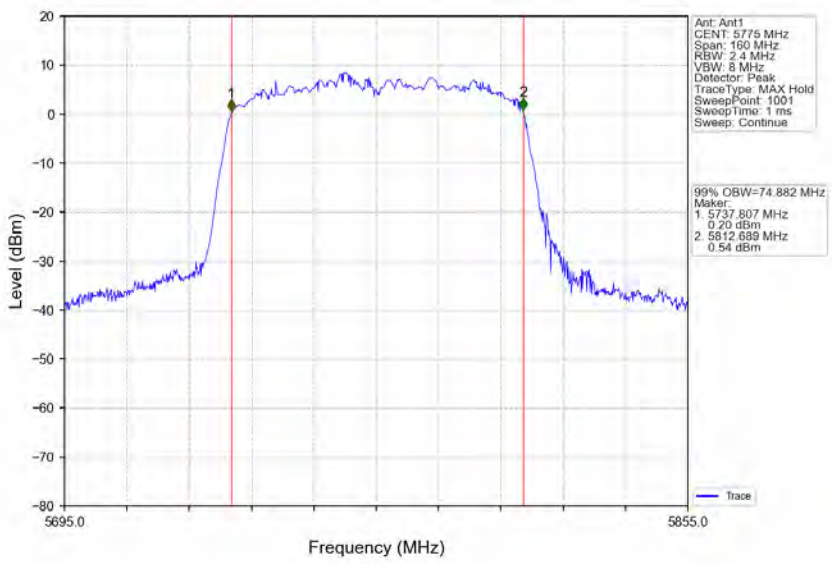
802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



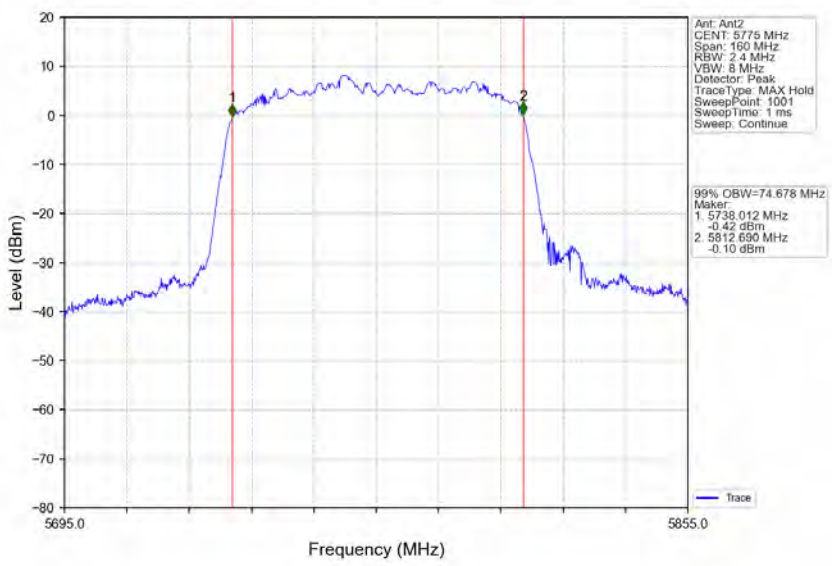

802.11ac(VHT80)_MCH_5210MHz_Ant2_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV




802.11ac(VHT80)_MCH_5775MHz_Ant2_NTNV



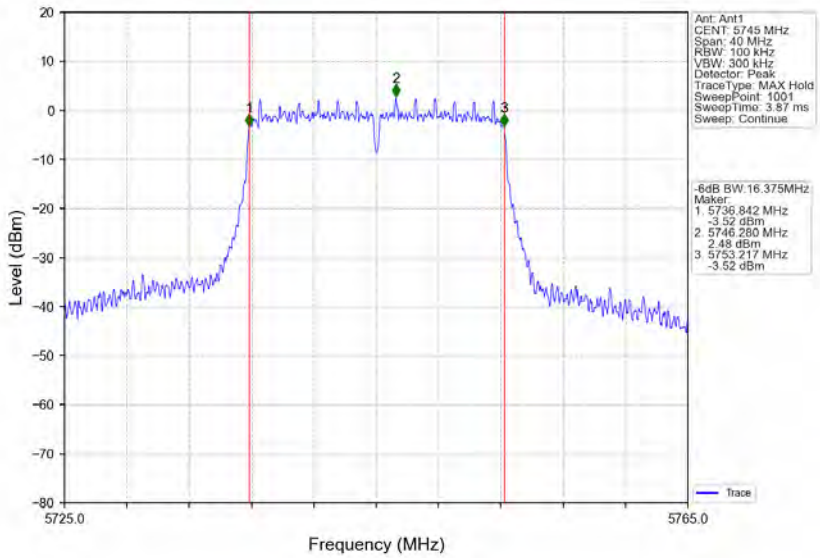
## 2.2 6dB BW

### 2.2.1 Test Result

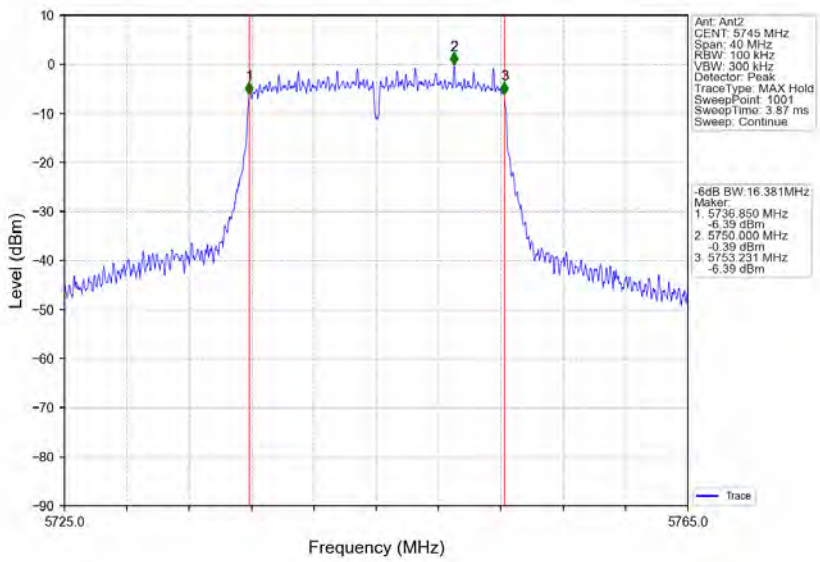
| Mode | TX Type | Frequency (MHz) | ANT | 6dB Bandwidth (MHz) | | Verdict |
|---|---|---|---|---|---|---|
| | | | | Result | Limit | |
| 802.11a | SISO | 5745 | 1 | 16.375 | >=0.5 | Pass |
| | | | 2 | 16.381 | >=0.5 | Pass |
| | | 5785 | 1 | 16.330 | >=0.5 | Pass |
| | | | 2 | 16.361 | >=0.5 | Pass |
| | | 5825 | 1 | 16.352 | >=0.5 | Pass |
| | | | 2 | 16.356 | >=0.5 | Pass |
| 802.11n (HT20) | MIMO | 5745 | 1 | 17.587 | >=0.5 | Pass |
| | | | 2 | 17.297 | >=0.5 | Pass |
| | | 5785 | 1 | 17.002 | >=0.5 | Pass |
| | | | 2 | 17.562 | >=0.5 | Pass |
| | | 5825 | 1 | 16.988 | >=0.5 | Pass |
| | | | 2 | 17.345 | >=0.5 | Pass |
| 802.11n (HT40) | MIMO | 5755 | 1 | 35.337 | >=0.5 | Pass |
| | | | 2 | 35.168 | >=0.5 | Pass |
| | | 5795 | 1 | 35.196 | >=0.5 | Pass |
| | | | 2 | 35.169 | >=0.5 | Pass |
| 802.11ac (VHT80) | MIMO | 5775 | 1 | 75.100 | >=0.5 | Pass |
| | | | 2 | 75.088 | >=0.5 | Pass |

## 2.2.2 Test Graph

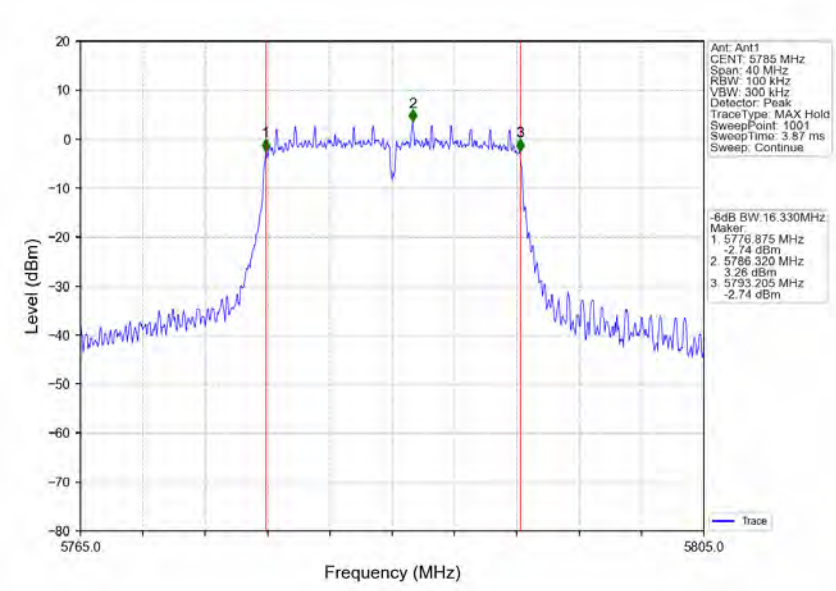
802.11a_LCH_5745MHz_Ant1_NTNV



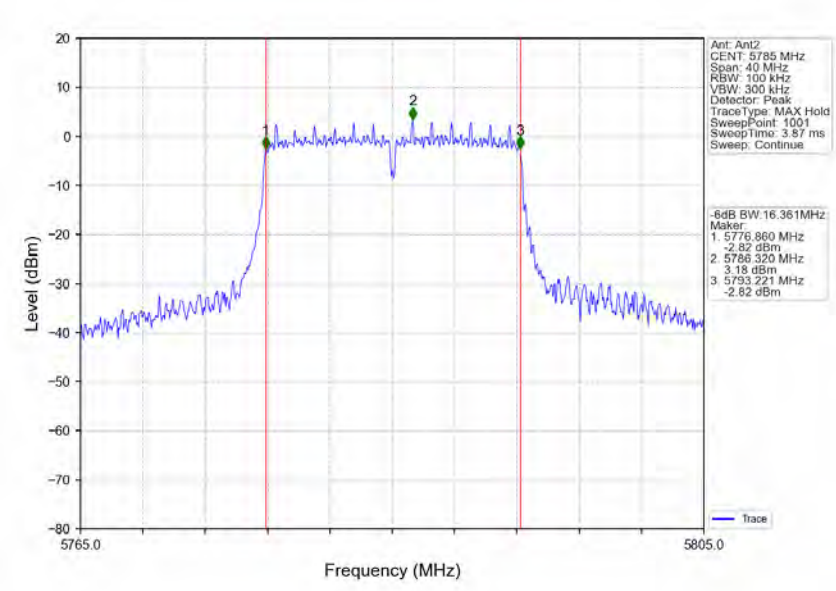

802.11a_LCH_5745MHz_Ant2_NTNV



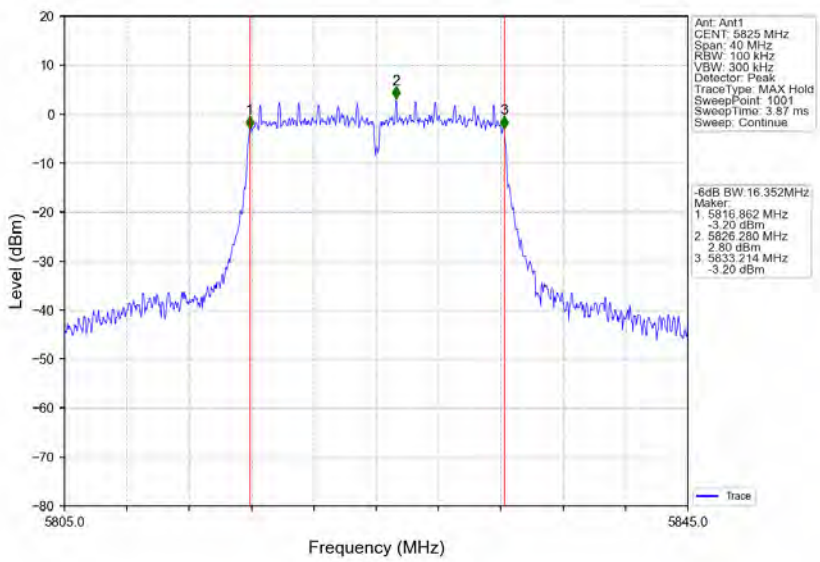
802.11a_MCH_5785MHz_Ant1_NTNV



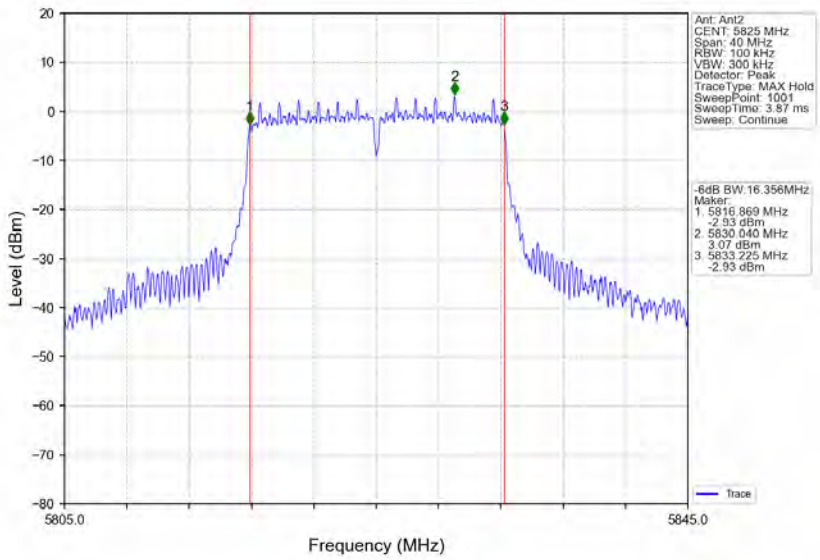

802.11a_MCH_5785MHz_Ant2_NTNV



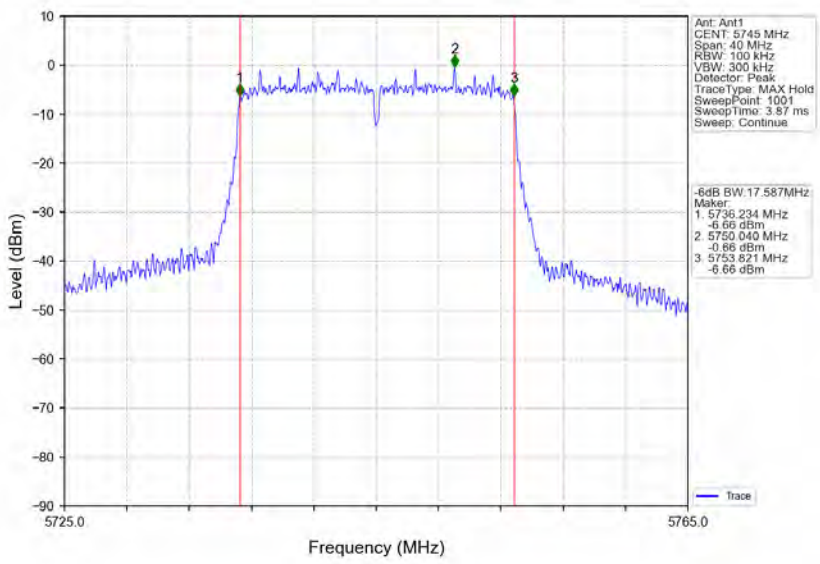
802.11a_HCH_5825MHz_Ant1_NTNV



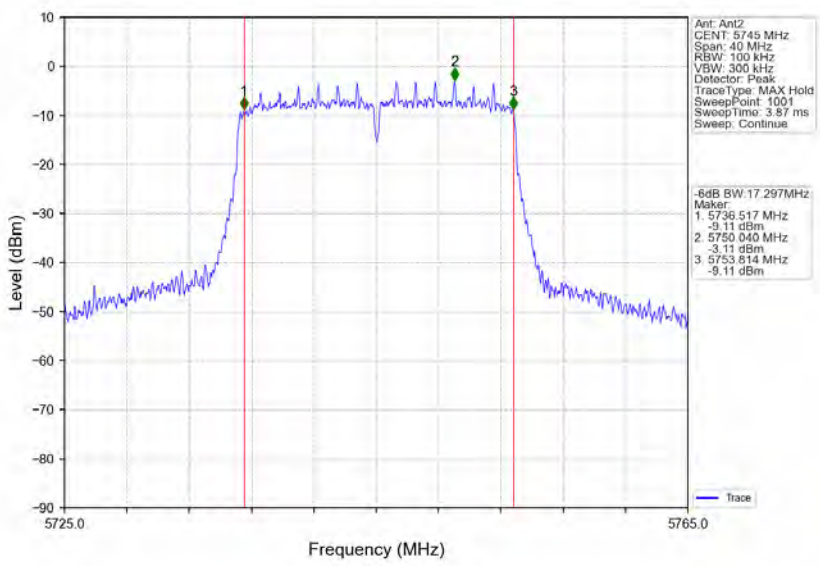

802.11a_HCH_5825MHz_Ant2_NTNV



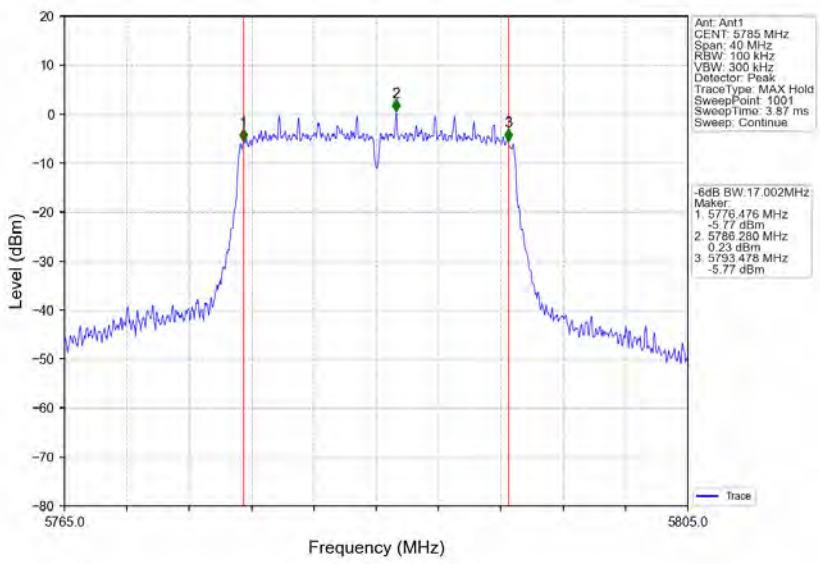
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



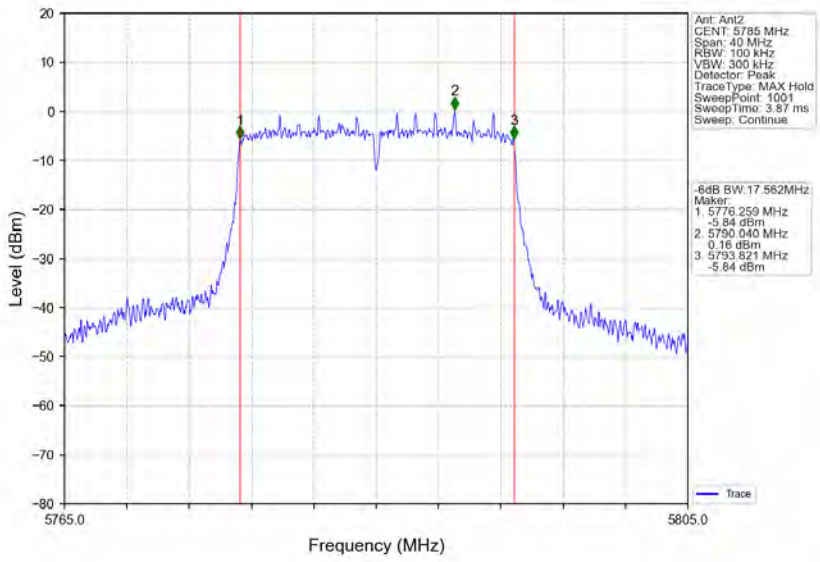

802.11n(HT20)_LCH_5745MHz_Ant2_NTNV



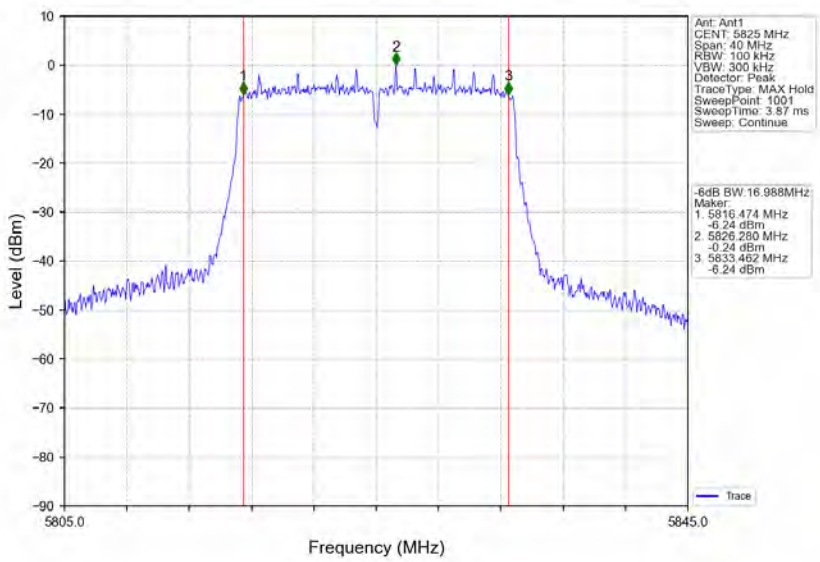
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



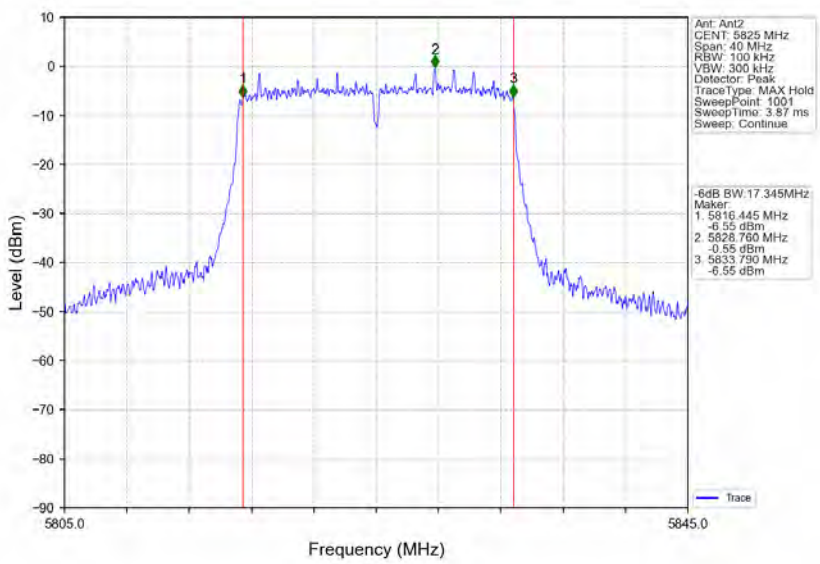

802.11n(HT20)_MCH_5785MHz_Ant2_NTNV



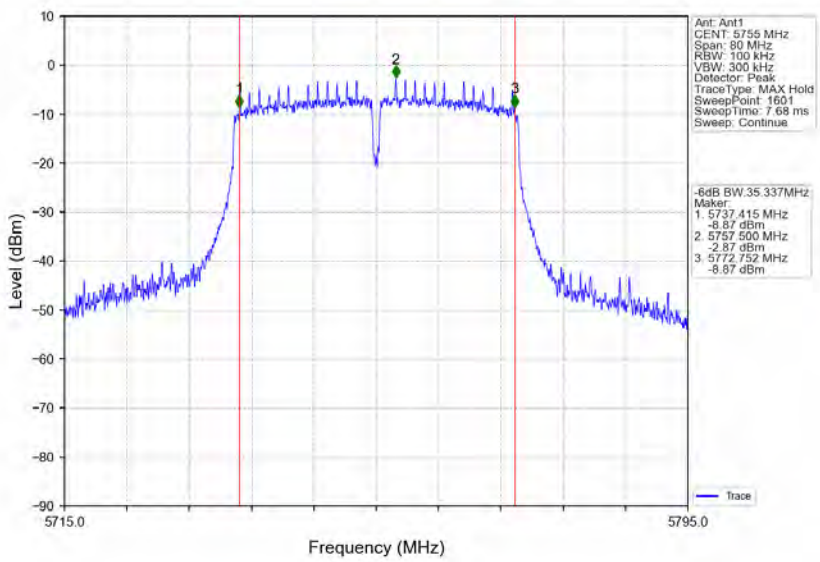
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



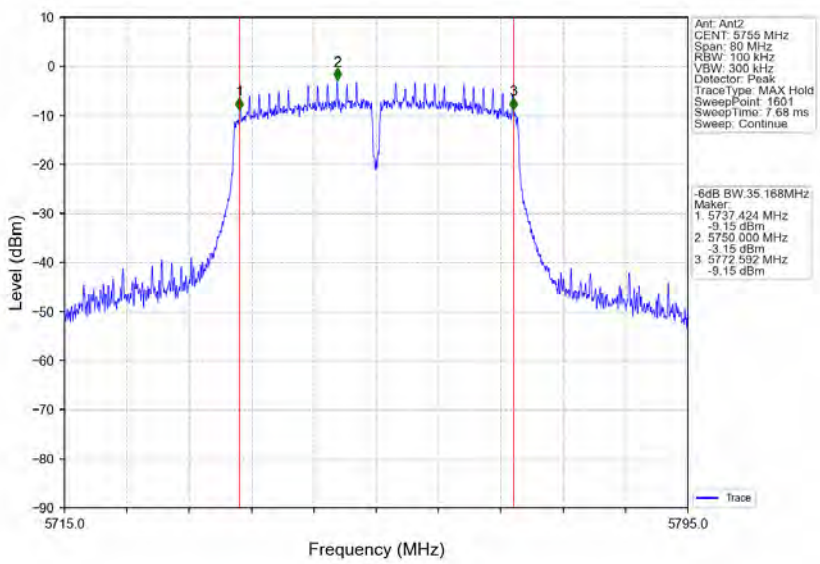

802.11n(HT20)_HCH_5825MHz_Ant2_NTNV



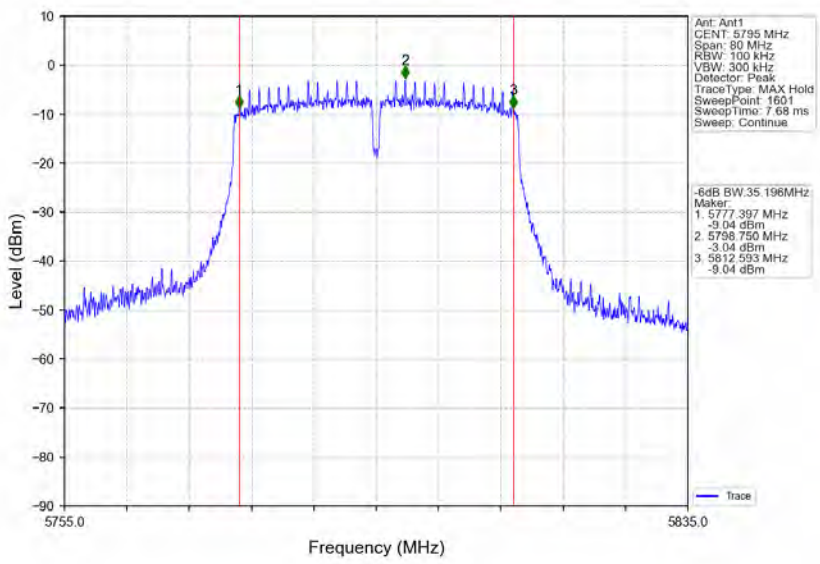
802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



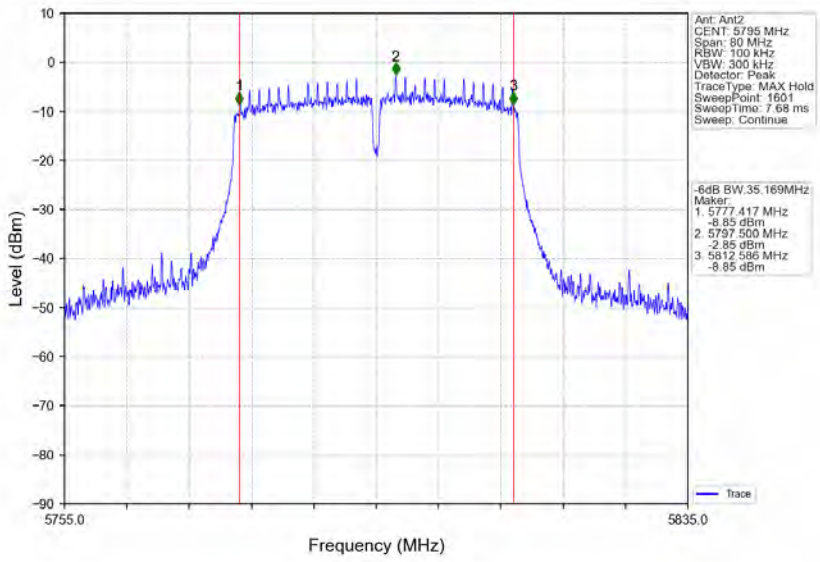

802.11n(HT40)_LCH_5755MHz_Ant2_NTNV



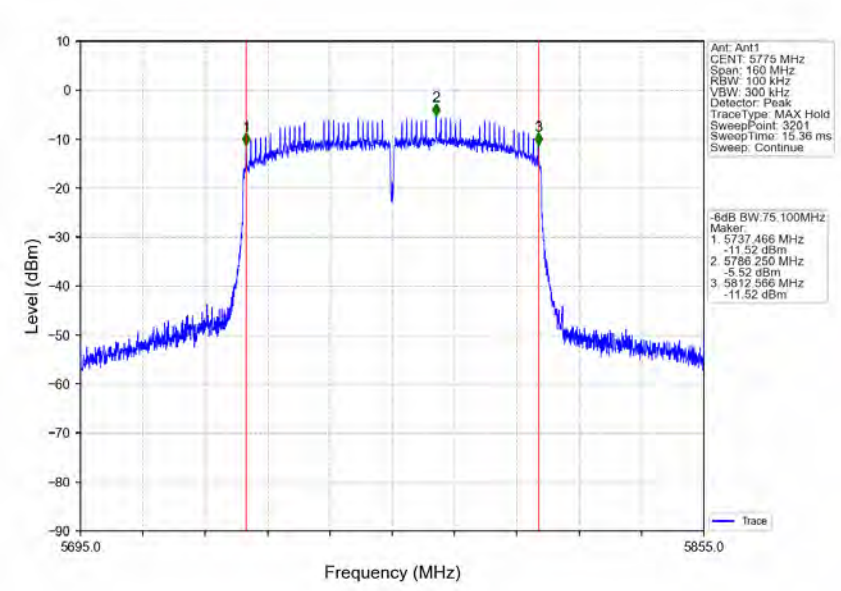
802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



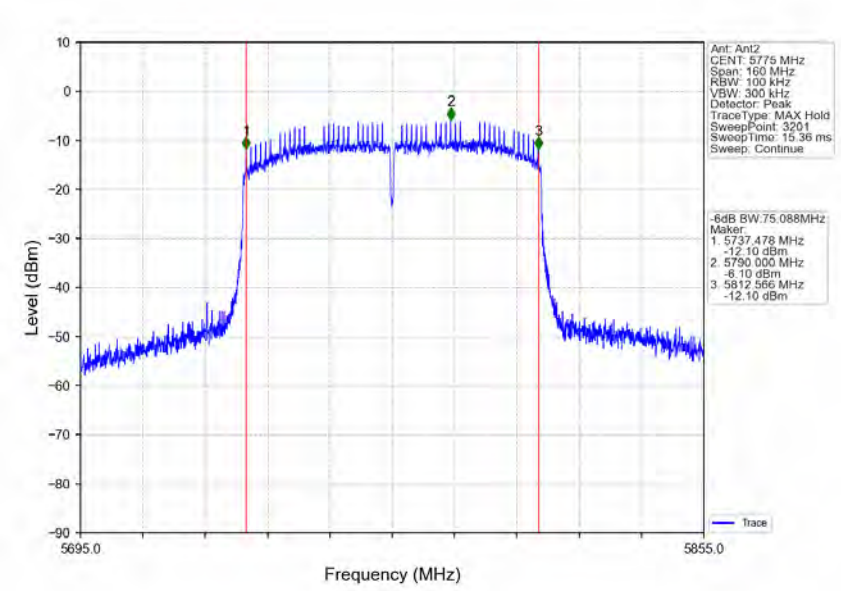

802.11n(HT40)_HCH_5795MHz_Ant2_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV




802.11ac(VHT80)_MCH_5775MHz_Ant2_NTNV



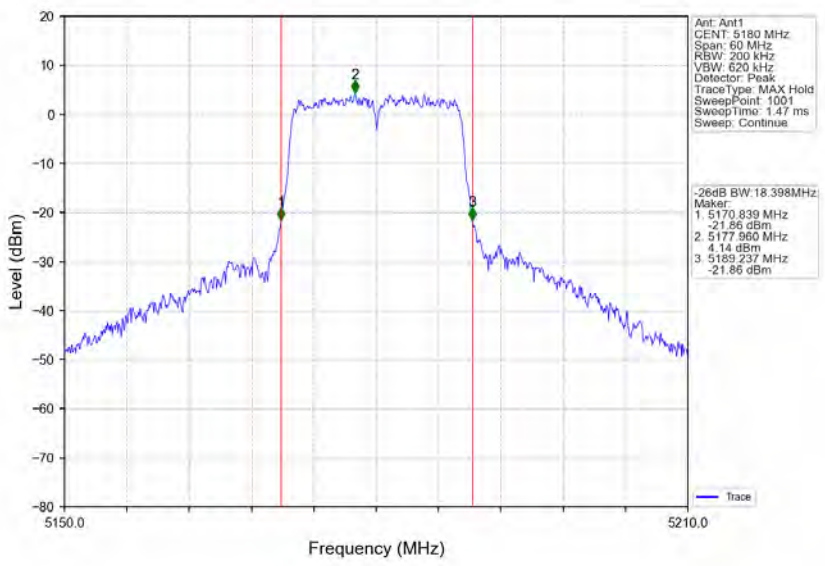
## 2.3 26dB BW

### 2.3.1 Test Result

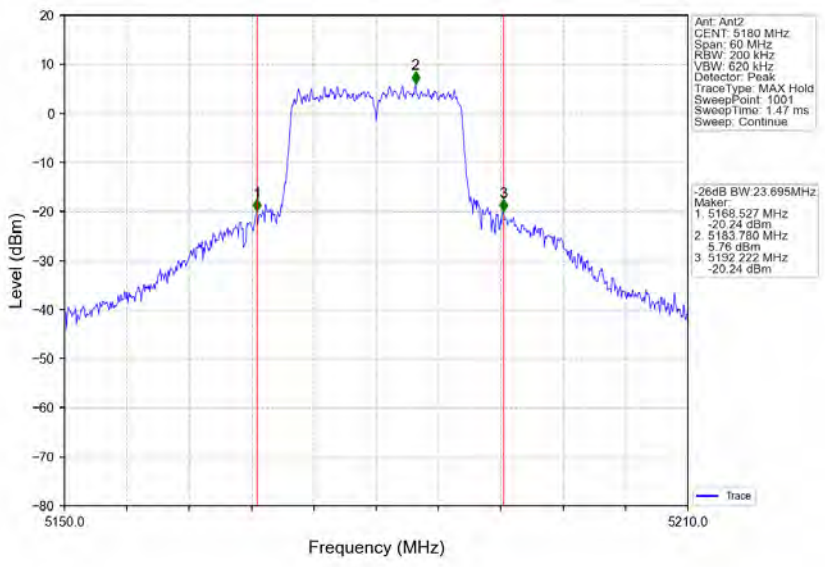
| Mode | TX Type | Frequency (MHz) | ANT | 26dB Bandwidth (MHz) | | Verdict |
|---|---|---|---|---|---|---|
| | | | | Result | Limit | |
| 802.11a | SISO | 5180 | 1 | 18.398 | / | Pass |
| | | | 2 | 23.695 | / | Pass |
| | | 5200 | 1 | 18.448 | / | Pass |
| | | | 2 | 18.375 | / | Pass |
| | | 5240 | 1 | 18.487 | / | Pass |
| | | | 2 | 18.479 | / | Pass |
| 802.11n (HT20) | MIMO | 5180 | 1 | 19.468 | / | Pass |
| | | | 2 | 19.470 | / | Pass |
| | | 5200 | 1 | 19.304 | / | Pass |
| | | | 2 | 19.291 | / | Pass |
| | | 5240 | 1 | 19.404 | / | Pass |
| | | | 2 | 19.315 | / | Pass |
| 802.11n (HT40) | MIMO | 5190 | 1 | 41.095 | / | Pass |
| | | | 2 | 40.827 | / | Pass |
| | | 5230 | 1 | 41.063 | / | Pass |
| | | | 2 | 41.101 | / | Pass |
| 802.11ac (VHT80) | MIMO | 5210 | 1 | 81.268 | / | Pass |
| | | | 2 | 80.970 | / | Pass |

## 2.3.2 Test Graph

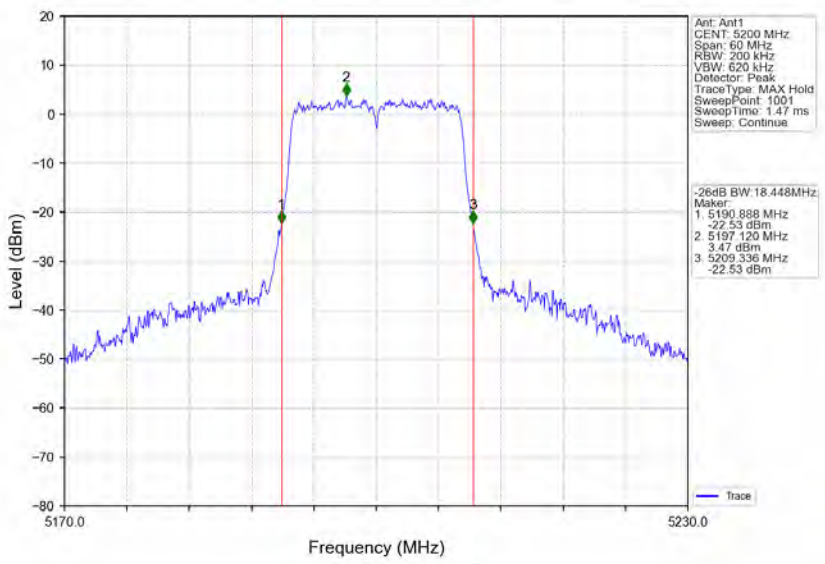
802.11a_LCH_5180MHz_Ant1_NTNV



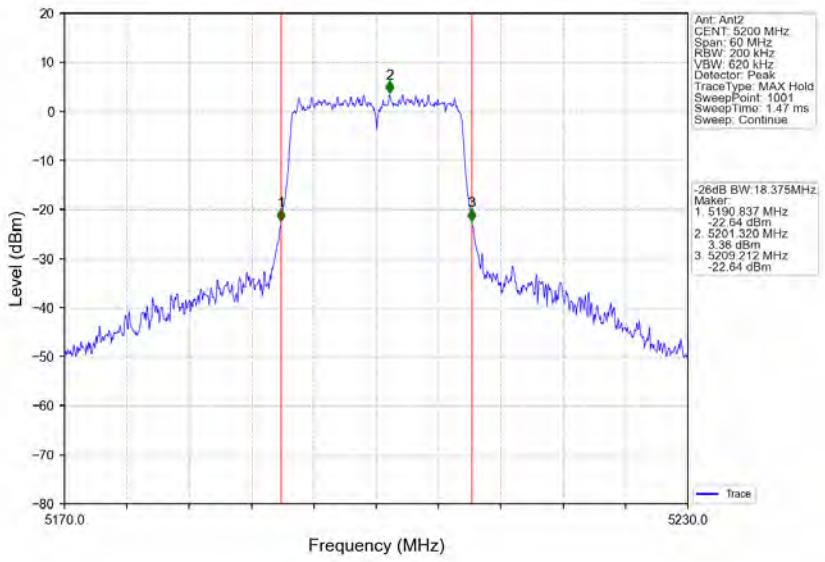

802.11a_LCH_5180MHz_Ant2_NTNV



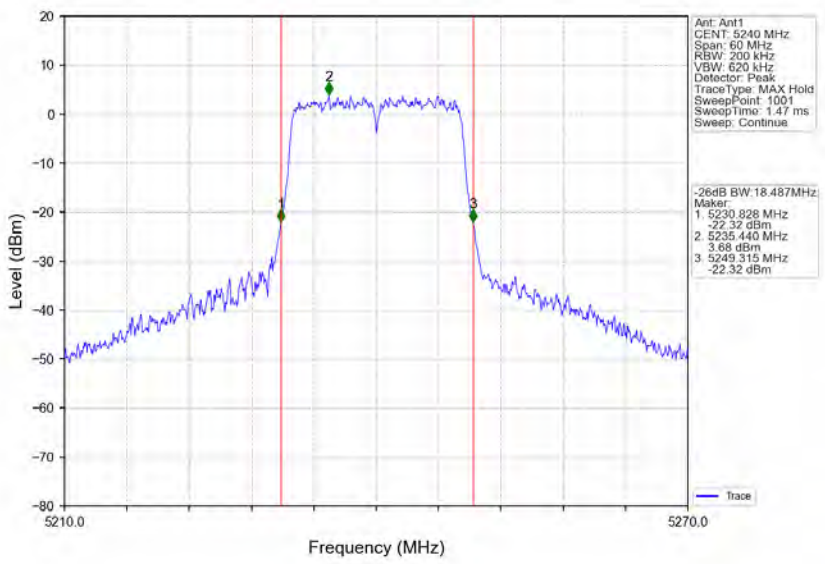
802.11a_MCH_5200MHz_Ant1_NTNV



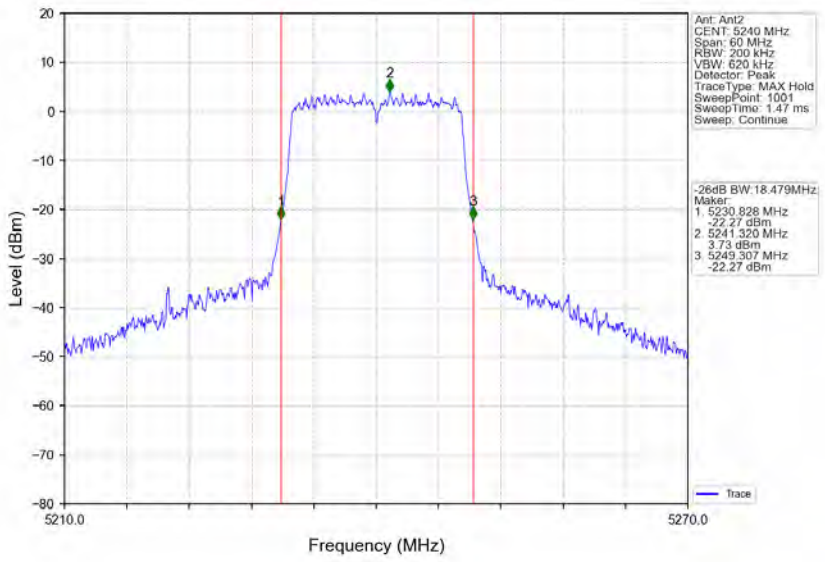

802.11a_MCH_5200MHz_Ant2_NTNV



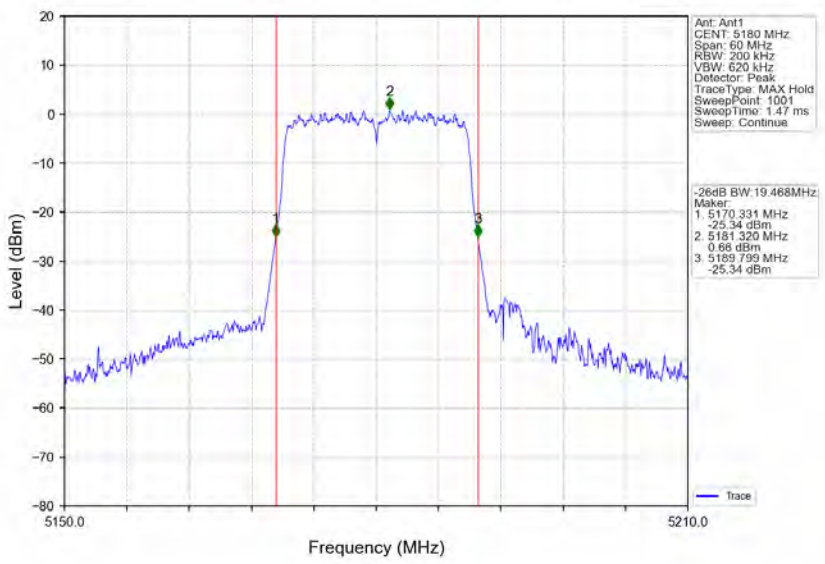
802.11a_HCH_5240MHz_Ant1_NTNV



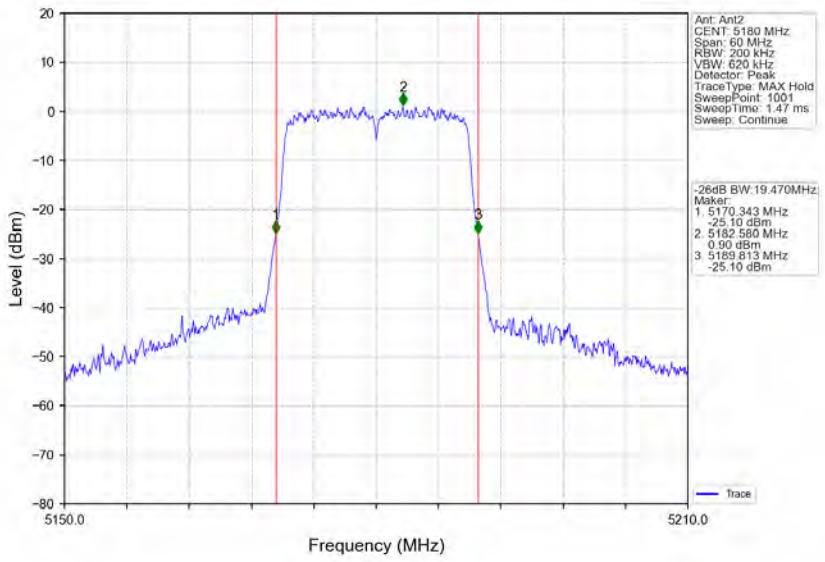

802.11a_HCH_5240MHz_Ant2_NTNV



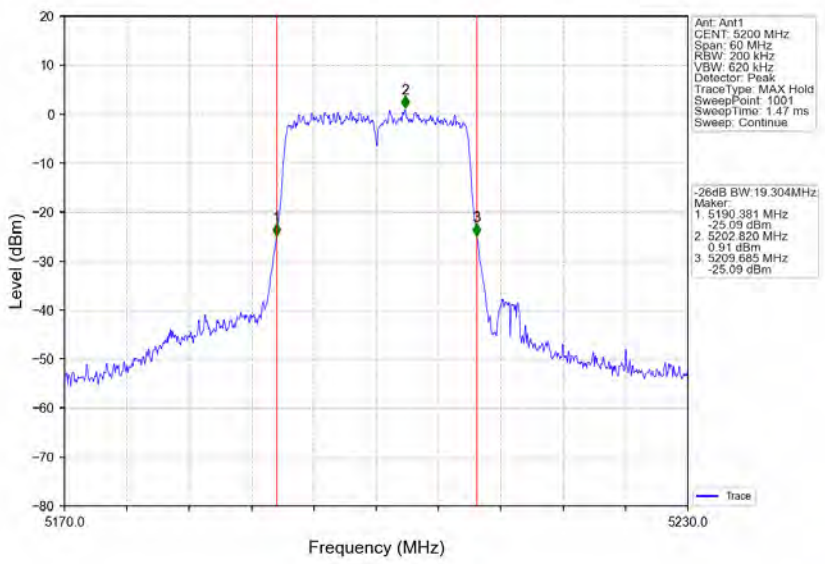
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



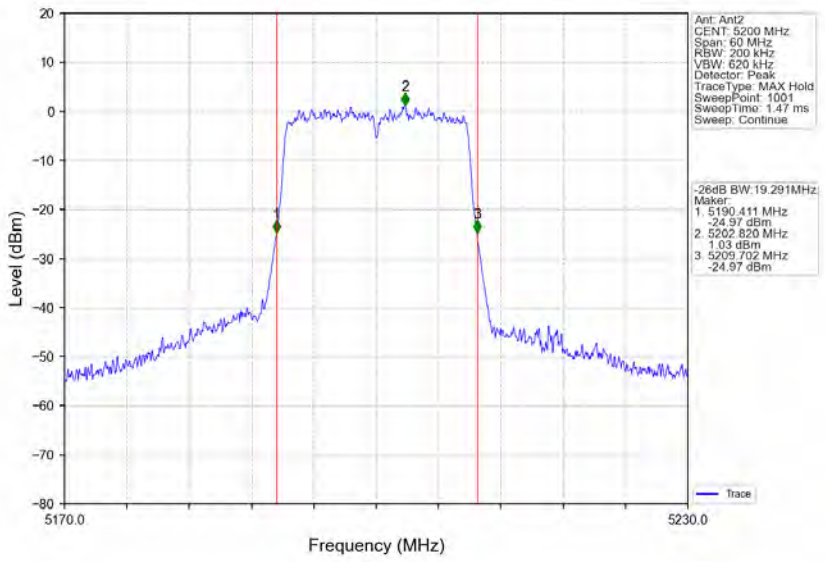

802.11n(HT20)_LCH_5180MHz_Ant2_NTNV



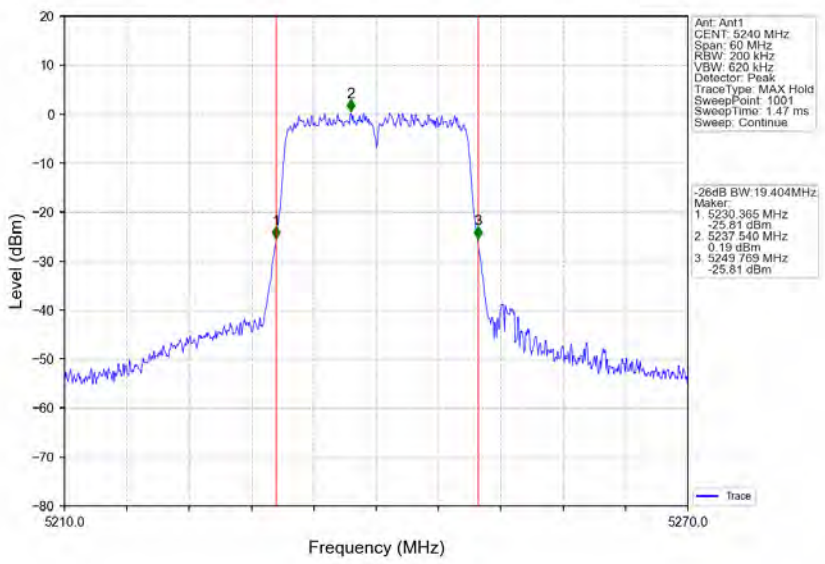
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



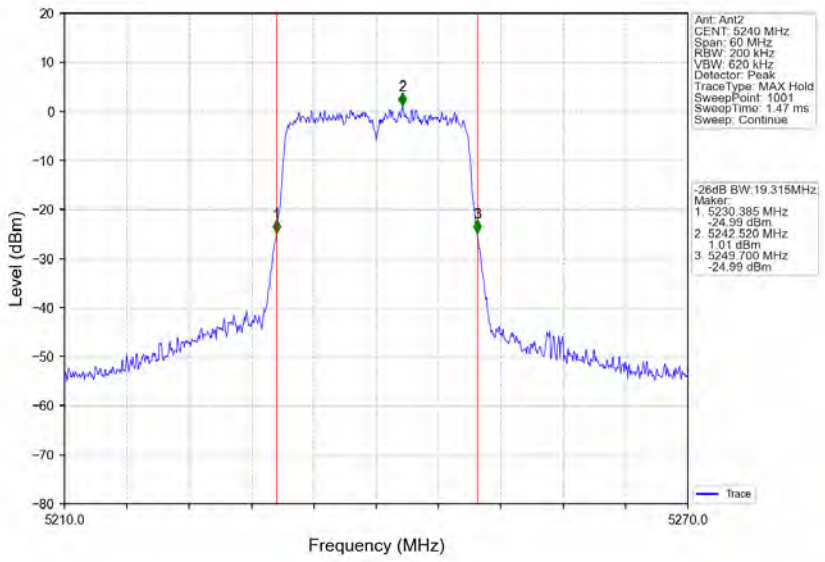

802.11n(HT20)_MCH_5200MHz_Ant2_NTNV



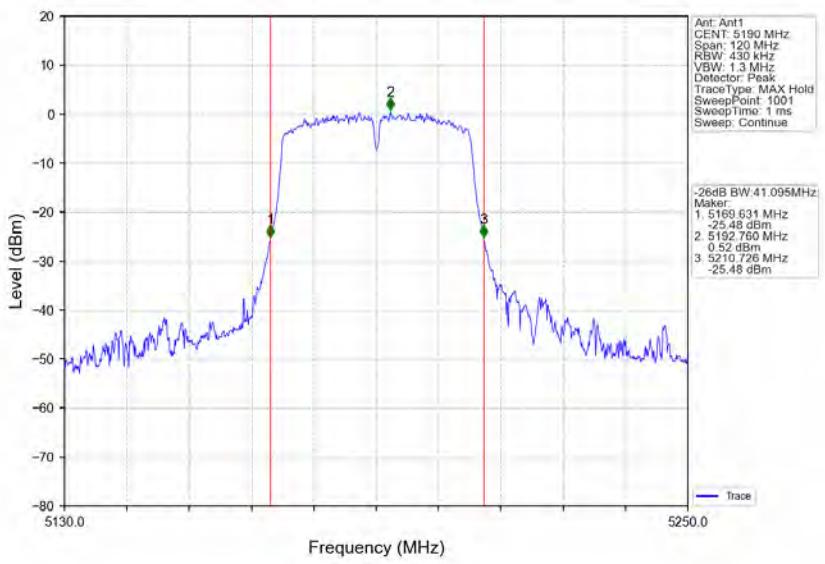
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



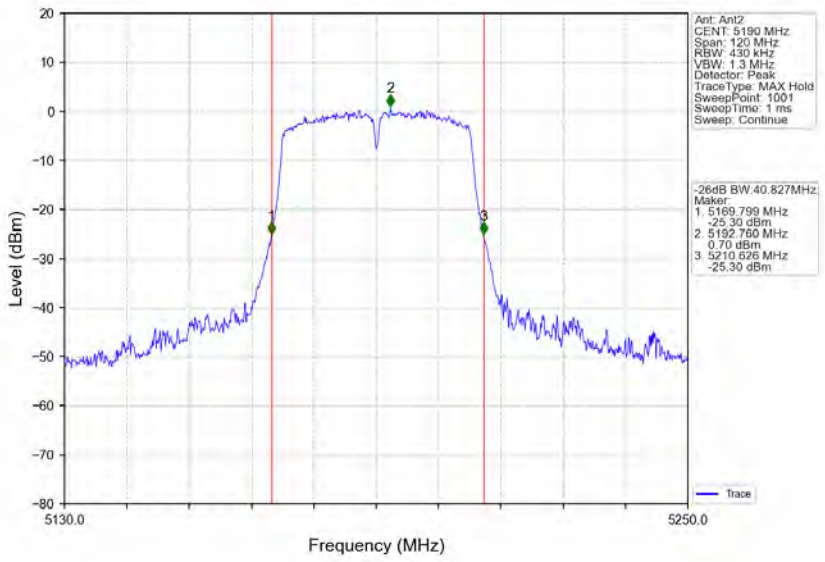

802.11n(HT20)_HCH_5240MHz_Ant2_NTNV



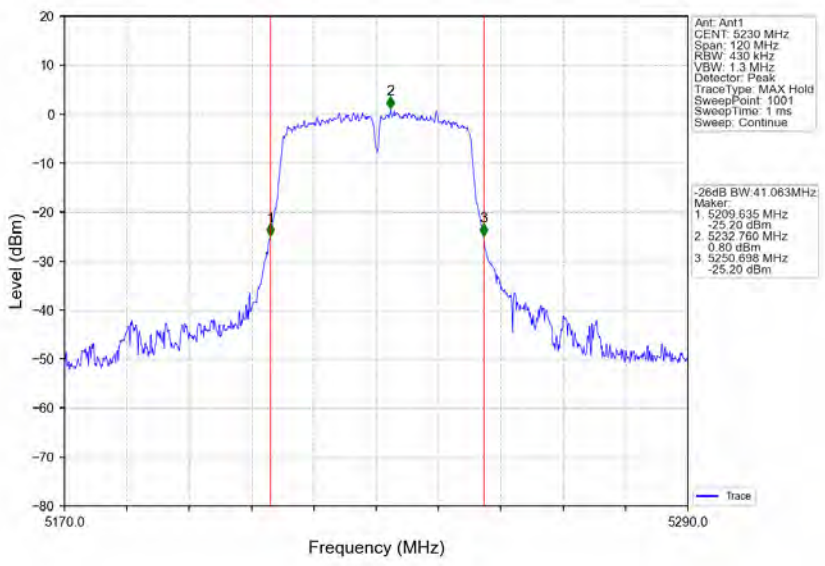
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



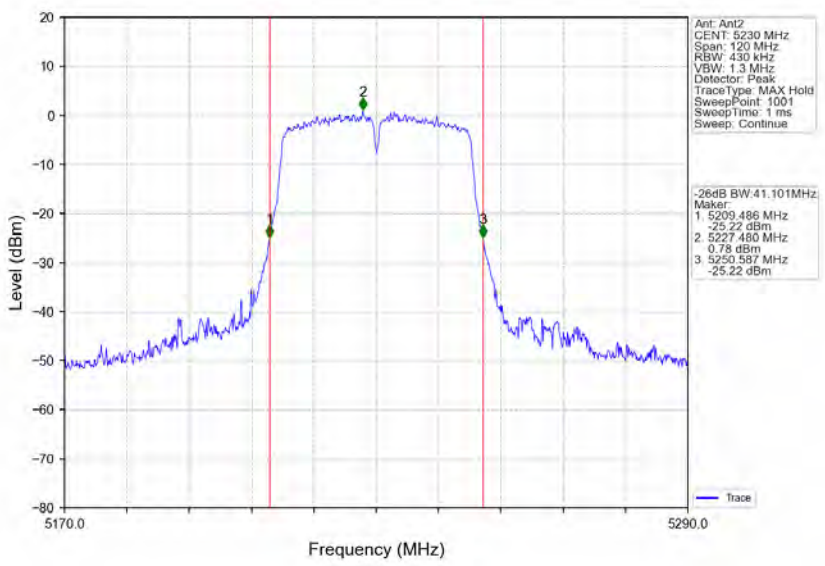

802.11n(HT40)_LCH_5190MHz_Ant2_NTNV



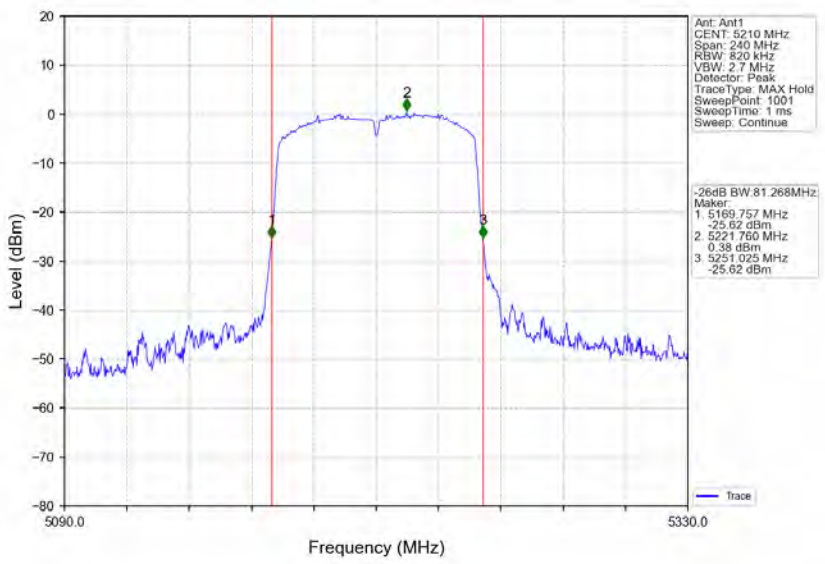
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



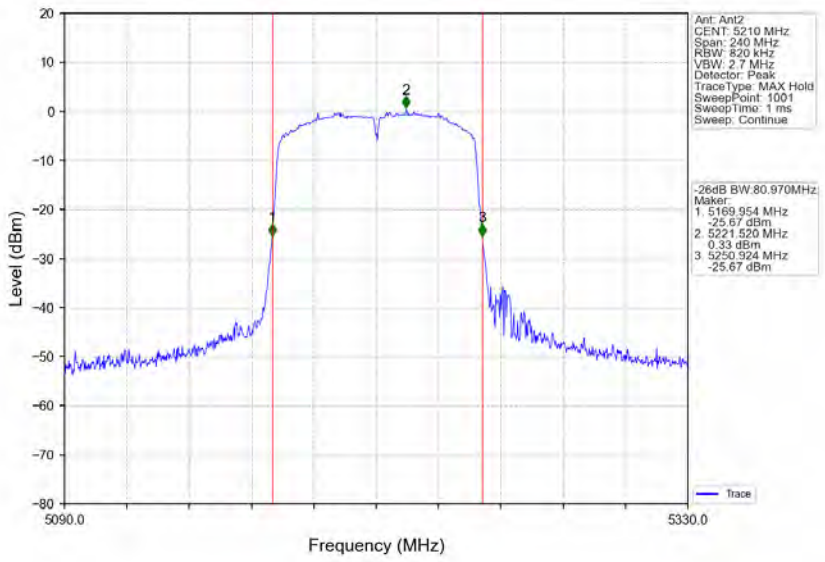

802.11n(HT40)_HCH_5230MHz_Ant2_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV




802.11ac(VHT80)_MCH_5210MHz_Ant2_NTNV



# 3. Maximum Conducted Output Power

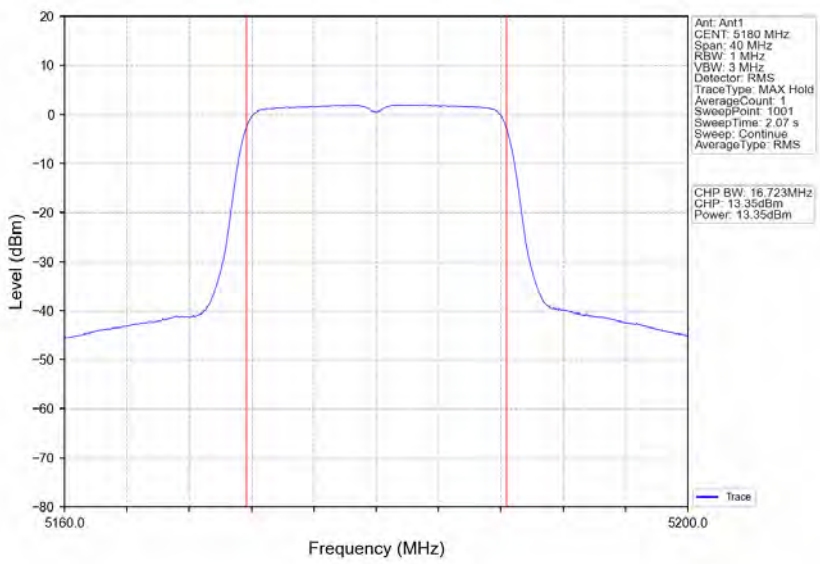
## 3.1 Power

### 3.1.1 Test Result

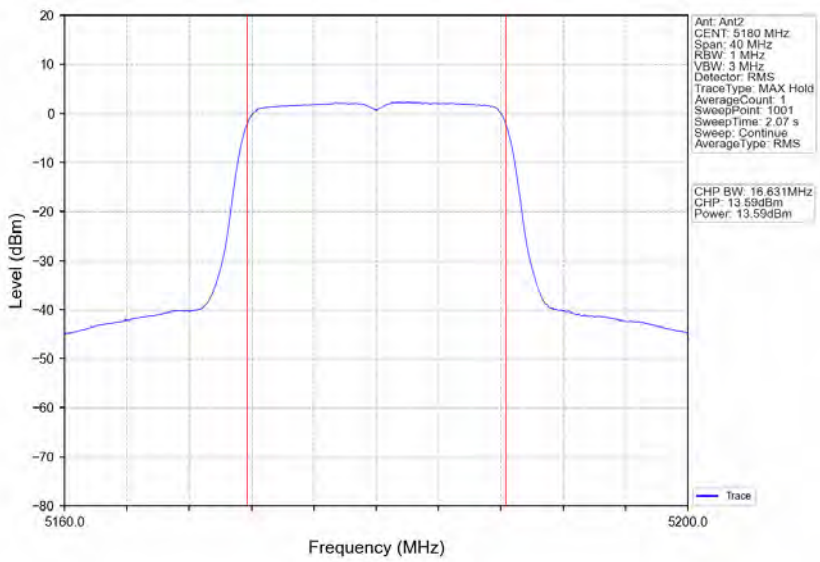
| Mode | TX Type | Frequency (MHz) | Maximum Average Conducted Output Power (dBm) | | | | Verdict |
|---|---|---|---|---|---|---|---|
| | | | ANT1 | ANT2 | MIMO | Limit | |
| 802.11a | SISO | 5180 | 13.35 | 13.59 | / | <=30 | Pass |
| | | 5200 | 13.27 | 13.46 | / | <=30 | Pass |
| | | 5240 | 13.73 | 13.75 | / | <=30 | Pass |
| | | 5745 | 13.48 | 13.42 | / | <=30 | Pass |
| | | 5785 | 13.91 | 13.97 | / | <=30 | Pass |
| | | 5825 | 13.80 | 13.86 | / | <=30 | Pass |
| 802.11n (HT20) | MIMO | 5180 | 10.63 | 10.91 | 13.78 | <=30 | Pass |
| | | 5200 | 10.75 | 10.99 | 13.88 | <=30 | Pass |
| | | 5240 | 10.24 | 10.67 | 13.47 | <=30 | Pass |
| | | 5745 | 10.34 | 10.54 | 13.45 | <=30 | Pass |
| | | 5785 | 10.64 | 11.00 | 13.83 | <=30 | Pass |
| | | 5825 | 10.38 | 10.40 | 13.40 | <=30 | Pass |
| 802.11n (HT40) | MIMO | 5190 | 10.38 | 10.45 | 13.43 | <=30 | Pass |
| | | 5230 | 10.61 | 10.58 | 13.61 | <=30 | Pass |
| | | 5755 | 10.65 | 10.29 | 13.48 | <=30 | Pass |
| | | 5795 | 10.64 | 10.52 | 13.59 | <=30 | Pass |
| 802.11ac (VHT80) | MIMO | 5210 | 10.69 | 10.45 | 13.58 | <=30 | Pass |
| | | 5775 | 10.66 | 10.29 | 13.49 | <=30 | Pass |
| Note1: Antenna Gain: Ant1: 3.33dBi; Ant2: 3.68dBi;<br>Note2: E.I.R.P = Measured Power + Antenna Gain | | | | | | | |

### 3.1.2 Test Graph

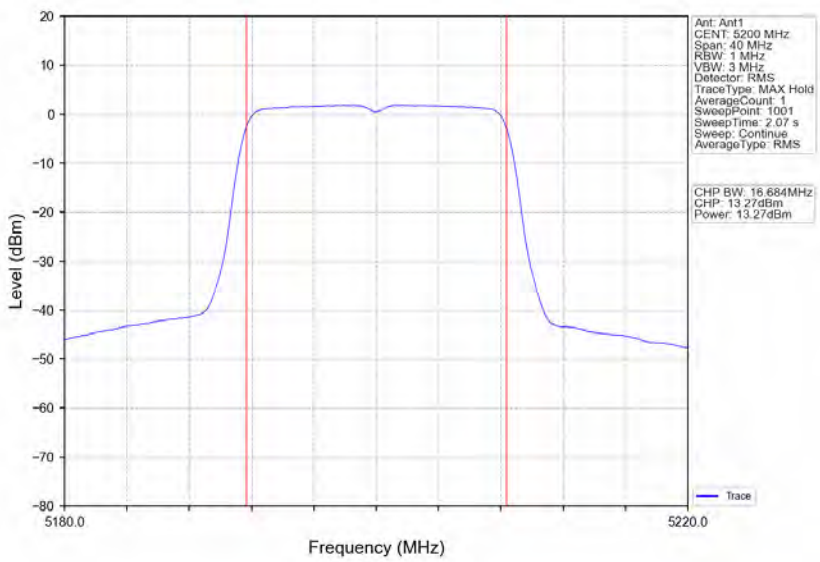
802.11a_LCH_5180MHz_Ant1_NTNV



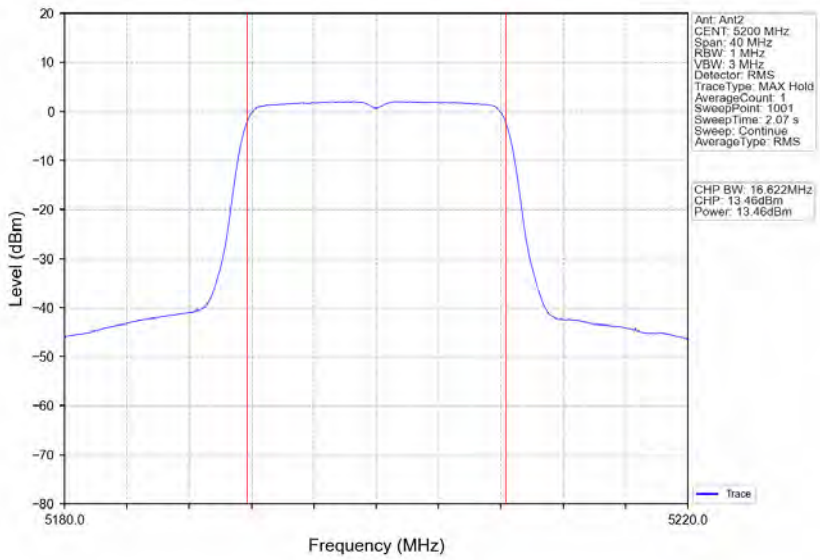

802.11a_LCH_5180MHz_Ant2_NTNV



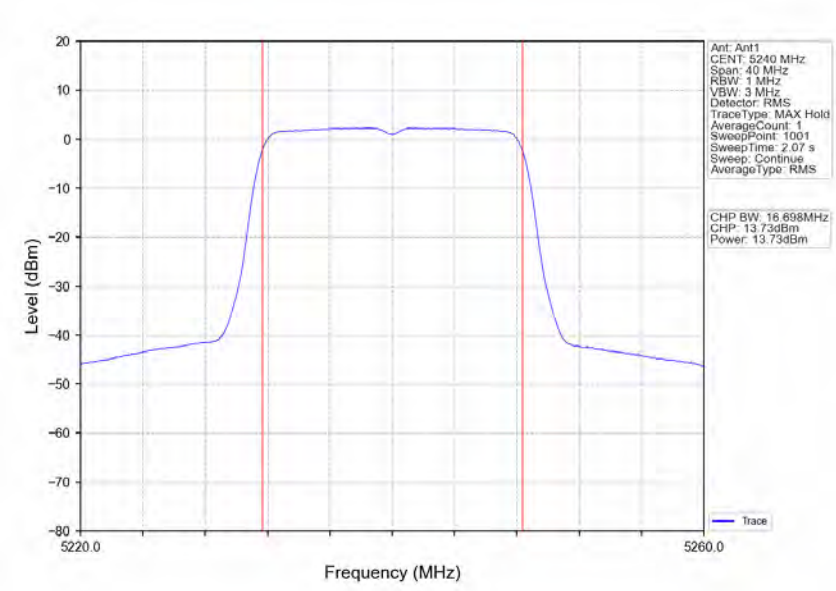
802.11a_MCH_5200MHz_Ant1_NTNV



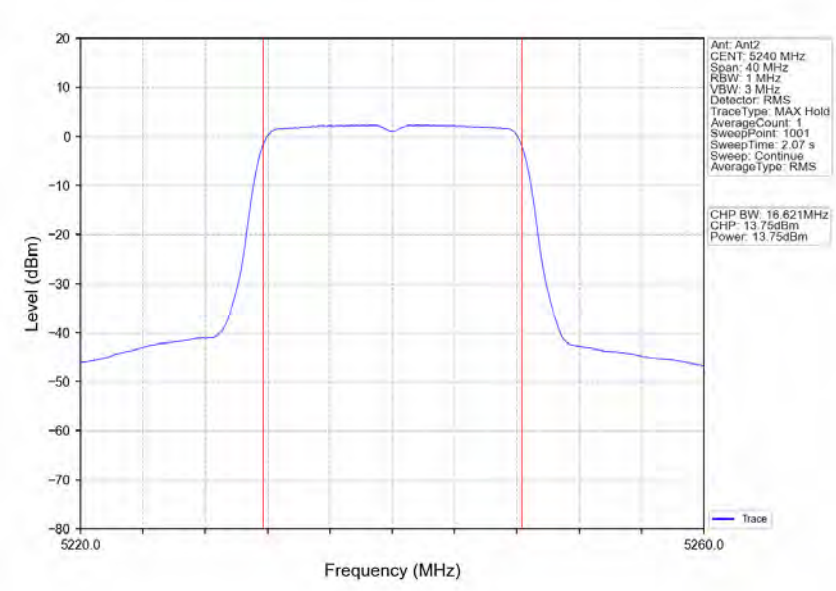

802.11a_MCH_5200MHz_Ant2_NTNV



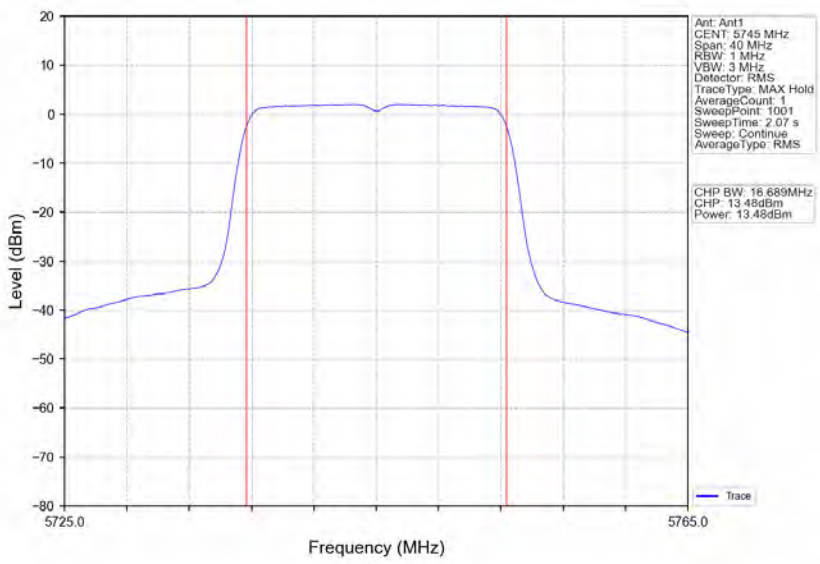
802.11a_HCH_5240MHz_Ant1_NTNV



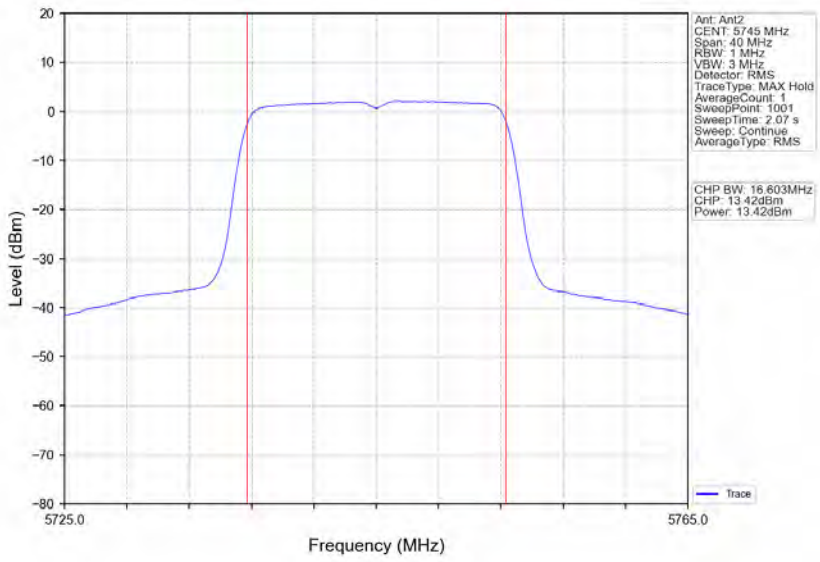

802.11a_HCH_5240MHz_Ant2_NTNV



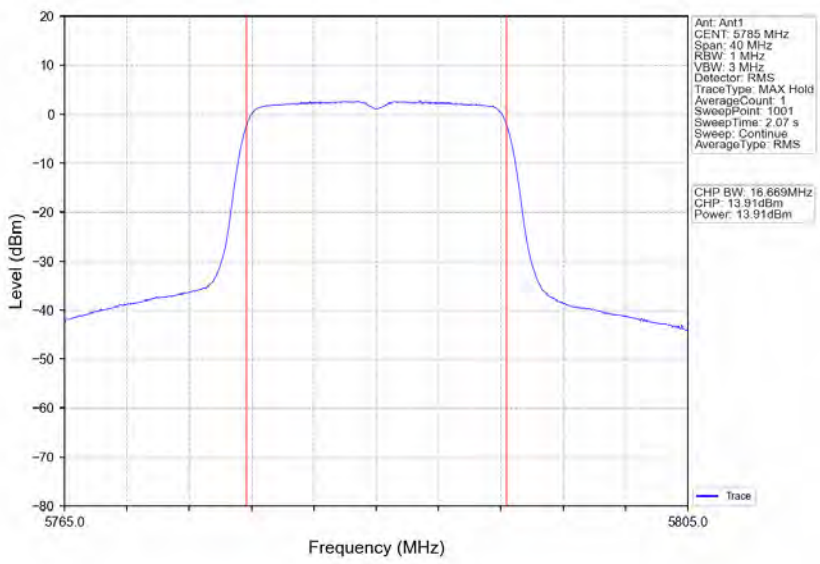
802.11a_LCH_5745MHz_Ant1_NTNV



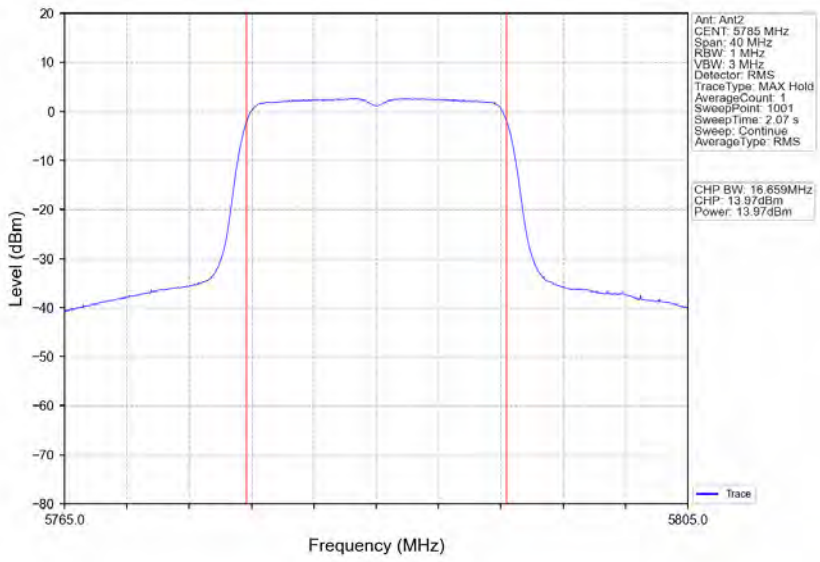

802.11a_LCH_5745MHz_Ant2_NTNV



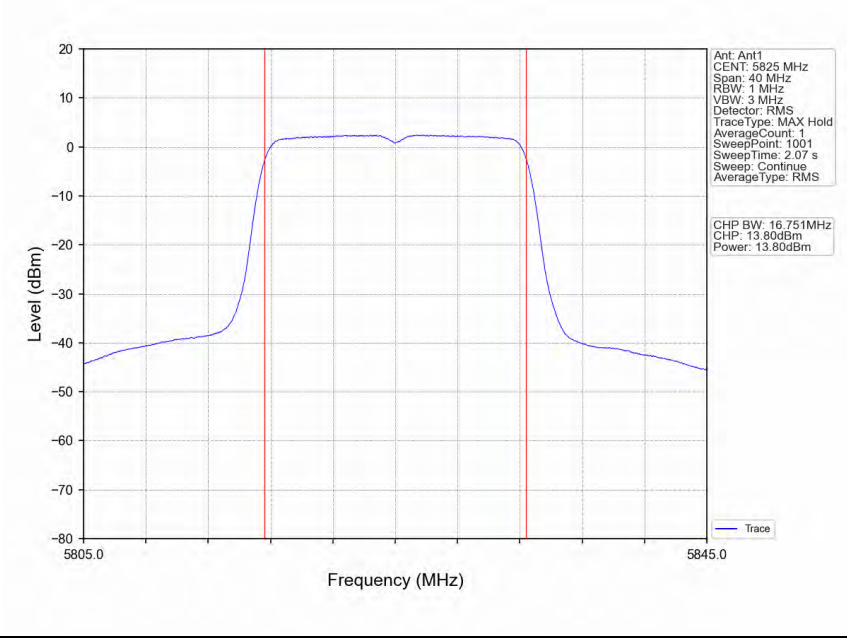
802.11a_MCH_5785MHz_Ant1_NTNV



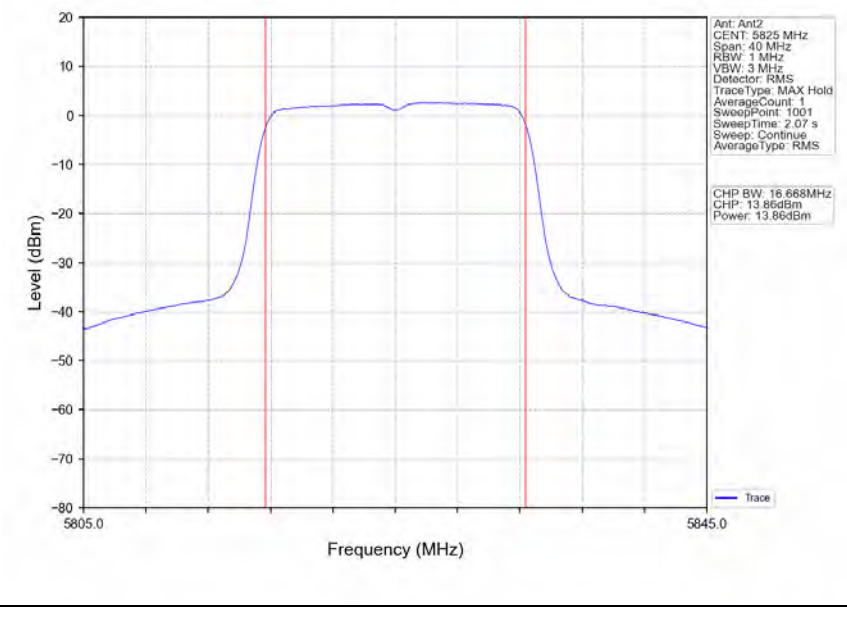

802.11a_MCH_5785MHz_Ant2_NTNV



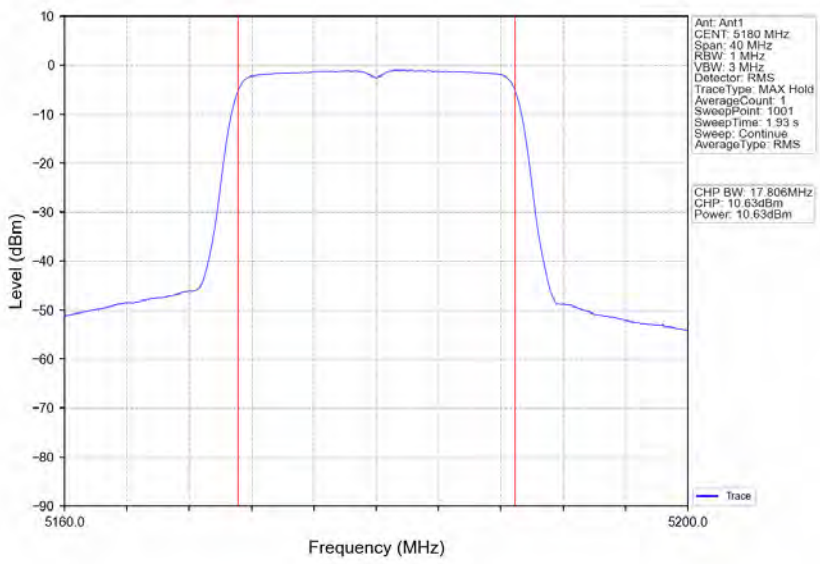
802.11a_HCH_5825MHz_Ant1_NTNV



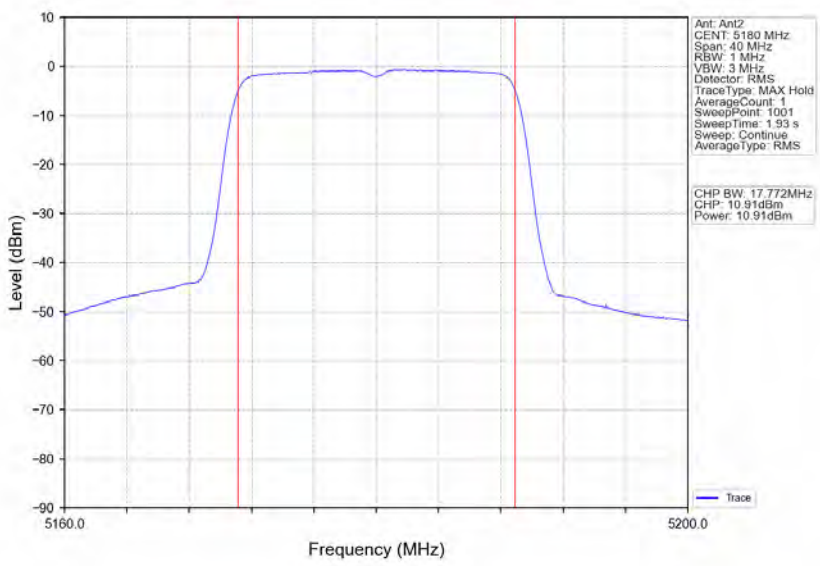

802.11a_HCH_5825MHz_Ant2_NTNV



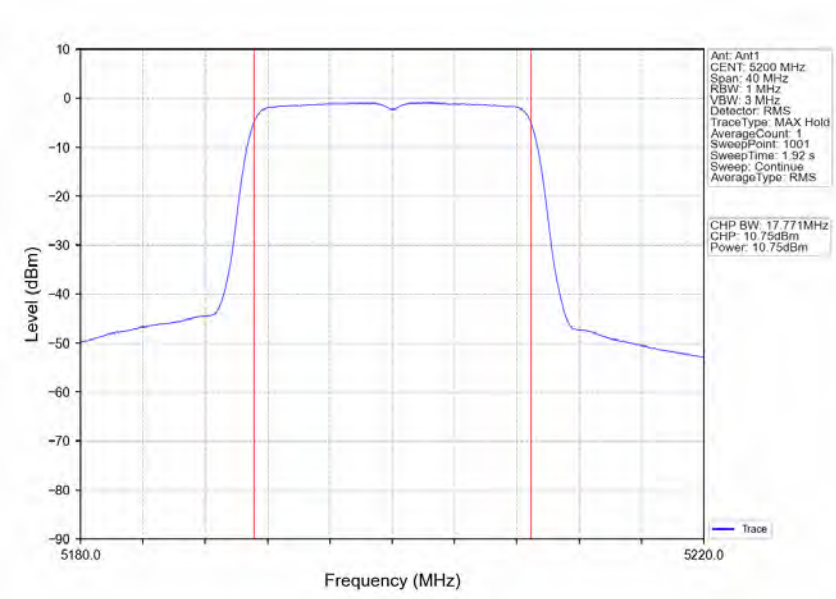
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



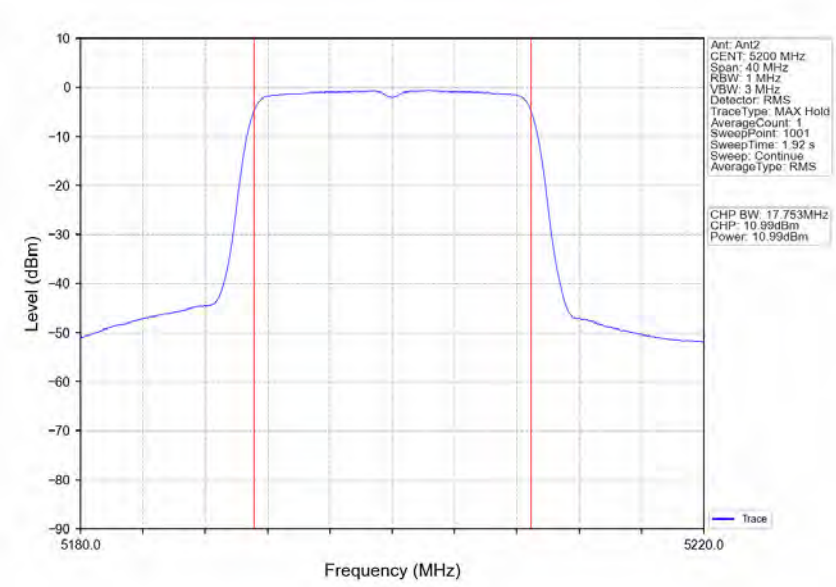

802.11n(HT20)_LCH_5180MHz_Ant2_NTNV



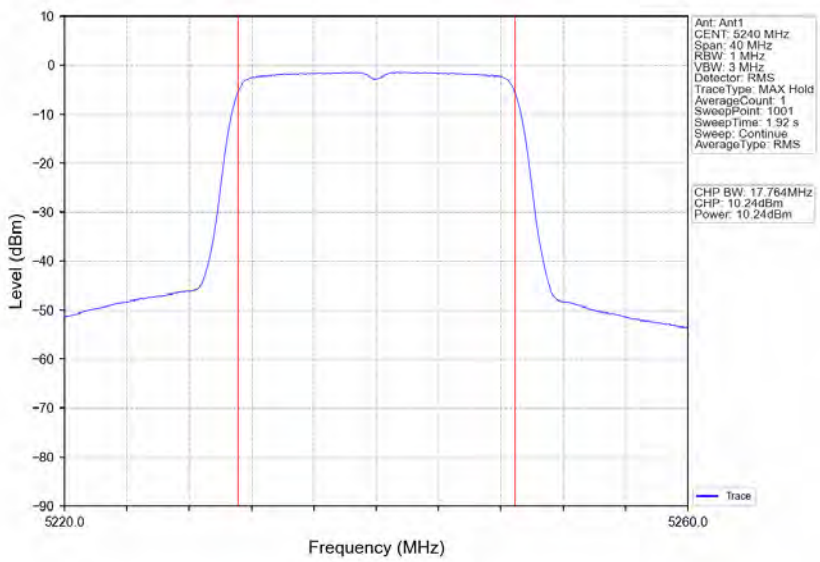
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



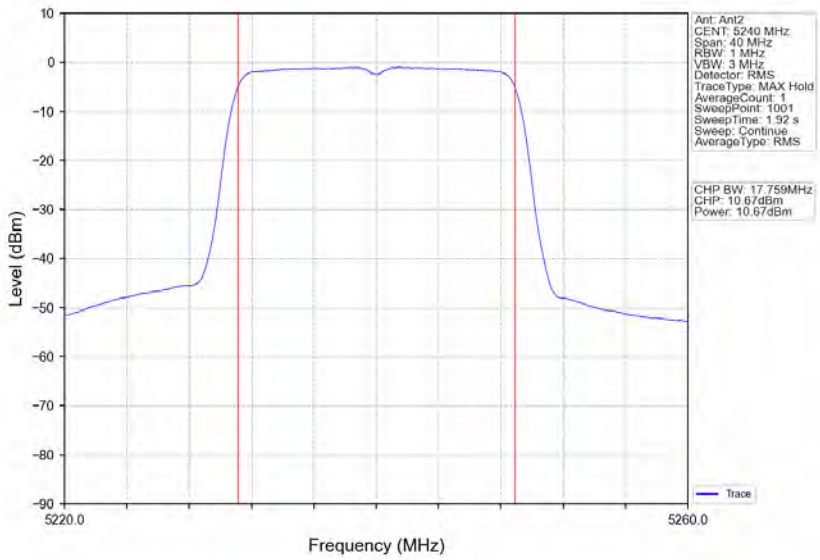

802.11n(HT20)_MCH_5200MHz_Ant2_NTNV



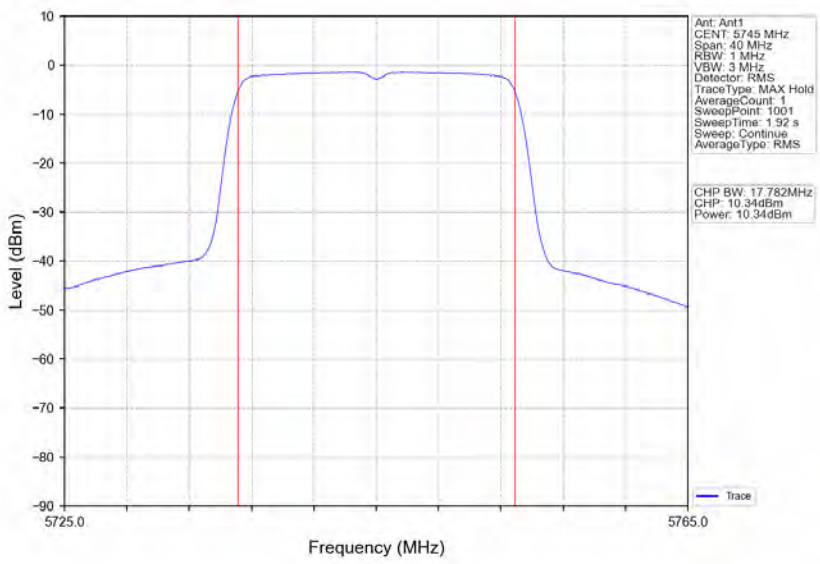
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



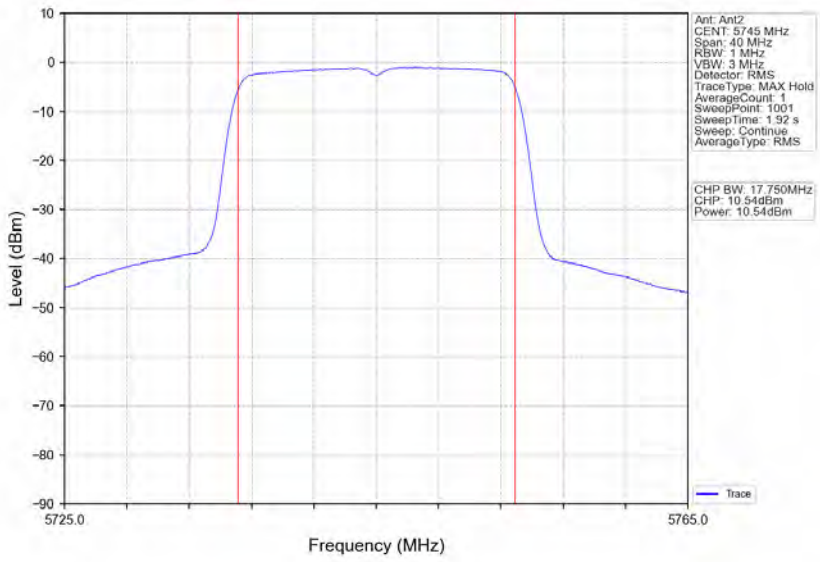

802.11n(HT20)_HCH_5240MHz_Ant2_NTNV



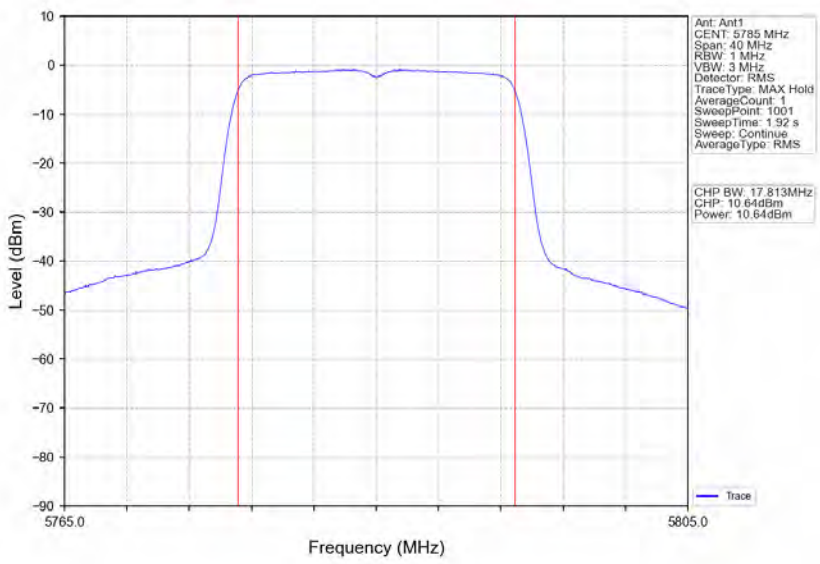
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



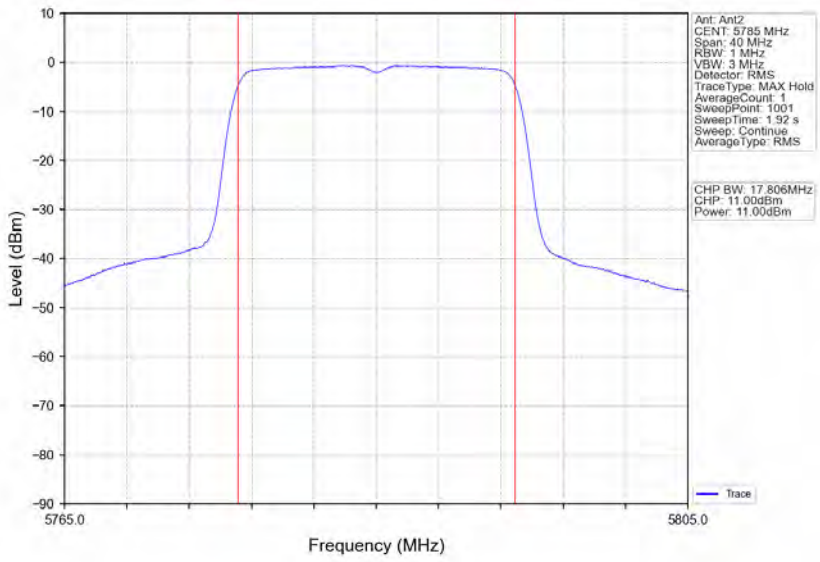

802.11n(HT20)_LCH_5745MHz_Ant2_NTNV



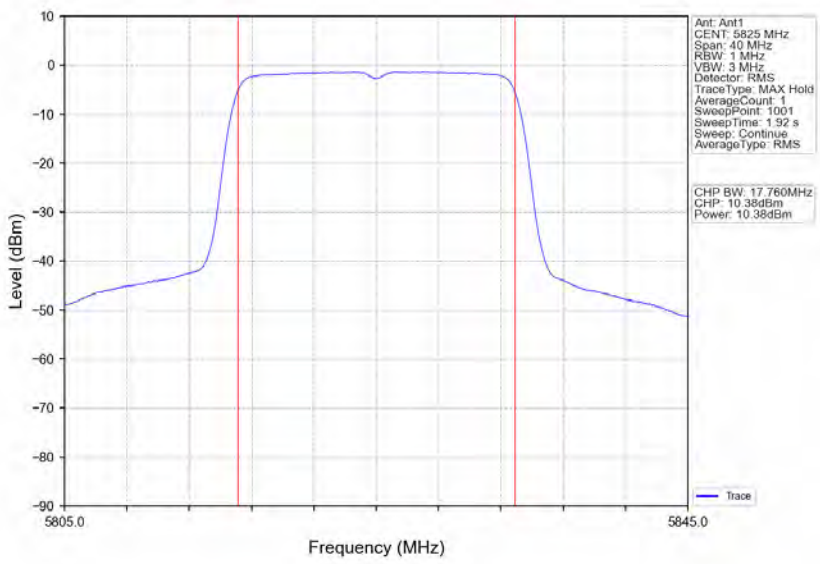
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



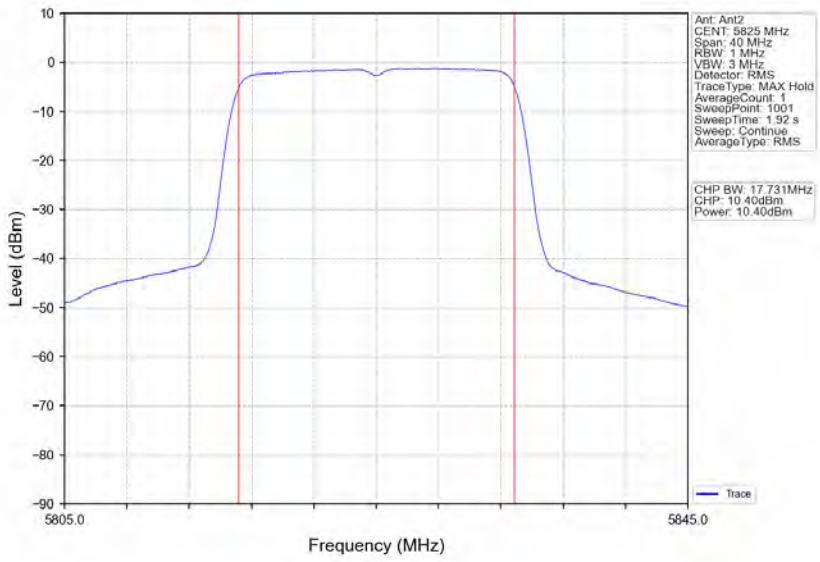

802.11n(HT20)_MCH_5785MHz_Ant2_NTNV



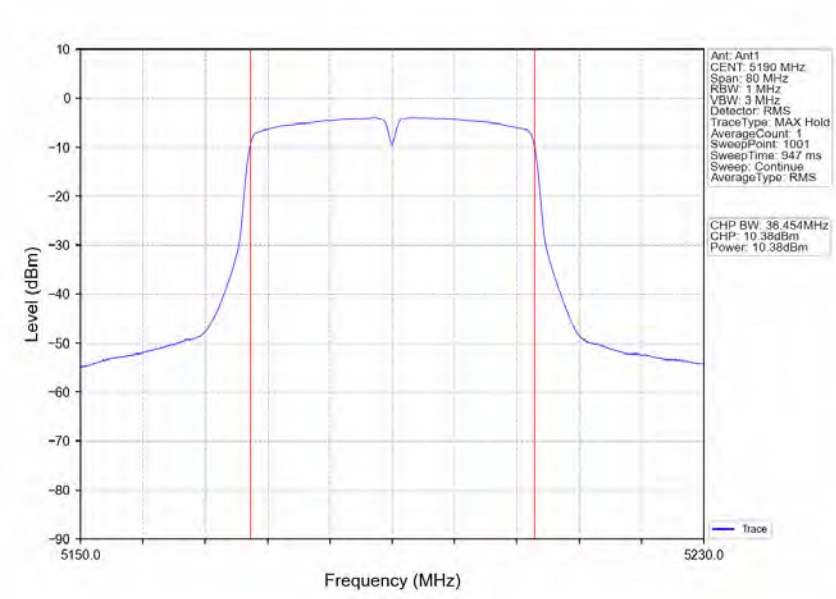
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



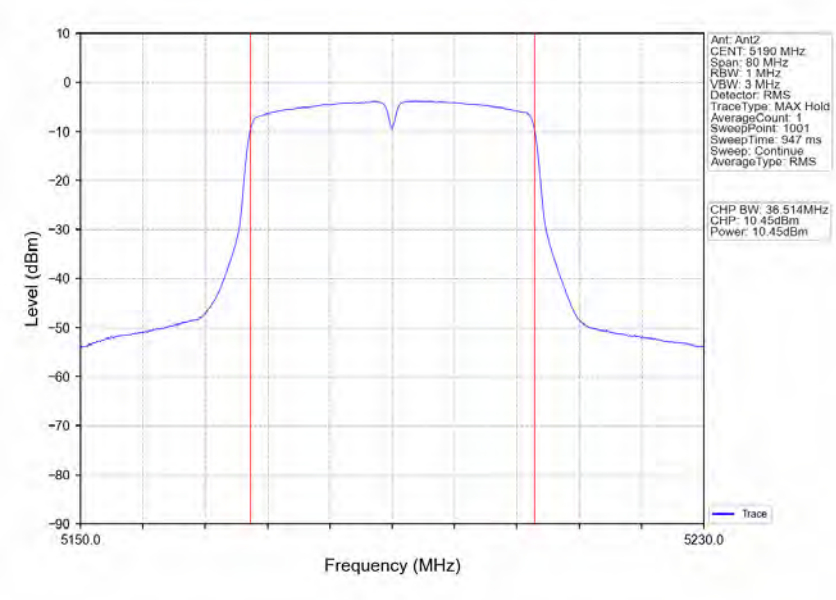

802.11n(HT20)_HCH_5825MHz_Ant2_NTNV



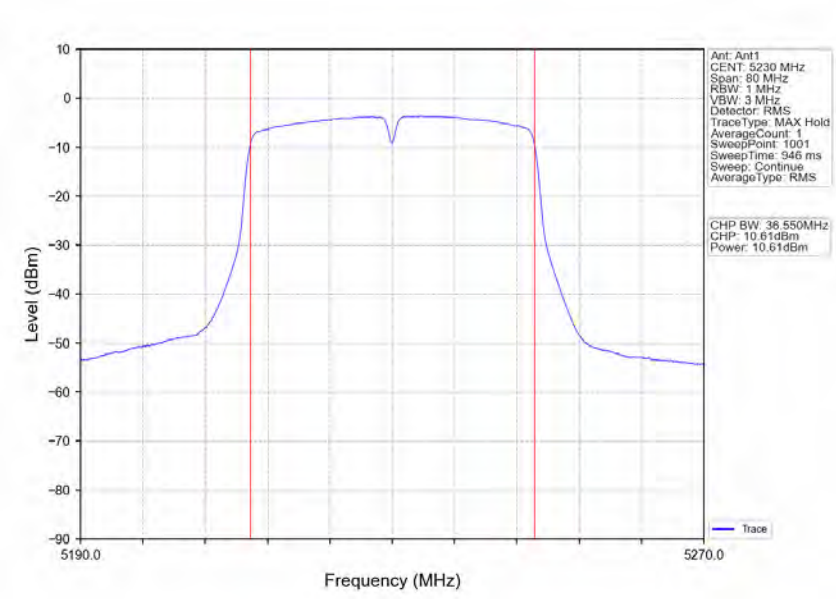
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



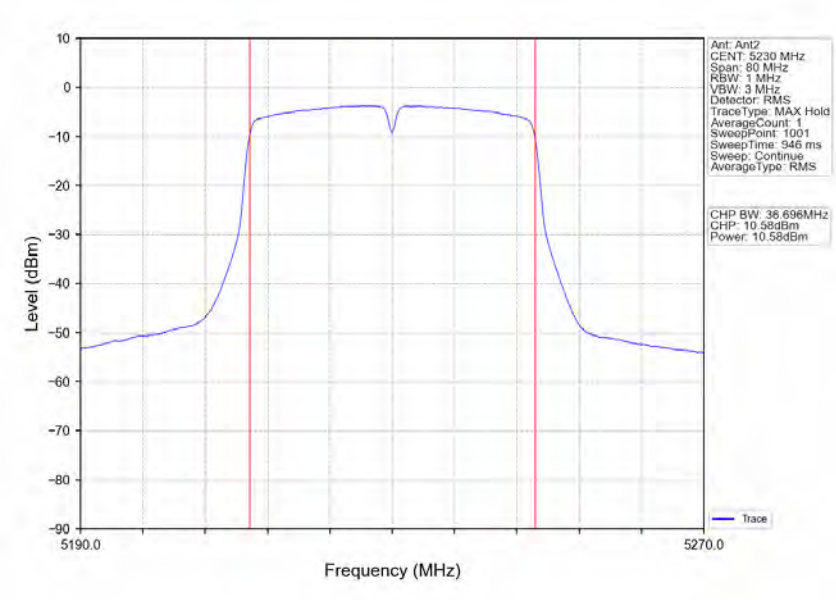

802.11n(HT40)_LCH_5190MHz_Ant2_NTNV



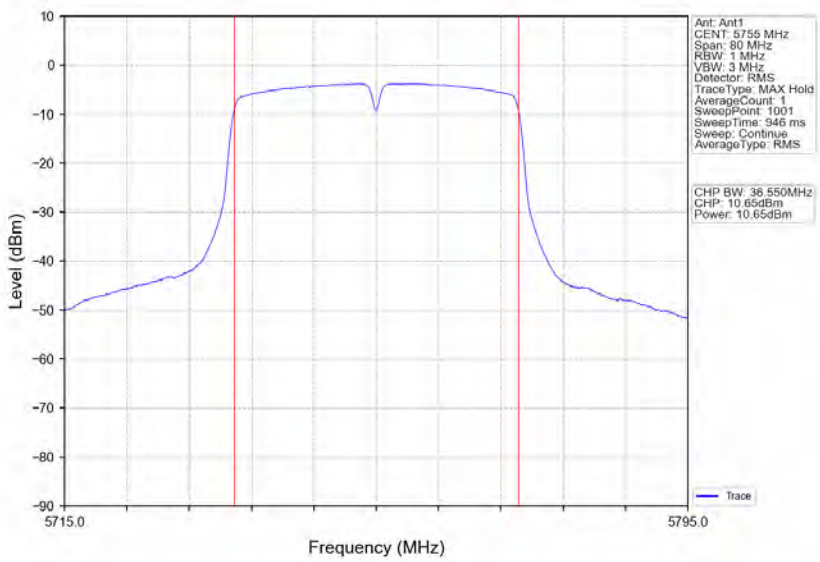
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



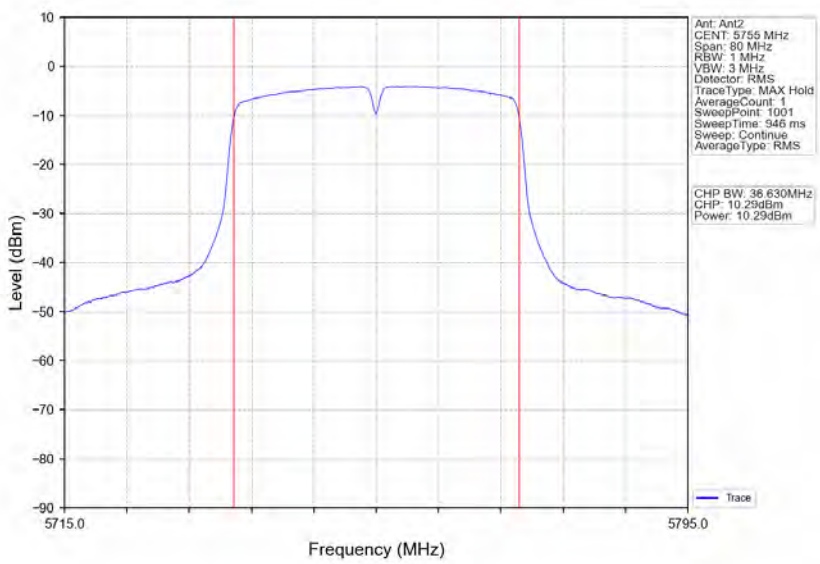

802.11n(HT40)_HCH_5230MHz_Ant2_NTNV



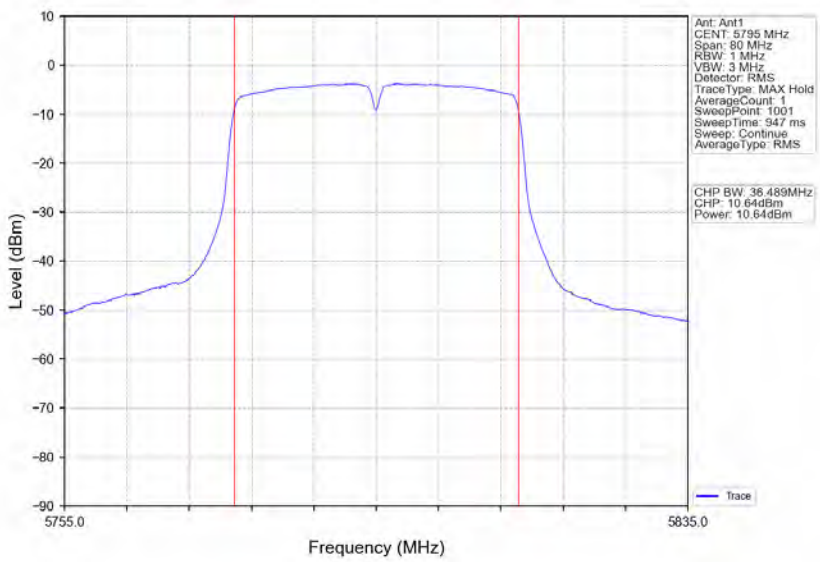
802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



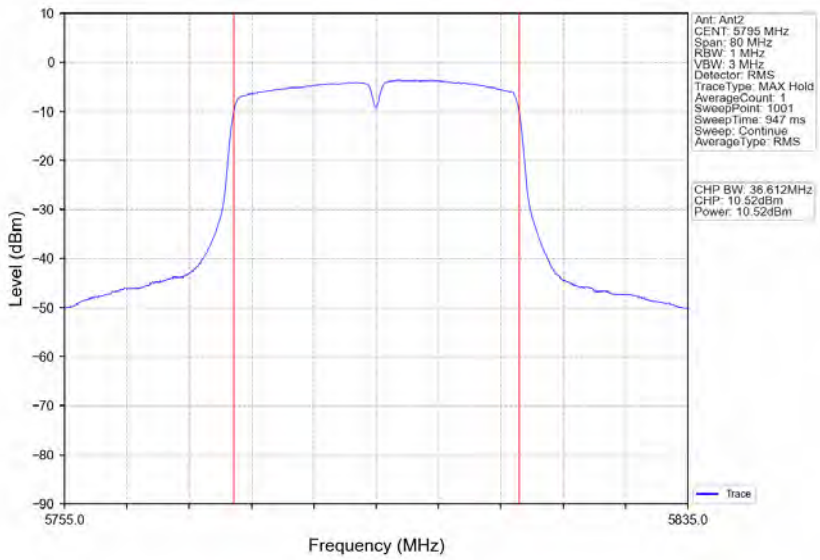

802.11n(HT40)_LCH_5755MHz_Ant2_NTNV



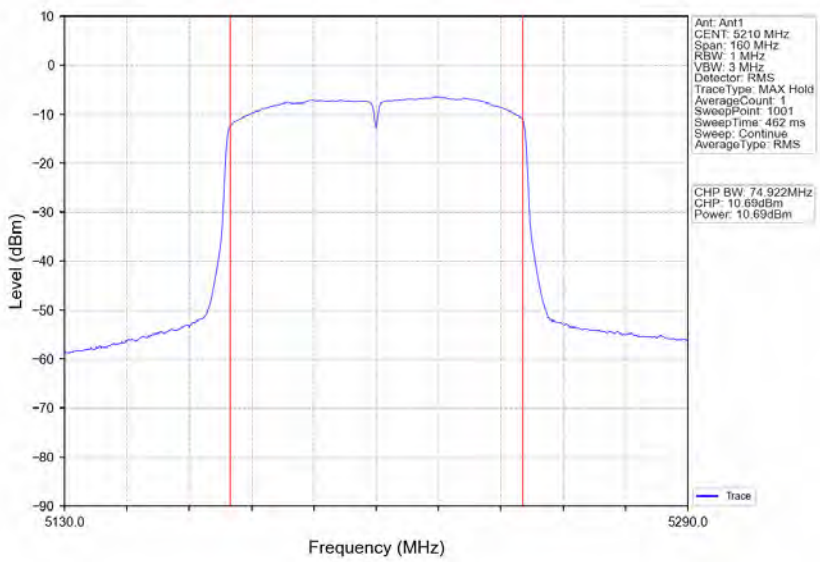
802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



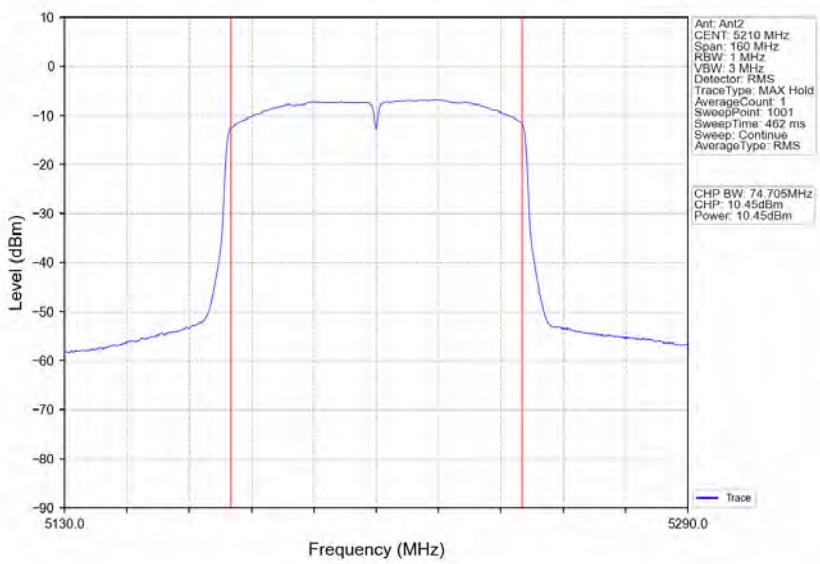

802.11n(HT40)_HCH_5795MHz_Ant2_NTNV



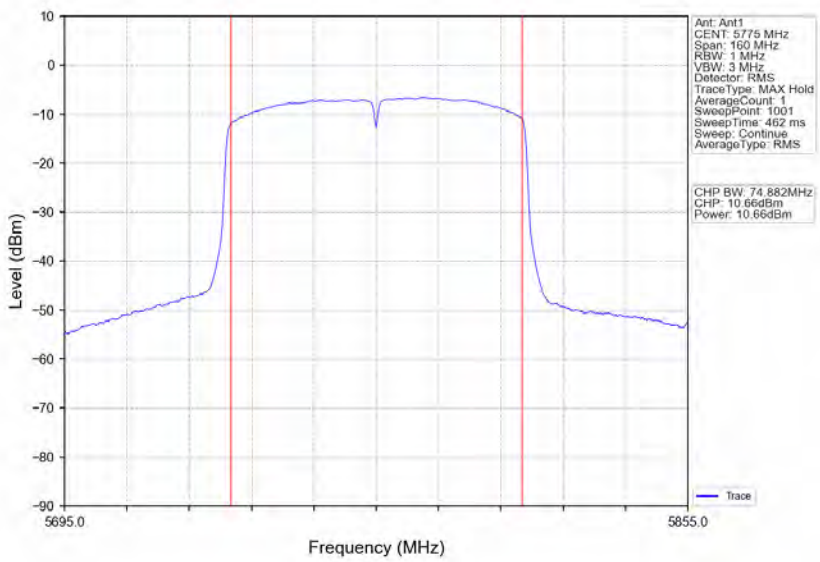
802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



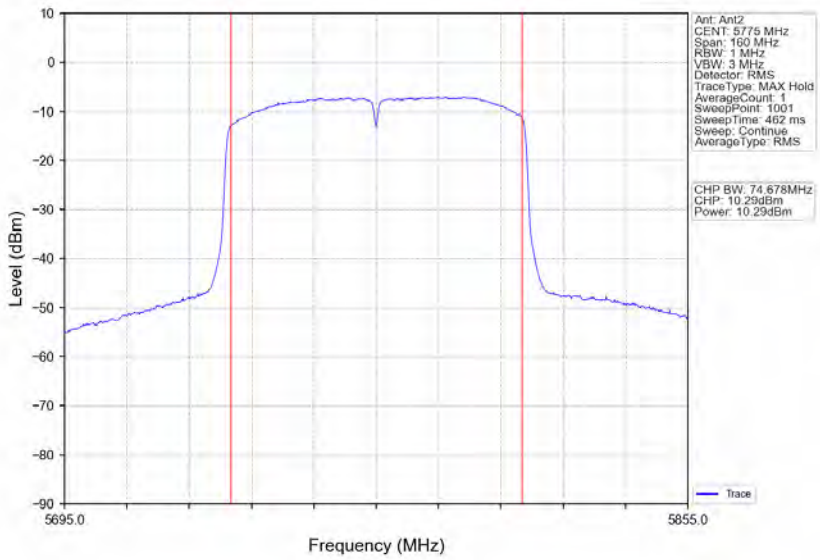

802.11ac(VHT80)_MCH_5210MHz_Ant2_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV




802.11ac(VHT80)_MCH_5775MHz_Ant2_NTNV



# 4. Maximum Power Spectral Density

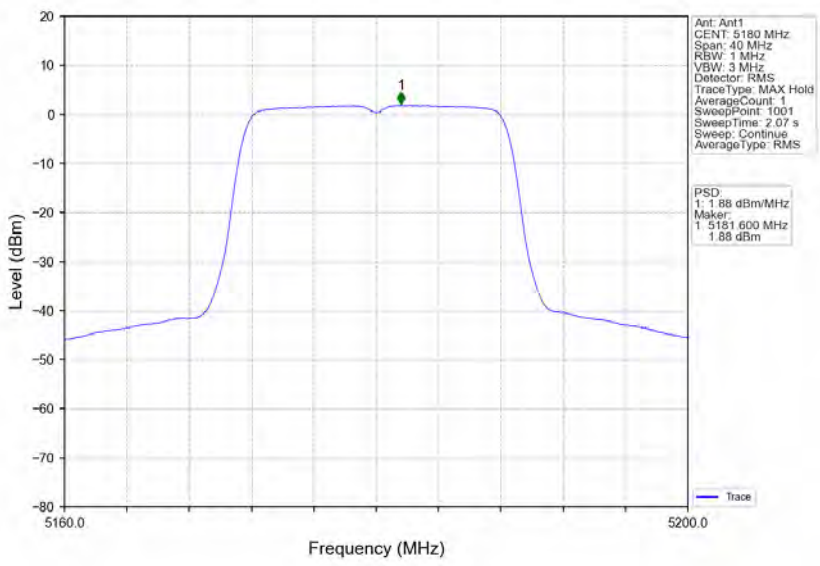
## 4.1 PSD

### 4.1.1 Test Result

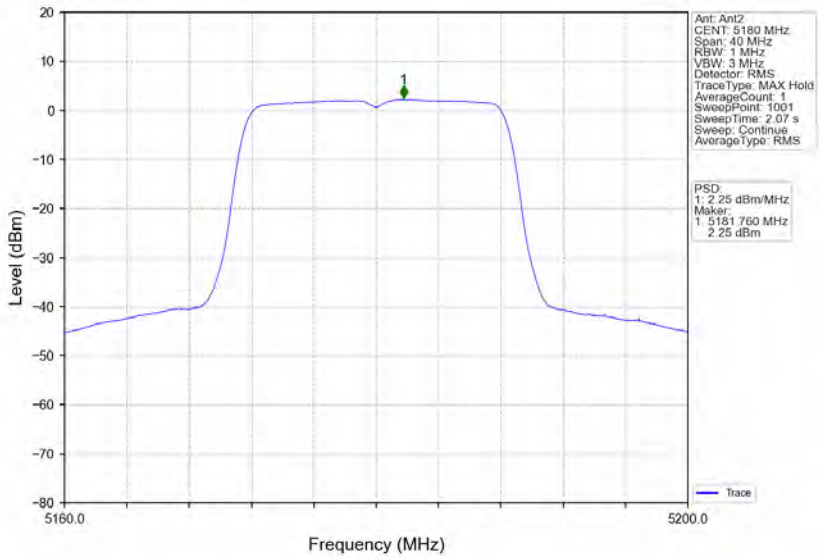
| Mode | TX Type | Frequency (MHz) | Maximum PSD (dBm/MHz) | | | | Verdict |
|---|---|---|---|---|---|---|---|
| | | | ANT1 | ANT2 | MIMO | Limit | |
| 802.11a | SISO | 5180 | 1.88 | 2.25 | / | <=17 | Pass |
| | | 5200 | 1.86 | 2.08 | / | <=17 | Pass |
| | | 5240 | 2.36 | 2.32 | / | <=17 | Pass |
| 802.11n (HT20) | MIMO | 5180 | -0.98 | -0.68 | 2.16 | <=17 | Pass |
| | | 5200 | -0.91 | -0.64 | 2.23 | <=17 | Pass |
| | | 5240 | -1.41 | -1.00 | 1.77 | <=17 | Pass |
| 802.11n (HT40) | MIMO | 5190 | -3.96 | -3.85 | -0.91 | <=17 | Pass |
| | | 5230 | -3.57 | -3.71 | -0.69 | <=17 | Pass |
| 802.11ac (VHT80) | MIMO | 5210 | -6.58 | -6.76 | -3.67 | <=17 | Pass |
| Note1: Antenna Gain: Ant1: 3.33dBi; Ant2: 3.68dBi;<br>Note2: E.I.R.PSD = Measured PSD + Antenna Gain | | | | | | | |

## 4.1.2 Test Graph

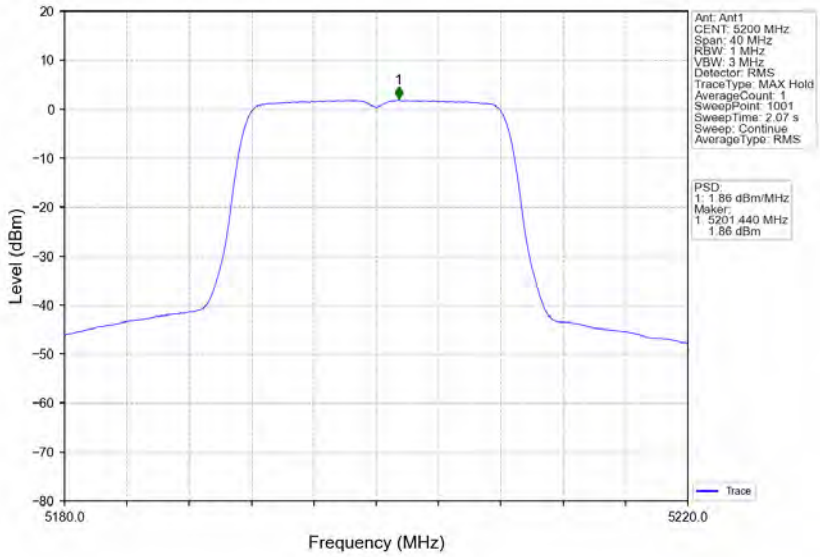
802.11a_LCH_5180MHz_Ant1_NTNV



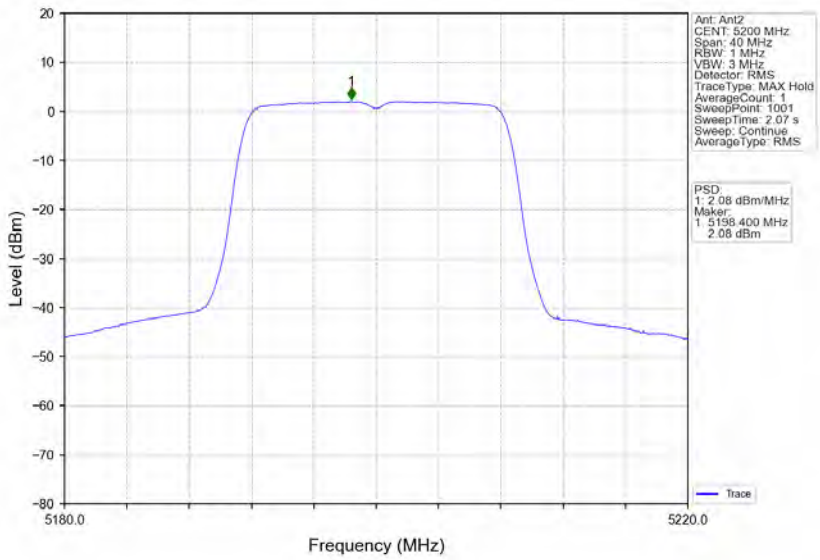

802.11a_LCH_5180MHz_Ant2_NTNV



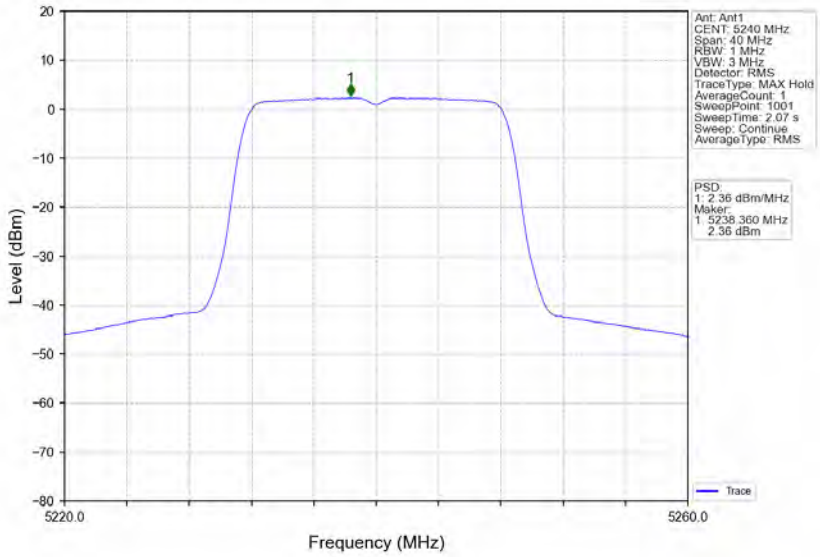
802.11a_MCH_5200MHz_Ant1_NTNV



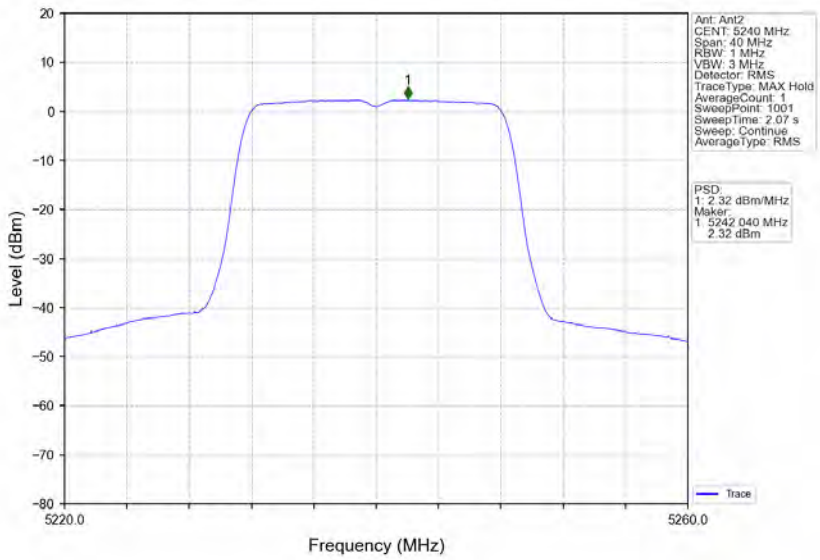

802.11a_MCH_5200MHz_Ant2_NTNV



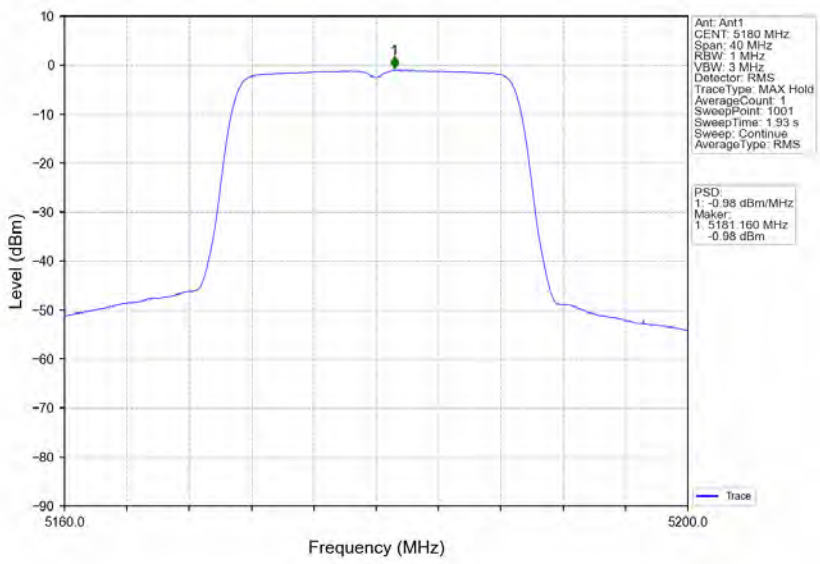
802.11a_HCH_5240MHz_Ant1_NTNV



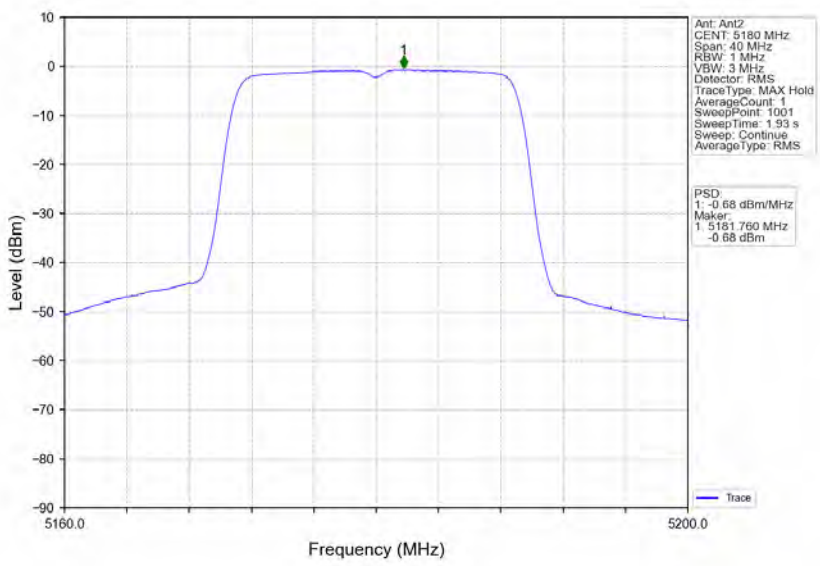

802.11a_HCH_5240MHz_Ant2_NTNV



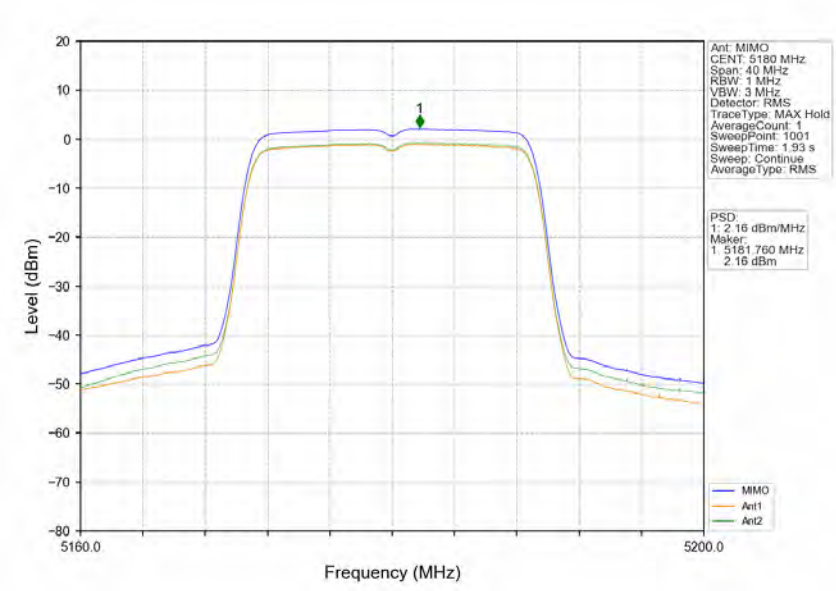
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



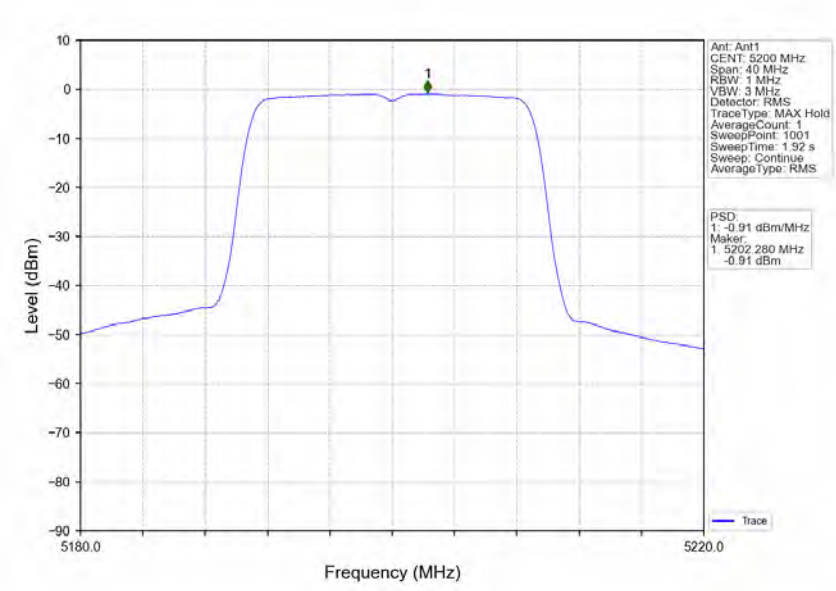

802.11n(HT20)_LCH_5180MHz_Ant2_NTNV



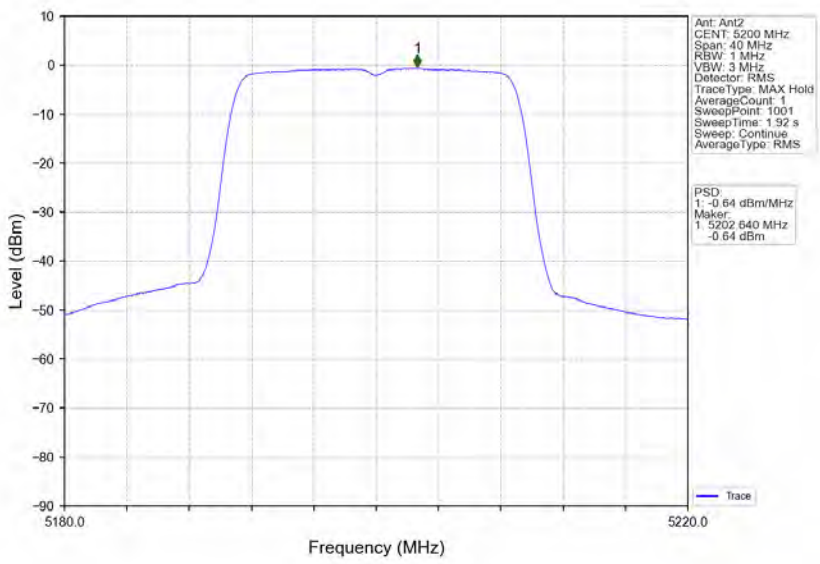
802.11n(HT20)_LCH_5180MHz_MIMO_NTNV



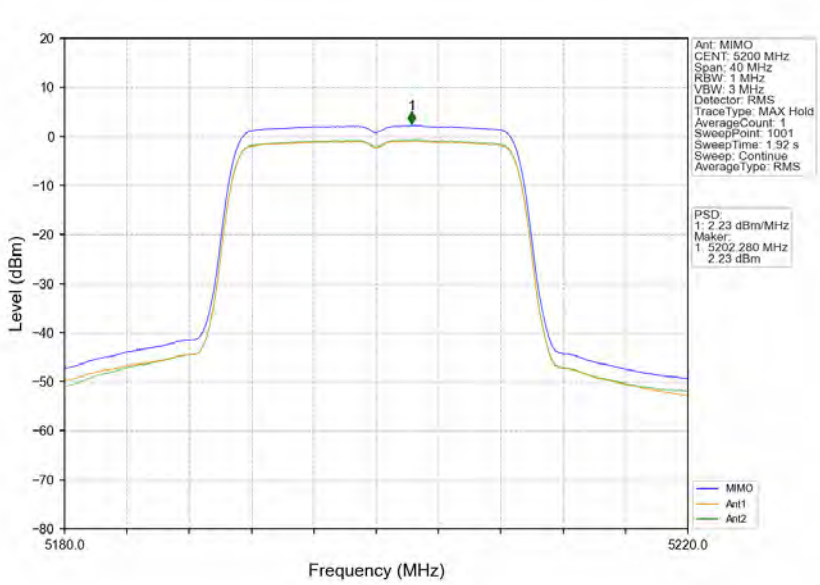

802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



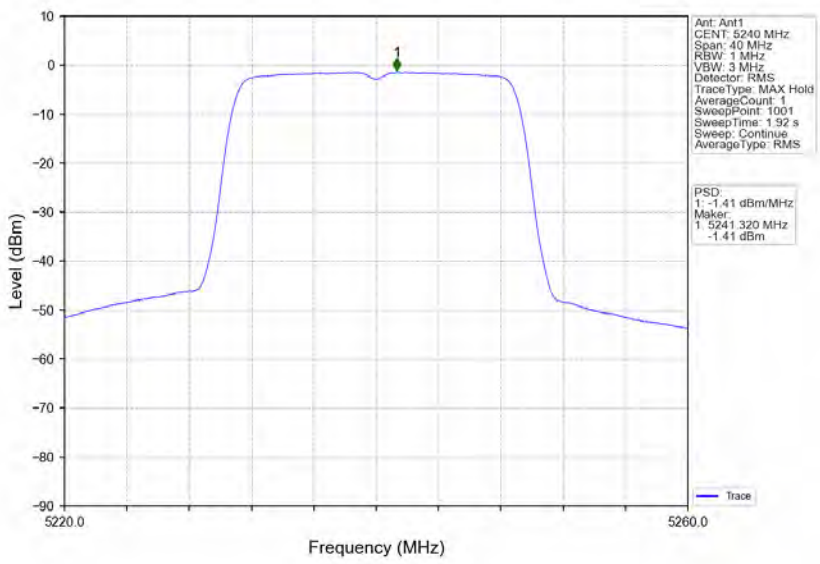
802.11n(HT20)_MCH_5200MHz_Ant2_NTNV



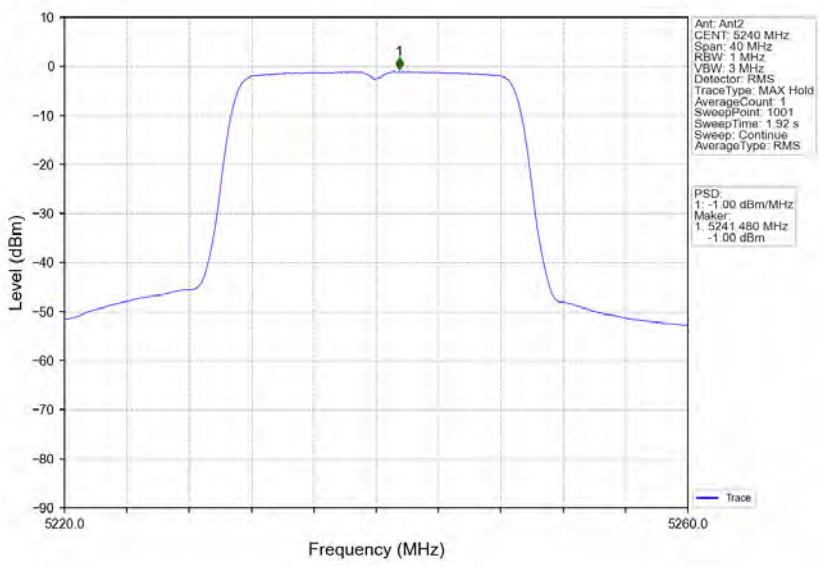

802.11n(HT20)_MCH_5200MHz_MIMO_NTNV



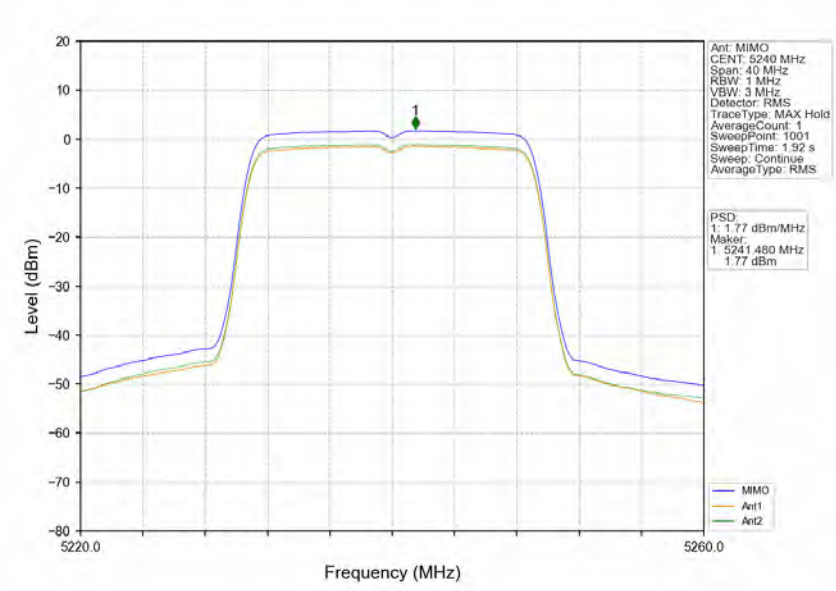
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



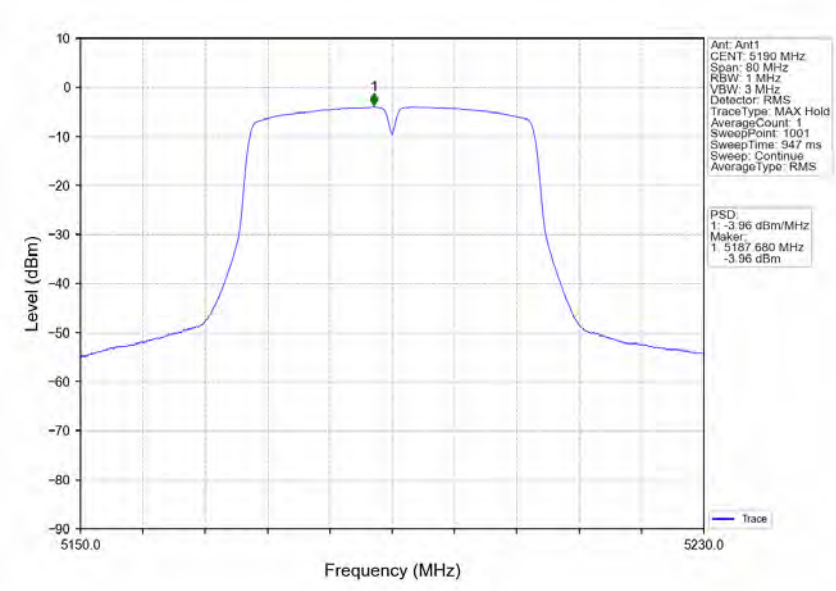

802.11n(HT20)_HCH_5240MHz_Ant2_NTNV



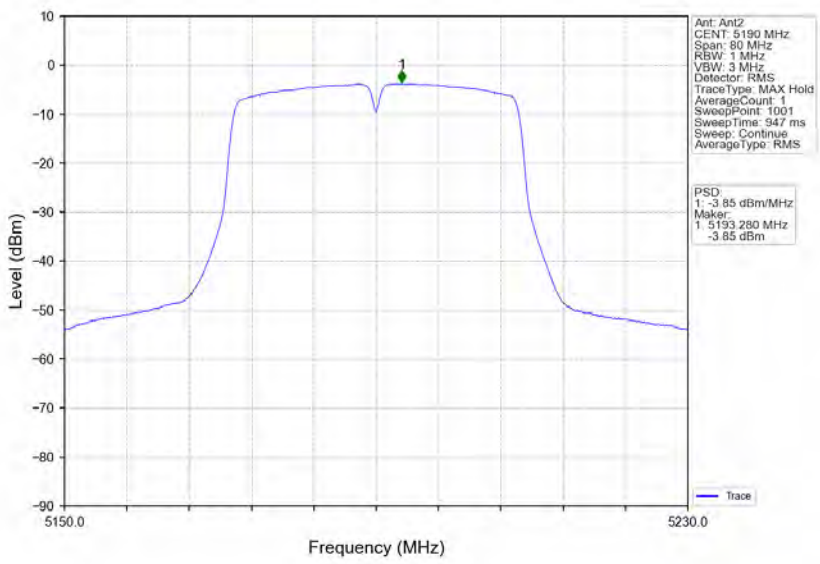
802.11n(HT20)_HCH_5240MHz_MIMO_NTNV



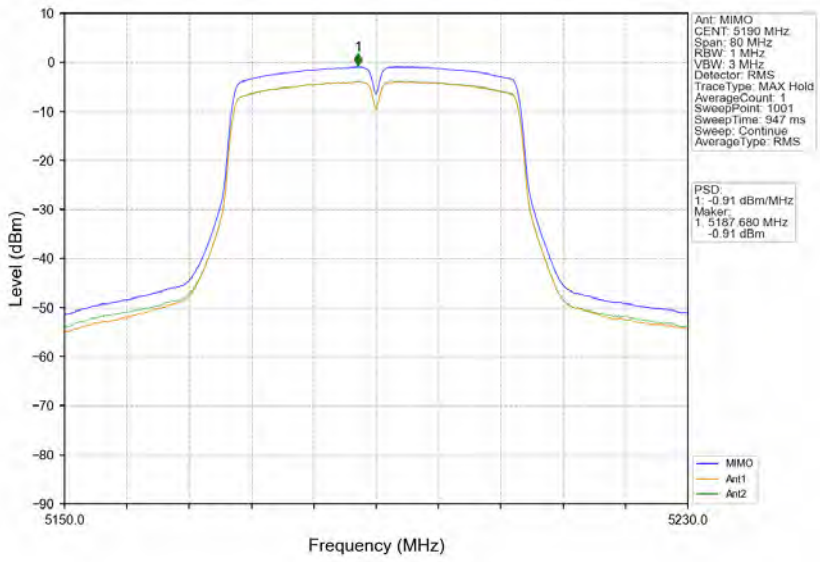

802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



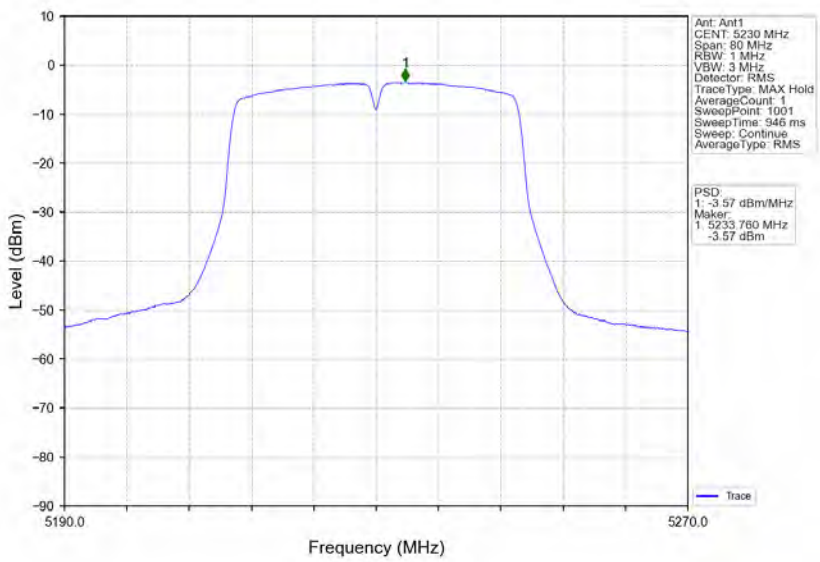
802.11n(HT40)_LCH_5190MHz_Ant2_NTNV



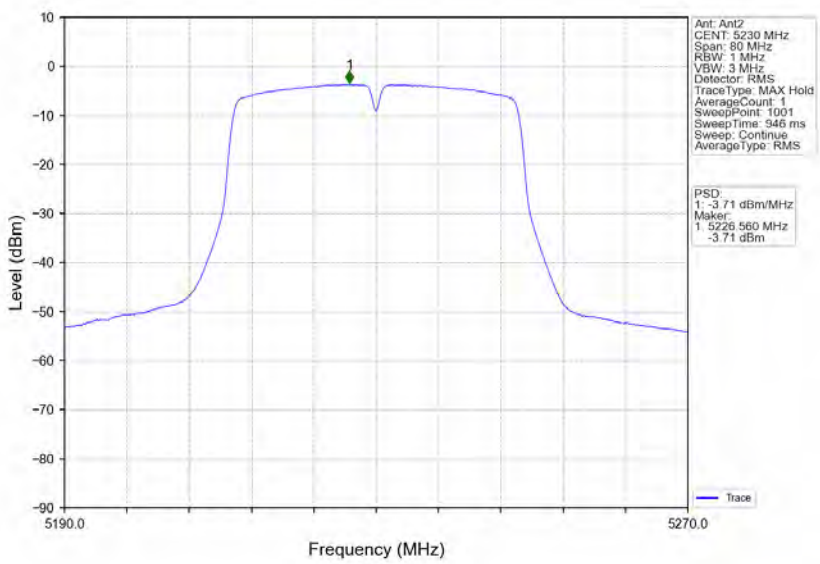

802.11n(HT40)_LCH_5190MHz_MIMO_NTNV



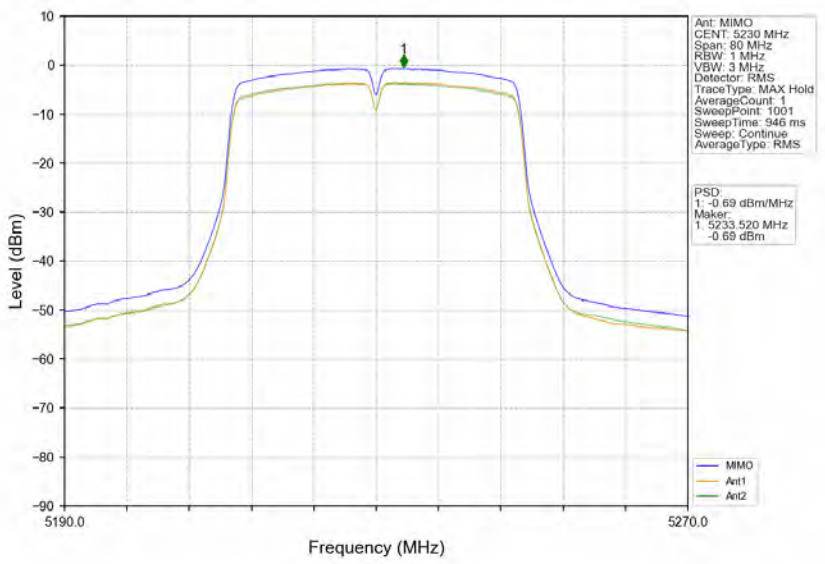
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



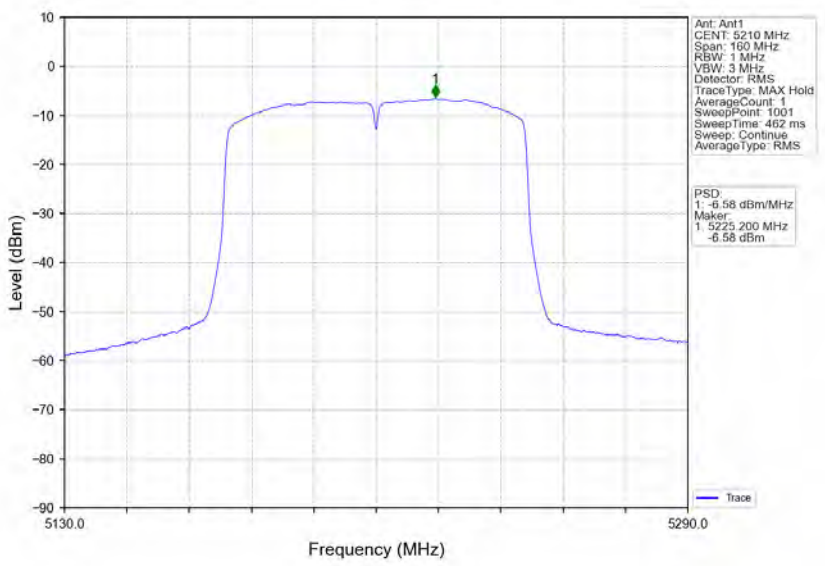

802.11n(HT40)_HCH_5230MHz_Ant2_NTNV



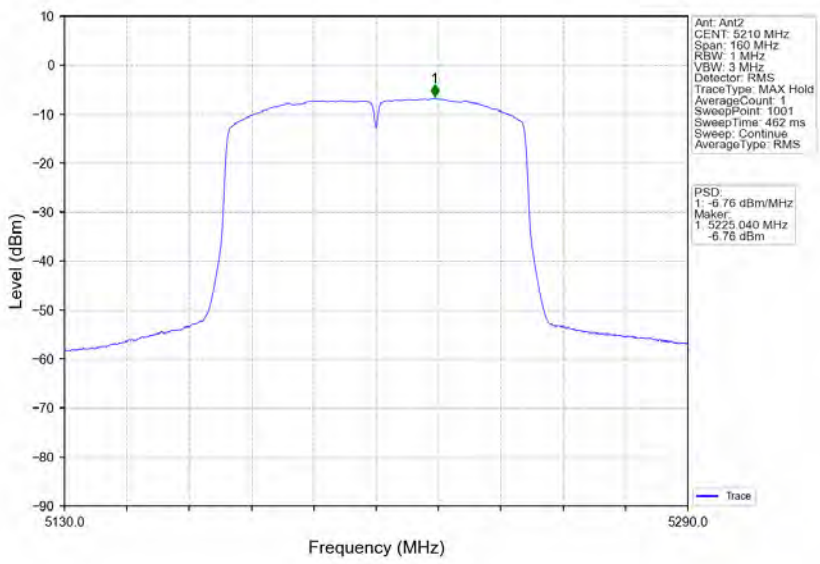
802.11n(HT40)_HCH_5230MHz_MIMO_NTNV



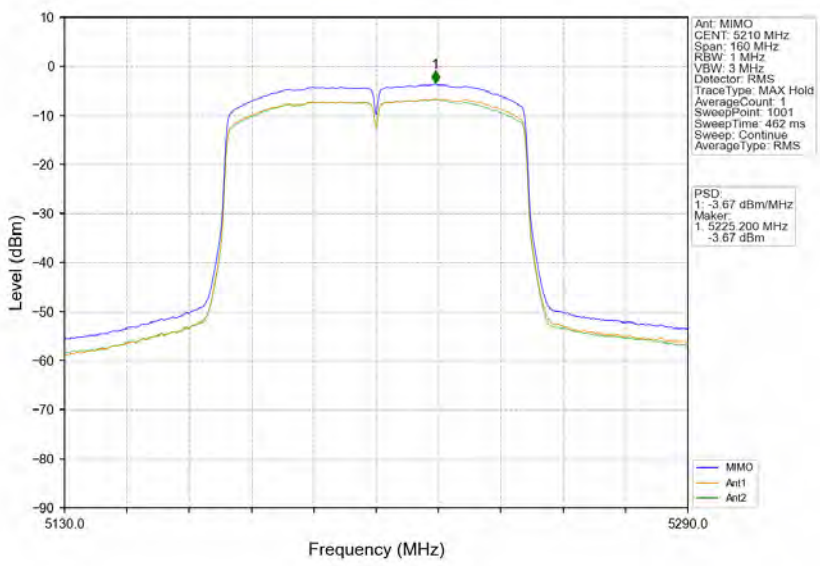

802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant2_NTNV




802.11ac(VHT80)_MCH_5210MHz_MIMO_NTNV



## 4.2 PSD-Band3

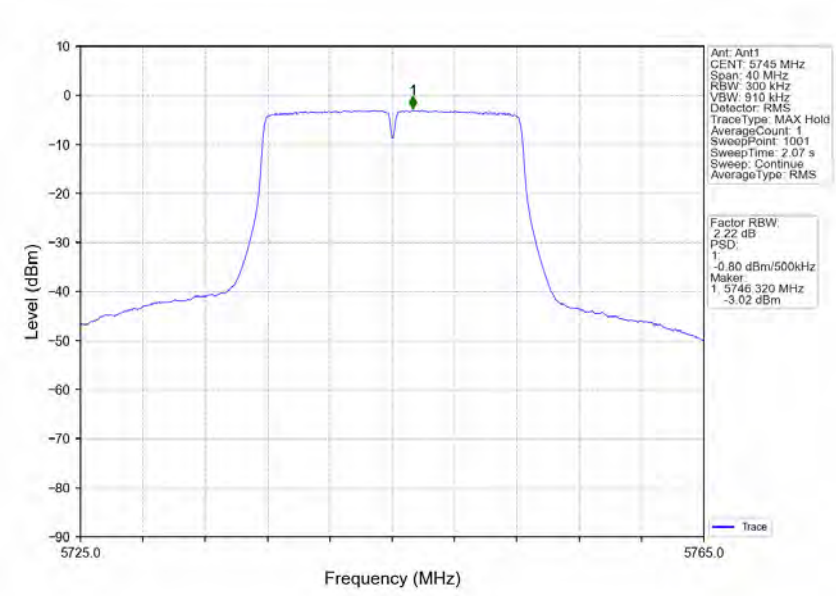
### 4.2.1 Test Result

| Mode | TX Type | Frequency (MHz) | Maximum PSD (dBm/500kHz) | | | | Verdict |
|---|---|---|---|---|---|---|---|
| | | | ANT1 | ANT2 | MIMO | Limit | |
| 802.11a | SISO | 5745 | -0.80 | -0.79 | / | <=30 | Pass |
| | | 5785 | -0.27 | -0.32 | / | <=30 | Pass |
| | | 5825 | -0.52 | -0.32 | / | <=30 | Pass |
| 802.11n (HT20) | MIMO | 5745 | -4.27 | -3.94 | -1.14 | <=30 | Pass |
| | | 5785 | -3.69 | -3.49 | -0.70 | <=30 | Pass |
| | | 5825 | -4.33 | -4.20 | -1.27 | <=30 | Pass |
| 802.11n (HT40) | MIMO | 5755 | -6.70 | -6.92 | -3.80 | <=30 | Pass |
| | | 5795 | -6.78 | -6.53 | -3.64 | <=30 | Pass |
| 802.11ac (VHT80) | MIMO | 5775 | -9.28 | -9.98 | -6.70 | <=30 | Pass |

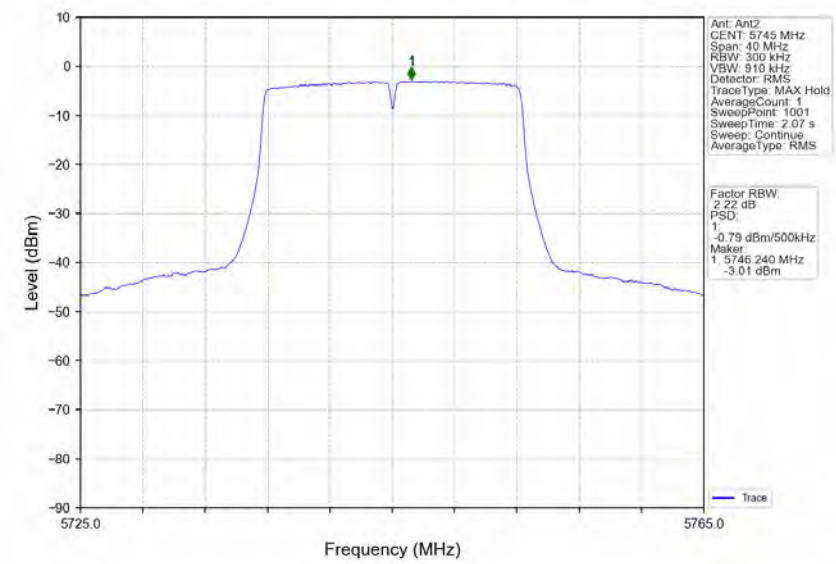
Note1: Antenna Gain: Ant1: 3.03dBi; Ant2: 3.03dBi;
Note2: Directional Gain: Uncorrelated(Directional Gain = Ant Gain)

## 4.2.2 Test Graph

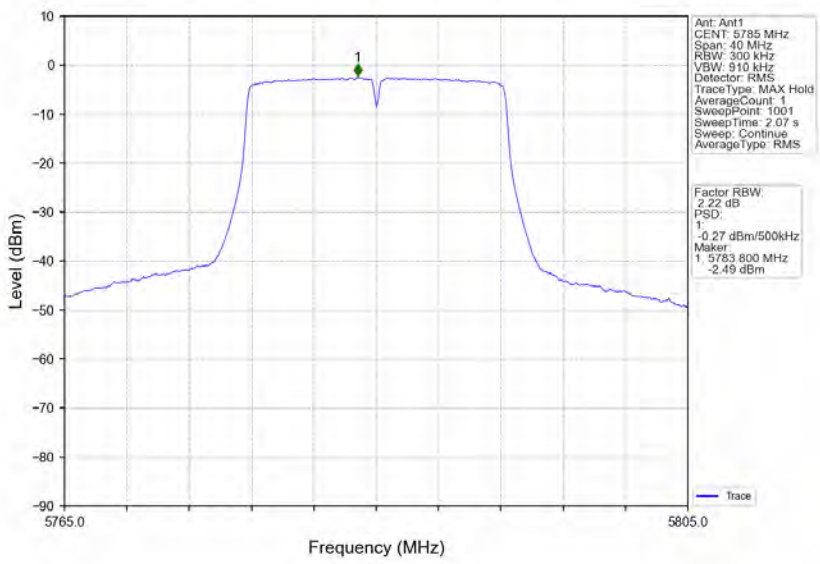
802.11a_LCH_5745MHz_Ant1_NTNV



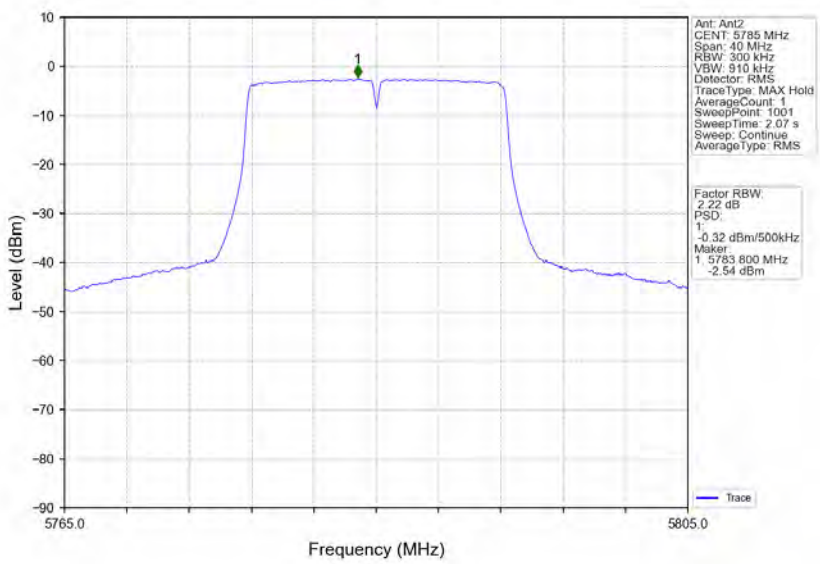

802.11a_LCH_5745MHz_Ant2_NTNV



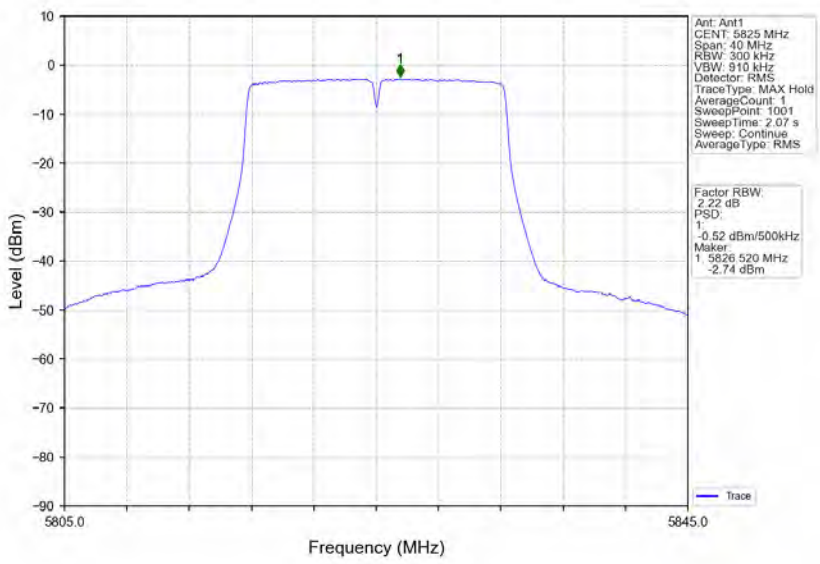
802.11a_MCH_5785MHz_Ant1_NTNV



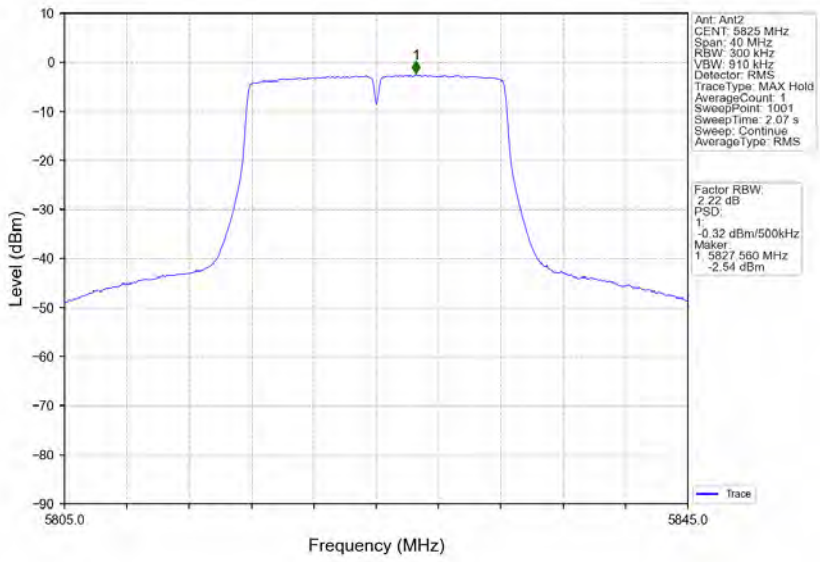

802.11a_MCH_5785MHz_Ant2_NTNV



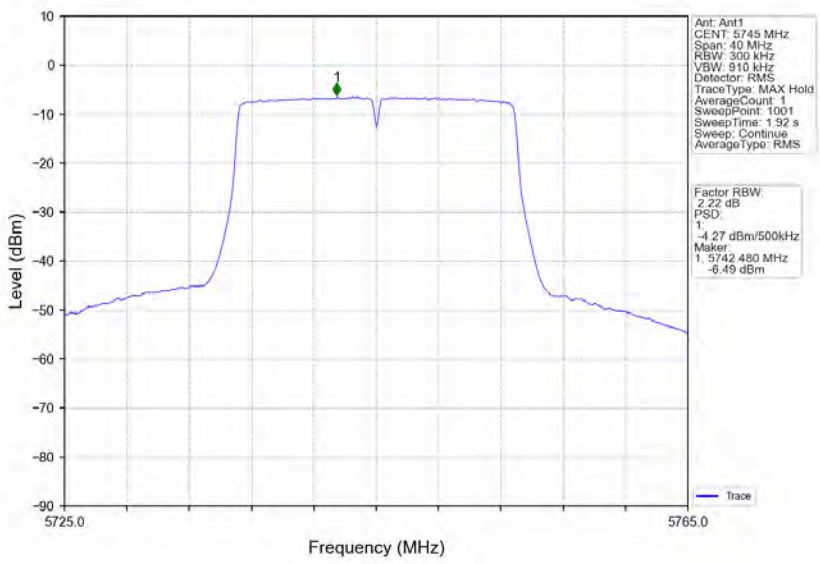
802.11a_HCH_5825MHz_Ant1_NTNV



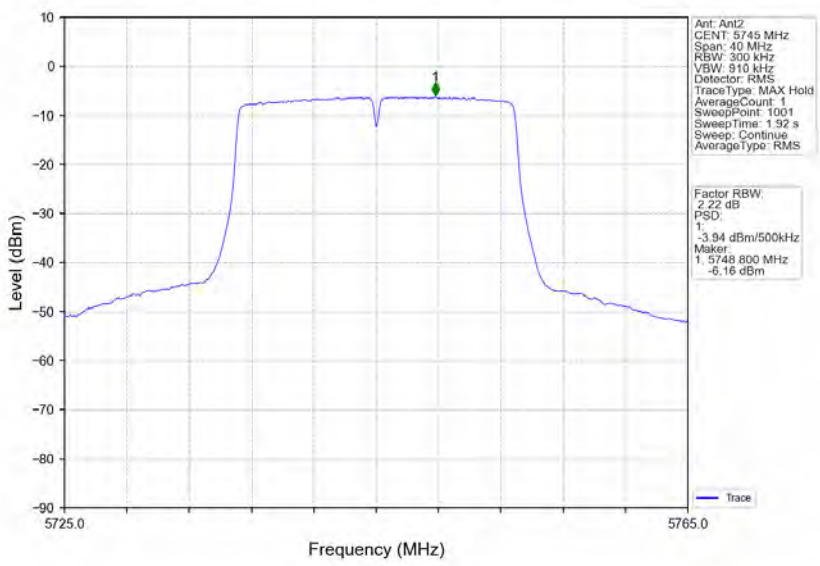

802.11a_HCH_5825MHz_Ant2_NTNV



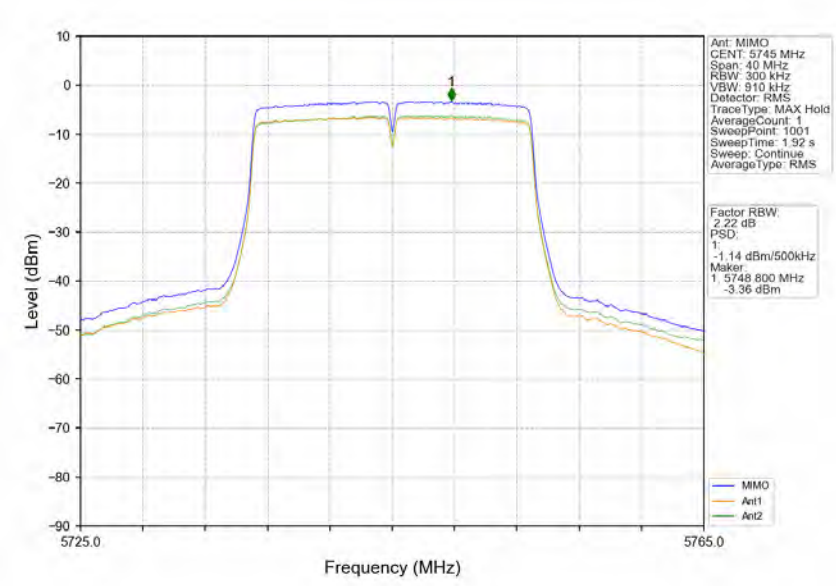
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



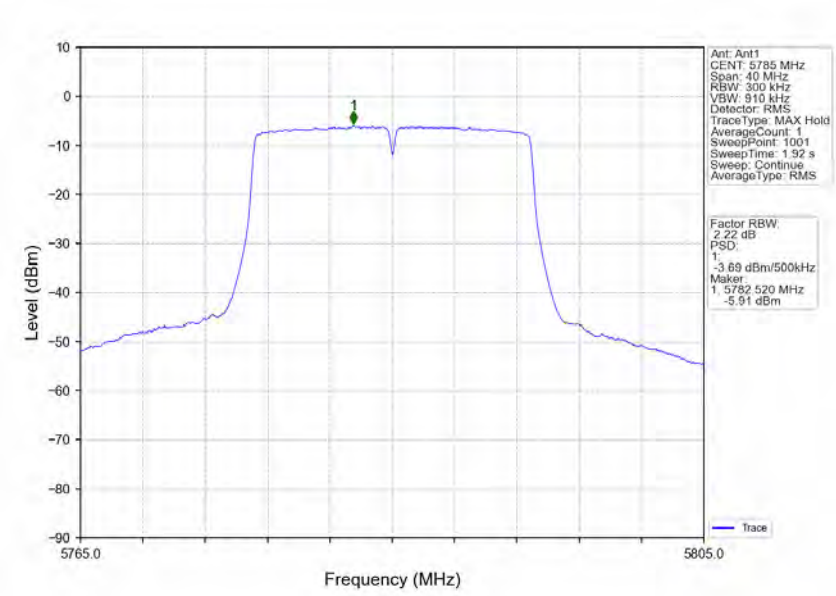

802.11n(HT20)_LCH_5745MHz_Ant2_NTNV



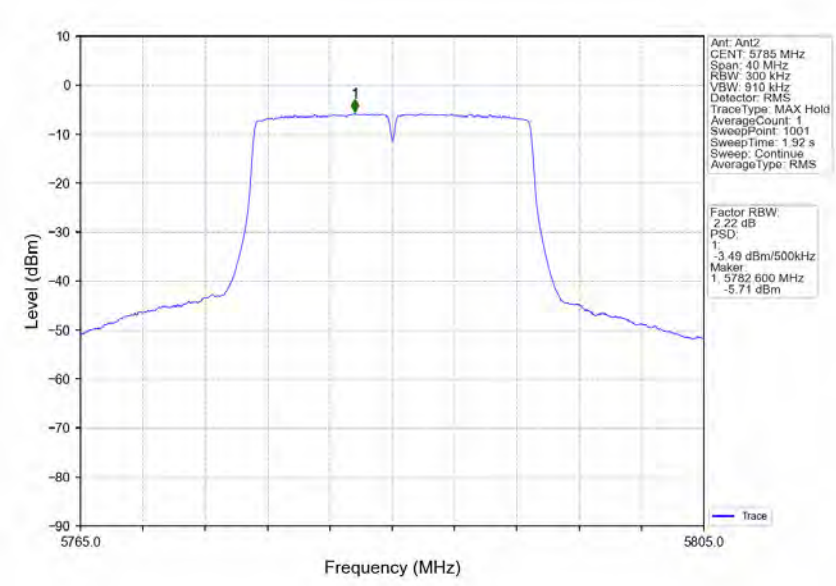
802.11n(HT20)_LCH_5745MHz_MIMO_NTNV



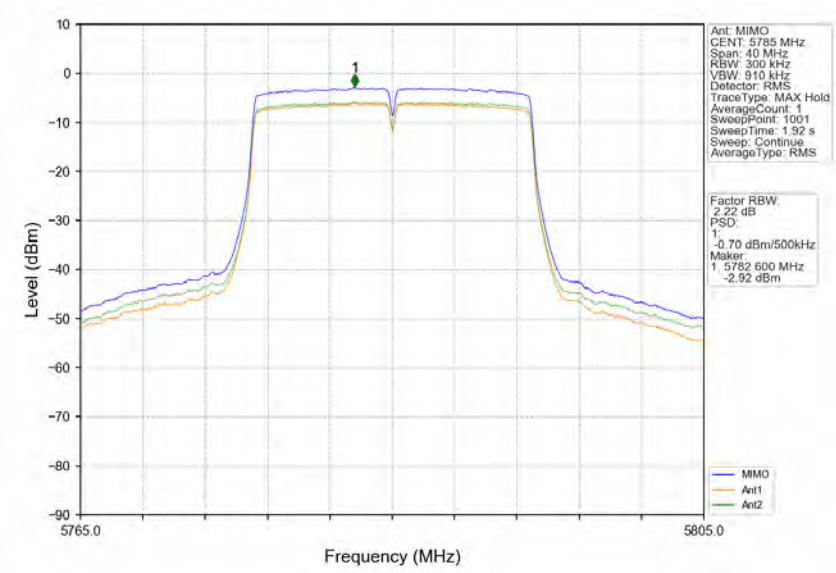

802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



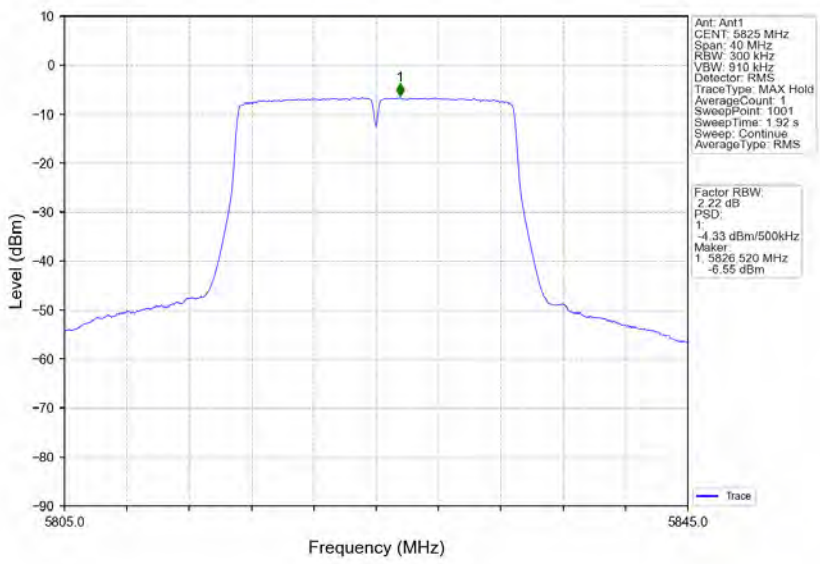
802.11n(HT20)_MCH_5785MHz_Ant2_NTNV



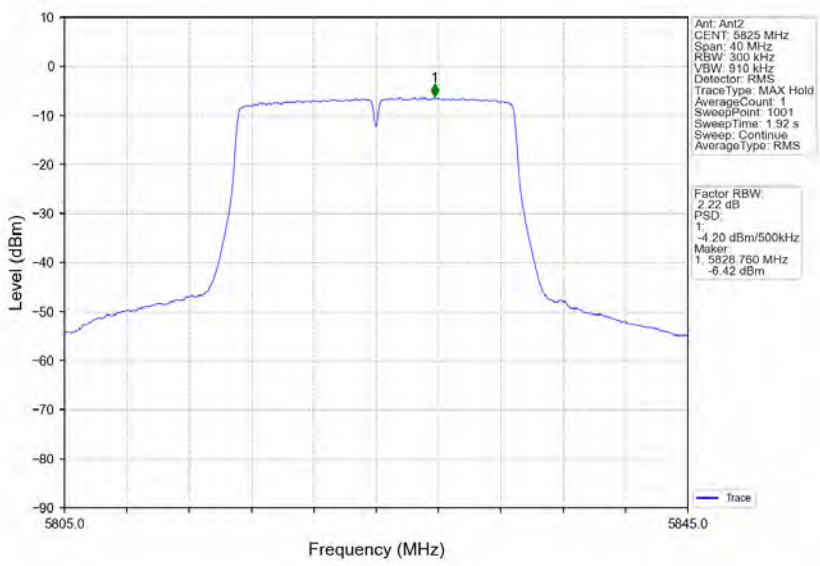

802.11n(HT20)_MCH_5785MHz_MIMO_NTNV



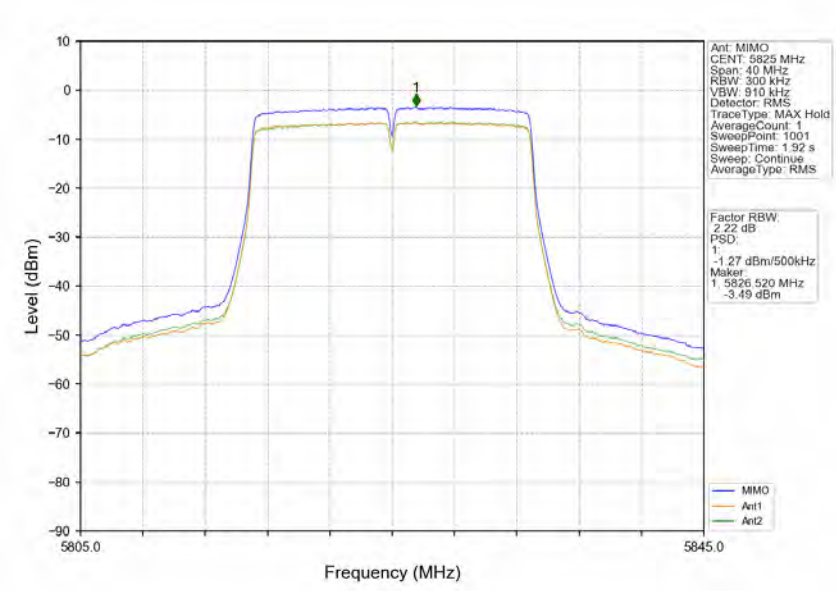
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



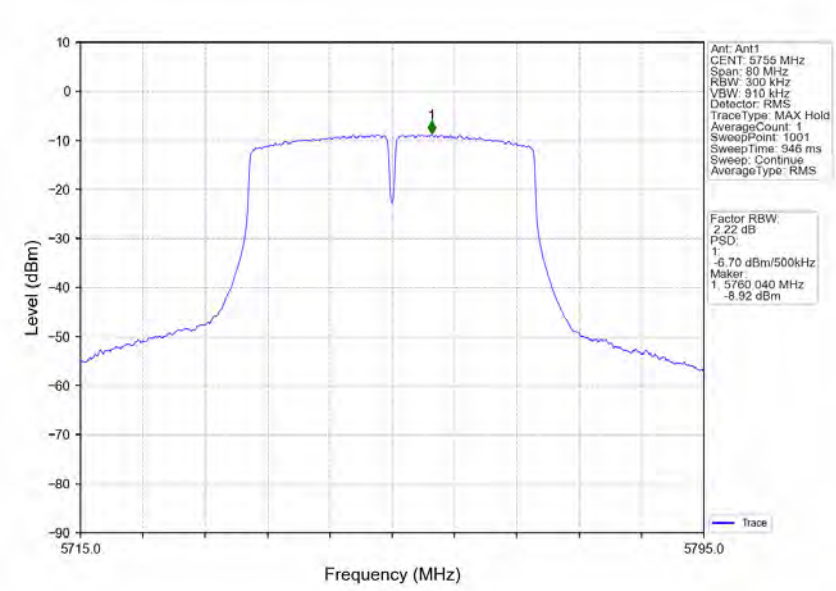

802.11n(HT20)_HCH_5825MHz_Ant2_NTNV



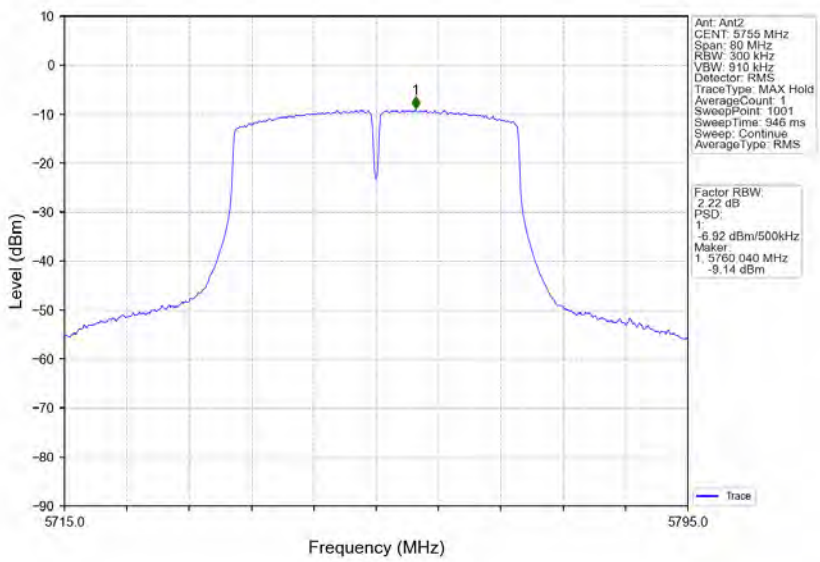
802.11n(HT20)_HCH_5825MHz_MIMO_NTNV



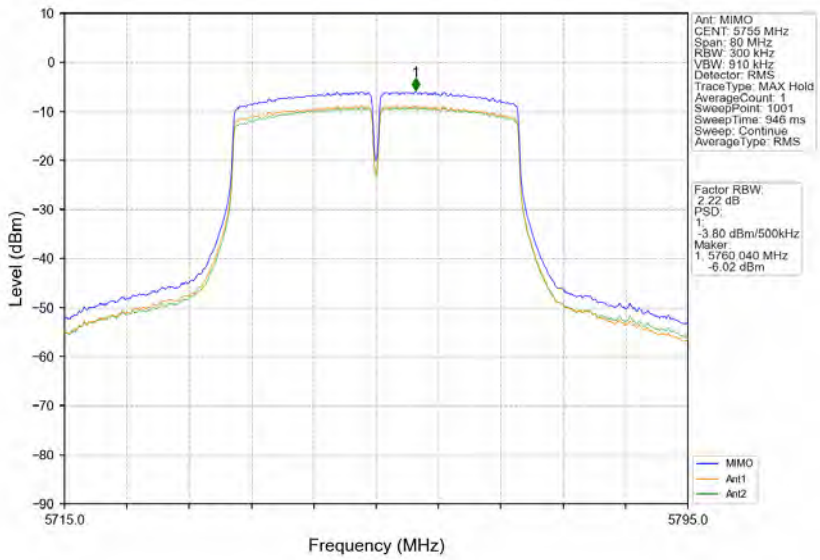

802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



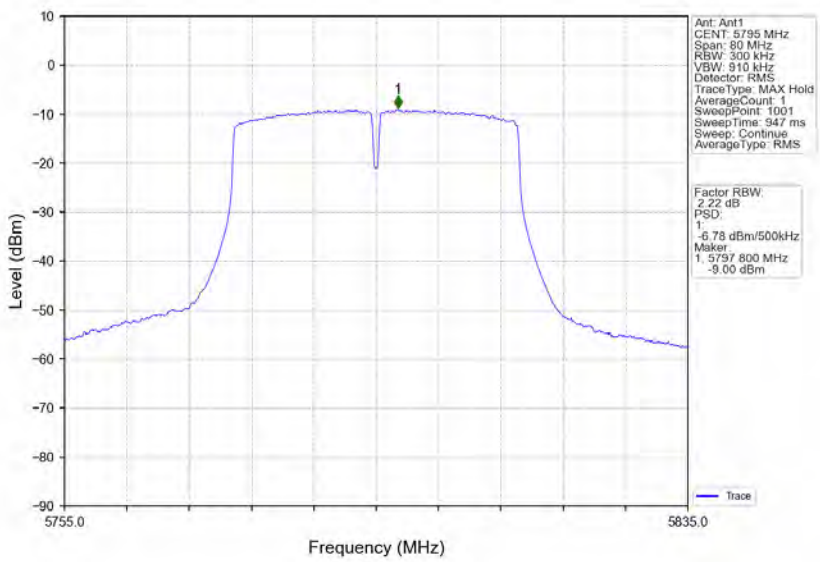
802.11n(HT40)_LCH_5755MHz_Ant2_NTNV



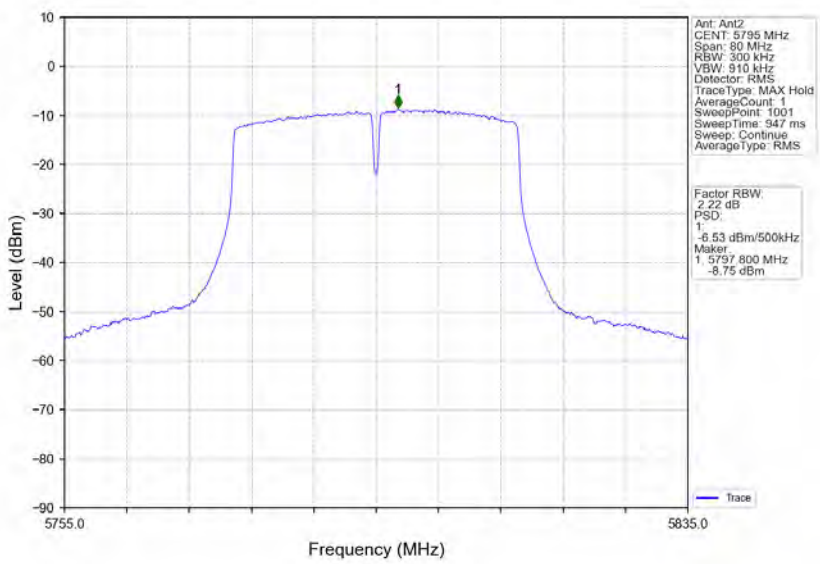

802.11n(HT40)_LCH_5755MHz_MIMO_NTNV



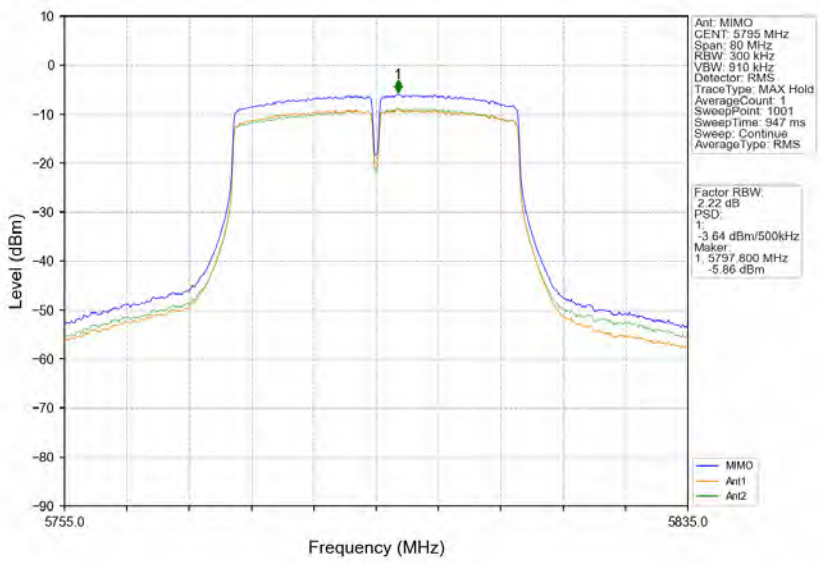
802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



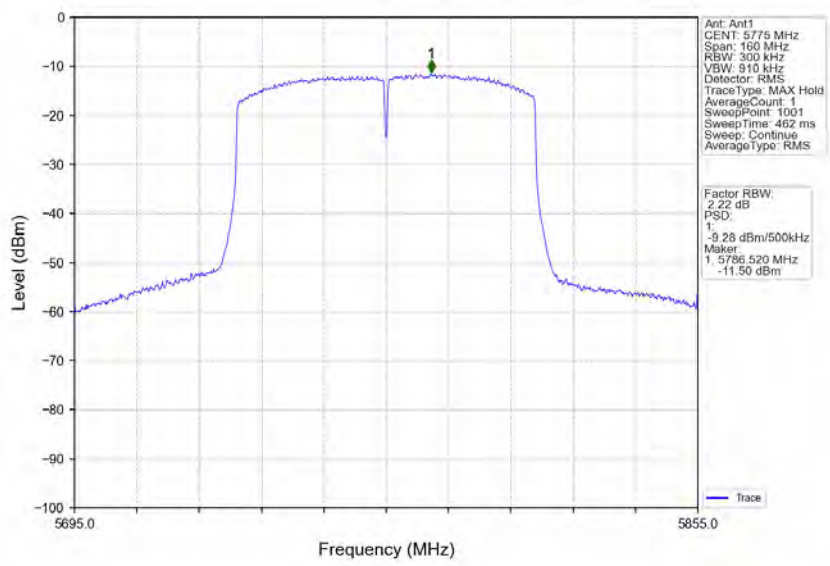

802.11n(HT40)_HCH_5795MHz_Ant2_NTNV



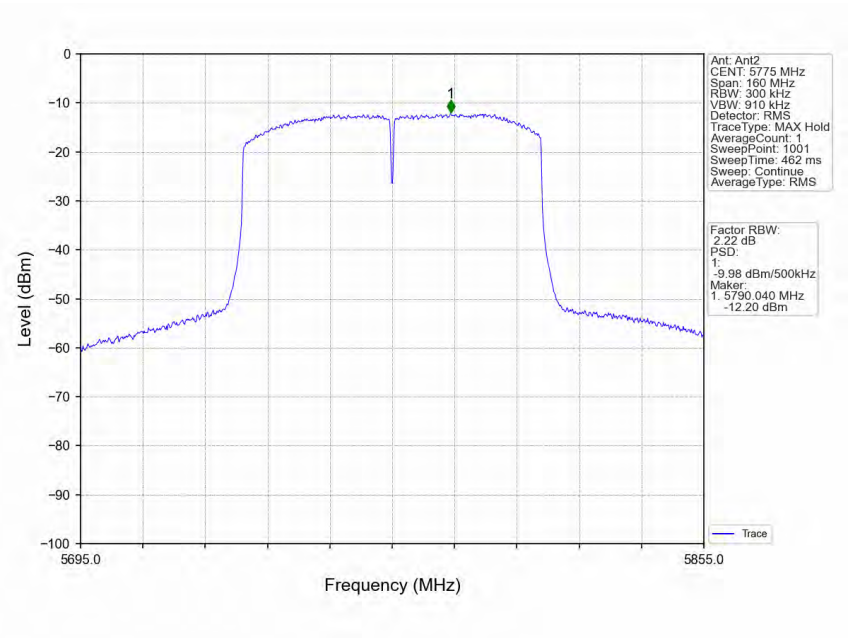
802.11n(HT40)_HCH_5795MHz_MIMO_NTNV



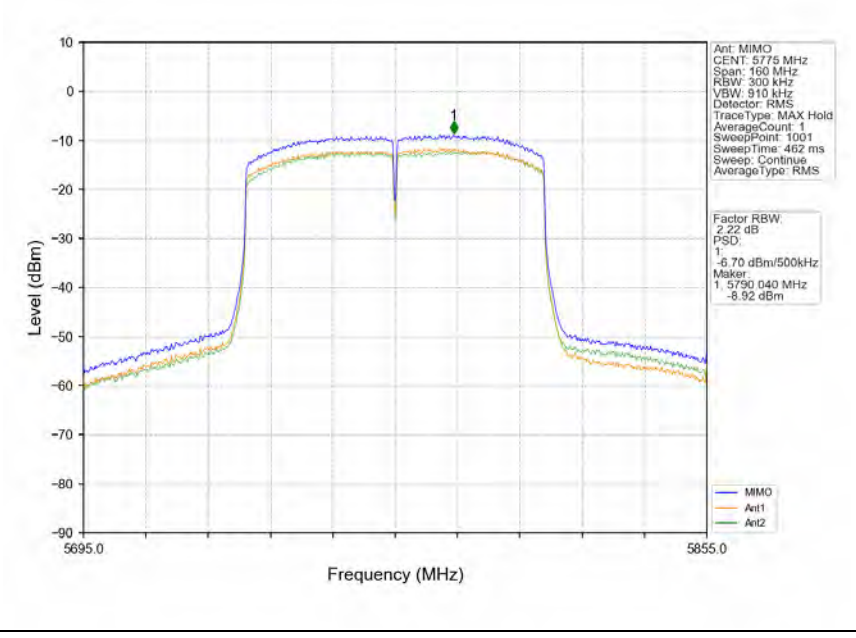

802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant2_NTNV




802.11ac(VHT80)_MCH_5775MHz_MIMO_NTNV



# 5. Frequency Stability

## 5.1 Ant1

### 5.1.1 Test Result

| Ant1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mode | TX Type | Frequency (MHz) | Temperature (°C) | Voltage (VAC) | Measured Frequency (MHz) | Limit (MHz) | Verdict |
| Carrier Wave | SISO | 5180 | 20 | 102 | 5179.987 | 5150 to 5250 | Pass |
| | | | | 120 | 5179.987 | 5150 to 5250 | Pass |
| | | | | 138 | 5179.988 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5179.988 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5179.989 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5179.989 | 5150 to 5250 | Pass |
| | | | 0 | 120 | 5179.989 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5179.990 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5179.990 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5179.990 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5179.990 | 5150 to 5250 | Pass |
| | | 5200 | 20 | 102 | 5199.992 | 5150 to 5250 | Pass |
| | | | | 120 | 5199.992 | 5150 to 5250 | Pass |
| | | | | 138 | 5199.992 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5199.992 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 0 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | 5240 | 20 | 102 | 5239.992 | 5150 to 5250 | Pass |
| | | | | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | | 138 | 5239.992 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | 0 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | 5745 | 20 | 102 | 5744.990 | 5725 to 5850 | Pass |
| | | | | 120 | 5744.990 | 5725 to 5850 | Pass |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | 138 | 5744.990 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5744.990 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5744.990 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5744.991 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5744.991 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5744.991 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5744.991 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5744.991 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5744.991 | 5725 to 5850 | Pass |
| | | 5785 | 20 | 102 | 5784.990 | 5725 to 5850 | Pass |
| | | | | 120 | 5784.990 | 5725 to 5850 | Pass |
| | | | | 138 | 5784.990 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | 5825 | 20 | 102 | 5824.991 | 5725 to 5850 | Pass |
| | | | | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | | 138 | 5824.991 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | MIMO | 5190 | 20 | 102 | 5189.992 | 5150 to 5250 | Pass |
| | | | | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | | 138 | 5189.992 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | 0 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | 5230 | 20 | 102 | 5229.993 | 5150 to 5250 | Pass |
| | | | | 120 | 5229.992 | 5150 to 5250 | Pass |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | 138 | 5229.992 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 0 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | 5755 | 20 | 102 | 5754.991 | 5725 to 5850 | Pass |
| | | | | 120 | 5754.991 | 5725 to 5850 | Pass |
| | | | | 138 | 5754.991 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5754.991 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | 5795 | 20 | 102 | 5794.991 | 5725 to 5850 | Pass |
| | | | | 120 | 5794.991 | 5725 to 5850 | Pass |
| | | | | 138 | 5794.991 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5794.991 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5794.991 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5794.991 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5794.991 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5794.991 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | 5210 | 20 | 102 | 5209.992 | 5150 to 5250 | Pass |
| | | | | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | | 138 | 5209.992 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | 0 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | 5775 | 20 | 102 | 5774.991 | 5725 to 5850 | Pass |
| | | | | 120 | 5774.991 | 5725 to 5850 | Pass |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | 138 | 5774.991 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5774.992 | 5725 to 5850 | Pass |

## 5.2 Ant2

### 5.2.1 Test Result

| Ant2 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mode | TX Type | Frequency (MHz) | Temperature (°C) | Voltage (VAC) | Measured Frequency (MHz) | Limit (MHz) | Verdict |
| Carrier Wave | SISO | 5180 | 20 | 102 | 5179.991 | 5150 to 5250 | Pass |
| | | | | 120 | 5179.991 | 5150 to 5250 | Pass |
| | | | | 138 | 5179.991 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5179.991 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5179.991 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5179.991 | 5150 to 5250 | Pass |
| | | | 0 | 120 | 5179.991 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5179.991 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5179.991 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5179.991 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5179.991 | 5150 to 5250 | Pass |
| | | 5200 | 20 | 102 | 5199.991 | 5150 to 5250 | Pass |
| | | | | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | | 138 | 5199.991 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 0 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5199.991 | 5150 to 5250 | Pass |
| | | 5240 | 20 | 102 | 5239.992 | 5150 to 5250 | Pass |
| | | | | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | | 138 | 5239.992 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5239.992 | 5150 to 5250 | Pass |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 0 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5239.992 | 5150 to 5250 | Pass |
| | | 5745 | 20 | 102 | 5744.992 | 5725 to 5850 | Pass |
| | | | | 120 | 5744.992 | 5725 to 5850 | Pass |
| | | | | 138 | 5744.992 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5744.992 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5744.992 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5744.992 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5744.992 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5744.992 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5744.992 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5744.992 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5744.992 | 5725 to 5850 | Pass |
| | | 5785 | 20 | 102 | 5784.991 | 5725 to 5850 | Pass |
| | | | | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | | 138 | 5784.991 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5784.991 | 5725 to 5850 | Pass |
| | | 5825 | 20 | 102 | 5824.991 | 5725 to 5850 | Pass |
| | | | | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | | 138 | 5824.991 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5824.991 | 5725 to 5850 | Pass |
| | MIMO | 5190 | 20 | 102 | 5189.992 | 5150 to 5250 | Pass |
| | | | | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | | 138 | 5189.992 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5189.992 | 5150 to 5250 | Pass |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 0 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5189.992 | 5150 to 5250 | Pass |
| | | 5230 | 20 | 102 | 5229.992 | 5150 to 5250 | Pass |
| | | | | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | | 138 | 5229.992 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 0 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5229.992 | 5150 to 5250 | Pass |
| | | 5755 | 20 | 102 | 5754.992 | 5725 to 5850 | Pass |
| | | | | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | | 138 | 5754.992 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5754.992 | 5725 to 5850 | Pass |
| | | 5795 | 20 | 102 | 5794.992 | 5725 to 5850 | Pass |
| | | | | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | | 138 | 5794.992 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5794.992 | 5725 to 5850 | Pass |
| | | 5210 | 20 | 102 | 5209.992 | 5150 to 5250 | Pass |
| | | | | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | | 138 | 5209.992 | 5150 to 5250 | Pass |
| | | | -30 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | -20 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | -10 | 120 | 5209.992 | 5150 to 5250 | Pass |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 0 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | 10 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | 30 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | 40 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | | 50 | 120 | 5209.992 | 5150 to 5250 | Pass |
| | | 5775 | 20 | 102 | 5774.992 | 5725 to 5850 | Pass |
| | | | | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | | 138 | 5774.992 | 5725 to 5850 | Pass |
| | | | -30 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | -20 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | -10 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 0 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 10 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 30 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 40 | 120 | 5774.992 | 5725 to 5850 | Pass |
| | | | 50 | 120 | 5774.992 | 5725 to 5850 | Pass |

- End of the Report -