



## **MET Laboratories, Inc.** *Safety Certification - EMI - Telecom Environmental Simulation*

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January 27, 2015

Meru Networks, Inc.  
894 Ross Dr.  
Sunnyvale, CA 94089

Dear Rajendran Chary,

Enclosed is the EMC Wireless test report for compliance testing of the Meru Networks, Inc., Mission Peak (AP822eV2) as tested to the requirements of Title 47 of the CFR, Ch. 1 (10-1-06 ed.), Title 47 of the CFR, Part 15, Subpart B for Unintentional Radiators and Part 15.407 for Intentional Radiators.

Thank you for using the services of MET Laboratories, Inc. If you have any questions regarding these results or if MET can be of further service to you, please feel free to contact me.

Sincerely yours,  
MET LABORATORIES, INC.

Jennifer Warnell  
Documentation Department

Reference: (\Meru Networks, Inc.\EMCS42577E-FCC407 Rev. 1 (UNII 2))

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### **Electromagnetic Compatibility Criteria Test Report**

for the

**Meru Networks, Inc.  
Model Mission Peak (AP822eV2)**

**Tested under**  
the FCC Certification Rules  
contained in  
Title 47 of the CFR, Parts 15 Subpart B  
for Class B Digital Devices  
&  
FCC Part 15.407 for Intentional Radiators

**MET Report: EMCS42577E-FCC407 Rev. 1 (UNII 2)**

January 27, 2015

**Prepared For:**

**Meru Networks, Inc.  
894 Ross Dr.  
Sunnyvale, CA 94089**

**Prepared By:**  
**MET Laboratories, Inc.**  
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&  
FCC Part 15.407 for Intentional Radiators



Andy Shen, Project Engineer  
Electromagnetic Compatibility Lab



Jennifer Warnell  
Documentation Department

**Engineering Statement:** The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Parts 15B, 15.407, of the FCC Rules under normal use and maintenance.



Asad Bajwa,  
Director, Electromagnetic Compatibility Lab

## Report Status Sheet

| Revision | Report Date      | Reason for Revision                      |
|----------|------------------|------------------------------------------|
| Ø        | January 21, 2015 | Initial Issue.                           |
| 1        | January 27, 2015 | Revised to reflect engineer corrections. |

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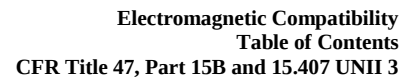
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## List of Terms and Abbreviations

|              |                                               |
|--------------|-----------------------------------------------|
| AC           | Alternating Current                           |
| ACF          | Antenna Correction Factor                     |
| Cal          | Calibration                                   |
| <i>d</i>     | Measurement Distance                          |
| dB           | Decibels                                      |
| dB $\mu$ A   | Decibels above one <b>microamp</b>            |
| dB $\mu$ V   | Decibels above one <b>microvolt</b>           |
| dB $\mu$ A/m | Decibels above one <b>microamp per meter</b>  |
| dB $\mu$ V/m | Decibels above one <b>microvolt per meter</b> |
| DC           | Direct Current                                |
| E            | Electric Field                                |
| DSL          | Digital Subscriber Line                       |
| ESD          | Electrostatic Discharge                       |
| EUT          | Equipment Under Test                          |
| <i>f</i>     | Frequency                                     |
| FCC          | Federal Communications Commission             |
| GRP          | Ground Reference Plane                        |
| H            | Magnetic Field                                |
| HCP          | Horizontal Coupling Plane                     |
| Hz           | Hertz                                         |
| IEC          | International Electrotechnical Commission     |
| kHz          | kilohertz                                     |
| kPa          | kilopascal                                    |
| kV           | kilovolt                                      |
| LISN         | Line Impedance Stabilization Network          |
| MHz          | Megahertz                                     |
| $\mu$ H      | <b>microhenry</b>                             |
| $\mu$        | <b>microfarad</b>                             |
| $\mu$ s      | <b>microseconds</b>                           |
| PRF          | Pulse Repetition Frequency                    |
| RF           | Radio Frequency                               |
| RMS          | Root-Mean-Square                              |
| TWT          | Traveling Wave Tube                           |
| V/m          | Volts <b>per meter</b>                        |
| VCP          | Vertical Coupling Plane                       |

# I. Executive Summary

## A. Purpose of Test

An EMC evaluation was performed to determine compliance of the Meru Networks, Inc. Mission Peak (AP822eV2), with the requirements of Part 15, §15.407. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accordance with §2.1033, the following data is presented in support of the Certification of the Mission Peak (AP822eV2). Meru Networks, Inc. should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the Mission Peak (AP822eV2), has been **permanently** discontinued.

## B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, §15.407, in accordance with Meru Networks, Inc., purchase order number 107001. All tests were conducted using measurement procedure ANSI C63.4-2003.

| FCC Reference                 | Description                                                                                                           | Results   |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------|
| §15.107                       | Conducted Emissions                                                                                                   | Compliant |
| §15.109                       | Radiated Emissions                                                                                                    | Compliant |
| §15.203                       | Antenna Requirements                                                                                                  | Compliant |
| §15.207                       | AC Conducted Emissions 150KHz – 30MHz                                                                                 | Compliant |
| §15.403 (i)                   | 26dB Occupied Bandwidth                                                                                               | Compliant |
| §15.407 (a)(3)                | Conducted Transmitter Output Power                                                                                    | Compliant |
| §15.407 (a)(3)                | Power Spectral Density                                                                                                | Compliant |
| §15.407 (b)(2), (3), (5), (6) | Undesirable Emissions (15.205/15.209 - General Field Strength Limits (Restricted Bands and Radiated Emission Limits)) | Compliant |
| §15.407(f)                    | RF Exposure                                                                                                           | Compliant |
| §15.407(g)                    | Frequency Stability                                                                                                   | Compliant |
| 15.407 (h)(2)(ii)             | Initial Channel Availability Check Time                                                                               | Compliant |
| 15.407 (h)                    | DFS Bandwidth                                                                                                         | Compliant |
| 15.407 (h)(2)(ii)             | Radar Burst at the Beginning of Channel Availability Check Time                                                       | Compliant |
| 15.407 (h)(2)(ii)             | Radar Burst at the End of Channel Availability Check Time                                                             | Compliant |
| 15.407 (h)(2)(iii)            | Channel Move Time and Channel Closing Time                                                                            | Compliant |
| 15.407 (h)(2)(iv)             | Non-Occupancy Period                                                                                                  | Compliant |
| 15.407 (h)(2)                 | Statistical Performance Check                                                                                         | Compliant |

**Table 1. Executive Summary of EMC Part 15.407 Compliance Testing**

## II. Equipment Configuration

## A. Overview

MET Laboratories, Inc. was contracted by Meru Networks, Inc. to perform testing on the Mission Peak (AP822eV2), under Meru Networks, Inc.'s purchase order number 107001.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Meru Networks, Inc. Mission Peak (AP822eV2).

The results obtained relate only to the item(s) tested.

|                                       |                                                         |                                            |  |
|---------------------------------------|---------------------------------------------------------|--------------------------------------------|--|
| <b>Model(s) Tested:</b>               | Mission Peak (AP822eV2)                                 |                                            |  |
| <b>Model(s) Covered:</b>              | Mission Peak (AP822eV2)                                 |                                            |  |
| <b>EUT Specifications:</b>            | Primary Power: 120 VAC, 60 Hz                           |                                            |  |
|                                       | FCC ID: RE7-AP822EV2<br>IC: 6749A-AP822EV               |                                            |  |
|                                       | Type of Modulations:                                    | OFDM, BPSK,QPSK,QAM16,QAM64                |  |
|                                       | Equipment Code:                                         | NII                                        |  |
|                                       | Peak RF Output Power:                                   | 21.84 dBm                                  |  |
|                                       | EUT Frequency Ranges:                                   | 5260 MHz – 5320 MHz<br>5500 MHz – 5700 MHz |  |
| <b>Analysis:</b>                      | The results obtained relate only to the item(s) tested. |                                            |  |
| <b>Environmental Test Conditions:</b> | Temperature: 15-35° C                                   |                                            |  |
|                                       | Relative Humidity: 30-60%                               |                                            |  |
|                                       | Barometric Pressure: 860-1060 mbar                      |                                            |  |
| <b>Evaluated by:</b>                  | Andy Shen                                               |                                            |  |
| <b>Report Date(s):</b>                | January 27, 2015                                        |                                            |  |

**Table 2. EUT Summary**

## B. References

|                                      |                                                                                                                                        |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>CFR 47, Part 15, Subpart B</b>    | Electromagnetic Compatibility: Criteria for Radio Frequency Devices                                                                    |
| <b>CFR 47, Part 15, Subpart E</b>    | Unlicensed National Information Infrastructure Devices (UNII)                                                                          |
| <b>RSS-210, Issue 8, Dec. 2010</b>   | Low-power Licence-exempt Radiocommunications Devices (All Frequency Bands): Category I Equipment                                       |
| <b>RSS-GEN, Issue 3, Dec. 2010</b>   | General Requirements and Information for the Certification of Radio Apparatus                                                          |
| <b>ICES-003, Issue 5 August 2012</b> | Electromagnetic Compatibility: Criteria for Radio Frequency Devices                                                                    |
| <b>ANSI C63.4:2003</b>               | Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical And Electronic Equipment in the Range of 9 kHz to 40 GHz |
| <b>ISO/IEC 17025:2005</b>            | General Requirements for the Competence of Testing and Calibration Laboratories                                                        |
| <b>ANSI C63.10-2009</b>              | American National Standard for Testing Unlicensed Wireless Devices                                                                     |

**Table 3. References**

## C. Test Site

All testing was performed at MET Laboratories, Inc., 3162 Belick Street, Santa Clara, CA 95054. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Radiated Emissions measurements were performed in a 3 meter semi-anechoic chamber (equivalent to an Open Area Test Site). In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories.

## D. Description of Test Sample

The Meru Networks, Inc. Mission Peak (AP822eV2), Equipment Under Test (EUT), is an 802.11AC wireless access point (WAP) that allows wireless devices to connect to a wired network using Wi-Fi, standard. The WAP usually connects to a router (via a wired network), and can relay data between the wireless devices (such as computers or printers) and wired devices on the network. The EUT supports 2.4 GHz and 5 GHz operation.



Photograph 1. Meru Networks, Inc. Mission Peak (AP822eV2)

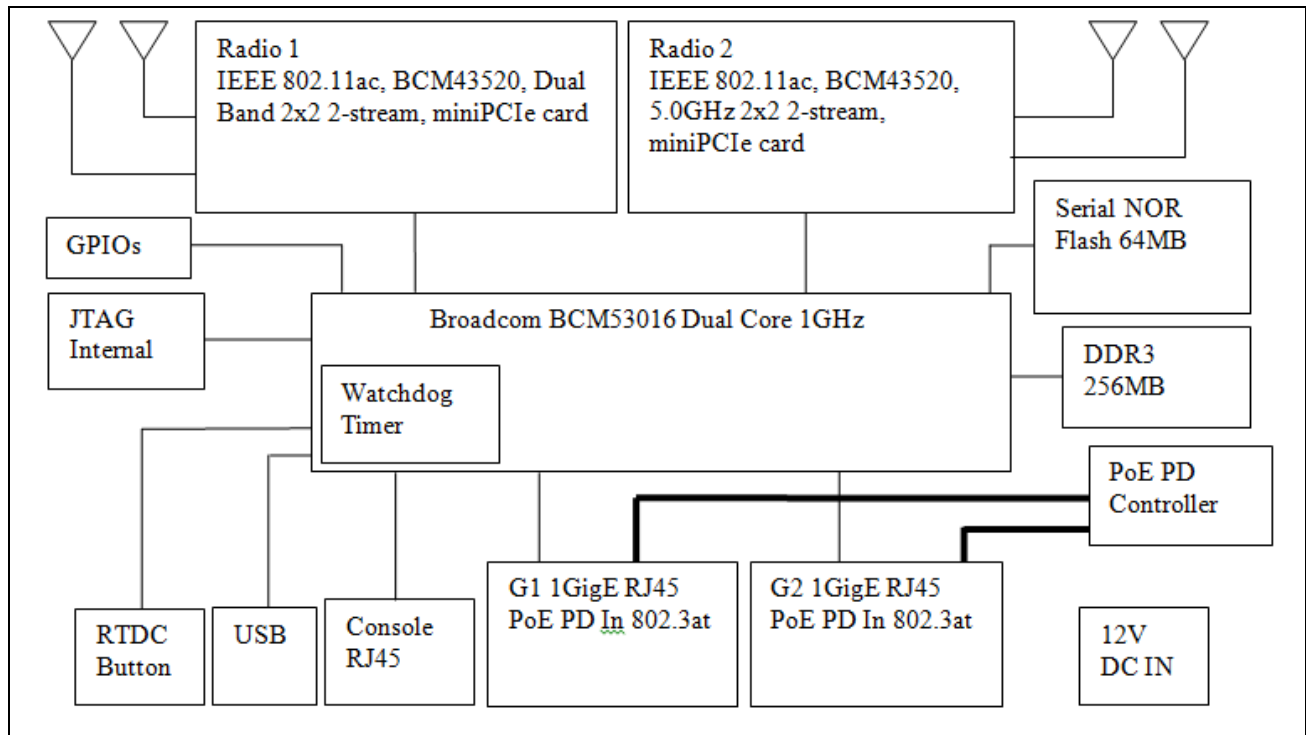


Figure 1. Block Diagram of Test Configuration

## E. Equipment Configuration

The EUT was set up as outlined in Figure 1, Block Diagram of Test Setup. All cards, racks, etc., incorporated as part of the EUT is included in the following list.

| Ref. ID | Name / Description      | Model Number | Serial Number   | Rev. # |
|---------|-------------------------|--------------|-----------------|--------|
| 1       | Dual Radio Access Point | AP822eV2     | 2414B822e16DB56 | Rev 1  |
| 2       | Dual Radio Access Point | AP822eV2     | 2614B822e16DB64 | Rev 1  |

**Table 4. Equipment Configuration**

## F. Support Equipment

Support equipment necessary for the operation and testing of the EUT is included in the following list.

| Ref. ID | Name / Description | Manufacturer | Model Number |
|---------|--------------------|--------------|--------------|
| 1       | PoE                | Power Design | PD-9001GR/AC |
| 2       | Laptop             | IBM          | IBM Thinkpad |

**Table 5. Support Equipment**

| SN | Meru Part Number   | Description                                             | Gain 2.4GHz/5.0GHz |
|----|--------------------|---------------------------------------------------------|--------------------|
| 1  | ANT-ABGN330-W      | Omni Directional Rubber Duck antenna                    | 3/3dBi             |
| 2  | ANT-ABGN460-W      | High Gain Omni Directional Rubber Duck antenna          | 4/6dBi             |
| 3  | ANT-ABGN230-W      | Omni Directional Rubber Duck antenna                    | 2/3dBi             |
| 4  | ANT-I2ABGN-0304-O  | Ceiling mount Omni Directional Antenna                  | 3/4dBi             |
| 5  | ANT-O4ABGN-0607-PT | Dual Band Wall Mount Patch 4-lead Antenna               | 6/7dBi             |
| 6  | ANT-O4ABGN-0606-O  | Outdoor Omni Directional 4-leads Dual Band Antenna      | 6/6dBi             |
| 7  | ANT-ABGN-23        | Dual Band Ceiling mount Omni Directional 3-lead Antenna | 3/4dBi             |
| 8  | ANT-6ABGN-24       | Dual Band Ceiling mount Omni Directional 6-lead Antenna | 2.5/4dBi           |
| 9  | ANT-ABGN47O        | Dual Band High Gain Dipole Omni Directional Antenna     | 4.7/4.7dBi         |
| 10 | ANT-O6ABGN-0606-O  | Dual Band Omni Directional 6-lead Antenna               | 6/6dBi             |
| 11 | ANT-I3ABGN-0304-O  | Dual Band Ceiling mount Omni Directional 3-lead Antenna | 3/4dBi             |
| 12 | ANT-O6ABGN-0607-PT | Dual Band Wall Mount Patch 6-lead Antenna               | 6/7dBi             |

**Table 6. Antenna List**

## G. Ports and Cabling Information

| Ref. ID | Port name on EUT  | Cable Description or reason for no cable | Qty | Length as tested (m) | Max Length (m) | Shielded? (Y/N) | Termination Box ID & Port Name                   |
|---------|-------------------|------------------------------------------|-----|----------------------|----------------|-----------------|--------------------------------------------------|
| 1       | Reset Console     | dB9 Serial cable                         | 1   | 1                    | --             | Yes             | To computer serial port or USB to Serial adapter |
| 2       | G1PoE             | Data and Power Ethernet port             | 1   | 2                    | 10             | YES             | To PoE injector or Ethernet switch               |
| 3       | G2PoE             | Data and Power Ethernet port             | 1   | 2                    | 10             | Yes             | To PoE injector or Ethernet switch               |
| 4       | 12 DC             | 12 DV Audio jack                         | 1   | 1                    | 10             | Yes             | To DC adapter                                    |
| 5       | A1, A3, A4 and A6 | RPSMA to SMA co-axial cable              | 4   | 0.5                  | 1              | Yes             | To power meter or spectrum Analyzer              |

**Table 7. Ports and Cabling Information**

## H. Mode of Operation

During the normal operation the configuration is controlled by the Meru controller which sets the country code, ESSID, Operating frequency band and Channel etc.

## I. Method of Monitoring EUT Operation

During the normal operation with controller Green or Blue LED indication on the Access point indicate the normal operation of the Access point. A Red LED indicates a failure of hardware or software settings.

## J. Modifications

### a) Modifications to EUT

No modifications were made to the EUT.

### b) Modifications to Test Standard

No modifications were made to the test standard.

## K. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to Meru Networks, Inc. upon completion of testing.

### **III. Electromagnetic Compatibility Criteria for Unintentional Radiators**

## Electromagnetic Compatibility Criteria

### § 15.107 Conducted Emissions Limits

**Test Requirement(s):** **15.107 (a)** Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in Table 8. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

**15.107 (b)** For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in Table 8. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals. The lower limit applies at the band edges.

| Frequency range<br>(MHz)                                                                                    | Class A Conducted Limits<br>(dB $\mu$ V) |         | *Class B Conducted<br>Limits (dB $\mu$ V) |         |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------|---------|-------------------------------------------|---------|
|                                                                                                             | Quasi-Peak                               | Average | Quasi-Peak                                | Average |
| * 0.15- 0.45                                                                                                | 79                                       | 66      | 66 - 56                                   | 56 - 46 |
| 0.45 - 0.5                                                                                                  | 79                                       | 66      | 56                                        | 46      |
| 0.5 - 30                                                                                                    | 73                                       | 60      | 60                                        | 50      |
| Note 1 — The lower limit shall apply at the transition frequencies.                                         |                                          |         |                                           |         |
| Note 2 — The limit decreases linearly with the logarithm if the frequency in the range 0.15 MHz to 0.5 MHz. |                                          |         |                                           |         |

**Table 8. Conducted Limits for Radio Frequency Devices calculated from FCC Part 15 Subsections 15.107(a) (b)**

**Test Procedures:** The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. The method of testing, test conditions, and test procedures of ANSI C63.4 were used. The EUT was powered through a 50 $\Omega$ /50 $\mu$ H LISN. An EMI receiver, connected to the measurement port of the LISN, scanned the frequency range from 150 kHz to 30 MHz in order to find the peak conducted emissions. All peak emissions within 6 dB of the limit were re-measured using a quasi-peak and/or average detector as appropriate.

**Test Results:** The EUT was compliant with the Class B requirement(s) of this section. Measured emissions were below applicable limits.

**Test Engineer(s):** Danny Alvendia

**Test Date(s):** 07/28/14

### Conducted Emissions - Voltage, AC Power, Phase Line (120 VAC, 60 Hz), PoE

| Line                             | Freq.<br>(MHz) | QP<br>Amplitude | QP<br>Limit | Delta   | Pass | Average<br>Amplitude | Average<br>Limit | Delta   | Pass |
|----------------------------------|----------------|-----------------|-------------|---------|------|----------------------|------------------|---------|------|
| 42577 Meru PoE Rad_Off<br>120V L | 0.16           | 46.7            | 65.465      | -18.765 | Pass | 35.04                | 55.465           | -20.425 | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 0.2            | 46.06           | 63.617      | -17.557 | Pass | 28                   | 53.617           | -25.617 | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 0.43           | 45.58           | 57.277      | -11.697 | Pass | 36.36                | 47.277           | -10.917 | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 0.45           | 45.59           | 56.9        | -11.31  | Pass | 37.01                | 46.9             | -9.89   | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 23.83          | 46.66           | 60          | -13.34  | Pass | 30.59                | 50               | -19.41  | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 29.93          | 48.46           | 60          | -11.54  | Pass | 32.52                | 50               | -17.48  | Pass |

**Table 9. Conducted Emissions - Voltage, AC Power, Phase Line (120 VAC, 60 Hz), PoE**



**Plot 1. Conducted Emissions, Phase Line, PoE**

### Conducted Emissions - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz), PoE

| Line                             | Freq.<br>(MHz) | QP<br>Amplitude | QP<br>Limit | Delta   | Pass | Average<br>Amplitude | Average<br>Limit | Delta   | Pass |
|----------------------------------|----------------|-----------------|-------------|---------|------|----------------------|------------------|---------|------|
| 42577 Meru PoE Rad_Off<br>120V N | 0.17           | 45.12           | 64.963      | -19.843 | Pass | 29.37                | 54.963           | -25.593 | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 0.44           | 44.77           | 57.086      | -12.316 | Pass | 32.92                | 47.086           | -14.166 | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 16.32          | 46.51           | 60          | -13.49  | Pass | 29.57                | 50               | -20.43  | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 22.04          | 46.42           | 60          | -13.58  | Pass | 27.54                | 50               | -22.46  | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 23.08          | 45.81           | 60          | -14.19  | Pass | 29.23                | 50               | -20.77  | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 29.885         | 47.63           | 60          | -12.37  | Pass | 32.59                | 50               | -17.41  | Pass |

**Table 10. Conducted Emissions - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz), PoE**

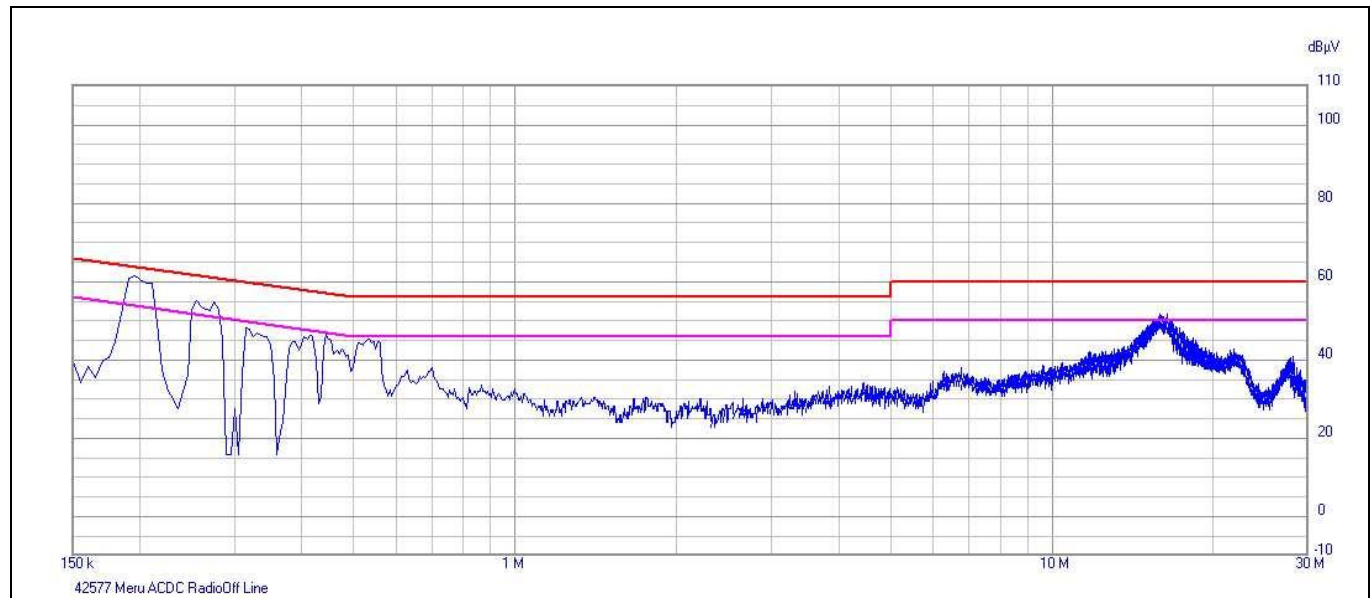


**Plot 2. Conducted Emissions, Neutral Line, PoE**

### Conducted Emissions - Voltage, AC Power, Phase Line (120 VAC, 60 Hz), AC/DC

| Line                       | Freq.<br>(MHz) | QP<br>Amplitude | QP<br>Limit | Delta   | Pass | Average<br>Amplitude | Average<br>Limit | Delta   | Pass |
|----------------------------|----------------|-----------------|-------------|---------|------|----------------------|------------------|---------|------|
| 42577 CEV ACDC RadOff<br>L | 0.195          | 57.81           | 63.827      | -6.017  | Pass | 40.17                | 53.827           | -13.657 | Pass |
| 42577 CEV ACDC RadOff<br>L | 0.255          | 51.09           | 61.605      | -10.515 | Pass | 33.29                | 51.605           | -18.315 | Pass |
| 42577 CEV ACDC RadOff<br>L | 0.315          | 42.22           | 59.854      | -17.634 | Pass | 20.77                | 49.854           | -29.084 | Pass |
| 42577 CEV ACDC RadOff<br>L | 0.445          | 40.87           | 56.993      | -16.123 | Pass | 22.88                | 46.993           | -24.113 | Pass |
| 42577 CEV ACDC RadOff<br>L | 14.47          | 46.73           | 60          | -13.27  | Pass | 37.42                | 50               | -12.58  | Pass |
| 42577 CEV ACDC RadOff<br>L | 15.785         | 46.88           | 60          | -13.12  | Pass | 39.03                | 50               | -10.97  | Pass |

**Table 11. Conducted Emissions - Voltage, AC Power, Phase Line (120 VAC, 60 Hz), AC/DC**



**Plot 3. Conducted Emissions, Phase Line, AC/DC**

### Conducted Emissions - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz), AC/DC

| Line                       | Freq.<br>(MHz) | QP<br>Amplitude | QP<br>Limit | Delta   | Pass | Average<br>Amplitude | Average<br>Limit | Delta   | Pass |
|----------------------------|----------------|-----------------|-------------|---------|------|----------------------|------------------|---------|------|
| 42577 CEV ACDC RadOff<br>N | 0.205          | 56.12           | 63.413      | -7.293  | Pass | 33.83                | 53.413           | -19.583 | Pass |
| 42577 CEV ACDC RadOff<br>N | 0.26           | 50              | 61.444      | -11.444 | Pass | 23.09                | 51.444           | -28.354 | Pass |
| 42577 CEV ACDC RadOff<br>N | 0.27           | 49.45           | 61.131      | -11.681 | Pass | 23.09                | 51.131           | -28.041 | Pass |
| 42577 CEV ACDC RadOff<br>N | 0.32           | 40.09           | 59.724      | -19.634 | Pass | 23.6                 | 49.724           | -26.124 | Pass |
| 42577 CEV ACDC RadOff<br>N | 0.46           | 35.09           | 56.712      | -21.622 | Pass | 25.81                | 46.712           | -20.902 | Pass |
| 42577 CEV ACDC RadOff<br>N | 16.07          | 38.45           | 60          | -21.55  | Pass | 24.43                | 50               | -25.57  | Pass |

Table 12. Conducted Emissions - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz), AC/DC

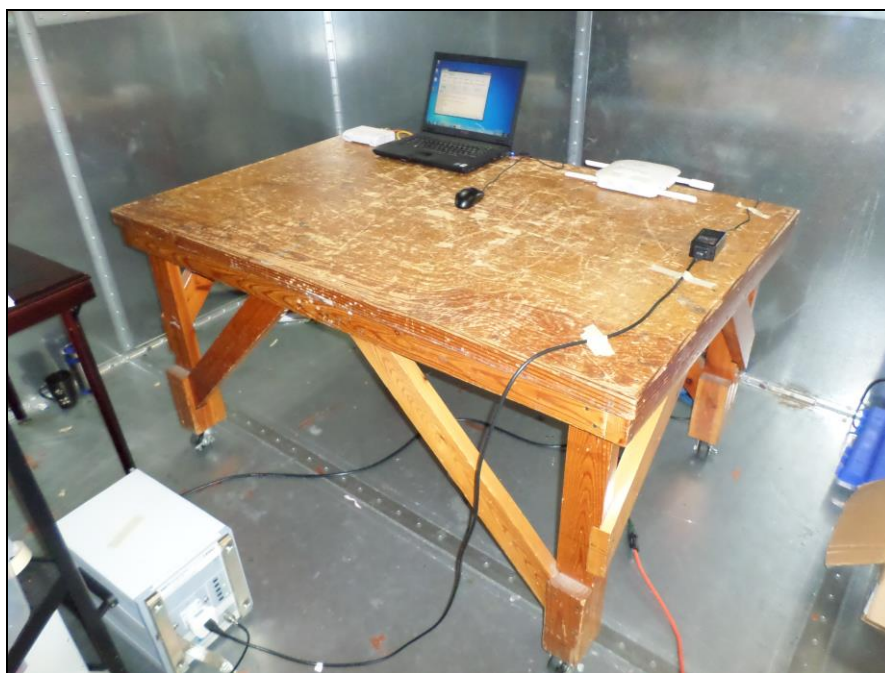


Plot 4. Conducted Emissions, Neutral Line, AC/DC

## Conducted Emission Limits Test Setup



**Photograph 2. Conducted Emissions, Test Setup, PoE**



**Photograph 3. Conducted Emissions, Test Setup, AC/DC**

## Radiated Emission Limits

### § 15.109 Radiated Emissions Limits

**Test Requirement(s):** **15.109 (a)** Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the Class B limits expressed in Table 13.

**15.109 (b)** The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the Class A limits expressed in Table 13.

| Frequency (MHz) | Field Strength (dB $\mu$ V/m)                    |                                                 |
|-----------------|--------------------------------------------------|-------------------------------------------------|
|                 | §15.109 (b), Class A Limit<br>(dB $\mu$ V) @ 10m | §15.109 (a), Class B Limit<br>(dB $\mu$ V) @ 3m |
| 30 - 88         | 39.00                                            | 40.00                                           |
| 88 - 216        | 43.50                                            | 43.50                                           |
| 216 - 960       | 46.40                                            | 46.00                                           |
| Above 960       | 49.50                                            | 54.00                                           |

**Table 13. Radiated Emissions Limits calculated from FCC Part 15, §15.109 (a) (b)**

**Test Procedures:** The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. The method of testing and test conditions of ANSI C63.4 were used. An antenna was located 3 m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. Unless otherwise specified, measurements were made using a quasi-peak detector with a 120 kHz bandwidth.

**Test Results:** The EUT was compliant with the Class B requirement(s) of this section. Measured emissions were below applicable limits.

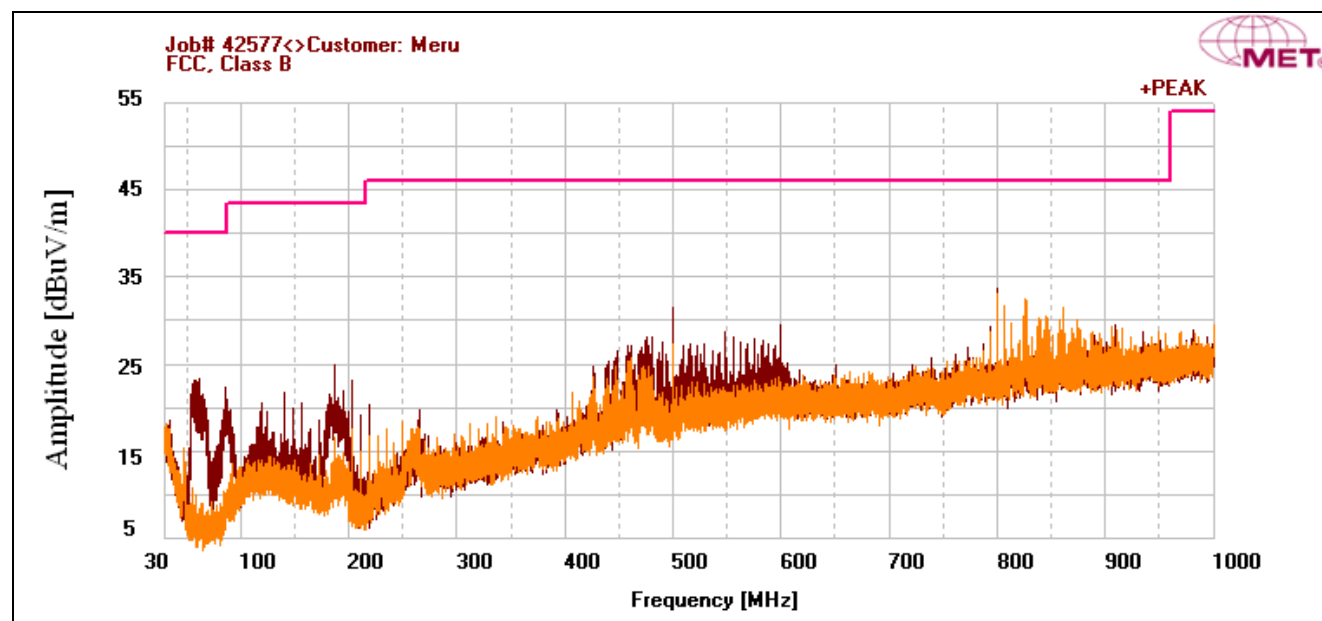
**Test Engineer(s):** Andy Shen

**Test Date(s):** 07/24/14

## Radiated Emissions Limits Test Results, Class B, PoE

| Frequency (MHz) | Antenna Polarity | EUT Azimuth (Degrees) | Antenna Height (cm) | Uncorrected Amplitude (dBμV) | ACF (dB/m) | Pre Amp Gain (dB) | CBL (dB) | DCF (dB) | Corrected Amplitude (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------|-----------------------|---------------------|------------------------------|------------|-------------------|----------|----------|------------------------------|----------------|-------------|
| 187             | H                | 79                    | 130.11              | 9.1                          | 9.52       | 0                 | 2.43     | 0        | 21.05                        | 43.5           | -22.45      |
| 495.84          | V                | 173                   | 100                 | 5.63                         | 16.935     | 0                 | 3.999    | 0        | 26.564                       | 46             | -19.436     |
| 500.02          | H                | 267                   | 181.41              | 5.66                         | 17.01      | 0                 | 4.017    | 0        | 26.687                       | 46             | -19.313     |
| 800             | H                | 169                   | 115.8               | 8.67                         | 19.67      | 0                 | 5.182    | 0        | 33.522                       | 46             | -12.478     |
| 806.78          | V                | 46                    | 100                 | 5.63                         | 19.758     | 0                 | 5.204    | 0        | 30.592                       | 46             | -15.408     |
| 825.94          | V                | 20                    | 100                 | 1.78                         | 20.177     | 0                 | 5.267    | 0        | 27.224                       | 46             | -18.776     |

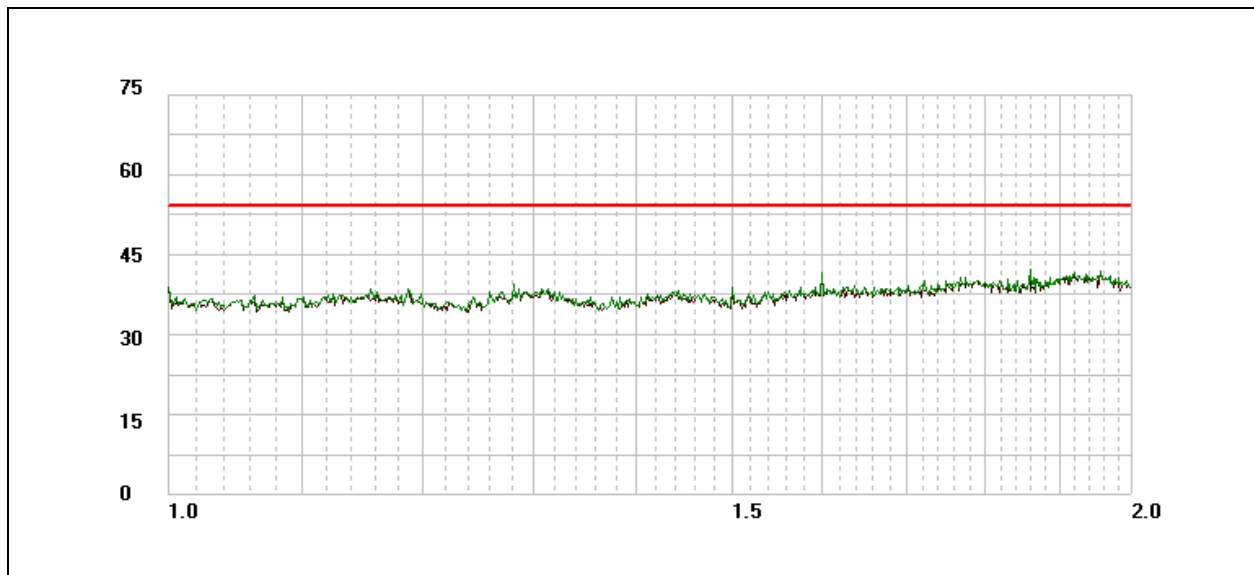
Table 14. Radiated Emissions Limits, Test Results, 30 MHz – 1 GHz, PoE



Plot 5. Radiated Emissions, 30 MHz – 1 GHz, PoE

| Frequency (MHz) | Antenna Polarity | EUT Azimuth (Degrees) | Antenna Height (cm) | Uncorrected Amplitude (dBμV) | ACF (dB/m) | Pre Amp Gain (dB) | CBL (dB) | DCF (dB) | Corrected Amplitude (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------|-----------------------|---------------------|------------------------------|------------|-------------------|----------|----------|------------------------------|----------------|-------------|
| 1189            | H                | 104                   | 160.23              | 29.03                        | 28.507     | 33.471            | 0        | 0        | 24.066                       | 54             | -29.934     |
| 1282.5          | V                | 133                   | 215.88              | 29.61                        | 28.722     | 33.431            | 0        | 0        | 24.901                       | 54             | -29.099     |
| 1594.367        | V                | 120                   | 114.94              | 30.2                         | 28.955     | 33.3              | 0        | 0        | 25.855                       | 54             | -28.145     |
| 1860            | H                | 17                    | 100                 | 29.14                        | 30.816     | 33.189            | 0        | 0        | 26.767                       | 54             | -27.233     |
| 1924            | V                | 73                    | 100                 | 30.44                        | 31.174     | 33.162            | 0        | 0        | 28.452                       | 54             | -25.548     |
| 1956            | H                | 0                     | 100                 | 29.79                        | 31.354     | 33.148            | 0        | 0        | 27.996                       | 54             | -26.004     |

**Table 15. Radiated Emissions Limits, Test Results, 1 GHz – 2 GHz, PoE**

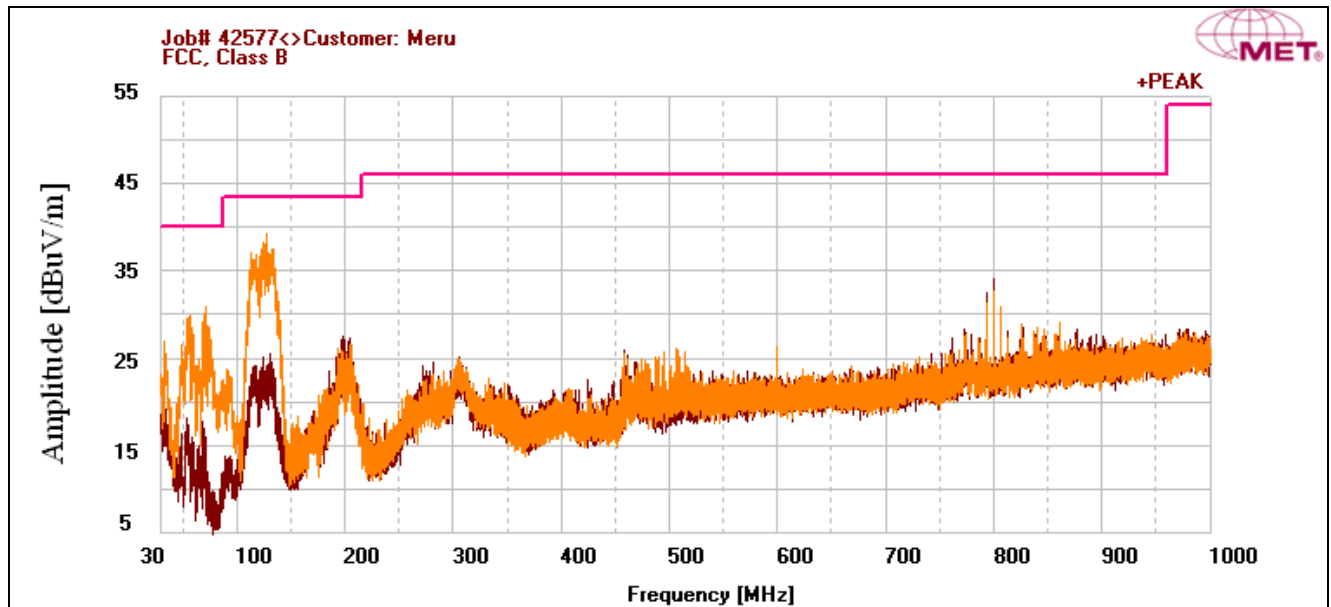


**Plot 6. Radiated Emissions, 1 GHz – 2 GHz, PoE**

## Radiated Emissions Limits Test Results, Class B, AC/DC

| Frequency (MHz) | Antenna Polarity | EUT Azimuth (Degrees) | Antenna Height (cm) | Uncorrected Amplitude (dBμV) | ACF (dB/m) | Pre Amp Gain (dB) | CBL (dB) | DCF (dB) | Corrected Amplitude (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------|-----------------------|---------------------|------------------------------|------------|-------------------|----------|----------|------------------------------|----------------|-------------|
| 71.385          | V                | 151                   | 169.7               | 13.92                        | 6.801      | 0                 | 1.477    | 0        | 22.198                       | 40             | -17.802     |
| 131.229         | V                | 283                   | 125.7               | 13.92                        | 12.479     | 0                 | 2.021    | 0        | 28.42                        | 43.5           | -15.08      |
| 600.018         | V                | 191                   | 100                 | 1.56                         | 18.82      | 0                 | 4.486    | 0        | 24.866                       | 46             | -21.134     |
| 793.23          | H                | 269                   | 100.11              | 5.61                         | 19.792     | 0                 | 5.156    | 0        | 30.558                       | 46             | -15.442     |
| 800.01          | H                | 264                   | 103.88              | 9.16                         | 19.67      | 0                 | 5.182    | 0        | 34.012                       | 46             | -11.988     |
| 806.74          | H                | 270                   | 100.11              | 3.77                         | 19.758     | 0                 | 5.204    | 0        | 28.732                       | 46             | -17.268     |

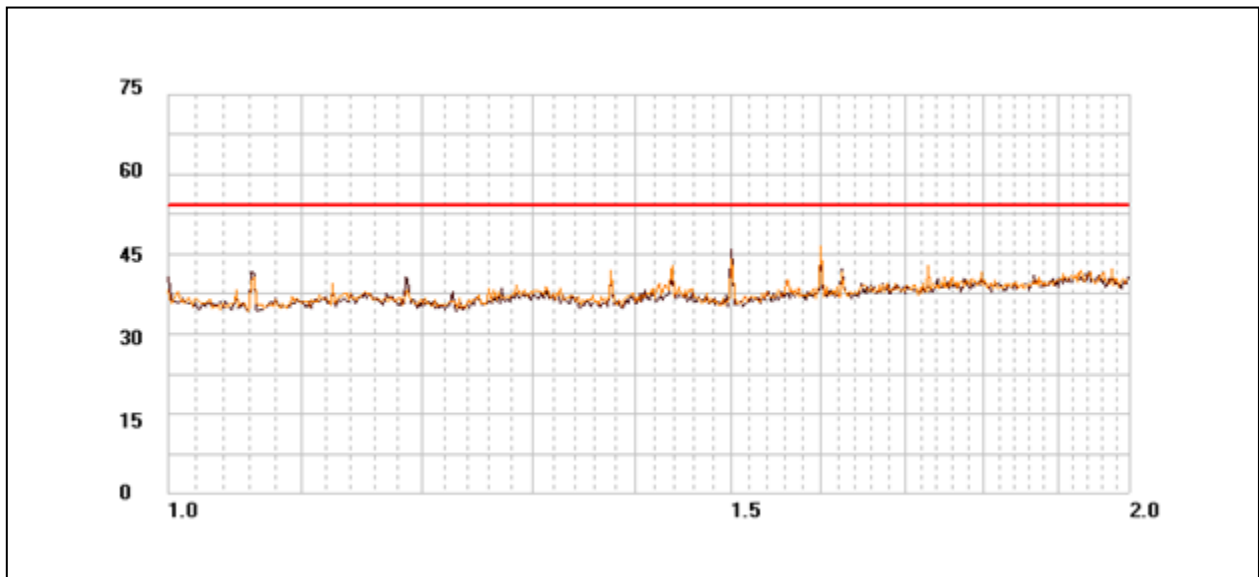
Table 16. Radiated Emissions Limits, Test Results, 30 MHz – 1 GHz, AC/DC



Plot 7. Radiated Emissions, 30 MHz – 1 GHz, AC/DC

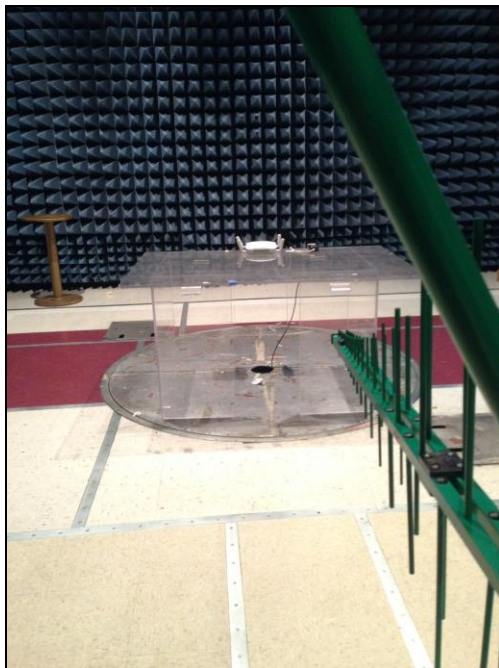
| Frequency (MHz) | Antenna Polarity | EUT Azimuth (Degrees) | Antenna Height (cm) | Uncorrected Amplitude (dBμV) | ACF (dB/m) | Pre Amp Gain (dB) | CBL (dB) | DCF (dB) | Corrected Amplitude (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------|-----------------------|---------------------|------------------------------|------------|-------------------|----------|----------|------------------------------|----------------|-------------|
| 1062.667        | H                | 0                     | 167.17              | 45.04                        | 27.901     | 33.524            | 0        | 0        | 39.417                       | 54             | -14.583     |
| 1375.133        | H                | 37                    | 130.05              | 38.25                        | 28.5       | 33.392            | 0        | 0        | 33.358                       | 54             | -20.642     |
| 1500.267        | H                | 99                    | 137.52              | 47.17                        | 28.202     | 33.34             | 0        | 0        | 42.032                       | 54             | -11.968     |
| 1625.333        | V                | 154                   | 198.29              | 46.69                        | 29.203     | 33.287            | 0        | 0        | 42.606                       | 54             | -11.394     |
| 1625.333        | H                | 169                   | 128.58              | 43.51                        | 29.203     | 33.287            | 0        | 0        | 39.426                       | 54             | -14.574     |
| 1750.5          | V                | 0                     | 128.11              | 43.42                        | 30.203     | 33.235            | 0        | 0        | 40.388                       | 54             | -13.612     |

Table 17. Radiated Emissions Limits, Test Results, 1 GHz – 2 GHz, AC/DC

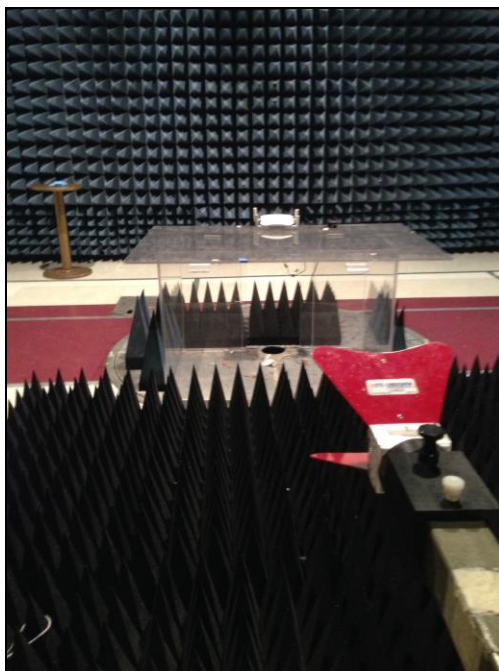


Plot 8. Radiated Emissions, 1 GHz – 2 GHz, AC/DC

## Radiated Emissions Limits Test Setup



**Photograph 4. Radiated Emissions, Test Setup, 30 MHz – 1 GHz**



**Photograph 5. Radiated Emissions, Test Setup, 1 GHz – 2 GHz**

## **IV. Electromagnetic Compatibility Criteria for Intentional Radiators**

## Electromagnetic Compatibility Criteria for Intentional Radiators

### § 15.203 Antenna Requirement

**Test Requirement:** § 15.203: 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 permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The structure and application of the EUT were analyzed to determine compliance with Section 15.203 of the Rules. Section 15.203 states that the subject device must meet at least one of the following criteria:

- a.) Antenna must be permanently attached to the unit.
- b.) Antenna must use a unique type of connector to attach to the EUT.
- c.) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

**Results:** The EUT as tested is compliant the criteria of §15.203 because the EUT is professionally installed.

**Test Engineer(s):** Andy Shen

**Test Date(s):** 07/26/14

| SN | Meru Part Number   | Description                                             | Gain 2.4GHz/5.0GHz |
|----|--------------------|---------------------------------------------------------|--------------------|
| 1  | ANT-ABGN33O-W      | Omni Directional Rubber Duck antenna                    | 3/3dBi             |
| 2  | ANT-ABGN46O-W      | High Gain Omni Directional Rubber Duck antenna          | 4/6dBi             |
| 3  | ANT-ABGN23O-W      | Omni Directional Rubber Duck antenna                    | 2/3dBi             |
| 4  | ANT-I2ABGN-0304-O  | Ceiling mount Omni Directional Antenna                  | 3/4dBi             |
| 5  | ANT-O4ABGN-0607-PT | Dual Band Wall Mount Patch 4-lead Antenna               | 6/7dBi             |
| 6  | ANT-O4ABGN-0606-O  | Outdoor Omni Directional 4-leads Dual Band Antenna      | 6/6dBi             |
| 7  | ANT-ABGN-23        | Dual Band Ceiling mount Omni Directional 3-lead Antenna | 3/4dBi             |
| 8  | ANT-6ABGN-24       | Dual Band Ceiling mount Omni Directional 6-lead Antenna | 2.5/4dBi           |
| 9  | ANT-ABGN47O        | Dual Band High Gain Dipole Omni Directional Antenna     | 4.7/4.7dBi         |
| 10 | ANT-O6ABGN-0606-O  | Dual Band Omni Directional 6-lead Antenna               | 6/6dBi             |
| 11 | ANT-I3ABGN-0304-O  | Dual Band Ceiling mount Omni Directional 3-lead Antenna | 3/4dBi             |
| 12 | ANT-O6ABGN-0607-PT | Dual Band Wall Mount Patch 6-lead Antenna               | 6/7dBi             |

**Table 18. Antenna List**

## Electromagnetic Compatibility Criteria for Intentional Radiators

### § 15.207 Conducted Emissions Limits

**Test Requirement(s):** § 15.207 (a): For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30MHz, shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50  $\Sigma$  line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

| Frequency range<br>(MHz) | § 15.207(a), Conducted Limit (dB $\mu$ V) |         |
|--------------------------|-------------------------------------------|---------|
|                          | Quasi-Peak                                | Average |
| * 0.15- 0.45             | 66 - 56                                   | 56 - 46 |
| 0.45 - 0.5               | 56                                        | 46      |
| 0.5 - 30                 | 60                                        | 50      |

**Table 19. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)**

**Test Procedure:** The EUT was placed on a 0.8m high wooden table inside a screen room. The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered from a 50  $\Omega$ /50  $\mu$ H Line Impedance Stabilization Network (LISN). The EMC receiver scanned the frequency range from 150 kHz to 30 MHz. Conducted Emissions measurements were made in accordance with ANSI C63.4-2003 "Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz". The measurements were performed over the frequency range of 0.15 MHz to 30 MHz using a 50  $\Omega$ /50  $\mu$ H LISN as the input transducer to an EMC/field intensity meter. For the purpose of this testing, the transmitter was turned on. Scans were performed with the transmitter on.

**Test Results:** The EUT was compliant with this requirement.

**Test Engineer(s):** Danny Alvendia

**Test Date(s):** 07/28/14

### Conducted Emissions 15.207(a) - Voltage, AC Power, Phase Line (120 VAC, 60 Hz), PoE

| Line                             | Freq.<br>(MHz) | QP<br>Amplitude | QP<br>Limit | Delta   | Pass | Average<br>Amplitude | Average<br>Limit | Delta   | Pass |
|----------------------------------|----------------|-----------------|-------------|---------|------|----------------------|------------------|---------|------|
| 42577 Meru PoE Rad_Off<br>120V L | 0.16           | 46.7            | 65.465      | -18.765 | Pass | 35.04                | 55.465           | -20.425 | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 0.2            | 46.06           | 63.617      | -17.557 | Pass | 28                   | 53.617           | -25.617 | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 0.43           | 45.58           | 57.277      | -11.697 | Pass | 36.36                | 47.277           | -10.917 | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 0.45           | 45.59           | 56.9        | -11.31  | Pass | 37.01                | 46.9             | -9.89   | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 23.83          | 46.66           | 60          | -13.34  | Pass | 30.59                | 50               | -19.41  | Pass |
| 42577 Meru PoE Rad_Off<br>120V L | 29.93          | 48.46           | 60          | -11.54  | Pass | 32.52                | 50               | -17.48  | Pass |

**Table 20. Conducted Emissions - Voltage, AC Power, 15.207(a), Phase Line (120 VAC, 60 Hz), PoE**



**Plot 9. Conducted Emissions, 15.207(a), Phase Line, PoE**

### Conducted Emissions 15.207(a) - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz), PoE

| Line                             | Freq.<br>(MHz) | QP<br>Amplitude | QP<br>Limit | Delta   | Pass | Average<br>Amplitude | Average<br>Limit | Delta   | Pass |
|----------------------------------|----------------|-----------------|-------------|---------|------|----------------------|------------------|---------|------|
| 42577 Meru PoE Rad_Off<br>120V N | 0.17           | 45.12           | 64.963      | -19.843 | Pass | 29.37                | 54.963           | -25.593 | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 0.44           | 44.77           | 57.086      | -12.316 | Pass | 32.92                | 47.086           | -14.166 | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 16.32          | 46.51           | 60          | -13.49  | Pass | 29.57                | 50               | -20.43  | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 22.04          | 46.42           | 60          | -13.58  | Pass | 27.54                | 50               | -22.46  | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 23.08          | 45.81           | 60          | -14.19  | Pass | 29.23                | 50               | -20.77  | Pass |
| 42577 Meru PoE Rad_Off<br>120V N | 29.885         | 47.63           | 60          | -12.37  | Pass | 32.59                | 50               | -17.41  | Pass |

Table 21. Conducted Emissions - Voltage, AC Power, 15.207(a), Neutral Line (120 VAC, 60 Hz), PoE

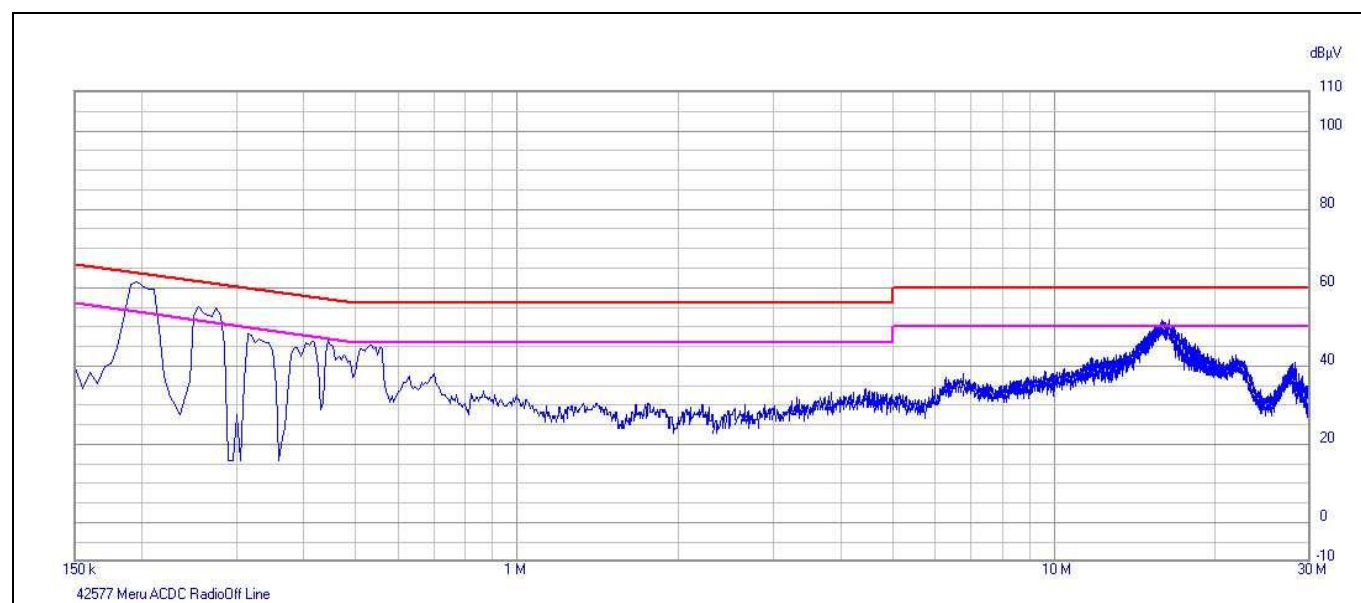


Plot 10. Conducted Emissions, 15.207(a), Neutral Line, PoE

### Conducted Emissions 15.207(a) - Voltage, AC Power, Phase Line (120 VAC, 60 Hz), AC/DC

| Line                       | Freq.<br>(MHz) | QP<br>Amplitude | QP<br>Limit | Delta   | Pass | Average<br>Amplitude | Average<br>Limit | Delta   | Pass |
|----------------------------|----------------|-----------------|-------------|---------|------|----------------------|------------------|---------|------|
| 42577 CEV ACDC RadOff<br>L | 0.195          | 57.81           | 63.827      | -6.017  | Pass | 40.17                | 53.827           | -13.657 | Pass |
| 42577 CEV ACDC RadOff<br>L | 0.255          | 51.09           | 61.605      | -10.515 | Pass | 33.29                | 51.605           | -18.315 | Pass |
| 42577 CEV ACDC RadOff<br>L | 0.315          | 42.22           | 59.854      | -17.634 | Pass | 20.77                | 49.854           | -29.084 | Pass |
| 42577 CEV ACDC RadOff<br>L | 0.445          | 40.87           | 56.993      | -16.123 | Pass | 22.88                | 46.993           | -24.113 | Pass |
| 42577 CEV ACDC RadOff<br>L | 14.47          | 46.73           | 60          | -13.27  | Pass | 37.42                | 50               | -12.58  | Pass |
| 42577 CEV ACDC RadOff<br>L | 15.785         | 46.88           | 60          | -13.12  | Pass | 39.03                | 50               | -10.97  | Pass |

Table 22. Conducted Emissions - Voltage, AC Power, 15.207(a), Phase Line (120 VAC, 60 Hz), AC/DC



Plot 11. Conducted Emissions, 15.207(a), Phase Line, AC/DC

### Conducted Emissions 15.207(a) - Voltage, AC Power, Neutral Line (120 VAC, 60 Hz), AC/DC

| Line                       | Freq.<br>(MHz) | QP<br>Amplitude | QP<br>Limit | Delta   | Pass | Average<br>Amplitude | Average<br>Limit | Delta   | Pass |
|----------------------------|----------------|-----------------|-------------|---------|------|----------------------|------------------|---------|------|
| 42577 CEV ACDC RadOff<br>N | 0.205          | 56.12           | 63.413      | -7.293  | Pass | 33.83                | 53.413           | -19.583 | Pass |
| 42577 CEV ACDC RadOff<br>N | 0.26           | 50              | 61.444      | -11.444 | Pass | 23.09                | 51.444           | -28.354 | Pass |
| 42577 CEV ACDC RadOff<br>N | 0.27           | 49.45           | 61.131      | -11.681 | Pass | 23.09                | 51.131           | -28.041 | Pass |
| 42577 CEV ACDC RadOff<br>N | 0.32           | 40.09           | 59.724      | -19.634 | Pass | 23.6                 | 49.724           | -26.124 | Pass |
| 42577 CEV ACDC RadOff<br>N | 0.46           | 35.09           | 56.712      | -21.622 | Pass | 25.81                | 46.712           | -20.902 | Pass |
| 42577 CEV ACDC RadOff<br>N | 16.07          | 38.45           | 60          | -21.55  | Pass | 24.43                | 50               | -25.57  | Pass |

Table 23. Conducted Emissions - Voltage, AC Power, 15.207(a), Neutral Line (120 VAC, 60 Hz), AC/DC



Plot 12. Conducted Emissions, 15.207(a), Neutral Line, AC/DC

## Electromagnetic Compatibility Criteria for Intentional Radiators

### § 15.403(i) 26dB Bandwidth

**Test Requirements:** § 15.403 (i): For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

**Test Procedure:** The transmitter was set to low, mid and high channels at the highest output power and connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using a RBW approximately equal to 1% of the total emission bandwidth, VBW > RBW. The 26 dB Bandwidth was measured and recorded.

**Test Results** The 26 dB Bandwidth was compliant with the requirements of this section and was determined from the plots on the following pages.

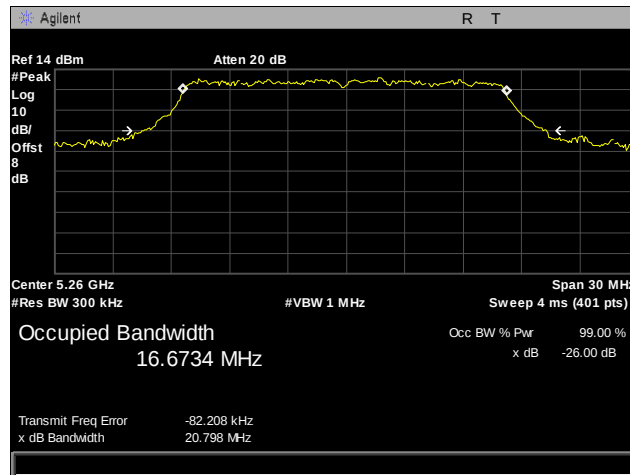
**Test Engineer(s):** Benjamin Taylor

**Test Date(s):** 09/05/14

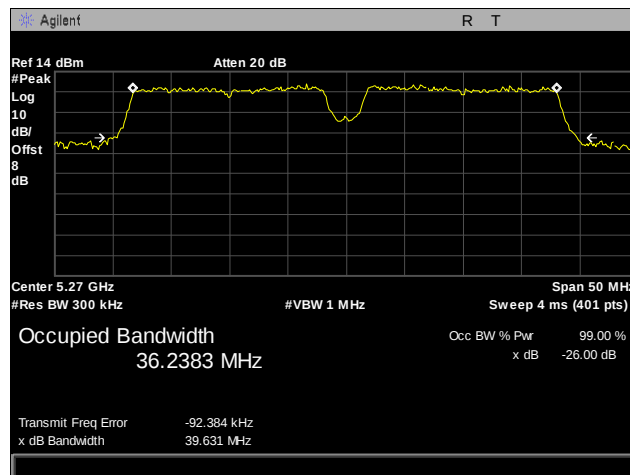


Figure 2. Occupied Bandwidth, Test Setup

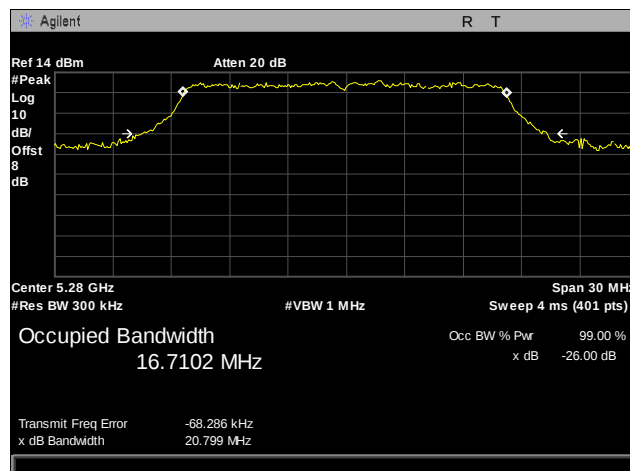
## 26 dB Occupied Bandwidth, 802.11a



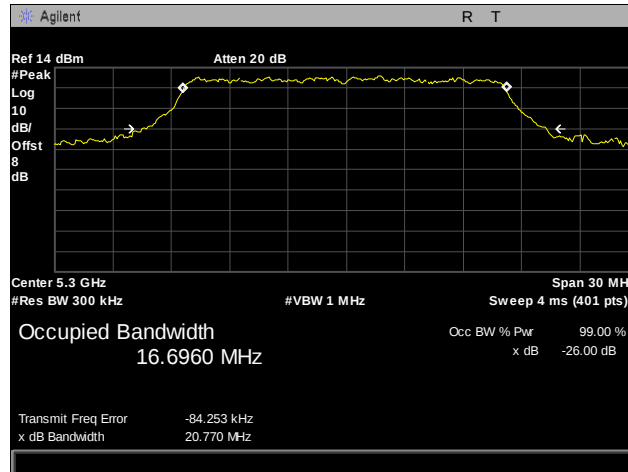
Plot 13. 26 dB Occupied Bandwidth, 802.11a, 5260 MHz



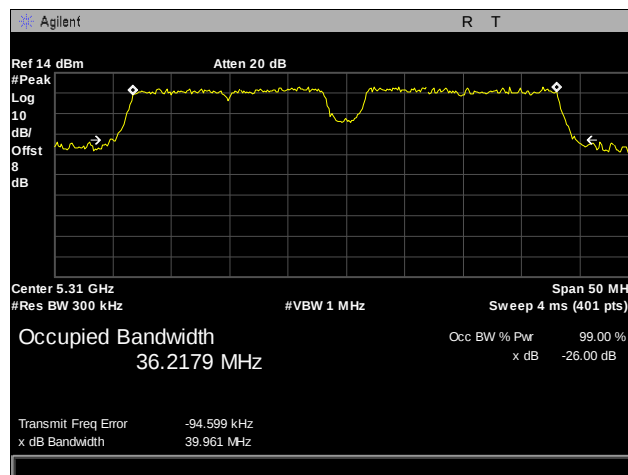
Plot 14. 26 dB Occupied Bandwidth, 802.11a, 5270 MHz



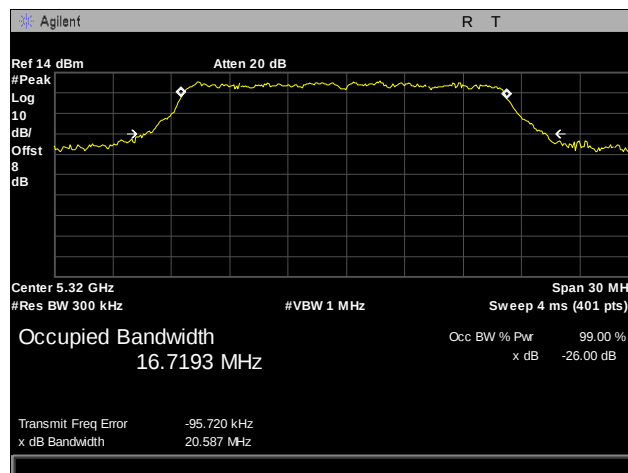
Plot 15. 26 dB Occupied Bandwidth, 802.11a, 5280 MHz



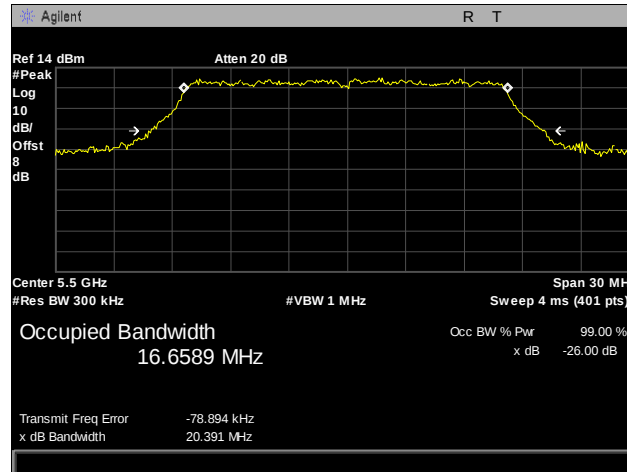
Plot 16. 26 dB Occupied Bandwidth, 802.11a, 5300 MHz



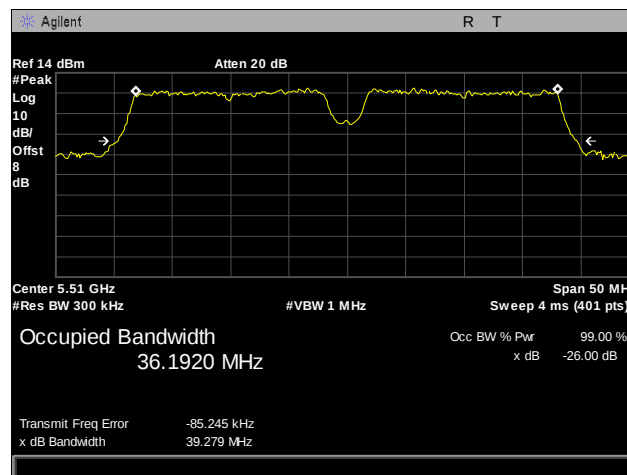
Plot 17. 26 dB Occupied Bandwidth, 802.11a, 5310 MHz



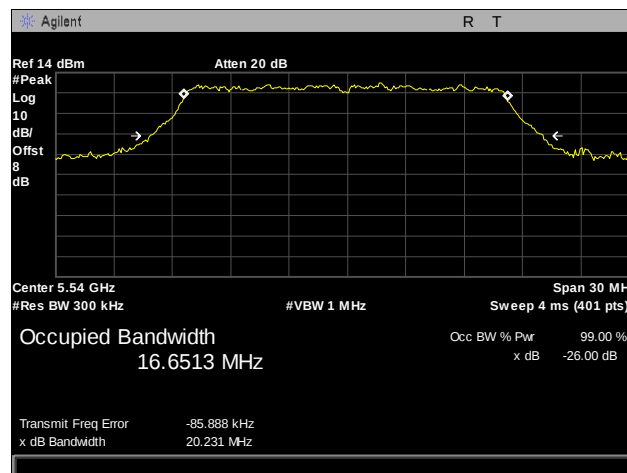
Plot 18. 26 dB Occupied Bandwidth, 802.11a, 5320 MHz



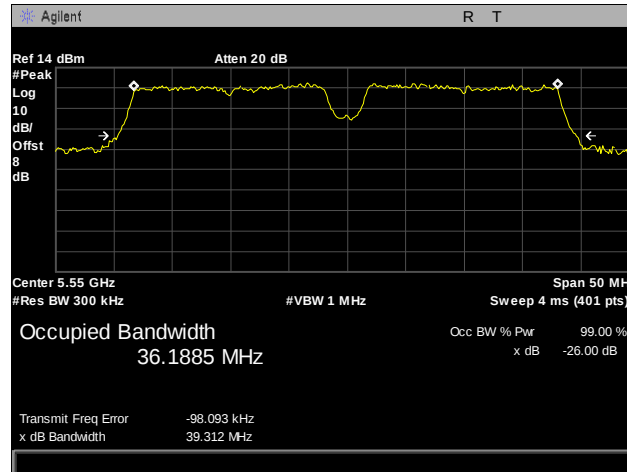
Plot 19. 26 dB Occupied Bandwidth, 802.11a, 5500 MHz



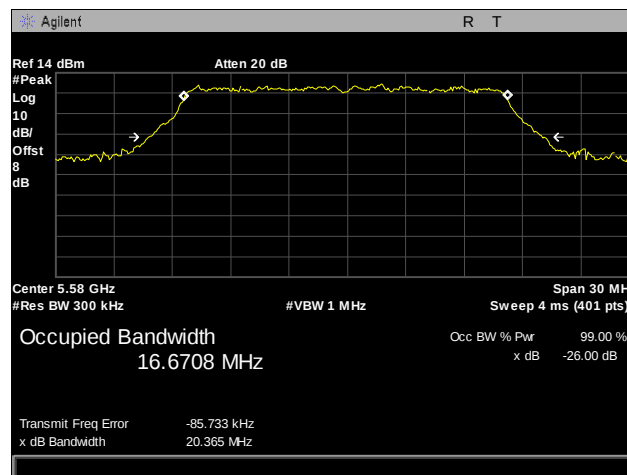
Plot 20. 26 dB Occupied Bandwidth, 802.11a, 5510 MHz



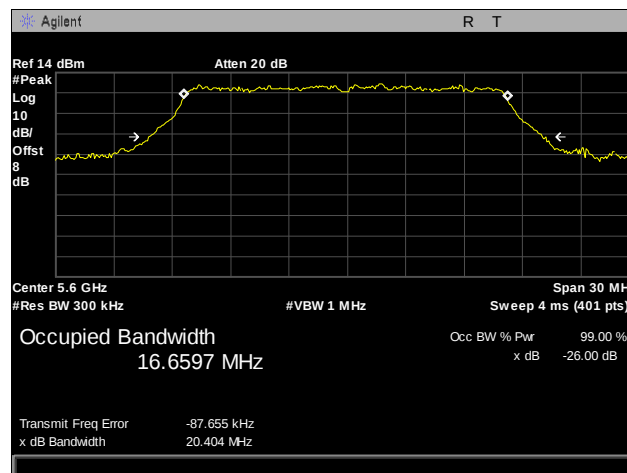
Plot 21. 26 dB Occupied Bandwidth, 802.11a, 5540 MHz



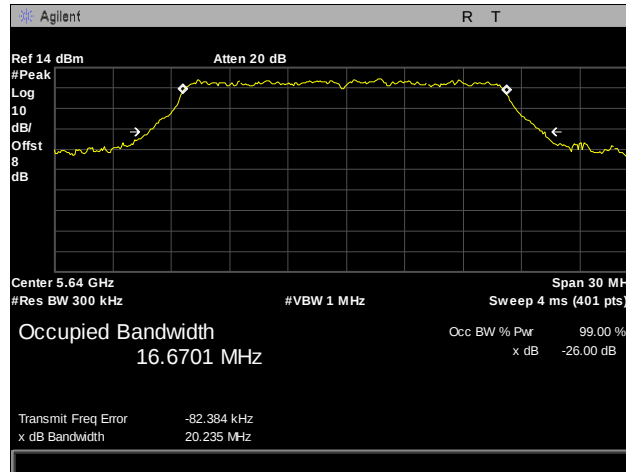
Plot 22. 26 dB Occupied Bandwidth, 802.11a, 5550 MHz



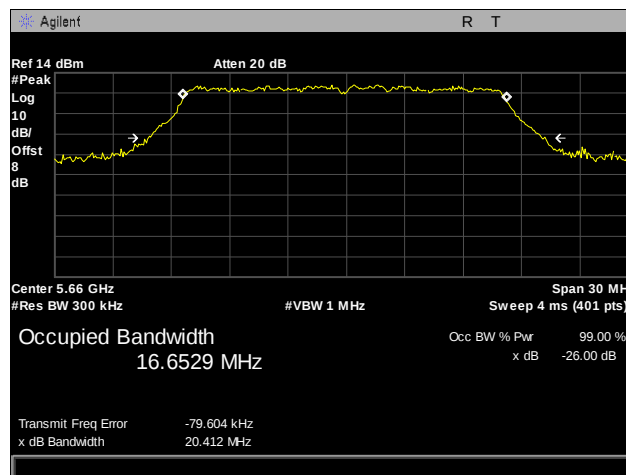
Plot 23. 26 dB Occupied Bandwidth, 802.11a, 5580 MHz



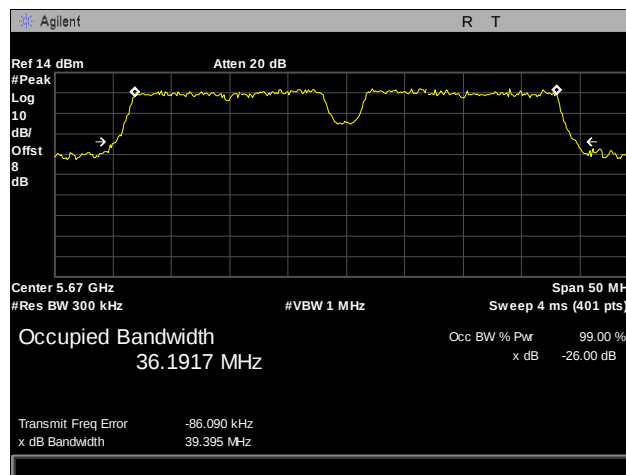
Plot 24. 26 dB Occupied Bandwidth, 802.11a, 5600 MHz



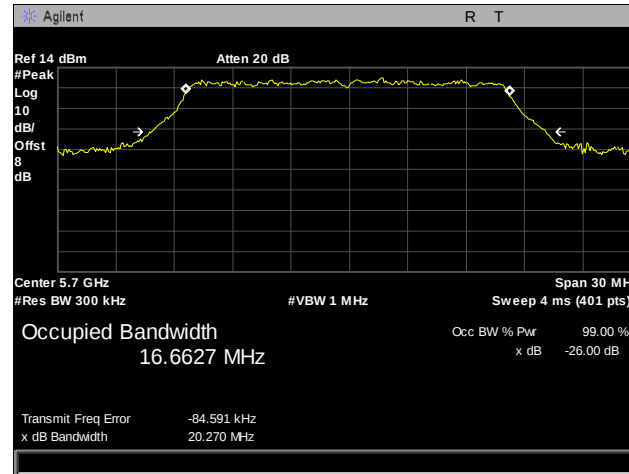
Plot 25. 26 dB Occupied Bandwidth, 802.11a, 5640 MHz



Plot 26. 26 dB Occupied Bandwidth, 802.11a, 5660 MHz

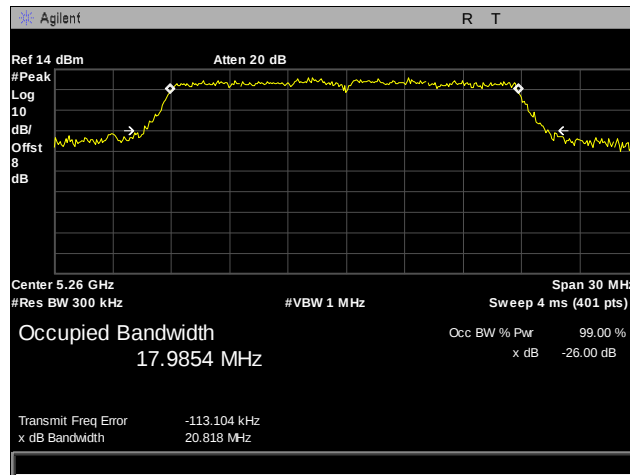


Plot 27. 26 dB Occupied Bandwidth, 802.11a, 5670 MHz

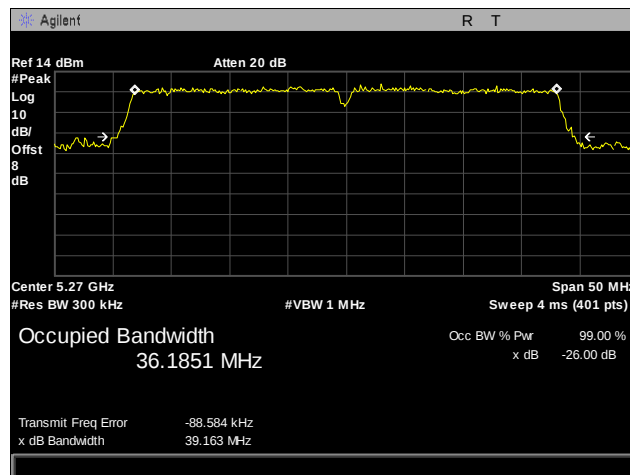


Plot 28. 26 dB Occupied Bandwidth, 802.11a, 5700 MHz

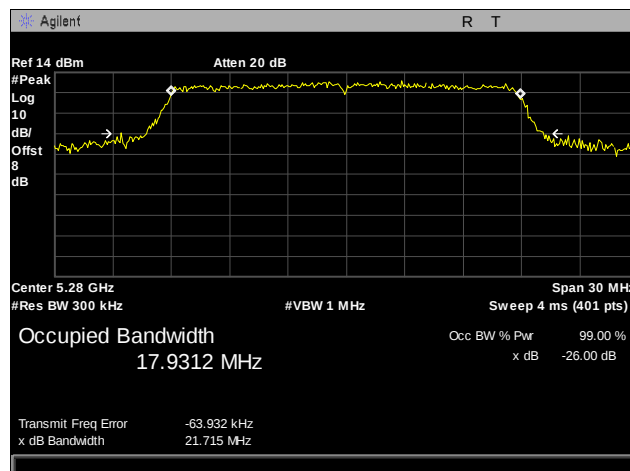
## 26 dB Occupied Bandwidth, 802.11n, Port 1



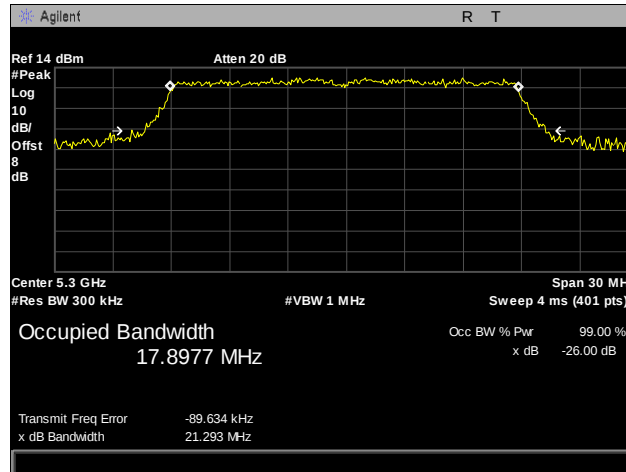
Plot 29. 26 dB Occupied Bandwidth, 802.11n, 5260 MHz, Port 1



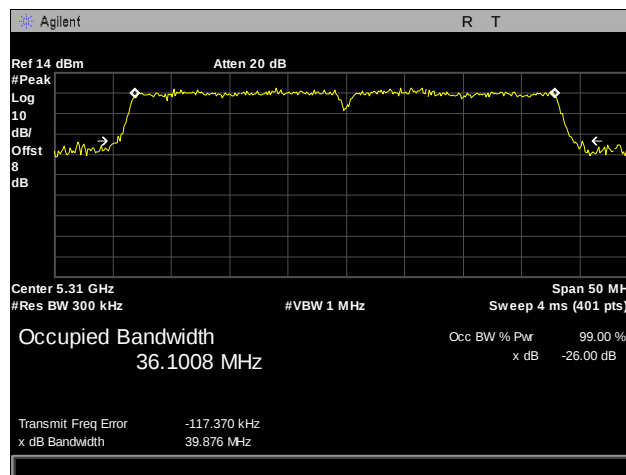
Plot 30. 26 dB Occupied Bandwidth, 802.11n, 5270 MHz, Port 1



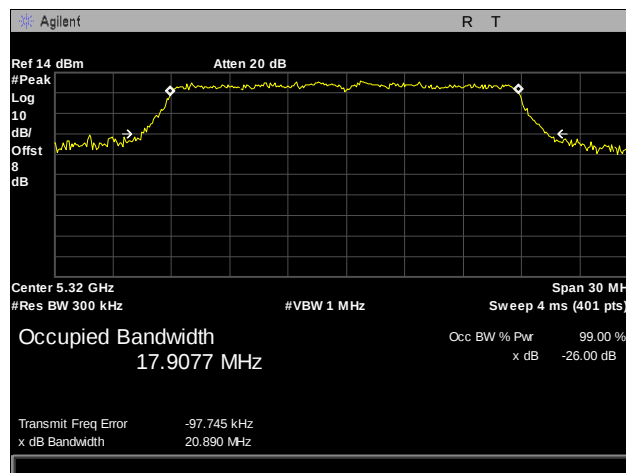
Plot 31. 26 dB Occupied Bandwidth, 802.11n, 5280 MHz, Port 1



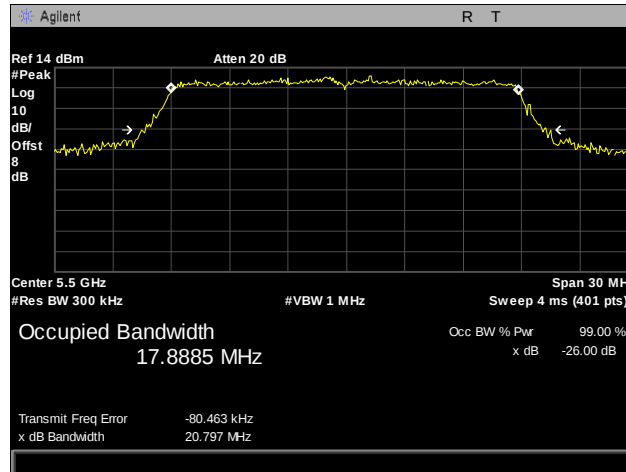
Plot 32. 26 dB Occupied Bandwidth, 802.11n, 5300 MHz, Port 1



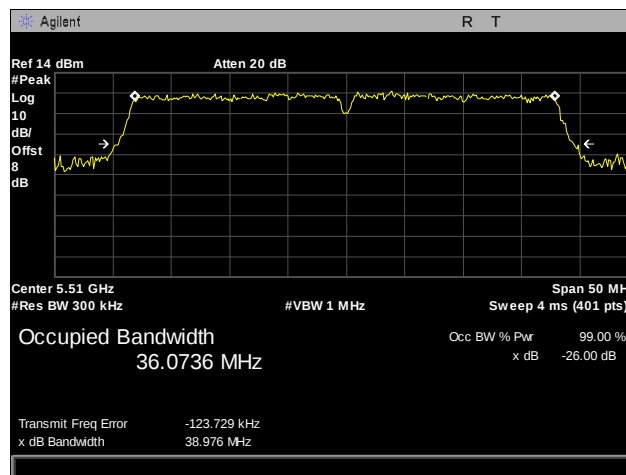
Plot 33. 26 dB Occupied Bandwidth, 802.11n, 5310 MHz, Port 1



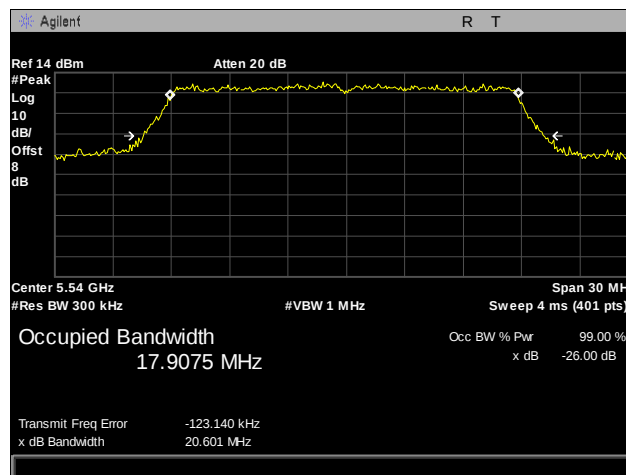
Plot 34. 26 dB Occupied Bandwidth, 802.11n, 5320 MHz, Port 1



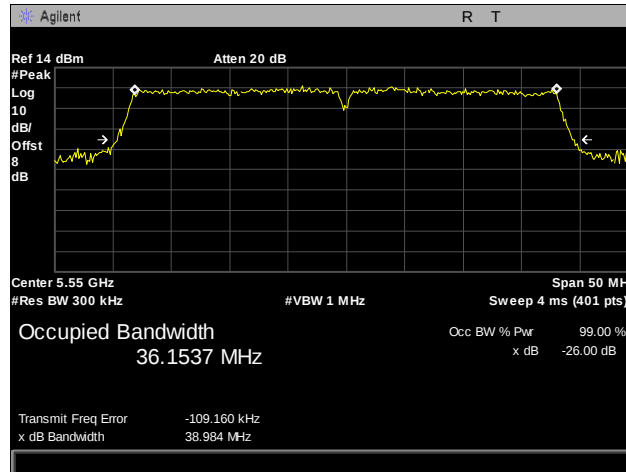
Plot 35. 26 dB Occupied Bandwidth, 802.11n, 5500 MHz, Port 1



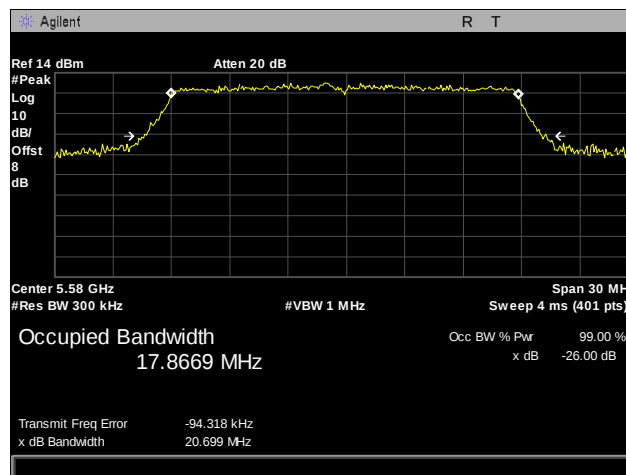
Plot 36. 26 dB Occupied Bandwidth, 802.11n, 5510 MHz, Port 1



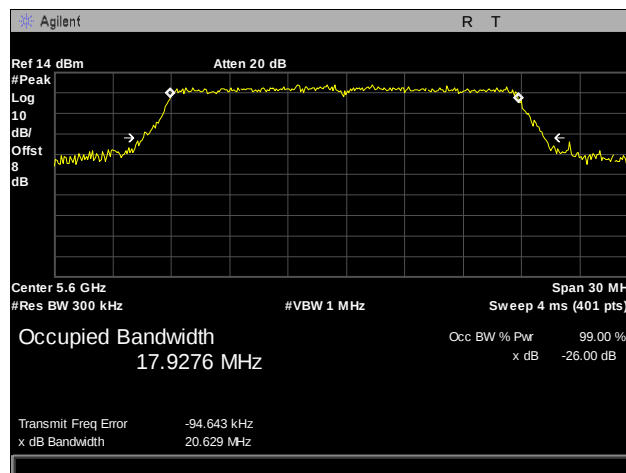
Plot 37. 26 dB Occupied Bandwidth, 802.11n, 5540 MHz, Port 1



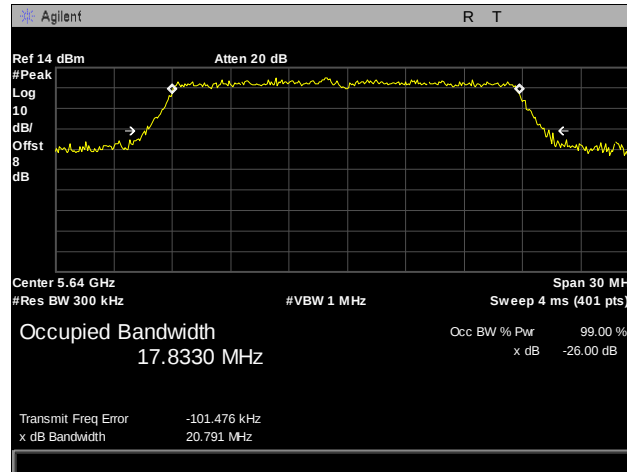
Plot 38. 26 dB Occupied Bandwidth, 802.11n, 5550 MHz, Port 1



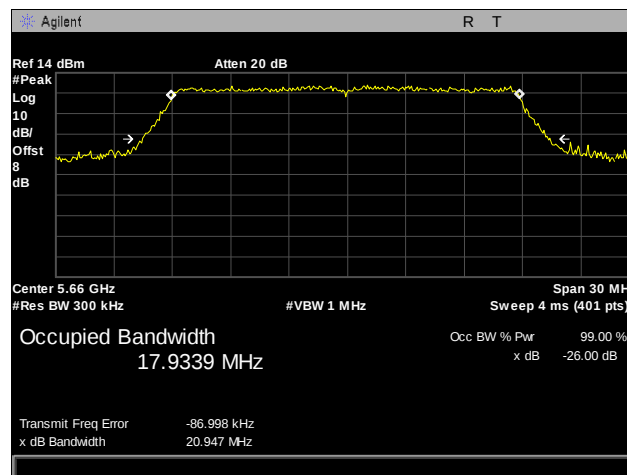
Plot 39. 26 dB Occupied Bandwidth, 802.11n, 5580 MHz, Port 1



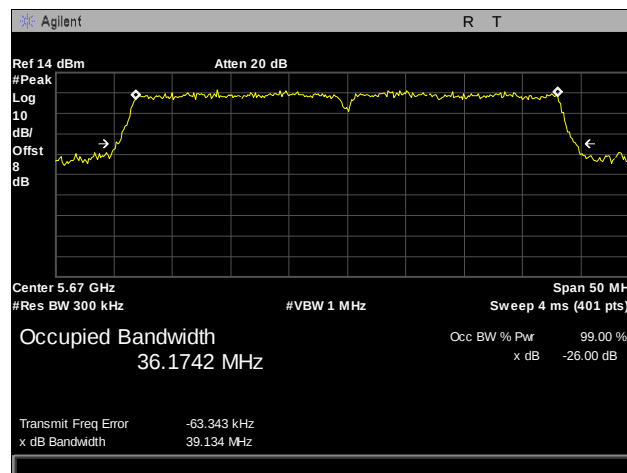
Plot 40. 26 dB Occupied Bandwidth, 802.11n, 5600 MHz, Port 1



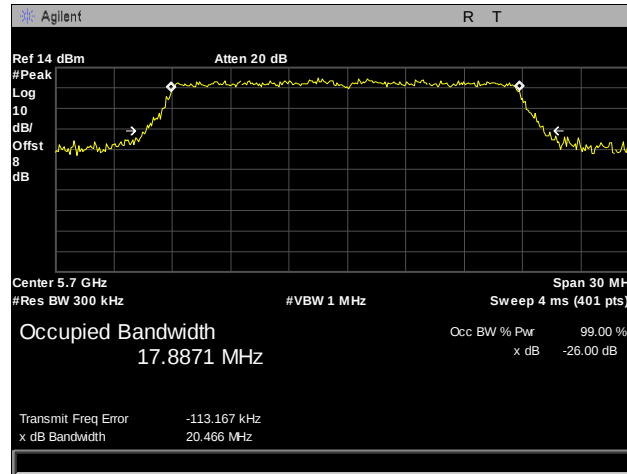
Plot 41. 26 dB Occupied Bandwidth, 802.11n, 5640 MHz, Port 1



Plot 42. 26 dB Occupied Bandwidth, 802.11n, 5660 MHz, Port 1

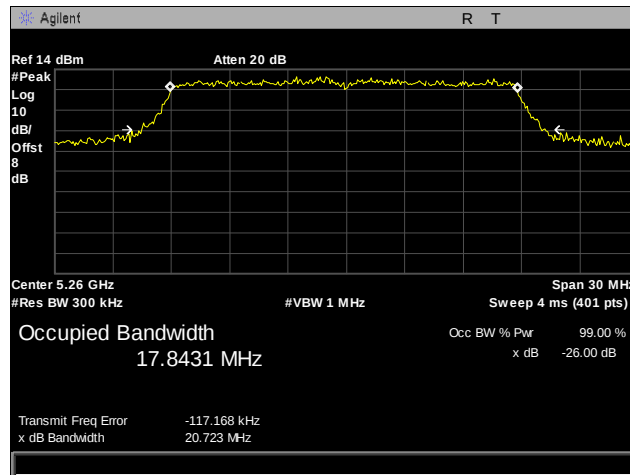


Plot 43. 26 dB Occupied Bandwidth, 802.11n, 5670 MHz, Port 1

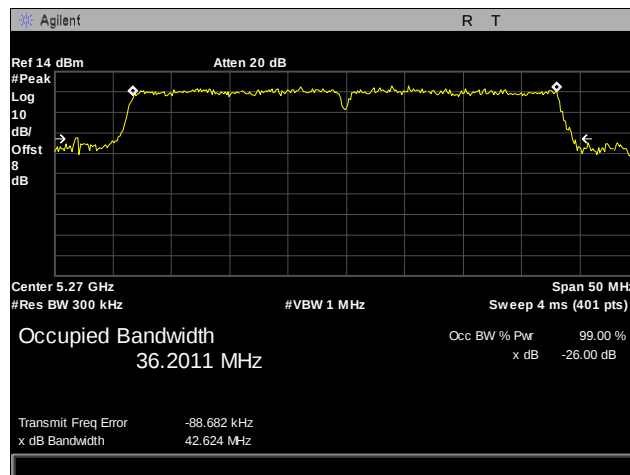


Plot 44. 26 dB Occupied Bandwidth, 802.11n, 5700 MHz, Port 1

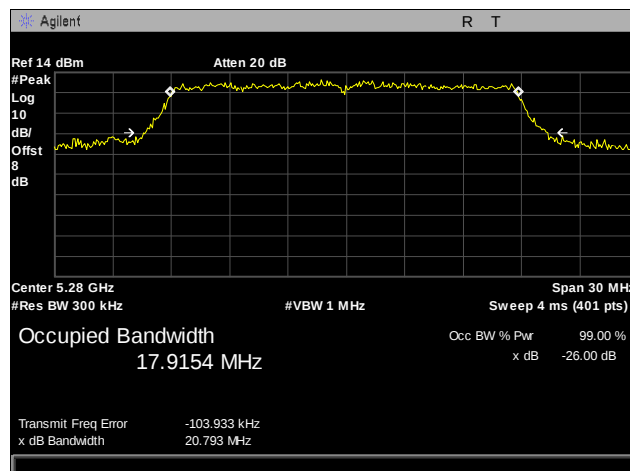
## 26 dB Occupied Bandwidth, 802.11n, Port 2



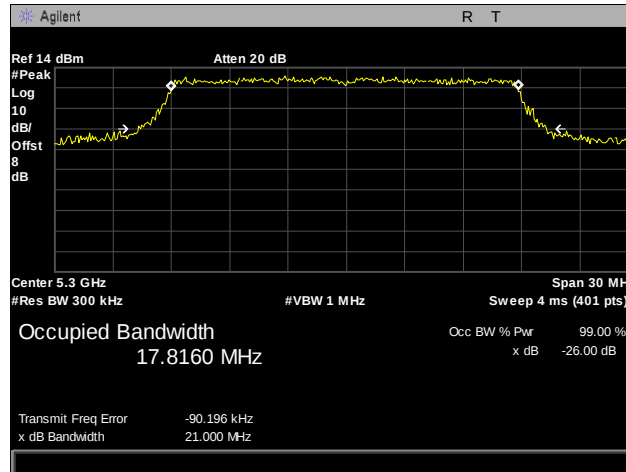
Plot 45. 26 dB Occupied Bandwidth, 802.11n, 5260 MHz, Port 2



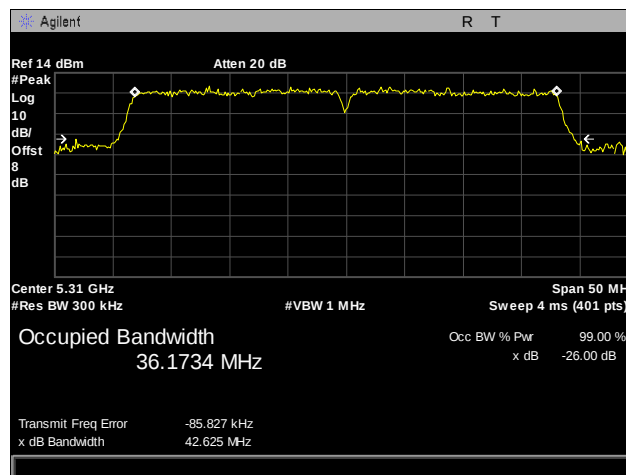
Plot 46. 26 dB Occupied Bandwidth, 802.11n, 5270 MHz, Port 2



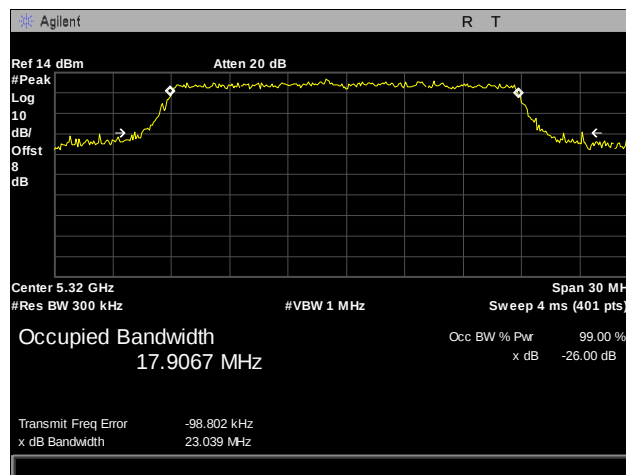
Plot 47. 26 dB Occupied Bandwidth, 802.11n, 5280 MHz, Port 2



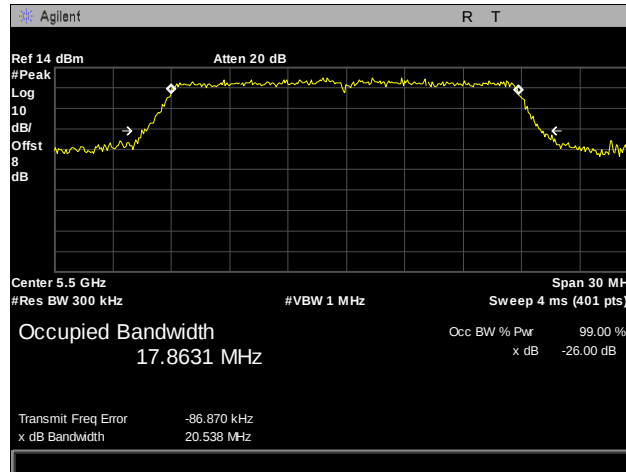
Plot 48. 26 dB Occupied Bandwidth, 802.11n, 5300 MHz, Port 2



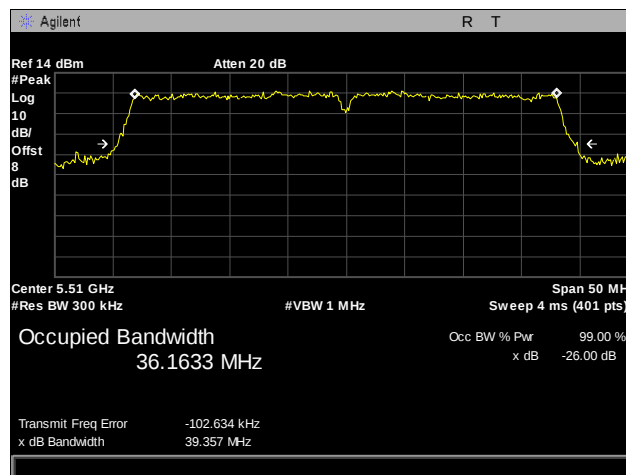
Plot 49. 26 dB Occupied Bandwidth, 802.11n, 5310 MHz, Port 2



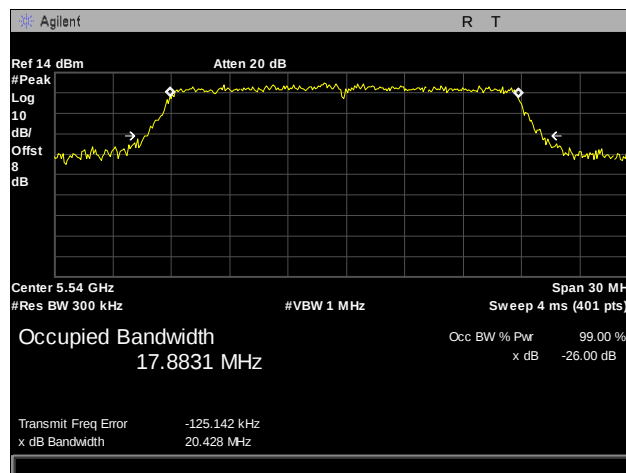
Plot 50. 26 dB Occupied Bandwidth, 802.11n, 5320 MHz, Port 2



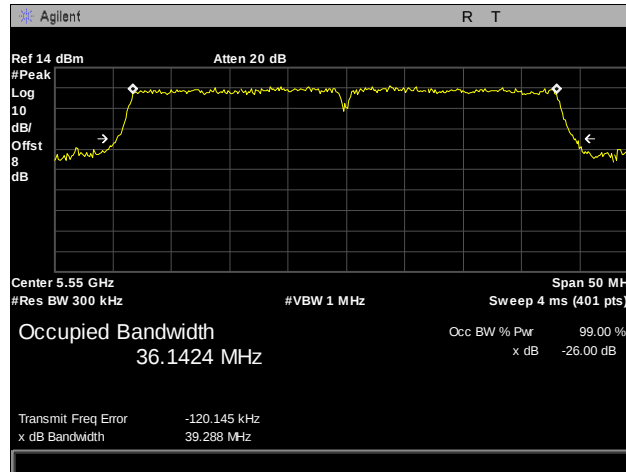
Plot 51. 26 dB Occupied Bandwidth, 802.11n, 5500 MHz, Port 2



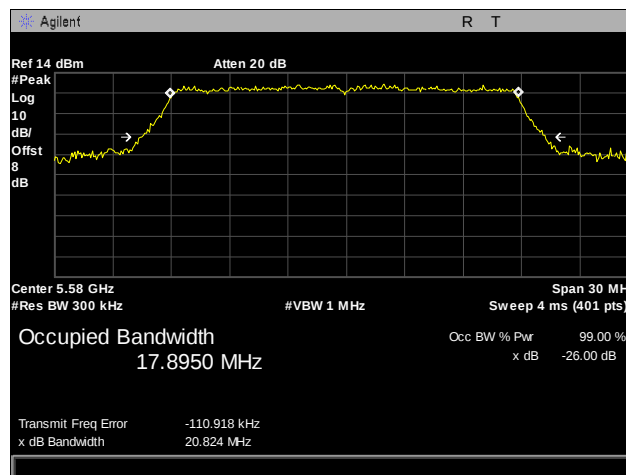
Plot 52. 26 dB Occupied Bandwidth, 802.11n, 5510 MHz, Port 2



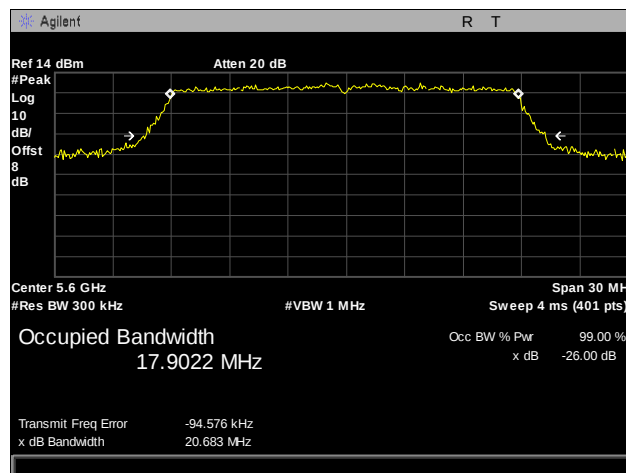
Plot 53. 26 dB Occupied Bandwidth, 802.11n, 5540 MHz, Port 2



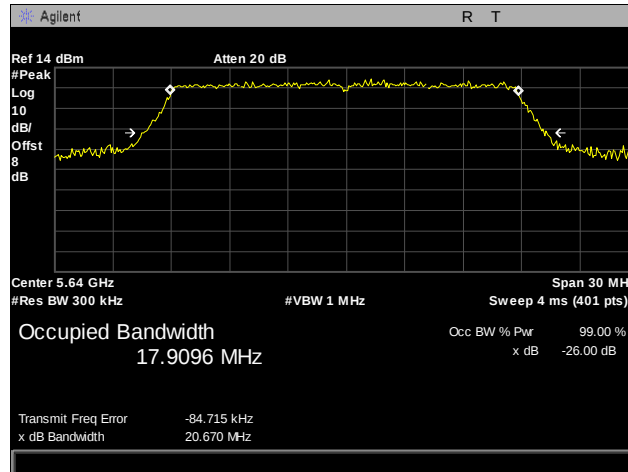
Plot 54. 26 dB Occupied Bandwidth, 802.11n, 5550 MHz, Port 2



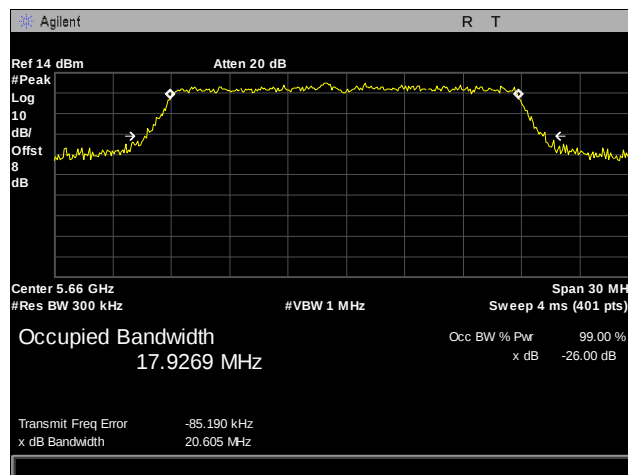
Plot 55. 26 dB Occupied Bandwidth, 802.11n, 5580 MHz, Port 2



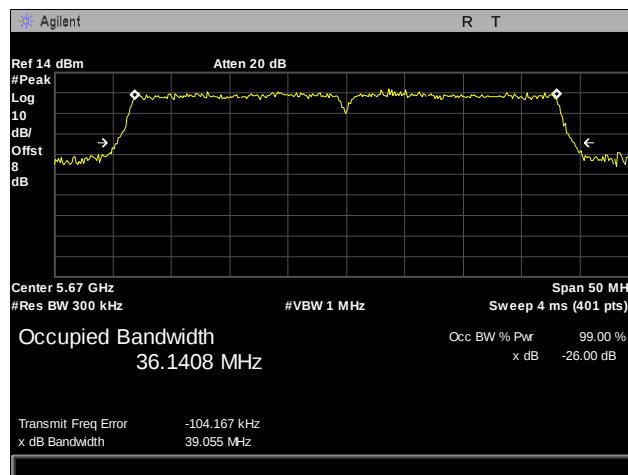
Plot 56. 26 dB Occupied Bandwidth, 802.11n, 5600 MHz, Port 2



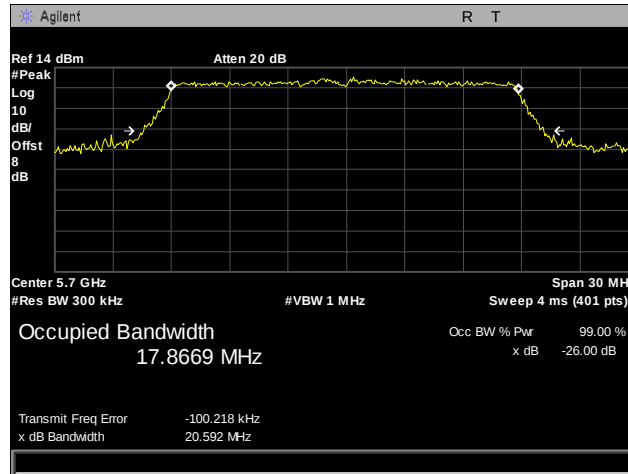
Plot 57. 26 dB Occupied Bandwidth, 802.11n, 5640 MHz, Port 2



Plot 58. 26 dB Occupied Bandwidth, 802.11n, 5660 MHz, Port 2

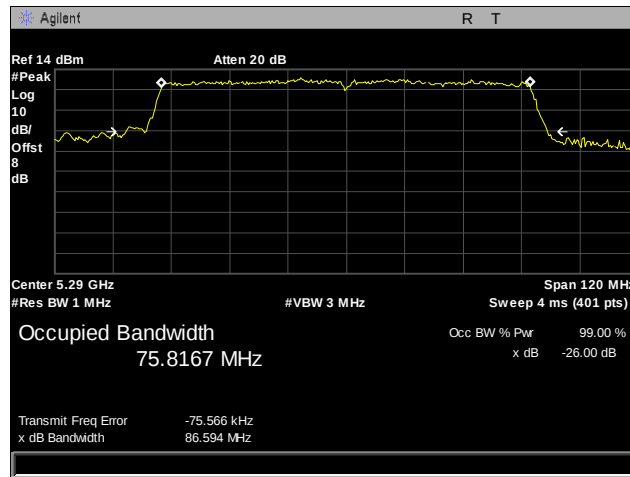


Plot 59. 26 dB Occupied Bandwidth, 802.11n, 5670 MHz, Port 2

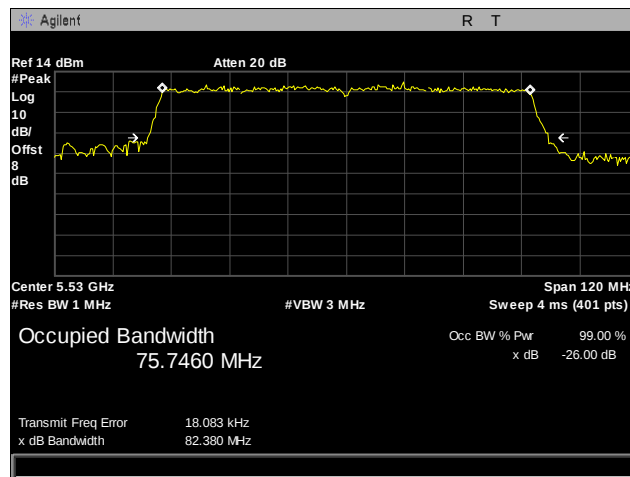


Plot 60. 26 dB Occupied Bandwidth, 802.11n, 5700 MHz, Port 2

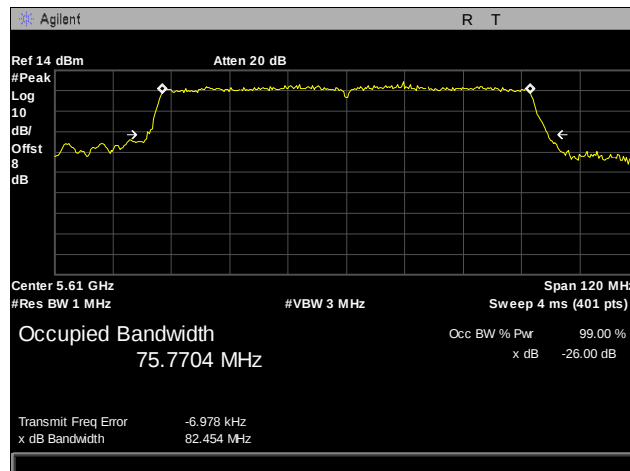
## 26 dB Occupied Bandwidth, 802.11ac, Port 1



Plot 61. 26 dB Occupied Bandwidth, 802.11ac, 5290 MHz, Port 1

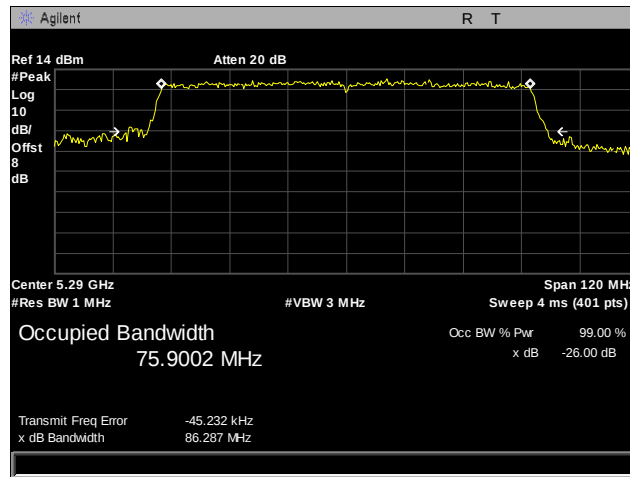


Plot 62. 26 dB Occupied Bandwidth, 802.11ac, 5530 MHz, Port 1

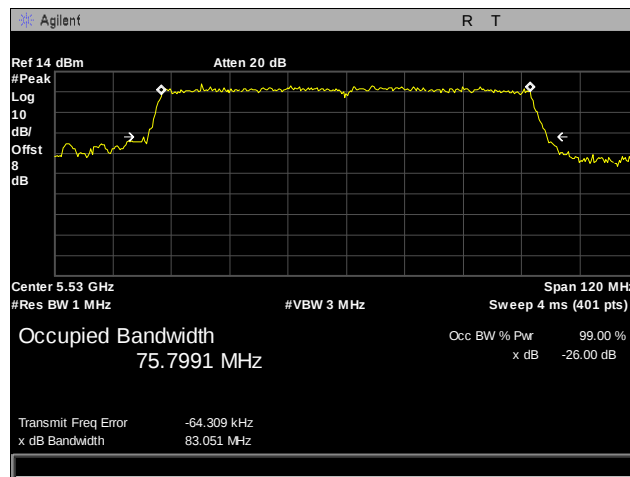


Plot 63. 26 dB Occupied Bandwidth, 802.11ac, 5610 MHz, Port 1

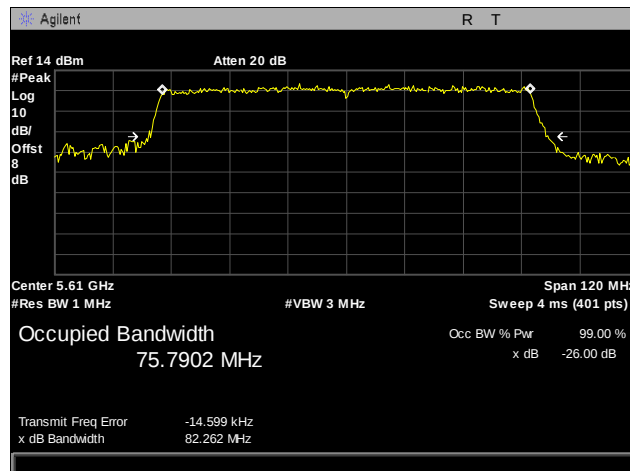
## 26 dB Occupied Bandwidth, 802.11ac, Port 2



Plot 64. 26 dB Occupied Bandwidth, 802.11ac, 5290 MHz, Port 2



Plot 65. 26 dB Occupied Bandwidth, 802.11ac, 5530 MHz, Port 2



Plot 66. 26 dB Occupied Bandwidth, 802.11ac, 5610 MHz, Port 2

## Electromagnetic Compatibility Criteria for Intentional Radiators

### § 15. 407(a)(2) RF Power Output

**Test Requirements:** §15.407(a)(2): For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.

**Test Procedure:** The EUT was connected to a spectrum analyzer through an attenuator and set to transmit continuously on the low, mid, and high channels. Its power was measured according to measurement method SA-1, as described in 789033 D02 General UNII Test Procedures New Rule v01. Plots were corrected for attenuator and cable loss. EUT will be professionally installed and Meru Networks will lower power accordingly when both radios are operating simultaneously and in the same band.

**Test Results:** Equipment was compliant with the Peak Power Output limits of § 15.407(a)(2).

**Test Engineer(s):** Benjamin Taylor

**Test Date(s):** 09/10/14



Figure 3. Power Output Test Setup

| Frequency (MHz) | Mode     | Port R1-A Power (dBm) | Port R1-B Power (dBm) | Summed Power (dBm) |
|-----------------|----------|-----------------------|-----------------------|--------------------|
| 5260            | 802.11a  | 18.55                 |                       | 18.55              |
| 5300            | 802.11a  | 18.54                 |                       | 18.54              |
| 5320            | 802.11a  | 19.23                 |                       | 19.23              |
| 5270            | 802.11a  | 18.64                 |                       | 18.64              |
| 5310            | 802.11a  | 19.01                 |                       | 19.01              |
| 5260            | 802.11n  | 15.21                 | 16.77                 | 19.07              |
| 5300            | 802.11n  | 16.65                 | 16.66                 | 19.67              |
| 5320            | 802.11n  | 16.11                 | 16.24                 | 19.19              |
| 5270            | 802.11n  | 15.91                 | 16.23                 | 19.08              |
| 5310            | 802.11n  | 15.67                 | 16.11                 | 18.91              |
| 5290            | 802.11ac | 17.46                 | 18.03                 | 20.76              |

Table 24. RF Output Power, Test Results, Lower, 9 dBi antenna

NOTE: The effective antenna gain of 2x2 MIMO: 6 dBi + 10 log (2) = 9 dBi

| Frequency (MHz) | Mode    | Port R1-A Power (dBm) | Port R1-B Power (dBm) | Summed Power (dBm) |
|-----------------|---------|-----------------------|-----------------------|--------------------|
| 5500            | 802.11a | 19.27                 |                       | 19.27              |
| 5600            | 802.11a | 18.49                 |                       | 18.49              |
| 5700            | 802.11a | 18.73                 |                       | 18.73              |
| 5510            | 802.11a | 18.97                 |                       | 18.97              |
| 5670            | 802.11a | 19.00                 |                       | 19.00              |
| 5500            | 802.11n | 17.20                 | 16.94                 | 20.08              |
| 5600            | 802.11n | 16.87                 | 17.16                 | 20.03              |
| 5700            | 802.11n | 17.62                 | 17.41                 | 20.53              |
| 5510            | 802.11n | 16.69                 | 16.75                 | 19.73              |
| 5670            | 802.11n | 16.25                 | 16.72                 | 19.50              |

Table 25. RF Output Power, Test Results, Upper, 9 dBi gain antenna

| Frequency (MHz) | Mode     | Port R1-A Power (dBm) | Port R1-B Power (dBm) | Summed Power (dBm) |
|-----------------|----------|-----------------------|-----------------------|--------------------|
| 5260            | 802.11a  | 20.79                 |                       | 20.79              |
| 5300            | 802.11a  | 20.01                 |                       | 20.01              |
| 5320            | 802.11a  | 19.39                 |                       | 19.39              |
| 5270            | 802.11a  | 19.46                 |                       | 19.46              |
| 5310            | 802.11a  | 19.22                 |                       | 19.22              |
| 5260            | 802.11n  | 16.91                 | 17.21                 | 20.07              |
| 5300            | 802.11n  | 17.05                 | 17.07                 | 20.07              |
| 5320            | 802.11n  | 16.97                 | 16.77                 | 19.88              |
| 5270            | 802.11n  | 17.71                 | 19.19                 | 21.52              |
| 5310            | 802.11n  | 18.27                 | 18.67                 | 21.48              |
| 5290            | 802.11ac | 18.11                 | 18.73                 | 21.44              |

Table 26. RF Output Power, Test Results, Lower, 4, 5, 6 7, 7.7 dBi gain antenna

| Frequency (MHz) | Mode    | Port R1-A Power (dBm) | Port R1-B Power (dBm) | Summed Power (dBm) |
|-----------------|---------|-----------------------|-----------------------|--------------------|
| 5500            | 802.11a | 19.27                 |                       | 19.27              |
| 5600            | 802.11a | 18.49                 |                       | 18.49              |
| 5700            | 802.11a | 18.73                 |                       | 18.73              |
| 5510            | 802.11a | 18.97                 |                       | 18.97              |
| 5670            | 802.11a | 19.00                 |                       | 19.00              |
| 5500            | 802.11n | 16.88                 | 17.23                 | 20.07              |
| 5600            | 802.11n | 15.76                 | 16.73                 | 19.28              |
| 5700            | 802.11n | 16.01                 | 16.56                 | 19.30              |
| 5510            | 802.11n | 19.22                 | 18.40                 | 21.84              |
| 5670            | 802.11n | 18.29                 | 18.83                 | 21.58              |

Table 27. RF Output Power, Test Results, Upper, 4, 5, 6 7, 7.7 dBi gain antenna

## Electromagnetic Compatibility Criteria for Intentional Radiators

### § 15.407(a)(2) Peak Power Spectral Density

**Test Requirements:** § 15.407(a)(3): In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**Test Procedure:** The transmitter was connected directly to a Spectrum Analyzer through an attenuator. The power level was set to the maximum level on the EUT. The RBW was set to 1MHz and the VBW was set to 3MHz. The method of measurement used was method SA-1 from 789033 D02 General UNII Test Procedures New Rule v01. Plots are correct for attenuators and cable loss.

**Test Results:** Equipment was compliant with the peak power spectral density limits of § 15.407 (a)(2). The peak power spectral density was determined from plots on the following page(s).

**Test Engineer(s):** Benjamin Taylor

**Test Date(s):** 09/10/14



Figure 4. Power Spectral Density Test Setup

| Frequency (MHz) | Mode     | Port R1-A PSD (dBm) | Port R1-B PSD (dBm) | Summed PSD (dBm) |
|-----------------|----------|---------------------|---------------------|------------------|
| 5260            | 802.11a  | 8.71                |                     | 8.71             |
| 5300            | 802.11a  | 8.42                |                     | 8.42             |
| 5320            | 802.11a  | 8.47                |                     | 8.47             |
| 5270            | 802.11a  | 5.46                |                     | 5.46             |
| 5310            | 802.11a  | 5.80                |                     | 5.80             |
| 5260            | 802.11n  | 5.95                | 6.16                | 9.07             |
| 5300            | 802.11n  | 5.78                | 6.00                | 8.90             |
| 5320            | 802.11n  | 6.12                | 6.30                | 9.22             |
| 5270            | 802.11n  | 4.83                | 5.25                | 8.06             |
| 5310            | 802.11n  | 4.79                | 5.75                | 8.31             |
| 5290            | 802.11ac | 1.509               | 1.725               | 4.63             |

Table 28. Peak Spectral Density, Test Results, Omni-Directional Antenna, Lower

| Frequency (MHz) | Mode    | Port R1-A PSD (dBm) | Port R1-B PSD (dBm) | Summed PSD (dBm) |
|-----------------|---------|---------------------|---------------------|------------------|
| 5500            | 802.11a | 8.75                |                     | 8.75             |
| 5600            | 802.11a | 8.08                |                     | 8.08             |
| 5700            | 802.11a | 8.43                |                     | 8.43             |
| 5510            | 802.11a | 5.55                |                     | 5.55             |
| 5670            | 802.11a | 5.58                |                     | 5.58             |
| 5500            | 802.11n | 5.92                | 6.22                | 9.08             |
| 5600            | 802.11n | 5.53                | 5.67                | 8.61             |
| 5700            | 802.11n | 5.70                | 6.14                | 8.93             |
| 5510            | 802.11n | 4.79                | 5.59                | 8.22             |
| 5670            | 802.11n | 4.68                | 5.07                | 7.89             |

Table 29. Peak Spectral Density, Test Results, Omni-Directional Antenna, Upper

| Frequency (MHz) | Mode     | Port R1-A PSD (dBm) | Port R1-B PSD (dBm) | Summed PSD (dBm) |
|-----------------|----------|---------------------|---------------------|------------------|
| 5260            | 802.11a  | 6.66                |                     | 6.66             |
| 5300            | 802.11a  | 6.73                |                     | 6.73             |
| 5320            | 802.11a  | 6.72                |                     | 6.72             |
| 5270            | 802.11a  | 5.46                |                     | 5.46             |
| 5310            | 802.11a  | 5.80                |                     | 5.80             |
| 5260            | 802.11n  | 4.98                | 4.62                | 7.81             |
| 5300            | 802.11n  | 4.83                | 4.89                | 7.87             |
| 5320            | 802.11n  | 4.91                | 4.88                | 7.91             |
| 5270            | 802.11n  | 1.99                | 2.51                | 5.27             |
| 5310            | 802.11n  | 2.28                | 2.33                | 5.31             |
| 5290            | 802.11ac | 1.509               | 1.725               | 4.63             |

Table 30. Peak Spectral Density, Test Results, 4, 5, 6, 7, 7.7 dBi Antenna, Lower

| Frequency (MHz) | Mode    | Port R1-A PSD (dBm) | Port R1-B PSD (dBm) | Summed PSD (dBm) |
|-----------------|---------|---------------------|---------------------|------------------|
| 5500            | 802.11a | 7.89                |                     | 7.89             |
| 5600            | 802.11a | 7.81                |                     | 7.81             |
| 5700            | 802.11a | 7.77                |                     | 7.77             |
| 5510            | 802.11a | 5.55                |                     | 5.55             |
| 5670            | 802.11a | 5.58                |                     | 5.58             |
| 5500            | 802.11n | 4.64                | 5.18                | 7.92             |
| 5600            | 802.11n | 4.29                | 3.85                | 7.08             |
| 5700            | 802.11n | 4.45                | 4.70                | 7.58             |
| 5510            | 802.11n | 3.35                | 2.66                | 6.03             |
| 5670            | 802.11n | 4.68                | 5.07                | 7.89             |

Table 31. Peak Spectral Density, Test Results, 4, 5, 6, 7, 7.7 dBi Antenna, Upper

## Electromagnetic Compatibility Criteria for Intentional Radiators

### § 15.407(b)(4), (6), (7) Undesirable Emissions

**Test Requirements:** § 15.407(b)(4), (6), (7); §15.205: Emissions outside the frequency band.

**§ 15.407(b)(2)(3)**

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.

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.

**§ 15.407(b)(6):** Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.

**§ 15.407(b)(7):** The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

**Test Procedure:** The transmitter was placed on an 80cm non-metallic table inside in a semi-anechoic chamber. Measurements were performed with the EUT rotated 360 degrees and varying the adjustable antenna mast height to determine worst case orientation for maximum emissions. A preamp was used in the range from 7-18GHz to improve noise floor. Plots were corrected for cable loss, antenna, and preamp gain.

For frequencies from 30 MHz to 1 GHz, measurements were made using a quasi-peak detector with a 120 kHz bandwidth.

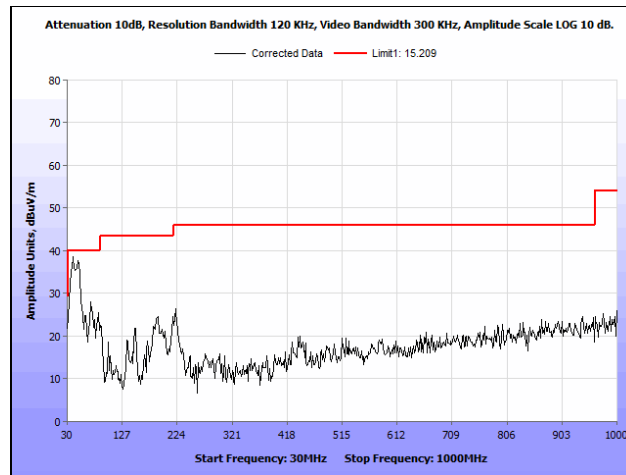
For measurements above 1 GHz, measurements were made with a Peak detector with 1 MHz resolution bandwidth. A notch filter was used to filter the transmitting signal. Where the spurious emissions fell into a restricted band, measurements were also made with an average detector to make sure they complied with 15.209 limits. Only noise floor was observed above 18 GHz.

**Test Results:** The EUT was compliant with the Radiated Emission limits for Intentional Radiators. See following pages for detailed test results. All emissions above 18 GHz were at the noise floor of the receiver.

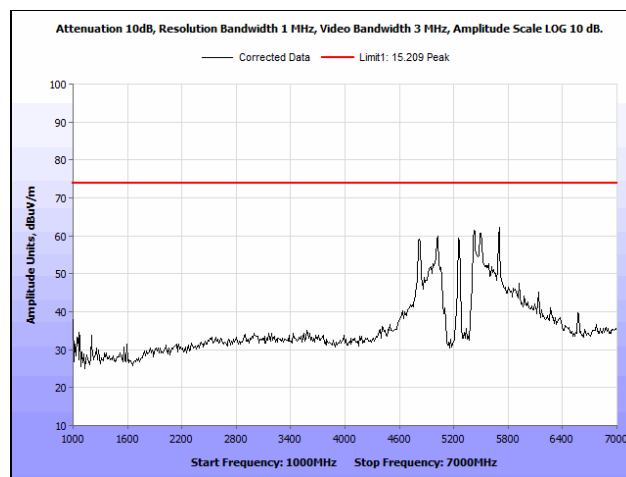
**Test Engineer(s):** Andy Shen and Ajaz Khan

**Test Date(s):** 09/05/14

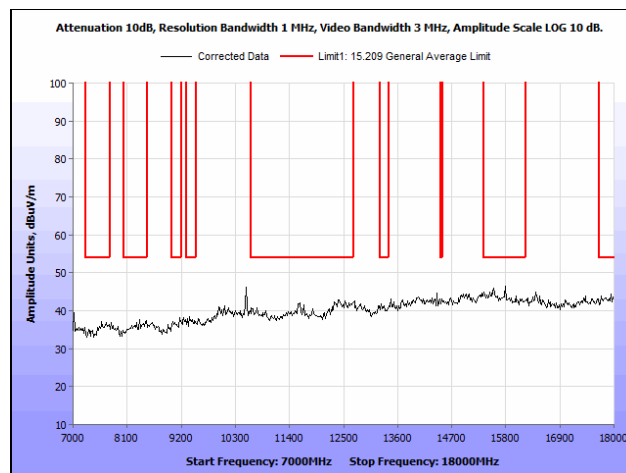
## Radiated Spurious Emissions, 802.11a, Ceiling Antenna, Lower Band



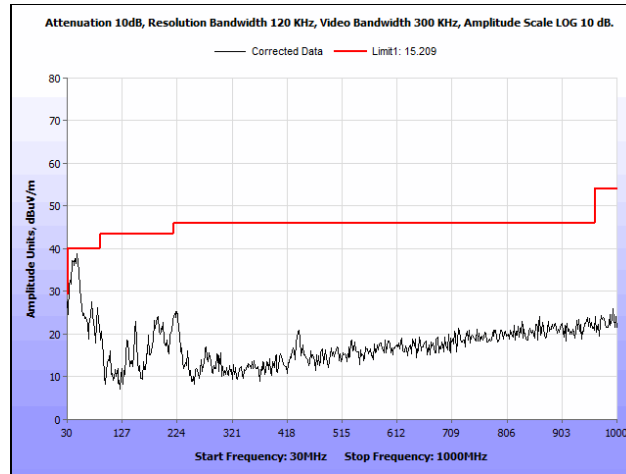
Plot 67. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 30 MHz – 1 GHz, Ceiling Antenna



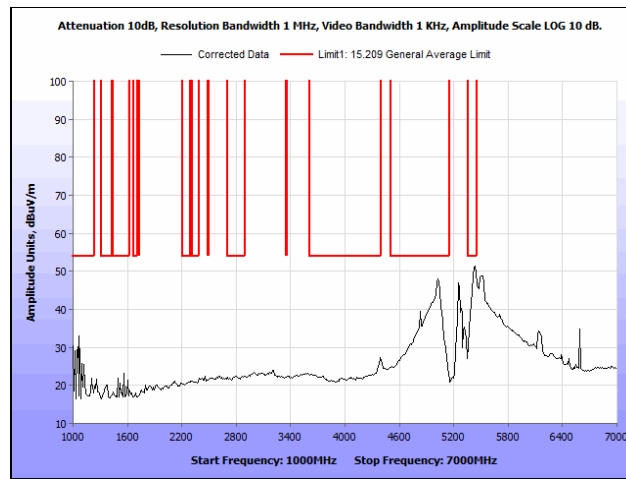
Plot 68. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna



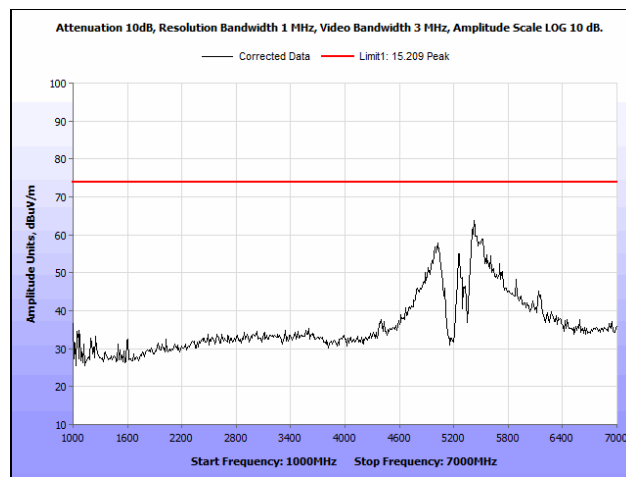
Plot 69. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 7 GHz – 18 GHz, Ceiling Antenna



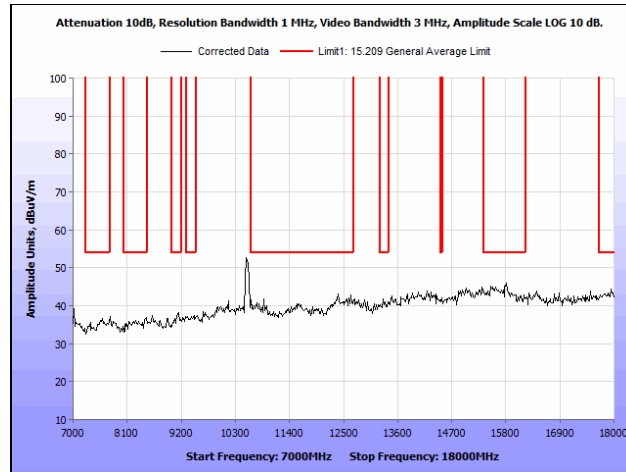
**Plot 70. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 30 MHz – 1 GHz, Ceiling Antenna**



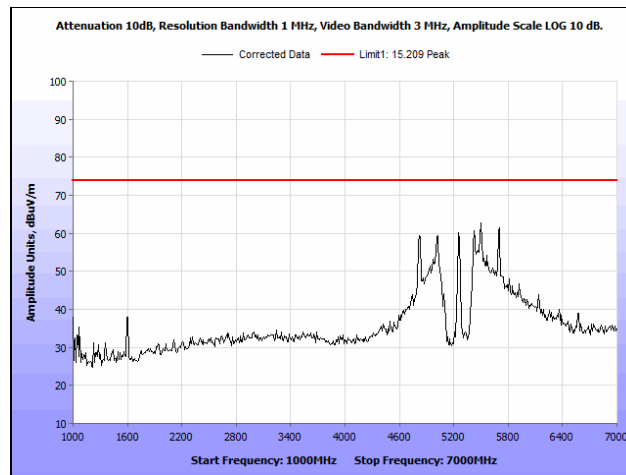
**Plot 71. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



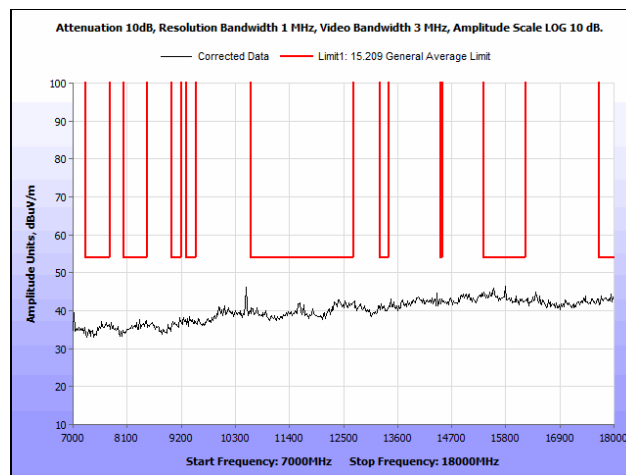
**Plot 72. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



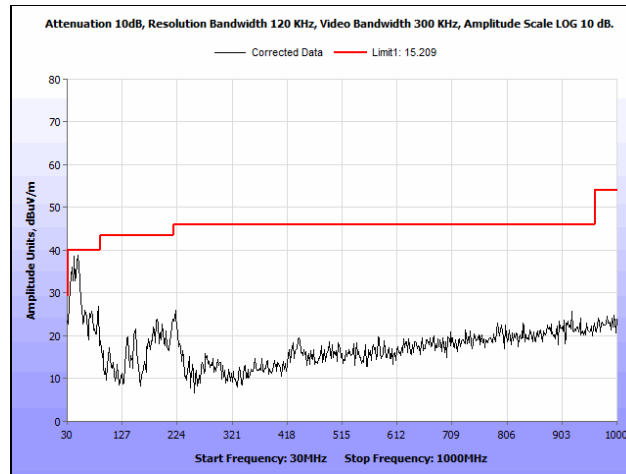
**Plot 73. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 7 GHz – 18 GHz, Ceiling Antenna**



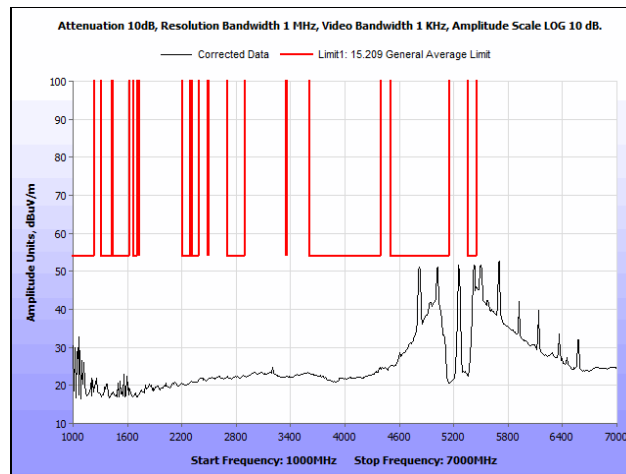
**Plot 74. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



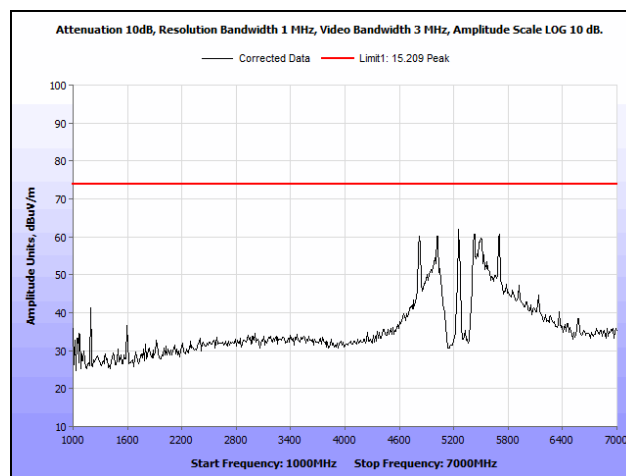
**Plot 75. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 7 GHz – 18 GHz, Ceiling Antenna**



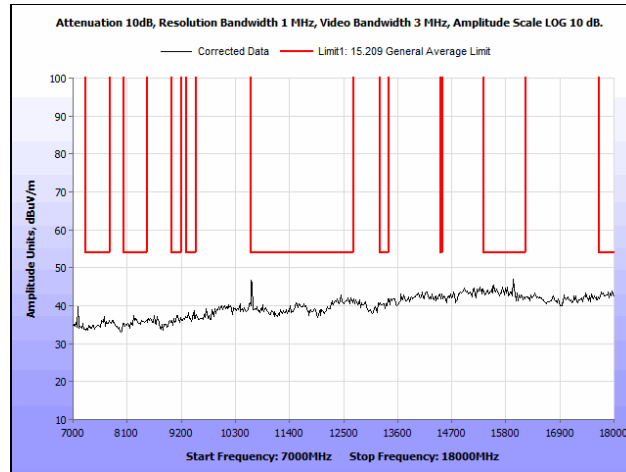
**Plot 76. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 30 MHz – 1 GHz, Ceiling Antenna**



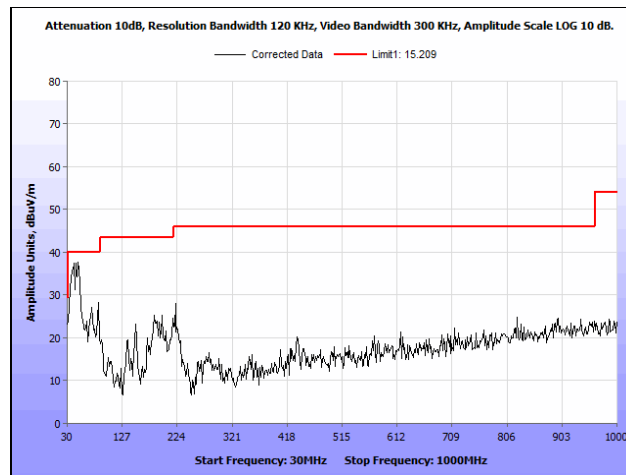
**Table 32. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



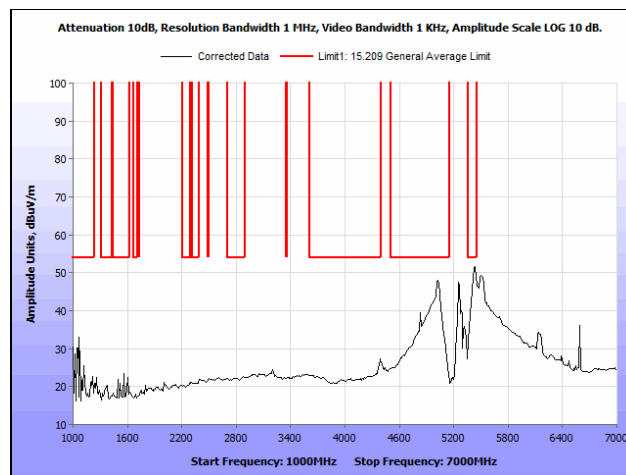
**Plot 77. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



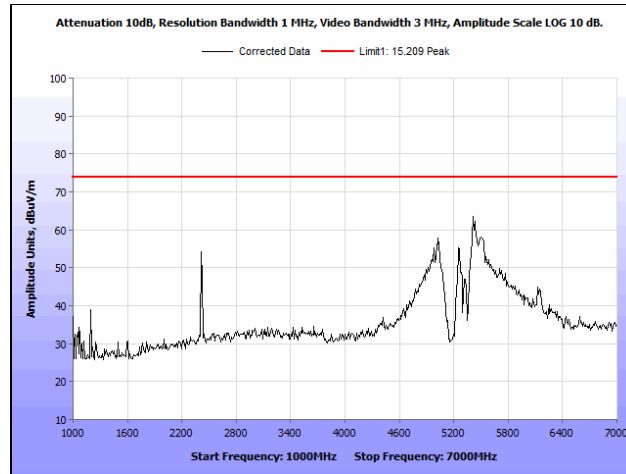
**Plot 78. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 7 GHz – 18 GHz, Ceiling Antenna**



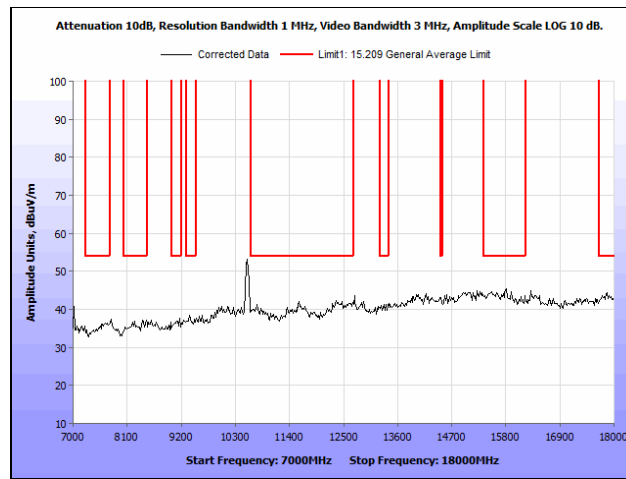
**Plot 79. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 30 MHz – 1 GHz, Ceiling Antenna**



**Plot 80. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**

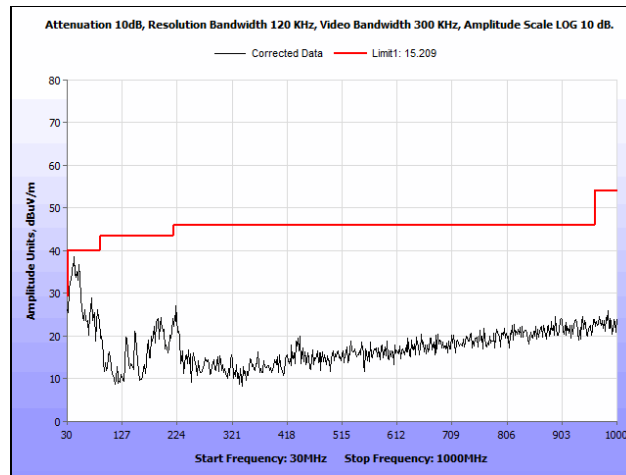


**Plot 81. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**

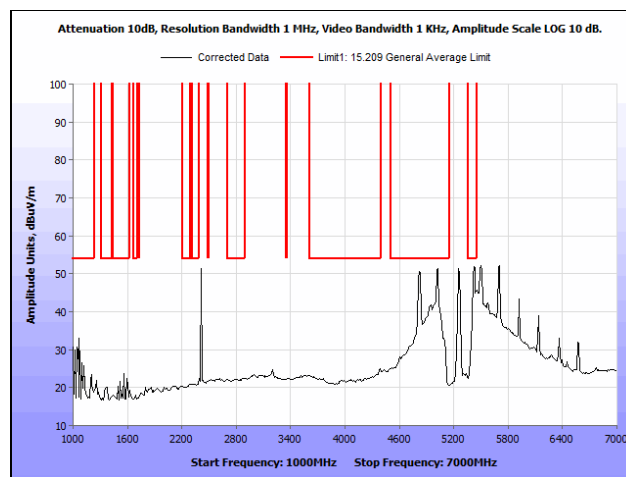


**Plot 82. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Ceiling Antenna**

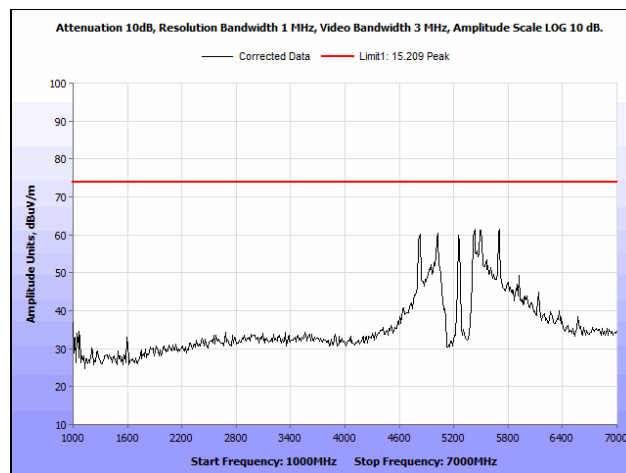
## Radiated Spurious Emissions, 802.11n, Ceiling Antenna, Lower Band



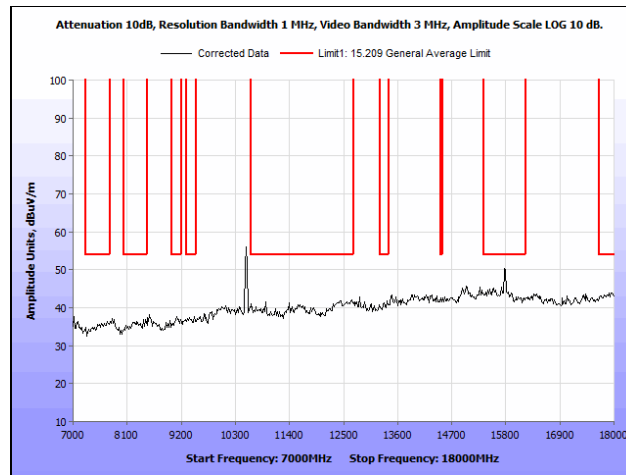
Plot 83. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 30 MHz – 1 GHz, Ceiling Antenna



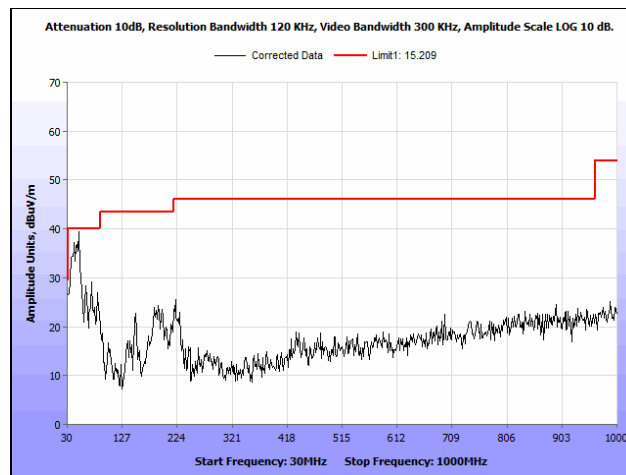
Plot 84. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna



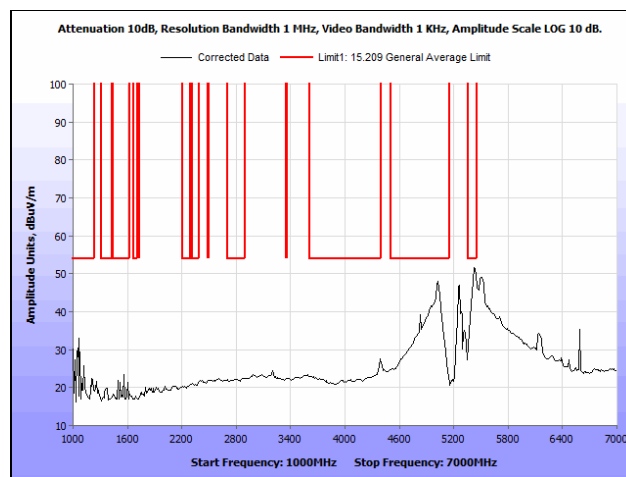
Plot 85. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna



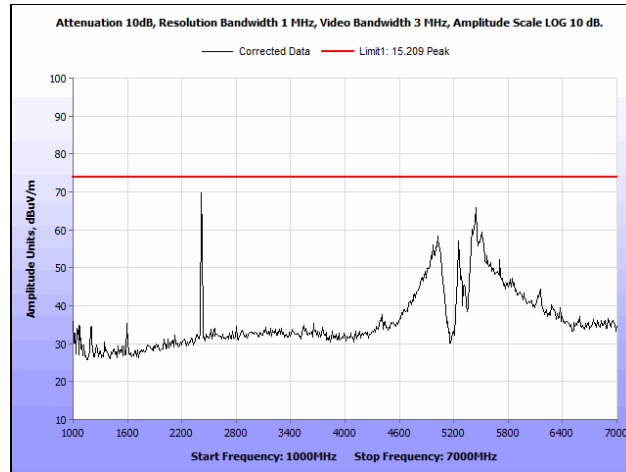
**Plot 86. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 7 GHz – 18 GHz, Ceiling Antenna**



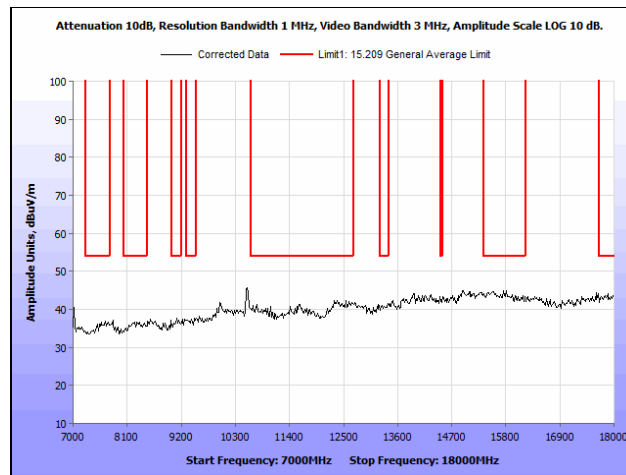
**Plot 87. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 30 MHz – 1 GHz, Ceiling Antenna**



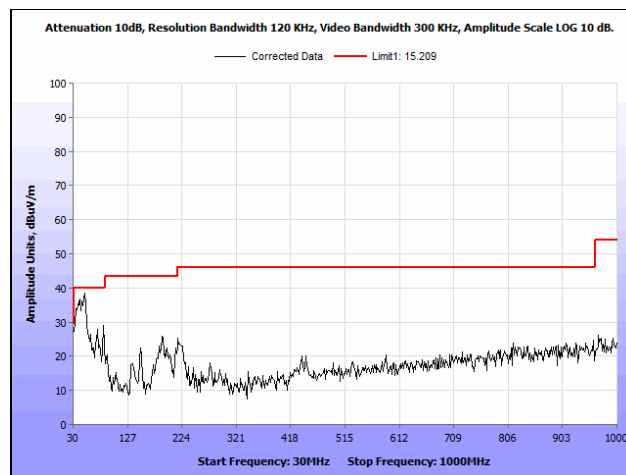
**Plot 88. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



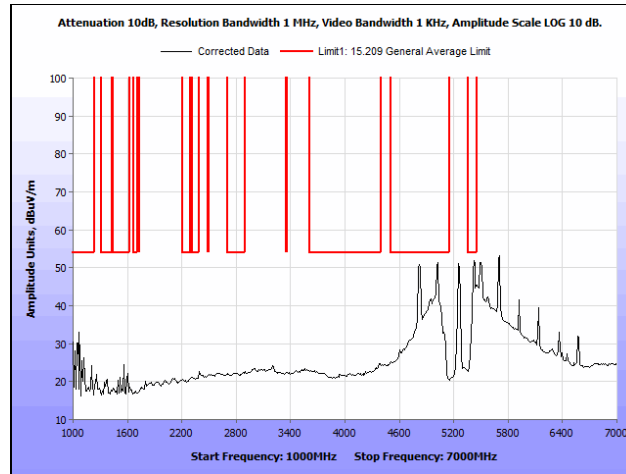
**Plot 89. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



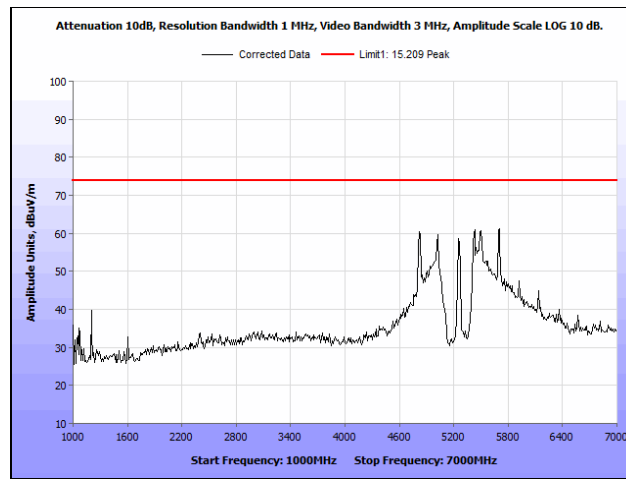
**Plot 90. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 7 GHz – 18 GHz, Ceiling Antenna**



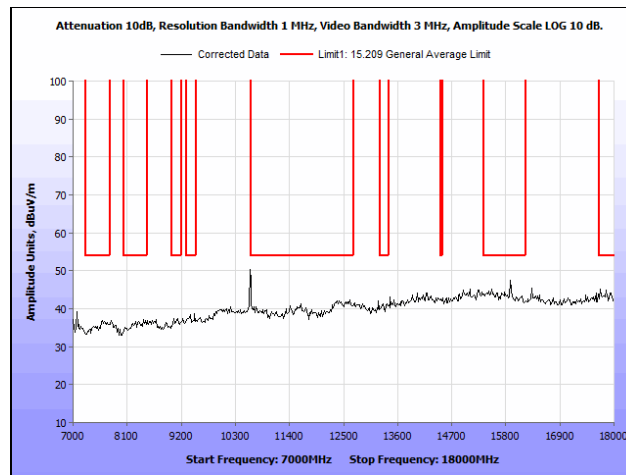
**Plot 91. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 30 MHz – 1 GHz, Ceiling Antenna**



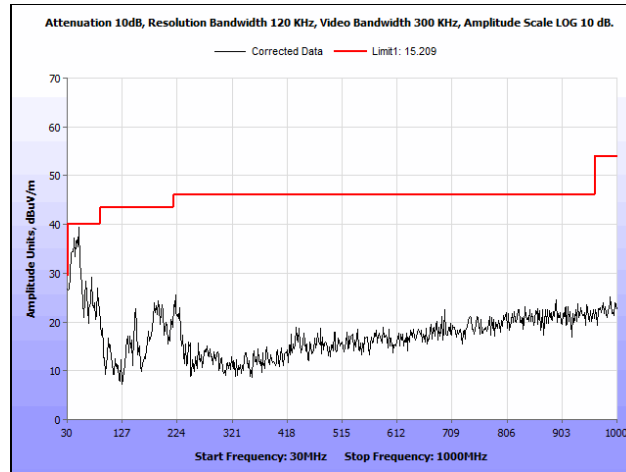
**Plot 92. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



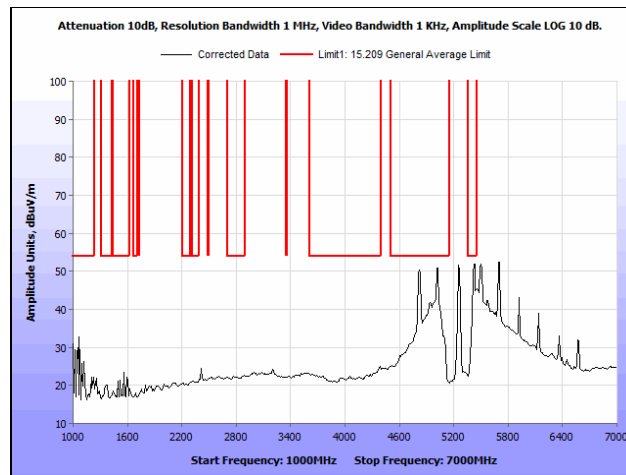
**Plot 93. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



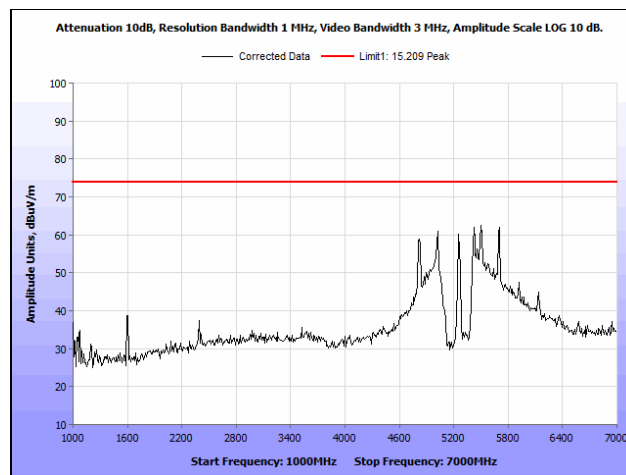
**Plot 94. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 7 GHz – 18 GHz, Ceiling Antenna**



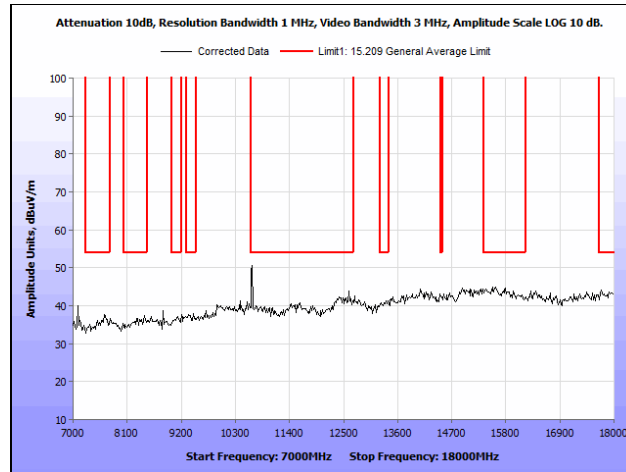
**Plot 95. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 30 MHz – 1 GHz, Ceiling Antenna**



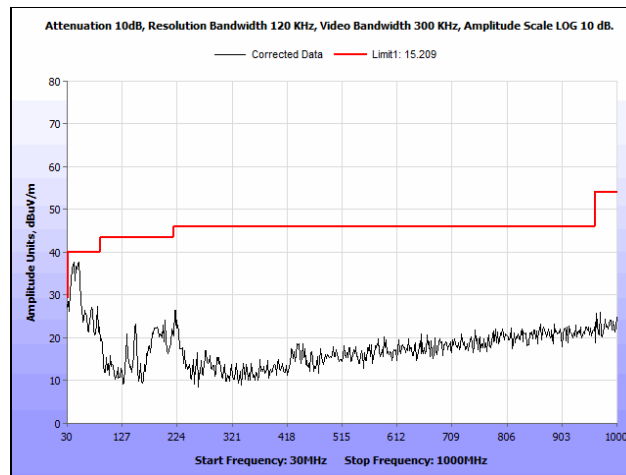
**Plot 96. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



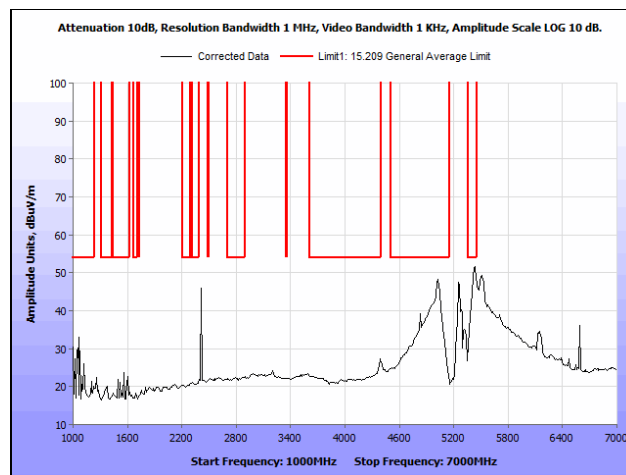
**Plot 97. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



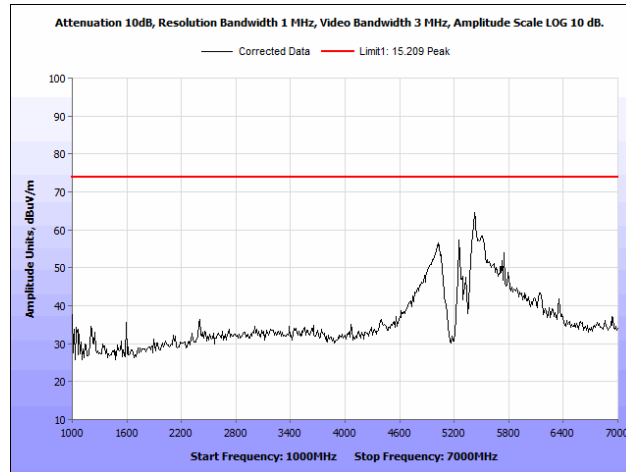
**Plot 98. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 7 GHz – 18 GHz, Ceiling Antenna**



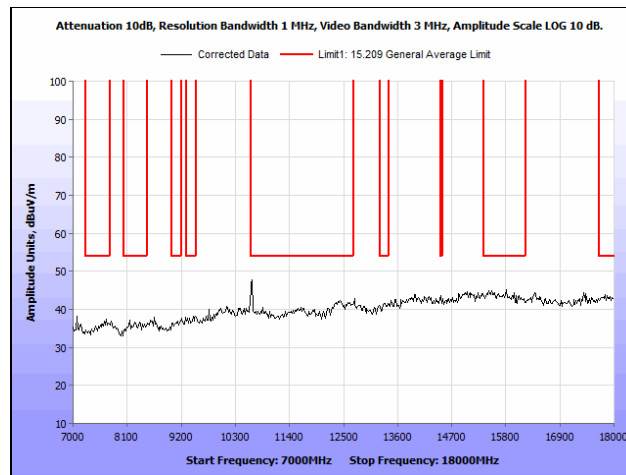
**Plot 99. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 30 MHz – 1 GHz, Ceiling Antenna**



**Plot 100. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**

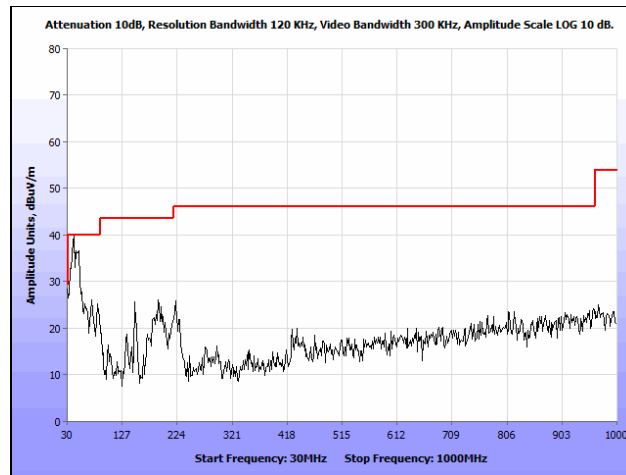


**Plot 101. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**

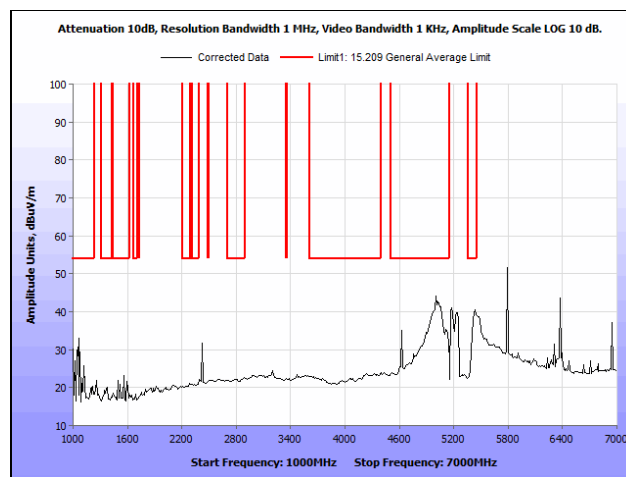


**Plot 102. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Ceiling Antenna**

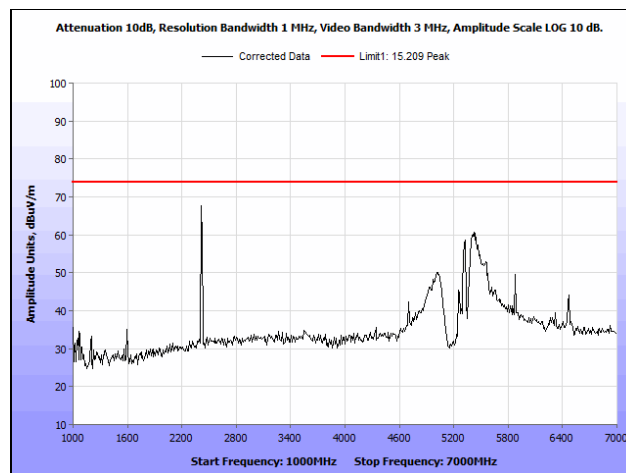
## Radiated Spurious Emissions, 802.11ac, Ceiling Antenna, Lower Band



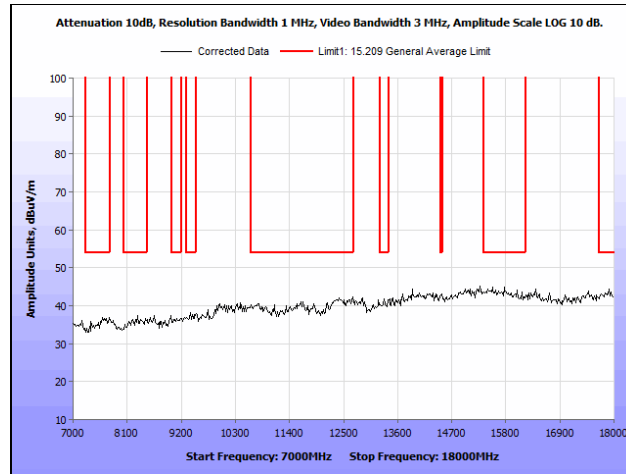
Plot 103. Radiated Spurious Emissions, 802.11ac 80 MHz, 30 MHz – 1 GHz, Ceiling Antenna



Plot 104. Radiated Spurious Emissions, 802.11ac 80 MHz, 1 GHz – 7 GHz, Average, Ceiling Antenna

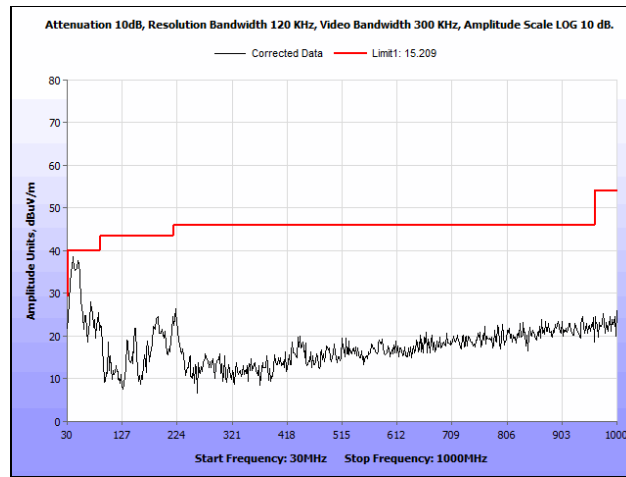


Plot 105. Radiated Spurious Emissions, 802.11ac 80 MHz, 1 GHz – 7 GHz, Peak, Ceiling Antenna

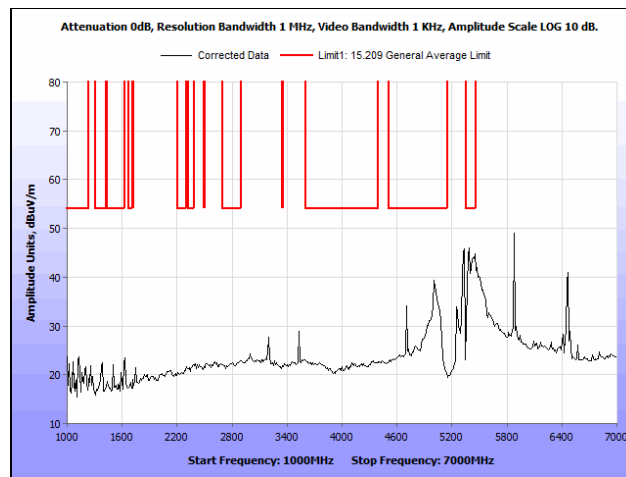


**Plot 106. Radiated Spurious Emissions, 802.11ac 80 MHz, 7 GHz – 18 GHz, Ceiling Antenna**

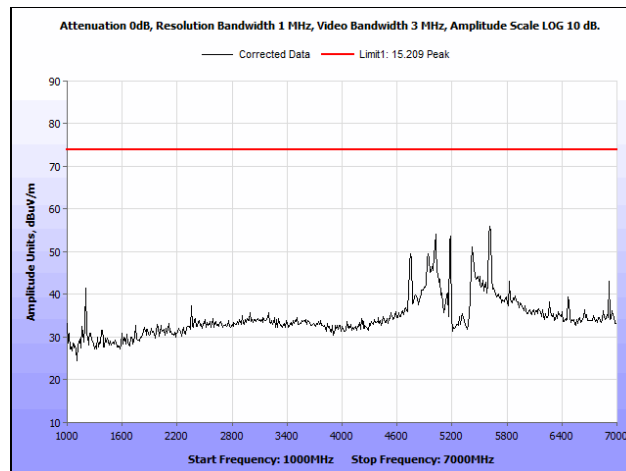
## Radiated Spurious Emissions, 802.11a, Omni Antenna, Lower Band



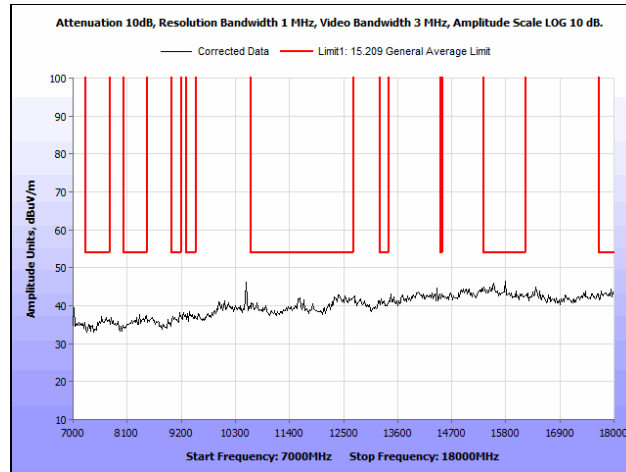
Plot 107. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 30 MHz – 1 GHz, Omni Antenna



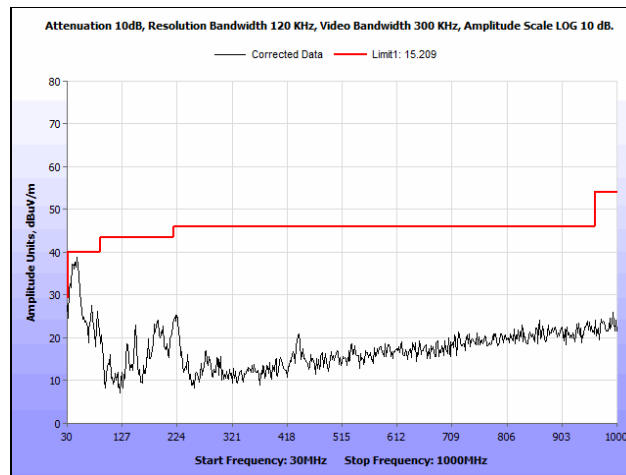
Plot 108. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Omni Antenna



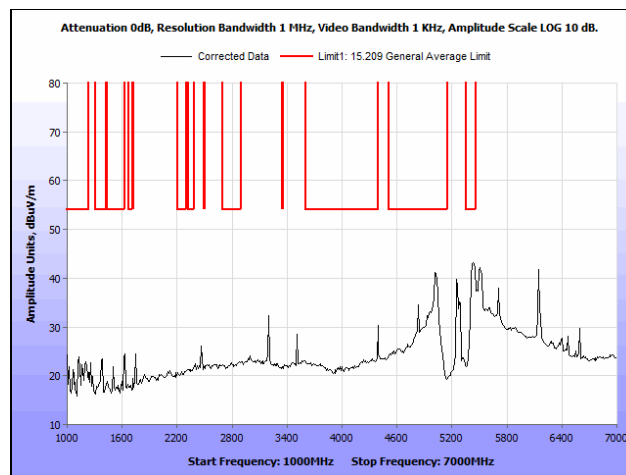
Plot 109. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Omni Antenna



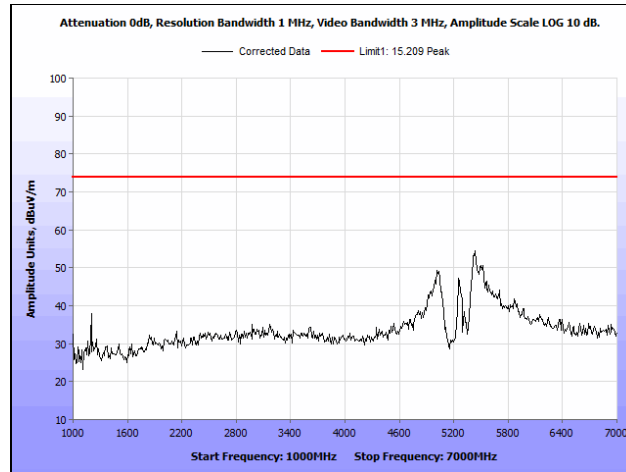
**Plot 110. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 7 GHz – 18 GHz, Omni Antenna**



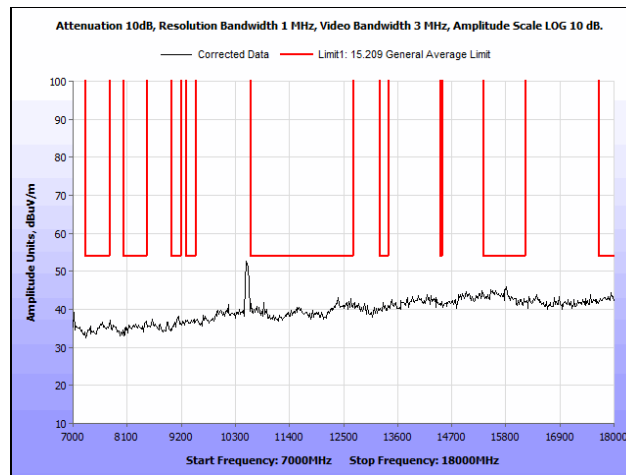
**Plot 111. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 30 MHz – 1 GHz, Omni Antenna**



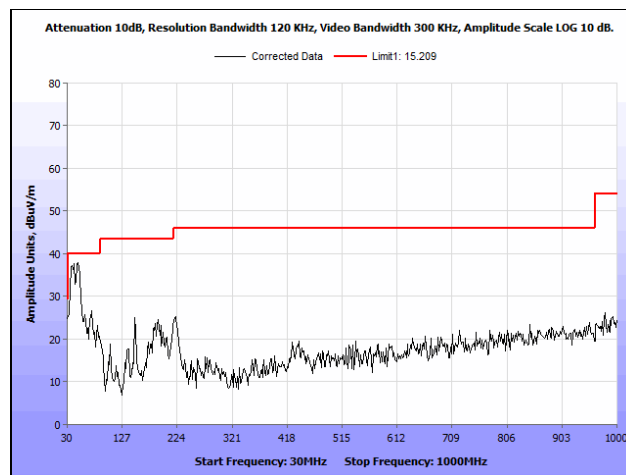
**Plot 112. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Omni Antenna**



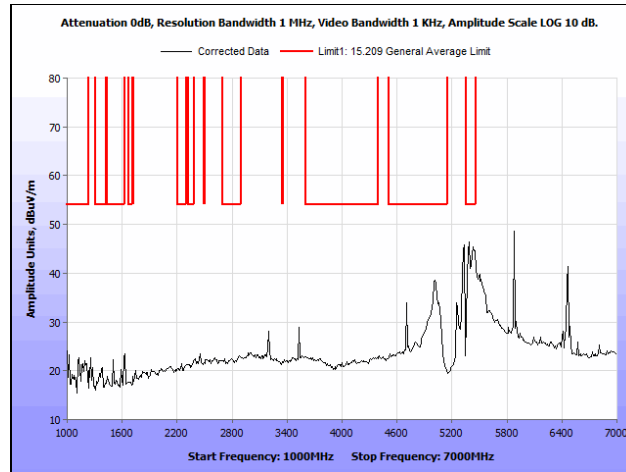
**Plot 113. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



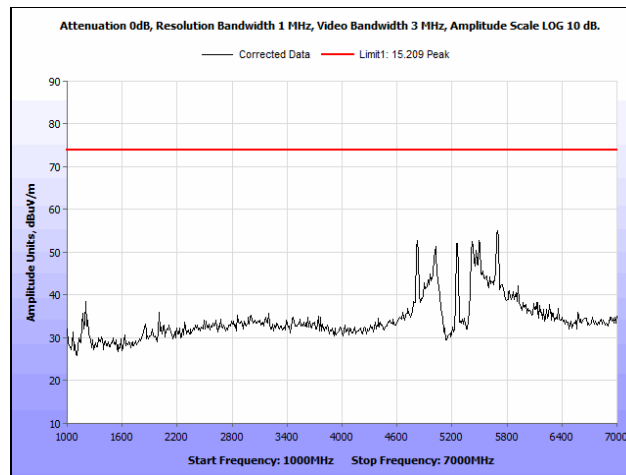
**Plot 114. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 7 GHz – 18 GHz, Omni Antenna**



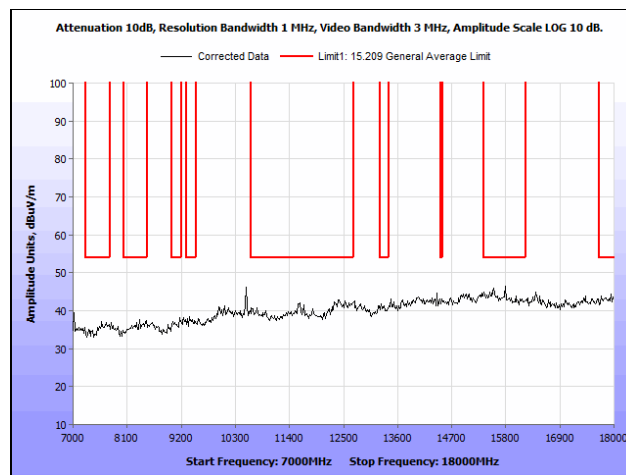
**Plot 115. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 30 MHz – 1 GHz, Omni Antenna**



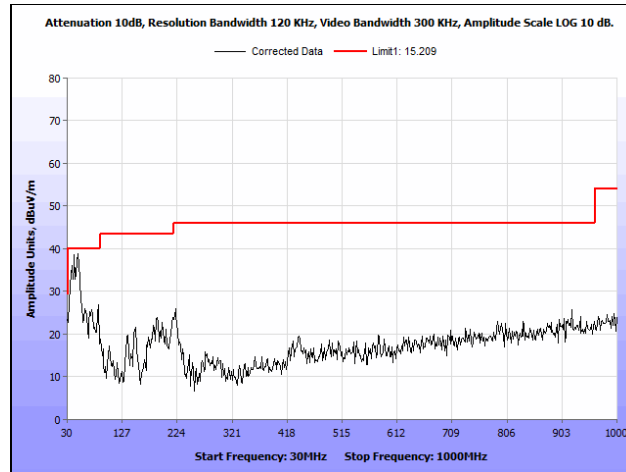
**Plot 116. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Omni Antenna**



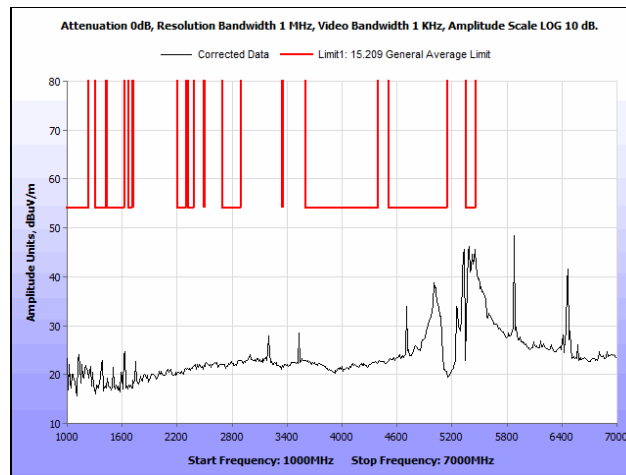
**Plot 117. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



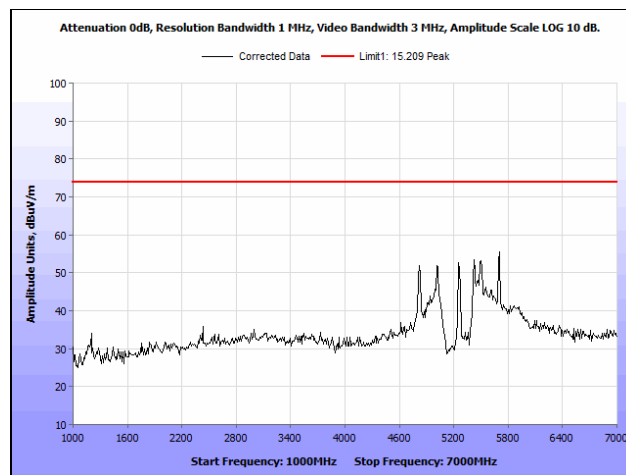
**Plot 118. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 7 GHz – 18 GHz, Omni Antenna**



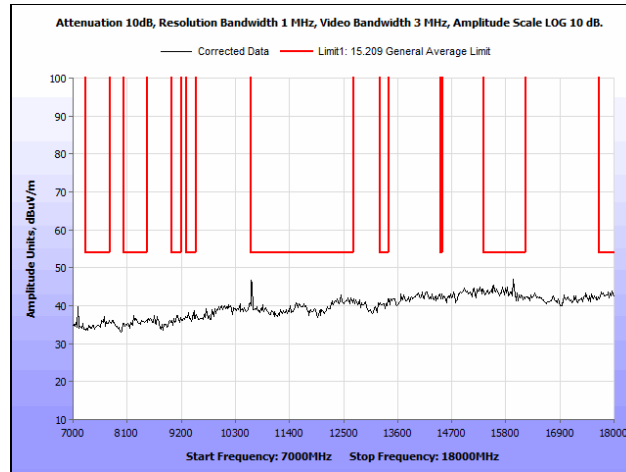
Plot 119. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 30 MHz – 1 GHz, Average, Omni Antenna



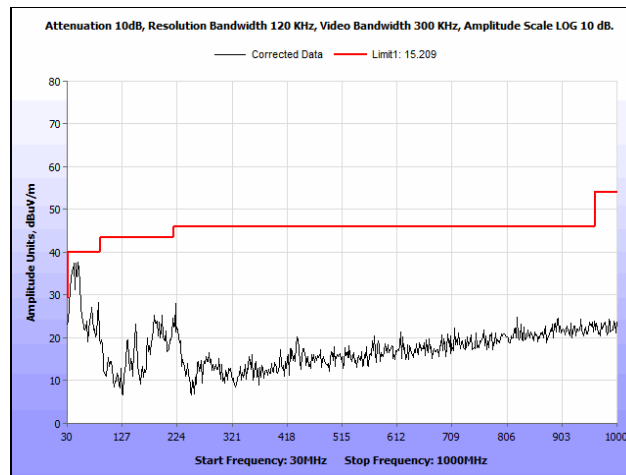
Plot 120. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Omni Antenna



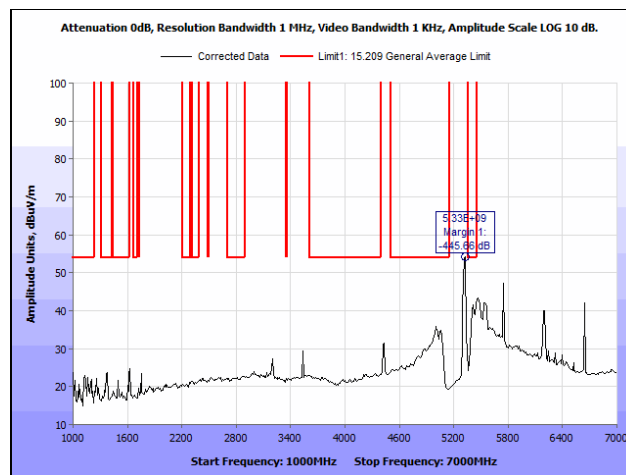
Plot 121. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Omni Antenna



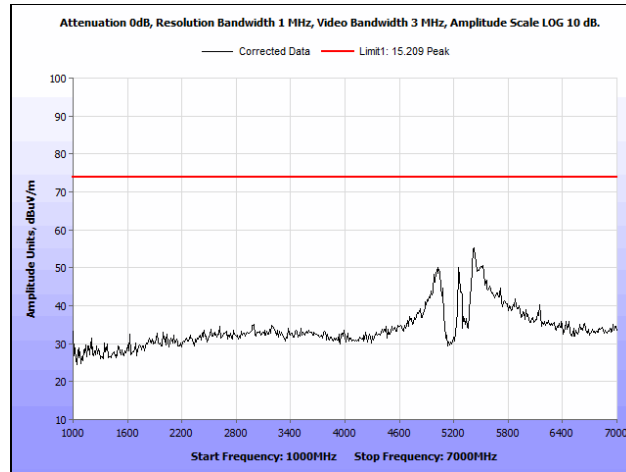
Plot 122. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 7 GHz – 18 GHz, Omni Antenna



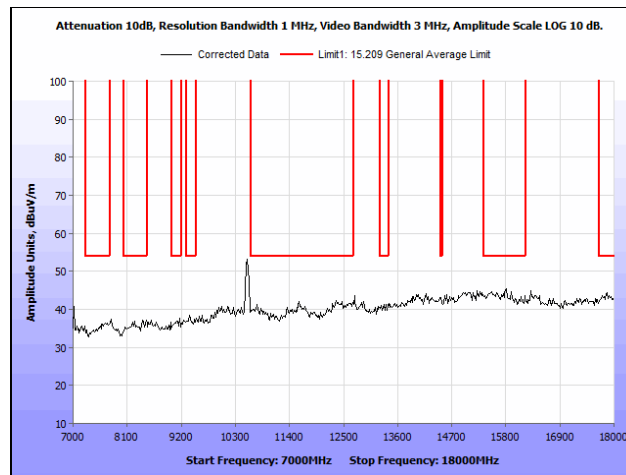
Plot 123. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 30 MHz – 1 GHz, Omni Antenna



Plot 124. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Omni Antenna

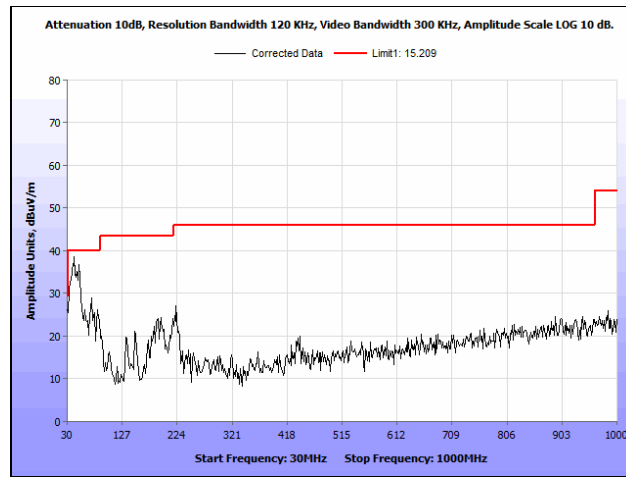


**Plot 125. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**

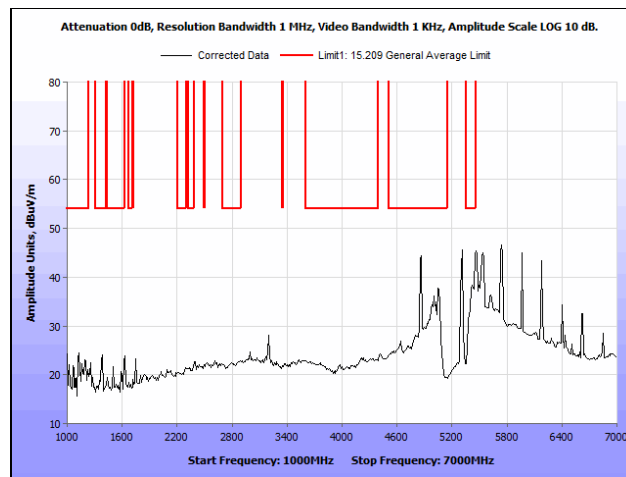


**Plot 126. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Omni Antenna**

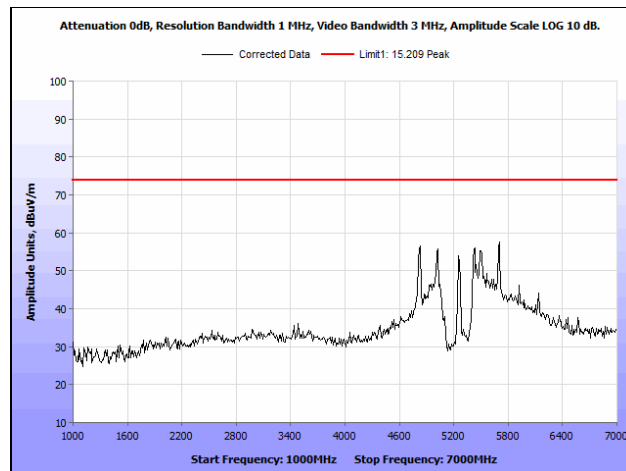
## Radiated Spurious Emissions, 802.11n, Omni Antenna, Lower Band



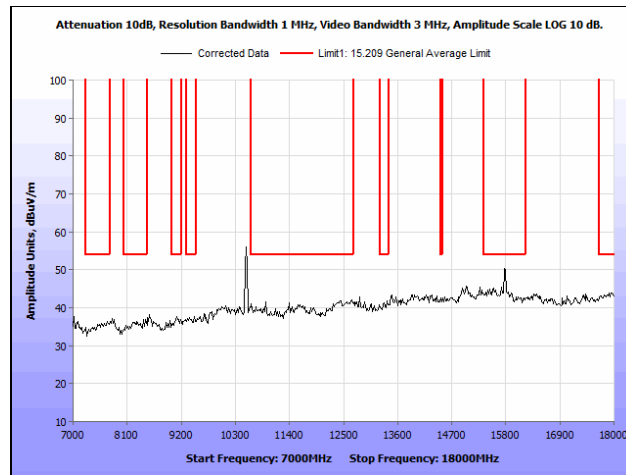
Plot 127. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 30 MHz – 1 GHz, Omni Antenna



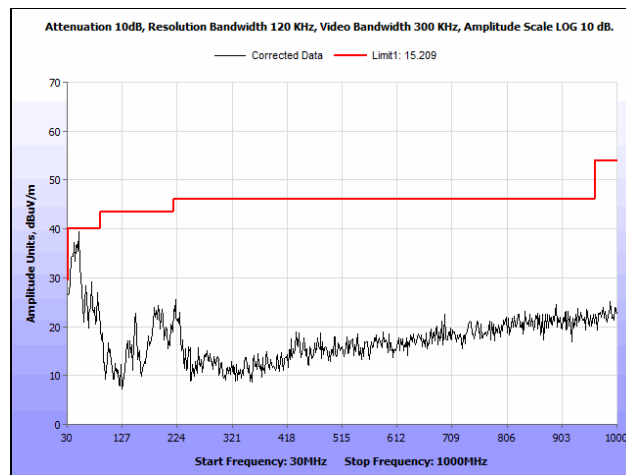
Plot 128. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Omni Antenna



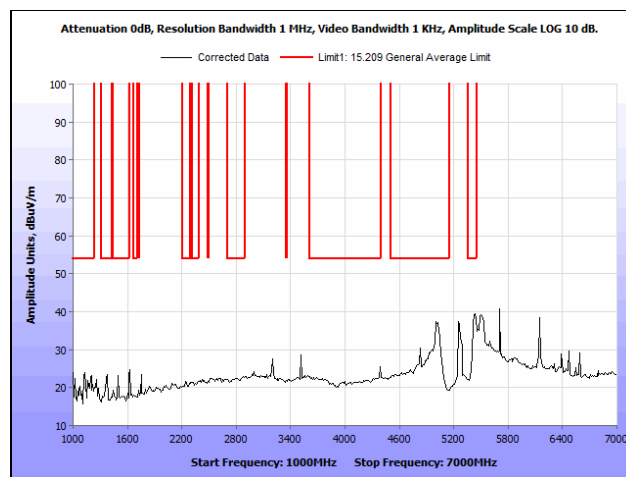
Plot 129. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Omni Antenna



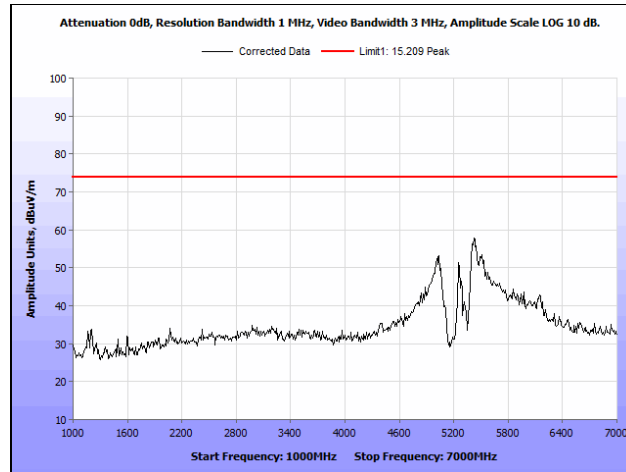
Plot 130. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 7 GHz – 18 GHz, Omni Antenna



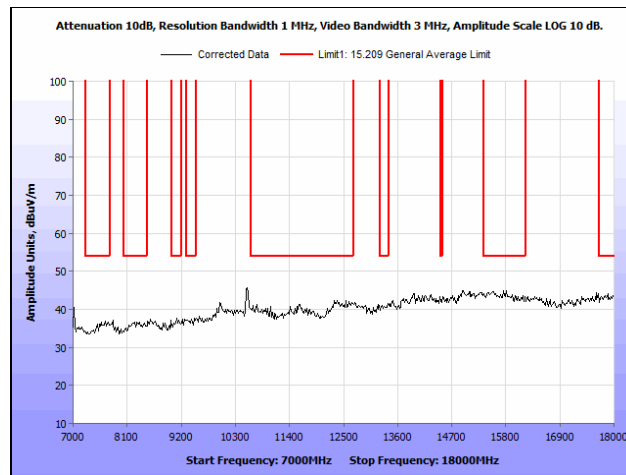
Plot 131. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 30 MHz – 1 GHz, Omni Antenna



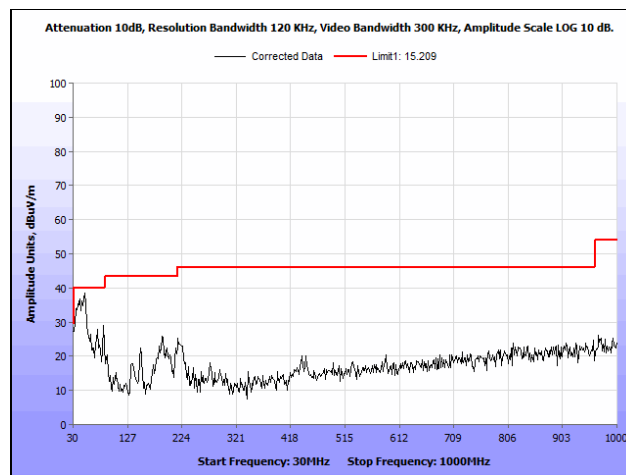
Plot 132. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Omni Antenna



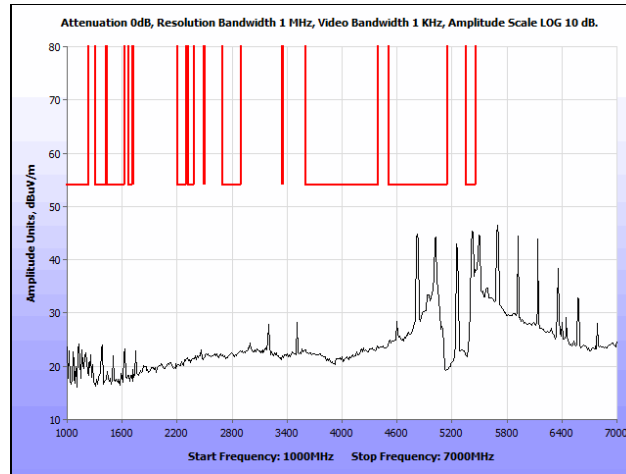
**Plot 133. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



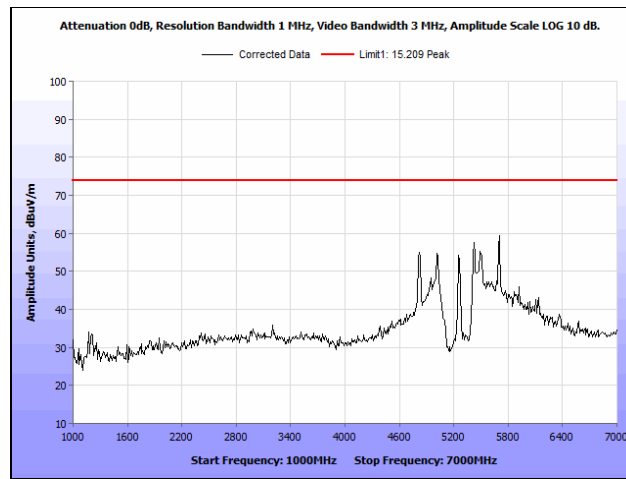
**Plot 134. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 7 GHz – 18 GHz, Omni Antenna**



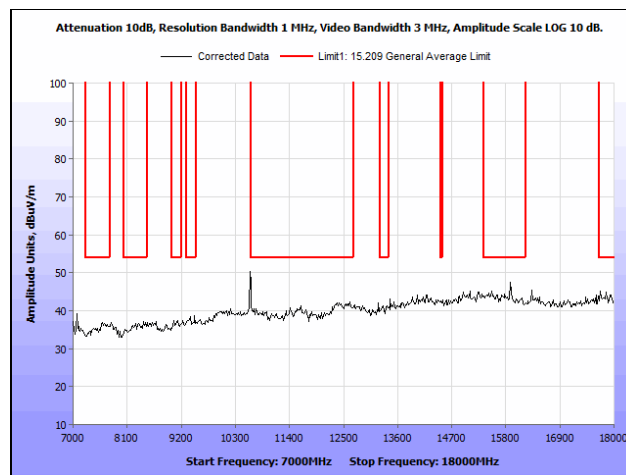
**Plot 135. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 30 MHz – 1 GHz, Omni Antenna**



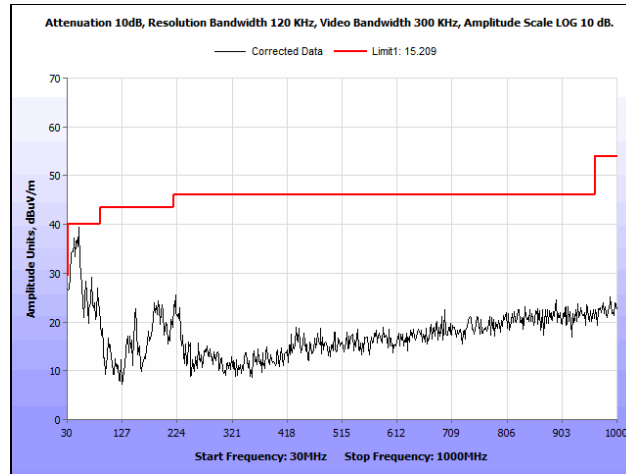
**Plot 136. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Omni Antenna**



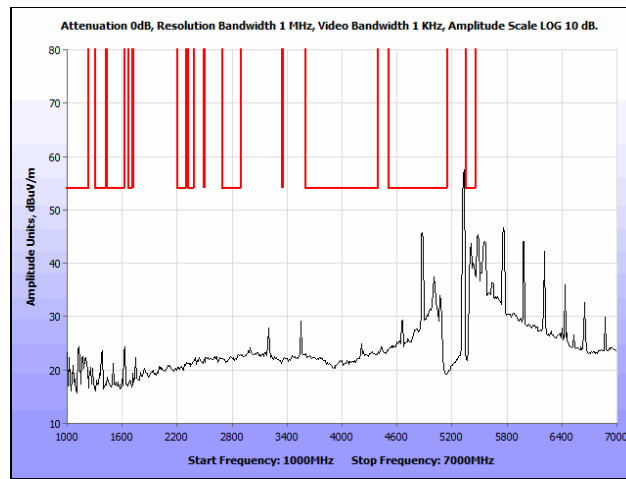
**Plot 137. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



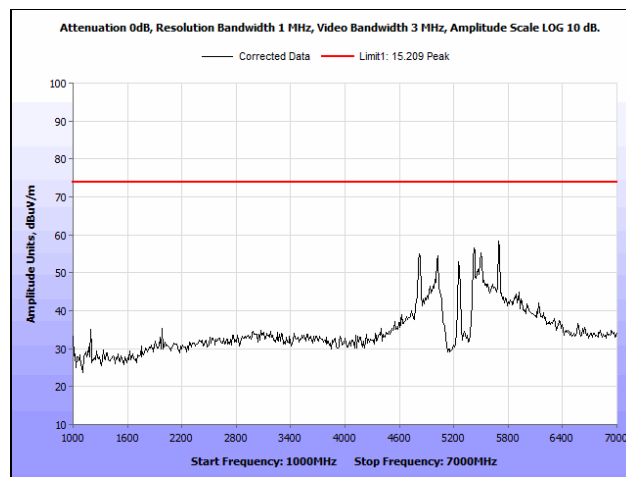
**Plot 138. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 7 GHz – 18 GHz, Omni Antenna**



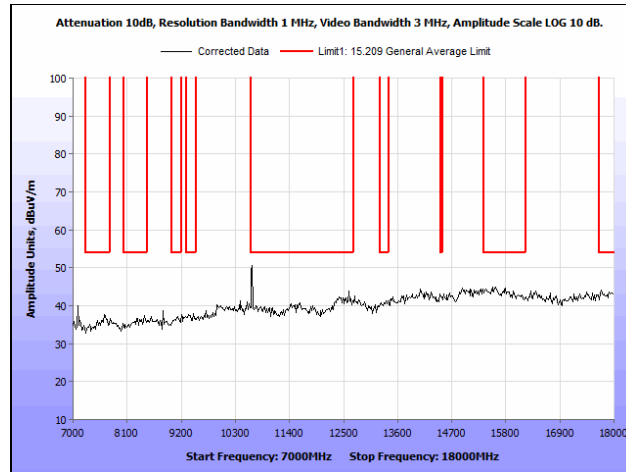
**Plot 139. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 30 MHz – 1 GHz, Omni Antenna**



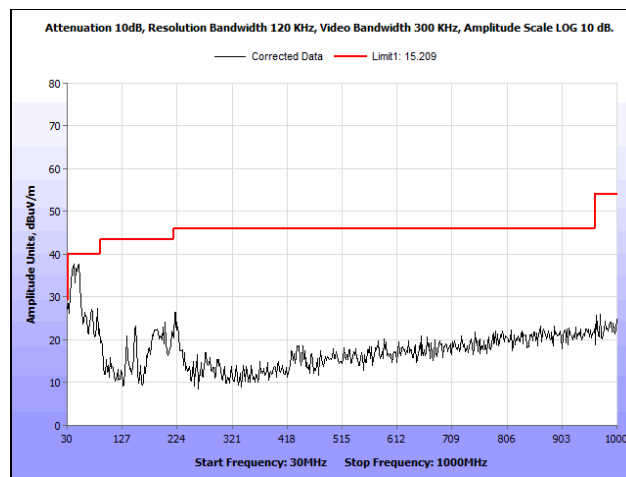
**Plot 140. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Omni Antenna**



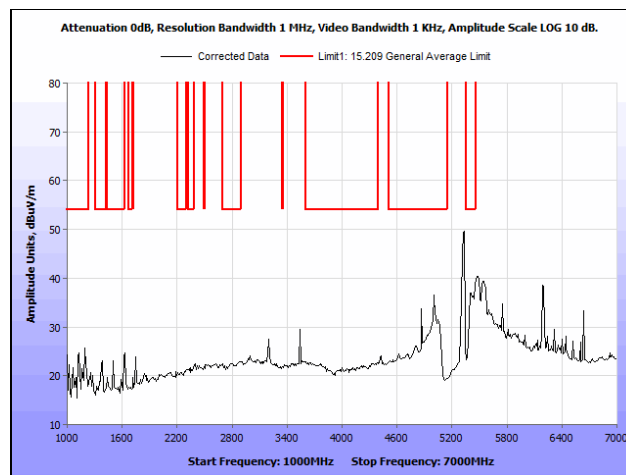
**Plot 141. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



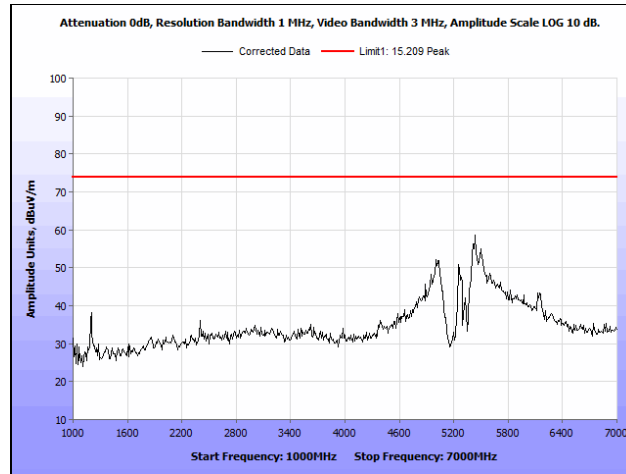
**Plot 142. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 7 GHz – 18 GHz, Omni Antenna**



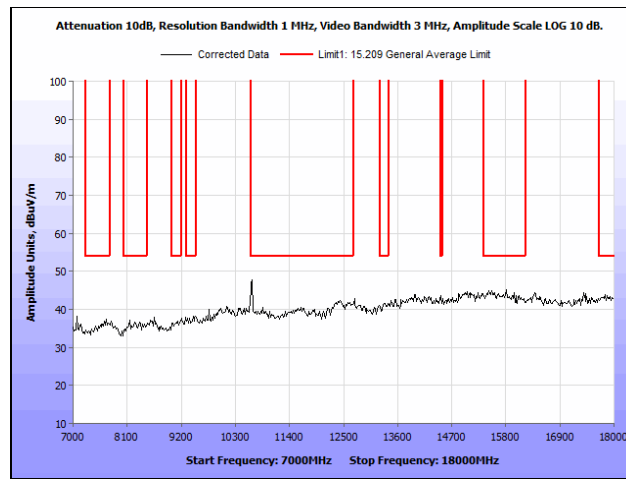
**Plot 143. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 30 MHz – 1 GHz, Omni Antenna**



**Plot 144. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Omni Antenna**

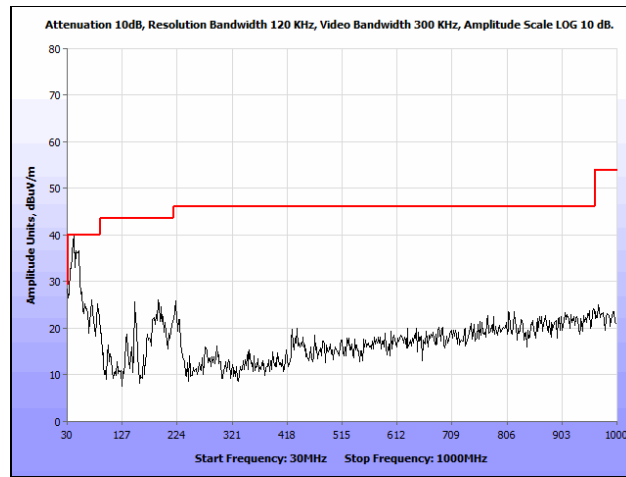


**Plot 145. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**

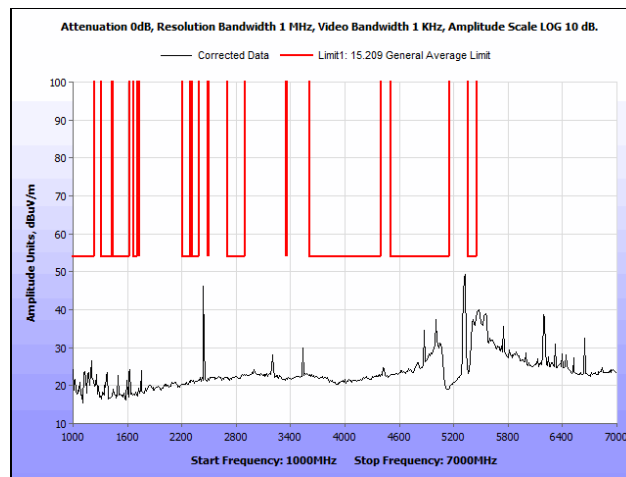


**Plot 146. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Omni Antenna**

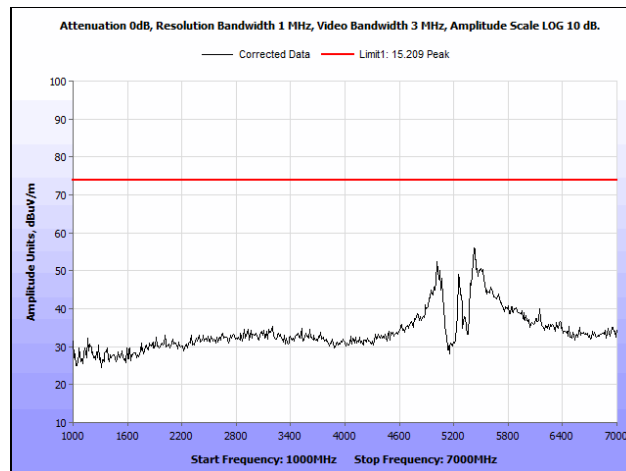
## Radiated Spurious Emissions, 802.11ac, Omni Antenna, Lower Band



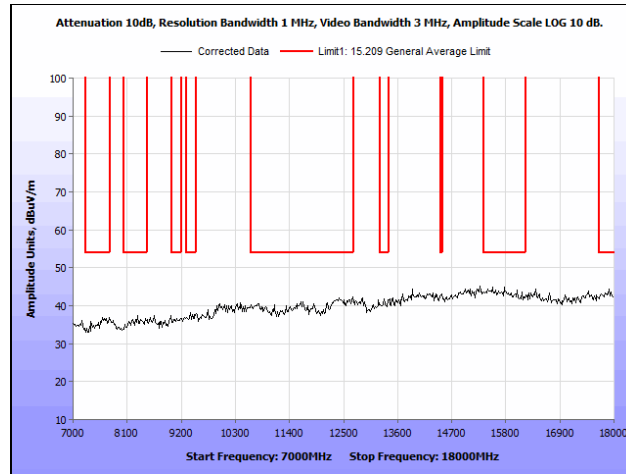
Plot 147. Radiated Spurious Emissions, 802.11ac 80 MHz, 30 MHz – 1 GHz, Omni Antenna



Plot 148. Radiated Spurious Emissions, 802.11ac 80 MHz, 1 GHz – 7 GHz, Average, Omni Antenna

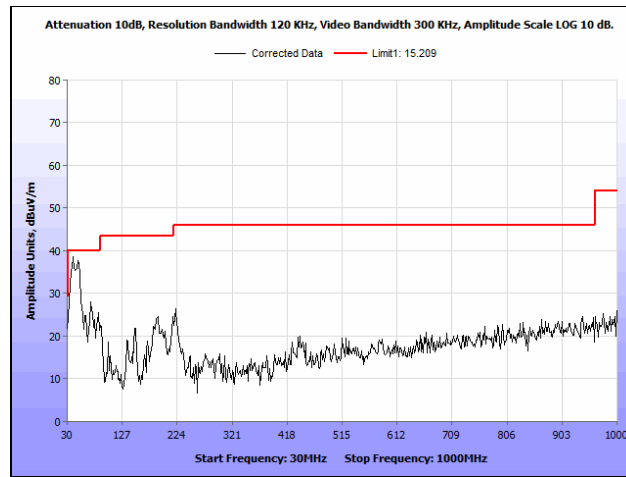


Plot 149. Radiated Spurious Emissions, 802.11ac 80 MHz, 1 GHz – 7 GHz, Peak, Omni Antenna

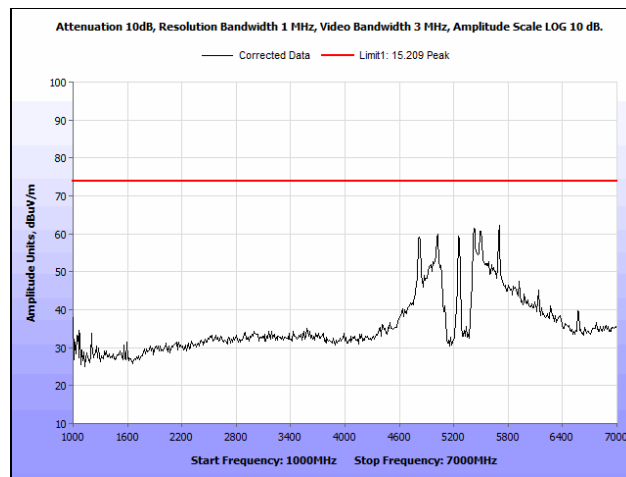


**Plot 150. Radiated Spurious Emissions, 802.11ac 80 MHz, 7 GHz – 18 GHz, Omni Antenna**

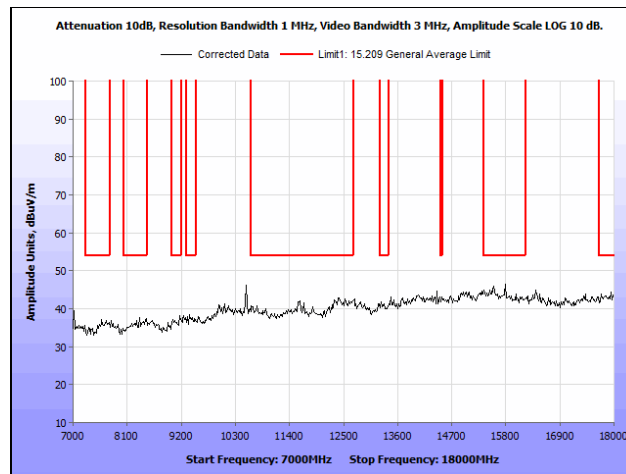
## Radiated Spurious Emissions, 802.11a, Patch Antenna, Lower Band



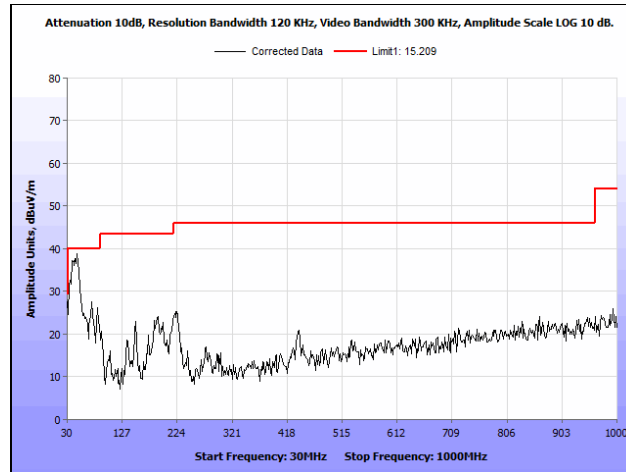
Plot 151. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 30 MHz – 1 GHz, Patch Antenna



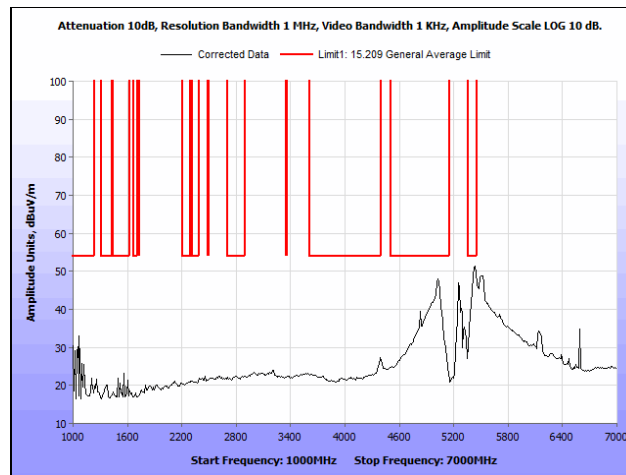
Plot 152. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Patch Antenna



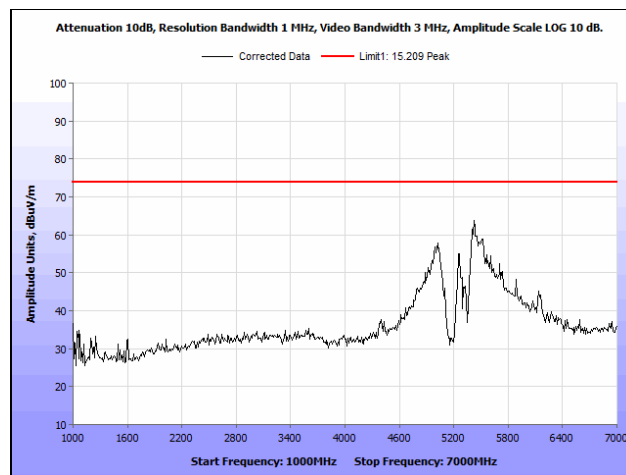
Plot 153. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 7 GHz – 18 GHz, Patch Antenna



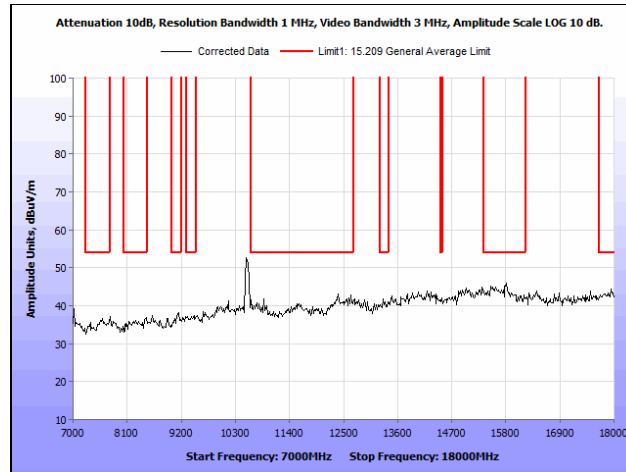
**Plot 154. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 30 MHz – 1 GHz, Patch Antenna**



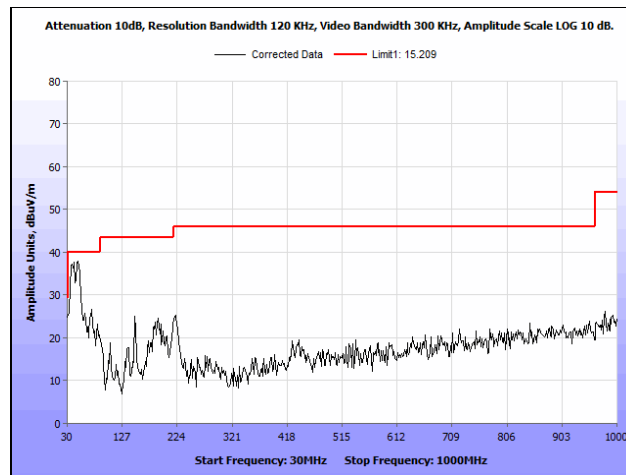
**Plot 155. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Patch Antenna**



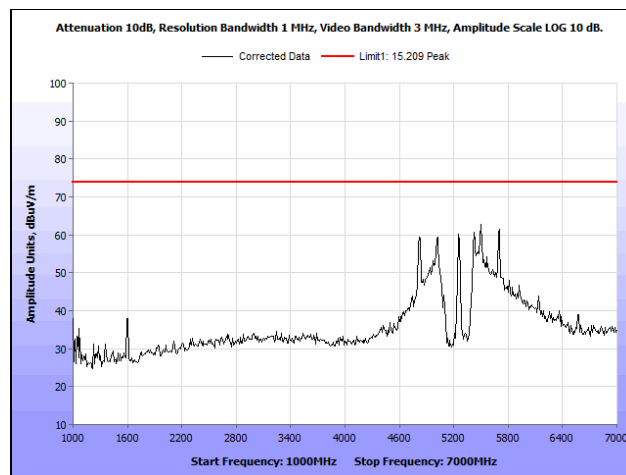
**Plot 156. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



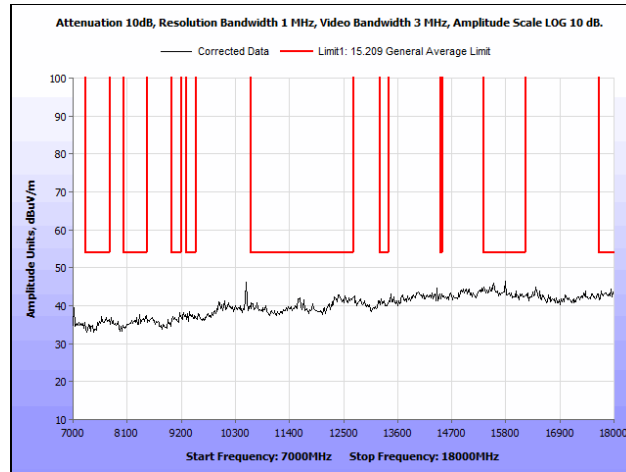
**Plot 157. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 7 GHz – 18 GHz, Patch Antenna**



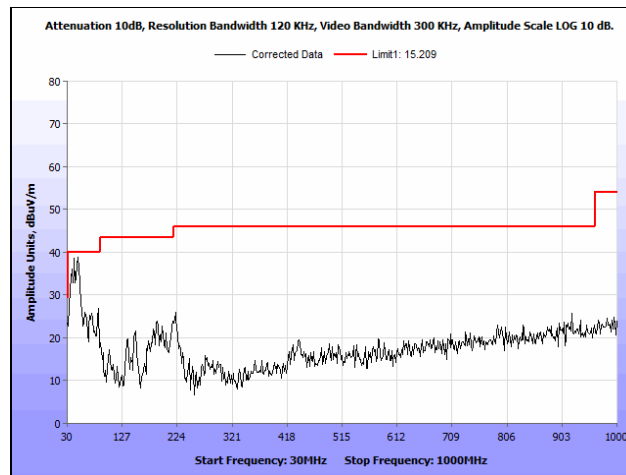
**Plot 158. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 30 MHz – 1 GHz, Patch Antenna**



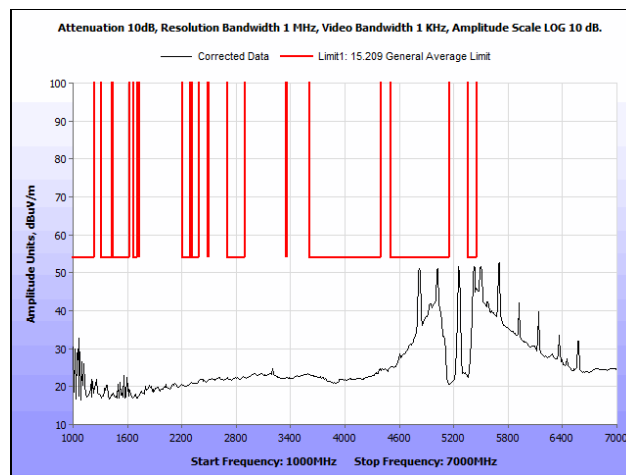
**Plot 159. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



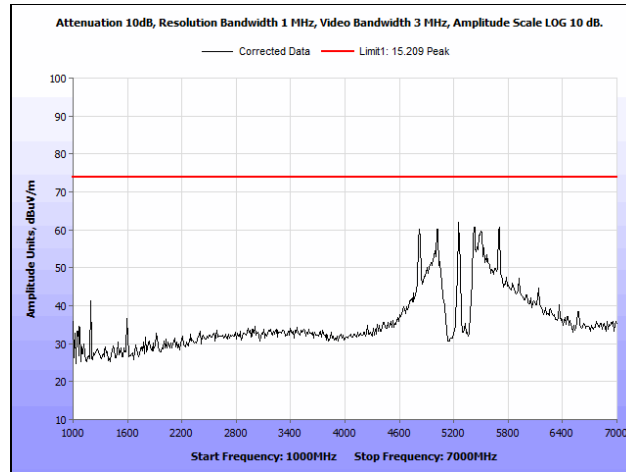
**Plot 160. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 7 GHz – 18 GHz, Patch Antenna**



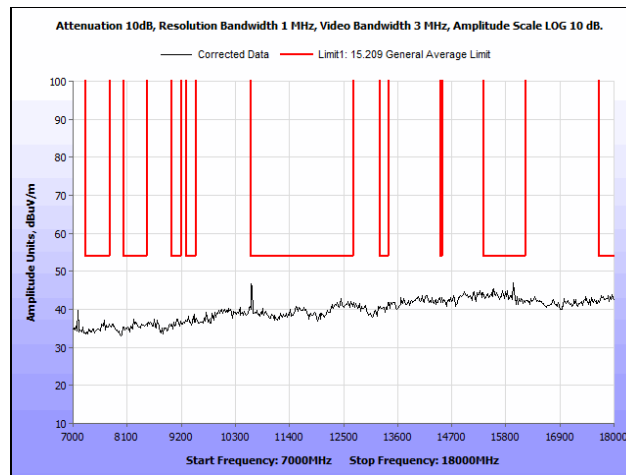
**Plot 161. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 30 MHz – 1 GHz, Patch Antenna**



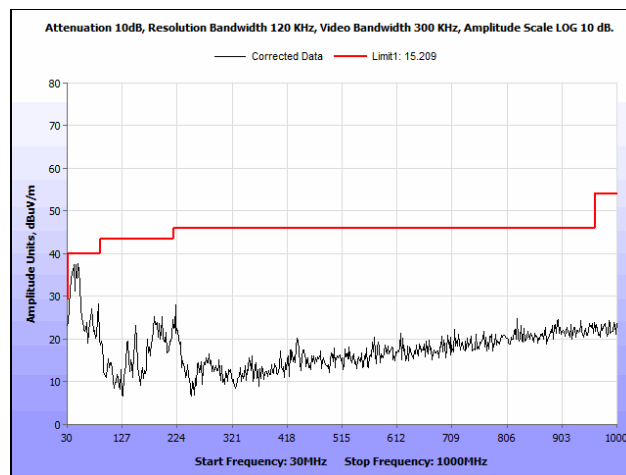
**Plot 162. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Patch Antenna**



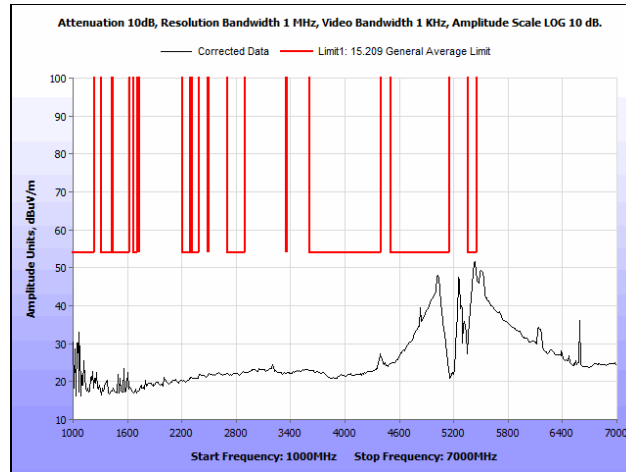
**Plot 163. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



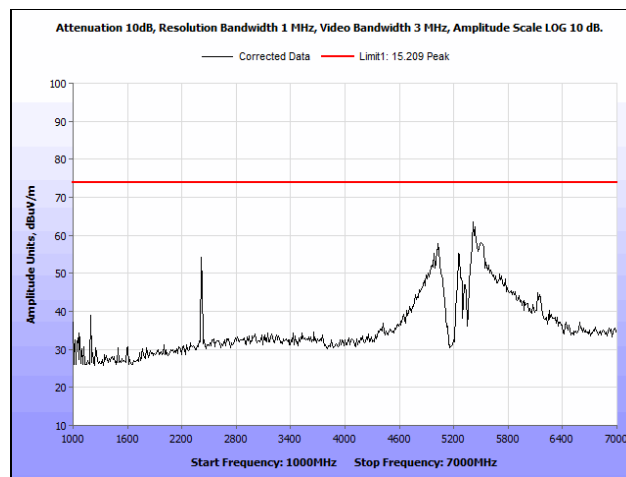
**Plot 164. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 7 GHz – 18 GHz, Patch Antenna**



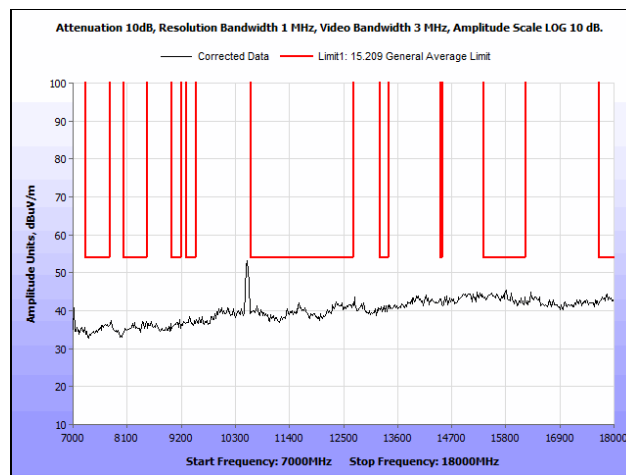
**Plot 165. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 30 MHz – 1 GHz, Patch Antenna**



**Plot 166. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Patch Antenna**

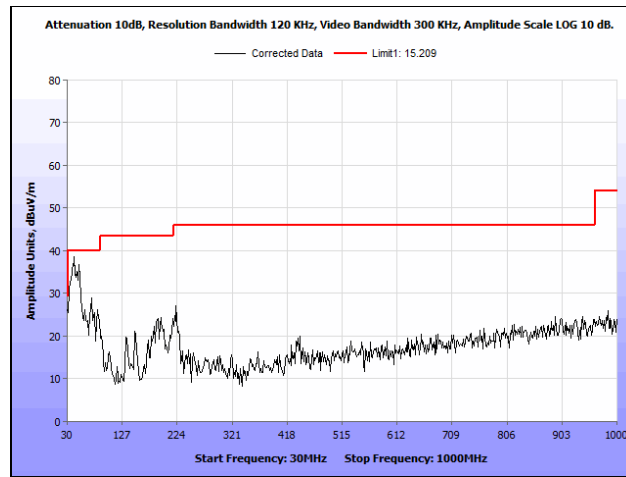


**Plot 167. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**

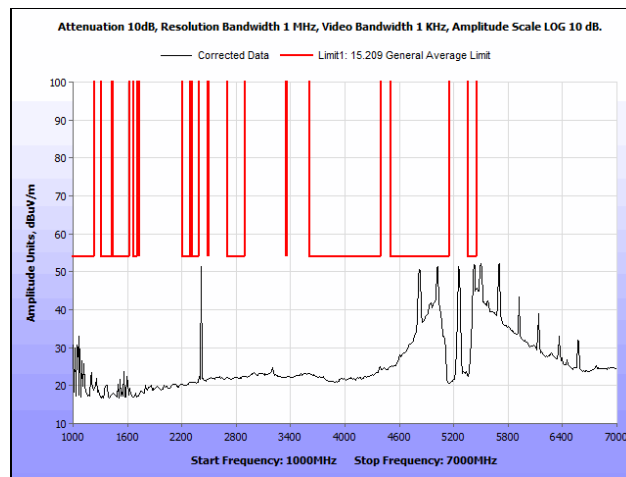


**Plot 168. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Patch Antenna**

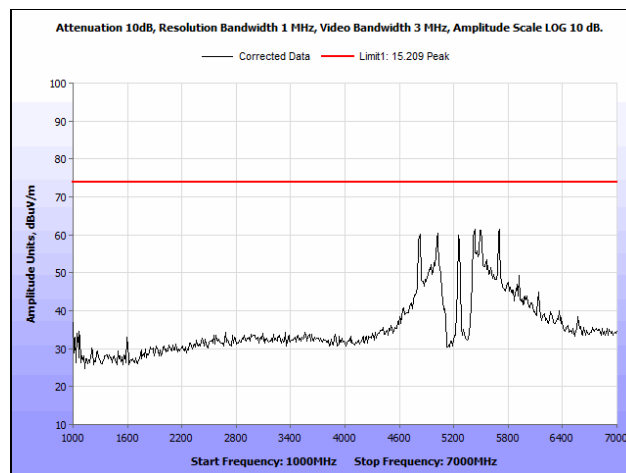
## Radiated Spurious Emissions, 802.11n, Patch Antenna, Lower Band



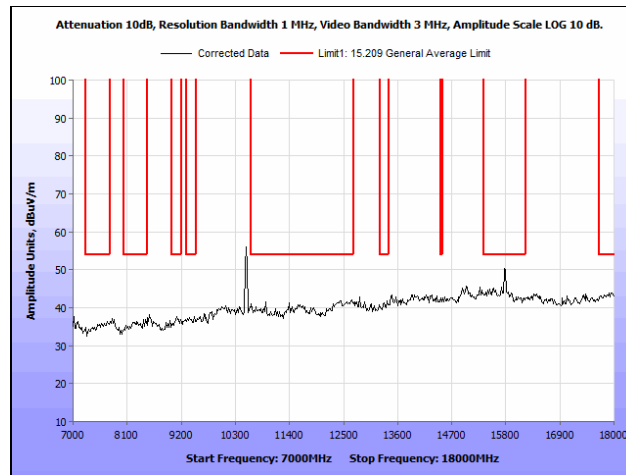
Plot 169. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 30 MHz – 1 GHz, Patch Antenna



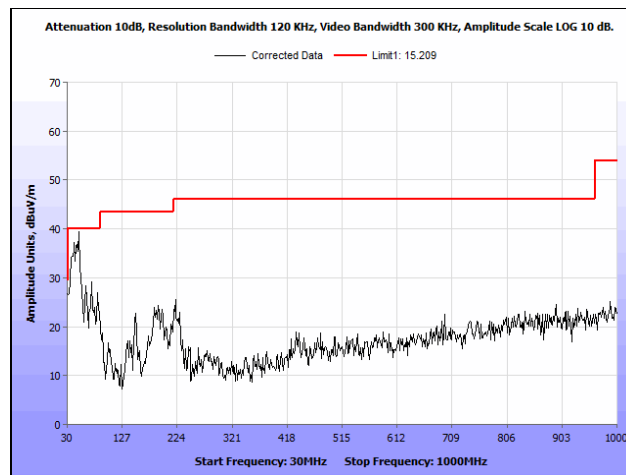
Plot 170. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Patch Antenna



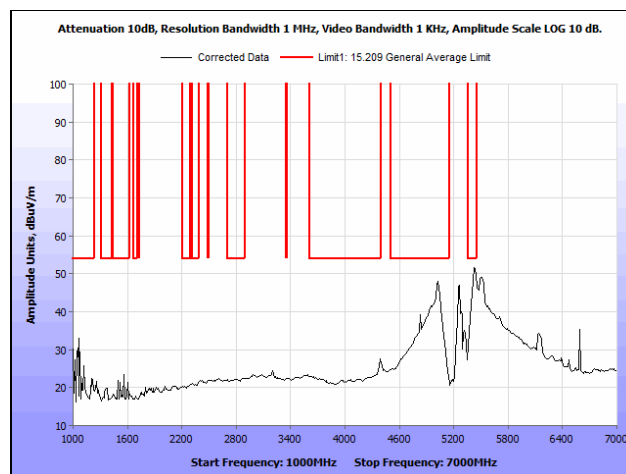
Plot 171. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Patch Antenna



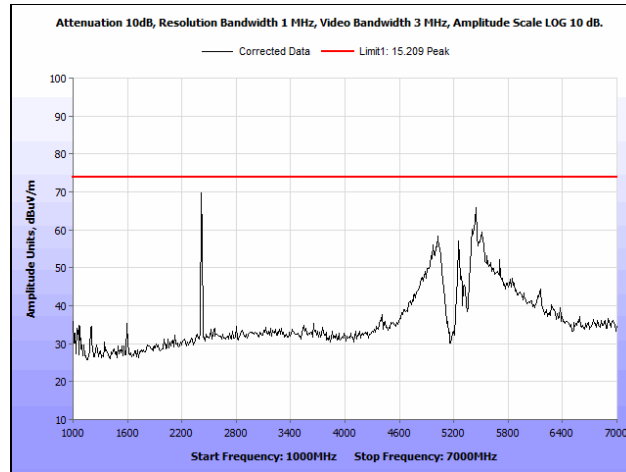
Plot 172. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 7 GHz – 18 GHz, Patch Antenna



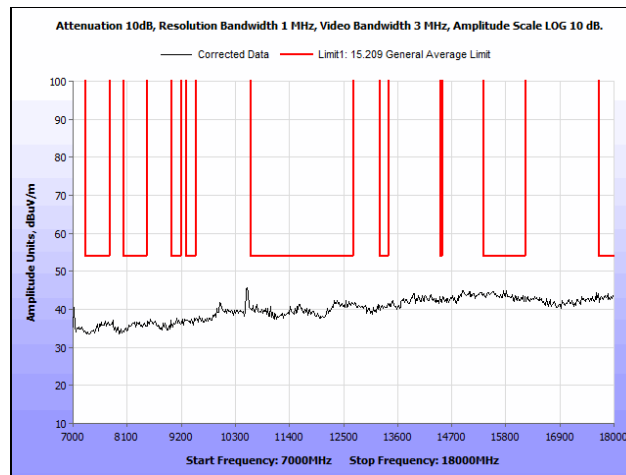
Plot 173. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 30 MHz – 1 GHz, Patch Antenna



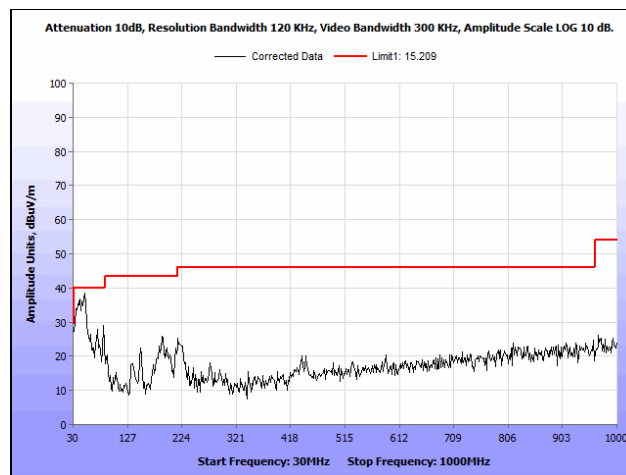
Plot 174. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Patch Antenna



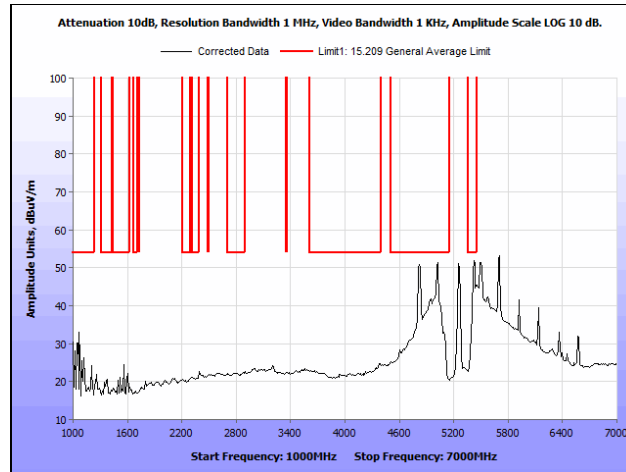
Plot 175. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Patch Antenna



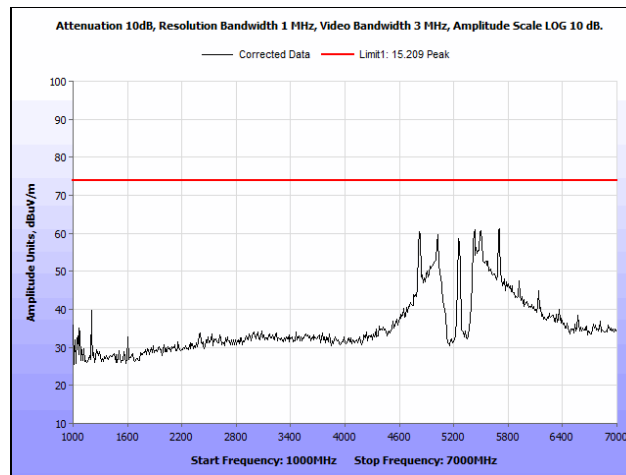
Plot 176. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 7 GHz – 18 GHz, Patch Antenna



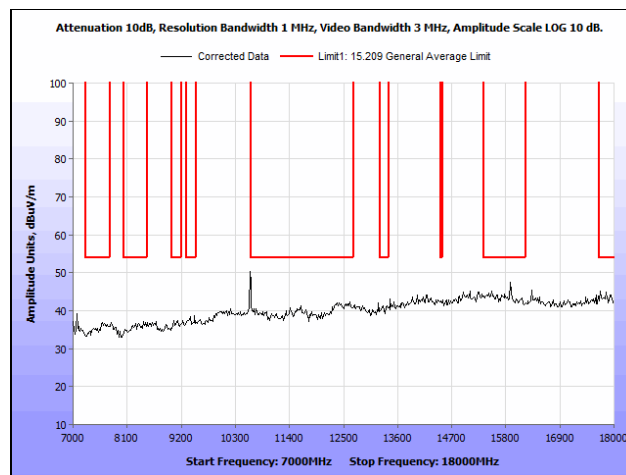
Plot 177. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 30 MHz – 1 GHz, Patch Antenna



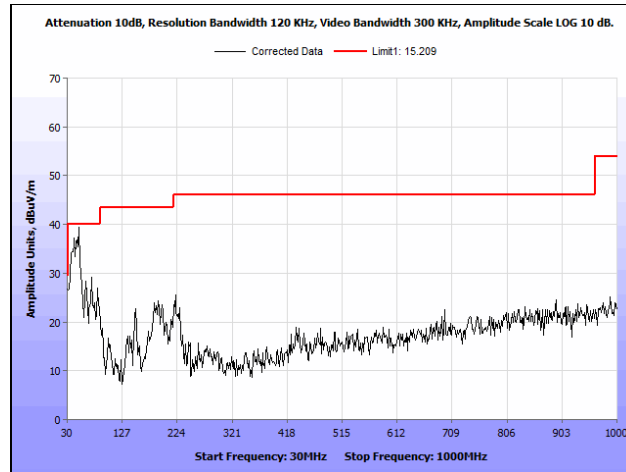
**Plot 178. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Patch Antenna**



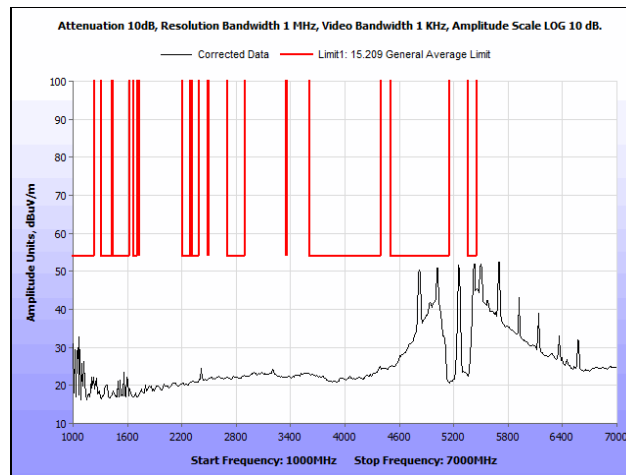
**Plot 179. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



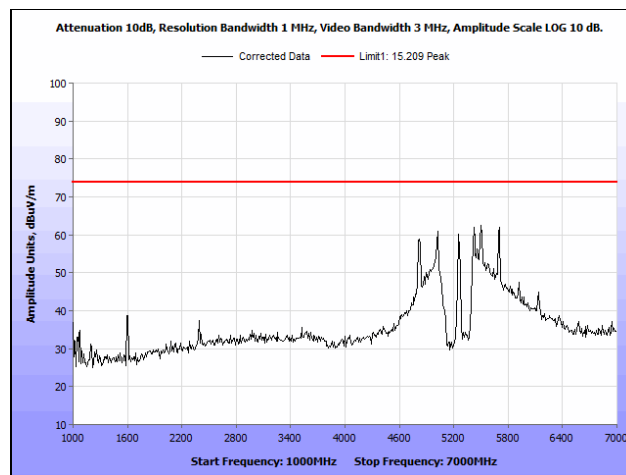
**Plot 180. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 7 GHz – 18 GHz, Patch Antenna**



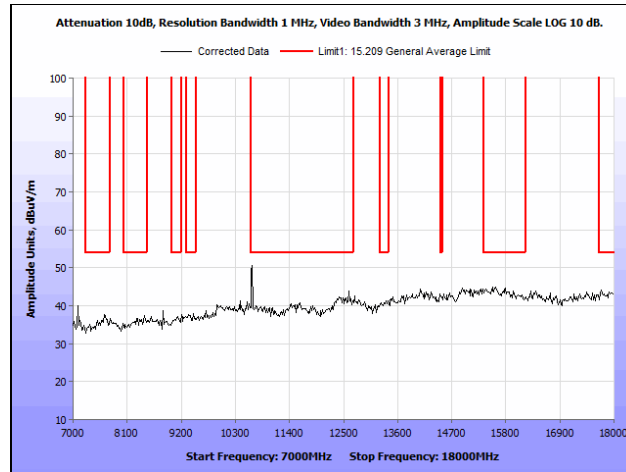
**Plot 181. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 30 MHz – 1 GHz, Patch Antenna**



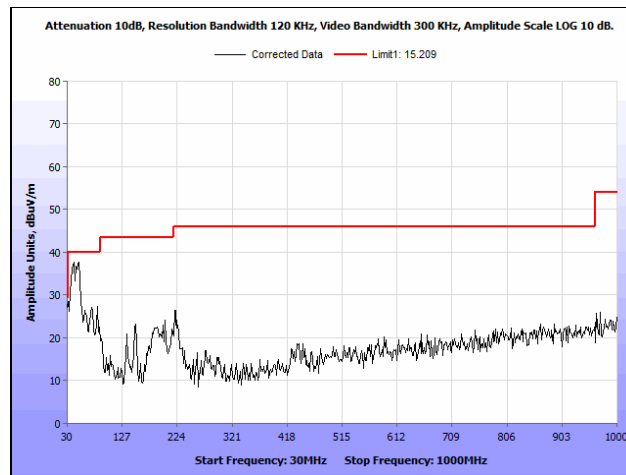
**Plot 182. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Patch Antenna**



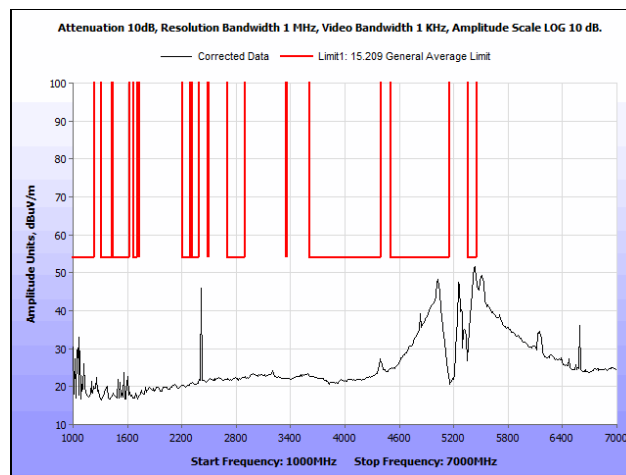
**Plot 183. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



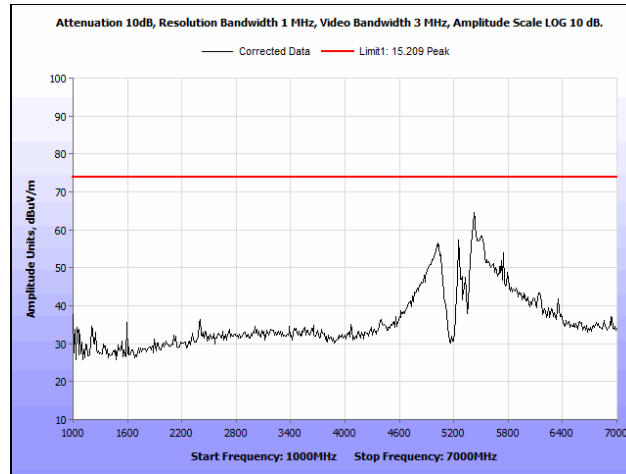
**Plot 184. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 7 GHz – 18 GHz, Patch Antenna**



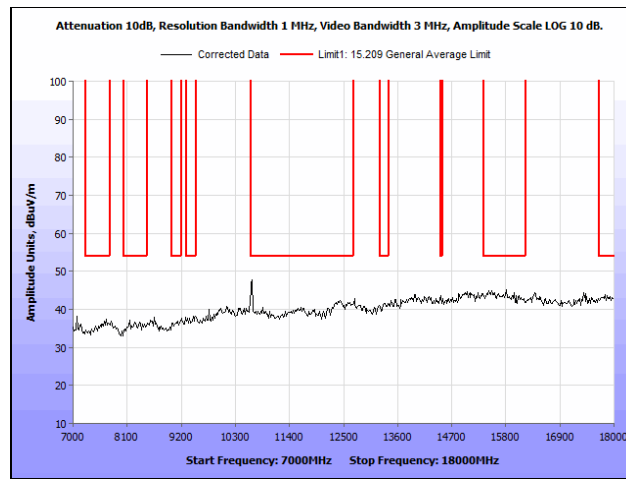
**Plot 185. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 30 MHz – 1 GHz, Patch Antenna**



**Plot 186. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Patch Antenna**

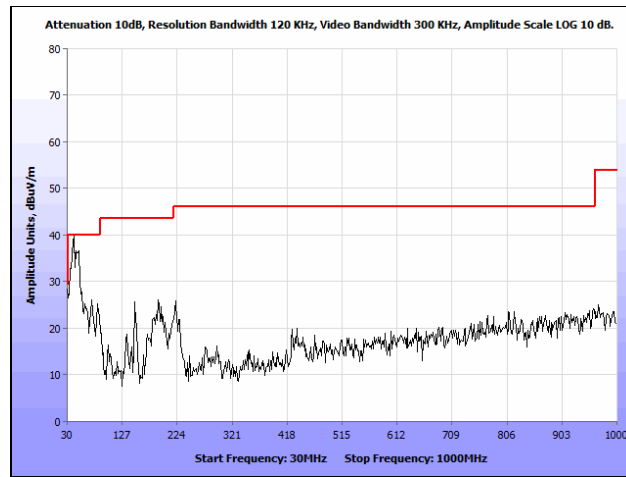


**Plot 187. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**

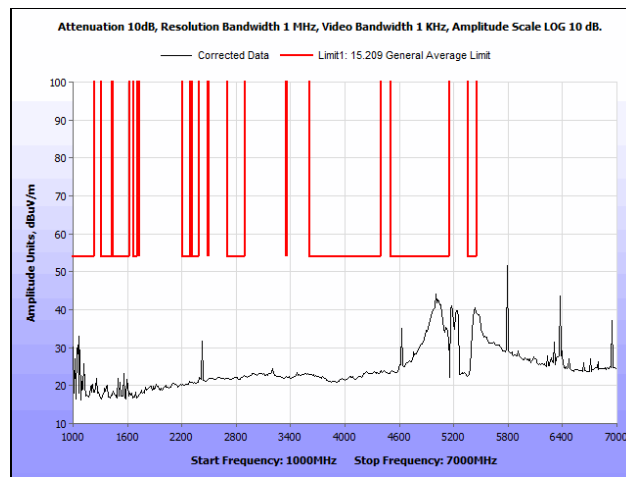


**Plot 188. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Patch Antenna**

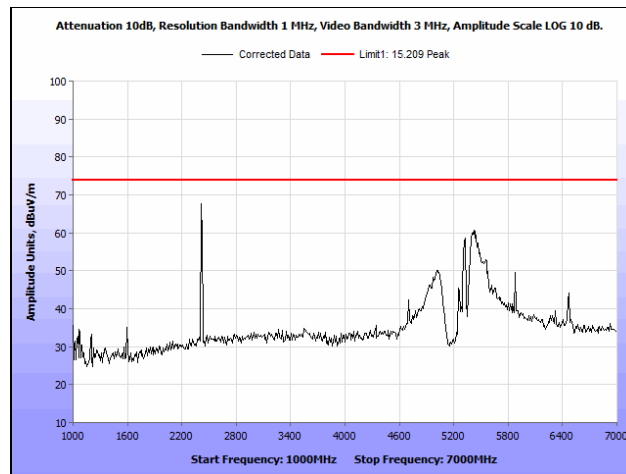
## Radiated Spurious Emissions, 802.11ac, Patch Antenna, Lower Band



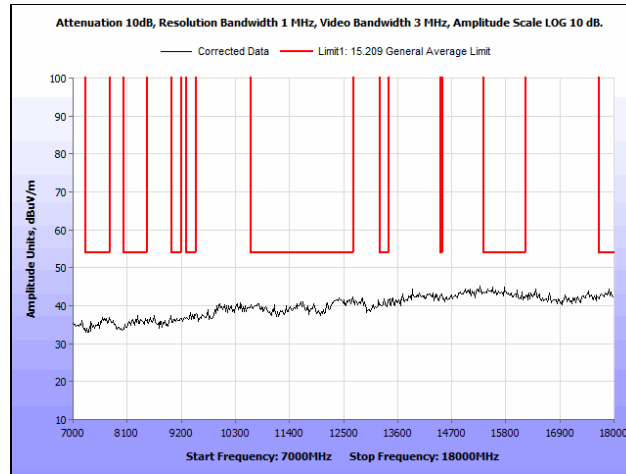
Plot 189. Radiated Spurious Emissions, 802.11ac 80 MHz, 30 MHz – 1 GHz, Patch Antenna



Plot 190. Radiated Spurious Emissions, 802.11ac 80 MHz, 1 GHz – 7 GHz, Average, Patch Antenna

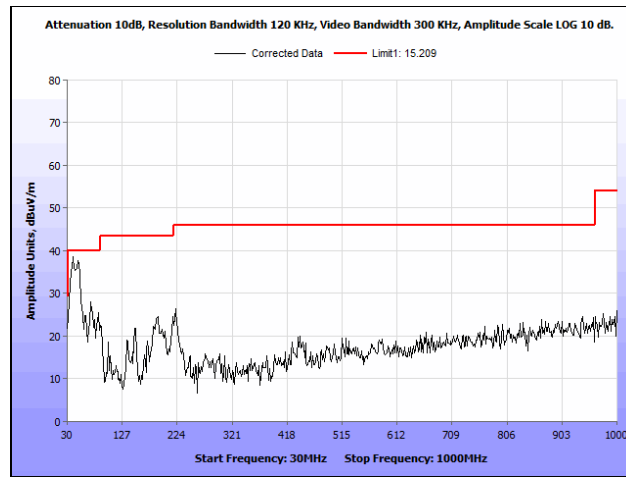


Plot 191. Radiated Spurious Emissions, 802.11ac 80 MHz, 1 GHz – 7 GHz, Peak, Patch Antenna

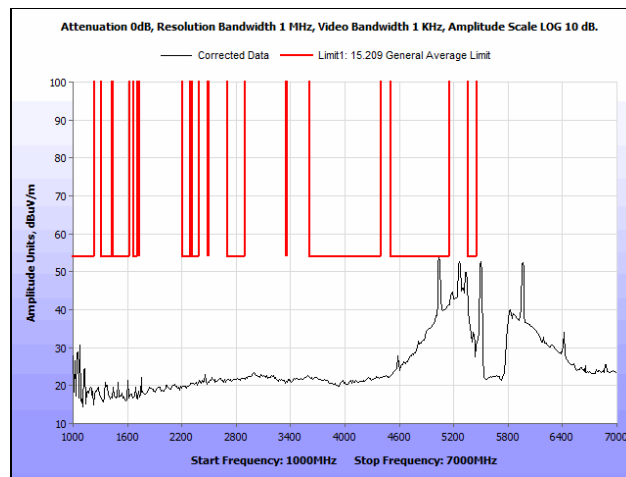


**Plot 192. Radiated Spurious Emissions, 802.11ac 80 MHz, 7 GHz – 18 GHz, Patch Antenna**

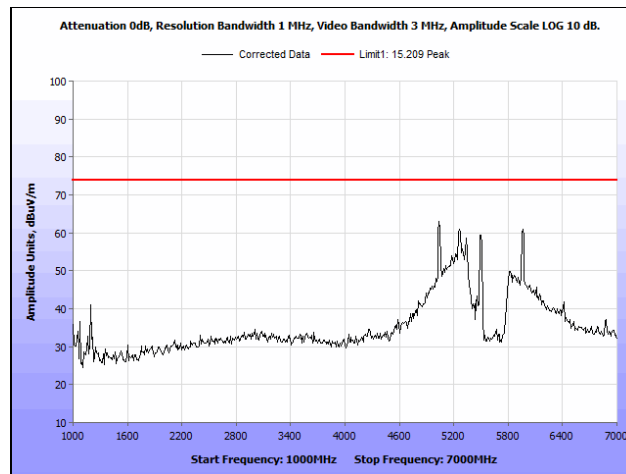
## Radiated Spurious Emissions, 802.11a, Ceiling Antenna, Upper Band



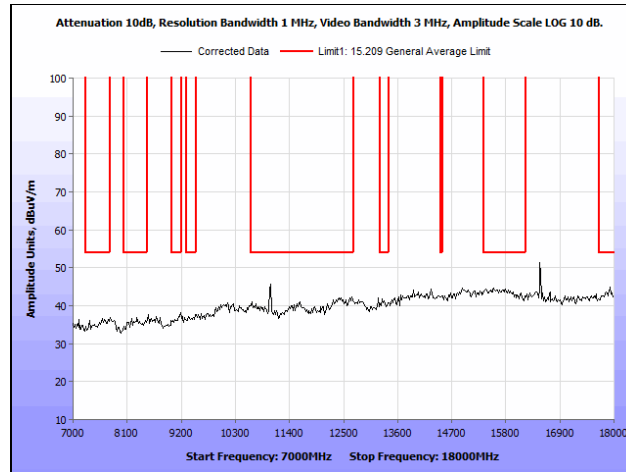
Plot 193. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 30 MHz – 1 GHz, Ceiling Antenna



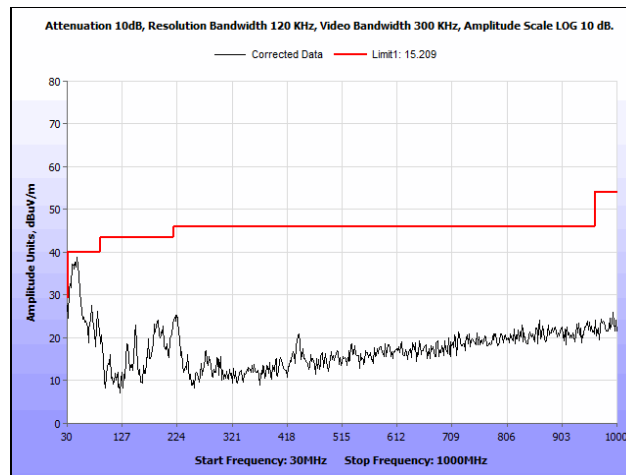
Plot 194. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna



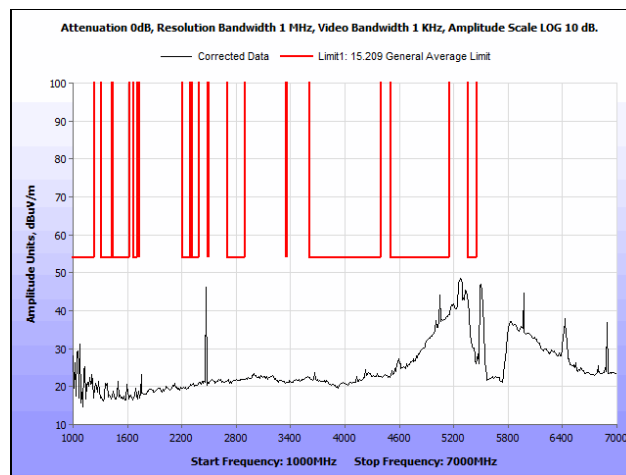
Plot 195. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna



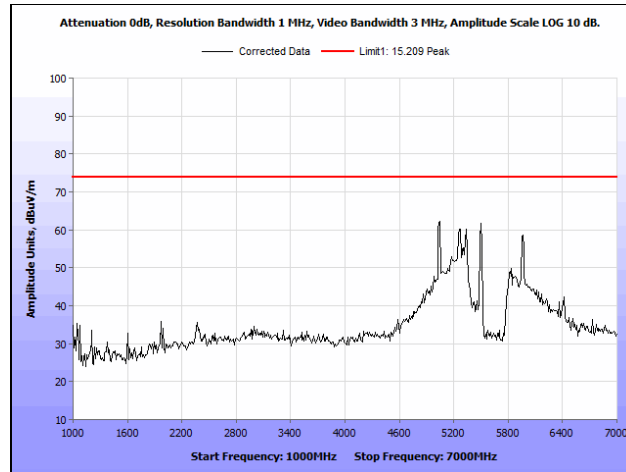
**Plot 196. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



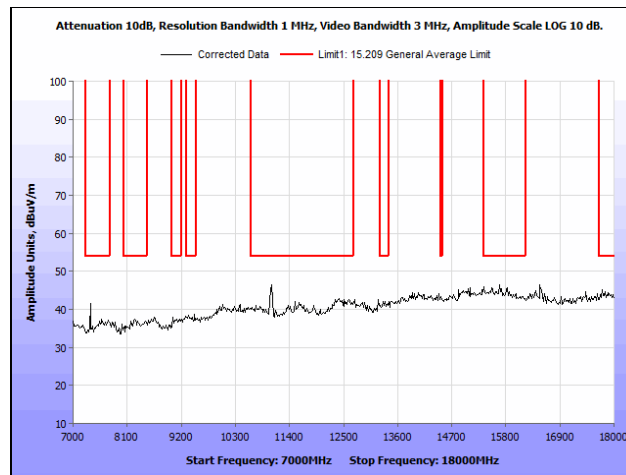
**Plot 197. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 30 MHz – 1 GHz, Ceiling Antenna**



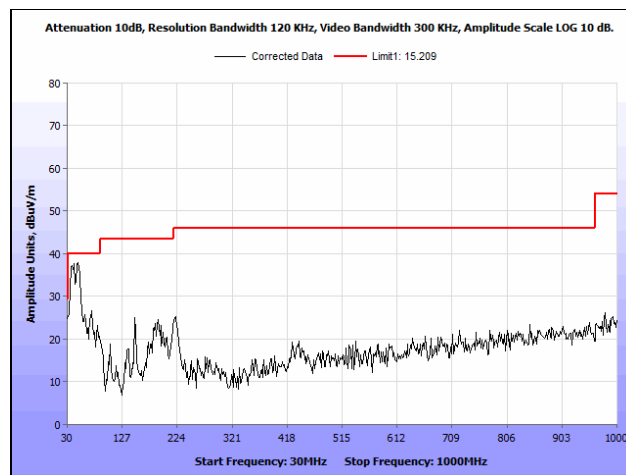
**Plot 198. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



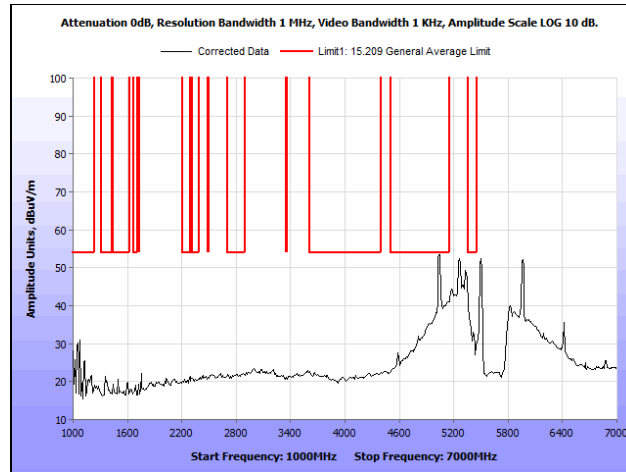
**Plot 199. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



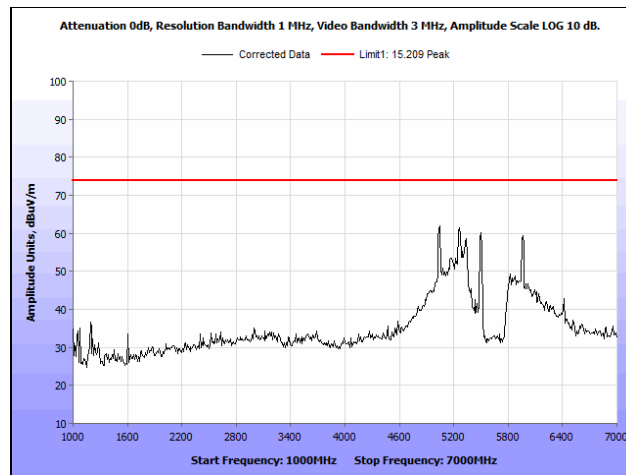
**Plot 200. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 7 GHz – 18 GHz, Ceiling Antenna**



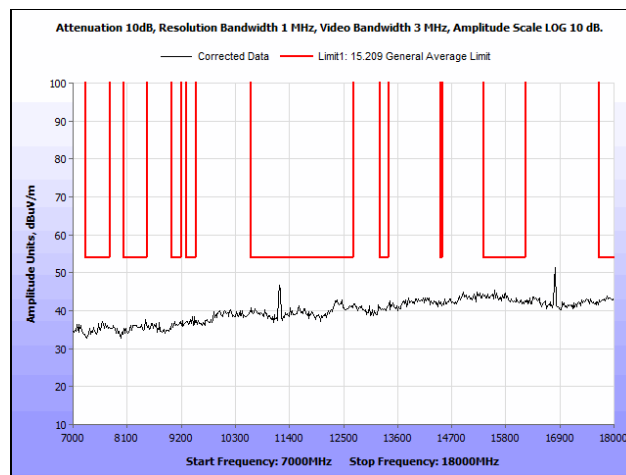
**Plot 201. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 30 MHz – 1 GHz, Ceiling Antenna**



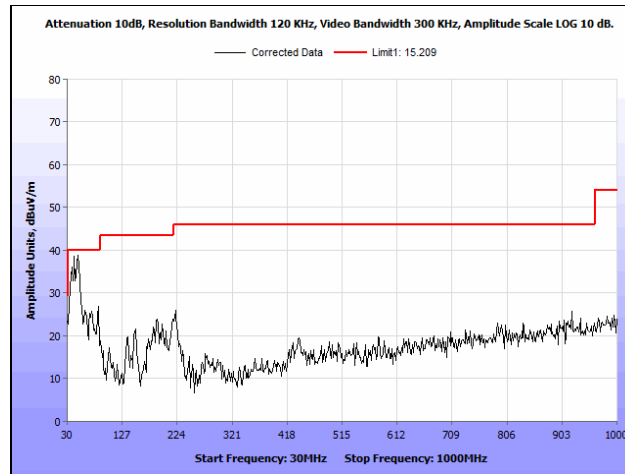
**Plot 202. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



**Plot 203. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



**Plot 204. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 7 GHz – 18 GHz, Ceiling Antenna**



Plot 205. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 30 MHz – 1 GHz, Ceiling Antenna

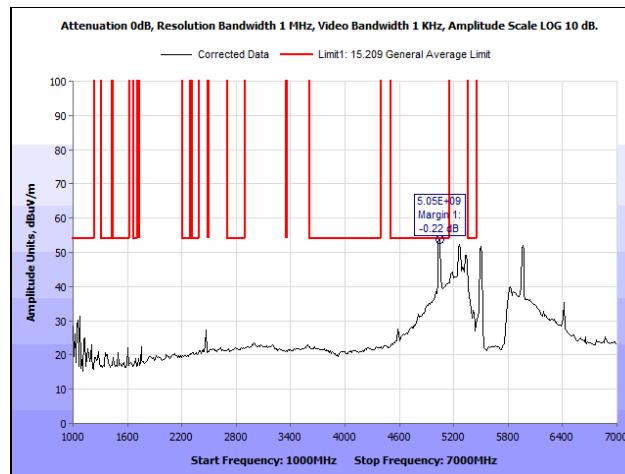
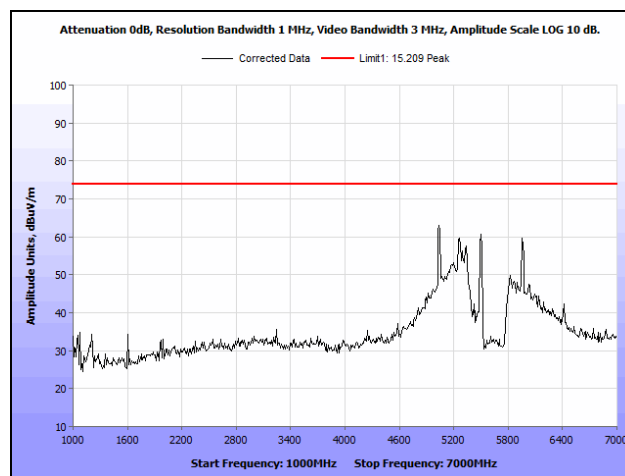
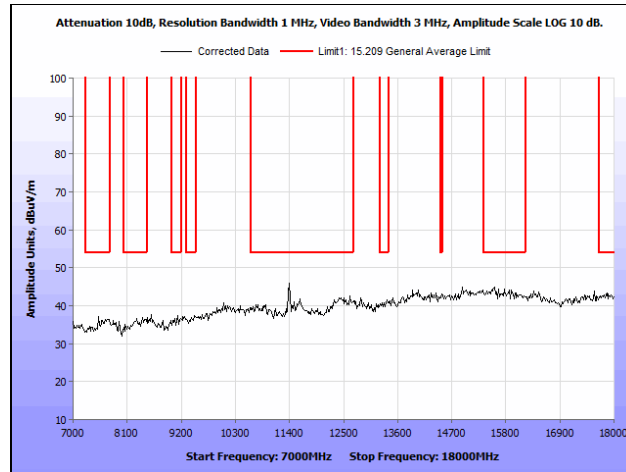


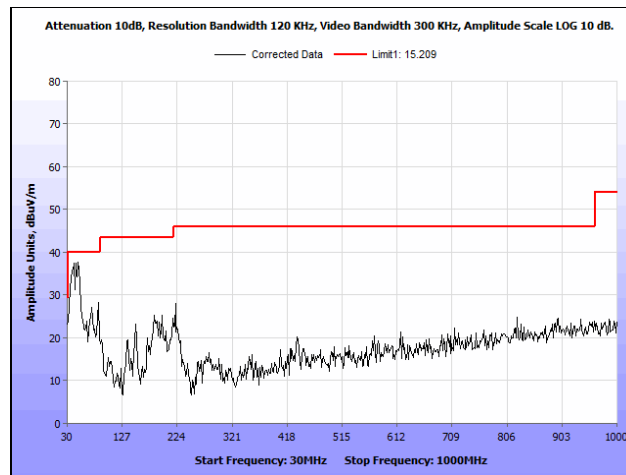
Table 33. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna



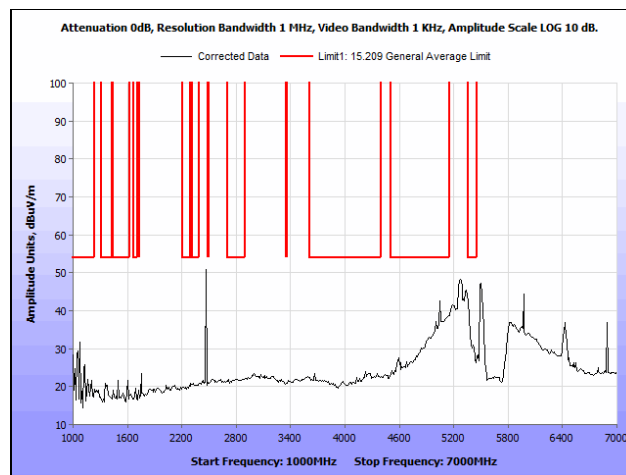
Plot 206. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna



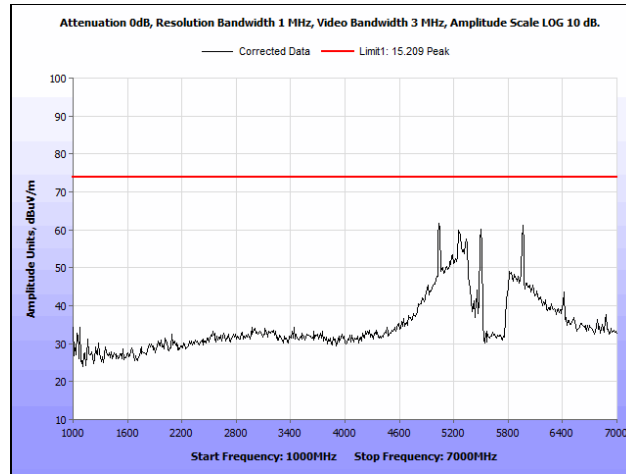
**Plot 207. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 7 GHz – 18 GHz, Ceiling Antenna**



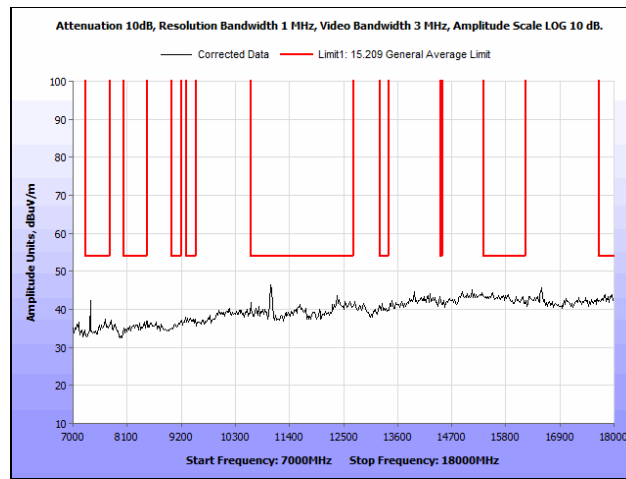
**Plot 208. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 30 MHz – 1 GHz, Ceiling Antenna**



**Plot 209. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**

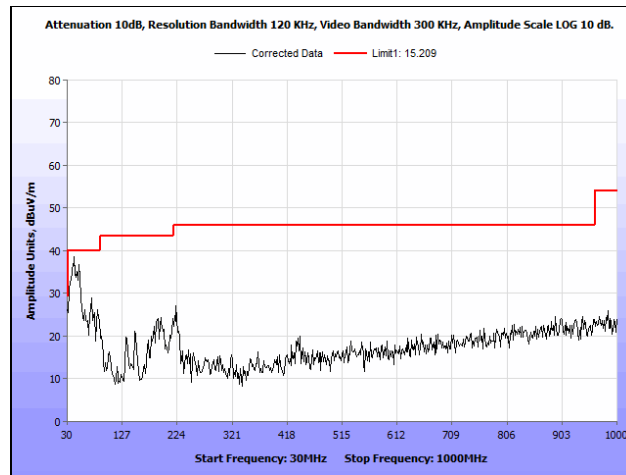


**Plot 210. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**

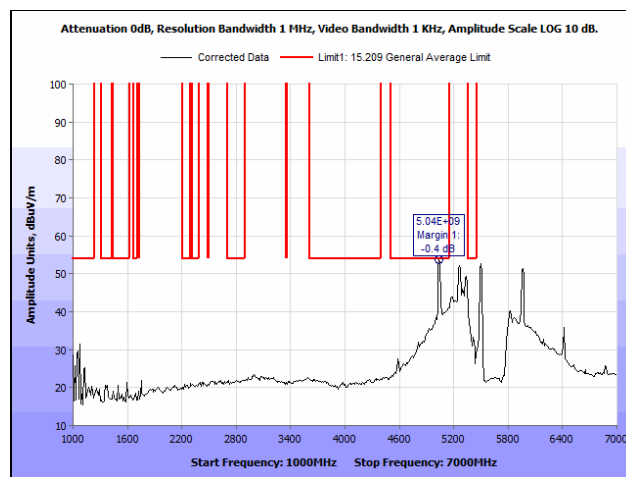


**Plot 211. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Ceiling Antenna**

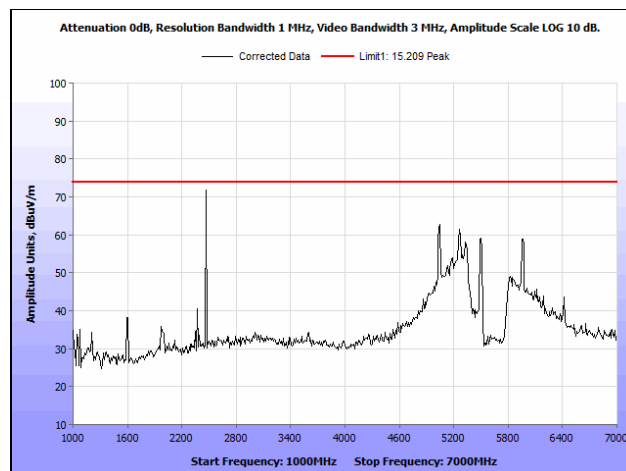
## Radiated Spurious Emissions, 802.11n, Ceiling Antenna, Upper Band



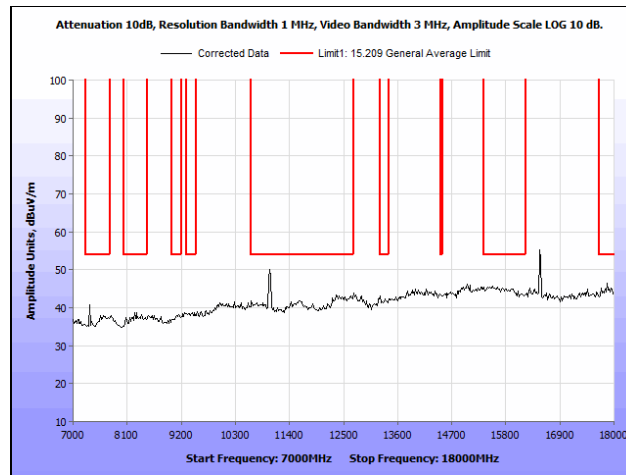
Plot 212. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 30 MHz – 1 GHz, Ceiling Antenna



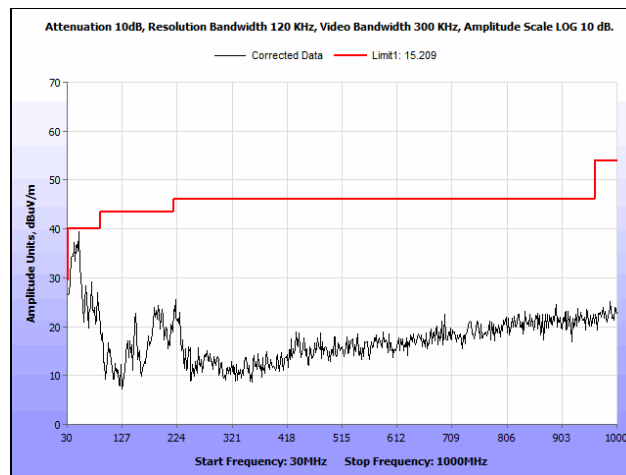
Plot 213. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna



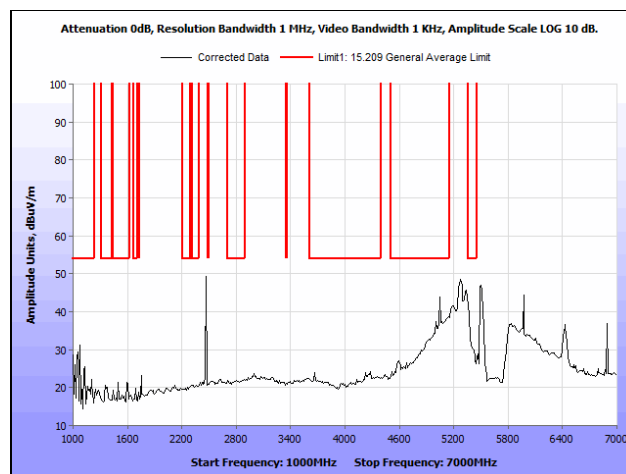
Plot 214. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna



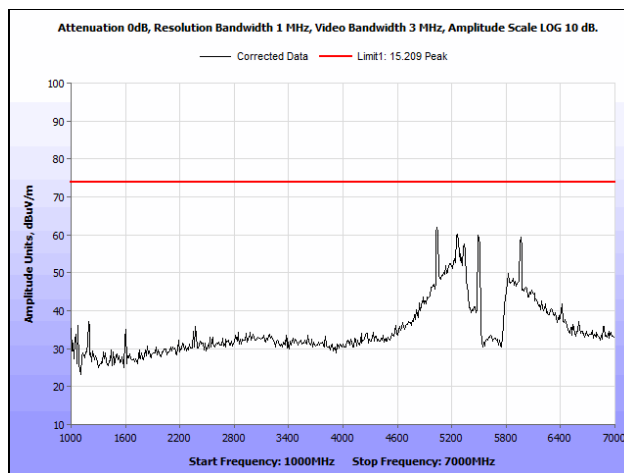
**Plot 215. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 7 GHz – 18 GHz, Ceiling Antenna**



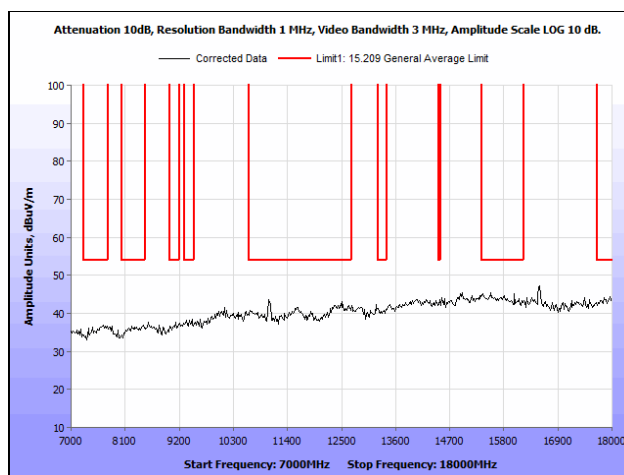
**Plot 216. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 30 MHz – 1 GHz, Ceiling Antenna**



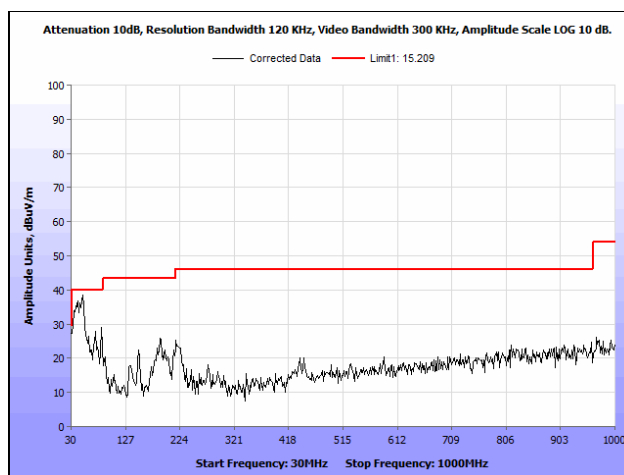
**Plot 217. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



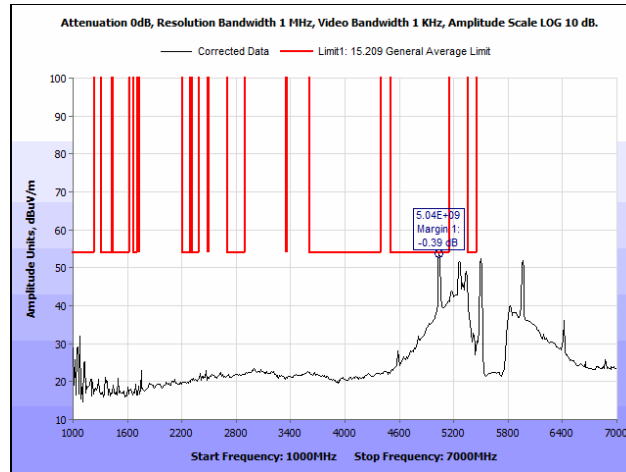
**Plot 218. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



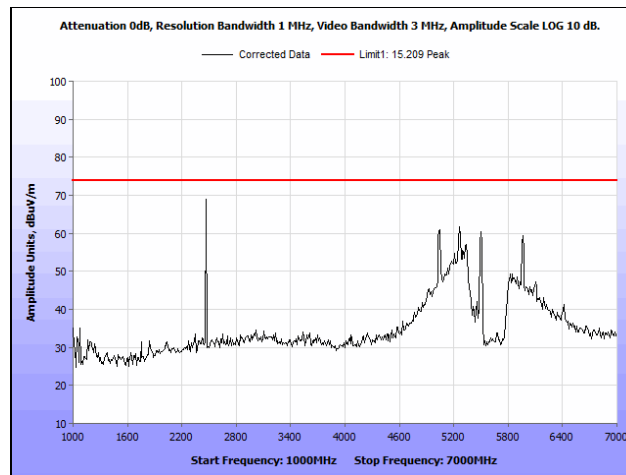
**Plot 219. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 7 GHz – 18 GHz, Ceiling Antenna**



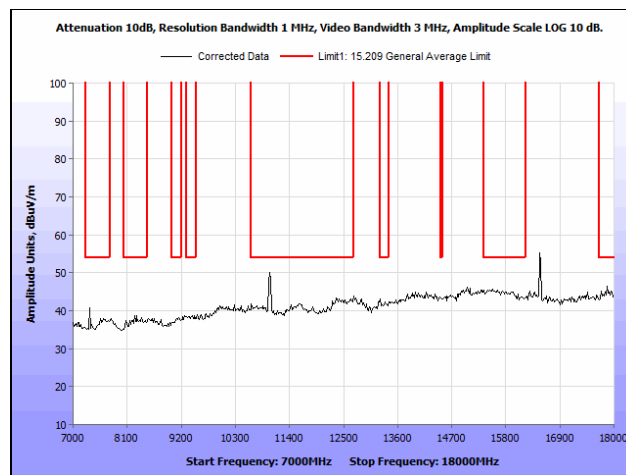
**Plot 220. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 30 MHz – 1 GHz, Ceiling Antenna**



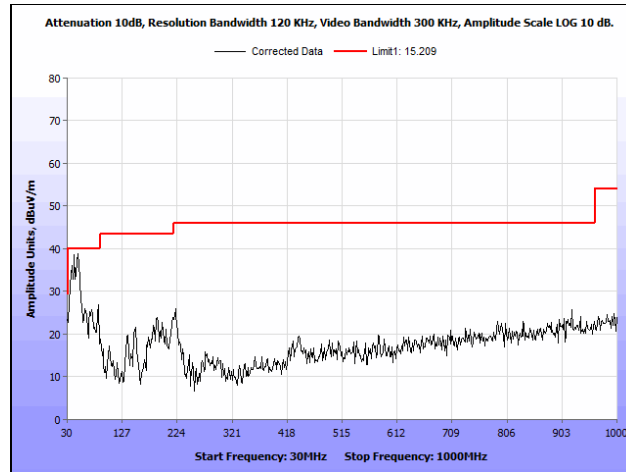
**Plot 221. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



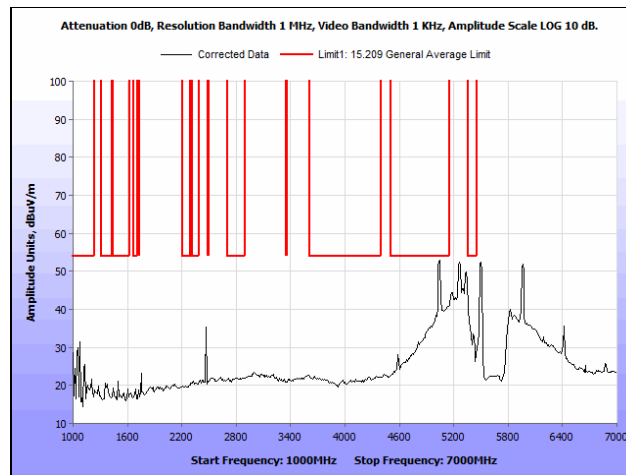
**Plot 222. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



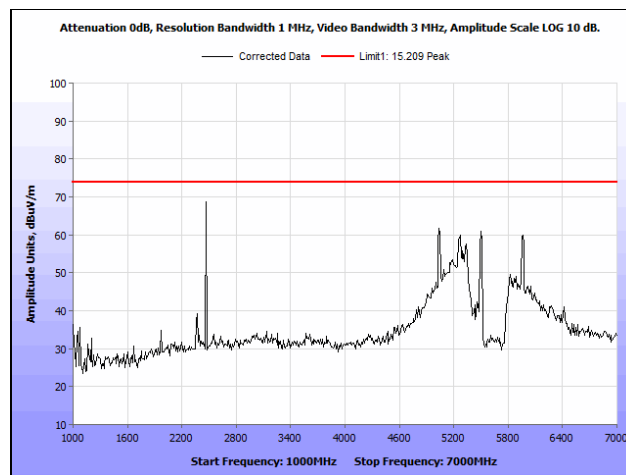
**Plot 223. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 7 GHz – 18 GHz, Ceiling Antenna**



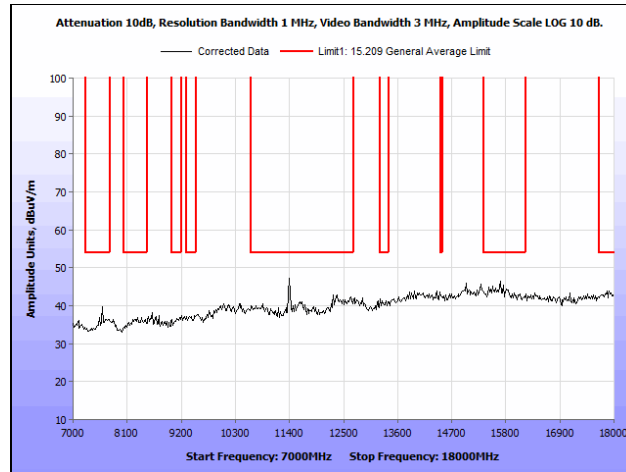
**Plot 224. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 30 MHz – 1 GHz, Ceiling Antenna**



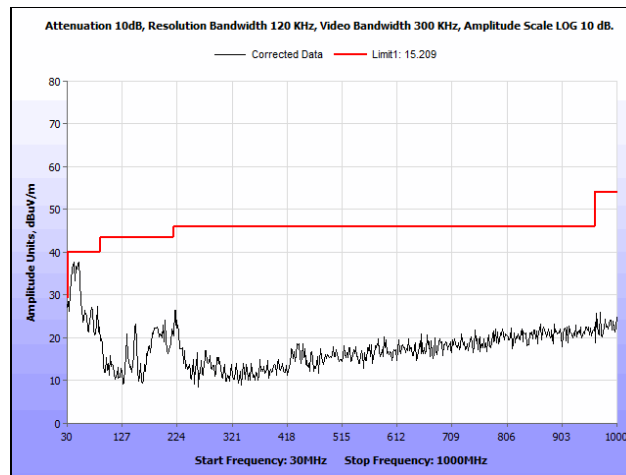
**Plot 225. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna**



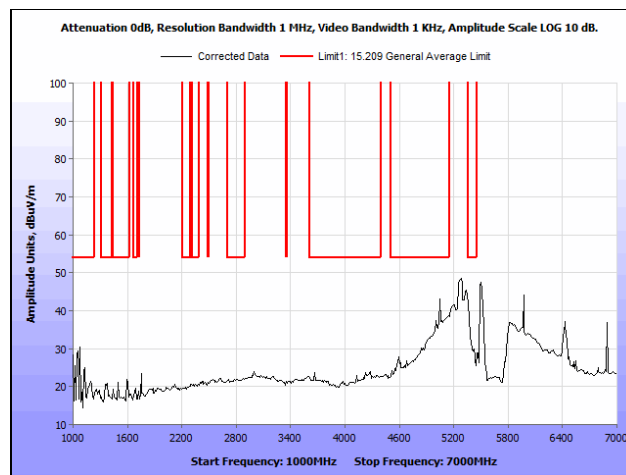
**Plot 226. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**



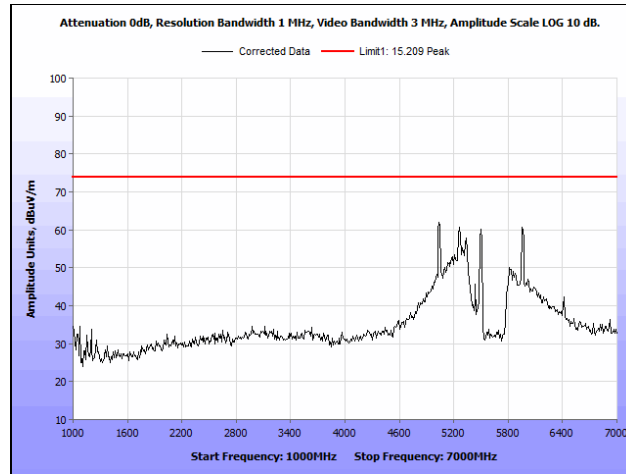
Plot 227. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 7 GHz – 18 GHz, Ceiling Antenna



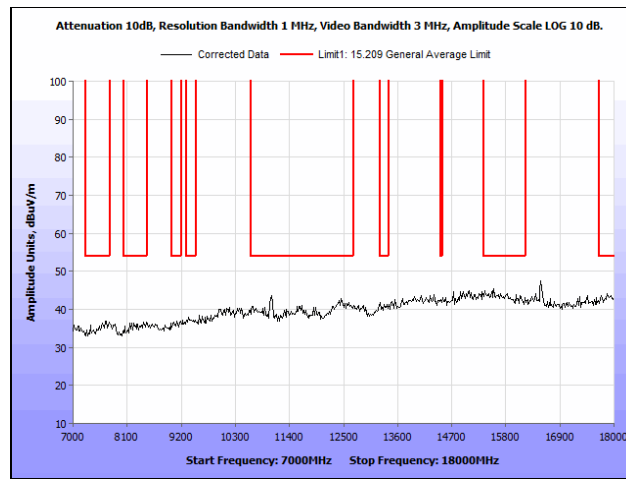
Plot 228. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 30 MHz – 1 GHz, Ceiling Antenna



Plot 229. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Ceiling Antenna

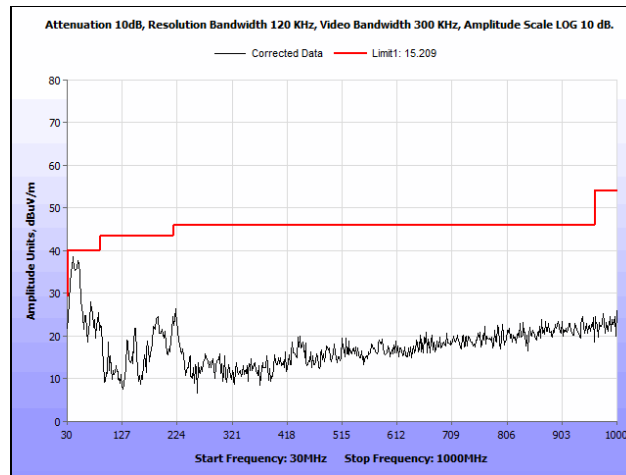


**Plot 230. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Ceiling Antenna**

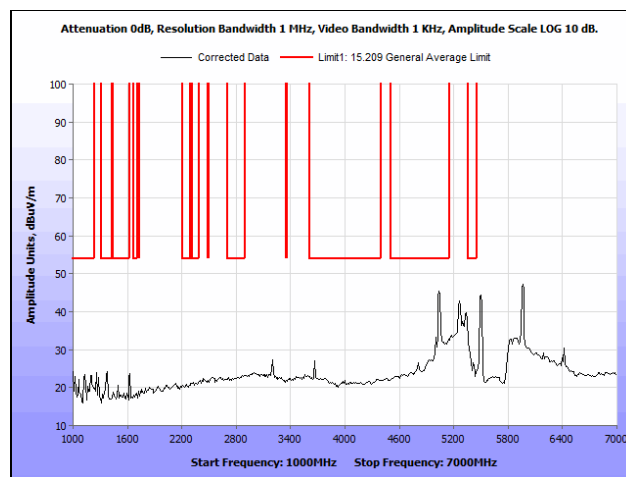


**Plot 231. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Ceiling Antenna**

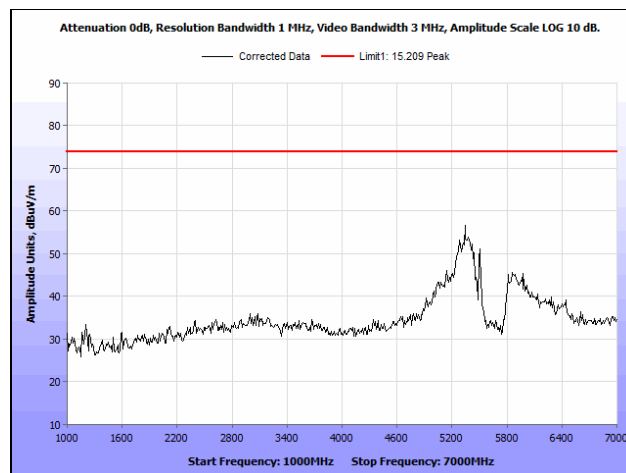
## Radiated Spurious Emissions, 802.11a, Omni Antenna, Upper Band



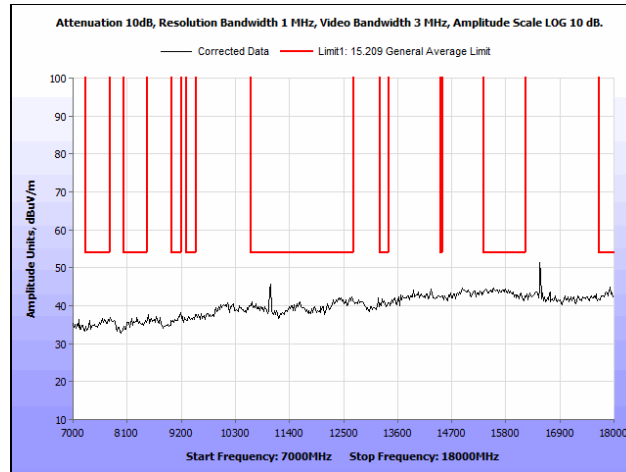
Plot 232. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 30 MHz – 1 GHz, Omni Antenna



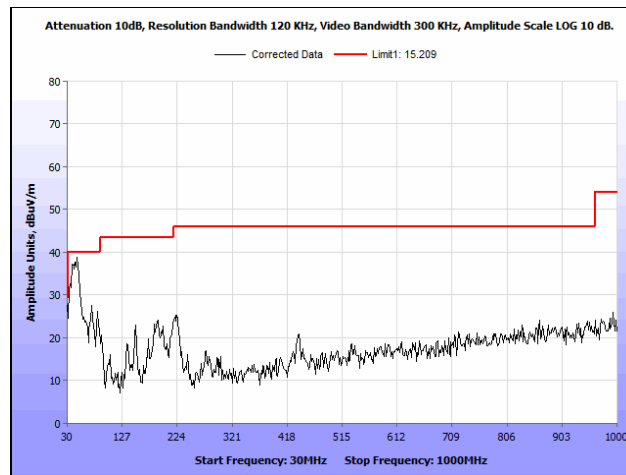
Plot 233. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Omni Antenna



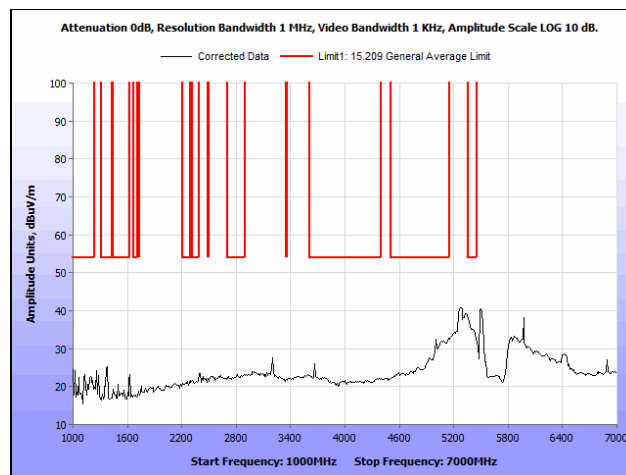
Plot 234. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Omni Antenna



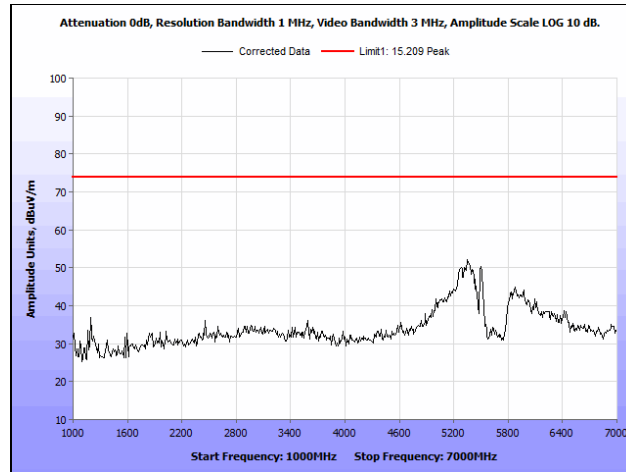
**Plot 235. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 7 GHz – 18 GHz, Omni Antenna**



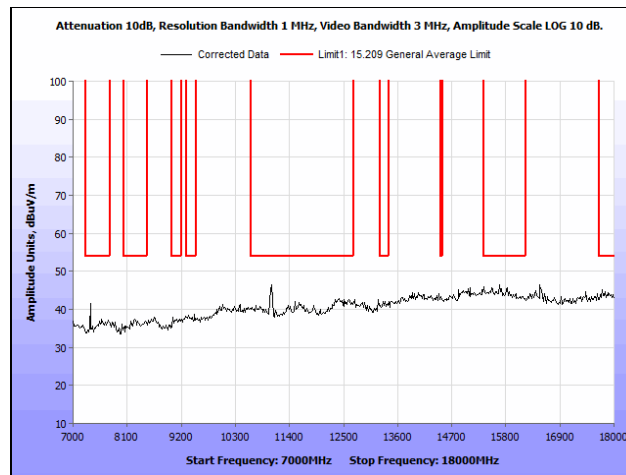
**Plot 236. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 30 MHz – 1 GHz, Omni Antenna**



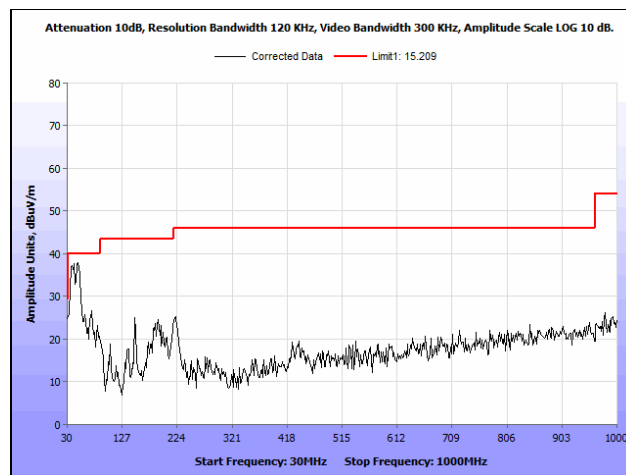
**Plot 237. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Omni Antenna**



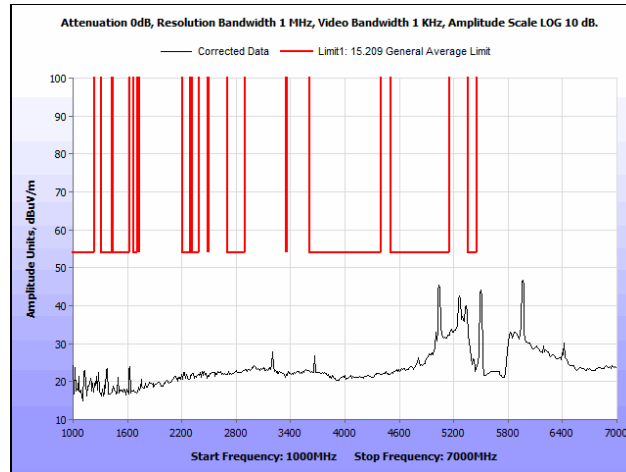
**Plot 238. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



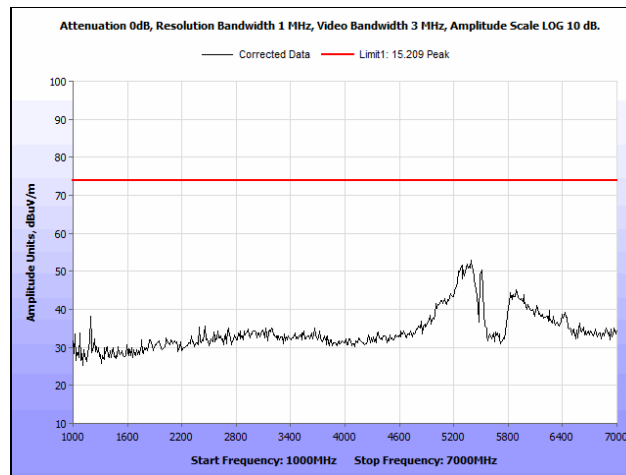
**Plot 239. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 7 GHz – 18 GHz, Omni Antenna**



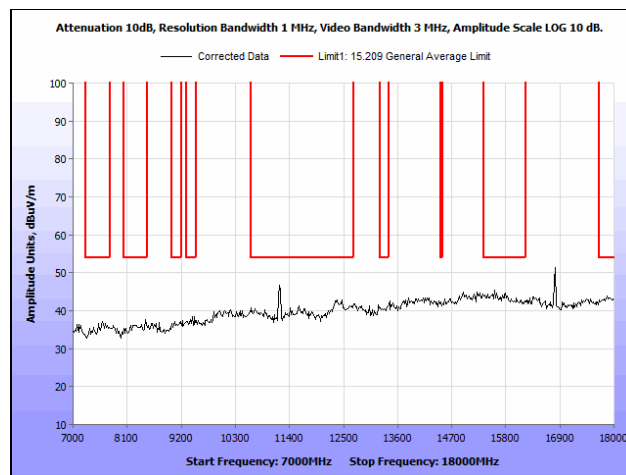
**Plot 240. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 30 MHz – 1 GHz, Omni Antenna**



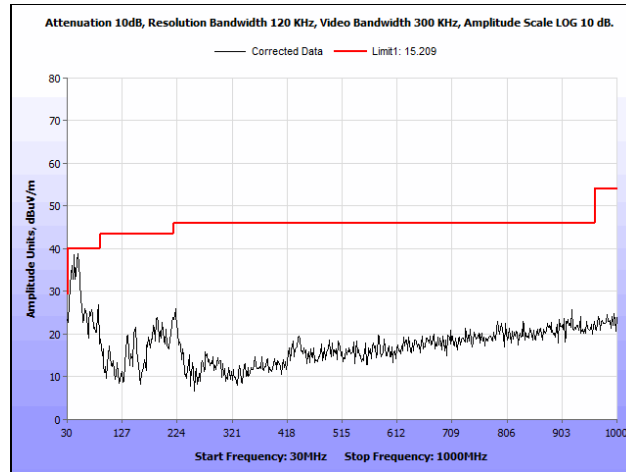
**Plot 241. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Omni Antenna**



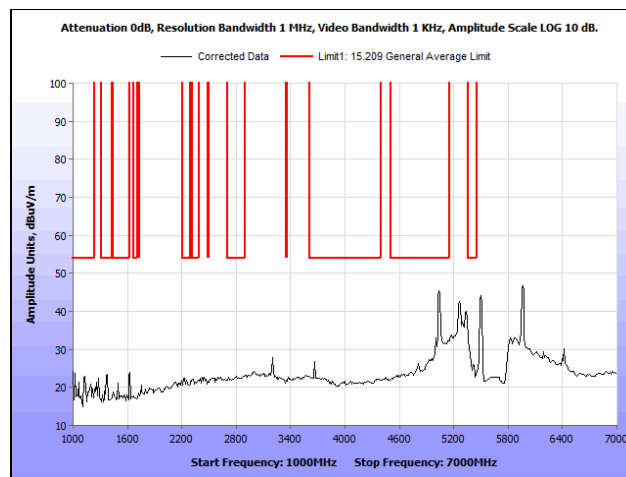
**Plot 242. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



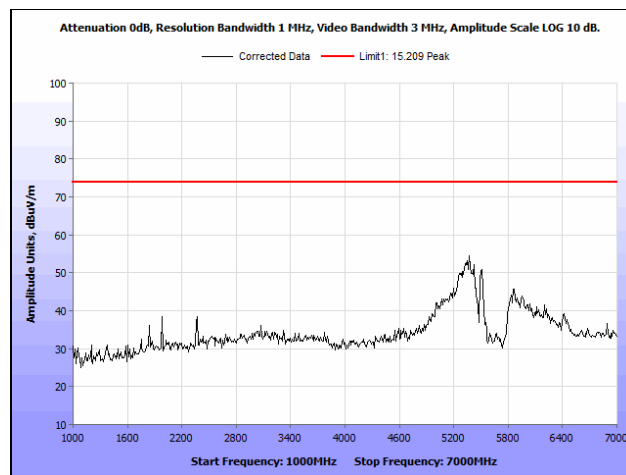
**Plot 243. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 7 GHz – 18 GHz, Omni Antenna**



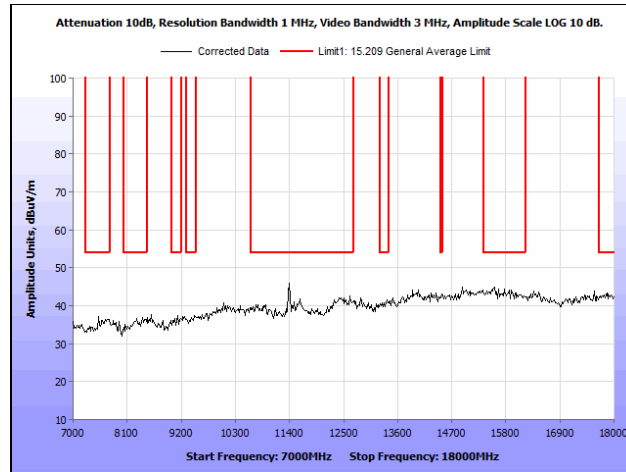
**Plot 244. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 30 MHz – 1 GHz, Average, Omni Antenna**



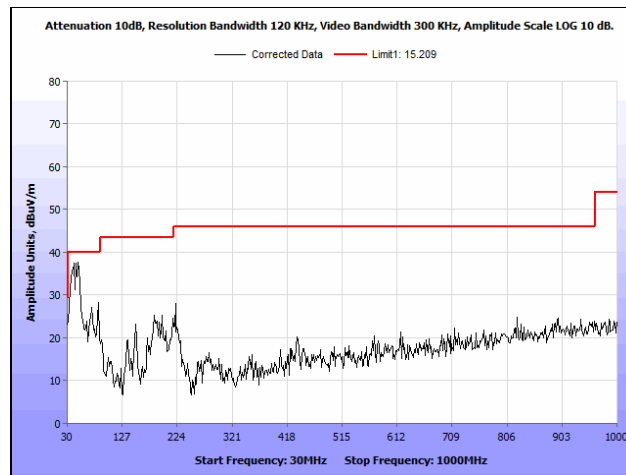
**Plot 245. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Omni Antenna**



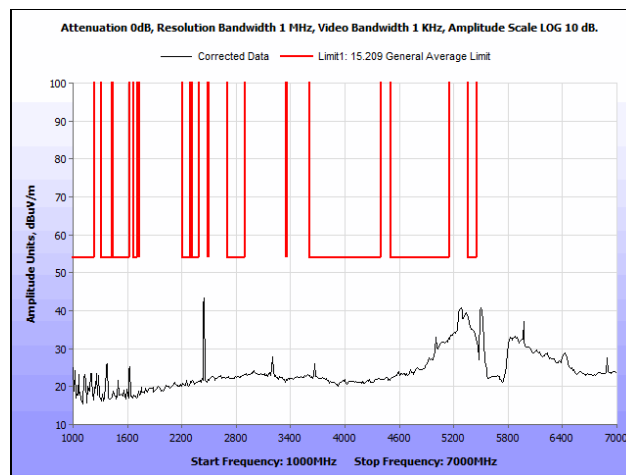
**Plot 246. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



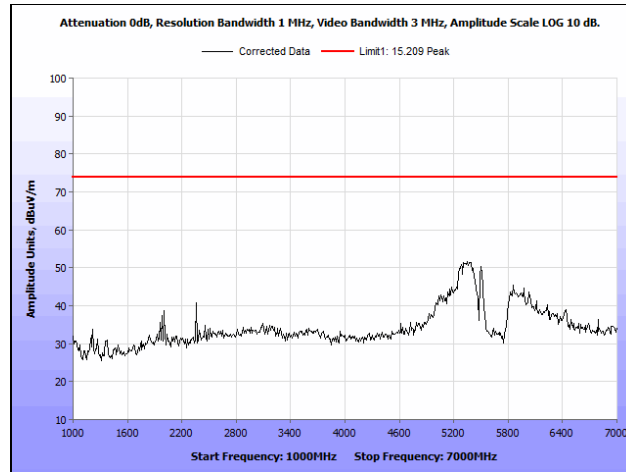
**Plot 247. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 7 GHz – 18 GHz, Omni Antenna**



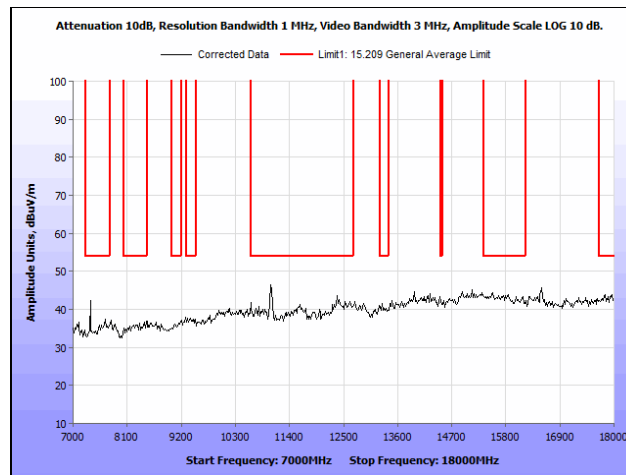
**Plot 248. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 30 MHz – 1 GHz, Omni Antenna**



**Plot 249. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Omni Antenna**

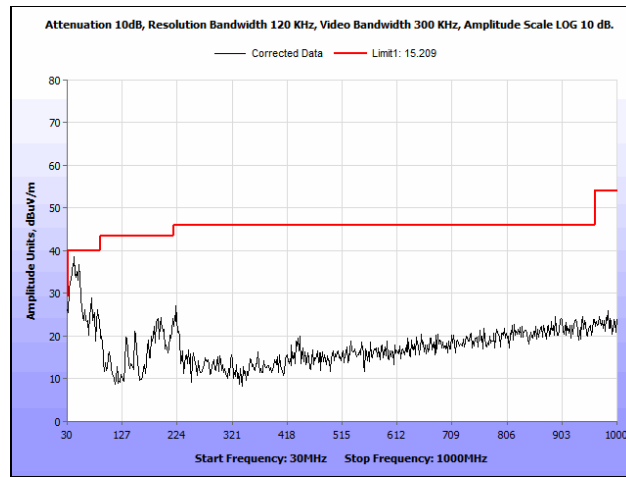


**Plot 250. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**

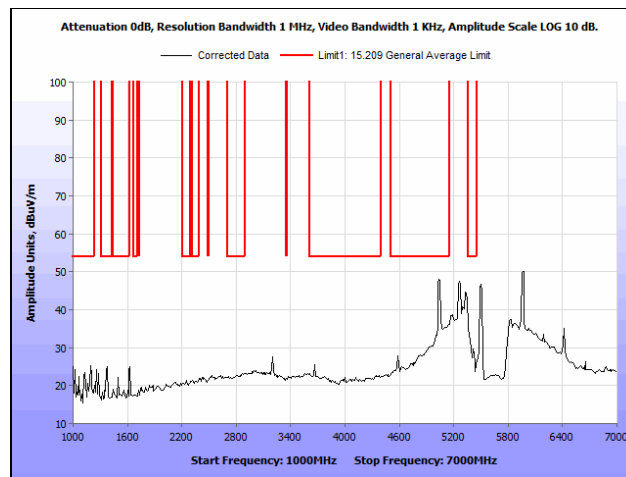


**Plot 251. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Omni Antenna**

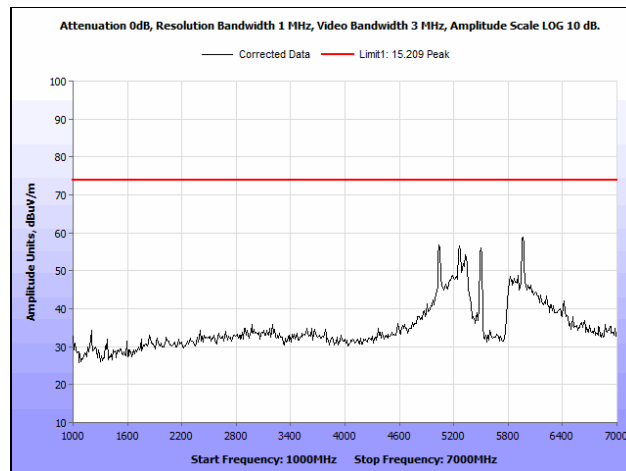
## Radiated Spurious Emissions, 802.11n, Omni Antenna, Upper Band



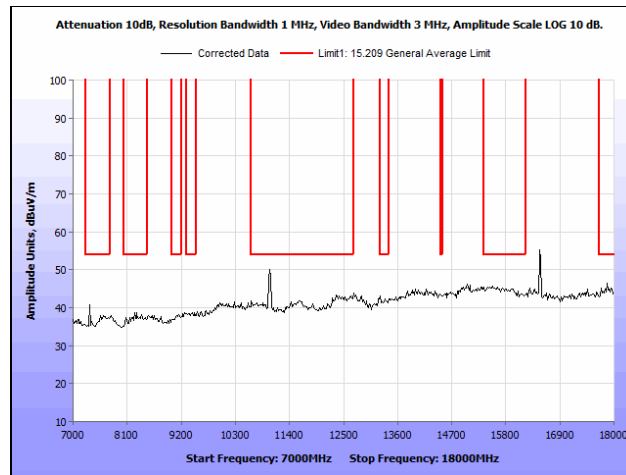
Plot 252. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 30 MHz – 1 GHz, Omni Antenna



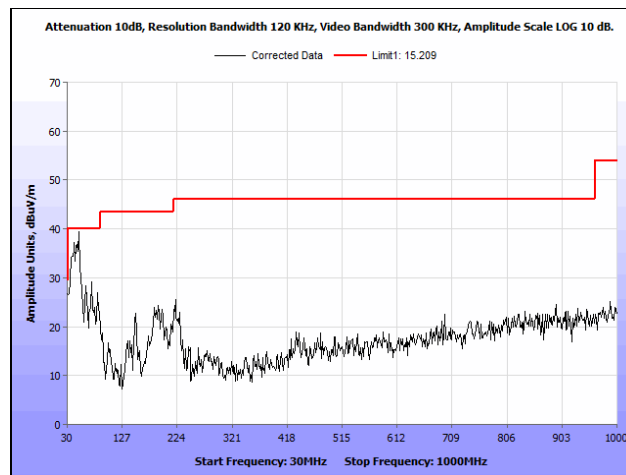
Plot 253. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Omni Antenna



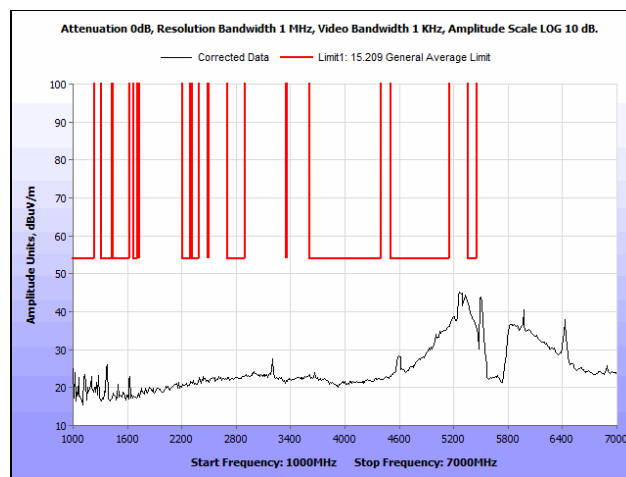
Plot 254. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Omni Antenna



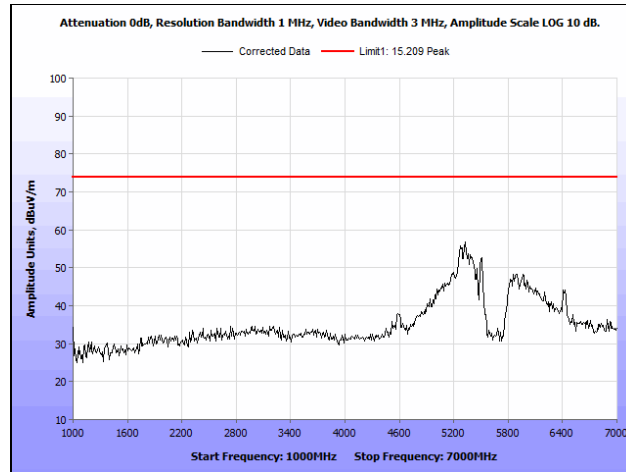
Plot 255. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 7 GHz – 18 GHz, Omni Antenna



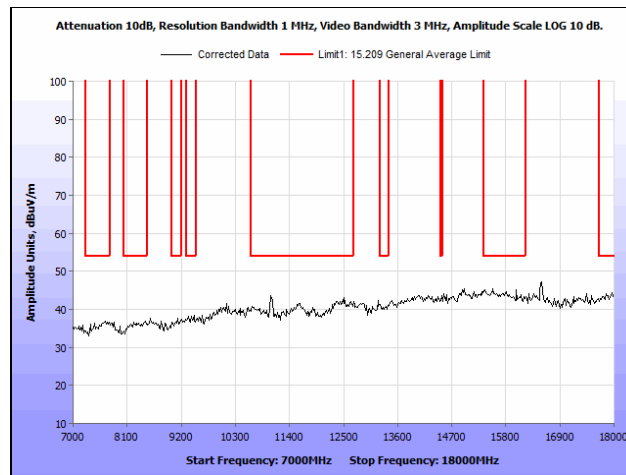
Plot 256. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 30 MHz – 1 GHz, Omni Antenna



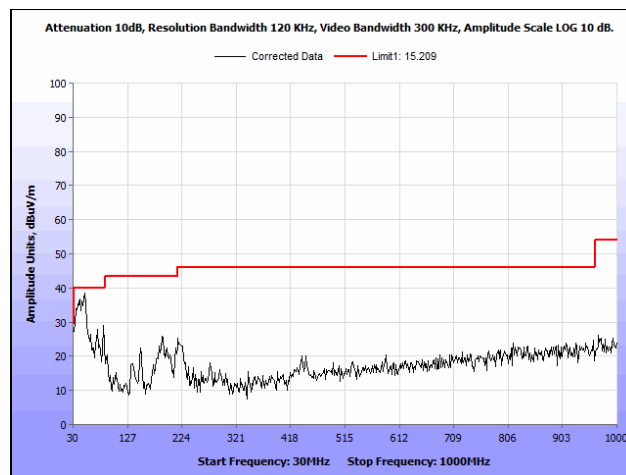
Plot 257. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Omni Antenna



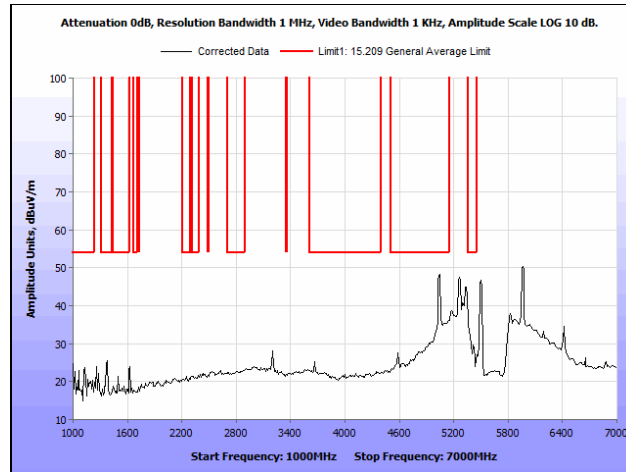
**Plot 258. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



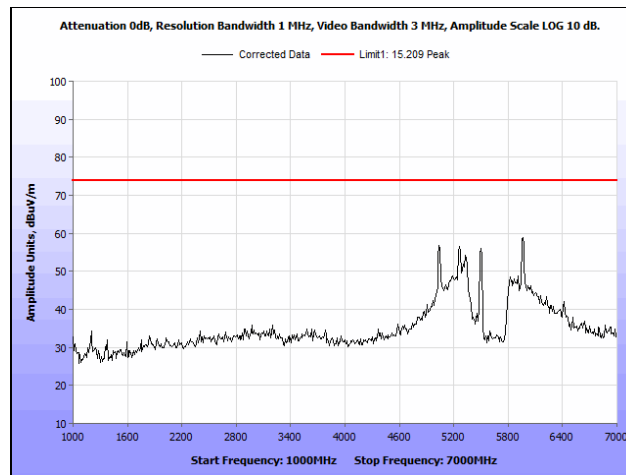
**Plot 259. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 7 GHz – 18 GHz, Omni Antenna**



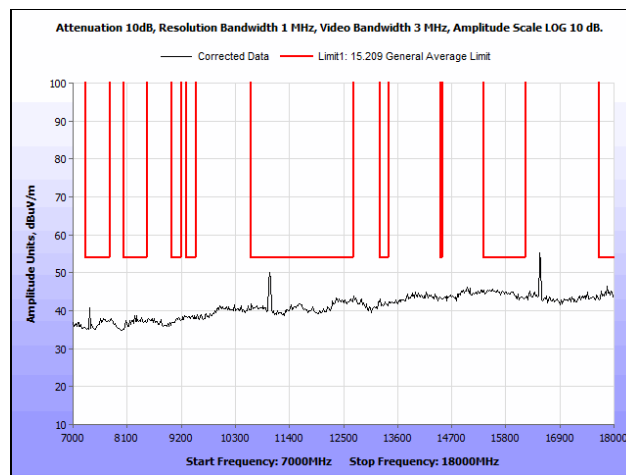
**Plot 260. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 30 MHz – 1 GHz, Omni Antenna**



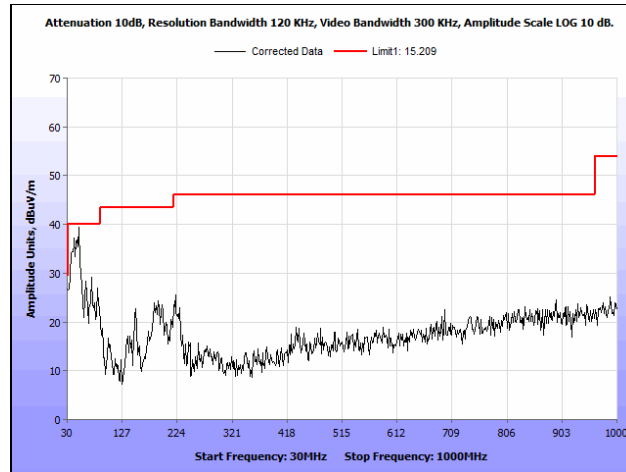
**Plot 261. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Omni Antenna**



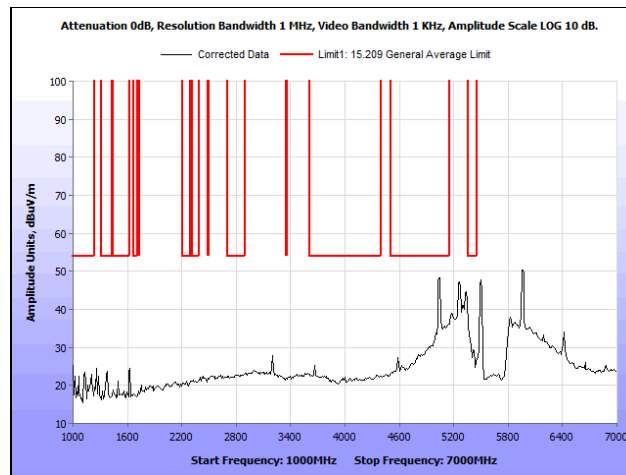
**Plot 262. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



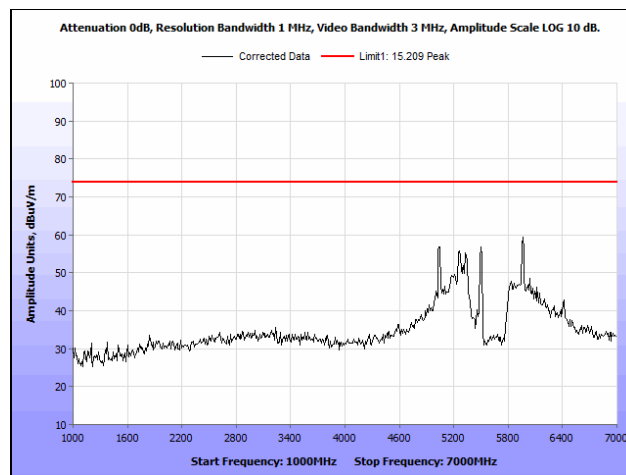
**Plot 263. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 7 GHz – 18 GHz, Omni Antenna**



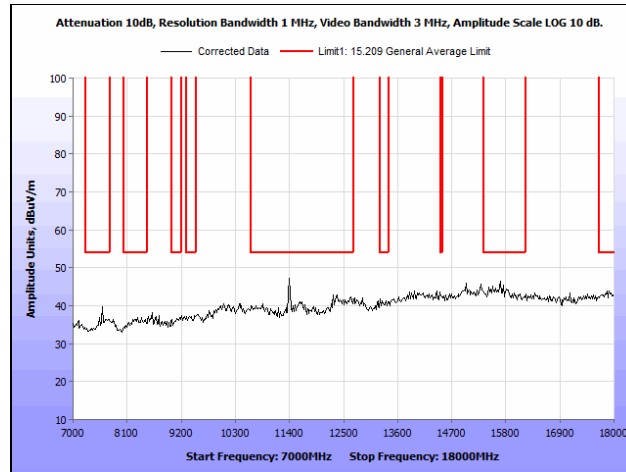
**Plot 264. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 30 MHz – 1 GHz, Omni Antenna**



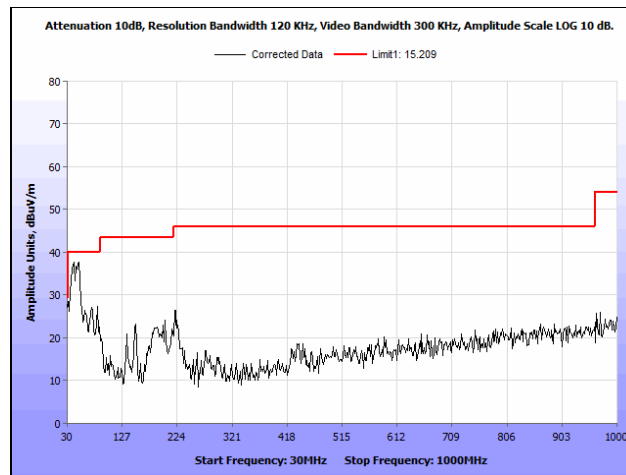
**Plot 265. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Omni Antenna**



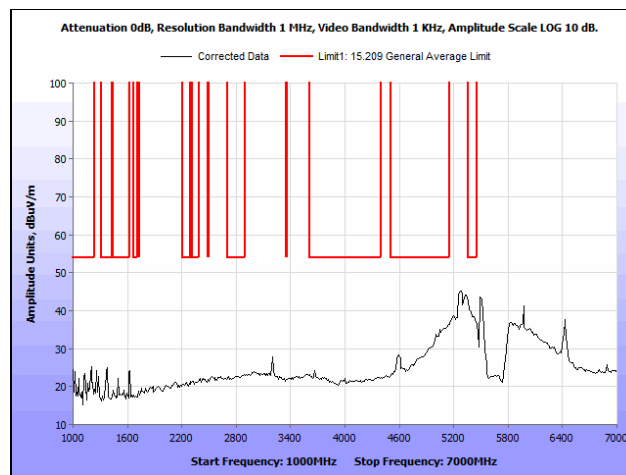
**Plot 266. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**



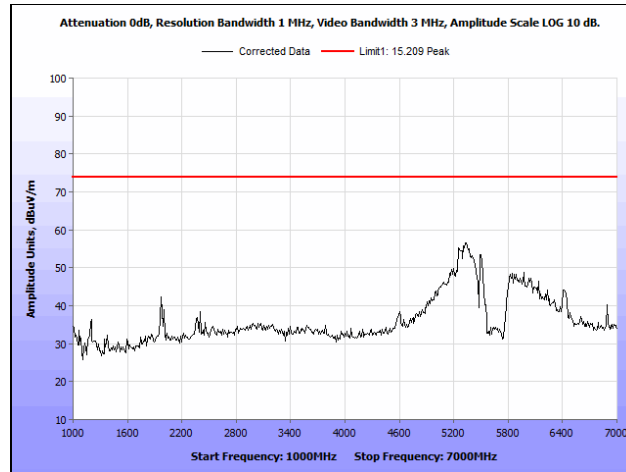
**Plot 267. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 7 GHz – 18 GHz, Omni Antenna**



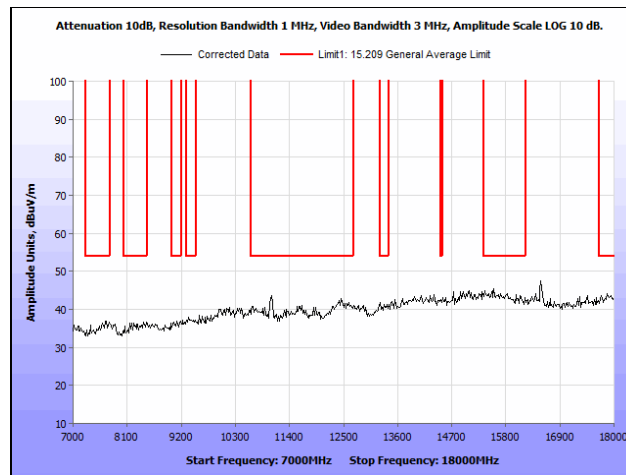
**Plot 268. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 30 MHz – 1 GHz, Omni Antenna**



**Plot 269. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Omni Antenna**

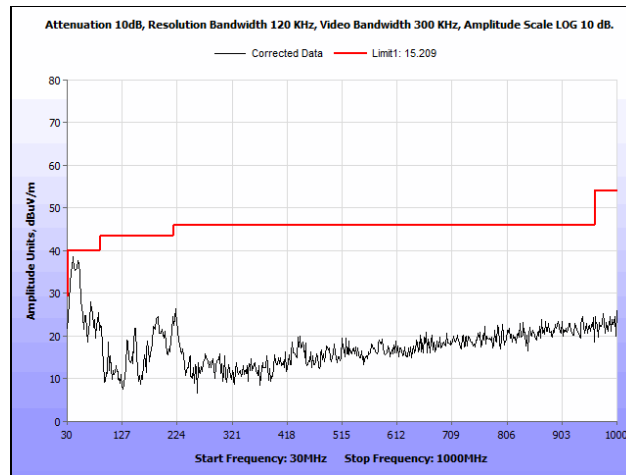


**Plot 270. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Omni Antenna**

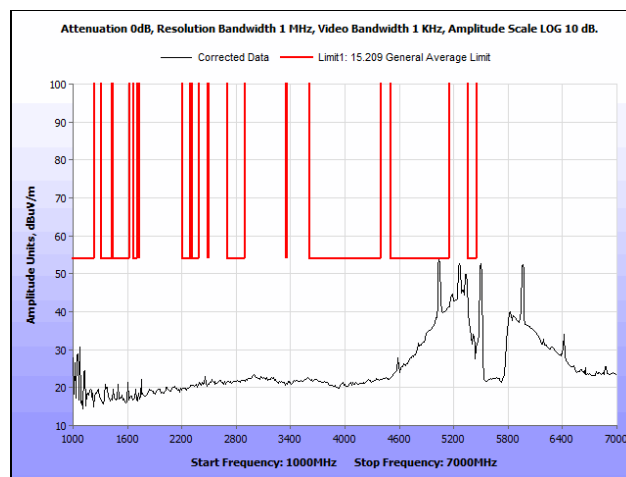


**Plot 271. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Omni Antenna**

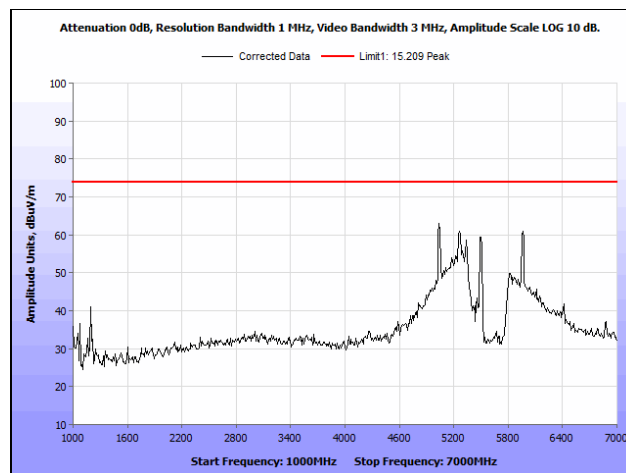
## Radiated Spurious Emissions, 802.11a, Patch Antenna, Upper Band



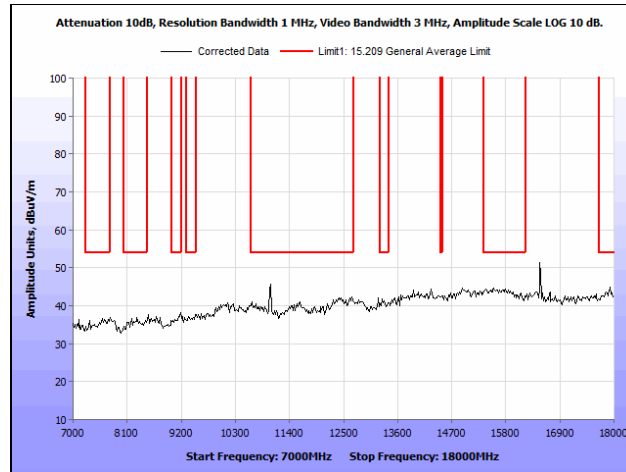
Plot 272. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 30 MHz – 1 GHz, Patch Antenna



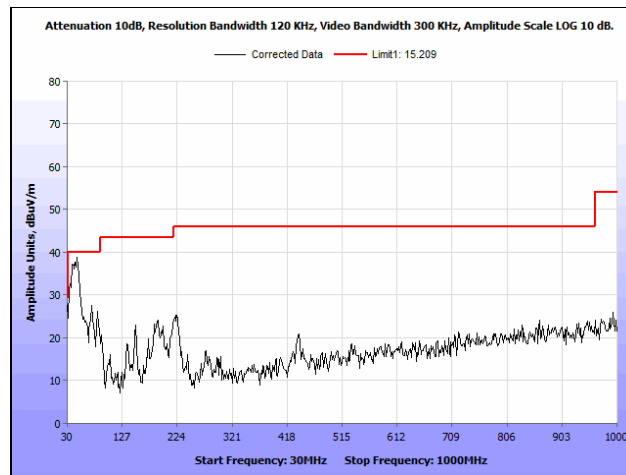
Plot 273. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Patch Antenna



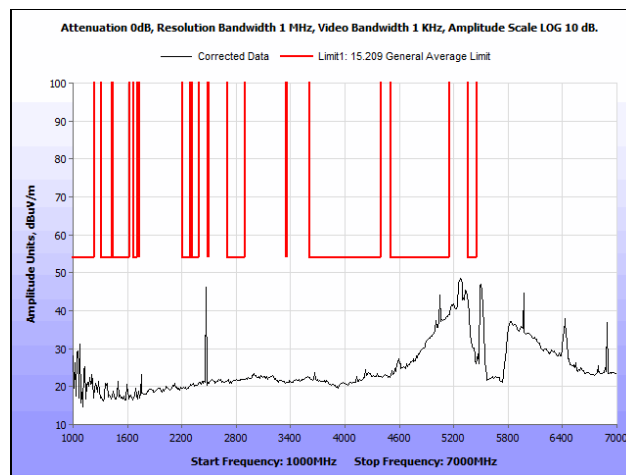
Plot 274. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Patch Antenna



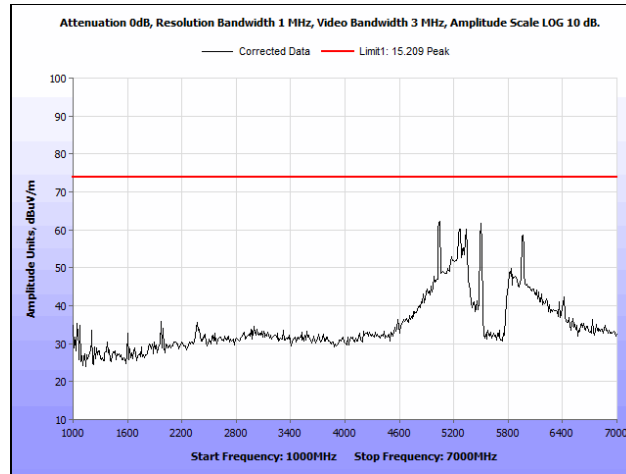
**Plot 275. Radiated Spurious Emissions, 802.11a 20 MHz, Low Channel, 7 GHz – 18 GHz, Patch Antenna**



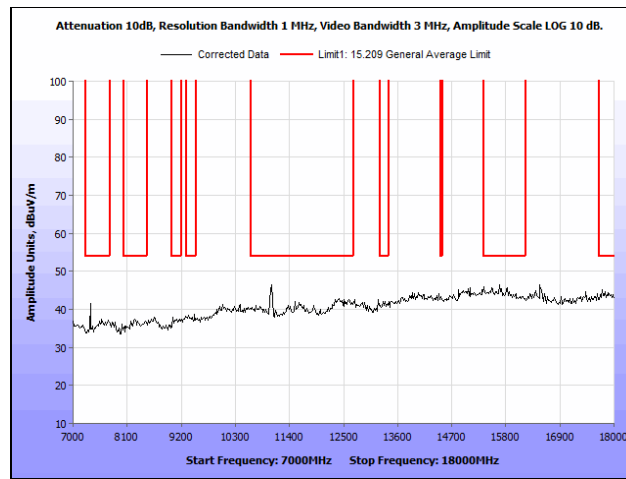
**Plot 276. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 30 MHz – 1 GHz, Patch Antenna**



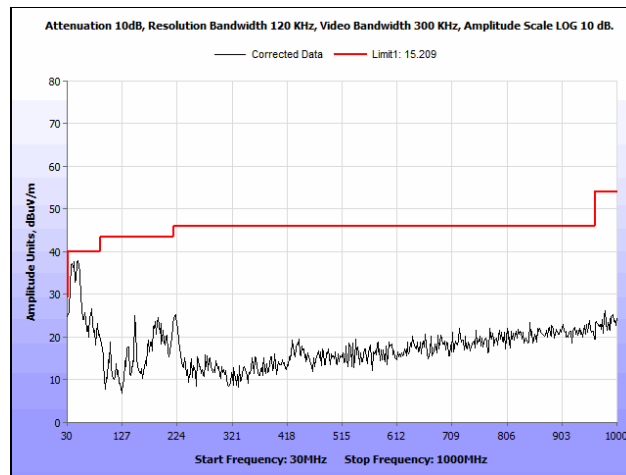
**Plot 277. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Patch Antenna**



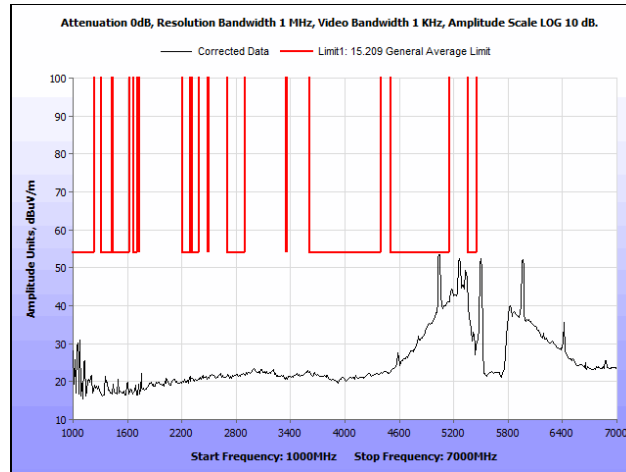
**Plot 278. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



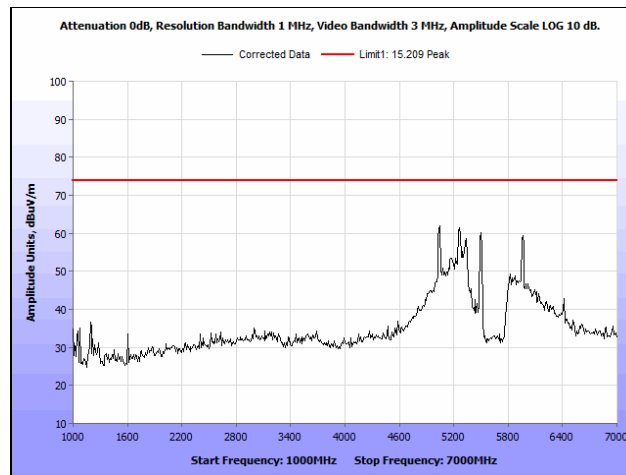
**Plot 279. Radiated Spurious Emissions, 802.11a 40 MHz, Low Channel, 7 GHz – 18 GHz, Patch Antenna**



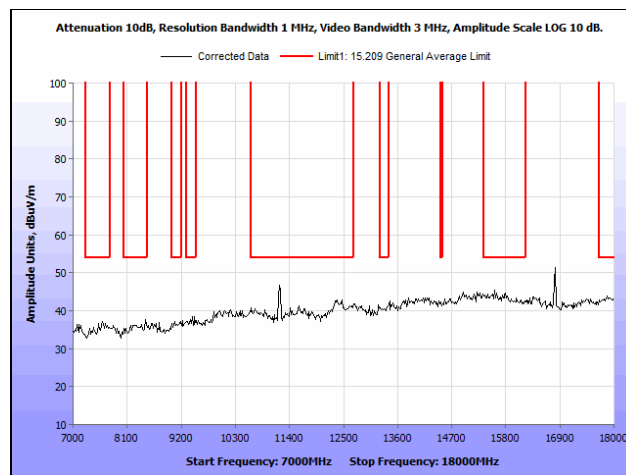
**Plot 280. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 30 MHz – 1 GHz, Patch Antenna**



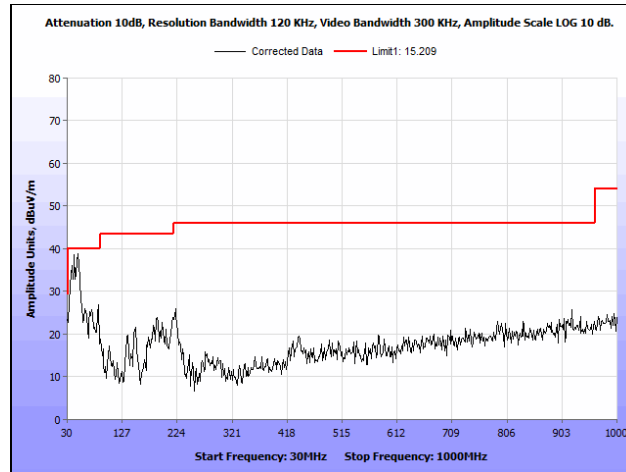
**Plot 281. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Patch Antenna**



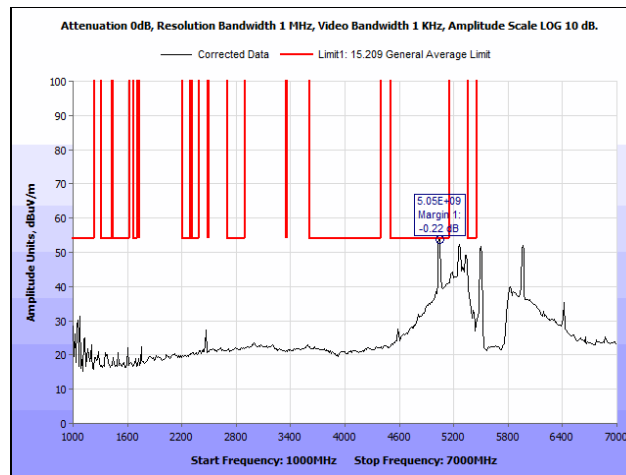
**Plot 282. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



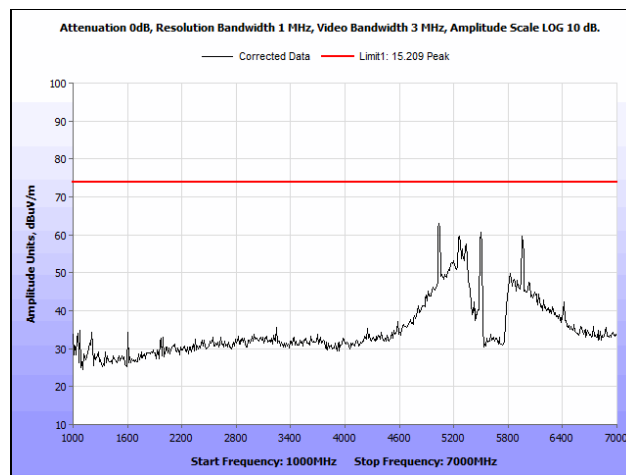
**Plot 283. Radiated Spurious Emissions, 802.11a 20 MHz, Mid Channel, 7 GHz – 18 GHz, Patch Antenna**



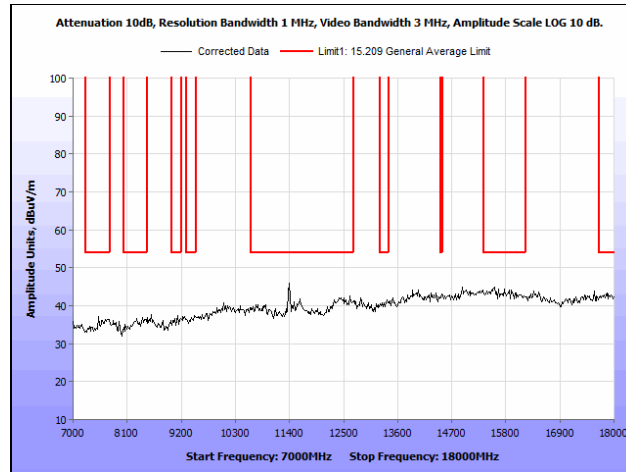
Plot 284. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 30 MHz – 1 GHz, Patch Antenna



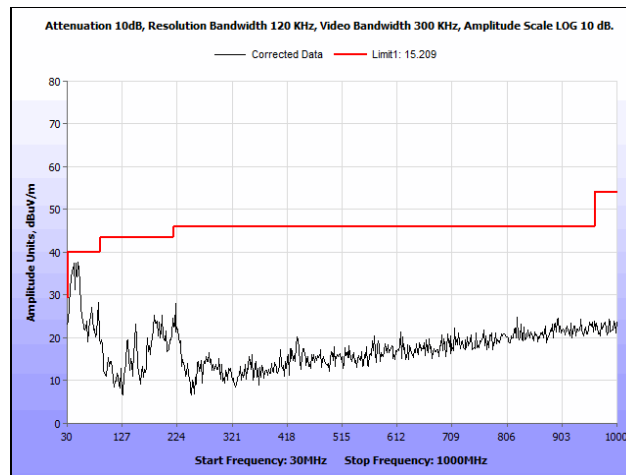
Plot 285. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Patch Antenna



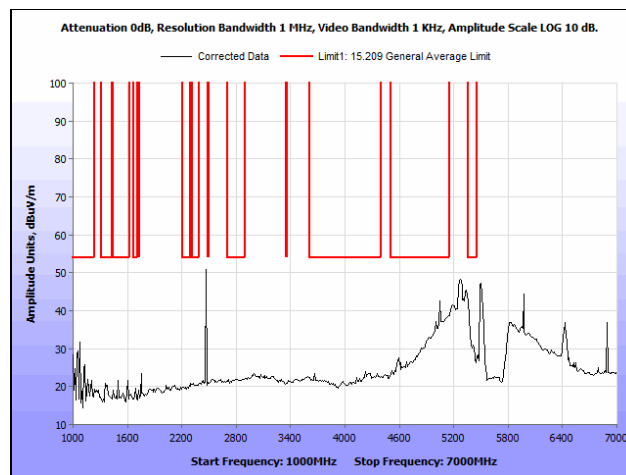
Plot 286. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Patch Antenna



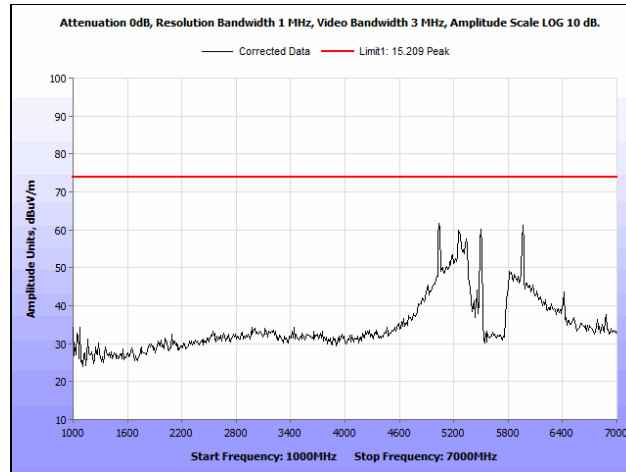
**Plot 287. Radiated Spurious Emissions, 802.11a 20 MHz, High Channel, 7 GHz – 18 GHz, Patch Antenna**



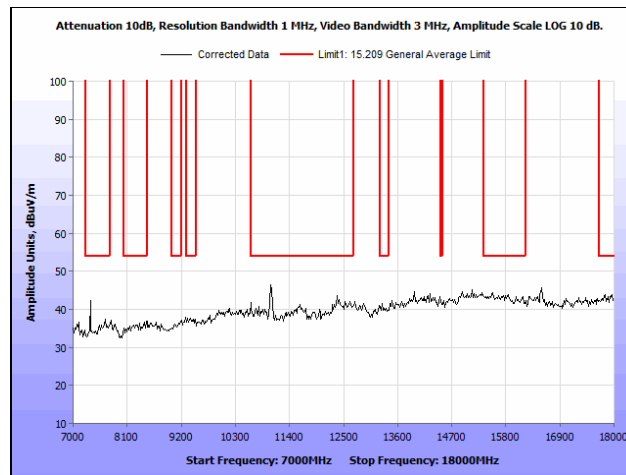
**Plot 288. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 30 MHz – 1 GHz, Patch Antenna**



**Plot 289. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Patch Antenna**

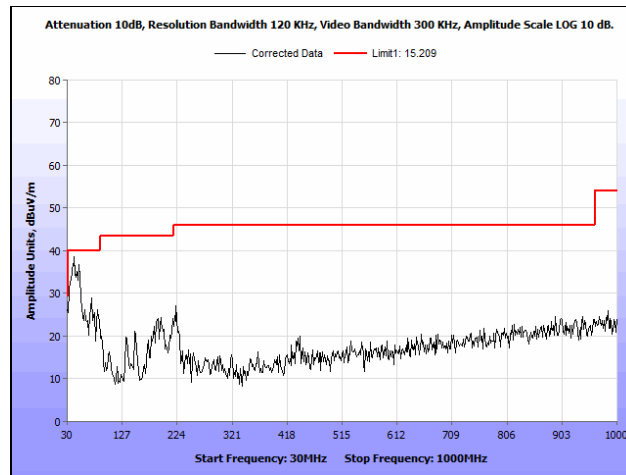


**Plot 290. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**

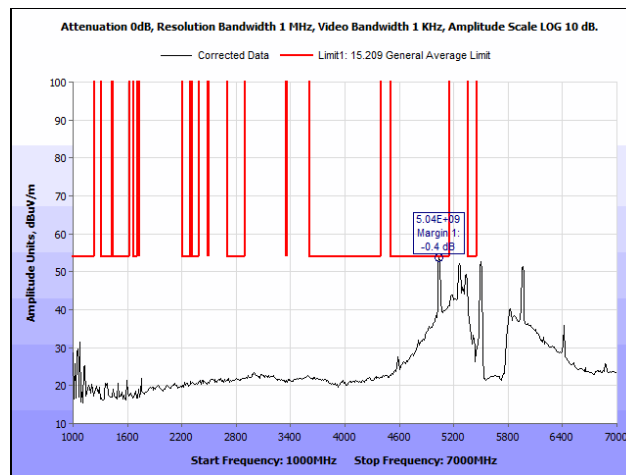


**Plot 291. Radiated Spurious Emissions, 802.11a 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Patch Antenna**

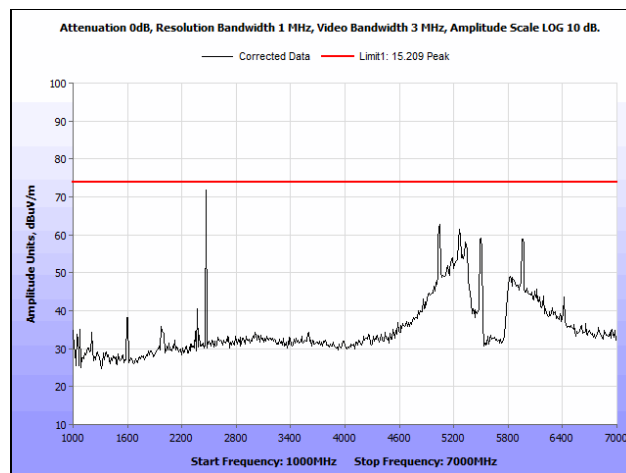
## Radiated Spurious Emissions, 802.11n, Patch Antenna, Upper Band



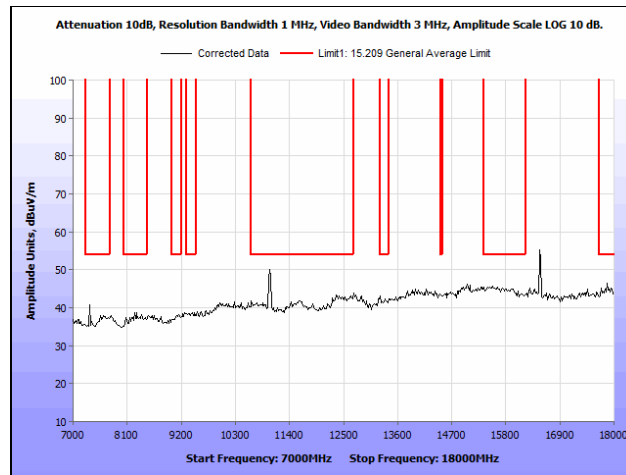
Plot 292. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 30 MHz – 1 GHz, Patch Antenna



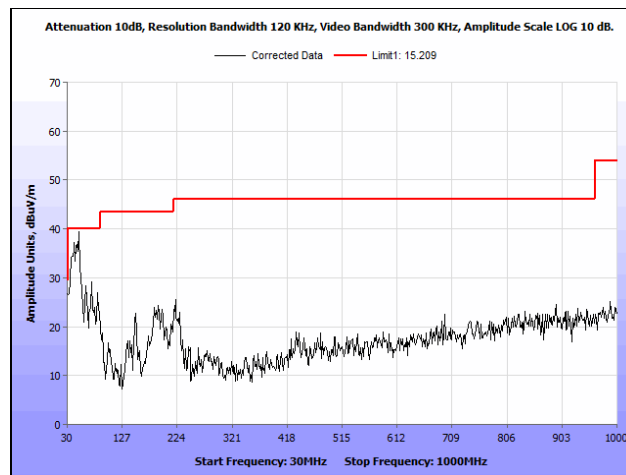
Plot 293. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Average, Patch Antenna



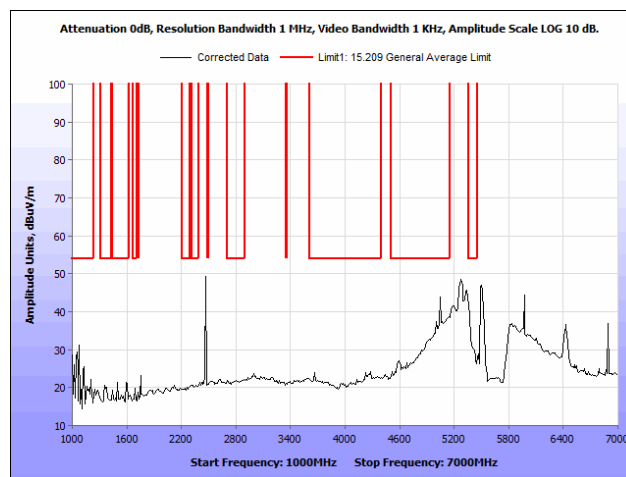
Plot 294. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Patch Antenna



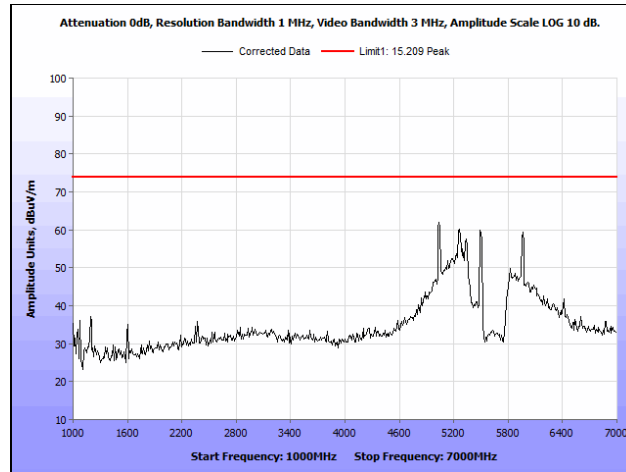
Plot 295. Radiated Spurious Emissions, 802.11n 20 MHz, Low Channel, 7 GHz – 18 GHz, Patch Antenna



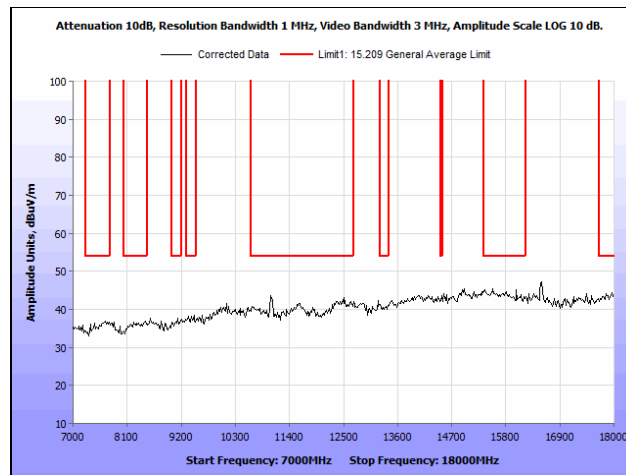
Plot 296. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 30 MHz – 1 GHz, Patch Antenna



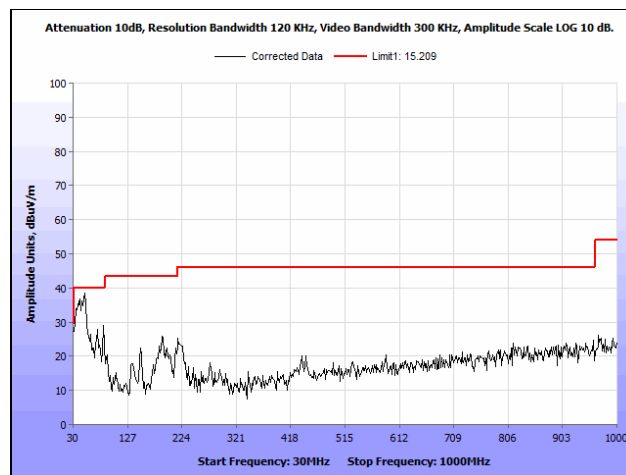
Plot 297. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Average, Patch Antenna



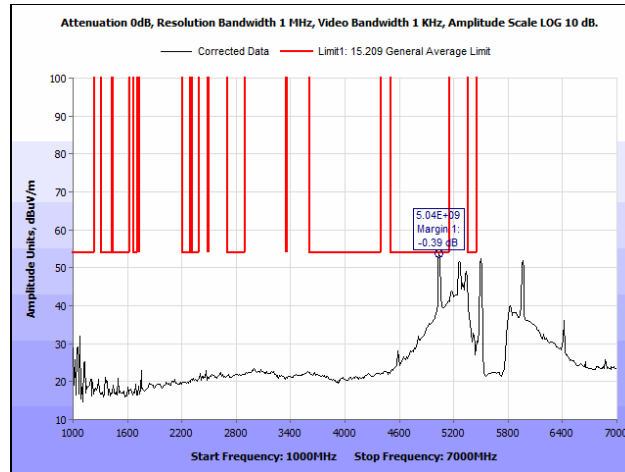
**Plot 298. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



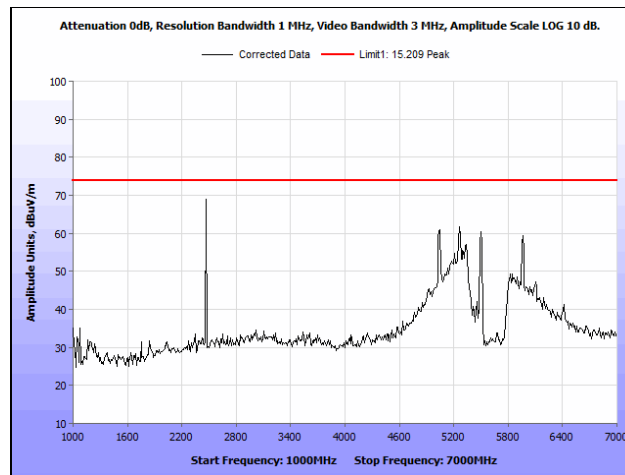
**Plot 299. Radiated Spurious Emissions, 802.11n 40 MHz, Low Channel, 7 GHz – 18 GHz, Patch Antenna**



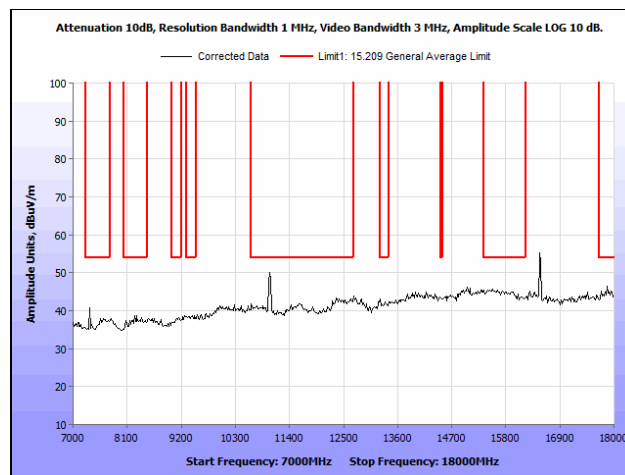
**Plot 300. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 30 MHz – 1 GHz, Patch Antenna**



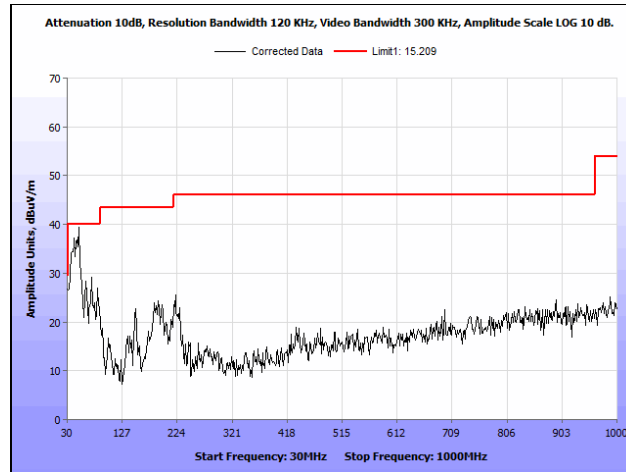
**Plot 301. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Average, Patch Antenna**



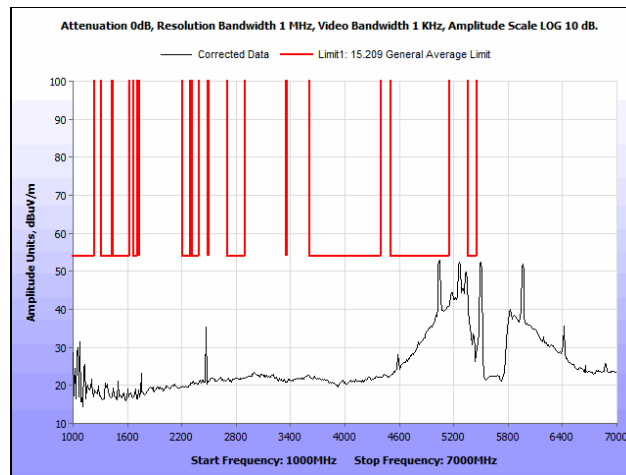
**Plot 302. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



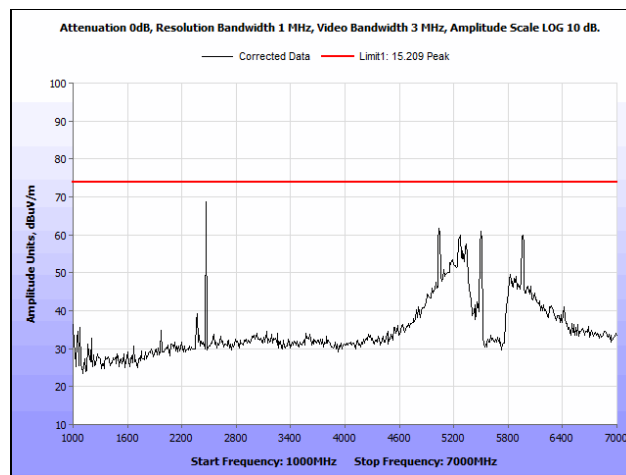
**Plot 303. Radiated Spurious Emissions, 802.11n 20 MHz, Mid Channel, 7 GHz – 18 GHz, Patch Antenna**



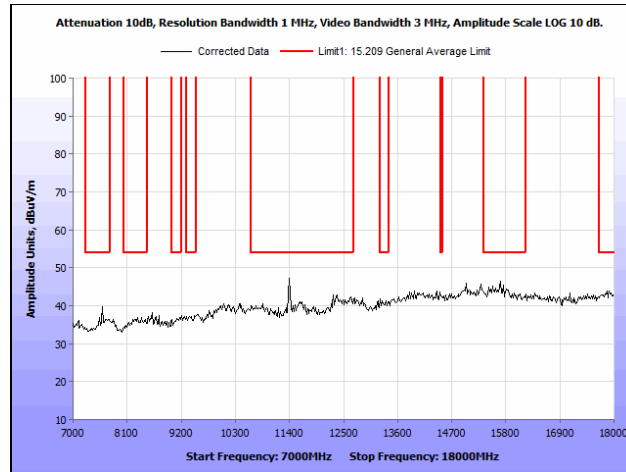
**Plot 304. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 30 MHz – 1 GHz, Patch Antenna**



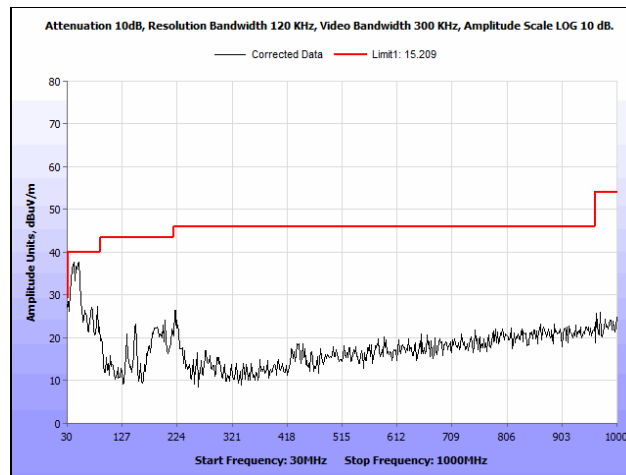
**Plot 305. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Average, Patch Antenna**



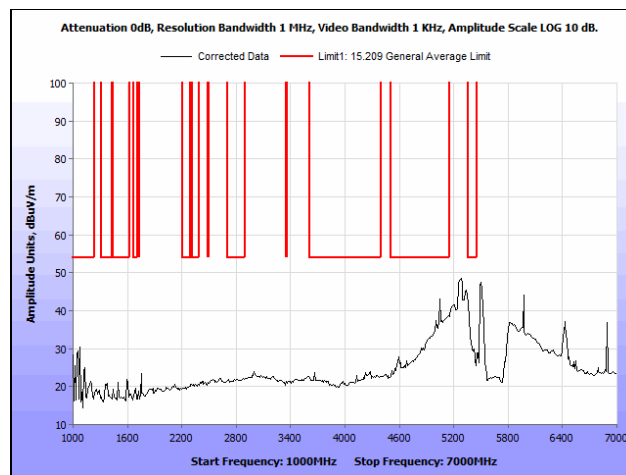
**Plot 306. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**



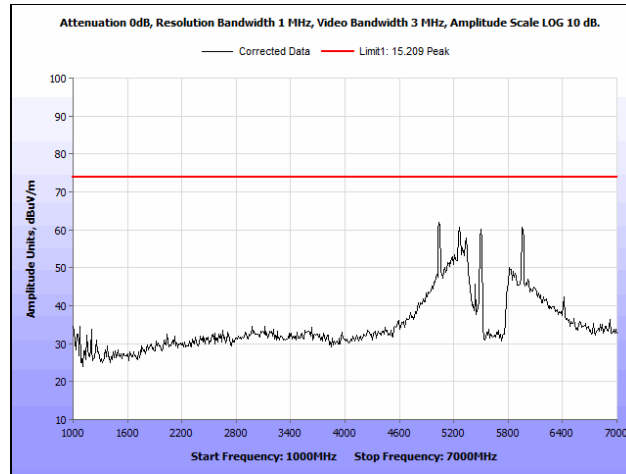
**Plot 307. Radiated Spurious Emissions, 802.11n 20 MHz, High Channel, 7 GHz – 18 GHz, Patch Antenna**



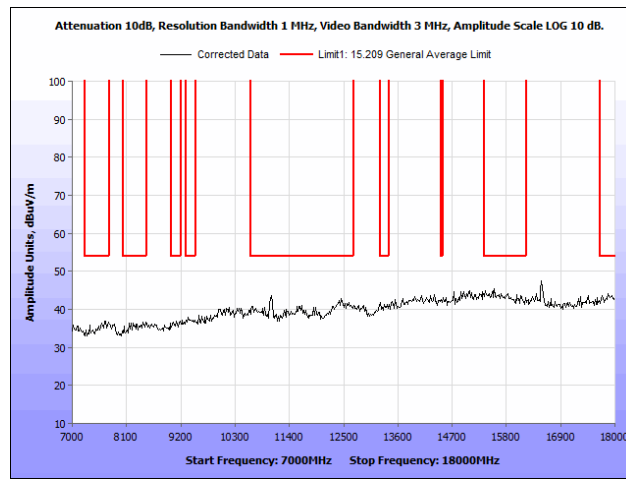
**Plot 308. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 30 MHz – 1 GHz, Patch Antenna**



**Plot 309. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Average, Patch Antenna**

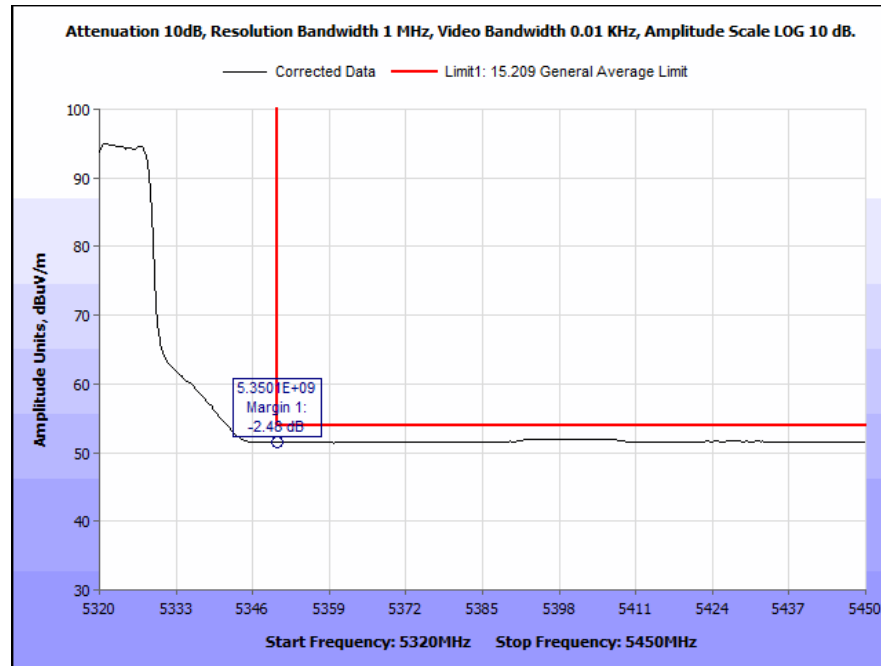


**Plot 310. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 1 GHz – 7 GHz, Peak, Patch Antenna**

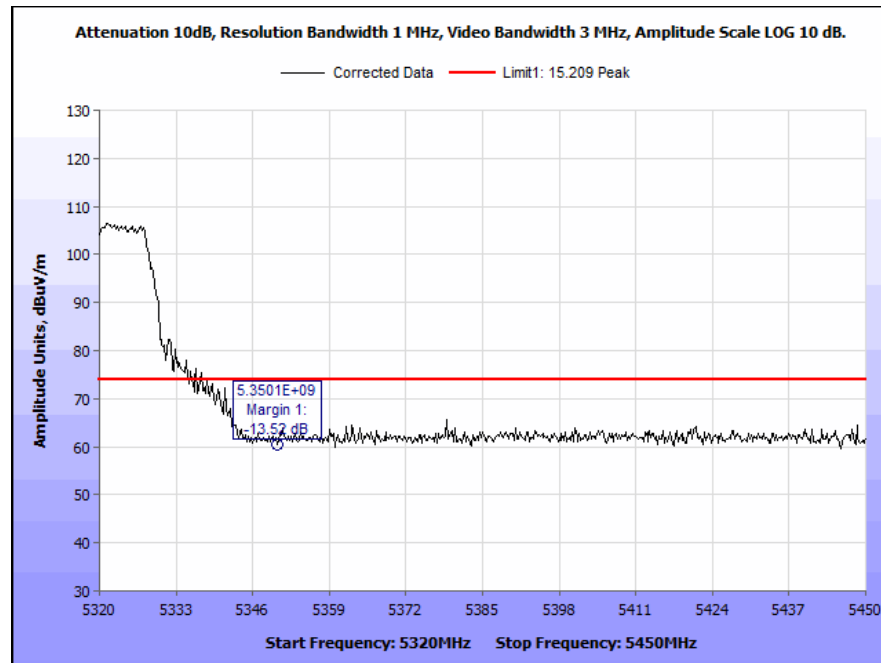


**Plot 311. Radiated Spurious Emissions, 802.11n 40 MHz, High Channel, 7 GHz – 18 GHz, Peak, Patch Antenna**

## Band Edge, 802.11a 20 MHz, Ceiling Antenna, Lower Band

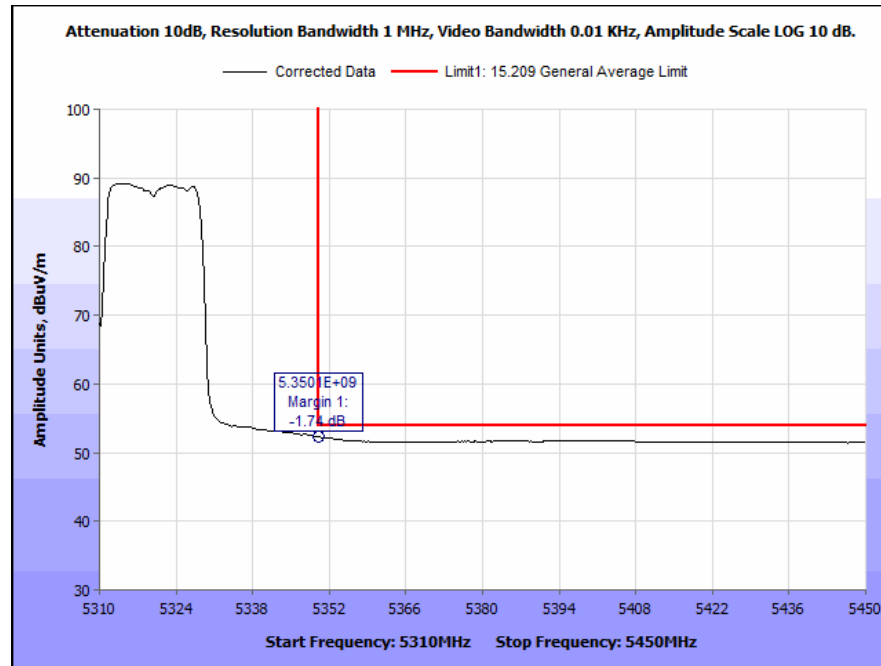


Plot 312. Radiated Band Edge, 802.11a 20 MHz, High Channel, Ceiling Antenna (5350 MHz), Average

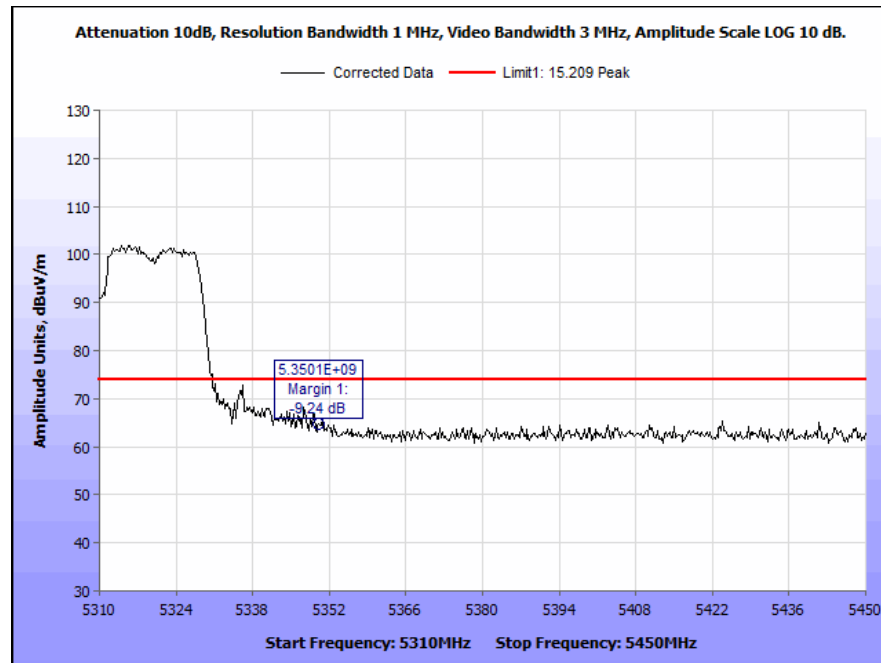


Plot 313. Radiated Band Edge, 802.11a 20 MHz, High Channel, Ceiling Antenna (5350 MHz), Peak

## Band Edge, 802.11a 40 MHz, Ceiling Antenna, Lower Band

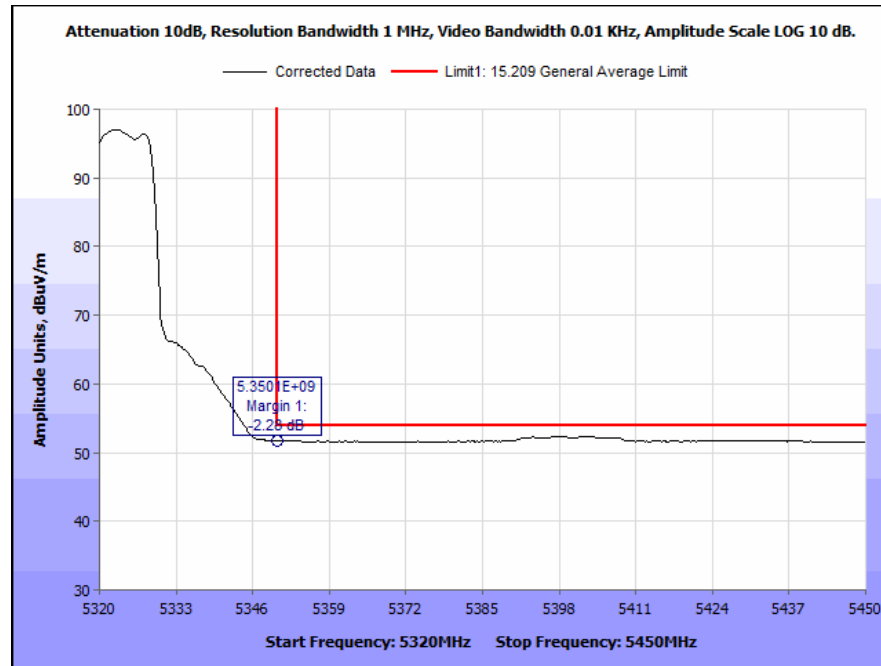


Plot 314. Radiated Band Edge, 802.11a 40 MHz, High Channel, Ceiling Antenna (5350 MHz), Average

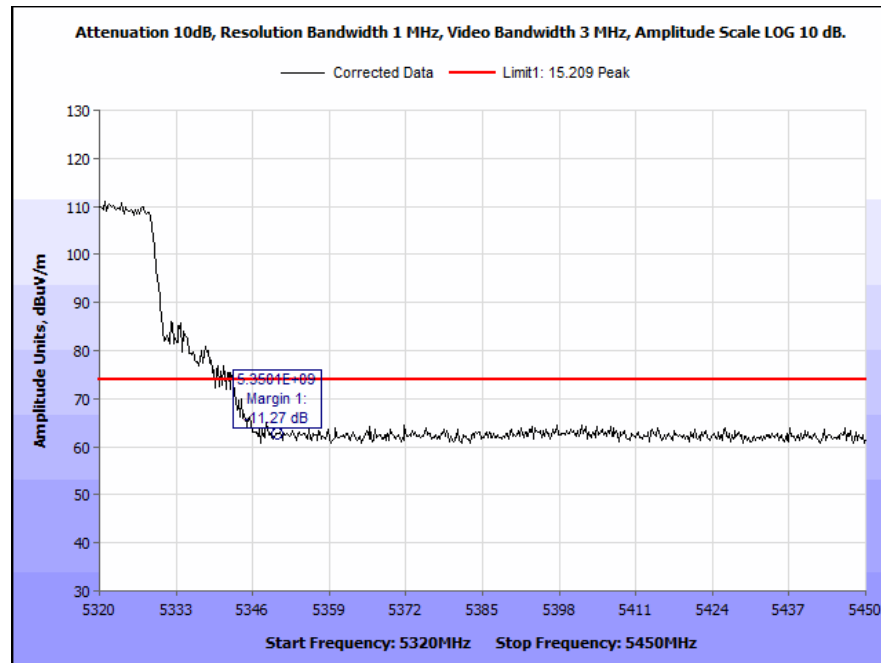


Plot 315. Radiated Band Edge, 802.11a 40 MHz, High Channel, Ceiling Antenna (5350 MHz), Peak

## Band Edge, 802.11n 20 MHz, Ceiling Antenna, Lower Band

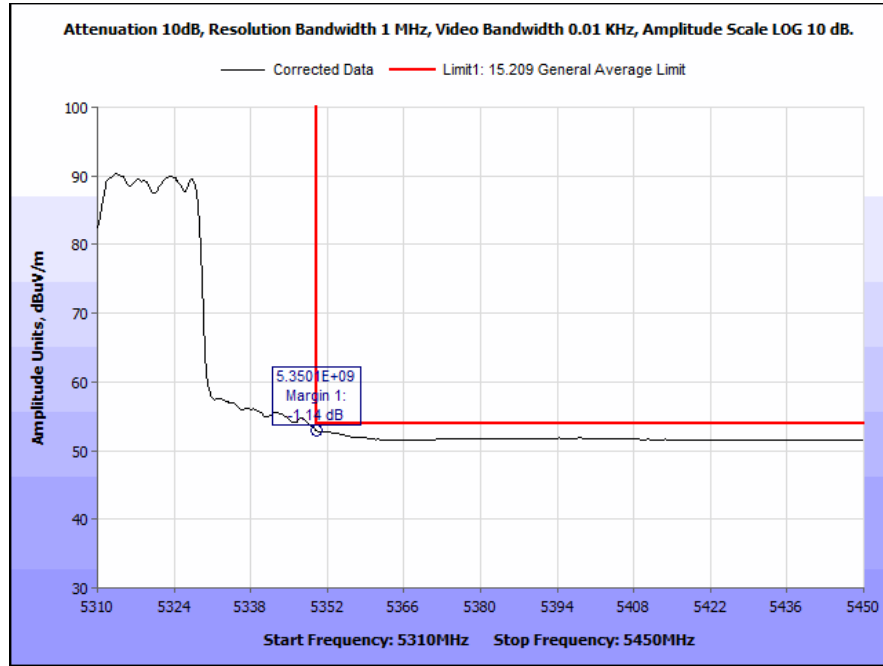


Plot 316. Radiated Band Edge, 802.11n 20 MHz, High Channel, Ceiling Antenna (5350 MHz), Average

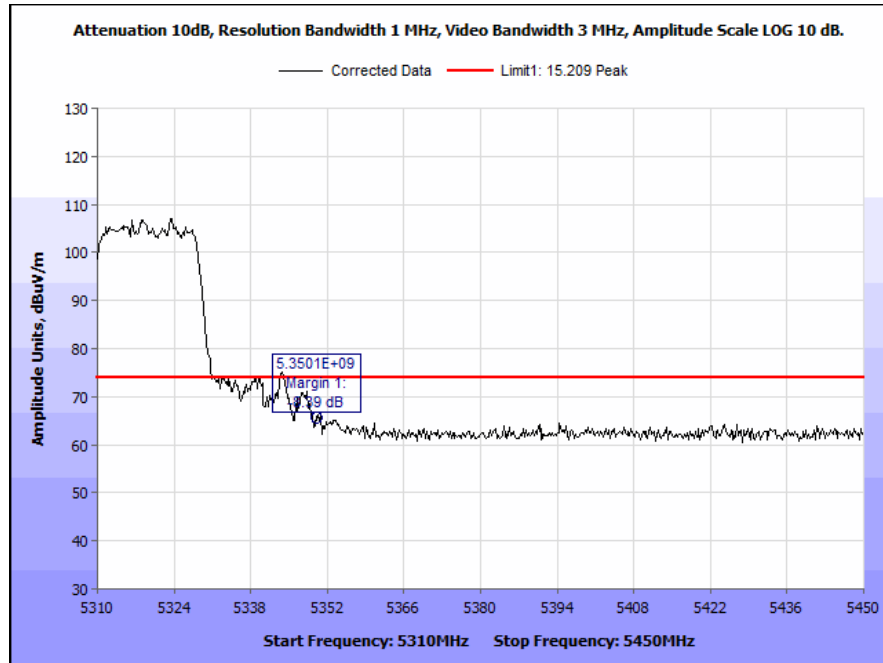


Plot 317. Radiated Band Edge, 802.11n 20 MHz, High Channel, Ceiling Antenna (5350 MHz), Peak

## Band Edge, 802.11n 40 MHz, Ceiling Antenna, Lower Band

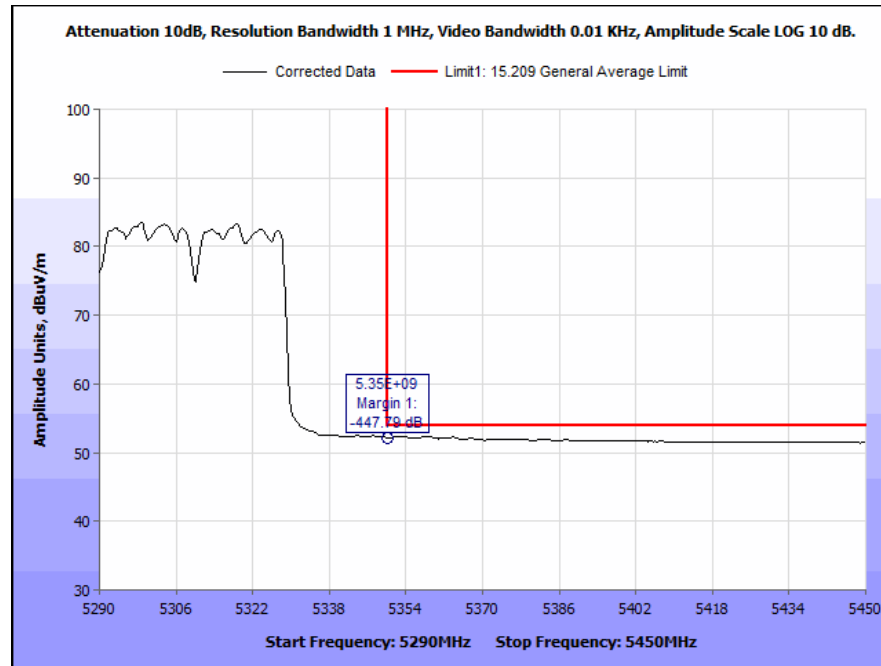


Plot 318. Radiated Band Edge, 802.11n 40 MHz, High Channel, Ceiling Antenna (5350 MHz), Average

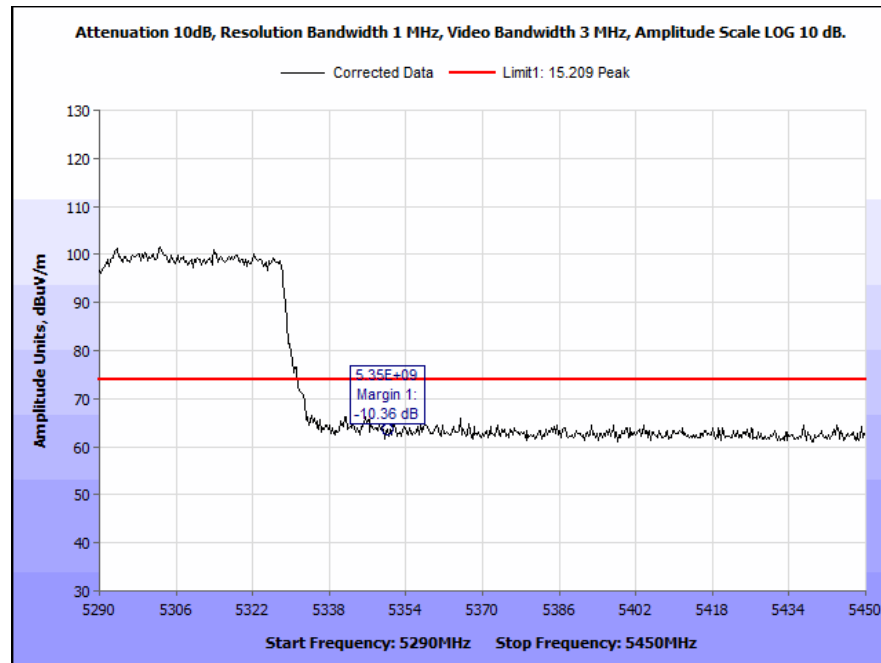


Plot 319. Radiated Band Edge, 802.11n 40 MHz, High Channel, Ceiling Antenna (5350 MHz), Peak

## Band Edge, 802.11ac 80 MHz, Ceiling Antenna, Lower Band



Plot 320. Radiated Band Edge, 802.11ac 80 MHz, High Channel, Ceiling Antenna (5350 MHz), Average



Plot 321. Radiated Band Edge, 802.11ac 80 MHz, High Channel, Ceiling Antenna (5350 MHz), Peak