

## TEST REPORT ADDENDUM – RADIATED RADIO 1

FROM



Test of: Hewlett Packard Enterprise APIN0344, APIN0345

To: FCC CFR 47 Part 15 Subpart E 15.407

Test Report Serial No.: HPEN111-U8\_Radiated\_Radio 1 Non-DFS Rev A

Issue Date: 22<sup>nd</sup> August 2017

| Master Document Number                    | Addendum Reports                 |
|---|----------------------------------|
| HPEN111-U8_Master WiFi<br>(non-DFS Bands) | HPEN111-U8_Conducted WiFi        |
|   | HPEN111-U8_Radiated_Radio 0 WiFi |
|   | HPEN111-U8_Radiated_Radio 1 WiFi |

This report is only valid in conjunction with the reports listed in the above table. Together these reports address the requirements for the type of device operating under the standard as listed.

### This Test Report is Issued Under the Authority of:

**MiCOM Labs, Inc.**  
575 Boulder Court  
Pleasanton California 94566  
USA  
Phone: +1 (925) 462-0304  
Fax: +1 (925) 462-0306  
[www.micomlabs.com](http://www.micomlabs.com)



MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

## Table of Contents

|   |           |
|---|-----------|
| <b>1. MEASUREMENT AND PRESENTATION OF TEST DATA .....</b> | <b>3</b>  |
| <b>2. TEST RESULTS .....</b>                              | <b>4</b>  |
| 2.1. Emissions .....                                      | 4         |
| 2.1.1. <i>Radiated Emissions</i> .....                    | 4         |
| 2.1.1.1. TX Spurious & Restricted Band Emissions .....    | 7         |
| Antenna: AP-ANT-13B.....                                  | 7         |
| Antenna: AP-ANT-19.....                                   | 10        |
| Antenna: AP-ANT-1W.....                                   | 13        |
| Antenna: AP-ANT-20W.....                                  | 16        |
| Antenna: AP-ANT-40.....                                   | 19        |
| Antenna: AP-ANT-45.....                                   | 22        |
| Antenna: AP-ANT-48.....                                   | 25        |
| Antenna: Metal Sheet .....                                | 28        |
| 2.1.1.2. Restricted Edge & Band-Edge Emissions.....       | 31        |
| Antenna: AP-ANT-13B.....                                  | 31        |
| Antenna: AP-ANT-19.....                                   | 37        |
| Antenna: AP-ANT-1W.....                                   | 43        |
| Antenna: AP-ANT-20W.....                                  | 49        |
| Antenna: AP-ANT-40.....                                   | 55        |
| Antenna: AP-ANT-45.....                                   | 61        |
| Antenna: AP-ANT-48.....                                   | 67        |
| Antenna: Metal Sheet .....                                | 73        |
| <b>A. APPENDIX - GRAPHICAL IMAGES .....</b>               | <b>79</b> |
| A.1. Emissions .....                                      | 79        |
| A.1.1. <i>Radiated Emissions</i> .....                    | 79        |
| A.1.1.1. TX Spurious & Restricted Band Emissions .....    | 79        |
| Antenna: AP-ANT-13B.....                                  | 79        |
| Antenna: AP-ANT-19.....                                   | 82        |
| Antenna: AP-ANT-1W.....                                   | 85        |
| Antenna: AP-ANT-20W.....                                  | 88        |
| Antenna: AP-ANT-40.....                                   | 91        |
| Antenna: AP-ANT-45.....                                   | 94        |
| Antenna: AP-ANT-48.....                                   | 97        |
| Antenna: Metal Sheet .....                                | 100       |
| A.1.1.2. Restricted Edge & Band-Edge Emissions .....      | 103       |
| Antenna: AP-ANT-13B.....                                  | 103       |
| Antenna: AP-ANT-19.....                                   | 108       |
| Antenna: AP-ANT-1W.....                                   | 113       |
| Antenna: AP-ANT-20W.....                                  | 118       |
| Antenna: AP-ANT-40.....                                   | 123       |
| Antenna: AP-ANT-45.....                                   | 128       |
| Antenna: AP-ANT-48.....                                   | 133       |
| Antenna: Metal Sheet .....                                | 138       |

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 3 of 143

---

## **1. MEASUREMENT AND PRESENTATION OF TEST DATA**

The measurement and graphical data presented in this test report was generated automatically using state-of-the-art technology creating an easy to read report structure. Numerical measurement data is separated from supporting graphical data (plots) through hyperlinks. Numerical measurement data can be reviewed without scrolling through numerous graphical pages to arrive at the next data matrix.

Plots have been relegated into the Appendix 'Graphical Data' Section of this report

Testing and report automation was performed by [MiTest](#). [MiTest](#) is an automated test system developed by MiCOM Labs. [MiTest](#) is the first cloud based modular test system enabling end-to-end automation of regulatory compliance testing for regulatory compliance.s

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 4 of 143

## 2. TEST RESULTS

### 2.1. Emissions

#### 2.1.1. Radiated Emissions

| Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions |   |                            |             |
|--|---|----------------------------|-------------|
| <b>Standard:</b>   | FCC CFR 47:15.407                         | <b>Ambient Temp. (°C):</b> | 20.0 - 24.5 |
| <b>Test Heading:</b>   | Radiated Spurious and Band-Edge Emissions | <b>Rel. Humidity (%):</b>  | 32 - 45     |
| <b>Standard Section(s):</b>  | 15.407 (b), 15.205, 15.209                | <b>Pressure (mBars):</b>   | 999 - 1001  |
| <b>Reference Document(s):</b>  | See Normative References                  |                            |             |

#### Test Procedure for Radiated Spurious and Band-Edge Emissions

Radiated emissions for restricted bands above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned.

Measurements on any restricted band frequency or frequencies above 1 GHz are based on the use of measurement instrumentation employing peak and average detectors. All measurements were performed using a resolution bandwidth of 1 MHz.

Test configuration and setup for Undesirable Measurement were per the Radiated Test Set-up specified in this document.

15.407 (b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

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

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

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

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

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

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

#### Limits for Restricted Bands (15.205, 15.209)

**Peak emission:** 74 dBuV/m

**Average emission:** 54 dBuV/m

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup> August 2017  
**Page:** 5 of 143

#### Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

$$FS = R + AF + CORR - FO$$

where:

FS = Field Strength

R = Measured Spectrum analyzer Input Amplitude

AF = Antenna Factor

CORR = Correction Factor = CL - AG + NFL

CL = Cable Loss

AG = Amplifier Gain

FO = Distance Falloff Factor

NFL = Notch Filter Loss

#### Example:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength (dB $\mu$ V/m);

$$E = \frac{1000000 \times \sqrt{30P}}{3} \mu\text{V/m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz equates to 68.23 dB $\mu$ V/m

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are as follows:

$$\text{Level (dBmV/m)} = 20 * \log(\text{level (mV/m)})$$

$$40 \text{ dBmV/m} = 100 \text{ mV/m}$$

$$48 \text{ dBmV/m} = 250 \text{ mV/m}$$

#### Restricted Bands of Operation (15.205)

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| Frequency Band  |                     |               |             |
|-----------------|---------------------|---------------|-------------|
| MHz             | MHz                 | MHz           | GHz         |
| 0.090-0.110     | 16.42-16.423        | 399.9-410     | 4.5-5.15    |
| 0.495-0.505     | 16.69475-16.69525   | 608-614       | 5.35-5.46   |
| 2.1735-2.1905   | 16.80425-16.80475   | 960-1240      | 7.25-7.75   |
| 4.125-4.128     | 25.5-25.67          | 1300-1427     | 8.025-8.5   |
| 4.17725-4.17775 | 37.5-38.25          | 1435-1626.5   | 9.0-9.2     |
| 4.20725-4.20775 | 73-74.6             | 1645.5-1646.5 | 9.3-9.5     |
| 6.215-6.218     | 74.8-75.2           | 1660-1710     | 10.6-12.7   |
| 6.26775-6.26825 | 108-121.94          | 1718.8-1722.2 | 13.25-13.4  |
| 6.31175-6.31225 | 123-138             | 2200-2300     | 14.47-14.5  |
| 8.291-8.294     | 149.9-150.05        | 2310-2390     | 15.35-16.2  |
| 8.362-8.366     | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4   |
| 8.37625-8.38675 | 156.7-156.9         | 2690-2900     | 22.01-23.12 |

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 6 of 143

|                   |                 |             |            |
|-------------------|-----------------|-------------|------------|
| 8.41425-8.41475   | 162.0125-167.17 | 3260-3267   | 23.6-24.0  |
| 12.29-12.293      | 167.72-173.2    | 3332-3339   | 31.2-31.8  |
| 12.51975-12.52025 | 240-285         | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4       | 3600-4400   | Above 38.6 |
| 13.36-13.41       |                 |             |            |

(b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

(c) Except as provided in paragraphs (d) and (e) of this section, regardless of the field strength limits specified elsewhere in this subpart, the provisions of this section apply to emissions from any intentional radiator.

(d) The following devices are exempt from the requirements of this section:

(1) Swept frequency field disturbance sensors operating between 1.705 and 37 MHz provided their emissions only sweep through the bands listed in paragraph (a) of this section, the sweep is never stopped with the fundamental emission within the bands listed in paragraph (a) of this section, and the fundamental emission is outside of the bands listed in paragraph (a) of this section more than 99% of the time the device is actively transmitting, without compensation for duty cycle.

(2) Transmitters used to detect buried electronic markers at 101.4 kHz which are employed by telephone companies.

(3) Cable locating equipment operated pursuant to §15.213.

(4) Any equipment operated under the provisions of §15.253, 15.255, and 15.256 in the frequency band 75-85 GHz, or §15.257 of this part.

(5) Biomedical telemetry devices operating under the provisions of §15.242 of this part are not subject to the restricted band 608-614 MHz but are subject to compliance within the other restricted bands.

(6) Transmitters operating under the provisions of subparts D or F of this part.

(7) Devices operated pursuant to §15.225 are exempt from complying with this section for the 13.36-13.41 MHz band only.

(8) Devices operated in the 24.075-24.175 GHz band under §15.245 are exempt from complying with the requirements of this section for the 48.15-48.35 GHz and 72.225-72.525 GHz bands only, and shall not exceed the limits specified in §15.245(b).

(9) Devices operated in the 24.0-24.25 GHz band under §15.249 are exempt from complying with the requirements of this section for the 48.0-48.5 GHz and 72.0-72.75 GHz bands only, and shall not exceed the limits specified in §15.249(a).

(e) Harmonic emissions appearing in the restricted bands above 17.7 GHz from field disturbance sensors operating under the provisions of §15.245 shall not exceed the limits specified in §15.245(b).

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 7 of 143

---

### 2.1.1.1. TX Spurious & Restricted Band Emissions

Antenna: AP-ANT-13B

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                  |                        |             |
|---------------------------------|------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-13B | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 4.00             | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable   | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00          | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 57               | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5175.66       | 68.92          | 3.69          | -11.51 | 61.10              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 8 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                  |                        |             |
|---------------------------------|------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-13B | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 4.00             | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable   | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5200.00          | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100              | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5194.29       | 78.13          | 3.67          | -11.47 | 70.33              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| #2                     | 15606.41      | 50.26          | 6.01          | -0.20  | 56.07              | Max Peak         | Vertical   | 196    | 58      | 68.2               | -12.2     | Pass       |  |
| #3                     | 15606.41      | 37.16          | 6.01          | -0.20  | 42.97              | Max Avg          | Vertical   | 196    | 58      | 54.0               | -11.0     | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 9 of 143

---

|  |                  |                        |             |
|--|------------------|------------------------|-------------|
| <b>Equipment Configuration for TX Spurious &amp; Restricted Band Emissions</b> |                  |                        |             |
| <b>Antenna:</b>  | Aruba AP-ANT-13B | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>   | 4.00             | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>  | Not Applicable   | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b>  | 5240.00          | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>  | 100              | <b>Tested By:</b>      | JMH         |

| **Antenna:** | Aruba AP-ANT-13B | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 4.00 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5240.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 100 | **Tested By:** | JMH |

| <b>Test Measurement Results</b> |               |                |               |        |                    |                  |            |        |         |                    |           |            |
|---------------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| <b>1000.00 - 18000.00 MHz</b>   |               |                |               |        |                    |                  |            |        |         |                    |           |            |
| Num                             | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
| #1                              | 5242.03       | 81.09          | 3.63          | -11.36 | 73.36              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |
| #2                              | 15720.91      | 58.22          | 6.09          | 0.17   | 64.48              | Max Peak         | Vertical   | 146    | 35      | 68.2               | -3.8      | Pass       |
| #3                              | 15720.91      | 45.50          | 6.09          | 0.17   | 51.76              | Max Avg          | Vertical   | 146    | 35      | 54.0               | -2.2      | Pass       |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 10 of 143

---

Antenna: AP-ANT-19

**Equipment Configuration for TX Spurious & Restricted Band Emissions**

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-19 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 6.00            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 61              | <b>Tested By:</b>      | JMH         |

**Test Measurement Results**

**1000.00 - 18000.00 MHz**

| Num | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|
| #1  | 5178.30       | 76.54          | 3.69          | -11.51 | 68.72              | Fundamental      | Vertical | 151    | 0       | --                 | --        |            |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 11 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-19 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 6.00            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5200.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100             | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5200.25       | 85.84          | 3.66          | -11.46 | 78.04              | Fundamental      | Vertical   | 151    | 0       | --                 | --        |            |  |
| #2                     | 15607.97      | 56.58          | 6.01          | -0.20  | 62.39              | Max Peak         | Horizontal | 153    | 185     | 68.2               | -5.8      | Pass       |  |
| #3                     | 15607.97      | 41.84          | 6.01          | -0.20  | 47.65              | Max Avg          | Horizontal | 153    | 185     | 54.0               | -6.4      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 12 of 143

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-19 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 6.00            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5240.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100             | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5238.83       | 88.07          | 3.63          | -11.37 | 80.33              | Fundamental      | Vertical | 151    | 0       | --                 | --        |            |  |
| #2                     | 10477.28      | 46.52          | 5.44          | -4.47  | 47.49              | Peak (NRB)       | Vertical | 200    | 0       | --                 | --        | Pass       |  |
| #3                     | 15727.83      | 57.48          | 6.08          | 0.17   | 63.73              | Max Peak         | Vertical | 198    | 336     | 68.2               | -4.5      | Pass       |  |
| #4                     | 15727.83      | 44.02          | 6.08          | 0.17   | 50.27              | Max Avg          | Vertical | 198    | 336     | 54.0               | -3.7      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 13 of 143

---

Antenna: AP-ANT-1W

**Equipment Configuration for TX Spurious & Restricted Band Emissions**

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-1W | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.80            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 74              | <b>Tested By:</b>      | OC          |

**Test Measurement Results**

**1000.00 - 18000.00 MHz**

| Num | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|
| #1  | 5178.74       | 75.07          | 3.69          | -11.51 | 67.25              | Fundamental      | Vertical | 200    | 60      | --                 | --        |            |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 14 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-1W | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.80            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5200.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100             | <b>Tested By:</b>      | OC          |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5202.67       | 71.40          | 3.65          | -11.45 | 63.60              | Fundamental      | Vertical   | 100    | 0       | --                 | --        |            |  |
| #2                     | 15607.68      | 53.62          | 6.01          | -0.20  | 59.43              | Max Peak         | Horizontal | 158    | 168     | 68.2               | -8.8      | Pass       |  |
| #3                     | 15607.68      | 40.50          | 6.01          | -0.20  | 46.31              | Max Avg          | Horizontal | 158    | 168     | 54.0               | -7.7      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 15 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-1W | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.80            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5240.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100             | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5235.75       | 79.41          | 3.63          | -11.37 | 71.67              | Fundamental      | Vertical   | 151    | 0       | --                 | --        |            |  |
| #2                     | 15721.29      | 53.48          | 6.11          | 0.17   | 59.76              | Max Peak         | Horizontal | 148    | 166     | 68.2               | -8.5      | Pass       |  |
| #3                     | 15721.29      | 37.11          | 6.11          | 0.17   | 43.39              | Max Avg          | Horizontal | 148    | 166     | 54.0               | -10.6     | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 16 of 143

---

Antenna: AP-ANT-20W

**Equipment Configuration for TX Spurious & Restricted Band Emissions**

|                                 |                  |                        |             |
|---------------------------------|------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-20W | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 2.00             | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable   | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00          | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 72               | <b>Tested By:</b>      | JMH         |

**Test Measurement Results**

**1000.00 - 18000.00 MHz**

| Num | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|
| #1  | 5181.29       | 71.30          | 3.69          | -11.50 | 63.49              | Fundamental      | Vertical | 100    | 0       | --                 | --        |            |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 17 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                  |                        |             |
|---------------------------------|------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-20W | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 2.00             | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable   | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5200.00          | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100              | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5202.01       | 82.11          | 3.66          | -11.46 | 74.31              | Fundamental      | Vertical   | 151    | 0       | --                 | --        |            |  |
| #2                     | 15607.93      | 53.89          | 6.01          | -0.20  | 59.70              | Max Peak         | Horizontal | 155    | 199     | 68.2               | -8.5      | Pass       |  |
| #3                     | 15607.93      | 39.29          | 6.01          | -0.20  | 45.10              | Max Avg          | Horizontal | 155    | 199     | 54.0               | -8.9      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 18 of 143

---

|  |                  |                        |             |
|--|------------------|------------------------|-------------|
| <b>Equipment Configuration for TX Spurious &amp; Restricted Band Emissions</b> |                  |                        |             |
| <b>Antenna:</b>  | Aruba AP-ANT-20W | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>   | 2.00             | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>  | Not Applicable   | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b>  | 5240.00          | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>  | 100              | <b>Tested By:</b>      | JMH         |

| <b>Test Measurement Results</b> |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |  |
|---------------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|--|
| <b>1000.00 - 18000.00 MHz</b>   |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |  |
| Num                             | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |  |
| #1                              | 5241.37       | 84.55          | 3.63          | -11.36 | 76.82              | Fundamental      | Vertical | 200    | 0       | --                 | --        |            |  |  |
| #2                              | 15722.80      | 58.58          | 6.12          | 0.17   | 64.87              | Max Peak         | Vertical | 188    | 69      | 68.2               | -3.4      | Pass       |  |  |
| #3                              | 15722.80      | 45.40          | 6.12          | 0.17   | 51.69              | Max Avg          | Vertical | 188    | 69      | 54.0               | -2.3      | Pass       |  |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 19 of 143

---

Antenna: AP-ANT-40

**Equipment Configuration for TX Spurious & Restricted Band Emissions**

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-40 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.00            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 72              | <b>Tested By:</b>      | JMH         |

**Test Measurement Results**

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5175.00       | 75.03          | 3.70          | -11.52 | 67.21              | Fundamental      | Horizontal | 100    | 32      | --                 | --        |            |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 20 of 143

---

|  |                 |                        |             |
|--|-----------------|------------------------|-------------|
| <b>Equipment Configuration for TX Spurious &amp; Restricted Band Emissions</b> |                 |                        |             |
| <b>Antenna:</b>  | Aruba AP-ANT-40 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>   | 5.00            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>  | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b>  | 5200.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>  | 100             | <b>Tested By:</b>      | JMH         |

| **Antenna:** | Aruba AP-ANT-40 | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 5.00 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5200.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 100 | **Tested By:** | JMH |

| <b>Test Measurement Results</b> |               |                |               |        |                    |                  |            |        |         |                    |           |            |
|---------------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| <b>1000.00 - 18000.00 MHz</b>   |               |                |               |        |                    |                  |            |        |         |                    |           |            |
| Num                             | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
| #1                              | 5207.19       | 83.02          | 3.65          | -11.44 | 75.23              | Fundamental      | Horizontal | 100    | 16      | --                 | --        |            |
| #2                              | 15608.13      | 54.93          | 6.00          | -0.18  | 60.75              | Max Peak         | Horizontal | 156    | 55      | 68.2               | -7.5      | Pass       |
| #3                              | 15608.13      | 40.39          | 6.00          | -0.18  | 46.21              | Max Avg          | Horizontal | 156    | 55      | 54.0               | -7.8      | Pass       |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 21 of 143

---

|  |                 |                        |             |
|--|-----------------|------------------------|-------------|
| <b>Equipment Configuration for TX Spurious &amp; Restricted Band Emissions</b> |                 |                        |             |
| <b>Antenna:</b>  | Aruba AP-ANT-40 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>   | 5.00            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>  | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b>  | 5240.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>  | 100             | <b>Tested By:</b>      | JMH         |

| <b>Test Measurement Results</b>  |                        |                |               |        |                    |                  |            |        |         |                    |           |            |  |  |     |               |                |               |       |                    |                  |     |        |         |                    |           |            |    |         |       |      |        |       |             |            |     |   |    |    |  |    |          |       |      |      |       |          |          |     |    |      |      |      |    |          |       |      |      |       |         |          |     |    |      |      |      |
|--|------------------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|--|-----|---------------|----------------|---------------|-------|--------------------|------------------|-----|--------|---------|--------------------|-----------|------------|----|---------|-------|------|--------|-------|-------------|------------|-----|---|----|----|--|----|----------|-------|------|------|-------|----------|----------|-----|----|------|------|------|----|----------|-------|------|------|-------|---------|----------|-----|----|------|------|------|
| <table border="1"><thead><tr><th colspan="14">1000.00 - 18000.00 MHz</th></tr><tr><th>Num</th><th>Frequency MHz</th><th>Raw dB<math>\mu</math>V</th><th>Cable Loss dB</th><th>AF dB</th><th>Level dB<math>\mu</math>V/m</th><th>Measurement Type</th><th>Pol</th><th>Hgt cm</th><th>Azt Deg</th><th>Limit dB<math>\mu</math>V/m</th><th>Margin dB</th><th>Pass /Fail</th></tr></thead><tbody><tr><td>#1</td><td>5236.30</td><td>81.01</td><td>3.63</td><td>-11.37</td><td>73.27</td><td>Fundamental</td><td>Horizontal</td><td>100</td><td>0</td><td>--</td><td>--</td><td></td></tr><tr><td>#2</td><td>15721.57</td><td>59.22</td><td>6.11</td><td>0.17</td><td>65.50</td><td>Max Peak</td><td>Vertical</td><td>198</td><td>68</td><td>68.2</td><td>-2.7</td><td>Pass</td></tr><tr><td>#3</td><td>15721.57</td><td>47.20</td><td>6.11</td><td>0.17</td><td>53.48</td><td>Max Avg</td><td>Vertical</td><td>198</td><td>68</td><td>54.0</td><td>-0.5</td><td>Pass</td></tr></tbody></table> | 1000.00 - 18000.00 MHz |                |               |        |                    |                  |            |        |         |                    |           |            |  |  | Num | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail | #1 | 5236.30 | 81.01 | 3.63 | -11.37 | 73.27 | Fundamental | Horizontal | 100 | 0 | -- | -- |  | #2 | 15721.57 | 59.22 | 6.11 | 0.17 | 65.50 | Max Peak | Vertical | 198 | 68 | 68.2 | -2.7 | Pass | #3 | 15721.57 | 47.20 | 6.11 | 0.17 | 53.48 | Max Avg | Vertical | 198 | 68 | 54.0 | -0.5 | Pass |
| 1000.00 - 18000.00 MHz   |                        |                |               |        |                    |                  |            |        |         |                    |           |            |  |  |     |               |                |               |       |                    |                  |     |        |         |                    |           |            |    |         |       |      |        |       |             |            |     |   |    |    |  |    |          |       |      |      |       |          |          |     |    |      |      |      |    |          |       |      |      |       |         |          |     |    |      |      |      |
| Num  | Frequency MHz          | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |  |     |               |                |               |       |                    |                  |     |        |         |                    |           |            |    |         |       |      |        |       |             |            |     |   |    |    |  |    |          |       |      |      |       |          |          |     |    |      |      |      |    |          |       |      |      |       |         |          |     |    |      |      |      |
| #1   | 5236.30                | 81.01          | 3.63          | -11.37 | 73.27              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |  |     |               |                |               |       |                    |                  |     |        |         |                    |           |            |    |         |       |      |        |       |             |            |     |   |    |    |  |    |          |       |      |      |       |          |          |     |    |      |      |      |    |          |       |      |      |       |         |          |     |    |      |      |      |
| #2   | 15721.57               | 59.22          | 6.11          | 0.17   | 65.50              | Max Peak         | Vertical   | 198    | 68      | 68.2               | -2.7      | Pass       |  |  |     |               |                |               |       |                    |                  |     |        |         |                    |           |            |    |         |       |      |        |       |             |            |     |   |    |    |  |    |          |       |      |      |       |          |          |     |    |      |      |      |    |          |       |      |      |       |         |          |     |    |      |      |      |
| #3   | 15721.57               | 47.20          | 6.11          | 0.17   | 53.48              | Max Avg          | Vertical   | 198    | 68      | 54.0               | -0.5      | Pass       |  |  |     |               |                |               |       |                    |                  |     |        |         |                    |           |            |    |         |       |      |        |       |             |            |     |   |    |    |  |    |          |       |      |      |       |          |          |     |    |      |      |      |    |          |       |      |      |       |         |          |     |    |      |      |      |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 22 of 143

---

Antenna: AP-ANT-45

**Equipment Configuration for TX Spurious & Restricted Band Emissions**

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-45 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.50            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 61              | <b>Tested By:</b>      | OC          |

**Test Measurement Results**

**1000.00 - 18000.00 MHz**

| Num | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|
| #1  | 5173.78       | 77.65          | 3.70          | -11.52 | 69.83              | Fundamental      | Vertical | 100    | 0       | --                 | --        |            |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 23 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-45 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.50            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5200.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100             | <b>Tested By:</b>      | OC          |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5207.19       | 88.11          | 3.65          | -11.44 | 80.32              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| #2                     | 15608.12      | 56.83          | 6.00          | -0.18  | 62.65              | Max Peak         | Horizontal | 151    | 176     | 68.2               | -5.6      | Pass       |  |
| #3                     | 15608.12      | 42.30          | 6.00          | -0.18  | 48.12              | Max Avg          | Horizontal | 151    | 176     | 54.0               | -5.9      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 24 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-45 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.50            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5240.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100             | <b>Tested By:</b>      | OC          |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5232.55       | 89.10          | 3.63          | -11.39 | 81.34              | Fundamental      | Vertical   | 100    | 0       | --                 | --        |            |  |
| #2                     | 15721.85      | 59.97          | 6.11          | 0.17   | 66.25              | Max Peak         | Horizontal | 154    | 202     | 68.2               | -2.0      | Pass       |  |
| #3                     | 15721.85      | 47.52          | 6.11          | 0.17   | 53.80              | Max Avg          | Horizontal | 154    | 202     | 54.0               | -0.2      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 25 of 143

---

Antenna: AP-ANT-48

**Equipment Configuration for TX Spurious & Restricted Band Emissions**

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-48 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 8.50            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 54              | <b>Tested By:</b>      | JMH         |

**Test Measurement Results**

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5184.37       | 72.77          | 3.68          | -11.49 | 64.96              | Fundamental      | Vertical | 100    | 0       | --                 | --        |            |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 26 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-48 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 8.50            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5200.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100             | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5202.67       | 86.64          | 3.65          | -11.45 | 78.84              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| #2                     | 15607.60      | 54.42          | 6.01          | -0.20  | 60.23              | Max Peak         | Horizontal | 147    | 197     | 68.2               | -8.0      | Pass       |  |
| #3                     | 15607.60      | 40.70          | 6.01          | -0.20  | 46.51              | Max Avg          | Horizontal | 147    | 197     | 54.0               | -7.5      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 27 of 143

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-48 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 8.50            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5240.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100             | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5244.89       | 88.92          | 3.63          | -11.35 | 81.20              | Fundamental      | Vertical   | 100    | 0       | --                 | --        |            |  |
| #2                     | 10475.62      | 46.12          | 5.45          | -4.49  | 47.08              | Peak (NRB)       | Vertical   | 151    | 0       | --                 | --        | Pass       |  |
| #3                     | 15724.89      | 57.45          | 6.11          | 0.17   | 63.73              | Max Peak         | Horizontal | 152    | 173     | 68.2               | -4.5      | Pass       |  |
| #4                     | 15724.89      | 45.19          | 6.11          | 0.17   | 51.47              | Max Avg          | Horizontal | 152    | 173     | 54.0               | -2.5      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 28 of 143

---

### Antenna: Metal Sheet

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                   |                        |             |
|---------------------------------|-------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba Metal Sheet | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 2.70              | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable    | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00           | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 67                | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5178.25       | 69.93          | 3.69          | -11.51 | 62.11              | Fundamental      | Horizontal | 151    | 23      | --                 | --        |            |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 29 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                   |                        |             |
|---------------------------------|-------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba Metal Sheet | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 2.70              | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable    | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5200.00           | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100               | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5202.67       | 80.03          | 3.65          | -11.45 | 72.23              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| #2                     | 15599.34      | 56.41          | 6.04          | -0.25  | 62.20              | Max Peak         | Horizontal | 185    | 352     | 68.2               | -6.0      | Pass       |  |
| #3                     | 15599.34      | 42.84          | 6.04          | -0.25  | 48.63              | Max Avg          | Horizontal | 185    | 352     | 54.0               | -5.4      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 30 of 143

---

#### Equipment Configuration for TX Spurious & Restricted Band Emissions

|                                 |                   |                        |             |
|---------------------------------|-------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba Metal Sheet | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 2.70              | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable    | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5240.00           | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 100               | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                     | 5242.91       | 80.94          | 3.63          | -11.36 | 73.21              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| #2                     | 15716.94      | 59.27          | 6.04          | 0.18   | 65.49              | Max Peak         | Horizontal | 196    | 354     | 68.2               | -2.7      | Pass       |  |
| #3                     | 15716.94      | 46.42          | 6.04          | 0.18   | 52.64              | Max Avg          | Horizontal | 196    | 354     | 54.0               | -1.4      | Pass       |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 31 of 143

---

### 2.1.1.2. Restricted Edge & Band-Edge Emissions

Antenna: AP-ANT-13B

#### RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

| Aruba AP-ANT-13B |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11a          | 5180.00                   | 5150.00        | 67.33                  | 47.52                  | 57            |
| 802.11ac-80      | 5210.00                   | 5150.00        | 67.15                  | 46.93                  | 50            |
| 802.11n HT-20    | 5180.00                   | 5150.00        | 67.34                  | 46.93                  | 57            |
| 802.11n HT-40    | 5190.00                   | 5150.00        | 66.50                  | 46.30                  | 47            |
| 802.11ac-80+80   | 5210.00 + 5290.00         | 5150.00        | 65.58                  | 45.15                  | 14 d          |

Click on the links to view the data.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 32 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                  |                        |             |
|---------------------------------|------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-13B | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 4.00             | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable   | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00          | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 57               | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 9.74           | 3.67          | 34.11 | 47.52              | Max Avg          | Horizontal | 116    | 329     | 54.0               | -6.5      | Pass       |  |
| #2                    | 5150.00       | 29.55          | 3.67          | 34.11 | 67.33              | Max Peak         | Horizontal | 116    | 329     | 68.2               | -0.9      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 33 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                  |                        |             |
|---------------------------------|------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-13B | <b>Variant:</b>        | 802.11ac-80 |
| <b>Antenna Gain (dBi):</b>      | 4.00             | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | 6                | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5210.00          | <b>Data Rate:</b>      | 29.3 MBit/s |
| <b>Power Setting:</b>           | 50               | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.50       | 29.36          | 3.68          | 34.11 | 67.15              | Max Peak         | Horizontal | 116    | 329     | 68.2               | -1.1      | Pass       |  |
| #2                    | 5150.00       | 9.15           | 3.67          | 34.11 | 46.93              | Max Avg          | Horizontal | 116    | 329     | 54.0               | -7.1      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 34 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                  |                        |               |
|---------------------------------|------------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-13B | <b>Variant:</b>        | 802.11n HT-20 |
| <b>Antenna Gain (dBi):</b>      | 4.00             | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6                | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5180.00          | <b>Data Rate:</b>      | 6.50 MBit/s   |
| <b>Power Setting:</b>           | 57               | <b>Tested By:</b>      | JMH           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5146.99       | 29.55          | 3.68          | 34.11 | 67.34              | Max Peak         | Horizontal | 116    | 329     | 68.2               | -0.9      | Pass       |  |
| #2                    | 5150.00       | 9.15           | 3.67          | 34.11 | 46.93              | Max Avg          | Horizontal | 116    | 329     | 54.0               | -7.1      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 35 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                  |                        |               |
|---------------------------------|------------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-13B | <b>Variant:</b>        | 802.11n HT-40 |
| <b>Antenna Gain (dBi):</b>      | 4.00             | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6                | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5190.00          | <b>Data Rate:</b>      | 13.50 MBit/s  |
| <b>Power Setting:</b>           | 47               | <b>Tested By:</b>      | JMH           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.50       | 8.51           | 3.68          | 34.11 | 46.30              | Max Avg          | Horizontal | 116    | 329     | 54.0               | -7.7      | Pass       |  |
| #2                    | 5148.50       | 28.71          | 3.68          | 34.11 | 66.50              | Max Peak         | Horizontal | 116    | 329     | 68.2               | -1.7      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 36 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |                |
|---------------------------------|-------------------|------------------------|----------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-13B  | <b>Variant:</b>        | 802.11ac-80+80 |
| <b>Antenna Gain (dBi):</b>      | 6.00              | <b>Modulation:</b>     | OFDM           |
| <b>Beam Forming Gain (Y):</b>   | 6                 | <b>Duty Cycle (%):</b> | 99             |
| <b>Channel Frequency (MHz):</b> | 5210.00 + 5290.00 | <b>Data Rate:</b>      | 58.60 MBit/s   |
| <b>Power Setting:</b>           | 14 d              | <b>Tested By:</b>      | JMH            |

#### Test Measurement Results

| 4500.00 - 5460.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 7.37           | 3.67          | 34.11 | 45.15              | Max Avg          | Horizontal | 116    | 329     | 54.0               | -8.9      | Pass       |  |
| #2                    | 5150.00       | 27.80          | 3.67          | 34.11 | 65.58              | Max Peak         | Horizontal | 116    | 329     | 68.2               | -2.7      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 37 of 143

---

Antenna: AP-ANT-19

#### RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

| Aruba AP-ANT-19  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11a          | 5180.00                   | 5150.00        | 67.85                  | 49.38                  | 61            |
| 802.11ac-80      | 5210.00                   | 5150.00        | 67.48                  | 46.30                  | 47            |
| 802.11n HT-20    | 5180.00                   | 5150.00        | 67.09                  | 47.52                  | 52            |
| 802.11n HT-40    | 5190.00                   | 5150.00        | 67.63                  | 47.52                  | 46            |

| Aruba AP-ANT-19  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11ac-80+80   | 5210.00 + 5290.00         | 5150.00        | 67.62                  | 46.73                  | 12 d          |

Click on the links to view the data.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 38 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-19 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 6.00            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 61              | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 11.60          | 3.67          | 34.11 | 49.38              | Max Avg          | Vertical | 155    | 4       | 54.0               | -4.6      | Pass       |  |
| #2                    | 5150.00       | 30.07          | 3.67          | 34.11 | 67.85              | Max Peak         | Vertical | 155    | 4       | 68.2               | -0.4      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 39 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |              |
|---------------------------------|-----------------|------------------------|--------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-19 | <b>Variant:</b>        | 802.11ac-80  |
| <b>Antenna Gain (dBi):</b>      | 6.00            | <b>Modulation:</b>     | OFDM         |
| <b>Beam Forming Gain (Y):</b>   | 6.00            | <b>Duty Cycle (%):</b> | 99           |
| <b>Channel Frequency (MHz):</b> | 5210.00         | <b>Data Rate:</b>      | 29.30 MBit/s |
| <b>Power Setting:</b>           | 47              | <b>Tested By:</b>      | JMH          |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 8.52           | 3.67          | 34.11 | 46.30              | Max Avg          | Vertical | 155    | 4       | 54.0               | -7.7      | Pass       |  |
| #2                    | 5150.00       | 29.70          | 3.67          | 34.11 | 67.48              | Max Peak         | Vertical | 155    | 4       | 68.2               | -0.7      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 40 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |               |
|---------------------------------|-----------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-19 | <b>Variant:</b>        | 802.11n HT-20 |
| <b>Antenna Gain (dBi):</b>      | 6.00            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.50 MBit/s   |
| <b>Power Setting:</b>           | 52              | <b>Tested By:</b>      | JMH           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 9.74           | 3.67          | 34.11 | 47.52              | Max Avg          | Vertical | 155    | 4       | 54.0               | -6.5      | Pass       |  |
| #2                    | 5150.00       | 29.31          | 3.67          | 34.11 | 67.09              | Max Peak         | Vertical | 155    | 4       | 68.2               | -1.1      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 41 of 143

---

|   |                 |                        |               |
|---|-----------------|------------------------|---------------|
| <b>Equipment Configuration for Restricted Lower Band-Edge Emissions</b> |                 |                        |               |
| <b>Antenna:</b>   | Aruba AP-ANT-19 | <b>Variant:</b>        | 802.11n HT-40 |
| <b>Antenna Gain (dBi):</b>  | 6.00            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b>   | 5190.00         | <b>Data Rate:</b>      | 13.50 MBit/s  |
| <b>Power Setting:</b>   | 46              | <b>Tested By:</b>      | JMH           |

| **Antenna:** | Aruba AP-ANT-19 | **Variant:** | 802.11n HT-40 |
| **Antenna Gain (dBi):** | 6.00 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | 6.00 | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5190.00 | **Data Rate:** | 13.50 MBit/s |
| **Power Setting:** | 46 | **Tested By:** | JMH |

|                                 |
|---------------------------------|
| <b>Test Measurement Results</b> |
|---------------------------------|

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 9.74           | 3.67          | 34.11 | 47.52              | Max Avg          | Vertical | 155    | 4       | 54.0               | -6.5      | Pass       |  |
| #2                    | 5150.00       | 29.85          | 3.67          | 34.11 | 67.63              | Max Peak         | Vertical | 155    | 4       | 68.2               | -0.6      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 42 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |                |
|---------------------------------|-------------------|------------------------|----------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-19   | <b>Variant:</b>        | 802.11ac-80+80 |
| <b>Antenna Gain (dBi):</b>      | 6.00              | <b>Modulation:</b>     | OFDM           |
| <b>Beam Forming Gain (Y):</b>   | 6.00              | <b>Duty Cycle (%):</b> | 99             |
| <b>Channel Frequency (MHz):</b> | 5210.00 + 5290.00 | <b>Data Rate:</b>      | 58.60 MBit/s   |
| <b>Power Setting:</b>           | 12 d              | <b>Tested By:</b>      | JMH            |

#### Test Measurement Results

| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5142.08       | 29.80          | 3.70          | 34.12 | 67.62              | Max Peak         | Vertical | 157    | 4       | 68.2               | -0.6      | Pass       |  |
| #2                    | 5150.00       | 8.95           | 3.67          | 34.11 | 46.73              | Max Avg          | Vertical | 157    | 4       | 54.0               | -7.3      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 43 of 143

---

Antenna: AP-ANT-1W

#### RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

| Aruba AP-ANT-1W  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11a          | 5180.00                   | 5150.00        | 67.94                  | 49.07                  | 74            |
| 802.11ac-80      | 5210.00                   | 5150.00        | 68.05                  | 47.13                  | 64            |
| 802.11n HT-20    | 5180.00                   | 5150.00        | 67.46                  | 49.83                  | 80            |
| 802.11n HT-40    | 5190.00                   | 5150.00        | 67.65                  | 47.33                  | 68            |

| Aruba AP-ANT-1W  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11ac-80+80   | 5210.00 + 5290.00         | 5150.00        | 63.37                  | 43.21                  | 14 d          |

Click on the links to view the data.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 44 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-1W | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.80            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 74              | <b>Tested By:</b>      | OC          |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5143.99       | 30.12          | 3.70          | 34.12 | 67.94              | Max Peak         | Vertical | 165    | 7       | 68.2               | -0.3      | Pass       |  |
| #2                    | 5150.00       | 11.29          | 3.67          | 34.11 | 49.07              | Max Avg          | Vertical | 165    | 7       | 54.0               | -4.9      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 45 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |              |
|---------------------------------|-----------------|------------------------|--------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-1W | <b>Variant:</b>        | 802.11ac-80  |
| <b>Antenna Gain (dBi):</b>      | 5.80            | <b>Modulation:</b>     | OFDM         |
| <b>Beam Forming Gain (Y):</b>   | 6.00            | <b>Duty Cycle (%):</b> | 99           |
| <b>Channel Frequency (MHz):</b> | 5210.00         | <b>Data Rate:</b>      | 29.30 MBit/s |
| <b>Power Setting:</b>           | 64              | <b>Tested By:</b>      | OC           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5146.99       | 9.34           | 3.68          | 34.11 | 47.13              | Max Avg          | Vertical | 165    | 7       | 54.0               | -6.9      | Pass       |  |
| #2                    | 5146.99       | 30.26          | 3.68          | 34.11 | 68.05              | Max Peak         | Vertical | 165    | 7       | 68.2               | -0.2      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 46 of 143

**Equipment Configuration for Restricted Lower Band-Edge Emissions**

|                                 |                 |                        |               |
|---------------------------------|-----------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-1W | <b>Variant:</b>        | 802.11n HT-20 |
| <b>Antenna Gain (dBi):</b>      | 5.80            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.50 MBit/s   |
| <b>Power Setting:</b>           | 80              | <b>Tested By:</b>      | OC            |

**Test Measurement Results**

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 12.05          | 3.67          | 34.11 | 49.83              | Max Avg          | Vertical | 165    | 7       | 54.0               | -4.2      | Pass       |  |
| #2                    | 5150.00       | 29.68          | 3.67          | 34.11 | 67.46              | Max Peak         | Vertical | 165    | 7       | 68.2               | -0.8      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 47 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |               |
|---------------------------------|-----------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-1W | <b>Variant:</b>        | 802.11n HT-40 |
| <b>Antenna Gain (dBi):</b>      | 5.80            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5190.00         | <b>Data Rate:</b>      | 13.50 MBit/s  |
| <b>Power Setting:</b>           | 68              | <b>Tested By:</b>      | OC            |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 9.55           | 3.67          | 34.11 | 47.33              | Max Avg          | Vertical | 165    | 7       | 54.0               | -6.7      | Pass       |  |
| #2                    | 5150.00       | 29.87          | 3.67          | 34.11 | 67.65              | Max Peak         | Vertical | 165    | 7       | 68.2               | -0.6      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 48 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |                |
|---------------------------------|-------------------|------------------------|----------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-1W   | <b>Variant:</b>        | 802.11ac-80+80 |
| <b>Antenna Gain (dBi):</b>      | 5.80              | <b>Modulation:</b>     | OFDM           |
| <b>Beam Forming Gain (Y):</b>   | 6.00              | <b>Duty Cycle (%):</b> | 99             |
| <b>Channel Frequency (MHz):</b> | 5210.00 + 5290.00 | <b>Data Rate:</b>      | 29.30 MBit/s   |
| <b>Power Setting:</b>           | 14 d              | <b>Tested By:</b>      | OC             |

#### Test Measurement Results

| 4500.00 - 5400.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5135.57       | 25.56          | 3.69          | 34.12 | 63.37              | Max Peak         | Vertical | 165    | 7       | 68.2               | -4.9      | Pass       |  |
| #2                    | 5150.00       | 5.43           | 3.67          | 34.11 | 43.21              | Max Avg          | Vertical | 165    | 7       | 54.0               | -10.8     | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 49 of 143

---

Antenna: AP-ANT-20W

#### RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

| Aruba AP-ANT-20W |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11a          | 5180.00                   | 5150.00        | 67.46                  | 46.93                  | 63            |
| 802.11ac-80      | 5210.00                   | 5150.00        | 67.21                  | 44.89                  | 51            |
| 802.11n HT-20    | 5180.00                   | 5150.00        | 67.92                  | 46.30                  | 66            |
| 802.11n HT-40    | 5190.00                   | 5150.00        | 67.29                  | 44.63                  | 55            |

| Aruba AP-ANT-20W |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11ac-80+80   | 5210.00 + 5290.00         | 5150.00        | 66.87                  | 44.89                  | 14 d          |

Click on the links to view the data.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 50 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                  |                        |             |
|---------------------------------|------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-20W | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 2.00             | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable   | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00          | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 63               | <b>Tested By:</b>      | OC          |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 9.15           | 3.67          | 34.11 | 46.93              | Max Avg          | Vertical | 175    | 269     | 54.0               | -7.1      | Pass       |  |
| #2                    | 5150.00       | 29.68          | 3.67          | 34.11 | 67.46              | Max Peak         | Vertical | 175    | 269     | 68.2               | -0.8      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 51 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                  |                        |              |
|---------------------------------|------------------|------------------------|--------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-20W | <b>Variant:</b>        | 802.11ac-80  |
| <b>Antenna Gain (dBi):</b>      | 2.00             | <b>Modulation:</b>     | OFDM         |
| <b>Beam Forming Gain (Y):</b>   | 6.00             | <b>Duty Cycle (%):</b> | 99           |
| <b>Channel Frequency (MHz):</b> | 5210.00          | <b>Data Rate:</b>      | 29.30 MBit/s |
| <b>Power Setting:</b>           | 51               | <b>Tested By:</b>      | OC           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5145.49       | 29.41          | 3.69          | 34.11 | 67.21              | Max Peak         | Vertical | 175    | 269     | 68.2               | -1.0      | Pass       |  |
| #2                    | 5150.00       | 7.11           | 3.67          | 34.11 | 44.89              | Max Avg          | Vertical | 175    | 269     | 54.0               | -9.1      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 52 of 143

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                  |                        |               |
|---------------------------------|------------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-20W | <b>Variant:</b>        | 802.11n HT-20 |
| <b>Antenna Gain (dBi):</b>      | 2.00             | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6.00             | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5180.00          | <b>Data Rate:</b>      | 6.50 MBit/s   |
| <b>Power Setting:</b>           | 66               | <b>Tested By:</b>      | OC            |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.50       | 30.13          | 3.68          | 34.11 | 67.92              | Max Peak         | Vertical | 175    | 269     | 68.2               | -0.3      | Pass       |  |
| #2                    | 5150.00       | 8.52           | 3.67          | 34.11 | 46.30              | Max Avg          | Vertical | 175    | 269     | 54.0               | -7.7      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 53 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                  |                        |               |
|---------------------------------|------------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-20W | <b>Variant:</b>        | 802.11n HT-40 |
| <b>Antenna Gain (dBi):</b>      | 2.00             | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6.00             | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5190.00          | <b>Data Rate:</b>      | 13.50 MBit/s  |
| <b>Power Setting:</b>           | 55               | <b>Tested By:</b>      | OC            |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.50       | 29.50          | 3.68          | 34.11 | 67.29              | Max Peak         | Vertical | 175    | 269     | 68.2               | -0.9      | Pass       |  |
| #2                    | 5150.00       | 6.85           | 3.67          | 34.11 | 44.63              | Max Avg          | Vertical | 175    | 269     | 54.0               | -9.4      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN11-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 54 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |                |
|---------------------------------|-------------------|------------------------|----------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-20W  | <b>Variant:</b>        | 802.11ac-80+80 |
| <b>Antenna Gain (dBi):</b>      | 2.00              | <b>Modulation:</b>     | OFDM           |
| <b>Beam Forming Gain (Y):</b>   | 6.00              | <b>Duty Cycle (%):</b> | 99             |
| <b>Channel Frequency (MHz):</b> | 5210.00 + 5290.00 | <b>Data Rate:</b>      | 58.60 MBit/s   |
| <b>Power Setting:</b>           | 14 d              | <b>Tested By:</b>      | JMH            |

#### Test Measurement Results

| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5143.19       | 29.05          | 3.70          | 34.12 | 66.87              | Max Peak         | Vertical | 178    | 351     | 68.2               | -1.3      | Pass       |  |
| #2                    | 5150.00       | 7.11           | 3.67          | 34.11 | 44.89              | Max Avg          | Vertical | 178    | 351     | 54.0               | -9.1      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |
| #4                    | 5350.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 55 of 143

---

Antenna: AP-ANT-40

#### RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

| Aruba AP-ANT-40  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11a          | 5180.00                   | 5150.00        | 67.92                  | 50.25                  | 70            |
| 802.11ac-80      | 5210.00                   | 5150.00        | 67.97                  | 45.86                  | 55            |
| 802.11n HT-20    | 5180.00                   | 5150.00        | 66.69                  | 45.86                  | 59            |
| 802.11n HT-40    | 5190.00                   | 5150.00        | 67.50                  | 44.89                  | 51            |

| Aruba AP-ANT-40  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11ac-80+80   | 5210.00 + 5290.00         | 5150.00        | 67.85                  | 44.37                  | 14 d          |

Click on the links to view the data.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 56 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-40 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.00            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 70              | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5145.49       | 30.12          | 3.69          | 34.11 | 67.92              | Max Peak         | Horizontal | 182    | 45      | 68.2               | -0.3      | Pass       |  |
| #2                    | 5150.00       | 12.47          | 3.67          | 34.11 | 50.25              | Max Avg          | Horizontal | 182    | 45      | 54.0               | -3.8      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 57 of 143

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |              |
|---------------------------------|-----------------|------------------------|--------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-40 | <b>Variant:</b>        | 802.11ac-80  |
| <b>Antenna Gain (dBi):</b>      | 5.00            | <b>Modulation:</b>     | OFDM         |
| <b>Beam Forming Gain (Y):</b>   | 3.00            | <b>Duty Cycle (%):</b> | 99           |
| <b>Channel Frequency (MHz):</b> | 5210.00         | <b>Data Rate:</b>      | 29.30 MBit/s |
| <b>Power Setting:</b>           | 55              | <b>Tested By:</b>      | JMH          |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5145.49       | 30.17          | 3.69          | 34.11 | 67.97              | Max Peak         | Horizontal | 182    | 45      | 68.2               | -0.2      | Pass       |  |
| #2                    | 5150.00       | 8.08           | 3.67          | 34.11 | 45.86              | Max Avg          | Horizontal | 182    | 45      | 54.0               | -8.1      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 58 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |               |
|---------------------------------|-----------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-40 | <b>Variant:</b>        | 802.11n HT-20 |
| <b>Antenna Gain (dBi):</b>      | 5.00            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 3.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.50 MBit/s   |
| <b>Power Setting:</b>           | 59              | <b>Tested By:</b>      | JMH           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.50       | 28.90          | 3.68          | 34.11 | 66.69              | Max Peak         | Horizontal | 182    | 45      | 68.2               | -1.5      | Pass       |  |
| #2                    | 5150.00       | 8.08           | 3.67          | 34.11 | 45.86              | Max Avg          | Horizontal | 182    | 45      | 54.0               | -8.1      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 59 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |               |
|---------------------------------|-----------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-40 | <b>Variant:</b>        | 802.11n HT-40 |
| <b>Antenna Gain (dBi):</b>      | 5.00            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 3.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5190.00         | <b>Data Rate:</b>      | 13.50 MBit/s  |
| <b>Power Setting:</b>           | 51              | <b>Tested By:</b>      | JMH           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.50       | 29.71          | 3.68          | 34.11 | 67.50              | Max Peak         | Horizontal | 182    | 45      | 68.2               | -0.7      | Pass       |  |
| #2                    | 5150.00       | 7.11           | 3.67          | 34.11 | 44.89              | Max Avg          | Horizontal | 182    | 45      | 54.0               | -9.1      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 60 of 143

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |                |
|---------------------------------|-------------------|------------------------|----------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-40   | <b>Variant:</b>        | 802.11ac-80+80 |
| <b>Antenna Gain (dBi):</b>      | 5.00              | <b>Modulation:</b>     | OFDM           |
| <b>Beam Forming Gain (Y):</b>   | 3.00              | <b>Duty Cycle (%):</b> | 99             |
| <b>Channel Frequency (MHz):</b> | 5210.00 + 5290.00 | <b>Data Rate:</b>      | 58.60 MBit/s   |
| <b>Power Setting:</b>           | 14 d              | <b>Tested By:</b>      | JMH            |

#### Test Measurement Results

| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.30       | 30.06          | 3.68          | 34.11 | 67.85              | Max Peak         | Horizontal | 182    | 45      | 68.2               | -0.4      | Pass       |  |
| #2                    | 5150.00       | 6.59           | 3.67          | 34.11 | 44.37              | Max Avg          | Horizontal | 182    | 45      | 54.0               | -9.6      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |
| #4                    | 5350.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 160 mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 61 of 143

---

Antenna: AP-ANT-45

#### RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

| Aruba AP-ANT-45  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11a          | 5180.00                   | 5150.00        | 67.23                  | 48.07                  | 61            |
| 802.11ac-80      | 5210.00                   | 5150.00        | 67.88                  | 45.63                  | 49            |
| 802.11n HT-20    | 5180.00                   | 5150.00        | 67.44                  | 46.30                  | 60            |
| 802.11n HT-40    | 5190.00                   | 5150.00        | 66.95                  | 45.86                  | 52            |

| Aruba AP-ANT-45  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11ac-80+80   | 5210.00 + 5290.00         | 5150.00        | 66.20                  | 44.64                  | 12 d          |

Click on the links to view the data.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 62 of 143

**Equipment Configuration for Restricted Lower Band-Edge Emissions**

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-45 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 5.50            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 61              | <b>Tested By:</b>      | OC          |

**Test Measurement Results**

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 10.29          | 3.67          | 34.11 | 48.07              | Max Avg          | Vertical | 166    | 4       | 54.0               | -5.9      | Pass       |  |
| #2                    | 5150.00       | 29.45          | 3.67          | 34.11 | 67.23              | Max Peak         | Vertical | 166    | 4       | 68.2               | -1.0      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 63 of 143

**Equipment Configuration for Restricted Lower Band-Edge Emissions**

|                                 |                 |                        |              |
|---------------------------------|-----------------|------------------------|--------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-45 | <b>Variant:</b>        | 802.11ac-80  |
| <b>Antenna Gain (dBi):</b>      | 5.50            | <b>Modulation:</b>     | OFDM         |
| <b>Beam Forming Gain (Y):</b>   | 3.00            | <b>Duty Cycle (%):</b> | 99           |
| <b>Channel Frequency (MHz):</b> | 5210.00         | <b>Data Rate:</b>      | 29.30 MBit/s |
| <b>Power Setting:</b>           | 49              | <b>Tested By:</b>      | OC           |

**Test Measurement Results**

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5145.49       | 30.08          | 3.69          | 34.11 | 67.88              | Max Peak         | Vertical | 166    | 4       | 68.2               | -0.4      | Pass       |  |
| #2                    | 5150.00       | 7.85           | 3.67          | 34.11 | 45.63              | Max Avg          | Vertical | 166    | 4       | 54.0               | -8.4      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 64 of 143

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |               |
|---------------------------------|-----------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-45 | <b>Variant:</b>        | 802.11n HT-20 |
| <b>Antenna Gain (dBi):</b>      | 5.50            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 3.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.50 MBit/s   |
| <b>Power Setting:</b>           | 60              | <b>Tested By:</b>      | OC            |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 8.52           | 3.67          | 34.11 | 46.30              | Max Avg          | Vertical | 166    | 4       | 54.0               | -7.7      | Pass       |  |
| #2                    | 5150.00       | 29.66          | 3.67          | 34.11 | 67.44              | Max Peak         | Vertical | 166    | 4       | 68.2               | -0.8      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 65 of 143

**Equipment Configuration for Restricted Lower Band-Edge Emissions**

|                                 |                 |                        |               |
|---------------------------------|-----------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-45 | <b>Variant:</b>        | 802.11n HT-40 |
| <b>Antenna Gain (dBi):</b>      | 5.50            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 3.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5190.00         | <b>Data Rate:</b>      | 13.50 MBit/s  |
| <b>Power Setting:</b>           | 52              | <b>Tested By:</b>      | OC            |

**Test Measurement Results**

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 8.08           | 3.67          | 34.11 | 45.86              | Max Avg          | Vertical | 166    | 4       | 54.0               | -8.1      | Pass       |  |
| #2                    | 5150.00       | 29.17          | 3.67          | 34.11 | 66.95              | Max Peak         | Vertical | 166    | 4       | 68.2               | -1.3      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 66 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |                |
|---------------------------------|-------------------|------------------------|----------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-45   | <b>Variant:</b>        | 802.11ac-80+80 |
| <b>Antenna Gain (dBi):</b>      | 5.50              | <b>Modulation:</b>     | OFDM           |
| <b>Beam Forming Gain (Y):</b>   | 3.00              | <b>Duty Cycle (%):</b> | 99             |
| <b>Channel Frequency (MHz):</b> | 5210.00 + 5290.00 | <b>Data Rate:</b>      | 29.30 MBit/s   |
| <b>Power Setting:</b>           | 12 d              | <b>Tested By:</b>      | OC             |

#### Test Measurement Results

| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.30       | 28.41          | 3.68          | 34.11 | 66.20              | Max Peak         | Vertical | 166    | 360     | 68.2               | -2.0      | Pass       |  |
| #2                    | 5150.00       | 6.86           | 3.67          | 34.11 | 44.64              | Max Avg          | Vertical | 166    | 360     | 54.0               | -9.4      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 67 of 143

---

Antenna: AP-ANT-48

#### RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

| Aruba AP-ANT-48  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11a          | 5180.00                   | 5150.00        | 67.71                  | 48.07                  | 54            |
| 802.11ac-80      | 5210.00                   | 5150.00        | 67.29                  | 47.52                  | 47            |
| 802.11n HT-20    | 5180.00                   | 5150.00        | 67.07                  | 48.07                  | 52            |
| 802.11n HT-40    | 5190.00                   | 5150.00        | 67.23                  | 46.93                  | 41            |

| Aruba AP-ANT-48  |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11ac-80+80   | 5210.00 + 5290.00         | 5150.00        | 67.48                  | 46.31                  | 12 d          |

Click on the links to view the data.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 68 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |             |
|---------------------------------|-----------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-48 | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 8.50            | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable  | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 54              | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 10.29          | 3.67          | 34.11 | 48.07              | Max Avg          | Horizontal | 166    | 359     | 54.0               | -5.9      | Pass       |  |
| #2                    | 5150.00       | 29.93          | 3.67          | 34.11 | 67.71              | Max Peak         | Horizontal | 166    | 359     | 68.2               | -0.5      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 69 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |              |
|---------------------------------|-----------------|------------------------|--------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-48 | <b>Variant:</b>        | 802.11ac-80  |
| <b>Antenna Gain (dBi):</b>      | 8.50            | <b>Modulation:</b>     | OFDM         |
| <b>Beam Forming Gain (Y):</b>   | 3.00            | <b>Duty Cycle (%):</b> | 99           |
| <b>Channel Frequency (MHz):</b> | 5210.00         | <b>Data Rate:</b>      | 29.30 MBit/s |
| <b>Power Setting:</b>           | 47              | <b>Tested By:</b>      | JMH          |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 9.74           | 3.67          | 34.11 | 47.52              | Max Avg          | Horizontal | 166    | 359     | 54.0               | -6.5      | Pass       |  |
| #2                    | 5150.00       | 29.51          | 3.67          | 34.11 | 67.29              | Max Peak         | Horizontal | 166    | 359     | 68.2               | -0.9      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 70 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |               |
|---------------------------------|-----------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-48 | <b>Variant:</b>        | 802.11n HT-20 |
| <b>Antenna Gain (dBi):</b>      | 8.50            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 3.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5180.00         | <b>Data Rate:</b>      | 6.50 MBit/s   |
| <b>Power Setting:</b>           | 52              | <b>Tested By:</b>      | JMH           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 10.29          | 3.67          | 34.11 | 48.07              | Max Avg          | Horizontal | 166    | 359     | 54.0               | -5.9      | Pass       |  |
| #2                    | 5150.00       | 29.29          | 3.67          | 34.11 | 67.07              | Max Peak         | Horizontal | 166    | 359     | 68.2               | -1.1      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 71 of 143

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                 |                        |               |
|---------------------------------|-----------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-48 | <b>Variant:</b>        | 802.11n HT-40 |
| <b>Antenna Gain (dBi):</b>      | 8.50            | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 3.00            | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5190.00         | <b>Data Rate:</b>      | 13.50 MBit/s  |
| <b>Power Setting:</b>           | 41              | <b>Tested By:</b>      | JMH           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5150.00       | 9.15           | 3.67          | 34.11 | 46.93              | Max Avg          | Horizontal | 166    | 359     | 54.0               | -7.1      | Pass       |  |
| #2                    | 5150.00       | 29.45          | 3.67          | 34.11 | 67.23              | Max Peak         | Horizontal | 166    | 359     | 68.2               | -1.0      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 72 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |                |
|---------------------------------|-------------------|------------------------|----------------|
| <b>Antenna:</b>                 | Aruba AP-ANT-48   | <b>Variant:</b>        | 802.11ac-80+80 |
| <b>Antenna Gain (dBi):</b>      | 8.50              | <b>Modulation:</b>     | OFDM           |
| <b>Beam Forming Gain (Y):</b>   | 3.00              | <b>Duty Cycle (%):</b> | 99             |
| <b>Channel Frequency (MHz):</b> | 5210.00 + 5290.00 | <b>Data Rate:</b>      | 58.6.30 MBit/s |
| <b>Power Setting:</b>           | 12 d              | <b>Tested By:</b>      | JMH            |

#### Test Measurement Results

| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5145.29       | 29.68          | 3.69          | 34.11 | 67.48              | Max Peak         | Horizontal | 169    | 359     | 68.2               | -0.7      | Pass       |  |
| #2                    | 5150.00       | 8.53           | 3.67          | 34.11 | 46.31              | Max Avg          | Horizontal | 169    | 359     | 54.0               | -7.7      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 73 of 143

---

Antenna: Metal Sheet

#### RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5150 - 5250 MHz

| Aruba Metal Sheet |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|-------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode  | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11a           | 5180.00                   | 5150.00        | 67.48                  | 48.07                  | 67            |
| 802.11ac-80       | 5210.00                   | 5150.00        | 67.49                  | 46.08                  | 58            |
| 802.11n HT-20     | 5180.00                   | 5150.00        | 67.61                  | 47.33                  | 62            |
| 802.11n HT-40     | 5190.00                   | 5150.00        | 67.99                  | 45.86                  | 52            |

| Aruba Metal Sheet |                           | Band-Edge Freq | Limit 68.2dB $\mu$ V/m | Limit 54.0dB $\mu$ V/m | Power Setting |
|-------------------|---------------------------|----------------|------------------------|------------------------|---------------|
| Operational Mode  | Operating Frequency (MHz) | MHz            | dB $\mu$ V/m           | dB $\mu$ V/m           |               |
| 802.11ac-80+80    | 5210.00 + 5290.00         | 5150.00        | 67.01                  | 44.37                  | 13 d          |

Click on the links to view the data.

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 74 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |             |
|---------------------------------|-------------------|------------------------|-------------|
| <b>Antenna:</b>                 | Aruba Metal Sheet | <b>Variant:</b>        | 802.11a     |
| <b>Antenna Gain (dBi):</b>      | 2.70              | <b>Modulation:</b>     | OFDM        |
| <b>Beam Forming Gain (Y):</b>   | Not Applicable    | <b>Duty Cycle (%):</b> | 99          |
| <b>Channel Frequency (MHz):</b> | 5180.00           | <b>Data Rate:</b>      | 6.00 MBit/s |
| <b>Power Setting:</b>           | 67                | <b>Tested By:</b>      | JMH         |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.50       | 29.69          | 3.68          | 34.11 | 67.48              | Max Peak         | Horizontal | 136    | 307     | 68.2               | -0.7      | Pass       |  |
| #2                    | 5150.00       | 10.29          | 3.67          | 34.11 | 48.07              | Max Avg          | Horizontal | 136    | 307     | 54.0               | -5.9      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 75 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |              |
|---------------------------------|-------------------|------------------------|--------------|
| <b>Antenna:</b>                 | Aruba Metal Sheet | <b>Variant:</b>        | 802.11ac-80  |
| <b>Antenna Gain (dBi):</b>      | 2.70              | <b>Modulation:</b>     | OFDM         |
| <b>Beam Forming Gain (Y):</b>   | 6.00              | <b>Duty Cycle (%):</b> | 99           |
| <b>Channel Frequency (MHz):</b> | 5210.00           | <b>Data Rate:</b>      | 29.30 MBit/s |
| <b>Power Setting:</b>           | 58                | <b>Tested By:</b>      | JMH          |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5145.49       | 8.28           | 3.69          | 34.11 | 46.08              | Max Avg          | Horizontal | 136    | 307     | 54.0               | -7.9      | Pass       |  |
| #2                    | 5145.49       | 29.69          | 3.69          | 34.11 | 67.49              | Max Peak         | Horizontal | 136    | 307     | 68.2               | -0.7      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 76 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |               |
|---------------------------------|-------------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba Metal Sheet | <b>Variant:</b>        | 802.11n HT-20 |
| <b>Antenna Gain (dBi):</b>      | 2.70              | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6.00              | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5180.00           | <b>Data Rate:</b>      | 6.50 MBit/s   |
| <b>Power Setting:</b>           | 62                | <b>Tested By:</b>      | JMH           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.50       | 9.54           | 3.68          | 34.11 | 47.33              | Max Avg          | Horizontal | 136    | 307     | 54.0               | -6.7      | Pass       |  |
| #2                    | 5148.50       | 29.82          | 3.68          | 34.11 | 67.61              | Max Peak         | Horizontal | 136    | 307     | 68.2               | -0.6      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 77 of 143

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |               |
|---------------------------------|-------------------|------------------------|---------------|
| <b>Antenna:</b>                 | Aruba Metal Sheet | <b>Variant:</b>        | 802.11n HT-40 |
| <b>Antenna Gain (dBi):</b>      | 2.70              | <b>Modulation:</b>     | OFDM          |
| <b>Beam Forming Gain (Y):</b>   | 6.00              | <b>Duty Cycle (%):</b> | 99            |
| <b>Channel Frequency (MHz):</b> | 5190.00           | <b>Data Rate:</b>      | 13.50 MBit/s  |
| <b>Power Setting:</b>           | 52                | <b>Tested By:</b>      | JMH           |

#### Test Measurement Results

| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.50       | 8.07           | 3.68          | 34.11 | 45.86              | Max Avg          | Horizontal | 136    | 307     | 54.0               | -8.1      | Pass       |  |
| #2                    | 5148.50       | 30.20          | 3.68          | 34.11 | 67.99              | Max Peak         | Horizontal | 136    | 307     | 68.2               | -0.2      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

RBE – Restricted Band-Edge

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



**Title:** Hewlett Packard Enterprise APIN0344 & APIN0345  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** HPEN111-U8\_Radiated Radio 1 Non-DFS Bands Rev A  
**Issue Date:** 22<sup>nd</sup>August 2017  
**Page:** 78 of 143

---

#### Equipment Configuration for Restricted Lower Band-Edge Emissions

|                                 |                   |                        |                |
|---------------------------------|-------------------|------------------------|----------------|
| <b>Antenna:</b>                 | Aruba Metal Sheet | <b>Variant:</b>        | 802.11ac-80+80 |
| <b>Antenna Gain (dBi):</b>      | 2.70              | <b>Modulation:</b>     | OFDM           |
| <b>Beam Forming Gain (Y):</b>   | 6.00              | <b>Duty Cycle (%):</b> | 99             |
| <b>Channel Frequency (MHz):</b> | 5210.00 + 5290.00 | <b>Data Rate:</b>      | 58.60 MBit/s   |
| <b>Power Setting:</b>           | 13 d              | <b>Tested By:</b>      | JMH            |

#### Test Measurement Results

| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| #1                    | 5148.30       | 29.22          | 3.68          | 34.11 | 67.01              | Max Peak         | Horizontal | 101    | 309     | 68.2               | -1.2      | Pass       |  |
| #2                    | 5150.00       | 6.59           | 3.67          | 34.11 | 44.37              | Max Avg          | Horizontal | 101    | 309     | 54.0               | -9.6      | Pass       |  |
| #3                    | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |
| #4                    | 5350.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

RBE – Restricted Band-Edge

---

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

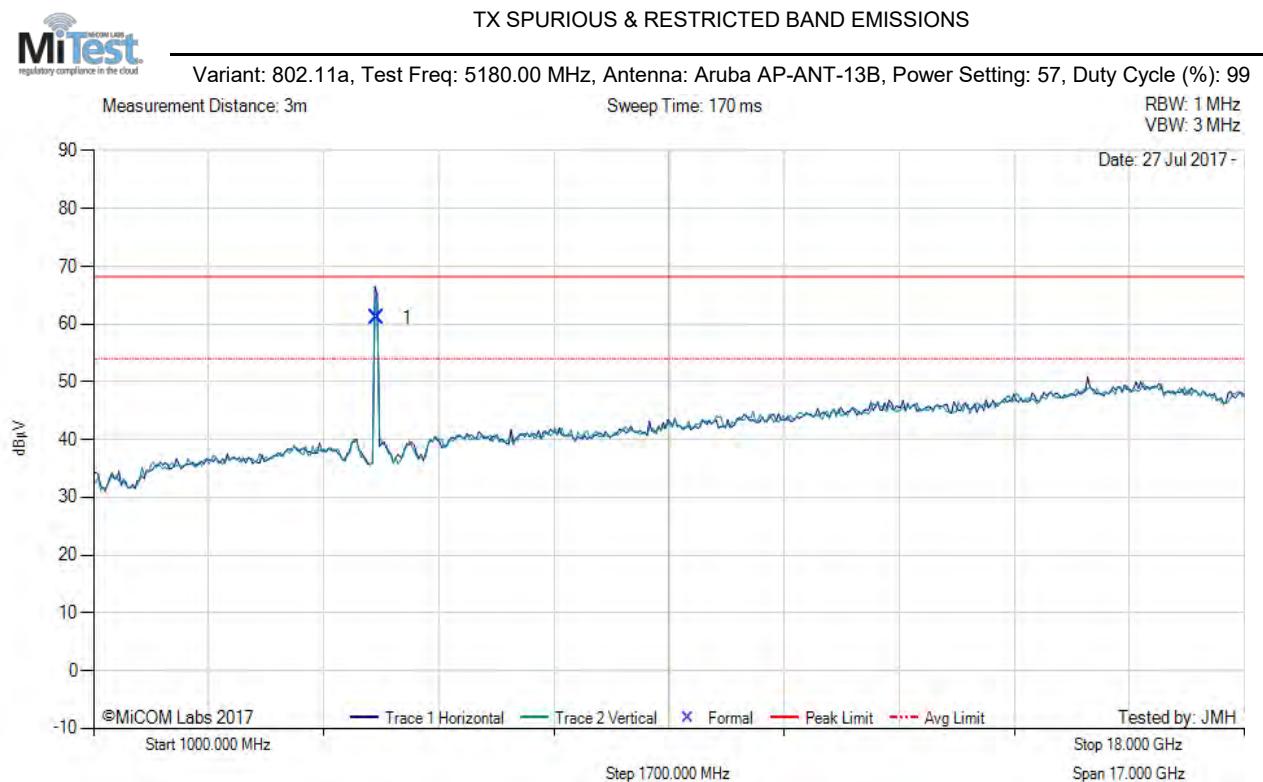
## A. APPENDIX - GRAPHICAL IMAGES

### A.1. Emissions

#### A.1.1. Radiated Emissions

##### A.1.1.1. TX Spurious & Restricted Band Emissions

Antenna: AP-ANT-13B



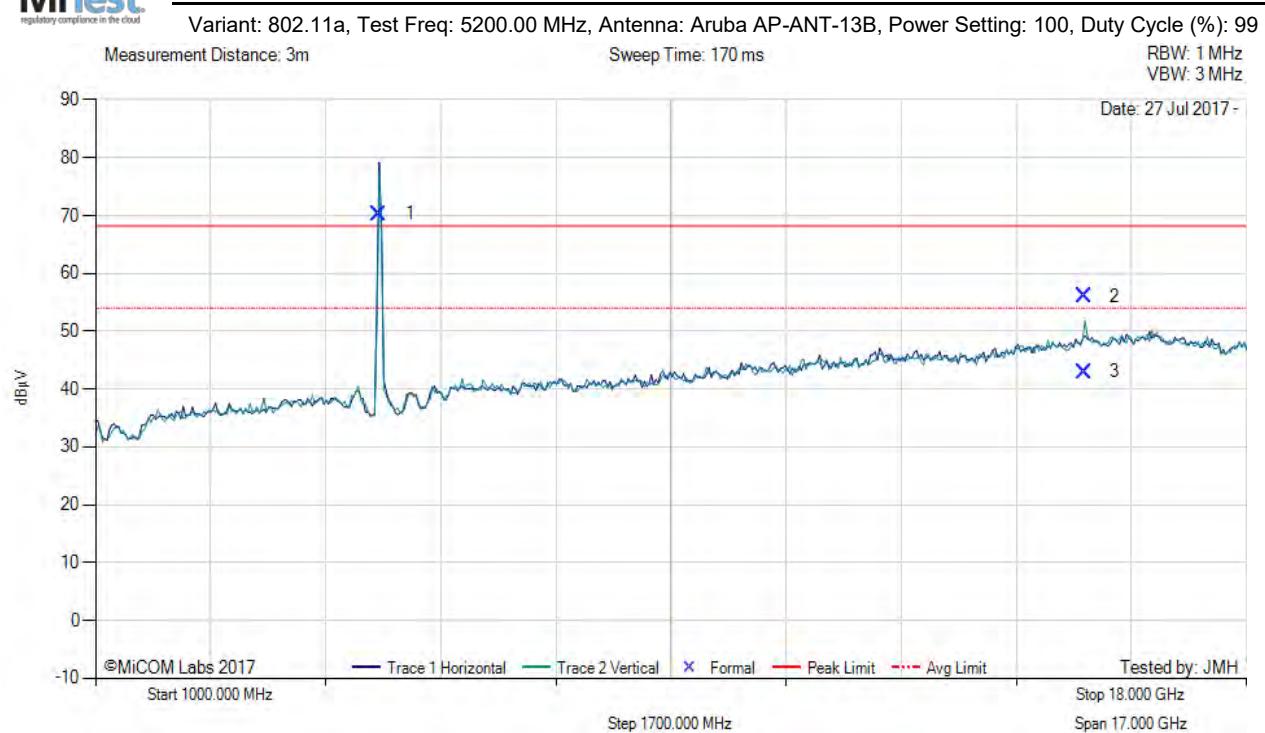
| 1000.00 - 18000.00 MHz |               |          |               |        |              |                  |            |        |         |              |           |            |  |
|------------------------|---------------|----------|---------------|--------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB  | Level dBµV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                      | 5175.66       | 68.92    | 3.69          | -11.51 | 61.10        | Fundamental      | Horizontal | 100    | 0       | --           | --        |            |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5194.29       | 78.13          | 3.67          | -11.47 | 70.33              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| 2                      | 15606.41      | 50.26          | 6.01          | -0.20  | 56.07              | Max Peak         | Vertical   | 196    | 58      | 68.2               | -12.2     | Pass       |  |
| 3                      | 15606.41      | 37.16          | 6.01          | -0.20  | 42.97              | Max Avg          | Vertical   | 196    | 58      | 54.0               | -11.0     | Pass       |  |

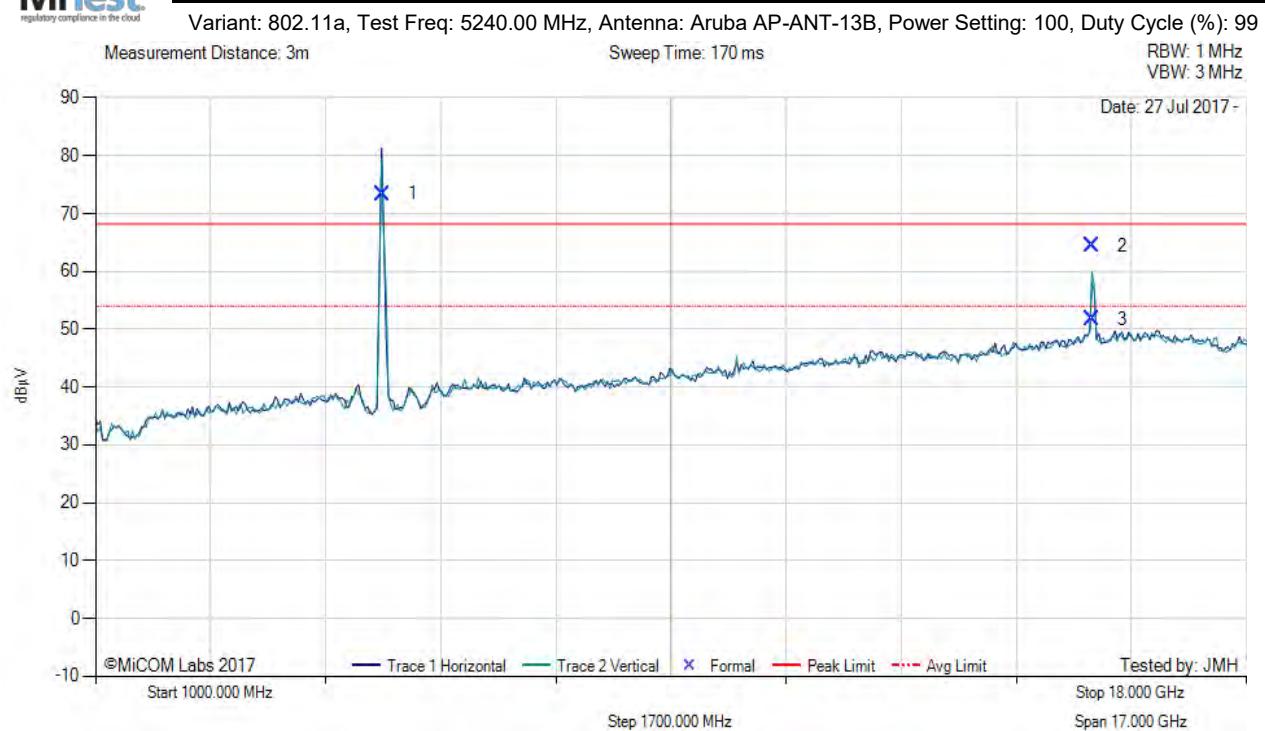
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5242.03       | 81.09          | 3.63          | -11.36 | 73.36              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| 2                      | 15720.91      | 58.22          | 6.09          | 0.17   | 64.48              | Max Peak         | Vertical   | 146    | 35      | 68.2               | -3.8      | Pass       |  |
| 3                      | 15720.91      | 45.50          | 6.09          | 0.17   | 51.76              | Max Avg          | Vertical   | 146    | 35      | 54.0               | -2.2      | Pass       |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

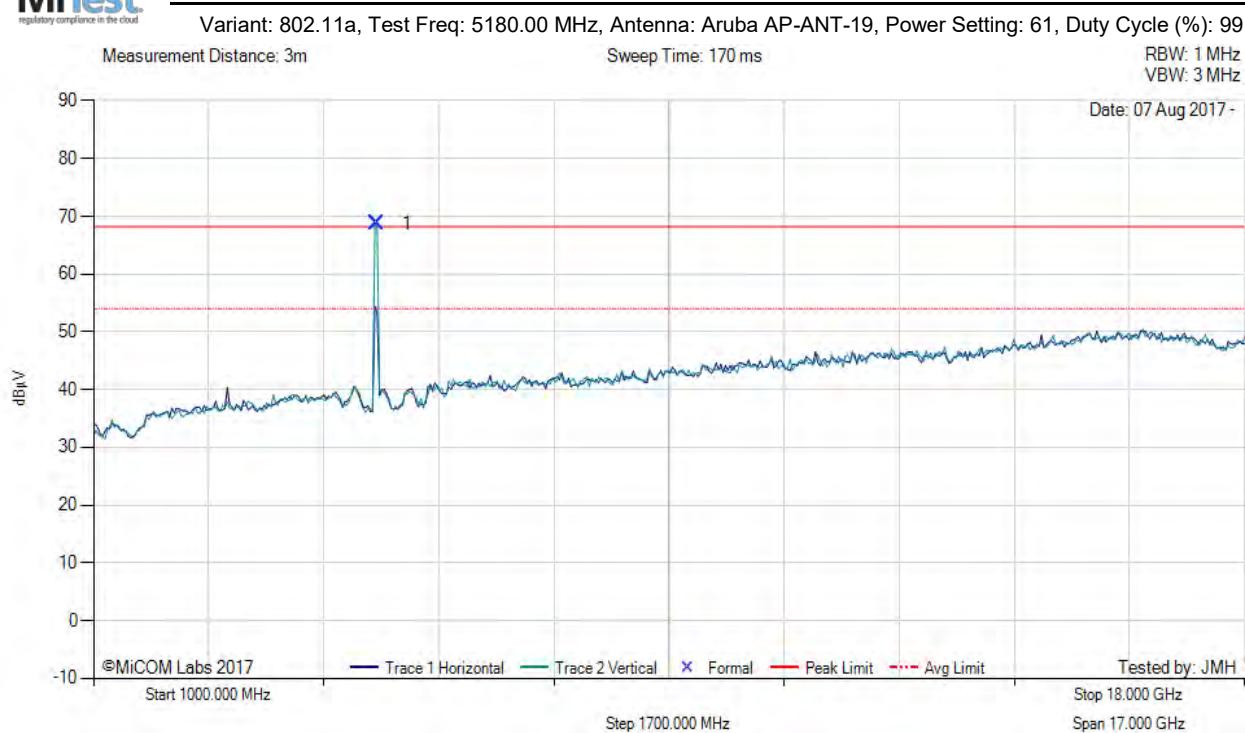
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-19



#### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5178.30       | 76.54          | 3.69          | -11.51 | 68.72              | Fundamental      | Vertical | 151    | 0       | --                 | --        |            |  |

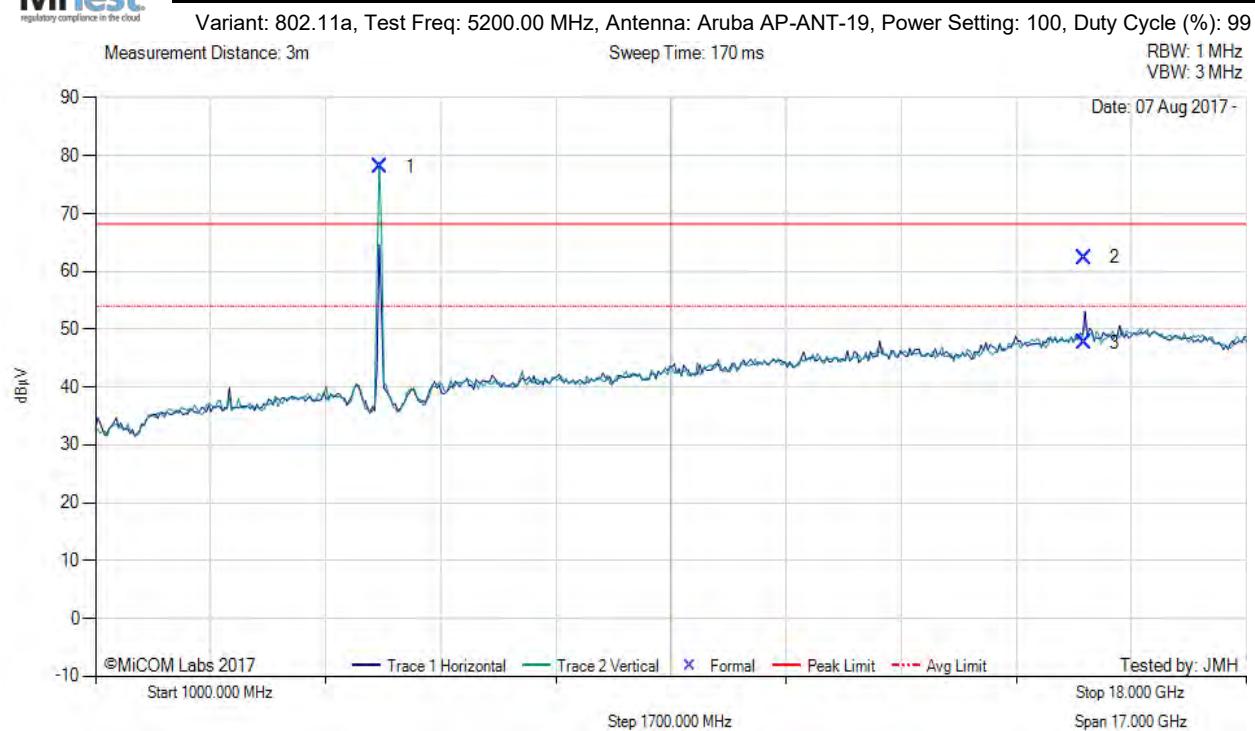
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5200.25       | 85.84          | 3.66          | -11.46 | 78.04              | Fundamental      | Vertical   | 151    | 0       | --                 | --        |            |  |
| 2                      | 15607.97      | 56.58          | 6.01          | -0.20  | 62.39              | Max Peak         | Horizontal | 153    | 185     | 68.2               | -5.8      | Pass       |  |
| 3                      | 15607.97      | 41.84          | 6.01          | -0.20  | 47.65              | Max Avg          | Horizontal | 153    | 185     | 54.0               | -6.4      | Pass       |  |

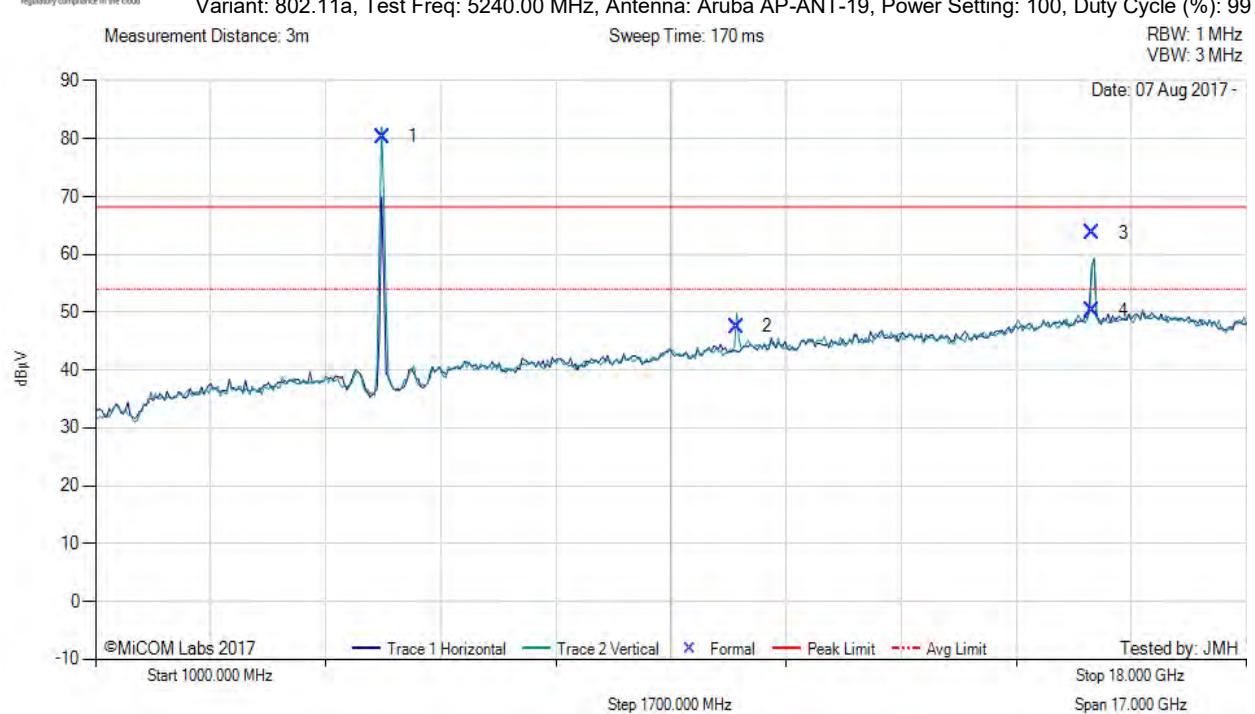
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5238.83       | 88.07          | 3.63          | -11.37 | 80.33              | Fundamental      | Vertical | 151    | 0       | --                 | --        |            |  |
| 2                      | 10477.28      | 46.52          | 5.44          | -4.47  | 47.49              | Peak (NRB)       | Vertical | 200    | 0       | --                 | --        | Pass       |  |
| 3                      | 15727.83      | 57.48          | 6.08          | 0.17   | 63.73              | Max Peak         | Vertical | 198    | 336     | 68.2               | -4.5      | Pass       |  |
| 4                      | 15727.83      | 44.02          | 6.08          | 0.17   | 50.27              | Max Avg          | Vertical | 198    | 336     | 54.0               | -3.7      | Pass       |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

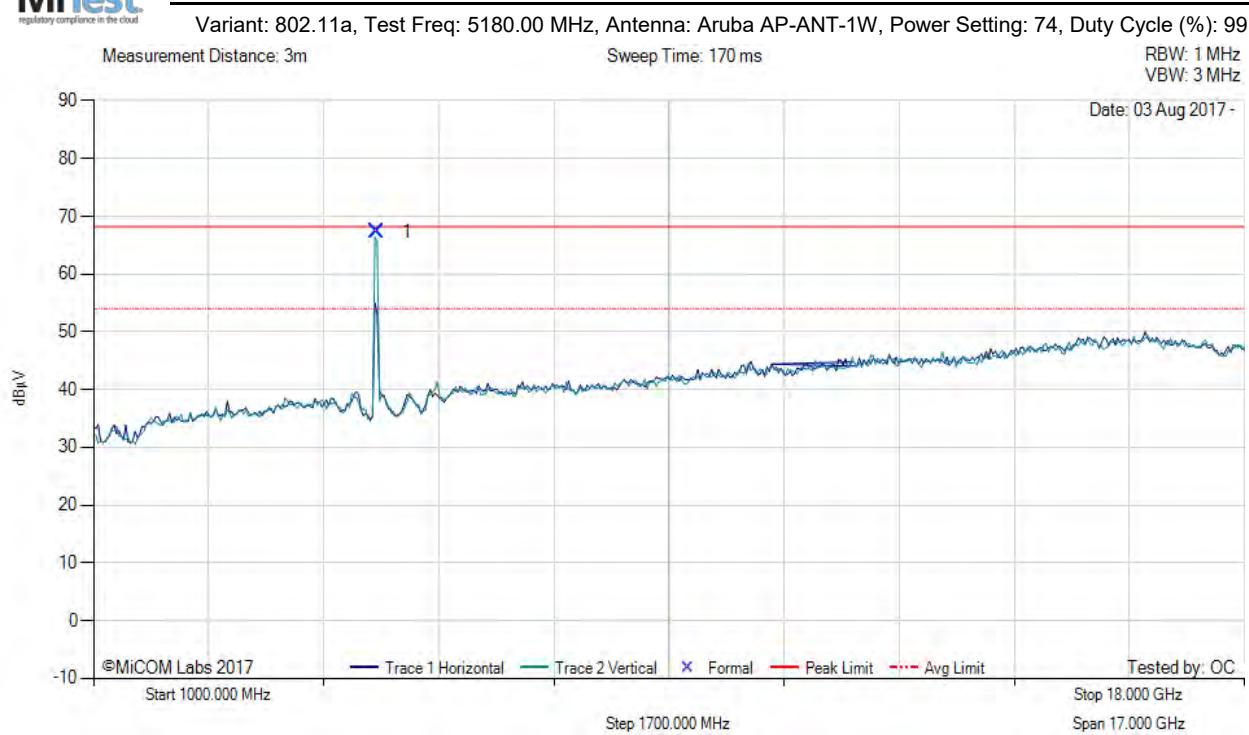
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-1W



TX SPURIOUS & RESTRICTED BAND EMISSIONS



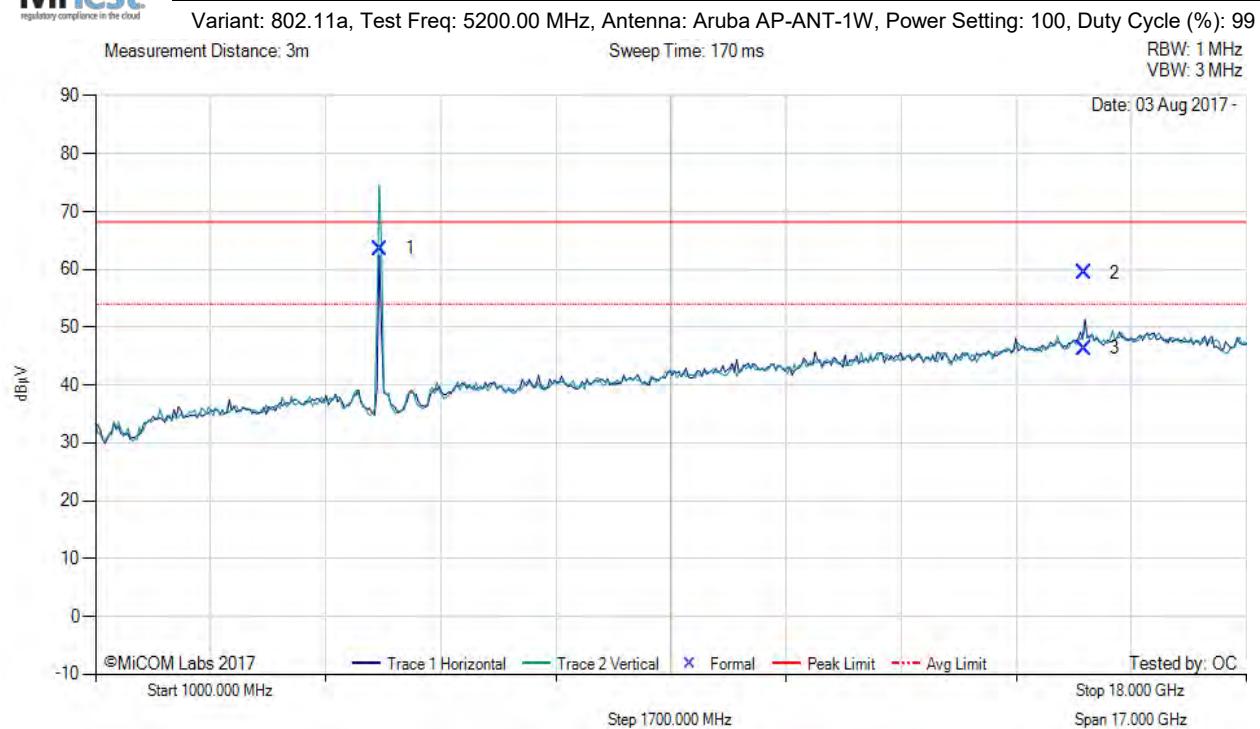
| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5178.74       | 75.07          | 3.69          | -11.51 | 67.25              | Fundamental      | Vertical | 200    | 60      | --                 | --        |            |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5202.67       | 71.40          | 3.65          | -11.45 | 63.60              | Fundamental      | Vertical   | 100    | 0       | --                 | --        |            |  |
| 2                      | 15607.68      | 53.62          | 6.01          | -0.20  | 59.43              | Max Peak         | Horizontal | 158    | 168     | 68.2               | -8.8      | Pass       |  |
| 3                      | 15607.68      | 40.50          | 6.01          | -0.20  | 46.31              | Max Avg          | Horizontal | 158    | 168     | 54.0               | -7.7      | Pass       |  |

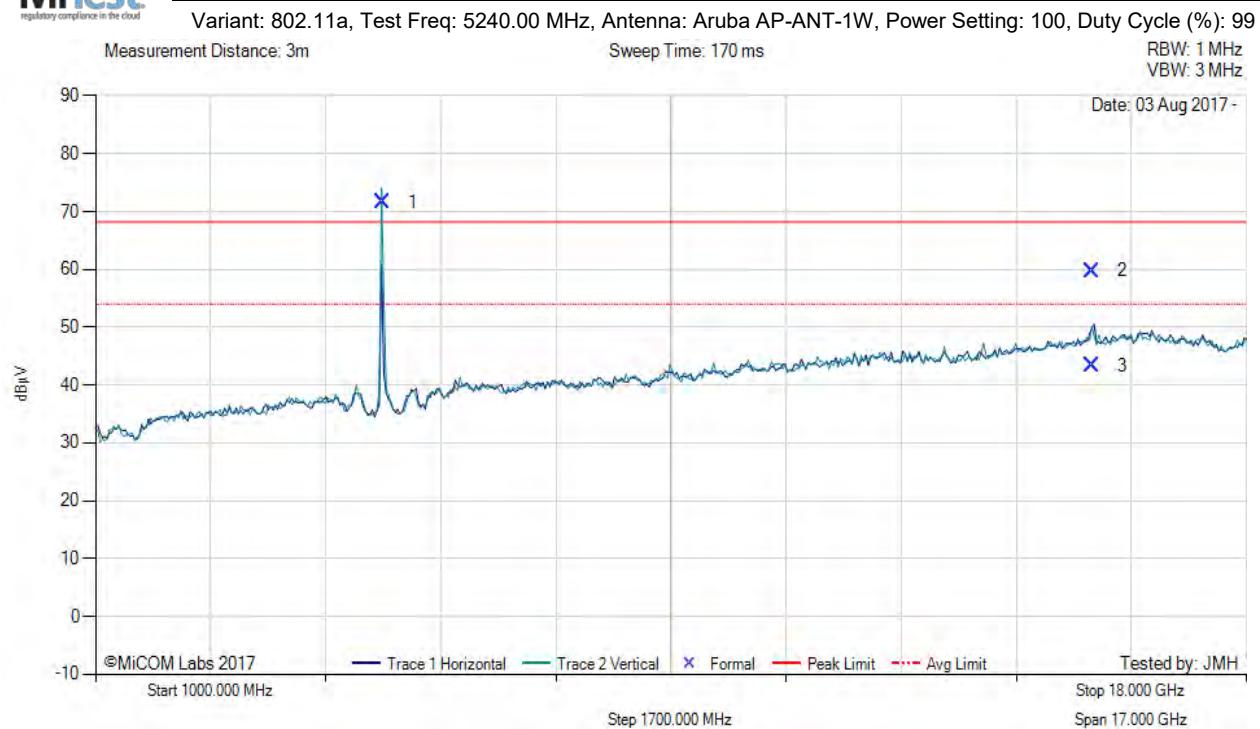
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5235.75       | 79.41          | 3.63          | -11.37 | 71.67              | Fundamental      | Vertical   | 151    | 0       | --                 | --        |            |  |
| 2                      | 15721.29      | 53.48          | 6.11          | 0.17   | 59.76              | Max Peak         | Horizontal | 148    | 166     | 68.2               | -8.5      | Pass       |  |
| 3                      | 15721.29      | 37.11          | 6.11          | 0.17   | 43.39              | Max Avg          | Horizontal | 148    | 166     | 54.0               | -10.6     | Pass       |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-20W



#### TX SPURIOUS & RESTRICTED BAND EMISSIONS



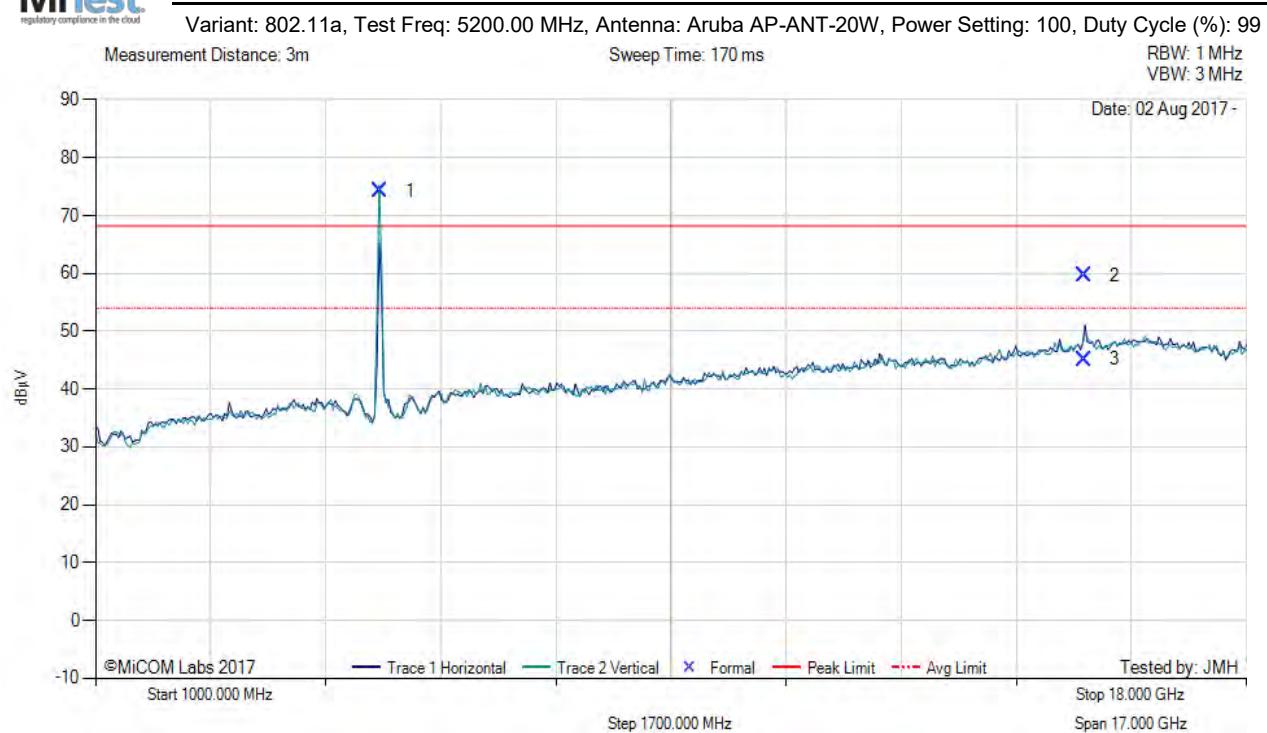
| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5181.29       | 71.30          | 3.69          | -11.50 | 63.49              | Fundamental      | Vertical | 100    | 0       | --                 | --        |            |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5202.01       | 82.11          | 3.66          | -11.46 | 74.31              | Fundamental      | Vertical   | 151    | 0       | --                 | --        |            |  |
| 2                      | 15607.93      | 53.89          | 6.01          | -0.20  | 59.70              | Max Peak         | Horizontal | 155    | 199     | 68.2               | -8.5      | Pass       |  |
| 3                      | 15607.93      | 39.29          | 6.01          | -0.20  | 45.10              | Max Avg          | Horizontal | 155    | 199     | 54.0               | -8.9      | Pass       |  |

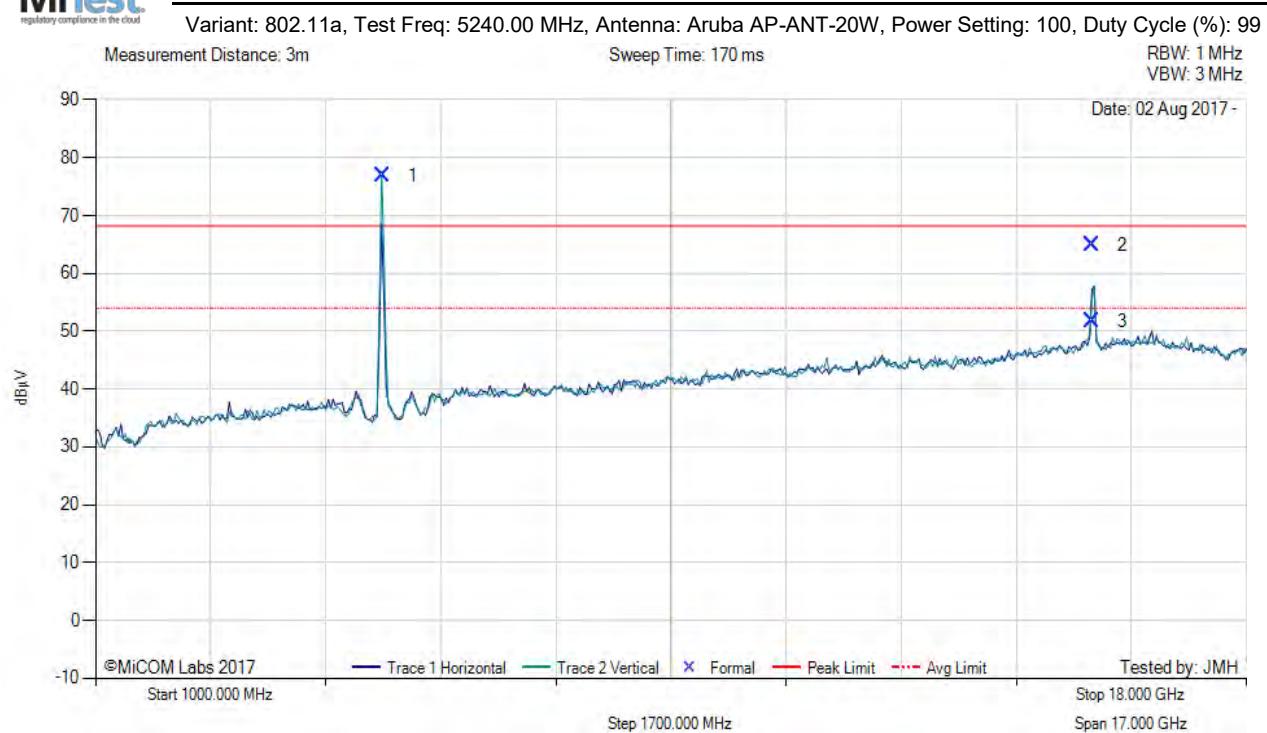
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5241.37       | 84.55          | 3.63          | -11.36 | 76.82              | Fundamental      | Vertical | 200    | 0       | --                 | --        |            |  |
| 2                      | 15722.80      | 58.58          | 6.12          | 0.17   | 64.87              | Max Peak         | Vertical | 188    | 69      | 68.2               | -3.4      | Pass       |  |
| 3                      | 15722.80      | 45.40          | 6.12          | 0.17   | 51.69              | Max Avg          | Vertical | 188    | 69      | 54.0               | -2.3      | Pass       |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

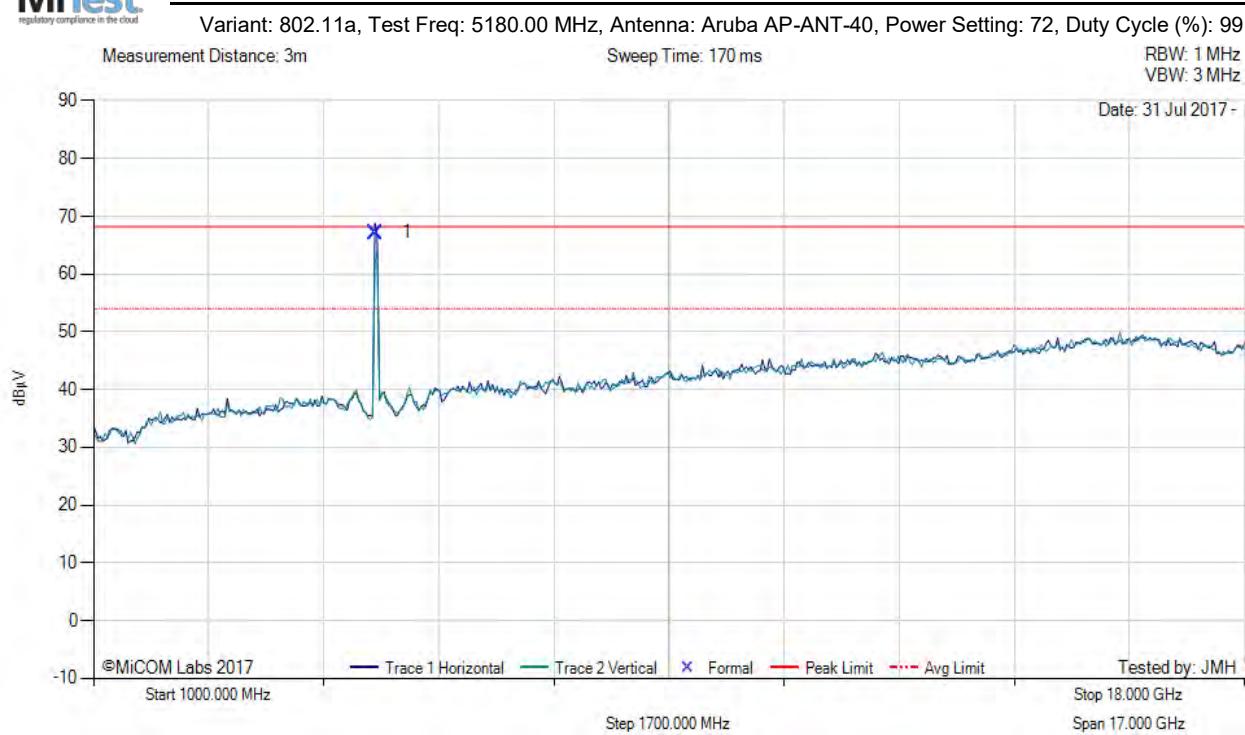
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-40



#### TX SPURIOUS & RESTRICTED BAND EMISSIONS



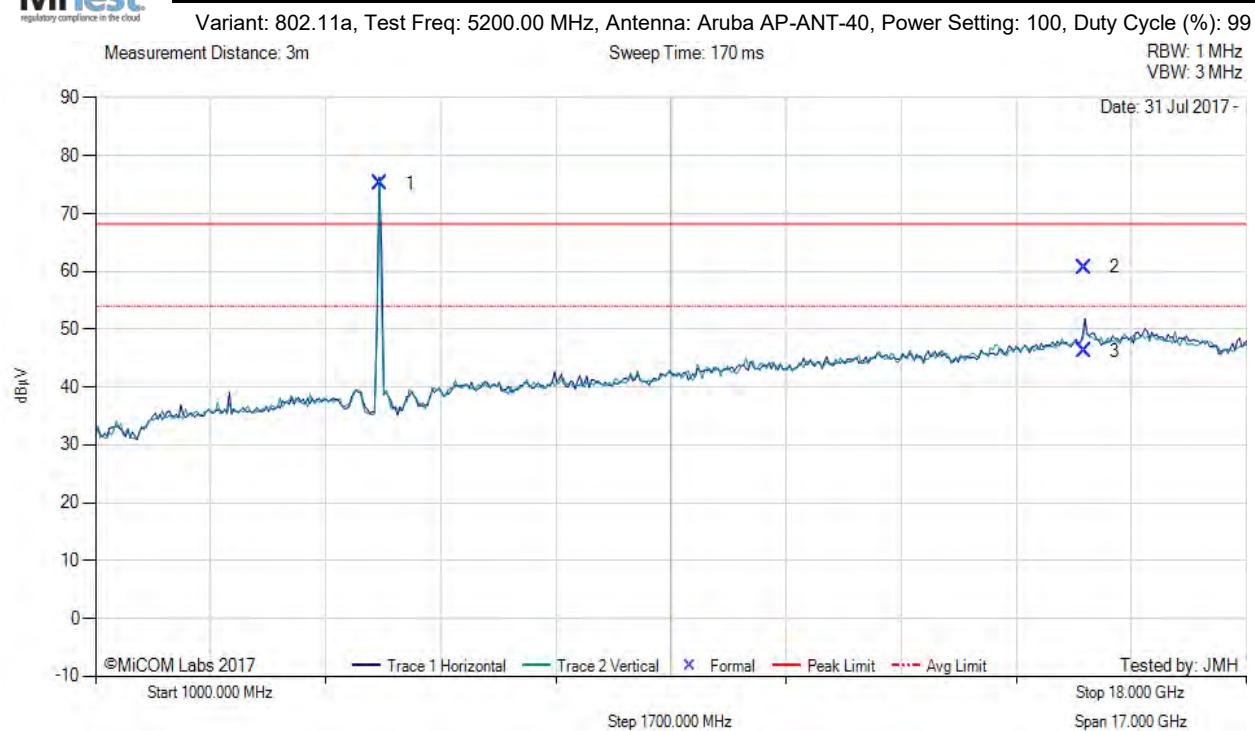
| 1000.00 - 18000.00 MHz |               |          |               |        |              |                  |            |        |         |              |           |            |  |
|------------------------|---------------|----------|---------------|--------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB  | Level dBµV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                      | 5175.00       | 75.03    | 3.70          | -11.52 | 67.21        | Fundamental      | Horizontal | 100    | 32      | --           | --        |            |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5207.19       | 83.02          | 3.65          | -11.44 | 75.23              | Fundamental      | Horizontal | 100    | 16      | --                 | --        |            |  |
| 2                      | 15608.13      | 54.93          | 6.00          | -0.18  | 60.75              | Max Peak         | Horizontal | 156    | 55      | 68.2               | -7.5      | Pass       |  |
| 3                      | 15608.13      | 40.39          | 6.00          | -0.18  | 46.21              | Max Avg          | Horizontal | 156    | 55      | 54.0               | -7.8      | Pass       |  |

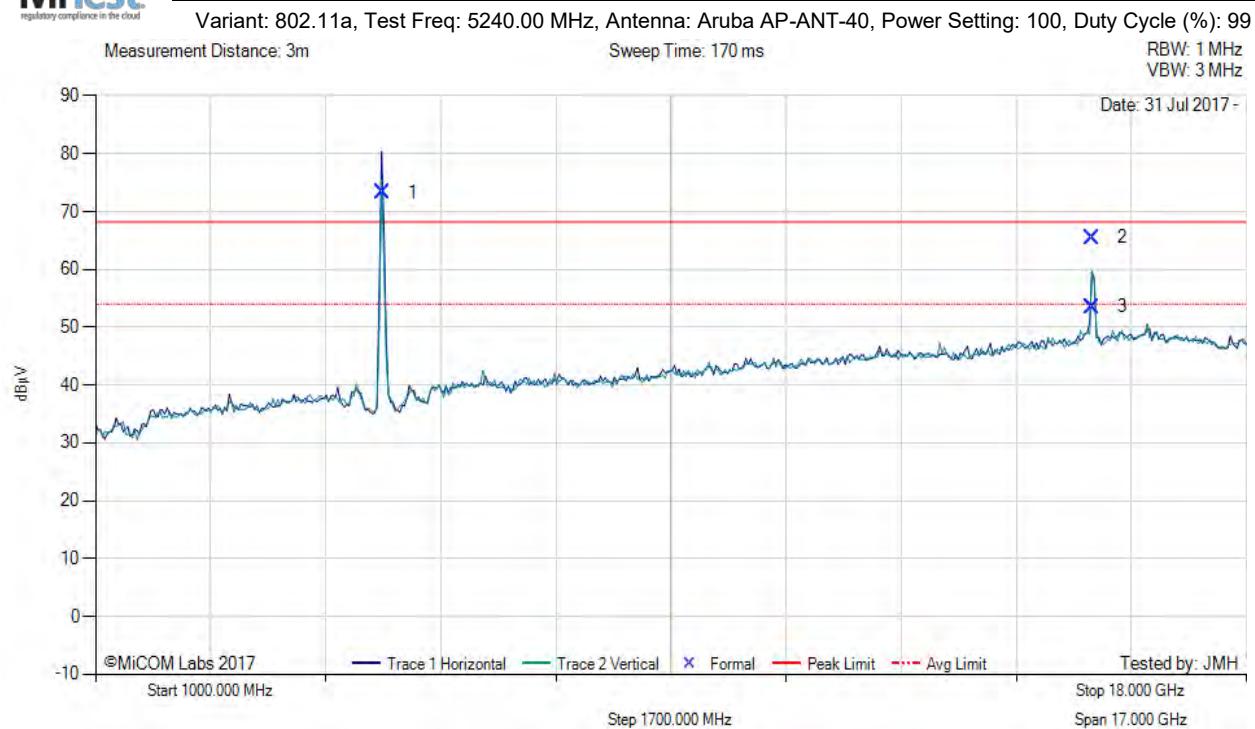
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5236.30       | 81.01          | 3.63          | -11.37 | 73.27              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| 2                      | 15721.57      | 59.22          | 6.11          | 0.17   | 65.50              | Max Peak         | Vertical   | 198    | 68      | 68.2               | -2.7      | Pass       |  |
| 3                      | 15721.57      | 47.20          | 6.11          | 0.17   | 53.48              | Max Avg          | Vertical   | 198    | 68      | 54.0               | -0.5      | Pass       |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

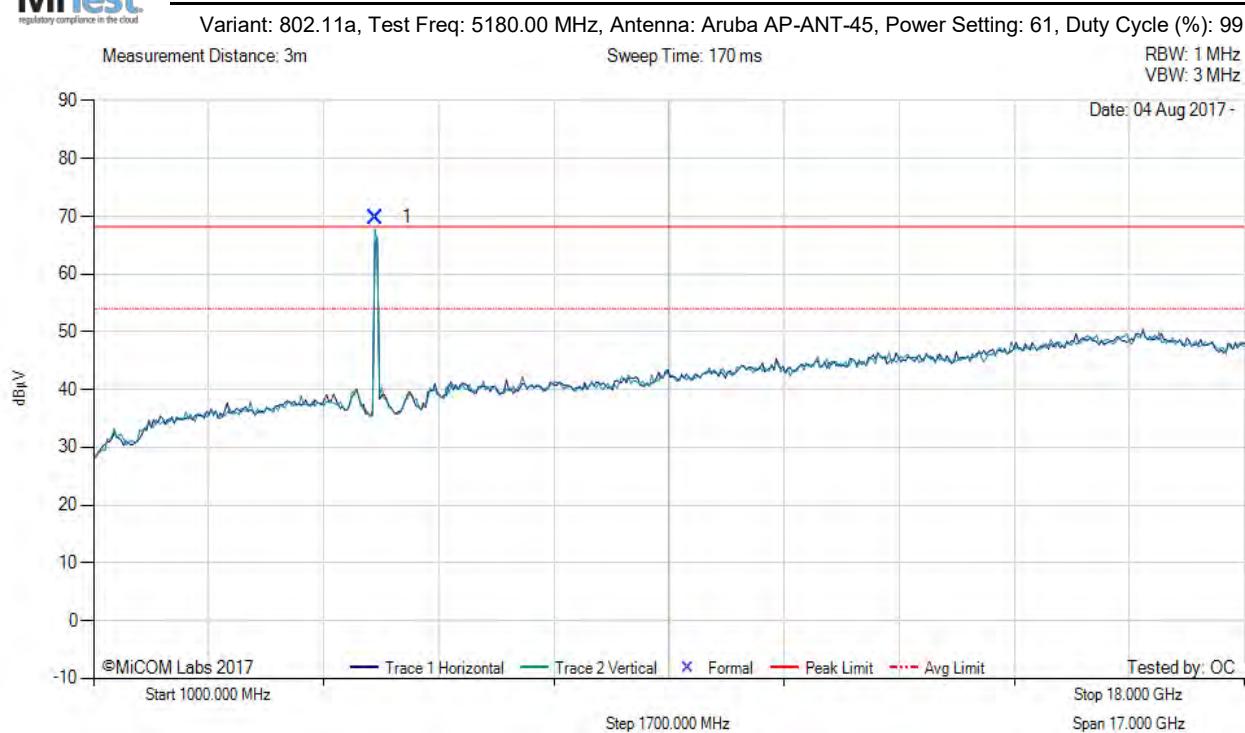
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-45



TX SPURIOUS & RESTRICTED BAND EMISSIONS



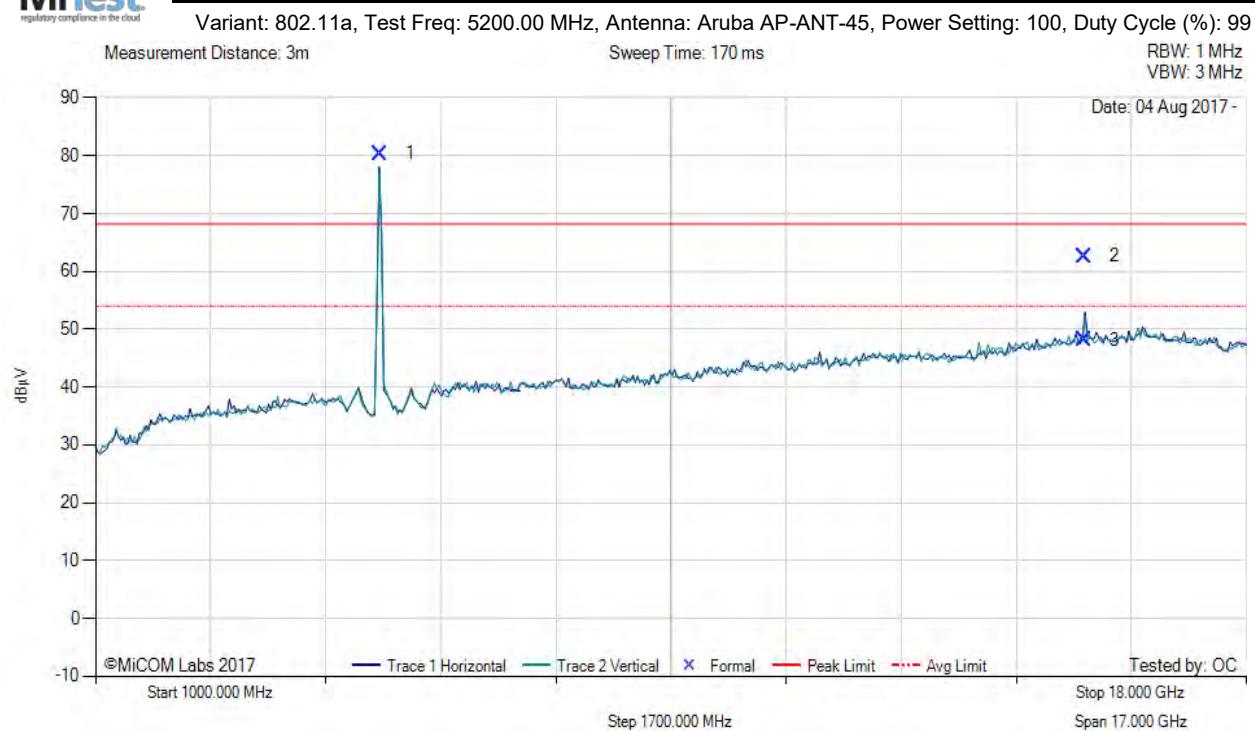
| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5173.78       | 77.65          | 3.70          | -11.52 | 69.83              | Fundamental      | Vertical | 100    | 0       | --                 | --        |            |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

### TX SPURIOUS & RESTRICTED BAND EMISSIONS



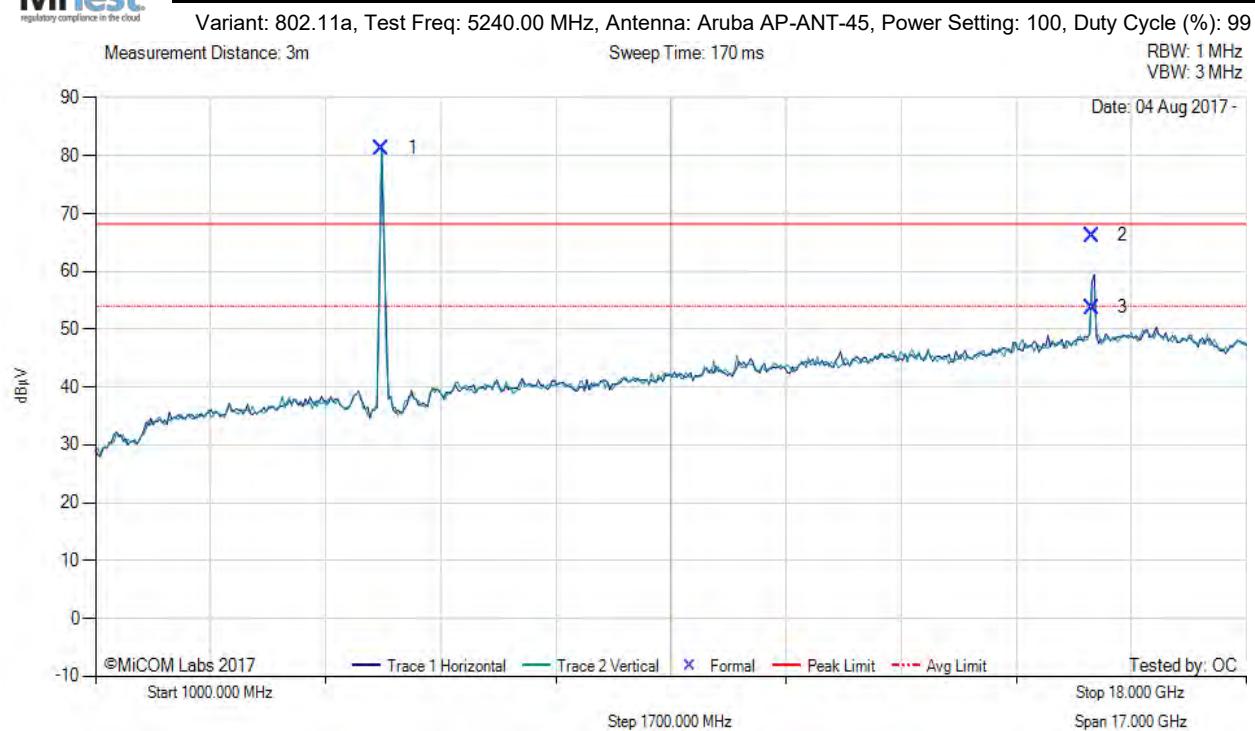
| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5207.19       | 88.11          | 3.65          | -11.44 | 80.32              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| 2                      | 15608.12      | 56.83          | 6.00          | -0.18  | 62.65              | Max Peak         | Horizontal | 151    | 176     | 68.2               | -5.6      | Pass       |  |
| 3                      | 15608.12      | 42.30          | 6.00          | -0.18  | 48.12              | Max Avg          | Horizontal | 151    | 176     | 54.0               | -5.9      | Pass       |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

[back to matrix](#)



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5232.55       | 89.10          | 3.63          | -11.39 | 81.34              | Fundamental      | Vertical   | 100    | 0       | --                 | --        |            |  |
| 2                      | 15721.85      | 59.97          | 6.11          | 0.17   | 66.25              | Max Peak         | Horizontal | 154    | 202     | 68.2               | -2.0      | Pass       |  |
| 3                      | 15721.85      | 47.52          | 6.11          | 0.17   | 53.80              | Max Avg          | Horizontal | 154    | 202     | 54.0               | -0.2      | Pass       |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-48



TX SPURIOUS & RESTRICTED BAND EMISSIONS



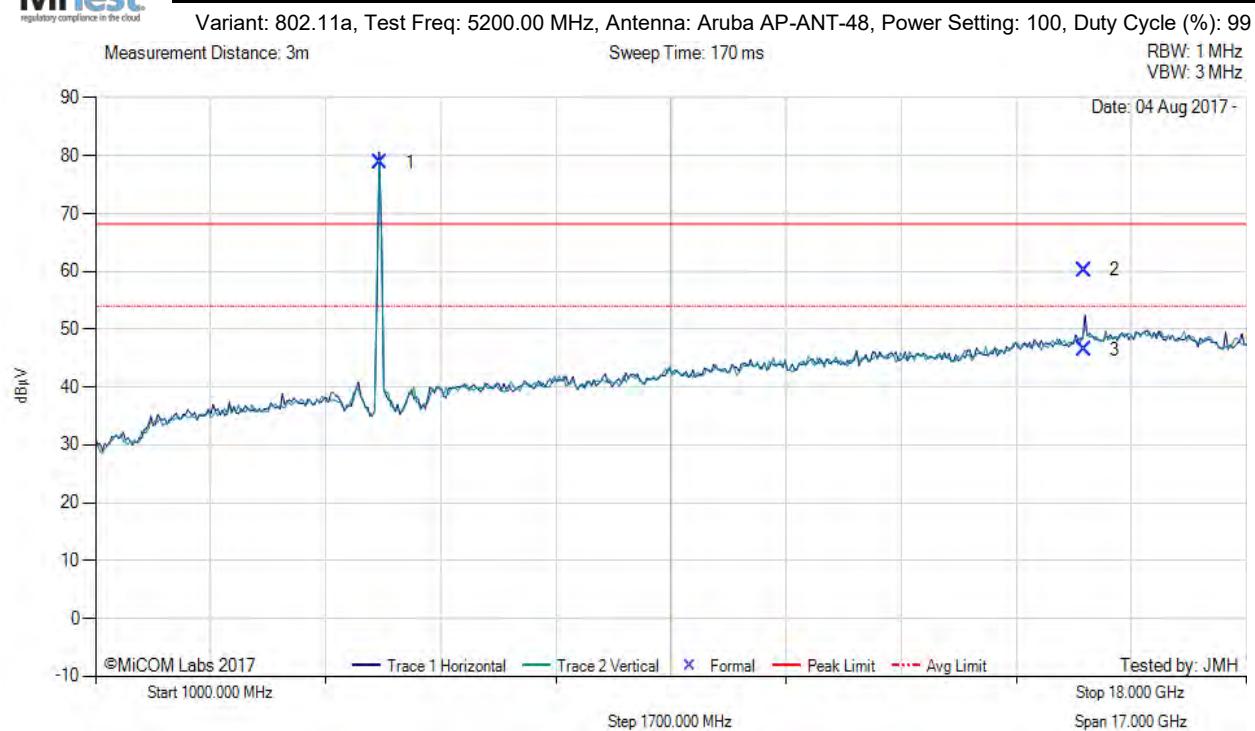
| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |          |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5184.37       | 72.77          | 3.68          | -11.49 | 64.96              | Fundamental      | Vertical | 100    | 0       | --                 | --        |            |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5202.67       | 86.64          | 3.65          | -11.45 | 78.84              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| 2                      | 15607.60      | 54.42          | 6.01          | -0.20  | 60.23              | Max Peak         | Horizontal | 147    | 197     | 68.2               | -8.0      | Pass       |  |
| 3                      | 15607.60      | 40.70          | 6.01          | -0.20  | 46.51              | Max Avg          | Horizontal | 147    | 197     | 54.0               | -7.5      | Pass       |  |

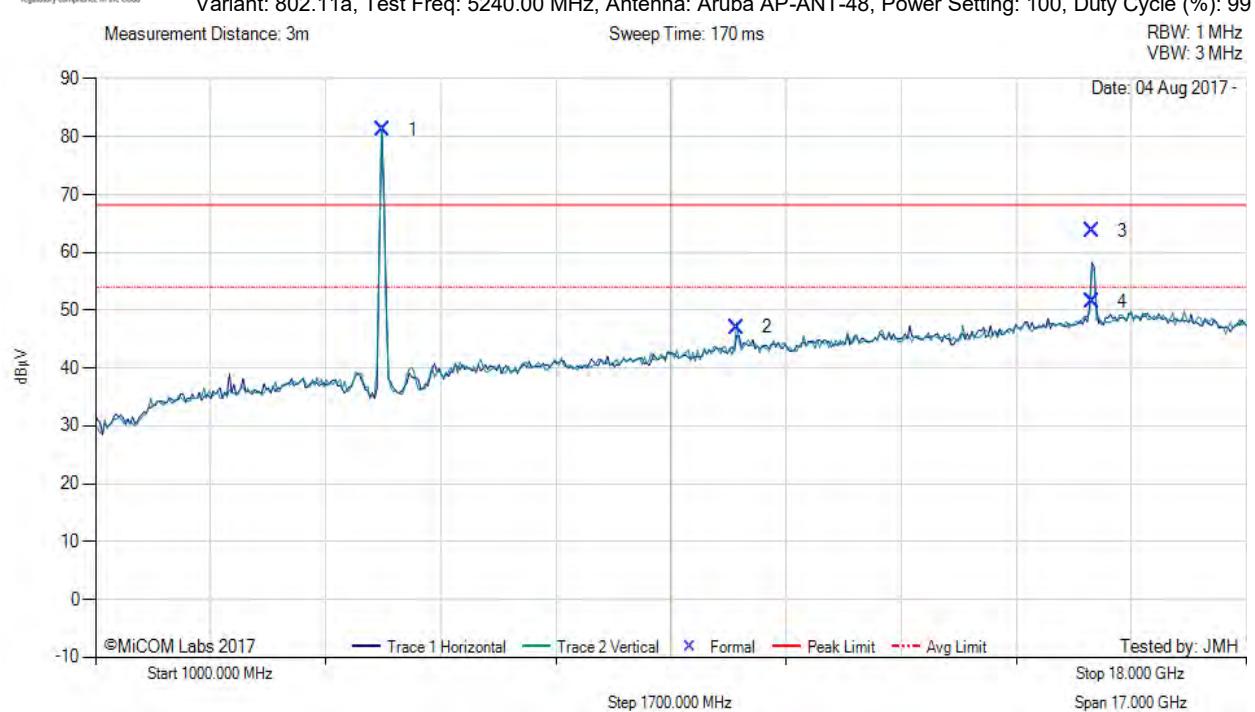
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5244.89       | 88.92          | 3.63          | -11.35 | 81.20              | Fundamental      | Vertical   | 100    | 0       | --                 | --        |            |  |
| 2                      | 10475.62      | 46.12          | 5.45          | -4.49  | 47.08              | Peak (NRB)       | Vertical   | 151    | 0       | --                 | --        | Pass       |  |
| 3                      | 15724.89      | 57.45          | 6.11          | 0.17   | 63.73              | Max Peak         | Horizontal | 152    | 173     | 68.2               | -4.5      | Pass       |  |
| 4                      | 15724.89      | 45.19          | 6.11          | 0.17   | 51.47              | Max Avg          | Horizontal | 152    | 173     | 54.0               | -2.5      | Pass       |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: Metal Sheet



TX SPURIOUS & RESTRICTED BAND EMISSIONS

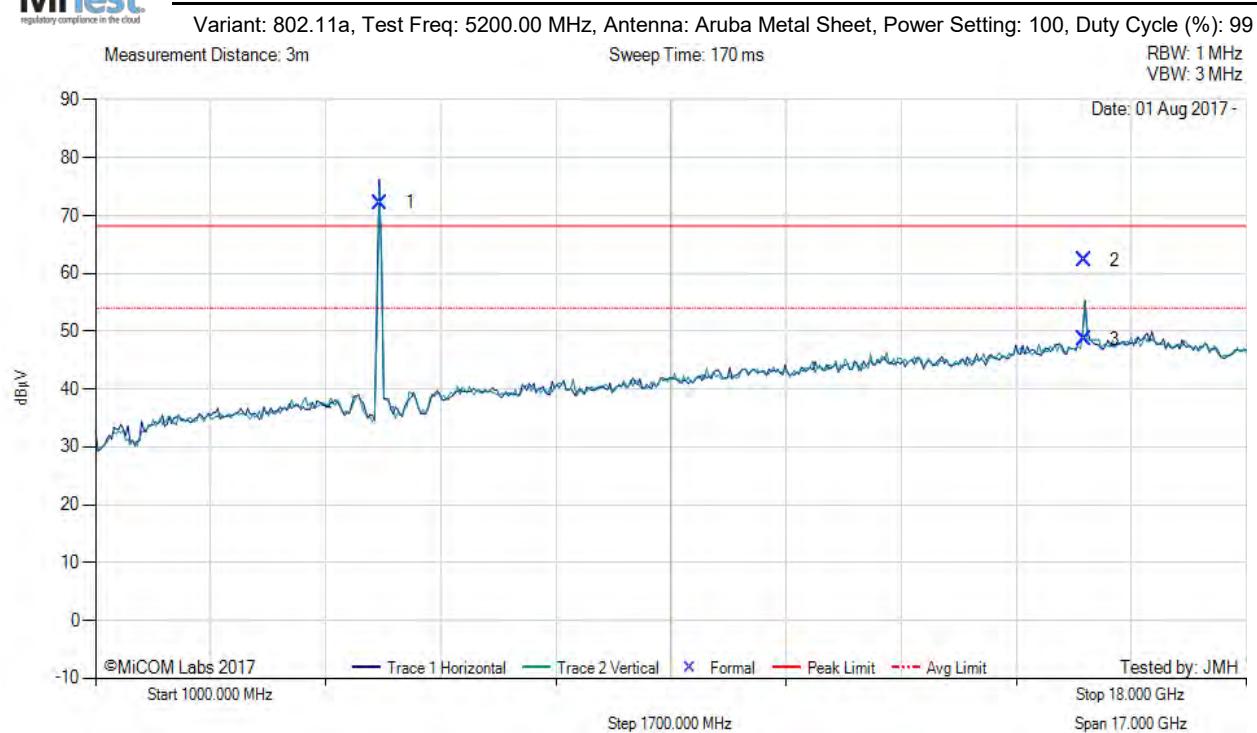


| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5178.25       | 69.93          | 3.69          | -11.51 | 62.11              | Fundamental      | Horizontal | 151    | 23      | --                 | --        |            |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)

### TX SPURIOUS & RESTRICTED BAND EMISSIONS



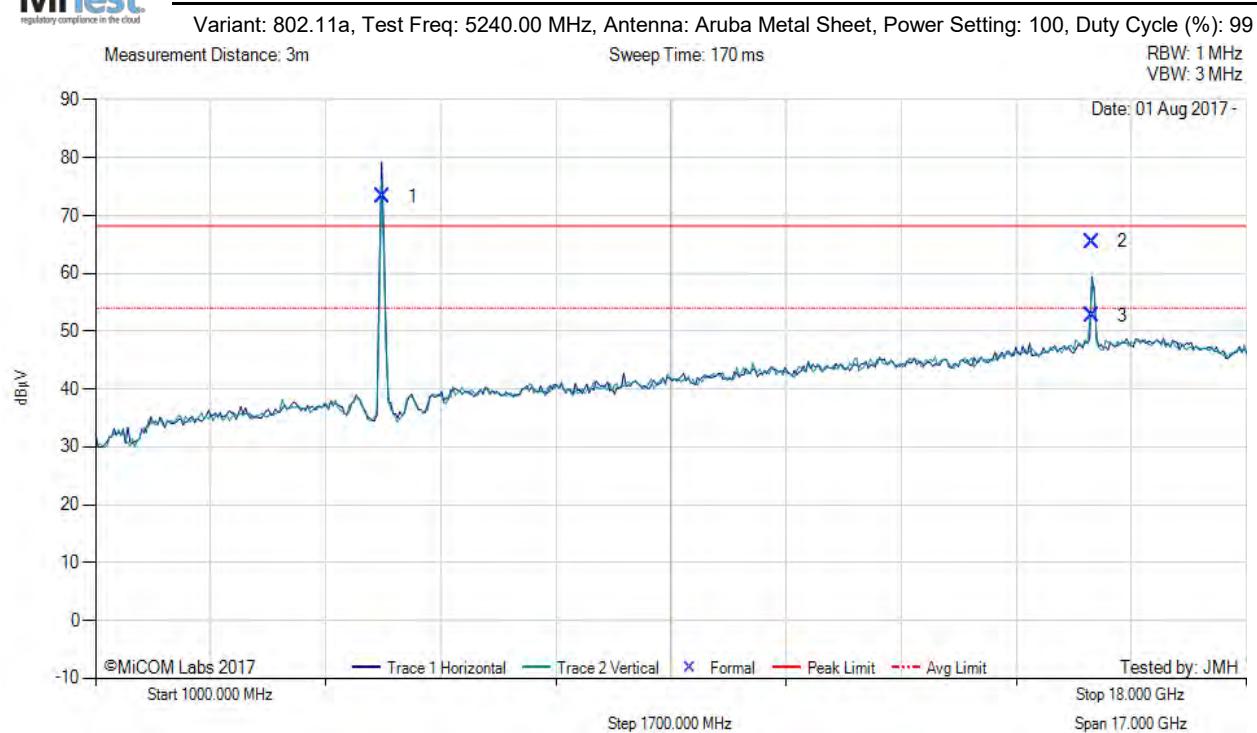
| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5202.67       | 80.03          | 3.65          | -11.45 | 72.23              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| 2                      | 15599.34      | 56.41          | 6.04          | -0.25  | 62.20              | Max Peak         | Horizontal | 185    | 352     | 68.2               | -6.0      | Pass       |  |
| 3                      | 15599.34      | 42.84          | 6.04          | -0.25  | 48.63              | Max Avg          | Horizontal | 185    | 352     | 54.0               | -5.4      | Pass       |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH40 a mode.

[back to matrix](#)



### TX SPURIOUS & RESTRICTED BAND EMISSIONS



| 1000.00 - 18000.00 MHz |               |                |               |        |                    |                  |            |        |         |                    |           |            |  |
|------------------------|---------------|----------------|---------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                    | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB  | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                      | 5242.91       | 80.94          | 3.63          | -11.36 | 73.21              | Fundamental      | Horizontal | 100    | 0       | --                 | --        |            |  |
| 2                      | 15716.94      | 59.27          | 6.04          | 0.18   | 65.49              | Max Peak         | Horizontal | 196    | 354     | 68.2               | -2.7      | Pass       |  |
| 3                      | 15716.94      | 46.42          | 6.04          | 0.18   | 52.64              | Max Avg          | Horizontal | 196    | 354     | 54.0               | -1.4      | Pass       |  |

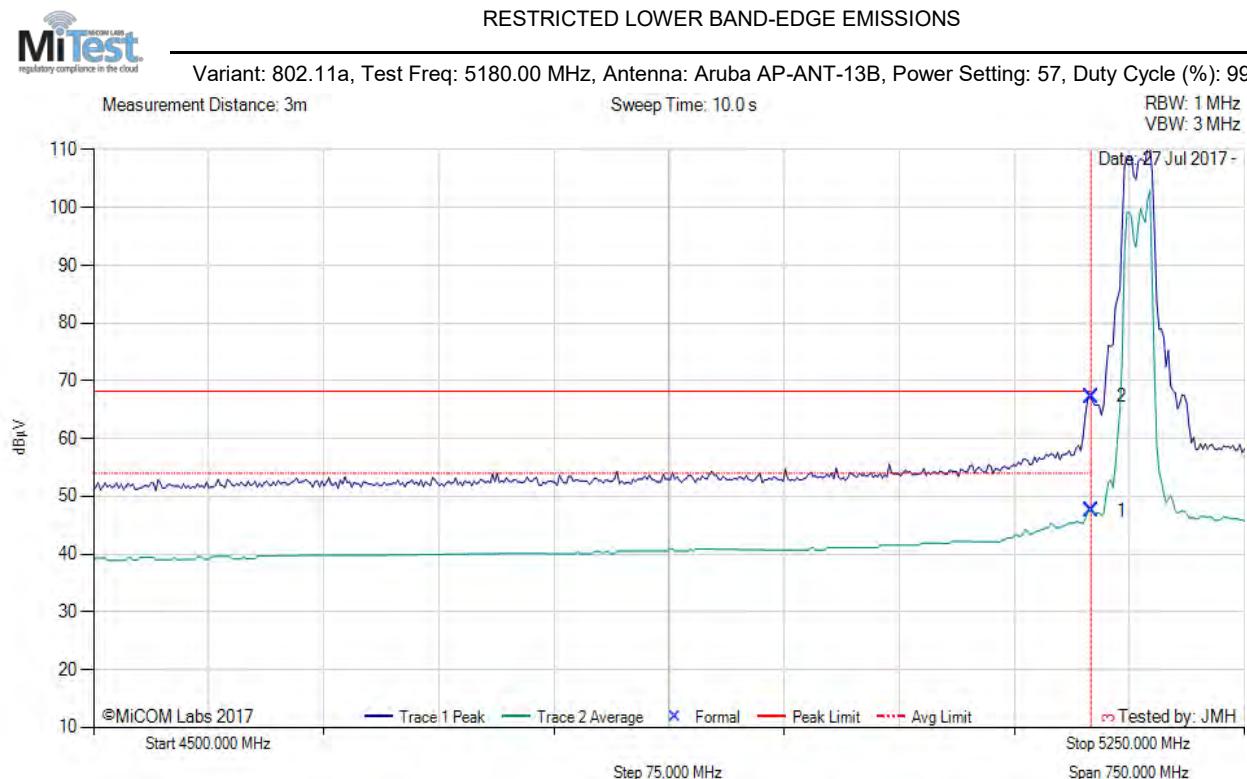
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH48 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

### A.1.1.2. Restricted Edge & Band-Edge Emissions

Antenna: AP-ANT-13B



| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |            |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 9.74     | 3.67          | 34.11 | 47.52        | Max Avg          | Horizontal | 116    | 329     | 54.0         | -6.5      | Pass       |  |
| 2                     | 5150.00       | 29.55    | 3.67          | 34.11 | 67.33        | Max Peak         | Horizontal | 116    | 329     | 68.2         | -0.9      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --         | --     | --      | --           | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

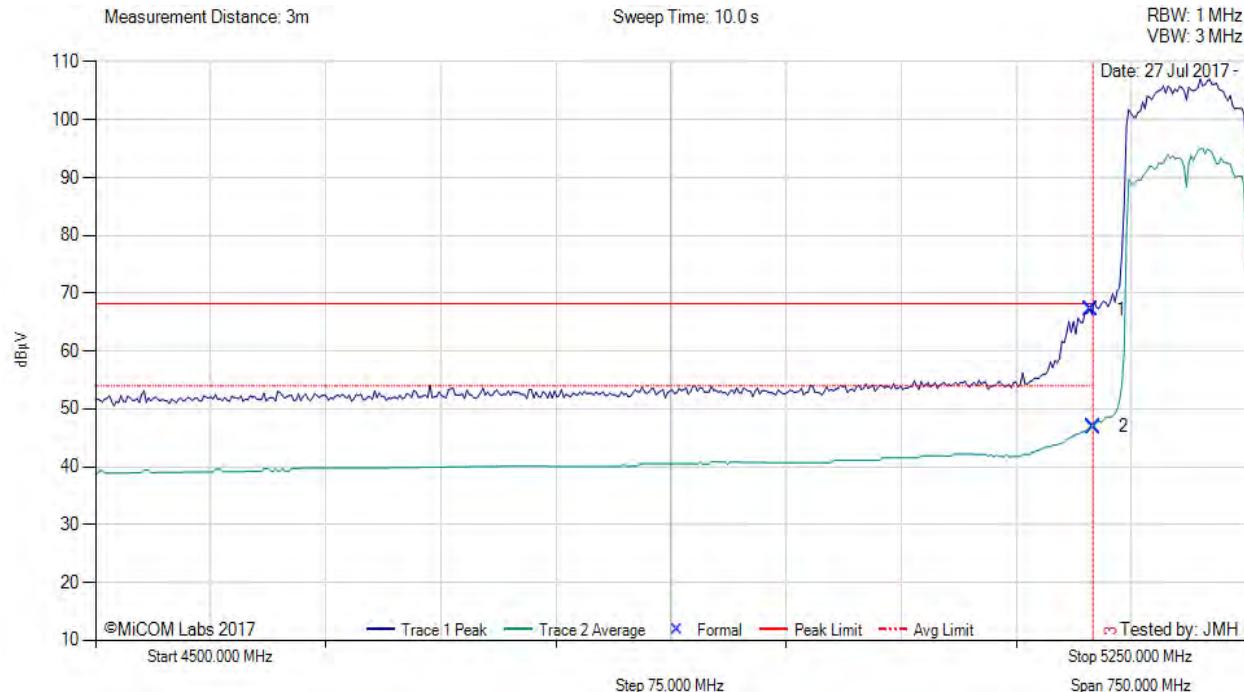
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11ac-80, Test Freq: 5210.00 MHz, Antenna: Aruba AP-ANT-13B, Power Setting: 50, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.50       | 29.36          | 3.68          | 34.11 | 67.15              | Max Peak         | Horizontal | 116    | 329     | 68.2               | -1.1      | Pass       |  |
| 2                     | 5150.00       | 9.15           | 3.67          | 34.11 | 46.93              | Max Avg          | Horizontal | 116    | 329     | 54.0               | -7.1      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

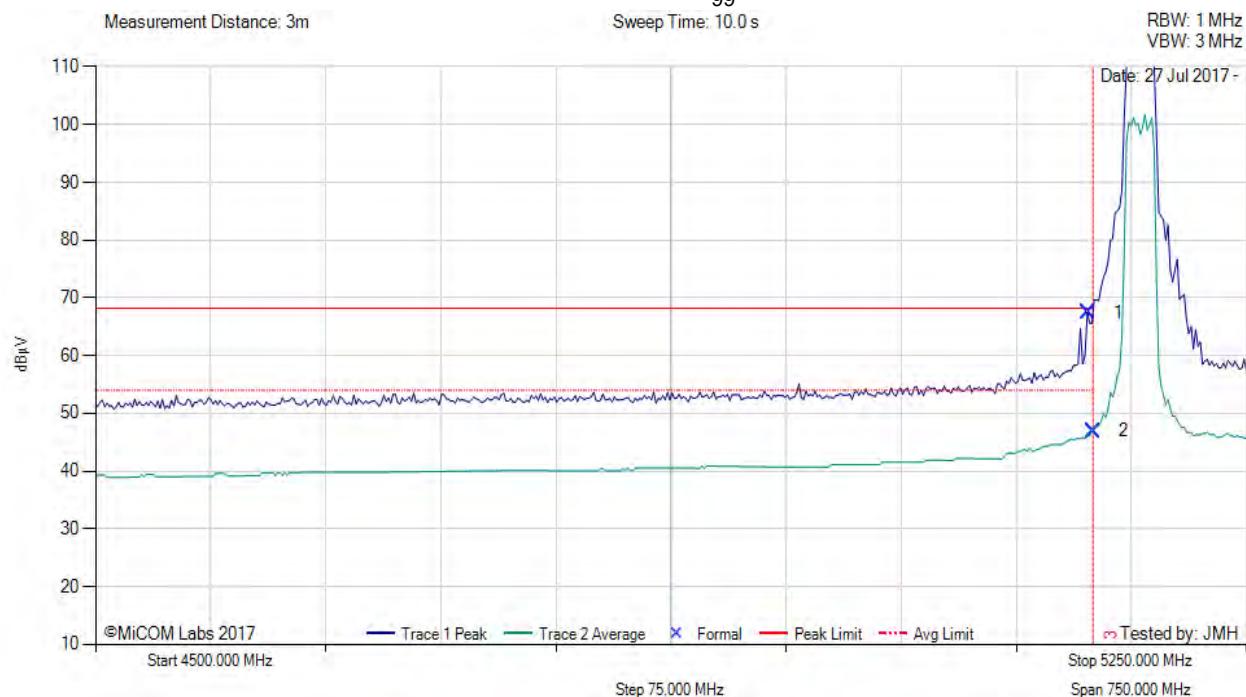
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5180.00 MHz, Antenna: Aruba AP-ANT-13B, Power Setting: 57, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |            |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5146.99       | 29.55    | 3.68          | 34.11 | 67.34        | Max Peak         | Horizontal | 116    | 329     | 68.2         | -0.9      | Pass       |  |
| 2                     | 5150.00       | 9.15     | 3.67          | 34.11 | 46.93        | Max Avg          | Horizontal | 116    | 329     | 54.0         | -7.1      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --         | --     | --      | --           | --        | --         |  |

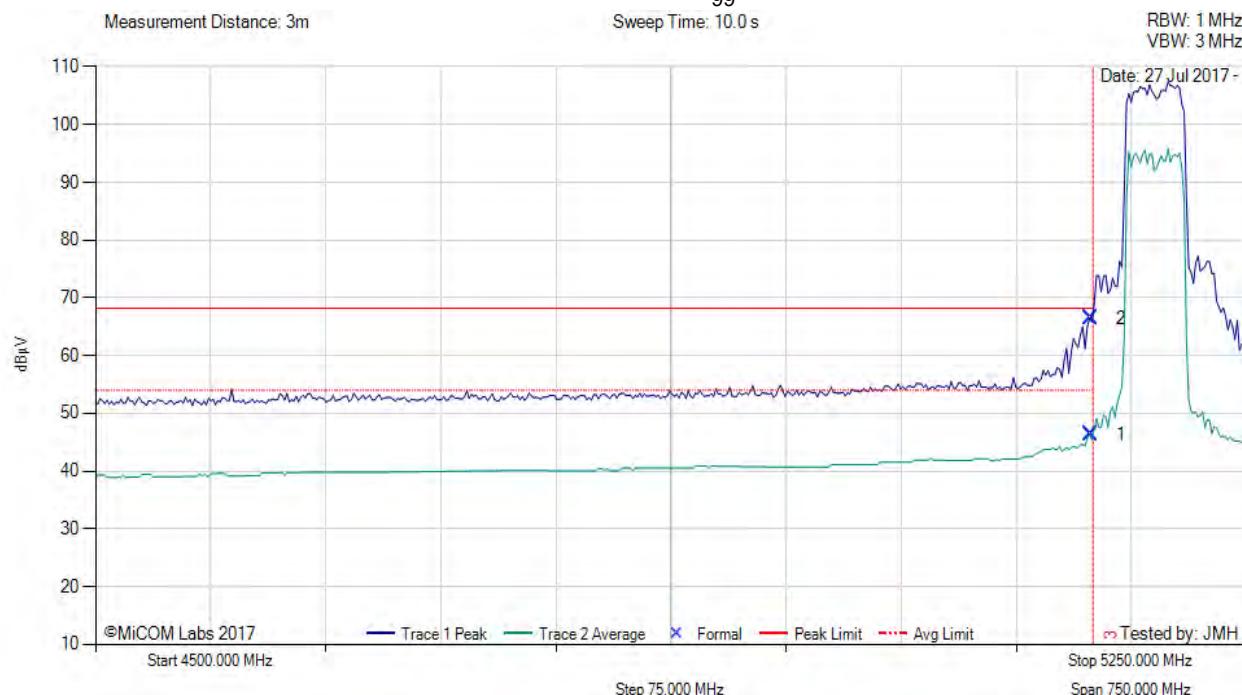
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

[back to matrix](#)

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-40, Test Freq: 5190.00 MHz, Antenna: Aruba AP-ANT-13B, Power Setting: 47, Duty Cycle (%): 99



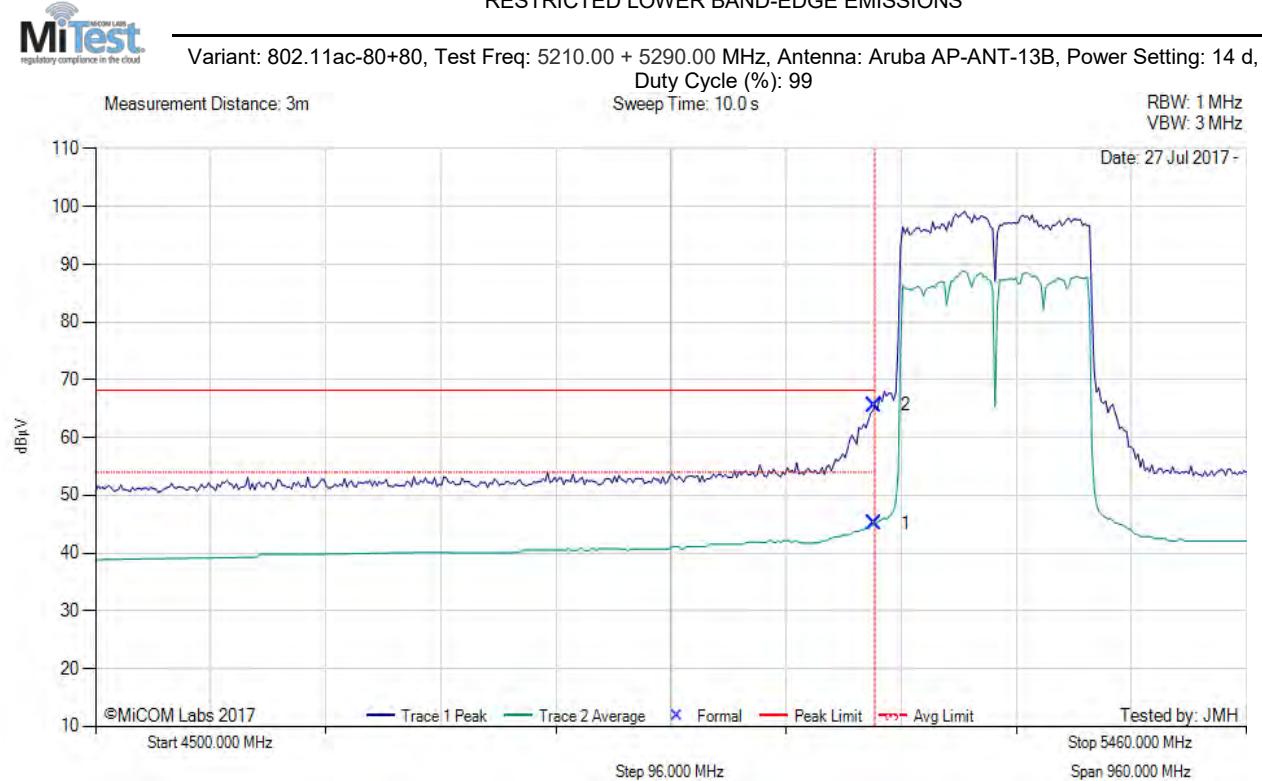
| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.50       | 8.51           | 3.68          | 34.11 | 46.30              | Max Avg          | Horizontal | 116    | 329     | 54.0               | -7.7      | Pass       |  |
| 2                     | 5148.50       | 28.71          | 3.68          | 34.11 | 66.50              | Max Peak         | Horizontal | 116    | 329     | 68.2               | -1.7      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

## RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5460.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
| 1                     | 5150.00       | 7.37           | 3.67          | 34.11 | 45.15              | Max Avg          | Horizontal | 116    | 329     | 54.0               | -8.9      | Pass       |
| 2                     | 5150.00       | 27.80          | 3.67          | 34.11 | 65.58              | Max Peak         | Horizontal | 116    | 329     | 68.2               | -2.7      | Pass       |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80 mode

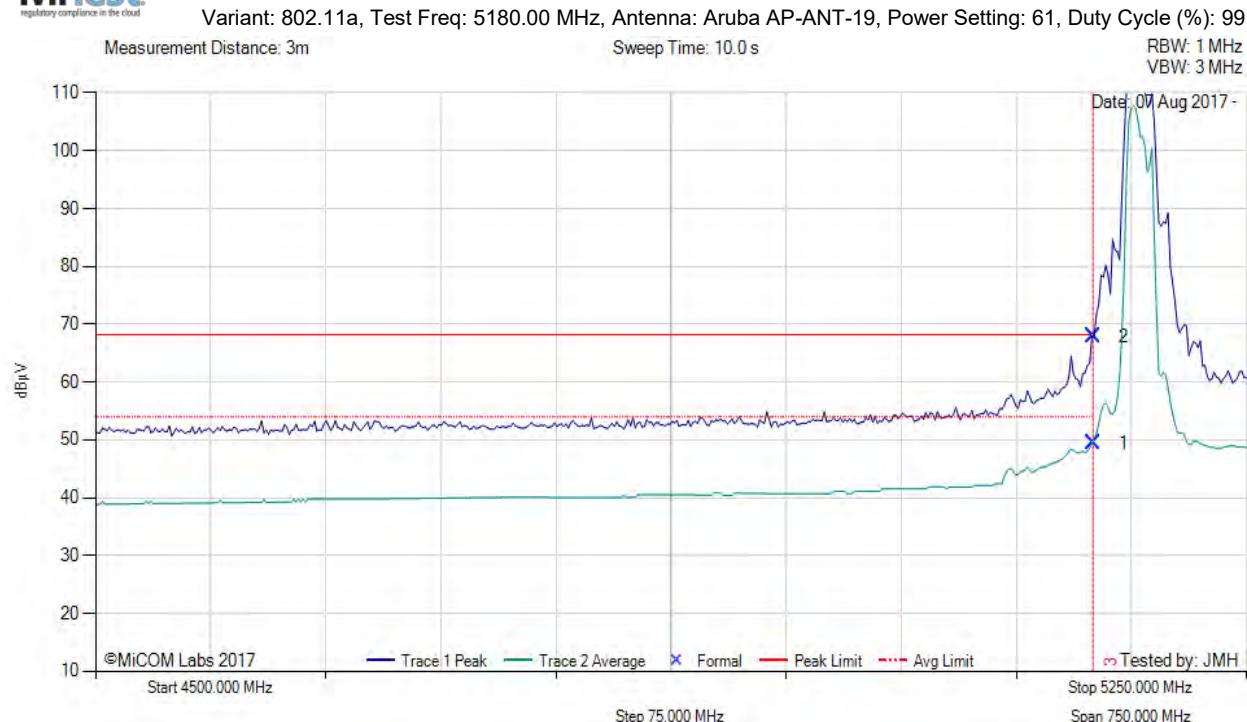
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-19



RESTRICTED LOWER BAND-EDGE EMISSIONS



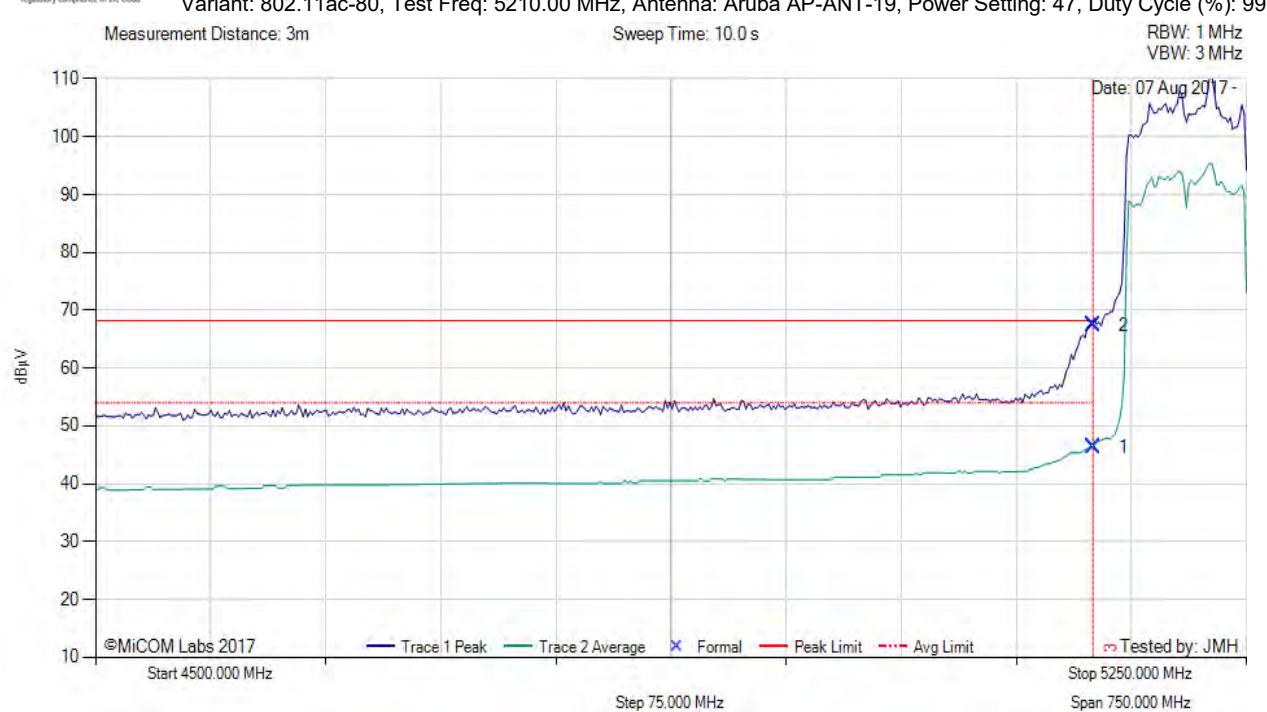
| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |          |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 11.60    | 3.67          | 34.11 | 49.38        | Max Avg          | Vertical | 155    | 4       | 54.0         | -4.6      | Pass       |  |
| 2                     | 5150.00       | 30.07    | 3.67          | 34.11 | 67.85        | Max Peak         | Vertical | 155    | 4       | 68.2         | -0.4      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --       | --     | --      | --           | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)



RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |          |        |         |              |           |            |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |
| 1                     | 5150.00       | 8.52     | 3.67          | 34.11 | 46.30        | Max Avg          | Vertical | 155    | 4       | 54.0         | -7.7      | Pass       |
| 2                     | 5150.00       | 29.70    | 3.67          | 34.11 | 67.48        | Max Peak         | Vertical | 155    | 4       | 68.2         | -0.7      | Pass       |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --       | --     | --      | --           | --        | --         |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

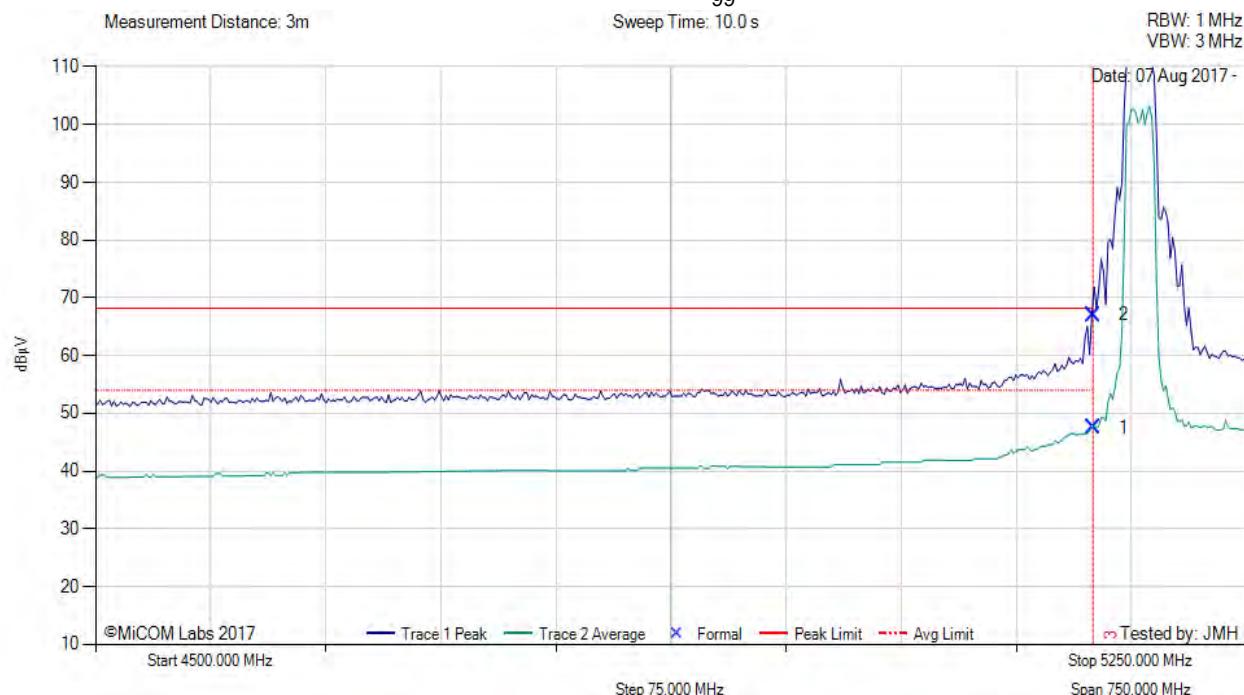
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-20, Test Freq: 5180.00 MHz, Antenna: Aruba AP-ANT-19, Power Setting: 52, Duty Cycle (%): 99



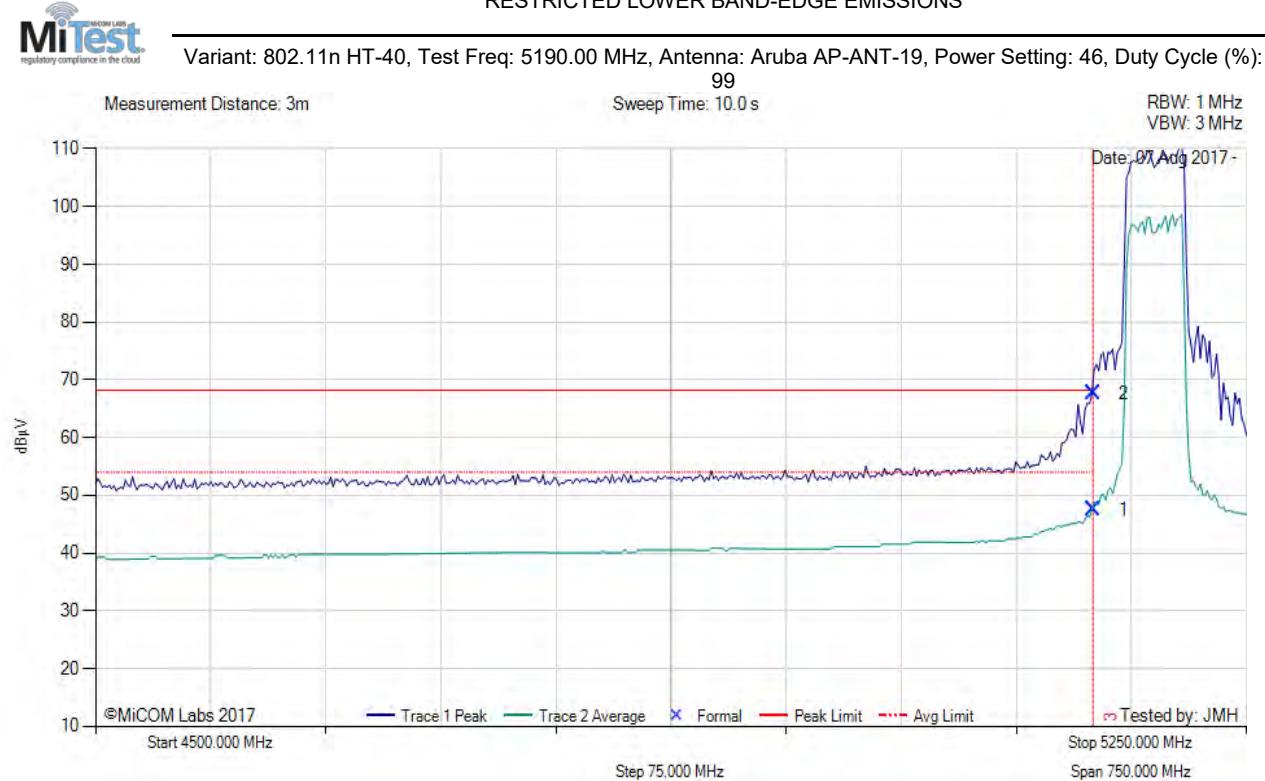
| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 9.74           | 3.67          | 34.11 | 47.52              | Max Avg          | Vertical | 155    | 4       | 54.0               | -6.5      | Pass       |  |
| 2                     | 5150.00       | 29.31          | 3.67          | 34.11 | 67.09              | Max Peak         | Vertical | 155    | 4       | 68.2               | -1.1      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

## RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
| 1                     | 5150.00       | 9.74           | 3.67          | 34.11 | 47.52              | Max Avg          | Vertical | 155    | 4       | 54.0               | -6.5      | Pass       |
| 2                     | 5150.00       | 29.85          | 3.67          | 34.11 | 67.63              | Max Peak         | Vertical | 155    | 4       | 68.2               | -0.6      | Pass       |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

[back to matrix](#)

RESTRICTED LOWER BAND-EDGE EMISSIONS

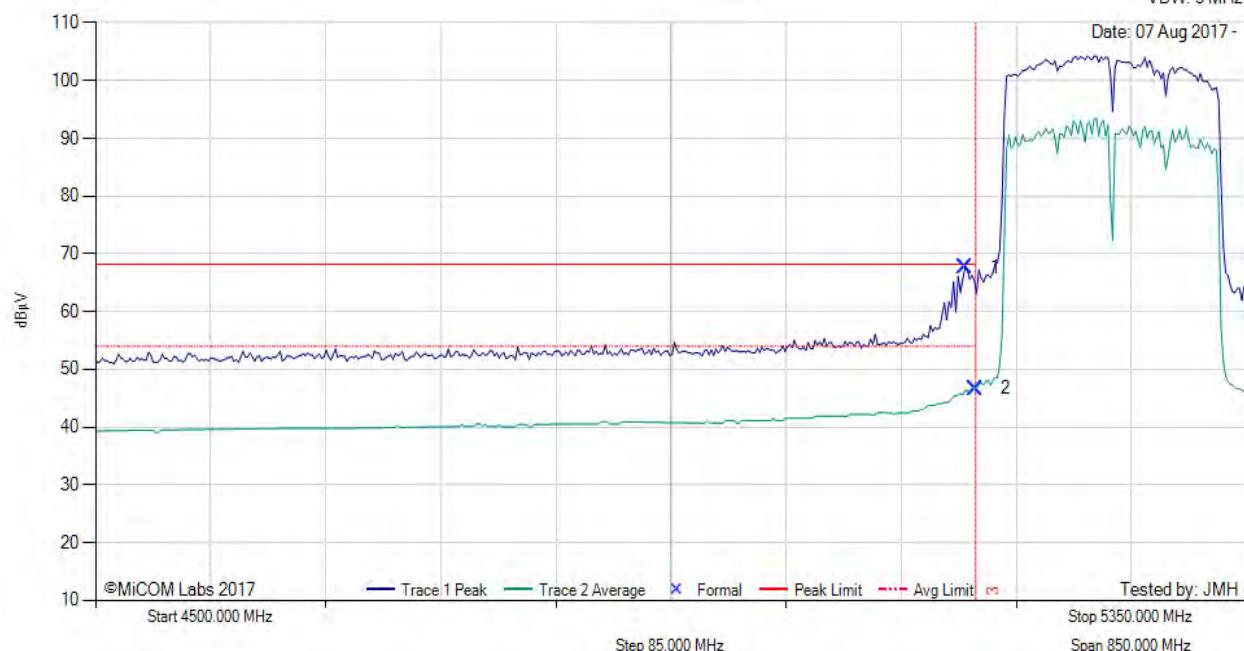


Variant: 802.11ac-80+80, Test Freq: 5210.00 + 5290.00 MHz, Antenna: Aruba AP-ANT-19, Power Setting: 12 d, Duty Cycle (%): 99

Measurement Distance: 3m

Sweep Time: 10.0 s

RBW: 1 MHz  
VBW: 3 MHz



| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5142.08       | 29.80          | 3.70          | 34.12 | 67.62              | Max Peak         | Vertical | 157    | 4       | 68.2               | -0.6      | Pass       |  |
| 2                     | 5150.00       | 8.95           | 3.67          | 34.11 | 46.73              | Max Avg          | Vertical | 157    | 4       | 54.0               | -7.3      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

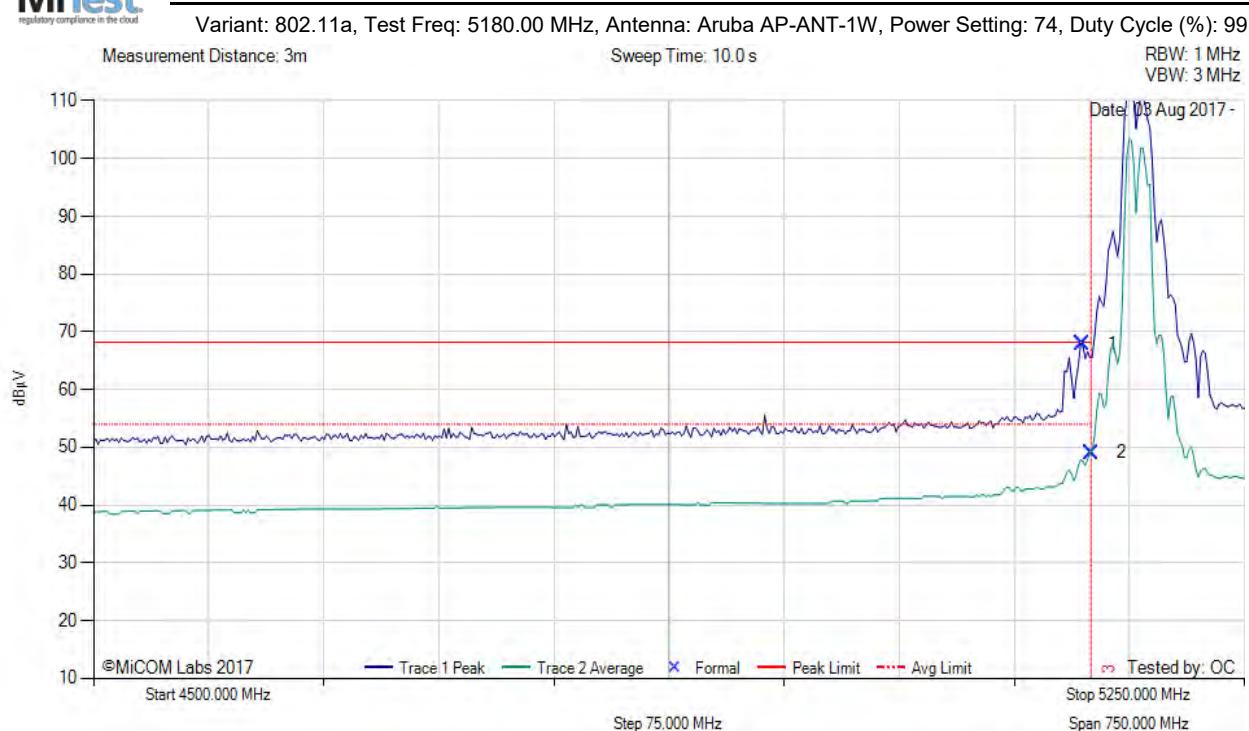
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-1W



RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5143.99       | 30.12          | 3.70          | 34.12 | 67.94              | Max Peak         | Vertical | 165    | 7       | 68.2               | -0.3      | Pass       |  |
| 2                     | 5150.00       | 11.29          | 3.67          | 34.11 | 49.07              | Max Avg          | Vertical | 165    | 7       | 54.0               | -4.9      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

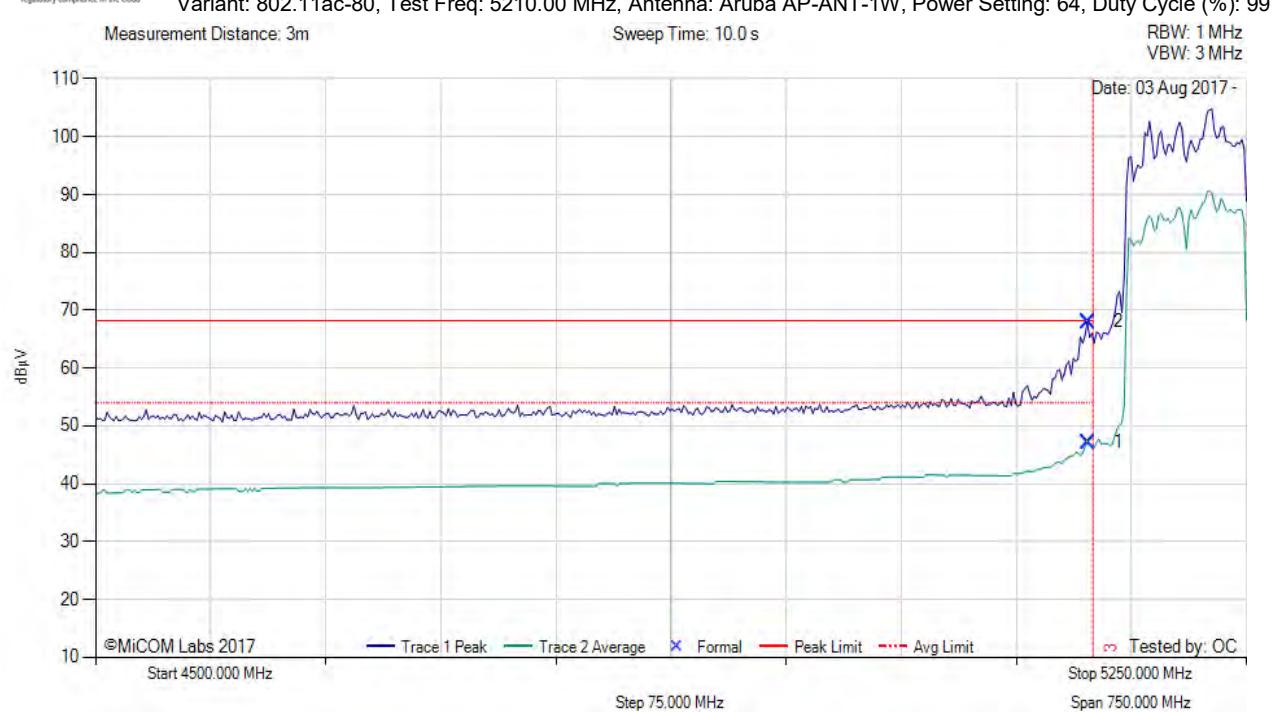
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



RESTRICTED LOWER BAND-EDGE EMISSIONS



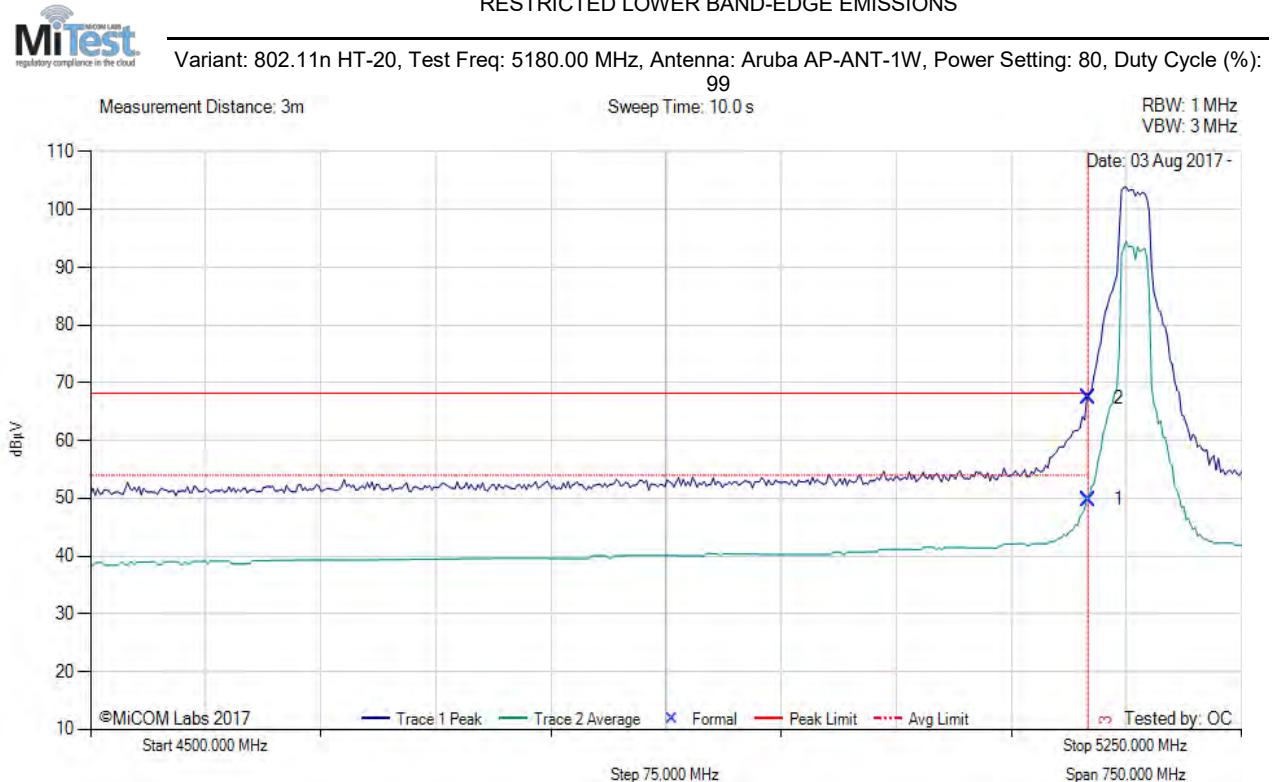
| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
| 1                     | 5146.99       | 9.34           | 3.68          | 34.11 | 47.13              | Max Avg          | Vertical | 165    | 7       | 54.0               | -6.9      | Pass       |
| 2                     | 5146.99       | 30.26          | 3.68          | 34.11 | 68.05              | Max Peak         | Vertical | 165    | 7       | 68.2               | -0.2      | Pass       |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 12.05          | 3.67          | 34.11 | 49.83              | Max Avg          | Vertical | 165    | 7       | 54.0               | -4.2      | Pass       |  |
| 2                     | 5150.00       | 29.68          | 3.67          | 34.11 | 67.46              | Max Peak         | Vertical | 165    | 7       | 68.2               | -0.8      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

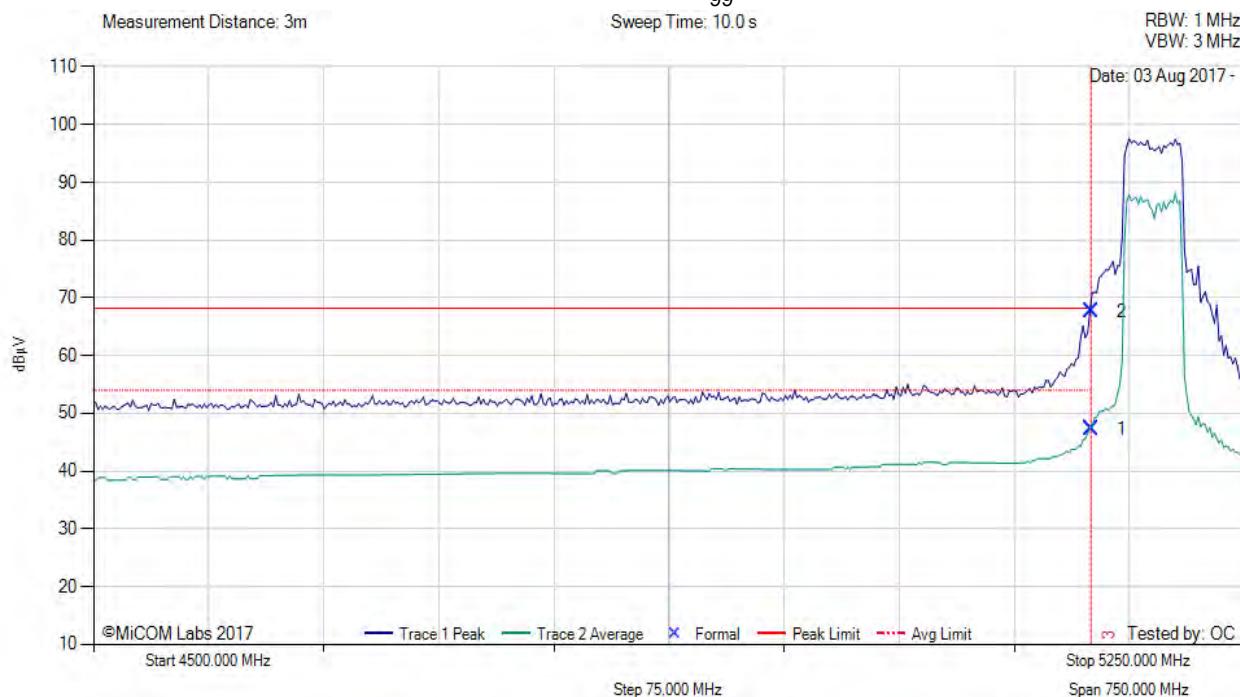
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-40, Test Freq: 5190.00 MHz, Antenna: Aruba AP-ANT-1W, Power Setting: 68, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 9.55           | 3.67          | 34.11 | 47.33              | Max Avg          | Vertical | 165    | 7       | 54.0               | -6.7      | Pass       |  |
| 2                     | 5150.00       | 29.87          | 3.67          | 34.11 | 67.65              | Max Peak         | Vertical | 165    | 7       | 68.2               | -0.6      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS

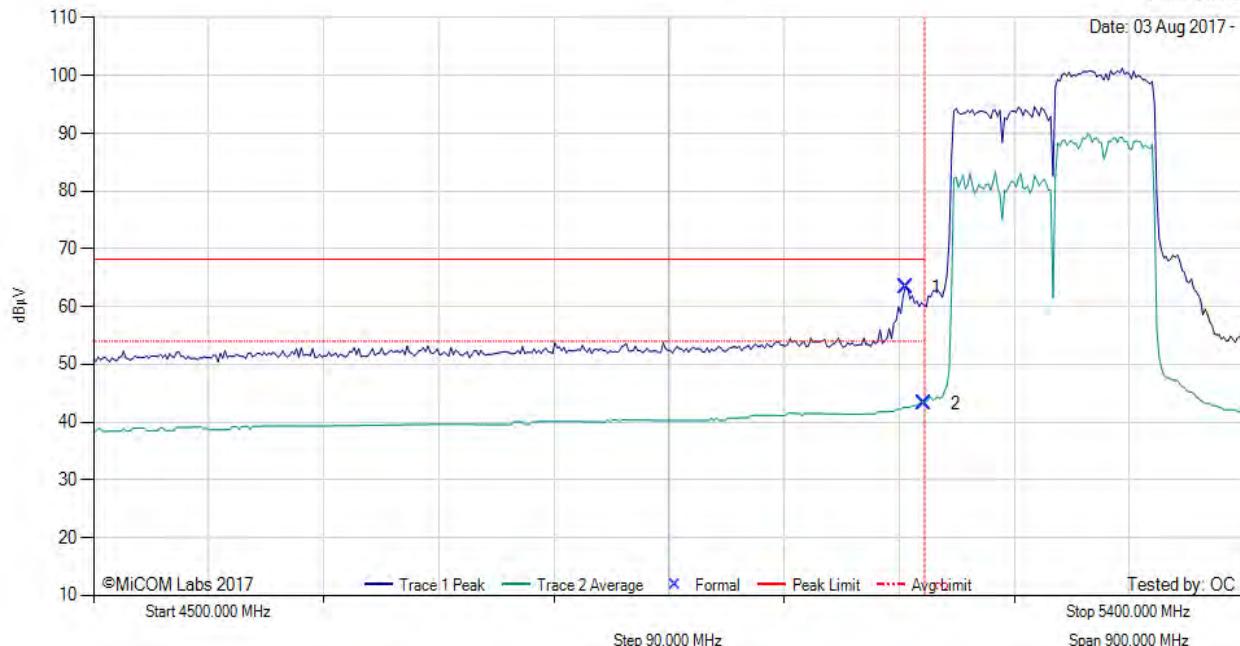


Variant: 802.11ac-80+80, Test Freq: 5210.00 + 5290.00 MHz, Antenna: Aruba AP-ANT-1W, Power Setting: 14 d, Duty Cycle (%): 99

Measurement Distance: 3m

Sweep Time: 10.0 s

RBW: 1 MHz  
VBW: 3 MHz



| 4500.00 - 5400.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5135.57       | 25.56          | 3.69          | 34.12 | 63.37              | Max Peak         | Vertical | 165    | 7       | 68.2               | -4.9      | Pass       |  |
| 2                     | 5150.00       | 5.43           | 3.67          | 34.11 | 43.21              | Max Avg          | Vertical | 165    | 7       | 54.0               | -10.8     | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

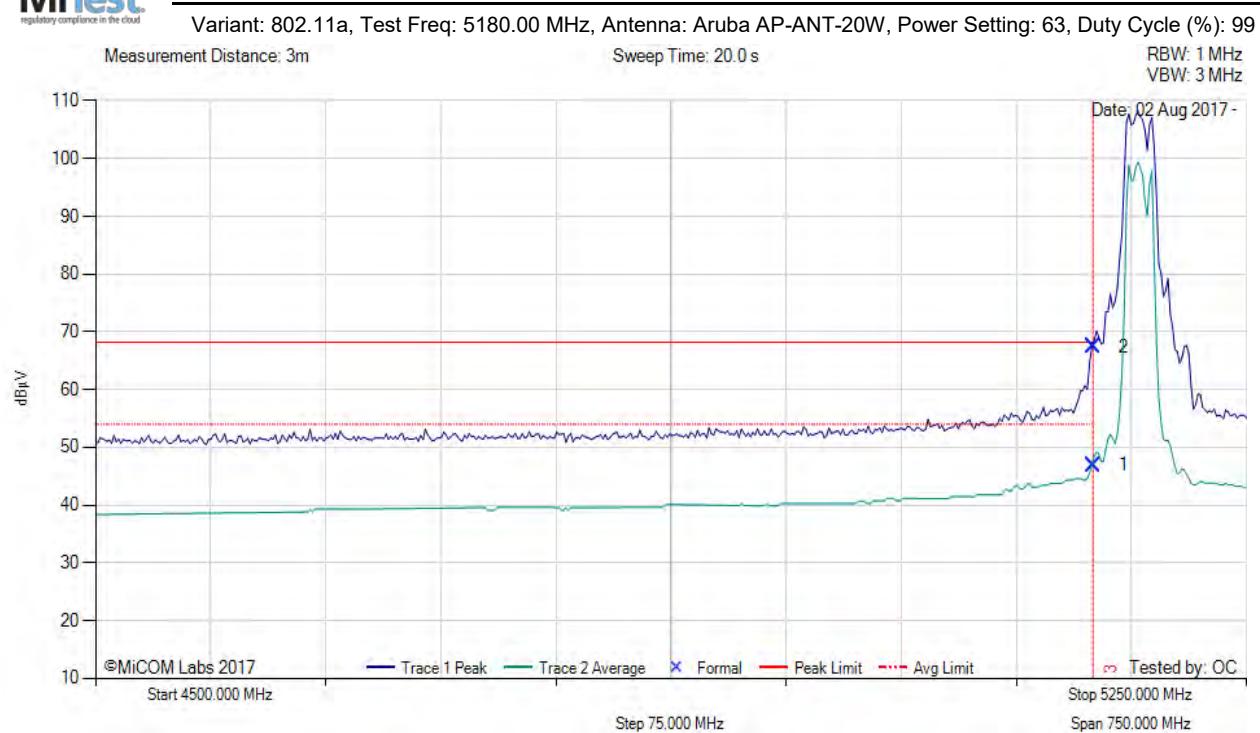
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-20W



RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 9.15           | 3.67          | 34.11 | 46.93              | Max Avg          | Vertical | 175    | 269     | 54.0               | -7.1      | Pass       |  |
| 2                     | 5150.00       | 29.68          | 3.67          | 34.11 | 67.46              | Max Peak         | Vertical | 175    | 269     | 68.2               | -0.8      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

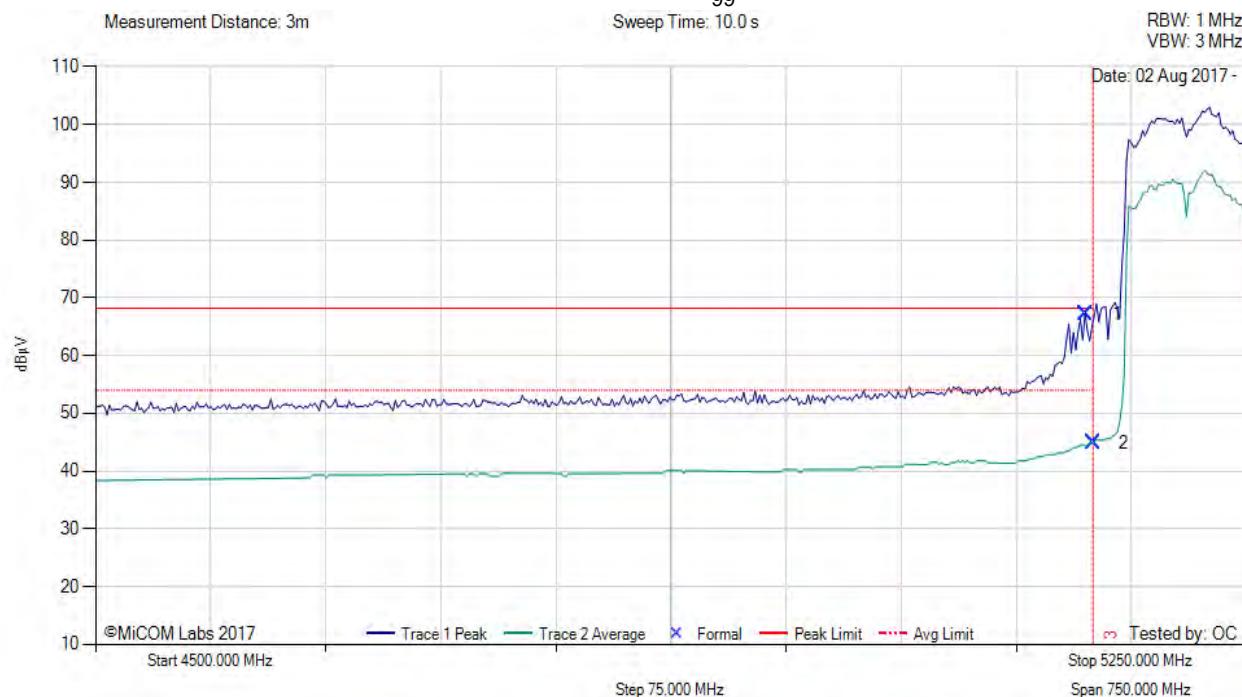
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11ac-80, Test Freq: 5210.00 MHz, Antenna: Aruba AP-ANT-20W, Power Setting: 51, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5145.49       | 29.41          | 3.69          | 34.11 | 67.21              | Max Peak         | Vertical | 175    | 269     | 68.2               | -1.0      | Pass       |  |
| 2                     | 5150.00       | 7.11           | 3.67          | 34.11 | 44.89              | Max Avg          | Vertical | 175    | 269     | 54.0               | -9.1      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

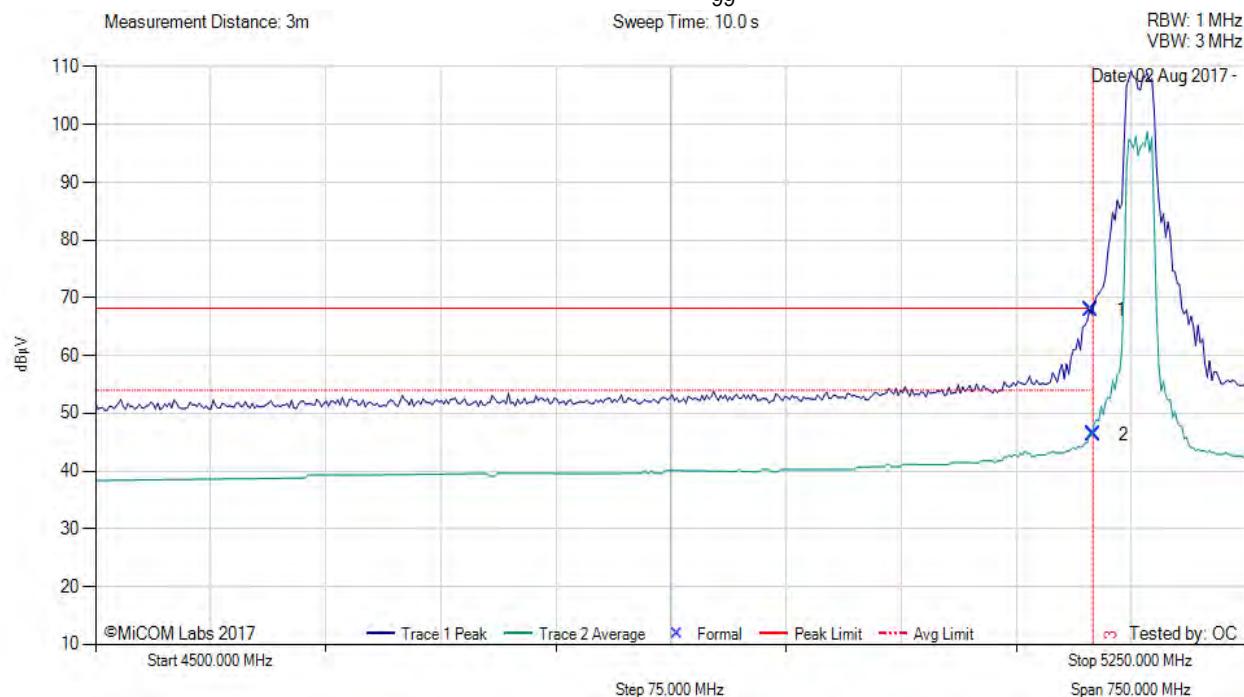
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-20, Test Freq: 5180.00 MHz, Antenna: Aruba AP-ANT-20W, Power Setting: 66, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |          |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.50       | 30.13    | 3.68          | 34.11 | 67.92        | Max Peak         | Vertical | 175    | 269     | 68.2         | -0.3      | Pass       |  |
| 2                     | 5150.00       | 8.52     | 3.67          | 34.11 | 46.30        | Max Avg          | Vertical | 175    | 269     | 54.0         | -7.7      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --       | --     | --      | --           | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

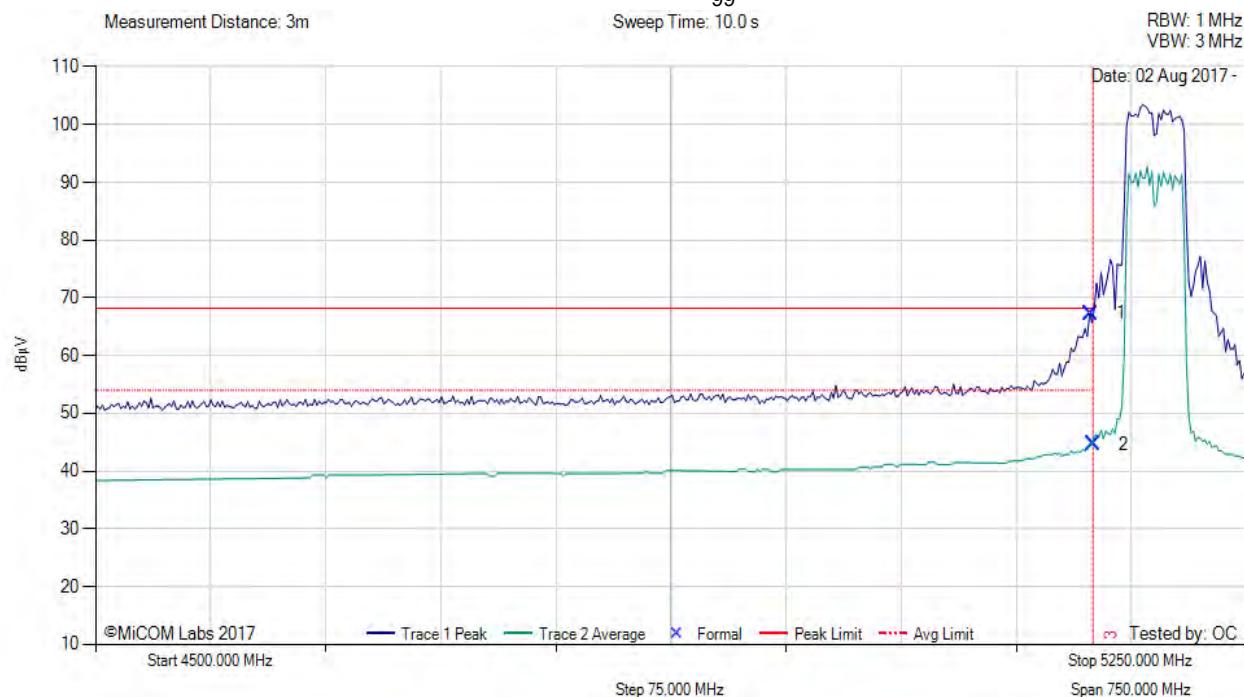
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-40, Test Freq: 5190.00 MHz, Antenna: Aruba AP-ANT-20W, Power Setting: 55, Duty Cycle (%): 99



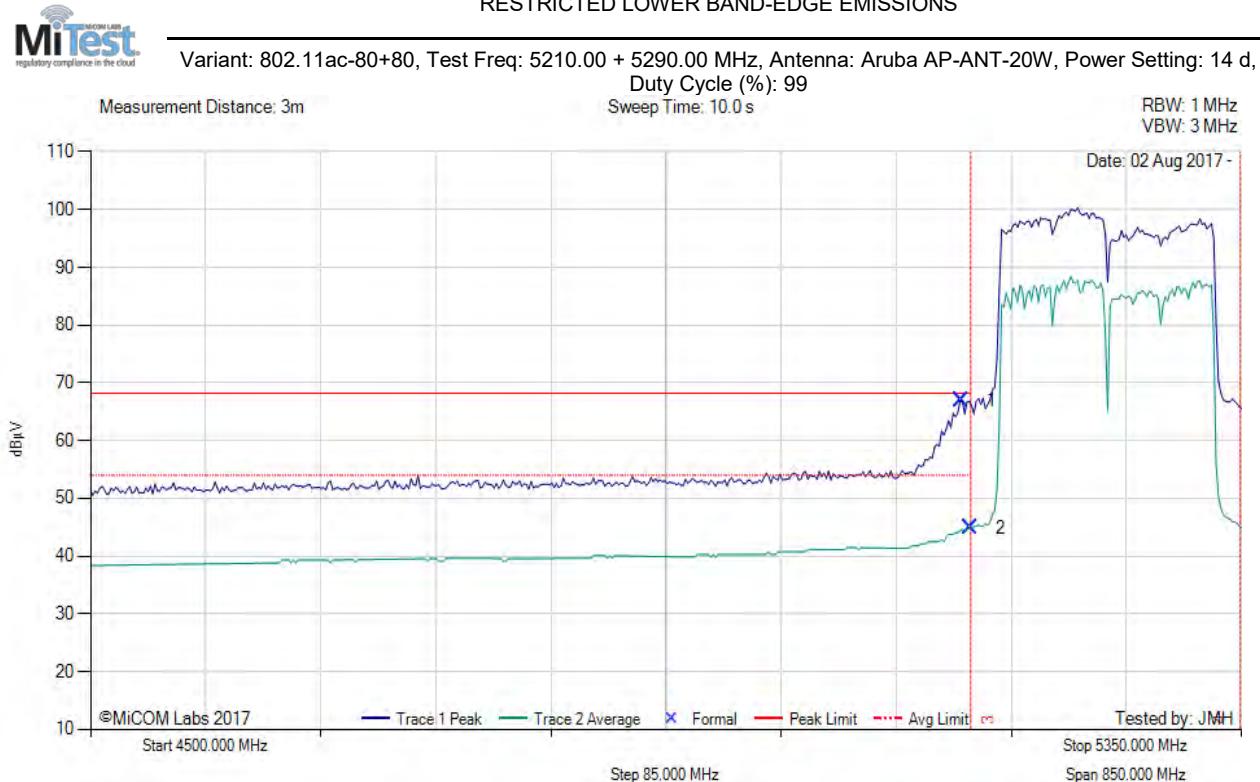
| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |          |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.50       | 29.50    | 3.68          | 34.11 | 67.29        | Max Peak         | Vertical | 175    | 269     | 68.2         | -0.9      | Pass       |  |
| 2                     | 5150.00       | 6.85     | 3.67          | 34.11 | 44.63        | Max Avg          | Vertical | 175    | 269     | 54.0         | -9.4      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --       | --     | --      | --           | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5143.19       | 29.05          | 3.70          | 34.12 | 66.87              | Max Peak         | Vertical | 178    | 351     | 68.2               | -1.3      | Pass       |  |
| 2                     | 5150.00       | 7.11           | 3.67          | 34.11 | 44.89              | Max Avg          | Vertical | 178    | 351     | 54.0               | -9.1      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |
| 4                     | 5350.00       | --             | --            | --    | --                 | Band-Edge        | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

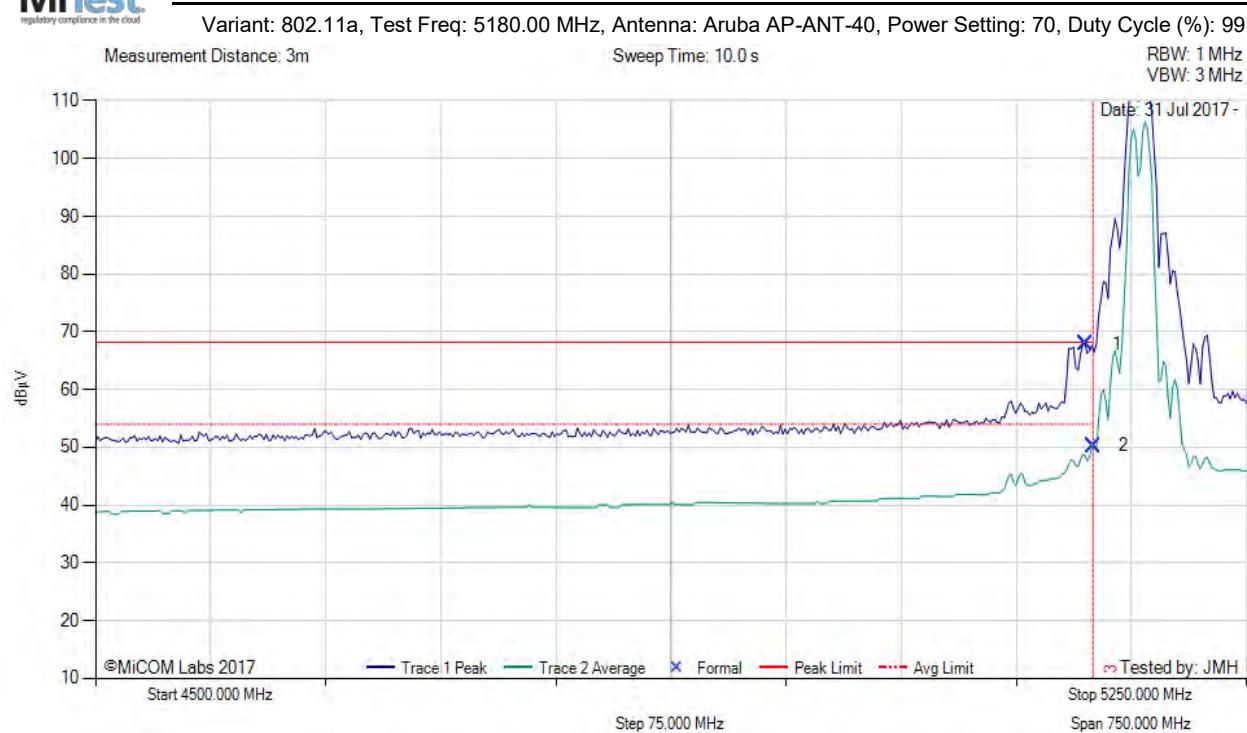
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-40



RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |            |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5145.49       | 30.12    | 3.69          | 34.11 | 67.92        | Max Peak         | Horizontal | 182    | 45      | 68.2         | -0.3      | Pass       |  |
| 2                     | 5150.00       | 12.47    | 3.67          | 34.11 | 50.25        | Max Avg          | Horizontal | 182    | 45      | 54.0         | -3.8      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --         | --     | --      | --           | --        | --         |  |

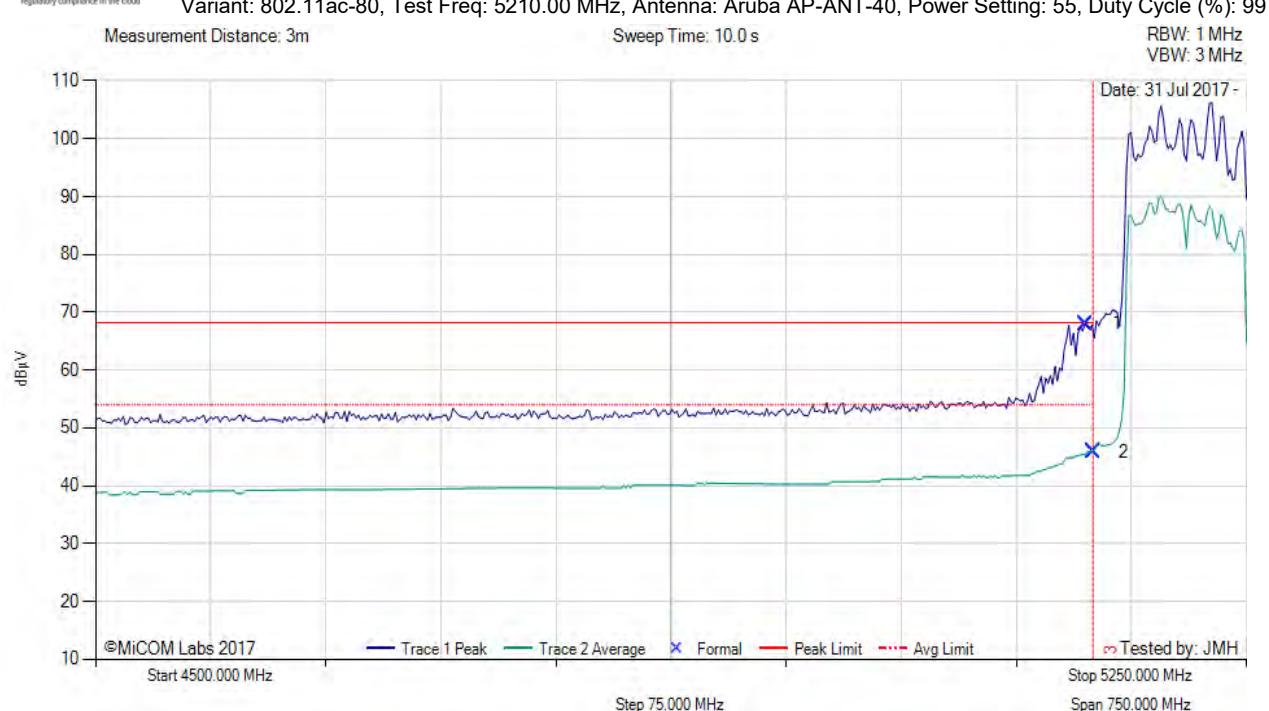
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5145.49       | 30.17          | 3.69          | 34.11 | 67.97              | Max Peak         | Horizontal | 182    | 45      | 68.2               | -0.2      | Pass       |  |
| 2                     | 5150.00       | 8.08           | 3.67          | 34.11 | 45.86              | Max Avg          | Horizontal | 182    | 45      | 54.0               | -8.1      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

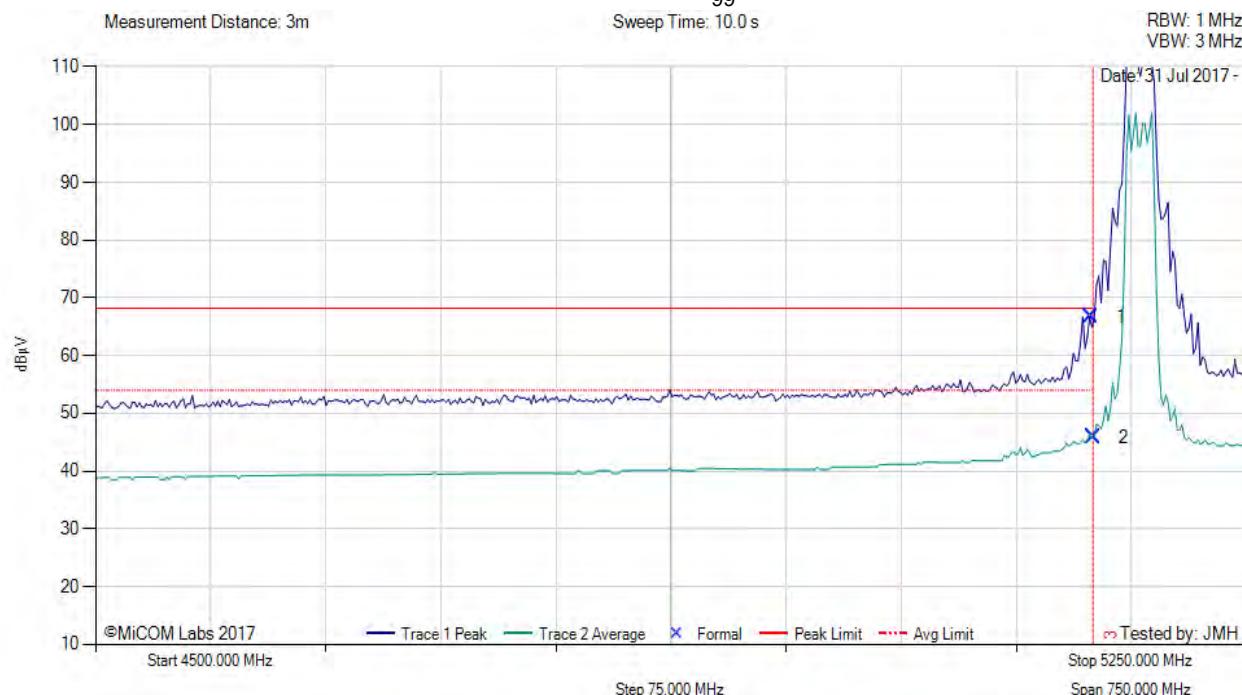
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-20, Test Freq: 5180.00 MHz, Antenna: Aruba AP-ANT-40, Power Setting: 59, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.50       | 28.90          | 3.68          | 34.11 | 66.69              | Max Peak         | Horizontal | 182    | 45      | 68.2               | -1.5      | Pass       |  |
| 2                     | 5150.00       | 8.08           | 3.67          | 34.11 | 45.86              | Max Avg          | Horizontal | 182    | 45      | 54.0               | -8.1      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode

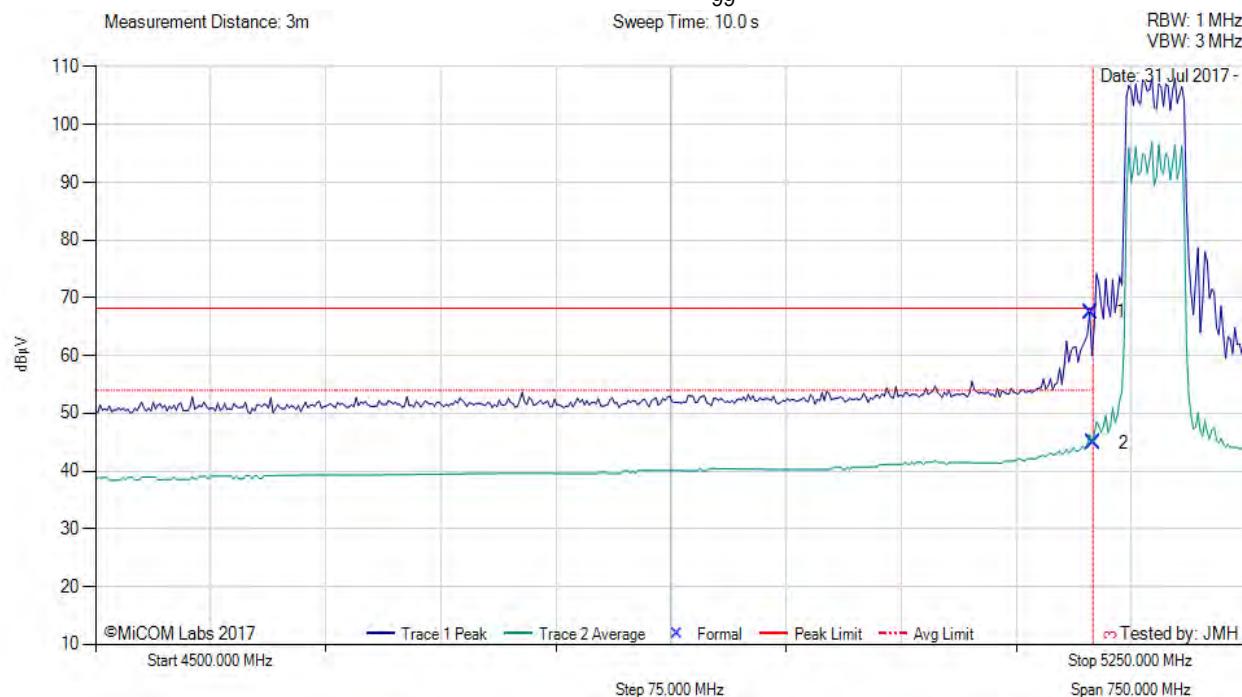
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-40, Test Freq: 5190.00 MHz, Antenna: Aruba AP-ANT-40, Power Setting: 51, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |            |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.50       | 29.71    | 3.68          | 34.11 | 67.50        | Max Peak         | Horizontal | 182    | 45      | 68.2         | -0.7      | Pass       |  |
| 2                     | 5150.00       | 7.11     | 3.67          | 34.11 | 44.89        | Max Avg          | Horizontal | 182    | 45      | 54.0         | -9.1      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --         | --     | --      | --           | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



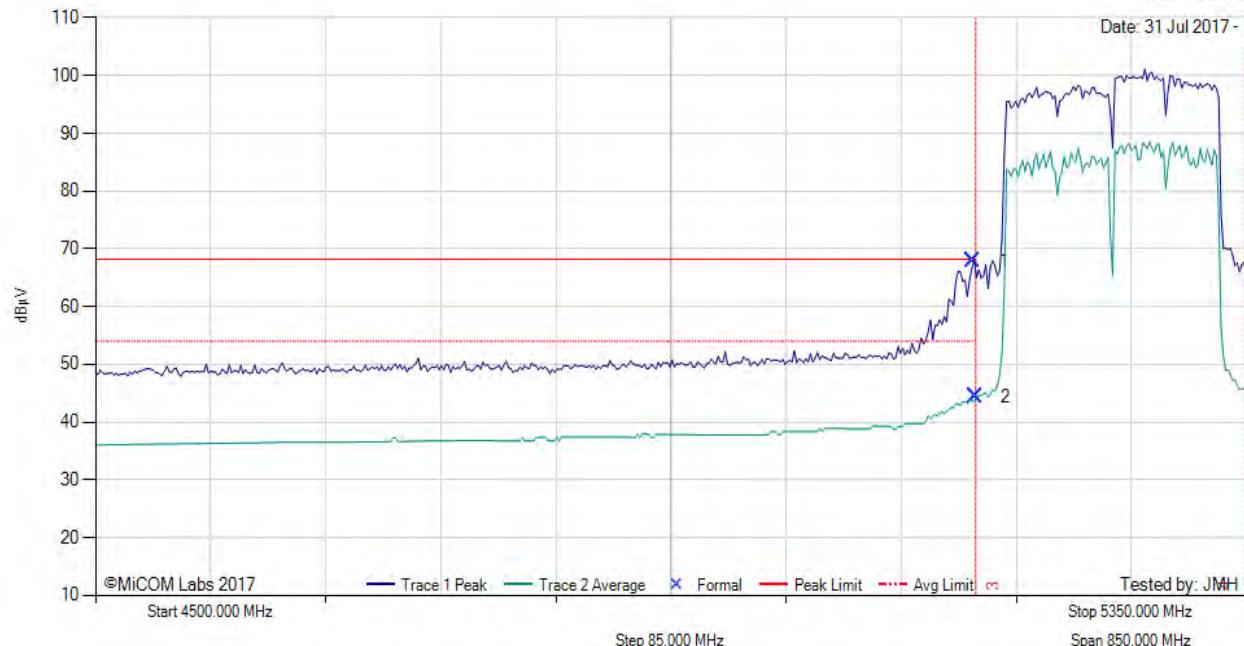
Variant: 802.11ac-80+80, Test Freq: 5210.00 + 5290.00 MHz, Antenna: Aruba AP-ANT-40, Power Setting: 14 d,

Duty Cycle (%): 99

Measurement Distance: 3m

Sweep Time: 10.0 s

RBW: 500 KHz  
VBW: 3 MHz



| 4500.00 - 5350.00 MHz |               |          |               |       |              |                  |            |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.30       | 30.06    | 3.68          | 34.11 | 67.85        | Max Peak         | Horizontal | 182    | 45      | 68.2         | -0.4      | Pass       |  |
| 2                     | 5150.00       | 6.59     | 3.67          | 34.11 | 44.37        | Max Avg          | Horizontal | 182    | 45      | 54.0         | -9.6      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --         | --     | --      | --           | --        | --         |  |
| 4                     | 5350.00       | --       | --            | --    | --           | Band-Edge        | --         | --     | --      | --           | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 160 mode.

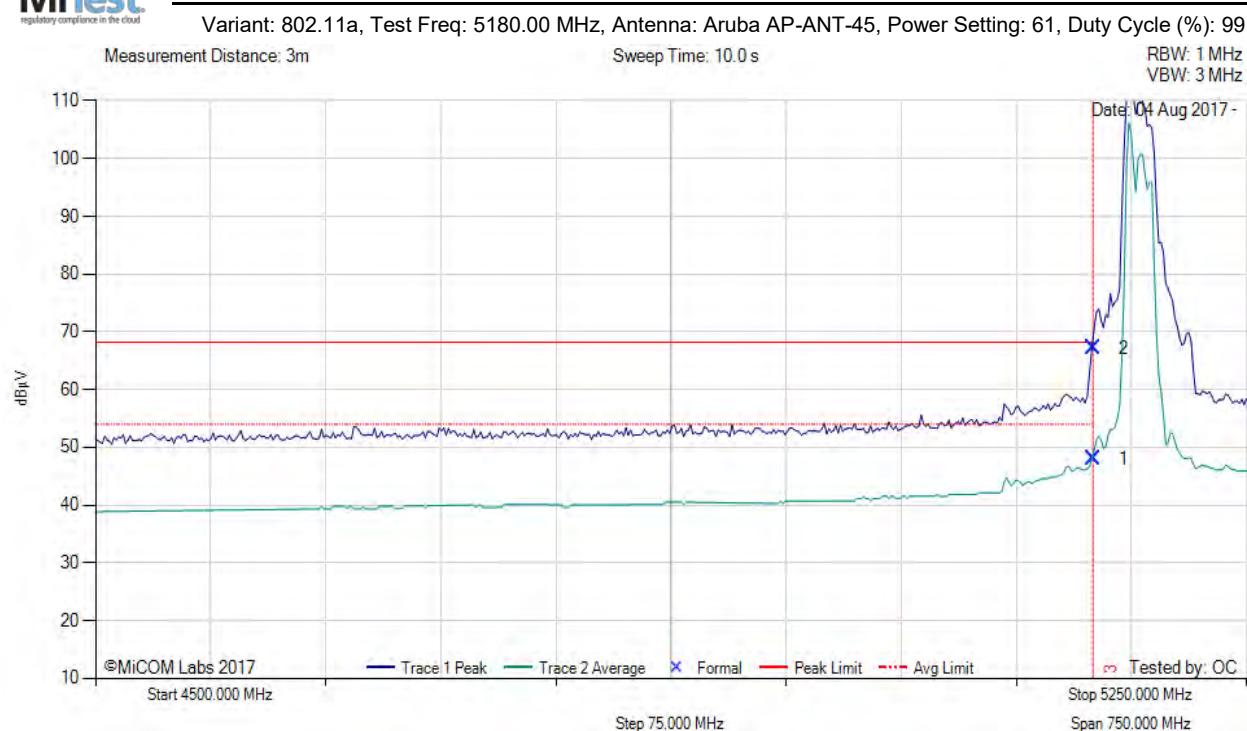
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-45



RESTRICTED LOWER BAND-EDGE EMISSIONS



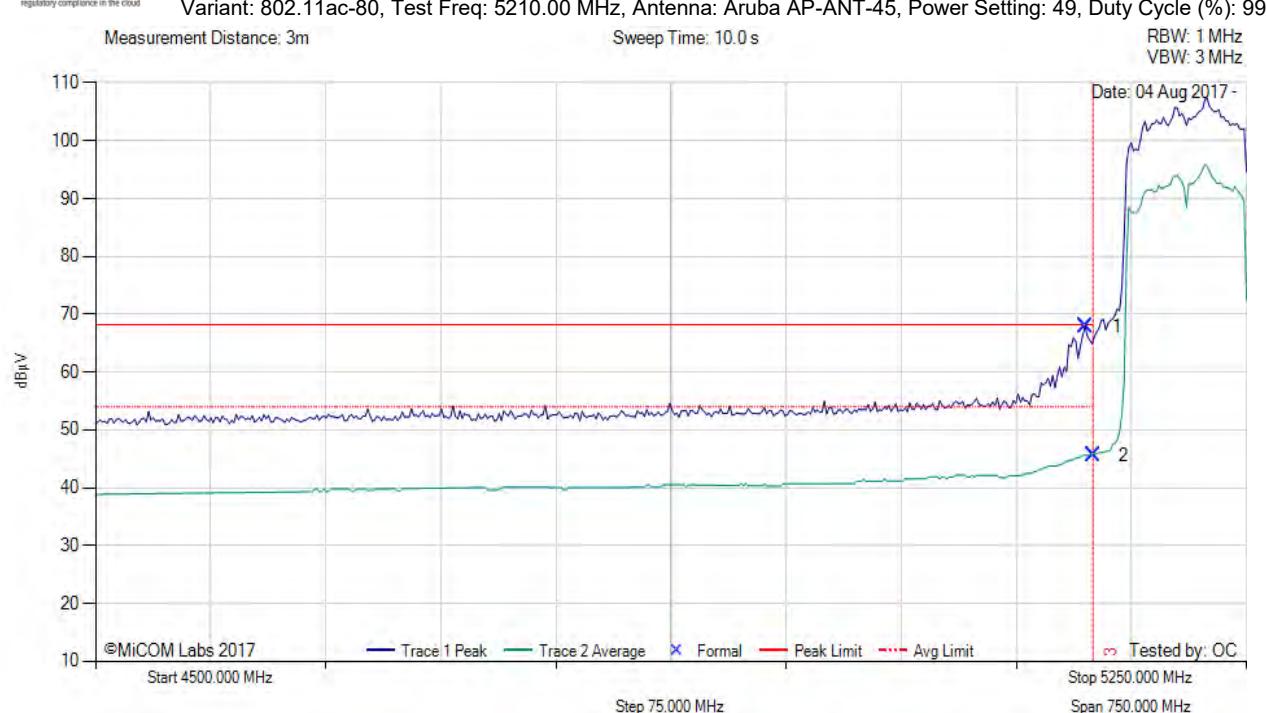
| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 10.29          | 3.67          | 34.11 | 48.07              | Max Avg          | Vertical | 166    | 4       | 54.0               | -5.9      | Pass       |  |
| 2                     | 5150.00       | 29.45          | 3.67          | 34.11 | 67.23              | Max Peak         | Vertical | 166    | 4       | 68.2               | -1.0      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
| 1                     | 5145.49       | 30.08          | 3.69          | 34.11 | 67.88              | Max Peak         | Vertical | 166    | 4       | 68.2               | -0.4      | Pass       |
| 2                     | 5150.00       | 7.85           | 3.67          | 34.11 | 45.63              | Max Avg          | Vertical | 166    | 4       | 54.0               | -8.4      | Pass       |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

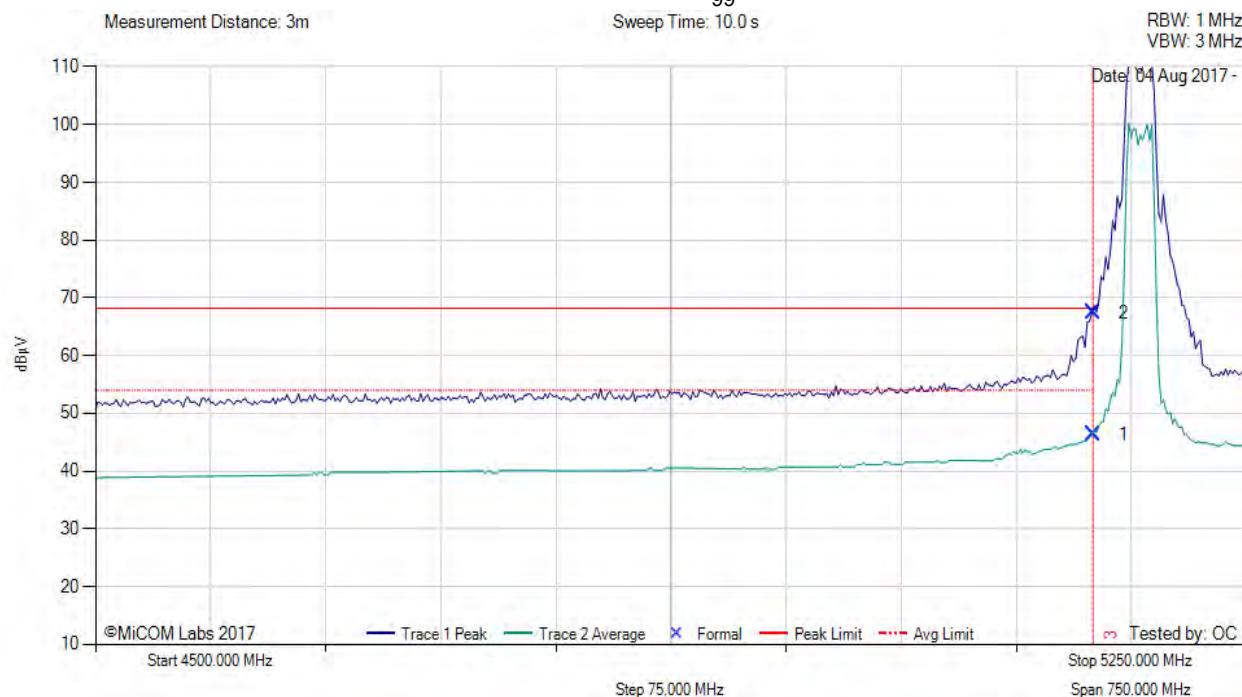
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-20, Test Freq: 5180.00 MHz, Antenna: Aruba AP-ANT-45, Power Setting: 60, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 8.52           | 3.67          | 34.11 | 46.30              | Max Avg          | Vertical | 166    | 4       | 54.0               | -7.7      | Pass       |  |
| 2                     | 5150.00       | 29.66          | 3.67          | 34.11 | 67.44              | Max Peak         | Vertical | 166    | 4       | 68.2               | -0.8      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

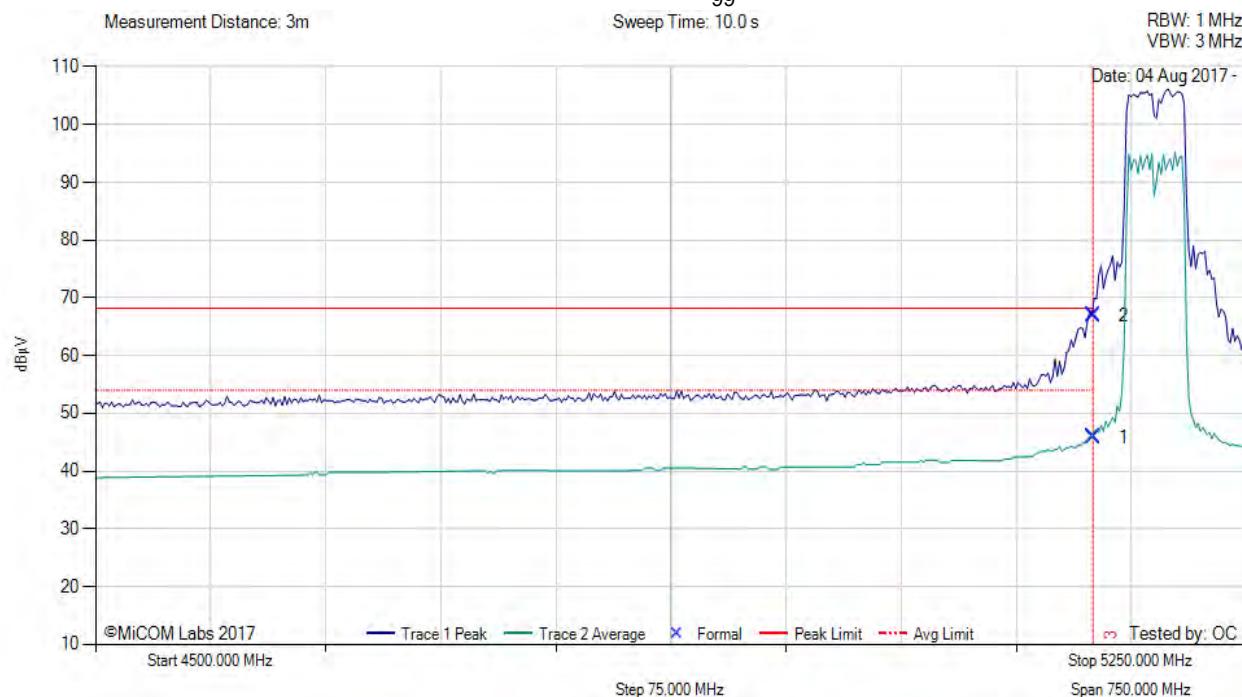
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-40, Test Freq: 5190.00 MHz, Antenna: Aruba AP-ANT-45, Power Setting: 52, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 8.08           | 3.67          | 34.11 | 45.86              | Max Avg          | Vertical | 166    | 4       | 54.0               | -8.1      | Pass       |  |
| 2                     | 5150.00       | 29.17          | 3.67          | 34.11 | 66.95              | Max Peak         | Vertical | 166    | 4       | 68.2               | -1.3      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS

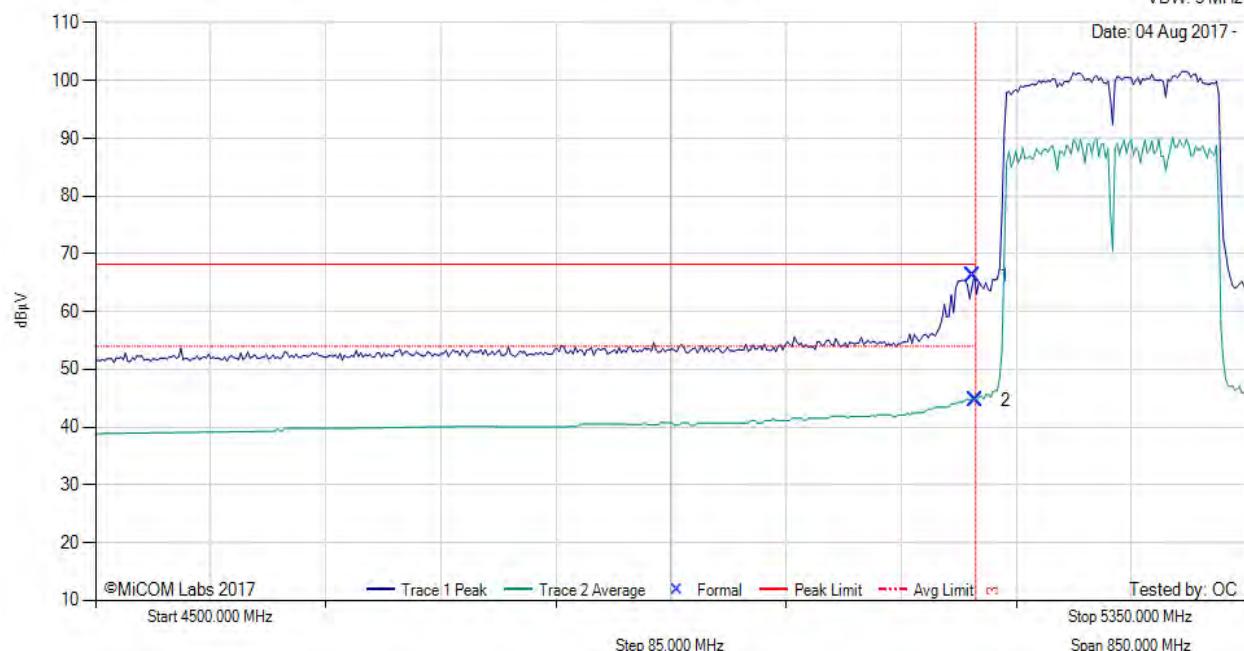


Variant: 802.11ac-80+80, Test Freq: 5210.00 + 5290.00 MHz, Antenna: Aruba AP-ANT-45, Power Setting: 12 d, Duty Cycle (%): 99

Measurement Distance: 3m

Sweep Time: 10.0 s

RBW: 1 MHz  
VBW: 3 MHz



| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |          |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.30       | 28.41          | 3.68          | 34.11 | 66.20              | Max Peak         | Vertical | 166    | 360     | 68.2               | -2.0      | Pass       |  |
| 2                     | 5150.00       | 6.86           | 3.67          | 34.11 | 44.64              | Max Avg          | Vertical | 166    | 360     | 54.0               | -9.4      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --       | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

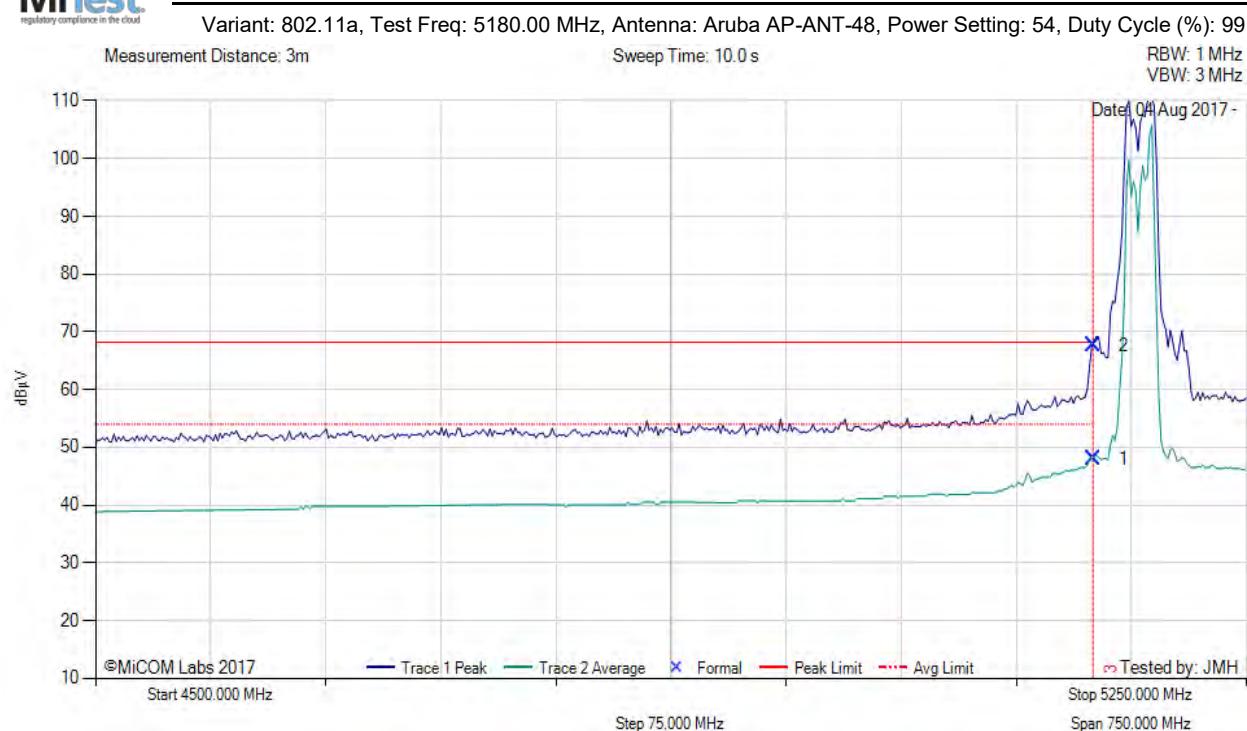
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: AP-ANT-48



RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |            |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 10.29    | 3.67          | 34.11 | 48.07        | Max Avg          | Horizontal | 166    | 359     | 54.0         | -5.9      | Pass       |  |
| 2                     | 5150.00       | 29.93    | 3.67          | 34.11 | 67.71        | Max Peak         | Horizontal | 166    | 359     | 68.2         | -0.5      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --         | --     | --      | --           | --        | --         |  |

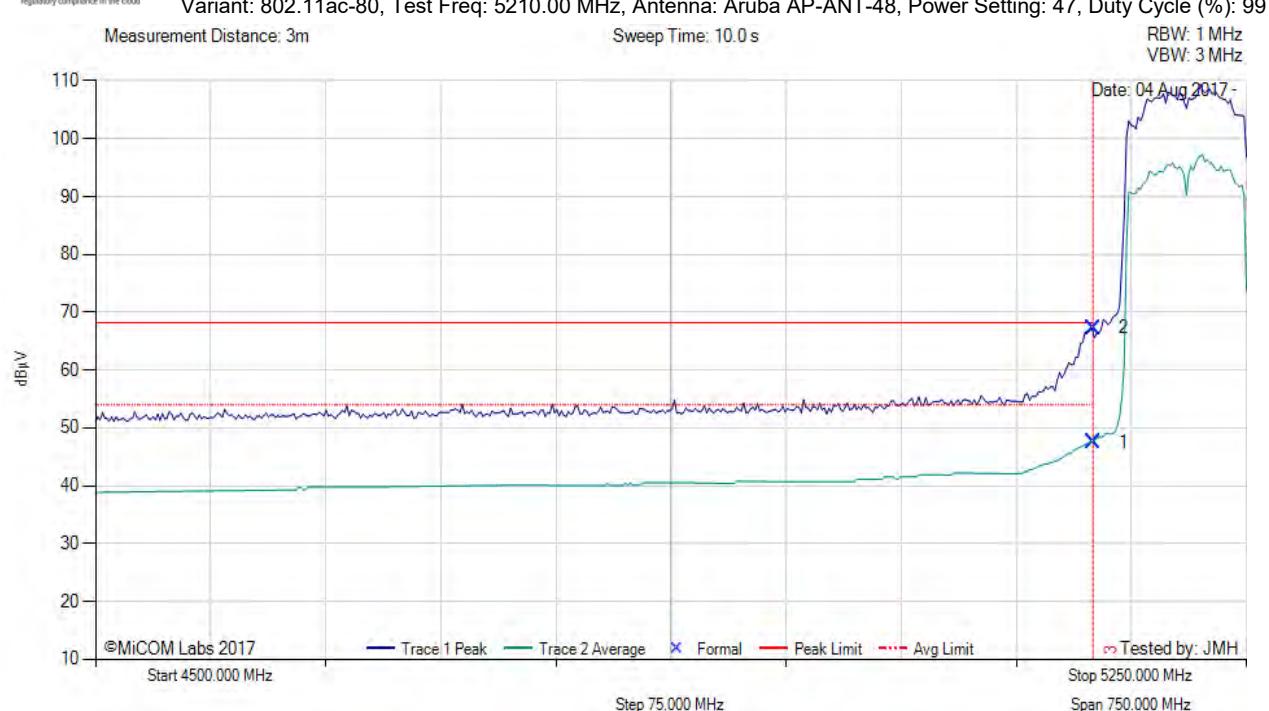
**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 9.74           | 3.67          | 34.11 | 47.52              | Max Avg          | Horizontal | 166    | 359     | 54.0               | -6.5      | Pass       |  |
| 2                     | 5150.00       | 29.51          | 3.67          | 34.11 | 67.29              | Max Peak         | Horizontal | 166    | 359     | 68.2               | -0.9      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

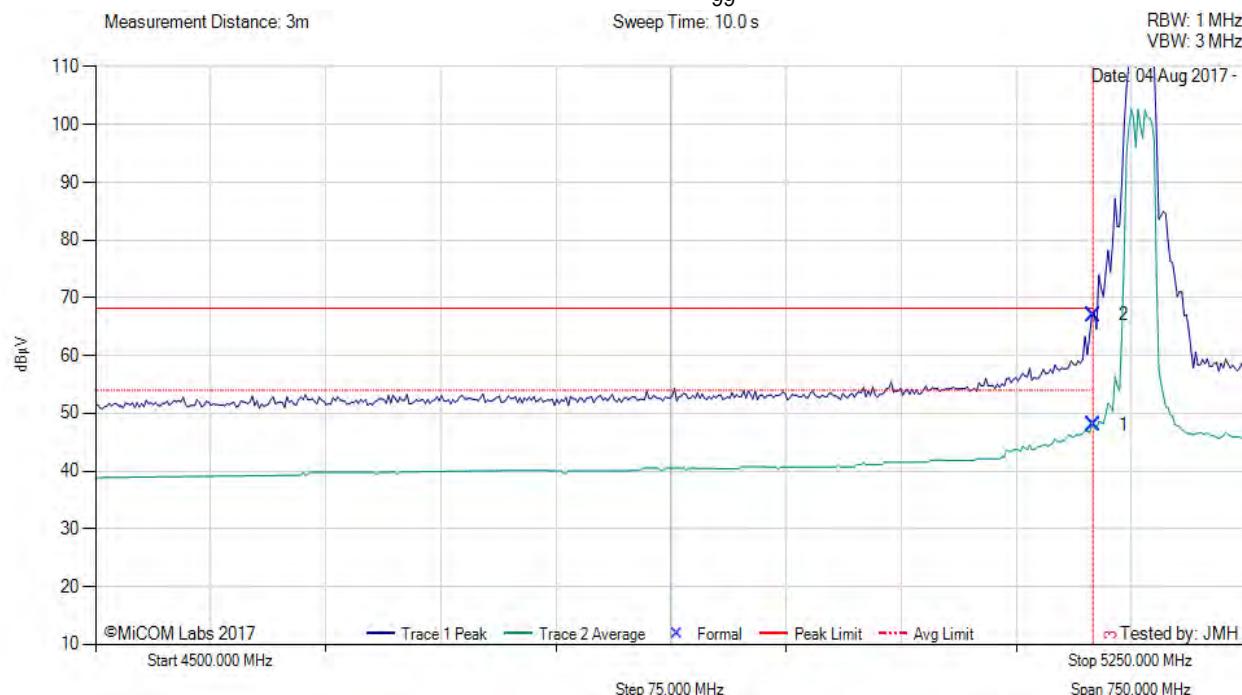
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-20, Test Freq: 5180.00 MHz, Antenna: Aruba AP-ANT-48, Power Setting: 52, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 10.29          | 3.67          | 34.11 | 48.07              | Max Avg          | Horizontal | 166    | 359     | 54.0               | -5.9      | Pass       |  |
| 2                     | 5150.00       | 29.29          | 3.67          | 34.11 | 67.07              | Max Peak         | Horizontal | 166    | 359     | 68.2               | -1.1      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

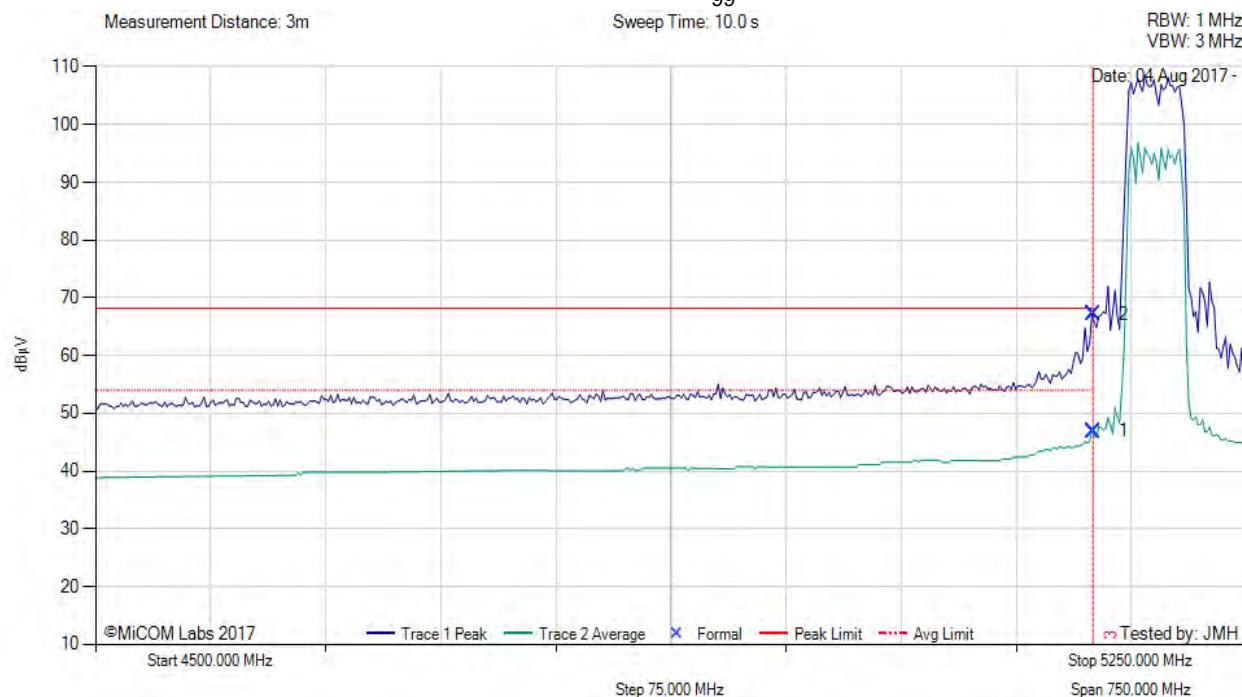
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-40, Test Freq: 5190.00 MHz, Antenna: Aruba AP-ANT-48, Power Setting: 41, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5150.00       | 9.15           | 3.67          | 34.11 | 46.93              | Max Avg          | Horizontal | 166    | 359     | 54.0               | -7.1      | Pass       |  |
| 2                     | 5150.00       | 29.45          | 3.67          | 34.11 | 67.23              | Max Peak         | Horizontal | 166    | 359     | 68.2               | -1.0      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS

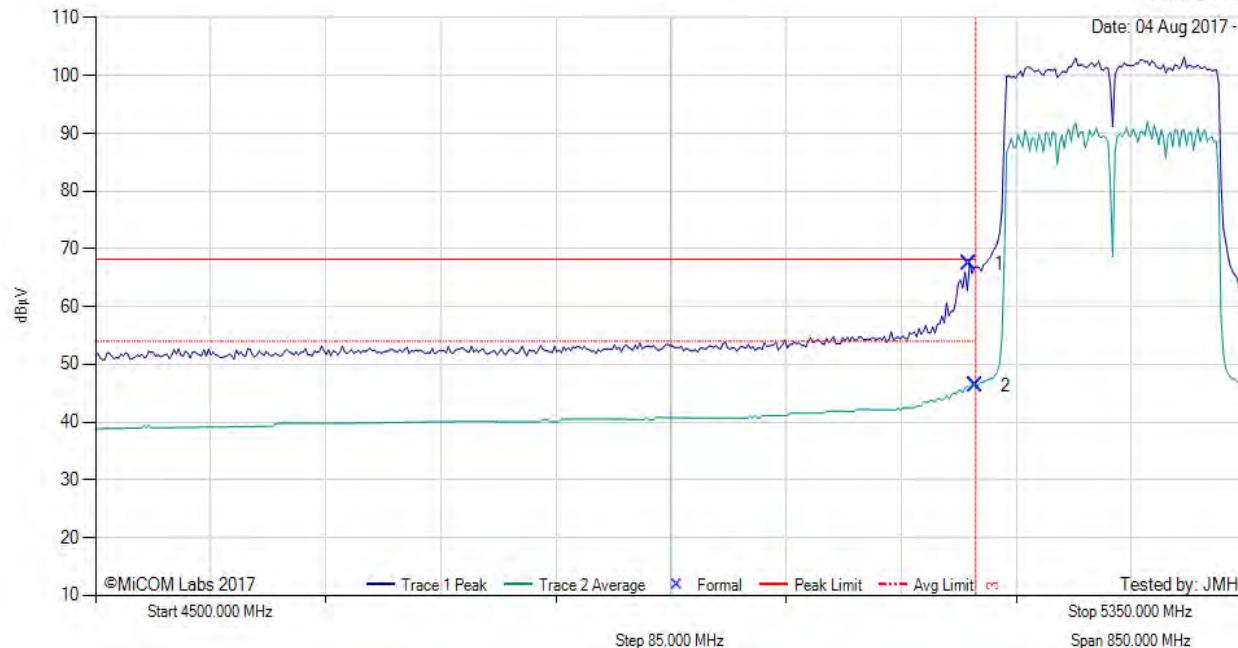


Variant: 802.11ac-80+80, Test Freq: 5210.00 + 5290.00 MHz, Antenna: Aruba AP-ANT-48, Power Setting: 12 d, Duty Cycle (%): 99

Measurement Distance: 3m

Sweep Time: 10.0 s

RBW: 1 MHz  
VBW: 3 MHz



| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5145.29       | 29.68          | 3.69          | 34.11 | 67.48              | Max Peak         | Horizontal | 169    | 359     | 68.2               | -0.7      | Pass       |  |
| 2                     | 5150.00       | 8.53           | 3.67          | 34.11 | 46.31              | Max Avg          | Horizontal | 169    | 359     | 54.0               | -7.7      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80 mode.

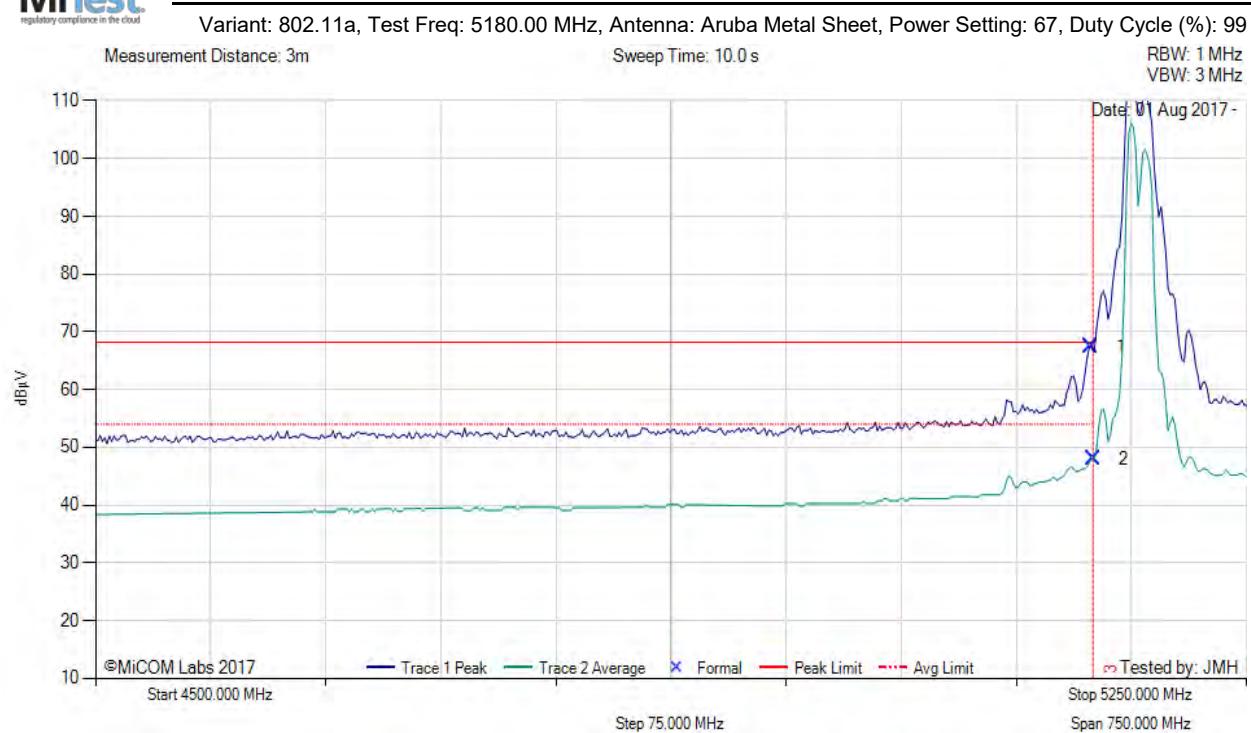
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

Antenna: Metal Sheet



RESTRICTED LOWER BAND-EDGE EMISSIONS

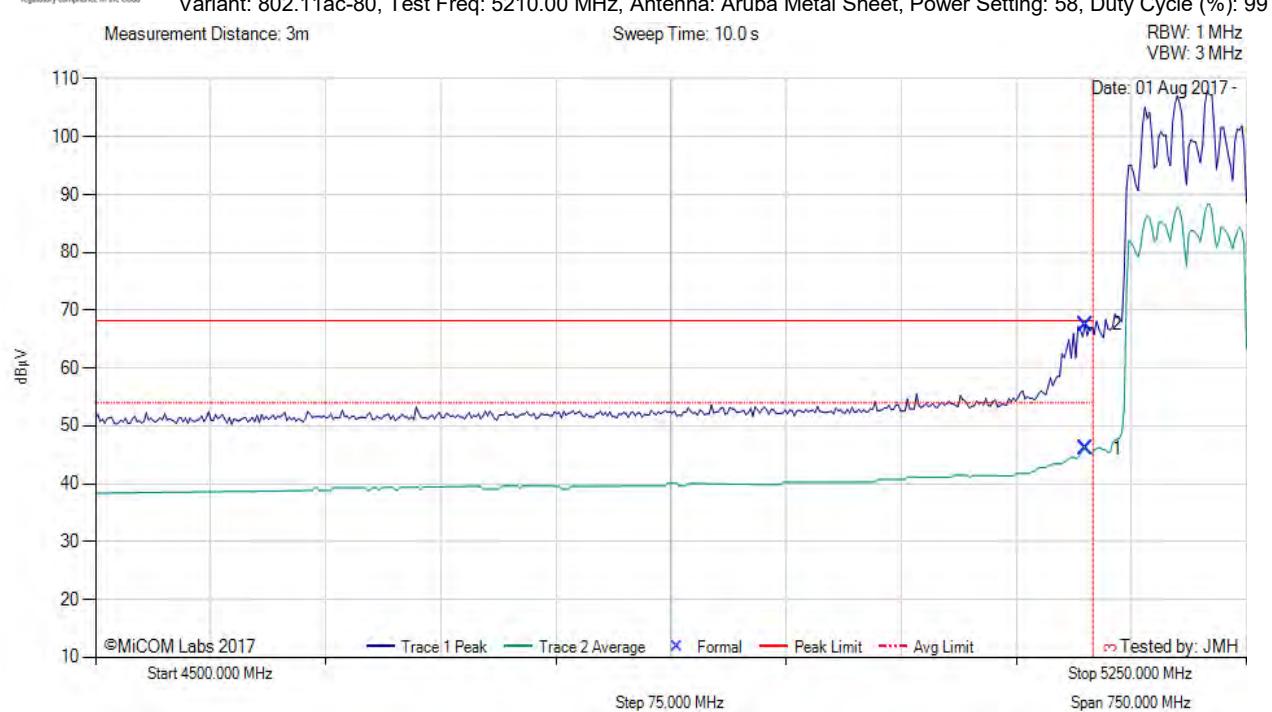


| 4500.00 - 5250.00 MHz |               |          |               |       |              |                  |            |        |         |              |           |            |  |
|-----------------------|---------------|----------|---------------|-------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dBµV | Cable Loss dB | AF dB | Level dBµV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBµV/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.50       | 29.69    | 3.68          | 34.11 | 67.48        | Max Peak         | Horizontal | 136    | 307     | 68.2         | -0.7      | Pass       |  |
| 2                     | 5150.00       | 10.29    | 3.67          | 34.11 | 48.07        | Max Avg          | Horizontal | 136    | 307     | 54.0         | -5.9      | Pass       |  |
| 3                     | 5150.00       | --       | --            | --    | --           | RBE              | --         | --     | --      | --           | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 a mode.

[back to matrix](#)

RESTRICTED LOWER BAND-EDGE EMISSIONS



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5145.49       | 8.28           | 3.69          | 34.11 | 46.08              | Max Avg          | Horizontal | 136    | 307     | 54.0               | -7.9      | Pass       |  |
| 2                     | 5145.49       | 29.69          | 3.69          | 34.11 | 67.49              | Max Peak         | Horizontal | 136    | 307     | 68.2               | -0.7      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42 ac 80 mode.

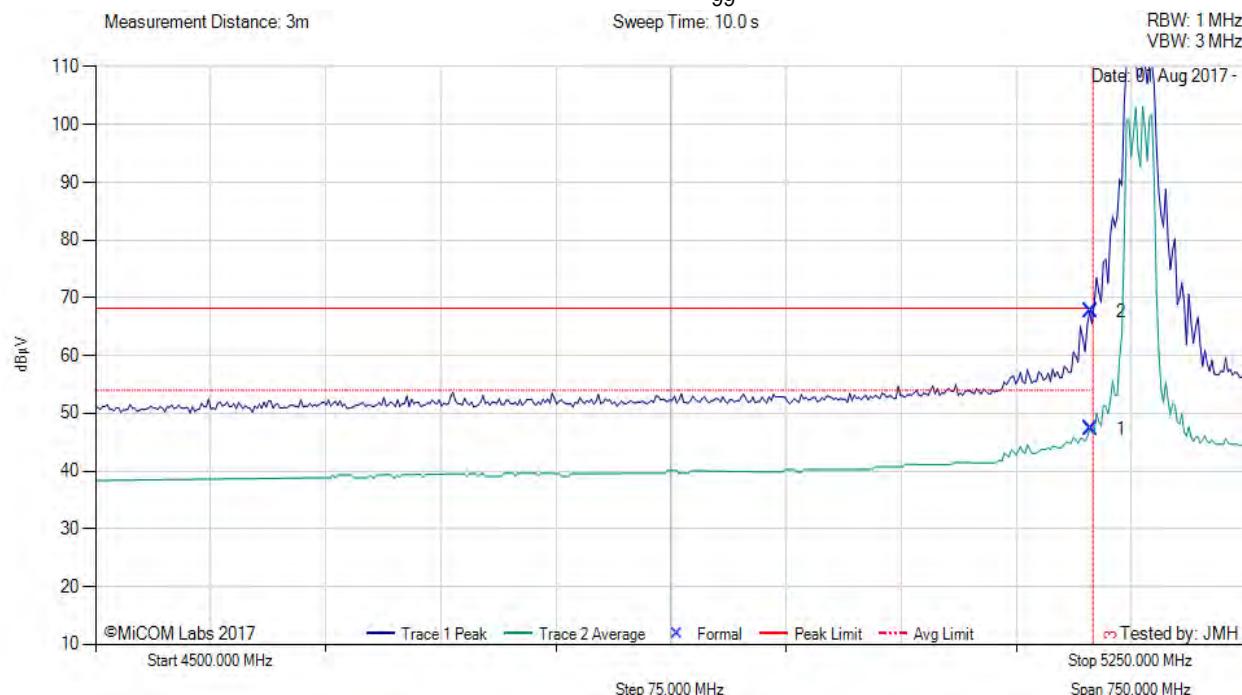
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-20, Test Freq: 5180.00 MHz, Antenna: Aruba Metal Sheet, Power Setting: 62, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.50       | 9.54           | 3.68          | 34.11 | 47.33              | Max Avg          | Horizontal | 136    | 307     | 54.0               | -6.7      | Pass       |  |
| 2                     | 5148.50       | 29.82          | 3.68          | 34.11 | 67.61              | Max Peak         | Horizontal | 136    | 307     | 68.2               | -0.6      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH36 nHT20 mode.

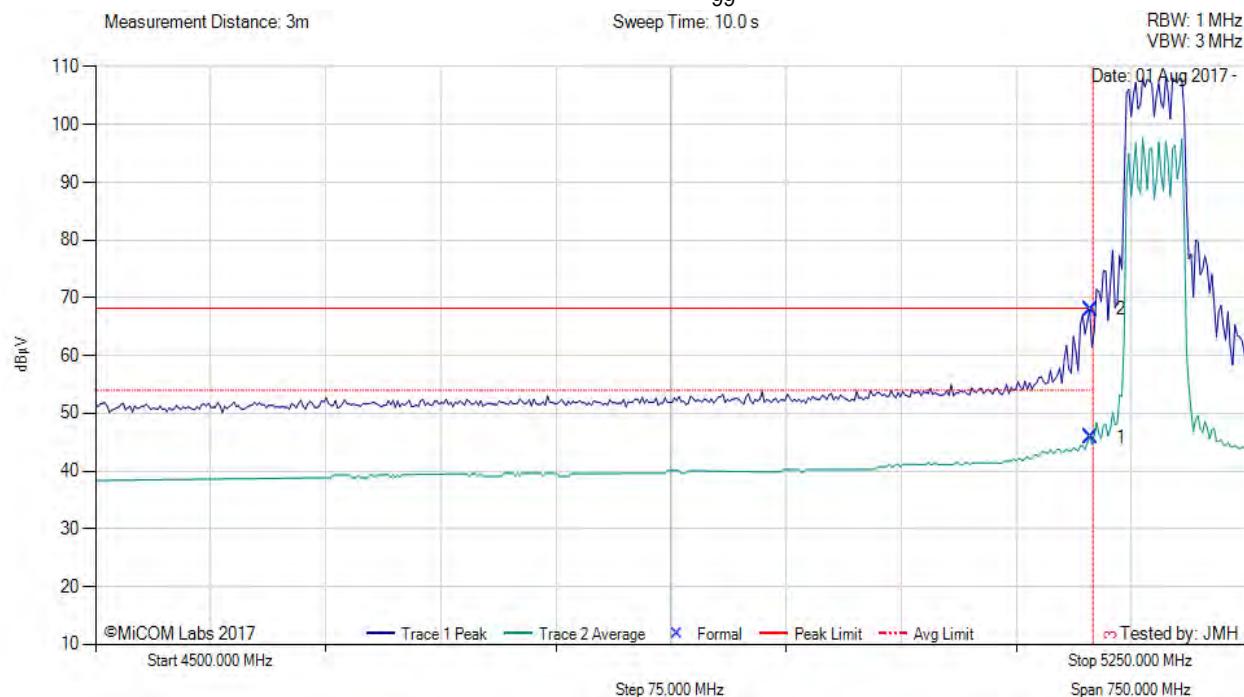
[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS



Variant: 802.11n HT-40, Test Freq: 5190.00 MHz, Antenna: Aruba Metal Sheet, Power Setting: 52, Duty Cycle (%): 99



| 4500.00 - 5250.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.50       | 8.07           | 3.68          | 34.11 | 45.86              | Max Avg          | Horizontal | 136    | 307     | 54.0               | -8.1      | Pass       |  |
| 2                     | 5148.50       | 30.20          | 3.68          | 34.11 | 67.99              | Max Peak         | Horizontal | 136    | 307     | 68.2               | -0.2      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH38 nHT40 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

RESTRICTED LOWER BAND-EDGE EMISSIONS

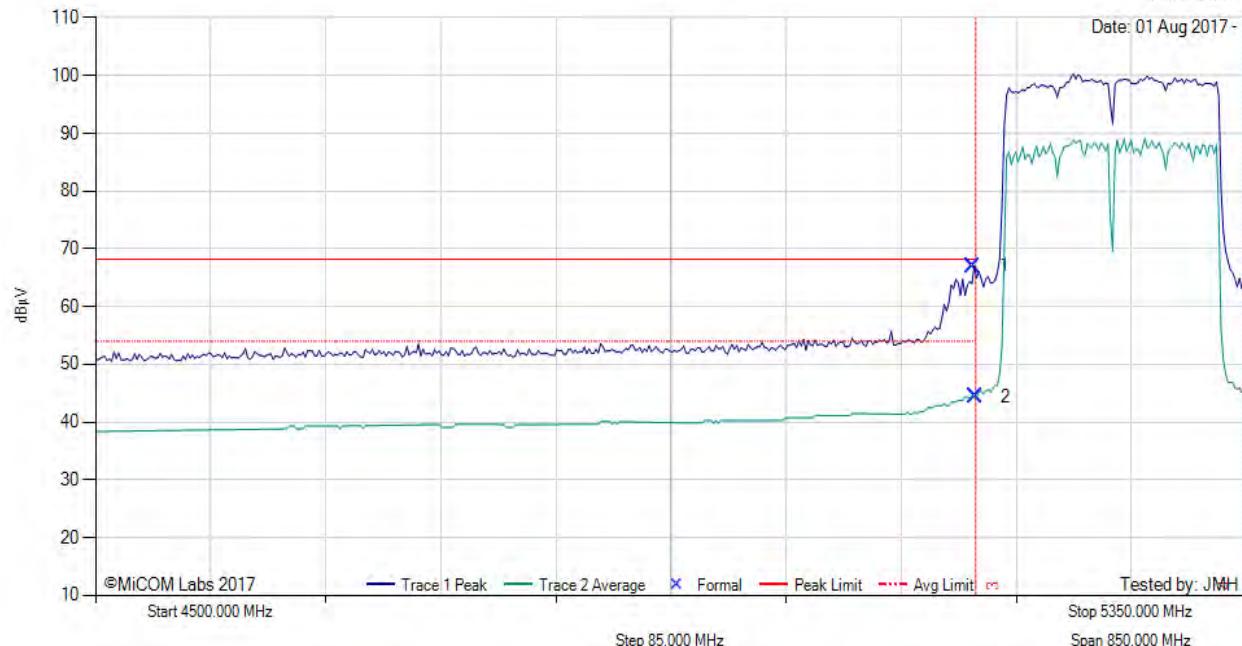


Variant: 802.11ac-80+80, Test Freq: 5210.00 + 5290.00 MHz, Antenna: Aruba Metal Sheet, Power Setting: 13 d, Duty Cycle (%): 99

Measurement Distance: 3m

Sweep Time: 10.0 s

RBW: 1 MHz  
VBW: 3 MHz



| 4500.00 - 5350.00 MHz |               |                |               |       |                    |                  |            |        |         |                    |           |            |  |
|-----------------------|---------------|----------------|---------------|-------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|--|
| Num                   | Frequency MHz | Raw dB $\mu$ V | Cable Loss dB | AF dB | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |  |
| 1                     | 5148.30       | 29.22          | 3.68          | 34.11 | 67.01              | Max Peak         | Horizontal | 101    | 309     | 68.2               | -1.2      | Pass       |  |
| 2                     | 5150.00       | 6.59           | 3.67          | 34.11 | 44.37              | Max Avg          | Horizontal | 101    | 309     | 54.0               | -9.6      | Pass       |  |
| 3                     | 5150.00       | --             | --            | --    | --                 | RBE              | --         | --     | --      | --                 | --        | --         |  |
| 4                     | 5350.00       | --             | --            | --    | --                 | Band-Edge        | --         | --     | --      | --                 | --        | --         |  |

**Test Notes:** EUT powered by AC/DC PS. Connected to laptop outside chamber via telnet software. Annotation: 5GL, 5GH Mode 2 Radio 1 CH42-58 ac 80+80 mode.

[back to matrix](#)

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



575 Boulder Court  
Pleasanton, California 94566, USA  
Tel: +1 (925) 462 0304  
Fax: +1 (925) 462 0306  
[www.micomlabs.com](http://www.micomlabs.com)