

Company: Aruba Networks, Inc.

Test of: APIN0214, APIN0215  
To: FCC CFR 47 Part 15 Subpart E 15.407

Report No.: ARUB206-U12 Rev A

**CONDUCTED, RADIATED TEST REPORT**



# CONDUCTED, RADIATED TEST REPORT

FROM



Test of: Aruba Networks, Inc. APIN0214, APIN0215

to

To: FCC CFR 47 Part 15 Subpart E 15.407

Test Report Serial No.: ARUB206-U12 Rev A

This report supersedes: NONE

Applicant: Aruba Networks, Inc.  
1344 Crossman Ave.  
Sunnyvale, California 94089  
USA

Product Function: Wireless Access Point

Issue Date: 30<sup>th</sup> April 2016

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

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MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

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## **1. ACCREDITATION, LISTINGS & RECOGNITION**

### **1.1. Testing Accreditation**

MiCOM Labs, Inc. is an accredited Electrical testing laboratory per the international standard ISO/IEC 17025:2005. The company is accredited by the American Association for Laboratory Accreditation (A2LA) [www.a2la.org](http://www.a2la.org) test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; <http://www.a2la.org/scopepdf/2381-01.pdf>



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**Title:** Aruba Networks APIN0214, APIN0215  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** ARUB206-U12 Rev A  
**Issue Date:** 30<sup>th</sup> April 2016  
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## 1.2. Recognition

MiCOM Labs, Inc has widely recognized wireless testing capabilities. Our international recognition includes Conformity Assessment Body designation by APEC MRA countries. MiCOM Labs test reports are accepted globally.

Country	Recognition Body	Status	Phase	Identification No.
USA	Federal Communications Commission (FCC)	TCB	-	US0159 Listing #: 102167
Canada	Industry Canada (IC)	FCB	APEC MRA 2	US0159 Listing #: 4143A-2 4143A-3
Japan	MIC (Ministry of Internal Affairs and Communication)	CAB	APEC MRA 2	RCB 210
	VCCI	--	--	A-0012
Europe	European Commission	NB	EU MRA	NB 2280
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)	CAB	APEC MRA 1	
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)	CAB	APEC MRA 1	
Singapore	Infocomm Development Authority (IDA)	CAB	APEC MRA 1	
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)	CAB	APEC MRA 1	
Vietnam	Ministry of Communication (MIC)	CAB	APEC MRA 1	

EU MRA – European Union Mutual Recognition Agreement.

NB – Notified Body

APEC MRA – Asia Pacific Economic Community Mutual Recognition Agreement. Recognition agreement under which test lab is accredited to regulatory standards of the APEC member countries.

Phase I - recognition for product testing

Phase II – recognition for both product testing and certification

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### **1.3. Product Certification**

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard ISO/IEC 17065:2012. The company is accredited by the American Association for Laboratory Accreditation (A2LA) [www.a2la.org](http://www.a2la.org) test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; <http://www.a2la.org/scopepdf/2381-02.pdf>



United States of America – Telecommunication Certification Body (TCB)  
Industry Canada – Certification Body, CAB Identifier – US0159  
Europe – Notified Body (NB), NB Identifier - 2280  
Japan – Recognized Certification Body (RCB), RCB Identifier - 210

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## **2. DOCUMENT HISTORY**

Document History		
Revision	Date	Comments
Draft	30 <sup>th</sup> December 2015	Document updated to take into account FCC new rules; 1).. increased power 5150 – 5250 MHz 2).. introduced 5725 – 5850 MHz into the UNII band 3).. additional channel(s) straddling the 5725 MHz band-edge frequency
Rev A	30 <sup>th</sup> April 2016	New FCC Rules Release
This document was originally under MiCOM Labs tracker ARUB179-U6.		
Rev B	2 <sup>nd</sup> September 2014	Initial Release

In the above table the latest report revision will replace all earlier versions.

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### 3. TEST RESULT CERTIFICATE

**Manufacturer:** Aruba Networks, Inc.  
1344 Crossman Ave.  
Sunnyvale California, 94089  
USA

**Model:** APIN0214, APIN0215  
**Type of Equipment:** Wireless Access Point

**S/N's:** CK0008154

**Test Date(s):** 8<sup>th</sup> December 15 – 7<sup>th</sup> Jan 2016

**Tested By:** MiCOM Labs, Inc.  
575 Boulder Court  
Pleasanton California 94566  
USA

**Telephone:** +1 925 462 0304  
**Fax:** +1 925 462 0306

**Website:** [www.micomlabs.com](http://www.micomlabs.com)

#### STANDARD(S)

FCC CFR 47 Part 15 Subpart E 15.407

#### TEST RESULTS

EQUIPMENT COMPLIES

MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

#### Notes:

1. This document reports conditions under which testing was conducted and the results of testing performed.
2. Details of test methods used have been recorded and kept on file by the laboratory.
3. Test results apply only to the item(s) tested.

#### Approved & Released for MiCOM Labs, Inc. by:

Graeme Grieve  
Quality Manager MiCOM Labs, Inc.



Gordon Hurst  
President & CEO MiCOM Labs, Inc.

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## 4. REFERENCES AND MEASUREMENT UNCERTAINTY

### 4.1. Normative References

REF.	PUBLICATION	YEAR	TITLE
I	FCC 47 CFR Part 15.407	2014	Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices
II	KDB 662911	31 <sup>st</sup> Oct 2013	Guidance for measurement of output emission of devices that employ single transmitter with multiple outputs or systems with multiple transmitters operating simultaneously in the same frequency band
III	KDB 905462 D02 v02	April 8, 2016	Test guidance to demonstrate compliance for U-NII devices subject to DFS requirements.
IV	KDB 926956 D01 v1r05	April 8, 2016	U-NII Device Transition Plan
V	KDB 789033 D02 v01r02	April 8, 2016	General UNII Test Procedures New Rules V01
VI	KDB 644545	August 15th 2014	Guidance for IEEE 802.11ac New Rules
VII	A2LA	June 2015	R105 - Requirement's When Making Reference to A2LA Accreditation Status
VIII	ANSI C63.10	2013	American National Standard for Testing Unlicensed Wireless Devices
IX	ANSI C63.4	2009	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
X	CISPR 22	2008	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
XI	ETSI TR 100 028	2001-12	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
XII	FCC 06-96	Jun 3 2006	Memorandum Opinion and Order
XIII	M 3003	Edition 3 Nov. 2012	Expression of Uncertainty and Confidence in Measurements
XIV	FCC 47 CFR Part 2.1033	2014	FCC requirements and rules regarding photographs and test setup diagrams.

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## **4.2. Test and Uncertainty Procedure**

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.

## 5. PRODUCT DETAILS AND TEST CONFIGURATIONS

### 5.1. Technical Details

Details	Description
Purpose:	Test of the Aruba Networks, Inc. APIN0214 and APIN0215 to FCC CFR 47 Part 15 Subpart E 15.407. Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices
Applicant:	Aruba Networks, Inc. 1344 Crossman Ave. Sunnyvale, California, 94089 USA
Manufacturer:	As Applicant
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Test report reference number:	ARUB206-U12
Date EUT received:	4 <sup>th</sup> December 2015
Standard(s) applied:	FCC CFR 47 Part 15 Subpart E 15.407
Dates of test (from - to):	8 <sup>th</sup> December 2015 – 7 <sup>th</sup> January 2016
No of Units Tested:	1
Type of Equipment:	802.11a/b/g/n/ac Wireless Access Point 3x3 Spatial Multiplexing MIMO configuration
Product Family Name:	Wireless Access Point
Model(s):	APIN0214, APIN0215
Location for use:	Indoor
Declared Frequency Range(s):	5150 - 5250; 5250 - 5350; 5470 - 5725; 5725 - 5850 MHz;
Primary function of equipment:	Wireless Access Point for transmitting data and voice.
Secondary function of equipment:	None Provided
Type of Modulation:	Per 802.11 – OFDM
EUT Modes of Operation:	802.11a; 802.11ac-80; 802.11n HT-20; 802.11n HT-40;
Declared Nominal Output Power (Ave):	+28 dBm
Transmit/Receive Operation:	Transceiver - Half Duplex
Rated Input Voltage and Current:	POE (POE adaptor sold with unit) 48Vdc
Operating Temperature Range:	Declared Range 0°C to 40°C
ITU Emission Designator:	802.11a 17M7D1D 802.11n HT-20 17M7D1D 802.11n HT-40 36M4D1D 802.11ac-40 36M9D1D 802.11ac-80 75M9D1D
Equipment Dimensions:	170mm x 170mm x 45mm
Weight:	1.3 lbs
Hardware Rev:	Version P3
Software Rev:	AOS 6.4.1.0

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## **5.2. Scope Of Test Program**

### **Aruba Networks, Inc. APIN0214 & APIN0215**

The scope of the test program was to test the Aruba Networks, Inc. APIN0214 and APIN0215, 802.11a/b/g/n/ac Wireless Access Point 3x3 Spatial Multiplexing MIMO configurations in the frequency ranges 5150 - 5250 MHz; 5250 - 5350 MHz; 5470 - 5725 MHz; 5725 - 5850 MHz; for compliance against the following specification:

#### **FCC CFR 47 Part 15 Subpart E 15.407**

Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices

Compliance was to the FCC new rules for;

- a).. increased power in the 5150 – 5250 MHz band
- b).. introduction of the 5725 – 5850 MHz band into UNII band regulations, and
- c).. add additional channel(s) straddling the 5725 MHz band-edge frequency

#### **Test Suite**

To prove compliance with the FCC's new rules the following tests were completed;

i).. Full Conducted Testing

ii).. Full Radiated Testing on all antenna's (Radiated Spurious Emissions and Radiated Band-Edge)

#### **Model Identification**

APIN0214: External Antenna (Reverse SMA)

APIN0215: Integral

#### **APIN0214 and APIN0215 Operational Modes**

Client did not provide software capability for the following operational modes and claimed these were covered under 802.11n HT-20 and 802.11n HT-40.

- i).. VHT-20
- ii)..VHT-40

**Aruba Networks, Inc. APIN0214**



**Top View**

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**Aruba Networks, Inc. APIN0215**



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### 5.3. Equipment Model(s) and Serial Number(s)

Type	Description	Manufacturer	Model	Serial no.	Delivery Date
EUT	External Antenna (Reverse SMA)	Aruba Networks, Inc	APIN0214	CK0008154	04 <sup>th</sup> December 2015
EUT	Integral Antenna	Aruba Networks, Inc	APIN0215	Test Sample	04 <sup>th</sup> December 2015
Support	Laptop PC	Dell	E5440	None	--

### 5.4. Antenna Details

#### 5.4.1. APIN0214 External Antennas

Type	Manufacturer	Model	Family	Gain (dBi)	BF Gain	Dir BW	X-Pol	Frequency Band (MHz)
External	Aruba Networks	AP-ANT-1B	OMNI	5.8	-	360	-	4900 - 5875
External	Aruba Networks	AP-ANT-13B	OMNI	3.3	-	360	-	4900 - 5900
External	Aruba Networks	AP-ANT16	OMNI	4.7	-	360	-	4900 - 5900
External	Aruba Networks	AP-ANT17	Directional 120 degr.	5.0	-	120	-	4900 - 5875
External	Aruba Networks	AP-ANT18	Directional 60 degr.	7.5	-	60	-	5150 - 5875
External	Aruba Networks	AP-ANT-19	OMNI	6.0	-	360	-	5150 - 5875
External	Aruba Networks	AP-ANT-20	OMNI	2.0	-	360	-	5150 - 5825

BF Gain - Beamforming Gain  
 Dir BW - Directional BeamWidth  
 X-Pol - Cross Polarization

#### Not Tested Antennas

AP-ANT-17 (5.0 dBi) was not tested as part of the compliance program as this antenna had a lower gain than directional gain antenna AP-ANT-18 (7.5 dBi)

#### 5.4.2. APIN0215 Integral Antennas

Type	Manufacturer	Model	Family	Gain (dBi)	BF Gain	Dir BW	X-Pol	Frequency Band (MHz)
Integral	Aruba Networks	Metal Sheet	OMNI	4.5	-	360	-	5150 - 5875

BF Gain - Beamforming Gain  
 Dir BW - Directional BeamWidth  
 X-Pol - Cross Polarization

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## 5.5. Cabling and I/O Ports

Port Type	Max Cable Length	# Of Ports	Screened	Conn Type	Data Type
Ethernet	100m (incl. POE)	1	N	RJ-45	Packet Data
USB	15m	1	Y	USB	Digital
dc Jack		1	N	Jack	

## 5.6. Test Configurations

Results for the following configurations are provided in this report:

Operational Mode(s) (802.11a/b/g/n/ac)	Data Rate with Highest Power MBit/s	Channel Frequency (MHz)		
		Low	Mid	High
<b>5150 - 5250 MHz</b>				
802.11a	6.00	5180.00	5200.00	5240.00
802.11ac-80	29.30	--	5210.00	--
802.11n HT-20	6.50	5180.00	5200.00	5240.00
802.11n HT-40	13.50	5190.00	--	5230.00
<b>5725 - 5850 MHz</b>				
802.11a	6.00	5745.00	5785.00	5825.00
802.11ac-80	29.30	--	5775.00	--
802.11n HT-20	6.50	5745.00	5785.00	5825.00
802.11n HT-40	13.50	5755.00	--	5795.00

## 5.7. Equipment Modifications

The following modifications were required to bring the equipment into compliance:

1. NONE

## 5.8. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:

1. NONE

## 6. TEST SUMMARY

### List of Measurements

Test Header	Result	Data Link
<b>Conducted Test Result</b>		
Peak Transmit Power	Complies	<a href="#">View Data</a>
26 dB & 99% Bandwidth	Complies	<a href="#">View Data</a>
Power Spectral Density	Complies	<a href="#">View Data</a>
<b>Radiated Emissions</b>		
i).. Restricted Band Emissions	Complies	<a href="#">View Data</a>
ii).. Restricted Band-Edge Emissions	Complies	<a href="#">View Data</a>
<b>Digital Emissions</b>		
Digital Emissions (0.03 – 1 GHz)	Not Tested*	-
<b>ac Wireline Emissions</b>		
Powerline Emissions (0.15 – 30 MHz)	Not Tested*	-

\* Tested as part of the original compliance test program, see Section 5.2 Scope of Test Program

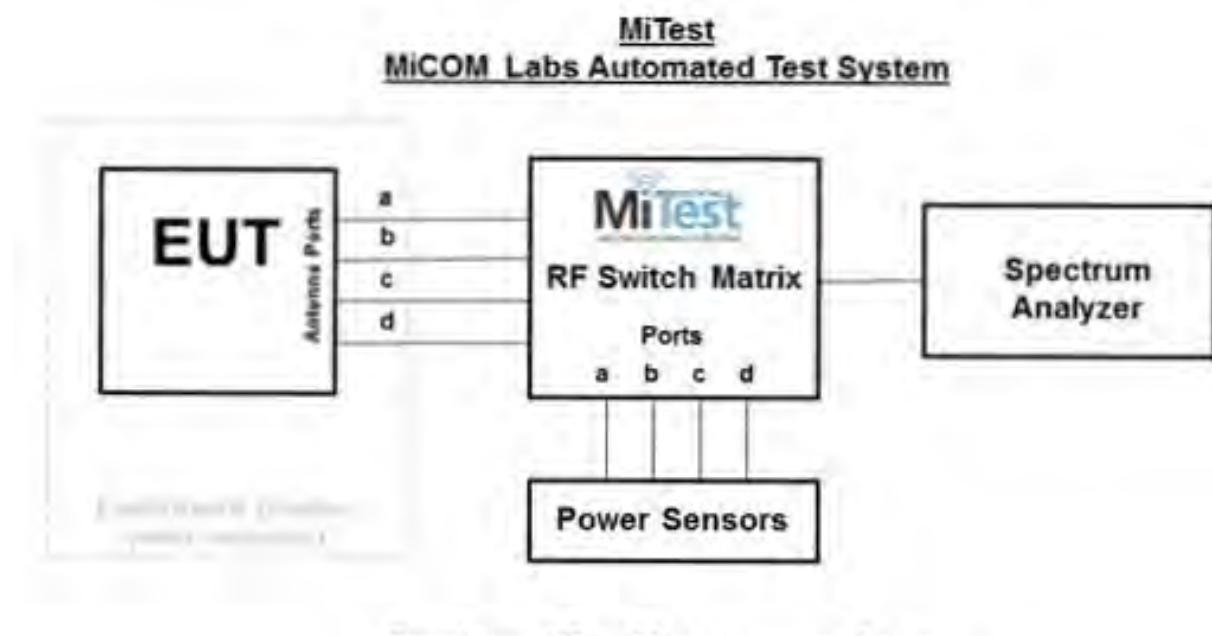
## **7. TEST EQUIPMENT CONFIGURATION(S)**

### **7.1. Conducted**

Conducted RF Emission Test Set-up(s)

The following tests were performed using the conducted test set-up shown in the diagram below.

1. Peak Transmit Power
2. 26 dB & 99% Bandwidth
3. Power Spectral Density



A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.



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Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
127	Power Supply	HP	6674A	US36370530	Cal when used
158	Barometer/Termometer	Control Company	4196	E2846	01 Dec 2016
248	Resistance Thermometer	Thermotronics	GR2105-02	9340 #1	21 Oct 2016
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	27 Aug 2016
376	USB 10MHz - 18GHz Average Power Sensor	Agilent	U2000A	MY51440005	23 Oct 2016
378	Rohde & Schwarz 40 GHz Receiver with Generator	Rhode & Schwarz	ESIB40	100107/040	04 Aug 2016
381	4x4 RF Switch Box	MiCOM Labs	MiTest RF Switch Box	MIC002	18 Jun 2016
419	Laptop with Labview Software	Lenova	W520	TS02	Not Required
420	USB to GPIB Interface	National Instruments	GPIB-USB HS	1346738	Not Required
RF#2 GPIB#1	GPIB cable to Power Supply	HP	GPIB	None	Not Required
RF#2 SMA#1	EUT to Mitest box port 1	Flexco	SMA Cable port1	None	18 Jun 2016
RF#2 SMA#2	EUT to Mitest box port 2	Flexco	SMA Cable port2	None	18 Jun 2016
RF#2 SMA#3	EUT to Mitest box port 3	Flexco	SMA Cable port3	None	18 Jun 2016
RF#2 SMA#4	EUT to Mitest box port 4	Flexco	SMA Cable port4	None	18 Jun 2016
RF#2 SMA#SA	Mitest box to SA	Flexco	SMA Cable SA	None	18 Jun 2016
RF#2 USB#1	USB Cable to Mitest Box	Dynex	USB Cable	None	Not Required

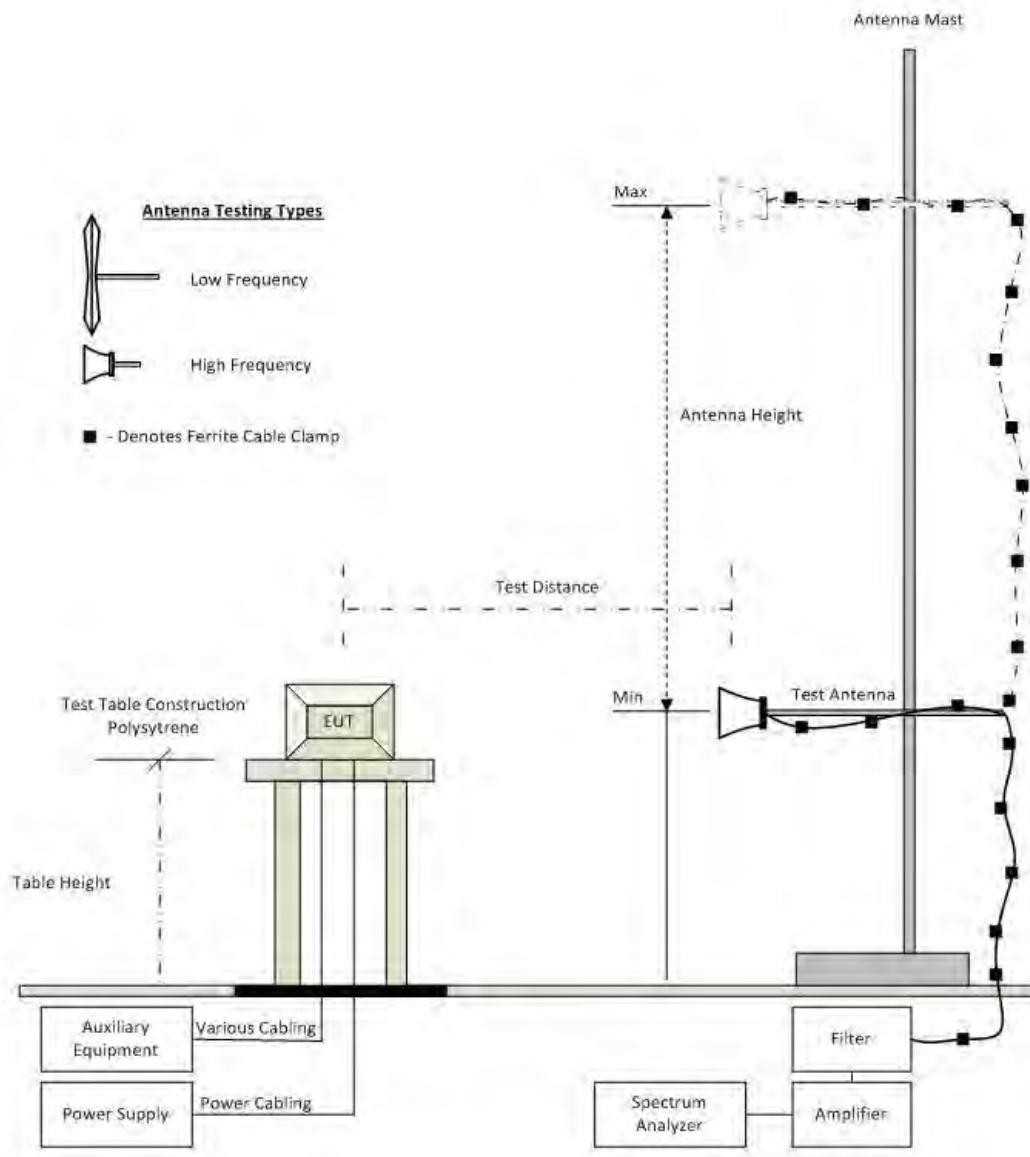
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## 7.2. Radiated Spurious Emission Test Set-up > 1 GHz

The following tests were performed using the radiated test set-up shown in the diagram below.

10.7 Radiated Spurious Emissions (1 – 10 GHz)  
 10.8 Radiated Digital Emissions (0.03 – 1 GHz)

### Radiated Emission Measurement Setup



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Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
158	Barometer/Thermometer	Control Company	4196	E2846	01 Dec 2016
170	Video System Controller for Semi Anechoic Chamber	Panasonic	WV-CY101	04R08507	Not Required
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	27 Aug 2016
338	Sunol 30 to 3000 MHz Antenna	Sunol	JB3	A052907	15 Aug 2016
342	2.4 GHz Notch Filter	EWT	EWT-14-0203	H1	18 Aug 2016
396	2.4 GHz Notch Filter	Microtronics	BRM50701	001	18 Aug 2016
399	ETS 1-18 GHz Horn Antenna	ETS	3117	00154575	10 Oct 2016
406	Amplifier for Radiated Emissions	MiCOM Labs	40dB 1 to 18GHz Amp	0406	28 May 2016
410	Desktop Computer	Dell	Inspiron 620	WS38	Not Required
411	Mast/Turntable Controller	Sunol Sciences	SC98V	060199-1D	Not Required
412	USB to GPIB Interface	National Instruments	GPIB-USB HS	11B8DC2	Not Required
413	Mast Controller	Sunol Science	TWR95-4	030801-3	Not Required
415	Turntable Controller	Sunol Sciences	Turntable Controller	None	Not Required
447	Rad Emissions Test Software	MiCOM	Version 1.0.73	447	Not Required
480	Cable - Bulkhead to Amp	SRC Haverhill	157-157-3050360	480	11 Aug 2016
481	Cable - Bulkhead to Receiver	SRC Haverhill	151-151-3050787	481	11 Aug 2016
482	Cable - Amp to Antenna	SRC Haverhill	157-157-3051574	482	11 Aug 2016

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## 8. 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'.

Test 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 conducted RF testing.



The MiCOM Labs "[MiTest](#)" Automated Test System" (Patent Pending)

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## 9. TEST RESULTS

### 9.1. Peak Transmit Power

Conducted Test Conditions for Maximum Conducted Output Power			
<b>Standard:</b>	FCC CFR 47:15.407	<b>Ambient Temp. (°C):</b>	24.0 - 27.5
<b>Test Heading:</b>	Maximum Conducted Output Power	<b>Rel. Humidity (%):</b>	32 - 45
<b>Standard Section(s):</b>	15.407 (a)	<b>Pressure (mBars):</b>	999 - 1001
<b>Reference Document(s):</b>	See Normative References		

#### Test Procedure for Maximum Conducted Output Power Measurement

Method PM (Measurement using an RF average power meter). KDB 789033 defines a methodology using an average wideband power meter. Measurements were made while the EUT was operating in a continuous transmission mode (100% duty cycle) at the appropriate center frequency. All operational modes and frequency bands were measured independently and the resultant calculated. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported separately. A summation ( $\Sigma$ ) of each antenna port output power is provided which includes any offset due to Duty Cycle Correction Factor (DCCF). Testing was performed under ambient conditions at nominal voltage.

Test configuration and setup used for the measurement was per the Conducted Test Set-up section specified in this document.  
 Supporting Information

Calculated Power =  $A + G + Y + 10 \log(1/x) \text{ dBm}$

$A$  = Total Power  $[10^{\text{a}/10} + 10^{\text{b}/10} + 10^{\text{c}/10} + 10^{\text{d}/10}]$

$G$  = Antenna Gain

$Y$  = Beamforming Gain

$x$  = Duty Cycle (average power measurements only)

#### Limits Maximum Conducted Output Power

##### Operating Frequency Band 5150-5250 MHz

###### 15. 407 (a)(1)

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **Operating Frequency Band 5250-5350 and 5470 – 5725 MHz**

##### **15. 407 (a)(2)**

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **Operating Frequency Band 5725 – 5850 MHz**

##### **15. 407 (a)(3)**

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

#### **Peak Transmit Power Setting**

To maximize Peak Transmit Power the lowest gain antenna was used and reported in the following measurement matrix. The following measurement results have been modified to take into account measurement data from Radiated Spurious Emissions (Section 9.4.1) and Radiated Band-Edge Emissions (Section 9.4.2) for the AP-ANT-20 (2 dBi) antenna.

For the remaining antenna a power setting measurement table is provided in Section 9.4.1 Restricted Band Emissions and 9.4.2 Restricted Band-Edge Emissions for each antenna type, channel frequency and operating mode.



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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	94.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.27 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5180.0	18.31	19.07	17.84	--	23.21	--	30.00	-6.79	18.00
5200.0	22.13	22.91	21.58	--	27.01	--	30.00	-2.99	22.00
5240.0	22.05	22.77	21.33	--	26.86	--	30.00	-3.14	22.00

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	65.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+1.87 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5210.0	18.90	20.08	18.93	--	24.11	--	30.00	-5.89	18.00

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.32 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5180.0	19.86	20.65	19.75	--	24.87	--	30.00	-5.13	20.00
5200.0	21.87	22.77	22.08	--	27.02	--	30.00	-2.98	22.00
5240.0	21.90	22.54	21.66	--	26.82	--	30.00	-3.18	22.00

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	79.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+1.02 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5190.0	17.39	17.99	17.32	--	22.35	--	30.00	-7.65	17.00
5230.0	22.34	22.82	21.99	--	27.17	--	30.00	-2.83	22.00

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	94.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.27 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5745.0	20.47	20.73	20.51	--	25.34	--	30.00	-4.66	20.00
5785.0	22.41	22.36	22.14	--	27.07	--	30.00	-2.93	22.00
5825.0	21.44	21.49	21.10	--	26.12	--	30.00	-3.88	21.00

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	65.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+1.87 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5775.0	22.05	22.67	22.37	--	27.14	--	30.00	-2.86	21.00

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.32 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5745.0	21.27	21.56	21.22	--	26.12	--	30.00	-3.88	21.00
5785.0	21.98	22.36	22.03	--	26.89	--	30.00	-3.11	22.00
5825.0	22.13	22.13	22.18	--	26.91	--	30.00	-3.09	22.00

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	79.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+1.02 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5755.0	22.68	23.09	22.64	--	27.58	--	30.00	-2.42	22.00
5795.0	22.54	22.88	22.59	--	27.45	--	30.00	-2.55	22.00

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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## 9.2. 26 dB & 99% Bandwidth

Conducted Test Conditions for 26 dB and 99% Bandwidth			
<b>Standard:</b>	FCC CFR 47:15.407	<b>Ambient Temp. (°C):</b>	24.0 - 27.5
<b>Test Heading:</b>	26 dB and 99 % Bandwidth	<b>Rel. Humidity (%):</b>	32 - 45
<b>Standard Section(s):</b>	15.407 (a)	<b>Pressure (mBars):</b>	999 - 1001
<b>Reference Document(s):</b>	See Normative References		
<b>Test Procedure for 26 dB and 99% Bandwidth Measurement</b> The bandwidth at 26 dB and 99 % is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The Resolution Bandwidth was set to approximately 1% of the emission bandwidth. Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.  Test configuration and setup used for the measurement was per the Conducted Test Set-up section specified in this document.			



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Equipment Configuration for 26 dB & 99% Occupied Bandwidth

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	94.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5180.0	<a href="#">31.764</a>	<a href="#">31.463</a>	<a href="#">31.663</a>	--	31.764	31.463
5200.0	<a href="#">31.764</a>	<a href="#">30.461</a>	<a href="#">32.665</a>	--	32.665	30.461
5240.0	<a href="#">33.166</a>	<a href="#">30.461</a>	<a href="#">32.665</a>	--	33.166	30.461

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5180.0	<a href="#">17.535</a>	<a href="#">17.134</a>	<a href="#">17.335</a>	--	17.535	17.134
5200.0	<a href="#">17.635</a>	<a href="#">17.234</a>	<a href="#">17.635</a>	--	17.635	17.234
5240.0	<a href="#">18.136</a>	<a href="#">17.435</a>	<a href="#">17.735</a>	--	18.136	17.435

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for 26 dB & 99% Occupied Bandwidth

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	65.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5210.0	<a href="#">150.301</a>	<a href="#">157.515</a>	<a href="#">143.487</a>	--	157.515	143.487
Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5210.0	<a href="#">77.355</a>	<a href="#">77.355</a>	<a href="#">77.756</a>	--	77.756	77.355

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

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#### Equipment Configuration for 26 dB & 99% Occupied Bandwidth

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5180.0	<a href="#">27.655</a>	<a href="#">30.862</a>	<a href="#">28.958</a>	--	30.862	27.655
5200.0	<a href="#">29.760</a>	<a href="#">33.768</a>	<a href="#">30.261</a>	--	33.768	29.760
5240.0	<a href="#">34.469</a>	<a href="#">34.469</a>	<a href="#">33.267</a>	--	34.469	33.267

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5180.0	<a href="#">18.036</a>	<a href="#">18.136</a>	<a href="#">18.136</a>	--	18.136	18.036
5200.0	<a href="#">18.036</a>	<a href="#">18.236</a>	<a href="#">18.236</a>	--	18.236	18.036
5240.0	<a href="#">18.236</a>	<a href="#">18.236</a>	<a href="#">18.337</a>	--	18.337	18.236

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

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**Title:** Aruba Networks APIN0214, APIN0215  
**To:** FCC CFR 47 Part 15 Subpart E 15.407  
**Serial #:** ARUB206-U12 Rev A  
**Issue Date:** 30<sup>th</sup> April 2016  
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Equipment Configuration for 26 dB & 99% Occupied Bandwidth

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	79.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)	
	Port(s)				Highest	Lowest
MHz	a	b	c	d	Highest	Lowest
5190.0	<a href="#">72.745</a>	<a href="#">67.134</a>	<a href="#">70.741</a>	--	72.745	67.134
5230.0	<a href="#">76.553</a>	<a href="#">70.140</a>	<a href="#">71.743</a>	--	76.553	70.140

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)	
	Port(s)				Highest	Lowest
MHz	a	b	c	d	Highest	Lowest
5190.0	<a href="#">37.074</a>	<a href="#">36.874</a>	<a href="#">37.074</a>	--	37.074	36.874
5230.0	<a href="#">38.076</a>	<a href="#">37.074</a>	<a href="#">37.275</a>	--	38.076	37.074

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

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#### Equipment Configuration for 26 dB & 99% Occupied Bandwidth

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	94.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)	
	Port(s)				Highest	Lowest
MHz	a	b	c	d	Highest	Lowest
5745.0	<a href="#">35.271</a>	<a href="#">34.669</a>	<a href="#">37.675</a>	--	37.675	34.669
5785.0	<a href="#">36.673</a>	<a href="#">35.571</a>	<a href="#">37.575</a>	--	37.575	35.571
5825.0	<a href="#">35.872</a>	<a href="#">36.273</a>	<a href="#">35.872</a>	--	36.273	35.872

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)	
	Port(s)				Highest	Lowest
MHz	a	b	c	d	Highest	Lowest
5745.0	<a href="#">20.842</a>	<a href="#">21.343</a>	<a href="#">22.445</a>	--	22.445	20.842
5785.0	<a href="#">21.443</a>	<a href="#">21.944</a>	<a href="#">22.645</a>	--	22.645	21.443
5825.0	<a href="#">20.641</a>	<a href="#">23.347</a>	<a href="#">21.944</a>	--	23.347	20.641

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

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Equipment Configuration for 26 dB & 99% Occupied Bandwidth

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	65.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5775.0	<a href="#">182.766</a>	<a href="#">191.984</a>	<a href="#">183.567</a>	--	191.984	182.766
Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5775.0	<a href="#">84.168</a>	<a href="#">107.816</a>	<a href="#">98.196</a>	--	107.816	84.168

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

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#### Equipment Configuration for 26 dB & 99% Occupied Bandwidth

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5745.0	<a href="#">37.876</a>	<a href="#">41.483</a>	<a href="#">38.677</a>	--	41.483	37.876
5785.0	<a href="#">39.579</a>	<a href="#">42.986</a>	<a href="#">40.982</a>	--	42.986	39.579
5825.0	<a href="#">38.277</a>	<a href="#">44.289</a>	<a href="#">41.283</a>	--	44.289	38.277

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5745.0	<a href="#">18.637</a>	<a href="#">23.747</a>	<a href="#">20.441</a>	--	23.747	18.637
5785.0	<a href="#">19.238</a>	<a href="#">24.549</a>	<a href="#">21.142</a>	--	24.549	19.238
5825.0	<a href="#">19.339</a>	<a href="#">24.148</a>	<a href="#">21.042</a>	--	24.148	19.339

#### Traceability to Industry Recognized Test Methodologies

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Measurement Uncertainty:	±2.81 dB

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**Equipment Configuration for 26 dB & 99% Occupied Bandwidth**

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	79.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)		
	Port(s)				Highest	Lowest	
MHz	a	b	c	d			
5755.0	<a href="#">85.972</a>	<a href="#">92.385</a>	<a href="#">87.575</a>	--	92.385	85.972	
5795.0	<a href="#">84.369</a>	<a href="#">94.589</a>	<a href="#">90.782</a>	--	94.589	84.369	

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)		
	Port(s)				Highest	Lowest	
MHz	a	b	c	d			
5755.0	<a href="#">42.886</a>	<a href="#">48.096</a>	<a href="#">46.092</a>	--	48.096	42.886	
5795.0	<a href="#">42.886</a>	<a href="#">49.499</a>	<a href="#">46.894</a>	--	49.499	42.886	

**Traceability to Industry Recognized Test Methodologies**

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

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### 9.3. Power Spectral Density

Conducted Test Conditions for Power Spectral Density			
<b>Standard:</b>	FCC CFR 47:15.407	<b>Ambient Temp. (°C):</b>	24.0 - 27.5
<b>Test Heading:</b>	Power Spectral Density	<b>Rel. Humidity (%):</b>	32 - 45
<b>Standard Section(s):</b>	15.407 (a)	<b>Pressure (mBars):</b>	999 - 1001
<b>Reference Document(s):</b>	See Normative References		

#### Test Procedure for Power Spectral Density

The in-band power spectral density was measured using the test technique specified in KDB 789033. A 1 MHz measurement bandwidth was implemented for the analyzer sweep. Once the sweep is complete the analyzer trace data is downloaded and used for post processing purposes.

Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured separately. The Peak Power Spectral Density is the highest level found across the emission bandwidth. With multiple antenna port measurements the numerical analyzer data from each port is summed (à) and a link to this additional graphic is provided.

Test configuration and setup used for the measurement was per the Conducted Test Set-up section specified in this document.

Measure and sum the spectra across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The individual spectra are then summed mathematically in linear power units. Unlike in-band power measurements, in which the sum involves a single measured value (output power) from each output, measurements for compliance with PSD limits involve summing entire spectra across corresponding frequency bins on the various outputs. Consistency is maintained for any device with multiple transmitter outputs to be certain the individual outputs are all aligned with the same span and same number of points. In this instance, the linear power spectrum value within the first spectral bin of output 0 is summed with that in the first spectral bin of output 1, and the first spectral bin of output 2, and so on up to the Nth output to obtain the true value for the first frequency bin of the summed spectrum. The summed spectrum value for each frequency bin is computed in this fashion. These summed spectral values were post processed and the resulting numerical and graphical data presented.

NOTE: It may be observed that spectrum in some plots break the limit line however this in itself does NOT constitute a failure. In all cases a spectrum summation plot is provided in order to prove compliance. A failure occurs only after the summation of all spectrum plots have been summed and are found to be greater than the limit line.

#### Supporting Information

Calculated Power =  $A + 10 \log (1/x)$  dBm

$A = \text{Total Power Spectral Density} [10^{\text{a}/10} + 10^{\text{b}/10} + 10^{\text{c}/10} + 10^{\text{d}/10}]$

$x = \text{Duty Cycle}$

#### Limits Power Spectral Density

##### Operating Frequency Band 5150-5250 MHz

###### 15. 407 (a)(1)

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **Operating Frequency Band 5250-5350 and 5470 – 5725 MHz**

##### 15. 407 (a)(2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **Operating Frequency Band 5725 – 5850 MHz**

##### 15. 407 (a)(3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.



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#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	94.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.27 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5180.0	11.105	12.068	10.751	--	16.119	17.0	-0.9
5200.0	11.258	12.048	10.766	--	15.907	17.0	-1.1
5240.0	10.630	11.908	10.247	--	15.829	17.0	-1.1

#### Traceability to Industry Recognized Test Methodologies

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Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	65.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+1.87 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5210.0	<a href="#">1.660</a>	<a href="#">2.820</a>	<a href="#">2.843</a>	--	<a href="#">7.313</a>	17.0	-9.7

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.32 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5180.0	10.436	11.131	9.949	--	14.601	17.0	-2.4
5200.0	9.579	10.443	10.125	--	14.800	17.0	-2.2
5240.0	10.106	10.399	9.534	--	14.610	17.0	-2.4

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	79.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+1.02 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5190.0	5.229	6.272	6.620	--	11.152	17.0	-5.8
5230.0	6.342	6.544	6.282	--	11.432	17.0	-5.5

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
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DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	94.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.27 dB)	Limit	Margin
	Port(s) (dBm/500 KHz)						
MHz	a	b	c	d	dBm/500 KHz	dBm/500 KHz	dB
5745.0	<a href="#">8.566</a>	<a href="#">8.284</a>	<a href="#">8.515</a>	--	<a href="#">13.139</a>	30.0	-16.8
5785.0	<a href="#">8.203</a>	<a href="#">8.091</a>	<a href="#">8.046</a>	--	<a href="#">12.647</a>	30.0	-17.3
5825.0	<a href="#">8.059</a>	<a href="#">8.414</a>	<a href="#">7.964</a>	--	<a href="#">12.644</a>	30.0	-17.3

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	65.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+1.87 dB)	Limit	Margin
	Port(s) (dBm/500 KHz)						
MHz	a	b	c	d	dBm/500 KHz	dBm/500 KHz	dB
5775.0	<a href="#">-2.732</a>	<a href="#">-0.468</a>	<a href="#">-1.456</a>	--	<a href="#">4.617</a>	30.0	-25.4

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

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#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.32 dB)	Limit	Margin
	Port(s) (dBm/500 KHz)						
MHz	a	b	c	d	dBm/500 KHz	dBm/500 KHz	dB
5745.0	7.275	8.155	7.848	--	12.301	30.0	-17.7
5785.0	6.859	7.680	7.061	--	11.764	30.0	-18.2
5825.0	6.613	7.534	7.464	--	11.816	30.0	-18.2

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

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#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	79.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	2.00
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	Not Applicable
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+1.02 dB)	Limit	Margin
	Port(s) (dBm/500 KHz)						
MHz	a	b	c	d	dBm/500 KHz	dBm/500 KHz	dB
5755.0	<a href="#">3.157</a>	<a href="#">4.254</a>	<a href="#">3.660</a>	--	<a href="#">8.496</a>	30.0	-21.5
5795.0	<a href="#">2.292</a>	<a href="#">3.304</a>	<a href="#">3.376</a>	--	<a href="#">8.171</a>	30.0	-21.8

#### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

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## 9.4. Radiated Spurious 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 and waveguide 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

### 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.

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

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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 or Waveguide 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:

Level (dBmV/m) = 20 \* Log (level (mV/m))

40 dBmV/m = 100 mV/m

48 dBmV/m = 250 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
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

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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).



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#### **9.4.1. Restricted Band Emissions**

##### **9.4.1.1 Antenna AP-ANT-1B**

###### **Equipment Configuration for Radiated Spurious - Restricted Band Emissions**

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<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>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	18	<b>Tested By:</b>	JMH

###### **Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5186.17	73.49	3.68	-11.49	65.68	Fundamental	Vertical	151	1	--	--	
#2	6906.67	57.40	4.11	-7.54	53.97	Peak (NRB)	Vertical	148	1	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<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>	
<b>Channel Frequency (MHz):</b>	5200.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5195.63	79.72	3.67	-11.47	71.92	Fundamental	Vertical	200	1	--	--	
#2	6933.30	57.75	4.11	-7.49	54.37	Peak (NRB)	Vertical	148	1	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<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>	
<b>Channel Frequency (MHz):</b>	5240.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5236.91	82.28	3.63	-11.37	74.54	Fundamental	Vertical	151	1	--	--	
#2	6986.60	53.92	4.13	-7.45	50.60	Peak (NRB)	Vertical	151	1	--	--	Pass

NRB: Non-Restricted Band Emissions

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<b>Equipment Configuration for Radiated Spurious - Restricted Band Emissions</b>			
<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

**Antenna:**	Aruba Networks AP-ANT-1B	**Variant:**	802.11a
**Antenna Gain (dBi):**	Not Applicable	**Modulation:**	OFDM
**Beam Forming Gain (Y):**	Not Applicable	**Duty Cycle (%):**	
**Channel Frequency (MHz):**	5745.00	**Data Rate:**	6.00 MBit/s
**Power Setting:**	22	**Tested By:**	JMH

<b>Test Measurement Results</b>												
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5751.30	66.75	3.84	-10.63	59.96	Fundamental	Vertical	200	1	--	--	
#2	6218.95	62.05	3.92	-8.78	57.19	Peak (NRB)	Vertical	198	1	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions	
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<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5785.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results
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Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5790.62	73.13	3.79	-10.41	66.51	Fundamental	Vertical	200	1	--	--	
#2	6261.84	58.74	3.93	-8.54	54.13	Peak (NRB)	Vertical	198	1	--	--	Pass
#3	6270.98	61.69	3.92	-8.51	57.10	Peak (NRB)	Vertical	198	1	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5820.56	74.15	3.83	-10.26	67.72	Fundamental	Vertical	151	1	--	--	
#2	6067.09	57.87	3.88	-9.61	52.14	Peak (NRB)	Vertical	151	0	--	--	Pass
#3	6308.98	61.47	3.92	-8.38	57.01	Peak (NRB)	Vertical	151	0	--	--	Pass

NRB: Non-Restricted Band Emissions

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#### 9.4.1.2 Antenna AP-ANT-13B

##### Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	3.30	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

##### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5178.67	73.57	3.69	-11.51	65.75	Fundamental	Horizontal	151	1	--	--	
#2	6906.58	53.97	4.11	-7.54	50.54	Peak (NRB)	Vertical	151	14	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	3.30	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5200.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5198.68	78.74	3.66	-11.47	70.93	Fundamental	Horizontal	101	1	--	--	
#2	6933.35	55.17	4.11	-7.49	51.79	Peak (NRB)	Vertical	153	0	--	--	Pass
#3	10402.05	49.87	5.42	-5.02	50.27	Peak (NRB)	Horizontal	153	0	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	3.30	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5240.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	4802.36	46.77	3.51	-11.12	39.16	Max Avg	Horizontal	159	21	54.0	-14.8	Pass
#2	4802.36	58.26	3.51	-11.12	50.65	Max Peak	Horizontal	159	21	74.0	-23.4	Pass
#3	5239.00	84.39	3.63	-11.37	76.65	Fundamental	Horizontal	151	40	--	--	
#4	6986.64	52.11	4.13	-7.45	48.79	Peak (NRB)	Horizontal	151	16	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5749.30	61.48	3.85	-10.63	54.70	Fundamental	Horizontal	151	50	--	--	
#2	6216.43	60.63	3.91	-8.80	55.74	Peak (NRB)	Vertical	151	0	--	--	Pass
#3	11489.54	41.55	5.45	-4.84	42.16	Max Avg	Horizontal	107	321	54.0	-11.8	Pass
#4	11489.54	55.31	5.45	-4.84	55.92	Max Peak	Horizontal	107	321	74.0	-18.1	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5785.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5792.15	64.91	3.78	-10.40	58.29	Fundamental	Horizontal	151	1	--	--	
#2	6270.98	57.22	3.92	-8.51	52.63	Peak (NRB)	Horizontal	151	1	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5818.04	67.05	3.82	-10.28	60.59	Fundamental	Horizontal	101	1	--	--	
#2	6304.57	58.49	3.94	-8.40	54.03	Peak (NRB)	Vertical	200	1	--	--	Pass
#3	11650.18	39.87	5.44	-4.47	40.84	Max Avg	Horizontal	198	47	54.0	-13.2	Pass
#4	11650.18	53.18	5.44	-4.47	54.15	Max Peak	Horizontal	198	47	74.0	-19.9	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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#### 9.4.1.3 Antenna AP-ANT-16

##### Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	4.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

##### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5184.25	75.52	3.68	-11.49	67.71	Fundamental	Horizontal	153	360	--	--	
#2	6906.59	52.12	4.11	-7.54	48.69	Peak (NRB)	Horizontal	146	360	--	--	Pass

NRB: Non-Restricted Band Emissions

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#### Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	4.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5200.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

#### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5196.27	73.03	3.67	-11.47	65.23	Fundamental	Horizontal	100	1	--	--	
#2	6933.32	52.81	4.11	-7.49	49.43	Peak (NRB)	Vertical	151	0	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	4.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5240.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5236.83	75.60	3.63	-11.37	67.86	Fundamental	Horizontal	101	0	--	--	
#2	6986.57	52.83	4.13	-7.45	49.51	Peak (NRB)	Horizontal	142	125	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5752.34	60.61	3.84	-10.62	53.83	Fundamental	Horizontal	151	59	--	--	
#2	6222.40	57.53	3.92	-8.76	52.69	Peak (NRB)	Horizontal	151	59	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5785.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5787.70	68.24	3.79	-10.43	61.60	Fundamental	Horizontal	101	13	--	--	
#2	6269.58	58.94	3.93	-8.51	54.36	Peak (NRB)	Horizontal	101	13	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5820.00	63.74	3.83	-10.26	57.31	Fundamental	Horizontal	200	1	--	--	
#2	6305.85	58.53	3.93	-8.39	54.07	Peak (NRB)	Horizontal	200	36	--	--	Pass

NRB: Non-Restricted Band Emissions

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#### 9.4.1.4 Antenna AP-ANT-18

##### Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	7.50	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

##### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5187.13	72.08	3.68	-11.49	64.27	Fundamental	Vertical	151	0	--	--	
#2	6906.67	55.12	4.11	-7.54	51.69	Peak (NRB)	Vertical	151	0	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	7.50	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5200.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5197.39	77.70	3.66	-11.47	69.89	Fundamental	Vertical	151	0	--	--	
#2	6933.33	53.54	4.11	-7.49	50.16	Peak (NRB)	Horizontal	151	60	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	7.50	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5240.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5232.59	78.63	3.63	-11.39	70.87	Fundamental	Vertical	200	1	--	--	
#2	6986.56	55.38	4.13	-7.45	52.06	Peak (NRB)	Vertical	200	0	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5737.91	62.56	3.82	-10.67	55.71	Fundamental	Vertical	100	19	--	--	
#2	6217.27	56.90	3.91	-8.80	52.01	Peak (NRB)	Vertical	151	9	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5785.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5786.25	70.30	3.79	-10.44	63.65	Fundamental	Vertical	151	1	--	--	
#2	6267.05	60.50	3.93	-8.52	55.91	Peak (NRB)	Vertical	151	1	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5820.80	68.77	3.83	-10.26	62.34	Fundamental	Vertical	151	1	--	--	
#2	6068.66	56.89	3.88	-9.60	51.17	Peak (NRB)	Horizontal	148	1	--	--	Pass
#3	6306.57	63.96	3.93	-8.39	59.50	Peak (NRB)	Vertical	148	1	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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#### 9.4.1.5 Antenna AP-ANT-19

##### Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks 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>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

##### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	4755.55	48.05	3.56	-11.12	40.49	Max Avg	Vertical	187	333	54.0	-13.5	Pass
#2	4755.55	59.06	3.56	-11.12	51.50	Max Peak	Vertical	187	333	74.0	-22.5	Pass
#3	5187.45	81.87	3.68	-11.49	74.06	Fundamental	Vertical	150	1	--	--	
#4	6906.66	55.22	4.11	-7.54	51.79	Peak (NRB)	Vertical	150	360	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks 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>	
<b>Channel Frequency (MHz):</b>	5200.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	4763.45	50.02	3.58	-11.11	42.49	Max Avg	Vertical	167	333	54.0	-11.5	Pass
#2	4763.45	61.32	3.58	-11.11	53.79	Max Peak	Vertical	167	333	74.0	-20.2	Pass
#3	5198.12	85.50	3.66	-11.47	77.69	Fundamental	Vertical	151	1	--	--	
#4	6933.32	52.67	4.11	-7.49	49.29	Peak (NRB)	Vertical	151	35	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks 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>	
<b>Channel Frequency (MHz):</b>	5240.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	4802.02	49.16	3.51	-11.12	41.55	Max Avg	Vertical	164	13	54.0	-12.5	Pass
#2	4802.02	60.22	3.51	-11.12	52.61	Max Peak	Vertical	164	13	74.0	-21.4	Pass
#3	5238.68	79.60	3.63	-11.37	71.86	Fundamental	Vertical	104	0	--	--	
#4	6986.63	55.62	4.13	-7.45	52.30	Peak (NRB)	Vertical	151	336	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5752.42	73.40	3.84	-10.62	66.62	Fundamental	Vertical	120	0	--	--	
#2	6223.44	63.57	3.92	-8.76	58.73	Peak (NRB)	Vertical	151	0	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5785.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5783.13	72.94	3.80	-10.46	66.28	Fundamental	Vertical	151	0	--	--	
#2	6274.27	62.40	3.92	-8.50	57.82	Peak (NRB)	Vertical	151	0	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5822.49	73.74	3.83	-10.26	67.31	Fundamental	Vertical	101	1	--	--	
#2	6067.41	59.87	3.88	-9.61	54.14	Peak (NRB)	Vertical	151	60	--	--	Pass
#3	6294.63	51.33	3.95	-8.44	46.84	Peak (NRB)	Vertical	151	11	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

NRB: Non-Restricted Band Emissions

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#### 9.4.1.6 Antenna AP-ANT-20

##### Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<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>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

##### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5187.53	79.52	3.68	-11.49	71.71	Fundamental	Vertical	200	0	--	--	
#2	6906.57	55.81	4.11	-7.54	52.38	Peak (NRB)	Vertical	200	0	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<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>	
<b>Channel Frequency (MHz):</b>	5200.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	4764.93	48.04	3.59	-11.11	40.52	Max Avg	Vertical	172	41	54.0	-13.5	Pass
#2	4764.93	59.67	3.59	-11.11	52.15	Max Peak	Vertical	172	41	74.0	-21.9	Pass
#3	5197.39	82.85	3.66	-11.47	75.04	Fundamental	Vertical	200	1	--	--	
#4	6933.28	59.22	4.11	-7.49	55.84	Peak (NRB)	Vertical	200	360	--	--	Pass

NRB: Non-Restricted Band Emissions

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<b>Equipment Configuration for Radiated Spurious - Restricted Band Emissions</b>			
<b>Antenna:</b>	Aruba Networks AP-ANT-20	<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>	
<b>Channel Frequency (MHz):</b>	5240.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

**Antenna:**	Aruba Networks AP-ANT-20	**Variant:**	802.11a
**Antenna Gain (dBi):**	2.00	**Modulation:**	OFDM
**Beam Forming Gain (Y):**	Not Applicable	**Duty Cycle (%):**	
**Channel Frequency (MHz):**	5240.00	**Data Rate:**	6.00 MBit/s
**Power Setting:**	22	**Tested By:**	JMH

<b>Test Measurement Results</b>
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Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5236.91	77.25	3.63	-11.37	69.51	Fundamental	Vertical	101	1	--	--	
#2	6986.60	53.47	4.13	-7.45	50.15	Peak (NRB)	Vertical	101	1	--	--	Pass

NRB: Non-Restricted Band Emissions

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<b>Equipment Configuration for Radiated Spurious - Restricted Band Emissions</b>			
<b>Antenna:</b>	Aruba Networks AP-ANT-20	<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>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5752.50	68.54	3.84	-10.61	61.77	Fundamental	Vertical	151	0	--	--	
#2	6219.59	58.99	3.92	-8.78	54.13	Peak (NRB)	Vertical	151	0	--	--	Pass

NRB: Non-Restricted Band Emissions

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<b>Equipment Configuration for Radiated Spurious - Restricted Band Emissions</b>			
<b>Antenna:</b>	Aruba Networks AP-ANT-20	<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>	
<b>Channel Frequency (MHz):</b>	5785.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5791.98	73.99	3.78	-10.40	67.37	Fundamental	Vertical	151	1	--	--	
#2	6273.88	59.13	3.92	-8.50	54.55	Peak (NRB)	Vertical	151	1	--	--	Pass

NRB: Non-Restricted Band Emissions

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<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>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5821.85	74.71	3.83	-10.26	68.28	Fundamental	Vertical	151	0	--	--	
#2	6063.52	58.68	3.89	-9.62	52.95	Peak (NRB)	Vertical	151	0	--	--	Pass
#3	6307.54	62.21	3.92	-8.39	57.74	Peak (NRB)	Vertical	151	0	--	--	Pass
#4	11640.64	37.78	5.48	-4.48	38.78	Max Avg	Vertical	161	95	54.0	-15.2	Pass
#5	11640.64	51.45	5.48	-4.48	52.45	Max Peak	Vertical	161	95	74.0	-21.6	Pass

NRB: Non-Restricted Band Emissions

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#### 9.4.1.7 Integral (APIN0215) Antenna

##### Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<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>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

##### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	4745.85	49.20	3.55	-11.12	41.63	Max Avg	Horizontal	151	72	54.0	-12.4	Pass
#2	4745.85	60.76	3.55	-11.12	53.19	Max Peak	Horizontal	151	72	74.0	-20.8	Pass
#3	4755.87	50.61	3.56	-11.12	43.05	Max Avg	Horizontal	159	81	54.0	-11.0	Pass
#4	4755.87	61.75	3.56	-11.12	54.19	Max Peak	Horizontal	159	81	74.0	-19.8	Pass
#5	5184.49	78.65	3.68	-11.49	70.84	Fundamental	Horizontal	151	1	--	--	
#6	6906.66	58.70	4.11	-7.54	55.27	Peak (NRB)	Horizontal	151	80	--	--	Pass
#7	10358.20	53.70	5.55	-5.28	53.97	Peak (NRB)	Horizontal	151	80	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<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>	
<b>Channel Frequency (MHz):</b>	5200.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	4759.79	51.74	3.57	-11.11	44.20	Max Avg	Horizontal	177	60	54.0	-9.8	Pass
#2	4759.79	62.58	3.57	-11.11	55.04	Max Peak	Horizontal	177	60	74.0	-19.0	Pass
#3	4765.13	51.78	3.59	-11.11	44.26	Max Avg	Horizontal	128	86	54.0	-9.7	Pass
#4	4765.13	62.29	3.59	-11.11	54.77	Max Peak	Horizontal	128	86	74.0	-19.2	Pass
#5	5194.27	85.52	3.67	-11.47	77.72	Fundamental	Horizontal	151	51	--	--	
#6	6933.27	55.58	4.11	-7.49	52.20	Peak (NRB)	Horizontal	151	51	--	--	Pass
#7	10403.01	51.17	5.42	-5.02	51.57	Peak (NRB)	Horizontal	151	51	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<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>	
<b>Channel Frequency (MHz):</b>	5240.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	4797.47	50.46	3.53	-11.11	42.88	Max Avg	Horizontal	107	60	54.0	-11.1	Pass
#2	4797.47	61.05	3.53	-11.11	53.47	Max Peak	Horizontal	107	60	74.0	-20.5	Pass
#3	5240.92	72.10	3.63	-11.36	64.37	Fundamental	Horizontal	101	360	--	--	
#4	6986.49	56.44	4.13	-7.45	53.12	Peak (NRB)	Horizontal	101	308	--	--	Pass
#5	10482.08	51.00	5.41	-4.44	51.97	Peak (NRB)	Horizontal	101	0	--	--	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5749.06	64.80	3.85	-10.63	58.02	Fundamental	Horizontal	151	32	--	--	
#2	6223.28	56.56	3.92	-8.76	51.72	Peak (NRB)	Horizontal	151	32	--	--	Pass
#3	11489.54	44.48	5.45	-4.84	45.09	Max Avg	Horizontal	154	190	54.0	-8.9	Pass
#4	11489.54	56.83	5.45	-4.84	57.44	Max Peak	Horizontal	154	190	74.0	-16.6	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5785.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5789.38	70.13	3.79	-10.42	63.50	Fundamental	Horizontal	151	1	--	--	
#2	6263.20	58.89	3.93	-8.54	54.28	Peak (NRB)	Horizontal	151	46	--	--	Pass
#3	6273.42	61.75	3.92	-8.50	57.17	Peak (NRB)	Horizontal	151	46	--	--	Pass
#4	11569.26	44.09	5.48	-4.65	44.92	Max Avg	Horizontal	144	190	54.0	-9.1	Pass
#5	11569.26	57.91	5.48	-4.65	58.74	Max Peak	Horizontal	144	190	74.0	-15.3	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5819.52	68.02	3.83	-10.26	61.59	Fundamental	Horizontal	151	1	--	--	
#2	6067.69	59.43	3.88	-9.61	53.70	Peak (NRB)	Horizontal	151	80	--	--	Pass
#3	6297.19	57.82	3.96	-8.43	53.35	Peak (NRB)	Horizontal	151	353	--	--	Pass
#4	11649.50	45.40	5.44	-4.47	46.37	Max Avg	Horizontal	147	190	54.0	-7.6	Pass
#5	11649.50	58.11	5.44	-4.47	59.08	Max Peak	Horizontal	147	190	74.0	-14.9	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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#### **9.4.2. Restricted Band-Edge Emissions**

##### **9.4.2.1 Antenna AP-ANT-1B**

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

Aruba Networks AP-ANT-1B		Band-Edge Freq	Peak (Limit 74.0dB $\mu$ V/m)	Average (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	69.98	51.96	18.00
802.11ac-80	5210.00	5150.00	72.80	48.64	17.50
802.11n HT-20	5180.00	5150.00	67.14	47.08	18.00
802.11n HT-40	5190.00	5150.00	73.78	47.67	17.00

Aruba Networks AP-ANT-1B		Band-Edge Freq	Peak (Limit 68.2dB $\mu$ V/m)	Average (Limit 78.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5745.00	5725.00	67.78	76.30	21.00
802.11ac-80	5775.00	5725.00	65.49	66.86	21.00
802.11n HT-20	5745.00	5725.00	64.12	72.57	22.00
802.11n HT-40	5755.00	5725.00	66.54	69.02	21.00

Aruba Networks AP-ANT-1B		Band-Edge Freq	Peak (Limit 78.2dB $\mu$ V/m)	Average (Limit 68.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5825.00	5850.00	73.30	66.16	21.00
802.11ac-80	5775.00	5725.00	67.50	67.42	22.00
802.11n HT-20	5825.00	5850.00	66.78	62.17	22.00
802.11n HT-40	5795.00	5850.00	62.66	61.68	22.00

Click on the links to view the data.



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

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<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>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	18	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	14.18	3.67	34.11	51.96	Max Avg	Vertical	148	-2	54.0	-2.0	Pass
#2	5150.00	32.20	3.67	34.11	69.98	Max Peak	Vertical	148	-2	74.0	-4.0	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE EUT on 150cm table.

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

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	5.80	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5210.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	17.5	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5143.49	34.98	3.70	34.12	72.80	Max Peak	Vertical	148	-2	74.0	-1.2	Pass
#2	5147.39	10.85	3.68	34.11	48.64	Max Avg	Vertical	148	-2	54.0	-5.4	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE EUT on 150cm table.

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

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	5.80	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5147.39	34.06	3.68	34.11	71.85	Max Peak	Vertical	148	-2	74.0	-2.2	Pass
#2	5150.00	14.82	3.67	34.11	52.60	Max Avg	Vertical	148	-2	54.0	-1.4	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE.

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

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	5.80	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5190.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	17	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	36.00	3.67	34.11	73.78	Max Peak	Vertical	148	-2	74.0	-0.2	Pass
#2	5150.00	9.89	3.67	34.11	47.67	Max Avg	Vertical	148	-2	54.0	-6.3	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE EUT on 150cm table.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5712.29	29.61	3.83	34.34	67.78	Marker	Vertical	175	358	68.2	-0.5	Pass
#2	5722.88	38.15	3.80	34.35	76.30	Marker	Vertical	175	358	78.2	-1.9	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5713.02	27.33	3.82	34.34	65.49	Marker	Vertical	175	358	68.2	-2.7	Pass
#2	5719.95	28.71	3.80	34.35	66.86	Marker	Vertical	175	358	78.2	-11.4	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	25.97	3.81	34.34	64.12	Marker	Vertical	175	358	68.2	-4.1	Pass
#2	5725.00	34.43	3.79	34.35	72.57	Marker	Vertical	175	358	78.2	-5.7	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5755.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	28.39	3.81	34.34	66.54	Marker	Vertical	175	358	68.2	-1.7	Pass
#2	5725.00	30.88	3.79	34.35	69.02	Marker	Vertical	175	358	78.2	-9.2	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5850.25	34.86	3.81	34.63	73.30	Marker	Vertical	145	358	78.2	-4.9	Pass
#3	5860.37	27.65	3.86	34.65	66.16	Marker	Vertical	145	358	68.2	-2.1	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	29.06	3.81	34.63	67.50	Marker	Vertical	145	358	78.2	-10.7	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5861.00	28.90	3.86	34.66	67.42	Marker	Vertical	145	358	68.2	-0.8	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	28.34	3.81	34.63	66.78	Marker	Vertical	145	358	78.2	-11.5	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	23.66	3.86	34.65	62.17	Marker	Vertical	145	358	68.2	-6.1	Pass

Test Notes: TTest notes

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-1B	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5795.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.25	24.22	3.81	34.63	62.66	Marker	Vertical	145	358	78.2	-15.6	Pass
#3	5860.00	23.17	3.86	34.65	61.68	Marker	Vertical	145	358	68.2	-6.6	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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### 9.4.2.2 Antenna AP-ANT-13B

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

Aruba Networks AP-ANT-13B		Band-Edge Freq	Peak (Limit 74.0dB $\mu$ V/m)	Average (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	70.94	51.99	19.00
802.11ac-80	5210.00	5150.00	73.83	48.41	17.50
802.11n HT-20	5180.00	5150.00	69.91	52.22	20.00
802.11n HT-40	5190.00	5150.00	73.91	48.24	17.50

Aruba Networks AP-ANT-13B		Band-Edge Freq	Peak (Limit 68.2dB $\mu$ V/m)	Average (Limit 78.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5745.00	5725.00	66.37	73.92	21.00
802.11ac-80	5775.00	5725.00	65.69	66.48	21.00
802.11n HT-20	5745.00	5725.00	65.28	72.57	22.00
802.11n HT-40	5755.00	5725.00	67.41	69.05	21.00

Aruba Networks AP-ANT-13B		Band-Edge Freq	Peak (Limit 78.2dB $\mu$ V/m)	Average (Limit 68.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5825.00	5850.00	71.78	66.33	22.00
802.11ac-80	5775.00	5725.00	68.70	67.67	22.00
802.11n HT-20	5825.00	5850.00	66.43	61.07	22.00
802.11n HT-40	5795.00	5850.00	64.24	62.41	22.00

Click on the links to view the data.



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Equipment Configuration for Restricted Lower Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	3.30	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	19	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	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	14.21	3.67	34.11	51.99	Max Avg	Vertical	182	340	54.0	-2.0	Pass
#2	5150.00	33.16	3.67	34.11	70.94	Max Peak	Vertical	182	340	74.0	-3.1	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	3.30	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5210.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	17.5	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5144.79	10.61	3.69	34.11	48.41	Max Avg	Vertical	182	340	54.0	-5.6	Pass
#2	5144.79	36.03	3.69	34.11	73.83	Max Peak	Vertical	182	340	74.0	-0.2	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for Restricted Lower Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	3.30	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	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	14.44	3.67	34.11	52.22	Max Avg	Vertical	182	340	54.0	-1.8	Pass
#2	5150.00	32.13	3.67	34.11	69.91	Max Peak	Vertical	182	340	74.0	-4.1	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	3.30	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5190.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	17.5	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5146.09	36.11	3.69	34.11	73.91	Max Peak	Vertical	182	340	74.0	-0.1	Pass
#2	5150.00	10.46	3.67	34.11	48.24	Max Avg	Vertical	182	340	54.0	-5.8	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5712.82	28.21	3.82	34.34	66.37	Marker	Vertical	187	5	68.2	-1.9	Pass
#2	5721.85	35.77	3.80	34.35	73.92	Marker	Vertical	187	5	78.2	-4.3	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	27.54	3.81	34.34	65.69	Marker	Vertical	187	5	68.2	-2.5	Pass
#2	5720.15	28.33	3.80	34.35	66.48	Marker	Vertical	187	5	78.2	-11.8	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	27.13	3.81	34.34	65.28	Marker	Vertical	187	5	68.2	-3.0	Pass
#2	5725.00	34.43	3.79	34.35	72.57	Marker	Vertical	187	5	78.2	-5.7	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5755.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	29.26	3.81	34.34	67.41	Marker	Vertical	187	5	68.2	-0.8	Pass
#2	5725.00	30.91	3.79	34.35	69.05	Marker	Vertical	187	5	78.2	-9.2	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5850.63	33.34	3.81	34.63	71.78	Marker	Vertical	186	346	78.2	-6.5	Pass
#3	5860.42	27.82	3.86	34.65	66.33	Marker	Vertical	186	346	68.2	-1.9	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	30.26	3.81	34.63	68.70	Marker	Vertical	186	346	78.2	-9.5	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	29.16	3.86	34.65	67.67	Marker	Vertical	186	346	68.2	-0.6	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	27.99	3.81	34.63	66.43	Marker	Vertical	186	346	78.2	-11.8	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	22.56	3.86	34.65	61.07	Marker	Vertical	186	346	68.2	-7.2	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-13B	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5795.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.47	25.80	3.81	34.63	64.24	Marker	Vertical	186	346	78.2	-14.0	Pass
#3	5860.42	23.90	3.86	34.65	62.41	Marker	Vertical	186	346	68.2	-5.8	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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### 9.4.2.3 Antenna AP-ANT-16

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

Aruba Networks AP-ANT-16		Band-Edge Freq	Peak (Limit 74.0dB $\mu$ V/m)	Average (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	72.49	52.73	20.00
802.11ac-80	5210.00	5150.00	71.54	49.33	19.00
802.11n HT-20	5180.00	5150.00	72.74	50.06	21.00
802.11n HT-40	5190.00	5150.00	72.25	49.14	19.00

Aruba Networks AP-ANT-16		Band-Edge Freq	Peak (Limit 68.2dB $\mu$ V/m)	Average (Limit 78.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5745.00	5725.00	67.08	76.23	22.00
802.11ac-80	5775.00	5725.00	66.19	67.88	22.00
802.11n HT-20	5745.00	5725.00	59.39	68.38	22.00
802.11n HT-40	5755.00	5725.00	65.70	69.81	22.00

Aruba Networks AP-ANT-16		Band-Edge Freq	Peak (Limit 78.2dB $\mu$ V/m)	Average (Limit 68.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5825.00	5850.00	73.95	67.81	22.00
802.11ac-80	5775.00	5725.00	67.06	65.95	22.00
802.11n HT-20	5825.00	5850.00	69.93	64.60	22.00
802.11n HT-40	5795.00	5850.00	62.45	60.02	22.00

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

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	4.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

#### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5147.39	34.70	3.68	34.11	72.49	Max Peak	Horizontal	154	20	74.0	-1.5	Pass
#2	5148.70	14.95	3.67	34.11	52.73	Max Avg	Horizontal	154	20	54.0	-1.3	Pass

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

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	4.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5210.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	19	<b>Tested By:</b>	JMH

#### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5147.39	33.75	3.68	34.11	71.54	Max Peak	Horizontal	154	20	74.0	-2.5	Pass
#2	5148.70	11.55	3.67	34.11	49.33	Max Avg	Horizontal	154	20	54.0	-4.7	Pass

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

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	4.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

#### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	34.96	3.67	34.11	72.74	Max Peak	Horizontal	154	20	74.0	-1.3	Pass
#2	5150.00	12.28	3.67	34.11	50.06	Max Avg	Horizontal	154	20	54.0	-3.9	Pass

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

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	4.70	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5190.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	19	<b>Tested By:</b>	JMH

#### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	34.47	3.67	34.11	72.25	Max Peak	Horizontal	154	20	74.0	-1.8	Pass
#2	5150.00	11.36	3.67	34.11	49.14	Max Avg	Horizontal	154	20	54.0	-4.9	Pass

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5714.94	28.93	3.81	34.34	67.08	Marker	Horizontal	128	71	68.2	-1.2	Pass
#2	5725.00	38.09	3.79	34.35	76.23	Marker	Horizontal	128	71	78.2	-2.0	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	28.04	3.81	34.34	66.19	Marker	Horizontal	156	8	68.2	-2.0	Pass
#2	5723.80	29.74	3.79	34.35	67.88	Marker	Horizontal	156	8	78.2	-10.4	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	21.24	3.81	34.34	59.39	Marker	Horizontal	128	71	68.2	-8.8	Pass
#2	5725.00	30.24	3.79	34.35	68.38	Marker	Horizontal	128	71	78.2	-9.9	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5755.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	27.55	3.81	34.34	65.70	Marker	Horizontal	128	71	68.2	-2.5	Pass
#2	5725.00	31.67	3.79	34.35	69.81	Marker	Horizontal	128	71	78.2	-8.4	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.10	35.51	3.81	34.63	73.95	Marker	Horizontal	177	52	78.2	-4.3	Pass
#3	5861.12	29.29	3.86	34.66	67.81	Marker	Horizontal	177	52	68.2	-0.4	Pass

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.10	28.62	3.81	34.63	67.06	Marker	Horizontal	177	52	78.2	-11.2	Pass
#3	5861.12	27.43	3.86	34.66	65.95	Marker	Horizontal	177	52	68.2	-2.3	Pass

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5850.10	31.49	3.81	34.63	69.93	Marker	Horizontal	177	52	78.2	-8.3	Pass
#3	5860.12	26.09	3.86	34.65	64.60	Marker	Horizontal	177	52	68.2	-3.6	Pass

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-16	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5795.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.35	24.01	3.81	34.63	62.45	Marker	Horizontal	177	52	78.2	-15.8	Pass
#3	5861.12	21.50	3.86	34.66	60.02	Marker	Horizontal	177	52	68.2	-8.2	Pass

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#### 9.4.2.4 Antenna AP-ANT-18

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

Aruba Networks AP-ANT-18		Band-Edge Freq	Peak (Limit 74.0dB $\mu$ V/m)	Average (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	73.73	51.65	19.00
802.11ac-80	5210.00	5150.00	73.39	53.72	18.00
802.11n HT-20	5180.00	5150.00	70.88	52.43	19.00
802.11n HT-40	5190.00	5150.00	73.41	53.05	18.00

Aruba Networks AP-ANT-18		Band-Edge Freq	Peak (Limit 68.2dB $\mu$ V/m)	Average (Limit 78.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5745.00	5725.00	67.16	74.28	22.00
802.11ac-80	5775.00	5725.00	66.32	67.12	20.00
802.11n HT-20	5745.00	5725.00	67.40	76.89	22.00
802.11n HT-40	5755.00	5725.00	66.01	68.69	20.00

Aruba Networks AP-ANT-18		Band-Edge Freq	Peak (Limit 78.2dB $\mu$ V/m)	Average (Limit 68.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5825.00	5850.00	73.33	66.85	22.00
802.11ac-80	5775.00	5725.00	67.48	66.25	20.00
802.11n HT-20	5825.00	5850.00	72.94	67.04	22.00
802.11n HT-40	5795.00	5850.00	69.41	66.78	22.00

Click on the links to view the data.



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Equipment Configuration for Restricted Lower Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	7.50	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	19	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	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	13.87	3.67	34.11	51.65	Max Avg	Vertical	151	23	54.0	-2.4	Pass
#2	5150.00	35.95	3.67	34.11	73.73	Max Peak	Vertical	151	23	74.0	-0.3	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	7.50	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5210.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	18	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5147.39	15.93	3.68	34.11	53.72	Max Avg	Vertical	151	23	54.0	-0.3	Pass
#2	5148.70	35.61	3.67	34.11	73.39	Max Peak	Vertical	151	23	74.0	-0.6	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for Restricted Lower Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	7.50	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	19	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	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	14.65	3.67	34.11	52.43	Max Avg	Vertical	151	23	54.0	-1.6	Pass
#2	5150.00	33.10	3.67	34.11	70.88	Max Peak	Vertical	151	23	74.0	-3.1	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for Restricted Lower Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	7.50	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5190.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	18	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	35.63	3.67	34.11	73.41	Max Peak	Vertical	151	23	74.0	-0.6	Pass
#2	5150.00	15.27	3.67	34.11	53.05	Max Avg	Vertical	151	23	54.0	-1.0	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5712.84	29.00	3.82	34.34	67.16	Marker	Vertical	168	355	68.2	-1.1	Pass
#2	5722.60	36.13	3.80	34.35	74.28	Marker	Vertical	168	355	78.2	-4.0	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5711.39	28.15	3.83	34.34	66.32	Marker	Vertical	168	355	68.2	-1.9	Pass
#2	5722.60	28.97	3.80	34.35	67.12	Marker	Vertical	168	355	78.2	-11.1	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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**To:** FCC CFR 47 Part 15 Subpart E 15.407  
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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	29.25	3.81	34.34	67.40	Marker	Vertical	168	355	68.2	-0.8	Pass
#2	5725.00	38.75	3.79	34.35	76.89	Marker	Vertical	168	355	78.2	-1.3	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5755.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	27.86	3.81	34.34	66.01	Marker	Vertical	168	355	68.2	-2.2	Pass
#2	5722.60	30.54	3.80	34.35	68.69	Marker	Vertical	168	355	78.2	-9.5	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.60	34.88	3.82	34.63	73.33	Marker	Vertical	150	355	78.2	-4.9	Pass
#3	5861.12	28.33	3.86	34.66	66.85	Marker	Vertical	150	355	68.2	-1.4	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.10	29.04	3.81	34.63	67.48	Marker	Vertical	150	355	78.2	-10.8	Pass
#3	5861.12	27.73	3.86	34.66	66.25	Marker	Vertical	150	355	68.2	-2.0	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	34.50	3.81	34.63	72.94	Marker	Vertical	150	355	78.2	-5.3	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	28.53	3.86	34.65	67.04	Marker	Vertical	150	355	68.2	-1.2	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-18	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5795.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5852.35	30.96	3.82	34.63	69.41	Marker	Vertical	150	355	78.2	-8.8	Pass
#3	5861.37	28.26	3.86	34.66	66.78	Marker	Vertical	150	355	68.2	-1.5	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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### 9.4.2.5 Antenna AP-ANT-19

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

Aruba Networks AP-ANT-19		Band-Edge Freq	Peak (Limit 74.0dB $\mu$ V/m)	Average (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	73.25	53.73	17.25
802.11ac-80	5210.00	5150.00	73.73	49.67	16.75
802.11n HT-20	5180.00	5150.00	72.96	52.85	19.00
802.11n HT-40	5190.00	5150.00	73.68	47.52	15.50

Aruba Networks AP-ANT-19		Band-Edge Freq	Peak (Limit 68.2dB $\mu$ V/m)	Average (Limit 78.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5745.00	5725.00	67.75	77.08	20.00
802.11ac-80	5775.00	5725.00	65.42	65.43	20.00
802.11n HT-20	5745.00	5725.00	65.83	72.81	21.00
802.11n HT-40	5755.00	5725.00	66.72	68.17	20.00

Aruba Networks AP-ANT-19		Band-Edge Freq	Peak (Limit 78.2dB $\mu$ V/m)	Average (Limit 68.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5825.00	5850.00	73.55	65.65	21.00
802.11ac-80	5775.00	5725.00	68.81	66.85	21.00
802.11n HT-20	5825.00	5850.00	72.71	66.20	22.00
802.11n HT-40	5795.00	5850.00	67.76	64.90	22.00

Click on the links to view the data.



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Equipment Configuration for Restricted Lower Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks 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>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	17.25	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	15.95	3.67	34.11	53.73	Max Avg	Vertical	167	201	54.0	-0.3	Pass
#2	5150.00	35.47	3.67	34.11	73.25	Max Peak	Vertical	167	201	74.0	-0.8	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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

<b>Antenna:</b>	Aruba Networks 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>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5210.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	16.75	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5138.28	11.85	3.70	34.12	49.67	Max Avg	Vertical	167	201	54.0	-4.3	Pass
#2	5143.49	35.91	3.70	34.12	73.73	Max Peak	Vertical	167	201	74.0	-0.3	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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

<b>Antenna:</b>	Aruba Networks 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>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	19	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	35.18	3.67	34.11	72.96	Max Peak	Vertical	167	201	74.0	-1.0	Pass
#2	5150.00	15.07	3.67	34.11	52.85	Max Avg	Vertical	167	201	54.0	-1.2	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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

<b>Antenna:</b>	Aruba Networks 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>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5190.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	15.5	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	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	167	201	54.0	-6.5	Pass
#2	5150.00	35.90	3.67	34.11	73.68	Max Peak	Vertical	167	201	74.0	-0.3	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5714.52	29.60	3.81	34.34	67.75	Marker	Vertical	168	199	68.2	-0.5	Pass
#2	5724.76	38.94	3.79	34.35	77.08	Marker	Vertical	168	199	78.2	-1.2	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	27.27	3.81	34.34	65.42	Marker	Vertical	168	199	68.2	-2.8	Pass
#2	5725.00	27.29	3.79	34.35	65.43	Marker	Vertical	168	199	78.2	-12.8	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	27.68	3.81	34.34	65.83	Marker	Vertical	168	199	68.2	-2.4	Pass
#2	5725.00	34.67	3.79	34.35	72.81	Marker	Vertical	168	199	78.2	-5.4	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5755.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	28.57	3.81	34.34	66.72	Marker	Vertical	168	199	68.2	-1.5	Pass
#2	5725.00	30.03	3.79	34.35	68.17	Marker	Vertical	168	199	78.2	-10.1	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.47	35.11	3.81	34.63	73.55	Marker	Vertical	168	192	78.2	-4.7	Pass
#3	5861.05	27.13	3.86	34.66	65.65	Marker	Vertical	168	192	68.2	-2.6	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.05	30.37	3.81	34.63	68.81	Marker	Vertical	168	192	78.2	-9.4	Pass
#3	5862.74	28.34	3.85	34.66	66.85	Marker	Vertical	168	192	68.2	-1.4	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	34.27	3.81	34.63	72.71	Marker	Vertical	168	192	78.2	-5.5	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	27.69	3.86	34.65	66.20	Marker	Vertical	168	192	68.2	-2.0	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-19	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5795.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.26	29.32	3.81	34.63	67.76	Marker	Vertical	168	192	78.2	-10.5	Pass
#3	5860.42	26.39	3.86	34.65	64.90	Marker	Vertical	168	192	78.2	-13.3	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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#### 9.4.2.6 Antenna AP-ANT-20

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

Aruba Networks AP-ANT-20		Band-Edge Freq	Peak (Limit 74.0dB $\mu$ V/m)	Average (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	69.10	51.19	18.00
802.11ac-80	5210.00	5150.00	73.10	48.12	18.00
802.11n HT-20	5180.00	5150.00	68.95	50.68	20.00
802.11n HT-40	5190.00	5150.00	73.50	45.97	17.00

Aruba Networks AP-ANT-20		Band-Edge Freq	Peak (Limit 68.2dB $\mu$ V/m)	Average (Limit 78.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5745.00	5725.00	64.01	73.92	20.00
802.11ac-80	5775.00	5725.00	65.41	66.90	21.00
802.11n HT-20	5745.00	5725.00	65.24	74.85	22.00
802.11n HT-40	5755.00	5725.00	66.54	69.92	21.00

Aruba Networks AP-ANT-20		Band-Edge Freq	Peak (Limit 78.2dB $\mu$ V/m)	Average (Limit 68.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5825.00	5850.00	71.73	64.49	21.00
802.11ac-80	5775.00	5850.00	65.78	64.68	21.00
802.11n HT-20	5825.00	5850.00	73.36	66.76	22.00
802.11n HT-40	5795.00	5850.00	64.87	61.83	22.00

Click on the links to view the data.



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<b>Equipment Configuration for Restricted Lower Band-Edge Emissions</b>			
<b>Antenna:</b>	Aruba Networks AP-ANT-20	<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>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	18	<b>Tested By:</b>	JMH

**Antenna:**	Aruba Networks AP-ANT-20	**Variant:**	802.11a
**Antenna Gain (dBi):**	2.00	**Modulation:**	OFDM
**Beam Forming Gain (Y):**	Not Applicable	**Duty Cycle (%):**	
**Channel Frequency (MHz):**	5180.00	**Data Rate:**	6.00 MBit/s
**Power Setting:**	18	**Tested By:**	JMH

<b>Test Measurement Results</b>												
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	31.32	3.67	34.11	69.10	Max Peak	Vertical	180	44	74.0	-4.9	Pass
#2	5150.00	13.41	3.67	34.11	51.19	Max Avg	Vertical	180	44	54.0	-2.8	Pass

| **Test Measurement Results** |
Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	31.32	3.67	34.11	69.10	Max Peak	Vertical	180	44	74.0	-4.9	Pass
#2	5150.00	13.41	3.67	34.11	51.19	Max Avg	Vertical	180	44	54.0	-2.8	Pass

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

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	2.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5210.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	18	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5144.79	35.30	3.69	34.11	73.10	Max Peak	Vertical	180	44	74.0	-0.9	Pass
#2	5148.70	10.34	3.67	34.11	48.12	Max Avg	Vertical	180	44	54.0	-5.9	Pass

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

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	2.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

#### Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	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	12.90	3.67	34.11	50.68	Max Avg	Vertical	180	44	54.0	-3.3	Pass
#2	5150.00	31.17	3.67	34.11	68.95	Max Peak	Vertical	180	44	74.0	-5.1	Pass

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

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	2.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5190.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	17	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	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	8.19	3.67	34.11	45.97	Max Avg	Vertical	180	44	54.0	-8.0	Pass
#2	5150.00	35.72	3.67	34.11	73.50	Max Peak	Vertical	180	44	74.0	-0.5	Pass

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<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>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5713.02	25.85	3.82	34.34	64.01	Marker	Vertical	145	1	68.2	-4.2	Pass
#2	5723.32	35.77	3.80	34.35	73.92	Marker	Vertical	145	1	78.2	-4.3	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	2.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5713.02	27.25	3.82	34.34	65.41	Marker	Vertical	145	1	68.2	-2.8	Pass
#2	5722.60	28.75	3.80	34.35	66.90	Marker	Vertical	145	1	78.2	-11.3	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	2.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	27.09	3.81	34.34	65.24	Marker	Vertical	145	1	68.2	-3.0	Pass
#2	5725.00	36.71	3.79	34.35	74.85	Marker	Vertical	145	1	78.2	-3.4	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	2.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5755.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	28.39	3.81	34.34	66.54	Marker	Vertical	145	1	68.2	-1.7	Pass
#2	5725.00	31.78	3.79	34.35	69.92	Marker	Vertical	145	1	78.2	-8.3	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<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>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5852.61	33.28	3.82	34.63	71.73	Marker	Vertical	150	-2	78.2	-6.5	Pass
#3	5862.12	25.98	3.85	34.66	64.49	Marker	Vertical	150	-2	68.2	-3.7	Pass

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	2.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.10	27.34	3.81	34.63	65.78	Marker	Vertical	150	-2	78.2	-12.5	Pass
#3	5862.63	26.17	3.85	34.66	64.68	Marker	Vertical	150	-2	68.2	-3.6	Pass

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	2.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	34.92	3.81	34.63	73.36	Marker	Vertical	150	-2	78.2	-4.9	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	28.25	3.86	34.65	66.76	Marker	Vertical	150	-2	68.2	-1.5	Pass

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks AP-ANT-20	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	2.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5795.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#2	5851.35	26.43	3.81	34.63	64.87	Marker	Vertical	150	-2	78.2	-13.4	Pass
#3	5861.62	23.32	3.85	34.66	61.83	Marker	Vertical	150	-2	68.2	-6.4	Pass

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### 9.4.2.7 Integral (APIN0215) Antenna

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

Aruba Networks Metal Sheet		Band-Edge Freq	Peak (Limit 74.0dB $\mu$ V/m)	Average (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	64.14	53.60	13.25
802.11ac-80	5210.00	5150.00	73.19	49.96	15.75
802.11n HT-20	5180.00	5150.00	72.87	53.25	20.00
802.11n HT-40	5190.00	5150.00	73.25	48.75	15.75

Aruba Networks Metal Sheet		Band-Edge Freq	Peak (Limit 68.2dB $\mu$ V/m)	Average (Limit 78.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5745.00	5725.00	68.23	78.23	21.00
802.11ac-80	5775.00	5725.00	68.23	78.23	20.00
802.11n HT-20	5745.00	5725.00	68.23	78.23	22.00
802.11n HT-40	5755.00	5725.00	68.23	78.23	20.00

Aruba Networks Metal Sheet		Band-Edge Freq	Peak (Limit 78.2dB $\mu$ V/m)	Average (Limit 68.2dB $\mu$ V/m)	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dB $\mu$ V/m	dB $\mu$ V/m	
802.11a	5825.00	5850.00	71.78	64.75	21.00
802.11ac-80	5775.00	5725.00	61.51	60.82	22.00
802.11n HT-20	5825.00	5850.00	68.21	61.88	22.00
802.11n HT-40	5795.00	5850.00	63.89	61.76	22.00

Click on the links to view the data.



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

<b>Antenna:</b>	Aruba Networks Metal Sheet	<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>	100
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	13.25	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5015.83	26.28	3.65	34.21	64.14	Max Peak	Horizontal	190	67	74.0	-9.9	Pass
#2	5027.56	15.69	3.70	34.21	53.60	Max Avg	Horizontal	190	67	54.0	-0.4	Pass

Test Notes: EUT on 150cm table, powered by PDSine 9001GR POE

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

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	5.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5210.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	15.75	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5138.28	12.14	3.70	34.12	49.96	Max Avg	Horizontal	190	67	54.0	-4.0	Pass
#2	5150.00	35.41	3.67	34.11	73.19	Max Peak	Horizontal	190	67	74.0	-0.8	Pass

Test Notes: EUT on 150cm table, powered by PDSine 9001GR POE

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

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	5.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5180.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5147.39	35.08	3.68	34.11	72.87	Max Peak	Horizontal	190	67	74.0	-1.1	Pass
#2	5150.00	15.47	3.67	34.11	53.25	Max Avg	Horizontal	190	67	54.0	-0.8	Pass

Test Notes: EUT on 150cm table, powered by PDSine 9001GR POE

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

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	5.00	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5190.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	15.75	<b>Tested By:</b>	JMH

**Test Measurement Results**

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5148.70	35.47	3.67	34.11	73.25	Max Peak	Horizontal	190	67	74.0	-0.8	Pass
#2	5150.00	10.97	3.67	34.11	48.75	Max Avg	Horizontal	190	67	54.0	-5.3	Pass

Test Notes: EUT on 150cm table, powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5714.27	28.31	3.82	34.34	66.47	Marker	Horizontal	195	327	68.2	-1.8	Pass
#2	5724.27	37.51	3.79	34.35	75.65	Marker	Horizontal	195	327	78.2	-2.6	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table, powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5714.76	26.38	3.81	34.34	64.53	Marker	Horizontal	195	327	68.2	-3.7	Pass
#2	5718.70	27.42	3.80	34.34	65.56	Marker	Horizontal	195	327	78.2	-12.7	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table, powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5745.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	26.38	3.81	34.34	64.53	Marker	Horizontal	195	327	68.2	-3.7	Pass
#2	5725.00	33.59	3.79	34.35	71.73	Marker	Horizontal	195	327	78.2	-6.5	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table, powered by PDSine 9001GR POE

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	100
<b>Channel Frequency (MHz):</b>	5755.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	20	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5715.00	27.54	3.81	34.34	65.69	Marker	Horizontal	195	327	68.2	-2.5	Pass
#2	5722.82	29.60	3.80	34.35	67.75	Marker	Horizontal	195	327	78.2	-10.5	Pass
#3	5725.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	

Test Notes: EUT on 150cm table, powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11a
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.00 MBit/s
<b>Power Setting:</b>	21	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	33.34	3.81	34.63	71.78	Marker	Horizontal	156	74	78.2	-6.5	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	26.24	3.86	34.65	64.75	Marker	Horizontal	156	74	68.2	-3.5	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11ac-80
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5775.00	<b>Data Rate:</b>	29.30 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	23.07	3.81	34.63	61.51	Marker	Horizontal	156	74	78.2	-16.7	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	22.31	3.86	34.65	60.82	Marker	Horizontal	156	74	68.2	-7.4	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11n HT-20
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5825.00	<b>Data Rate:</b>	6.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	29.77	3.81	34.63	68.21	Marker	Horizontal	156	74	78.2	-10.0	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	23.37	3.86	34.65	61.88	Marker	Horizontal	156	74	68.2	-6.4	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

<b>Antenna:</b>	Aruba Networks Metal Sheet	<b>Variant:</b>	802.11n HT-40
<b>Antenna Gain (dBi):</b>	Not Applicable	<b>Modulation:</b>	OFDM
<b>Beam Forming Gain (Y):</b>	Not Applicable	<b>Duty Cycle (%):</b>	
<b>Channel Frequency (MHz):</b>	5795.00	<b>Data Rate:</b>	13.50 MBit/s
<b>Power Setting:</b>	22	<b>Tested By:</b>	JMH

Test Measurement Results

Num	Frequency MHz	Raw dB $\mu$ V	Cable Loss	AF dB	Level dB $\mu$ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB $\mu$ V/m	Margin dB	Pass /Fail
#1	5850.00	25.45	3.81	34.63	63.89	Marker	Horizontal	156	74	78.2	-14.3	Pass
#2	5850.00	0.00	0.00	0.00	--	Band-Edge		0	0	--	--	
#3	5860.00	23.25	3.86	34.65	61.76	Marker	Horizontal	156	74	68.2	-6.5	Pass

Test Notes: EUT on 150cm table. Powered by PDSine 9001GR POE

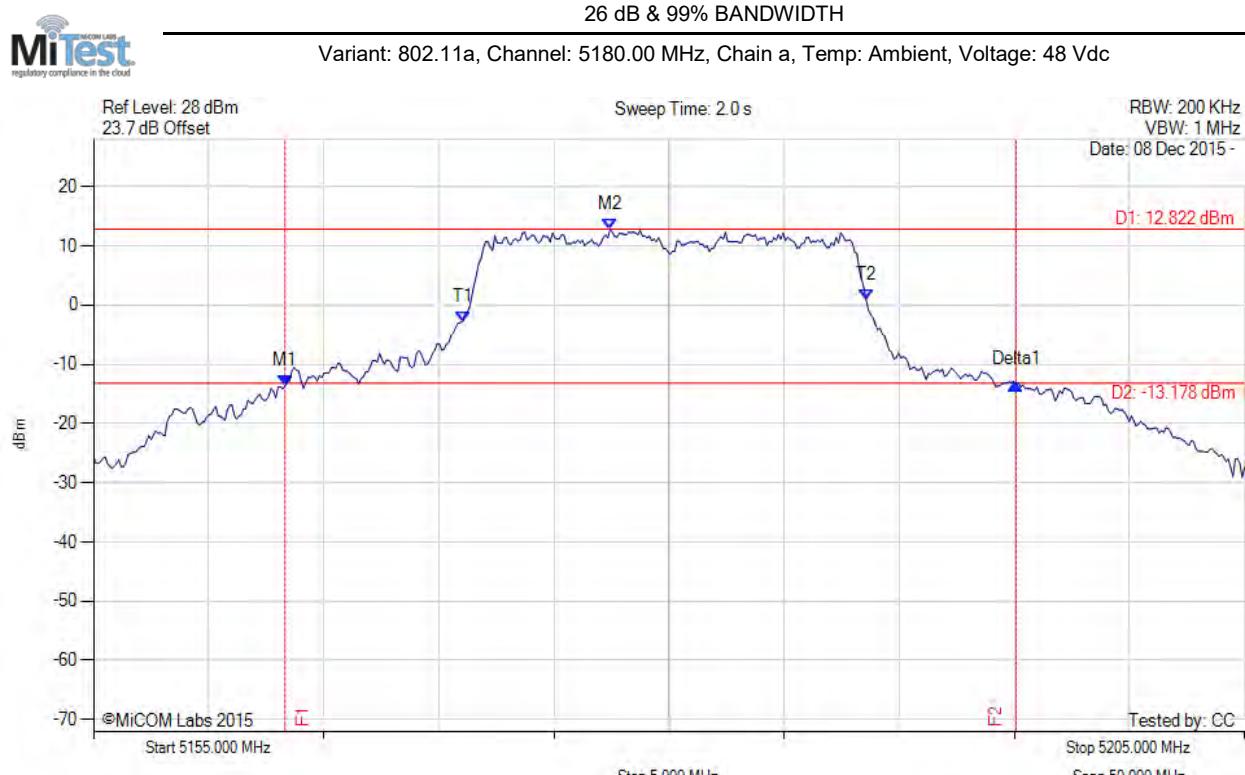
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## A. APPENDIX - GRAPHICAL IMAGES

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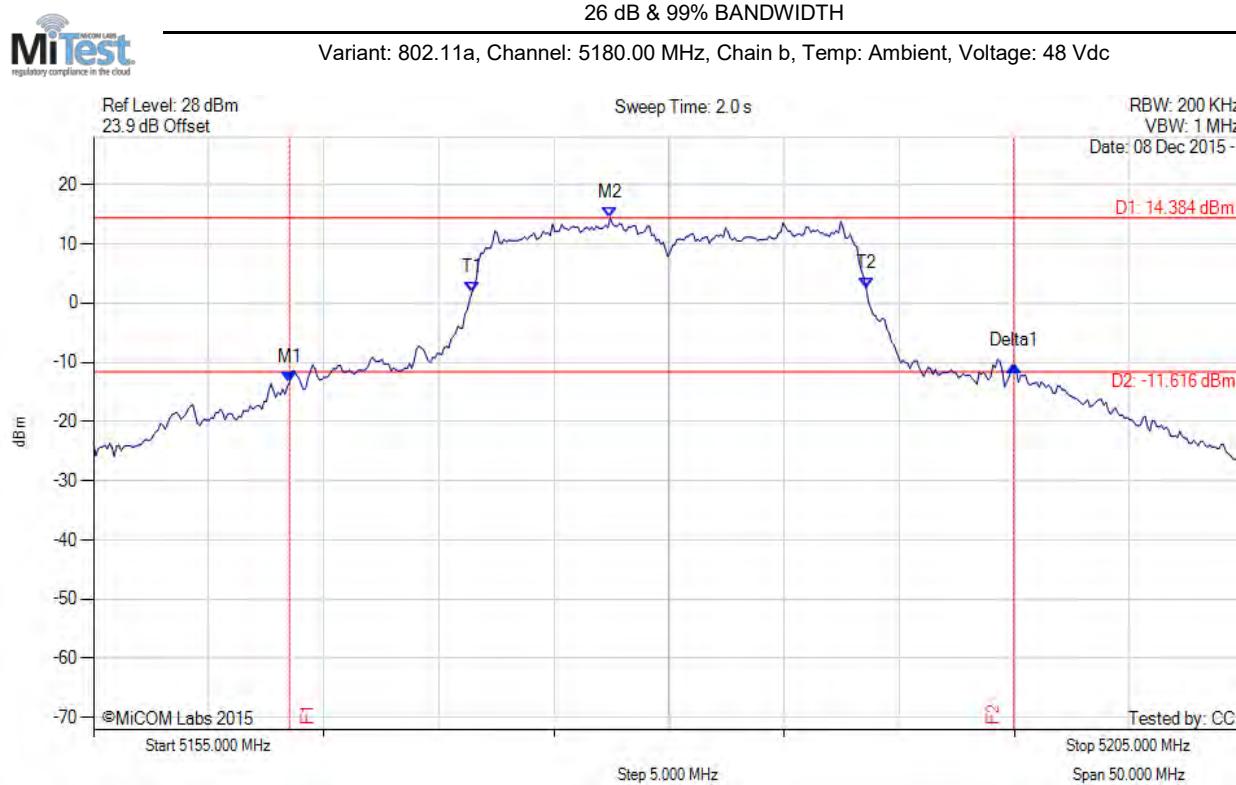
### A.1. 26 dB & 99% Bandwidth



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5163.317 MHz : -13.665 dBm M2 : 5177.445 MHz : 12.822 dBm Delta1 : 31.764 MHz : 0.370 dB T1 : 5171.032 MHz : -2.791 dBm T2 : 5188.567 MHz : 0.833 dBm OBW : 17.535 MHz	Measured 26 dB Bandwidth: 31.764 MHz Measured 99% Bandwidth: 17.535 MHz

[back to matrix](#)

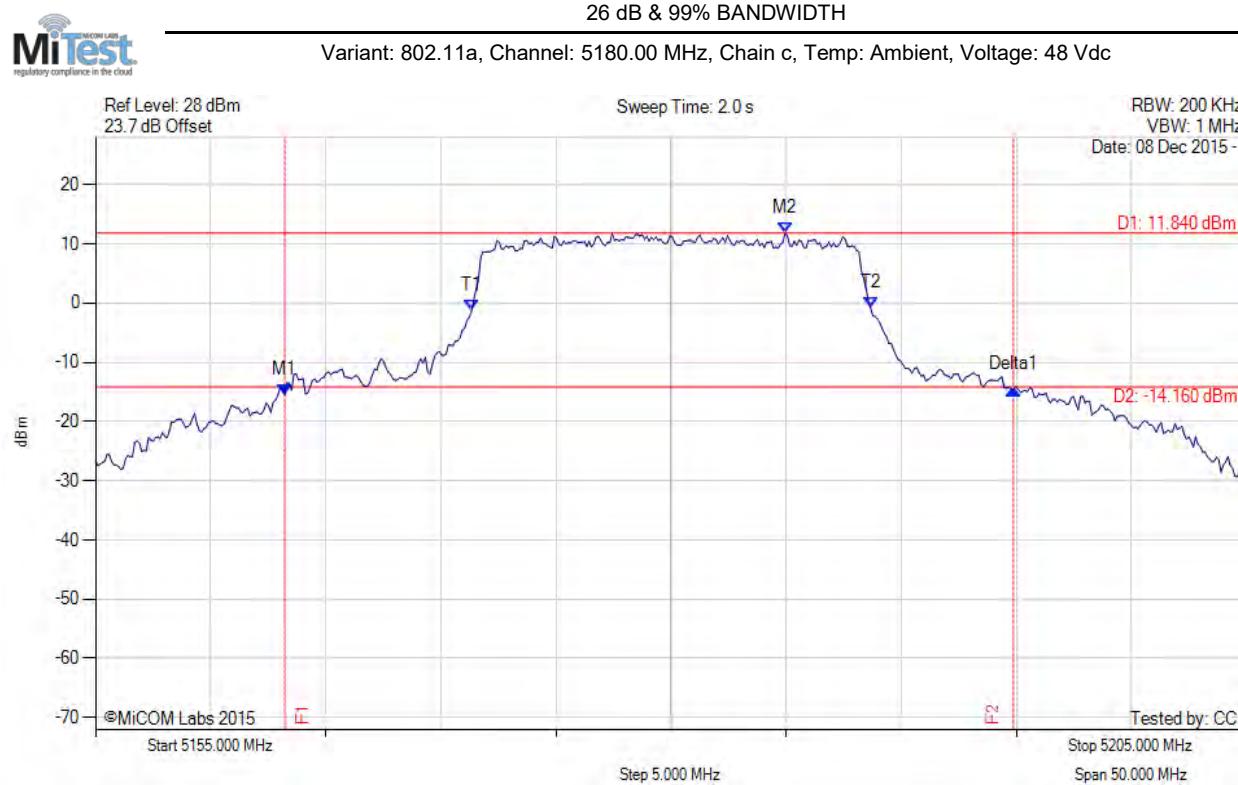
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5163.517 MHz : -13.393 dBm M2 : 5177.445 MHz : 14.384 dBm Delta1 : 31.463 MHz : 2.829 dB T1 : 5171.433 MHz : 1.700 dBm T2 : 5188.567 MHz : 2.505 dBm OBW : 17.134 MHz	Measured 26 dB Bandwidth: 31.463 MHz Measured 99% Bandwidth: 17.134 MHz

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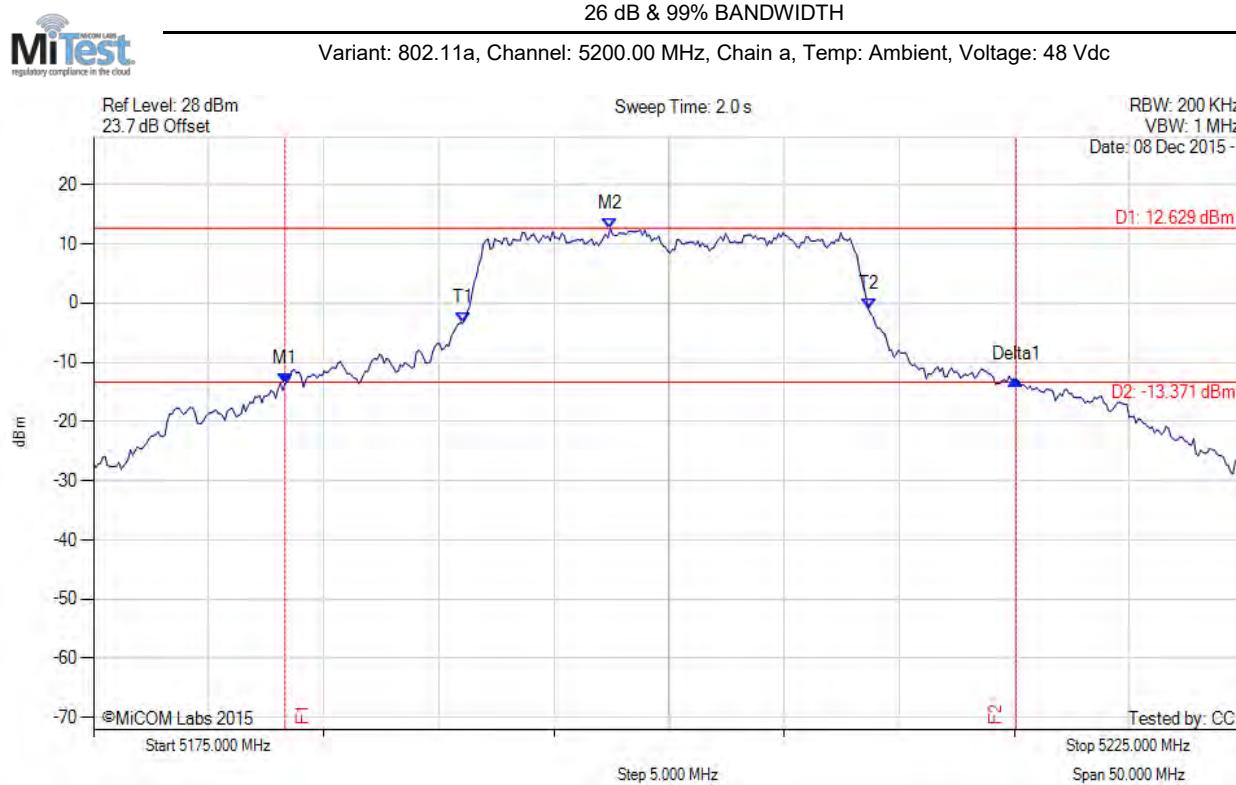
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5163.216 MHz : -15.451 dBm M2 : 5184.960 MHz : 11.840 dBm Delta1 : 31.663 MHz : 0.964 dB T1 : 5171.333 MHz : -1.345 dBm T2 : 5188.667 MHz : -0.765 dBm OBW : 17.335 MHz	Measured 26 dB Bandwidth: 31.663 MHz Measured 99% Bandwidth: 17.335 MHz

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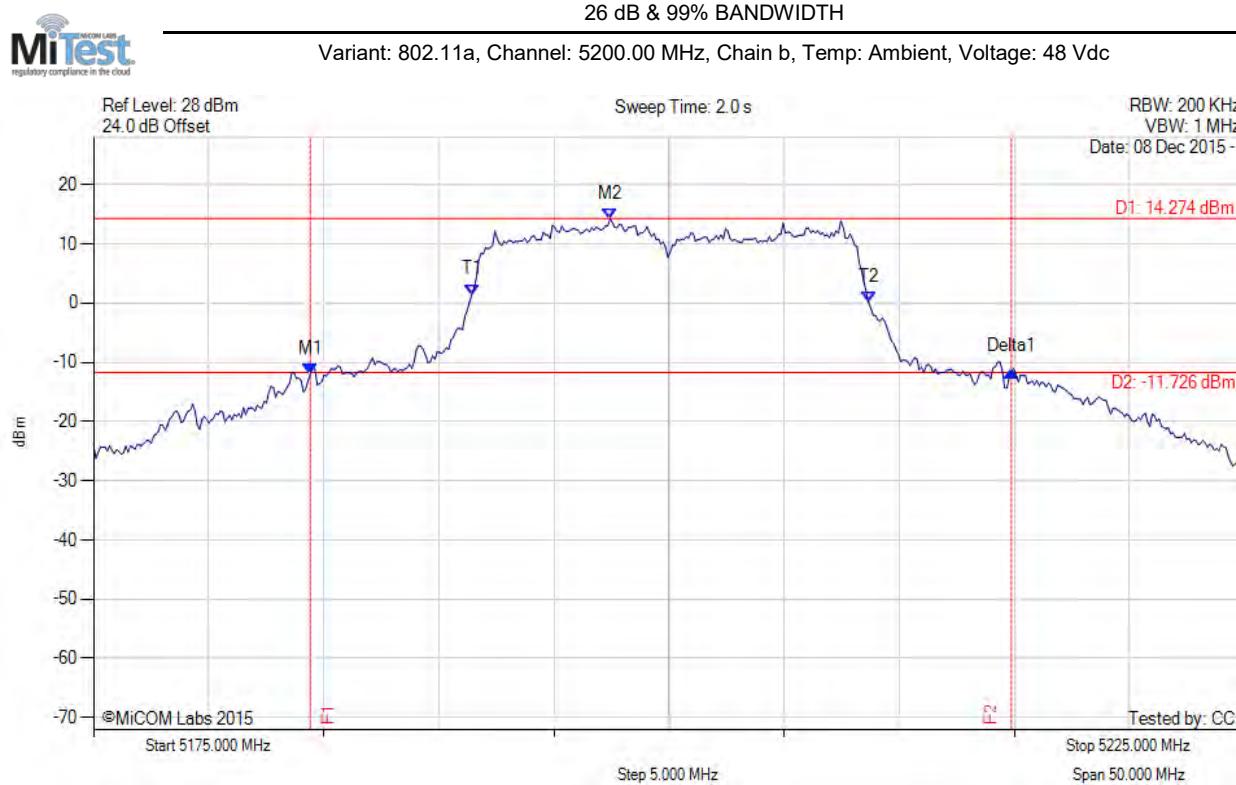
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5183.317 MHz : -13.639 dBm M2 : 5197.445 MHz : 12.629 dBm Delta1 : 31.764 MHz : 0.641 dB T1 : 5191.032 MHz : -3.407 dBm T2 : 5208.667 MHz : -1.032 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 31.764 MHz Measured 99% Bandwidth: 17.635 MHz

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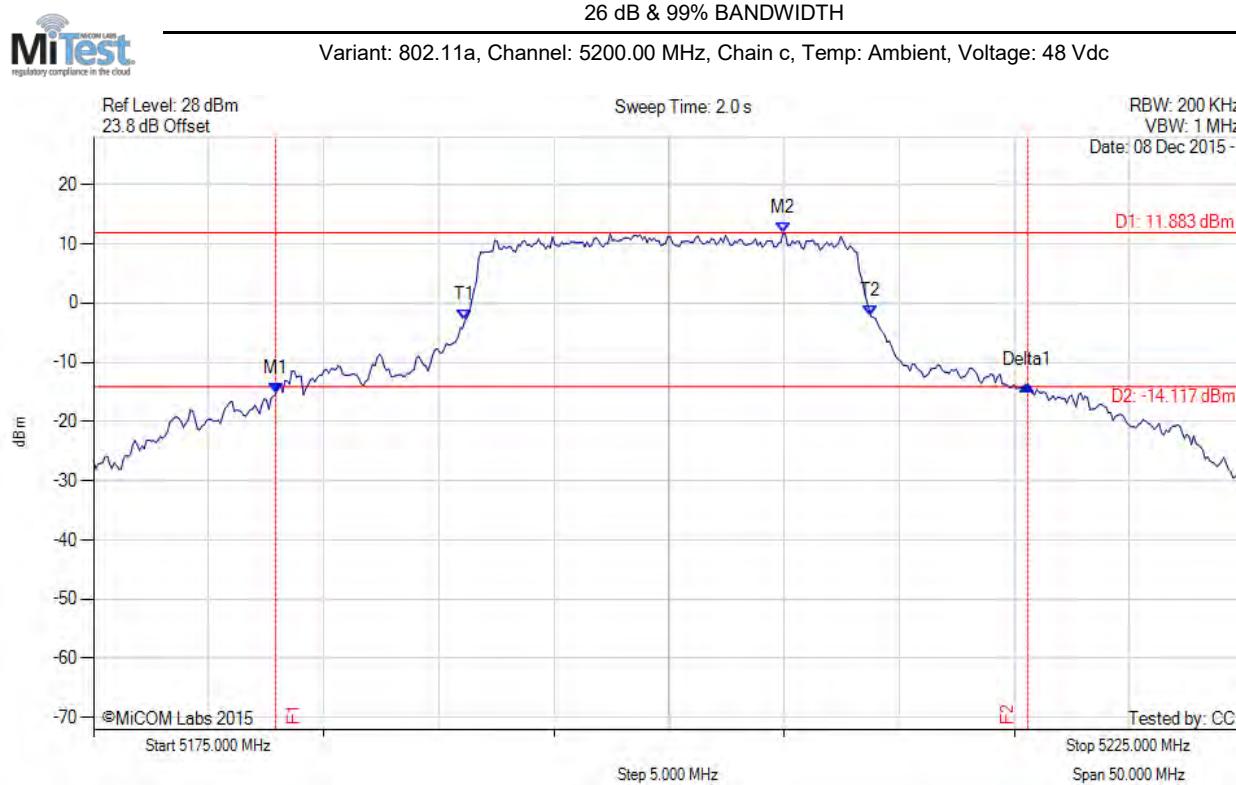
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5184.419 MHz : -11.990 dBm M2 : 5197.445 MHz : 14.274 dBm Delta1 : 30.461 MHz : 0.492 dB T1 : 5191.433 MHz : 1.437 dBm T2 : 5208.667 MHz : 0.146 dBm OBW : 17.234 MHz	Measured 26 dB Bandwidth: 30.461 MHz Measured 99% Bandwidth: 17.234 MHz

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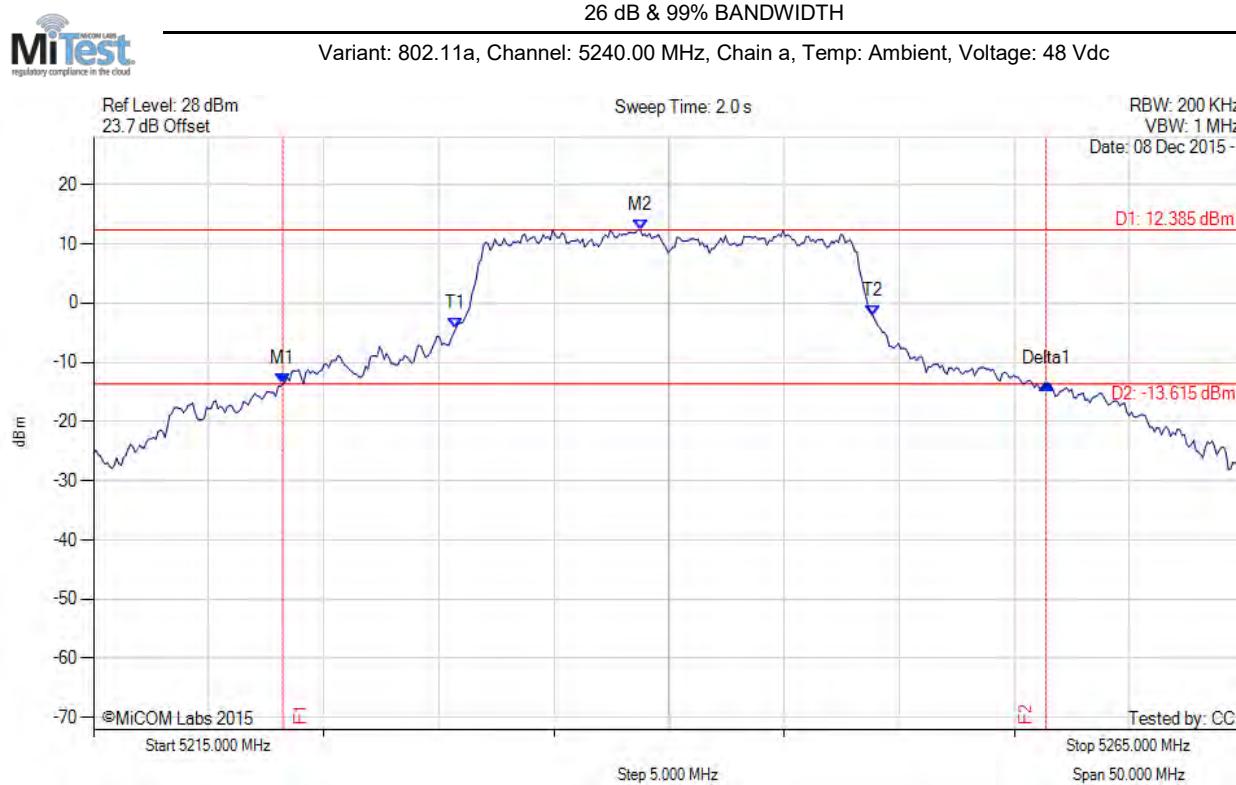
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5182.916 MHz : -15.300 dBm M2 : 5204.960 MHz : 11.883 dBm Delta1 : 32.665 MHz : 1.377 dB T1 : 5191.132 MHz : -2.976 dBm T2 : 5208.768 MHz : -2.232 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 32.665 MHz Measured 99% Bandwidth: 17.635 MHz

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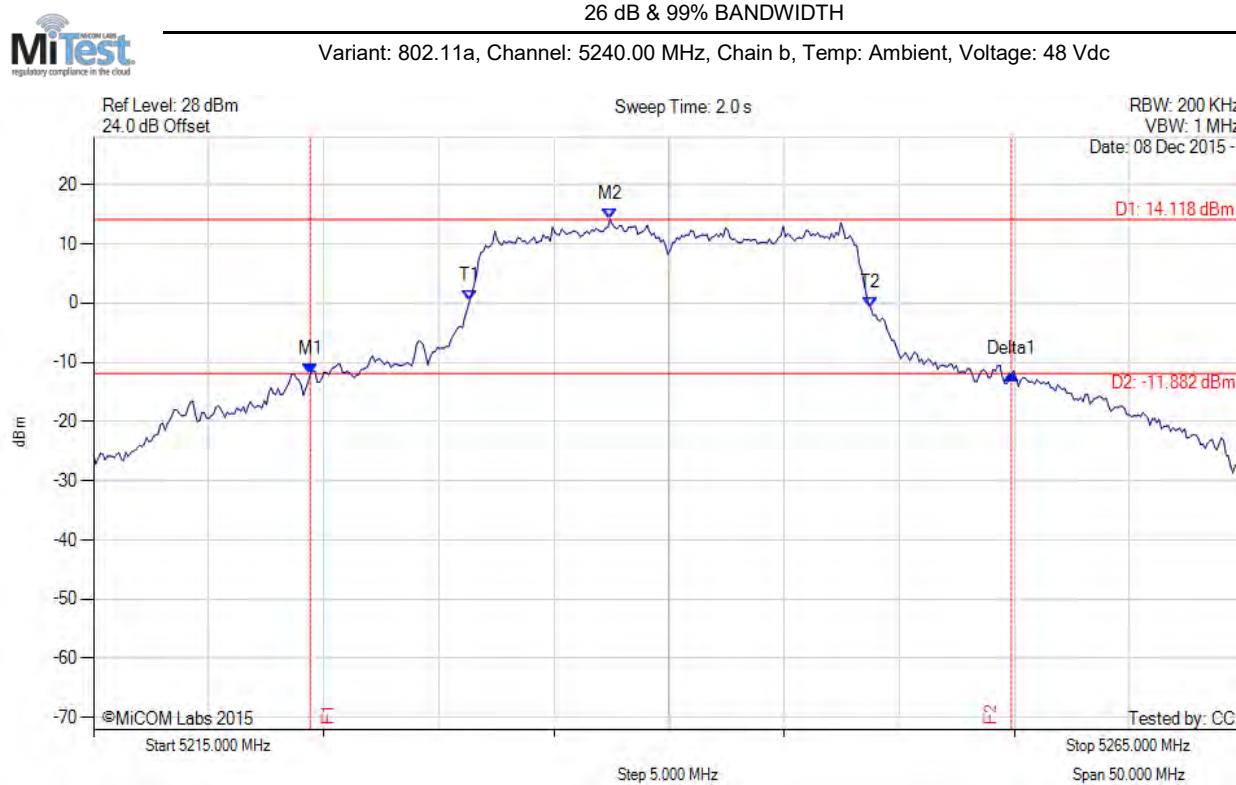
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5223.216 MHz : -13.716 dBm M2 : 5238.747 MHz : 12.385 dBm Delta1 : 33.166 MHz : -0.012 dB T1 : 5230.731 MHz : -4.379 dBm T2 : 5248.868 MHz : -2.215 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 33.166 MHz Measured 99% Bandwidth: 18.136 MHz

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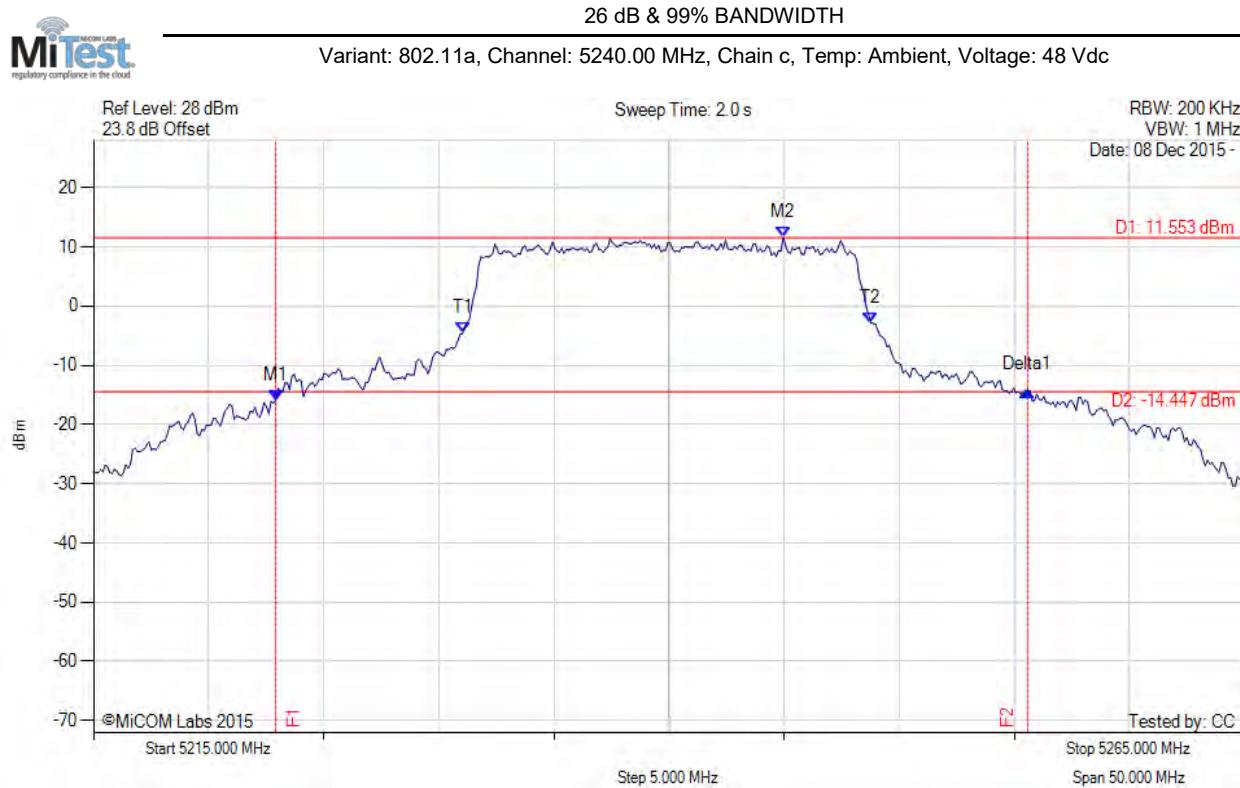
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5224.419 MHz : -11.975 dBm M2 : 5237.445 MHz : 14.118 dBm Delta1 : 30.461 MHz : 0.057 dB T1 : 5231.333 MHz : 0.347 dBm T2 : 5248.768 MHz : -0.875 dBm OBW : 17.435 MHz	Measured 26 dB Bandwidth: 30.461 MHz Measured 99% Bandwidth: 17.435 MHz

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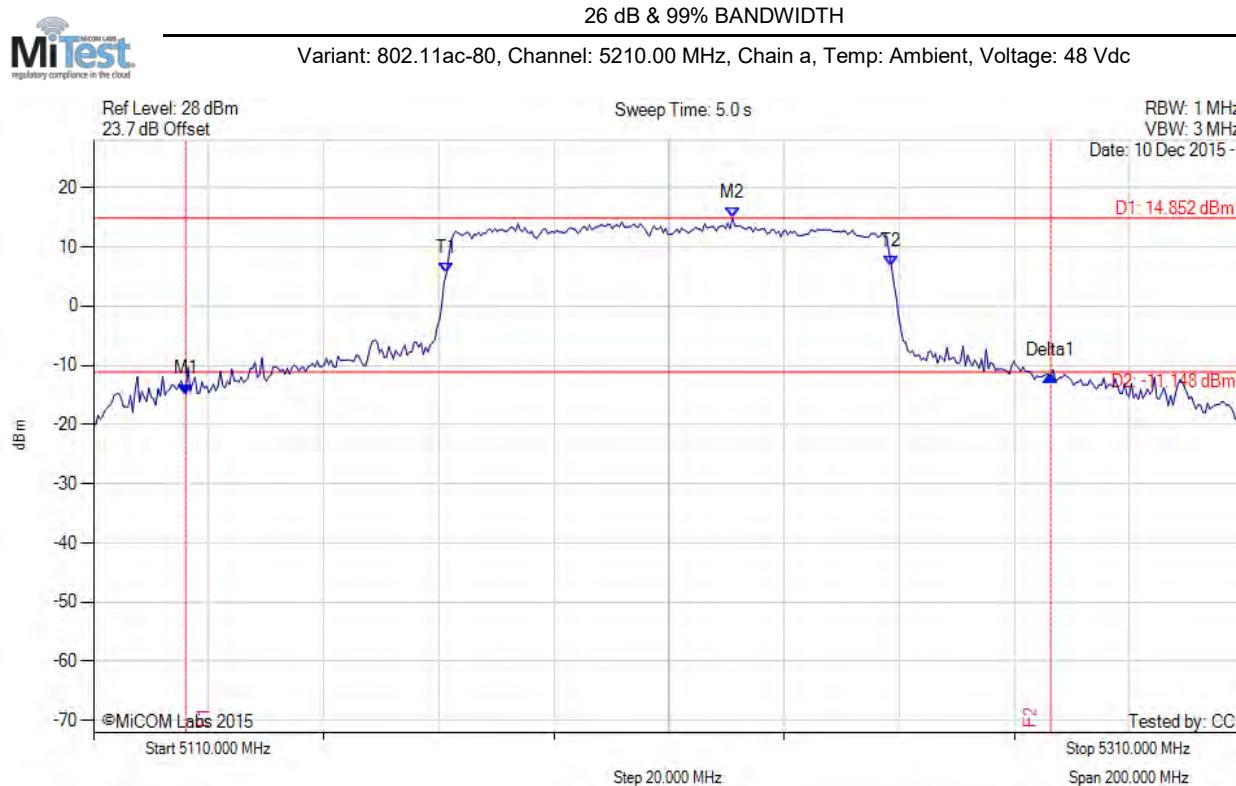
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5222.916 MHz : -15.870 dBm M2 : 5244.960 MHz : 11.553 dBm Delta1 : 32.665 MHz : 1.643 dB T1 : 5231.032 MHz : -4.609 dBm T2 : 5248.768 MHz : -2.819 dBm OBW : 17.735 MHz	Measured 26 dB Bandwidth: 32.665 MHz Measured 99% Bandwidth: 17.735 MHz

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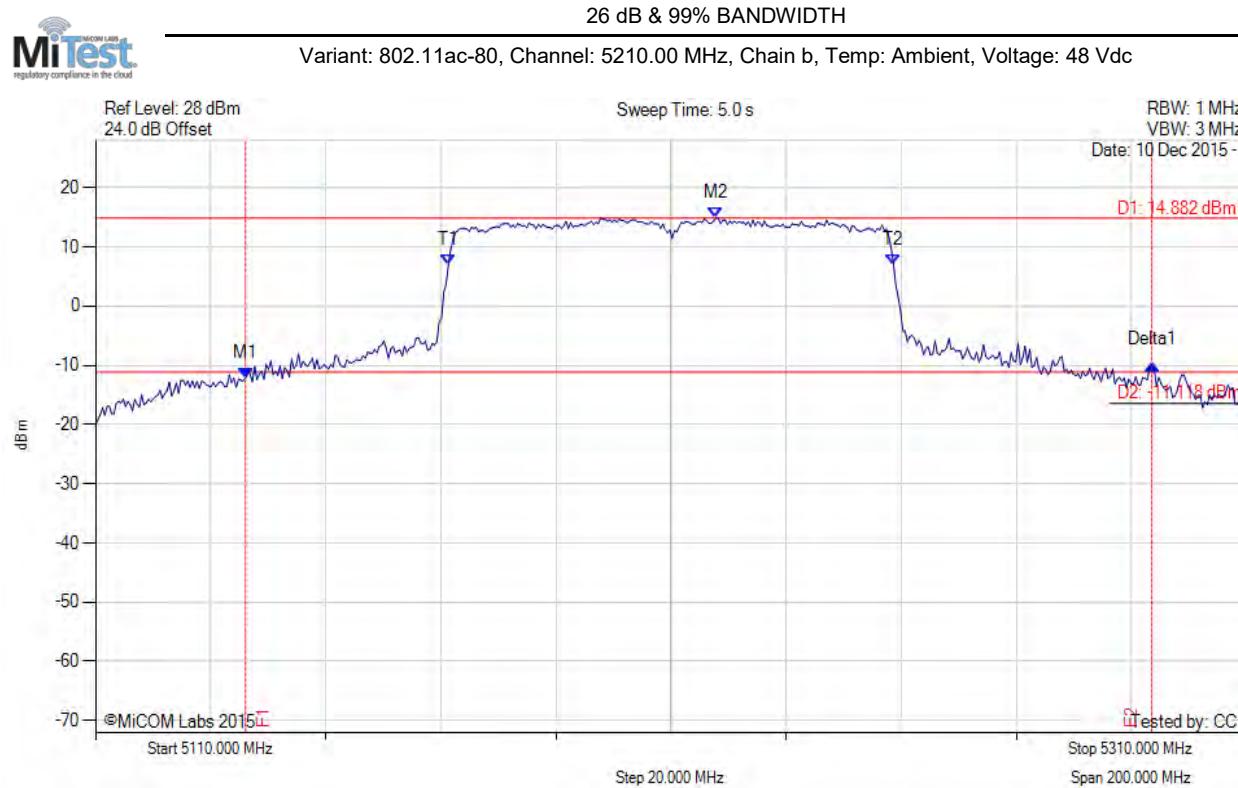
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5126.032 MHz : -14.910 dBm M2 : 5221.022 MHz : 14.852 dBm Delta1 : 150.301 MHz : 3.140 dB T1 : 5171.323 MHz : 5.488 dBm T2 : 5248.677 MHz : 6.640 dBm OBW : 77.355 MHz	Measured 26 dB Bandwidth: 150.301 MHz Measured 99% Bandwidth: 77.355 MHz

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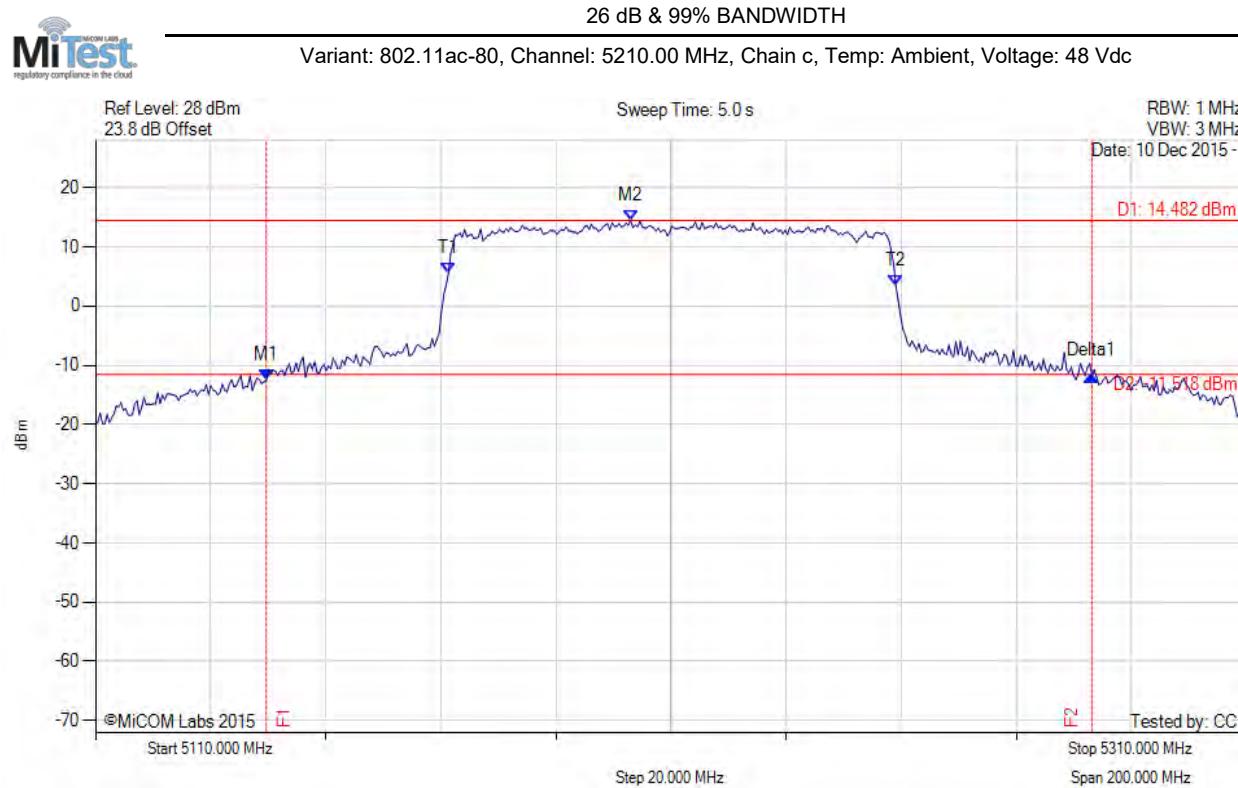
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5136.052 MHz : -12.195 dBm M2 : 5217.816 MHz : 14.882 dBm Delta1 : 157.515 MHz : 2.341 dB T1 : 5171.323 MHz : 6.943 dBm T2 : 5248.677 MHz : 7.004 dBm OBW : 77.355 MHz	Measured 26 dB Bandwidth: 157.515 MHz Measured 99% Bandwidth: 77.355 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5139.659 MHz : -12.520 dBm M2 : 5202.986 MHz : 14.482 dBm Delta1 : 143.487 MHz : 0.761 dB T1 : 5171.323 MHz : 5.558 dBm T2 : 5249.078 MHz : 3.384 dBm OBW : 77.756 MHz	Measured 26 dB Bandwidth: 143.487 MHz Measured 99% Bandwidth: 77.756 MHz

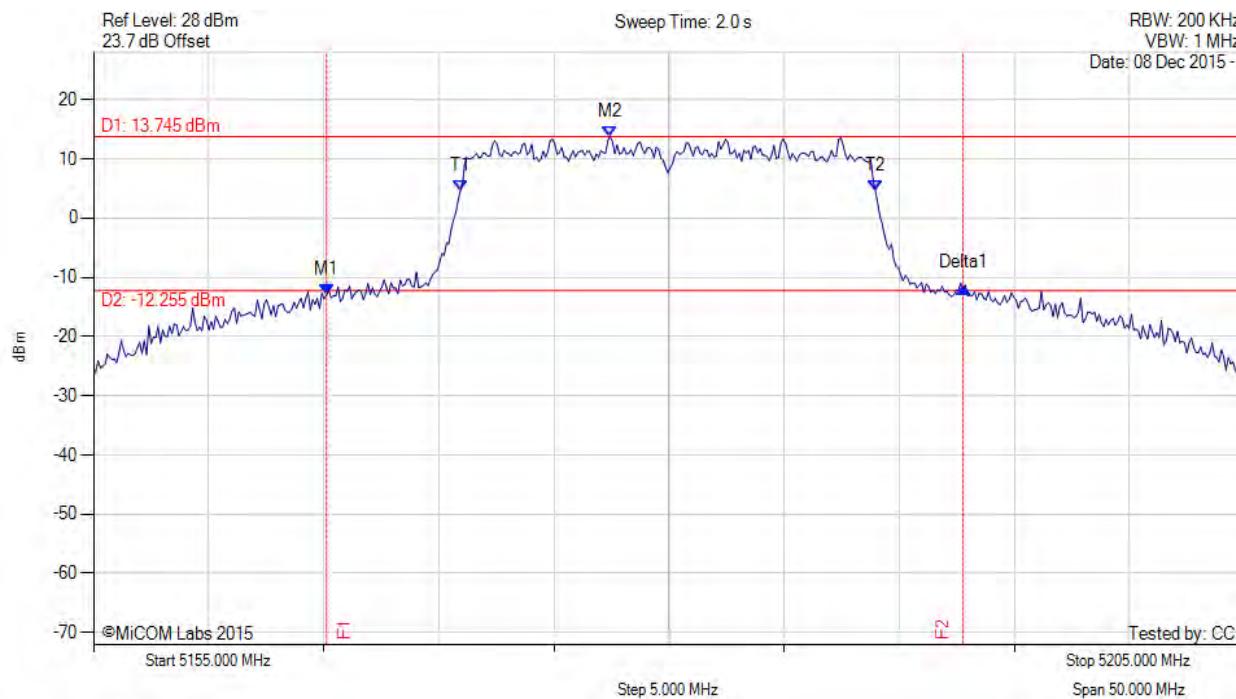
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26 dB & 99% BANDWIDTH

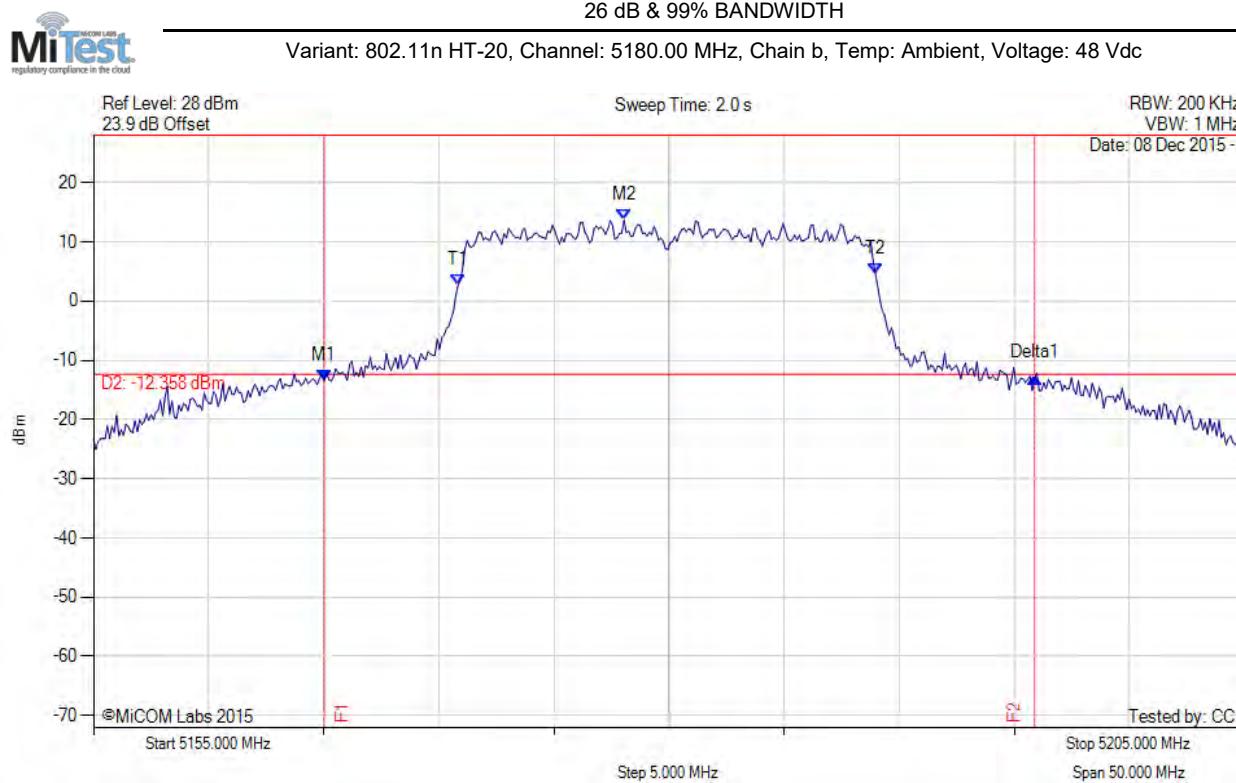
Variant: 802.11n HT-20, Channel: 5180.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5165.120 MHz : -12.998 dBm M2 : 5177.445 MHz : 13.745 dBm Delta1 : 27.655 MHz : 1.204 dB T1 : 5170.932 MHz : 4.618 dBm T2 : 5188.968 MHz : 4.571 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 27.655 MHz Measured 99% Bandwidth: 18.036 MHz

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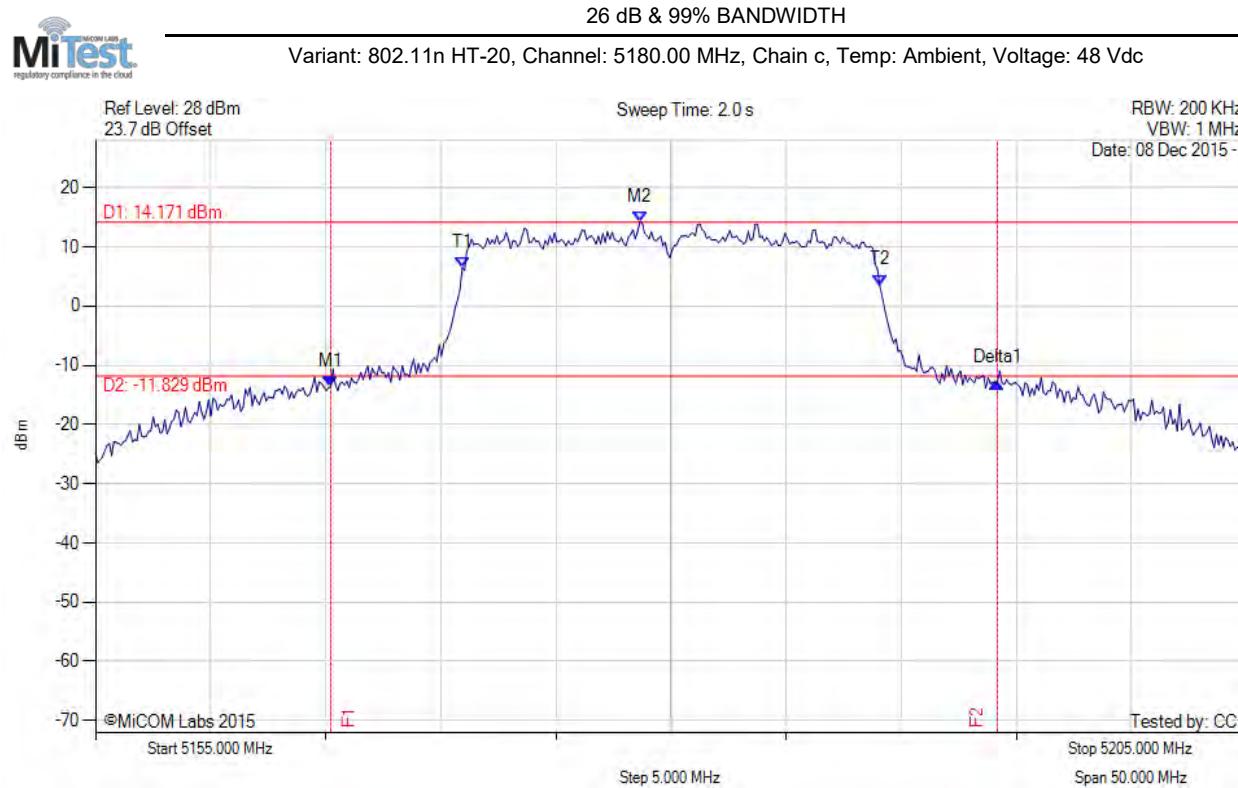
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5165.020 MHz : -13.405 dBm M2 : 5178.046 MHz : 13.642 dBm Delta1 : 30.862 MHz : 0.456 dB T1 : 5170.832 MHz : 2.651 dBm T2 : 5188.968 MHz : 4.563 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 30.862 MHz Measured 99% Bandwidth: 18.136 MHz

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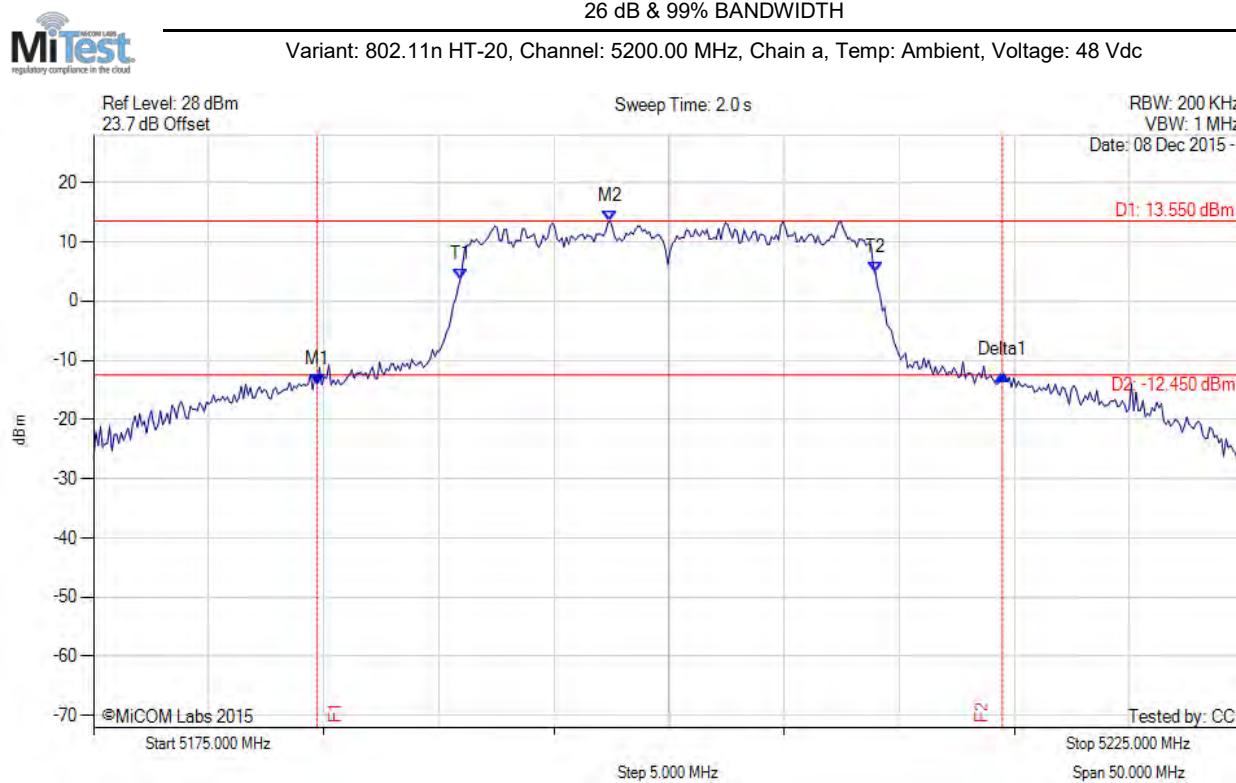
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5165.220 MHz : -13.639 dBm M2 : 5178.647 MHz : 14.171 dBm Delta1 : 28.958 MHz : 0.805 dB T1 : 5170.932 MHz : 6.505 dBm T2 : 5189.068 MHz : 3.542 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 28.958 MHz Measured 99% Bandwidth: 18.136 MHz

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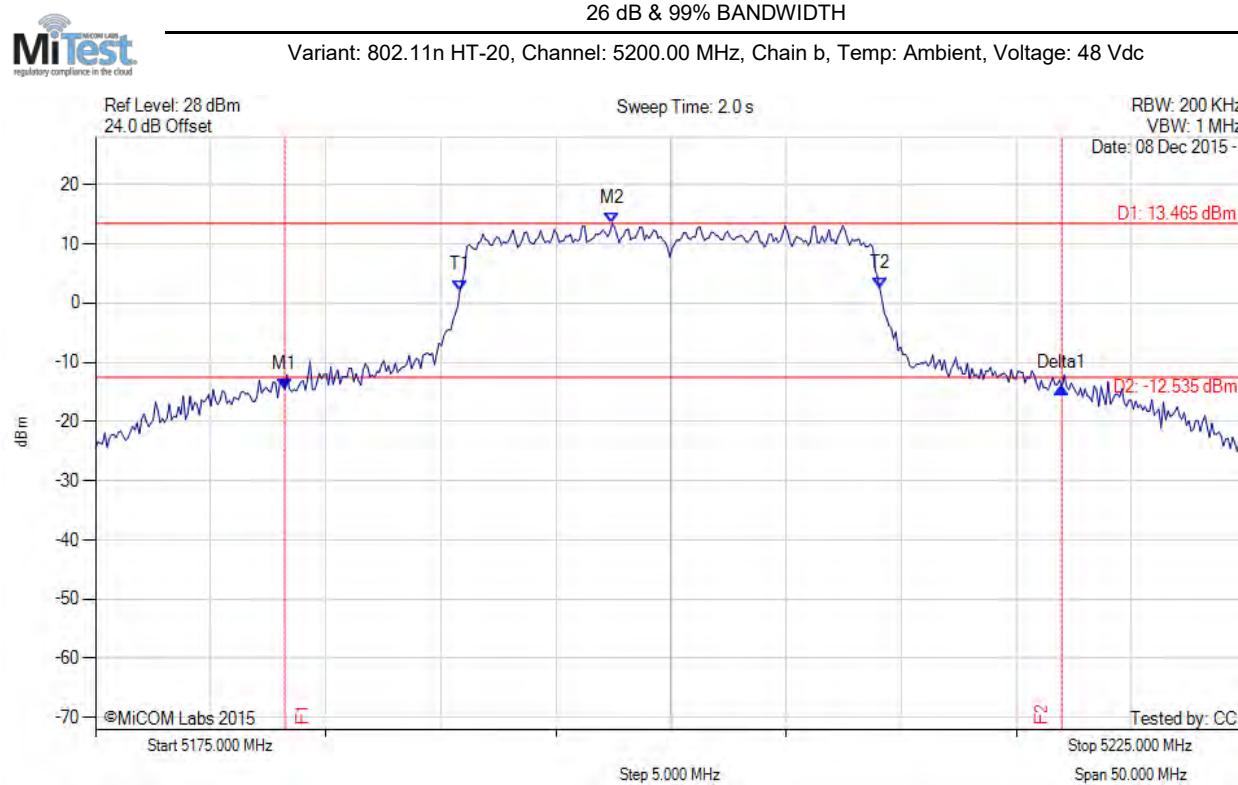
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5184.719 MHz : -14.007 dBm M2 : 5197.445 MHz : 13.550 dBm Delta1 : 29.760 MHz : 1.479 dB T1 : 5190.932 MHz : 3.685 dBm T2 : 5208.968 MHz : 4.734 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 29.760 MHz Measured 99% Bandwidth: 18.036 MHz

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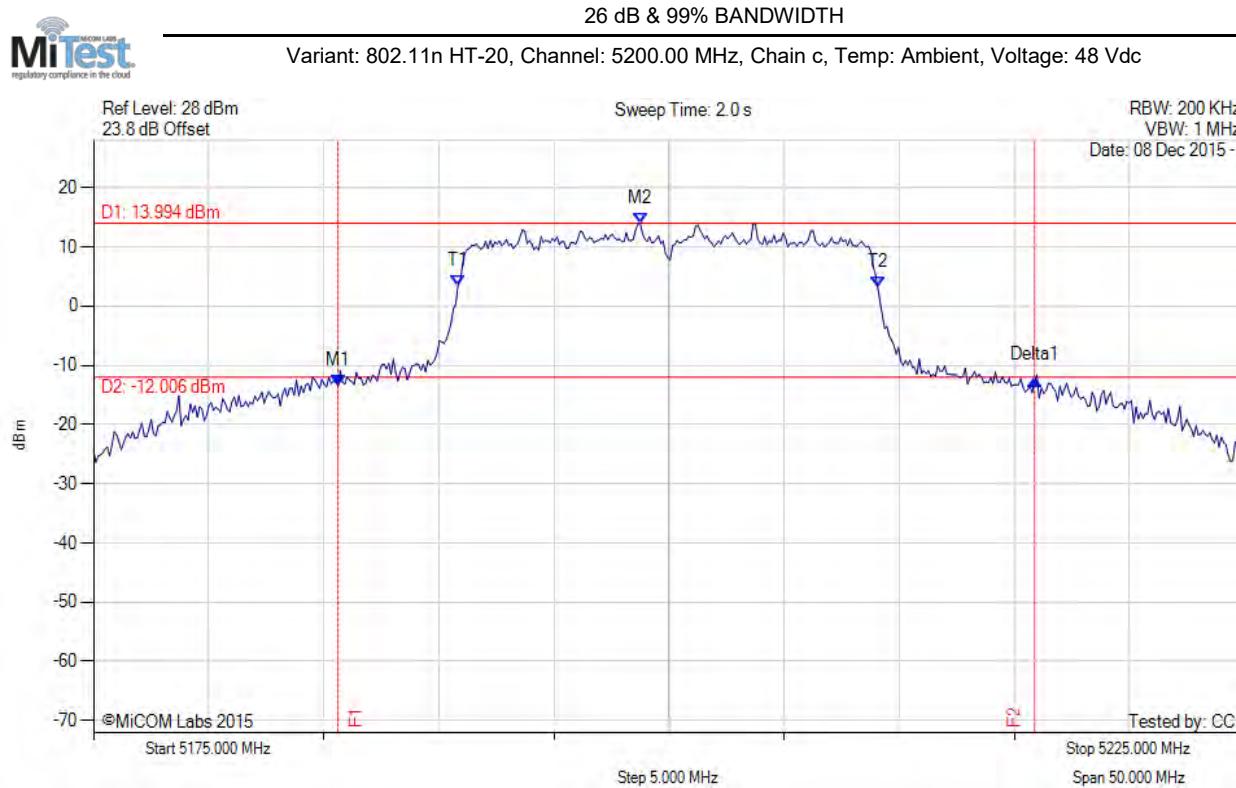
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5183.216 MHz : -14.574 dBm M2 : 5197.445 MHz : 13.465 dBm Delta1 : 33.768 MHz : 0.169 dB T1 : 5190.832 MHz : 2.159 dBm T2 : 5209.068 MHz : 2.535 dBm OBW : 18.236 MHz	Measured 26 dB Bandwidth: 33.768 MHz Measured 99% Bandwidth: 18.236 MHz

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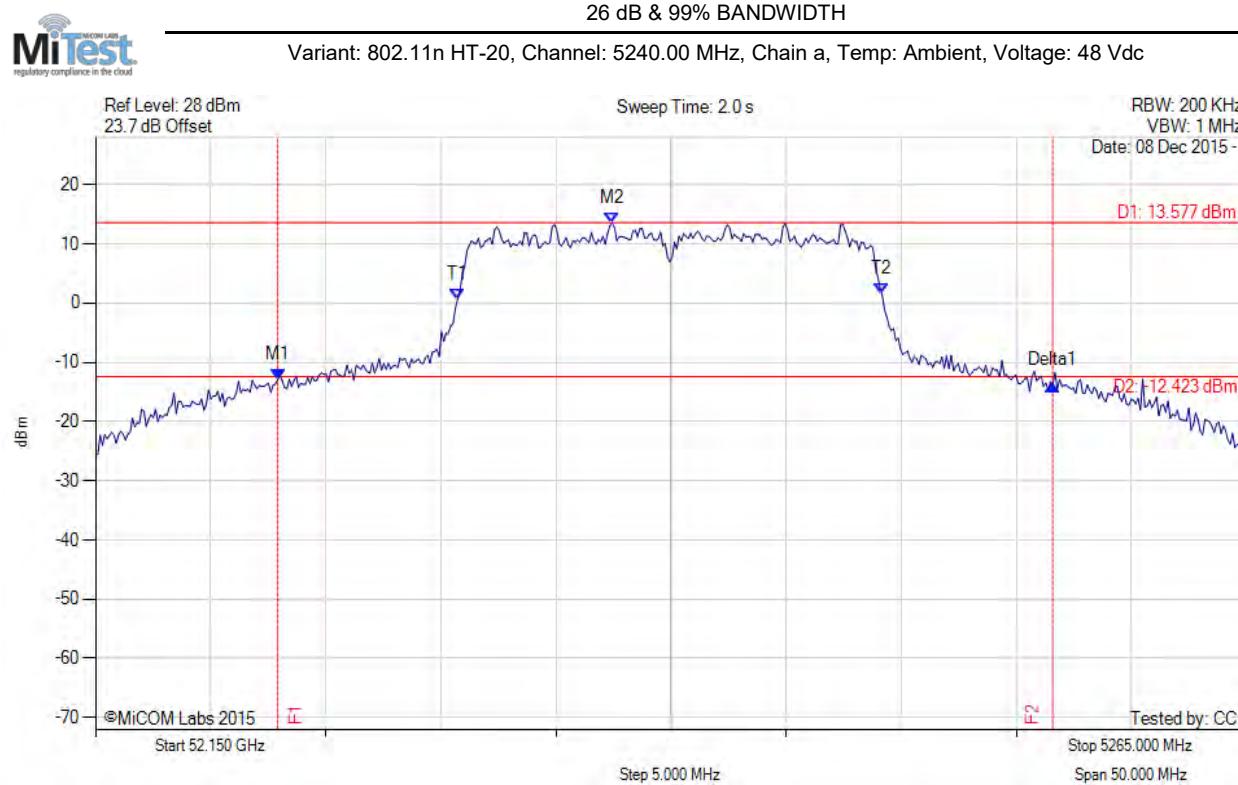
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5185.621 MHz : -13.462 dBm M2 : 5198.747 MHz : 13.994 dBm Delta1 : 30.261 MHz : 1.035 dB T1 : 5190.832 MHz : 3.451 dBm T2 : 5209.068 MHz : 3.168 dBm OBW : 18.236 MHz	Measured 26 dB Bandwidth: 30.261 MHz Measured 99% Bandwidth: 18.236 MHz

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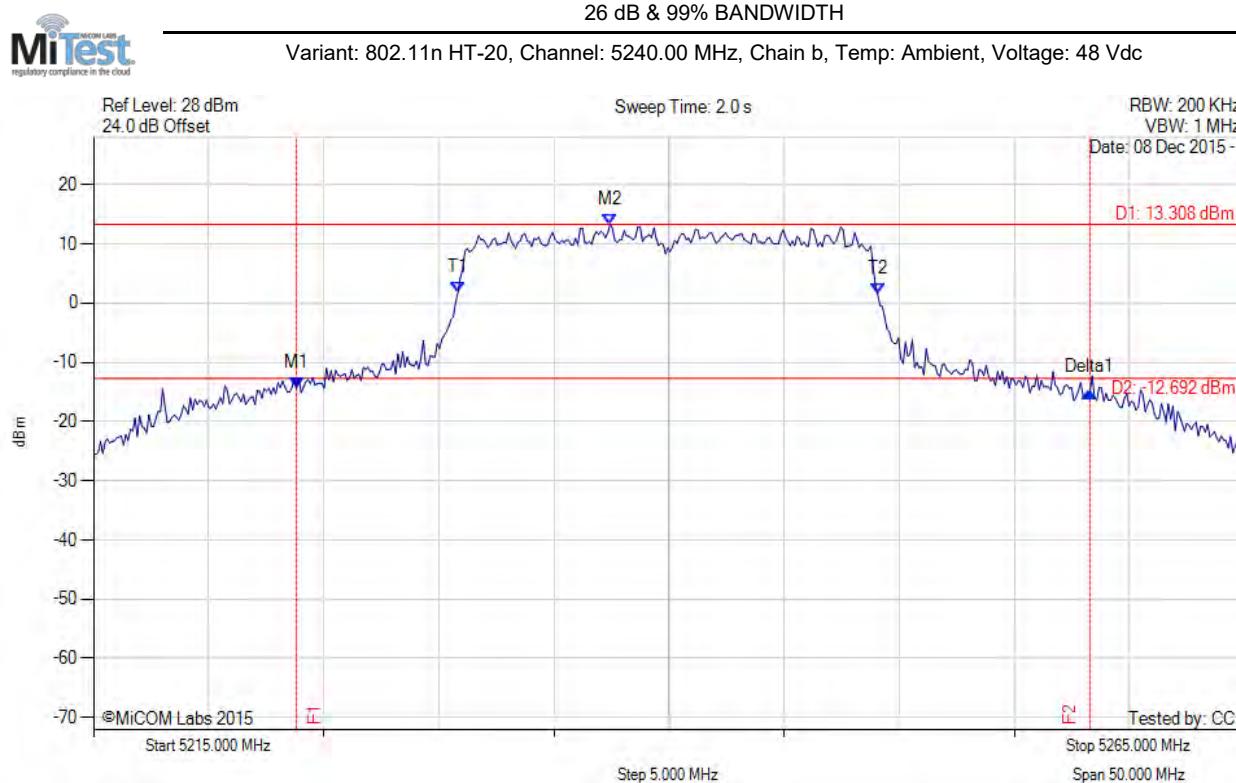
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5222.916 MHz : -12.842 dBm M2 : 5237.445 MHz : 13.577 dBm Delta1 : 33.667 MHz : -0.944 dB T1 : 5230.731 MHz : 0.646 dBm T2 : 5249.168 MHz : 1.466 dBm OBW : 18.437 MHz	Channel Frequency: 5240.00 MHz

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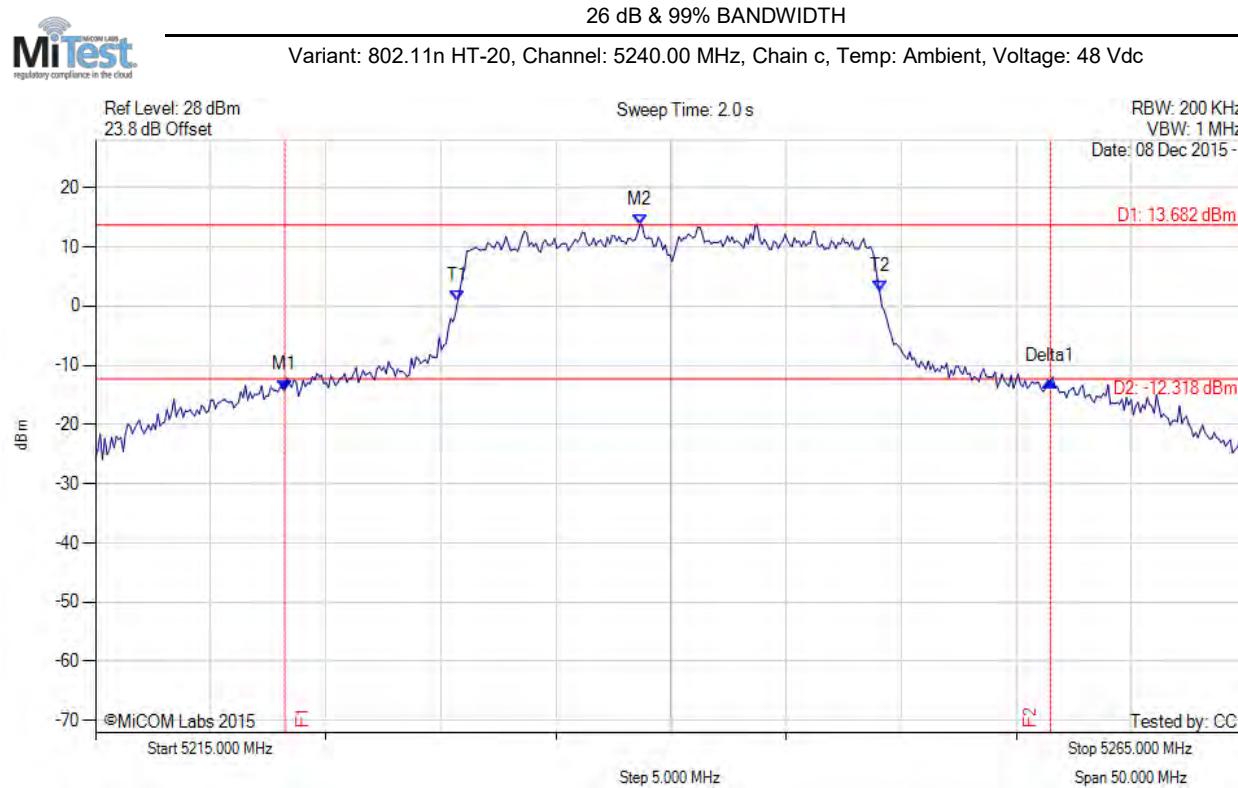
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	ERROR!!! MULTIPLE TEST RESULTS MATCHES...	Measured 26 dB Bandwidth: 34.469 MHz Measured 99% Bandwidth: 18.236 MHz ERROR!!! MULTIPLE TEST RESULTS MATCHES...

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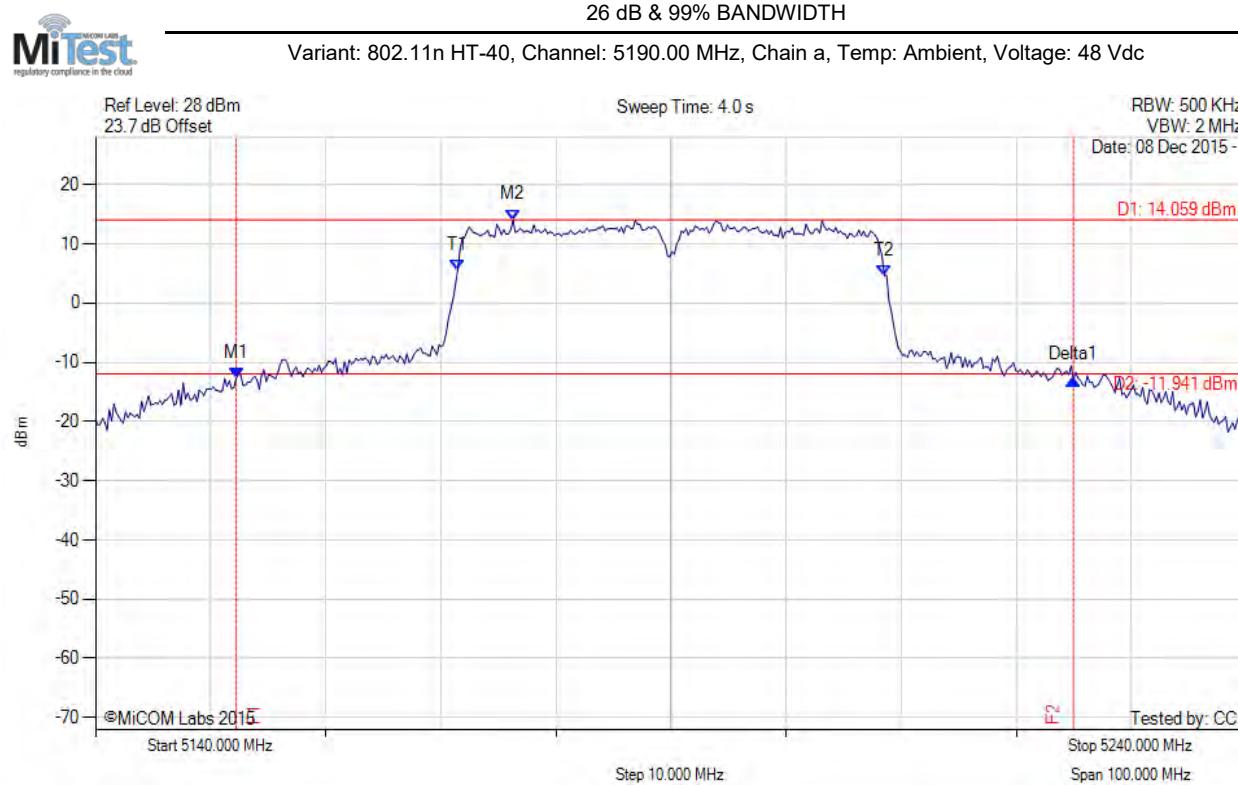
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5223.216 MHz : -14.223 dBm M2 : 5238.647 MHz : 13.682 dBm Delta1 : 33.267 MHz : 1.505 dB T1 : 5230.731 MHz : 0.845 dBm T2 : 5249.068 MHz : 2.399 dBm OBW : 18.337 MHz	Measured 26 dB Bandwidth: 33.267 MHz Measured 99% Bandwidth: 18.337 MHz

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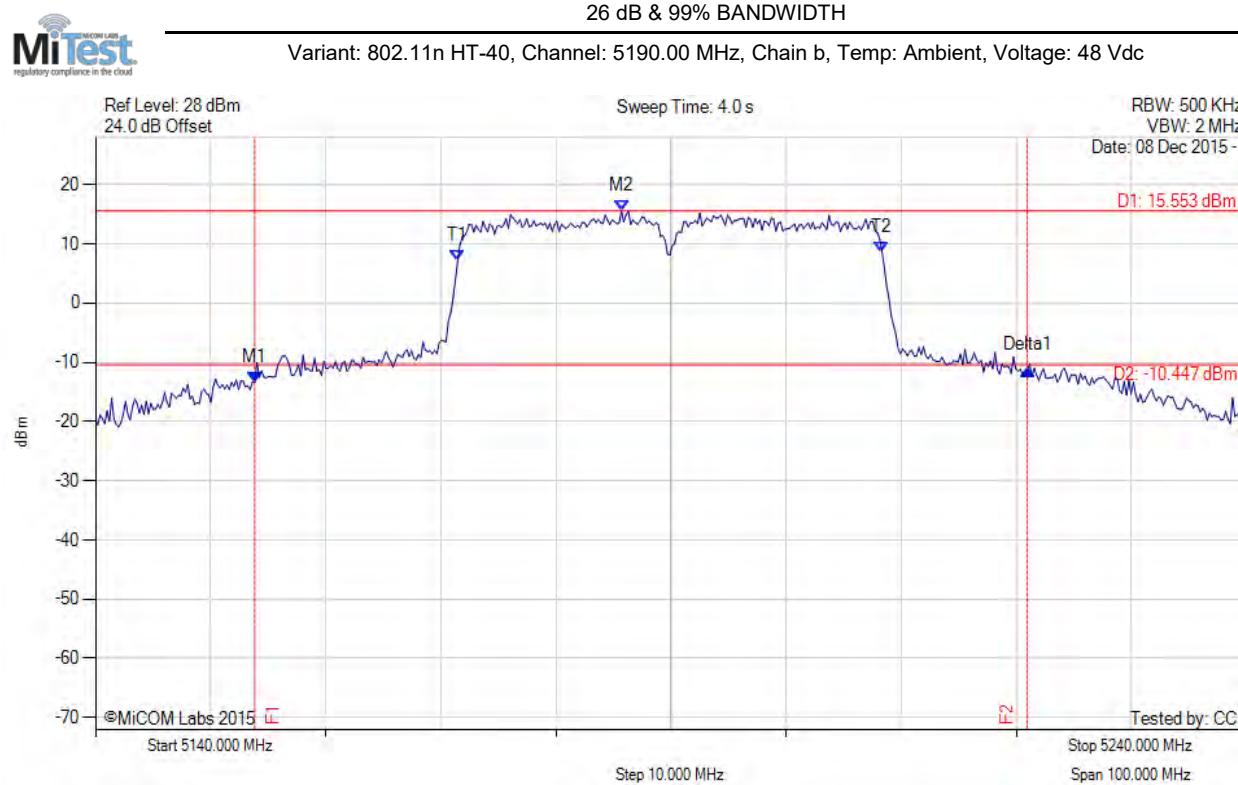
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5152.224 MHz : -12.624 dBm M2 : 5176.273 MHz : 14.059 dBm Delta1 : 72.745 MHz : -0.218 dB T1 : 5171.463 MHz : 5.537 dBm T2 : 5208.537 MHz : 4.610 dBm OBW : 37.074 MHz	Measured 26 dB Bandwidth: 72.745 MHz Measured 99% Bandwidth: 37.074 MHz

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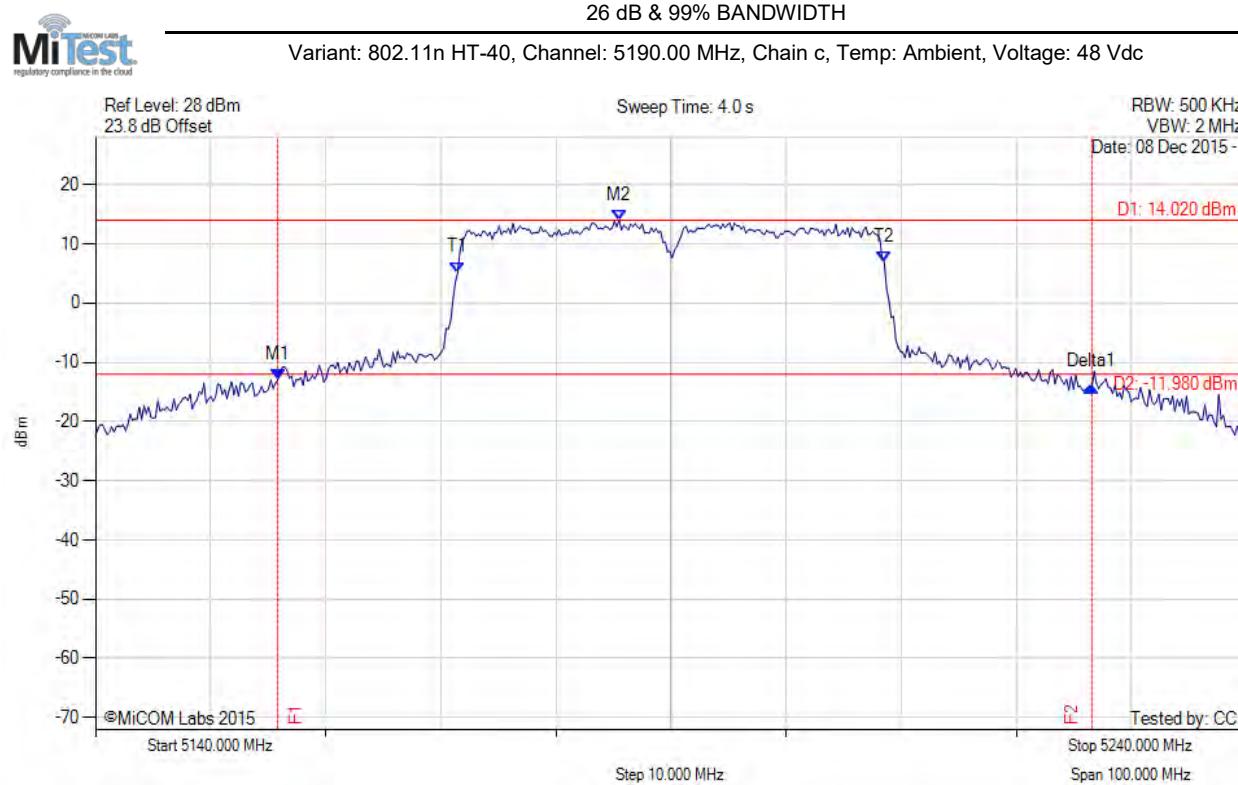
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5153.828 MHz : -13.360 dBm M2 : 5185.691 MHz : 15.553 dBm Delta1 : 67.134 MHz : 2.121 dB T1 : 5171.463 MHz : 7.170 dBm T2 : 5208.337 MHz : 8.596 dBm OBW : 36.874 MHz	Measured 26 dB Bandwidth: 67.134 MHz Measured 99% Bandwidth: 36.874 MHz

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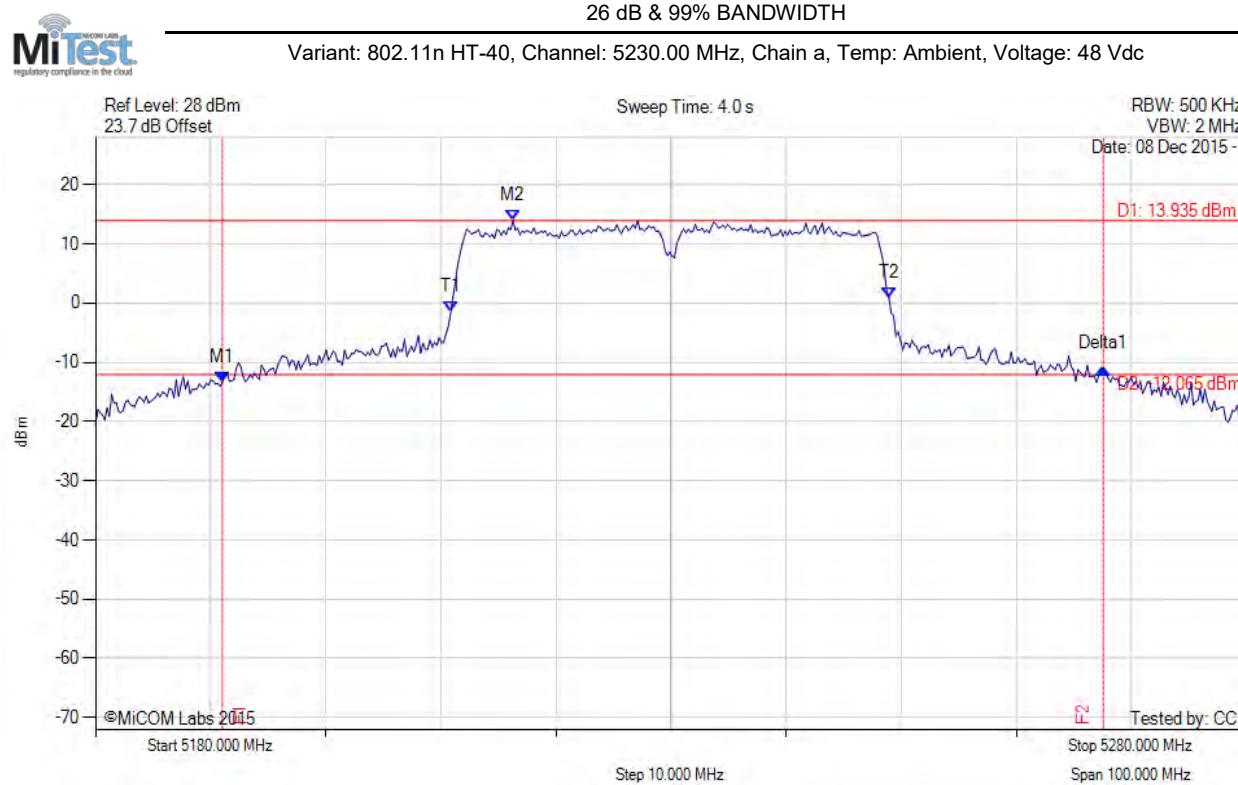
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5155.832 MHz : -12.982 dBm M2 : 5185.491 MHz : 14.020 dBm Delta1 : 70.741 MHz : -1.194 dB T1 : 5171.463 MHz : 5.194 dBm T2 : 5208.537 MHz : 6.865 dBm OBW : 37.074 MHz	Measured 26 dB Bandwidth: 70.741 MHz Measured 99% Bandwidth: 37.074 MHz

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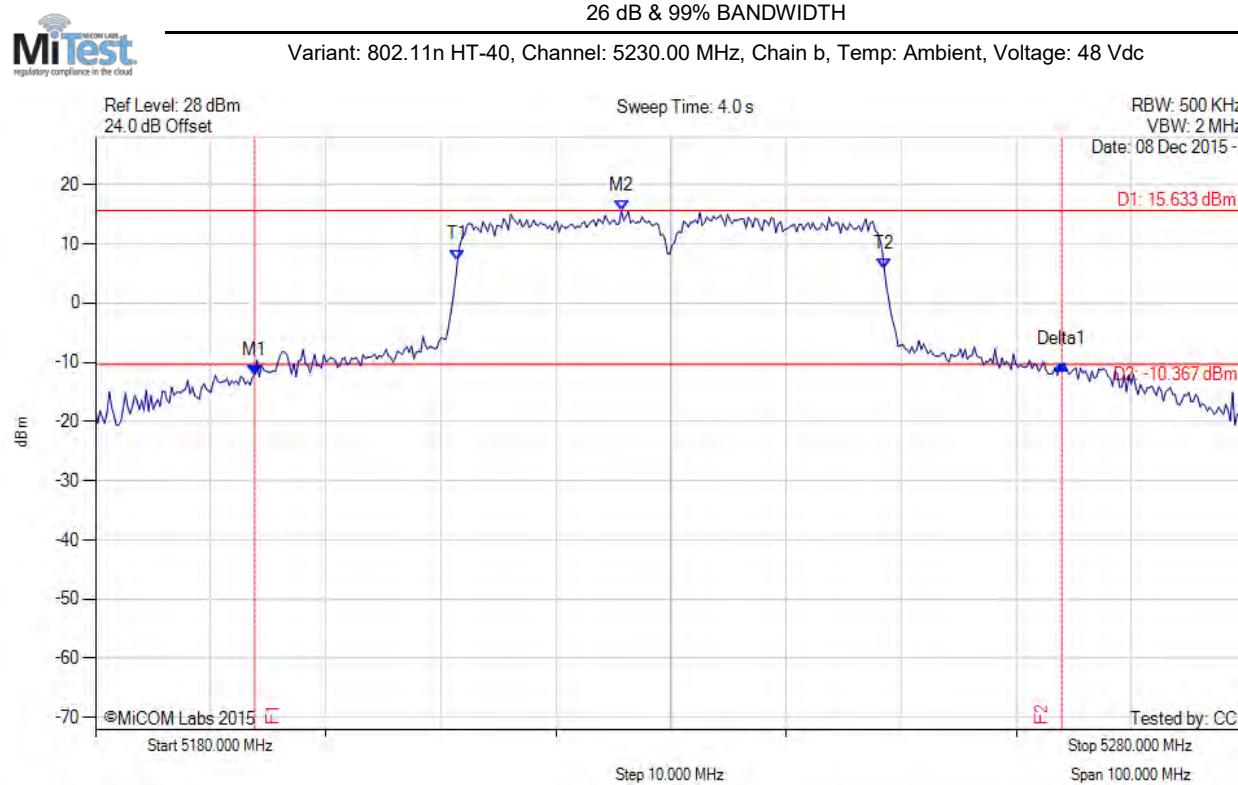
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5191.022 MHz : -13.336 dBm M2 : 5216.273 MHz : 13.935 dBm Delta1 : 76.553 MHz : 2.274 dB T1 : 5210.862 MHz : -1.560 dBm T2 : 5248.938 MHz : 0.815 dBm OBW : 38.076 MHz	Measured 26 dB Bandwidth: 76.553 MHz Measured 99% Bandwidth: 38.076 MHz

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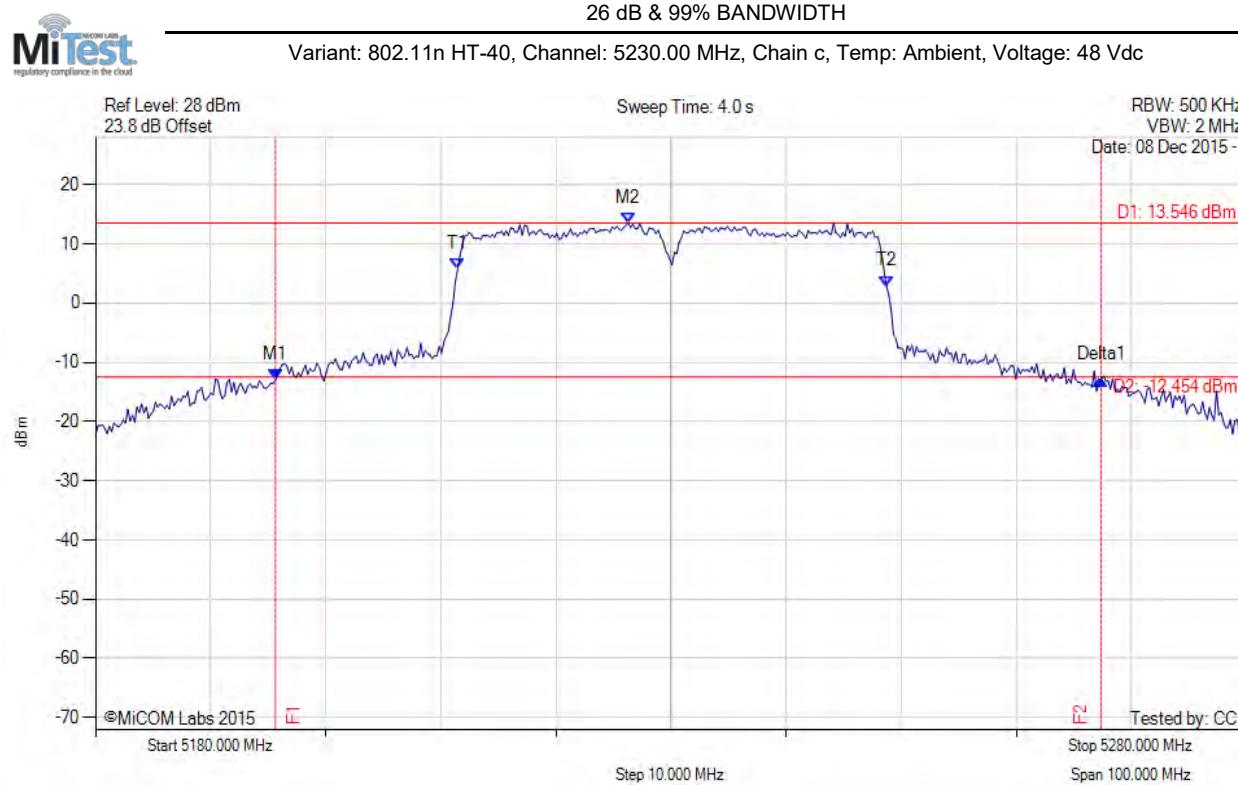
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5193.828 MHz : -12.138 dBm M2 : 5225.691 MHz : 15.633 dBm Delta1 : 70.140 MHz : 1.786 dB T1 : 5211.463 MHz : 7.284 dBm T2 : 5248.537 MHz : 5.737 dBm OBW : 37.074 MHz	Measured 26 dB Bandwidth: 70.140 MHz Measured 99% Bandwidth: 37.074 MHz

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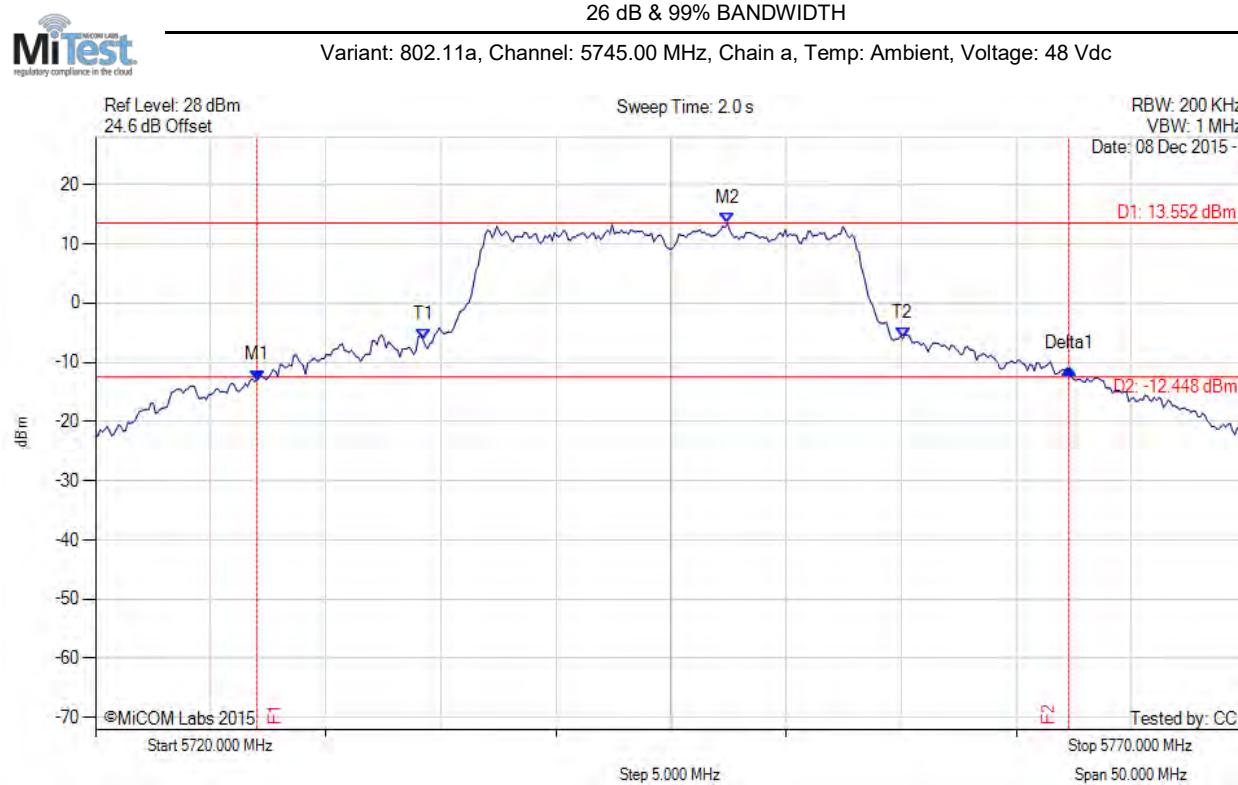
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5195.631 MHz : -13.019 dBm M2 : 5226.293 MHz : 13.546 dBm Delta1 : 71.743 MHz : 0.153 dB T1 : 5211.463 MHz : 5.686 dBm T2 : 5248.737 MHz : 2.841 dBm OBW : 37.275 MHz	Measured 26 dB Bandwidth: 71.743 MHz Measured 99% Bandwidth: 37.275 MHz

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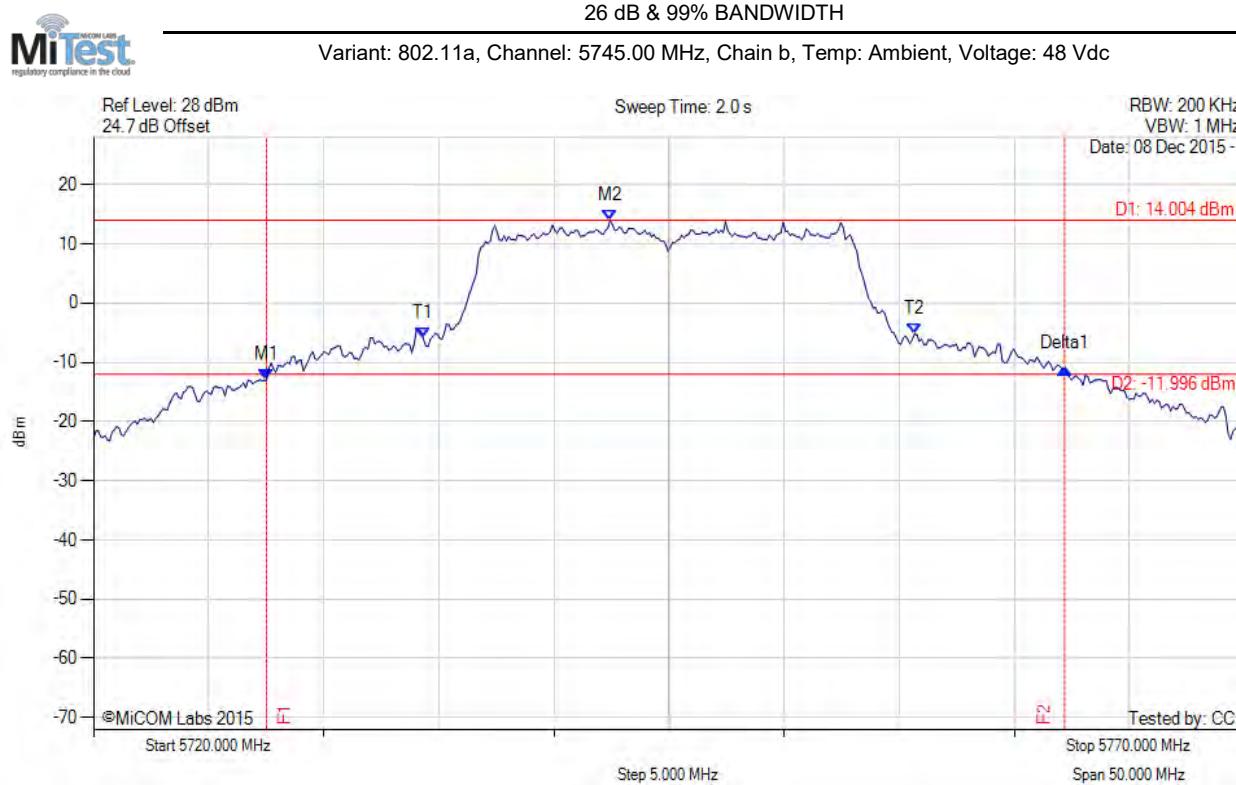
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5727.014 MHz : -13.031 dBm M2 : 5747.455 MHz : 13.552 dBm Delta1 : 35.271 MHz : 1.879 dB T1 : 5734.228 MHz : -6.171 dBm T2 : 5755.070 MHz : -5.962 dBm OBW : 20.842 MHz	Measured 26 dB Bandwidth: 35.271 MHz Measured 99% Bandwidth: 20.842 MHz

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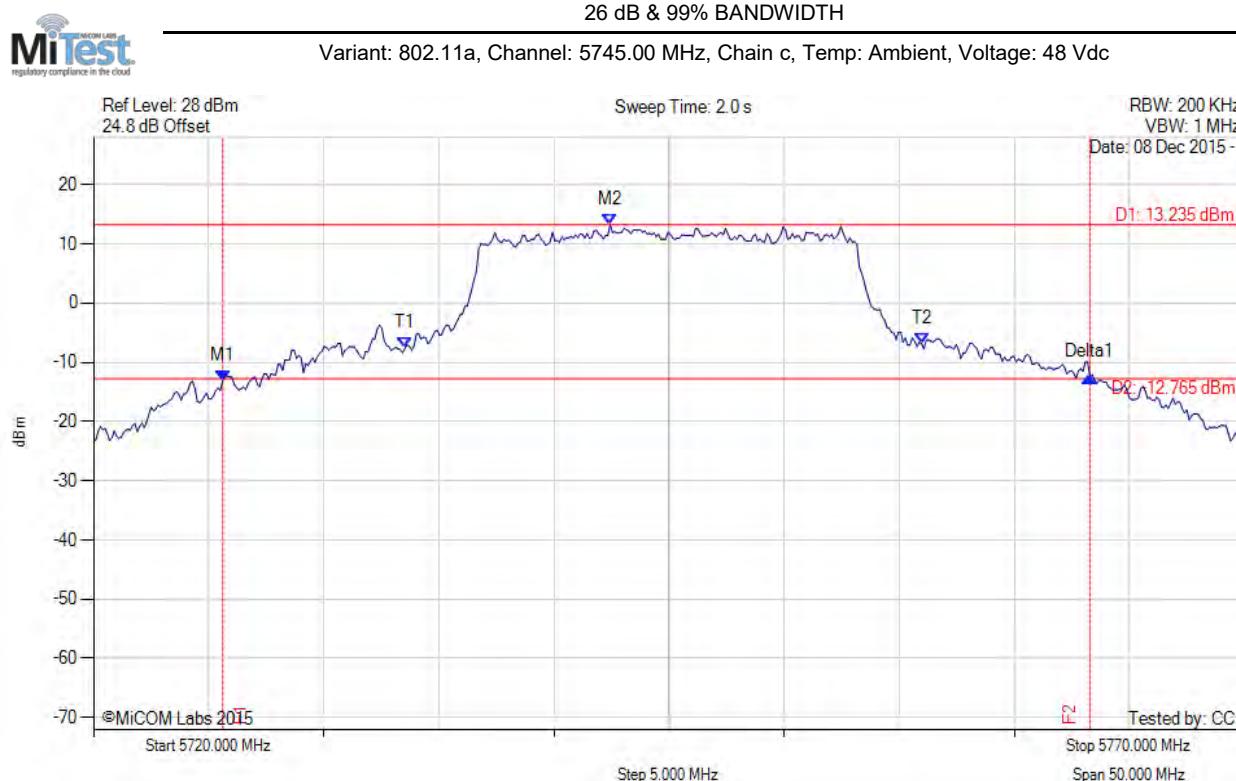
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5727.515 MHz : -13.017 dBm M2 : 5742.445 MHz : 14.004 dBm Delta1 : 34.669 MHz : 1.881 dB T1 : 5734.329 MHz : -5.982 dBm T2 : 5755.671 MHz : -5.213 dBm OBW : 21.343 MHz	Measured 26 dB Bandwidth: 34.669 MHz Measured 99% Bandwidth: 21.343 MHz

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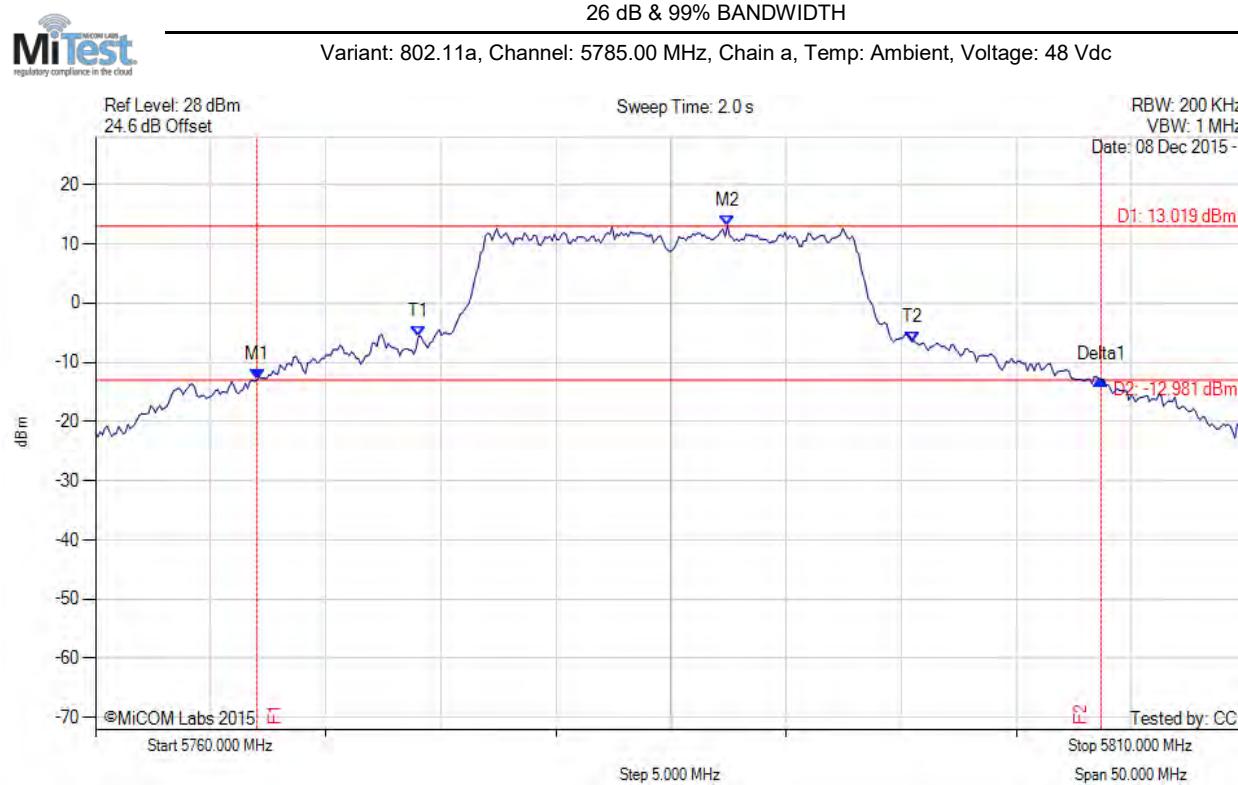
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5725.611 MHz : -13.098 dBm M2 : 5742.445 MHz : 13.235 dBm Delta1 : 37.675 MHz : 0.659 dB T1 : 5733.527 MHz : -7.645 dBm T2 : 5755.972 MHz : -6.787 dBm OBW : 22.445 MHz	Measured 26 dB Bandwidth: 37.675 MHz Measured 99% Bandwidth: 22.445 MHz

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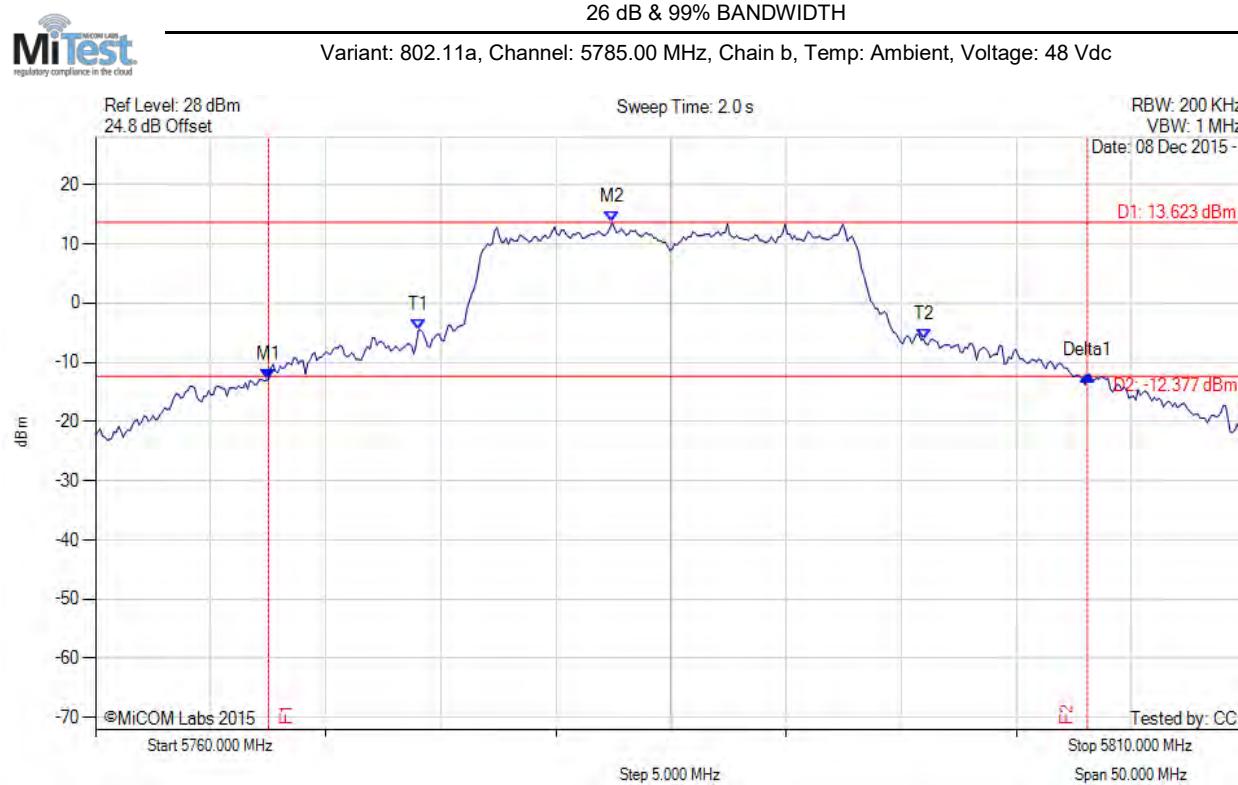
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5767.014 MHz : -13.004 dBm M2 : 5787.455 MHz : 13.019 dBm Delta1 : 36.673 MHz : 0.071 dB T1 : 5774.028 MHz : -5.636 dBm T2 : 5795.471 MHz : -6.547 dBm OBW : 21.443 MHz	Measured 26 dB Bandwidth: 36.673 MHz Measured 99% Bandwidth: 21.443 MHz

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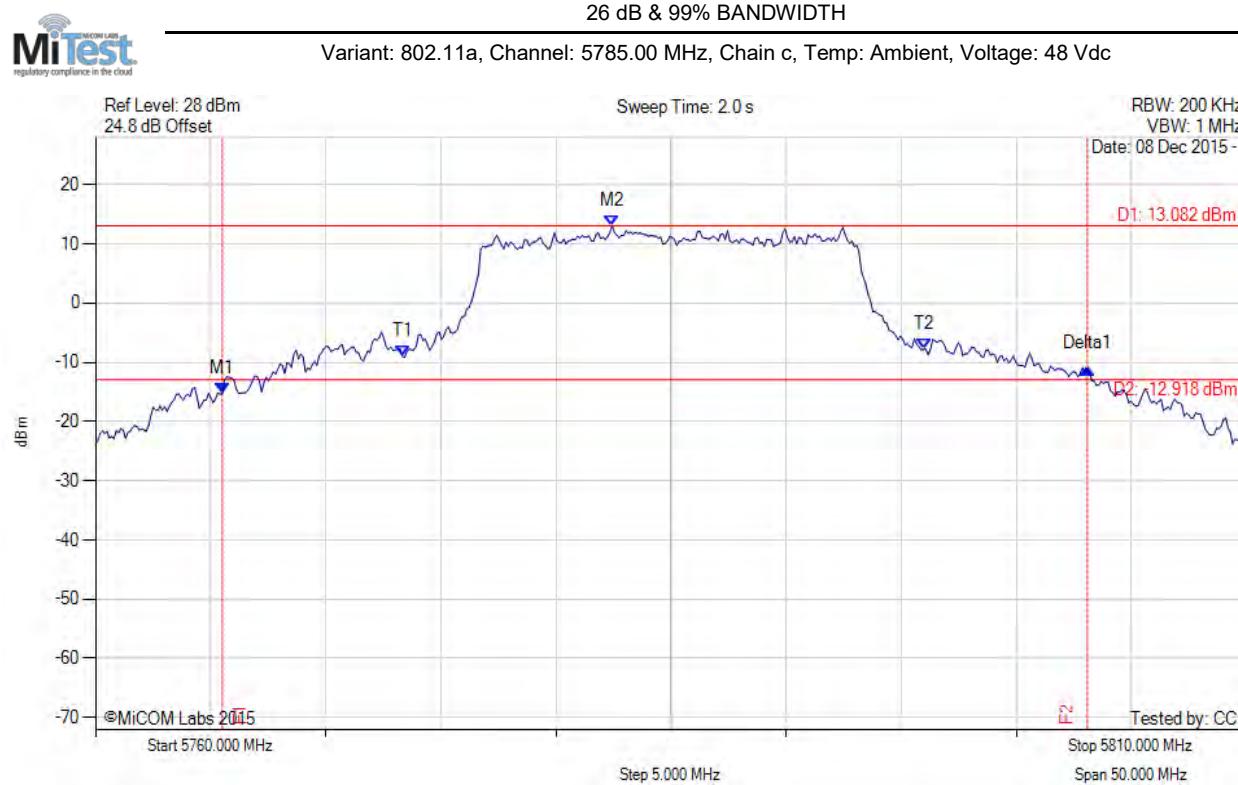
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5767.515 MHz : -13.000 dBm M2 : 5782.445 MHz : 13.623 dBm Delta1 : 35.571 MHz : 0.769 dB T1 : 5774.028 MHz : -4.585 dBm T2 : 5795.972 MHz : -6.049 dBm OBW : 21.944 MHz	Measured 26 dB Bandwidth: 35.571 MHz Measured 99% Bandwidth: 21.944 MHz

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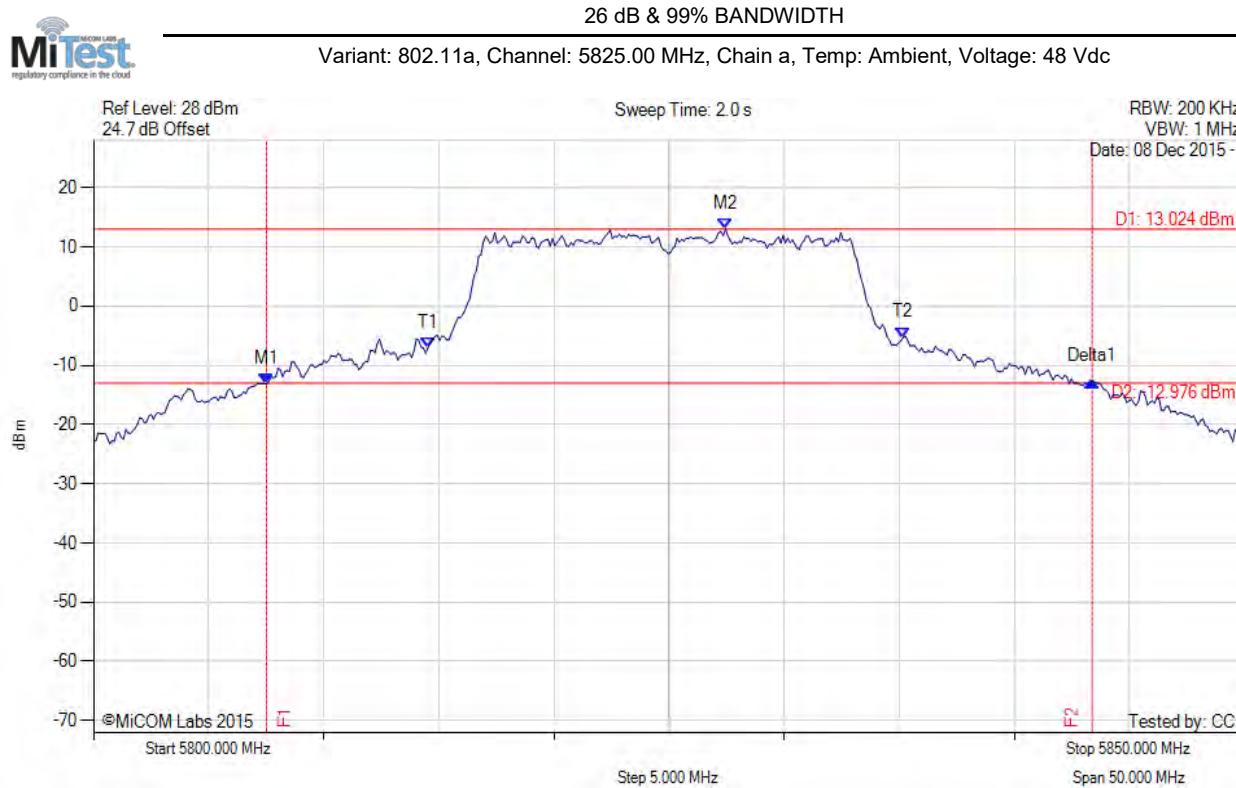
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5765.511 MHz : -15.272 dBm M2 : 5782.445 MHz : 13.082 dBm Delta1 : 37.575 MHz : 4.147 dB T1 : 5773.327 MHz : -8.984 dBm T2 : 5795.972 MHz : -7.829 dBm OBW : 22.645 MHz	Measured 26 dB Bandwidth: 37.575 MHz Measured 99% Bandwidth: 22.645 MHz

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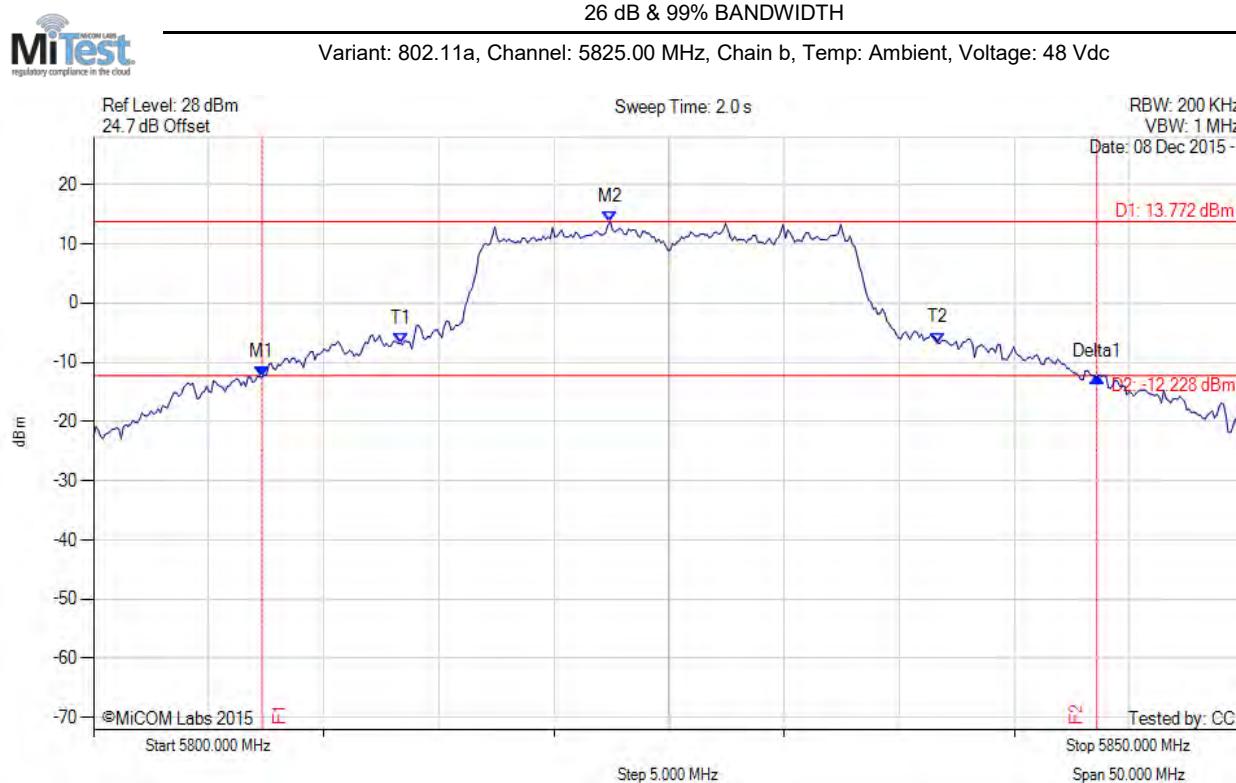
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5807.515 MHz : -13.149 dBm M2 : 5827.455 MHz : 13.024 dBm Delta1 : 35.872 MHz : 0.541 dB T1 : 5814.529 MHz : -7.025 dBm T2 : 5835.170 MHz : -5.325 dBm OBW : 20.641 MHz	Measured 26 dB Bandwidth: 35.872 MHz Measured 99% Bandwidth: 20.641 MHz

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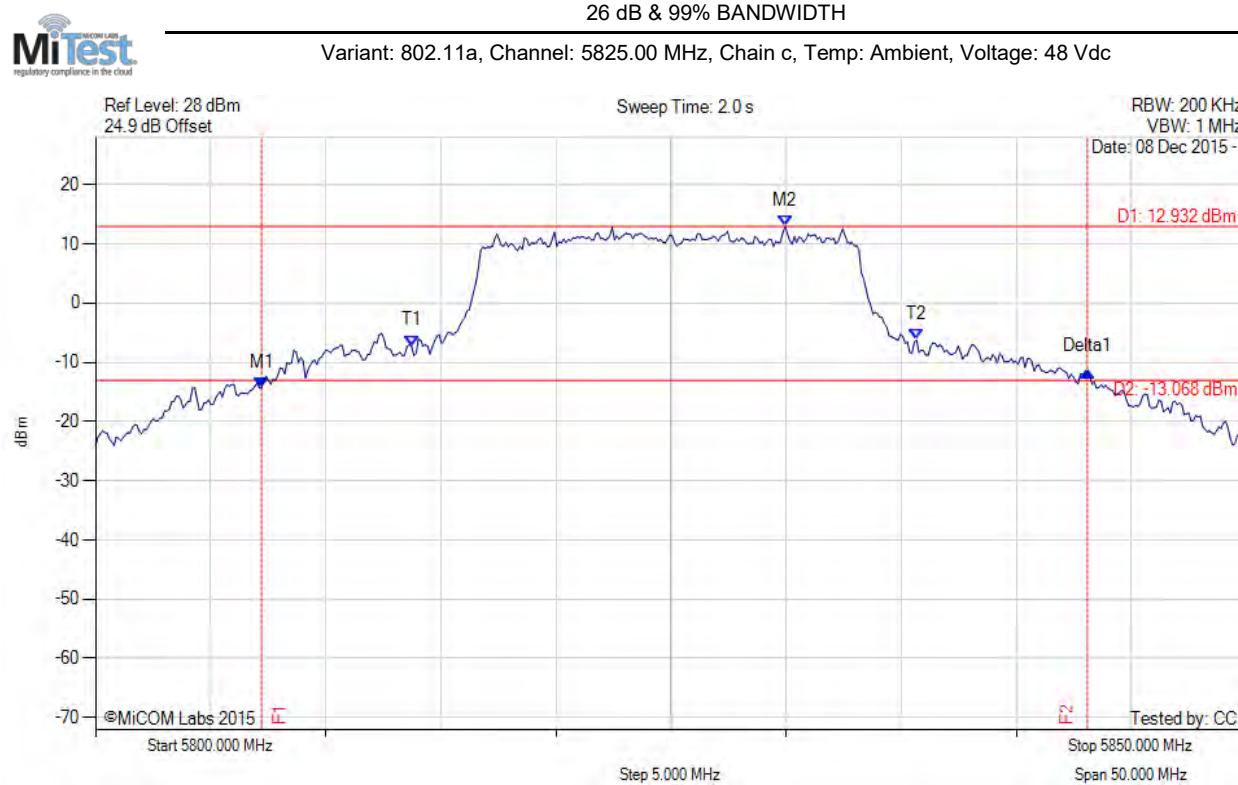
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5807.315 MHz : -12.453 dBm M2 : 5822.445 MHz : 13.772 dBm Delta1 : 36.273 MHz : 0.047 dB T1 : 5813.327 MHz : -6.836 dBm T2 : 5836.673 MHz : -6.745 dBm OBW : 23.347 MHz	Measured 26 dB Bandwidth: 36.273 MHz Measured 99% Bandwidth: 23.347 MHz

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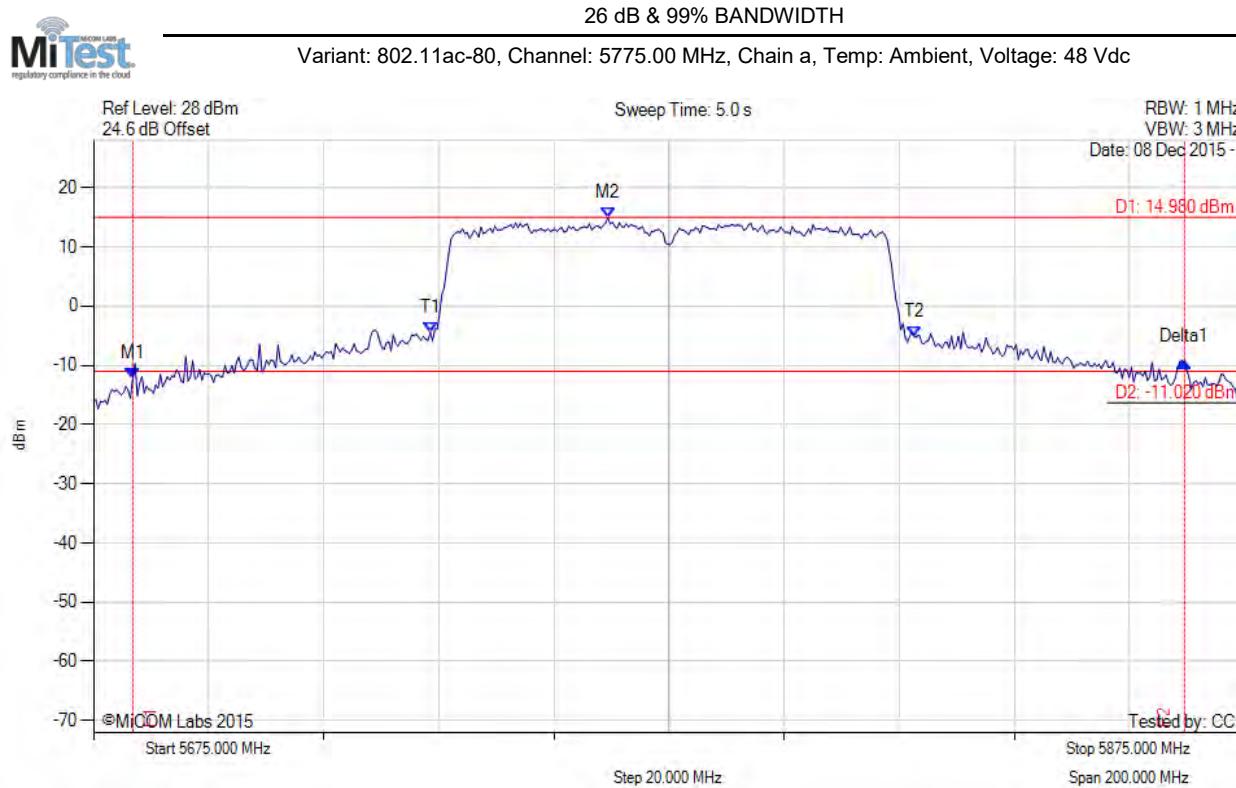
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5807.214 MHz : -14.288 dBm M2 : 5829.960 MHz : 12.932 dBm Delta1 : 35.872 MHz : 2.859 dB T1 : 5813.727 MHz : -7.206 dBm T2 : 5835.671 MHz : -6.246 dBm OBW : 21.944 MHz	Measured 26 dB Bandwidth: 35.872 MHz Measured 99% Bandwidth: 21.944 MHz

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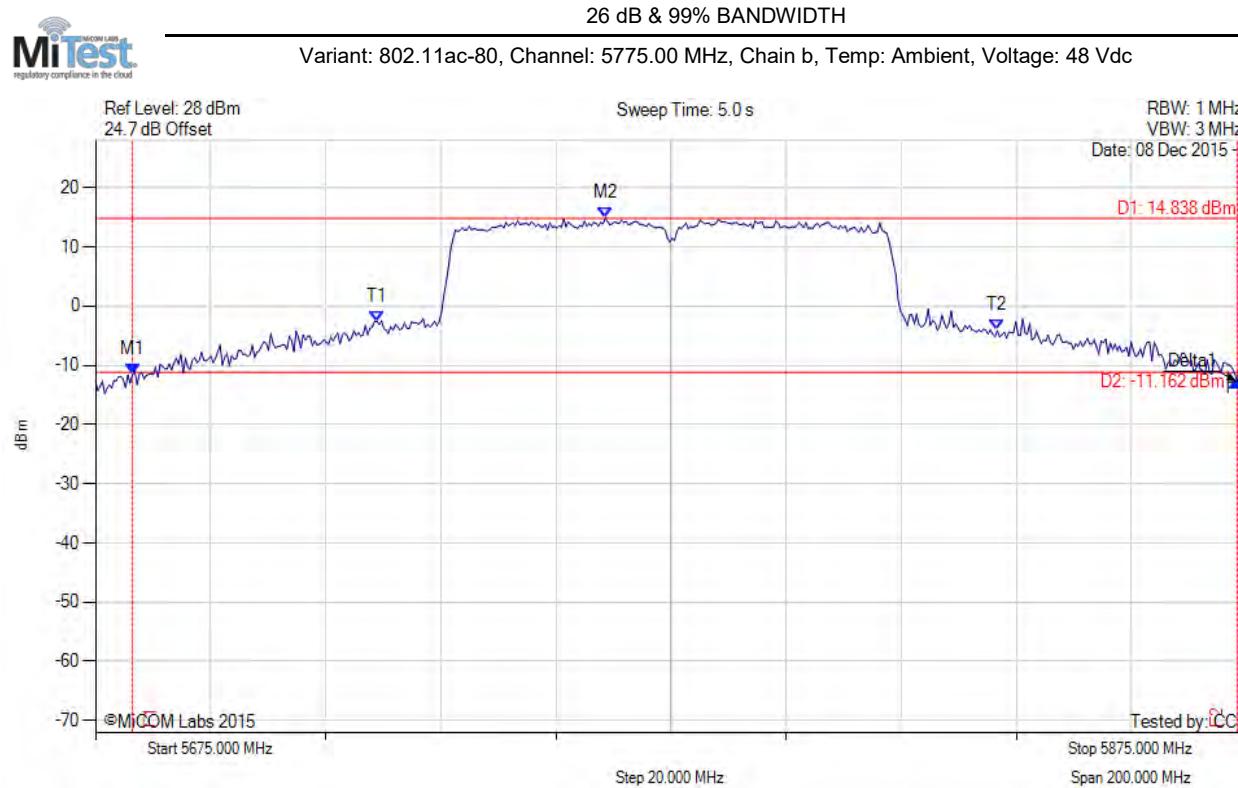
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5681.814 MHz : -12.240 dBm M2 : 5764.379 MHz : 14.980 dBm Delta1 : 182.766 MHz : 2.774 dB T1 : 5733.517 MHz : -4.491 dBm T2 : 5817.685 MHz : -5.242 dBm OBW : 84.168 MHz	Measured 26 dB Bandwidth: 182.766 MHz Measured 99% Bandwidth: 84.168 MHz

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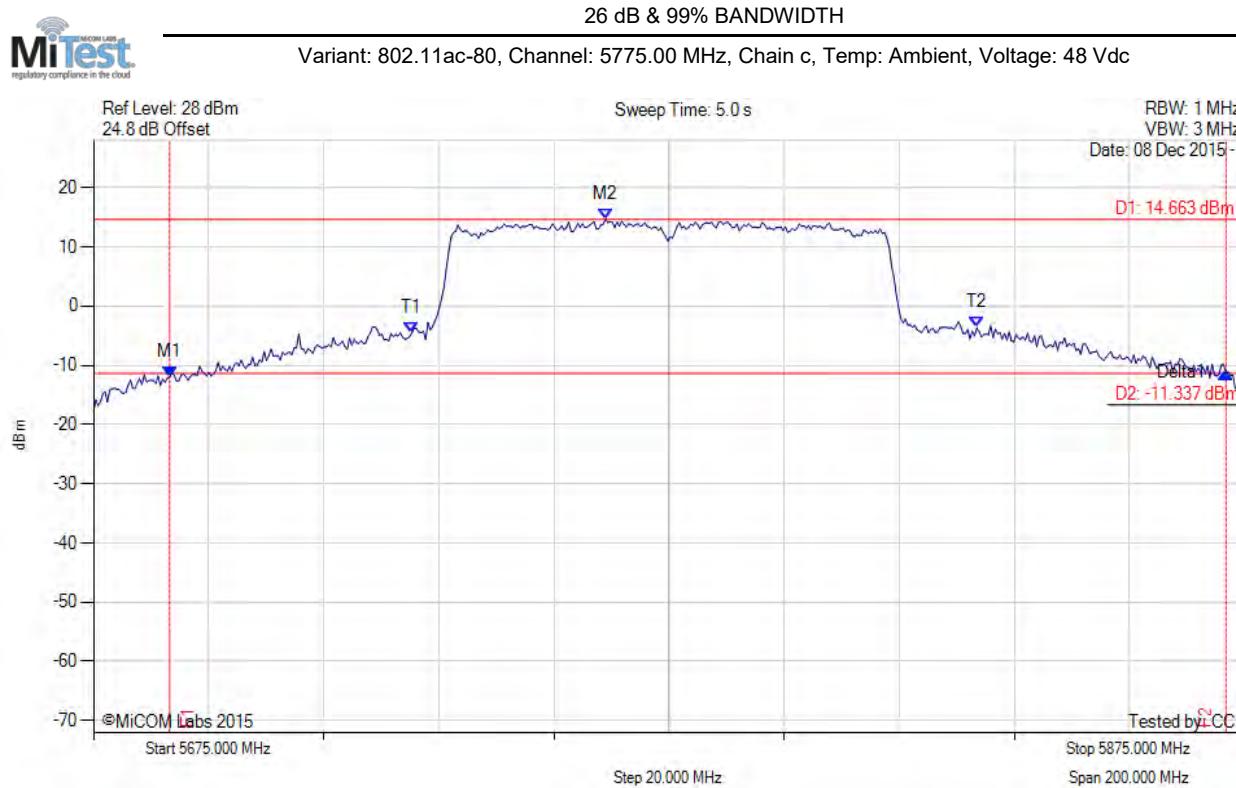
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5681.413 MHz : -11.579 dBm M2 : 5763.577 MHz : 14.838 dBm Delta1 : 191.984 MHz : -1.184 dB T1 : 5723.898 MHz : -2.596 dBm T2 : 5831.713 MHz : -4.145 dBm OBW : 107.816 MHz	Measured 26 dB Bandwidth: 191.984 MHz Measured 99% Bandwidth: 107.816 MHz

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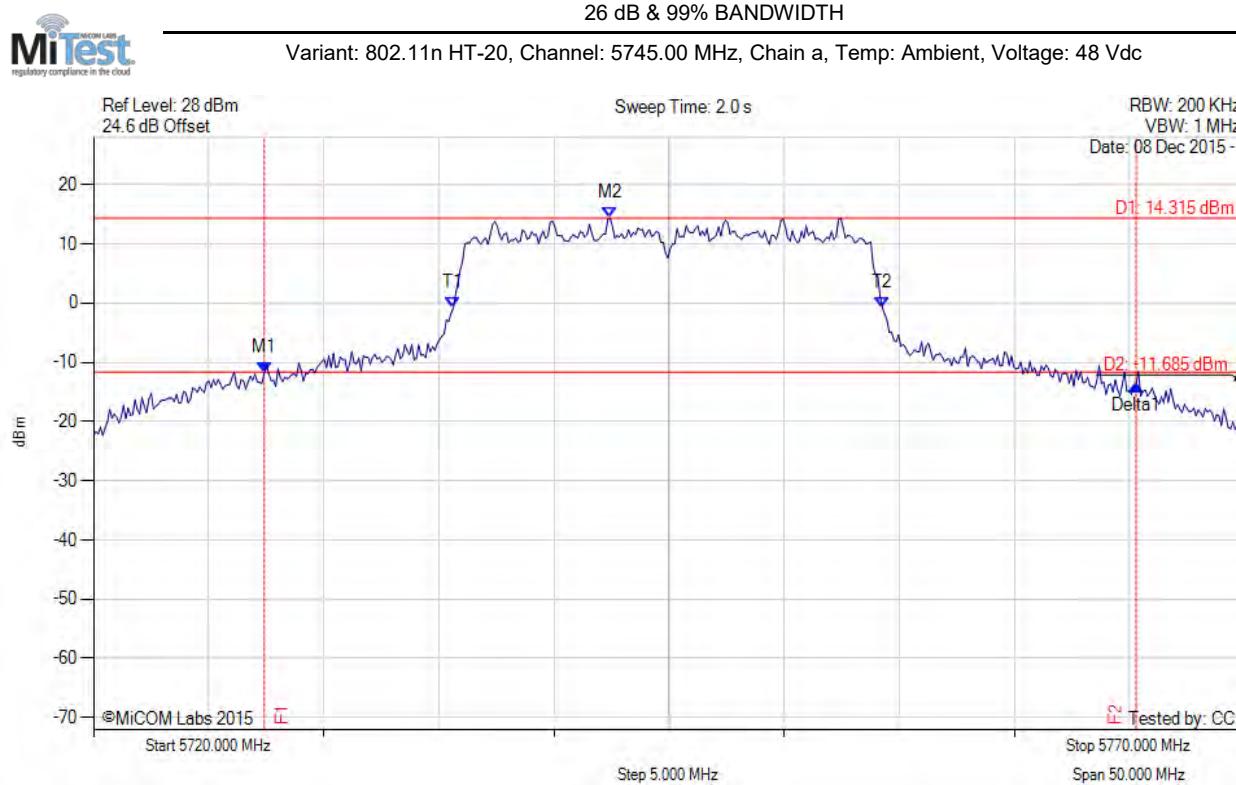
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5688.226 MHz : -12.012 dBm M2 : 5763.978 MHz : 14.663 dBm Delta1 : 183.567 MHz : 0.848 dB T1 : 5730.311 MHz : -4.562 dBm T2 : 5828.507 MHz : -3.667 dBm OBW : 98.196 MHz	Measured 26 dB Bandwidth: 183.567 MHz Measured 99% Bandwidth: 98.196 MHz

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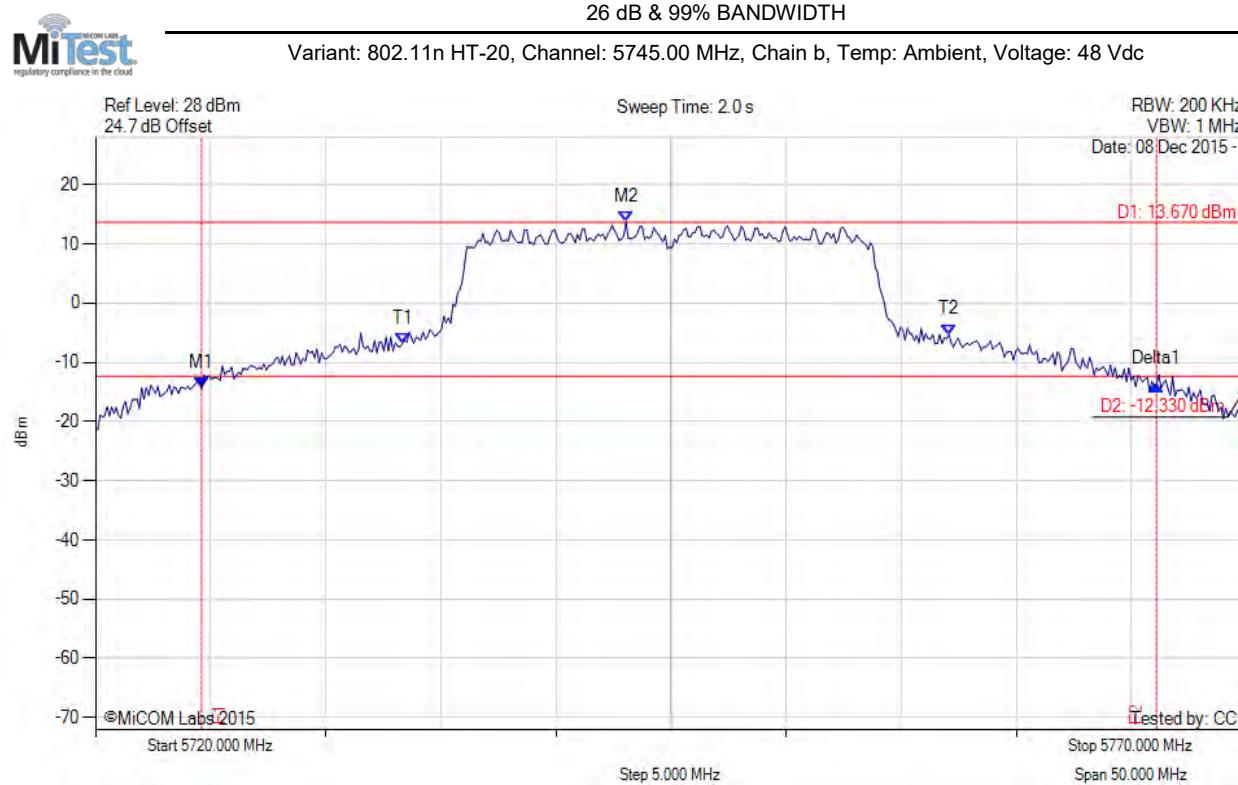
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5727.415 MHz : -11.758 dBm M2 : 5742.445 MHz : 14.315 dBm Delta1 : 37.876 MHz : -2.017 dB T1 : 5735.631 MHz : -0.841 dBm T2 : 5754.269 MHz : -0.692 dBm OBW : 18.637 MHz	Measured 26 dB Bandwidth: 37.876 MHz Measured 99% Bandwidth: 18.637 MHz

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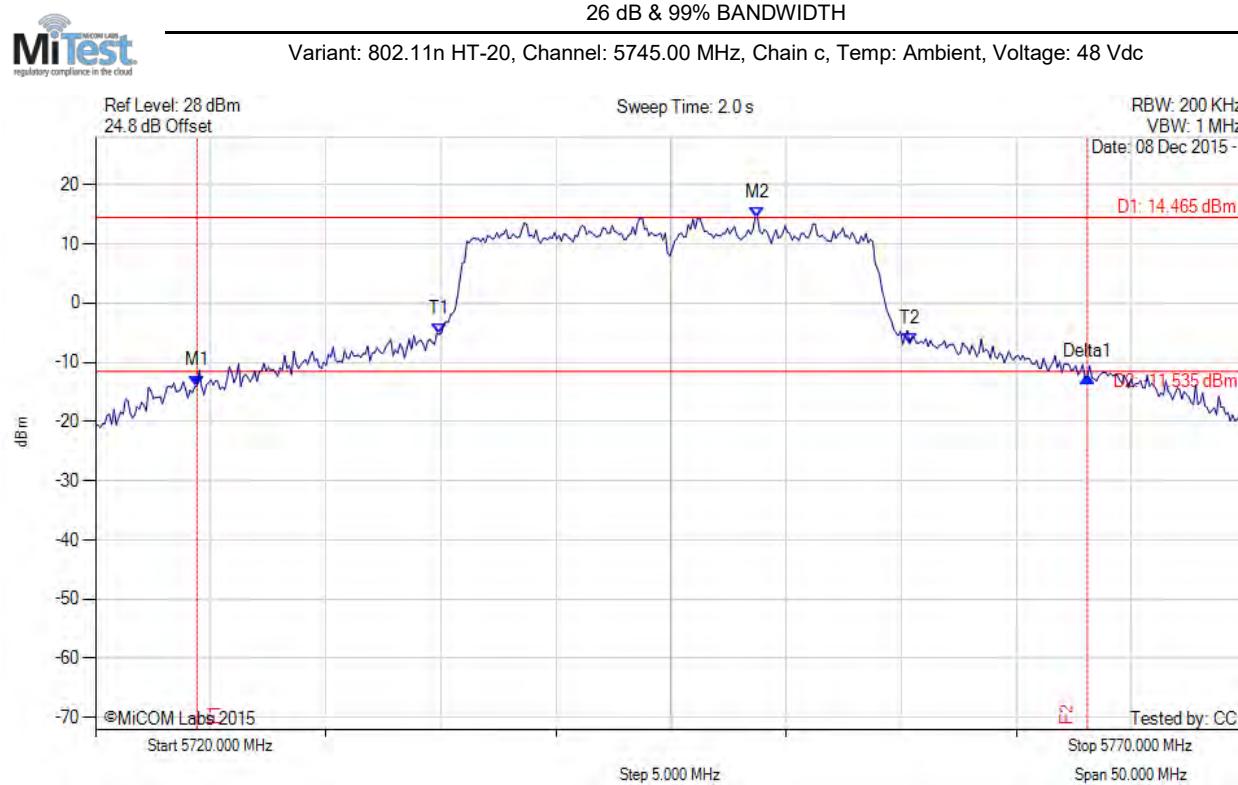
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5724.609 MHz : -14.400 dBm M2 : 5743.046 MHz : 13.670 dBm Delta1 : 41.483 MHz : 0.651 dB T1 : 5733.327 MHz : -6.848 dBm T2 : 5757.074 MHz : -5.321 dBm OBW : 23.747 MHz	Measured 26 dB Bandwidth: 41.483 MHz Measured 99% Bandwidth: 23.747 MHz

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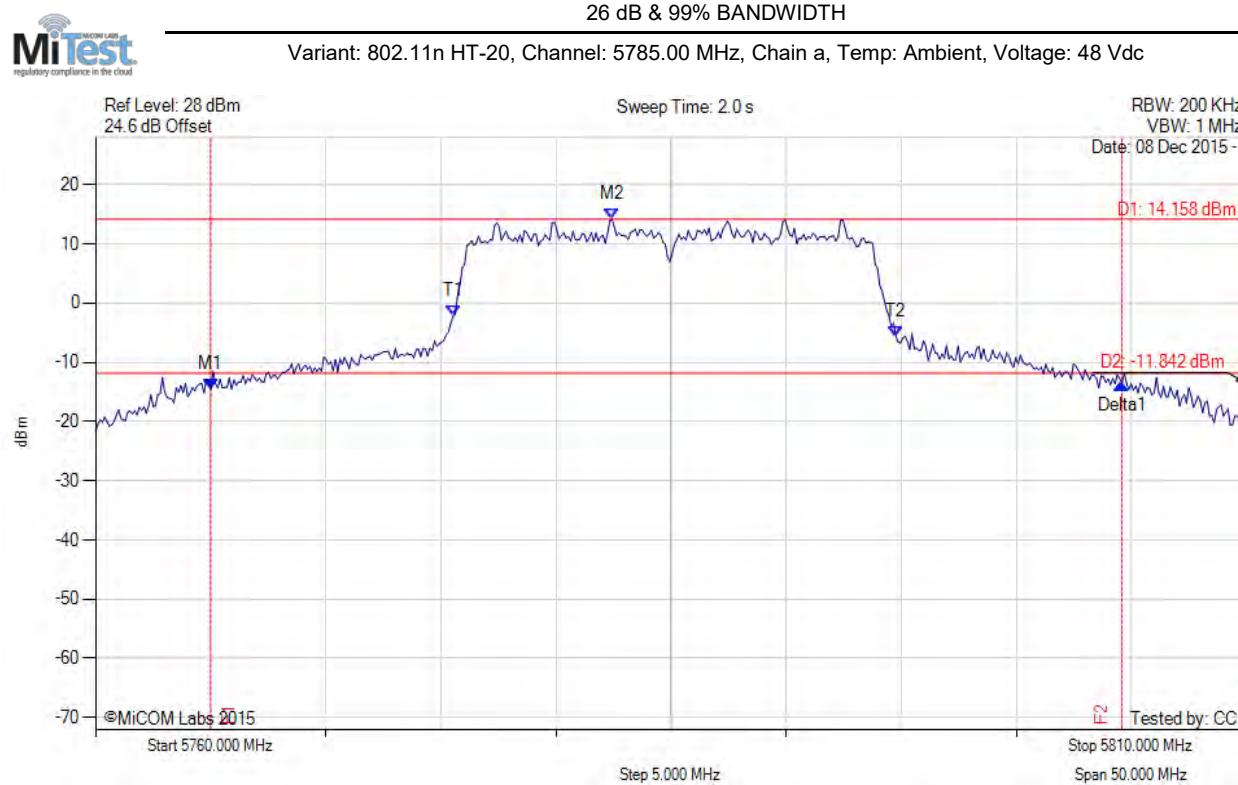
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5724.409 MHz : -13.989 dBm M2 : 5748.758 MHz : 14.465 dBm Delta1 : 38.677 MHz : 1.568 dB T1 : 5734.930 MHz : -5.280 dBm T2 : 5755.371 MHz : -6.871 dBm OBW : 20.441 MHz	Measured 26 dB Bandwidth: 38.677 MHz Measured 99% Bandwidth: 20.441 MHz

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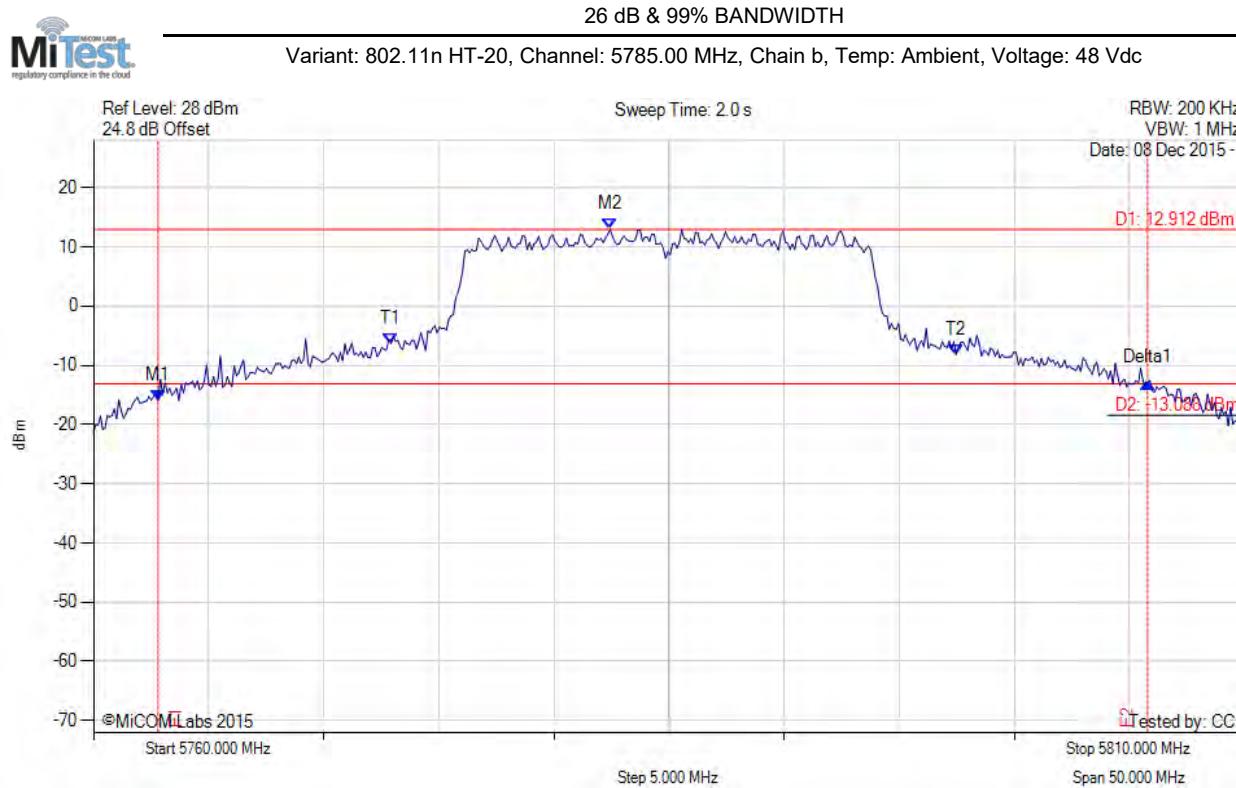
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5765.010 MHz : -14.497 dBm M2 : 5782.445 MHz : 14.158 dBm Delta1 : 39.579 MHz : 0.879 dB T1 : 5775.531 MHz : -2.238 dBm T2 : 5794.770 MHz : -5.622 dBm OBW : 19.238 MHz	Measured 26 dB Bandwidth: 39.579 MHz Measured 99% Bandwidth: 19.238 MHz

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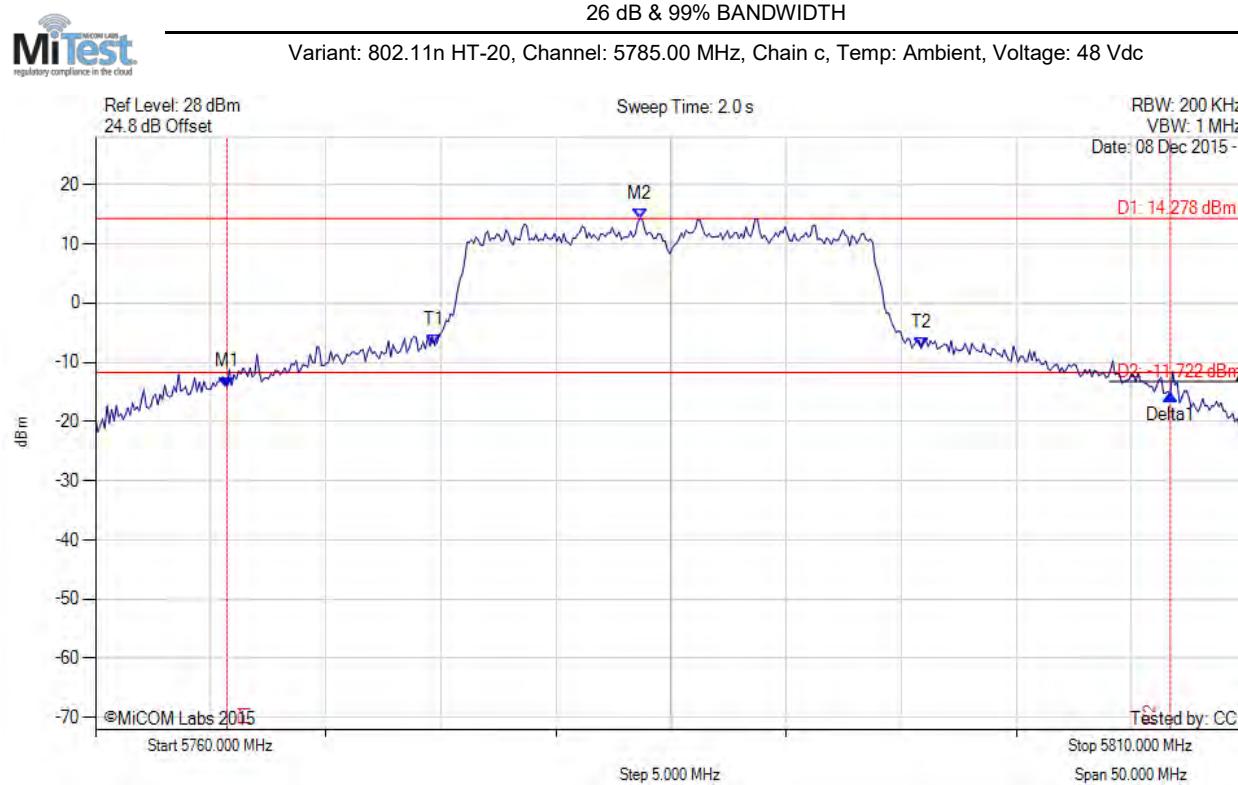
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5762.806 MHz : -15.907 dBm M2 : 5782.445 MHz : 12.912 dBm Delta1 : 42.986 MHz : 2.931 dB T1 : 5772.926 MHz : -6.299 dBm T2 : 5797.475 MHz : -8.156 dBm OBW : 24.549 MHz	Measured 26 dB Bandwidth: 42.986 MHz Measured 99% Bandwidth: 24.549 MHz

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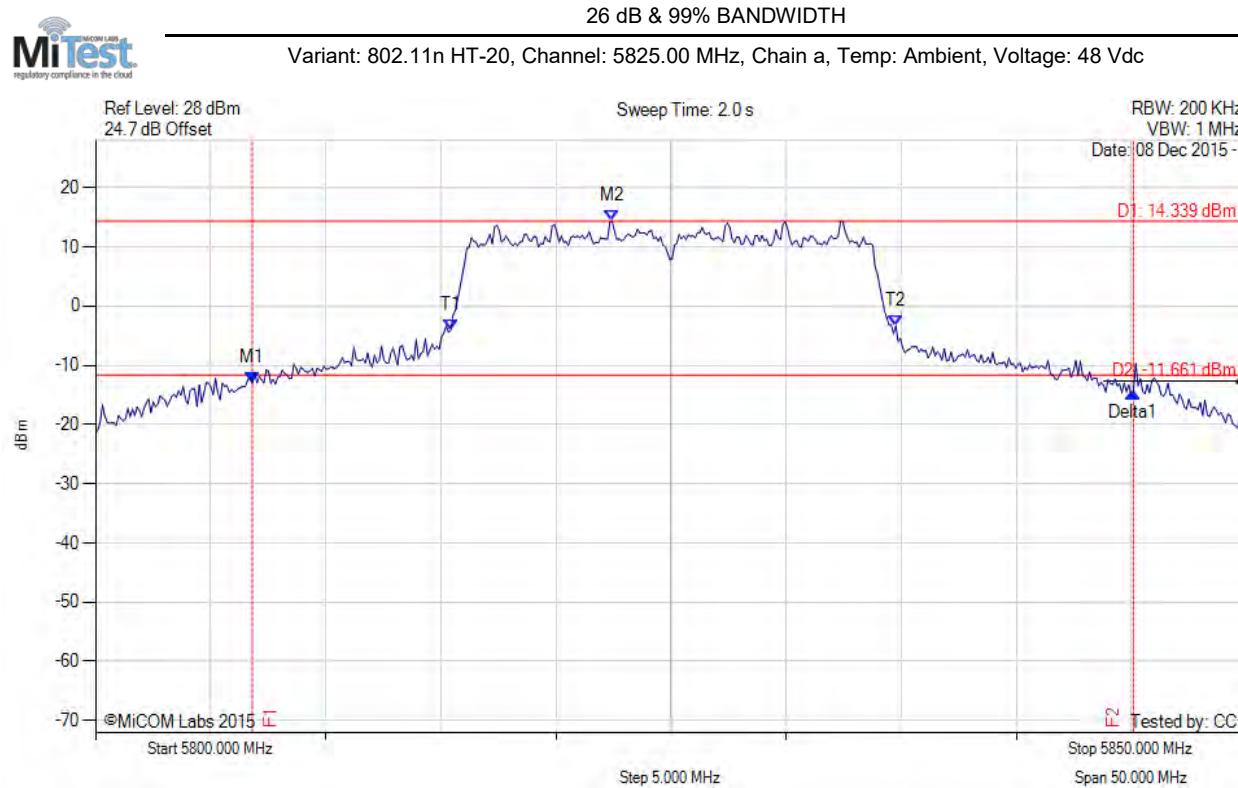
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5765.711 MHz : -14.202 dBm M2 : 5783.647 MHz : 14.278 dBm Delta1 : 40.982 MHz : -1.178 dB T1 : 5774.729 MHz : -7.157 dBm T2 : 5795.872 MHz : -7.631 dBm OBW : 21.142 MHz	Measured 26 dB Bandwidth: 40.982 MHz Measured 99% Bandwidth: 21.142 MHz

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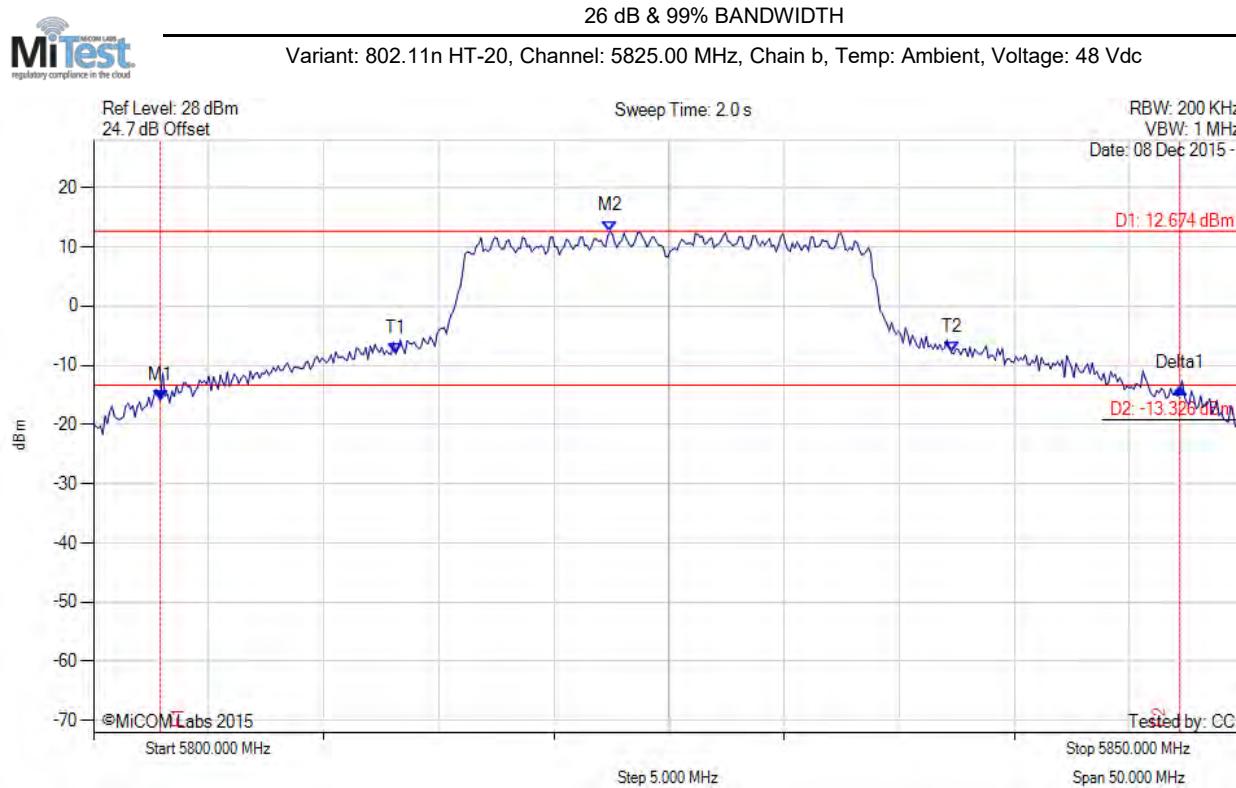
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5806.814 MHz : -13.025 dBm M2 : 5822.445 MHz : 14.339 dBm Delta1 : 38.277 MHz : -1.442 dB T1 : 5815.431 MHz : -4.111 dBm T2 : 5834.770 MHz : -3.373 dBm OBW : 19.339 MHz	Measured 26 dB Bandwidth: 38.277 MHz Measured 99% Bandwidth: 19.339 MHz

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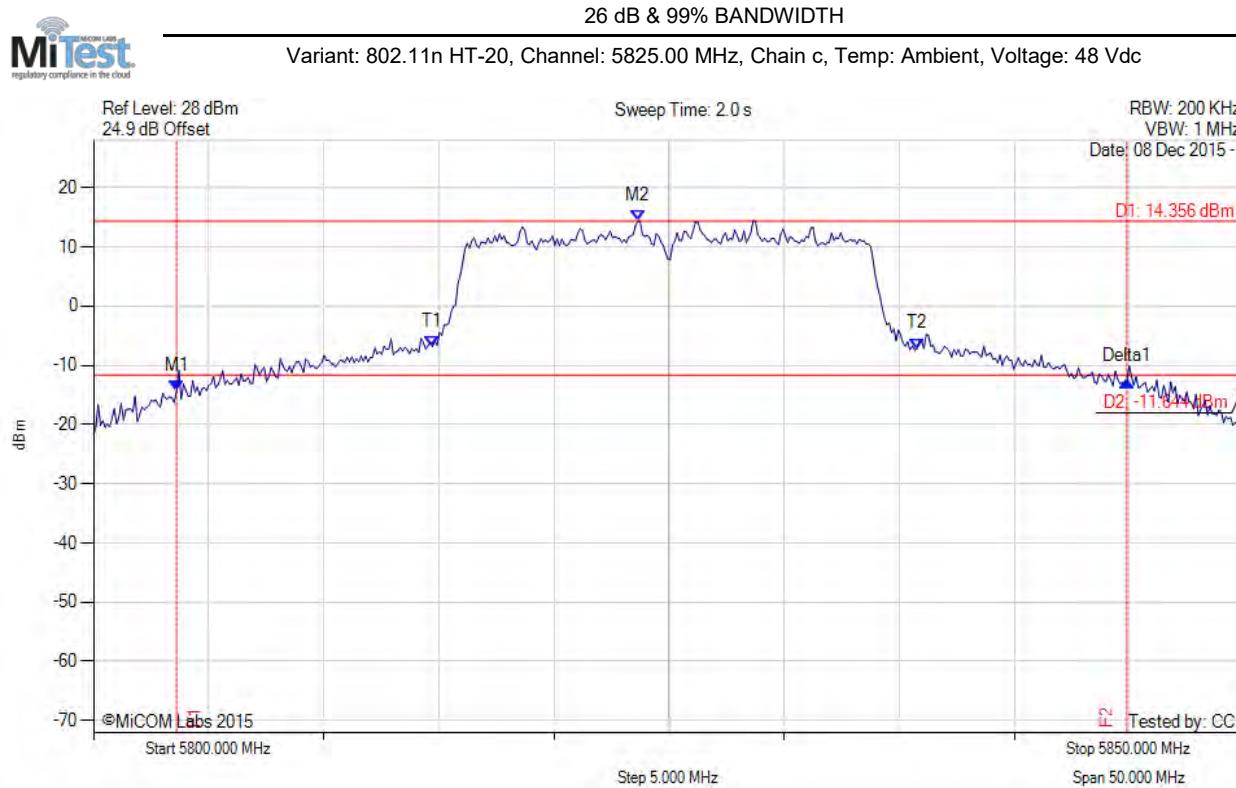
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5802.906 MHz : -15.966 dBm M2 : 5822.445 MHz : 12.674 dBm Delta1 : 44.289 MHz : 2.201 dB T1 : 5813.126 MHz : -8.050 dBm T2 : 5837.275 MHz : -7.881 dBm OBW : 24.148 MHz	Measured 26 dB Bandwidth: 44.289 MHz Measured 99% Bandwidth: 24.148 MHz

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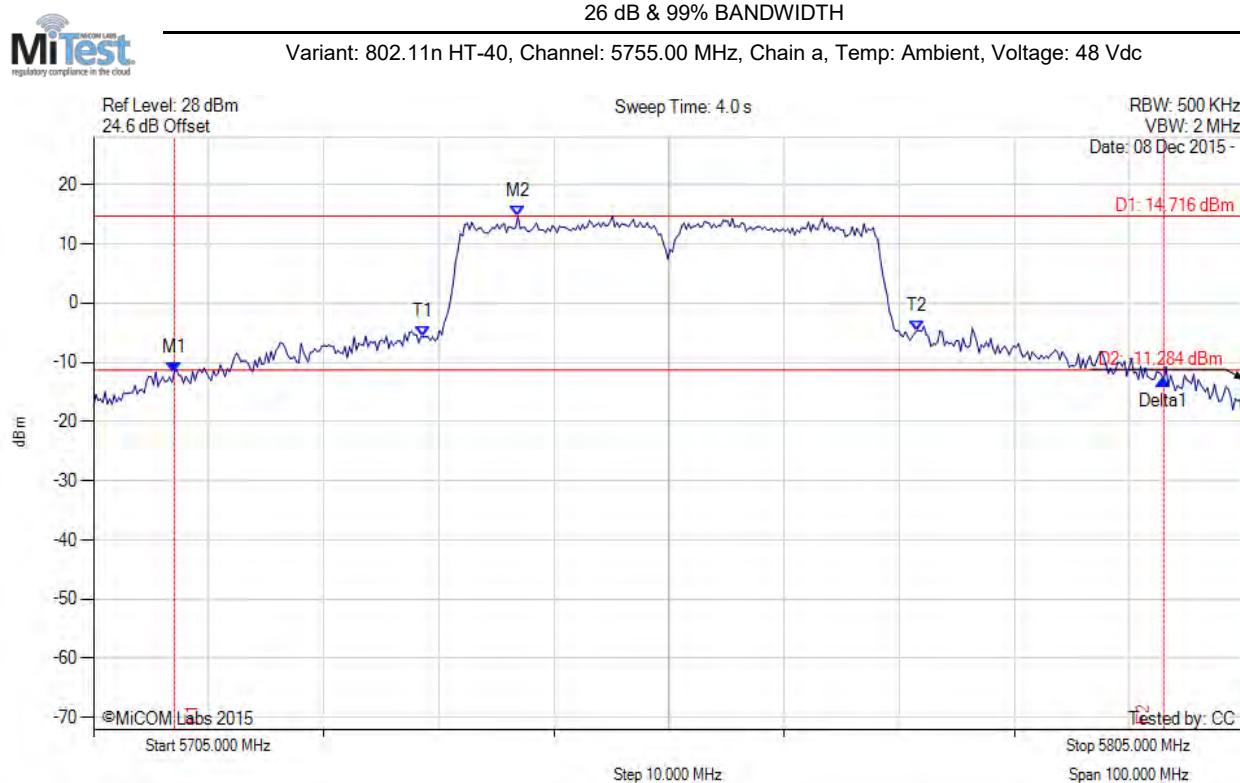
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5803.607 MHz : -14.334 dBm M2 : 5823.647 MHz : 14.356 dBm Delta1 : 41.283 MHz : 1.639 dB T1 : 5814.729 MHz : -6.828 dBm T2 : 5835.772 MHz : -7.192 dBm OBW : 21.042 MHz	Measured 26 dB Bandwidth: 41.283 MHz Measured 99% Bandwidth: 21.042 MHz

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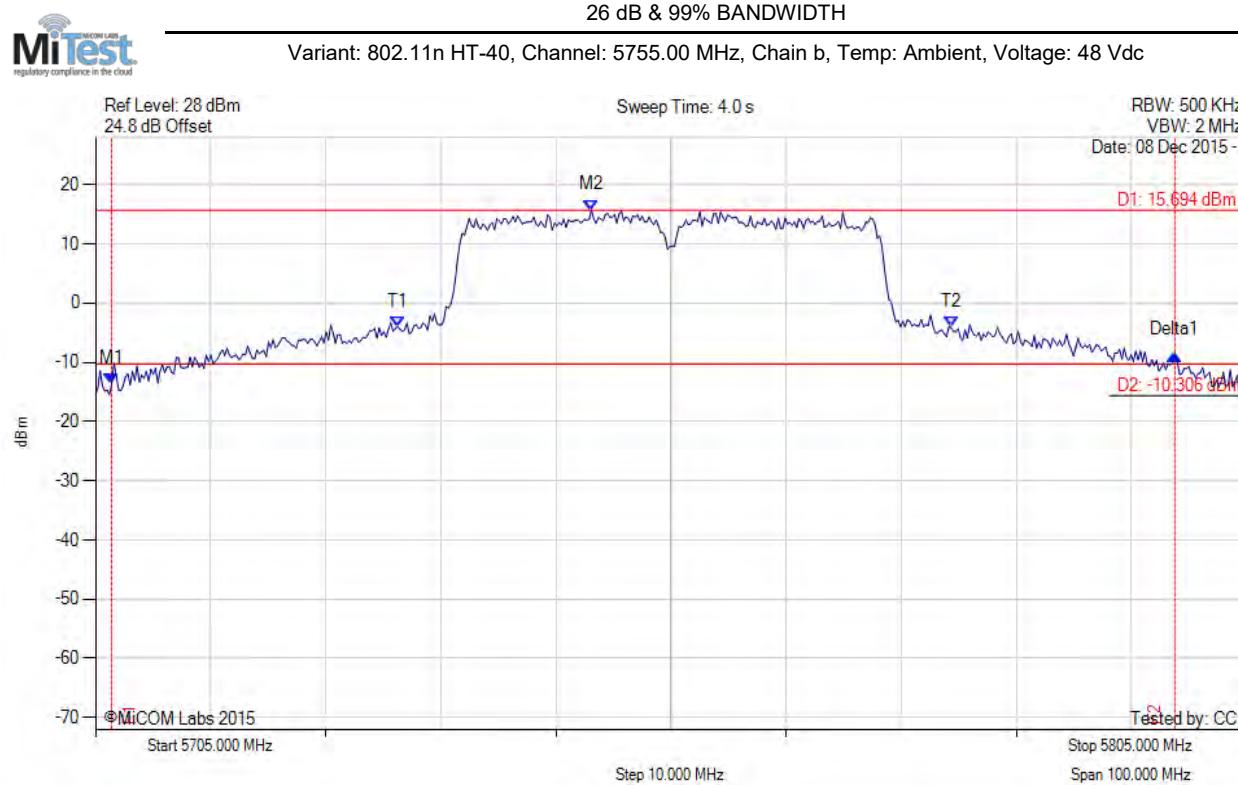
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5712.014 MHz : -11.660 dBm M2 : 5741.874 MHz : 14.716 dBm Delta1 : 85.972 MHz : -1.322 dB T1 : 5733.657 MHz : -5.683 dBm T2 : 5776.543 MHz : -4.666 dBm OBW : 42.886 MHz	Measured 26 dB Bandwidth: 85.972 MHz Measured 99% Bandwidth: 42.886 MHz

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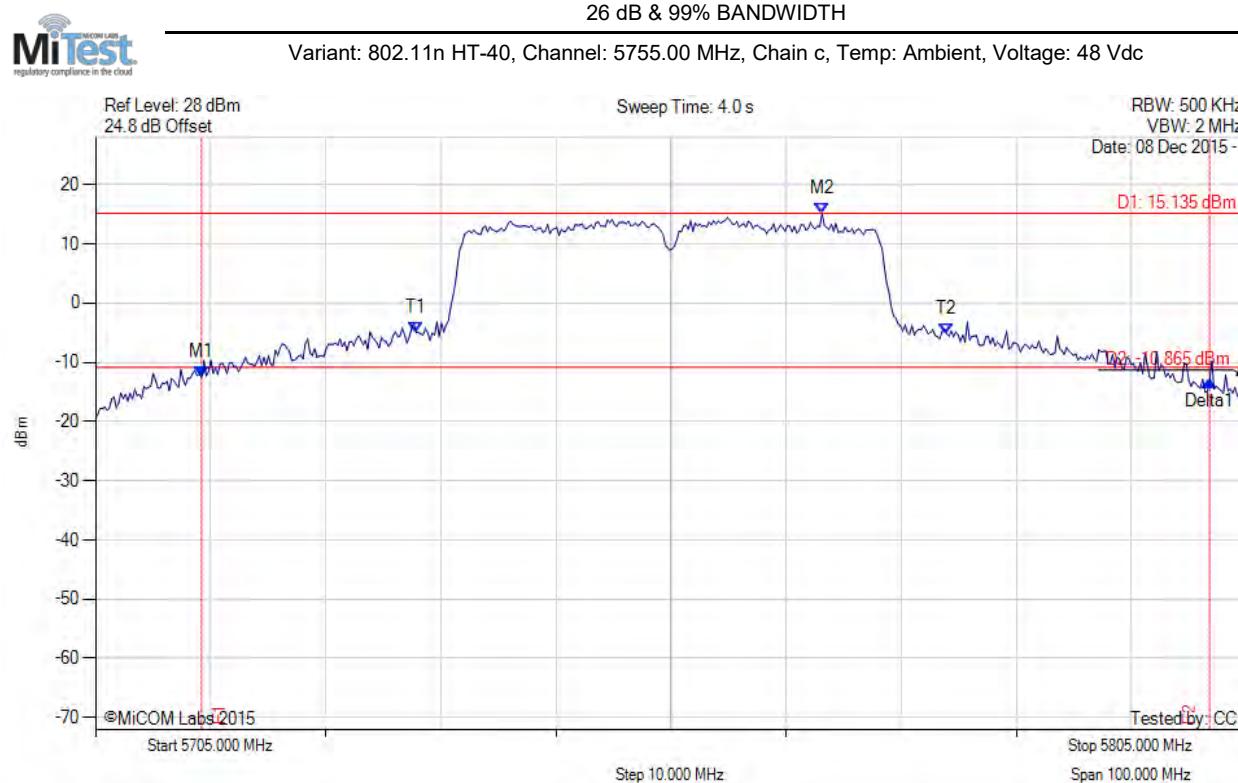
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5706.403 MHz : -13.678 dBm M2 : 5748.086 MHz : 15.694 dBm Delta1 : 92.385 MHz : 4.946 dB T1 : 5731.253 MHz : -3.968 dBm T2 : 5779.349 MHz : -4.143 dBm OBW : 48.096 MHz	Measured 26 dB Bandwidth: 92.385 MHz Measured 99% Bandwidth: 48.096 MHz

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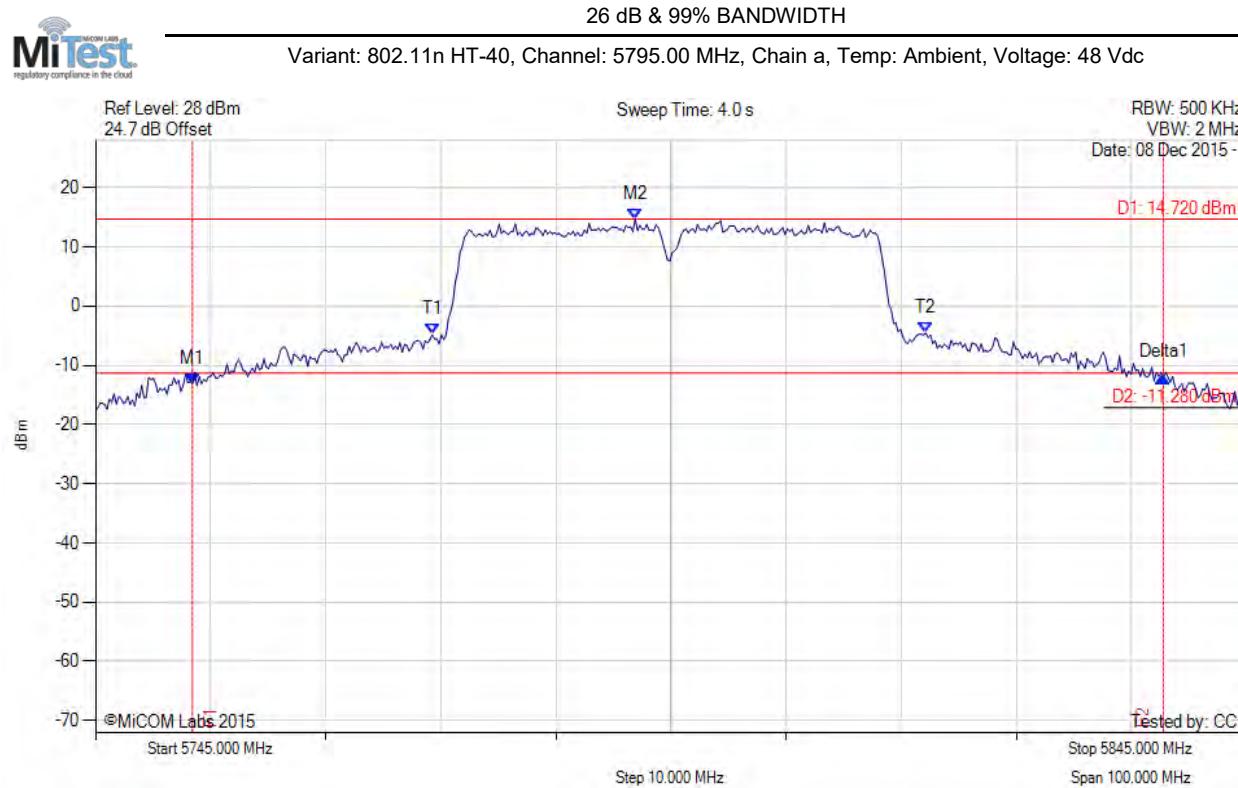
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5714.218 MHz : -12.506 dBm M2 : 5768.126 MHz : 15.135 dBm Delta1 : 87.575 MHz : -0.584 dB T1 : 5732.856 MHz : -5.022 dBm T2 : 5778.948 MHz : -5.146 dBm OBW : 46.092 MHz	Measured 26 dB Bandwidth: 87.575 MHz Measured 99% Bandwidth: 46.092 MHz

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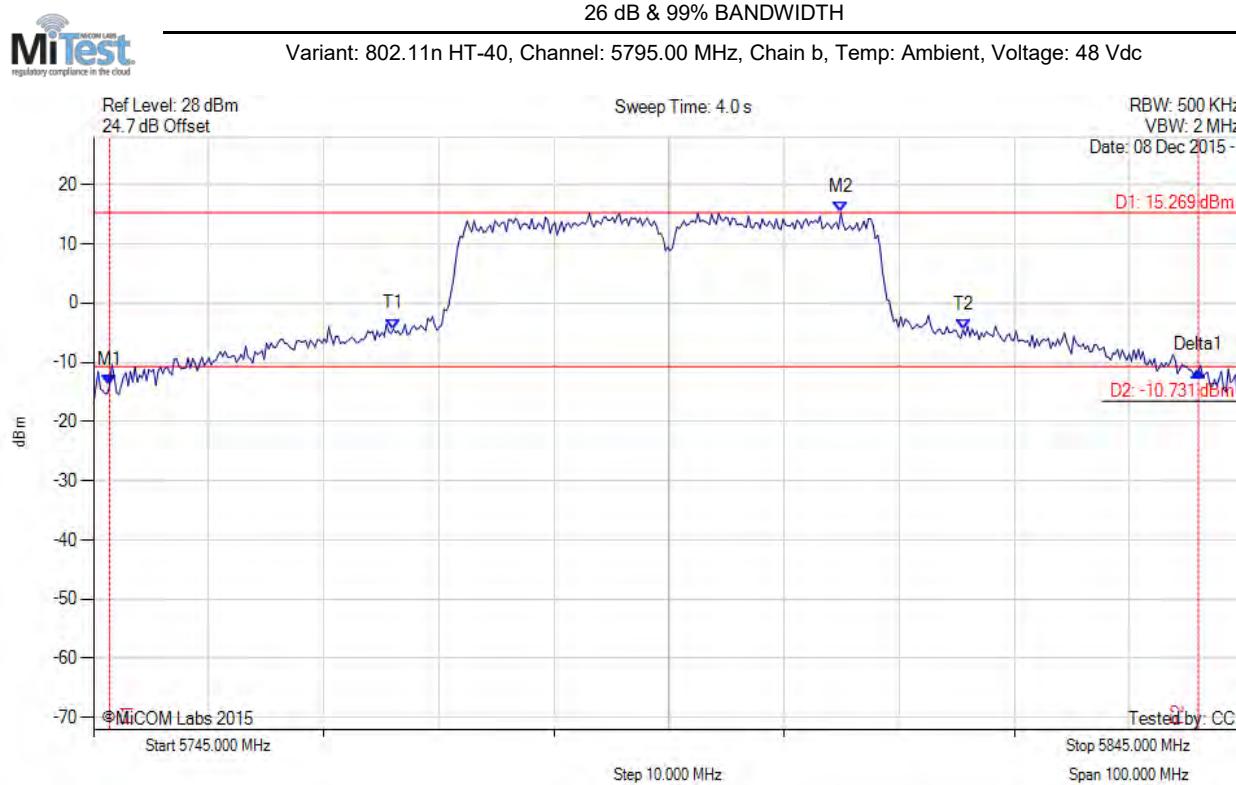
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5753.417 MHz : -13.130 dBm M2 : 5791.894 MHz : 14.720 dBm Delta1 : 84.369 MHz : 1.098 dB T1 : 5774.259 MHz : -4.849 dBm T2 : 5817.144 MHz : -4.570 dBm OBW : 42.886 MHz	Measured 26 dB Bandwidth: 84.369 MHz Measured 99% Bandwidth: 42.886 MHz

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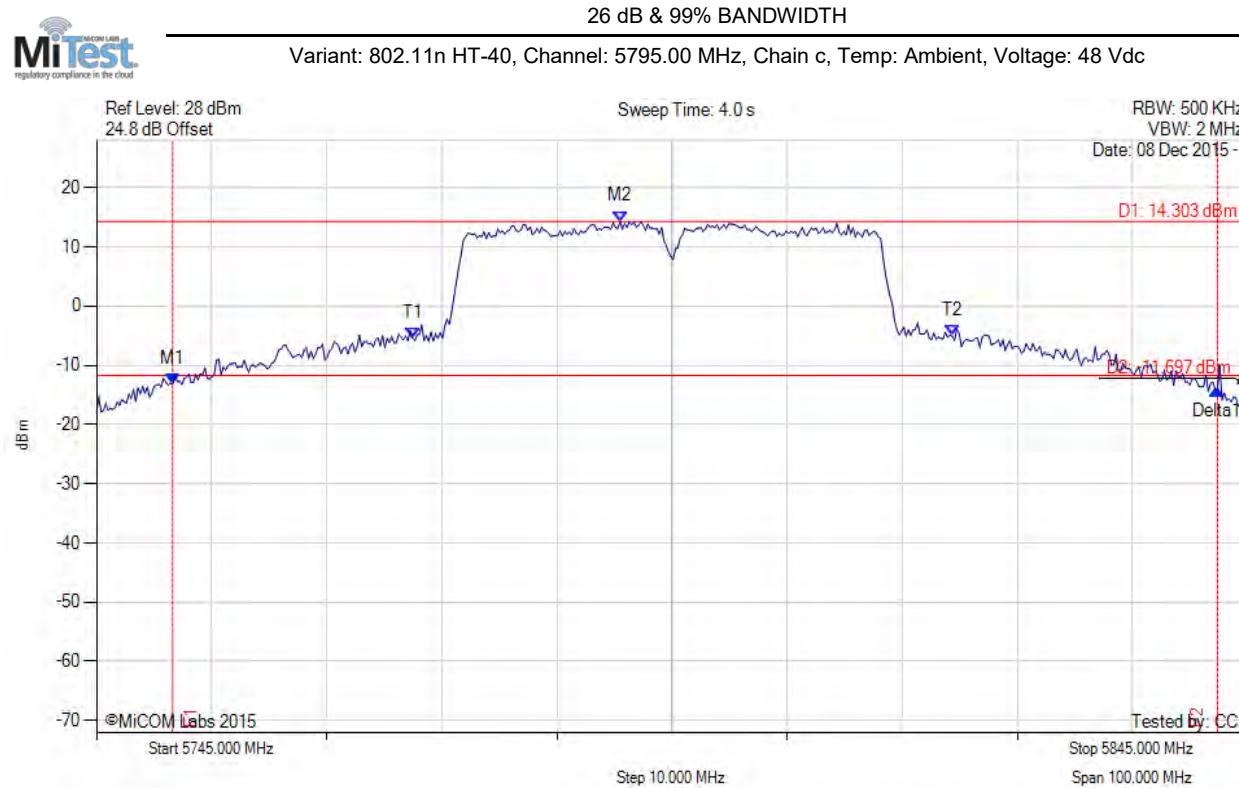
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5746.403 MHz : -13.836 dBm M2 : 5809.930 MHz : 15.269 dBm Delta1 : 94.589 MHz : 2.414 dB T1 : 5771.052 MHz : -4.389 dBm T2 : 5820.551 MHz : -4.544 dBm OBW : 49.499 MHz	Measured 26 dB Bandwidth: 94.589 MHz Measured 99% Bandwidth: 49.499 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5751.613 MHz : -13.210 dBm M2 : 5790.491 MHz : 14.303 dBm Delta1 : 90.782 MHz : -0.944 dB T1 : 5772.455 MHz : -5.400 dBm T2 : 5819.349 MHz : -5.059 dBm OBW : 46.894 MHz	Measured 26 dB Bandwidth: 90.782 MHz Measured 99% Bandwidth: 46.894 MHz

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