



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Model Tested: C050900C032A
Report Number: 20127
DLS Project: 6620

Code of Federal Regulations 47 Part 15 – Radio Frequency Devices

Subpart E – Unlicensed National Information Infrastructure Devices

Section 15.407

General Technical Requirements.

THE FOLLOWING **MEETS** THE ABOVE TEST SPECIFICATION
(DFS not tested by DLS Electronic Systems Inc.)

Formal Name: ePMP Station 5.1GHz (or 5.2GHz, 5.4GHz or 5.7GHz) Radio

Kind of Equipment: Point-to-Point or Point-to-Multipoint Digital Transmission Transceiver

Frequency Range: **5160 to 5245 MHz (5.1 GHz xcvr in this report)**
5270 to 5330 MHz (5.2 GHz xcvr in reported to the FCC in CFR 47
Part 15 Subpart C Section 15.407 report # 19276)
or 5495 to 5705 MHz (5.4 GHz xcvr reported to the FCC in CFR 47
Part 15 Subpart C Section 15.407 report # 19222)
or 5740 to 5835 MHz (5.7 GHz xcvr reported to the FCC in CFR 47
Part 15 Subpart C Section 15.247 report # 19075)

Test Configuration: Stand-alone

Model Number(s): Integrated model: C058900P132A
Connectorized model: C050900C032A

Model(s) Tested: Connectorized model: C050900C032A

Serial Number(s): Connectorized: 000456C560B4

Date of Tests: May & June 2014

Test Conducted For: Cambium Networks
3800 Golf Road, Suite 360
Rolling Meadows, IL 60008, USA

NOTICE: “This test report relates only to the items tested and must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government”. Please see the "Description of Test Sample" page listed inside of this report.

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166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:
DLS Project:

Cambium Networks
C050900C032A
20127
6620

SIGNATURE PAGE

Tested By:

A handwritten signature in black ink that reads "Craig Brandt". The signature is written in a cursive style with a long horizontal stroke at the end.

Craig Brandt
Senior Test Engineer

Reviewed By:

A handwritten signature in black ink that reads "William Stumpf". The signature is written in a cursive style with a long horizontal stroke at the end.

William Stumpf
OATS Manager

Approved By:

A handwritten signature in black ink that reads "Brian J. Mattson". The signature is written in a cursive style with a long horizontal stroke at the end.

Brian Mattson
General Manager



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Model Tested: C050900C032A
Report Number: 20127
DLS Project: 6620

Table of Contents

i. Cover Page	1
ii. Signature Page	2
iii. Table of Contents	3
iv. NVLAP Certificate of Accreditation	5
1.0 Summary of Test Report	6
2.0 Introduction	7
3.0 Test Facilities	7
4.0 Description of Test Sample	7
5.0 Test Equipment	9
6.0 Test Arrangements	10
7.0 Test Conditions	10
8.0 Modifications Made To EUT For Compliance	11
9.0 Additional Descriptions	11
10.0 Results	11
11.0 Conclusion	11
Appendix A – Test Photos	12
Appendix B – Measurement Data	17
B1.0 Duty Cycle of Test Unit	17
B1.0a - 5 MHz Bandwidth	18
B1.0b - 40 MHz Bandwidth	19
B2.0 Emission Bandwidth – 26 dB bandwidth – conducted	20
B2.0a - 5 MHz Bandwidth	21
B2.0b - 40 MHz Bandwidth	24
B3.0 99 Percent Occupied Bandwidth	27
B3.0a - 5 MHz Bandwidth	28
B3.0b - 40 MHz Bandwidth	31
B4.0 Maximum Conducted Output Power	34
B4.0a - AVERAGE Power - 5 MHz Bandwidth	35
B4.0b - AVERAGE Power - 40 MHz Bandwidth	50
B4.1a - PEAK Power - 5 MHz Bandwidth	65
B4.1b - PEAK Power - 40 MHz Bandwidth	81



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Model Tested: C050900C032A
Report Number: 20127
DLS Project: 6620

B5.0	Maximum Power Spectral Density (PSD)– Conducted.....	98
B5.0a	- 5 MHz Bandwidth	99
B5.0b	- 40 MHz Bandwidth	108
B6.0	Unwanted Emission Levels – Radiated Band-Edge - (Cabinet Radiated).....	120
B6.0a	- 5 MHz Bandwidth	121
B6.0b	- 40 MHz Bandwidth	137
B7.0	Unwanted Emission Levels – Band Edge - RF Conducted	153
B7.0a	- 5 MHz Bandwidth	154
B7.0b	- 40 MHz Bandwidth	202
B8.0	Unwanted Emission Levels – RF Conducted	264
B8.0a	- 5 MHz Bandwidth - 2 dBi antenna.....	265
B8.0b	- 5 MHz Bandwidth - 16 dBi antenna.....	307
B8.0c	- 5 MHz Bandwidth - 23 dBi antenna.....	349
B8.1a	- 40 MHz Bandwidth - 2 dBi antenna.....	393
B8.1b	- 40 MHz Bandwidth - 16 dBi antenna.....	435
B8.1c	- 40 MHz Bandwidth - 23 dBi antenna.....	477
B9.0	Unwanted Emission Levels – Radiated from cabinet.....	519



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:
DLS Project:

Cambium Networks
C050900C032A
20127
6620

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 100276-0

D.L.S. Electronic Systems, Inc.
Wheeling, IL

is accredited by the National Voluntary Laboratory Accreditation Program for specific services
listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).



2013-10-01 through 2014-09-30

Effective dates

John P. Mulla

For the National Institute of Standards and Technology

NVLAP-01C (REV. 2009-01-28)



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
 Model Tested: C050900C032A
 Report Number: 20127
 DLS Project: 6620

1.0 Summary of Test Report

Subpart E Section 15.407 Applicable Technical Requirements Tested:

Section	Description	Procedure	Note	Compliant?
Informative	Duty Cycle	FCC KDB 789033 D02 General UNII Test Procedures v01 Section II.B(2)(b)	1	NA
Informative	Emission Bandwidth – 26 dB bandwidth	FCC KDB 789033 D02 General UNII Test Procedures v01 Section II.C.1	1	NA
Informative	99 Percent Occupied Bandwidth	FCC KDB 789033 D02 General UNII Test Procedures v01 Section II.D	1	NA
15.407(a)(1)	Maximum Conducted Output Power	FCC KDB 789033 D02 General UNII Test Procedures v01 Section II.E(3)(a)	1	Yes
15.407(a)(1)	Maximum Power Spectral Density (PSD) - Conducted	FCC KDB 789033 D02 General UNII Test Procedures v01 Sections II.F & II.E(2)(b)	1	Yes
15.407(b)(1)	Unwanted Emission Levels – Radiated Band-Edge	FCC KDB 789033 D02 General UNII Test Procedures v01 Sections II.G(1), G(3), G(5), G(6) & G(6)(c)	2	Yes
15.407(b)(1)	Unwanted Emission Levels – RF Conducted Band-Edge	FCC KDB 789033 D02 General UNII Test Procedures v01 Sections II.G(1), G(3), G(5), G(6) & G(6)(c)	1	Yes
15.407(b)(1) & 15.407(b)(6)	Unwanted Emission Levels – RF Conducted	FCC KDB 789033 D02 General UNII Test Procedures v01 Sections II.G(1), G(2), G(3), G(4), G(5), G(6) & G(6)(c)	1	Yes
15.407(b)(3) & 15.407(b)(6)	Unwanted Emission Levels – Radiated from cabinet	FCC KDB 789033 D02 General UNII Test Procedures v01 Sections II.G(1), G(2), G(3)	2	Yes
15.407(b)(6) & 15.207(a)	AC Line Conducted Emissions	ANSI C63.10:2009	3	Yes
15.407(h)(2)	Dynamic Frequency Selection (DFS)	Not tested by DLS		NA

Note 1: RF Conducted emission measurement.

Note 2: Radiated emission measurement.

Note 3: Data included in original test report #19276



166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C050900C032A
Report Number:	20127
DLS Project:	6620

1.0 Summary of Test Report - continued

It was determined that the Cambium Networks ePMP Station 5.1GHz Radio, Connectorized model: C050900C032A, complies with the requirements of CFR 47 Part 15 Subpart E Section 15.407. The data demonstrating FCC compliance of the 5.2GHz, 5.4 GHz and 5.7GHz radios is found in D.L.S. Electronics, Inc. Reports #19276, #19222 and #19075.

2.0 Introduction

In May & June 2014 the ePMP Station 5.1GHz Radio, Model C050900C032A, as provided from Cambium Networks, was tested to the requirements of CFR 47 Part 15 Subpart E Section 15.407. To meet these requirements, the procedures contained within this report were performed by personnel of D.L.S Electronic Systems, Inc.

3.0 Test Facilities

D.L.S. Electronic Systems, Inc. is a full service EMC/Safety Testing Laboratory accredited to ISO 17025. NVLAP Certificate and Scope can be viewed at <http://www.dlsemc.com/certificate>. Our facilities are registered with the FCC, Industry Canada, and VCCI.

Wisconsin Test Facility:

D.L.S. Electronic Systems, Inc.
166 S. Carter Street
Genoa City, Wisconsin 53128

Wheeling Test Facility:

D.L.S. Electronic Systems, Inc.
1250 Peterson Drive
Wheeling, IL 60090

4.0 Description of Test Sample

Description:

Point-to-Point or Point-to-Multipoint 5.1GHz (or 5.2GHz or 5.4GHz or 5.7GHz) 802.11 fixed indoor/outdoor transceiver with either 5 MHz or 40 MHz channel bandwidth (20 MHz or 40 MHz channel bandwidth for the 5.2GHz or 5.4GHz or 5.7GHz radios). The 5.1GHz radio is tested for use with a 2dBi, 3dBi, or 16dBi antenna for Point-to-Multipoint operation, or for use with a 23dBi or 30dBi antenna for Point-to-Point operation. OFDM modulation.



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Model Tested: C050900C032A
Report Number: 20127
DLS Project: 6620

Type of Equipment / Frequency Range:

Stand-Alone / **5160 to 5245 MHz (5 MHz bandwidth) (in this report)**
5190 to 5230 MHz (40 MHz bandwidth) (in this report)

5270 to 5330 MHz (5.2 GHz xcvr) reported to the FCC in report # 19276
5495 to 5705 MHz (5.4 GHz xcvr) reported to the FCC in report # 19222
5740 to 5835 MHz (5.7 GHz xcvr) reported to the FCC in report # 19075

Physical Dimensions of Equipment Under Test:

Internal Module Board Length: 6 in. Width: 2.75 in. Height: .75 in.

Power Source:

29 VDC (Power Over Ethernet to Radio)
120 Vac, 60 Hz using Phihong power supply model: PSA15M-300(SM)

Internal Frequencies:

940 - 1000 kHz (Switching Power Supply Frequency)
40 MHz, 25 MHz, 4 MHz

Transmit / Receive Frequencies Used For Test Purpose:

5 MHz Channel Bandwidth: Low channel: 5160 MHz (5170 MHz for 23 and 30 dBi antennas), Middle channel: 5200 MHz, High channel: 5245 MHz

40 MHz Channel Bandwidth: Low channel: 5190 MHz, Middle channel: 5200 MHz, High channel: 5230 MHz

Type of Modulation(s):

5 MHz Channel Bandwidth: OFDM: Legacy 54 Mbit/s
40 MHz Channel Bandwidth: OFDM: 802.11n: MCS15

Description of Circuit Board(s) / Part Number:

SM PC Board	P005310
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166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:
DLS Project:

Cambium Networks
C050900C032A
20127
6620

5.0 Test Equipment

A list of the equipment used can be found in the table below. All primary equipment was calibrated against known reference standards with a verified traceable path to NIST.

D.L.S. Wisconsin

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Dates	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 40	837808/005	20 Hz – 40 GHz	7-23-13	7-23-14
Preamp	Ciao	CA118-4010	101	1GHz-18GHz	2-14-14	2-14-15
Horn Antenna	EMCO	3115	6204	1-18GHz	6-5-13	6-5-15
High Pass Filter	Planar	HP8G-7G8-CD-SFF	PF1225/0728	7.5-18 GHz	8-14-13	8-14-14
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26GHz	8-12-13	8-12-14
Horn Antenna	ETS Lindgren	3116	00062917	18 – 40GHz	8-15-13	8-15-15
High Pass Filter	K&L	11SH10-18000/T40000-K-K	8	18-40 GHz	3-6-14	3-6-15
Preamp	Planar	PTB-60-2040-5R0-10-115VAC-292FF	PL3292	18-40 GHz	8-12-13	8-12-14
20 dB attenuator	Aeroflex/weinschel	75A-20-12	1071	DC – 40 GHz	8-14-13	8-14-14
10 dB attenuator	narda	4768-10	0702	DC – 40 GHz	8-14-13	8-14-14
2 dB attenuator	narda	4778-2	9712	DC – 26 GHz	8-14-13	8-14-14
Power Meter	Anritsu	ML2487A	6K00002069	N/A	2-27-14	2-27-15
Peak Power Sensor	Anritsu	MA2491A	031650	50MHz-18GHz	2-28-14	2-28-15
Thermal Power Sensor	Rohde & Schwarz	NRP-Z51	1138.0005.03-104290-Wq	DC - 18 GHz	12-12-13	12-12-14
Low Pass Filter	Mini-Circuits	VLFX-1125	UU92600920	30-1000 MHz	8-13-13	8-13-14



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Model Tested: C050900C032A
Report Number: 20127
DLS Project: 6620

6.0 Test Arrangements

RF Conducted Emissions Measurement Arrangement:

All RF conducted emission measurements were performed at D.L.S. Electronic Systems, Inc. and set up according to FCC Publication KDB 789033 D02 General UNII test Procedures v01 and ANSI C63.10-2009, unless otherwise noted. Description of procedures and measurements can be found in Appendix B – Measurement Data. See Appendix A for photos of the test set up.

Radiated Emissions Measurement Arrangement:

All radiated emission measurements were performed at D.L.S. Electronic Systems, Inc. and set up according to ANSI C63.10-2009, unless otherwise noted. Description of procedures and measurements can be found in Appendix B – Measurement Data. See Appendix A for photos of the test set up.

Unless otherwise noted, the bandwidth of the measuring receiver / analyzer used during testing is shown below.

Frequency Range	Bandwidth (-6 dB)
10 to 150 kHz	200 Hz
150 kHz to 30 MHz	9 kHz
30 MHz to 1 GHz	120 kHz
Above 1 GHz	1 MHz

7.0 Test Conditions

Normal Test Conditions:

Temperature and Humidity:

70°F at 39% RH (or noted on the test data)

Supply Voltage:

29 VDC (Power Over Ethernet to Radio)

120 Vac, 60 Hz using Phihong power supply model: PSA15M-300(SM)



166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C050900C032A
Report Number:	20127
DLS Project:	6620

8.0 Modifications Made To EUT For Compliance

No modifications were made to the EUT at the time of test.

9.0 Additional Descriptions

Testing was performed at low, mid, and high channels over 2 modulation bandwidths (5MHz & 40MHz). Only antenna port called Channel 0 was tested. It was determined to be either the same or worst-case during previous testing.

Emission Designators: 5M0x1D, 40M0x1D

Power Settings noted on the test data.

Cambium 5.1GHz Test Software:

1. Atheros Radio Test 2 (ART-GUI), version 2.3, build date: 2014/May/20, CART version 2.29, build date: 120515, build time: 100000.
2. Tera Term, version 4.74 (SVN#4957), build time: May 31 2012 21:53:11.
3. TFTP32 version 4.00, build May 8 2011 00:05:37

Documentation for the FCC CFR 47 Part 15.407(a)(1)(i) requirement for the e.i.r.p. measurements at any elevation angle above 30 degrees will be provided by Cambium Networks.

Please note that Cambium Networks requested a new model number for the Avenger Station 5.2GHz (or 5.4GHz or 5.7GHz) Radio on August 22, 2013. The model number for the 5.7GHz integrated radio was reported as C050900P032A in DLS Report # 19075. This number has been updated to C058900P132A.

10.0 Results

Measurements were performed in accordance with FCC Publication KDB 789033 D02 General UNII test Procedures v01 and ANSI C63.10-2009. Graphical and tabular data can be found in Appendix B at the end of this report.

11.0 Conclusion

Dynamic Frequency Selection (DFS) testing was not performed by DLS Electronic Systems, Inc. Otherwise, the ePMP Station 5.1GHz Radio, Model C050900C032A, as provided from Cambium Networks tested in May & June 2014 **meets** the requirements of CFR 47 Part 15 Subpart E Section 15.407.



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:
DLS Project:

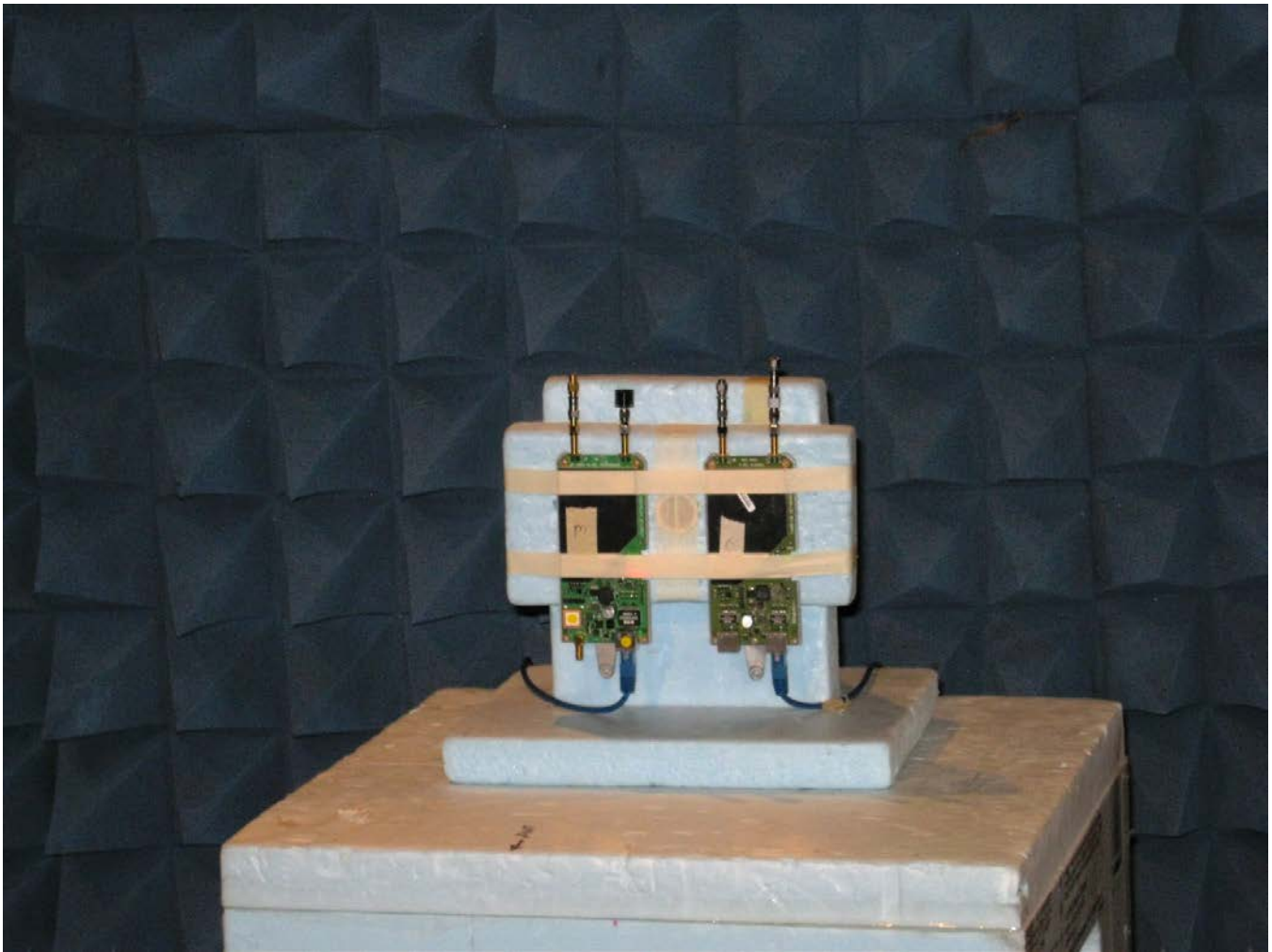
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C050900C032A
20127
6620

Appendix A – Test Photos

Photo Information and Test Setup:

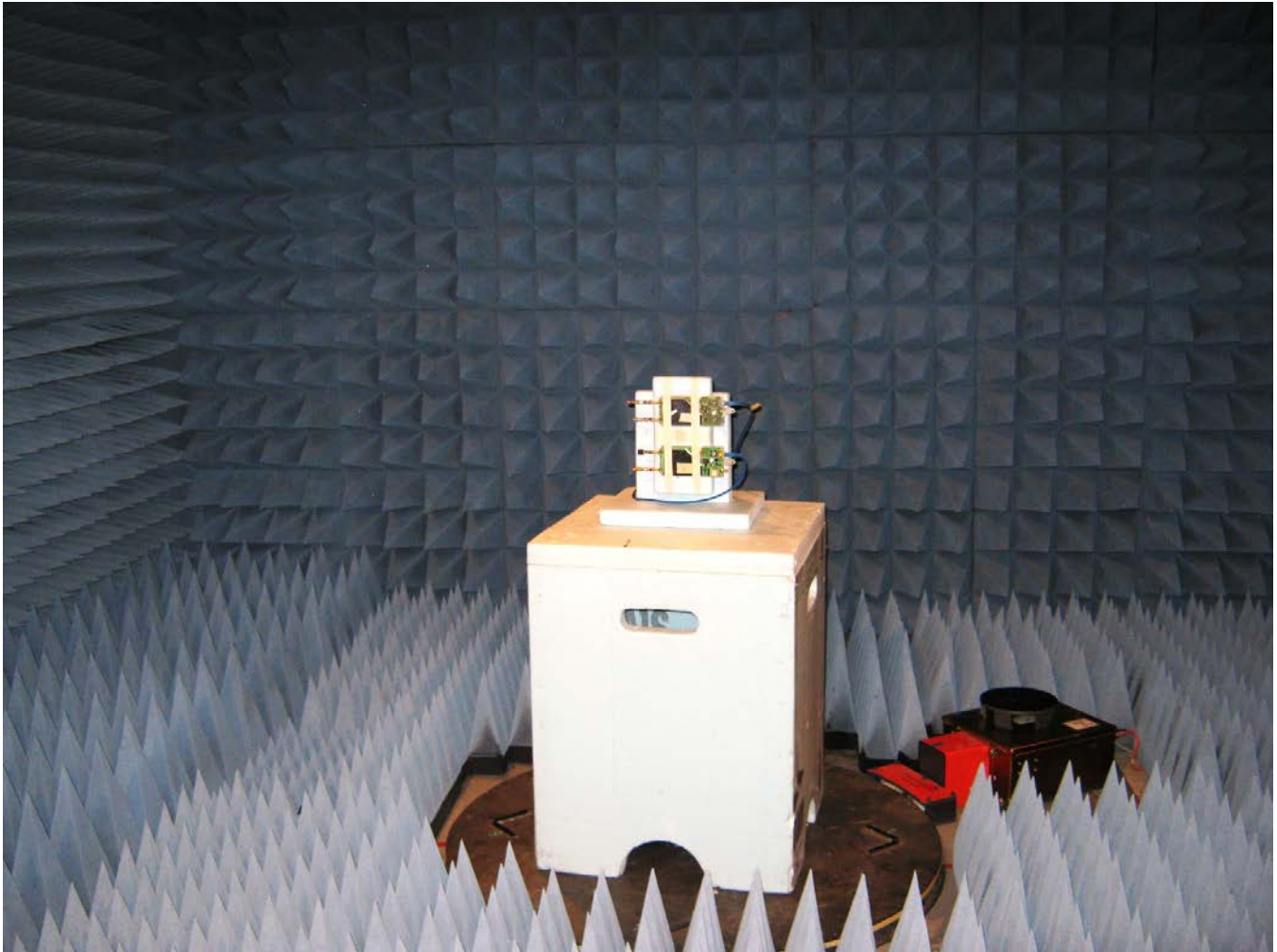
Item0: ePMP Station 5.1GHz (or 5.2GHz or 5.4GHz or 5.7GHz) Radio, Model C050900C032A

Radiated Close-Up



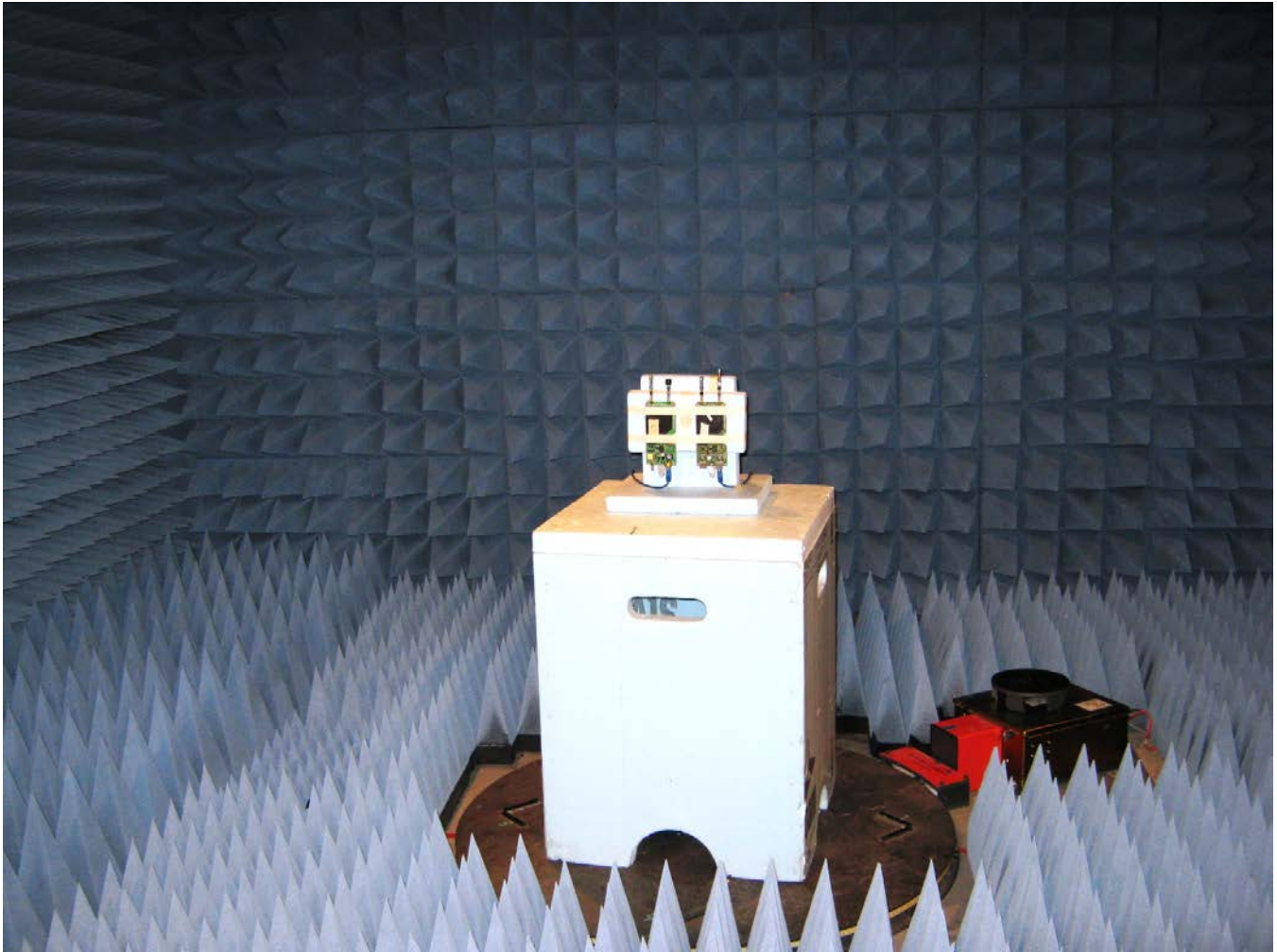
Appendix A – Test Photos

Radiated - Position X



Appendix A – Test Photos

Radiated - Position Y



Appendix A – Test Photos

Radiated - Position Z





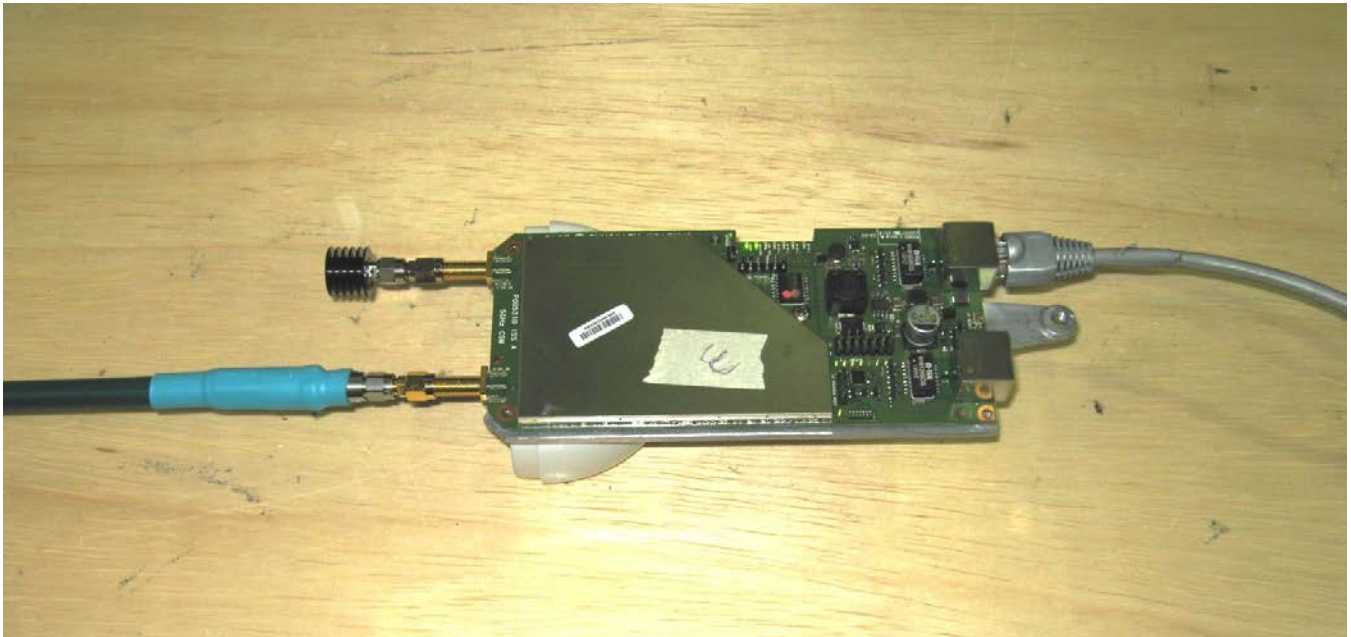
166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:
DLS Project:

Cambium Networks
C050900C032A
20127
6620

Appendix A – Test Photos

RF Conducted / Output Power





166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C050900C032A
Report Number:	20127
DLS Project:	6620

Appendix B – Measurement Data

B1.0 Duty Cycle of Test Unit

Rule Part: FCC Section 15.35(c)

Test Procedure: FCC KDB 789033 D02 General UNII Test Procedures v01
Section B(2)(b)

Limits: Informative

Results: EUT is continuously transmitting (duty cycle = 100%).

Sample Equations: None

Notes: No Duty cycle correction factor was applied to measurements for this device.

Test Date: 05-27-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII
 Test: Duty Cycle during testing
 Operator: Craig B / Paul L
 5 MHz channel bandwidth; OFDM
 RBW = 10 MHz VBW = 10 MHz
 Mid Channel: Transmit = 5.200 GHz 5 MHz BW

Duty cycle factor x = 1.00 = 100%



Max/Ref Lvl

35 dBm

15 dBm

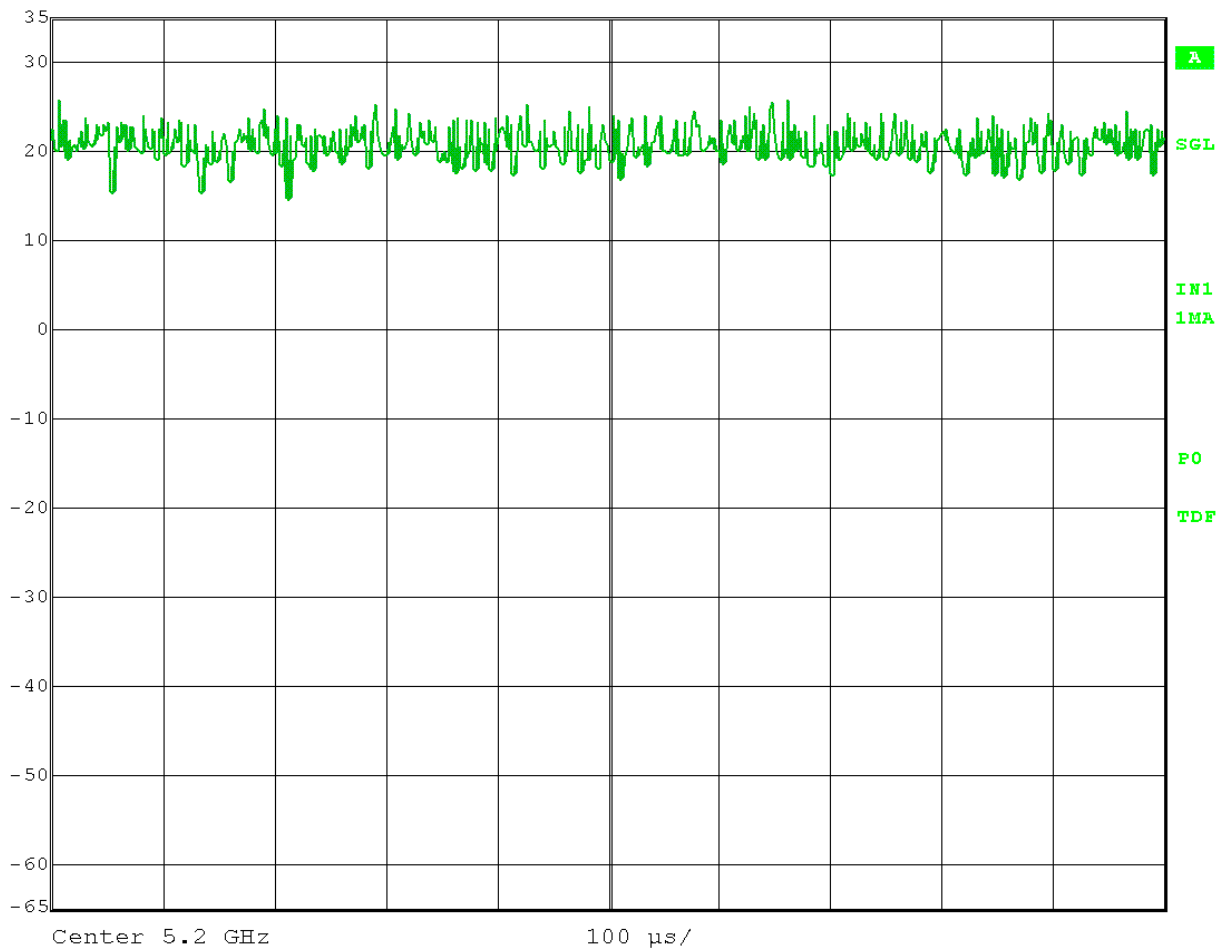
RBW 10 MHz

VBW 10 MHz

SWT 1 ms

RF Att 30 dB

Unit dBm



Date: 27.MAY.2014 15:11:49

Test Date: 06-05-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII
 Test: Duty Cycle during testing
 Operator: Craig B / Paul L
 40 MHz channel bandwidth; OFDM
 RBW = 10 MHz VBW = 10 MHz
 Mid Channel: Transmit = 5.200 GHz 40 MHz BW

Duty cycle factor x = 1.00 = 100%



Max/Ref Lvl

30 dBm

10 dBm

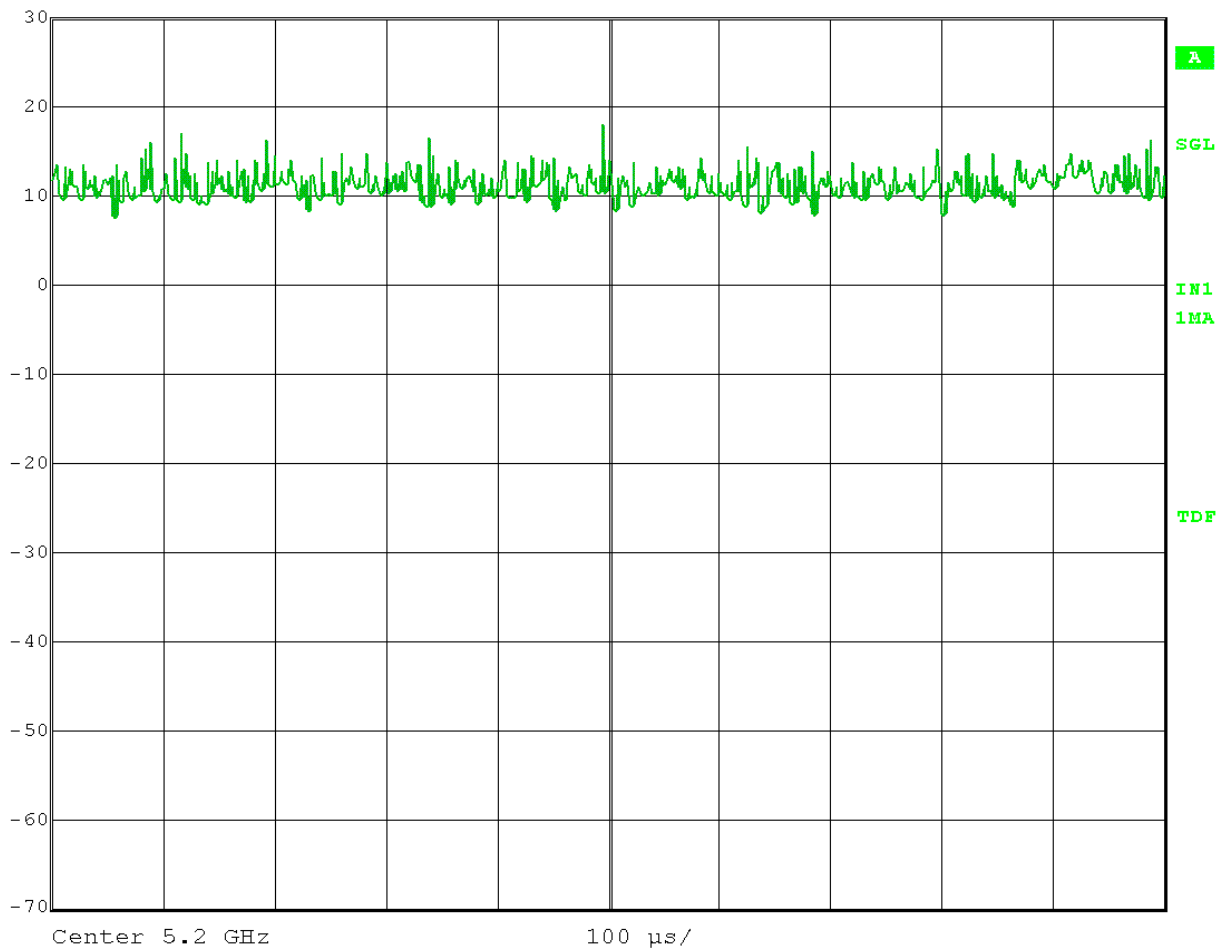
RBW 10 MHz

VBW 10 MHz

SWT 1 ms

RF Att 20 dB

Unit dBm



Date: 5.JUN.2014 09:10:05



166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C050900C032A
Report Number:	20127
DLS Project:	6620

Appendix B – Measurement Data

B2.0 Emission Bandwidth – 26 dB bandwidth – conducted

Rule Section: Informative

Test Procedure: FCC KDB 789033 D02 General UNII Test Procedures v01 – *Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E*

Section C.1 – Emission Bandwidth (EBW)

Description: RBW = approximately 1% of EBW
VBW > RBW
Detector = Peak
Trace mode = max hold

Measure the maximum width of the emission between the lower and upper frequencies that measure 26 dB below the maximum level of the in-band emission.

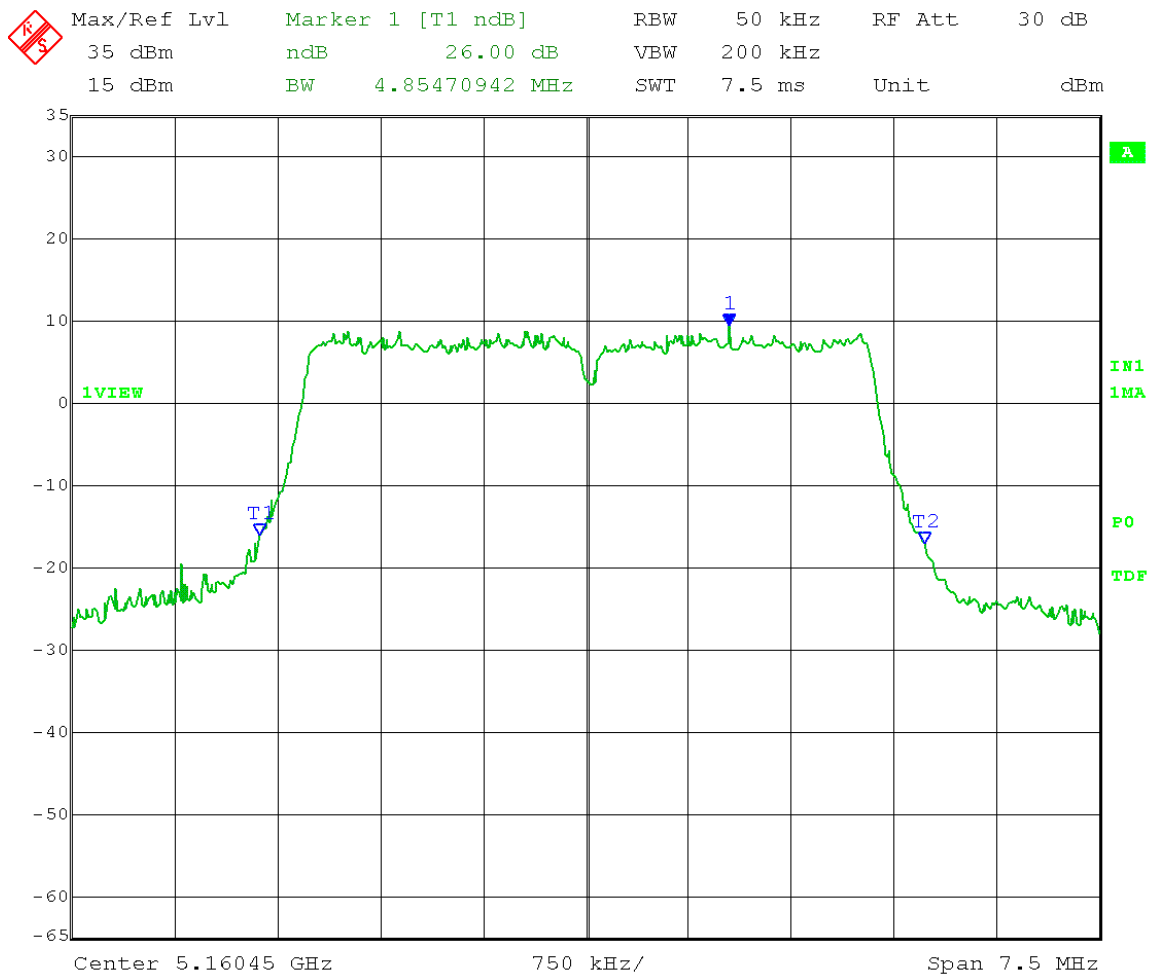
Limit: Informative

Notes: 5 MHz channel bandwidth measurements were taken with Legacy OFDM 54 Mbit/s modulation at the lowest, middle, and highest channels of operation. 40 MHz channel bandwidth measurements were taken with MCS15 OFDM modulation. The EUT was set to transmit continuously with 100% duty cycle.

Test Date: 05-28-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Emission Bandwidth (26 dB) - Conducted
Operator: Craig B
Comment: RBW = 50 kHz VBW = 200 kHz
Low Channel: Transmit = 5.160 GHz 5 MHz BW
Output power setting: 18

Channel 0:

26 dB Emission Bandwidth = 4.85 MHz

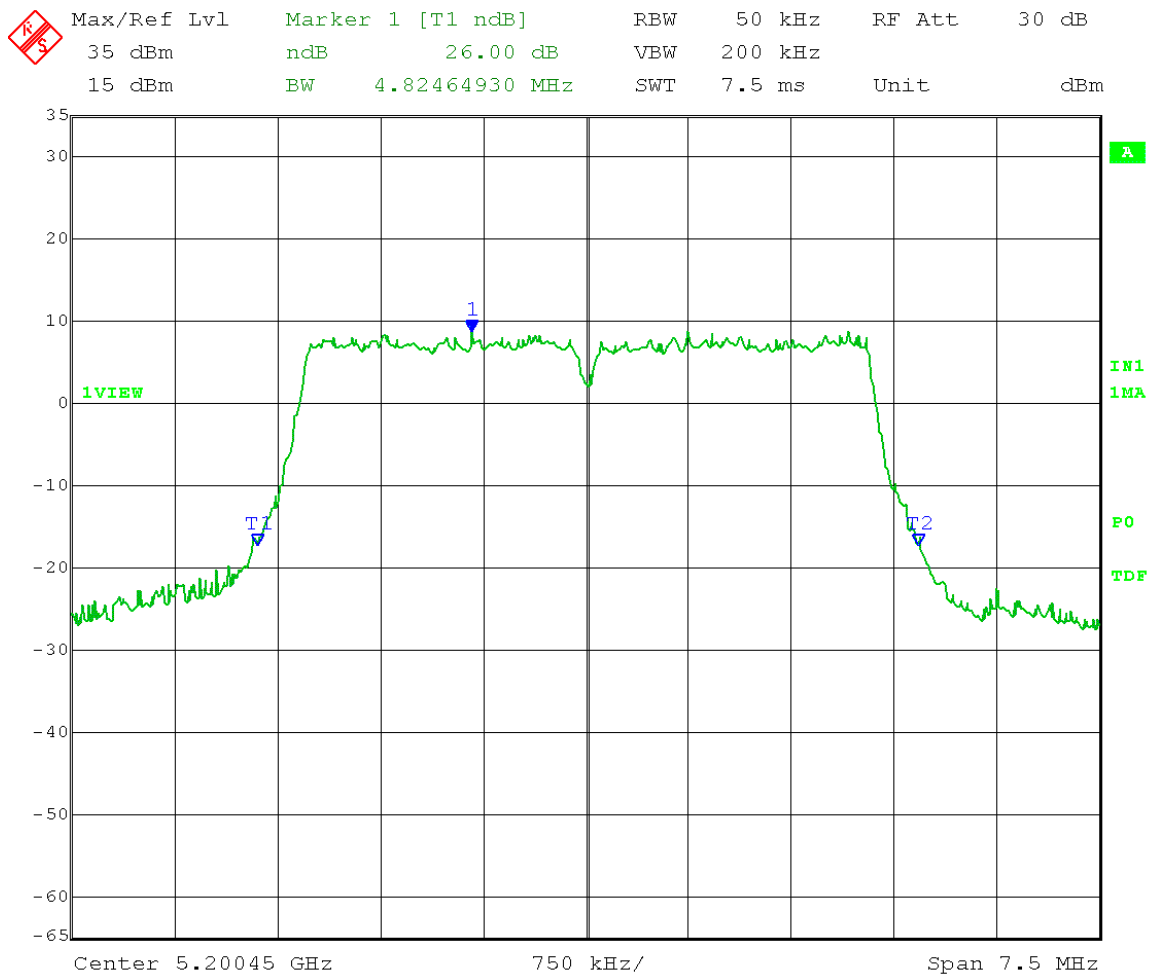


Date: 28.MAY.2014 08:49:06

Test Date: 05-28-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Emission Bandwidth (26 dB) - Conducted
Operator: Craig B
Comment: RBW = 50 kHz VBW = 200 kHz
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 18

Channel 0:

26 dB Emission Bandwidth = 4.82 MHz

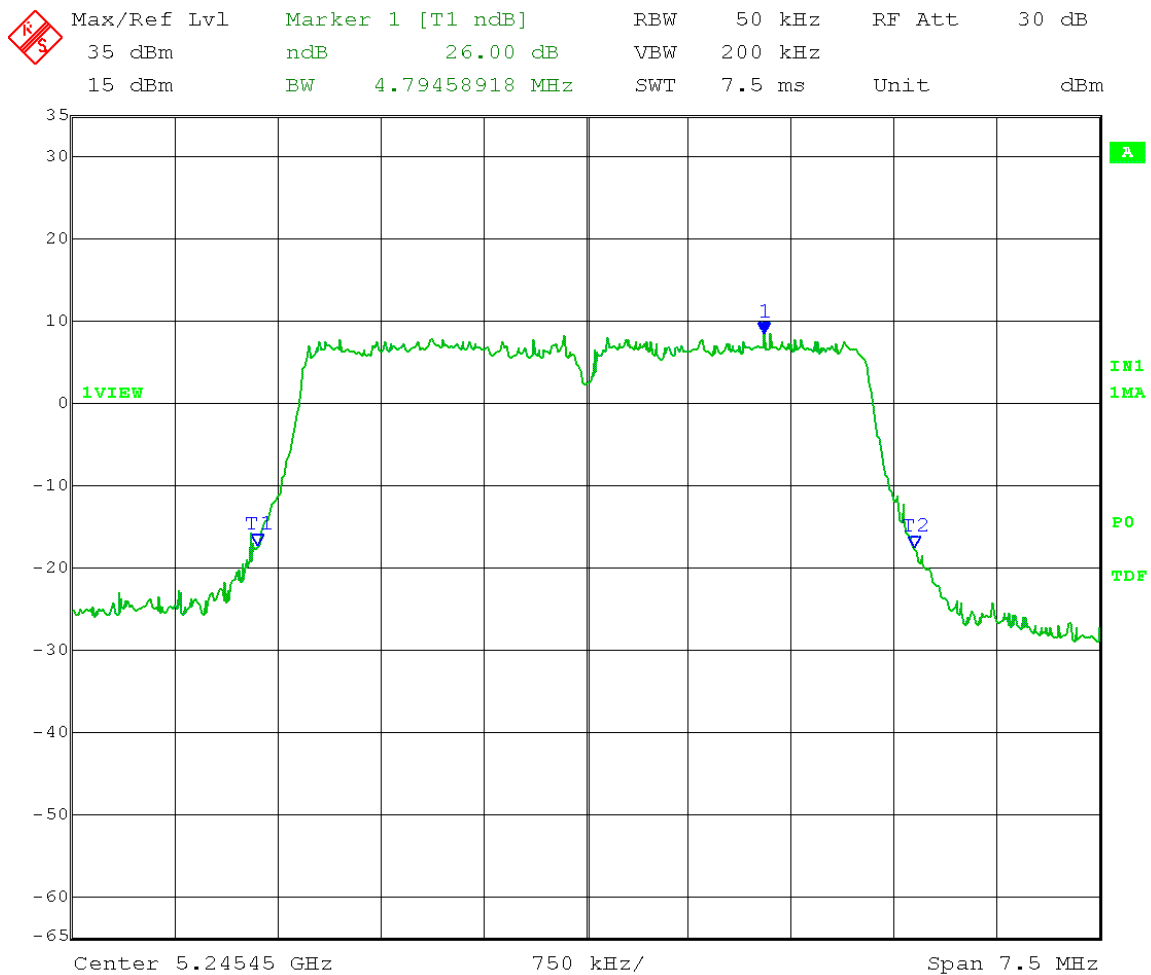


Date: 28.MAY.2014 08:53:02

Test Date: 05-28-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Emission Bandwidth (26 dB) - Conducted
Operator: Craig B
Comment: RBW = 50 kHz VBW = 200 kHz
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 18

Channel 0:

26 dB Emission Bandwidth = 4.79 MHz

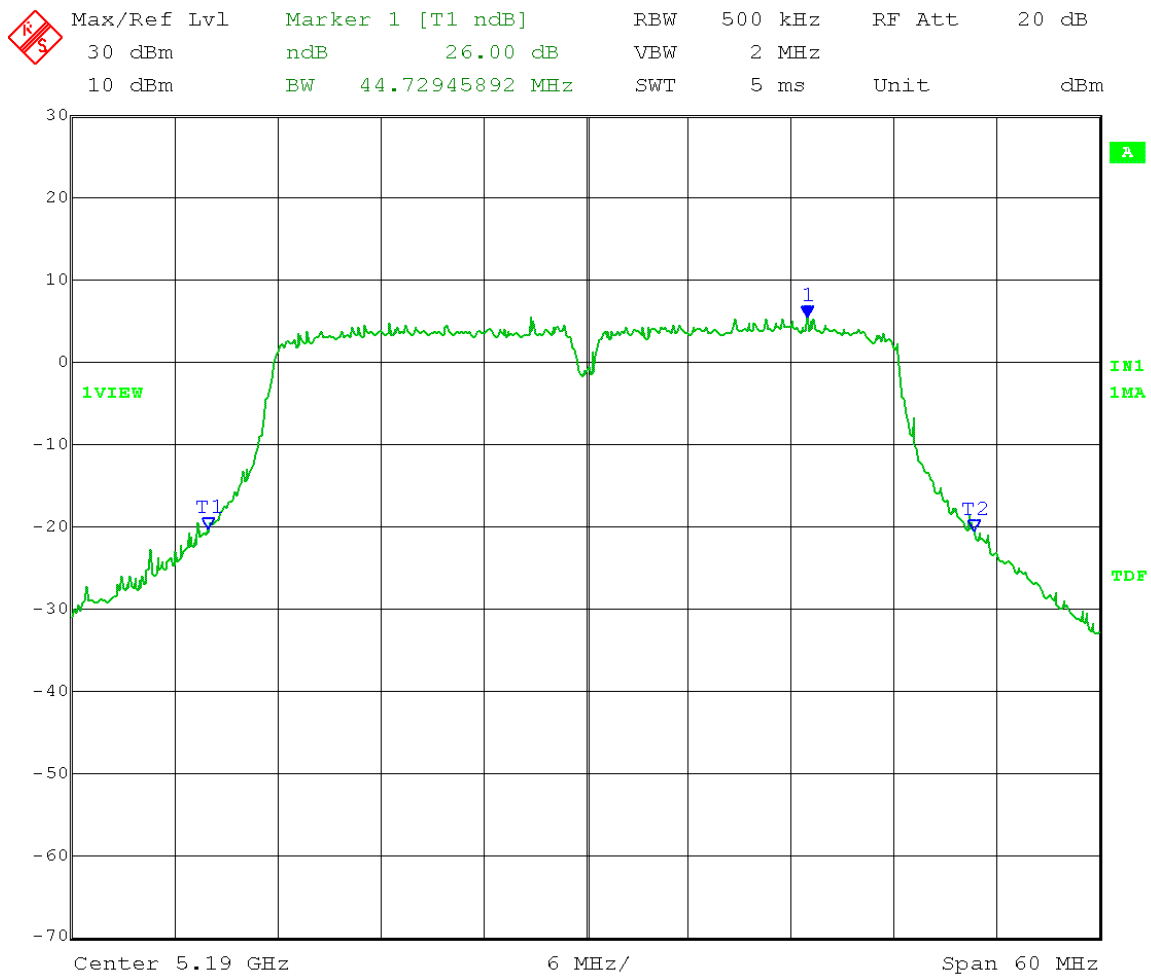


Date: 28.MAY.2014 08:56:54

Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Emission Bandwidth (26 dB) - Conducted
Operator: Craig B
Comment: RBW = 500 kHz VBW = 2 MHz
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 12.5

Channel 0:

26 dB Emission Bandwidth = 44.73 MHz

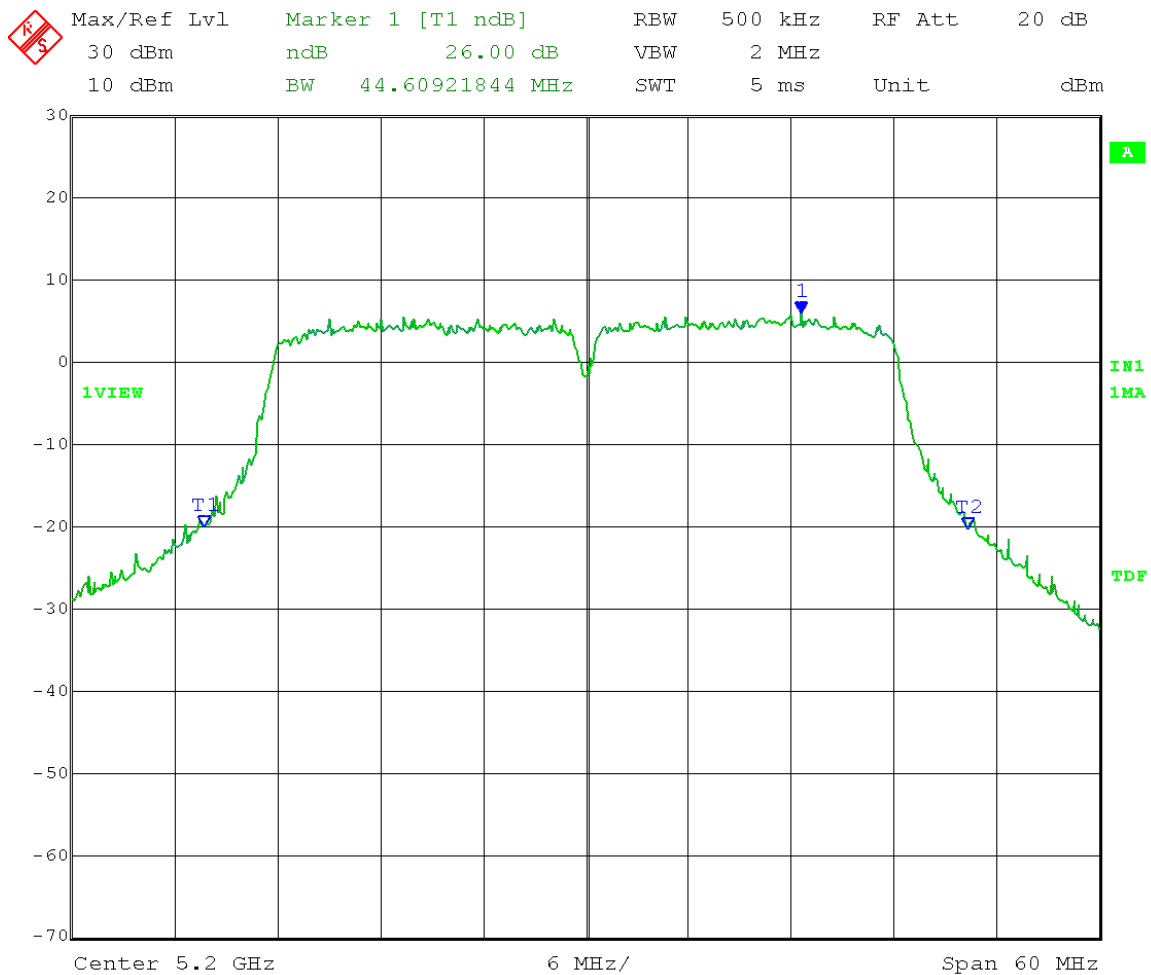


Date: 5.JUN.2014 08:26:55

Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Emission Bandwidth (26 dB) - Conducted
Operator: Craig B
Comment: RBW = 500 kHz VBW = 2 MHz
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 14

Channel 0:

26 dB Emission Bandwidth = 44.61 MHz

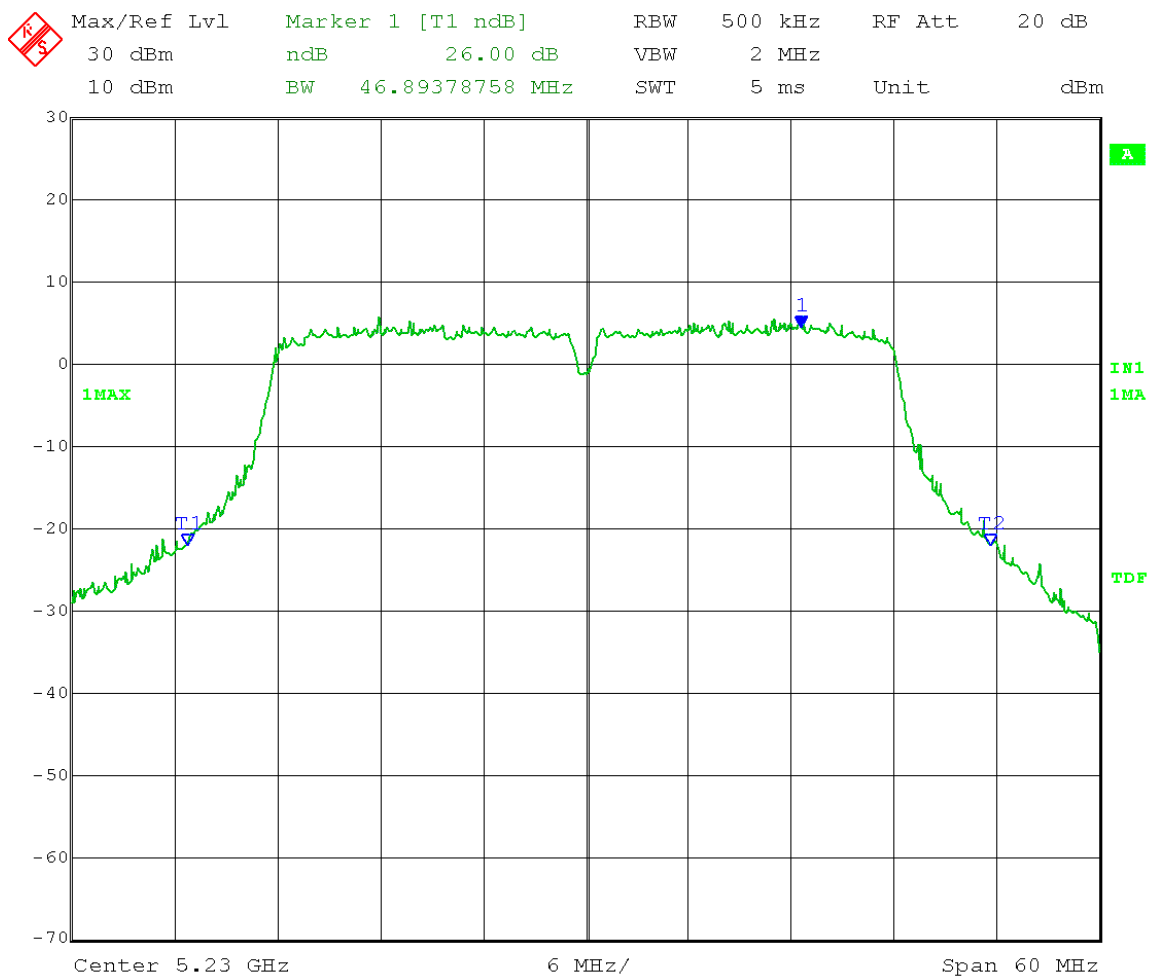


Date: 5.JUN.2014 08:37:05

Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Emission Bandwidth (26 dB) - Conducted
Operator: Craig B
Comment: RBW = 500 kHz VBW = 2 MHz
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 14

Channel 0:

26 dB Emission Bandwidth = 46.89 MHz



Date: 5.JUN.2014 08:40:50



166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C050900C032A
Report Number:	20127
DLS Project:	6620

Appendix B – Measurement Data

B3.0 99 Percent Occupied Bandwidth

Rule Section: Informative

Test Procedure: FCC KDB 789033 D02 General UNII Test Procedures v01 – *Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E*

Section D – 99 Percent Occupied Bandwidth

Description: SPAN = 1.5 to 5 times the OBW
RBW = 1% to 5% of OBW
VBW $\geq 3 \times$ RBW
Detector = Peak
Trace mode = max hold

Measure the width of the emission using the 99% power bandwidth function of the spectrum analyzer

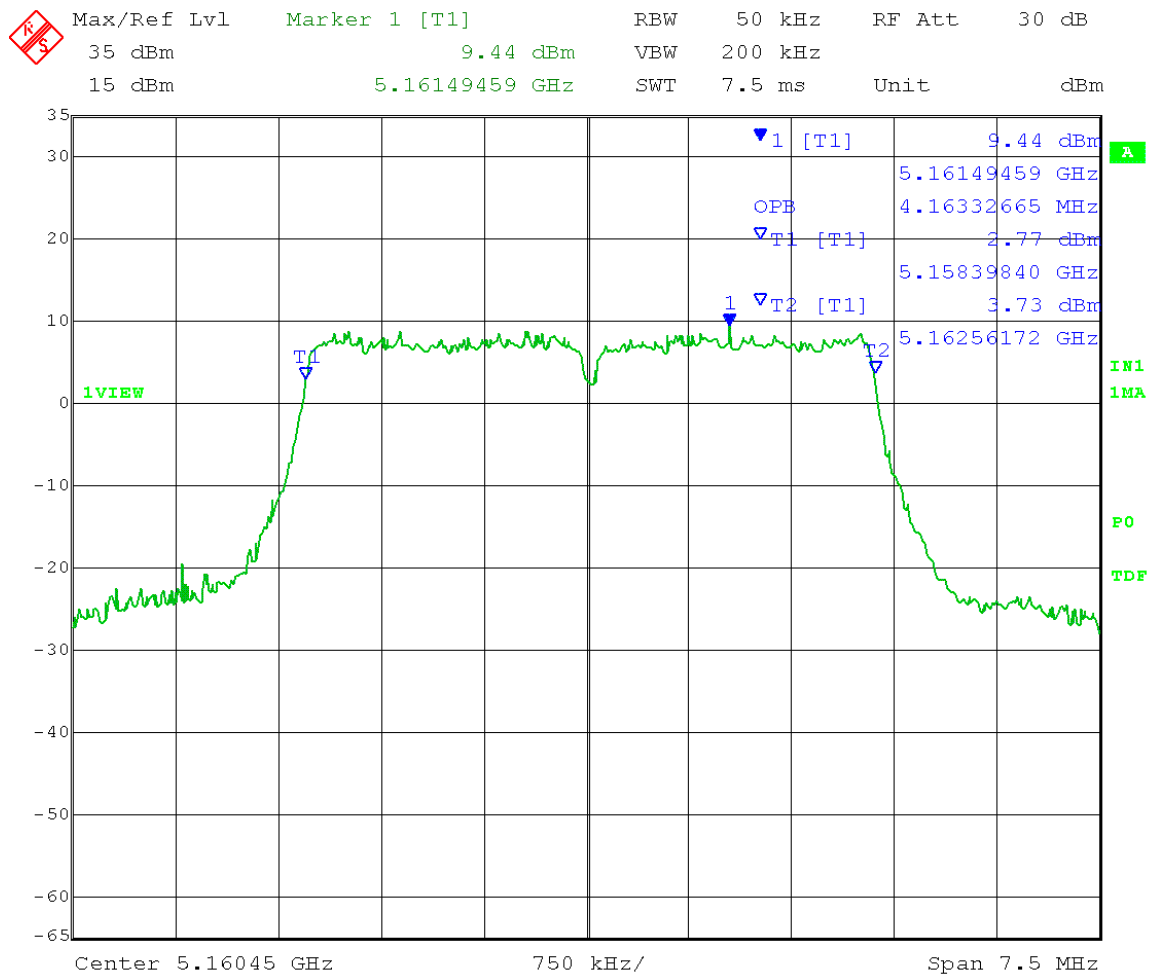
Limit: Informative

Notes: 5 MHz channel bandwidth measurements were taken with Legacy OFDM 54 Mbit/s modulation at the lowest, middle, and highest channels of operation. 40 MHz channel bandwidth measurements were taken with MCS15 OFDM modulation. The EUT was set to transmit continuously with 100% duty cycle.

Test Date: 05-28-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: 99% Occupied Bandwidth - Conducted
Operator: Craig B
Comment: RBW = 50 kHz VBW = 200 kHz
Low Channel: Transmit = 5.160 GHz 5 MHz BW
Output power setting: 18

Channel 0:

99% Power Bandwidth = 4.16 MHz

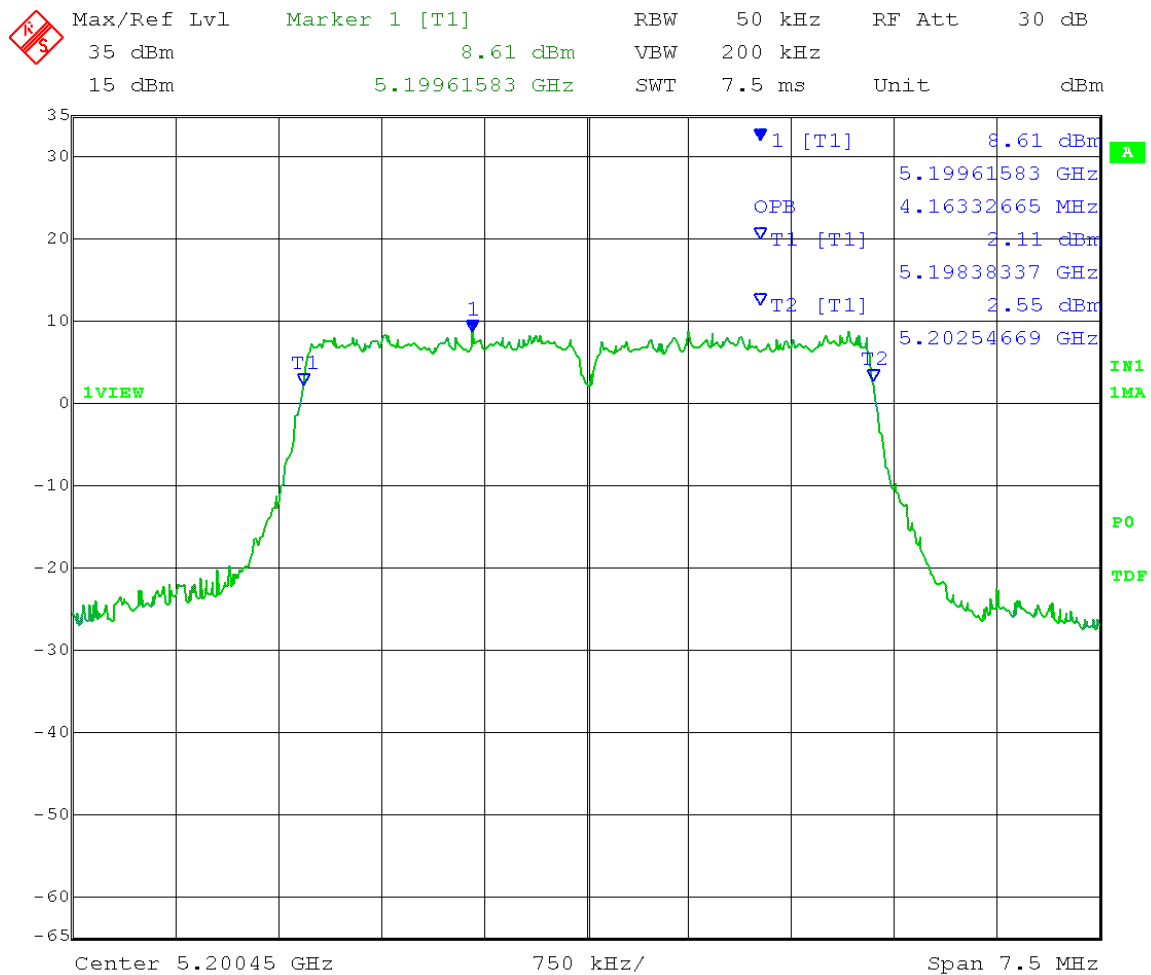


Date: 28.MAY.2014 08:50:26

Test Date: 05-28-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: 99% Occupied Bandwidth - Conducted
 Operator: Craig B
 Comment: RBW = 50 kHz VBW = 200 kHz
 Mid Channel: Transmit = 5.200 GHz 5 MHz BW
 Output power setting: 18

Channel 0:

99% Power Bandwidth = 4.16 MHz

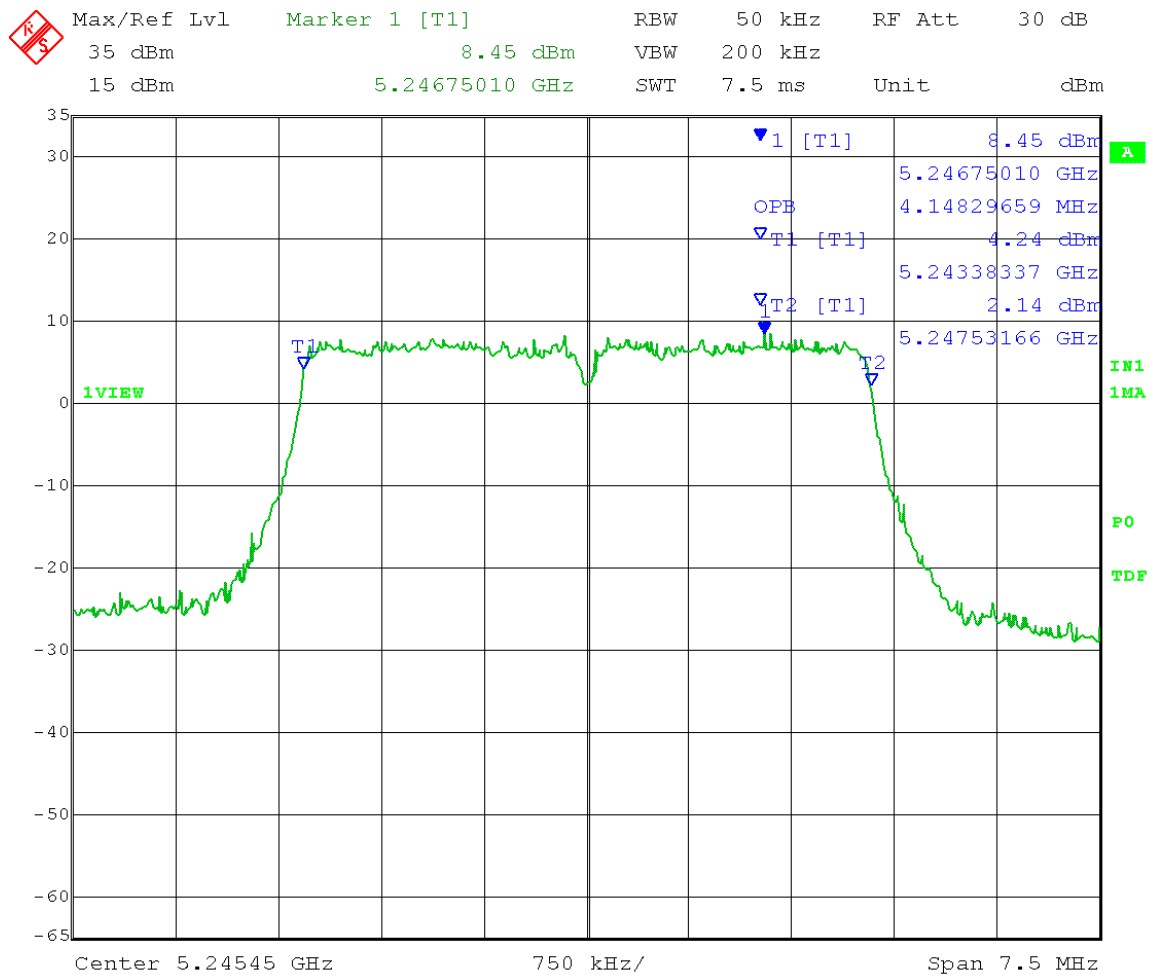


Date: 28.MAY.2014 08:54:21

Test Date: 05-28-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: 99% Occupied Bandwidth - Conducted
 Operator: Craig B
 Comment: RBW = 50 kHz VBW = 200 kHz
 High Channel: Transmit = 5.245 GHz 5 MHz BW
 Output power setting: 18

Channel 0:

99% Power Bandwidth = 4.15 MHz

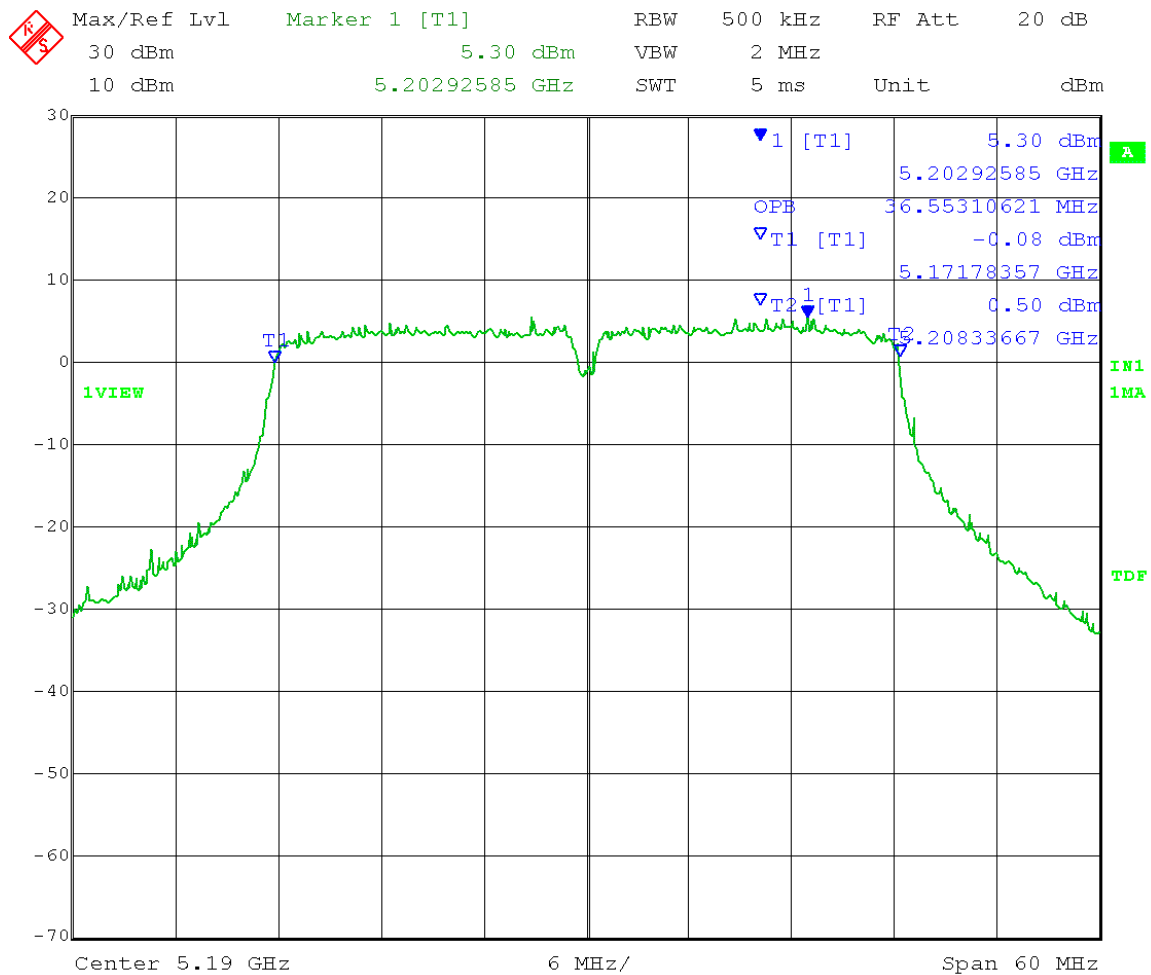


Date: 28.MAY.2014 08:58:05

Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: 99% Occupied Bandwidth - Conducted
Operator: Craig B
Comment: RBW = 500 kHz VBW = 2 MHz
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 12.5

Channel 0:

99% Power Bandwidth = 36.55 MHz

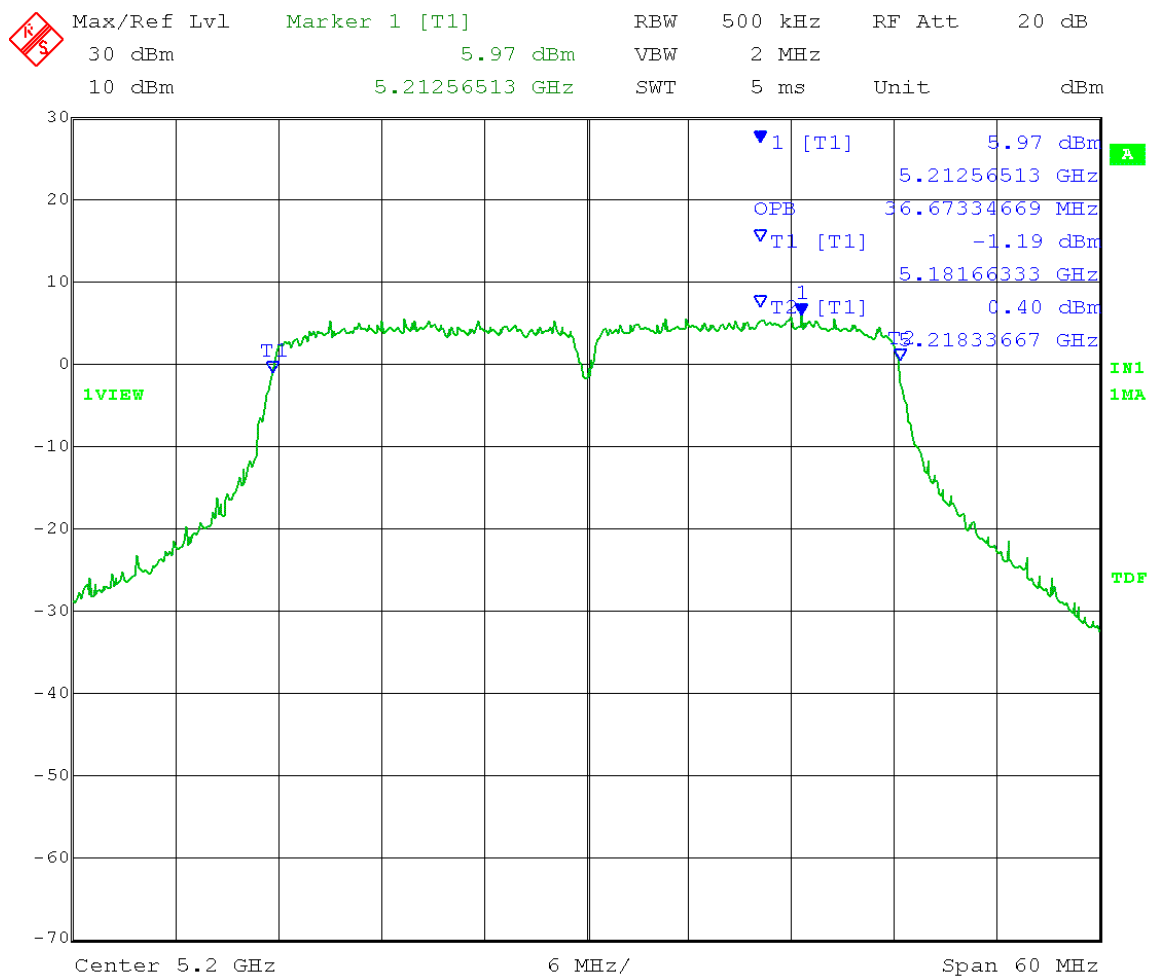


Date: 5.JUN.2014 08:30:41

Test Date: 06-05-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: 99% Occupied Bandwidth - Conducted
 Operator: Craig B
 Comment: RBW = 500 kHz VBW = 2 MHz
 Mid Channel: Transmit = 5.200 GHz 40 MHz BW
 Output power setting: 14

Channel 0:

99% Power Bandwidth = 36.67 MHz

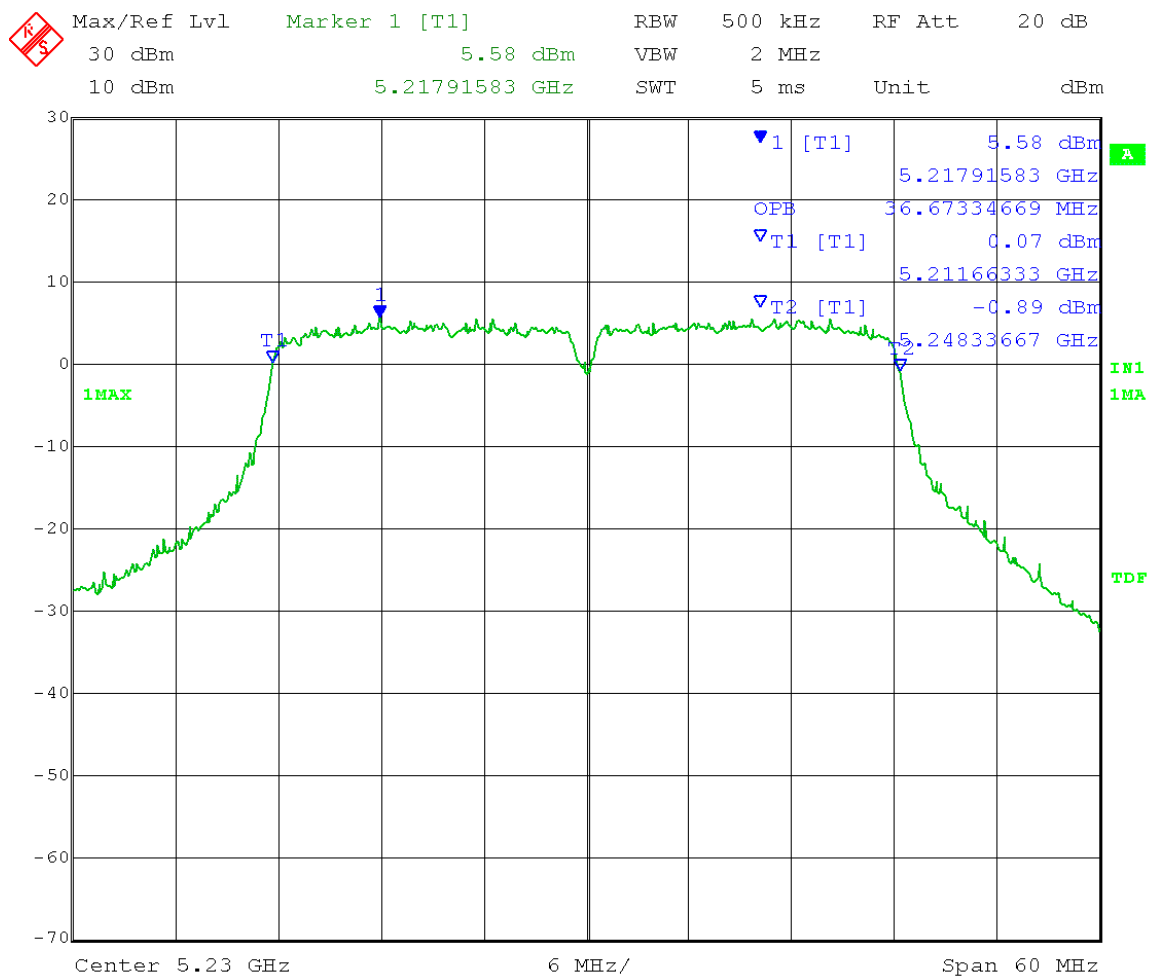


Date: 5.JUN.2014 08:38:24

Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: 99% Occupied Bandwidth - Conducted
Operator: Craig B
Comment: RBW = 500 kHz VBW = 2 MHz
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 14

Channel 0:

99% Power Bandwidth = 36.67 MHz



Date: 5.JUN.2014 08:42:21



166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C050900C032A
Report Number:	20127
DLS Project:	6620

Appendix B – Measurement Data

B4.0 Maximum Conducted Output Power

Rule Section: Section 15.407(a)(1)

Test Procedure: FCC KDB 789033 D02 General UNII Test Procedures v01 – *Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E*

Section E(3)(a) Method PM (Measurement using an RF average power meter):
Measurements performed using a wideband RF power meter with a thermocouple detector

Description: Measure the average power of the transmitter
Add $10 \log(1/x)$, where x is the duty cycle, to the measured power
Add $10 \log(N)$, where N is the number of outputs, for MIMO operation
(according to FCC KDB 662911)

Limit: 1W (30 dBm) conducted

Limit shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

For fixed point-to-point access points: Limit shall be reduced by the amount in dB that the directional gain of the antenna exceeds 23 dBi

Results: Passed

Notes: 5 MHz channel bandwidth measurements were taken with Legacy OFDM 54 Mbit/s modulation at the lowest, middle, and highest channels of operation. 40 MHz channel bandwidth measurements were taken with MCS15 OFDM modulation. The EUT was set to transmit continuously with 100% duty cycle.

Peak detector output power measurements were also recorded and included in this test report as requested by Cambium Networks.

Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.160 GHz 5 MHz BW
Output power setting: 18
Ch 0:

Maximum conducted output power = 18.92 dBm + 3 dB (MIMO)
= 21.92 dBm



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 18
Ch 0:

Maximum conducted output power = 19.63 dBm + 3 dB (MIMO)
= 22.63 dBm



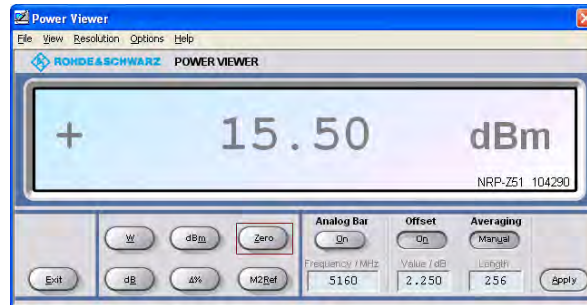
Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 18
Ch 0:

Maximum conducted output power = 19.66 dBm + 3 dB (MIMO)
= 22.66 dBm



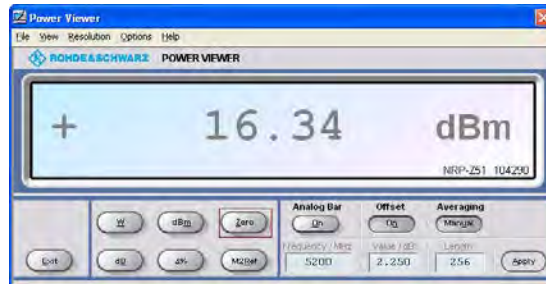
Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.160 GHz 5 MHz BW
Output power setting: 15
Ch 0:

Maximum conducted output power = 15.50 dBm + 3 dB (MIMO)
= 18.50 dBm



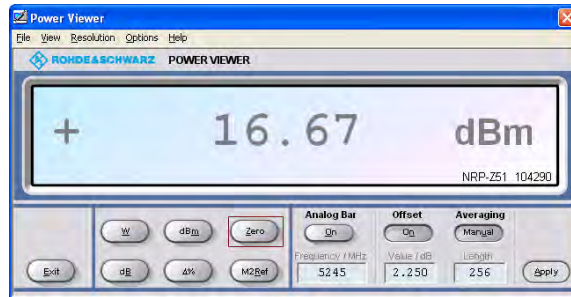
Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 15
Ch 0:

Maximum conducted output power = 16.34 dBm + 3 dB (MIMO)
= 19.34 dBm



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 15
Ch 0:

Maximum conducted output power = 16.67 dBm + 3 dB (MIMO)
= 19.67 dBm



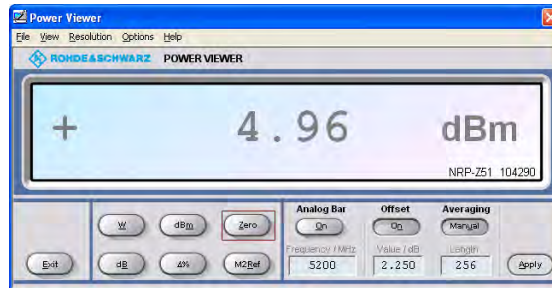
Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
Low Channel: Transmit = 5.160 GHz 5 MHz BW
Output power setting: 4
Ch 0:

Maximum conducted output power = $4.02 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 7.02 dBm



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 4
Ch 0:

Maximum conducted output power = $4.96 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 7.96 dBm



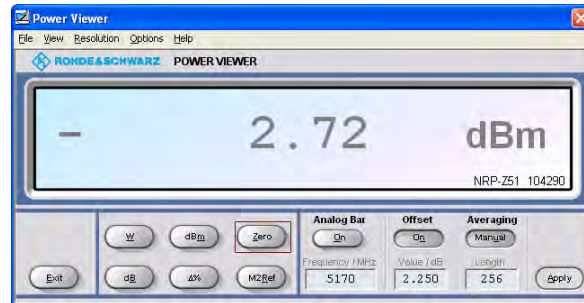
Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 16
Ch 0:

Maximum conducted output power = $16.99 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 19.99 dBm



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.170 GHz 5 MHz BW
Output power setting: 3 – 6 dB external atten. = -3
Ch 0:

Maximum conducted output power = $-2.72 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 0.28 dBm



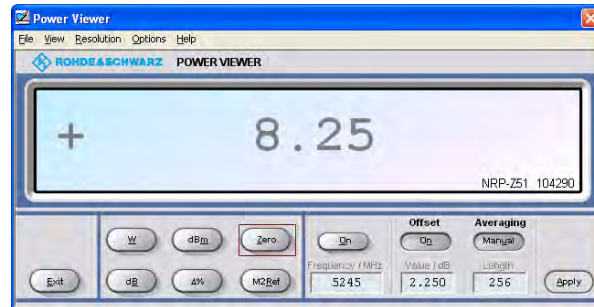
Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 3 – 6 dB external atten. = -3
Ch 0:

Maximum conducted output power = $-2.03 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 0.97 dBm



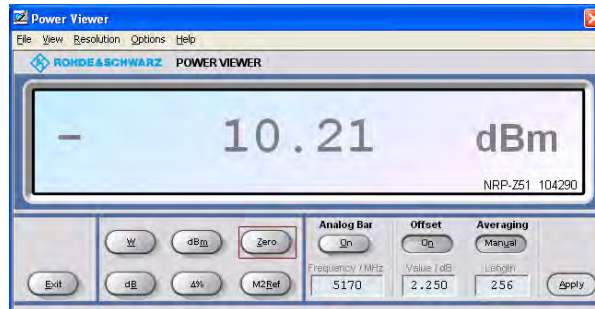
Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 17 – 10 dB external atten. = 7
Ch 0:

Maximum conducted output power = 8.25 dBm + 3 dB (MIMO)
= 11.25 dBm



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30-23) = 23 \text{ dBm}$
Low Channel: Transmit = 5.170 GHz 5 MHz BW
Output power setting: $0 - 10 \text{ dB external atten.} = -10$
Ch 0:

Maximum conducted output power = $-10.21 \text{ dBm} + 3 \text{ dB (MIMO)}$
= -7.21 dBm



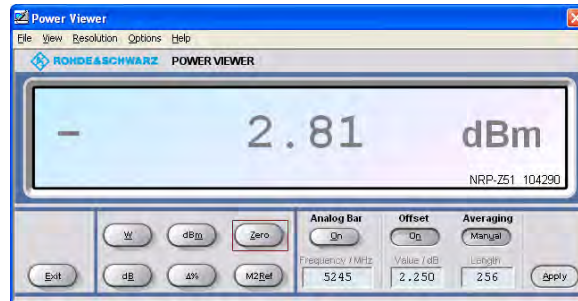
Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 0 – 10 dB external atten. = -10
Ch 0:

Maximum conducted output power = $-9.49 \text{ dBm} + 3 \text{ dB (MIMO)}$
= -6.49 dBm



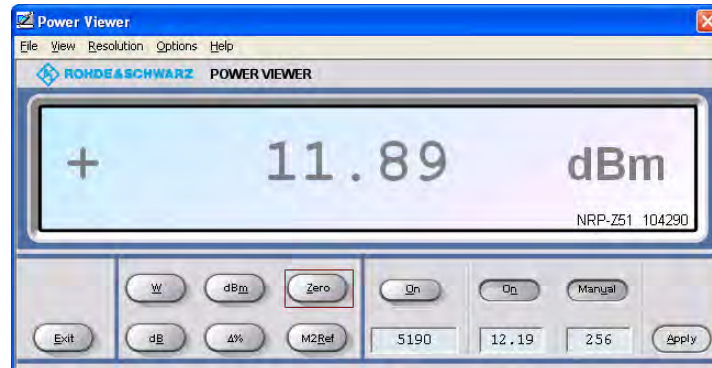
Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 6 – 10 dB external atten. = -4
Ch 0:

Maximum conducted output power = $-2.81 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 0.19 dBm



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 12.5
Ch 0:

Maximum conducted output power = 11.89 dBm + 3 dB (MIMO)
= 14.89 dBm



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 14
Ch 0:

Maximum conducted output power = 13.95 dBm + 3 dB (MIMO)
= 16.95 dBm



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 14
Ch 0:

Maximum conducted output power = 14.28 dBm + 3 dB (MIMO)
= 17.28 dBm



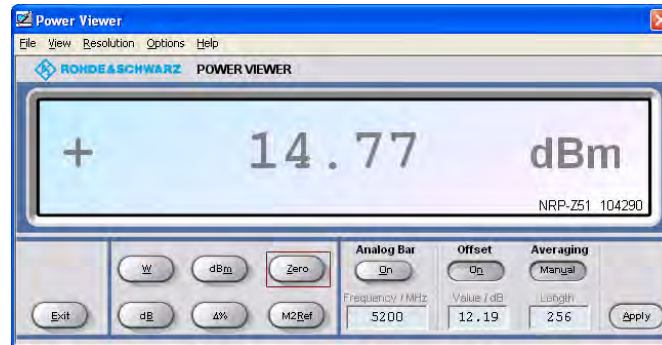
Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 11.5
Ch 0:

Maximum conducted output power = 12.05 dBm + 3 dB (MIMO)
= 15.05 dBm



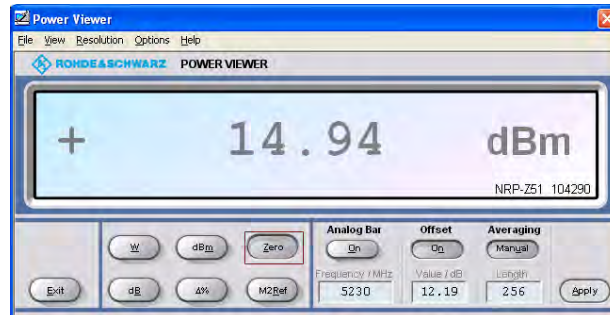
Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 14
Ch 0:

Maximum conducted output power = 14.77 dBm + 3 dB (MIMO)
= 17.77 dBm



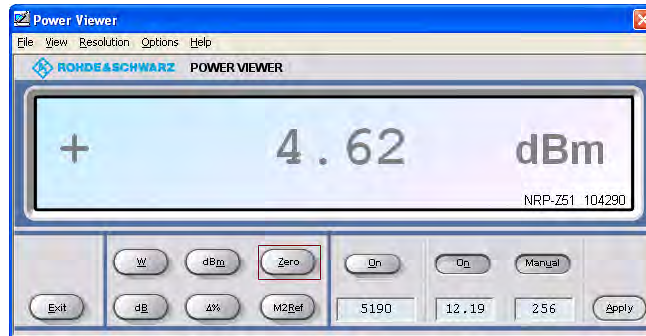
Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 14
Ch 0:

Maximum conducted output power = 14.94 dBm + 3 dB (MIMO)
= 17.94 dBm



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 4
Ch 0:

Maximum conducted output power = $4.62 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 7.62 dBm



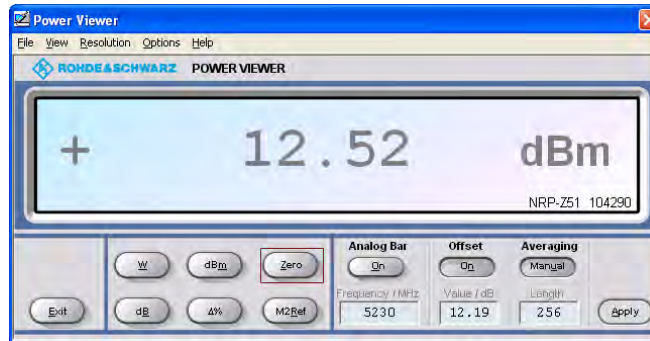
Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 8
Ch 0:

Maximum conducted output power = $9.33 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 12.33 dBm



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 11
Ch 0:

Maximum conducted output power = $12.52 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 15.52 dBm



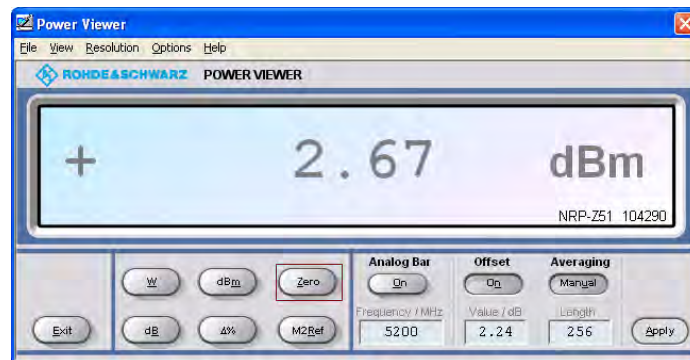
Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 0.5 – 2 dB external atten. = -1.5
Ch 0:

Maximum conducted output power = $-1.00 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 2.00 dBm



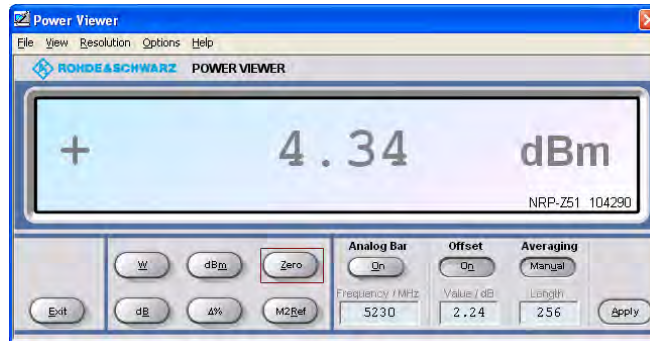
Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 3.5 – 2 dB external atten. = 1.5
Ch 0:

Maximum conducted output power = 2.67 dBm + 3 dB (MIMO)
= 5.67 dBm



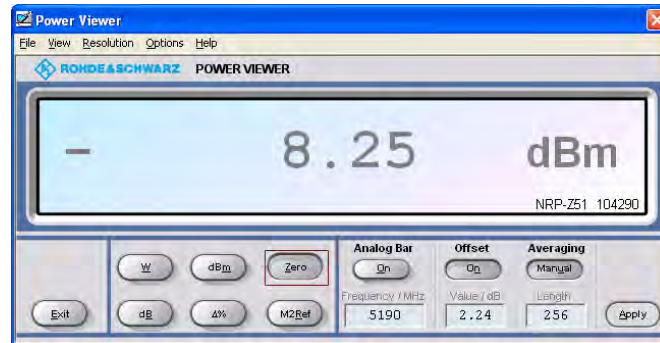
Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 5 – 2 dB external atten. = 3
Ch 0:

Maximum conducted output power = 4.34 dBm + 3 dB (MIMO)
= 7.34 dBm



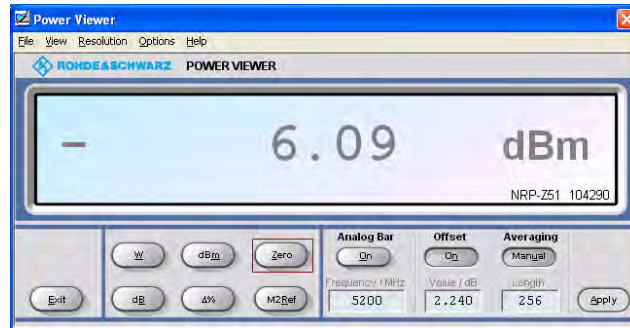
Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 1 – 10 dB external atten. = -9
Ch 0:

Maximum conducted output power = $-8.25 \text{ dBm} + 3 \text{ dB (MIMO)}$
= -5.25 dBm



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 5 – 10 dB external atten. = -5
Ch 0:

Maximum conducted output power = $-6.09 \text{ dBm} + 3 \text{ dB (MIMO)}$
= -3.09 dBm



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: $6.5 - 10 \text{ dB external atten.} = -3.5$
Ch 0:

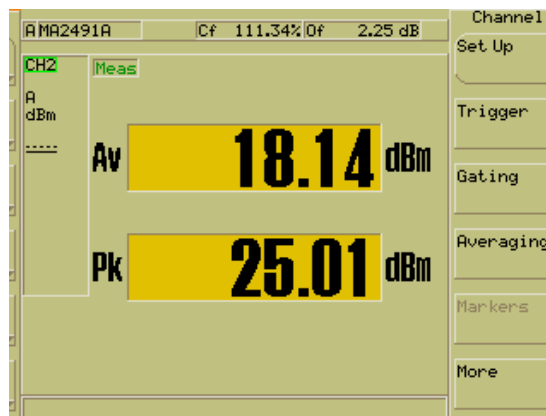
Maximum conducted output power = $-2.26 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 0.74 dBm



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.160 GHz 5 MHz BW
Output power setting: 18
Ch 0:

Maximum conducted output power = 25.01 dBm + 3 dB (MIMO)
= 28.01 dBm

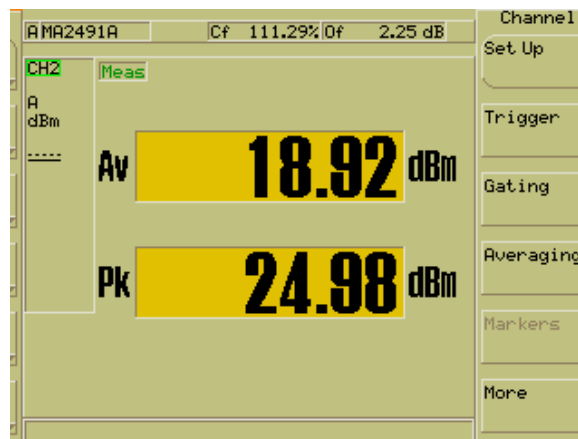
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 18
Ch 0:

Maximum conducted output power = 24.98 dBm + 3 dB (MIMO)
= 27.98 dBm

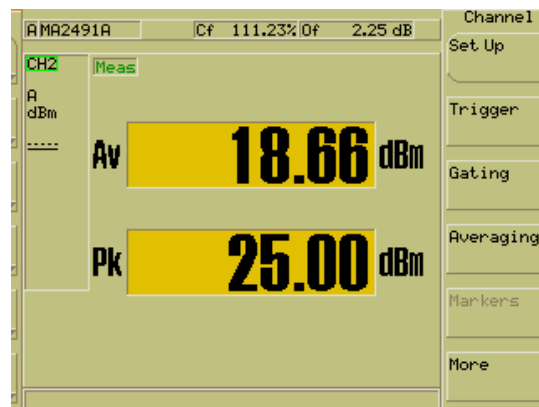
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 18
Ch 0:

Maximum conducted output power = 25.00 dBm + 3 dB (MIMO)
= 28.00 dBm

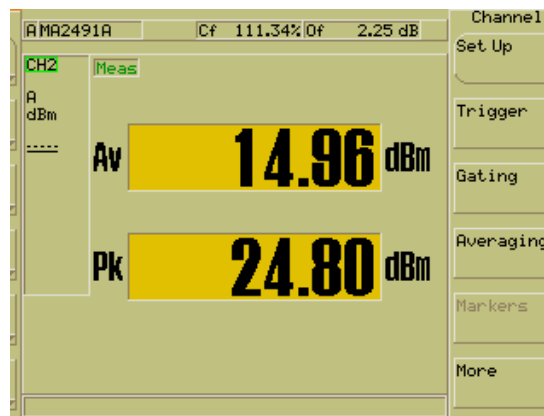
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.160 GHz 5 MHz BW
Output power setting: 15
Ch 0:

Maximum conducted output power = 24.80 dBm + 3 dB (MIMO)
= 27.80 dBm

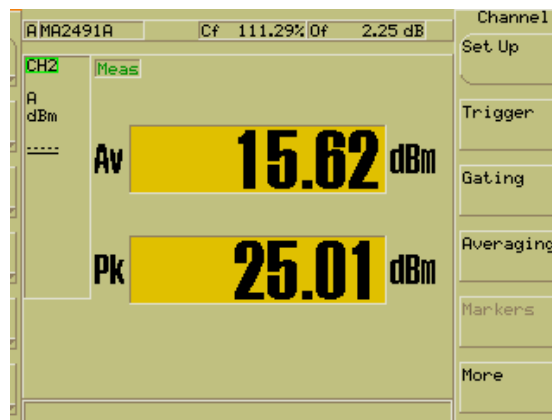
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 15
Ch 0:

Maximum conducted output power = 25.01 dBm + 3 dB (MIMO)
= 28.01 dBm

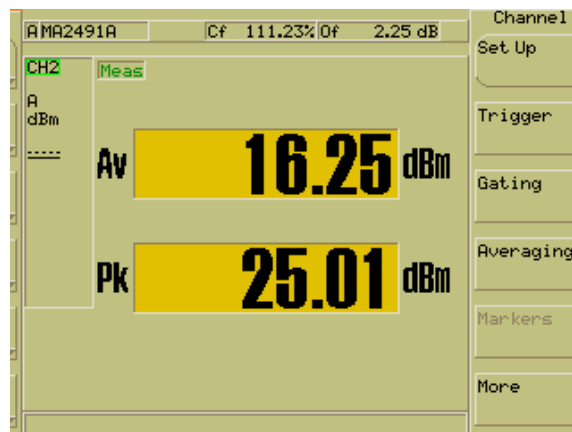
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 15
Ch 0:

Maximum conducted output power = 25.01 dBm + 3 dB (MIMO)
= 28.01 dBm

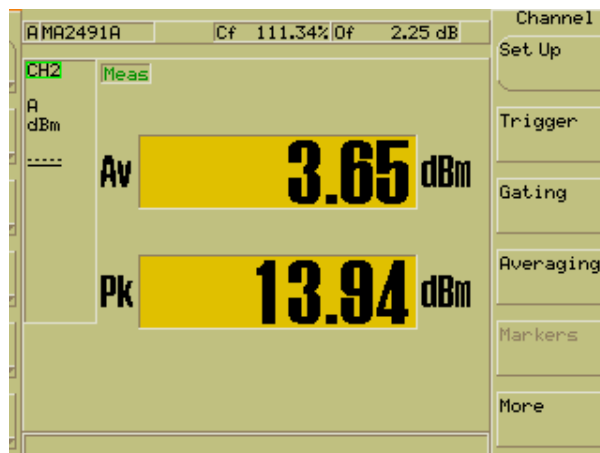
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
Low Channel: Transmit = 5.160 GHz 5 MHz BW
Output power setting: 4
Ch 0:

Maximum conducted output power = $13.94 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 16.94 dBm

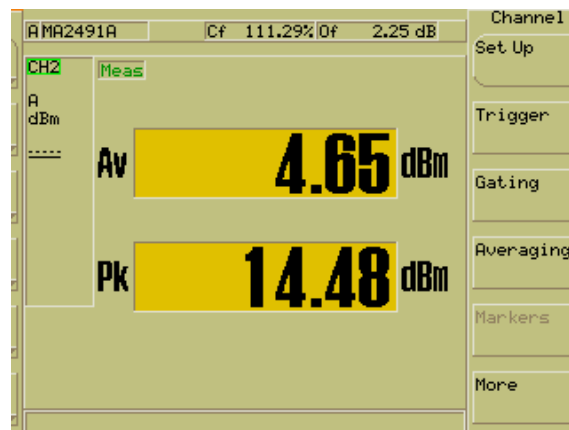
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 4
Ch 0:

Maximum conducted output power = $14.48 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 17.48 dBm

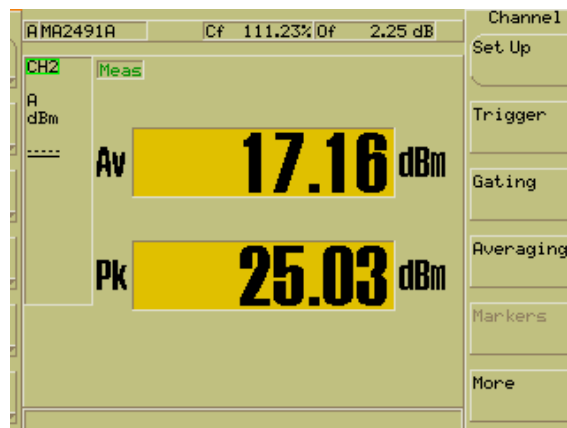
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 16
Ch 0:

Maximum conducted output power = $25.03 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 28.03 dBm

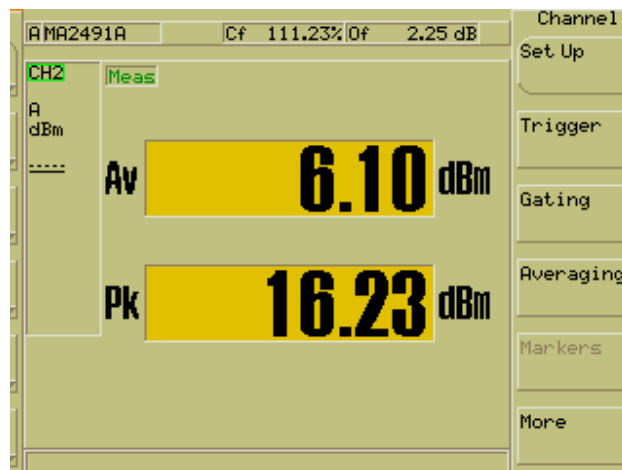
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: **5**
Ch 0:

Maximum conducted output power = $16.23 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 19.23 dBm

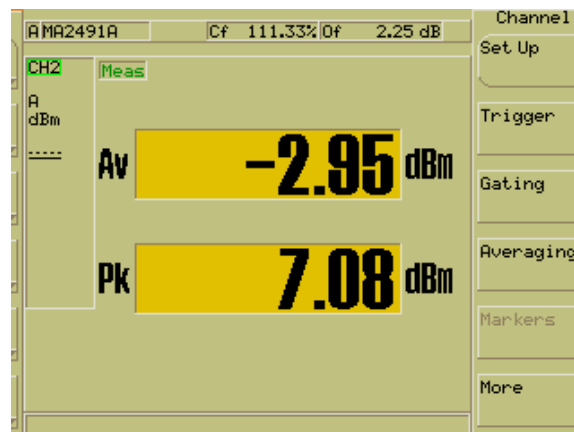
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.170 GHz 5 MHz BW
Output power setting: 3 – 6 dB external atten. = -3
Ch 0:

Maximum conducted output power = 7.08 dBm + 3 dB (MIMO)
= 10.08 dBm

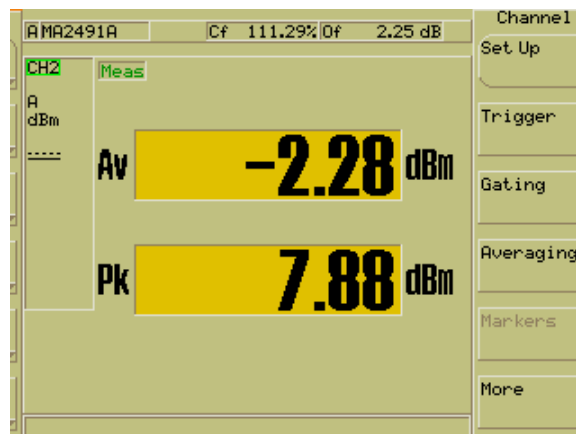
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to-Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 3 – 6 dB external atten. = -3
Ch 0:

Maximum conducted output power = 7.88 dBm + 3 dB (MIMO)
= 10.88 dBm

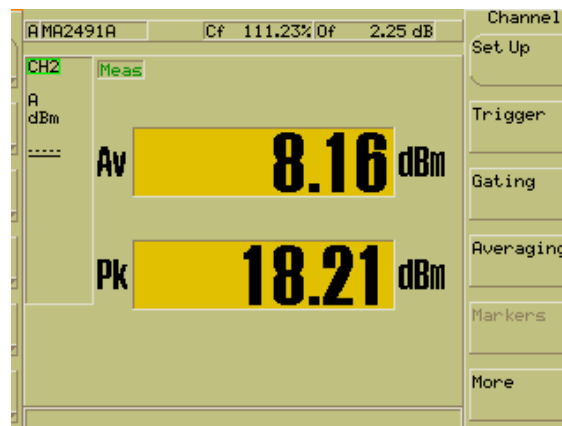
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 17 – 10 dB external atten. = 7
Ch 0:

Maximum conducted output power = 18.21 dBm + 3 dB (MIMO)
= 21.21 dBm

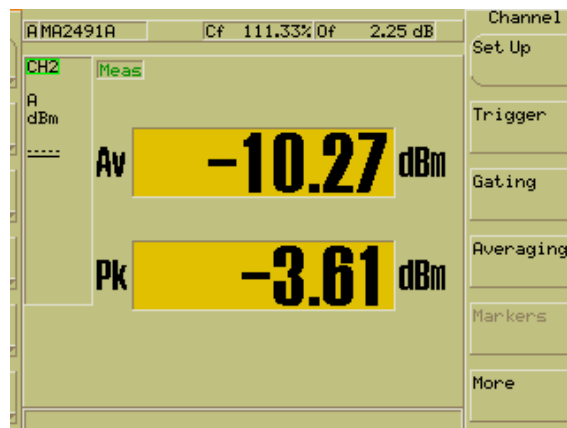
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
Low Channel: Transmit = 5.170 GHz 5 MHz BW
Output power setting: 0 – 10 dB external atten. = -10
Ch 0:

Maximum conducted output power = $-3.61 \text{ dBm} + 3 \text{ dB (MIMO)}$
= -0.61 dBm

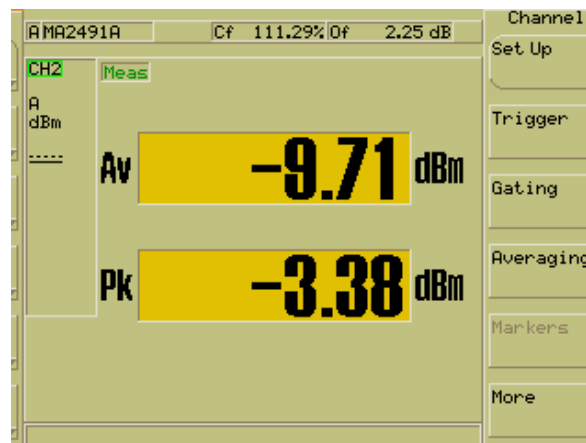
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
Mid Channel: Transmit = 5.200 GHz 5 MHz BW
Output power setting: 0 – 10 dB external atten. = -10
Ch 0:

Maximum conducted output power = $-3.38 \text{ dBm} + 3 \text{ dB (MIMO)}$
= -0.38 dBm

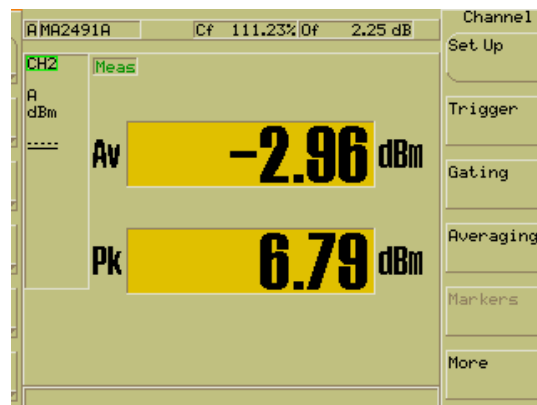
PEAK DETECTOR



Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 6 – 10 dB external atten. = -4
Ch 0:

Maximum conducted output power = $6.79 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 9.79 dBm

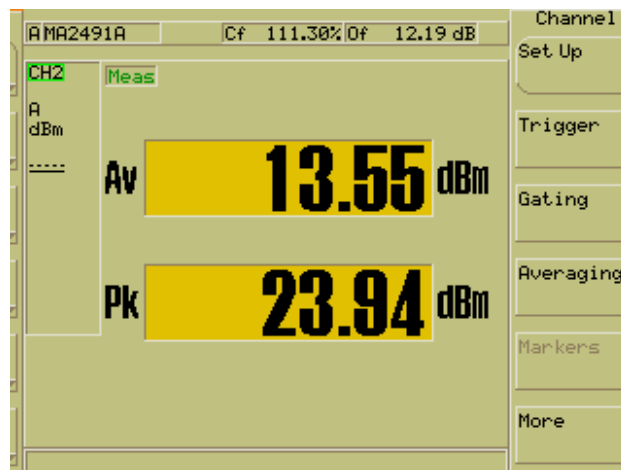
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 12.5
Ch 0:

Maximum conducted output power = 23.94 dBm + 3 dB (MIMO)
= 26.94 dBm

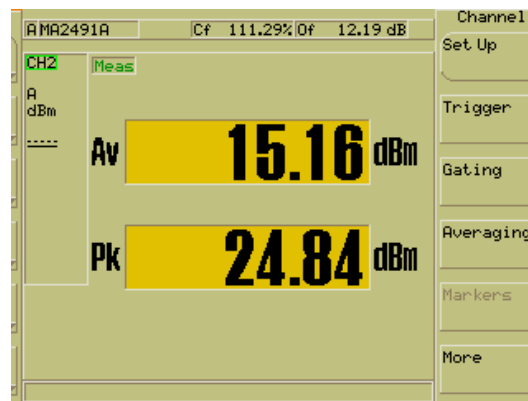
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 14
Ch 0:

Maximum conducted output power = 24.84 dBm + 3 dB (MIMO)
= 27.84 dBm

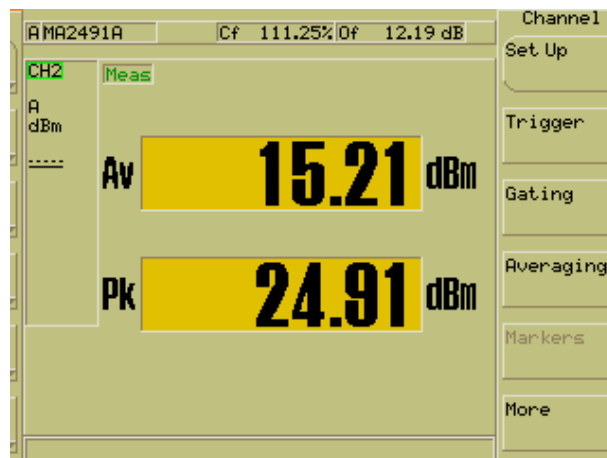
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 2 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 14
Ch 0:

Maximum conducted output power = 24.91 dBm + 3 dB (MIMO)
= 27.91 dBm

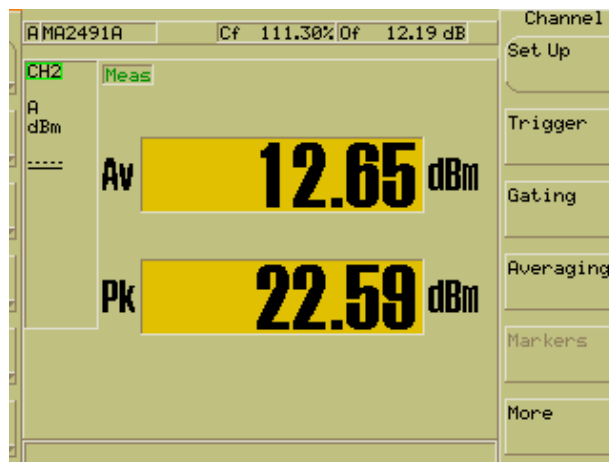
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 11.5
Ch 0:

Maximum conducted output power = 22.59 dBm + 3 dB (MIMO)
= 25.59 dBm

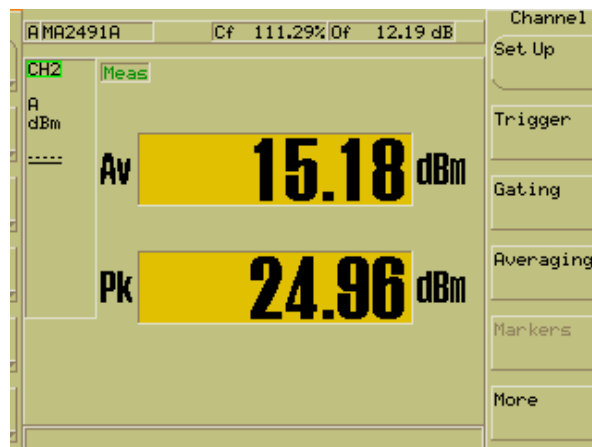
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 14
Ch 0:

Maximum conducted output power = 24.96 dBm + 3 dB (MIMO)
= 27.96 dBm

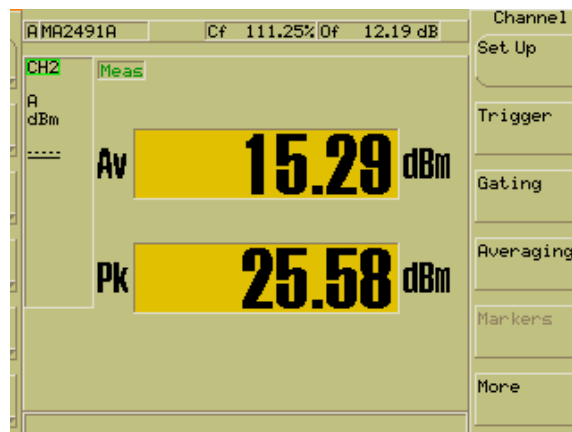
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 3 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 14
Ch 0:

Maximum conducted output power = 25.58 dBm + 3 dB (MIMO)
= 28.58 dBm

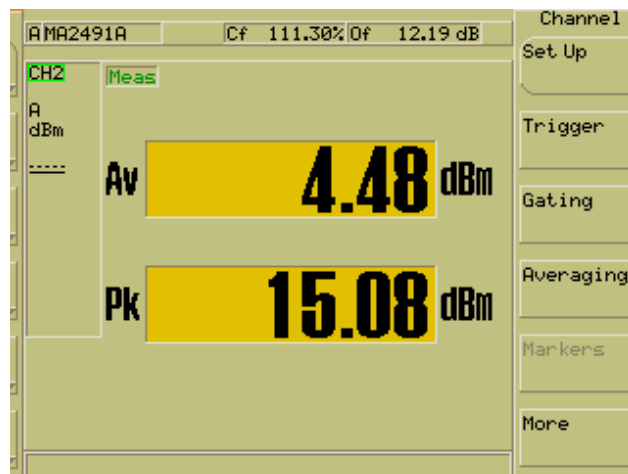
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 4
Ch 0:

Maximum conducted output power = 15.05 dBm + 3 dB (MIMO)
= 18.08 dBm

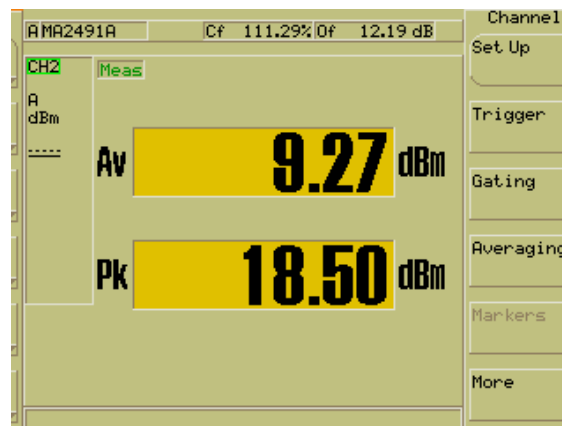
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 8
Ch 0:

Maximum conducted output power = $18.50 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 21.50 dBm

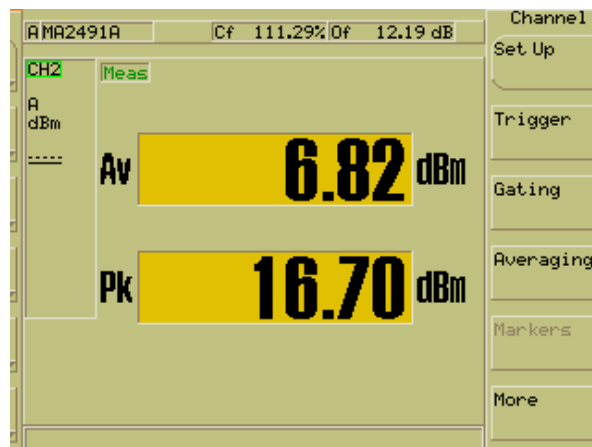
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 6
Ch 0:

Maximum conducted output power = $16.70 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 19.70 dBm

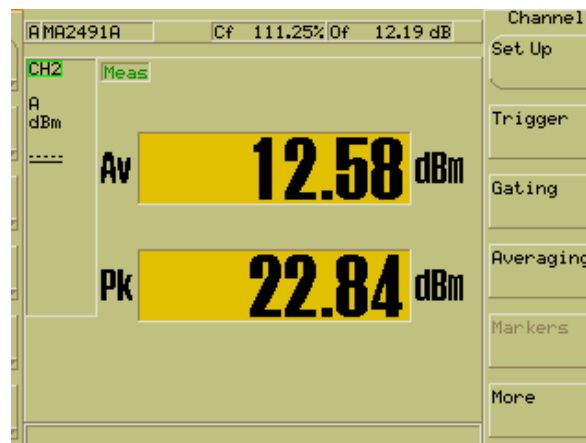
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 11
Ch 0:

Maximum conducted output power = $22.84 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 25.84 dBm

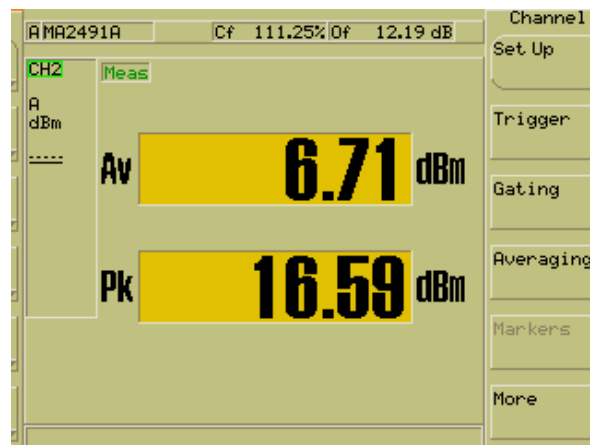
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the
antenna gain exceeds 6 dBi
Operating Mode: Point-to-Multipoint; Antenna Gain = 16 dBi
EUT Limit: $(30 \text{ dBm} - (16 \text{ dBi} - 6 \text{ dB})) = 20 \text{ dBm}$
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 6
Ch 0:

Maximum conducted output power = 16.59 dBm + 3 dB (MIMO)
= 19.59 dBm

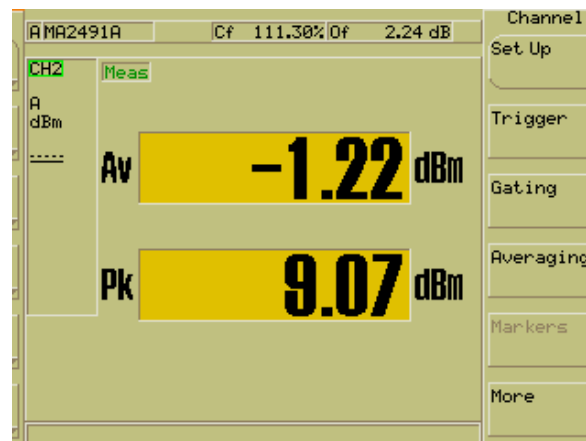
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 0.5 – 2 dB external atten. = -1.5
Ch 0:

Maximum conducted output power = 9.07 dBm + 3 dB (MIMO)
= 12.07 dBm

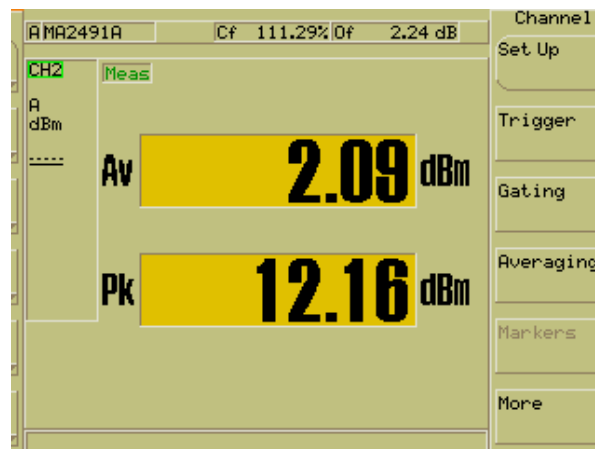
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 3.5 – 2 dB external atten. = 1.5
Ch 0:

Maximum conducted output power = 12.16 dBm + 3 dB (MIMO)
= 15.16 dBm

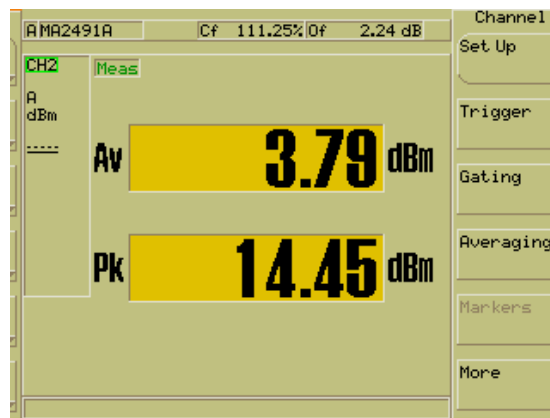
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 23 dBi
EUT Limit: 30 dBm
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 5 – 2 dB external atten. = 3
Ch 0:

Maximum conducted output power = 14.45 dBm + 3 dB (MIMO)
= 17.45 dBm

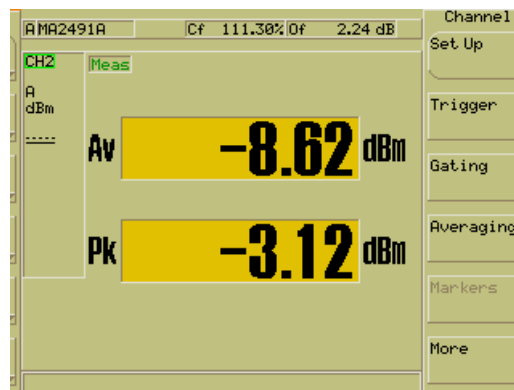
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 1 – 10 dB external atten. = -9
Ch 0:

Maximum conducted output power = $-3.12 \text{ dBm} + 3 \text{ dB (MIMO)}$
= -0.12 dBm

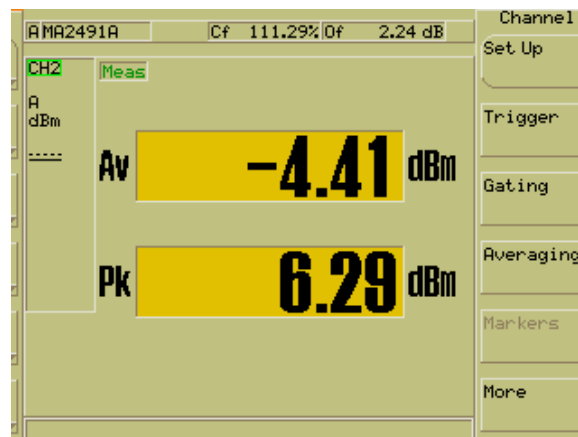
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
Mid Channel: Transmit = 5.200 GHz 40 MHz BW
Output power setting: 5 – 10 dB external atten. = -5
Ch 0:

Maximum conducted output power = $6.29 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 9.29 dBm

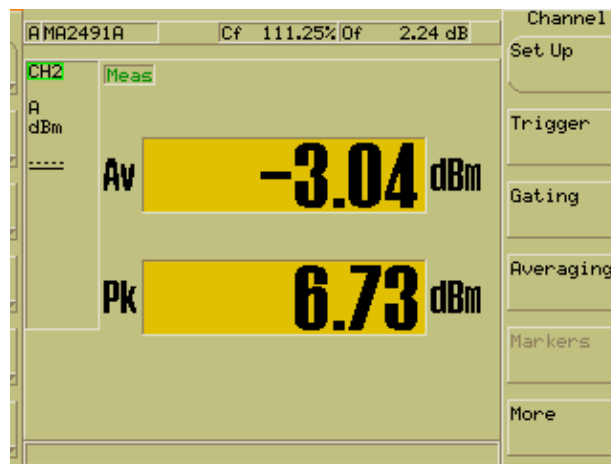
PEAK DETECTOR



Test Date: 06-05-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to Point)
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using a power meter (PM)
Limit: [15.407(a)(1)]: 30.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
EUT Limit: $30 \text{ dBm} - (30 - 23) = 23 \text{ dBm}$
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: $6.5 - 10 \text{ dB external atten.} = -3.5$
Ch 0:

Maximum conducted output power = $6.73 \text{ dBm} + 3 \text{ dB (MIMO)}$
= 9.73 dBm

PEAK DETECTOR





166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Model Tested: C050900C032A
Report Number: 20127
DLS Project: 6620

Appendix B – Measurement Data

B5.0 Maximum Power Spectral Density (PSD)– Conducted

Rule Section: Section 15.407(a)(1)

Test Procedure: FCC KDB 789033 D02 General UNII Test Procedures v01 – *Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E*

Section F – Maximum power spectral density (PSD)
Using method E(2)(b) SA-1 for power spectrum

Description: SPAN: set to encompass entire emission bandwidth
RBW = 1 MHz
VBW $\geq$ 3 MHz
Number of points $\geq$ 2 x Span/RBW
Sweep time: auto
Detector = RMS
Sweep: trace average 200 sweeps in RMS mode
Use peak search to find the peak of the spectrum

Limit: 17 dBm in any 1 MHz band

Limit shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

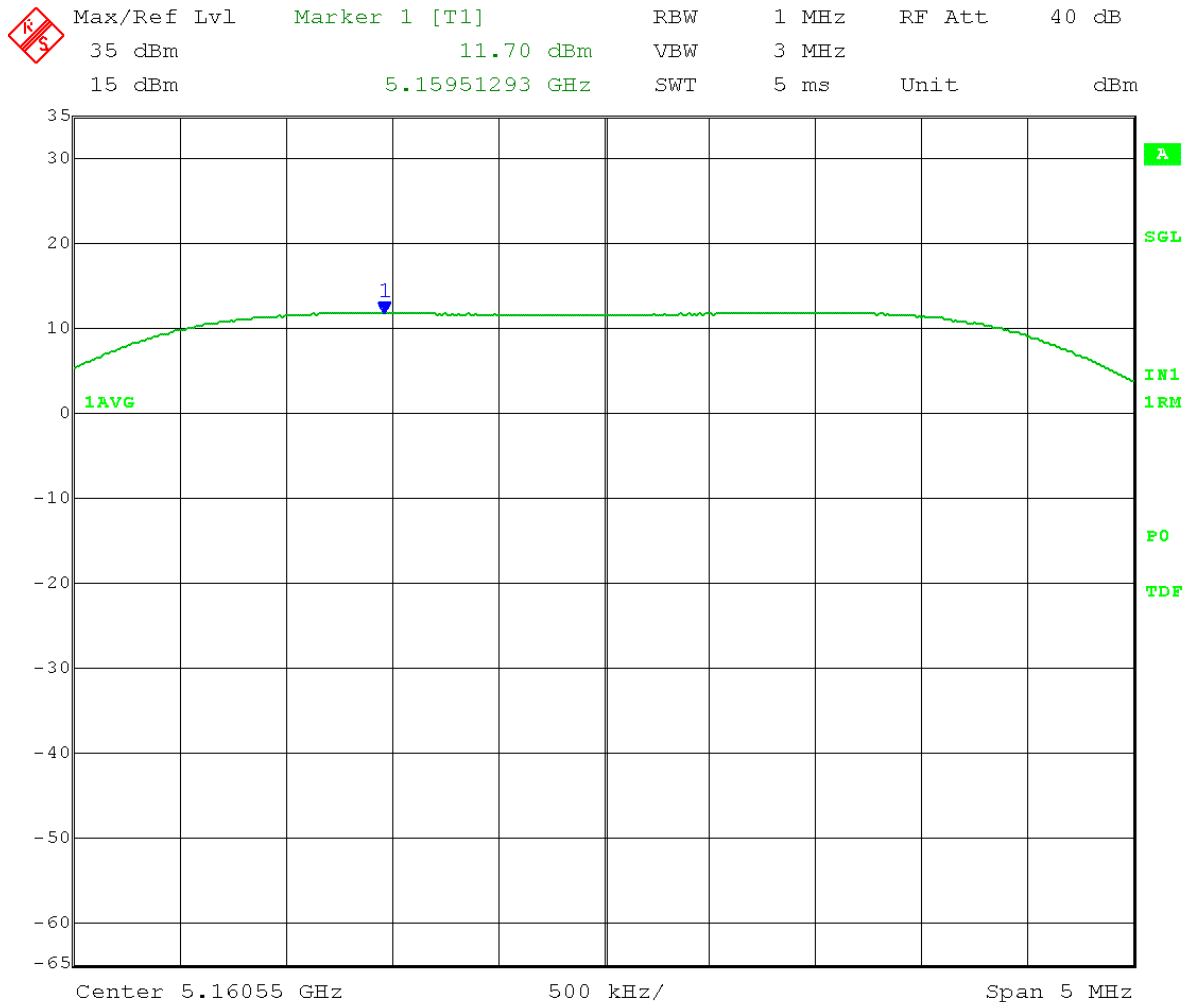
For fixed point-to-point access points: Limit shall be reduced by the amount in dB that the directional gain of the antenna exceeds 23 dBi

Results: Passed

Notes: 5 MHz channel bandwidth measurements were taken with Legacy OFDM 54 Mbit/s modulation at the lowest, middle, and highest channels of operation. 40 MHz channel bandwidth measurements were taken with MCS15 OFDM modulation. The EUT was set to transmit continuously with 100% duty cycle.

Test Date: 05-27-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: $17 - 3(\text{MIMO}) = 14 \text{ dBm/MHz}$
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 Low Channel: Transmit = 5.160 GHz 5 MHz BW
 Output power setting: 18 Channel 0

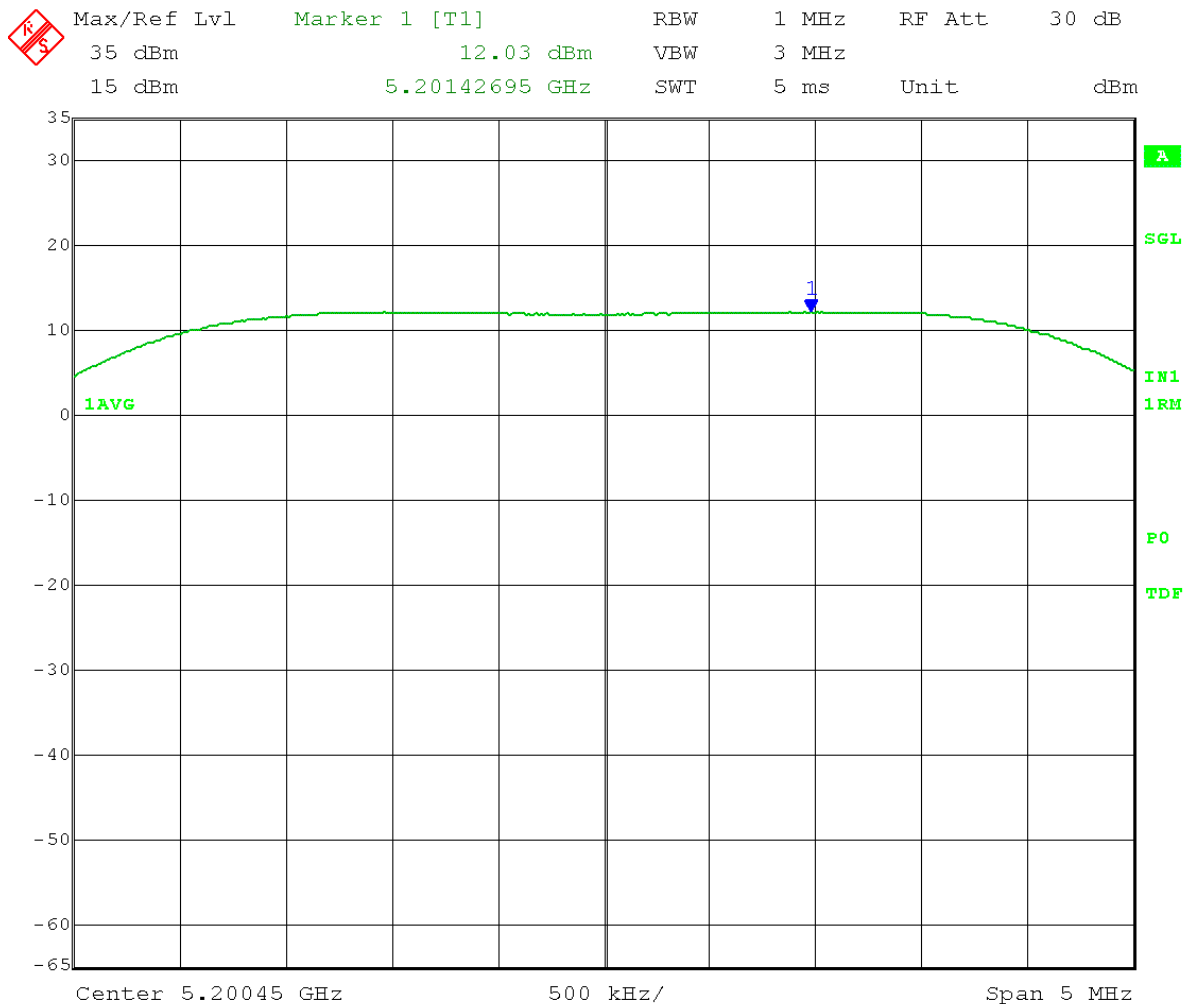
PSD = 11.70 dBm/MHz



Date: 27.MAY.2014 14:23:06

Test Date: 05-27-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: $17 - 3(\text{MIMO}) = 14 \text{ dBm/MHz}$
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 Mid Channel: Transmit = 5.200 GHz 5 MHz BW
 Output power setting: 18 Channel 0

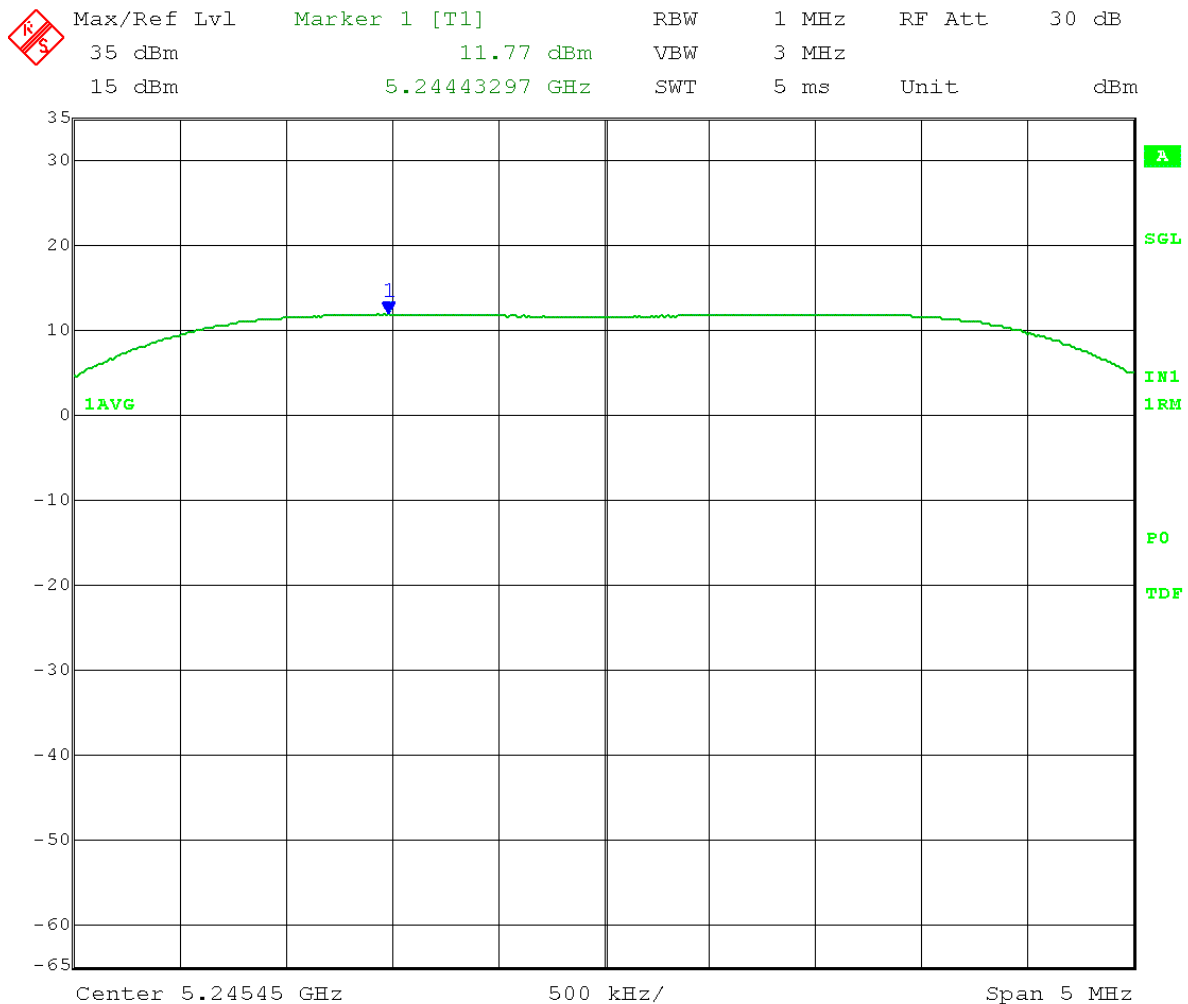
PSD = 12.03 dBm/MHz



Date: 27.MAY.2014 14:25:20

Test Date: 05-27-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407(a)(1)
F) PSD
Limit:[15.407(a)(1)(i)]: $17 - 3(\text{MIMO}) = 14 \text{ dBm/MHz}$
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = AVG
Sweep Time = Auto Sweep counts = 200
High Channel: Transmit = 5.245 GHz 5 MHz BW
Output power setting: 18 Channel 0

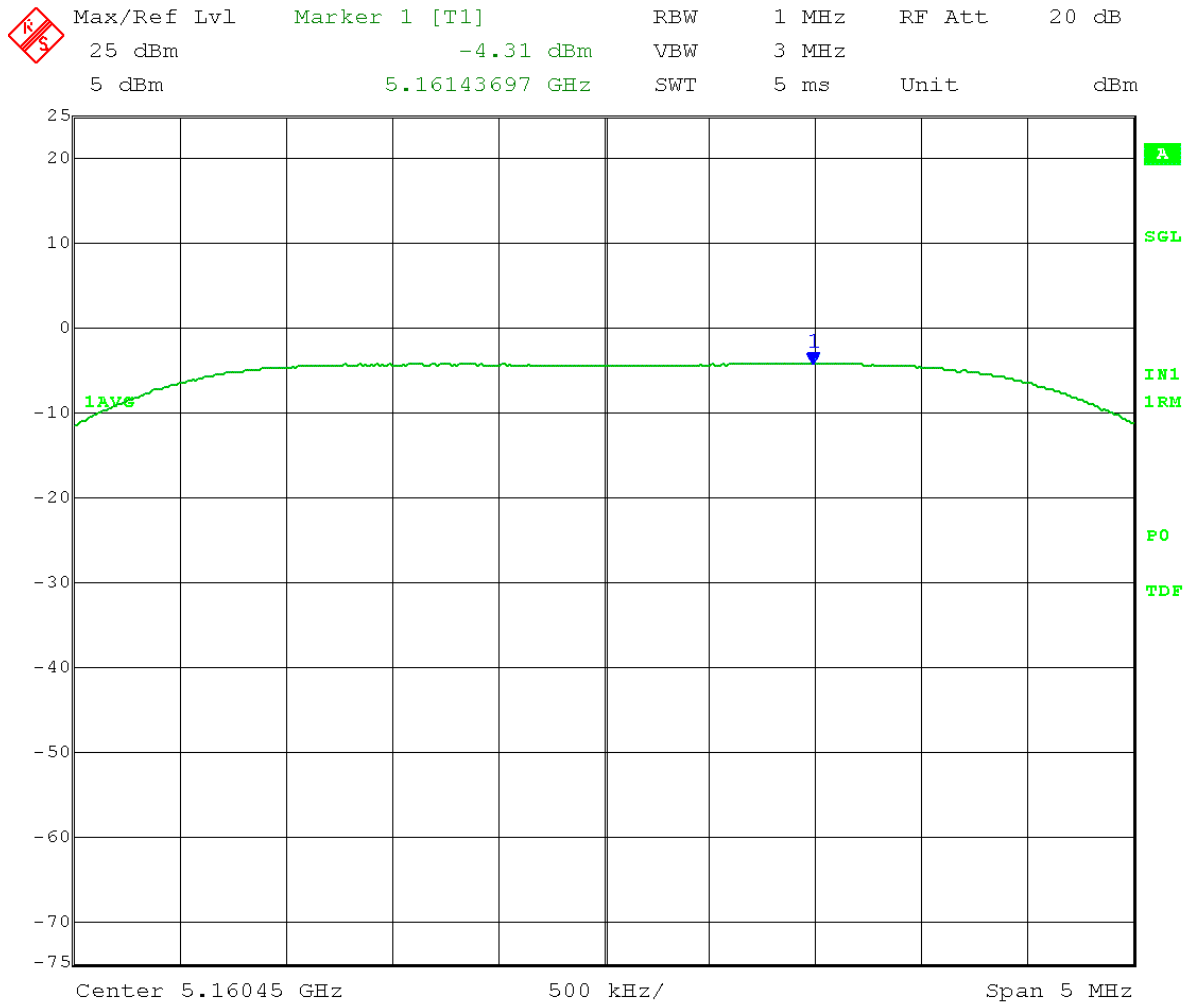
PSD = 11.77 dBm/MHz



Date: 27.MAY.2014 14:27:20

Test Date: 05-27-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: 17 – 3 (MIMO) – 10 (amount greater than 6)
 = 4 dBm/MHz
 RBW = 1 MHz
 Detector = RMS
 Sweep Time = Auto
 Low Channel: Transmit = 5.160 GHz
 Output power setting: 4
 VBW = 3 MHz
 Trace = AVG
 Sweep counts = 200
 5 MHz BW
 Channel 0

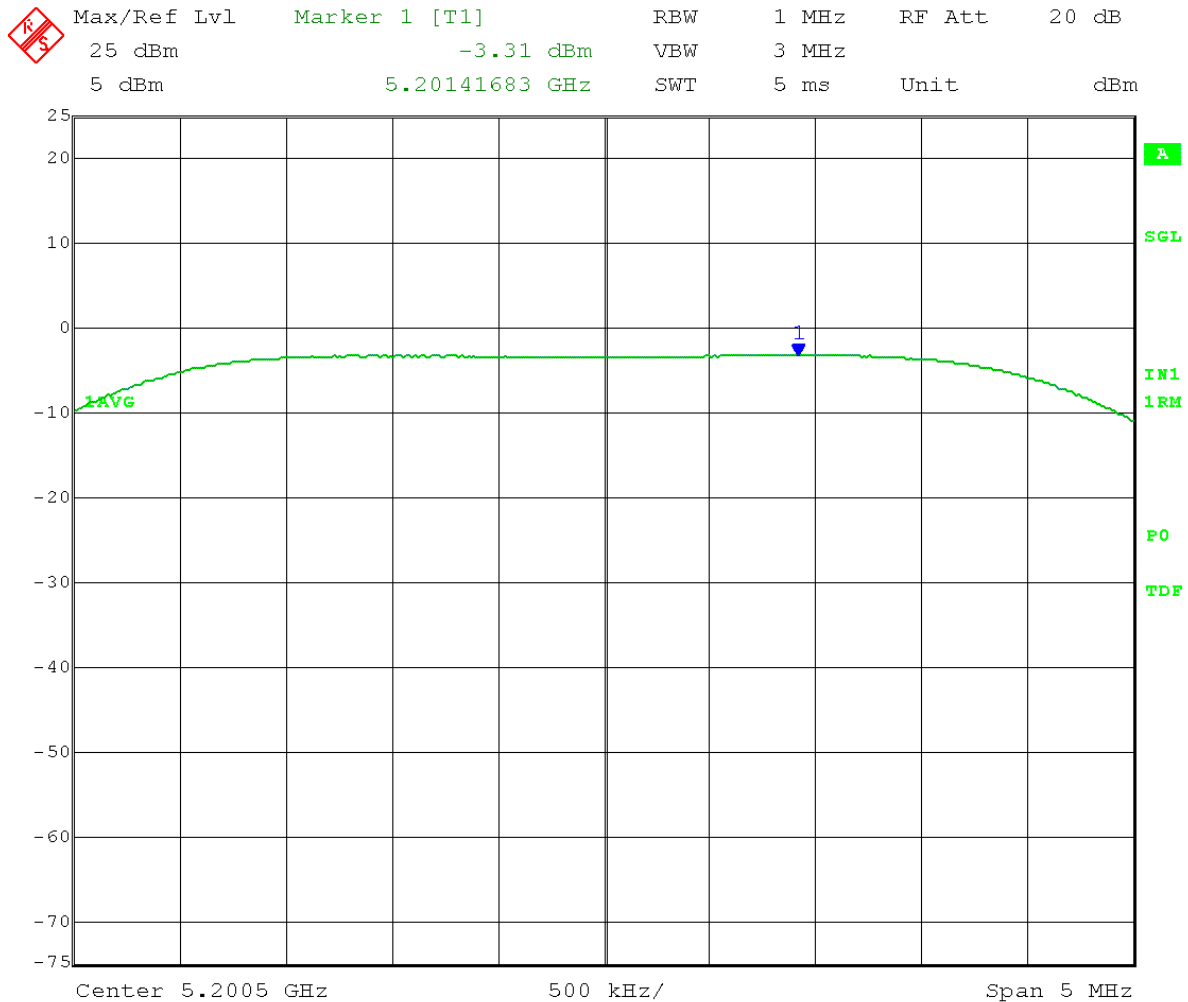
 PSD = -4.31 dBm/MHz



Date: 27.MAY.2014 14:32:01

Test Date: 05-27-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: 17 – 3 (MIMO) – 10 (amount greater than 6)
 = 4 dBm/MHz
 RBW = 1 MHz
 Detector = RMS
 Sweep Time = Auto
 Mid Channel: Transmit = 5.200 GHz
 Output power setting: 4
 VBW = 3 MHz
 Trace = AVG
 Sweep counts = 200
 5 MHz BW
 Channel 0

 PSD = -2.01 dBm/MHz



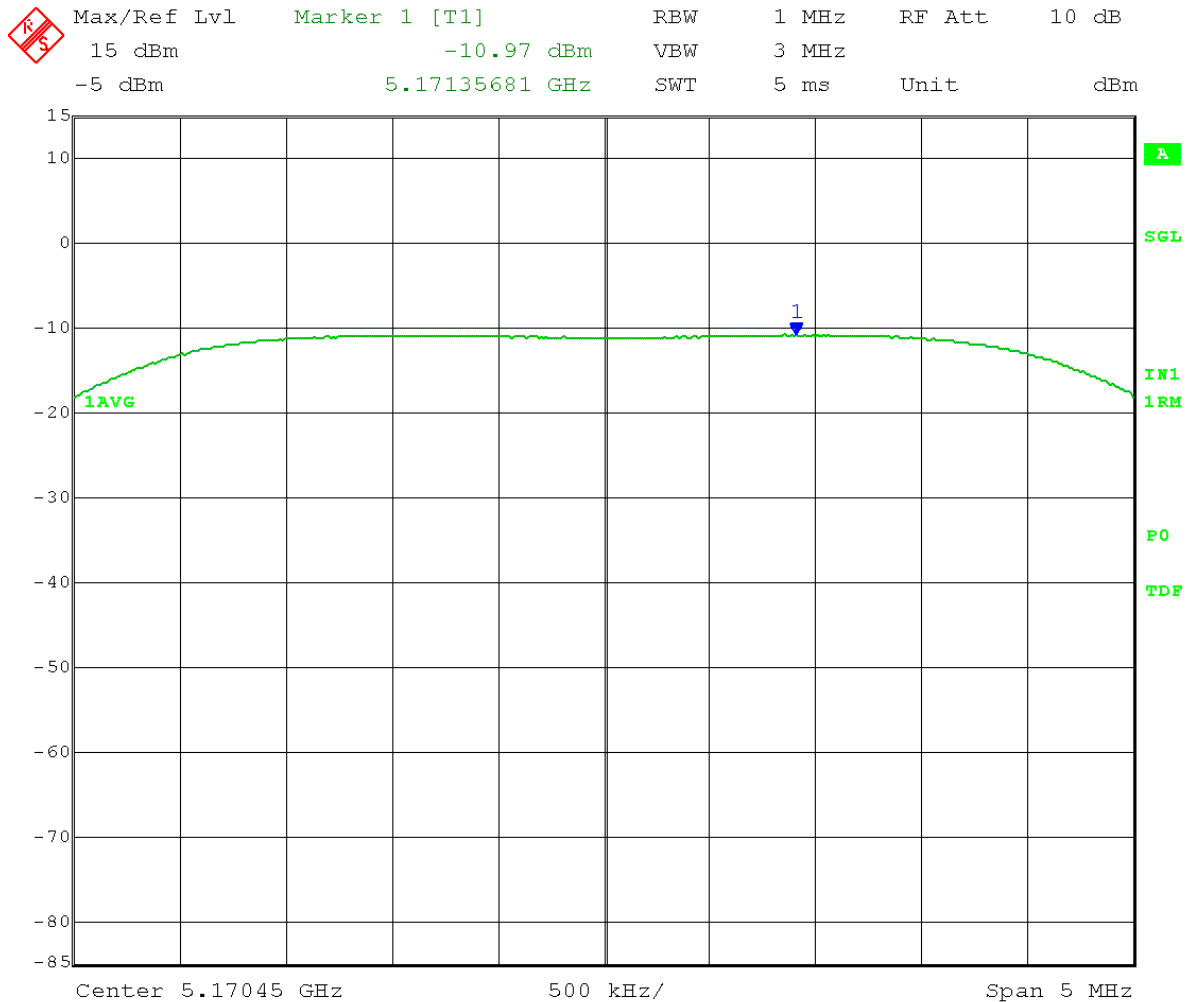
Date: 27.MAY.2014 14:35:20

PSD = 3.98 dBm/MHz



Test Date: 05-27-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to-Point)
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: 17 – 3 (MIMO) = 14 dBm/MHz
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 Low Channel: Transmit = 5.170 GHz 5 MHz BW
 Output power setting: 3 – 6 dB
 external attenuator = -3 Channel 0

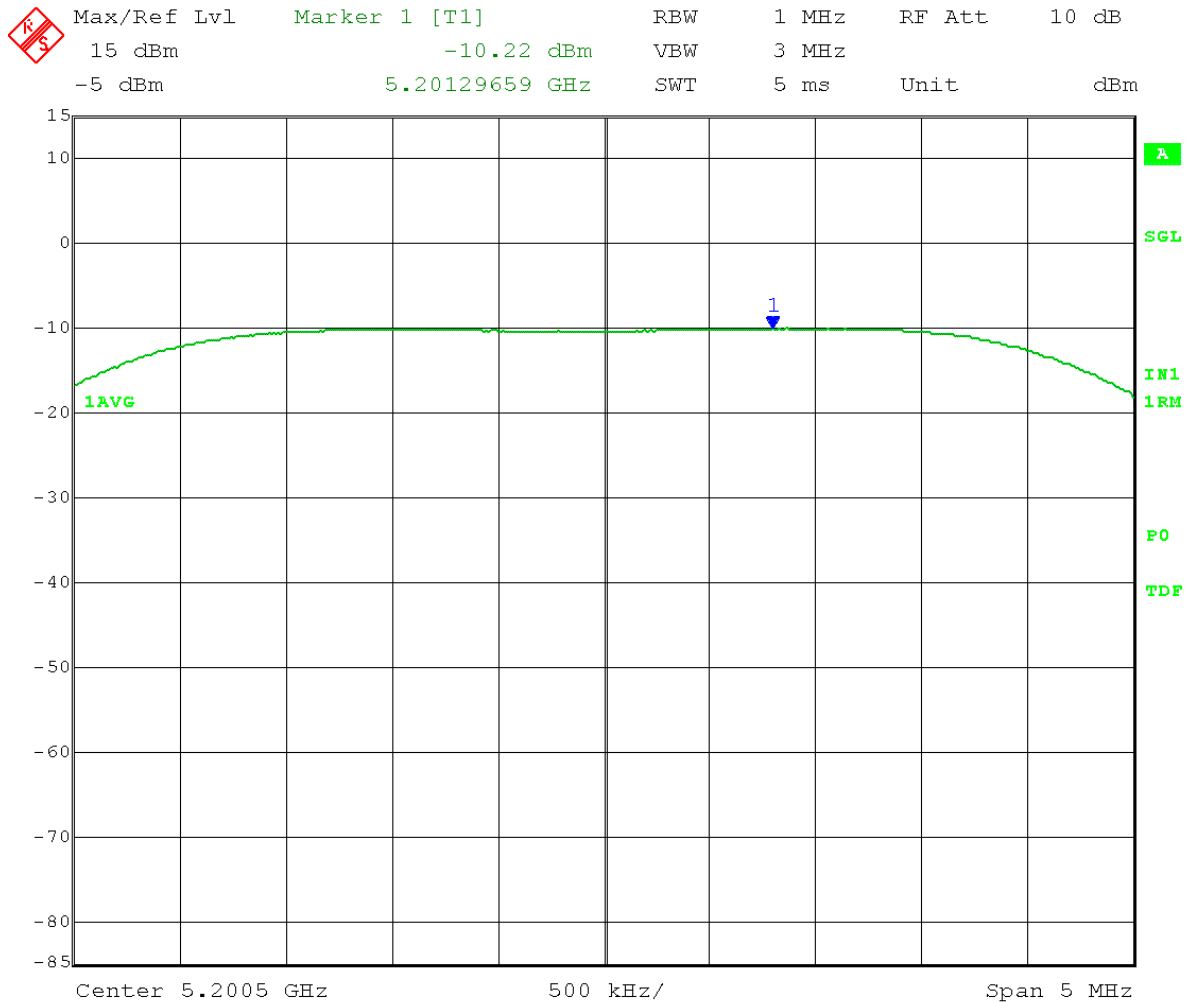
PSD = -10.97 dBm/MHz



Date: 27.MAY.2014 14:57:20

Test Date: 05-27-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to-Point)
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: 17 – 3 (MIMO) = 14 dBm/MHz
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 Mid Channel: Transmit = 5.200 GHz 5 MHz BW
 Output power setting: 3–6 dB
 external attenuator = -3 Channel 0

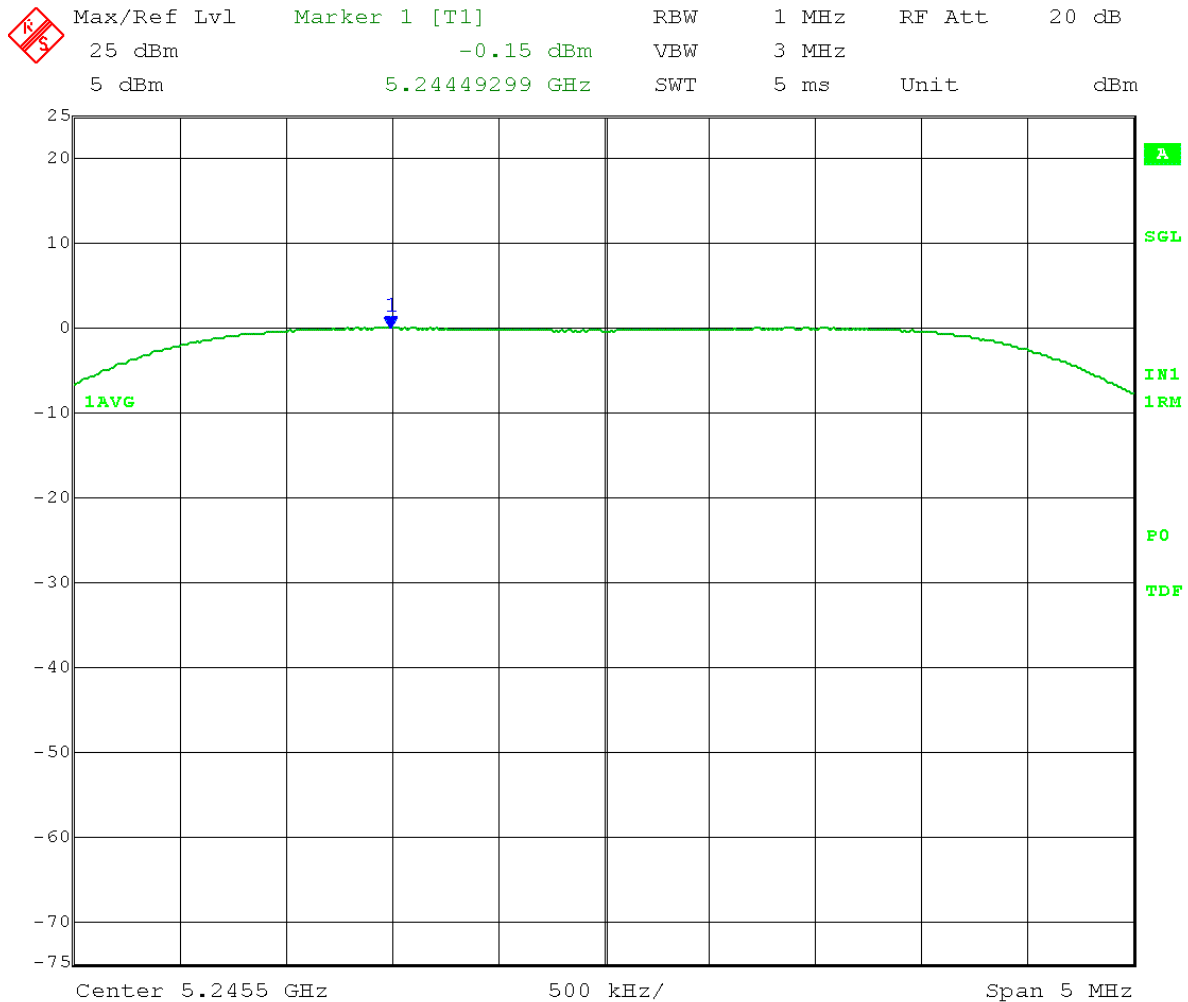
PSD = -10.22 dBm/MHz



Date: 27.MAY.2014 15:00:11

Test Date: 05-27-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to-Point)
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: 17 – 3 (MIMO) = 14 dBm/MHz
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 High Channel: Transmit = 5.245 GHz 5 MHz BW
 Output power setting: 17–10dB
 external attenuator = 7 Channel 0

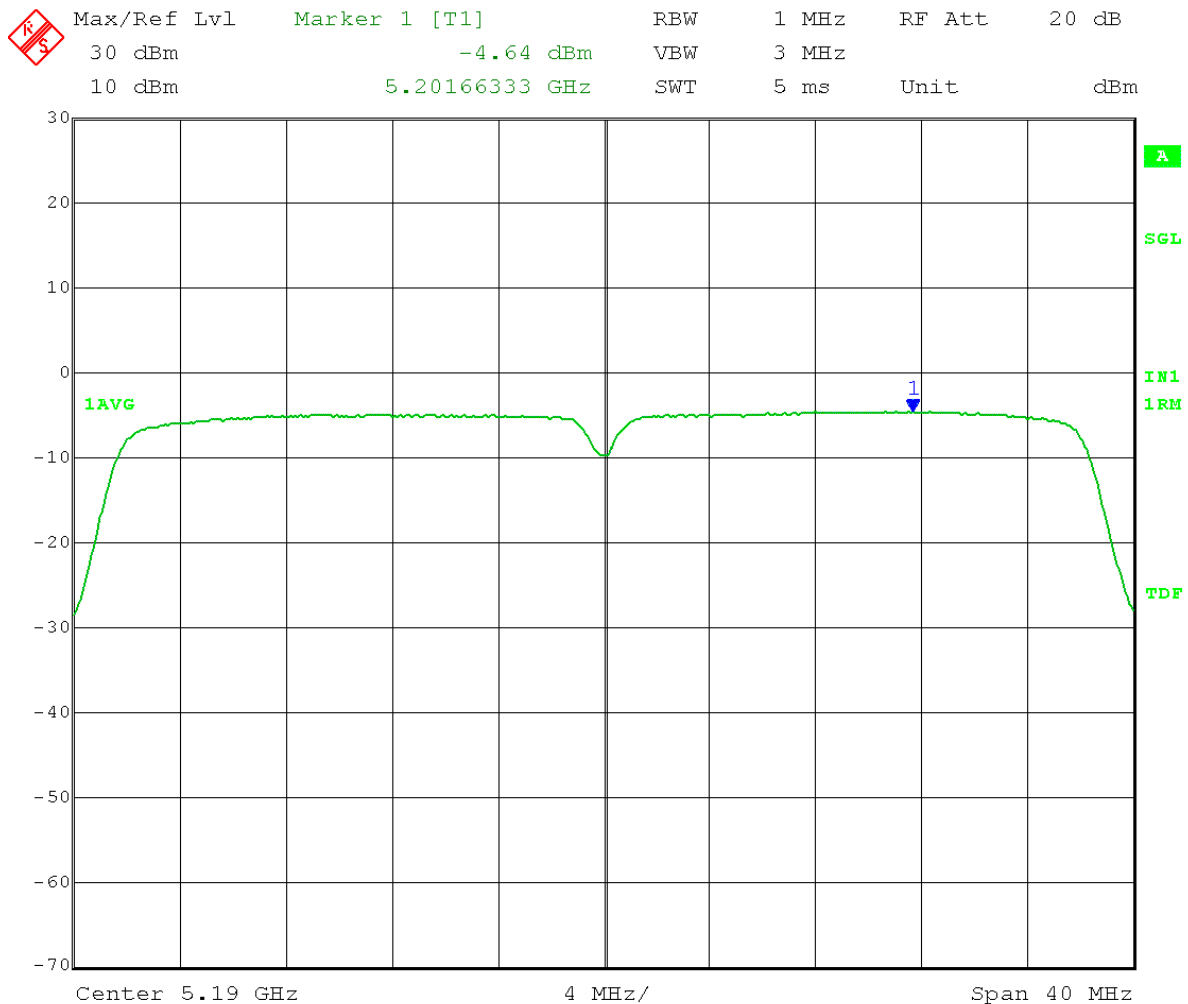
PSD = -0.15 dBm/MHz



Date: 27.MAY.2014 15:03:57

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: $17 - 3(\text{MIMO}) = 14 \text{ dBm/MHz}$
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 Low Channel: Transmit = 5.190 GHz 40 MHz BW
 Output power setting: 12.5 Channel 0

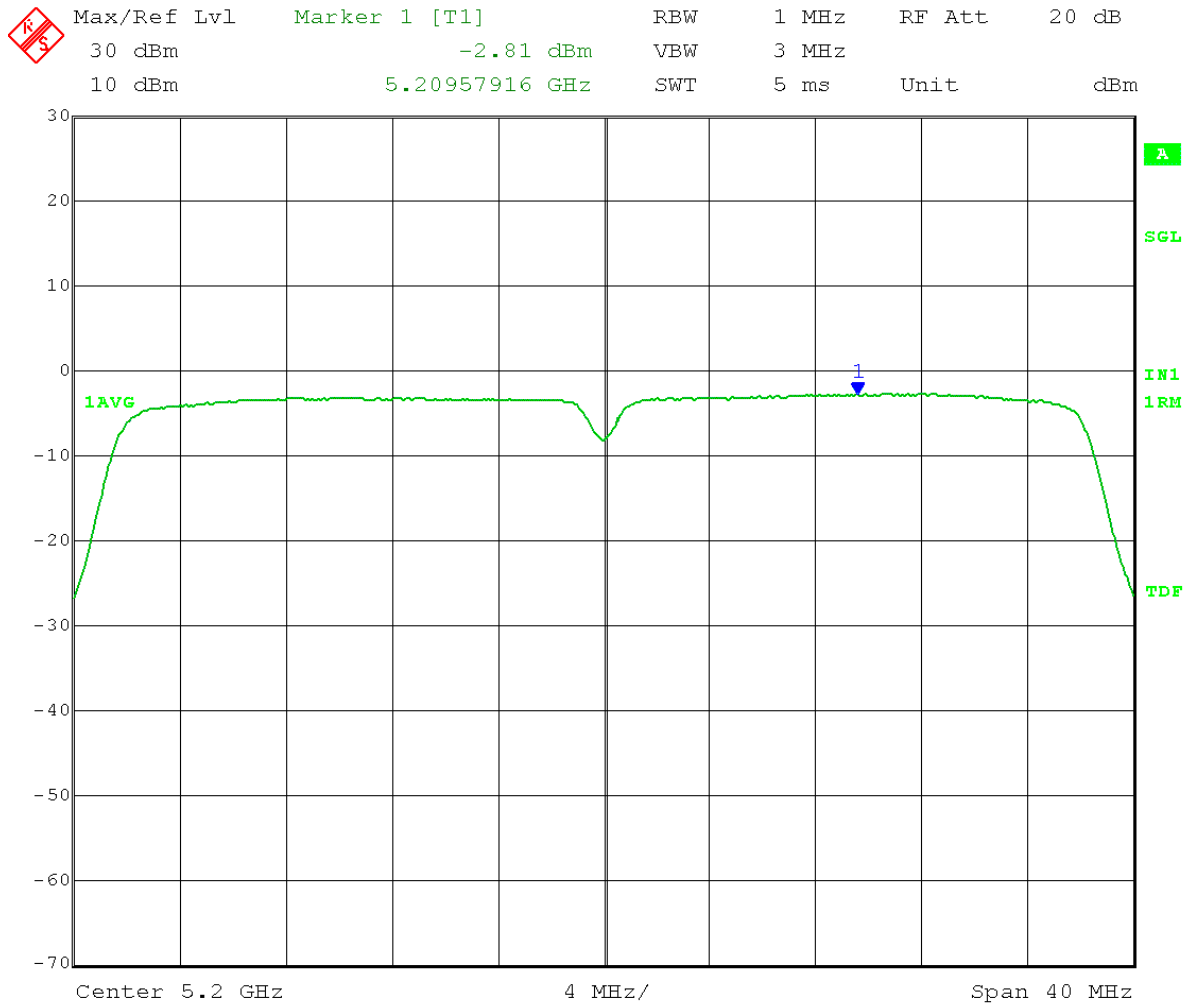
PSD = -4.64 dBm/MHz



Date: 4.JUN.2014 15:06:17

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: $17 - 3(\text{MIMO}) = 14 \text{ dBm/MHz}$
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 Mid Channel: Transmit = 5.200 GHz 40 MHz BW
 Output power setting: 14 Channel 0

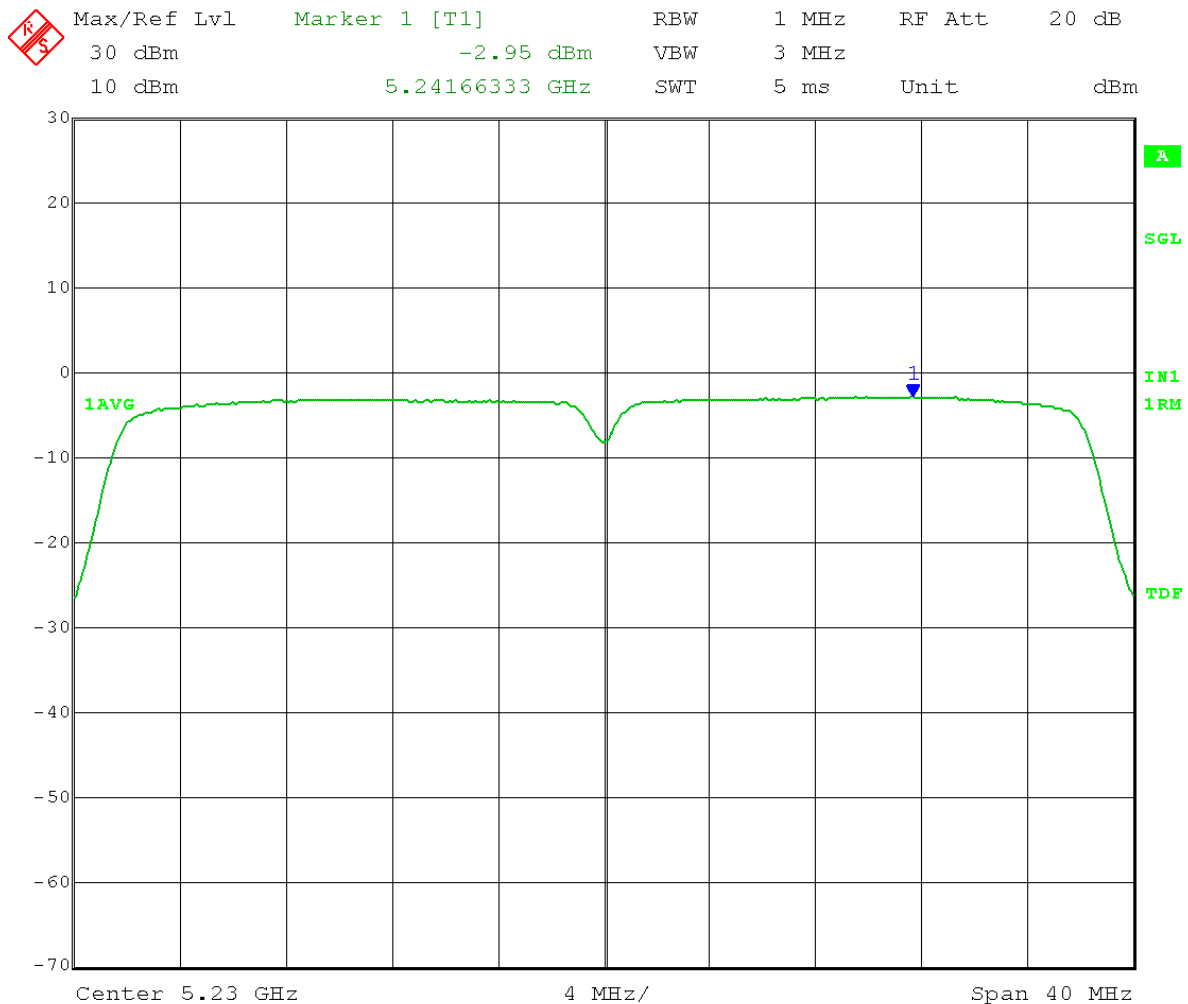
PSD = -2.81 dBm/MHz



Date: 4.JUN.2014 15:10:20

Test Date: 06-04-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407(a)(1)
F) PSD
Limit:[15.407(a)(1)(i)]: $17 - 3(\text{MIMO}) = 14 \text{ dBm/MHz}$
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = AVG
Sweep Time = Auto Sweep counts = 200
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 14 Channel 0

PSD = -2.95 dBm/MHz

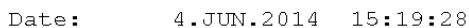


Date: 4.JUN.2014 15:13:52

PSD = -13.08 dBm/MHz

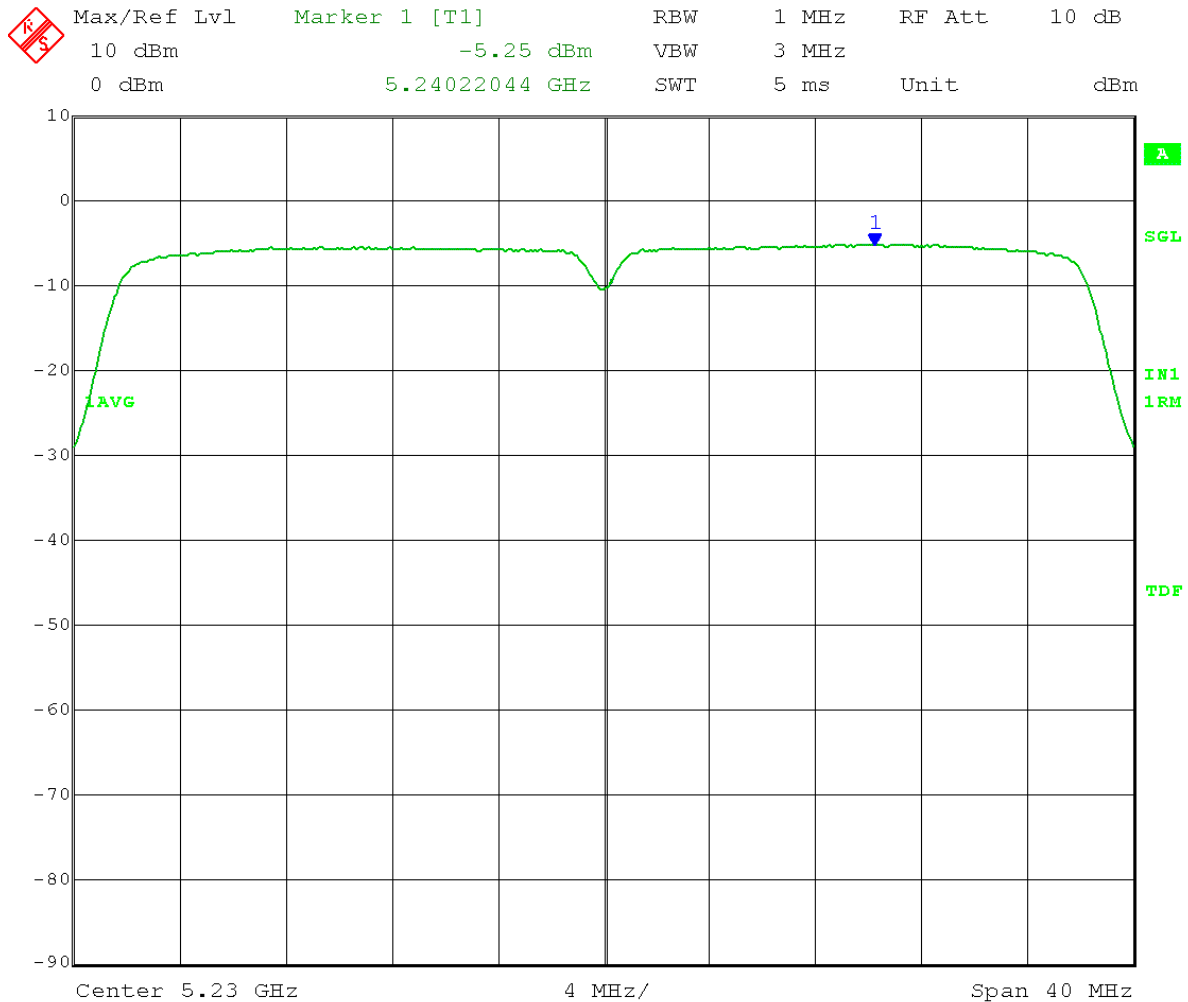


PSD = -8.22 dBm/MHz



Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: 17 – 3 (MIMO) – 10 (amount greater than 6)
 = 4 dBm/MHz
 RBW = 1 MHz
 Detector = RMS
 Sweep Time = Auto
 High Channel: Transmit = 5.230 GHz
 Output power setting: 11
 VBW = 3 MHz
 Trace = AVG
 Sweep counts = 200
 40 MHz BW
 Channel 0

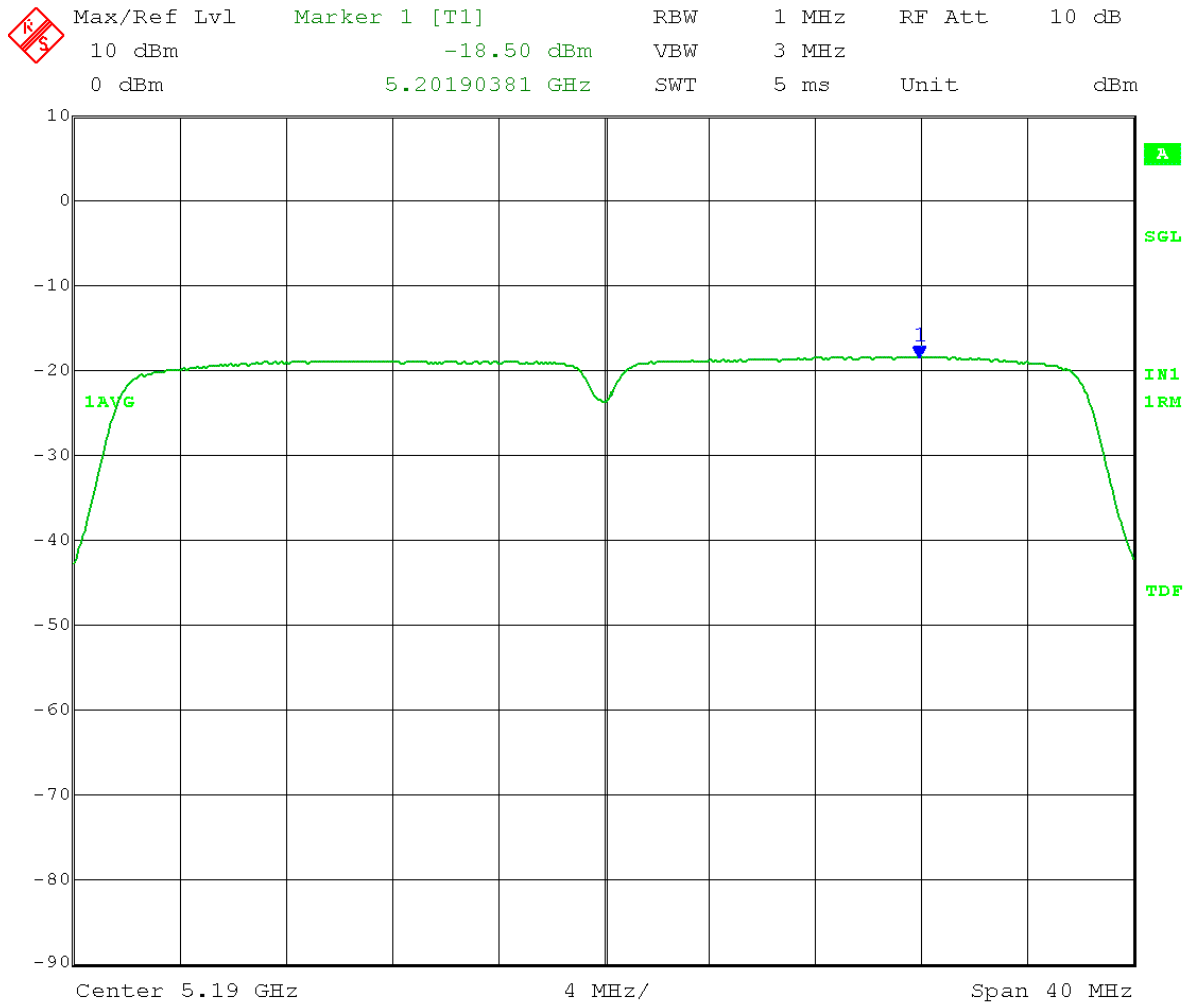
 PSD = -5.25 dBm/MHz



Date: 4.JUN.2014 15:21:43

Test Date: 06-04-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to-Point)
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407(a)(1)
F) PSD
Limit:[15.407(a)(1)(i)]: $17 - 3 \text{ (MIMO)} = 14 \text{ dBm/MHz}$
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = AVG
Sweep Time = Auto Sweep counts = 200
Low Channel: Transmit = 5.190 GHz 40 MHz BW
Output power setting: 0.5 – 2 dB external atten. = -1.5
Channel 0

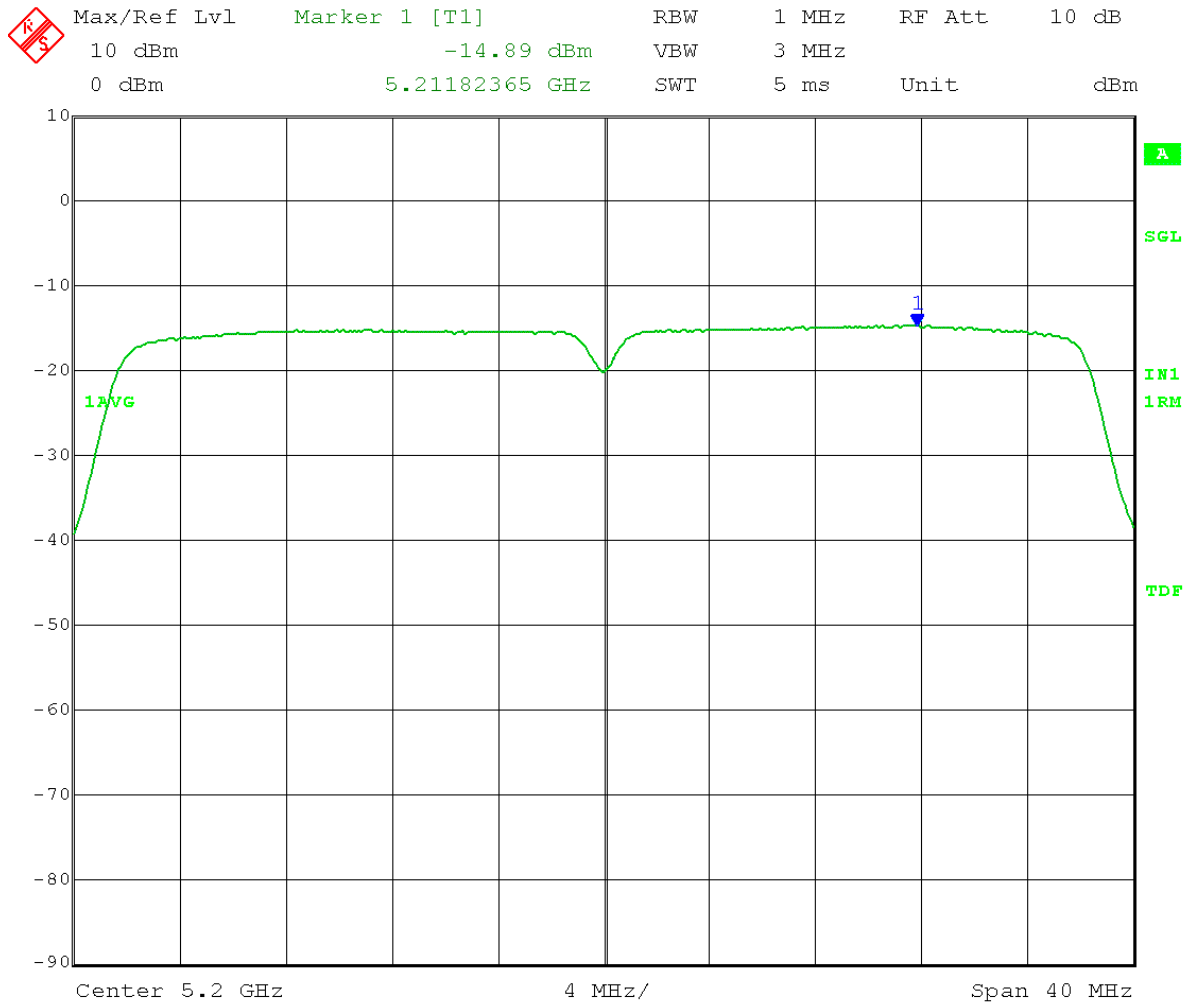
PSD = -18.50 dBm/MHz



Date: 4.JUN.2014 15:34:17

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to-Point)
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit:[15.407(a)(1)(i)]: 17 – 3 (MIMO) = 14 dBm/MHz
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 Mid Channel: Transmit = 5.200 GHz 40 MHz BW
 Output power setting: 3.5 – 2 dB external atten. = 1.5
 Channel 0

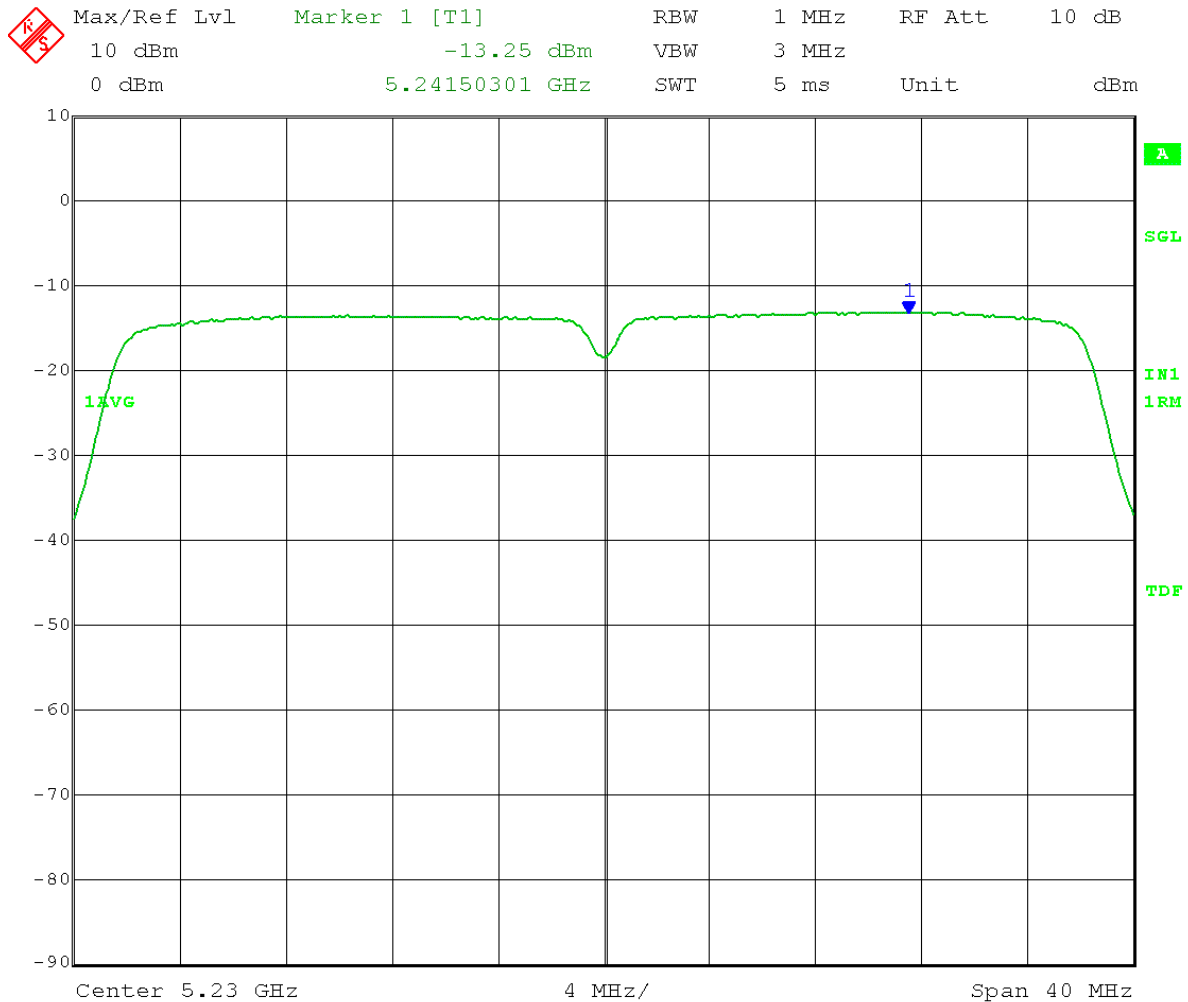
PSD = -14.89 dBm/MHz



Date: 4.JUN.2014 15:28:47

Test Date: 06-04-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain (Point-to-Point)
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407(a)(1)
F) PSD
Limit:[15.407(a)(1)(i)]: $17 - 3 \text{ (MIMO)} = 14 \text{ dBm/MHz}$
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = AVG
Sweep Time = Auto Sweep counts = 200
High Channel: Transmit = 5.230 GHz 40 MHz BW
Output power setting: 5 - 2 dB external atten. = 3
Channel 0

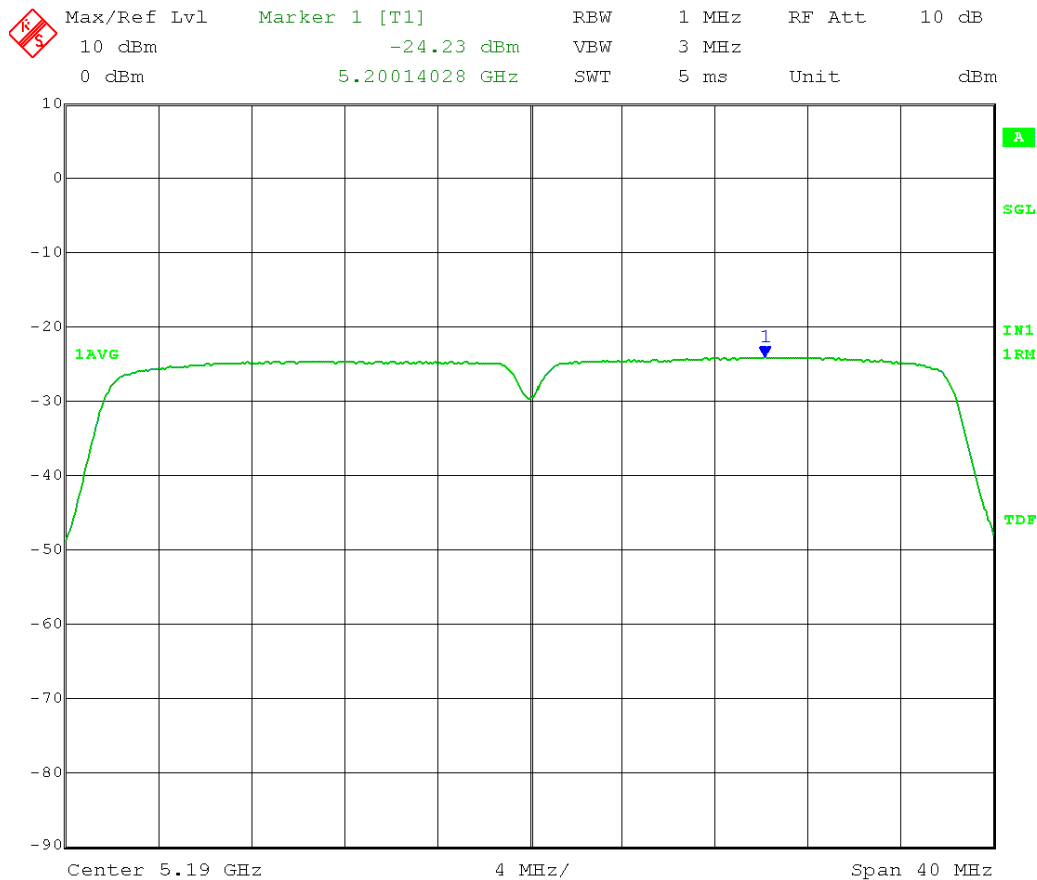
PSD = -13.25 dBm/MHz



Date: 4.JUN.2014 15:26:26

Test Date: 06-05-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to-Point)
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit: [15.407(a)(1)]: 17.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
 Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
 EUT Limit:[15.407(a)(1)(i)]: $17 - (30-23) - 3$ (MIMO) = 7 dBm/MHz
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 Low Channel: Transmit = 5.190 GHz 40 MHz BW
 Output power setting: 1 – 10 dB external atten. = -9
 Channel 0

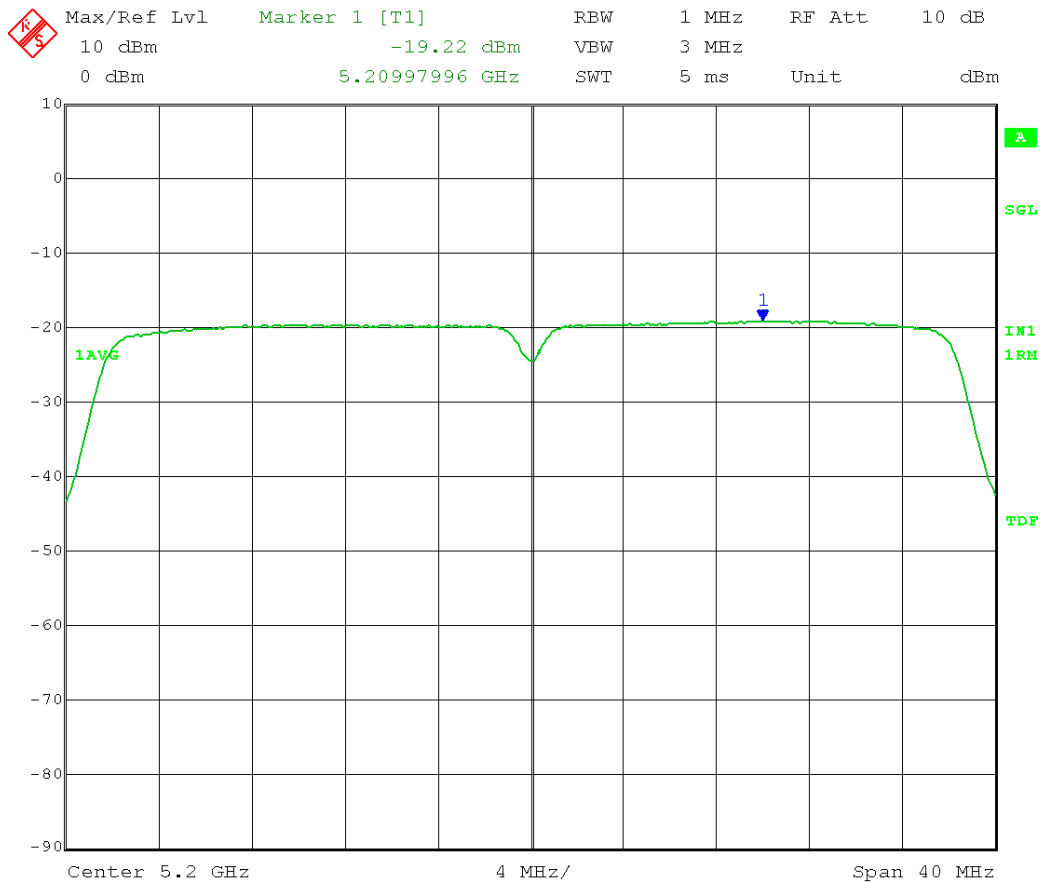
PSD = -24.23 dBm/MHz



Date: 5.JUN.2014 13:04:02

Test Date: 06-05-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to-Point)
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit: [15.407(a)(1)]: 17.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
 Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
 EUT Limit:[15.407(a)(1)(i)]: $17 - (30-23) - 3$ (MIMO) = 7 dBm/MHz
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 Mid Channel: Transmit = 5.200 GHz 40 MHz BW
 Output power setting: 5 – 10 dB external atten. = -5
 Channel 0

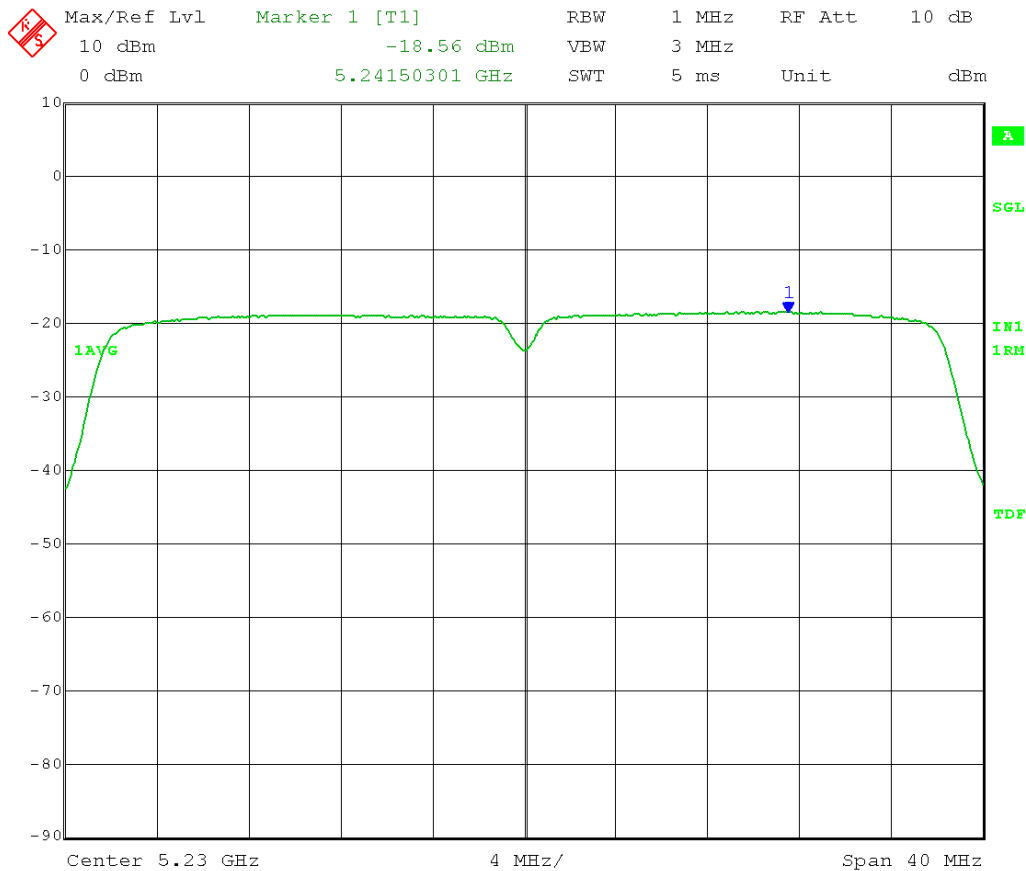
PSD = -19.22 dBm/MHz



Date: 5.JUN.2014 13:01:46

Test Date: 06-05-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain (Point-to-Point)
 Test: Peak Power Spectral Density - Conducted
 Operator: Craig B
 Comment: FCC UNII operating under 15.407(a)(1)
 F) PSD
 Limit: [15.407(a)(1)]: 17.0 dBm conducted, reduced 1 dB for every dB the antenna gain exceeds 23 dBi (Point-to-Point)
 Operating Mode: Point-to-Point; Antenna Gain = 30 dBi
 EUT Limit:[15.407(a)(1)(i)]: $17 - (30-23) - 3$ (MIMO) = 7 dBm/MHz
 RBW = 1 MHz VBW = 3 MHz
 Detector = RMS Trace = AVG
 Sweep Time = Auto Sweep counts = 200
 High Channel: Transmit = 5.230 GHz 40 MHz BW
 Output power setting: 6.5 – 10 dB external atten. = -3.5
 Channel 0

PSD = -18.56 dBm/MHz



Date: 5.JUN.2014 13:06:07



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Model Tested: C050900C032A
Report Number: 20127
DLS Project: 6620

Appendix B – Measurement Data

B6.0 Unwanted Emission Levels – Radiated Band-Edge - (Cabinet Radiated) (antenna ports 50-Ohm terminated)

Rule Section: Sections 15.407(b)(1)

Test Procedure: FCC KDB 789033 D02 General UNII Test Procedures v01 – *Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E*

Section G – Unwanted emission measurement
Section G(1) – Unwanted emissions in the restricted bands
Section G(3) – General Requirements for Unwanted Emissions Measurements
Section G(5) – Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz
Section G(6) – Procedure for Average Unwanted Emissions Measurements Above 1000 MHz
Section G(6)(c) – Method AD - Average Detection method

Description: Per 789033 D02 General UNII Test Procedures v01, section G(2)(c): “an out-of-band emission that complies with both the peak and average limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.”

Measure the band-edge emission level using the following settings:

PEAK measurements:

RBW = 1 MHz

VBW $\geq$ 3 MHz

Detector = peak

Sweep time = auto

Trace mode = max hold

AVERAGE measurements:

RBW = 1 MHz

VBW $\geq$ 3 MHz

Detector = RMS

Sweep time = auto

Trace mode = trace average 200 traces

Limit: Peak and Average limits of 15.209, were used instead of the -27 dBm/MHz limit of FCC Part 15.407(b)(1).

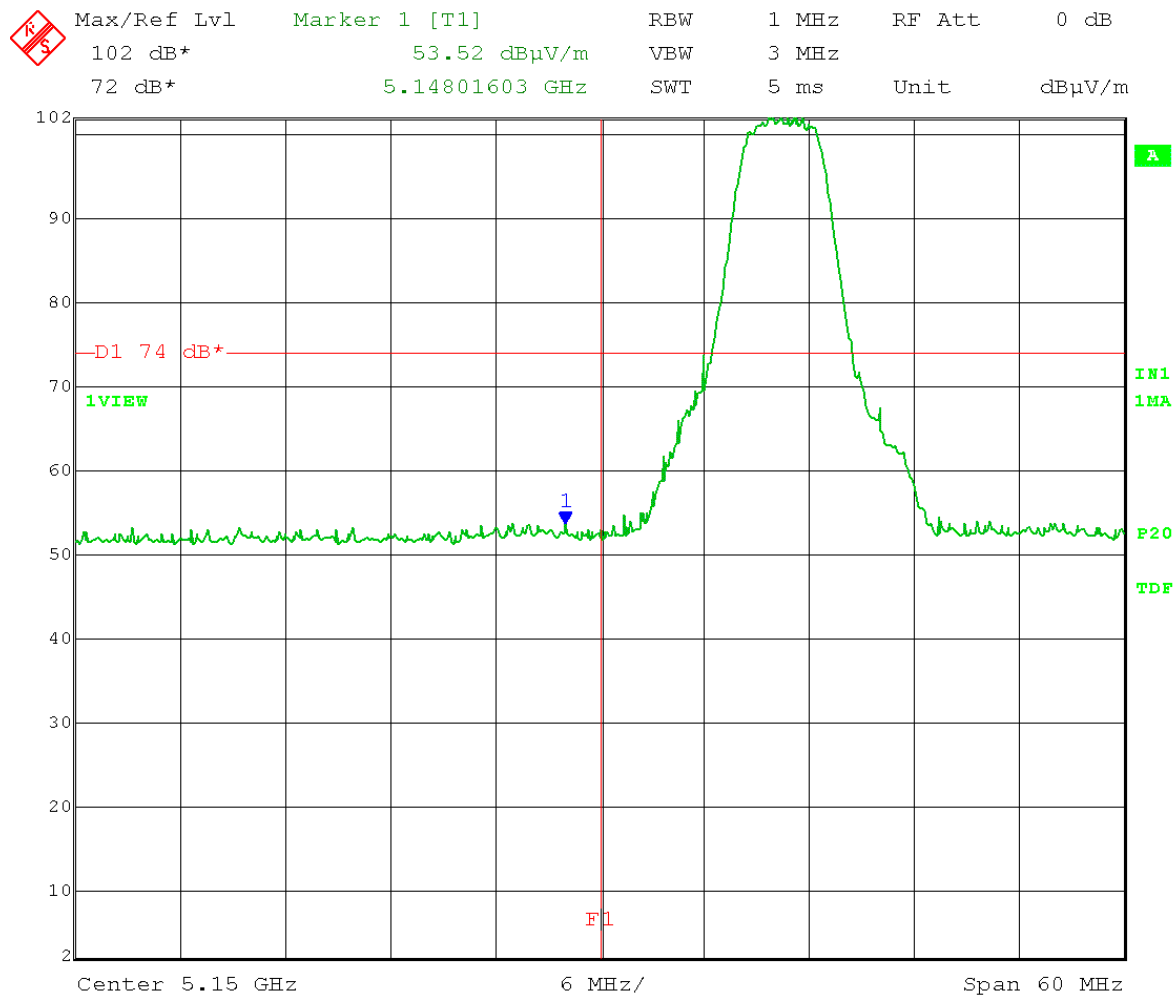
Results: Passed

Notes: 5 MHz channel bandwidth measurements were taken with Legacy OFDM 54 Mbit/s modulation at the lowest, middle, and highest channels of operation. 40 MHz channel bandwidth measurements were taken with MCS15 OFDM modulation. The EUT was set to transmit continuously with 100% duty cycle.

Tested with both output antenna ports terminated with 50 Ohm terminations. 5 MHz channel bandwidth output power setting in test software was set to 18.0. 40 MHz channel bandwidth output power setting in test software was set to 16.0.

Test Date: 05-23-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channels 0 and 1 both active
 Low Channel Transmit = 5.160 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m at 3 meters
 VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.150 GHz

Horizontal:

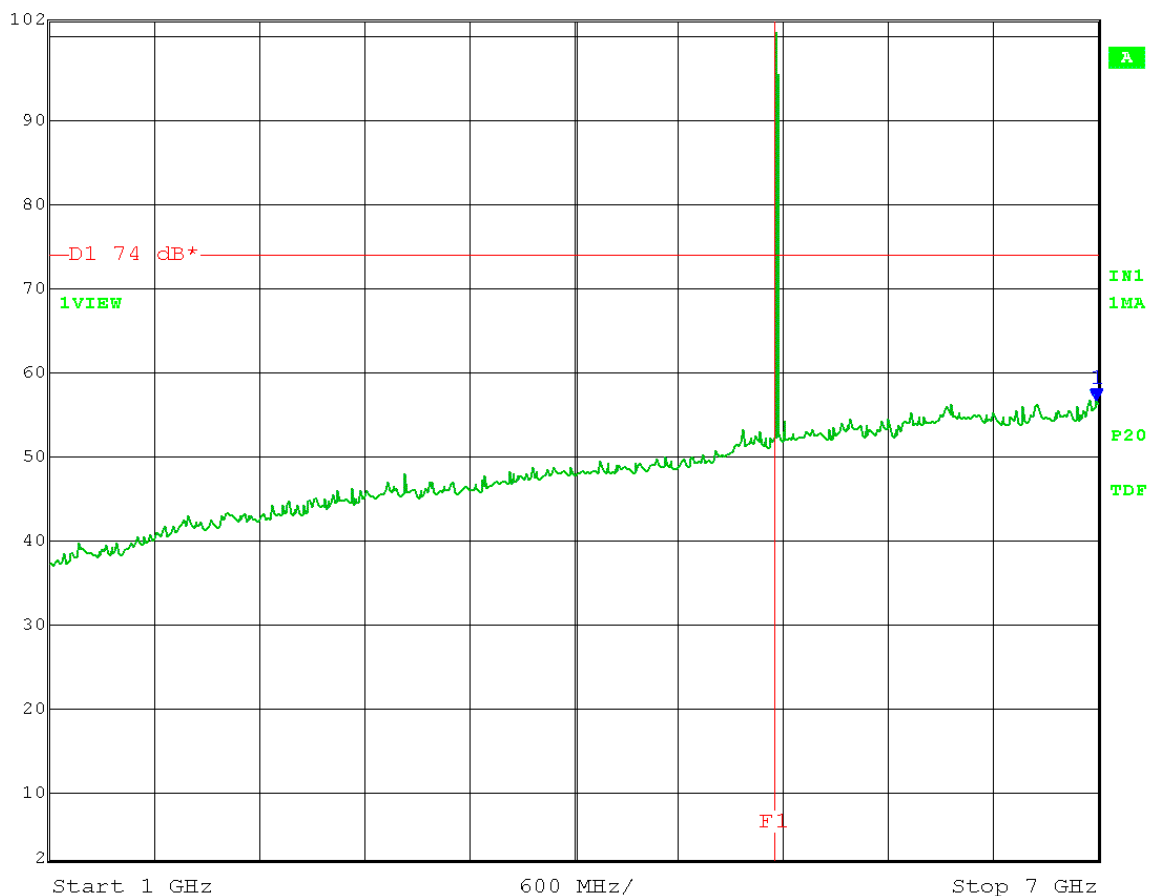


Date: 23.MAY.2014 13:16:16

Horizontal:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	56.64 dBμV/m	VBW	3 MHz		
72 dB*	6.98797595 GHz	SWT	15 ms	Unit	dBμV/m

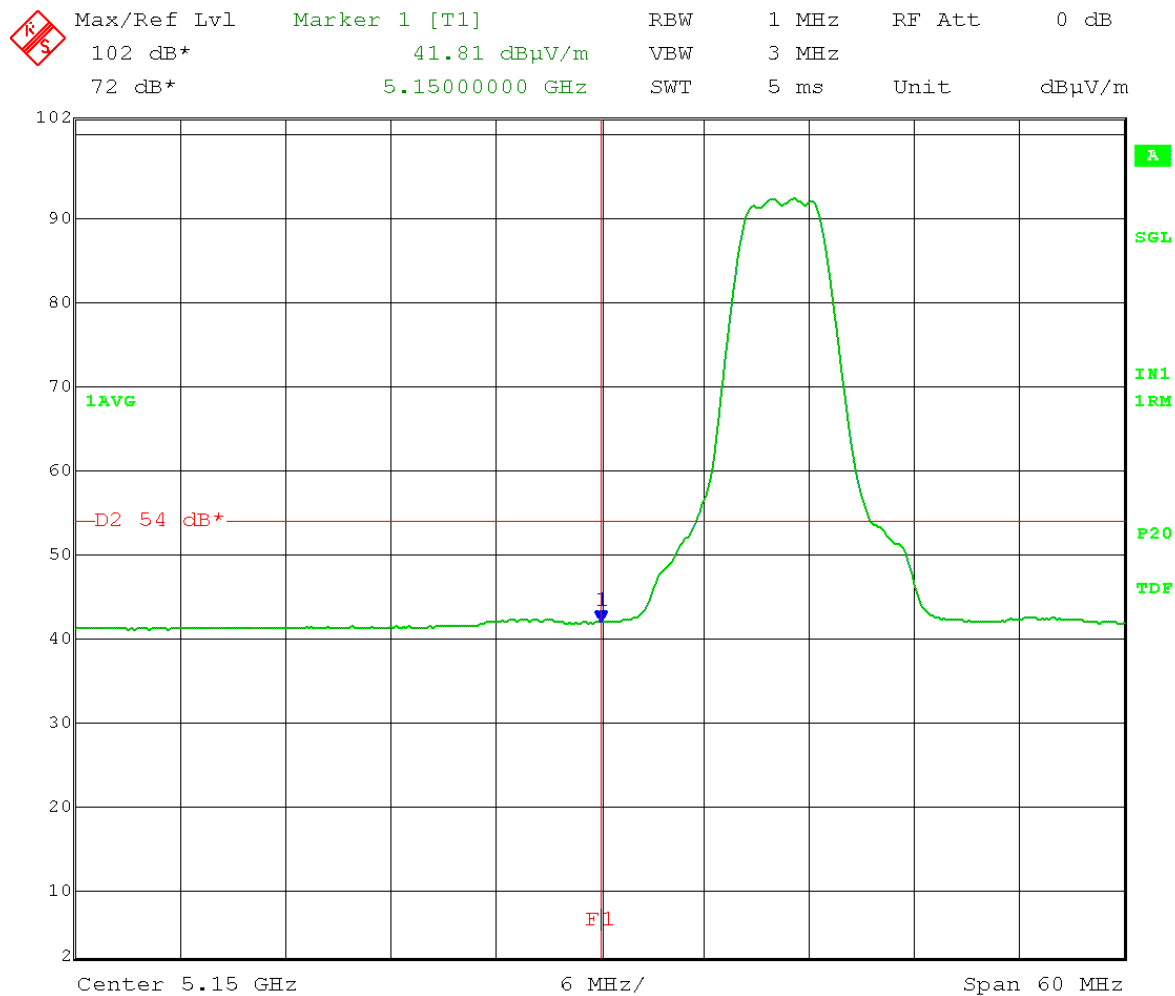


Date: 23.MAY.2014 13:15:18

Test Date: 05-23-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channels 0 and 1 both active
 Low Channel Transmit = 5.160 GHz
 5 MHz BW
 Average limit = 54 dBμV/m at 3 meters

VBW ≥ 3 MHz
 Trace = Average 200 sweeps
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.150 GHz

Horizontal:



Date: 23.MAY.2014 13:12:19

Horizontal:



Max/Ref Lvl

102 dB*

72 dB*

RBW

1 MHz

RF Att

0 dB

VBW

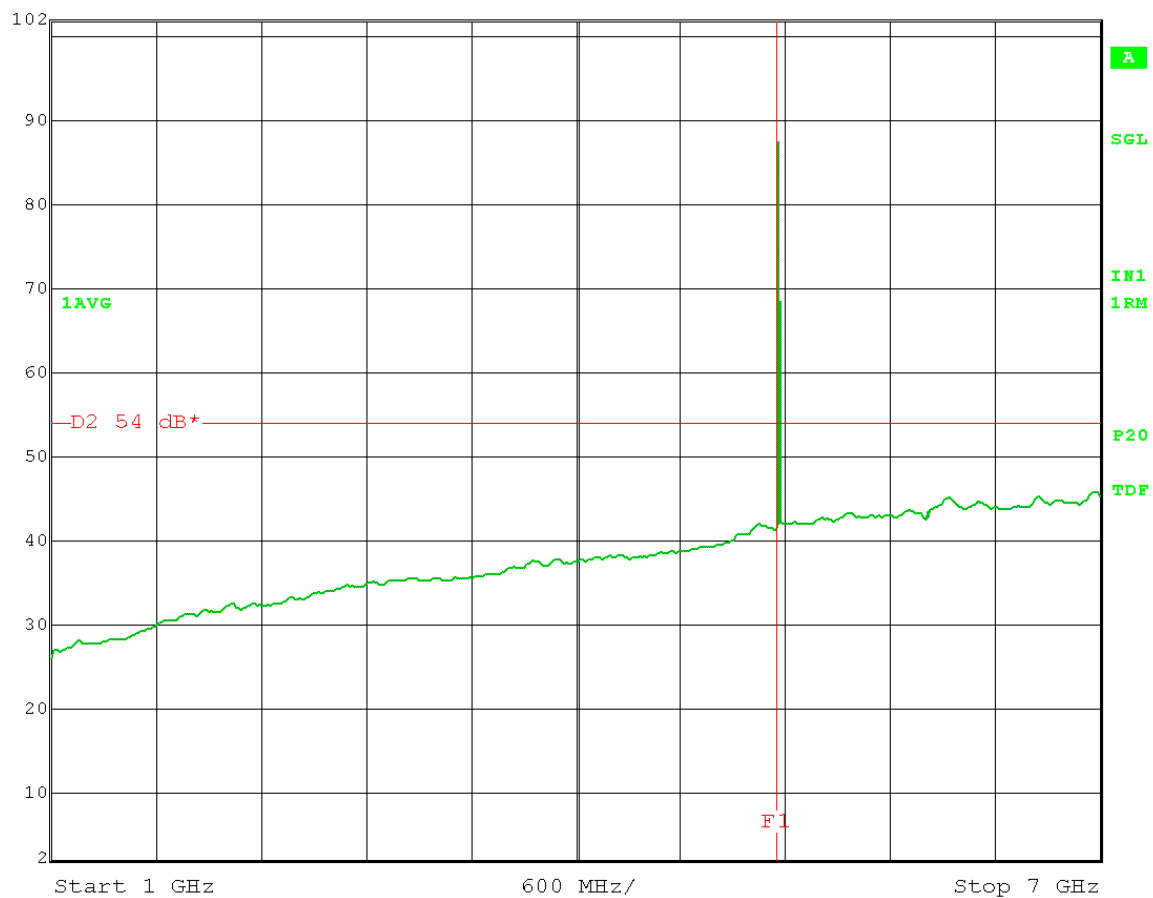
3 MHz

SWT

15 ms

Unit

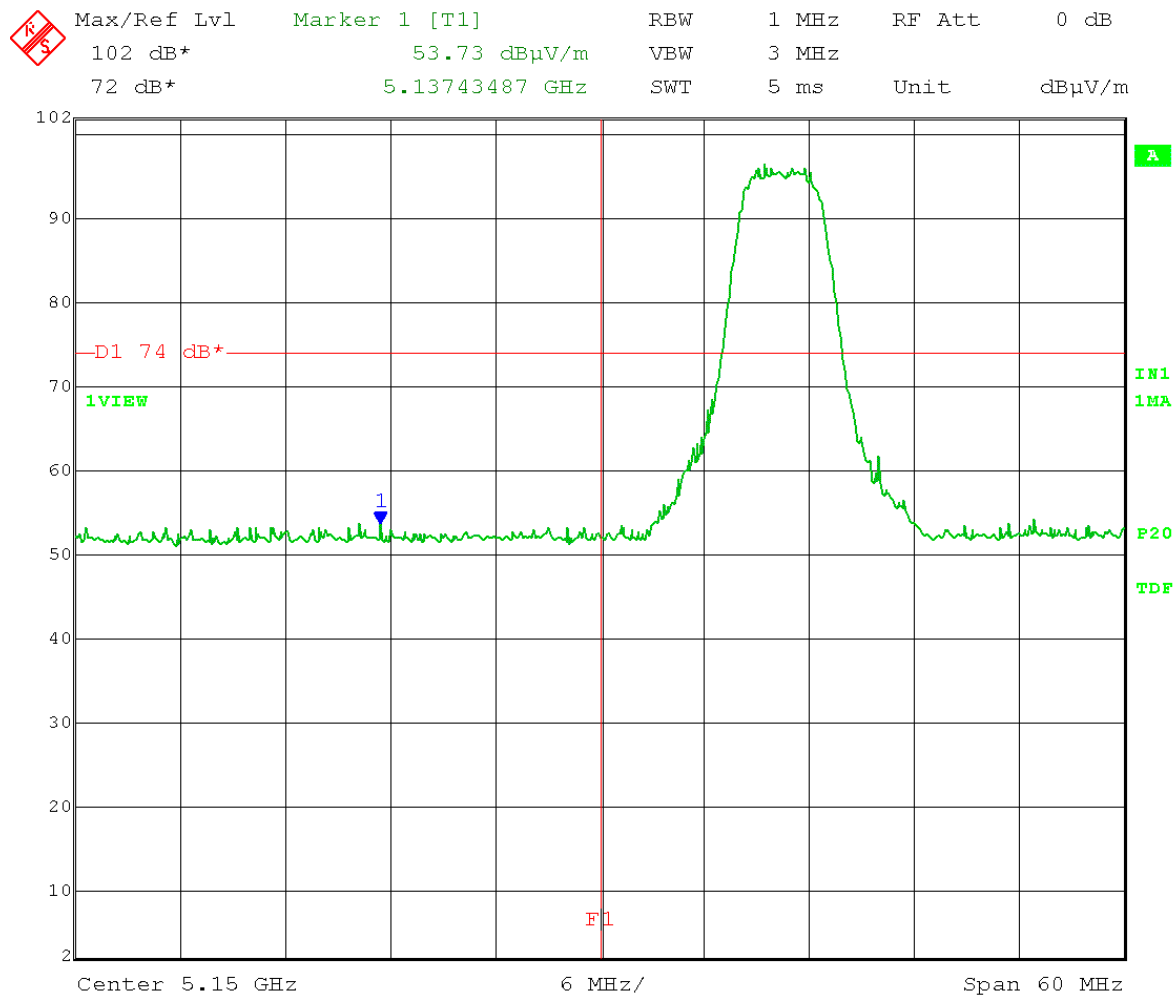
dBμV/m



Date: 23.MAY.2014 13:13:11

Test Date: 05-23-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channels 0 and 1 both active
 Low Channel Transmit = 5.160 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m at 3 meters
 VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.150 GHz

Vertical:

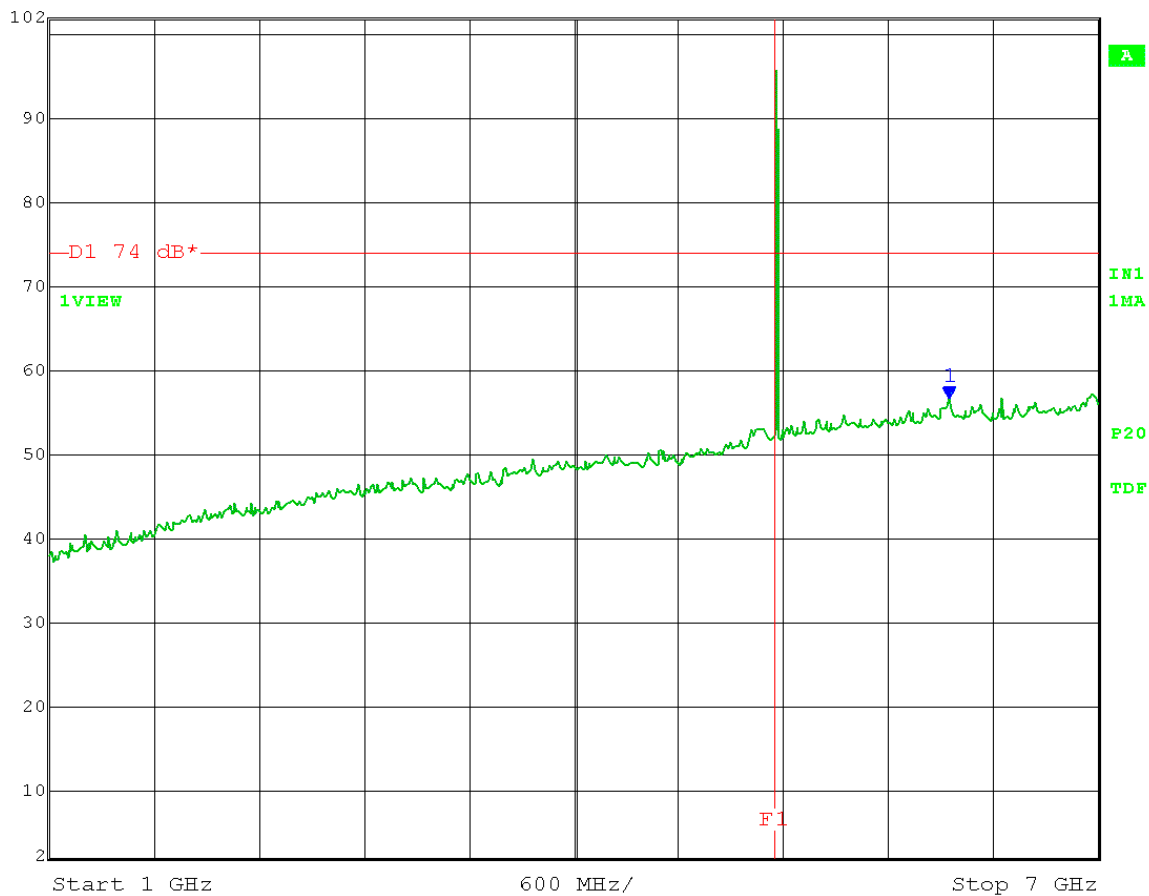


Date: 23.MAY.2014 13:50:04

Vertical:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	56.53 dBμV/m	VBW	3 MHz		
72 dB*	6.14629259 GHz	SWT	15 ms	Unit	dBμV/m

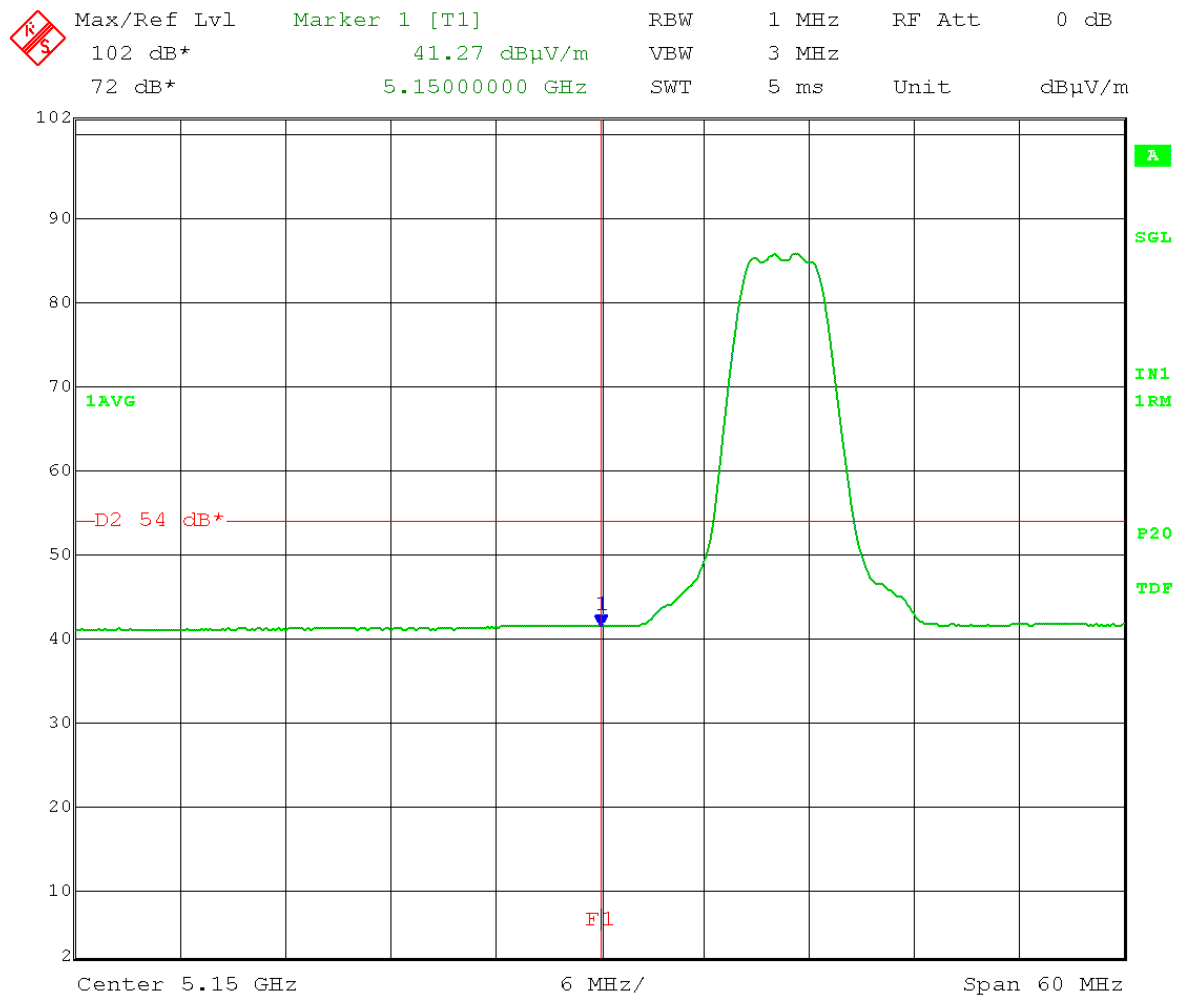


Date: 23.MAY.2014 13:48:58

Test Date: 05-23-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channels 0 and 1 both active
 Low Channel Transmit = 5.160 GHz
 5 MHz BW
 Average limit = 54 dBμV/m at 3 meters

VBW ≥ 3 MHz
 Trace = Average 200 sweeps
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.150 GHz

Vertical:



Date: 23.MAY.2014 13:44:20

Vertical:



Max/Ref Lvl

102 dB*

72 dB*

RBW

1 MHz

RF Att

0 dB

VBW

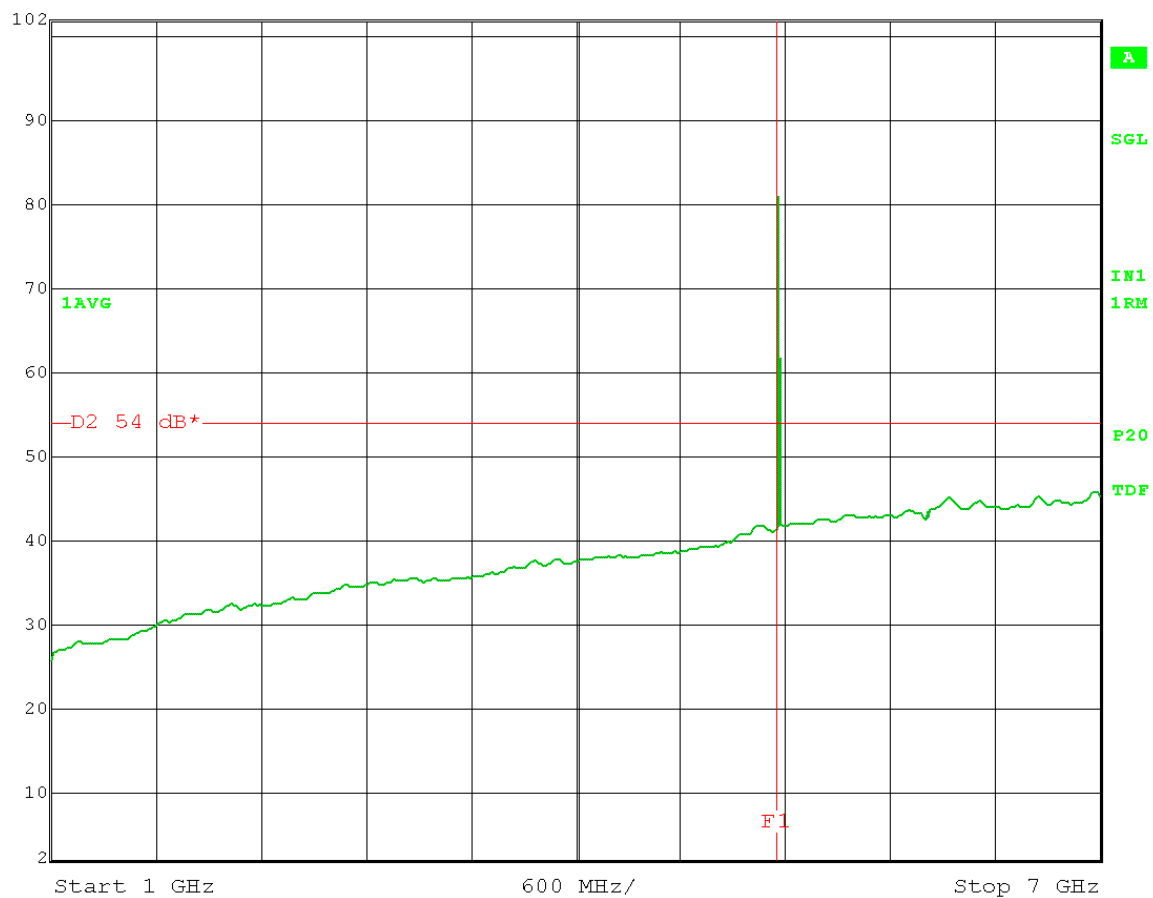
3 MHz

SWT

15 ms

Unit

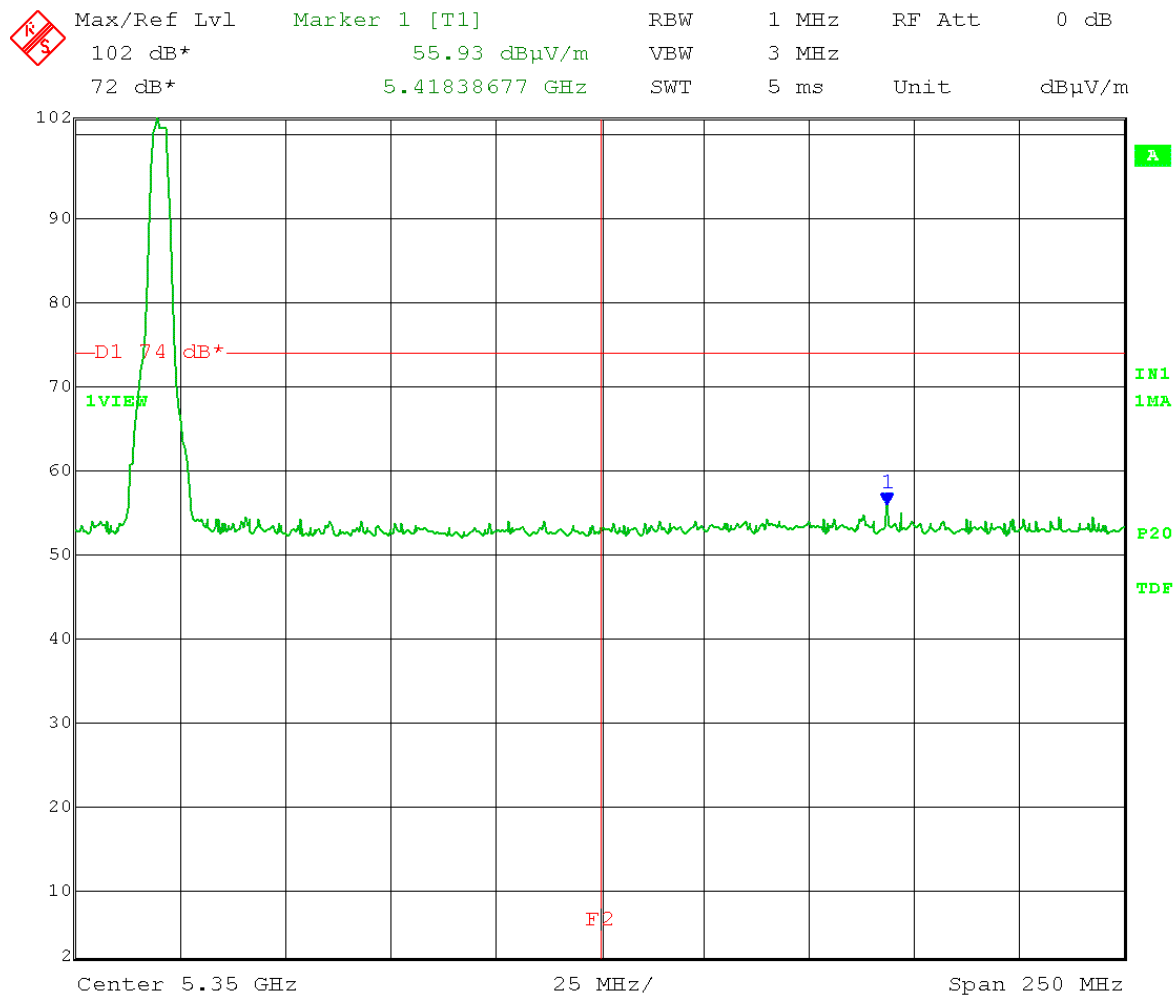
dBμV/m



Date: 23.MAY.2014 13:46:06

Test Date:	05-23-2014		
Company:	Cambium Networks		
EUT:	ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports		
Test:	Operating Band-edge Measurement – Radiated from cabinet		
Operator:	Craig B / Paul		
Comment:	RBW = 1 MHz	VBW $\geq$ 3 MHz	
	Detector = Peak	Trace = Max Hold	
	Channels 0 and 1 both active	ESN# 000456C560B4	
	High Channel Transmit = 5.245 GHz	Output power setting: 18	
	5 MHz BW	Band-edge = 5.350 GHz	
	Peak limit = 74 dB μ V/m at 3 meters		

Horizontal:

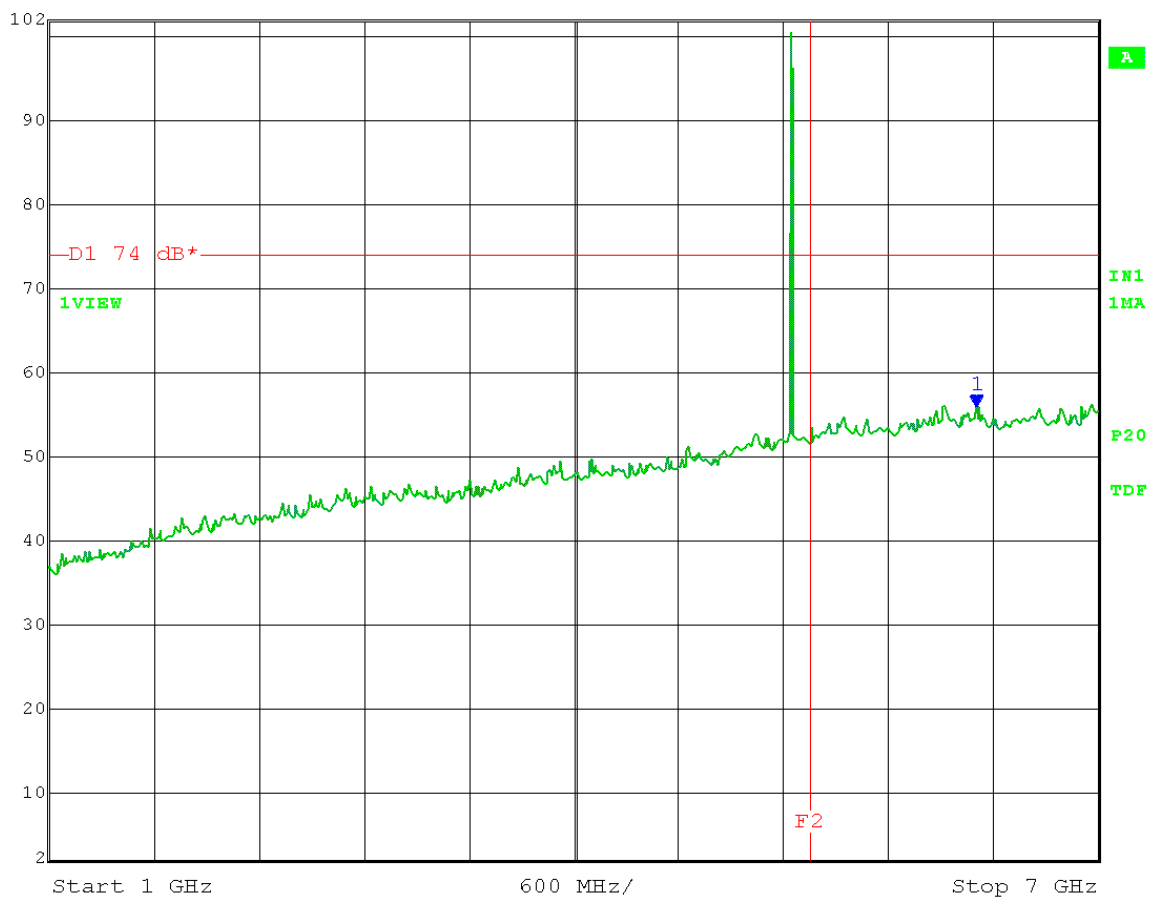


Date: 23.MAY.2014 13:24:52

Horizontal:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	55.90 dBμV/m	VBW	3 MHz		
72 dB*	6.29989980 GHz	SWT	15 ms	Unit	dBμV/m

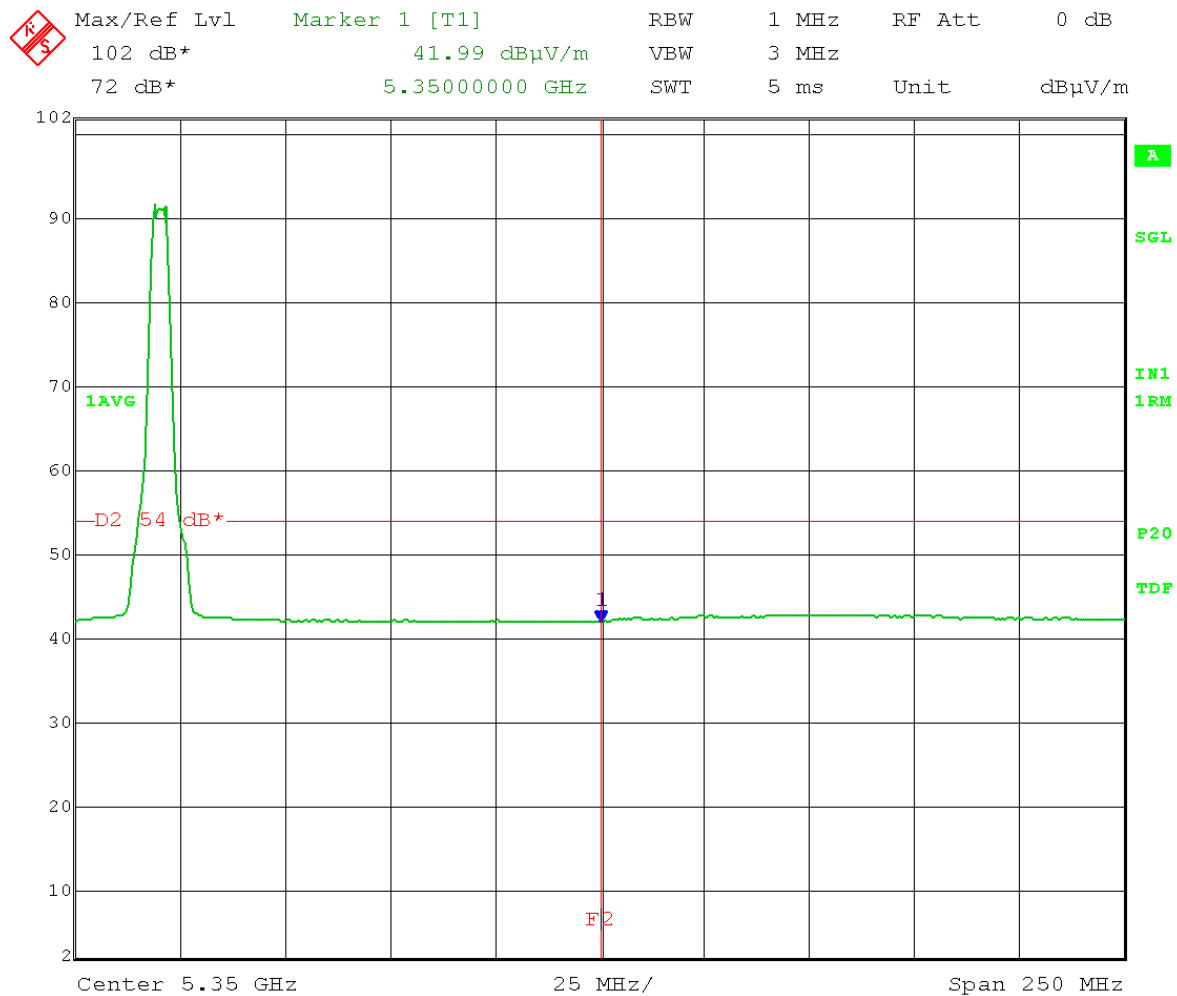


Date: 23.MAY.2014 13:23:49

Test Date: 05-23-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channels 0 and 1 both active
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dBμV/m at 3 meters

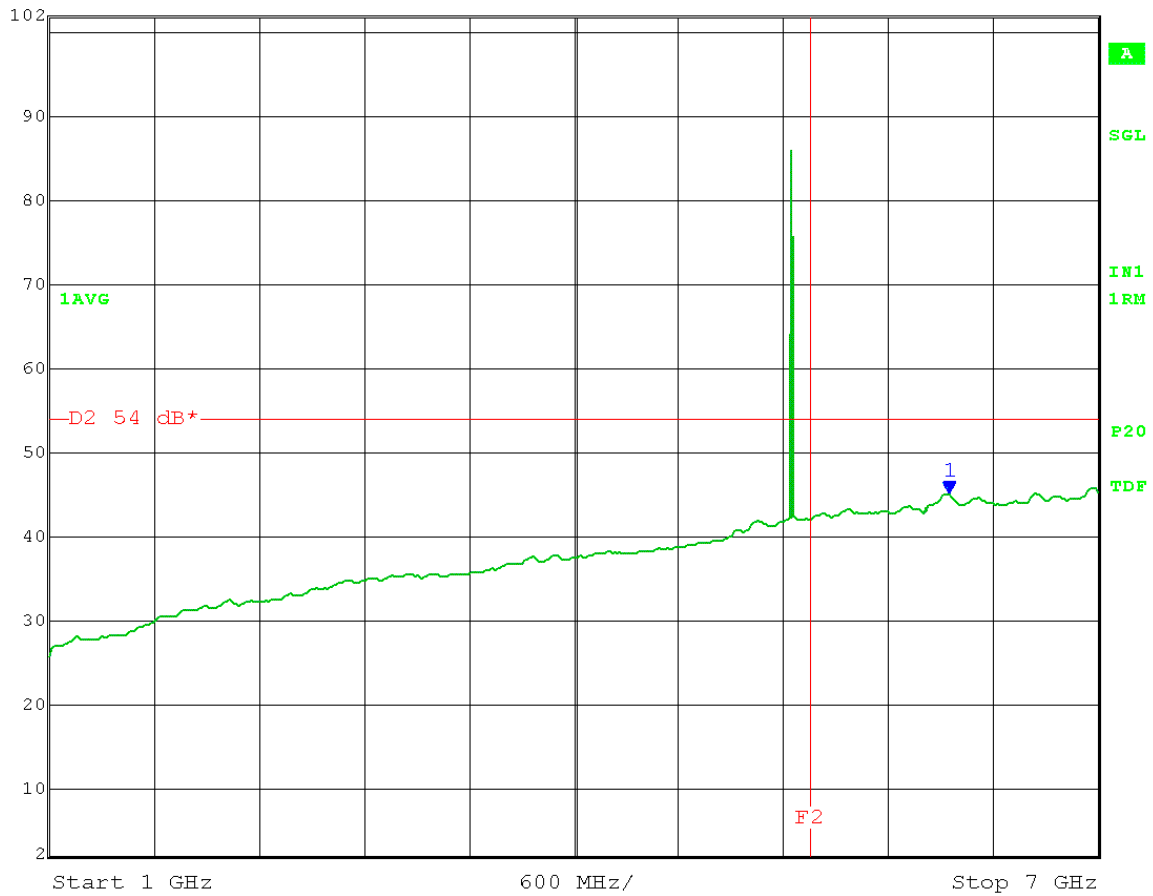
VBW ≥ 3 MHz
 Trace = Average 200 sweeps
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.350 GHz

Horizontal:



Date: 23.MAY.2014 13:21:47

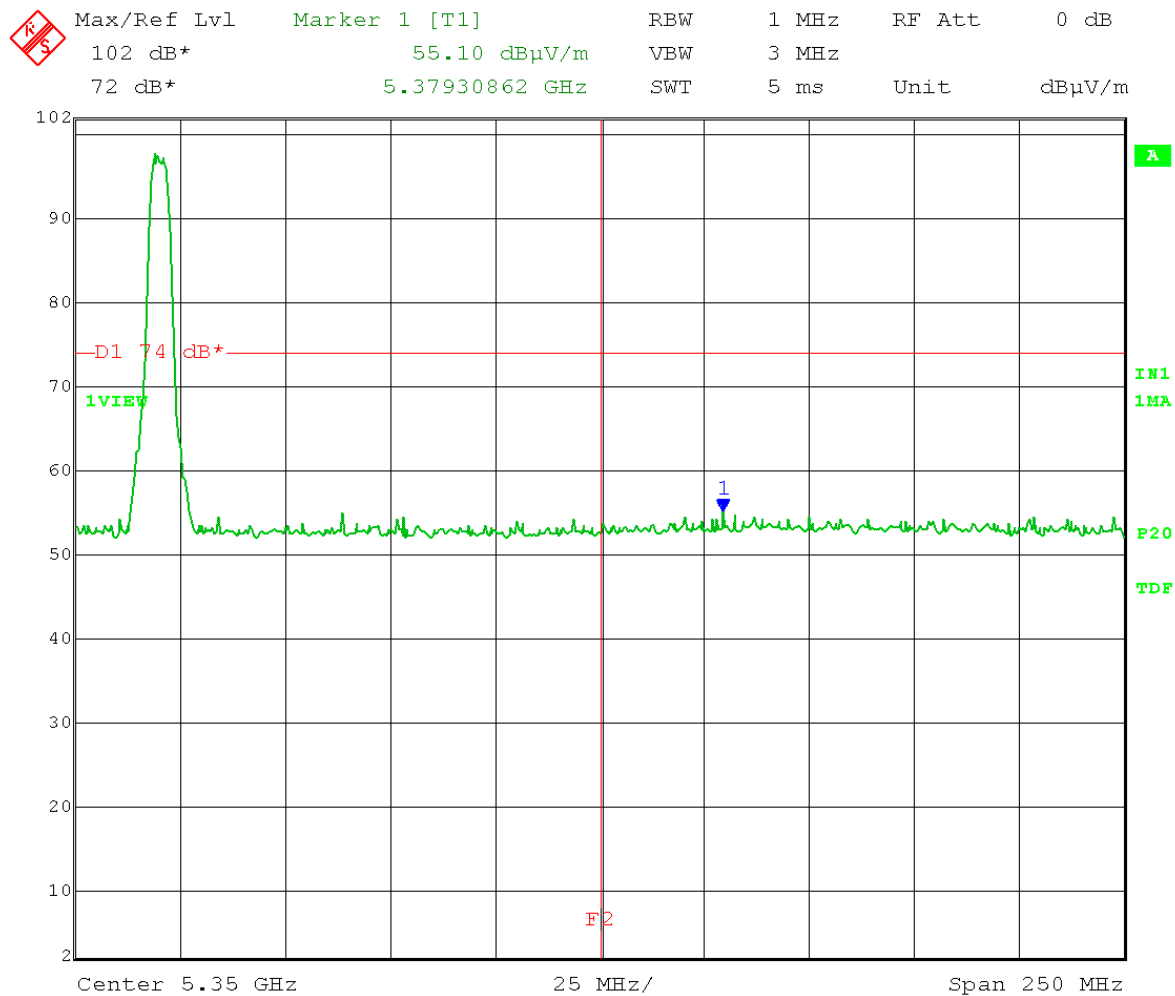
Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	45.01 dBµV/m	VBW	3 MHz		
72 dB*	6.14358717 GHz	SWT	15 ms	Unit	dBµV/m



Date: 23.MAY.2014 13:22:36

Test Date:	05-23-2014		
Company:	Cambium Networks		
EUT:	ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports		
Test:	Operating Band-edge Measurement – Radiated from cabinet		
Operator:	Craig B / Paul		
Comment:	RBW = 1 MHz	VBW $\geq$ 3 MHz	
	Detector = Peak	Trace = Max Hold	
	Channels 0 and 1 both active	ESN# 000456C560B4	
	High Channel Transmit = 5.245 GHz	Output power setting: 18	
	5 MHz BW	Band-edge = 5.350 GHz	
	Peak limit = 74 dB μ V/m at 3 meters		

Vertical:

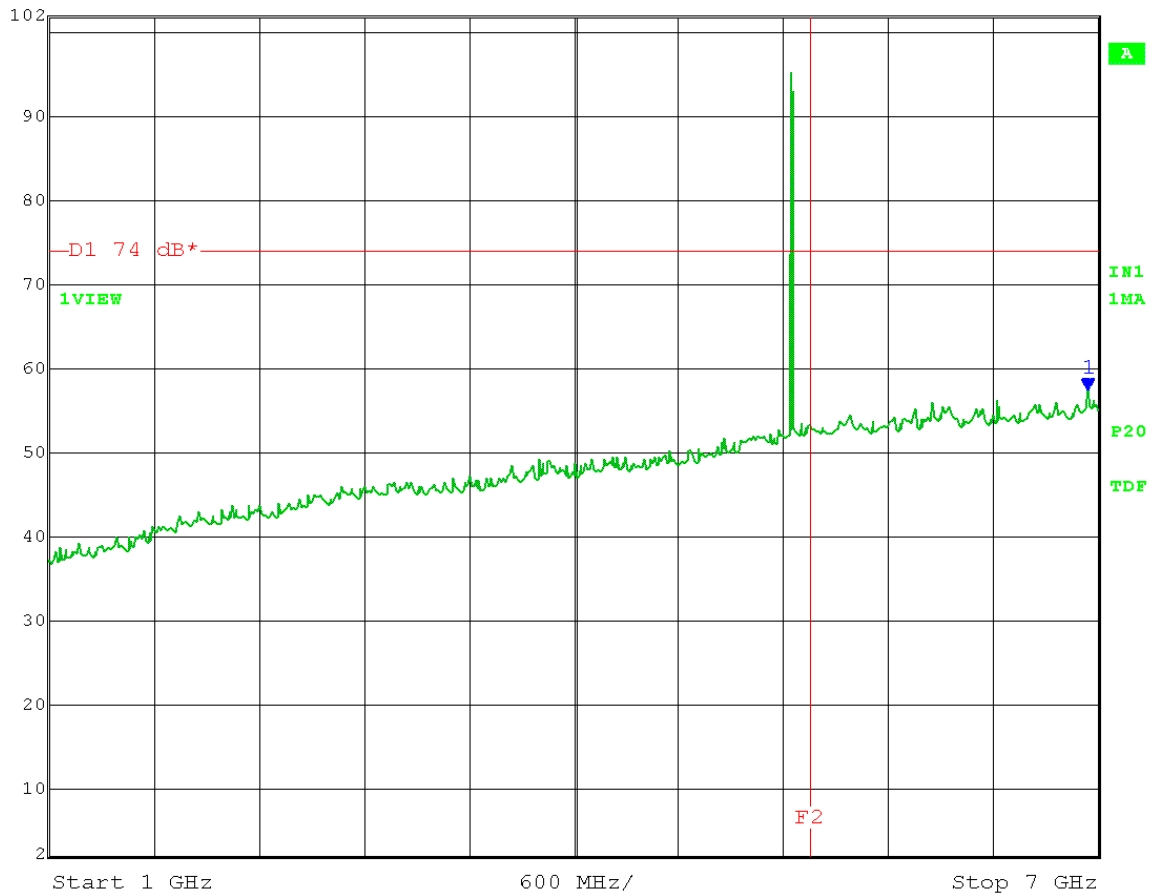


Date: 23.MAY.2014 13:34:51

Vertical:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	57.47 dBμV/m	VBW	3 MHz		
72 dB*	6.94243487 GHz	SWT	15 ms	Unit	dBμV/m

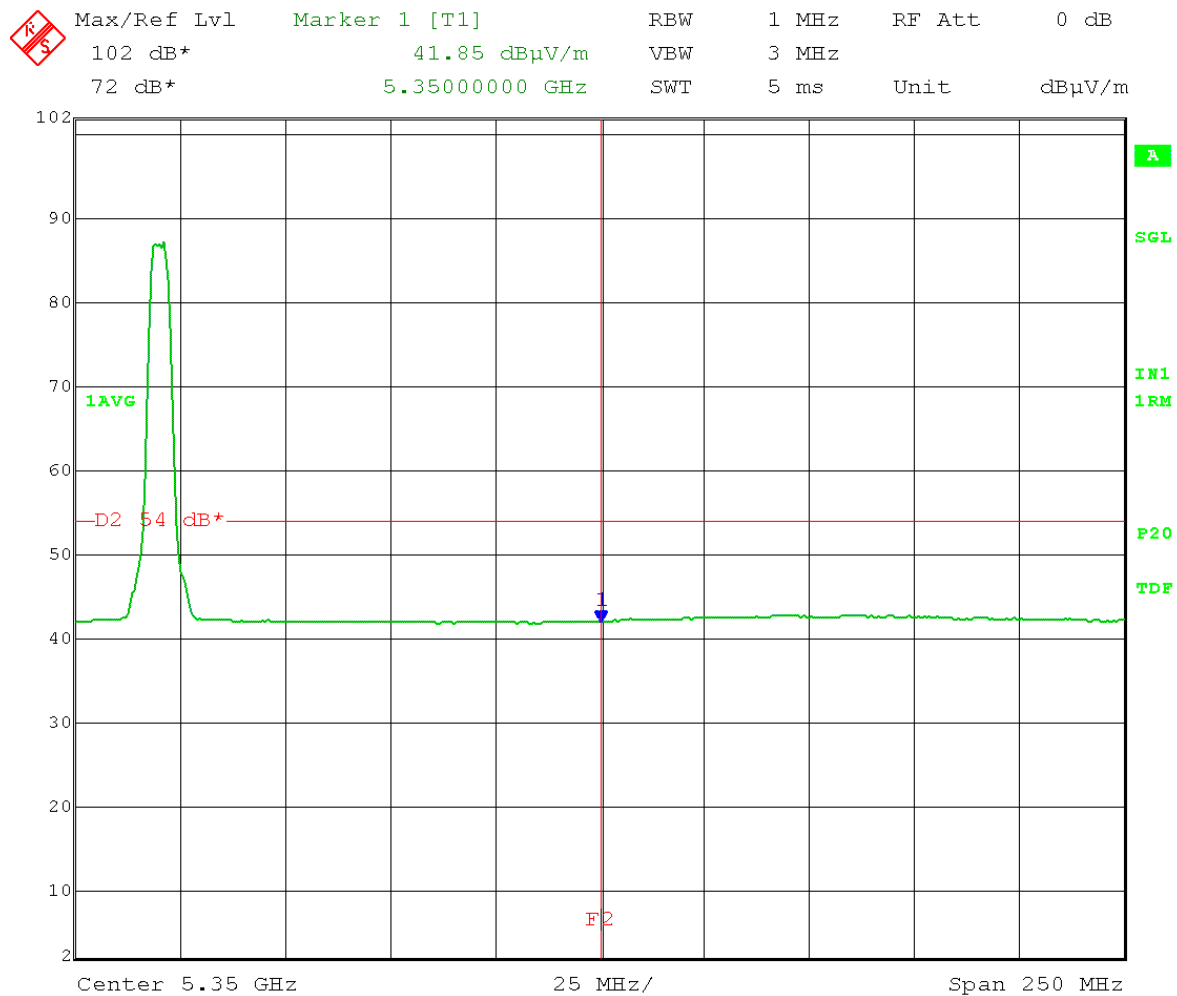


Date: 23.MAY.2014 13:35:39

Test Date: 05-23-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channels 0 and 1 both active
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m at 3 meters

VBW $\geq$ 3 MHz
 Trace = Average 200 sweeps
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.350 GHz

Vertical:



Date: 23.MAY.2014 13:37:33

Vertical:



Max/Ref Lvl

102 dB*

72 dB*

RBW

1 MHz

RF Att

0 dB

VBW

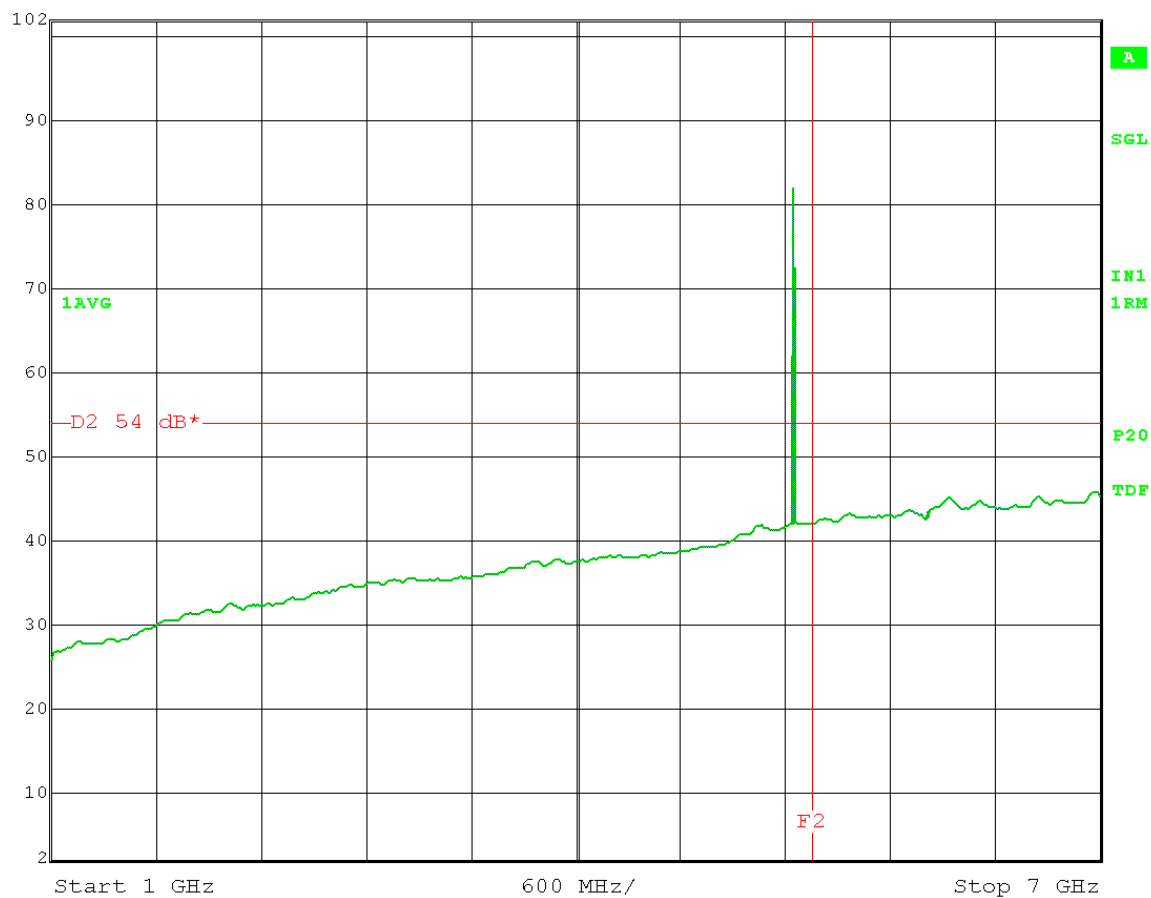
3 MHz

SWT

15 ms

Unit

dBμV/m

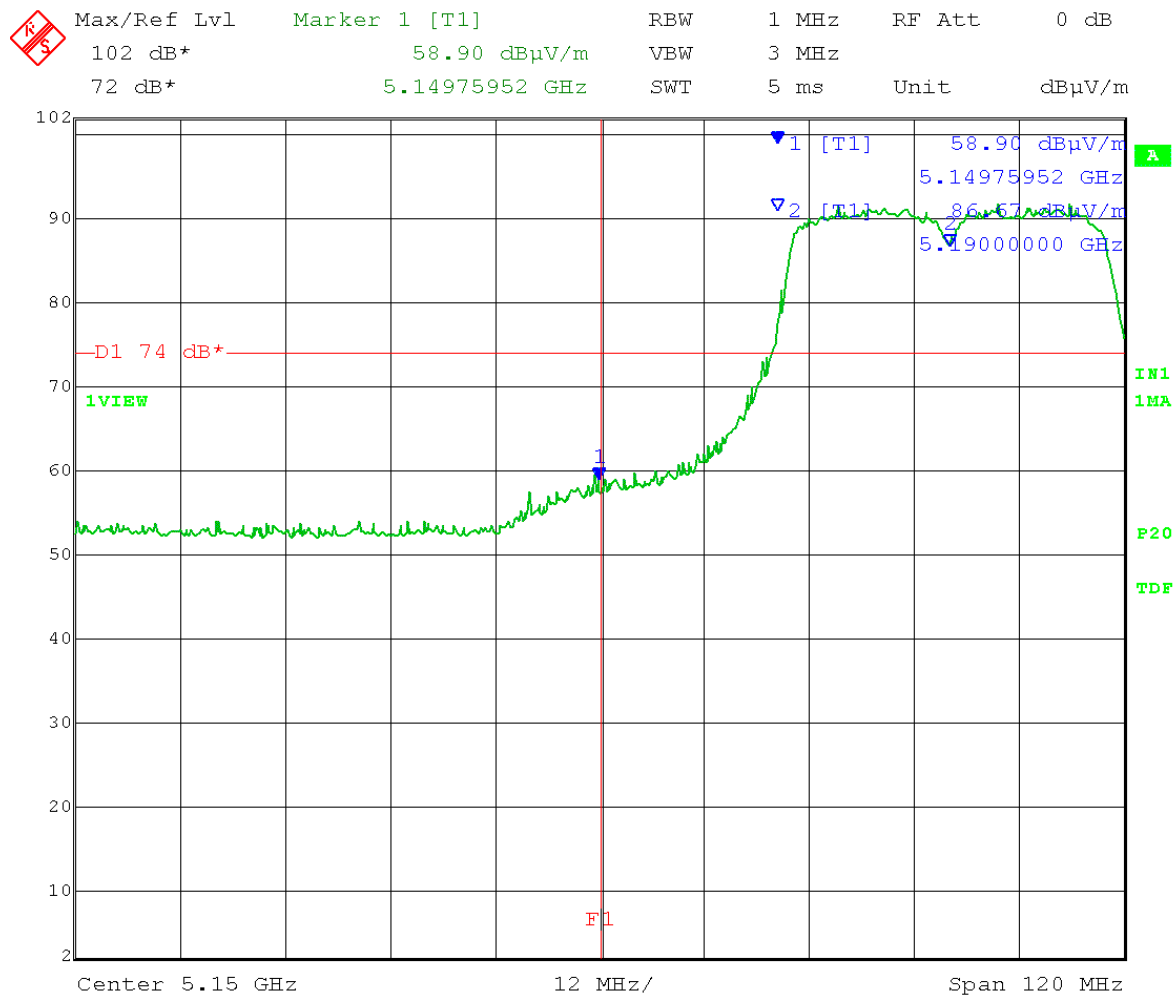


Date: 23.MAY.2014 13:36:46

Test Date: 06-13-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channels 0 and 1 both active
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Peak limit = 74 dBμV/m at 3 meters

VBW ≥ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 16
 Band-edge = 5.150 GHz

Horizontal:

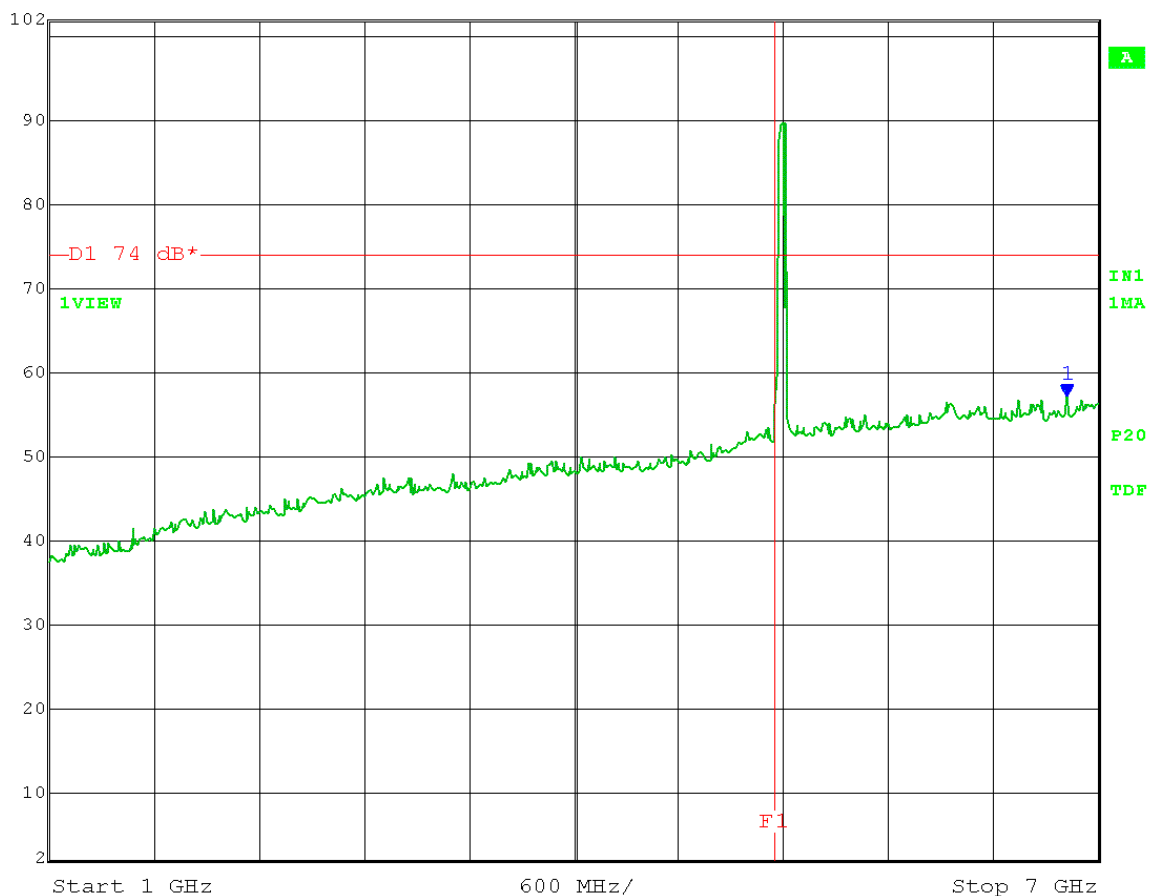


Date: 13.JUN.2014 11:28:16

Horizontal:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	57.05 dBμV/m	VBW	3 MHz		
72 dB*	6.81963928 GHz	SWT	15 ms	Unit	dBμV/m

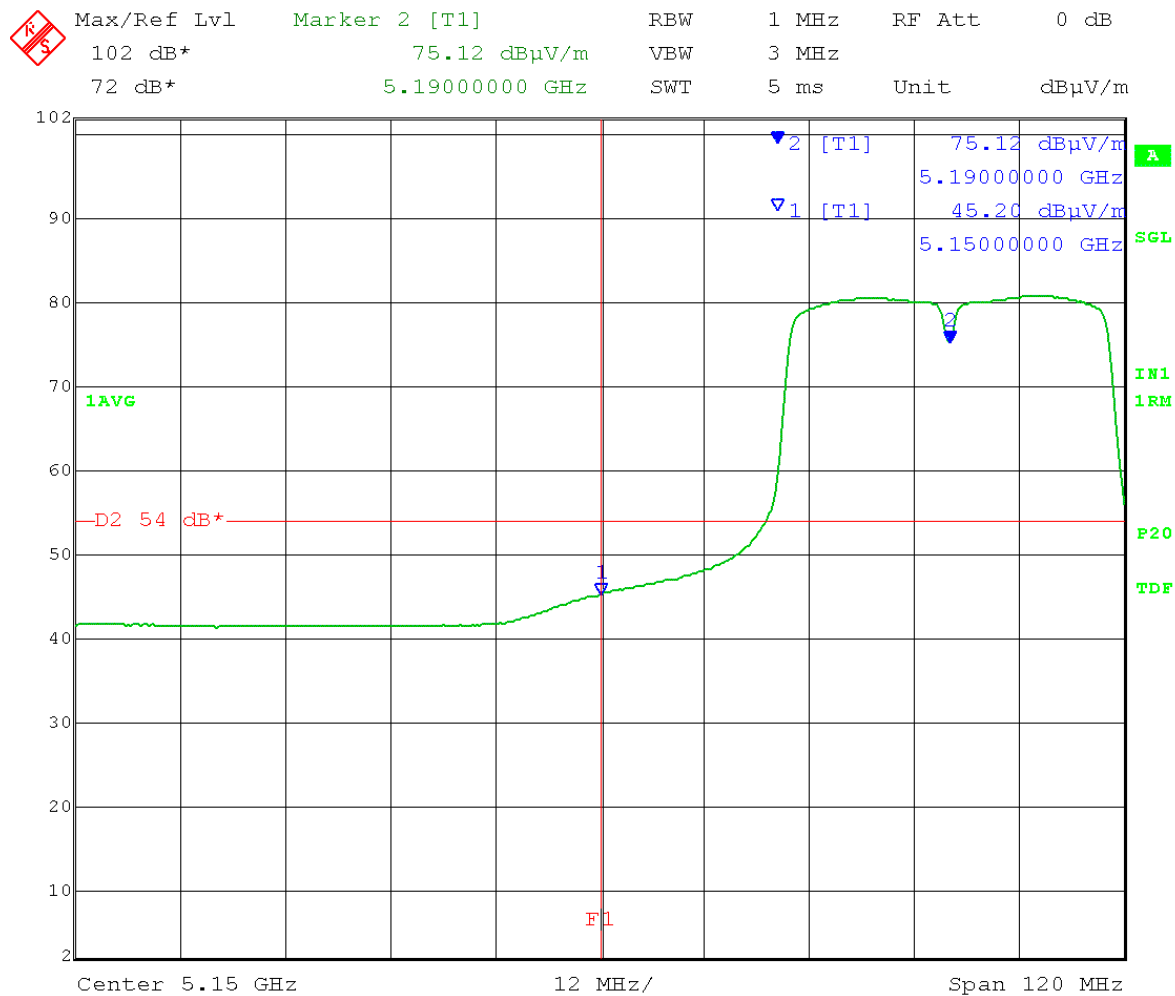


Date: 13.JUN.2014 11:29:47

Test Date: 06-13-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channels 0 and 1 both active
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Average limit = 54 dBμV/m at 3 meters

VBW ≥ 3 MHz
 Trace = Average 200 sweeps
 ESN# 000456C560B4
 Output power setting: 16
 Band-edge = 5.150 GHz

Horizontal:

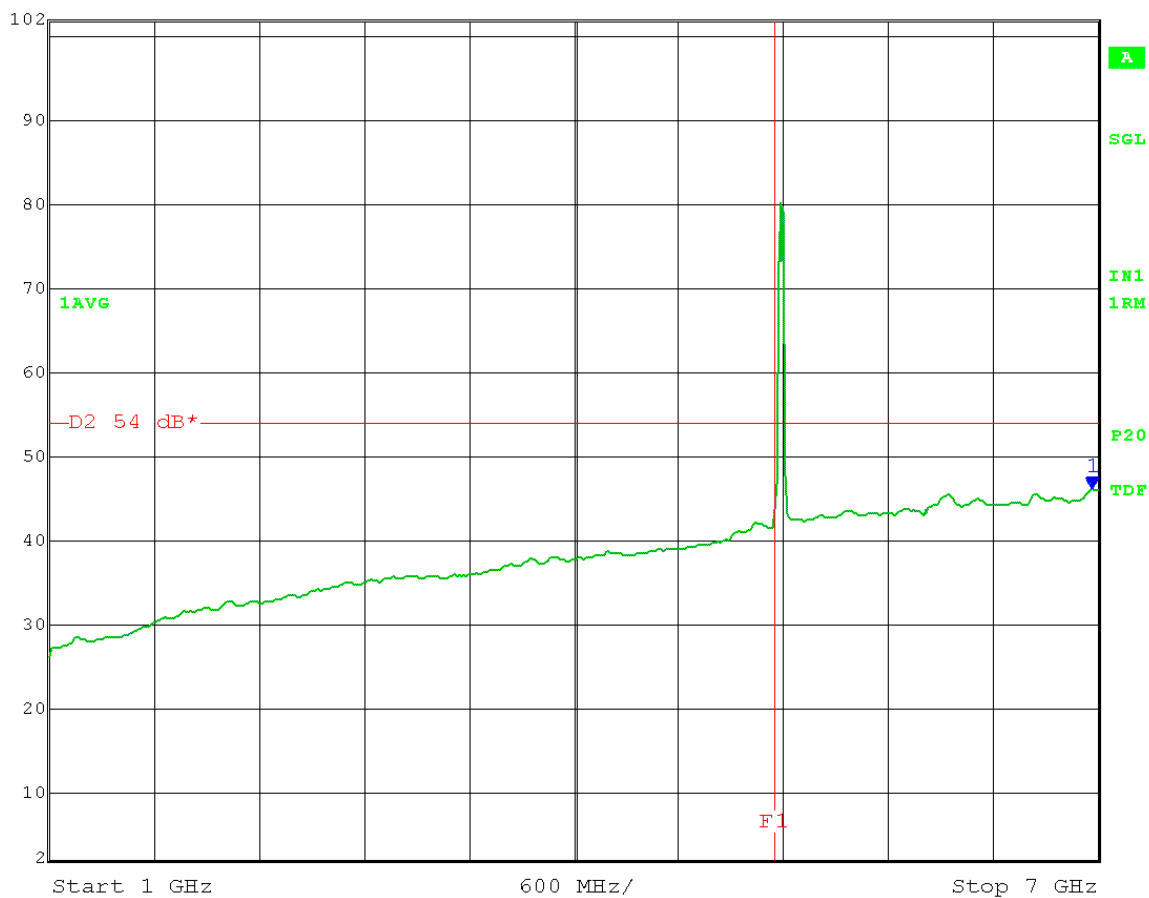


Date: 13.JUN.2014 11:26:32

Horizontal:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	46.00 dBμV/m	VBW	3 MHz		
72 dB*	6.96392786 GHz	SWT	15 ms	Unit	dBμV/m



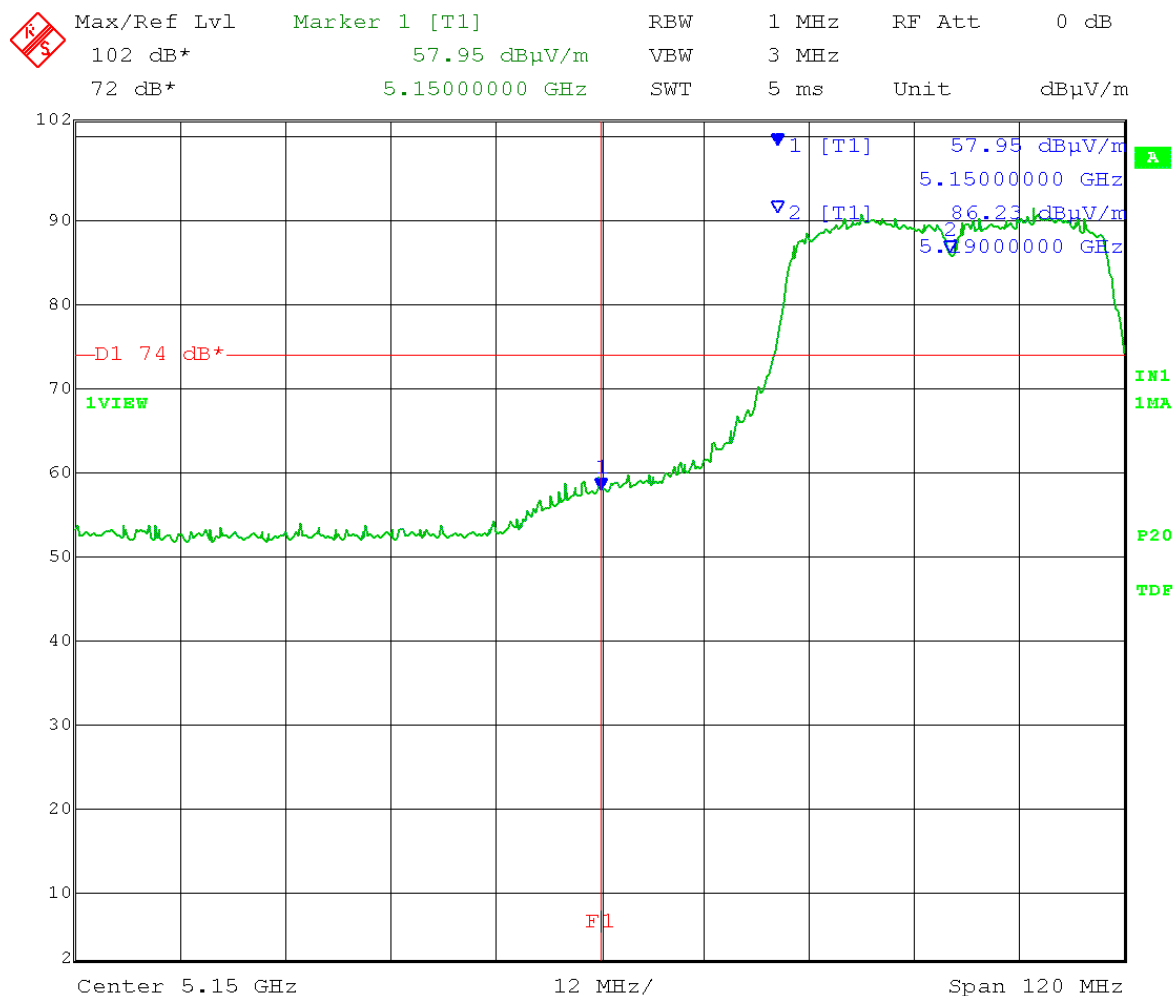
Date: 13.JUN.2014 11:31:06

Test Date: 06-13-2014
Company: Cambium Networks
EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
Test: Operating Band-edge Measurement – Radiated from cabinet
Operator: Craig B / Paul
Comment: RBW = 1 MHz

Detector = Peak
Channels 0 and 1 both active
Low Channel Transmit = 5.190 GHz
40 MHz BW
Peak limit = 74 dB μ V/m at 3 meters

VBW $\geq$ 3 MHz
Trace = Max Hold
ESN# 000456C560B4
Output power setting: 16
Band-edge = 5.150 GHz

Vertical:

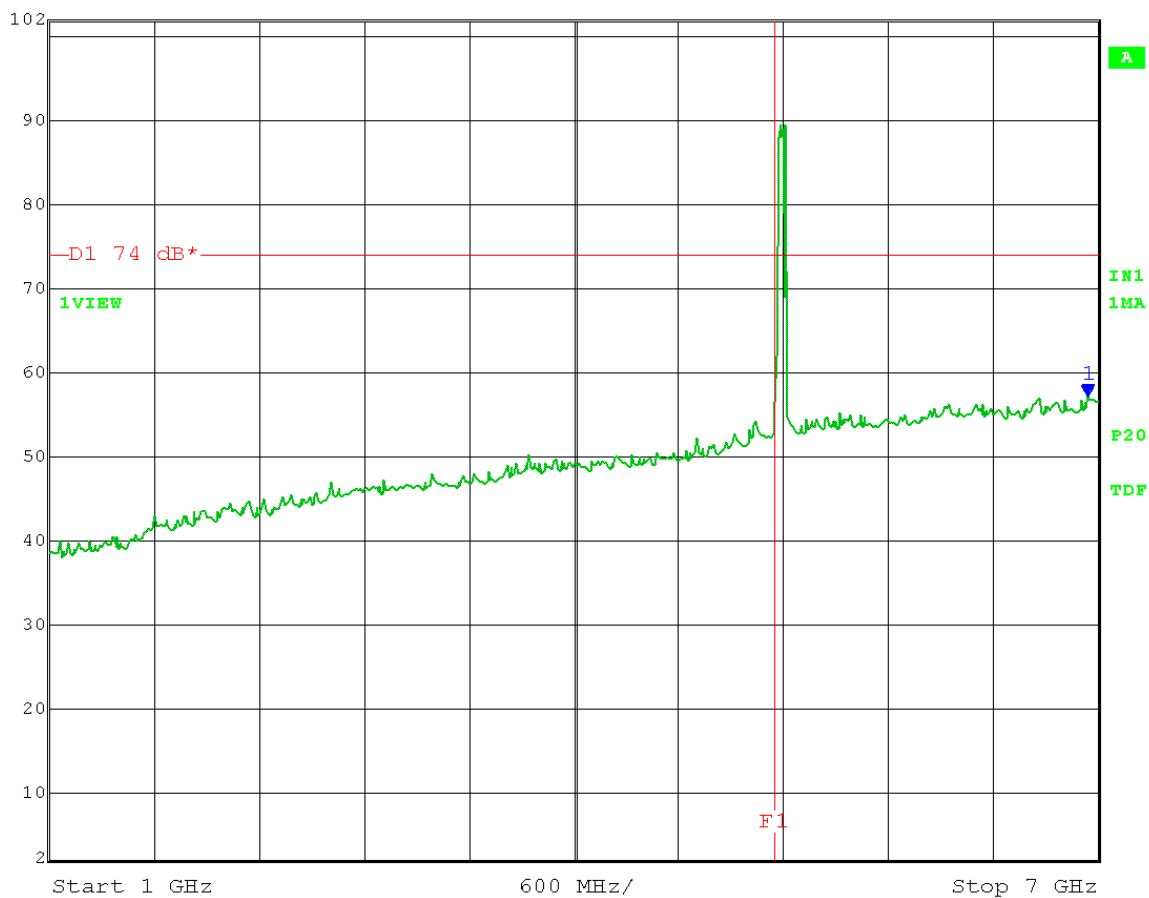


Date: 13.JUN.2014 10:54:14

Vertical:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	57.00 dBμV/m	VBW	3 MHz		
72 dB*	6.93987976 GHz	SWT	15 ms	Unit	dBμV/m

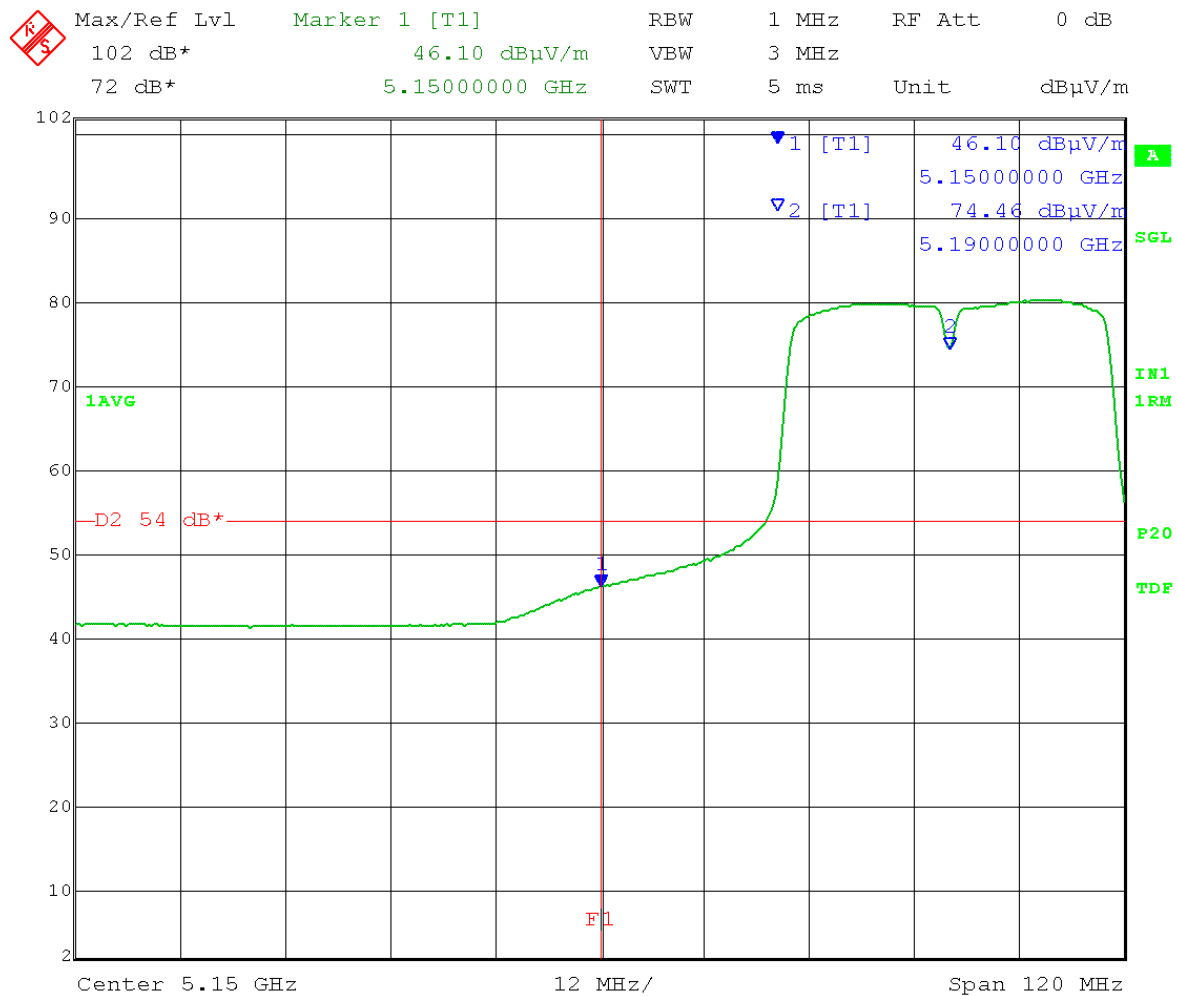


Date: 13.JUN.2014 10:56:27

Test Date: 06-13-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channels 0 and 1 both active
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Average limit = 54 dBμV/m at 3 meters

VBW ≥ 3 MHz
 Trace = Average 200 sweeps
 ESN# 000456C560B4
 Output power setting: 16
 Band-edge = 5.150 GHz

Vertical:

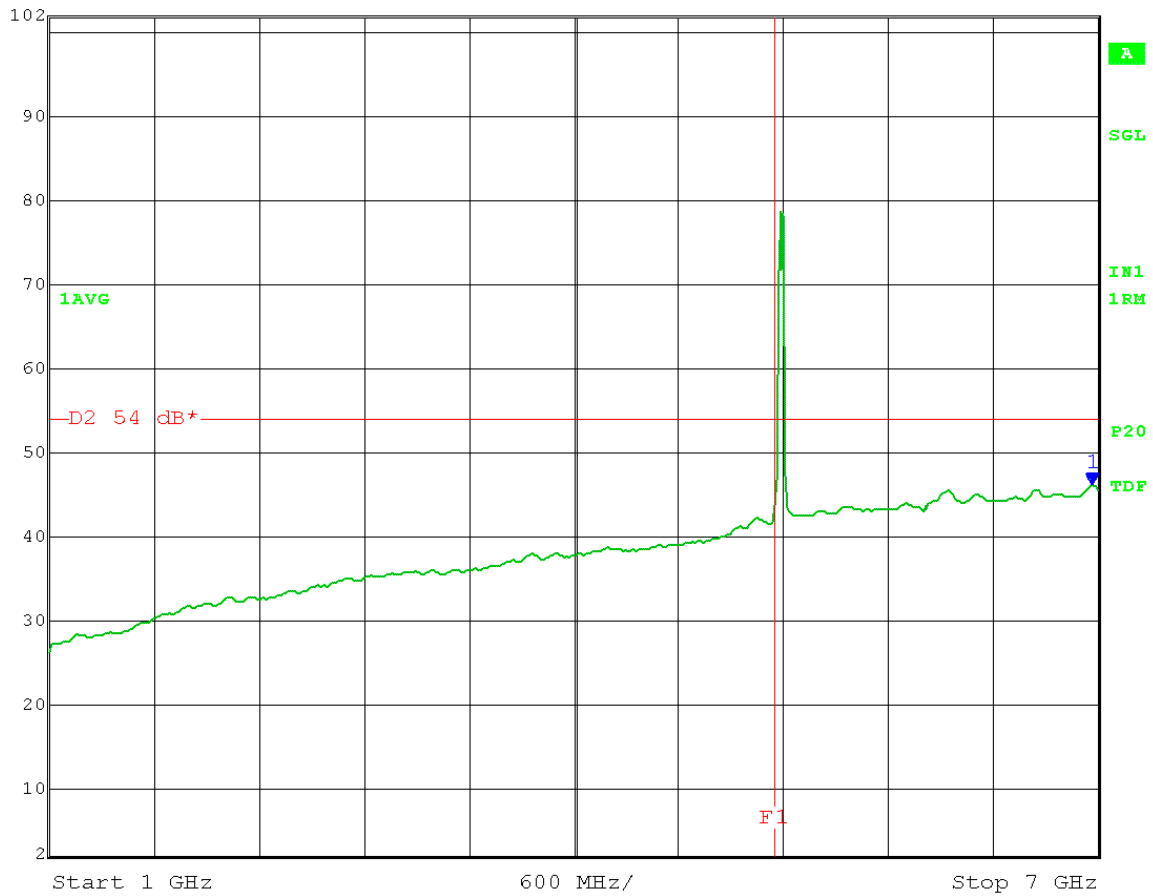


Date: 13.JUN.2014 10:52:55

Vertical:



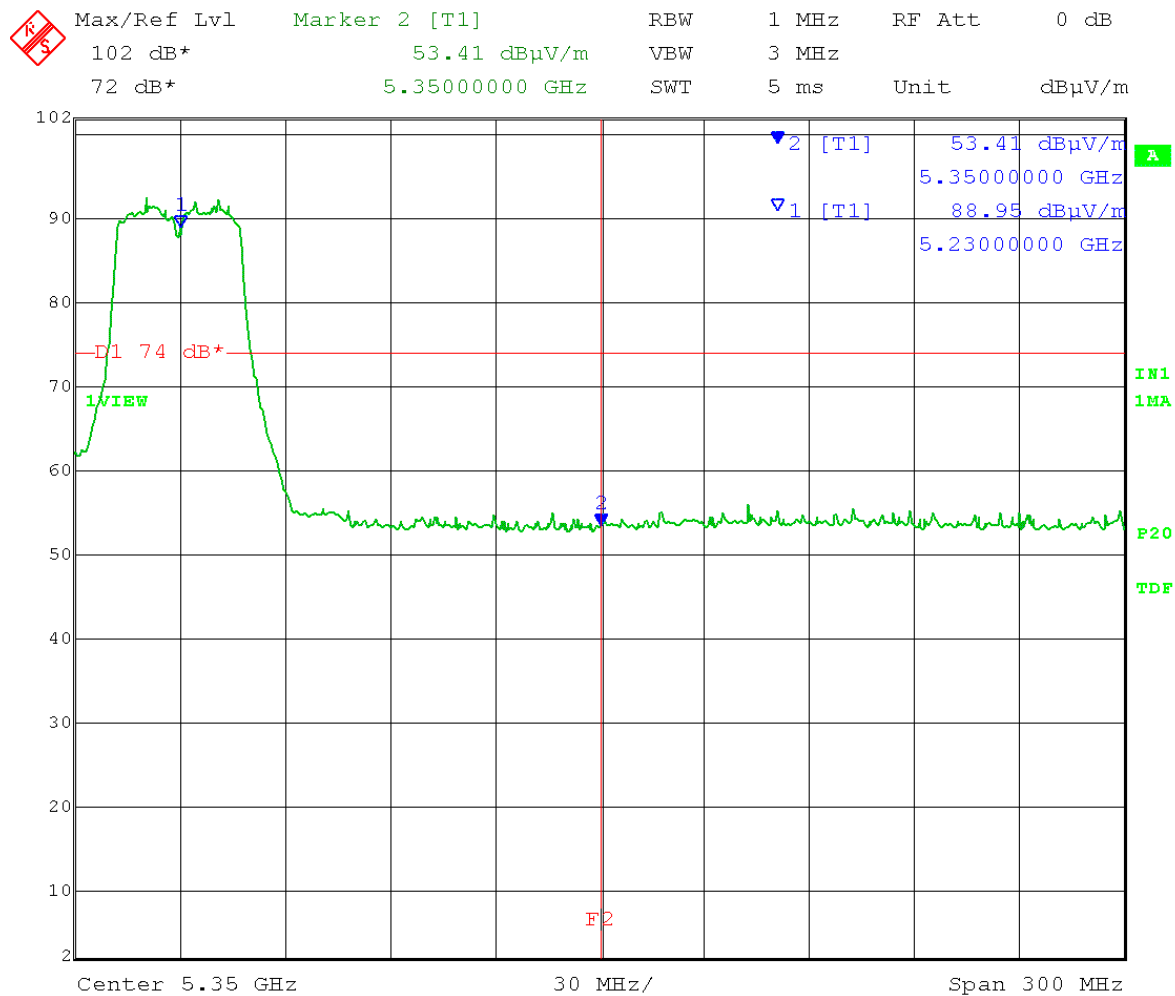
Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	46.03 dBμV/m	VBW	3 MHz		
72 dB*	6.96392786 GHz	SWT	15 ms	Unit	dBμV/m



Date: 13.JUN.2014 10:57:53

Test Date: 06-13-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channels 0 and 1 both active
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dBμV/m at 3 meters
 VBW ≥ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 16
 Band-edge = 5.350 GHz

Horizontal:

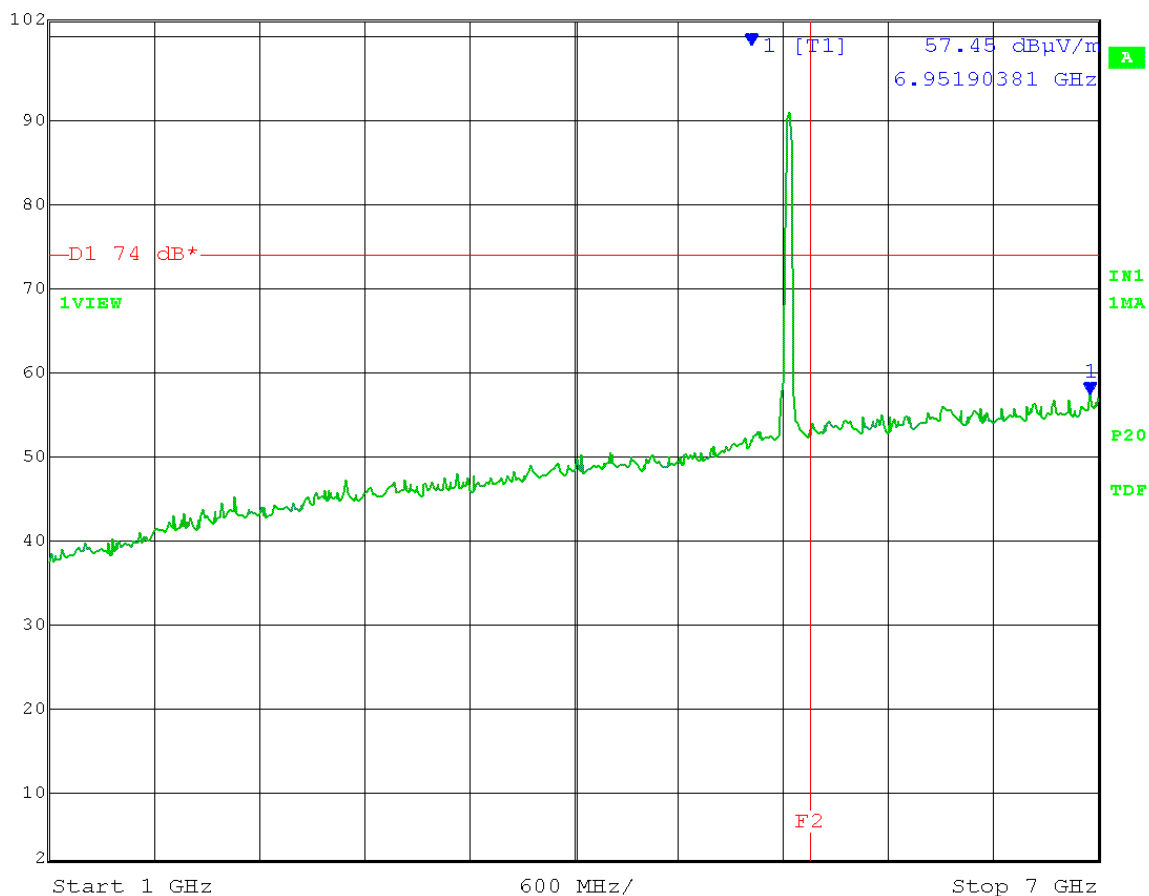


Date: 13.JUN.2014 11:17:35

Horizontal:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	57.45 dBμV/m	VBW	3 MHz		
72 dB*	6.95190381 GHz	SWT	15 ms	Unit	dBμV/m

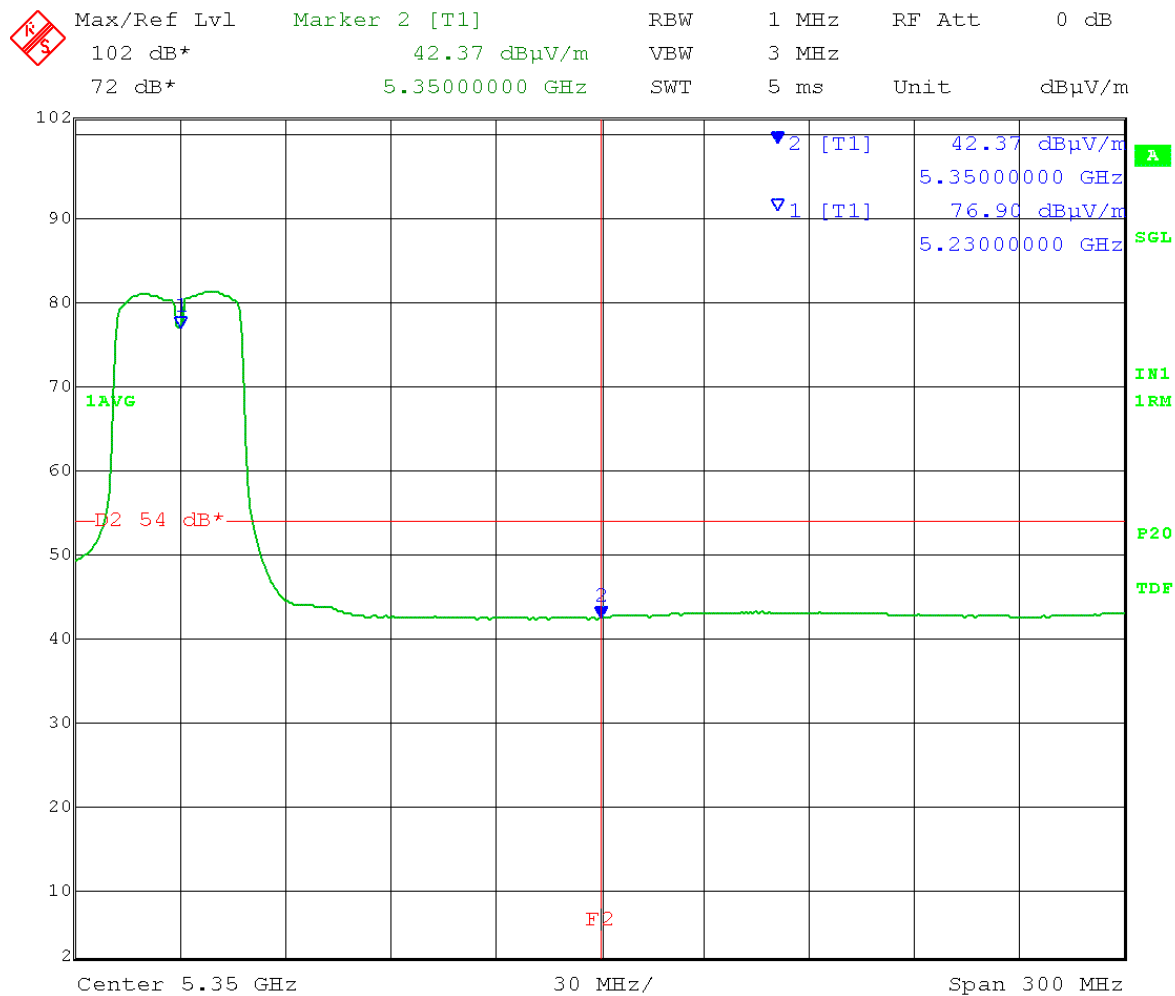


Date: 13.JUN.2014 11:18:48

Test Date: 06-13-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channels 0 and 1 both active
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dBμV/m at 3 meters

VBW ≥ 3 MHz
 Trace = Average 200 sweeps
 ESN# 000456C560B4
 Output power setting: 16
 Band-edge = 5.350 GHz

Horizontal:

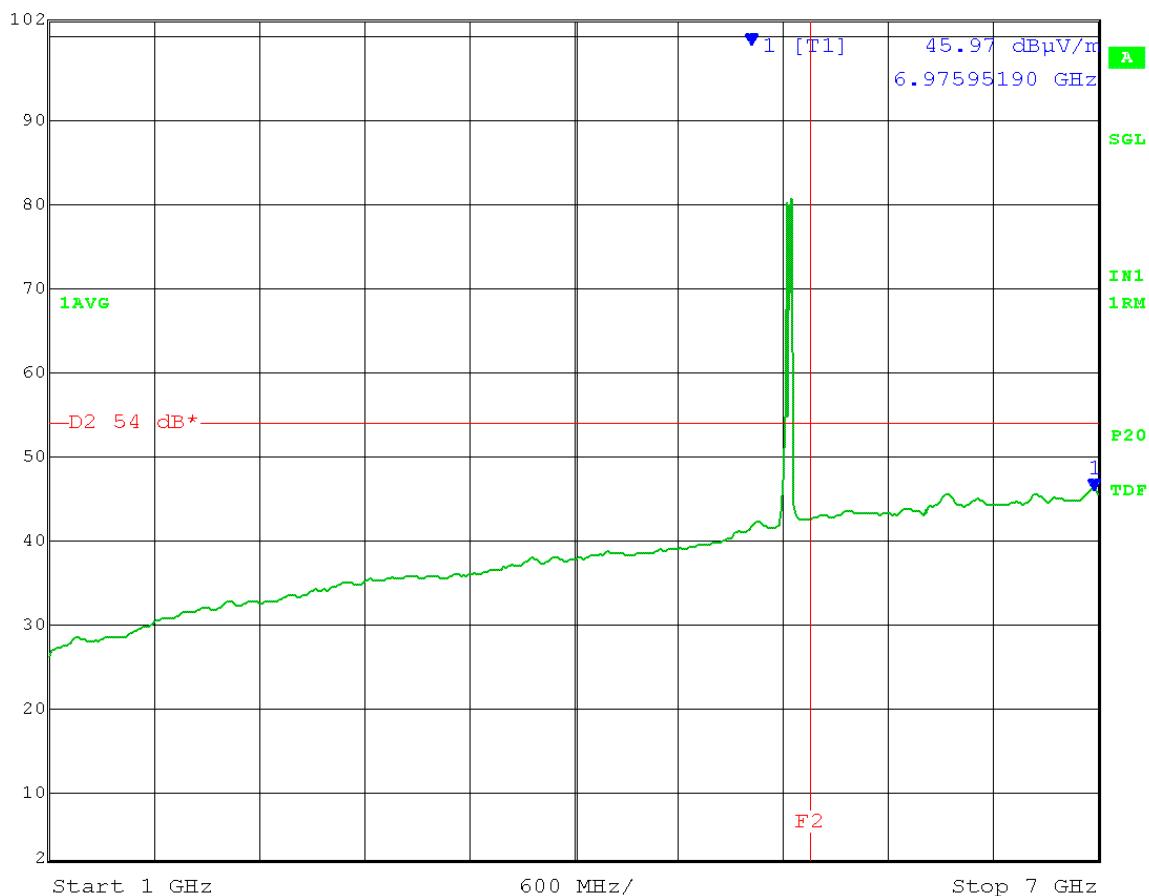


Date: 13.JUN.2014 11:16:19

Horizontal:



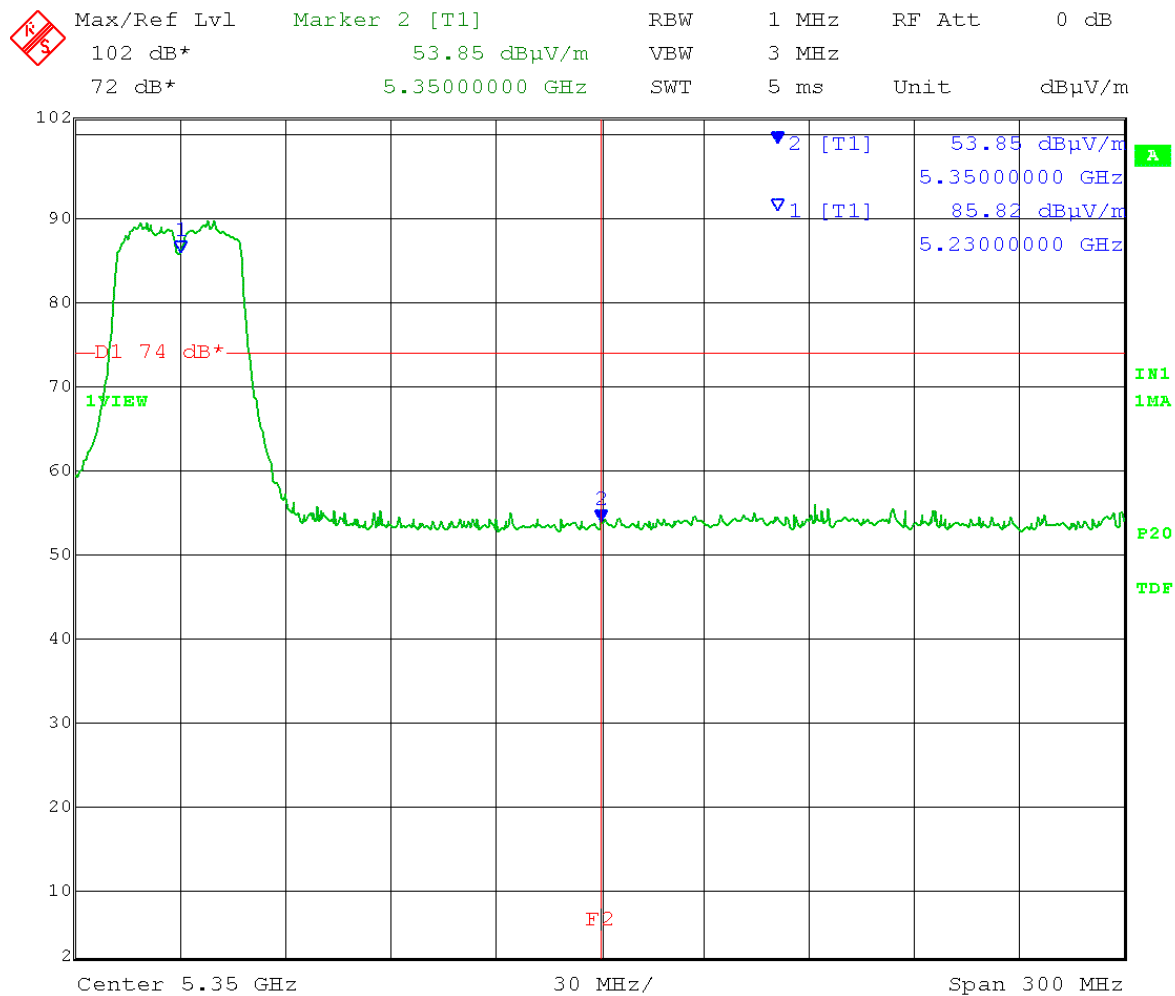
Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	45.97 dBμV/m	VBW	3 MHz		
72 dB*	6.97595190 GHz	SWT	15 ms	Unit	dBμV/m



Date: 13.JUN.2014 11:19:59

Test Date: 06-13-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channels 0 and 1 both active
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m at 3 meters
 VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 16
 Band-edge = 5.350 GHz

Vertical:

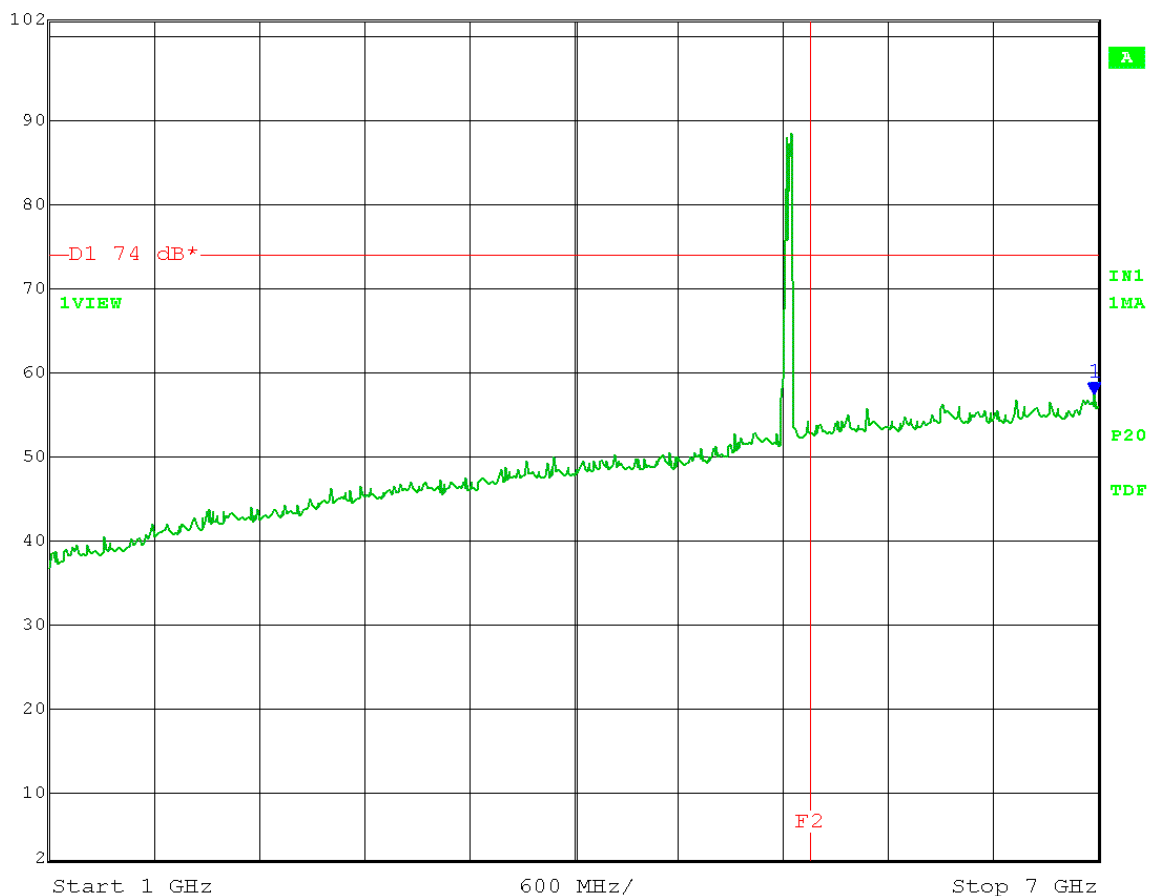


Date: 13.JUN.2014 11:03:59

Vertical:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	57.29 dBμV/m	VBW	3 MHz		
72 dB*	6.97595190 GHz	SWT	15 ms	Unit	dBμV/m

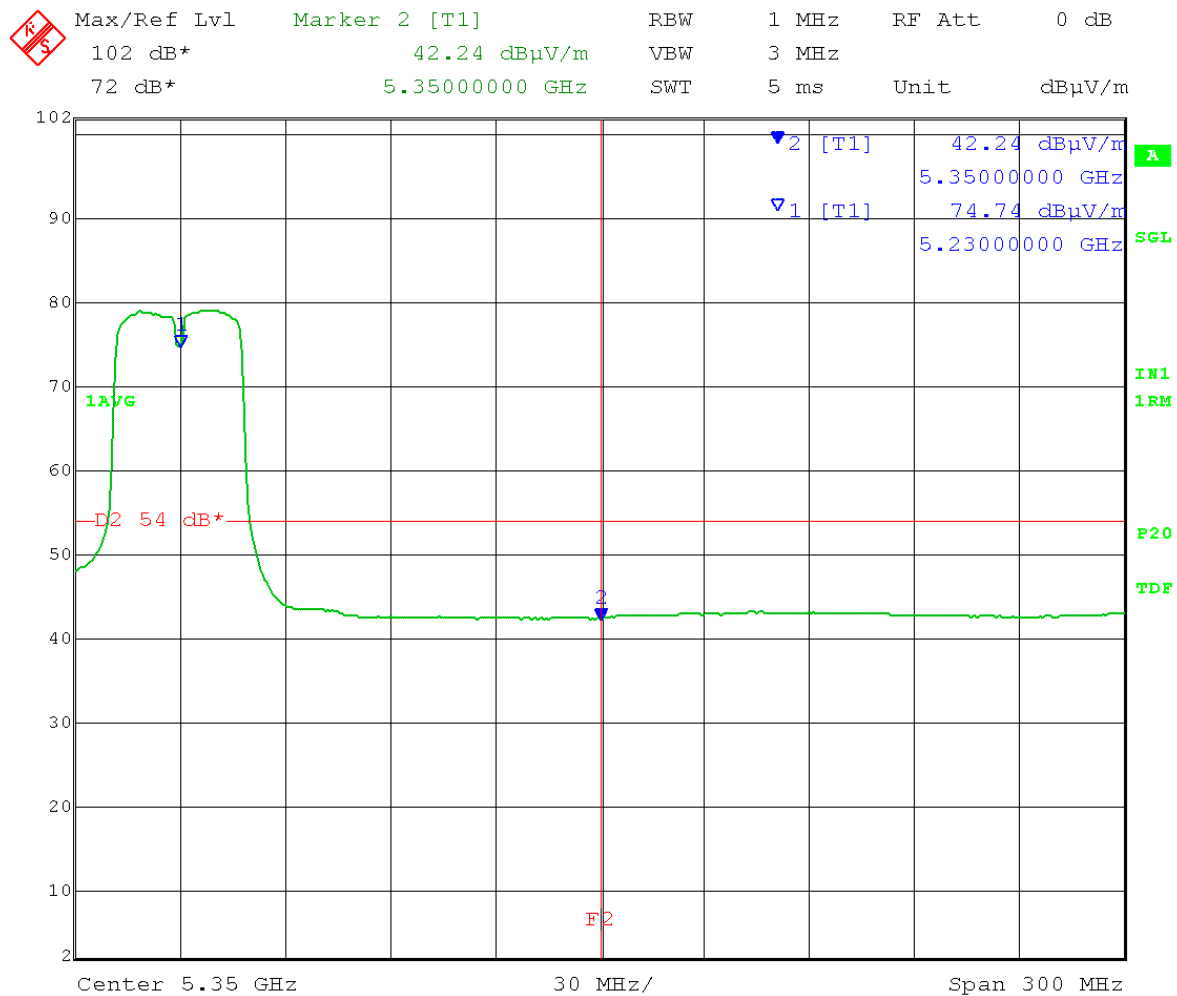


Date: 13.JUN.2014 11:04:56

Test Date: 06-13-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII 50 Ohm terminations on antenna ports
 Test: Operating Band-edge Measurement – Radiated from cabinet
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channels 0 and 1 both active
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dBμV/m at 3 meters

VBW ≥ 3 MHz
 Trace = Average 200 sweeps
 ESN# 000456C560B4
 Output power setting: 16
 Band-edge = 5.350 GHz

Vertical:

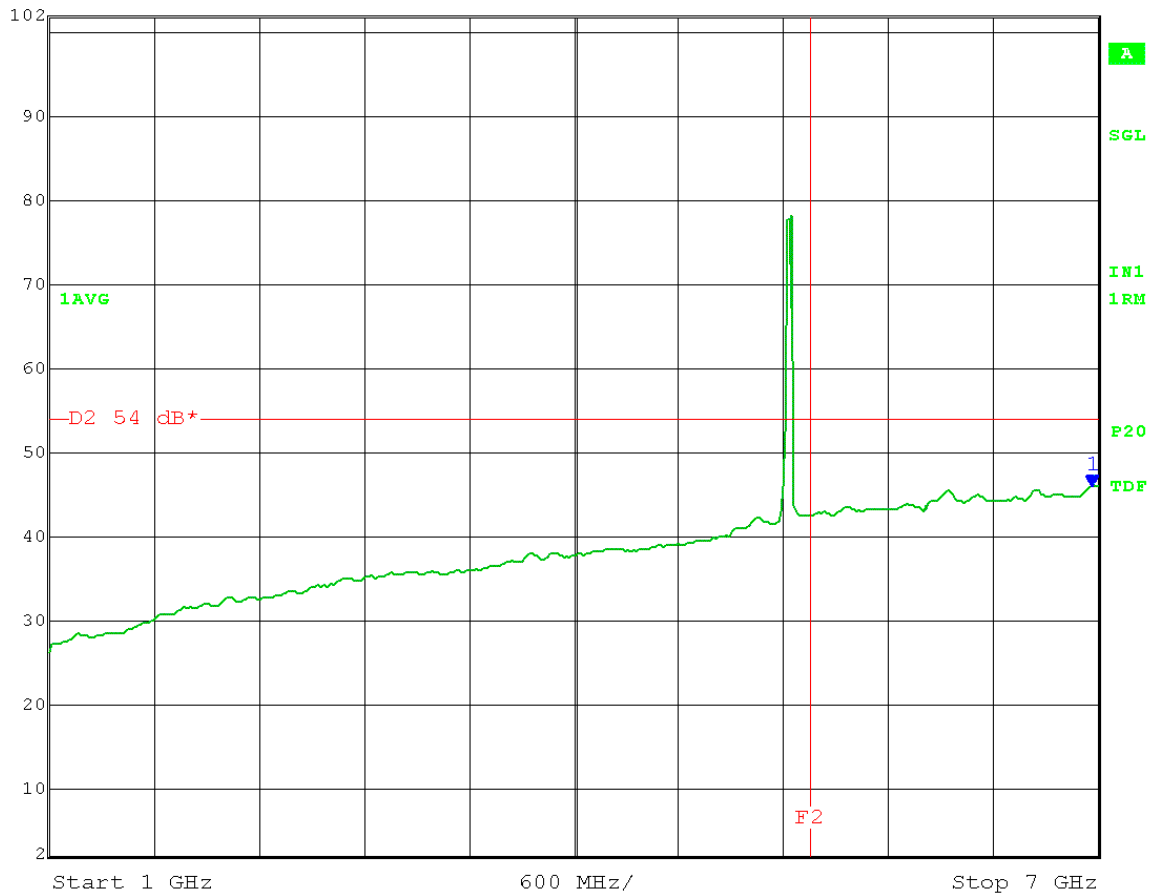


Date: 13.JUN.2014 11:02:43

Vertical:



Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
102 dB*	45.96 dBμV/m	VBW	3 MHz		
72 dB*	6.96392786 GHz	SWT	15 ms	Unit	dBμV/m



Date: 13.JUN.2014 11:06:22



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Model Tested: C050900C032A
Report Number: 20127
DLS Project: 6620

Appendix B – Measurement Data

B7.0 Unwanted Emission Levels – Band Edge - RF Conducted

Rule Section: Sections 15.407(b)(1)

Test Procedure: FCC KDB 789033 D02 General UNII Test Procedures v01 – *Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E*
Section G(1) – Unwanted emissions in the restricted bands
Section G(3) – General Requirements for Unwanted Emissions Measurements
Section G(5) – Procedure for Unwanted Maximum Emissions Measurements Above 1000 MHz
Section G(6) – Procedure for Unwanted Average Emissions Measurements Above 1000 MHz
Section G(6)(c) – Method AD - Average Detection Method
Section G(3)(d)(ii) – Integration Method

Peak measurements above 1000 MHz

RBW = 1 MHz

VBW $\geq$ 3 MHz

Detector = peak

Sweep time = auto

Trace mode = max hold

Average measurements above 1000 MHz (required for peak emissions that are above the average limits) –

Method AD (Average Detection)

RBW = 1 MHz

VBW $\geq$ 3 MHz

Detector = RMS (span/(# of points in sweep) $\leq$ RBW/2)

Averaging type = power

Sweep time = auto

Trace mode = trace average 100 sweeps; increased by a factor of (1 / duty cycle)

For a duty cycle less than 98%, add 10 log (1/duty cycle)

Integration Method

Set RBW = 100 kHz

Set VBW $\geq$ 3 x RBW

Perform band-power integration across the 1 MHz bandwidth in which the emission level is to be measured.

EIRP calculation:

Add upper bound on out-of-band antenna gain to measured antenna port conducted emission power. (This is the maximum in-band gain or 2 dBi, whichever is greater)

Add 10 log(N), where N is the number of output, for MIMO operation

Field strength calculation:

Above 1 GHz: $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20 \log (d \{\text{meters}\}) + 104.77$

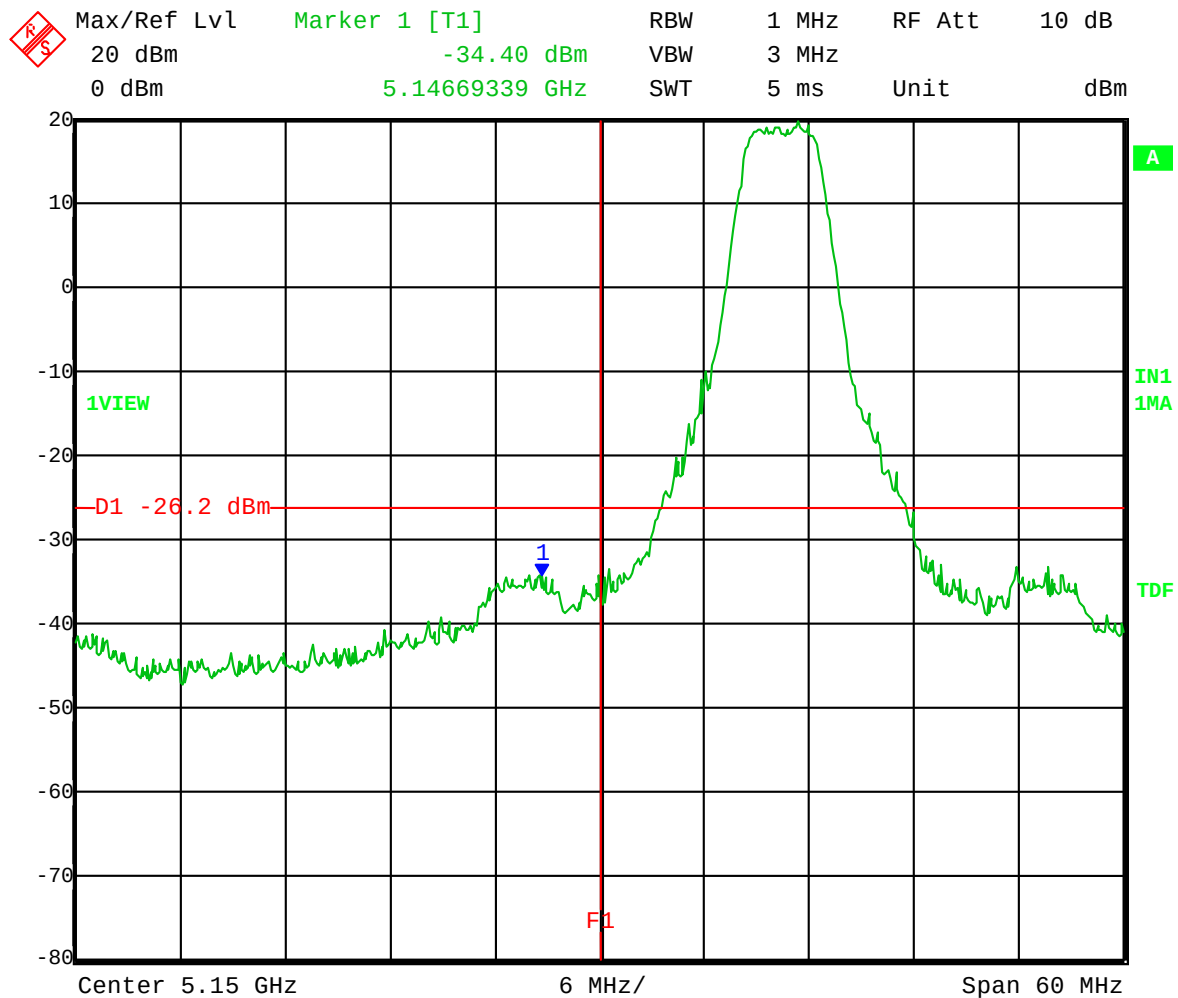
Limits: Inside restricted bands: Peak and Average limits of FCC Part 15.209

Notes: 5 MHz channel bandwidth measurements were taken with Legacy OFDM 54 Mbit/s modulation at the lowest, middle, and highest channels of operation. 40 MHz channel bandwidth measurements were taken with MCS15 OFDM modulation. The EUT was set to transmit continuously with 100% duty cycle.

Included in this "band edge" section of the report are charts showing compliance to the entire restricted band nearest the EUT's operating band edge frequency.

Test Date: 05-15-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.160 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -26.2 dBm

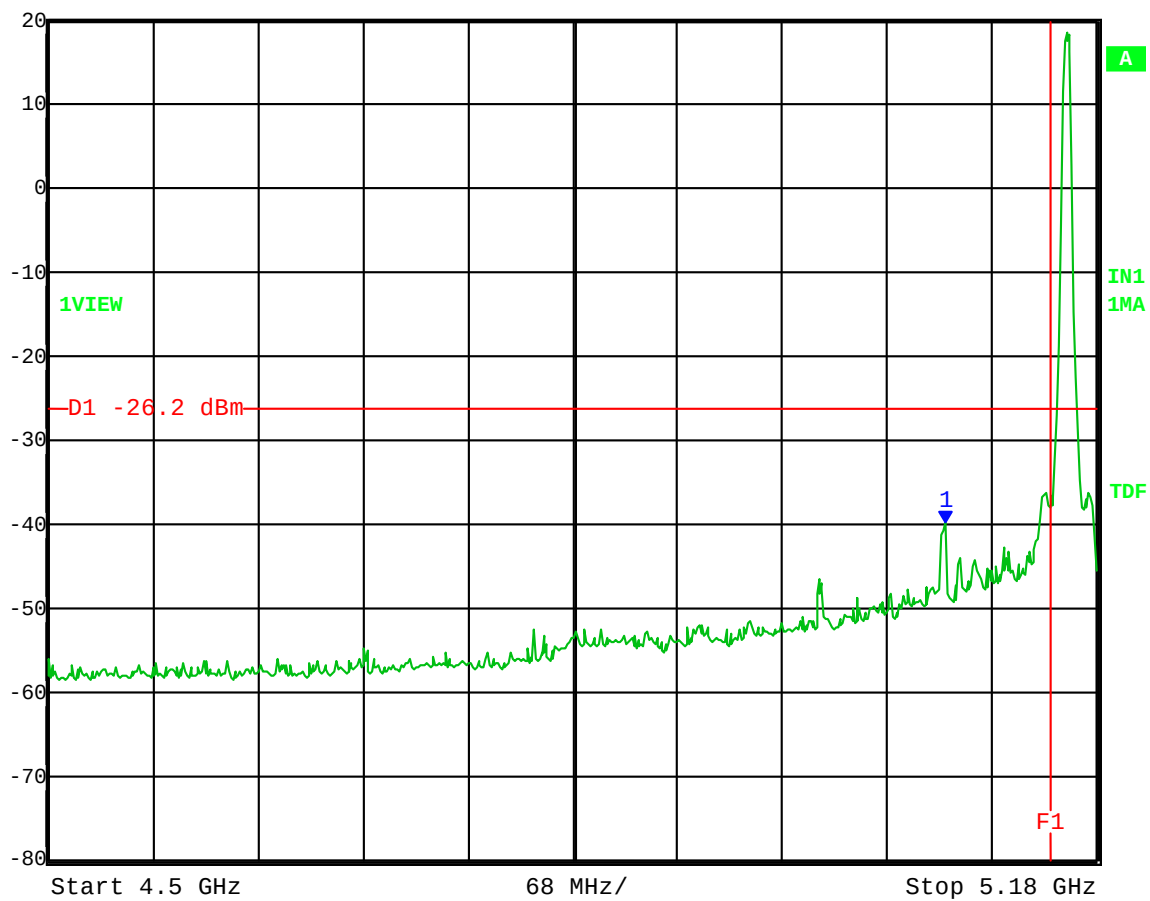
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.150 GHz



Date: 15.MAY.2014 15:46:41



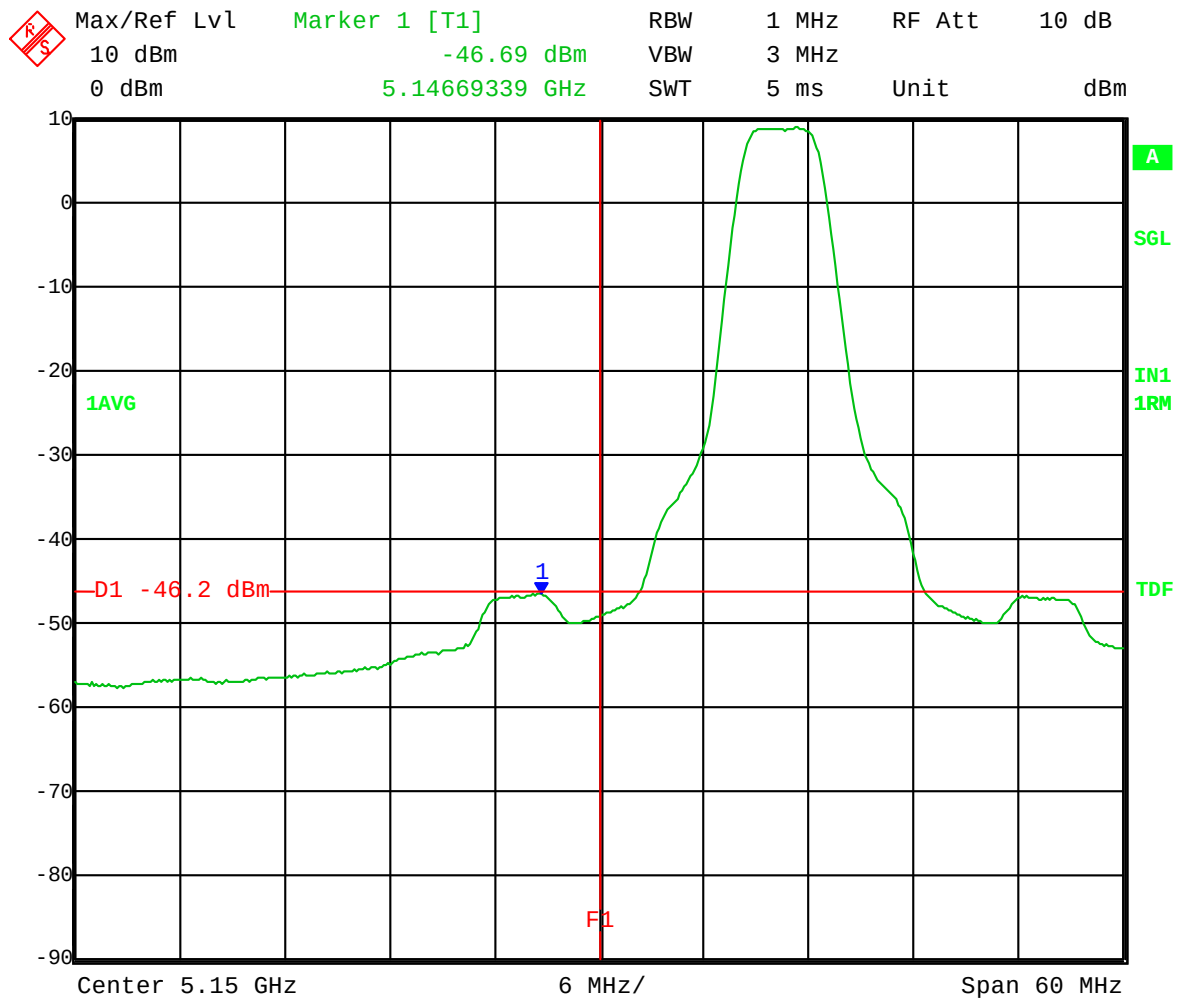
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 10 dB
20 dBm -39.88 dBm VBW 3 MHz
0 dBm 5.08128257 GHz SWT 5 ms Unit dBm



Date: 15.MAY.2014 15:47:54

Test Date: 05-15-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Low Channel Transmit = 5.160 GHz
 5 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -46.2 dBm

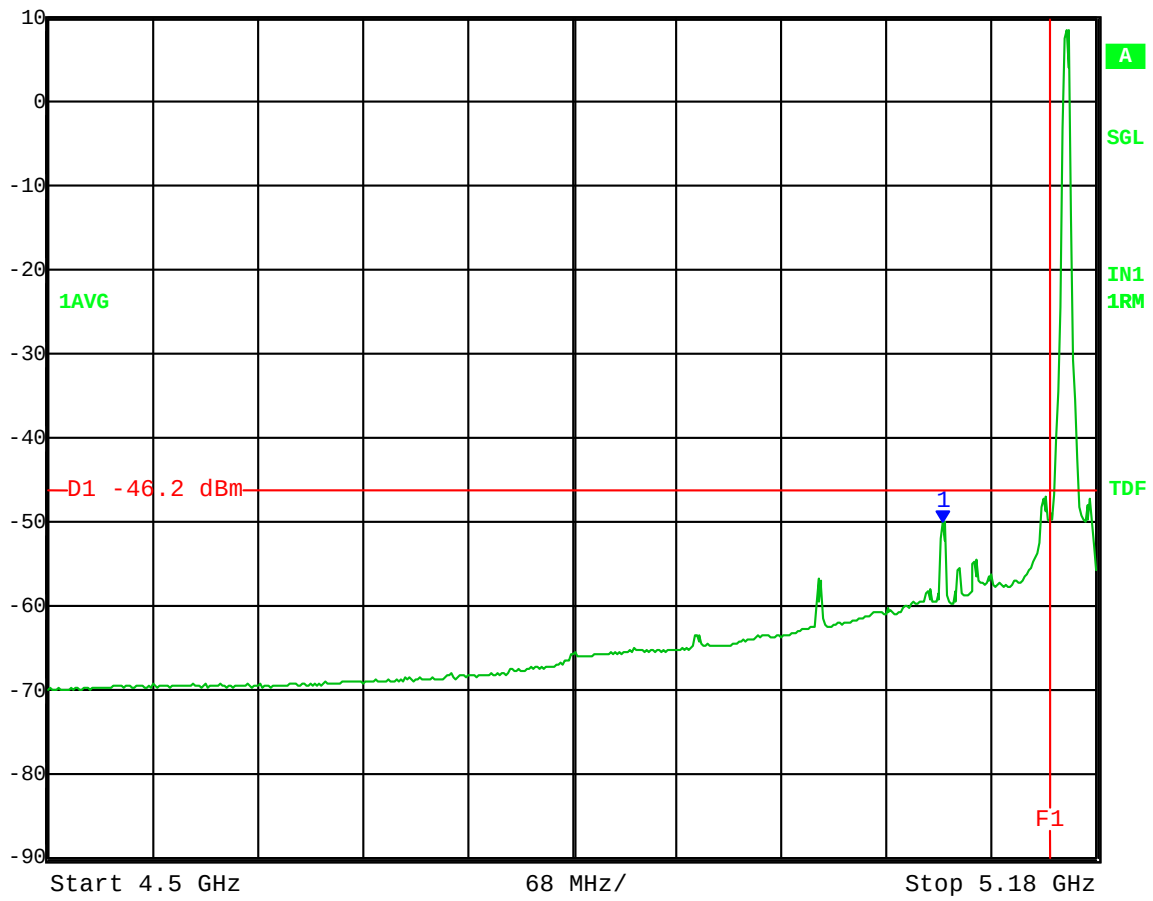
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.150 GHz



Date: 15.MAY.2014 15:43:28



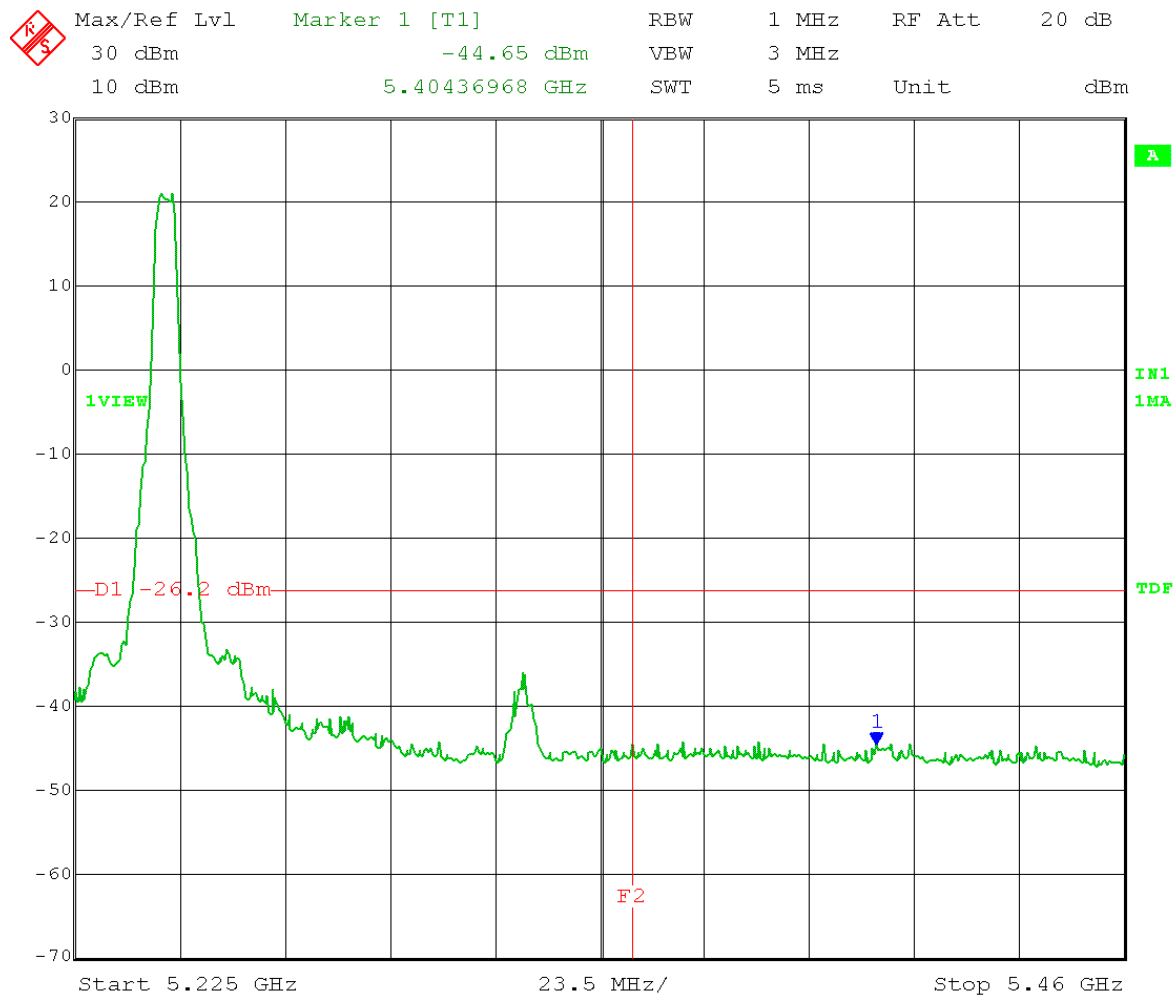
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 10 dB
10 dBm -50.02 dBm VBW 3 MHz
0 dBm 5.07991984 GHz SWT 5 ms Unit dBm



Date: 15.MAY.2014 15:44:33

Test Date: 05-15-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -26.2 dBm

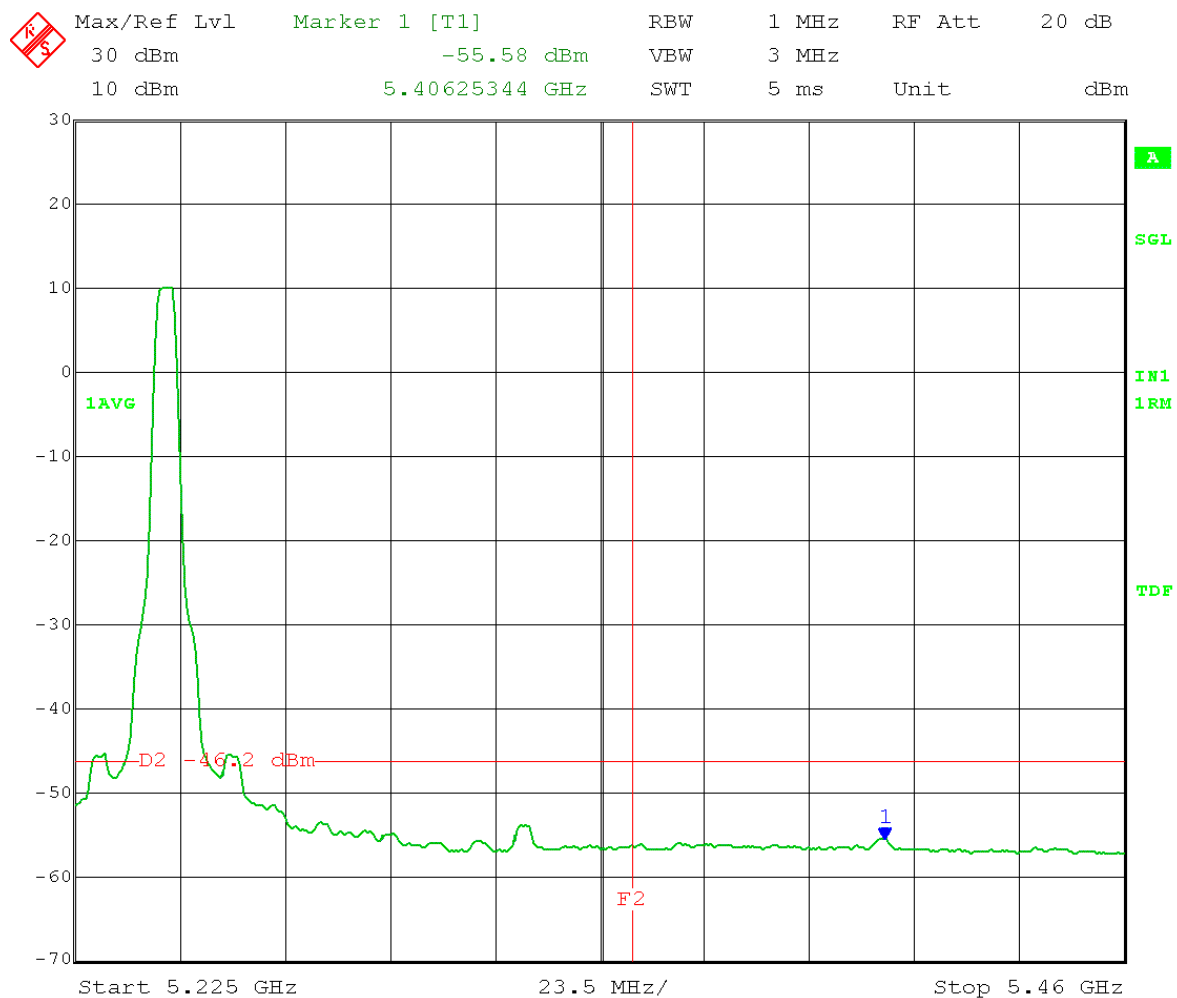
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 15:08:00

Test Date: 05-15-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -46.2 dBm

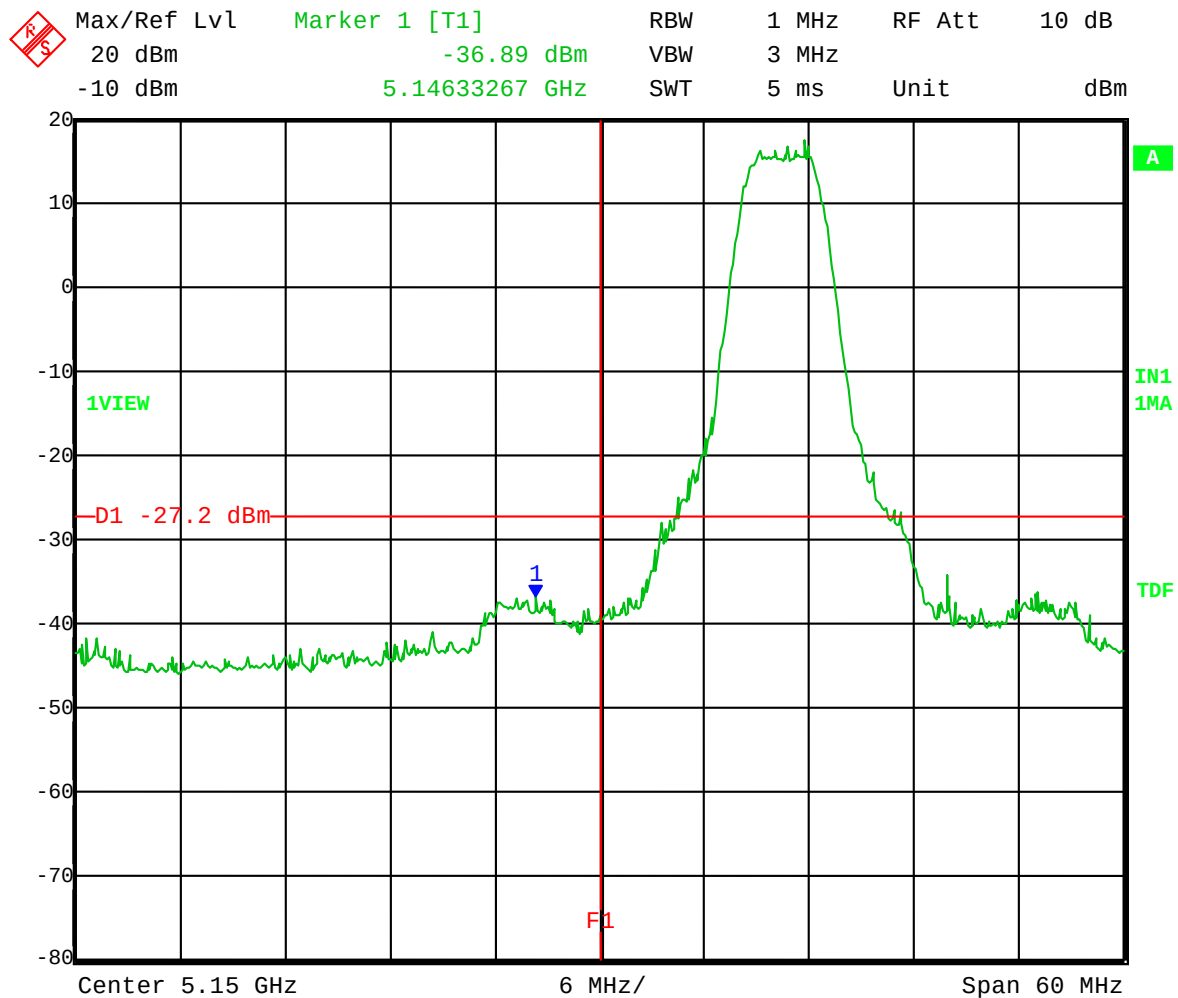
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 18
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 15:06:49

Test Date: 05-15-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.160 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -27.2 dBm

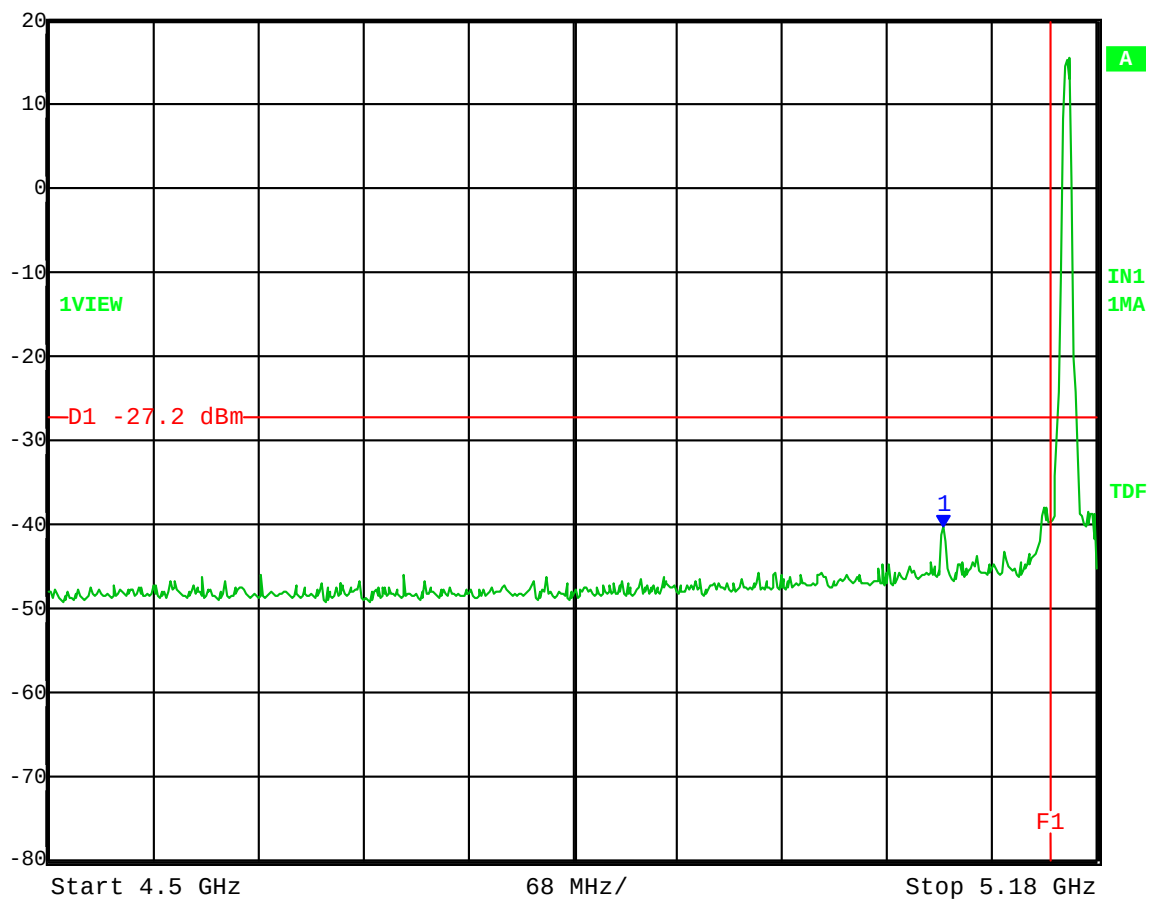
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 15
 Band-edge = 5.150 GHz



Date: 15.MAY.2014 15:19:02



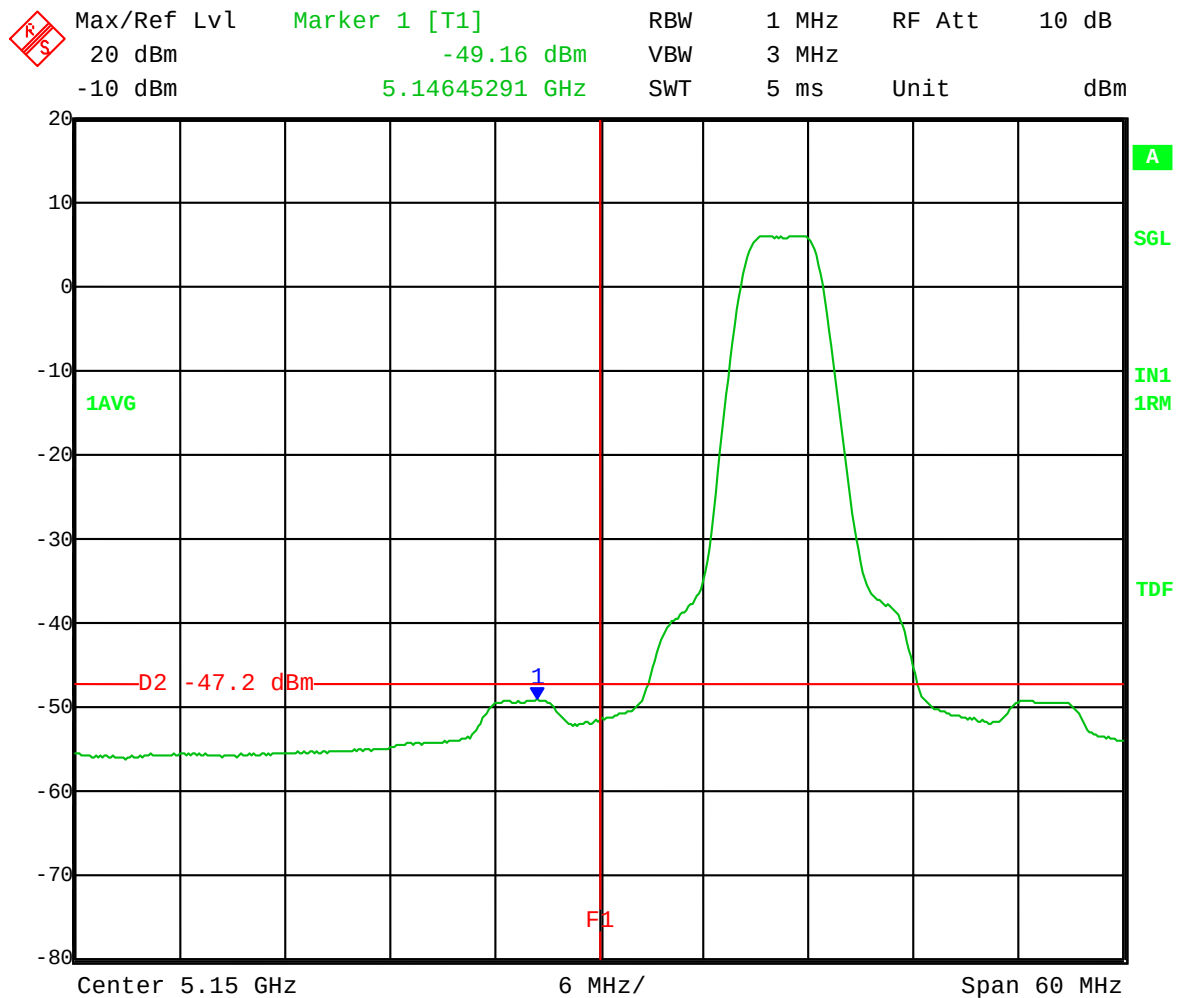
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 10 dB
20 dBm -40.34 dBm VBW 3 MHz
-10 dBm 5.08092184 GHz SWT 5 ms Unit dBm



Date: 15.MAY.2014 15:19:41

Test Date: 05-15-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Low Channel Transmit = 5.160 GHz
 5 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 15
 Band-edge = 5.150 GHz



Date: 15.MAY.2014 15:16:00



Max/Ref Lvl

20 dBm

-10 dBm

Marker 1 [T1]

-51.25 dBm

5.08240481 GHz

RBW

1 MHz

RF Att

10 dB

VBW

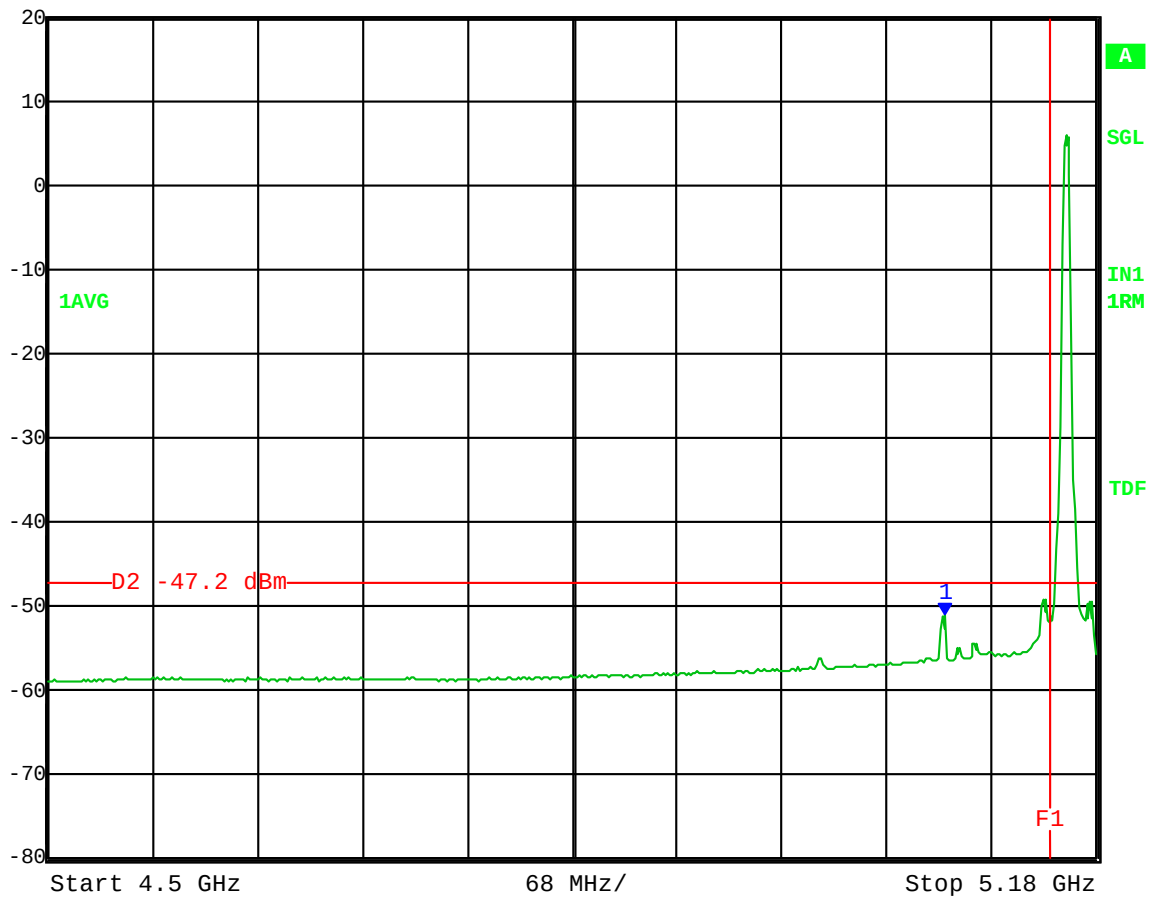
3 MHz

SWT

5 ms

Unit

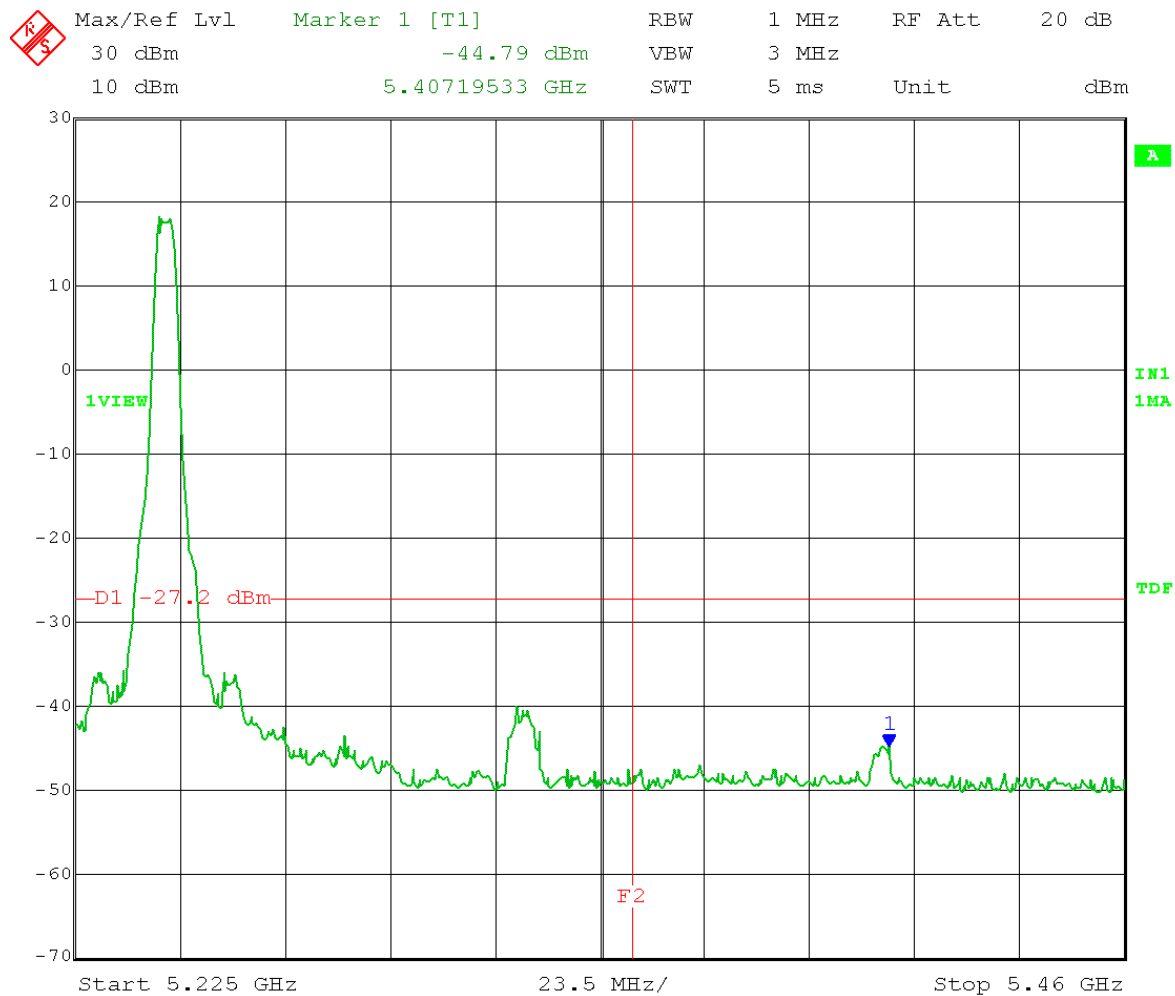
dBm



Date: 15.MAY.2014 15:17:41

Test Date: 05-15-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -27.2 dBm

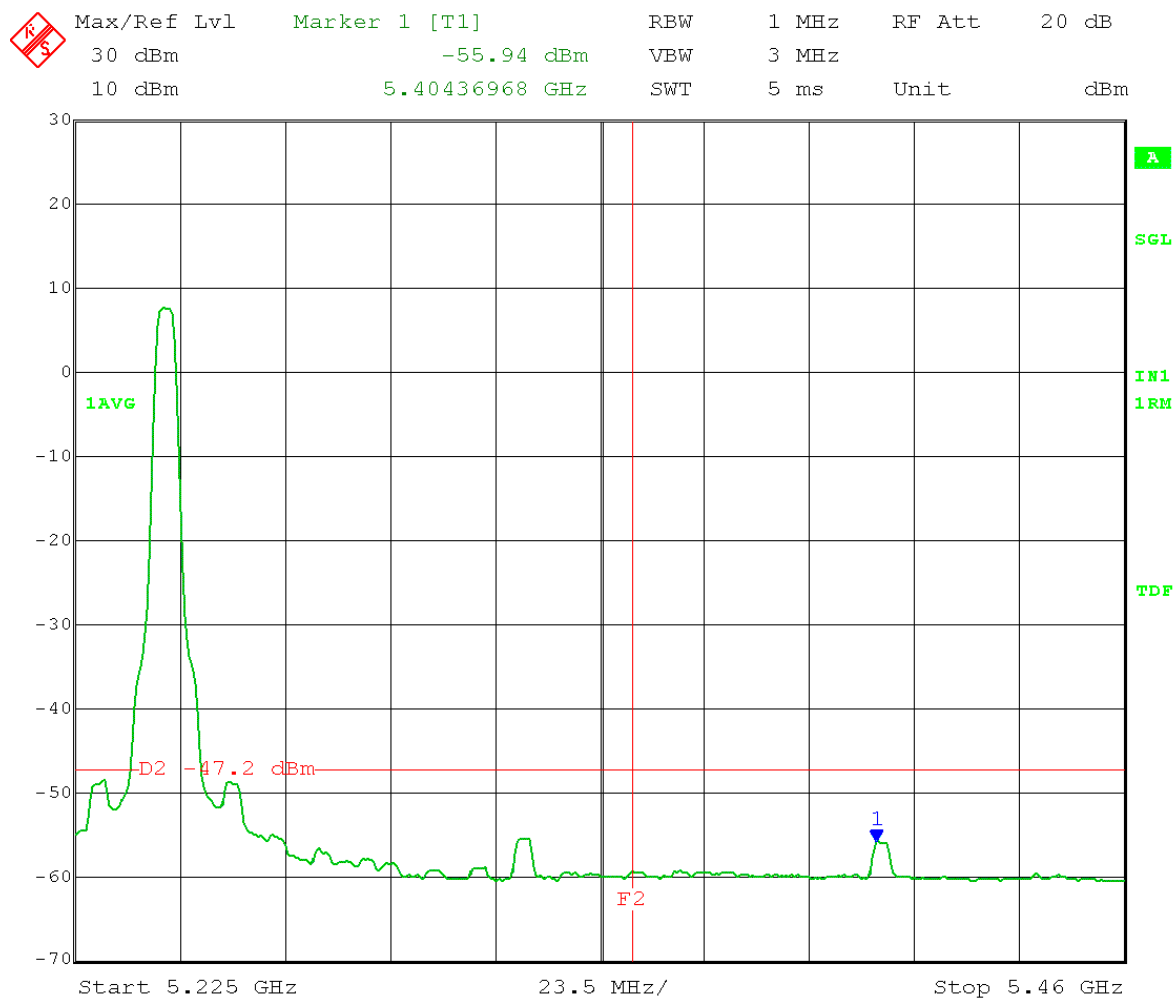
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 15
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 14:49:16

Test Date: 05-15-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

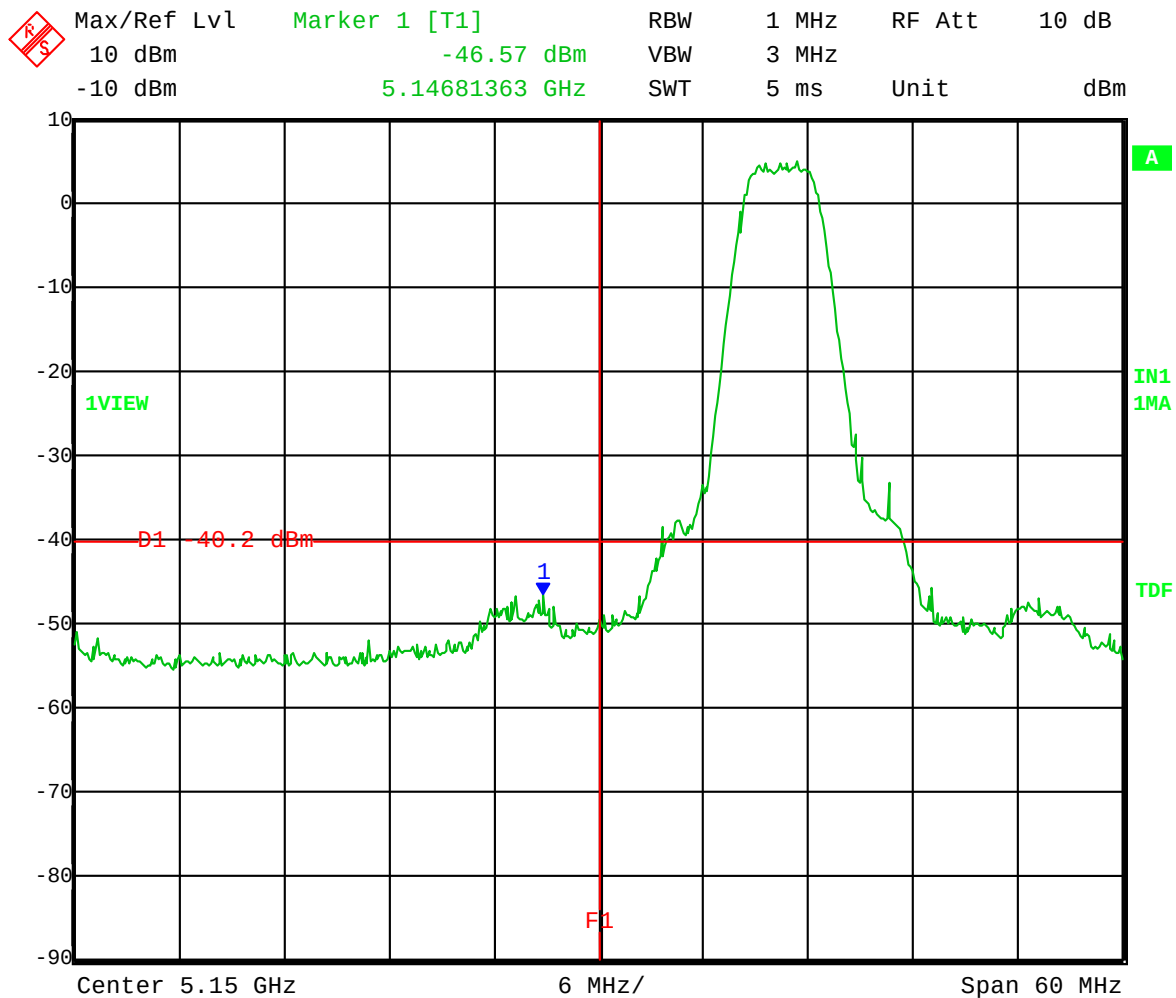
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 15
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 14:47:46

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna assembly gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.160 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna assembly gain – 3 dB (MIMO) = -40.2 dBm

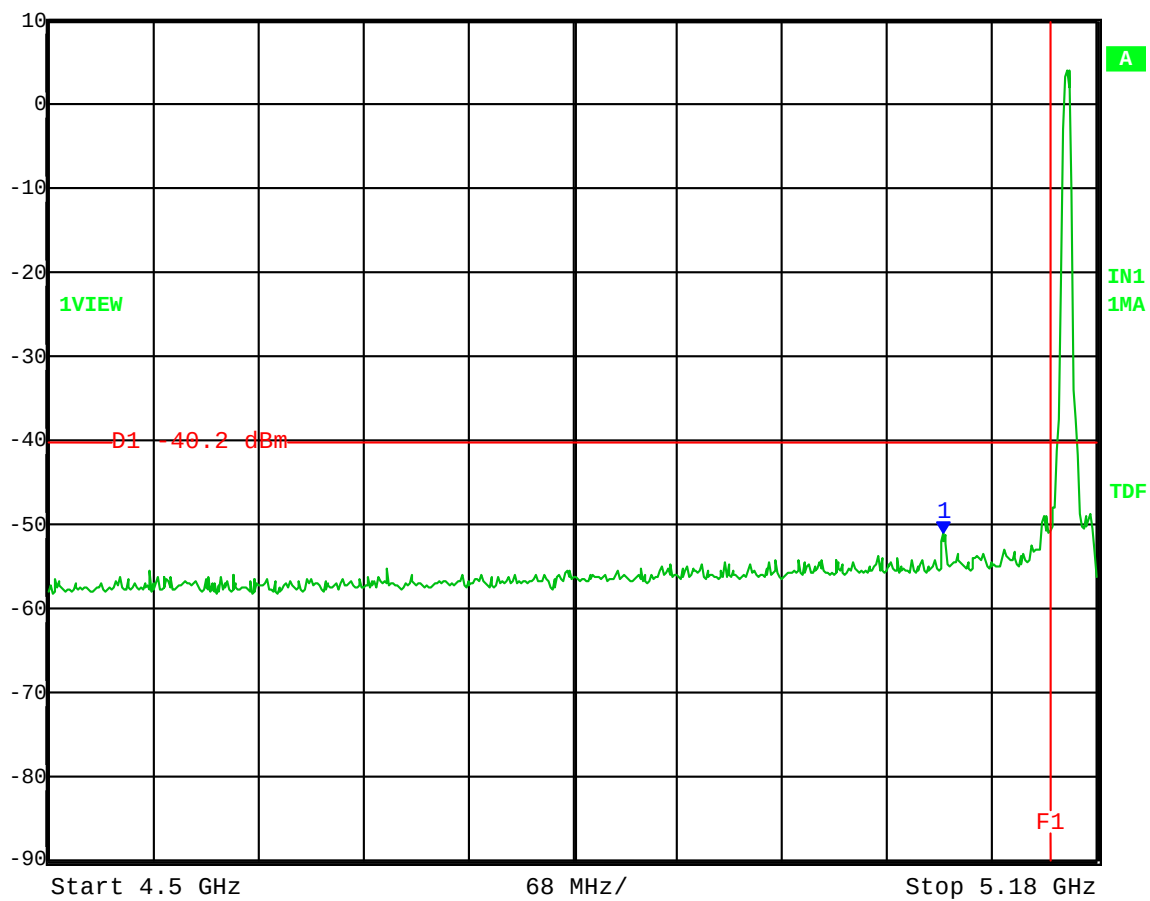
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 4
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 10:25:49

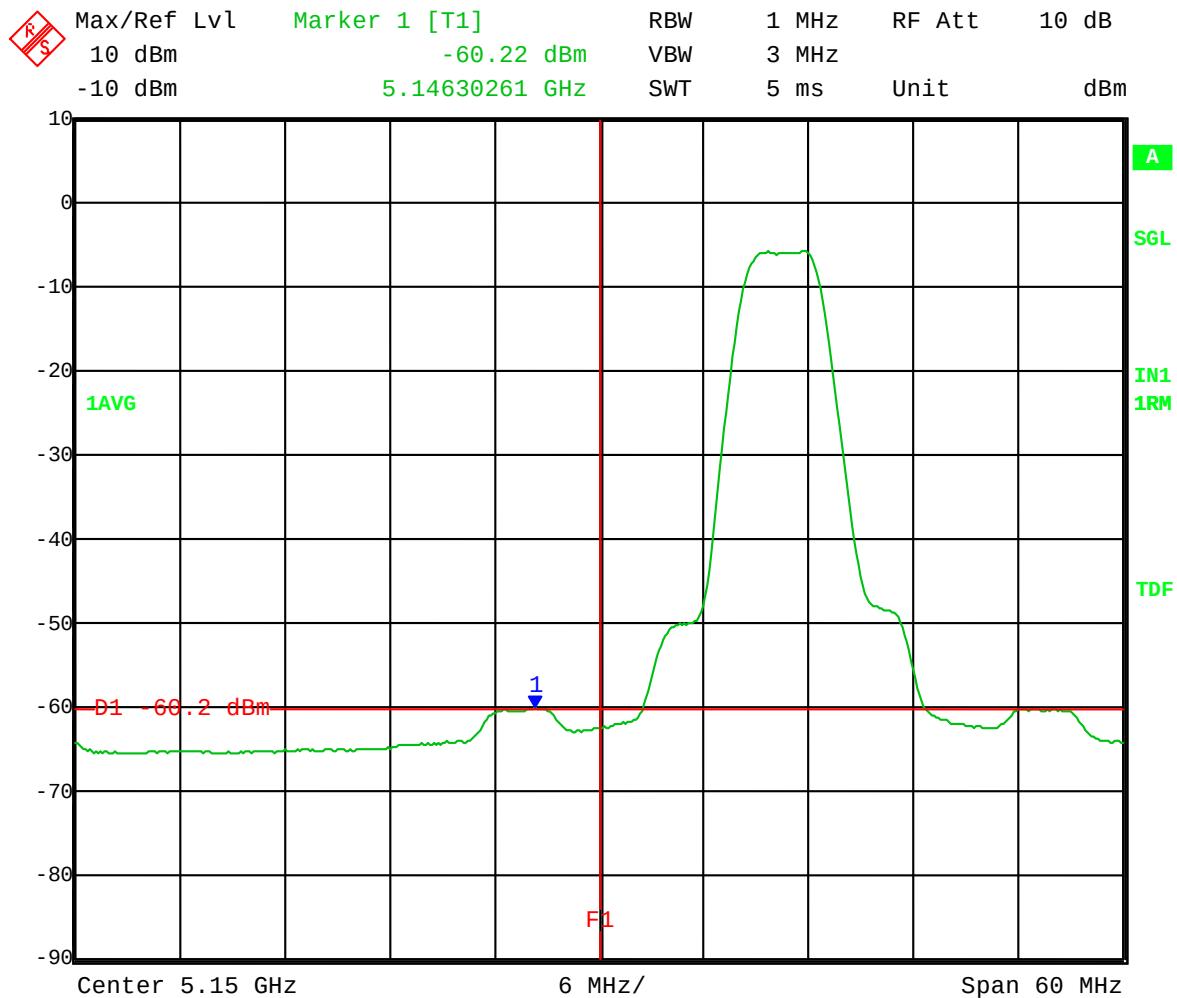


Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 10 dB
10 dBm -51.14 dBm VBW 3 MHz
-10 dBm 5.08089178 GHz SWT 5 ms Unit dBm



Date: 16.MAY.2014 10:24:48

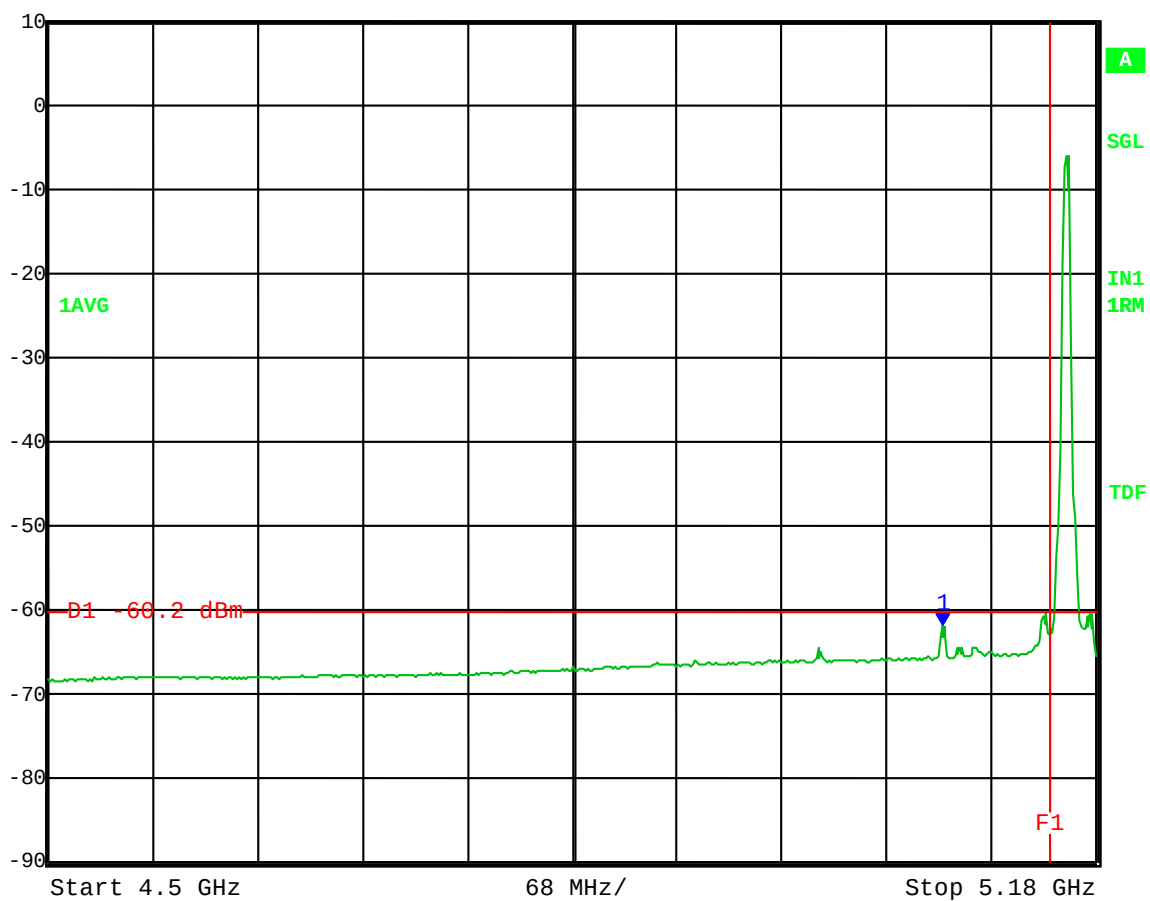
Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna assembly gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz VBW $\geq$ 3 MHz
 Detector = RMS Trace = Average 200 traces
 Channel 0 ESN# 000456C560B4
 Low Channel Transmit = 5.160 GHz Output power setting: 4
 5 MHz BW Band-edge = 5.150 GHz
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna
 assembly gain – 3 dB (MIMO) = -60.2 dBm



Date: 16.MAY.2014 10:22:15



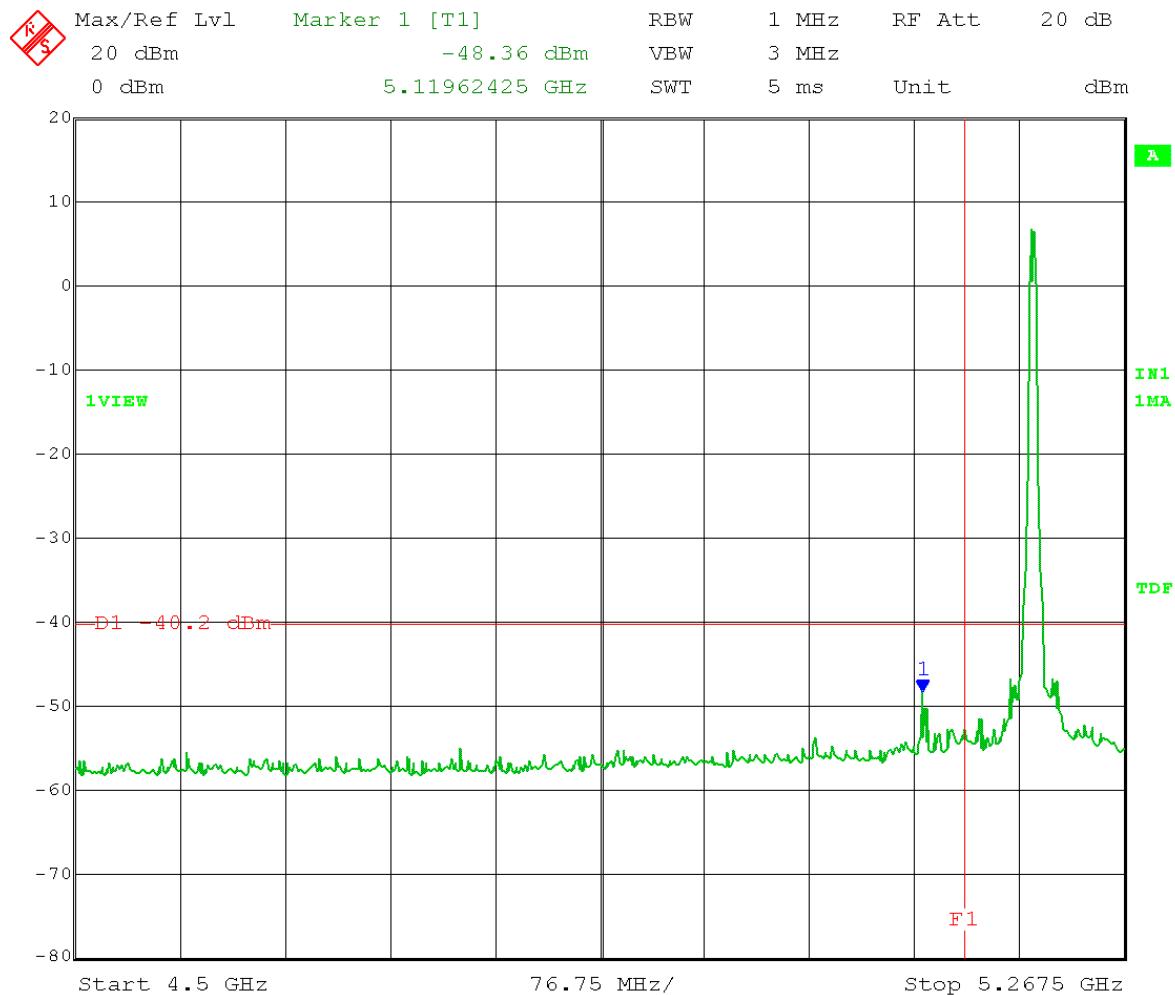
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 10 dB
10 dBm -61.84 dBm VBW 3 MHz
-10 dBm 5.08089178 GHz SWT 5 ms Unit dBm



Date: 16.MAY.2014 10:23:41

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna assembly gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna
 assembly gain – 3 dB (MIMO) = -40.2 dBm

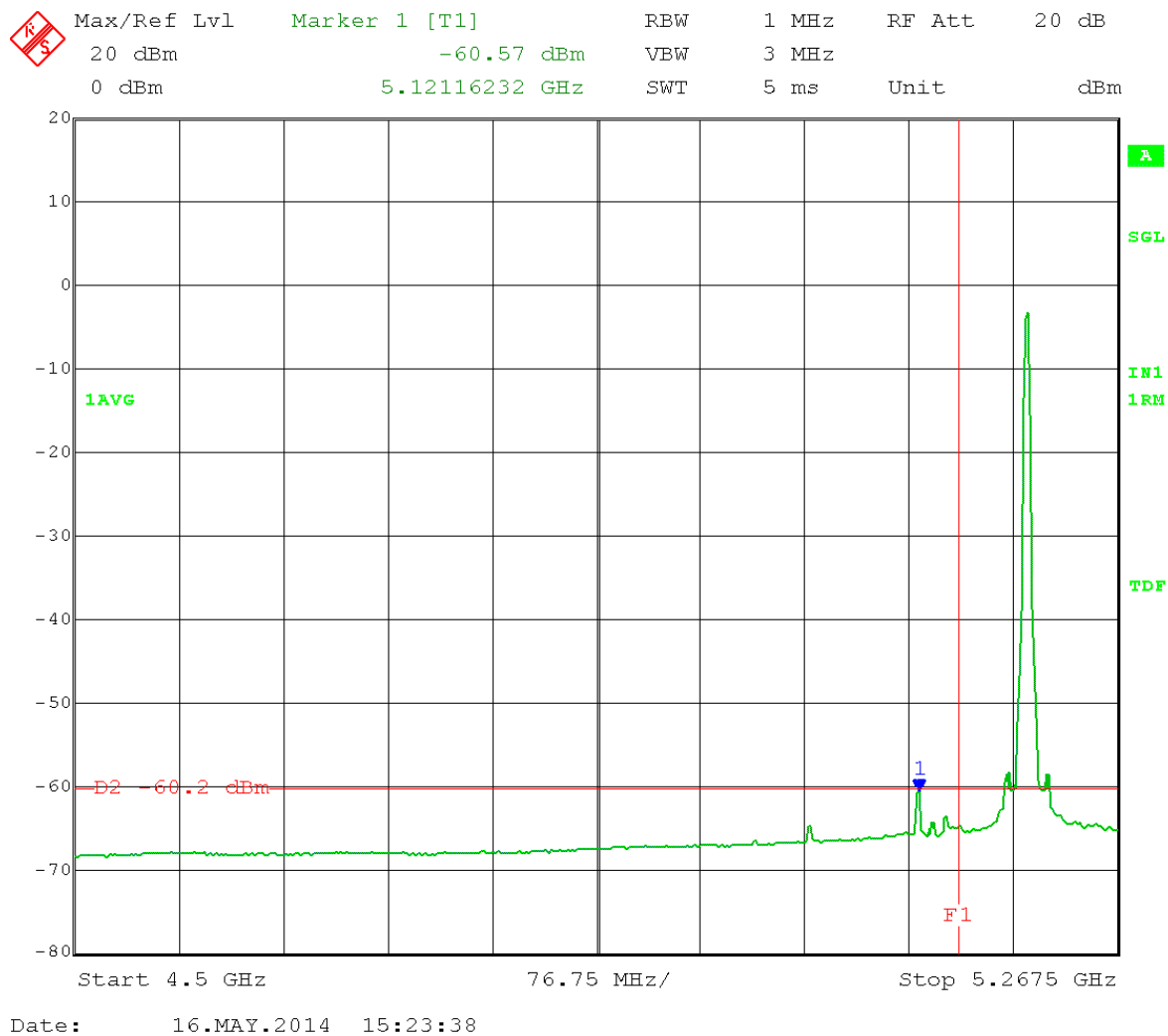
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 10-6dB
 external atten. = 4
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 15:21:26

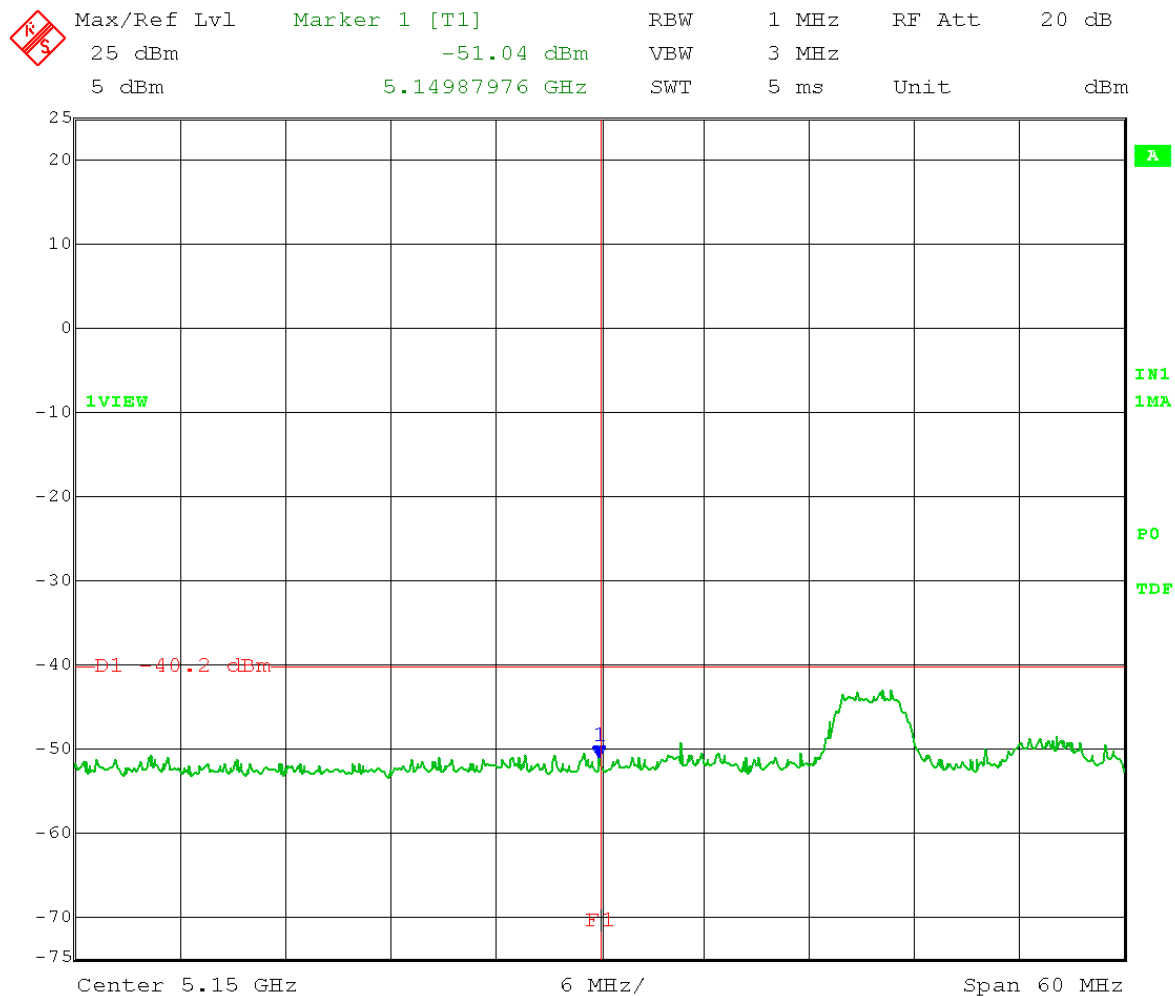
Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna assembly gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna
 assembly gain – 3 dB (MIMO) = -60.2 dBm

VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 10-dB
 external atten. = 4
 Band-edge = 5.150 GHz



Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna assembly gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna
 assembly gain – 3 dB (MIMO) = -40.2 dBm

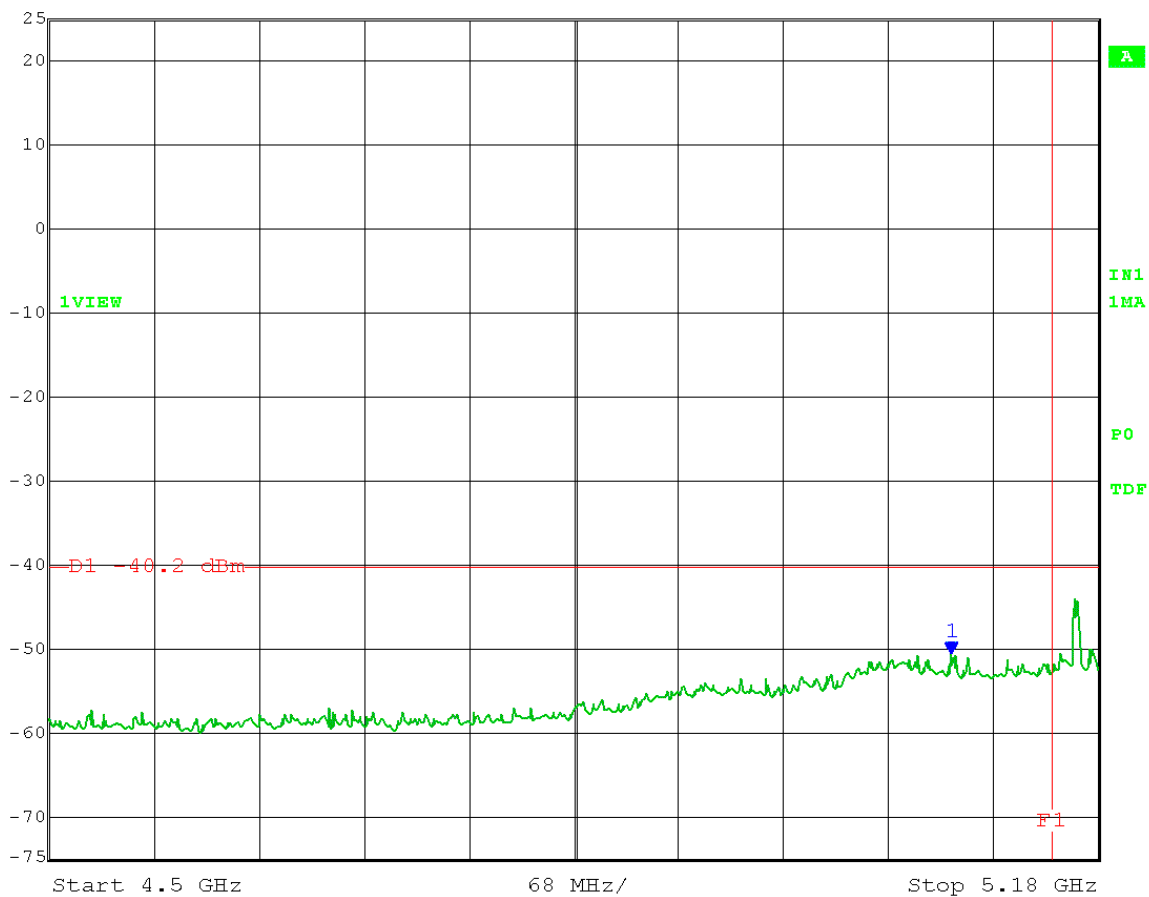
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 28-10dB
 external atten. = 18
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 14:22:19



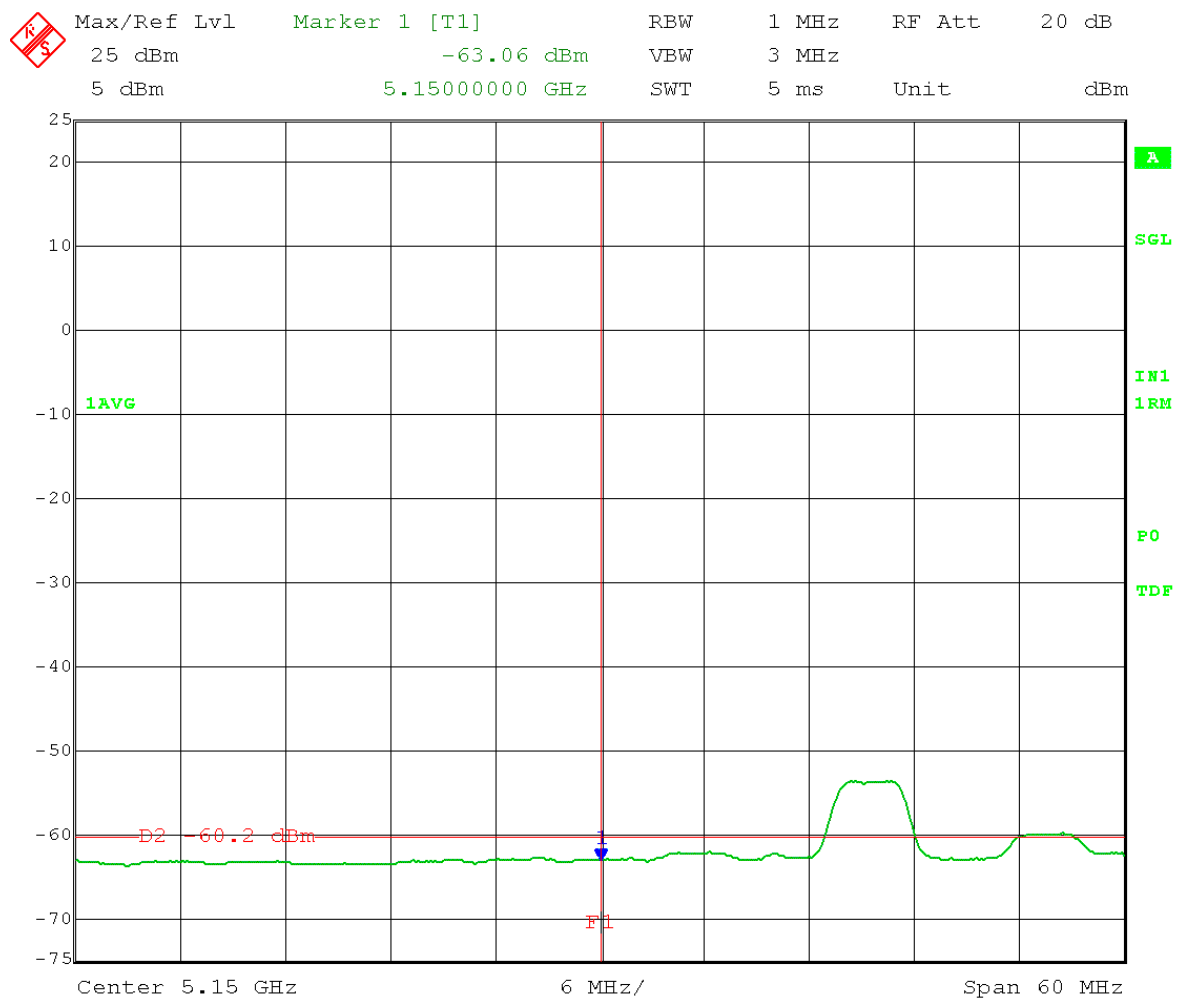
Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	20 dB
25 dBm	-50.69 dBm	VBW	3 MHz		
5 dBm	5.08446894 GHz	SWT	5 ms	Unit	dBm



Date: 16.MAY.2014 14:23:04

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna assembly gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna assembly gain – 3 dB (MIMO) = -60.2 dBm

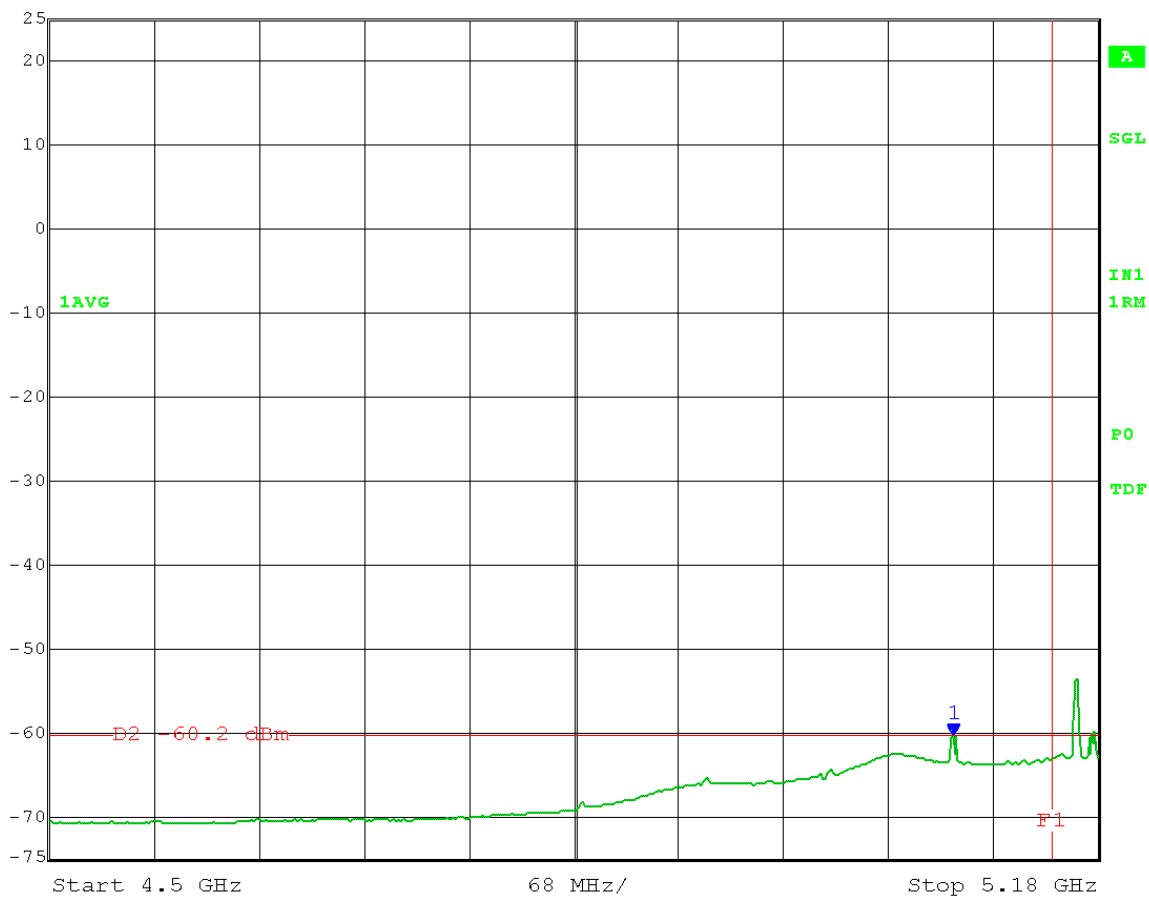
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 28-10dB
 external atten. = 18
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 14:21:27



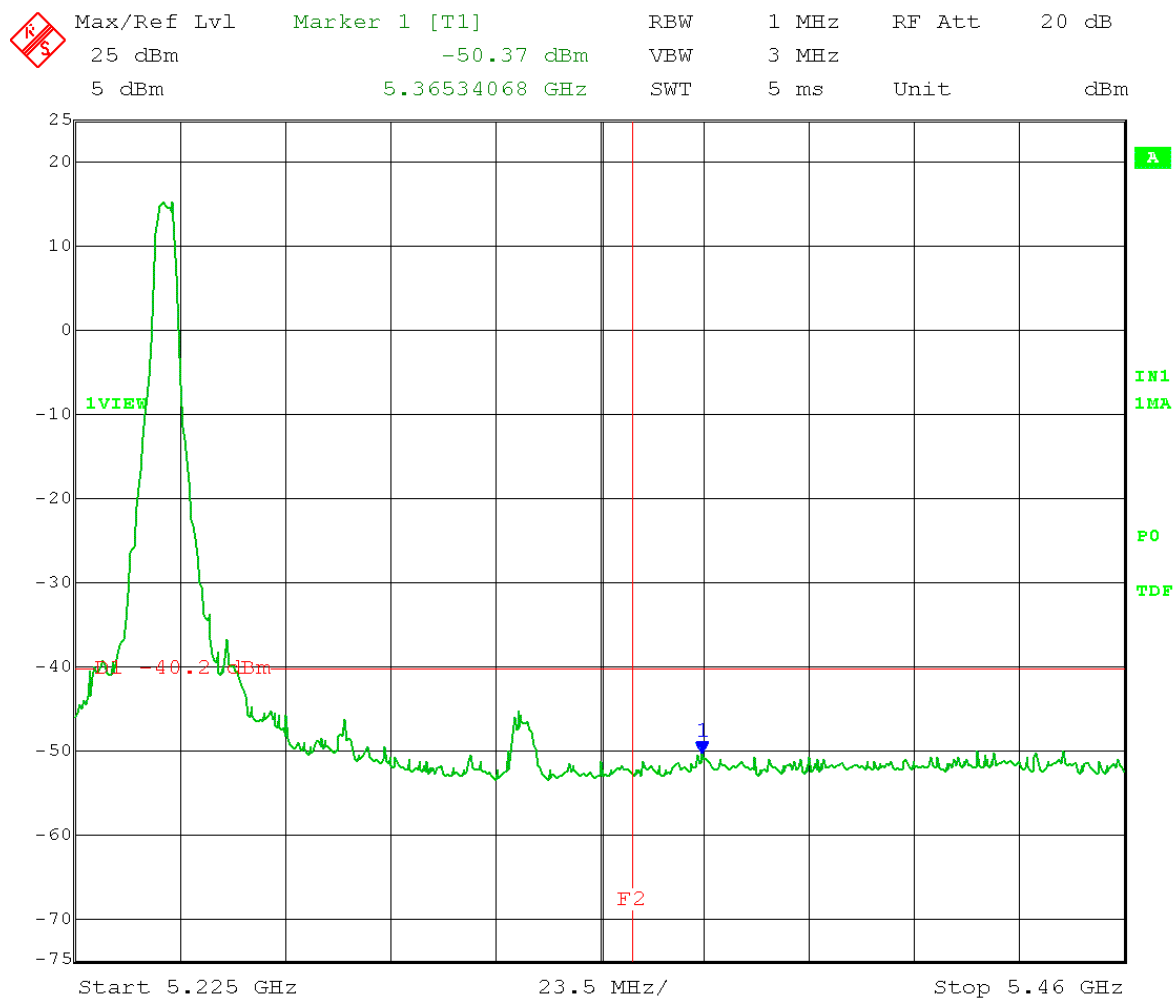
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 20 dB
25 dBm -60.36 dBm VBW 3 MHz
5 dBm 5.08539830 GHz SWT 5 ms Unit dBm



Date: 16.MAY.2014 14:19:55

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna assembly gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna
 assembly gain – 3 dB (MIMO) = -40.2 dBm

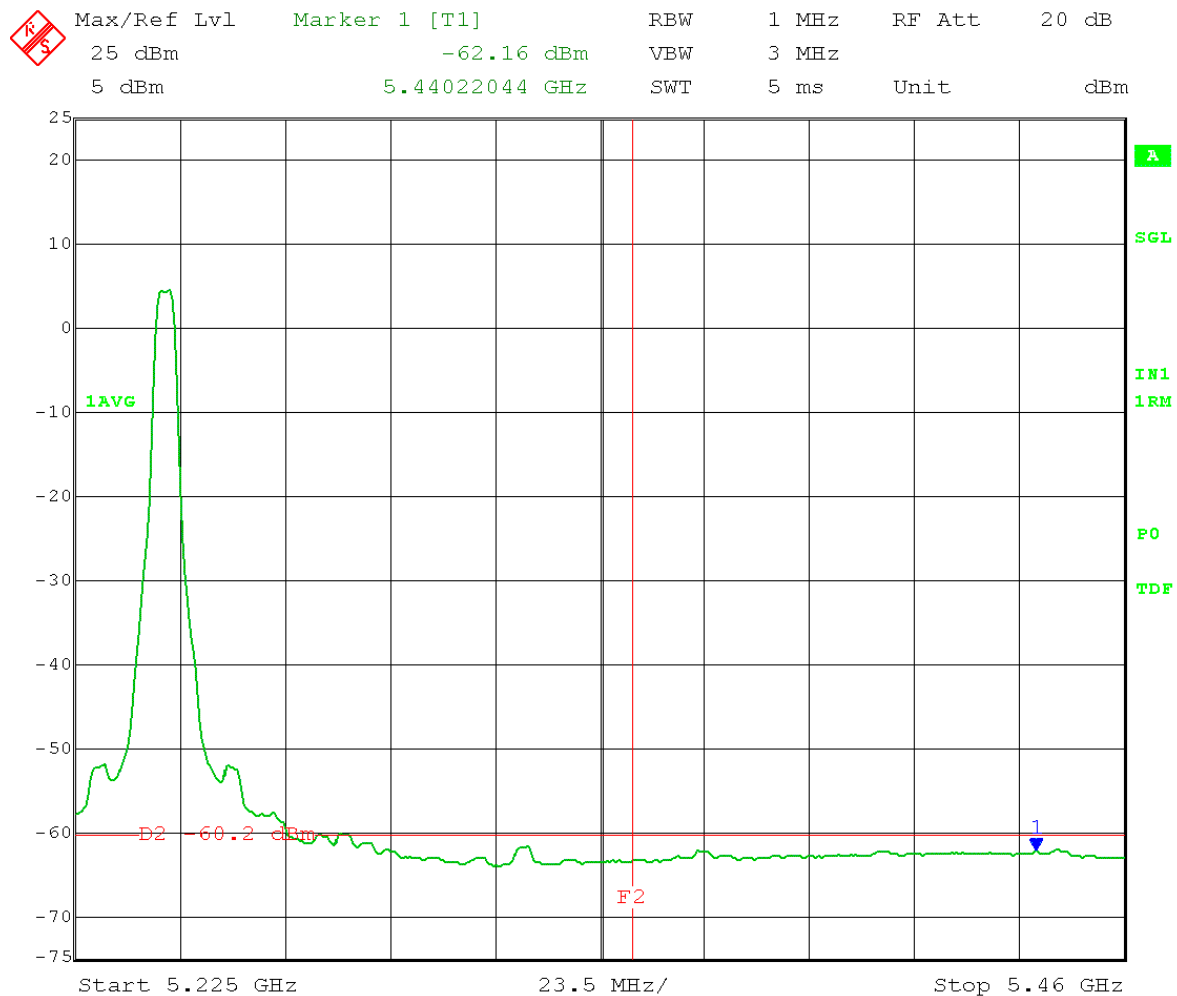
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 28-10dB
 external atten. = 18
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 14:30:01

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna assembly gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna assembly gain – 3 dB (MIMO) = -60.2 dBm

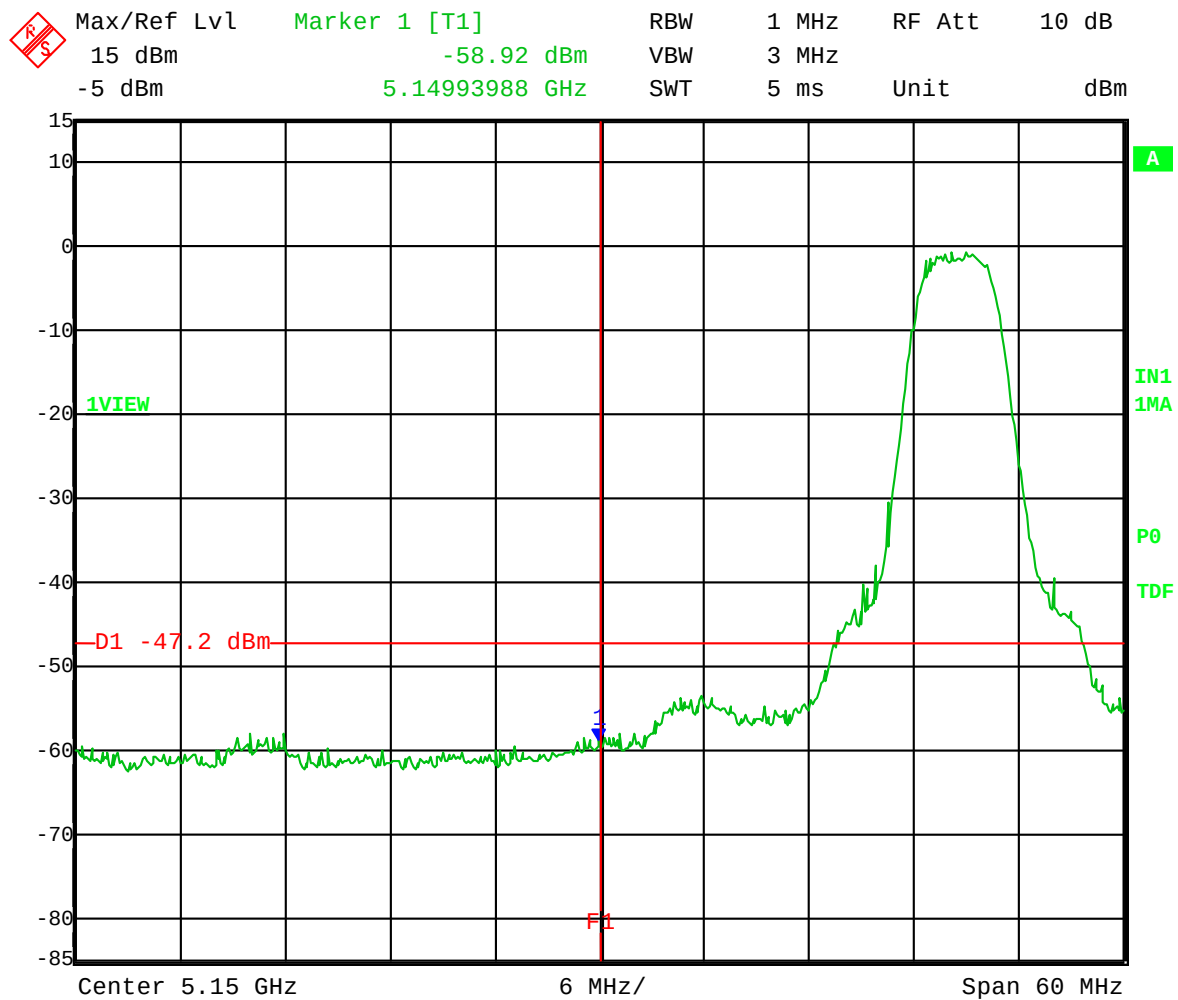
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 18-10dB
 external atten. = 8
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 14:28:49

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.170 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 3 – 6 dB
 external attenuator = -3
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 11:16:21



Max/Ref Lvl

Marker 1 [T1]

RBW

1 MHz

RF Att

10 dB

15 dBm

-57.03 dBm

VBW

3 MHz

-5 dBm

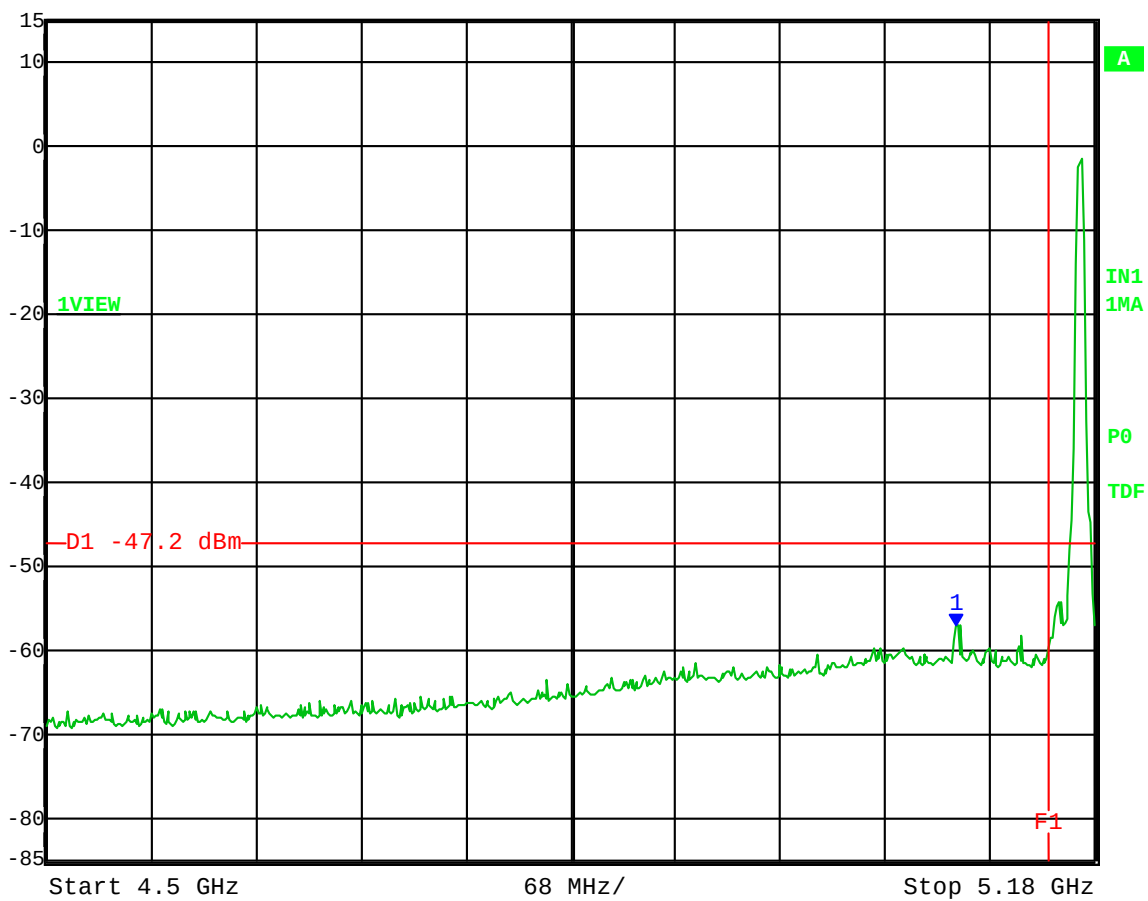
5.08997996 GHz

SWT

5 ms

Unit

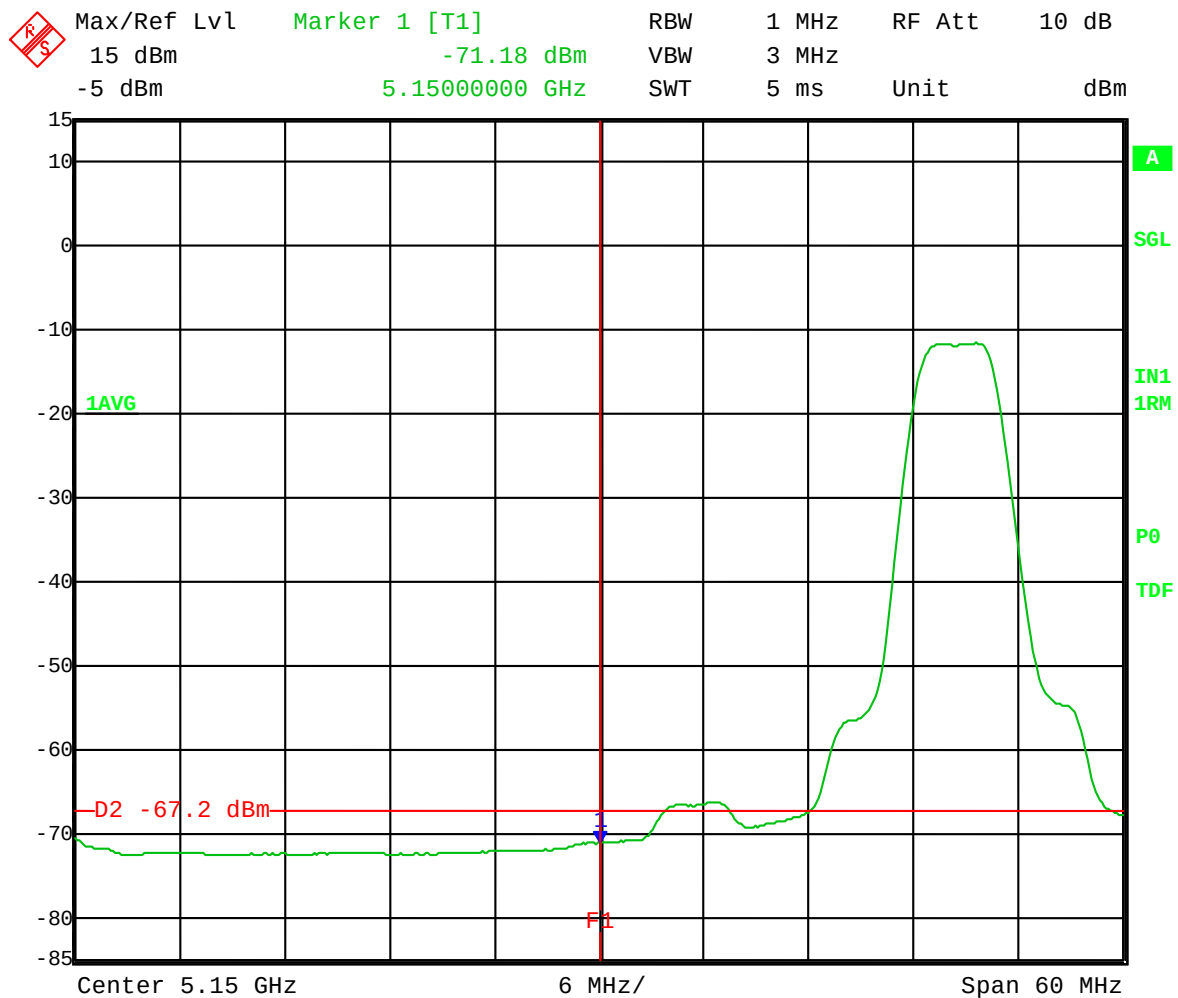
dBm



Date: 16.MAY.2014 11:17:05

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Low Channel Transmit = 5.170 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -67.2 dBm

VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 3 – 6 dB
 external attenuator = -3
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 11:31:09



Max/Ref Lvl

15 dBm

-5 dBm

Marker 1 [T1]

-67.96 dBm

5.09140281 GHz

RBW

1 MHz

RF Att

10 dB

VBW

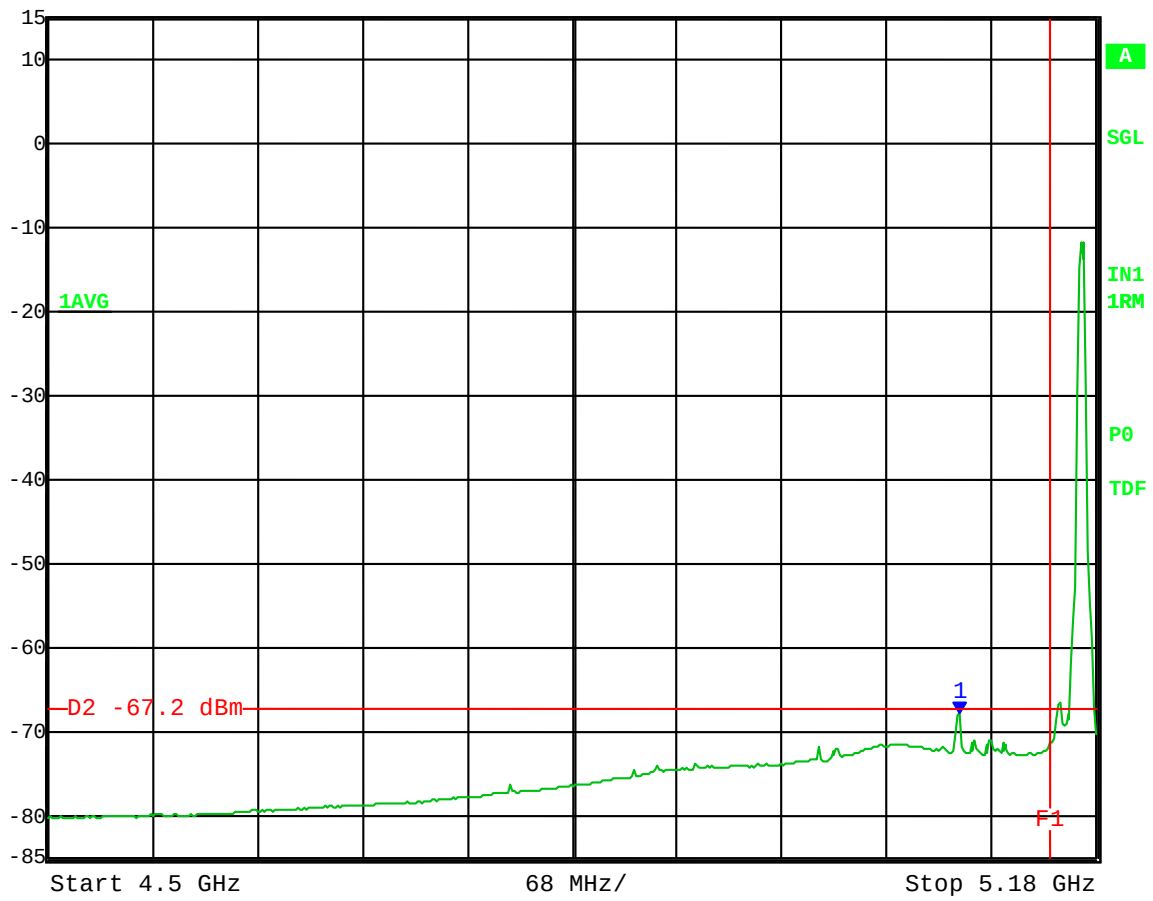
3 MHz

SWT

5 ms

Unit

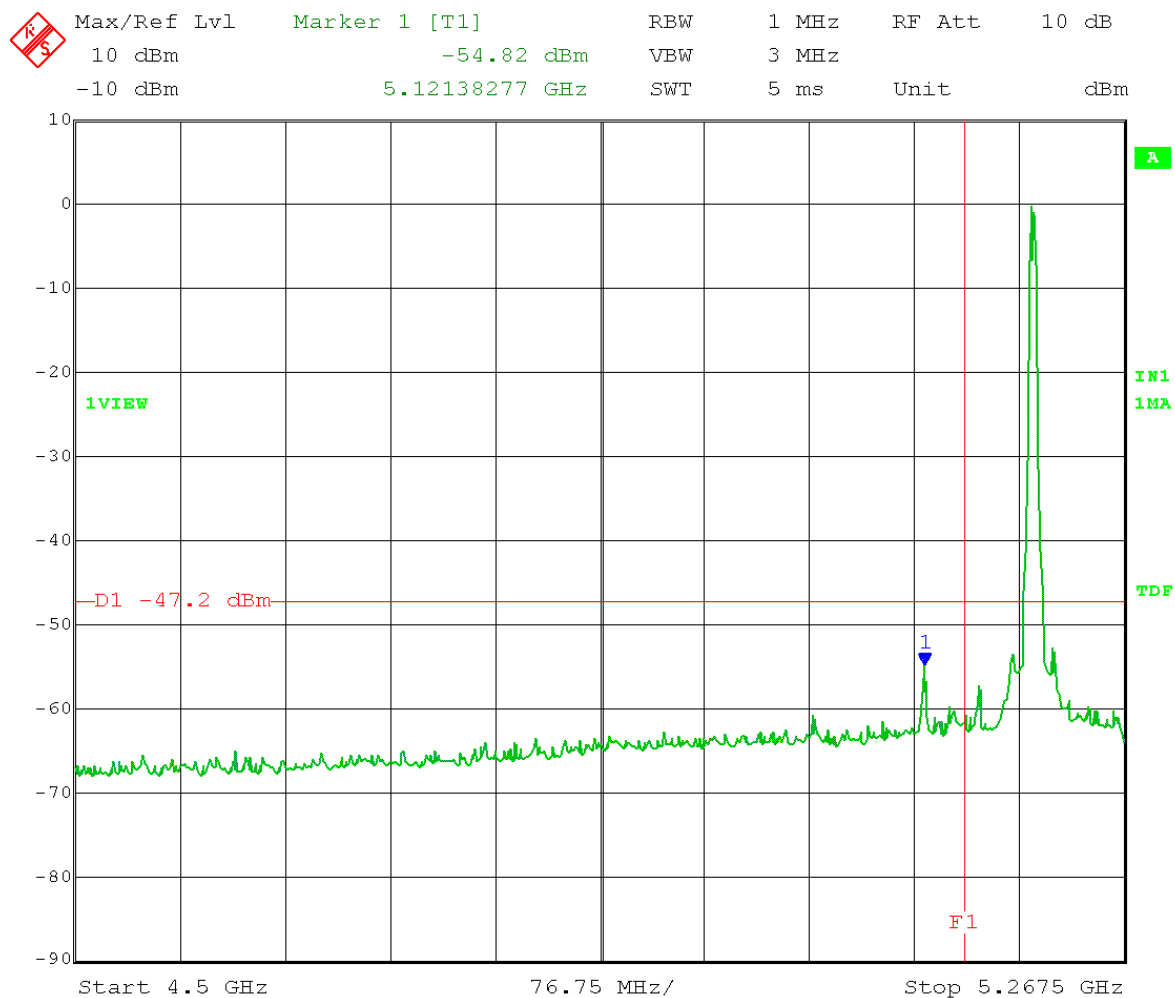
dBm



Date: 16.MAY.2014 11:32:02

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

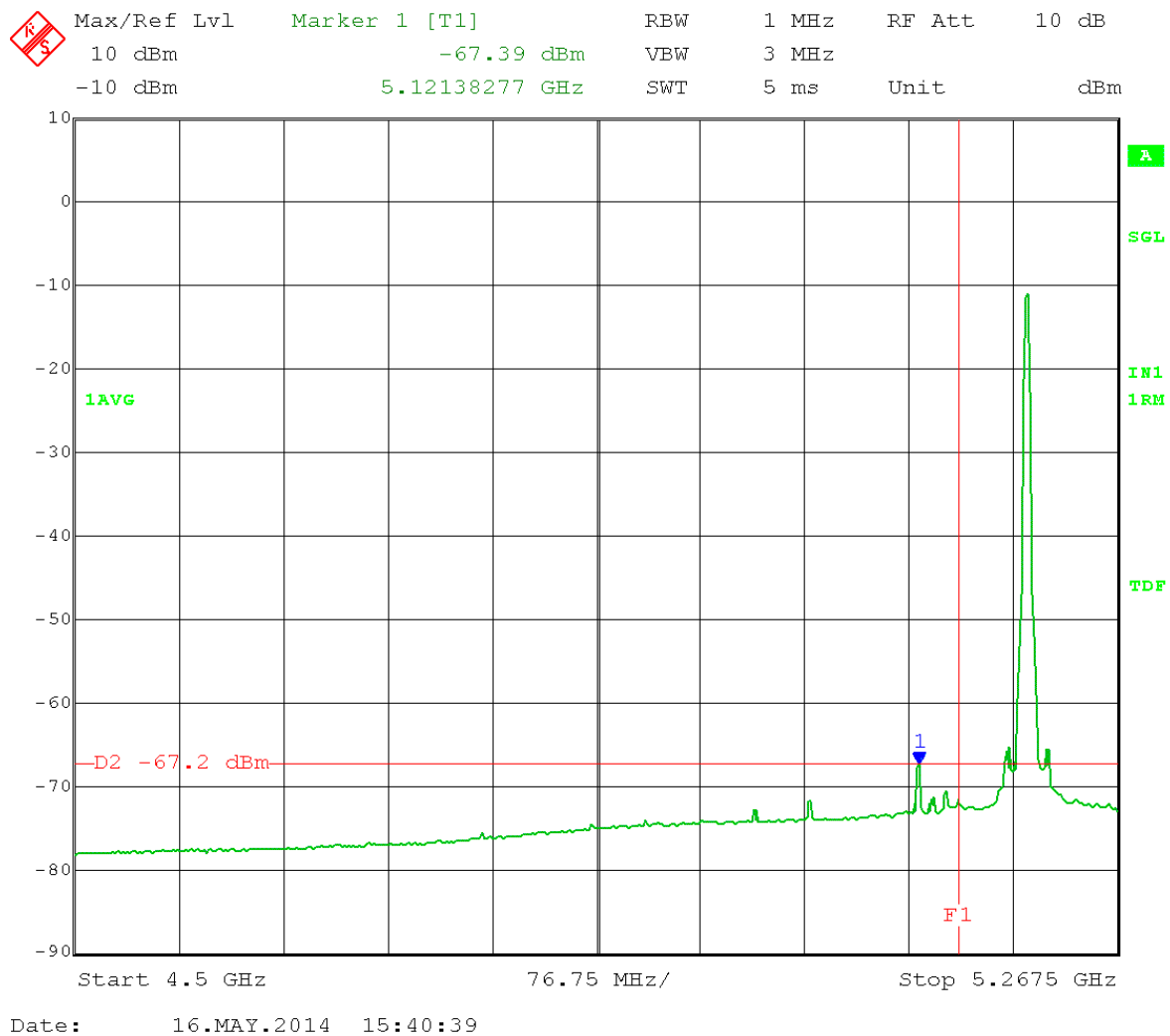
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 3–6dB
 external attenuator = -3
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 15:41:39

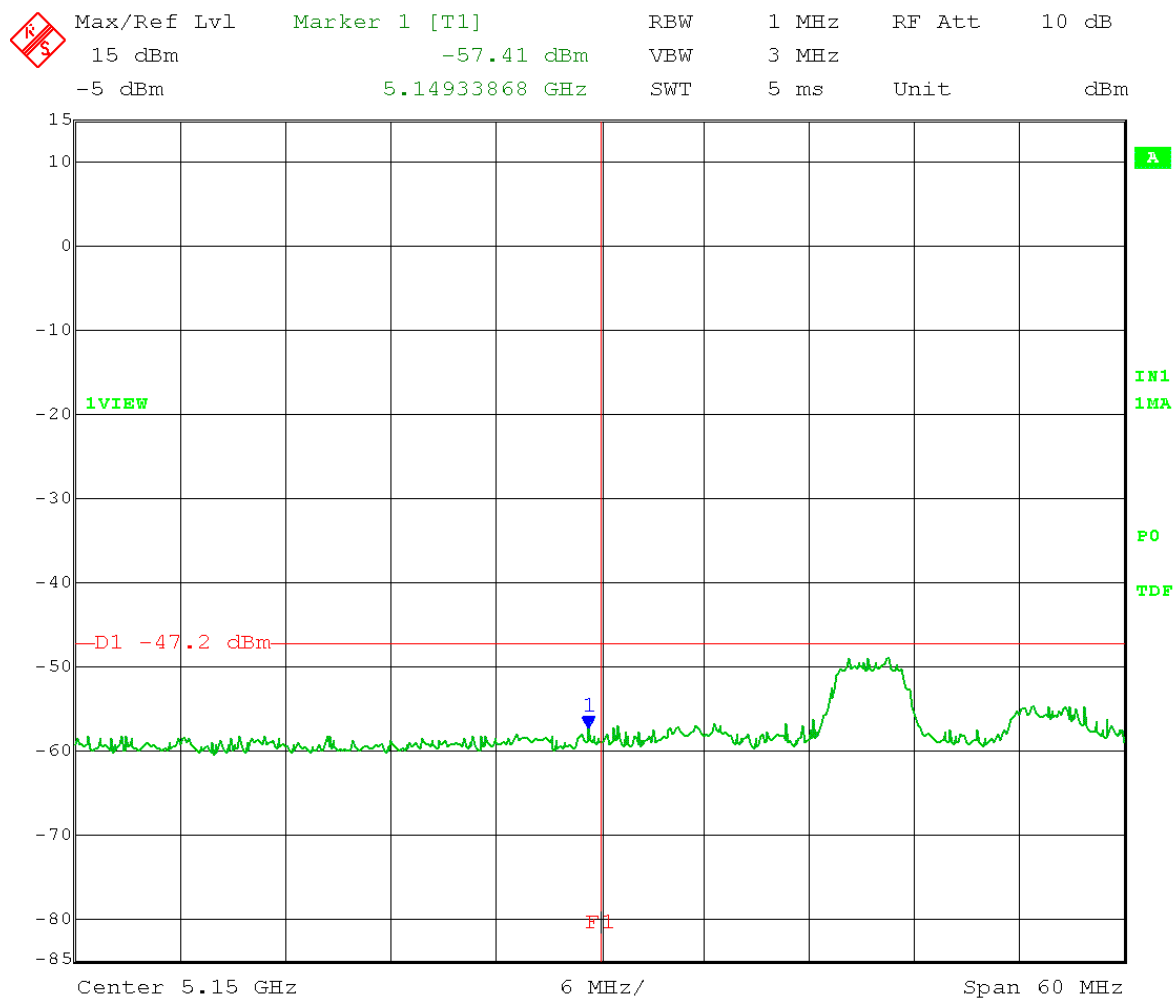
Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -67.2 dBm

VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 3–6dB
 external attenuator = -3
 Band-edge = 5.150 GHz



Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

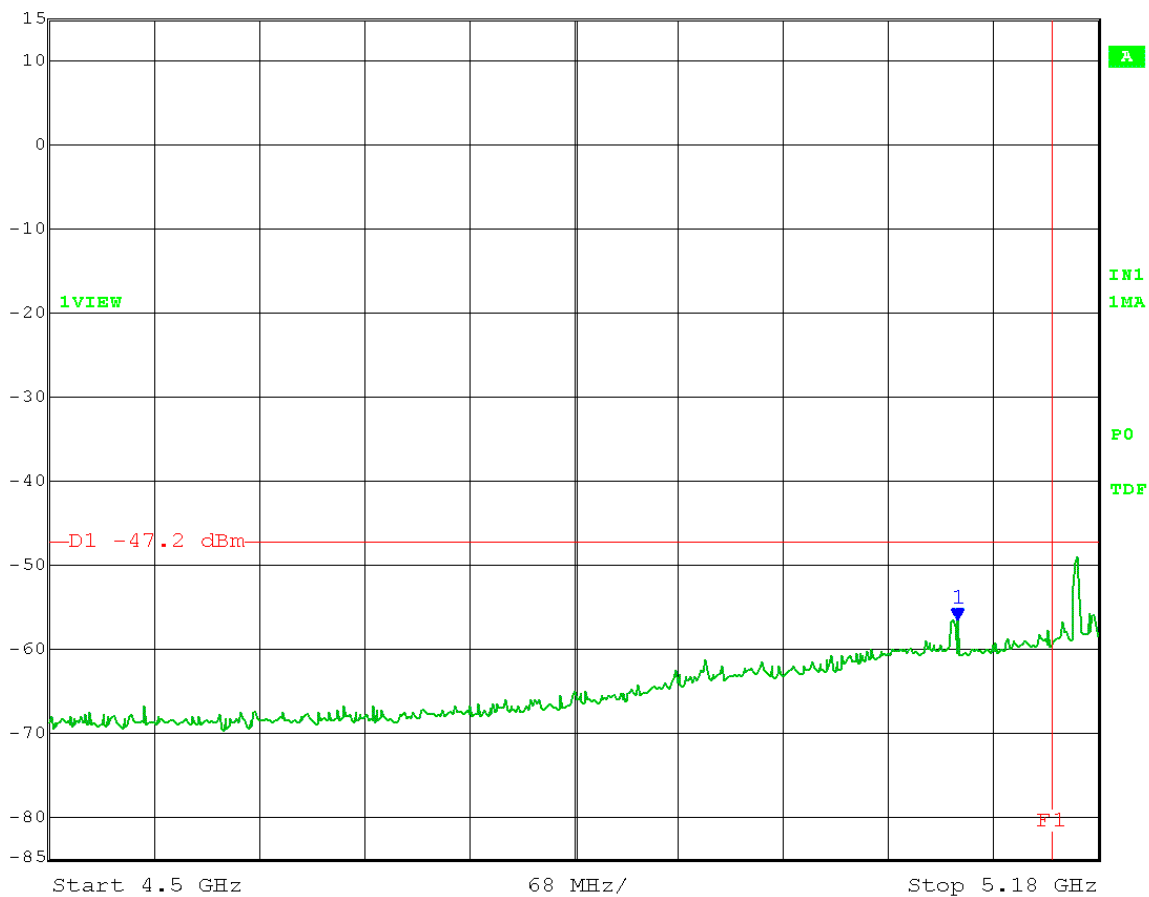
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 17–10dB
 external attenuator = 7
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 13:58:33



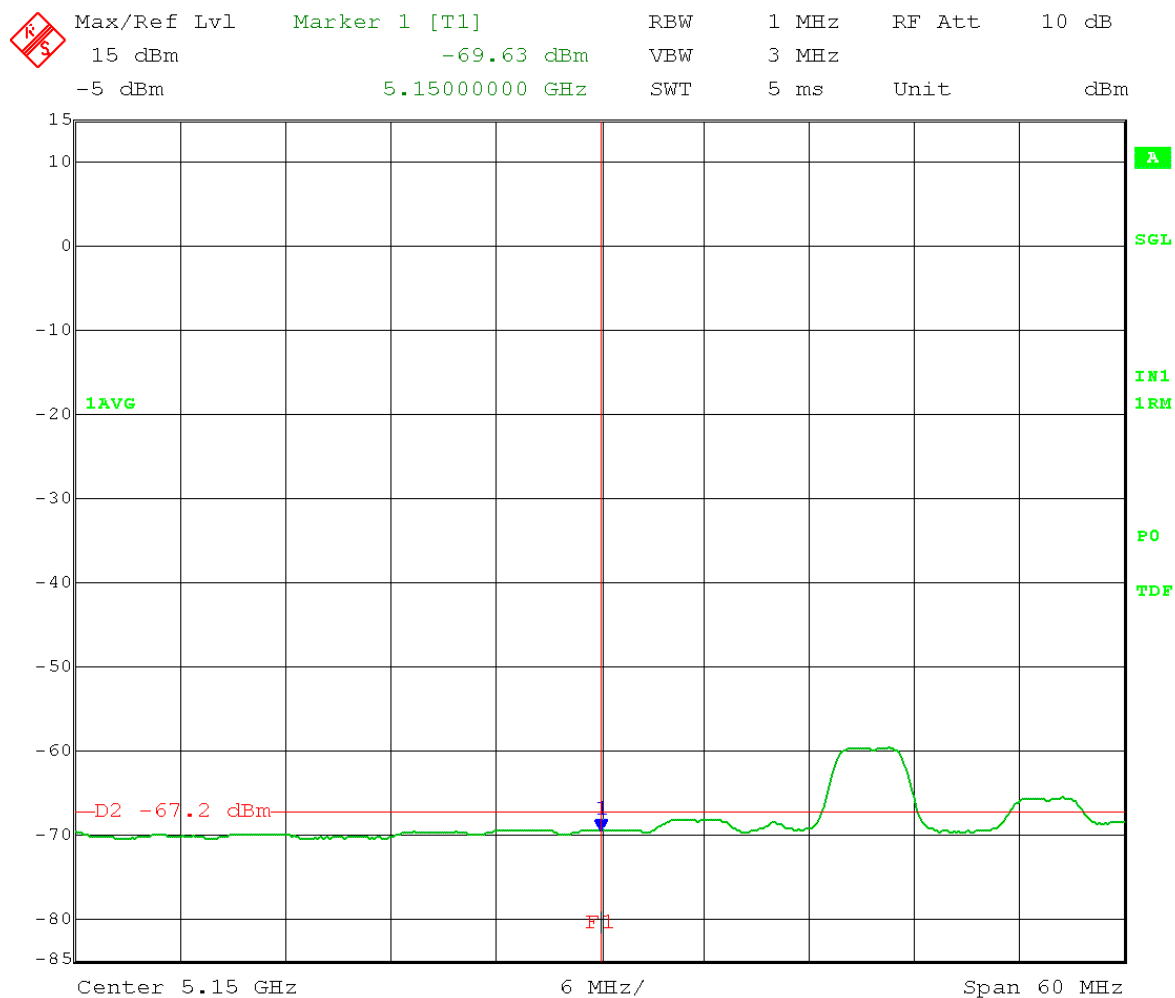
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 10 dB
15 dBm -56.59 dBm VBW 3 MHz
-5 dBm 5.08867735 GHz SWT 5 ms Unit dBm



Date: 16.MAY.2014 13:57:52

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -67.2 dBm

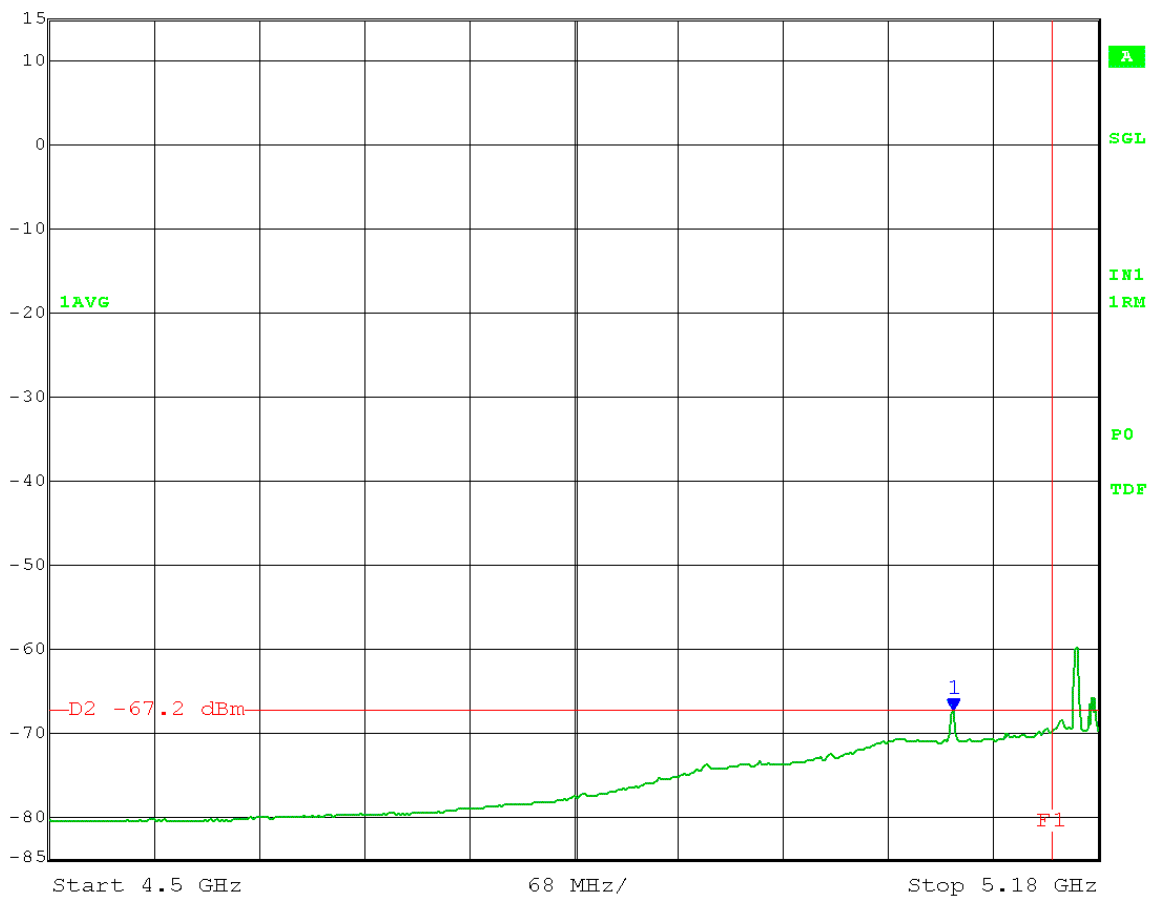
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 17–10dB
 external attenuator = 7
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 13:55:52



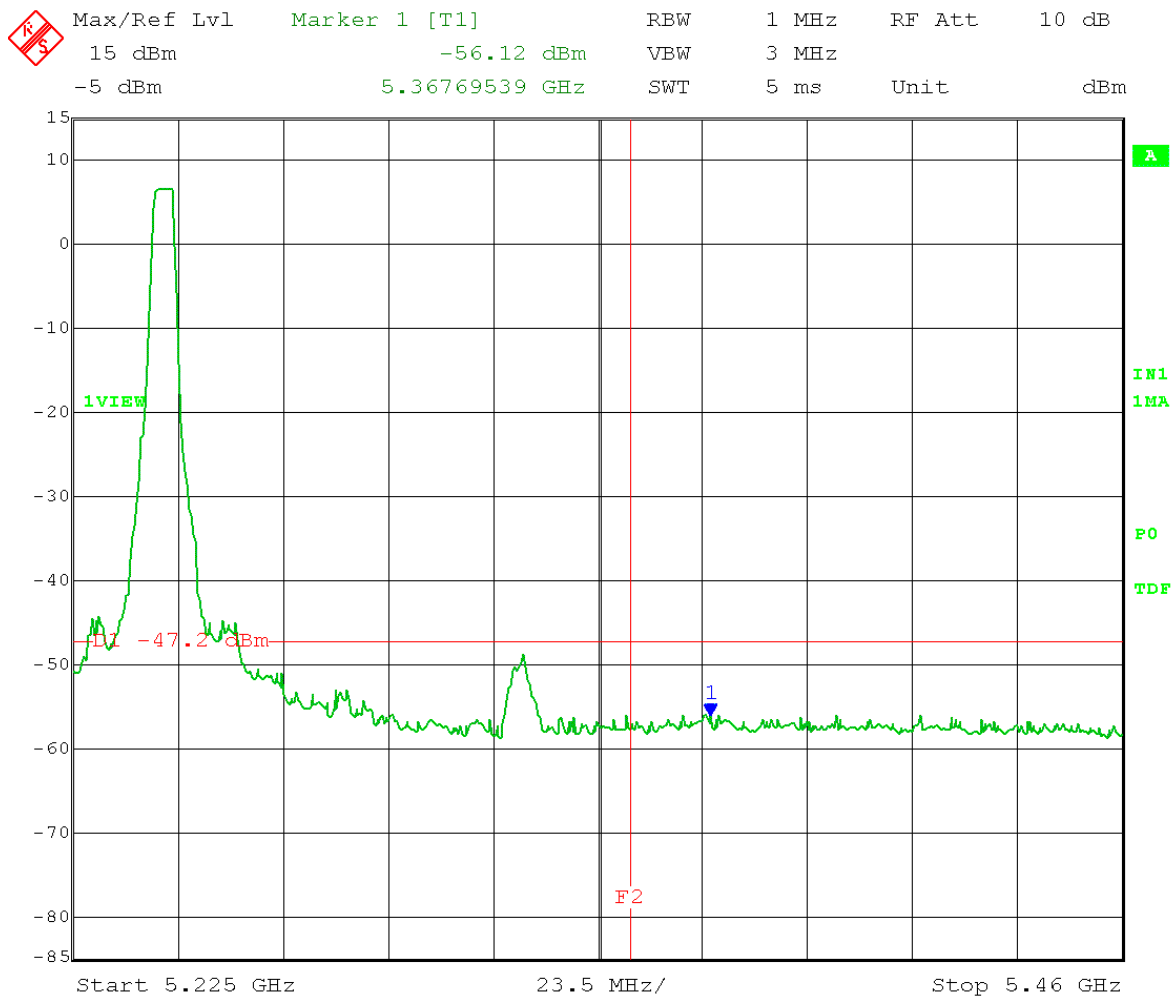
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 10 dB
15 dBm -67.46 dBm VBW 3 MHz
-5 dBm 5.08595190 GHz SWT 5 ms Unit dBm



Date: 16.MAY.2014 13:56:44

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

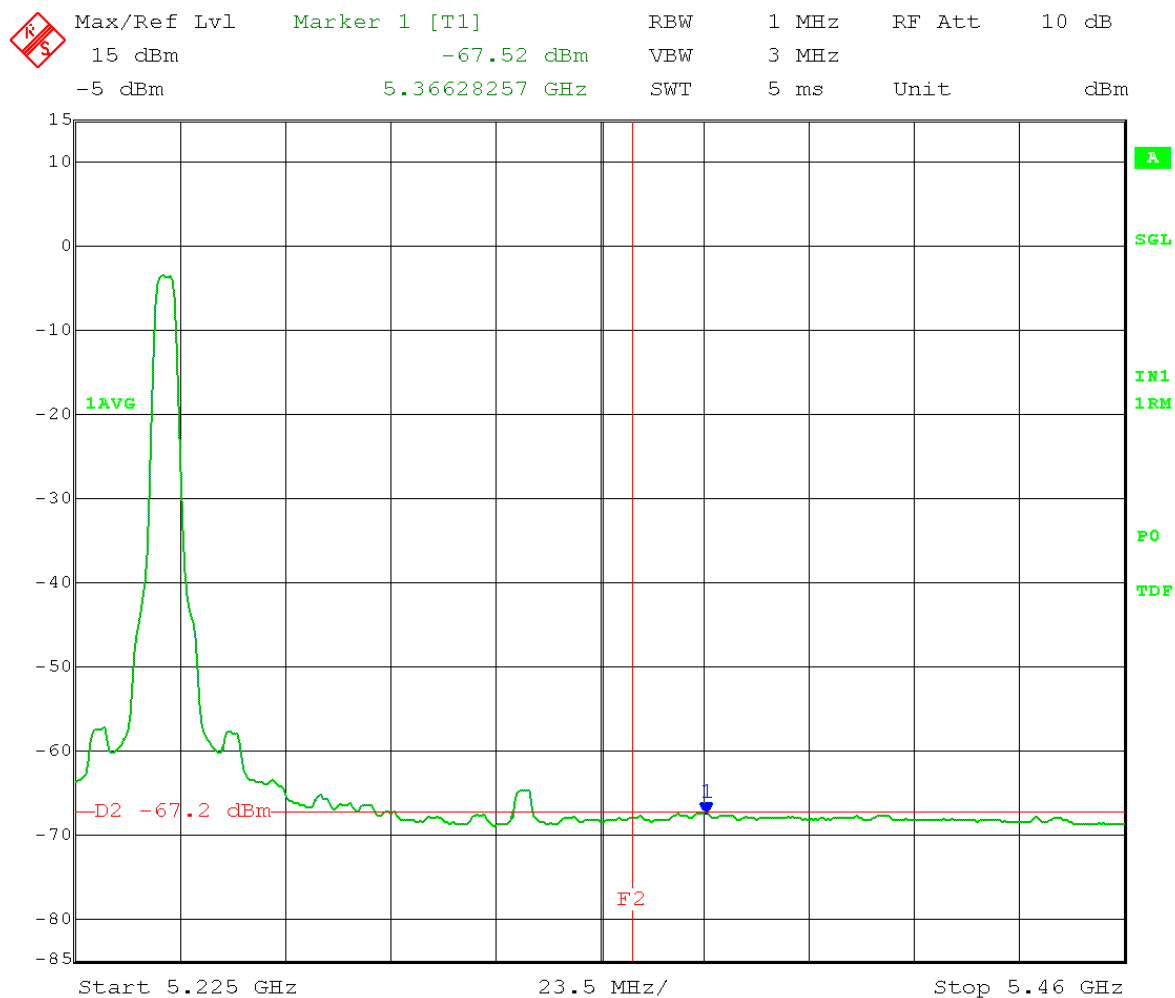
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 17–10dB
 external attenuator = 7
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 13:52:21

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -67.2 dBm

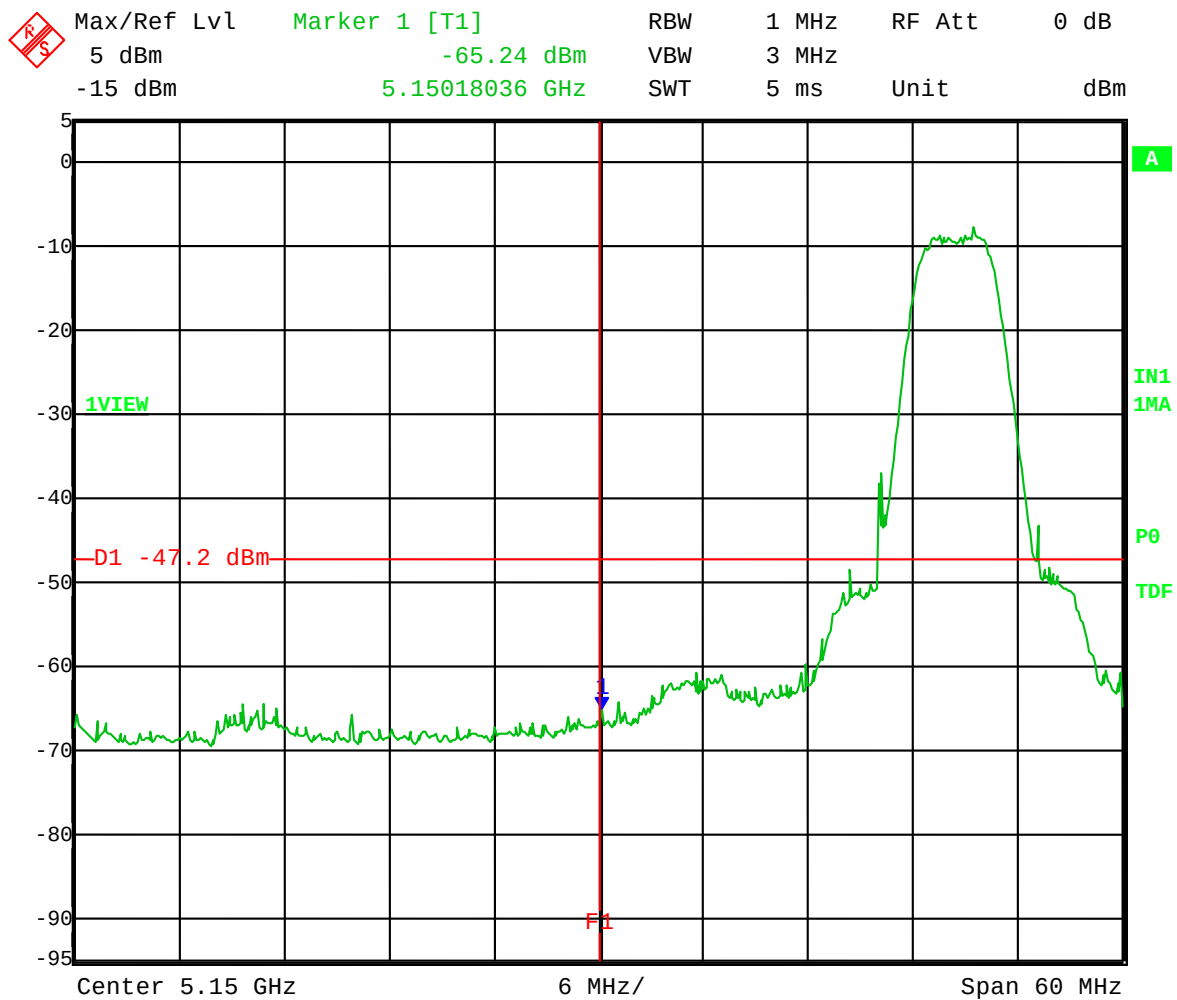
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 17–10dB
 external attenuator = 7
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 13:51:03

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.170 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -54.2 dBm

VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 0 – 10dB
 external atten. = -10
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 11:49:21



Max/Ref Lvl

Marker 1 [T1]

RBW

1 MHz

RF Att

0 dB

5 dBm

-63.37 dBm

VBW

3 MHz

-15 dBm

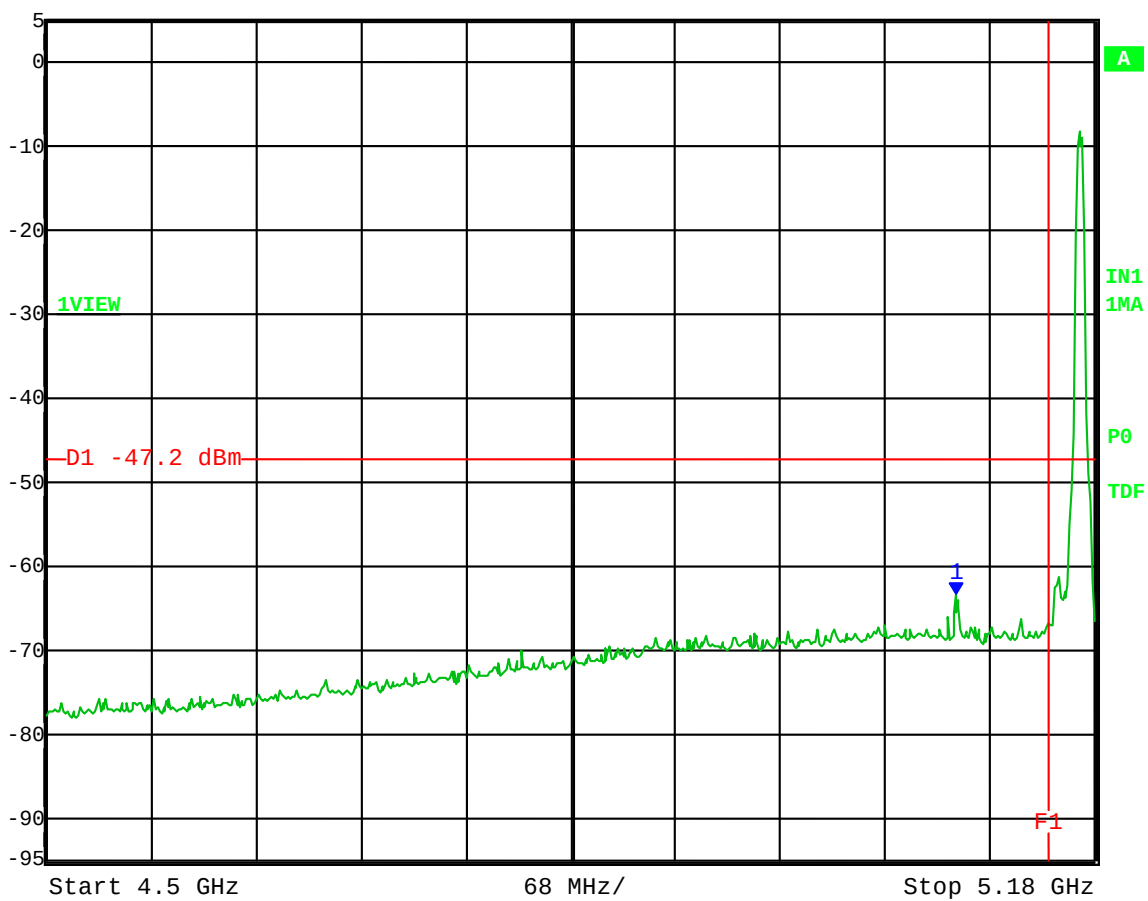
5.09022044 GHz

SWT

5 ms

Unit

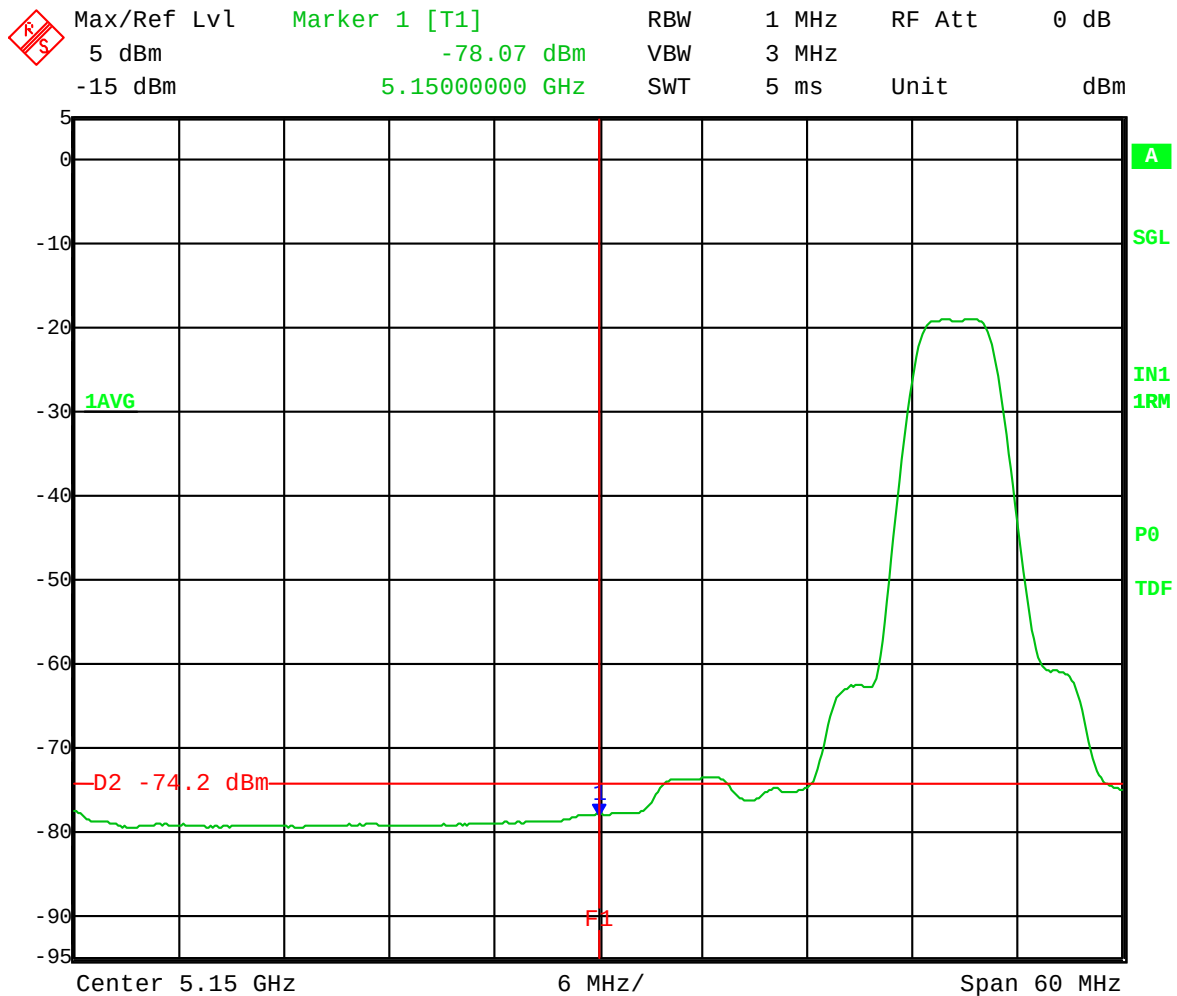
dBm



Date: 16.MAY.2014 11:50:23

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Low Channel Transmit = 5.170 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -74.2 dBm

VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 0 – 10dB
 external atten. = -10
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 11:45:22



Max/Ref Lvl

Marker 1 [T1]

RBW

1 MHz

RF Att

0 dB

5 dBm

-74.93 dBm

VBW

3 MHz

-15 dBm

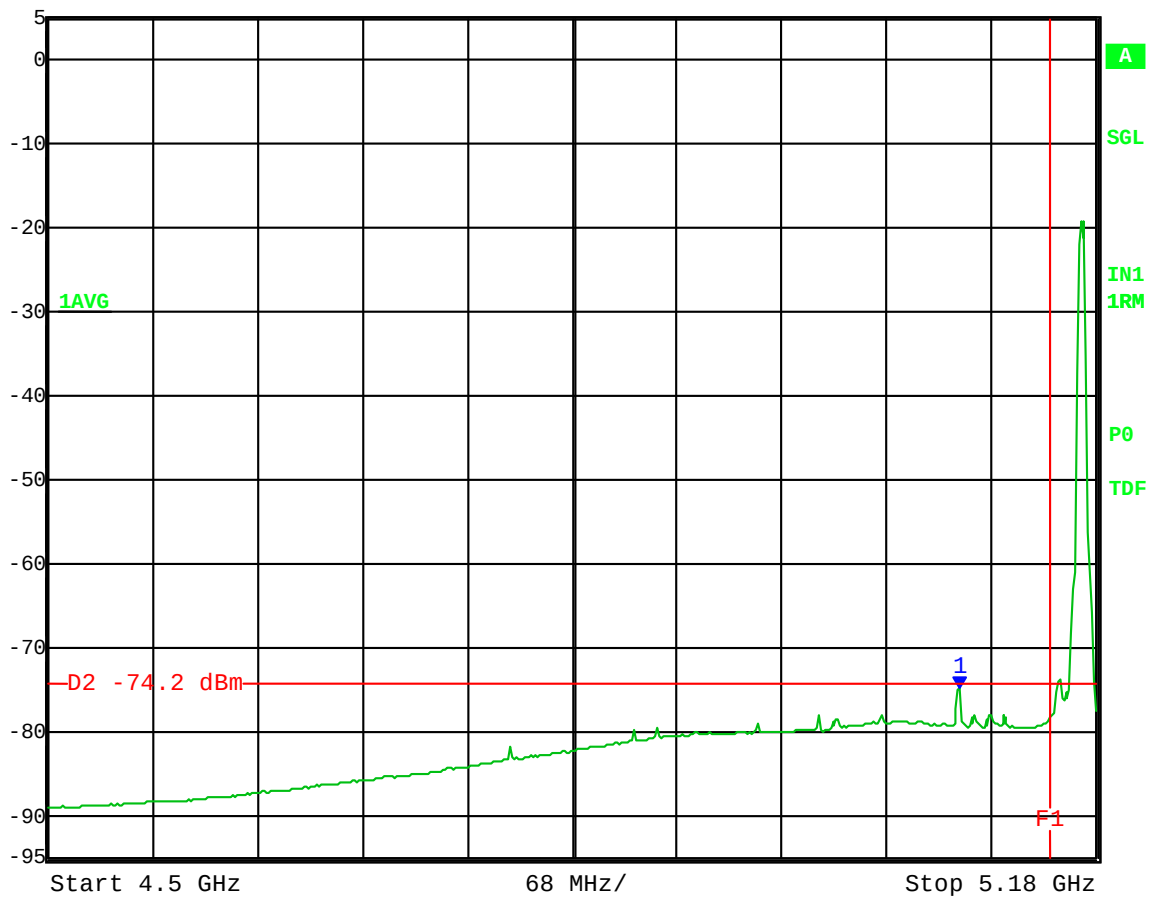
5.09140281 GHz

SWT

5 ms

Unit

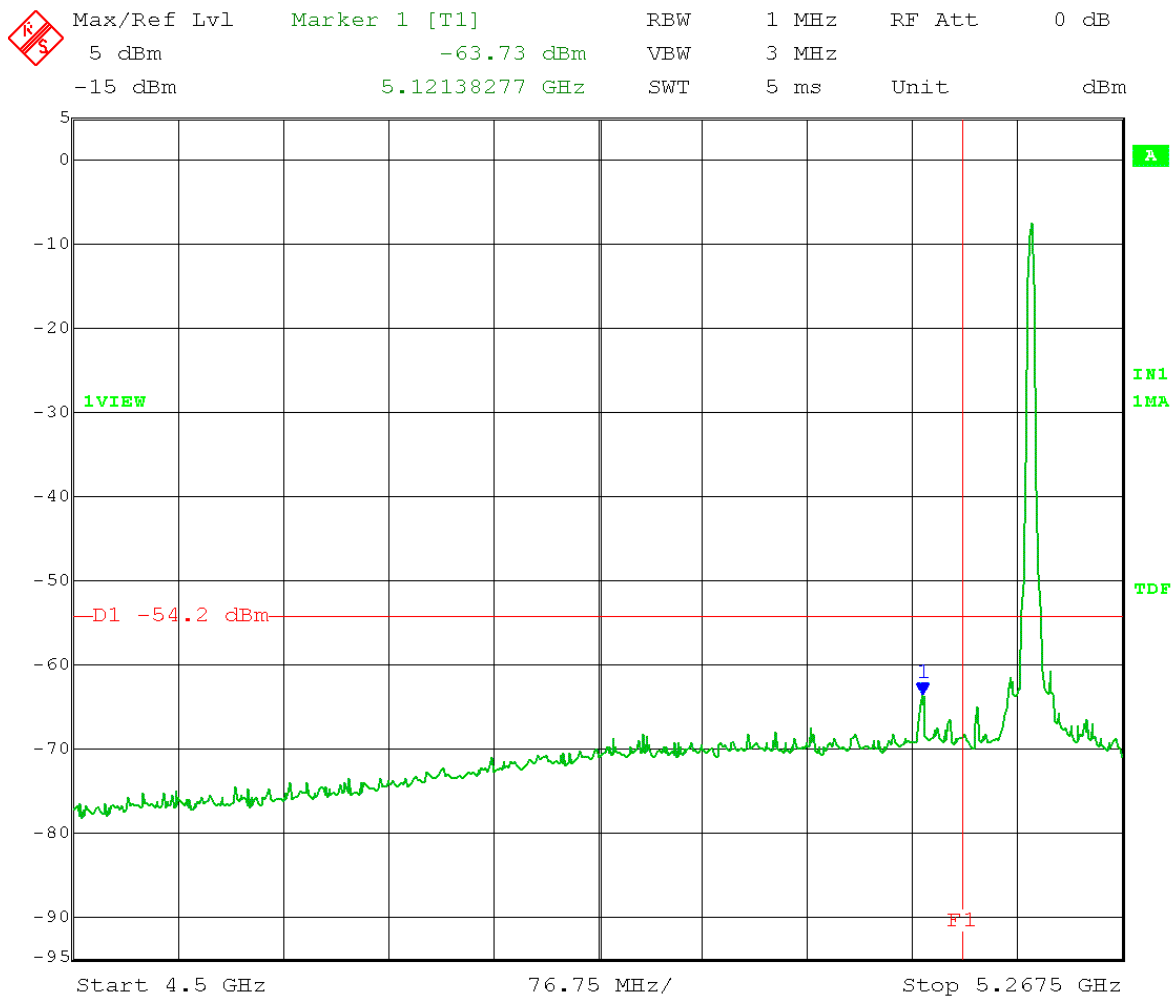
dBm



Date: 16.MAY.2014 11:47:09

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -54.2 dBm

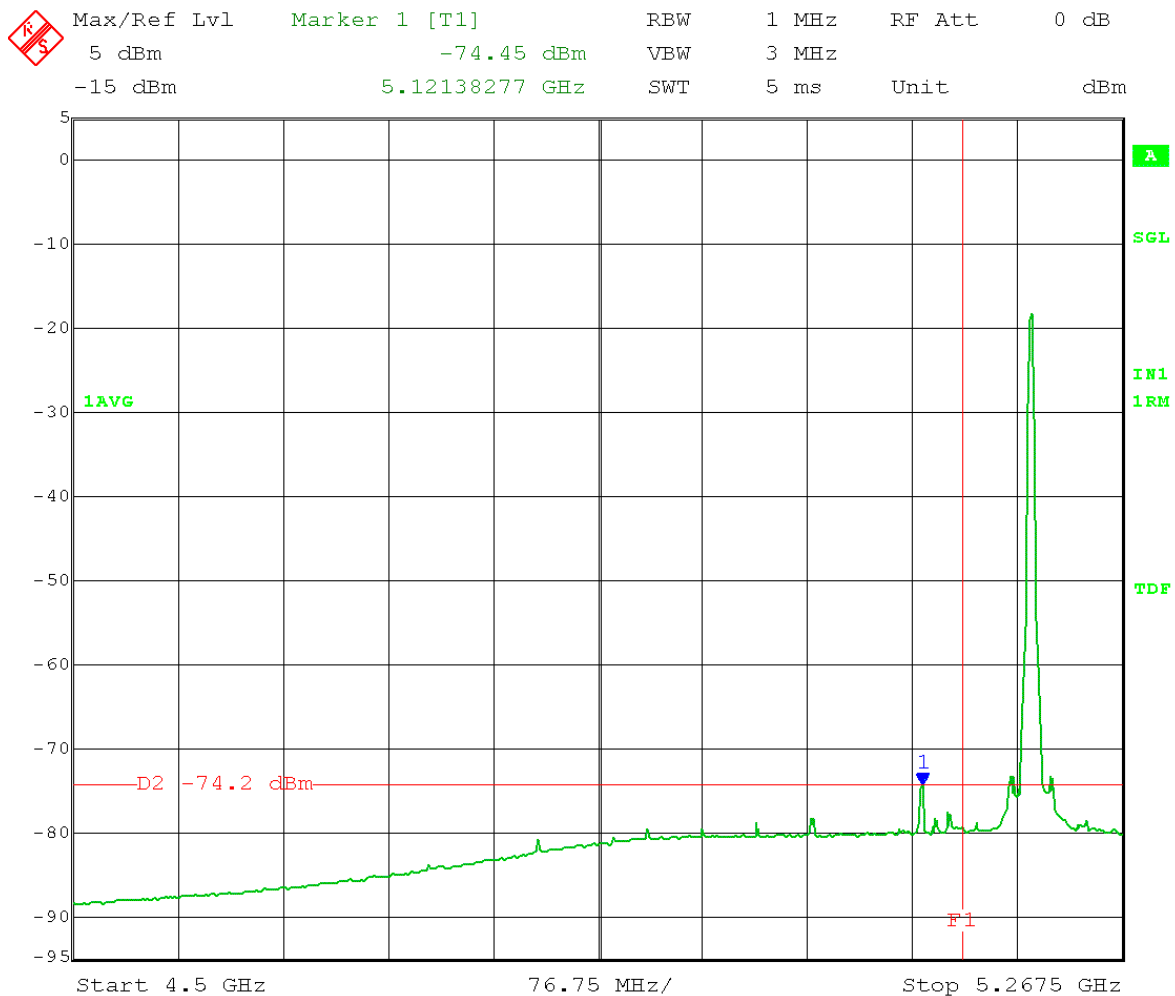
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 0 – 10dB
 external atten. = -10
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 15:55:26

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -74.2 dBm

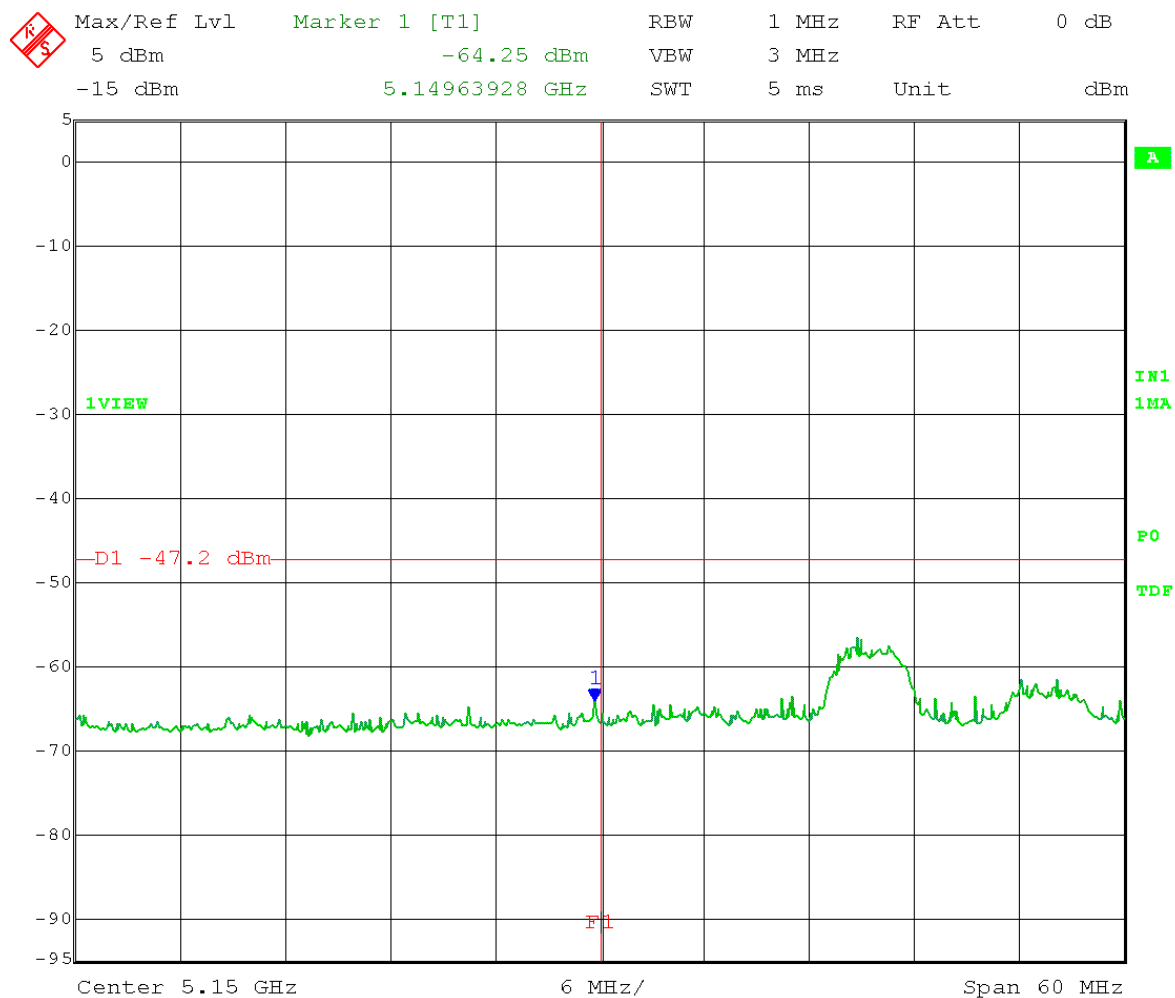
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 0 – 10dB
 external atten. = -10
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 15:53:51

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -54.2 dBm

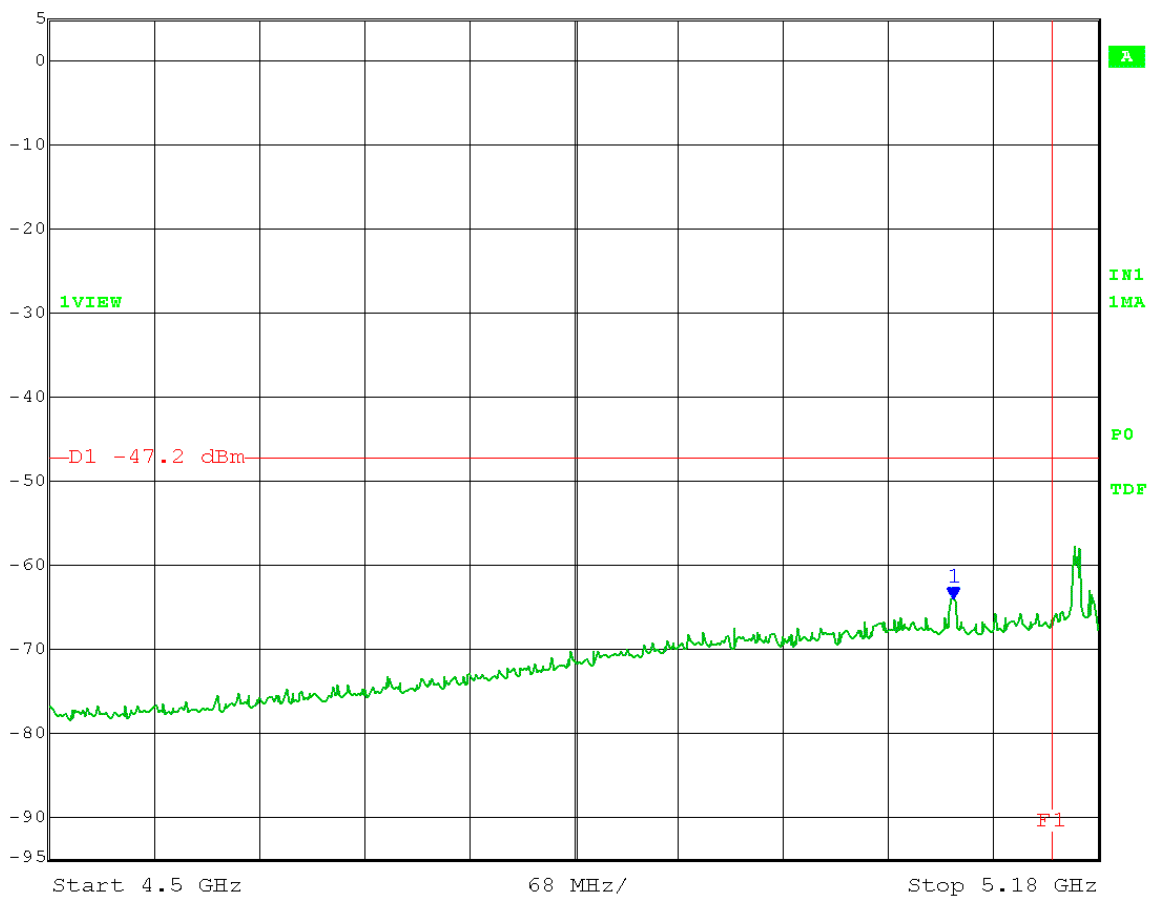
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 6 – 10dB
 external atten. = -4
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 12:56:00



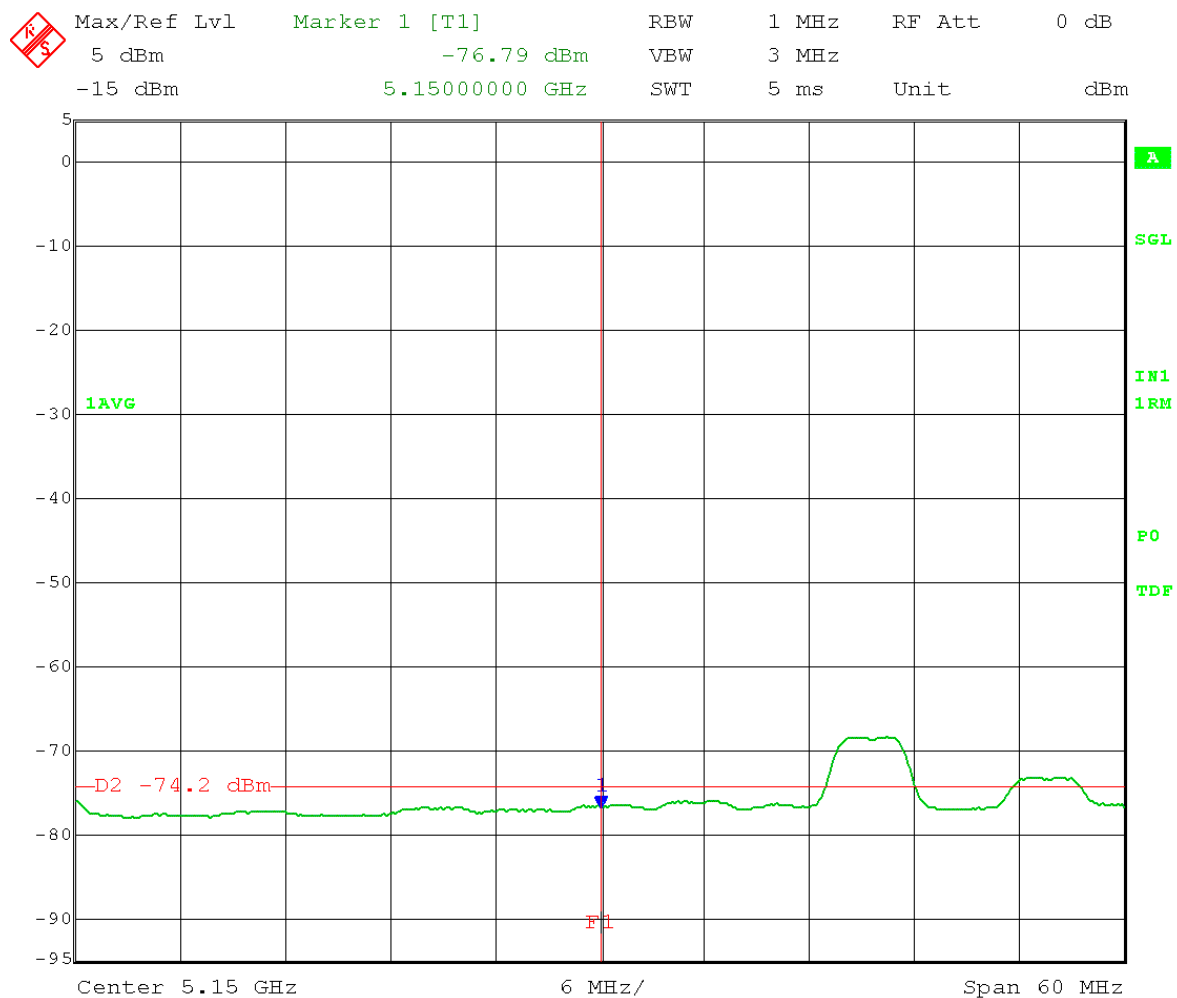
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 0 dB
5 dBm -64.20 dBm VBW 3 MHz
-15 dBm 5.08559118 GHz SWT 5 ms Unit dBm



Date: 16.MAY.2014 12:56:43

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -74.2 dBm

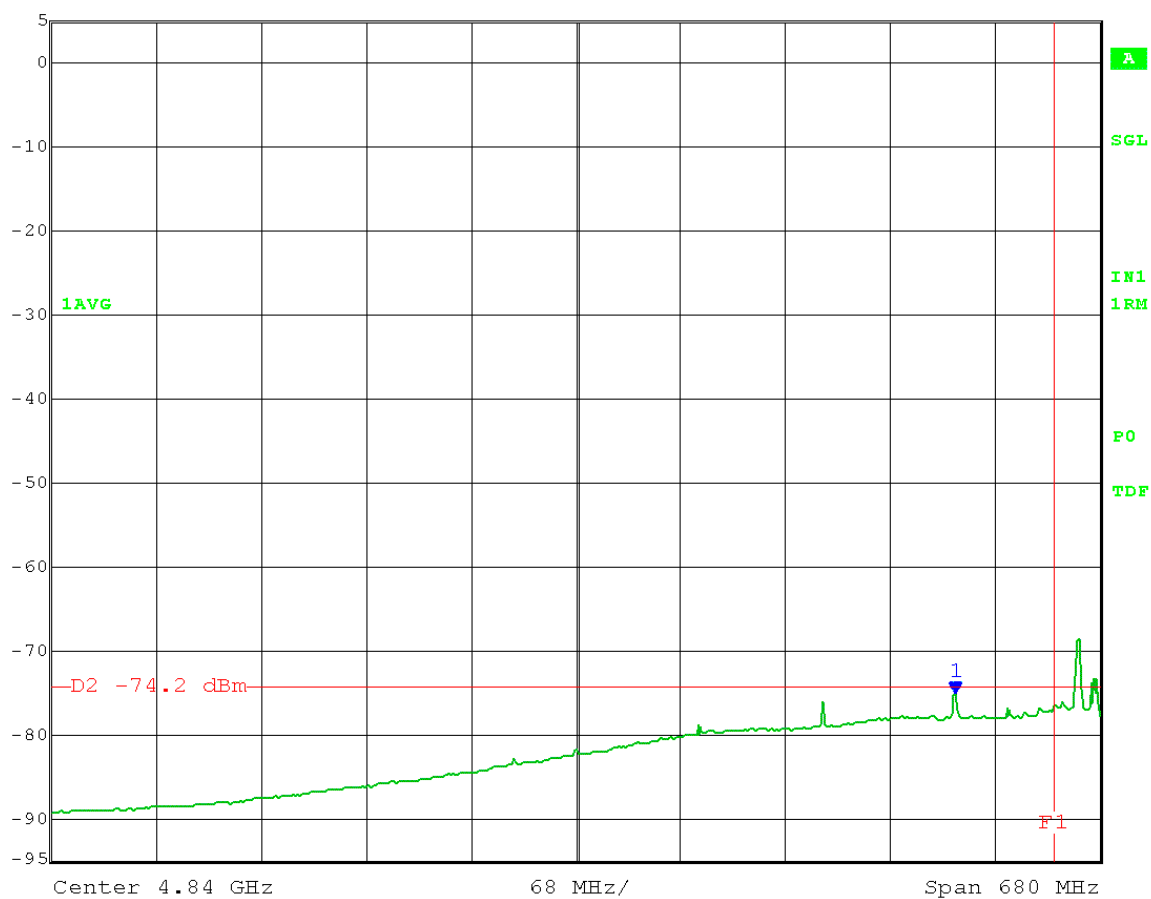
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 6 – 10dB
 external atten. = -4
 Band-edge = 5.150 GHz



Date: 16.MAY.2014 12:55:16



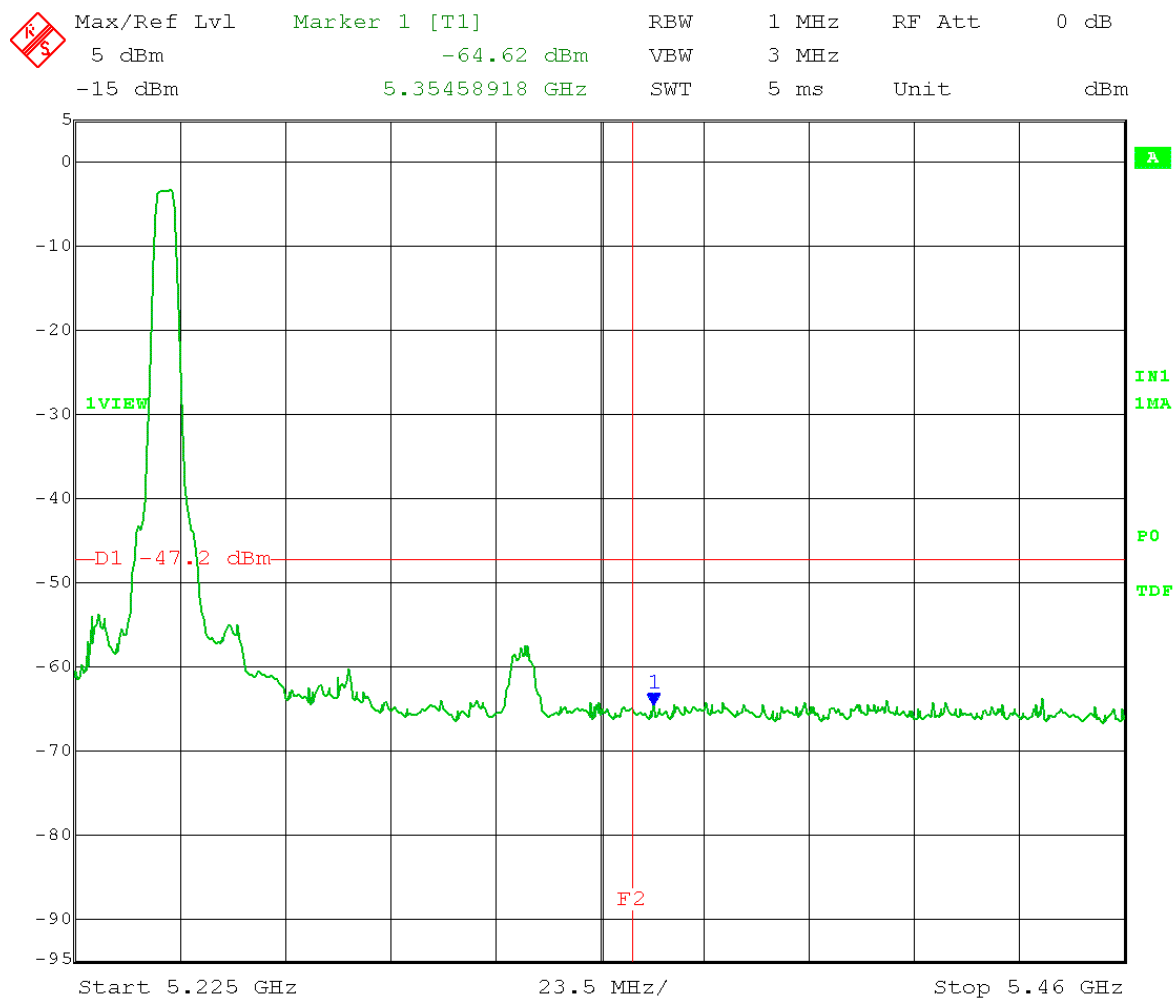
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 0 dB
5 dBm -75.14 dBm VBW 3 MHz
-15 dBm 5.08613226 GHz SWT 5 ms Unit dBm



Date: 16.MAY.2014 12:54:19

Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -54.2 dBm

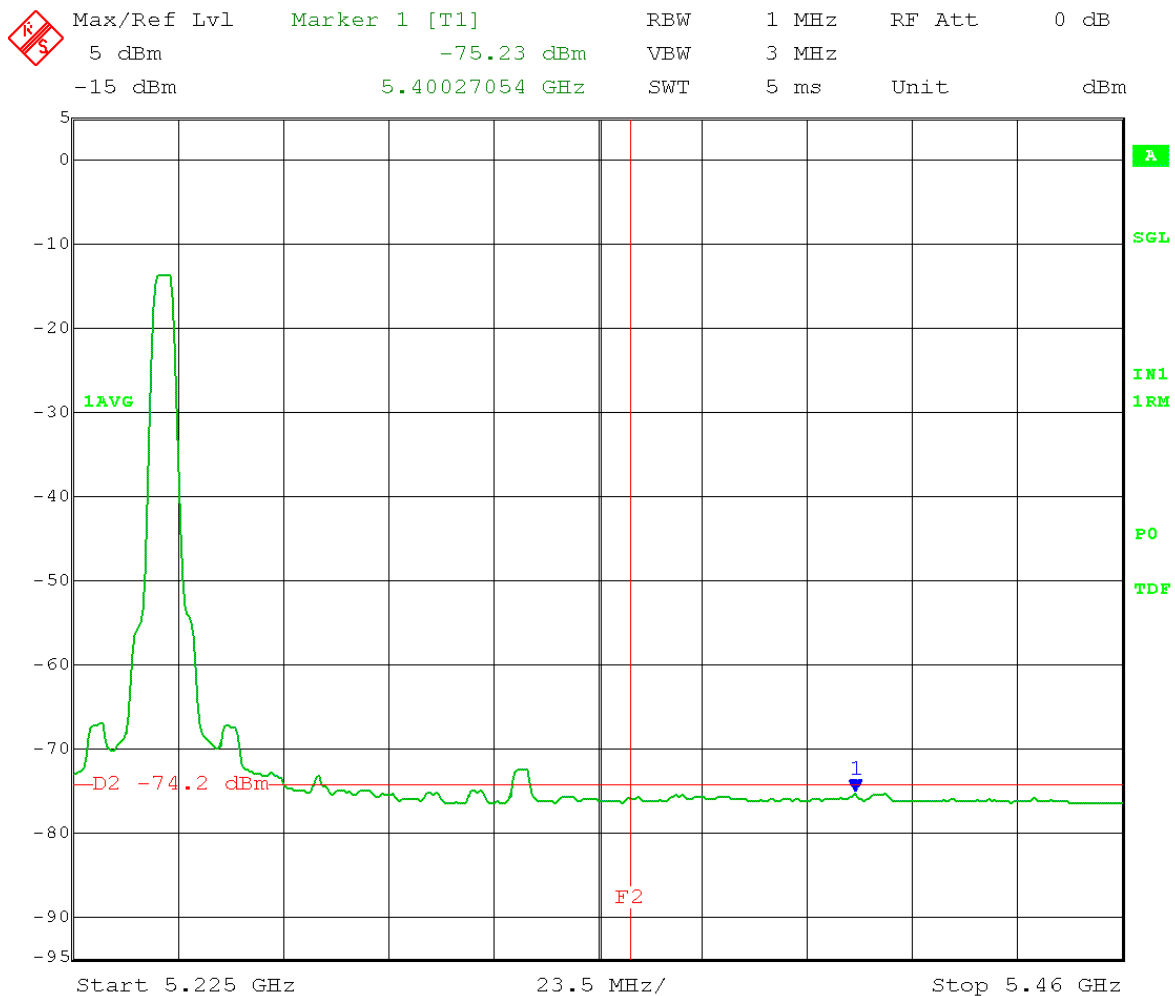
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 6 – 10dB
 external atten. = -4
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 13:07:38

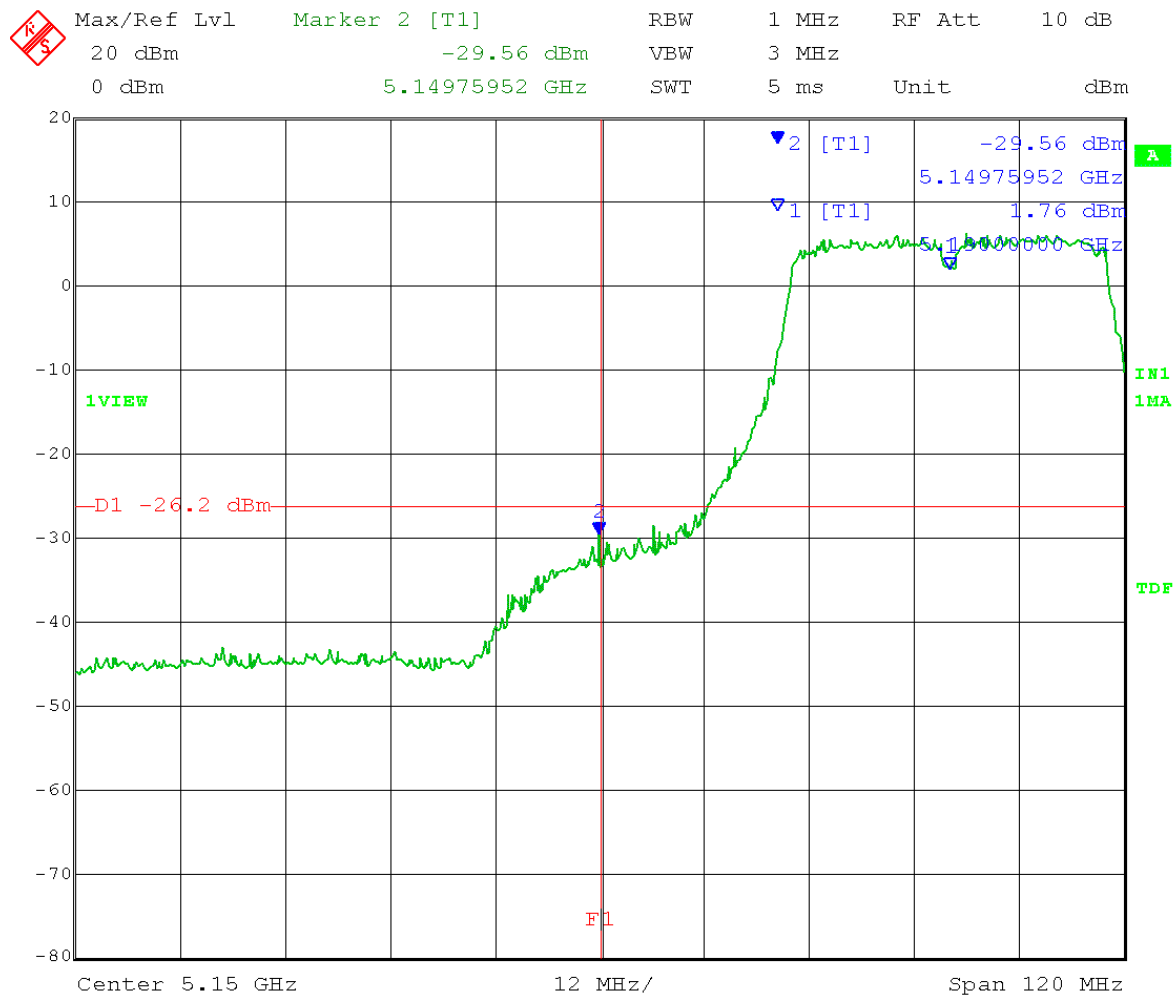
Test Date: 05-16-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.245 GHz
 5 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -74.2 dBm

VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 6 – 10dB
 external atten. = -4
 Band-edge = 5.350 GHz



Date: 16.MAY.2014 13:06:35

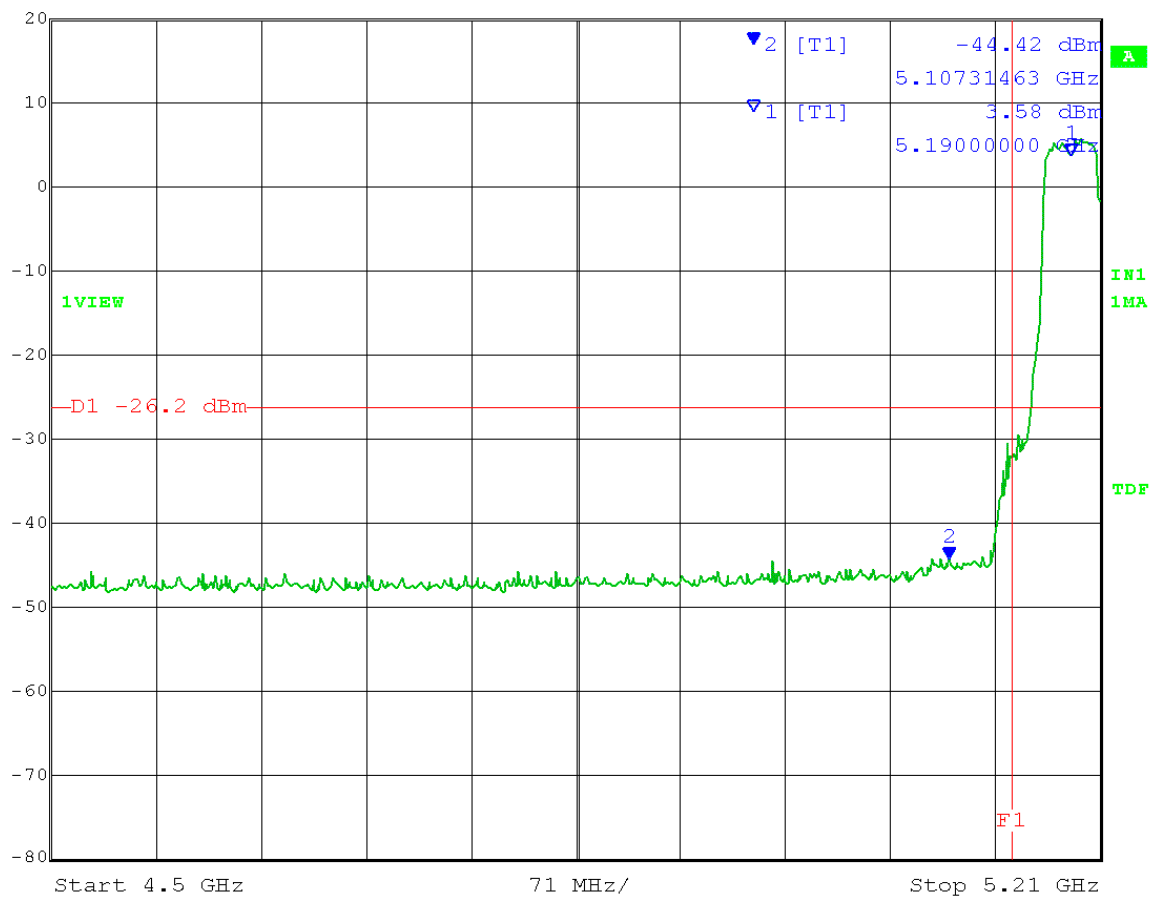
Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -26.2 dBm
 VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 12.5
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 15:01:57



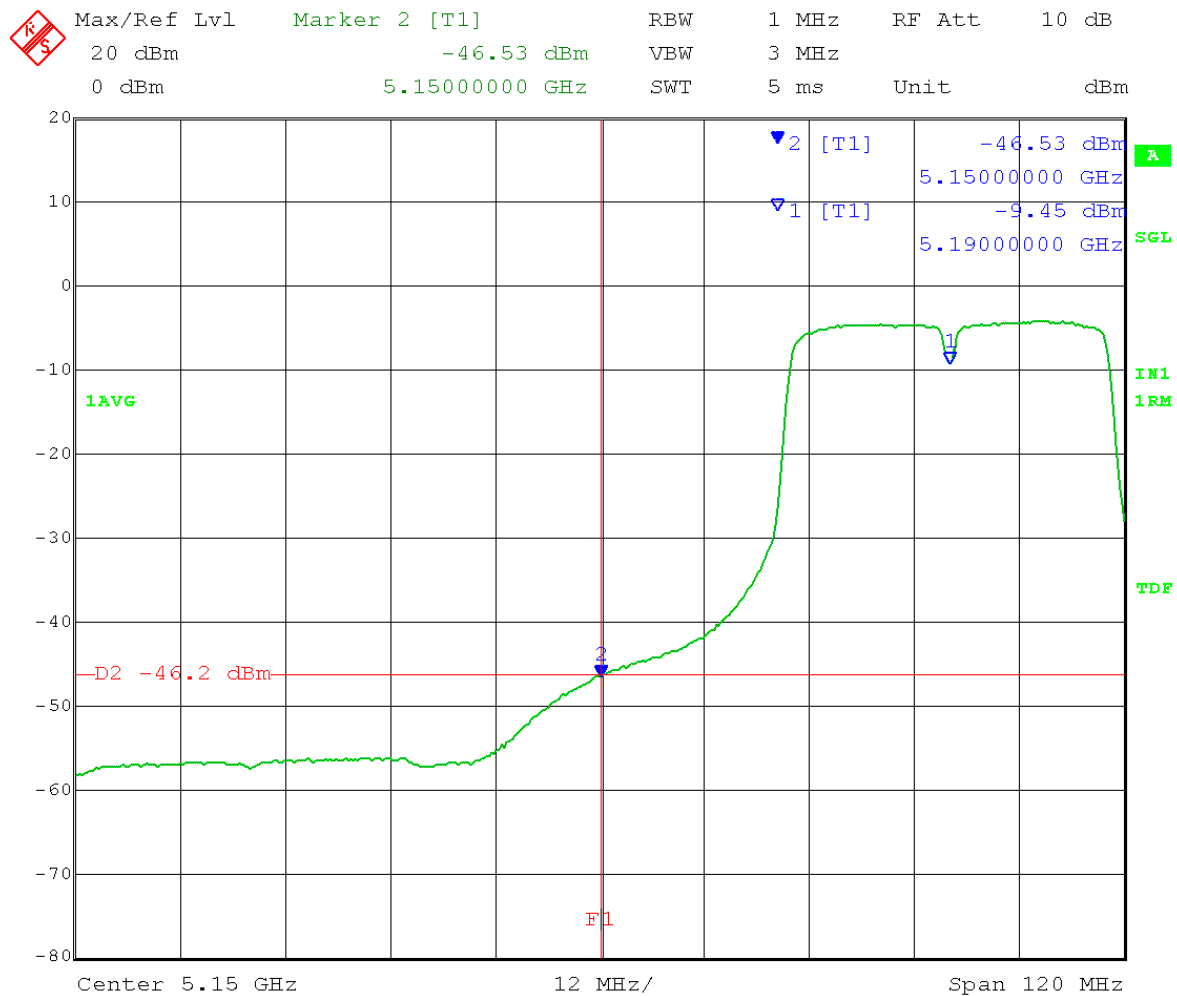
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
20 dBm -44.42 dBm VBW 3 MHz
0 dBm 5.10731463 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 15:00:47

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -46.2 dBm

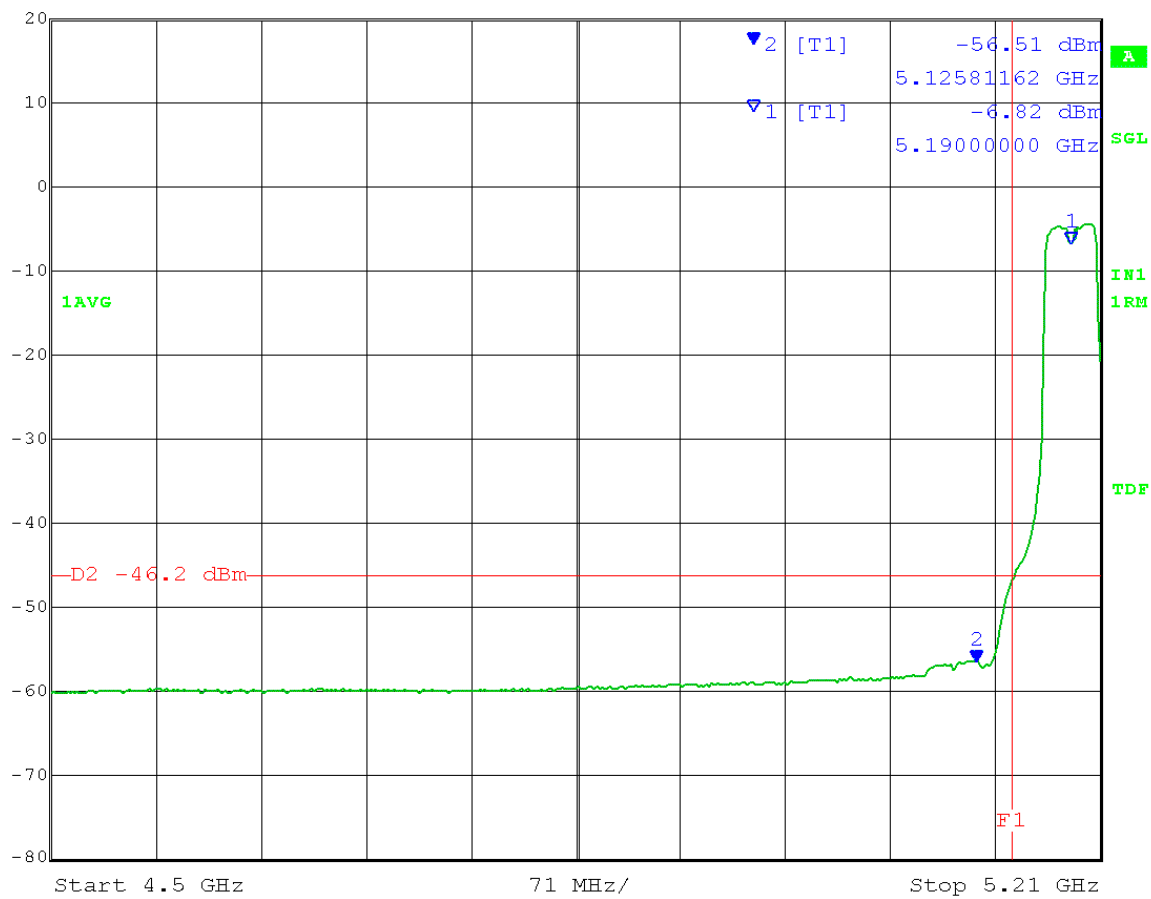
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 12.5
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 14:58:27



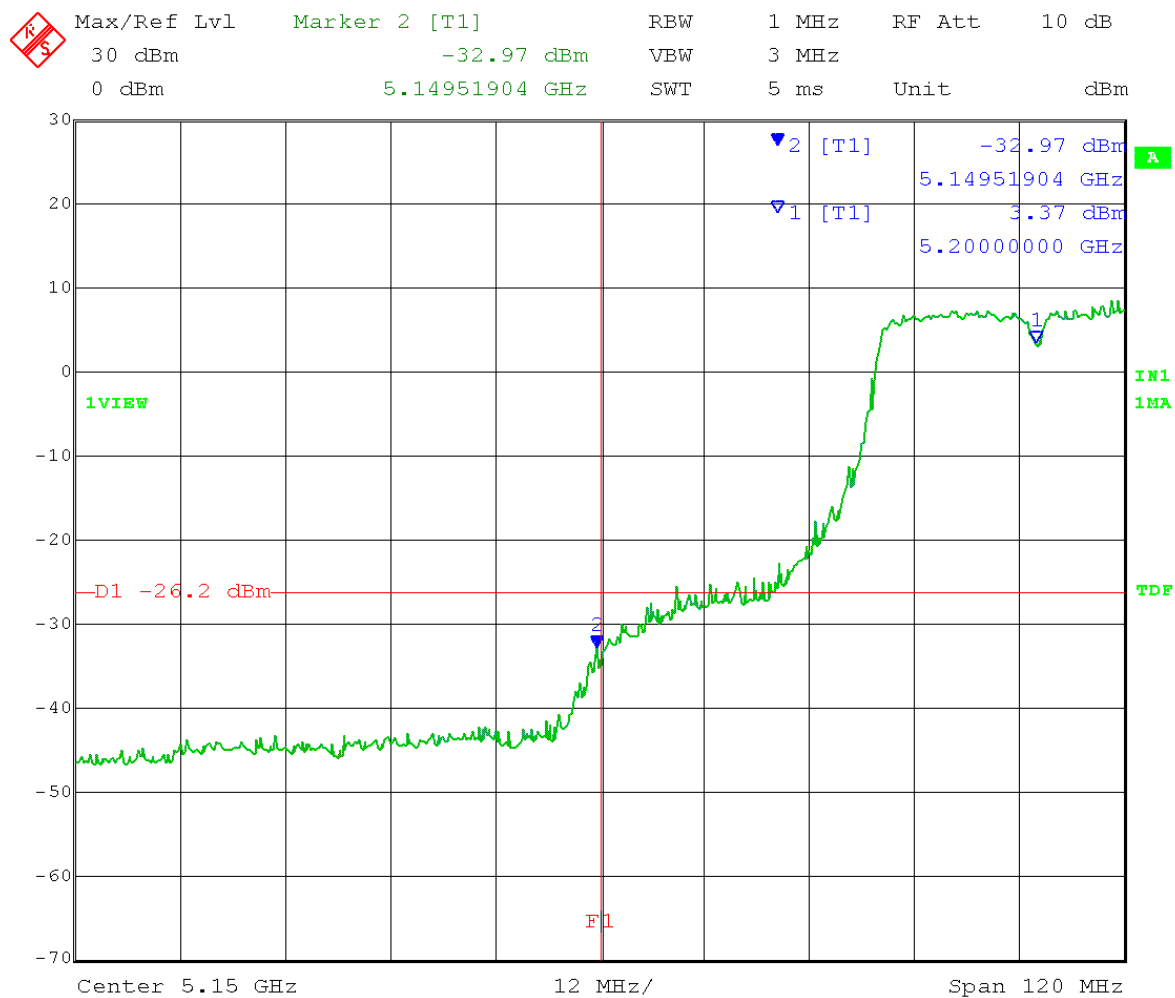
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
20 dBm -56.51 dBm VBW 3 MHz
0 dBm 5.12581162 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 14:59:20

Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -26.2 dBm

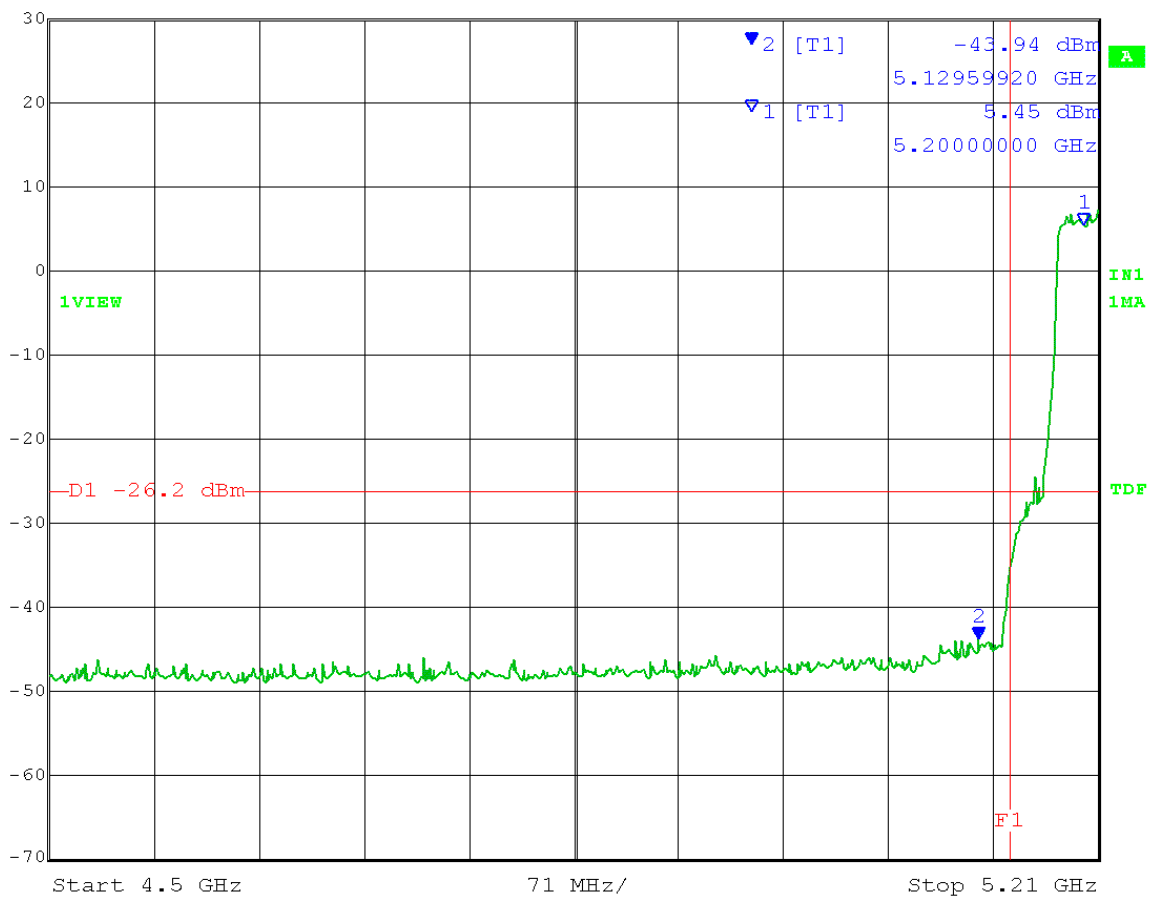
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 14
 Band-edge = 5.150 GHz



Date: 3.JUN.2014 14:34:41



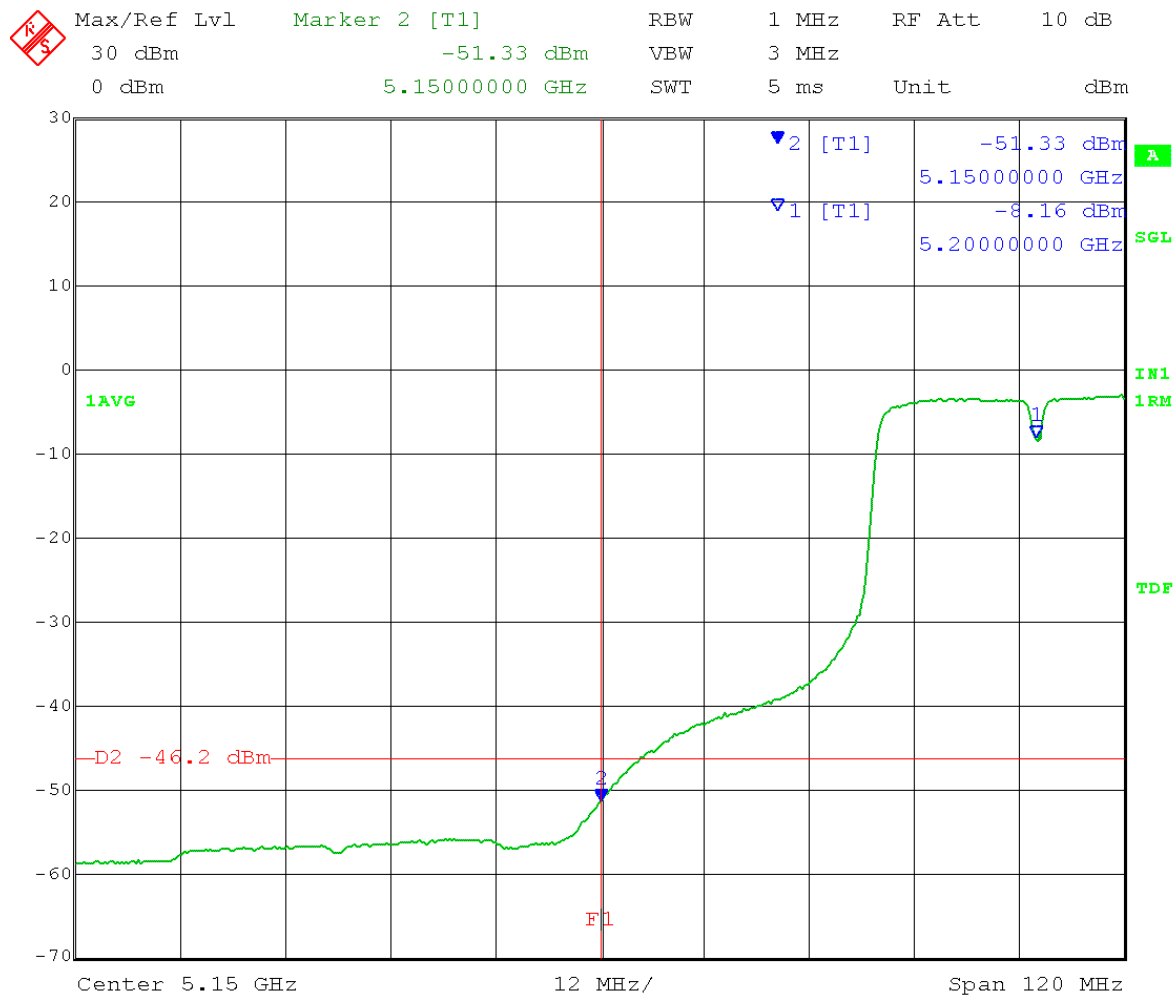
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
30 dBm -43.94 dBm VBW 3 MHz
0 dBm 5.12959920 GHz SWT 5 ms Unit dBm



Date: 3.JUN.2014 14:35:37

Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -46.2 dBm

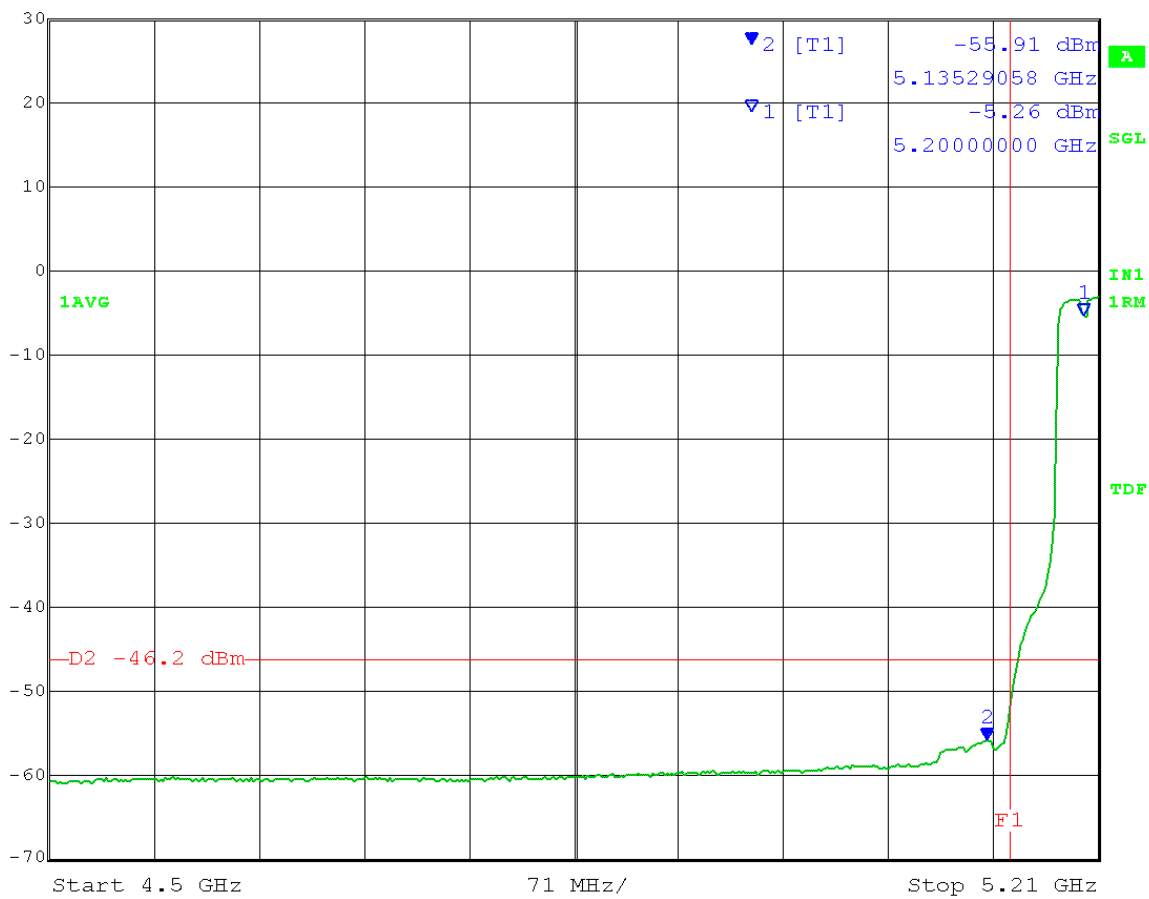
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 14
 Band-edge = 5.150 GHz



Date: 3.JUN.2014 14:37:12

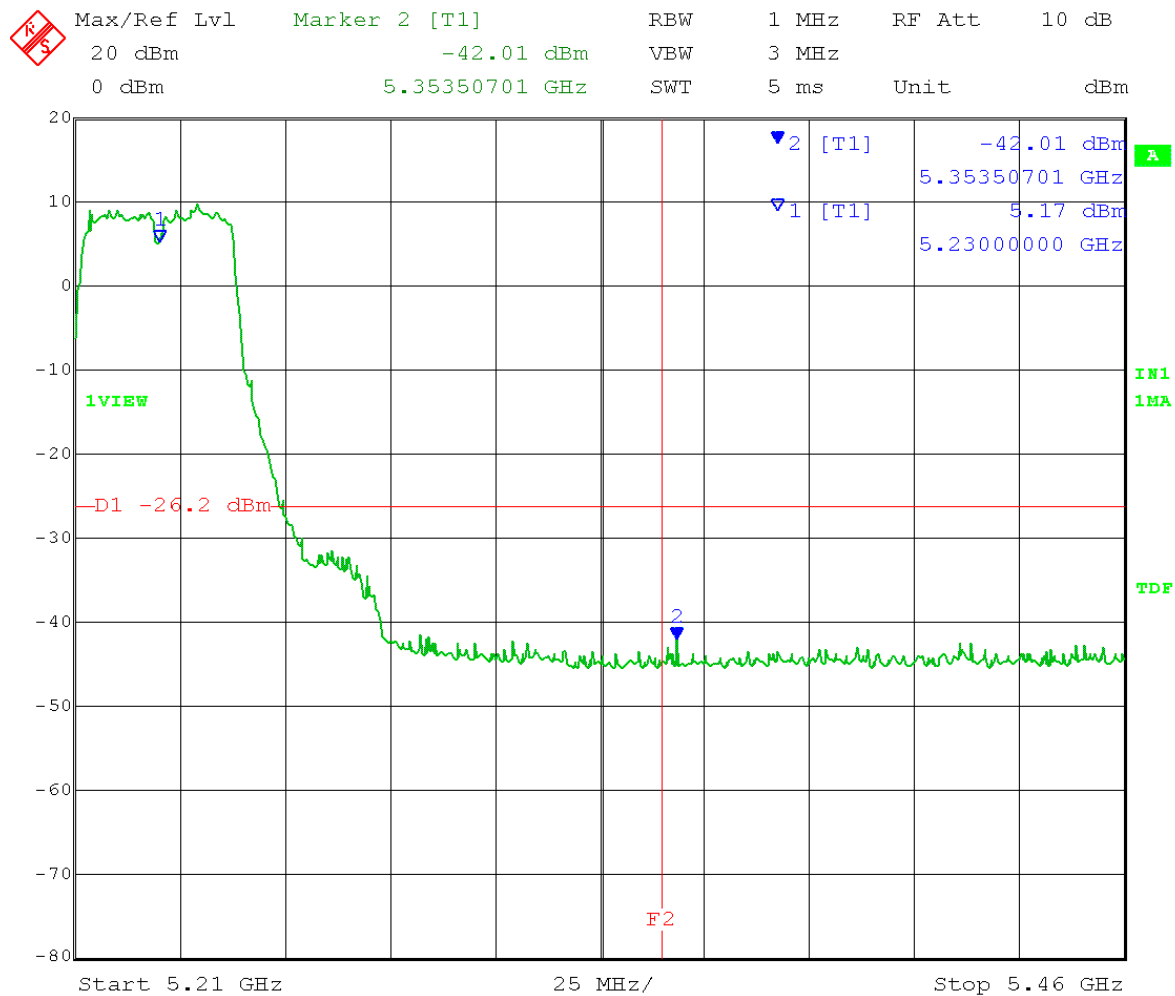


Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
30 dBm -55.91 dBm VBW 3 MHz
0 dBm 5.13529058 GHz SWT 5 ms Unit dBm



Date: 3.JUN.2014 14:36:24

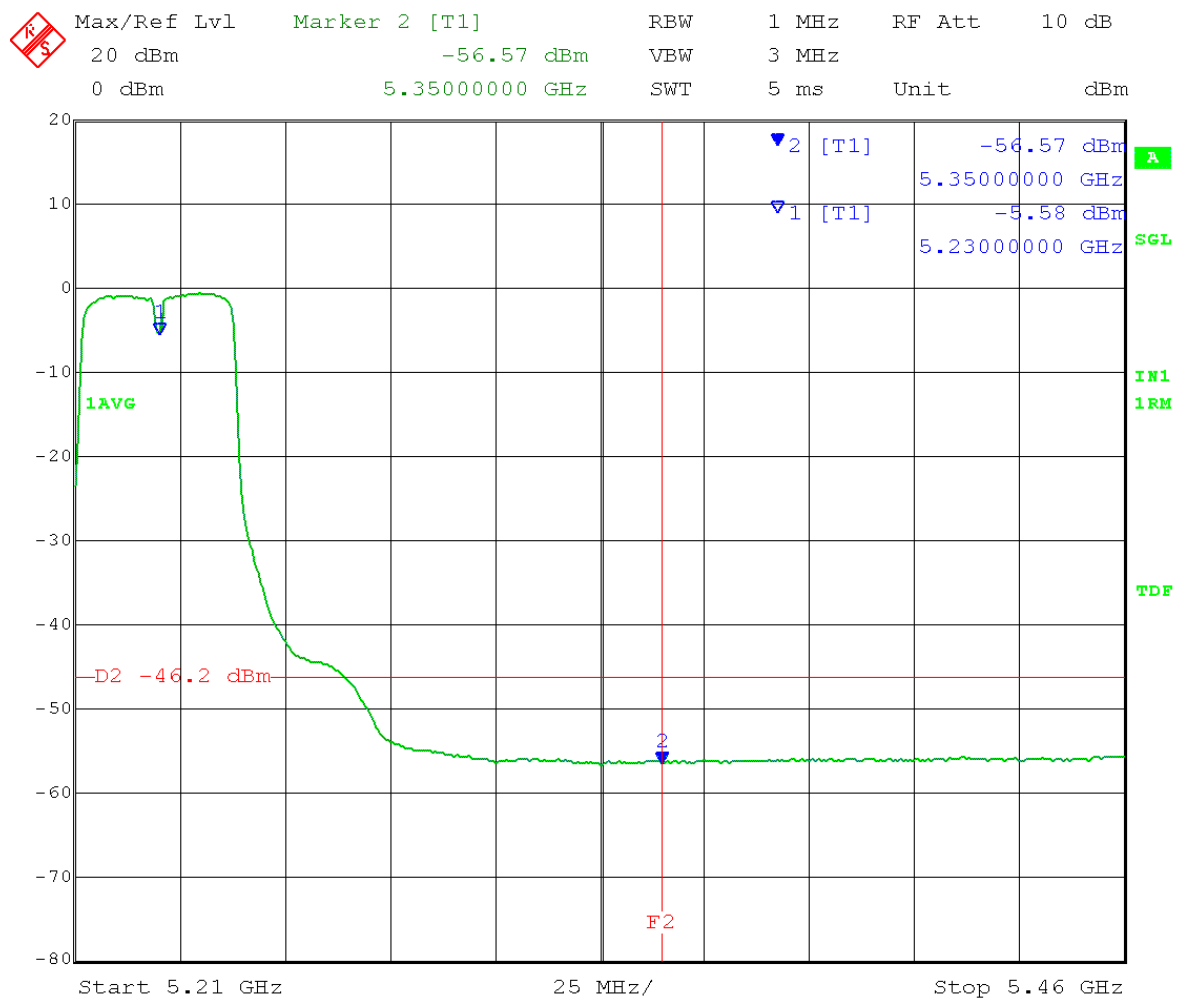
Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dBμV/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -26.2 dBm
 VBW ≥ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 14
 Band-edge = 5.350 GHz



Date: 3.JUN.2014 12:40:49

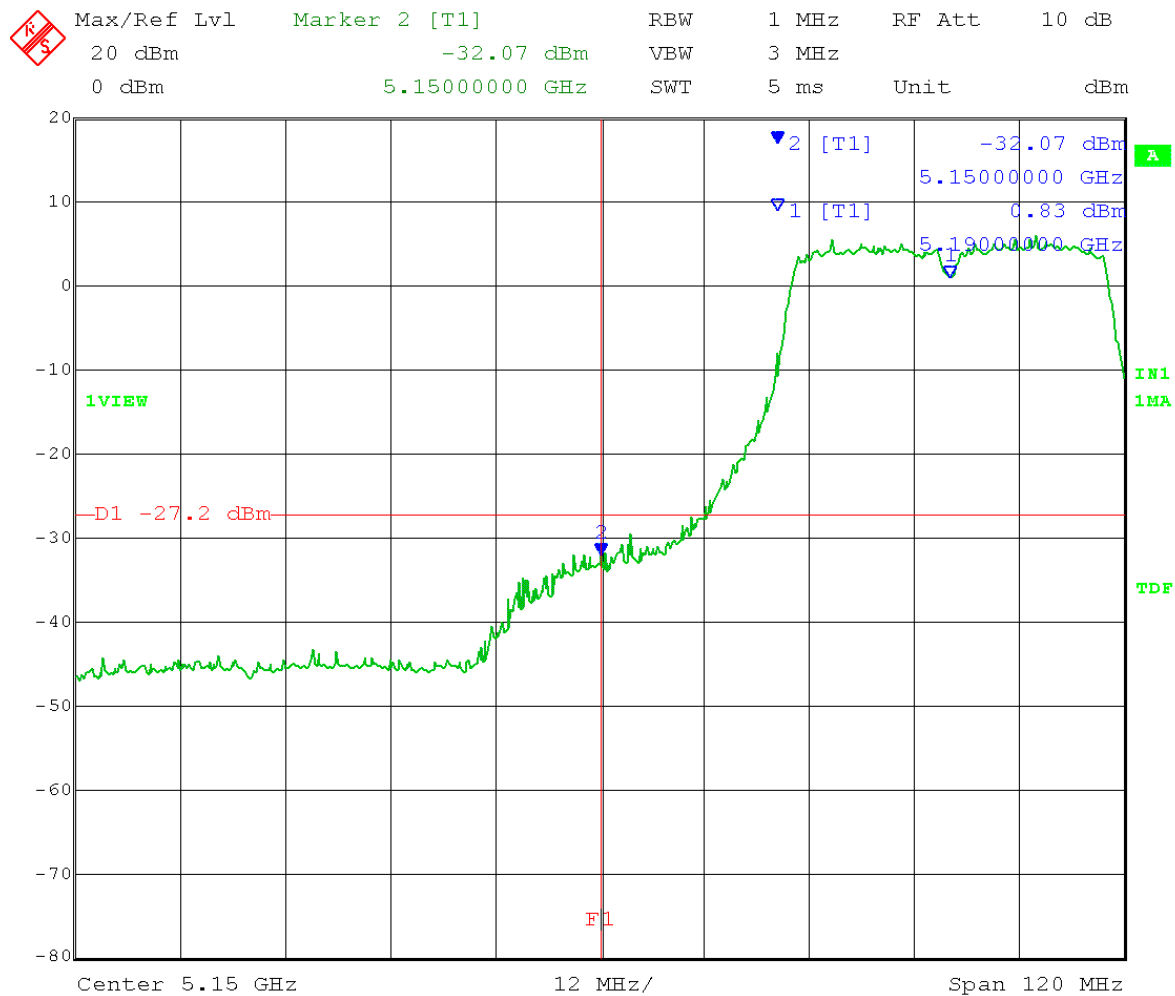
Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 2 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 2 dBi antenna gain
 – 3 dB (MIMO) = -46.2 dBm

VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 14
 Band-edge = 5.350 GHz



Date: 3.JUN.2014 12:39:39

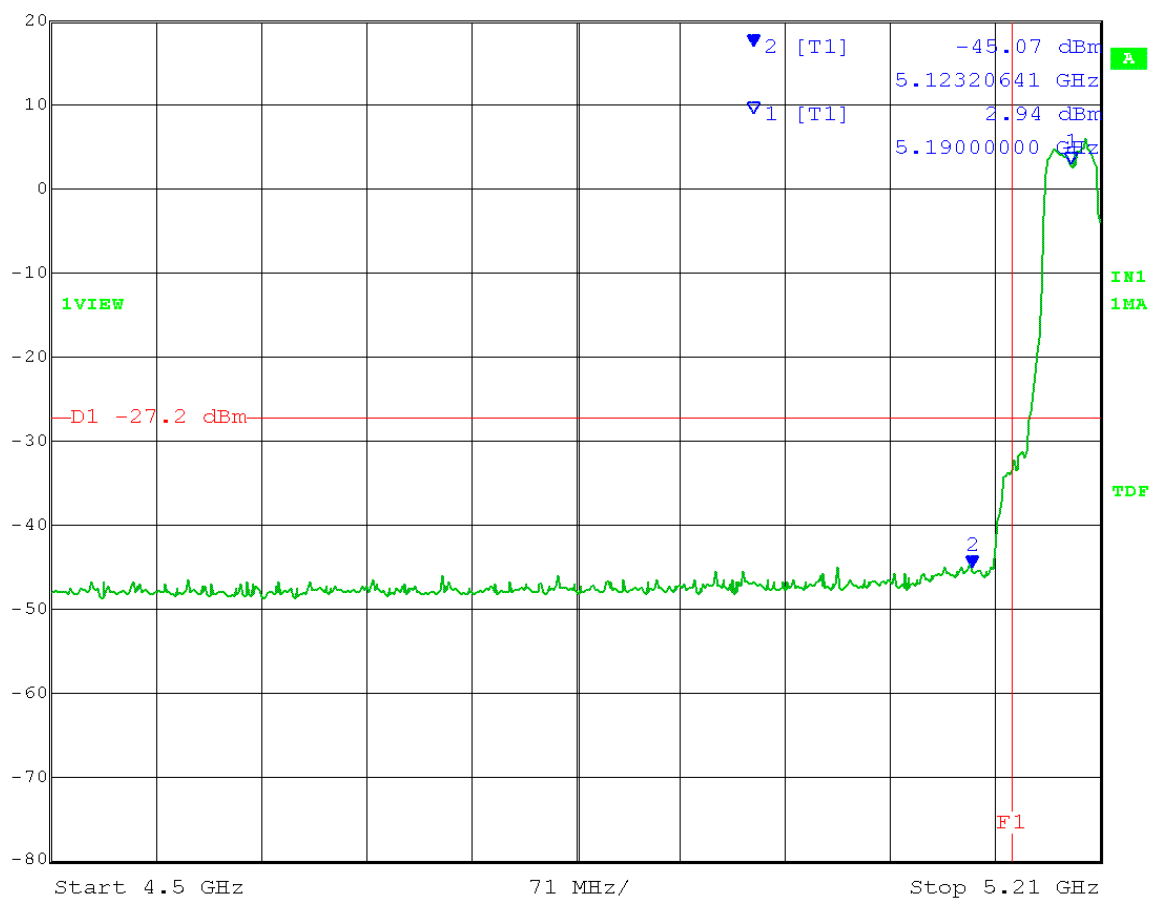
Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -27.2 dBm
 VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 11.5
 Band-edge = 5.150 GHz



Date: 3.JUN.2014 12:58:07



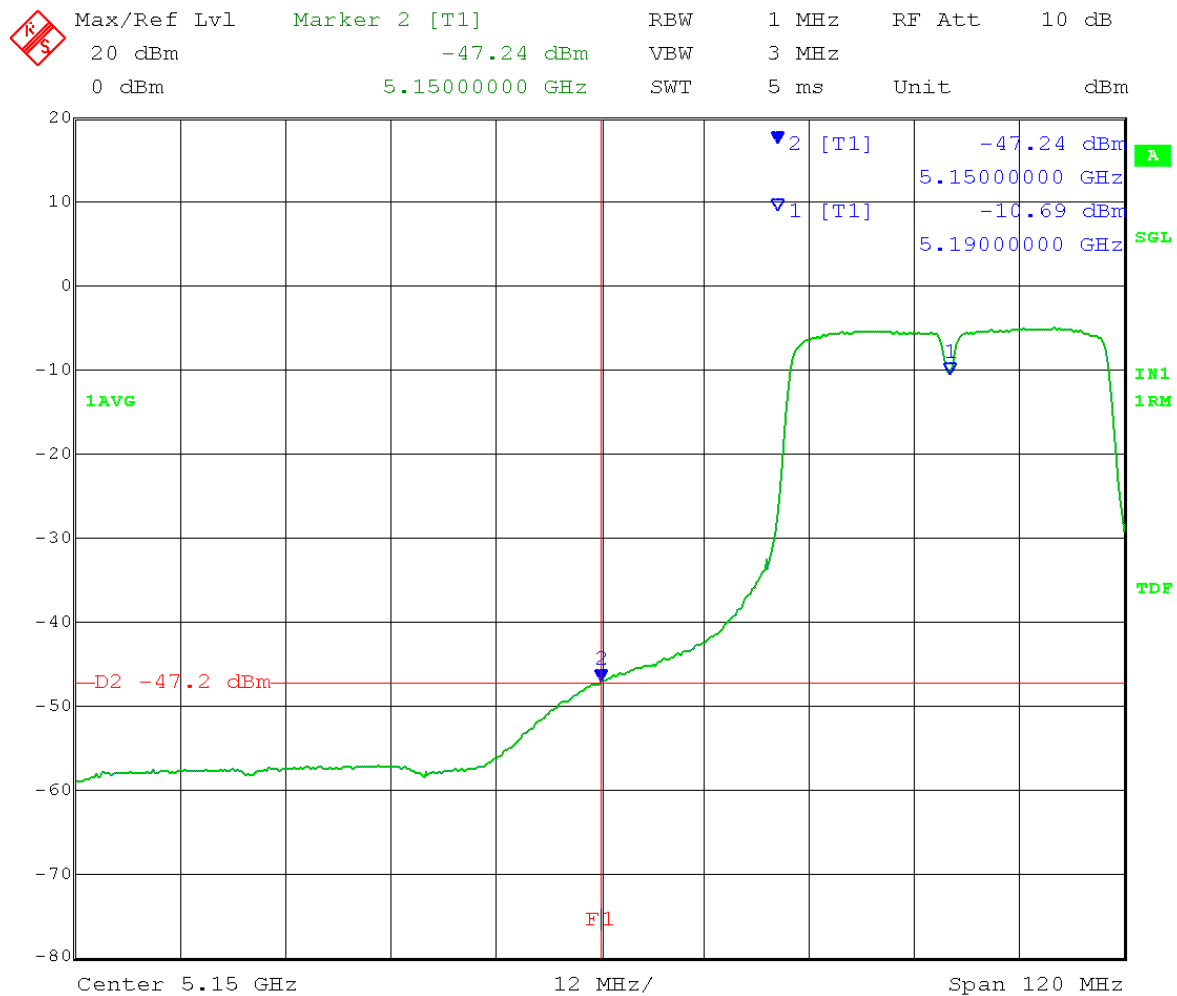
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
20 dBm -45.07 dBm VBW 3 MHz
0 dBm 5.12320641 GHz SWT 5 ms Unit dBm



Date: 3.JUN.2014 12:56:13

Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

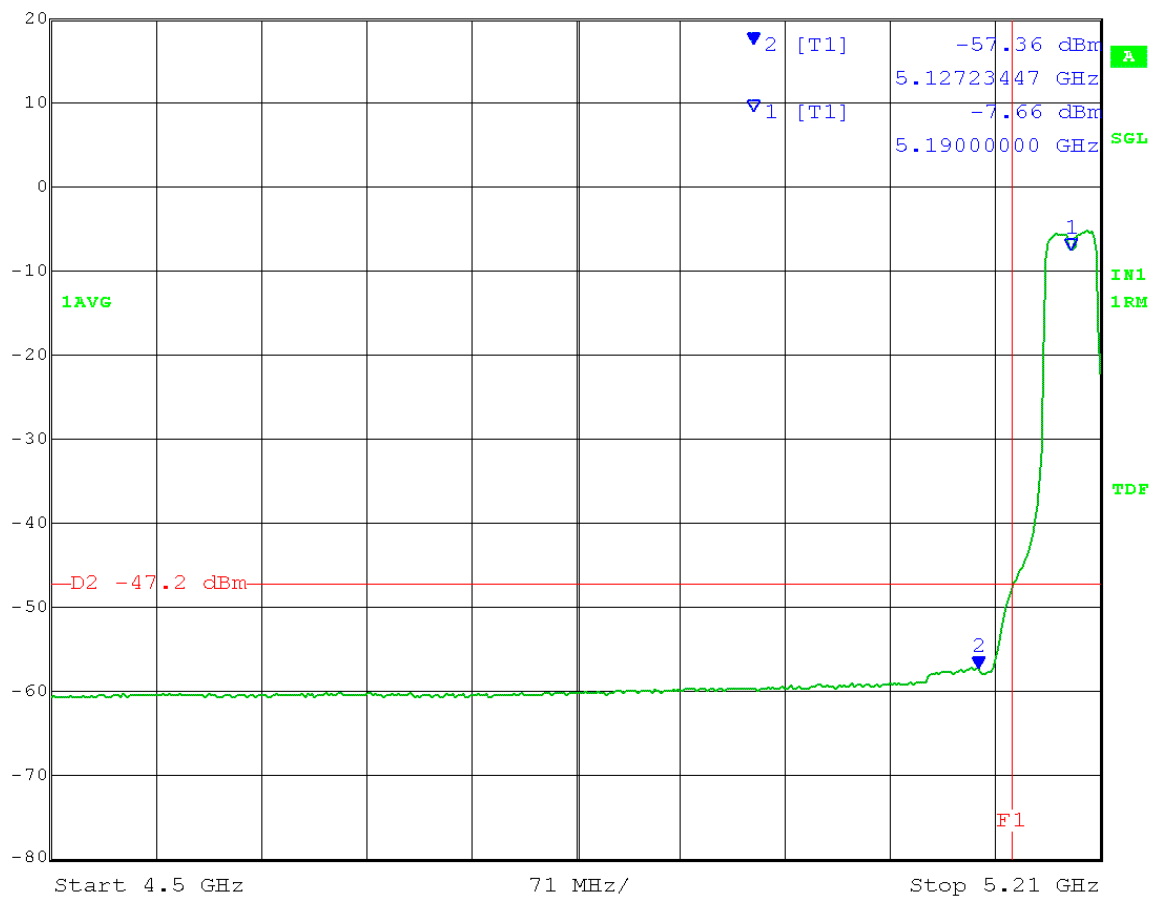
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 11.5
 Band-edge = 5.150 GHz



Date: 3.JUN.2014 12:54:11



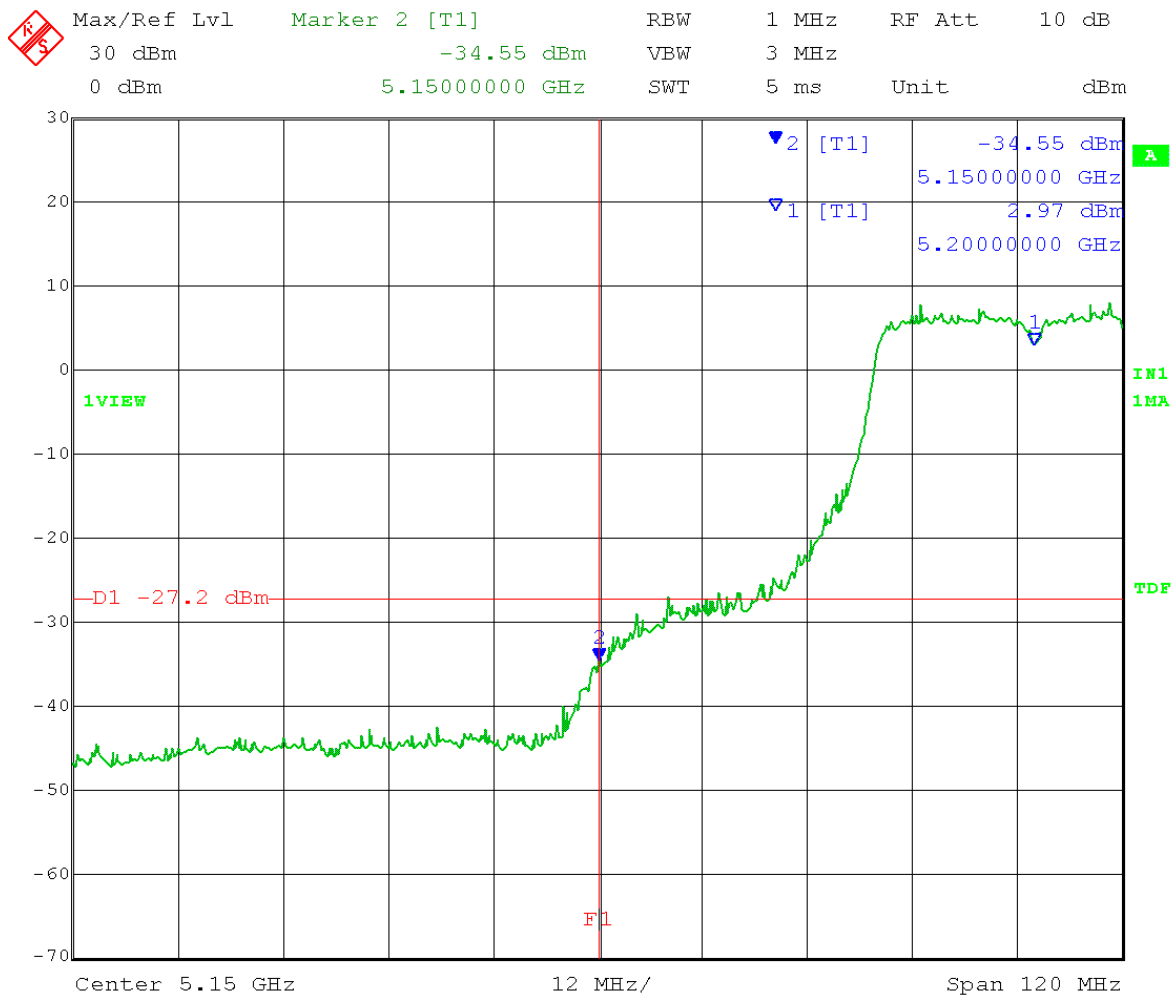
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
20 dBm -57.36 dBm VBW 3 MHz
0 dBm 5.12723447 GHz SWT 5 ms Unit dBm



Date: 3.JUN.2014 12:54:59

Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -27.2 dBm

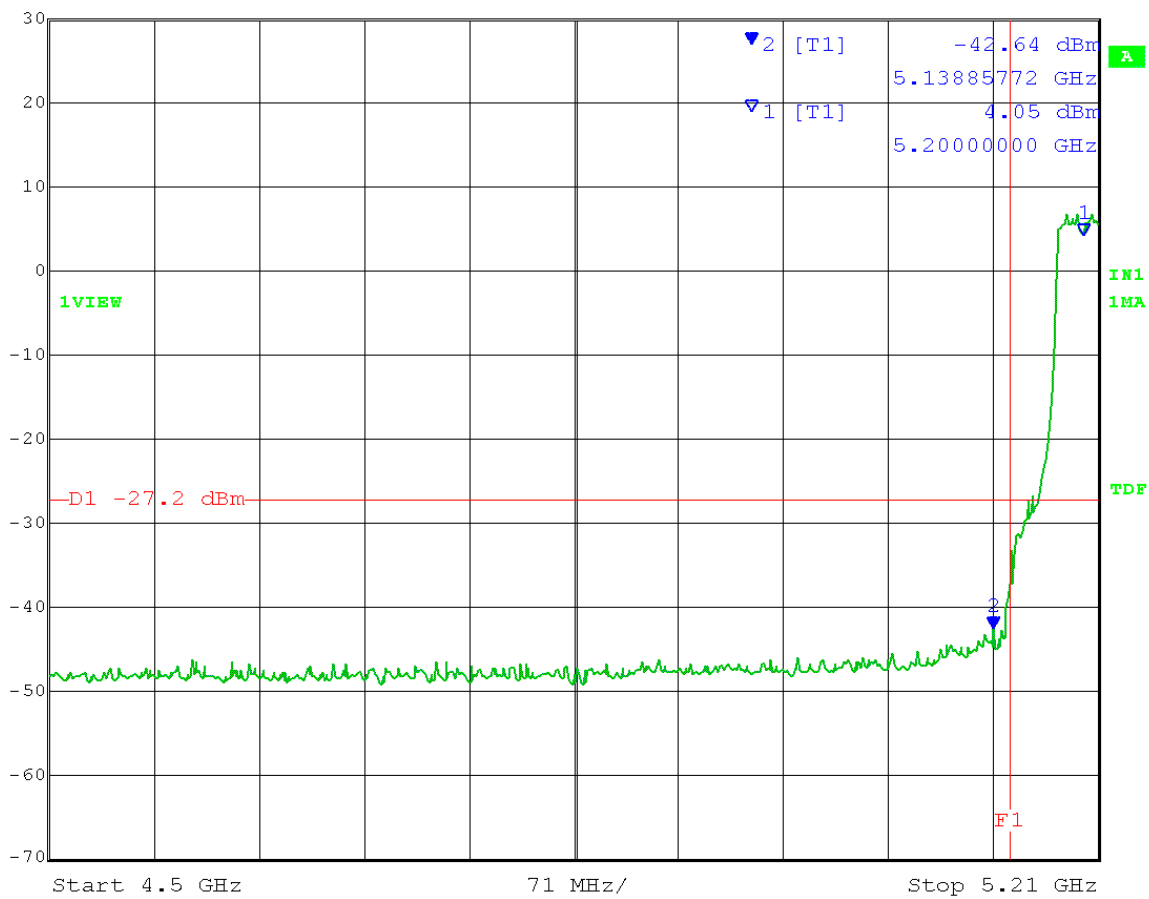
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 14
 Band-edge = 5.150 GHz



Date: 3.JUN.2014 14:43:36



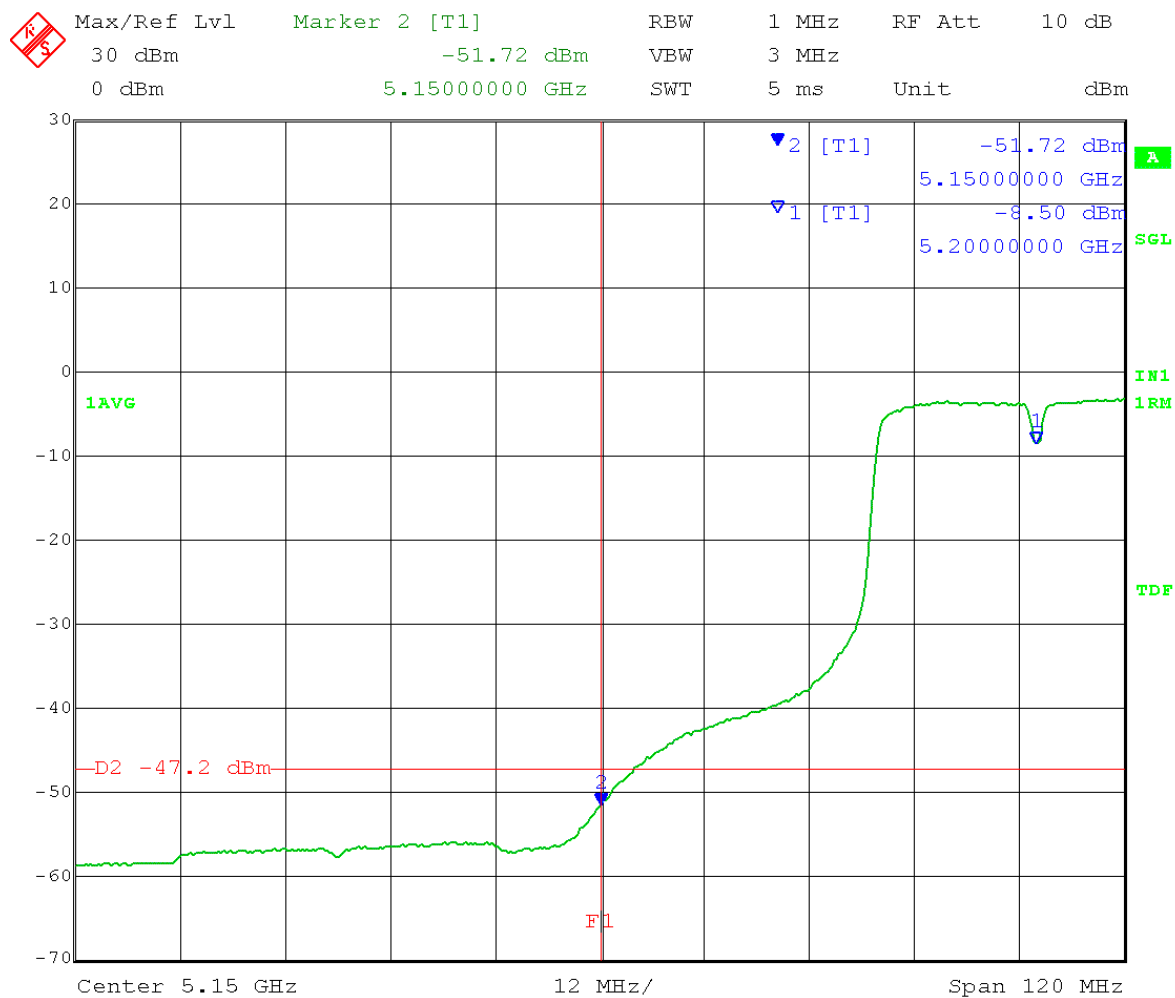
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
30 dBm -42.64 dBm VBW 3 MHz
0 dBm 5.13885772 GHz SWT 5 ms Unit dBm



Date: 3.JUN.2014 14:42:21

Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

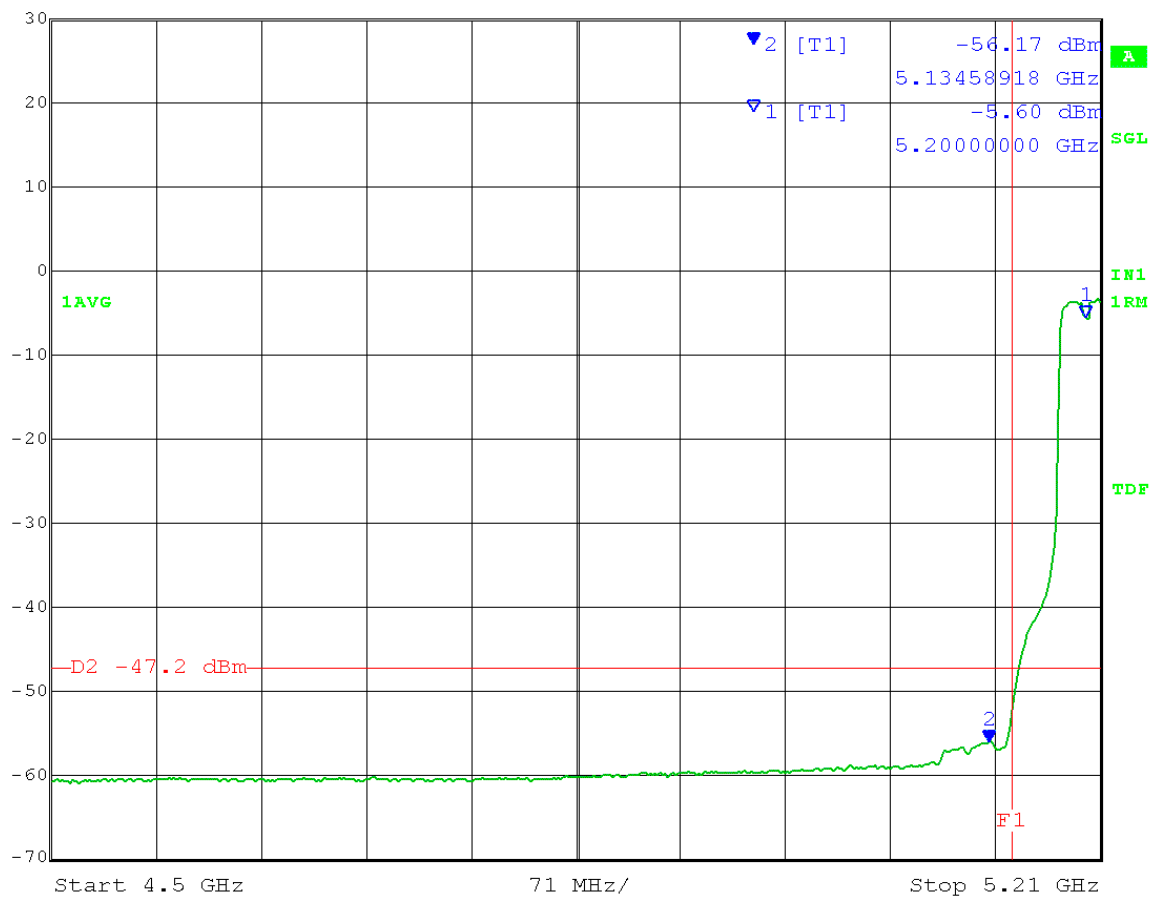
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 14
 Band-edge = 5.150 GHz



Date: 3.JUN.2014 14:40:09



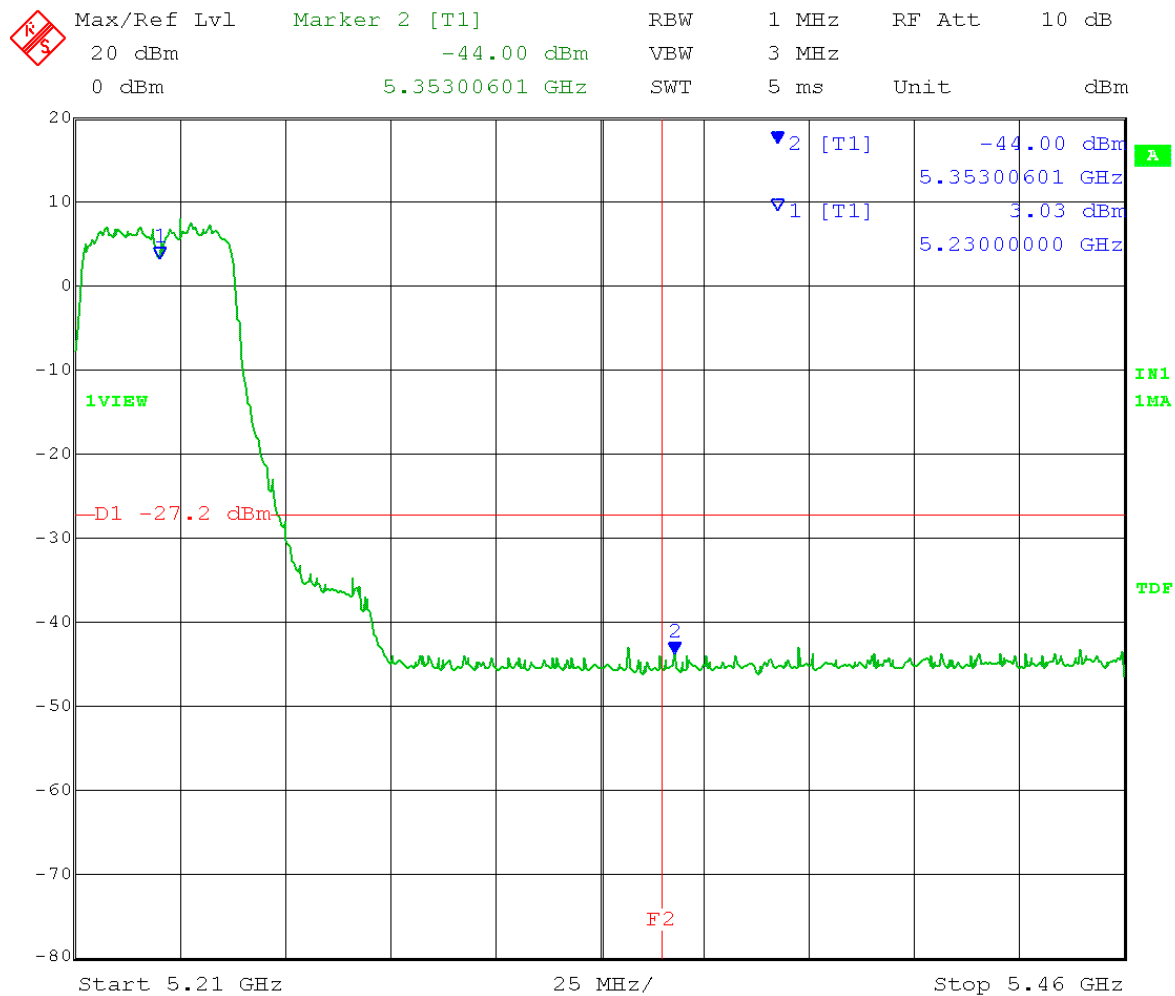
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
30 dBm -56.17 dBm VBW 3 MHz
0 dBm 5.13458918 GHz SWT 5 ms Unit dBm



Date: 3.JUN.2014 14:41:23

Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -27.2 dBm

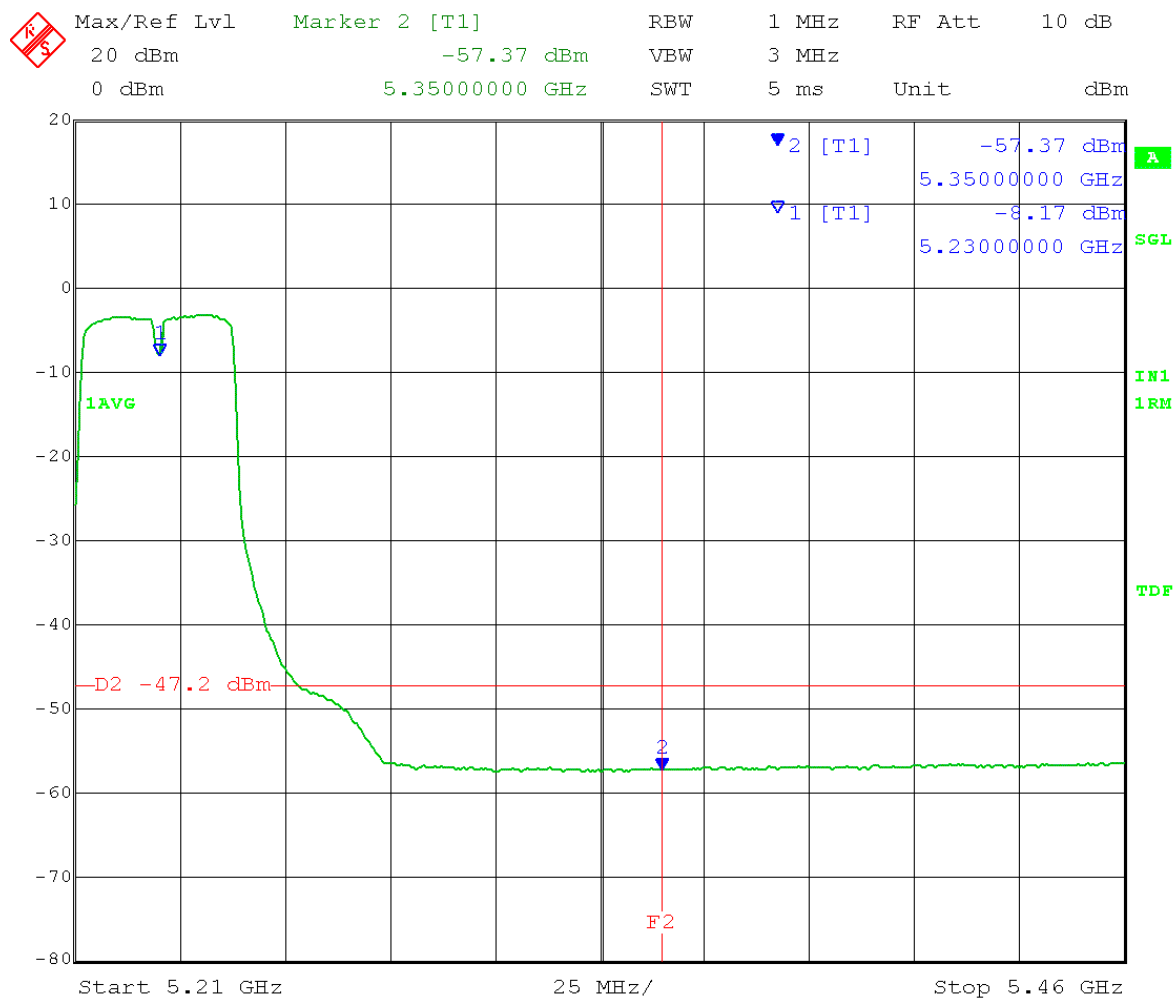
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 14
 Band-edge = 5.350 GHz



Date: 3.JUN.2014 13:02:19

Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 3 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 3 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

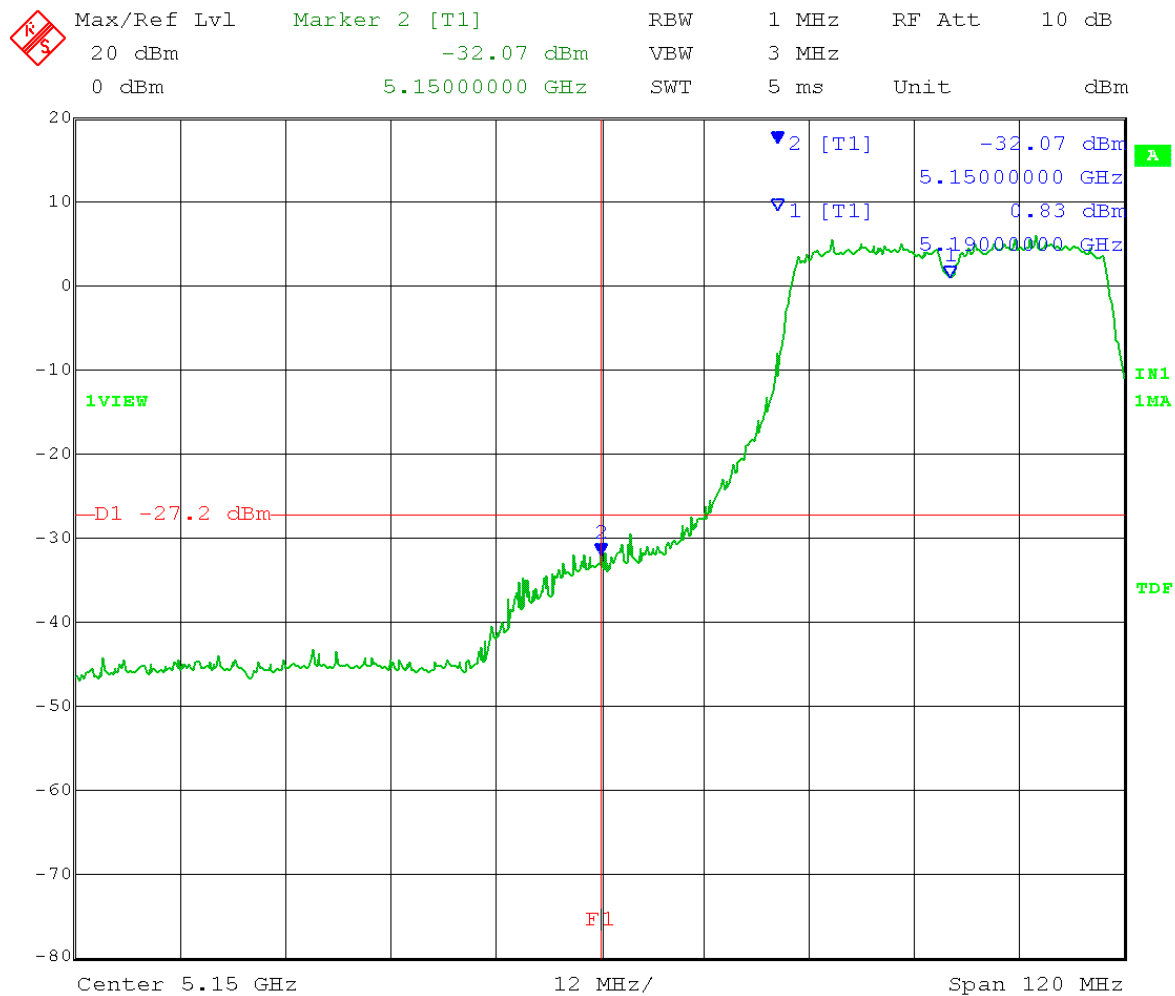
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 14
 Band-edge = 5.350 GHz



Date: 3.JUN.2014 13:01:12

Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna gain
 – 3 dB (MIMO) = -40.2 dBm

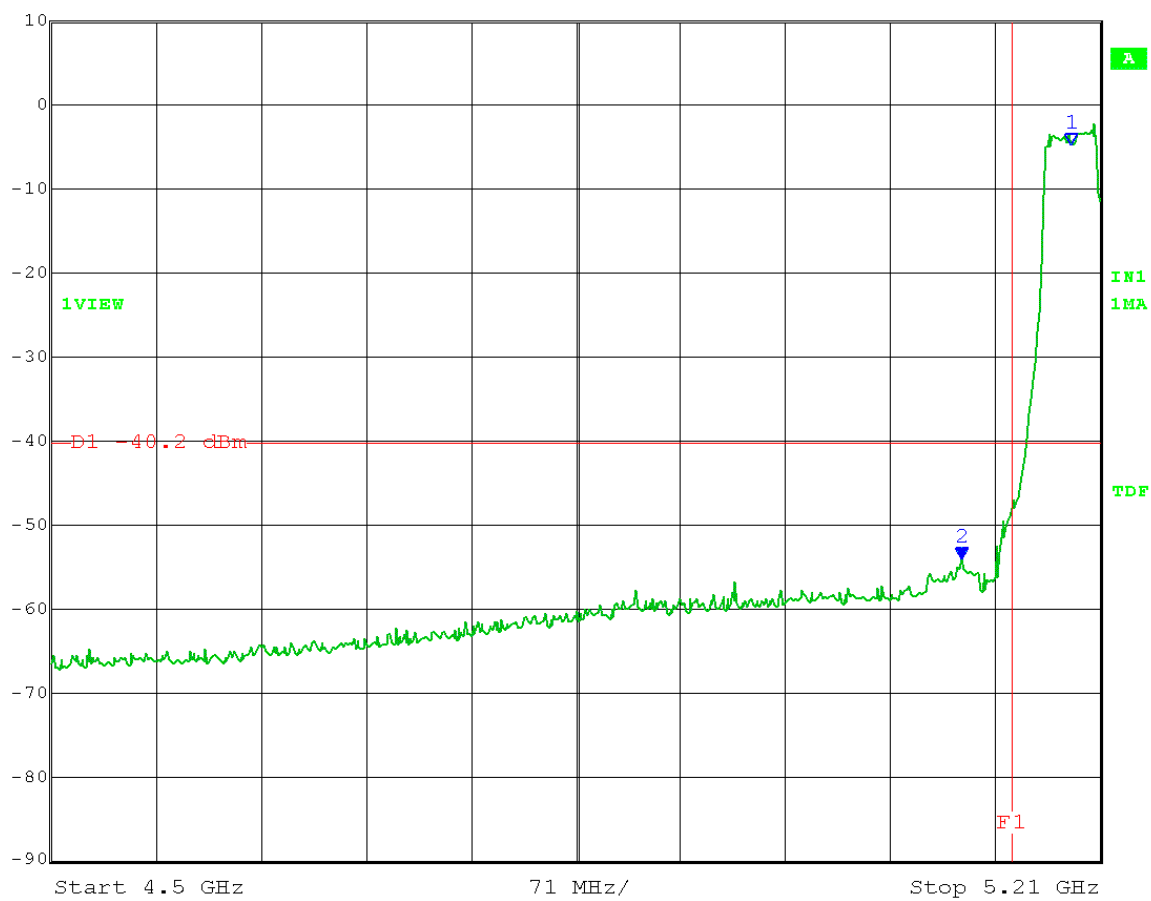
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 4
 Band-edge = 5.150 GHz



Date: 3.JUN.2014 12:58:07



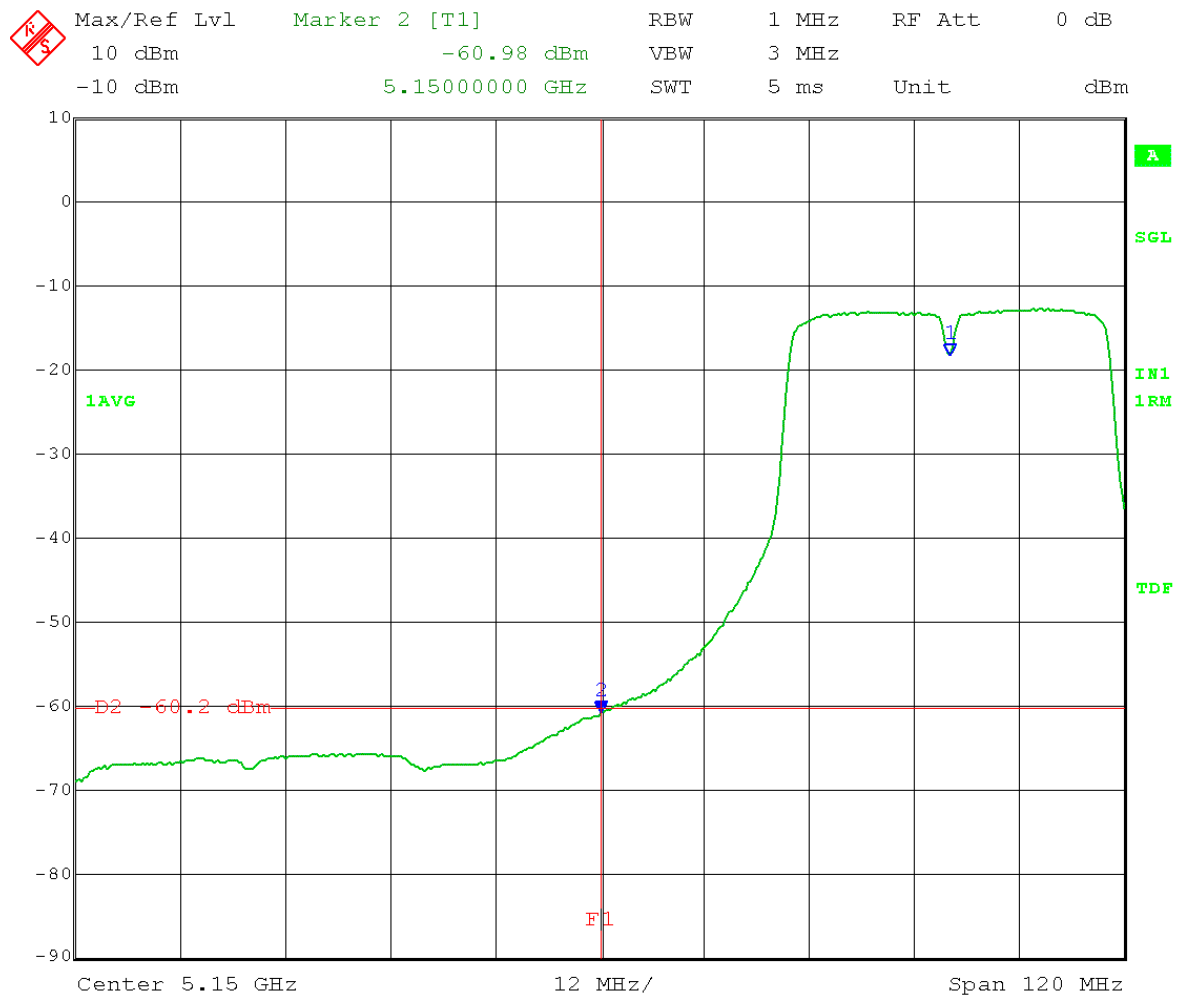
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 0 dB
10 dBm -54.20 dBm VBW 3 MHz
-10 dBm 5.11562761 GHz SWT 5 ms Unit dBm



Date: 3.JUN.2014 13:23:38

Test Date: 06-03-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 16 dBi antenna gain
 – 3 dB (MIMO) = -60.2 dBm

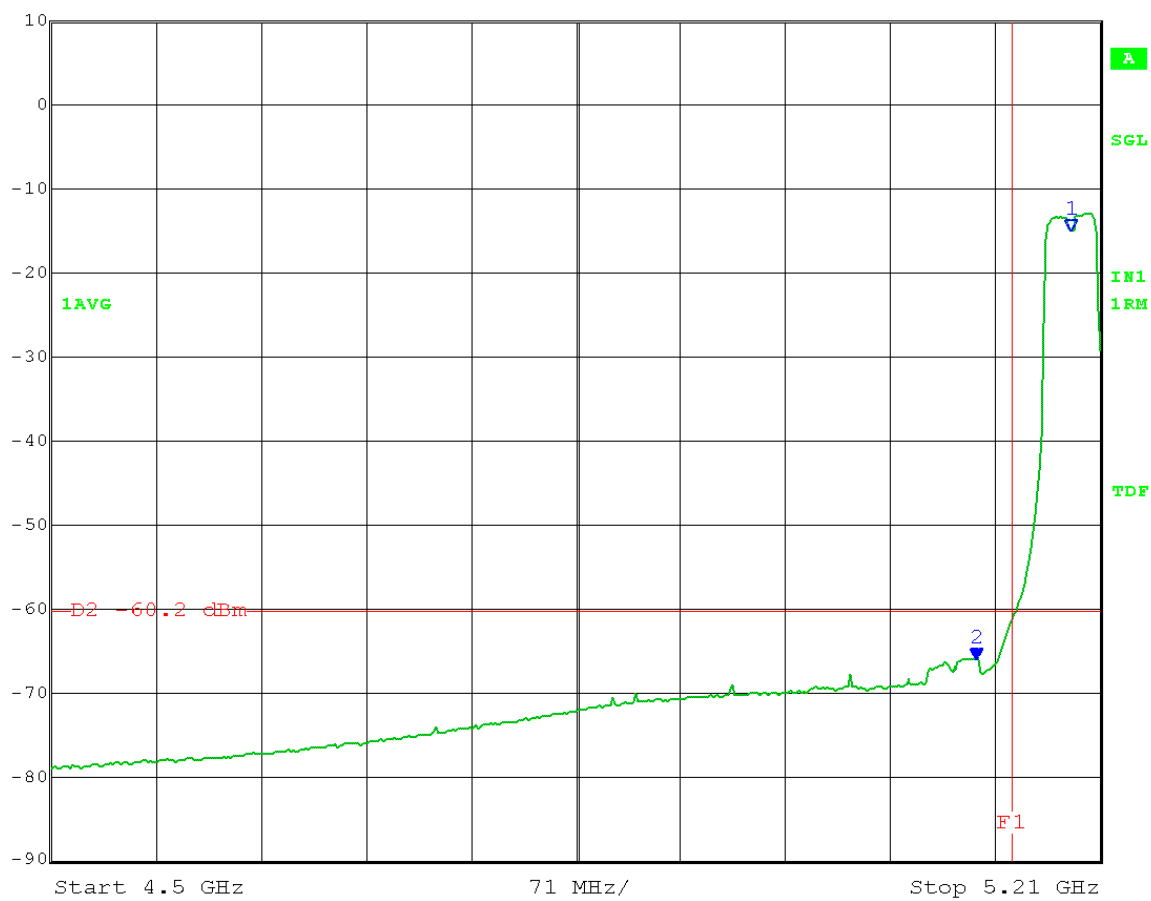
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 4
 Band-edge = 5.150 GHz



Date: 3.JUN.2014 13:20:21



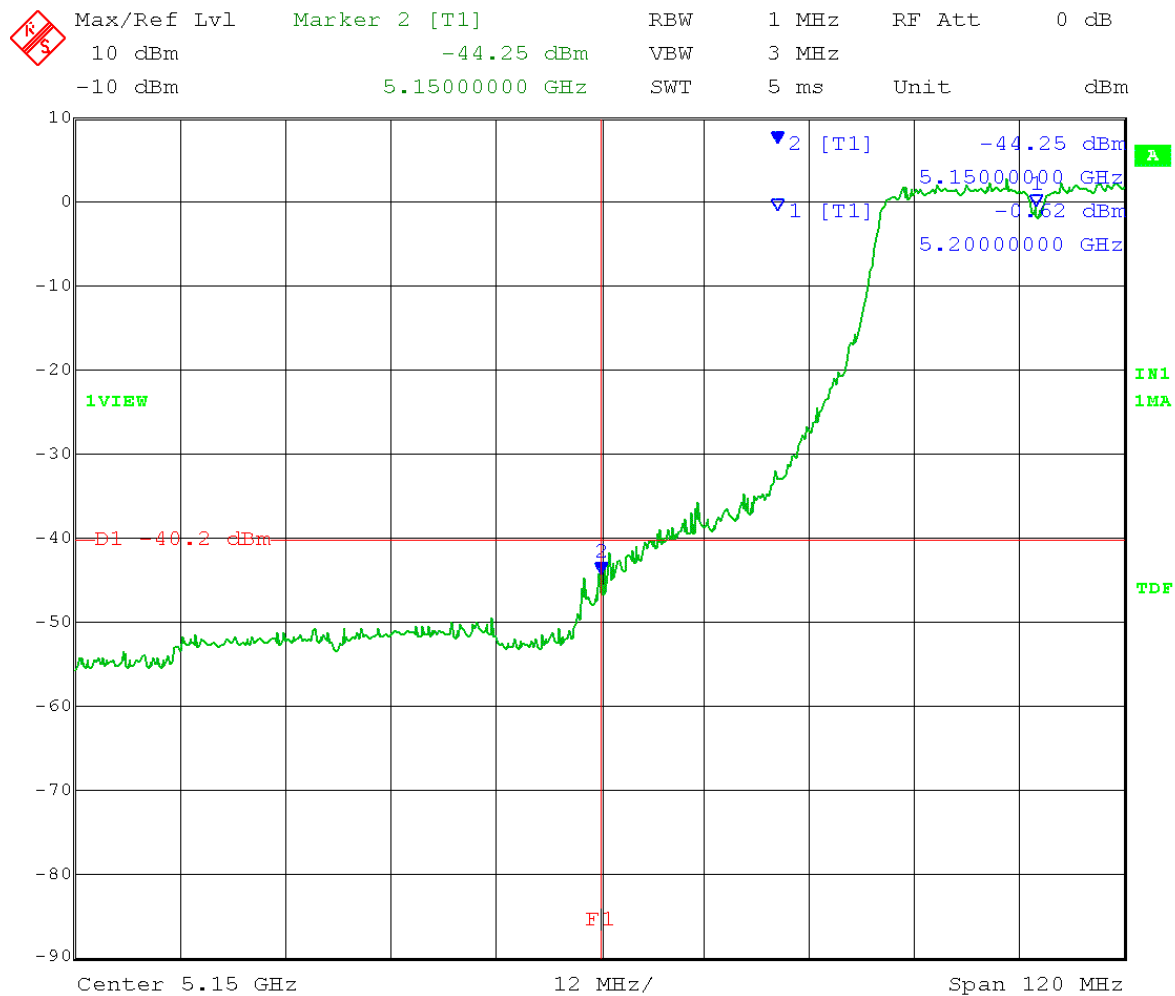
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 0 dB
10 dBm -66.08 dBm VBW 3 MHz
-10 dBm 5.12581162 GHz SWT 5 ms Unit dBm



Date: 3.JUN.2014 13:21:07

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna gain
 – 3 dB (MIMO) = -40.2 dBm

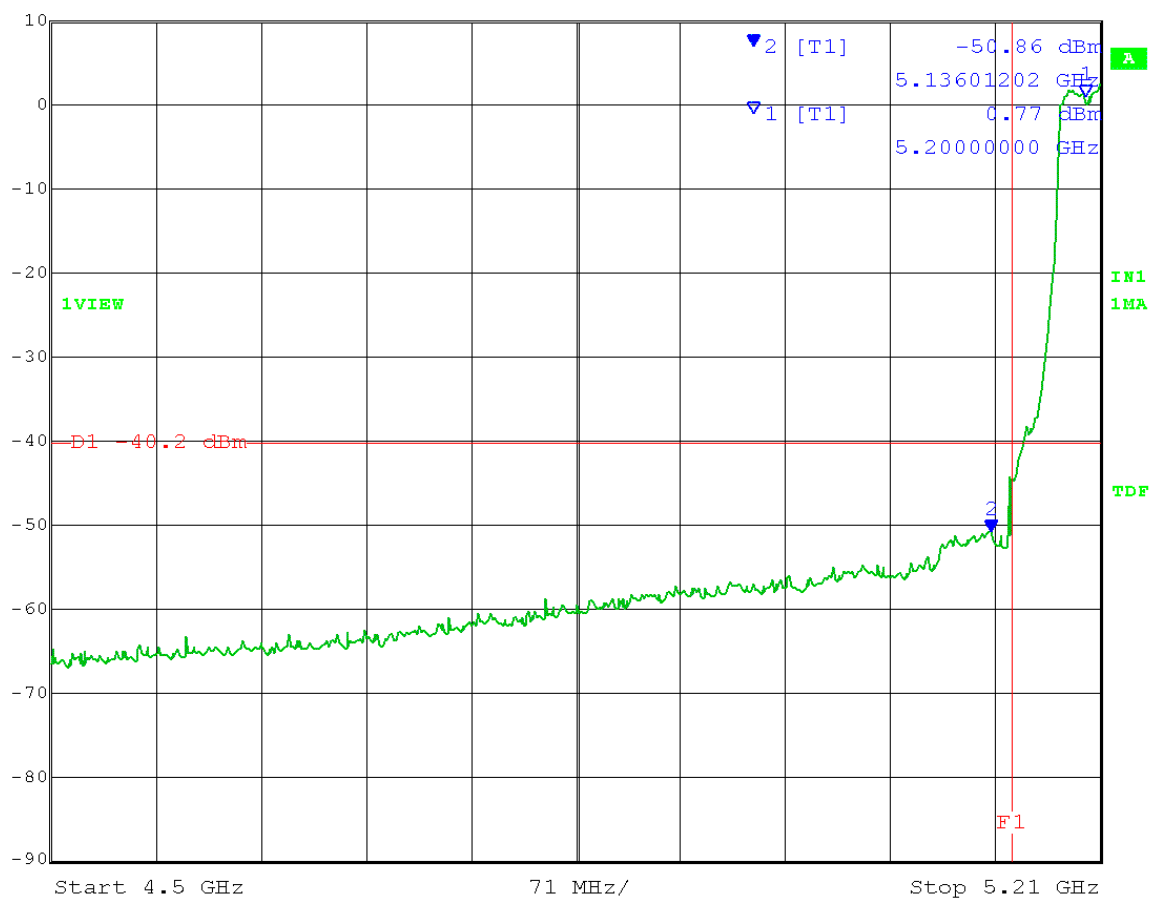
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 8
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 14:36:45



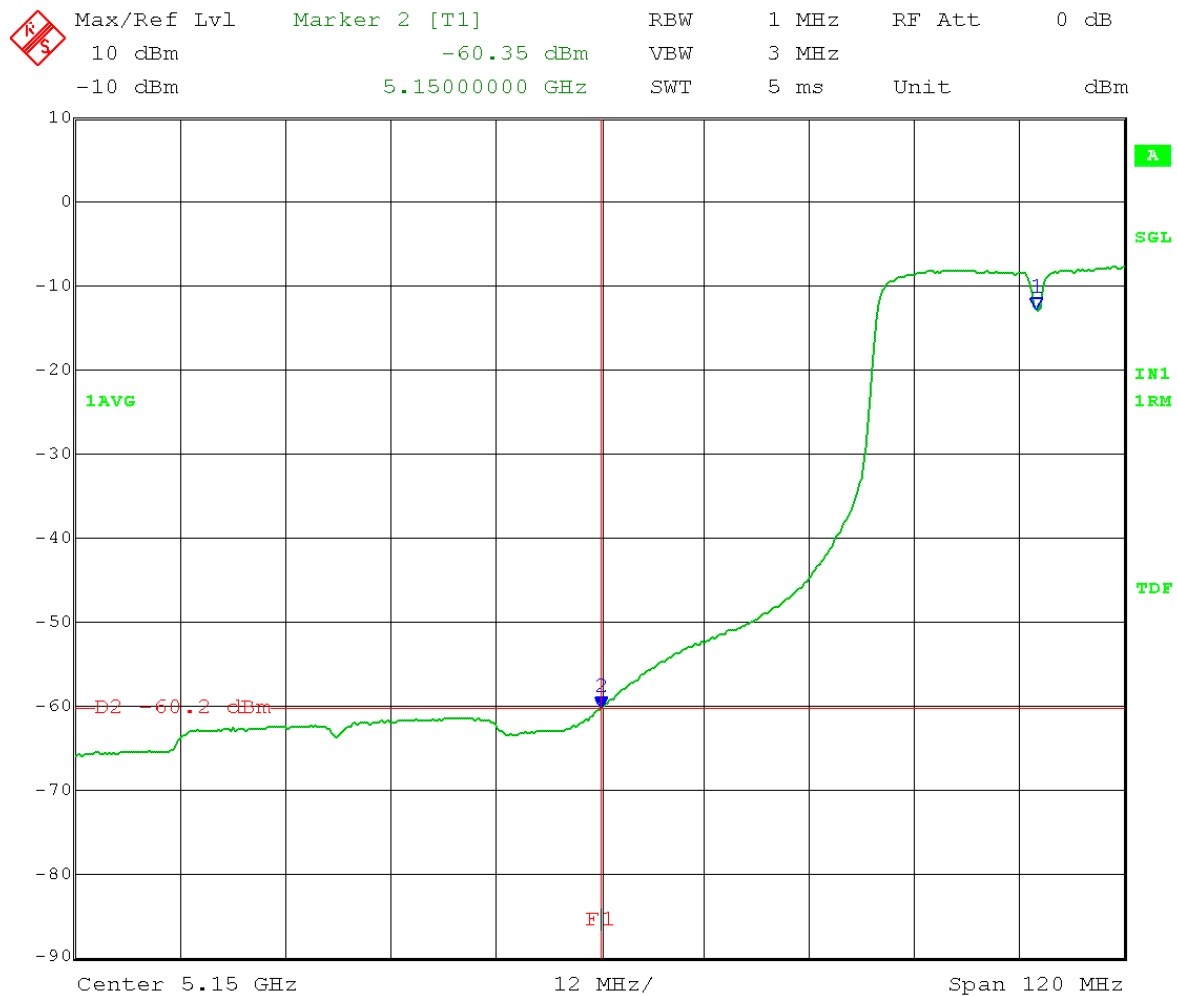
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 0 dB
10 dBm -50.86 dBm VBW 3 MHz
-10 dBm 5.13601202 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 14:35:31

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 16 dBi antenna gain
 – 3 dB (MIMO) = -60.2 dBm

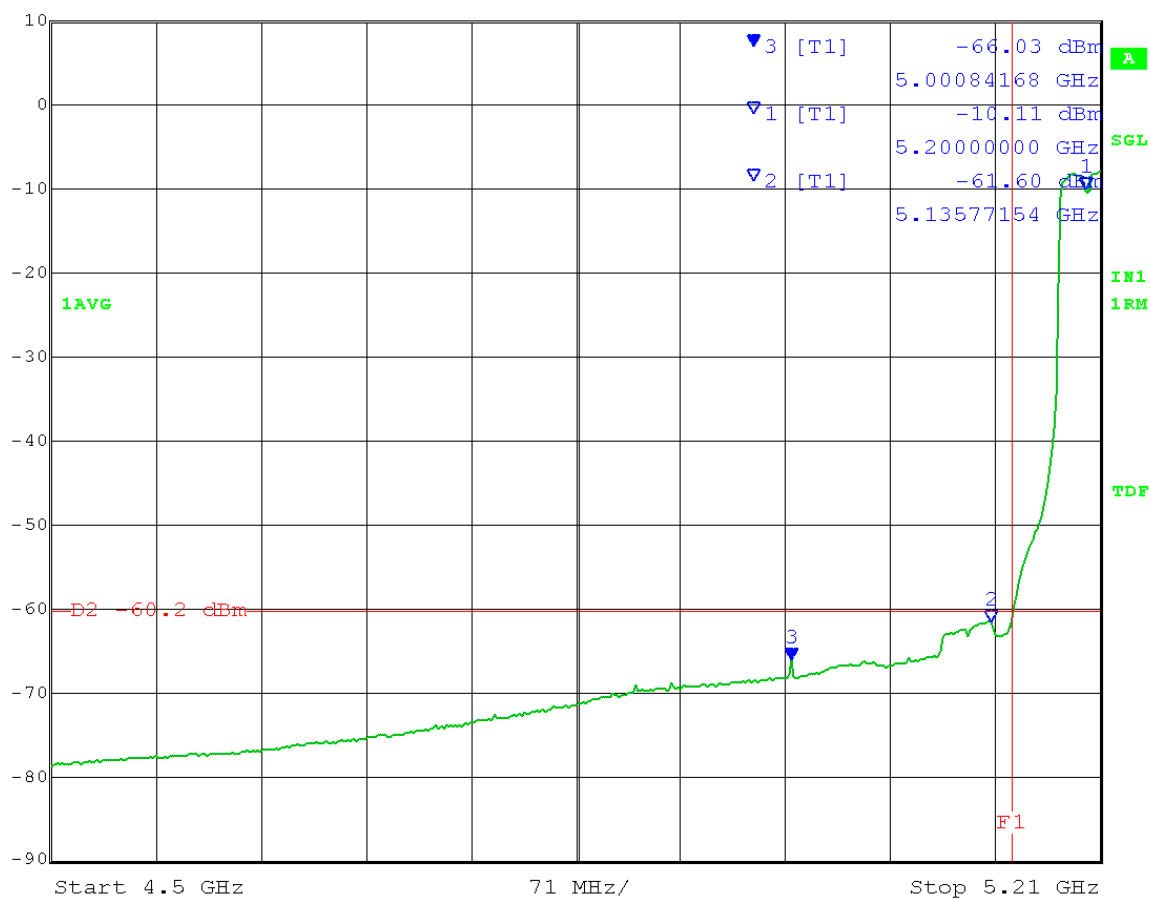
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 8
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 14:33:00



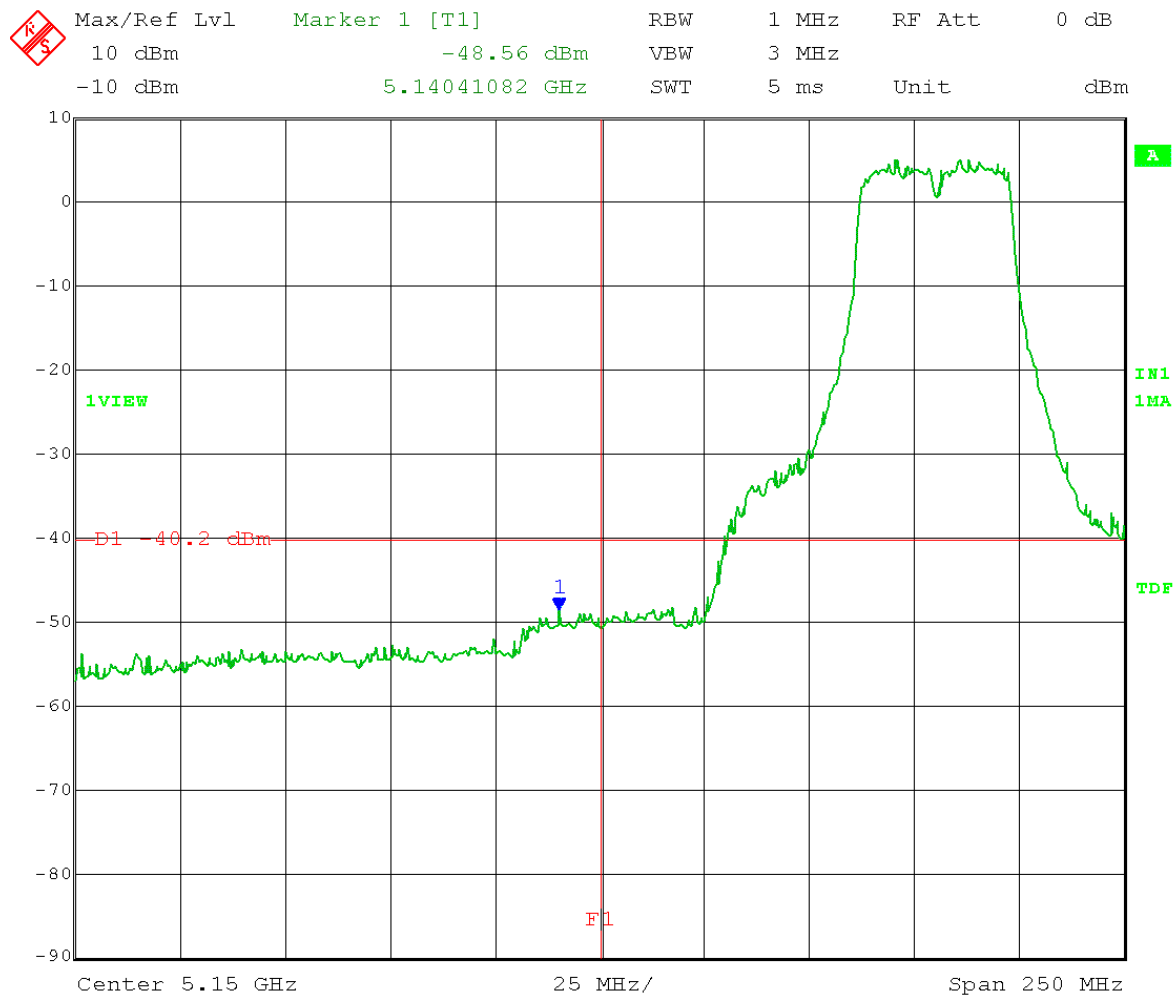
Max/Ref Lvl Marker 3 [T1] RBW 1 MHz RF Att 0 dB
10 dBm -66.03 dBm VBW 3 MHz
-10 dBm 5.00084168 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 14:33:56

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dBμV/m – 95.2 (3 meter distance) – 16 dBi antenna gain
 – 3 dB (MIMO) = -40.2 dBm

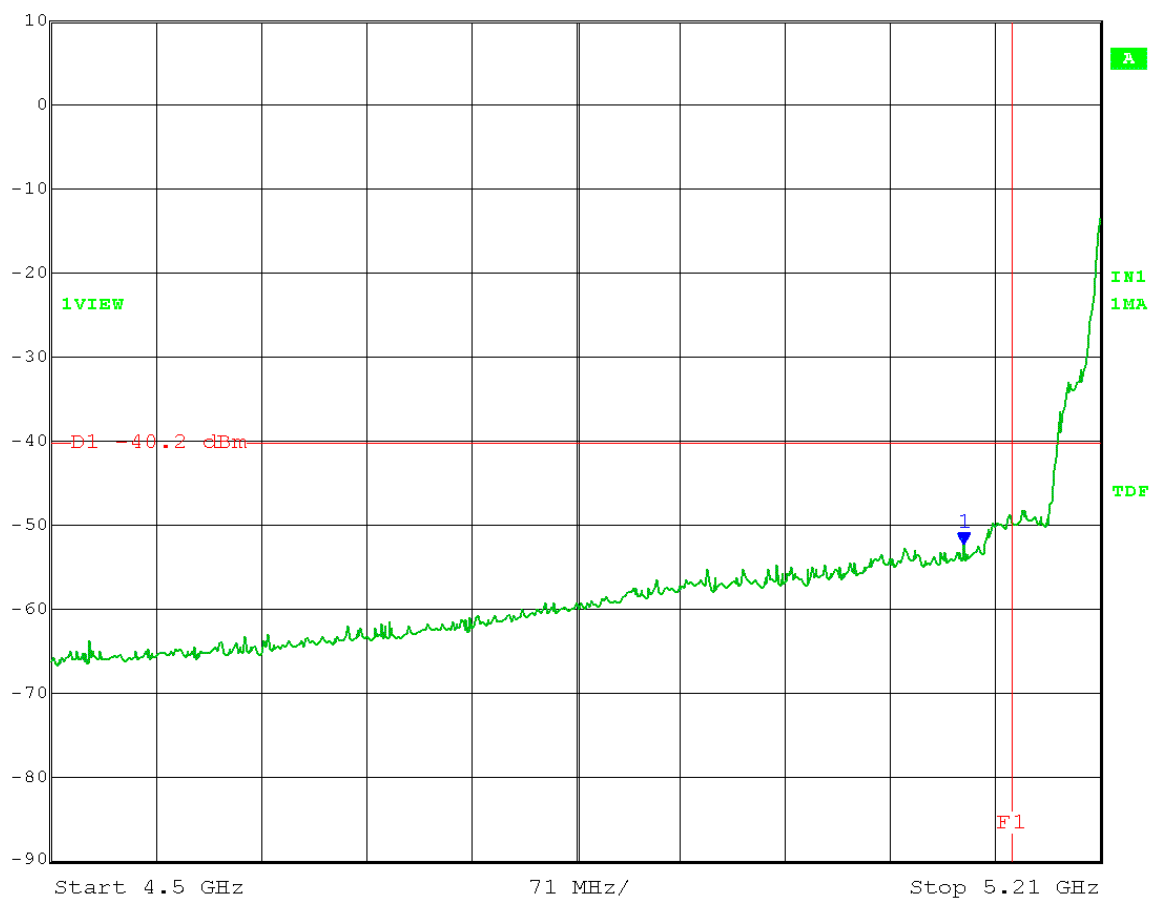
VBW ≥ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 11
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 14:28:42



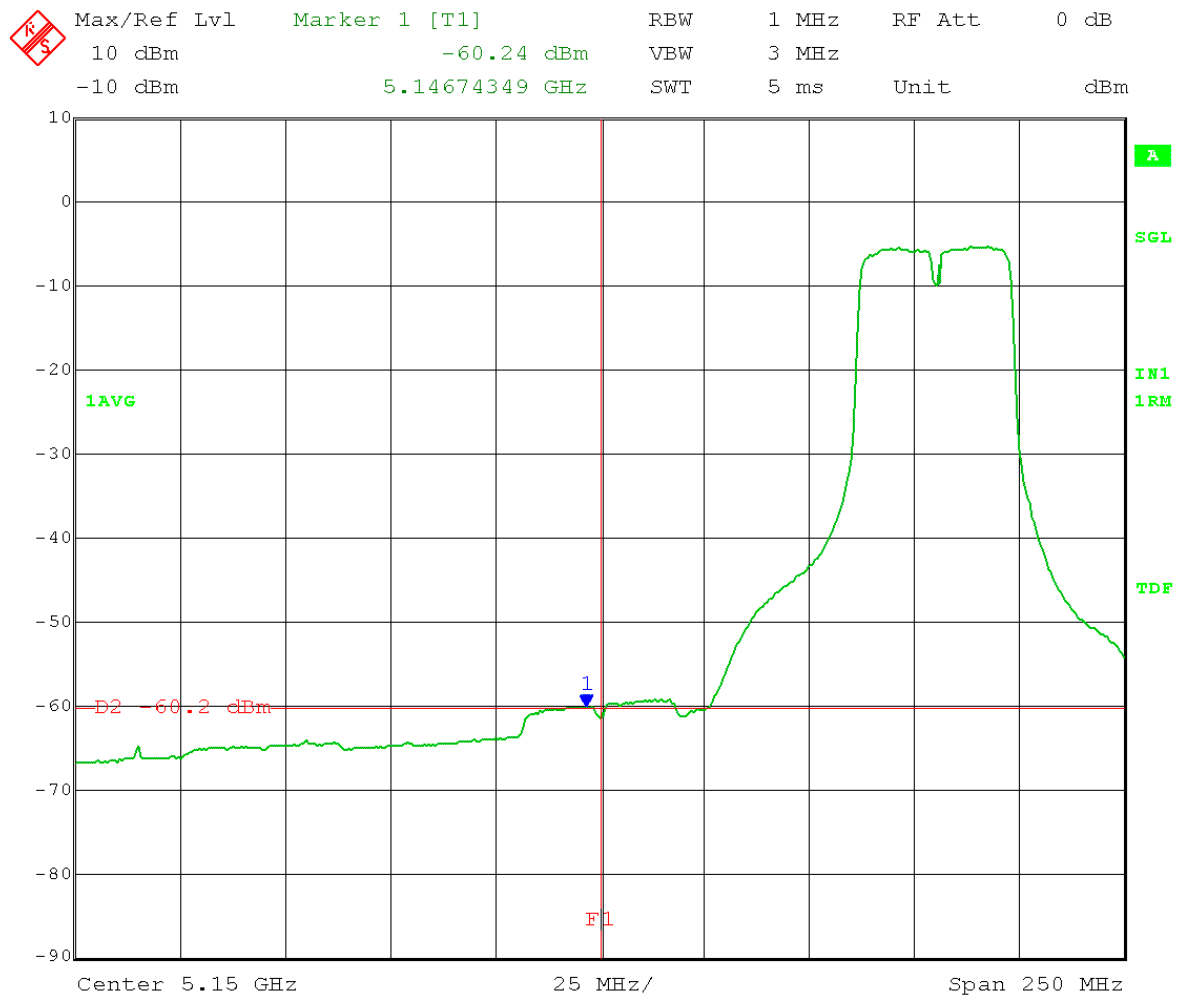
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 0 dB
10 dBm -52.38 dBm VBW 3 MHz
-10 dBm 5.11686373 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 14:27:47

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 16 dBi antenna gain
 – 3 dB (MIMO) = -60.2 dBm

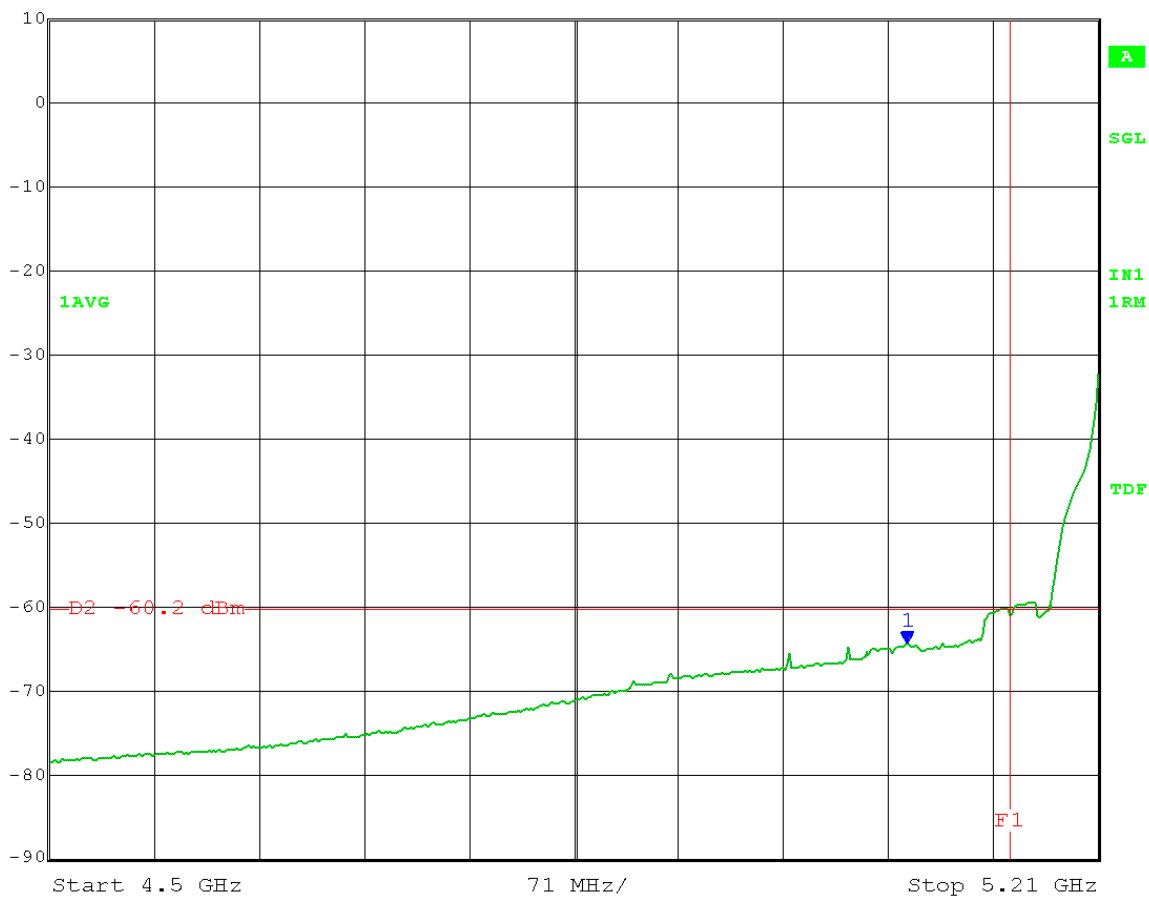
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 11
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 14:25:13



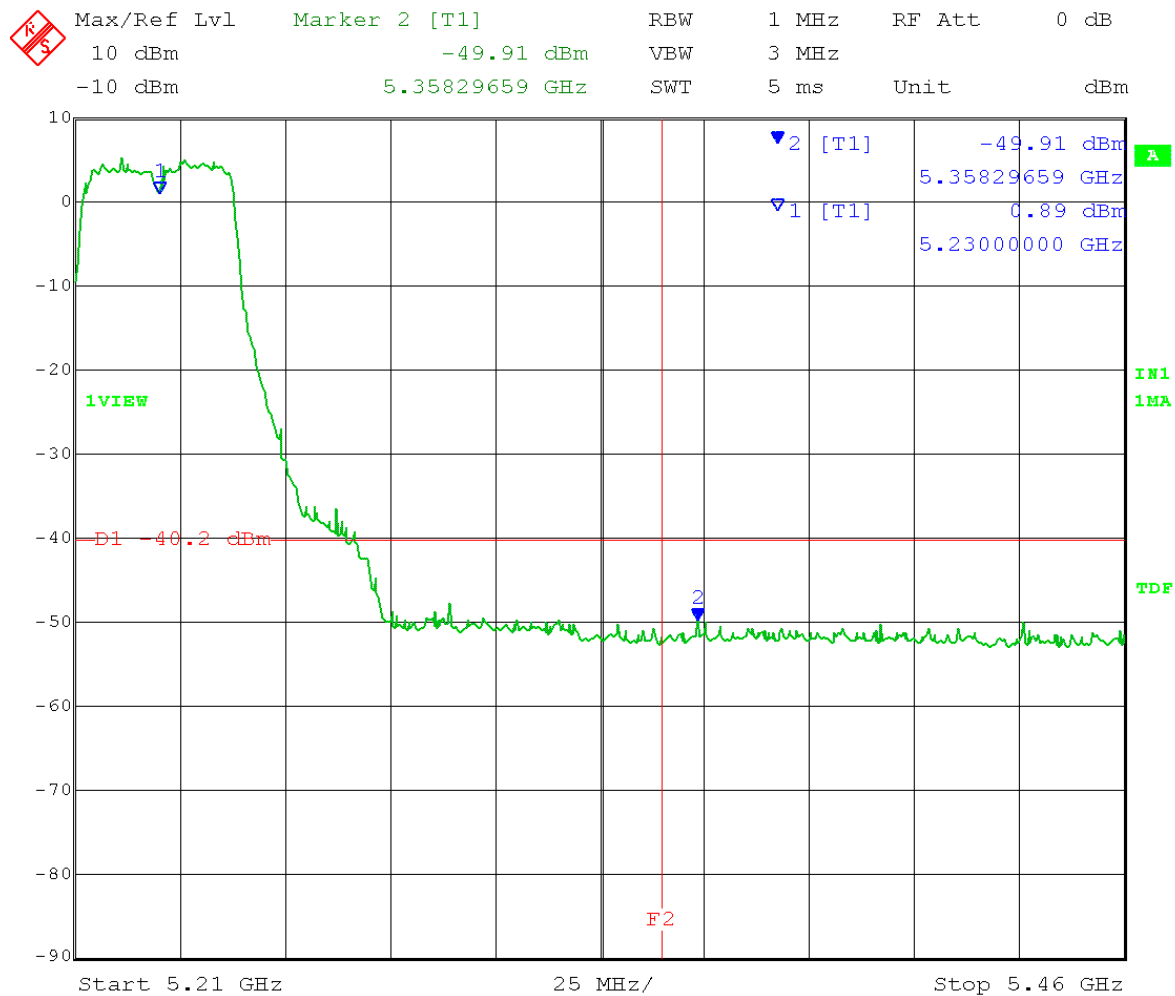
Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 0 dB
10 dBm -64.38 dBm VBW 3 MHz
-10 dBm 5.07986974 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 14:26:28

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna gain
 – 3 dB (MIMO) = -40.2 dBm

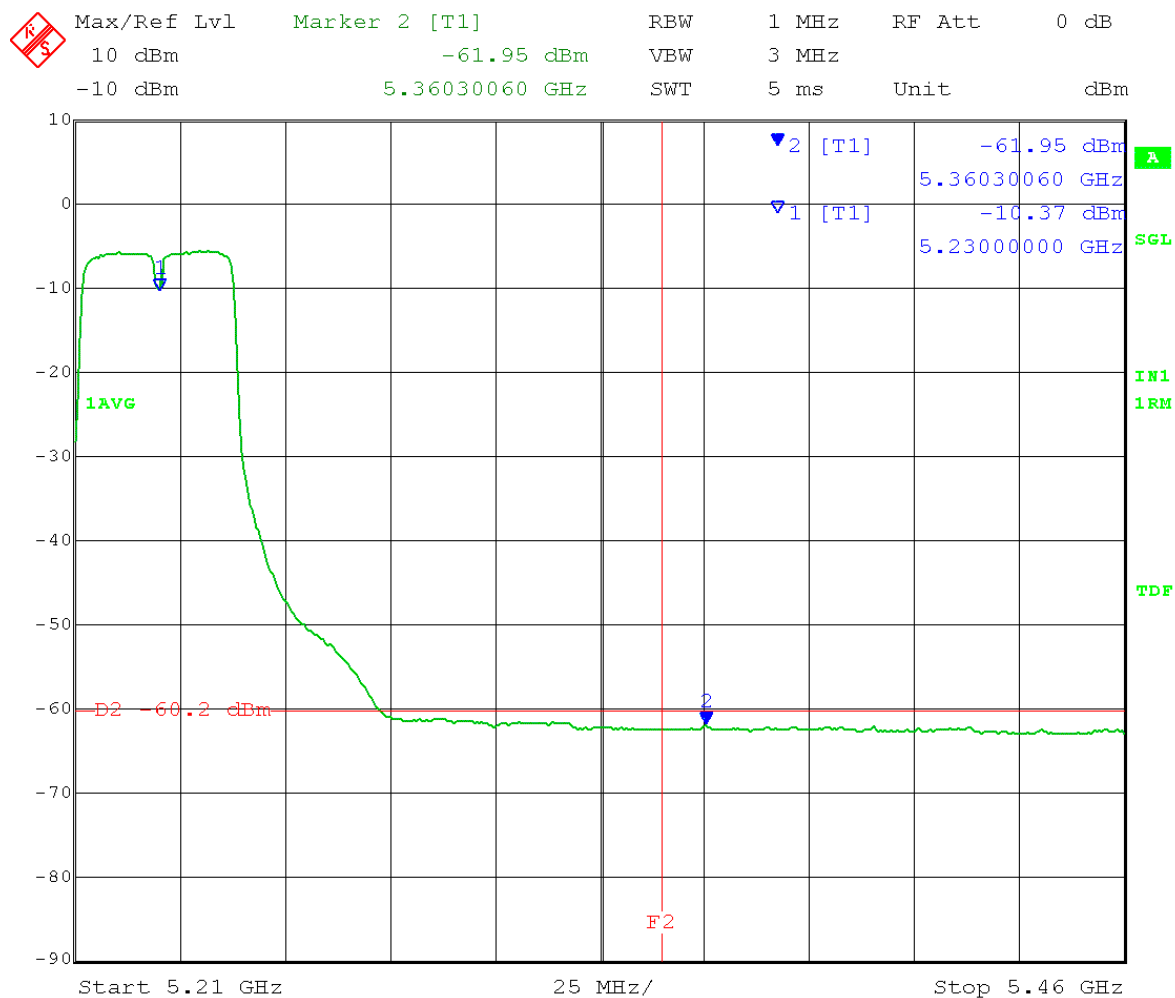
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 11
 Band-edge = 5.350 GHz



Date: 4.JUN.2014 14:43:15

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 16 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 16 dBi antenna gain
 – 3 dB (MIMO) = -60.2 dBm

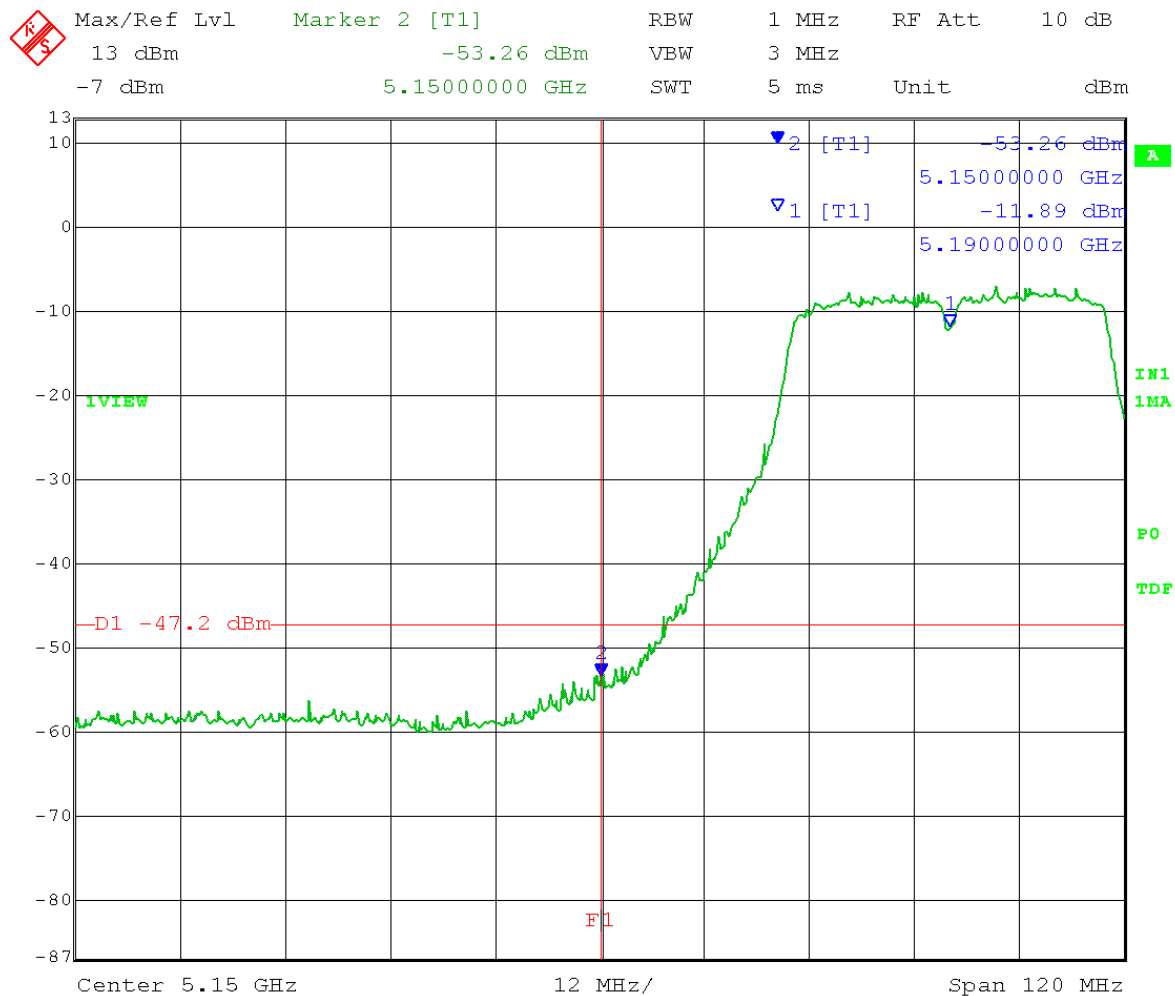
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 11
 Band-edge = 5.350 GHz



Date: 4.JUN.2014 14:44:02

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

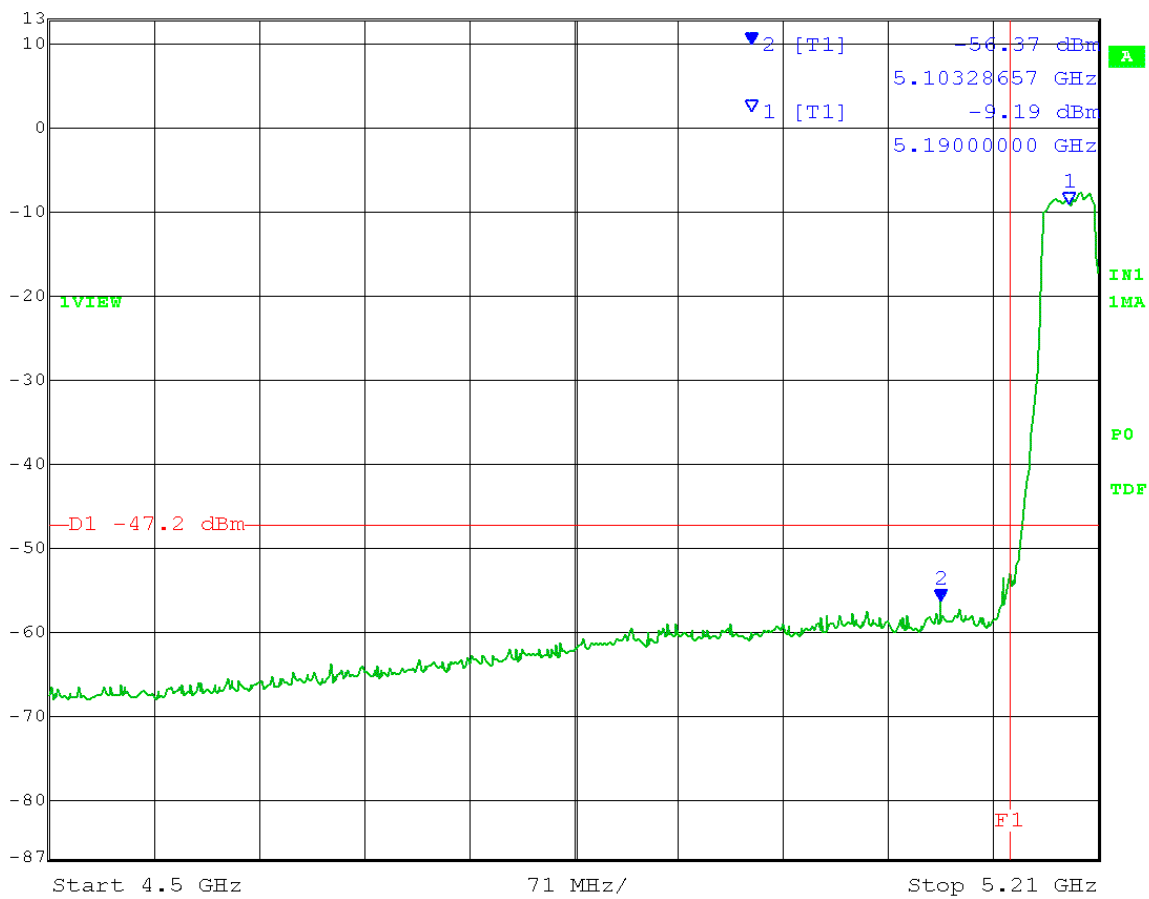
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 0.5-2dB
 external atten. = -1.5
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 13:20:37



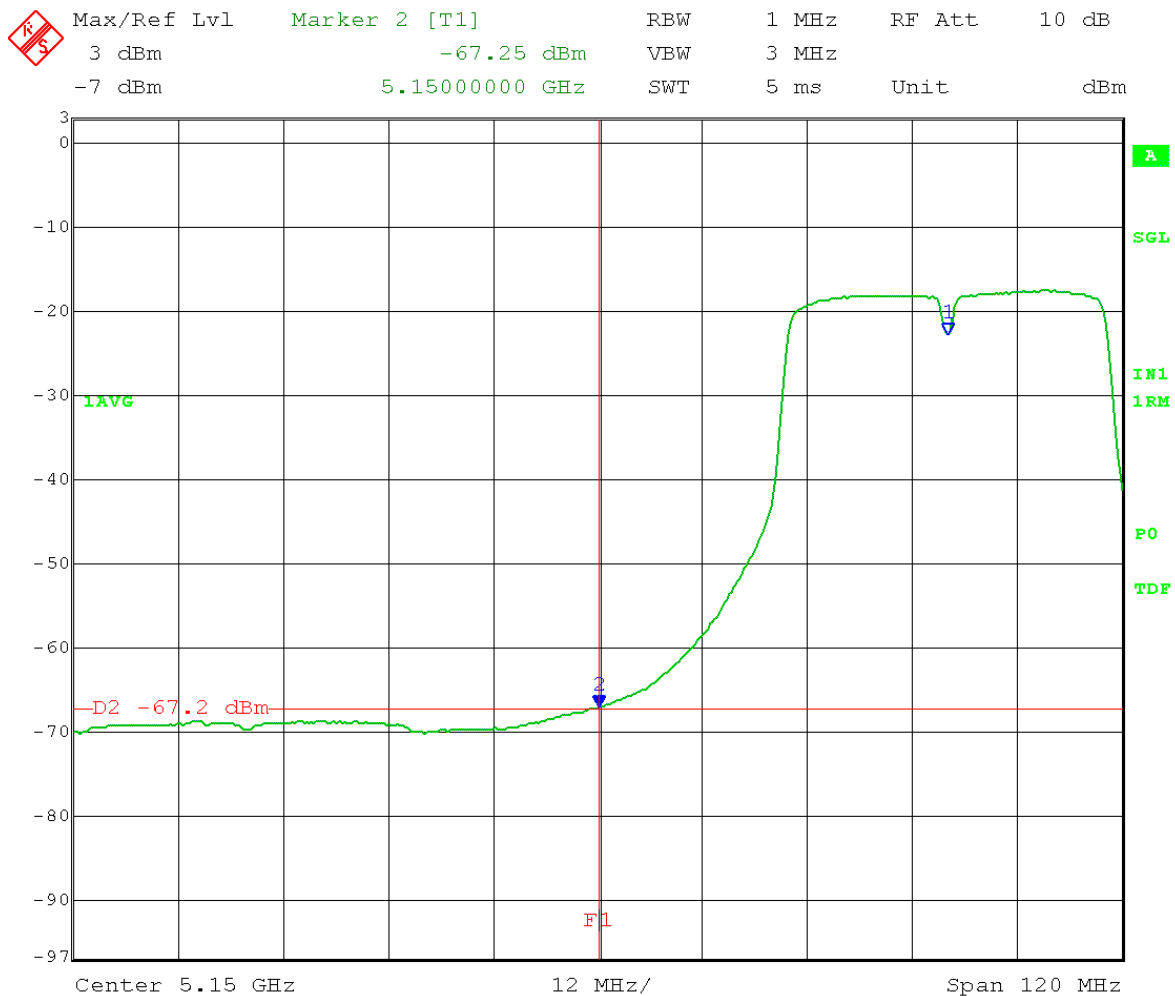
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
13 dBm -56.37 dBm VBW 3 MHz
-7 dBm 5.10328657 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 13:19:39

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -67.2 dBm

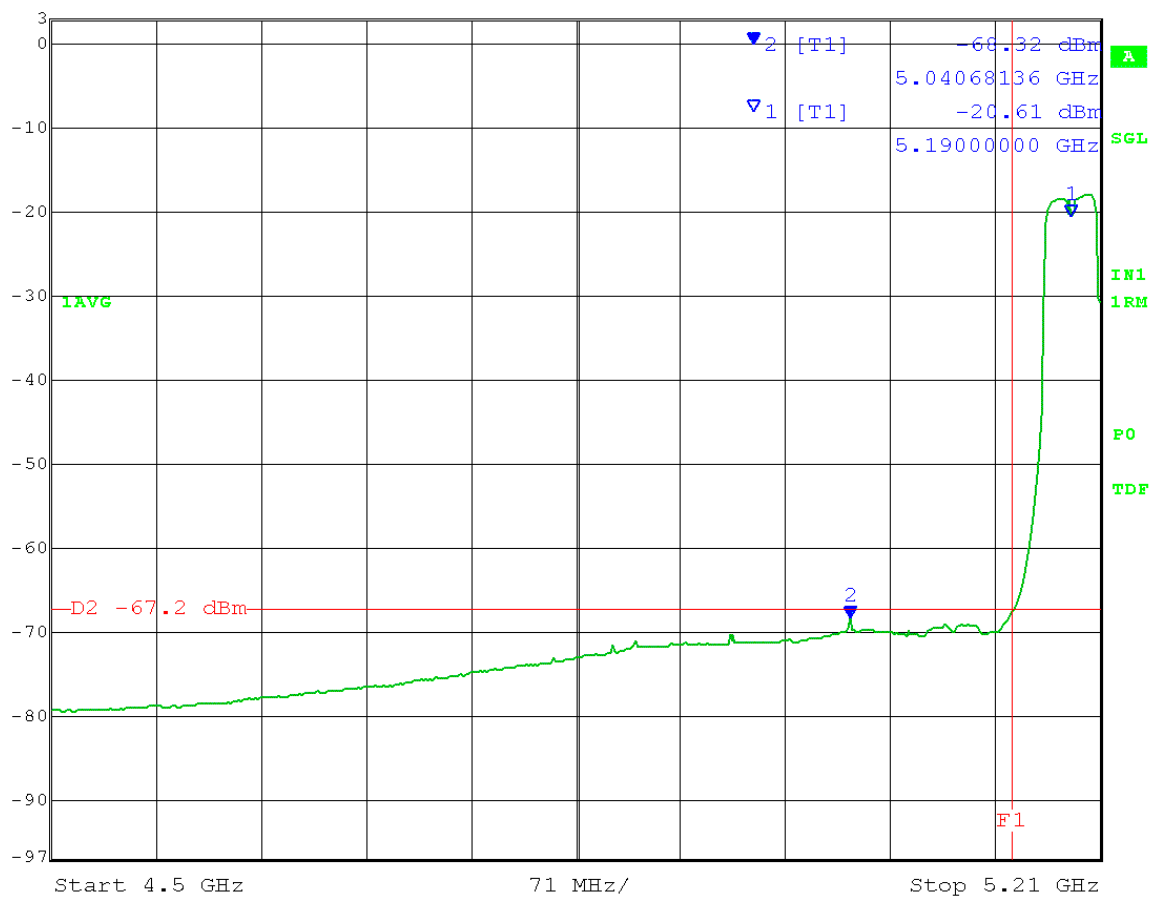
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 0.5-2dB
 external atten. = -1.5
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 13:13:56



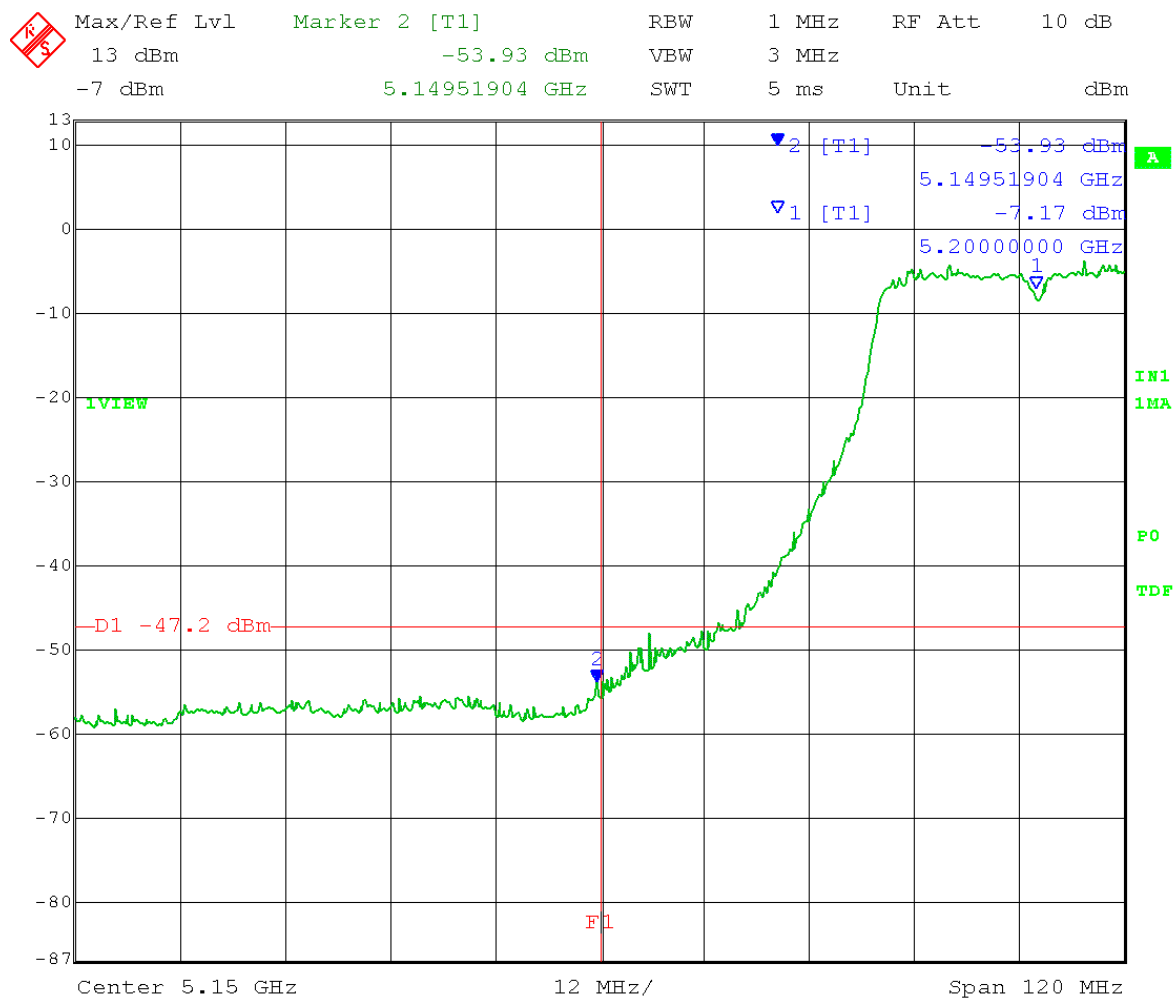
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
3 dBm -68.32 dBm VBW 3 MHz
-7 dBm 5.04068136 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 13:16:45

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

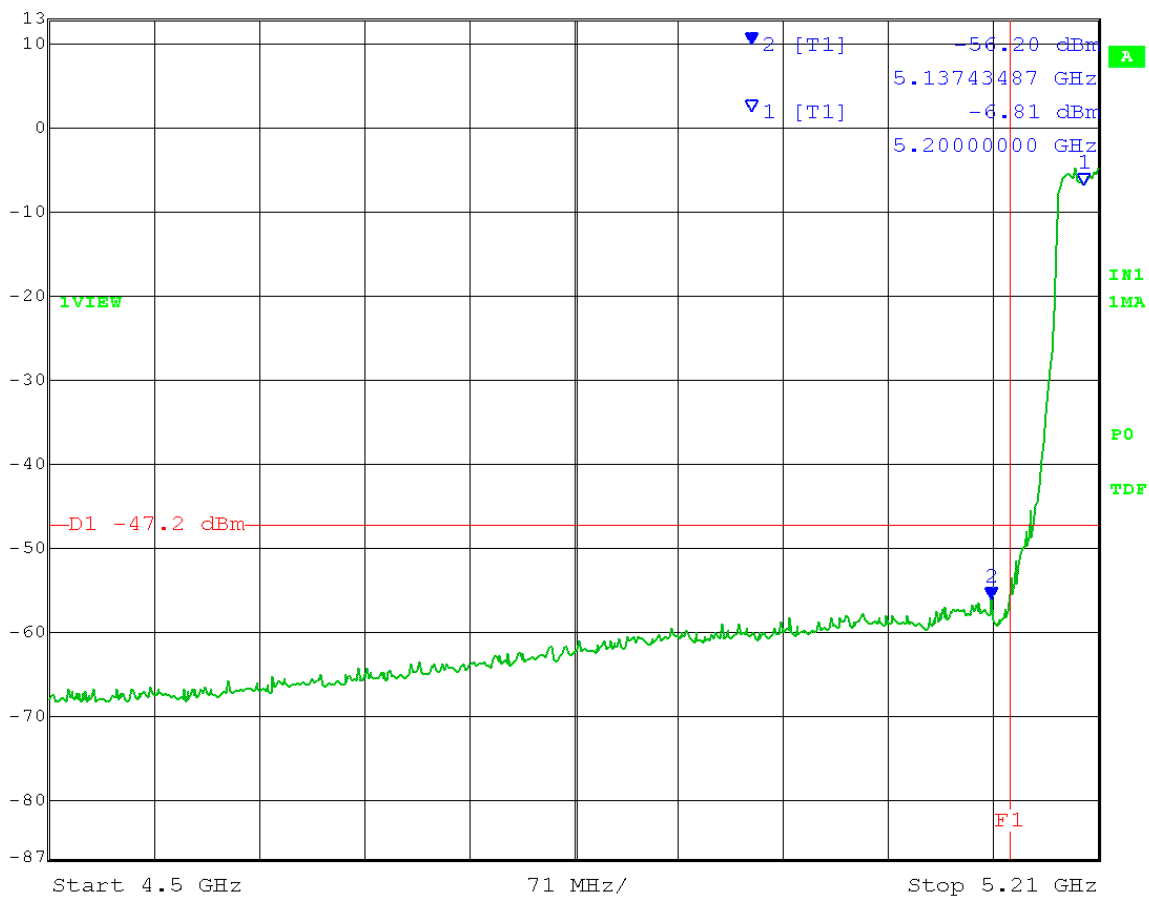
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 3.5-2dB
 external atten. = 1.5
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 13:35:33



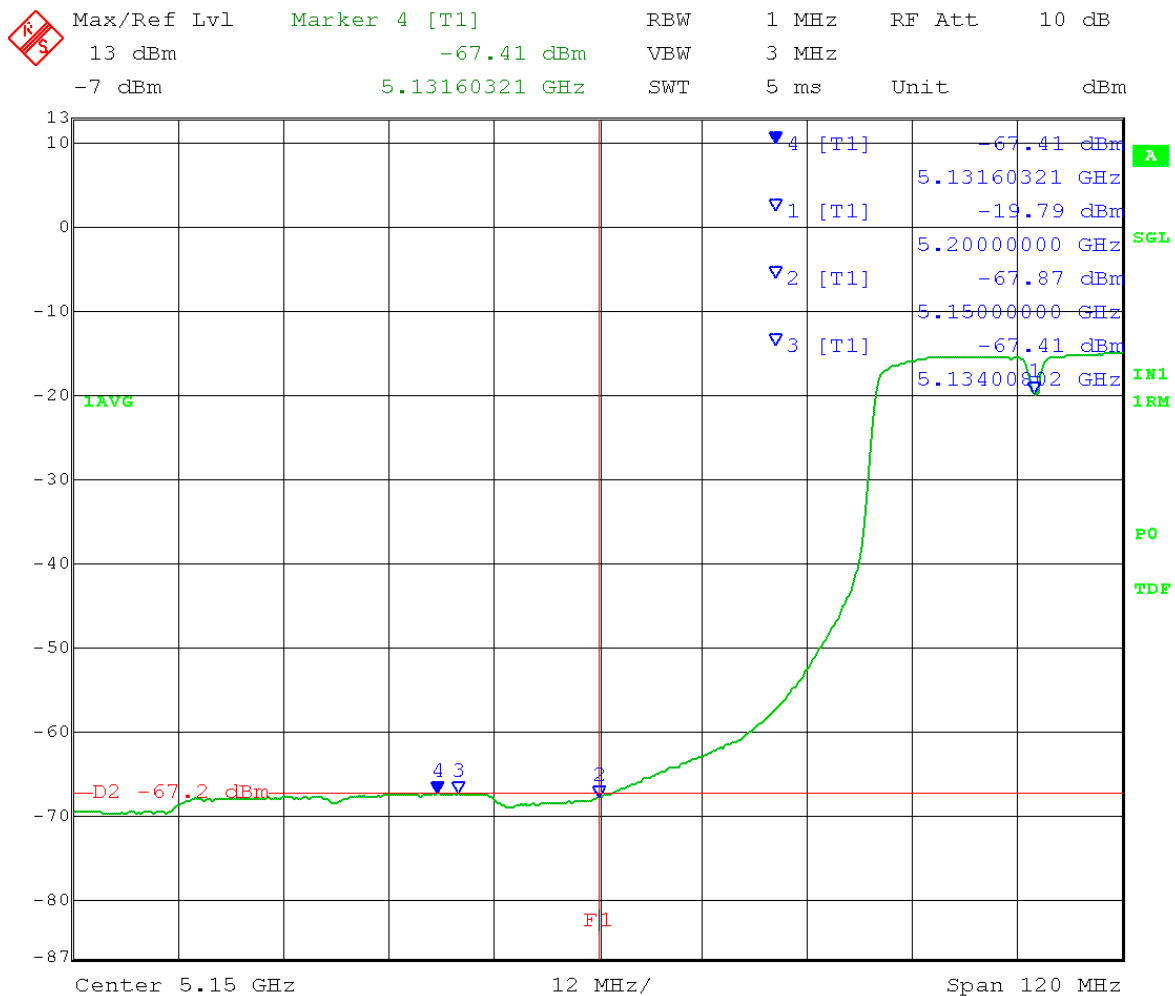
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
13 dBm -56.20 dBm VBW 3 MHz
-7 dBm 5.13743487 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 13:34:09

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -67.2 dBm

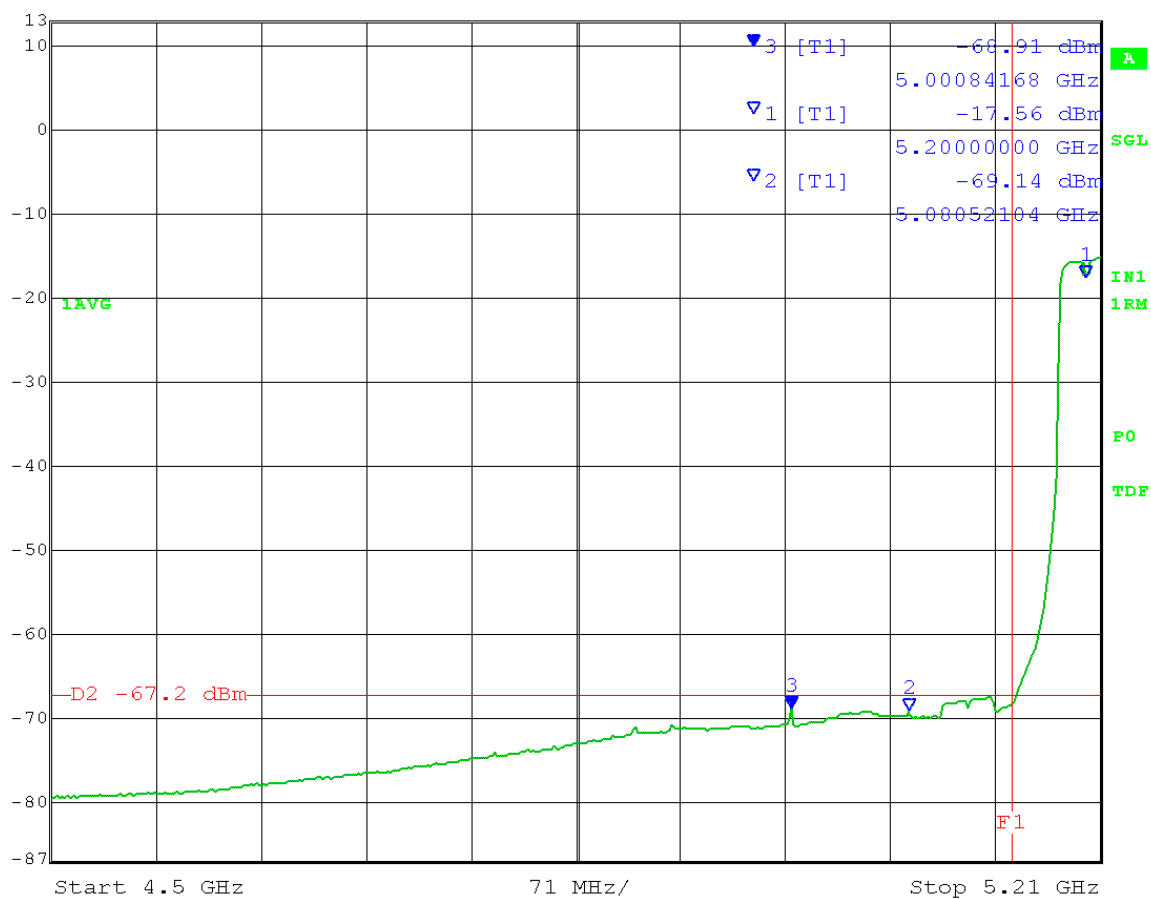
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 3.5-2dB
 external atten. = 1.5
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 13:31:18



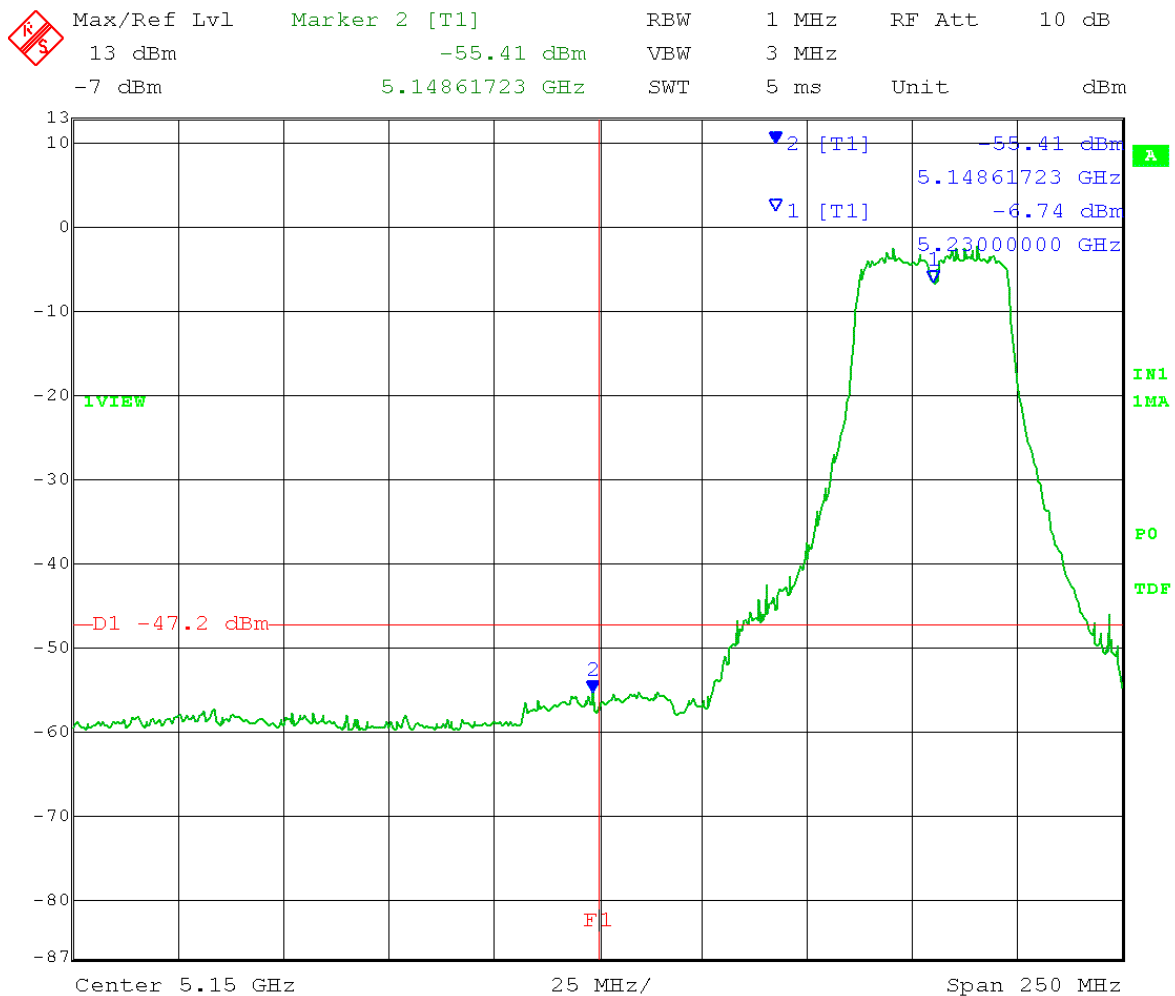
Max/Ref Lvl Marker 3 [T1] RBW 1 MHz RF Att 10 dB
13 dBm -68.91 dBm VBW 3 MHz
-7 dBm 5.00084168 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 13:32:20

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

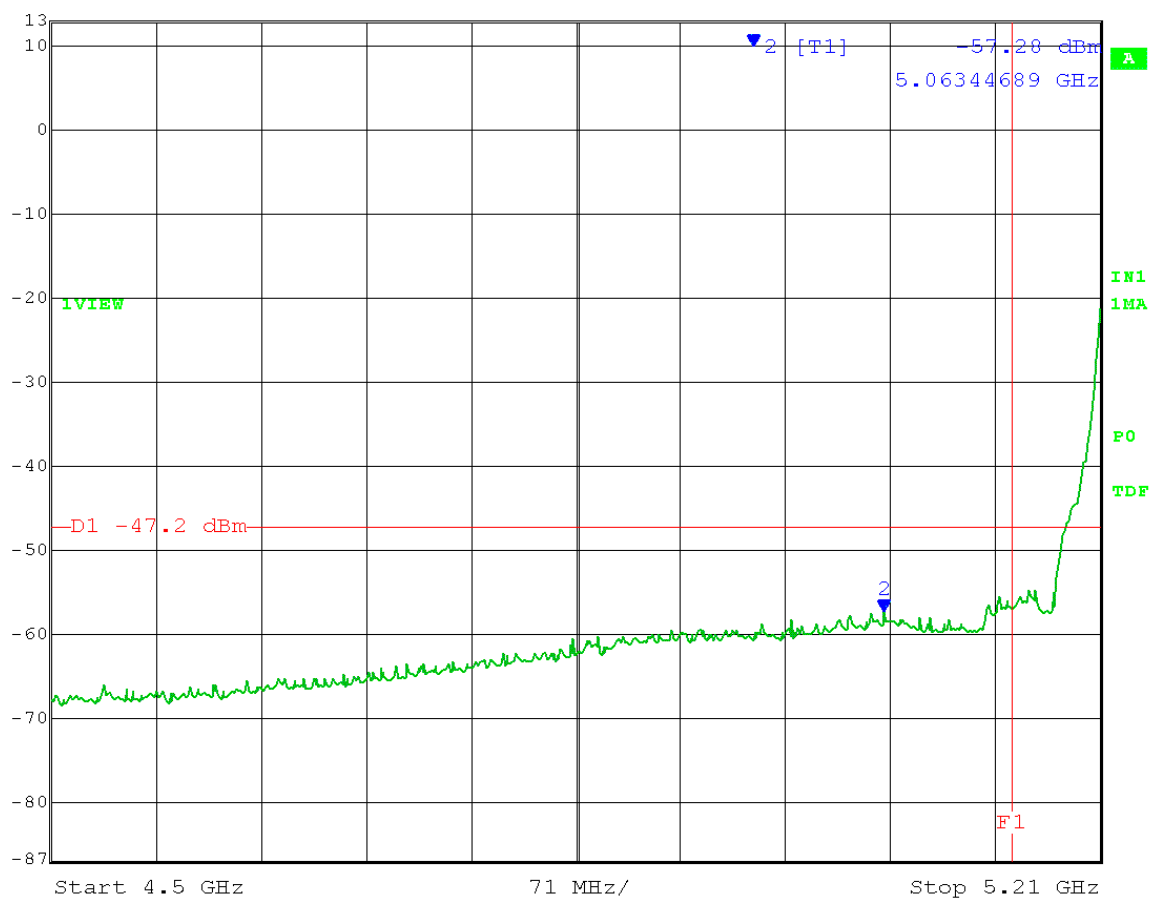
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 5-2dB
 external atten. = 3
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 13:44:05



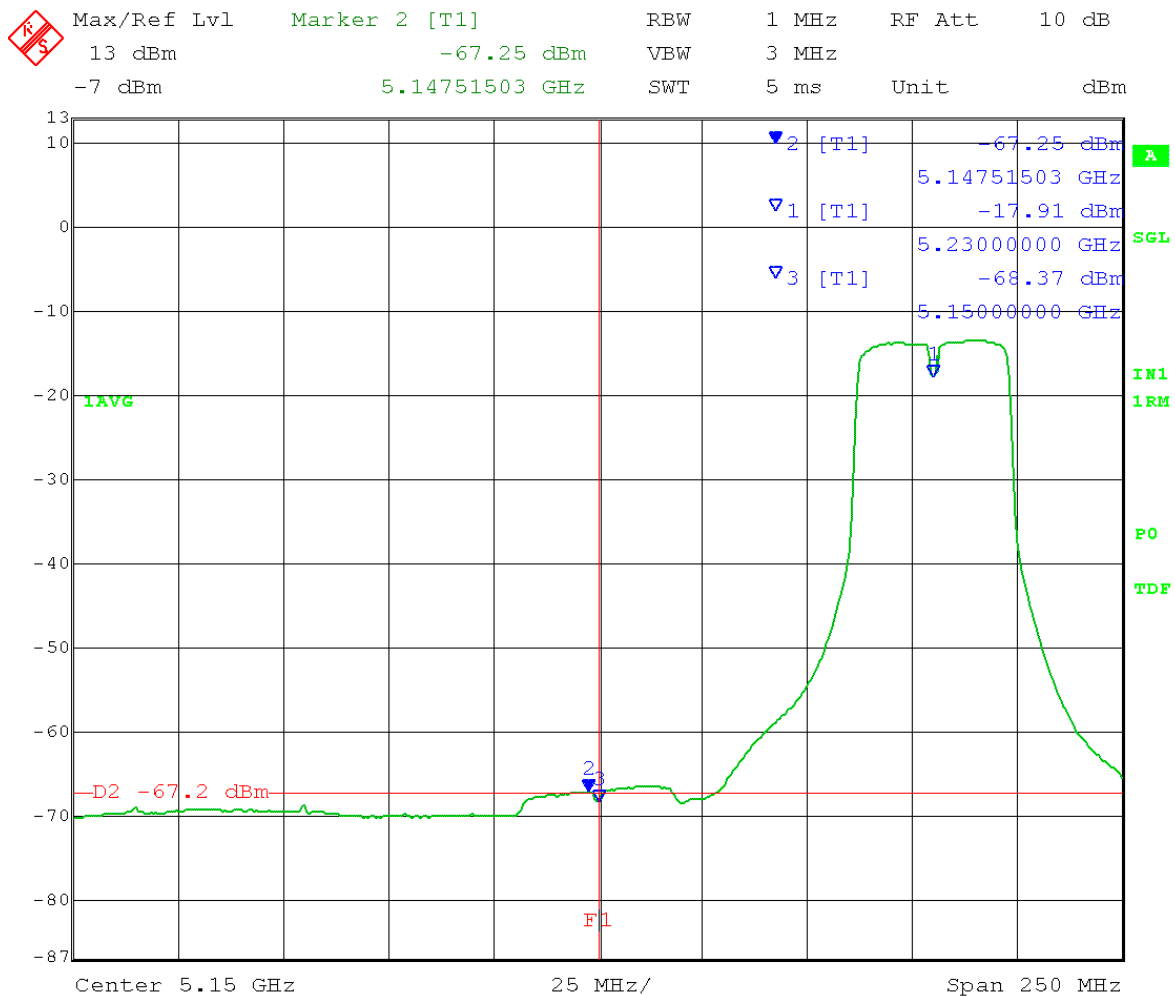
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
13 dBm -57.28 dBm VBW 3 MHz
-7 dBm 5.06344689 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 13:42:34

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -67.2 dBm

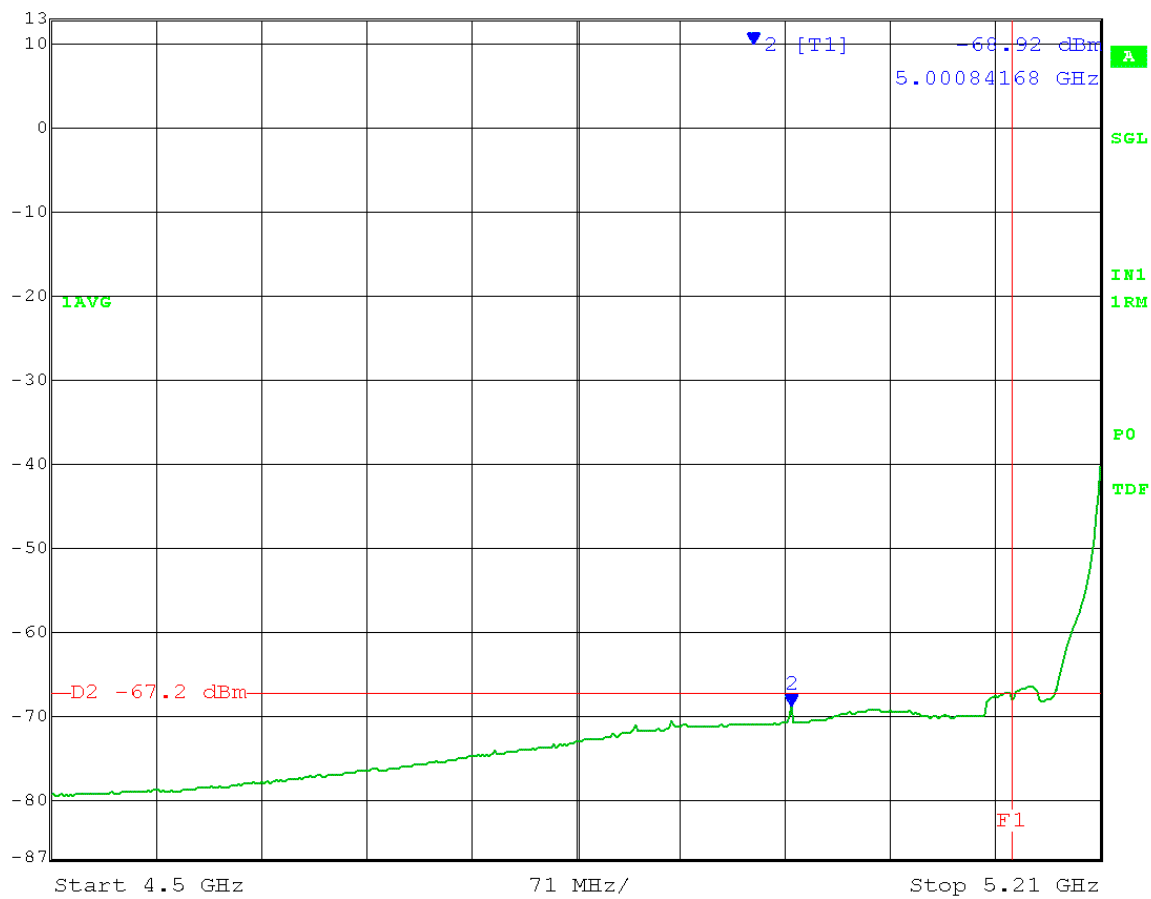
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 5-2dB
 external atten. = 3
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 13:39:06



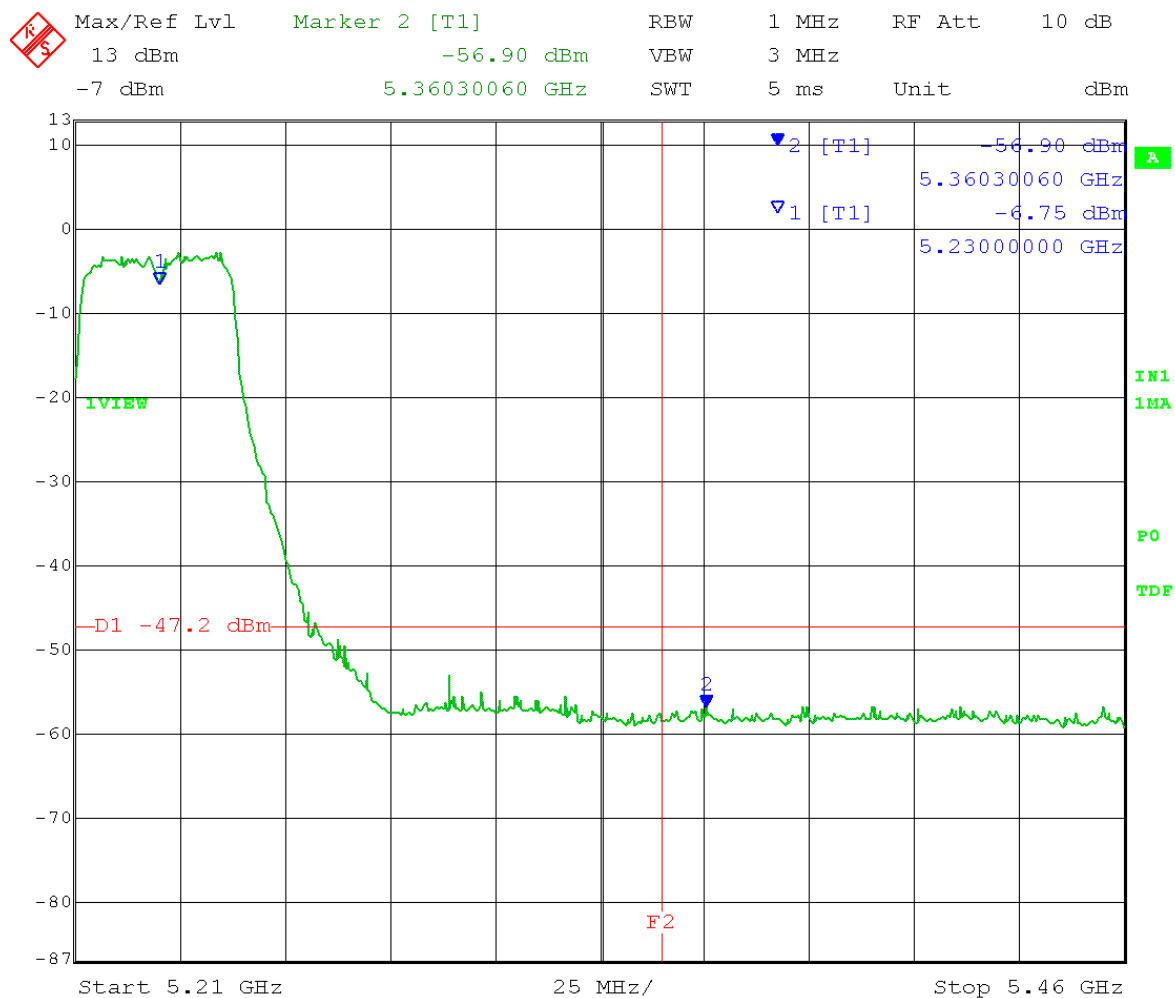
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 10 dB
13 dBm -68.92 dBm VBW 3 MHz
-7 dBm 5.00084168 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 13:40:50

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -47.2 dBm

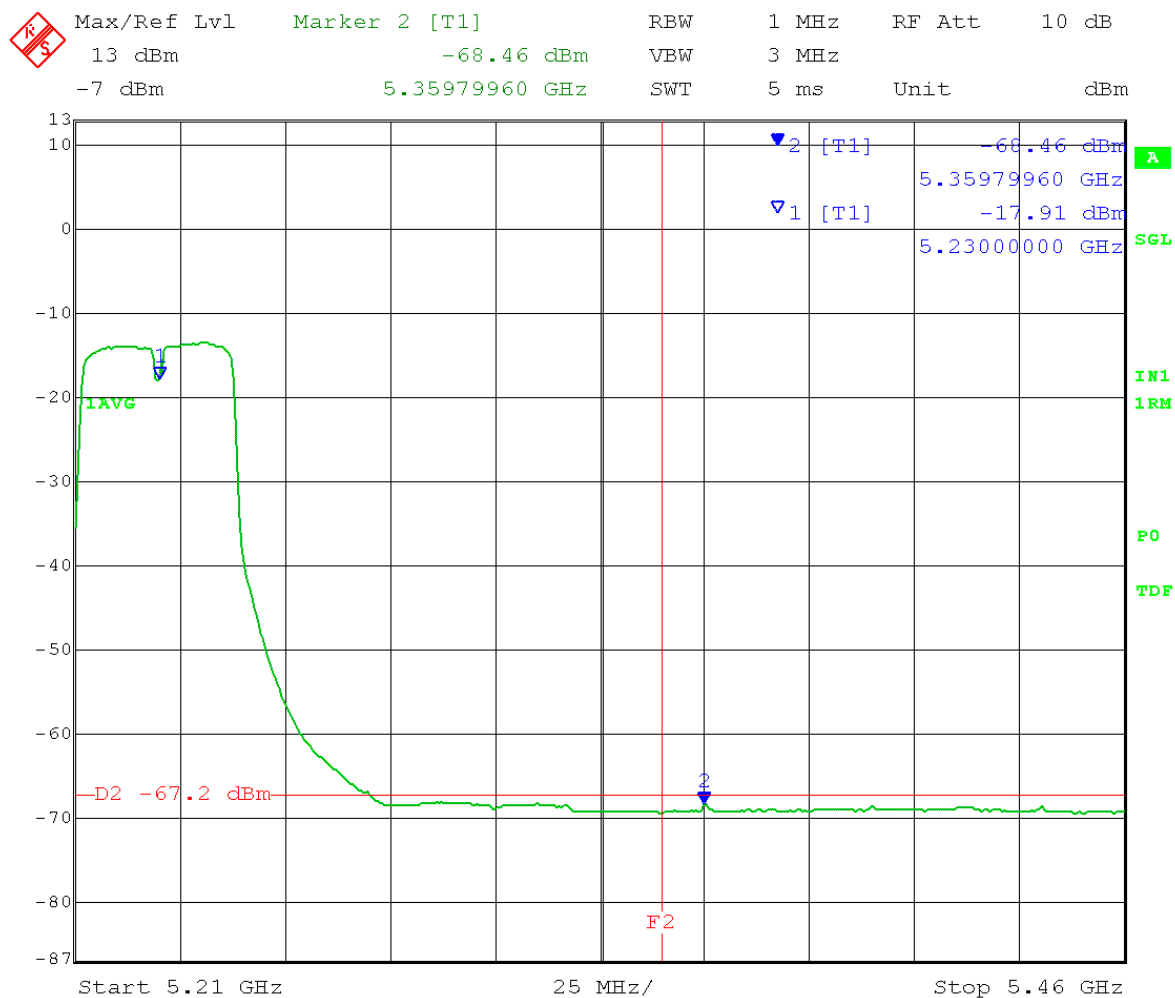
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 5-2dB
 external atten. = 3
 Band-edge = 5.350 GHz



Date: 4.JUN.2014 13:48:32

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 23 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 23 dBi antenna gain
 – 3 dB (MIMO) = -67.2 dBm

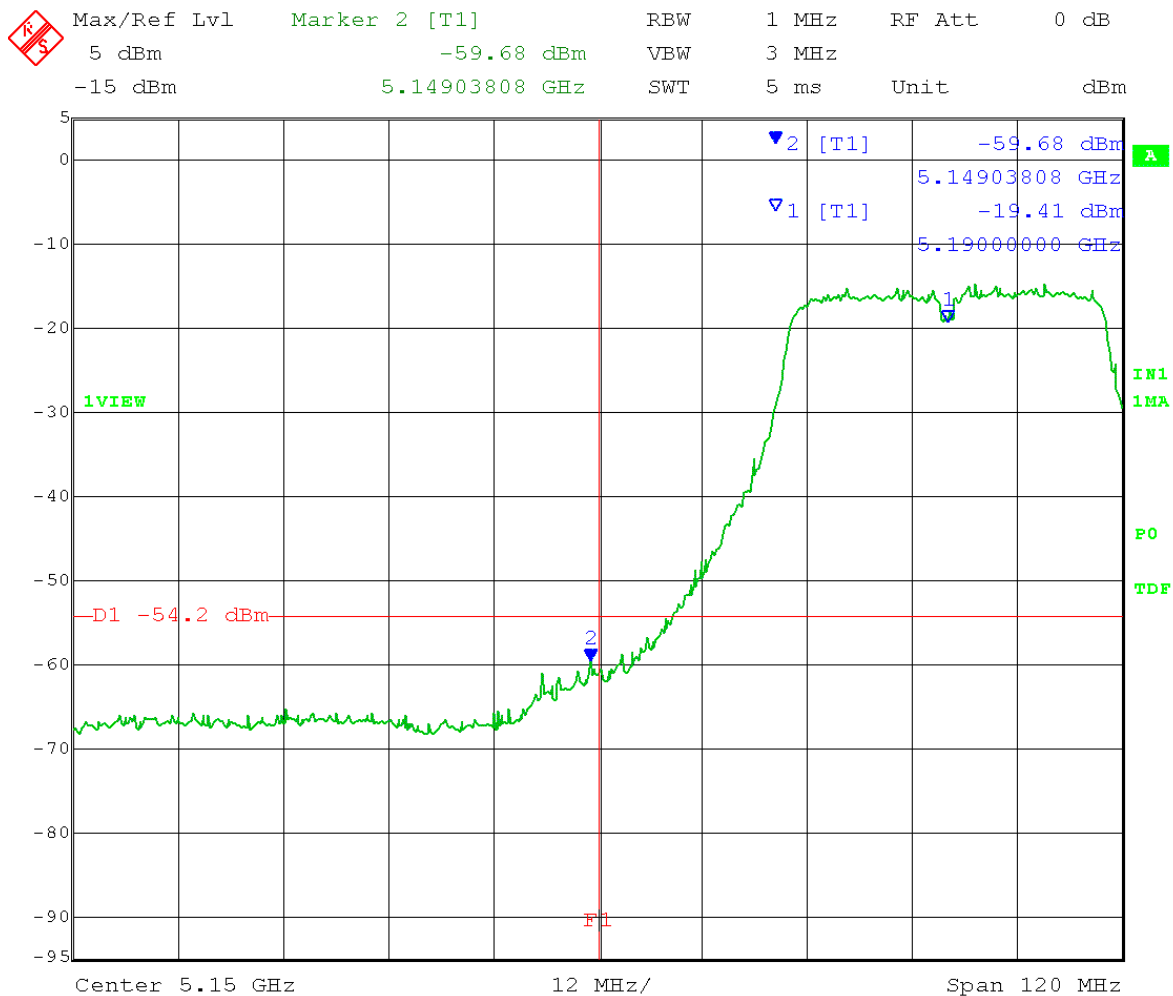
VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 5-2dB
 external atten. = 3
 Band-edge = 5.350 GHz



Date: 4.JUN.2014 13:46:02

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -54.2 dBm

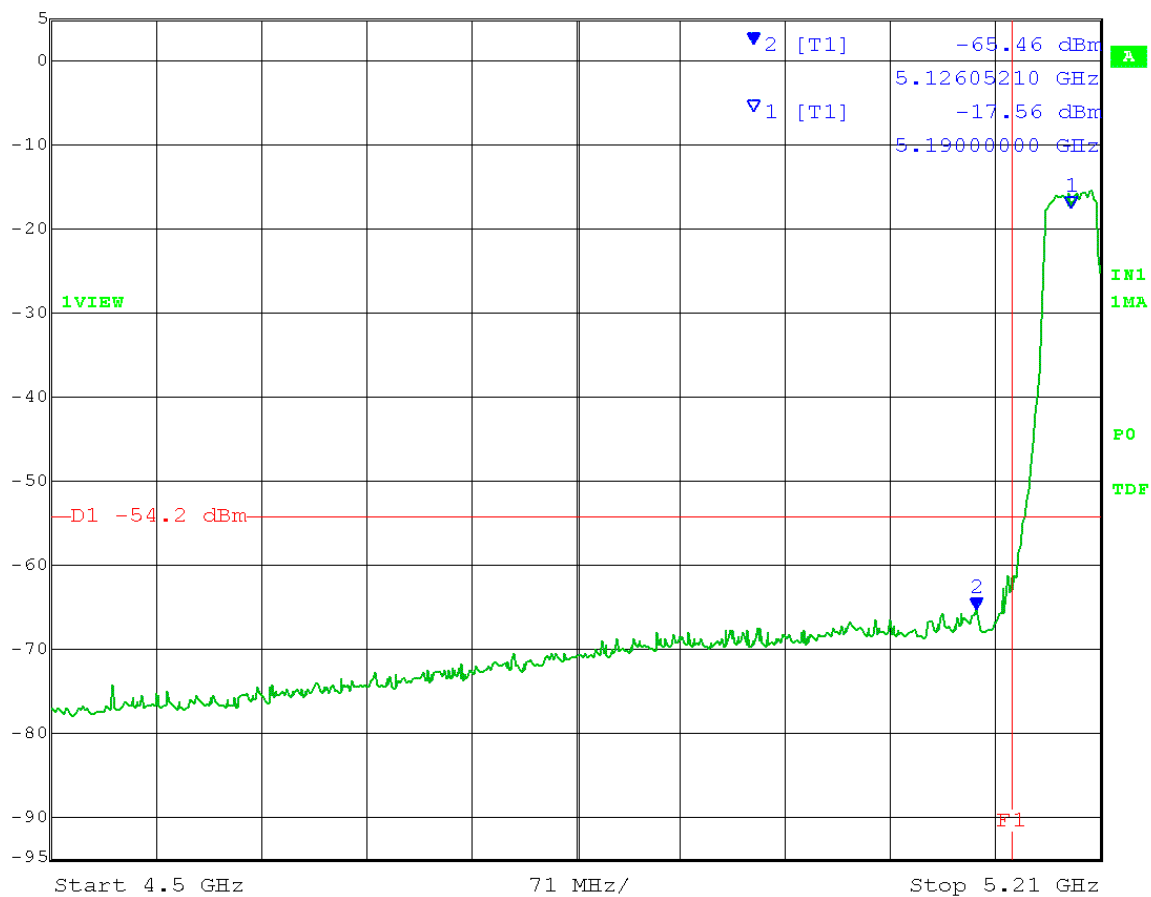
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 1 – 10dB
 external atten. = -9
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 09:49:16



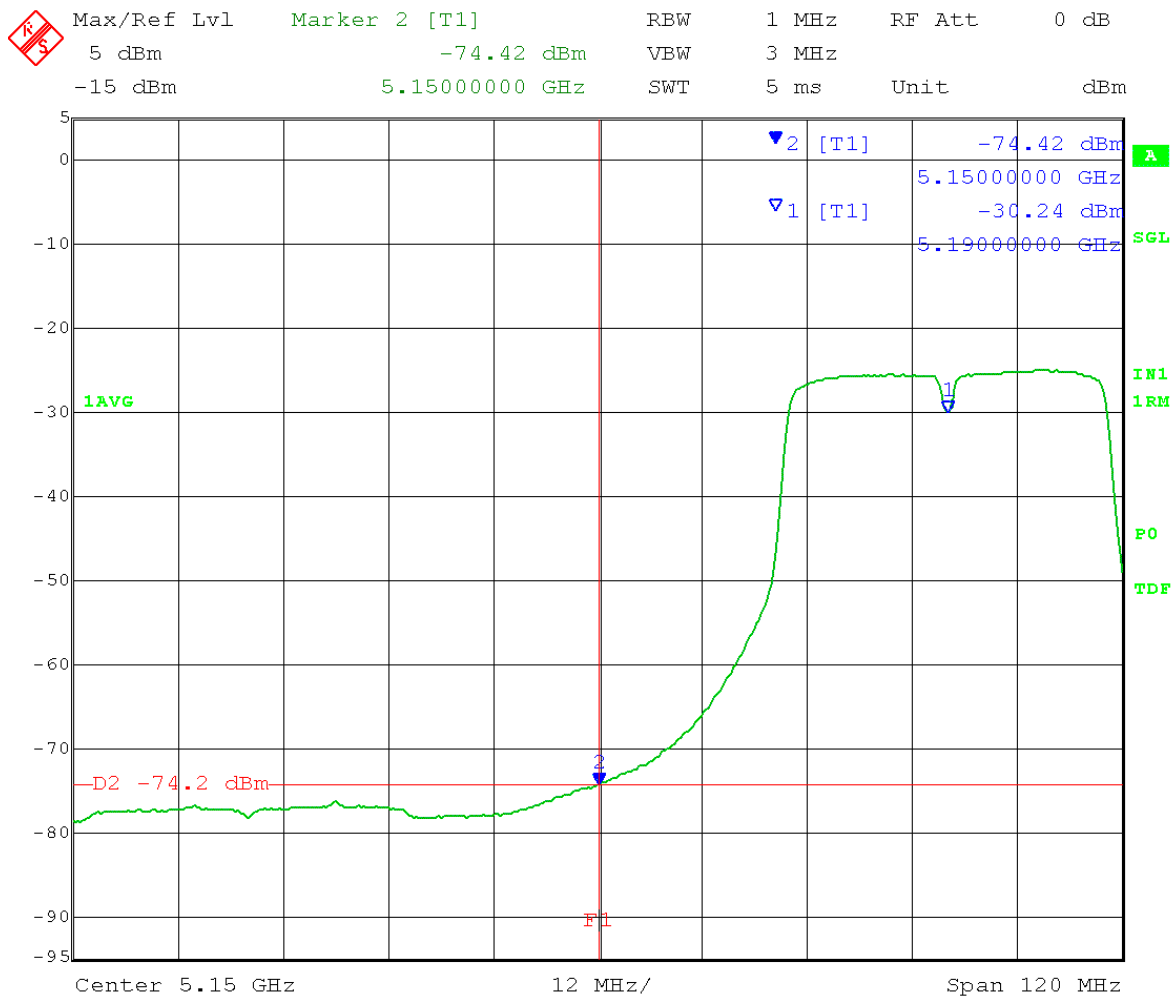
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 0 dB
5 dBm -65.46 dBm VBW 3 MHz
-15 dBm 5.12605210 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 09:48:03

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Low Channel Transmit = 5.190 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -74.2 dBm

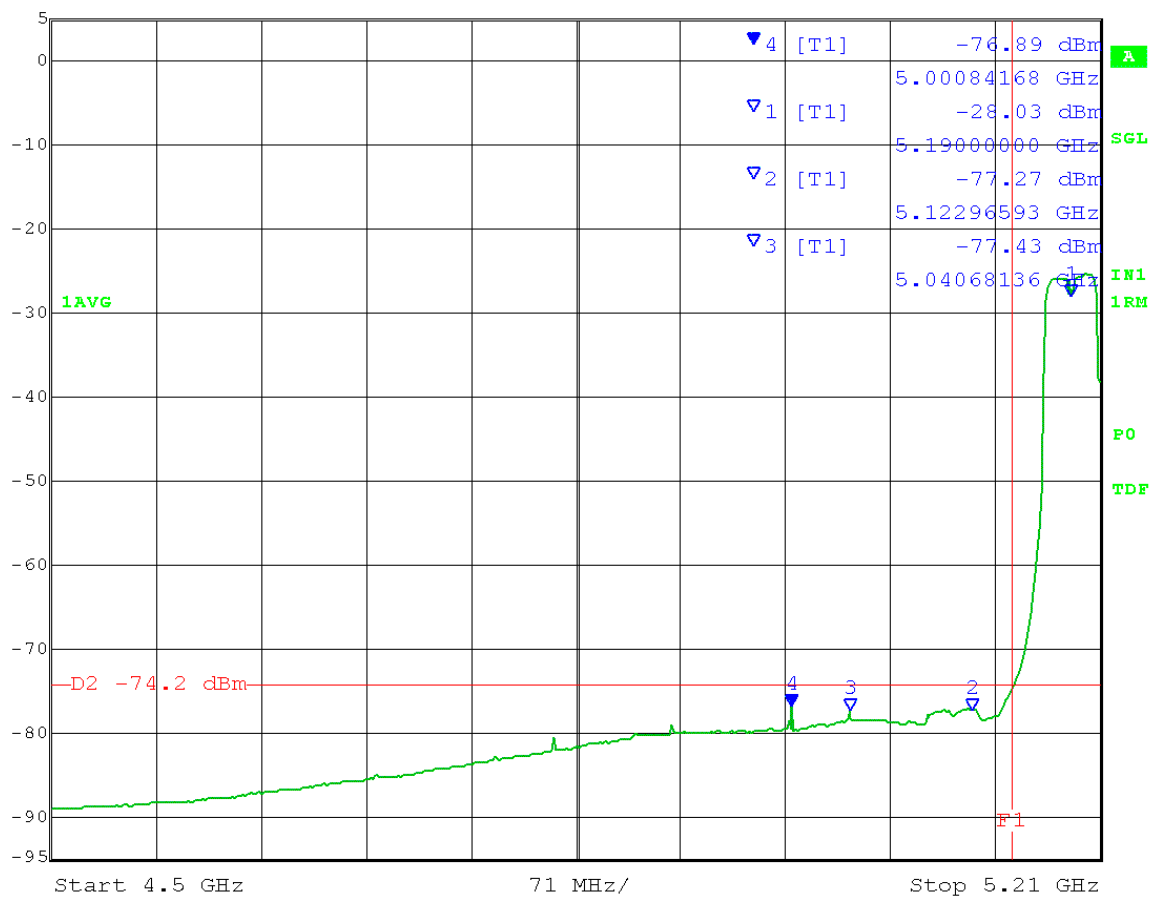
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 1 – 10dB
 external atten. = -9
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 09:42:32



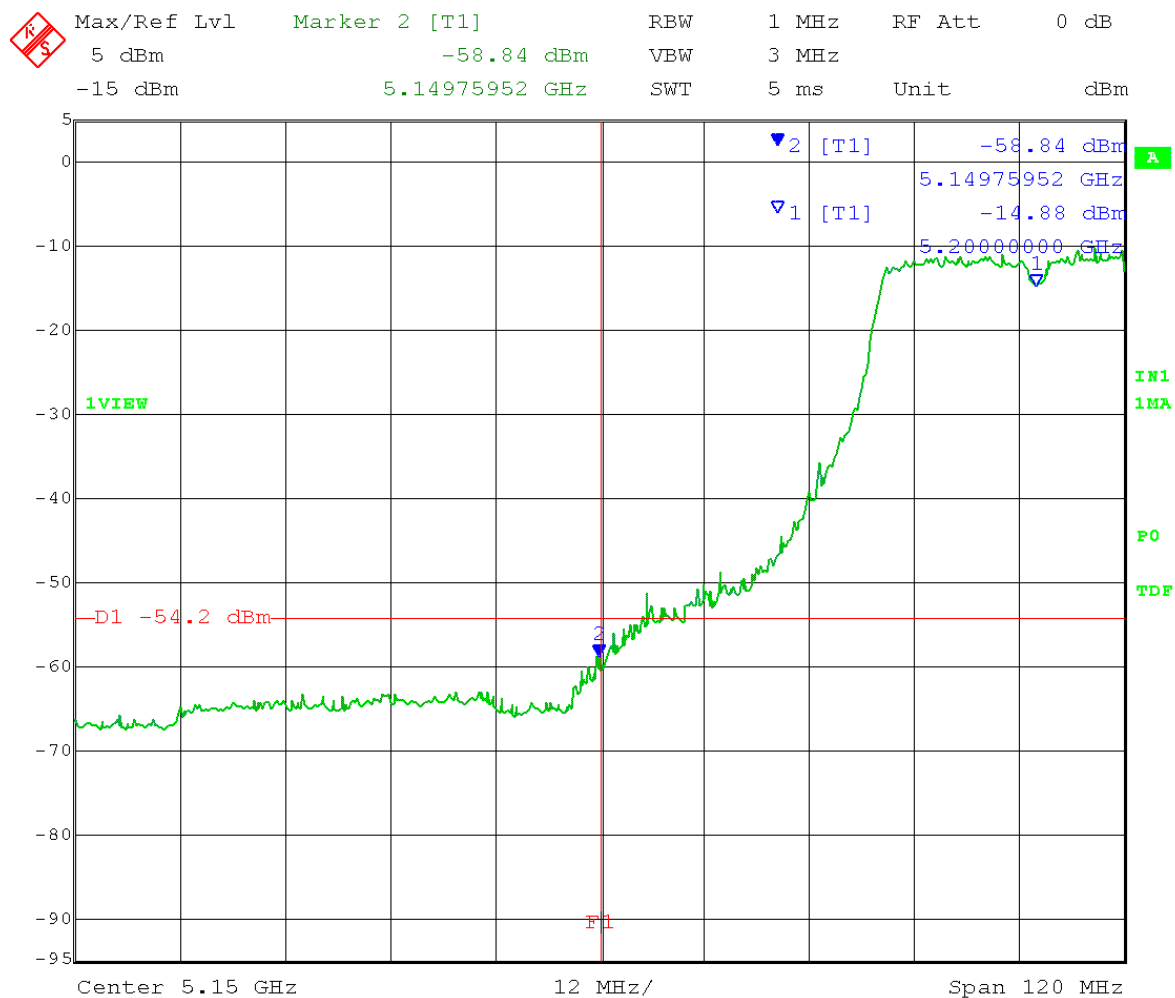
Max/Ref Lvl Marker 4 [T1] RBW 1 MHz RF Att 0 dB
5 dBm -76.89 dBm VBW 3 MHz
-15 dBm 5.00084168 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 09:44:33

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -54.2 dBm

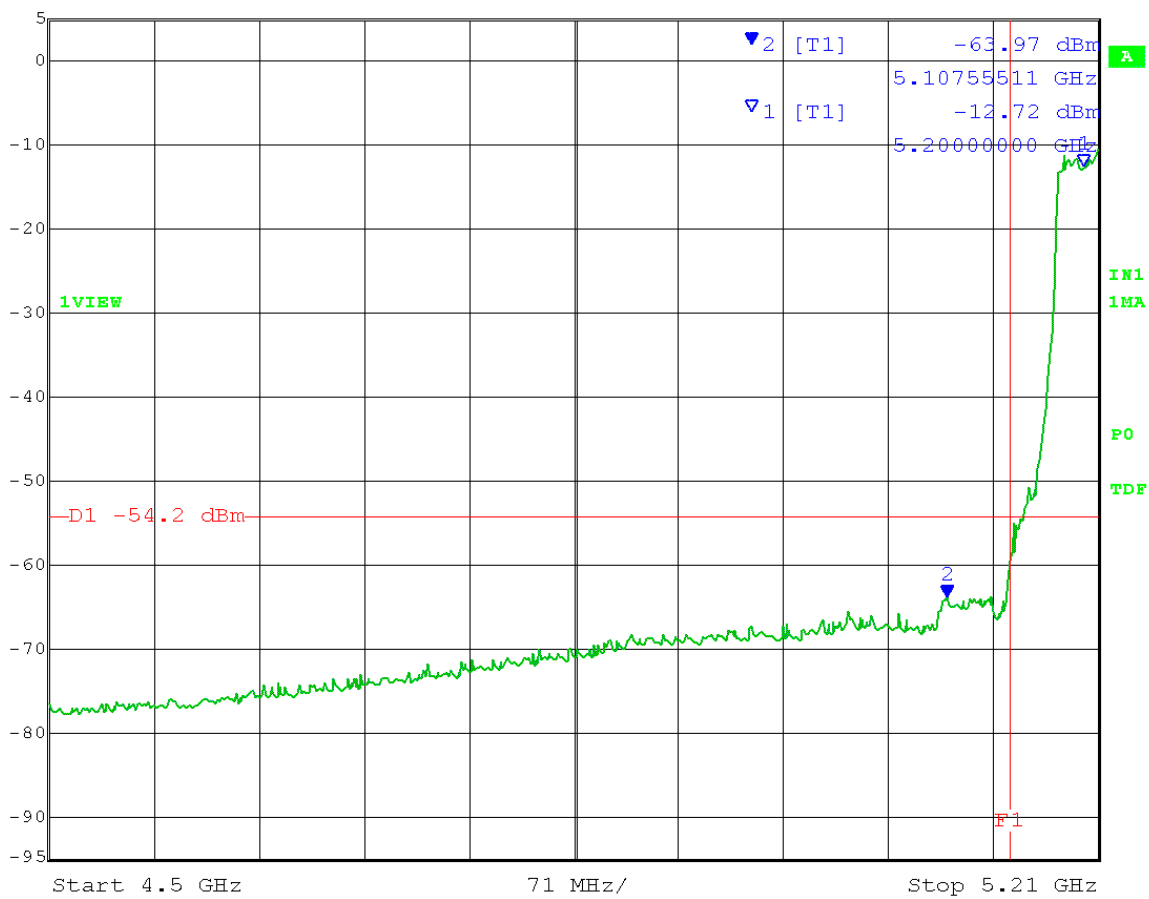
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 5 – 10dB
 external atten. = -5
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 09:59:48



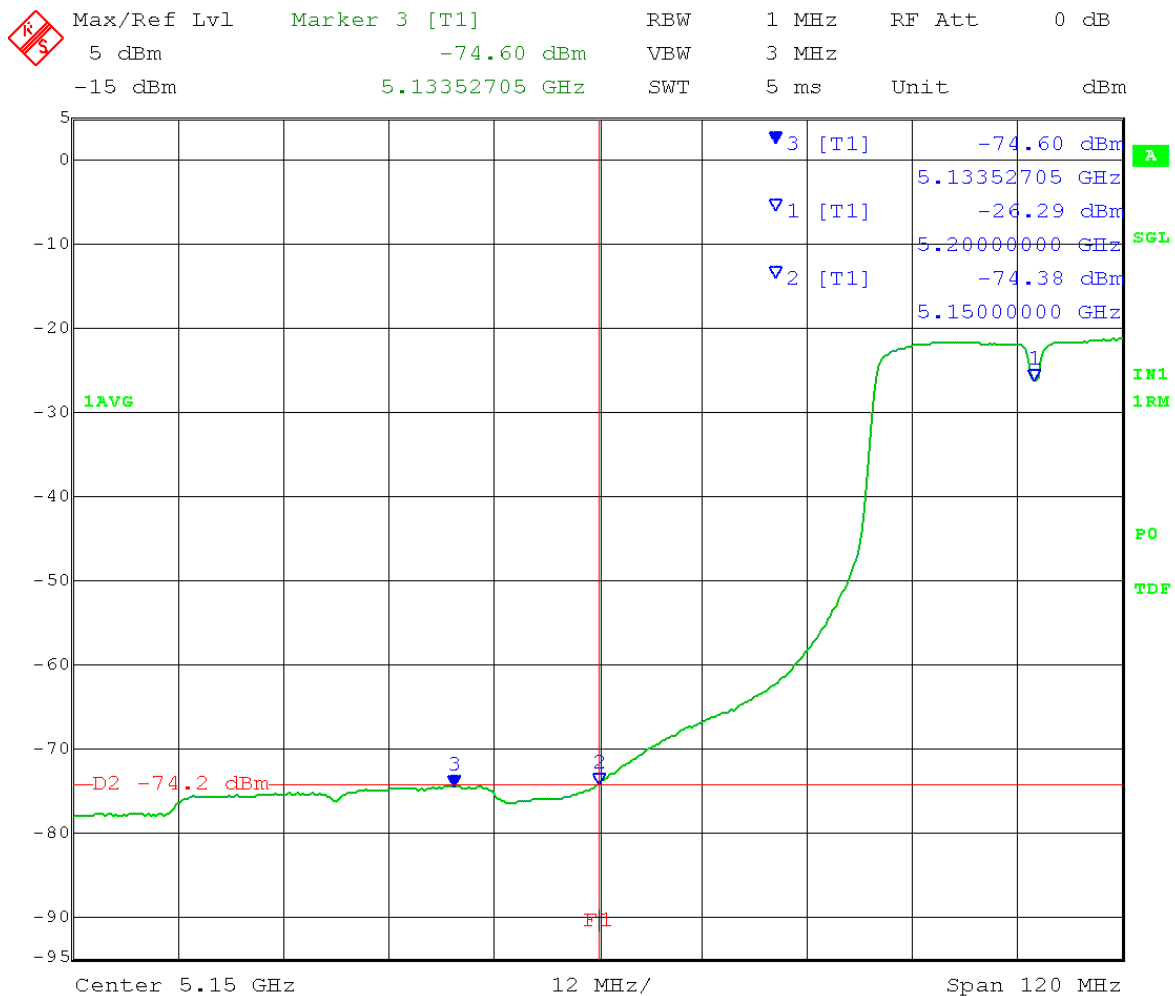
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 0 dB
5 dBm -63.97 dBm VBW 3 MHz
-15 dBm 5.10755511 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 09:57:59

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 Mid Channel Transmit = 5.200 GHz
 40 MHz BW
 Average limit = 54 dBμV/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -74.2 dBm

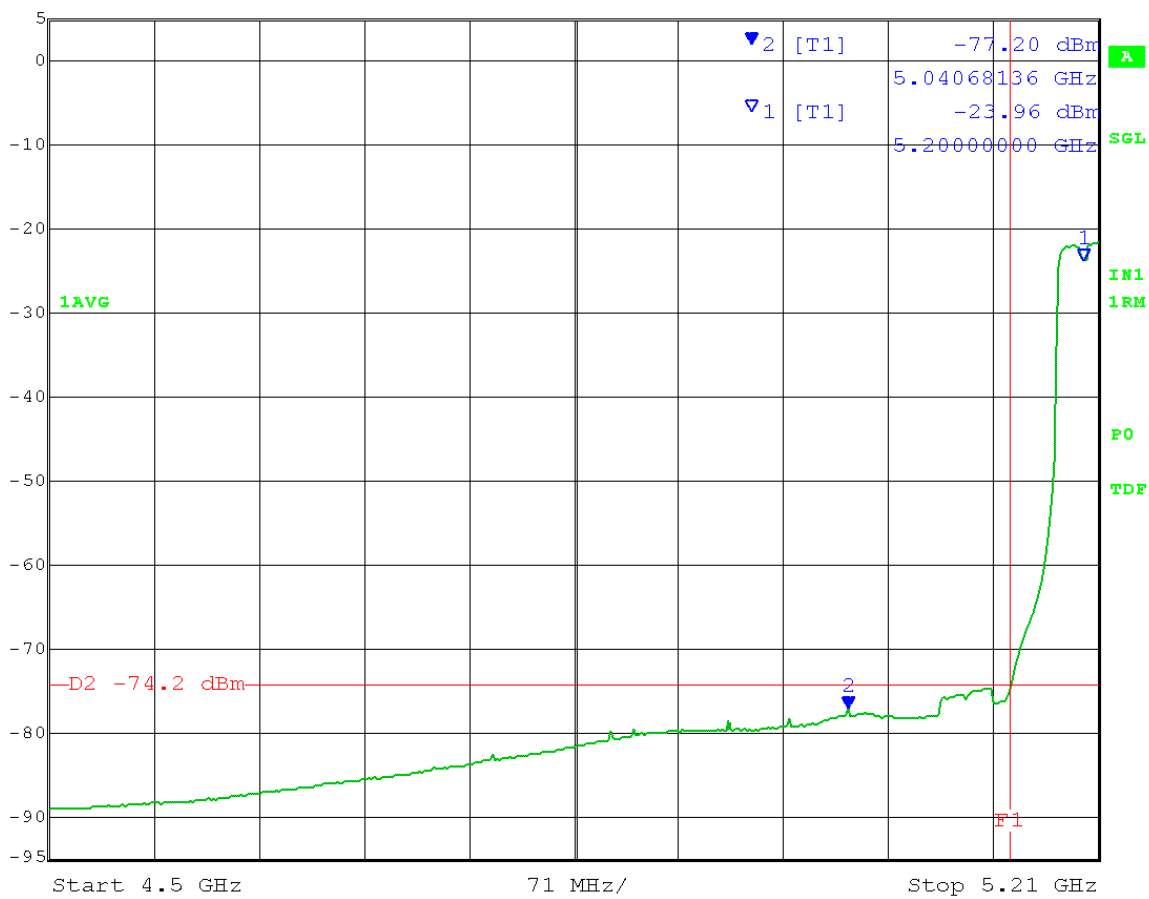
VBW ≥ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 5 – 10dB
 external atten. = -5
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 09:55:39



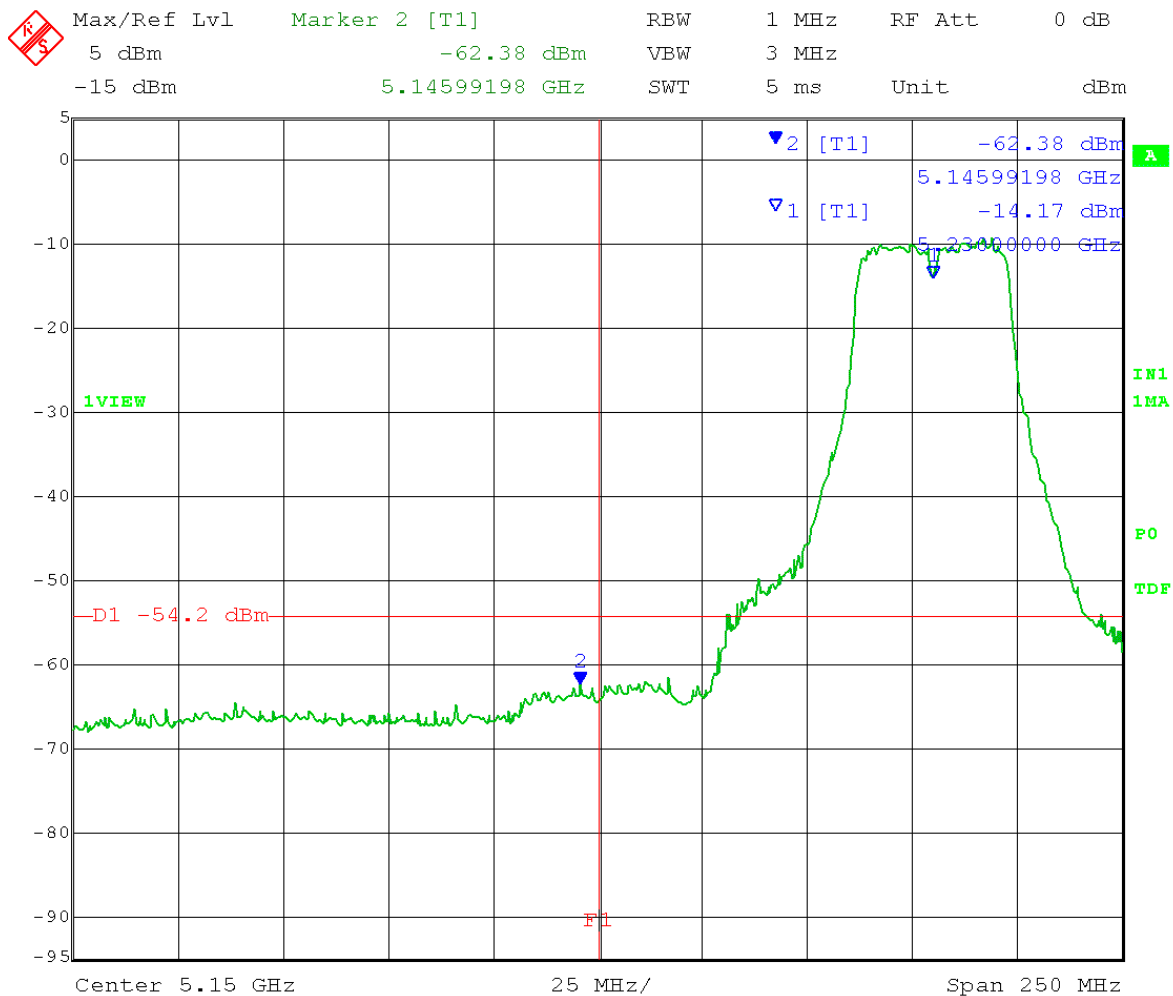
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 0 dB
5 dBm -77.20 dBm VBW 3 MHz
-15 dBm 5.04068136 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 09:56:44

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -54.2 dBm

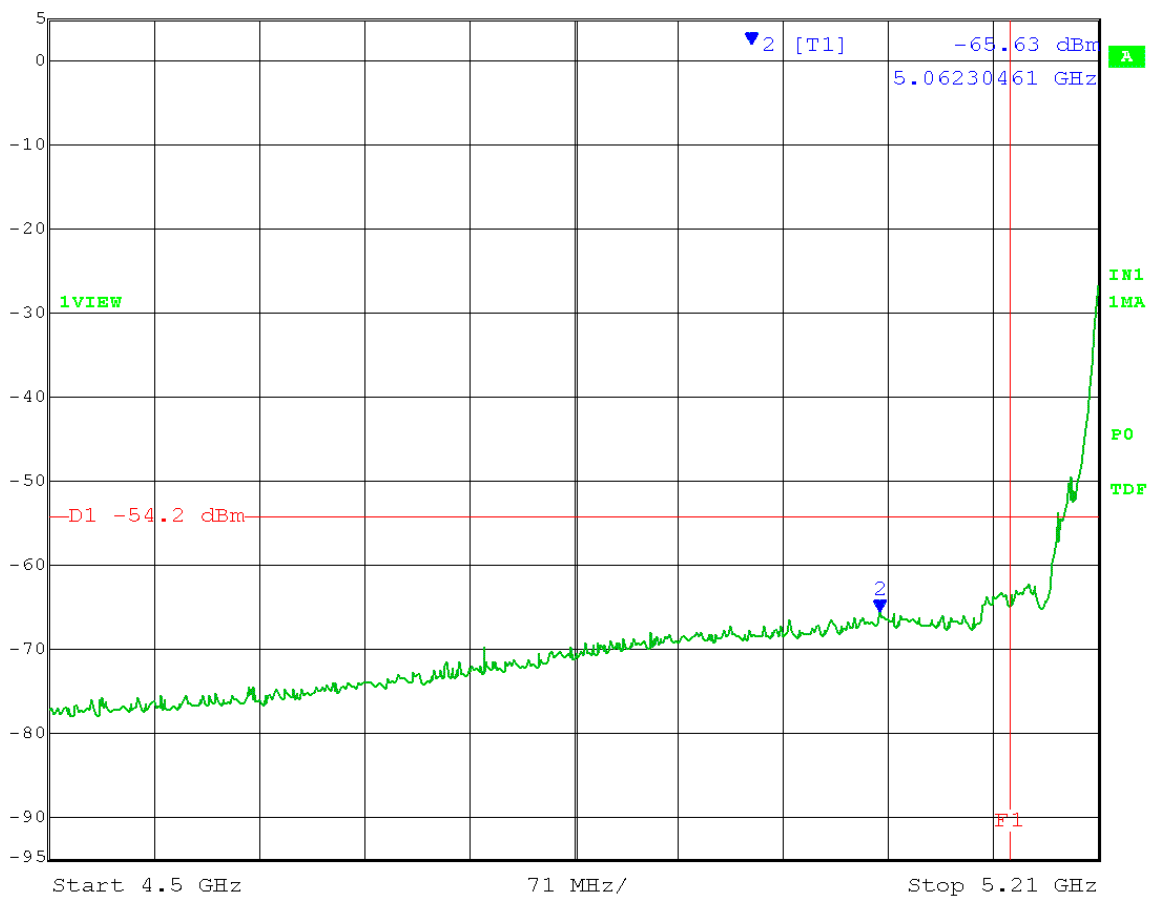
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 6.5–10dB
 external atten. = -3.5
 Band-edge = 5.150 GHz



Date: 4.JUN.2014 10:12:12



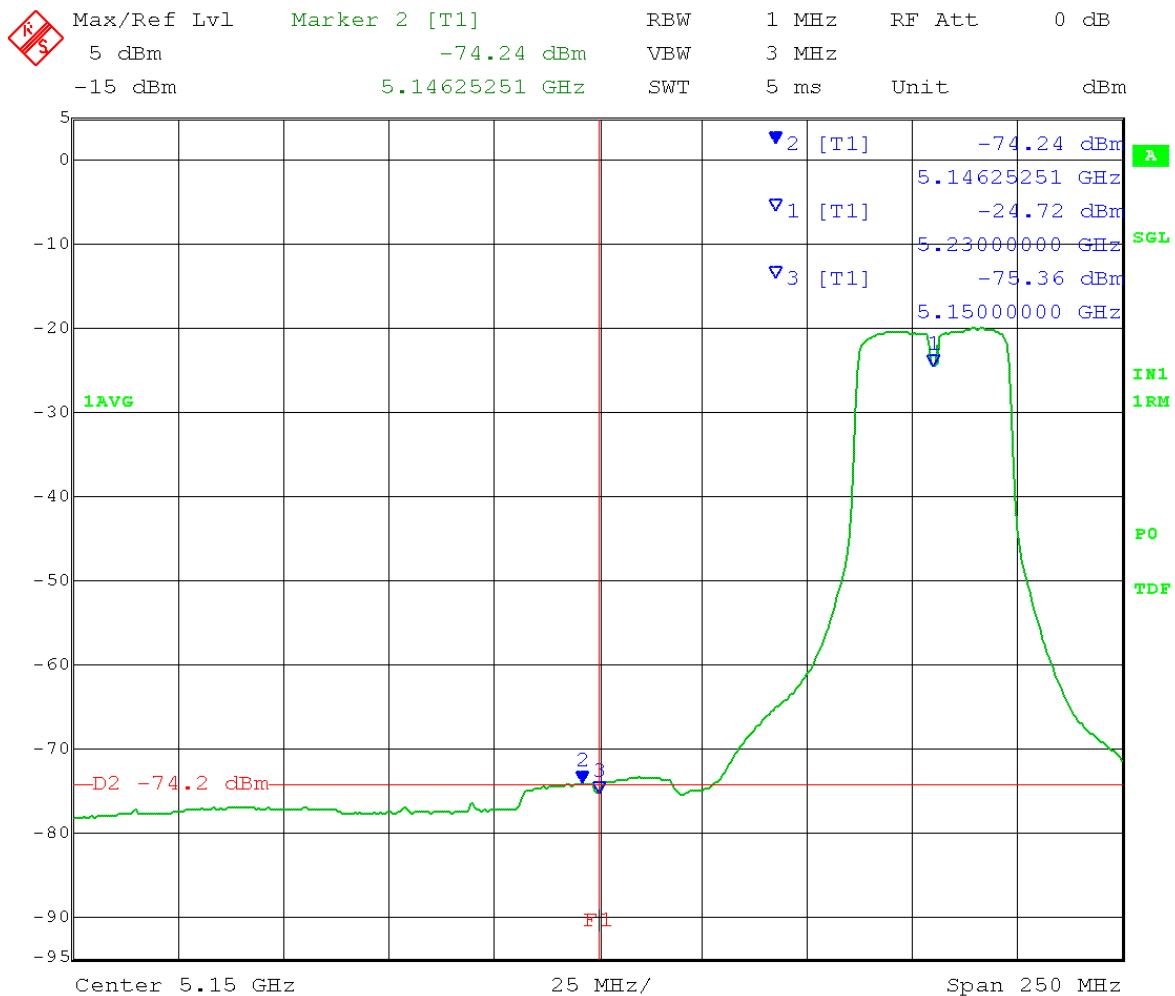
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 0 dB
5 dBm -65.63 dBm VBW 3 MHz
-15 dBm 5.06230461 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 10:10:33

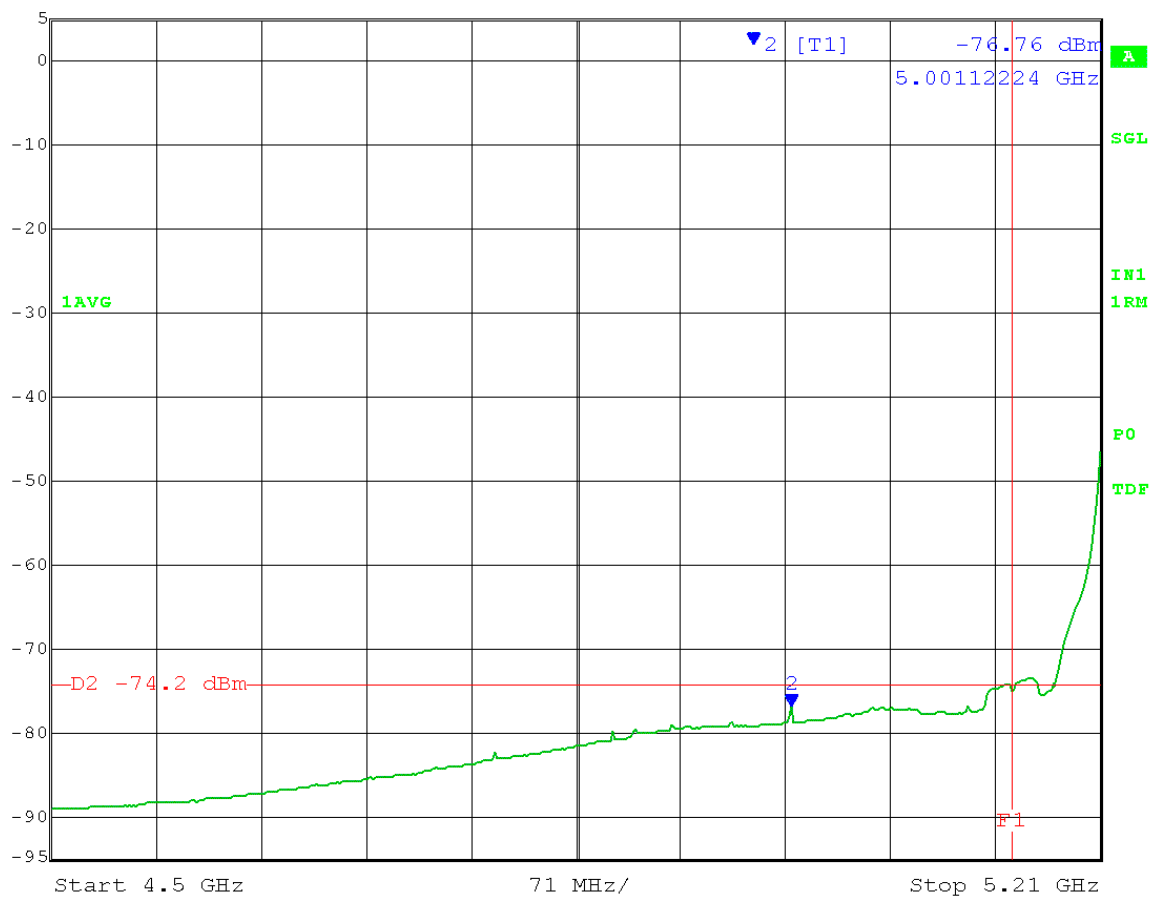
Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -74.2 dBm

VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 6.5–10dB
 external atten. = -3.5
 Band-edge = 5.150 GHz





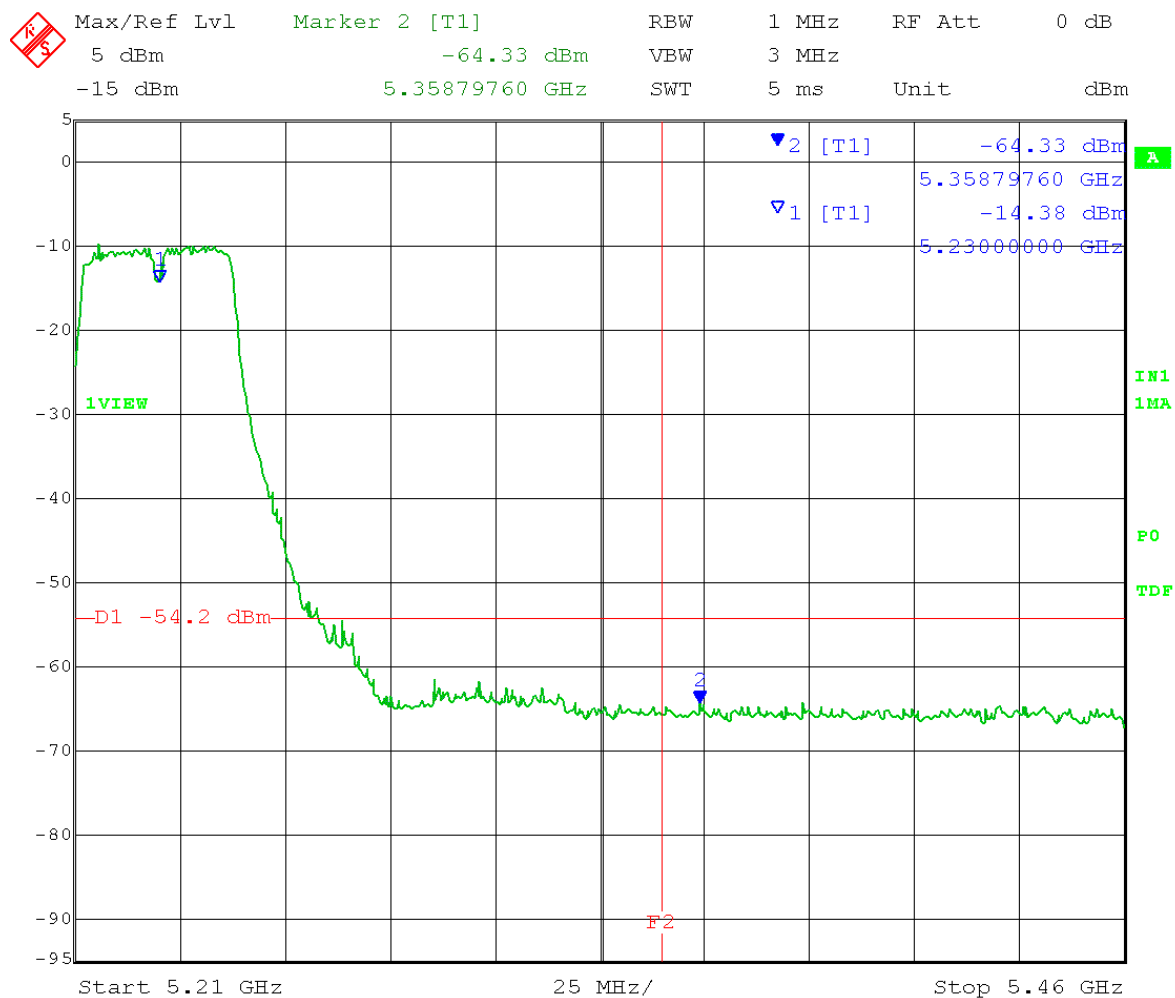
Max/Ref Lvl Marker 2 [T1] RBW 1 MHz RF Att 0 dB
5 dBm -76.76 dBm VBW 3 MHz
-15 dBm 5.00112224 GHz SWT 5 ms Unit dBm



Date: 4.JUN.2014 10:08:59

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = Peak
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Peak limit = 74 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -54.2 dBm

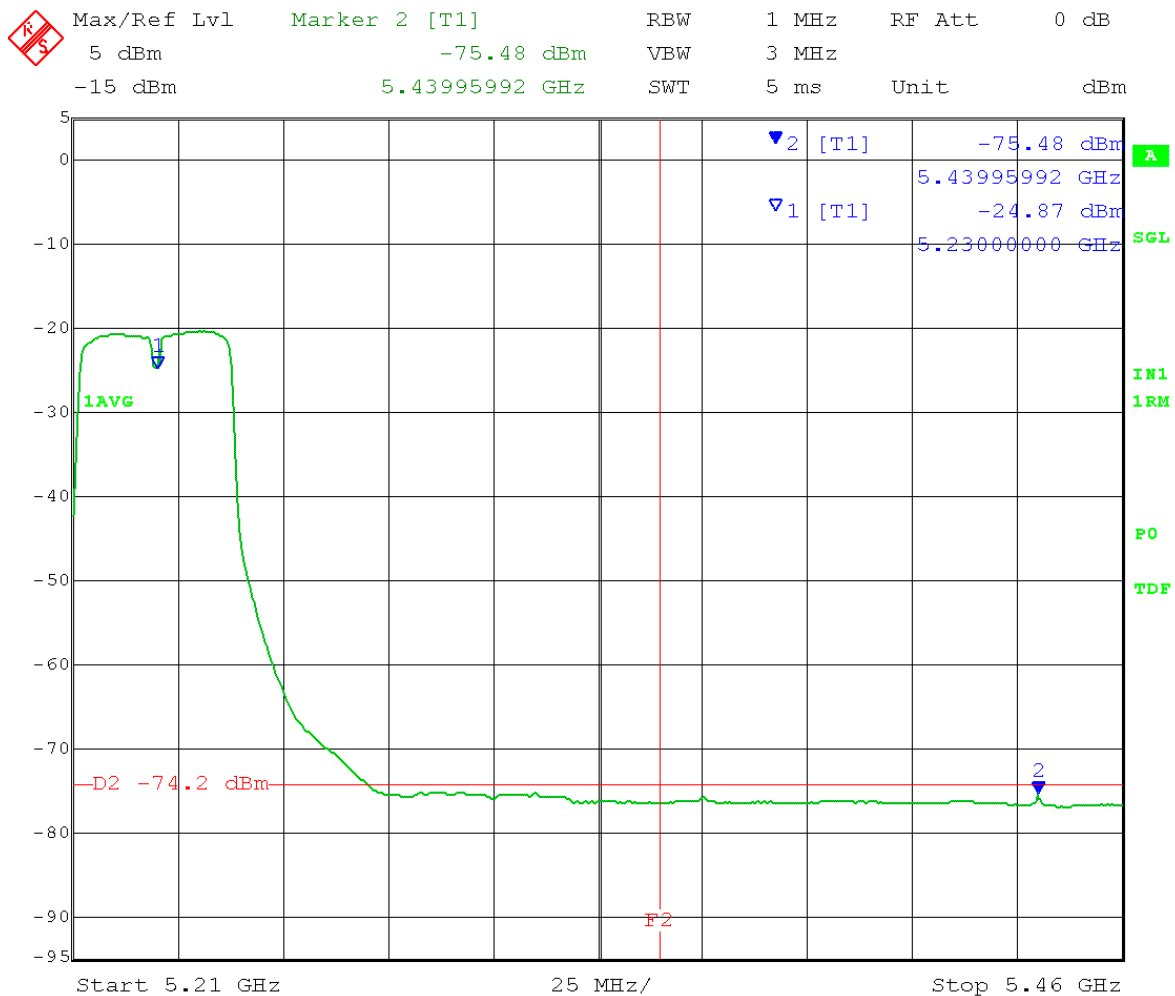
VBW $\geq$ 3 MHz
 Trace = Max Hold
 ESN# 000456C560B4
 Output power setting: 6.5–10dB
 external atten. = -3.5
 Band-edge = 5.350 GHz



Date: 4.JUN.2014 10:24:58

Test Date: 06-04-2014
 Company: Cambium Networks
 EUT: ePMP 5.1 STA UNII with 30 dBi antenna gain
 Test: Operating Band-edge Measurement - Conducted
 Operator: Craig B / Paul
 Comment: RBW = 1 MHz
 Detector = RMS
 Channel 0
 High Channel Transmit = 5.230 GHz
 40 MHz BW
 Average limit = 54 dB μ V/m – 95.2 (3 meter distance) – 30 dBi antenna gain
 – 3 dB (MIMO) = -74.2 dBm

VBW $\geq$ 3 MHz
 Trace = Average 200 traces
 ESN# 000456C560B4
 Output power setting: 6.5–10dB
 external atten. = -3.5
 Band-edge = 5.350 GHz



Date: 4.JUN.2014 10:23:32