166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Models Tested:	C058900P122A
Report Number:	19894
DLS Project:	6493

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 5.4GHz (or 5.2GHz or 5.7GHz) Radio with 23dBi Panel or 30dBi Dish antenna
Kind of Equipment:	Point-to-Point or Point-to-Multipoint Digital Transmission Transceiver
Frequency Range:	5495 to 5600, 5650 to 5705MHz (20 MHz bandwidth) 5510 to 5600, 5650 to 5695MHz (40 MHz bandwidth)

5270 to 5330 MHz (5.2 GHz xcvr with panel or dish antenna) reported to the FCC in report # 19892
5740 to 5835 MHz (5.7 GHz xcvr with panel or dish antenna) reported to the FCC in report # 19896

Test Configuration:	Stand-alone
Model Number(s):	C058900P122A (connectorized model)
Model(s) Tested:	C058900P122A
Serial Number(s):	ESN/MAC Address: 000456C560B4
Date of Tests:	March 31 to April 15, 2014
Test Conducted For:	Cambium Networks 3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA

SIGNATURE PAGE

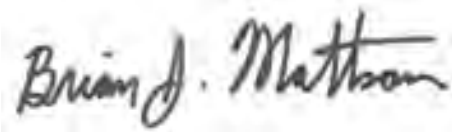
Tested By:

Craig Brandt
Senior Test Engineer

Reviewed By:

William Stumpf
OATS Manager

Approved By:



Brian Mattson
General Manager

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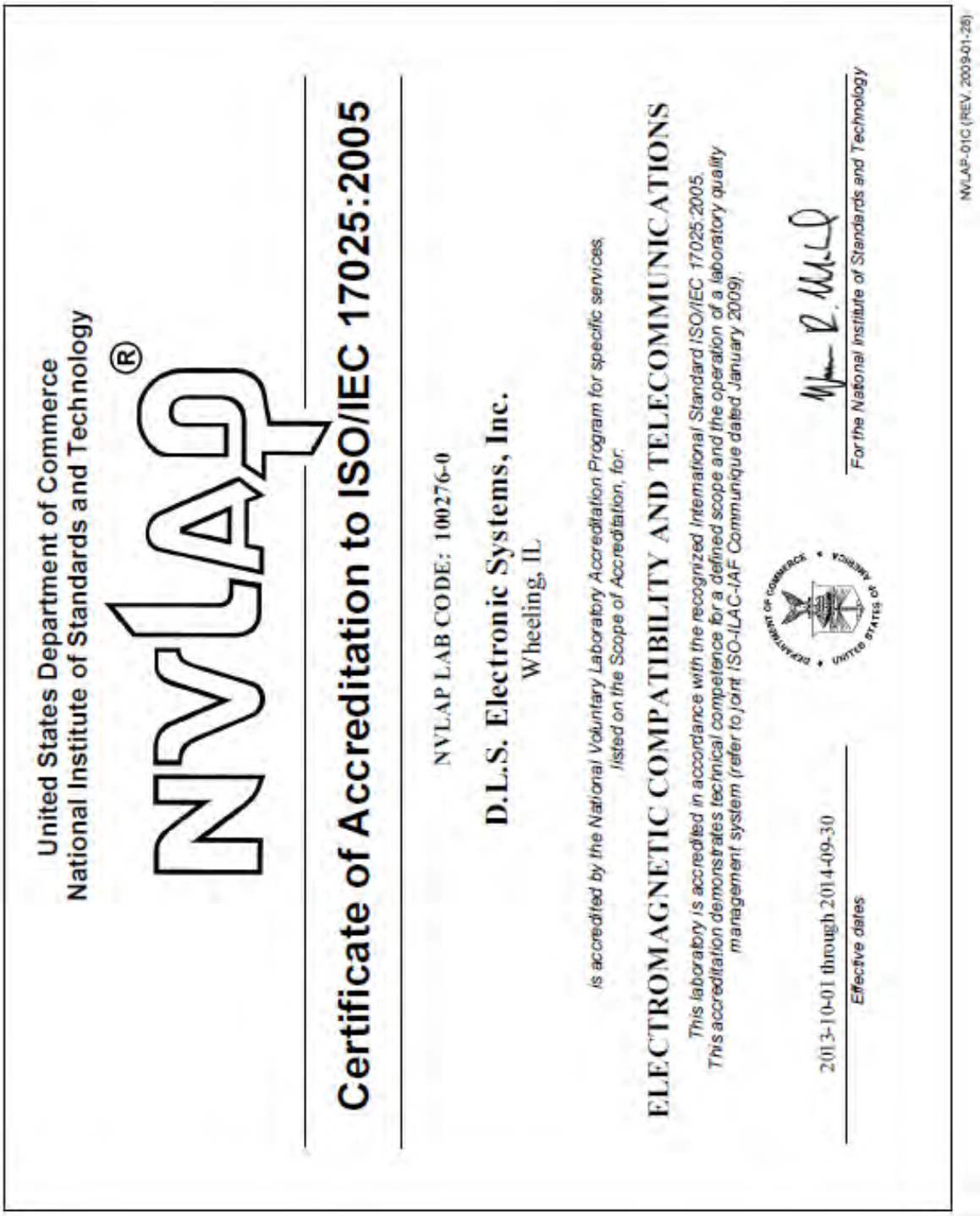


United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

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 Communique dated January 2009).

2013-10-01 through 2014-09-30
Effective dates

For the National Institute of Standards and Technology

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

1.0 Summary of Test Report

Subpart E Section 15.407 Applicable Technical Requirements Tested:

Section	Description	Procedure	Note	Compliant?
15.407(a)(2)	Maximum Conducted Output Power	FCC KDB 789033 D01 General UNII Test Procedures v01r03 Section E(3)(a)	1	Yes
15.407(a)(2)	Peak Power Spectral Density - Conducted	FCC KDB 789033 D01 General UNII Test Procedures v01r03 Sections F & E(2)(b)	1	Yes
15.407(b)(3) 15.407(b)(5)	Unwanted Emission Levels – Radiated Band-Edge with antenna connected	FCC KDB 789033 D01 General UNII Test Procedures v01r03 Sections H, H(1), H(2), H(3)	2	Yes
15.407(b)(3) & 15.407(b)(6)	Unwanted Emission Levels – Radiated with antenna connected	FCC KDB 789033 D01 General UNII Test Procedures v01r03 Sections H(1), H(2), H(3)	2	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.

1.0 Summary of Test Report - continued

It was determined that the Cambium Networks ePMP Station 5.4GHz Radio, Connectorized model: C058900P122A with 23dBi Panel or 30dBi Dish antenna added, complies with the requirements of CFR 47 Part 15 Subpart E Section 15.407. The data demonstrating FCC compliance of the 5.2 GHz and 5.7GHz radios is found in D.L.S. Electronics, Inc. Reports #19892 and #19896.

2.0 Introduction

From March 31 to April 15, 2014 the ePMP Station 5.4GHz Radio, Model C058900P122A, as provided from Cambium Networks, was tested with a 23dBi Panel or a 30dBi Dish antenna 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 5.4GHz (or 5.2GHz or 5.7GHz) 802.11 fixed indoor/outdoor transceiver with either 20 MHz or 40 MHz channel bandwidth. OFDM modulation. This is a software defined radio. This report includes data to show compliance of the radio with a 23dBi Panel or 30dBi Dish antenna added.

Type of Equipment / Frequency Range:

Stand-Alone / **5495 to 5600, 5650 to 5705 MHz (20 MHz bandwidth) (in this report)**
5510 to 5600, 5650 to 5695 MHz (40 MHz bandwidth) (in this report)

5270 to 5330 MHz (5.2 GHz xcvr) reported to the FCC in report # 19892
5740 to 5835 MHz (5.7 GHz xcvr) reported to the FCC in report # 19896

Physical Dimensions of Equipment Under Test:

Connectorized Unit: Length: 3 in. Width: 1 in. Height: 8.5 in. (tested with Panel or Dish antenna)
Integrated Unit:: Length: 4 in. Width: 2 in. Height: 10 in. (not tested) - it is larger with an integral antenna

Power Source:

29 VDC (Power Over Ethernet to Radio)
120 Vac, 60 Hz using power supply model: PSA-15M-300 (SM)

Internal Frequencies:

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

Transmit / Receive Frequencies Used For Test Purpose:

20 MHz Channel Bandwidth:	Low channel: 5495 MHz, Middle channel: 5575 MHz, High channel: 5705 MHz
40 MHz Channel Bandwidth:	Low channel: 5510 MHz, Middle channel: 5575 MHz, High channel: 5695 MHz

Type of Modulation(s):

OFDM: 802.11n: MCS15

Description of Circuit Board(s) / Part Number:

Cambium Networks Connectorized PC Board ESN/MAC Address	00456C560B4
MARS 23dBi Panel Antenna	MA-WA56-DP23
ARC Wireless Solutions 30dBi Dish Antenna	ARC-DA5830SD1

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
Preamplifier	Rohde & Schwarz	TS-PR10	032001/003	9 kHz – 1 GHz	1-4-14	1-4-15
Preamp	Ciao	CA118-4010	101	1GHz-18GHz	2-14-14	2-14-15
Horn Antenna	EMCO	3115	9903-5731	1-18GHz	7-11-13	7-11-15
Filter- High-Pass	Planar	HP8G-7G8-CD-SFF	PF1225/0782	7.5GHz-18GHz	8-14-13	8-14-14
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26GHz	8-13-13	8-13-14
Preamp	Rohde & Schwarz	TS-PR40	052002/025	26GHz-40GHz	5-28-13	5-28-14
Preamp	DLS	642-1	1	1GHz-26GHz	8-15-13	8-15-14
Horn Antenna	EMCO	3116	2549	18 – 40GHz	9-6-12	9-6-14
High Pass Filter	K & l	11SH10-18000/T40000-K-K	8	18-40GHz	3-6-14	3-6-15
10 dB attenuator	Pasternack Enterprises	PE7014-10	DLS#198	DC – 18 GHz	3-16-13	3-16-15
Receiver	Rohde & Schwarz	ESI 40	837808/006	20 Hz – 40 GHz	7-23-13	7-23-14
Low Pass Filter	Mini-Circuits	VLFX-1125	RUU926009 20	DC-1 GHz	8-13-13	8-13-14
Preamplifier	Rohde & Schwarz	TS-PR10	032001/004	9 kHz – 1 GHz	1-4-14	1-4-15
Antenna	EMCO	3104C	00054892	20 MHz – 200 MHz	9-13-12	9-13-14
Antenna	EMCO	3146	1205	200 MHz – 1 GHz	9-19-12	9-19-14
Thermal Power Sensor	Rohde & Schwarz	NRP-Z51	1138.0005.03 -104290-Wq	DC - 18GHz	12-12-13	12-12-14

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 D01 General UNII test Procedures v01r03 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:

68°F at 32% RH (or noted on the test data)

Supply Voltage:

29 VDC (Power Over Ethernet to Radio)
120 Vac, 60 Hz using power supply model: PSA-15M-300 (SM)

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 (20MHz & 40MHz). The antenna ports were tested (Channel 0 & 1) using the connectorized model attached to either the 23dBi Panel or 30dBi Dish antenna.. Worst case emissions were recorded.

Testing with the 23dBi Panel antenna was performed with the antenna rotated 45° from standard horizontal/vertical. Testing included a 3dB attenuator on the antenna & 3dB attenuator on the radio. The final Power Settings for the 5.4GHz radio with the Panel antenna are:

For the 20MHz Bandwidth: Low Channel 8.0, Mid Channel 9.0, High Channel 9.5
For the 40MHz Bandwidth: Low Channel 6.0, Mid Channel 9.0, High Channel 5.5

Testing with the 30dBi Dish antenna was also performed with the antenna rotated 45° from standard horizontal/vertical. Testing included a 3dB attenuator on the antenna & 3dB attenuator on the radio. The Cal Table was changed so that power setting 24.0 = 0.0. The final Power Settings for the 5.4GHz radio with the Dish antenna are:

For the 20MHz Bandwidth: Low Channel 26.0, Mid Channel 26.5, High Channel 27.5
For the 40MHz Bandwidth: Low Channel 26.0, Mid Channel 27.0, High Channel 26.5

Power Settings are noted on the test data.

The Emission Designators are: 20M0x1D, 40M0x1D

10.0 Results

Measurements were performed in accordance with FCC Publication KDB 789033 D01 General UNII test Procedures v01r03 and ANSI C63.10-2009. Graphical and tabular data can be found in Appendix B at the end of this report.

11.0 Conclusion

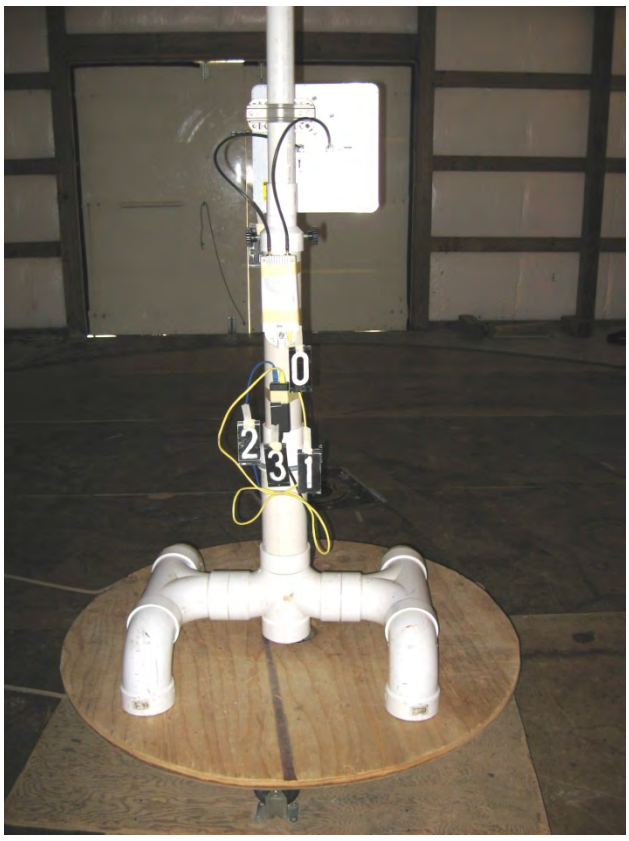
Dynamic Frequency Selection (DFS) testing was not performed by DLS Electronic Systems,Inc. Otherwise, the ePMP Station 5.4GHz Radio, Model C058900P122A with either the 23dBi Panel or 30dBi Dish antenna, as provided from Cambium Networks tested from March 31 to April 15, 2014 **meets** the requirements of CFR 47 Part 15 Subpart E Section 15.407.

Appendix A – Test Photos

Photo Information and Test Setup:

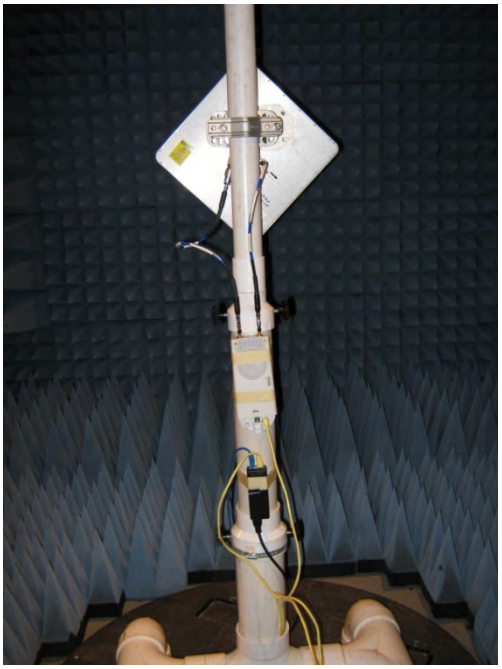
Item0: Cambium Networks ePMP Station 5.4 GHz OFDM MIMO Radio, Model C058900P122A
Item1: Unshielded CAT 5e POE Cable - 1.5 meters long
Item2: Unshielded CAT 5e Ethernet Cable - not terminated - 8 meters long
Item3: Phihong Power Supply PSA-15M-300(SM)
Item4: MARS model MA-WA56-DP23 4.9-6.1 GHz 23 dBi Panel antenna, SN: 5111 or ARC Wireless Solutions model ARC-DA5830SD1 4.94-5.875 GHz 30 dBi Dish antenna, SN: none

Radiated - Below 1 GHz - Front & Back - with 23 dBi Panel Antenna

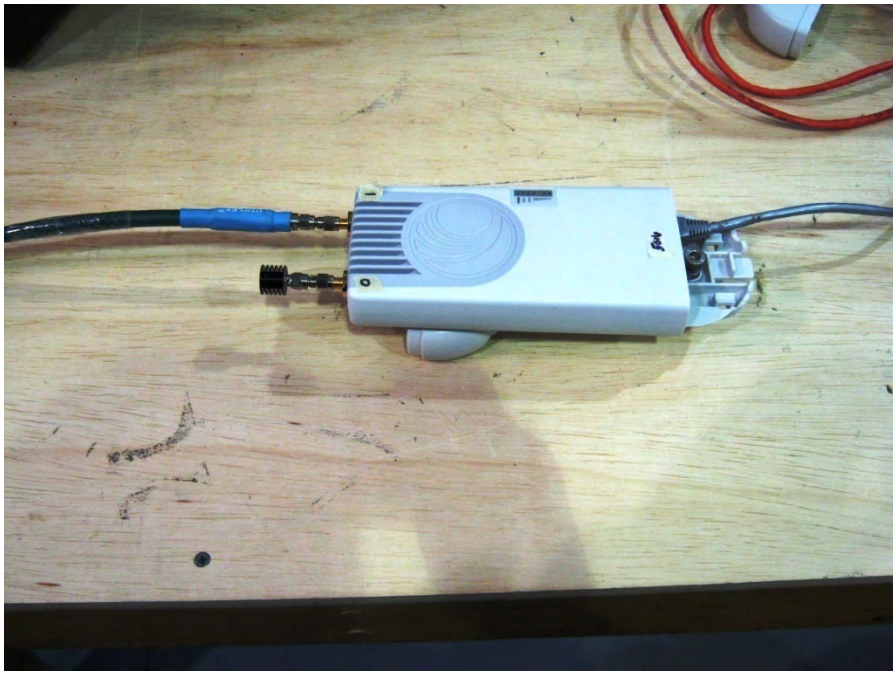


Appendix A – Test Photos

Radiated - Above 1 GHz - Front & Back - with 23 dBi Panel Antenna

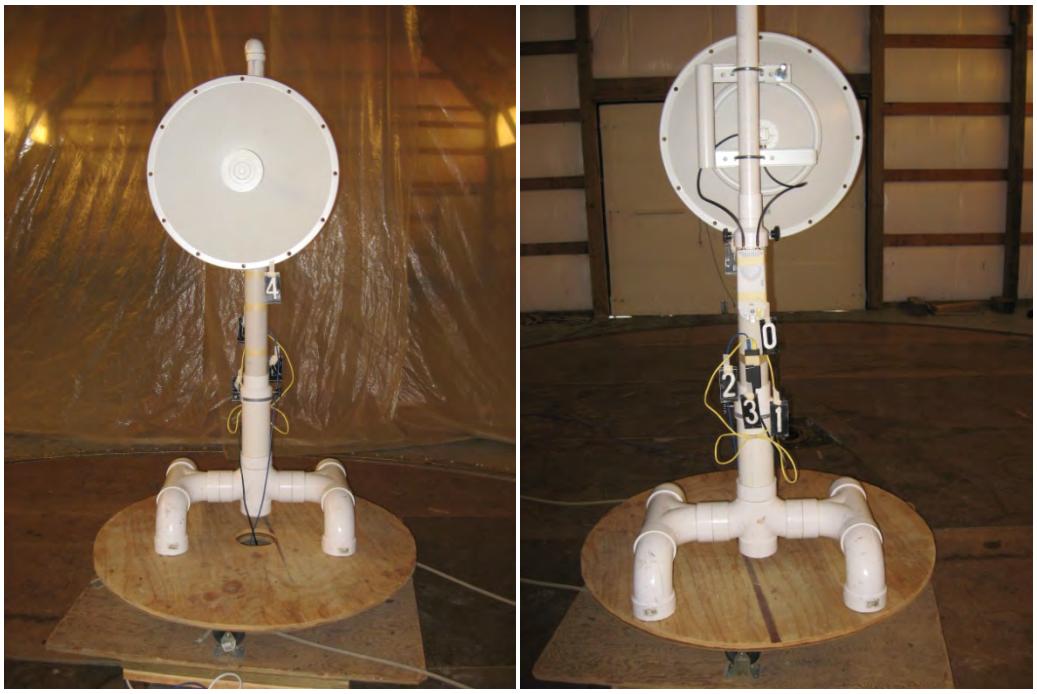


RF Conducted

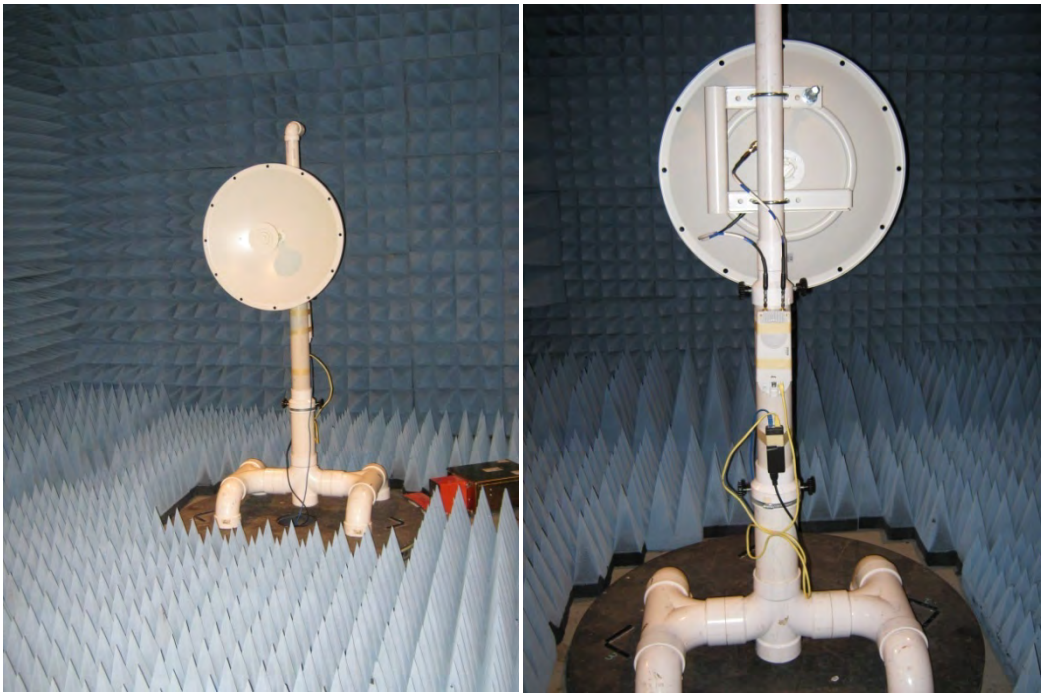


Appendix A – Test Photos

Radiated - Below 1 GHz - Front & Back - with 30 dBi Dish Antenna



Radiated - Above 1 GHz - Front & Back - with 30 dBi Dish Antenna



Appendix B – Measurement Data

B1.0 Maximum Conducted Output Power

Rule Section: Section 15.407(a)(2)

Test Procedure: FCC KDB 789033 D01 General UNII Test Procedures v01r03 – *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: Lesser of: 250 mW (24 dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
Limit shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

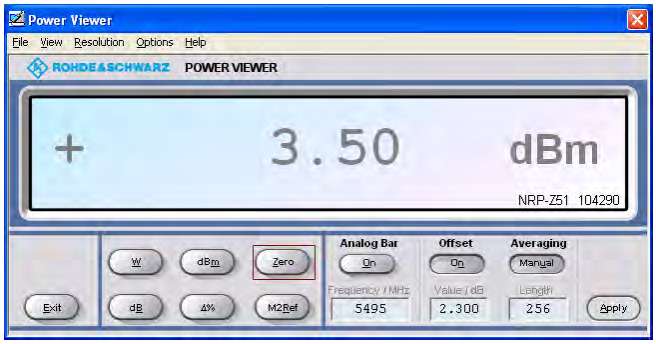
Results: Passed

Notes: Measurements were taken for MCS15 OFDM modulation at the lowest, middle, and highest channels of operation. EUT was set to transmit continuously with 100% duty cycle.

Tested output port 1 only as it was determined to be worst case from previous testing of this device (original certification).

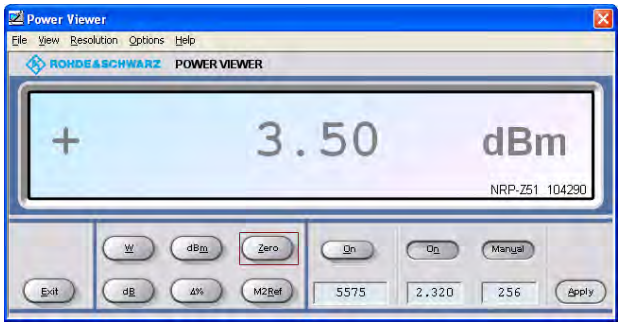
Test Date: 04-01-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 23 dBi
EUT Limit: 24-(23-6) = 7 dBm
Low Channel: Transmit = 5.495 GHz 20MHz BW
Output power setting: 2

Port 1:
Maximum conducted output power = 3.50 dBm + 3 dB (MIMO)
= 6.50 dBm



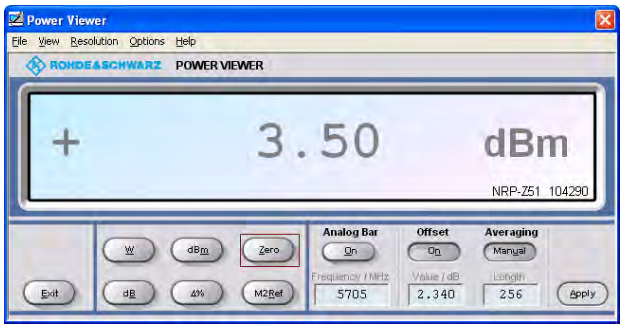
Test Date: 04-01-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 23 dBi
EUT Limit: 24-(23-6) = 7 dBm
Mid Channel: Transmit = 5.575 GHz 20MHz BW
Output power setting: 3

Port 1:
Maximum conducted output power = 3.50 dBm + 3 dB (MIMO)
= 6.50 dBm



Test Date: 04-01-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 23 dBi
EUT Limit: 24-(23-6) = 7 dBm
High Channel: Transmit = 5.705 GHz 20MHz BW
Output power setting: 3.5

Port 1:
Maximum conducted output power = 3.50 dBm + 3 dB (MIMO)
= 6.50 dBm

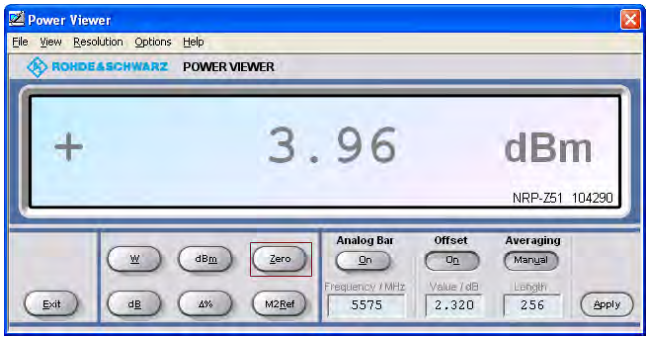


Test Date: 04-01-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 23 dBi
EUT Limit: 24-(23-6) = 7 dBm
Low Channel: Transmit = 5.510 GHz 40MHz BW
Output power setting: 2

Port 1:
Maximum conducted output power = 3.99 dBm + 3 dB (MIMO)
= 6.99 dBm

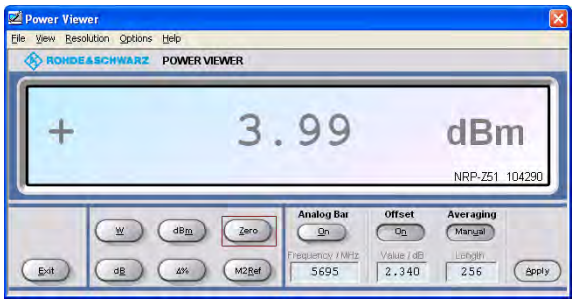
Test Date: 04-01-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 23 dBi
EUT Limit: 24-(23-6) = 7 dBm
Mid Channel: Transmit = 5.575 GHz 40MHz BW
Output power setting: 3

Port 1:
Maximum conducted output power = 3.96 dBm + 3 dB (MIMO)
= 6.96 dBm



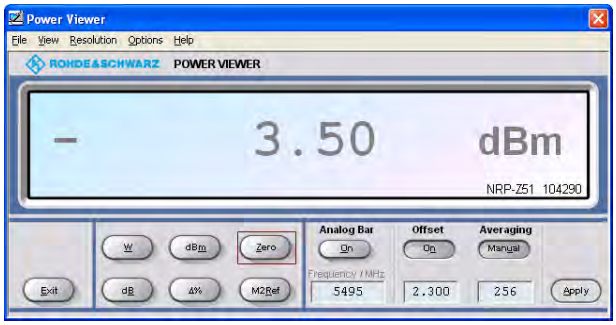
Test Date: 04-01-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 23 dBi
EUT Limit: 24-(23-6) = 7 dBm
High Channel: Transmit = 5.695 GHz 40MHz BW
Output power setting: 3

Port 1:
Maximum conducted output power = 3.99 dBm + 3 dB (MIMO)
= 6.99 dBm



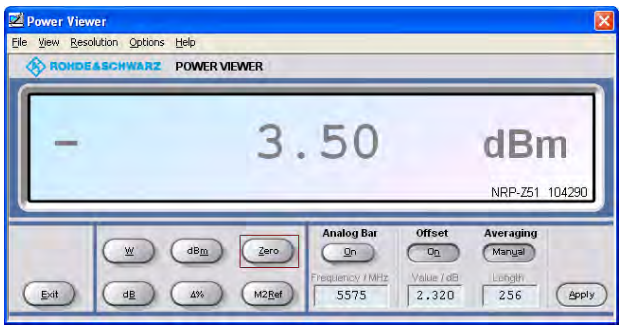
Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 30 dBi
EUT Limit: 24-(30-6) = 0 dBm
Low Channel: Transmit = 5.495 GHz 20MHz BW
Output power setting: 20.0*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:
Maximum conducted output power = -3.50 dBm + 3 dB (MIMO)
= -0.50 dBm



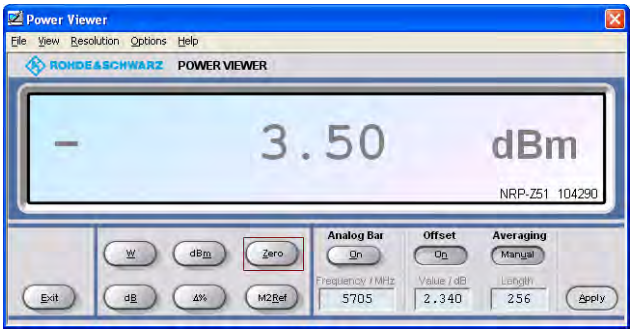
Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 30 dBi
EUT Limit: 24-(30-6) = 0 dBm
Mid Channel: Transmit = 5.575 GHz 20MHz BW
Output power setting: 20.5*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:
Maximum conducted output power = -3.50 dBm + 3 dB (MIMO)
= -0.50 dBm



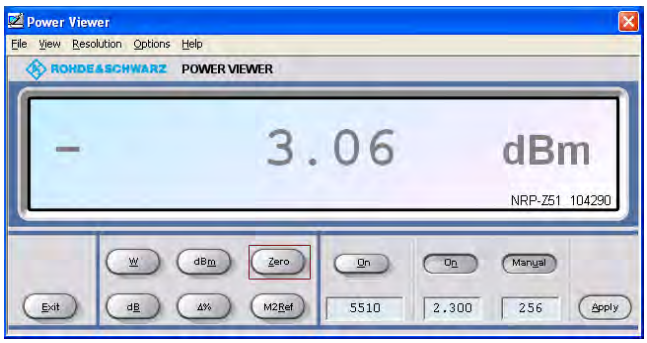
Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 30 dBi
EUT Limit: 24-(30-6) = 0 dBm
High Channel: Transmit = 5.705 GHz 20MHz BW
Output power setting: 21.5*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:
Maximum conducted output power = -3.50 dBm + 3 dB (MIMO)
= -0.50 dBm



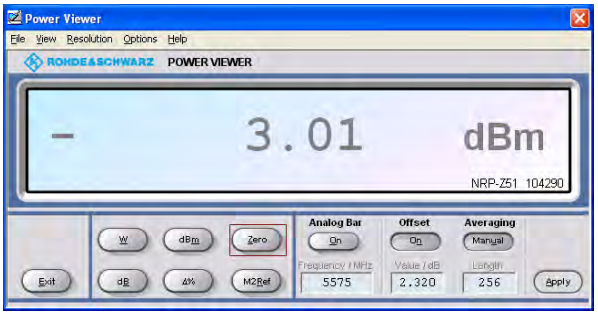
Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 30 dBi
EUT Limit: 24-(30-6) = 0 dBm
Low Channel: Transmit = 5.510 GHz 40MHz BW
Output power setting: 20.0*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:
Maximum conducted output power = -3.06 dBm + 3 dB (MIMO)
= -0.06 dBm



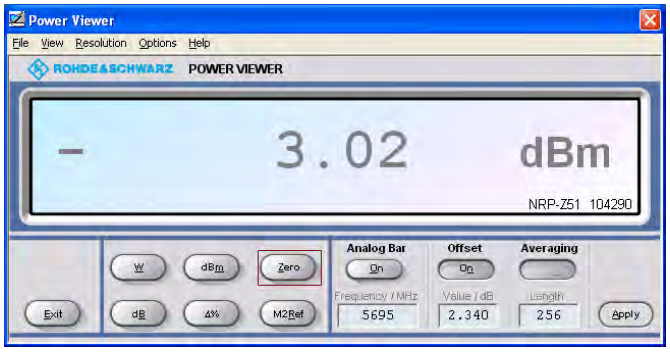
Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 30 dBi
EUT Limit: 24-(30-6) = 0 dBm
Mid Channel: Transmit = 5.575 GHz 40MHz BW
Output power setting: 21.0*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:
Maximum conducted output power = -3.01 dBm + 3 dB (MIMO)
= -0.01 dBm



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Maximum conducted output power – Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
E)3) Measurement using an average power meter with a thermocouple detector
Limit: [15.407(a)(2)]: 24.0 dBm conducted.
Antenna Gain = 30 dBi
EUT Limit: 24-(30-6) = 0 dBm
High Channel: Transmit = 5.695 GHz 40MHz BW
Output power setting: 20.5*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:
Maximum conducted output power = -3.02 dBm + 3 dB (MIMO)
= -0.02 dBm



Appendix B – Measurement Data

B2.0 Peak Power Spectral Density – Conducted

Rule Section: Section 15.407(a)(2)

Test Procedure: FCC KDB 789033 D01 General UNII Test Procedures v01r03 – *Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E*

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

Description: SPAN: set to encompass entire emission bandwidth
RBW = 1 MHz
VBW ≥ 3 MHz
Number of points ≥ 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: 11 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

Results: Passed

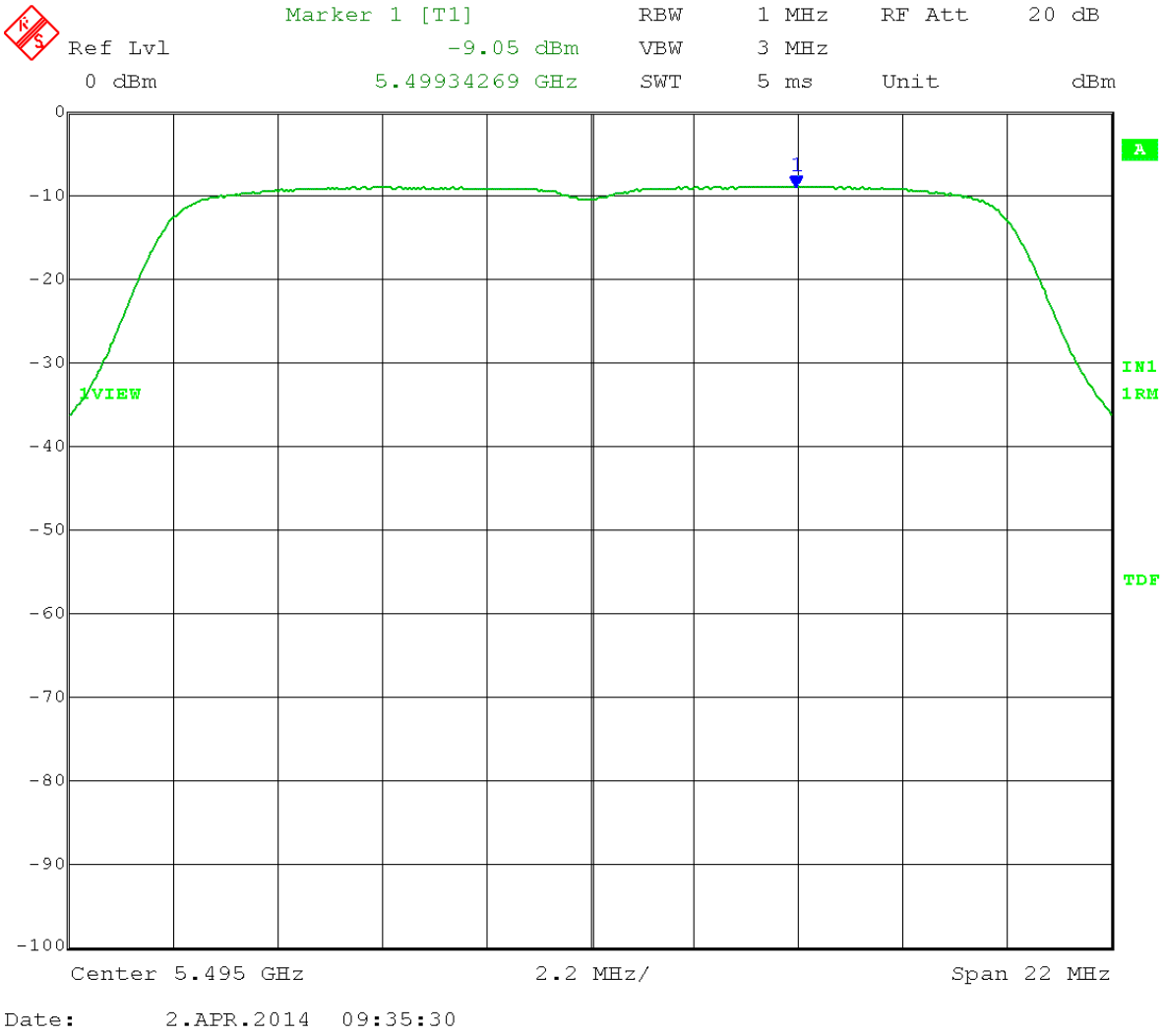
Notes: Measurements were taken for MCS15 OFDM modulation at the lowest, middle, and highest channels of operation. EUT was set to transmit continuously with 100% duty cycle.

Tested output port 1 only as it was determined to be worst case from previous testing of this device (original certification).

Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 17 dB (amount antenna gain exceeds 6 dBi) = -6 dBm/MHz
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
Low Channel: Transmit = 5.495 GHz 20MHz BW
Output power setting: 2.0

Port 1:

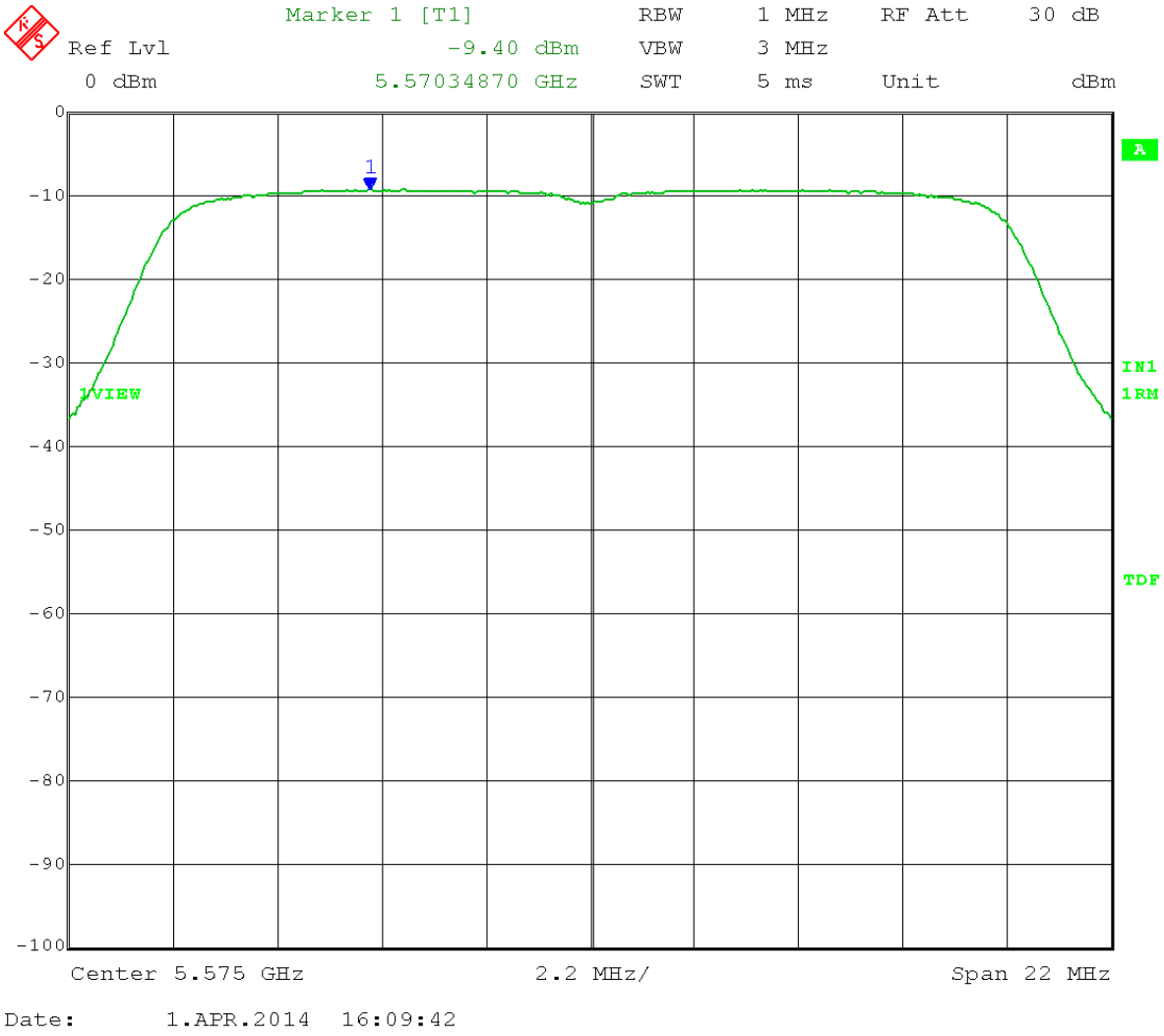
PPSD = -9.05 dBm/MHz + 3 dB (MIMO) = -6.05 dBm/MHz



Test Date: 04-01-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 17 dB (amount antenna gain exceeds 6 dBi) = -6 dBm/MHz
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
Mid Channel: Transmit = 5.575 GHz 20MHz BW
Output power setting: 3.0

Port 1:

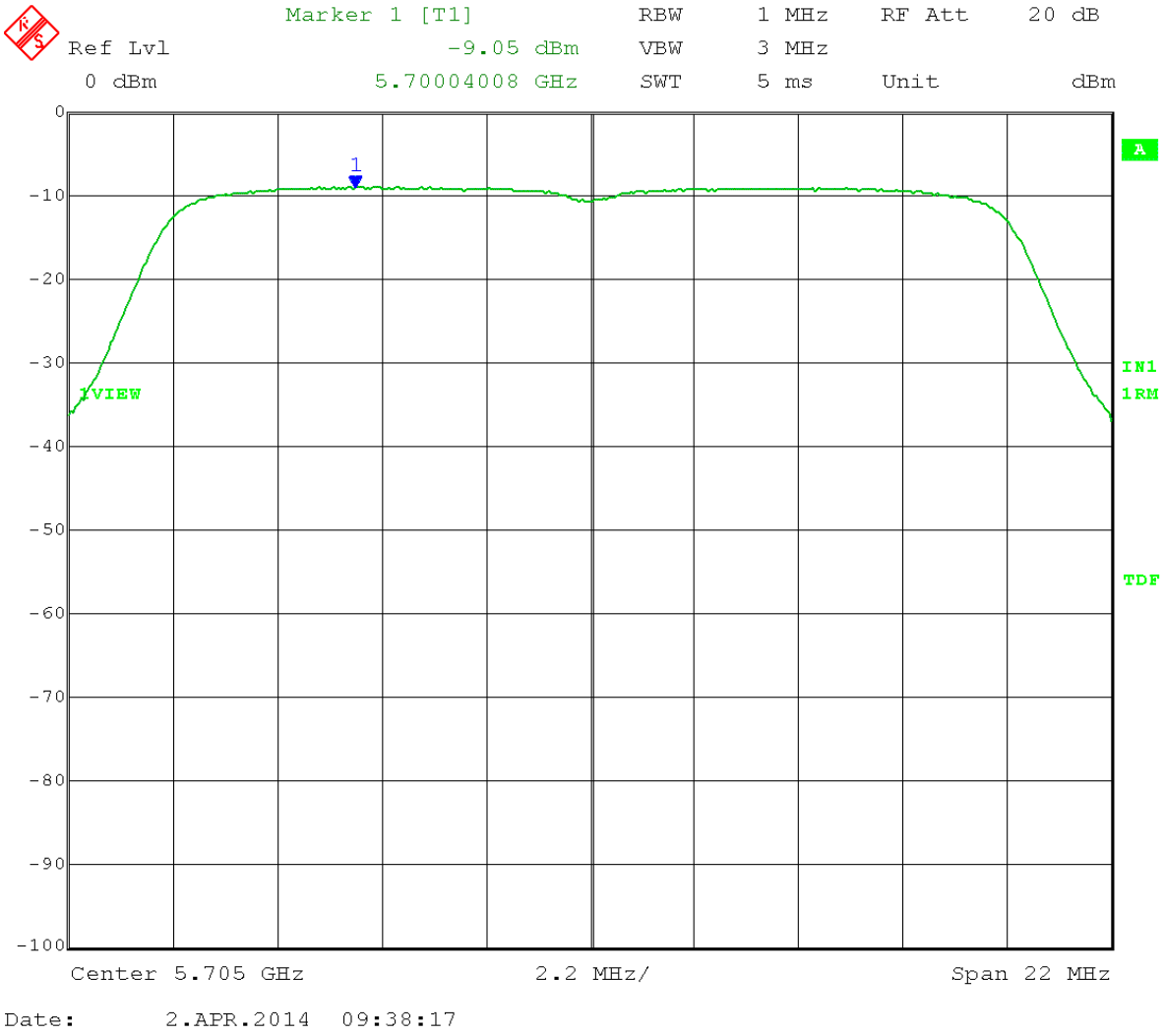
PPSD = -9.40 dBm/MHz + 3 dB (MIMO) = -6.40 dBm/MHz



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 17 dB (amount antenna gain exceeds 6 dBi) = -6 dBm/MHz
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
High Channel: Transmit = 5.705 GHz 20MHz BW
Output power setting: 3.5

Port 1:

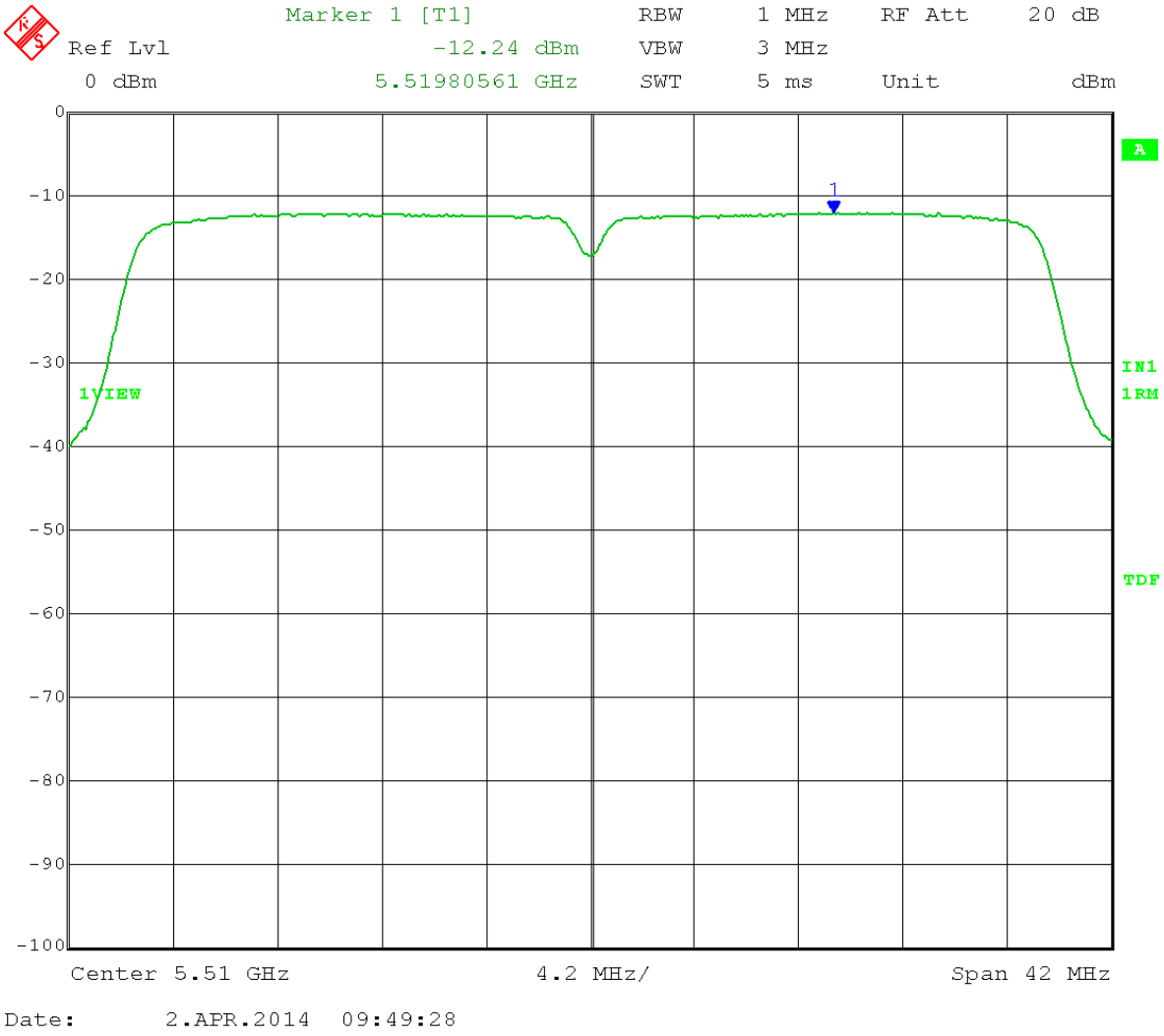
PPSD = -9.05 dBm/MHz + 3 dB (MIMO) = -6.05 dBm/MHz



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 17 dB (amount antenna gain exceeds 6 dBi) = -6 dBm/MHz
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
Low Channel: Transmit = 5.510 GHz 40MHz BW
Output power setting: 2.0

Port 1:

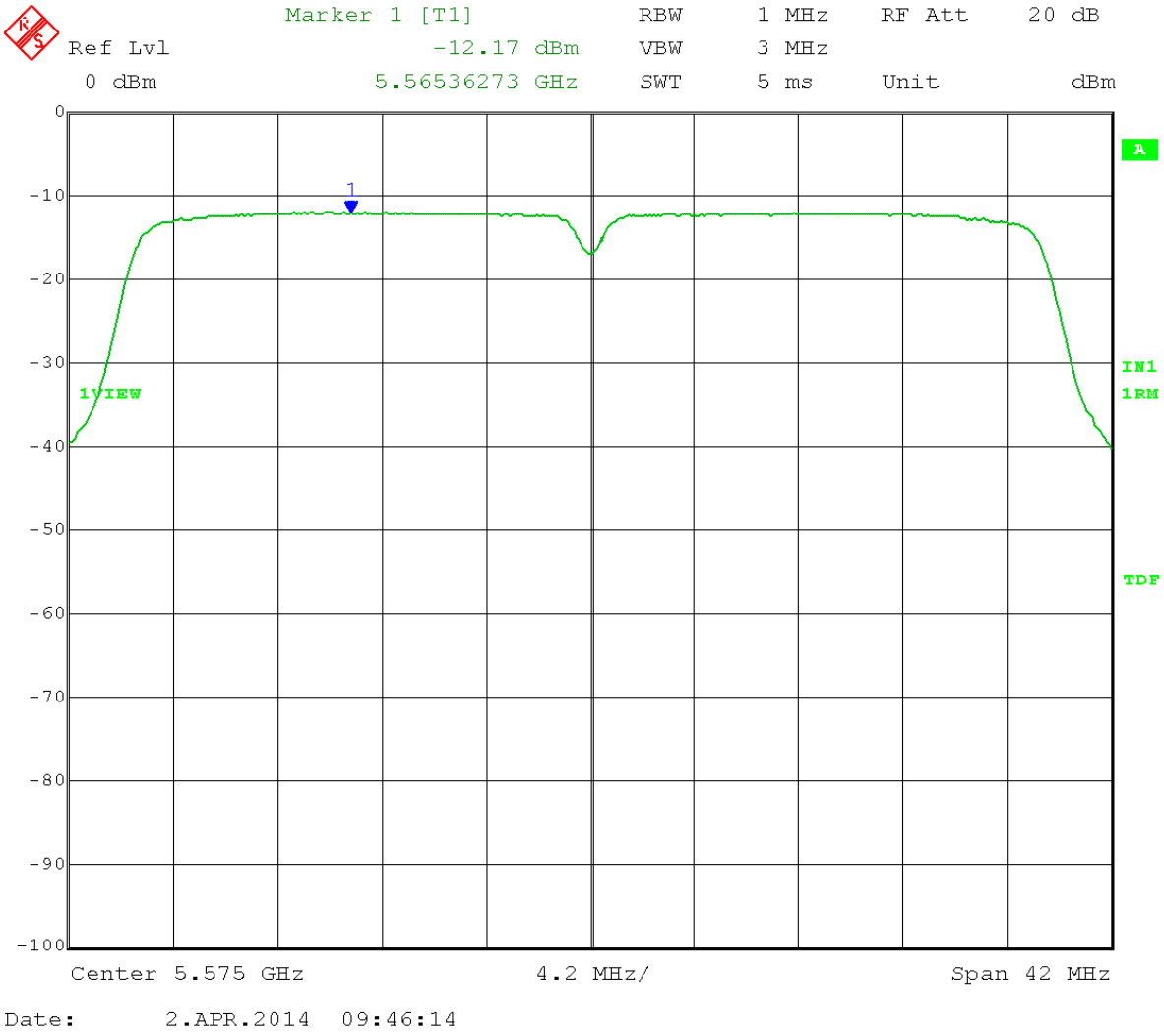
PPSD = -12.24 dBm/MHz + 3 dB (MIMO) = -9.24 dBm/MHz



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 17 dB (amount antenna gain exceeds 6 dBi) = -6 dBm/MHz
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
Mid Channel: Transmit = 5.575 GHz 40MHz BW
Output power setting: 3.0

Port 1:

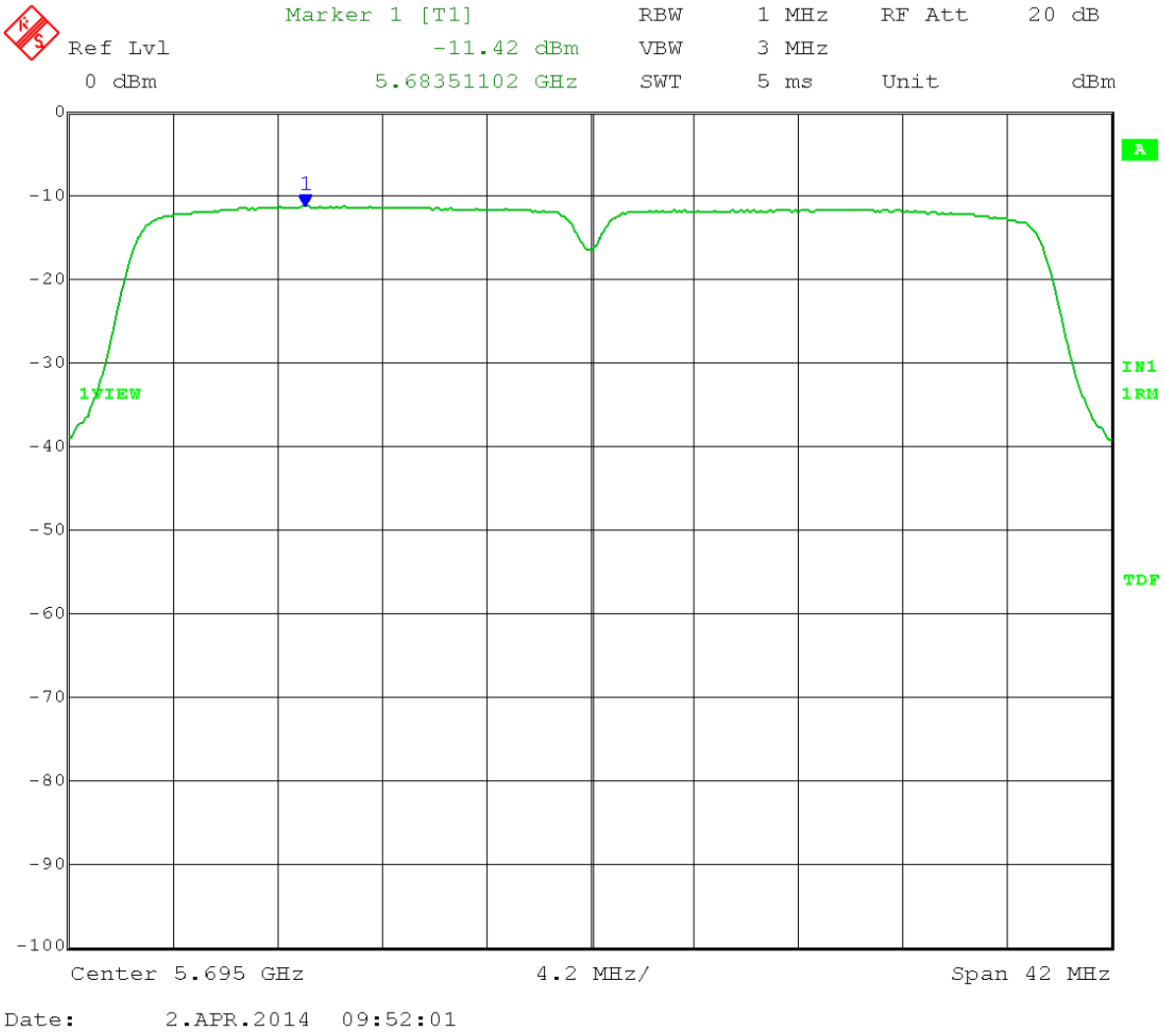
PPSD = -12.17 dBm/MHz + 3 dB (MIMO) = -9.17 dBm/MHz



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 17 dB (amount antenna gain exceeds 6 dBi) = -6 dBm/MHz
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
High Channel: Transmit = 5.695 GHz 40MHz BW
Output power setting: 3.0

Port 1:

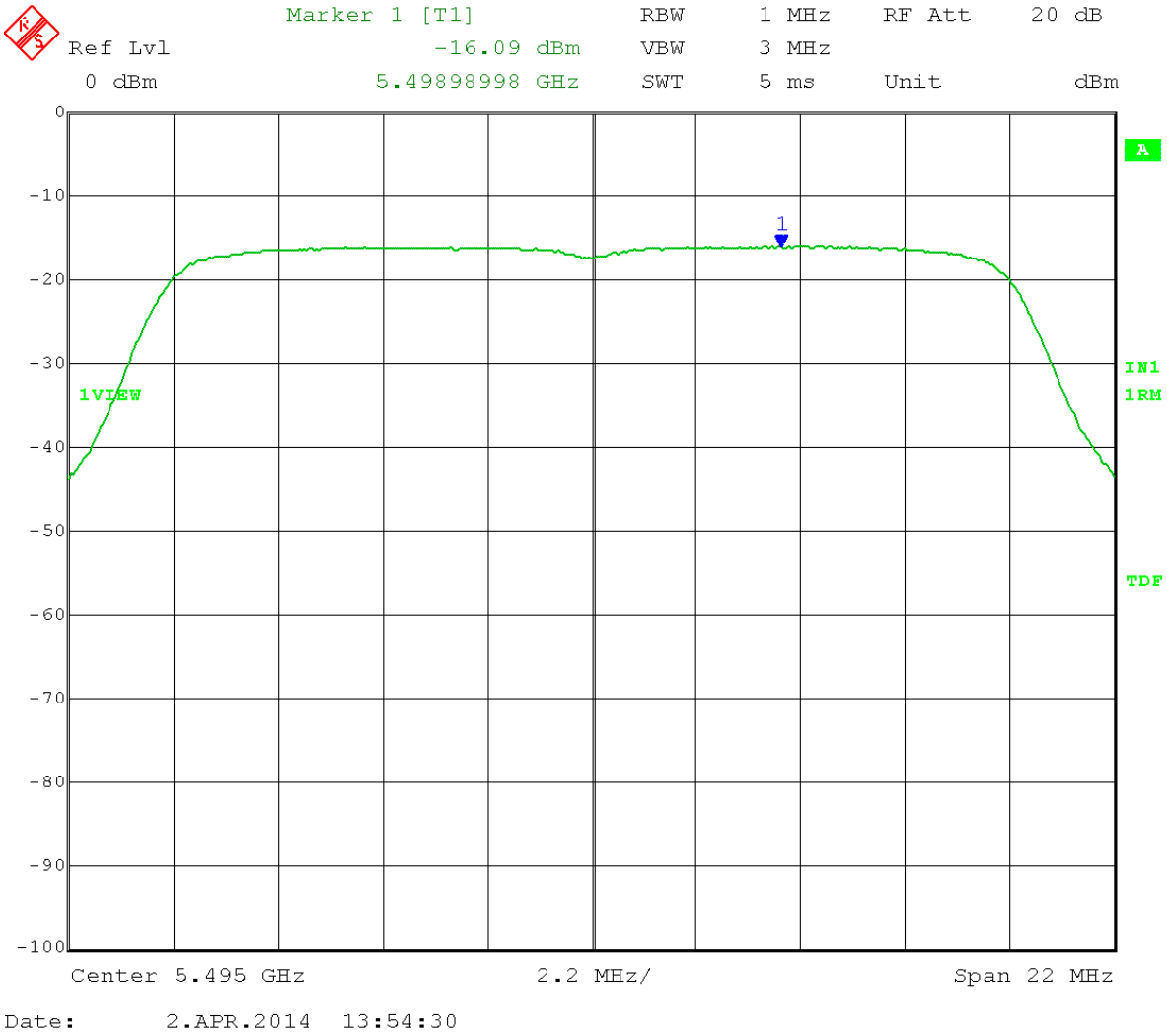
PPSD = -11.42 dBm/MHz + 3 dB (MIMO) = -8.42 dBm/MHz



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 24 dB (amount antenna gain exceeds 6 dBi) = **-13 dBm/MHz**
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
Low Channel: Transmit = 5.495 GHz 20MHz BW
Output power setting: 20.0*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:

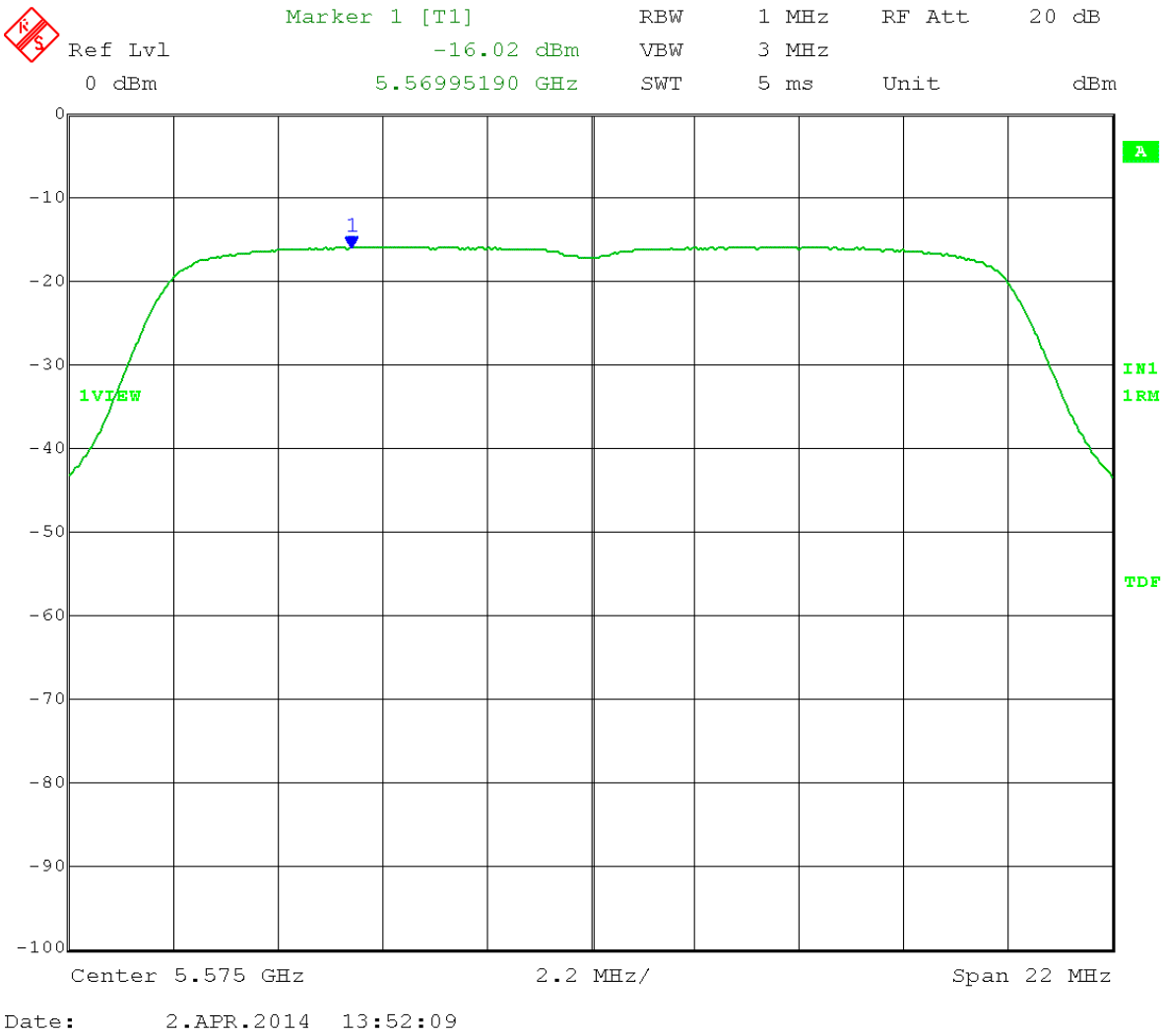
PPSD = -16.09 dBm/MHz + 3 dB (MIMO) = -13.09 dBm/MHz



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 24 dB (amount antenna gain exceeds 6 dBi) = **-13 dBm/MHz**
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
Mid Channel: Transmit = 5.575 GHz 20MHz BW
Output power setting: 20.5*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:

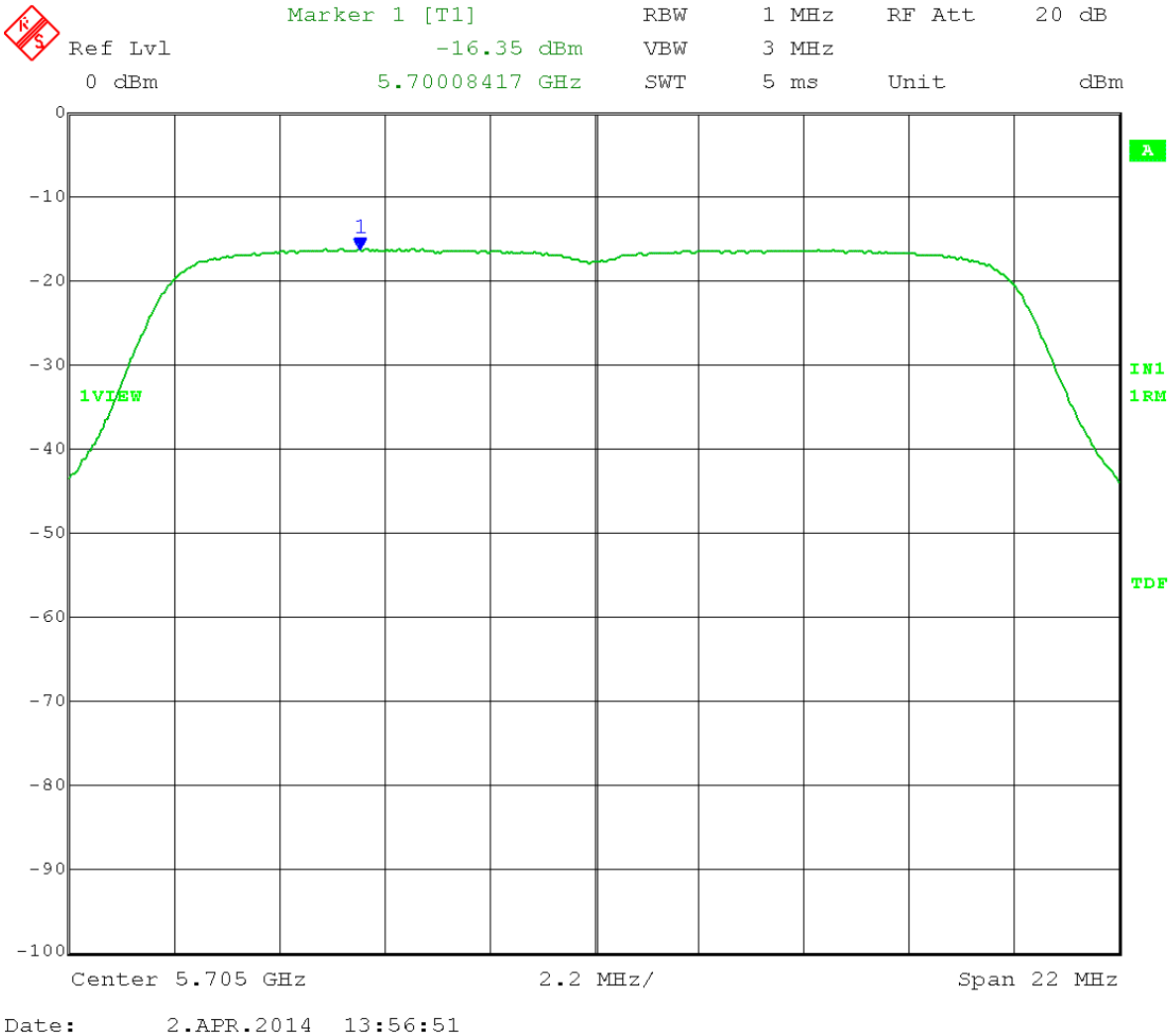
PPSD = -16.02 dBm/MHz + 3 dB (MIMO) = -13.02 dBm/MHz



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 24 dB (amount antenna gain exceeds 6 dBi) = **-13 dBm/MHz**
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
High Channel: Transmit = 5.705 GHz 20MHz BW
Output power setting: 21.5*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:

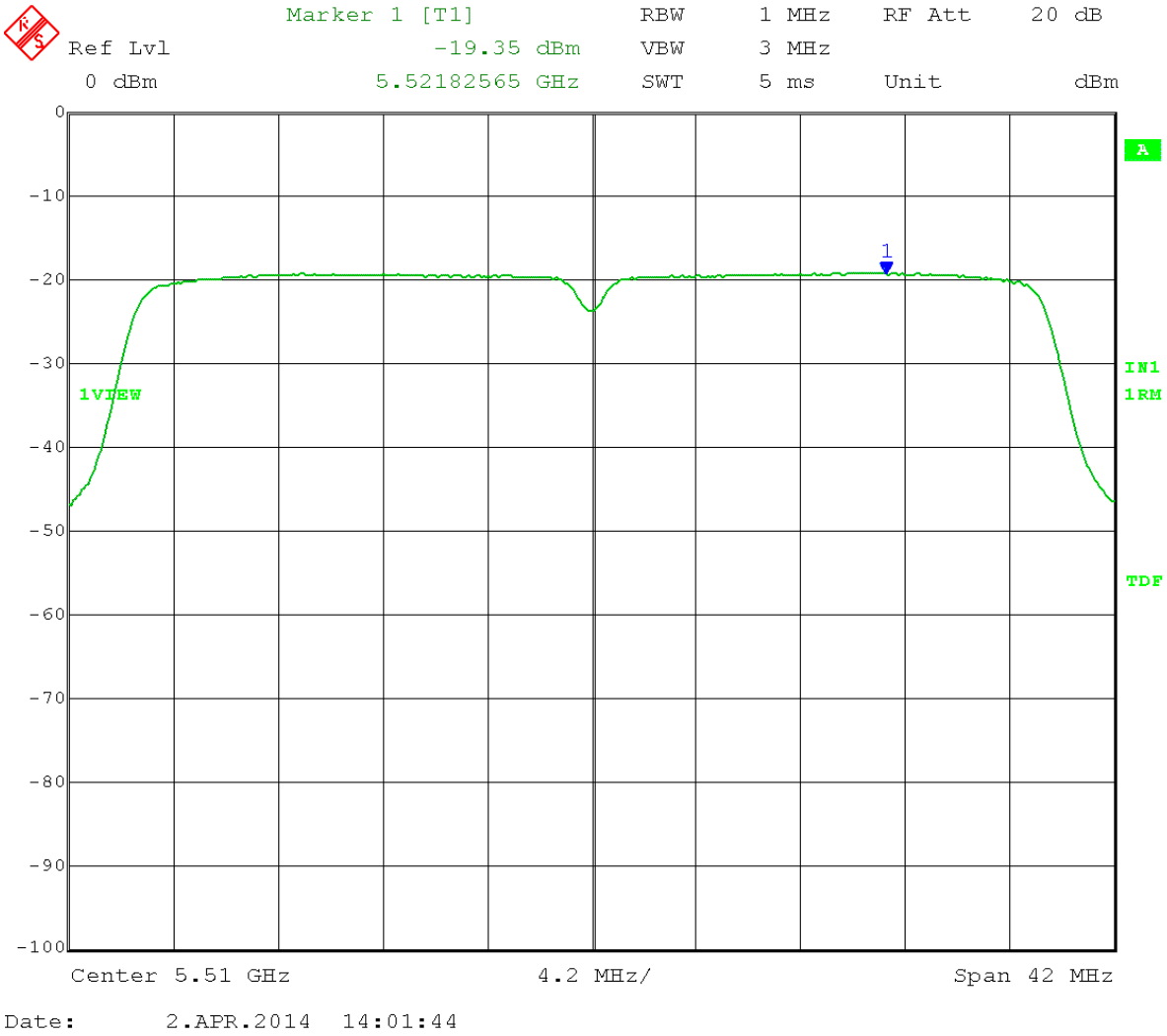
PPSD = -16.35 dBm/MHz + 3 dB (MIMO) = -13.35 dBm/MHz



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 24 dB (amount antenna gain exceeds 6 dBi) = -13 dBm/MHz
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
Low Channel: Transmit = 5.510 GHz 40MHz BW
Output power setting: 20.0*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:

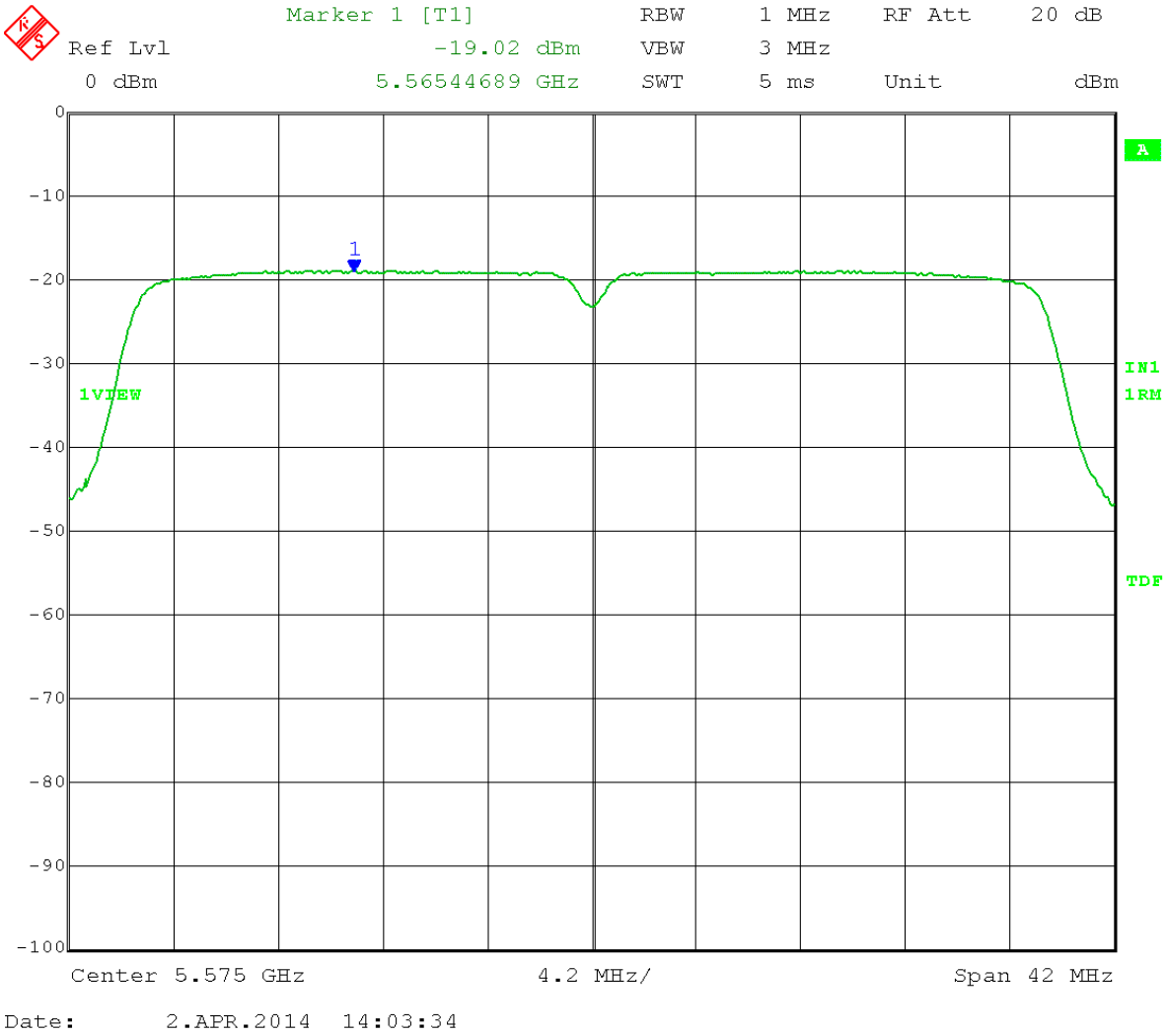
PPSD = -19.35 dBm/MHz + 3 dB (MIMO) = -16.35 dBm/MHz



Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 24 dB (amount antenna gain exceeds 6 dBi) = **-13 dBm/MHz**
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
Mid Channel: Transmit = 5.575 GHz 40MHz BW
Output power setting: 21.0*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:

PPSD = -19.02 dBm/MHz + 3 dB (MIMO) = -16.02 dBm/MHz

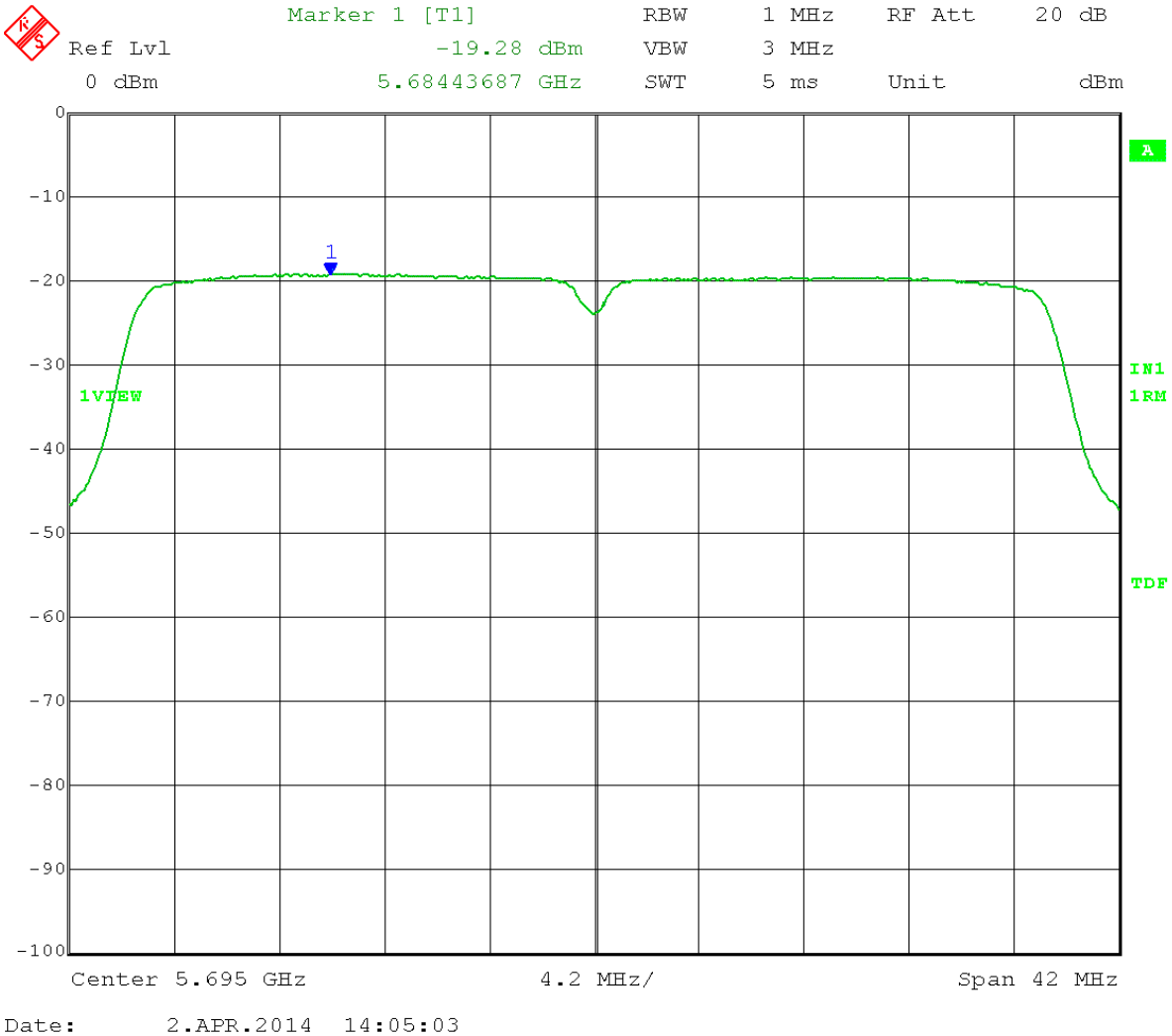


Date: 2.APR.2014 14:03:34

Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Peak Power Spectral Density - Conducted
Operator: Craig B
Comment: FCC UNII operating under 15.407
F) PPSD – using E)2 method SA-1
Limit:[15.407(a)(2)]: 11 dBm/MHz
11 – 24 dB (amount antenna gain exceeds 6 dBi) = **-13 dBm/MHz**
RBW = 1 MHz VBW = 3 MHz
Detector = RMS Trace = average 200 traces
Sweep Time = Auto
High Channel: Transmit = 5.695 GHz 40MHz BW
Output power setting: 20.5*
*Software cal table was modified so that power setting 24.0 = 0.0

Port 1:

PPSD = -19.28 dBm/MHz + 3 dB (MIMO) = -16.28 dBm/MHz



Appendix B – Measurement Data

B3.0 Unwanted Emission Levels – Radiated Band-Edge with antenna connected

Rule Section: Sections 15.407(b)(3) and 15.407(b)(5)

Test Procedure: FCC KDB 789033 D01 General UNII Test Procedures v01r03 – *Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E*

Section H – Unwanted emission levels
Section H(1) – Unwanted emissions in the restricted bands
Section H(2) – Unwanted emissions that fall outside of the restricted bands
Section H(3) – General Requirements for Unwanted Emissions Measurements

Description: Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

Measure the band-edge emission level using the following settings

PEAK measurements:
- RBW = 1 MHz
- VBW ≥ 3 MHz
- Detector = peak
- Sweep time = auto
- Trace mode = max hold

AVERAGE measurements:
- RBW = 1 MHz
- VBW ≥ 3 MHz
- Detector = AVERAGE
- Sweep time = auto
- Trace mode = max hold

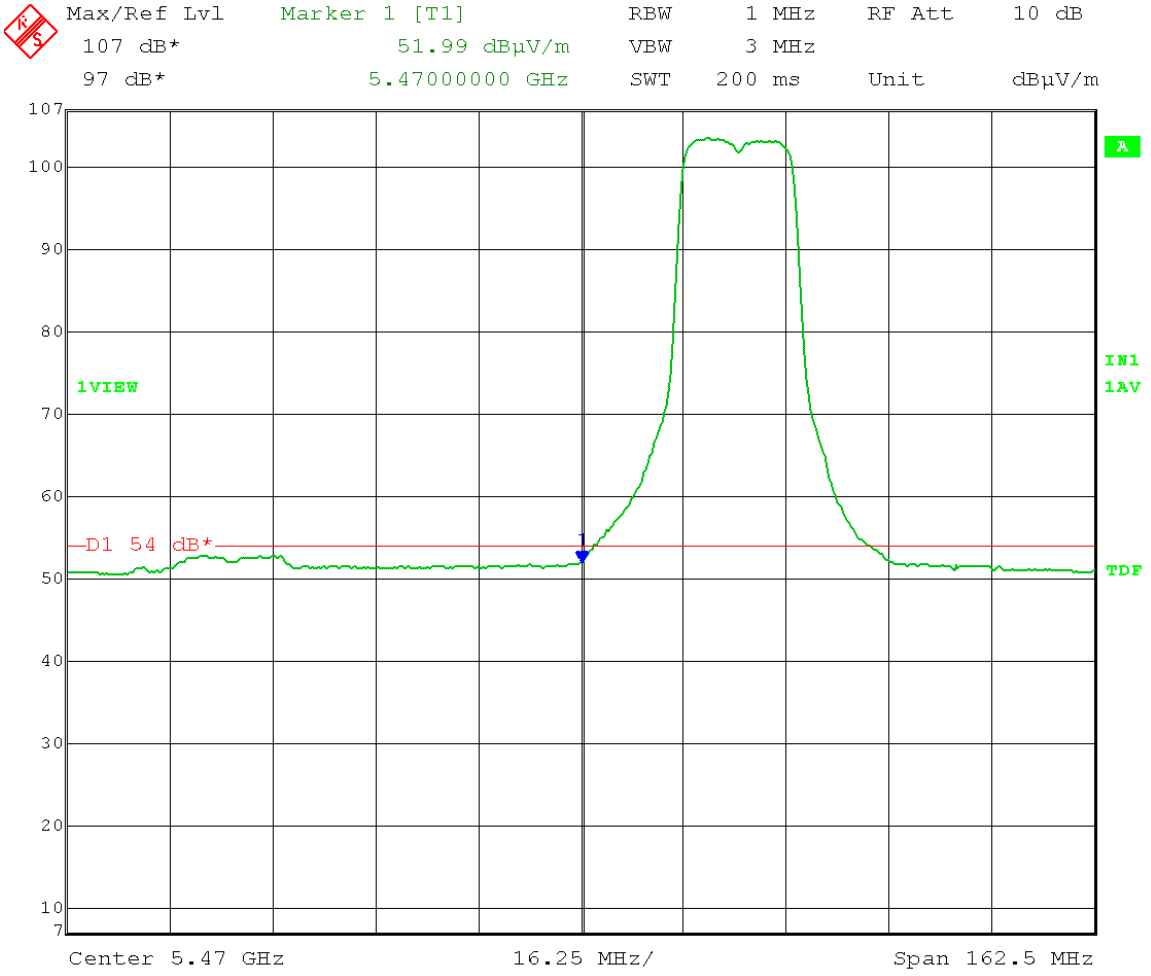
Limit: Peak and Average limits of 15.209 were used instead of the -27 dBm/MHz limit of FCC Part 15.407(b)(3).

Results: Passed

Notes: Measurements were taken for MCS15 OFDM modulation at the lowest and highest channels of operation. EUT was set to transmit continuously with 100% duty cycle. Both transmit chains were active.

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 8.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

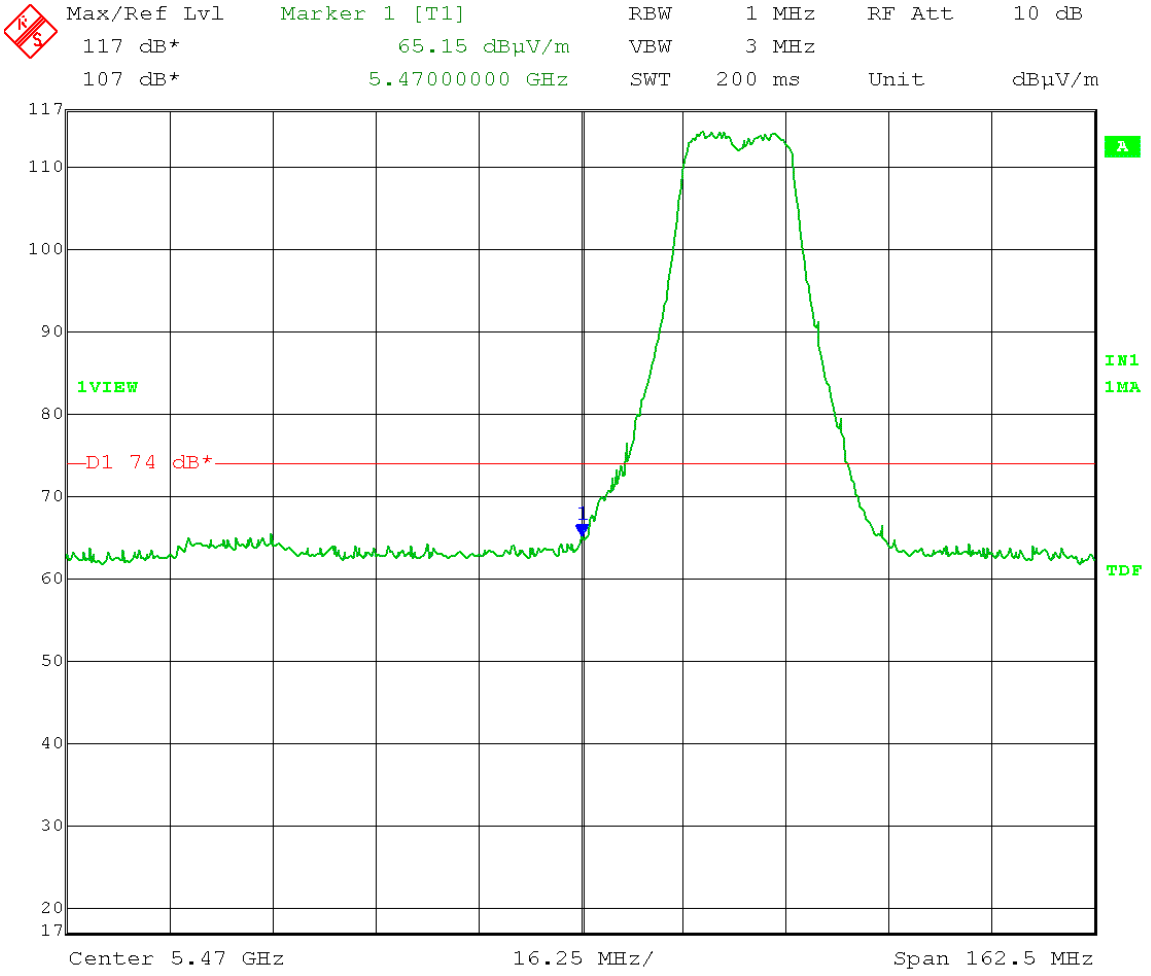
Horizontal: Average:



Date: 11.APR.2014 10:35:03

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 8.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

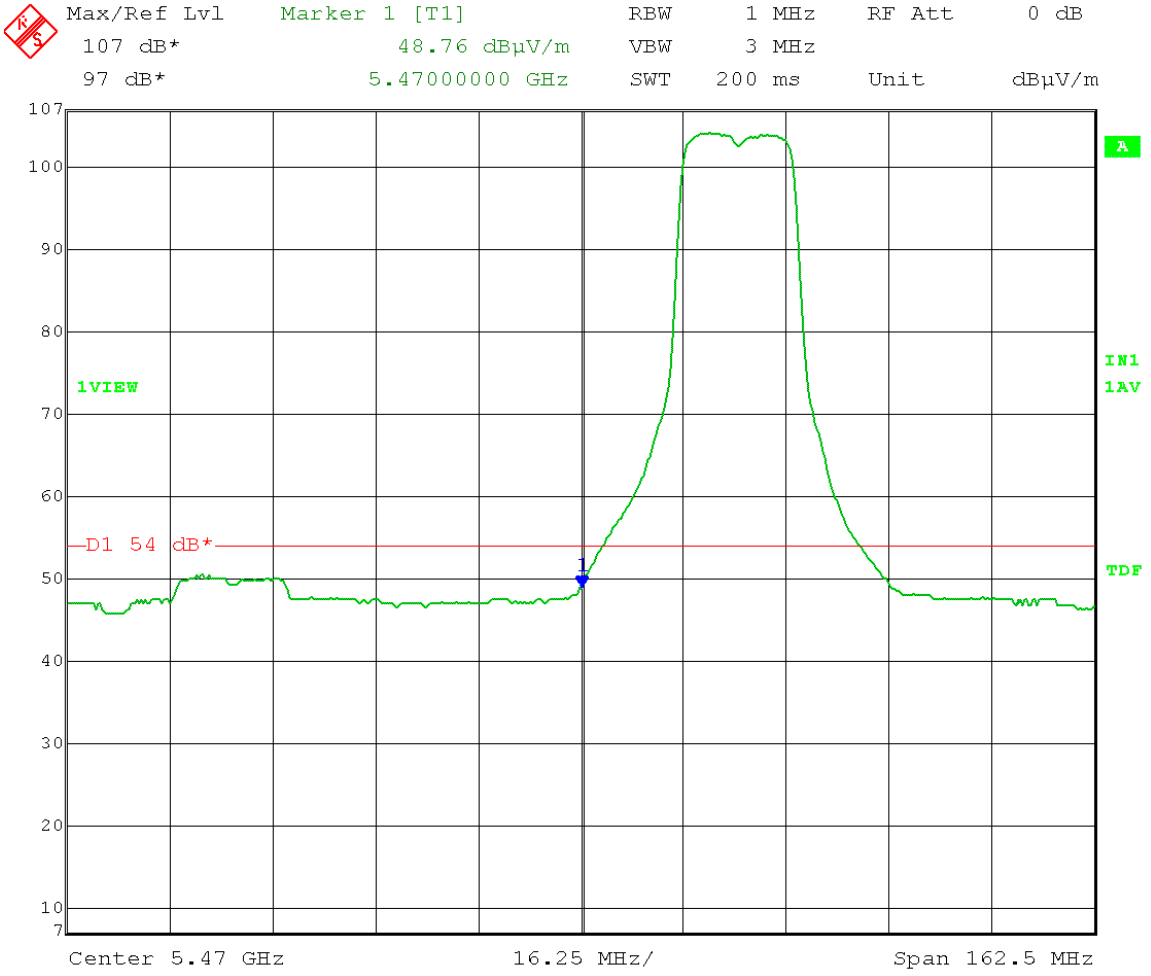
Horizontal: Peak:



Date: 11.APR.2014 10:36:07

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 8.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

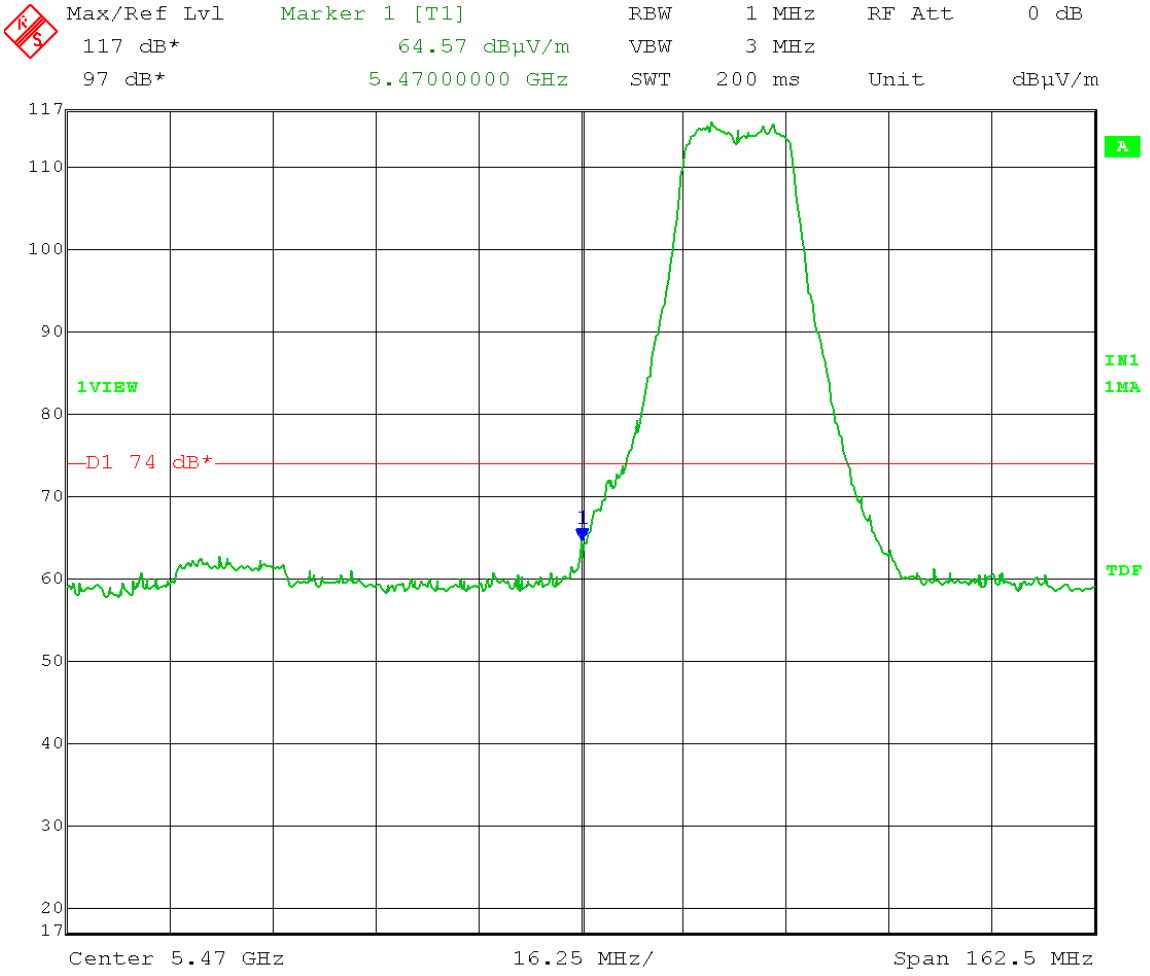
Vertical: Average:



Date: 11.APR.2014 11:30:26

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 8.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

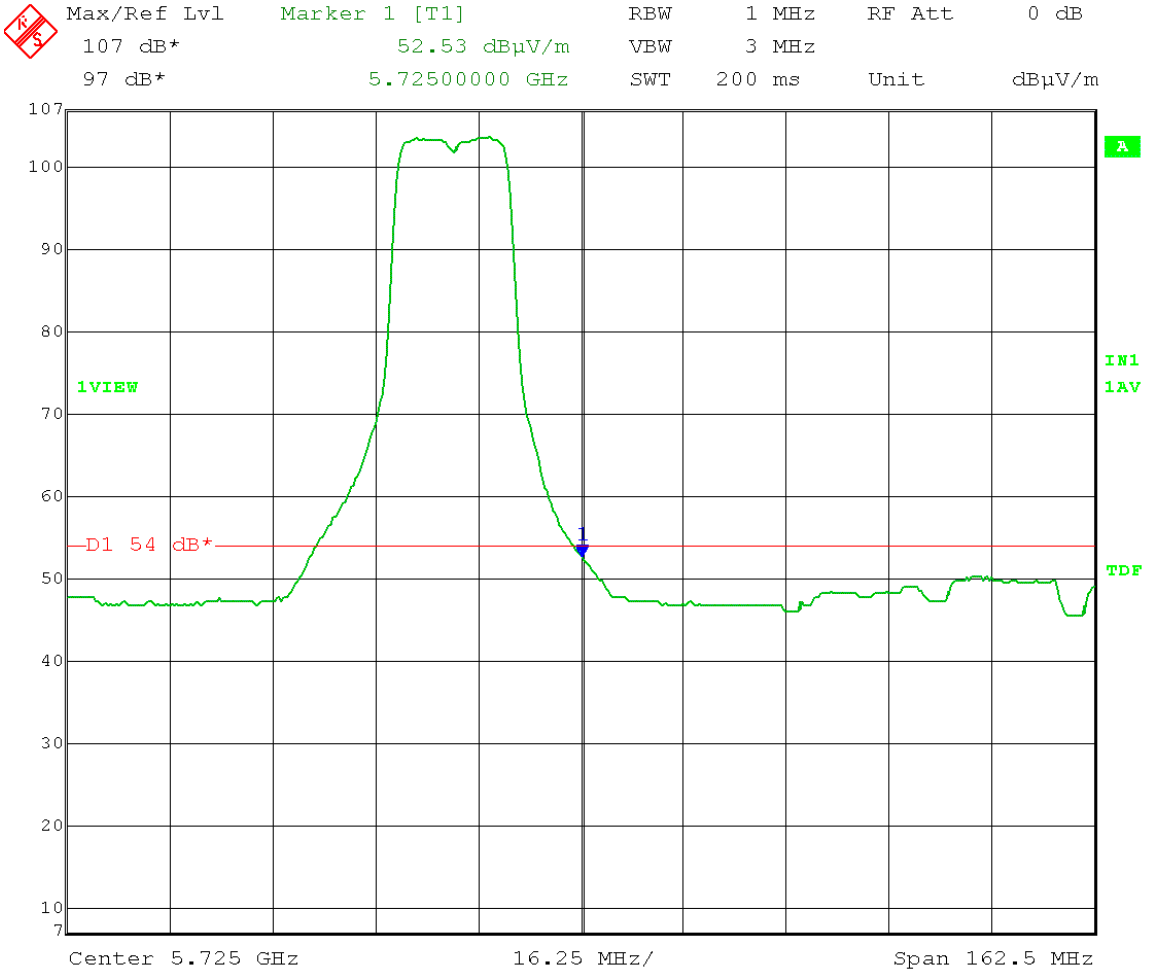
Vertical: Peak:



Date: 11.APR.2014 11:31:03

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 9.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

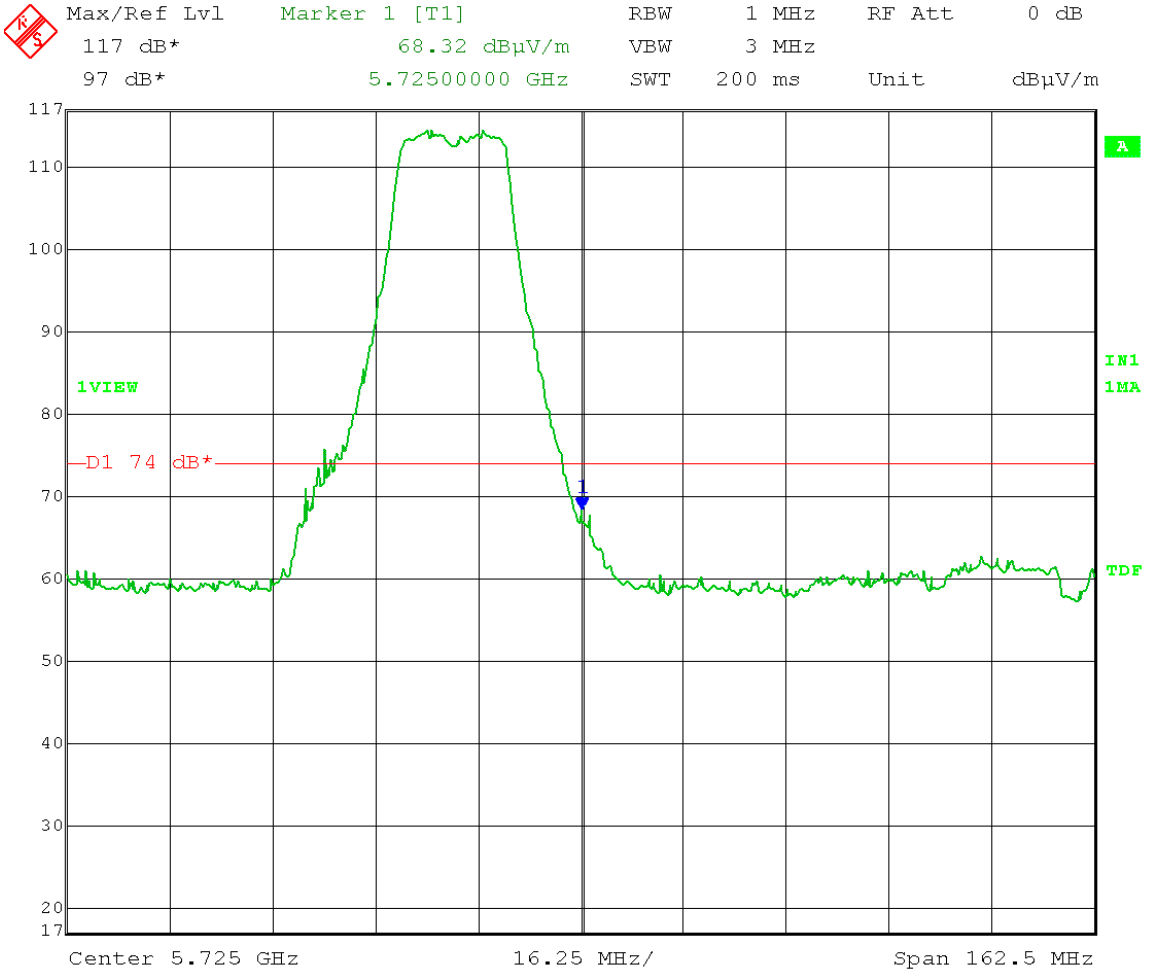
Horizontal: Average:



Date: 11.APR.2014 10:47:52

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 9.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

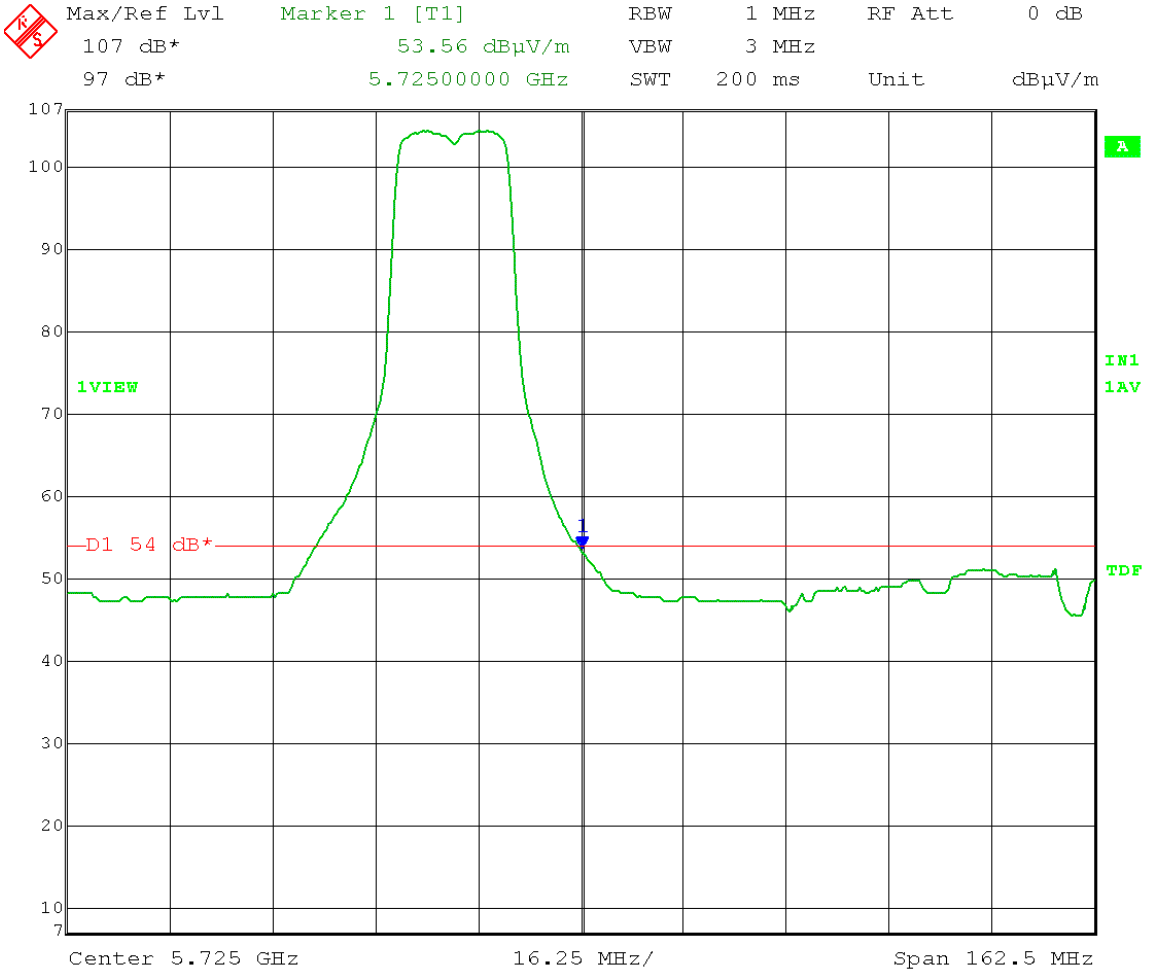
Horizontal: Peak:



Date: 11.APR.2014 10:48:55

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 9.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

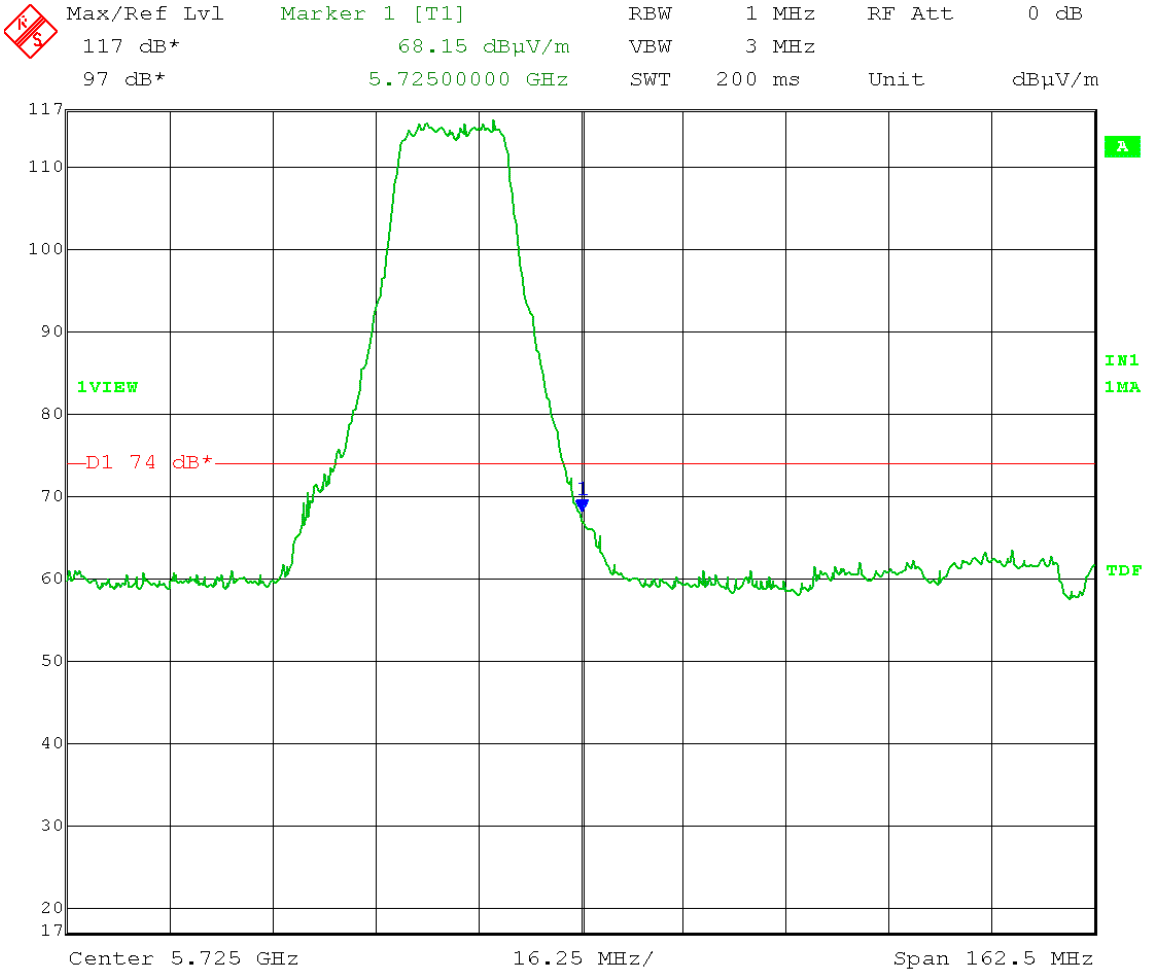
Vertical: Average:



Date: 11.APR.2014 11:19:34

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 9.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

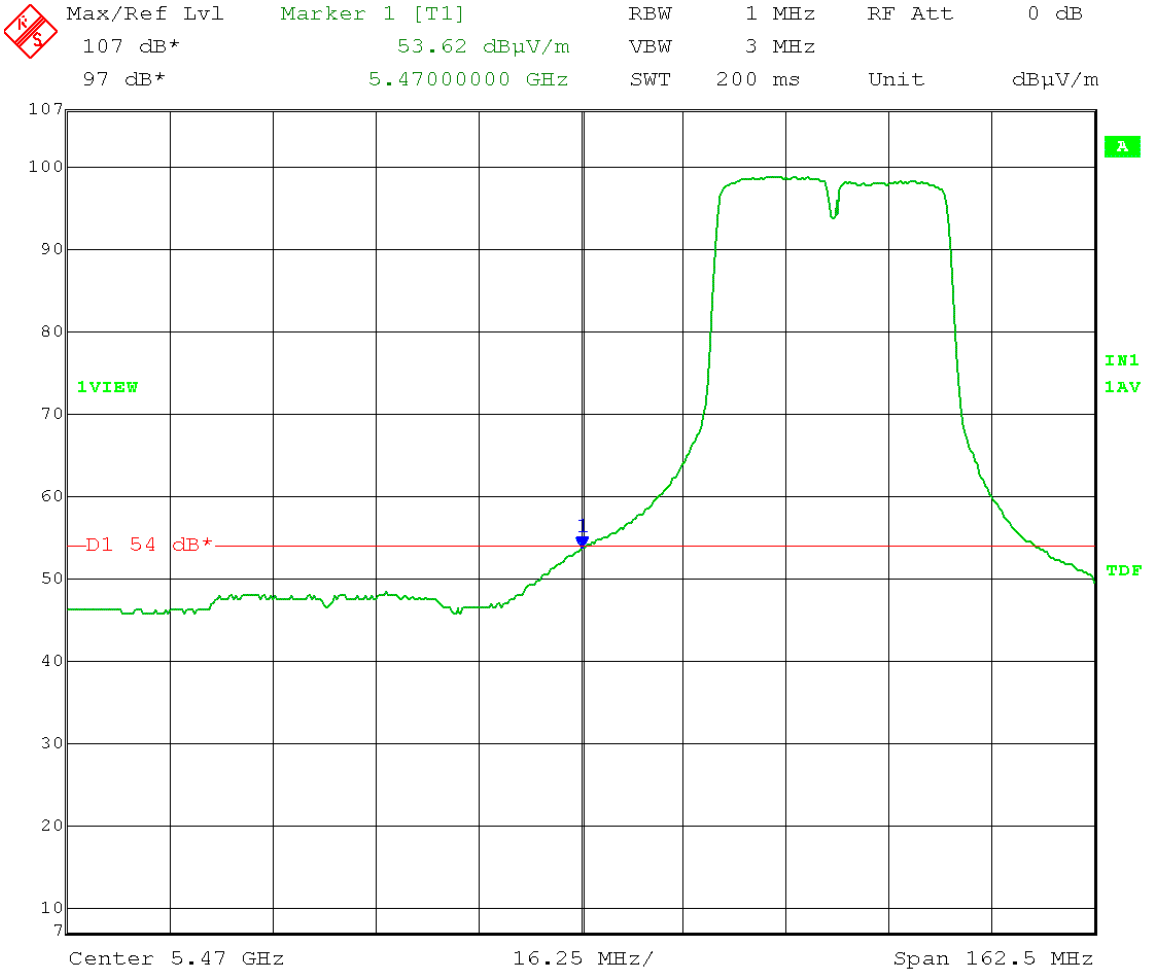
Vertical: Peak:



Date: 11.APR.2014 11:20:10

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 6.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

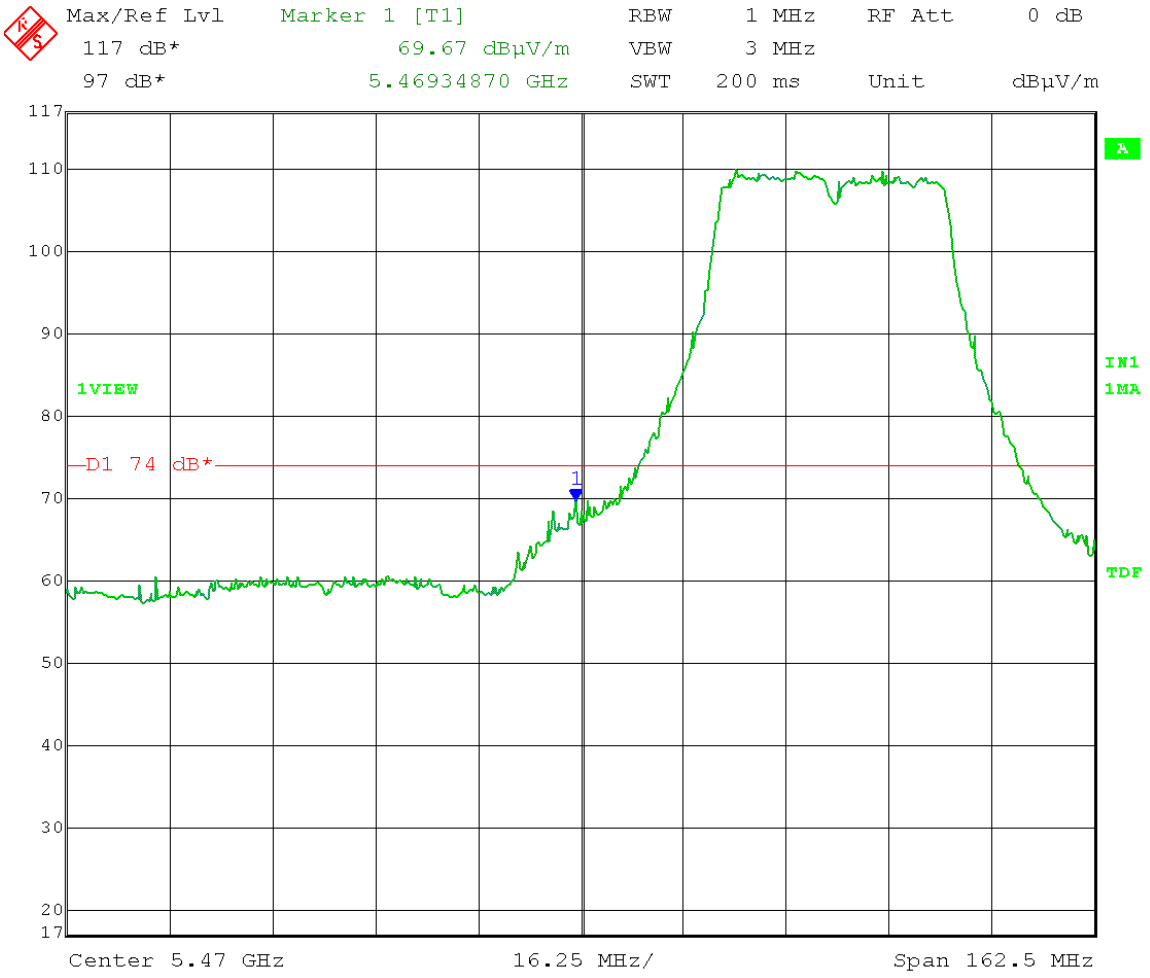
Horizontal: Average:



Date: 11.APR.2014 10:52:02

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 6.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

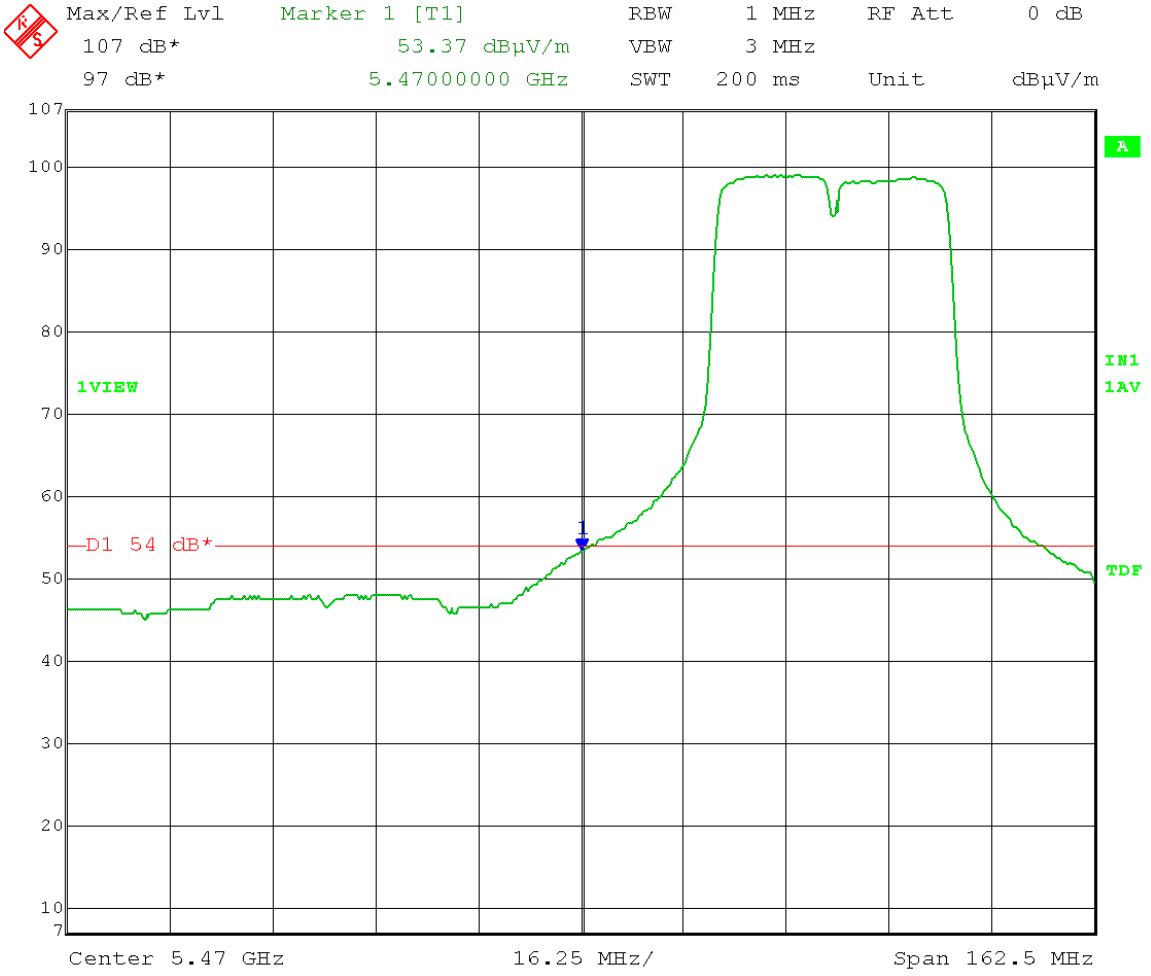
Horizontal: Peak:



Date: 11.APR.2014 10:52:57

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 6.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

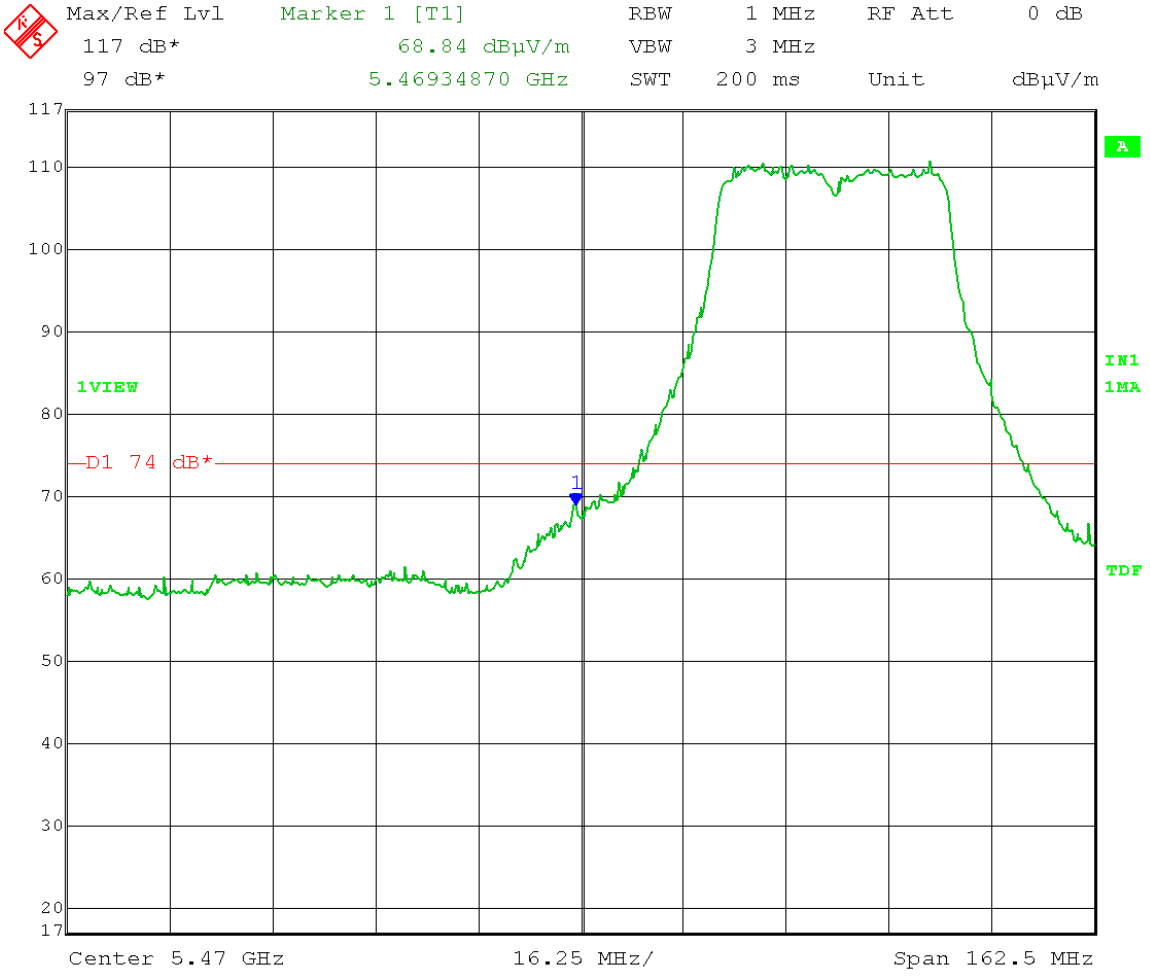
Vertical: Average:



Date: 11.APR.2014 11:28:27

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 6.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

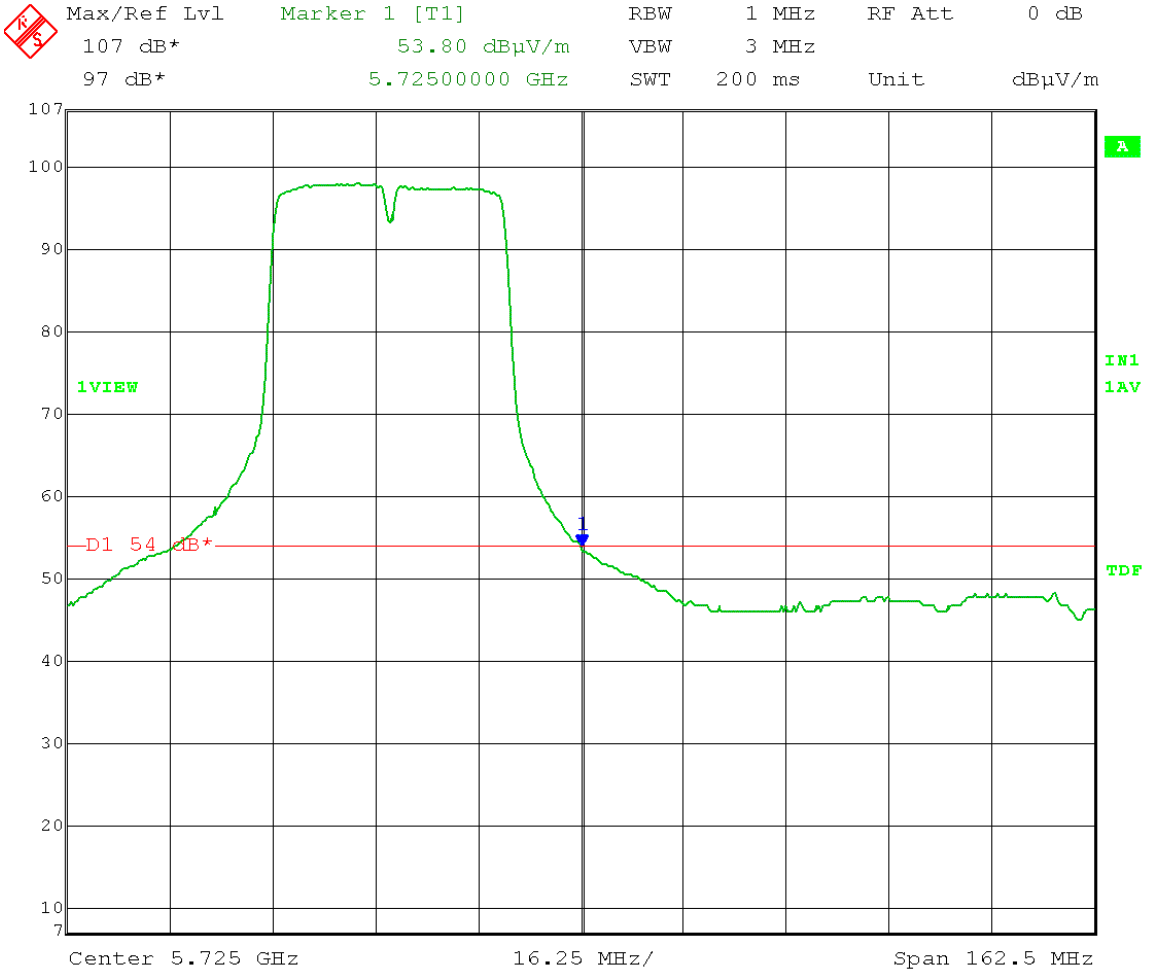
Vertical: Peak:



Date: 11.APR.2014 11:27:51

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 5.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

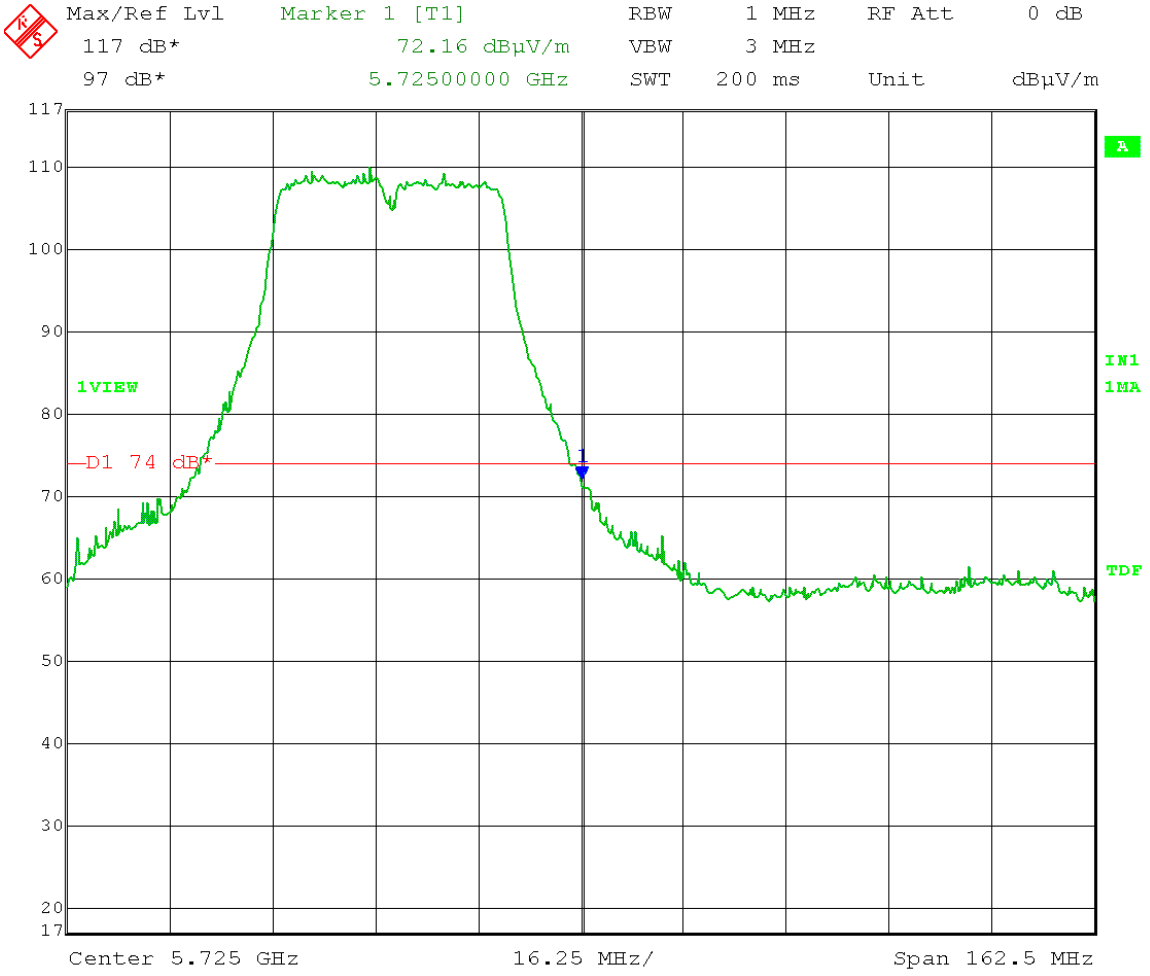
Horizontal: Average:



Date: 11.APR.2014 10:44:22

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 5.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

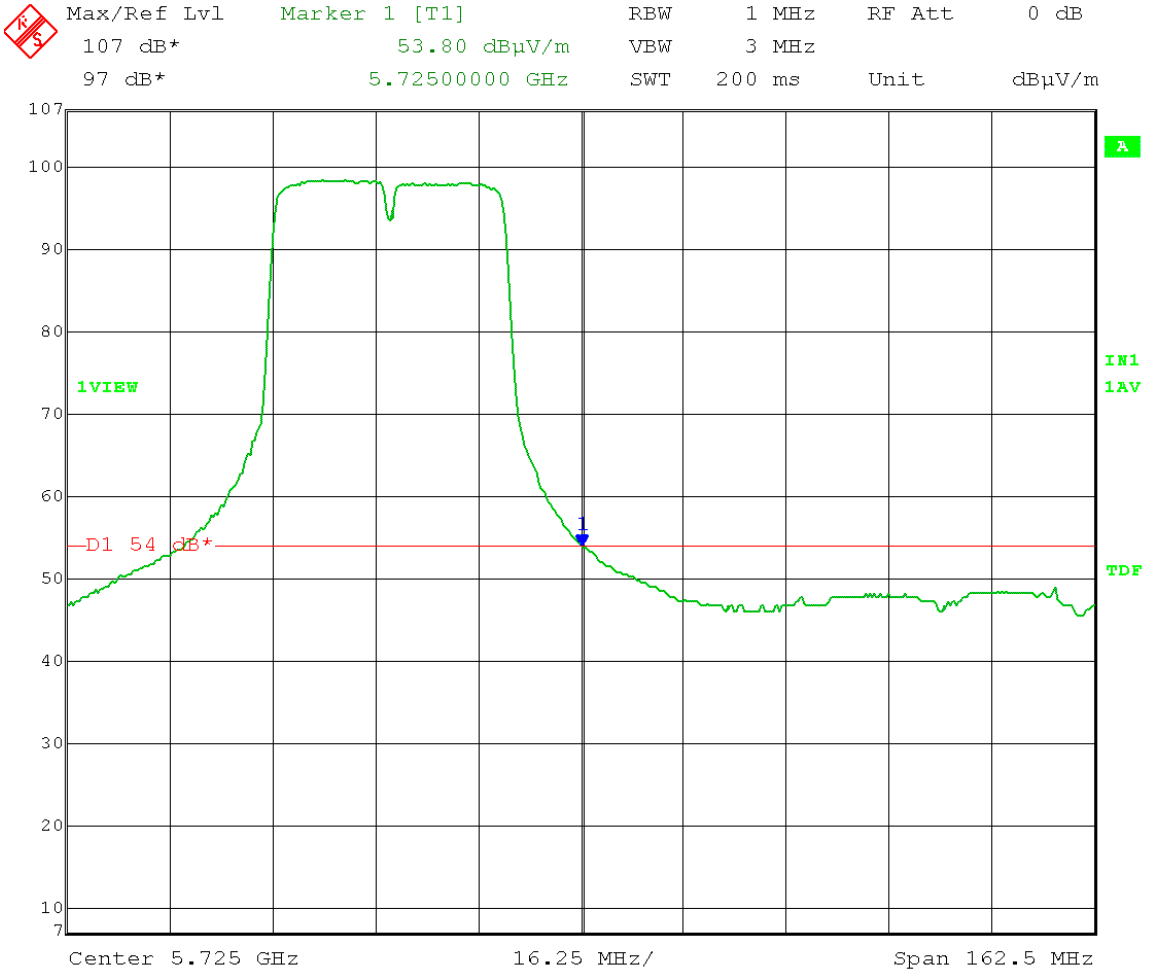
Horizontal: Peak:



Date: 11.APR.2014 10:45:35

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 5.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

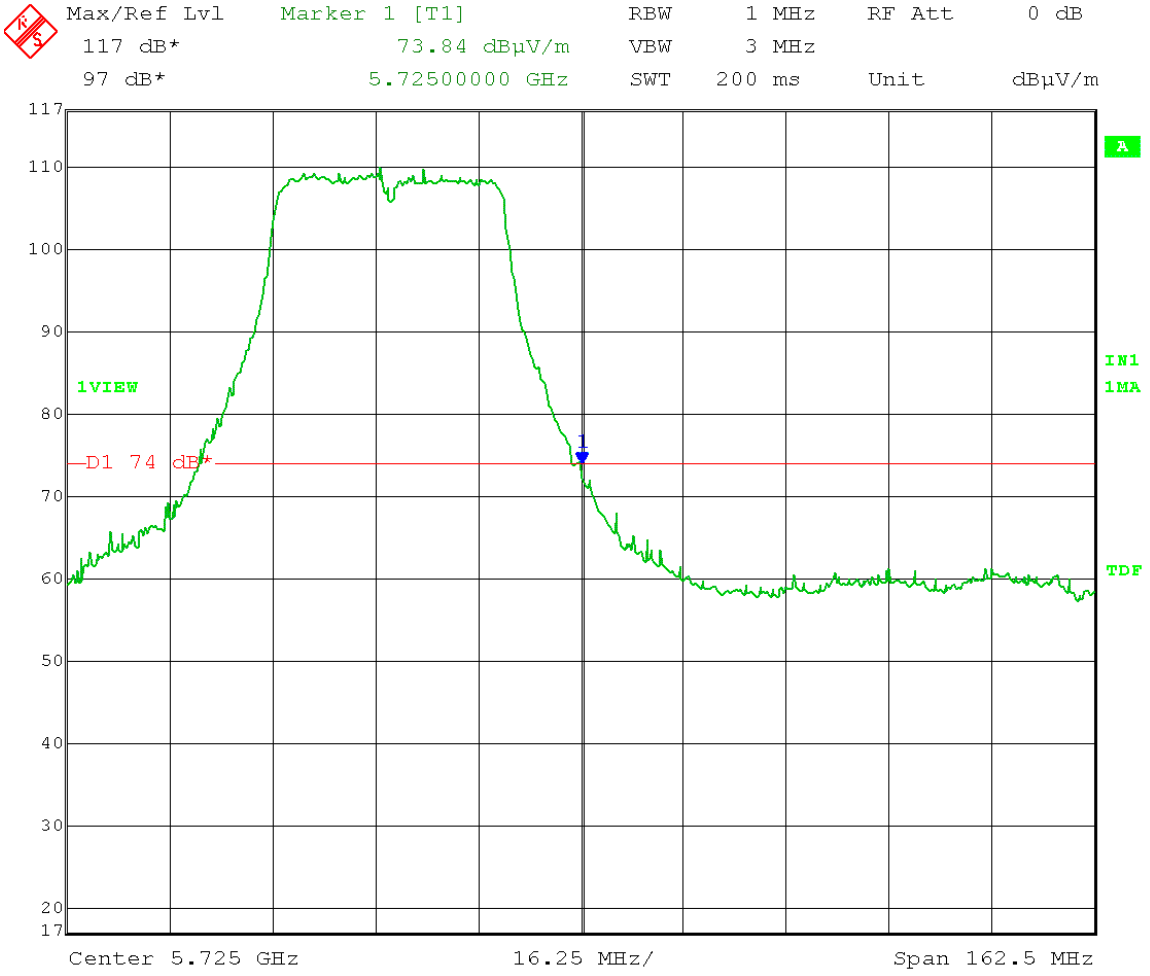
Vertical: Average:



Date: 11.APR.2014 11:23:50

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 5.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

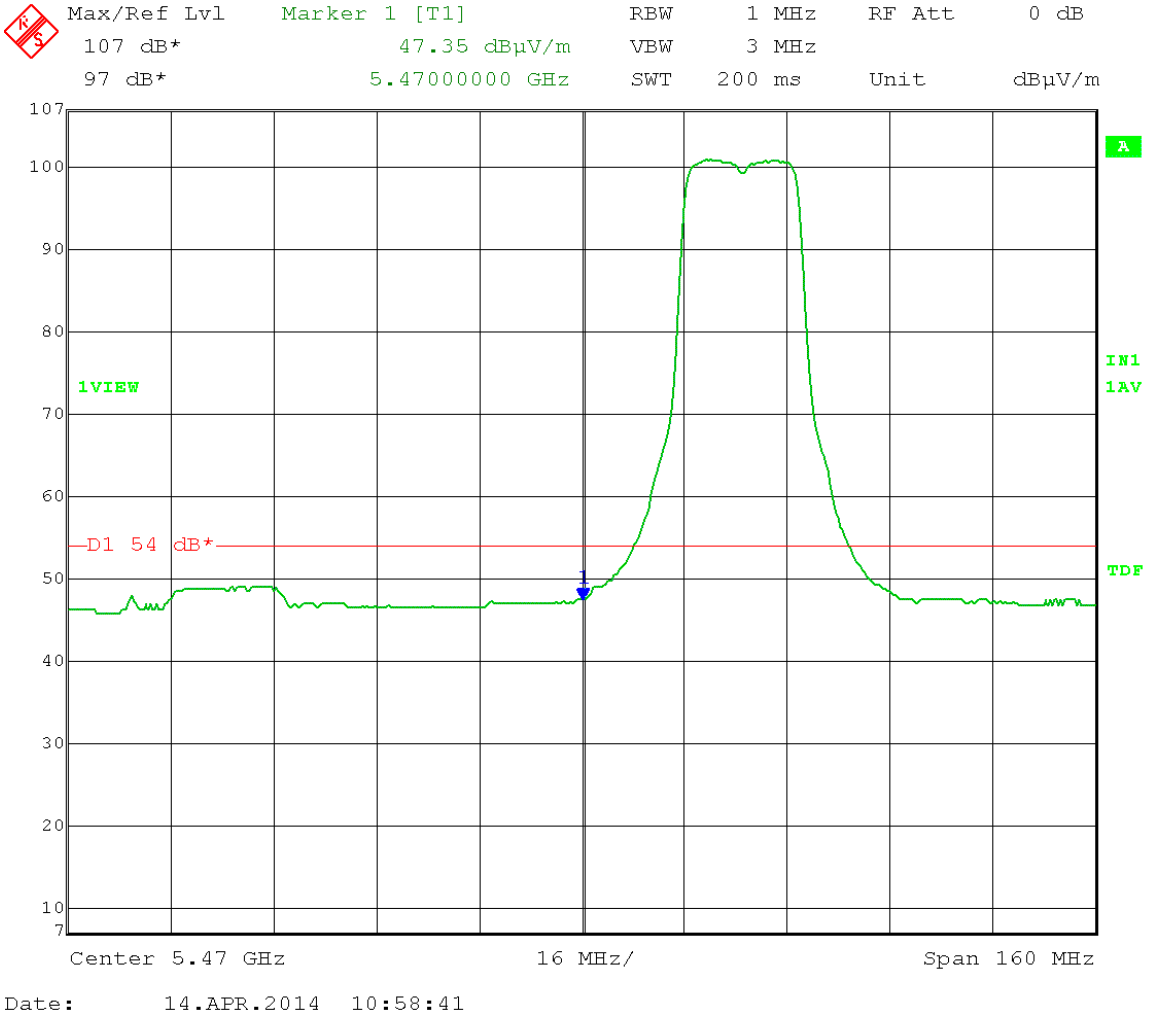
Vertical: Peak:



Date: 11.APR.2014 11:25:10

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

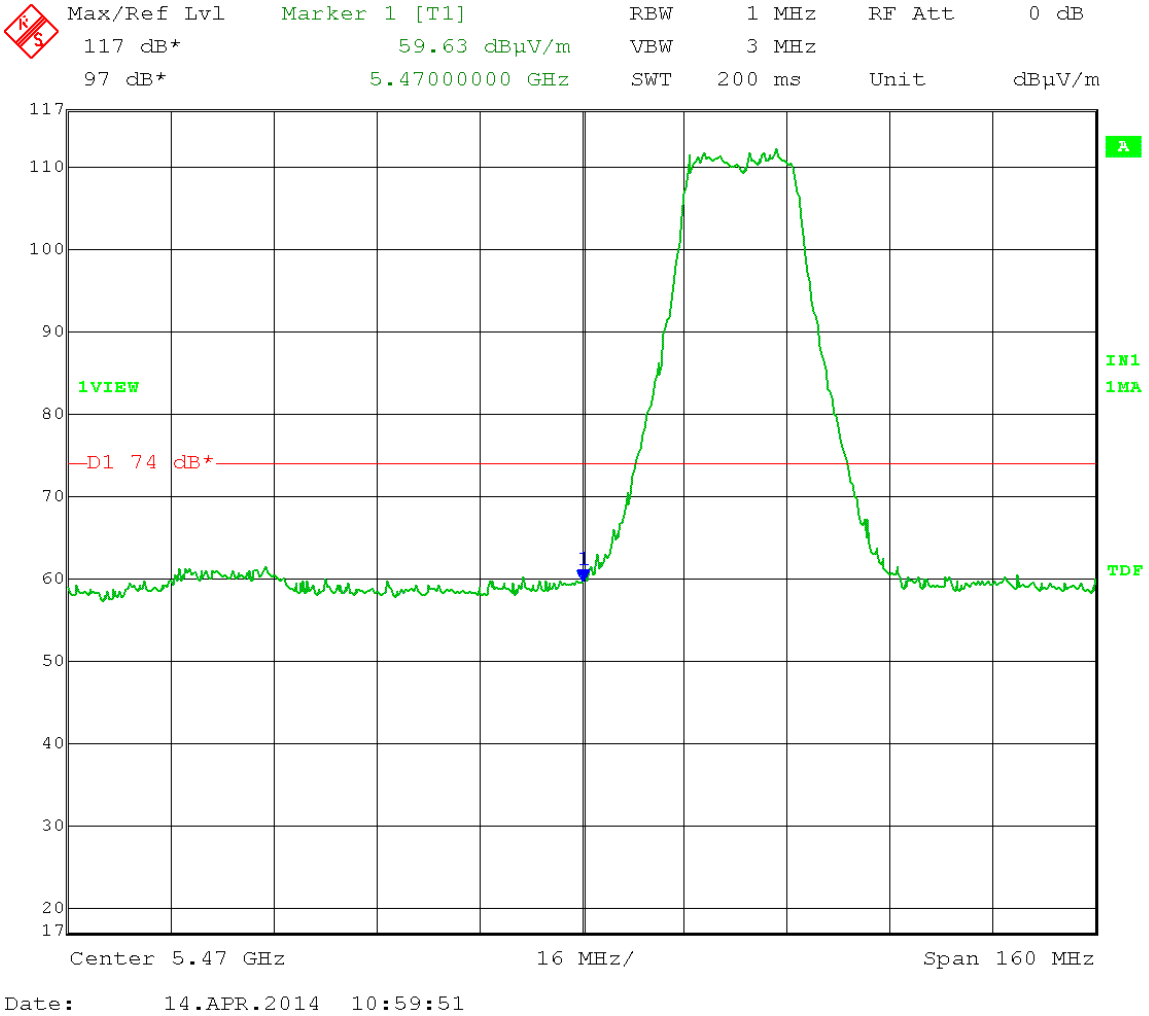
Horizontal: Average:



Date: 14.APR.2014 10:58:41

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

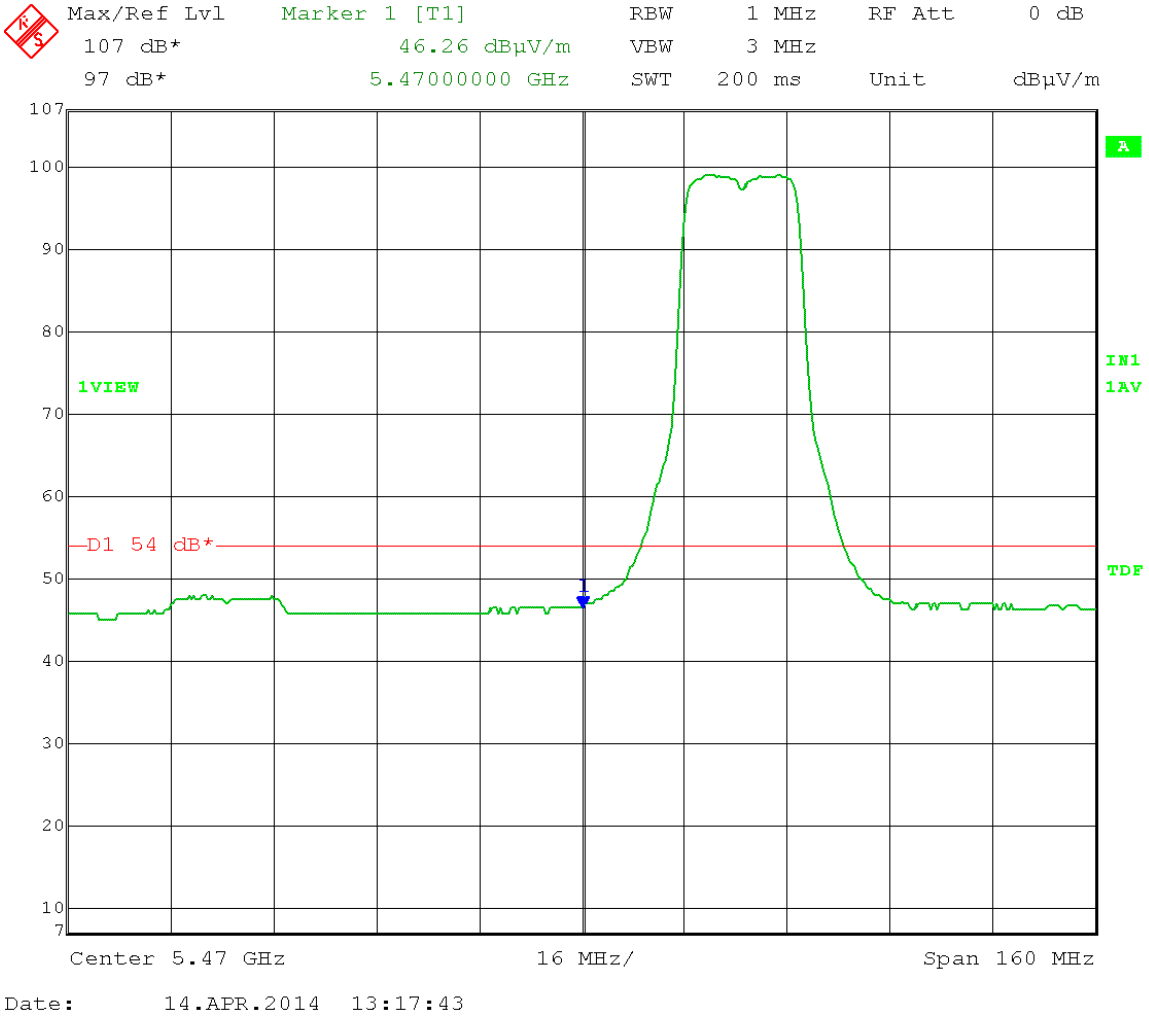
Horizontal: Peak:



Date: 14.APR.2014 10:59:51

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0 with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

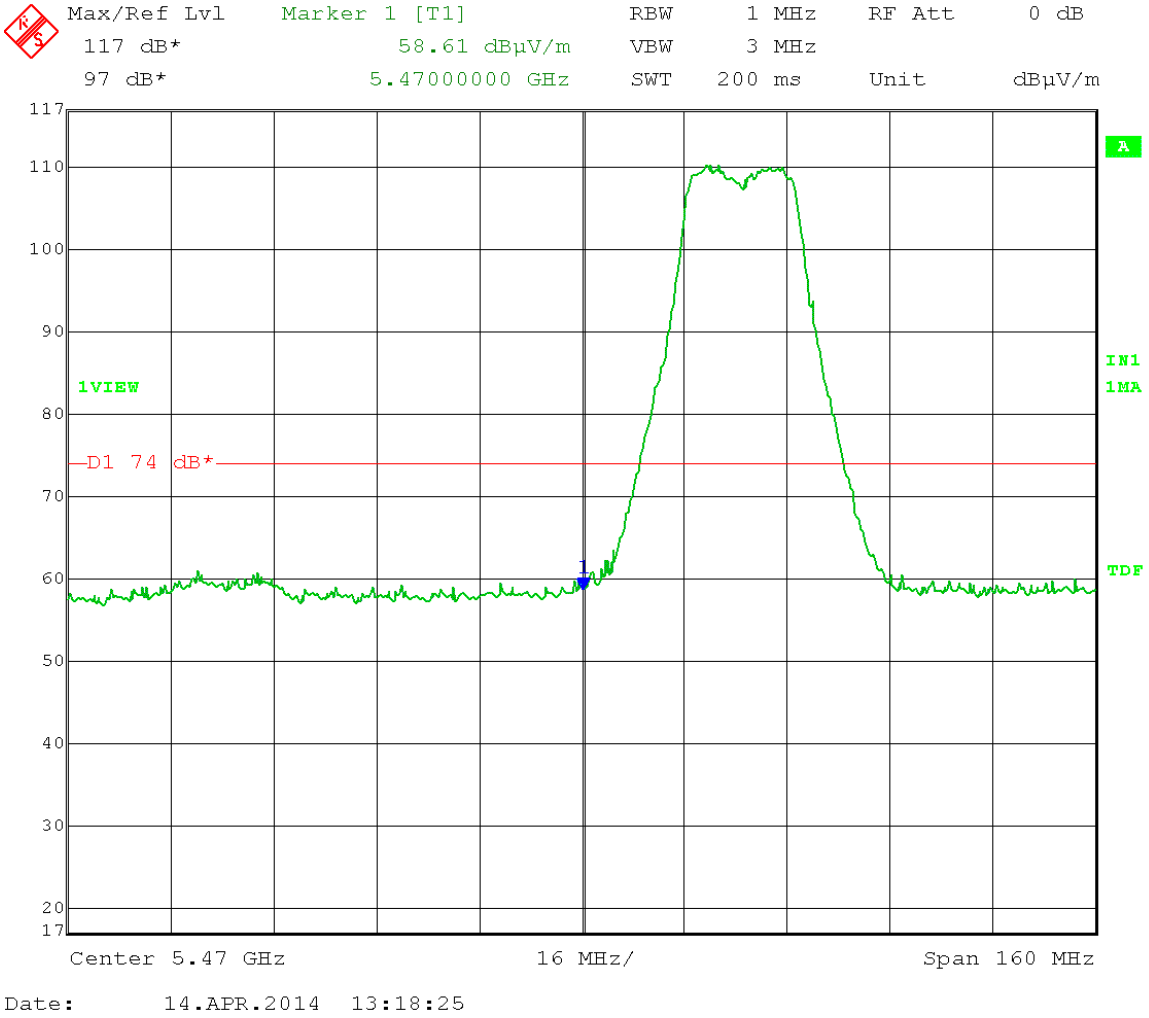
Vertical: Average:



Date: 14.APR.2014 13:17:43

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

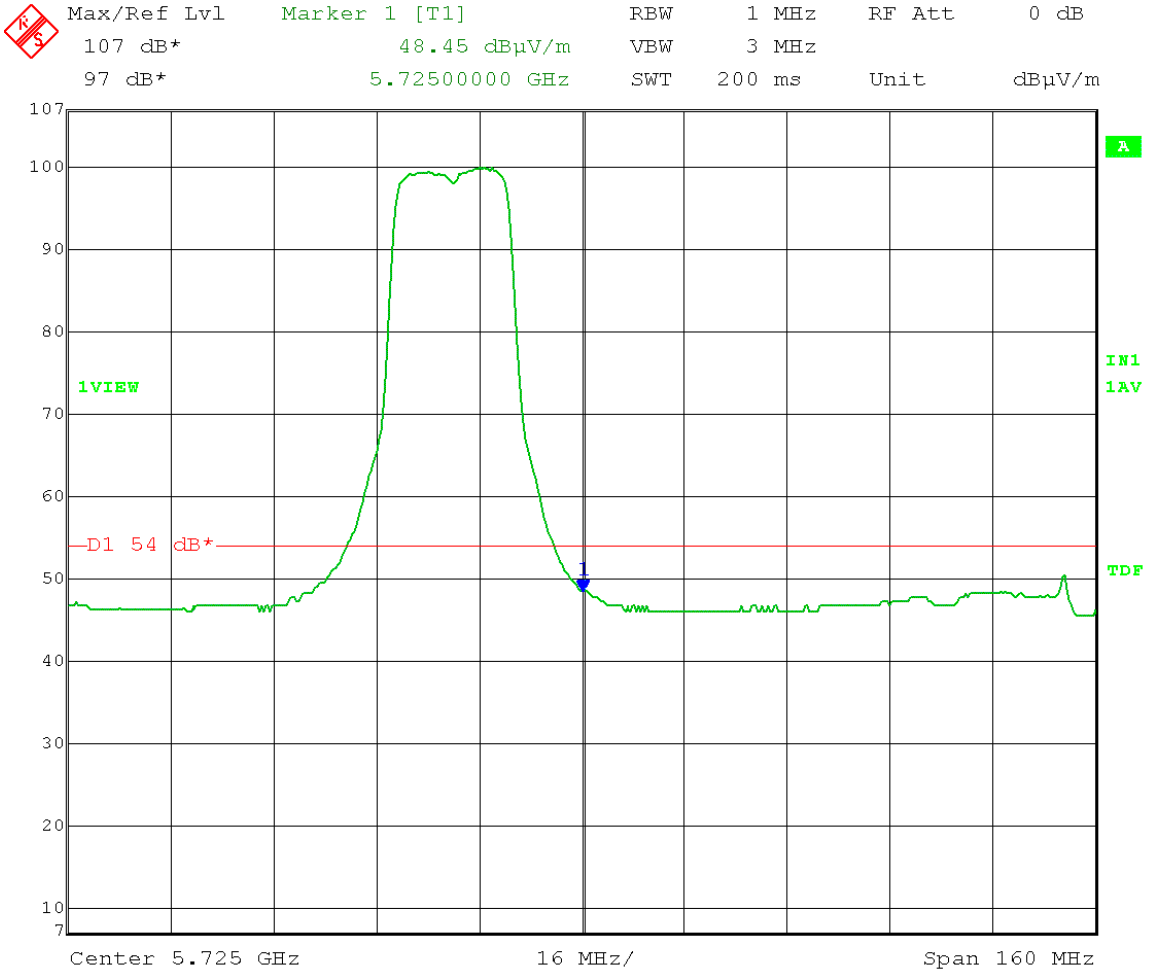
Vertical: Peak:



Date: 14.APR.2014 13:18:25

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0 with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

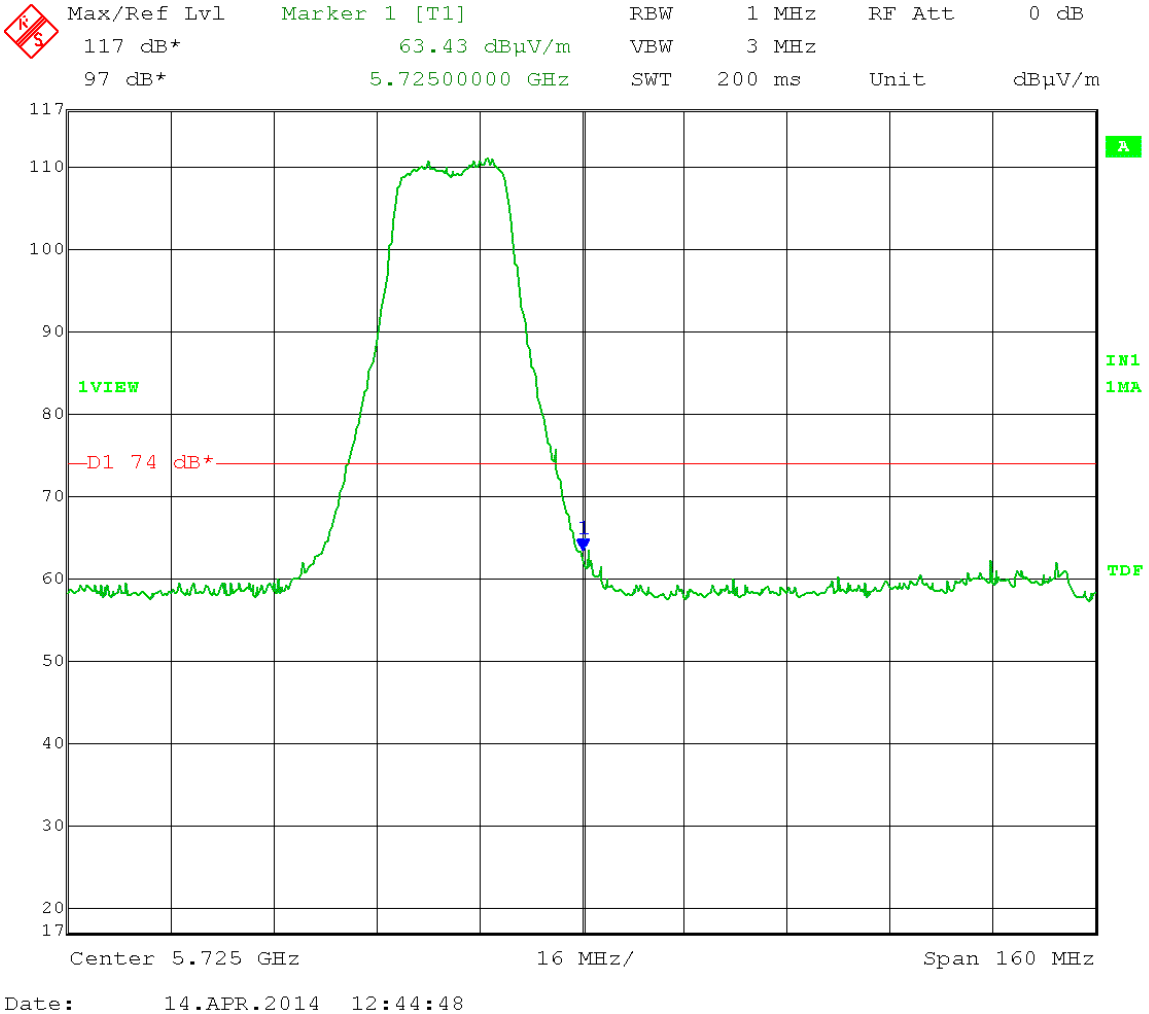
Horizontal: Average:



Date: 14.APR.2014 12:44:05

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

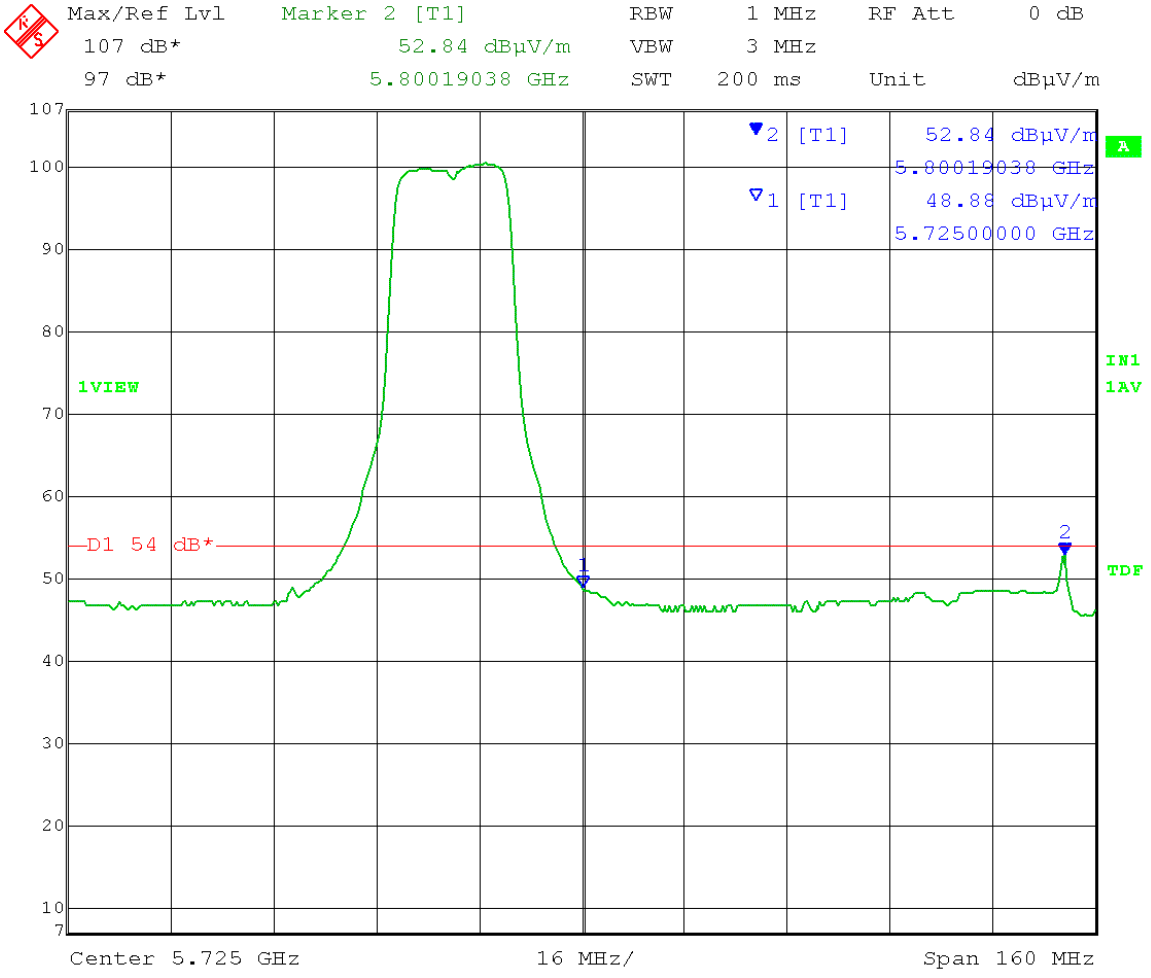
Horizontal: Peak:



Date: 14.APR.2014 12:44:48

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0 with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

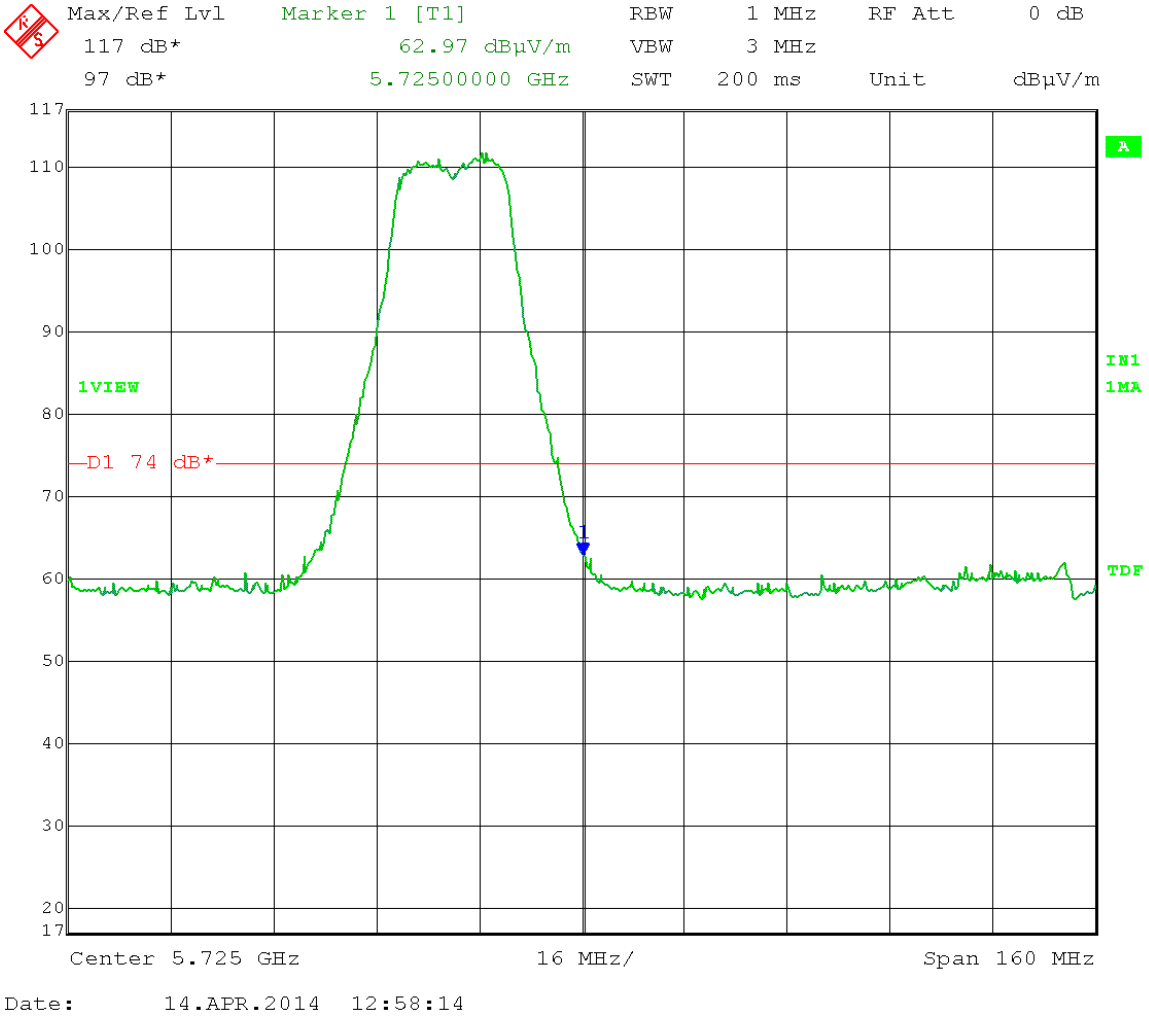
Vertical: Average:



Date: 14.APR.2014 12:57:24

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

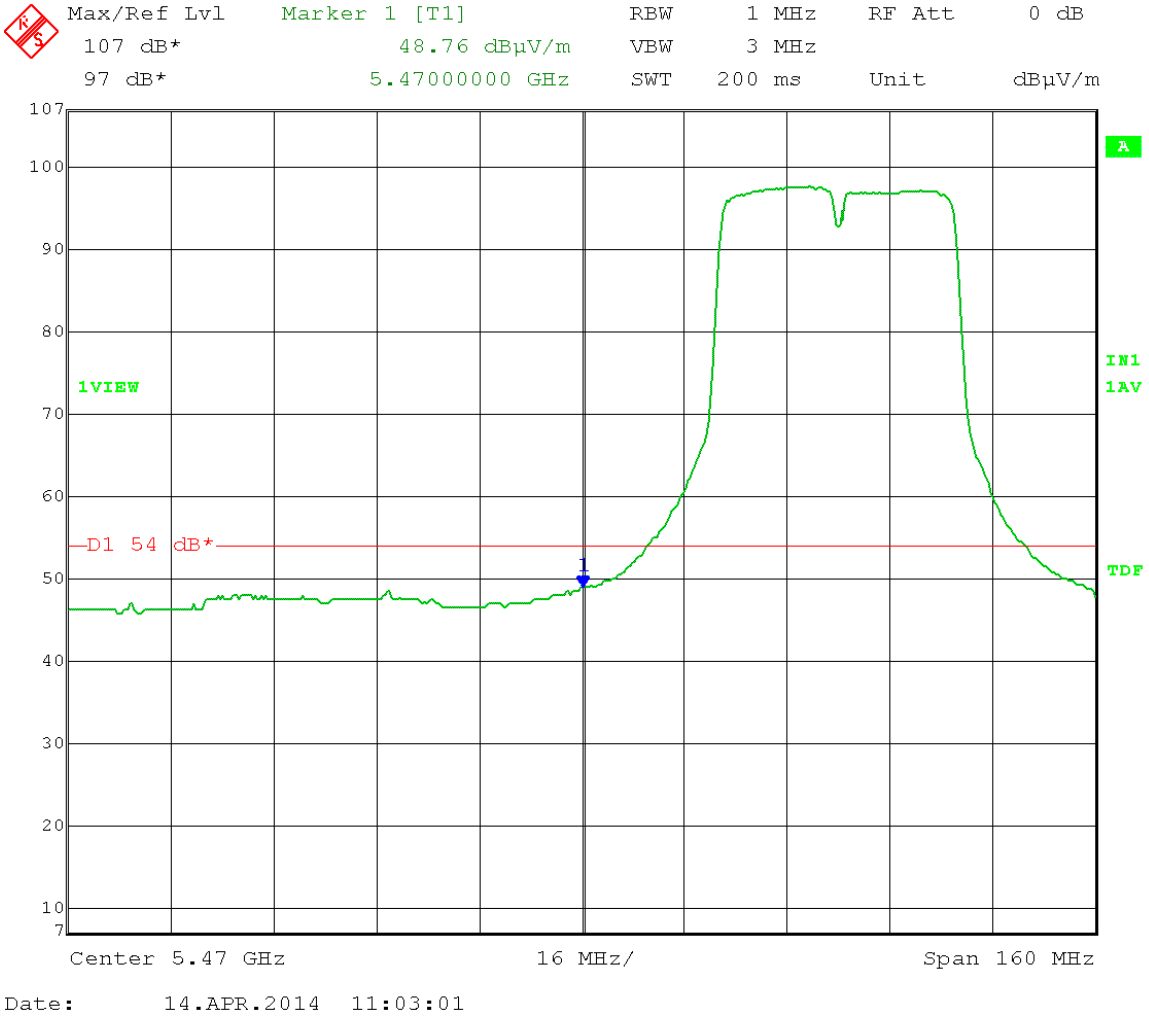
Vertical: Peak:



Date: 14.APR.2014 12:58:14

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0 with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

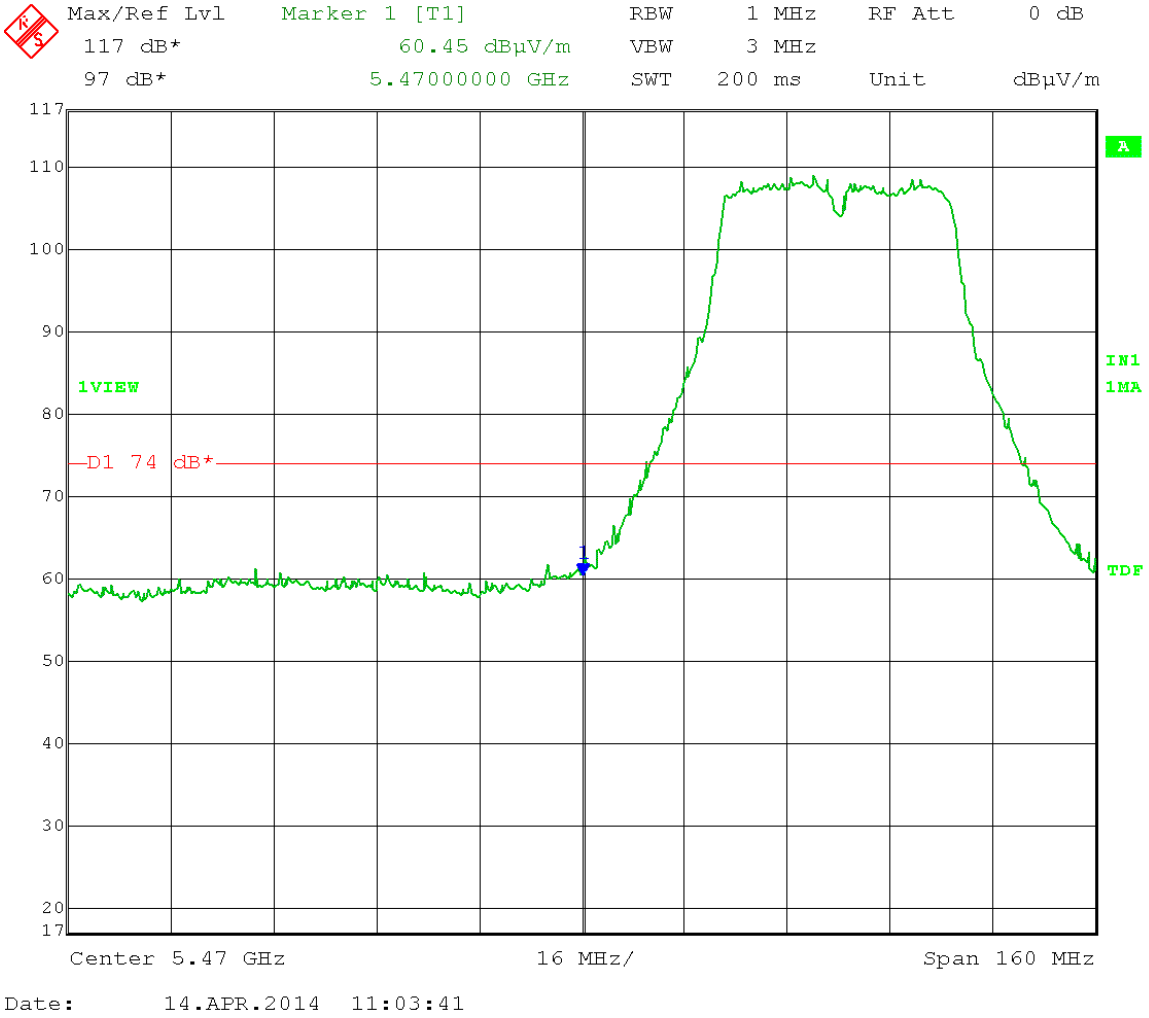
Horizontal: Average:



Date: 14.APR.2014 11:03:01

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

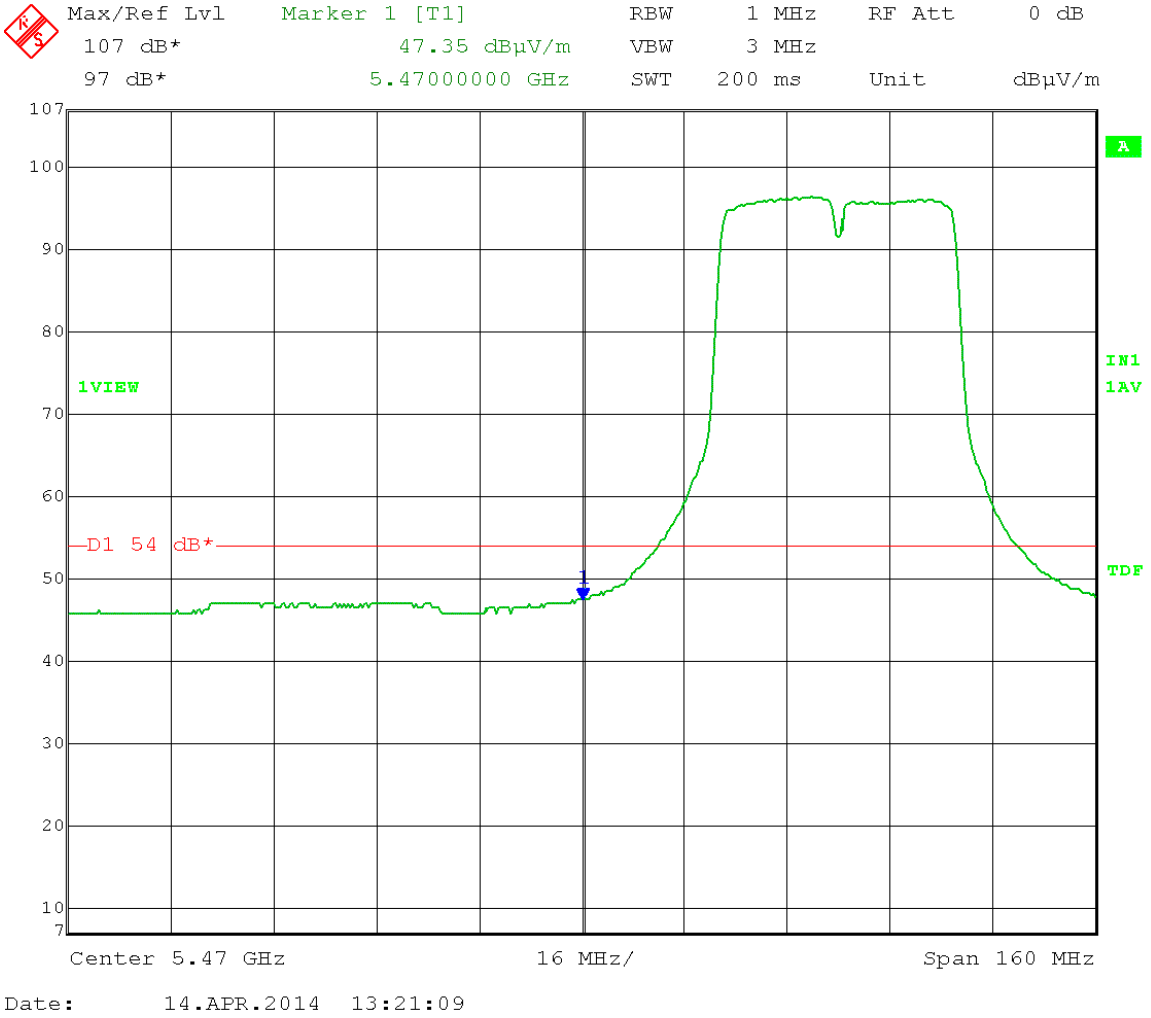
Horizontal: Peak:



Date: 14.APR.2014 11:03:41

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0 with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

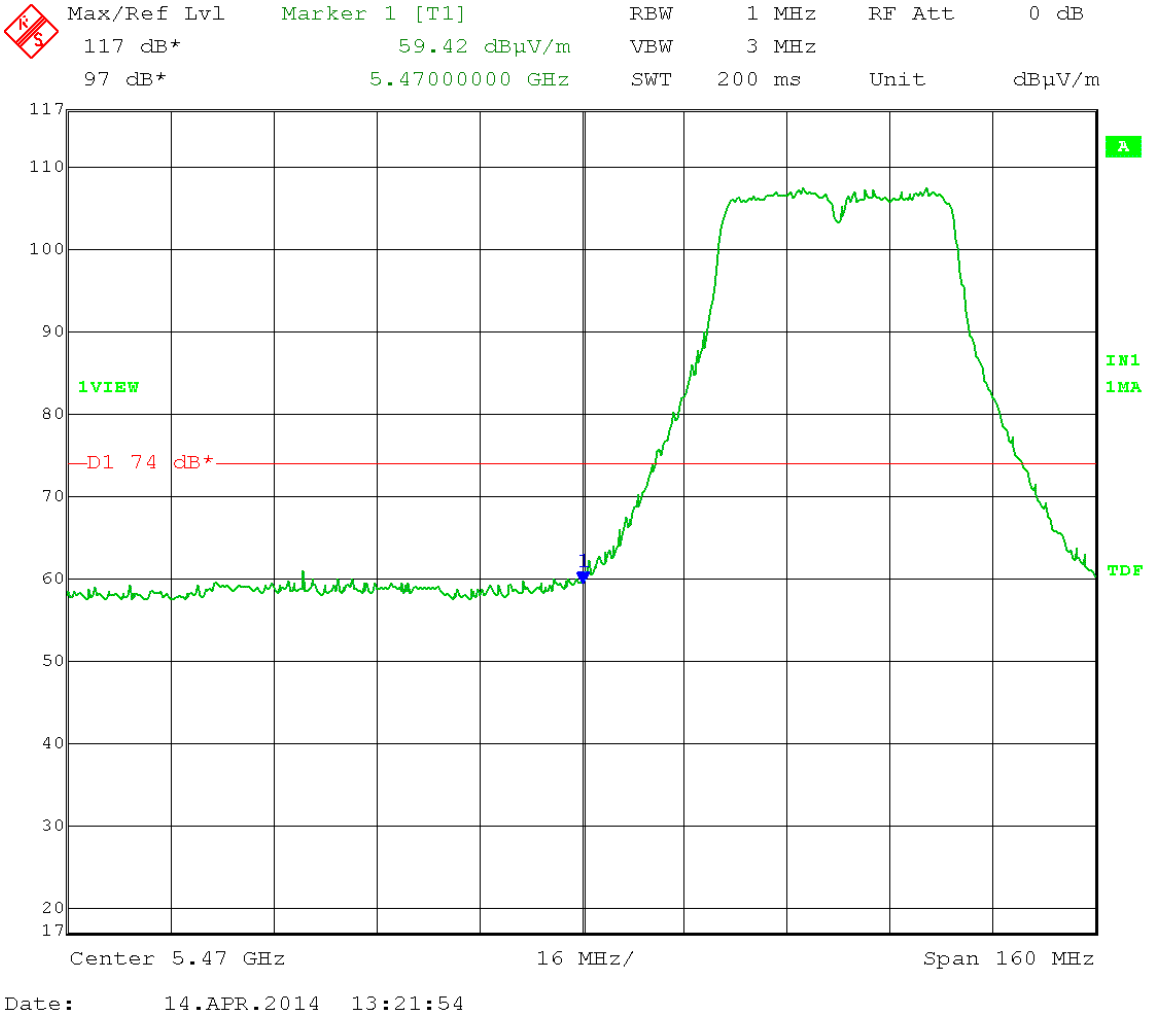
Vertical: Average:



Date: 14.APR.2014 13:21:09

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Lower Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0 with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.47 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

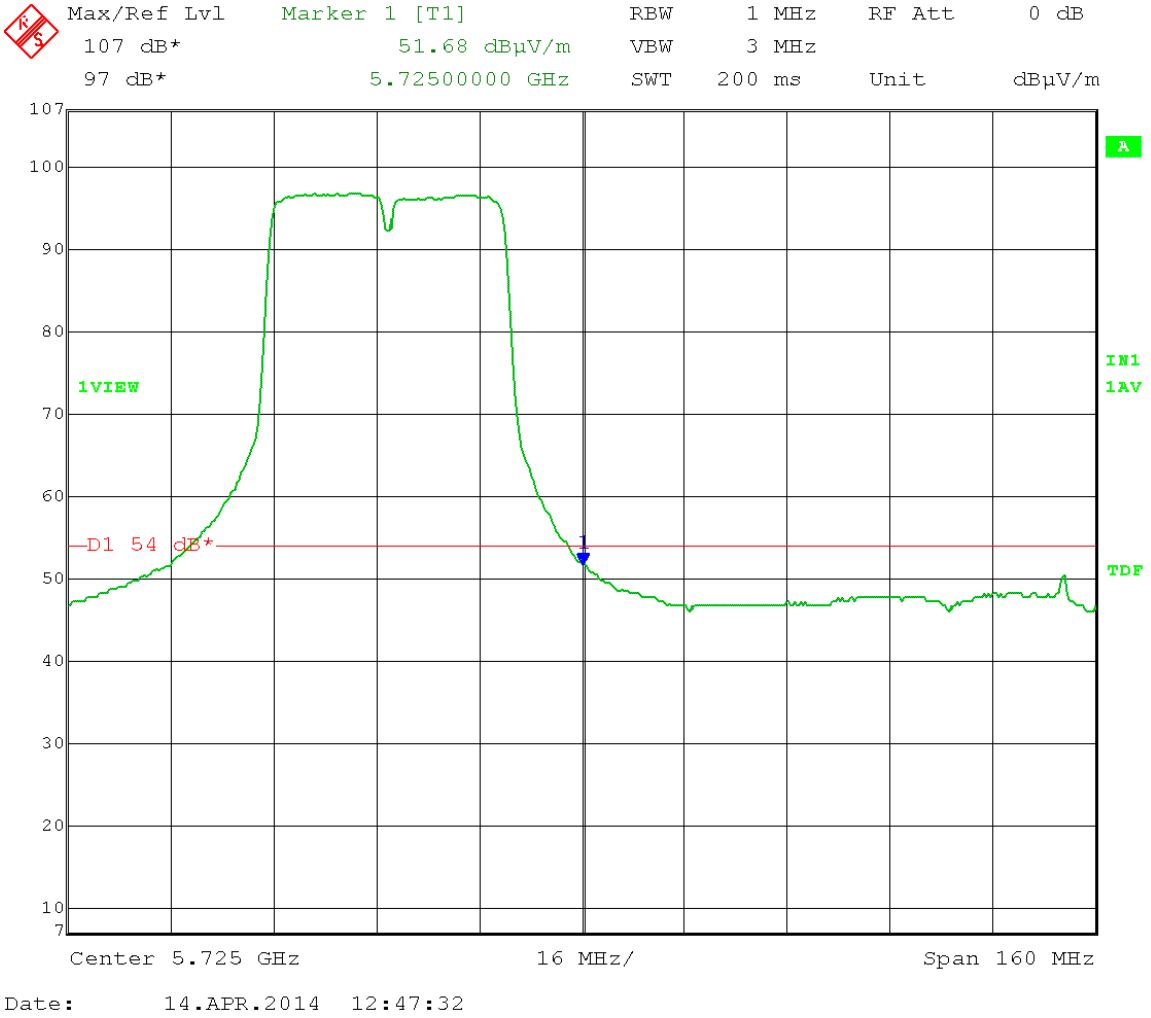
Vertical: Peak:



Date: 14.APR.2014 13:21:54

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0 with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

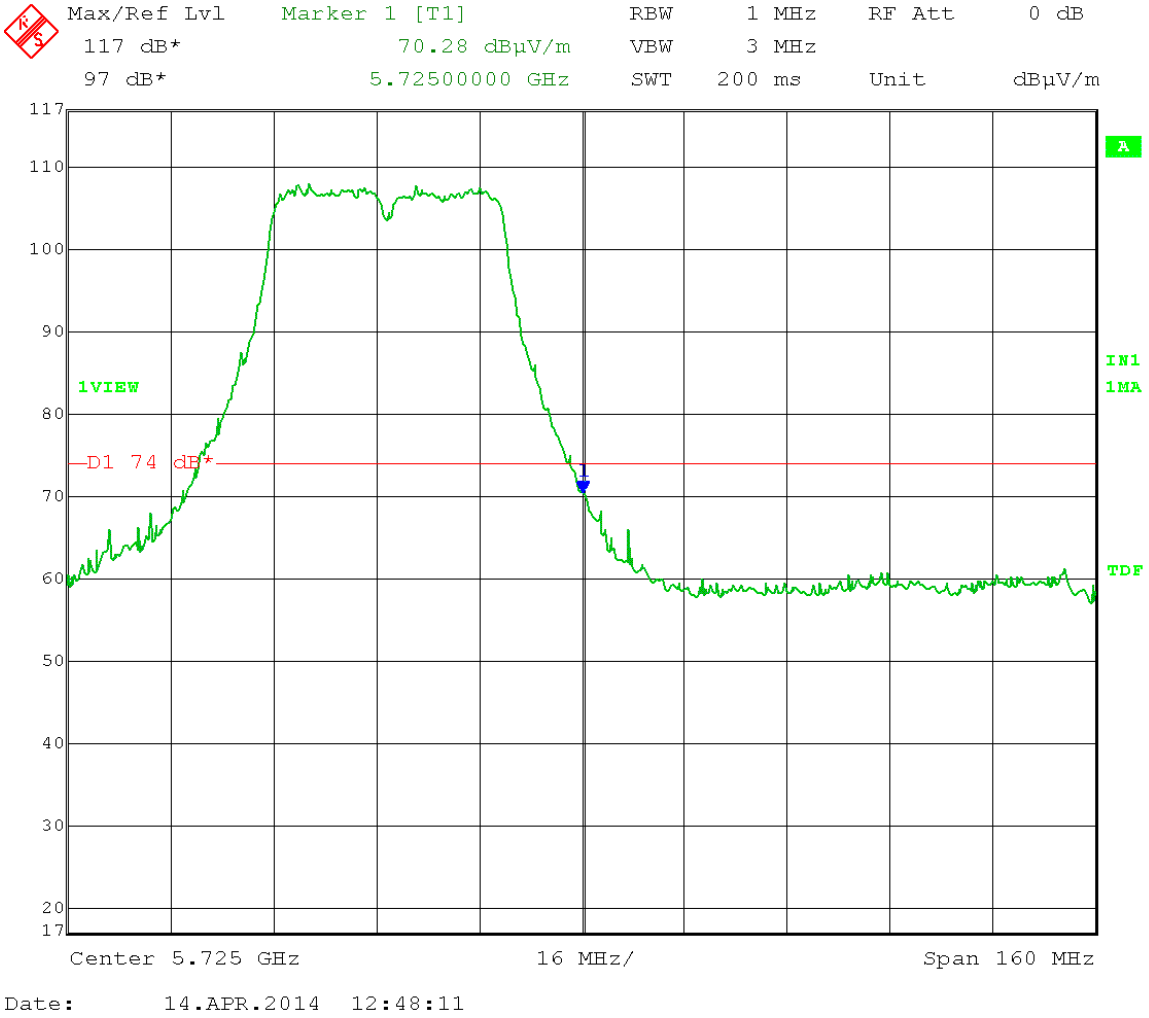
Horizontal: Average:



Date: 14.APR.2014 12:47:32

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

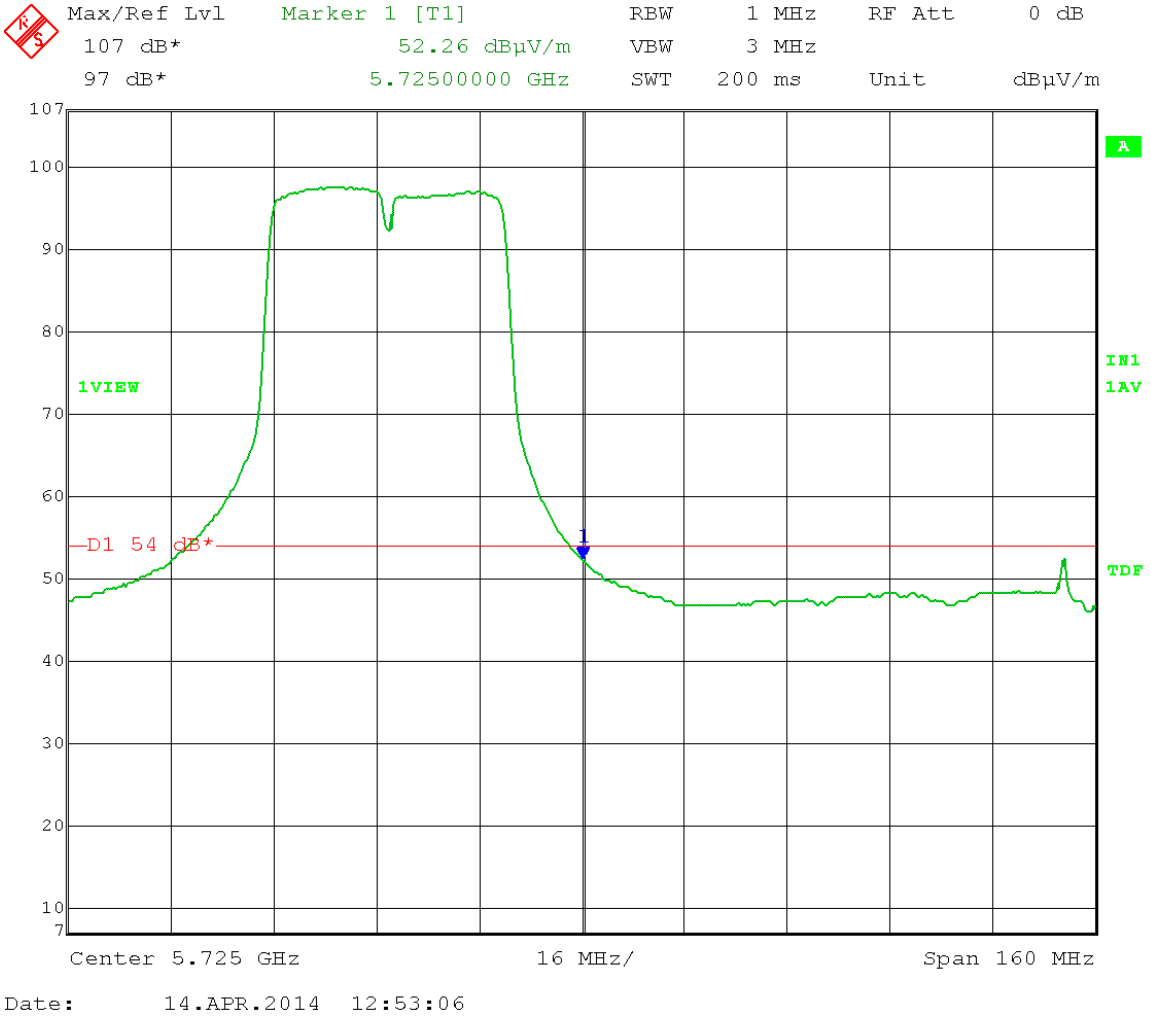
Horizontal: Peak:



Date: 14.APR.2014 12:48:11

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 54 dBµV/m AVERAGE at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

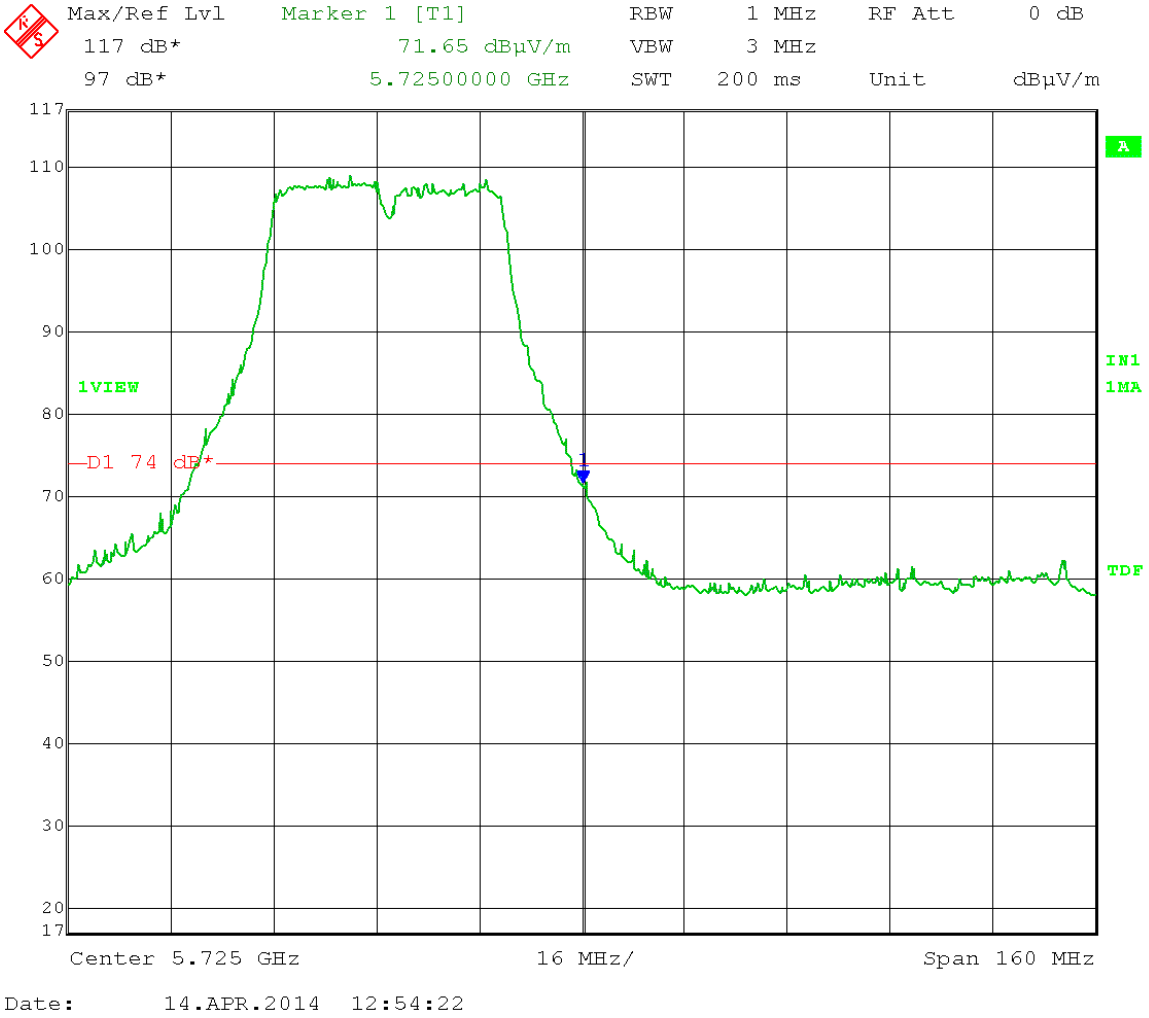
Vertical: Average:



Date: 14.APR.2014 12:53:06

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Upper Operating Band-Edge Compliance - Radiated
(FCC 15.407(b)(3) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Operating Band-Edge Frequency: 5.725 GHz
Part 15.209 limit: 74 dBµV/m PEAK at 3 meters
Per 789033 D01 General UNII Test Procedures v01r03, section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

Vertical: Peak:



Date: 14.APR.2014 12:54:22

Appendix B – Measurement Data

B4.0 Unwanted Emission Levels – Radiated with antenna connected

Rule Section: Sections 15.407(b)(3) and 15.407(b)(6)

Test Procedure: FCC KDB 789033 D01 General UNII Test Procedures v01r03 – *Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E*

Section H(1) – Unwanted emissions in the restricted bands
Section H(2) – Unwanted emissions that fall outside of the restricted bands
Section H(3) – General Requirements for Unwanted Emissions Measurements

Below 1000 MHz
Detector = quasi-peak

Peak measurements above 1000 MHz
RBW = 1 MHz
VBW ≥ 3 MHz
Detector = peak
Sweep time = auto
Trace mode = max hold

Average measurements above 1000 MHz
RBW = 1 MHz
VBW ≥ 3 MHz
Detector = AVERAGE
Sweep time = auto
Trace mode = max hold

Limits: Outside restricted bands: Peak EIRP shall not exceed -27 dBm/MHz
Inside restricted bands: Peak and Average limits of FCC Part 15.209

Per Section H(2)(c)(i): "an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit."

Results: Passed

Notes: Both transmit chains active during test.
Measurements were taken for MCS15 OFDM modulation at the lowest, middle, and highest channels of operation. EUT was set to transmit continuously with 100% duty cycle.

FCC Part 15.209

Electric Field Strength

EUT: ePMP STA 5.2, 5.4, 5.7 GHz OFDM, ESN: 000456C560B4
Manufacturer: Cambium Networks
Operating Condition: 68 deg. F; 32% R.H.
Test Site: DLS O.F. Site 2
Operator: Craig B
Test Specification: Restricted Band emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment: Both ports Tx setting 28.5; with 30 dBi Dish & 23 dBi Panel antennas
Date: 03-31-2014

TEXT: "Horz 3 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)

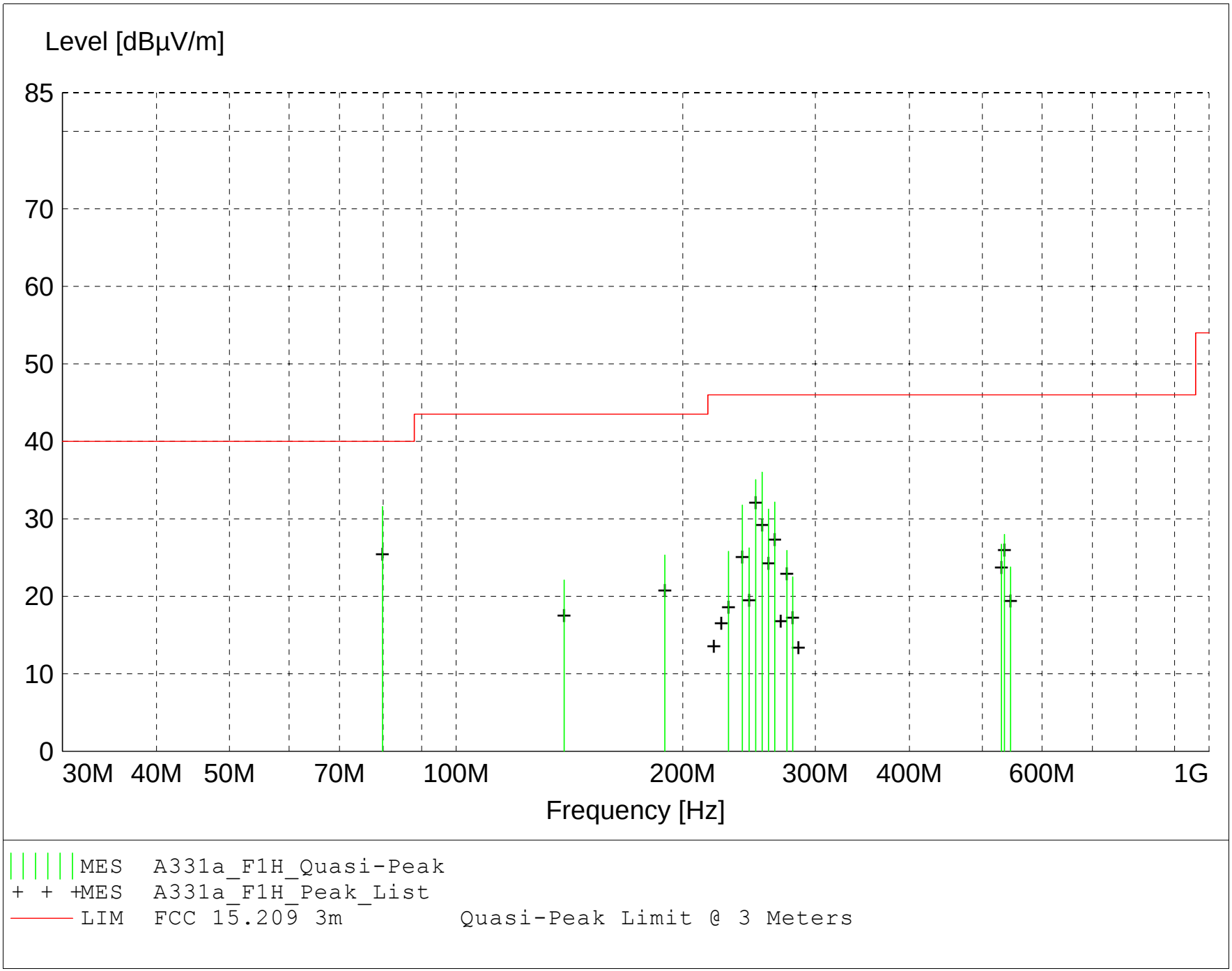
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector


Level [dBµV/m]
85
70
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A331a_F1H_Quasi-Peak
MES A331a_F1H_Peak_List
LIM FCC 15.209 3m
Quasi-Peak Limit @ 3 Meters

MEASUREMENT RESULT: "A331a_F1H_Final"

3/31/2014 11:23AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
79.850000	48.80	6.07	-23.3	31.6	40.0	8.4	2.70	90	QUASI-PEAK	None
254.970000	45.05	12.70	-21.7	36.0	46.0	10.0	3.20	170	QUASI-PEAK	None
249.980000	44.41	12.40	-21.8	35.1	46.0	10.9	1.20	315	QUASI-PEAK	None
264.970000	40.52	13.20	-21.6	32.2	46.0	13.8	2.50	160	QUASI-PEAK	None
239.980000	41.53	12.00	-21.7	31.8	46.0	14.2	3.00	270	QUASI-PEAK	None
259.970000	39.98	13.00	-21.7	31.3	46.0	14.7	2.60	170	QUASI-PEAK	None
534.970000	29.27	18.40	-19.7	28.0	46.0	18.0	1.00	260	QUASI-PEAK	None
189.325000	30.25	17.33	-22.3	25.3	43.5	18.2	3.20	225	QUASI-PEAK	None
529.970000	28.13	18.40	-19.8	26.7	46.0	19.3	1.00	270	QUASI-PEAK	None
244.970000	35.80	12.20	-21.7	26.3	46.0	19.7	3.00	270	QUASI-PEAK	None
274.970000	34.09	13.40	-21.6	25.9	46.0	20.1	2.00	160	QUASI-PEAK	None
229.970000	36.28	11.40	-21.9	25.8	46.0	20.2	3.10	90	QUASI-PEAK	None
139.165000	32.55	12.28	-22.7	22.1	43.5	21.4	1.90	270	QUASI-PEAK	None
544.970000	25.34	18.20	-19.8	23.8	46.0	22.2	1.10	265	QUASI-PEAK	None
279.970000	30.54	13.50	-21.5	22.5	46.0	23.5	2.00	170	QUASI-PEAK	None

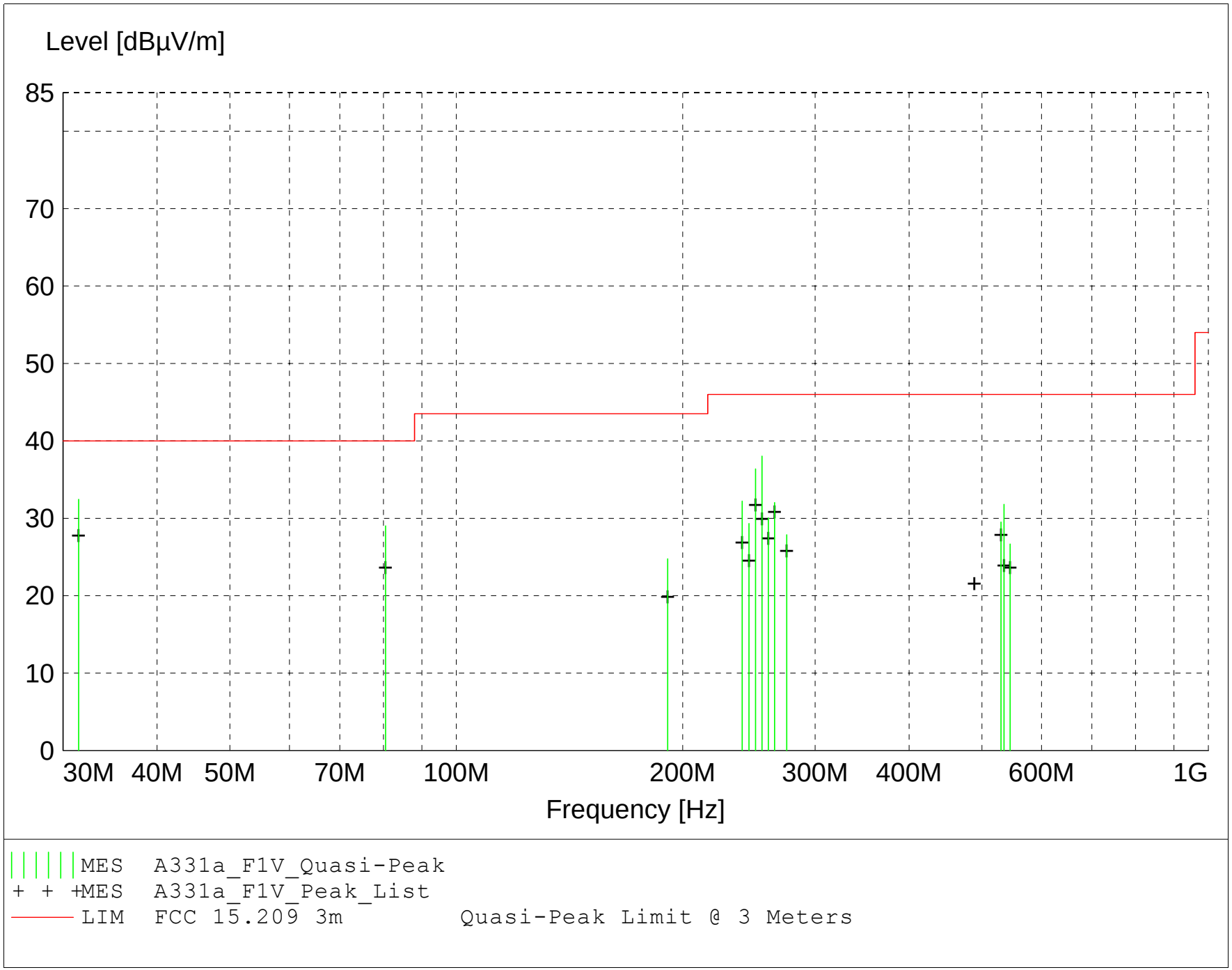
FCC Part 15.209

Electric Field Strength

```
EUT:                 ePMP STA 5.2, 5.4, 5.7 GHz OFDM,   ESN: 000456C560B4
Manufacturer:        Cambium Networks
Operating Condition: 68 deg. F; 32% R.H.
Test Site:           DLS O.F. Site 2
Operator:            Craig B
Test Specification:  Restricted Band emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment:             Both ports Tx setting 28.5; with 30 dBi Dish & 23 dBi Panel antennas
                     Date:  03-31-2014
```

TEXT: "Vert 3 meters"

```
  Short Description:           Test Set-up


Test Set-up:    EUT Measured at 3 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector
```


Level [dBµV/m]
85
70
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A331a_F1V_Quasi-Peak
MES A331a_F1V_Peak_List
LIM FCC 15.209 3m
Quasi-Peak Limit @ 3 Meters

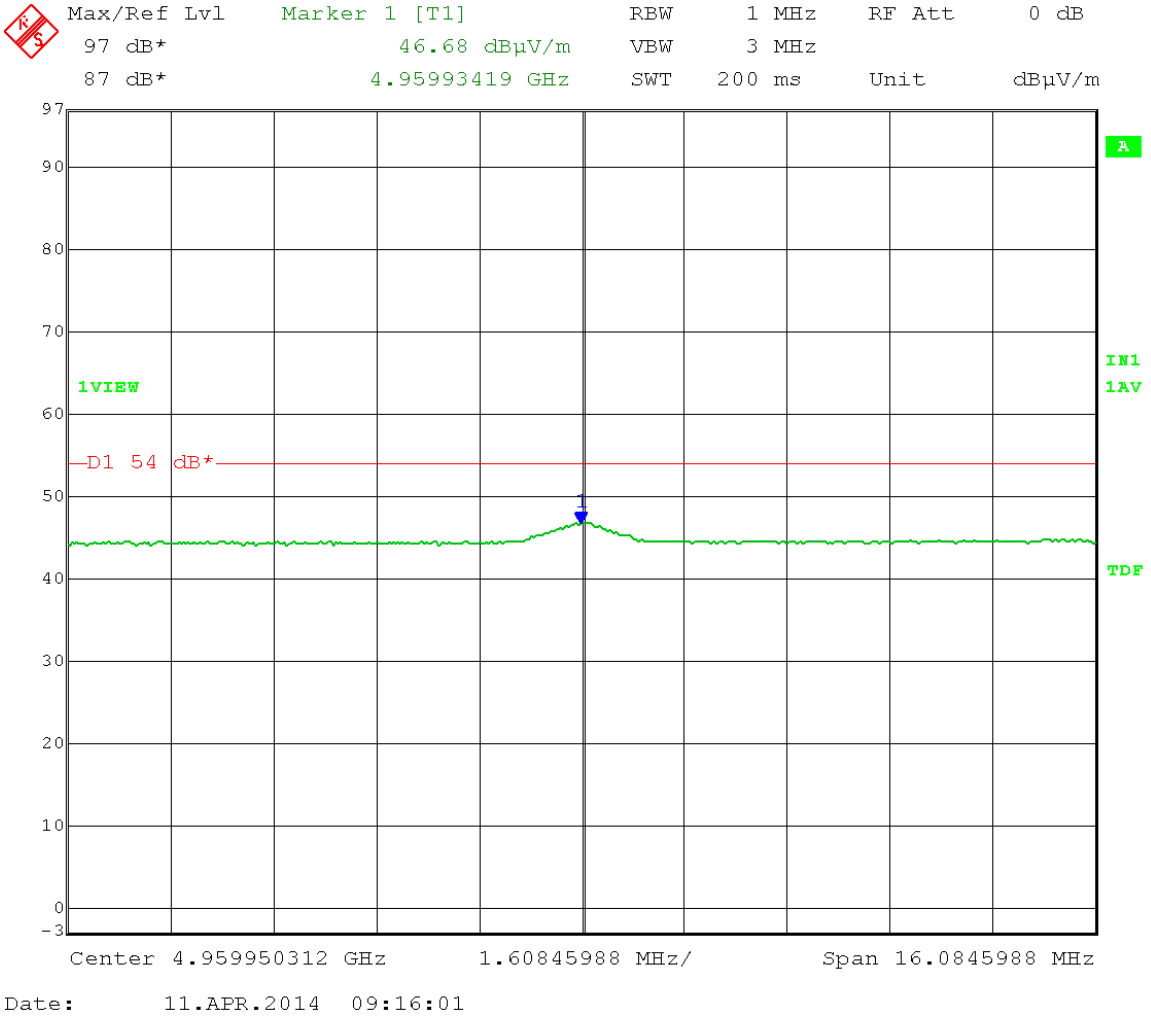
MEASUREMENT RESULT: "A331a_F1V_Final"

3/31/2014 11:12AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
31.470000	45.34	11.25	-24.1	32.4	40.0	7.6	1.00	350	QUASI-PEAK	None
254.980000	47.06	12.70	-21.7	38.0	46.0	8.0	1.50	180	QUASI-PEAK	None
249.980000	45.74	12.40	-21.8	36.4	46.0	9.6	1.60	340	QUASI-PEAK	None
80.525000	46.15	6.15	-23.3	29.0	40.0	11.0	1.00	315	QUASI-PEAK	None
239.970000	41.97	12.00	-21.7	32.2	46.0	13.8	1.60	330	QUASI-PEAK	None
264.970000	40.39	13.20	-21.6	32.0	46.0	14.0	1.30	180	QUASI-PEAK	None
534.970000	33.09	18.40	-19.7	31.8	46.0	14.2	1.30	225	QUASI-PEAK	None
259.980000	38.79	13.00	-21.7	30.1	46.0	15.9	1.50	180	QUASI-PEAK	None
529.970000	30.92	18.40	-19.8	29.5	46.0	16.5	2.00	225	QUASI-PEAK	None
244.970000	38.87	12.20	-21.7	29.3	46.0	16.7	1.60	340	QUASI-PEAK	None
274.970000	36.05	13.40	-21.6	27.9	46.0	18.1	1.30	180	QUASI-PEAK	None
191.025000	29.72	17.30	-22.2	24.8	43.5	18.7	1.00	170	QUASI-PEAK	None
544.970000	28.24	18.20	-19.8	26.7	46.0	19.3	1.90	225	QUASI-PEAK	None

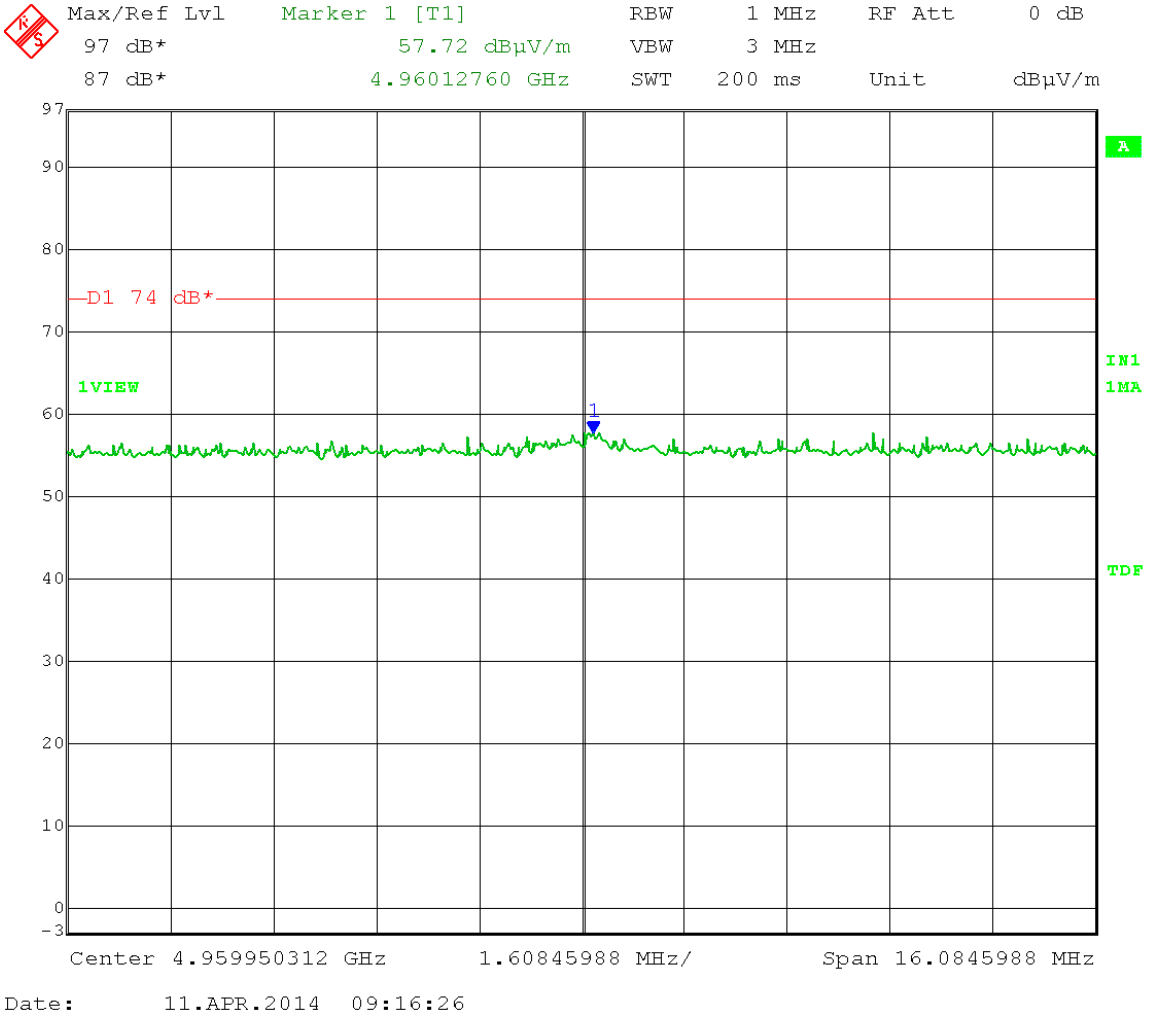
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 8.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



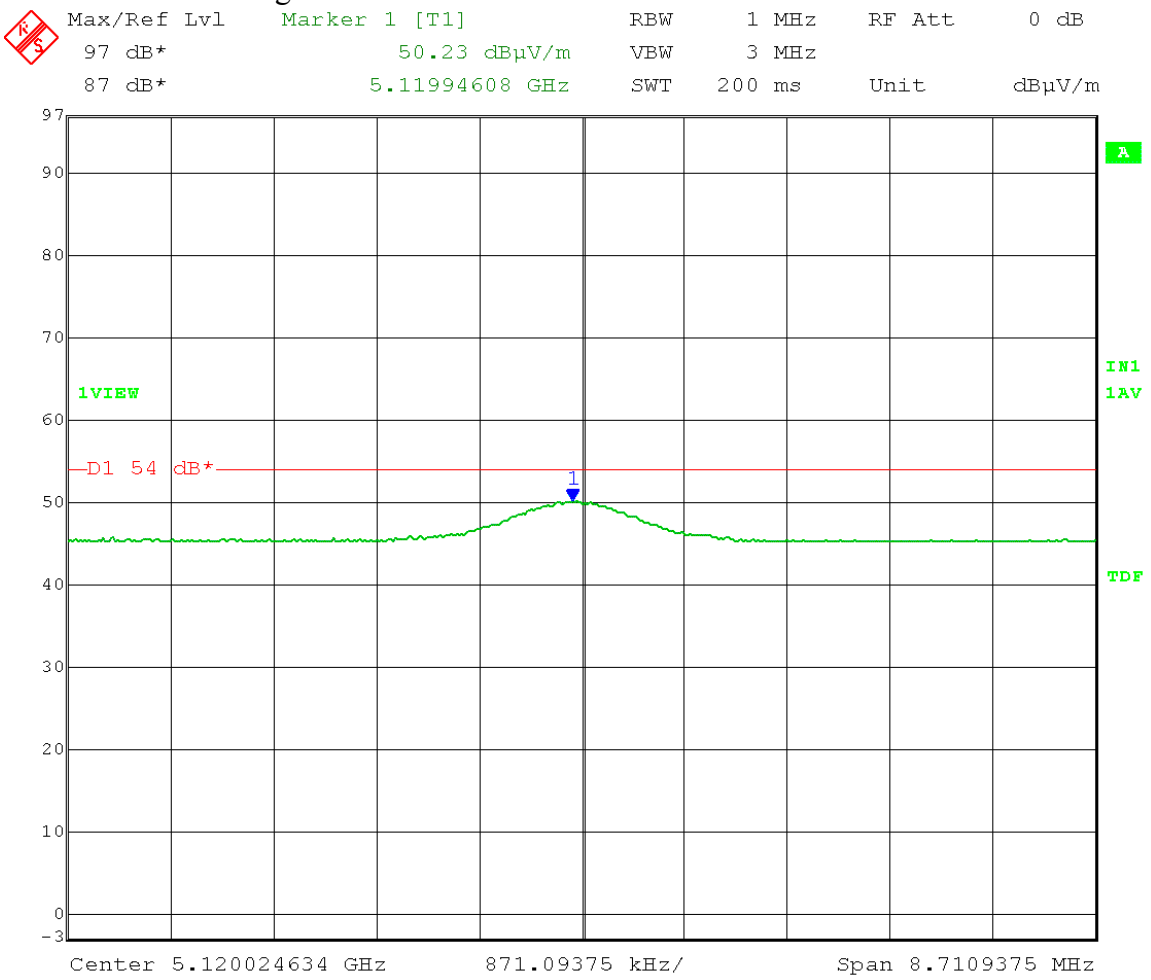
Date: 11.APR.2014 09:16:01

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 8.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



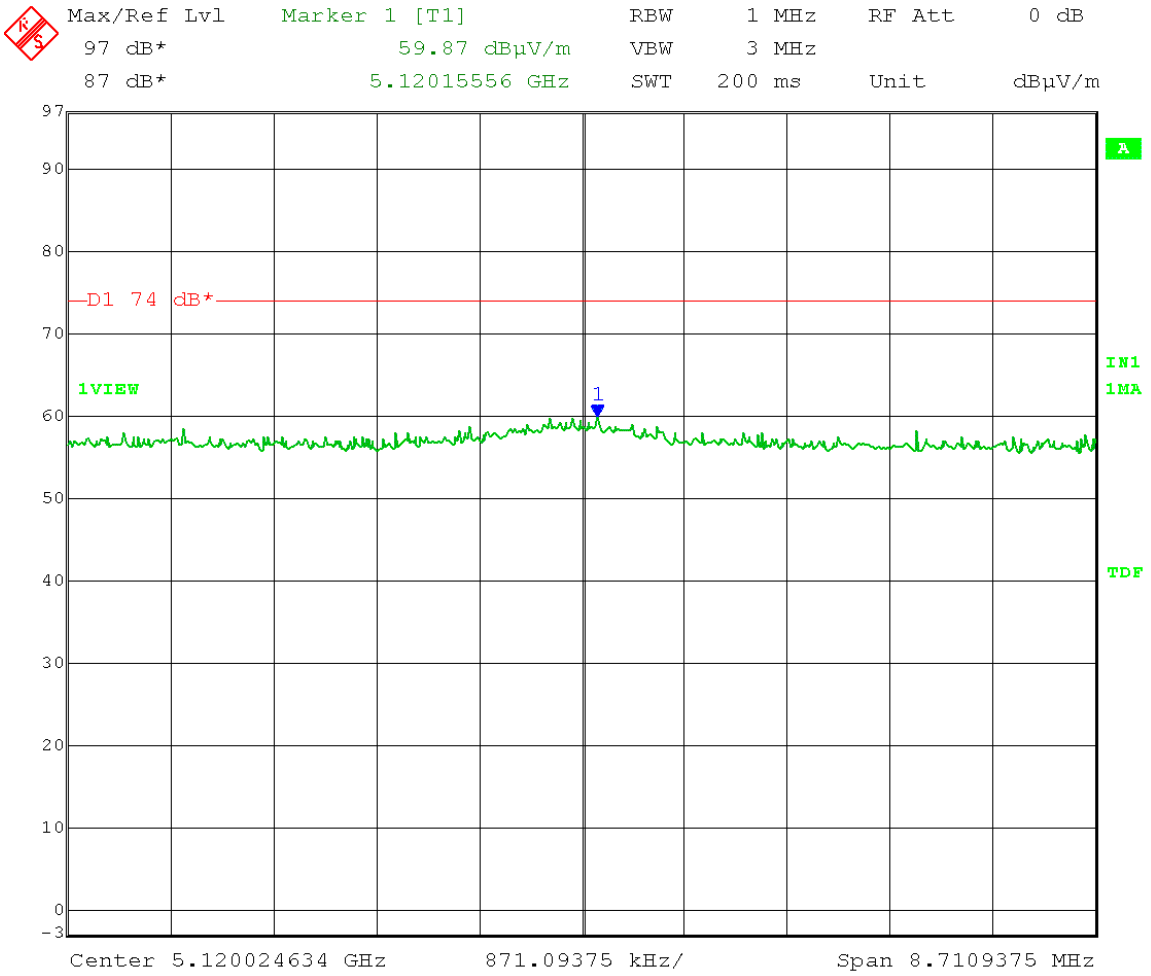
Date: 11.APR.2014 09:16:26

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 8.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



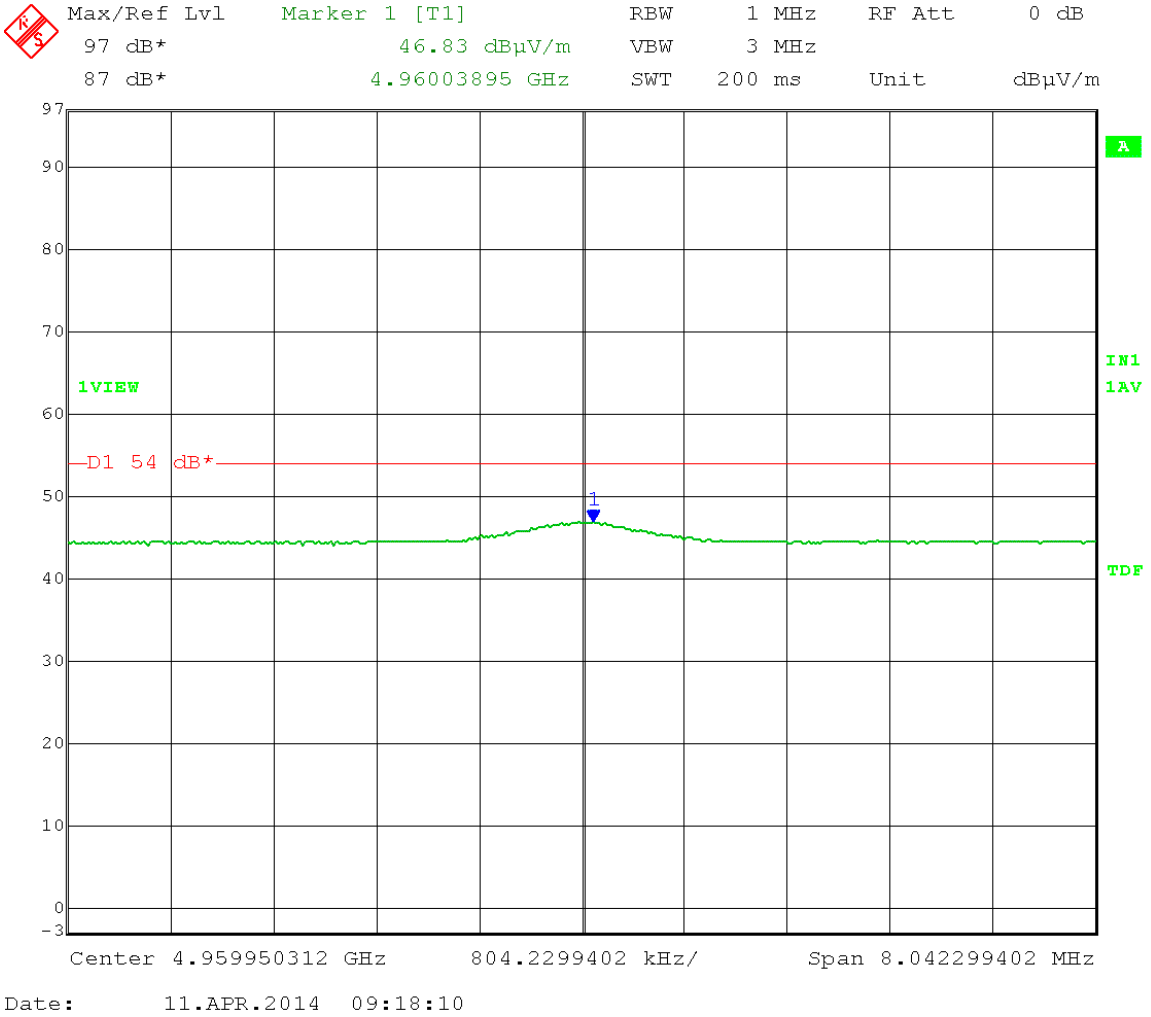
Date: 11.APR.2014 08:32:04

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 8.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



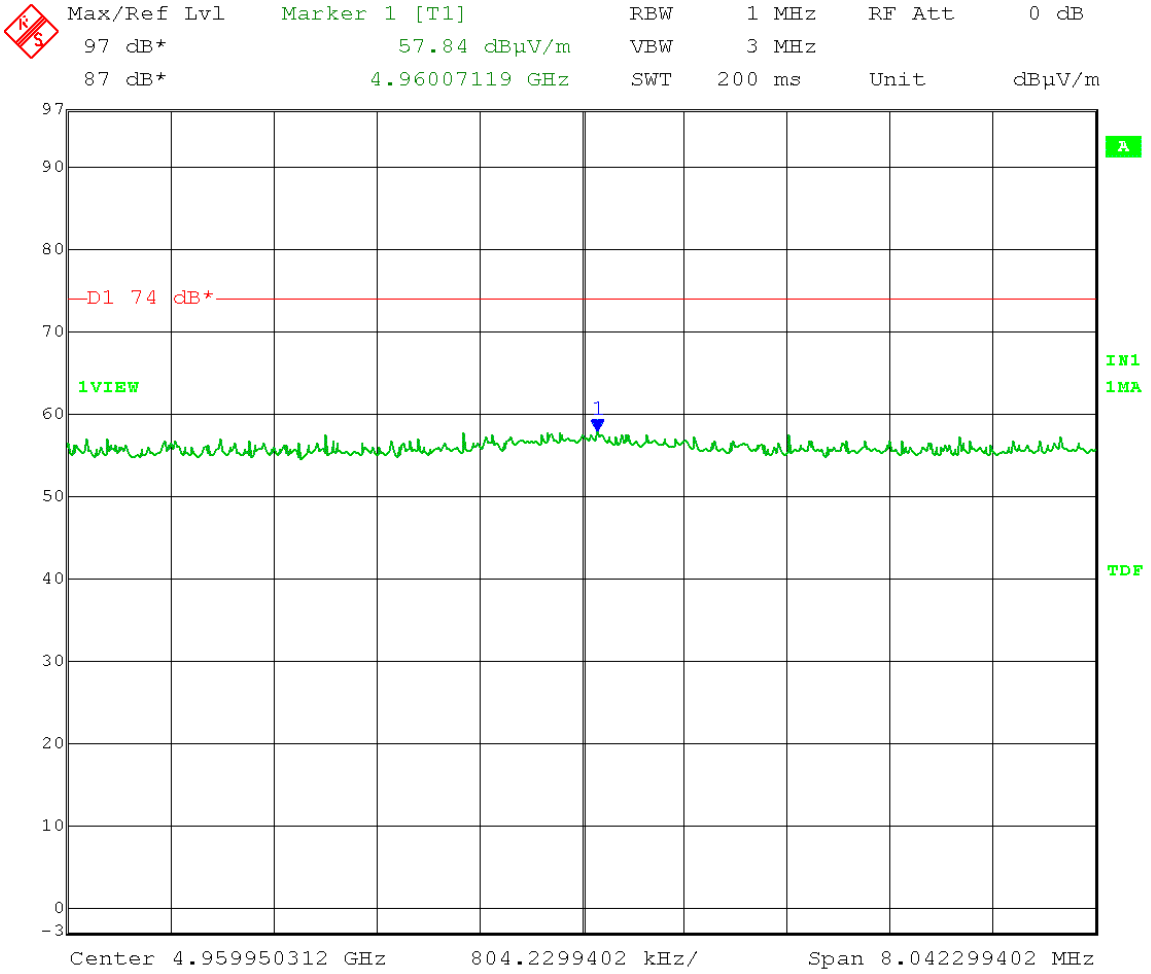
Date: 11.APR.2014 08:32:40

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 9.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Horizontal: Average:



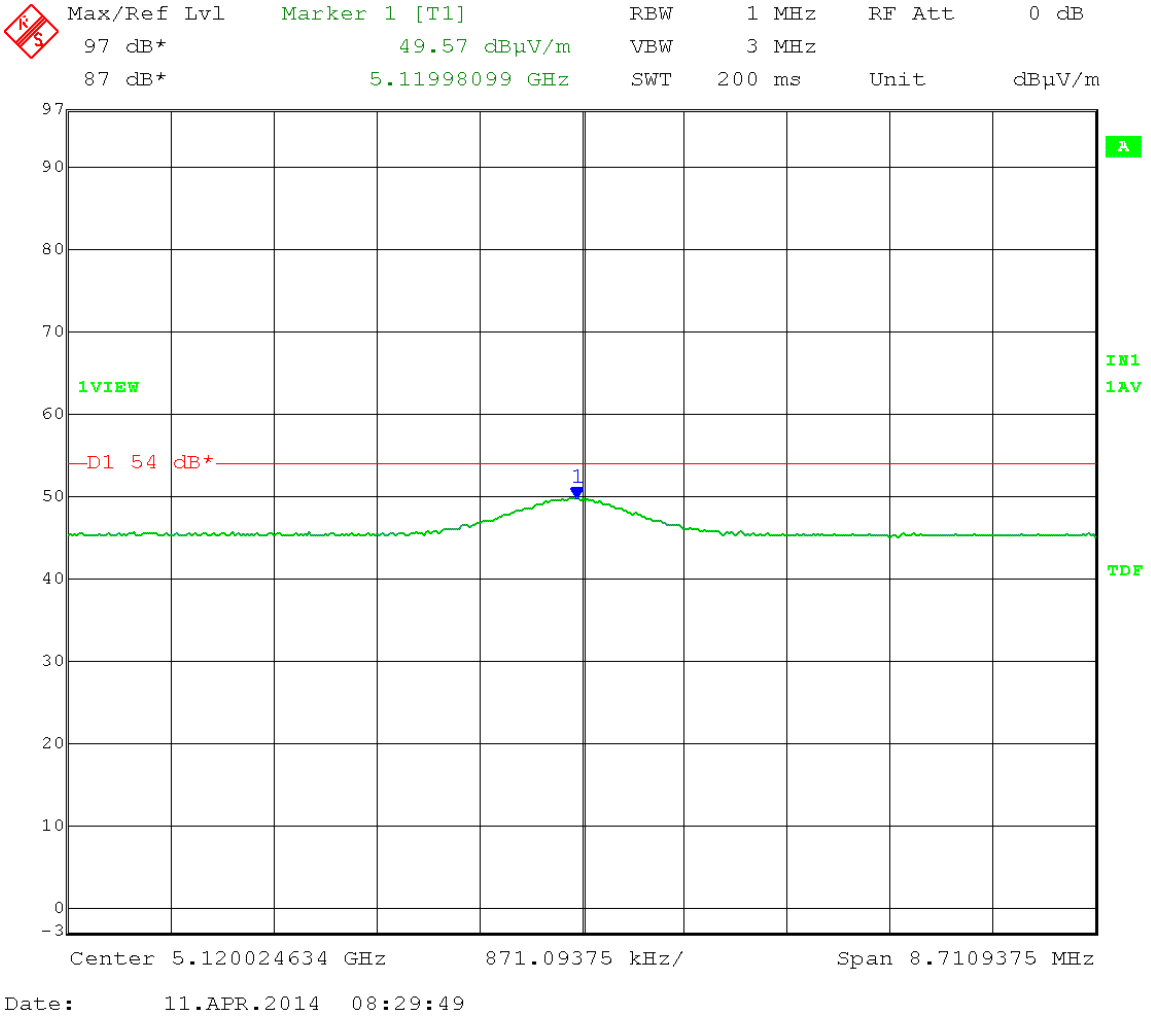
Date: 11.APR.2014 09:18:10

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 9.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



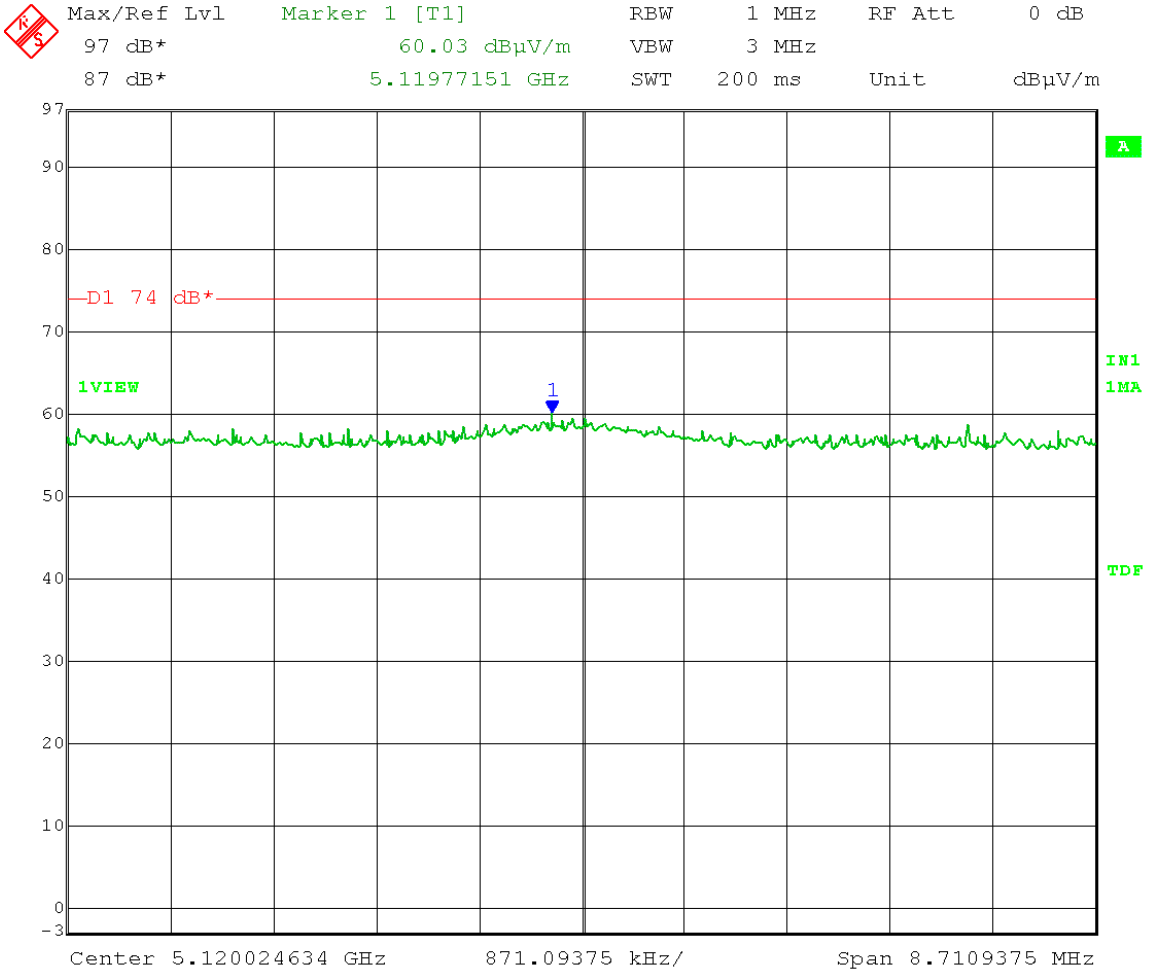
Date: 11.APR.2014 09:18:33

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 9.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



Date: 11.APR.2014 08:29:49

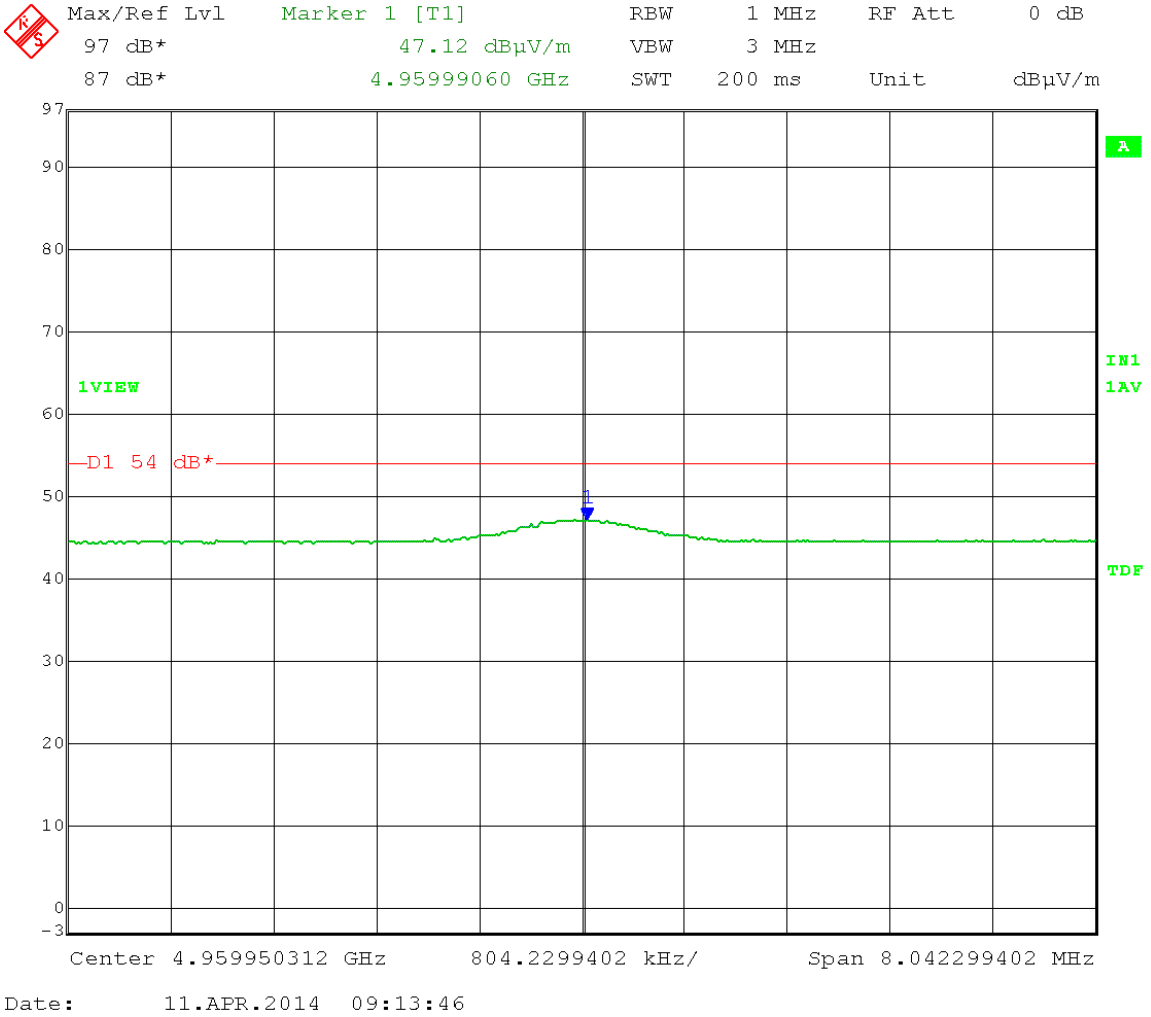
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 9.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



Date: 11.APR.2014 08:30:26

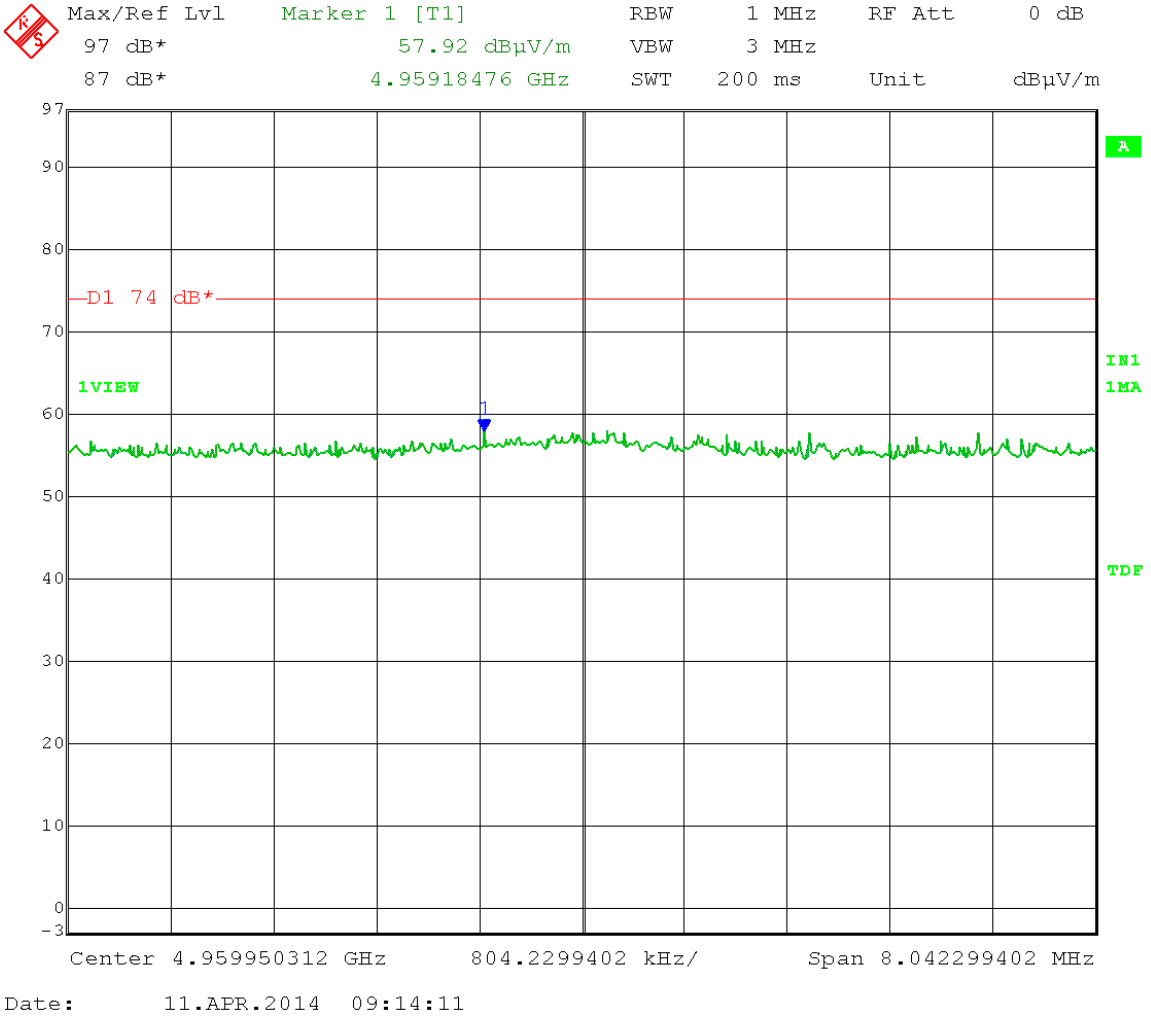
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 9.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



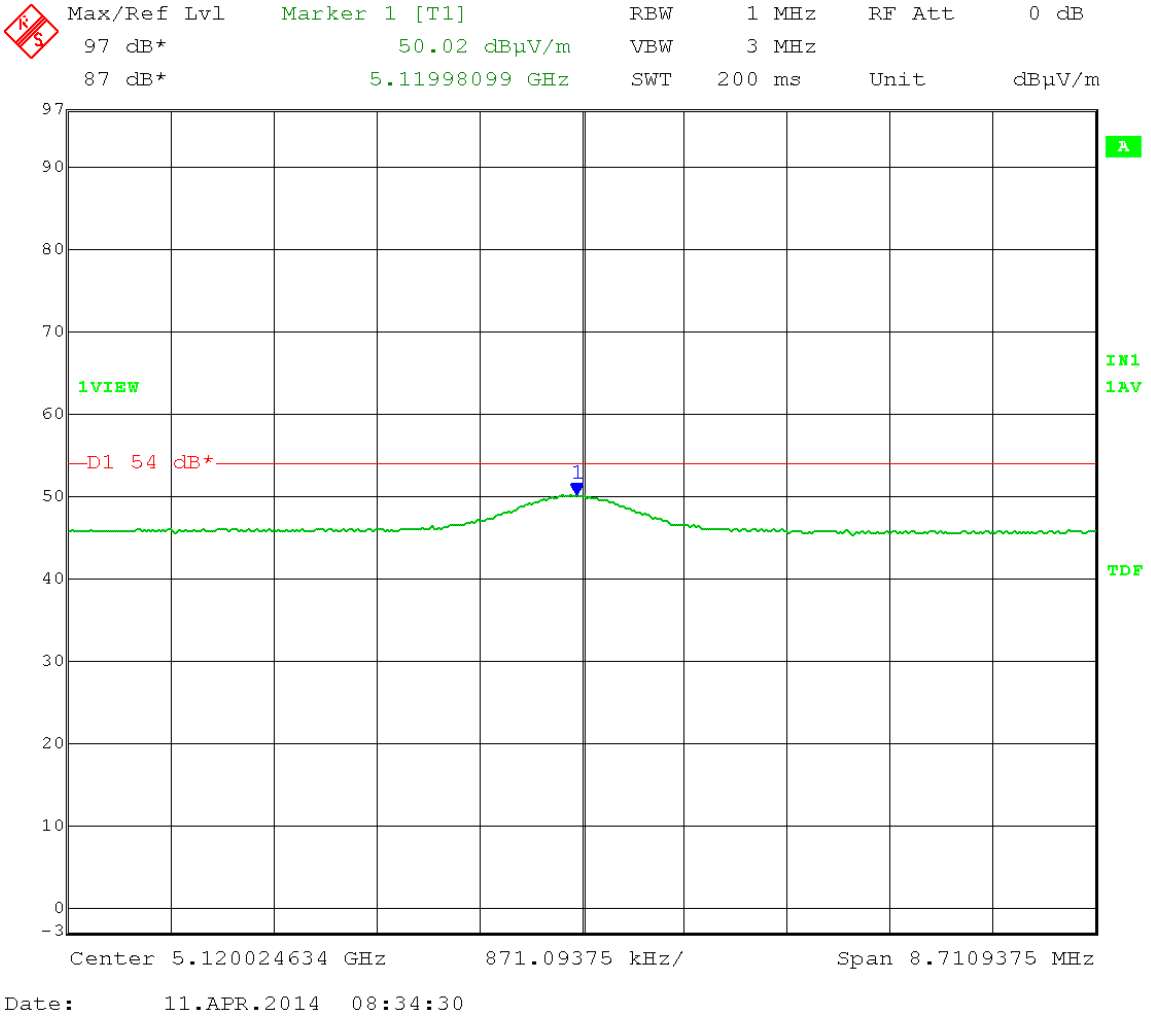
Date: 11.APR.2014 09:13:46

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 9.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



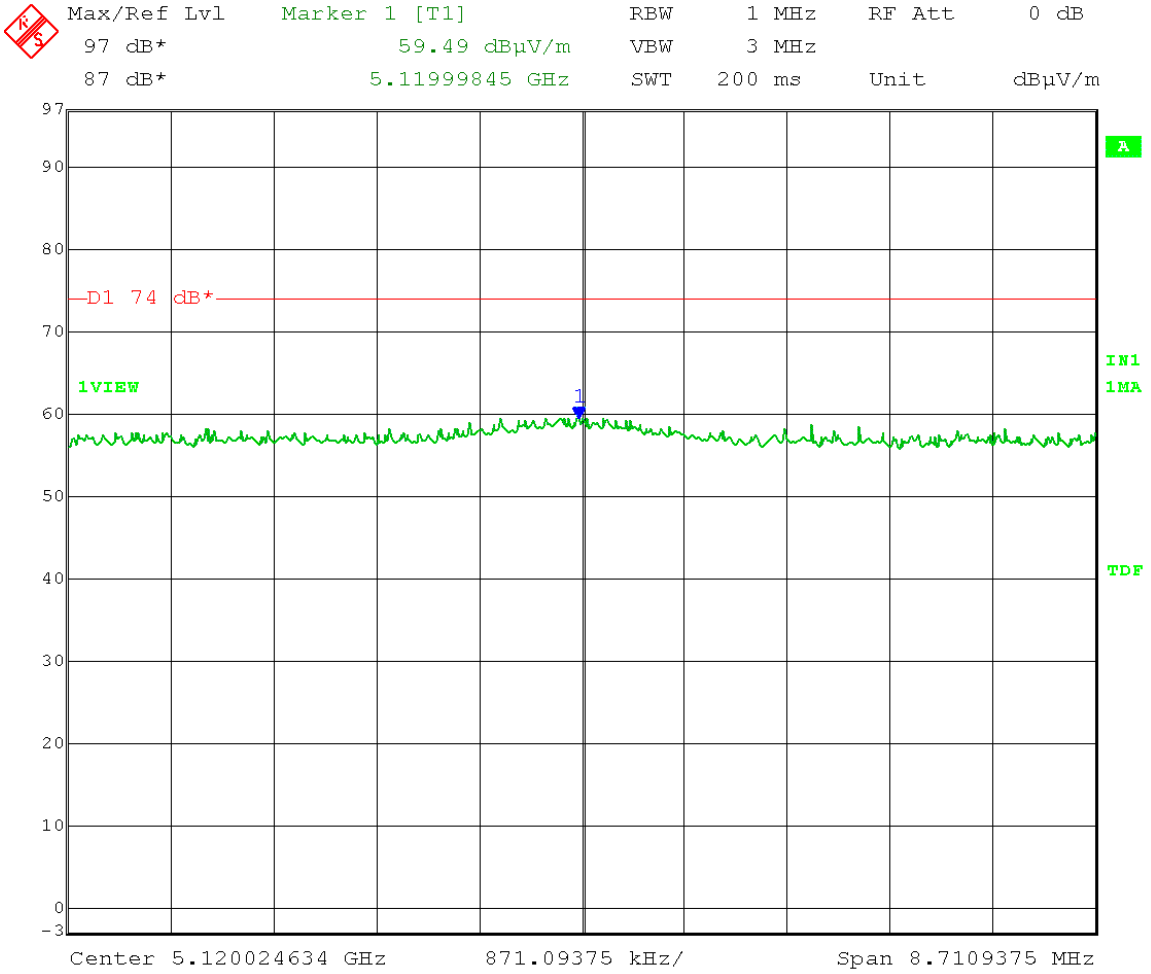
Date: 11.APR.2014 09:14:11

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 9.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



Date: 11.APR.2014 08:34:30

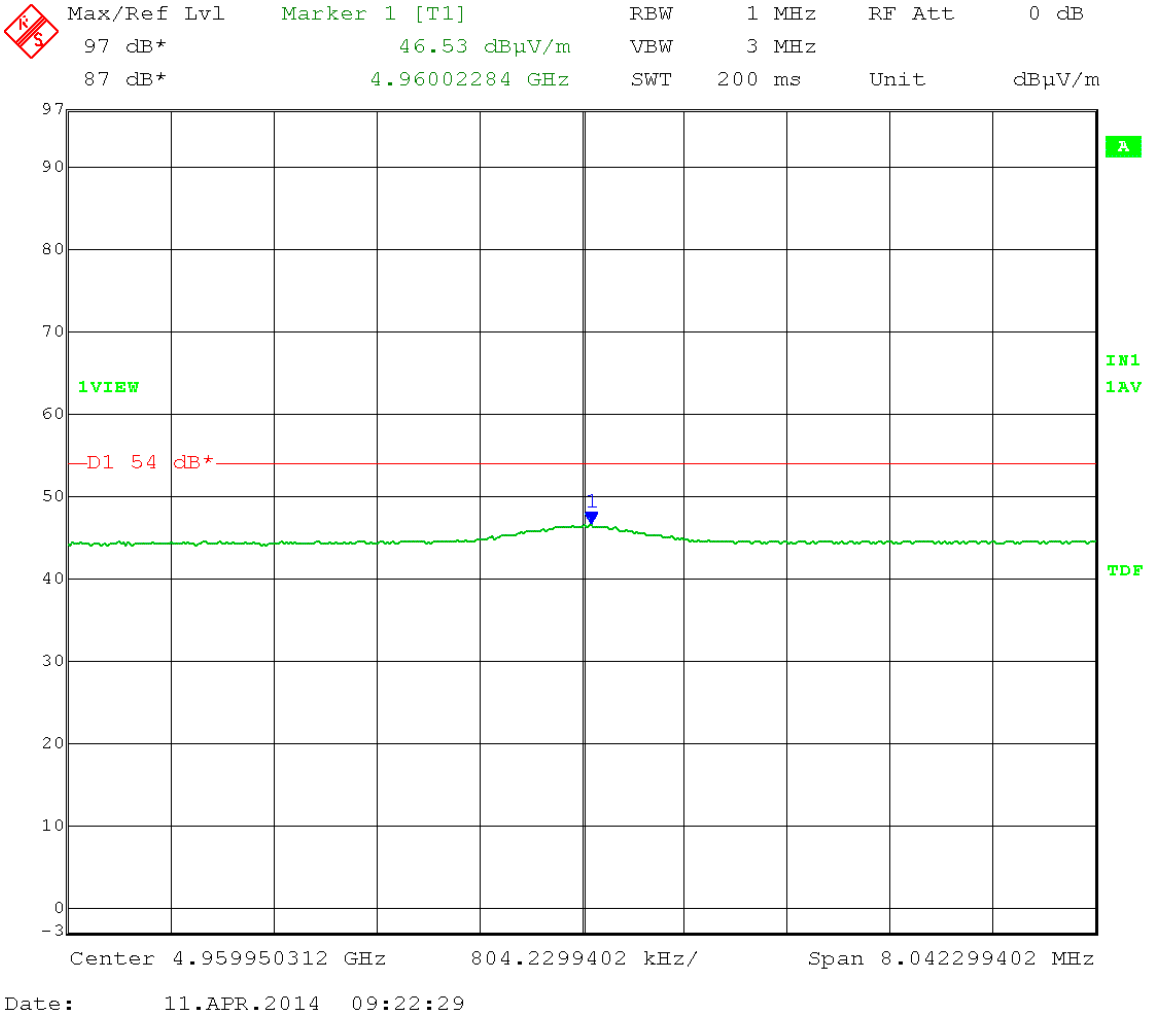
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 9.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



Date: 11.APR.2014 08:34:55

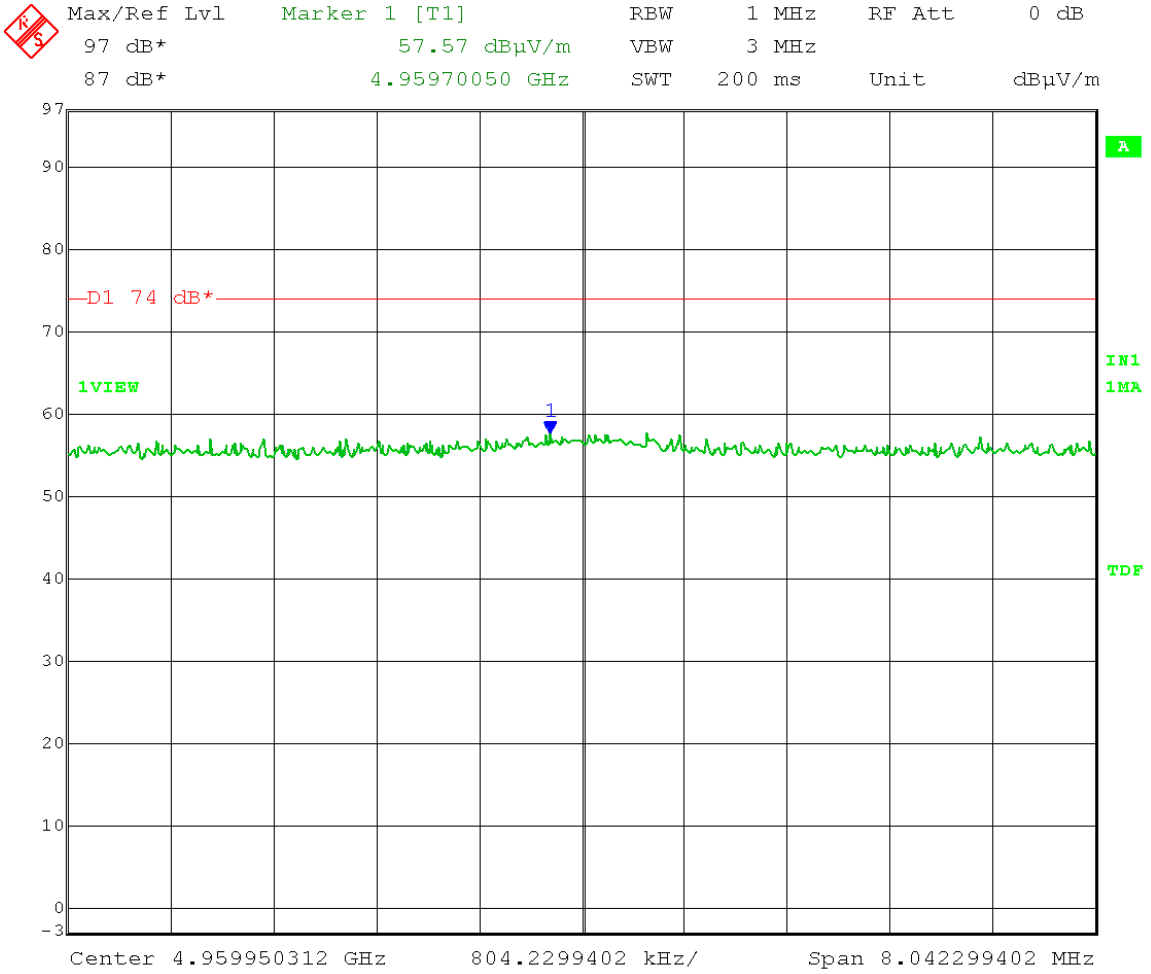
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 7.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



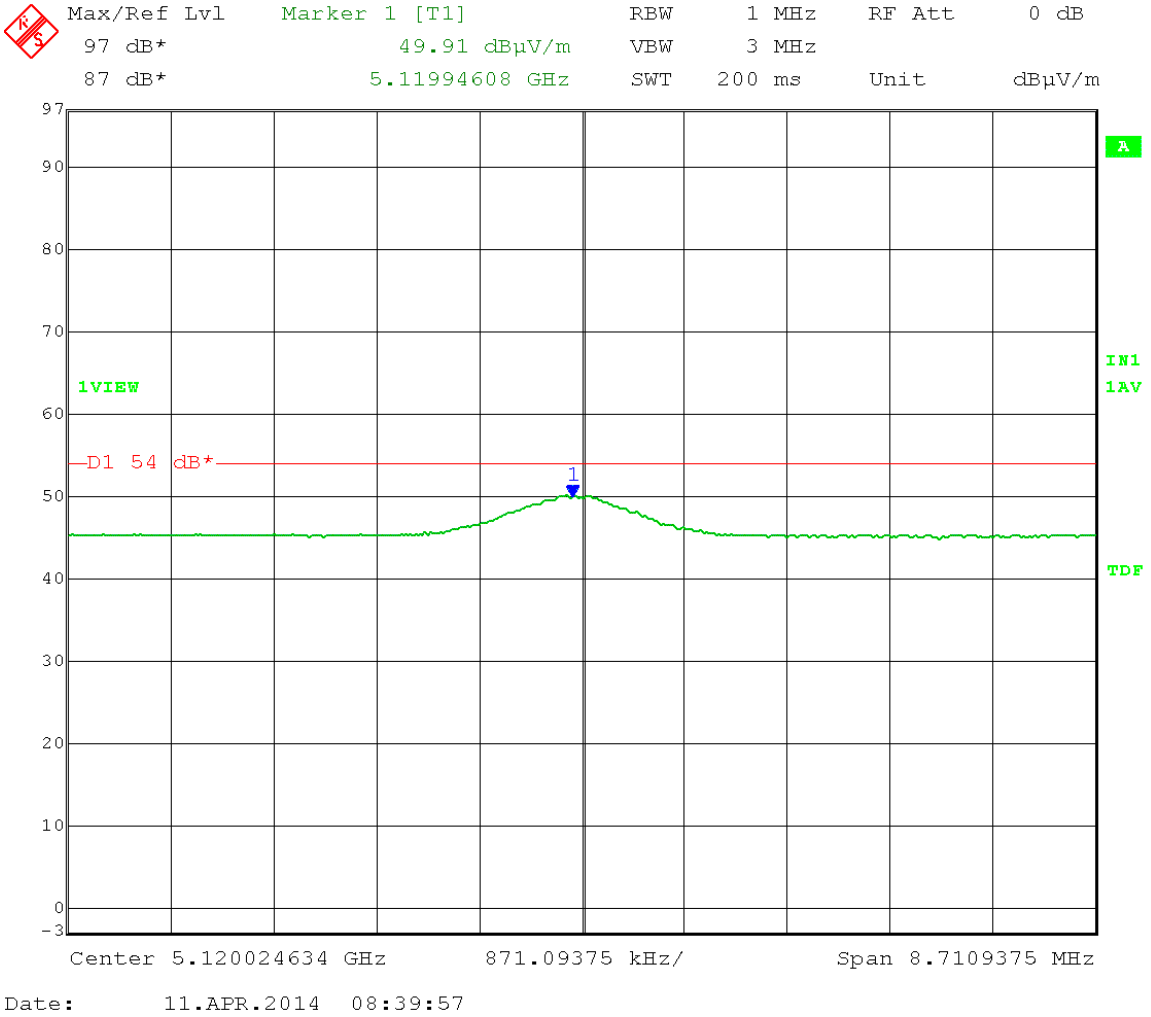
Date: 11.APR.2014 09:22:29

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 7.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



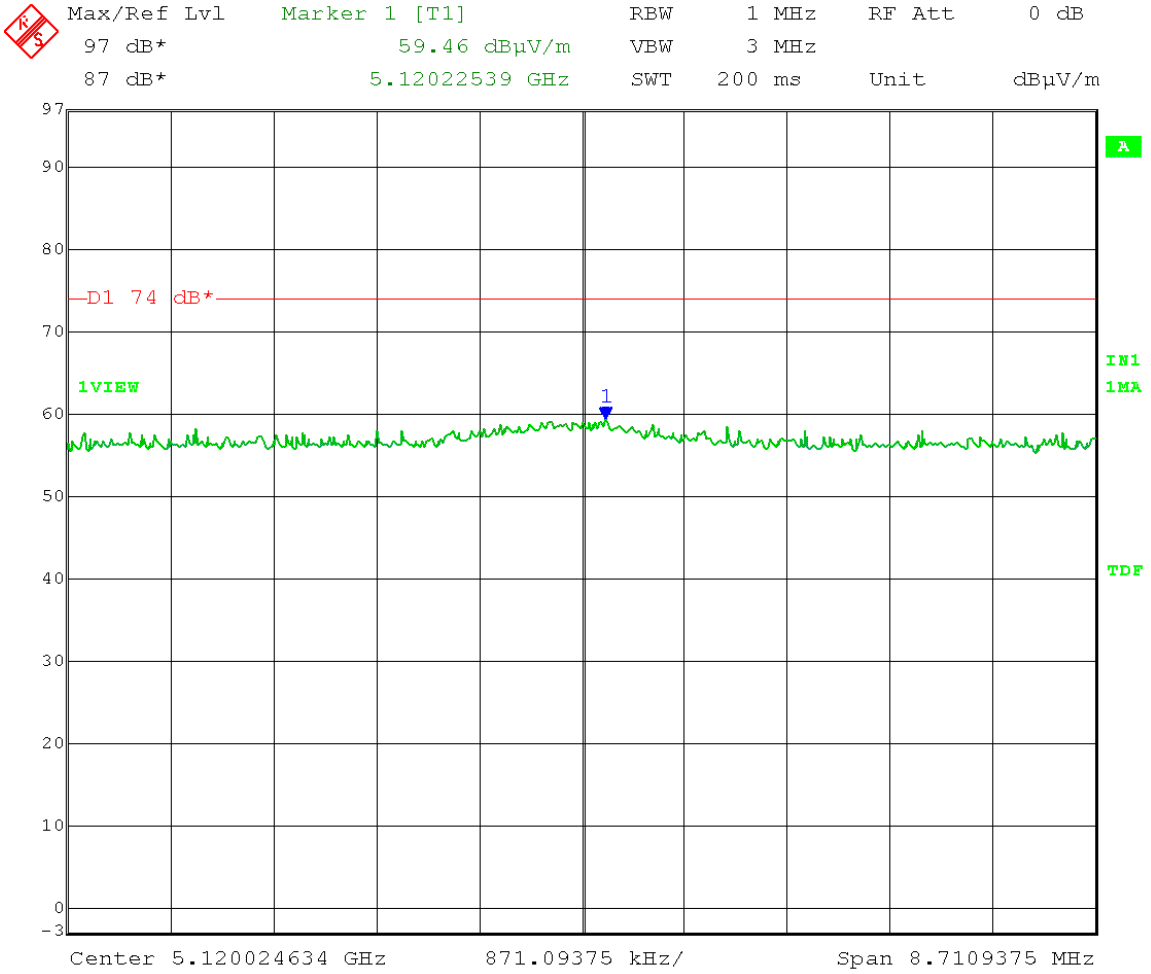
Date: 11.APR.2014 09:22:51

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 7.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



Date: 11.APR.2014 08:39:57

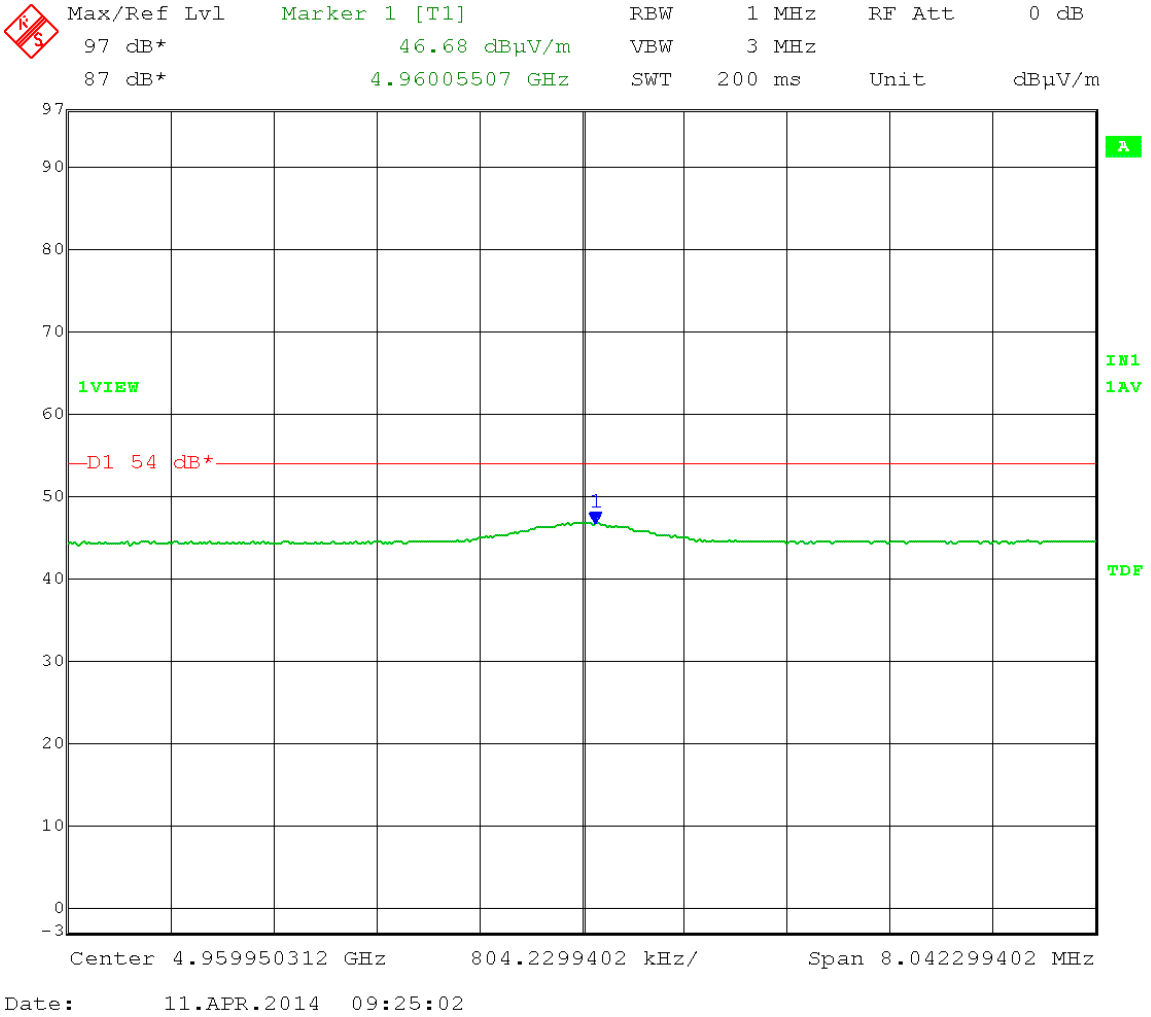
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 7.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



Date: 11.APR.2014 08:40:21

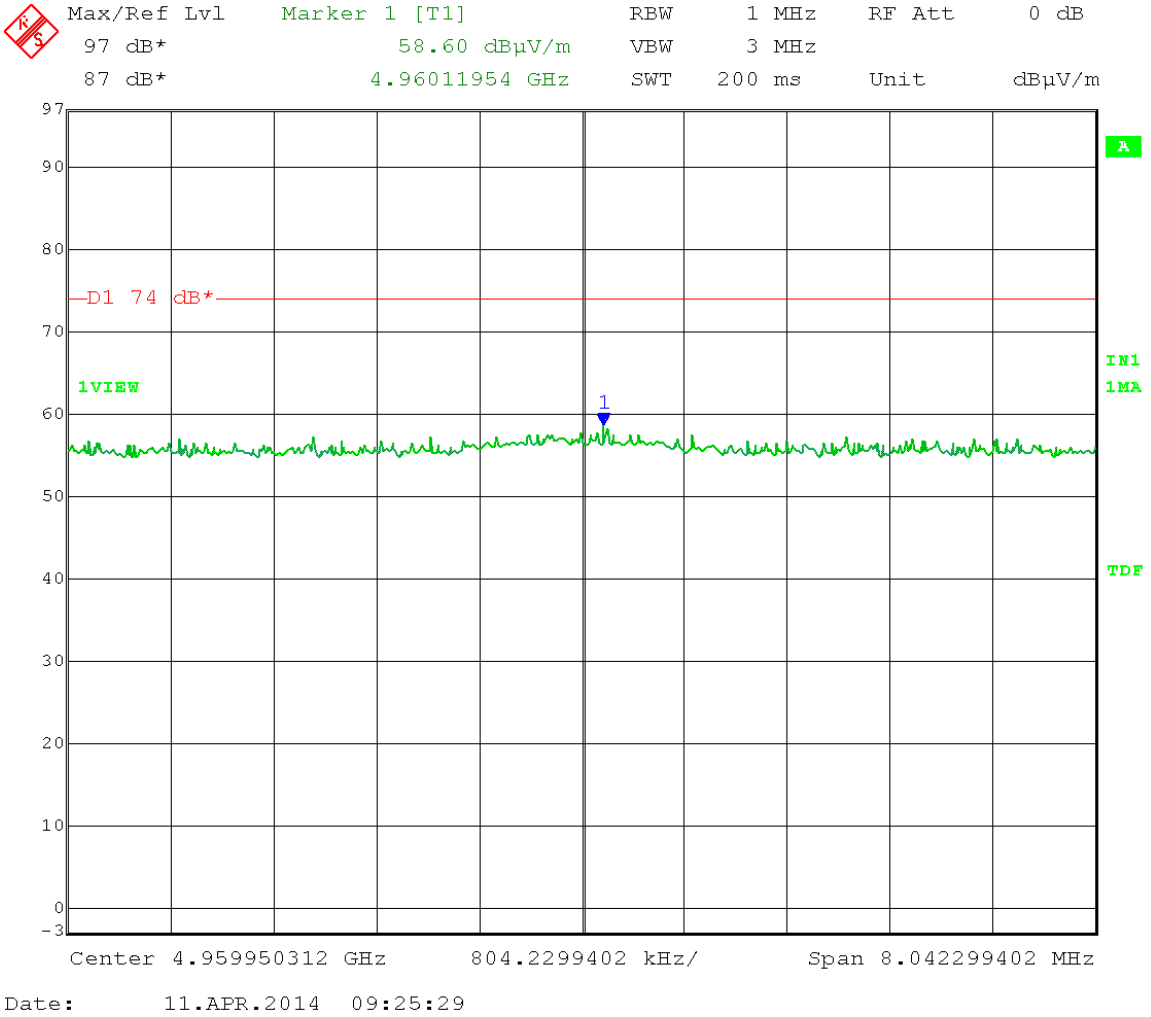
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 9.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



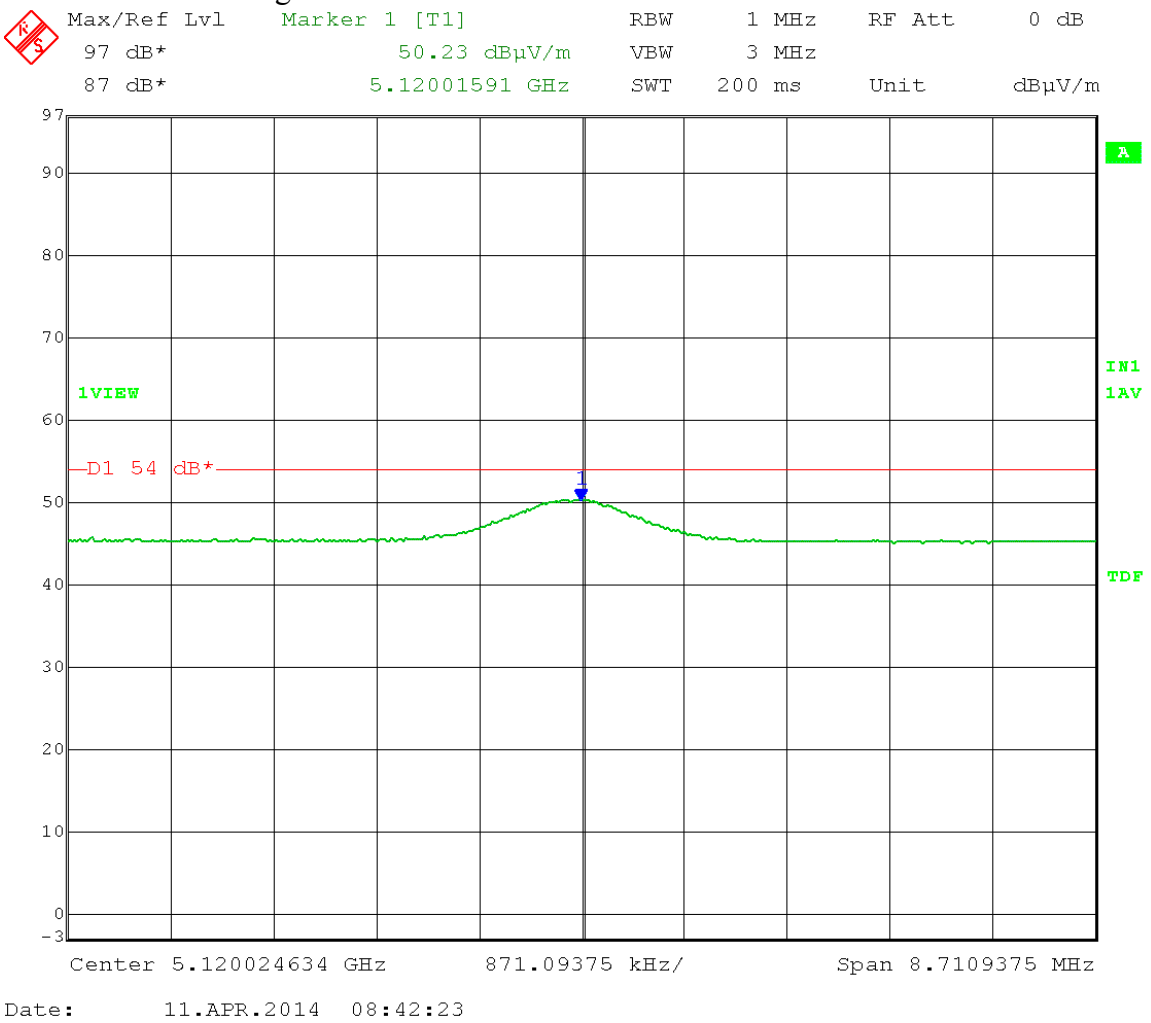
Date: 11.APR.2014 09:25:02

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 9.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



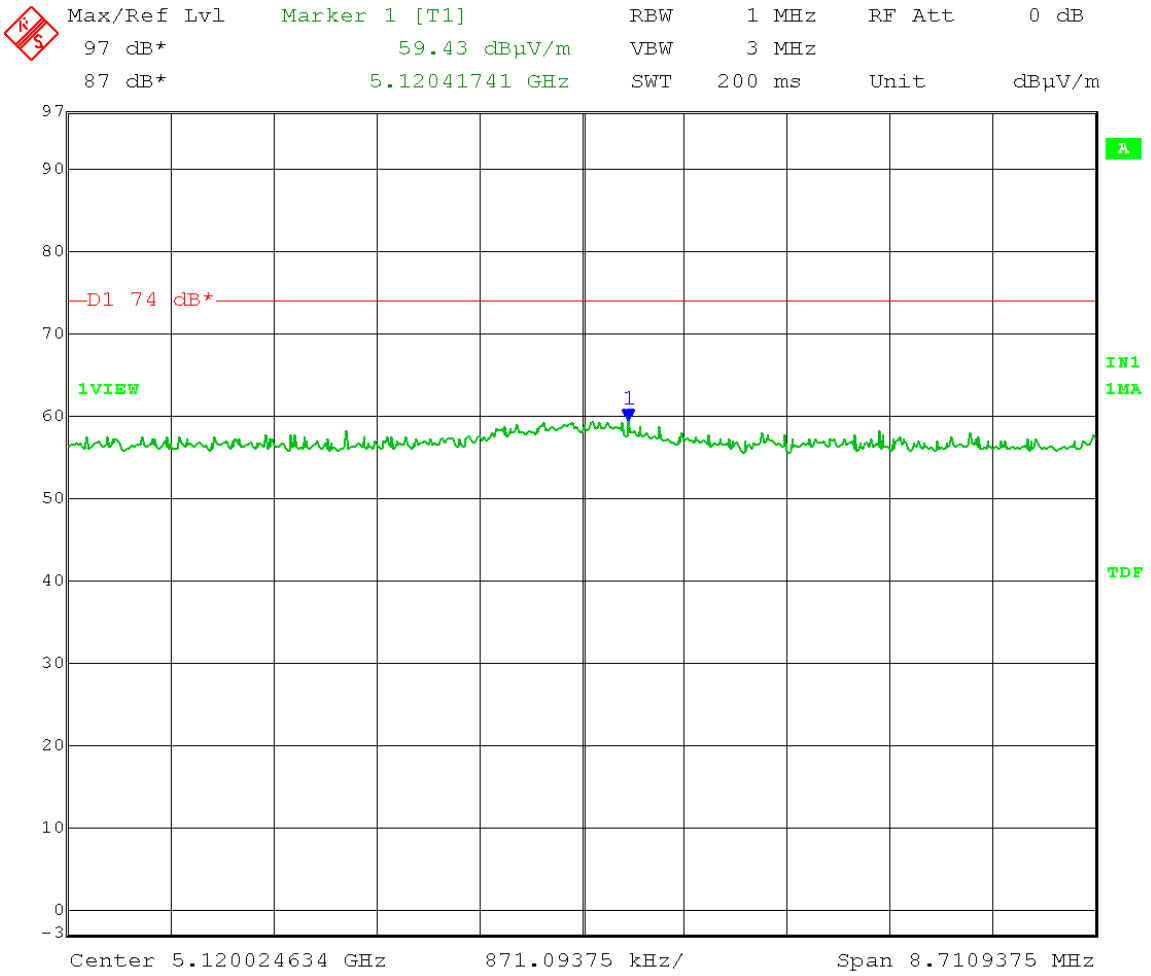
Date: 11.APR.2014 09:25:29

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 9.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



Date: 11.APR.2014 08:42:23

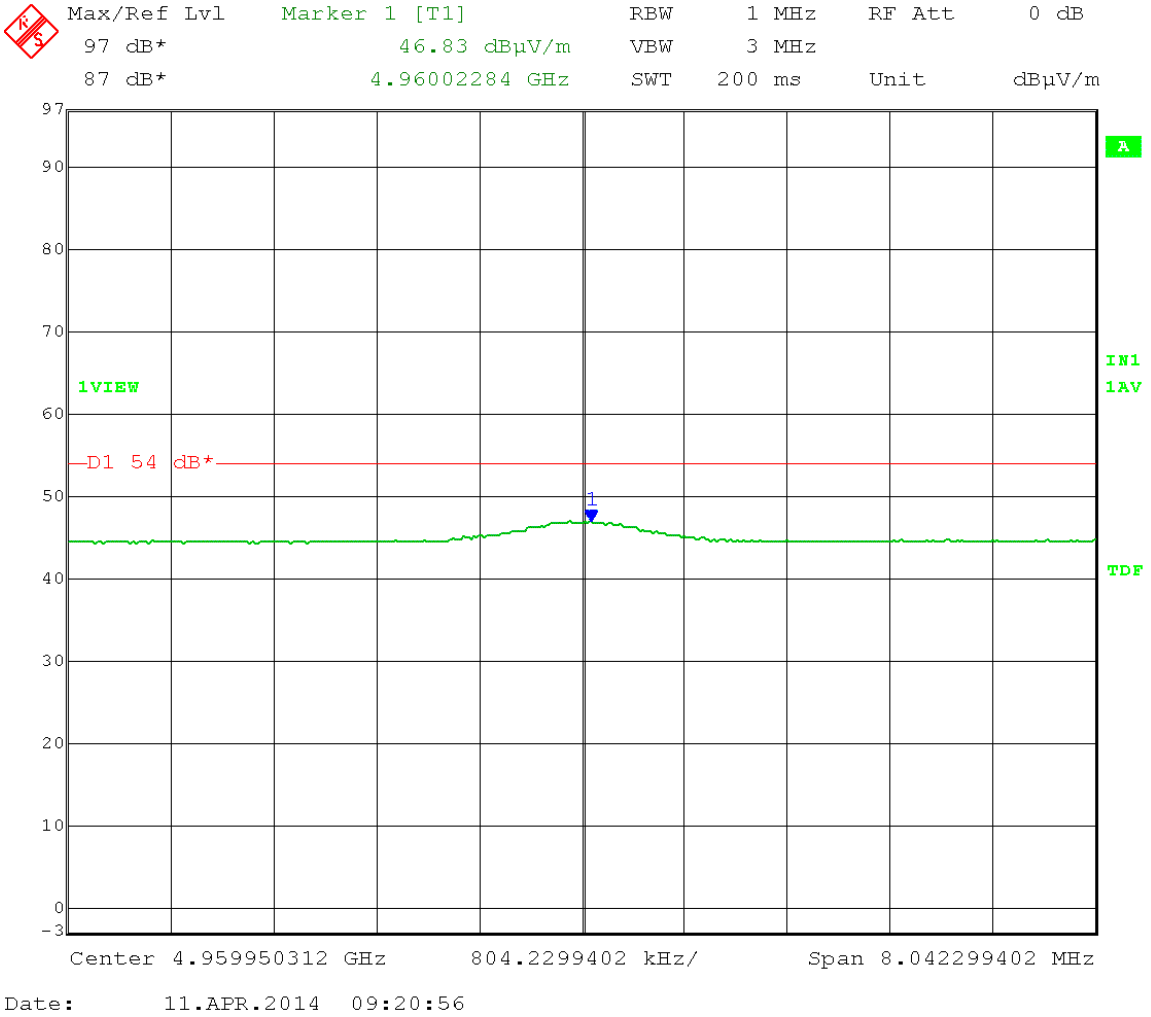
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 9.0 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



Date: 11.APR.2014 08:42:51

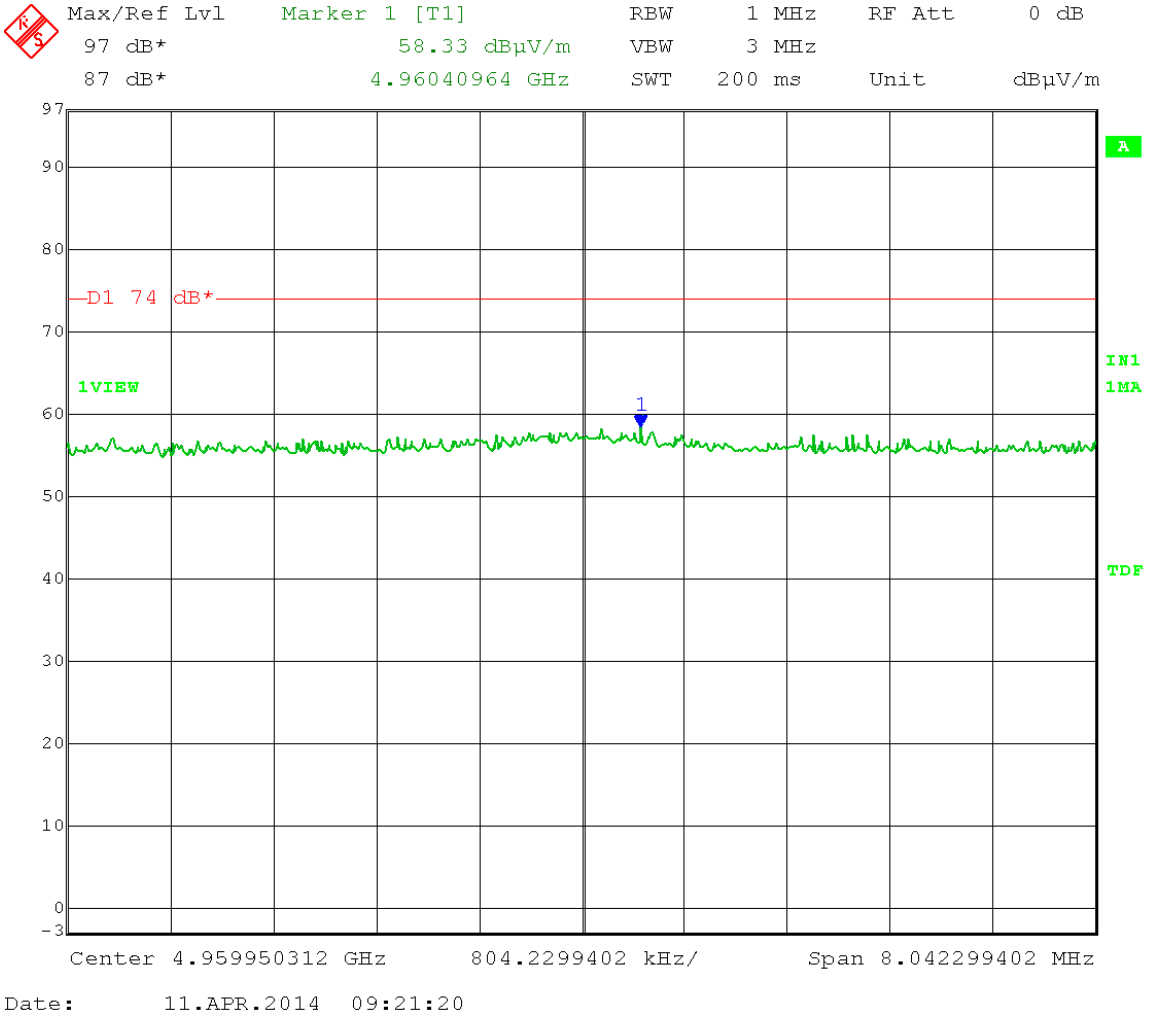
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 7.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



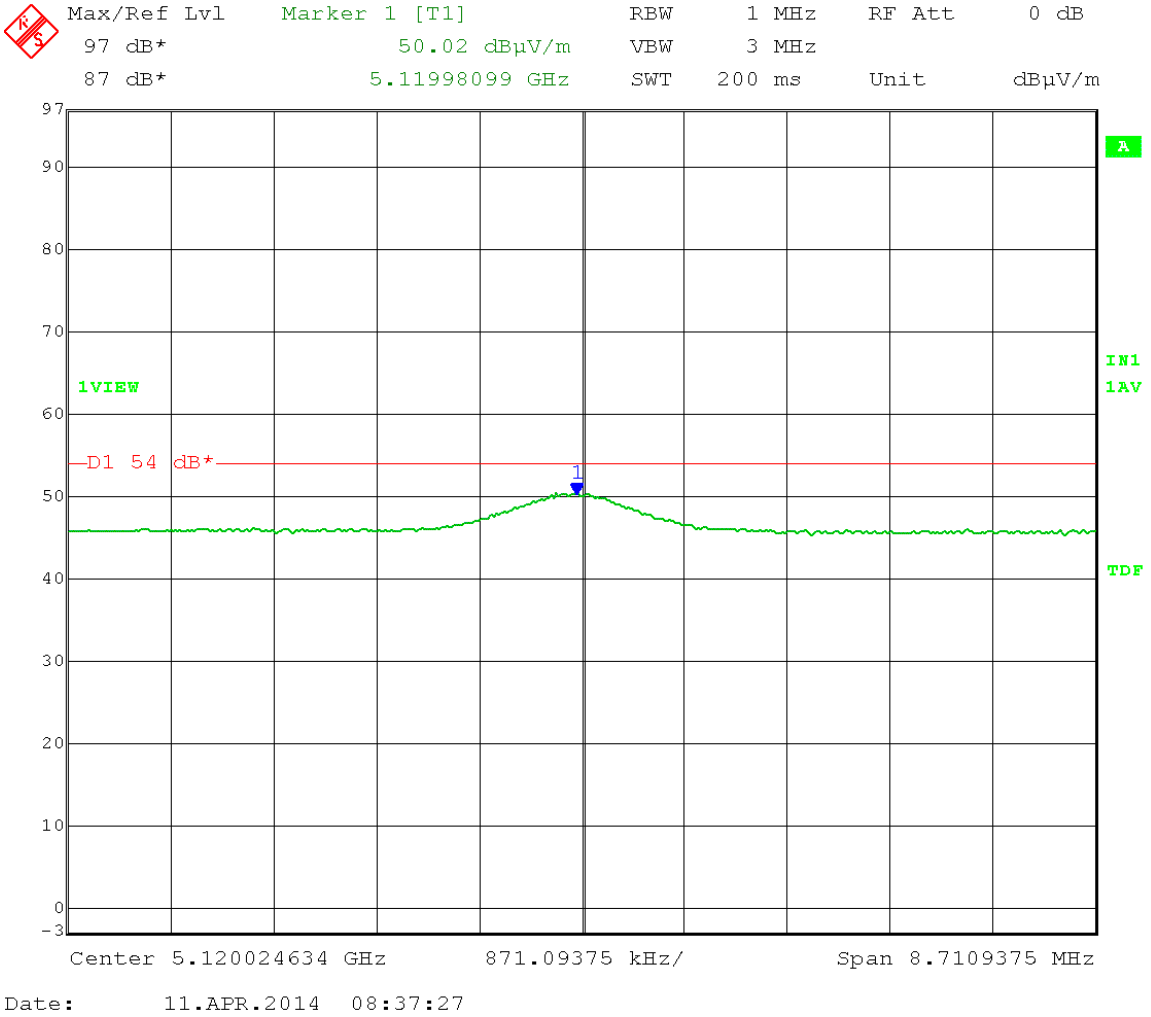
Date: 11.APR.2014 09:20:56

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 7.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



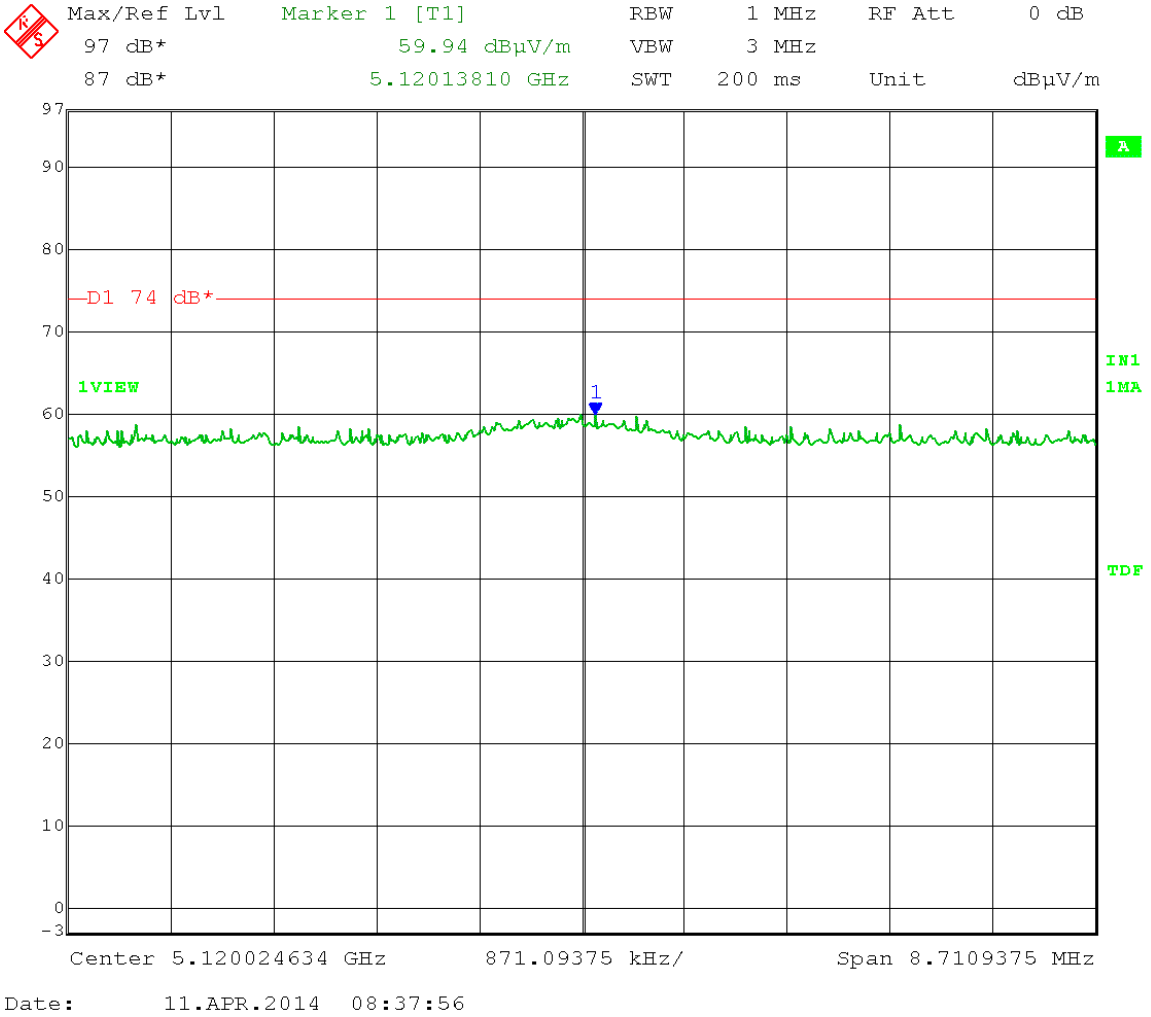
Date: 11.APR.2014 09:21:20

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 7.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



Date: 11.APR.2014 08:37:27

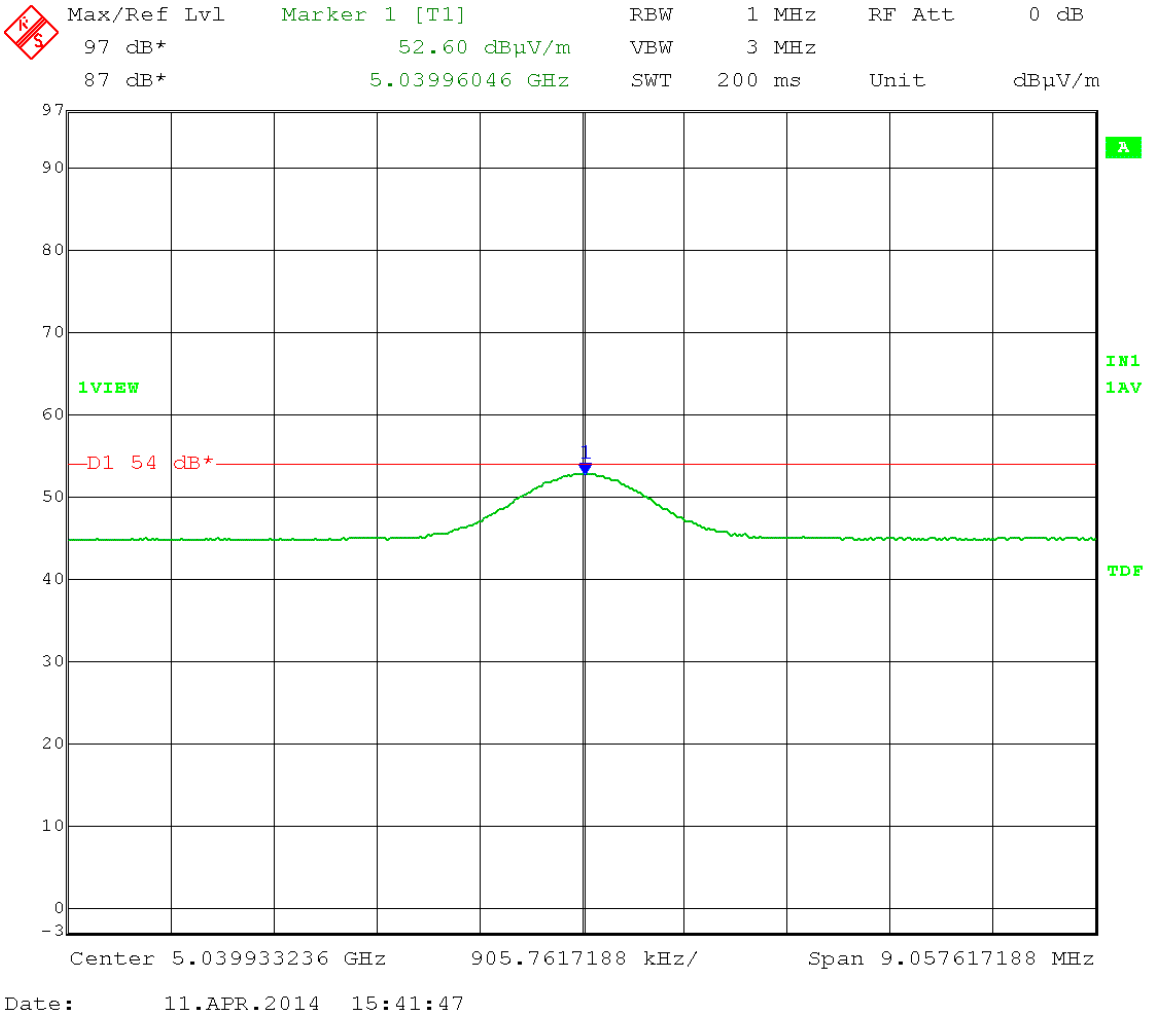
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 7.5 on both chains
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



Date: 11.APR.2014 08:37:56

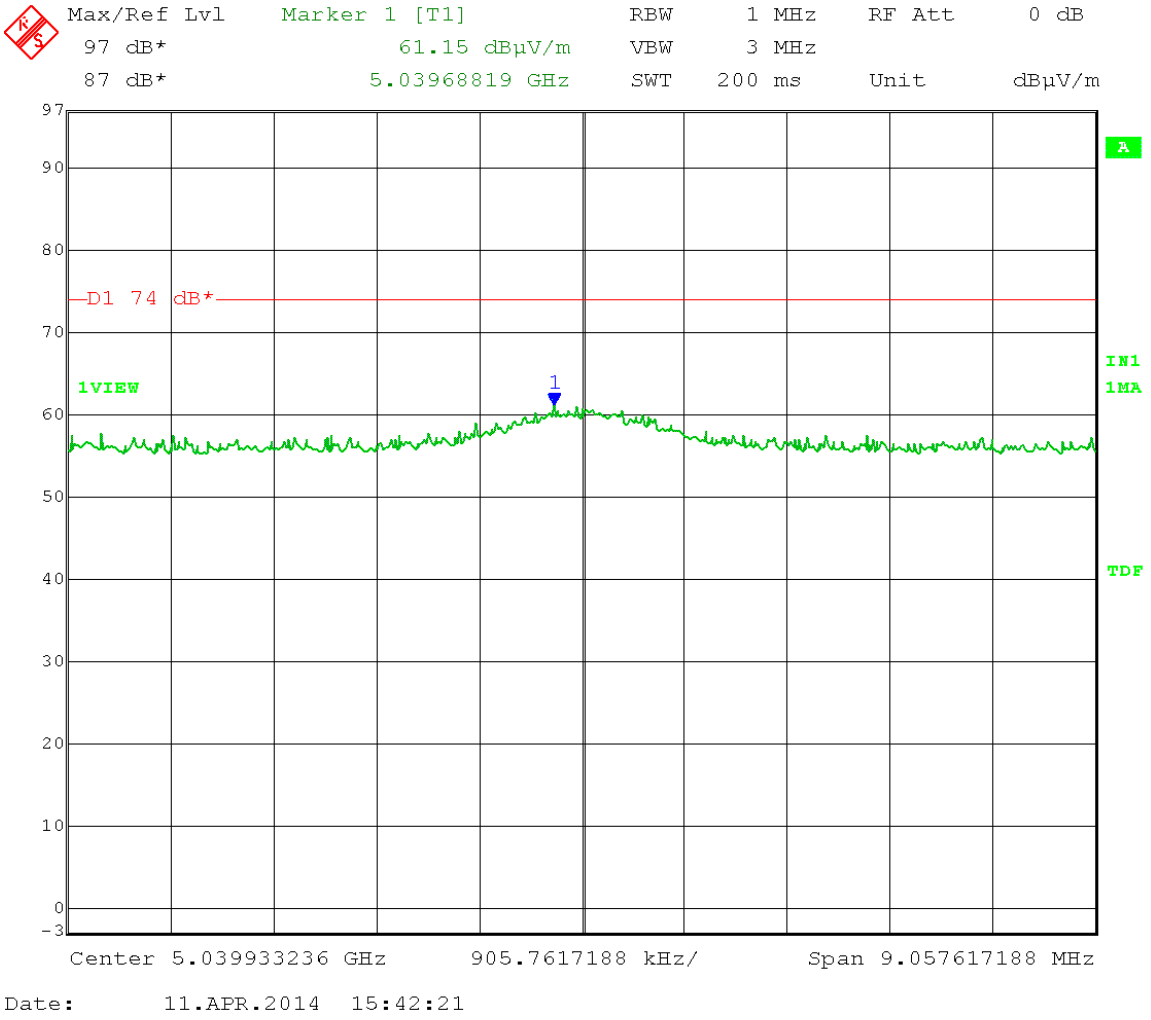
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



Date: 11.APR.2014 15:41:47

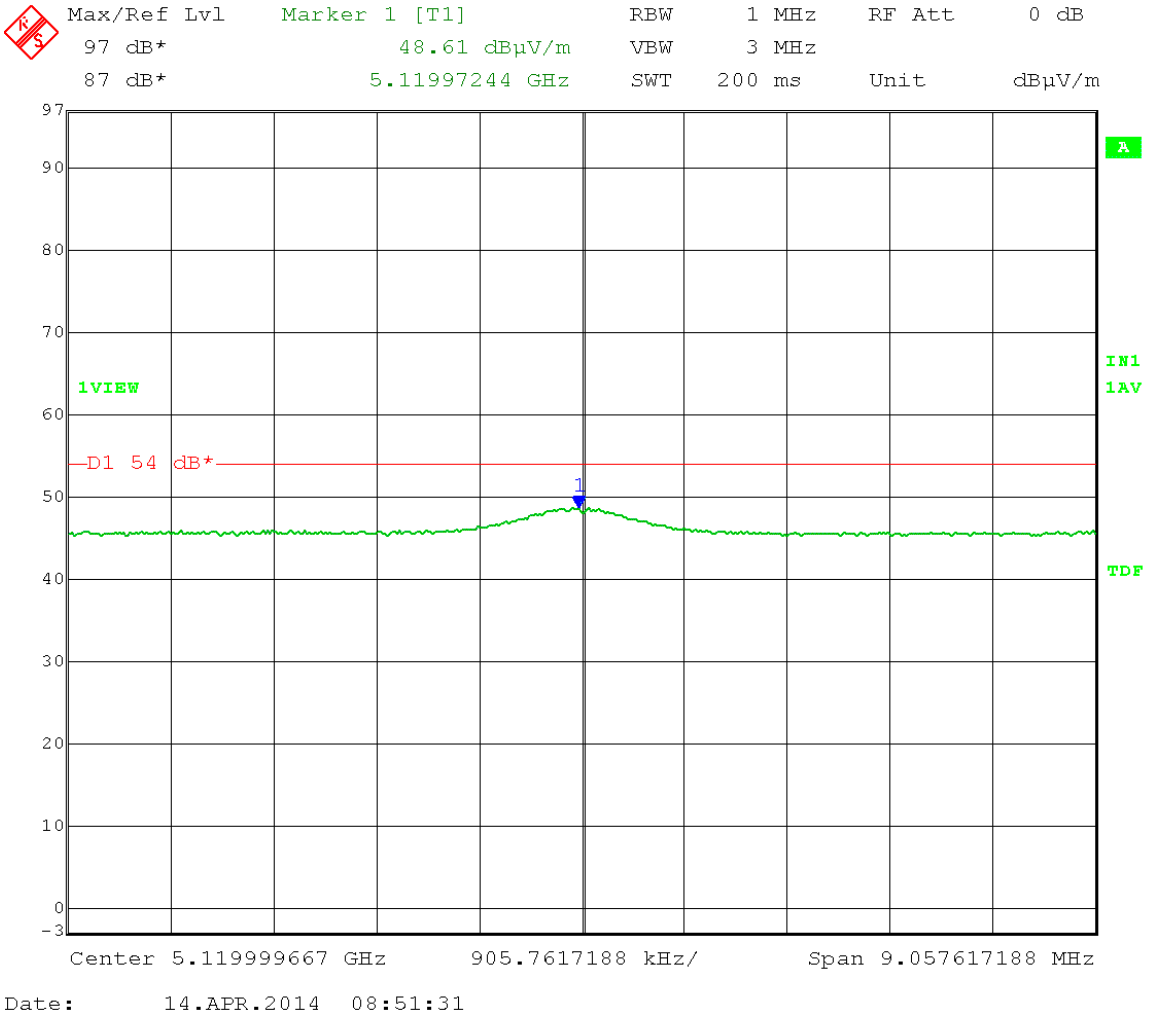
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



Date: 11.APR.2014 15:42:21

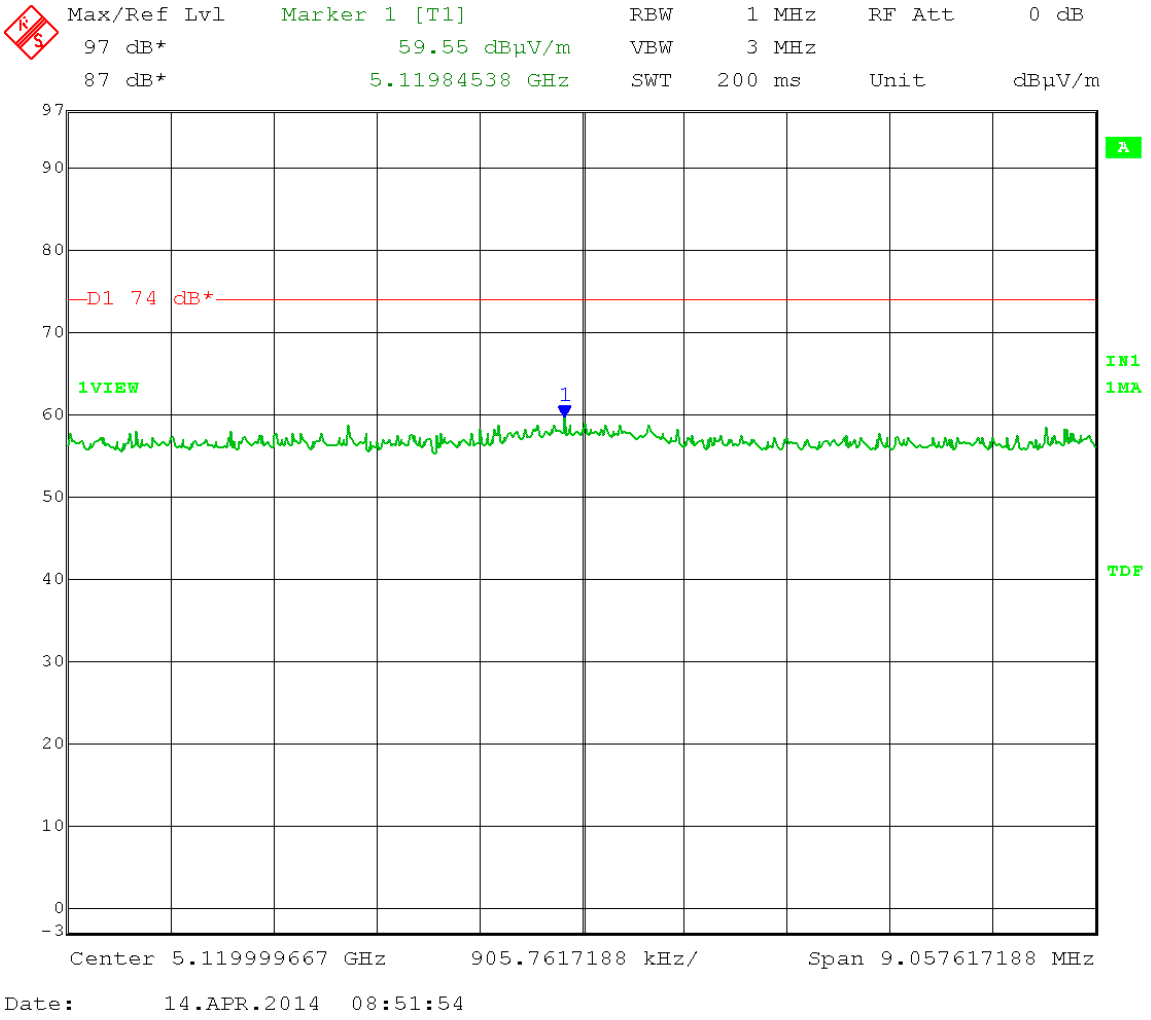
Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Vertical: Average:



Date: 14.APR.2014 08:51:31

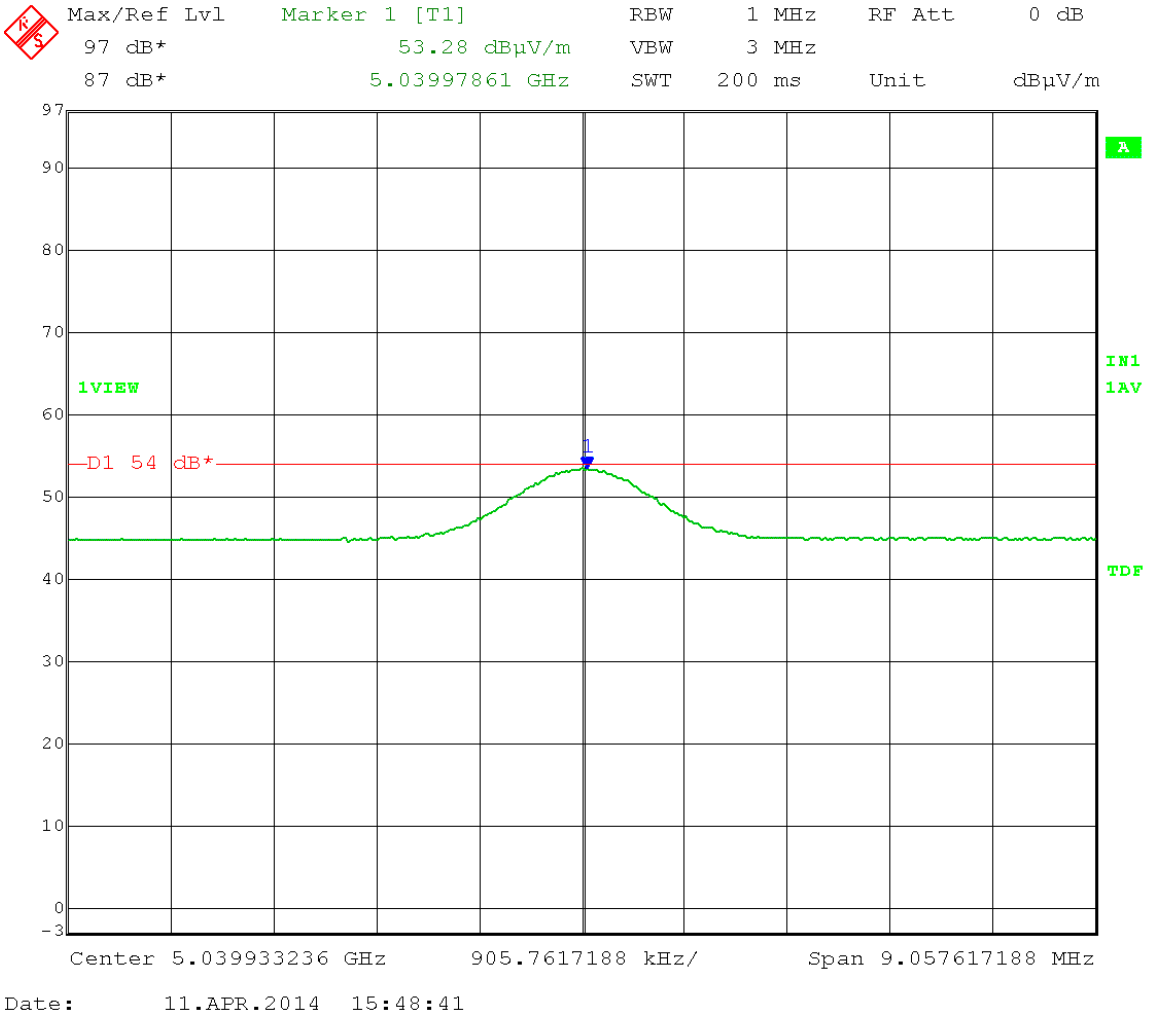
Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



Date: 14.APR.2014 08:51:54

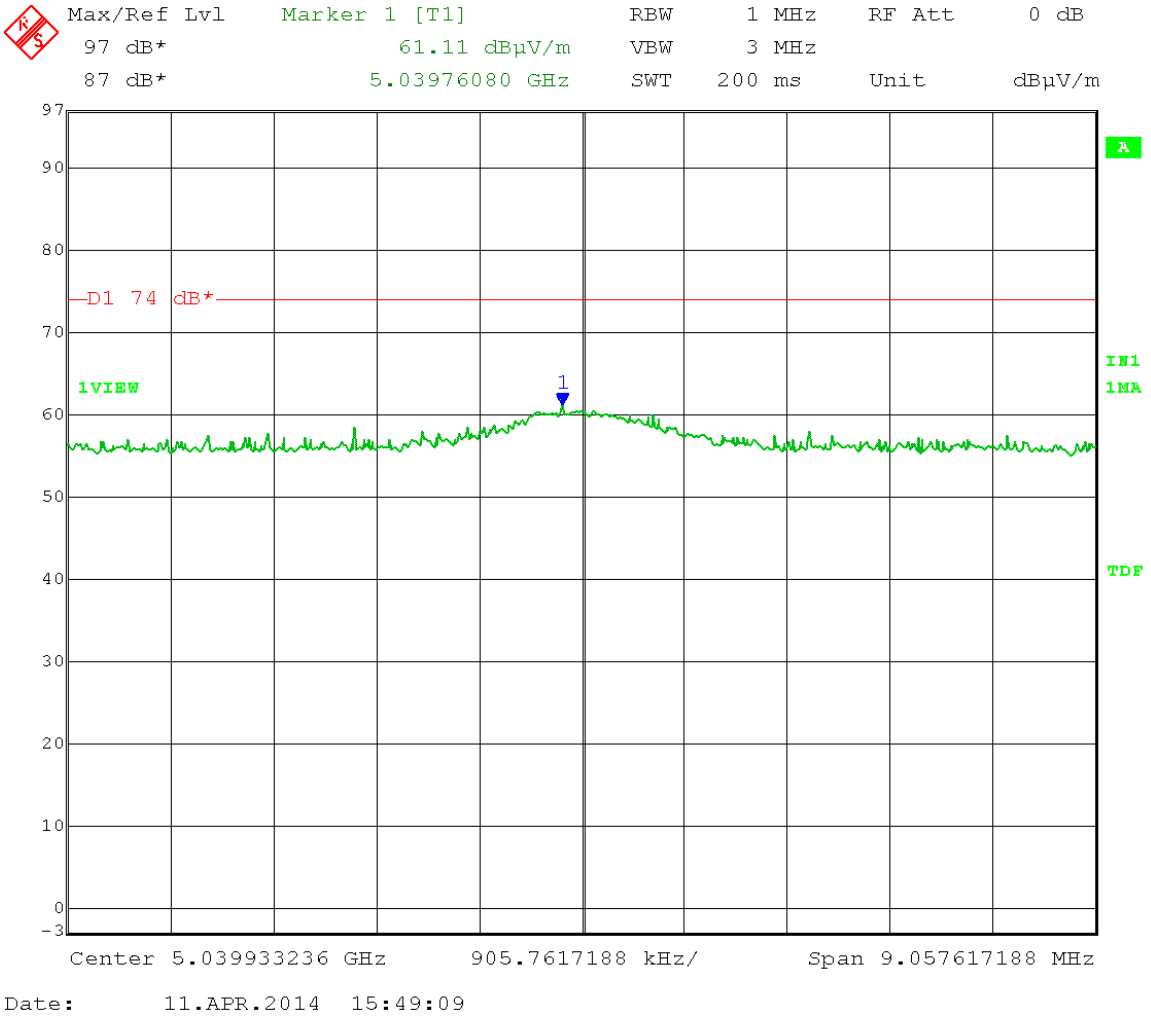
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



Date: 11.APR.2014 15:48:41

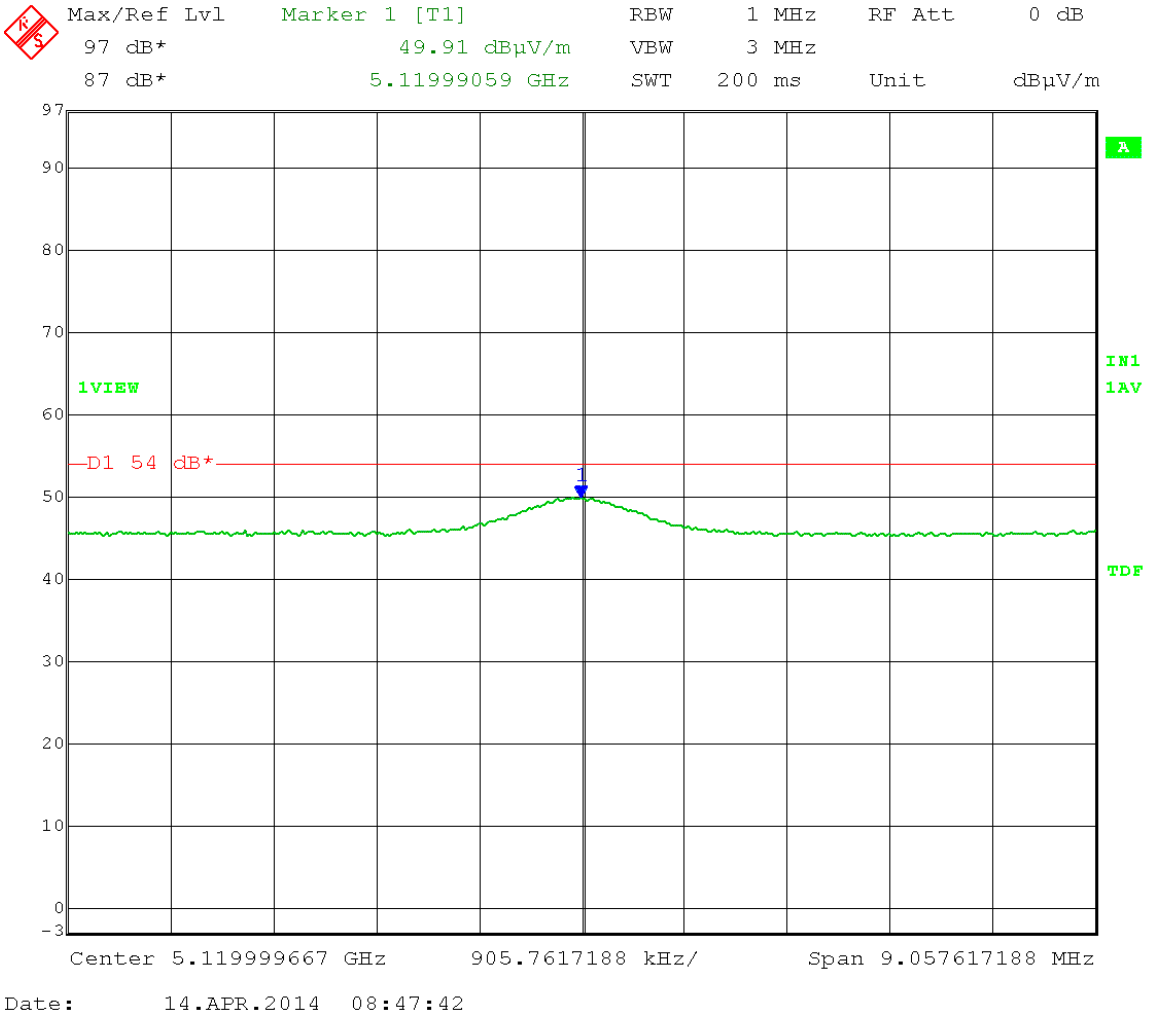
Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



Date: 11.APR.2014 15:49:09

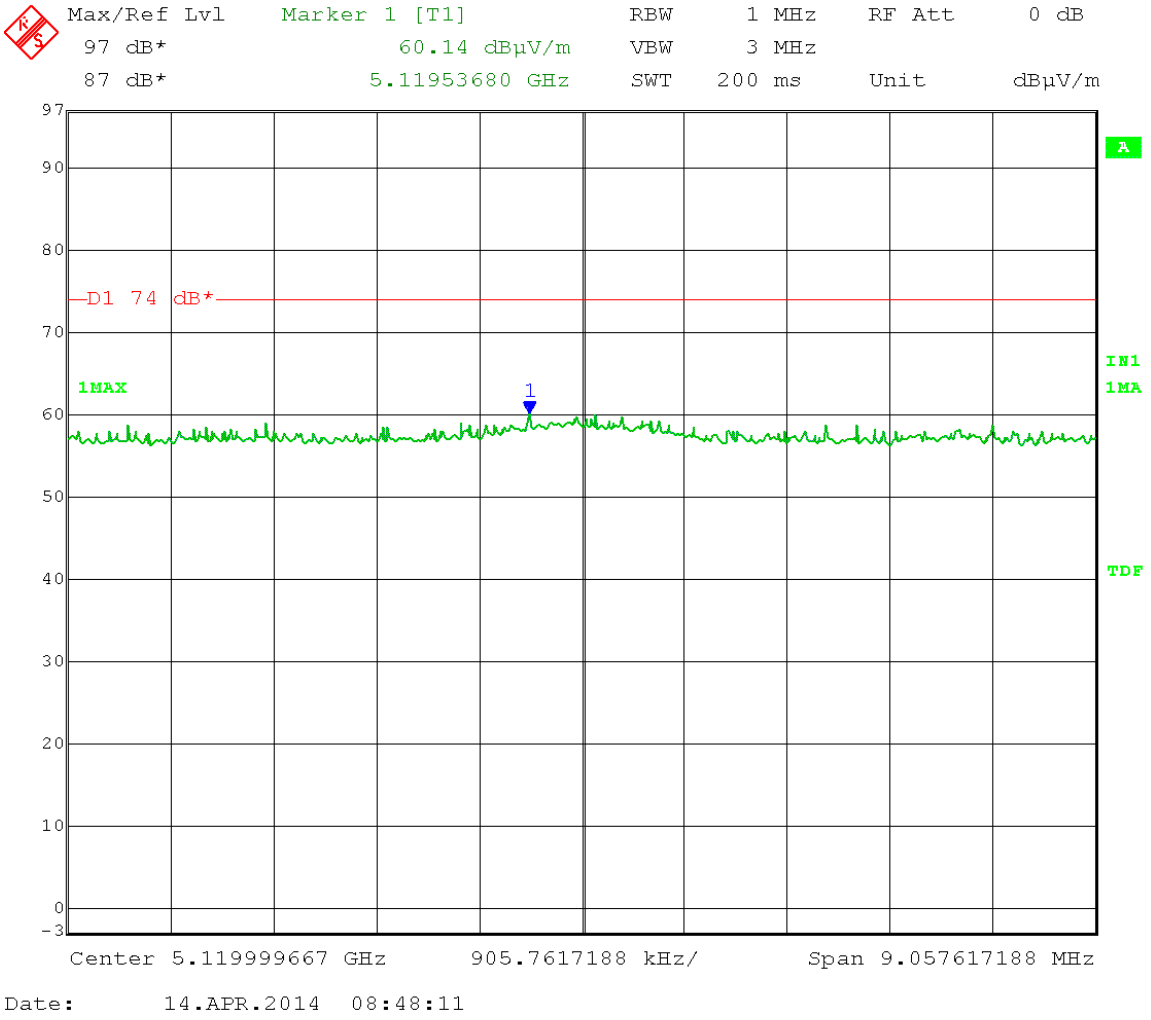
Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Vertical: Average:

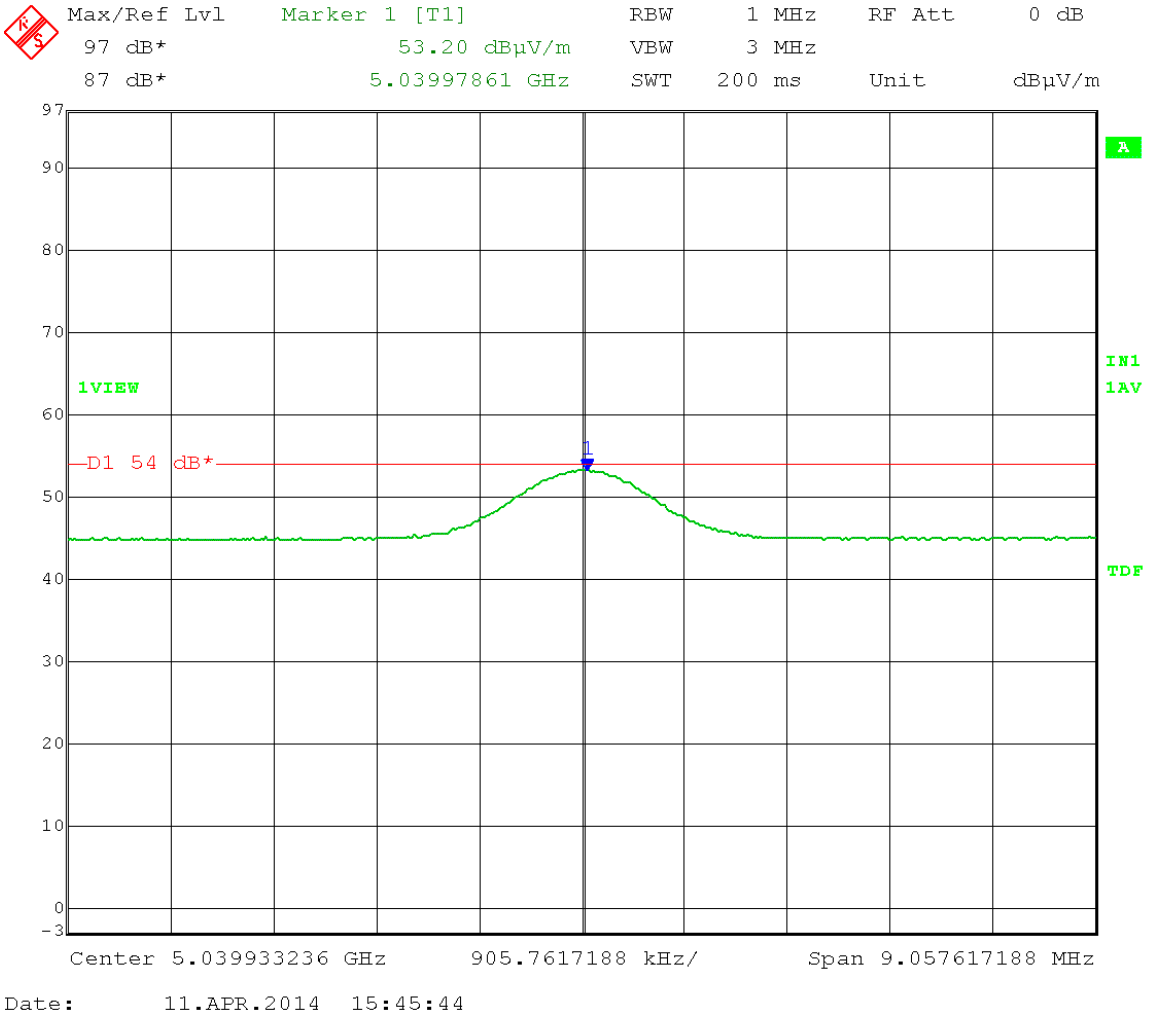


Date: 14.APR.2014 08:47:42

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:

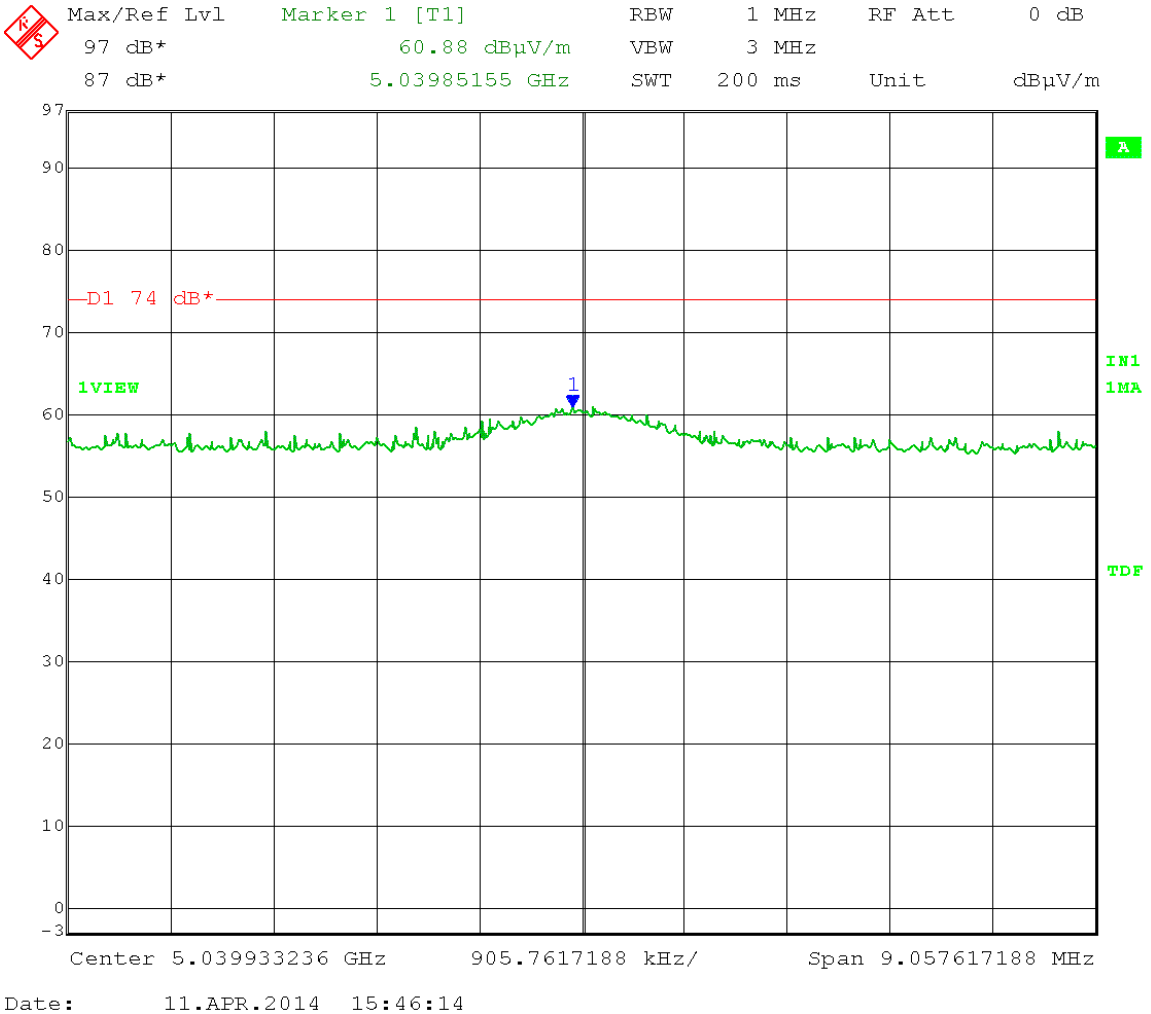


Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Horizontal: Average:



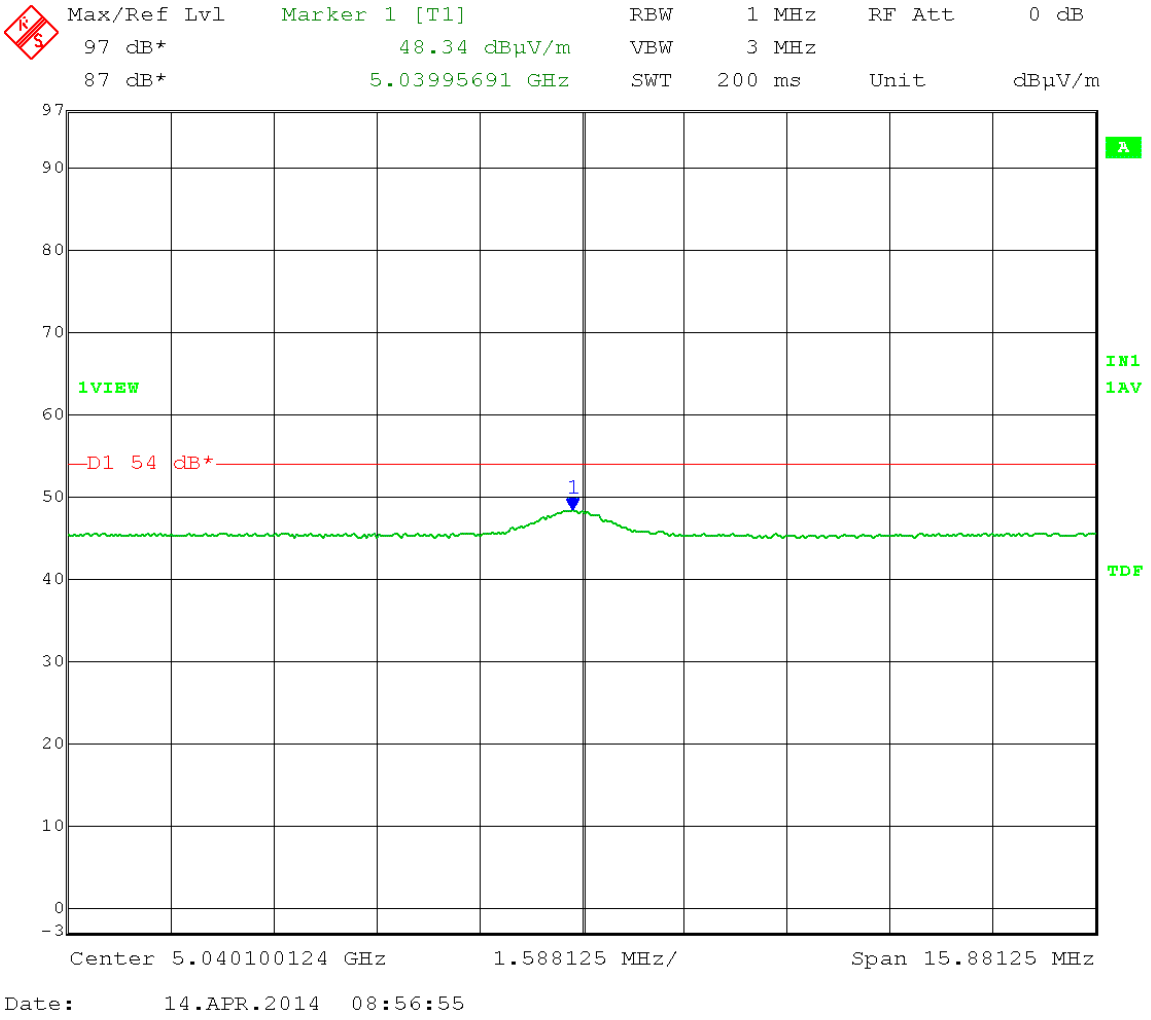
Date: 11.APR.2014 15:45:44

Test Date: 04-11-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



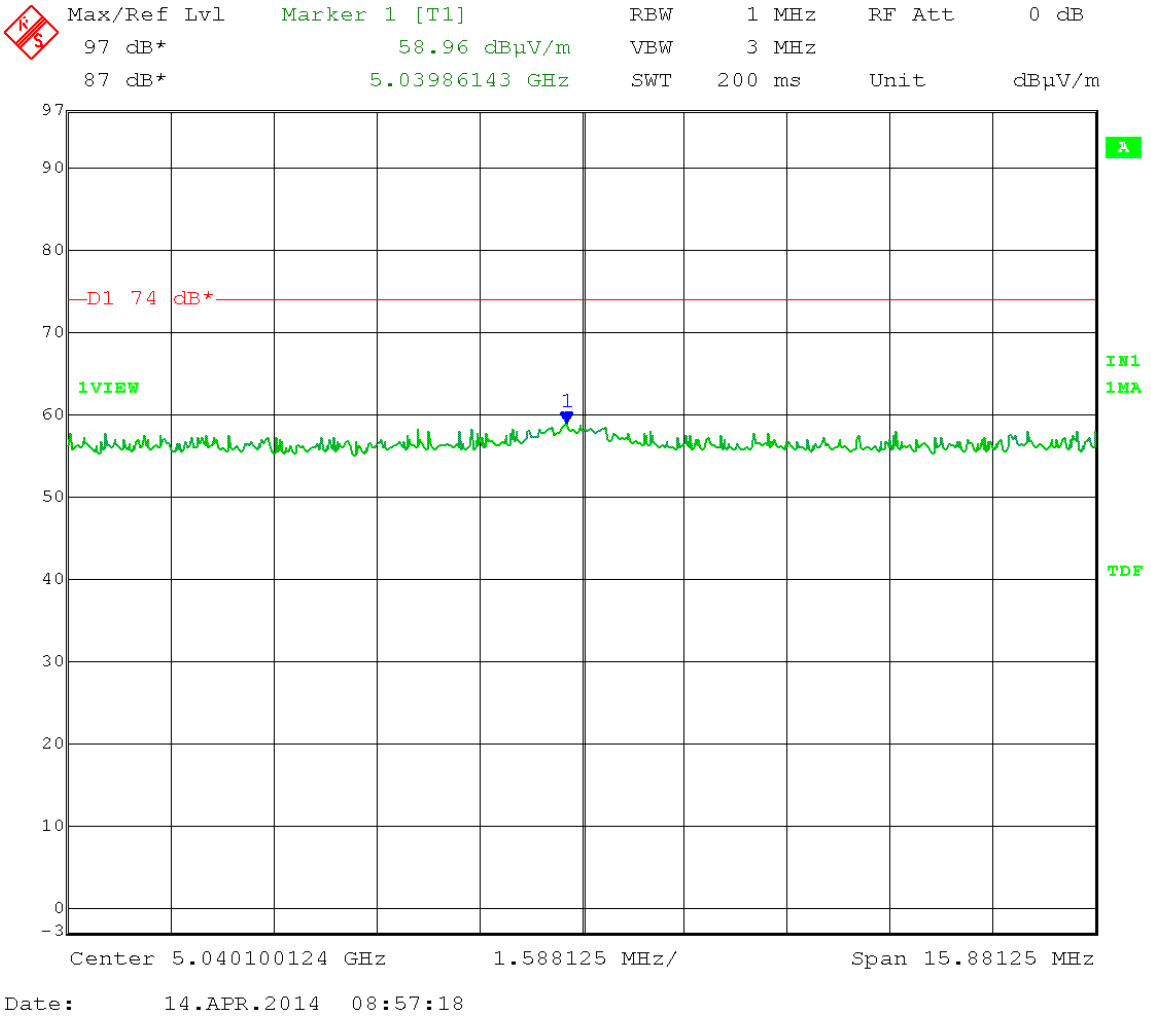
Date: 11.APR.2014 15:46:14

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



Date: 14.APR.2014 08:56:55

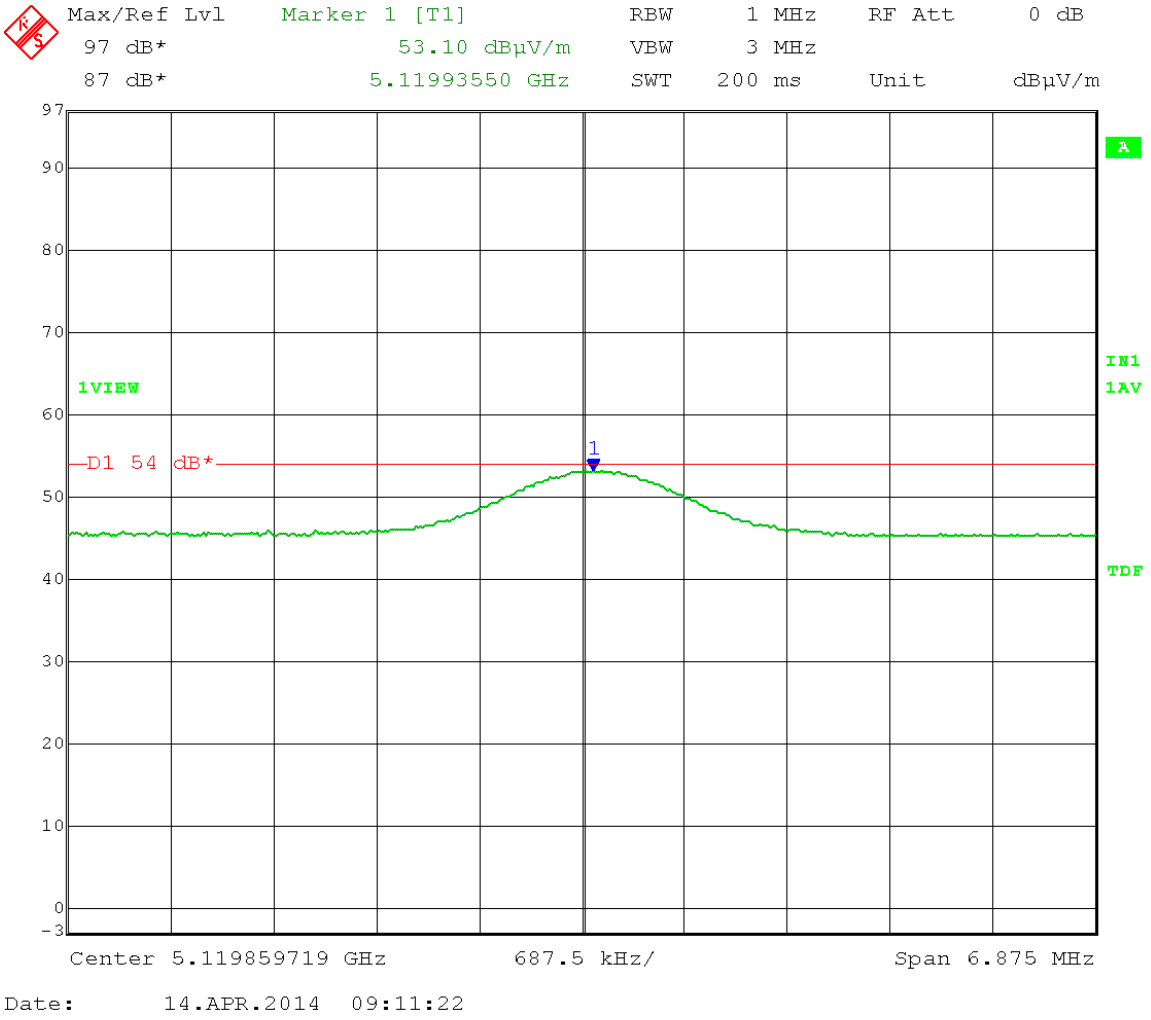
Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



Date: 14.APR.2014 08:57:18

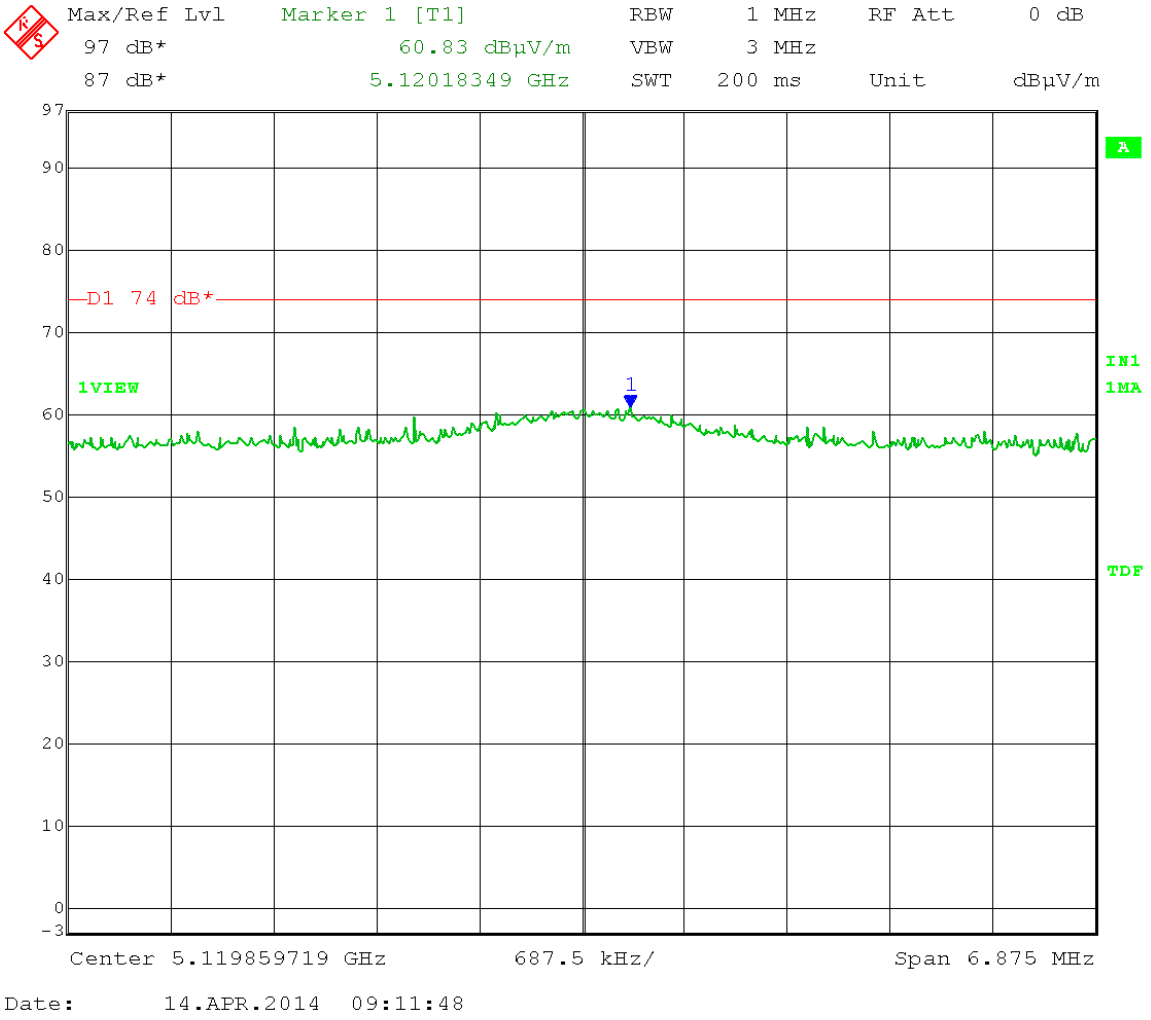
Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



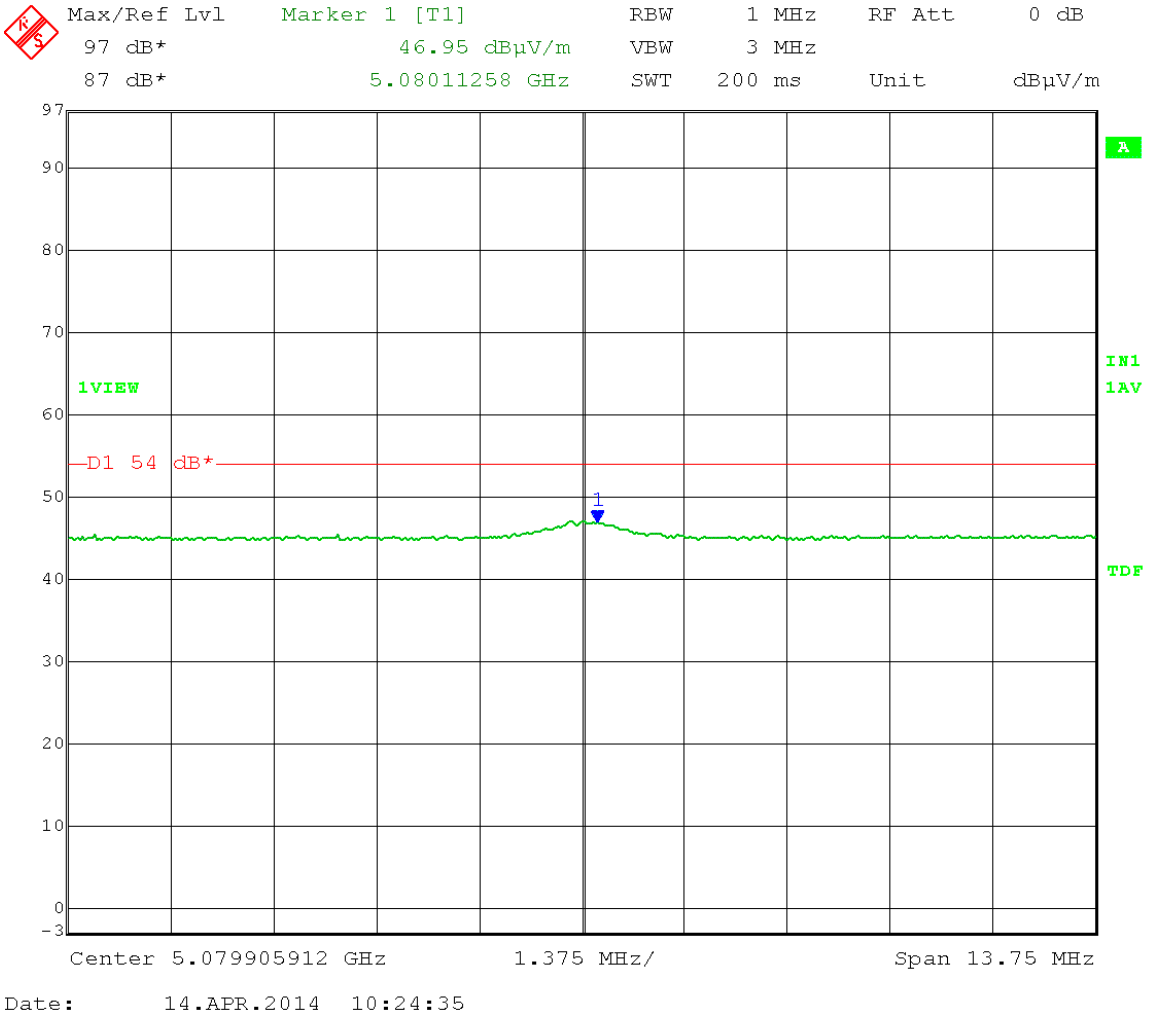
Date: 14.APR.2014 09:11:22

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



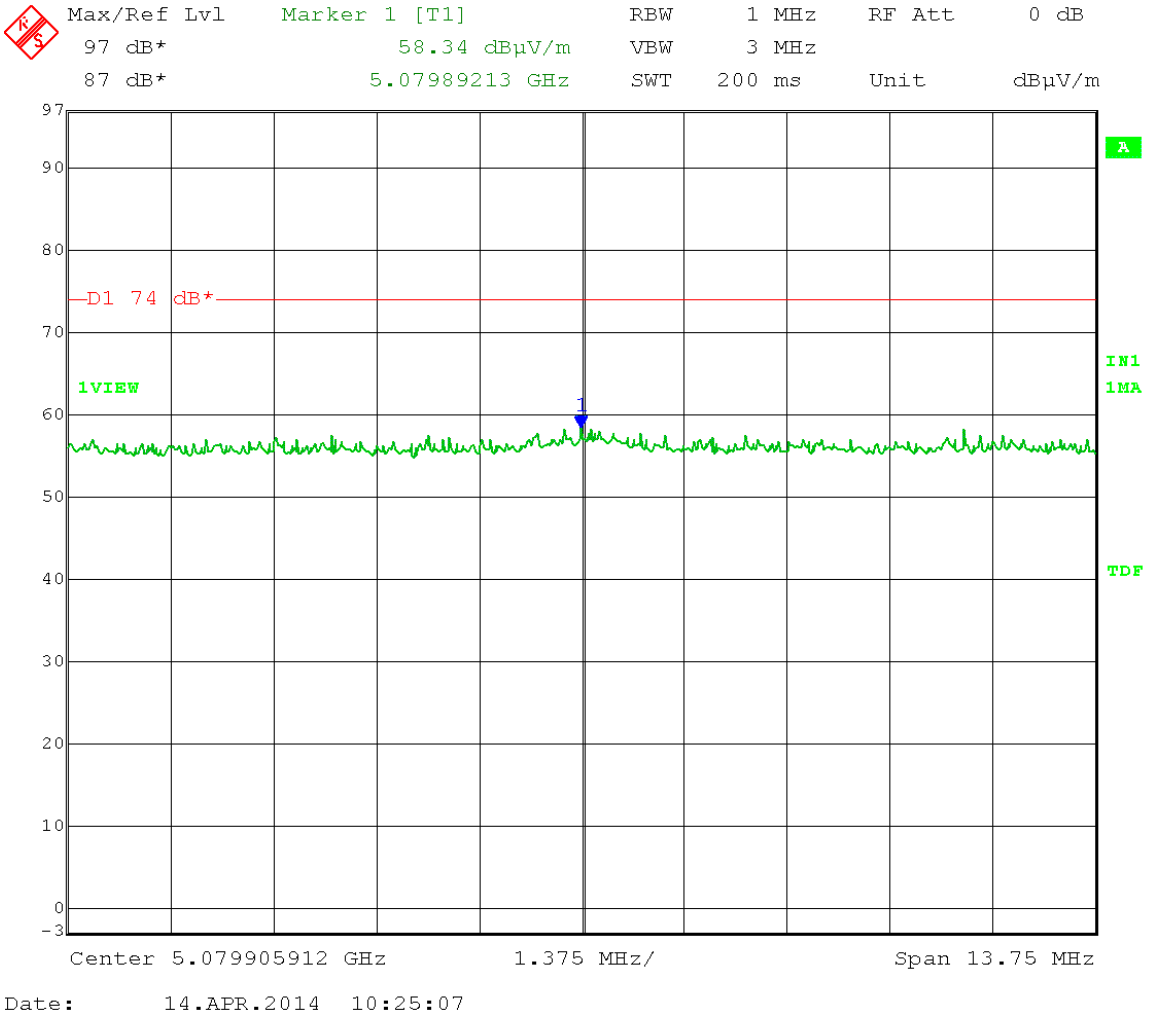
Date: 14.APR.2014 09:11:48

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



Date: 14.APR.2014 10:24:35

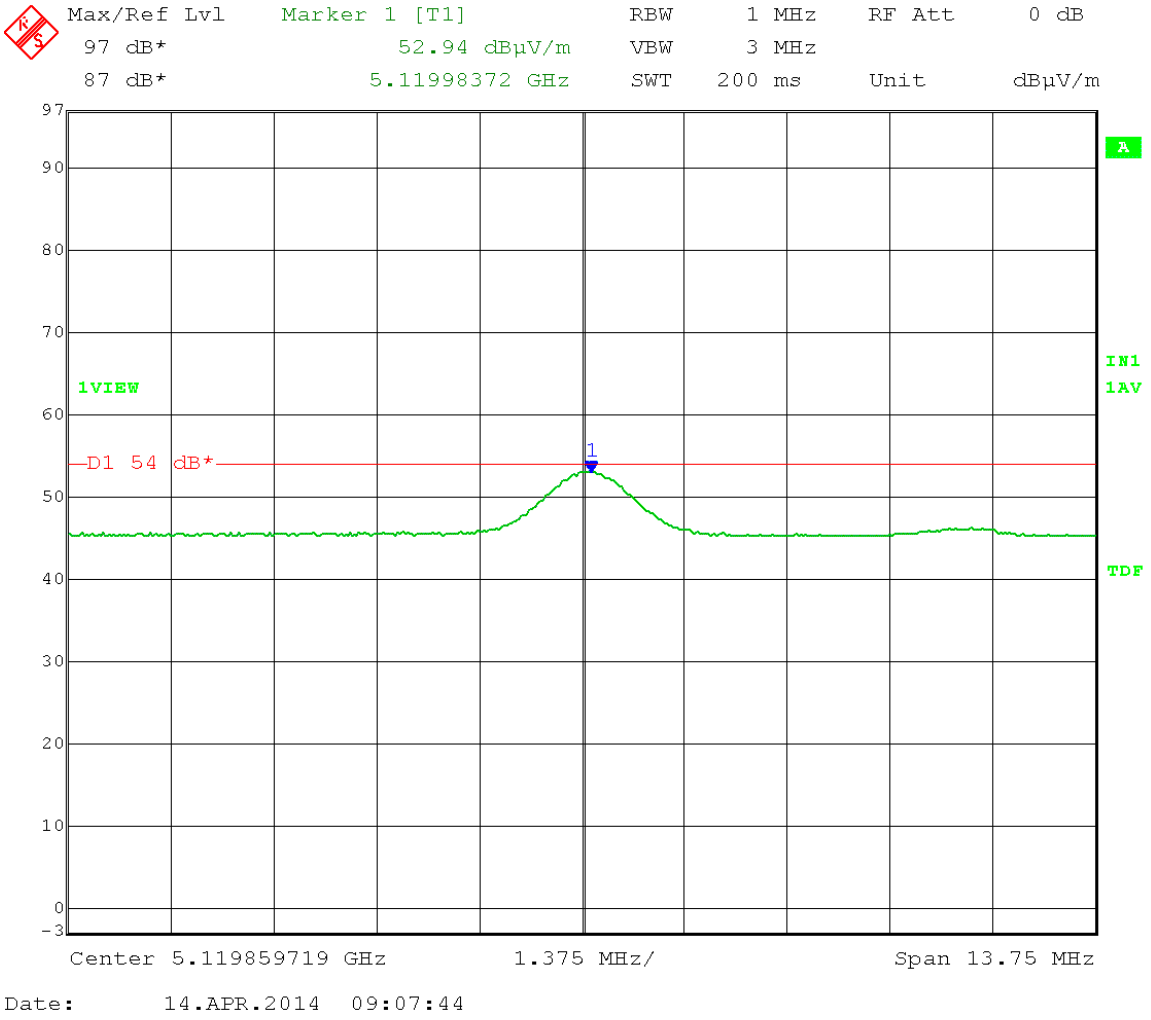
Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



Date: 14.APR.2014 10:25:07

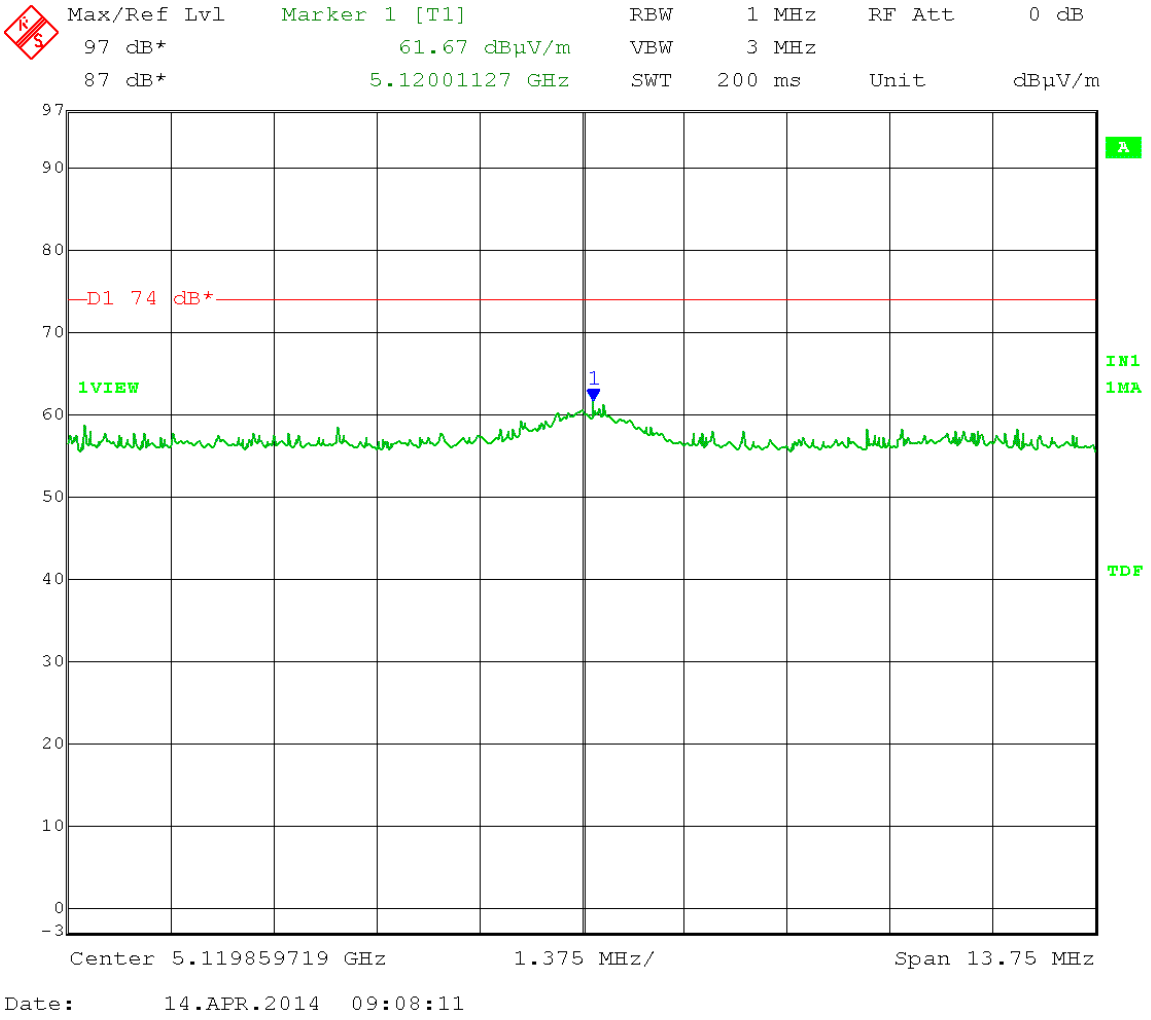
Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 27.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



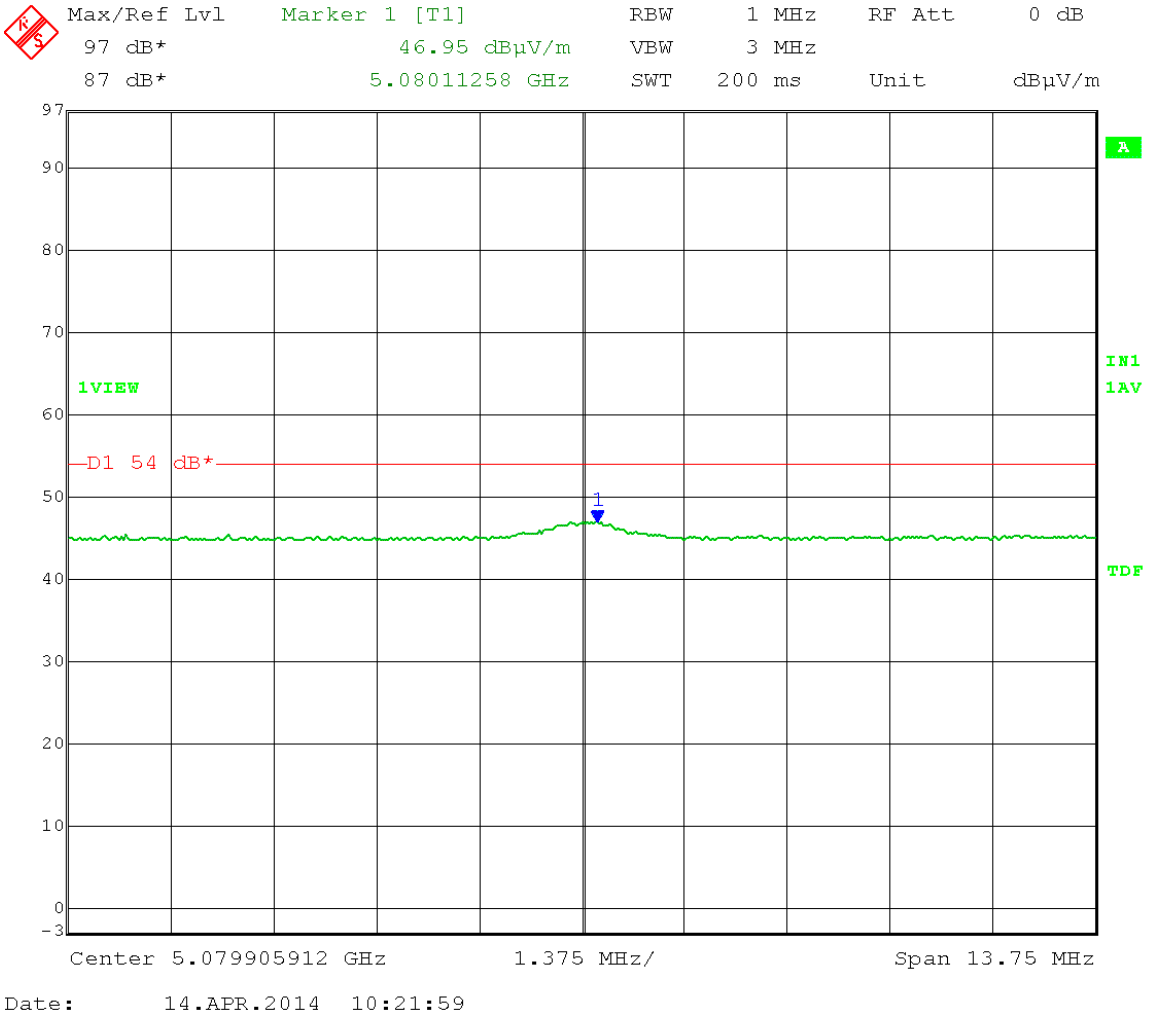
Date: 14.APR.2014 09:07:44

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 27.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



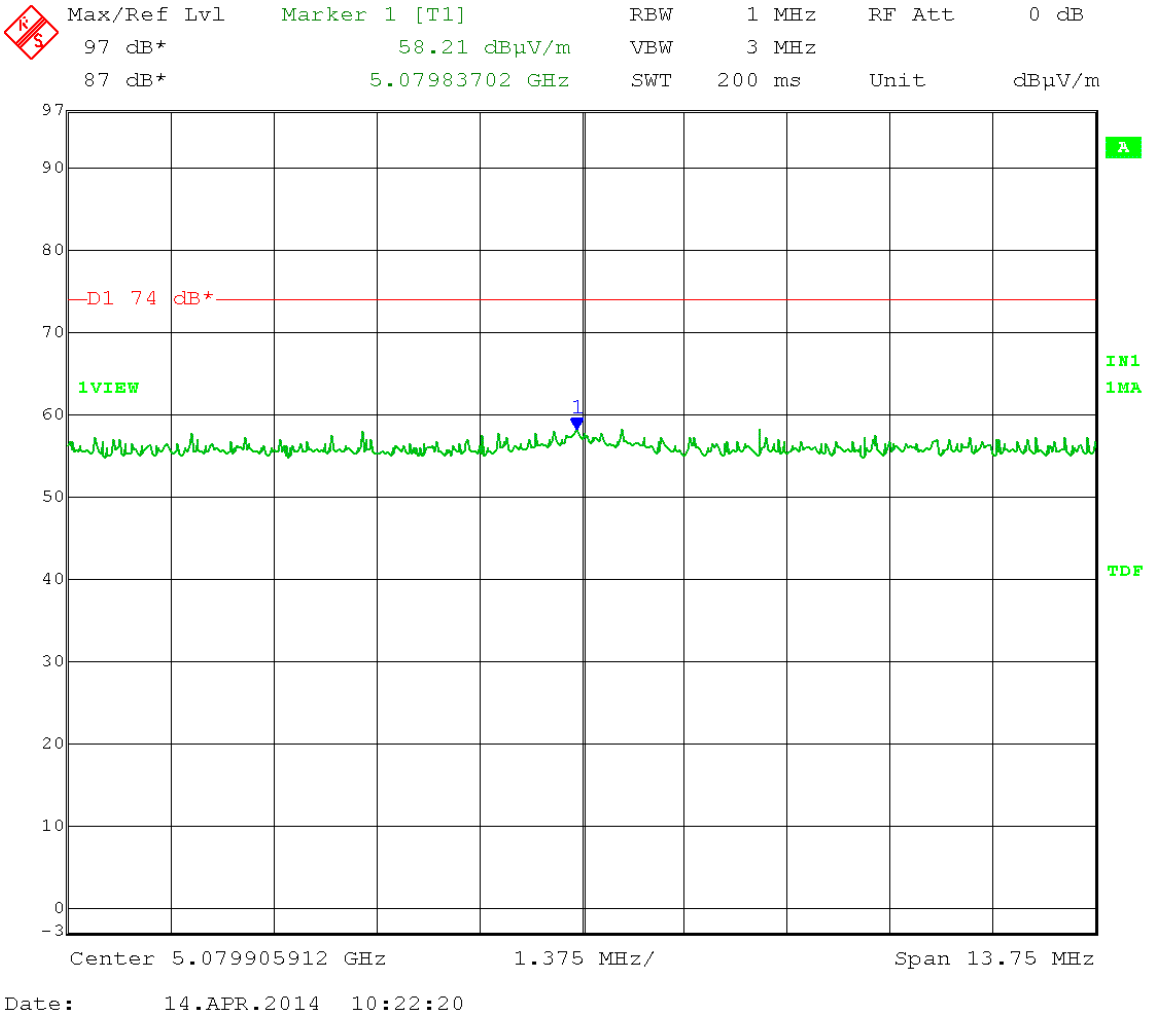
Date: 14.APR.2014 09:08:11

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 27.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



Date: 14.APR.2014 10:21:59

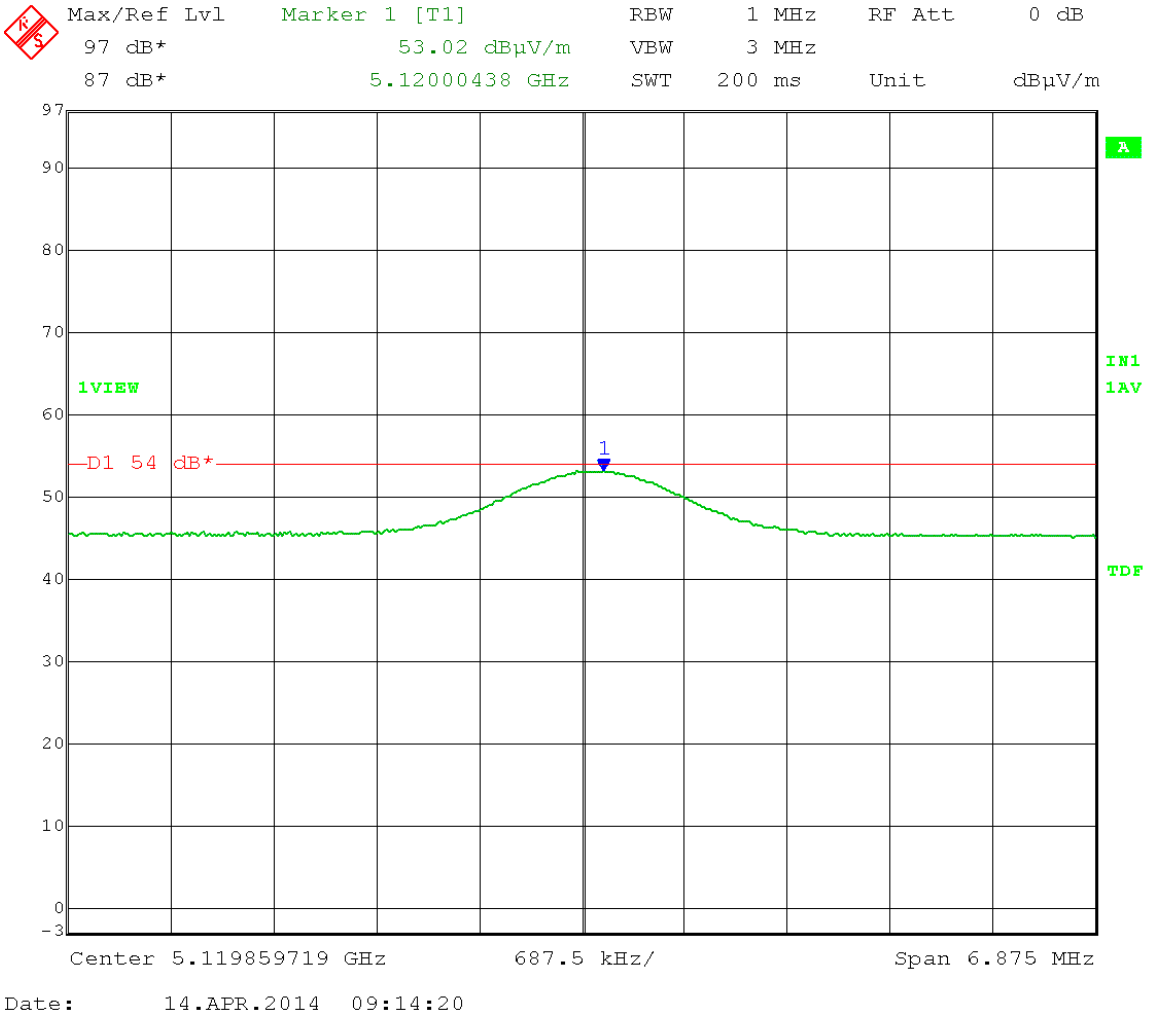
Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 27.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



Date: 14.APR.2014 10:22:20

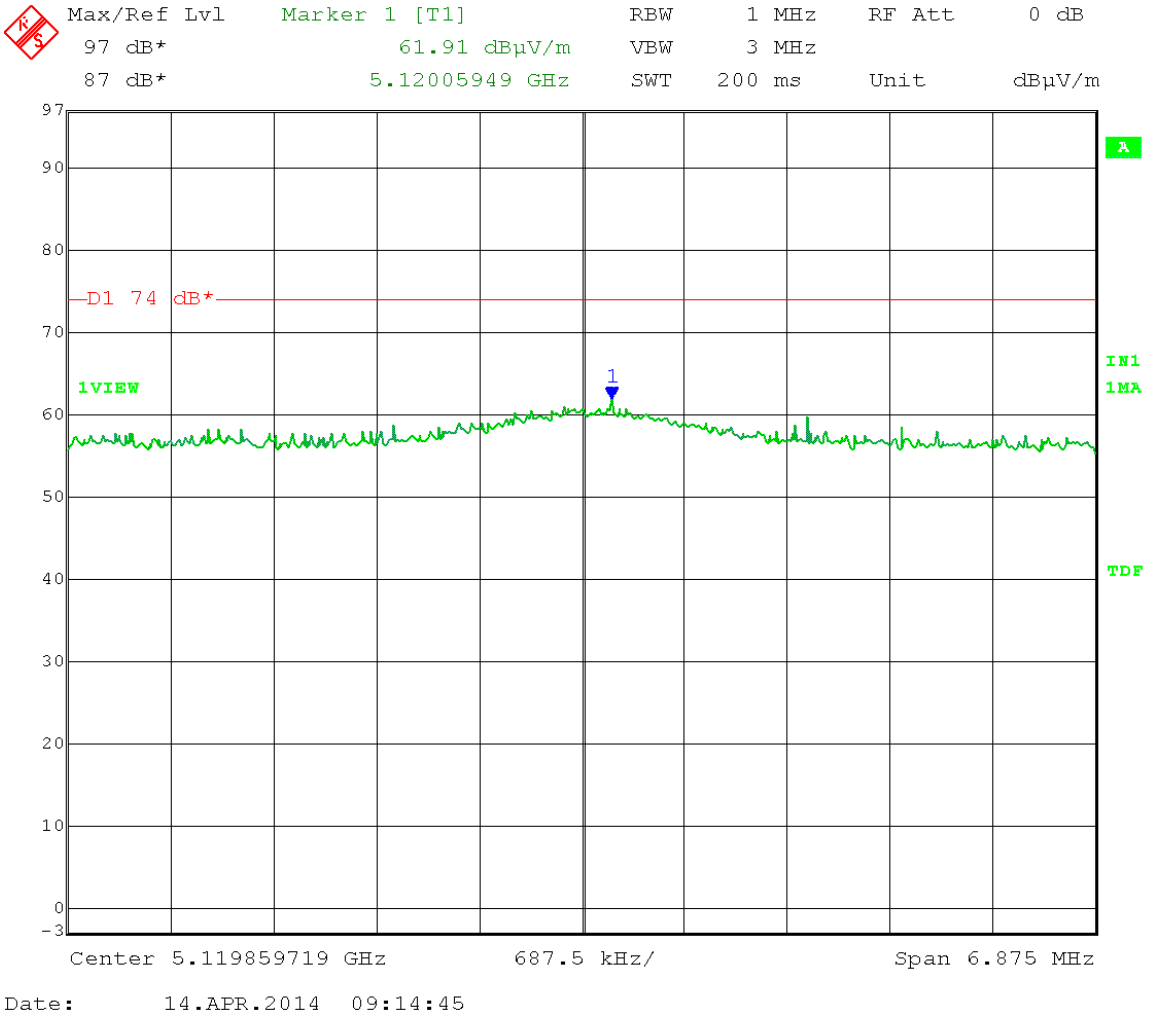
Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters

Horizontal: Average:



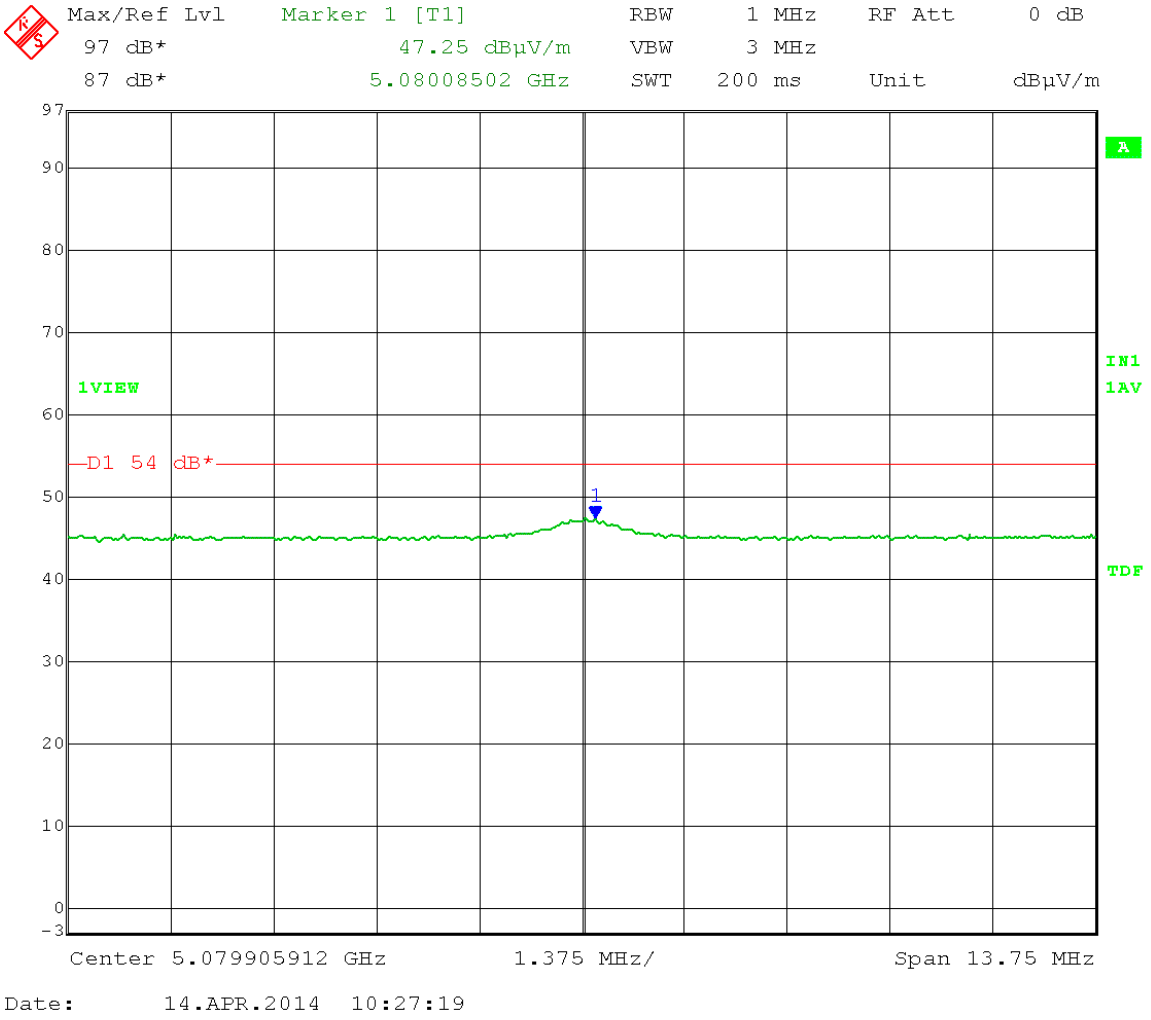
Date: 14.APR.2014 09:14:20

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Horizontal: Peak:



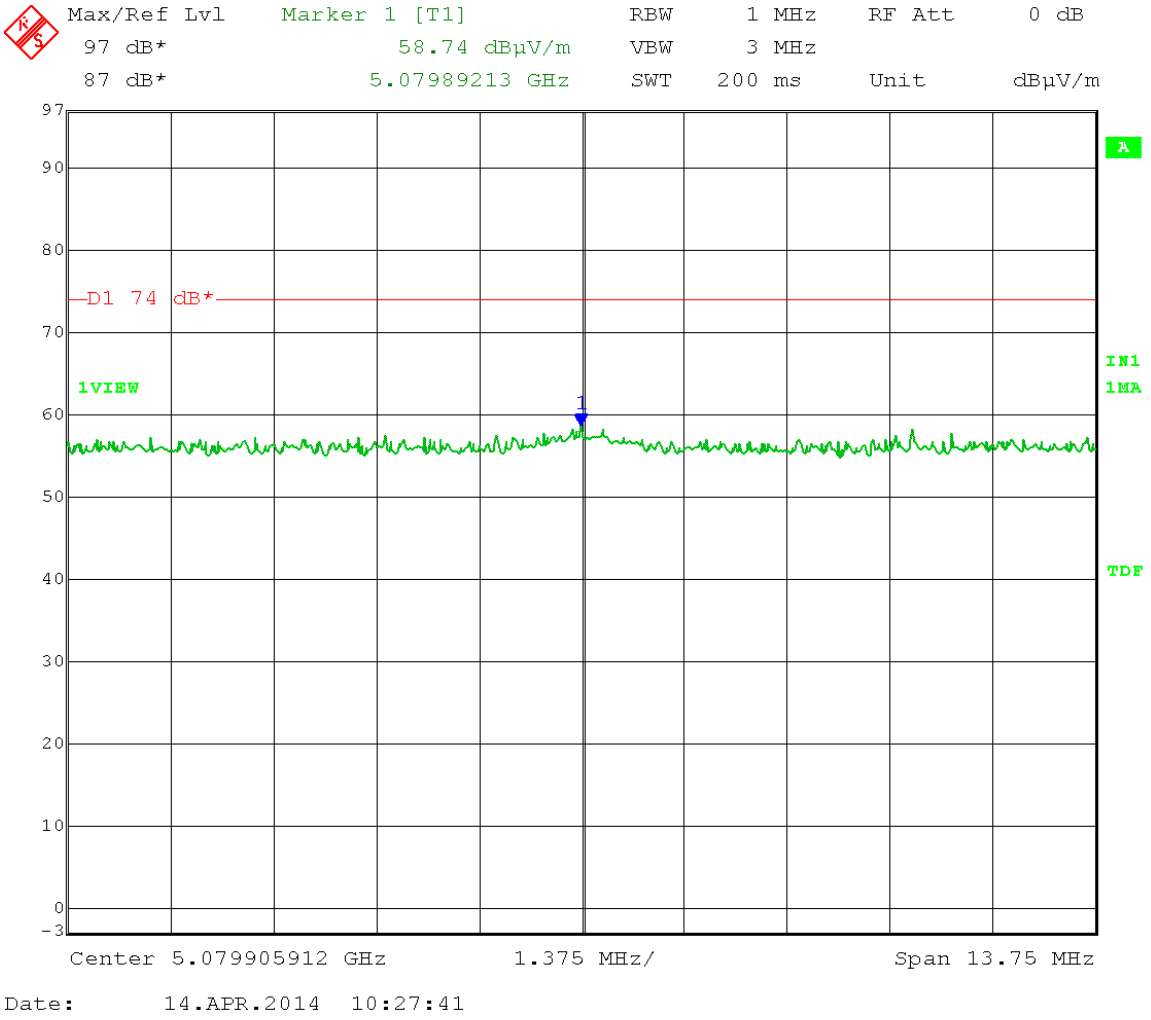
Date: 14.APR.2014 09:14:45

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Vertical: Average:



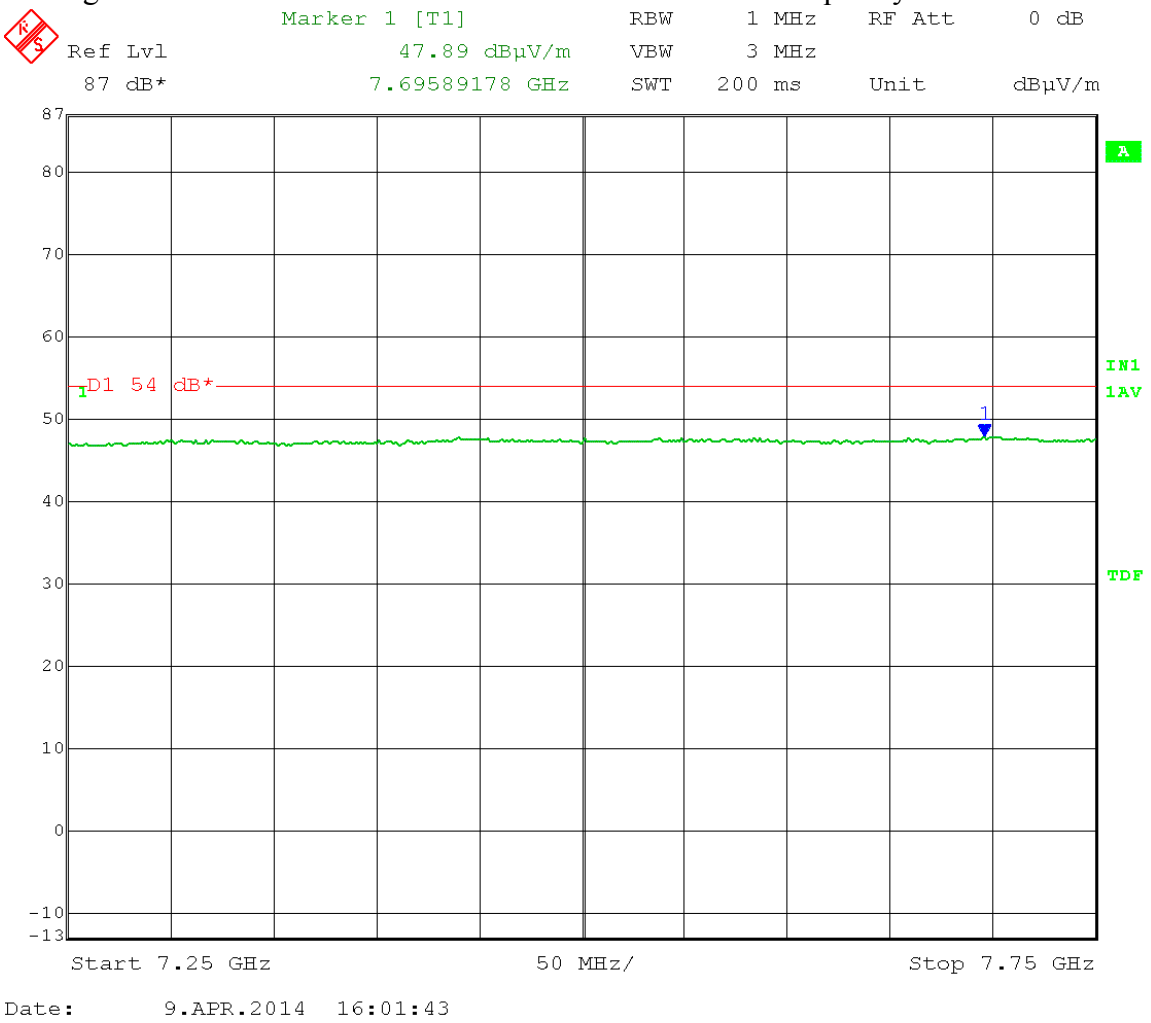
Date: 14.APR.2014 10:27:19

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Vertical: Peak:



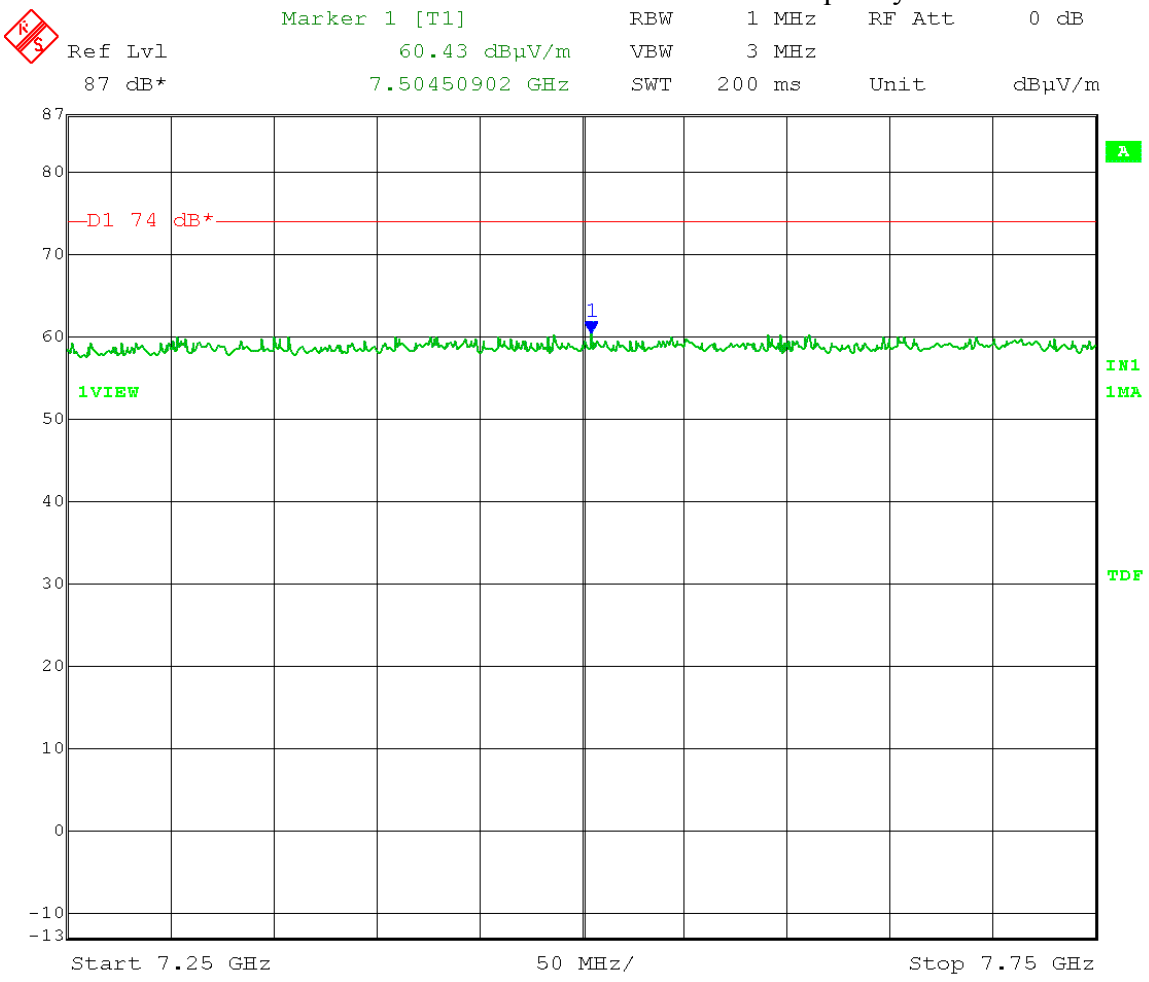
Date: 14.APR.2014 10:27:41

Test Date: 04-09-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low, Mid, and High channels
Output power setting: 8.5 on both chains with 5 dB pad on antenna
Channel bandwidth: 20 MHz and 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical and Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Average: Note: No emissions found in the 7.25 – 7.75 frequency band



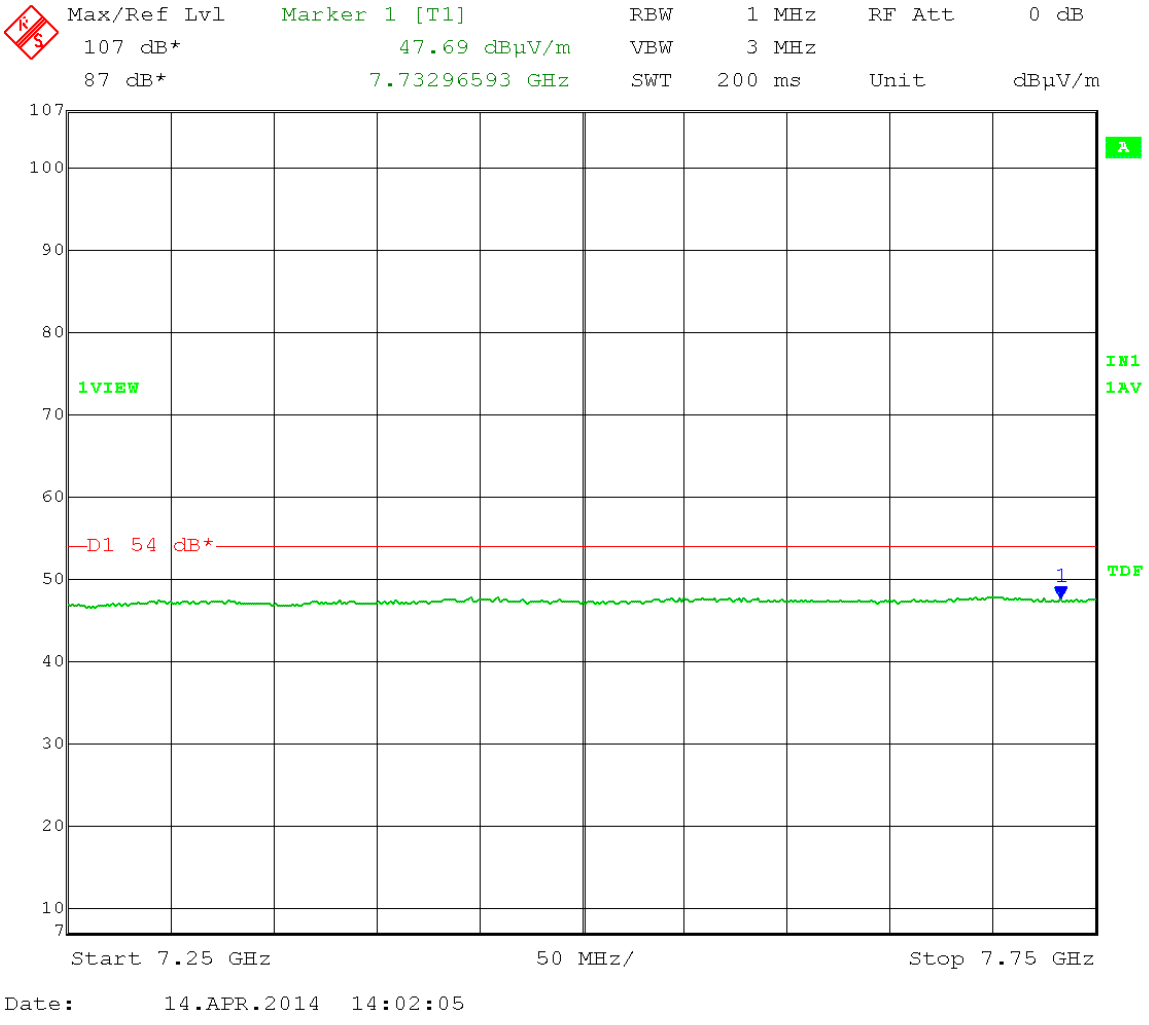
Date: 9.APR.2014 16:01:43

Test Date: 04-09-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low, Mid, and High channels
Output power setting: 8.5 on both chains with 5 dB pad on antenna
Channel bandwidth: 20 MHz and 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical and Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Peak: Note: No emissions found in the 7.25 – 7.75 frequency band



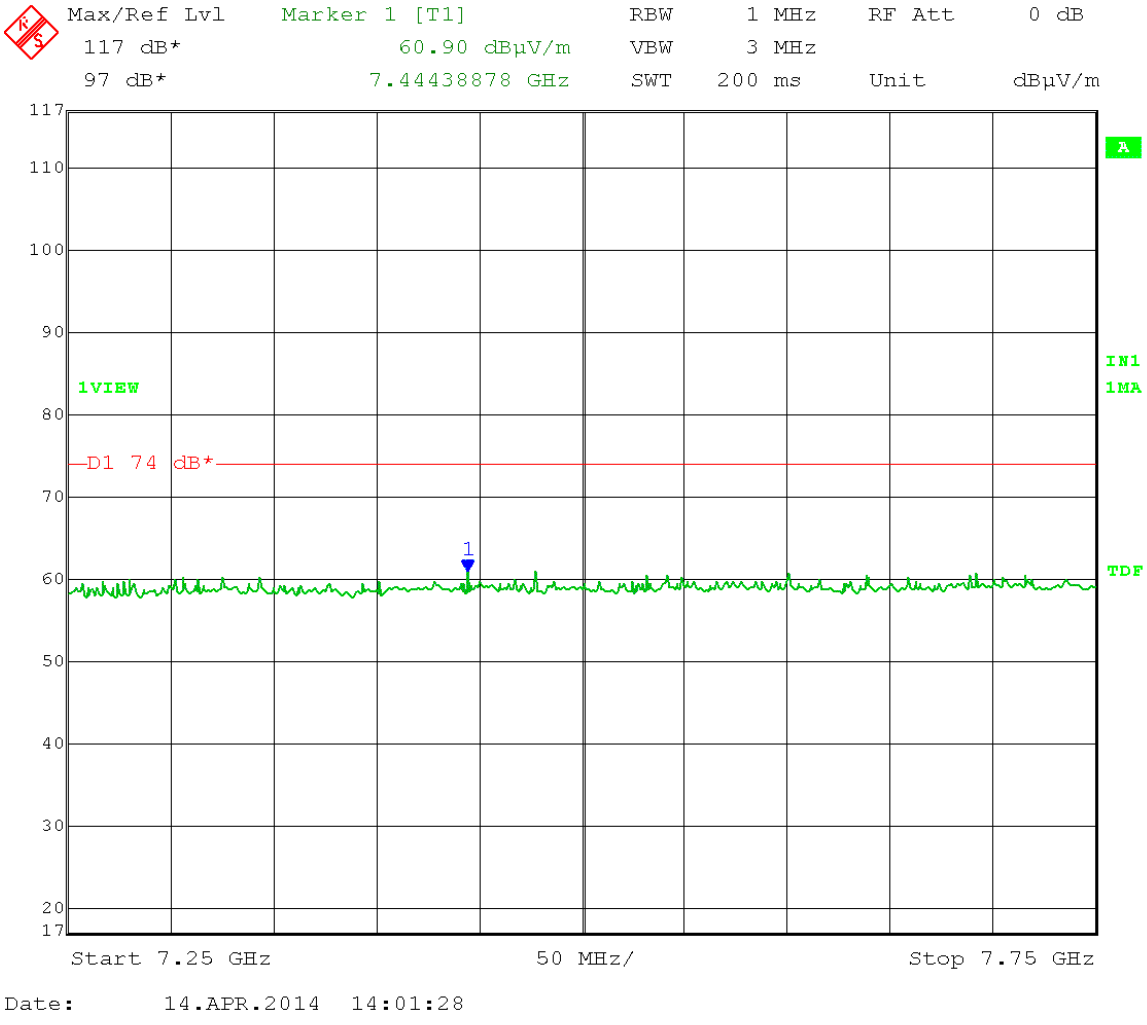
Date: 9.APR.2014 16:02:26

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low, Mid, and High channels
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0 with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz and 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical and Horizontal
Restricted Band Limit: 54 dBµV/m AVERAGE at 3 meters
Average: Note: No emissions found in the 7.25 – 7.75 frequency band



Date: 14.APR.2014 14:02:05

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in the restricted bands - Radiated
(FCC 15.407(b)(7)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low, Mid, and High channels
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0 with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz and 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical and Horizontal
Restricted Band Limit: 74 dBµV/m PEAK at 3 meters
Peak: Note: No emissions found in the 7.25 – 7.75 frequency band

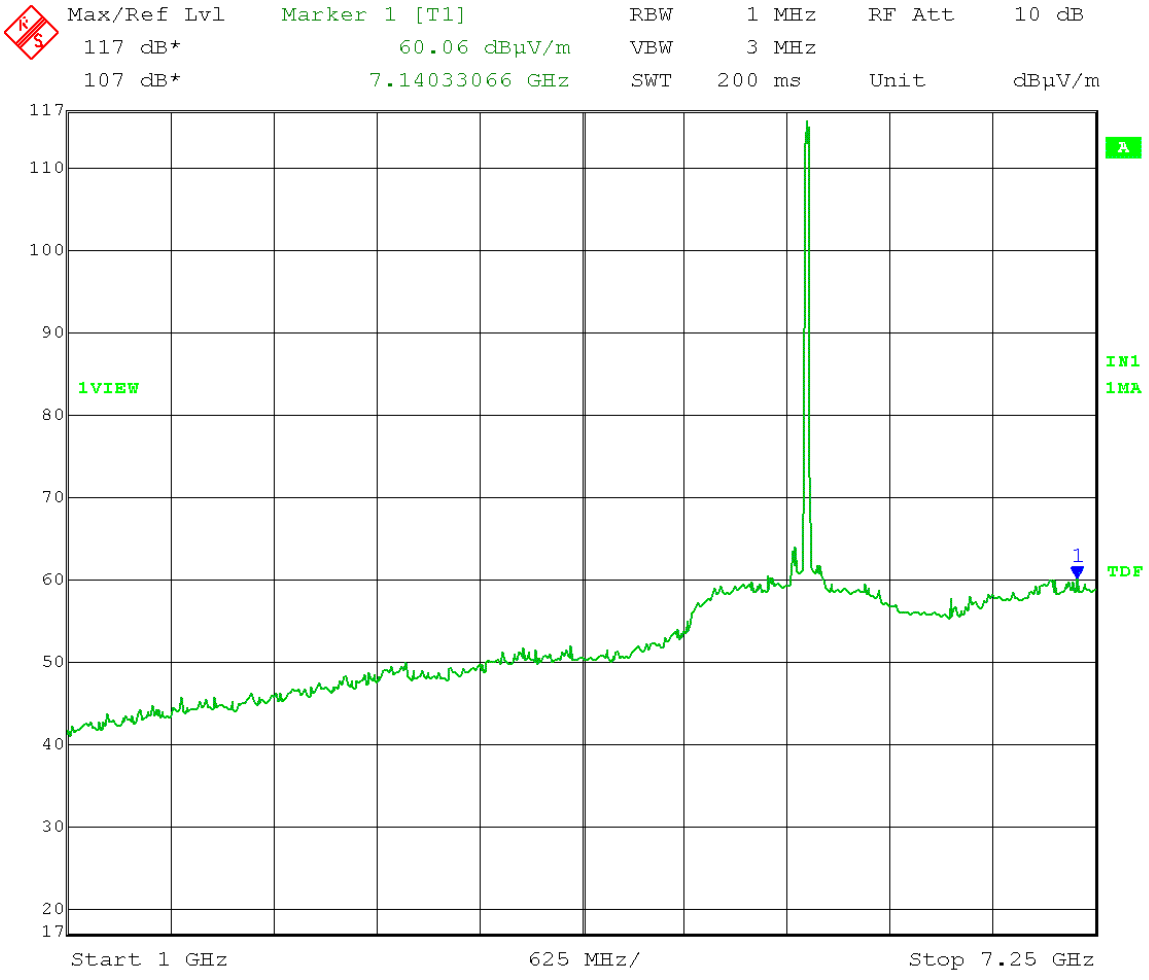


Date: 14.APR.2014 14:01:28

Test Date: 04-03-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated (FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 2.0 on both chains
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 60.06 dBµV/m – 95.2 = -35.14 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

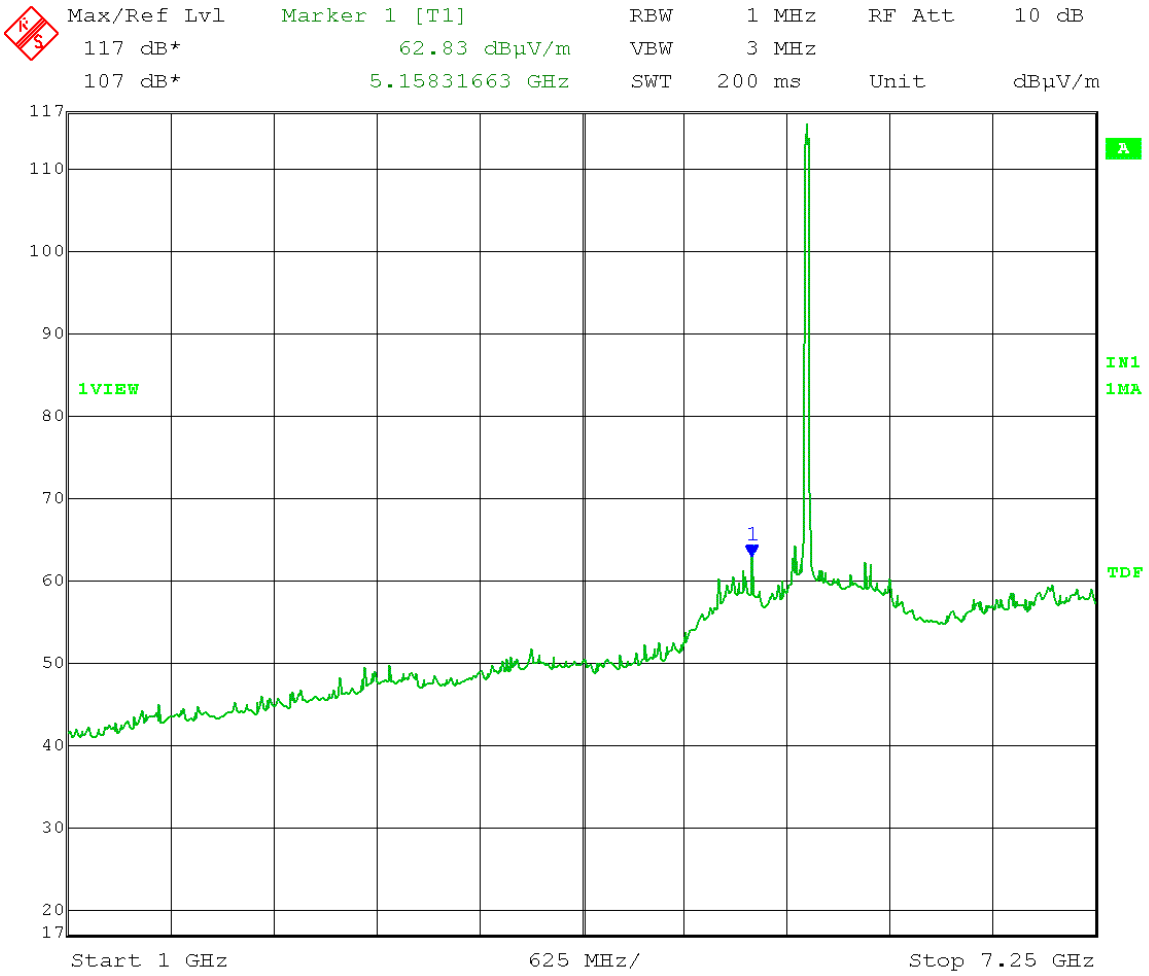


Date: 3.APR.2014 11:27:25

Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 2.0 on both chains
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 62.83 dBµV/m – 95.2 = -32.37 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

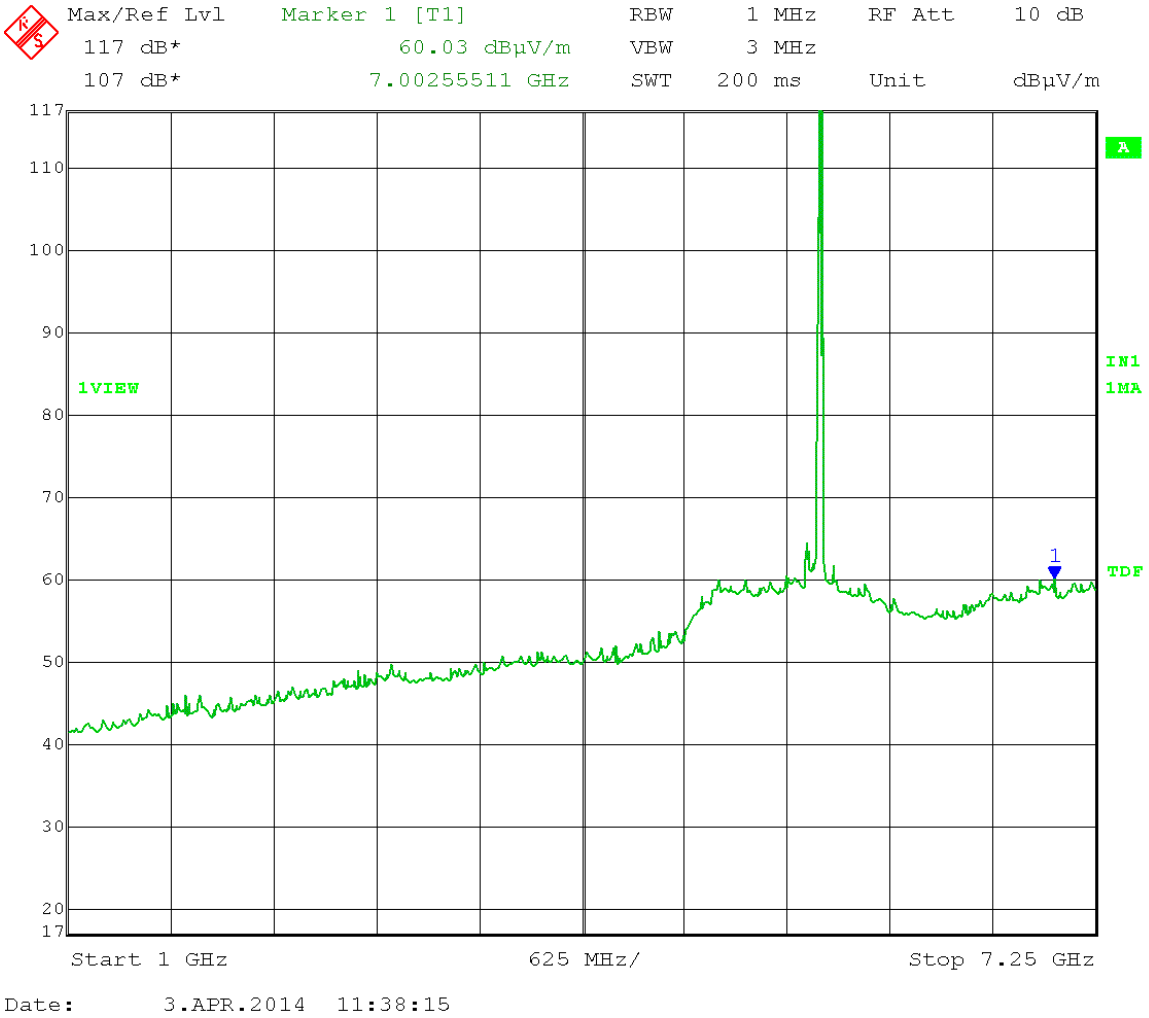


Date: 3.APR.2014 12:19:52

Test Date: 04-03-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 3.0 on both chains
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 60.03 dBµV/m – 95.2 = -35.17 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

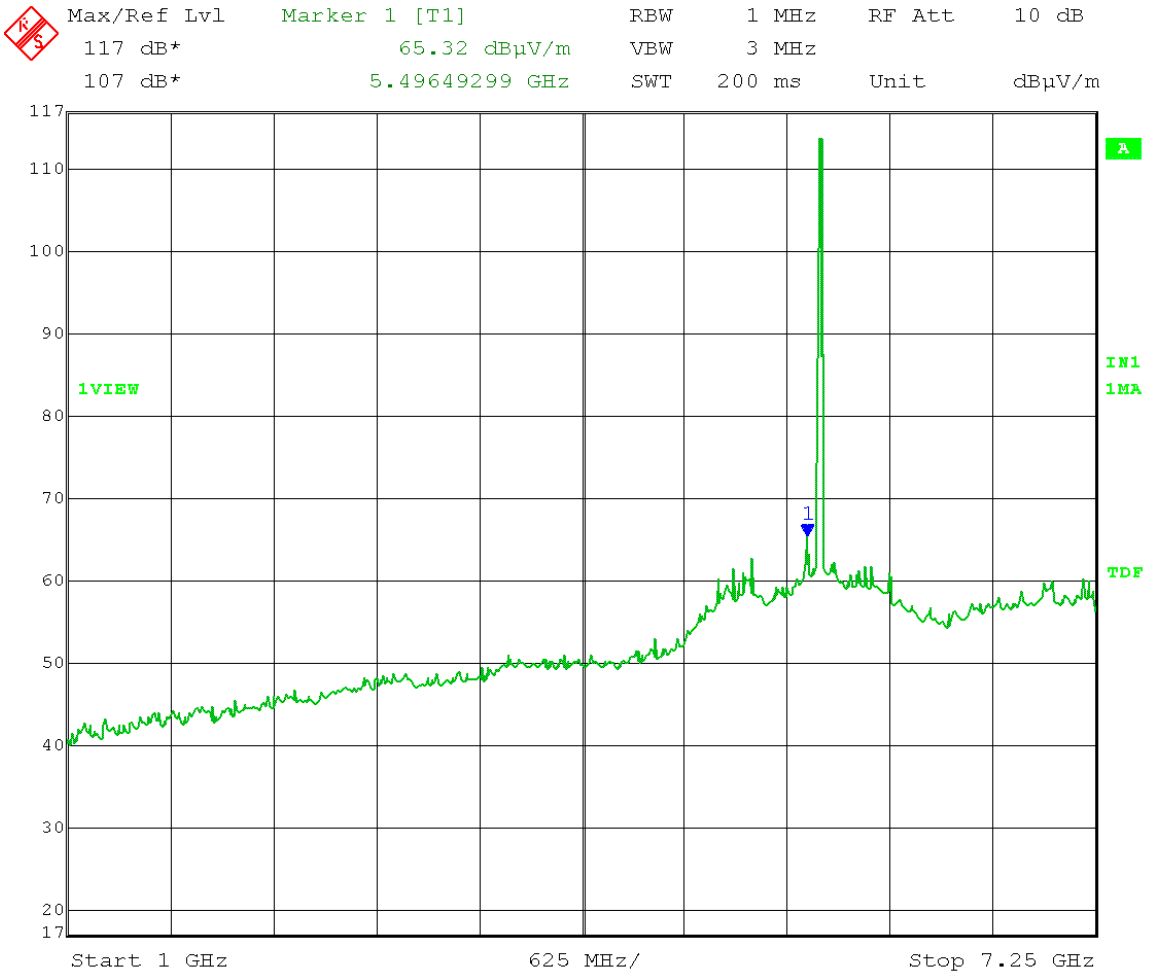


Date: 3.APR.2014 11:38:15

Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 3.0 on both chains
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 65.32 dBµV/m – 95.2 = -29.88 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

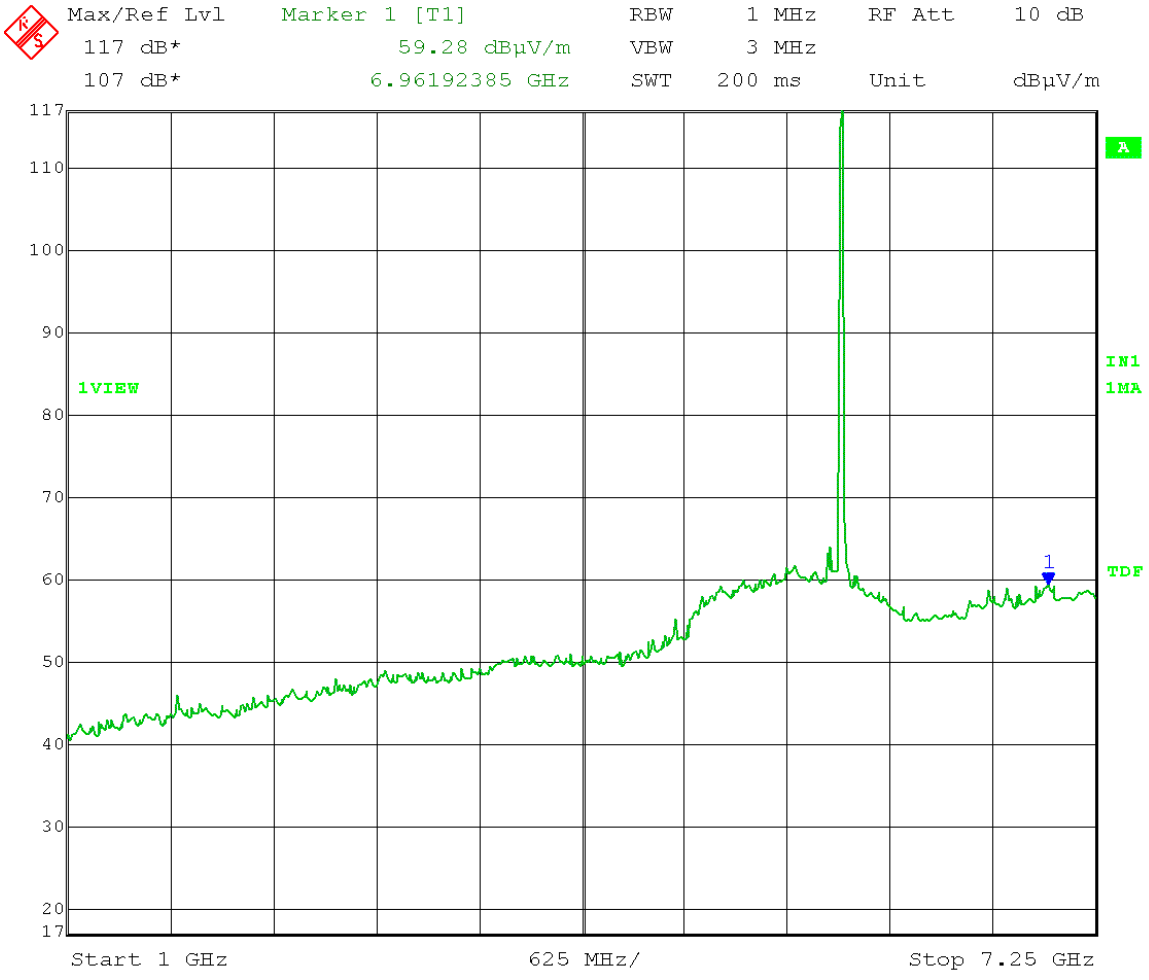


Date: 3.APR.2014 12:16:44

Test Date: 04-03-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated (FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 3.5 on both chains
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 59.28 dBµV/m – 95.2 = -35.92 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

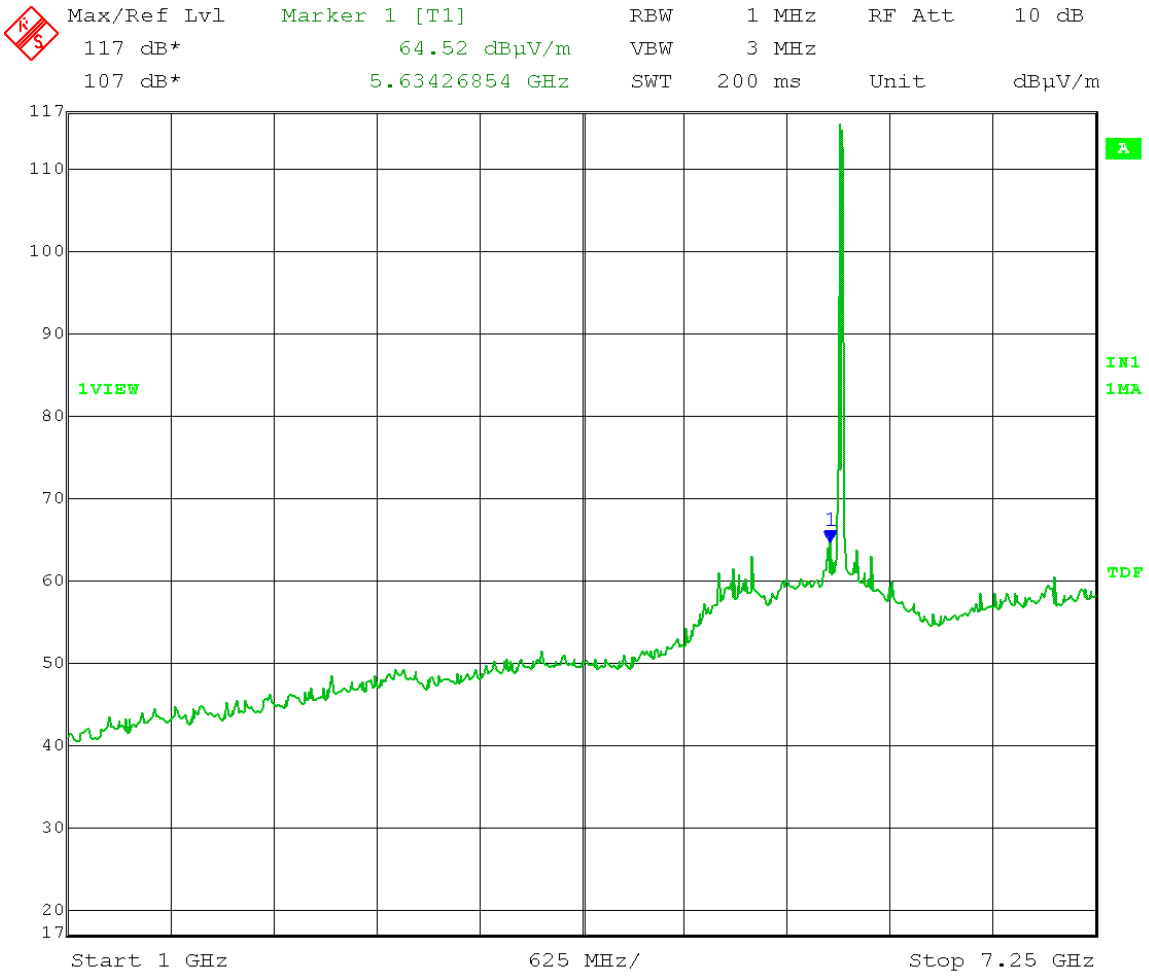


Date: 3.APR.2014 11:47:01

Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 3.5 on both chains
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 64.52 dBµV/m – 95.2 = -30.68 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

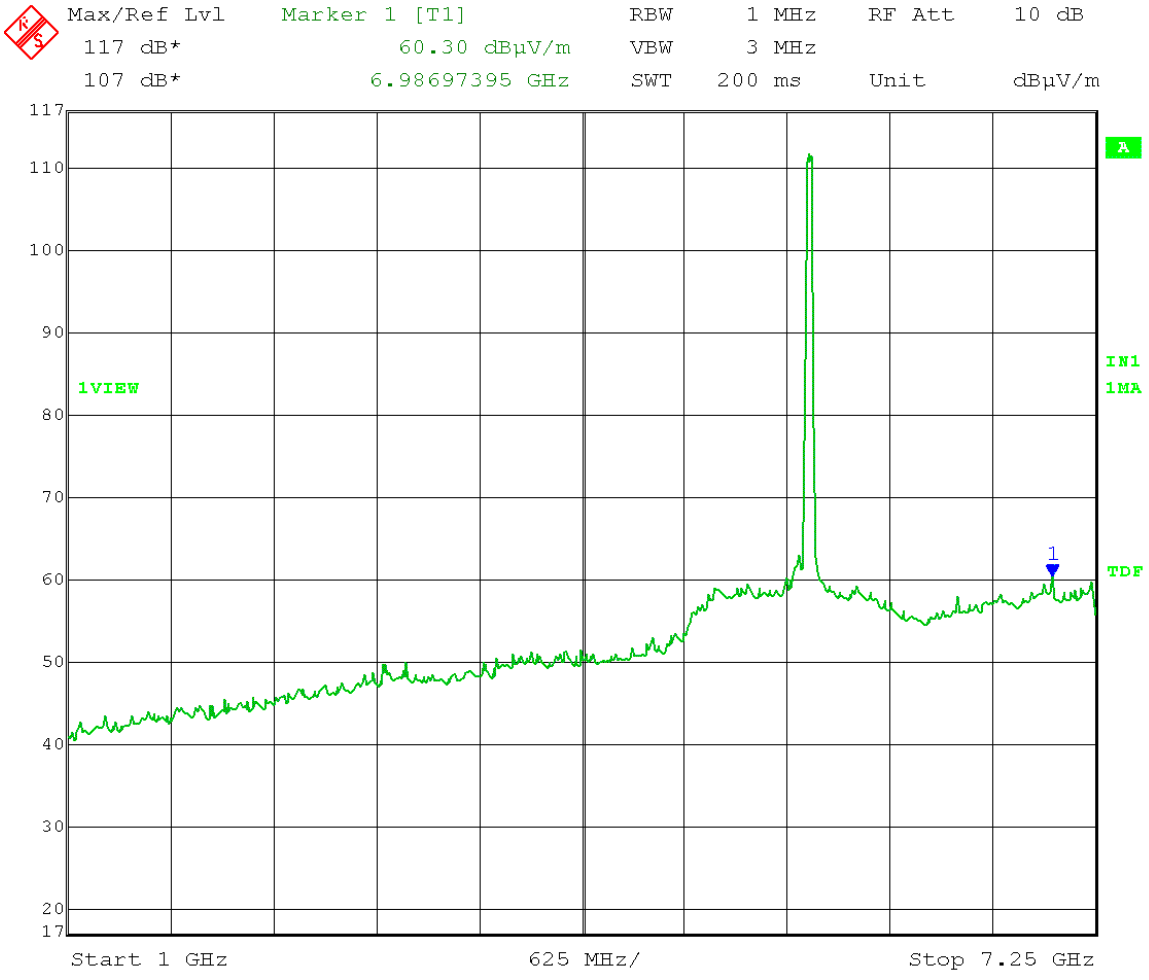


Date: 3.APR.2014 12:22:52

Test Date: 04-03-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 2.0 on both chains
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 60.30 dBµV/m – 95.2 = -34.90 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

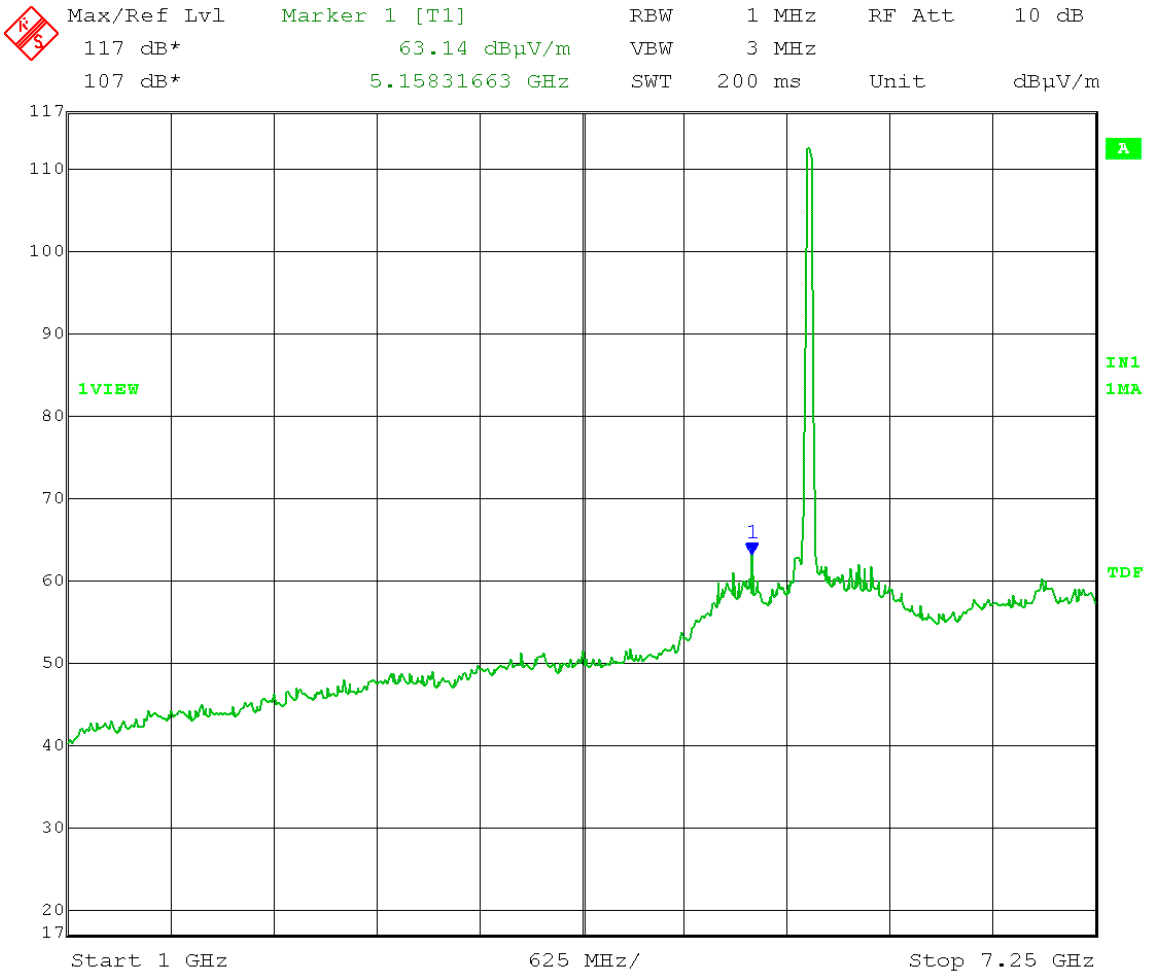


Date: 3.APR.2014 12:01:12

Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 2.0 on both chains
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 63.14 dBµV/m – 95.2 = -32.06 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

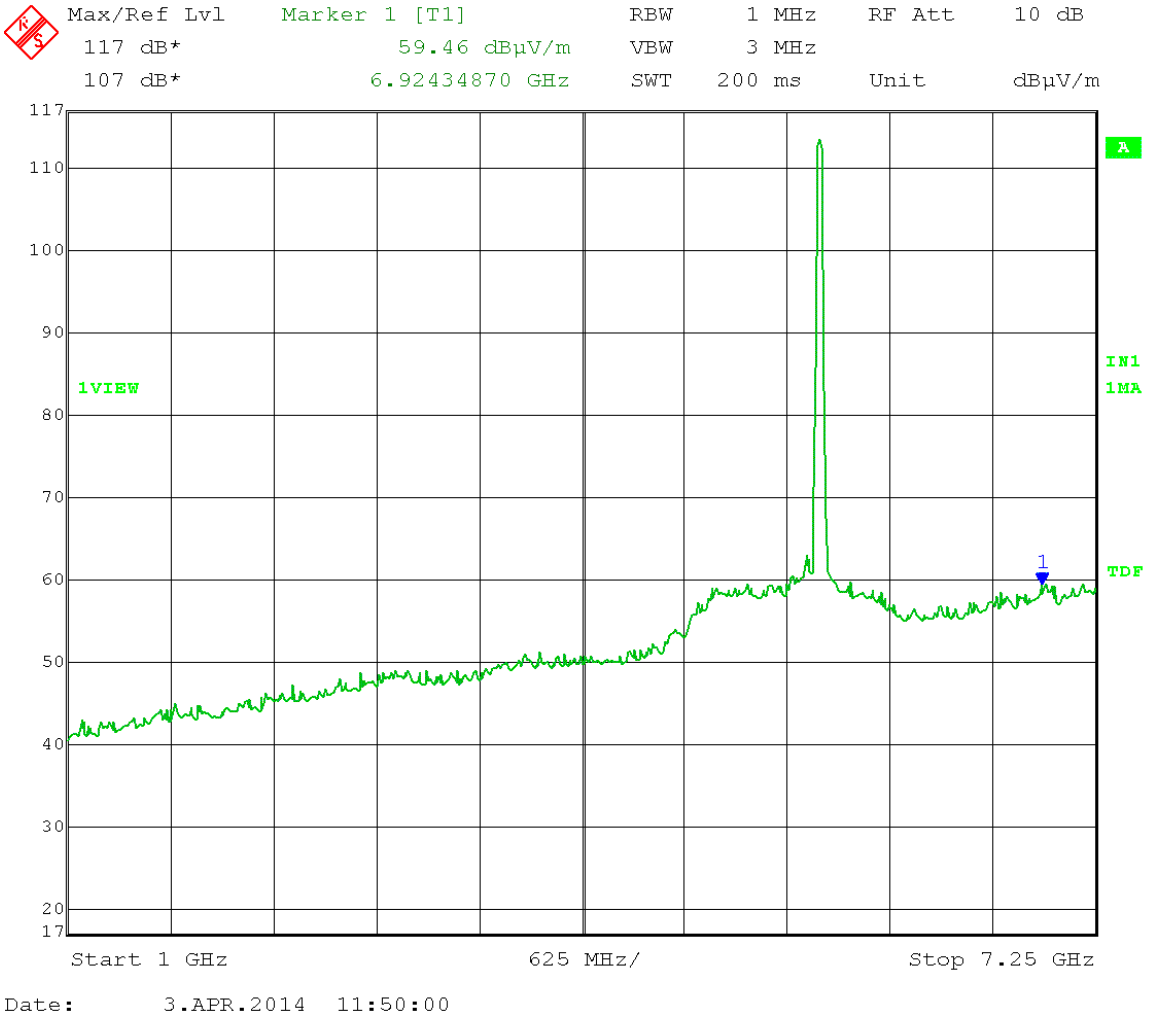


Date: 3.APR.2014 12:14:29

Test Date: 04-03-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated (FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 3.0 on both chains
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 59.46 dBµV/m – 95.2 = -35.74 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

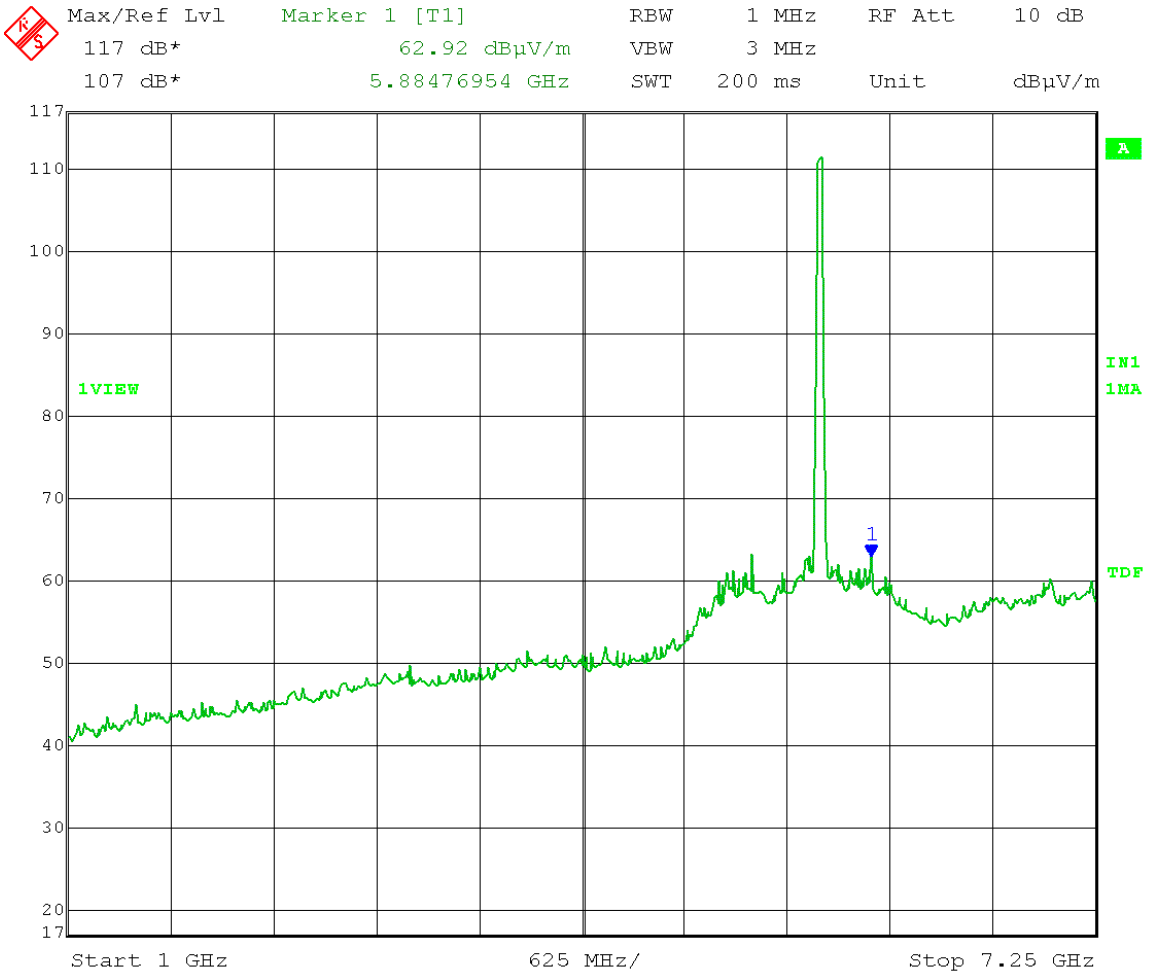


Date: 3.APR.2014 11:50:00

Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated (FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 3.0 on both chains
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 62.92 dBµV/m – 95.2 = -32.28 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

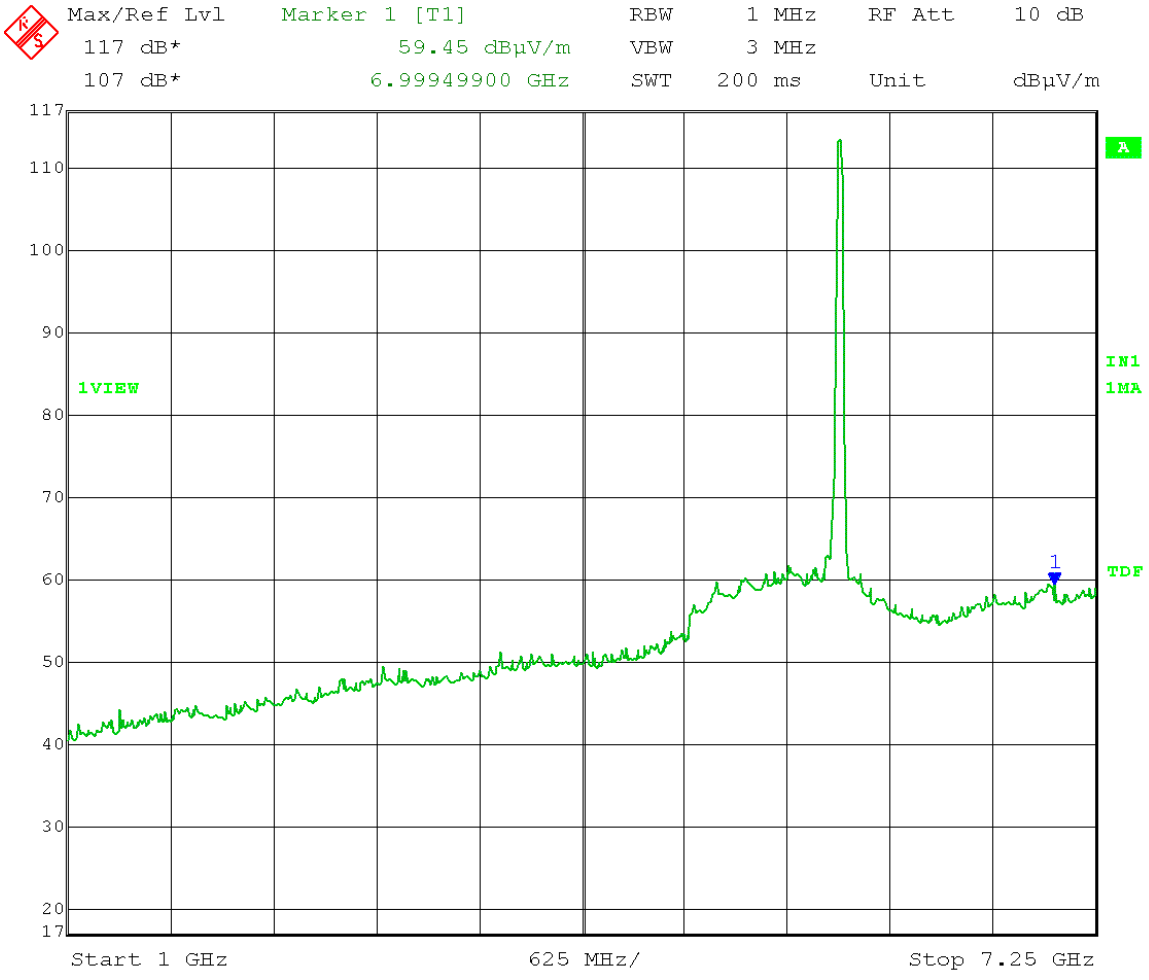


Date: 3.APR.2014 12:10:32

Test Date: 04-03-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated (FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 3.0 on both chains
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 59.46 dBµV/m – 95.2 = -35.74 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

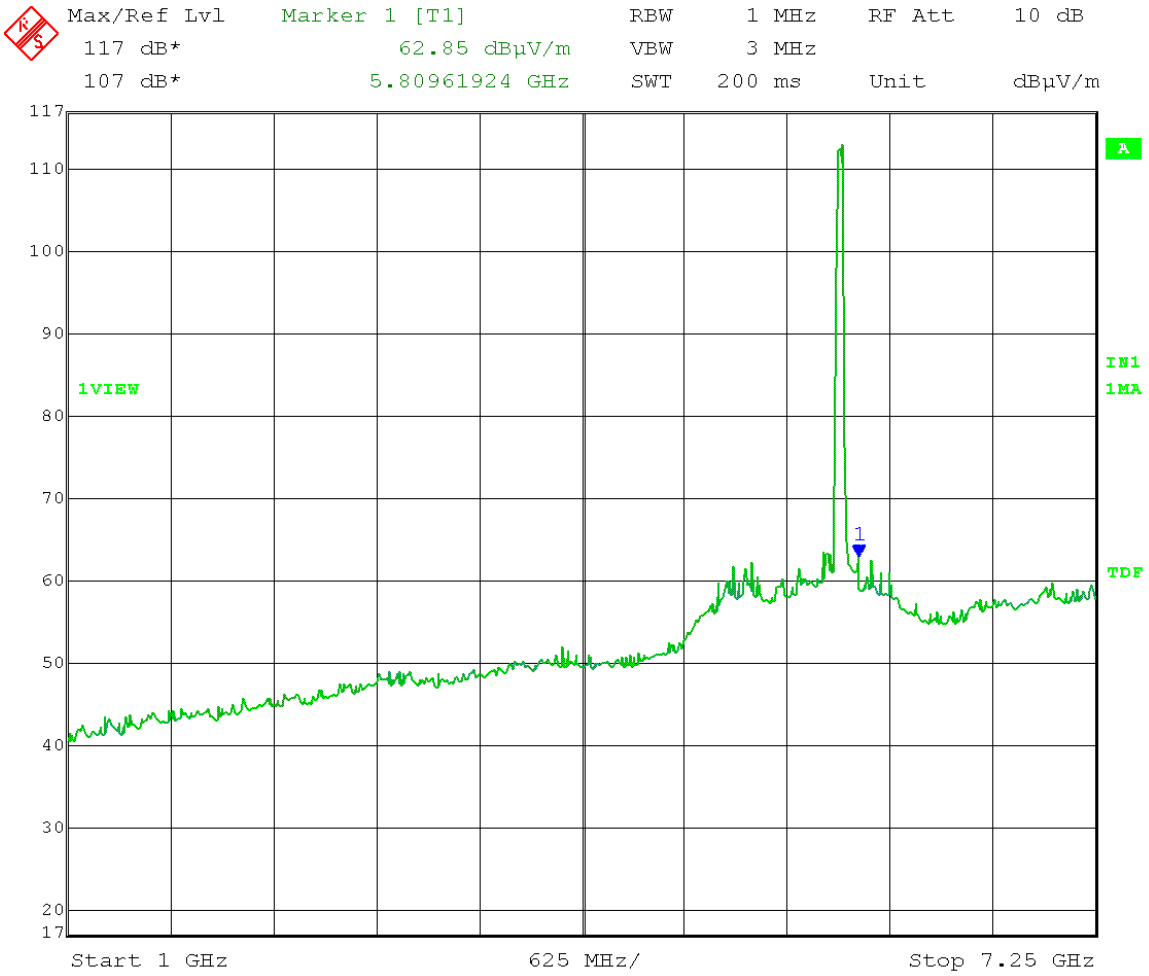


Date: 3.APR.2014 12:04:59

Test Date: 04-02-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated (FCC 15.407(b)(3)) - With 23 dBi Panel antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 3.0 on both chains
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 62.85 dBµV/m – 95.2 = -32.35 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

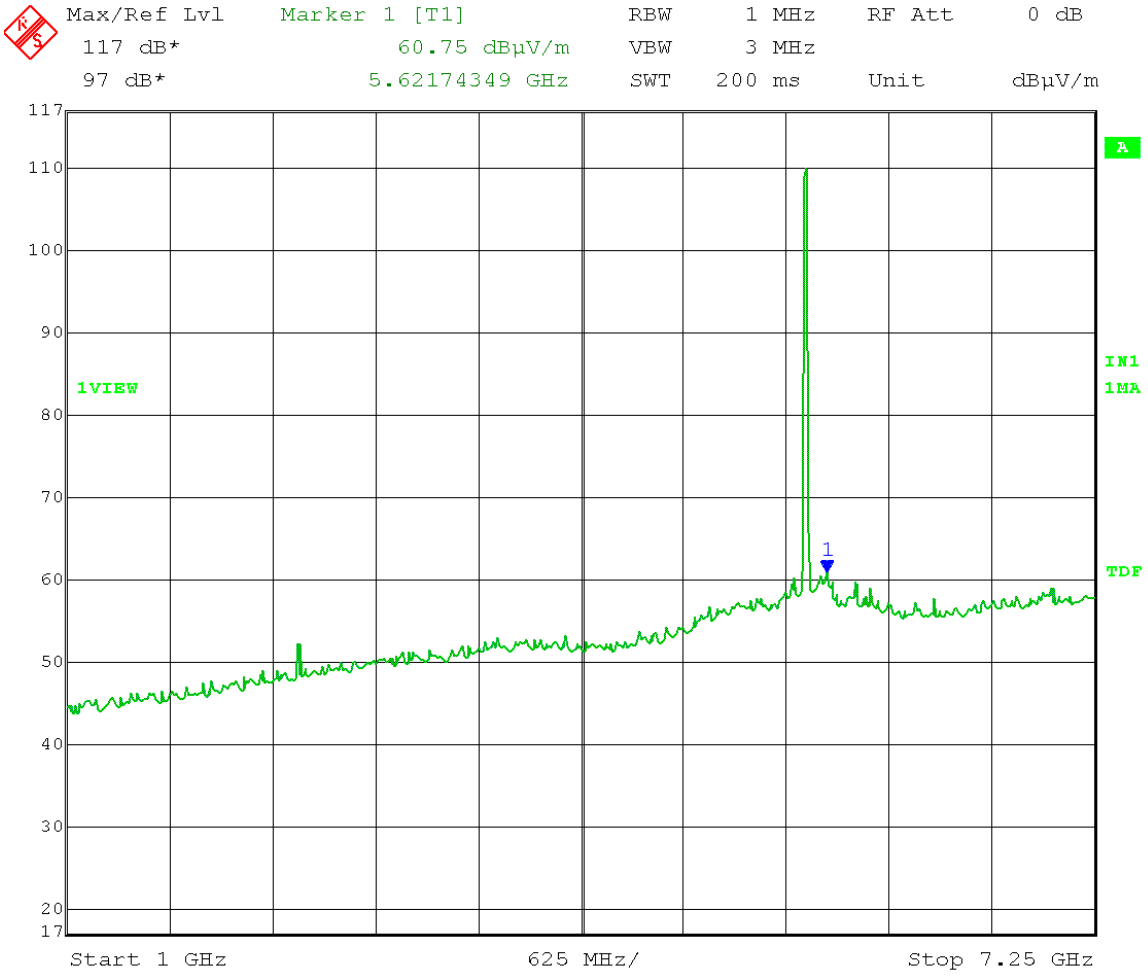


Date: 3.APR.2014 12:08:16

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 60.75 dBµV/m – 95.2 = -34.45 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

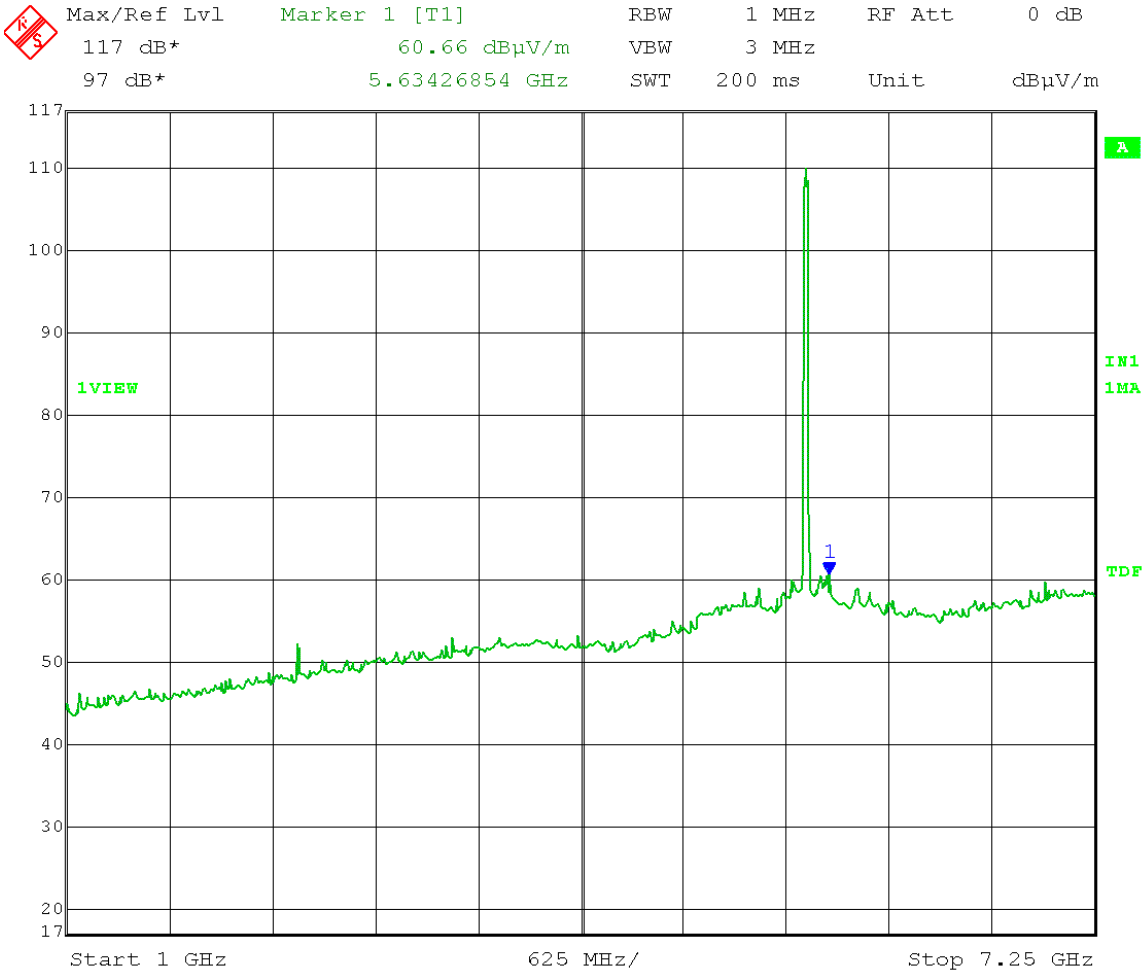


Date: 14.APR.2014 15:41:18

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5495 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 60.66 dBµV/m – 95.2 = -34.54 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

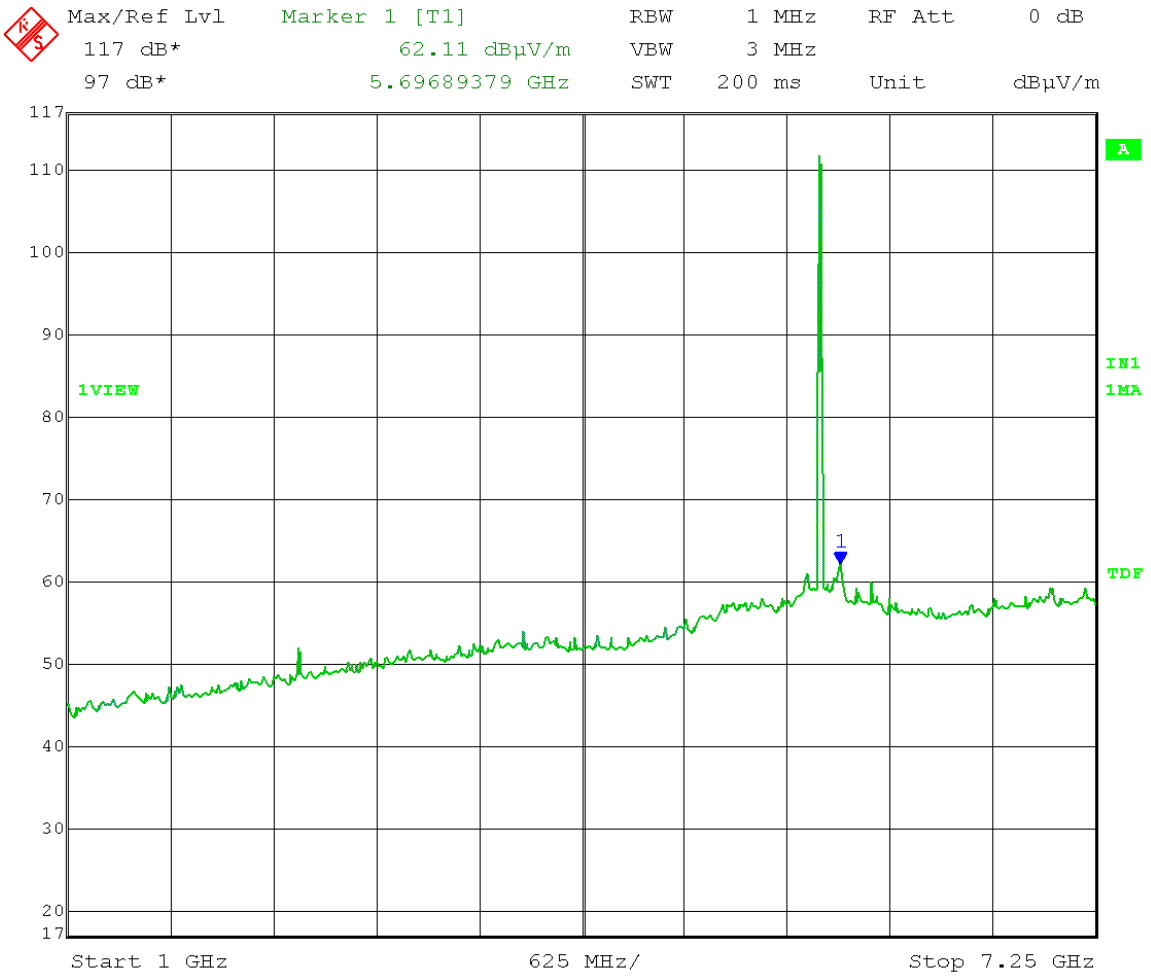


Date: 14.APR.2014 14:19:02

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 62.11 dBµV/m – 95.2 = -33.09 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

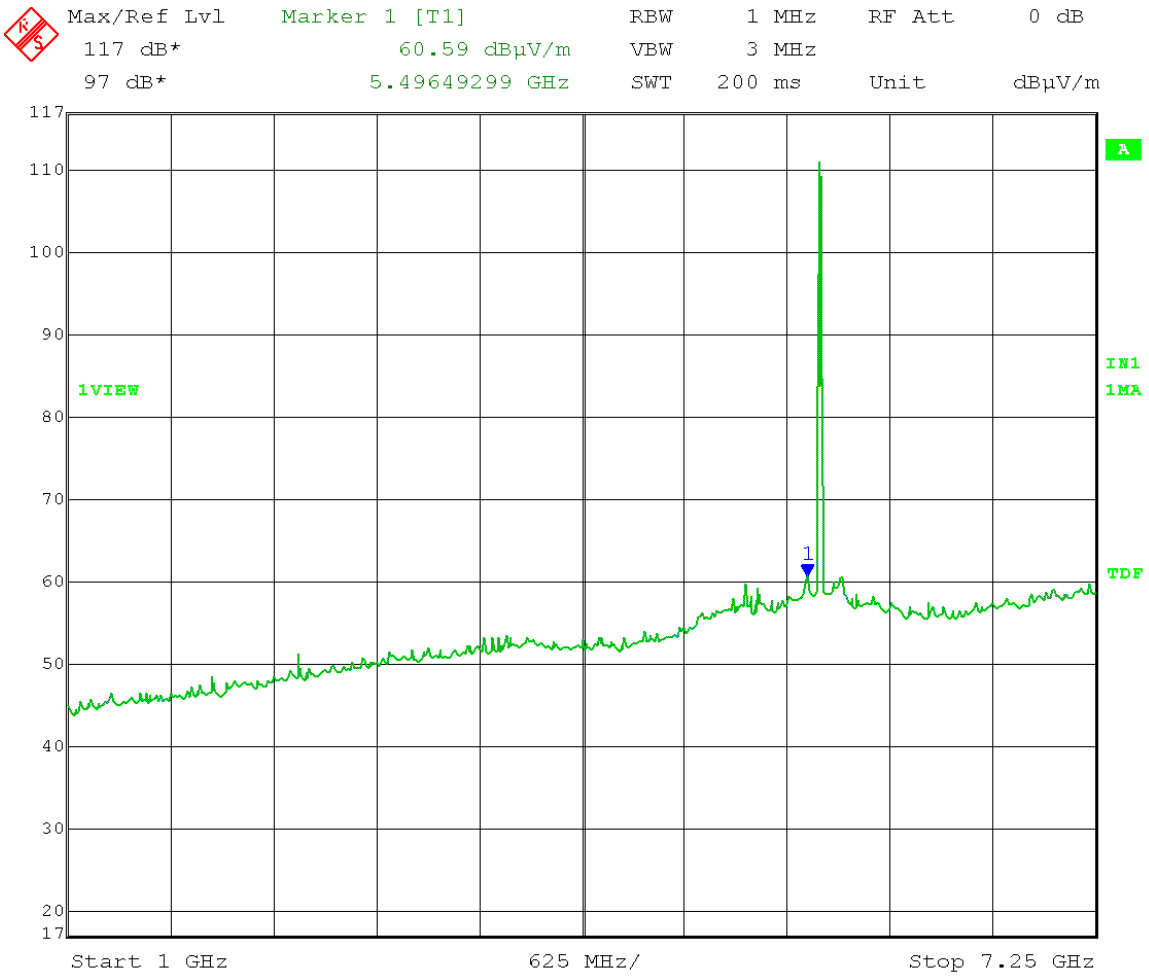


Date: 14.APR.2014 15:43:35

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 60.59 dBµV/m – 95.2 = -34.61 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

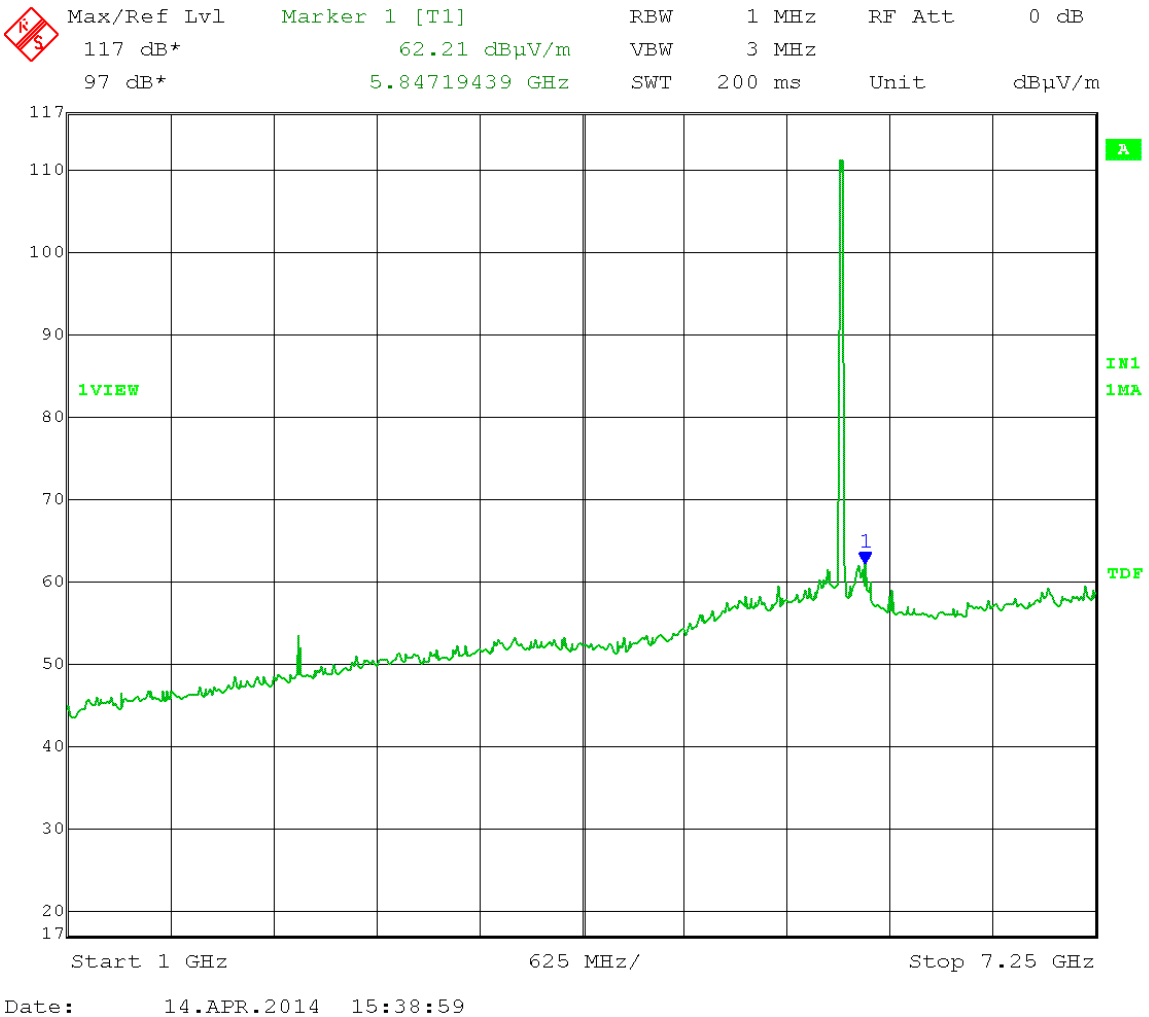


Date: 14.APR.2014 14:17:16

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 62.21 dBµV/m – 95.2 = -32.99 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

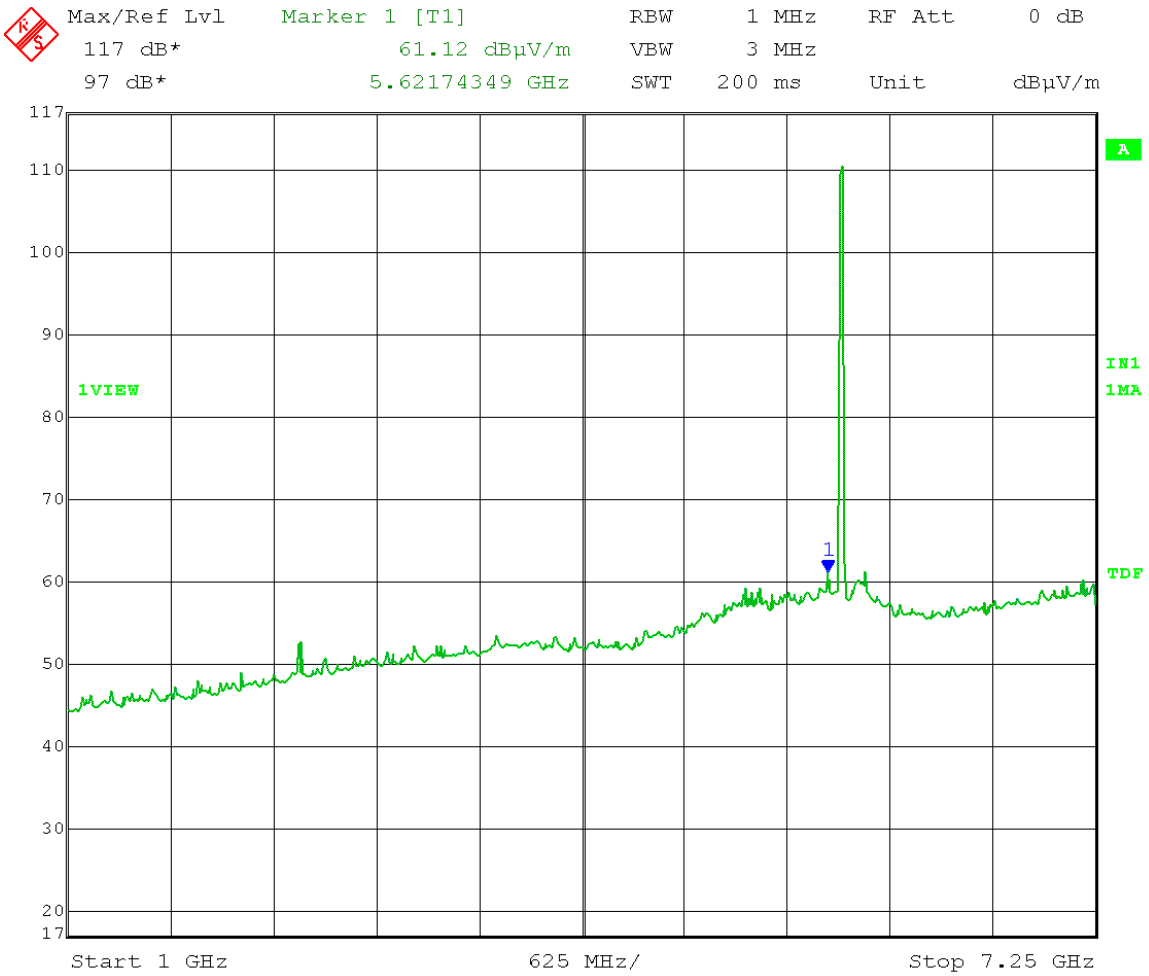


Date: 14.APR.2014 15:38:59

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5705 MHz
Output power setting: 27.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 20 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 61.12 dBµV/m – 95.2 = -34.08 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

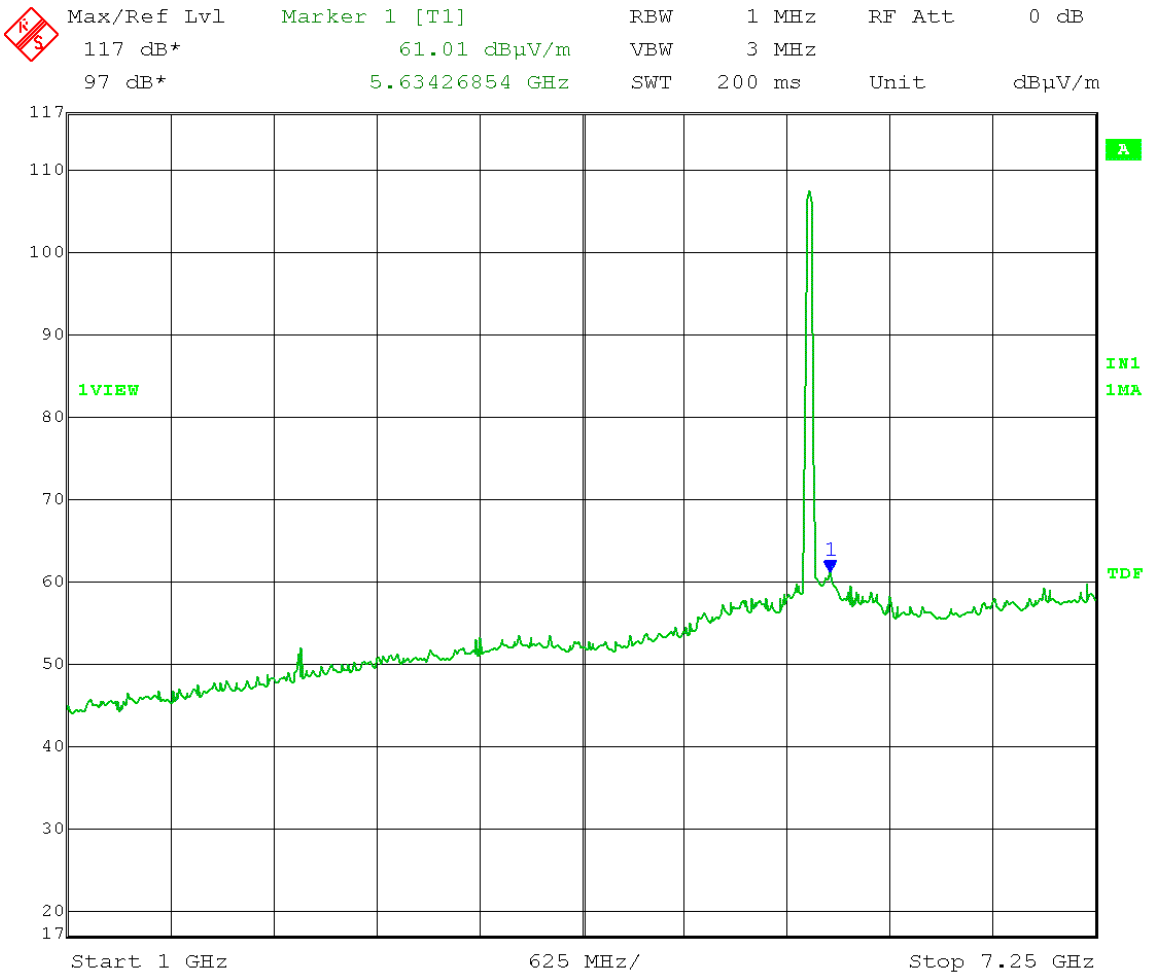


Date: 14.APR.2014 14:22:27

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 61.01 dBµV/m – 95.2 = -34.19 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

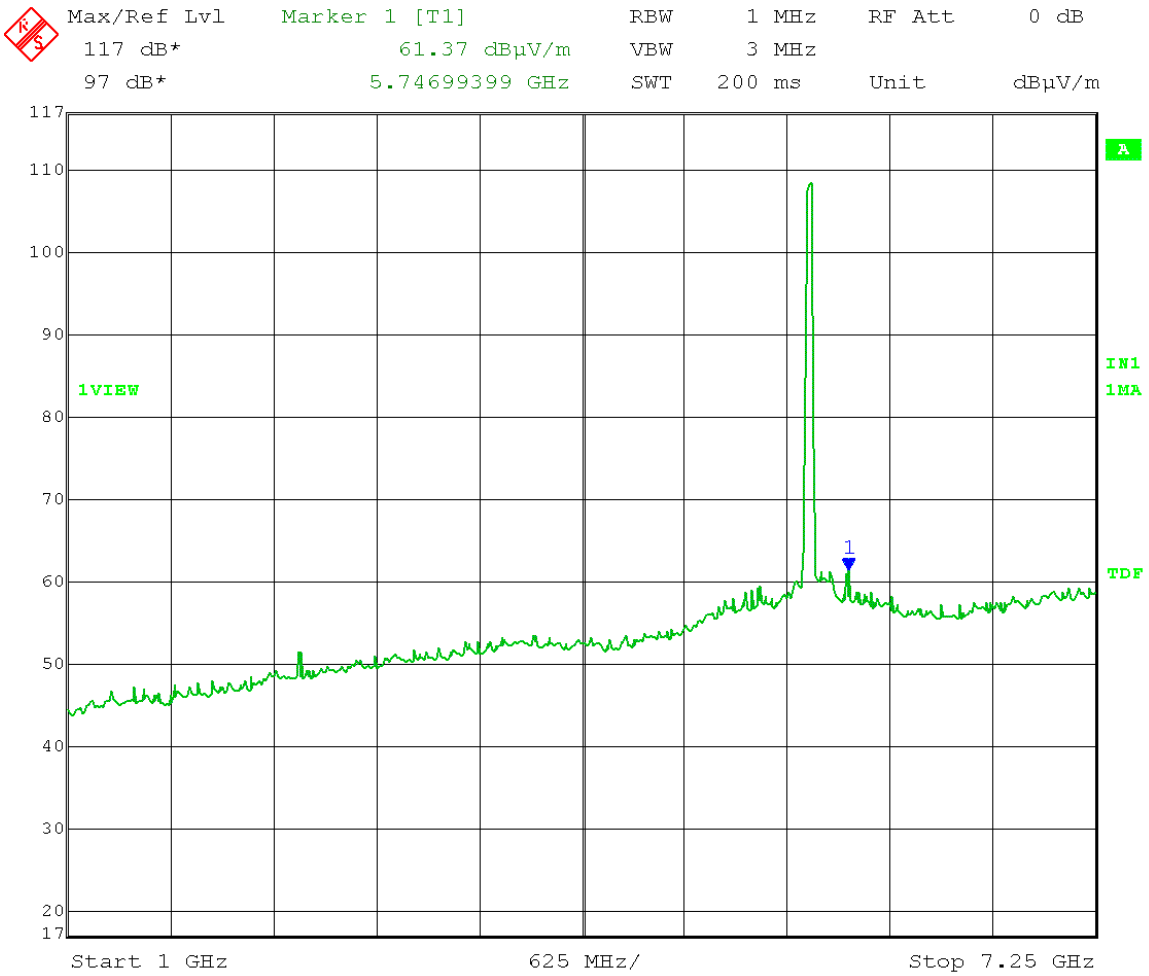


Date: 14.APR.2014 15:28:54

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Low Channel: Frequency – 5510 MHz
Output power setting: 26.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 61.37 dBµV/m – 95.2 = -33.83 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

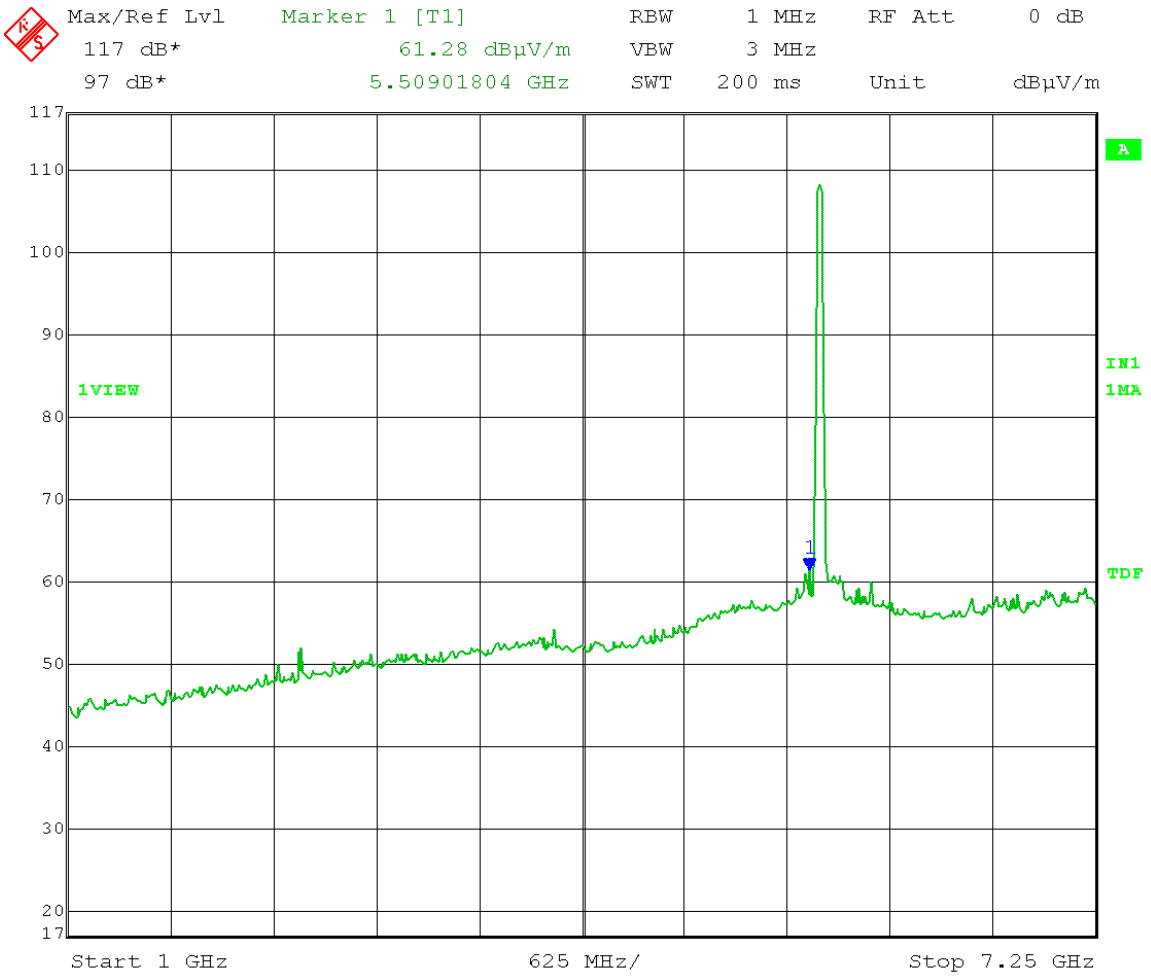


Date: 14.APR.2014 14:43:28

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 27.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 61.28 dBµV/m – 95.2 = -33.92 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

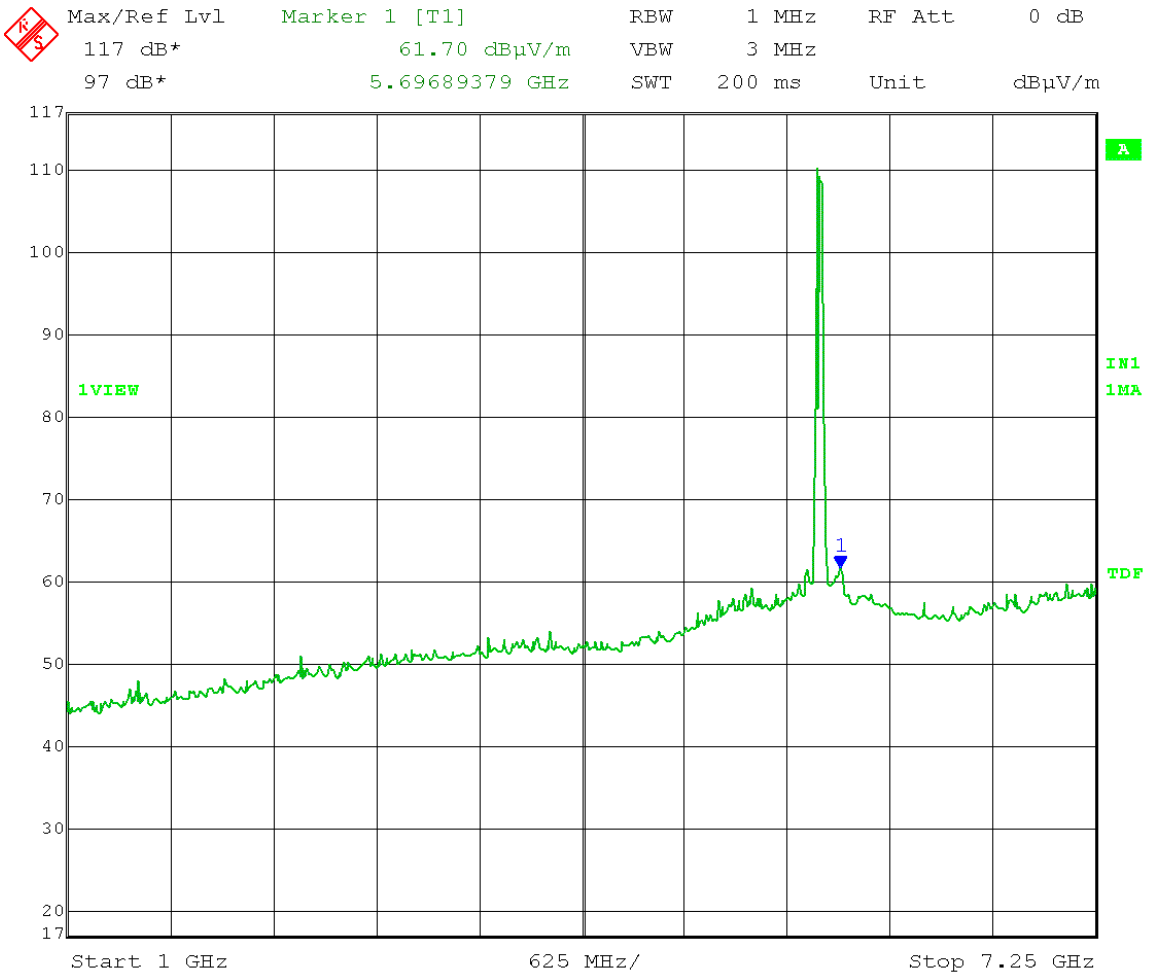


Date: 14.APR.2014 15:30:59

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: Mid Channel: Frequency – 5575 MHz
Output power setting: 27.0* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 61.70 dBµV/m – 95.2 = -33.50 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:

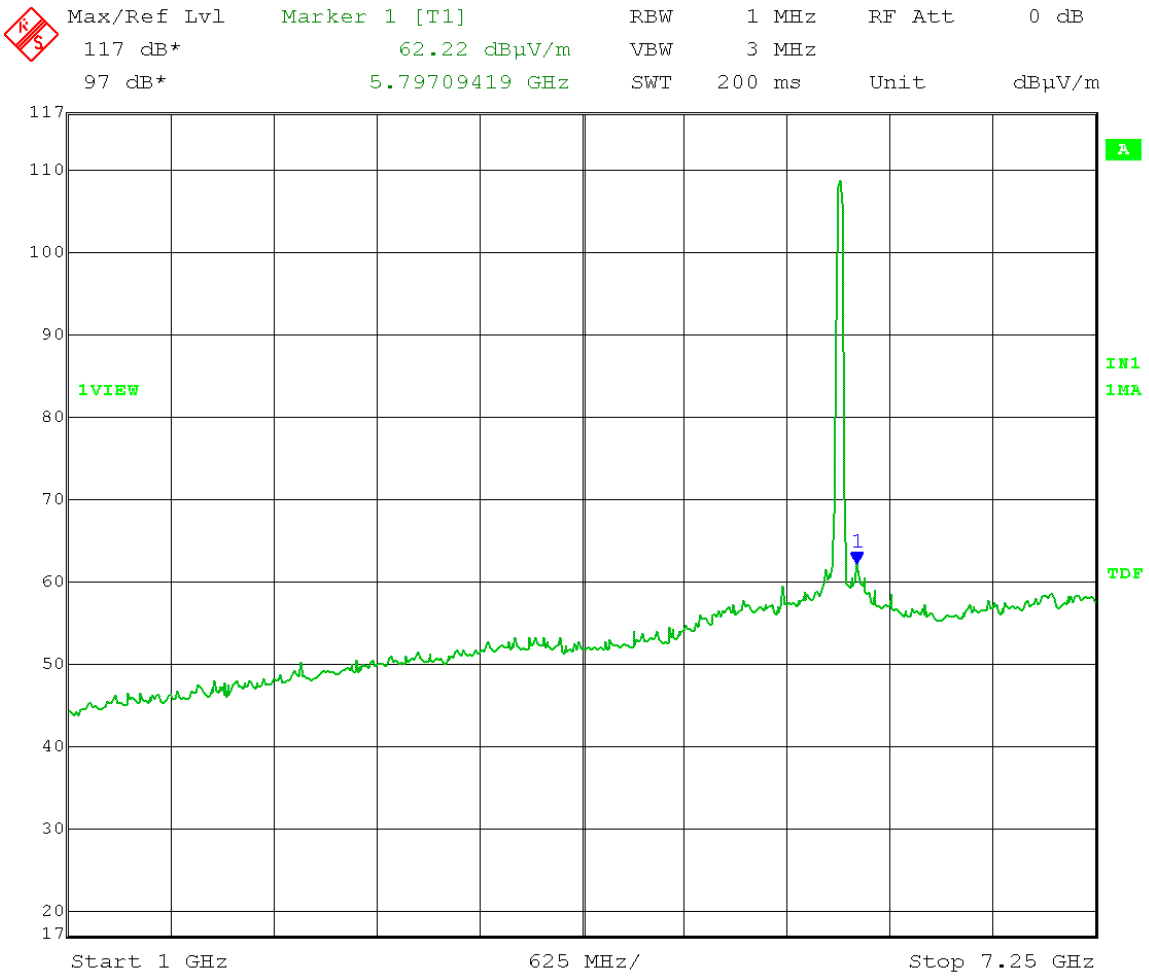


Date: 14.APR.2014 14:40:25

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Vertical
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 62.22 dBµV/m – 95.2 = -32.98 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Vertical: Peak:

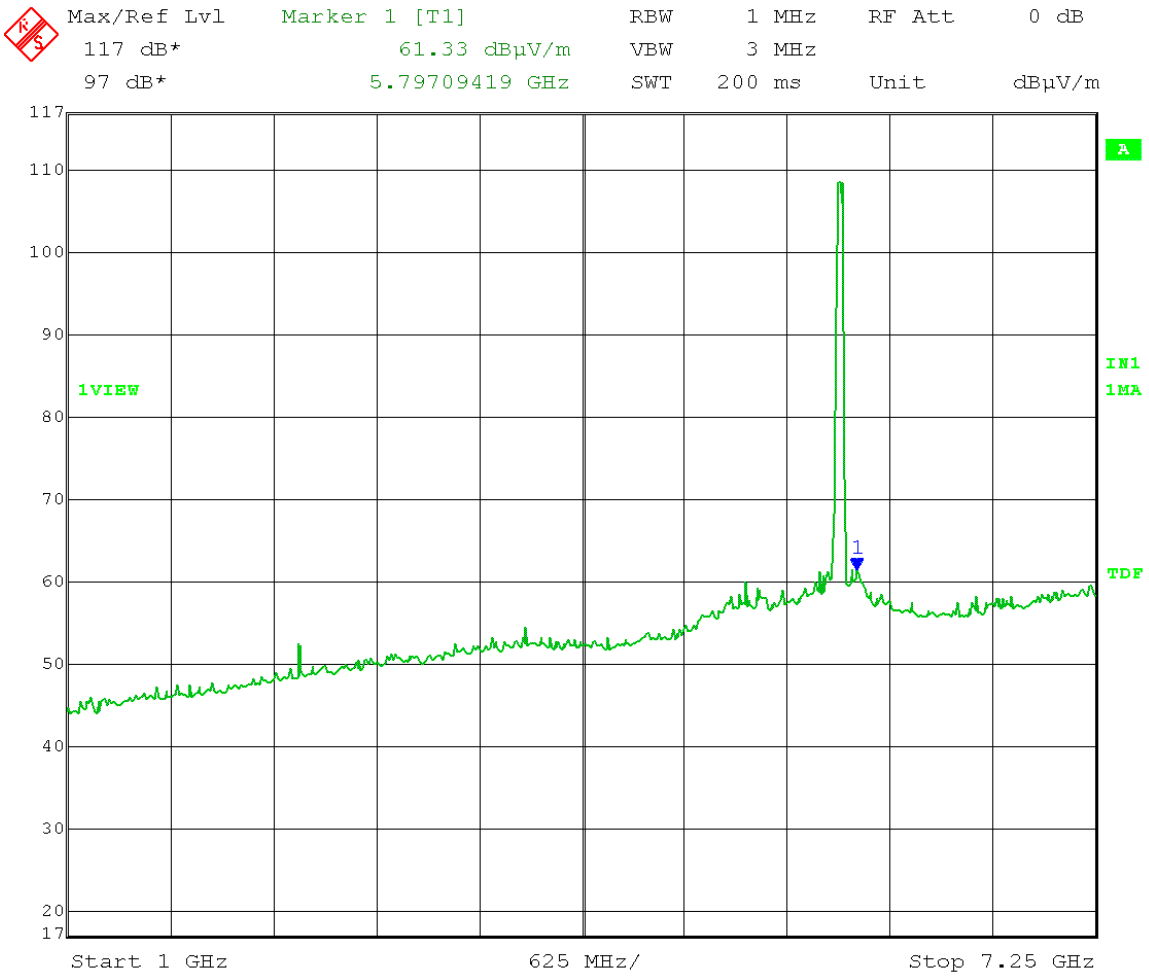


Date: 14.APR.2014 15:26:52

Test Date: 04-14-2014
Company: Cambium Networks
EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Test: Unwanted Emissions in non-restricted bands - Radiated
(FCC 15.407(b)(3)) - With 30 dBi Dish antenna
Operator: Craig B
Comment: High Channel: Frequency – 5695 MHz
Output power setting: 26.5* on both chains
*Software cal table was modified so that power setting 24.0 = 0.0
with 3 dB attenuator on radio and 3 dB attenuator on antenna
Channel bandwidth: 40 MHz
Modulation: OFDM; MCS15
Polarization: Horizontal
Limit: -27 dBm/MHz Peak EIRP

Test distance 3 meters: EIRP[dBm] = E[dBµV/m] – 95.2
EIRP = 61.33 dBµV/m – 95.2 = -33.87 dBm/MHz

Frequency Range: 1 – 7.25 GHz
Horizontal: Peak:



Date: 14.APR.2014 14:46:55

FCC Part 15.209

Electric Field Strength

EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Manufacturer: Cambium Networks
Operating Condition: 70 deg C 27% R.H.
Test Site: DLS O.F. G1
Operator: Craig B
Test Specification: Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment: Both ports Tx setting 8.5; with 23 dBi Panel antenna and 5 dB pad on EUT Port 1
Date: 04-07-2014

TEXT: "Horz 3 meters"

Short Description: Test Set-up

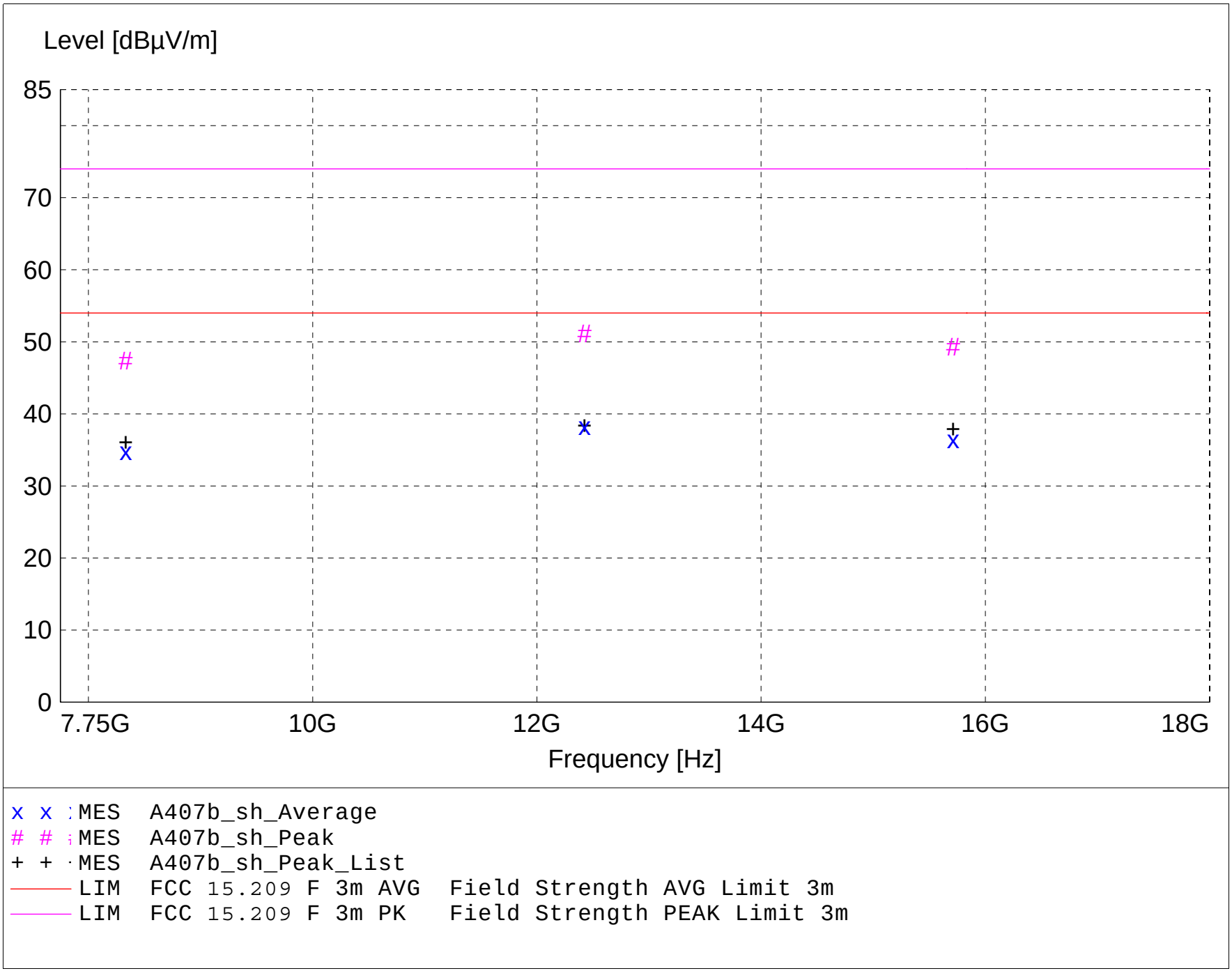
Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers:

+	Frequency marker (Level of marker not related to final level)
|	Final maximized level using Quasi-Peak detector
X	Final maximized level using Average dector
#	Final maximized level using Peak detector
-	Background Scan Peak Detector (Optional)
-	Background Scan Average Detector (Optional)



x x x MES A407b_sh_Average
MES A407b_sh_Peak
+ + + MES A407b_sh_Peak_List
——— LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
——— LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A407b_sh_Final"

4/7/2014 11:03AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
12425.500000	34.96	39.70	-36.4	38.3	54.0	15.7	1.30	0	AVERAGE	noise floor
15713.200000	35.98	38.08	-37.6	36.5	54.0	17.5	1.30	0	AVERAGE	noise floor
8332.600000	33.28	36.93	-35.4	34.8	54.0	19.2	1.30	0	AVERAGE	noise floor
12425.500000	47.79	39.70	-36.4	51.1	74.0	22.9	1.30	0	MAX PEAK	noise floor
15713.200000	48.82	38.08	-37.6	49.3	74.0	24.7	1.30	0	MAX PEAK	noise floor
8332.600000	45.82	36.93	-35.4	47.4	74.0	26.6	1.30	0	MAX PEAK	noise floor

FCC Part 15.209

Electric Field Strength

EUT: ePMP STA 5.4 GHz OFDM ESN: 000456C560B4
Manufacturer: Cambium Networks
Operating Condition: 70 deg C 27% R.H.
Test Site: DLS O.F. G1
Operator: Craig B
Test Specification: Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment: Both ports Tx setting 8.5; with 23 dBi Panel antenna and 5 dB pad on EUT Port 1
Date: 04-07-2014

TEXT: "Vert 3 meters"

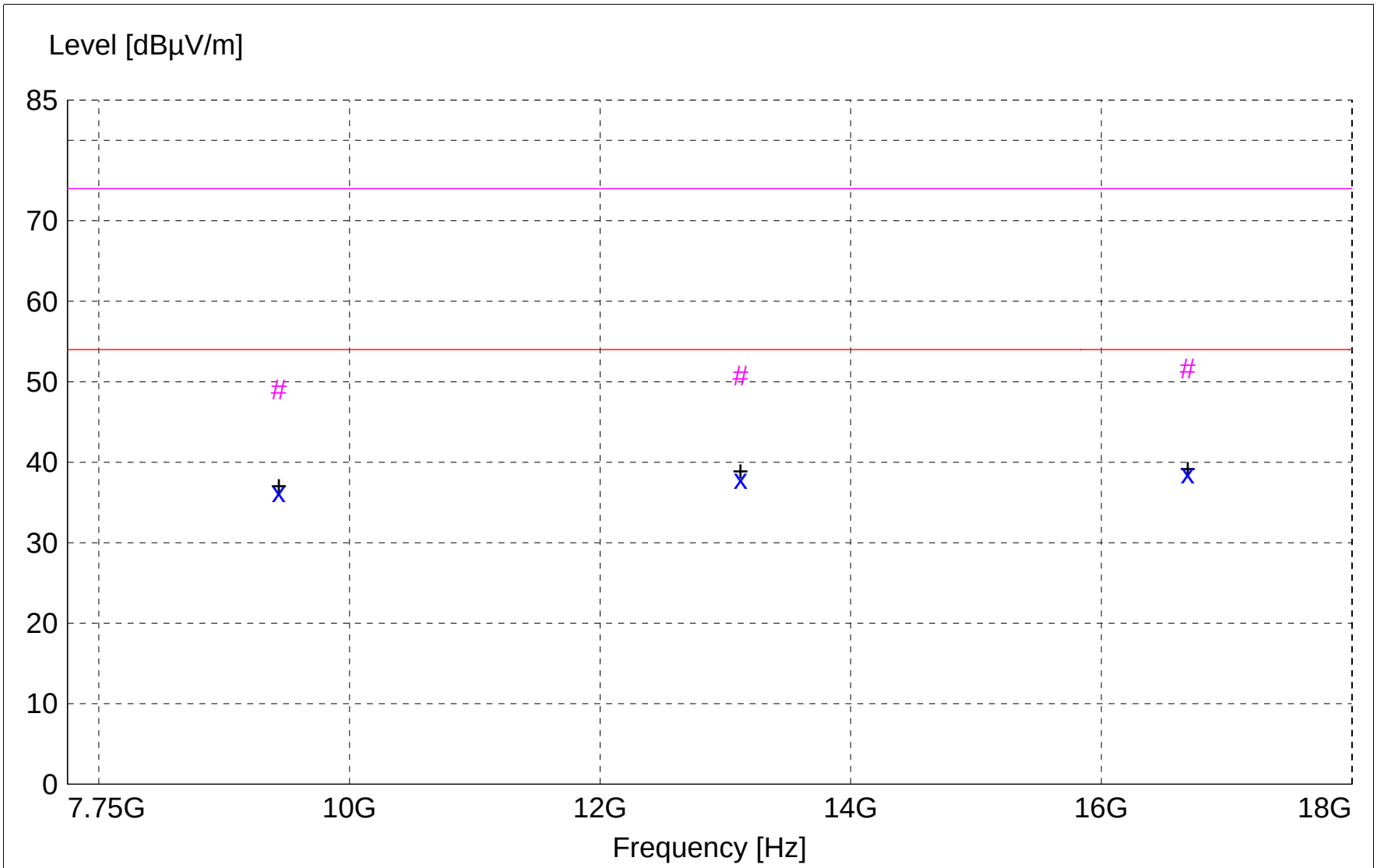
Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with VERTICAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers:
+ Frequency marker (Level of marker not related to final level)
| Final maximized level using Quasi-Peak detector
X Final maximized level using Average dector
Final maximized level using Peak detector
- Background Scan Peak Detector (Optional)
- Background Scan Average Detector (Optional)



x x x MES A407b_sv_Average
MES A407b_sv_Peak
+ + + MES A407b_sv_Peak_List
——— LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
——— LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A407b_sv_Final"

4/7/2014 10:39AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
16689.400000	37.30	39.06	-37.8	38.6	54.0	15.4	1.12	0	AVERAGE	noise floor
13122.100000	35.32	39.55	-36.9	37.9	54.0	16.1	1.12	0	AVERAGE	noise floor
9436.300000	34.91	37.74	-36.3	36.3	54.0	17.7	1.12	0	AVERAGE	noise floor
16689.400000	50.32	39.06	-37.8	51.6	74.0	22.4	1.12	0	MAX PEAK	noise floor
13122.100000	48.18	39.55	-36.9	50.8	74.0	23.2	1.12	0	MAX PEAK	noise floor
9436.300000	47.66	37.74	-36.3	49.1	74.0	24.9	1.12	0	MAX PEAK	noise floor

FCC Part 15.209

Electric Field Strength

EUT: ePMP STA 5.2 & 5.4 GHz OFDM, ESN: 000456C560B4
Manufacturer: Cambium Networks
Operating Condition: 70 deg. F; 27% R.H.
Test Site: DLS O.F. Site 2
Operator: Craig B
Test Specification: Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels (both bands)
Comment: Both ports Tx setting 8.5; with 23 dBi Panel antenna and 5 dB pad on EUT Port 1
Date: 04-07-2014

TEXT: "Horz 1 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 1 Meters with HORIZONTAL Antenna Polarization

Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)

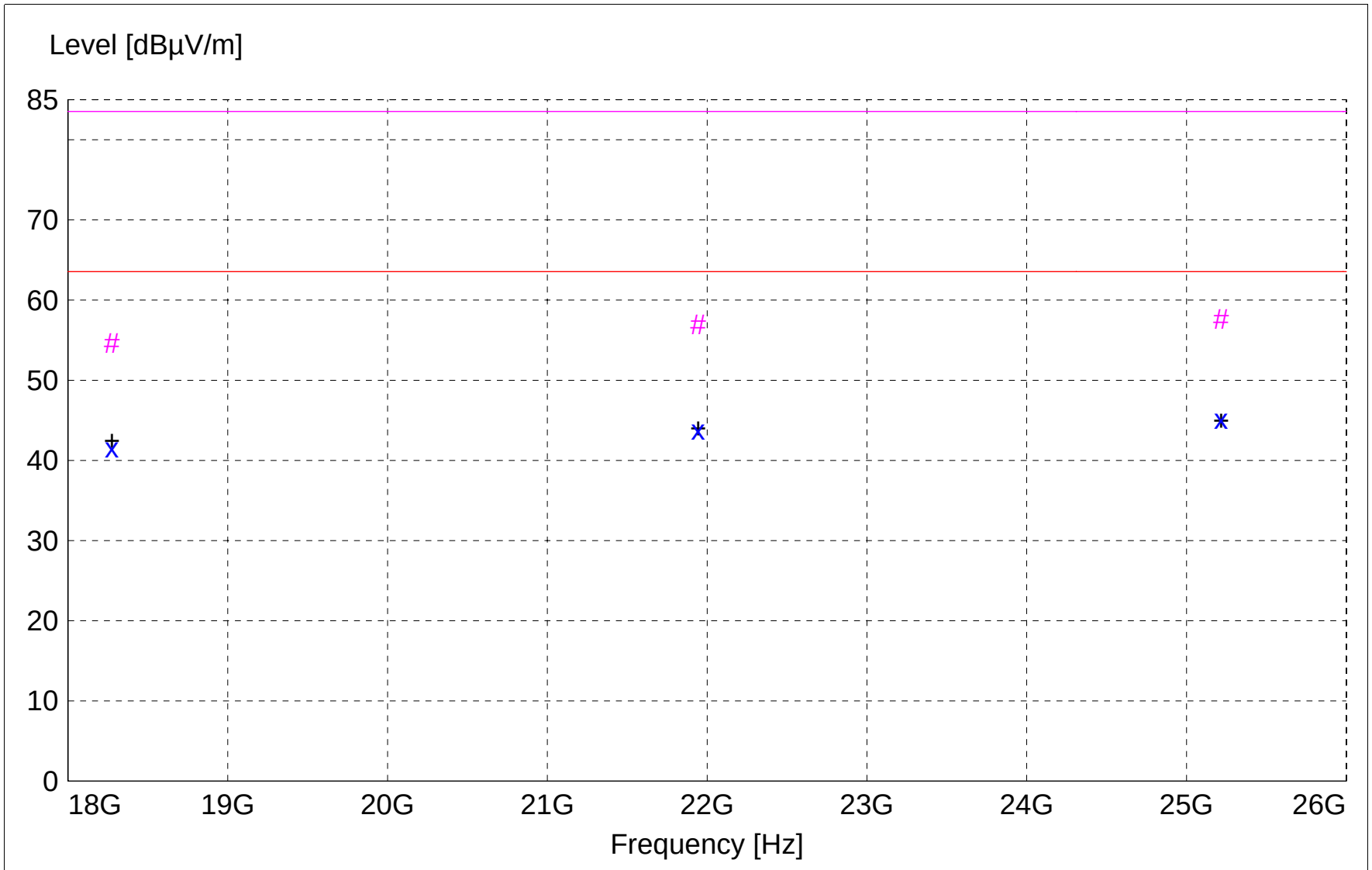
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector



x x xMES A407a_sh_Average
#MES A407a_sh_Peak
+ + +MES A407a_sh_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A407a_sh_Final"

4/7/2014 2:02PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
25216.800000	34.86	46.86	-36.6	45.1	63.5	18.4	1.30	0	AVERAGE	noise floor
21944.000000	37.78	46.40	-40.4	43.8	63.5	19.8	1.30	0	AVERAGE	noise floor
18274.800000	35.50	44.70	-38.6	41.6	63.5	22.0	1.30	0	AVERAGE	noise floor
25216.800000	47.33	46.86	-36.6	57.6	83.5	25.9	1.30	0	MAX PEAK	noise floor
21944.000000	50.95	46.40	-40.4	57.0	83.5	26.6	1.30	0	MAX PEAK	noise floor
18274.800000	48.55	44.70	-38.6	54.6	83.5	28.9	1.30	0	MAX PEAK	noise floor

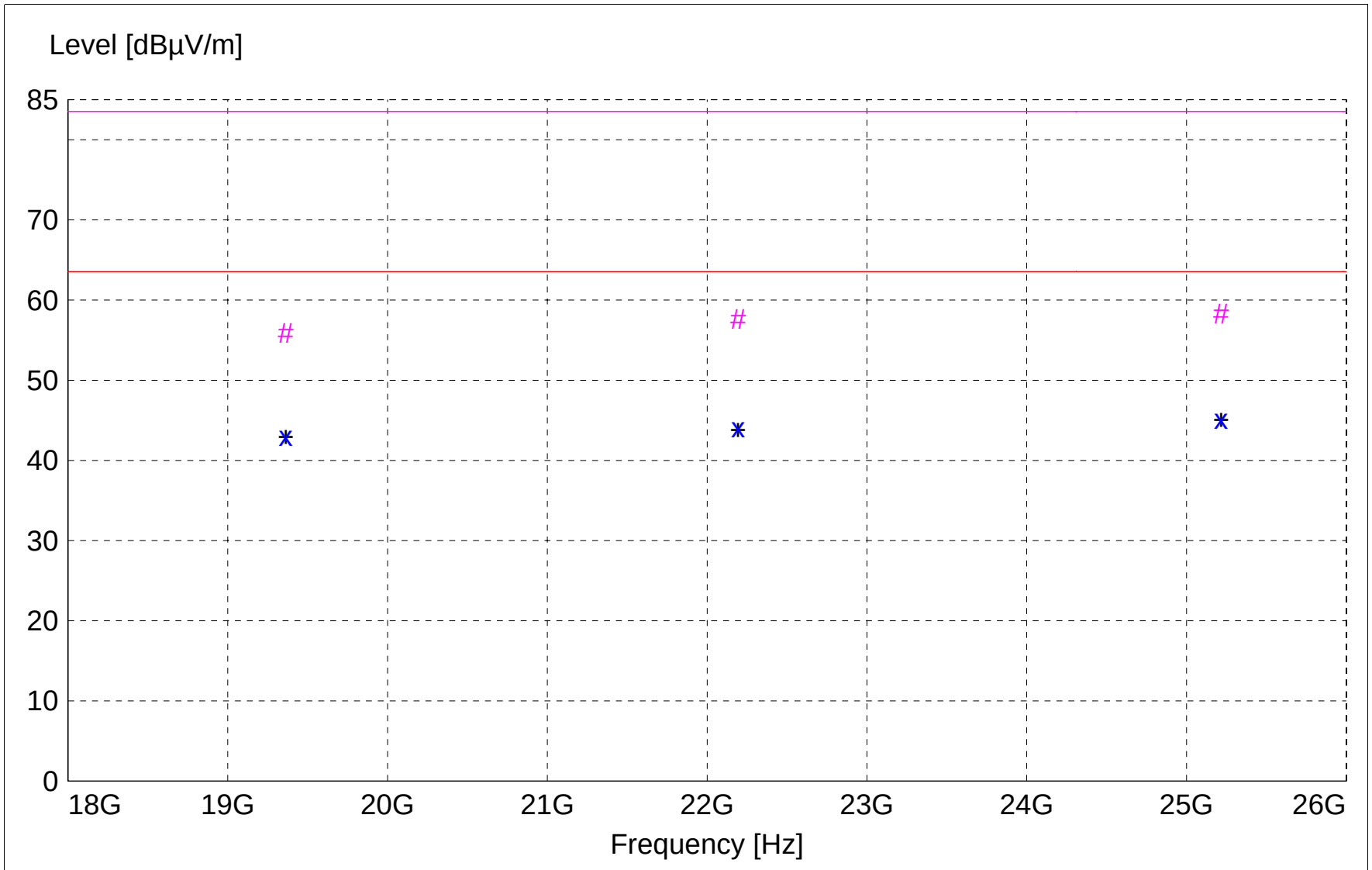
FCC Part 15.209

Electric Field Strength

```
EUT:                 ePMP STA 5.2 & 5.4 GHz OFDM,   ESN: 000456C560B4
Manufacturer:        Cambium Networks
Operating Condition: 70 deg. F; 27% R.H.
Test Site:           DLS O.F. Site 2
Operator:            Craig B
Test Specification:  Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels (both bands)
Comment:             Both ports Tx setting 8.5; with 23 dBi Panel antenna and 5 dB pad on EUT Port 1
                     Date:  04-07-2014
```

TEXT: "Vert 1 meters"

```
  Short Description:           Test Set-up


Test Set-up:    EUT Measured at 1 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6



Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector
```



x x xMES A407a_sv_Average
#MES A407a_sv_Peak
+ + +MES A407a_sv_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A407a_sv_Final"

4/7/2014 1:57PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
25216.500000	34.94	46.86	-36.6	45.2	63.5	18.3	1.25	0	AVERAGE	noise floor
22194.000000	38.35	46.40	-40.6	44.1	63.5	19.4	1.25	0	AVERAGE	noise floor
19363.000000	37.11	45.76	-39.8	43.1	63.5	20.5	1.25	0	AVERAGE	noise floor
25216.500000	48.02	46.86	-36.6	58.3	83.5	25.3	1.25	0	MAX PEAK	noise floor
22194.000000	51.89	46.40	-40.6	57.6	83.5	25.9	1.25	0	MAX PEAK	noise floor
19363.000000	49.92	45.76	-39.8	55.9	83.5	27.7	1.25	0	MAX PEAK	noise floor

FCC Part 15.209

Electric Field Strength

EUT: ePMP STA 5.2 & 5.4 GHz OFDM, ESN: 000456C560B4
Manufacturer: Cambium Networks
Operating Condition: 70 deg. F; 27% R.H.
Test Site: DLS O.F. Site 2
Operator: Craig B
Test Specification: Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels (both bands)
Comment: Both ports Tx setting 8.5; ith 23 dBi Panel antenna and 5 dB pad on EUT Port 1
Date: 04-07-2014

TEXT: "Horz 1 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 1 Meters with HORIZONTAL Antenna Polarization

Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)

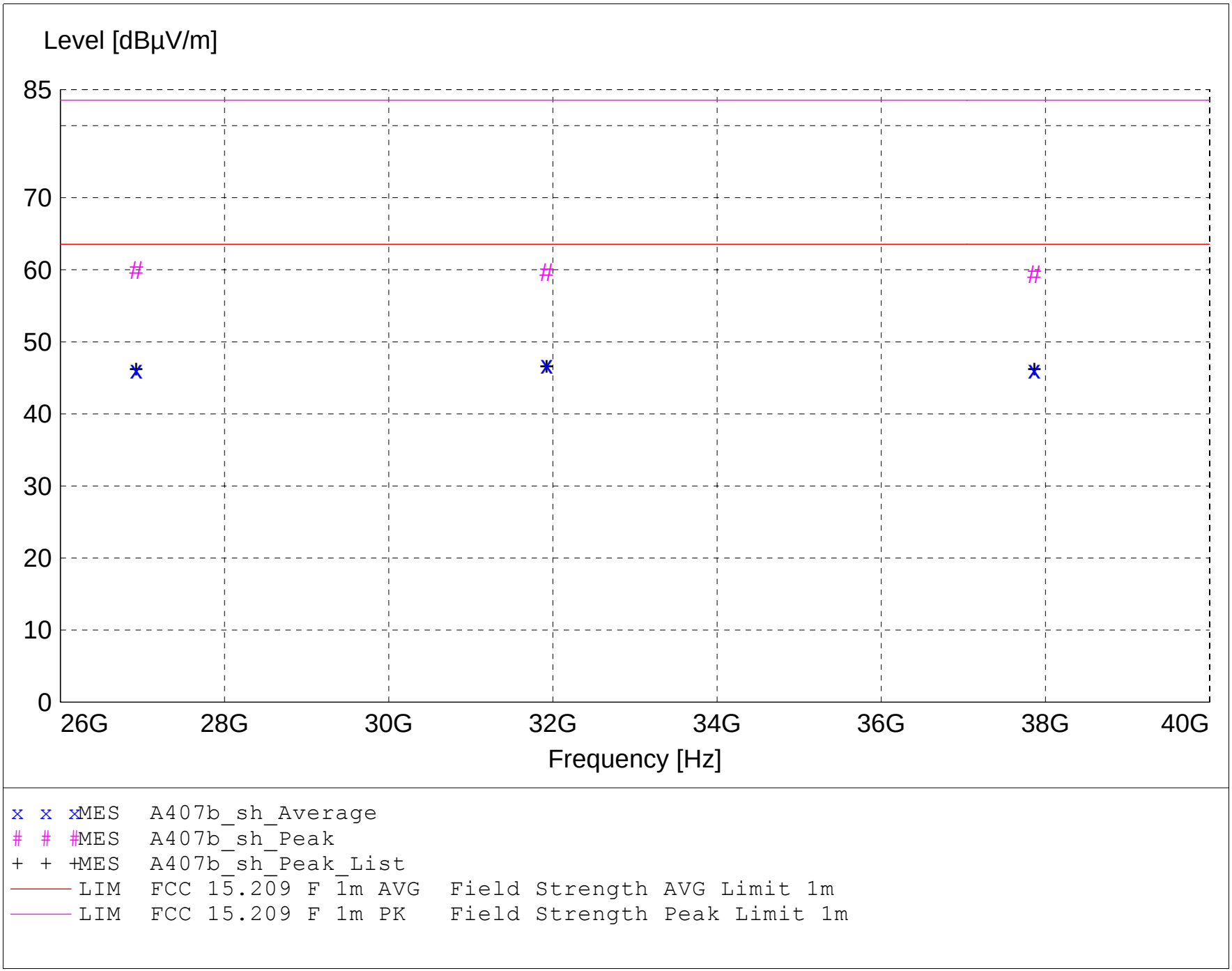
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector



x x xMES A407b_sh_Average
#MES A407b_sh_Peak
+ + +MES A407b_sh_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A407b_sh_Final"

4/7/2014 2:49PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
31923.600000	49.32	47.82	-50.3	46.8	63.5	16.7	1.30	0	AVERAGE	noise floor
26924.600000	50.11	46.38	-50.3	46.2	63.5	17.4	1.30	0	AVERAGE	noise floor
37864.800000	46.75	45.41	-46.0	46.1	63.5	17.4	1.30	0	AVERAGE	noise floor
26924.600000	63.91	46.38	-50.3	60.0	83.5	23.6	1.30	0	MAX PEAK	noise floor
31923.600000	62.18	47.82	-50.3	59.7	83.5	23.9	1.30	0	MAX PEAK	noise floor
37864.800000	59.97	45.41	-46.0	59.3	83.5	24.2	1.30	0	MAX PEAK	noise floor

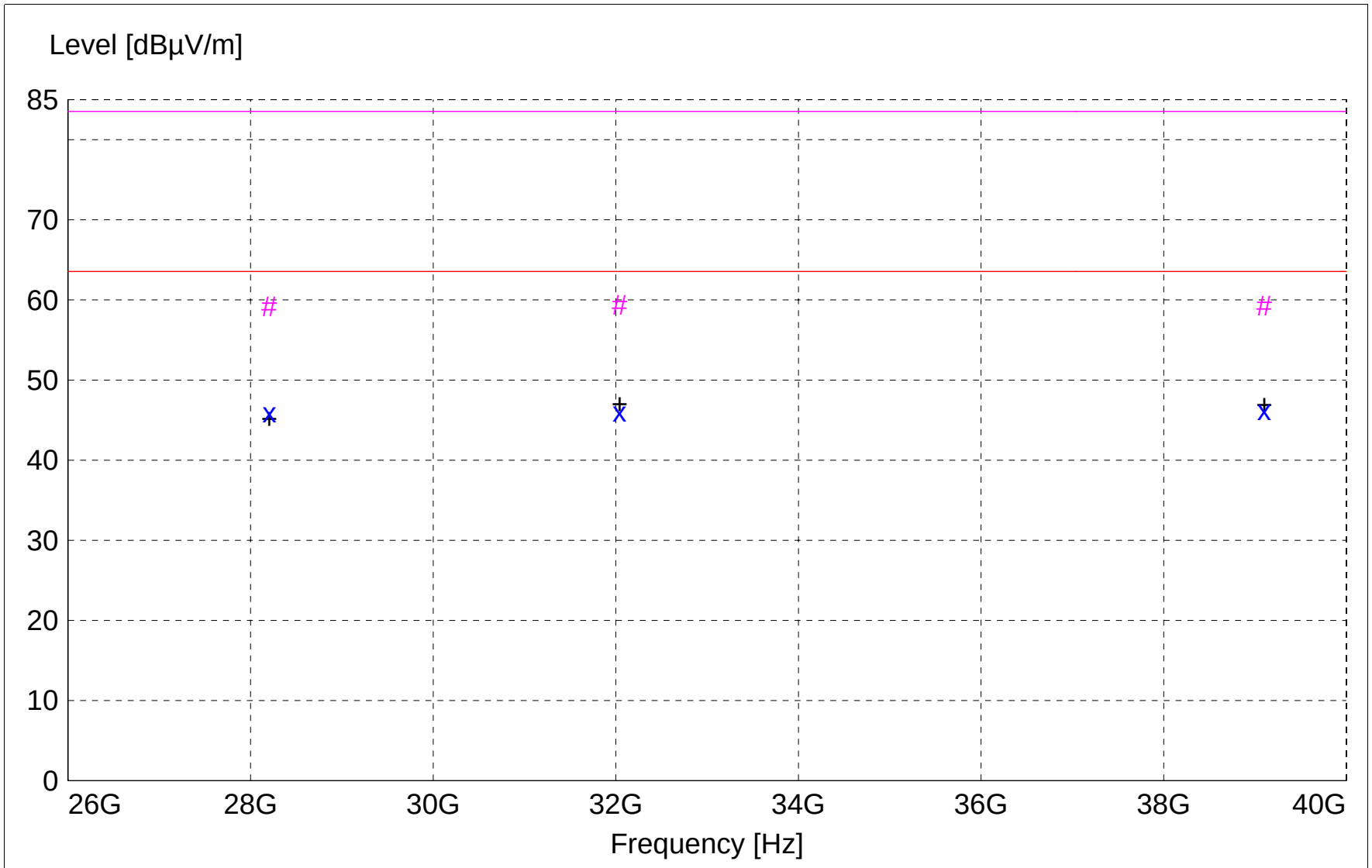
FCC Part 15.209

Electric Field Strength

```
EUT:                 ePMP STA 5.2 & 5.4 GHz OFDM,   ESN: 000456C560B4
Manufacturer:        Cambium Networks
Operating Condition: 70 deg. F; 27% R.H.
Test Site:           DLS O.F. Site 2
Operator:            Craig B
Test Specification:  Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels (both bands)
Comment:             Both ports Tx setting 8.5; ith 23 dBi Panel antenna and 5 dB pad on EUT Port 1
                     Date:  04-07-2014
```

TEXT: "Vert 1 meters"

```
  Short Description:           Test Set-up


Test Set-up:    EUT Measured at 1 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6



Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector
```



x x xMES A407b_sv_Average
#MES A407b_sv_Peak
+ + +MES A407b_sv_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A407b_sv_Final"

4/7/2014 2:35PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
39101.800000	47.52	45.74	-47.1	46.2	63.5	17.3	1.30	0	AVERAGE	noise floor
32042.600000	48.62	47.94	-50.5	46.1	63.5	17.5	1.30	0	AVERAGE	noise floor
28205.600000	49.72	46.57	-50.3	45.9	63.5	17.6	1.30	0	AVERAGE	noise floor
32042.600000	61.92	47.94	-50.5	59.4	83.5	24.2	1.30	0	MAX PEAK	noise floor
39101.800000	60.63	45.74	-47.1	59.3	83.5	24.2	1.30	0	MAX PEAK	noise floor
28205.600000	62.97	46.57	-50.3	59.2	83.5	24.3	1.30	0	MAX PEAK	noise floor

FCC Part 15.209

Electric Field Strength

EUT: ePMP STA 5.4 & 5.2 GHz OFDM ESN: 000456C560B4
Manufacturer: Cambium Networks
Operating Condition: 70 deg C 27% R.H.
Test Site: DLS O.F. G1
Operator: Craig B
Test Specification: Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment: Both ports Tx setting 27.5 (24=0 cal table); with 30 dBi Dish antenna (w/6 dB atten)
Date: 04-15-2014

TEXT: "Horz 3 meters"

Short Description: Test Set-up

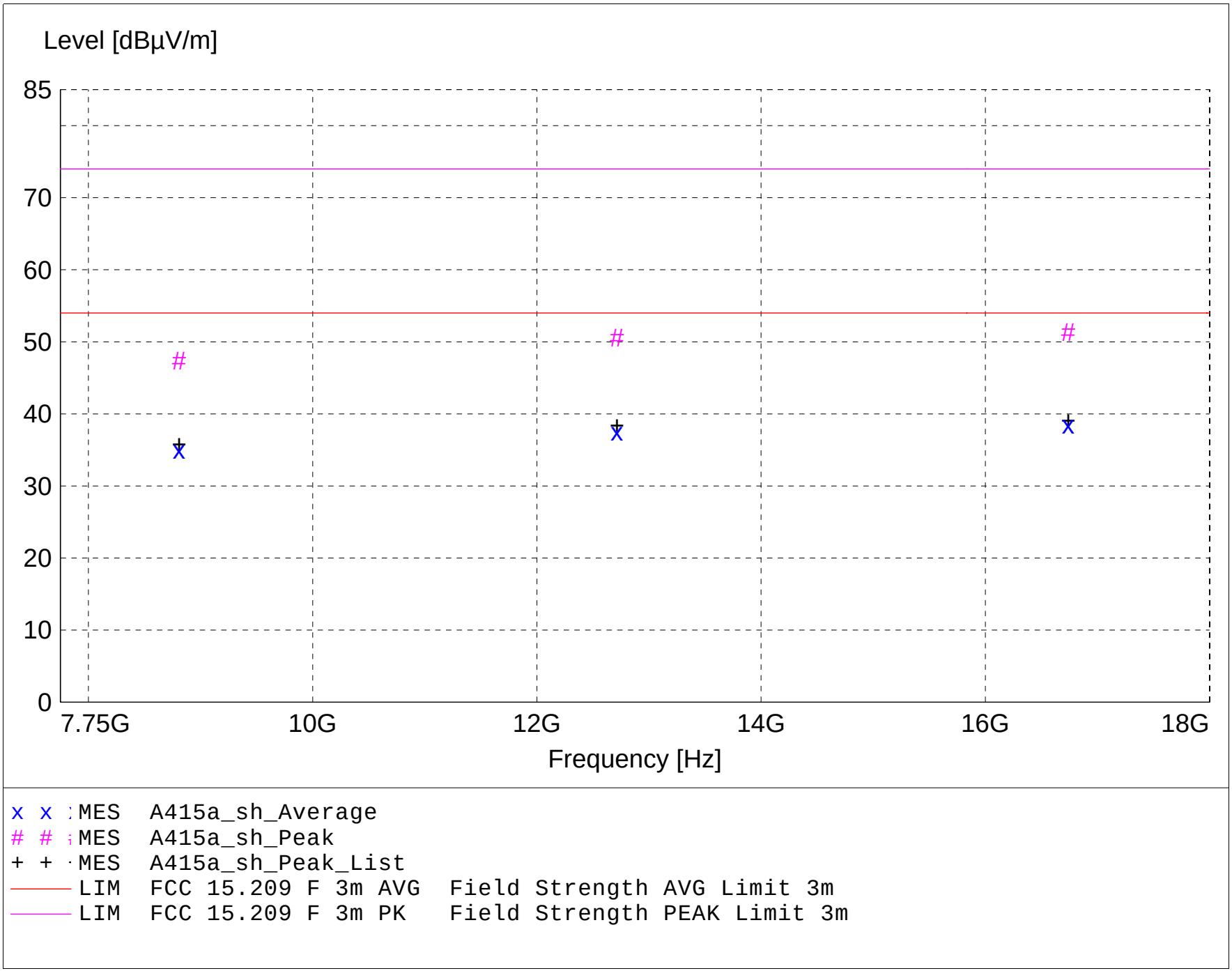
Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

Sample Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
24.6 = 35.51 + (-22.1) + 11.20

Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)
15.4 = 40 - 24.6

Graph Markers:

+	Frequency marker (Level of marker not related to final level)
|	Final maximized level using Quasi-Peak detector
X	Final maximized level using Average dector
#	Final maximized level using Peak detector
-	Background Scan Peak Detector (Optional)
-	Background Scan Average Detector (Optional)



x x x MES A415a_sh_Average
MES A415a_sh_Peak
+ + + MES A415a_sh_Peak_List
——— LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
——— LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A415a_sh_Final"

4/15/2014 10:41AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
16739.800000	37.00	39.25	-37.8	38.5	54.0	15.5	1.33	0	AVERAGE	noise floor
12713.500000	33.89	39.77	-36.2	37.5	54.0	16.5	1.33	0	AVERAGE	noise floor
8808.400000	33.74	37.59	-36.3	35.0	54.0	19.0	1.33	0	AVERAGE	noise floor
16739.800000	49.90	39.25	-37.8	51.4	74.0	22.6	1.33	0	MAX PEAK	noise floor
12713.500000	46.98	39.77	-36.2	50.6	74.0	23.4	1.33	0	MAX PEAK	noise floor
8808.400000	46.06	37.59	-36.3	47.3	74.0	26.7	1.33	0	MAX PEAK	noise floor

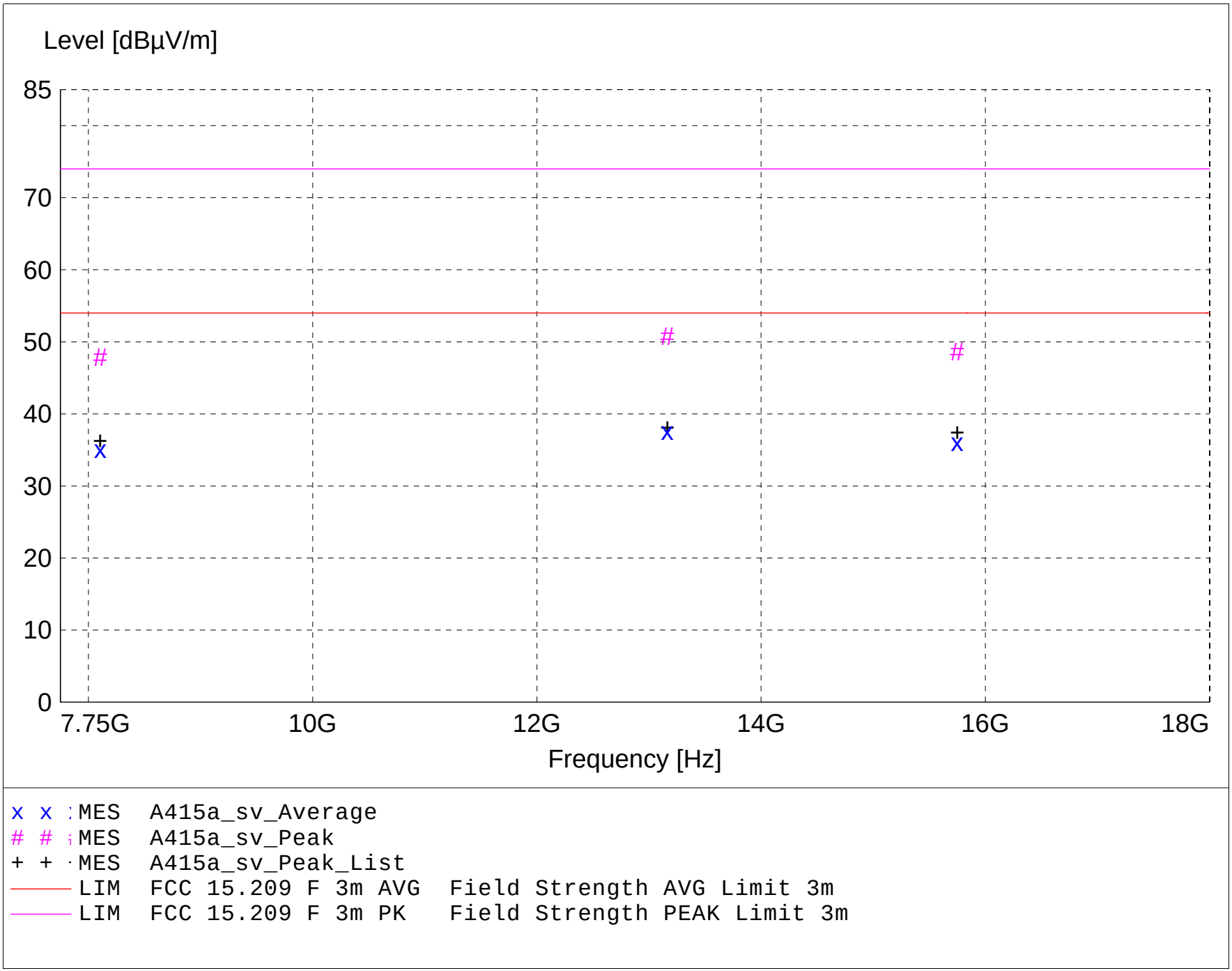
FCC Part 15.209

Electric Field Strength

```
EUT:                 ePMP STA 5.4 & 5.2 GHz OFDM   ESN: 000456C560B4
Manufacturer:        Cambium Networks
Operating Condition: 70 deg C  27% R.H.
Test Site:           DLS O.F. G1
Operator:            Craig B
Test Specification:  Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment:             Both ports Tx setting 27.5 (24=0 cal table); with 30 dBi Dish antenna (w/ 6 dB atten)
                     Date:  04-15-2014
```

TEXT: "Vert 3 meters"

```
  Short Description:           Test Set-up


Test Set-up:    EUT Measured at 3 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector

                -       Background Scan Peak Detector (Optional)

                -       Background Scan Average Detector (Optional)
```



x x x MES A415a_sv_Average
MES A415a_sv_Peak
+ + + MES A415a_sv_Peak_List
——— LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
——— LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A415a_sv_Final"

4/15/2014 11:16AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
13163.200000	34.75	39.78	-36.9	37.6	54.0	16.4	1.30	0	AVERAGE	noise floor
15748.600000	35.68	37.97	-37.6	36.1	54.0	17.9	1.30	0	AVERAGE	noise floor
8104.900000	33.28	36.67	-34.8	35.1	54.0	18.9	1.30	0	AVERAGE	noise floor
13163.200000	47.88	39.78	-36.9	50.8	74.0	23.2	1.30	0	MAX PEAK	noise floor
15748.600000	48.27	37.97	-37.6	48.7	74.0	25.3	1.30	0	MAX PEAK	noise floor
8104.900000	46.06	36.67	-34.8	47.9	74.0	26.1	1.30	0	MAX PEAK	noise floor

FCC Part 15.209

Electric Field Strength

EUT: ePMP STA 5.4 & 5.2 GHz OFDM, ESN: 000456C560B4
Manufacturer: Cambium Networks
Operating Condition: 70 deg. F; 31% R.H.
Test Site: DLS O.F. Site 2
Operator: Craig B
Test Specification: Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment: Both ports Tx setting 27.5 (24=0 cal table); with 30 dBi Dish antenna (w/ 6 dB atten)
Date: 04-15-2014

TEXT: "Horz 1 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 1 Meters with HORIZONTAL Antenna Polarization

Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)

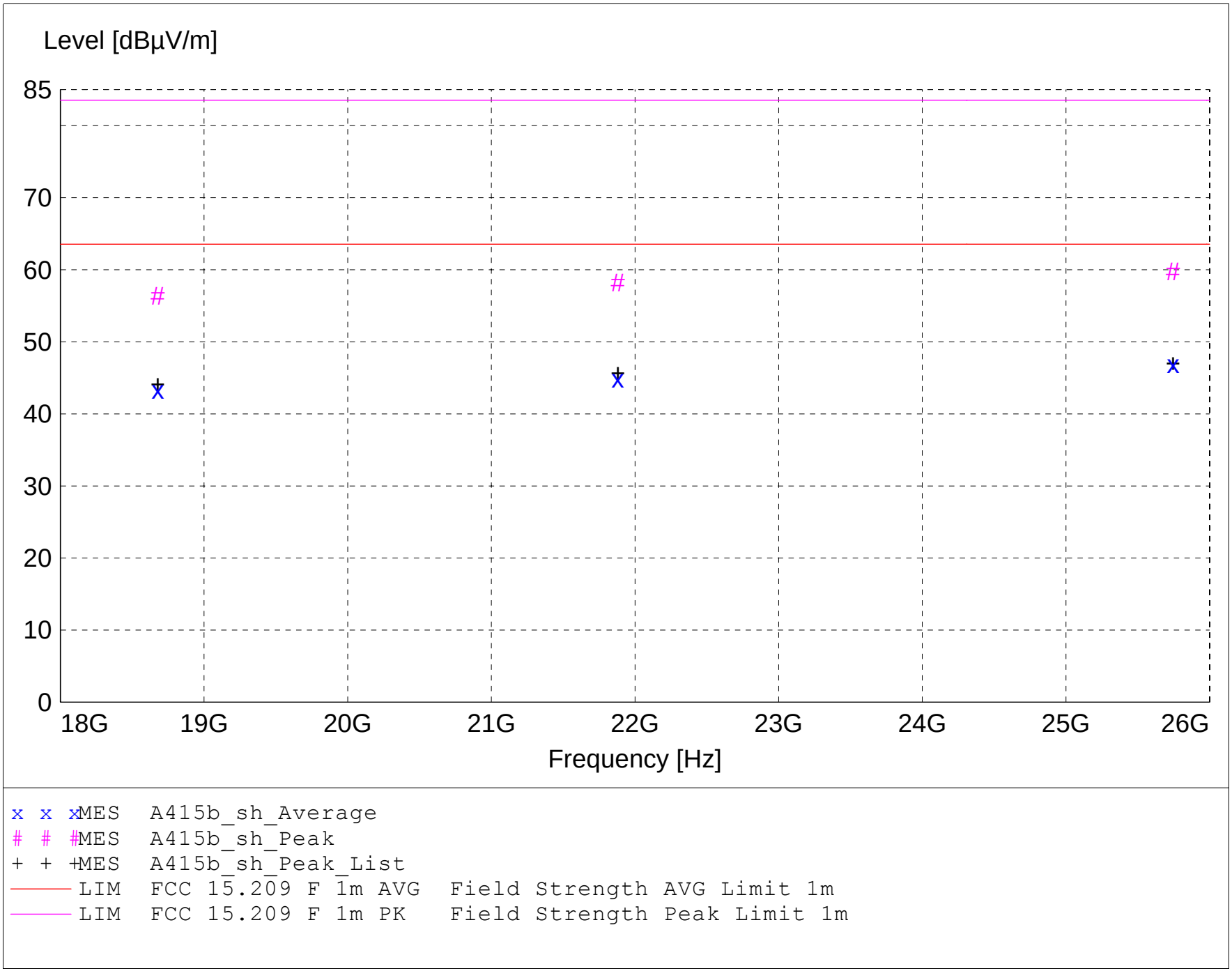
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector



x x xMES A415b_sh_Average
#MES A415b_sh_Peak
+ + +MES A415b_sh_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A415b_sh_Final"

4/15/2014 1:55PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
25746.300000	36.02	46.65	-35.7	46.9	63.5	16.6	1.30	0	AVERAGE	noise floor
21880.800000	38.73	46.44	-40.3	44.8	63.5	18.7	1.30	0	AVERAGE	noise floor
18678.000000	37.04	45.01	-38.8	43.3	63.5	20.2	1.30	0	AVERAGE	noise floor
25746.300000	48.81	46.65	-35.7	59.7	83.5	23.8	1.30	0	MAX PEAK	noise floor
21880.800000	52.11	46.44	-40.3	58.2	83.5	25.3	1.30	0	MAX PEAK	noise floor
18678.000000	50.14	45.01	-38.8	56.4	83.5	27.1	1.30	0	MAX PEAK	noise floor

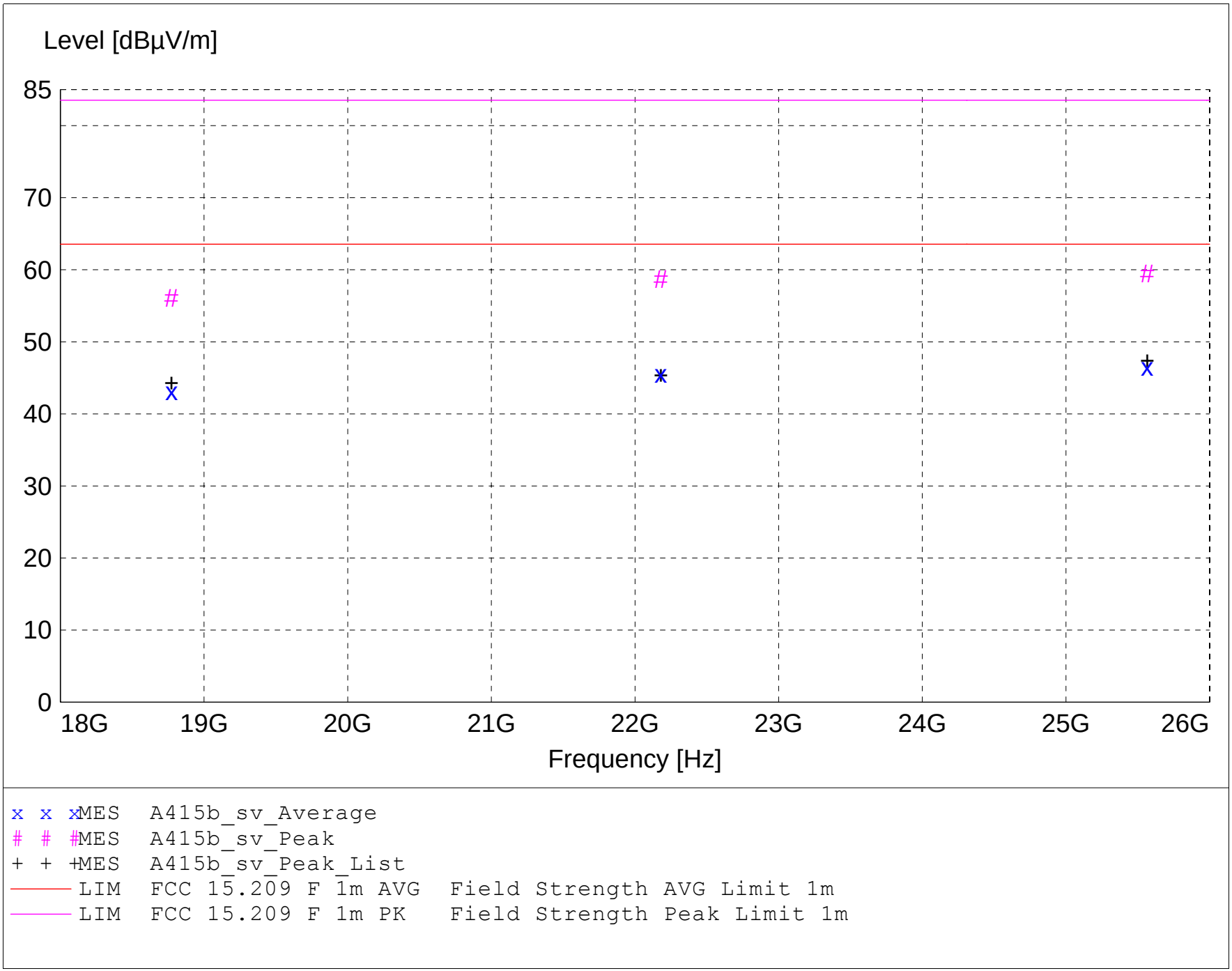
FCC Part 15.209

Electric Field Strength

```
EUT:                 ePMP STA 5.4 & 5.2 GHz OFDM,   ESN: 000456C560B4
Manufacturer:        Cambium Networks
Operating Condition: 70 deg. F; 31% R.H.
Test Site:           DLS O.F. Site 2
Operator:            Craig B
Test Specification:  Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment:             Both ports Tx setting 27.5 (24=0 cal table); with 30 dBi Dish antenna (w/ 6 dB atten)
                     Date:  04-15-2014
```

TEXT: "Vert 1 meters"

```
  Short Description:           Test Set-up


Test Set-up:    EUT Measured at 1 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6



Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector
```



x x xMES A415b_sv_Average
#MES A415b_sv_Peak
+ + +MES A415b_sv_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A415b_sv_Final"

4/15/2014 1:59PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
25565.400000	35.72	46.77	-36.0	46.5	63.5	17.0	1.30	0	AVERAGE	noise floor
22179.600000	39.78	46.39	-40.6	45.6	63.5	18.0	1.30	0	AVERAGE	noise floor
18773.800000	37.23	45.12	-39.2	43.2	63.5	20.4	1.30	0	AVERAGE	noise floor
25565.400000	48.67	46.77	-36.0	59.5	83.5	24.1	1.30	0	MAX PEAK	noise floor
22179.600000	52.90	46.39	-40.6	58.7	83.5	24.9	1.30	0	MAX PEAK	noise floor
18773.800000	50.14	45.12	-39.2	56.1	83.5	27.5	1.30	0	MAX PEAK	noise floor

FCC Part 15.209

Electric Field Strength

EUT: ePMP STA 5.4 & 5.2 GHz OFDM, ESN: 000456C560B4
Manufacturer: Cambium Networks
Operating Condition: 70 deg. F; 31% R.H.
Test Site: DLS O.F. Site 2
Operator: Craig B
Test Specification: Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment: Both ports Tx setting 27.5 (24=0 cal table); with 30 dBi Dish antenna (w/ 6 dB atten)
Date: 04-15-2014

TEXT: "Horz 1 meters"

Short Description: Test Set-up

Test Set-up: EUT Measured at 1 Meters with HORIZONTAL Antenna Polarization

Equations: Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)

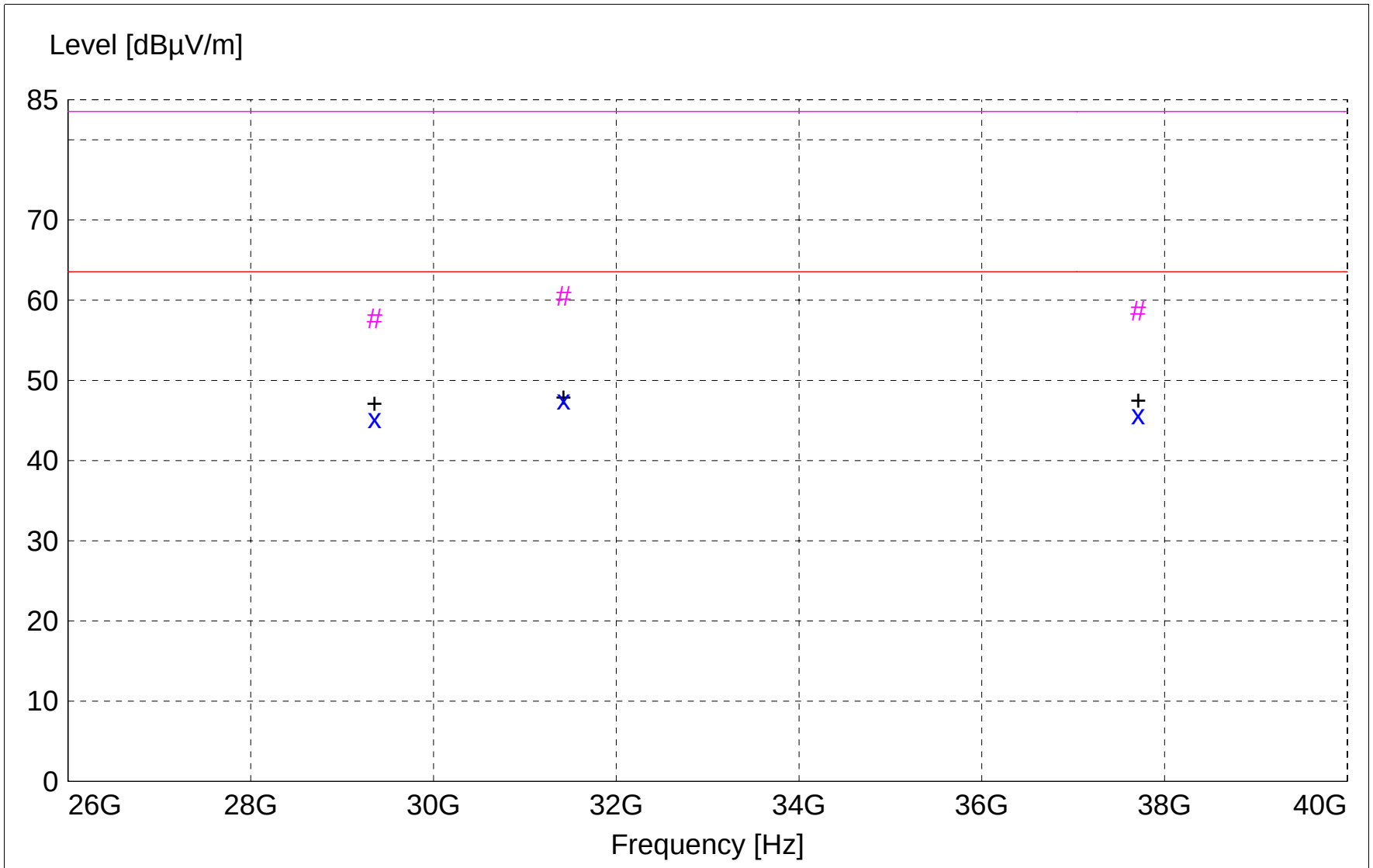
Margin(dB) = Limit(dBµV/m) - Total Level(dBµV/m)

Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average dector

Final maximized level using Peak detector



x x xMES A415c_sh_Average
#MES A415c_sh_Peak
+ + +MES A415c_sh_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A415c_sh_Final"

4/15/2014 2:32PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
31423.000000	50.59	47.44	-50.4	47.6	63.5	15.9	1.30	0	AVERAGE	noise floor
37712.400000	46.39	45.36	-46.0	45.8	63.5	17.8	1.30	0	AVERAGE	noise floor
29355.000000	47.44	46.56	-48.7	45.3	63.5	18.3	1.30	0	AVERAGE	noise floor
31423.000000	63.51	47.44	-50.4	60.5	83.5	23.0	1.30	0	MAX PEAK	noise floor
37712.400000	59.29	45.36	-46.0	58.7	83.5	24.9	1.30	0	MAX PEAK	noise floor
29355.000000	59.92	46.56	-48.7	57.7	83.5	25.8	1.30	0	MAX PEAK	noise floor

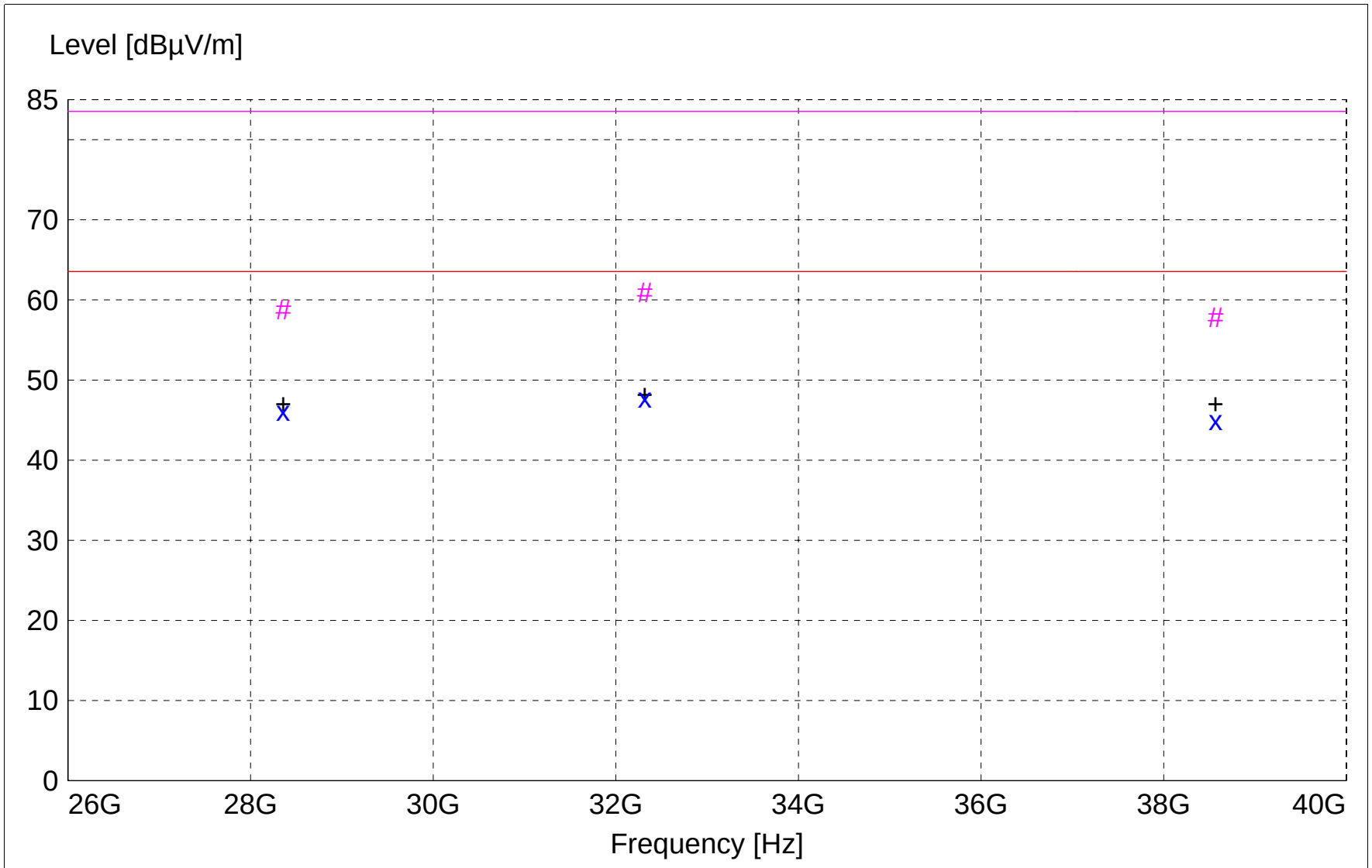
FCC Part 15.209

Electric Field Strength

```
EUT:                 ePMP STA 5.4 & 5.2 GHz OFDM,   ESN: 000456C560B4
Manufacturer:        Cambium Networks
Operating Condition: 70 deg. F; 31% R.H.
Test Site:           DLS O.F. Site 2
Operator:            Craig B
Test Specification:  Radiated spurious emissions; 20 & 40 MHz ch BW; L,M,H channels
Comment:             Both ports Tx setting 27.5 (24=0 cal table); with 30 dBi Dish antenna (w/ 6 dB atten)
                     Date:  04-15-2014
```

TEXT: "Vert 1 meters"

```
  Short Description:           Test Set-up


Test Set-up:    EUT Measured at 1 Meters with VERTICAL Antenna Polarization


Sample Equations:   Total Level(dBµV/m) = Level(dBµV) + System Loss(dB) + Antenna Factor(dBµV/m)
                    24.6                = 35.51       + (-22.1)         + 11.20

                    Margin(dB)  = Limit(dBµV/m) - Total Level(dBµV/m)
                    15.4        = 40            - 24.6


Graph Markers:  +       Frequency marker (Level of marker not related to final level)

                |       Final maximized level using Quasi-Peak detector

                X       Final maximized level using Average dector

                #       Final maximized level using Peak detector
```



x x xMES A415c_sv_Average
#MES A415c_sv_Peak
+ + +MES A415c_sv_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A415c_sv_Final"

4/15/2014 2:29PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
32319.200000	49.29	48.24	-49.8	47.8	63.5	15.8	1.30	0	AVERAGE	noise floor
28359.200000	49.91	46.57	-50.4	46.1	63.5	17.4	1.30	0	AVERAGE	noise floor
38570.000000	45.89	45.47	-46.4	45.0	63.5	18.6	1.30	0	AVERAGE	noise floor
32319.200000	62.45	48.24	-49.8	60.9	83.5	22.6	1.30	0	MAX PEAK	noise floor
28359.200000	62.58	46.57	-50.4	58.8	83.5	24.7	1.30	0	MAX PEAK	noise floor
38570.000000	58.78	45.47	-46.4	57.9	83.5	25.7	1.30	0	MAX PEAK	noise floor

END OF REPORT

Revision #	Date	Comments	By
1.0	4-22-2014	Preliminary Release	JS
1.1	4-22-2014	Notes added pages 11, 15, 28	JS