166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C024900P011A
Report Number:	19734
DLS Project:	6333

Code of Federal Regulations 47 Part 15 – Radio Frequency Devices

Subpart C – Intentional Radiators
Section 15.247
Operation within the bands 902 - 928 MHz,
2400 - 2483.5 MHz, 5725 - 5875 MHz,
and 24.0 - 24.25 GHz.
PART 1 - thru Section B5.0

THE FOLLOWING **MEETS** THE ABOVE TEST SPECIFICATION

Formal Name:	EPMP AP 2.4 GHz OFDM MIMO Radio
Kind of Equipment:	Point-to-Point or Point-to-Multipoint Digital Transmission Transceiver
Frequency Range:	2412to 2462 MHz (20 MHz bandwidth) 2422 to 2452 MHz (40 MHz bandwidth)

Please see the Users' Manual for the channel specifications for use with the Dish antenna.

Test Configuration:	Stand-alone
Model Number(s):	C024900P011A, C024900A011A
Model(s) Tested:	C024900P011A
Serial Number(s):	MAC Address: 000456C1A853
Date of Tests:	January 13th to February 4th, 2014
Test Conducted For:	Cambium Networks 3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA

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

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SIGNATURE PAGE

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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

It was determined that the Cambium Networks EPMP AP 2.4 GHz OFDM MIMO Radio, Model C024900P011A, complies with the requirements of CFR 47 Part 15 Subpart C Section 15.247.

Applicable Technical Requirements Tested:

Section	Description	Procedure	Note	Compliant?
15.247(a)(2)	6 dB Emission Bandwidth - Conducted	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 8.1 Option 1	1	Yes
15.247(b)(3)	Fundamental Emission Output Power – Average	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 9.2.3.1-AVGPM	1	Yes
15.247(e)	Maximum Power Spectral Density - Conducted	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 10.3-AVGPSD-1	1	Yes
15.247(d)	Maximum Unwanted Emission Levels – Conducted	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 11.0	1	Yes
15.247 (d), 15.205	Conducted Measurements for Radiated Restricted Band Compliance - with Dish	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 12.1/12.2.2	1	Yes
15.247(d), 15.205	Maximum Unwanted Emission Levels – Conducted - Operating Band-Edge	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 11.0	1	Yes
15.247(d), 15.205	Maximum Unwanted Emission Levels into Restricted Frequency Bands - Radiated	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 12.0 & 12.1	2	Yes
15.247(d), 15.205	Maximum Unwanted Emissions - Radiated Band-Edge - from Cabinet	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01	2	Yes
15.35(c)	Duty Cycle of Test Unit	ANSI C63.10-2009 Section 7.5	1	NA
15.207(a)	AC Line Conducted Emissions	ANSI C63.10-2009 Section 6.2		Yes

Note 1: RF conducted measurement.
Note 2: Radiated emission measurement.

2.0 Introduction

From January 13th through February 4th, 2014 the EPMP AP 2.4 GHz OFDM MIMO Radio, Model C024900P011A, as provided from Cambium Networks, was tested to the requirements of CFR 47 Part 15 Subpart C Section 15.247. 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 2.4 GHz DTS Transceiver with either Sector (17 dBi) or Omni (8dBi) or Dish (25dBi) external antenna with 20 MHz or 40 MHz channel bandwidth. OFDM modulation.

Type of Equipment / Frequency Range:

Stand-Alone / 2412 to 2462 MHz (20 MHz bandwidth)
2422 to 2452 MHz (40 MHz bandwidth)
Please see the Users' Manual for the channel specifications for use with the Dish antenna.

Physical Dimensions of Equipment Under Test:

Length: 8.5 in. Width: 3 in. Height: 1 in.

Power Source:

30 VDC (Power Over Ethernet to Radio)
120 Vac, 60 Hz using Power supply model: PSA15M-300 (AP)

Internal Frequencies:

292kHz, 940-1000kHz, 4MHz (Switching Power Supply Frequencies)
40 MHz, 25 MHz

Transmit Frequencies Used For Test Purpose:

20 MHz Channel Bandwidth:
Low channel: 2412 MHz
Middle channel: 2437 MHz
High channel: 2462 MHz
High Channel with Dish antenna: 2462 MHz

40 MHz Channel Bandwidth:
Low channel: 2422 MHz
Middle channel: 2437 MHz
High channel: 2452 MHz
High Channel with Dish antenna: 2447 MHz

Type of Modulations:

OFDM: MCS15 (worst case) used for testing

Description of Circuit Board(s) / Part Number:

Cambium Networks PC Board	P005153
17 dBi Sector antenna	Laird SKS240045-18-CA1
8 dBi Omni antenna	AFR-SP(2400-2500)-8-2A
25 dBi Dish antenna	MA-WP2556-DP12
Connector x 2	PMP090003
1 dB cable x 2	LMR E203950

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
LISN	Solar	9252-50-R-24-BNC	961019	9 kHz – 30 MHz	5-24-13	5-24-14
Filter- High-Pass	SOLAR	7930-120	090702	120 kHz – 30 MHz	1-3-14	1-3-15
Limiter	Electro-Metrics	EM-7600	706	9 kHz – 30 MHz	1-3-14	1-3-15
Preamp	Miteq	AMF-7D-01001800-22-10P	1809602	1GHz-18GHz	5-29-13	5-29-14
Horn Antenna	EMCO	3115	9502-4451	1-18GHz	3-18-13	3-18-15
Filter- High-Pass	Q-Microwave	100462	2	4.2GHz-18GHz	5-28-13	5-28-14
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26GHz	8-12-13	8-12-14
Horn Antenna	EMCO	3116	2549	18 – 40GHz	9-6-12	9-6-14
High Pass Filter	Planar	CL22500-9000-CD-SS	PF1229/0728	15-40 GHz	8-14-13	8-14-14
20 dB attenuator	Aeroflex/weinschel	75A-20-12	1071	DC – 40 GHz	8-14-13	8-14-14
10 dB attenuator	Pasternack	PE7014-10	DLS#198	DC – 18 GHz	3-16-13	3-16-14
Preamplifier	Rohde & Schwarz	TS-PR10	032001/005	9 kHz – 1 GHz	1-4-14	1-4-15
Antenna	EMCO	3104C	97014785	20 MHz – 200 MHz	8-22-12	8-22-14
Antenna	EMCO	3146	97024895	200 MHz – 1 GHz	9-6-12	9-6-14
Filter- Low-Pass	Mini-Circuits	VLFX1125	RUU92600920	30 - 1000 MHz	8-13-13	8-13-14
Thermal Power Sensor	Rohde & Schwarz	NRP-Z51	1138.0005.03-104290-Wq	DC - 18GHz	12-12-13	12-12-14
20 dB attenuator	Anritsu	42N50-20	000451	DC – 18 GHz	3-16-13	3-16-14

6.0 Test Arrangements

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 additional 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

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 558074 D01 DTS Meas Guidance v03r01 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 additional photos of the test set up.

7.0 Test Conditions

Normal Test Conditions:

Temperature and Humidity:

67°F at 27% RH

Supply Voltage:

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

8.0 Modifications Made To EUT for Compliance

No modifications were needed for the OFDM transmitters.

9.0 Additional Descriptions

Mode of operation: Measurements were taken for MCS15 modulation (as worst case) at the lowest, middle, and highest channels of operation. Port 0 & Port 1 were tested. Port 0 was tested as representative of Port 1. Port 0 was equal to/or worst case over Port 1 per Cambium Networks. 20 and 40 MHz channel bandwidths were tested. EUT was set to transmit continuously (at various power settings) with 100% duty cycle.

Emission Designators: 20M0X1D, 40M0X1D

Please see the Users' Manual for the channel specifications for use with the Dish antenna.

10.0 Results

Measurements were performed in accordance with FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 and ANSI C63.10-2009. Graphical and tabular data can be found in Appendix B at the end of this report.

11.0 Conclusion

The EPMP AP 2.4 GHz OFDM MIMO Radio, Model C024900P011A, as provided from Cambium Networks tested from January 13th to February 4th, 2014 **meets** the requirements of CFR 47 Part 15 Subpart C Section 15.247.

Appendix A – Test Photos

Photo Information and Test Setup:

Item 0: Cambium Networks EPMP AP 2.4 GHz OFDM MIMO Radio, Model C024900P011A
Item 1: 2.4 GHz OMNI MIMO Antenna, Model AFR-SP(2400-2500)-8-2A
Item 2: Unshielded Ethernet cable, 6ft long
Item 3: Shielded Coax cable 2 x @ 2ft long
Item 4: Power Supply, Model PSA15m-300 (AP)
Item 5: Unshielded Ethernet cable, 100ft long

Radiated with Omni Antenna - Back, below 1 GHz

Appendix A – Test Photos

Radiated with Omni Antenna - Front, below 1 GHz

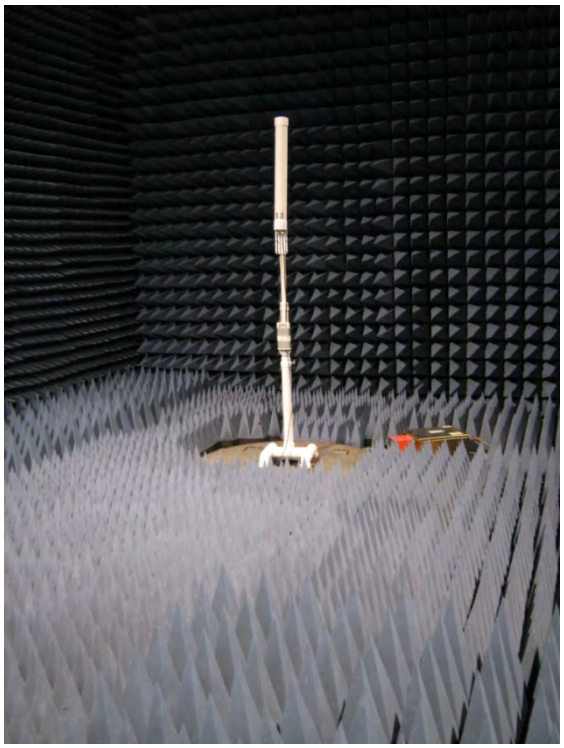
Radiated with Sector Antenna - Front, below 1 GHz

Appendix A – Test Photos

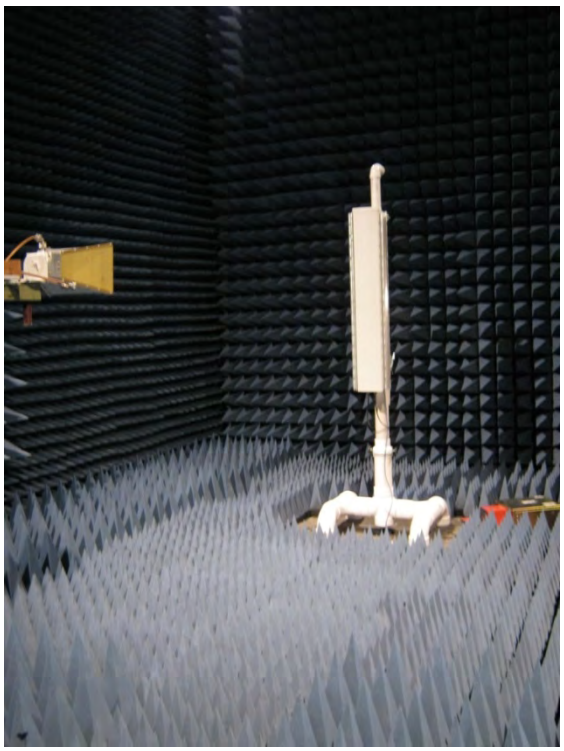
Item 0: Cambium Networks EPMP AP 2.4 GHz OFDM MIMO Radio, Model C024900P011A
Item 1: Laird Sector Antenna, Model SKS240045-18-CA1
Item 2: Unshielded Ethernet cable, 6ft long
Item 3: Shielded Coax cable 2 x @ 2ft long
Item 4: Power Supply, Model PSA15m-300 (AP)
Item 5: Unshielded Ethernet cable, 100ft long

Radiated with Sector Antenna - Back, below 1 GHz

Radiated with Omni Antenna - Above 1 GHz

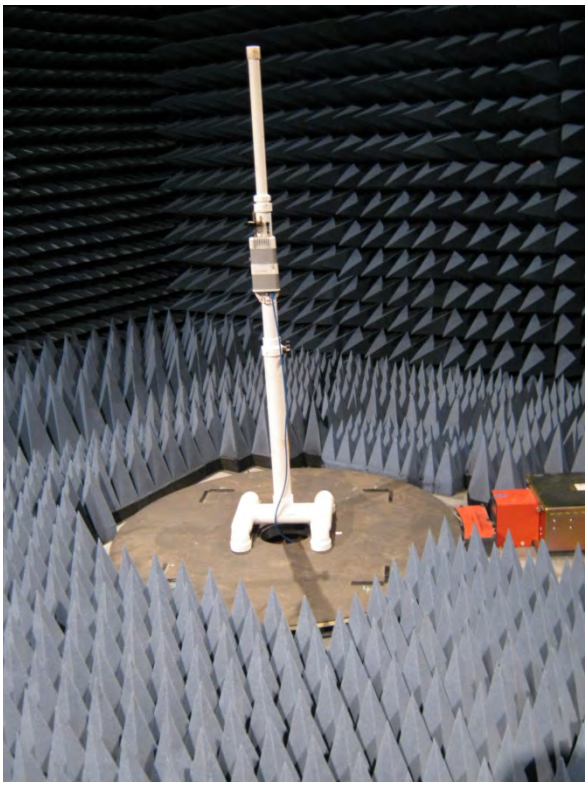


Radiated with Sector Antenna - Above 1 GHz



Radiated with Sector Antenna - Side View Above 1 GHz

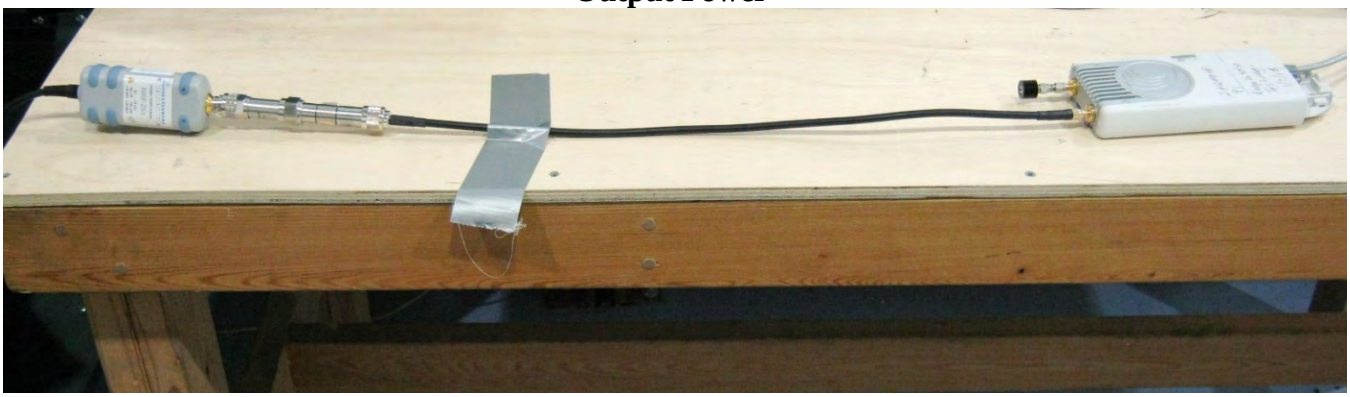
Radiated from Cabinet - Above 1 GHz



Appendix A – Test Photos

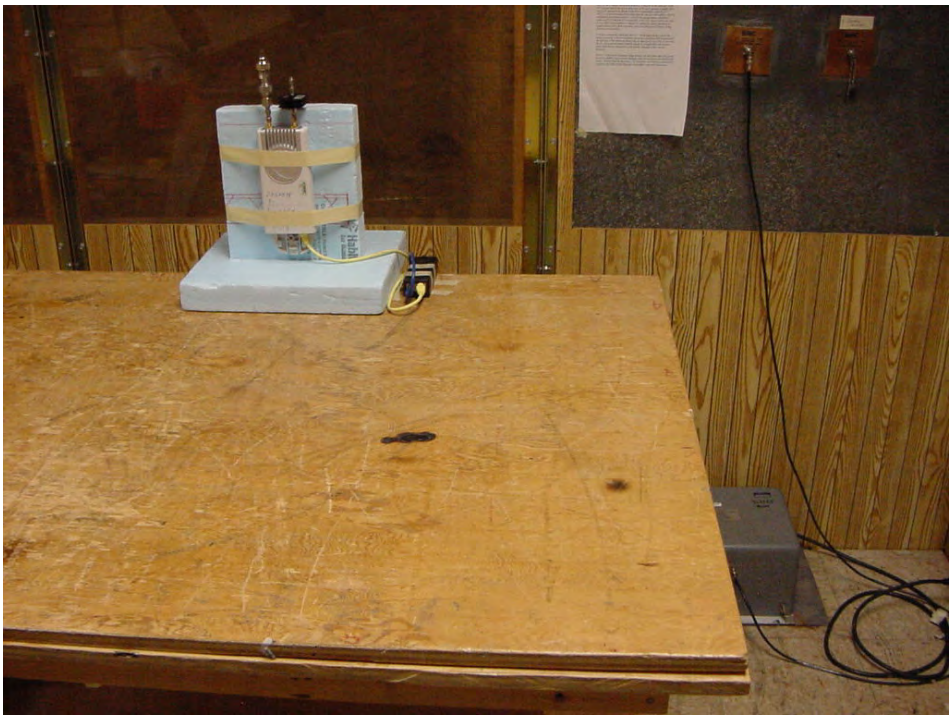
RF Conducted

Output Power

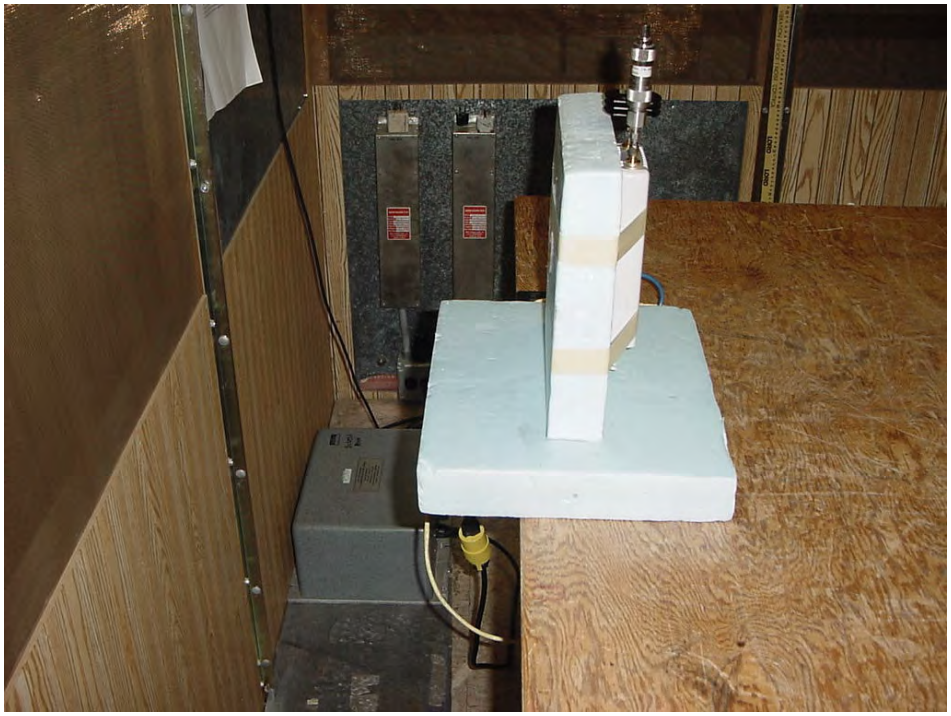


Appendix A – Test Photos

AC Line Conducted - Front



AC Line Conducted - Back



Appendix B – Measurement Data

B1.0 DTS Bandwidth – 6 dB bandwidth - Conducted

Rule Section: FCC 15.247(a)(2)

Test Procedure: FCC KDB 558074 D01 DTS Meas Guidance v03r01 – *Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247*

Section 8.1 Option 1

Description:
RBW = 100kHz
VBW ≥ 3 x RBW
Detector = Peak
Trace mode = max hold
Sweep = auto couple

Measure the maximum width of the emission between the lower and upper frequencies that measure 6 dB below the maximum level of the in-band emission.

Measurements were taken for OFDM MCS15 with 20 MHz and 40 MHz channel bandwidths at the low, middle and high channels of operation. EUT was set to transmit continuously with a 100% duty cycle.

Per Cambium Networks request, measurements were only performed on output port 0.

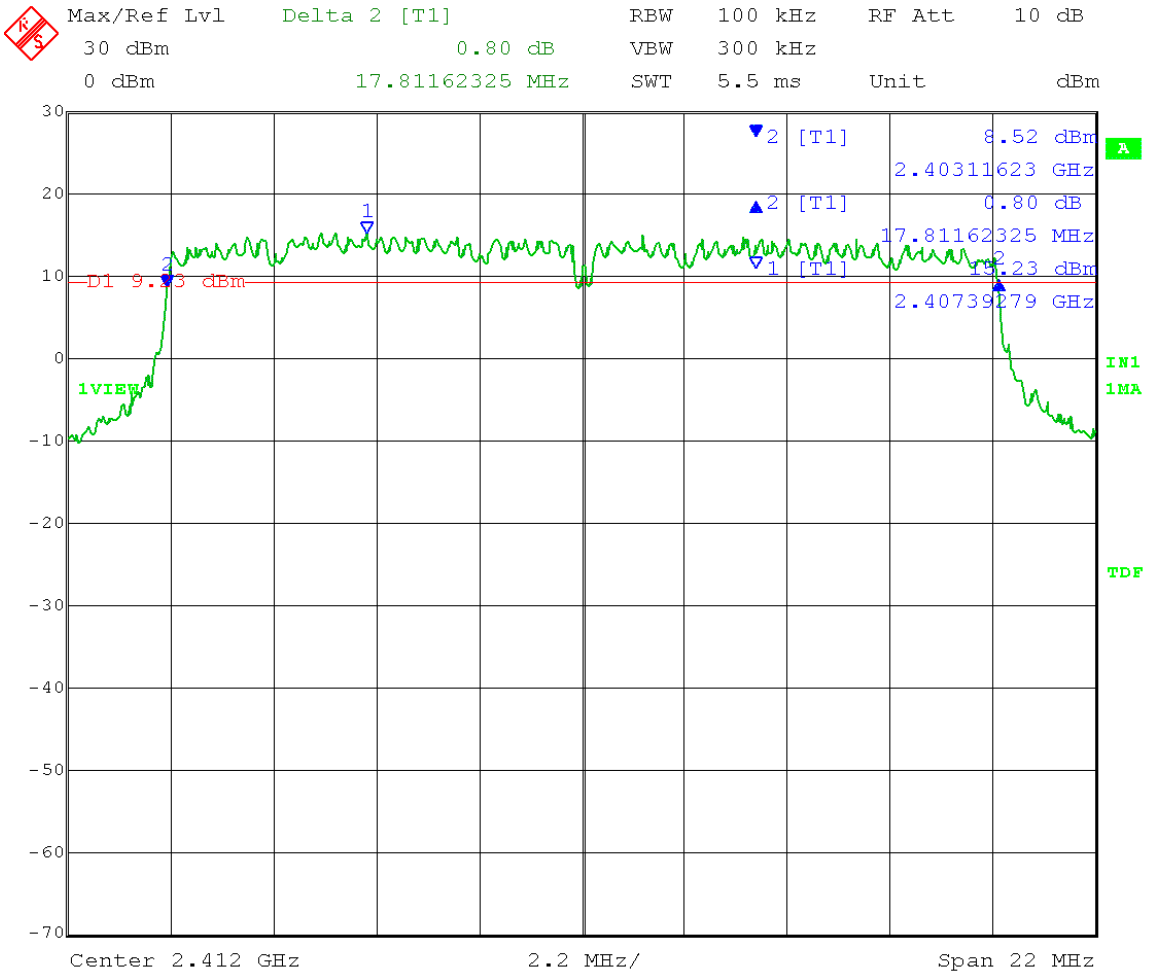
Limit: DTS Bandwidth shall be at least 500 kHz

Results: Passed

Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Emission Bandwidth (6 dB) - Conducted
Operator: Craig B

Comment: Low Channel: Transmit = 2.412 GHz
Output power setting: 26 20 MHz channel BW
Output port 0 Modulation: OFDM MCS15

6 dB Emission Bandwidth = 17.81 MHz

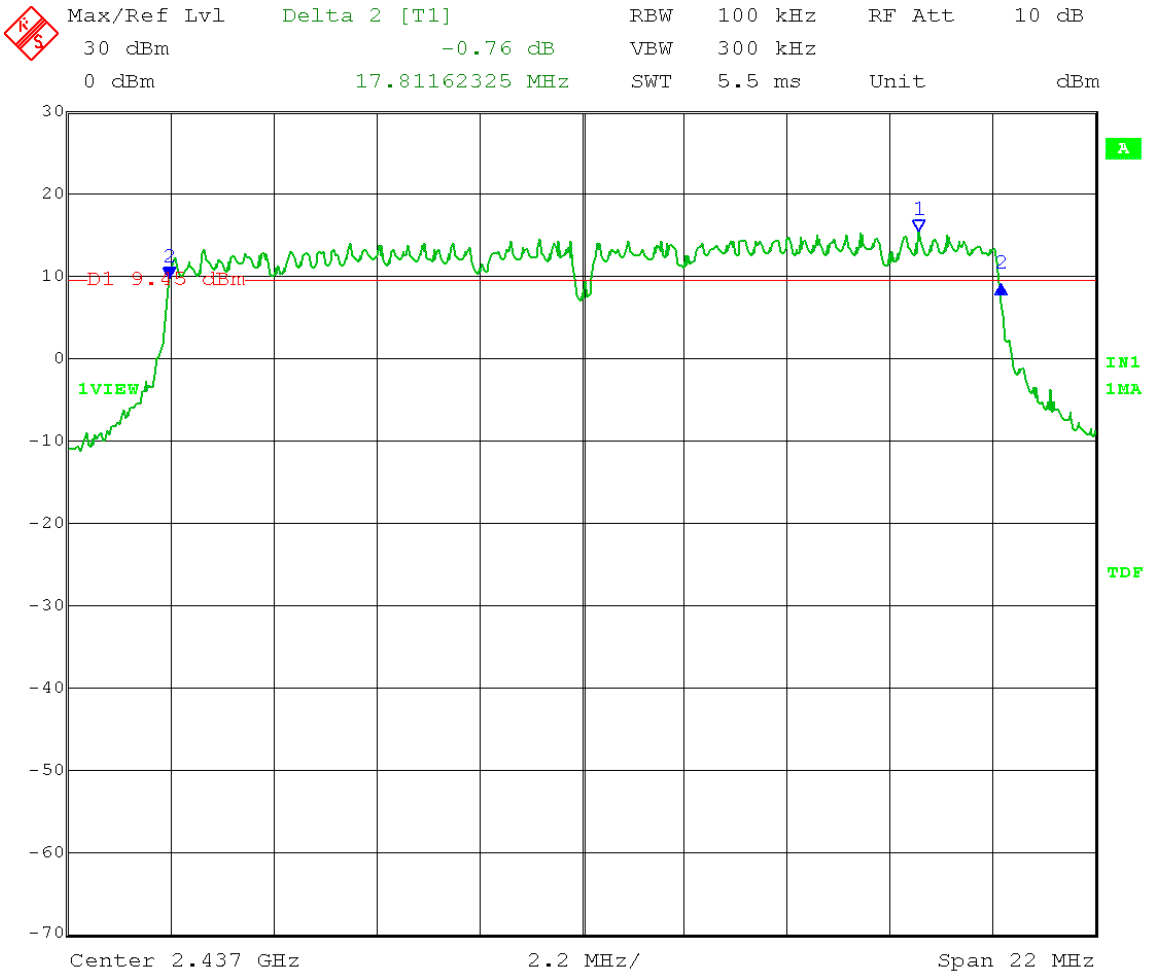


Date: 21.JAN.2014 09:29:10

Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Emission Bandwidth (6 dB) - Conducted
Operator: Craig B

Comment: Mid Channel: Transmit = 2.437 GHz
Output power setting: 26 20 MHz channel BW
Output port 0 Modulation: OFDM MCS15

6 dB Emission Bandwidth = 17.81 MHz



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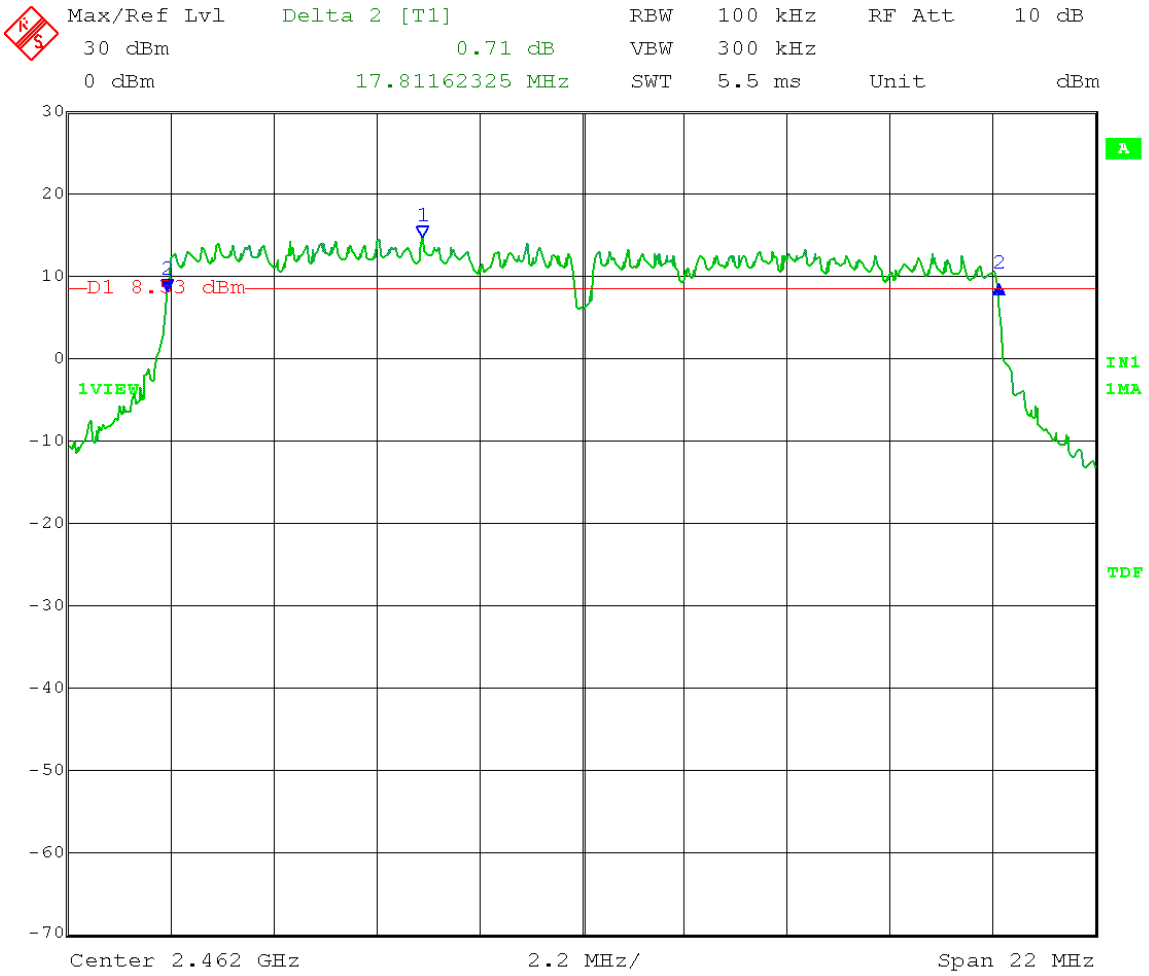
Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Emission Bandwidth (6 dB) - Conducted
Operator: Craig B

Comment: High Channel: Transmit = 2.462 GHz
Output power setting: 26 20 MHz channel BW
Output port 0 Modulation: OFDM MCS15

6 dB Emission Bandwidth = 17.81 MHz

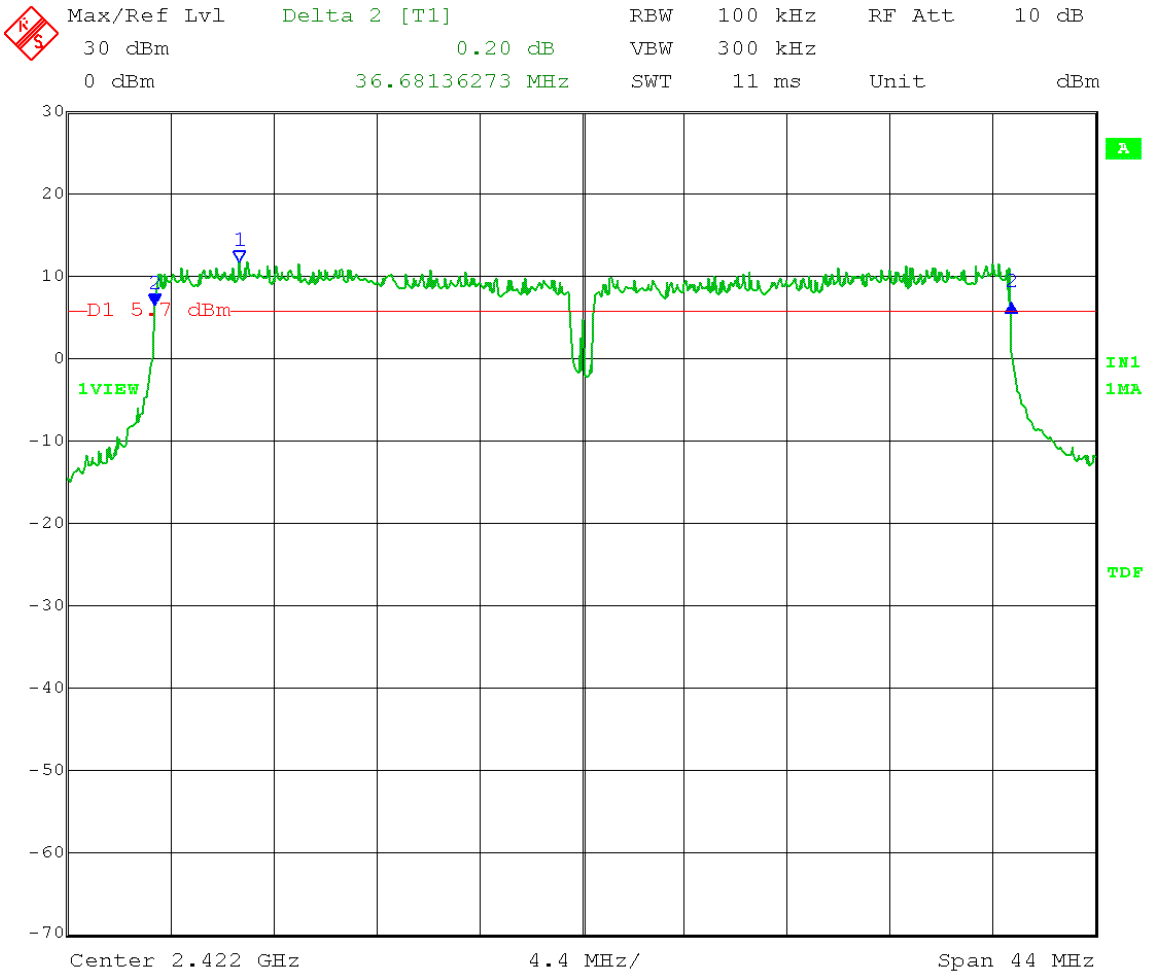


Date: 21.JAN.2014 09:37:53

Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Emission Bandwidth (6 dB) - Conducted
Operator: Craig B

Comment: Low Channel: Transmit = 2.422 GHz
Output power setting: 26 40 MHz channel BW
Output port 0 Modulation: OFDM MCS15

6 dB Emission Bandwidth = 36.68 MHz

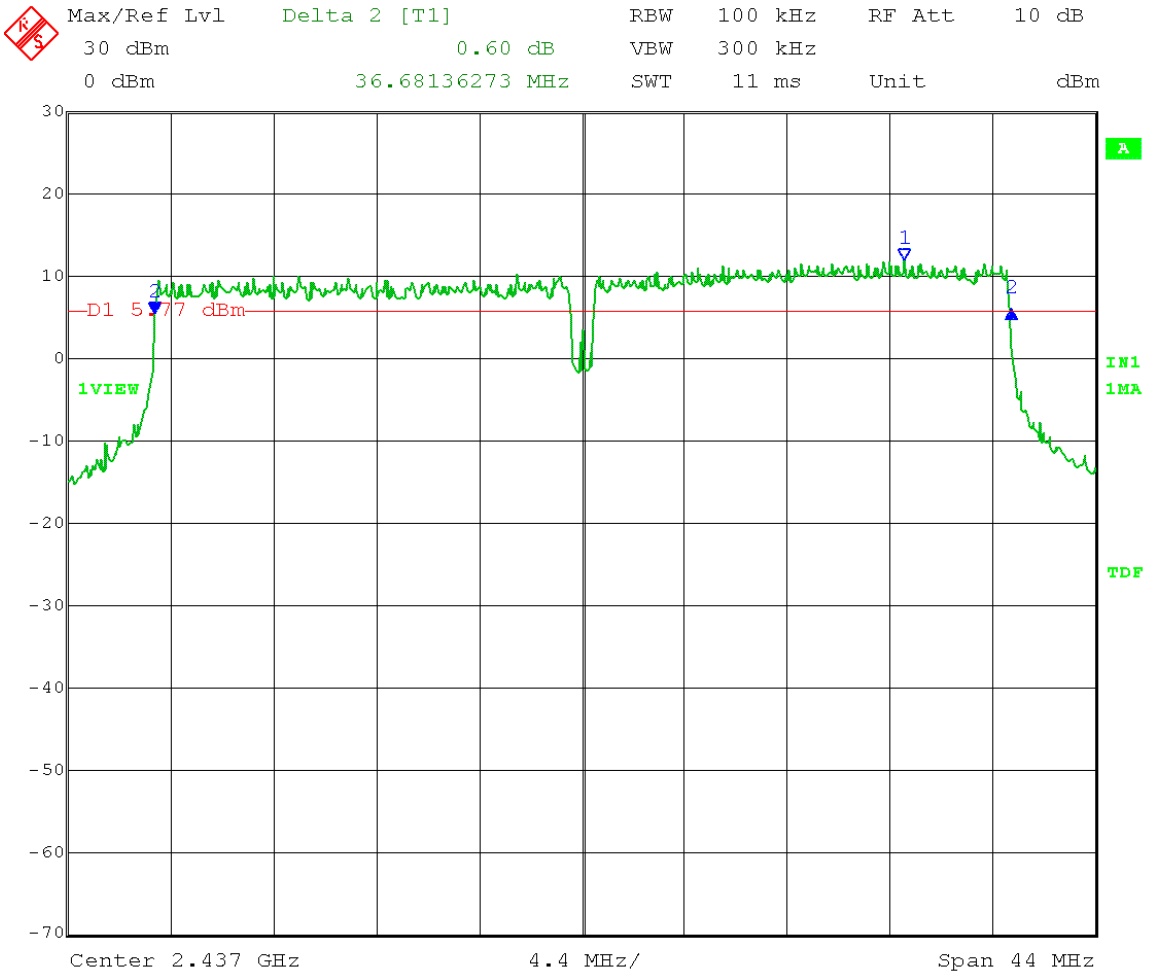


Date: 21.JAN.2014 09:42:52

Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Emission Bandwidth (6 dB) - Conducted
Operator: Craig B

Comment: Mid Channel: Transmit = 2.437 GHz
Output power setting: 26 40 MHz channel BW
Output port 0 Modulation: OFDM MCS15

6 dB Emission Bandwidth = 36.68 MHz

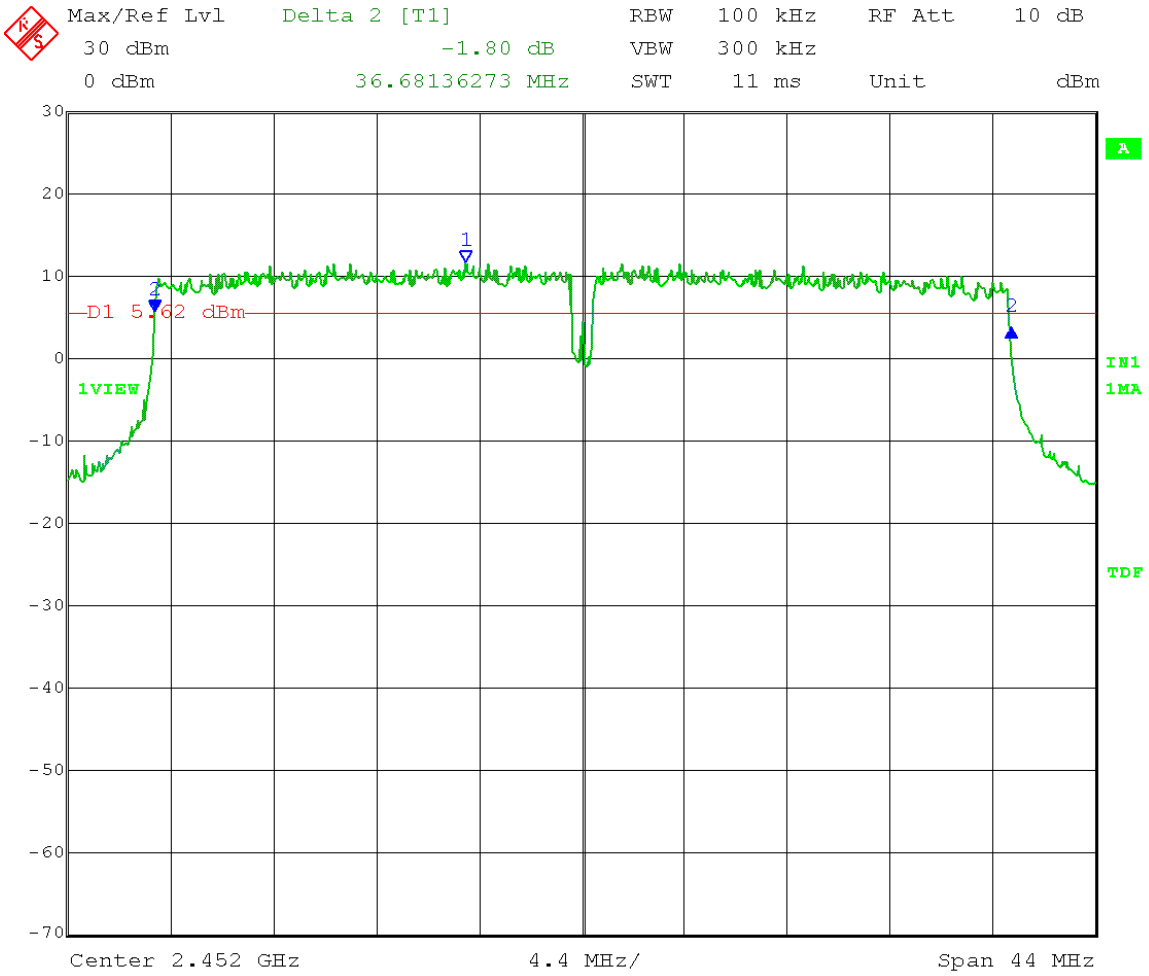


Date: 21.JAN.2014 09:45:20

Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Emission Bandwidth (6 dB) - Conducted
Operator: Craig B

Comment: High Channel: Transmit = 2.452 GHz
Output power setting: 26 40 MHz channel BW
Output port 0 Modulation: OFDM MCS15

6 dB Emission Bandwidth = 36.68 MHz



Date: 21.JAN.2014 09:48:10

Appendix B – Measurement Data

B2.0 Fundamental Emission Output Power - Conducted

Rule Section: FCC 15.247(b)(3)

Test Procedure: FCC KDB 558074 D01 DTS Meas Guidance v03r01 – *Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247*

Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)

Description: Measurements were performed using a wideband RF power meter with a thermocouple detector.

The EUT was transmitting continuously with a 100% duty cycle.
The average power of the transmitter was measured.

Measurements were taken for OFDM MCS15 with 20 MHz and 40 MHz channel bandwidths at the low, middle and high channels of operation.

Limit: Limit with 8 dBi Omni antenna: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 2 dB (antenna gain is 2 dB greater than the 6 dB allowed) = 28 dBm conducted.

Limit with 17 dBi Sector antenna: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 11 dB (antenna gain is 11 dB greater than the 6 dB allowed) = 19 dBm conducted.

Limit with 25 dBi Dish antenna (used for point-to-point operation only): [15.247(b)(3)&(c)(1)(i)]: 30 dBm conducted with 6 dBi antenna gain allowed. Conducted limit is lowered 1 dB for every 3 dB antenna gain exceeds 6 dB. Antenna gain exceeds 6 dBi by 19 dB, therefore RF conducted power limit is reduced by 7 dB. RF conducted limit = 23 dBm.

* It was later decided that the 25 dBi Dish could also be used in point-to-multipoint operation. Test rest results show that the output power used for point-to-point mode also passes the point-to-multipoint limit. Point-to-multipoint limit: [15.247(b)(3)&(4)]:
30 dBm (1 Watt) – 19 dB (antenna gain is 19 dB greater than the 6 dB allowed) = 11 dBm conducted.

Results: Passed

Notes: The RF conducted power limit was reduced by the amount by which the antenna gain exceeds 6 dBi.

Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB. 3 dB was added to power measurements to account for MIMO cross-polarized operation.

The fundamental output power setting was limited in order to pass near-by restricted band emission limits.

Per Cambium Networks request, measurements were only performed on output port 0.

Test Date: 01-20-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

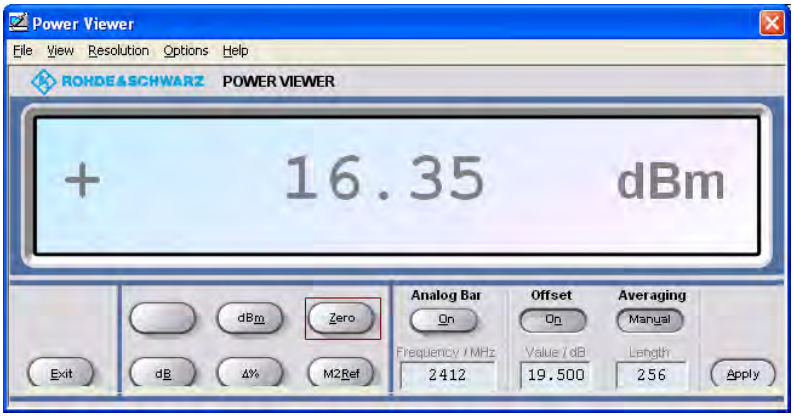
EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0; Low Channel Frequency: 2.412 GHz
Test software setting: 16.5 (used to get 15.5 dBm output);
Modulation Type: OFDM MCS15
Antenna gain (Omni): 8 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 2 dB (antenna gain is 2 dB greater than the 6 dB allowed) = 28 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 16.35 dBm + 3 dB (MIMO Cross-Pole)
= 19.35 dBm



Test Date: 01-13-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0; Mid Channel Frequency: 2.437 GHz
Test software setting: 26 (used to get 25 dBm output);
Modulation Type: OFDM MCS15
Antenna gain (Omni): 8 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 2 dB (antenna gain is 2 dB greater than the 6 dB allowed) = 28 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 24.99 dBm + 3 dB (MIMO Cross-Pole)
= 27.99 dBm

Test Date: 01-20-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

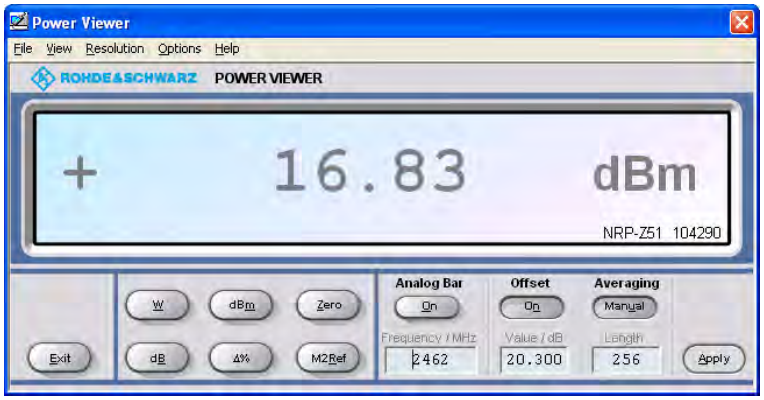
EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0; High Channel Frequency: 2.462 GHz
Test software setting: 17.5 (used to get 16.5 dBm output);
Modulation Type: OFDM MCS15
Antenna gain (Omni): 8 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 2 dB (antenna gain is 2 dB greater than the 6 dB allowed) = 28 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 16.83 dBm + 3 dB (MIMO Cross-Pole)
= 19.83 dBm



Test Date: 01-20-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

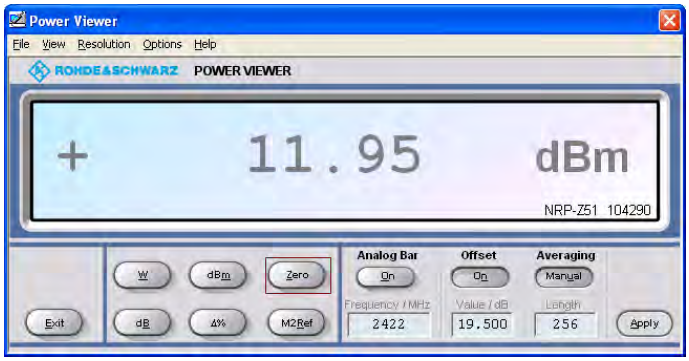
EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0; Low Channel Frequency: 2.422 GHz
Test software setting: 13 (used to get 12 dBm output);
Modulation Type: OFDM MCS15
Antenna gain (Omni): 8 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 2 dB (antenna gain is 2 dB greater than the 6 dB allowed) = 28 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 11.95 dBm + 3 dB (MIMO Cross-Pole)
= 14.95 dBm



Test Date: 01-14-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

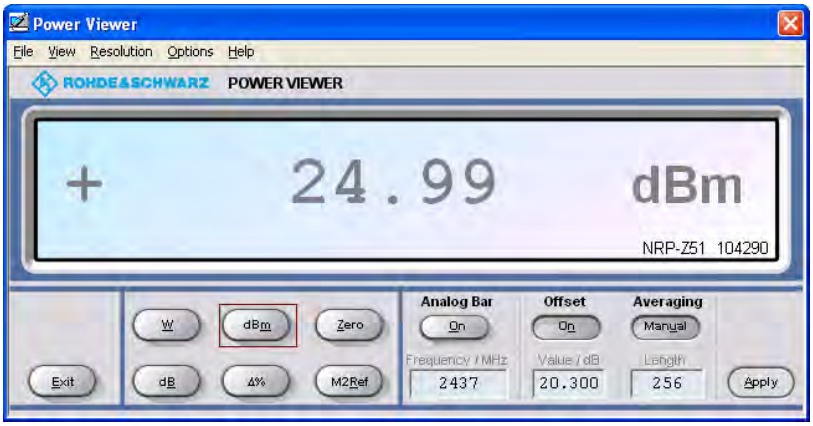
EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0; Mid Channel Frequency: 2.437 GHz
Test software setting: 26 (used to get 25 dBm output);
Modulation Type: OFDM MCS15
Antenna gain (Omni): 8 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 2 dB (antenna gain is 2 dB greater than the 6 dB allowed) = 28 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 24.99 dBm + 3 dB (MIMO Cross-Pole)
= 27.99 dBm



Test Date: 01-22-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

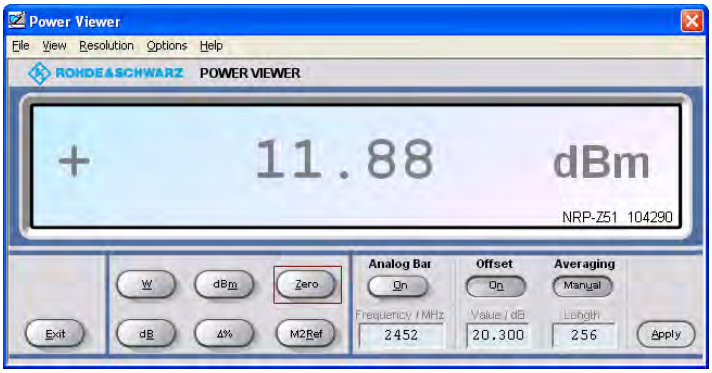
EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0; High Channel Frequency: 2.452 GHz
Test software setting: 12 (used to get 11 dBm output);
Modulation Type: OFDM MCS15
Antenna gain (Omni): 8 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 2 dB (antenna gain is 2 dB greater than the 6 dB allowed) = 28 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 11.88 dBm + 3 dB (MIMO Cross-Pole)
= 14.88 dBm



Test Date: 01-20-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

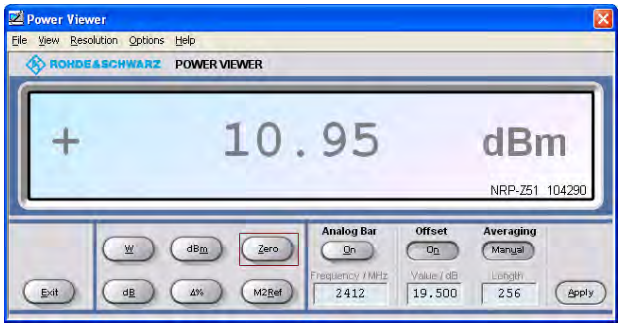
EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0; Low Channel Frequency: 2.412 GHz
Test software setting: 12 (used to get 11 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 17 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 11 dB (antenna gain is 11 dB greater than the 6 dB allowed) = 19 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 10.95 dBm + 3 dB (MIMO Cross-Pole)
= 13.95 dBm



Test Date: 01-13-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

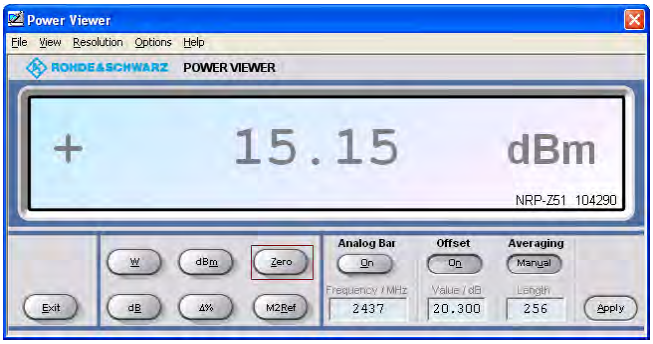
EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0; Mid Channel Frequency: 2.437 GHz
Test software setting: 17 (used to get 16 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 17 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 11 dB (antenna gain is 11 dB greater than the 6 dB allowed) = 19 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 15.15 dBm + 3 dB (MIMO Cross-Pole)
= 18.15 dBm



Test Date: 01-20-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

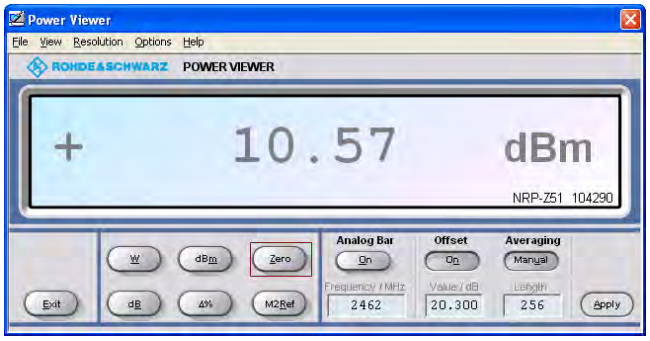
EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0; High Channel Frequency: 2.462 GHz
Test software setting: 12 (used to get 11 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 17 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 11 dB (antenna gain is 11 dB greater than the 6 dB allowed) = 19 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 10.57 dBm + 3 dB (MIMO Cross-Pole)
= 13.57 dBm



Test Date: 01-20-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

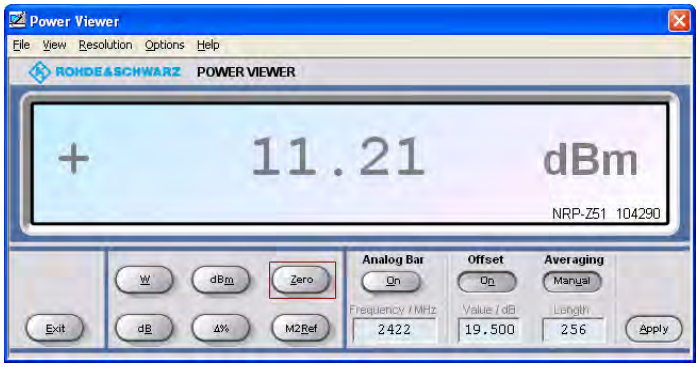
EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0; Low Channel Frequency: 2.422 GHz
Test software setting: 12 (used to get 11 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 17 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 11 dB (antenna gain is 11 dB greater than the 6 dB allowed) = 19 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 11.21 dBm + 3 dB (MIMO Cross-Pole)
= 14.21 dBm



Test Date: 01-14-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

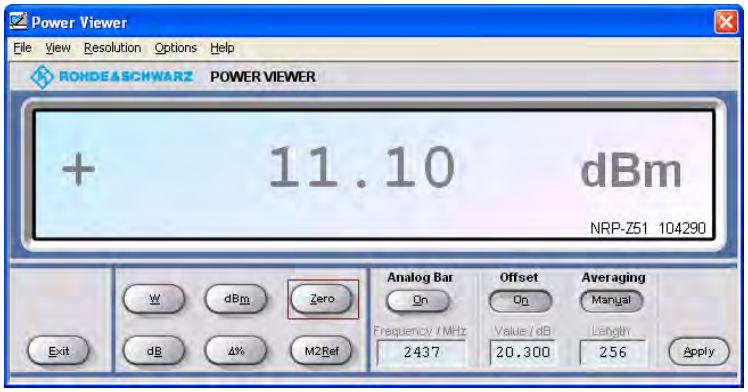
EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0; Mid Channel Frequency: 2.437 GHz
Test software setting: 12 (used to get 11 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 17 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 11 dB (antenna gain is 11 dB greater than the 6 dB allowed) = 19 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 11.10 dBm + 3 dB (MIMO Cross-Pole)
= 14.10 dBm



Test Date: 01-20-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

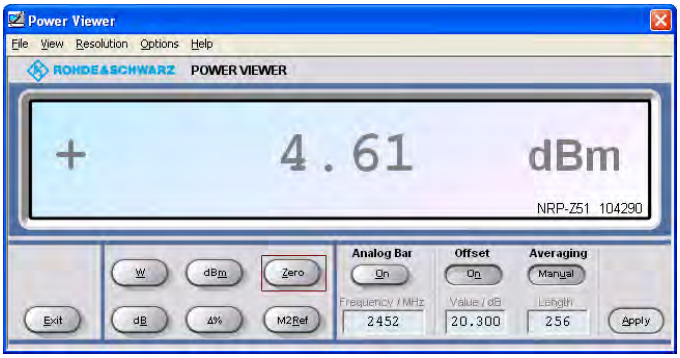
EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0; High Channel Frequency: 2.452 GHz
Test software setting: 4.5 (used to get 3.5 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 17 dBi; Point-to-Multipoint operation

Limit: [15.247(b)(3)&(4)]: 30 dBm (1 Watt) – 11 dB (antenna gain is 11 dB greater than the 6 dB allowed) = 19 dBm conducted.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Correction for duty cycle = 100%

Fundamental Emission AVERAGE Output Power = 4.61 dBm + 3 dB (MIMO Cross-Pole)
= 7.61 dBm



Test Date: 01-31-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

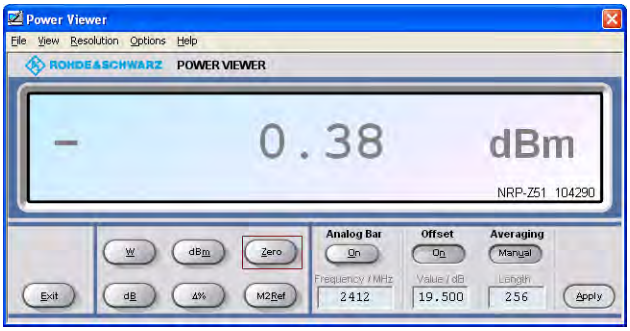
EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0; Low Channel Frequency: 2.412 GHz
Test software setting: 1 (used to get 0 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 25 dBi; Point-to-Point operation

Limit: [15.247(b)(3)&(c)(1)(i)]: 30 dBm conducted with 6 dBi antenna gain allowed. Conducted limit is lowered 1 dB for every 3 dB antenna gain exceeds 6 dB. Antenna gain exceeds 6 dBi by 19 dB, therefore RF conducted power limit is reduced by 7 dB.
RF conducted limit = 23 dBm.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Duty cycle of test unit = 100%, (no correction required)

Fundamental Emission AVERAGE Output Power = -0.38 dBm + 3 dB (MIMO Cross-Pole)
= 2.62 dBm



Test Date: 01-30-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

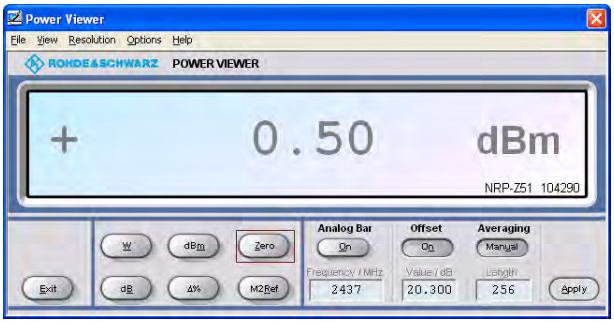
EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0; Mid Channel Frequency: 2.437 GHz
Test software setting: 1.5 (used to get 0.5 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 25 dBi; Point-to-Point operation

Limit: [15.247(b)(3)&(c)(1)(i)]: 30 dBm conducted with 6 dBi antenna gain allowed. Conducted limit is lowered 1 dB for every 3 dB antenna gain exceeds 6 dB. Antenna gain exceeds 6 dBi by 19 dB, therefore RF conducted power limit is reduced by 7 dB.
RF conducted limit = 23 dBm.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Duty cycle of test unit = 100%, (no correction required)

Fundamental Emission AVERAGE Output Power = 0.50 dBm + 3 dB (MIMO Cross-Pole)
= 3.50 dBm



Test Date: 01-31-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

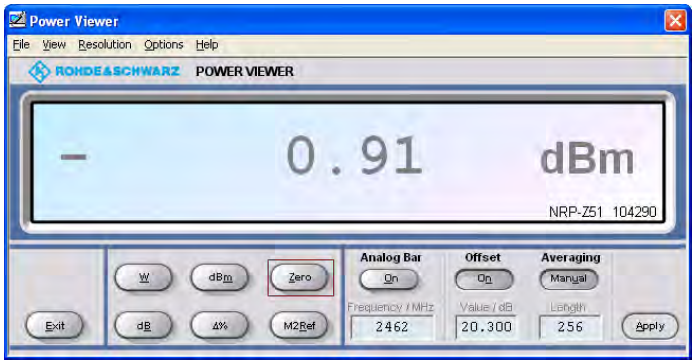
EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0; High Channel Frequency: 2.462 GHz
Test software setting: 0 (used to get -1 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 25 dBi; Point-to-Point operation

Limit: [15.247(b)(3)&(c)(1)(i)]: 30 dBm conducted with 6 dBi antenna gain allowed. Conducted limit is lowered 1 dB for every 3 dB antenna gain exceeds 6 dB. Antenna gain exceeds 6 dBi by 19 dB, therefore RF conducted power limit is reduced by 7 dB.
RF conducted limit = 23 dBm.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Duty cycle of test unit = 100%, (no correction required)

Fundamental Emission AVERAGE Output Power = -0.91 dBm + 3 dB (MIMO Cross-Pole)
= 2.09 dBm



Test Date: 02-03-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

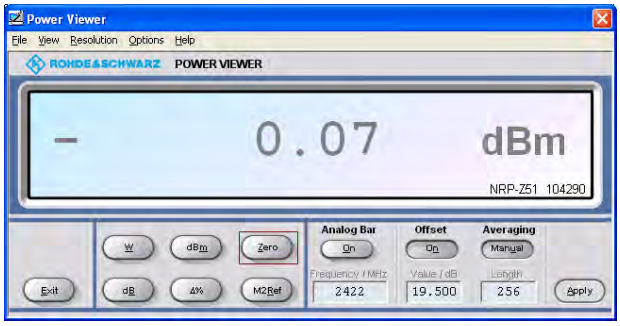
EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0; Low Channel Frequency: 2.422 GHz
Test software setting: 1 (used to get 0 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 25 dBi; Point-to-Point operation

Limit: [15.247(b)(3)&(c)(1)(i)]: 30 dBm conducted with 6 dBi antenna gain allowed. Conducted limit is lowered 1 dB for every 3 dB antenna gain exceeds 6 dB. Antenna gain exceeds 6 dBi by 19 dB, therefore RF conducted power limit is reduced by 7 dB.
RF conducted limit = 23 dBm.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Duty cycle of test unit = 100%, (no correction required)

Fundamental Emission AVERAGE Output Power = -0.07 dBm + 3 dB (MIMO Cross-Pole)
= 2.93 dBm



Test Date: 02-03-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

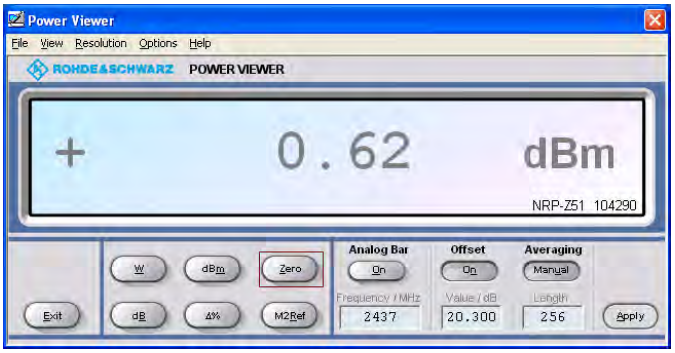
EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0; Mid Channel Frequency: 2.437 GHz
Test software setting: 1.5 (used to get 0.5 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 25 dBi; Point-to-Point operation

Limit: [15.247(b)(3)&(c)(1)(i)]: 30 dBm conducted with 6 dBi antenna gain allowed. Conducted limit is lowered 1 dB for every 3 dB antenna gain exceeds 6 dB. Antenna gain exceeds 6 dBi by 19 dB, therefore RF conducted power limit is reduced by 7 dB.
RF conducted limit = 23 dBm.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Duty cycle of test unit = 100%, (no correction required)

Fundamental Emission AVERAGE Output Power = 0.62 dBm + 3 dB (MIMO Cross-Pole)
= 3.62 dBm



Test Date: 02-03-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz OFDM MAC: 000456C1A853
Test: AVERAGE Fundamental Emission Output Power – Conducted
Procedure: FCC KDB D01 DTS Meas Guidance v03r01
Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator: Craig B

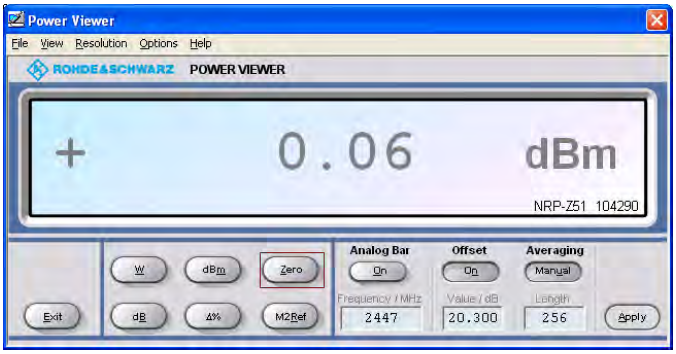
EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0; High Channel Frequency: 2.447 GHz
Test software setting: 0.5 (used to get -0.5 dBm output);
Modulation Type: OFDM MCS15
Antenna gain 25 dBi; Point-to-Point operation

Limit: [15.247(b)(3)&(c)(1)(i)]: 30 dBm conducted with 6 dBi antenna gain allowed. Conducted limit is lowered 1 dB for every 3 dB antenna gain exceeds 6 dB. Antenna gain exceeds 6 dBi by 19 dB, therefore RF conducted power limit is reduced by 7 dB.
RF conducted limit = 23 dBm.

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

Duty cycle of test unit = 100%, (no correction required)

Fundamental Emission AVERAGE Output Power = 0.06 dBm + 3 dB (MIMO Cross-Pole)
= 3.06 dBm



Appendix B – Measurement Data

B3.0 Maximum Power Spectral Density – Conducted

Rule Section: FCC 15.247(e)

Test Procedure: FCC KDB 558074 D01 DTS Meas Guidance v03r01 – *Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247*

10.3 Method AVGPSD-1 (trace averaging with EUT transmitting at full power throughout each sweep)

Description: Set instrument center frequency to DTS channel center frequency.
Set span to at least 1.5 times the OBW.
Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
Set VBW ≥ 3 x RBW
Detector = power averaging (RMS).
Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
Sweep time = auto couple.
Trace mode: trace average 200 traces
Use the peak marker function to determine the maximum amplitude level.
If necessary, zoom in on the emission of interest in order to meet the minimum measurement point requirement.

Limit: 8 dBm in any 3 kHz band segment within the fundamental EBW during any time interval of continuous transmission.

Results: Passed

Notes: Measurements were taken for OFDM MCS15 with 20 MHz and 40 MHz channel bandwidths at the low, middle and high channels of operation. EUT was set to transmit continuously with a 100% duty cycle.

Measurements were taken using the power settings used with the 8 dBi gain antenna (highest usable conducted output power).

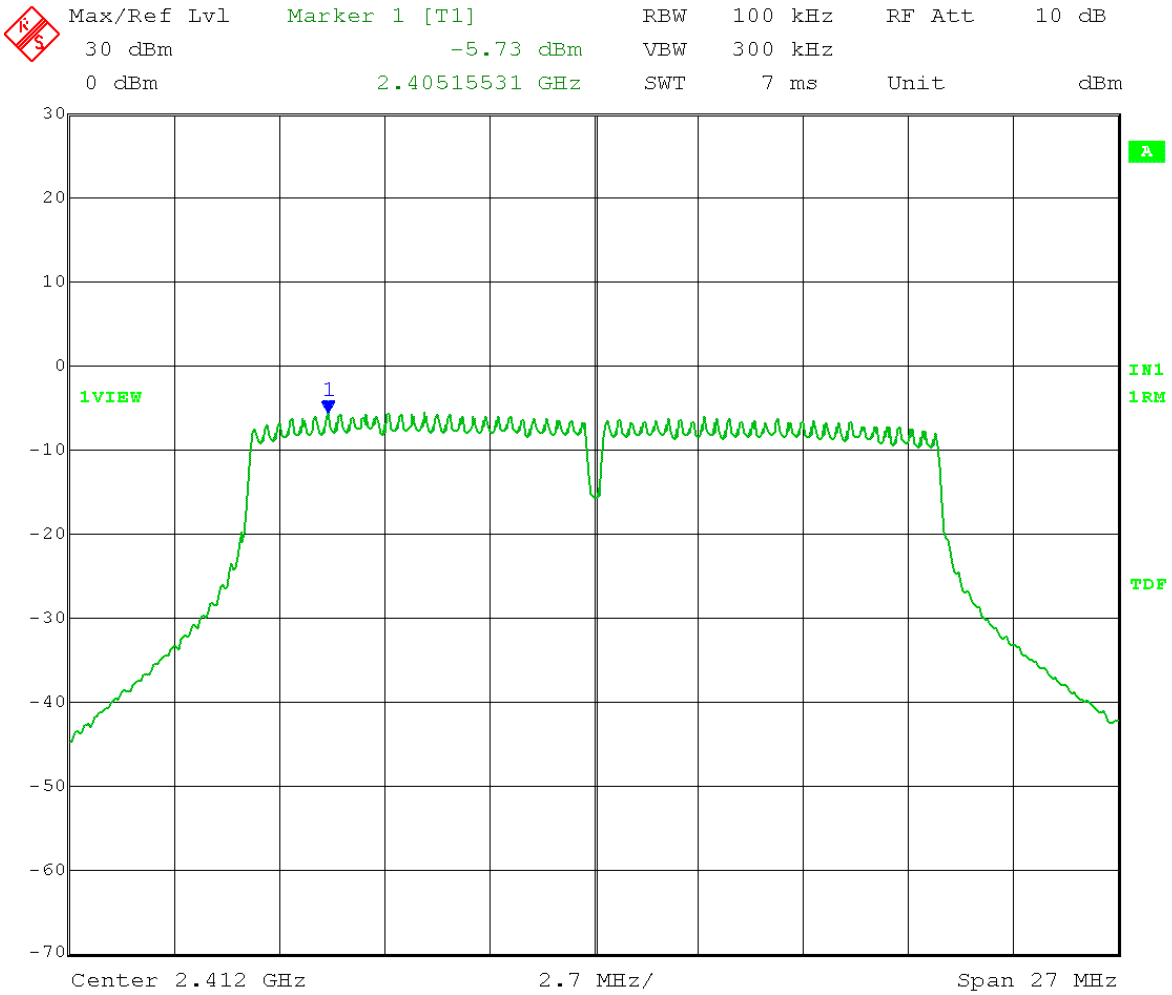
Per Cambium Networks request, measurements were only performed on output port 0.

Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Power Spectral Density level in the fundamental emission
Operator: Craig B
Comment: Low Channel: Frequency = 2412 MHz

Output Power Setting = 16.5	20 MHz channel BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x DTS bandwidth	Detector = RMS
Sweep = auto couple	Trace mode: average 200 traces
Output port 0	
Limit: +8 dBm / 3 kHz	

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

PSD = -5.73 dBm + 3 dB (MIMO) = -2.73 dBm / 100 kHz

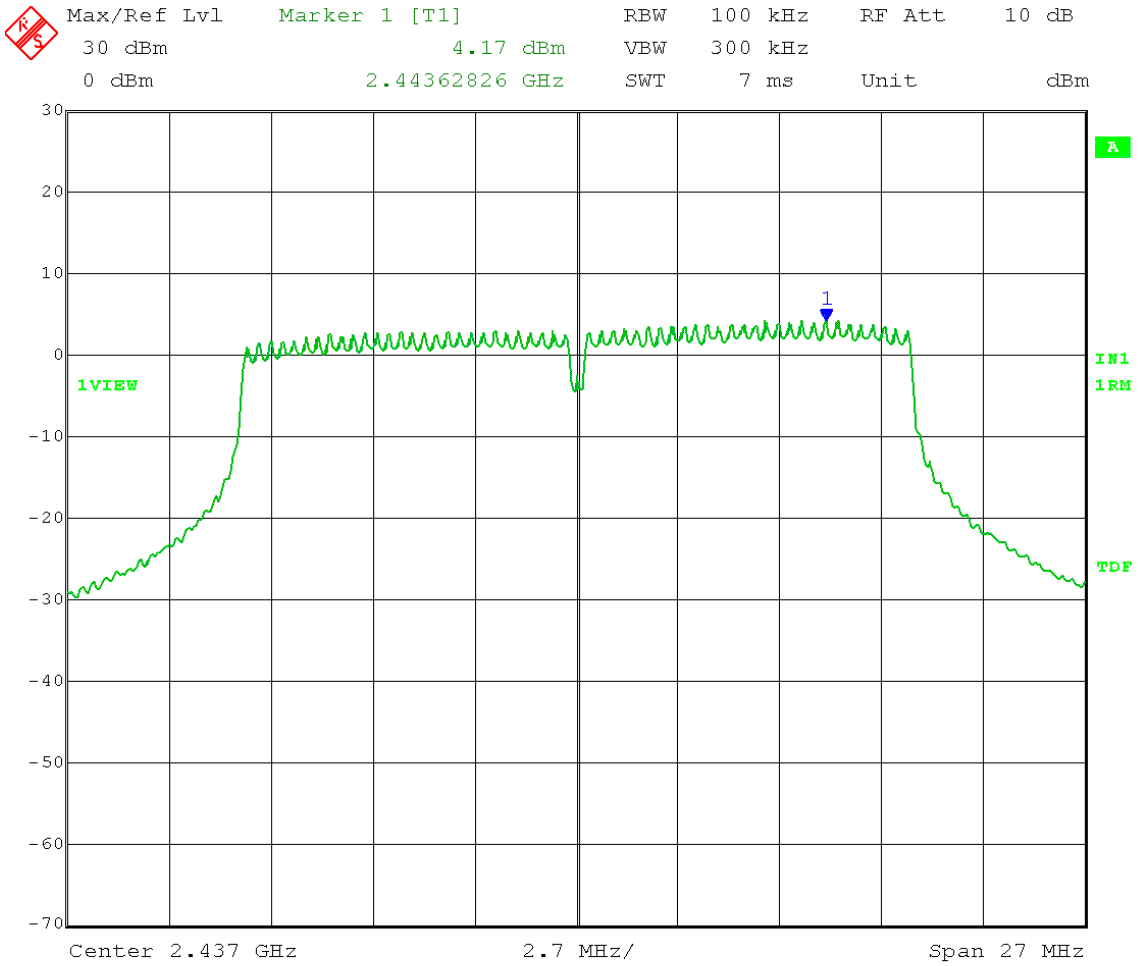


Date: 21.JAN.2014 10:35:14

Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Power Spectral Density level in the fundamental emission
Operator: Craig B
Comment: Mid Channel: Frequency = 2437 MHz
Output Power Setting = 26 20 MHz channel BW
RBW = 100 kHz VBW = 300 kHz
Span = 1.5 x DTS bandwidth Detector = RMS
Sweep = auto couple Trace mode: average 200 traces
Output port 0
Limit: +8 dBm / 3 kHz

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

PSD = 4.17 dBm + 3 dB (MIMO) = 7.17 dBm / 100 kHz



Date: 21.JAN.2014 10:14:03

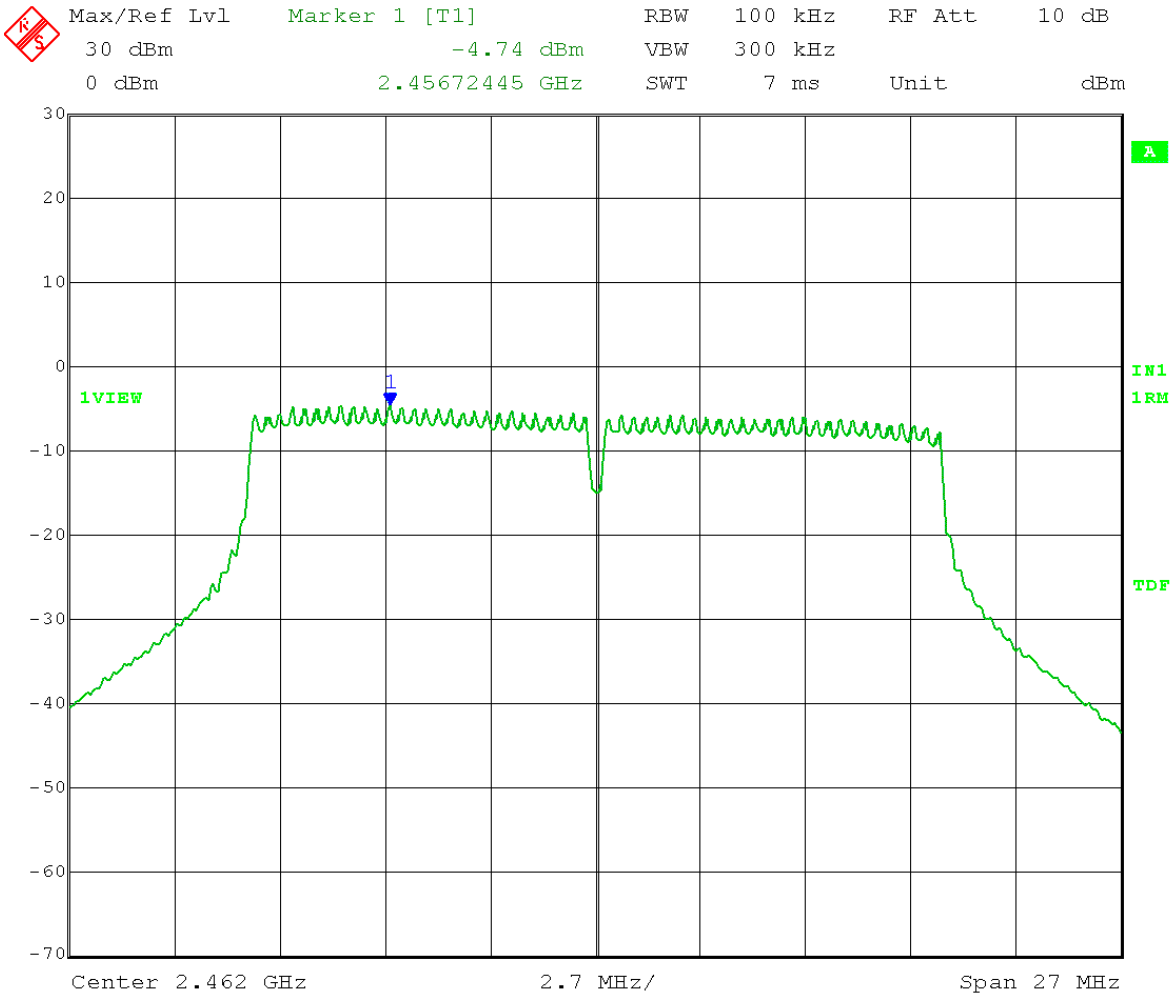
Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Power Spectral Density level in the fundamental emission
Operator: Craig B
Comment: High Channel: Frequency = 2462 MHz

Output Power Setting = 17.5	20 MHz channel BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x DTS bandwidth	Detector = RMS
Sweep = auto couple	Trace mode: average 200 traces

Output port 0
Limit: +8 dBm / 3 kHz

MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB

PSD = -4.74 dBm + 3 dB (MIMO) = -1.74 dBm / 100 kHz

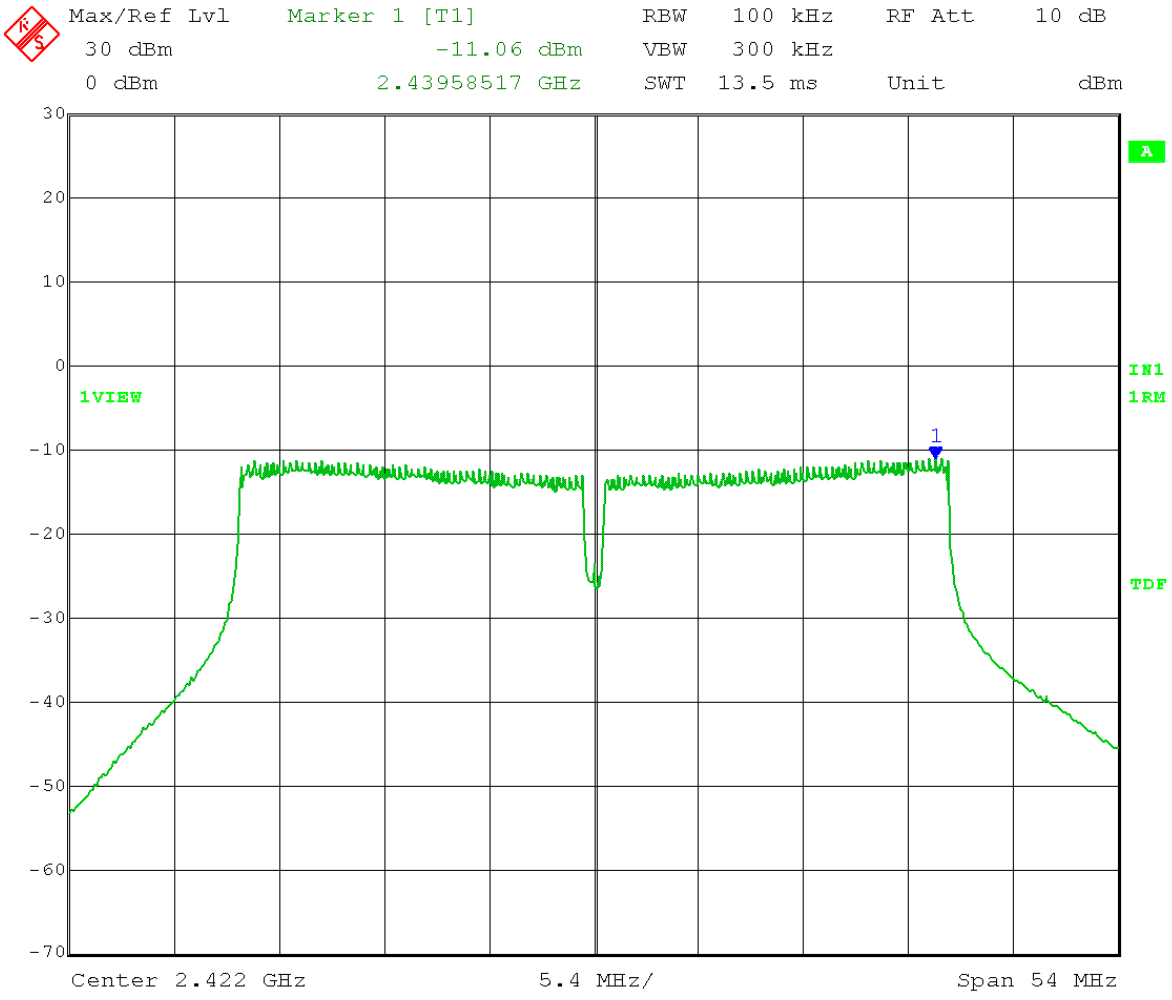


Date: 21.JAN.2014 10:40:53

Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Power Spectral Density level in the fundamental emission
Operator: Craig B
Comment: Low Channel: Frequency = 2422 MHz

Output Power Setting = 13	40 MHz channel BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x DTS bandwidth	Detector = RMS
Sweep = auto couple	Trace mode: average 200 traces
Output port 0	
Limit: +8 dBm / 3 kHz	

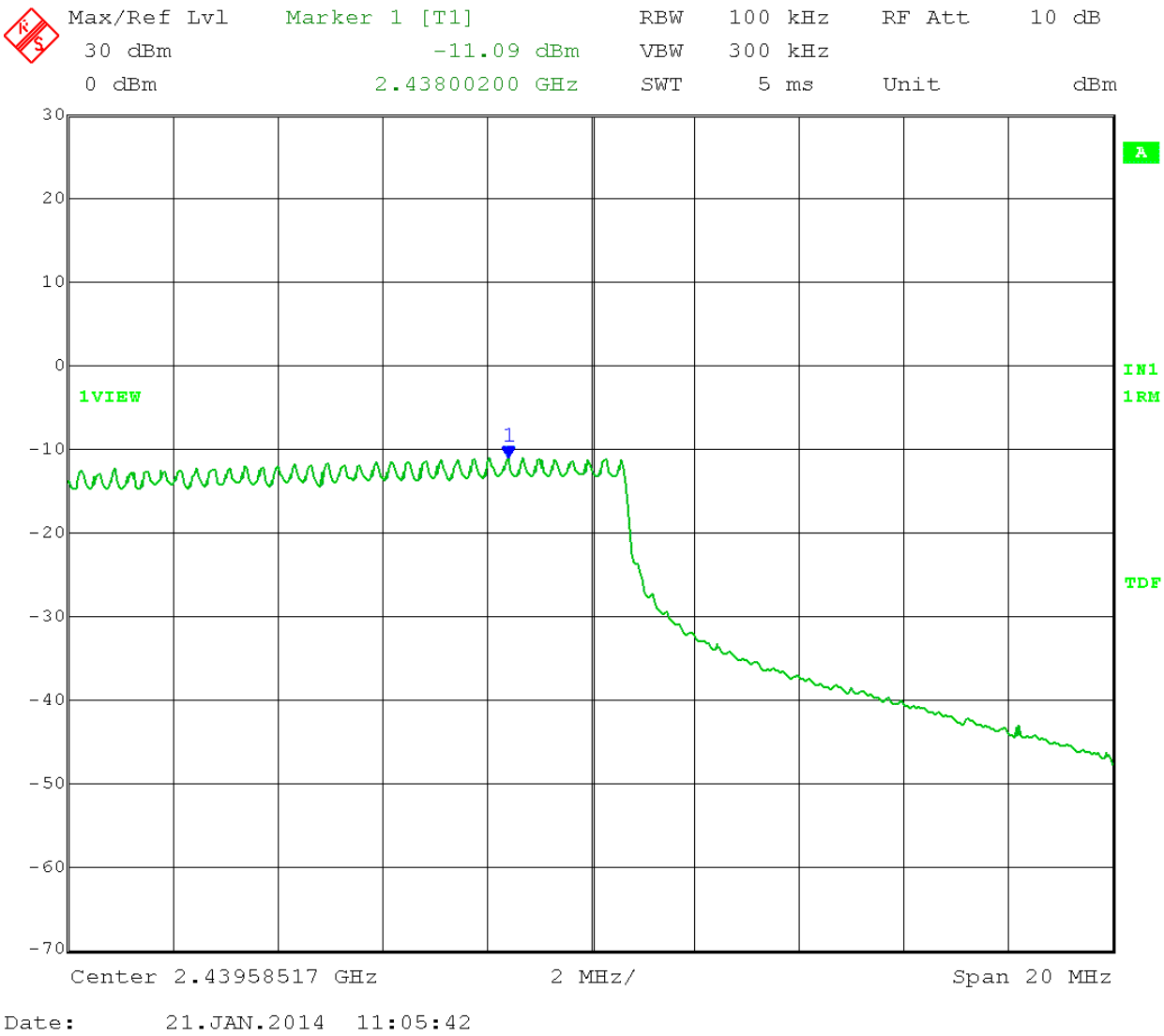
MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB



Date: 21.JAN.2014 11:04:17

Zoom in on the emission of interest and reduce the span in order to meet the minimum measurement point requirement:

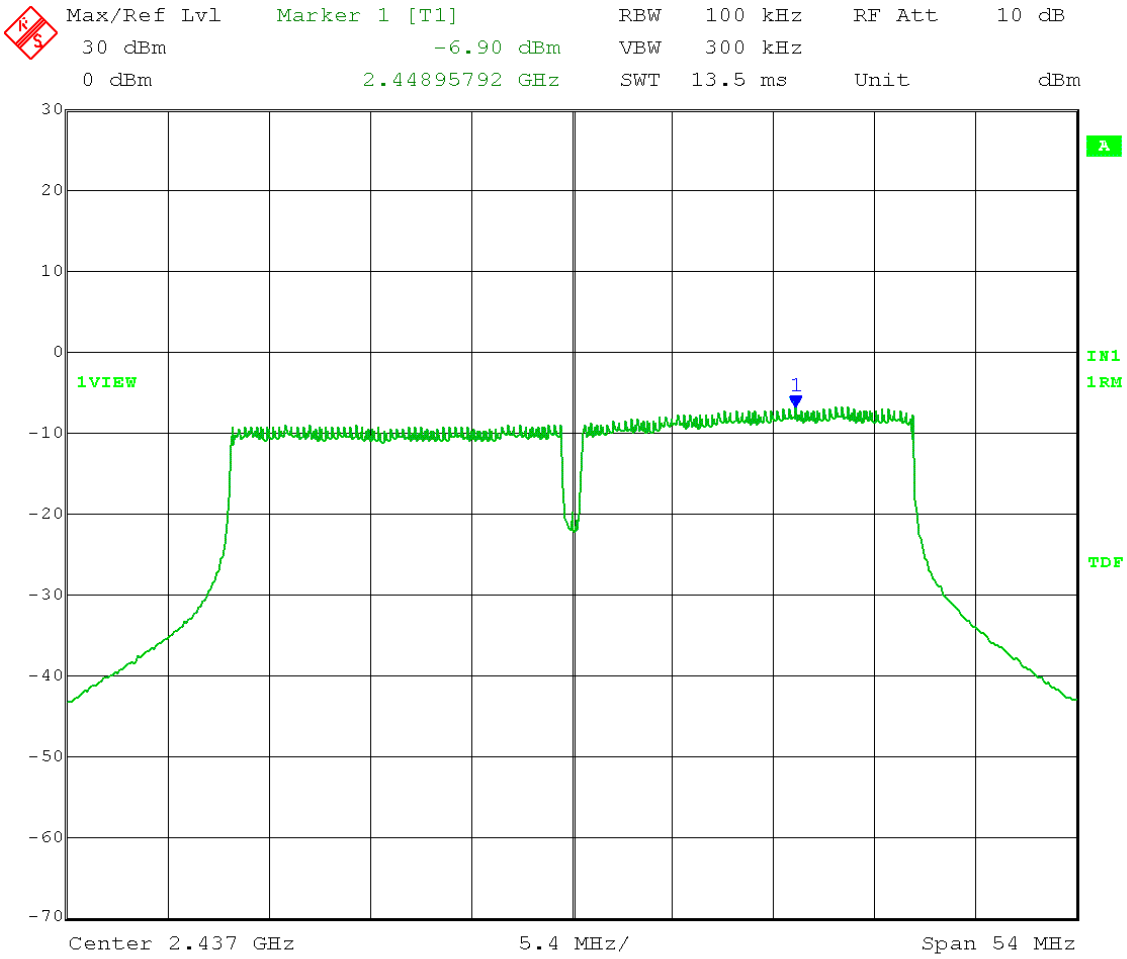
PSD = -11.09 dBm + 3 dB (MIMO) = -8.09 dBm / 100 kHz



Date: 21.JAN.2014 11:05:42

Test Date: 01-21-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Power Spectral Density level in the fundamental emission
Operator: Craig B
Comment: Mid Channel: Frequency = 2437 MHz
Output Power Setting = 17 40 MHz channel BW
RBW = 100 kHz VBW = 300 kHz
Span = 1.5 x DTS bandwidth Detector = RMS
Sweep = auto couple Trace mode: average 200 traces
Output port 0
Limit: +8 dBm / 3 kHz

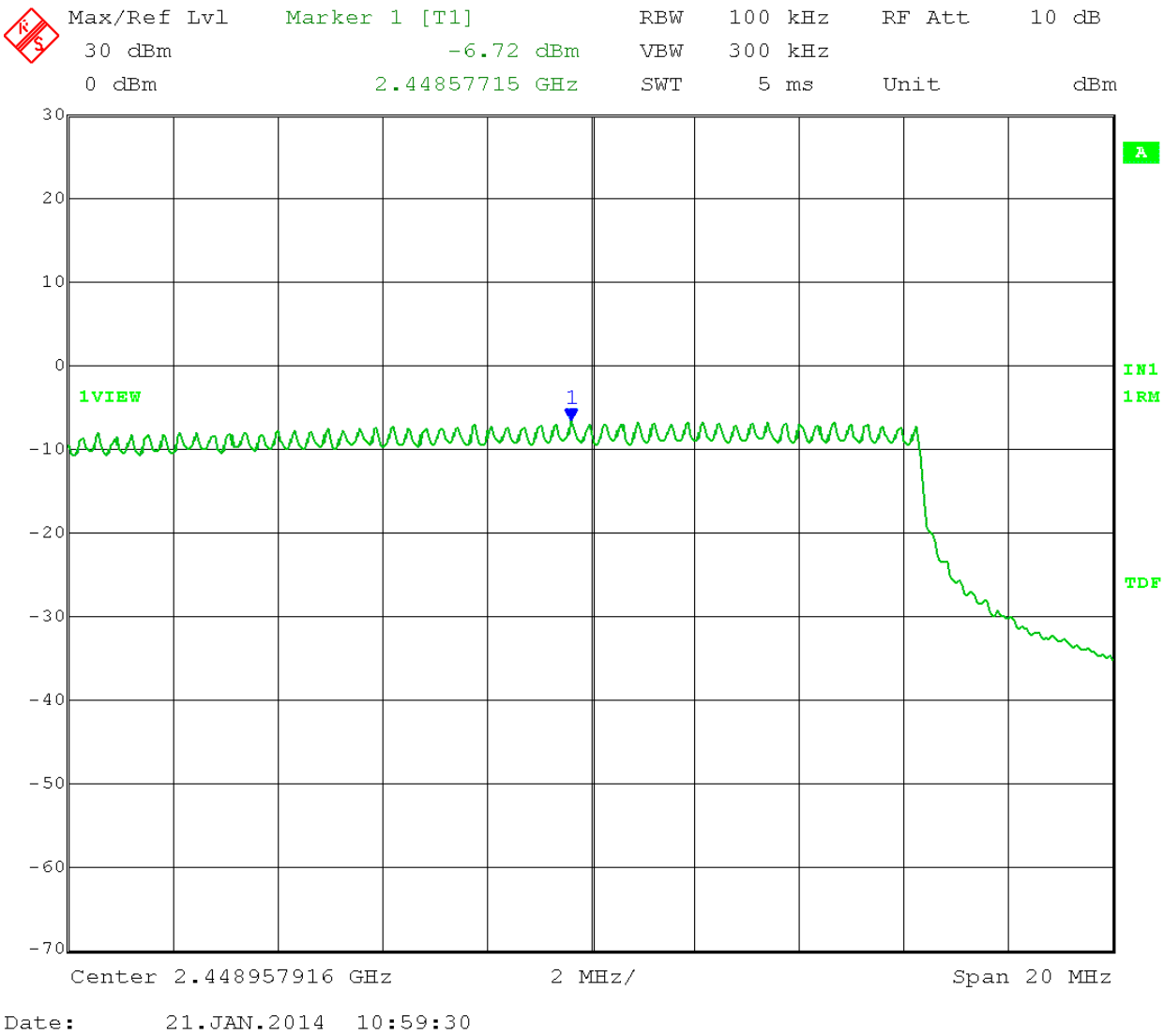
MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB



Date: 21.JAN.2014 10:56:07

Zoom in on the emission of interest and reduce the span in order to meet the minimum measurement point requirement:

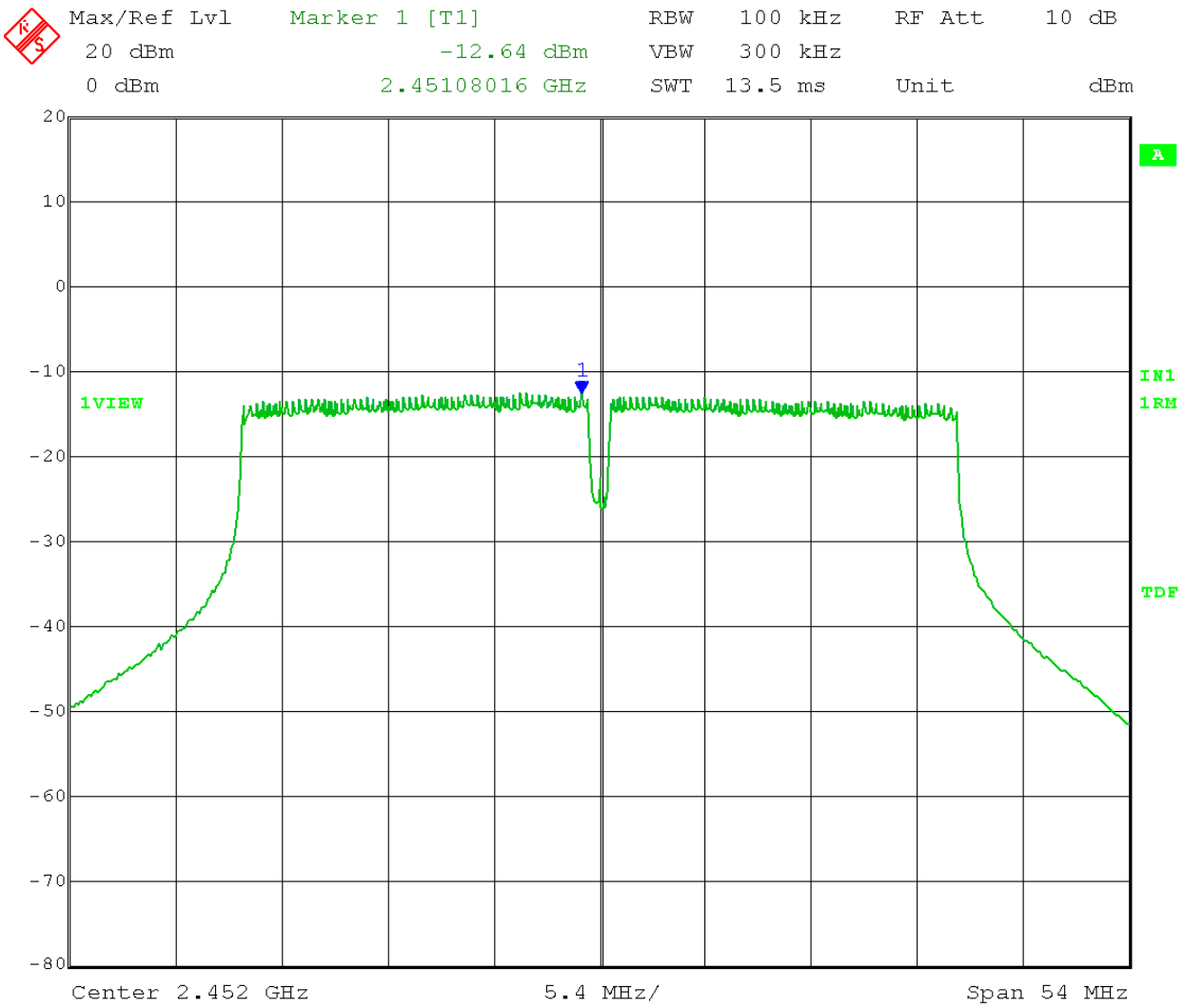
PSD = -6.72 dBm + 3 dB (MIMO) = -3.72 dBm / 100 kHz



Date: 21.JAN.2014 10:59:30

Test Date: 01-22-2014
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Power Spectral Density level in the fundamental emission
Operator: Craig B
Comment: High Channel: Frequency = 2452 MHz
Output Power Setting = 12 40 MHz channel BW
RBW = 100 kHz VBW = 300 kHz
Span = 1.5 x DTS bandwidth Detector = RMS
Sweep = auto couple Trace mode: average 200 traces
Output port 0
Limit: +8 dBm / 3 kHz

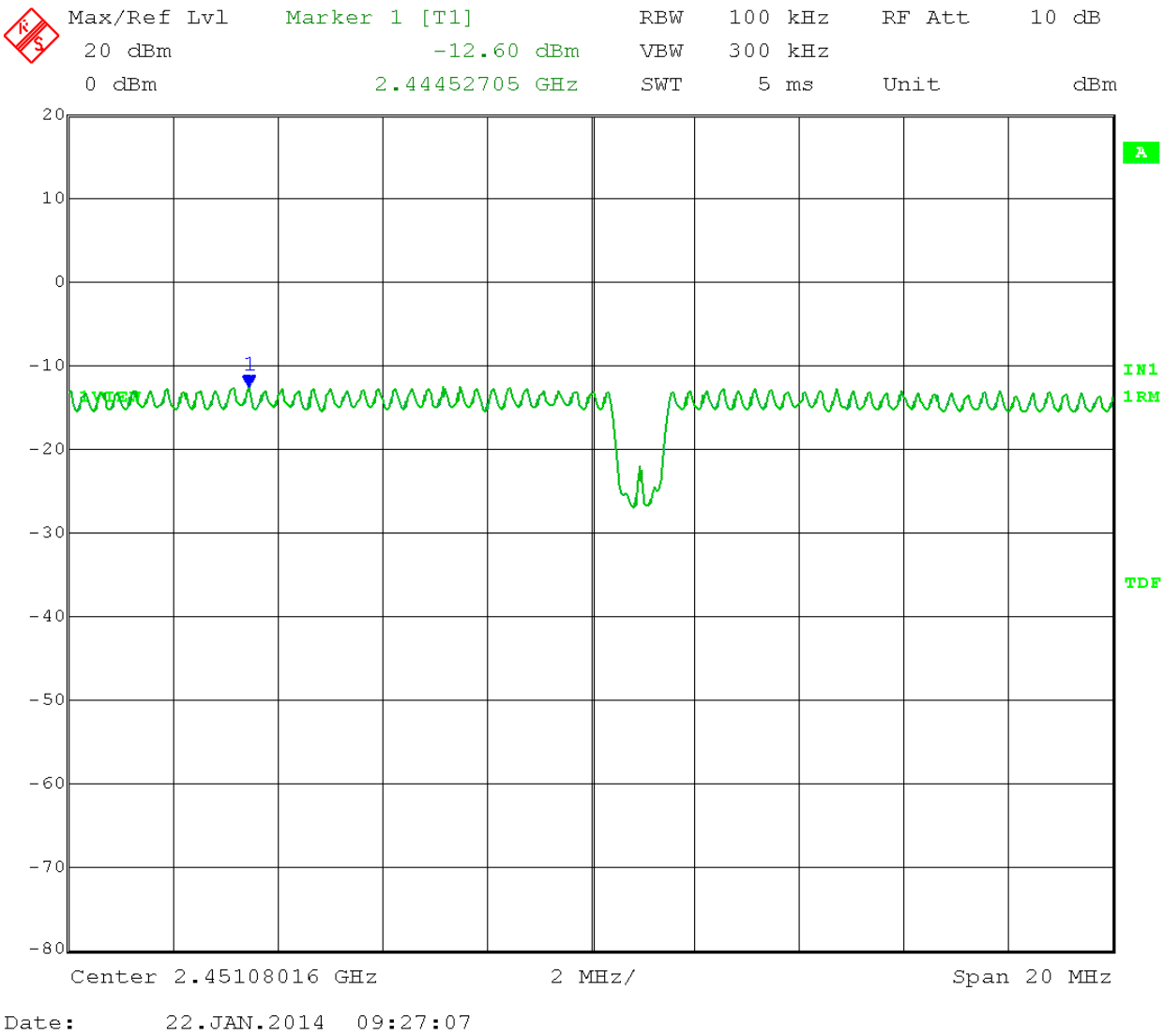
MIMO MATRIX A: Measure-and-sum technique for MIMO with Cross-Polarized antenna:
Measure and add 10 log(N) dB, where N is the number of outputs.
= 10 log(2) = 3 dB



Date: 22.JAN.2014 09:25:49

Zoom in on the emission of interest and reduce the span in order to meet the minimum measurement point requirement:

PSD = -12.60 dBm + 3 dB (MIMO) = -9.60 dBm / 100 kHz



Date: 22.JAN.2014 09:27:07

Appendix B – Measurement Data

B4.0 Maximum Unwanted Emission Levels – Conducted

Rule Section: FCC 15.247(d)

Test Procedure: FCC KDB 558074 D01 DTS Meas Guidance v03r01 – *Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247*

11.0 Emissions in non-restricted frequency bands

Description:

RBW = 100 kHz
VBW ≥ 300 kHz
Span to ≥ 1.5 times the *DTS bandwidth* (Reference Level)
Set the center frequency and span to encompass frequency range to be measured. (Emission Level)
Detector = peak
Sweep = auto couple
Trace mode = max hold

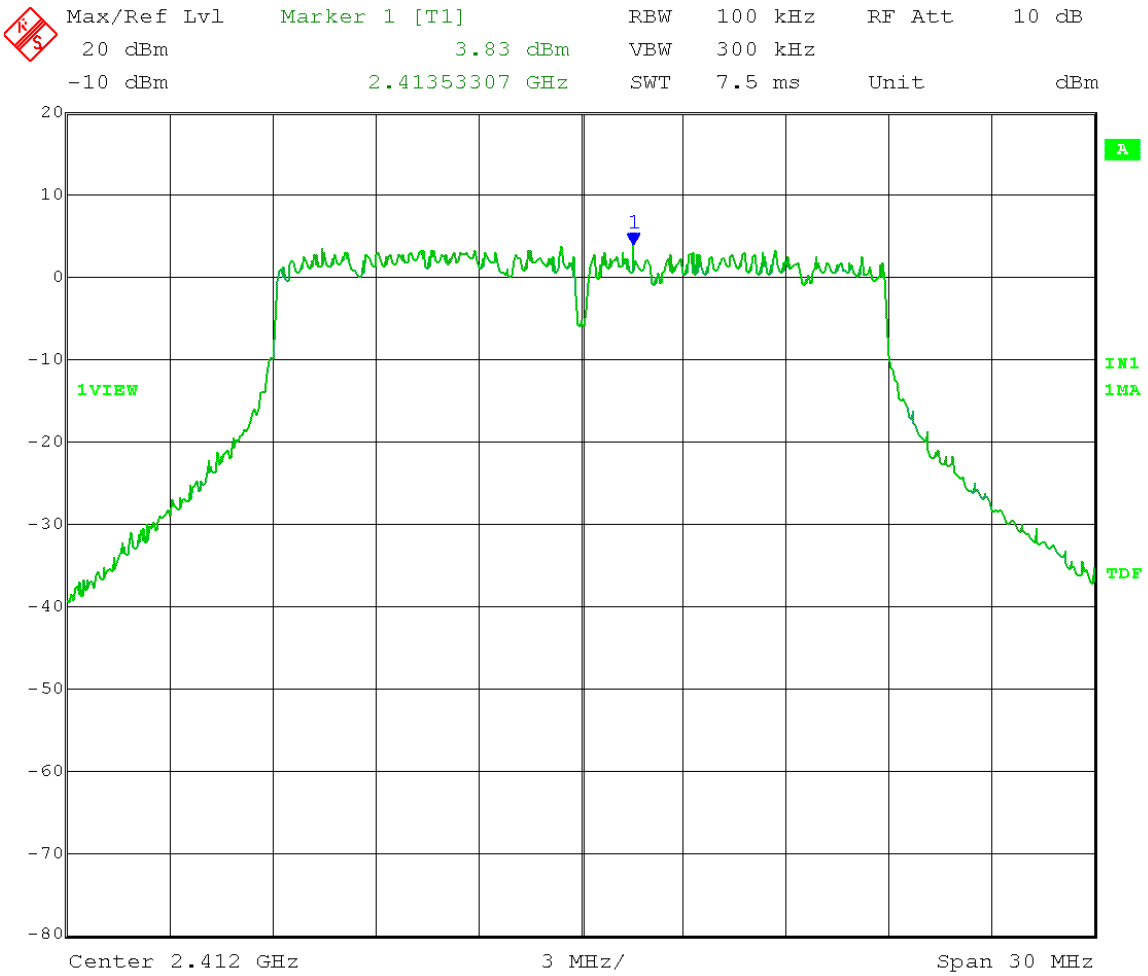
Measurements were taken for OFDM MCS15 with 20 MHz and 40 MHz channel bandwidths at the low, middle and high channels of operation. EUT was set to transmit continuously with a 100% duty cycle.

Per Cambium Networks request, measurements were only performed on output port 0.

Limit: 30 dB below maximum in-band average PSD level (maximum level in any 100 kHz band). Average output power procedure was used to measure the fundamental emission power.

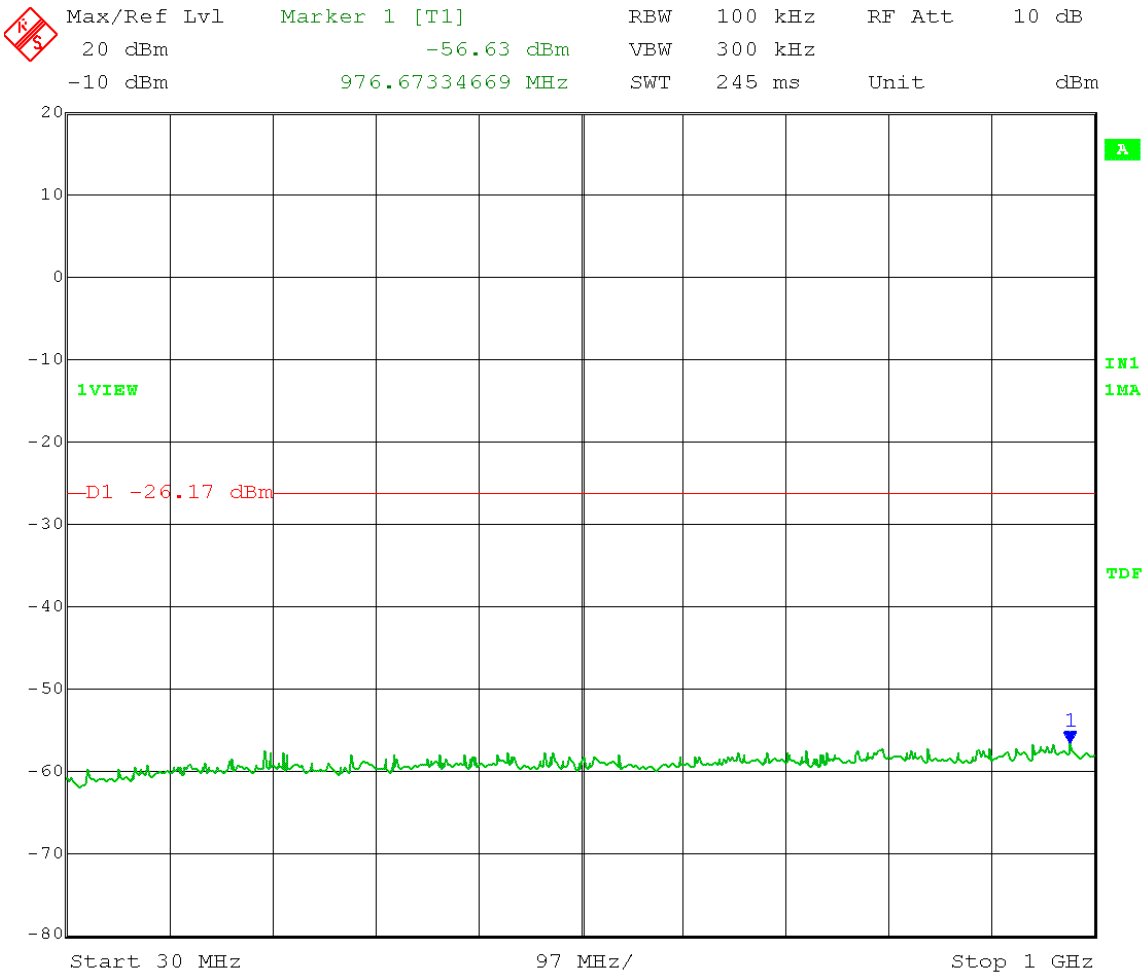
Results: Passed

Test Date:	01-21-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Low Channel Transmit = 2412 MHz
	Output Power Setting 16.5	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Reference Level Measurement	
	Limit = 3.83 dBm – 30 dB = -26.17 dBm	



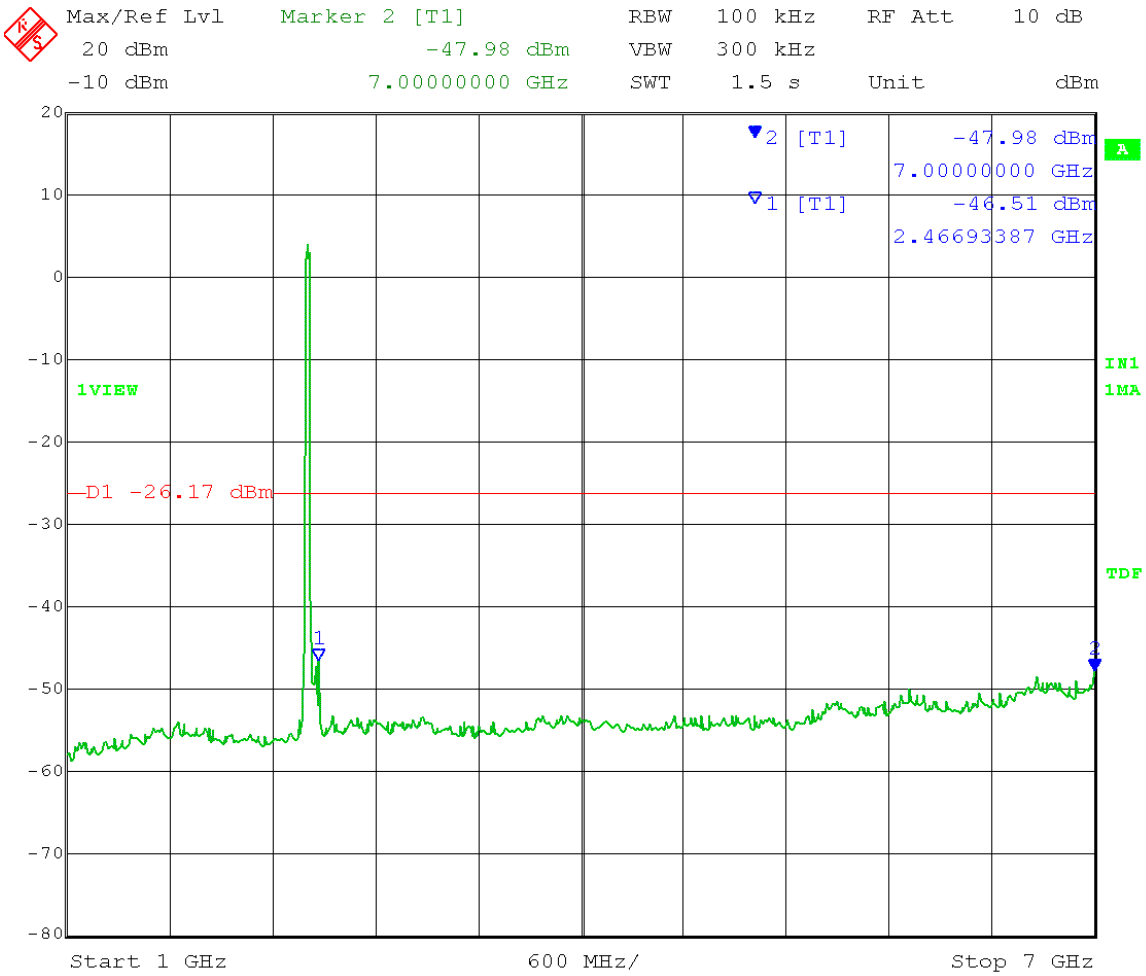
Date: 21.JAN.2014 12:01:34

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 16.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 3.83 dBm – 30 dB = -26.17 dBm
	Frequency range: 30 – 1000 MHz



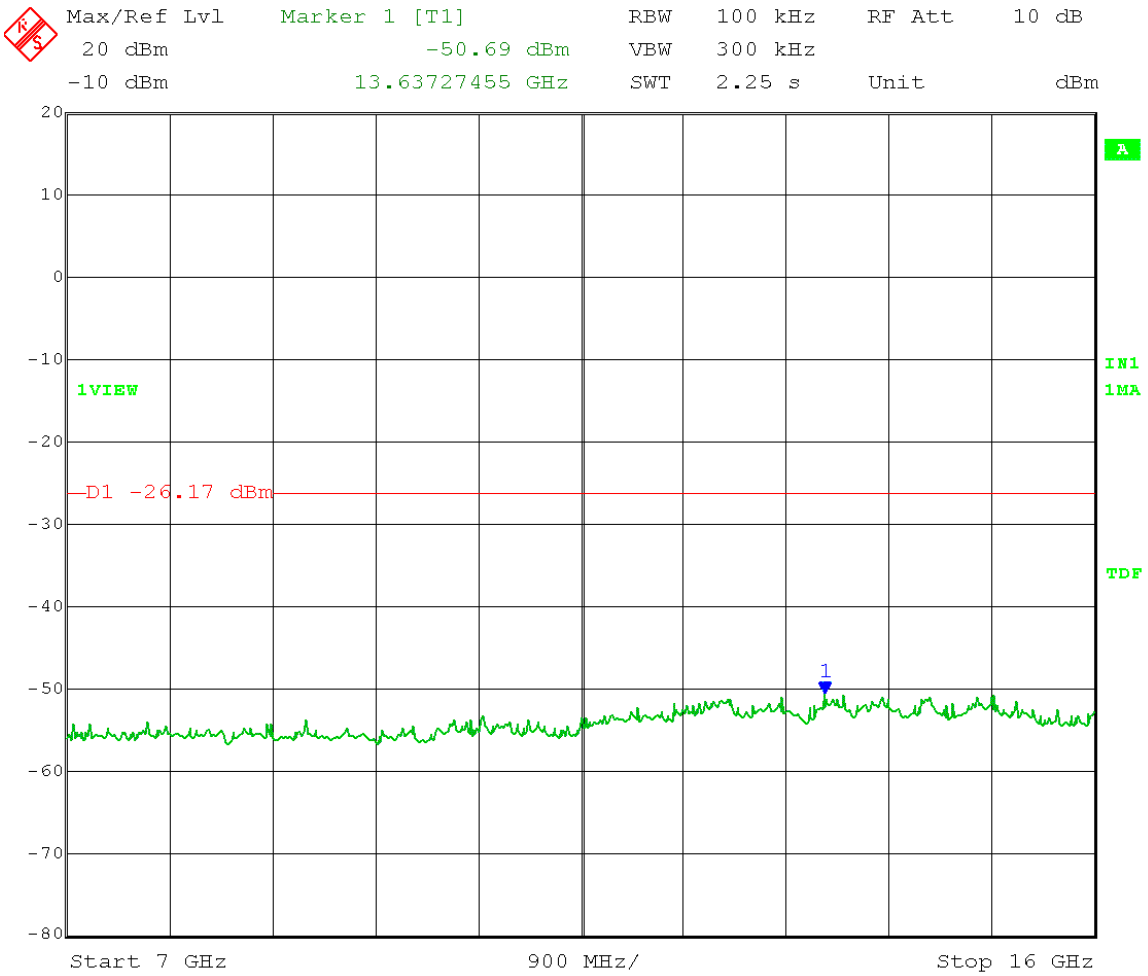
Date: 22.JAN.2014 10:11:17

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 16.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 3.83 dBm – 30 dB = -26.17 dBm
	Frequency range: 1 – 7 GHz



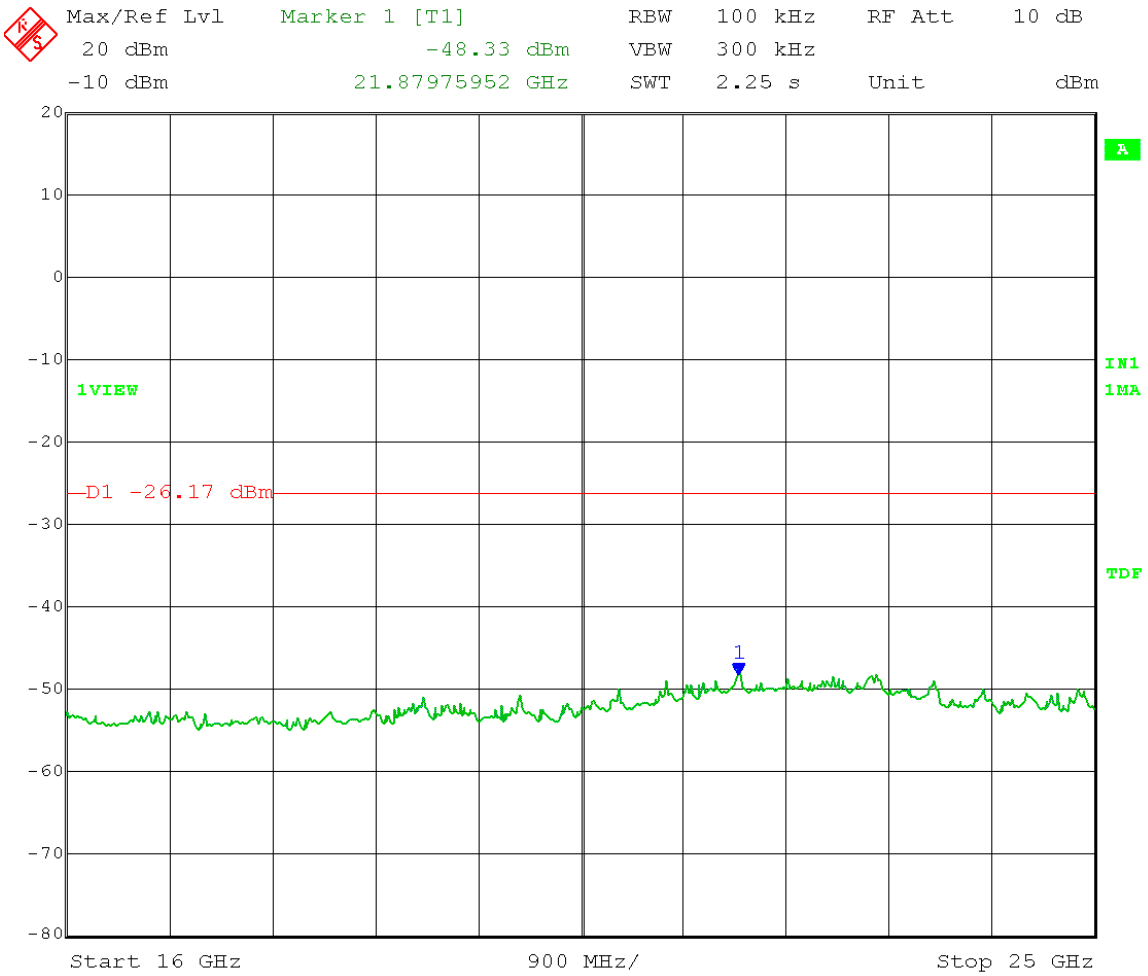
Date: 22.JAN.2014 10:04:17

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 16.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 3.83 dBm – 30 dB = -26.17 dBm
	Frequency range: 7 – 16 GHz



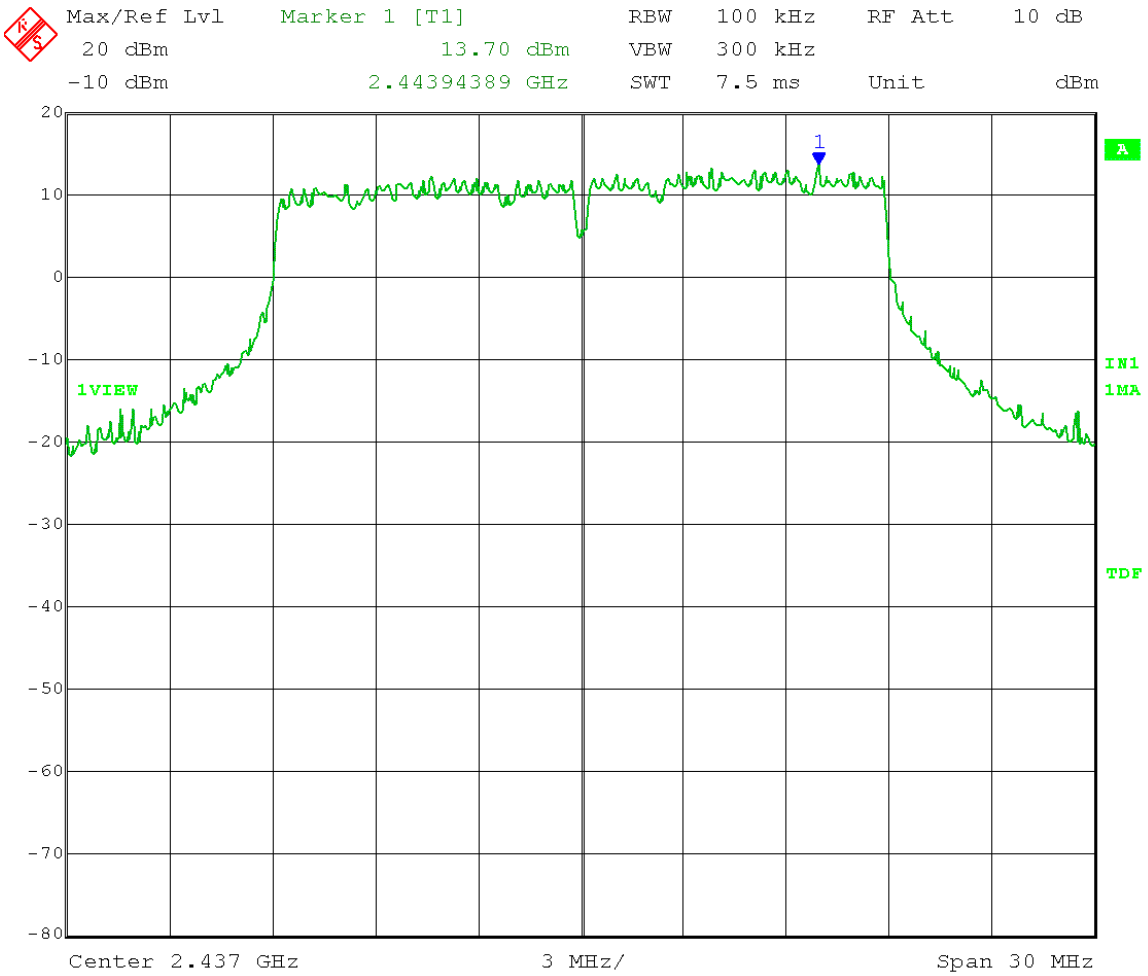
Date: 22.JAN.2014 10:06:06

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 16.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 3.83 dBm – 30 dB = -26.17 dBm
	Frequency range: 16 – 25 GHz



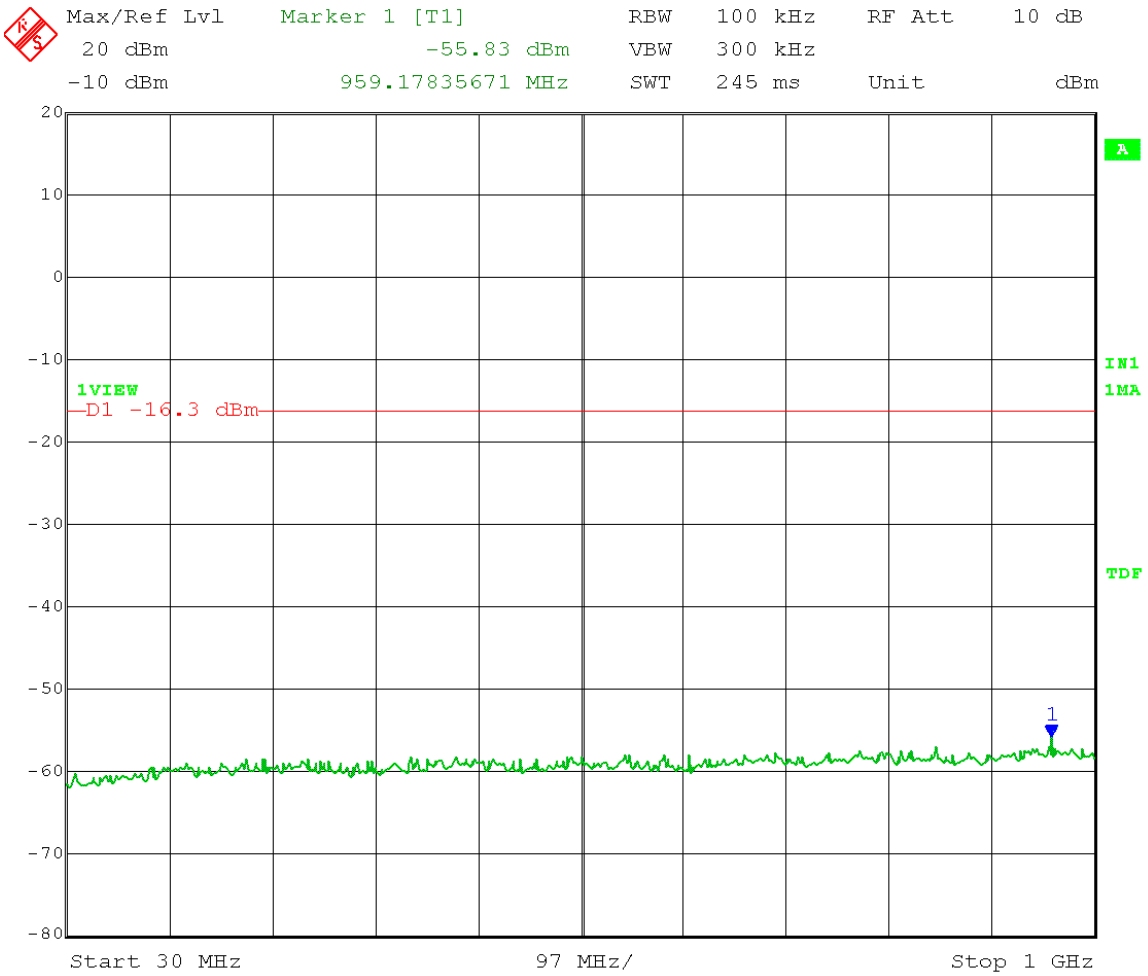
Date: 22.JAN.2014 10:08:54

Test Date:	01-21-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 26 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = 13.70 dBm – 30 dB = -16.30 dBm



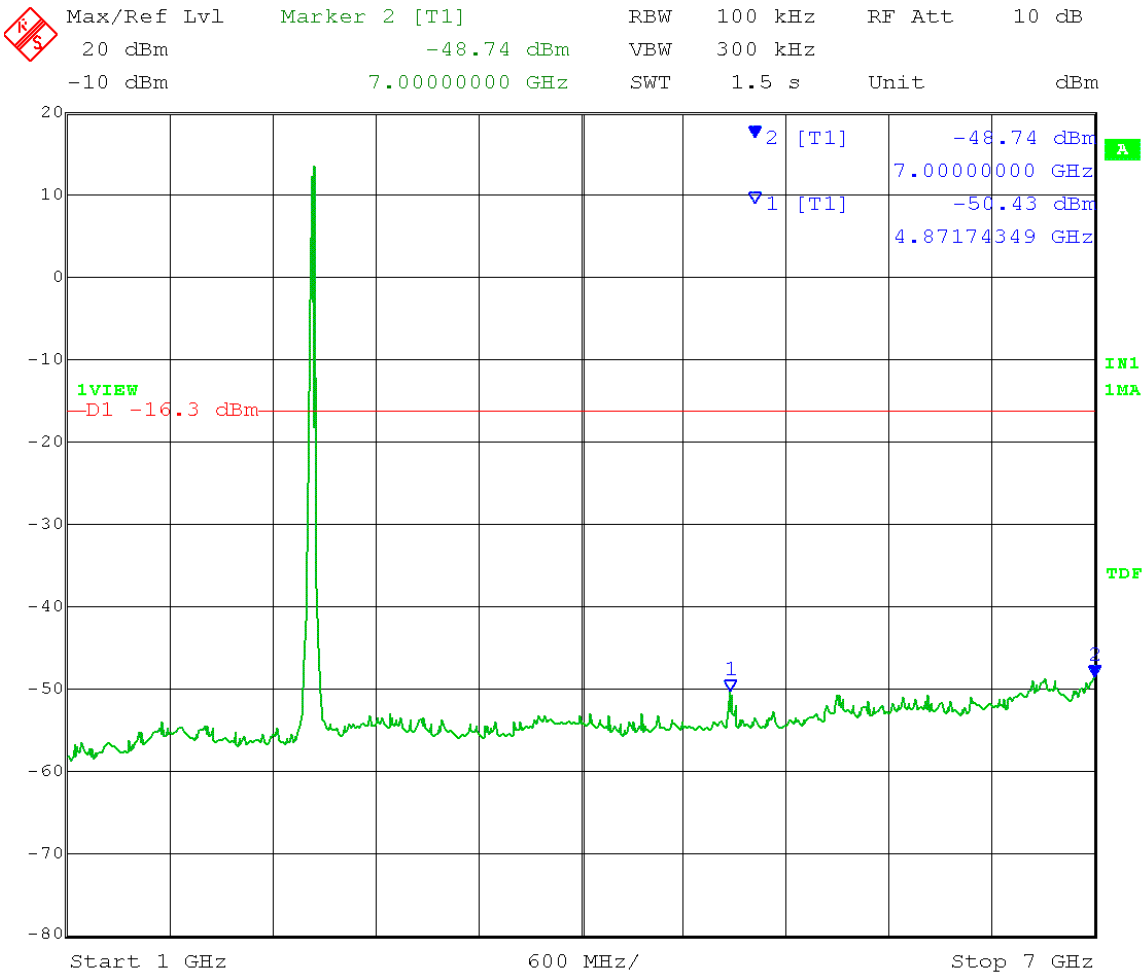
Date: 21.JAN.2014 11:57:17

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 26 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = 13.70 dBm – 30 dB = -16.30 dBm
Frequency range: 30 – 1000 MHz



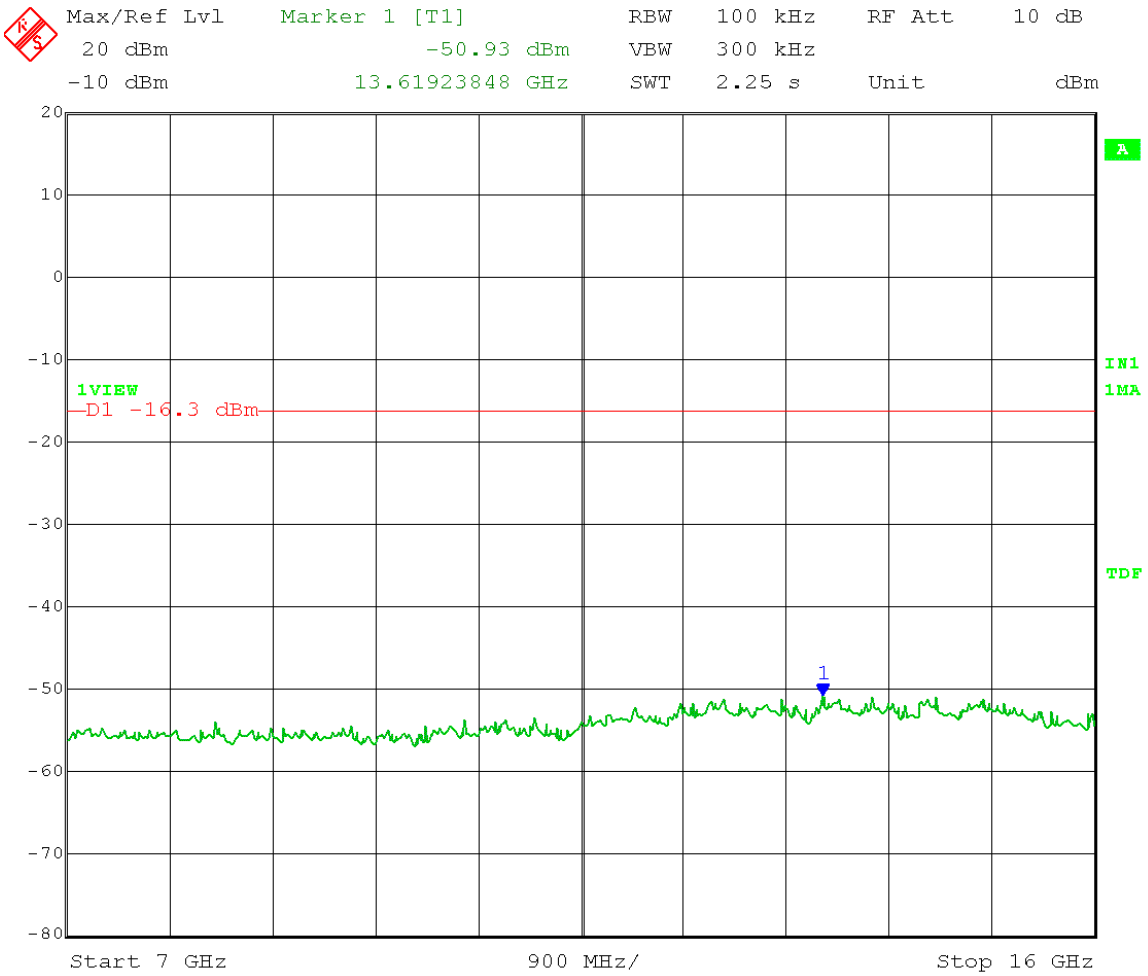
Date: 22.JAN.2014 10:19:45

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 26 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 13.70 dBm – 30 dB = -16.30 dBm
	Frequency range: 1 – 7 GHz



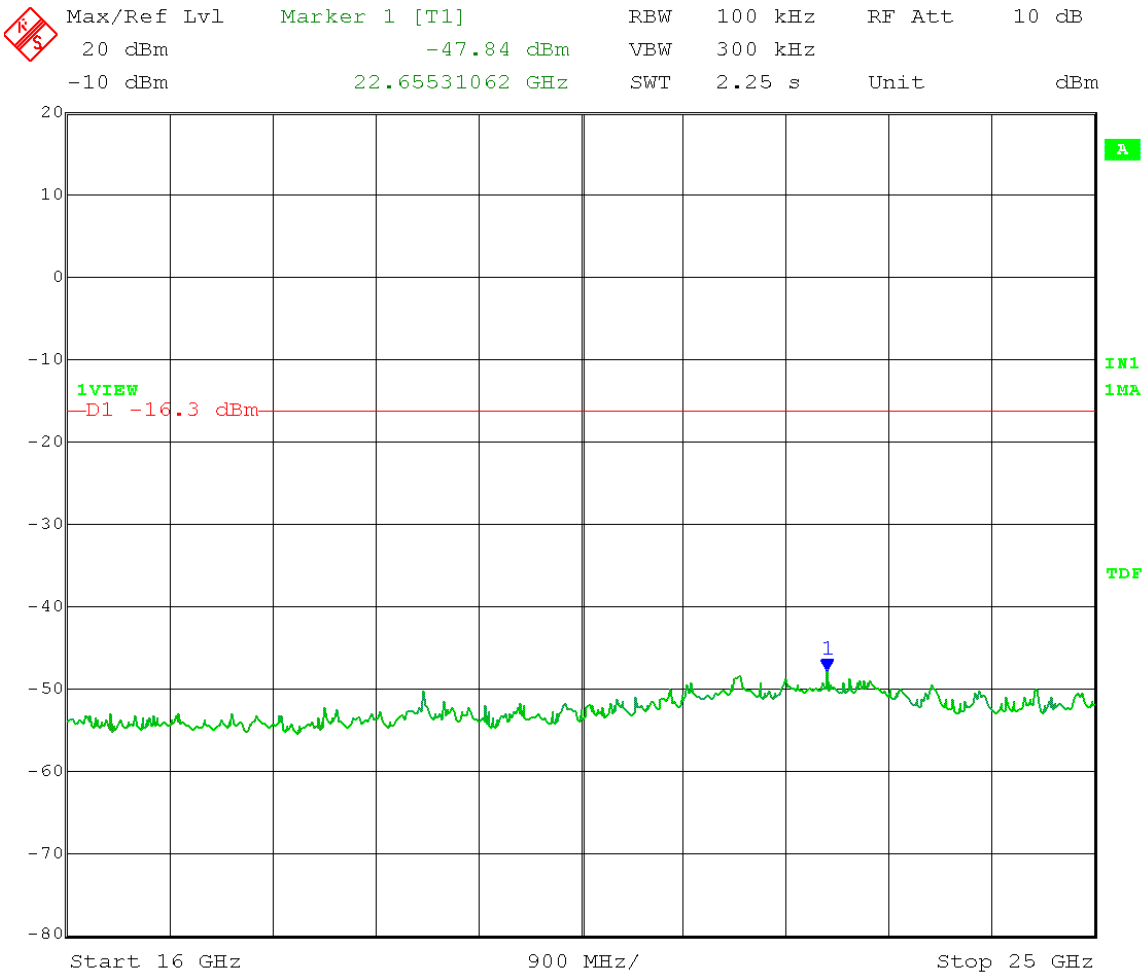
Date: 22.JAN.2014 10:14:36

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 26 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 13.70 dBm – 30 dB = -16.30 dBm
	Frequency range: 7 – 16 GHz



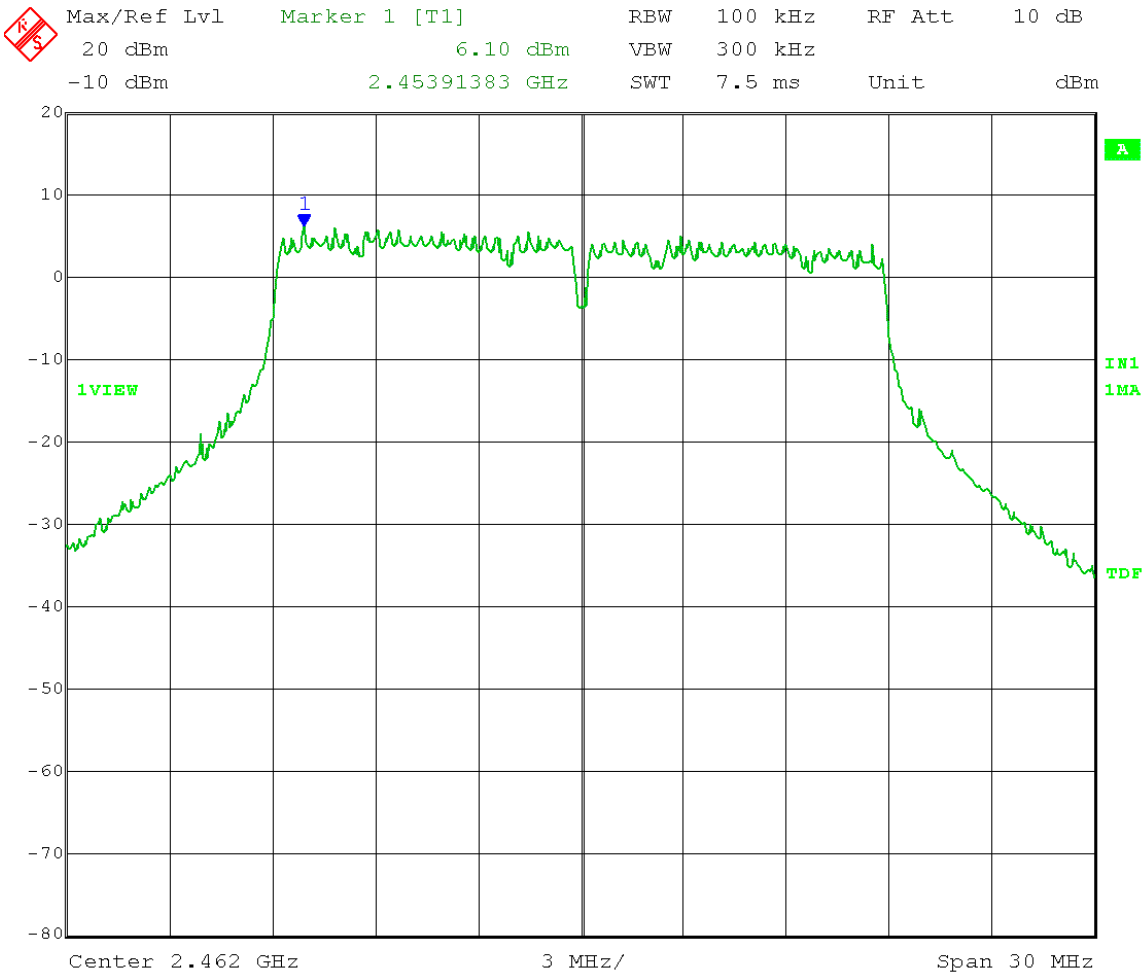
Date: 22.JAN.2014 10:16:12

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 26 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = 13.70 dBm – 30 dB = -16.30 dBm
Frequency range: 16 – 25 GHz



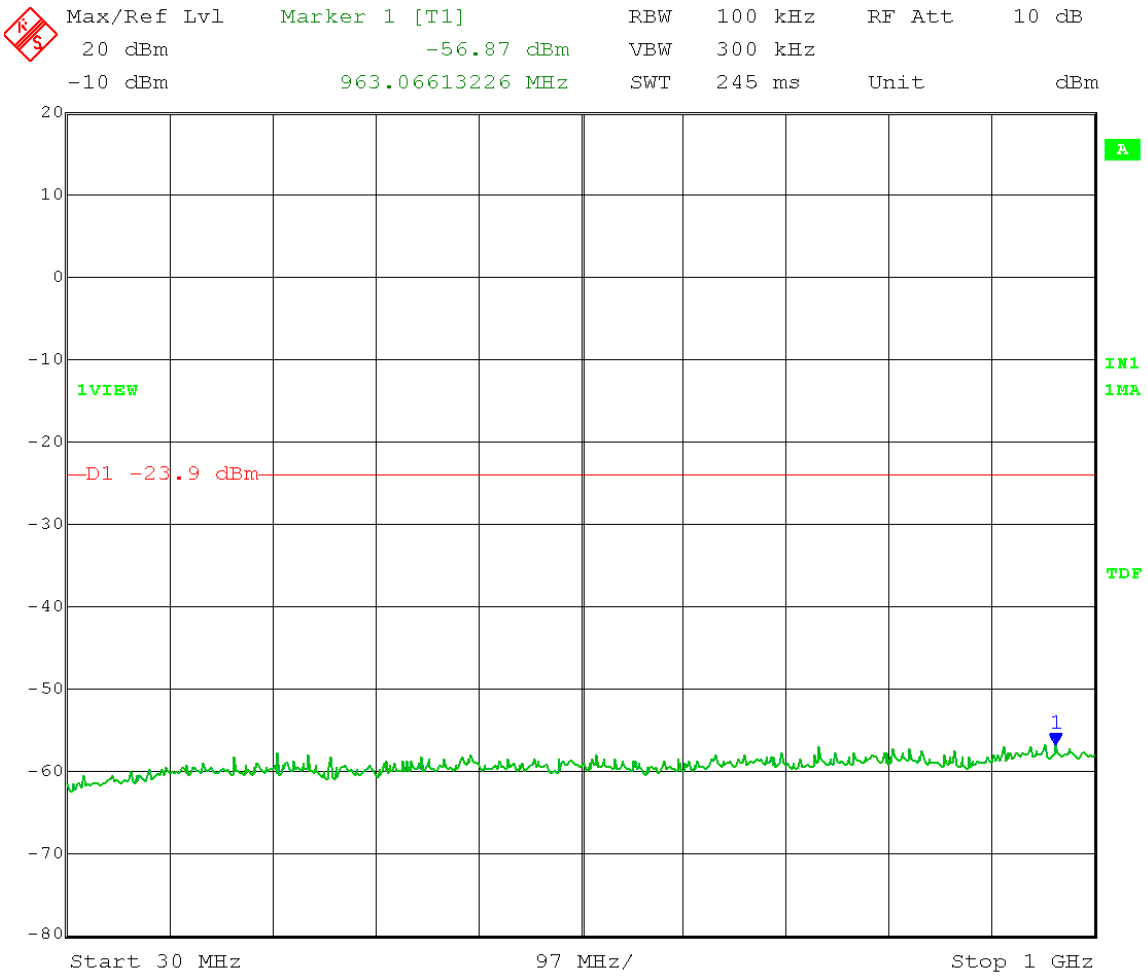
Date: 22.JAN.2014 10:17:49

Test Date:	01-22-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	High Channel Transmit = 2462 MHz
	Output Power Setting 17.5	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Reference Level Measurement	
	Limit = 6.10 dBm – 30 dB = -23.9 dBm	



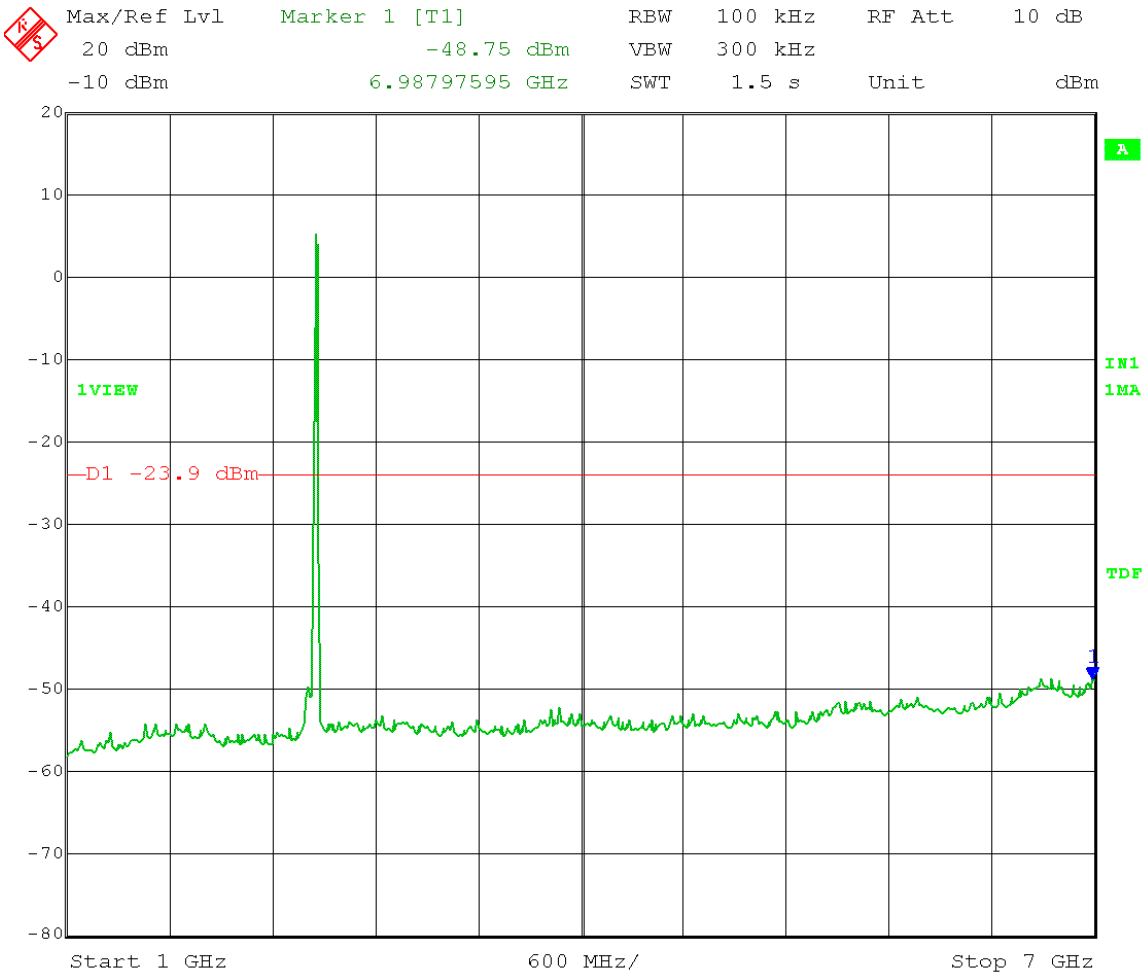
Date: 22.JAN.2014 09:47:00

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 17.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 6.10 dBm – 30 dB = -23.90 dBm
	Frequency range: 30 – 1000 MHz



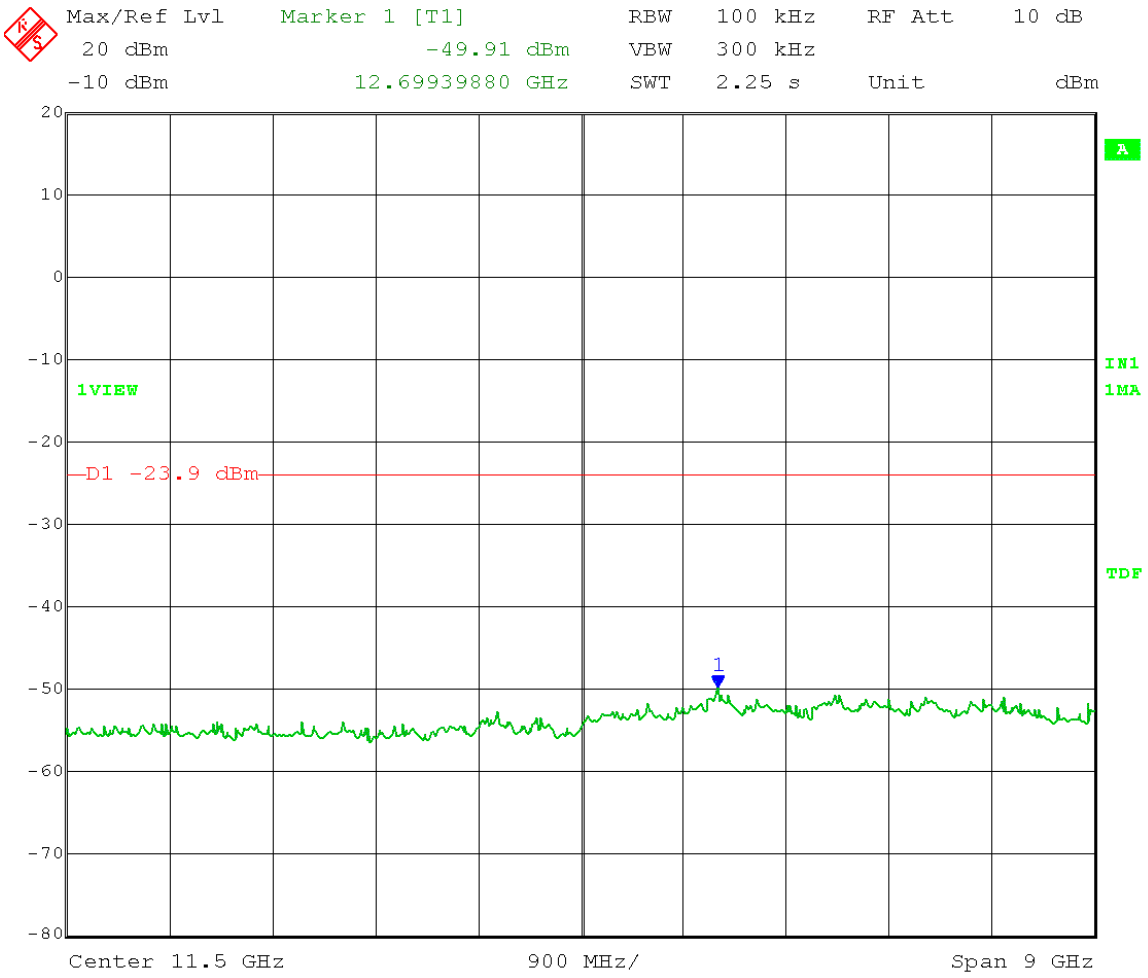
Date: 22.JAN.2014 10:00:00

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 17.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 6.10 dBm – 30 dB = -23.90 dBm
	Frequency range: 1 – 7 GHz



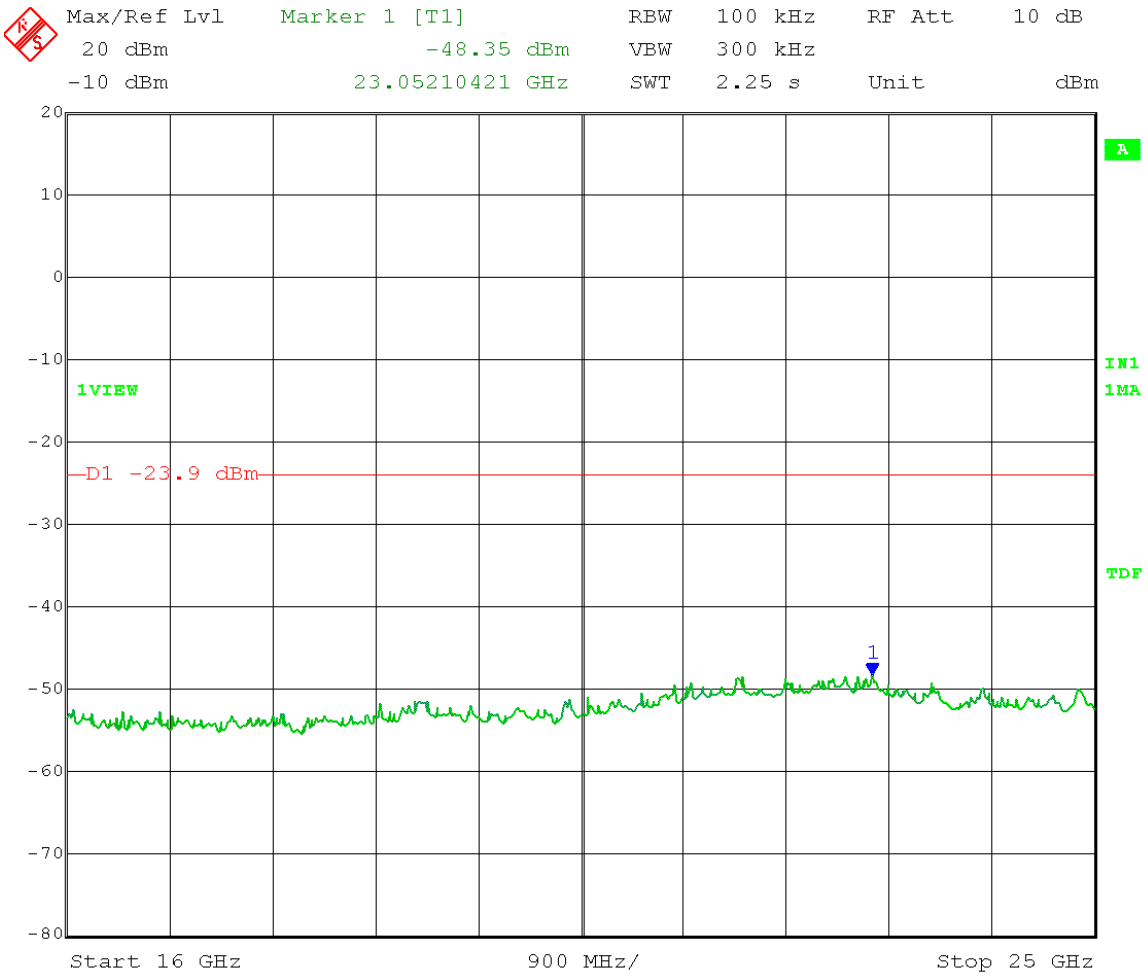
Date: 22.JAN.2014 09:52:00

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2462 MHz
Output Power Setting 17.5 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = 6.10 dBm – 30 dB = -23.90 dBm
Frequency range: 7 – 16 GHz



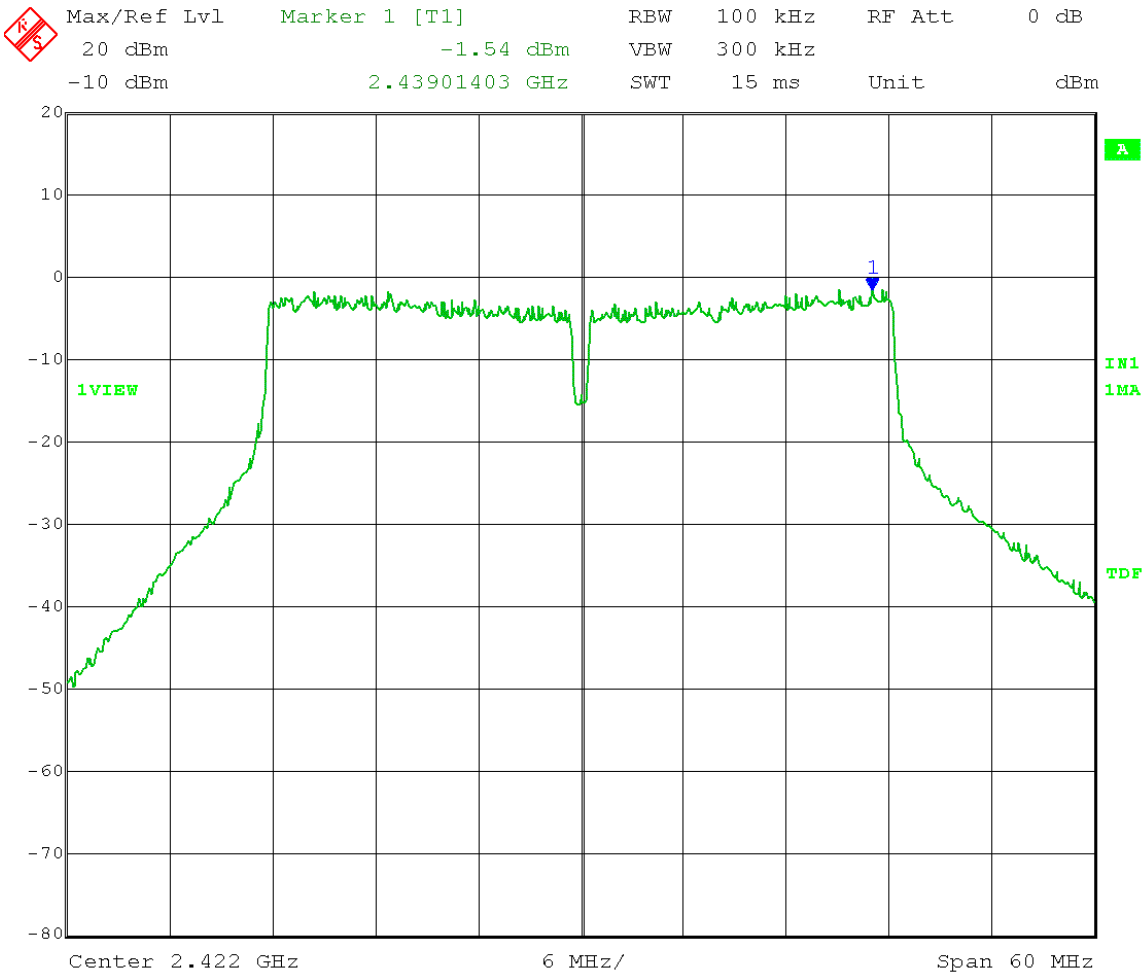
Date: 22.JAN.2014 09:56:20

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 17.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 6.10 dBm – 30 dB = -23.90 dBm
	Frequency range: 16 – 25 GHz



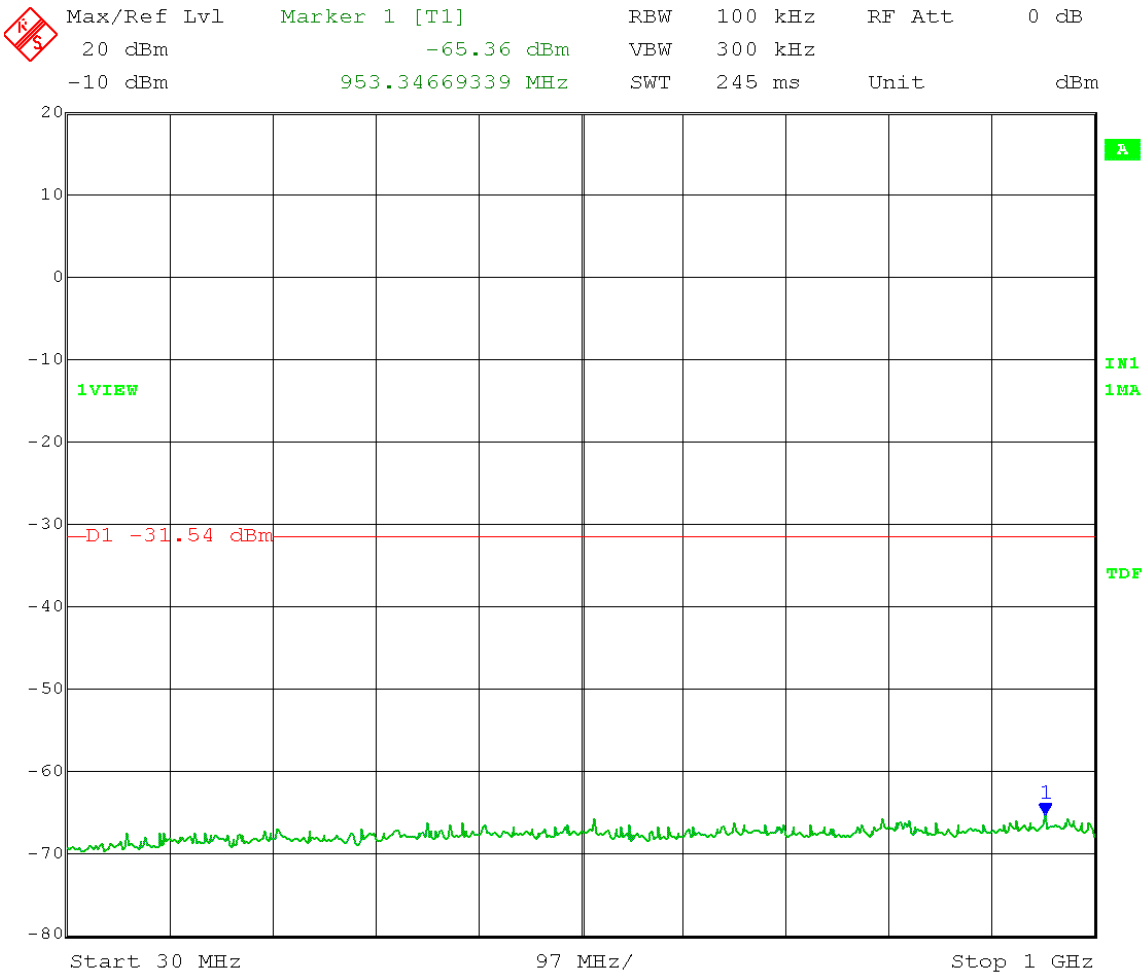
Date: 22.JAN.2014 09:58:26

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 13 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -1.54 dBm – 30 dB = -31.54 dBm



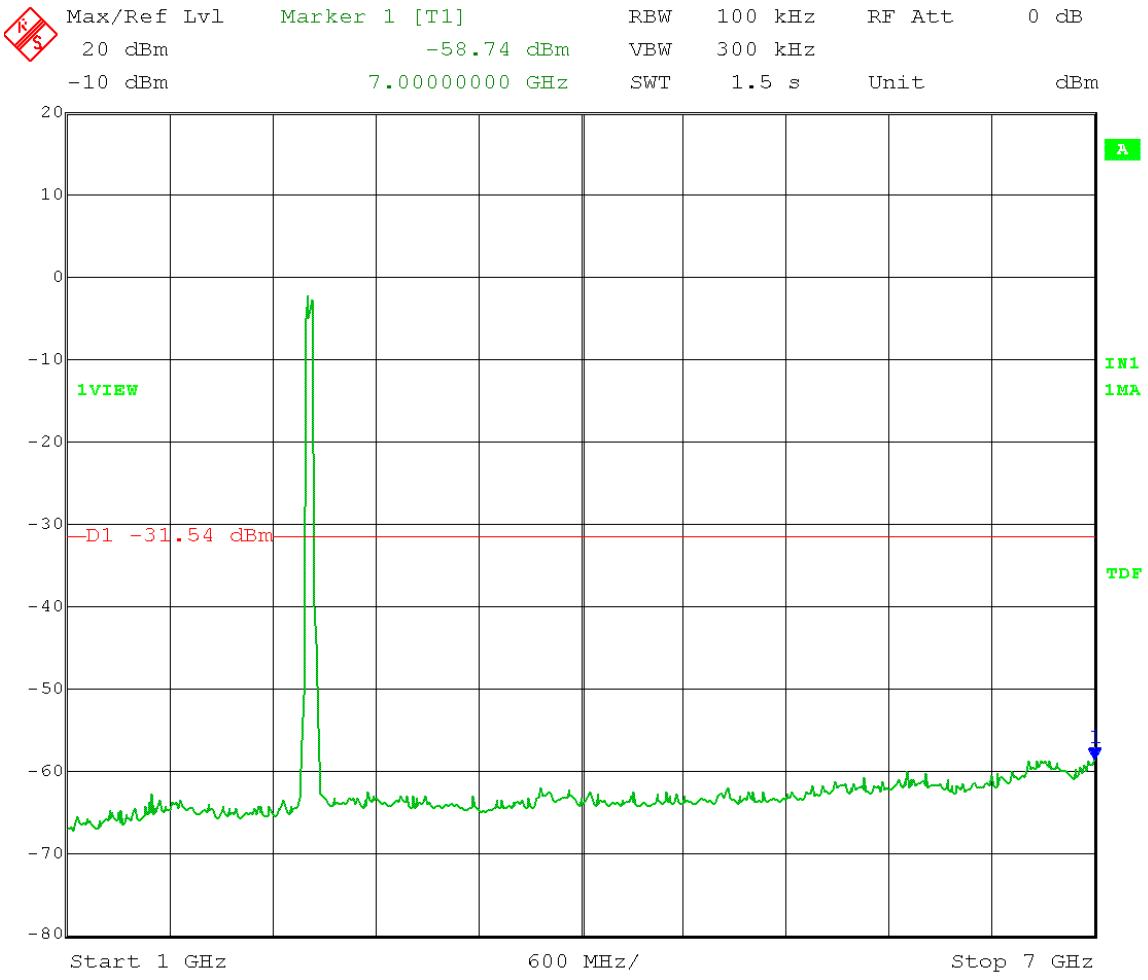
Date: 22.JAN.2014 11:30:49

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 13 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -1.54 dBm – 30 dB = -31.54 dBm
	Frequency Range: 30 – 1000 MHz



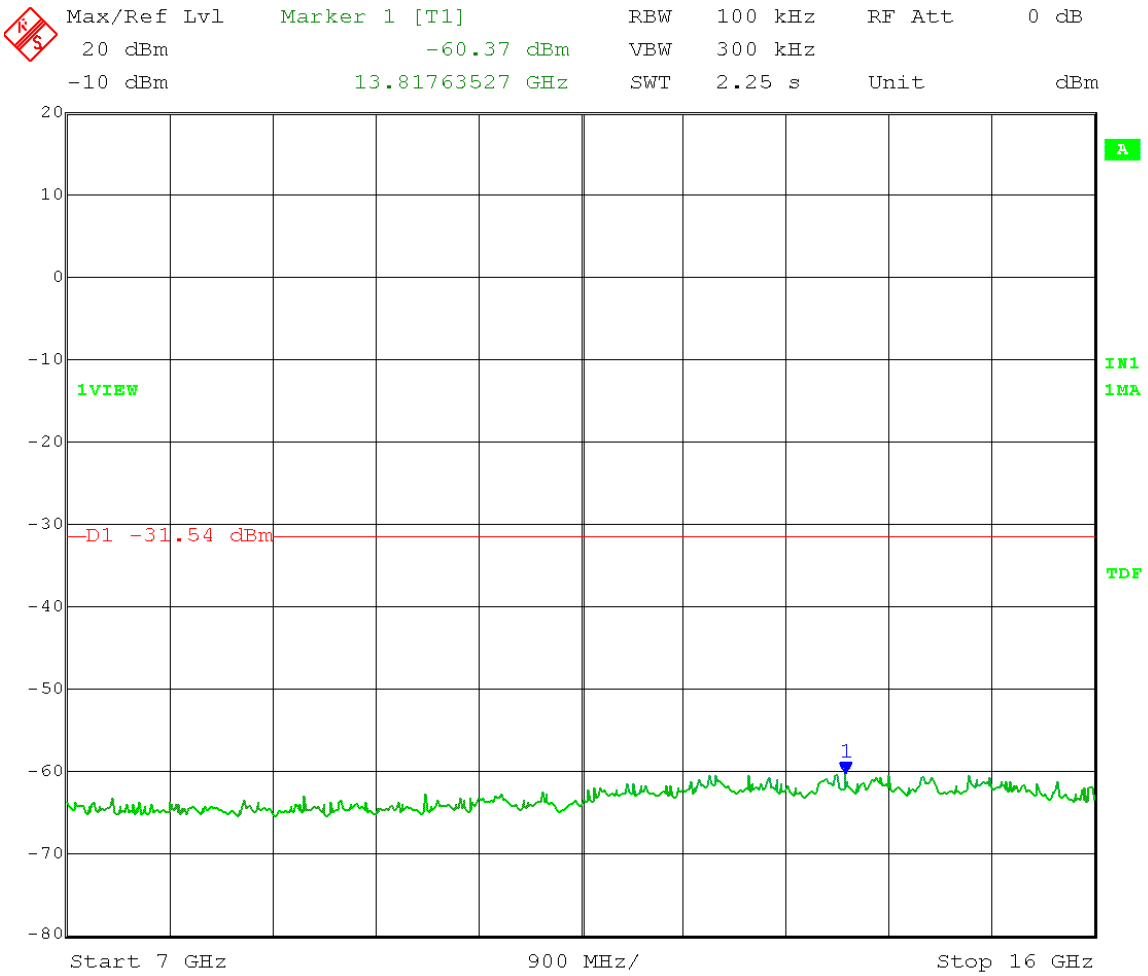
Date: 22.JAN.2014 11:38:15

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 13 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -1.54 dBm – 30 dB = -31.54 dBm
	Frequency Range: 1 – 7 GHz



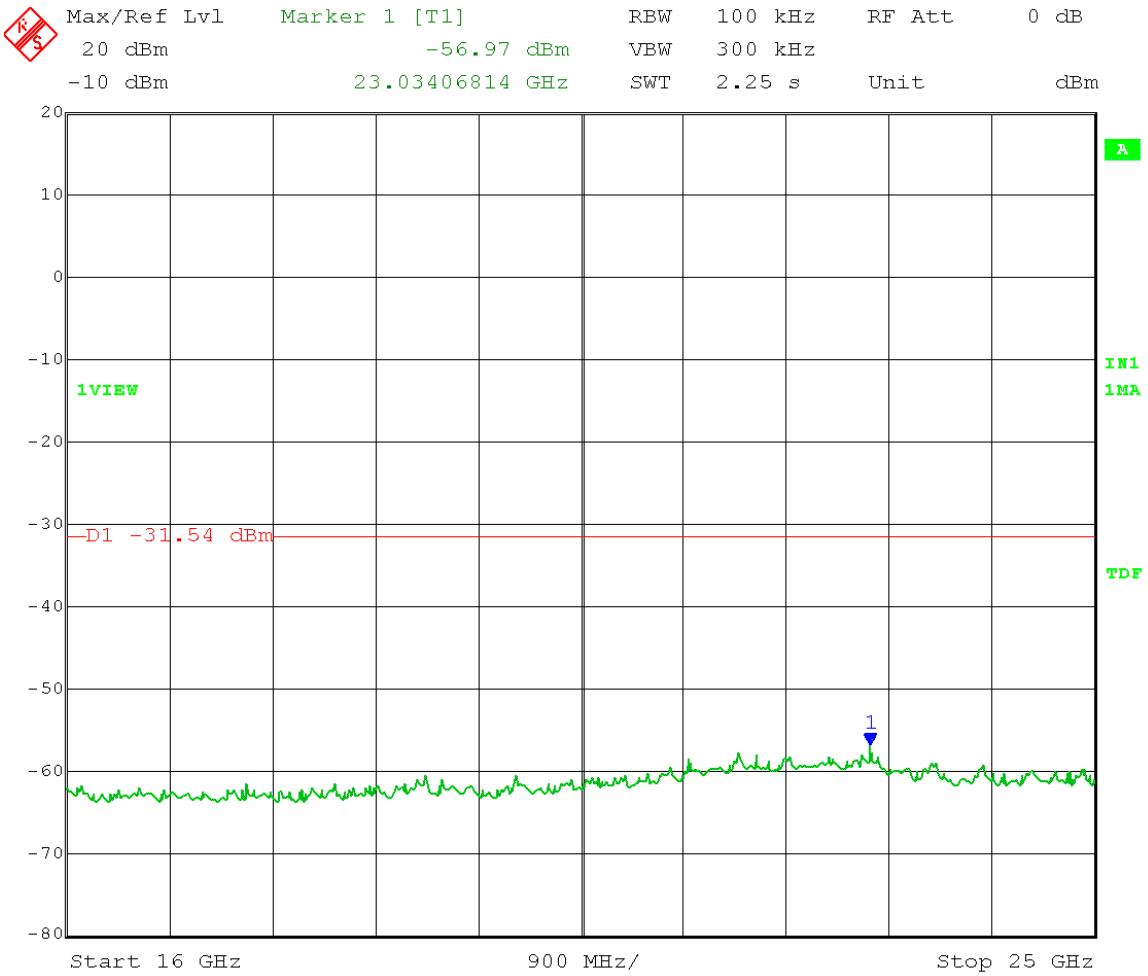
Date: 22.JAN.2014 11:32:59

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Low Channel Transmit = 2422 MHz
Output Power Setting 13 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -1.54 dBm – 30 dB = -31.54 dBm
Frequency Range: 7 – 16 GHz



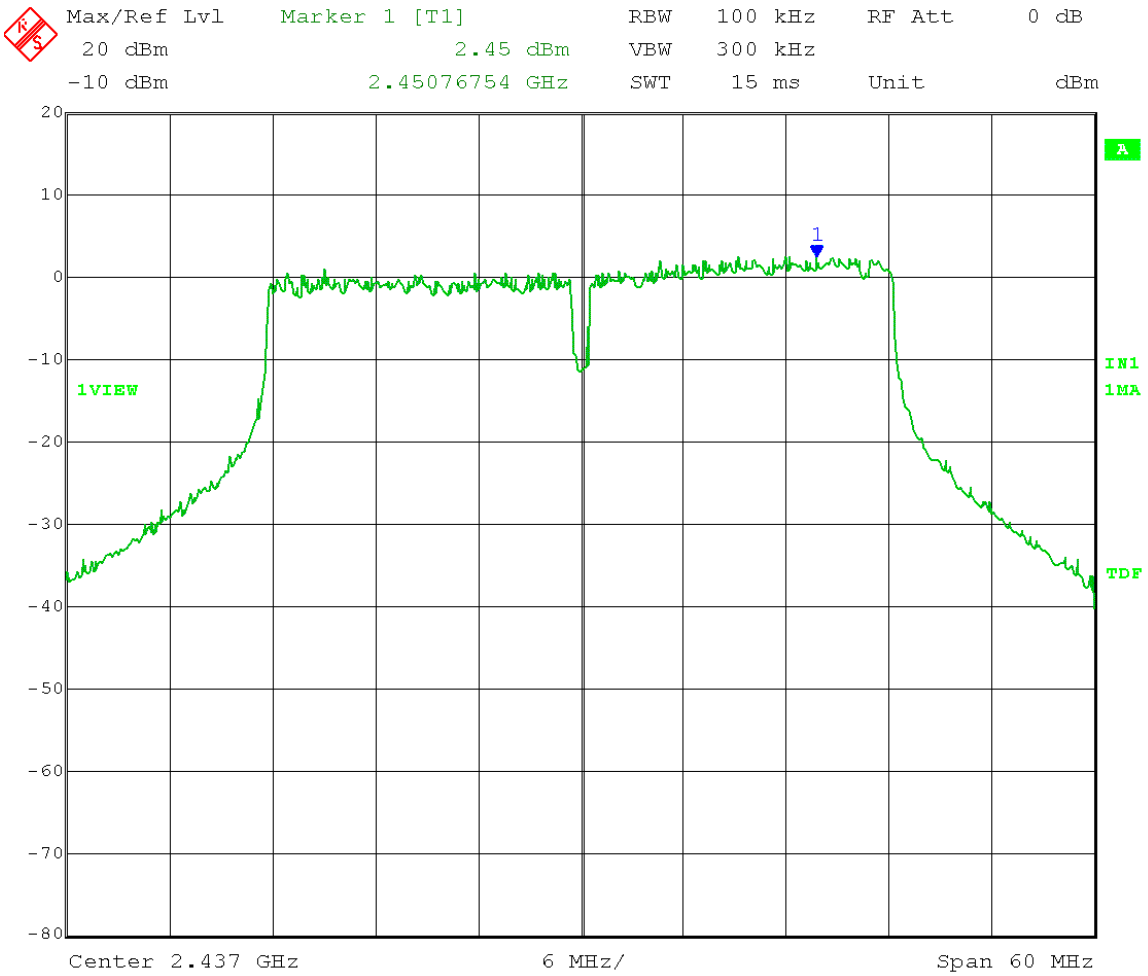
Date: 22.JAN.2014 11:34:38

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Low Channel Transmit = 2422 MHz
Output Power Setting 13 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -1.54 dBm – 30 dB = -31.54 dBm
Frequency Range: 16 – 25 GHz



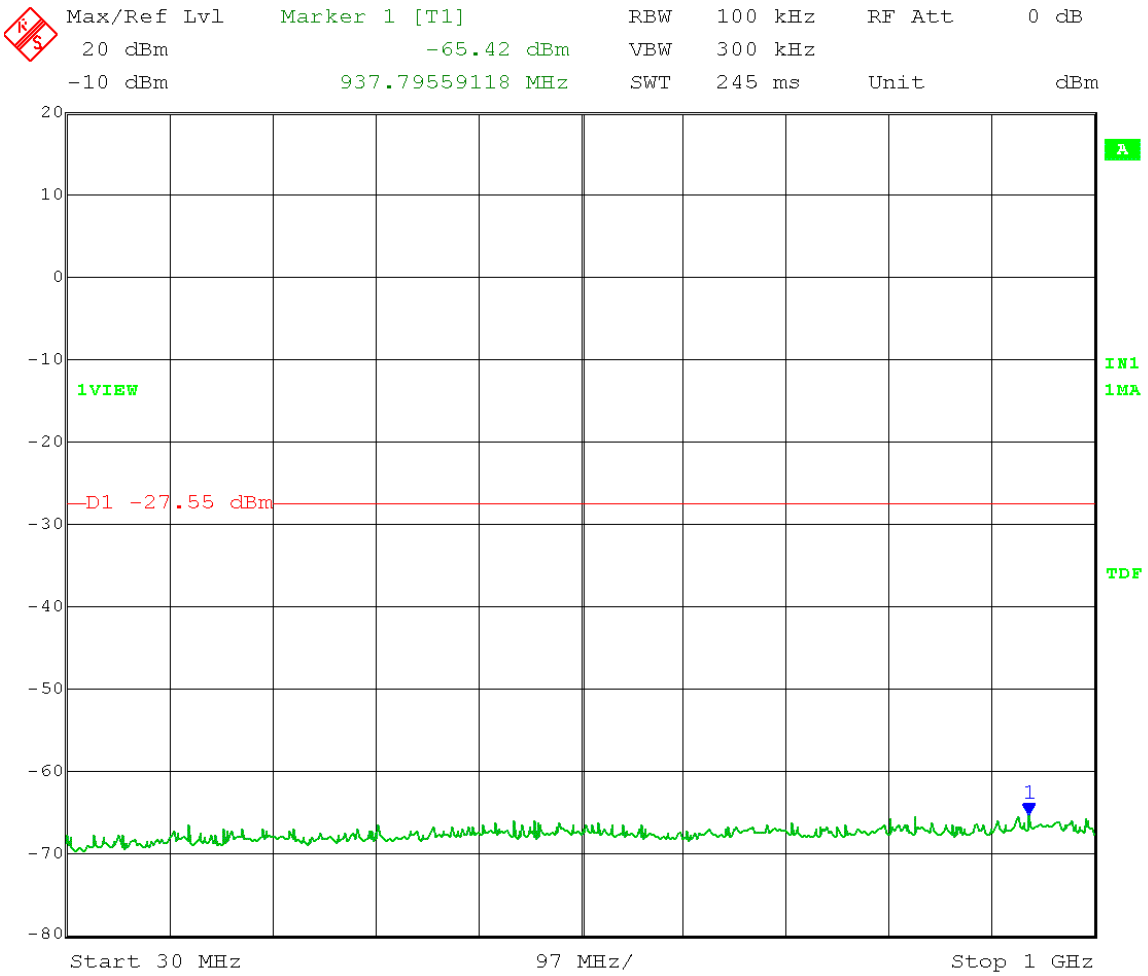
Date: 22.JAN.2014 11:36:24

Test Date:	01-22-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 17	Channel bandwidth: 40MHz
	Output port: 0	OFDM MCS15
	Reference Level Measurement	
	Limit = 2.45 dBm – 30 dB = -27.55 dBm	



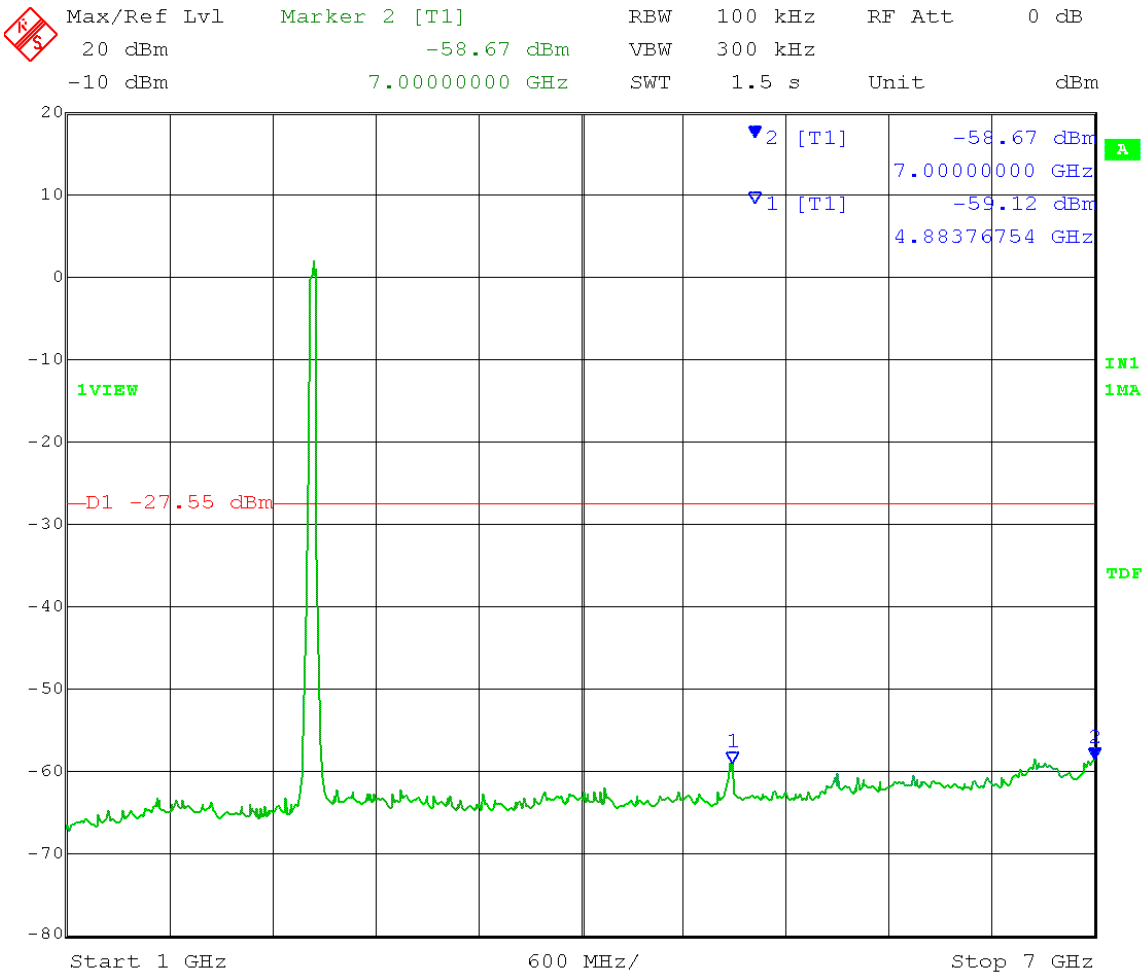
Date: 22.JAN.2014 12:33:46

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 17 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 2.45 dBm – 30 dB = -27.55 dBm
	Frequency Range: 30 – 1000 MHz



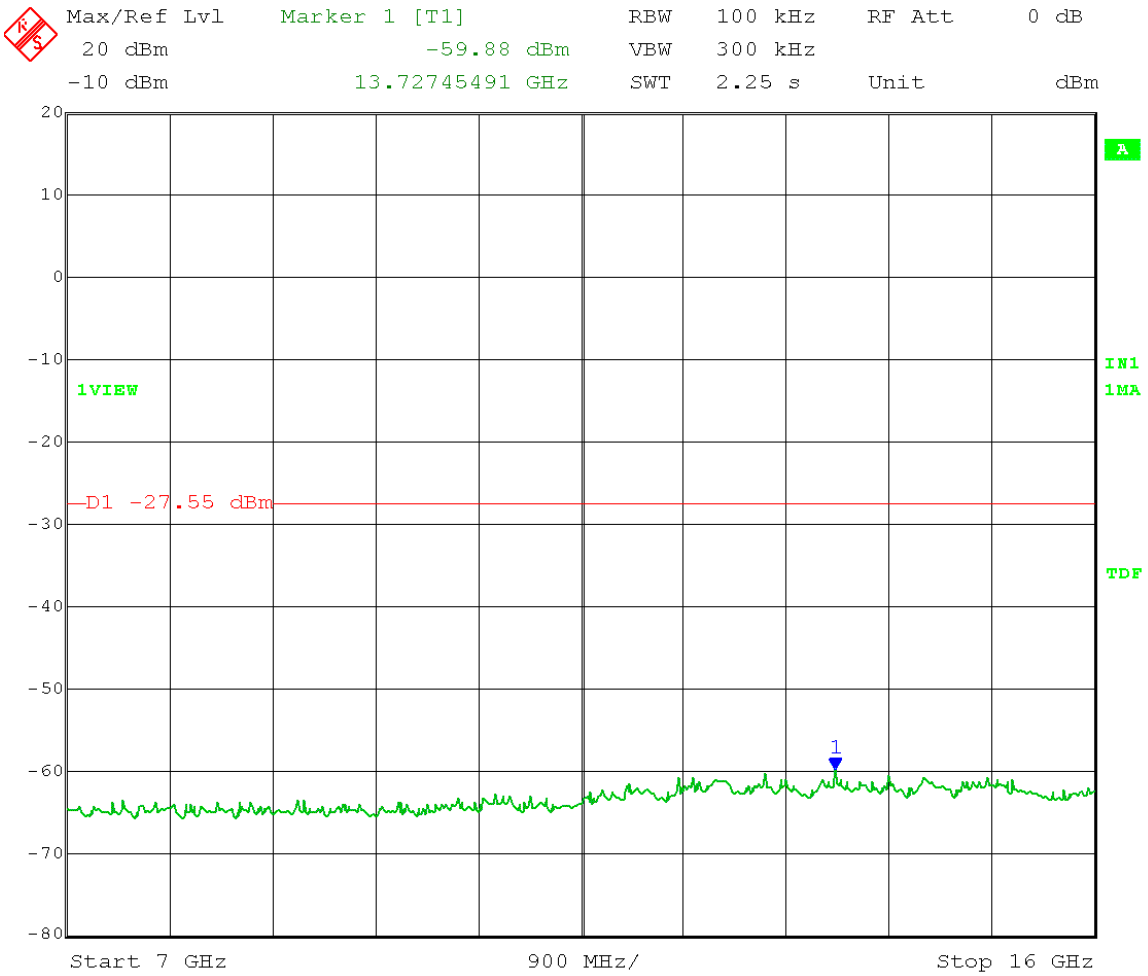
Date: 22.JAN.2014 12:43:13

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 17 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = 2.45 dBm – 30 dB = -27.55 dBm
Frequency Range: 1 – 7 GHz



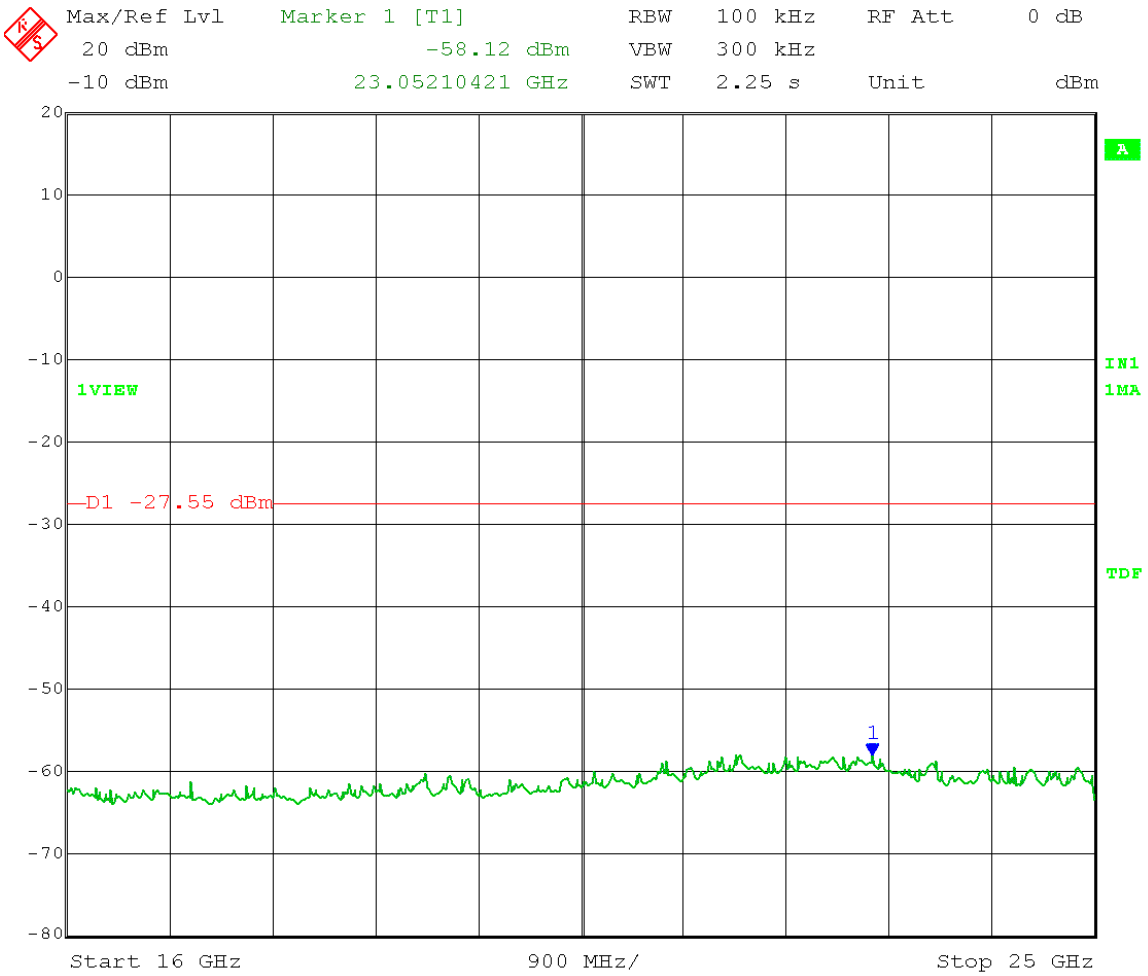
Date: 22.JAN.2014 12:37:53

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 17 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 2.45 dBm – 30 dB = -27.55 dBm
	Frequency Range: 7 – 16 GHz



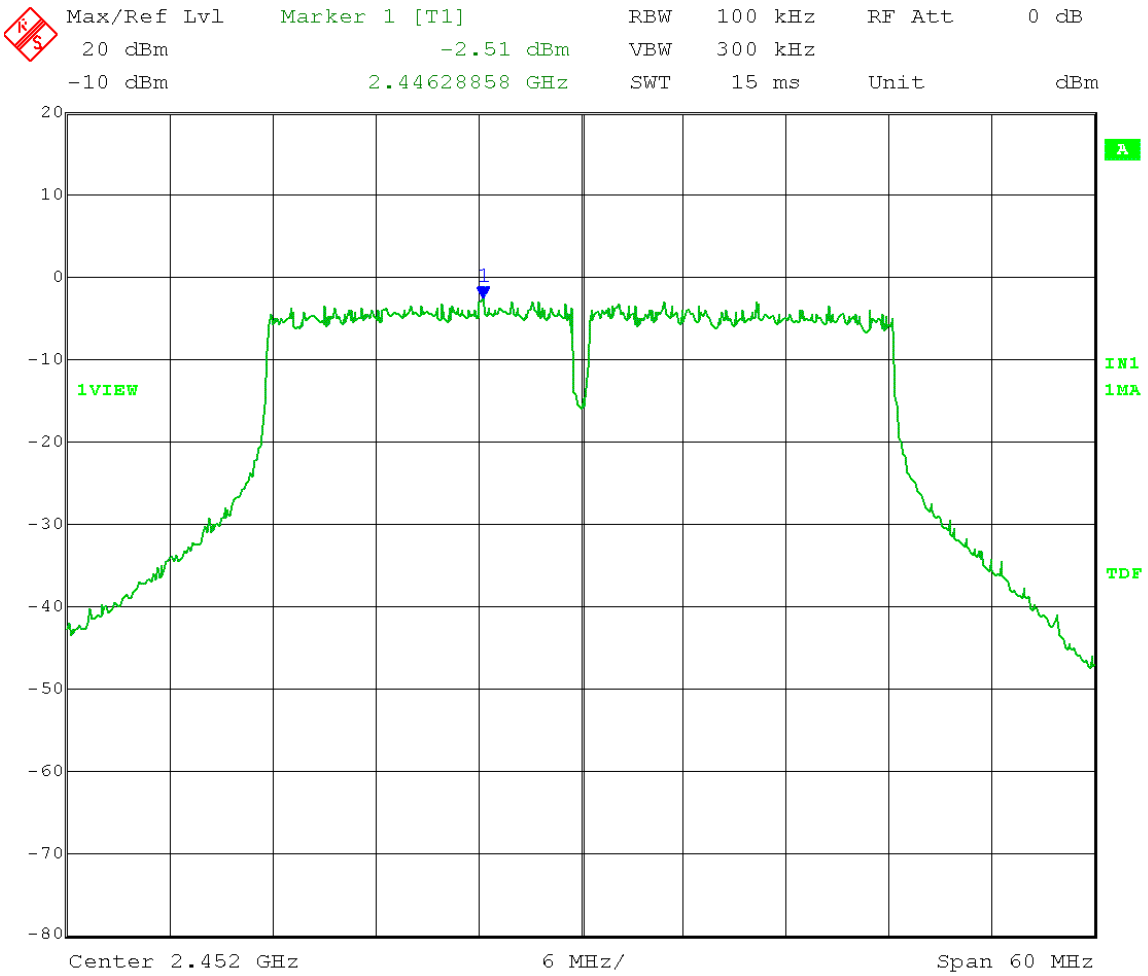
Date: 22.JAN.2014 12:39:34

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 17 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = 2.45 dBm – 30 dB = -27.55 dBm
Frequency Range: 16 – 25 GHz



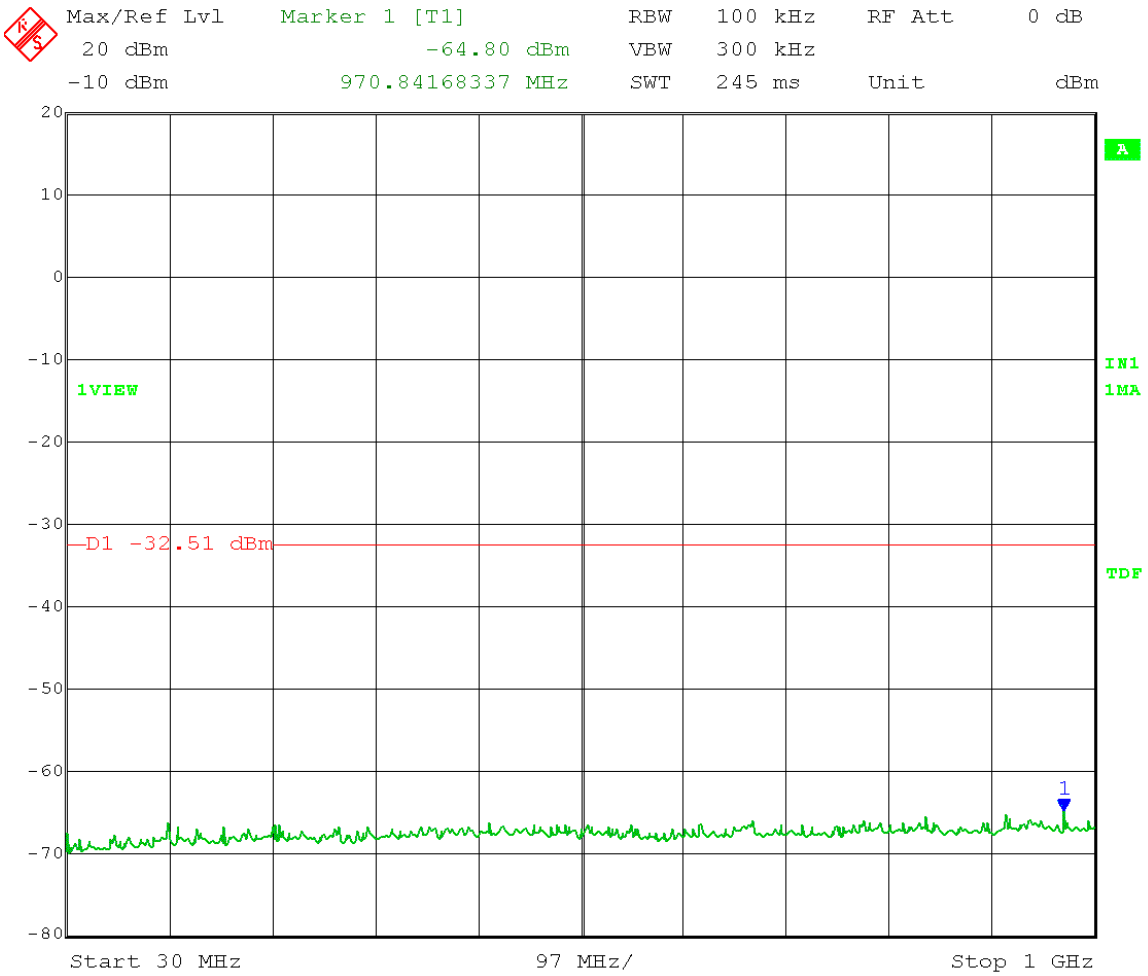
Date: 22.JAN.2014 12:41:30

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2452 MHz
	Output Power Setting 12 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -2.51 dBm – 30 dB = -32.51 dBm



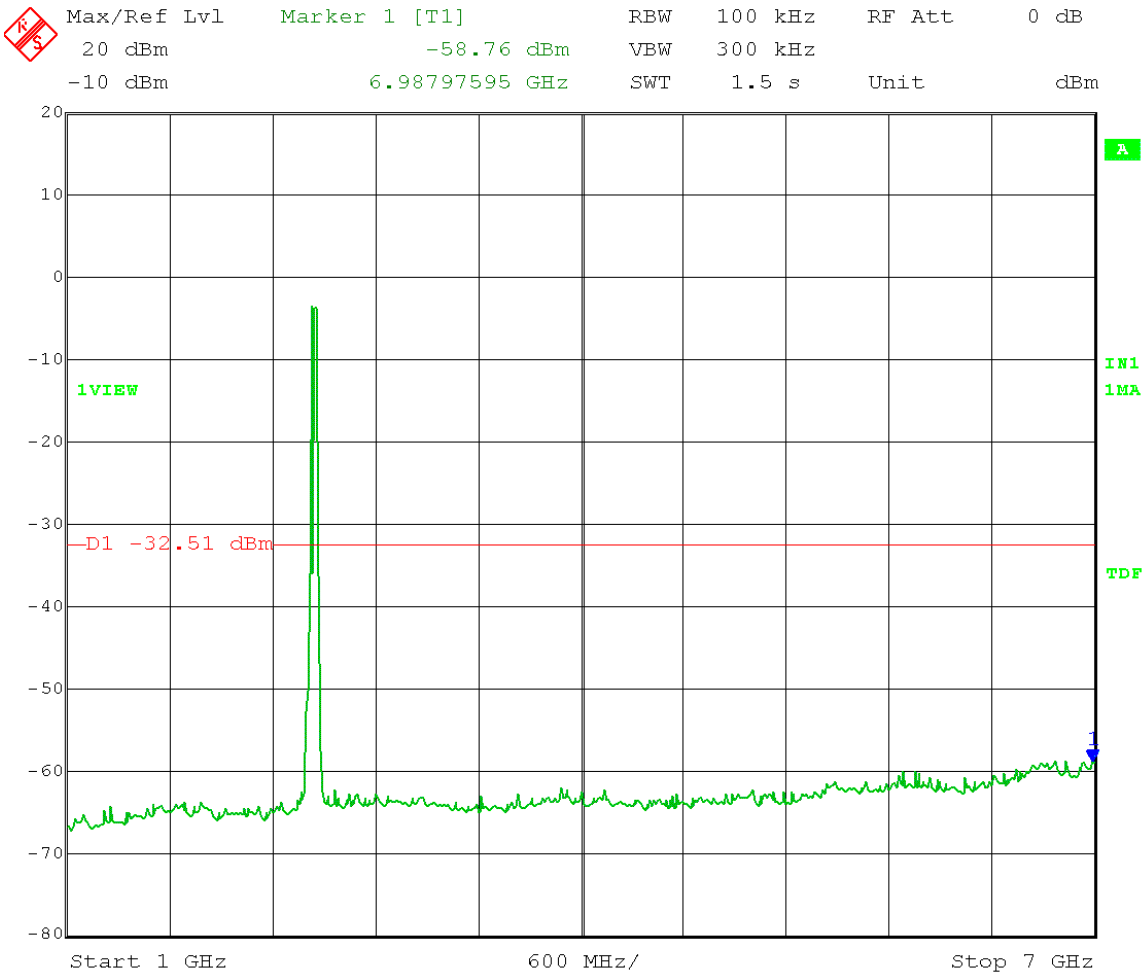
Date: 22.JAN.2014 11:09:39

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2452 MHz
Output Power Setting 12 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -2.51 dBm – 30 dB = -32.51 dBm
Frequency Range: 30 – 1000 MHz



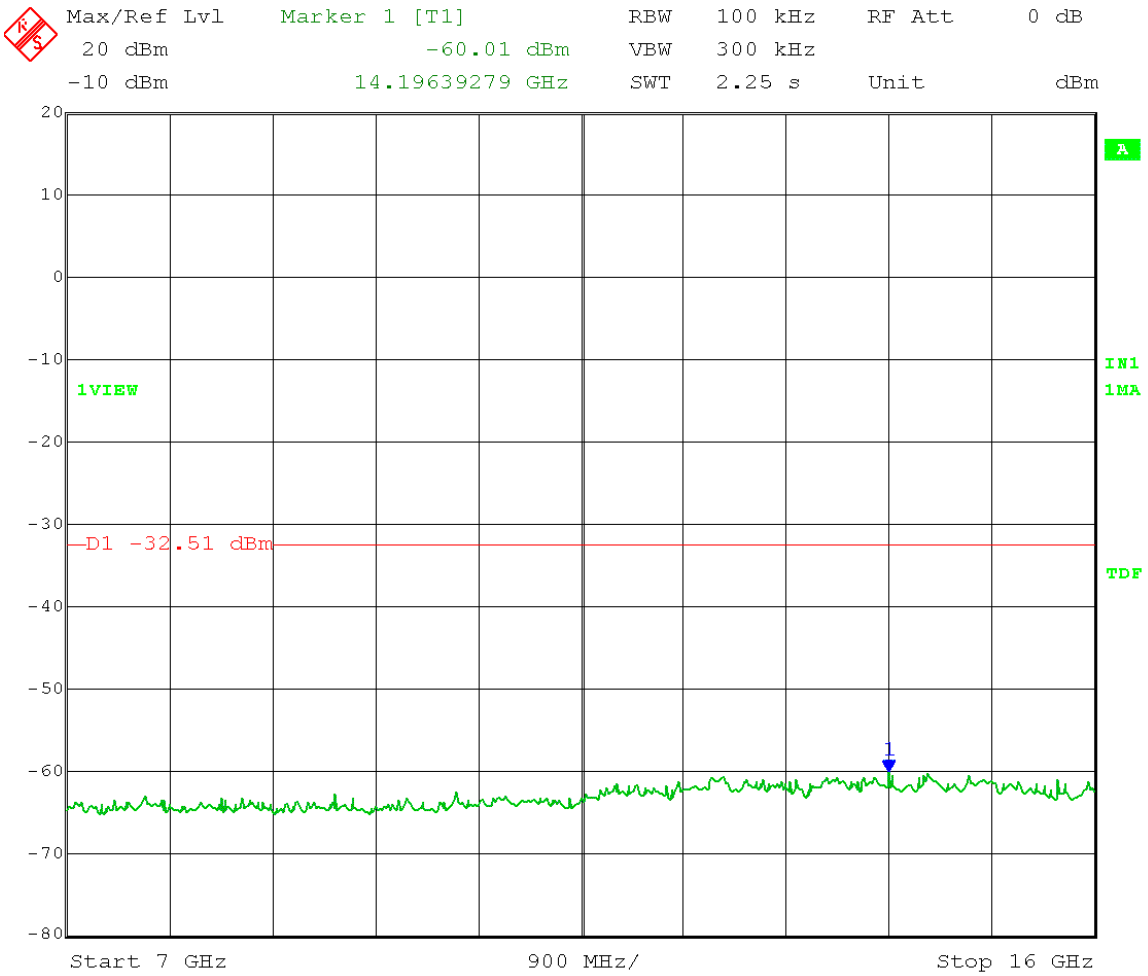
Date: 22.JAN.2014 11:17:07

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2452 MHz
	Output Power Setting 12 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -2.51 dBm – 30 dB = -32.51 dBm
	Frequency Range: 1 – 7 GHz



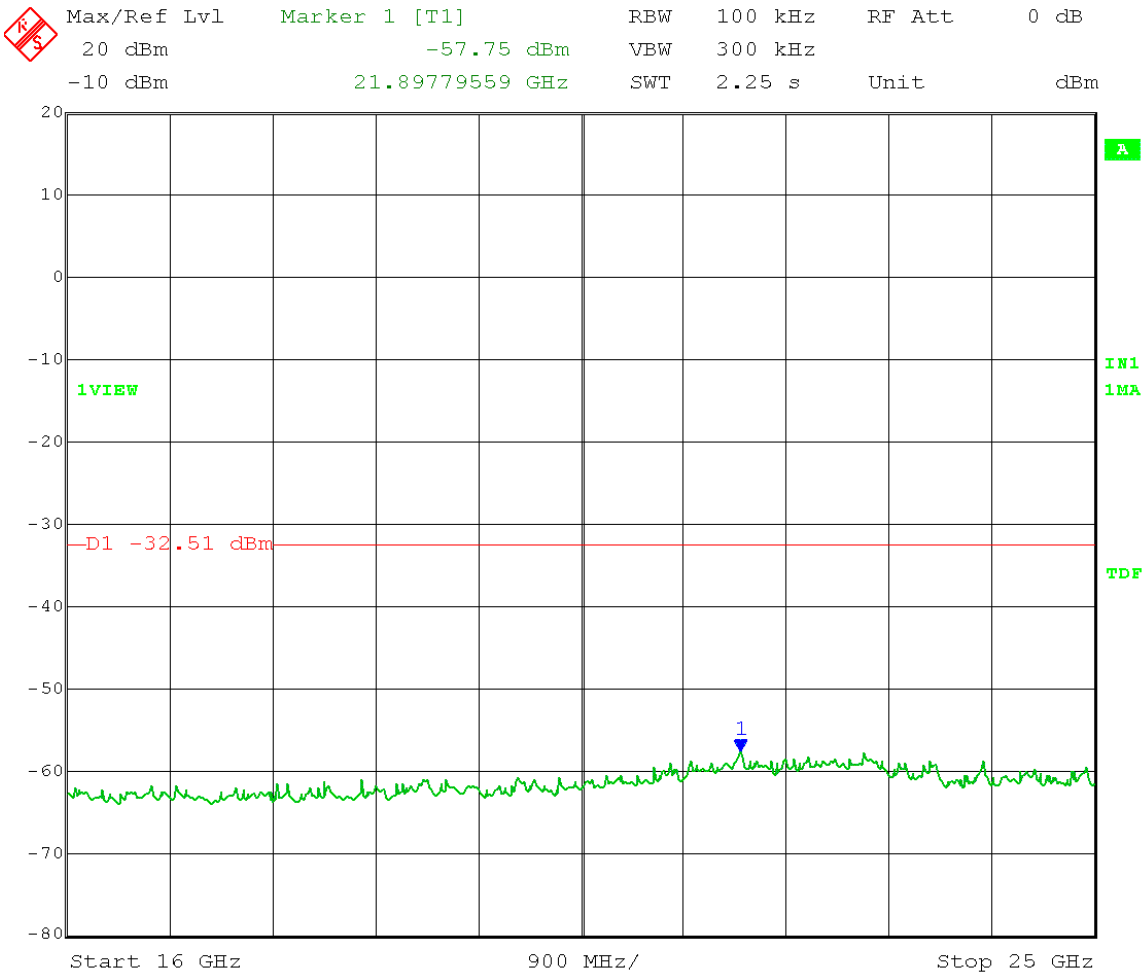
Date: 22.JAN.2014 11:11:34

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2452 MHz
Output Power Setting 12 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -2.51 dBm – 30 dB = -32.51 dBm
Frequency Range: 7 – 16 GHz



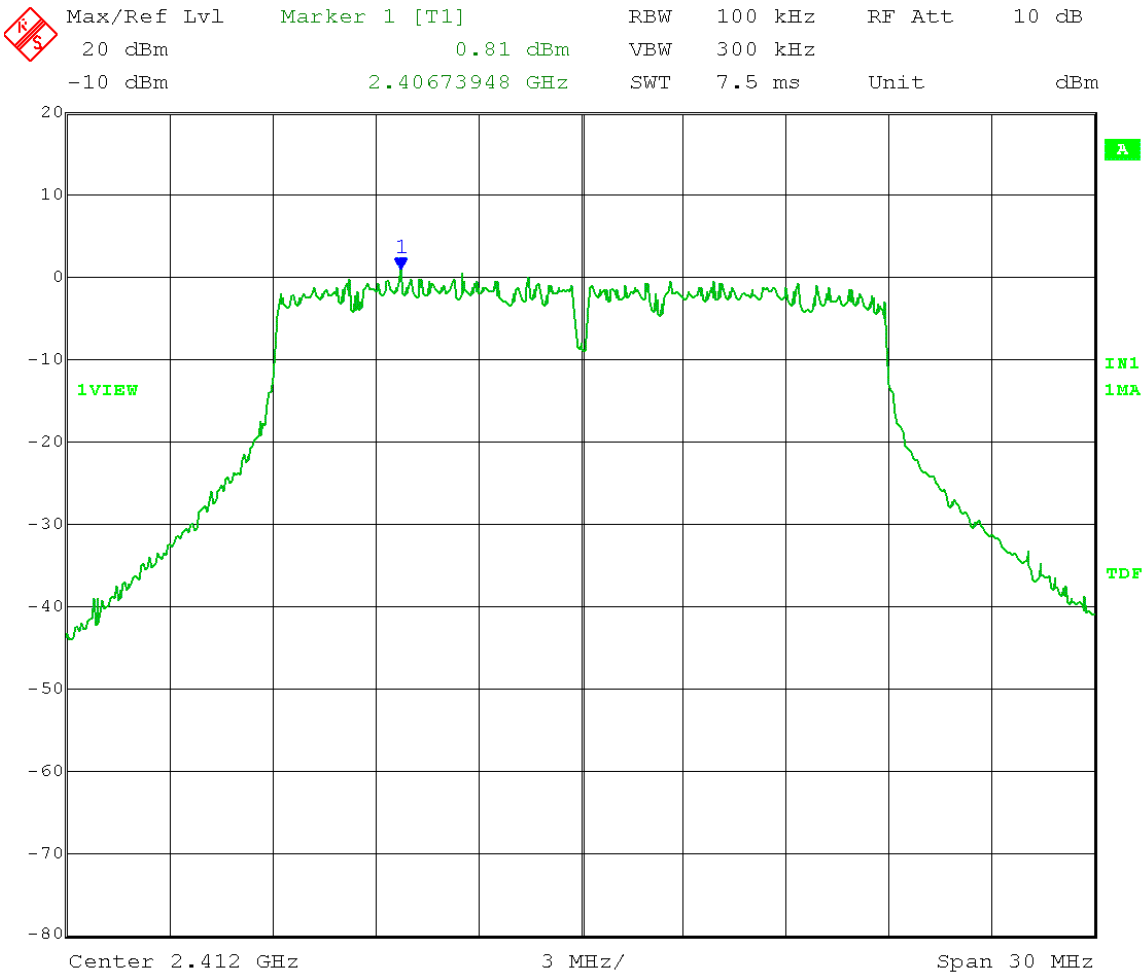
Date: 22.JAN.2014 11:13:41

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2452 MHz
	Output Power Setting 12 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -2.51 dBm – 30 dB = -32.51 dBm
	Frequency Range: 16 – 25 GHz



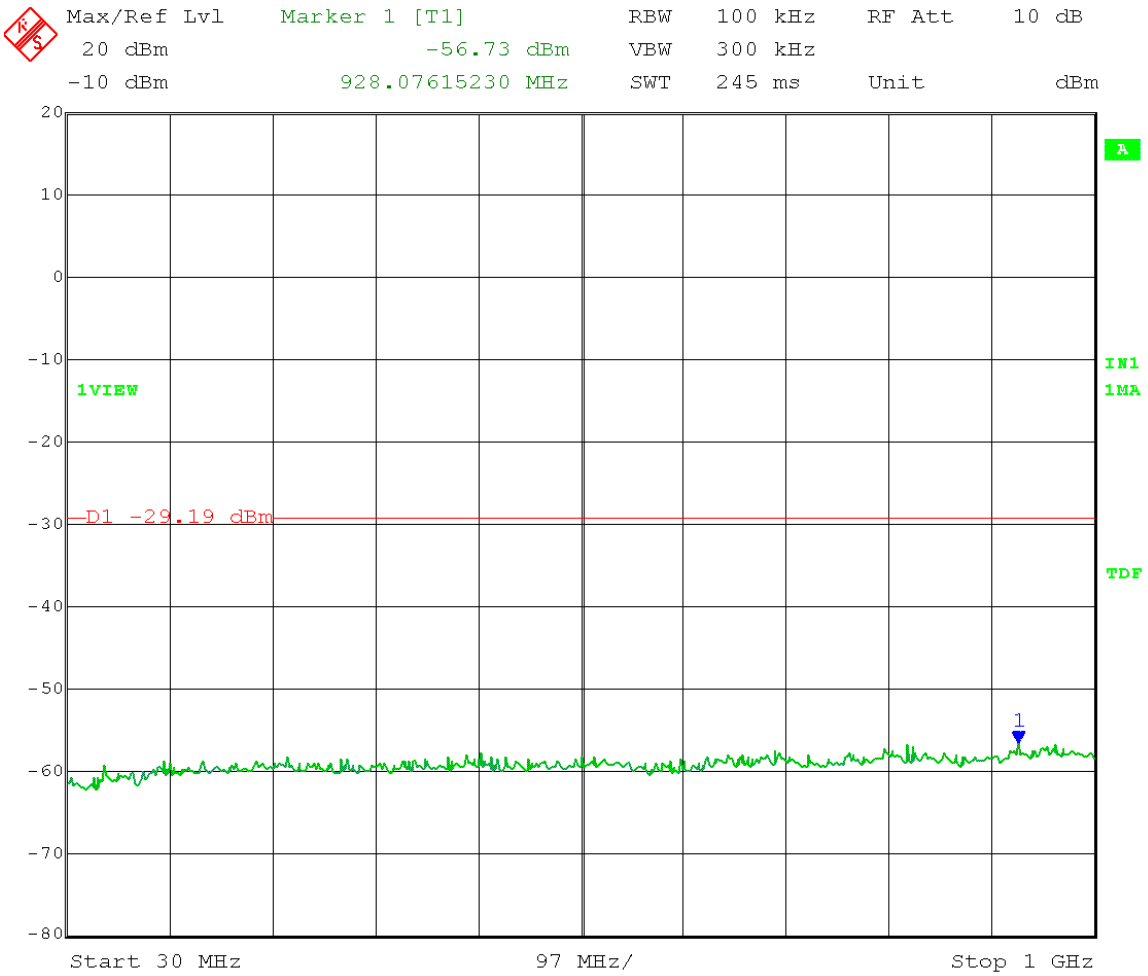
Date: 22.JAN.2014 11:15:16

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 12 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = 0.81 dBm – 30 dB = -29.19 dBm



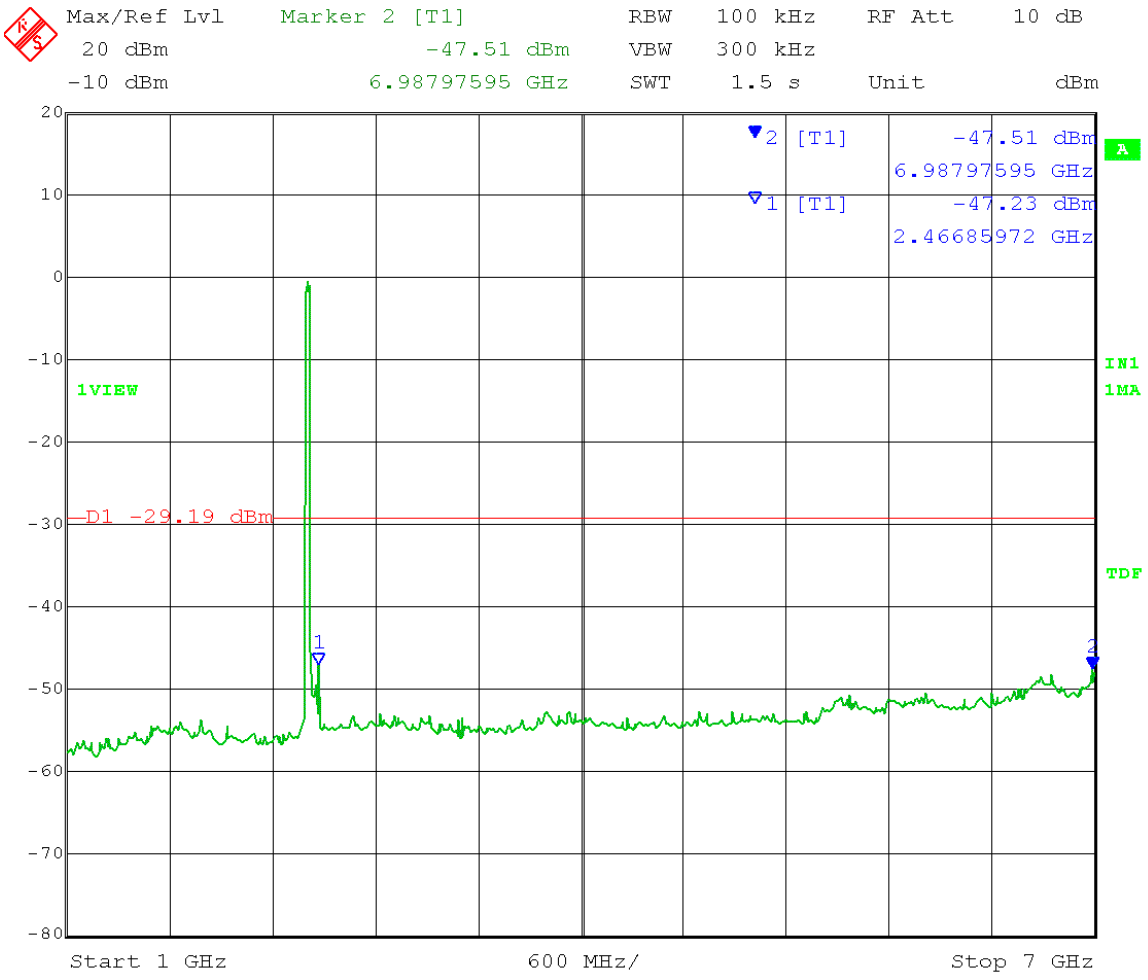
Date: 22.JAN.2014 10:42:09

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 12 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 0.81 dBm – 30 dB = -29.19 dBm
	Frequency range: 30 – 1000 MHz



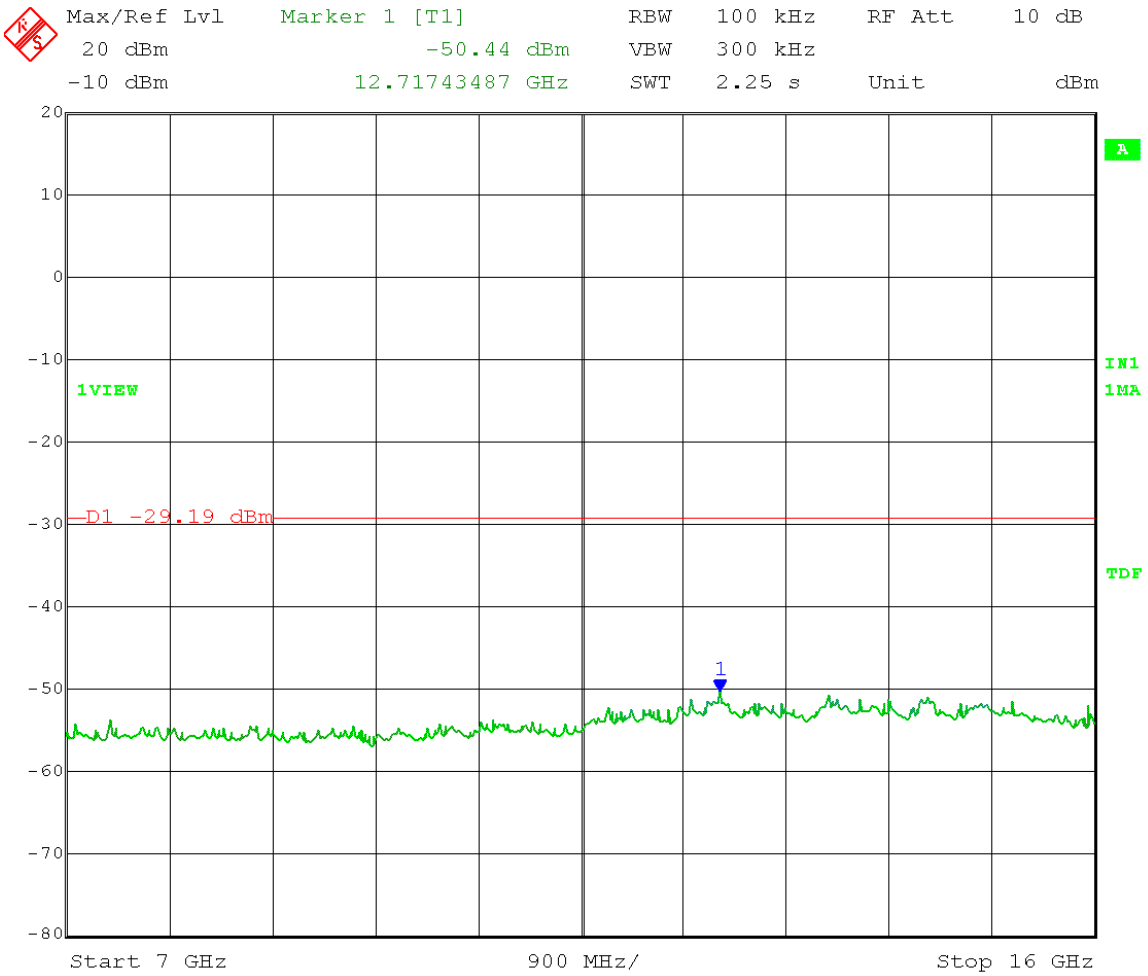
Date: 22.JAN.2014 10:50:35

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 12 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 0.81 dBm – 30 dB = -29.19 dBm
	Frequency range: 1 – 7 GHz



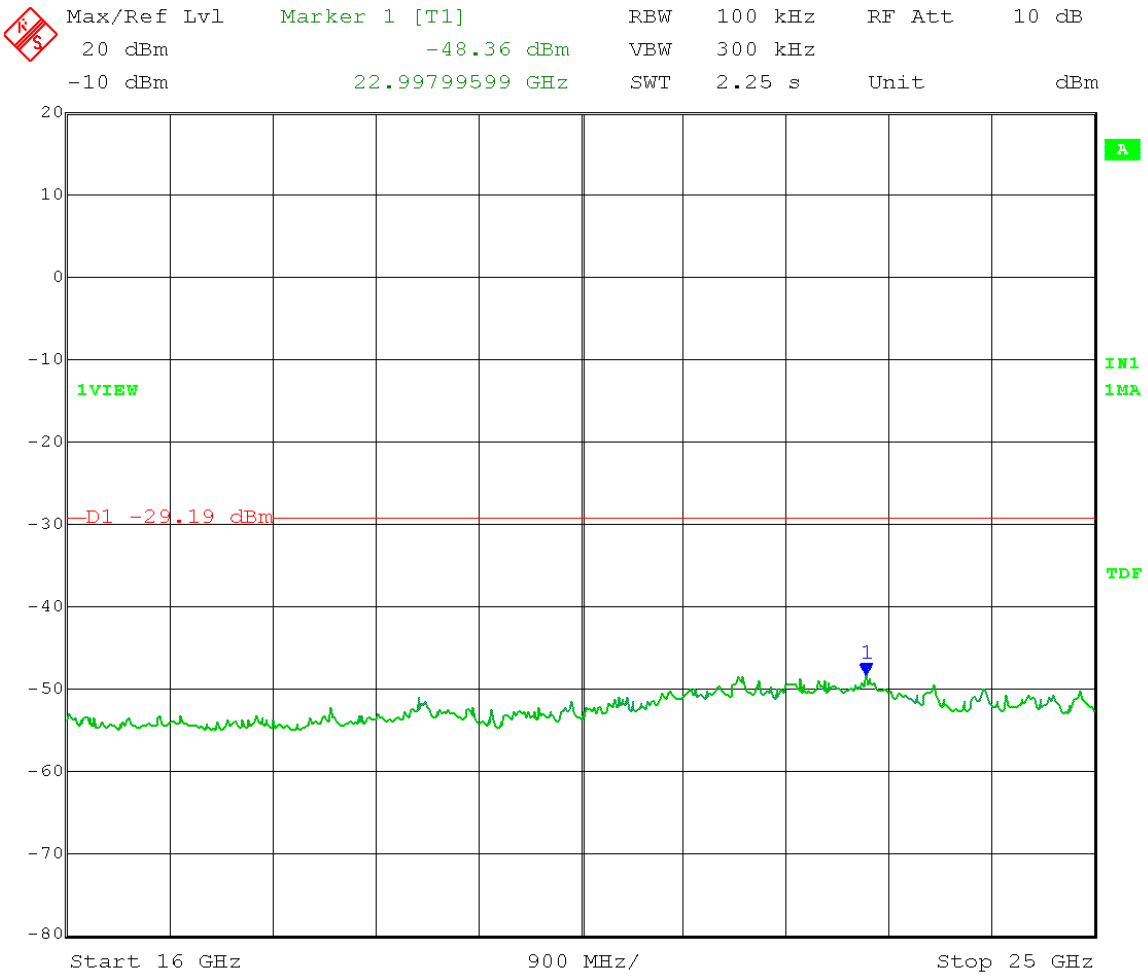
Date: 22.JAN.2014 10:45:00

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 12 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 0.81 dBm – 30 dB = -29.19 dBm
	Frequency range: 7 – 16 GHz



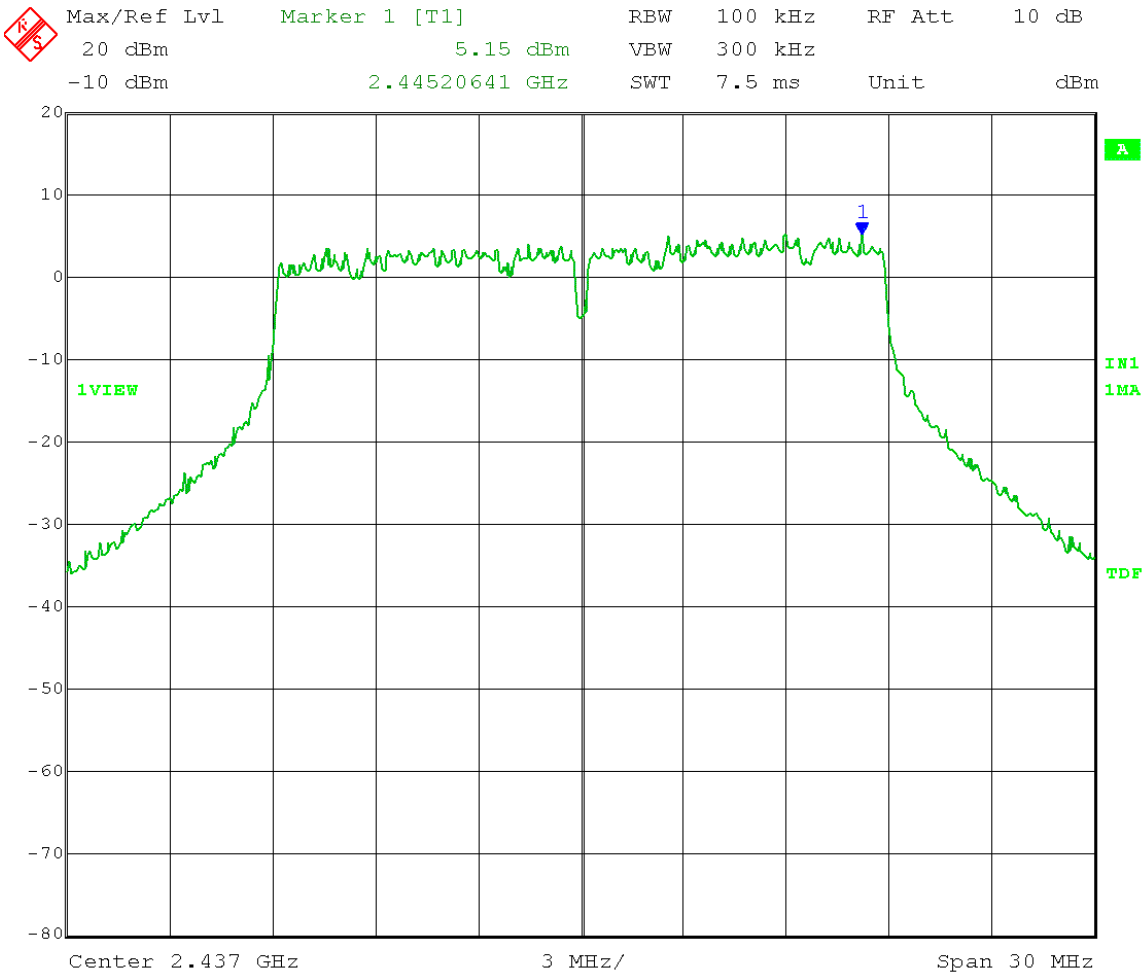
Date: 22.JAN.2014 10:46:50

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Low Channel Transmit = 2412 MHz
Output Power Setting 12 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = 0.81 dBm – 30 dB = -29.19 dBm
Frequency range: 16 – 25 GHz



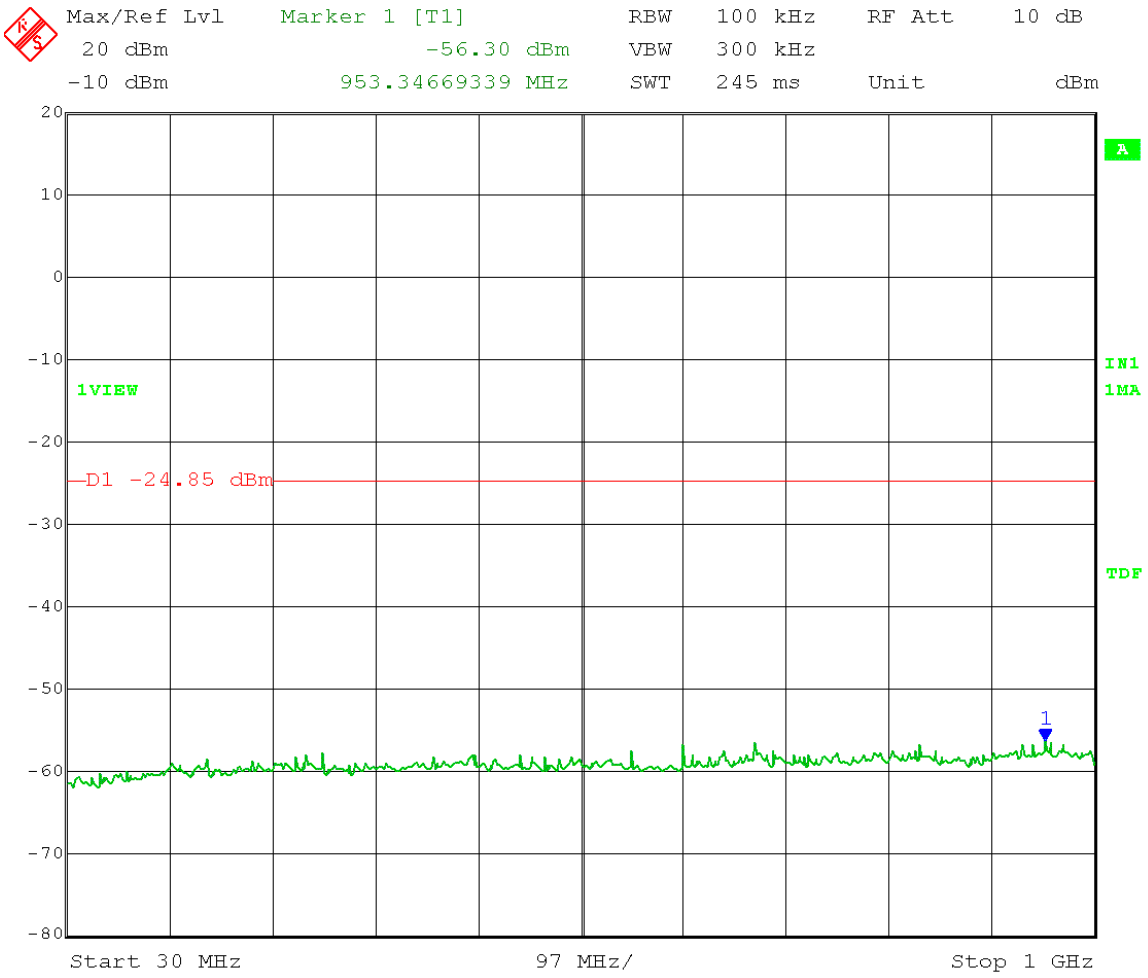
Date: 22.JAN.2014 10:48:41

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 17 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = 5.15 dBm – 30 dB = -24.85 dBm



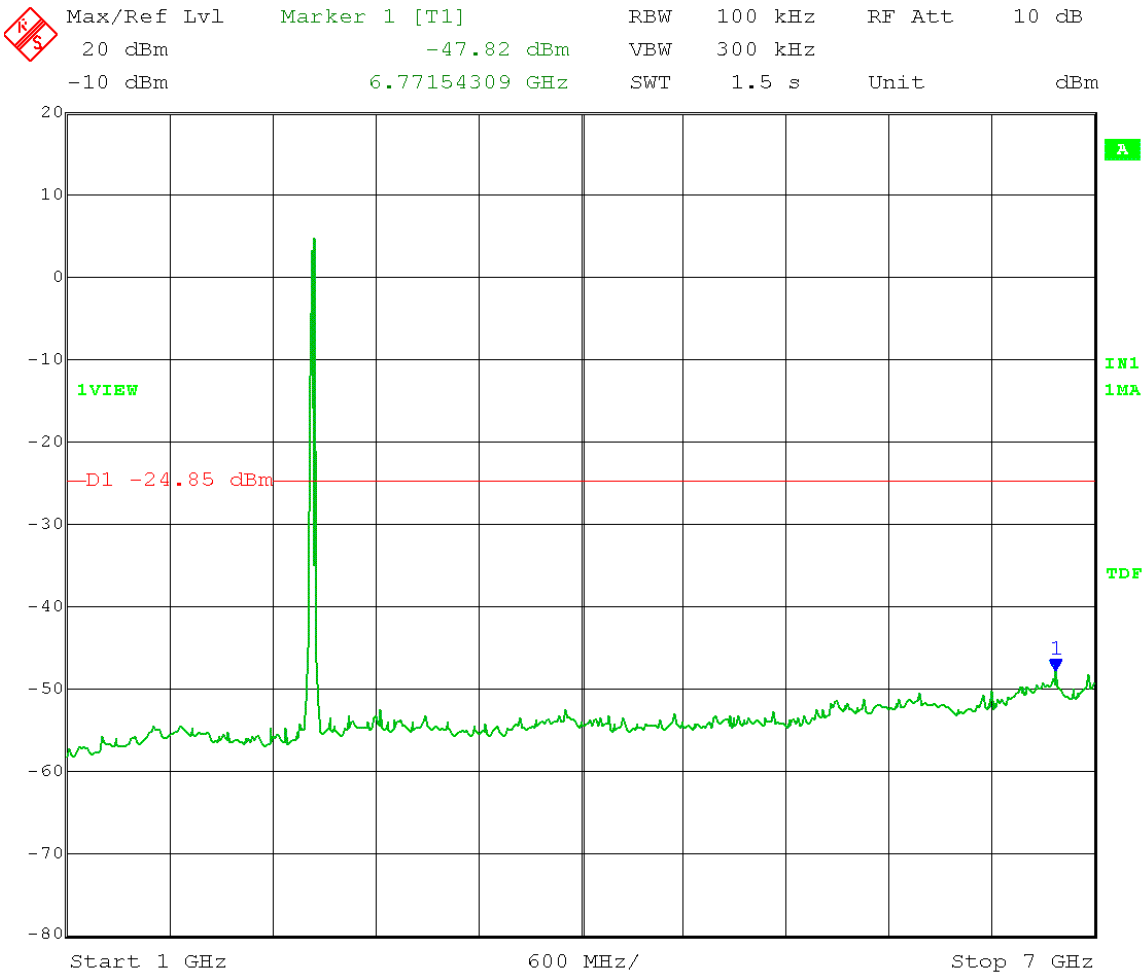
Date: 22.JAN.2014 10:55:13

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 17 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 5.15 dBm – 30 dB = -24.85 dBm
	Frequency Range: 30 – 1000 MHz



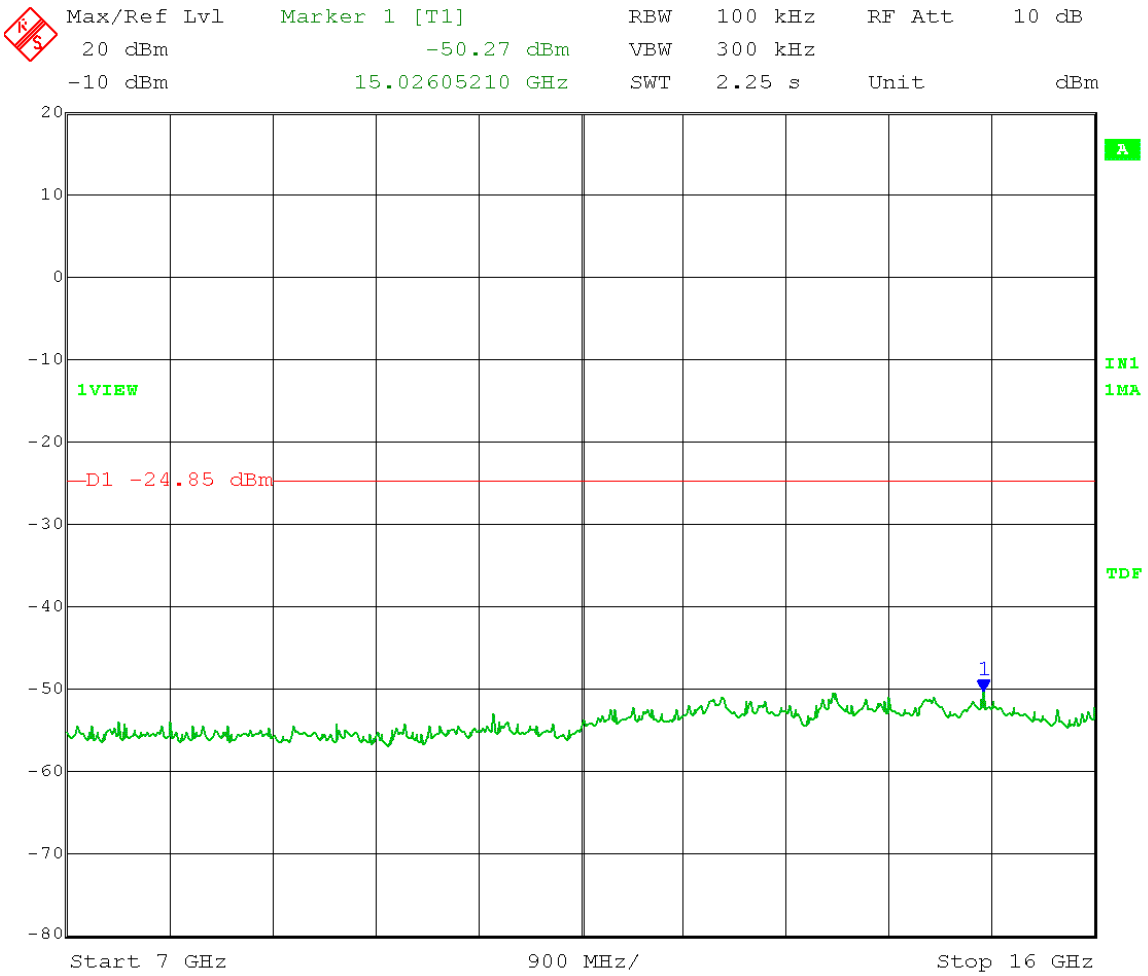
Date: 22.JAN.2014 11:03:49

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 17 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 5.15 dBm – 30 dB = -24.85 dBm
	Frequency Range: 1 – 7 GHz



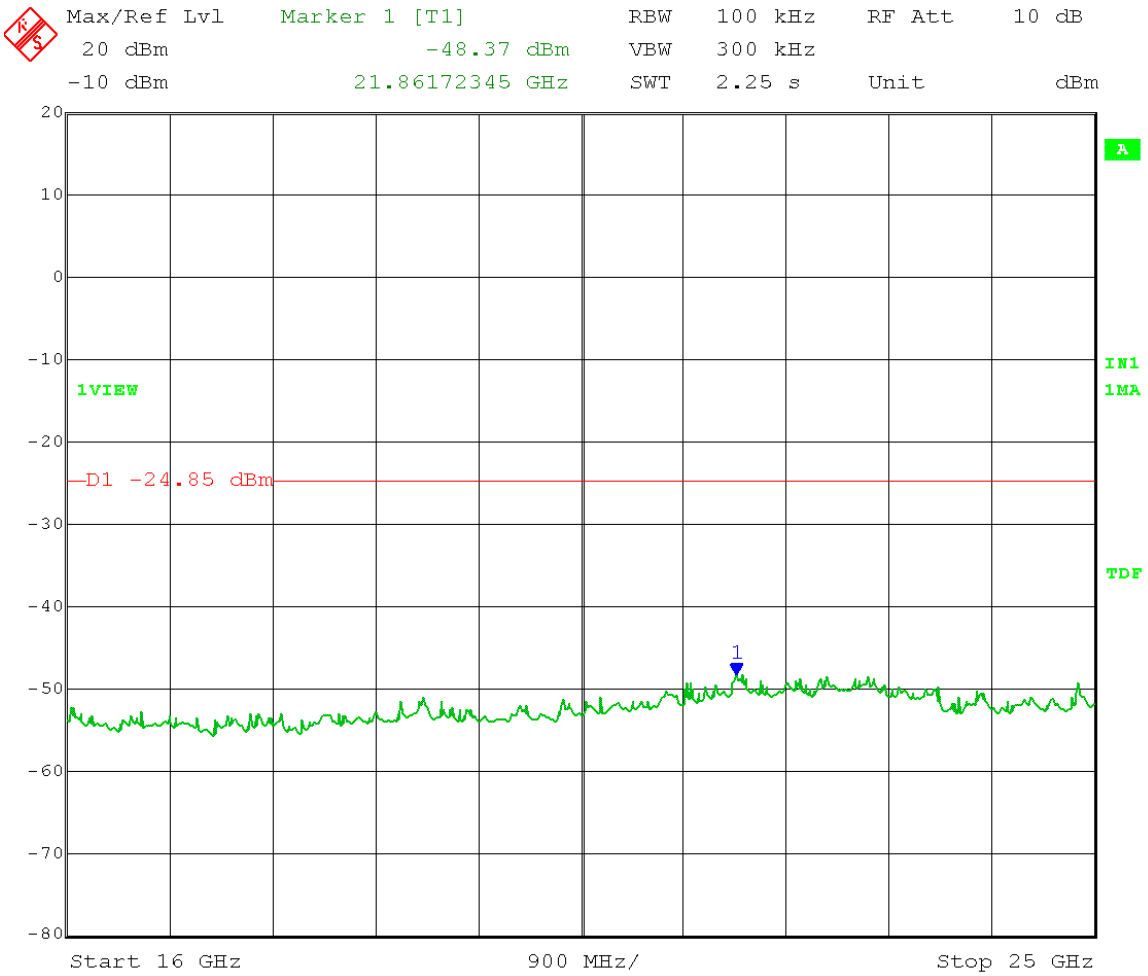
Date: 22.JAN.2014 10:57:53

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 17 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 5.15 dBm – 30 dB = -24.85 dBm
	Frequency Range: 7 – 16 GHz



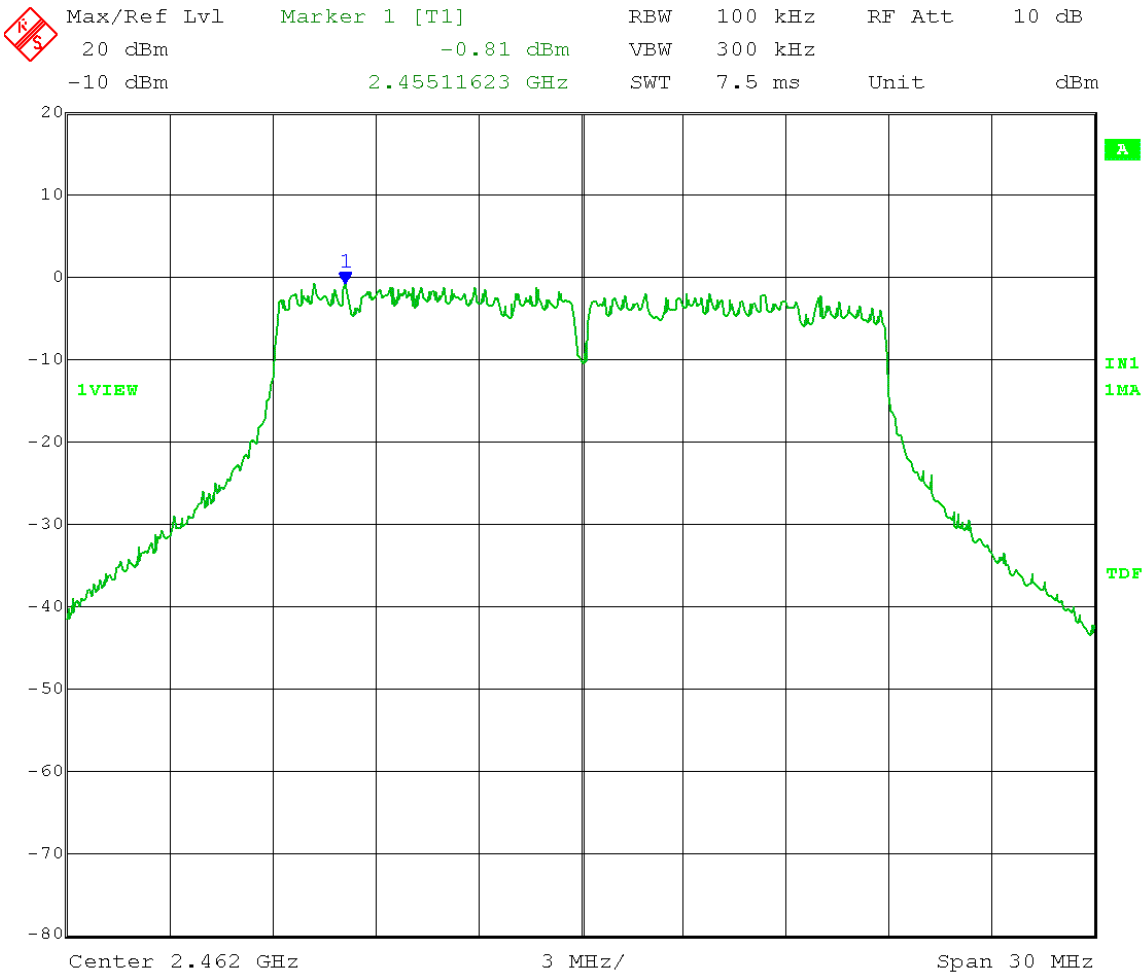
Date: 22.JAN.2014 10:59:47

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 17 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = 5.15 dBm – 30 dB = -24.85 dBm
	Frequency Range: 16 – 25 GHz



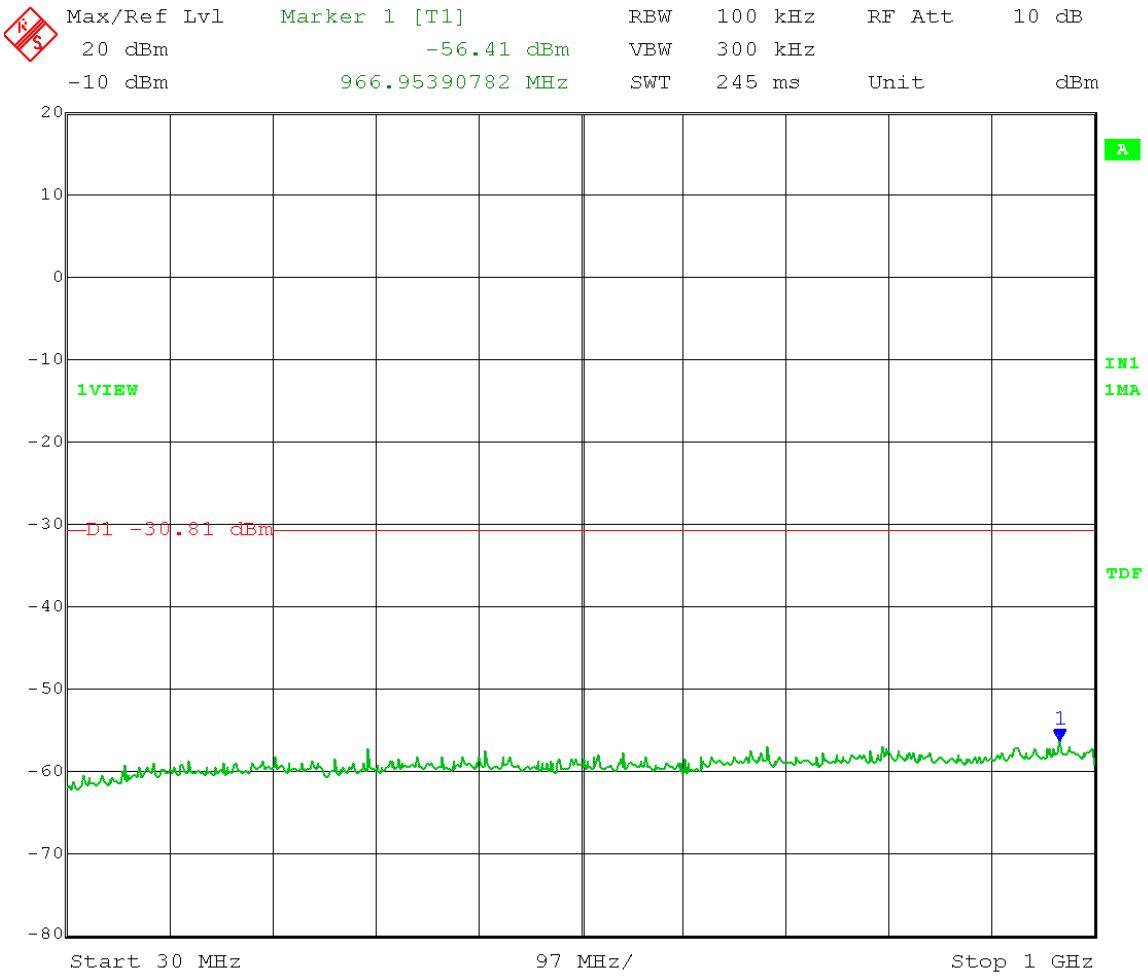
Date: 22.JAN.2014 11:01:42

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 12 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -0.81 dBm – 30 dB = -30.81 dBm



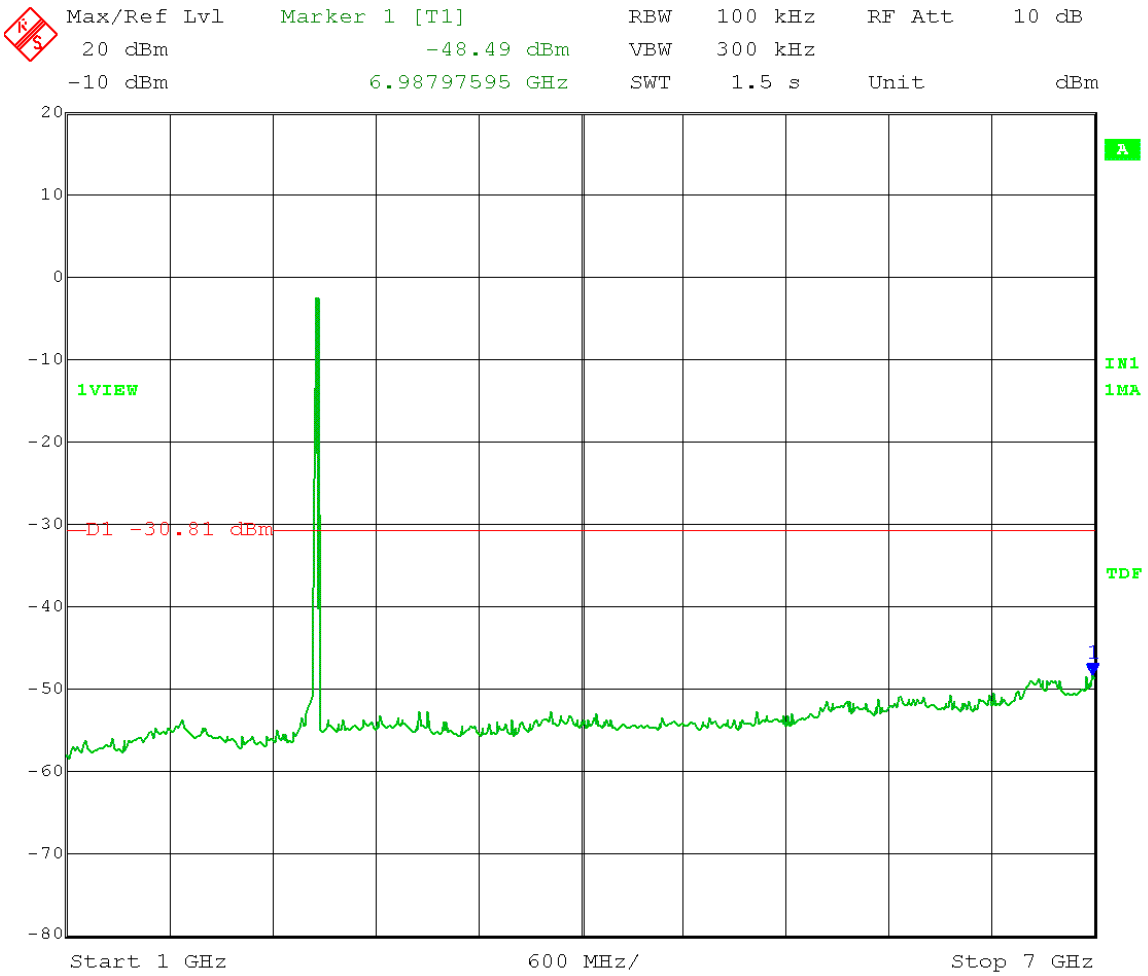
Date: 22.JAN.2014 10:23:05

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 12 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -0.81 dBm – 30 dB = -30.81 dBm
	Frequency range: 30 – 1000 MHz



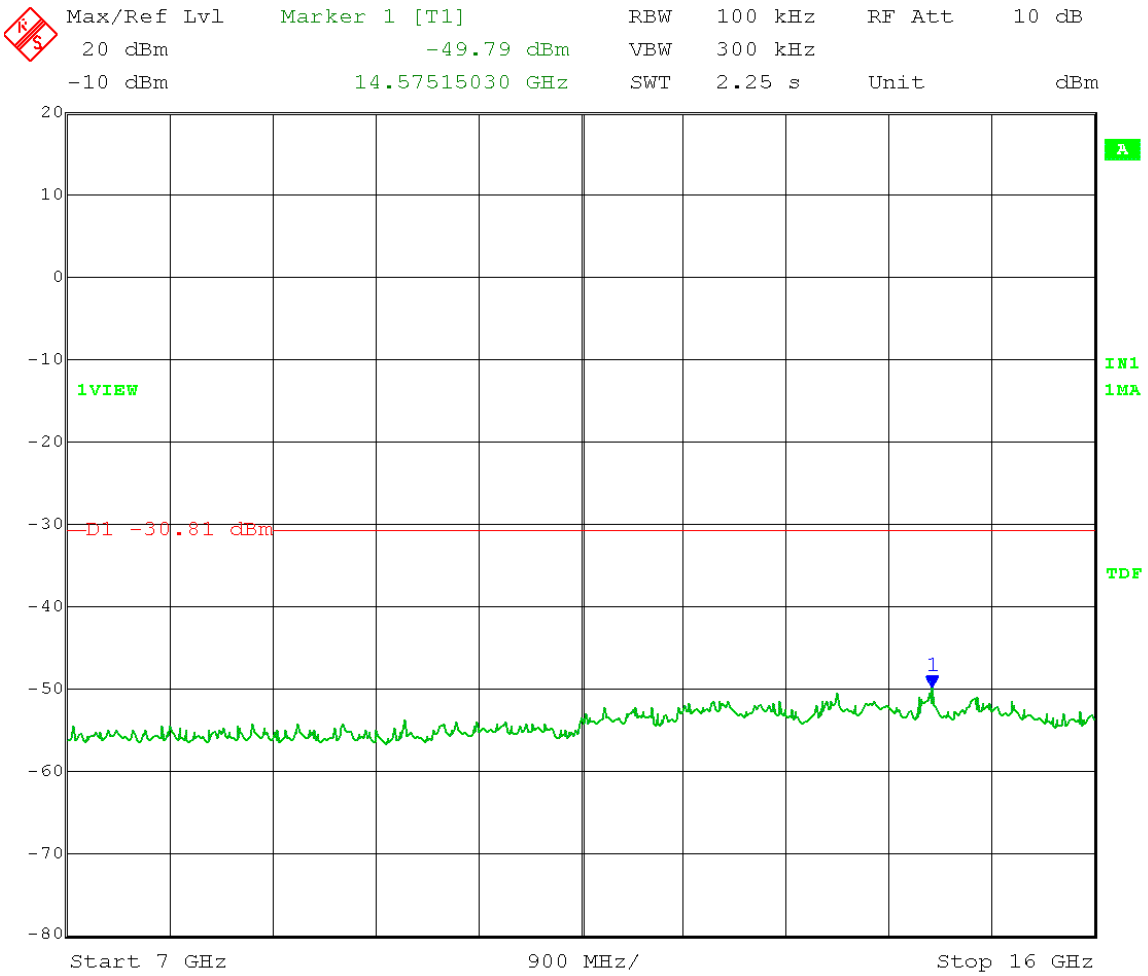
Date: 22.JAN.2014 10:32:44

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 12 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -0.81 dBm – 30 dB = -30.81 dBm
	Frequency range: 1 – 7 GHz



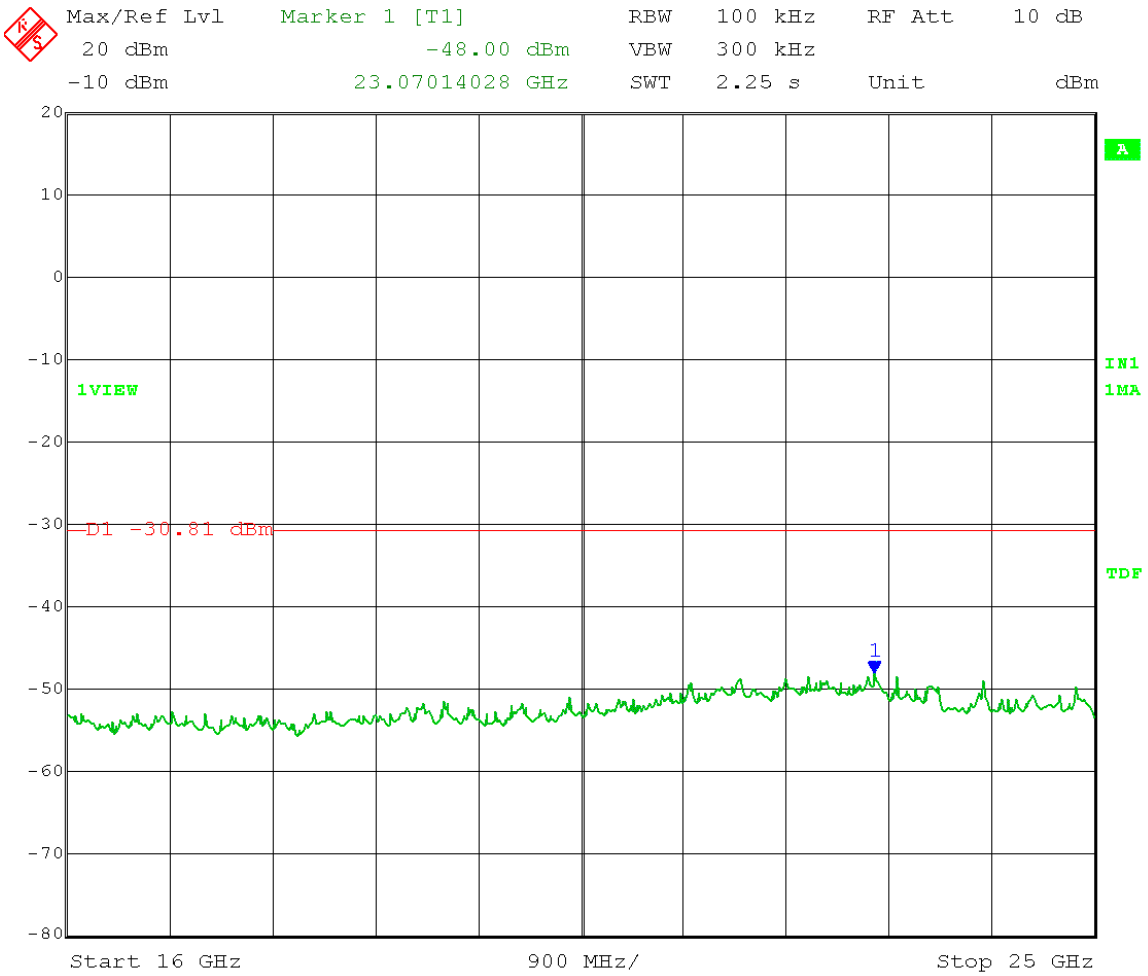
Date: 22.JAN.2014 10:27:18

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 12 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -0.81 dBm – 30 dB = -30.81 dBm
	Frequency range: 7 – 16 GHz



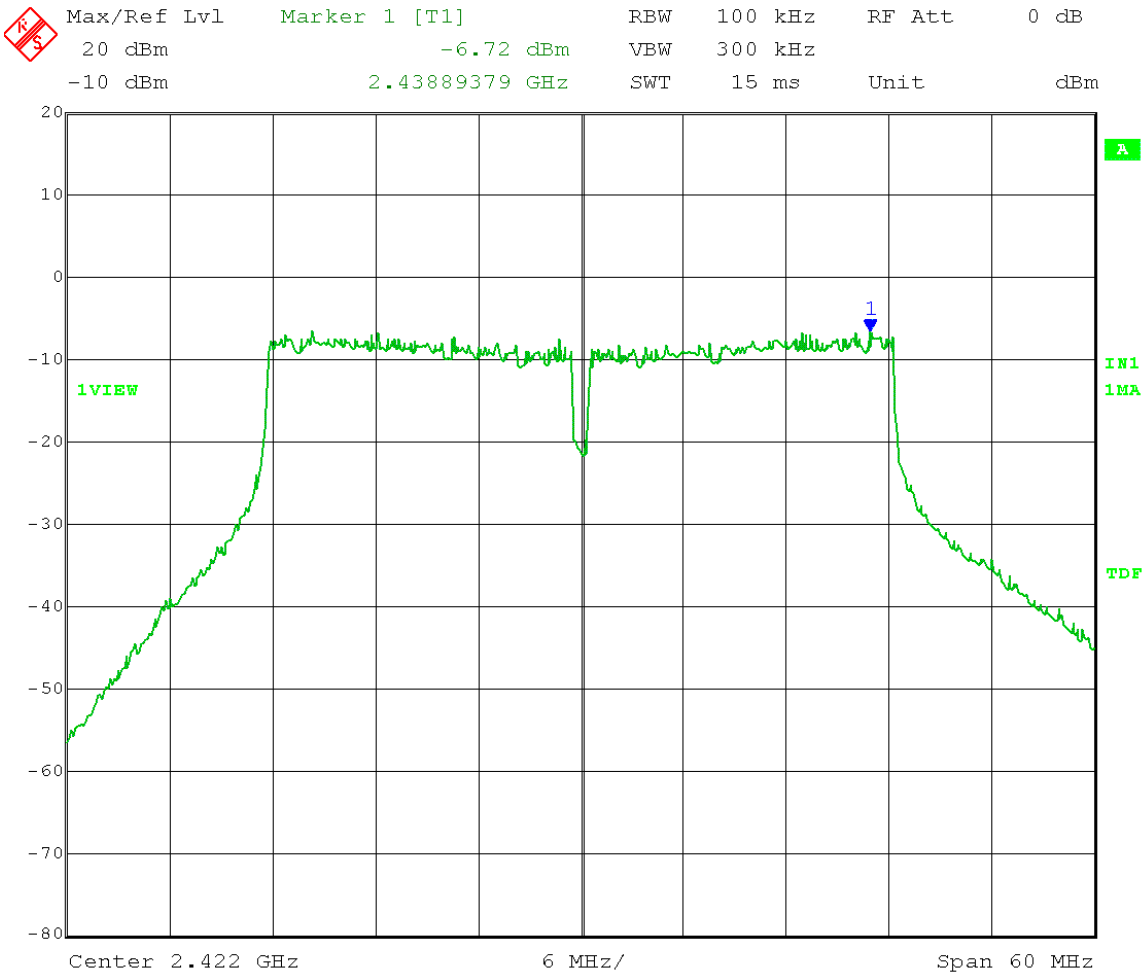
Date: 22.JAN.2014 10:29:10

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2462 MHz
Output Power Setting 12 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -0.81 dBm – 30 dB = -30.81 dBm
Frequency range: 16 – 25 GHz



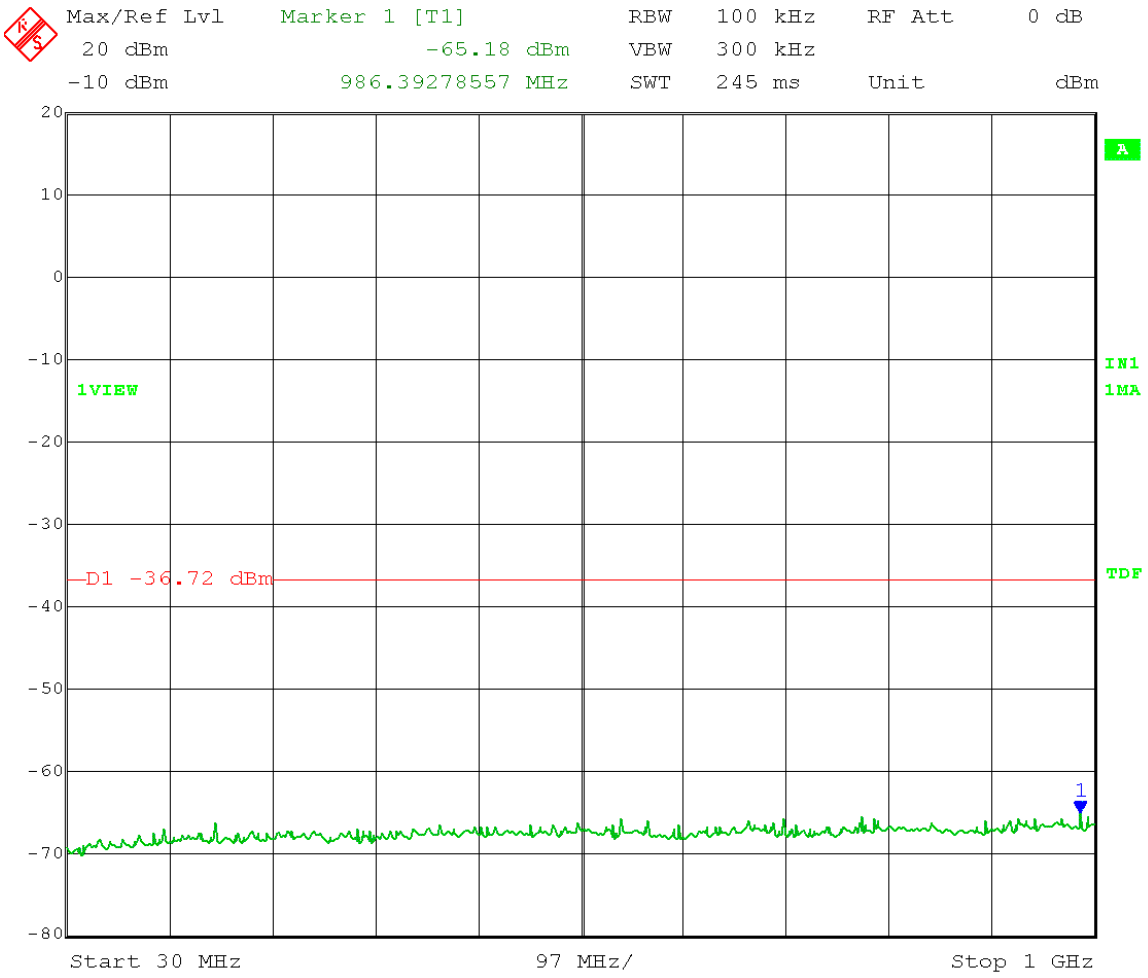
Date: 22.JAN.2014 10:30:45

Test Date:	01-22-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Low Channel Transmit = 2422 MHz
	Output Power Setting 8	Channel bandwidth: 40MHz
	Output port: 0	OFDM MCS15
	Reference Level Measurement	
	Limit = -6.72 dBm – 30 dB = -36.72 dBm	



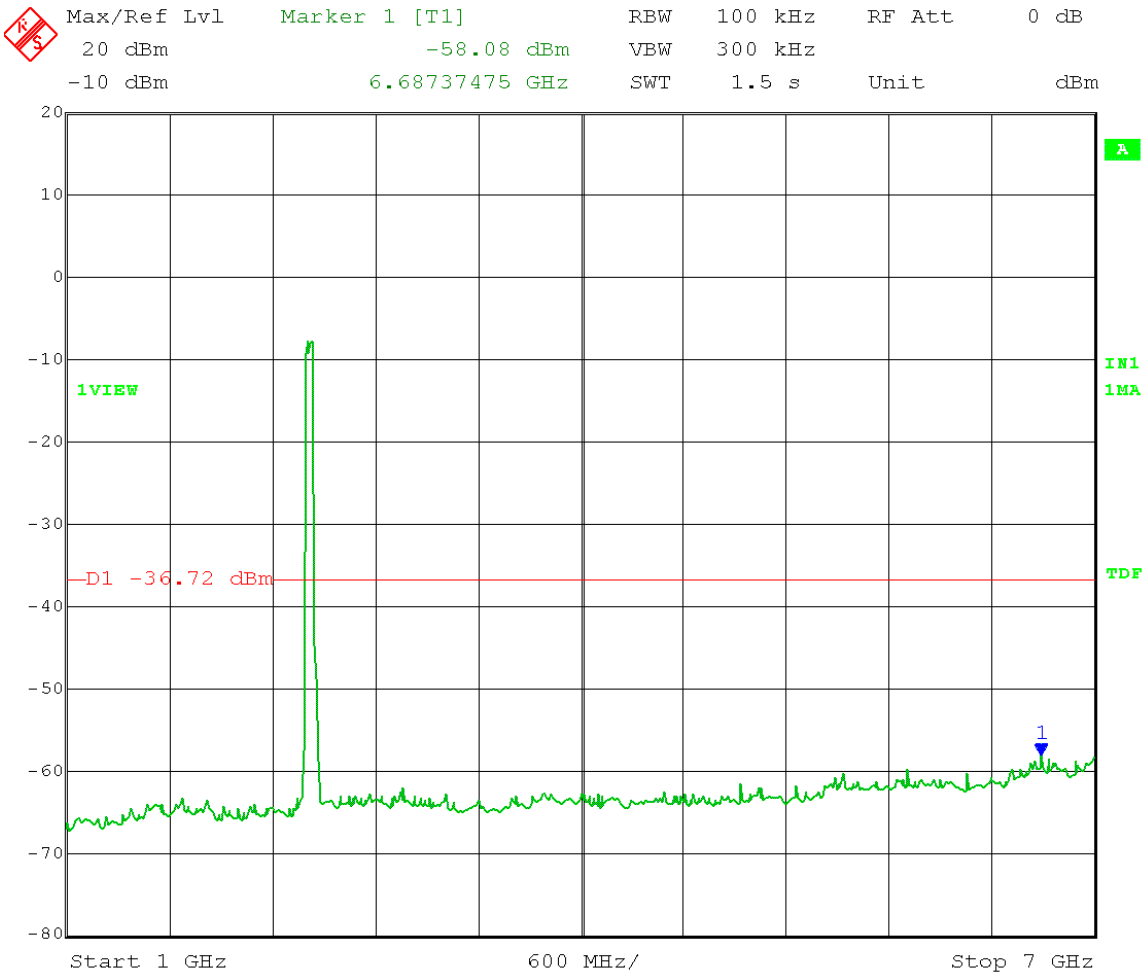
Date: 22.JAN.2014 11:40:51

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Low Channel Transmit = 2422 MHz
Output Power Setting 8 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -6.72 dBm – 30 dB = -36.72 dBm
Frequency Range: 30 – 1000 MHz



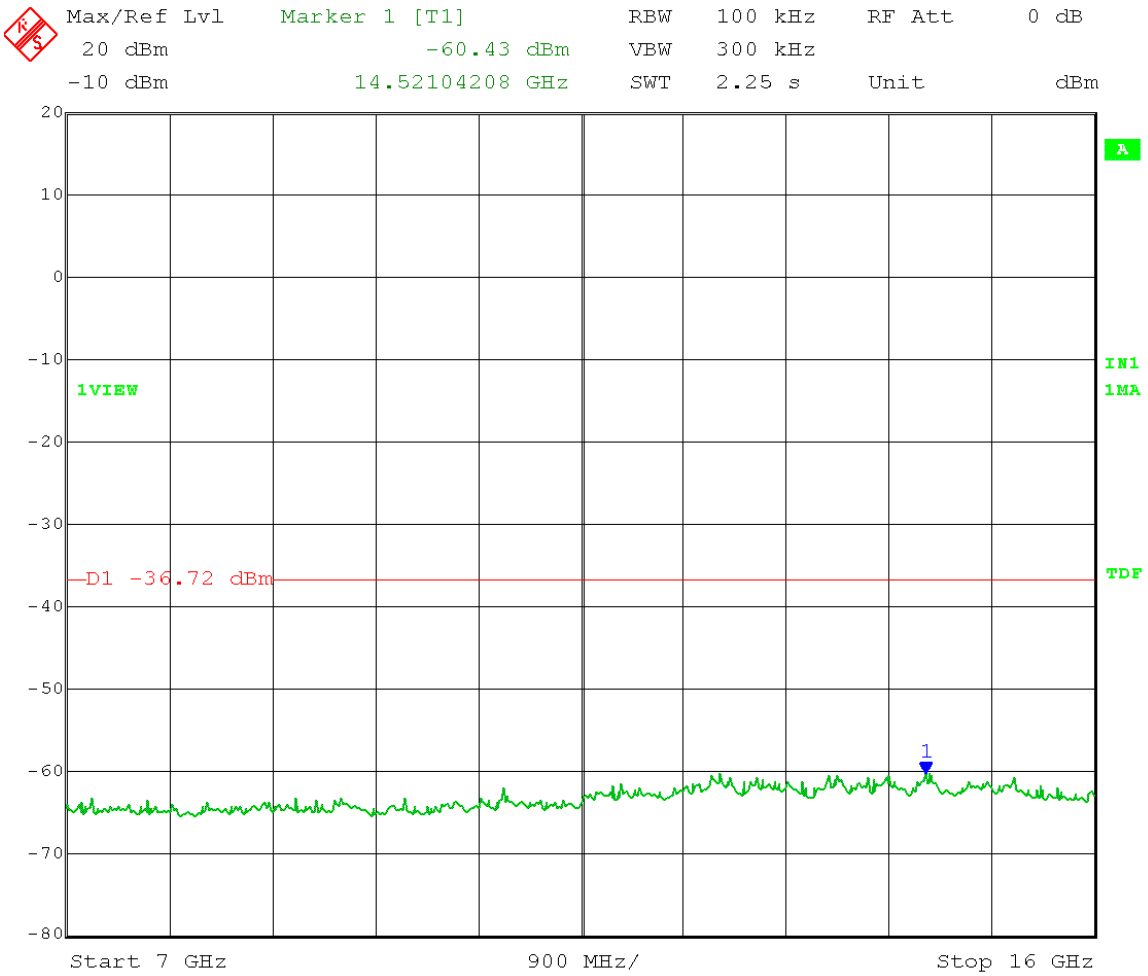
Date: 22.JAN.2014 12:30:53

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 8 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -6.72 dBm – 30 dB = -36.72 dBm
	Frequency Range: 1 – 7 GHz



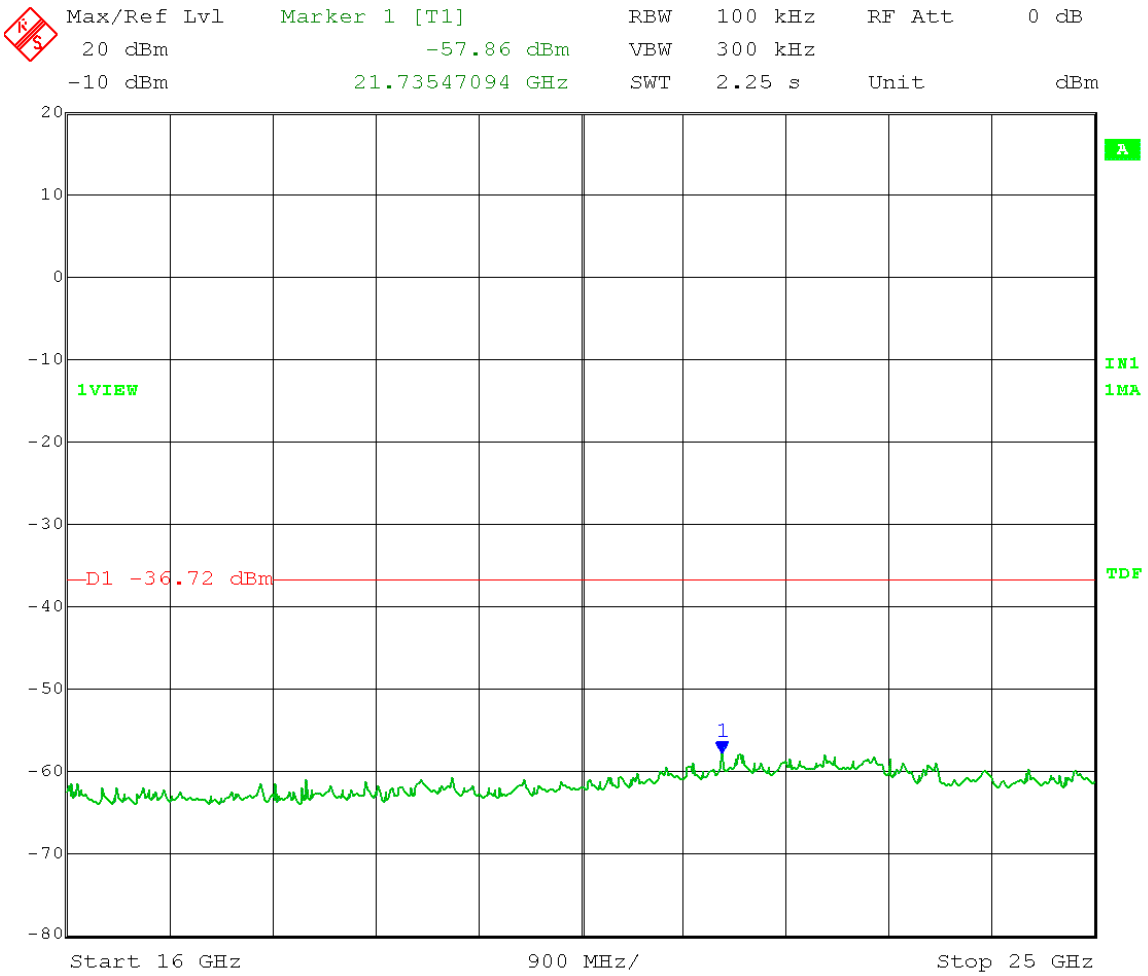
Date: 22.JAN.2014 11:42:57

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 8 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -6.72 dBm – 30 dB = -36.72 dBm
	Frequency Range: 7 – 16 GHz



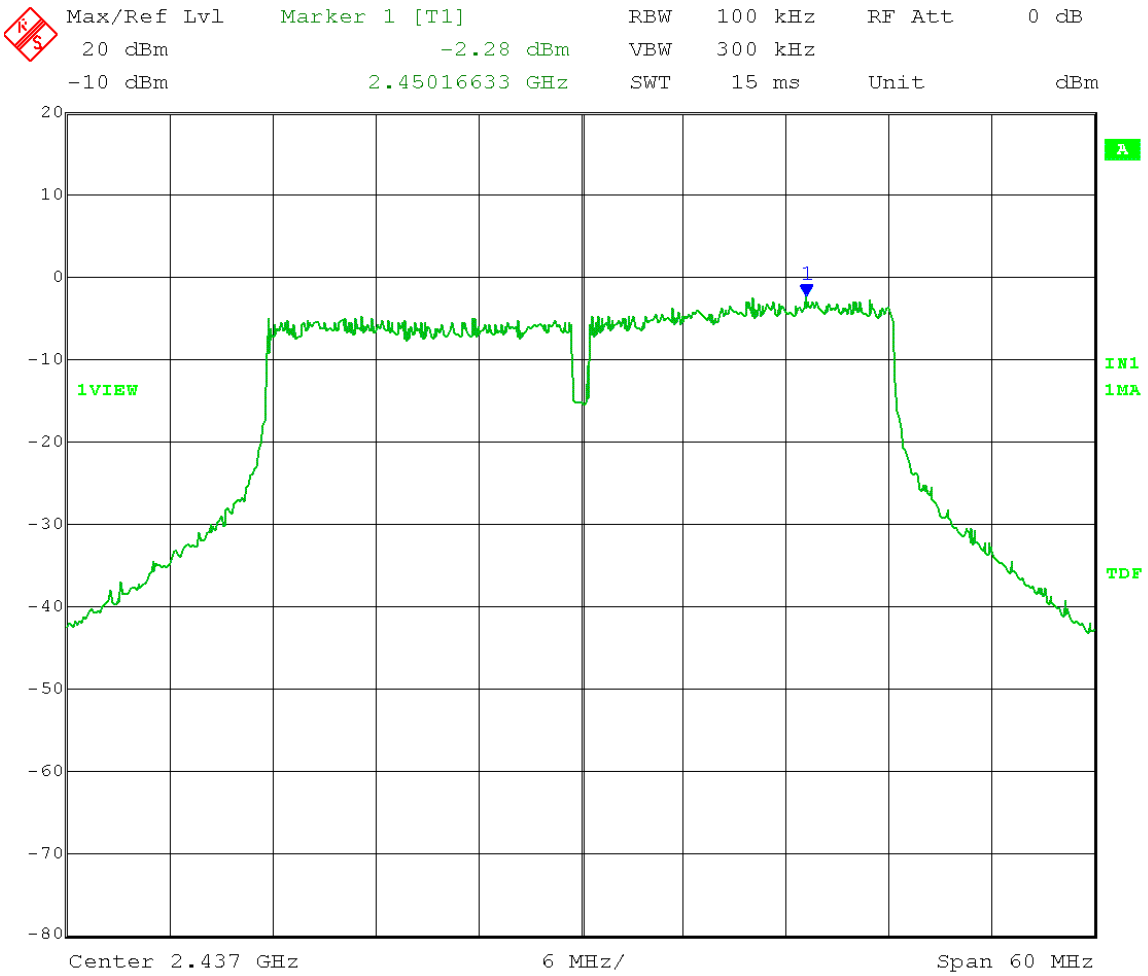
Date: 22.JAN.2014 12:26:46

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 8 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -6.72 dBm – 30 dB = -36.72 dBm
	Frequency Range: 16 – 25 GHz



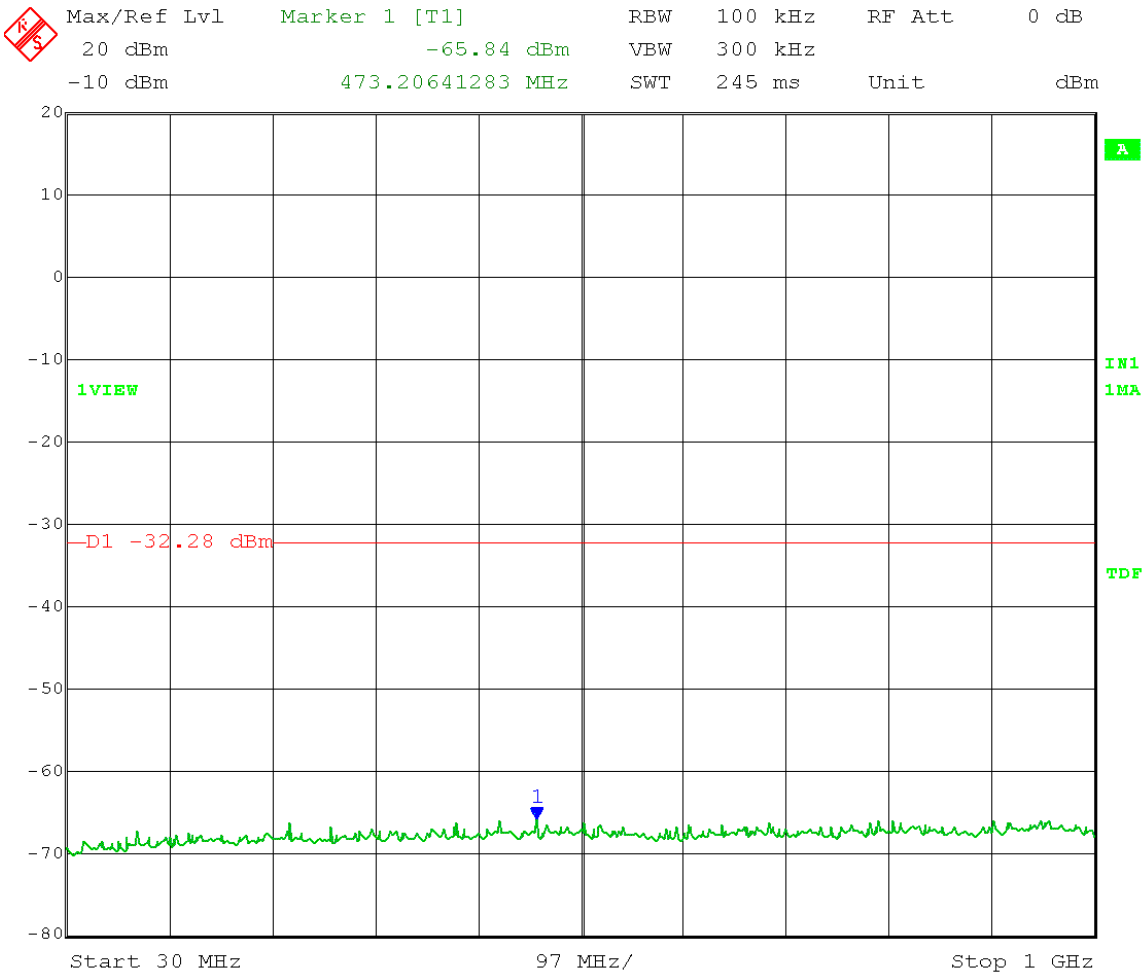
Date: 22.JAN.2014 12:28:27

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 12 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -2.28 dBm – 30 dB = -32.28 dBm



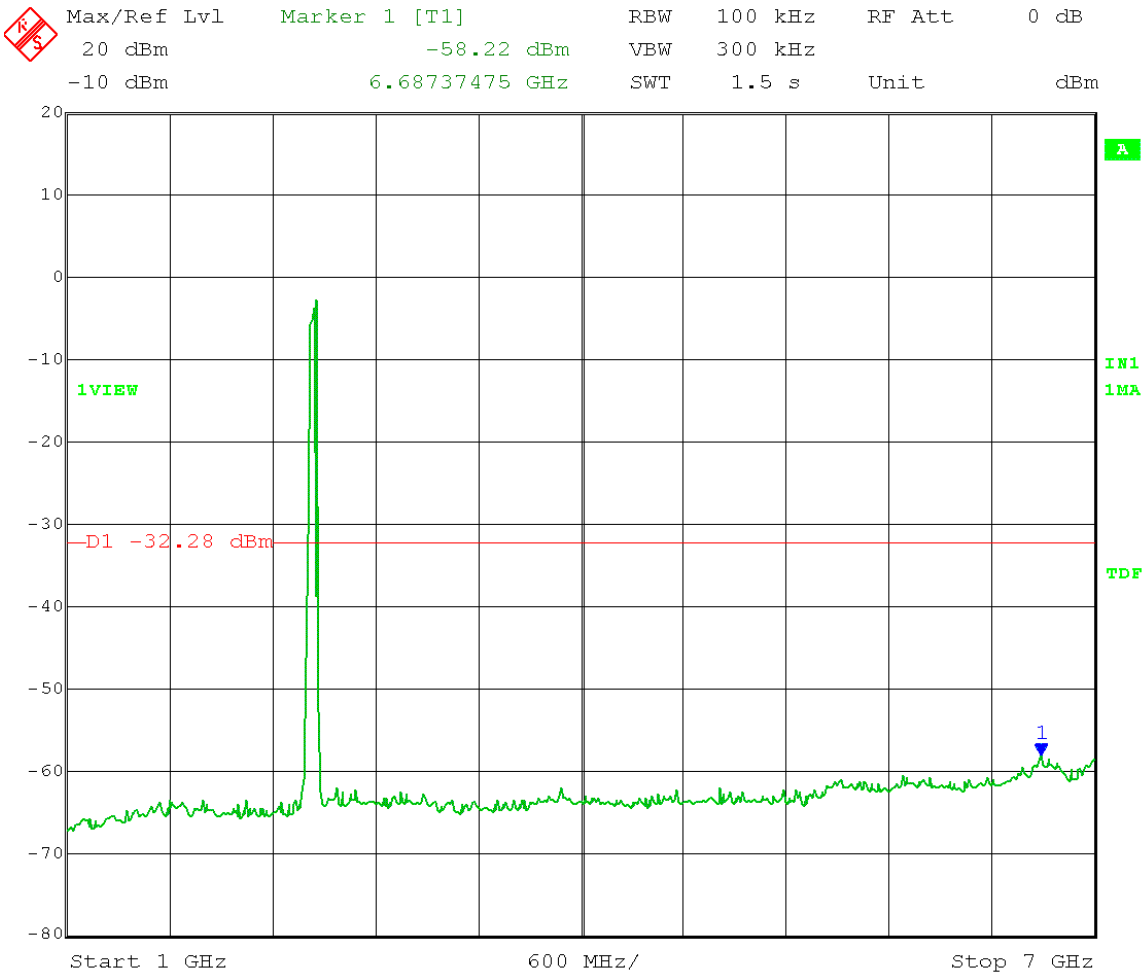
Date: 22.JAN.2014 12:45:44

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 12 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -2.28 dBm – 30 dB = -32.28 dBm
	Frequency Range: 30 – 1000 MHz



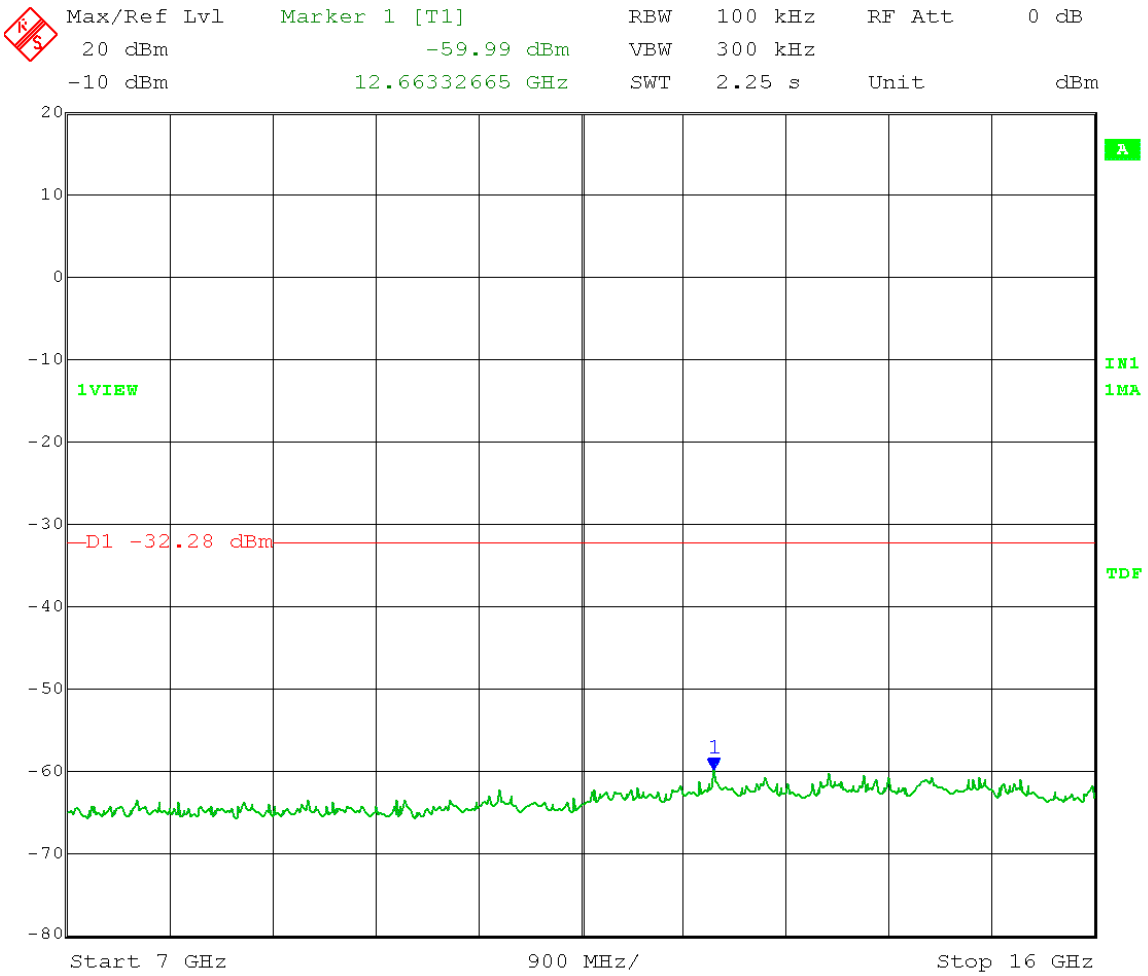
Date: 22.JAN.2014 12:52:09

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 12 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -2.28 dBm – 30 dB = -32.28 dBm
Frequency Range: 1 – 7 GHz



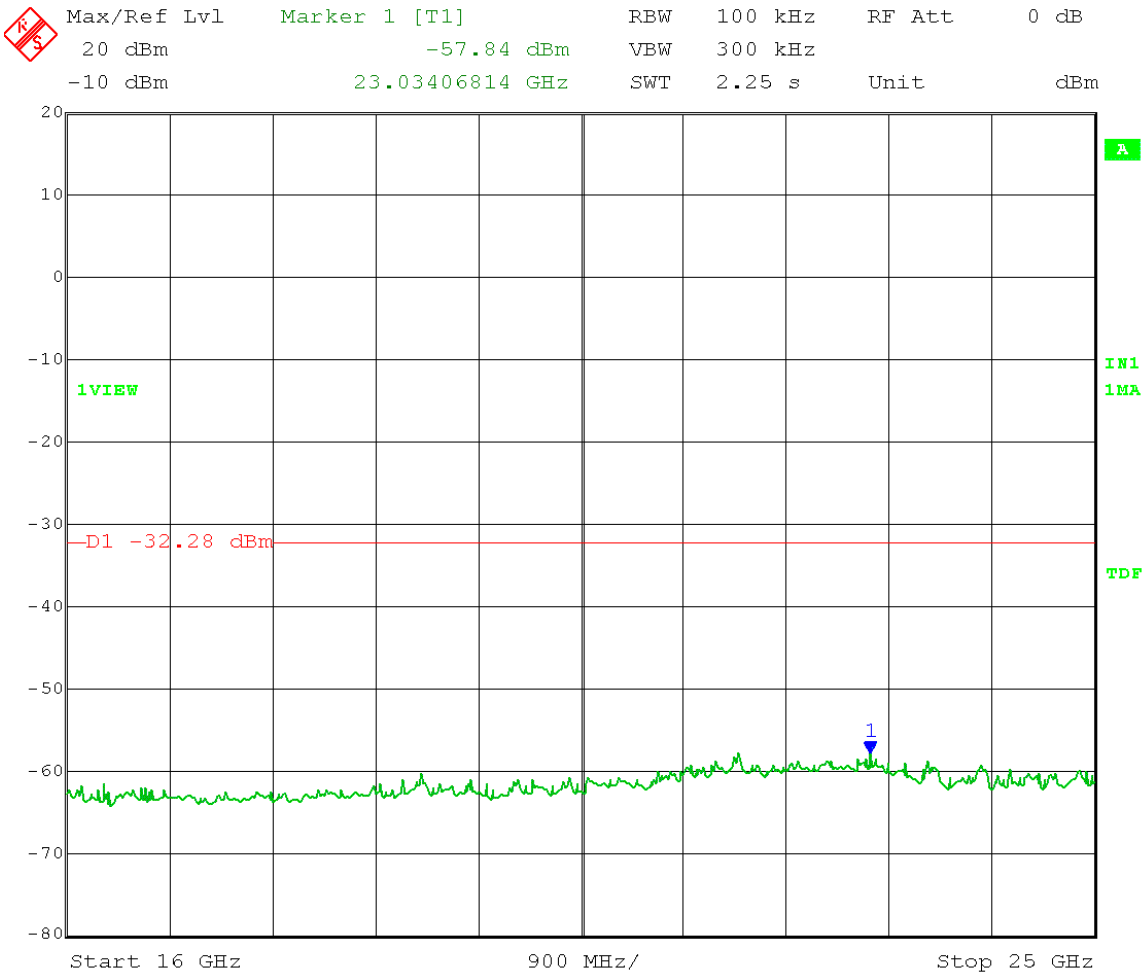
Date: 22.JAN.2014 12:47:48

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 12 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -2.28 dBm – 30 dB = -32.28 dBm
	Frequency Range: 7 – 16 GHz



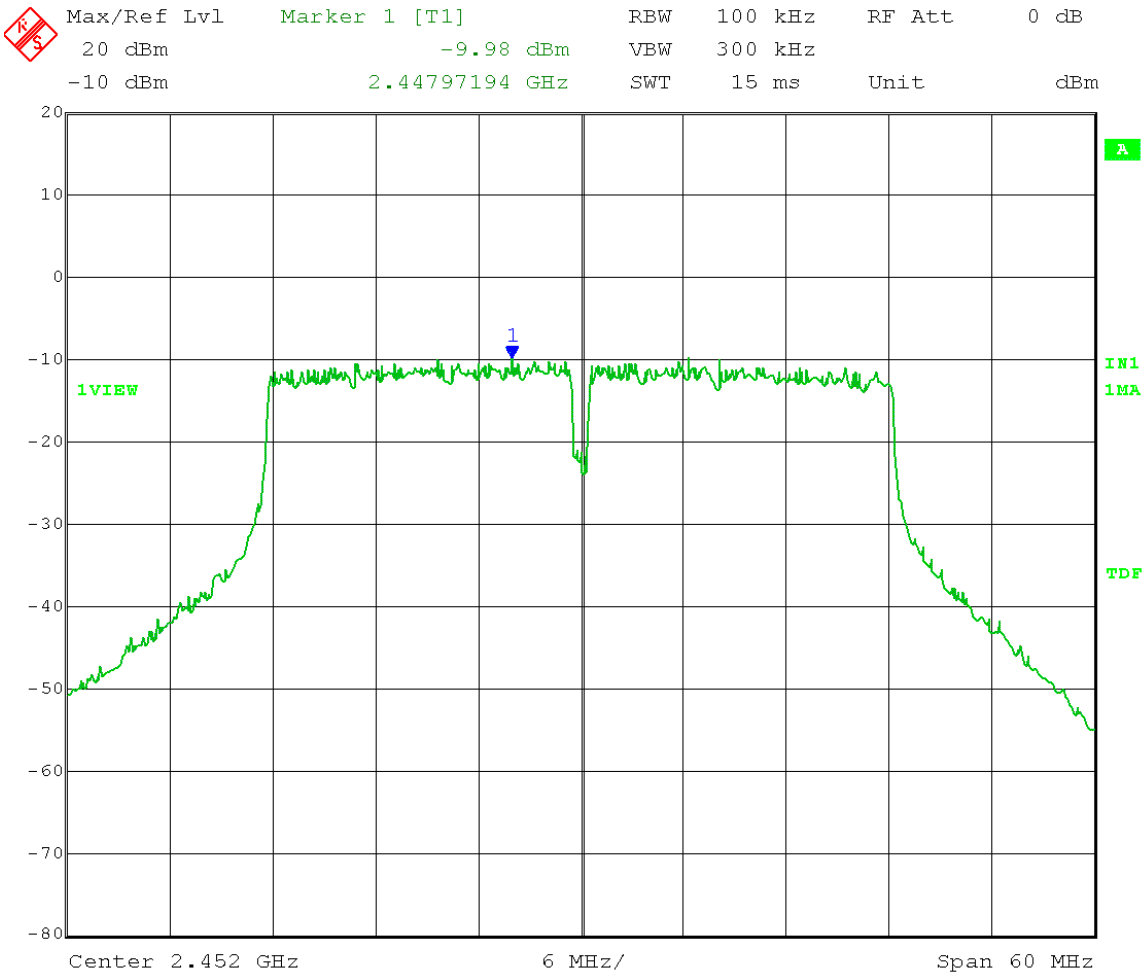
Date: 22.JAN.2014 12:49:02

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 12 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -2.28 dBm – 30 dB = -32.28 dBm
Frequency Range: 16 – 25 GHz



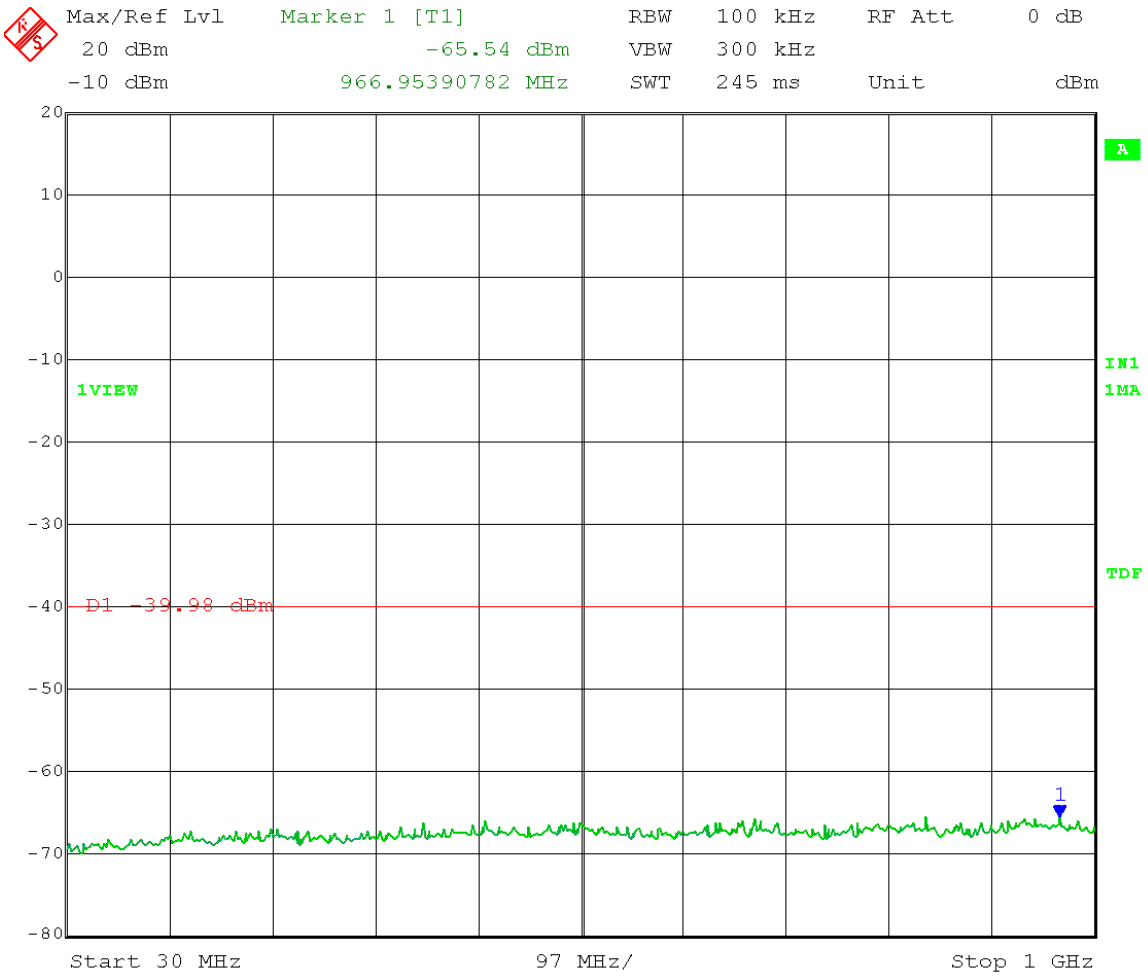
Date: 22.JAN.2014 12:50:28

Test Date:	01-22-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2452 MHz
	Output Power Setting 4.5 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -9.98 dBm – 30 dB = -39.98 dBm



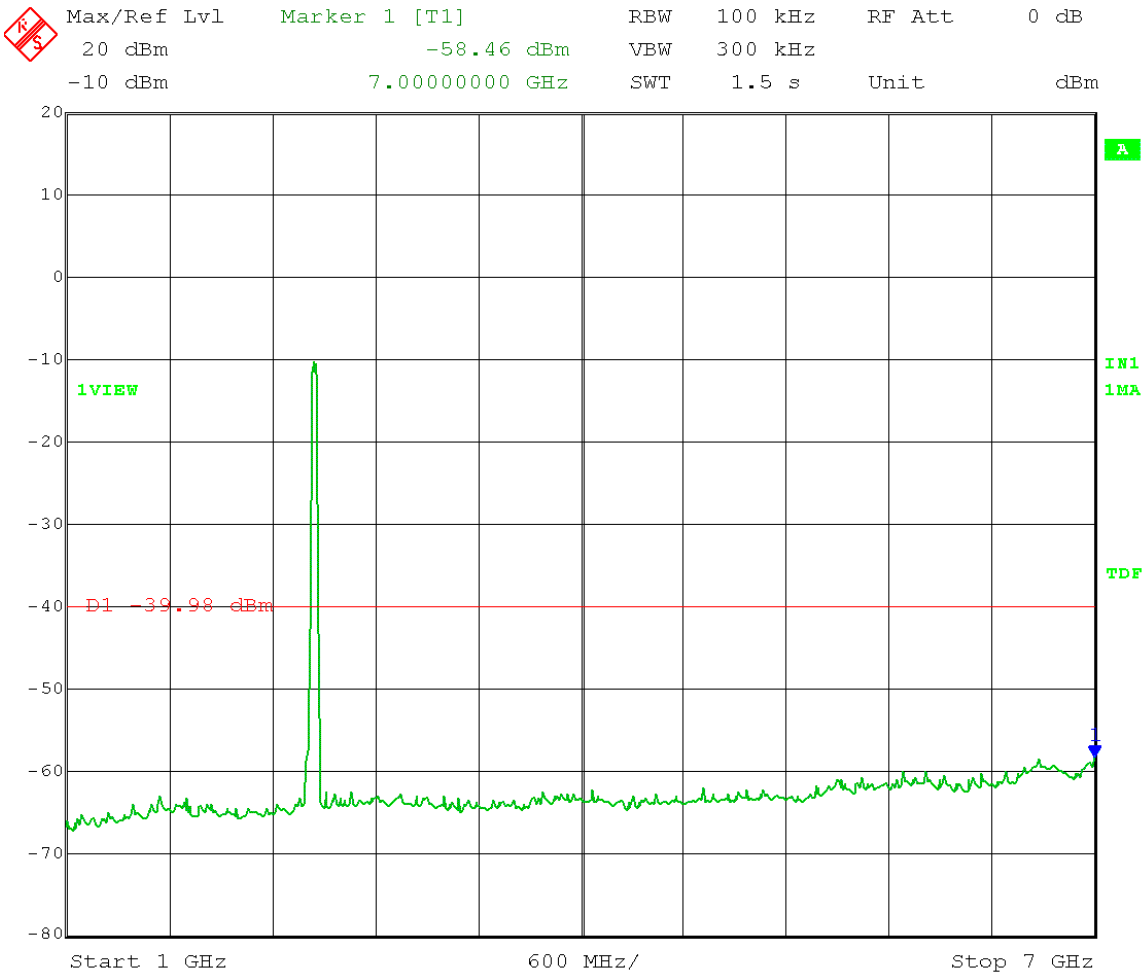
Date: 22.JAN.2014 11:19:38

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2452 MHz
Output Power Setting 4.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -9.98 dBm – 30 dB = -39.98 dBm
Frequency Range: 30 – 1000 MHz



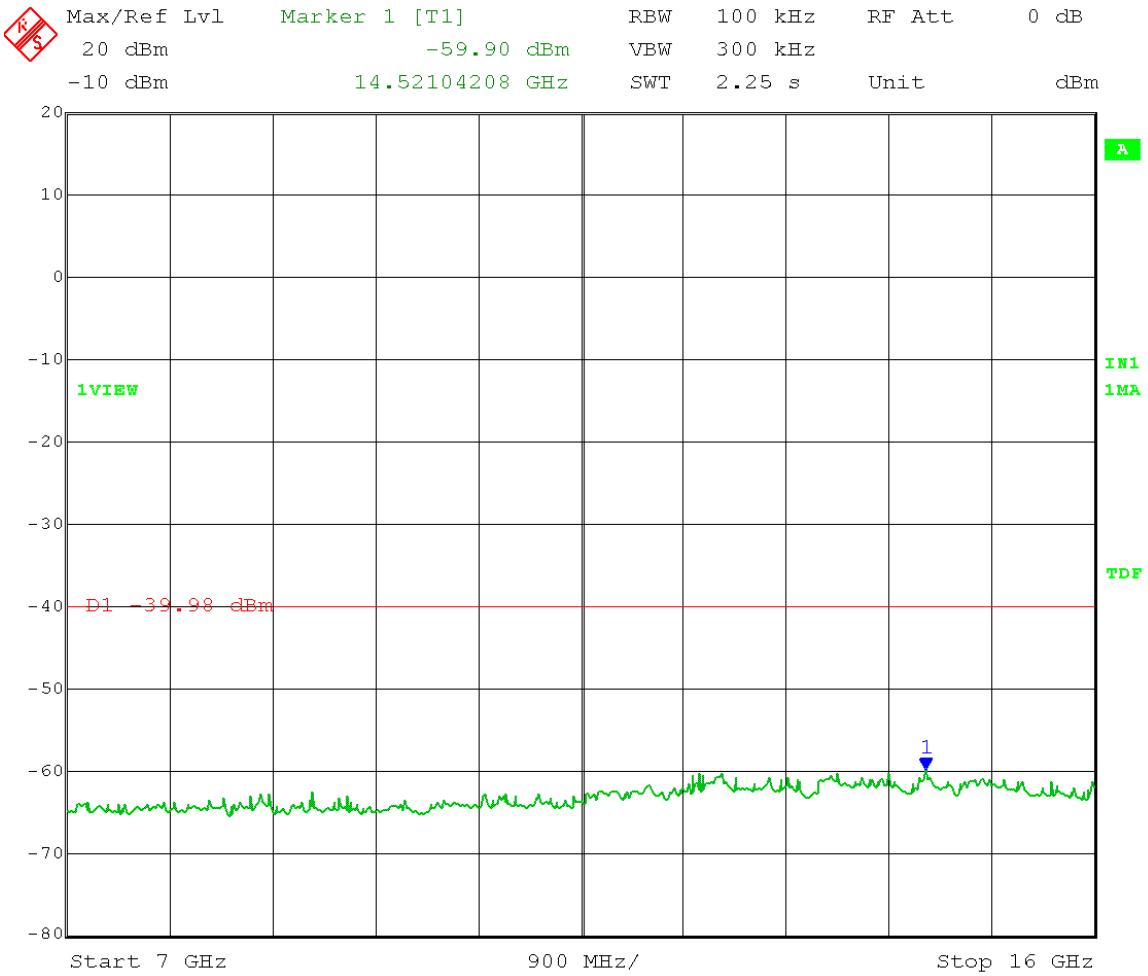
Date: 22.JAN.2014 11:27:57

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2452 MHz
Output Power Setting 4.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -9.98 dBm – 30 dB = -39.98 dBm
Frequency Range: 1 – 7 GHz



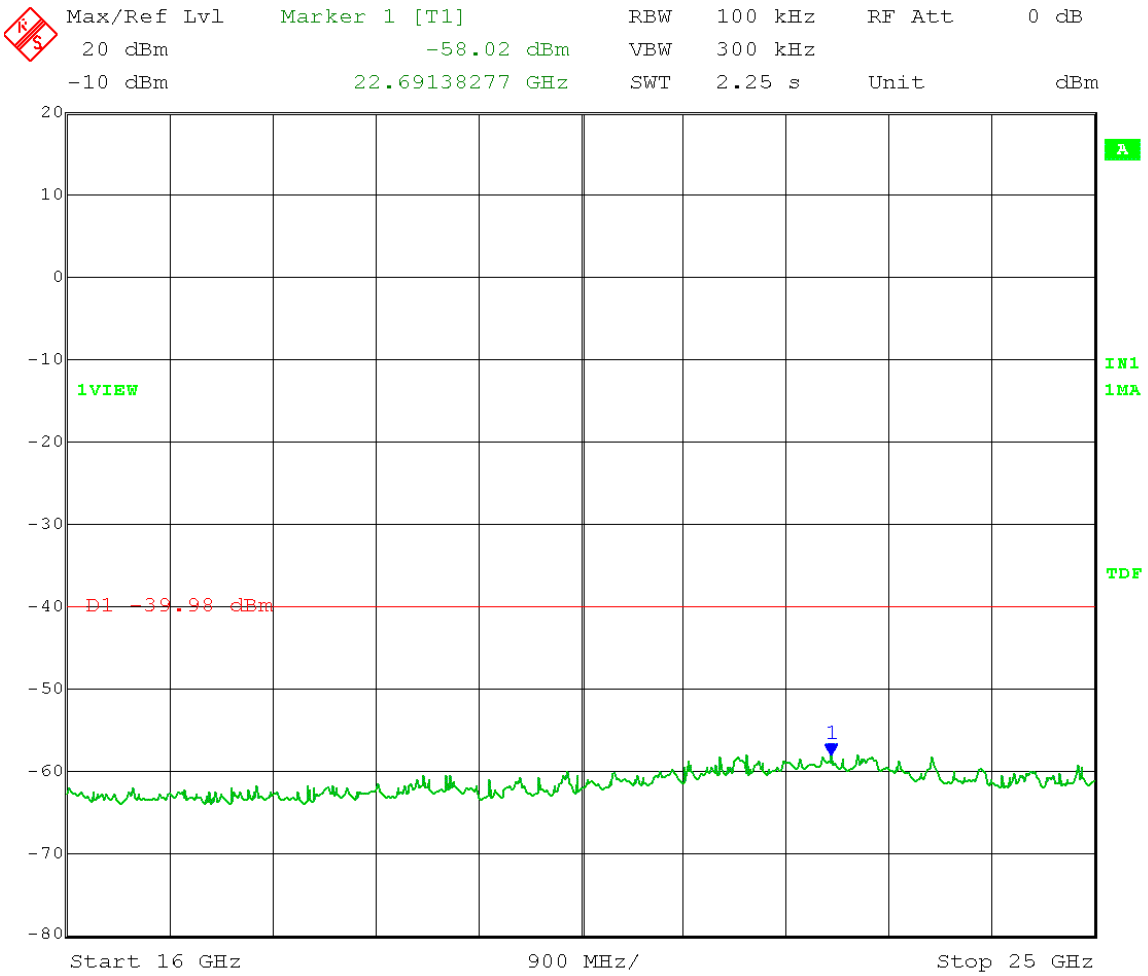
Date: 22.JAN.2014 11:22:28

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2452 MHz
Output Power Setting 4.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -9.98 dBm – 30 dB = -39.98 dBm
Frequency Range: 7 – 16 GHz



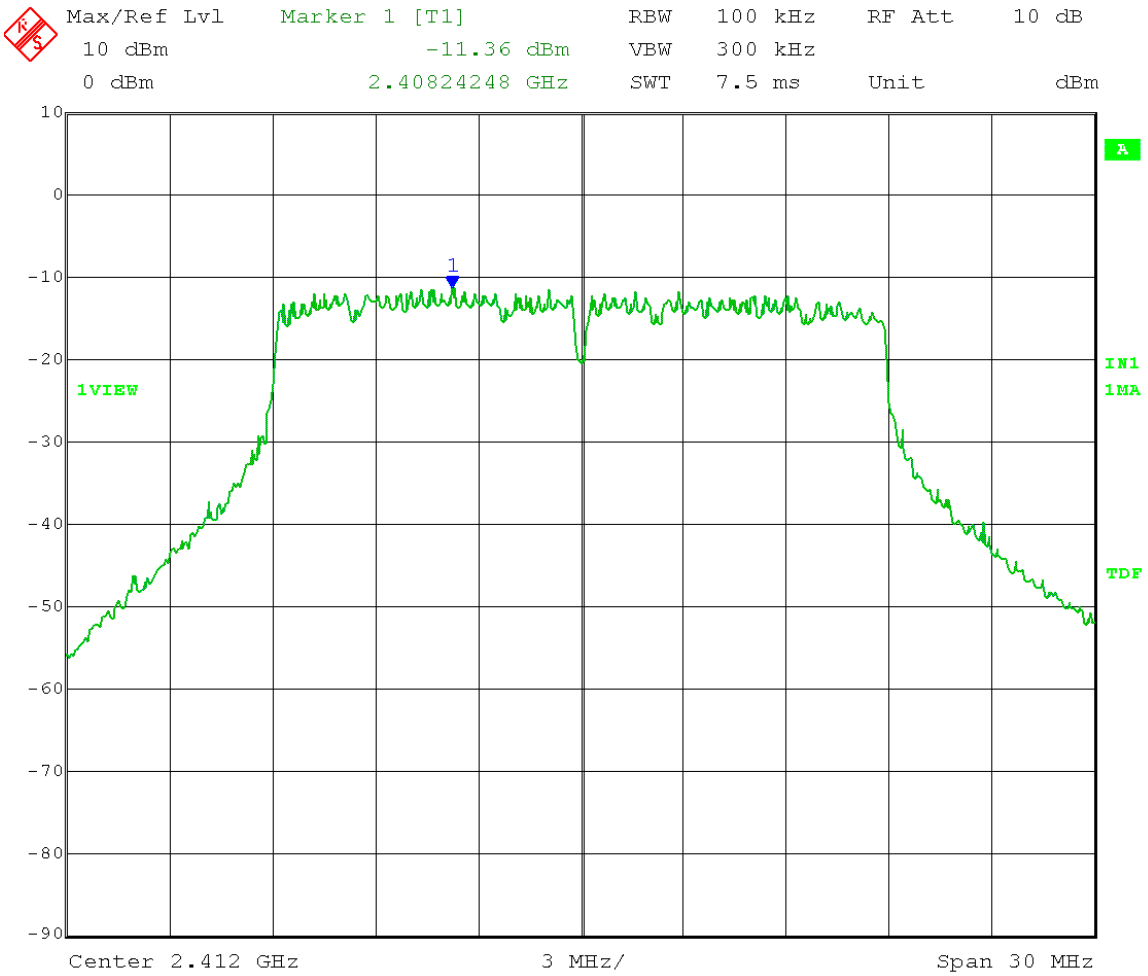
Date: 22.JAN.2014 11:24:17

Test Date: 01-22-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2452 MHz
Output Power Setting 4.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -9.98 dBm – 30 dB = -39.98 dBm
Frequency Range: 16 – 25 GHz



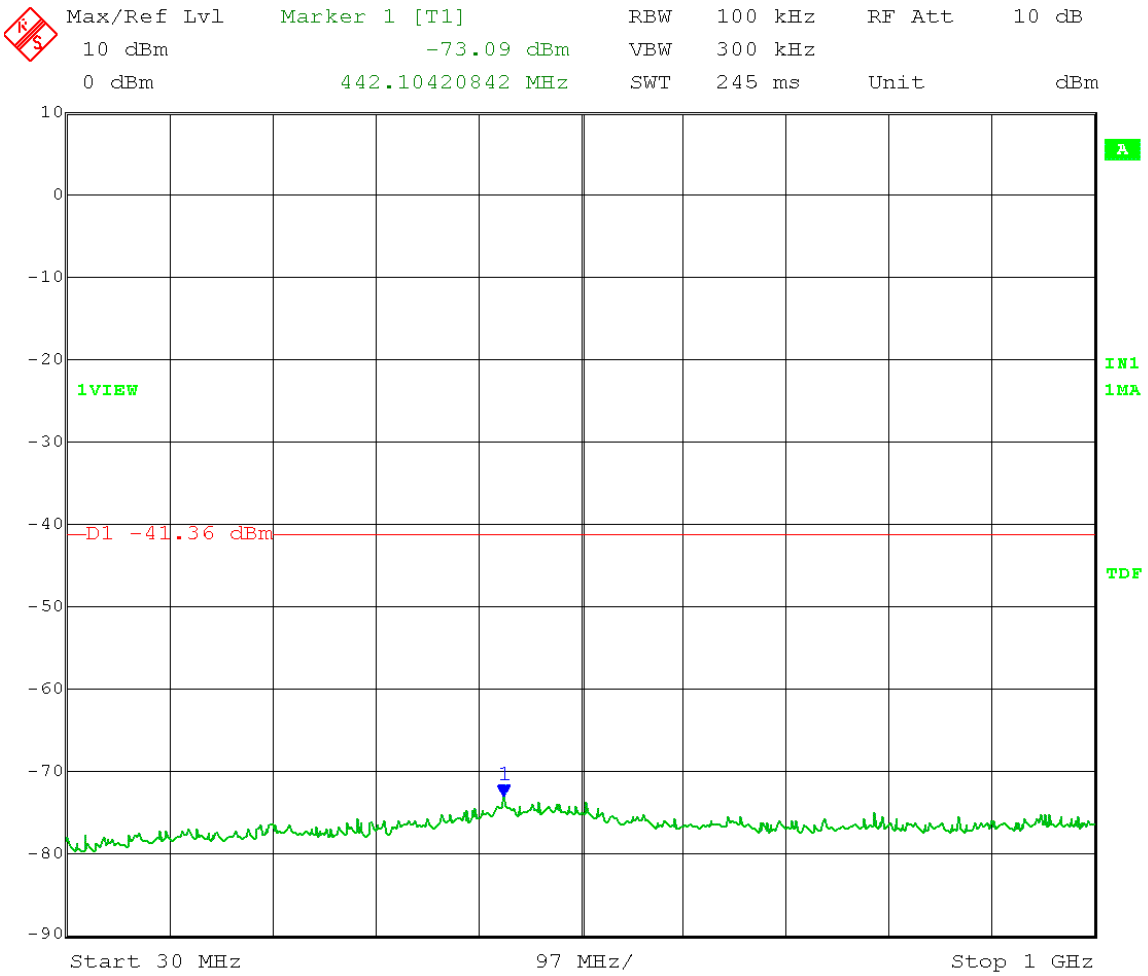
Date: 22.JAN.2014 11:25:59

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -11.36 dBm – 30 dB = -41.36 dBm



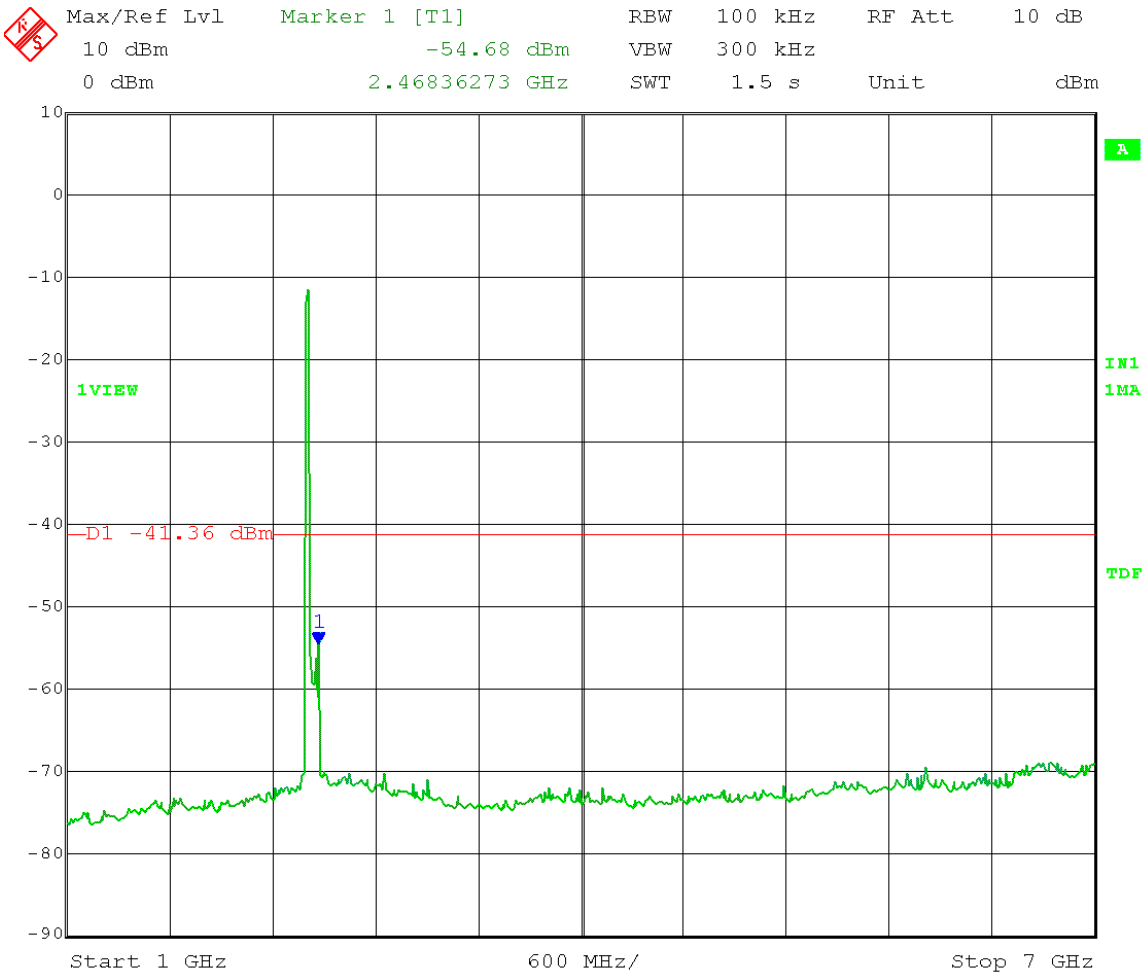
Date: 31.JAN.2014 15:31:05

Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Low Channel Transmit = 2412 MHz
Output Power Setting 1 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -11.36 dBm – 30 dB = -41.36 dBm
Frequency Range: 30 – 1000 MHz



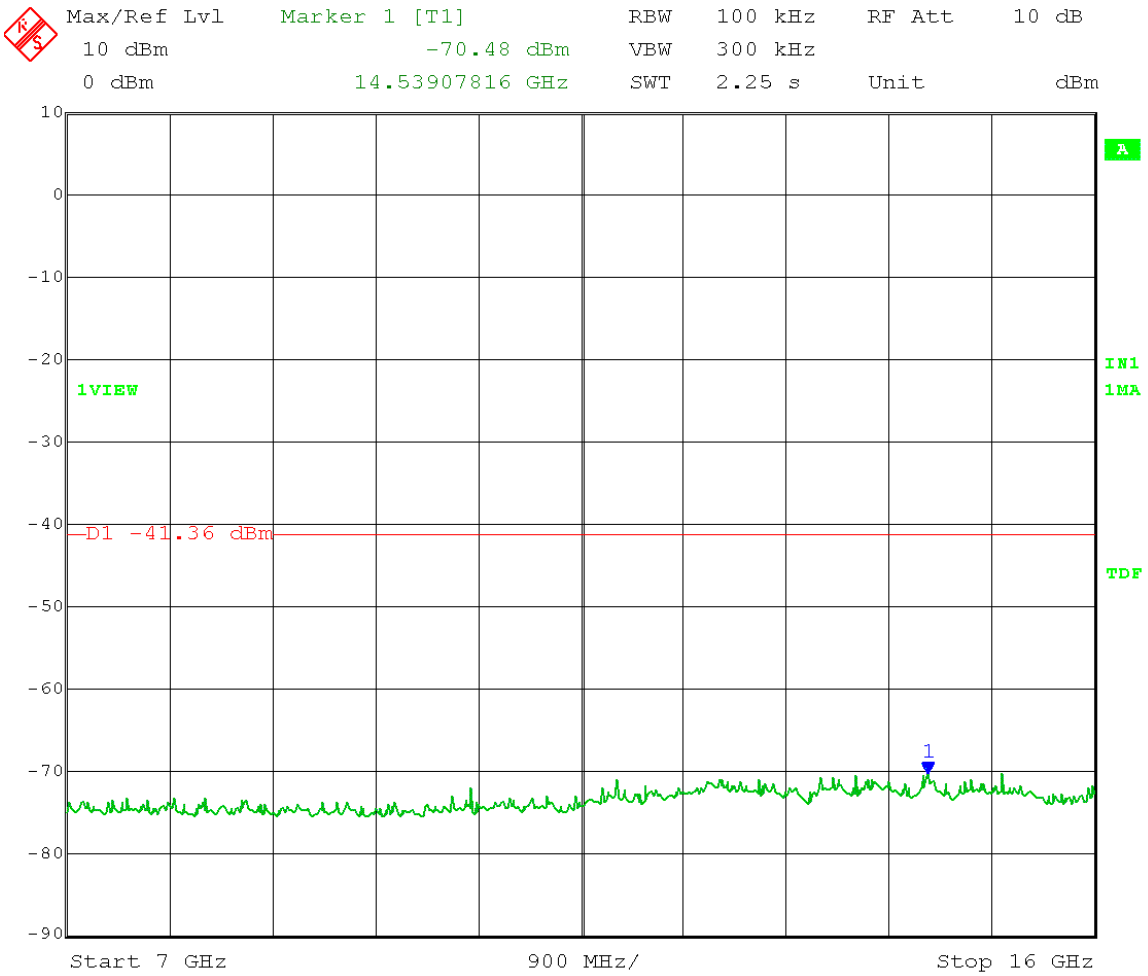
Date: 31.JAN.2014 15:36:55

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -11.36 dBm – 30 dB = -41.36 dBm
	Frequency Range: 1 – 7 GHz



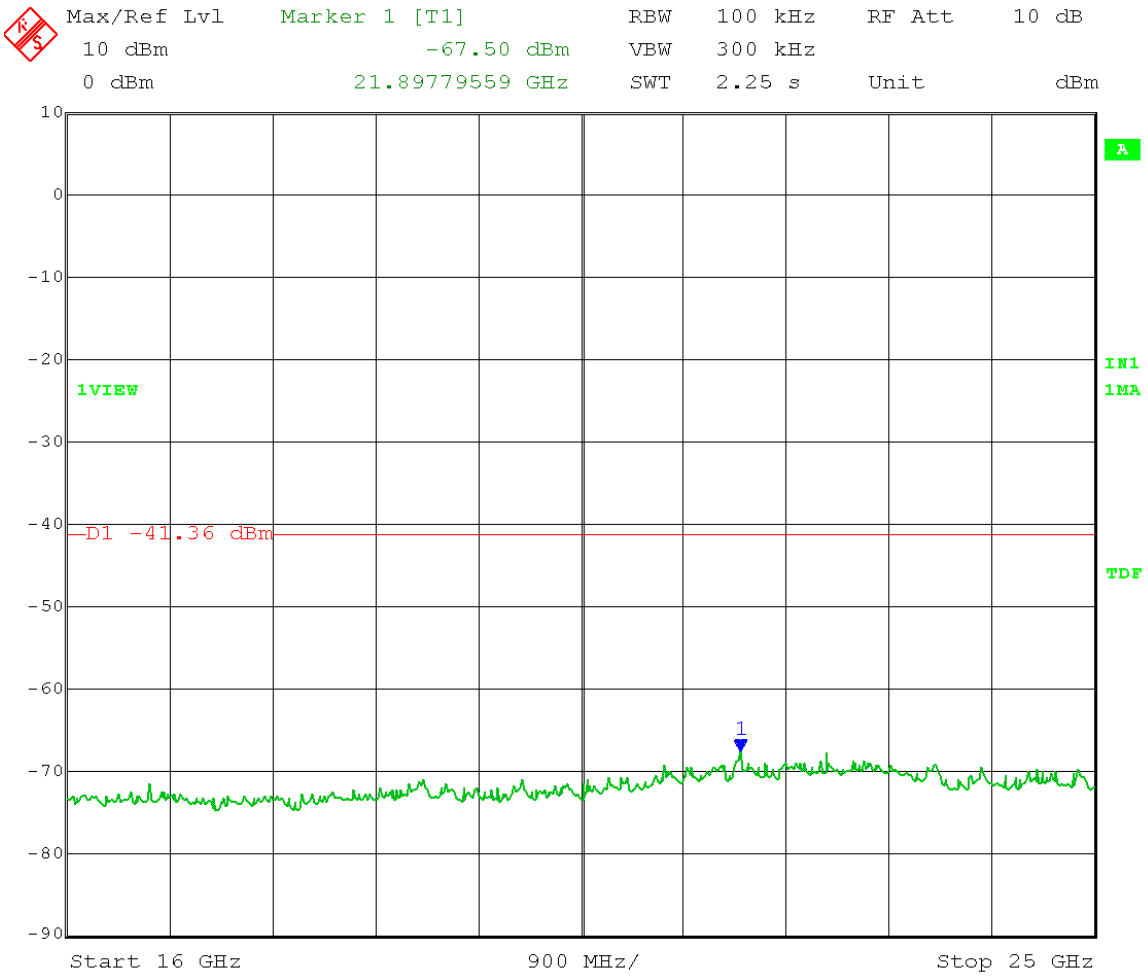
Date: 31.JAN.2014 15:33:01

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -11.36 dBm – 30 dB = -41.36 dBm
	Frequency Range: 7 – 16 GHz



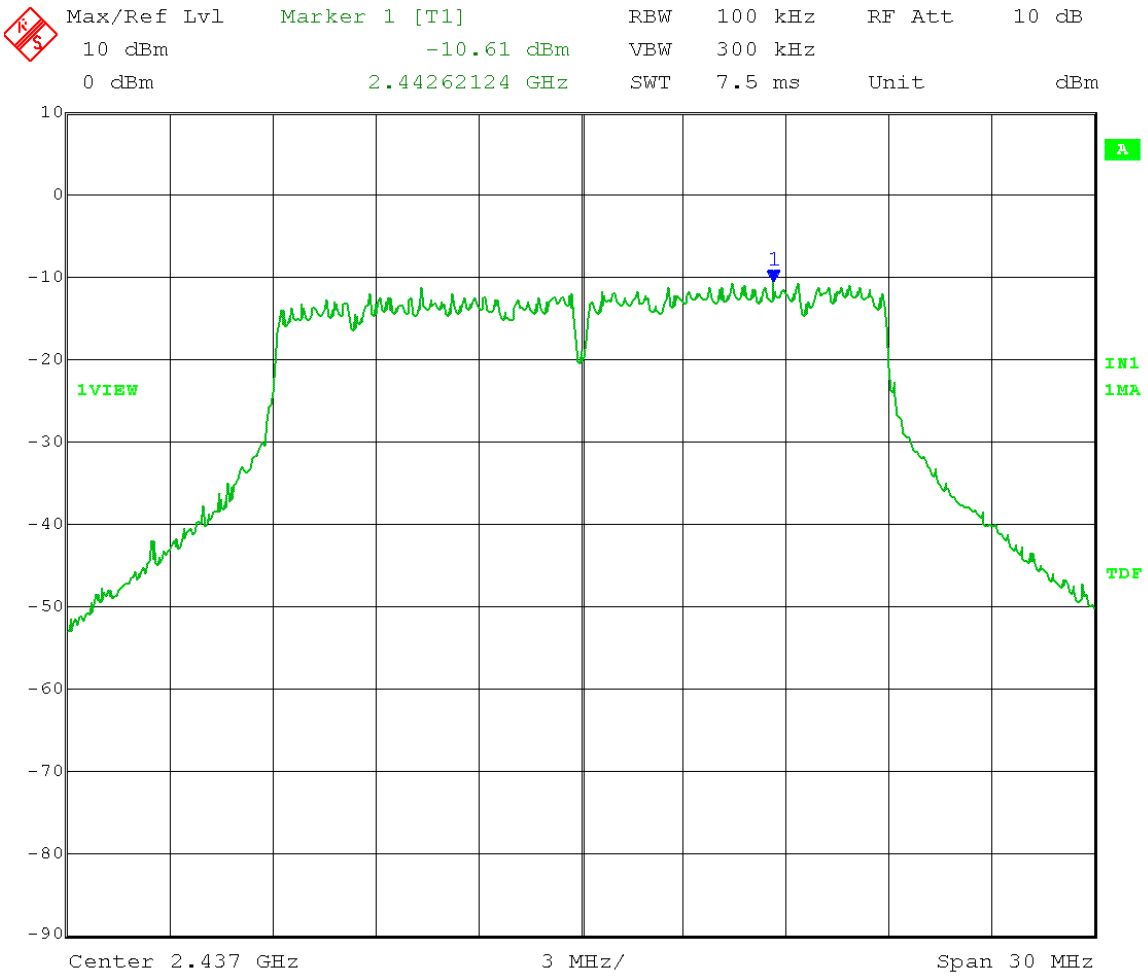
Date: 31.JAN.2014 15:34:29

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -11.36 dBm – 30 dB = -41.36 dBm
	Frequency Range: 16 – 25 GHz



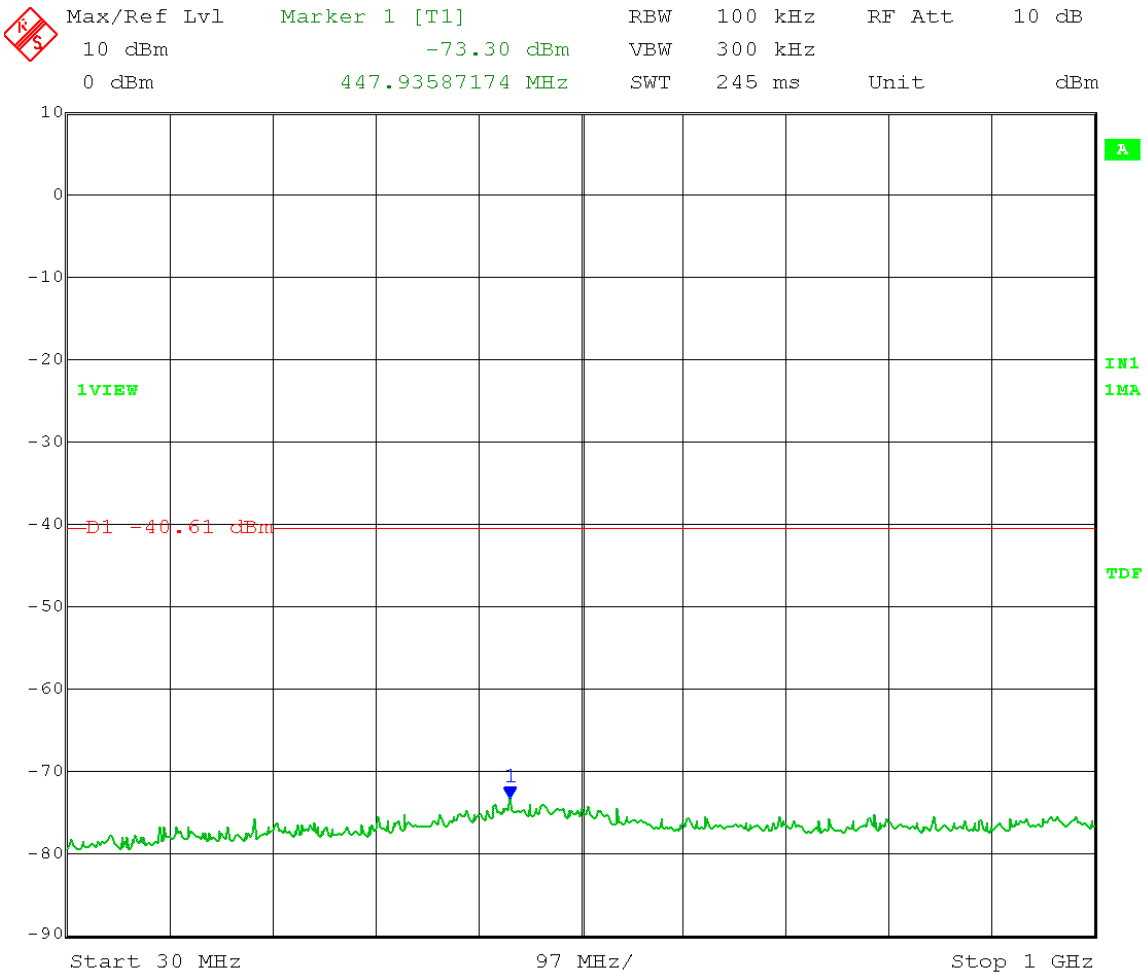
Date: 31.JAN.2014 15:35:37

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -10.61 dBm – 30 dB = -40.61 dBm



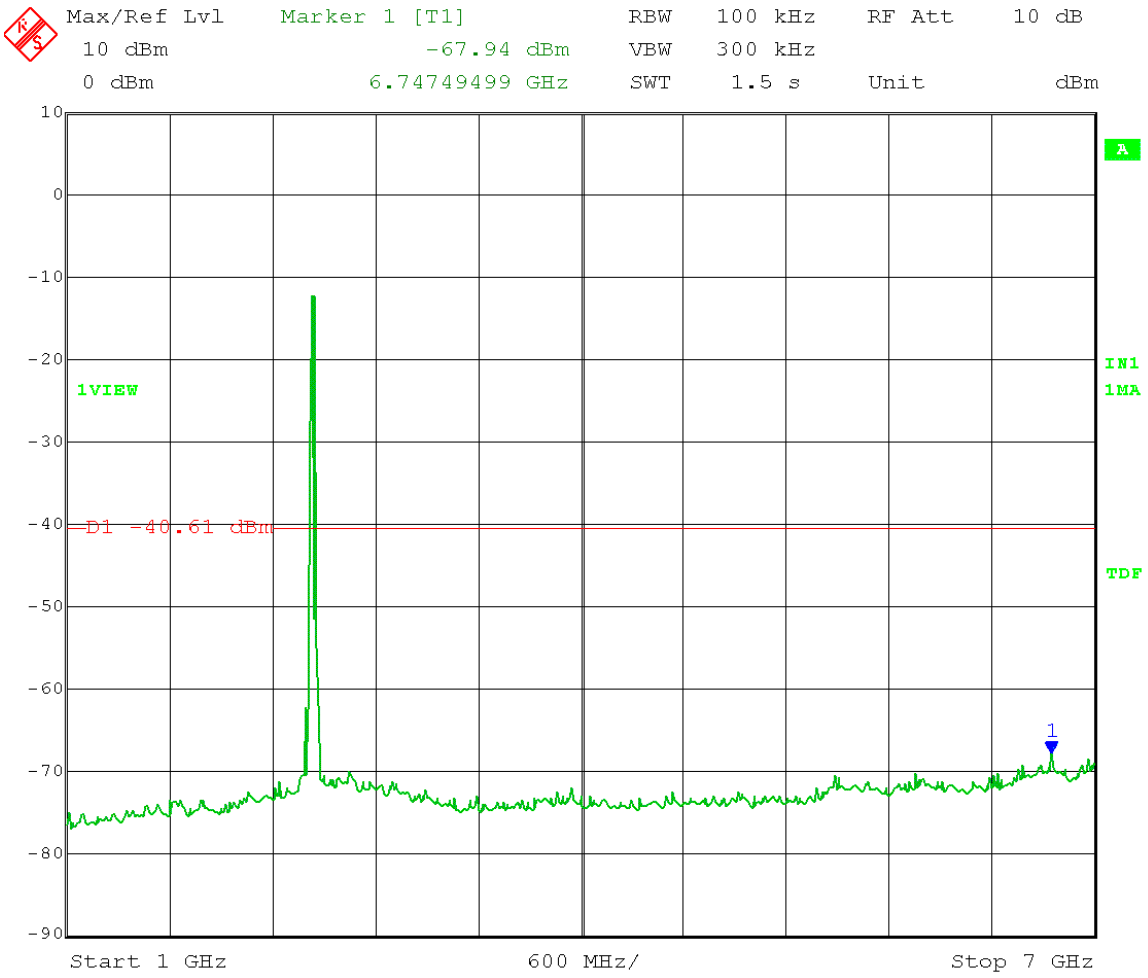
Date: 31.JAN.2014 11:26:51

Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -10.61 dBm – 30 dB = -40.61 dBm
Frequency Range: 30 – 1000 MHz



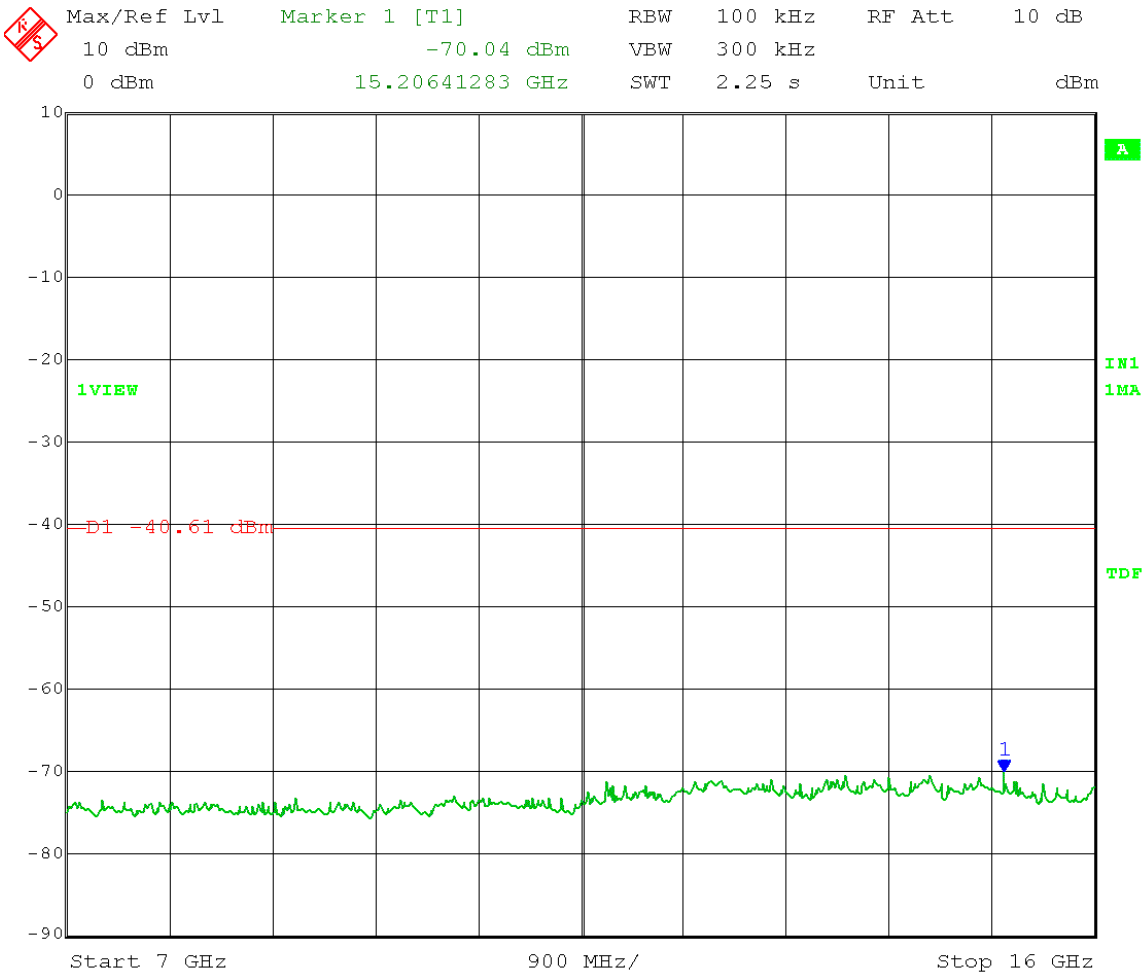
Date: 31.JAN.2014 11:33:43

Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -10.61 dBm – 30 dB = -40.61 dBm
Frequency Range: 1 – 7 GHz



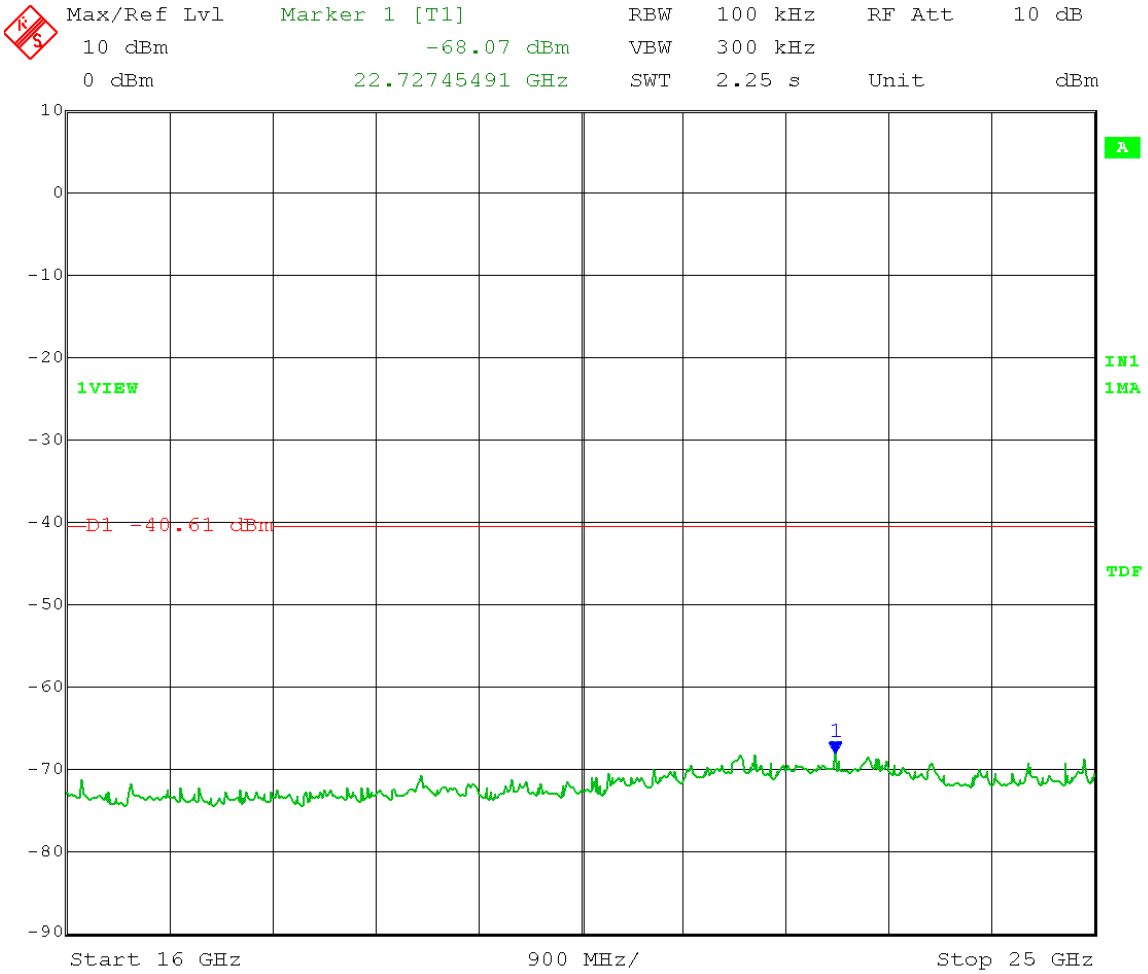
Date: 31.JAN.2014 11:29:15

Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -10.61 dBm – 30 dB = -40.61 dBm
Frequency Range: 1 – 7 GHz



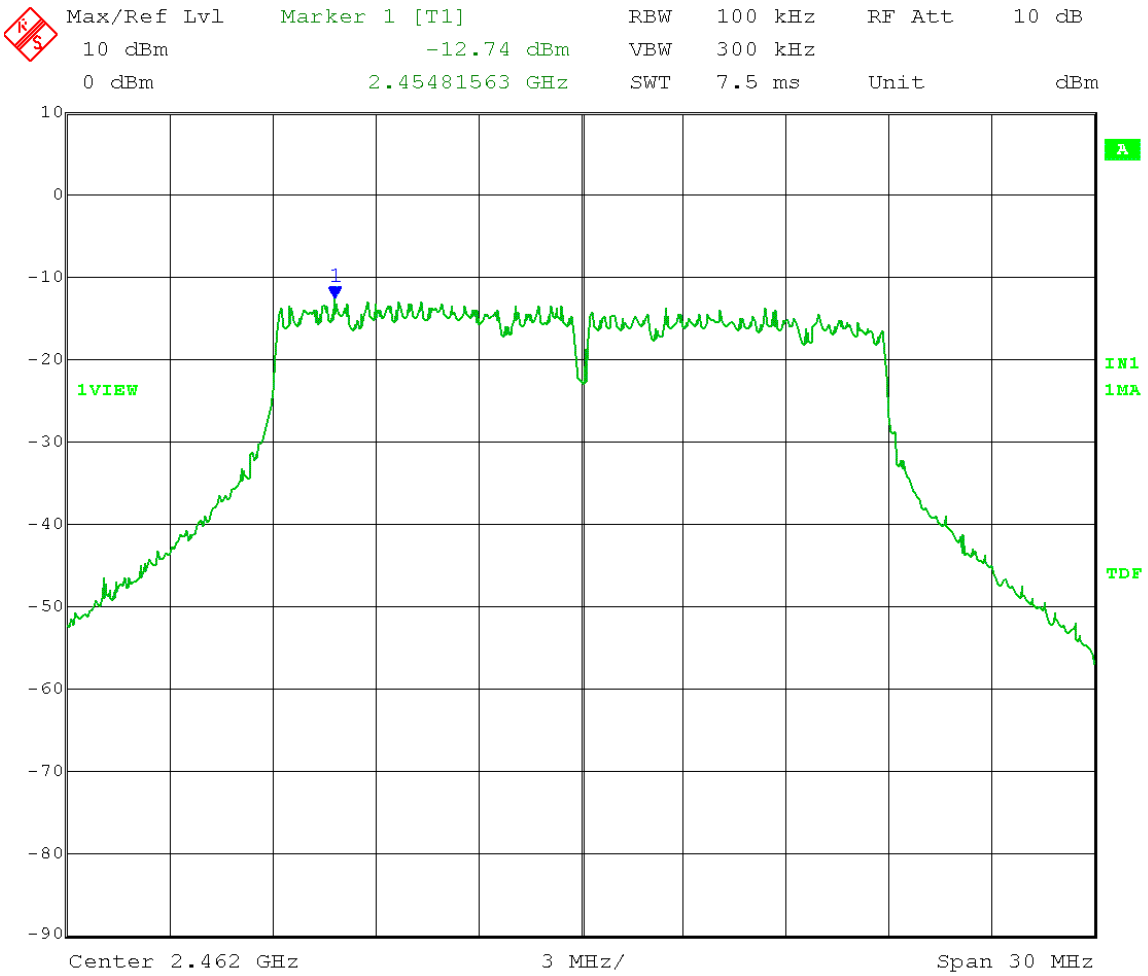
Date: 31.JAN.2014 11:31:03

Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -10.61 dBm – 30 dB = -40.61 dBm
Frequency Range: 16 – 25 GHz



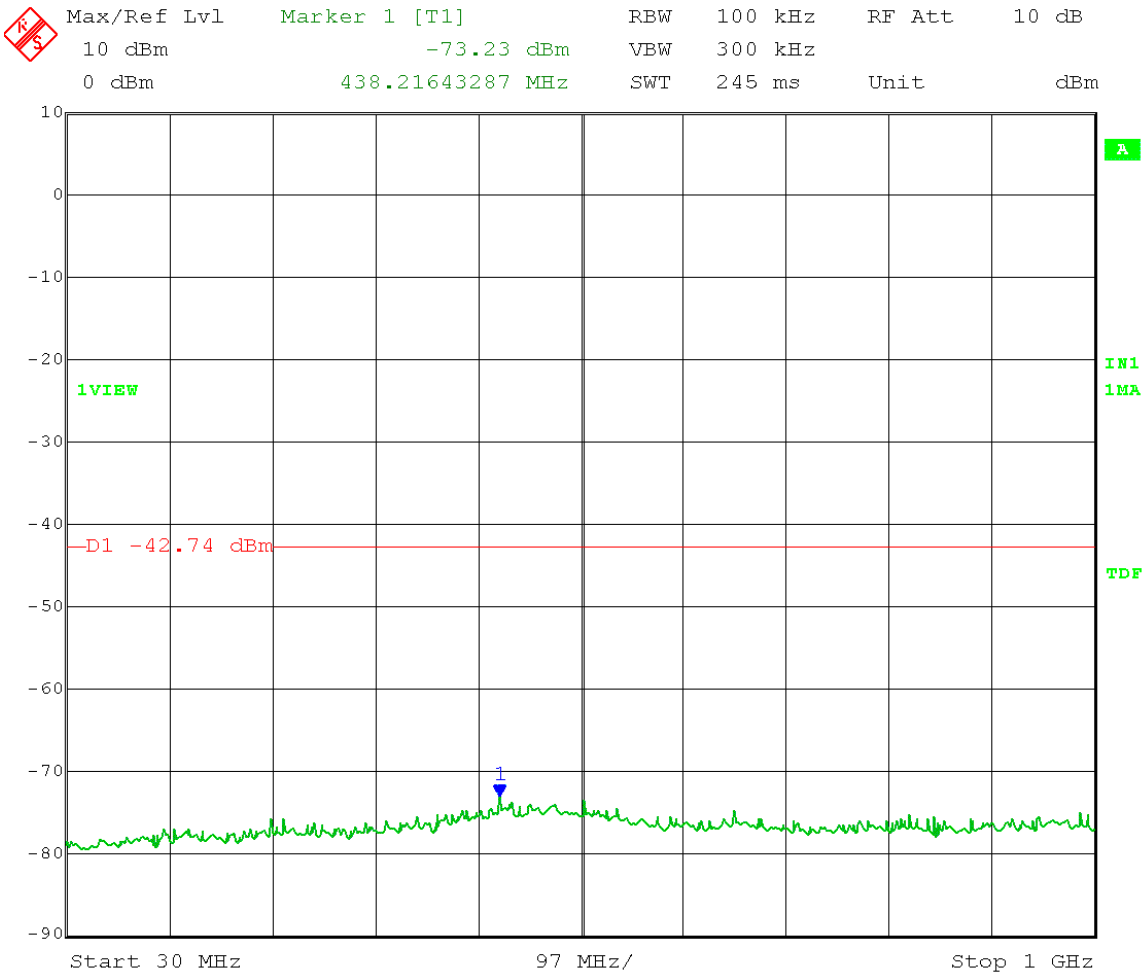
Date: 31.JAN.2014 11:32:17

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 0 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -12.74 dBm – 30 dB = -42.74 dBm



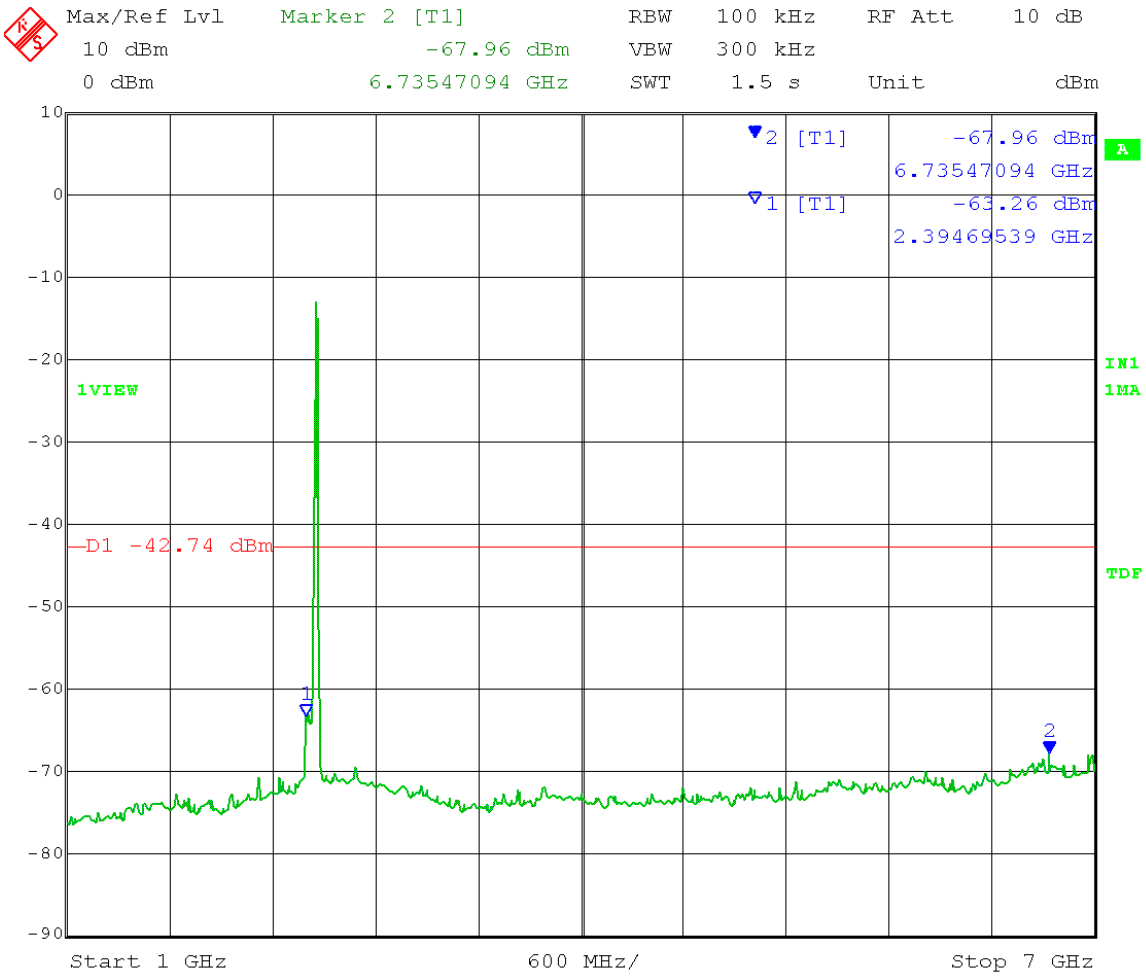
Date: 31.JAN.2014 15:39:31

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 0 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -12.74 dBm – 30 dB = -42.74 dBm
	Frequency Range: 30 – 1000 MHz



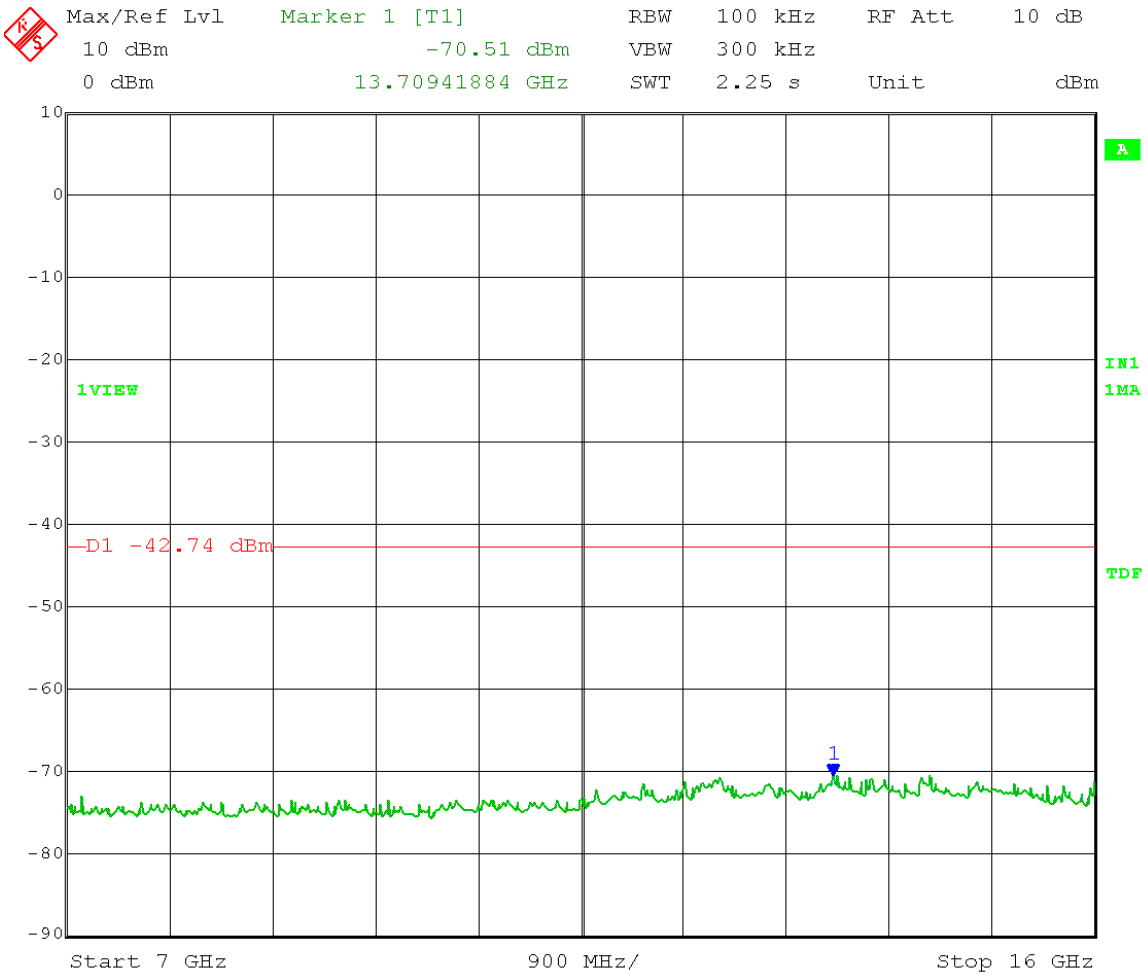
Date: 31.JAN.2014 15:45:46

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2462 MHz
	Output Power Setting 0 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -12.74 dBm – 30 dB = -42.74 dBm
	Frequency Range: 1 – 7 GHz



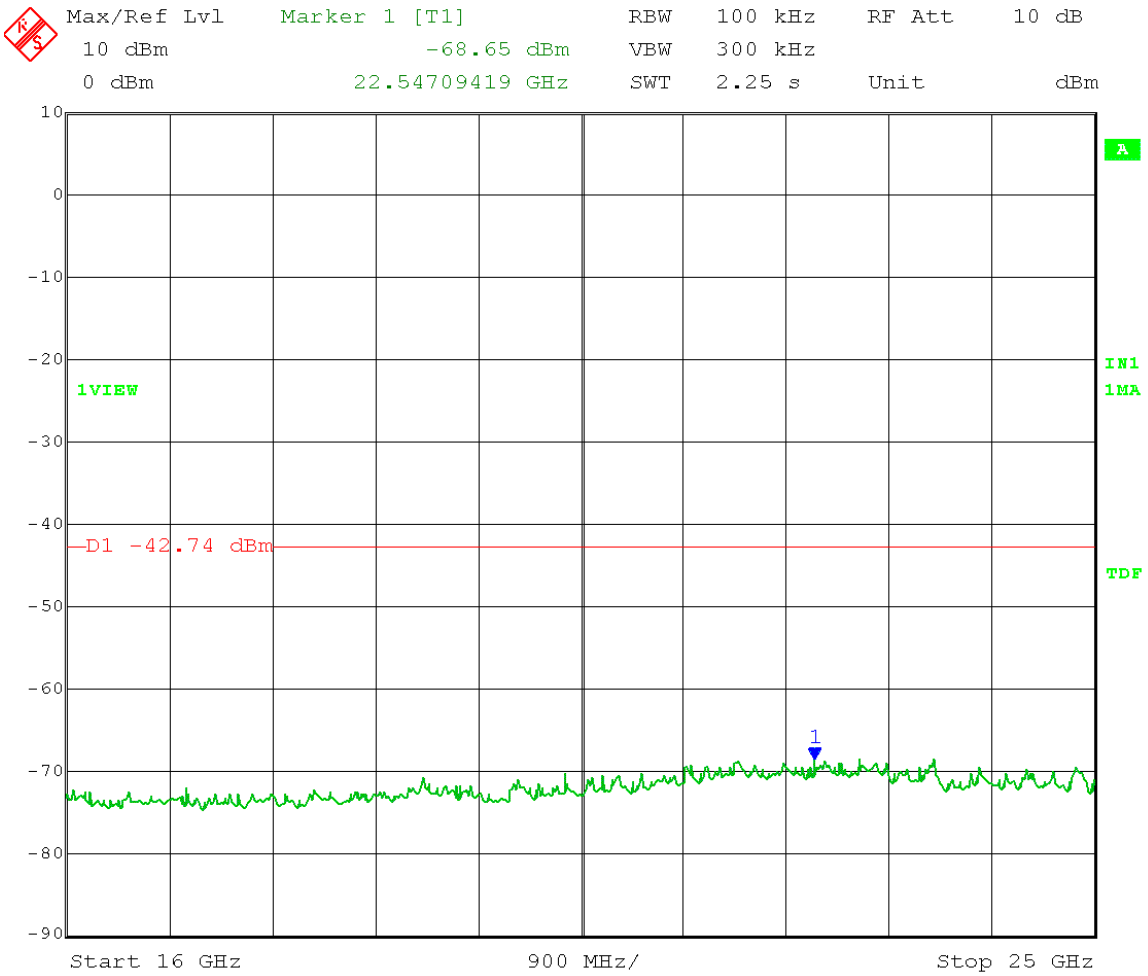
Date: 31.JAN.2014 15:41:39

Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2462 MHz
Output Power Setting 0 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -12.74 dBm – 30 dB = -42.74 dBm
Frequency Range: 7 – 16 GHz



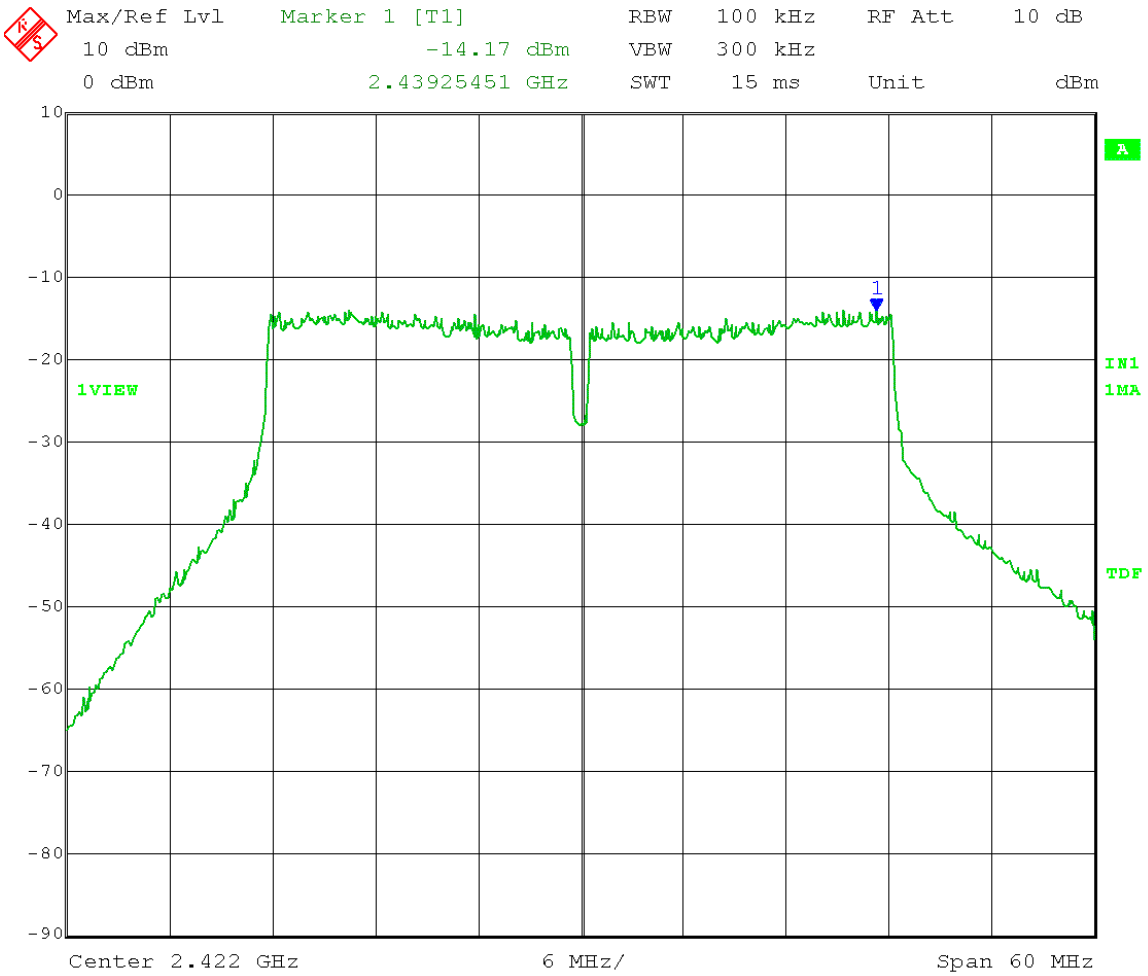
Date: 31.JAN.2014 15:42:50

Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2462 MHz
Output Power Setting 0 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -12.74 dBm – 30 dB = -42.74 dBm
Frequency Range: 16 – 25 GHz



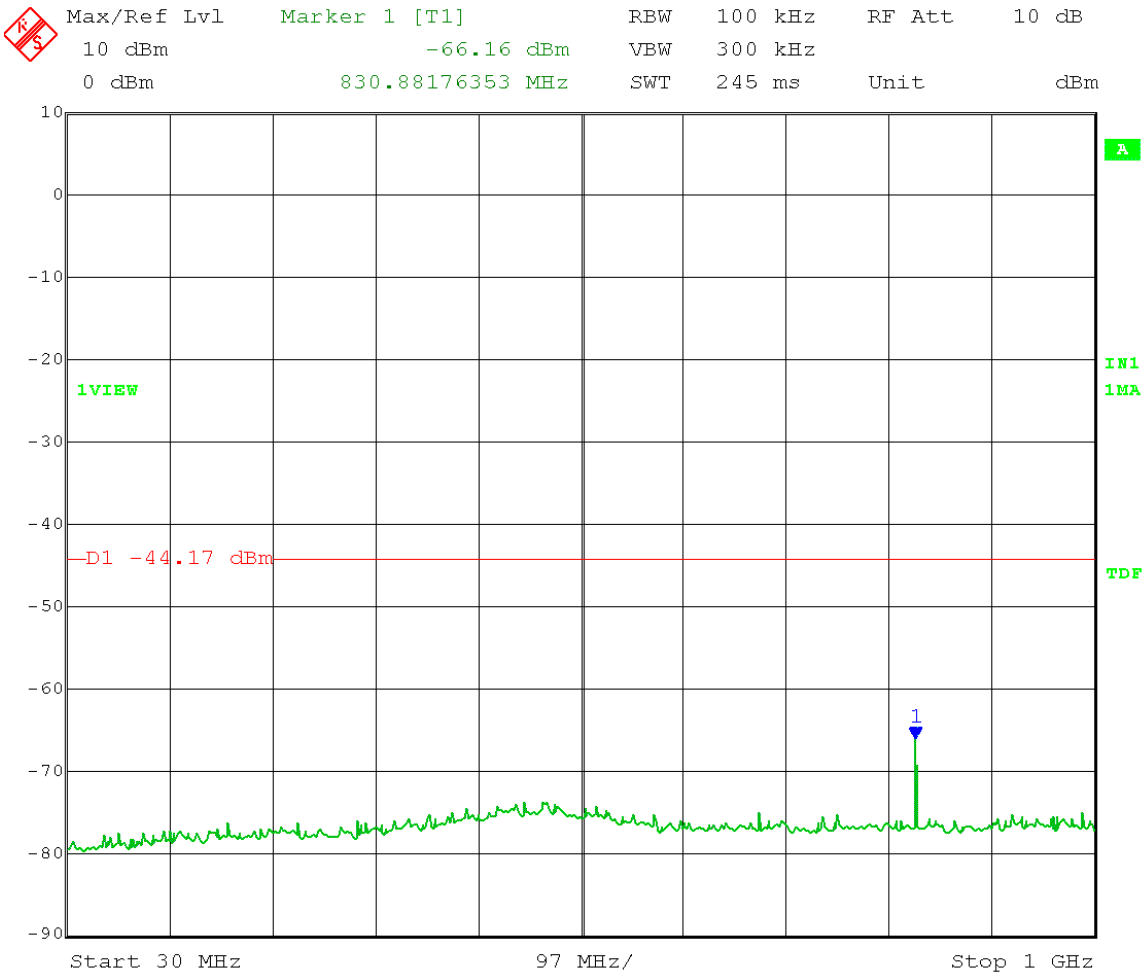
Date: 31.JAN.2014 15:44:25

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 1 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -14.17 dBm – 30 dB = -44.17 dBm



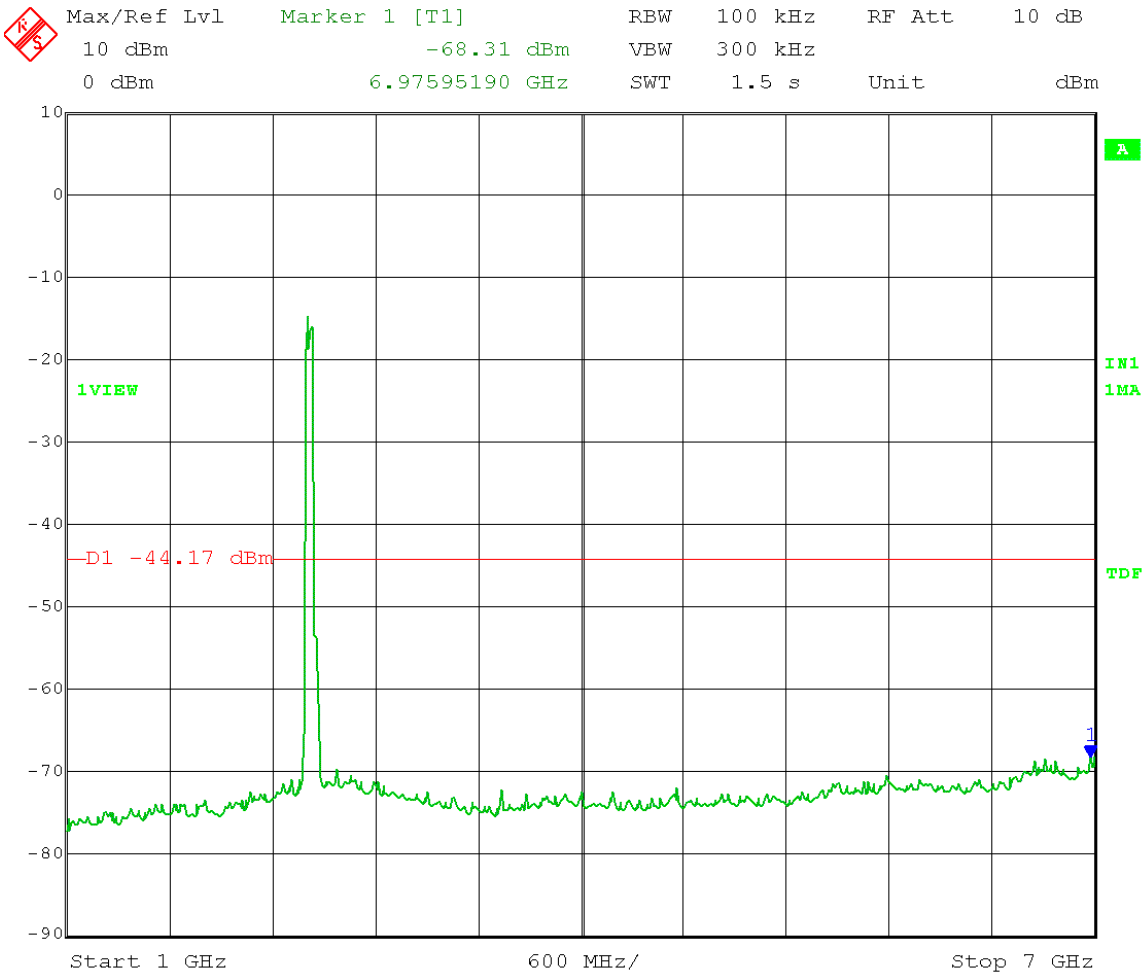
Date: 3.FEB.2014 14:33:21

Test Date: 02-03-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Low Channel Transmit = 2422 MHz
Output Power Setting 1 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -14.17 dBm – 30 dB = -44.17 dBm
Frequency Range: 30 – 1000 MHz



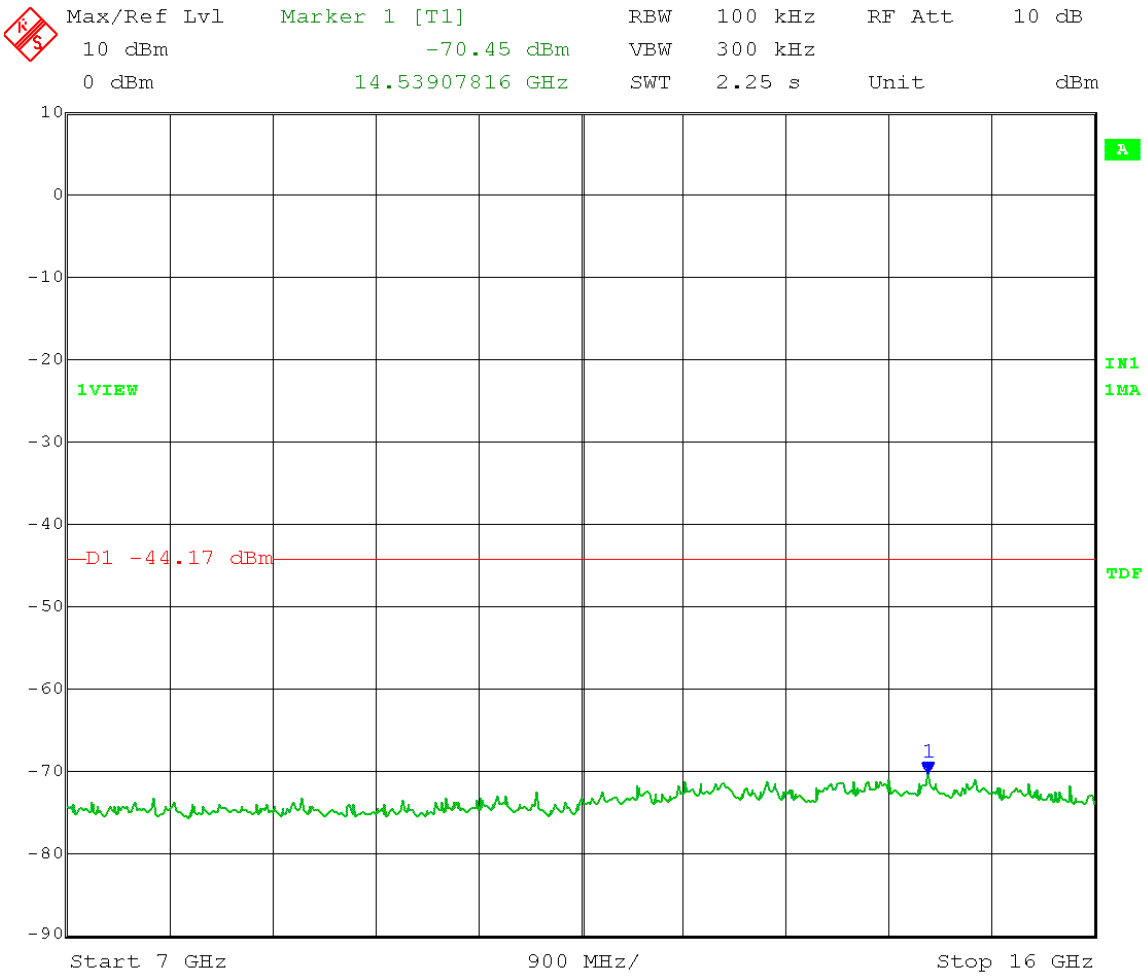
Date: 3.FEB.2014 14:38:36

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 1 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -14.17 dBm – 30 dB = -44.17 dBm
	Frequency Range: 1 – 7 GHz



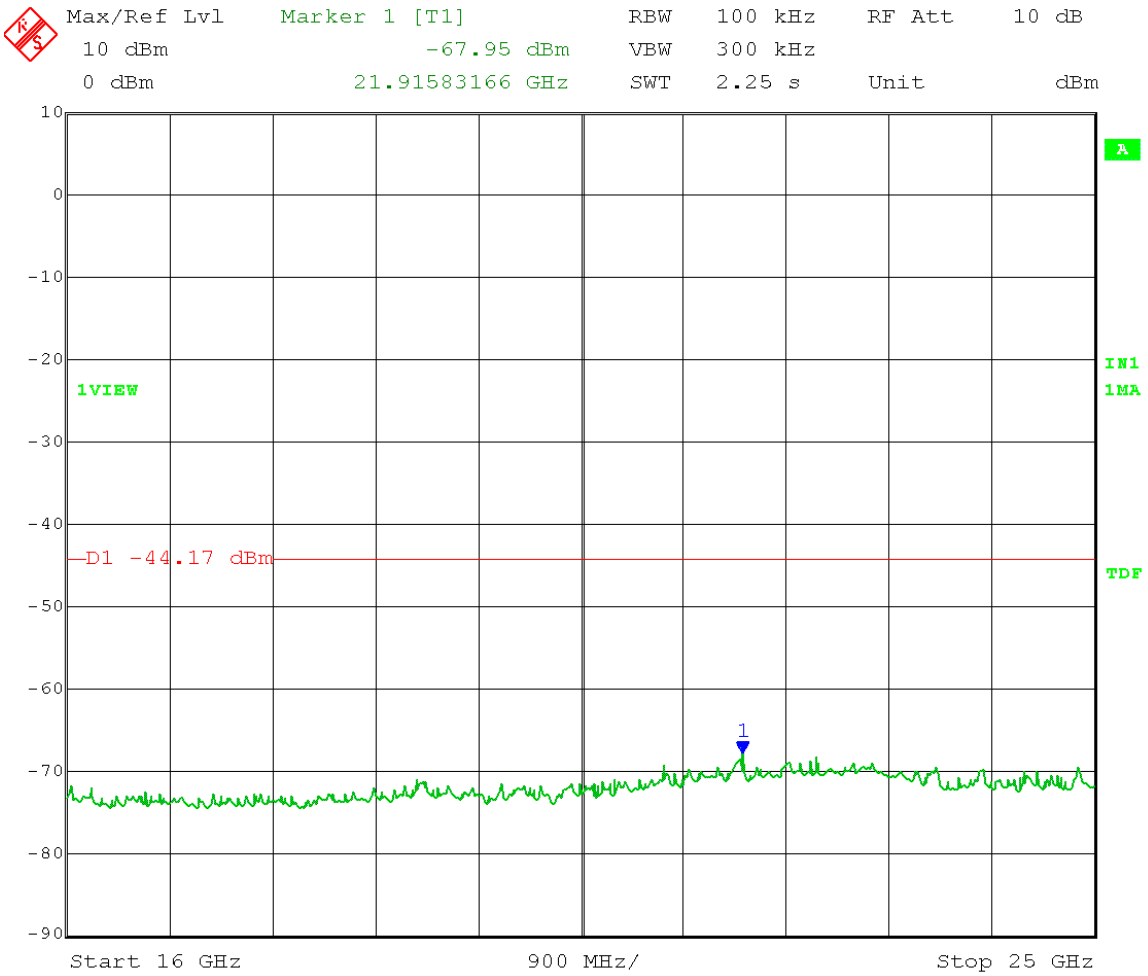
Date: 3.FEB.2014 14:35:11

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 1 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -14.17 dBm – 30 dB = -44.17 dBm
	Frequency Range: 7 – 16 GHz



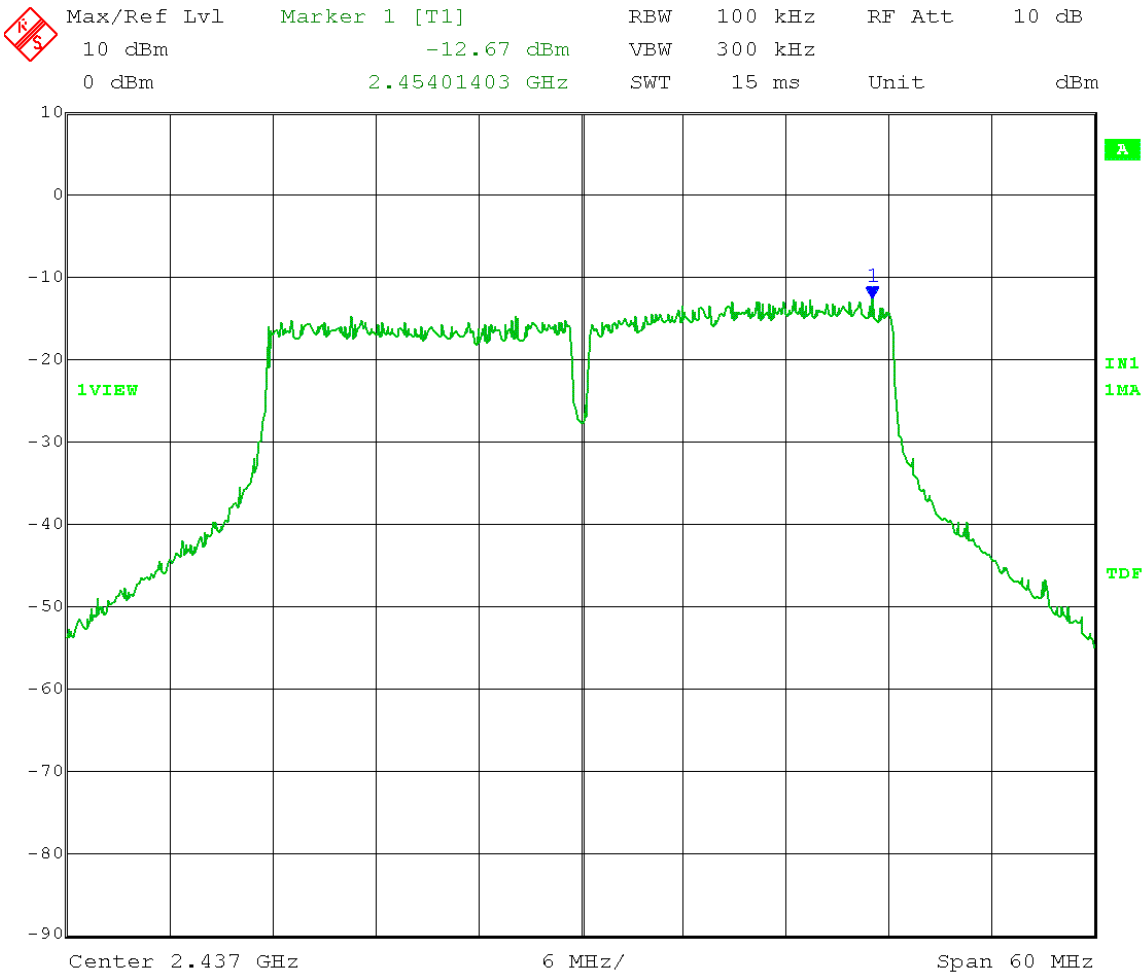
Date: 3.FEB.2014 14:36:18

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 1 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -14.17 dBm – 30 dB = -44.17 dBm
	Frequency Range: 16 – 25 GHz



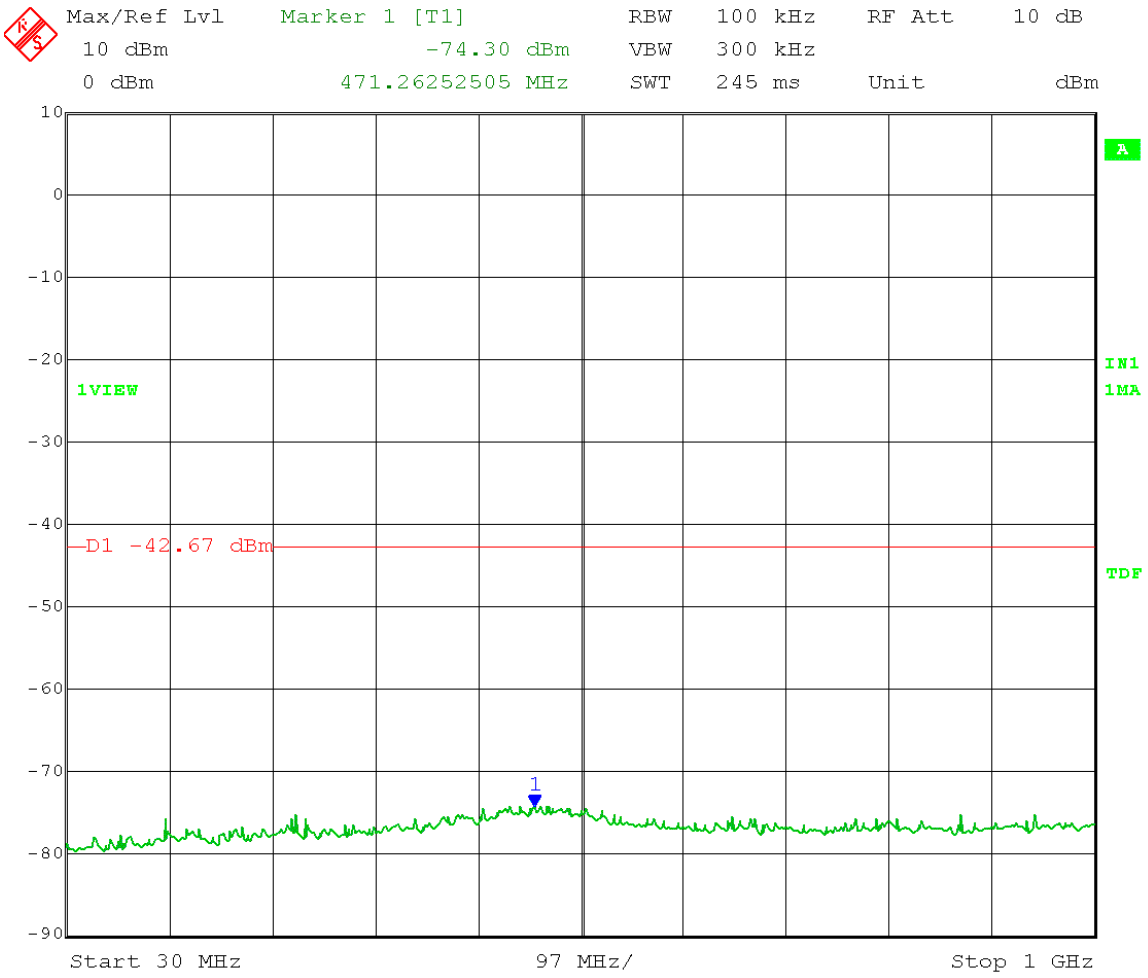
Date: 3.FEB.2014 14:37:21

Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5	Channel bandwidth: 40MHz
	Output port: 0	OFDM MCS15
	Reference Level Measurement	
	Limit = -12.67 dBm – 30 dB = -42.67 dBm	



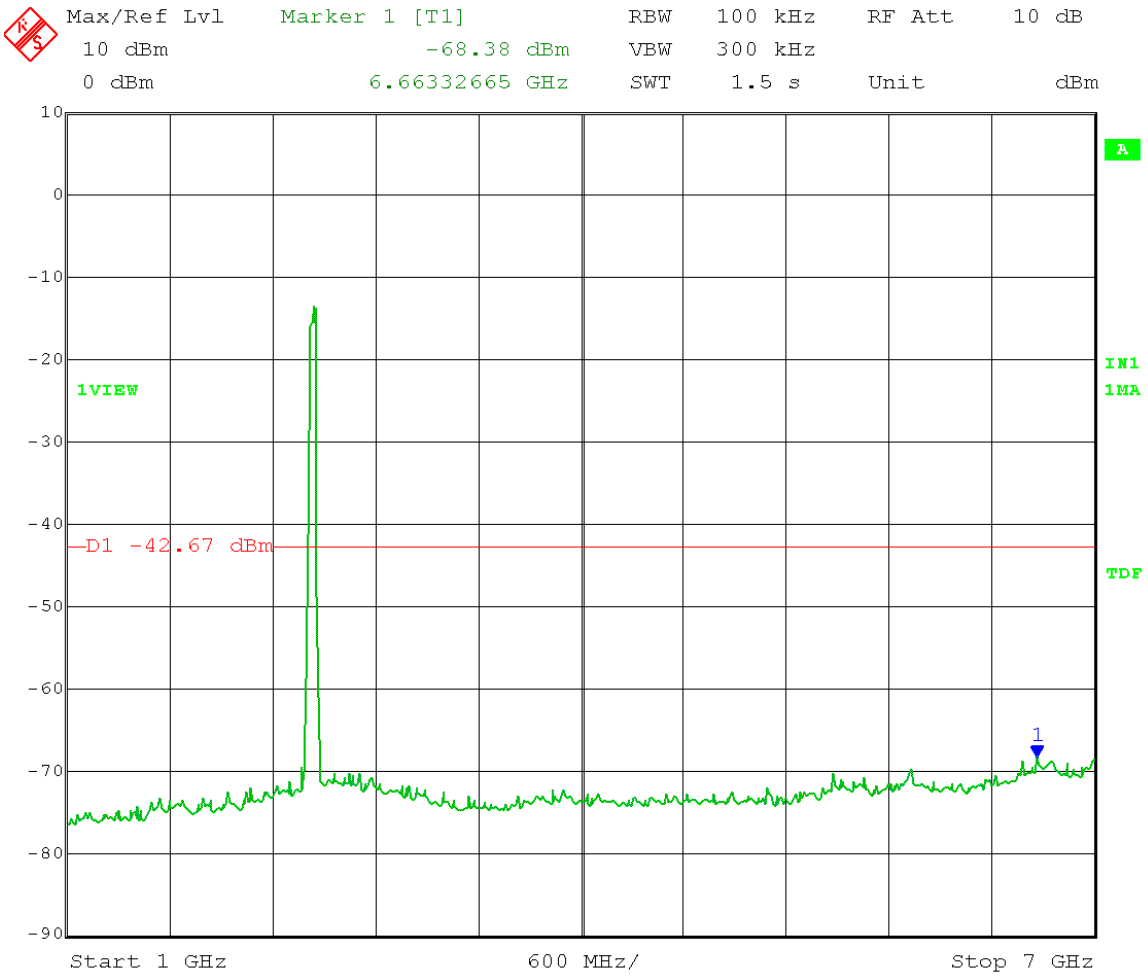
Date: 3.FEB.2014 14:25:02

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -12.67 dBm – 30 dB = -42.67 dBm
	Frequency Range: 30 – 1000 MHz



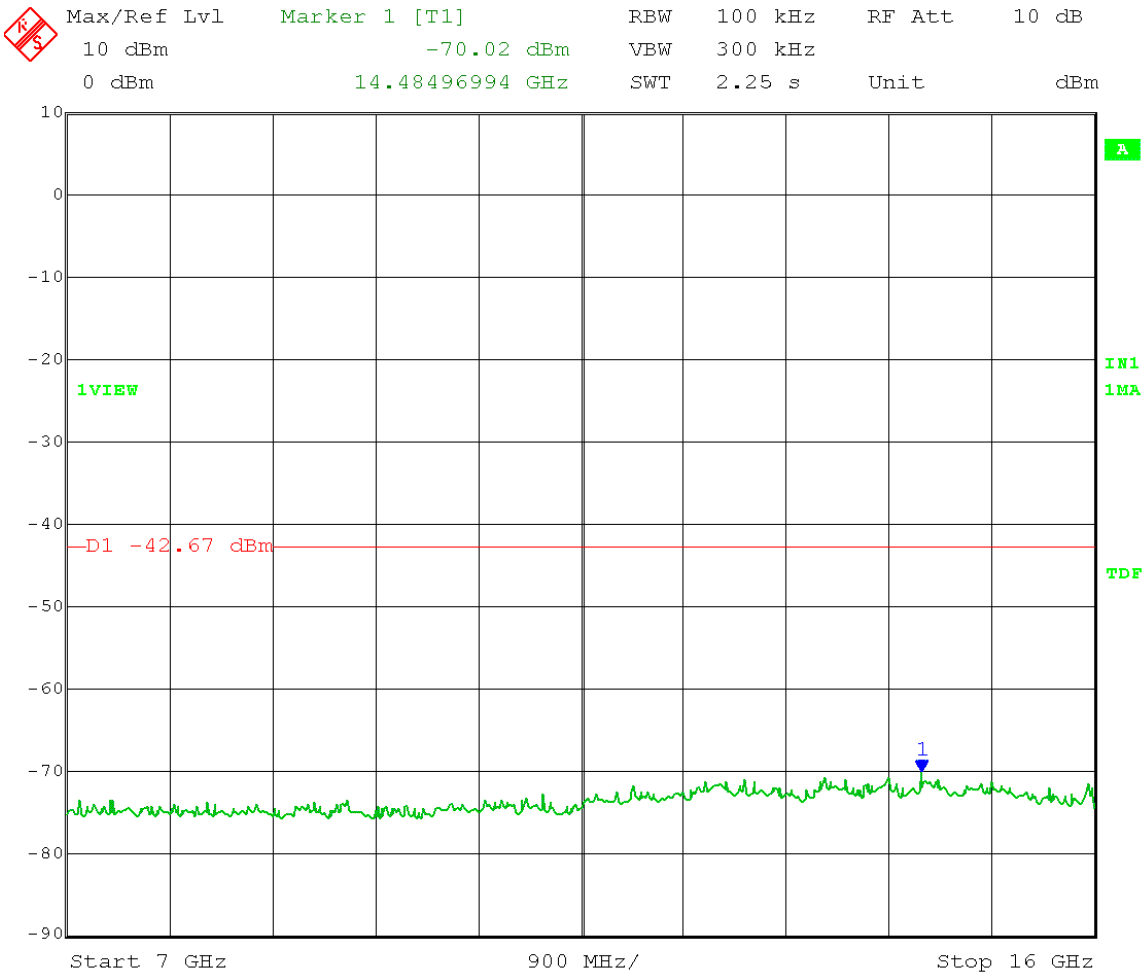
Date: 3.FEB.2014 14:30:46

Test Date: 02-03-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -12.67 dBm – 30 dB = -42.67 dBm
Frequency Range: 1 – 7 GHz



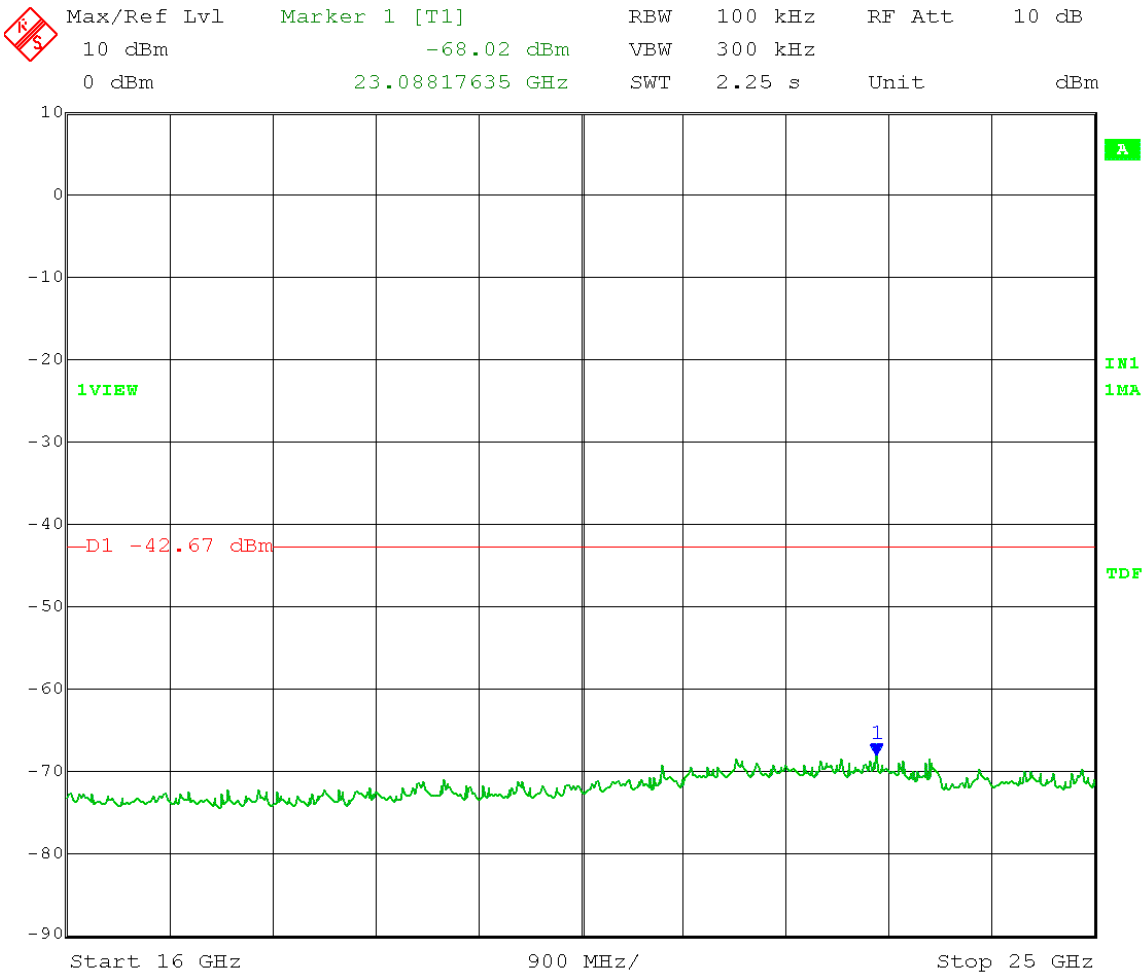
Date: 3.FEB.2014 14:26:57

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -12.67 dBm – 30 dB = -42.67 dBm
	Frequency Range: 7 – 16 GHz



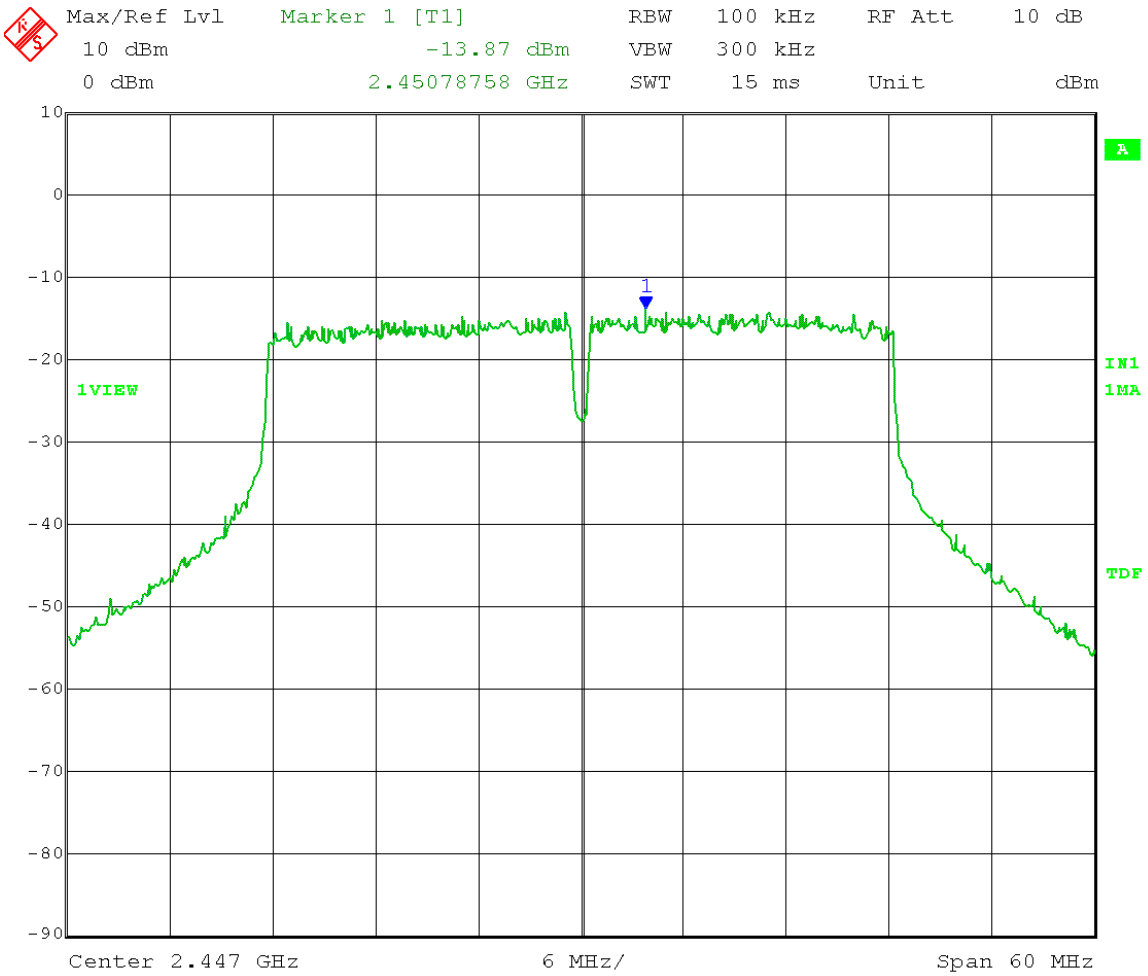
Date: 3.FEB.2014 14:28:17

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -12.67 dBm – 30 dB = -42.67 dBm
	Frequency Range: 16 – 25 GHz



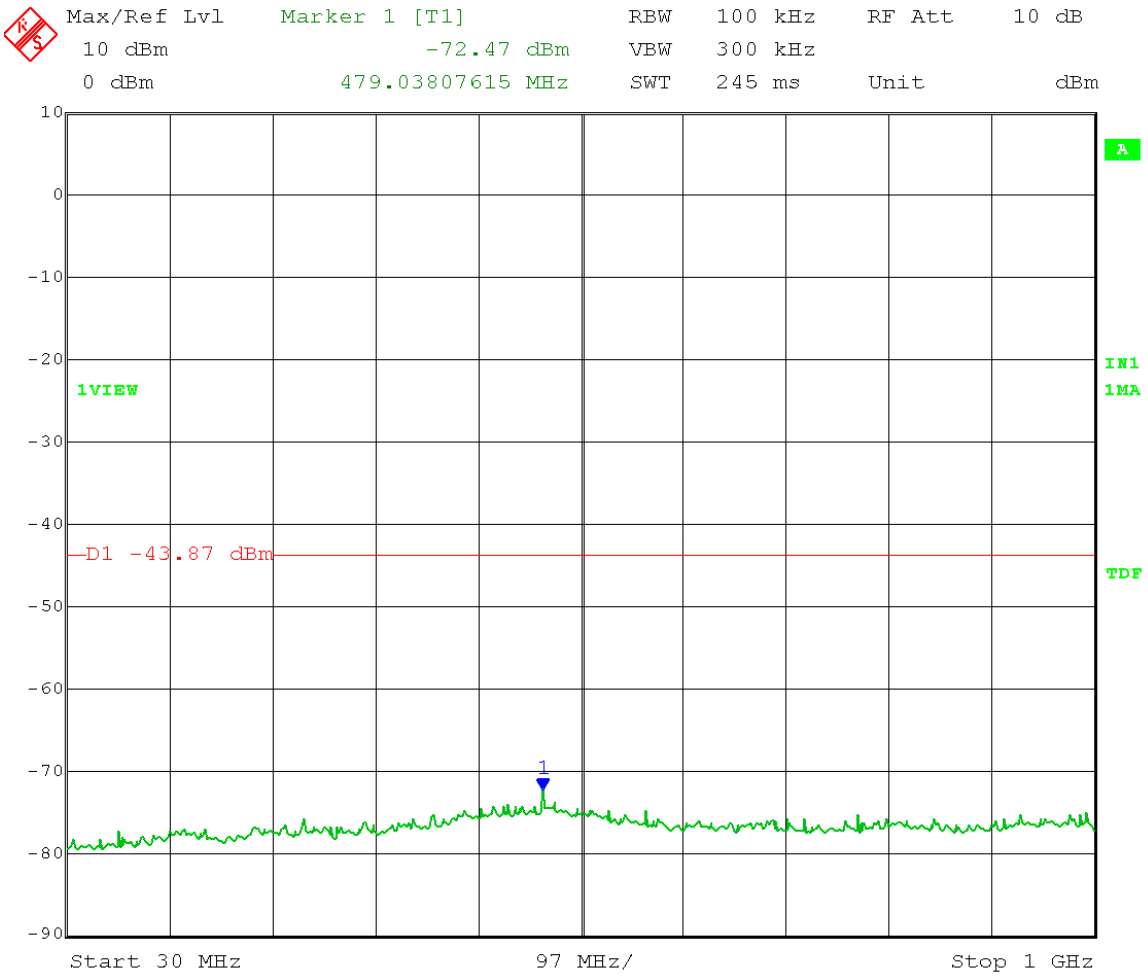
Date: 3.FEB.2014 14:29:36

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2447 MHz
	Output Power Setting 0.5 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Reference Level Measurement
	Limit = -13.87 dBm – 30 dB = -43.87 dBm



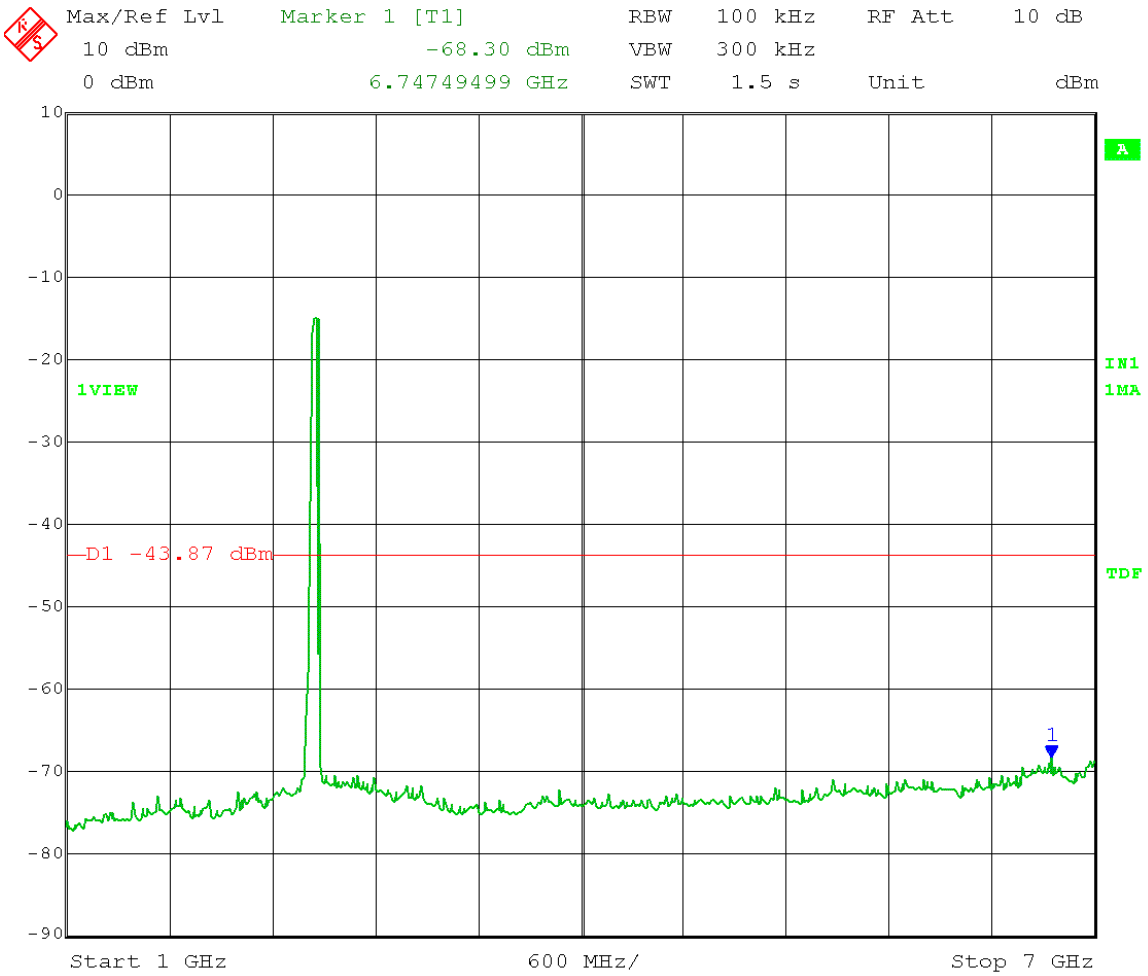
Date: 3.FEB.2014 14:41:24

Test Date: 02-03-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 100 kHz VBW ≥ 300 kHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold High Channel Transmit = 2447 MHz
Output Power Setting 0.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Emission Level Measurement
Limit = -13.87 dBm – 30 dB = -43.87 dBm
Frequency Range: 30 – 1000 MHz



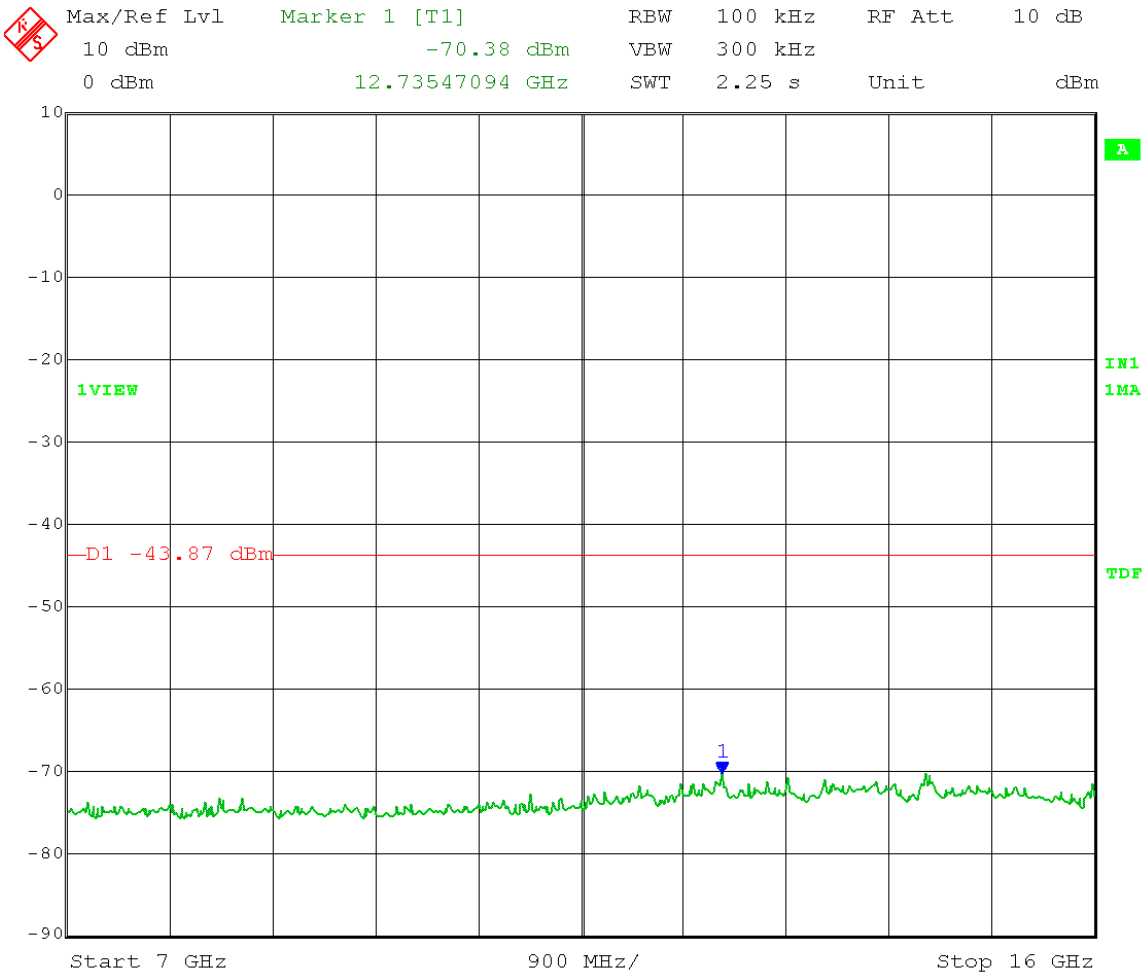
Date: 3.FEB.2014 14:47:34

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2447 MHz
	Output Power Setting 0.5 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -13.87 dBm – 30 dB = -43.87 dBm
	Frequency Range: 1 – 7 GHz



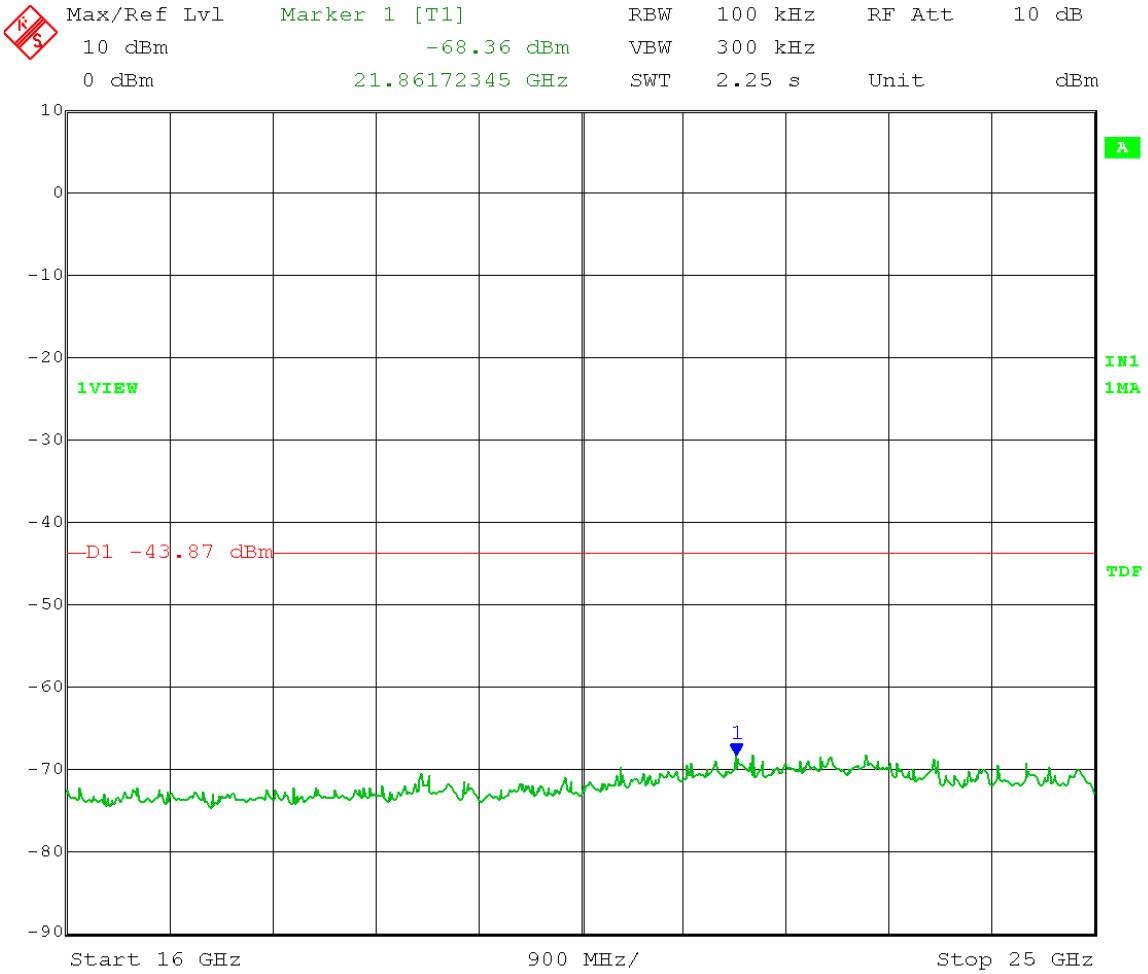
Date: 3.FEB.2014 14:43:33

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2447 MHz
	Output Power Setting 0.5 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -13.87 dBm – 30 dB = -43.87 dBm
	Frequency Range: 7 – 16 GHz



Date: 3.FEB.2014 14:44:43

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 100 kHz VBW ≥ 300 kHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2447 MHz
	Output Power Setting 0.5 Channel bandwidth: 40MHz
	Output port: 0 OFDM MCS15
	Emission Level Measurement
	Limit = -13.87 dBm – 30 dB = -43.87 dBm
	Frequency Range: 16 – 25 GHz



Date: 3.FEB.2014 14:46:02

Appendix B – Measurement Data

B5.0 Conducted Measurements for Radiated Restricted Band Compliance - with Dish

Rule Section: FCC 15.247(d) & FCC 15.205

Test Procedure: FCC KDB 558074 D01 DTS Meas Guidance v03r01 – *Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247*

12.1 Emissions in restricted frequency bands
12.2.2 General Procedure for conducted measurements in restricted bands

Description: Measure the conducted output power (in dBm) using the detector specified (section 12.2.4 used for peak, and 12.2.5.1 used for average).
Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level.
For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (*e.g.*, Watts, mW).
Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = EIRP - 20\log D + 104.8$$

where:

E = electric field strength in dBμV/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

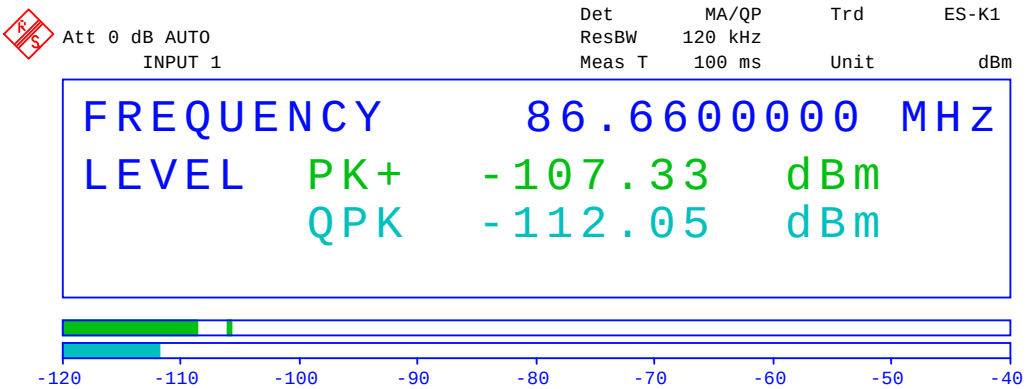
Compare the resultant electric field strength level to the applicable limit.

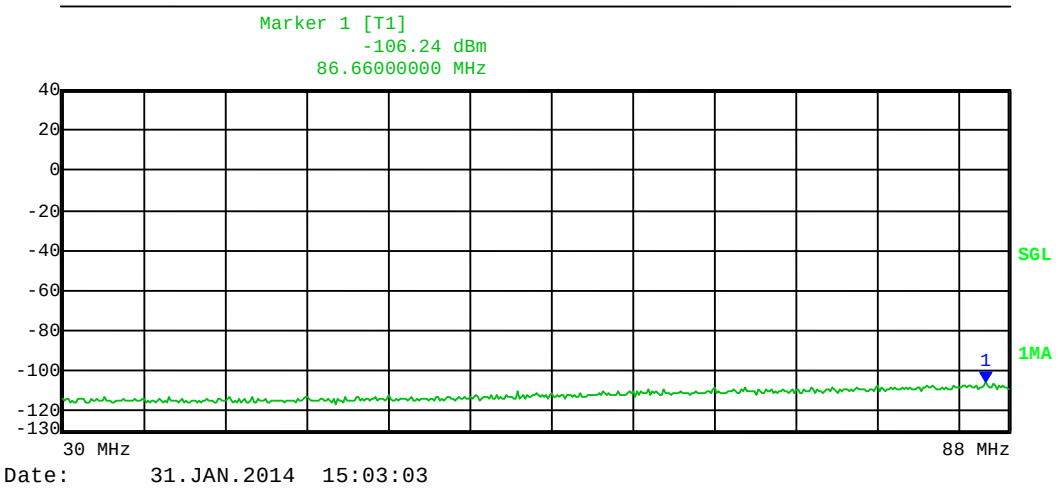
Limit: Average Limit = 54dBuV/m @ 3 meters
Peak Limit = 74dBuV/m @ 3 meters

Results: Passed

Notes: Measurements were taken for OFDM MCS15 with 20 MHz and 40 MHz channel bandwidths at the low, middle and high channels of operation. EUT was set to transmit continuously with a 100% duty cycle.

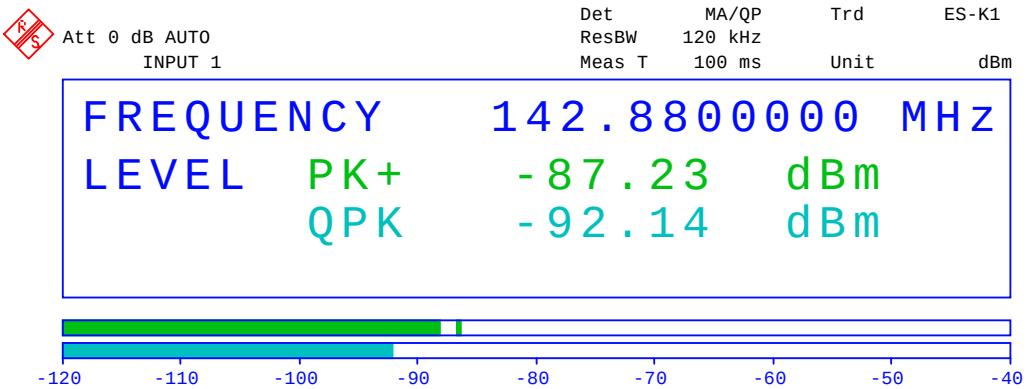
Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Low Channel Transmit = 2412 MHz
Output Power Setting 1 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 40 dBµV/m at 3 meters
Frequency Range: 30 – 88 MHz

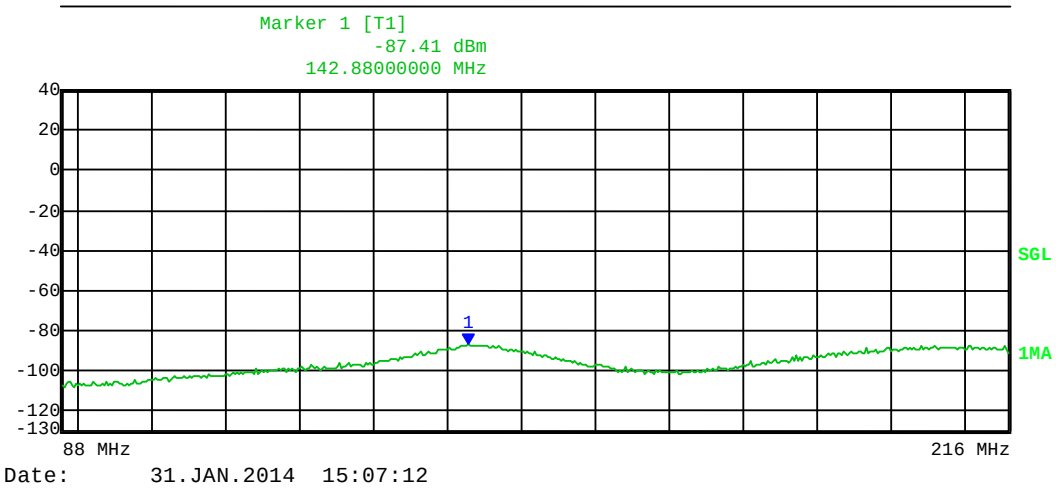




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -112.05 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 15.91 dBµV/m
Margin = 24.09 dB

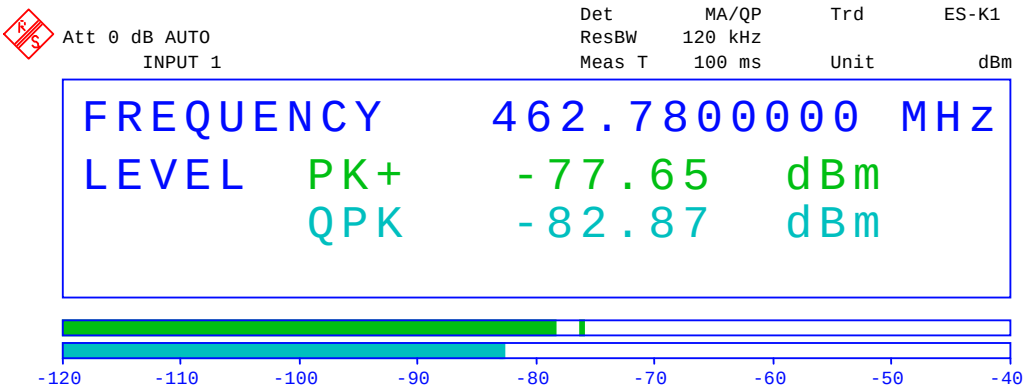
Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Low Channel Transmit = 2412 MHz
Output Power Setting 1 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 43.5 dBµV/m at 3 meters
Frequency Range: 88 – 216 MHz

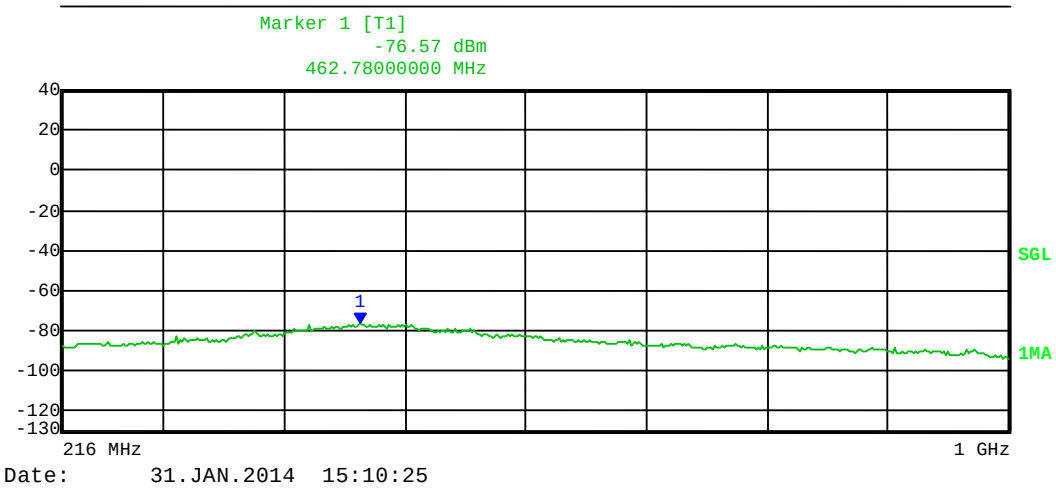




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -92.14 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 35.82 dBµV/m
Margin = 7.68 dB

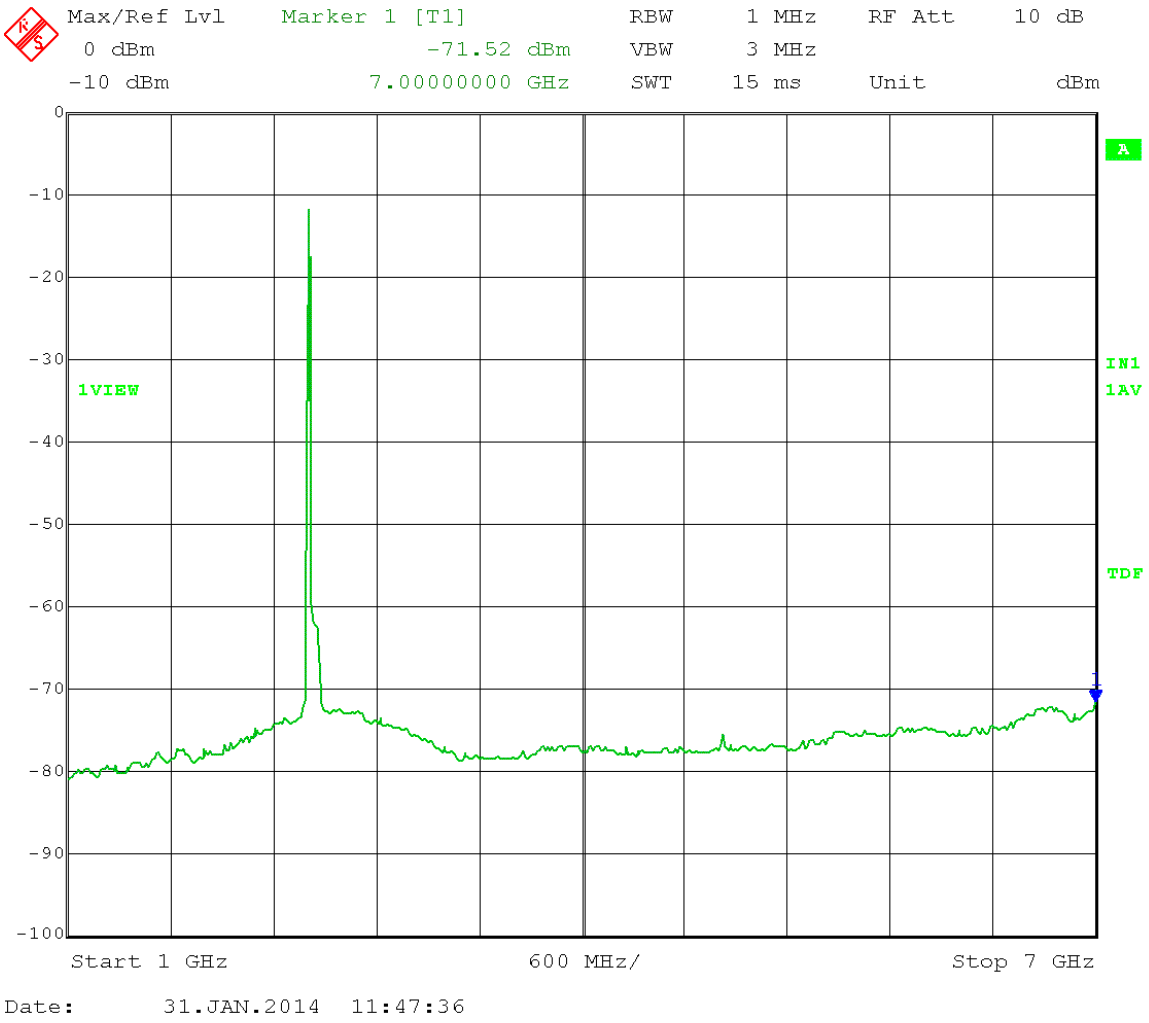
Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Low Channel Transmit = 2412 MHz
Output Power Setting 1 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 46 dBµV/m at 3 meters
Frequency Range: 216 – 1000 MHz





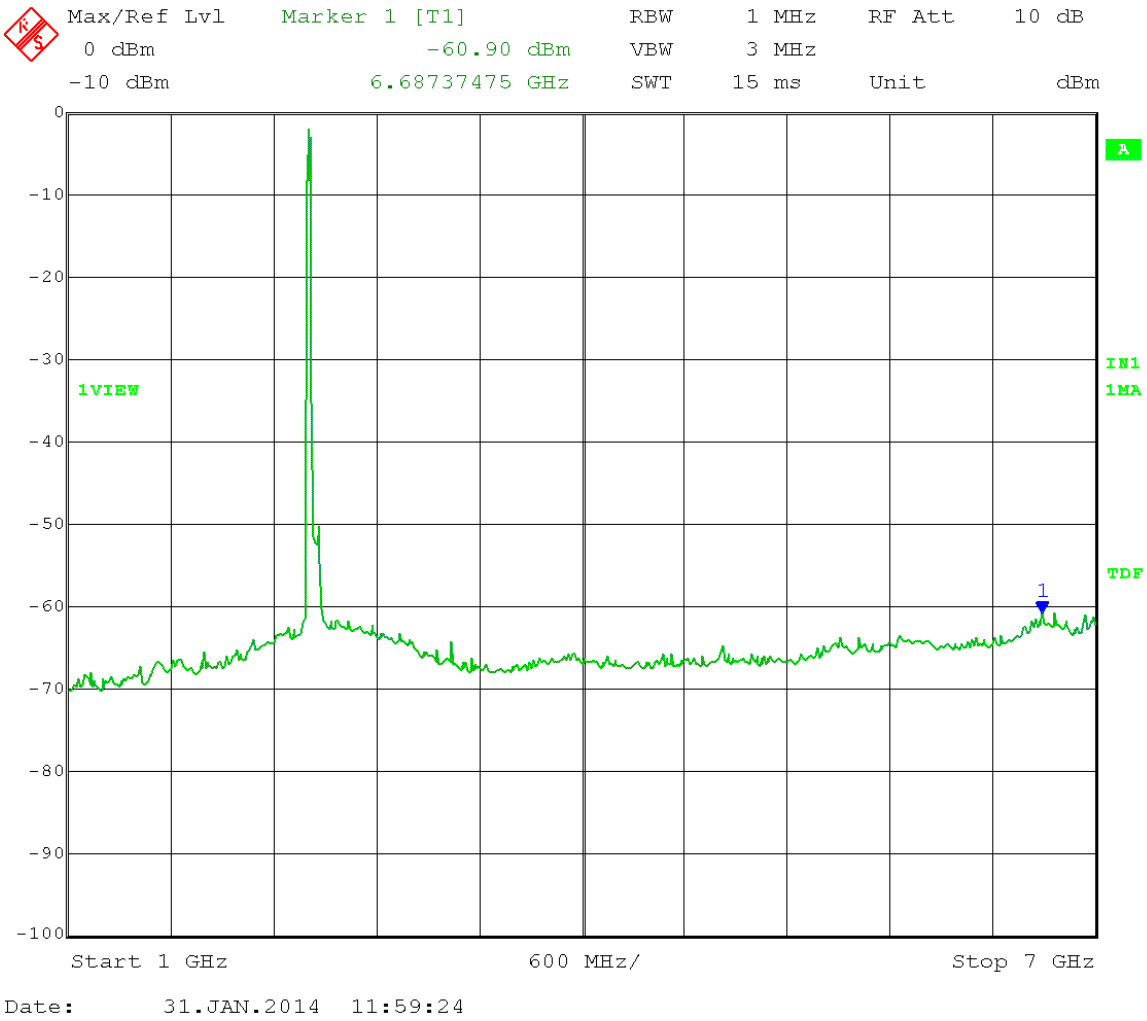
E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -82.87 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 45.09 dBµV/m
Margin = 0.91 dB

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Average Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters
	Frequency Range: 1 – 7 GHz



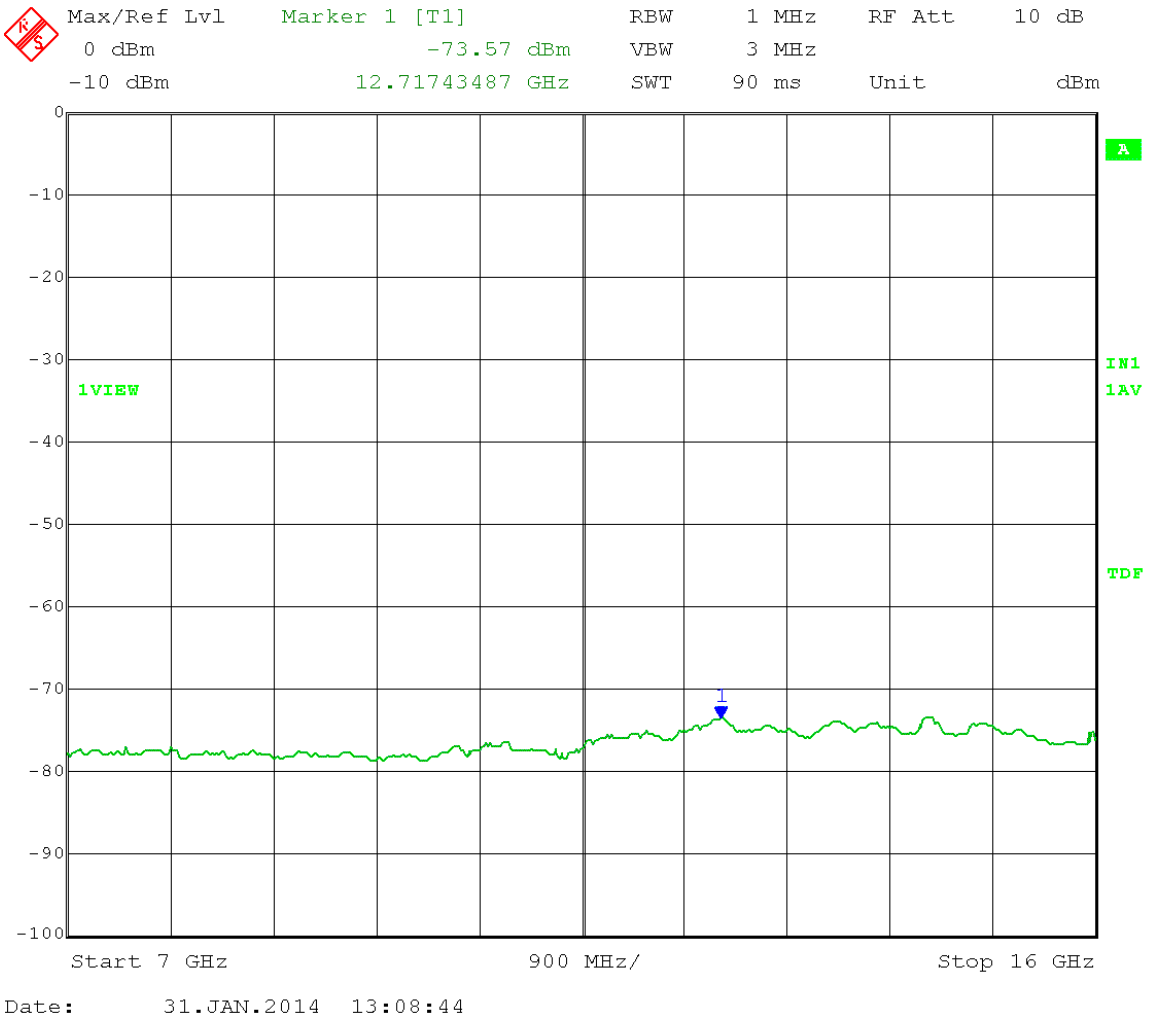
E = EIRP – 20log D + 104.8
= -71.52 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 51.74 dBµV/m
Margin = 2.26 dB (noise floor measurement)

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters
	Frequency Range: 1 – 7 GHz



E = EIRP – 20log D + 104.8
= -60.90 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 62.36 dBµV/m
Margin = 11.64 dB (noise floor measurement)

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Average Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters
	Frequency Range: 7 – 16 GHz



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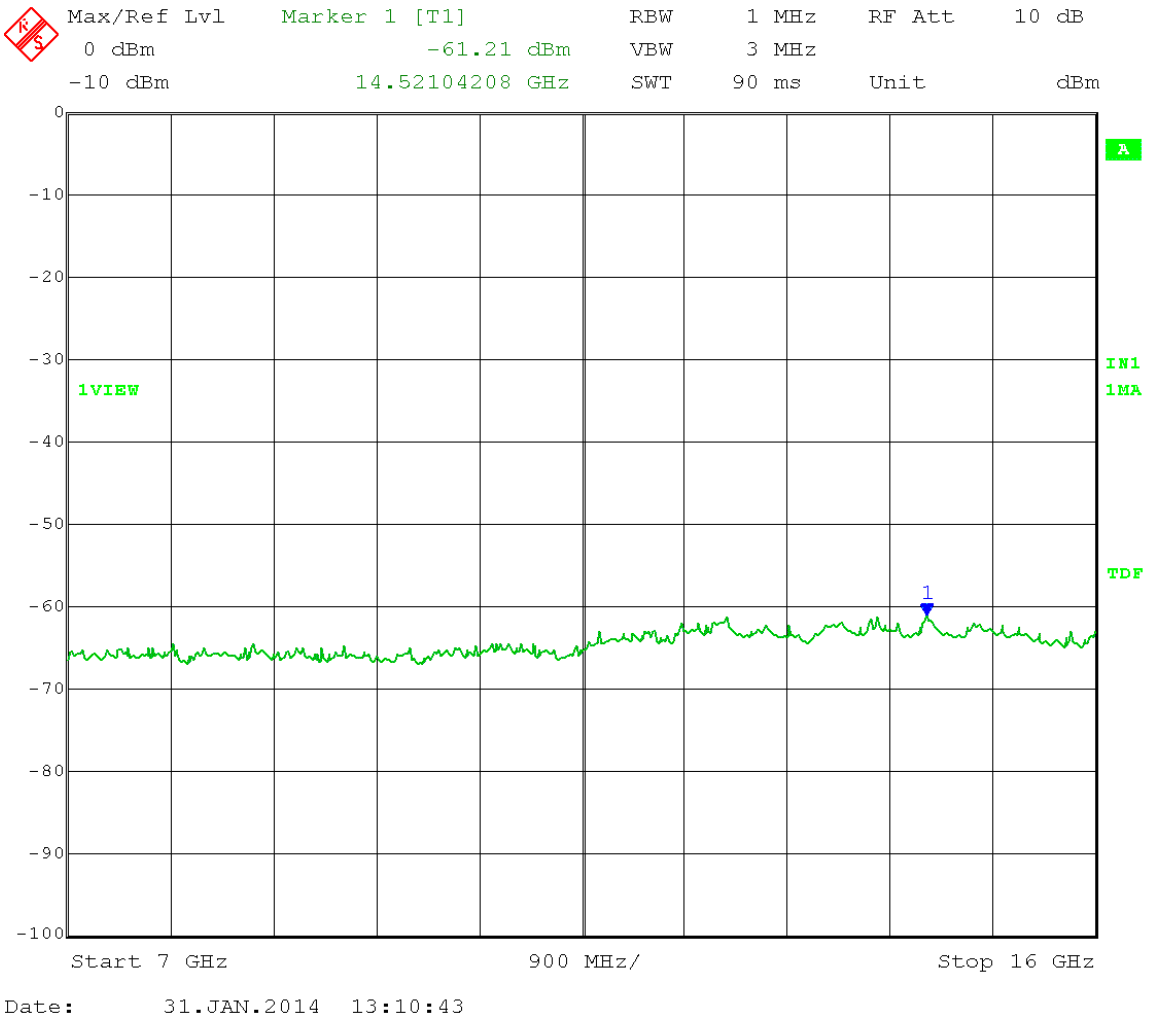
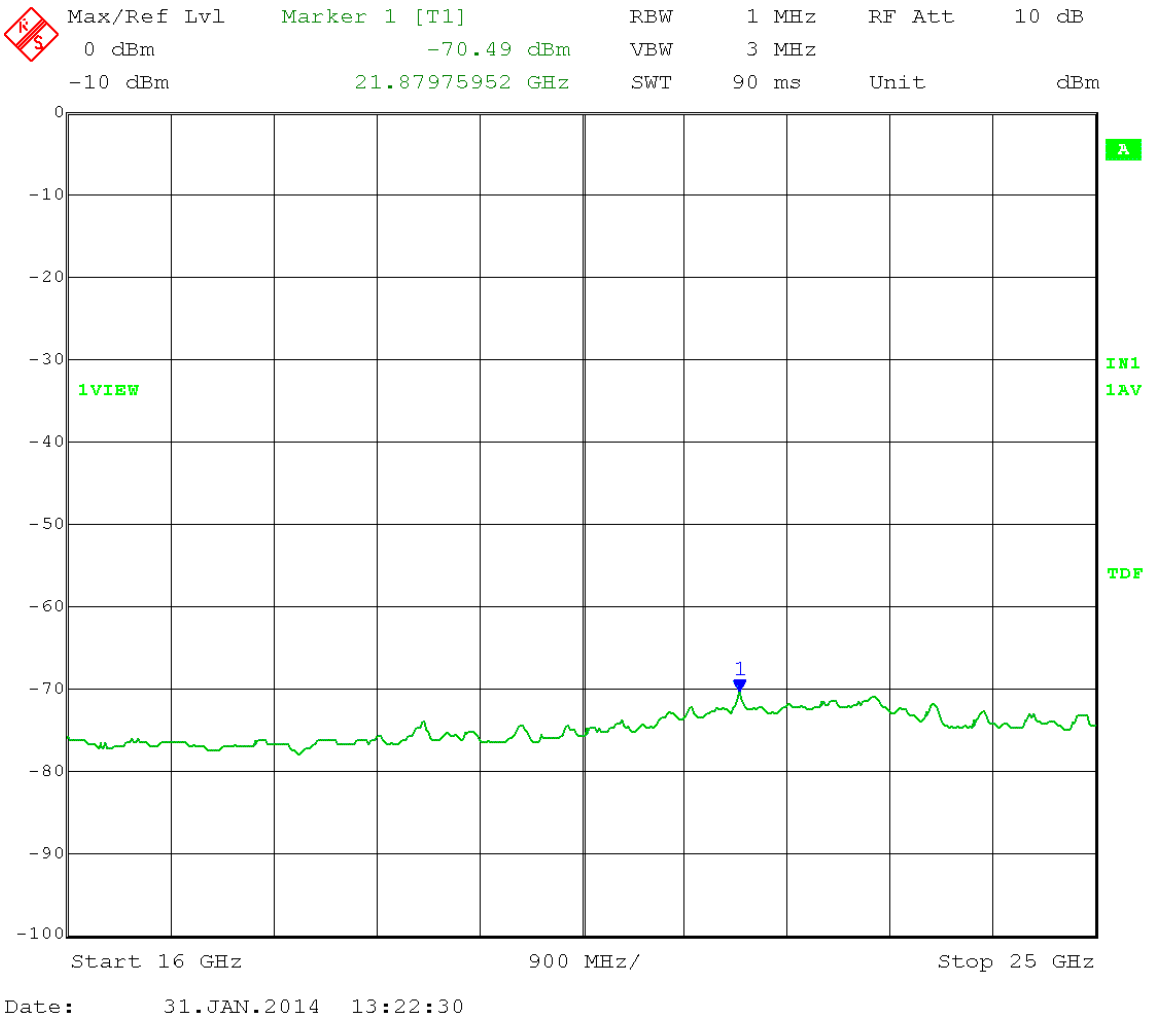
E = EIRP – 20log D + 104.8
= -73.57 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 49.69 dBµV/m
Margin = 4.31 dB (noise floor measurement)

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters
	Frequency Range: 7 – 16 GHz



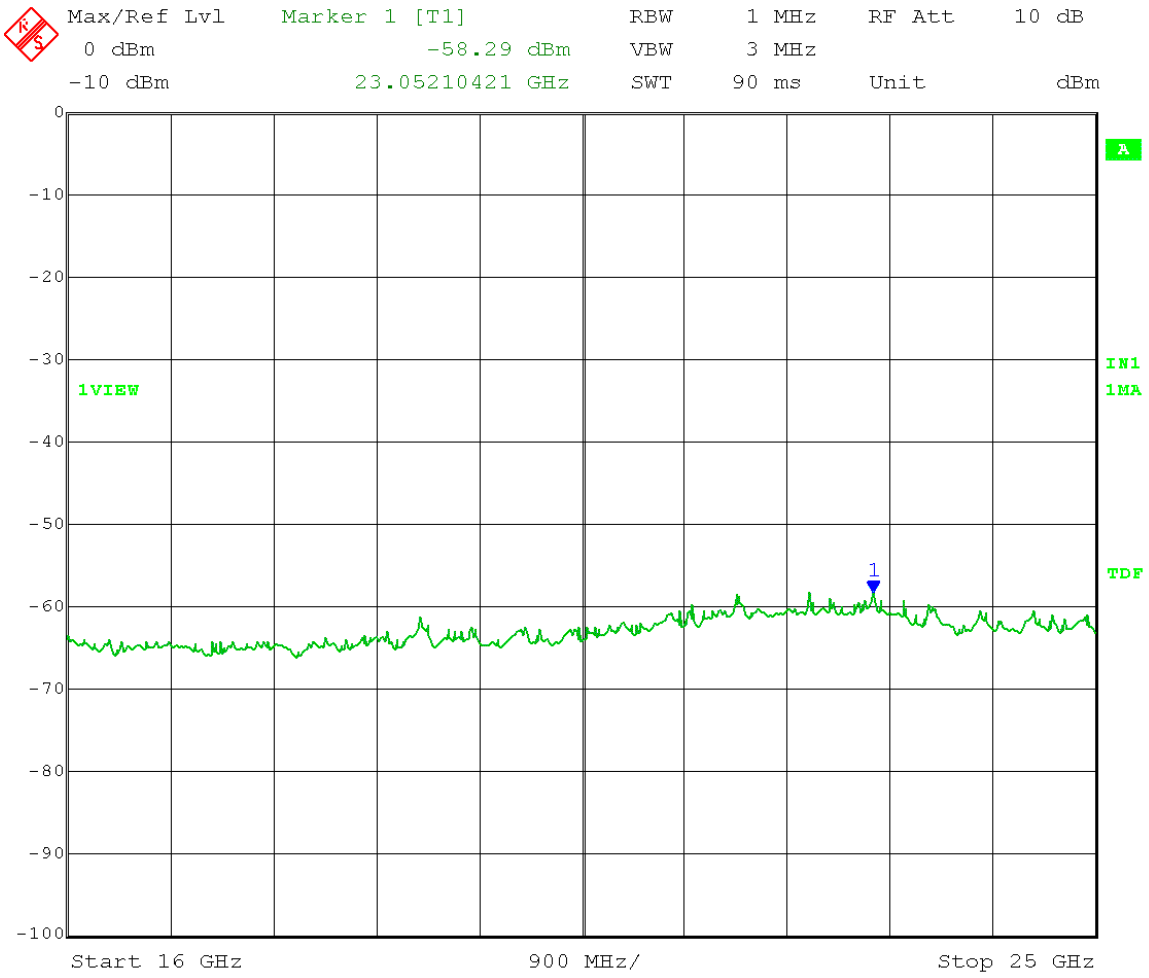
E = EIRP – 20log D + 104.8
= -61.21 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 62.05 dBµV/m
Margin = 11.95 dB (noise floor measurement)

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Average Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters
	Frequency Range: 16 – 25 GHz



E = EIRP – 20log D + 104.8
= -70.49 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 52.77 dBµV/m
<u>Margin = 1.23 dB</u> (noise floor measurement)

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2412 MHz
	Output Power Setting 1 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters
	Frequency Range: 16 – 25 GHz



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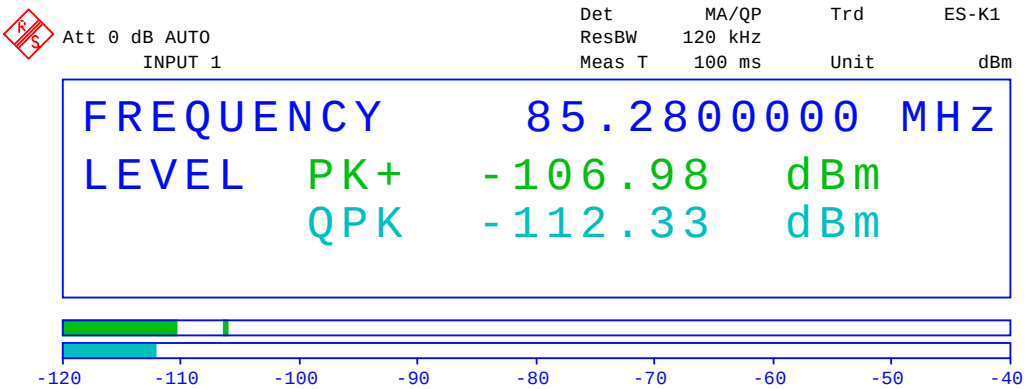
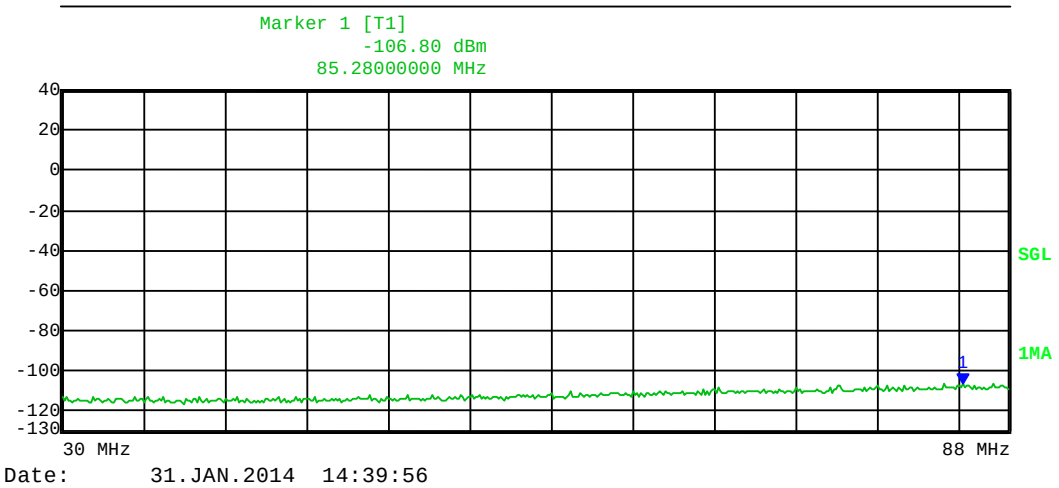
E = EIRP – 20log D + 104.8
= -58.29 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 64.97 dBµV/m
Margin = 9.03 dB (noise floor measurement)

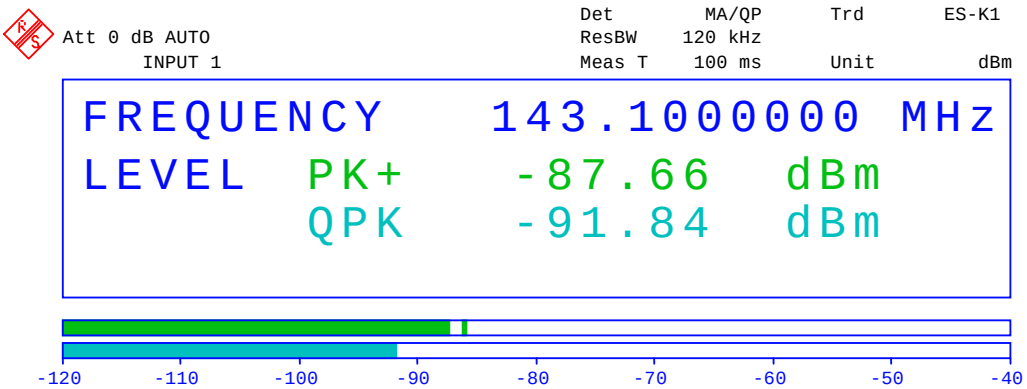
Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 40 dBµV/m at 3 meters
Frequency Range: 30 – 88 MHz

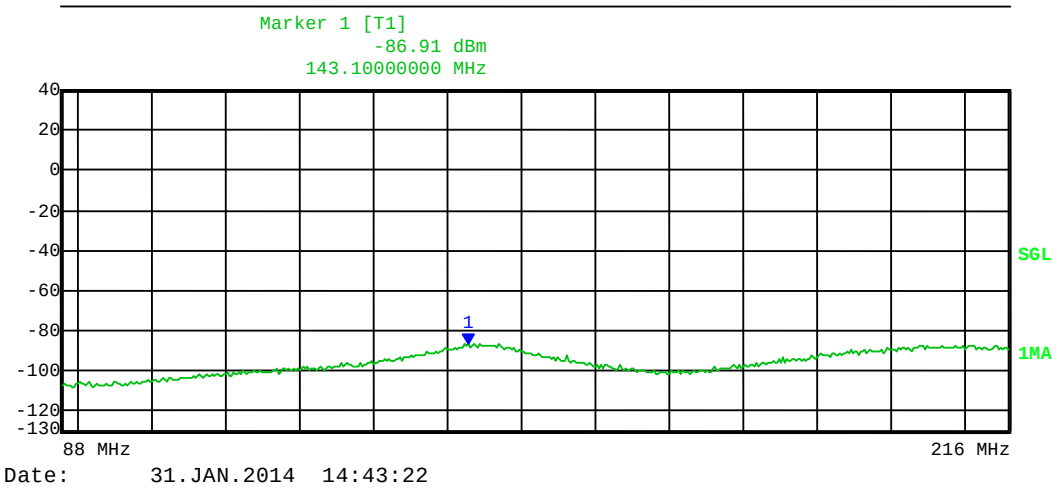




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -112.33 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 15.63 dBµV/m
Margin = 24.37 dB

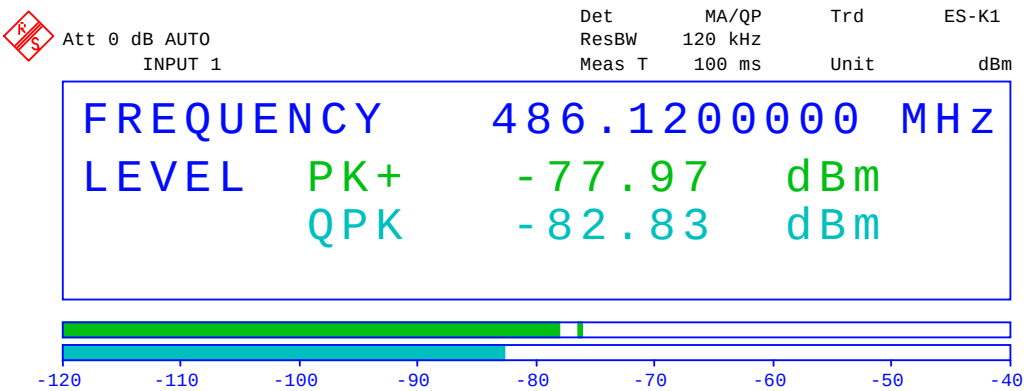
Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 43.5 dBµV/m at 3 meters
Frequency Range: 88 – 216 MHz

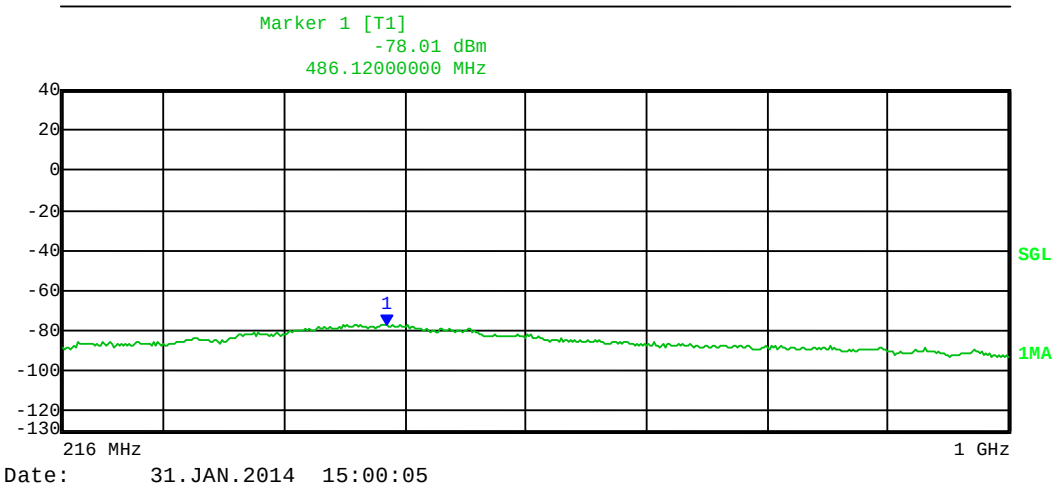




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -91.84 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 36.12 dBµV/m
<u>Margin = 7.38 dB</u>

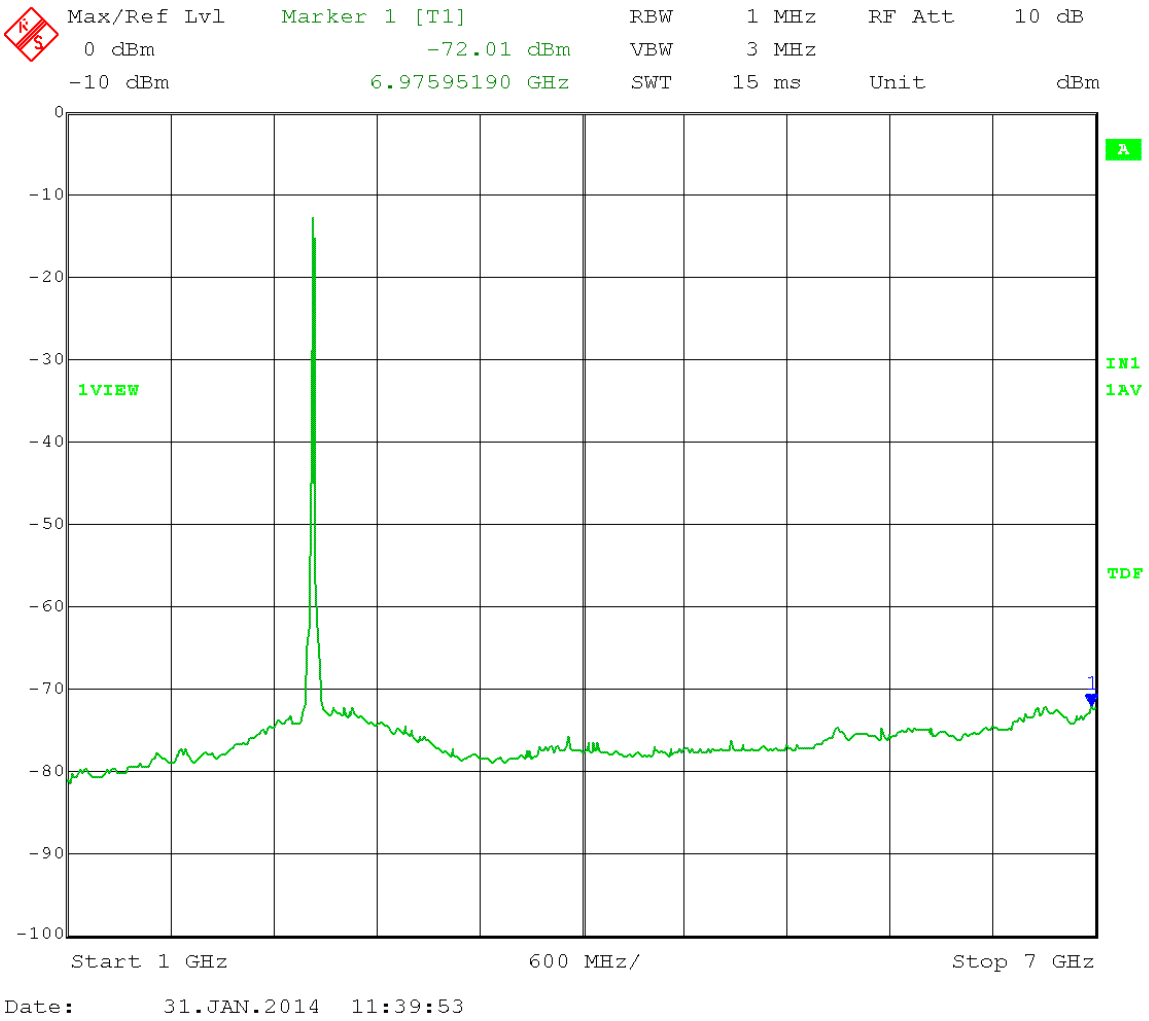
Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 46 dBµV/m at 3 meters
Frequency Range: 216 – 1000 MHz





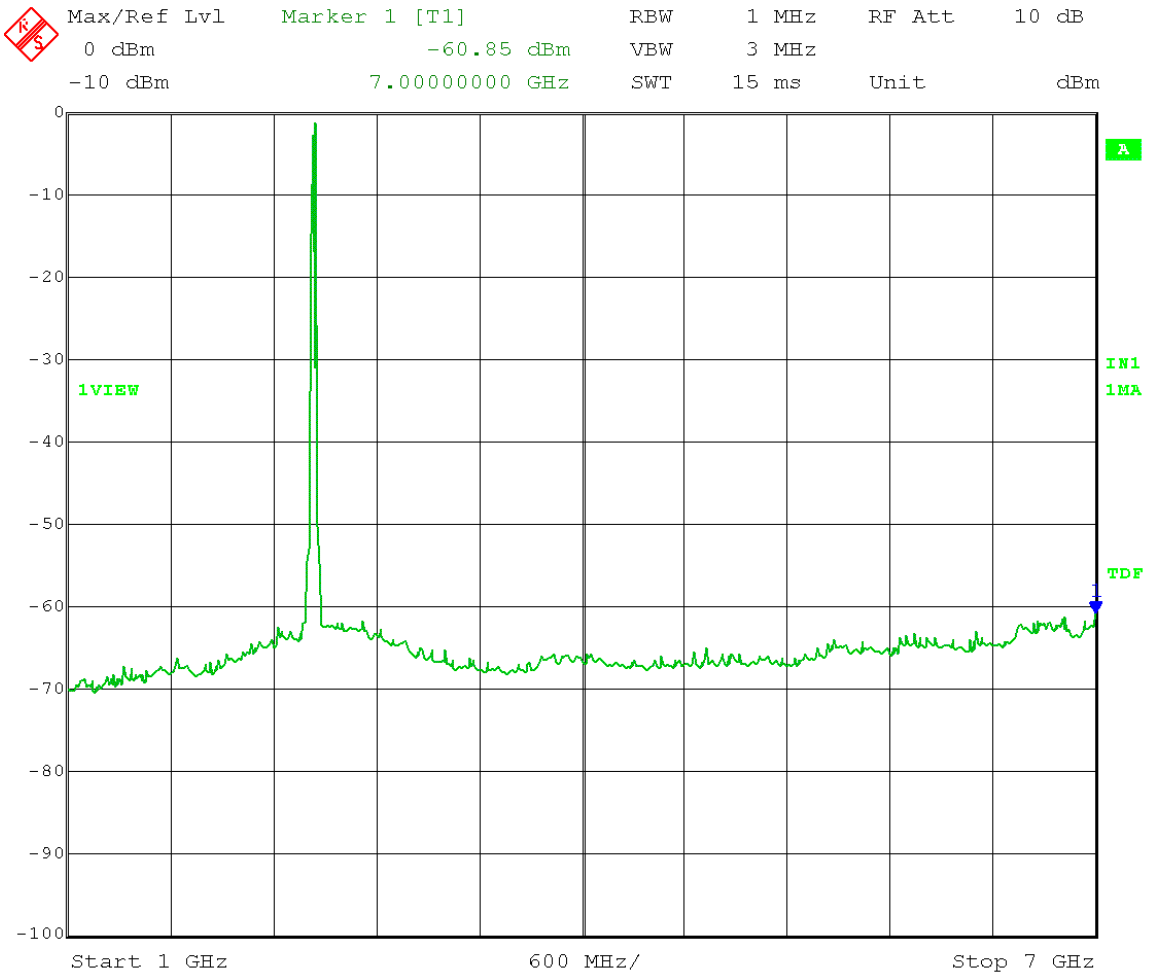
E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -82.83 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 45.13 dBµV/m
Margin = 0.87 dB

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Average Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters
	Frequency Range: 1 – 7 GHz



E = EIRP – 20log D + 104.8
= -72.01 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 51.25 dBµV/m
Margin = 2.75 dB (noise floor measurement)

Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 1 – 7 GHz	



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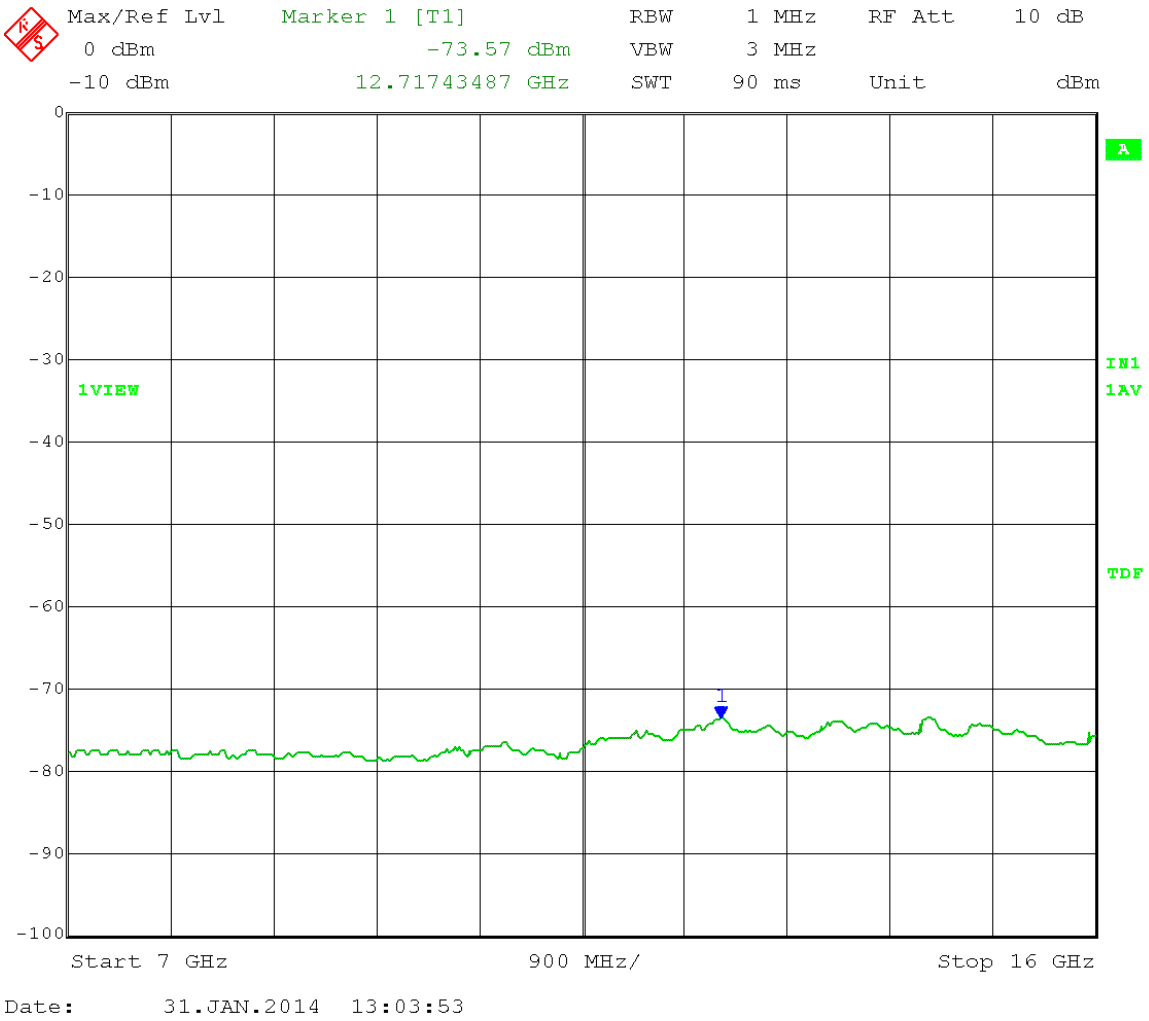
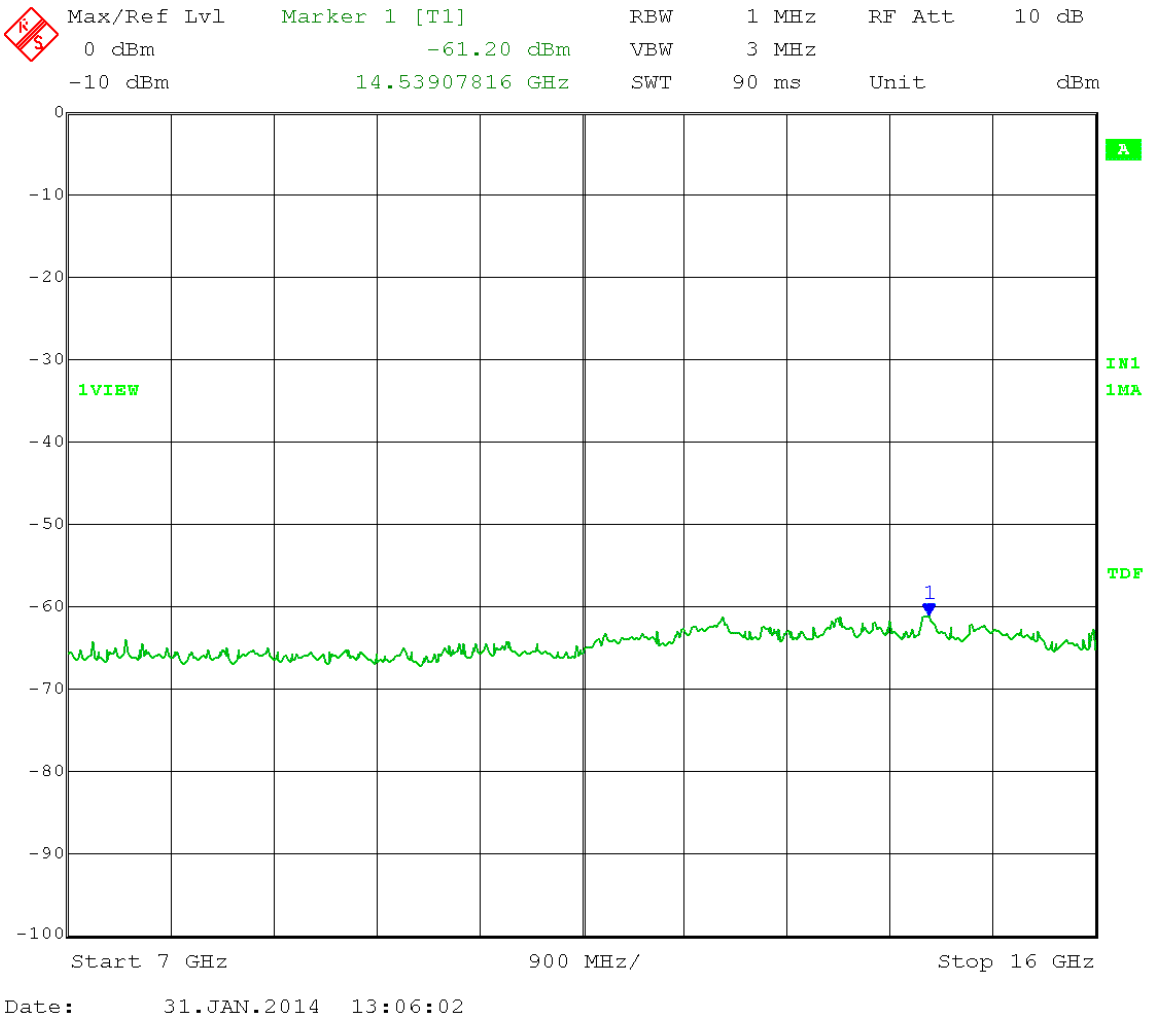
E = EIRP – 20log D + 104.8
= -60.85 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 62.41 dBµV/m
Margin = 11.59 dB (noise floor measurement)

Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Average	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters	
	Frequency Range: 7 – 16 GHz	



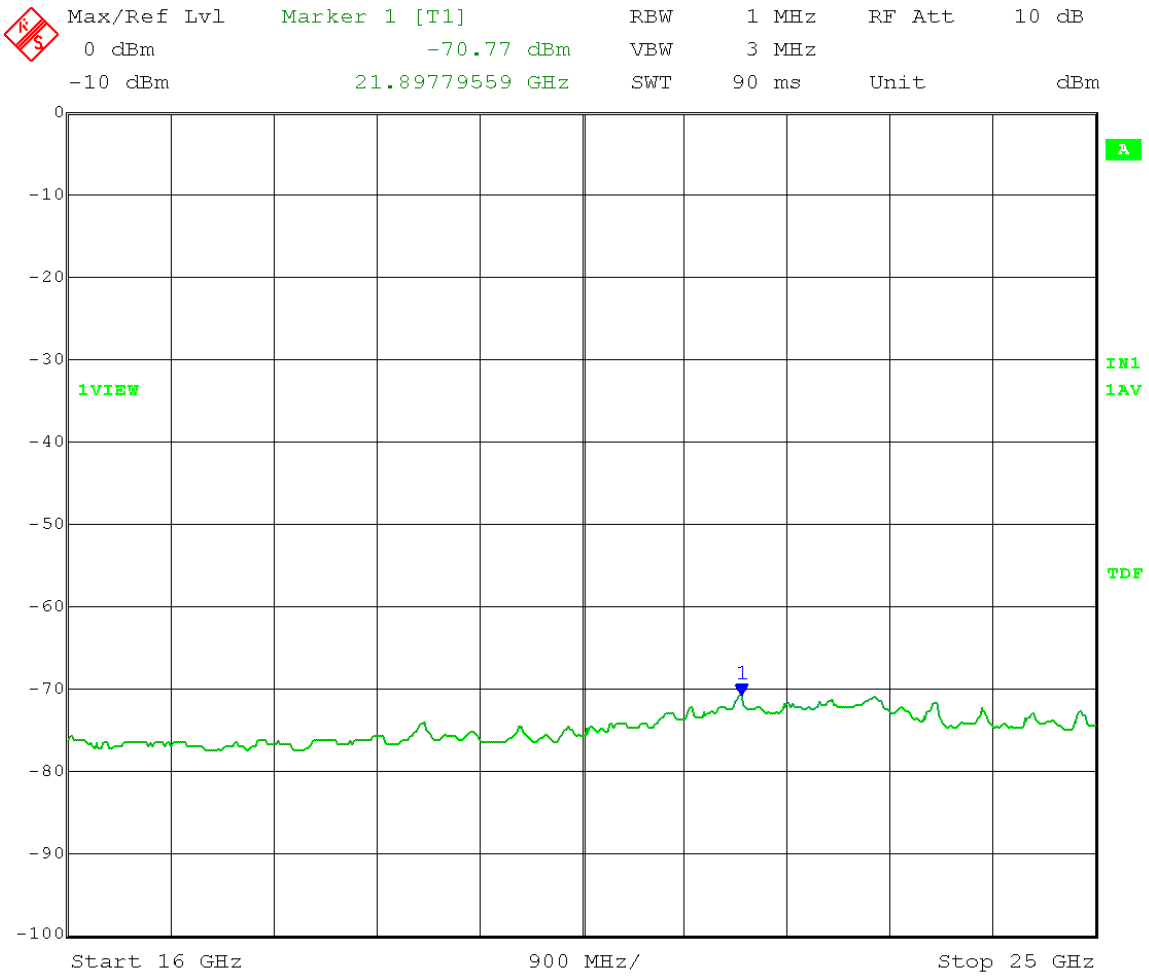
E = EIRP – 20log D + 104.8
= -73.57 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 49.69 dBµV/m
Margin = 4.31 dB (noise floor measurement)

Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 7 – 16 GHz	



E = EIRP – 20log D + 104.8
= -61.20 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 62.06 dBµV/m
Margin = 11.94 dB (noise floor measurement)

Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 1 MHz VBW ≥ 3 MHz
Detector = Average Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Average limit = 54 dBµV/m at 3 meters
Frequency Range: 16 – 25 GHz



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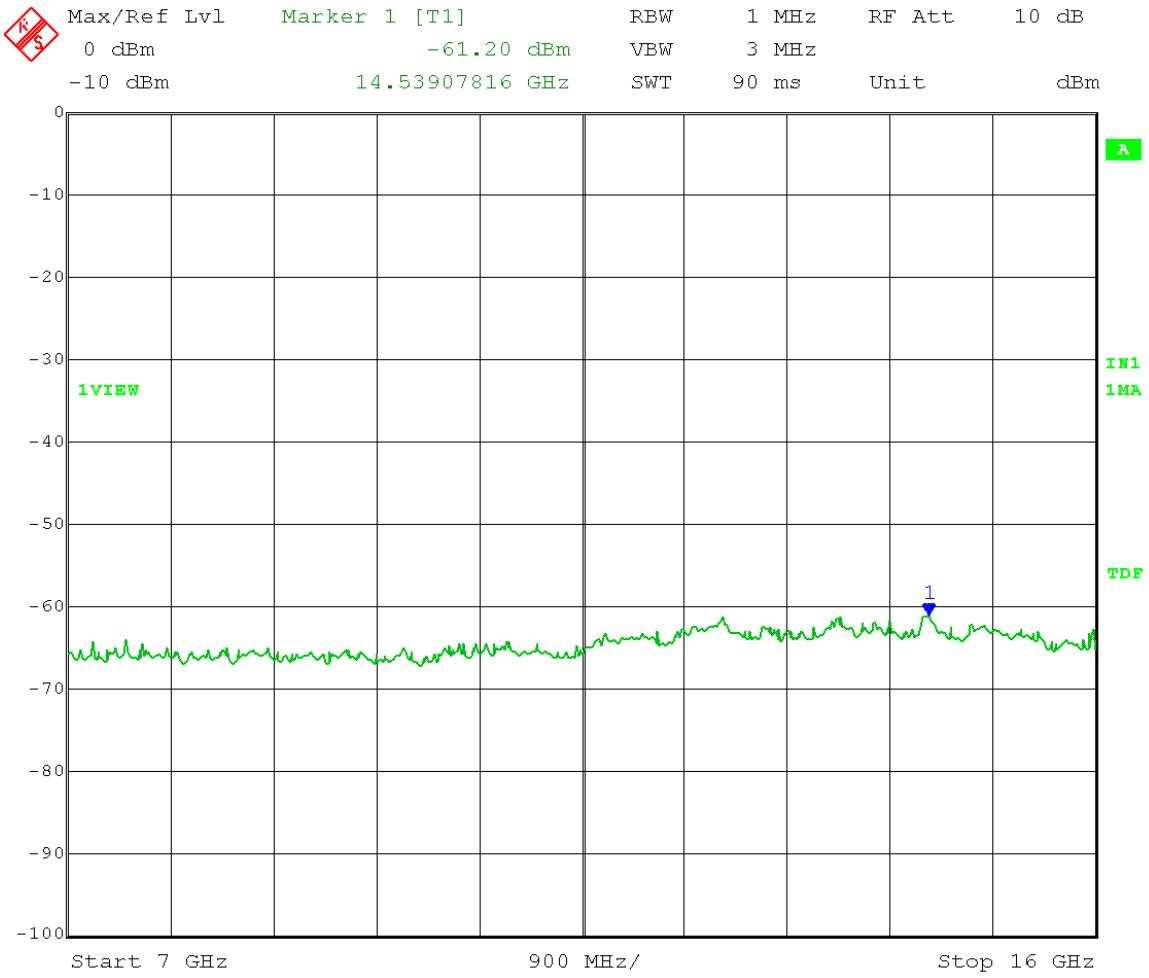
E = EIRP – 20log D + 104.8
= -70.77 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 52.49 dBµV/m
Margin = 1.51 dB (noise floor measurement)

Test Date:	01-31-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5 Channel bandwidth: 20MHz
	Output port: 0 OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters
	Frequency Range: 16 – 25 GHz



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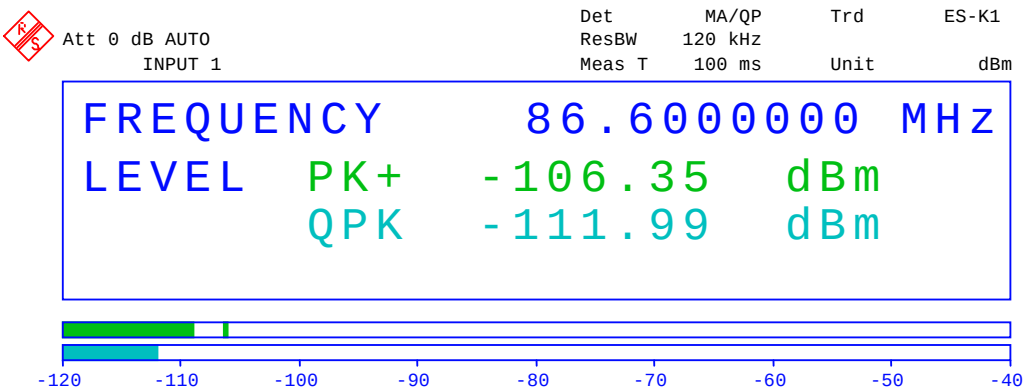
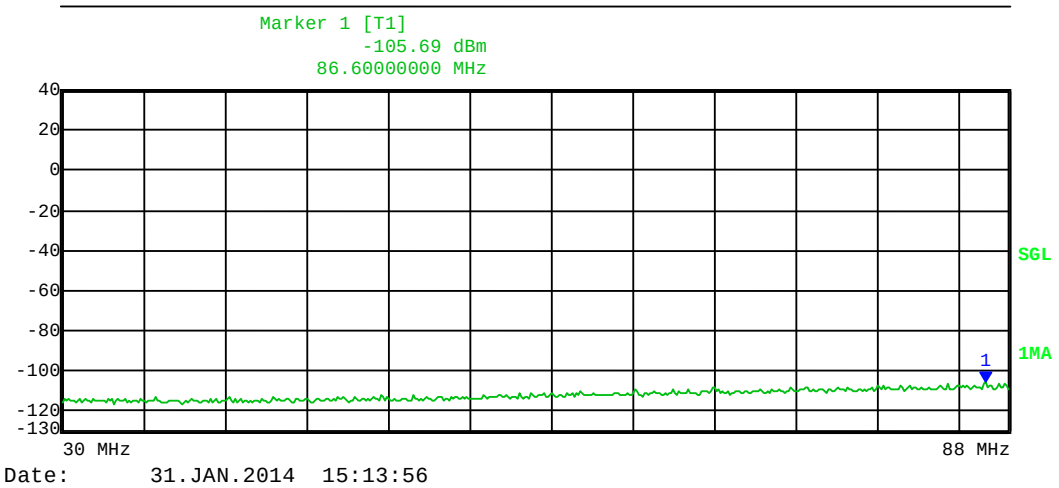
E = EIRP – 20log D + 104.8
= -61.20 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 62.06 dBµV/m
Margin = 11.94 dB (noise floor measurement)

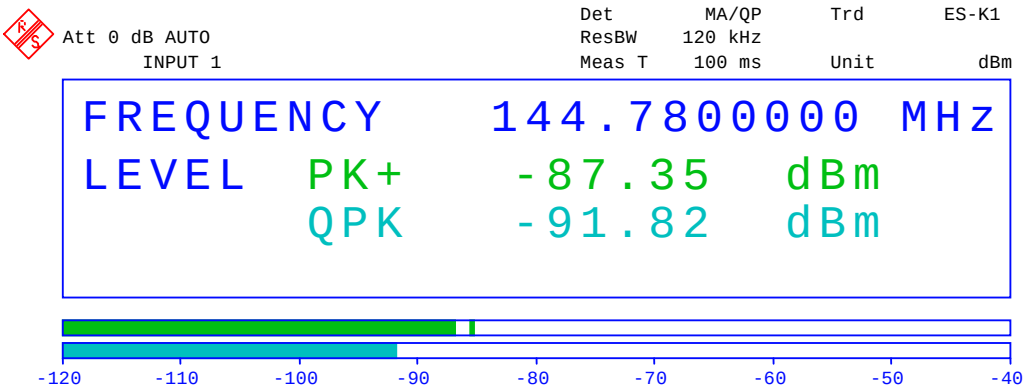
Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
High Channel Transmit = 2462 MHz
Output Power Setting 0 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 40 dBµV/m at 3 meters
Frequency Range: 30 – 88 MHz

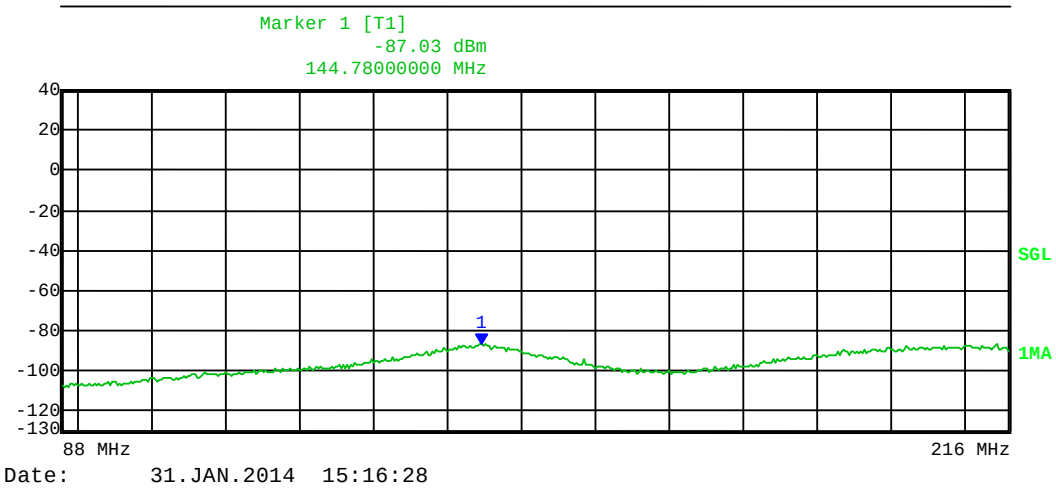




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -111.99 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 15.97 dBµV/m
<u>Margin = 24.03 dB</u>

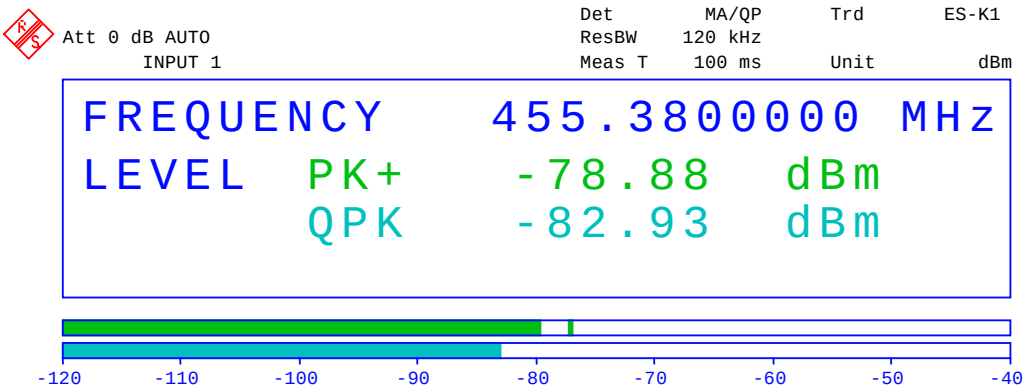
Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
High Channel Transmit = 2462 MHz
Output Power Setting 0 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 43.5 dBµV/m at 3 meters
Frequency Range: 88 – 216 MHz

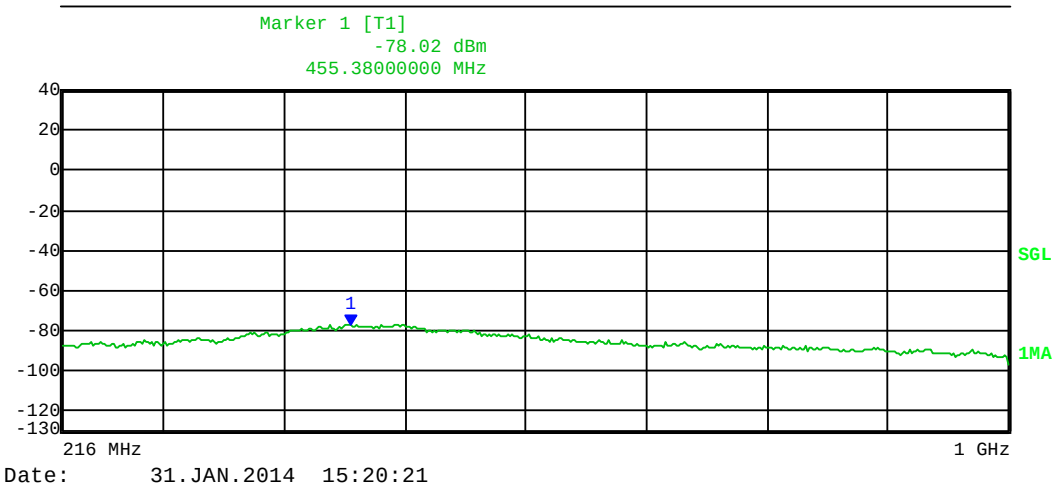




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -91.82 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 36.14 dBµV/m
Margin = 7.36 dB

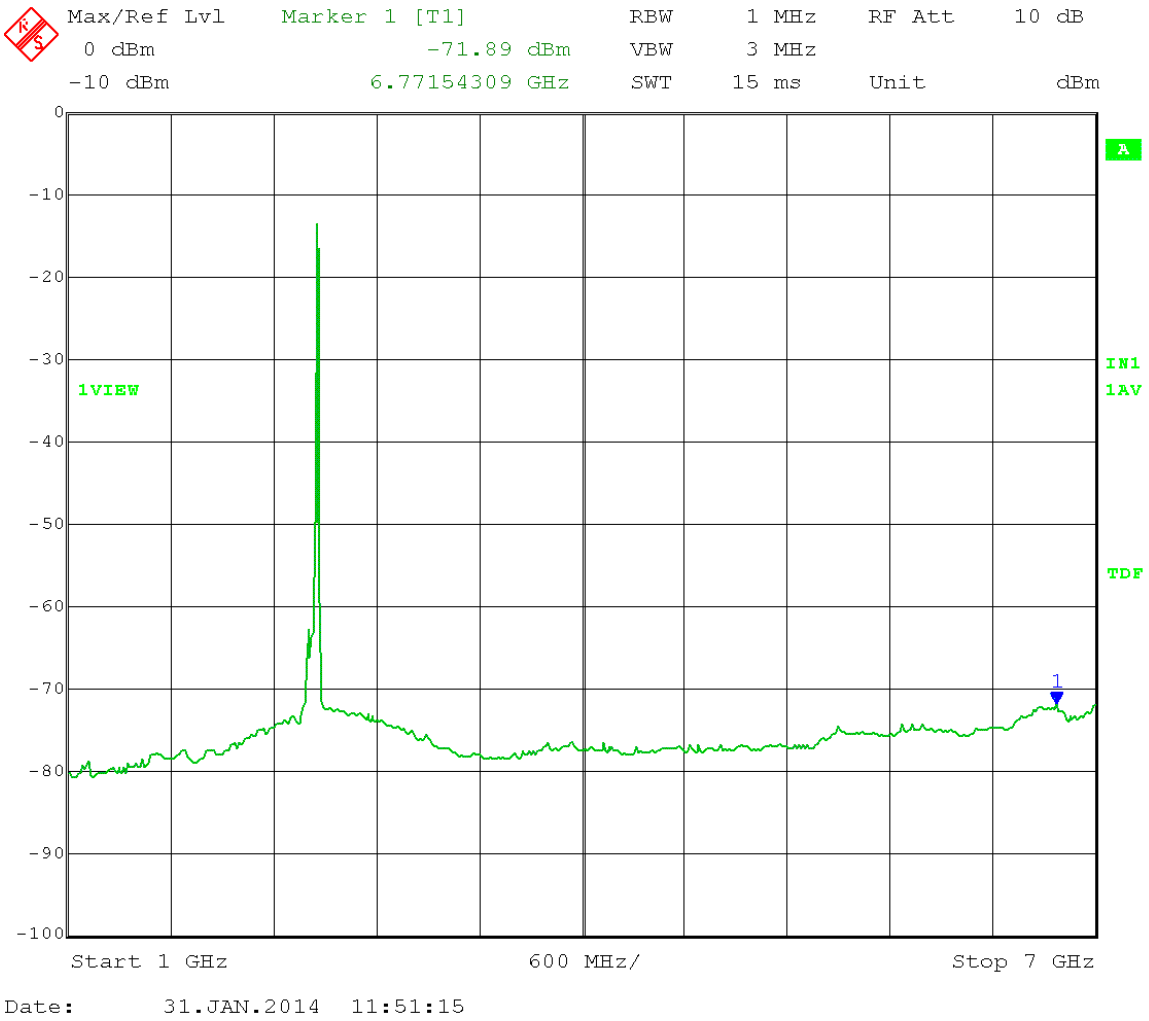
Test Date: 01-31-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
High Channel Transmit = 2462 MHz
Output Power Setting 0 Channel bandwidth: 20MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 46 dBµV/m at 3 meters
Frequency Range: 216 – 1000 MHz





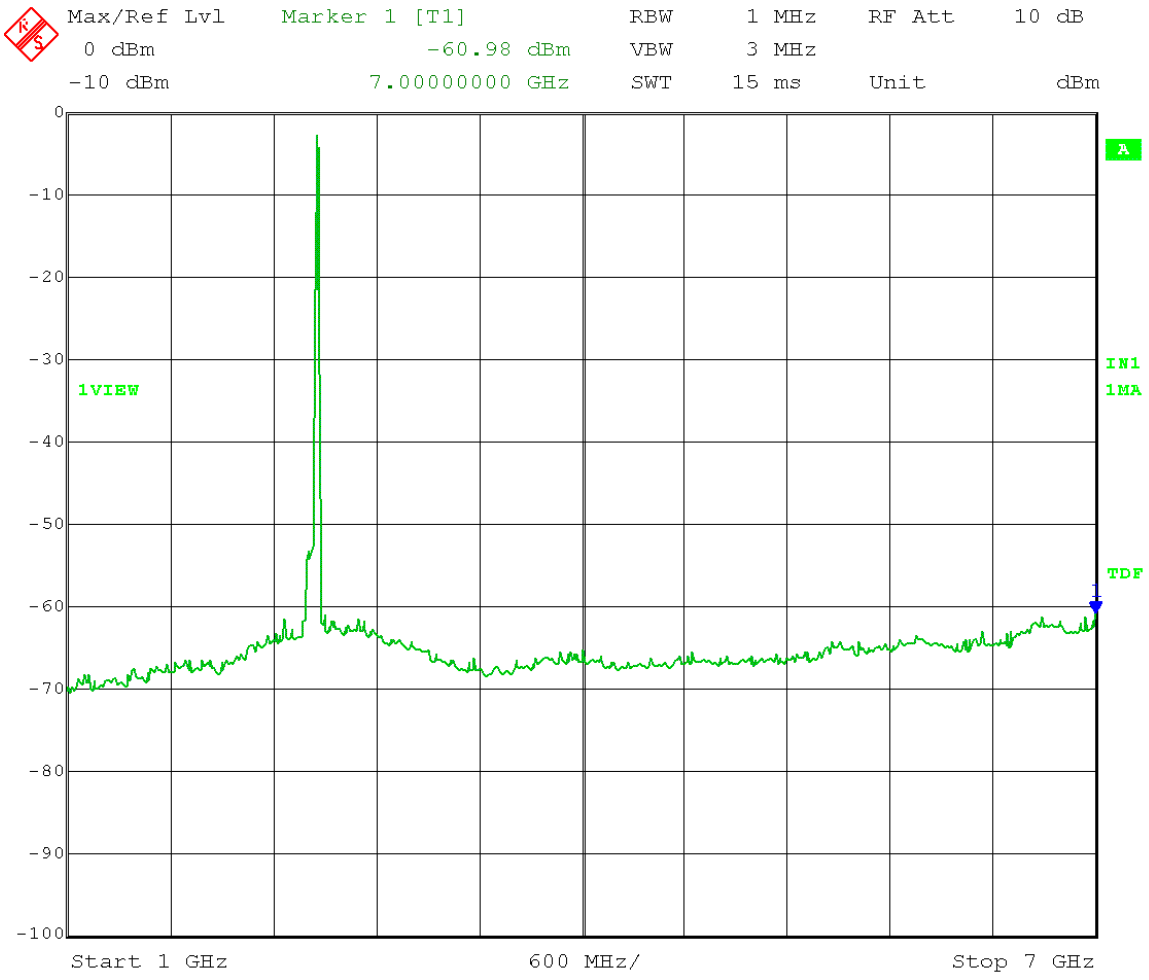
E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -82.93 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 45.03 dBµV/m
Margin = 0.97 dB

Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Average	Sweep = Auto Couple
	Trace = Max Hold	High Channel Transmit = 2462 MHz
	Output Power Setting 0	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters	
	Frequency Range: 1 – 7 GHz	



E = EIRP – 20log D + 104.8
= -71.89 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 51.37 dBµV/m
Margin = 2.63 dB (noise floor measurement)

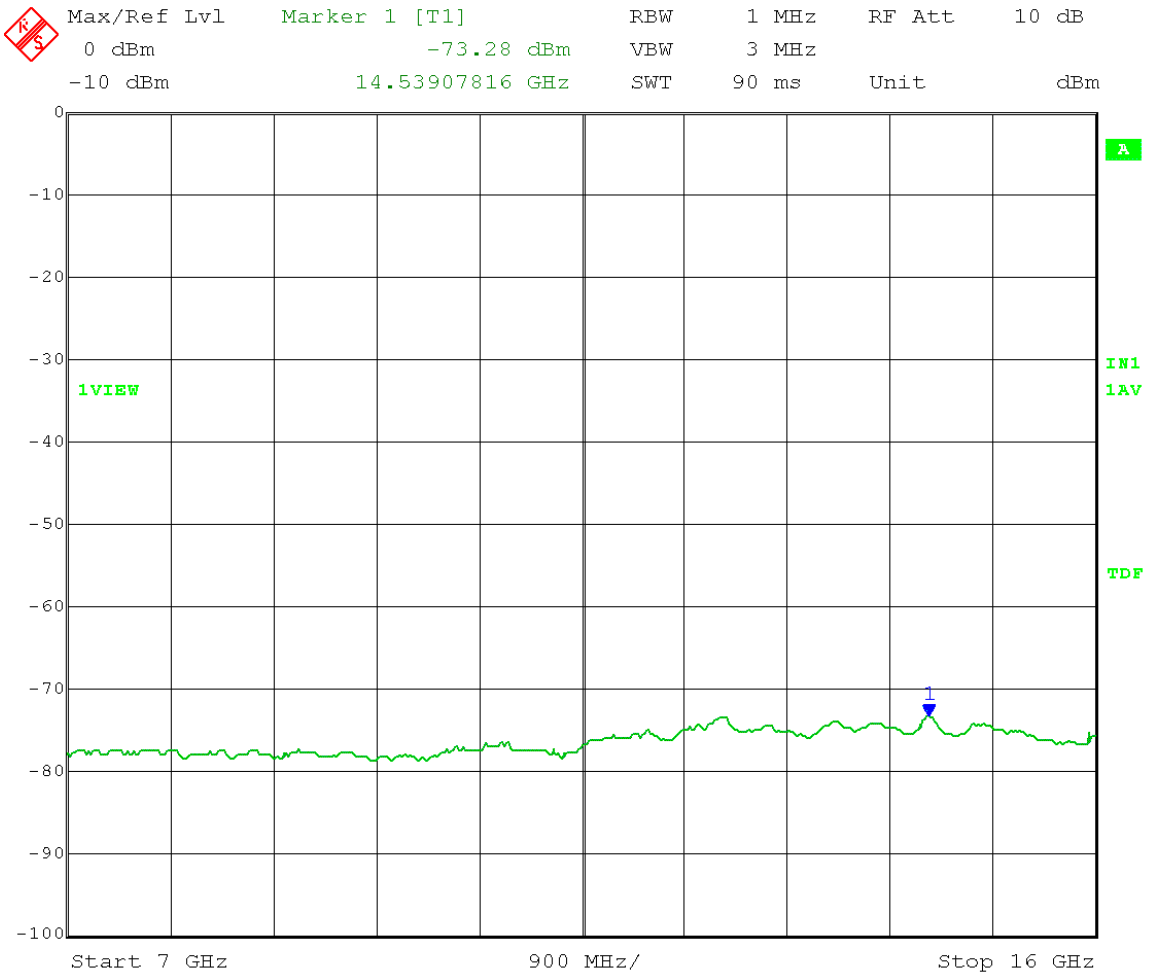
Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	High Channel Transmit = 2462 MHz
	Output Power Setting 0	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 1 – 7 GHz	



Date: 31.JAN.2014 11:54:02

E = EIRP – 20log D + 104.8
= -60.98 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 62.28 dBµV/m
Margin = 11.72 dB (noise floor measurement)

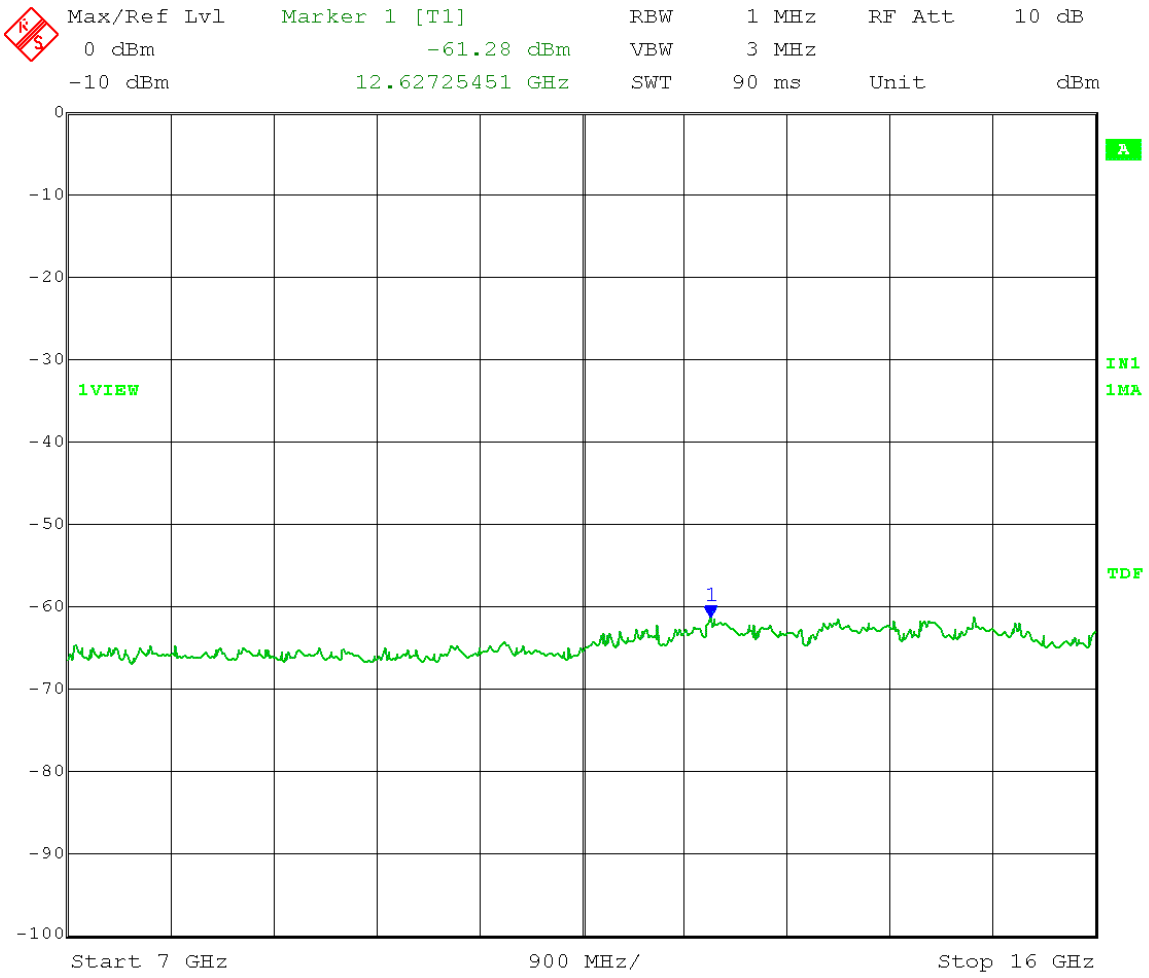
Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Average	Sweep = Auto Couple
	Trace = Max Hold	High Channel Transmit = 2462 MHz
	Output Power Setting 0	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters	
	Frequency Range: 7 – 16 GHz	



Date: 31.JAN.2014 13:14:10

E = EIRP – 20log D + 104.8
= -73.28 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 49.98 dBµV/m
Margin = 4.02 dB (noise floor measurement)

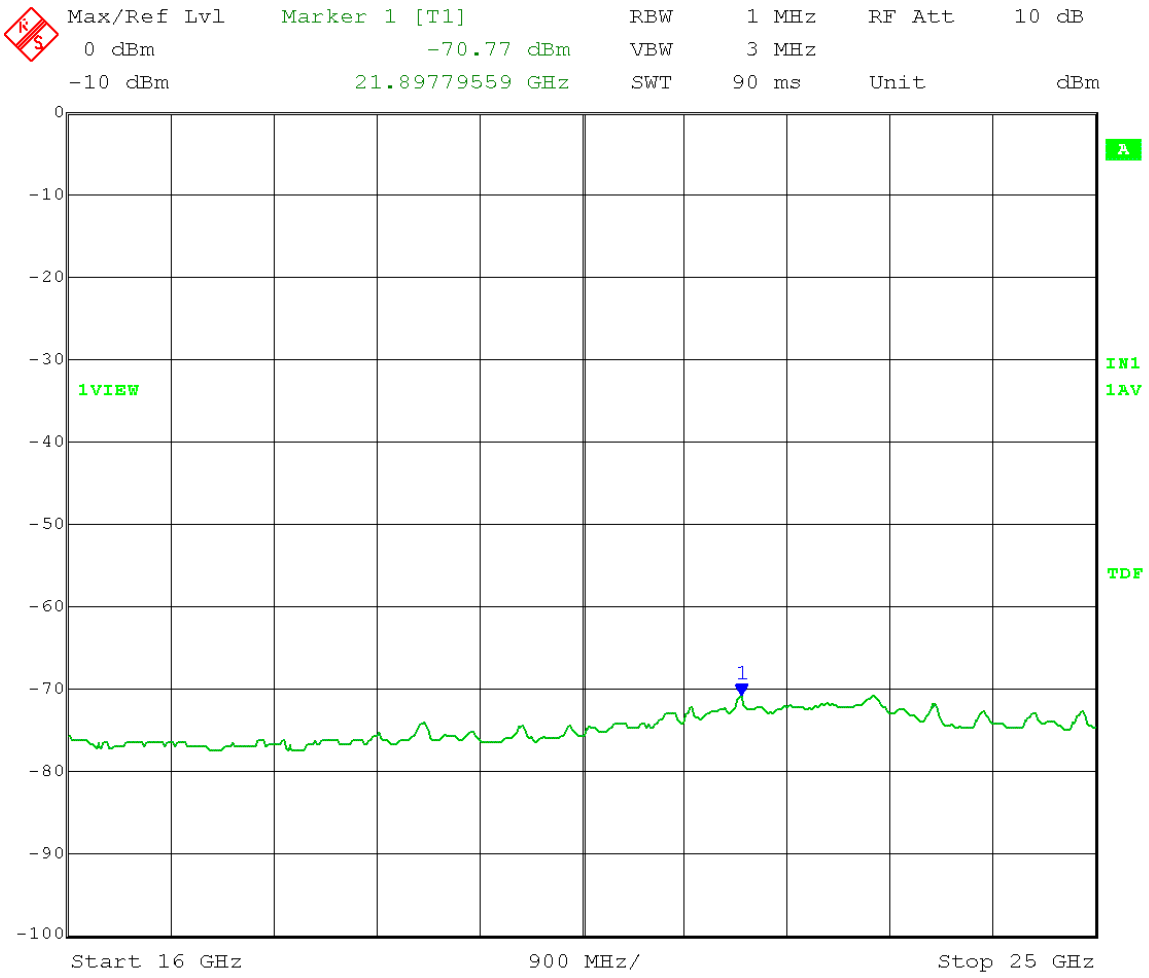
Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	High Channel Transmit = 2462 MHz
	Output Power Setting 0	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 7 – 16 GHz	



Date: 31.JAN.2014 13:16:13

E = EIRP – 20log D + 104.8
= -61.28 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 61.98 dBµV/m
Margin = 12.02 dB (noise floor measurement)

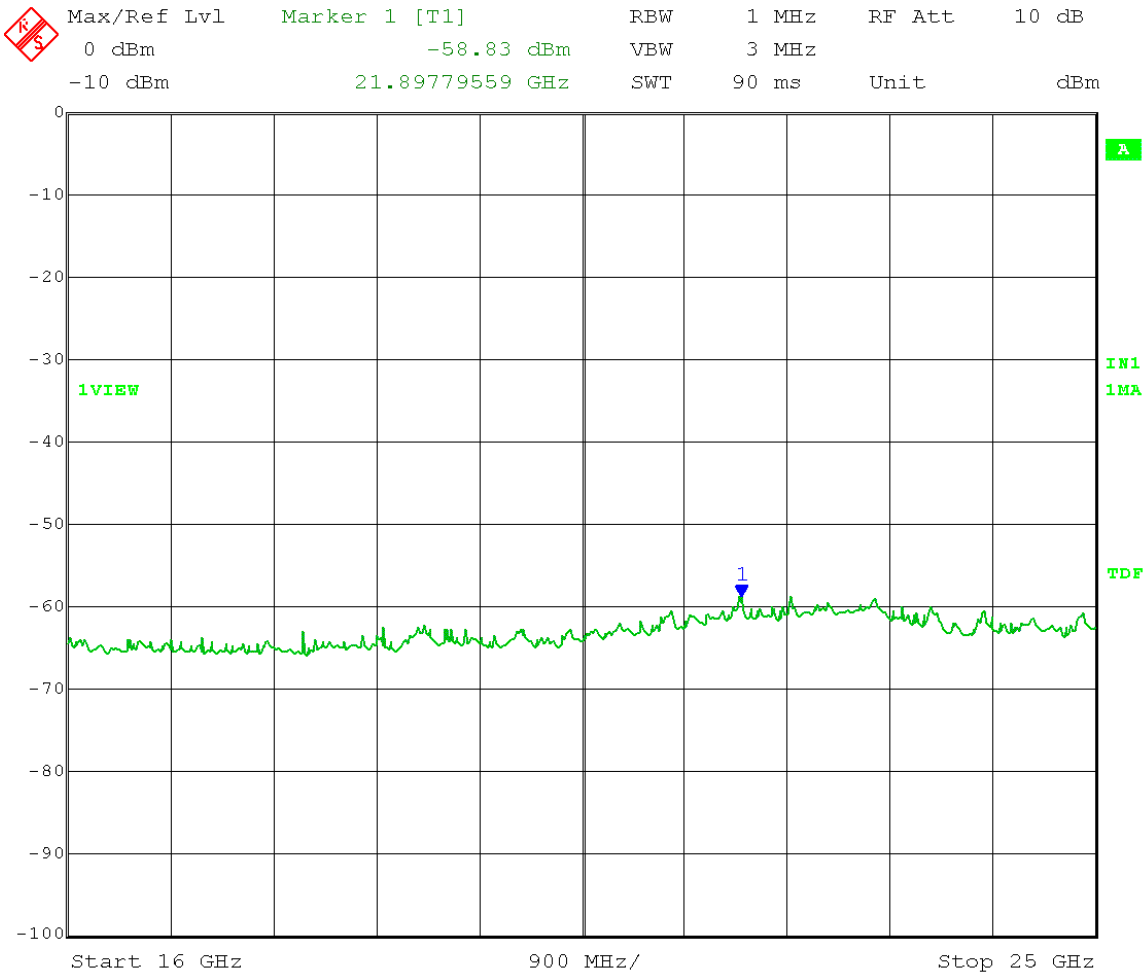
Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Average	Sweep = Auto Couple
	Trace = Max Hold	High Channel Transmit = 2462 MHz
	Output Power Setting 0	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters	
	Frequency Range: 16 – 25 GHz	



Date: 31.JAN.2014 13:18:28

E = EIRP – 20log D + 104.8
= -70.77 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 52.49 dBµV/m
Margin = 1.51 dB (noise floor measurement)

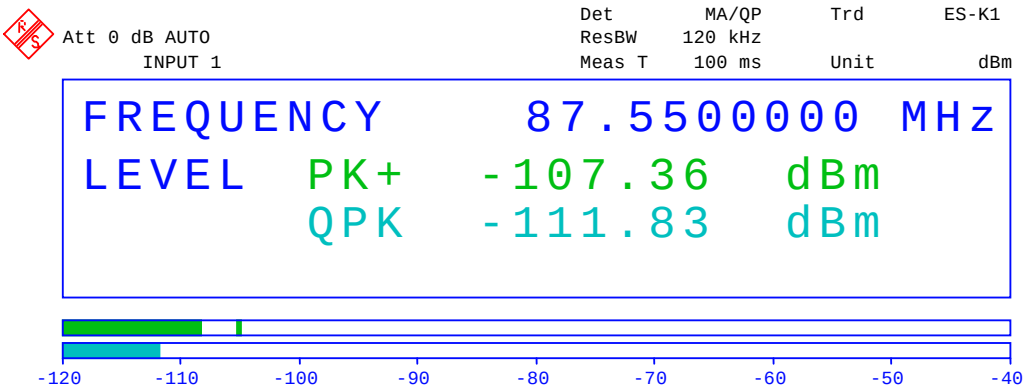
Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	High Channel Transmit = 2462 MHz
	Output Power Setting 0	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 16 – 25 GHz	

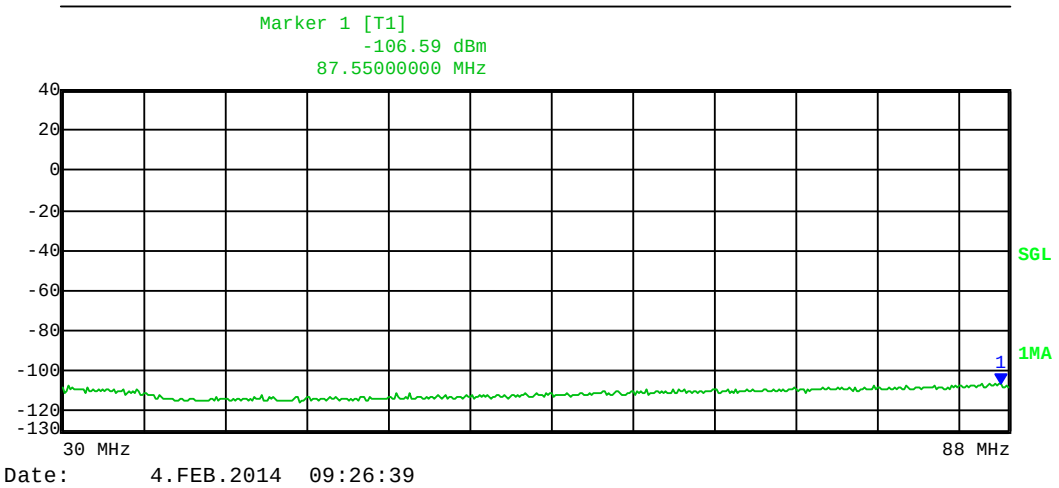


Date: 31.JAN.2014 13:19:57

E = EIRP – 20log D + 104.8
= -58.83 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 64.43 dBµV/m
Margin = 9.57 dB (noise floor measurement)

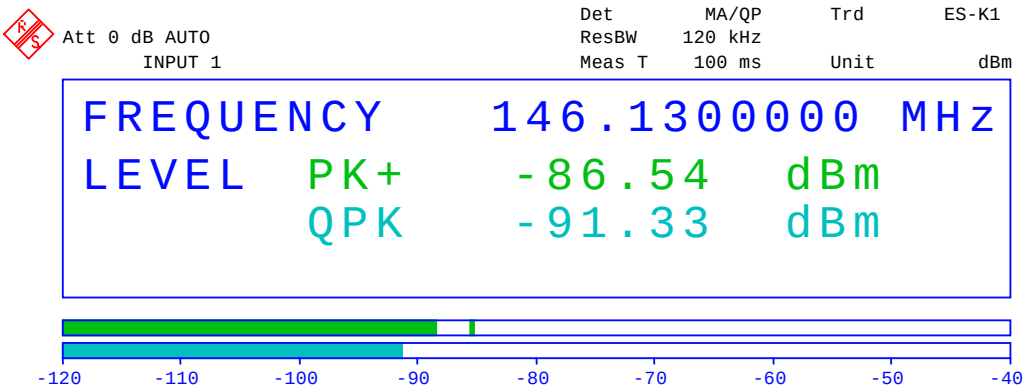
Test Date: 02-04-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Low Channel Transmit = 2422 MHz
Output Power Setting 1 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 40 dBµV/m at 3 meters
Frequency Range: 30 – 88 MHz

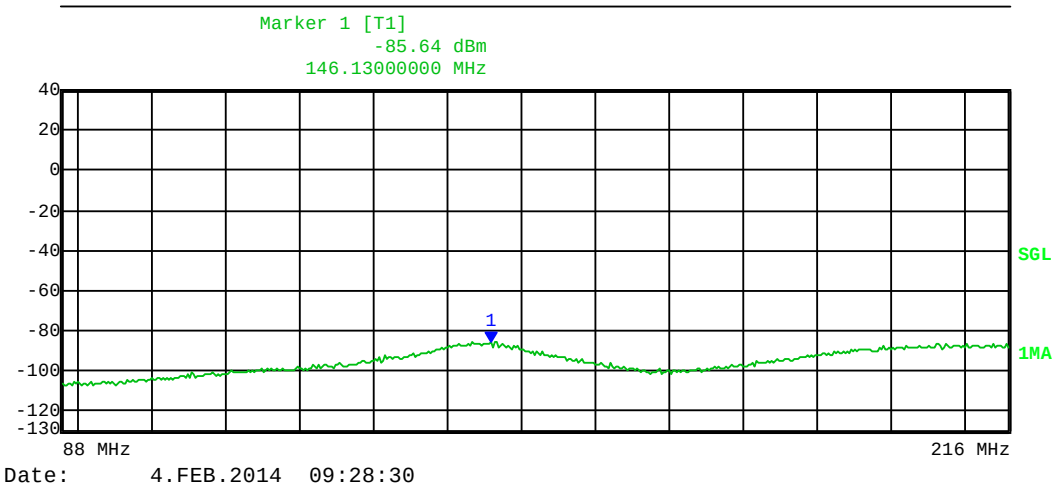




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -111.83 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 16.13 dBµV/m
Margin = 23.87 dB

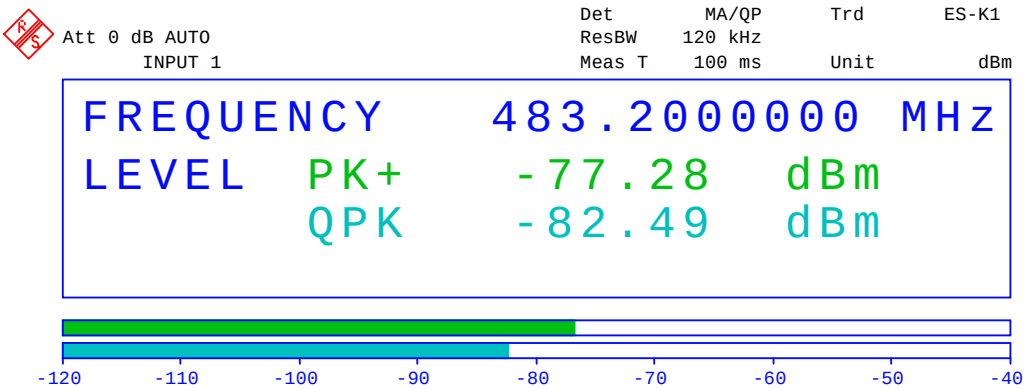
Test Date: 02-04-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Low Channel Transmit = 2422 MHz
Output Power Setting 1 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 43.5 dBµV/m at 3 meters
Frequency Range: 88 – 216 MHz

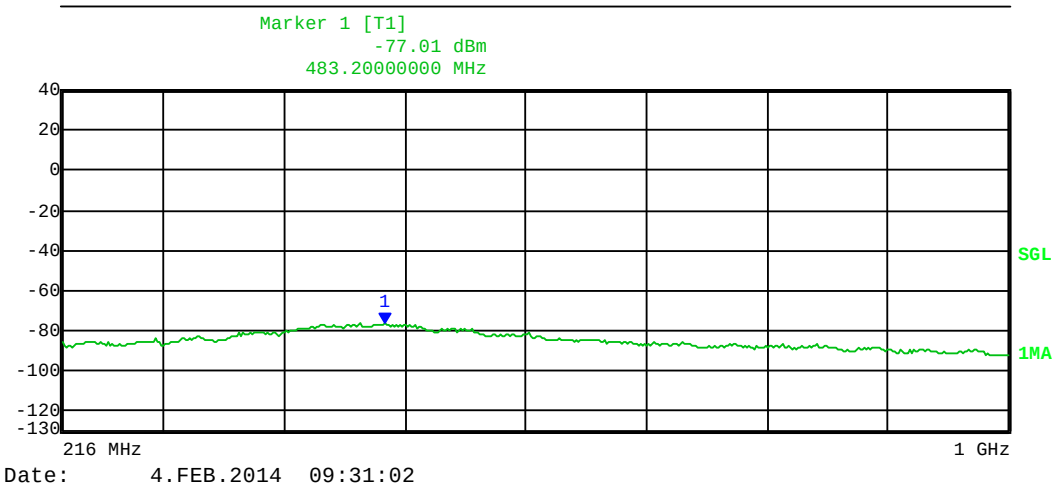




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -91.33 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 36.63 dBµV/m
Margin = 6.87 dB

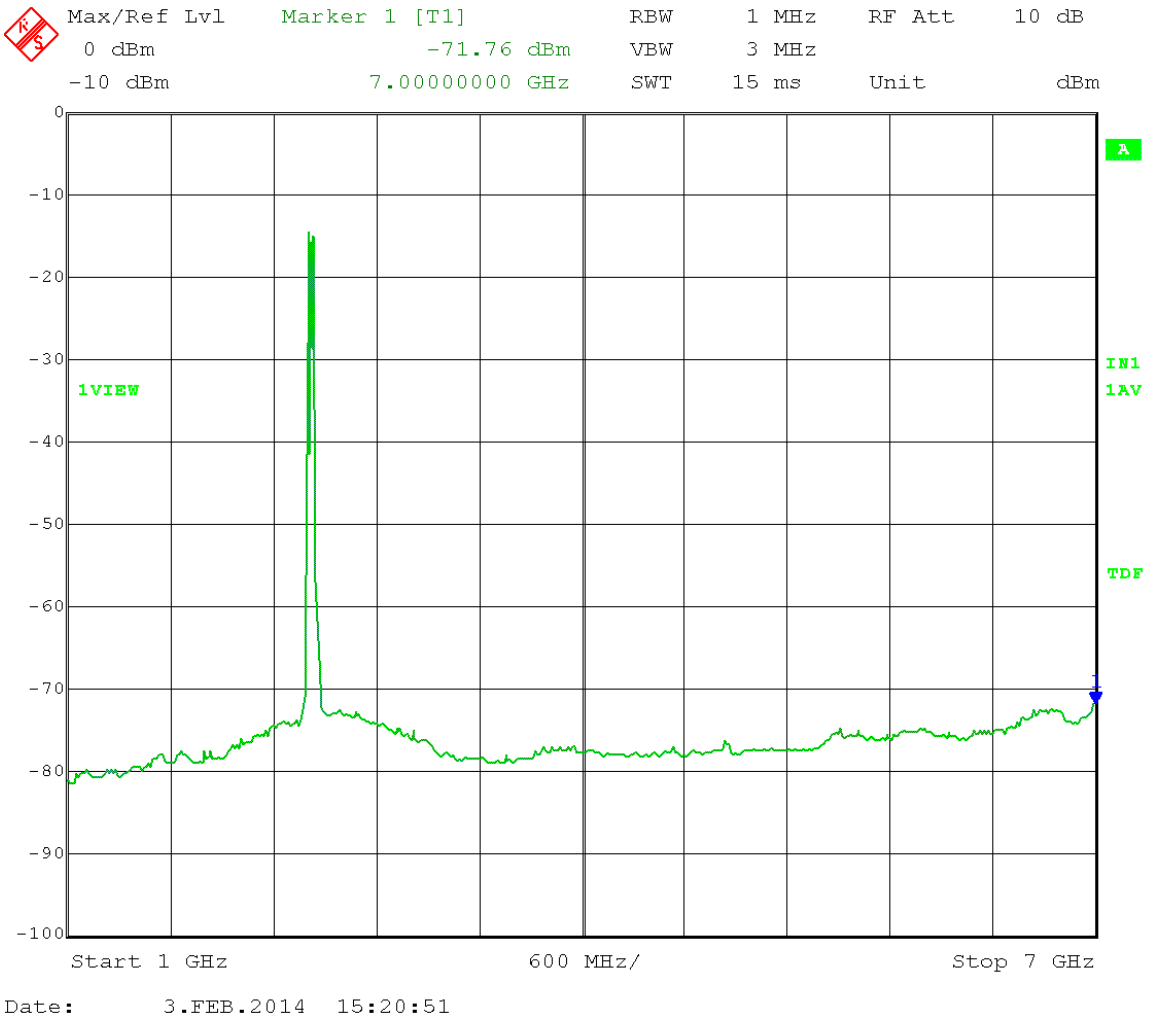
Test Date: 02-04-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Low Channel Transmit = 2422 MHz
Output Power Setting 1 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 46 dBµV/m at 3 meters
Frequency Range: 216 – 1000 MHz





E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -82.49 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 45.47 dBµV/m
Margin = 0.53 dB

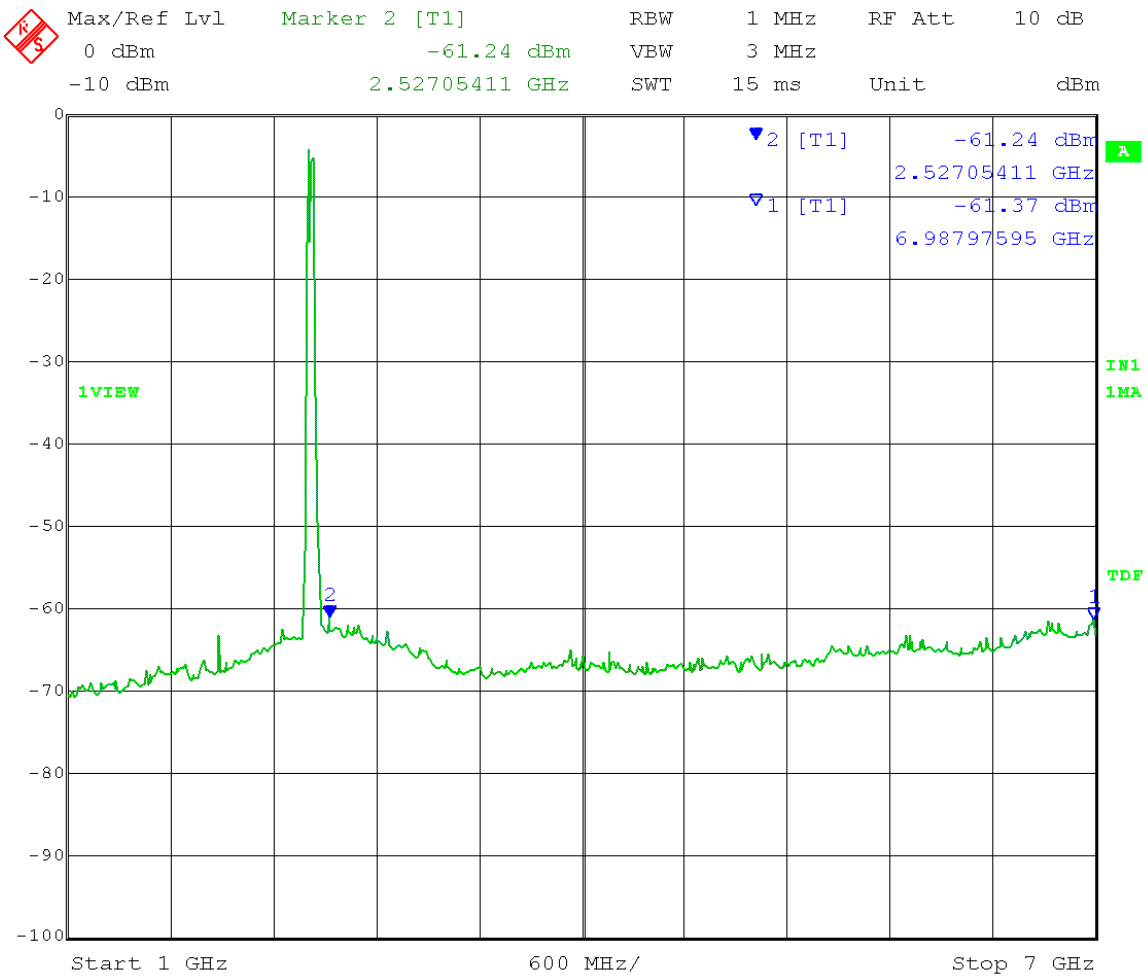
Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Average Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 1 Channel bandwidth: 40 MHz
	Output port: 0 OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters
	Frequency Range: 1 – 7 GHz



Date: 3.FEB.2014 15:20:51

E = EIRP – 20log D + 104.8
= -71.76 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 51.50 dBµV/m
Margin = 2.50 dB (noise floor measurement)

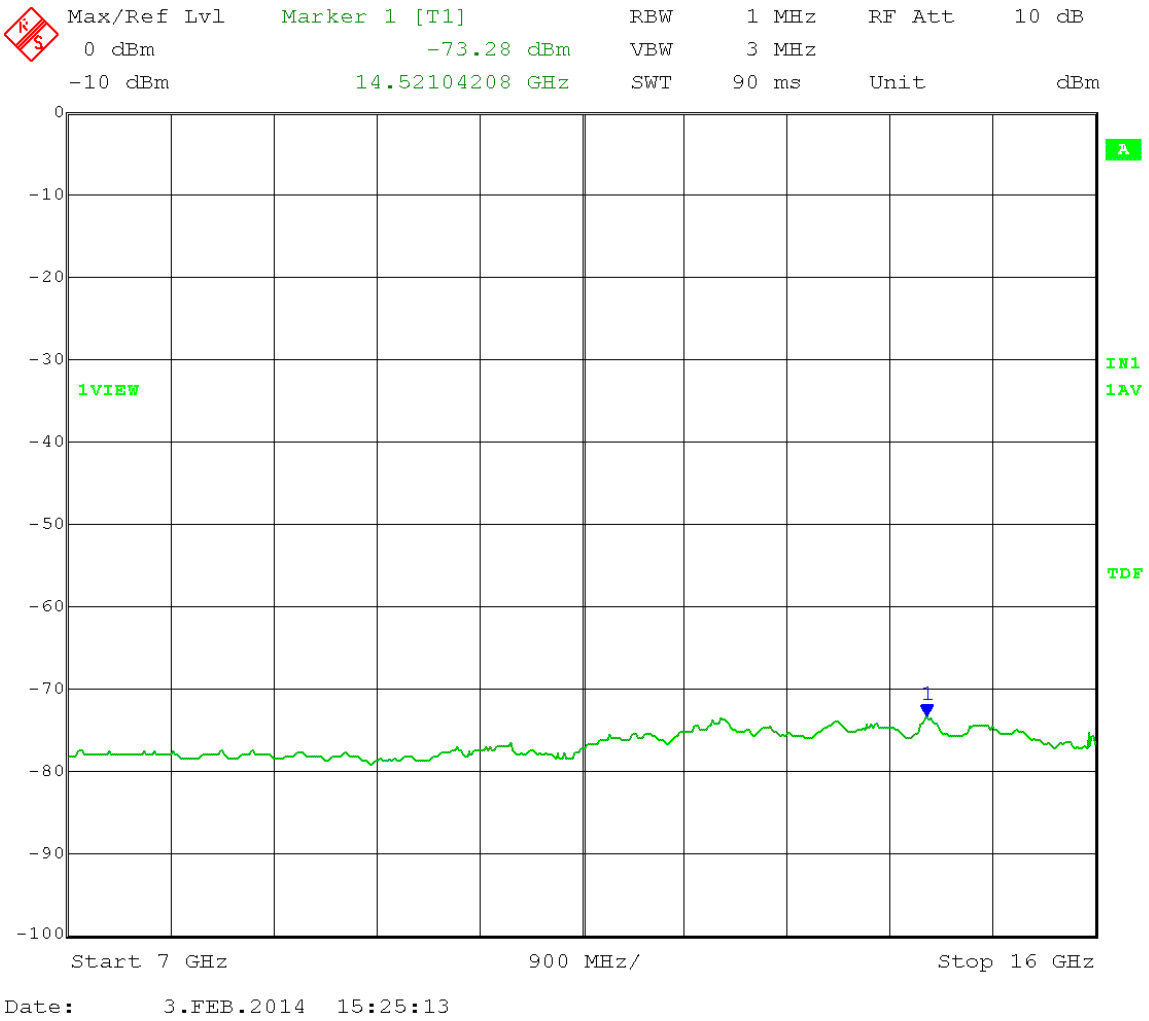
Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Low Channel Transmit = 2422 MHz
	Output Power Setting 1	Channel bandwidth: 40 MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 1 – 7 GHz	



Date: 3.FEB.2014 15:22:58

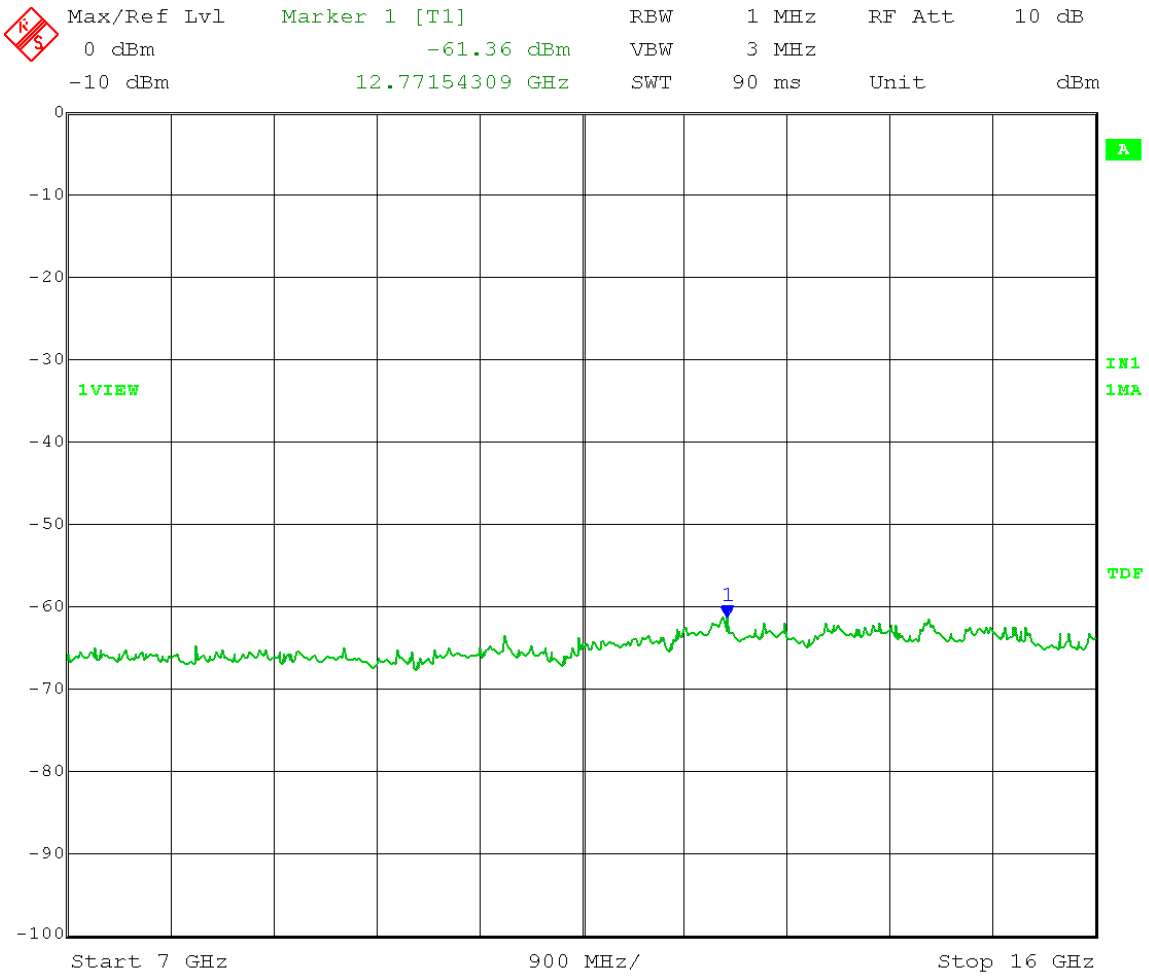
E = EIRP – 20log D + 104.8
= -61.24 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 62.02 dBµV/m
Margin = 11.98 dB (noise floor measurement)

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Average Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 1 Channel bandwidth: 40 MHz
	Output port: 0 OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters
	Frequency Range: 7 – 16 GHz



E = EIRP – 20log D + 104.8
= -73.28 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 49.98 dBµV/m
Margin = 4.02 dB (noise floor measurement)

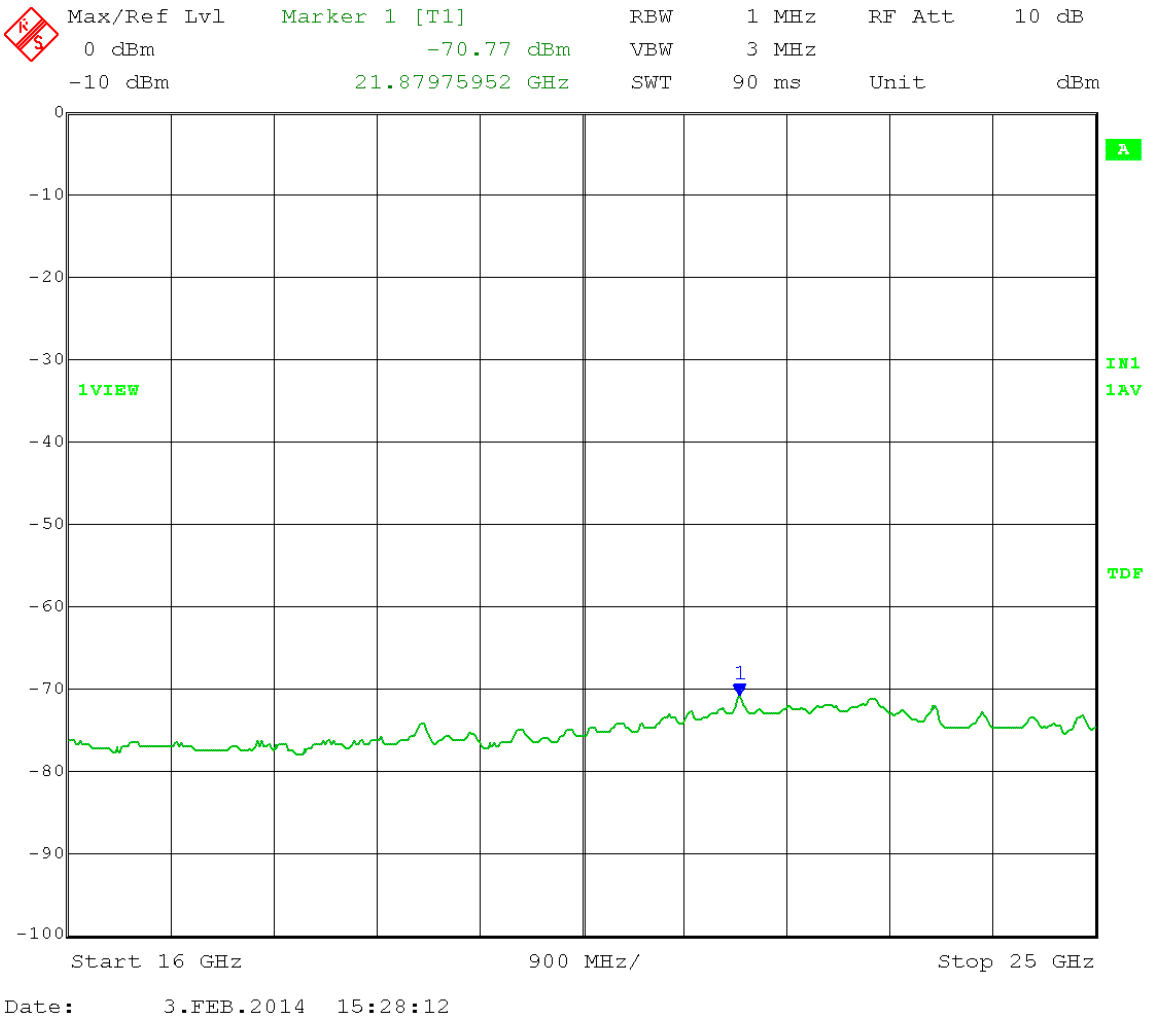
Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Low Channel Transmit = 2422 MHz
	Output Power Setting 1	Channel bandwidth: 40 MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 7 – 16 GHz	



Date: 3.FEB.2014 15:26:35

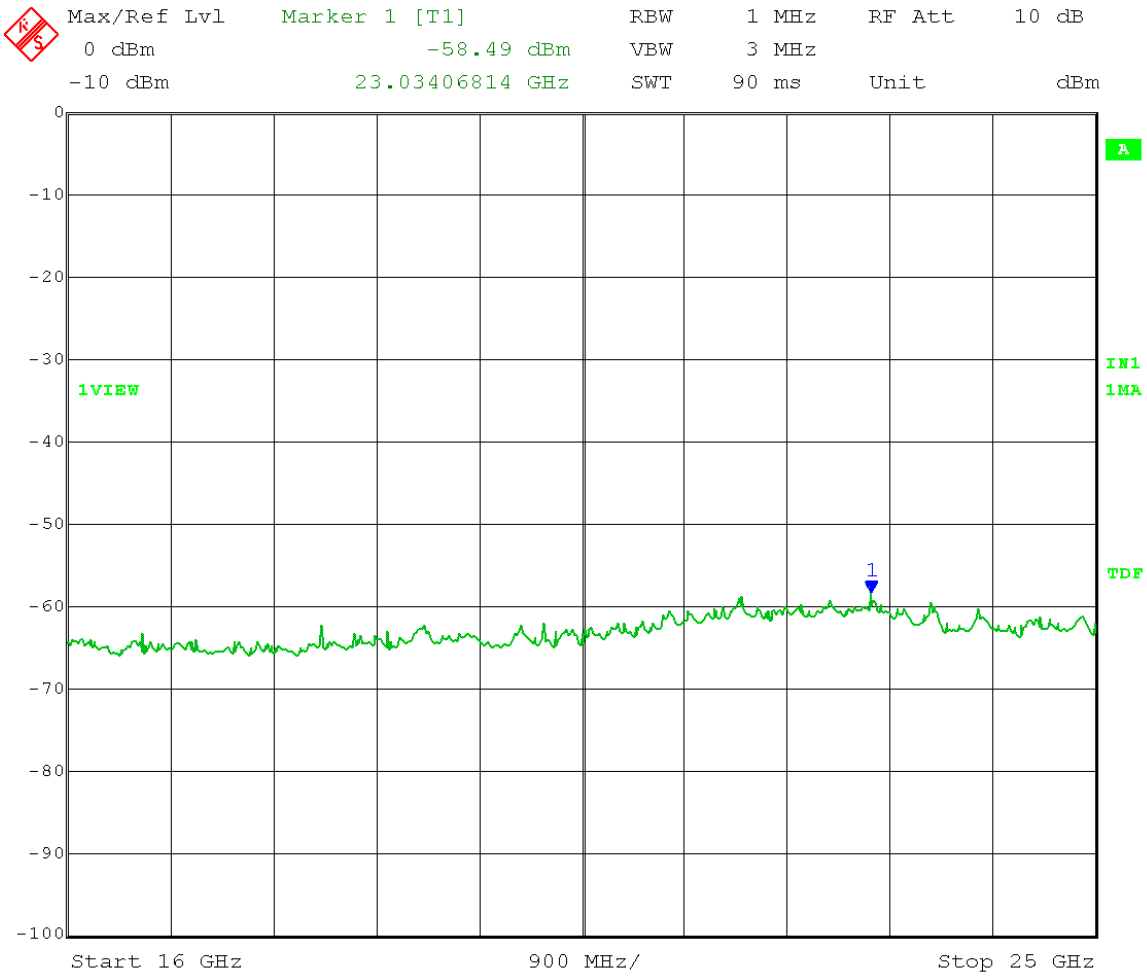
E = EIRP – 20log D + 104.8
= -61.36 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 61.90 dBµV/m
Margin = 12.10 dB (noise floor measurement)

Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Average	Sweep = Auto Couple
	Trace = Max Hold	Low Channel Transmit = 2422 MHz
	Output Power Setting 1	Channel bandwidth: 40 MHz
	Output port: 0	OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters	
	Frequency Range: 16 – 25 GHz	



E = EIRP – 20log D + 104.8
= -70.77 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 52.49 dBµV/m
<u>Margin = 1.51 dB</u> (noise floor measurement)

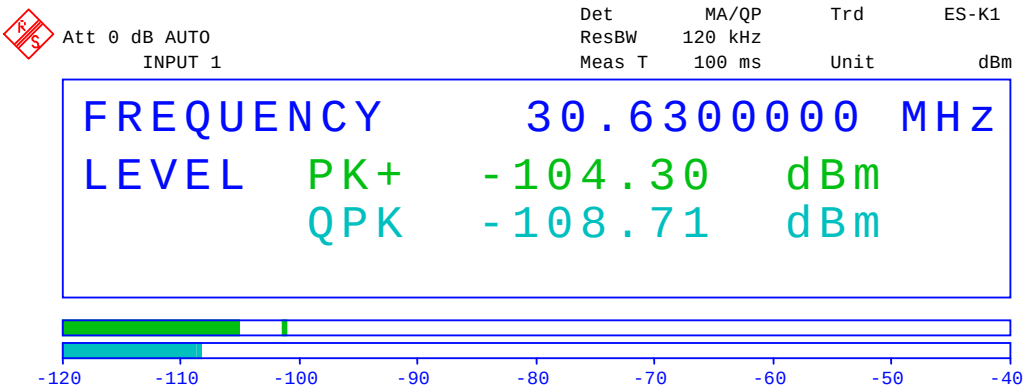
Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold Low Channel Transmit = 2422 MHz
	Output Power Setting 1 Channel bandwidth: 40 MHz
	Output port: 0 OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters
	Frequency Range: 16 – 25 GHz

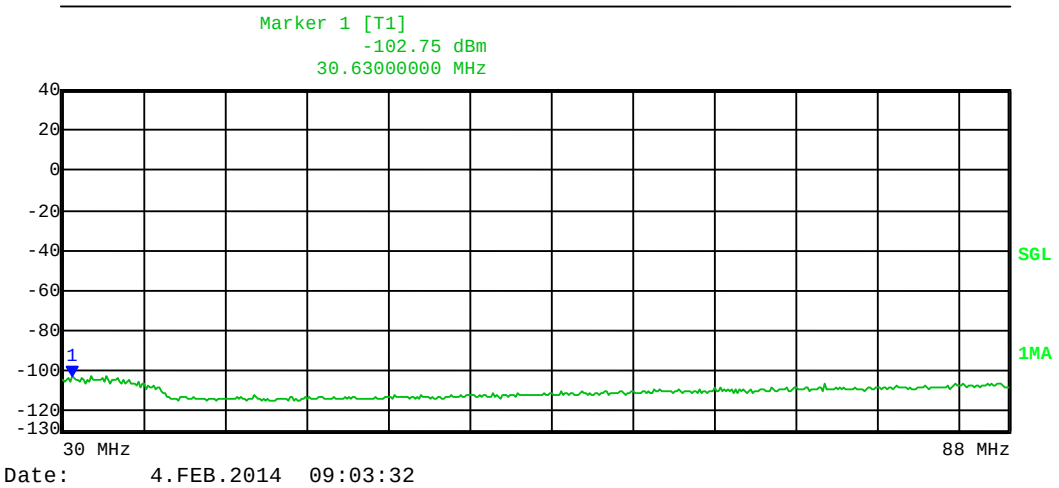


Date: 3.FEB.2014 15:29:48

E = EIRP – 20log D + 104.8
= -58.49 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 64.77 dBµV/m
Margin = 9.23 dB (noise floor measurement)

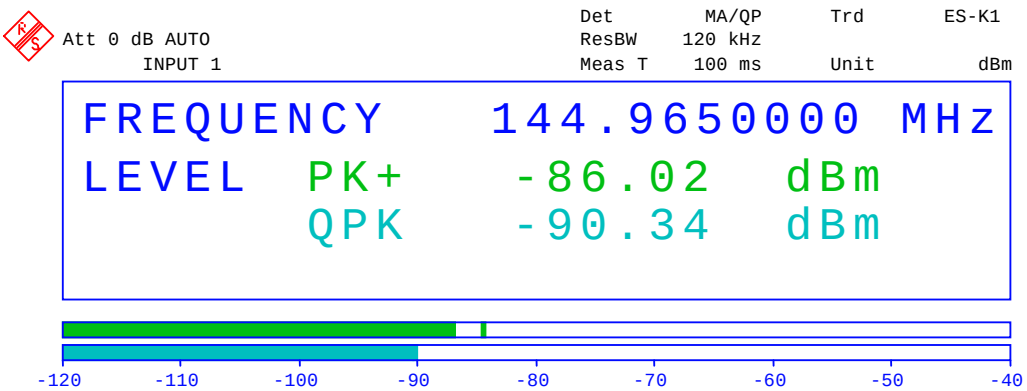
Test Date: 02-04-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 40 dBµV/m at 3 meters
Frequency Range: 30 – 88 MHz

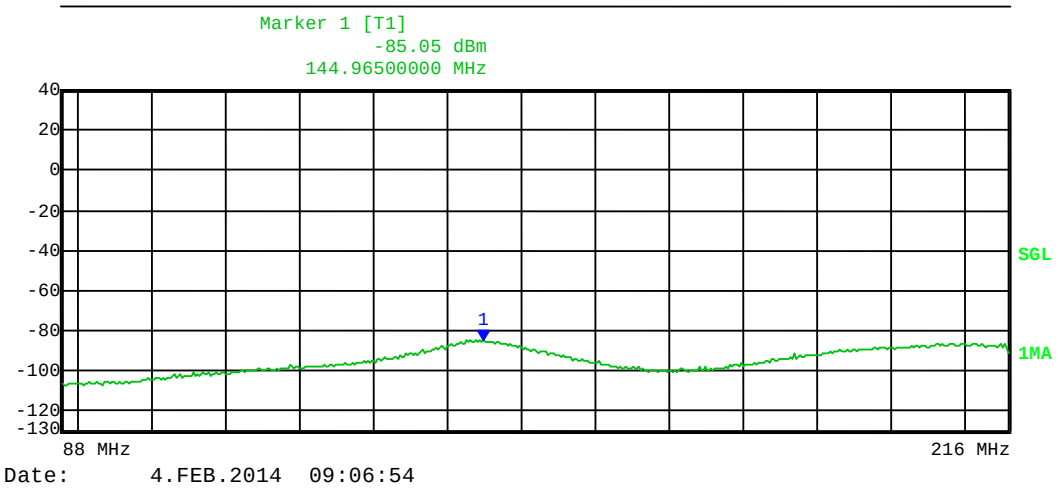




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -108.71 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 19.25 dBµV/m
Margin = 20.75 dB

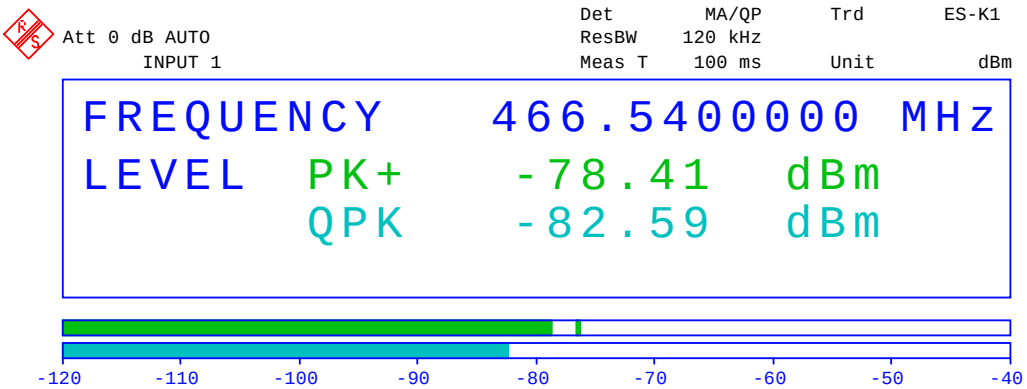
Test Date: 02-04-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 43.5 dBµV/m at 3 meters
Frequency Range: 88 – 216 MHz

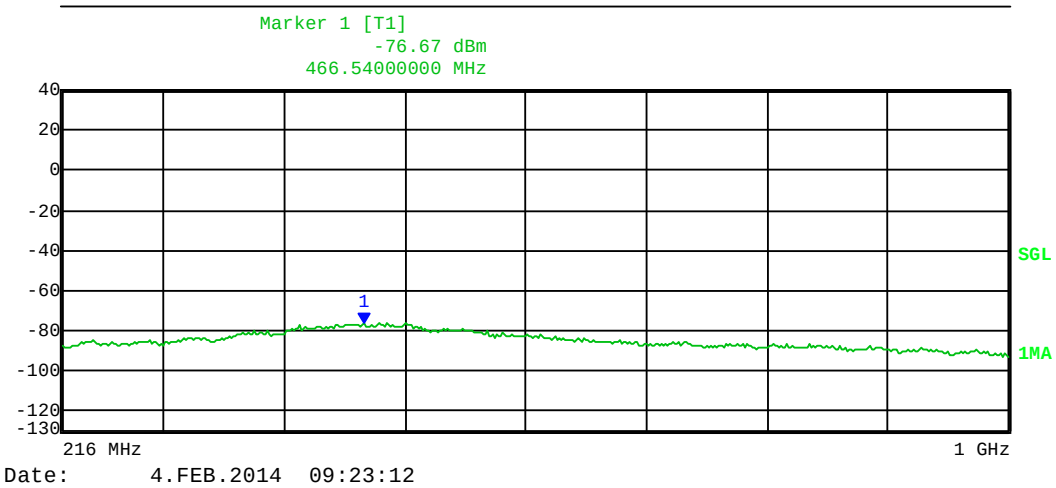




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -90.34 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 37.62 dBµV/m
Margin = 5.88 dB

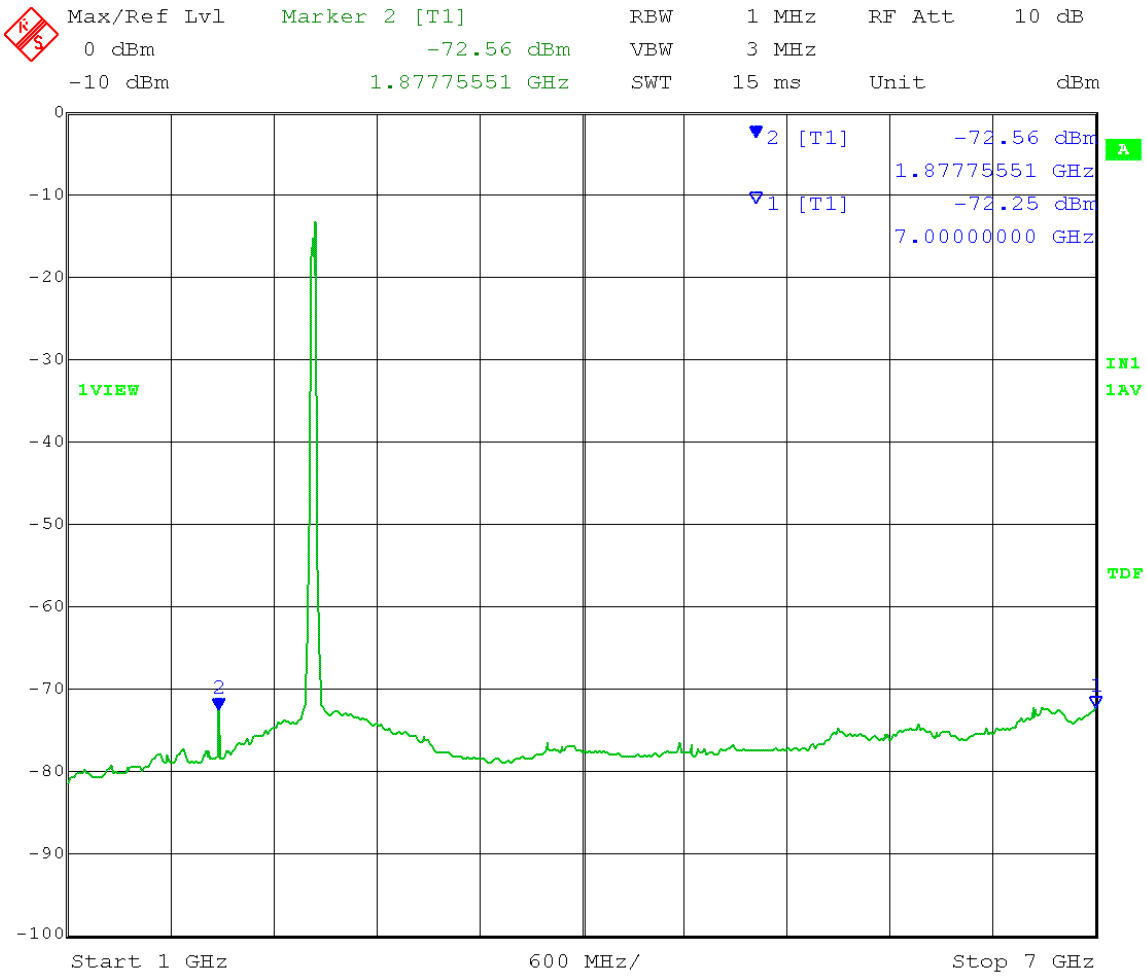
Test Date: 02-04-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 46 dBµV/m at 3 meters
Frequency Range: 216 – 1000 MHz





E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -82.59 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 45.37 dBµV/m
Margin = 0.63 dB

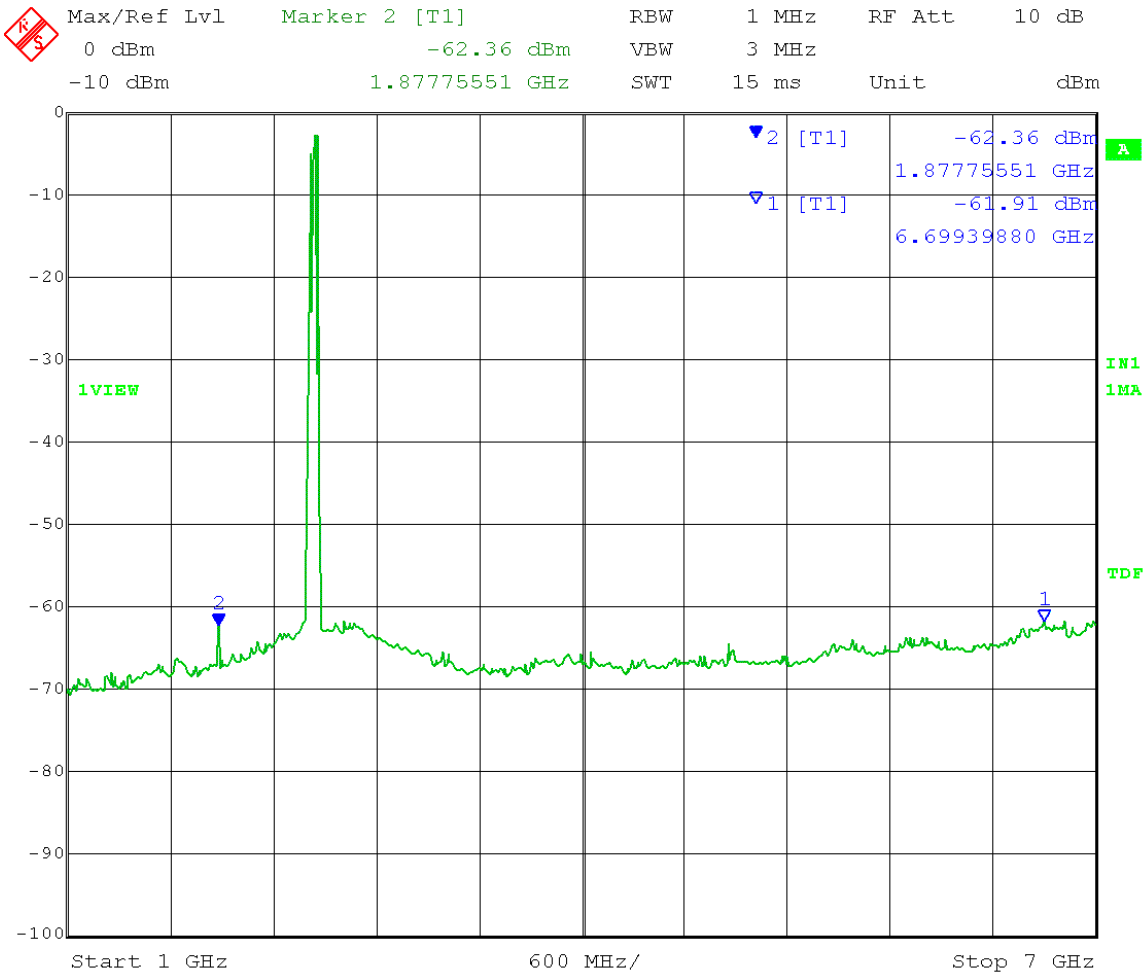
Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Average	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5	Channel bandwidth: 40MHz
	Output port: 0	OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters	
	Frequency Range: 1 – 7 GHz	



Date: 3.FEB.2014 15:01:04

E = EIRP – 20log D + 104.8
= -72.25 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 51.01 dBµV/m
Margin = 2.99 dB

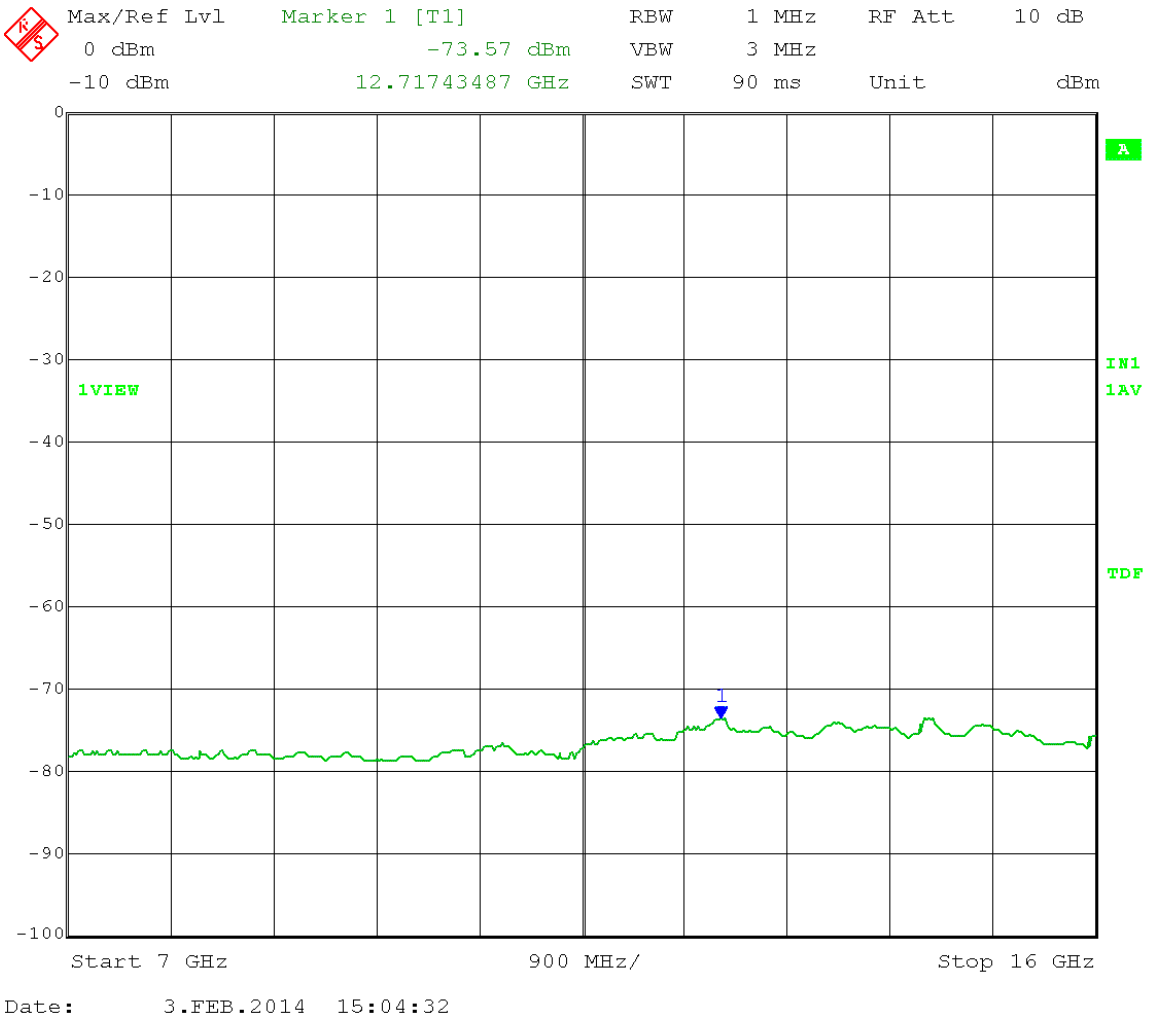
Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5	Channel bandwidth: 40MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 1 – 7 GHz	



Date: 3.FEB.2014 15:02:38

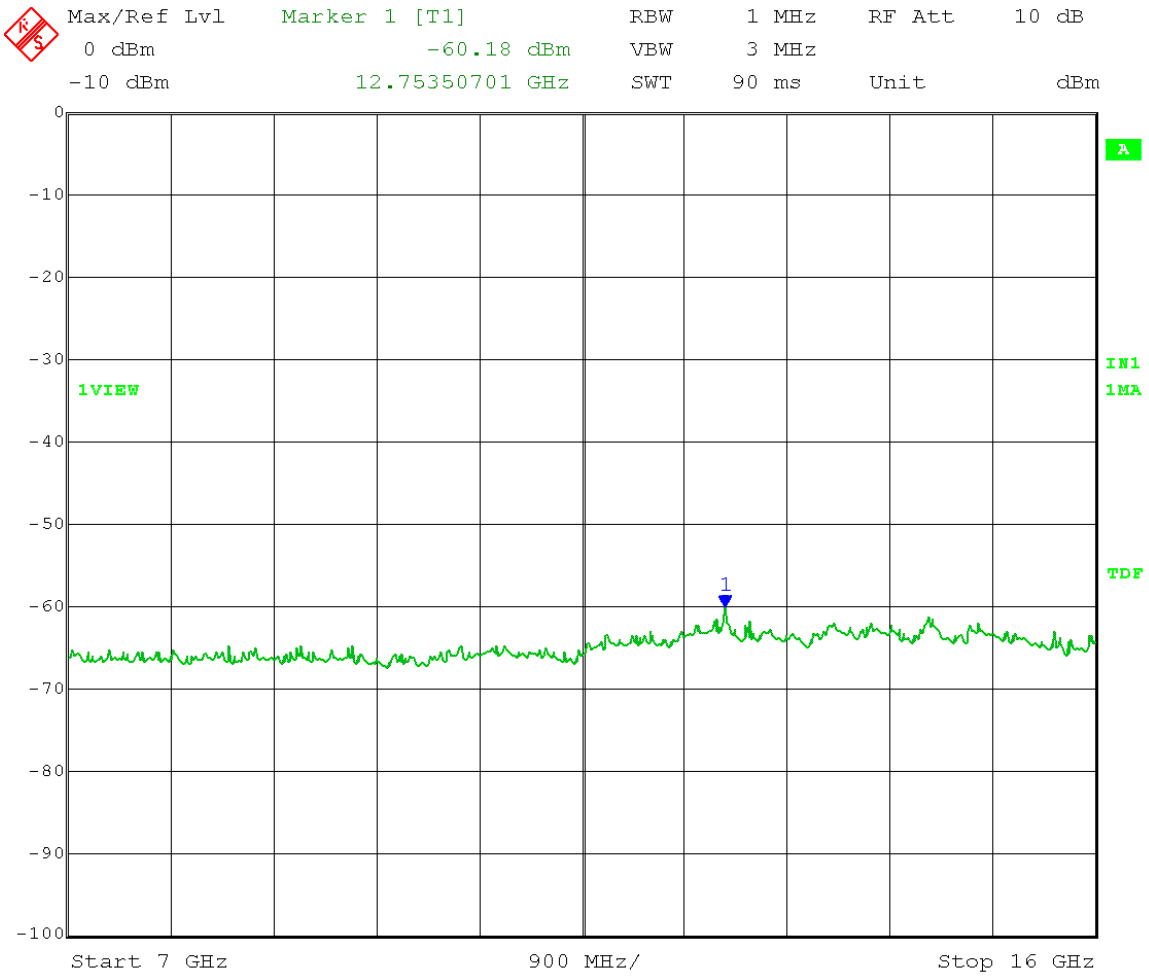
E = EIRP – 20log D + 104.8
= -61.91 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 61.35 dBµV/m
Margin = 12.65 dB (noise floor measurement)

Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Average	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5	Channel bandwidth: 40MHz
	Output port: 0	OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters	
	Frequency Range: 7 – 16 GHz	



E = EIRP – 20log D + 104.8
= -73.57 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 49.69 dBµV/m
Margin = 4.31 dB (noise floor measurement)

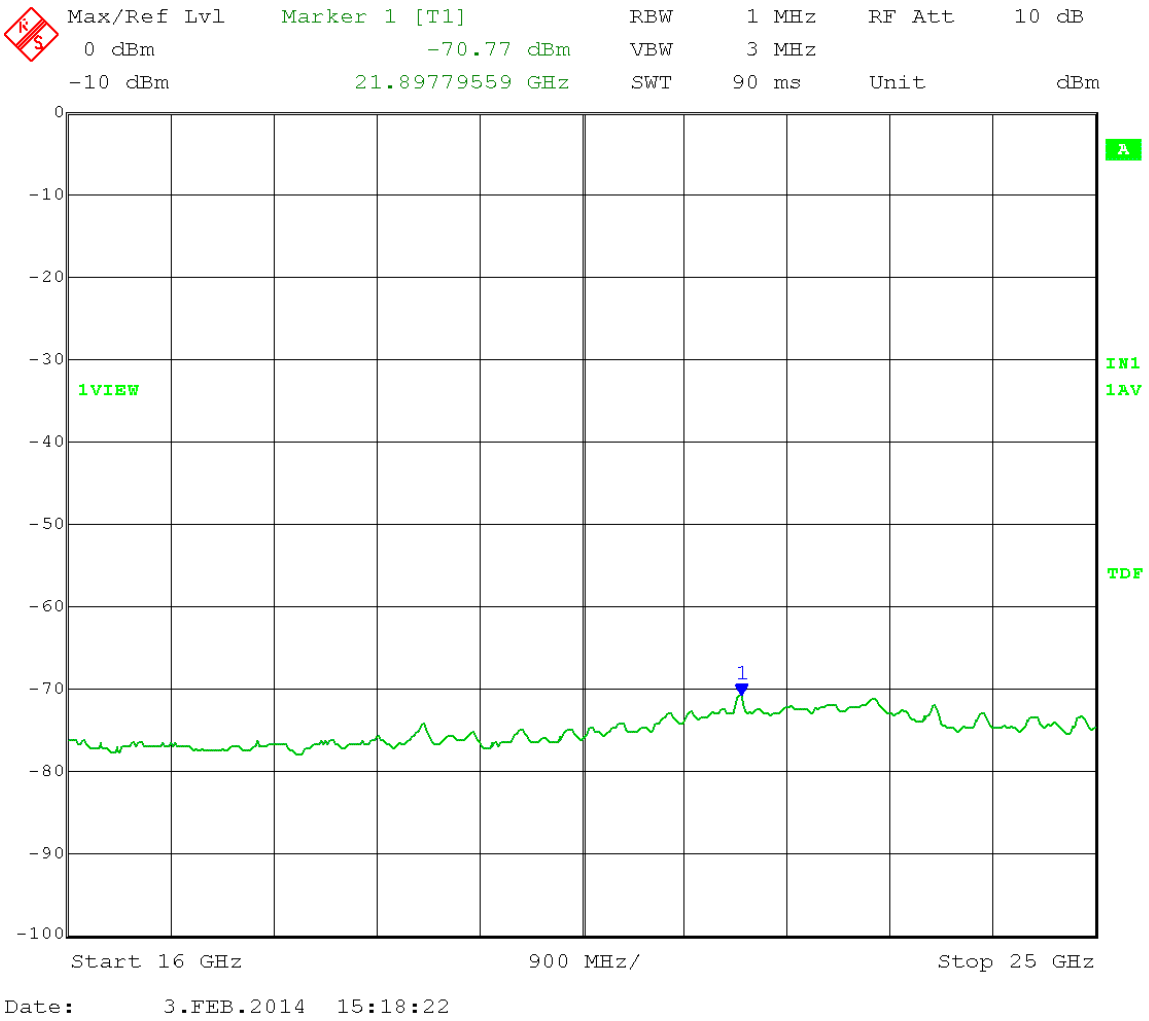
Test Date:	01-31-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5	Channel bandwidth: 20MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 7 – 16 GHz	



Date: 3.FEB.2014 15:15:03

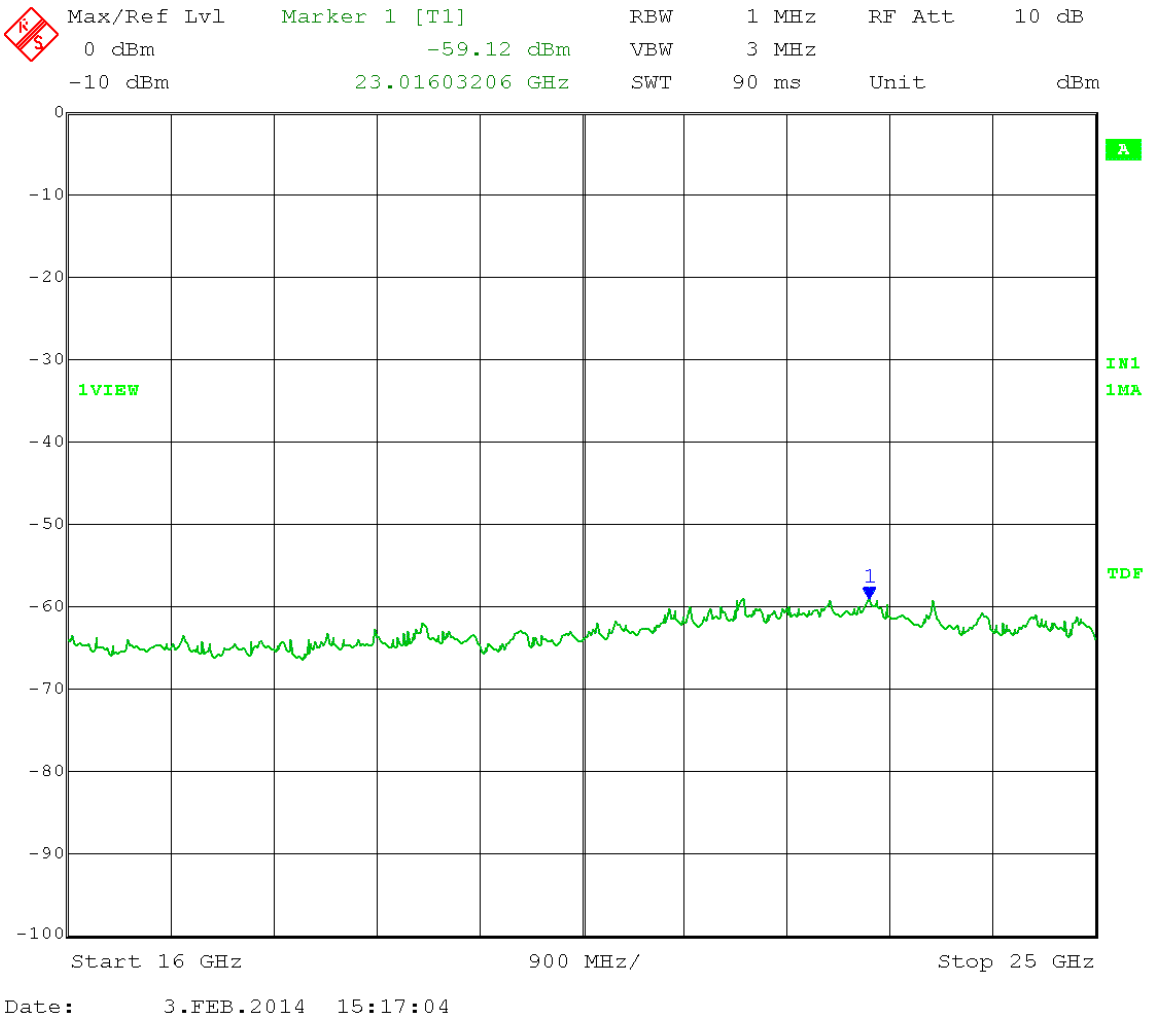
E = EIRP – 20log D + 104.8
= -60.18 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 63.08 dBµV/m
Margin = 10.92 dB (noise floor measurement)

Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Average	Sweep = Auto Couple
	Trace = Max Hold	Mid Channel Transmit = 2437 MHz
	Output Power Setting 1.5	Channel bandwidth: 40 MHz
	Output port: 0	OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters	
	Frequency Range: 16 – 25 GHz	



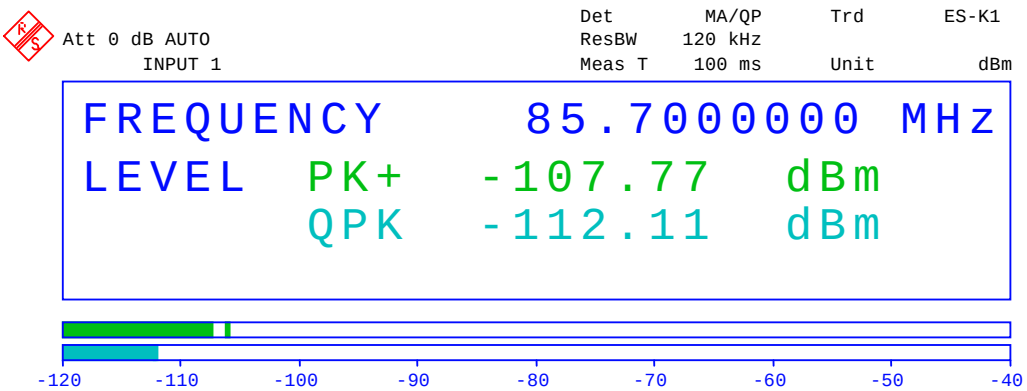
E = EIRP – 20log D + 104.8
= -70.77 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 52.49 dBµV/m
<u>Margin = 1.51 dB</u> (noise floor measurement)

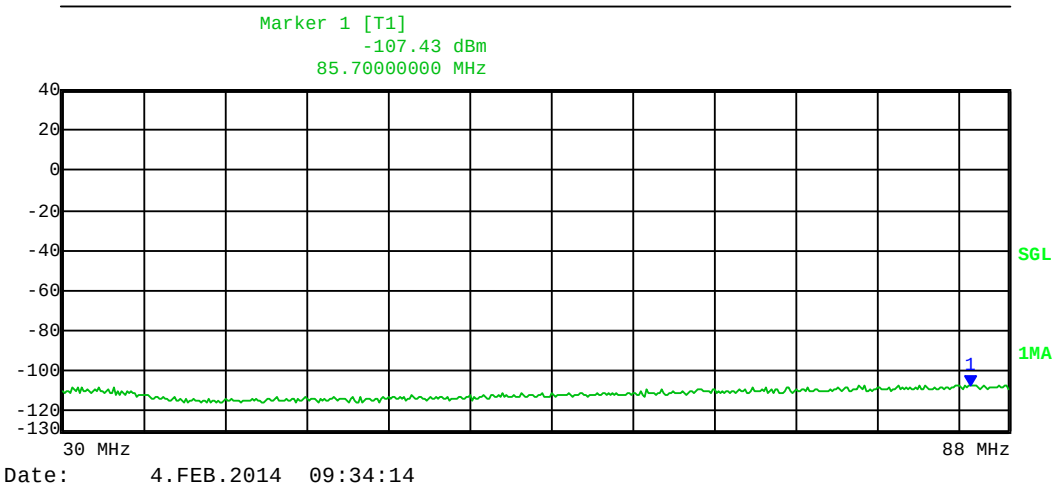
Test Date: 02-03-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: RBW = 1 MHz VBW ≥ 3 MHz
Detector = Peak Sweep = Auto Couple
Trace = Max Hold Mid Channel Transmit = 2437 MHz
Output Power Setting 1.5 Channel bandwidth: 40 MHz
Output port: 0 OFDM MCS15
Peak limit = 74 dBµV/m at 3 meters
Frequency Range: 16 – 25 GHz



E = EIRP – 20log D + 104.8
= -59.12 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 64.14 dBµV/m
Margin = 9.86 dB (noise floor measurement)

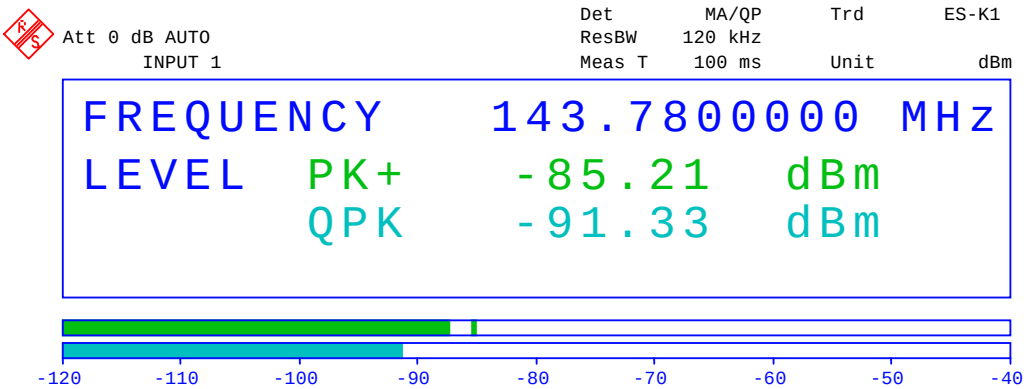
Test Date: 02-04-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
High Channel Transmit = 2447 MHz
Output Power Setting 0 Channel bandwidth: 40MHz
Output port: 0.5 OFDM MCS15
Quasi-Peak limit = 40 dBµV/m at 3 meters
Frequency Range: 30 – 88 MHz

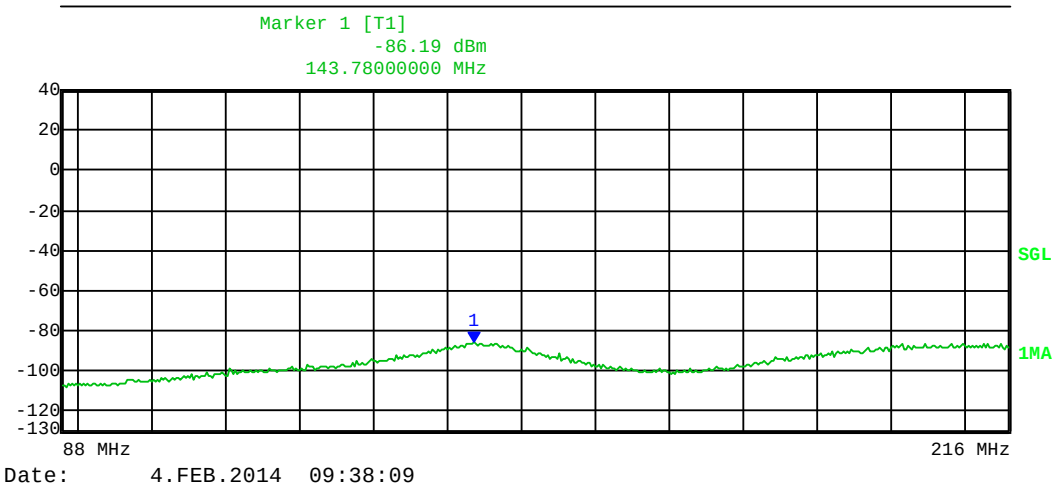




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -112.11 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 15.85 dBµV/m
Margin = 24.15 dB

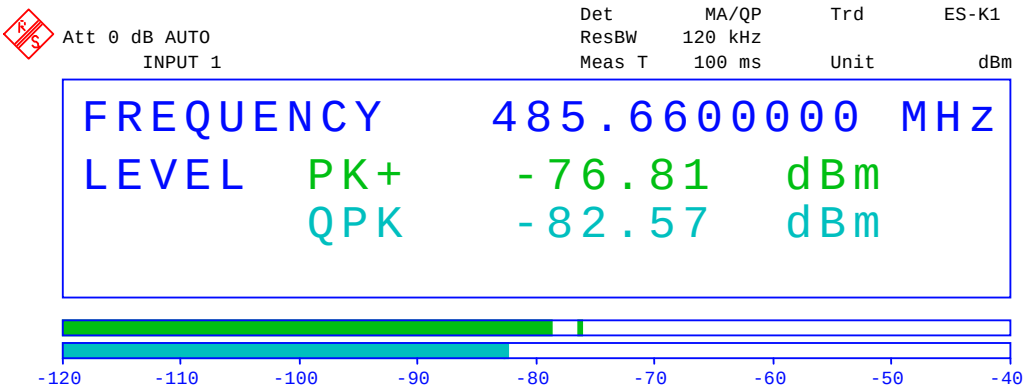
Test Date: 02-04-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
High Channel Transmit = 2447 MHz
Output Power Setting 0.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 43.5 dBµV/m at 3 meters
Frequency Range: 88 – 216 MHz

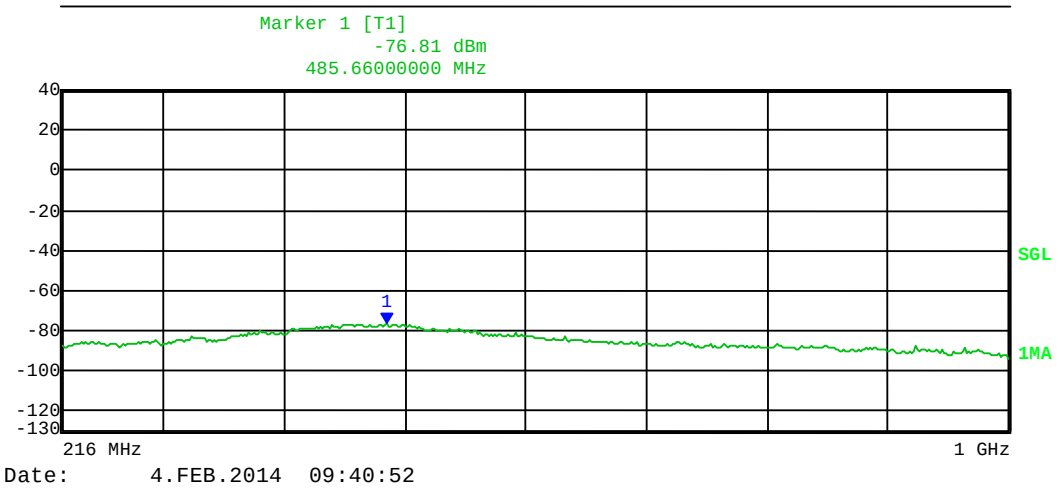




E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -91.33 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 36.63 dBµV/m
Margin = 6.87 dB

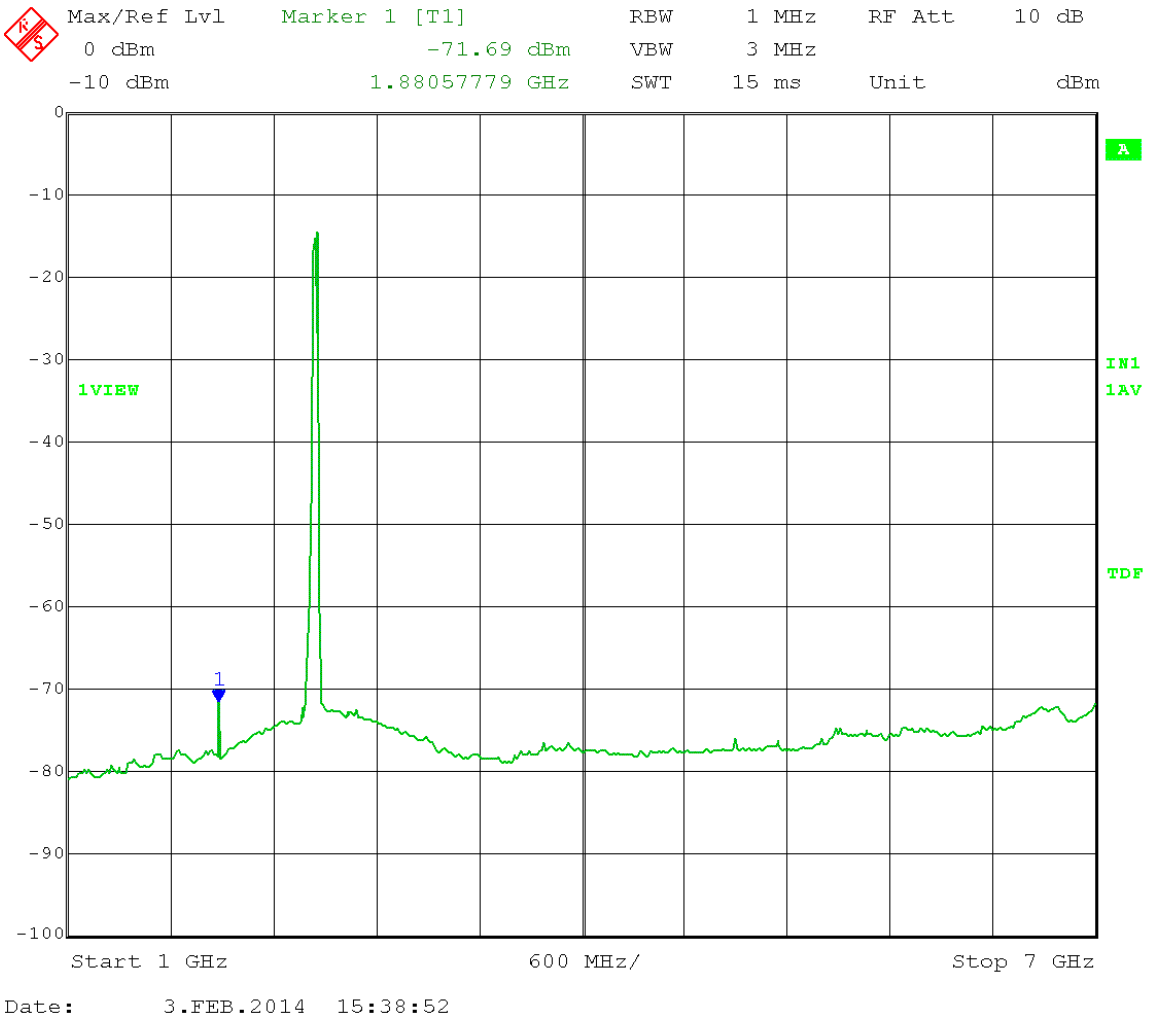
Test Date: 02-04-14
Company: Cambium Networks
EUT: EPMP 2.4 GHz AP MAC: 000456C1A853
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Craig B
Comment: Detector bandwidth = 120 kHz
Detector = Quasi-Peak
High Channel Transmit = 2447 MHz
Output Power Setting 0.5 Channel bandwidth: 40MHz
Output port: 0 OFDM MCS15
Quasi-Peak limit = 46 dBµV/m at 3 meters
Frequency Range: 216 – 1000 MHz





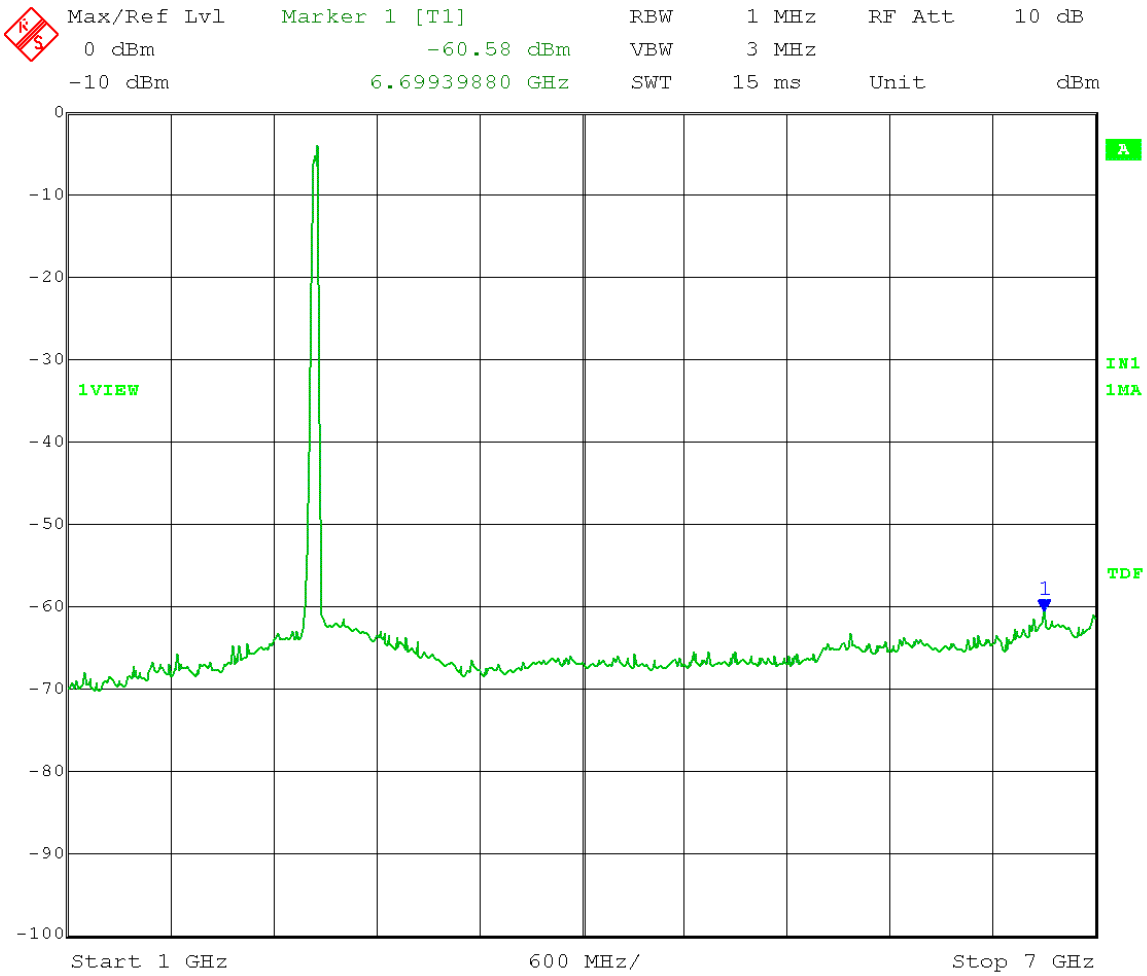
E = EIRP – 20log D + 104.8 + 4.7 dB (ground reflection)
= -82.57 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 4.7 dB + 3 dB (MIMO operation)
= 45.39 dBµV/m
Margin = 0.61 dB

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Average Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2447 MHz
	Output Power Setting 0.5 Channel bandwidth: 40 MHz
	Output port: 0 OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters
	Frequency Range: 1 – 7 GHz



E = EIRP – 20log D + 104.8
= -71.69 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 51.57 dBµV/m
Margin = 2.43 dB

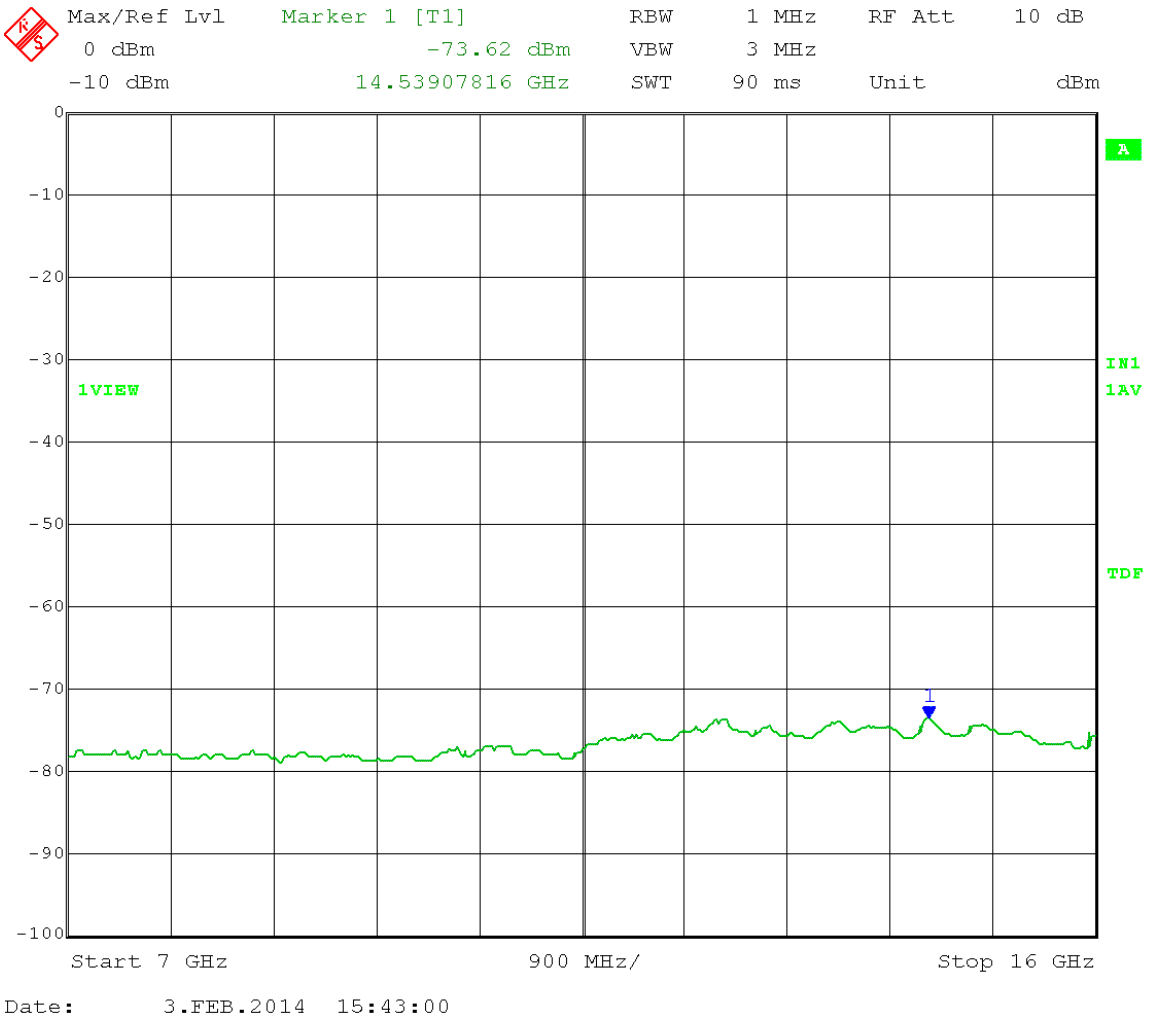
Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	High Channel Transmit = 2447 MHz
	Output Power Setting 0.5	Channel bandwidth: 40 MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 1 – 7 GHz	



Date: 3.FEB.2014 15:40:45

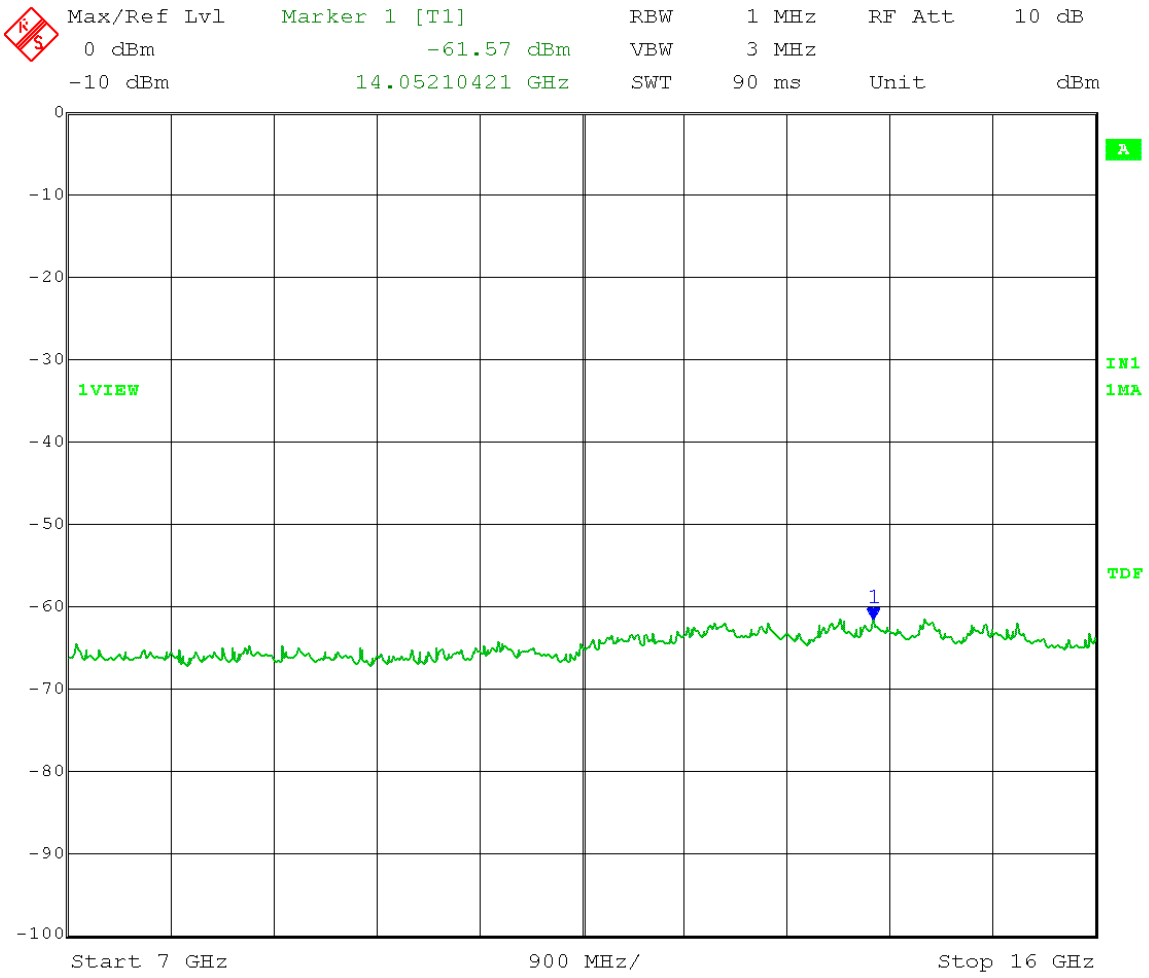
E = EIRP – 20log D + 104.8
= -60.58 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 62.68 dBµV/m
Margin = 11.32 dB (noise floor measurement)

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Average Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2447 MHz
	Output Power Setting 0.5 Channel bandwidth: 40 MHz
	Output port: 0 OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters
	Frequency Range: 7 – 16 GHz



E = EIRP – 20log D + 104.8
= -73.62 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 49.64 dBµV/m
Margin = 4.36 dB (noise floor measurement)

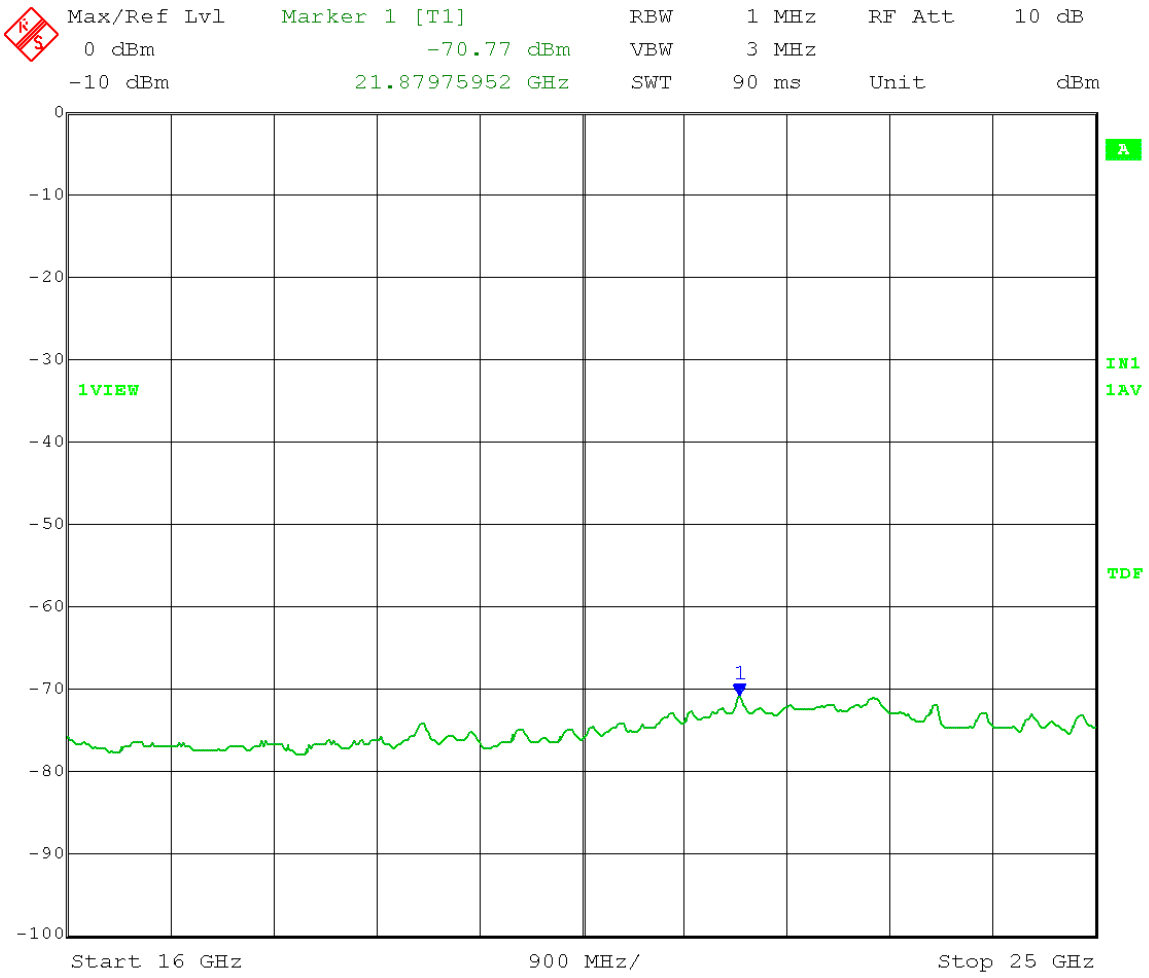
Test Date:	02-03-14	
Company:	Cambium Networks	
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853	
Test:	Maximum Unwanted Emission Levels - Conducted	
Operator:	Craig B	
Comment:	RBW = 1 MHz	VBW ≥ 3 MHz
	Detector = Peak	Sweep = Auto Couple
	Trace = Max Hold	High Channel Transmit = 2447 MHz
	Output Power Setting 0.5	Channel bandwidth: 40 MHz
	Output port: 0	OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters	
	Frequency Range: 7 – 16 GHz	



Date: 3.FEB.2014 15:44:37

E = EIRP – 20log D + 104.8
= -61.57 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 61.69 dBµV/m
Margin = 12.31 dB (noise floor measurement)

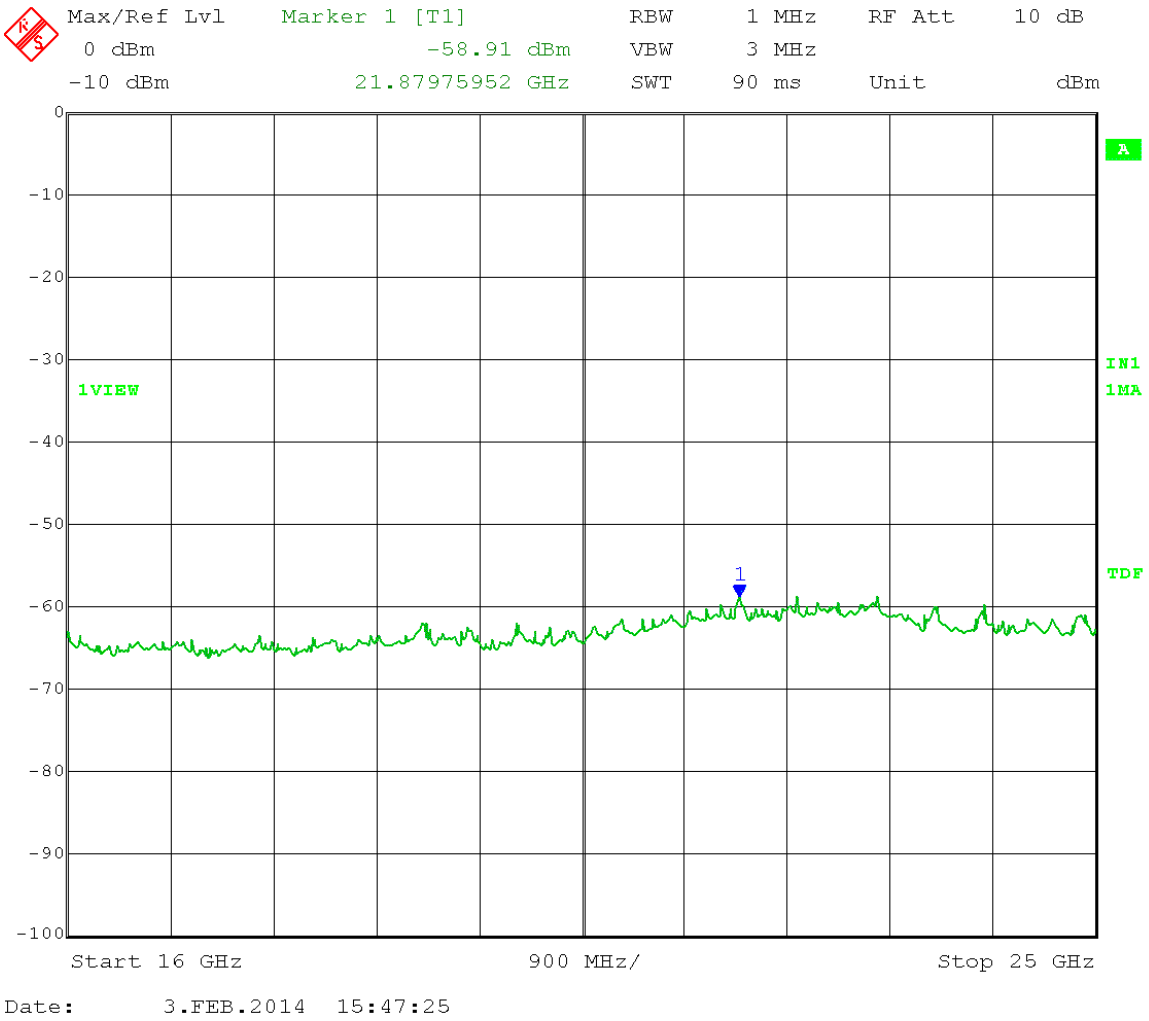
Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Average Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2447 MHz
	Output Power Setting 0.5 Channel bandwidth: 40 MHz
	Output port: 0 OFDM MCS15
	Average limit = 54 dBµV/m at 3 meters
	Frequency Range: 16 – 25 GHz



Date: 3.FEB.2014 15:46:14

E = EIRP – 20log D + 104.8
= -70.77 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 52.49 dBµV/m
Margin = 1.51 dB (noise floor measurement)

Test Date:	02-03-14
Company:	Cambium Networks
EUT:	EPMP 2.4 GHz AP MAC: 000456C1A853
Test:	Maximum Unwanted Emission Levels - Conducted
Operator:	Craig B
Comment:	RBW = 1 MHz VBW ≥ 3 MHz
	Detector = Peak Sweep = Auto Couple
	Trace = Max Hold High Channel Transmit = 2447 MHz
	Output Power Setting 0.5 Channel bandwidth: 40 MHz
	Output port: 0 OFDM MCS15
	Peak limit = 74 dBµV/m at 3 meters
	Frequency Range: 16 – 25 GHz



Date: 3.FEB.2014 15:47:25

E = EIRP – 20log D + 104.8
= -58.91 dBm + 25 dBi antenna gain – 20log (3 meters) + 104.8 + 3 dB (MIMO operation)
= 64.35 dBµV/m
Margin = 9.65 dB (noise floor measurement)

END OF REPORT

Revision #	Date	Comments	By
1.0	02-12-2014	Preliminary Release	JS
1.1	03-11-2014	Add pg 25 note & edit title pg 145 (& 6)	JS