



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Models Tested: C036045C004A & C036045C008A
Report Number: 19812
DLS Project: 6384

Code of Federal Regulations 47
PART 90—PRIVATE LAND MOBILE RADIO SERVICES
Subpart Z—Wireless Broadband Services in the 3650-3700 MHz Band

THE FOLLOWING **MEETS** THE ABOVE TEST SPECIFICATION

Formal Name: PMP450SM 3.65GHz OFDM Radio

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

Frequency Range: 3652.5 to 3697.5 MHz (5 MHz bandwidth)
3655 to 3695 MHz (10 MHz bandwidth)
3660 to 3690 MHz (20 MHz bandwidth)

Test Configuration: Stand-alone

Model Number(s): Integrated models: C036045C001A, C036045C002A, C036045C003A, C036045C004A
Connectorized models: C036045C005A, C036045C006A, C036045C007A, C036045C008A

Model(s) Tested: C036045C004A & C036045C008A

Serial Number(s): Integrated model MAC Address: 0A003E4030EA
Connectorized model MAC Address: 0A003E4030CD

Date of Tests: February 14th to 27th, 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

Tested By:

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Approved By:

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United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 100276-0

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

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

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

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

2013-10-01 through 2014-09-30

Effective dates



Mr. D. M. L.

For the National Institute of Standards and Technology

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



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Models Tested: C036045C004A & C036045C008A
Report Number: 19812
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1.0 Summary of Test Report

It was determined that the Cambium Networks PMP450SM 3.65GHz OFDM Radio, Model C036045C004A & C036045C008A, complies with the requirements of CFR 47 Part 90 Subpart Z.

Applicable Technical Requirements Tested:

Section	Description	Procedure	Note	Compliant?
Pt 90.1321 (a) & (b)	Duty Cycle of Test Unit - for RMS measurements	See Cambium Networks' PBA	2	NA
Pt 90.1321 (a) & (b)	Transmitter Output Power and Power Density	See Cambium Networks' PBA	1	Yes
Pt 2.1049	Occupied Bandwidth - 99% power bandwidth	FCC Publication KDB 971168 D01 Power Meas License Digital Systems v02r01 Section 4.2	1	Yes
Pt 90.1323(a) Pt 2.1051 Pt 2.1053	Transmitter Unwanted Emissions	FCC Publication KDB 971168 D01 Power Meas License Digital Systems v02r01 Sections 6.0 & 7.0	1, 2	Yes
Pt 2.1055	Transmitter RF Conducted Band-edge with Frequency Stability	FCC Publication KDB 971168 D01 Power Meas License Digital Systems v02r01 Section 9.30	1	Yes
Pt 90.1323(a) Pt 2.1053	Radiated Band Edge Compliance	FCC Publication KDB 971168 D01 Power Meas License Digital Systems v02r01 Section 7.0	2	Yes
15.207(a)	AC Line Conducted Emissions	ANSI C63.10-2009 Section 6.2	3	Yes

Note 1: RF conducted measurement.

Note 2: Radiated emission measurement.

Note 3: Informative.

2.0 Introduction

From February 14th through February 27th, 2014 the PMP450SM 3.65GHz OFDM Radio, Model C036045C004A & C036045C008A, as provided from Cambium Networks, was tested to the requirements of CFR 47 Part 90 Subpart Z. To meet these requirements, the procedures contained within this report were performed by personnel of D.L.S Electronic Systems, Inc.



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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 3.65 GHz Fixed Access Wireless Transceiver with either integrated Patch (8 dBi) antenna, or Patch (8 dBi) with external Dish (12 dBi) antennas (20 dBi total), or connectorized Sector (17dBi) antenna, or connectorized Panel (22 dBi) antenna. 5 MHz, 10 MHz or 20 MHz channel bandwidth. OFDM modulation.

Type of Equipment / Frequency Range:

Stand-Alone / 3652.5 to 3697.5 MHz (5 MHz bandwidth)
3655 to 3695 MHz (10 MHz bandwidth)
3660 to 3690 MHz (20 MHz bandwidth)

Physical Dimensions of Equipment Under Test:

Length: 3.5 in. Width: 1 in. Height: 11.5 in.

Power Source:

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

Internal Frequencies:

292kHz, 940-1000kHz, 4MHz (Switching Power Supply Frequencies)
25 MHz, 20MHz



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Transmit Frequencies Used For Test Purpose:

5 MHz Channel Bandwidth: Low channel: 3652.5 MHz
Middle channel: 3675 MHz
High channel: 3697.5 MHz

10 MHz Channel Bandwidth: Low channel: 3655 MHz
Middle channel: 3675 MHz
High channel: 3695 MHz

20 MHz Channel Bandwidth: Low channel: 3660 MHz
Middle channel: 3675 MHz
High channel: 3690 MHz

Type of Modulations:

OFDM: QPSK (worst case) used for testing, 16QAM, 64QAM, 256QAM

Description of Circuit Board(s) / Part Number:

PC Board - Integrated EUT	MAC Address: 0A003E4030EA
PC Board - Connectorized EUT	MAC Address: 0A003E4030CD
8dBi Patch Antenna	On integrated EUT PC Board
12dBi Dish Antenna	27RD
17 dBi Sector Antenna	Laird C030045D901A revAA
22 dBi Panel Antenna	Mars M291810400015



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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	20Hz – 40GHz	7-23-13	7-23-14
LISN	Solar	9252-50-R-24-BNC	961019	9kHz – 30MHz	5-24-13	5-24-14
Low Pass Filter	Mini-Circuits	VLFX-1125	R UU92600920	30MHz-1GHz	8-13-13	8-13-14
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
Preamplifier	Rohde & Schwarz	TS-PR10	032001/004	9 kHz – 1 GHz	1-4-14	1-4-15
Preamp	Ciao	CA118-4010	101	1GHz-18GHz	2-26-13	2-26-14
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26GHz	8-12-13	8-12-14
Preamp	Rohde & Schwarz	TS-PR40	052002/025	26GHz-40GHz	5-23-13	5-23-14
Horn Antenna	EMCO	3115	6204	1GHz-18GHz	6-3-13	6-3-15
Horn Antenna	EMCO	3116	2549	18GHz-40GHz	9-6-12	9-6-14
Antenna	EMCO	3104C	00054892	20 MHz – 200 MHz	9-13-12	9-13-14
Antenna	EMCO	3146	1205	200 MHz – 1 GHz	9-19-12	9-19-14
High Pass Filter	Q Microwave, Inc.	100462	1	4.2GHz - 18GHz	5-23-13	5-24-14
High Pass Filter	Q Microwave, Inc.	100462	2	4.2GHz - 18GHz	5-23-13	5-24-14
High Pass Filter	Planar	CL22500-9000-CD-SS	PF1229/0728	15GHz-40GHz	8-14-13	8-14-14
Signal Generator	Rohde & Schwarz	SMR40	100092	1GHz - 40GHz	7-23-13	7-23-14
Horn Antenna	A.H. Systmes	SAS-574	221	80MHz - 1GHz	4-17-12	4-17-14
20 dB attenuator	Aeroflex/weinsche l	75A-20-12	1071	DC – 40 GHz	8-14-13	8-14-14
Temperature Chamber	Test Equity	1007C	R035716	-73° C to +175° C	4-27-13	4-27-14



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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 FCC Publication KDB 971168 D01 Power Meas License Digital Systems v02r01 and per the FCC accepted KDB procedure documented in the Cambium Networks PBA for this project, 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 971168 D01 Power Meas License Digital Systems v02r01 and per the FCC accepted KDB procedure documented in the Cambium Networks PBA for this project, 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

Temperature and Humidity:

72°F at 20% RH, or noted on the test data

Supply Voltage:

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



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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 QPSK modulation (as worst case) at the lowest, middle, and highest channels of operation. Output Port A & Port B were tested. Port A was tested as representative of Port B. Port A was equal to/or worst case over Port B per Cambium Networks. 5, 10 and 20 MHz channel bandwidths were tested. Continuous Transmit, Continuous Receive, and Continuous Scan modes were tested.

Emission Designators: 5M0X1D, 10M0X1D, 20M0X1D

10.0 Results

Measurements were performed in accordance with FCC Publication KDB 971168 D01 Power Meas License Digital Systems v02r01, ANSI C63.10-2009, and per the FCC accepted KDB procedure documented in the Cambium Networks PBA for this project. Graphical and tabular data can be found in Appendix B at the end of this report.

11.0 Conclusion

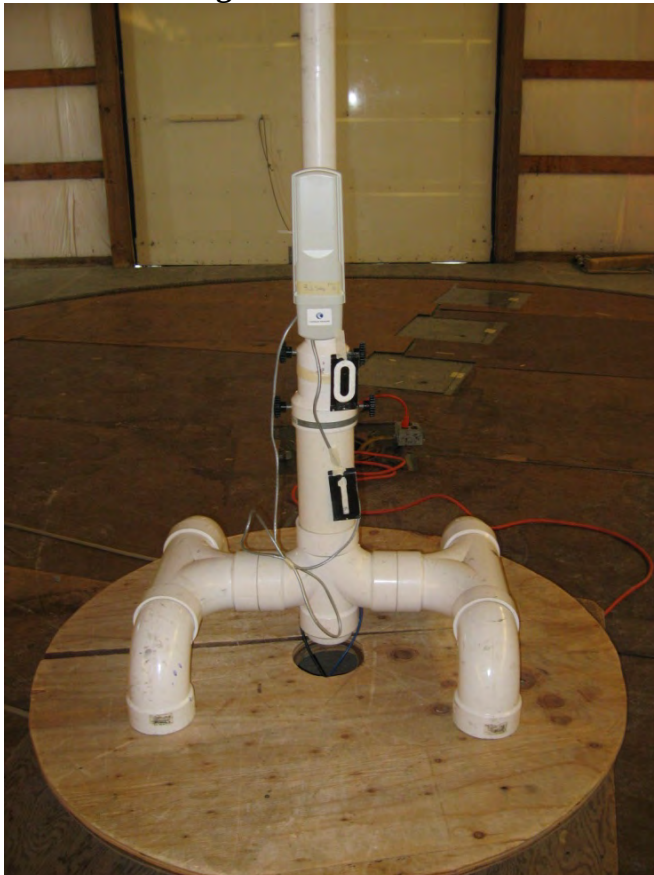
The PMP450SM 3.65GHz OFDM Radio, Model C036045C004A & C036045C008A, as provided from Cambium Networks tested from February 14th to 27th, 2014 **meets** the requirements of CFR 47 Part 90 Subpart Z.

Appendix A – Test Photos

Photo Information and Test Setup:

- Item 0: PMP450AP 3.65GHz OFDM Radio, Model C036045A004A (integrated) or Model C036045C008A (connectorized)
- Item 1: Unshielded CAT 5e Power Over Ethernet cable, 1.5m long with plastic
- Item 2: Unshielded CAT 5e Ethernet cable to remote PC, 10m long with plastic
- Item 3: Phihong Power Supply, Model PSA15M-300 (SM)

**Radiated Below 1 GHz
with Integral Patch Antenna - Front**

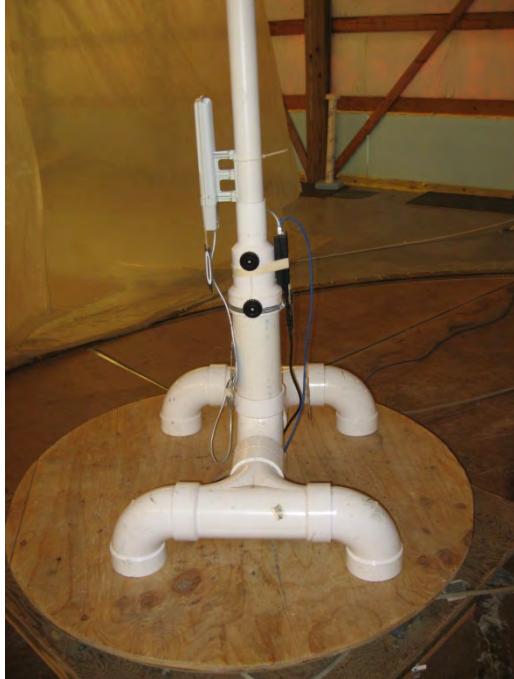


**Radiated Below 1 GHz
with Integral Patch Antenna - Back**

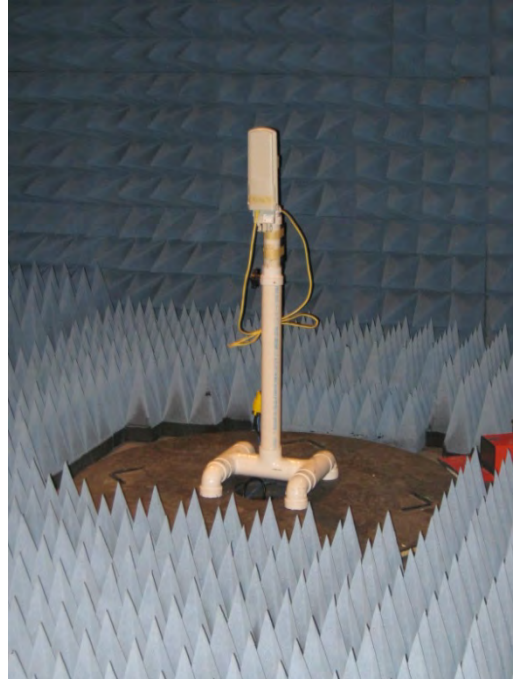


Appendix A – Test Photos

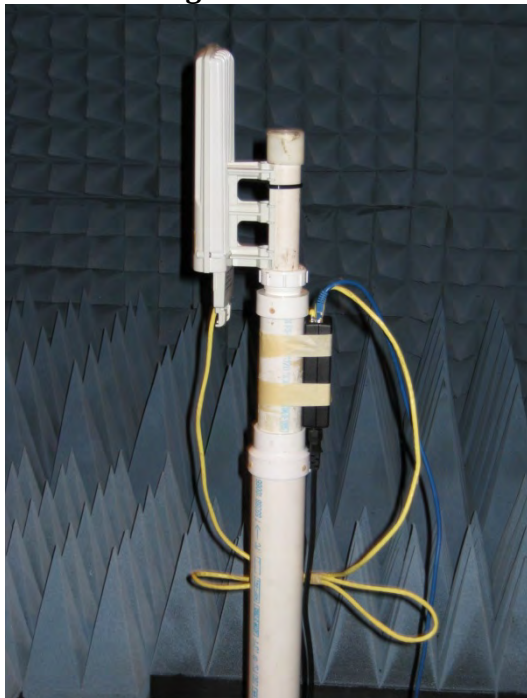
**Radiated Below 1 GHz
with Integral Patch Antenna - Side**



**Radiated Above 1 GHz
with Integral Patch Antenna - Front**



**Radiated Above 1 GHz
with Integral Patch Antenna - Side**



**Radiated from Cabinet
Above 1 GHz - Front**



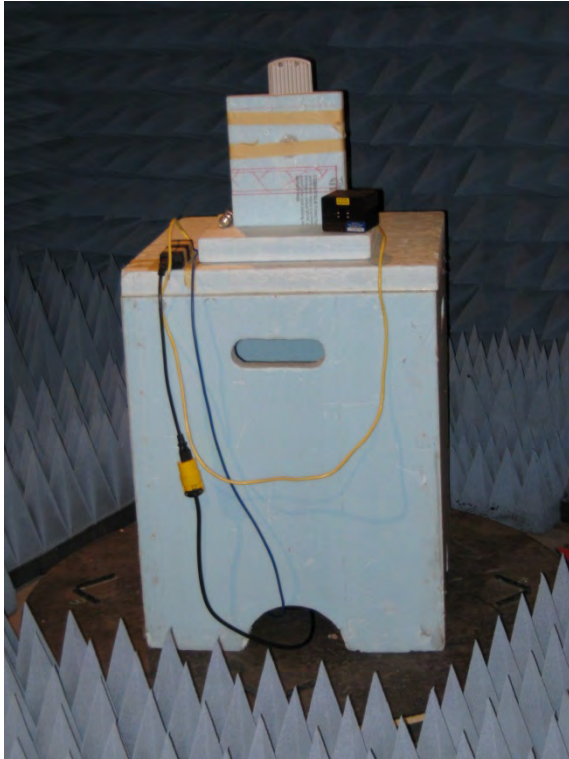


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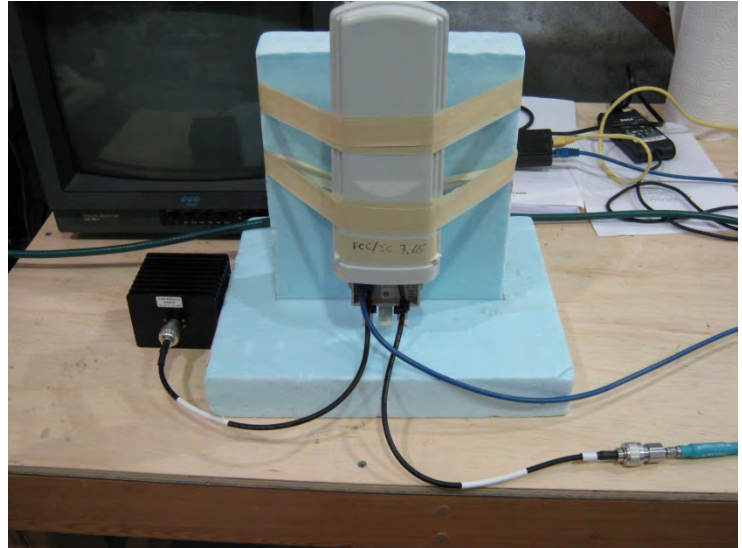
Company: Cambium Networks
Models Tested: C036045C004A & C036045C008A
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Appendix A – Test Photos

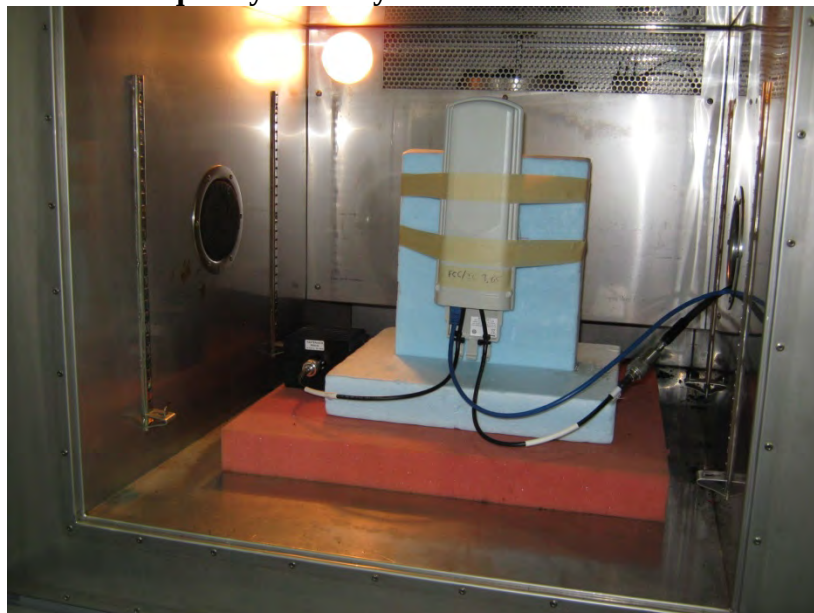
**Radiated from Cabinet
Above 1 GHz - Back**



RF Conducted



Frequency Stability at Extreme Conditions





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Appendix A – Test Photo

AC Line Conducted - Front



AC Line Conducted - Back





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Appendix B – Measurement Data

B1.0 Duty Cycle of Test Unit - for RMS measurements

Rule Part: FCC Part 90.1321 (a) and (b)
Duty cycle correction needed for special procedure for Output Power and Power Density test per the FCC accepted KDB procedure as documented in the Cambium Networks PBA for this project.

Test Procedure: RBW = 1 MHz; VBW = 3 MHz; Span = zero span; Sweep time set as appropriate to capture the on and off times of one complete cycle.

Limits: Informative.

Results: EUT is transmitting at a duty cycle less than 100%.
The duty cycle correction factor was measured and applied to the output power (RMS) and Power Density (RMS) measurements.

Notes: None.

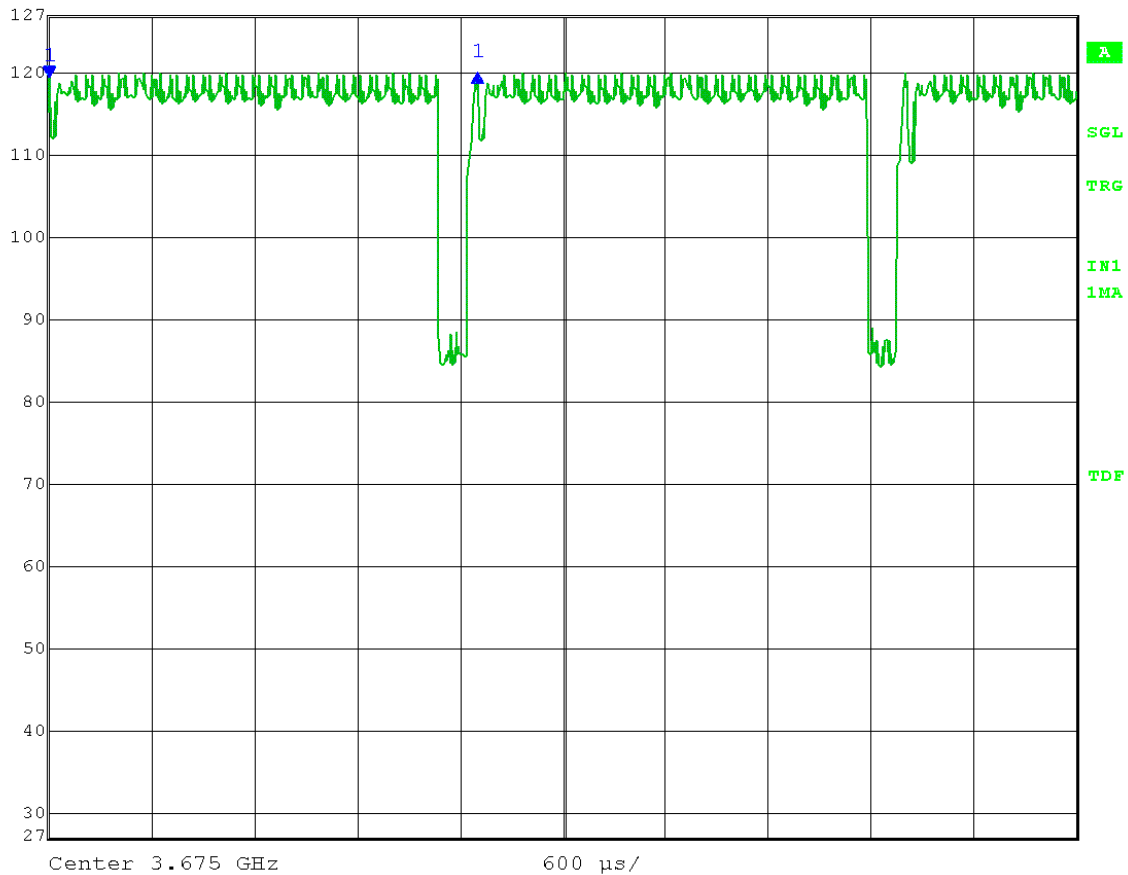
Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C004A
Test: Duty Cycle during testing
Operator: Craig B

5 MHz channel bandwidth; QPSK

Comment: ON time = 2.272545 ms during 2.501002 ms cycle
 $x = 2.272545 / 2.501002 = 0.908653$
Duty cycle correction factor = $10\log(x) = 0.42$ dB

ON + OFF time of 1 cycle = 2.501002 ms

	Max/Ref Lvl	Delta 1 [T1]	RBW	1 MHz	RF Att	30 dB
	127 dB*	0.57 dB	VBW	3 MHz		
	117 dB*	2.501002 ms	SWT	6 ms	Unit	dBμV/m



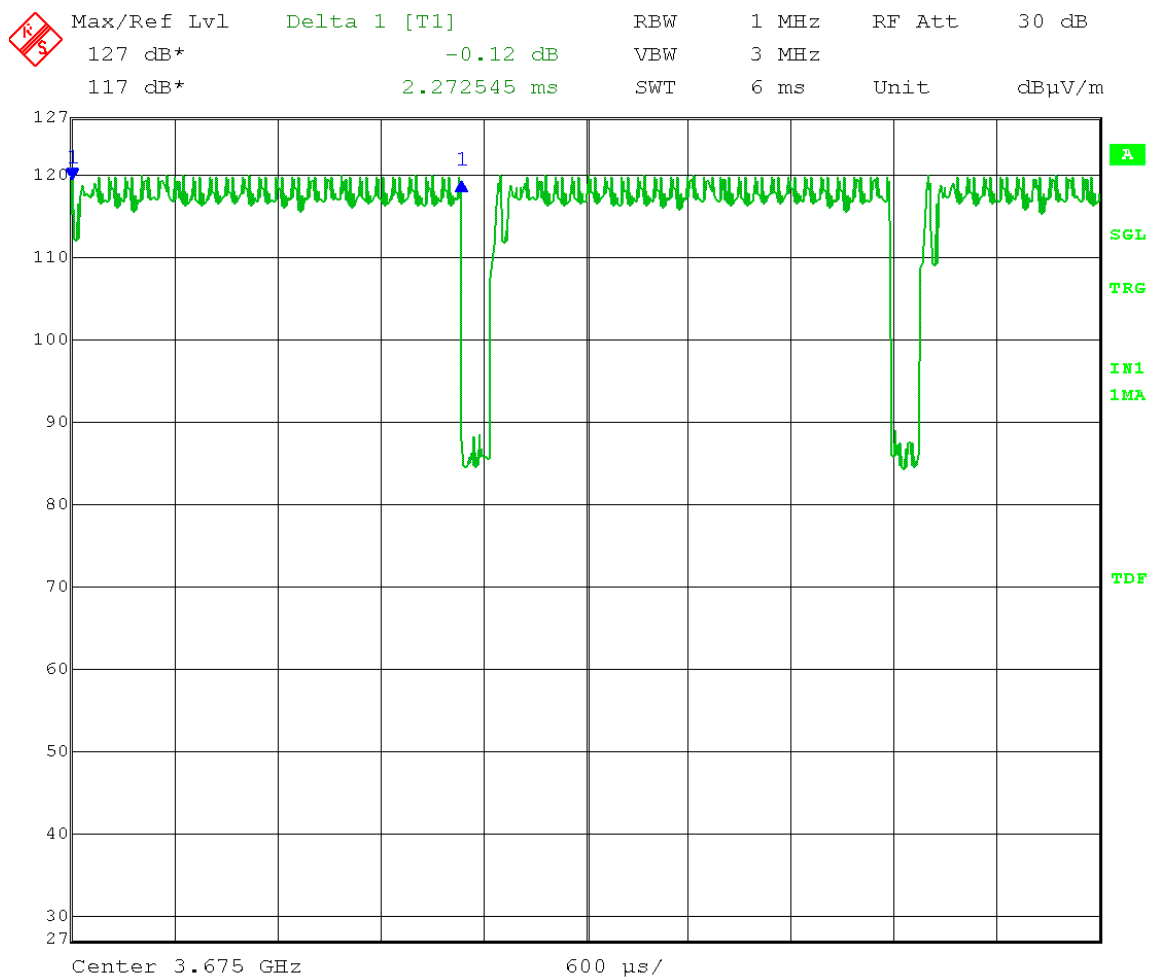
Date: 18.FEB.2014 10:26:36

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C004A
Test: Duty Cycle during testing
Operator: Craig B

5 MHz channel bandwidth; QPSK

Comment: ON time = 2.272545 ms during 2.501002 ms cycle
 $x = 2.272545 / 2.501002 = 0.908653$
Duty cycle correction factor = $10\log(x) = 0.42$ dB

ON time of 1 cycle = 2.272545 ms



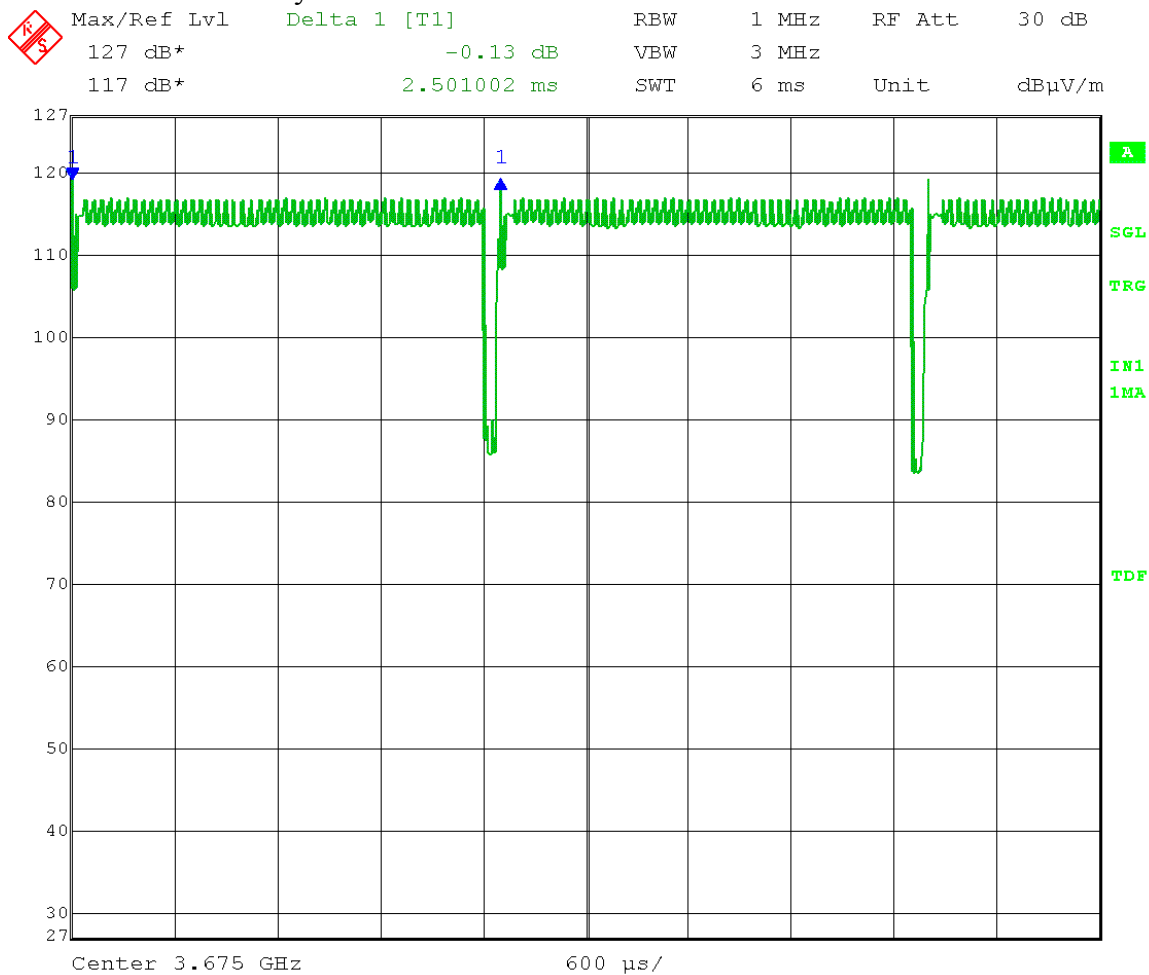
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Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C004A
Test: Duty Cycle during testing
Operator: Craig B

10 MHz channel bandwidth; QPSK

Comment: ON time = 2.404810 ms during 2.501002 ms cycle
 $x = 2.404810 / 2.501002 = 0.9615538$
Duty cycle correction factor = $10\log(x) = 0.17$ dB

ON + OFF time of 1 cycle = 2.501002 ms



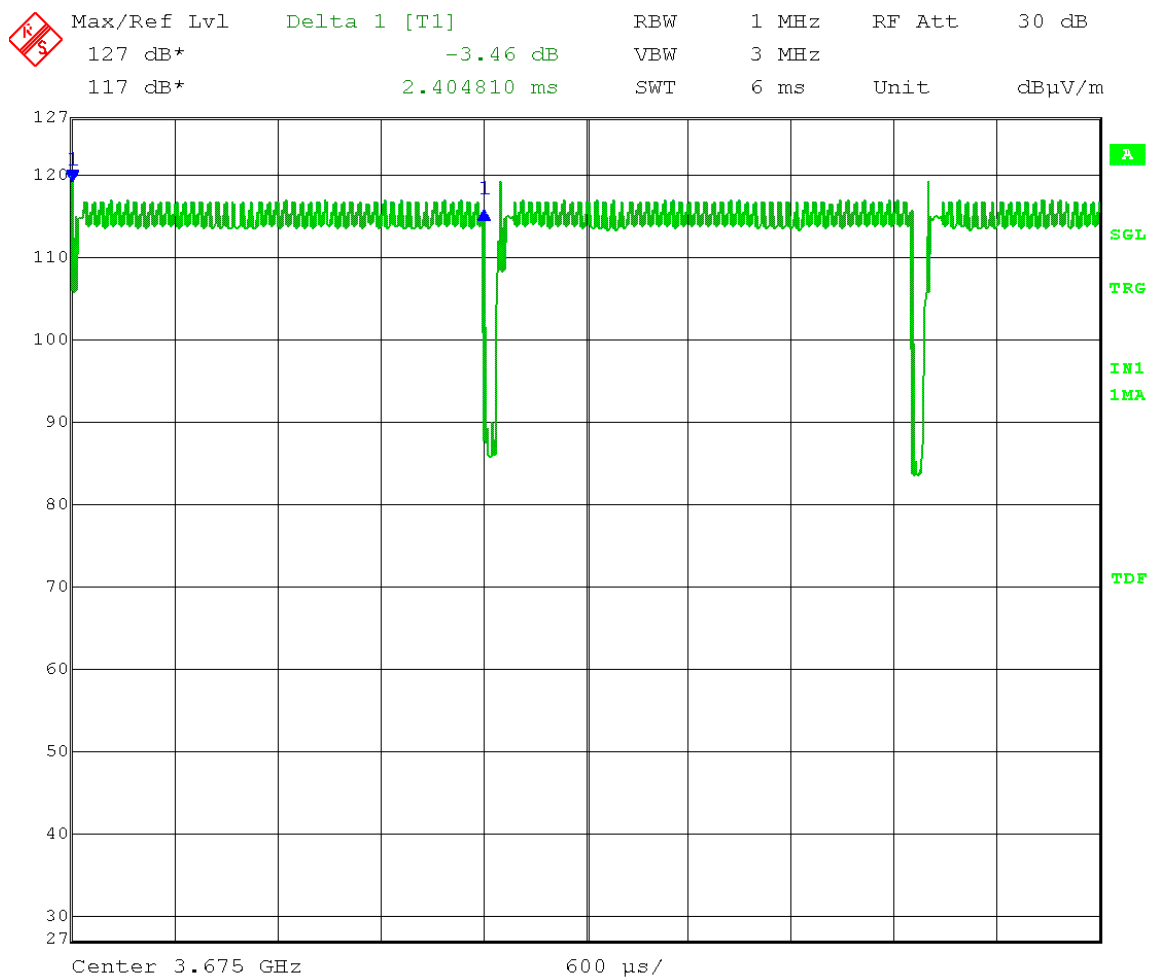
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Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C004A
Test: Duty Cycle during testing
Operator: Craig B

10 MHz channel bandwidth; QPSK

Comment: ON time = 2.404810 ms during 2.501002 ms cycle
 $x = 2.404810 / 2.501002 = 0.9615538$
Duty cycle correction factor = $10\log(x) = 0.17$ dB

ON time of 1 cycle = 2.404810 ms



Date: 18.FEB.2014 10:14:50

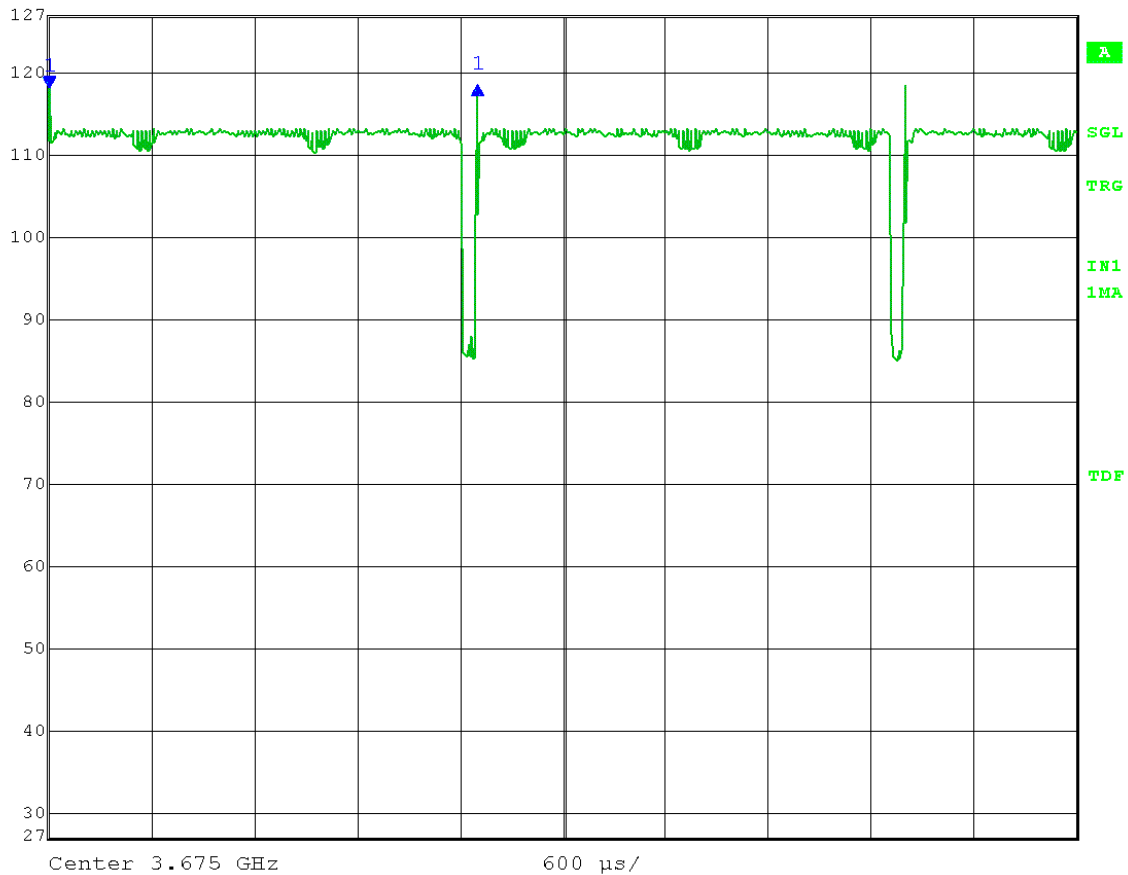
Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C004A
Test: Duty Cycle during testing
Operator: Craig B

20 MHz channel bandwidth; QPSK

Comment: ON time = 2.416834 ms during 2.501002 ms cycle
 $x = 2.416834 / 2.501002 = 0.966346$
Duty cycle correction factor = $10\log(x) = 0.15$ dB

ON + OFF time of 1 cycle = 2.501002 ms

	Max/Ref Lvl	Delta 1 [T1]	RBW	1 MHz	RF Att	30 dB
	127 dB*	0.08 dB	VBW	3 MHz		
	117 dB*	2.501002 ms	SWT	6 ms	Unit	dBμV/m



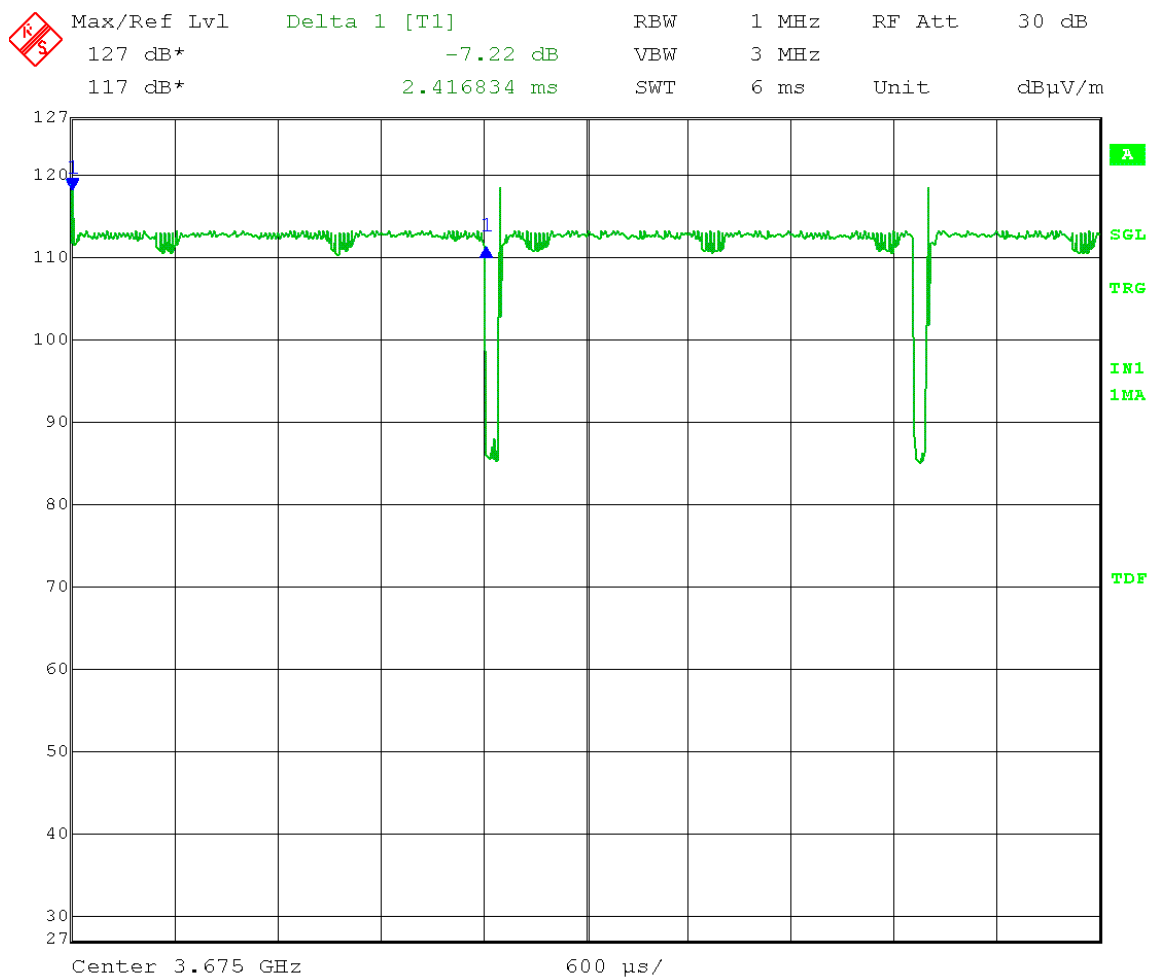
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Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C004A
Test: Duty Cycle during testing
Operator: Craig B

20 MHz channel bandwidth; QPSK

Comment: ON time = 2.416834 ms during 2.501002 ms cycle
 $x = 2.416834 / 2.501002 = 0.966346$
Duty cycle correction factor = $10\log(x) = 0.15$ dB

ON time of 1 cycle = 2.416834 ms



Date: 18.FEB.2014 10:21:14



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Appendix B – Measurement Data

B2.0 Transmitter Output Power and Power Density

Rule Part: FCC Part 90.1321 (a) and (b)

Test Procedure: Tested per the FCC accepted KDB procedure as documented in the Cambium Networks PBA for this project.

Limit: e.i.r.p. of 25 Watts (44 dBm) per 25 MHz
e.i.r.p. of 1 Watt (30 dBm) per 1 MHz

Results:

Compliant

Notes:

Only tested QPSK modulation mode as determined worst case by Cambium Networks.
Only tested output port A as determined worst case by Cambium Networks.

Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 5 MHz channel BW mode; Port A
 Antenna Gain = **8 dBi** patch
 Recorded levels are measured RF conducted levels + 8 dBi antenna gain +
 3 dB (2-port MIMO operation) + 0.42 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3652.5 MHz)
 Power setting 25 (for each chain)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	34.97	28.98

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 25 (for each chain)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	34.98	28.96

Peak EIRP Power (dBm): **High channel** (3697.5 MHz)
 Power setting 25 (for each chain)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	34.79	29.18

Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 5 MHz channel BW mode; Port A
 Antenna Gain = **17 dBi** sector antenna
 Recorded levels are measured RF conducted levels + 17 dBi antenna gain
 + 3 dB (2-port MIMO operation) + 0.42 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3652.5 MHz)
 Power setting 18 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.30	29.15

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 18 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.26	29.12

Peak EIRP Power (dBm): **High channel** (3697.5 MHz)
 Power setting 18 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.42	29.30

Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 5 MHz channel BW mode; Port A
 Antenna Gain = 8 dBi patch + 12 dBi dish = 20 dBi total gain
 Recorded levels are measured RF conducted levels + 20 dBi antenna gain
 + 3 dB (2-port MIMO operation) + 0.42 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3652.5 MHz)
 Power setting 15 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.35	29.19

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 15 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.30	29.14

Peak EIRP Power (dBm): **High channel** (3697.5 MHz)
 Power setting 15 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.46	29.31

Test Date: 02-19-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 5 MHz channel BW mode; Port A
 Antenna Gain = **22 dBi** panel antenna
 Recorded levels are measured RF conducted levels + 22 dBi antenna gain
 + 3 dB (2-port MIMO operation) + 0.42 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3652.5 MHz)
 Power setting 13 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.90	29.77

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 13 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.86	29.75

Peak EIRP Power (dBm): **High channel** (3697.5 MHz)
 Power setting 13 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	36.01	29.96

Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 10 MHz channel BW mode; Port A
 Antenna Gain = **8 dBi** patch
 Recorded levels are measured RF conducted levels + 8 dBi antenna gain +
 3 dB (2-port MIMO operation) + 0.17 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3655 MHz)
 Power setting 25 (for each chain)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	34.89	25.85

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 25 (for each chain)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	34.92	25.88

Peak EIRP Power (dBm): **High channel** (3695 MHz)
 Power setting 25 (for each chain)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.11	26.06

Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 10 MHz channel BW mode; Port A
 Antenna Gain = **17 dBi** sector antenna
 Recorded levels are measured RF conducted levels + 17 dBi antenna gain
 + 3 dB (2-port MIMO operation) + 0.17 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3655 MHz)
 Power setting 22 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	38.70	29.60

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 22 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	38.69	29.60

Peak EIRP Power (dBm): **High channel** (3695 MHz)
 Power setting 22 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	38.83	29.74

Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 10 MHz channel BW mode; Port A
 Antenna Gain = 8 dBi patch + 12 dBi dish = 20 dBi total gain
 Recorded levels are measured RF conducted levels + 20 dBi antenna gain
 + 3 dB (2-port MIMO operation) + 0.17 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3655 MHz)
 Power setting 19 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	39.02	29.96

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 19 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	39.00	29.94

Peak EIRP Power (dBm): **High channel** (3695 MHz)
 Power setting 18 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	38.20	29.11

Test Date: 02-19-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 10 MHz channel BW mode; Port A
 Antenna Gain = **22 dBi** panel antenna
 Recorded levels are measured RF conducted levels + 22 dBi antenna gain
 + 3 dB (2-port MIMO operation) + 0.17 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3655 MHz)
 Power setting 16 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	38.51	29.41

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 16 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	38.49	29.40

Peak EIRP Power (dBm): **High channel** (3695 MHz)
 Power setting 16 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	38.63	29.53

Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 20 MHz channel BW mode; Port A
 Antenna Gain = **8 dBi** patch
 Recorded levels are measured RF conducted levels + 8 dBi antenna gain +
 3 dB (2-port MIMO operation) + 0.15 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3660 MHz)
 Power setting 25 (for each chain)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	34.87	23.00

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 25 (for each chain)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	34.94	23.20

Peak EIRP Power (dBm): **High channel** (3690 MHz)
 Power setting 25 (for each chain)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	35.11	23.23

Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 20 MHz channel BW mode; Port A
 Antenna Gain = **17 dBi** sector antenna
 Recorded levels are measured RF conducted levels + 17 dBi antenna gain
 + 3 dB (2-port MIMO operation) + 0.15 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3660 MHz)
 Power setting 25 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	41.43	29.44

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 25 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	41.44	29.56

Peak EIRP Power (dBm): **High channel** (3690 MHz)
 Power setting 25 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	41.56	29.62

Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 20 MHz channel BW mode; Port A
 Antenna Gain = 8 dBi patch + 12 dBi dish = 20 dBi total gain
 Recorded levels are measured RF conducted levels + 20 dBi antenna gain
 + 3 dB (2-port MIMO operation) + 0.15 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3660 MHz)
 Power setting 22 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	41.55	29.55

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 22 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	41.56	29.67

Peak EIRP Power (dBm): **High channel** (3690 MHz)
 Power setting 22 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	41.69	29.76

Test Date: 02-19-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Tests: Transmitter Maximum E.I.R.P.
 Operator: Craig B
 Comment: 20 MHz channel BW mode; Port A
 Antenna Gain = **22 dBi** panel antenna
 Recorded levels are measured RF conducted levels + 22 dBi antenna gain
 + 3 dB (2-port MIMO operation) + 0.15 dB (correction for duty cycle)

EIRP Limit: 25 W / 25 MHz; 1 W / 1 MHz
 = 44 dBm / 25 MHz; 30 dBm / 1 MHz

RBW = 1 MHz; VBW = 3 MHz; **Detector = RMS**
 Trace mode = max hold; **Sweep time = 10 seconds per Cambium Networks**
 Span = 1.5 x nominal channel bandwidth
 Measurement using peak-search function of spectrum analyzer

Band power integrated over a 25 MHz bandwidth for EIRP / 25 MHz measurement
 (span = 30 MHz)

Peak EIRP Power (dBm): **Low channel** (3660 MHz)
 Power setting 19 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	41.42	29.42

Peak EIRP Power (dBm): **Mid channel** (3675 MHz)
 Power setting 19 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	41.41	29.50

Peak EIRP Power (dBm): **High channel** (3690 MHz)
 Power setting 19 (total of both chains)

Modulation Type	120 V +20 °C	
QPSK	EIRP / 25 MHz	EIRP / 1 MHz
	41.51	29.56



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Models Tested: C036045C004A & C036045C008A
Report Number: 19812
DLS Project: 6384

Appendix B – Measurement Data

B3.0 Occupied Bandwidth - 99% power bandwidth

Rule Part: FCC Part 2.1049 - Occupied bandwidth

Test Procedure: KDB 971168 D01 Power Meas License Digital Systems v02r01
4.2 Occupied bandwidth - power bandwidth (99%)

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

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

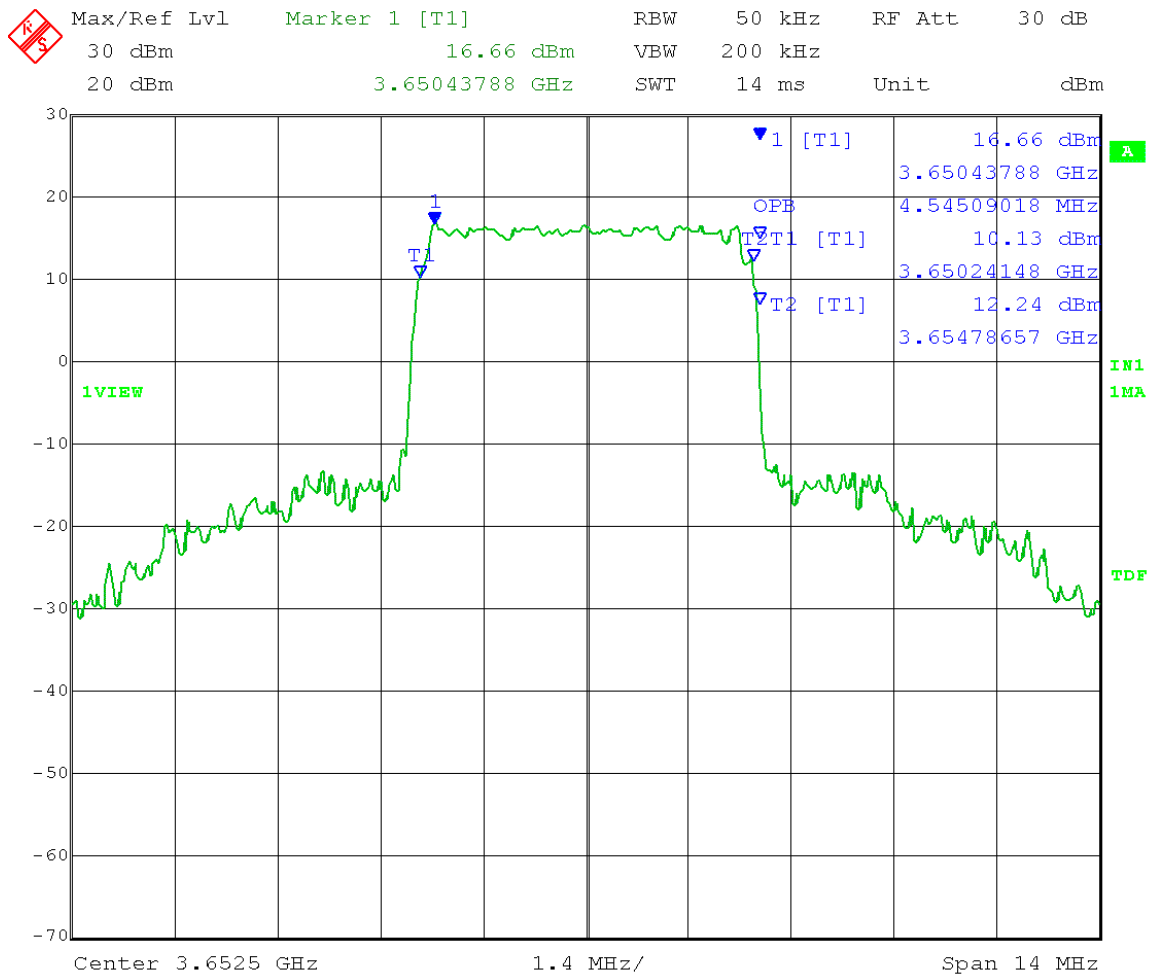
Limit: Informative

Notes: Only tested QPSK modulation mode as determined worst case by Cambium Networks.
Only tested output port A as determined worst case by Cambium Networks.

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Occupied Bandwidth (99% power) - Conducted
Operator: Craig B

Comment: Low Channel: Transmit = 3652.5 MHz
Output power setting: 25 5 MHz channel BW
Output port A Modulation: QPSK

Occupied Bandwidth = 4.55 MHz

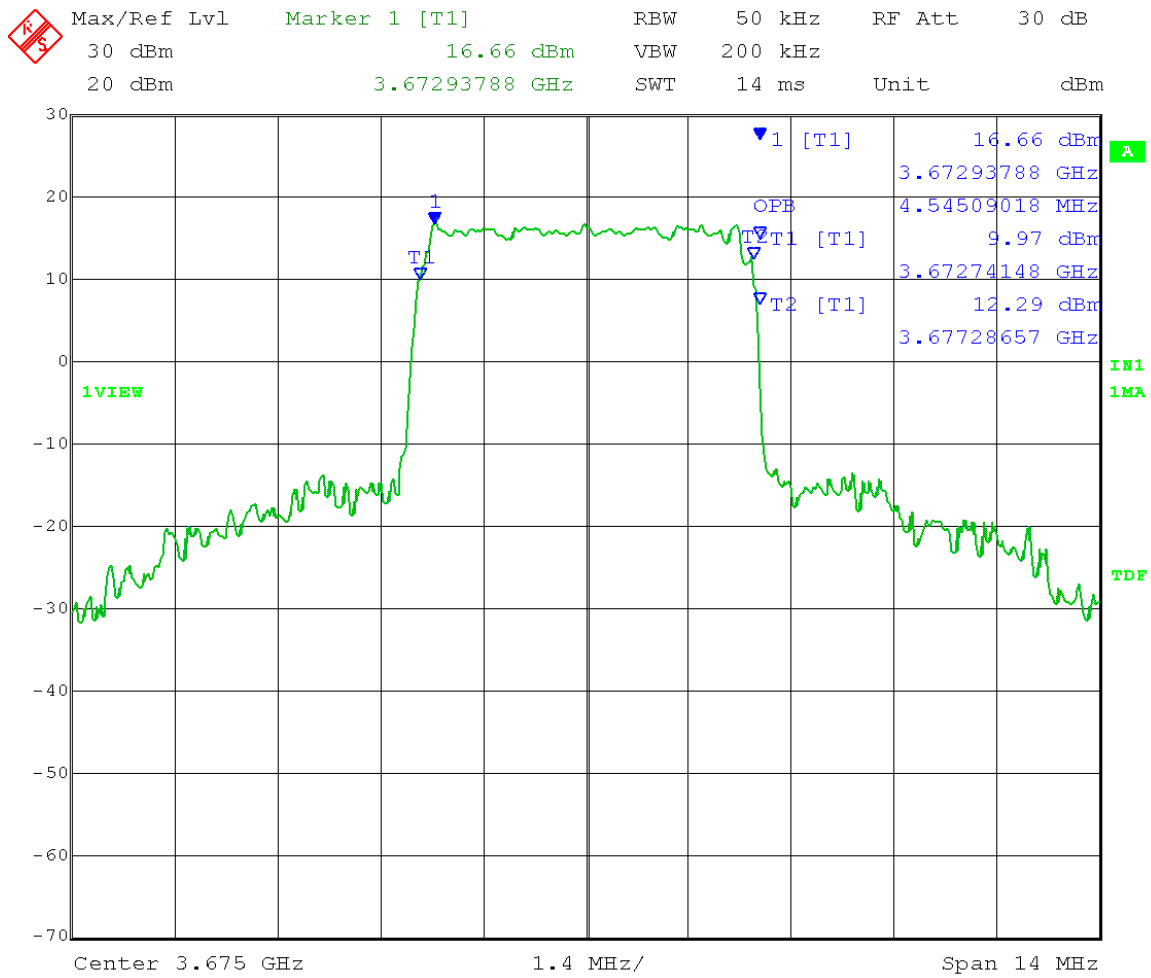


Date: 18.FEB.2014 15:24:10

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Occupied Bandwidth (99% power) - Conducted
Operator: Craig B

Comment: Mid Channel: Transmit = 3675 MHz
Output power setting: 25 5 MHz channel BW
Output port A Modulation: QPSK

Occupied Bandwidth = 4.55 MHz

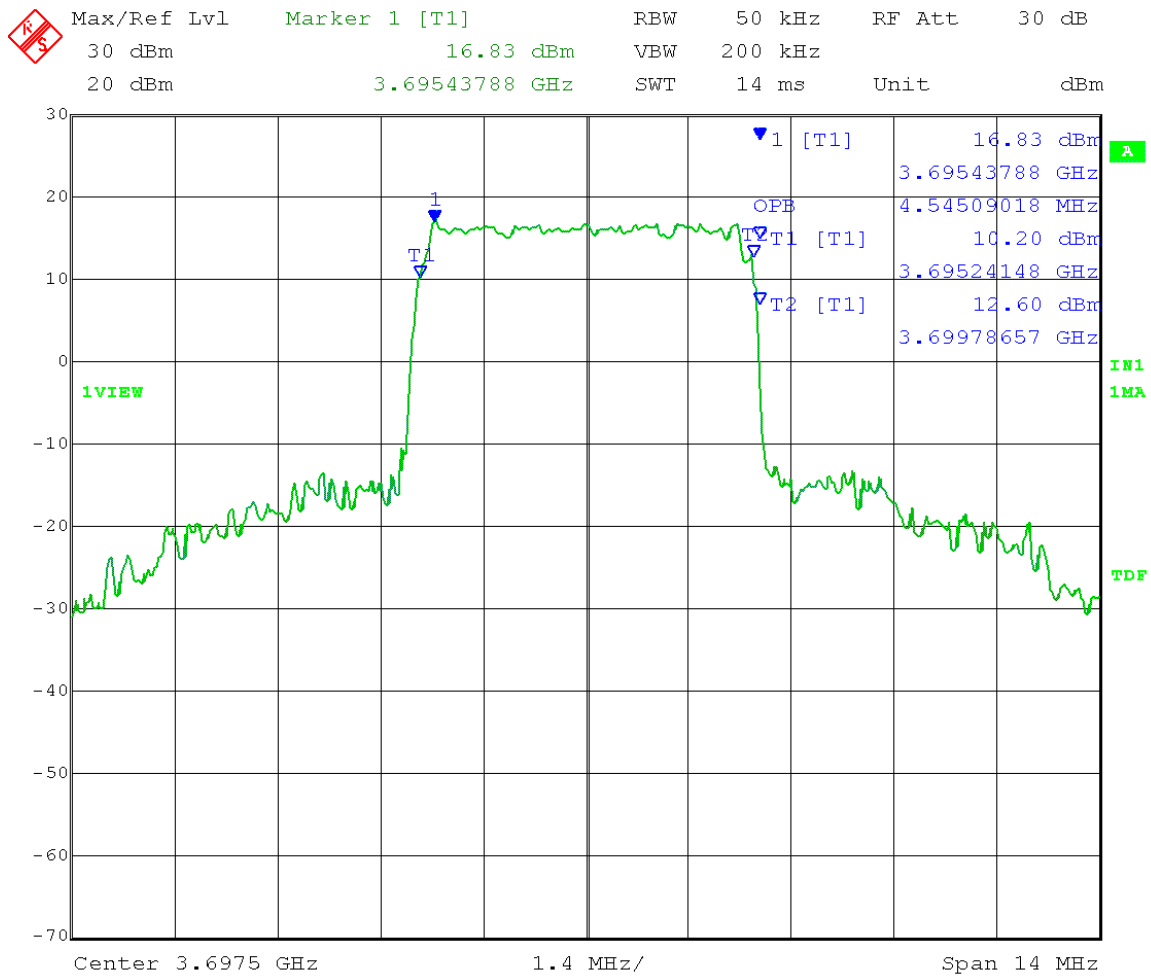


Date: 18.FEB.2014 15:26:44

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Occupied Bandwidth (99% power) - Conducted
Operator: Craig B

Comment: High Channel: Transmit = 3697.5 MHz
Output power setting: 25 5 MHz channel BW
Output port A Modulation: QPSK

Occupied Bandwidth = 4.55 MHz

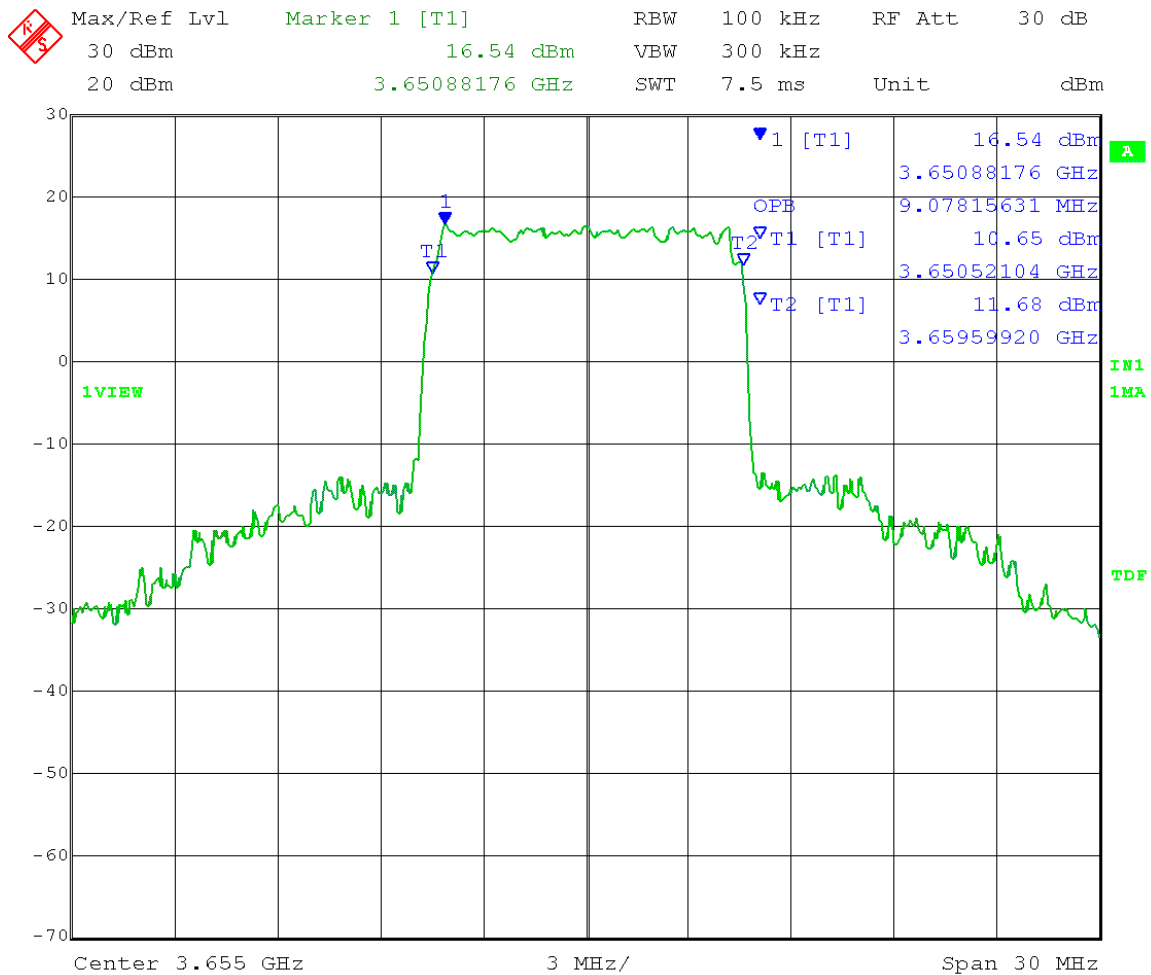


Date: 18.FEB.2014 15:29:19

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Occupied Bandwidth (99% power) - Conducted
Operator: Craig B

Comment: Low Channel: Transmit = 3655 MHz
Output power setting: 25 10 MHz channel BW
Output port A Modulation: QPSK

Occupied Bandwidth = 9.08 MHz

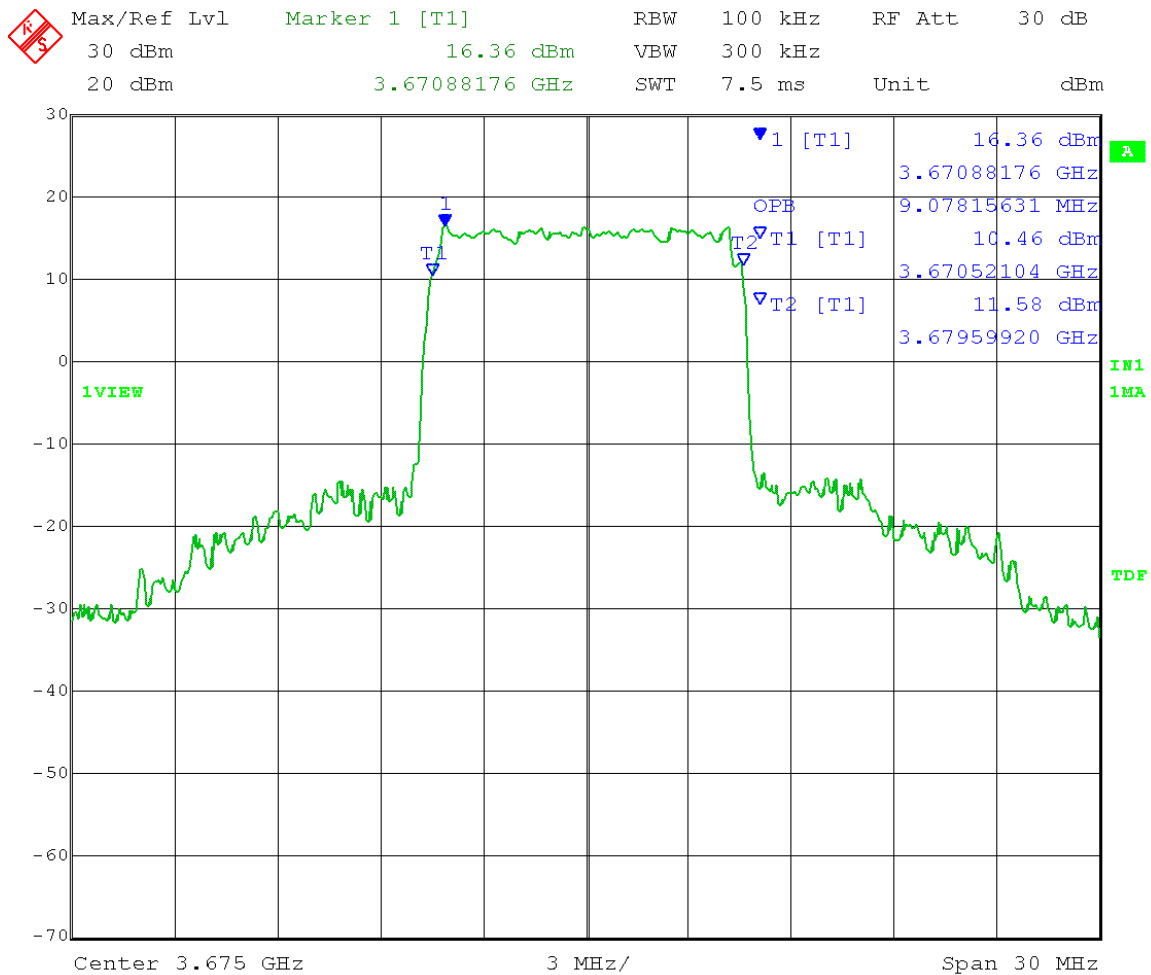


Date: 18.FEB.2014 15:34:35

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Occupied Bandwidth (99% power) - Conducted
Operator: Craig B

Comment: Mid Channel: Transmit = 3675 MHz
Output power setting: 25 10 MHz channel BW
Output port A Modulation: QPSK

Occupied Bandwidth = 9.08 MHz

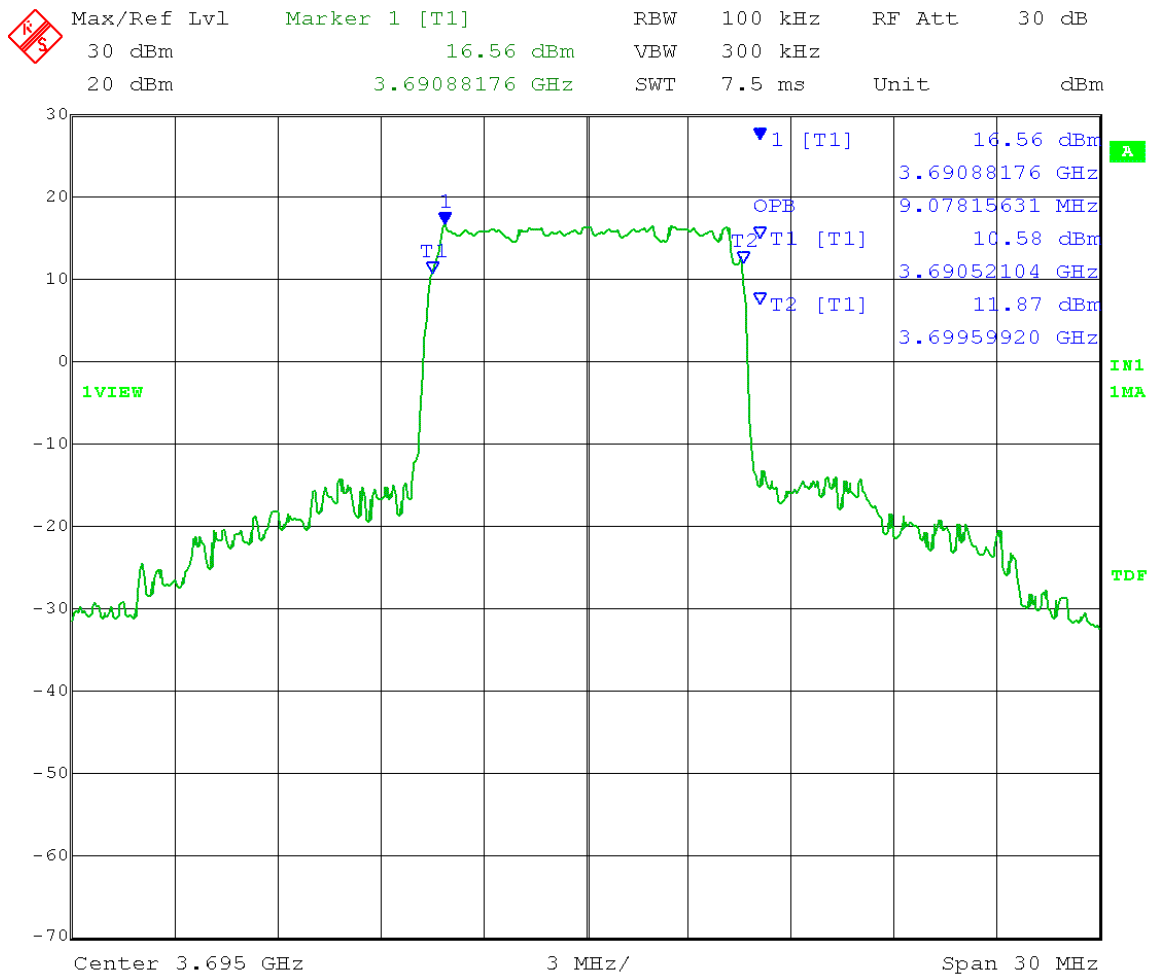


Date: 18.FEB.2014 15:36:52

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Occupied Bandwidth (99% power) - Conducted
Operator: Craig B

Comment: High Channel: Transmit = 3695 MHz
Output power setting: 25 10 MHz channel BW
Output port A Modulation: QPSK

Occupied Bandwidth = 9.08 MHz

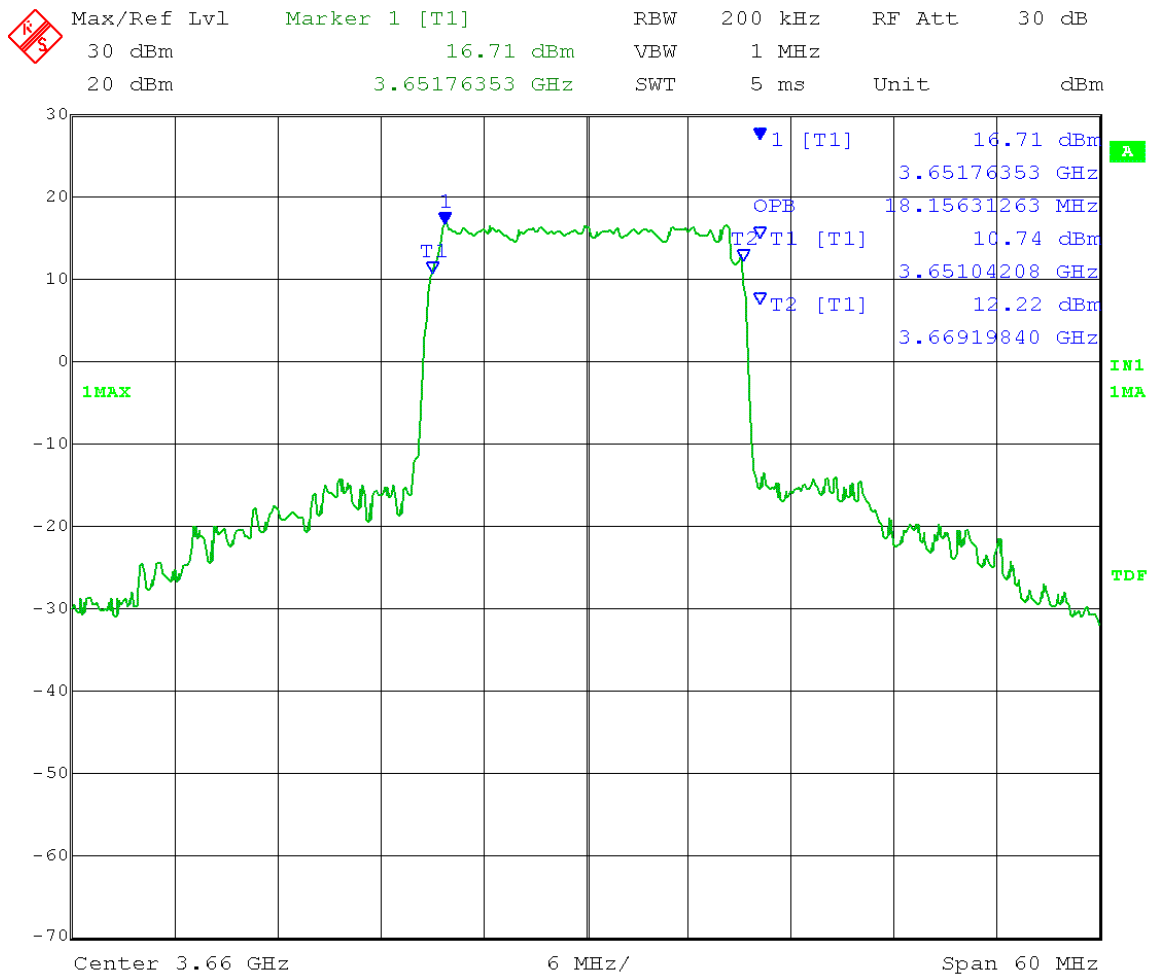


Date: 18.FEB.2014 15:39:12

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Occupied Bandwidth (99% power) - Conducted
Operator: Craig B

Comment: Low Channel: Transmit = 3660 MHz
Output power setting: 25 20 MHz channel BW
Output port A Modulation: QPSK

Occupied Bandwidth = 18.16 MHz

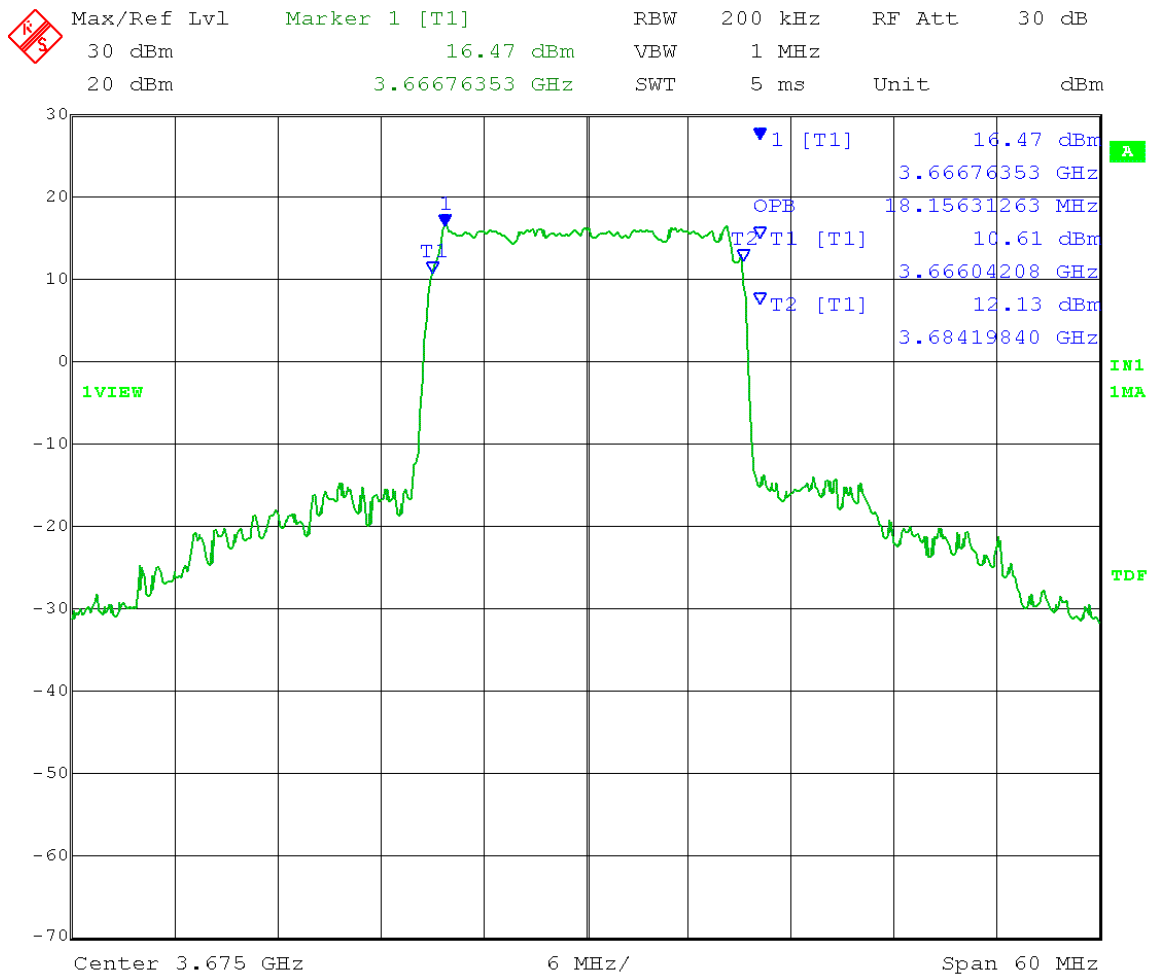


Date: 18.FEB.2014 15:44:57

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Occupied Bandwidth (99% power) - Conducted
Operator: Craig B

Comment: Mid Channel: Transmit = 3675 MHz
Output power setting: 25 20 MHz channel BW
Output port A Modulation: QPSK

Occupied Bandwidth = 18.16 MHz

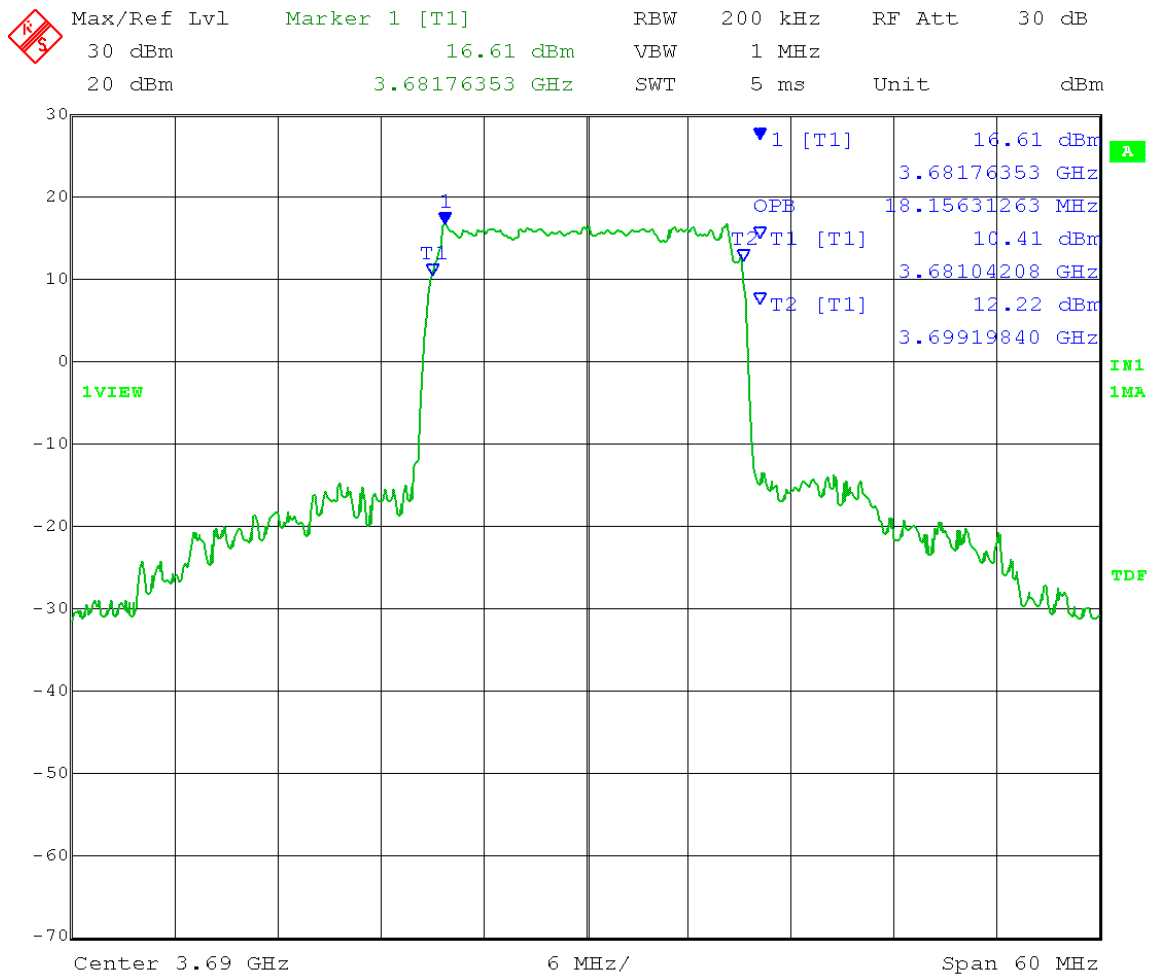


Date: 18.FEB.2014 15:59:00

Test Date: 02-18-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Occupied Bandwidth (99% power) - Conducted
Operator: Craig B

Comment: High Channel: Transmit = 3690 MHz
Output power setting: 25 20 MHz channel BW
Output port A Modulation: QPSK

Occupied Bandwidth = 18.16 MHz



Date: 18.FEB.2014 16:01:19



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Models Tested: C036045C004A & C036045C008A
Report Number: 19812
DLS Project: 6384

Appendix B – Measurement Data

B4.0 Transmitter Unwanted Emissions

Rule Part: FCC Part 90.1323(a) - Emission limits
FCC Part 2.1051 - Spurious emissions at antenna terminals
FCC Part 2.1053 - Field strength of spurious radiation

Test Procedure: KDB 971168 D01 Power Meas License Digital Systems v02r01
6.0 Spurious Emissions at Antenna Terminals
7.0 Field Strength of Spurious Radiation

RBW = 1 MHz; VBW = 3 MHz; Detector = peak; Trace mode = max hold

RF Conducted: The EUT was connected to a spectrum analyzer through a cable and attenuator. The output power was set to the highest level used in the Transmitter Output Power test (power level corresponding to the 8 dBi antenna gain).

Radiated from cabinet (1-37 GHz): Both ports of the EUT were terminated with 50 Ohm terminations. Both ports were active during testing. The output power was set to the highest level used in the Transmitter Output Power test (power level corresponding to the 8 dBi antenna gain).

Radiated from 8 dBi integral patch antenna (30-1000 MHz and 1-37 GHz): Both ports were active during testing. The output power was set to the level used in the Transmitter Output Power test corresponding to the 8 dBi antenna gain.

Limit: The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB.

Calculated limit = -13 dBm.

Results:

Compliant

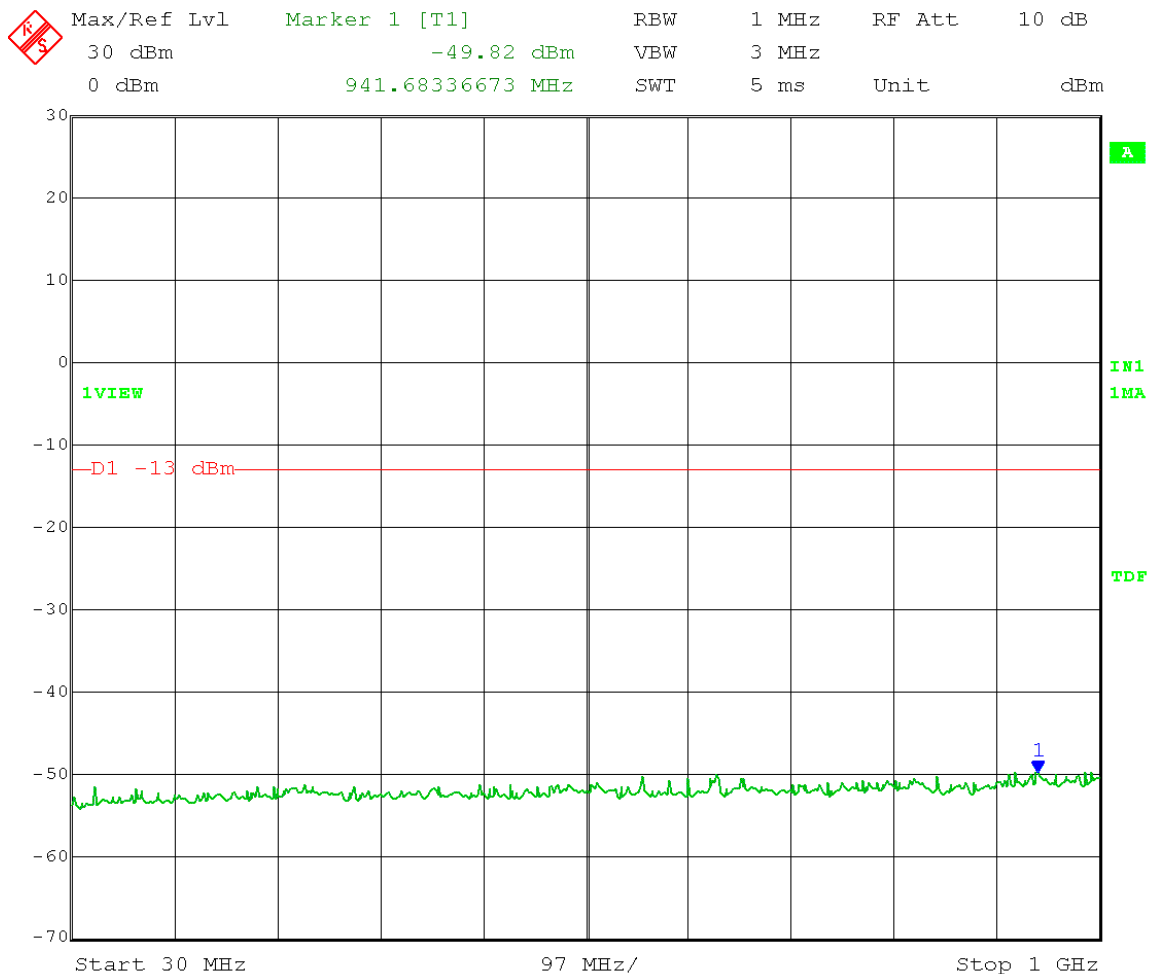
Notes:

Only tested QPSK modulation mode as determined worst case by Cambium Networks. For RF conducted measurements, only port A was tested as it was determined worst case by Cambium Networks.

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3652.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 30 – 1000 MHz

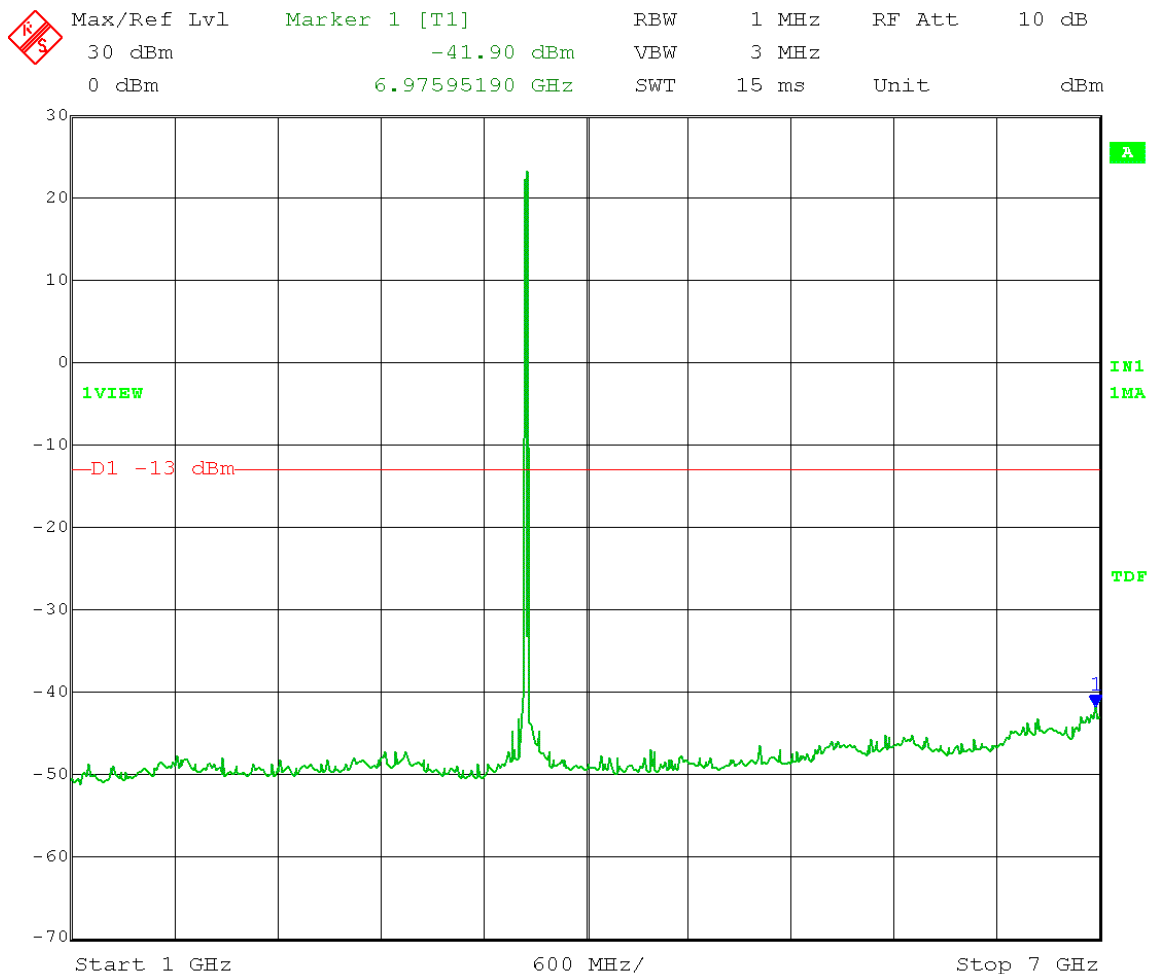


Date: 21.FEB.2014 09:22:27

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3652.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 1 – 7 GHz

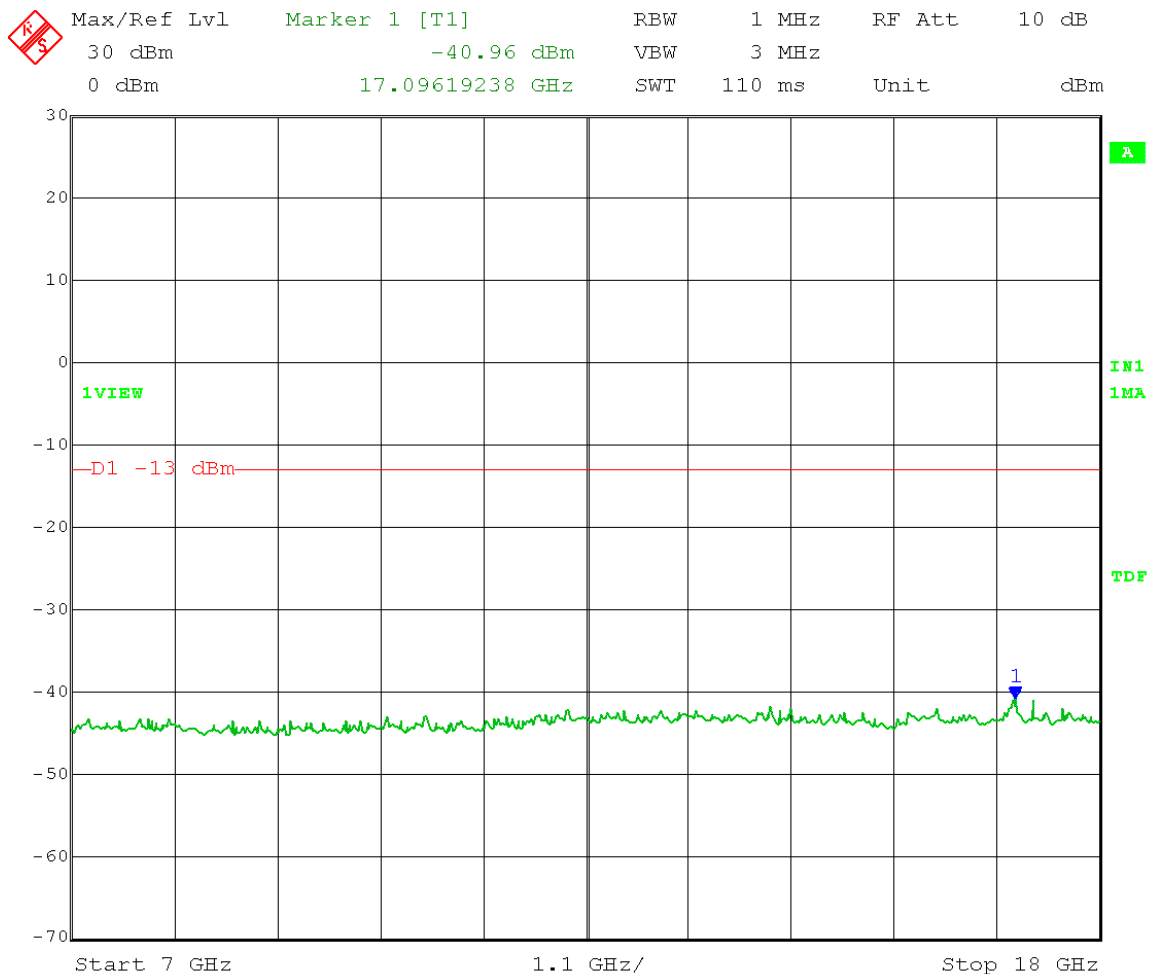


Date: 21.FEB.2014 09:17:12

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3652.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 7 – 18 GHz

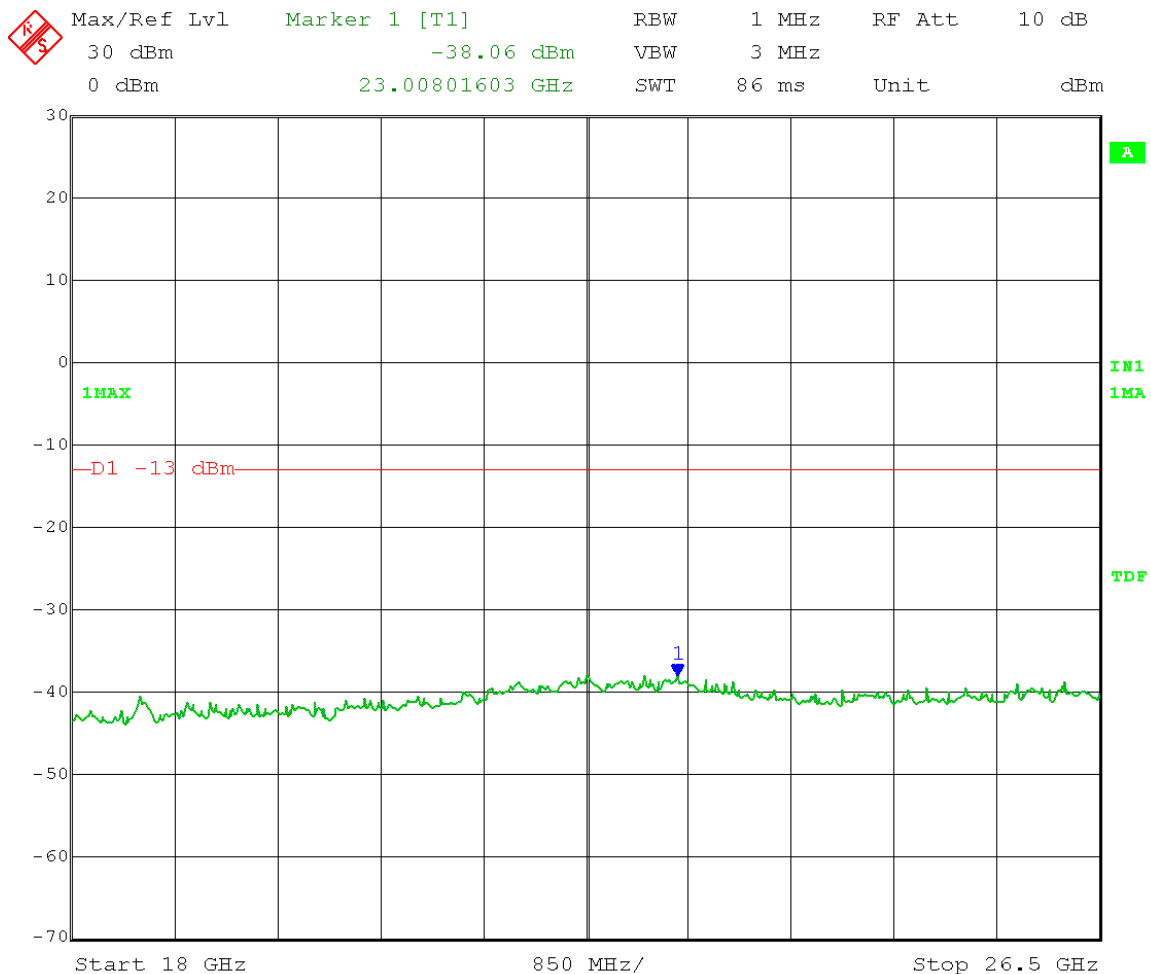


Date: 21.FEB.2014 09:15:51

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3652.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 18 – 26.5 GHz

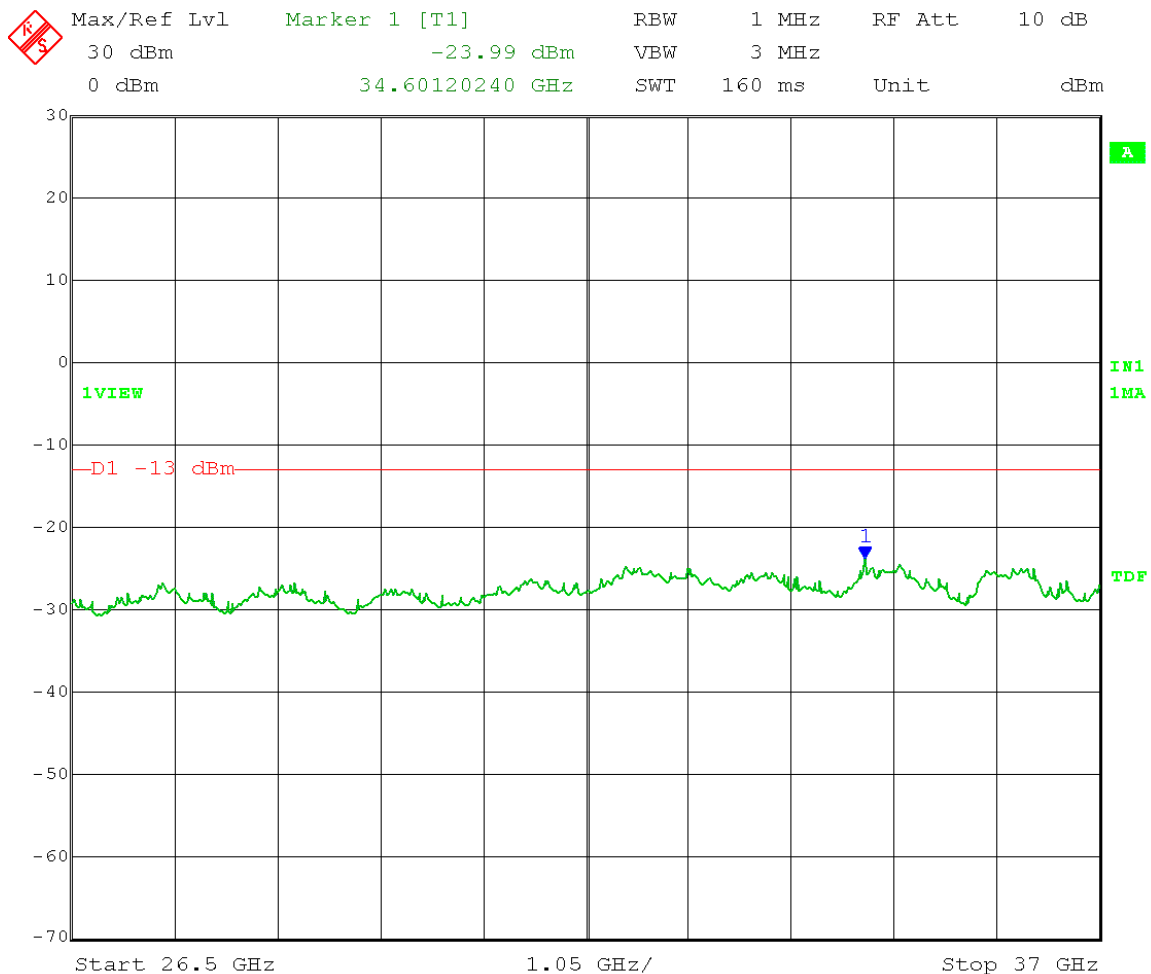


Date: 21.FEB.2014 09:18:39

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3652.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 26.5 – 37 GHz

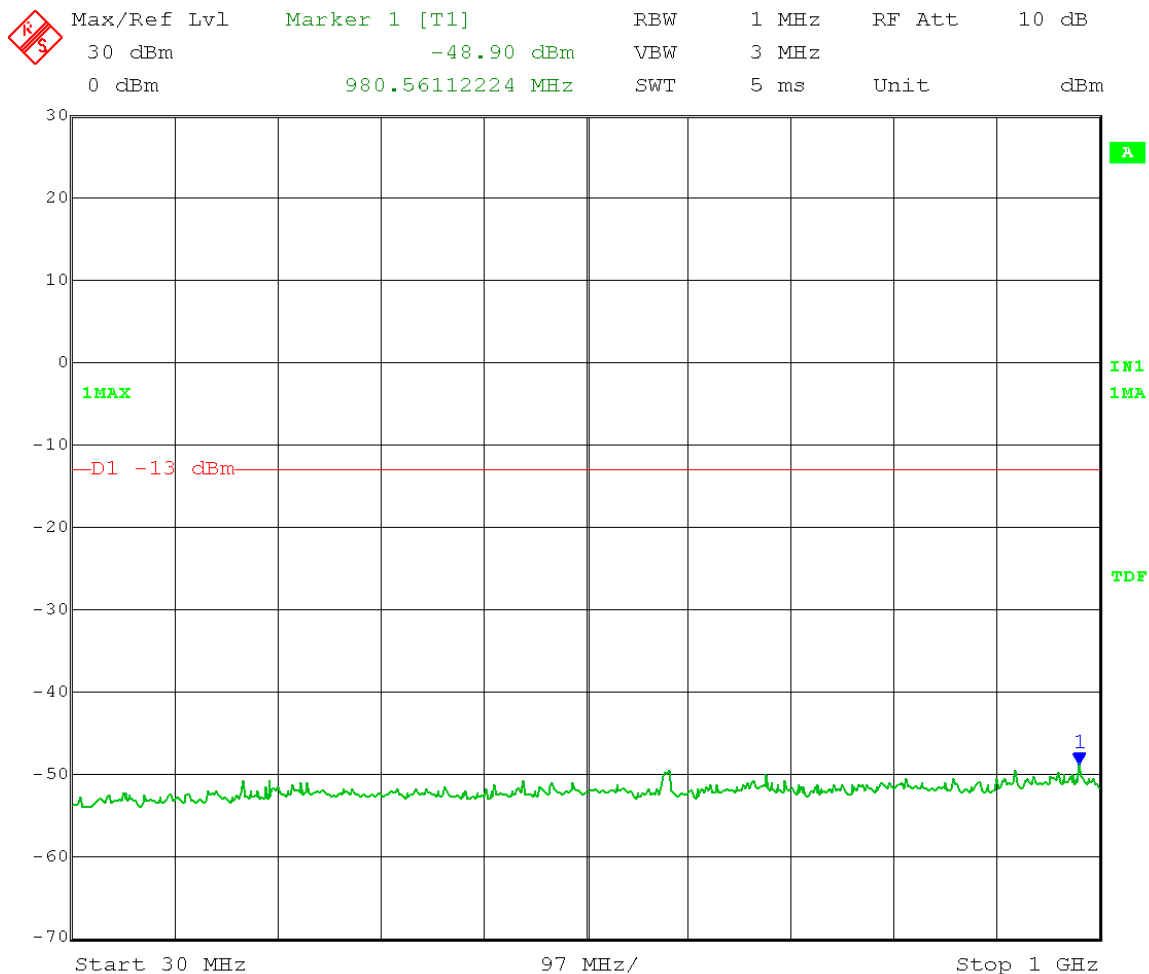


Date: 21.FEB.2014 09:20:24

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675.0 MHz Output power setting: 25 each port
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 30 – 1000 MHz

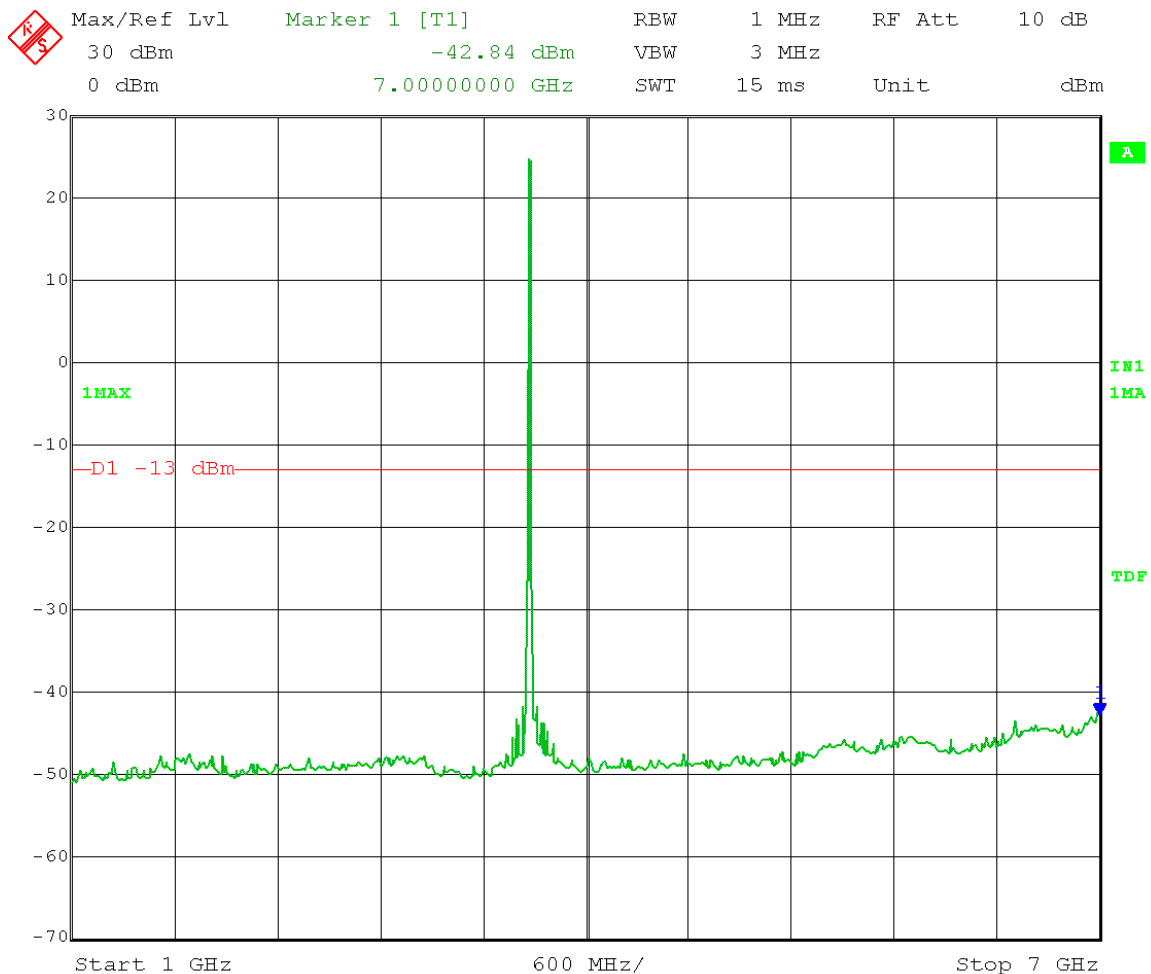


Date: 21.FEB.2014 11:28:32

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675.0 MHz Output power setting: 25 each port
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 1 – 7 GHz

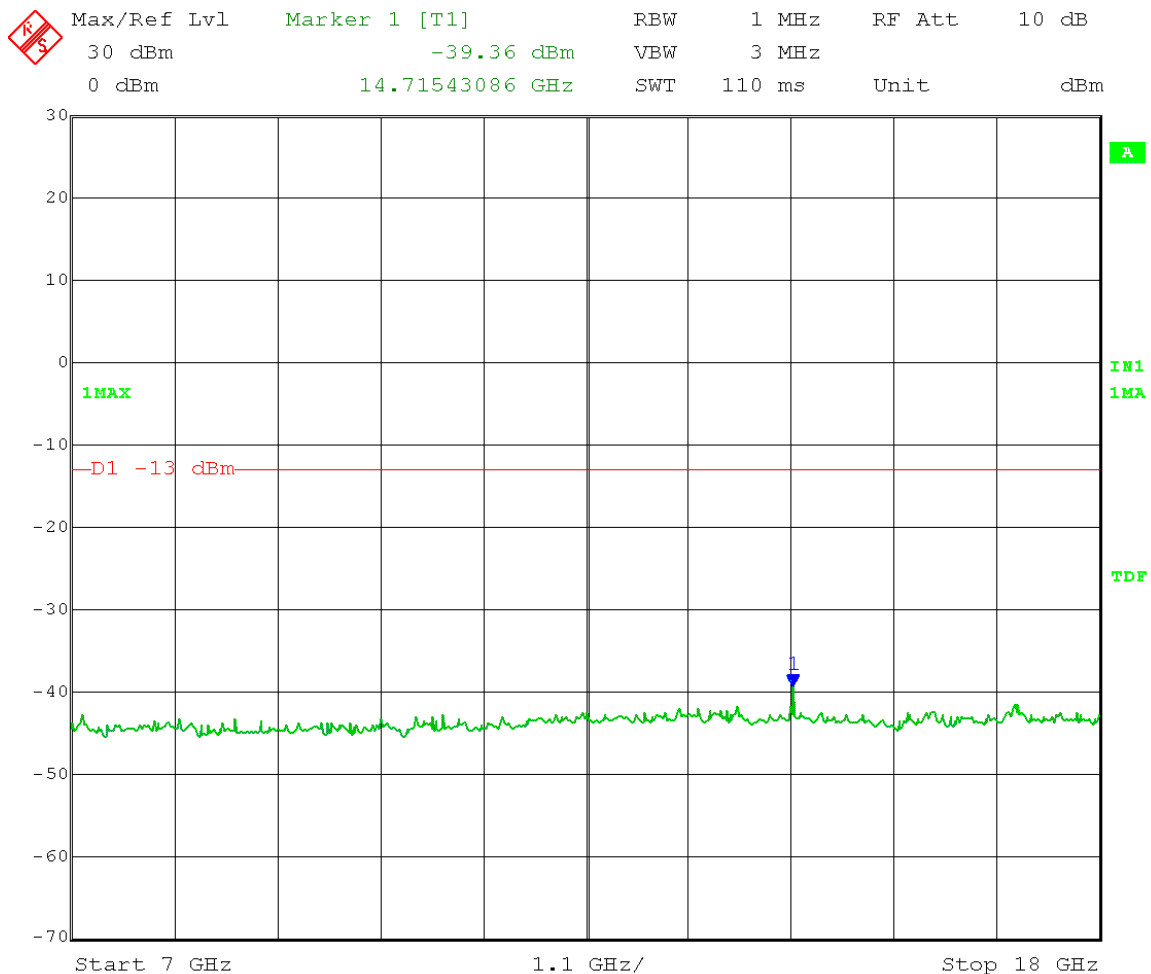


Date: 21.FEB.2014 11:21:55

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675.0 MHz Output power setting: 25 each port
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 7 – 18 GHz

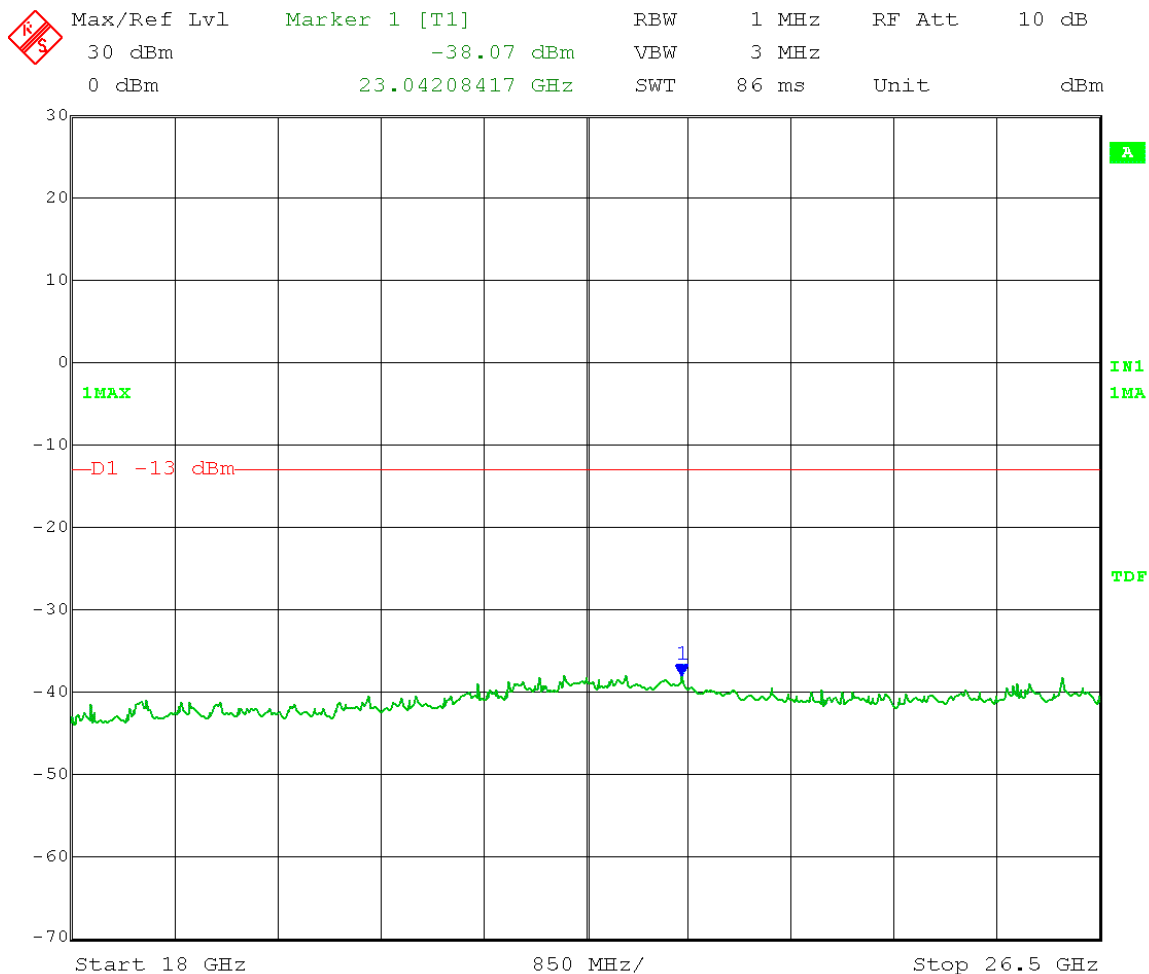


Date: 21.FEB.2014 11:23:18

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675.0 MHz Output power setting: 25 each port
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 18 – 26.5 GHz

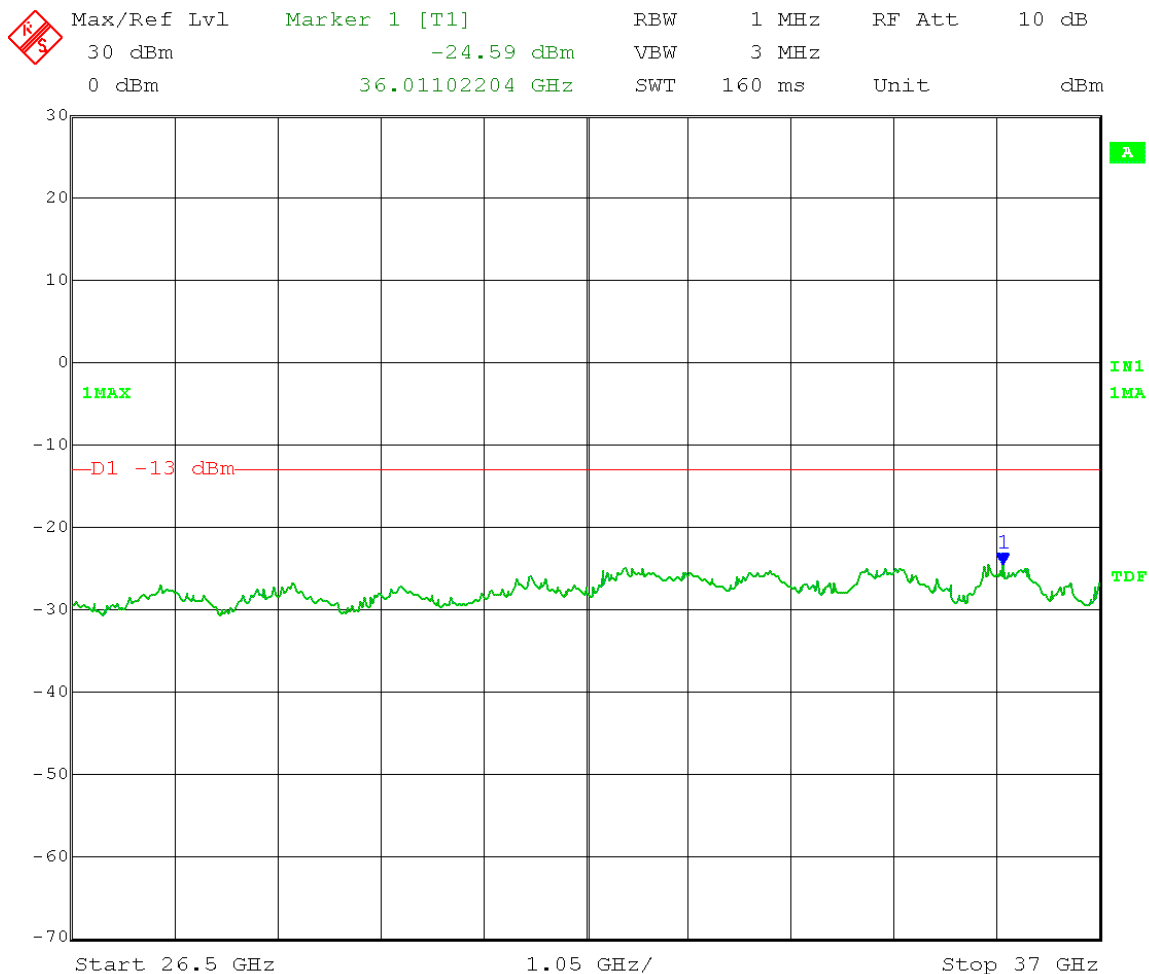


Date: 21.FEB.2014 11:24:44

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675.0 MHz Output power setting: 25 each port
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 26.5 – 37 GHz

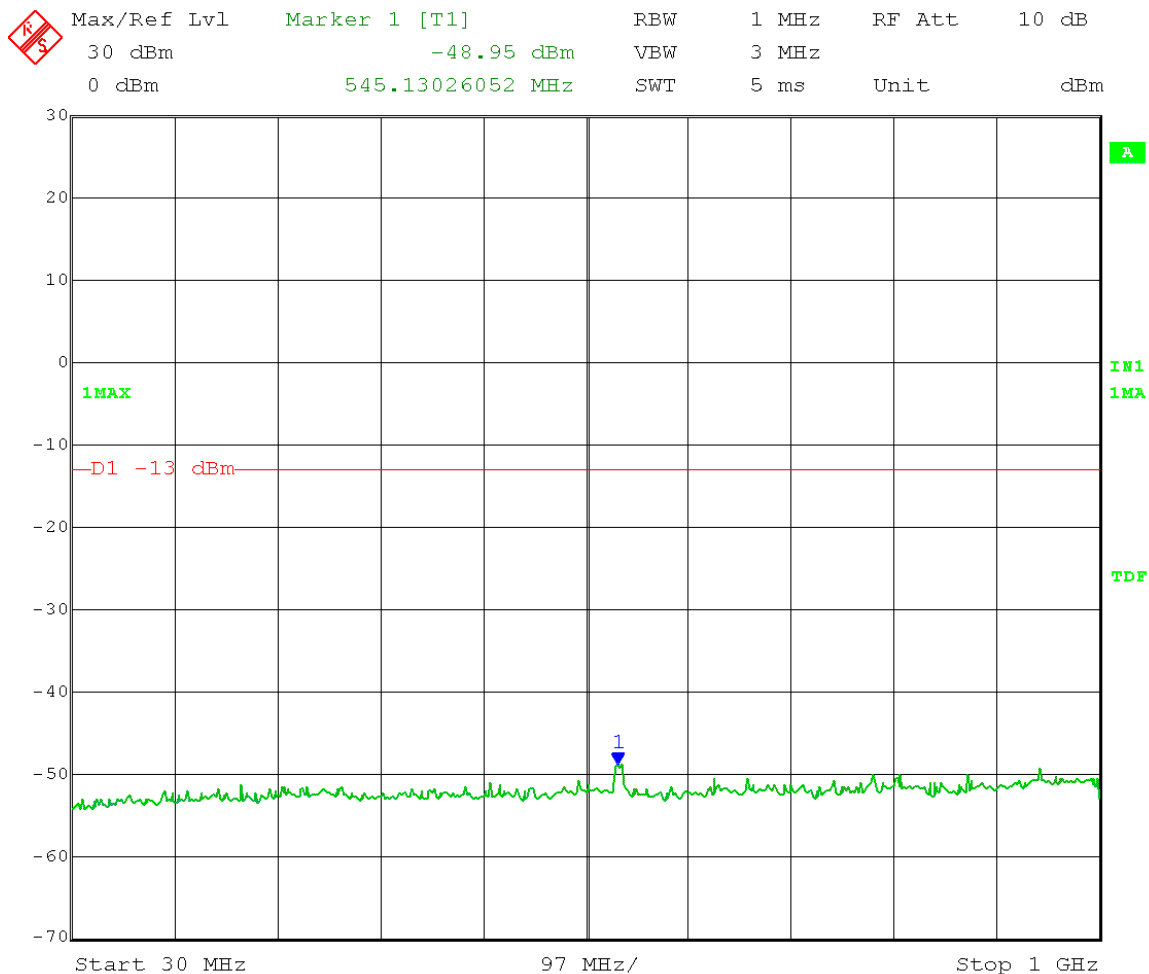


Date: 21.FEB.2014 11:26:29

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3697.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 30 – 1000 MHz

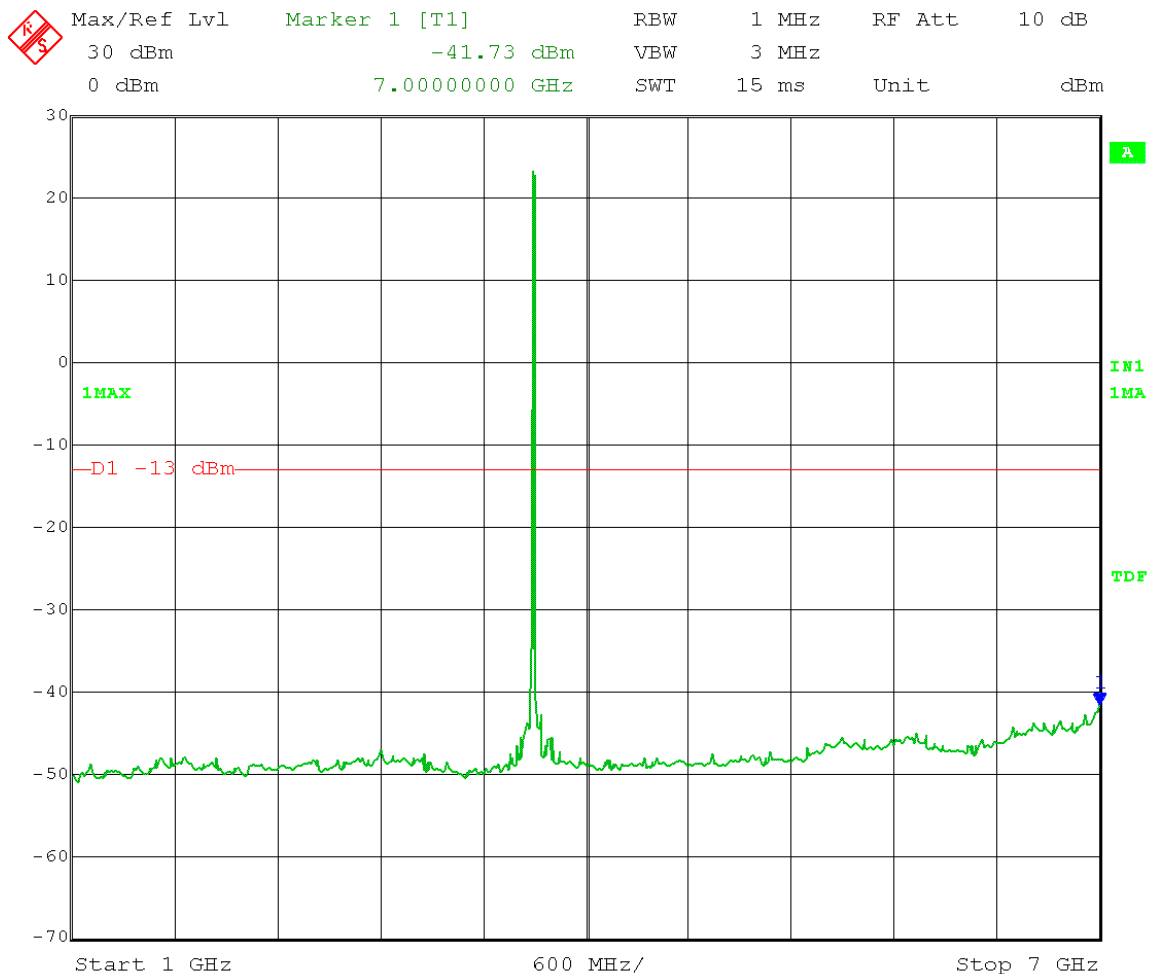


Date: 21.FEB.2014 09:46:46

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3697.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 1 – 7 GHz

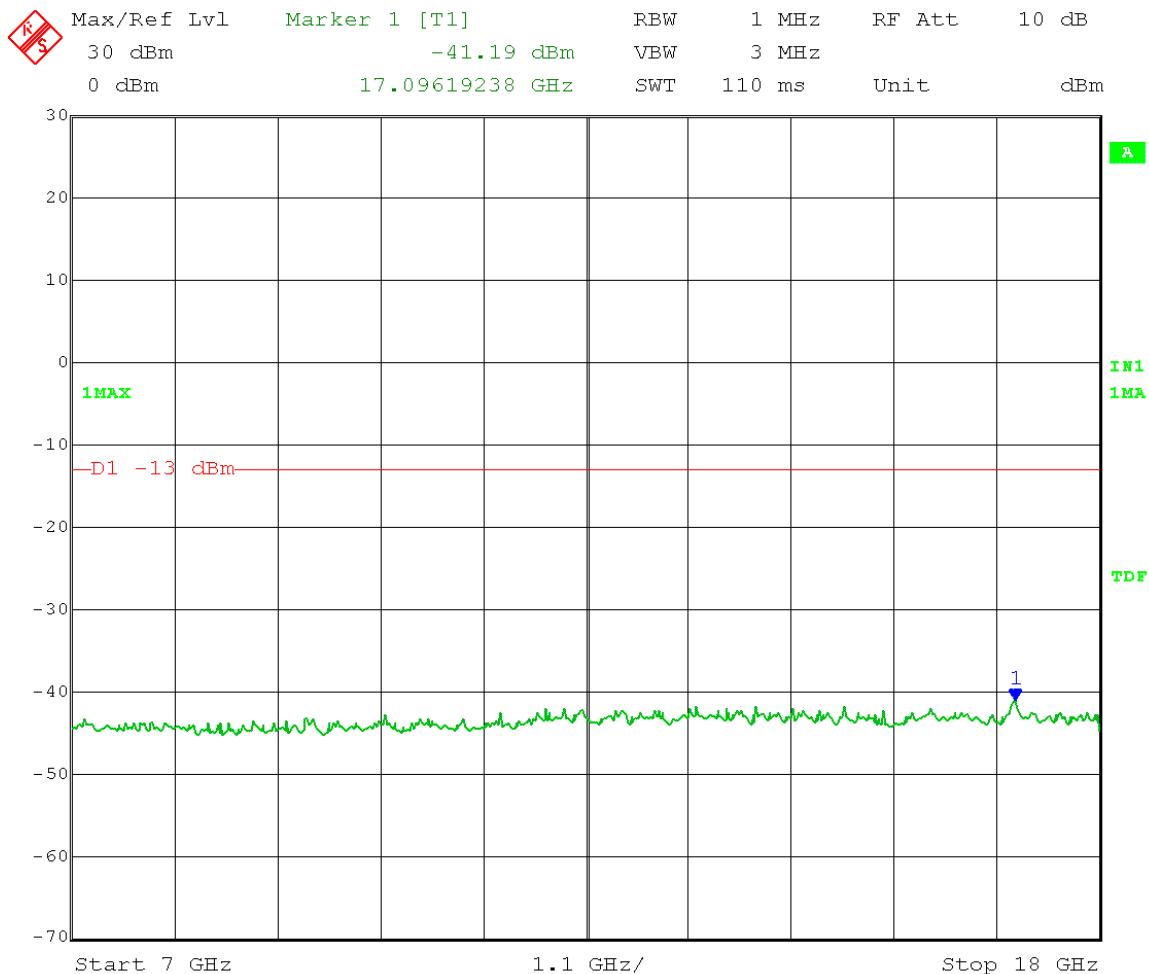


Date: 21.FEB.2014 09:39:15

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3697.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 7 – 18 GHz

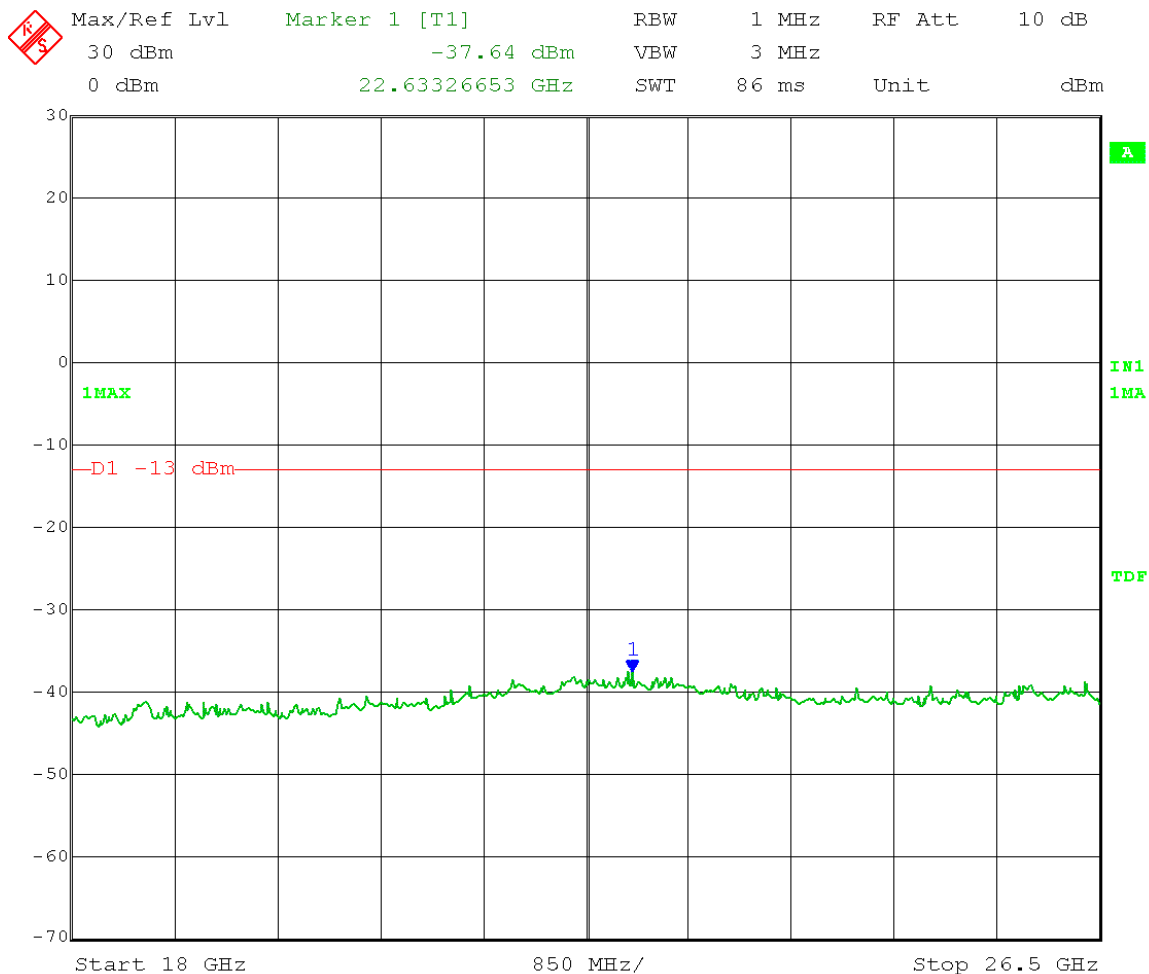


Date: 21.FEB.2014 09:41:20

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3697.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 18 – 26.5 GHz

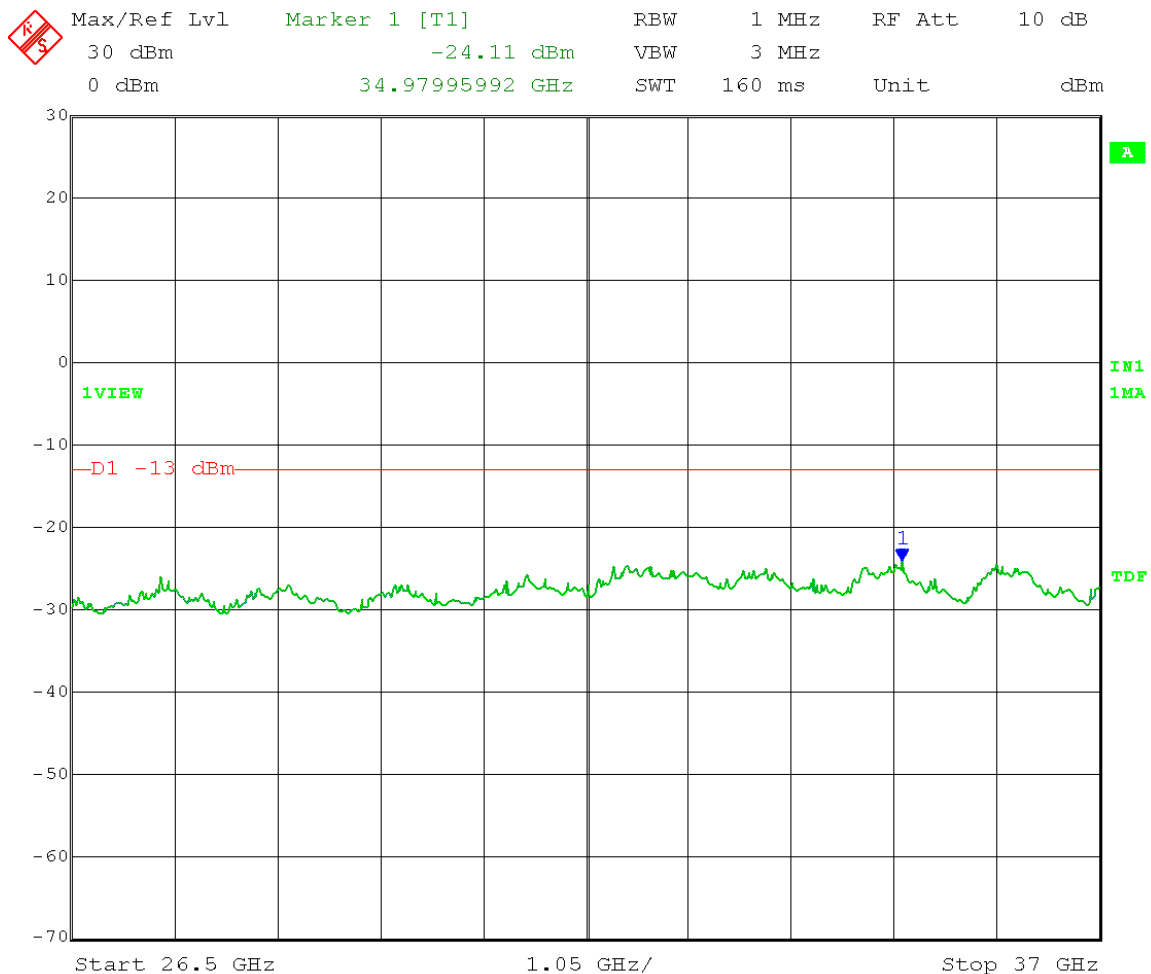


Date: 21.FEB.2014 09:42:45

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3697.5 MHz Output power setting: 25
Channel bandwidth: 5 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 26.5 – 37 GHz

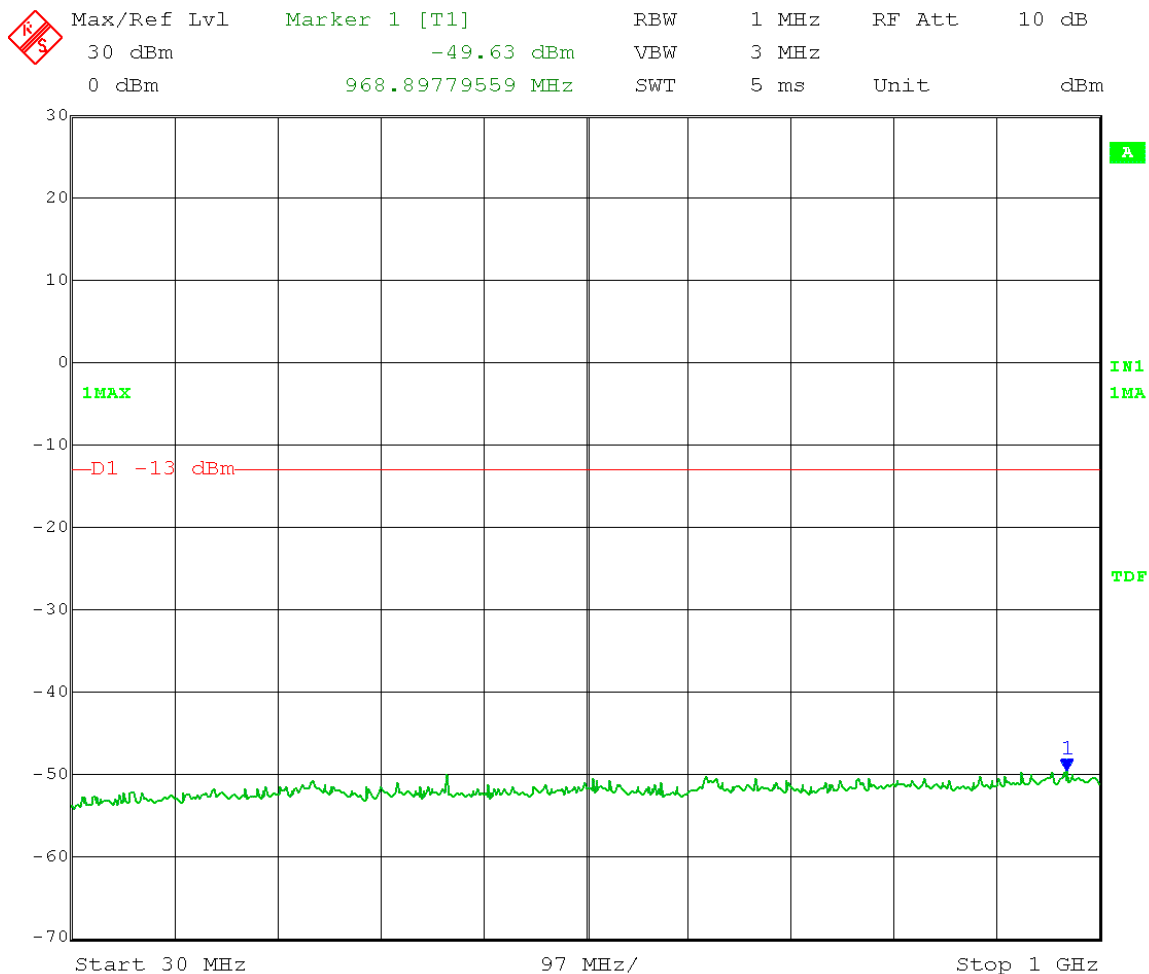


Date: 21.FEB.2014 09:44:47

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3655 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 30 – 1000 MHz

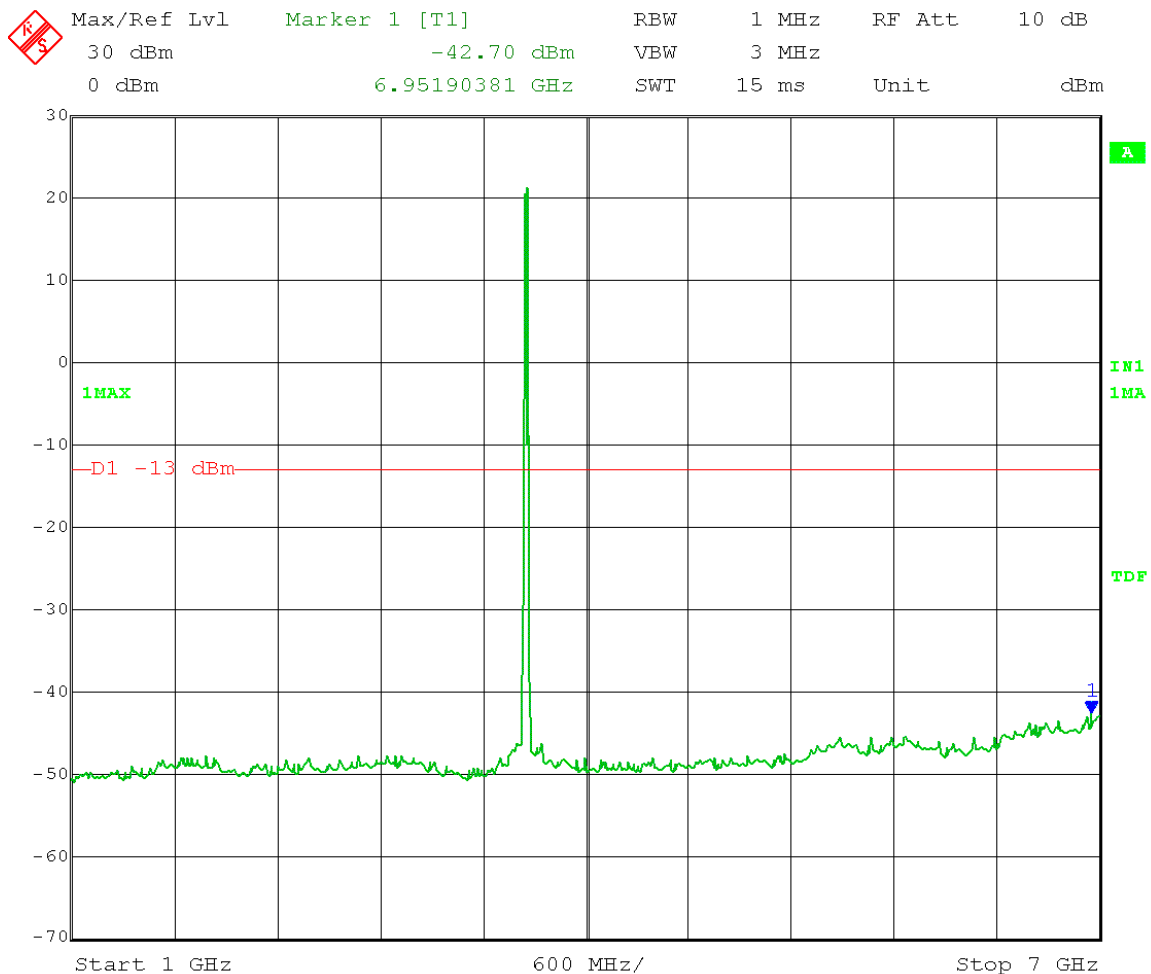


Date: 21.FEB.2014 10:05:43

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3655 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 1 – 7 GHz

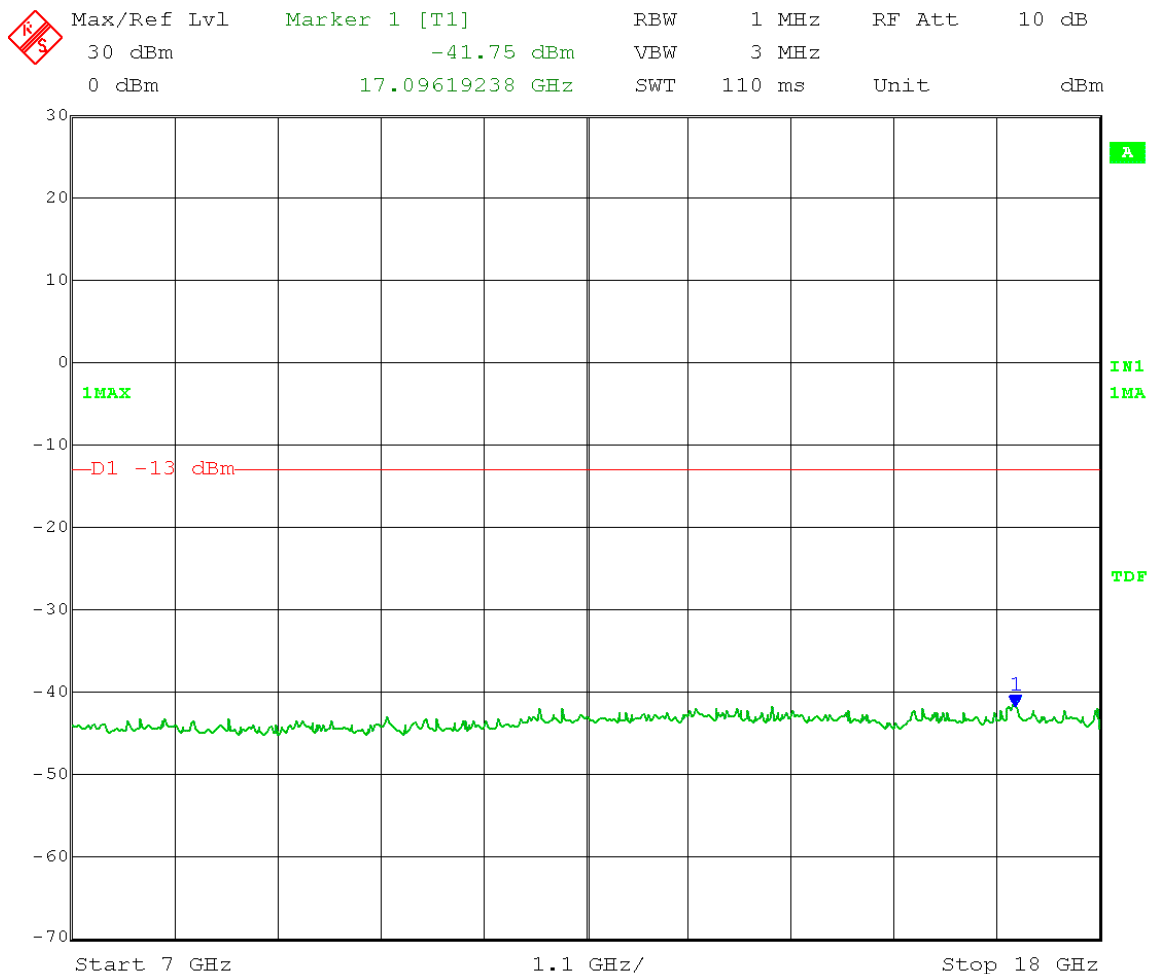


Date: 21.FEB.2014 09:57:26

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3655 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 7 – 18 GHz

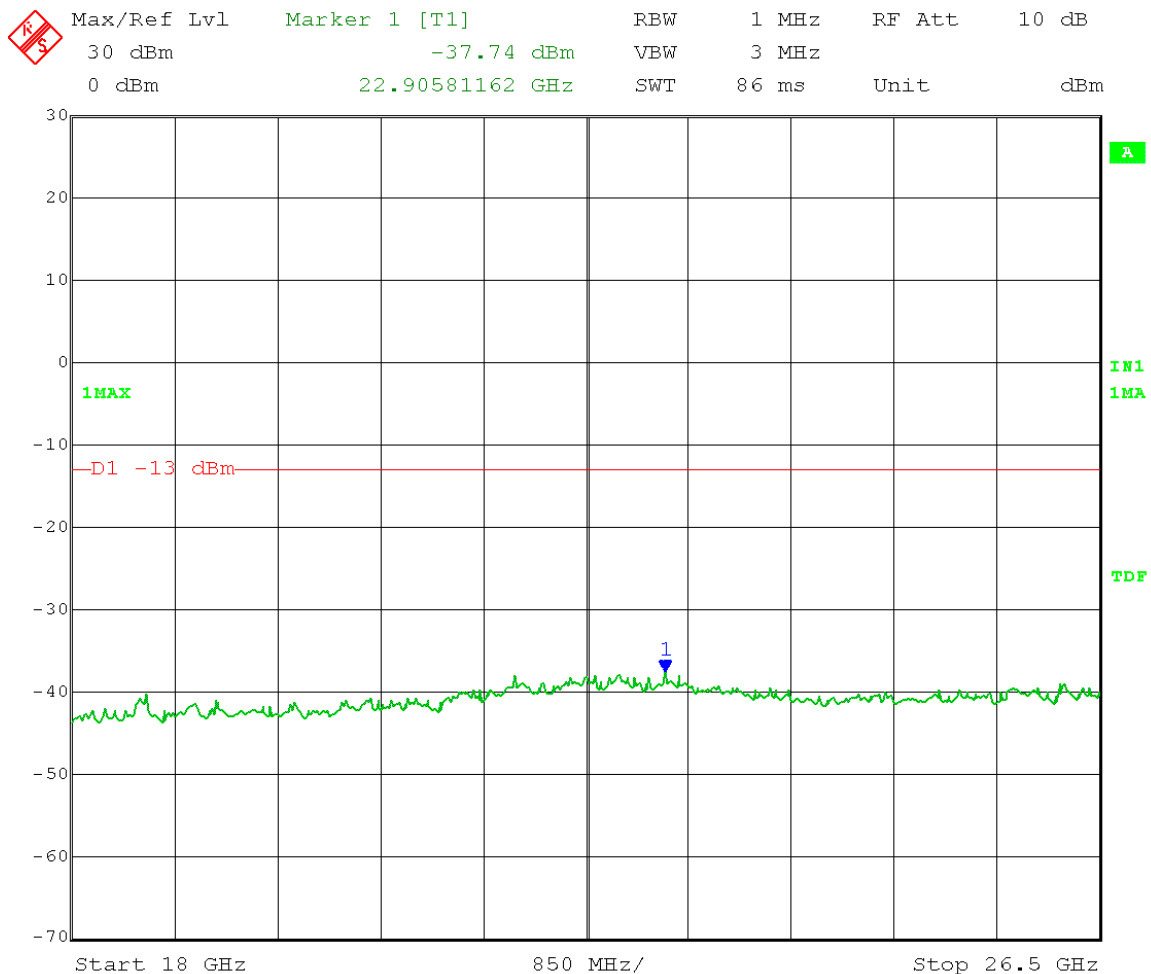


Date: 21.FEB.2014 09:59:19

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3655 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 18 – 26.5 GHz

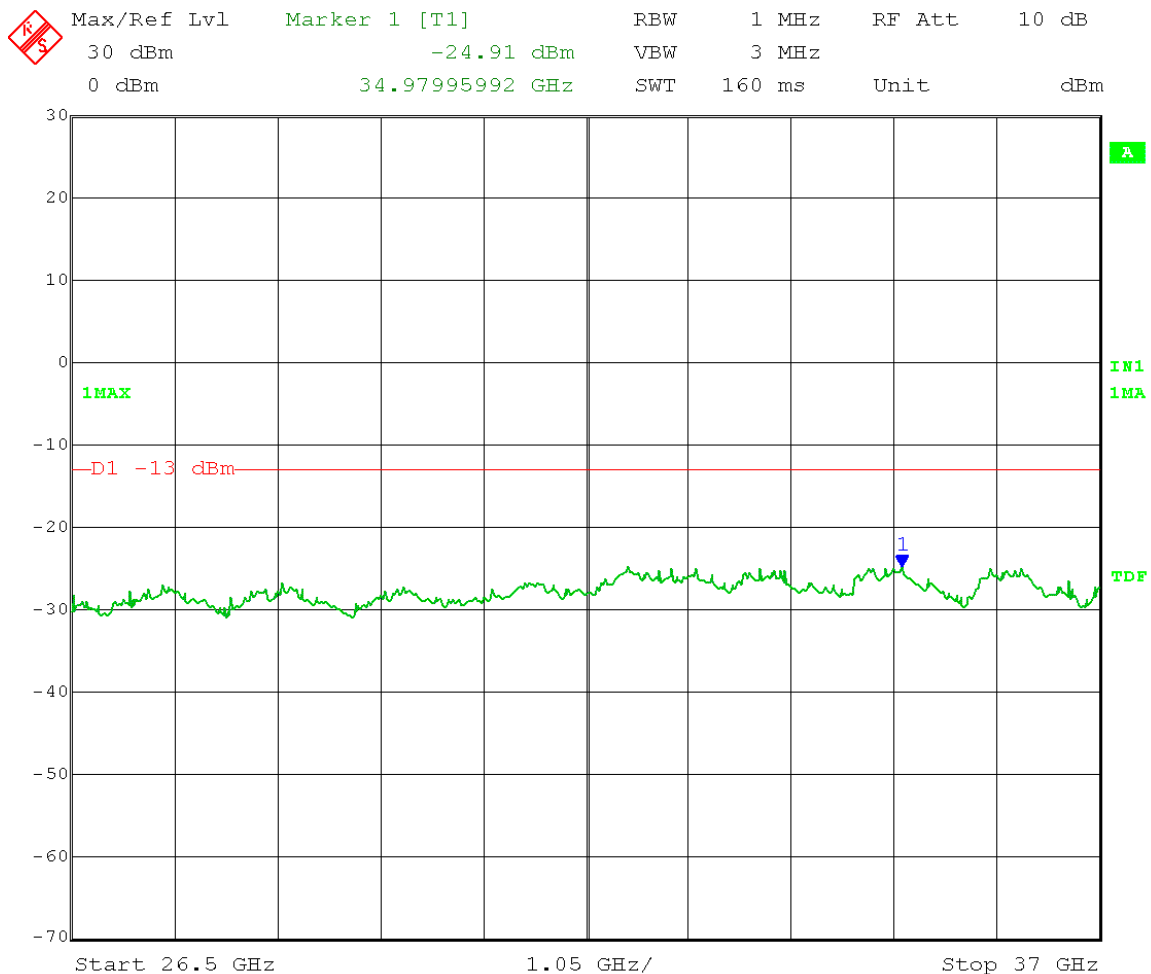


Date: 21.FEB.2014 10:01:11

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3655 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 26.5 – 37 GHz

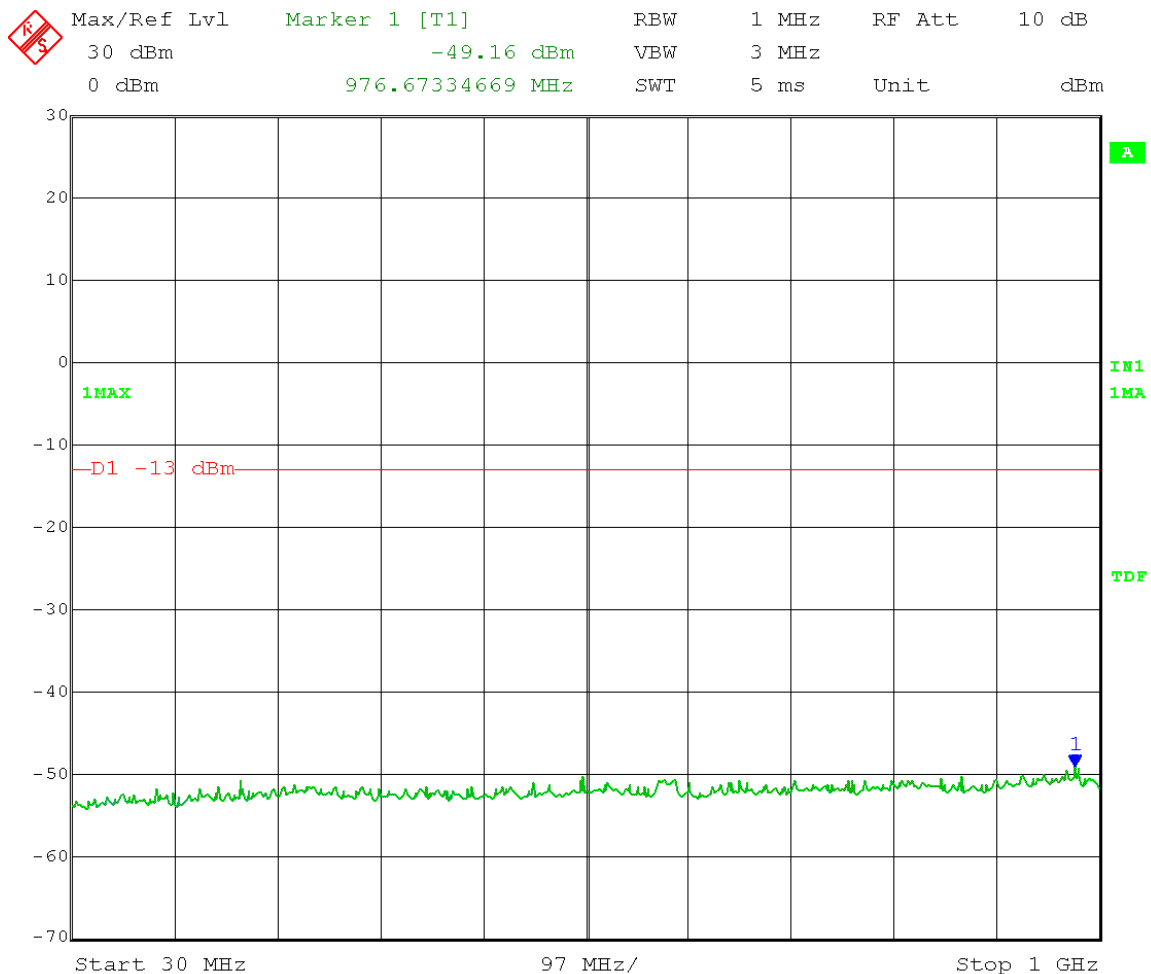


Date: 21.FEB.2014 10:02:37

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 30 – 1000 GHz

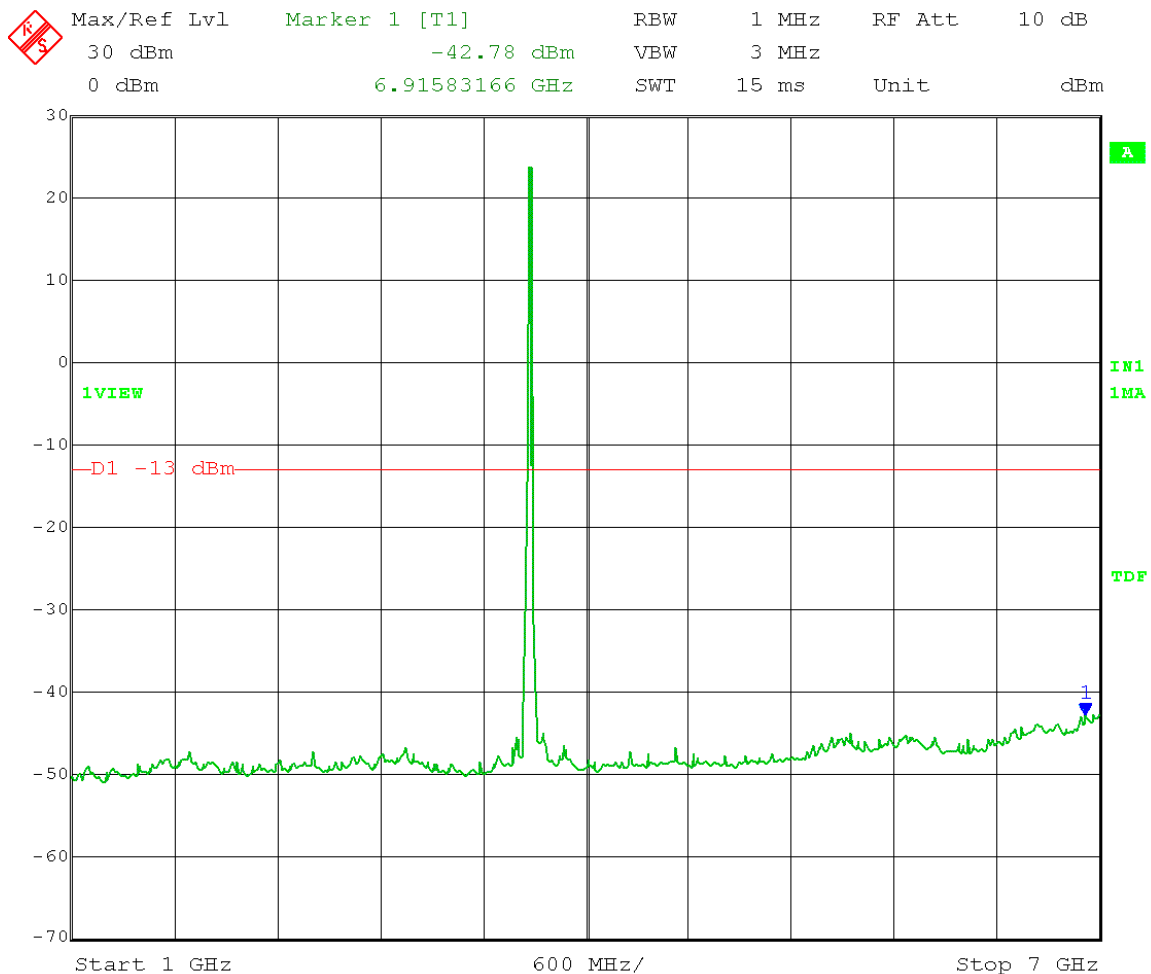


Date: 21.FEB.2014 10:19:16

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 1 – 7 GHz

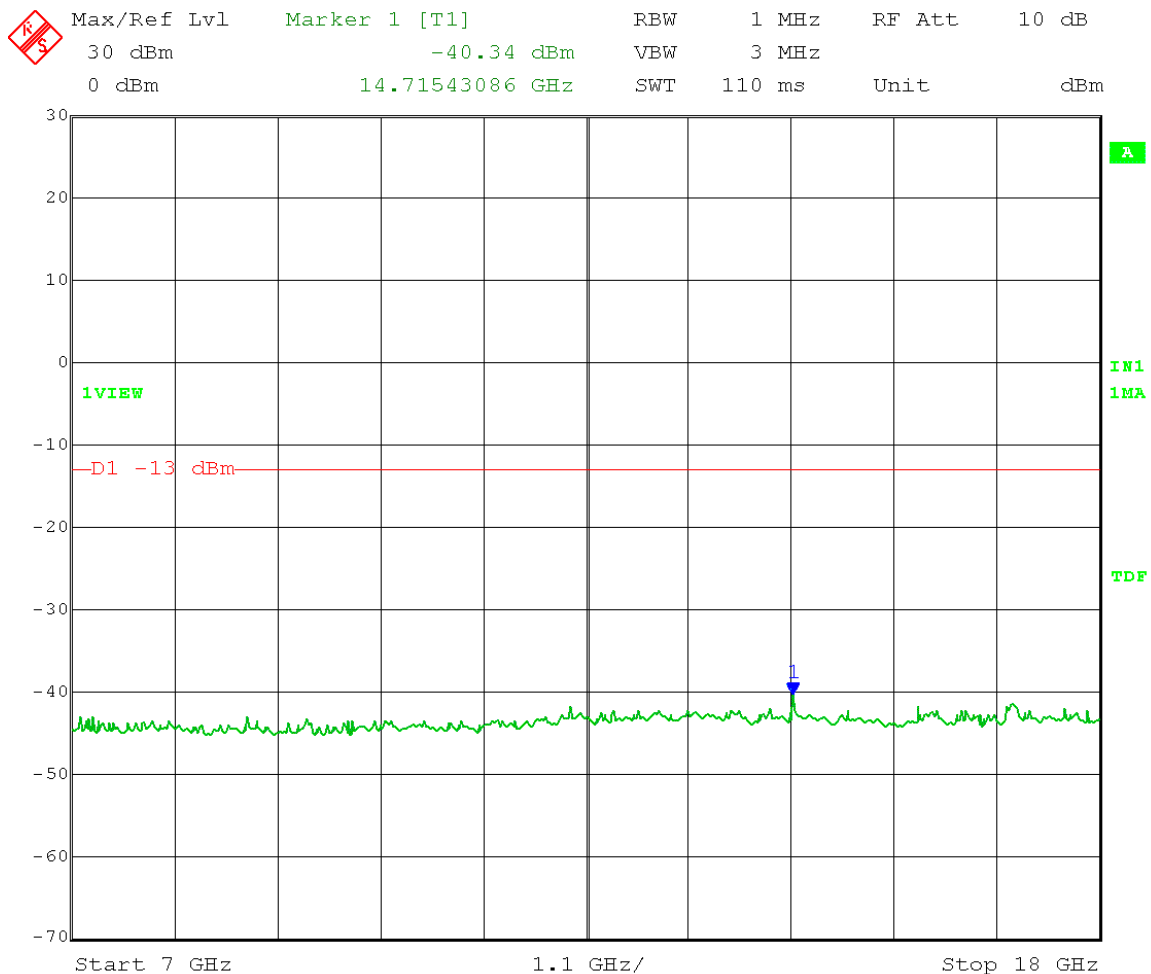


Date: 21.FEB.2014 10:09:42

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 7 – 18 GHz

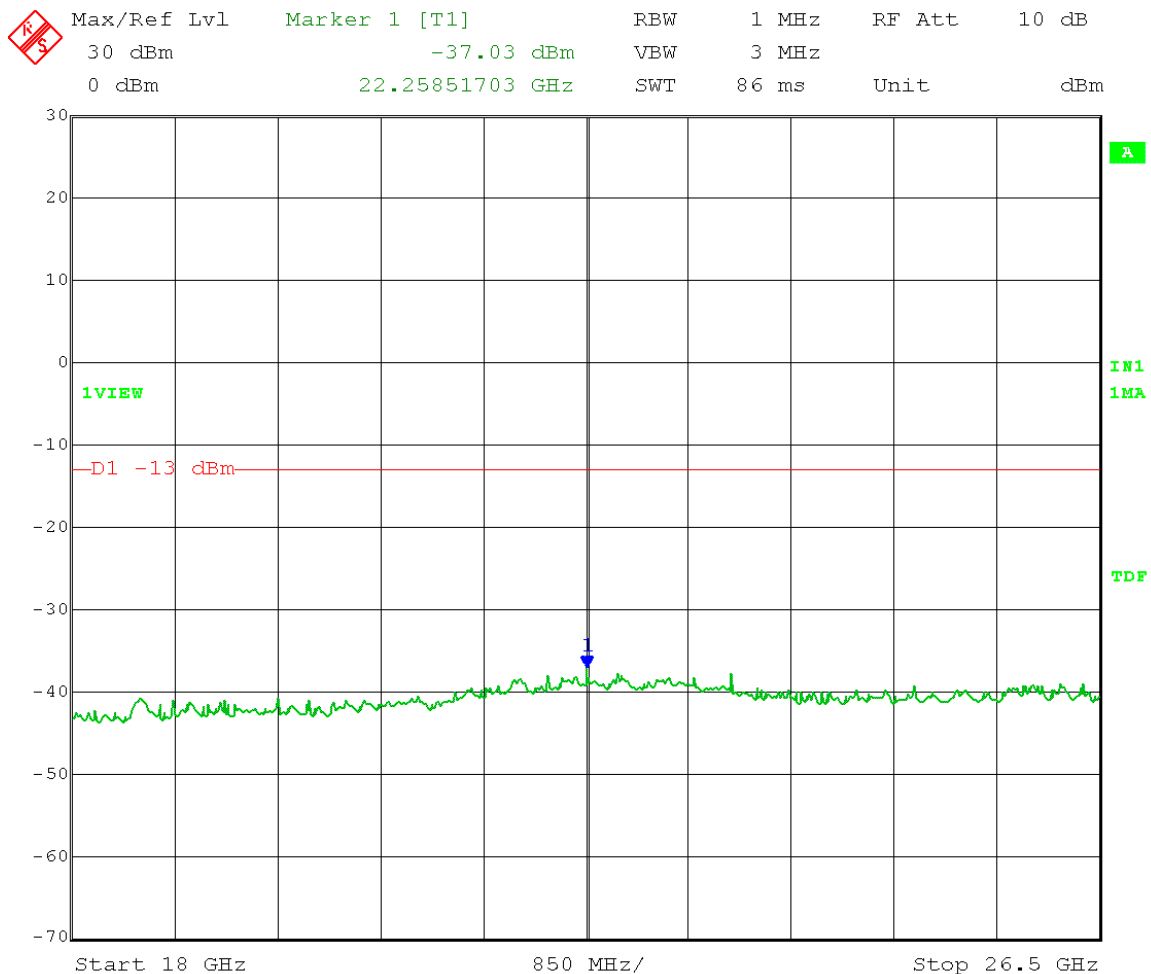


Date: 21.FEB.2014 10:12:30

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 18 – 26.5 GHz

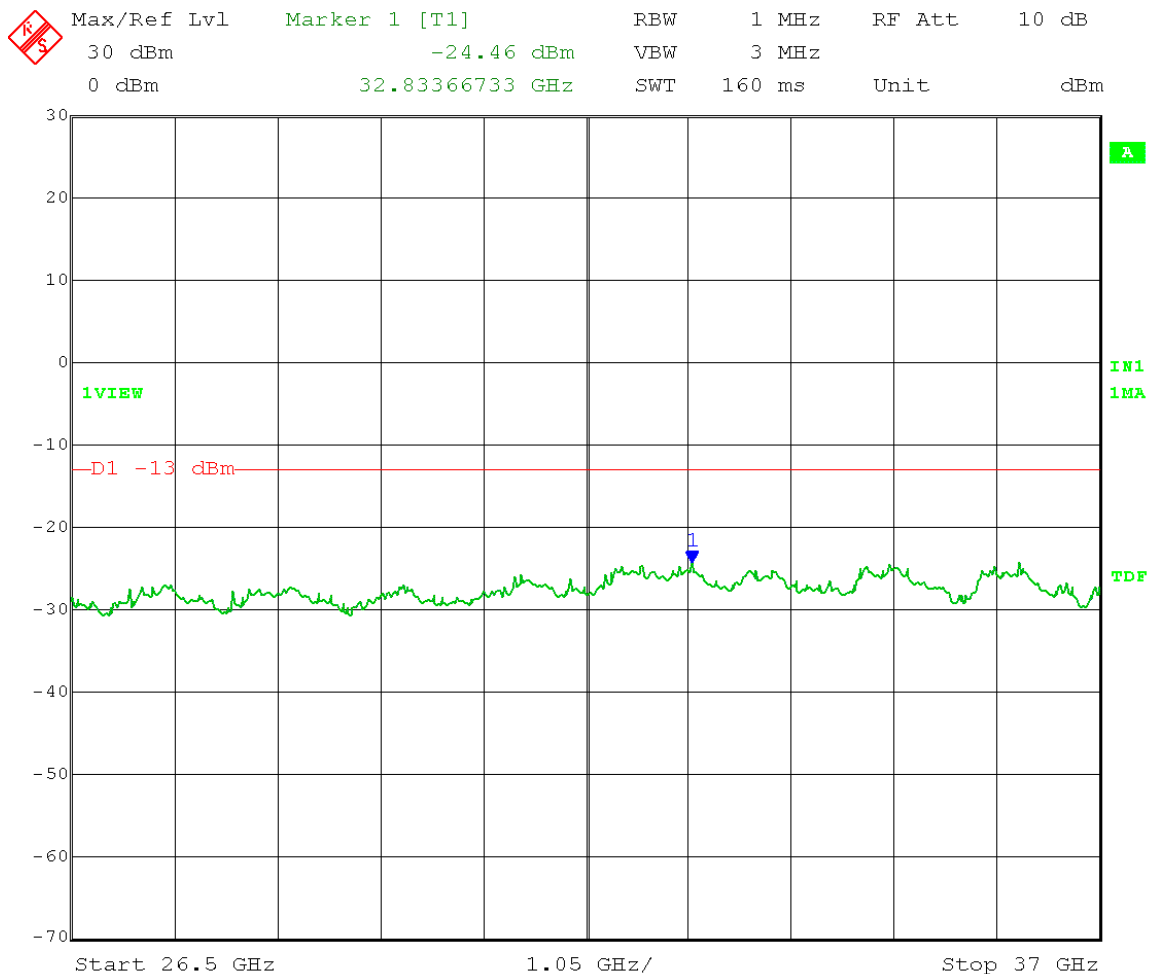


Date: 21.FEB.2014 10:15:03

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 26.5 – 37 GHz

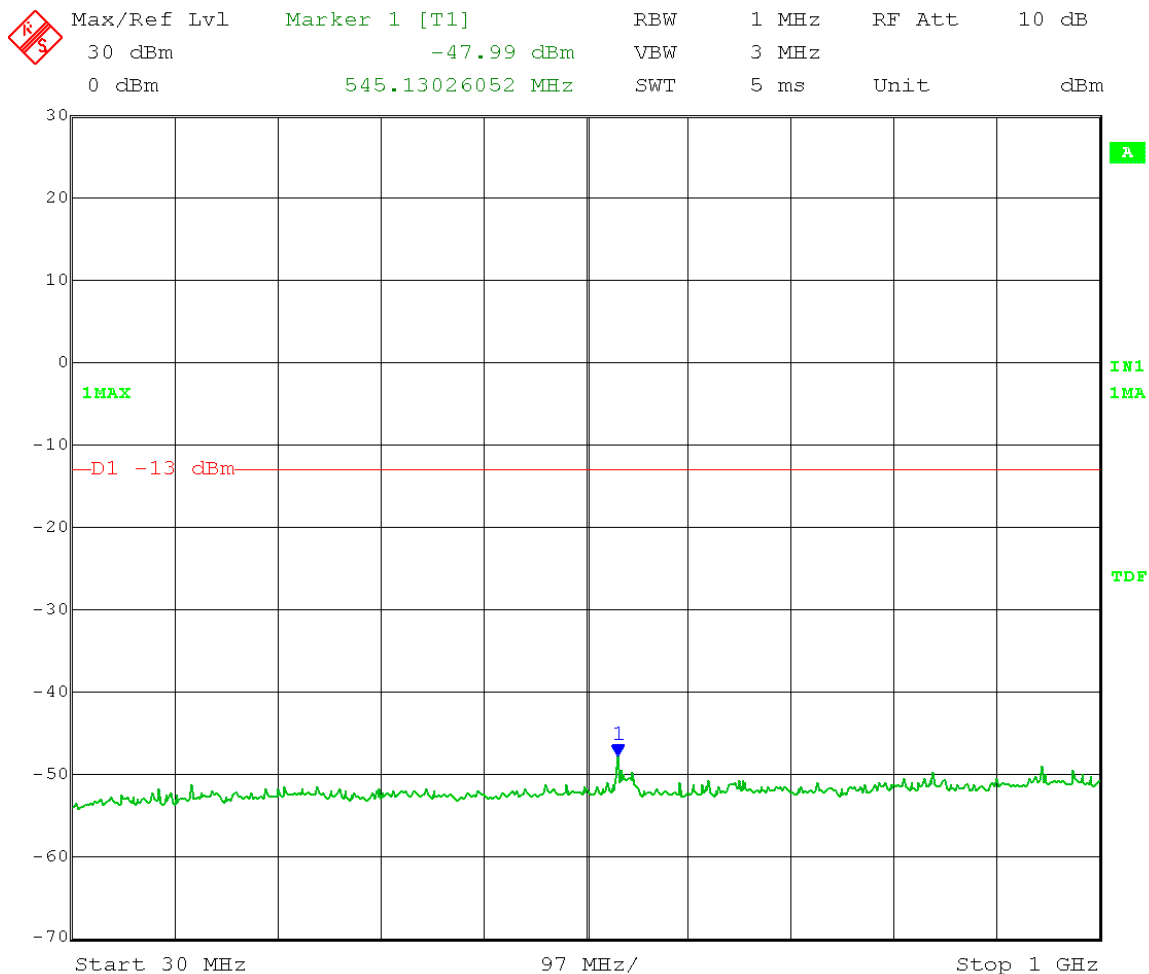


Date: 21.FEB.2014 10:17:08

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3695 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 30 – 1000 MHz

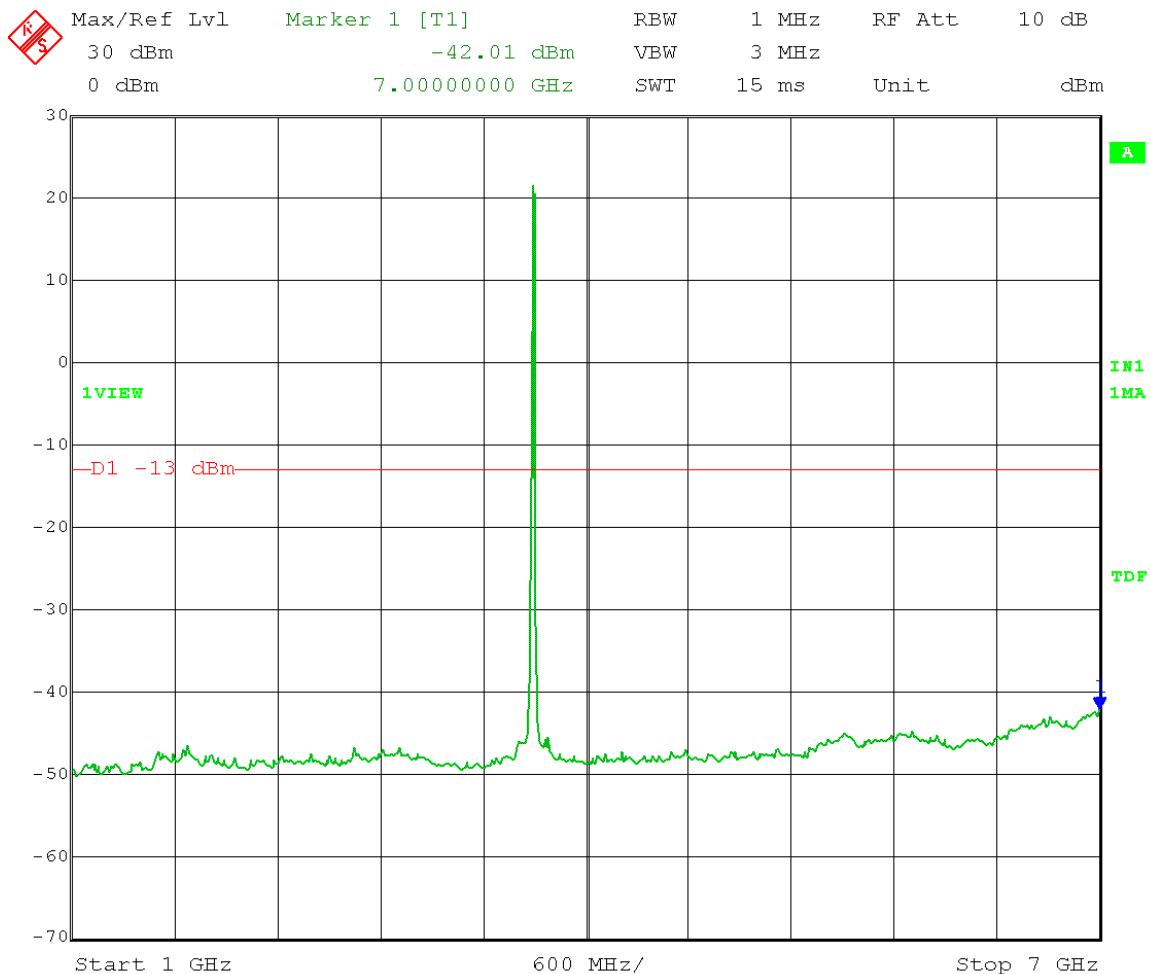


Date: 21.FEB.2014 10:40:10

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3695 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 1 – 7 GHz

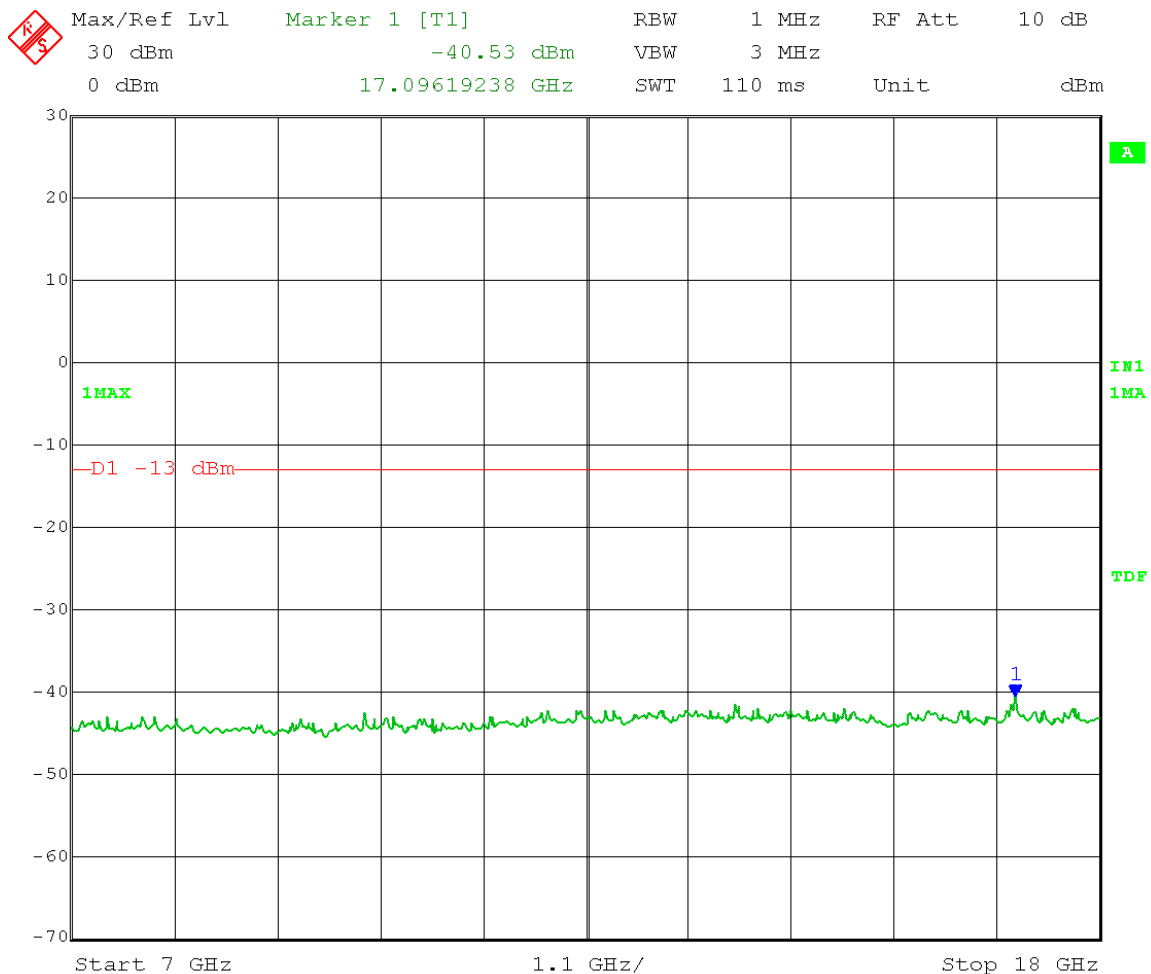


Date: 21.FEB.2014 10:31:49

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3695 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 7 – 18 GHz

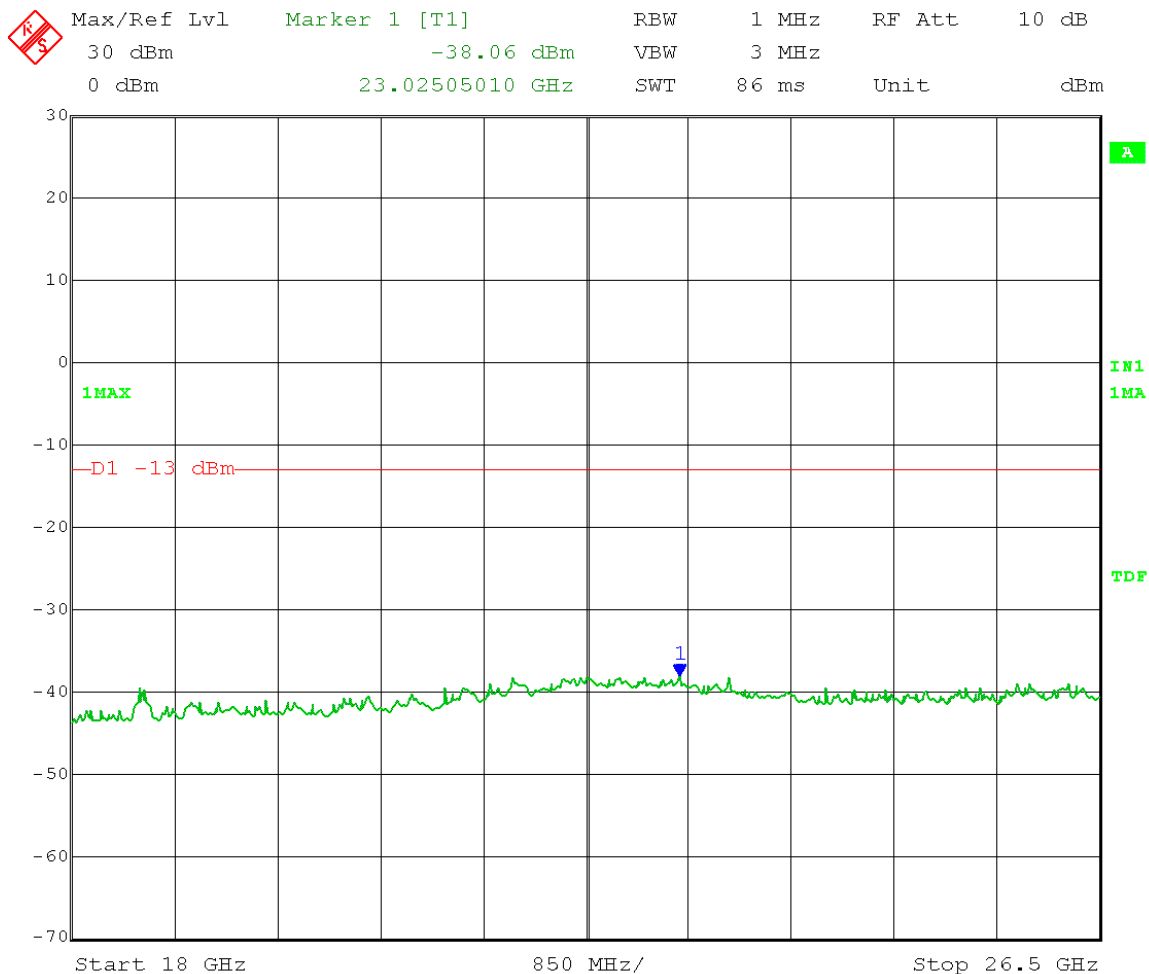


Date: 21.FEB.2014 10:34:01

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3695 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 18 – 26.5 GHz

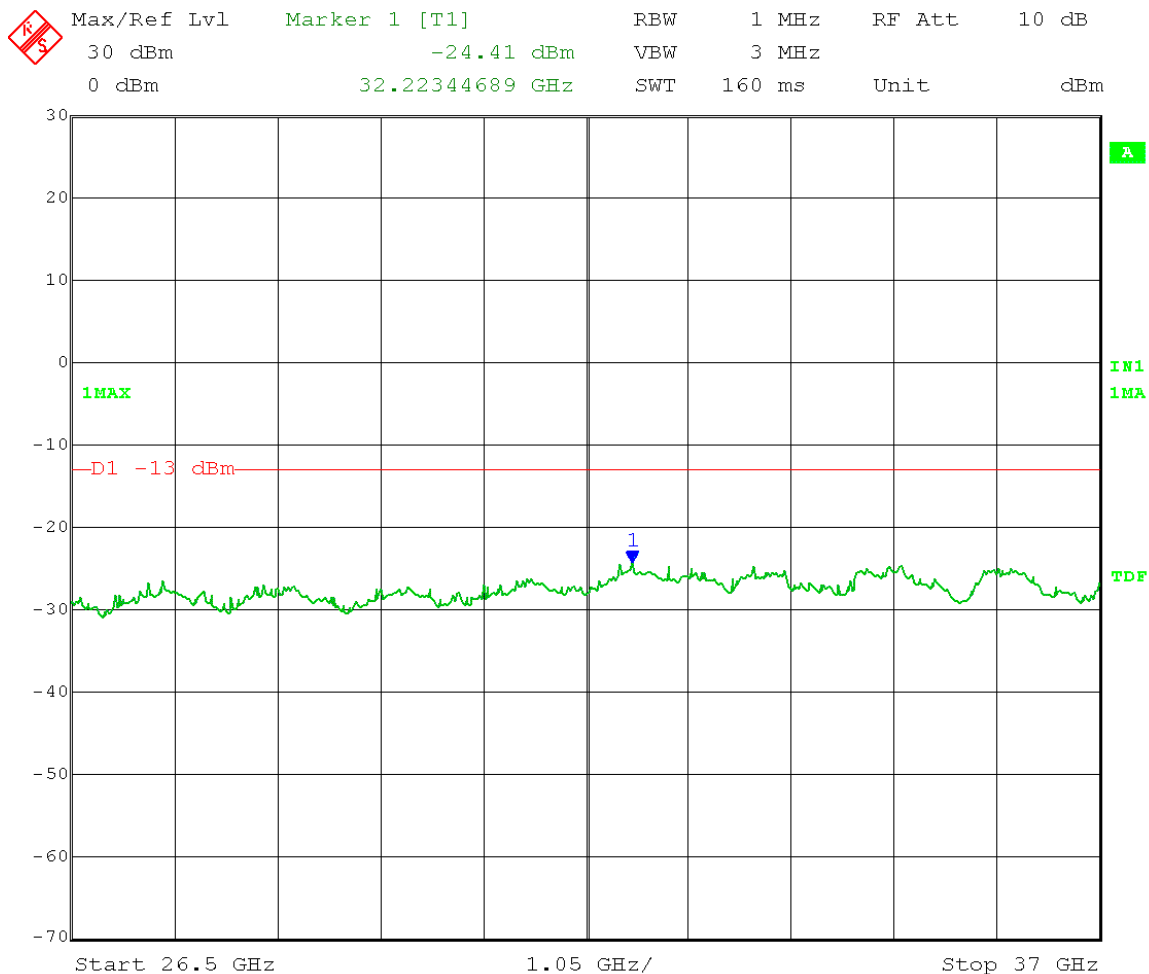


Date: 21.FEB.2014 10:36:05

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3695 MHz Output power setting: 25
Channel bandwidth: 10 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 26.5 – 37 GHz

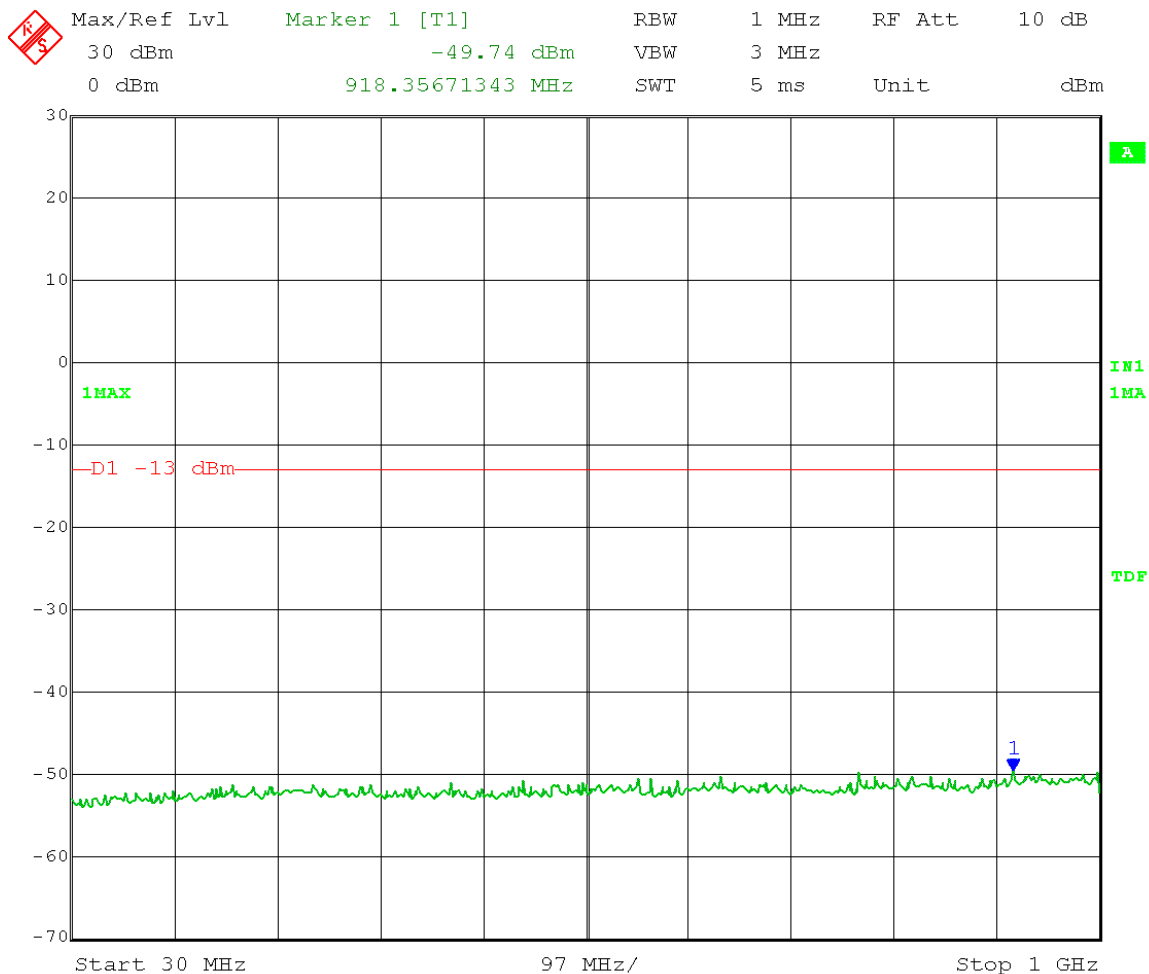


Date: 21.FEB.2014 10:38:12

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3660 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 30 – 1000 MHz

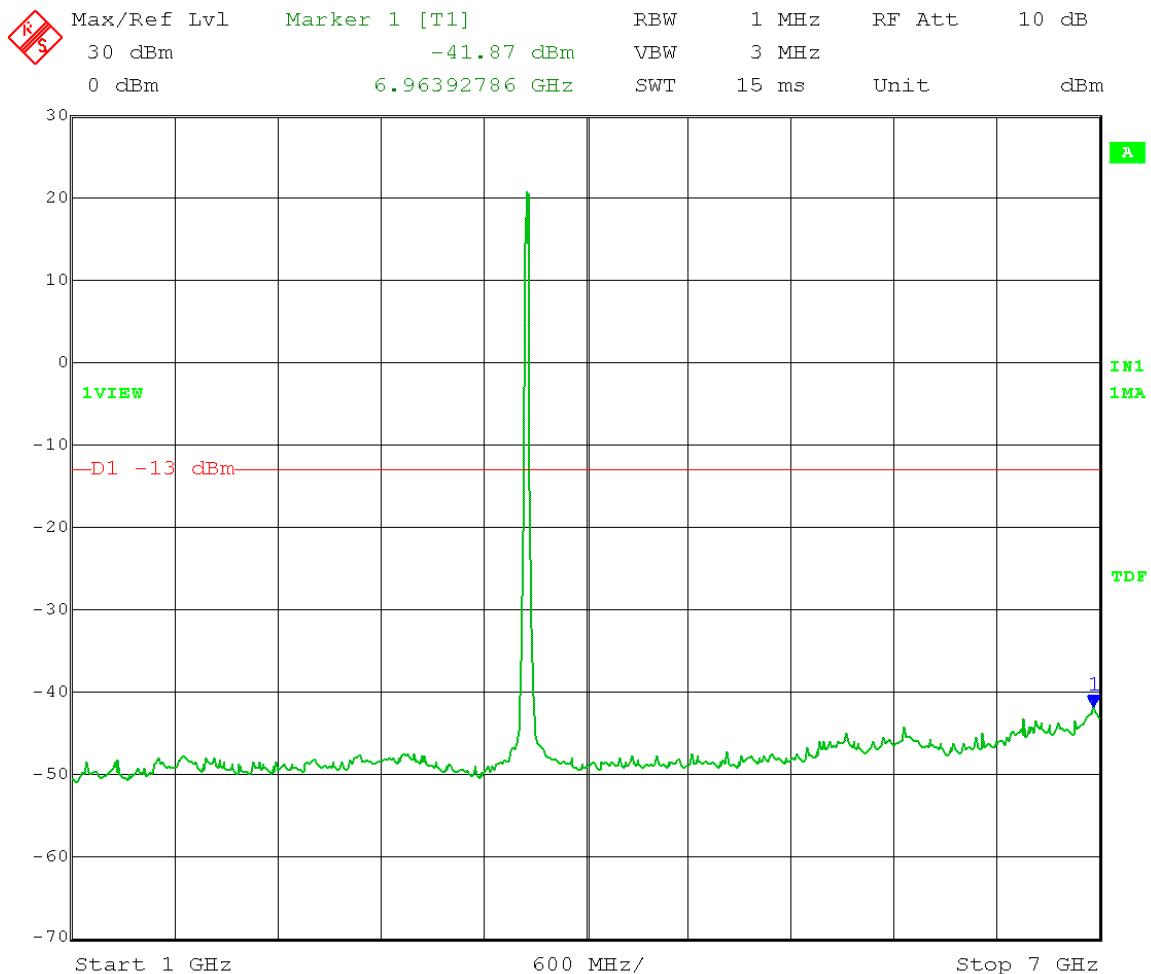


Date: 21.FEB.2014 10:54:29

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3660 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 1 – 7 GHz

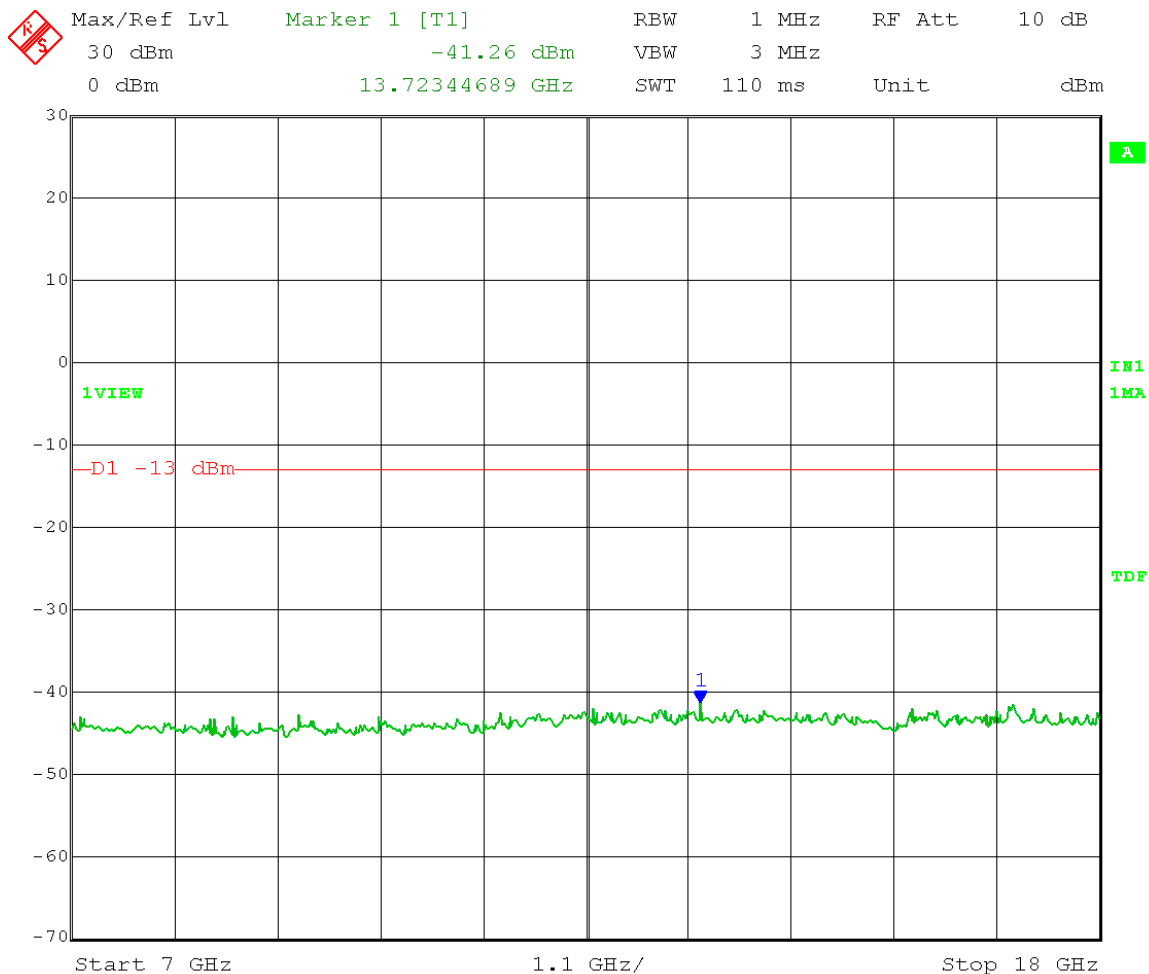


Date: 21.FEB.2014 10:45:39

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3660 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 7 – 18 GHz

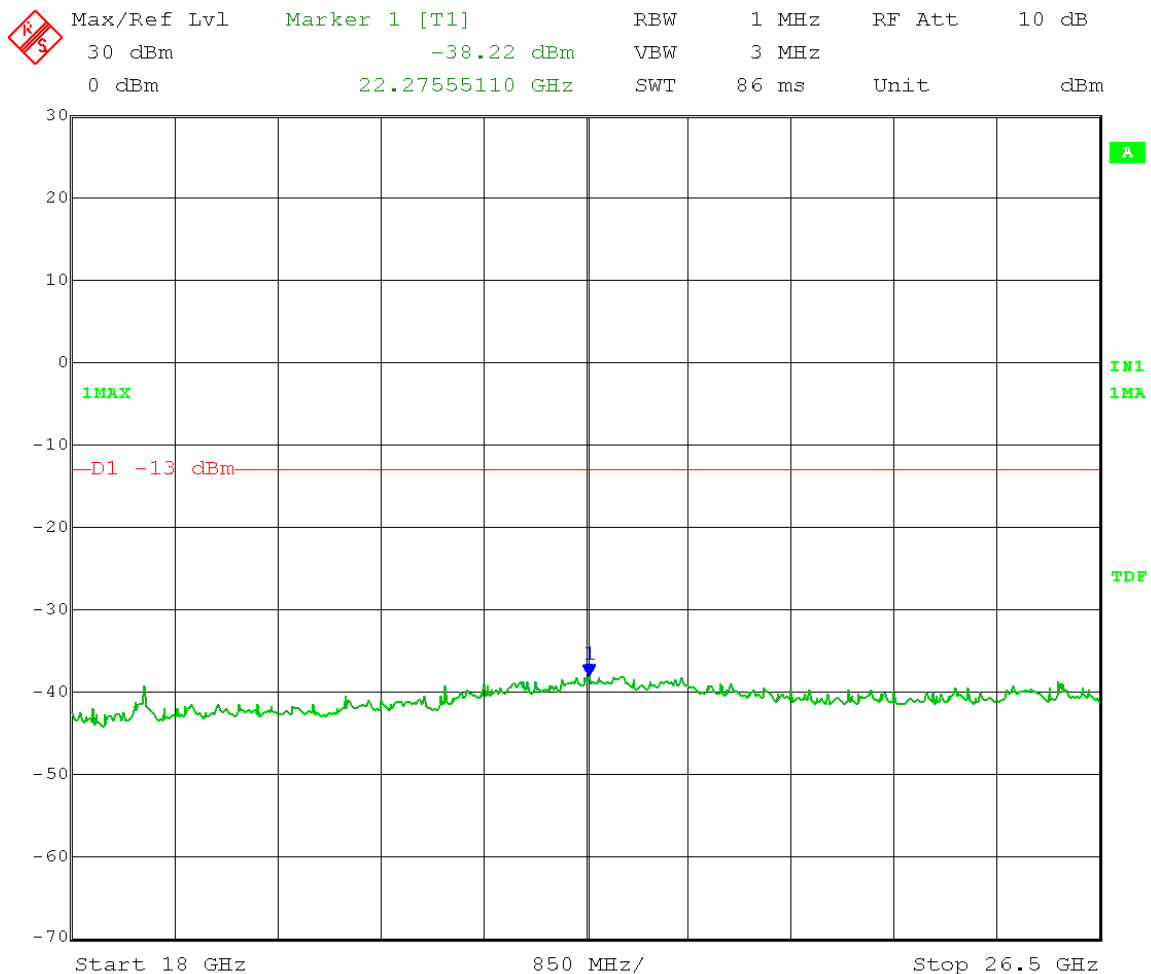


Date: 21.FEB.2014 10:47:43

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3660 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 18 – 26.5 GHz

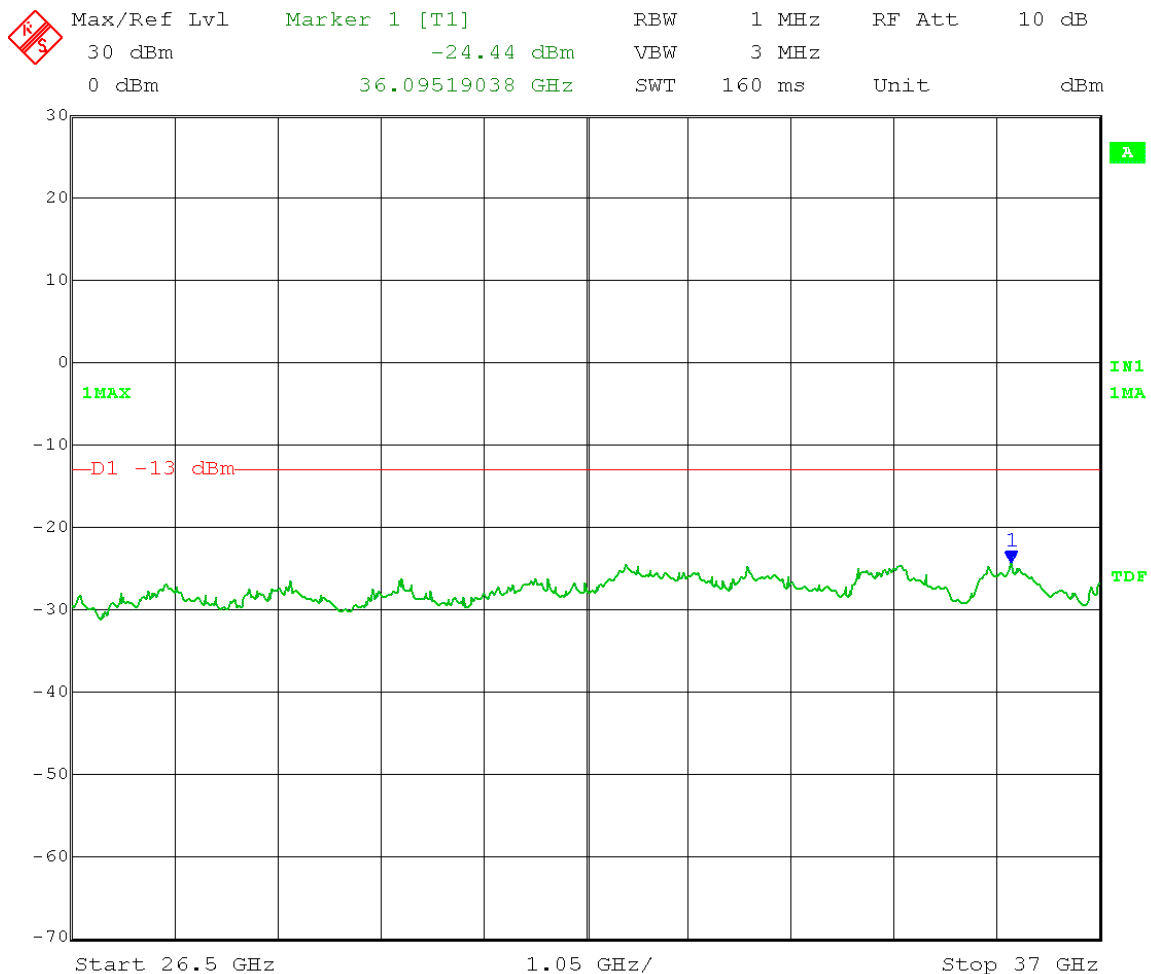


Date: 21.FEB.2014 10:49:49

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: 3660 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 26.5 – 37 GHz

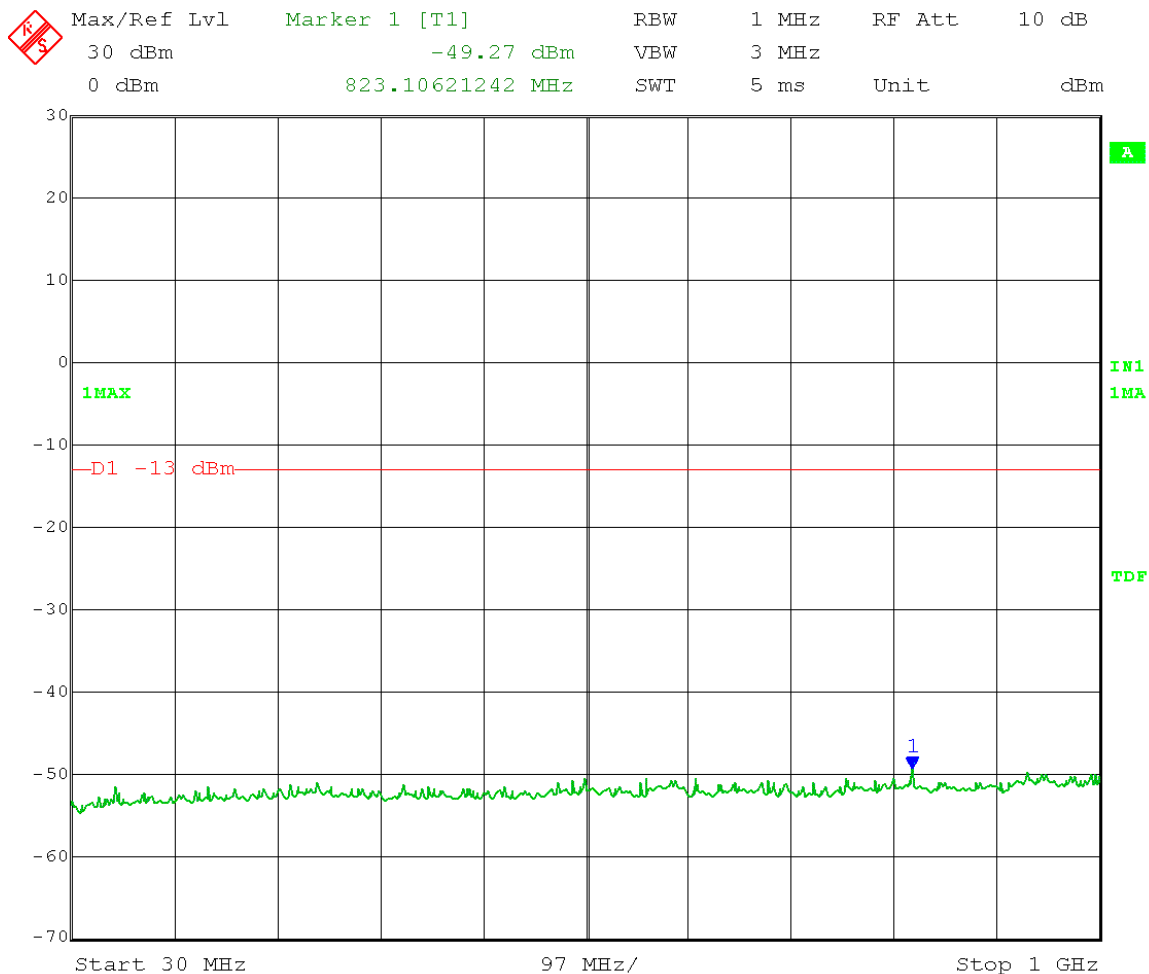


Date: 21.FEB.2014 10:51:48

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 30 – 1000 MHz

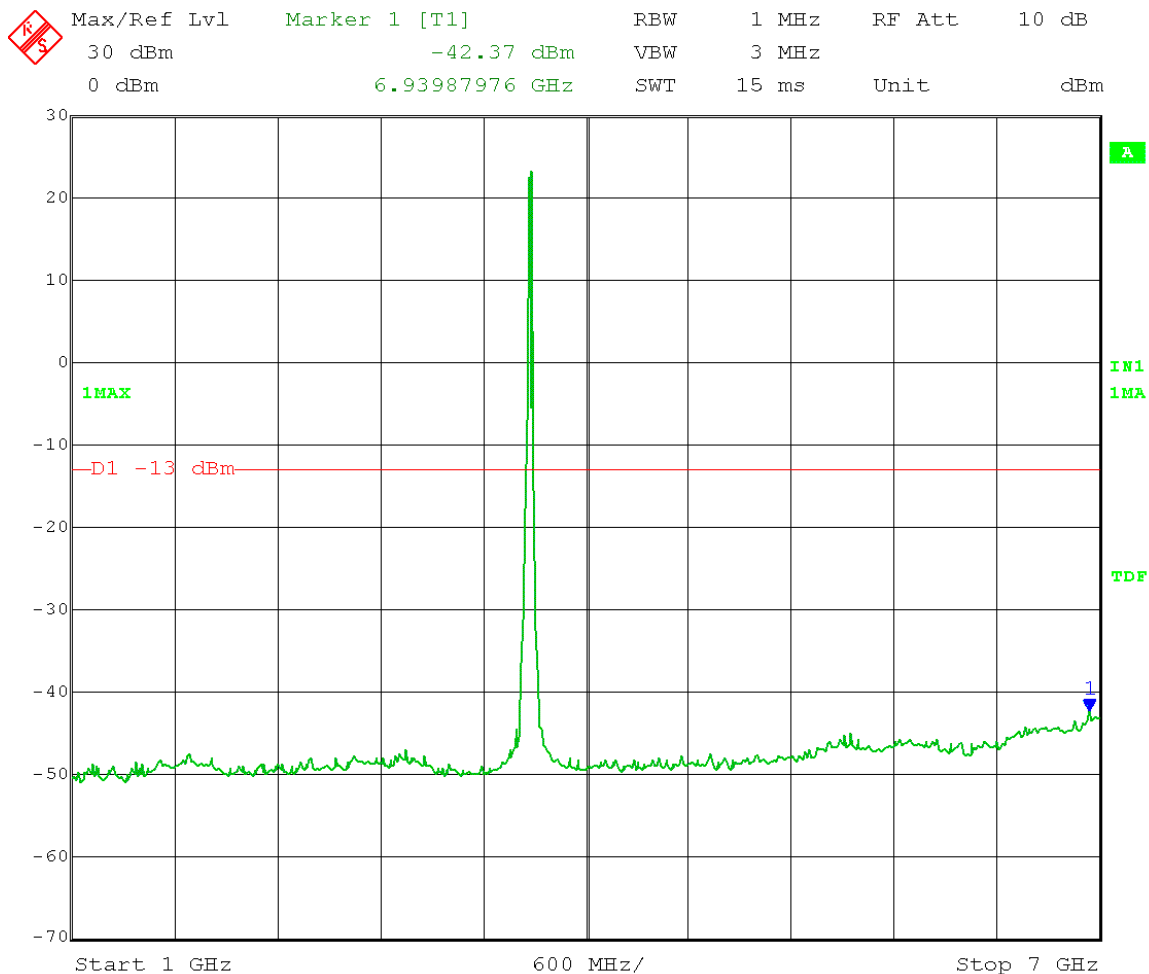


Date: 21.FEB.2014 11:06:14

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 1 – 7 GHz

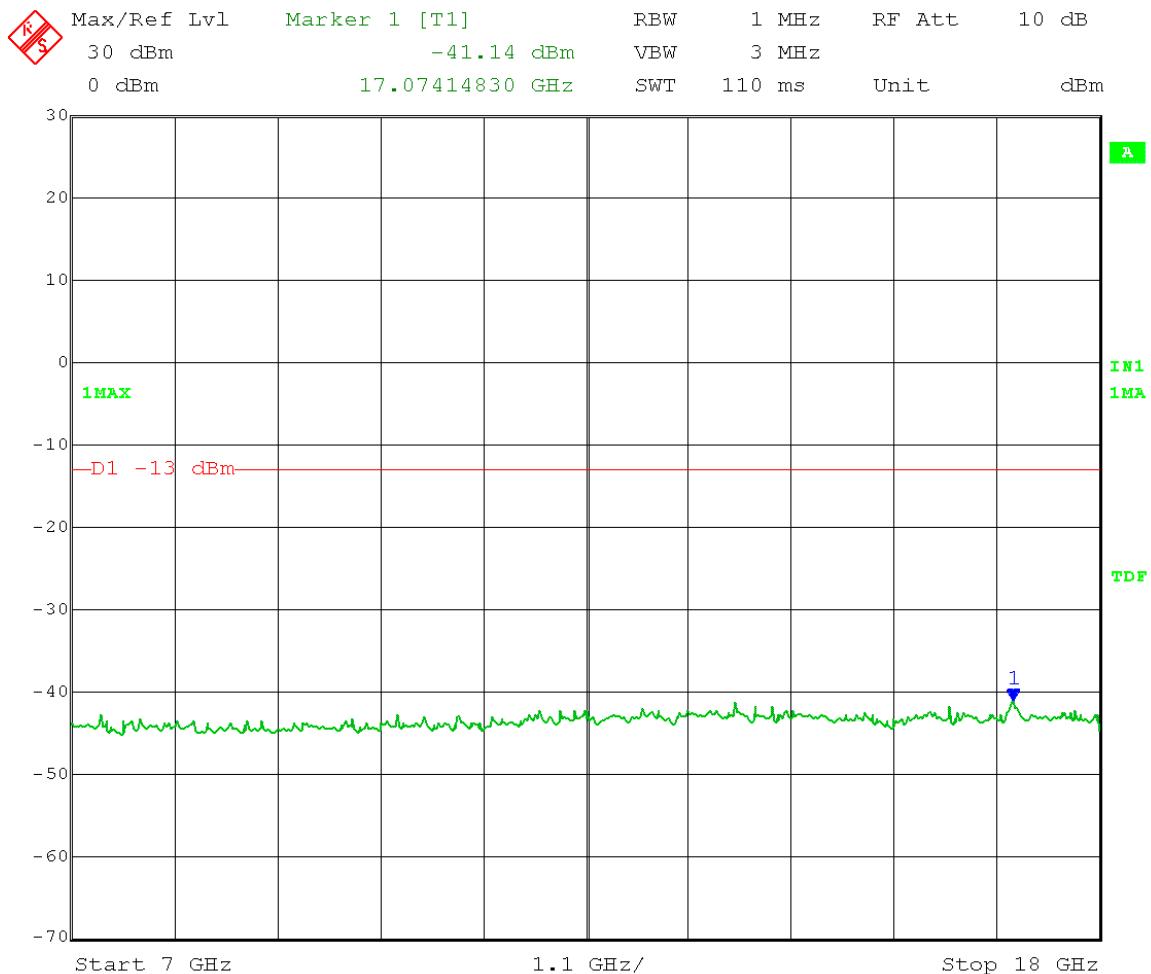


Date: 21.FEB.2014 10:57:38

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 7 – 18 GHz

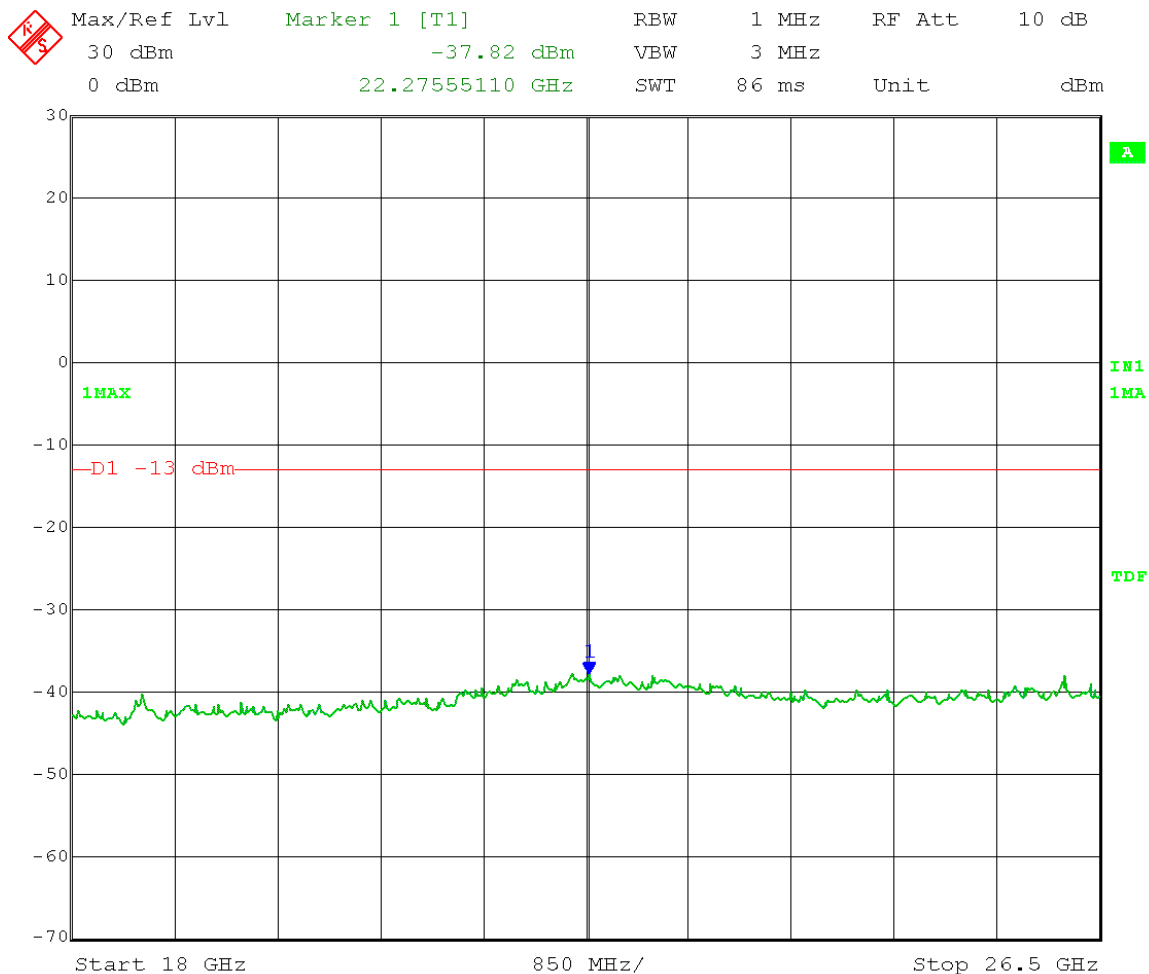


Date: 21.FEB.2014 11:00:00

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 18 – 26.5 GHz

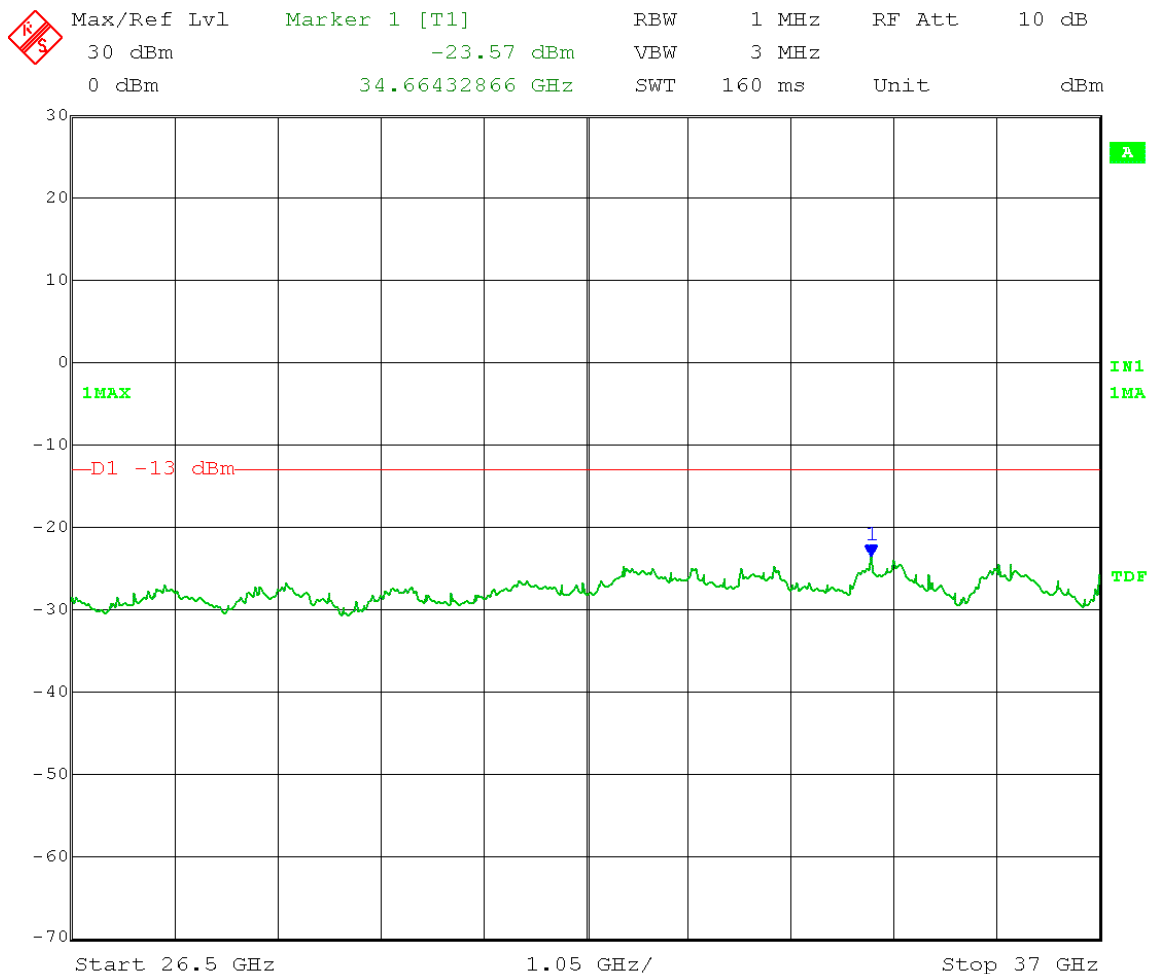


Date: 21.FEB.2014 11:02:01

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Mid Channel: 3675 MHz Output power setting: 25 each port
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 26.5 – 37 GHz

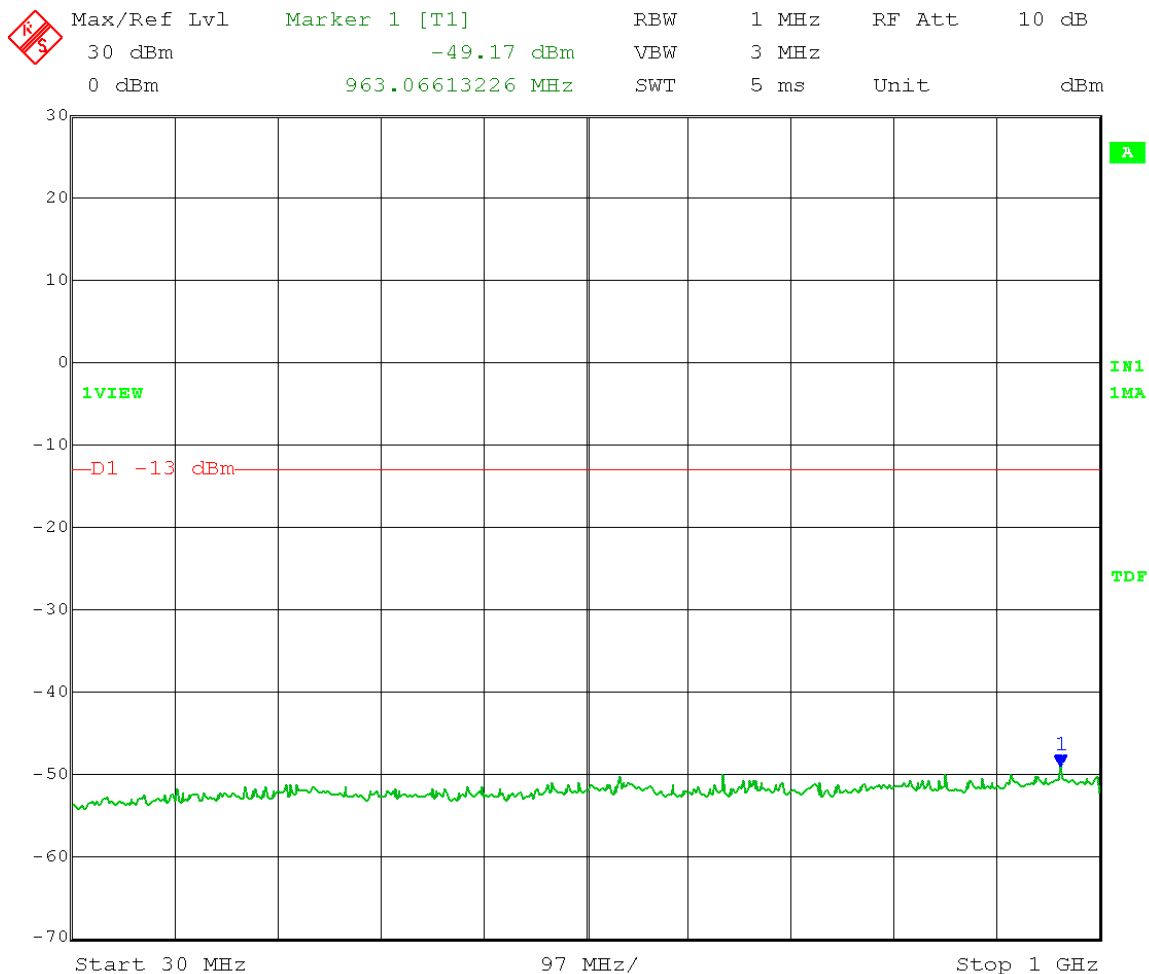


Date: 21.FEB.2014 11:04:01

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3690 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 30 – 1000 MHz

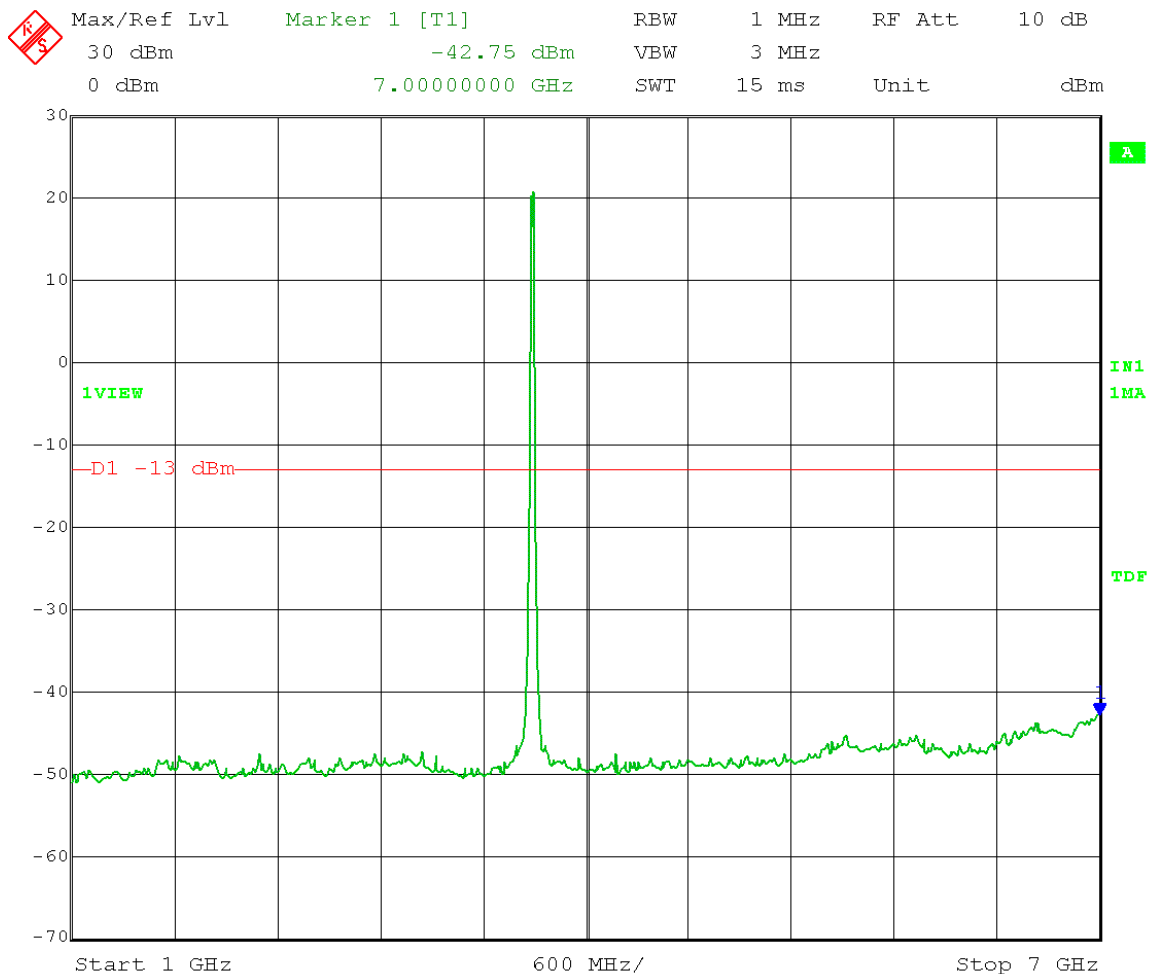


Date: 21.FEB.2014 11:18:18

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3690 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 1 – 7 GHz

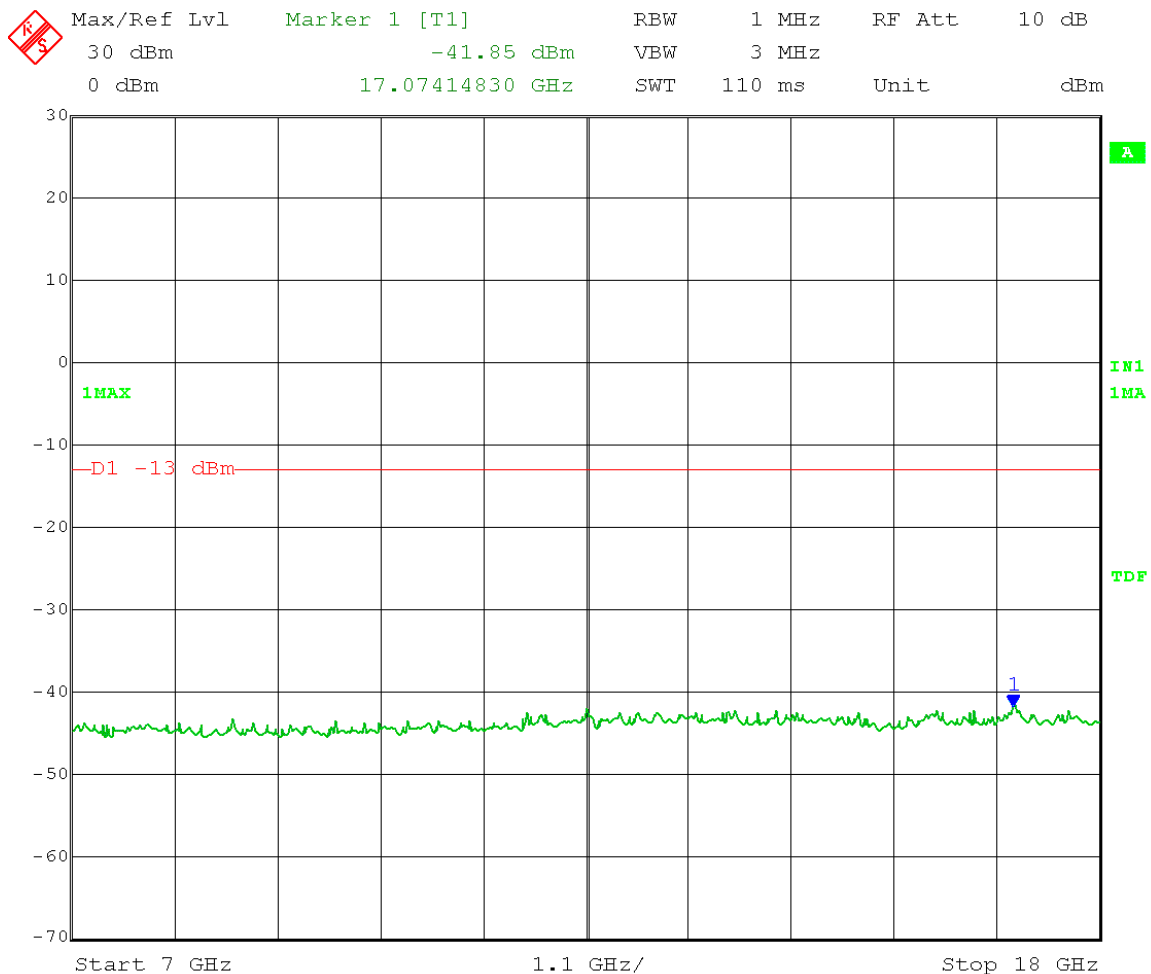


Date: 21.FEB.2014 11:10:19

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3690 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 7 – 18 GHz

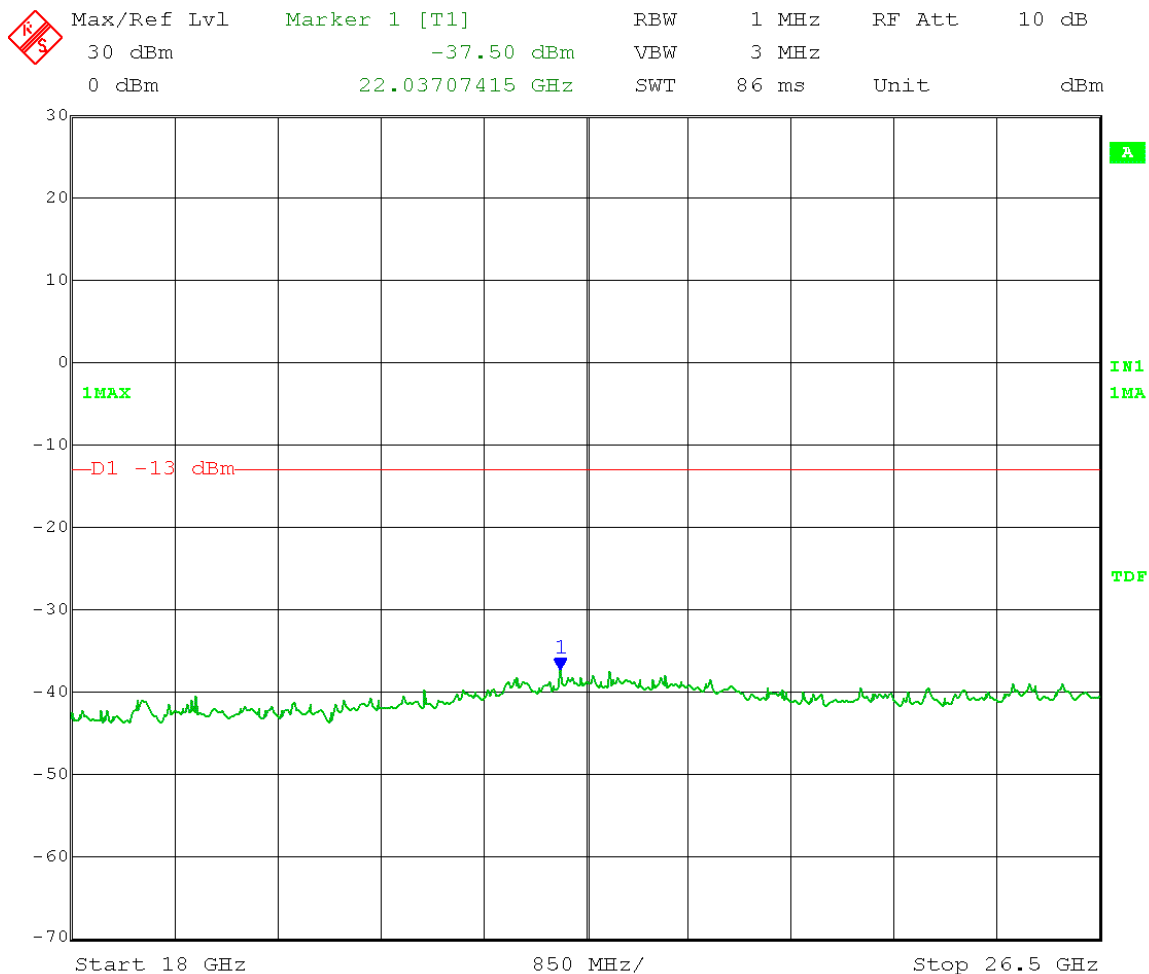


Date: 21.FEB.2014 11:11:36

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3690 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 18 – 26.5 GHz

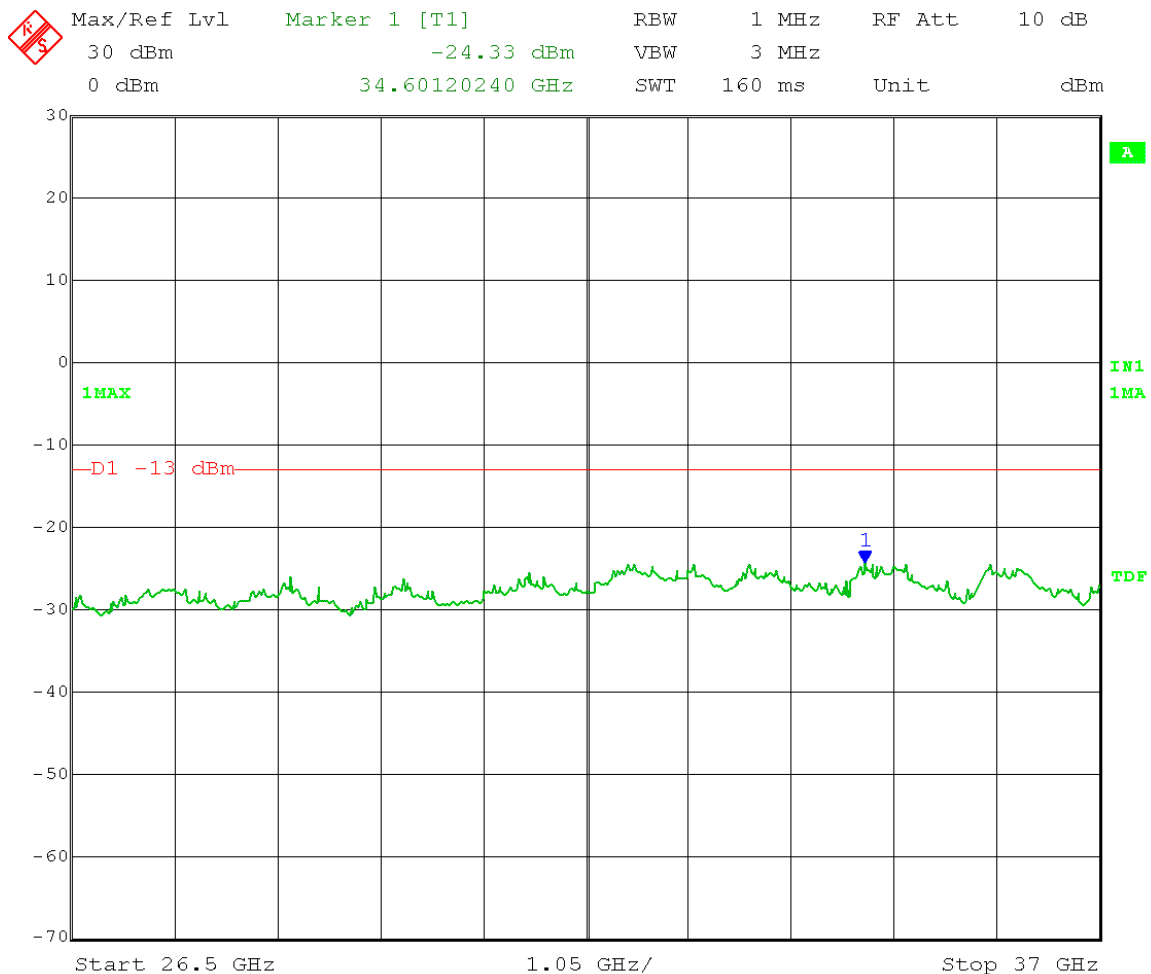


Date: 21.FEB.2014 11:13:25

Test Date: 02-21-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: 3690 MHz Output power setting: 25
Channel bandwidth: 20 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power
= -13 dBm/MHz

Frequency Range: 26.5 – 37 GHz



Date: 21.FEB.2014 11:15:44

Electric Field Strength

EUT: PMP450SM 3.65 GHz, Model C036045C004A
Manufacturer: Cambium Networks
Operating Condition: 66 deg. F; 20% R.H.
Test Site: DLS O.F. Site 2
Operator: Craig B
Test Specification: Transmitter Spurious emissions with 8 dBi integral patch ant
Comment: L,M,H channels, 5,10,20 MHz ch BWs, powersetting 25
Date: 02-14-2014

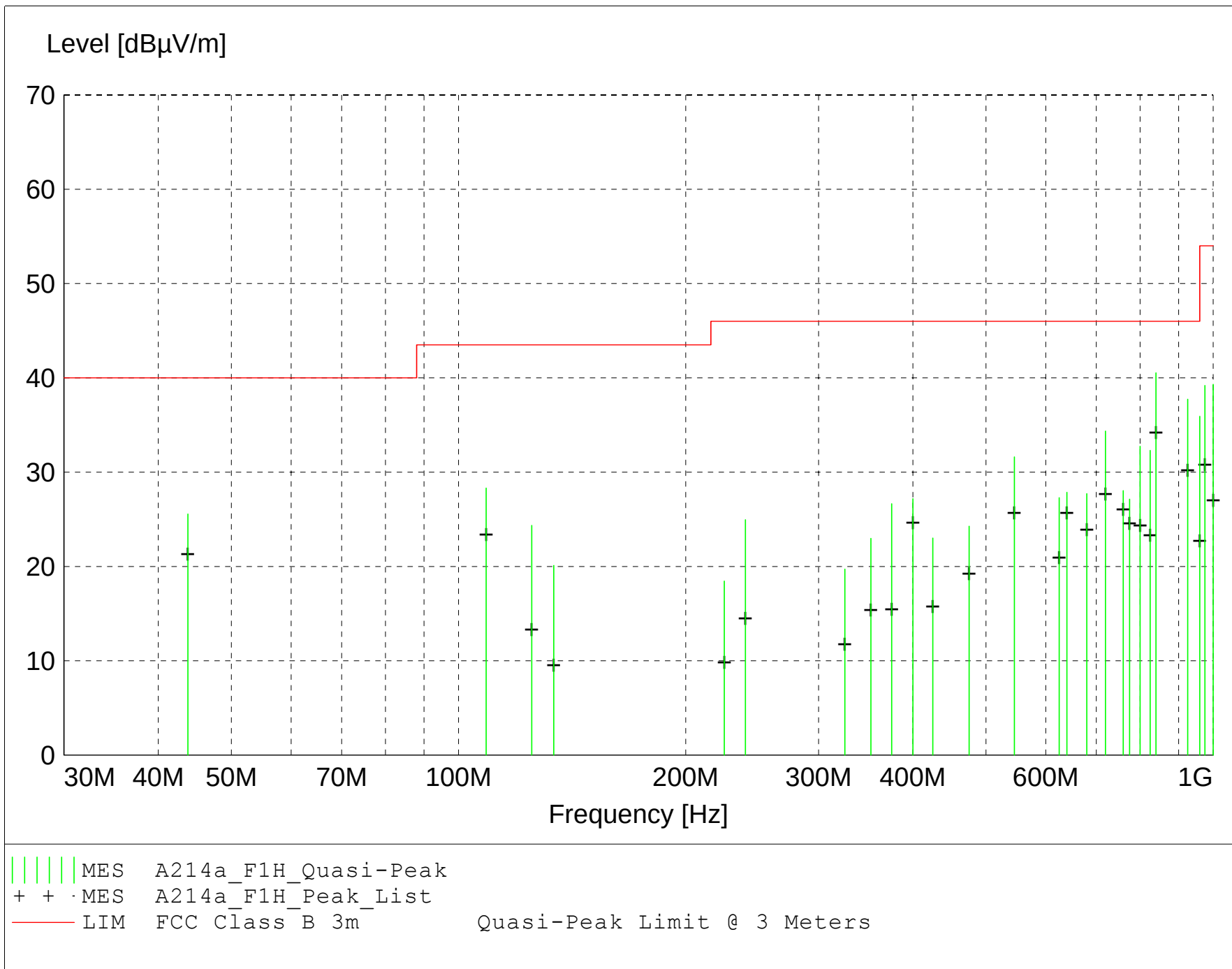
TEXT: "Horz 3 meters"

Short Description: Test Set-up

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

Equations:
$$\text{Total Level (dB}\mu\text{V/m)} = \text{Level (dB}\mu\text{V)} + \text{System Loss (dB)} + \text{Antenna Factor (dB}\mu\text{V/m)}$$
$$\text{Margin (dB)} = \text{Limit (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

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



MEASUREMENT RESULT: "A214a_F1H_Final"

2/14/2014 12:51PM

Frequency	Level	Antenna	System	Total	Limit	Margin	Height	EuT	Final	Comment
MHz	dBμV	Factor	Loss	Level			Ant.	Angle	Detector	
		dBμV/m	dB	dBμV/m	dBμV/m	dB	m	deg		
840.000000	36.13	22.40	-18.0	40.5	46.0	5.5	1.20	290	QUASI-PEAK	None
925.000000	31.97	23.50	-17.7	37.7	46.0	8.3	1.10	75	QUASI-PEAK	None
960.000000	29.46	23.70	-17.2	35.9	46.0	10.1	1.10	125	QUASI-PEAK	None
720.000000	32.35	21.40	-19.4	34.4	46.0	11.6	1.00	0	QUASI-PEAK	None
800.000000	29.34	21.70	-18.3	32.7	46.0	13.3	2.00	80	QUASI-PEAK	None
825.000000	28.10	22.10	-17.9	32.3	46.0	13.7	1.00	270	QUASI-PEAK	None
545.050000	33.65	18.20	-20.2	31.6	46.0	14.4	1.30	315	QUASI-PEAK	broadband
43.785000	37.56	11.98	-24.0	25.6	40.0	14.4	2.70	90	QUASI-PEAK	broadband
1000.000000	31.59	24.60	-16.9	39.3	54.0	14.7	1.10	0	QUASI-PEAK	None
975.000000	32.56	23.90	-17.3	39.2	54.0	14.8	1.10	0	QUASI-PEAK	None
108.780000	39.67	11.70	-23.1	28.3	43.5	15.2	3.00	225	QUASI-PEAK	broadband
760.000000	25.22	21.50	-18.7	28.0	46.0	18.0	1.00	5	QUASI-PEAK	None
640.000000	28.07	19.70	-19.9	27.9	46.0	18.1	1.00	270	QUASI-PEAK	None
680.000000	26.41	20.90	-19.6	27.7	46.0	18.3	1.00	0	QUASI-PEAK	None
625.000000	27.85	19.40	-20.0	27.3	46.0	18.7	1.20	80	QUASI-PEAK	None
400.000000	32.44	15.90	-21.2	27.2	46.0	18.8	2.00	45	QUASI-PEAK	None
775.000000	24.04	21.60	-18.5	27.1	46.0	18.9	1.00	60	QUASI-PEAK	None
125.000000	34.45	12.90	-23.0	24.4	43.5	19.1	2.60	95	QUASI-PEAK	None
375.000000	32.81	15.20	-21.4	26.7	46.0	19.3	1.00	180	QUASI-PEAK	None
240.000000	35.01	12.00	-22.0	25.0	46.0	21.0	1.00	225	QUASI-PEAK	None
475.000000	27.44	17.40	-20.6	24.3	46.0	21.7	2.00	30	QUASI-PEAK	None
425.000000	27.56	16.50	-21.0	23.0	46.0	23.0	1.00	0	QUASI-PEAK	None
351.880000	29.45	14.90	-21.4	23.0	46.0	23.0	1.00	180	QUASI-PEAK	None
133.705000	30.46	12.60	-22.9	20.1	43.5	23.4	2.70	120	QUASI-PEAK	None
325.000000	26.79	14.60	-21.7	19.7	46.0	26.3	1.00	45	QUASI-PEAK	None
225.000000	29.43	11.30	-22.3	18.5	46.0	27.5	1.00	0	QUASI-PEAK	None

Electric Field Strength

EUT: PMP450SM 3.65 GHz, Model C036045C004A
Manufacturer: Cambium Networks
Operating Condition: 66 deg. F; 20% R.H.
Test Site: DLS O.F. Site 2
Operator: Craig B
Test Specification: Transmitter Spurious emissions with 8 dBi integral patch ant
Comment: L,M,H channels, 5,10,20 MHz ch BWs, powersetting 25
Date: 02-14-2014

TEXT: "Vert 3 meters"

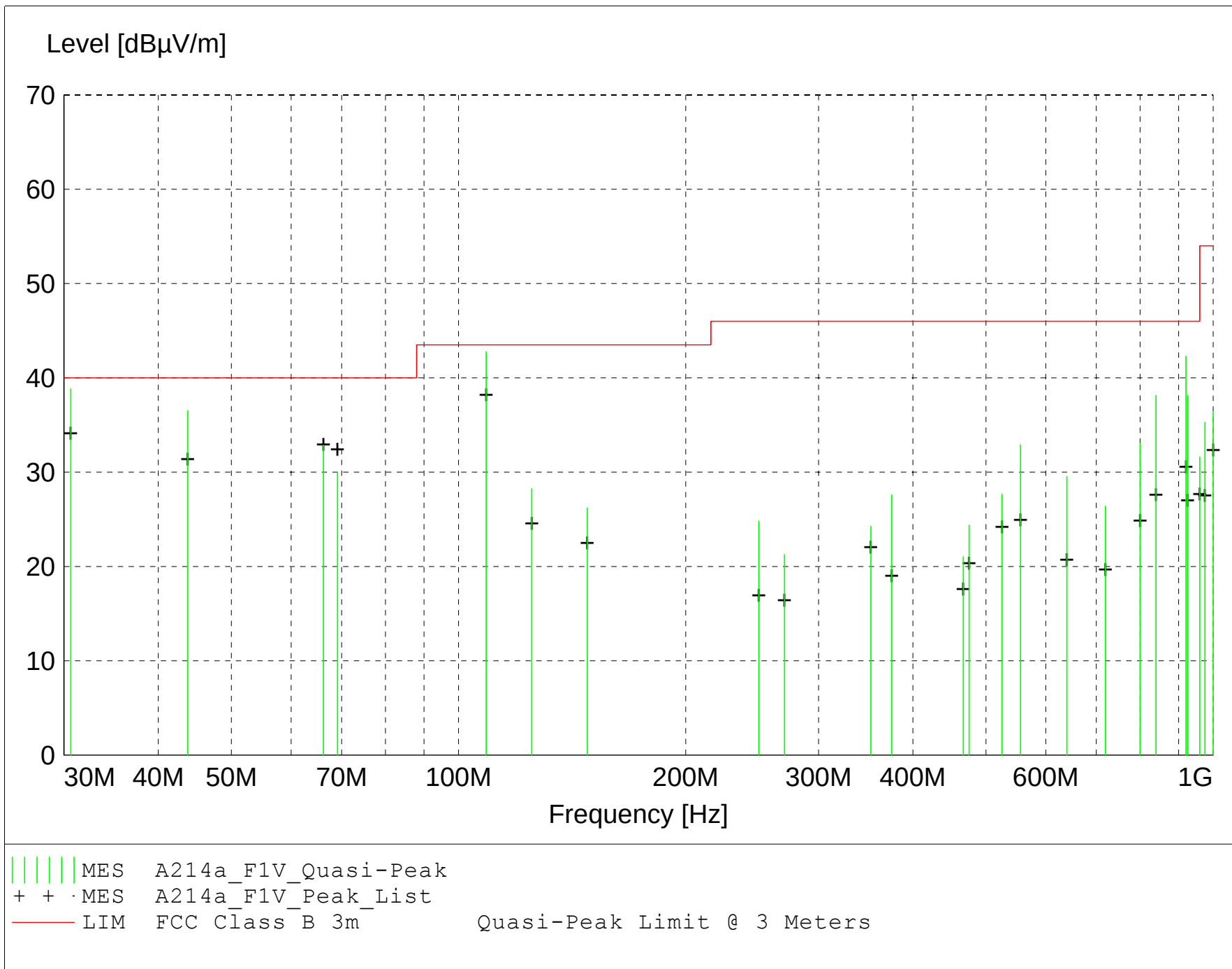
Short Description: Test Set-up

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

Sample Equations:
$$\begin{array}{rclclcl} \text{Total Level (dB}\mu\text{V/m)} & = & \text{Level (dB}\mu\text{V)} & + & \text{System Loss (dB)} & + & \text{Antenna Factor (dB}\mu\text{V/m)} \\ 24.6 & & = 35.51 & & + (-22.1) & & + 11.20 \end{array}$$

$$\begin{array}{rclcl} \text{Margin (dB)} & = & \text{Limit (dB}\mu\text{V/m)} & - & \text{Total Level (dB}\mu\text{V/m)} \\ 15.4 & = & 40 & - & 24.6 \end{array}$$

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



MEASUREMENT RESULT: "A214a_F1V_Final"

2/14/2014 11:41AM

Frequency	Level	Antenna	System	Total	Limit	Margin	Height	EuT	Final	Comment
MHz	dBμV	Factor	Loss	Level			Ant.	Angle	Detector	
		dBμV/m	dB	dBμV/m	dBμV/m	dB	m	deg		
108.790000	54.13	11.70	-23.1	42.8	43.5	0.7	1.00	100	QUASI-PEAK	broadband
30.625000	51.77	11.31	-24.3	38.8	40.0	1.2	1.00	30	QUASI-PEAK	broadband
43.765000	48.53	11.98	-24.0	36.5	40.0	3.5	1.00	180	QUASI-PEAK	broadband
920.000000	36.65	23.50	-17.8	42.3	46.0	3.7	1.30	350	QUASI-PEAK	None
66.220000	48.17	8.33	-23.6	32.9	40.0	7.1	1.00	45	QUASI-PEAK	broadband
840.000000	33.75	22.40	-18.0	38.1	46.0	7.9	1.10	30	QUASI-PEAK	None
925.000000	32.32	23.50	-17.7	38.1	46.0	7.9	1.20	350	QUASI-PEAK	None
69.125000	45.98	7.55	-23.6	30.0	40.0	10.0	1.00	315	QUASI-PEAK	broadband
800.000000	29.65	21.70	-18.3	33.1	46.0	12.9	1.30	10	QUASI-PEAK	None
555.500000	34.68	18.61	-20.4	32.9	46.0	13.1	1.20	270	QUASI-PEAK	None
960.000000	25.14	23.70	-17.2	31.6	46.0	14.4	1.20	20	QUASI-PEAK	None
125.000000	38.36	12.90	-23.0	28.3	43.5	15.2	1.00	100	QUASI-PEAK	None
640.000000	29.75	19.70	-19.9	29.5	46.0	16.5	1.00	90	QUASI-PEAK	None
148.135000	37.03	12.00	-22.8	26.2	43.5	17.3	1.00	180	QUASI-PEAK	broadband
1000.000000	28.62	24.60	-16.9	36.3	54.0	17.7	1.30	10	QUASI-PEAK	None
525.000000	29.61	18.40	-20.3	27.7	46.0	18.3	1.00	0	QUASI-PEAK	None
375.000000	33.77	15.20	-21.4	27.6	46.0	18.4	1.70	225	QUASI-PEAK	None
975.000000	28.64	23.90	-17.3	35.3	54.0	18.7	1.30	0	QUASI-PEAK	None
720.000000	24.38	21.40	-19.4	26.4	46.0	19.6	1.00	80	QUASI-PEAK	None
250.000000	34.46	12.40	-22.1	24.8	46.0	21.2	1.00	0	QUASI-PEAK	None
475.000000	27.55	17.40	-20.6	24.4	46.0	21.6	1.00	100	QUASI-PEAK	None
351.860000	30.72	14.90	-21.4	24.3	46.0	21.7	1.00	20	QUASI-PEAK	None
270.340000	29.81	13.31	-21.9	21.3	46.0	24.7	1.00	110	QUASI-PEAK	None
466.520000	24.41	17.30	-20.7	21.0	46.0	25.0	1.00	190	QUASI-PEAK	None

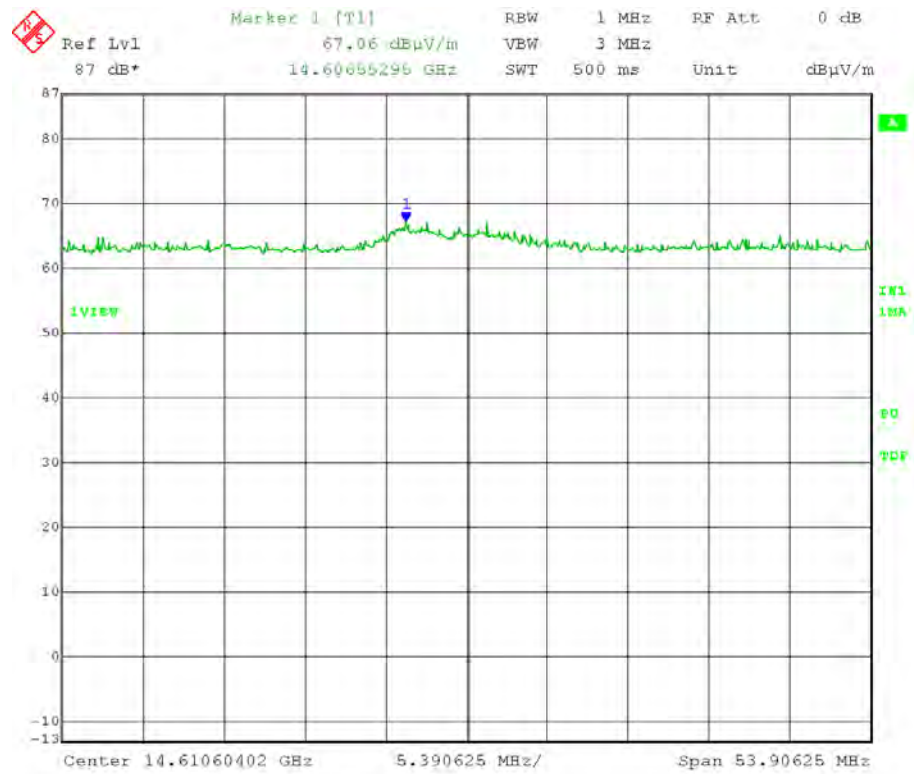
Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25.
 5 MHz channel BW; Modulation: QPSK
 Low channel center frequency: 3652.5 MHz

Limit: -13 dBm

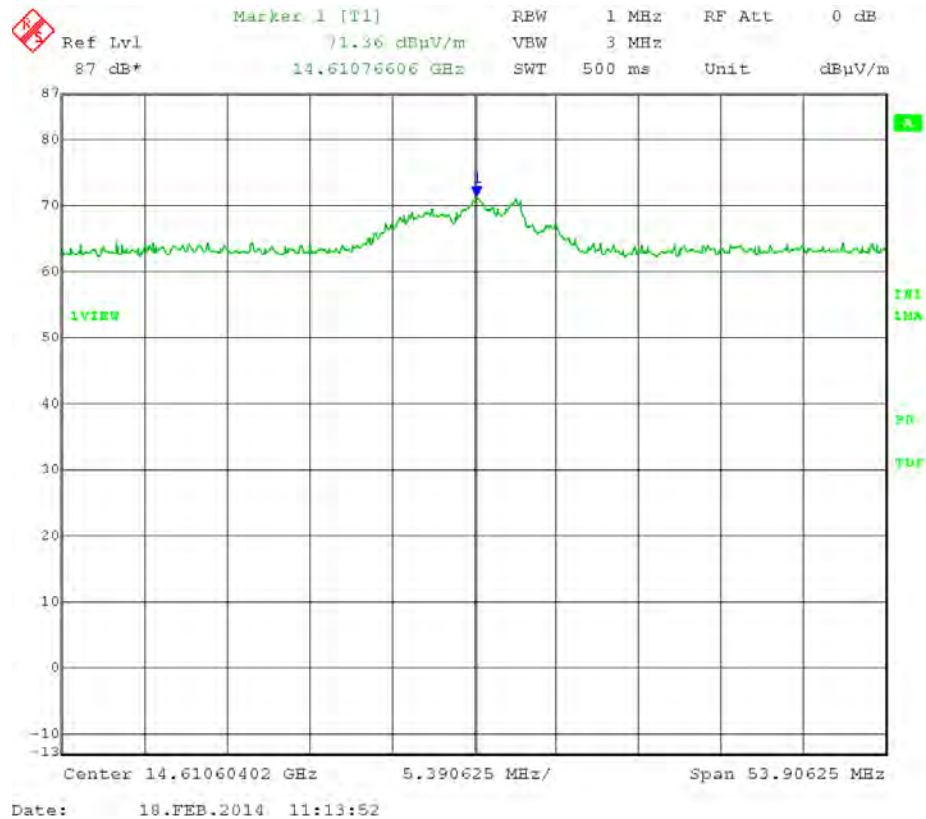
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.610 vertical	67.06	-42.25	8.79	11.77	-39.27	-13	26.27
14.610 horizontal	71.36	-36.72	8.79	11.77	-33.74	-13	20.74

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



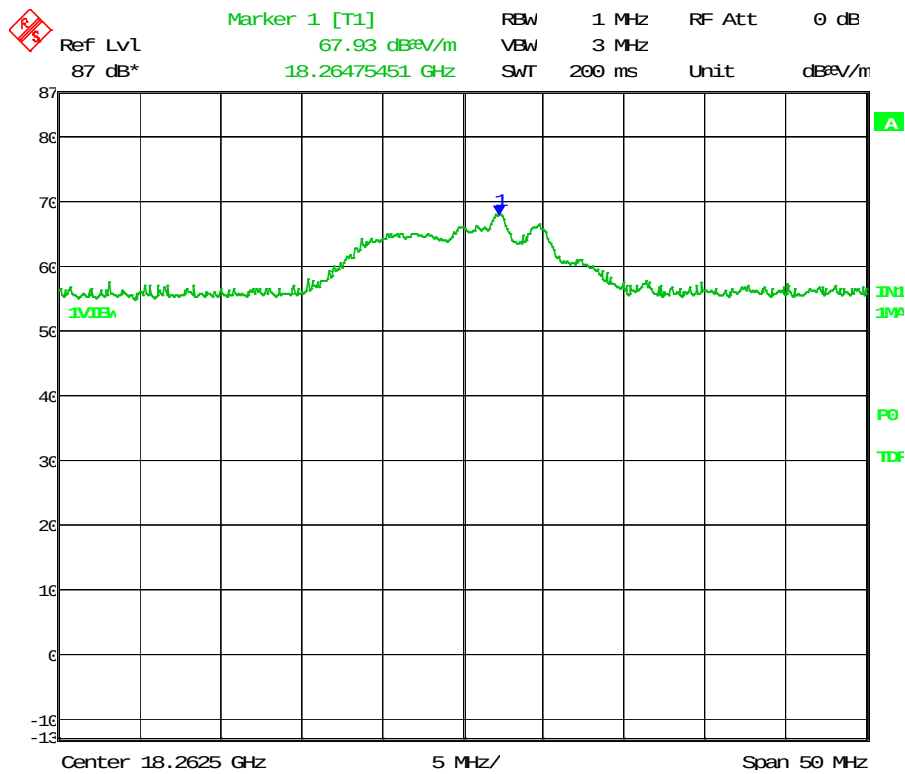
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 5 MHz channel BW; Modulation: QPSK
 Low channel center frequency: 3652.5 MHz

Limit: -13 dBm

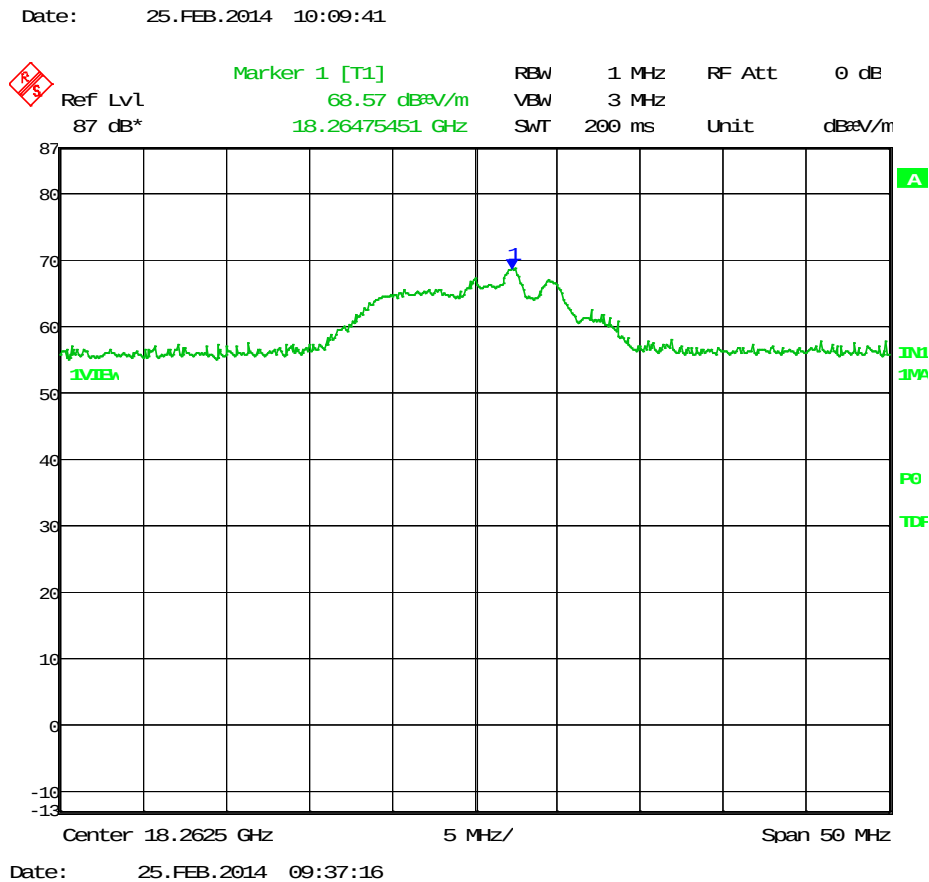
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.2625 vertical	67.93	-43.16	9.87	15.18	-37.85	-13	24.85
18.2625 horizontal	68.57	-42.13	9.87	15.18	-36.82	-13	23.82

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 5 MHz channel BW; Modulation: QPSK
 Low channel center frequency: 3652.5 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

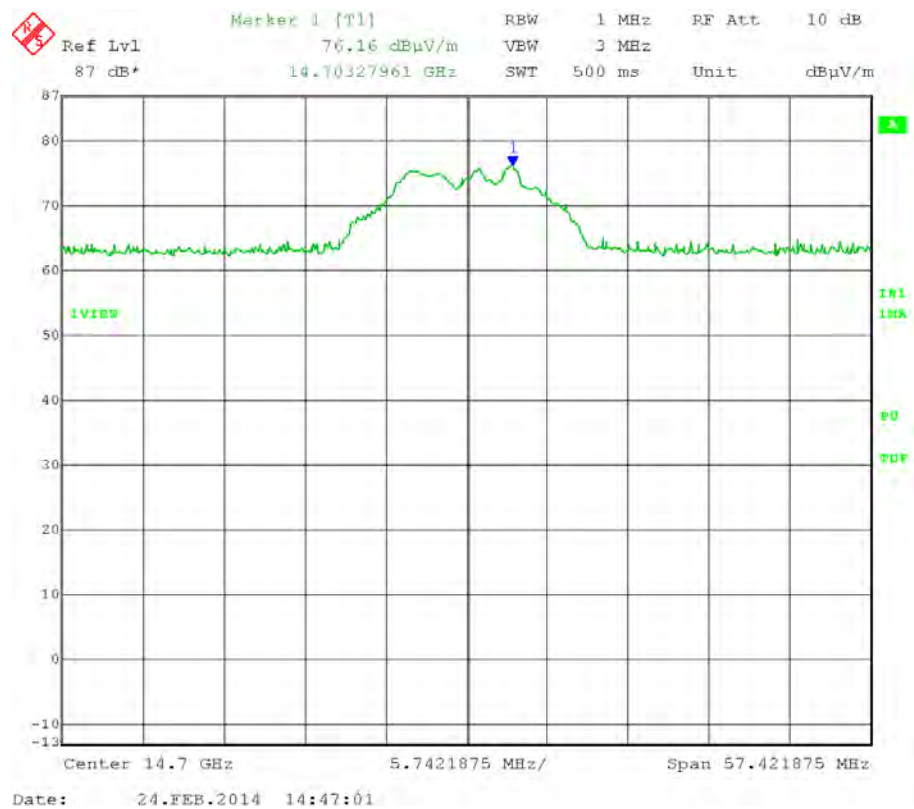
Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active. Power setting 25 on each chain.
 5 MHz channel BW; Modulation: QPSK
 Mid channel center frequency: 3675 MHz

Limit: -13 dBm

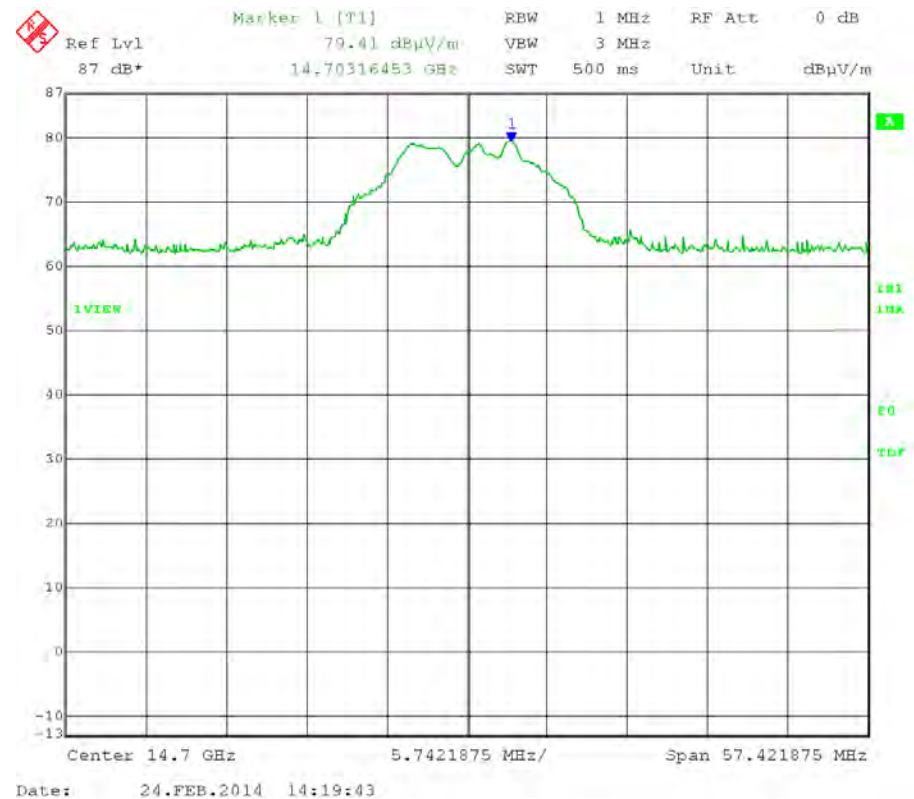
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.700 vertical	76.16	-33.42	8.83	12.10	-30.15	-13	17.15
14.700 horizontal	79.41	-29.11	8.83	12.10	-25.84	-13	12.84

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



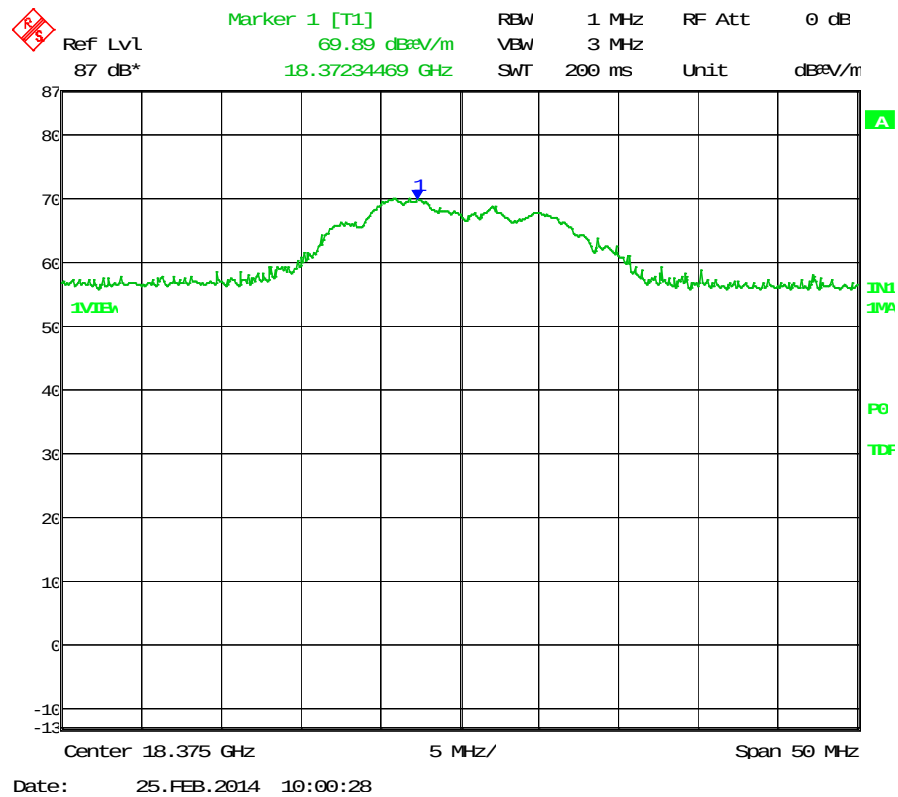
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active. Power setting 25 on each chain.
 5 MHz channel BW; Modulation: QPSK
 Mid channel center frequency: 3675 MHz

Limit: -13 dBm

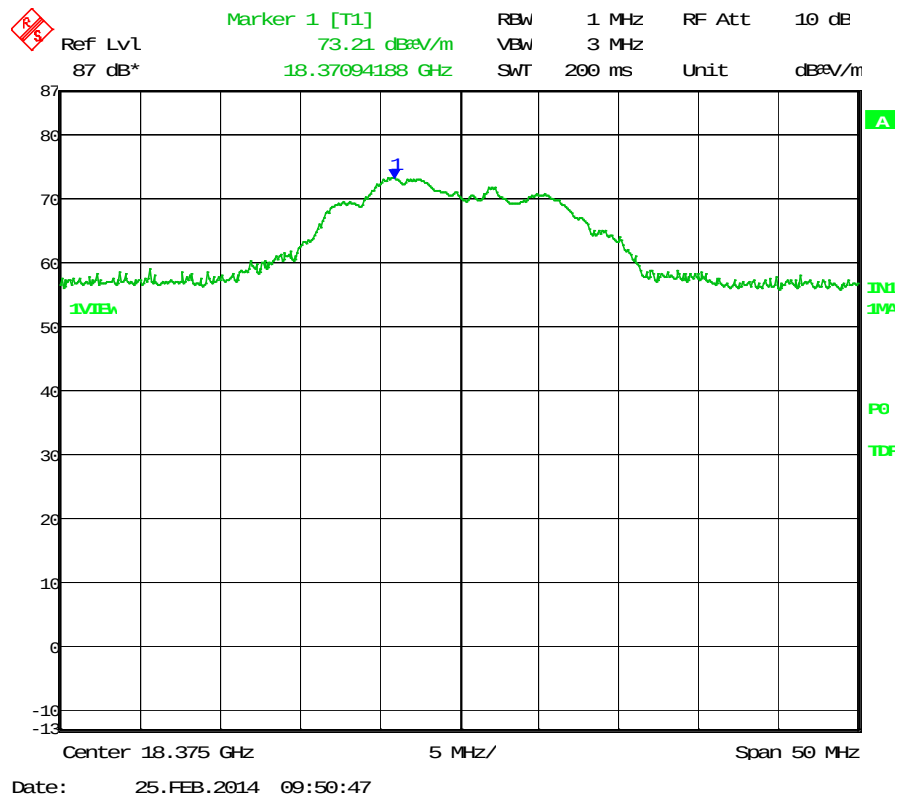
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.375 vertical	69.89	-41.94	9.91	15.18	-36.67	-13	23.67
18.375 horizontal	73.21	-38.37	9.91	15.18	-33.10	-13	20.10

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



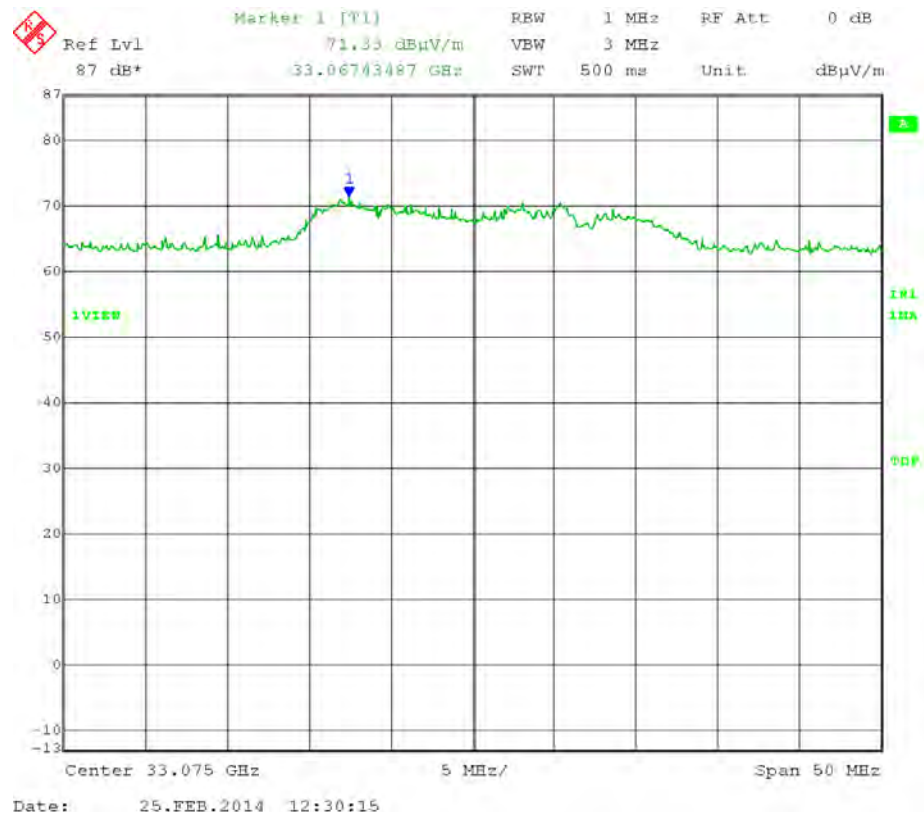
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active. Power setting 25 on each chain.
 5 MHz channel BW; Modulation: QPSK
 Mid channel center frequency: 3675 MHz

Limit: -13 dBm

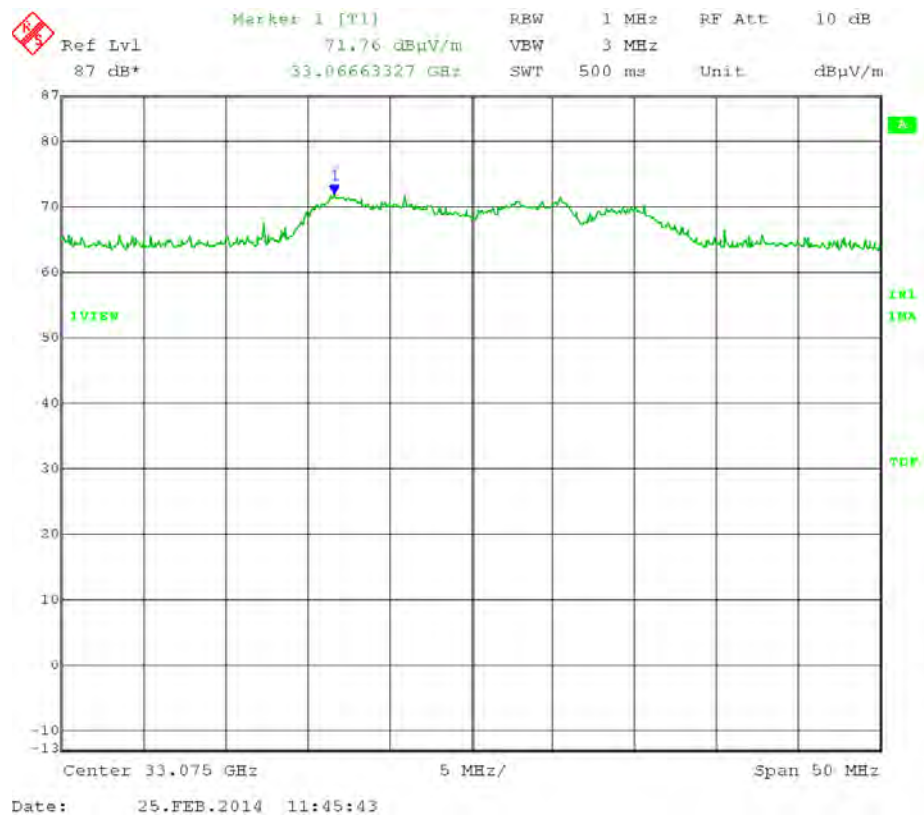
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
33.075 vertical	71.33	-45.06	13.67	19.75	-38.98	-13	25.98
33.075 horizontal	71.76	-44.37	13.67	19.75	-38.29	-13	25.29

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



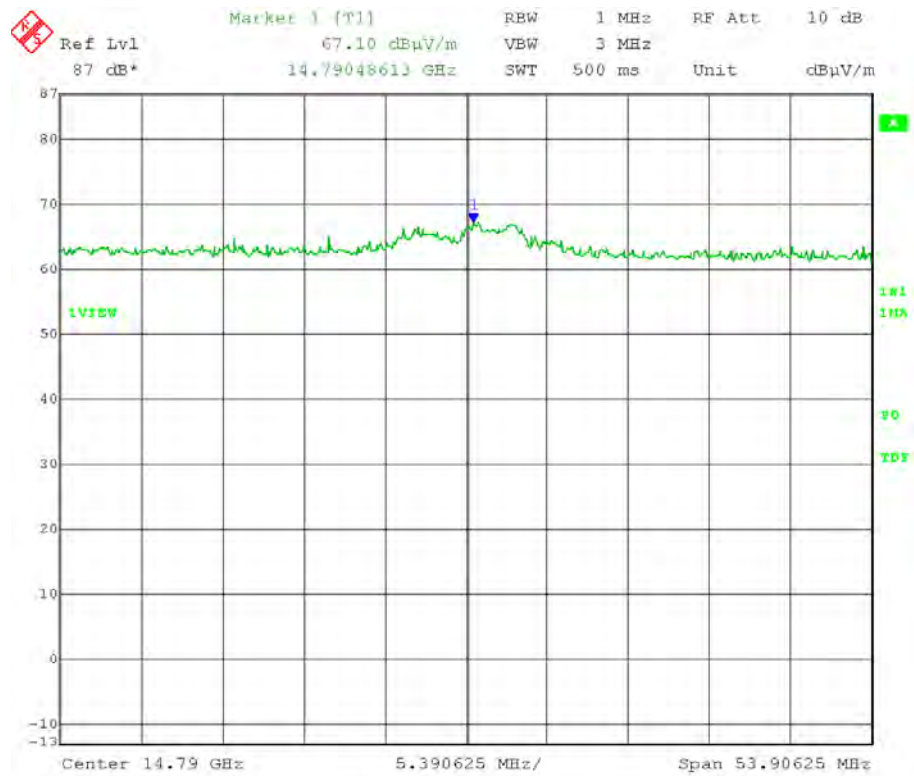
Test Date: 02-18-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25.
 5 MHz channel BW; Modulation: QPSK
 High channel center frequency: 3697.5 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.790 vertical	67.10	-41.23	8.83	12.57	-37.49	-13	24.49
14.790 horizontal	68.18	-38.98	8.83	12.57	-35.24	-13	22.24

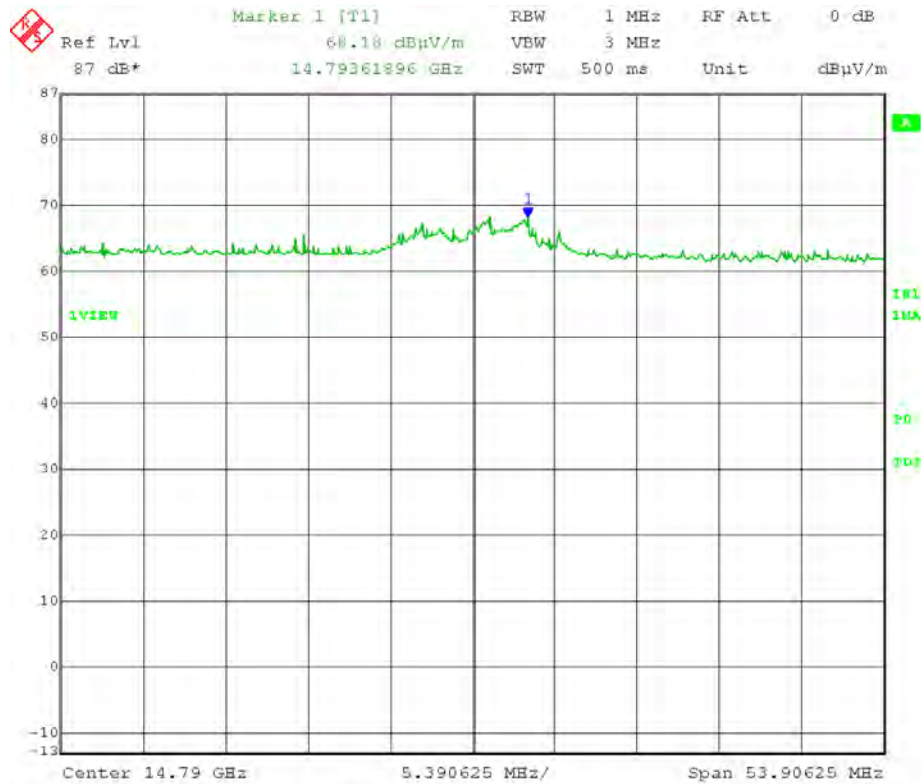
EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Date: 18.FEB.2014 11:44:18

Horizontal:



Date: 18.FEB.2014 11:47:54

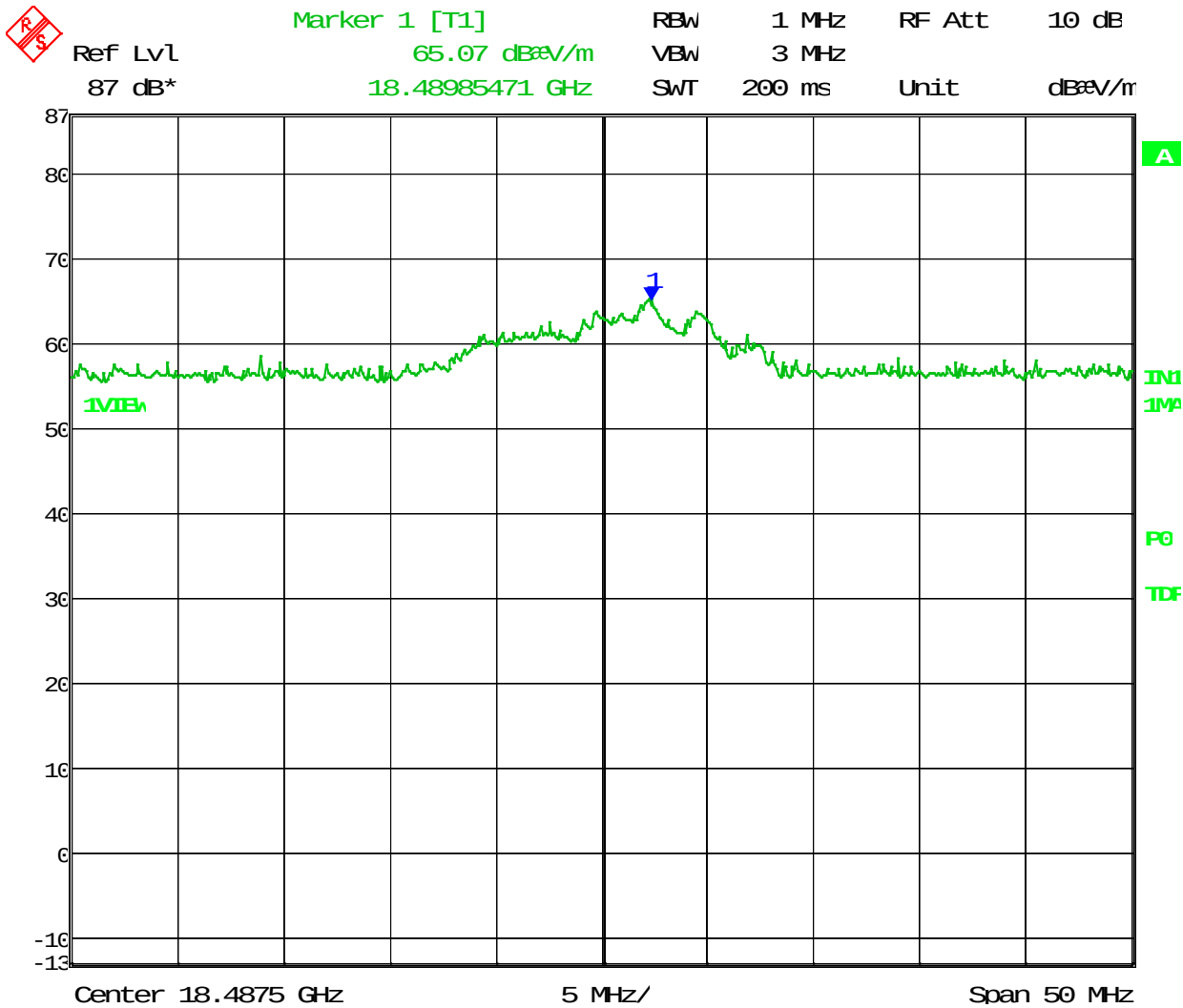
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 5 MHz channel BW; Modulation: QPSK
 High channel center frequency: 3697.5 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.4875 vertical	noise floor						
18.4875 horizontal	65.07	-46.20	9.94	15.18	-40.96	-13	27.96

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Date: 25.FEB.2014 09:46:35

Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 5 MHz channel BW; Modulation: QPSK
 High channel center frequency: 3697.5 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

Test Date: 02-24-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25.
 10 MHz channel BW; Modulation: QPSK
 Low channel center frequency: 3655 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.620 vertical	noise floor						
14.620 horizontal	68.57	-38.58	8.79	11.77	-35.60	-13	22.60

EIRP = Signal generator output - cable loss + antenna gain

Date: 24.FEB.2014 15:19:35

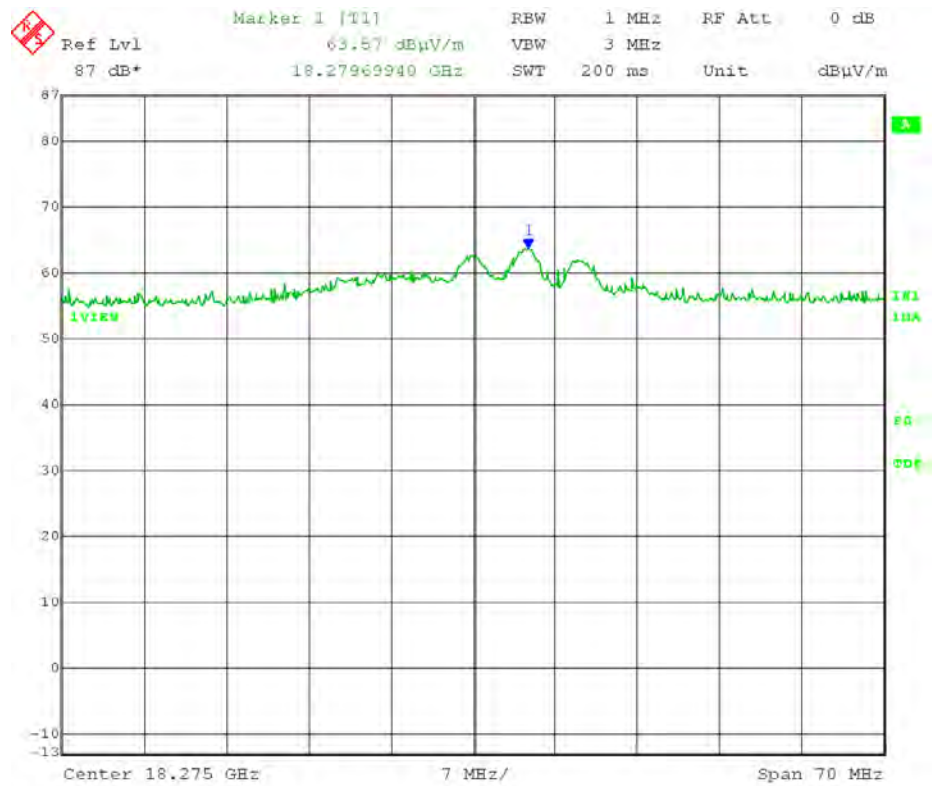
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 10 MHz channel BW; Modulation: QPSK
 Low channel center frequency: 3655 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.275 vertical	63.57	-47.87	9.87	15.18	-42.56	-13	29.56
18.275 horizontal	65.60	-45.51	9.87	15.18	-40.20	-13	27.20

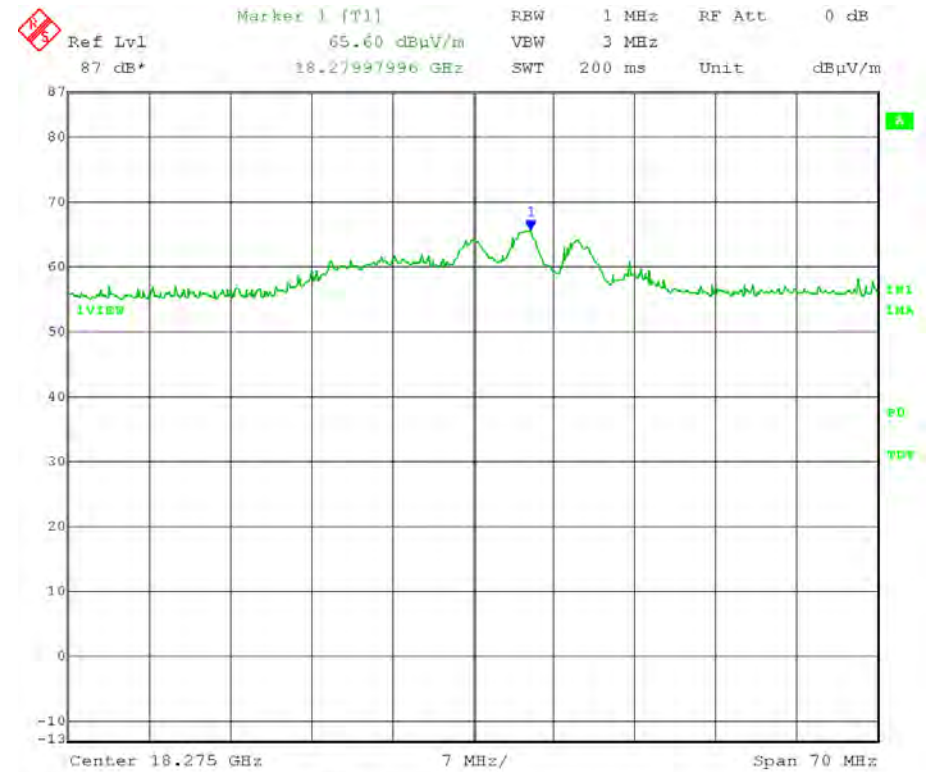
EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Date: 25.FEB.2014 10:52:04

Horizontal:



Date: 25.FEB.2014 10:36:45

Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 10 MHz channel BW; Modulation: QPSK
 Low channel center frequency: 3655 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

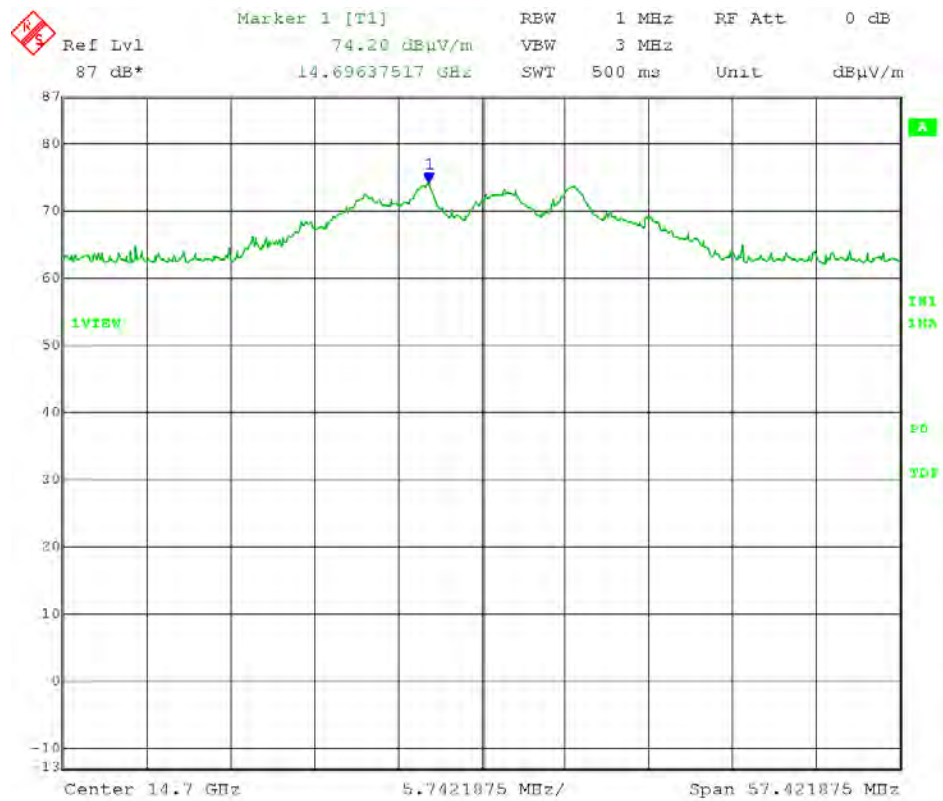
Test Date: 02-24-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active. Power setting 25 on each chain.
 10 MHz channel BW; Modulation: QPSK
 Mid channel center frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.700 vertical	74.20	-35.38	8.83	12.10	-32.11	-13	19.11
14.700 horizontal	76.85	-31.67	8.83	12.10	-28.40	-13	15.40

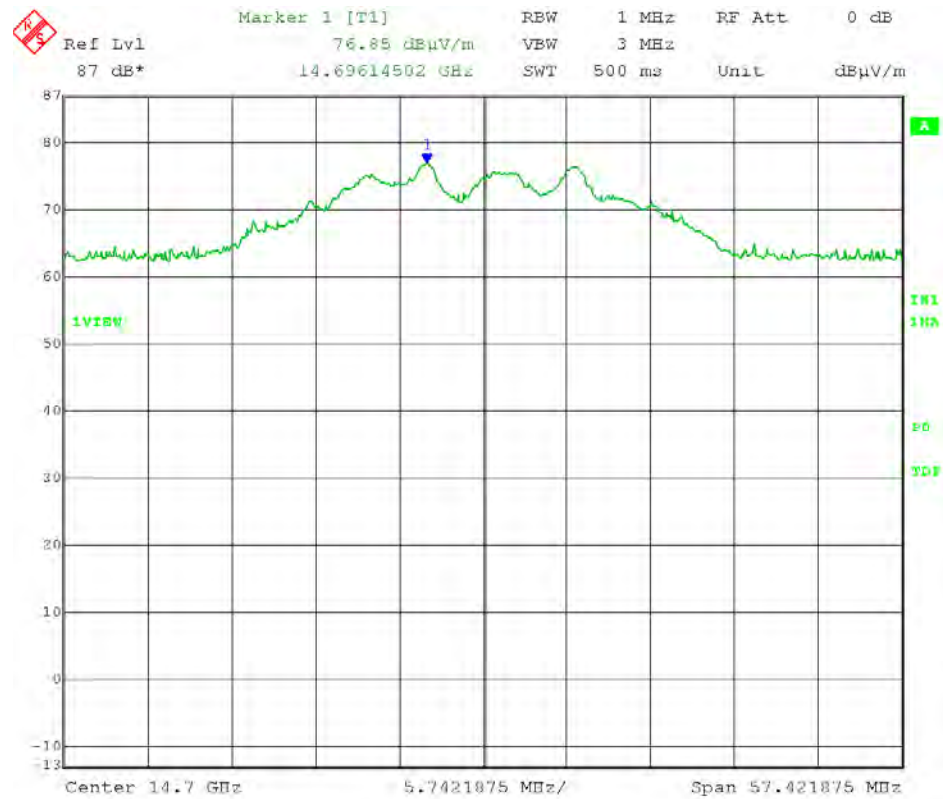
EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Date: 24.FEB.2014 14:52:44

Horizontal:



Date: 24.FEB.2014 14:31:37

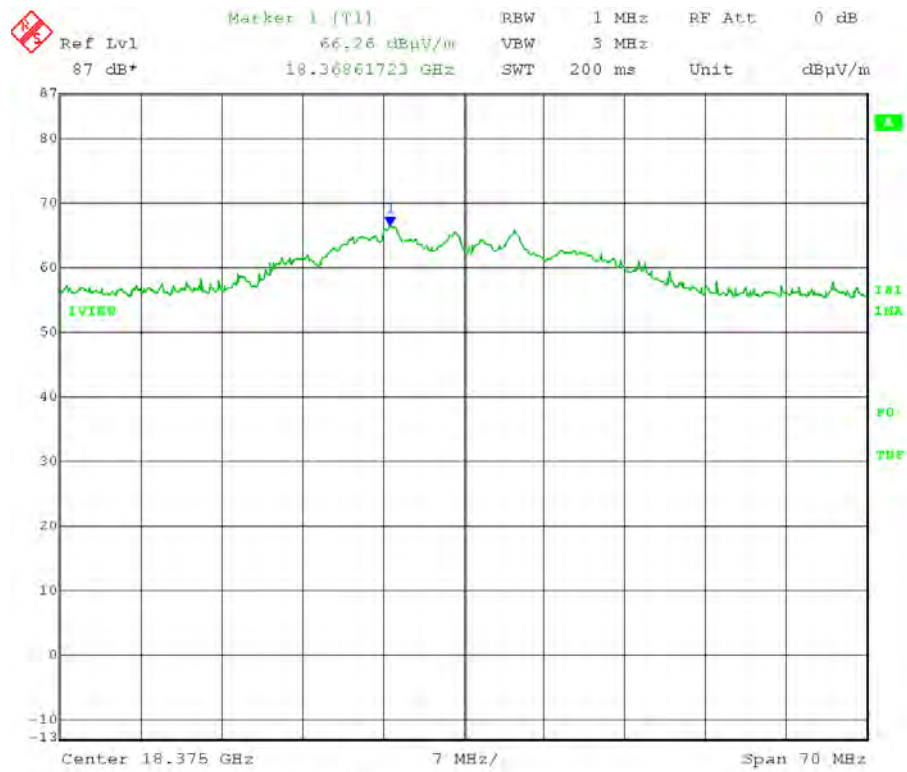
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active. Power setting 25 on each chain.
 10 MHz channel BW; Modulation: QPSK
 Mid channel center frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.375 vertical	66.26	-45.57	9.91	15.18	-40.30	-13	27.30
18.375 horizontal	70.37	-41.21	9.91	15.18	-35.94	-13	22.94

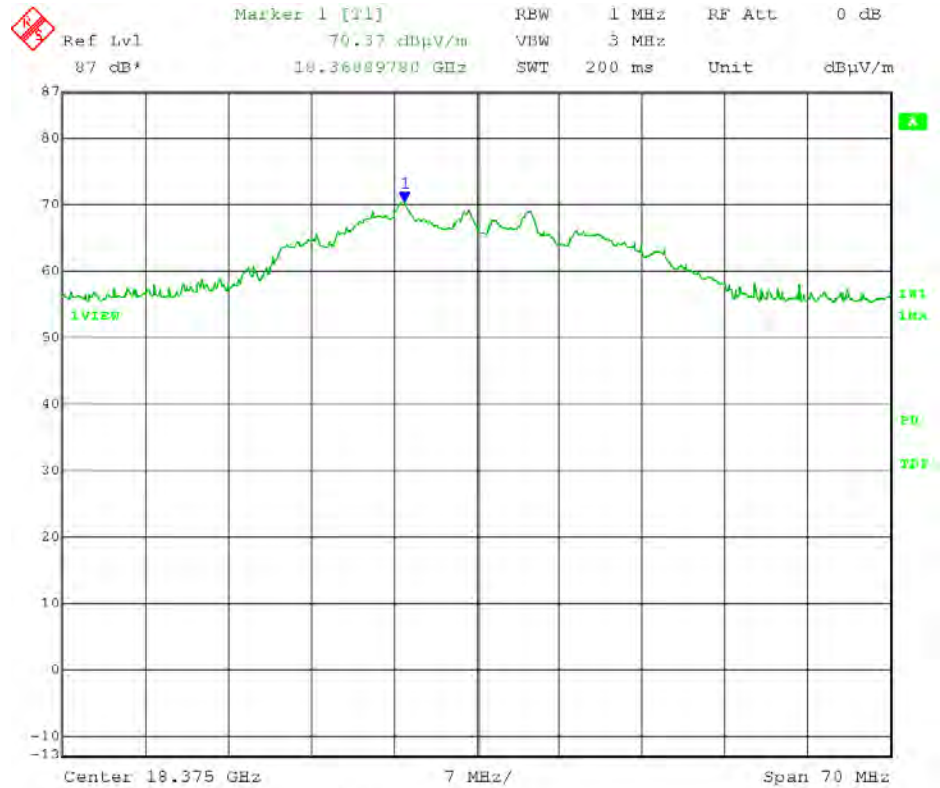
EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Date: 25.FEB.2014 10:57:28

Horizontal:



Date: 25.FEB.2014 10:29:57

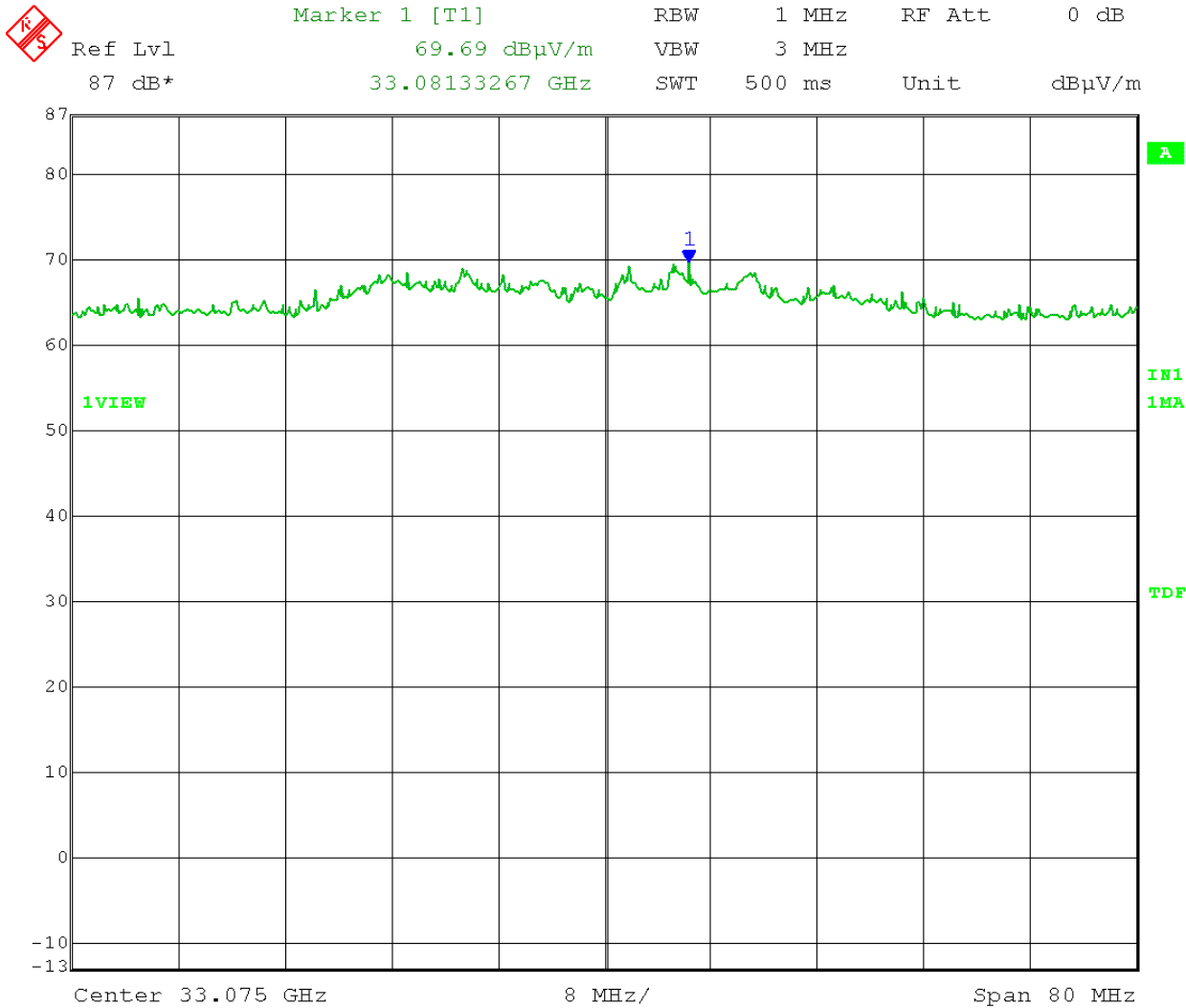
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active. Power setting 25 on each chain.
 10 MHz channel BW; Modulation: QPSK
 Mid channel center frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
33.075 vertical	noise floor						
33.075 horizontal	69.69	-46.44	13.67	19.75	-40.36	-13	27.36

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Date: 25.FEB.2014 12:43:35

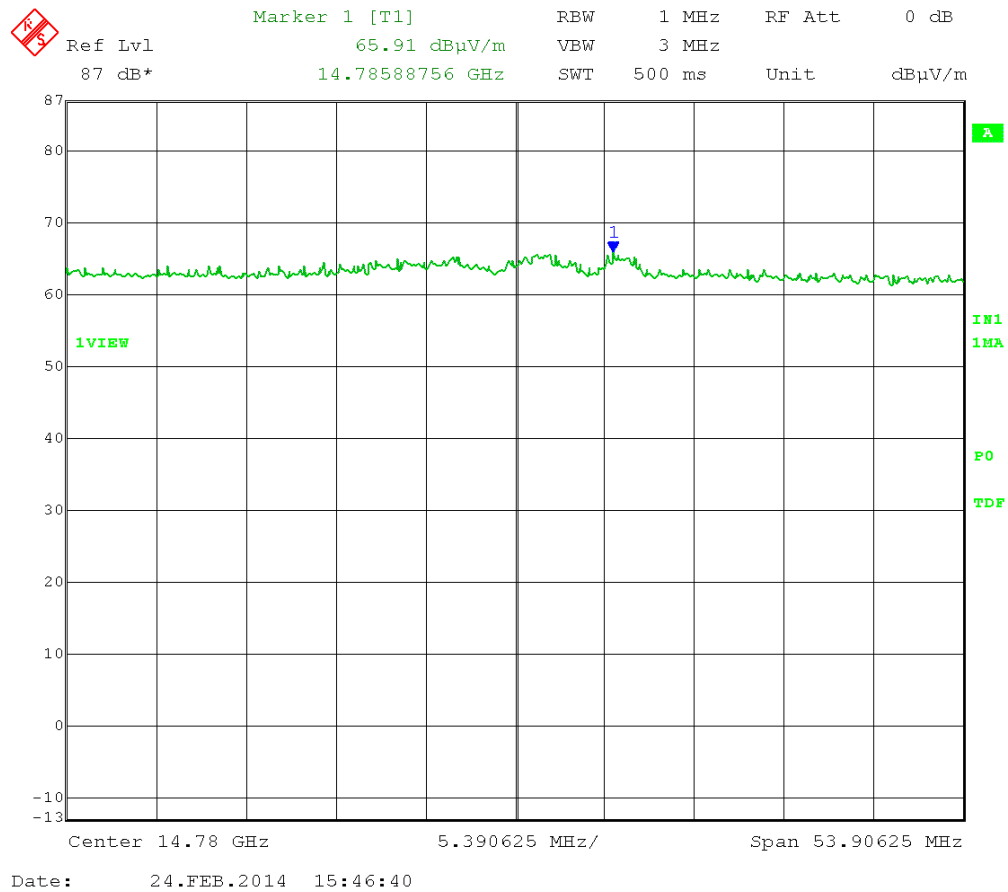
Test Date: 02-24-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25.
 10 MHz channel BW; Modulation: QPSK
 High channel center frequency: 3695 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.780 vertical	noise floor						
14.780 horizontal	65.91	-41.15	8.83	12.57	-37.41	-13	24.41

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 10 MHz channel BW; Modulation: QPSK
 High channel center frequency: 3695 MHz

Limit: -13 dBm

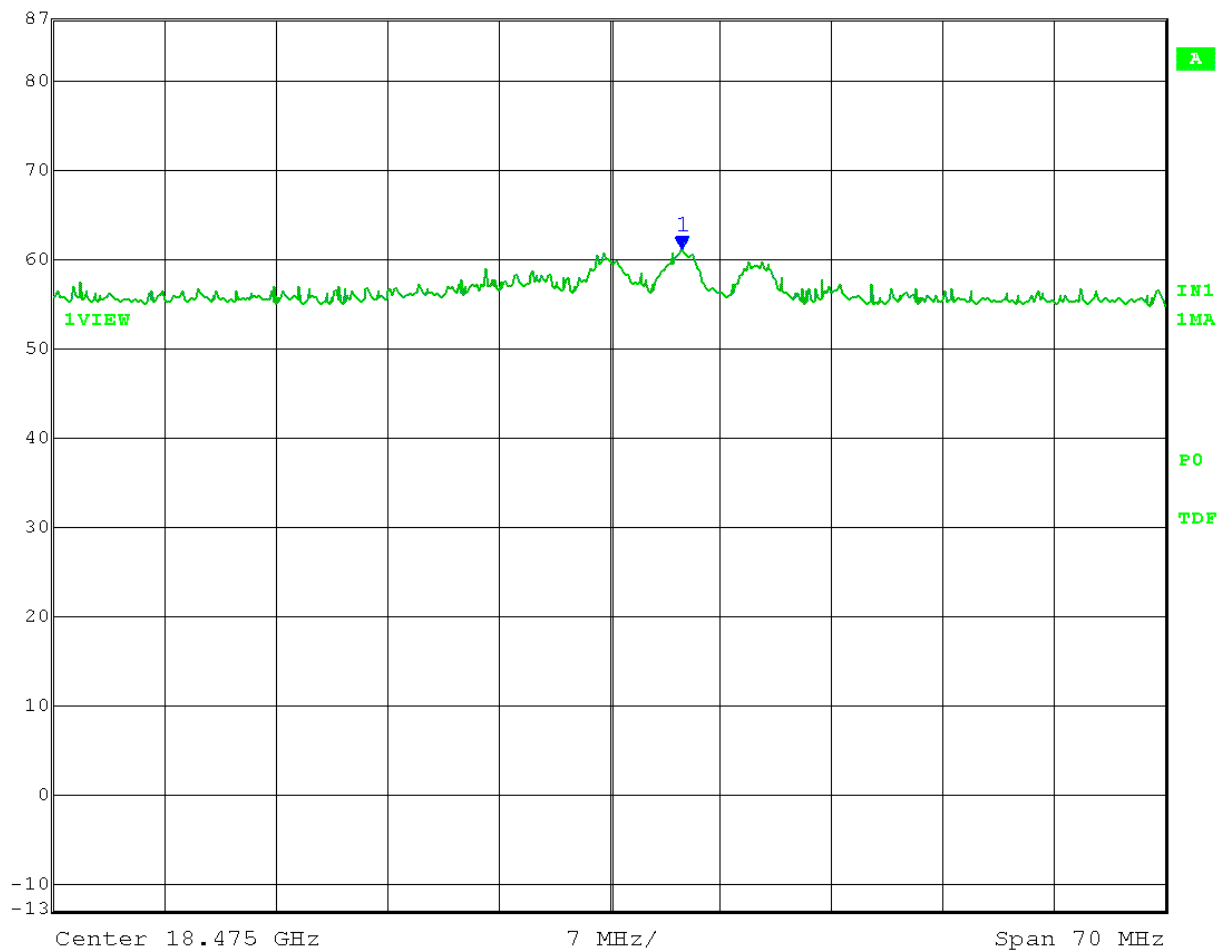
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.475 vertical	noise floor						
18.475 horizontal	61.13	-50.05	9.94	15.18	-44.81	-13	31.81

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
87 dB*	61.13 dBμV/m	VBW	3 MHz		
	18.47955912 GHz	SWT	200 ms	Unit	dBμV/m



Date: 25.FEB.2014 10:41:12

Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 10 MHz channel BW; Modulation: QPSK
 High channel center frequency: 3695 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

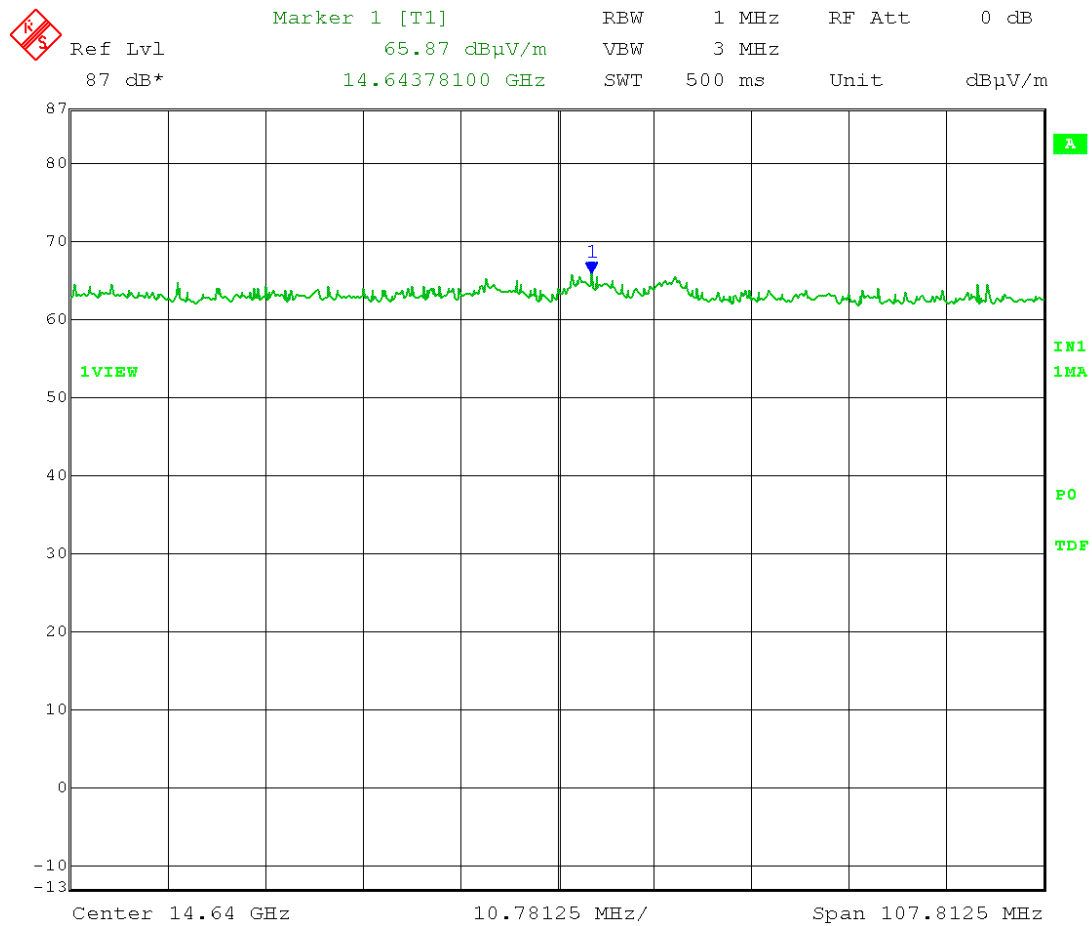
Test Date: 02-24-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25.
 20 MHz channel BW; Modulation: QPSK
 Low channel center frequency: 3660 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.640 vertical	noise floor						
14.640 horizontal	65.87	-42.09	8.79	11.77	-39.11	-13	26.11

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Date: 24.FEB.2014 15:22:32

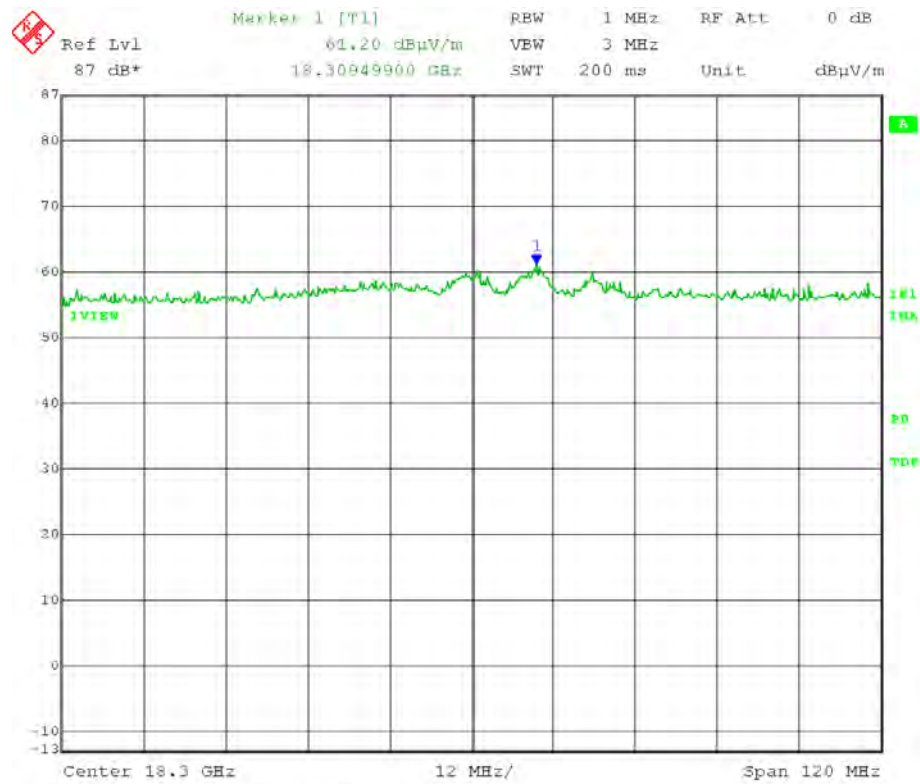
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 20 MHz channel BW; Modulation: QPSK
 Low channel center frequency: 3660 MHz

Limit: -13 dBm

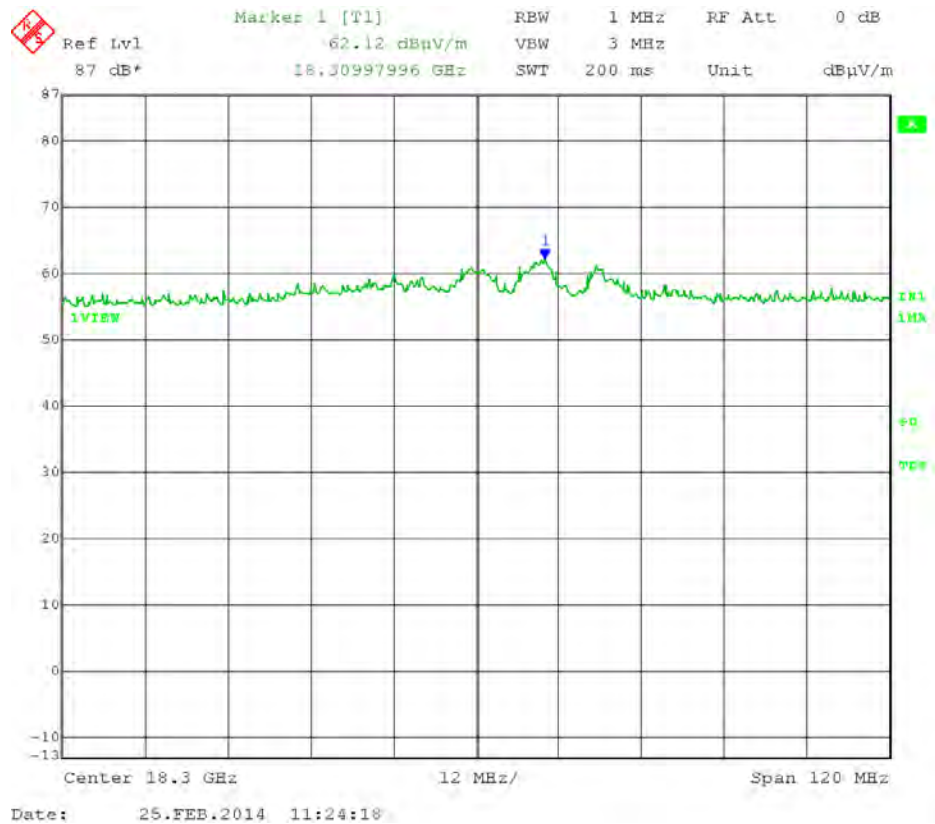
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.300 vertical	61.20	-50.42	9.91	15.18	-45.15	-13	32.15
18.300 horizontal	62.12	-48.88	9.91	15.18	-43.61	-13	30.61

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 20 MHz channel BW; Modulation: QPSK
 Low channel center frequency: 3660 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

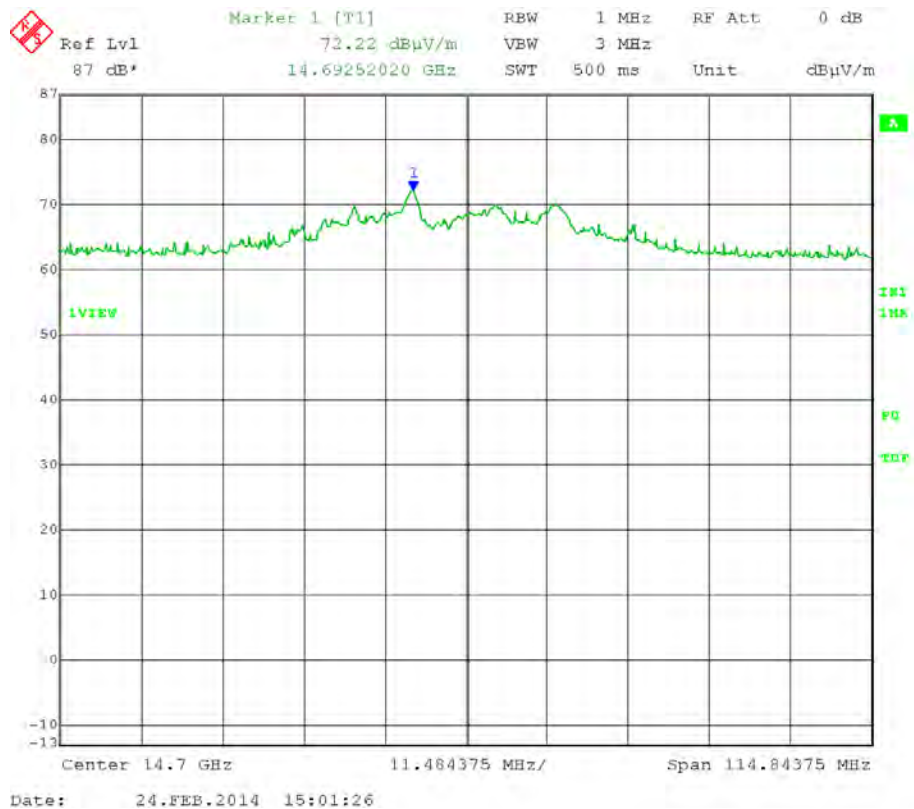
Test Date: 02-24-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active. Power setting 25 on each chain.
 20 MHz channel BW; Modulation: QPSK
 Mid channel center frequency: 3675 MHz

Limit: -13 dBm

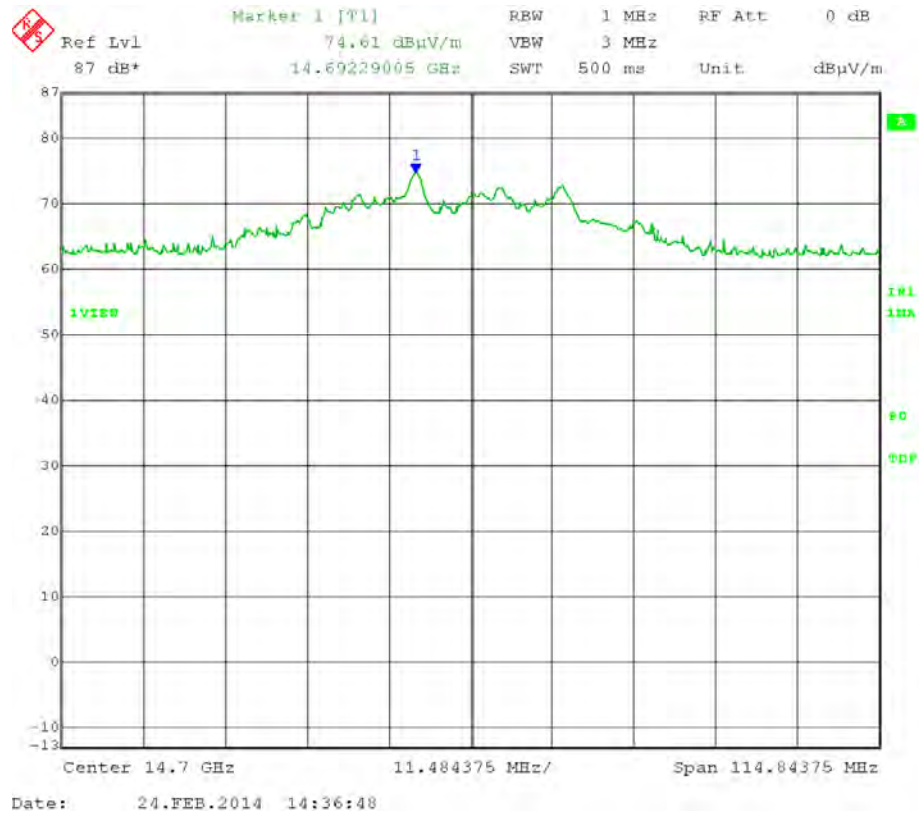
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.700 vertical	72.22	-37.36	8.83	12.10	-34.09	-13	21.09
14.700 horizontal	74.61	-33.91	8.83	12.10	-30.64	-13	17.64

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



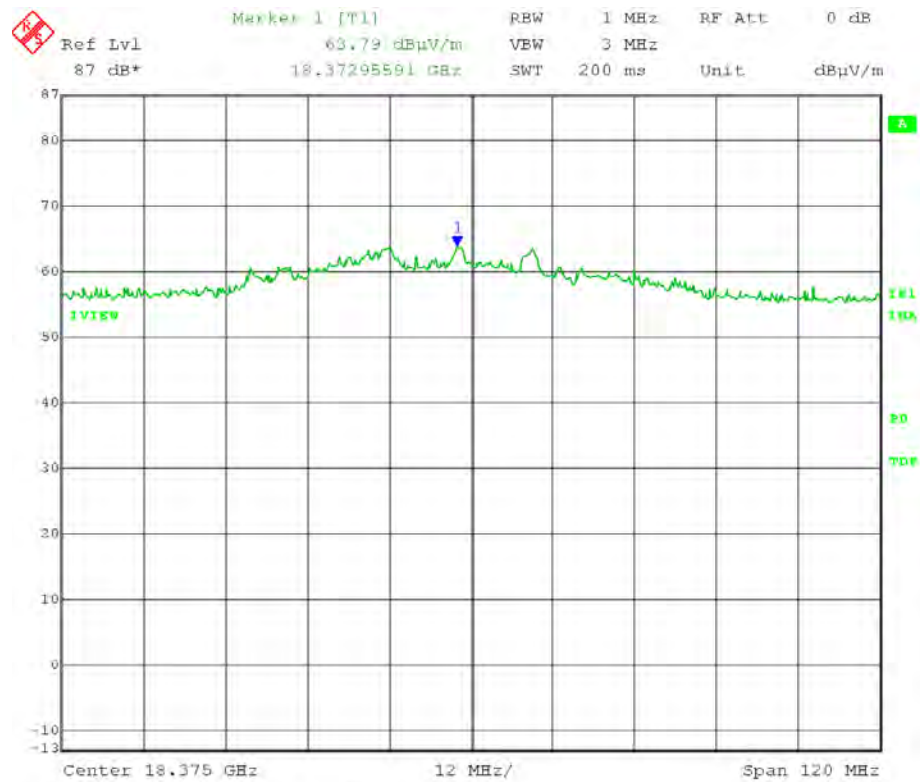
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active. Power setting 25 on each chain.
 20 MHz channel BW; Modulation: QPSK
 Mid channel center frequency: 3675 MHz

Limit: -13 dBm

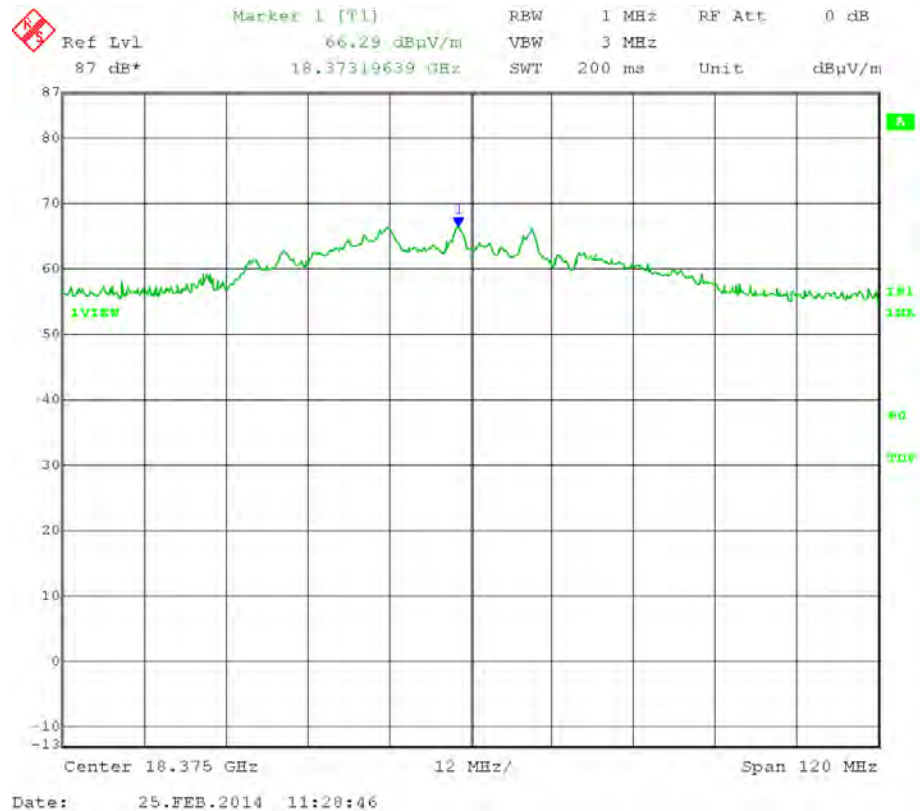
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.375 vertical	63.79	-48.04	9.91	15.18	-42.77	-13	29.77
18.375 horizontal	66.29	-45.29	9.91	15.18	-40.02	-13	27.02

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active. Power setting 25 on each chain.
 20 MHz channel BW; Modulation: QPSK
 Mid channel center frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

Test Date: 02-24-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25.
 20 MHz channel BW; Modulation: QPSK
 High channel center frequency: 3690 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 1 to 18 GHz

Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 20 MHz channel BW; Modulation: QPSK
 High channel center frequency: 3690 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 18 to 26 GHz

Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C004A (with integral patch antenna)
 Tests: Transmitter Unwanted Out-of-Band Emissions
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 (total of both chains).
 20 MHz channel BW; Modulation: QPSK
 High channel center frequency: 3690 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

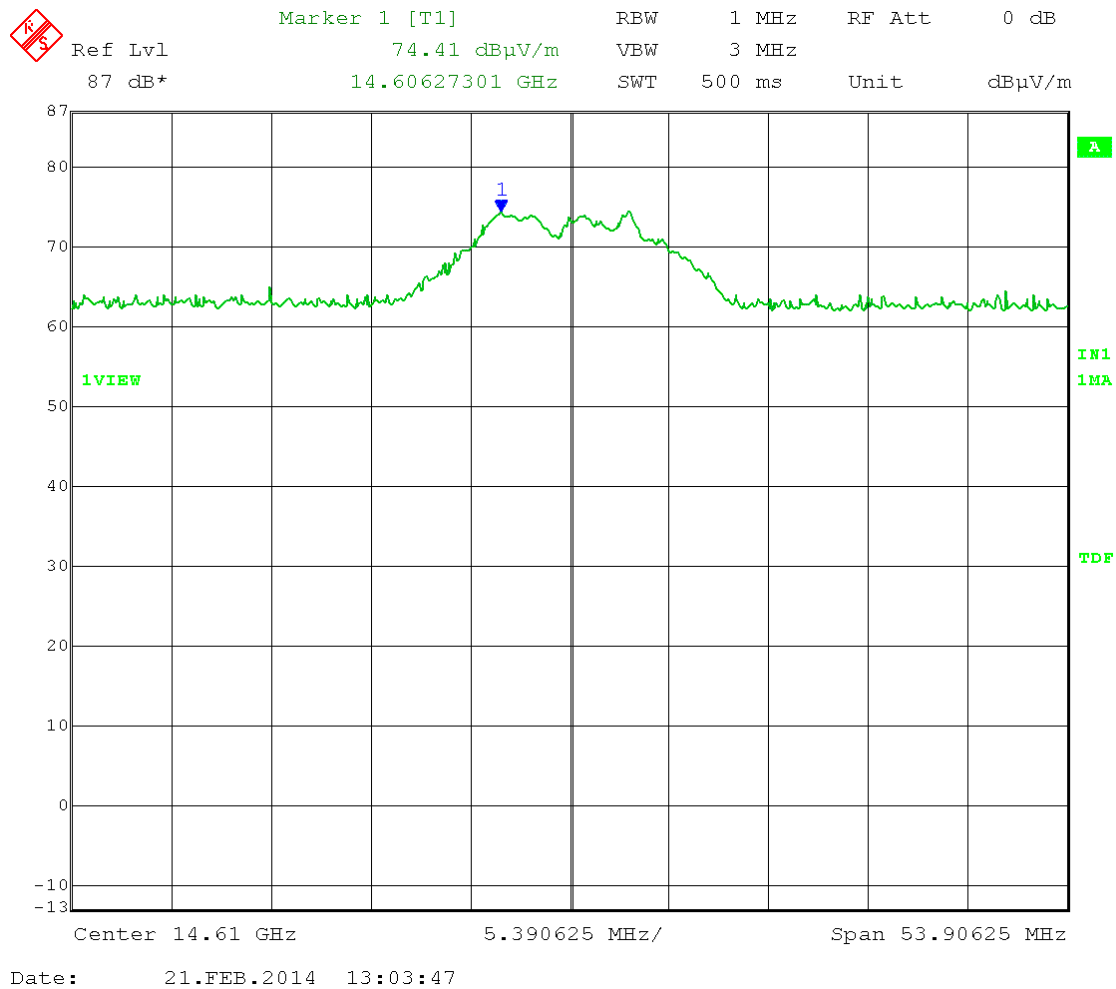
Test Date: 02-21-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 5 MHz channel BW; Modulation: QPSK
 Low channel frequency: 3652.5 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.610 vertical	Noise Floor						
14.610 horizontal	74.41	-33.68	8.79	11.77	-30.70	-13	17.70

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



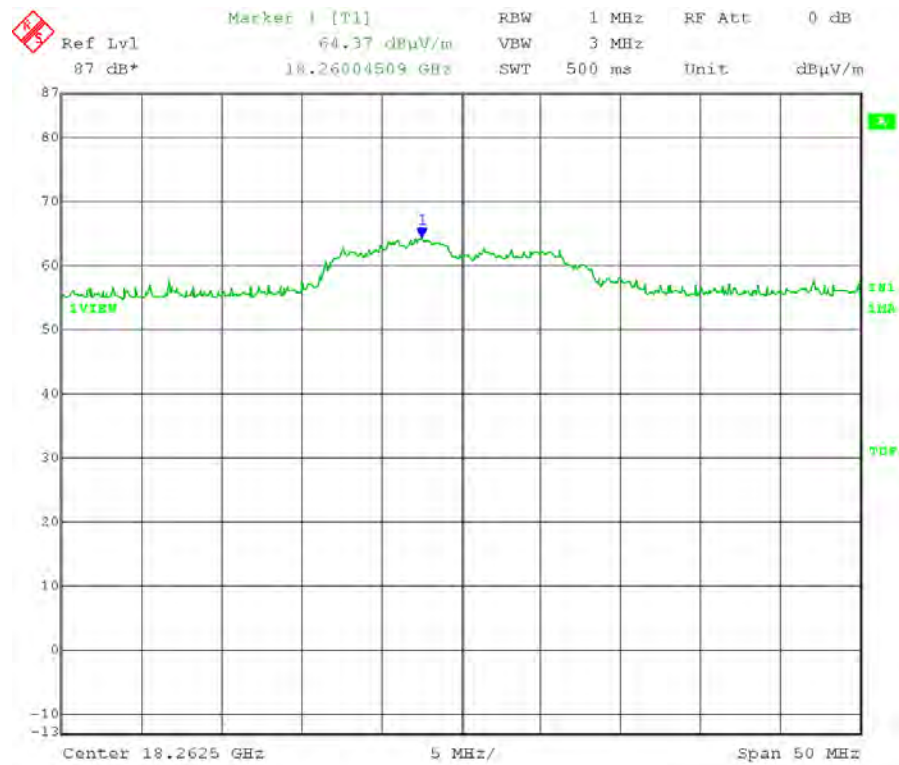
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 5 MHz channel BW; Modulation: QPSK
 Low channel frequency: 3652.5 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.2625 vertical	64.37	-47.16	9.87	15.18	-41.85	-13	28.85
18.2625 horizontal	69.81	-40.92	9.87	15.18	-35.61	-13	22.61

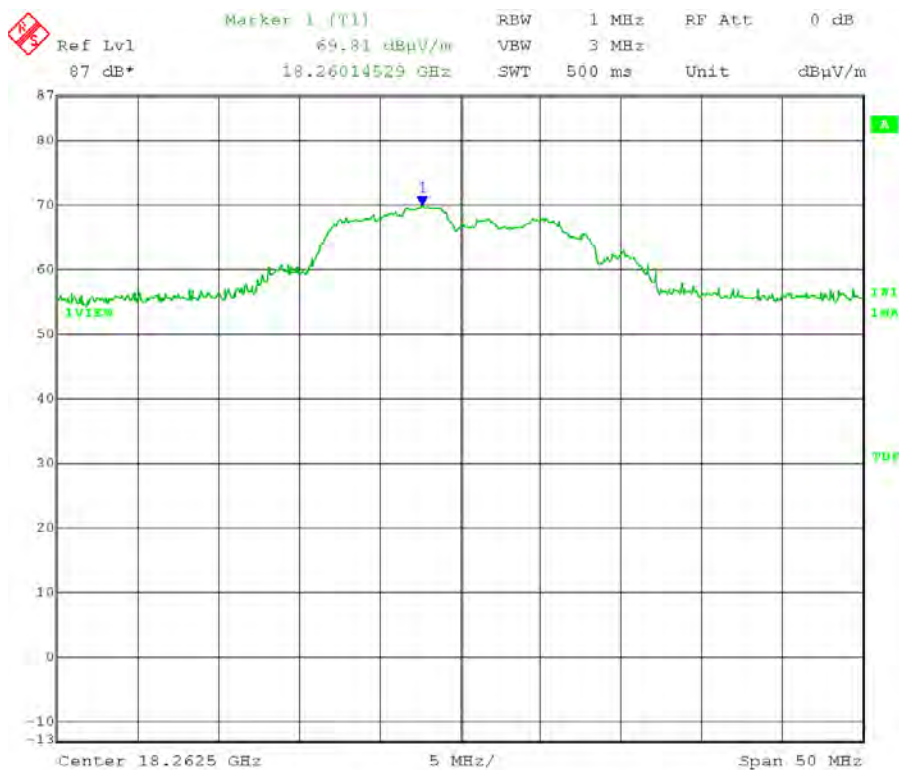
EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Date: 25.FEB.2014 15:11:07

Horizontal:



Date: 25.FEB.2014 14:51:33

Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 5 MHz channel BW; Modulation: QPSK
 Low channel frequency: 3652.5 MHz

Limit: -13 dBm

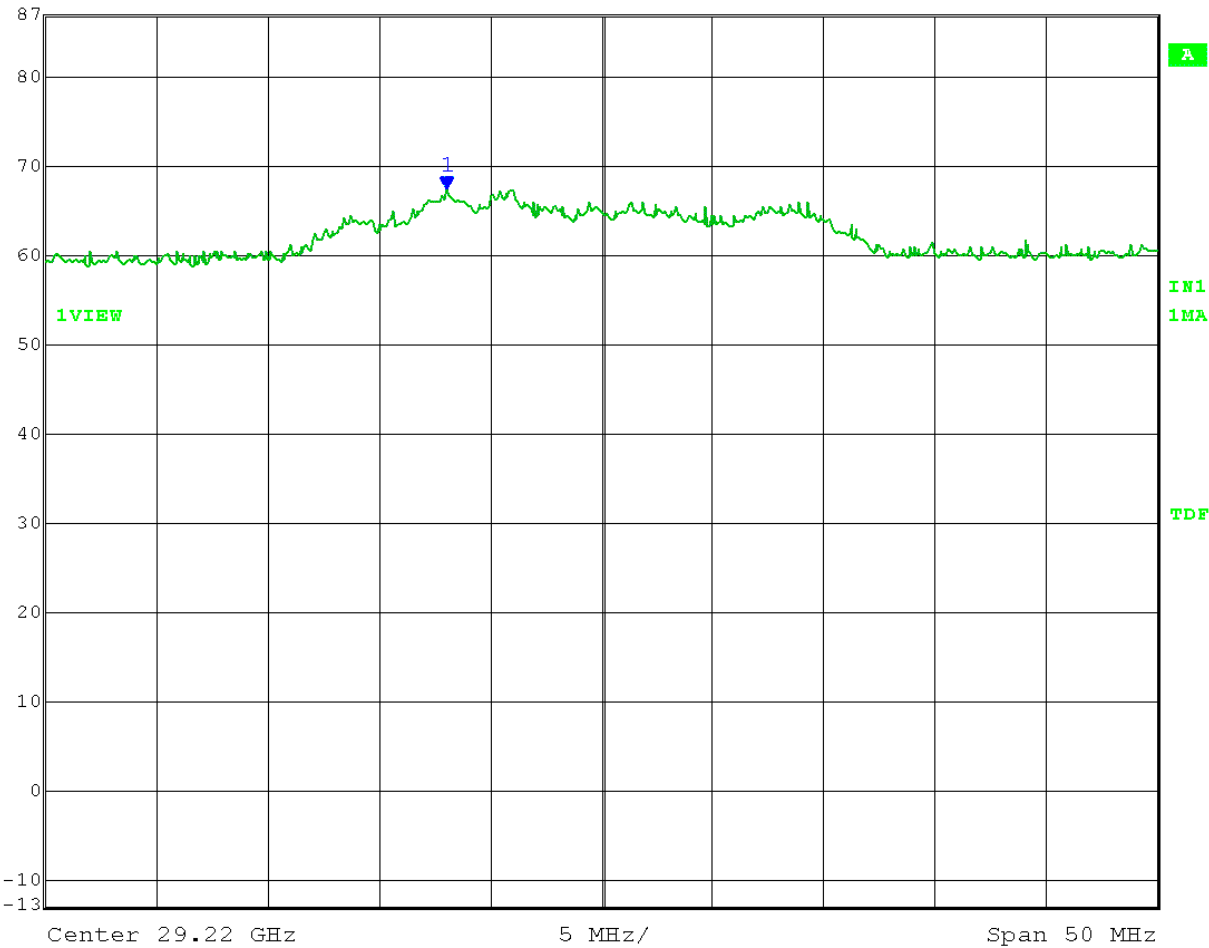
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
29.220 vertical	noise floor						
29.220 horizontal	67.37	-44.05	12.73	18.55	-38.23	-13	25.23

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
87 dB*	67.37 dBμV/m	VBW	3 MHz		
	29.21303607 GHz	SWT	500 ms	Unit	dBμV/m



Date: 26.FEB.2014 09:30:46

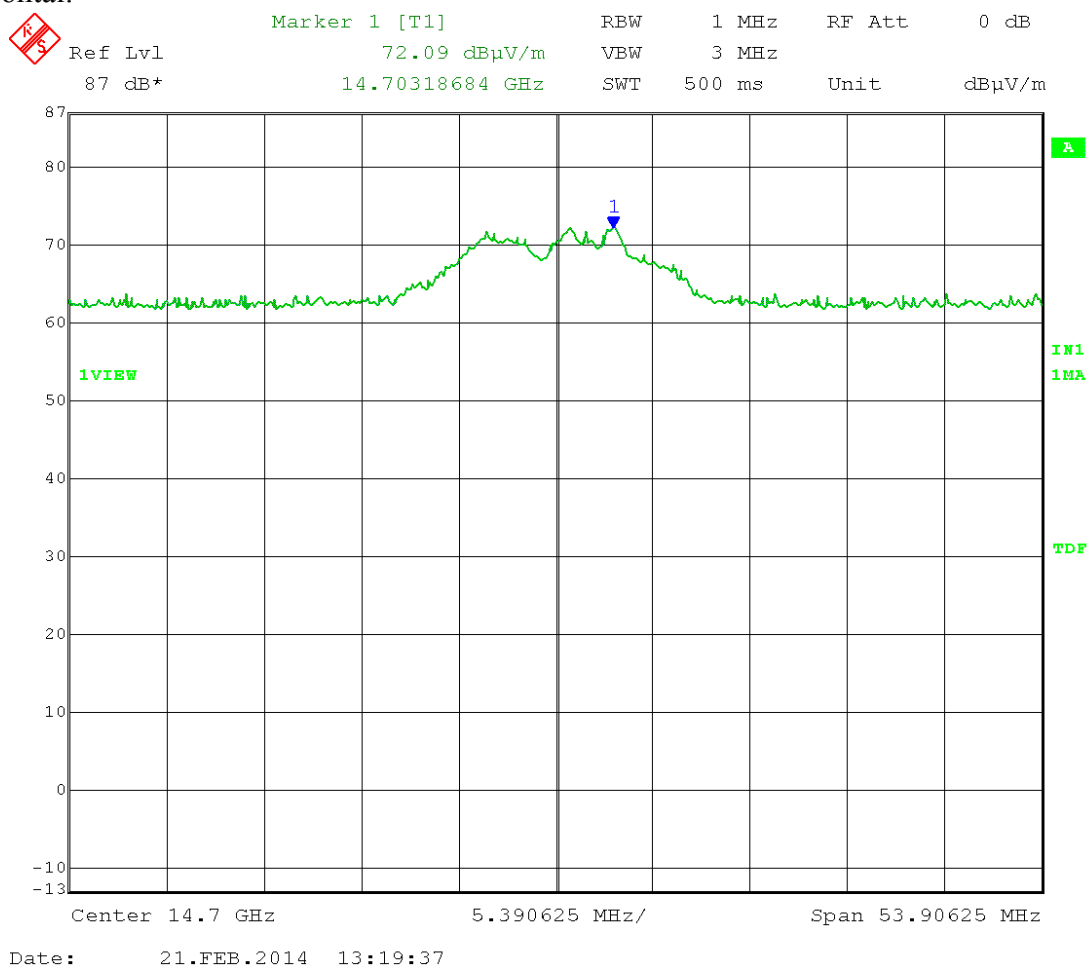
Test Date: 02-21-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 5 MHz channel BW; Modulation: QPSK
 Mid channel frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.700 vertical	Noise Floor						
14.700 horizontal	72.09	-36.43	8.79	12.10	-33.12	-13	20.12

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



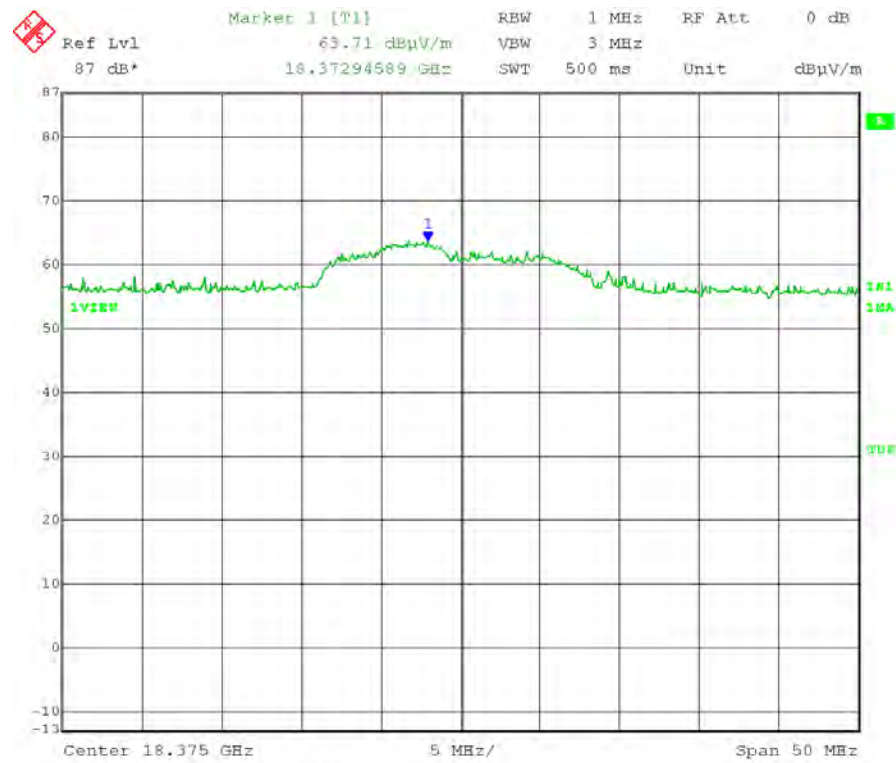
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 5 MHz channel BW; Modulation: QPSK
 Mid channel frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.375 vertical	63.71	-48.12	9.91	15.18	-42.85	-13	29.85
18.375 horizontal	69.25	-42.33	9.91	15.18	-37.06	-13	24.06

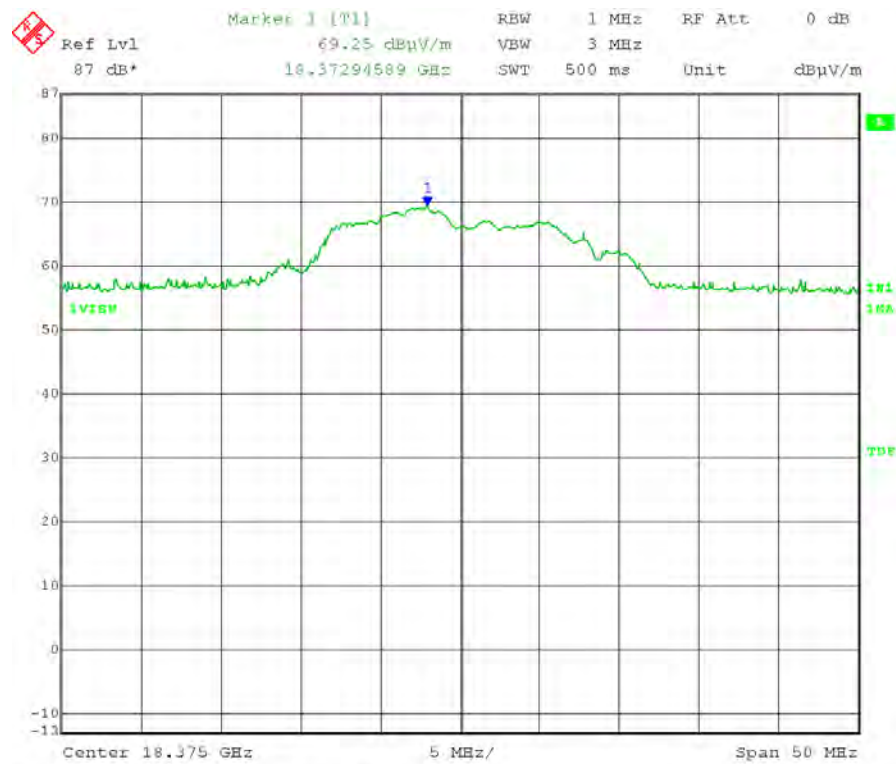
EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Date: 25.FEB.2014 15:07:57

Horizontal:



Date: 25.FEB.2014 14:45:54

Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 5 MHz channel BW; Modulation: QPSK
 Mid channel frequency: 3675 MHz

Limit: -13 dBm

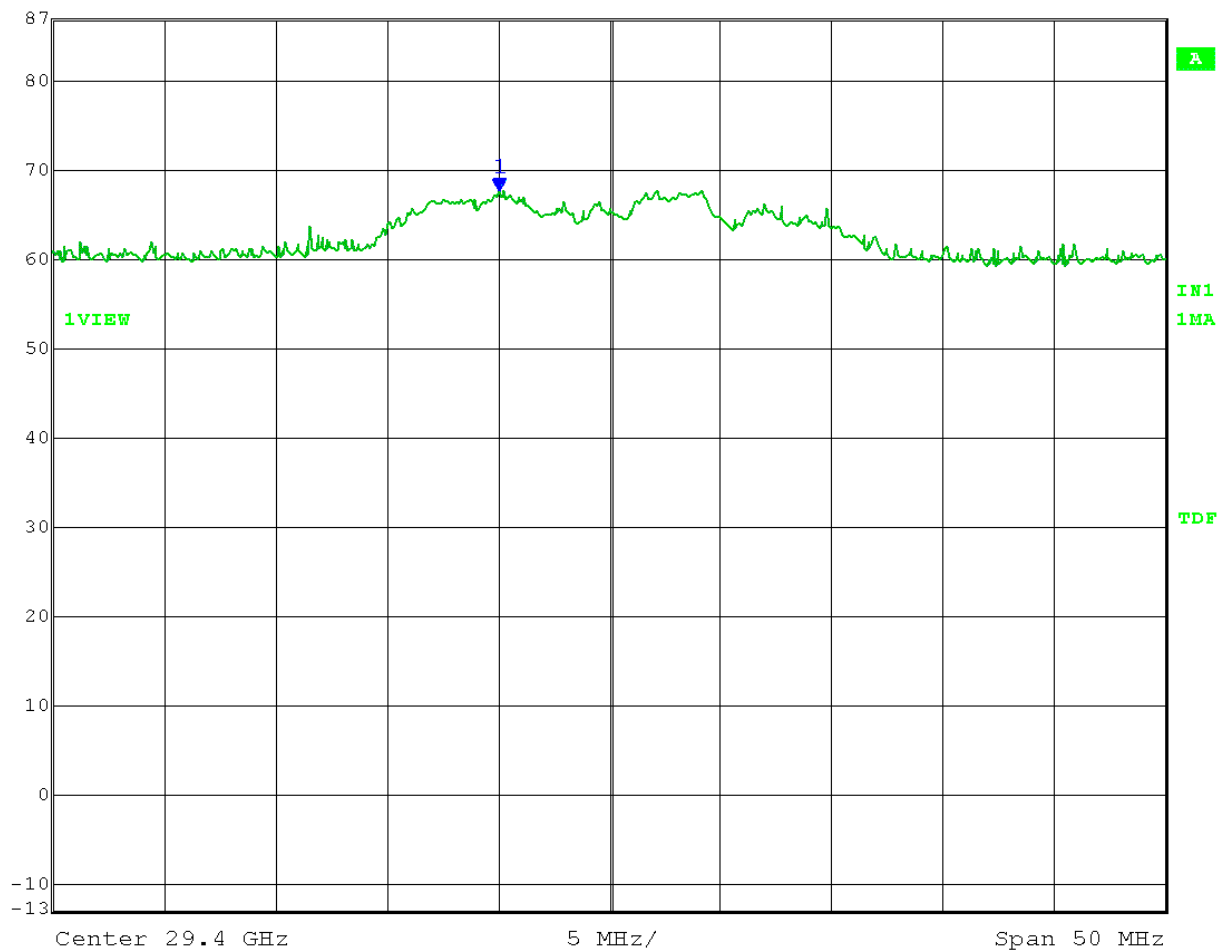
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
29.400 vertical	noise floor						
29.400 horizontal	67.69	-44.82	12.74	18.57	-38.99	-13	25.99

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
87 dB*	67.69 dBμV/m	VBW	3 MHz		
	29.39504008 GHz	SWT	500 ms	Unit	dBμV/m



Date: 26.FEB.2014 09:27:01

Test Date: 02-21-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 5 MHz channel BW; Modulation: QPSK
 High channel frequency: 3697.5 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.790 vertical	Noise Floor						
14.790 horizontal	69.73	-40.29	8.83	12.57	-36.55	-13	23.55

EIRP = Signal generator output - cable loss + antenna gain

Date: 21.FEB.2014 13:27:08

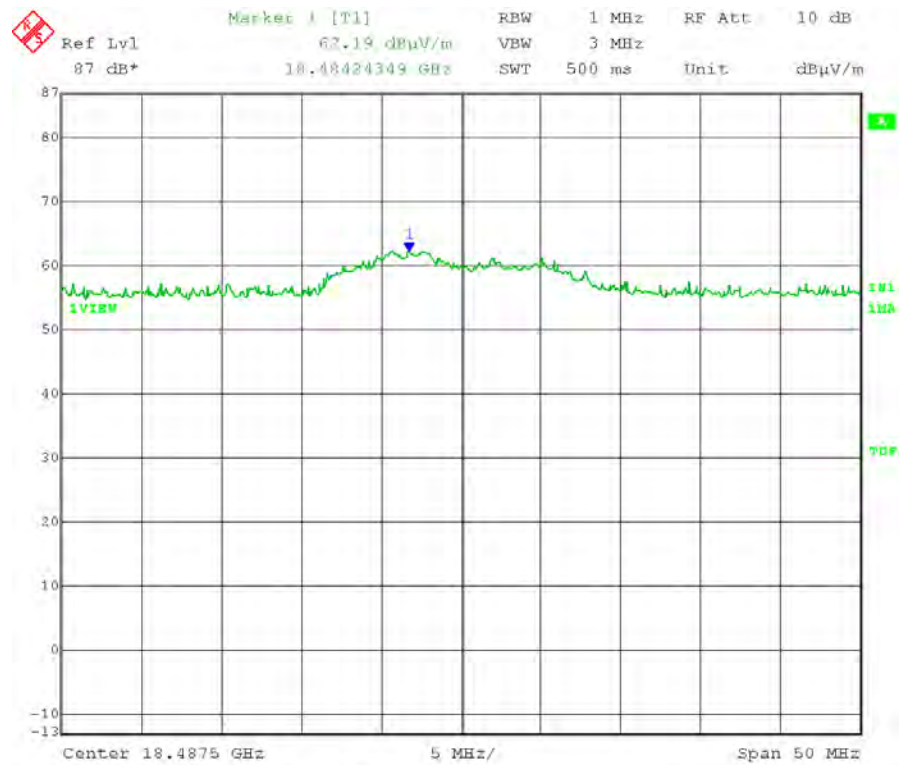
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 5 MHz channel BW; Modulation: QPSK
 High channel frequency: 3697.5 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.4875 vertical	62.19	-49.19	9.94	15.18	-43.95	-13	30.95
18.4875 horizontal	66.18	-45.52	9.94	15.18	-40.28	-13	27.28

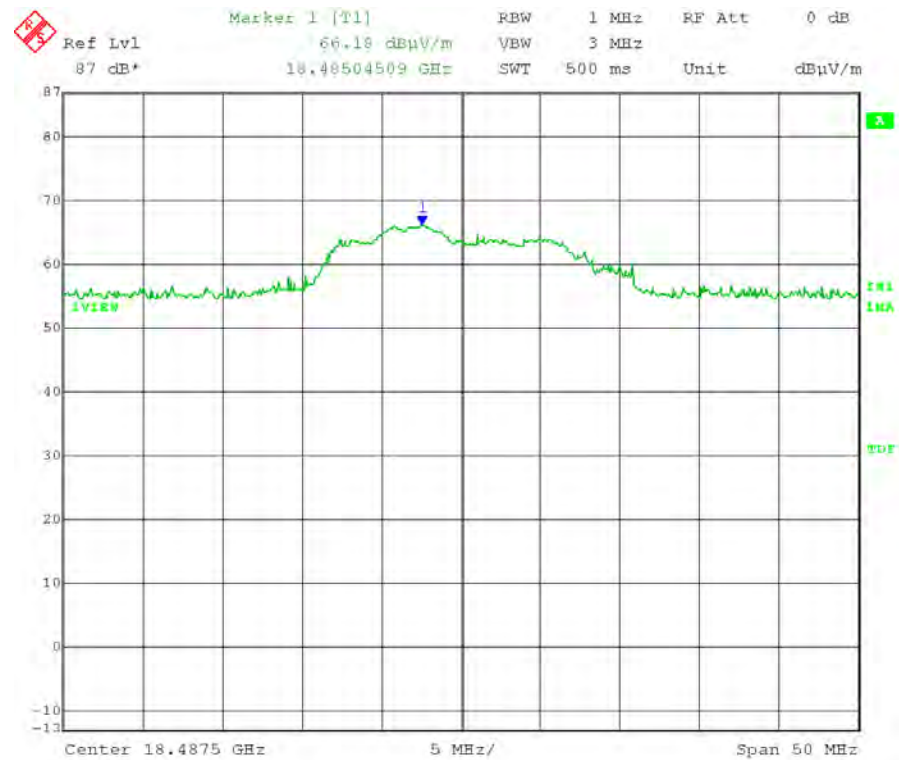
EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Date: 25.FEB.2014 15:04:19

Horizontal:



Date: 25.FEB.2014 14:58:27

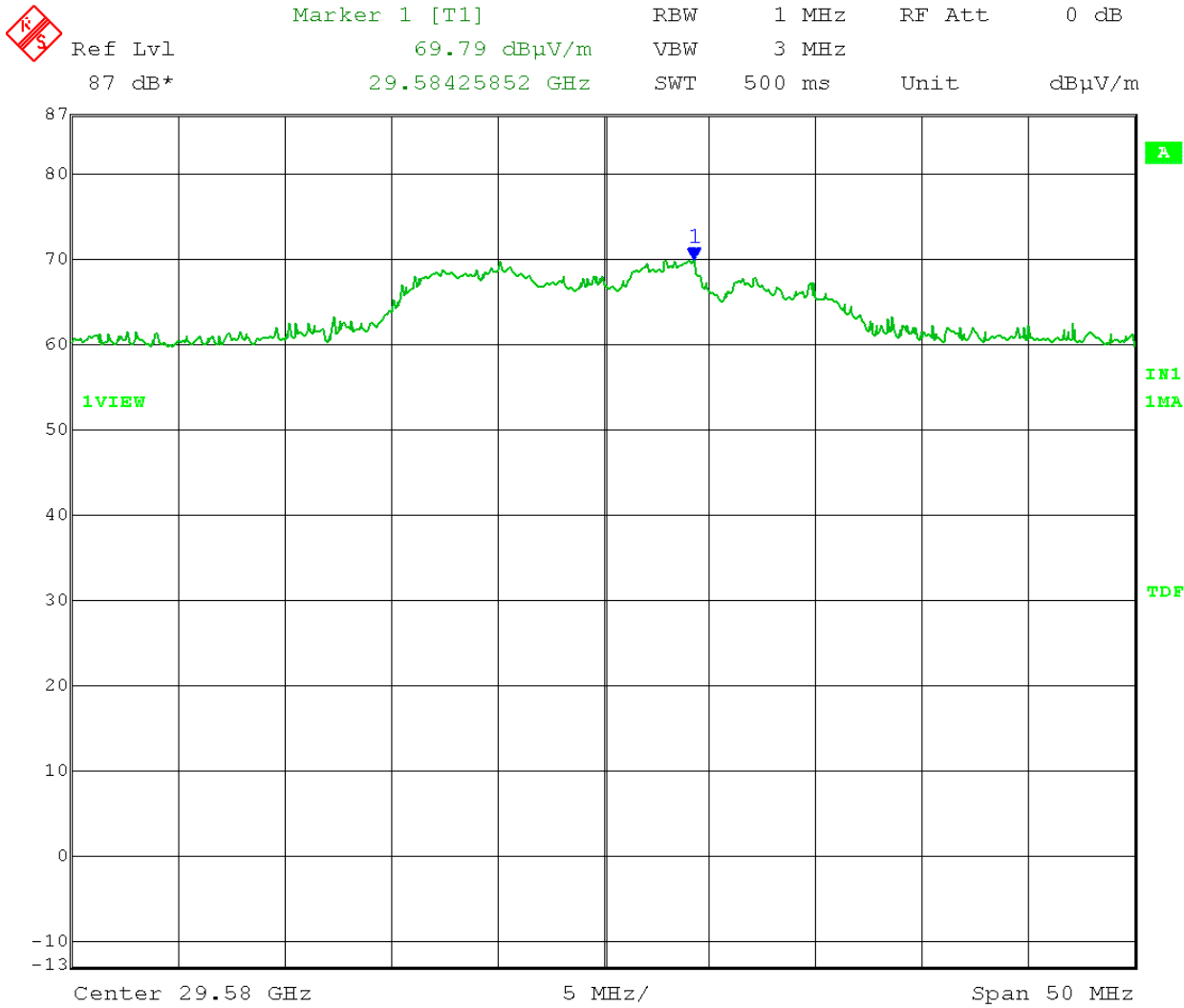
Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 5 MHz channel BW; Modulation: QPSK
 High channel frequency: 3697.5 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
29.580 vertical	noise floor						
29.580 horizontal	69.79	-43.65	12.87	18.62	-37.90	-13	24.90

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Date: 26.FEB.2014 09:34:26

Test Date: 02-21-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 10 MHz channel BW; Modulation: QPSK
 Low channel frequency: 3655 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.620 vertical	Noise Floor						
14.620 horizontal	70.57	-36.58	8.79	11.77	-33.60	-13	20.60

EIRP = Signal generator output - cable loss + antenna gain

Center 14.62 GHz

Span 53.90625 MHz

IN1 1MA

1VIEW

1

Date: 21.FEB.2014 13:33:20

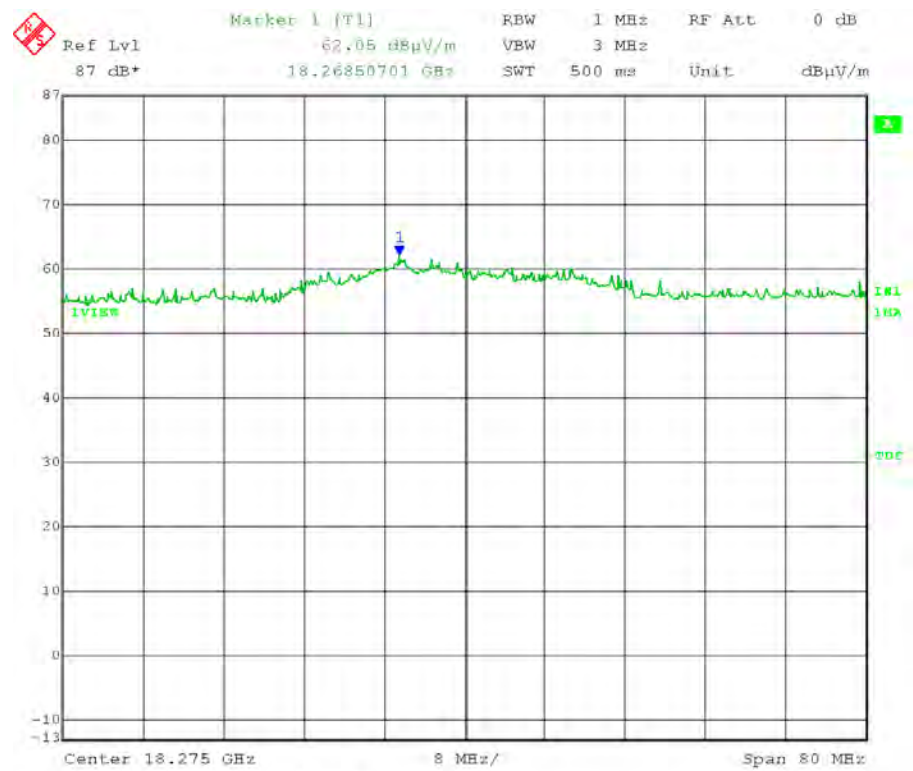
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 10 MHz channel BW; Modulation: QPSK
 Low channel frequency: 3655 MHz

Limit: -13 dBm

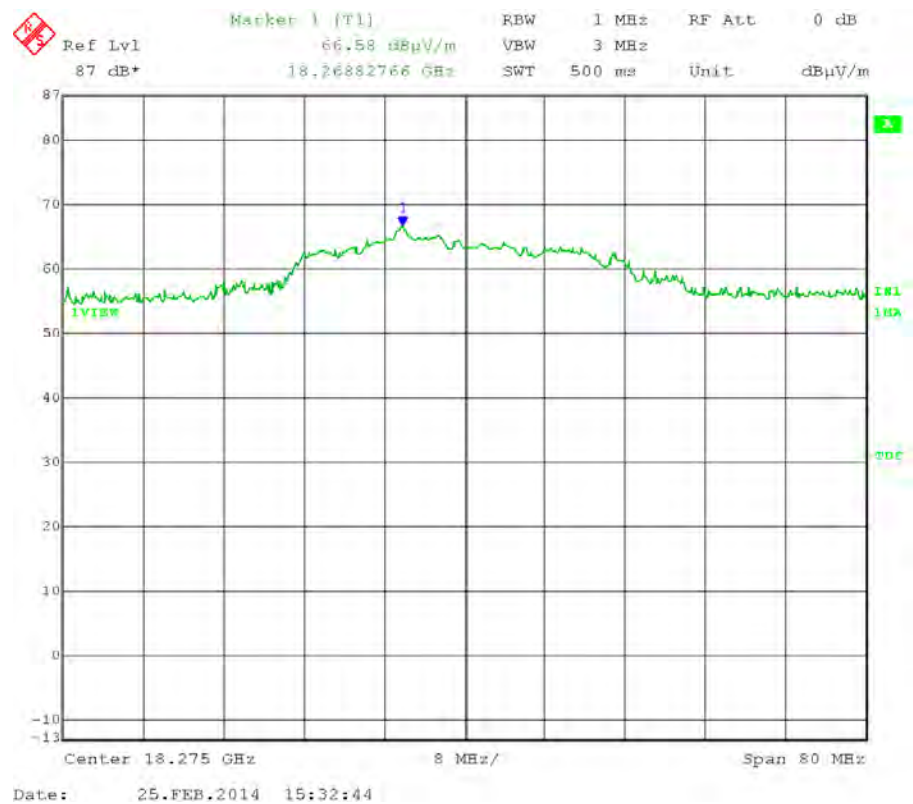
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.275 vertical	62.05	-49.26	9.87	15.18	-43.95	-13	30.95
18.275 horizontal	66.58	-44.60	9.87	15.18	-39.29	-13	26.29

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 10 MHz channel BW; Modulation: QPSK
 Low channel frequency: 3655 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

Test Date: 02-21-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 10 MHz channel BW; Modulation: QPSK
 Mid channel frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.700 vertical	Noise Floor						
14.700 horizontal	70.58	-37.94	8.83	12.10	-34.67	-13	21.67

EIRP = Signal generator output - cable loss + antenna gain

Ref	Lvl
87	dB*

70.58 dB μ V/m

14.69594893 GHz

0 dB

3 MHz

500 m

Unit

dB μ V/mIN1
1MA

TDF

Center 14.7 GHz

5.390625 MHz/

Span 53.90625 MHz

Date: 21.FEB.2014 13:43:06

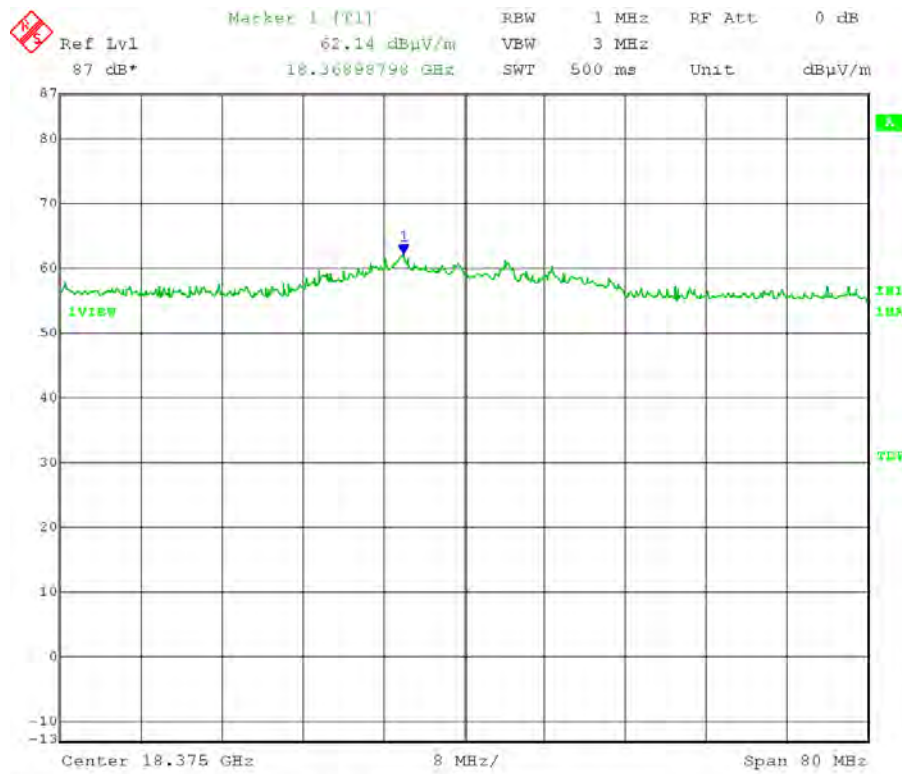
Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 10 MHz channel BW; Modulation: QPSK
 Mid channel frequency: 3675 MHz

Limit: -13 dBm

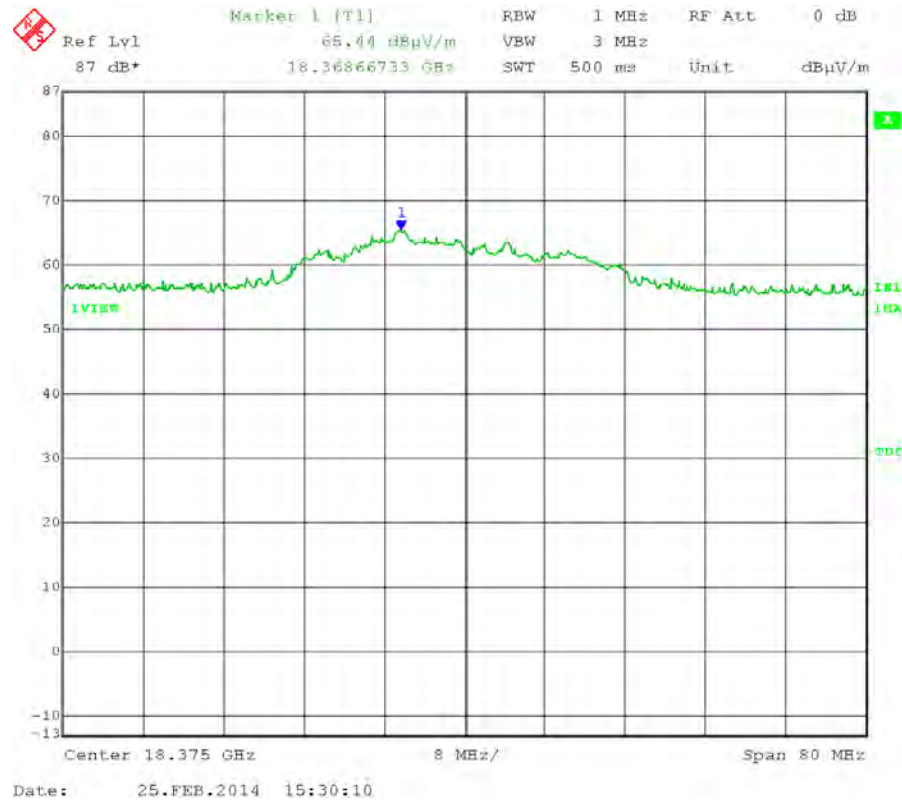
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.375 vertical	62.14	-49.69	9.91	15.18	-44.42	-13	31.42
18.375 horizontal	65.44	-46.14	9.91	15.18	-40.87	-13	27.87

EIRP = Signal generator output - cable loss + antenna gain

Vertical:



Horizontal:



Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 10 MHz channel BW; Modulation: QPSK
 Mid channel frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

Test Date: 02-21-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 10 MHz channel BW; Modulation: QPSK
 High channel frequency: 3695 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.780 vertical	Noise Floor						
14.780 horizontal	68.03	-38.93	8.83	12.10	-35.66	-13	22.66

EIRP = Signal generator output - cable loss + antenna gain

Date: 21.FEB.2014 13:46:29

Test Date: 02-25-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 10 MHz channel BW; Modulation: QPSK
 High channel frequency: 3695 MHz

Limit: -13 dBm

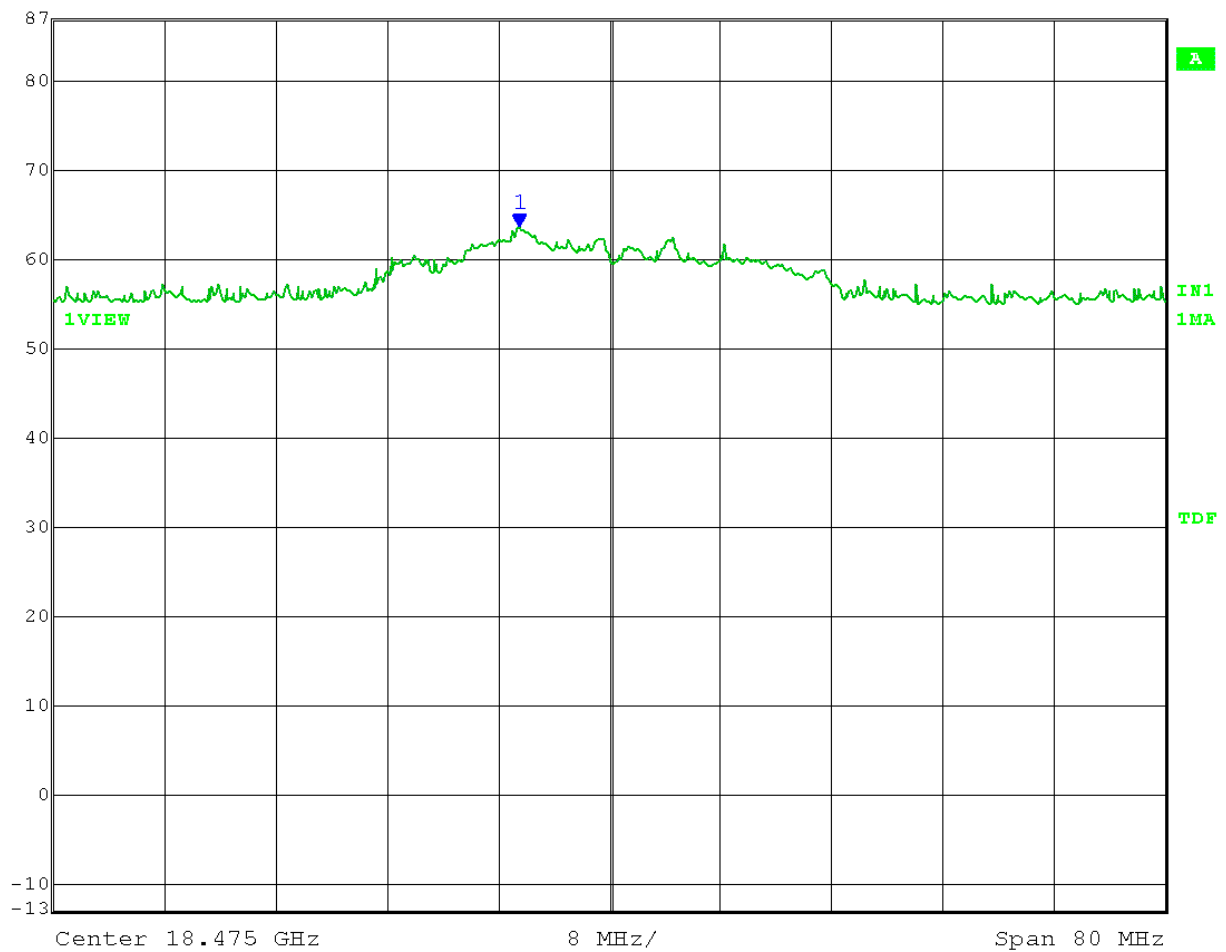
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.475 vertical	noise floor						
18.475 horizontal	63.62	-48.06	9.94	15.18	-42.82	-13	29.82

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
87 dB*	63.62 dBμV/m	VBW	3 MHz		
	18.46850701 GHz	SWT	500 ms	Unit	dBμV/m



Date: 25.FEB.2014 15:27:42

Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 10 MHz channel BW; Modulation: QPSK
 High channel frequency: 3695 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

Test Date: 02-21-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 20 MHz channel BW; Modulation: QPSK
 Low channel frequency: 3660 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.640 vertical	Noise Floor						
14.640 horizontal	68.23	-39.61	8.79	11.77	-36.63	-13	23.63

EIRP = Signal generator output - cable loss + antenna gain

TDE

Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 20 MHz channel BW; Modulation: QPSK
 Low channel frequency: 3660 MHz

Limit: -13 dBm

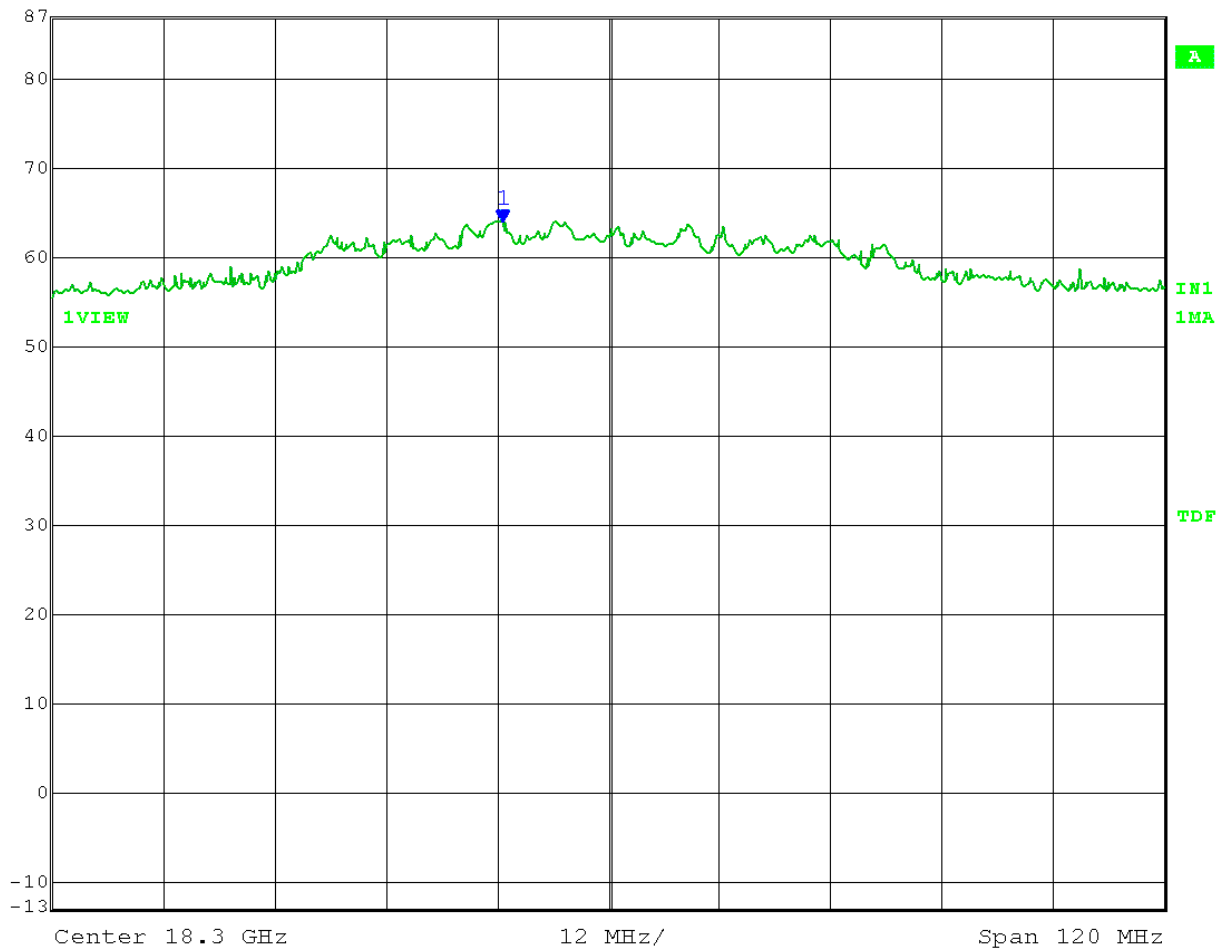
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.300 vertical	noise floor						
18.300 horizontal	63.99	-47.40	9.87	15.18	-42.09	-13	29.09

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
87 dB*	63.99 dBμV/m	VBW	3 MHz		
	18.28857715 GHz	SWT	500 ms	Unit	dBμV/m



Date: 26.FEB.2014 08:53:53

Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 20 MHz channel BW; Modulation: QPSK
 Low channel frequency: 3660 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

Test Date: 02-21-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 20 MHz channel BW; Modulation: QPSK
 Mid channel frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.700 vertical	Noise Floor						
14.700 horizontal	68.46	-40.06	8.79	12.10	-36.75	-13	23.75

EIRP = Signal generator output - cable loss + antenna gain

Date: 21.FEB.2014 13:57:15

Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 20 MHz channel BW; Modulation: QPSK
 Mid channel frequency: 3675 MHz

Limit: -13 dBm

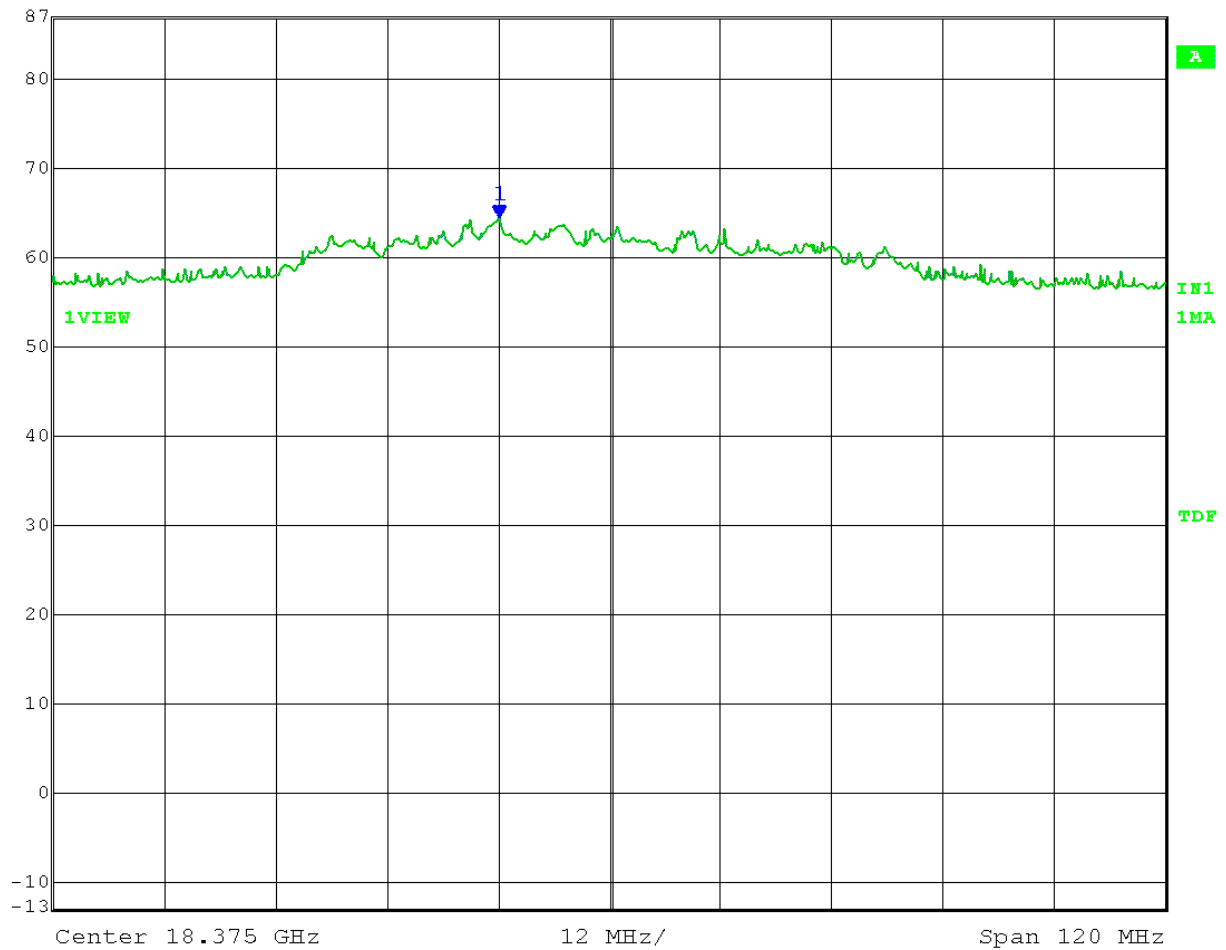
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.375 vertical	noise floor						
18.375 horizontal	64.46	-47.12	9.91	15.18	-41.85	-13	28.85

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
87 dB*	64.46 dBμV/m	VBW	3 MHz		
	18.36309619 GHz	SWT	500 ms	Unit	dBμV/m



Date: 26.FEB.2014 08:49:28

Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 20 MHz channel BW; Modulation: QPSK
 Mid channel frequency: 3675 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz

Test Date: 02-21-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 20 MHz channel BW; Modulation: QPSK
 High channel frequency: 3690 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
14.760 vertical	Noise Floor						
14.760 horizontal	65.67	-41.74	8.83	12.10	-38.47	-13	25.47

EIRP = Signal generator output - cable loss + antenna gain

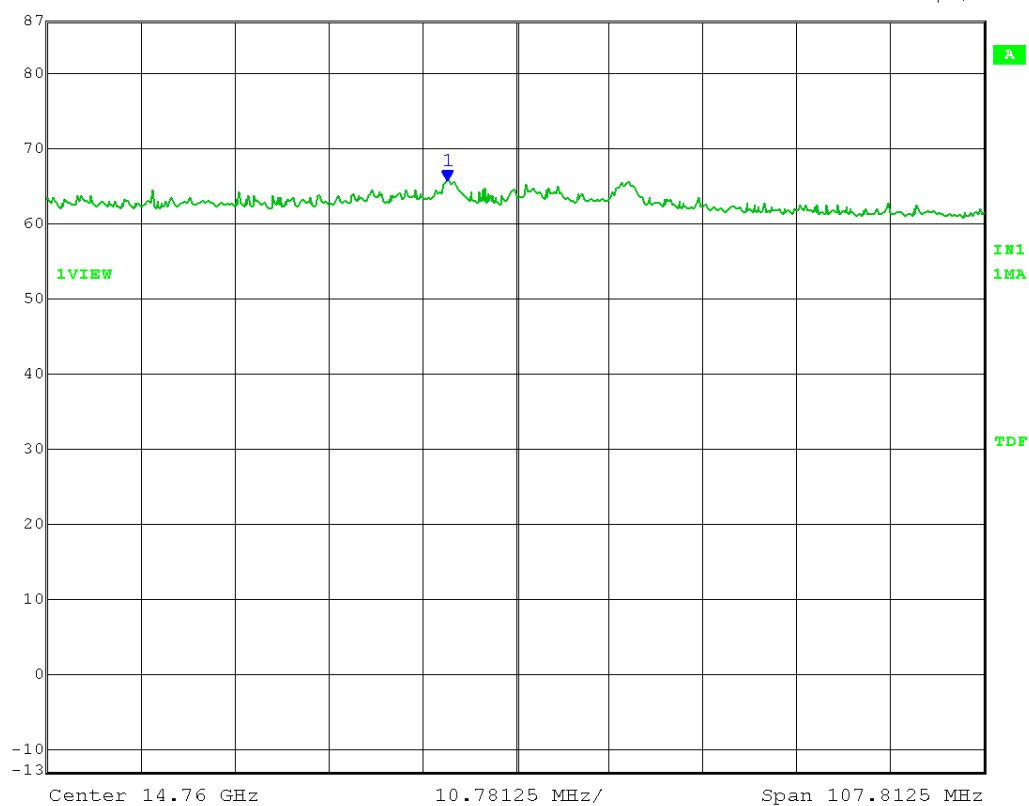


RBW 1 MHz RF Att 0 dB

VBW 3 MHz

14.75211392 GHz

SWT	500 ms	Unit	dB μ V/m
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Date: 21.FEB.2014 14:02:14

Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 20 MHz channel BW; Modulation: QPSK
 High channel frequency: 3690 MHz

Limit: -13 dBm

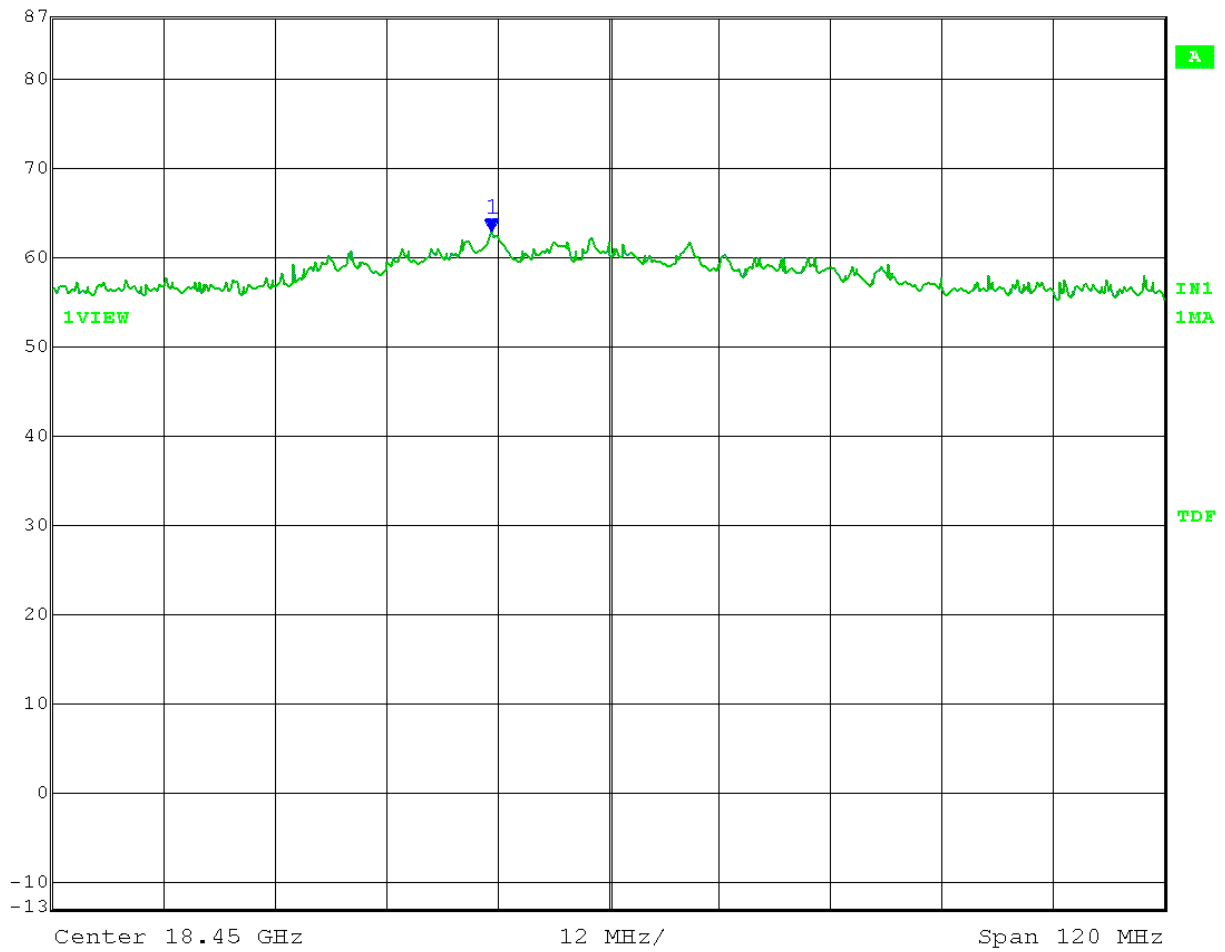
Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
18.450 vertical	noise floor						
18.450 horizontal	62.83	-48.07	9.94	15.18	-42.83	-13	29.83

EIRP = Signal generator output - cable loss + antenna gain

Horizontal:



Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
87 dB*	62.83 dBμV/m	VBW	3 MHz		
	18.43737475 GHz	SWT	500 ms	Unit	dBμV/m



Date: 26.FEB.2014 08:57:06

Test Date: 02-26-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
 Tests: Transmitter Unwanted Out-of-Band Emissions – Radiated from cabinet
 Operator: Craig B
 Comment: Both transmit chains active at power setting 25 for each chain.
 20 MHz channel BW; Modulation: QPSK
 High channel frequency: 3690 MHz

Limit: -13 dBm

Frequency and Polarization (GHz)	Max. Field Strength of EUT @ 1 meter (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [EIRP] (dBm)	Limit (dBm)	Margin (dB)
						-13	
						-13	

EIRP = Signal generator output - cable loss + antenna gain

NOTE: NO EMISSIONS FOUND 26 to 37 GHz



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Models Tested: C036045C004A & C036045C008A
Report Number: 19812
DLS Project: 6384

Appendix B – Measurement Data

B5.0 Transmitter RF Conducted Band-edge with Frequency Stability

Rule Part: FCC Part 2.1055 - Frequency stability

Test Procedure: KDB 971168 D01 Power Meas License Digital Systems v02r01
9.30 Frequency Stability

The EUT was connected to a spectrum analyzer through a cable and attenuator. The ambient temperature was varied from -30 °C to +50 °C, and the supply voltage was varied from 102 VAC to 138 VAC. For each condition, the lower and upper band edge was measured to show the frequency of the transmitter does not drift out of its authorized band of operation.

Limit: Amplitude level of -13 dBm at the lower and upper band edges (3650 MHz and 3700 MHz)

Results: Compliant.

Notes:

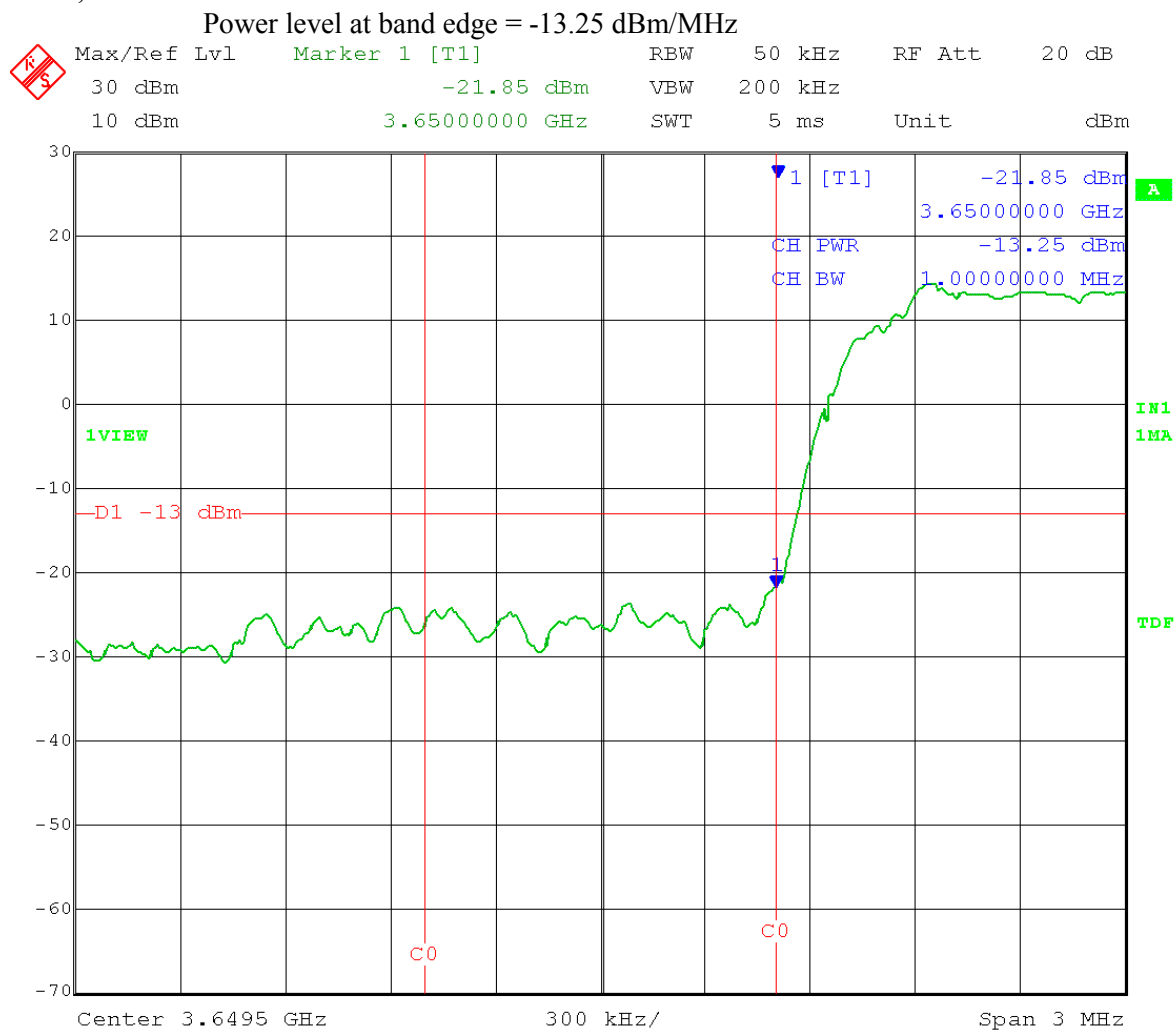
Only tested QPSK modulation mode as determined worst case by Cambium Networks.
Only tested output port A as determined worst case by Cambium Networks.

The following charts show the band-edge power settings determined for each antenna under normal conditions followed by the extreme conditions band-edge charts using the worst case power settings.

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3652.5 MHz Power setting: 25 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Lower band edge frequency = 3650 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

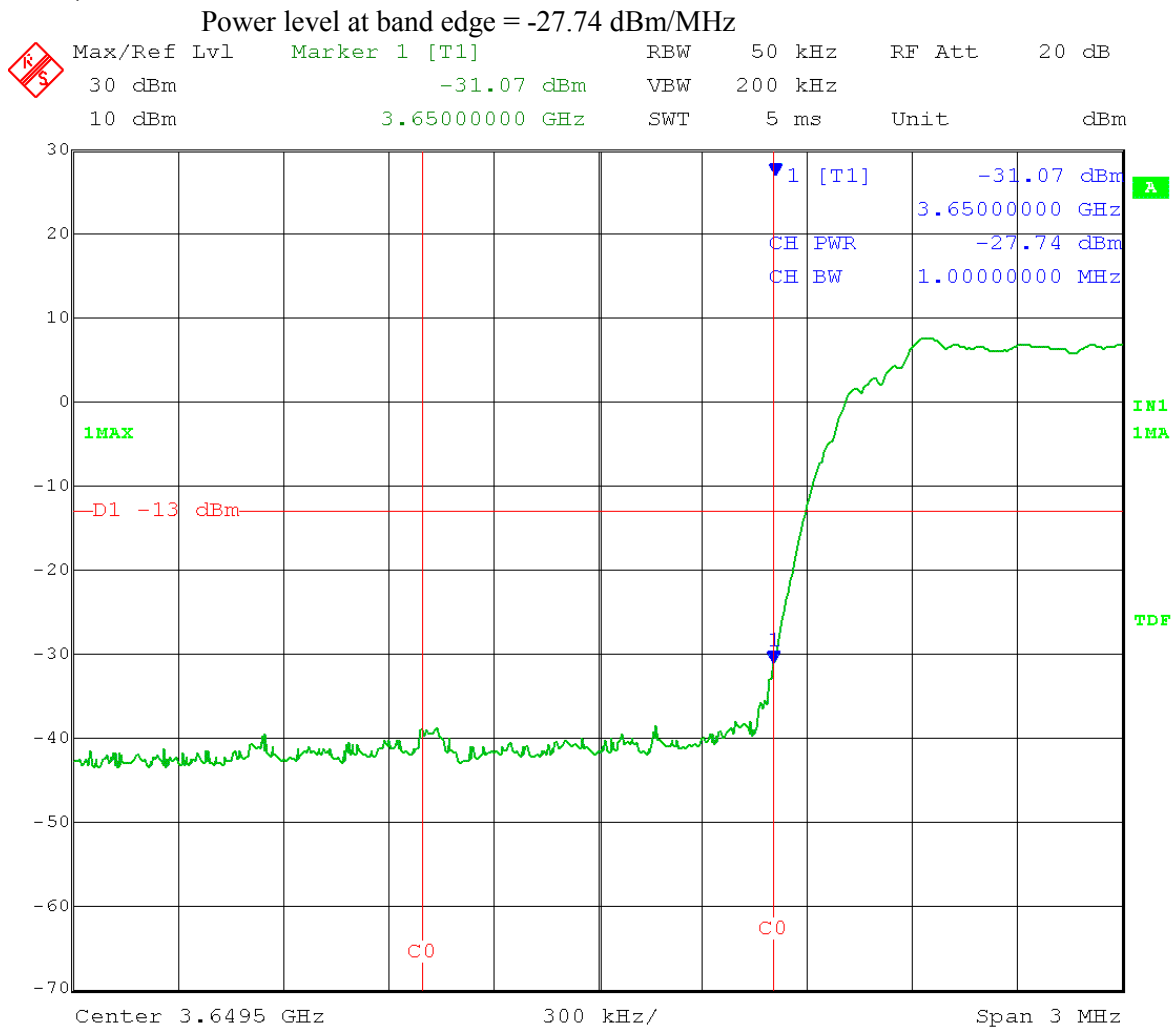


Date: 19.FEB.2014 10:31:12

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3652.5 MHz Power setting: 18 total of both chains
Channel bandwidth: 5 MHz for 17 dBi antenna gain
Lower band edge frequency = 3650 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

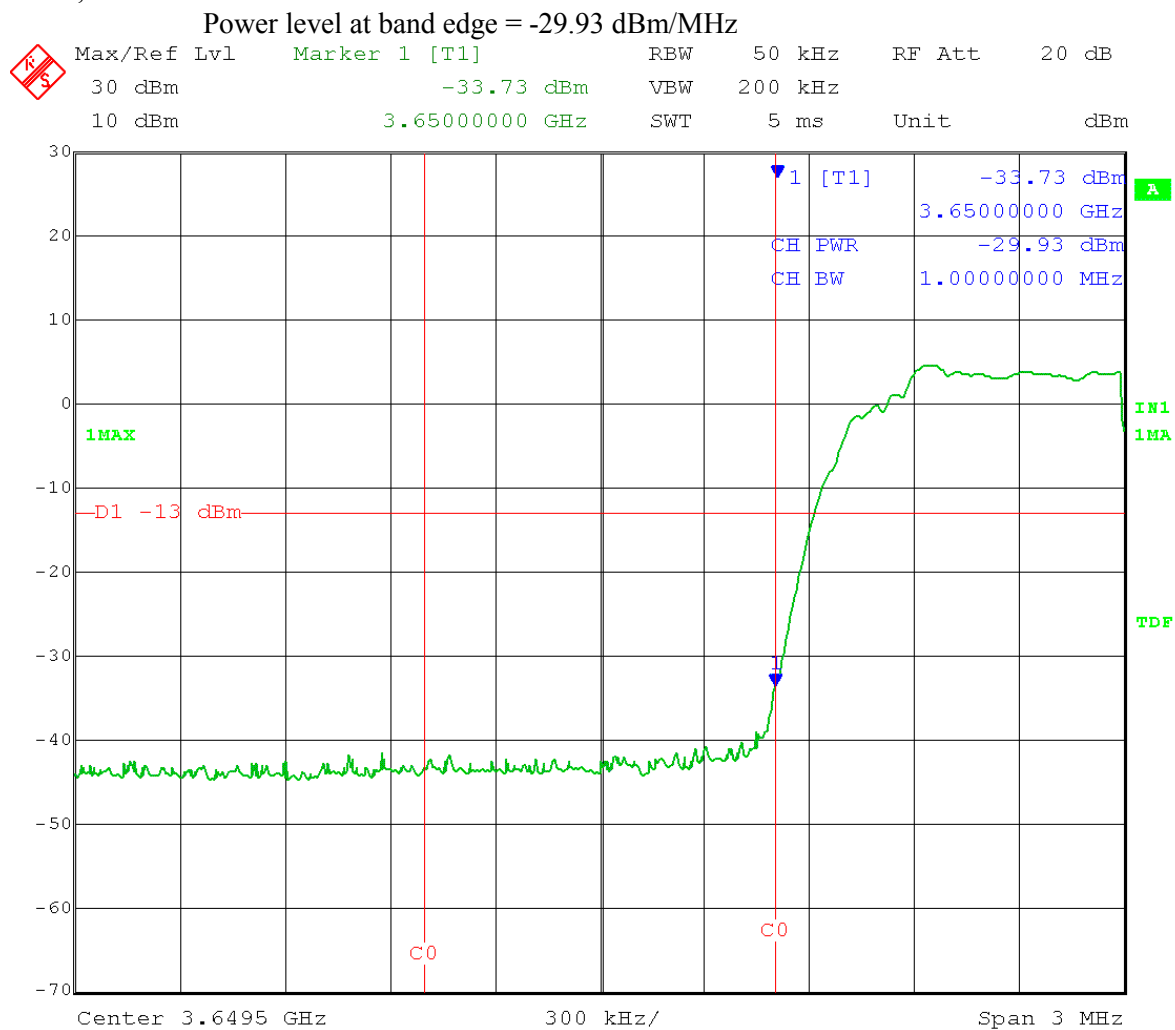


Date: 19.FEB.2014 10:52:55

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3652.5 MHz Power setting: 15 total of both chains
Channel bandwidth: 5 MHz for 20 dBi antenna gain
Lower band edge frequency = 3650 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V



Date: 19.FEB.2014 10:55:17

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 13 total of both chains

Channel bandwidth: 5 MHz

for 22 dBi antenna gain

Lower band edge frequency = 3650 MHz

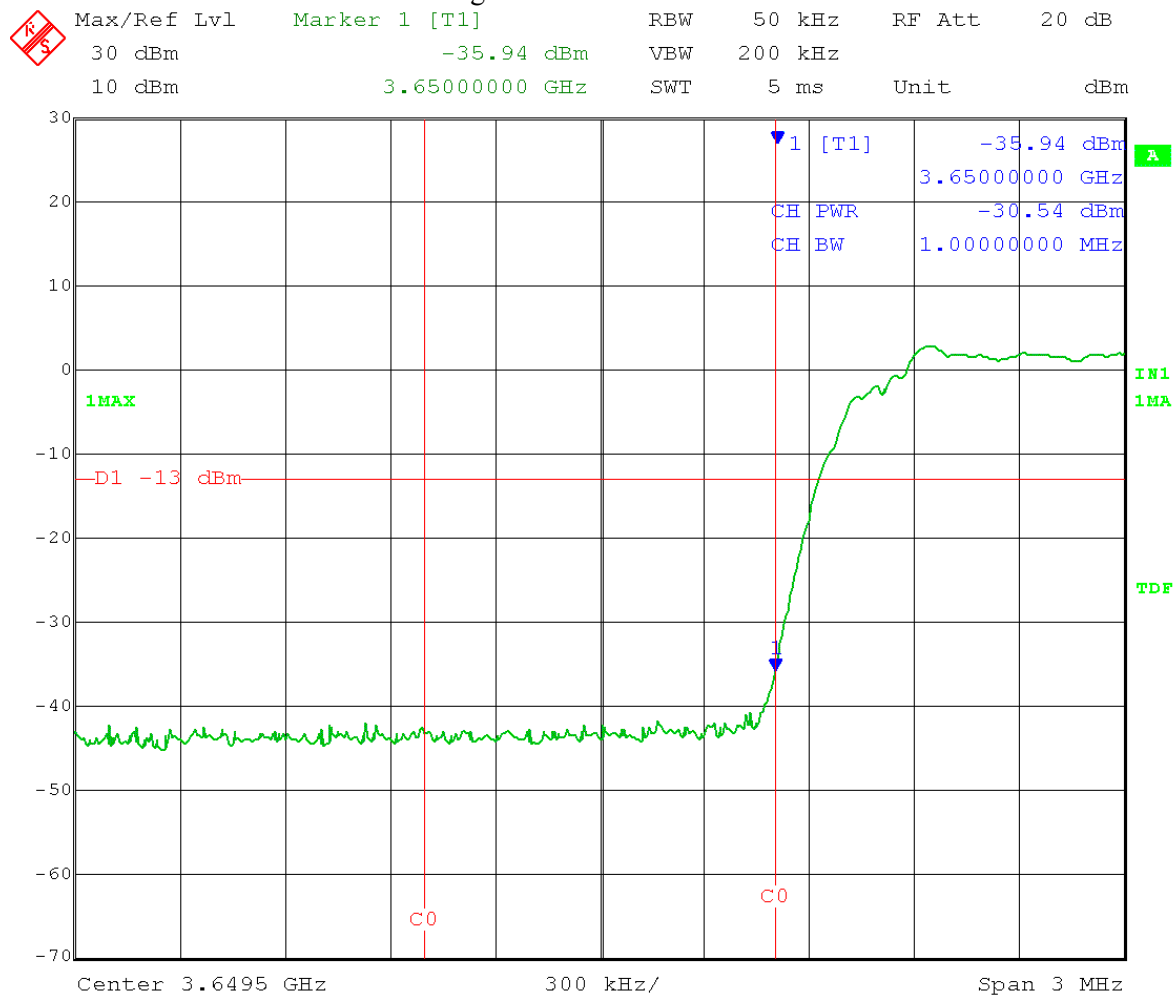
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -30.54 dBm/MHz

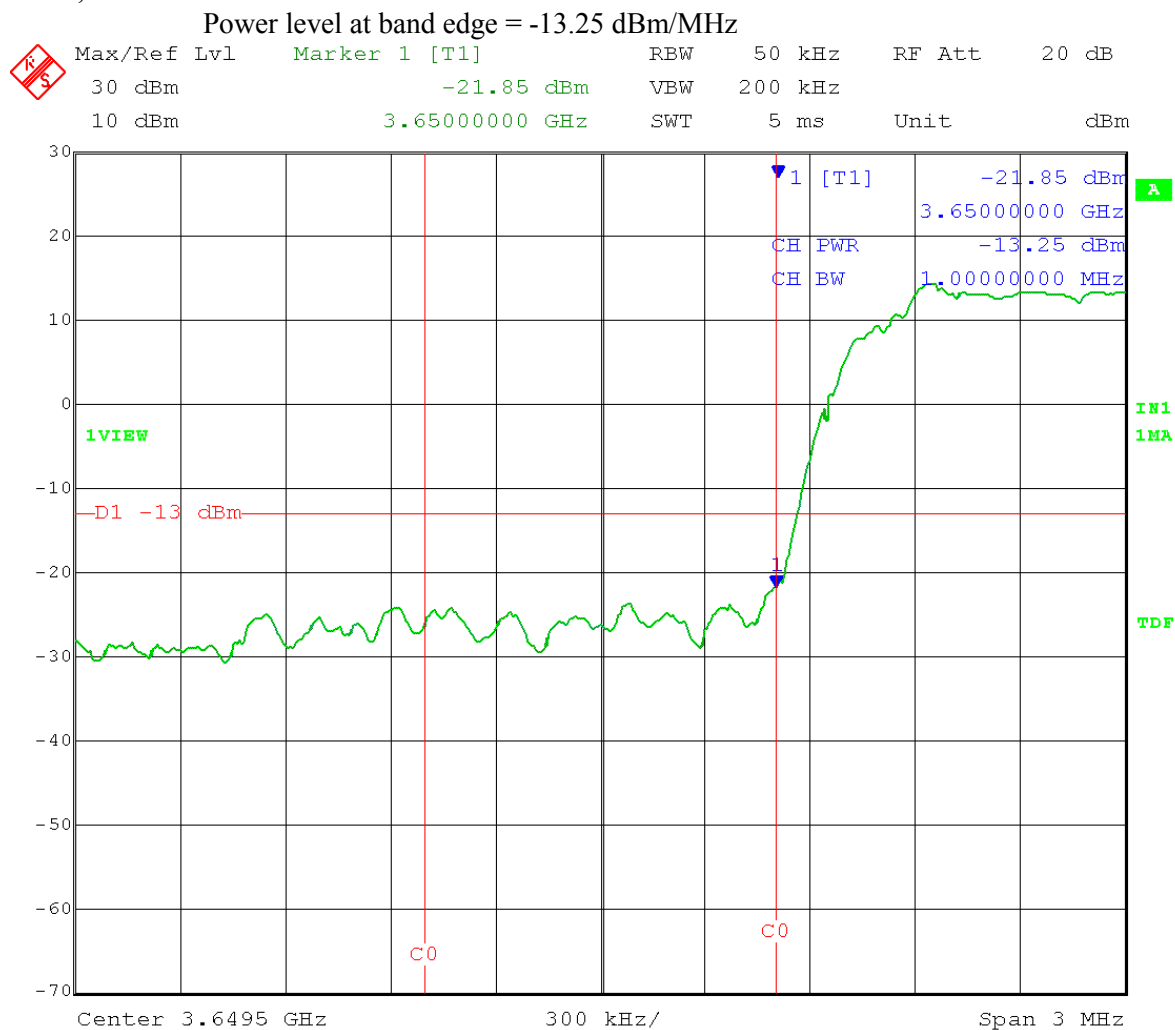


Date: 19.FEB.2014 10:57:56

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3652.5 MHz Power setting: 25 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Lower band edge frequency = 3650 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V



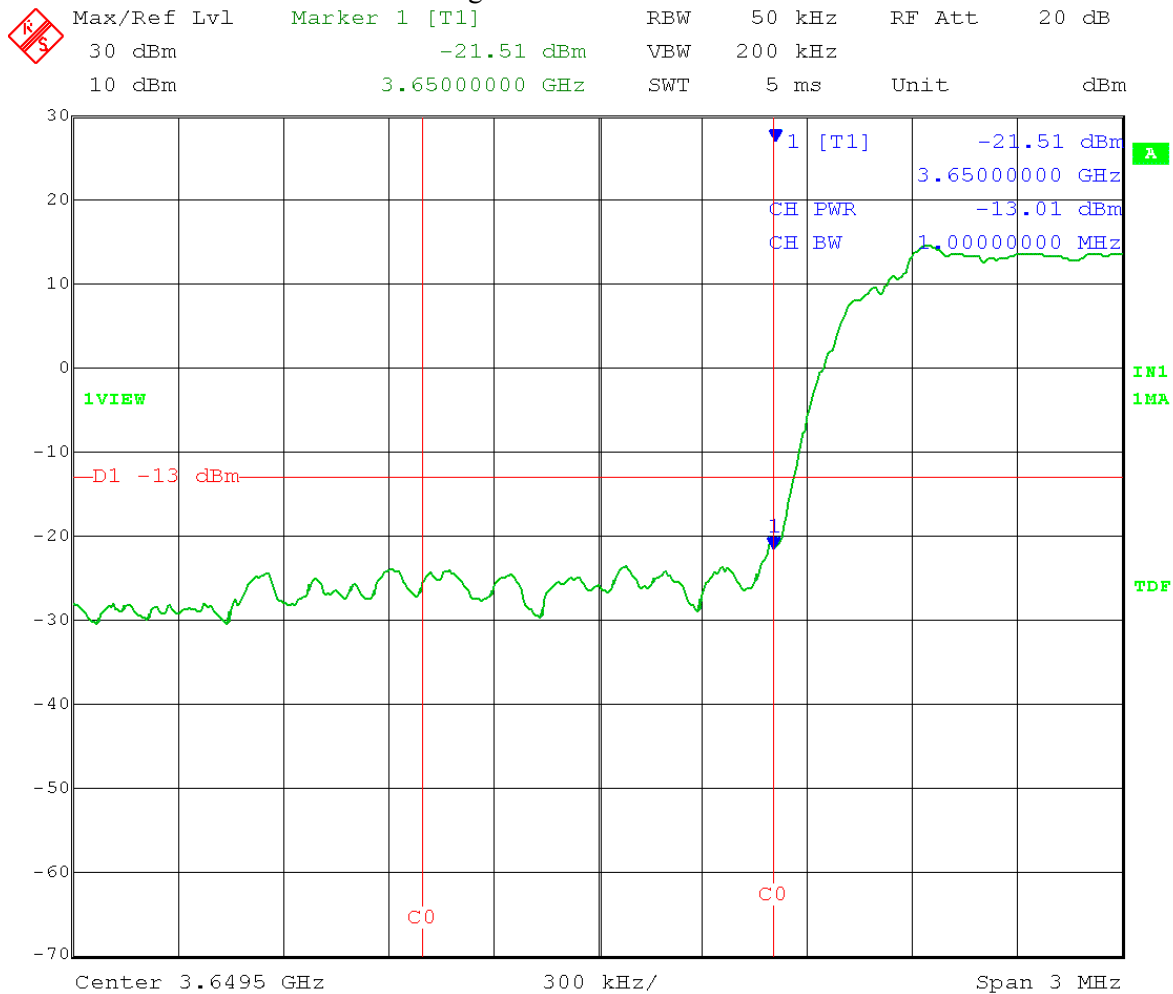
Date: 19.FEB.2014 10:31:12

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3652.5 MHz Power setting: 25 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Lower band edge frequency = 3650 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 138 V

Power level at band edge = -13.01 dBm/MHz



Date: 19.FEB.2014 14:48:26

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 25 total of both chains

Channel bandwidth: 5 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

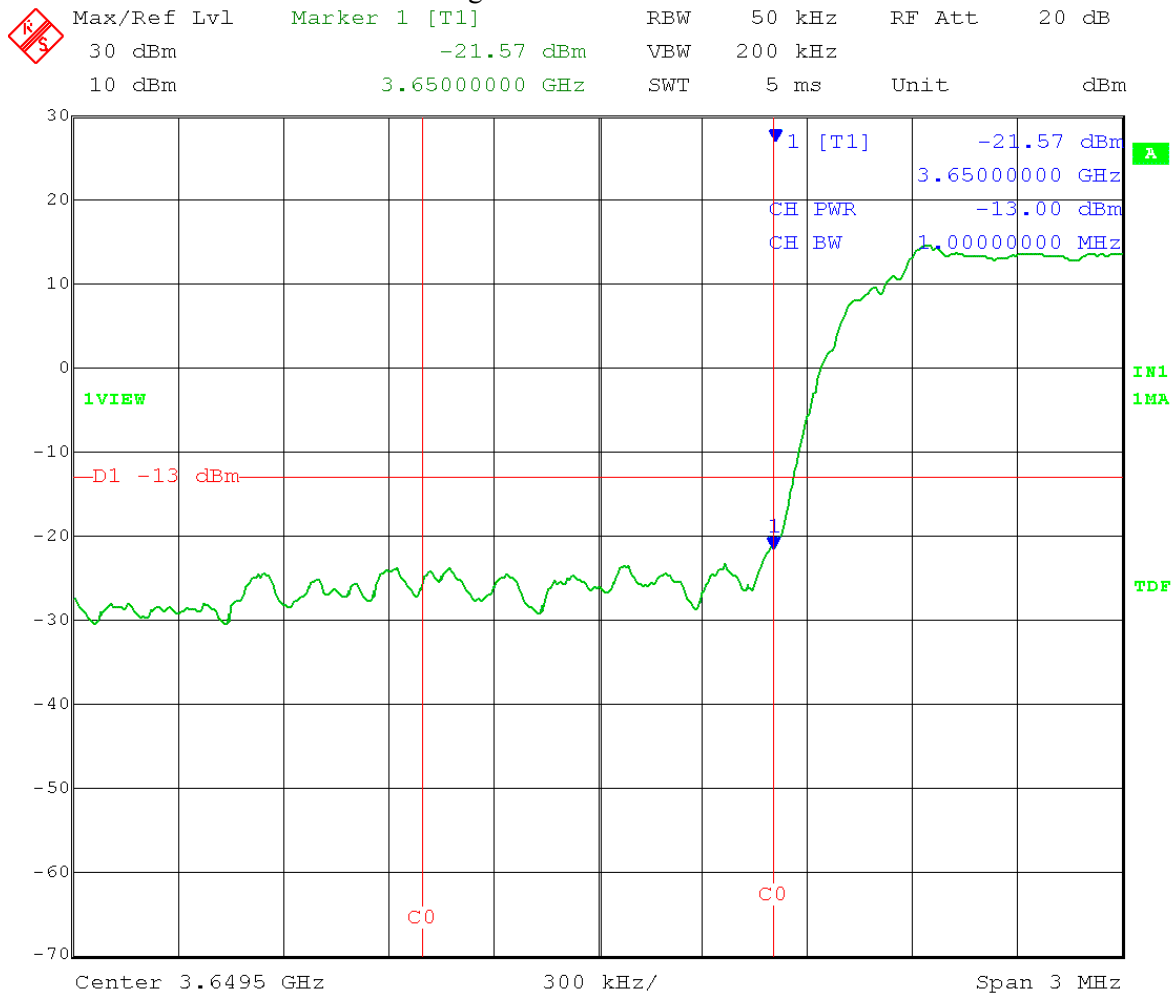
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 102 V

Power level at band edge = -13.00 dBm/MHz



Date: 19.FEB.2014 14:50:30

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 25 total of both chains

Channel bandwidth: 5 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

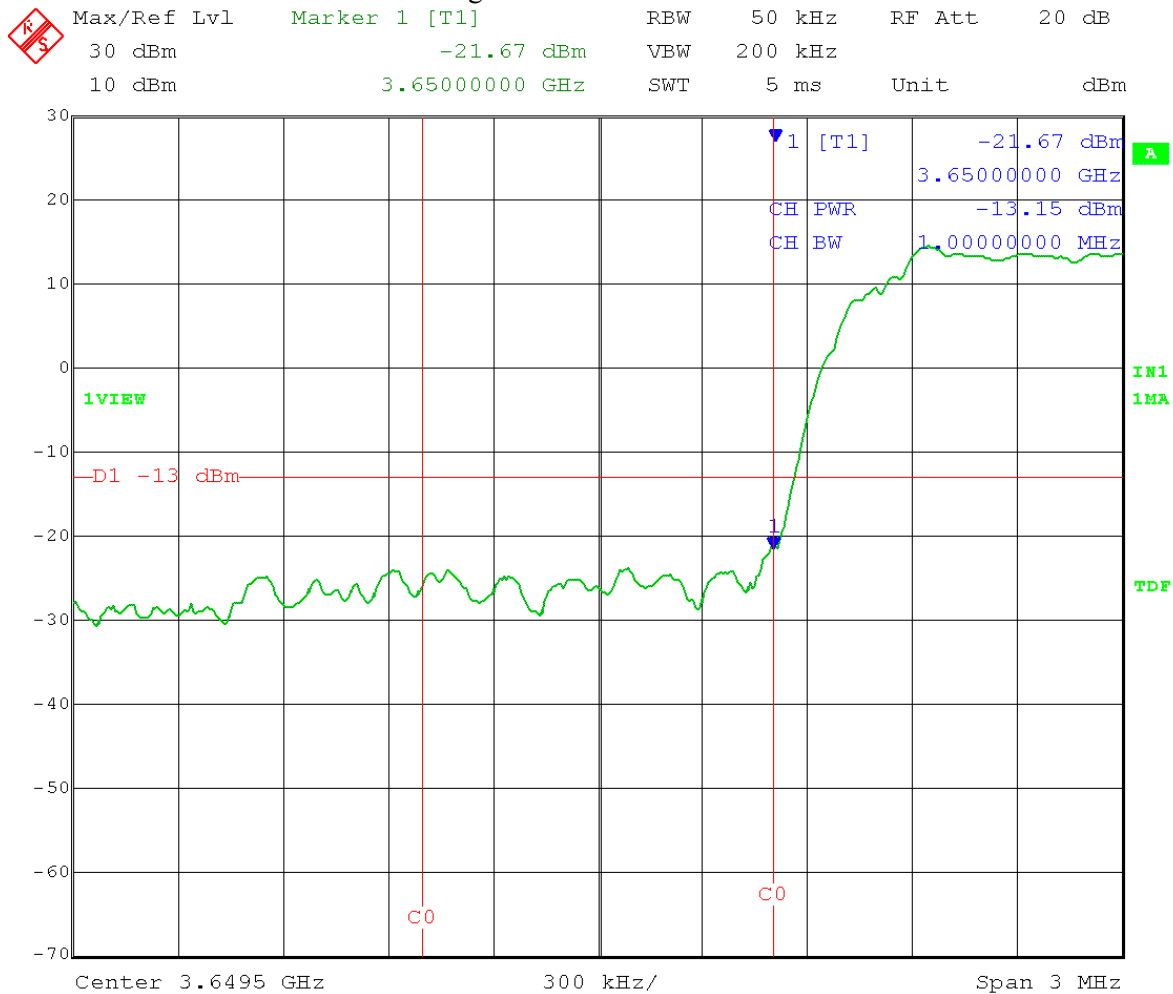
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

30 °C, 120 V

Power level at band edge = -13.15 dBm/MHz



Date: 19.FEB.2014 15:29:13

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 25 total of both chains

Channel bandwidth: 5 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

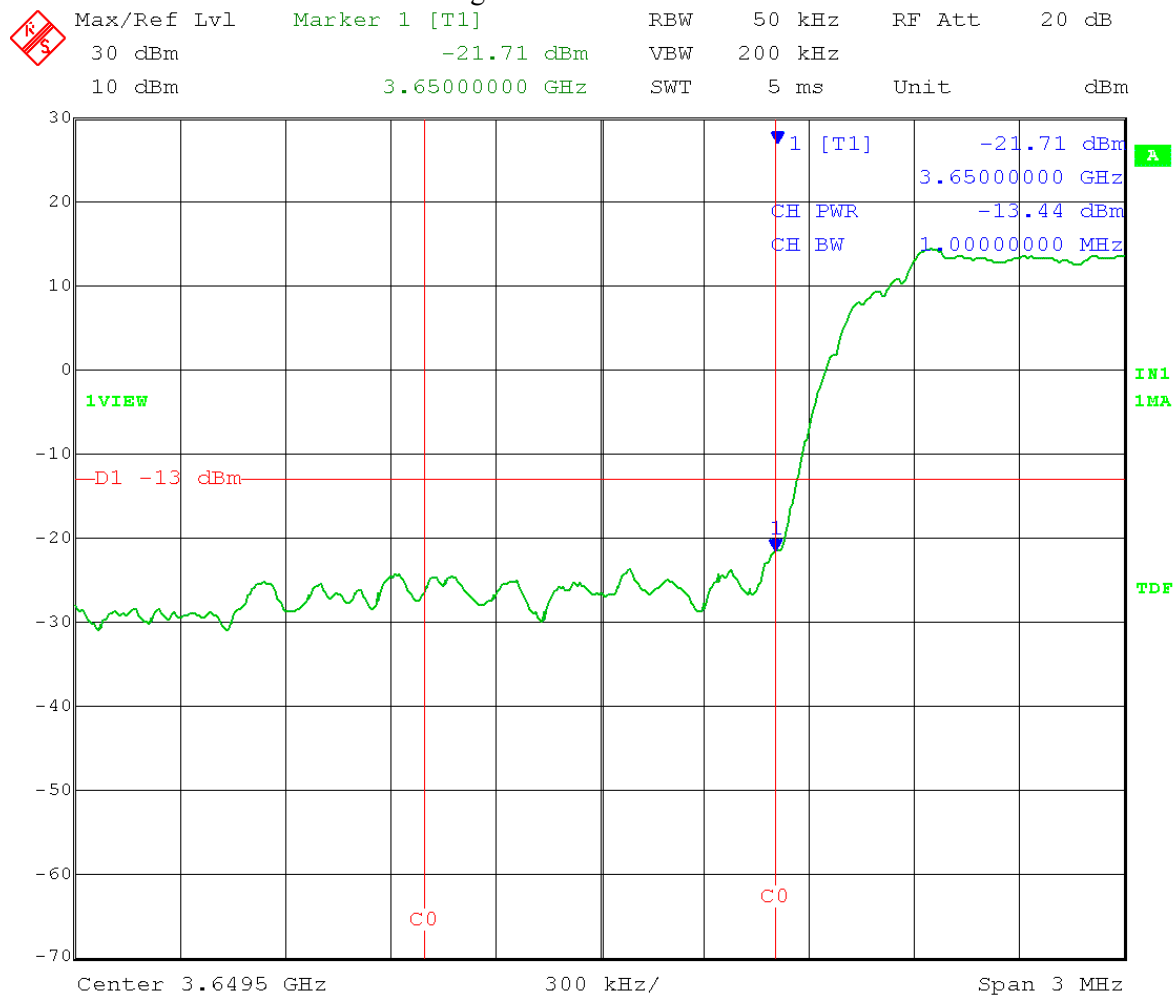
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

40 °C, 120 V

Power level at band edge = -13.44 dBm/MHz



Date: 20.FEB.2014 08:54:48

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 25 total of both chains

Channel bandwidth: 5 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

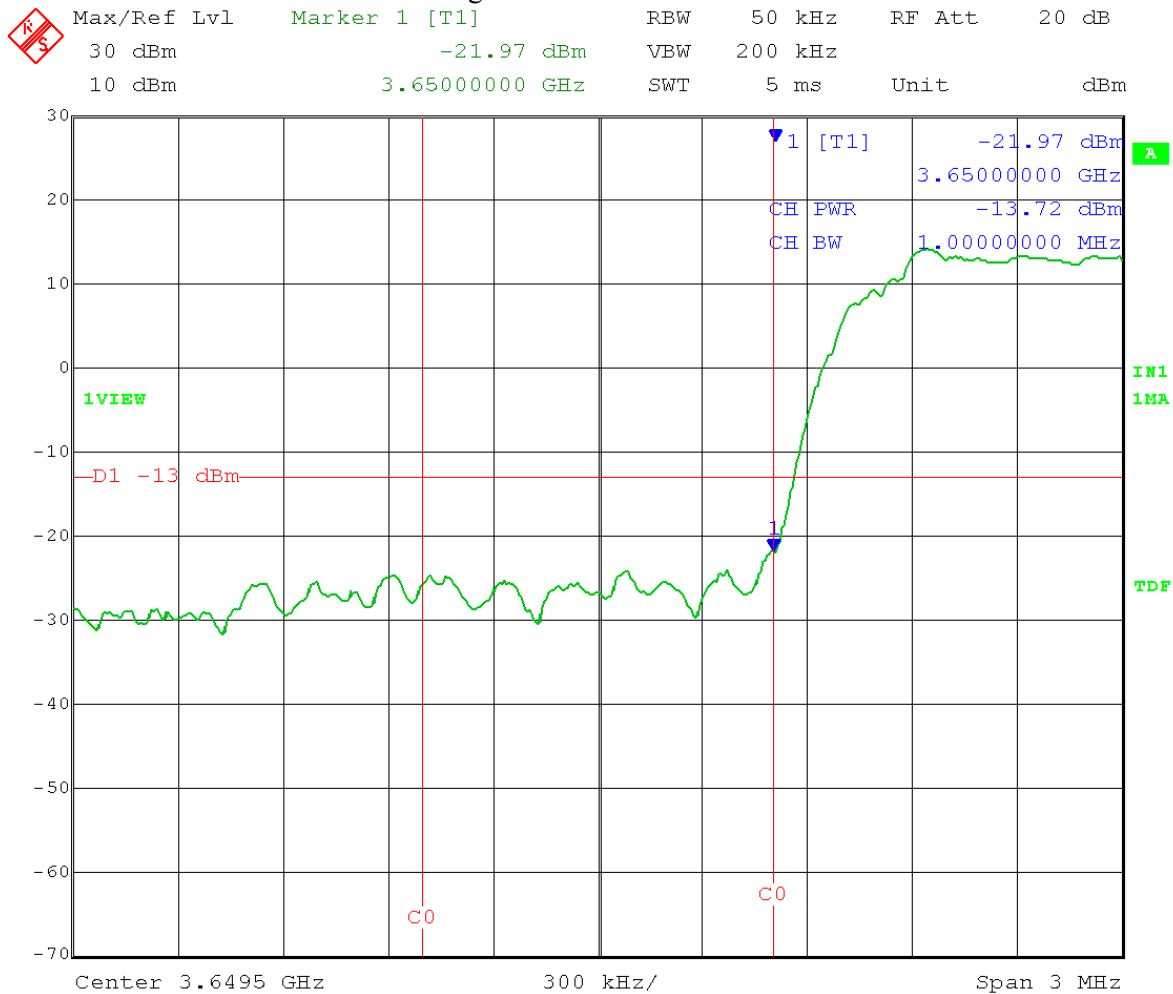
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

50 °C, 120 V

Power level at band edge = -13.72 dBm/MHz



Date: 20.FEB.2014 09:59:42

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 24 total of both chains

Channel bandwidth: 5 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

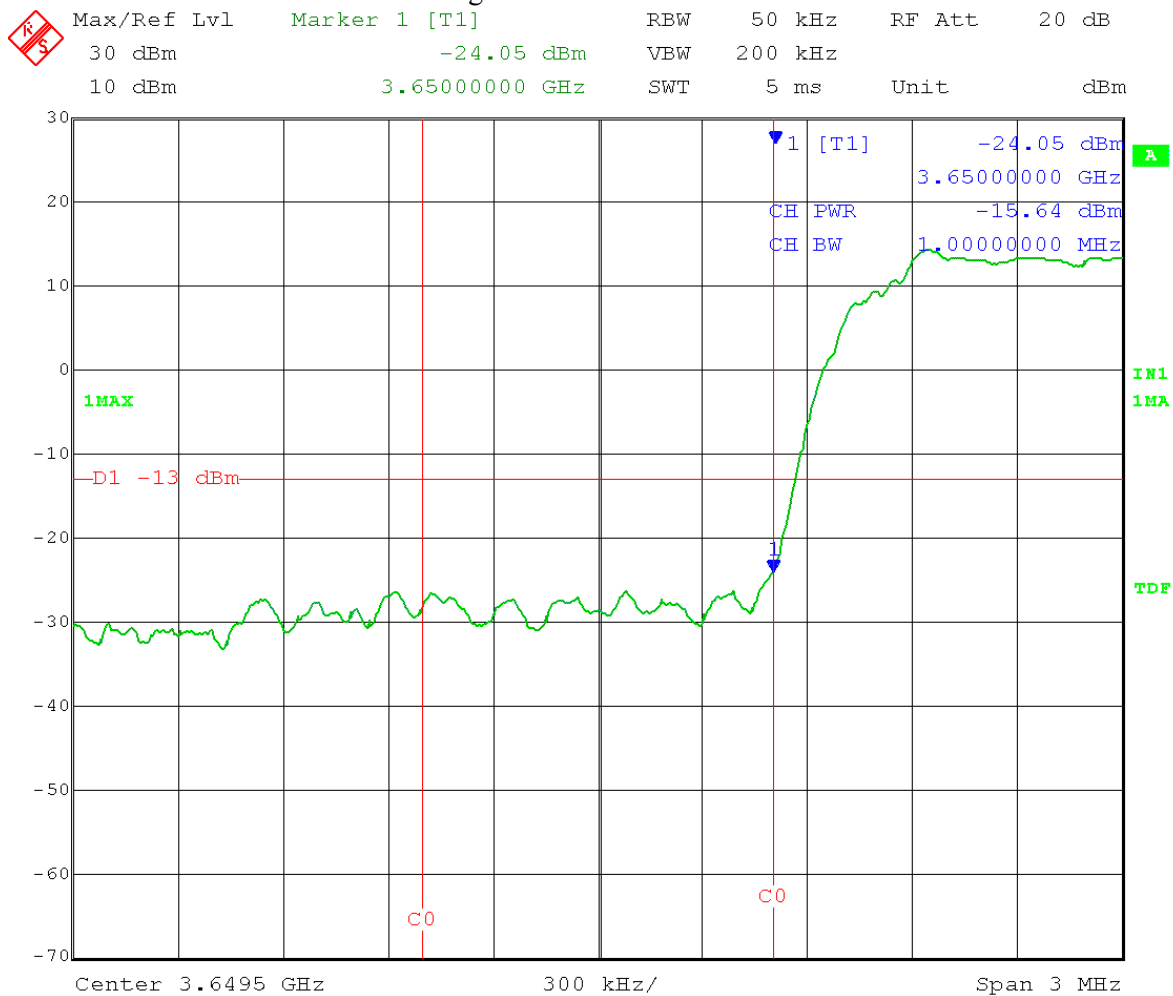
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

10 °C, 120 V

Power level at band edge = -15.64 dBm/MHz



Date: 20.FEB.2014 11:21:37

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 24 total of both chains

Channel bandwidth: 5 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

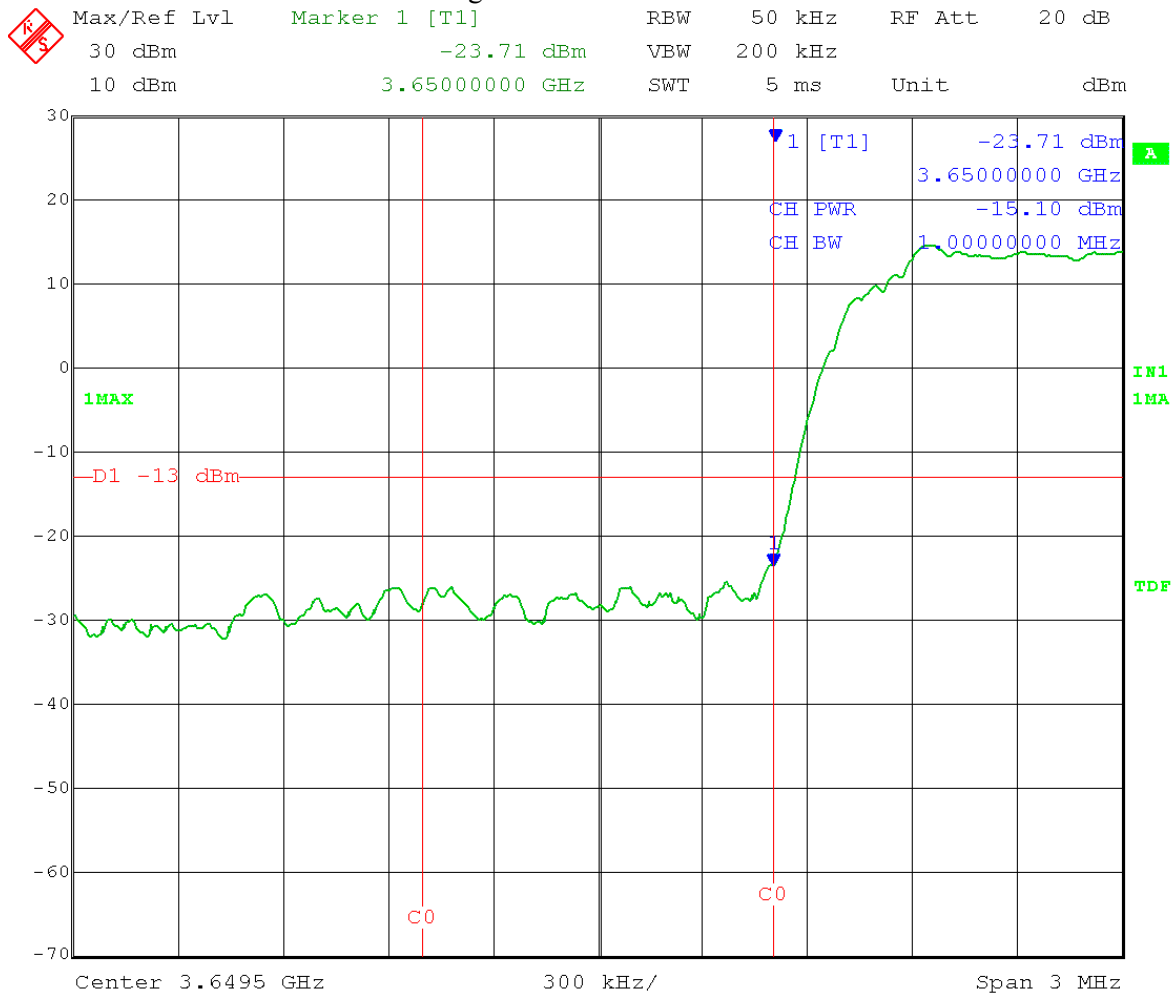
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

0 °C, 120 V

Power level at band edge = -15.10 dBm/MHz



Date: 20.FEB.2014 12:49:13

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 24 total of both chains

Channel bandwidth: 5 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

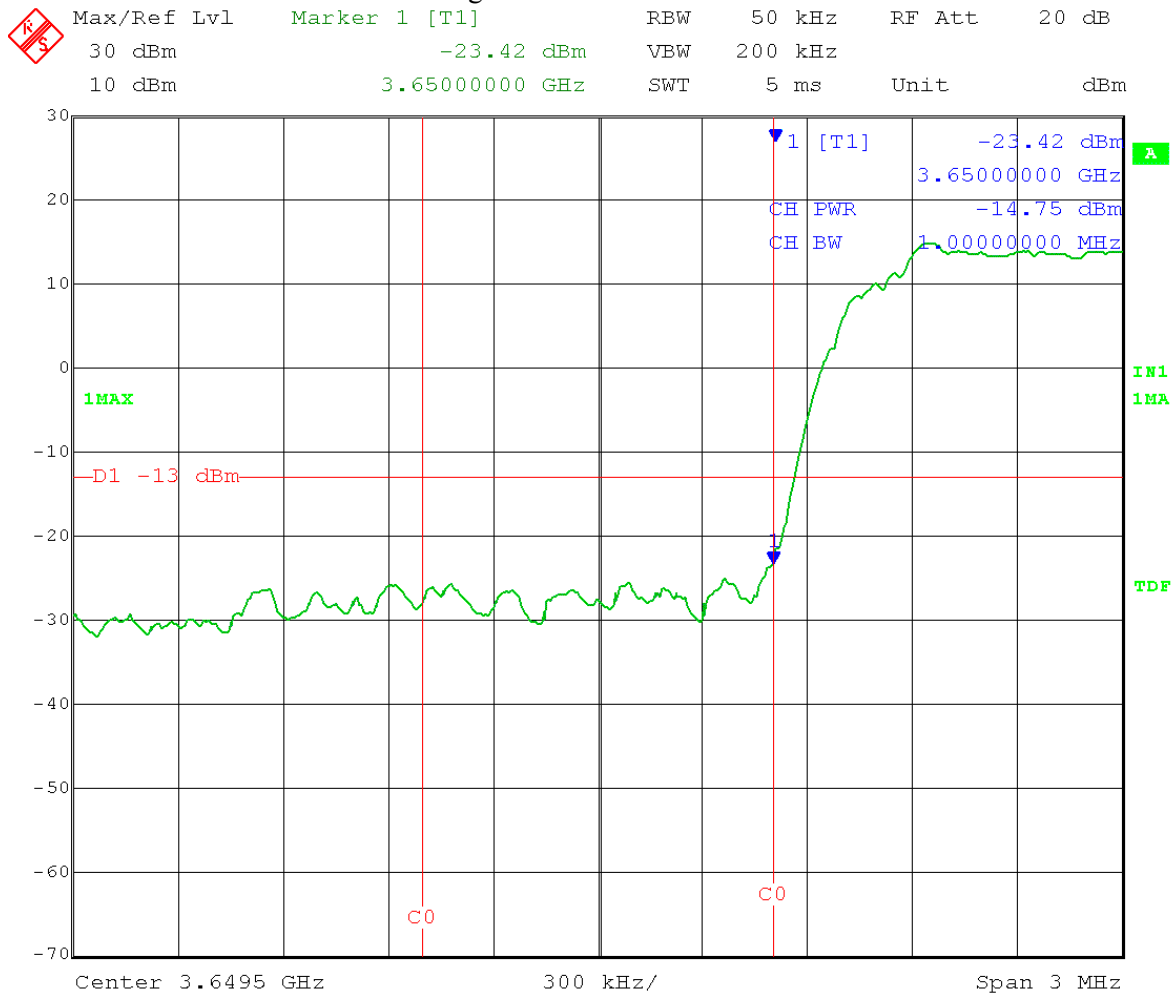
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

-10 °C, 120 V

Power level at band edge = -14.75 dBm/MHz



Date: 20.FEB.2014 13:45:19

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 24 total of both chains

Channel bandwidth: 5 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

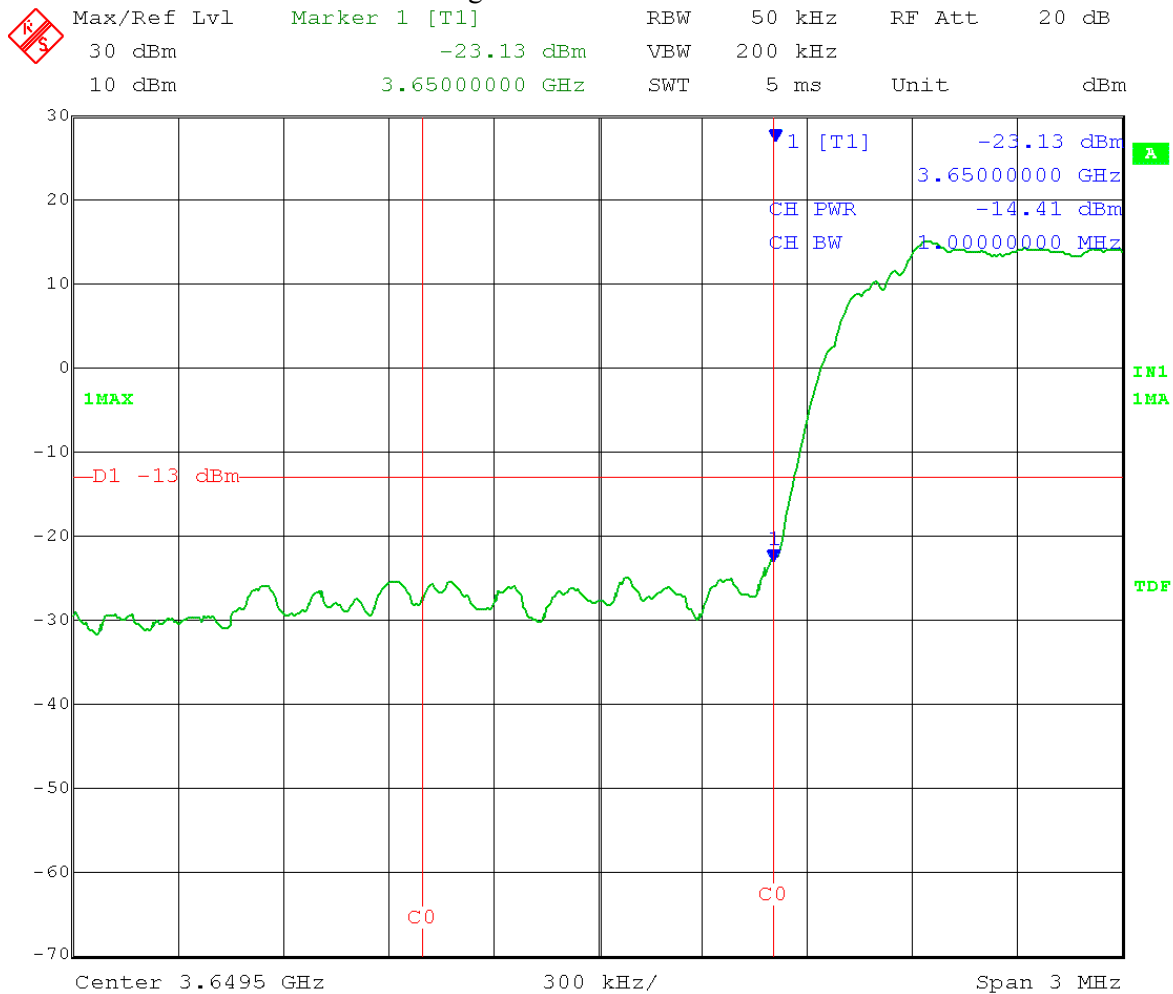
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

-20 °C, 120 V

Power level at band edge = -14.41 dBm/MHz



Date: 20.FEB.2014 14:45:23

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting: 24 total of both chains

Channel bandwidth: 5 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

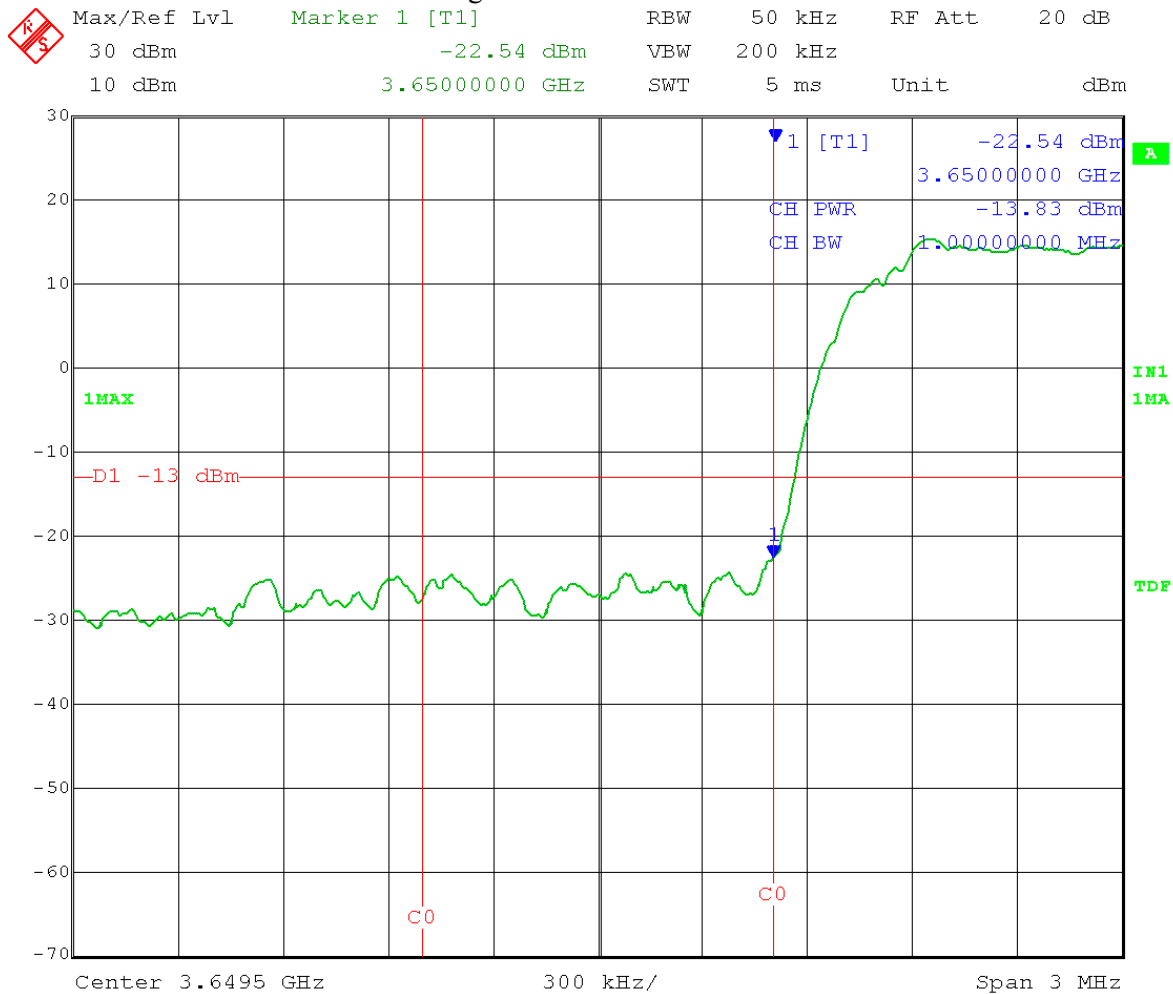
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

-30 °C, 120 V

Power level at band edge = -13.83 dBm/MHz



Date: 20.FEB.2014 15:43:41

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -14.78 dBm/MHz

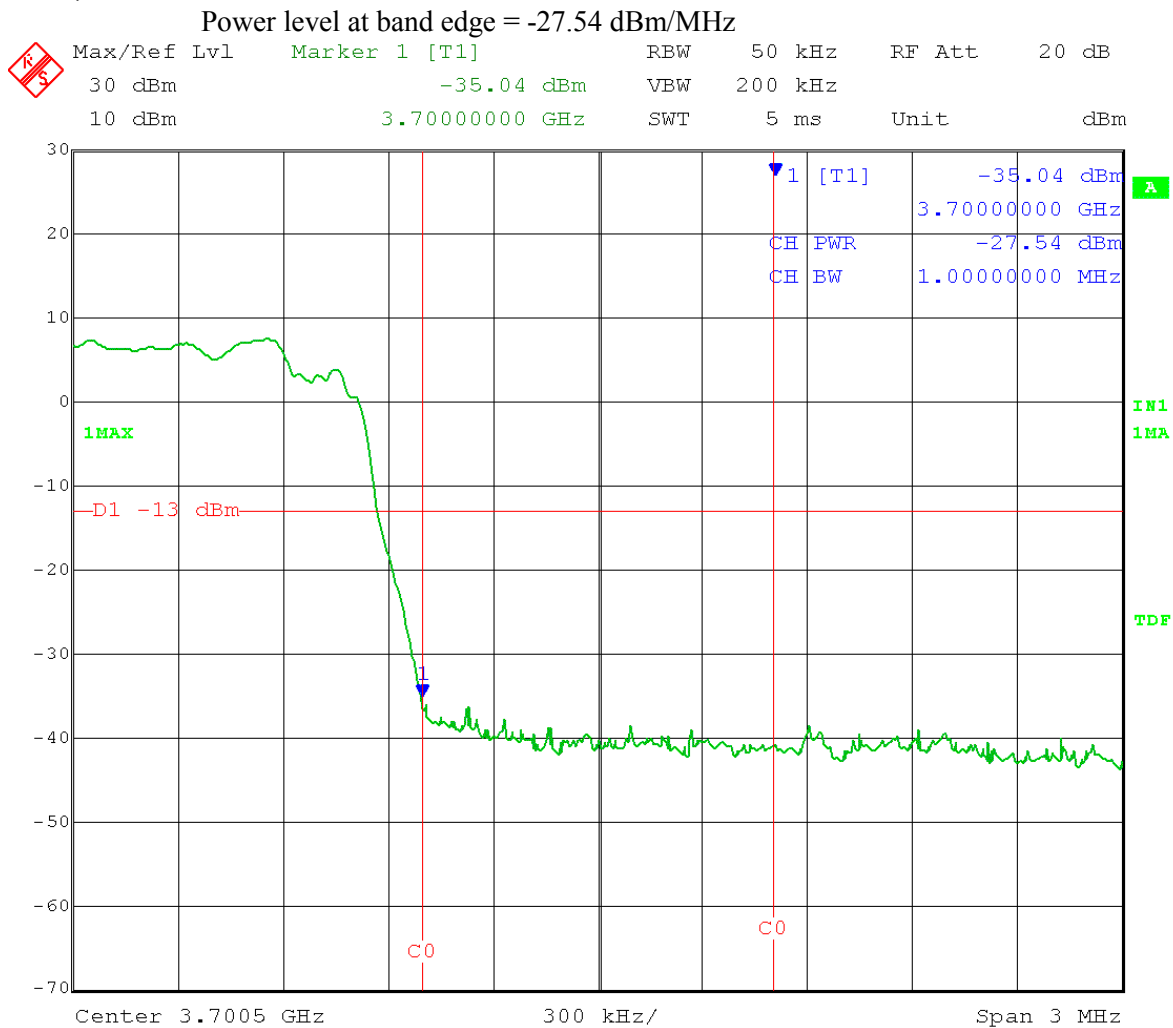


Date: 19.FEB.2014 11:18:23

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 18 total of both chains
Channel bandwidth: 5 MHz for 17 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

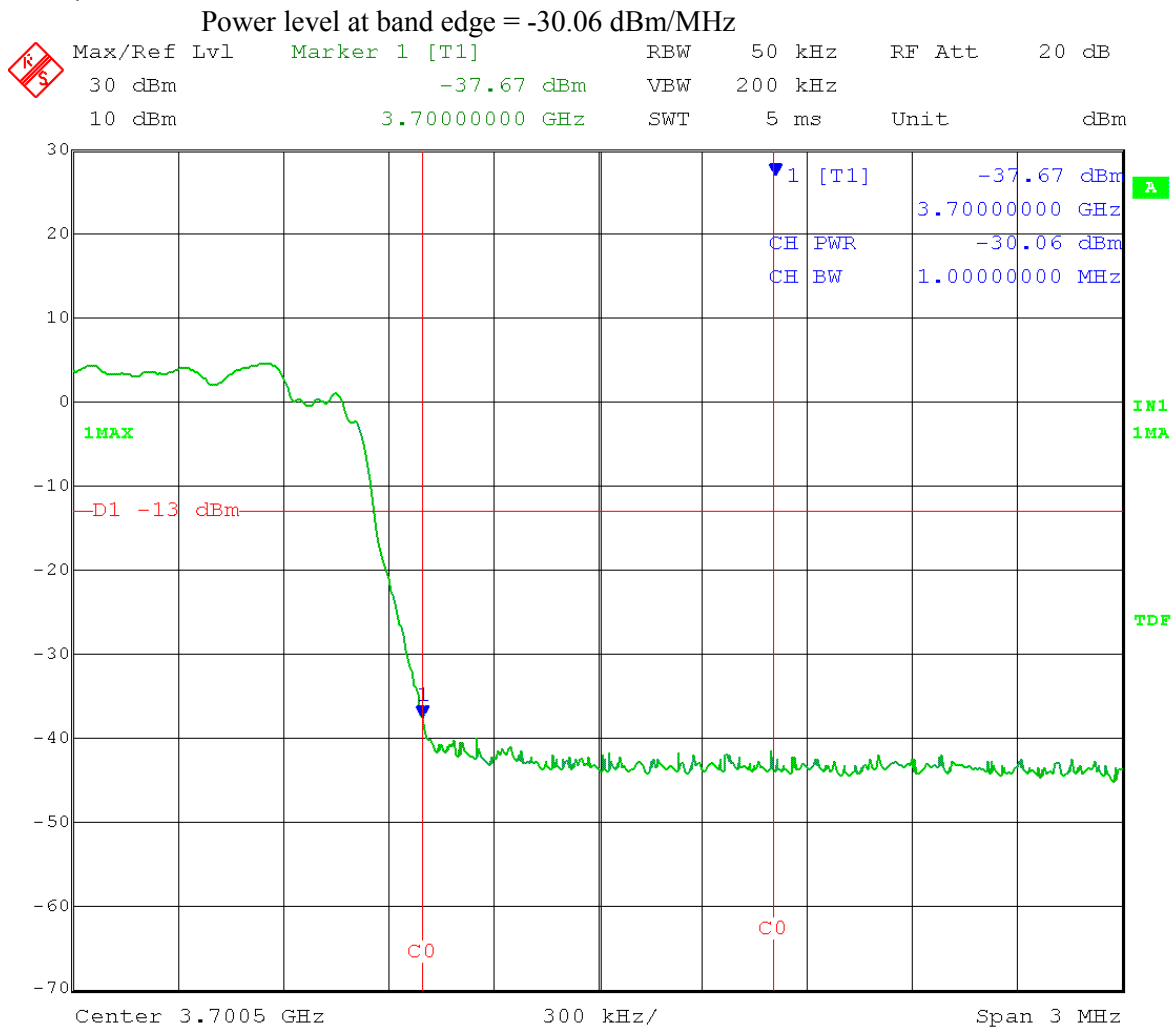


Date: 19.FEB.2014 11:21:54

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 15 total of both chains
Channel bandwidth: 5 MHz for 20 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V



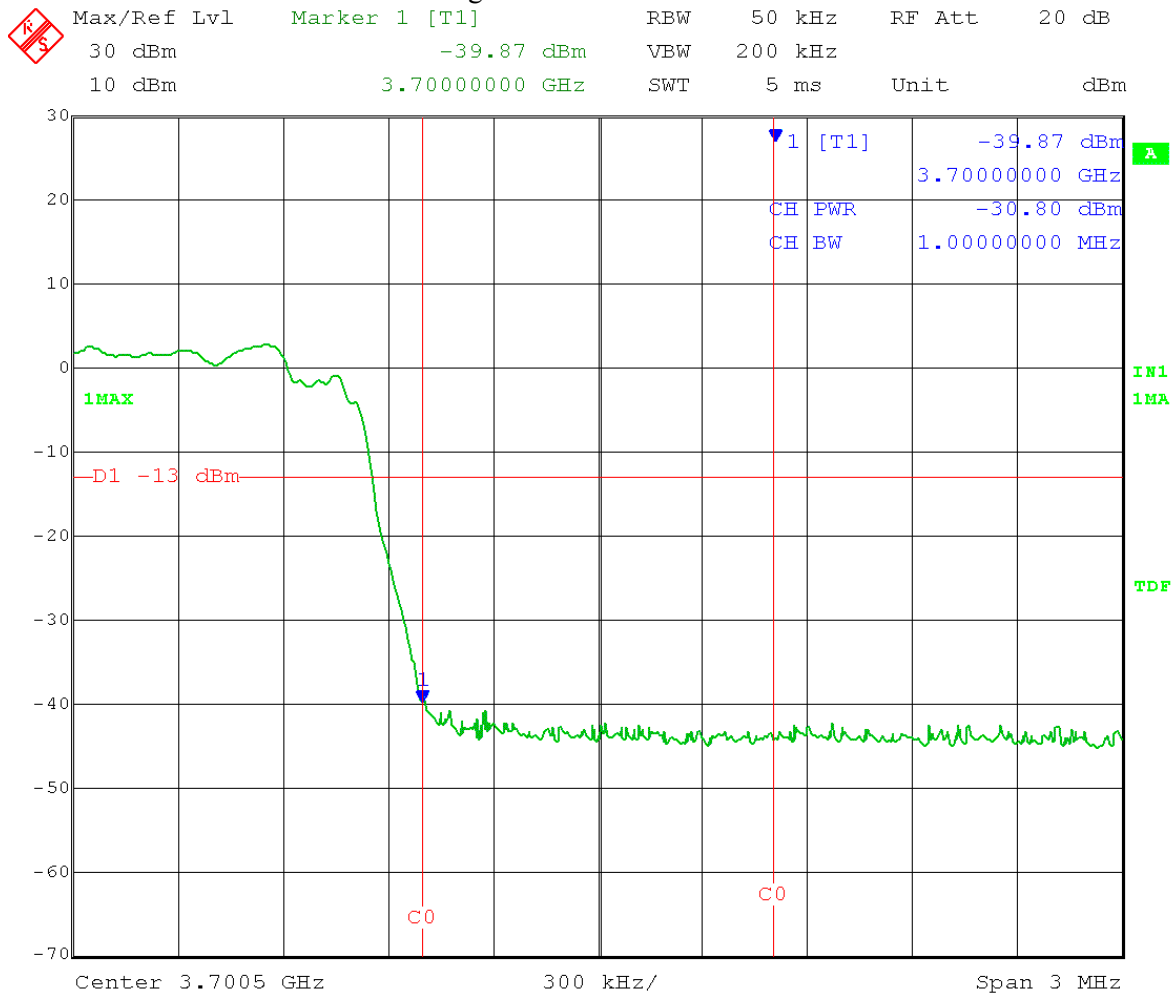
Date: 19.FEB.2014 11:24:26

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 13 total of both chains
Channel bandwidth: 5 MHz for 22 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -30.80 dBm/MHz

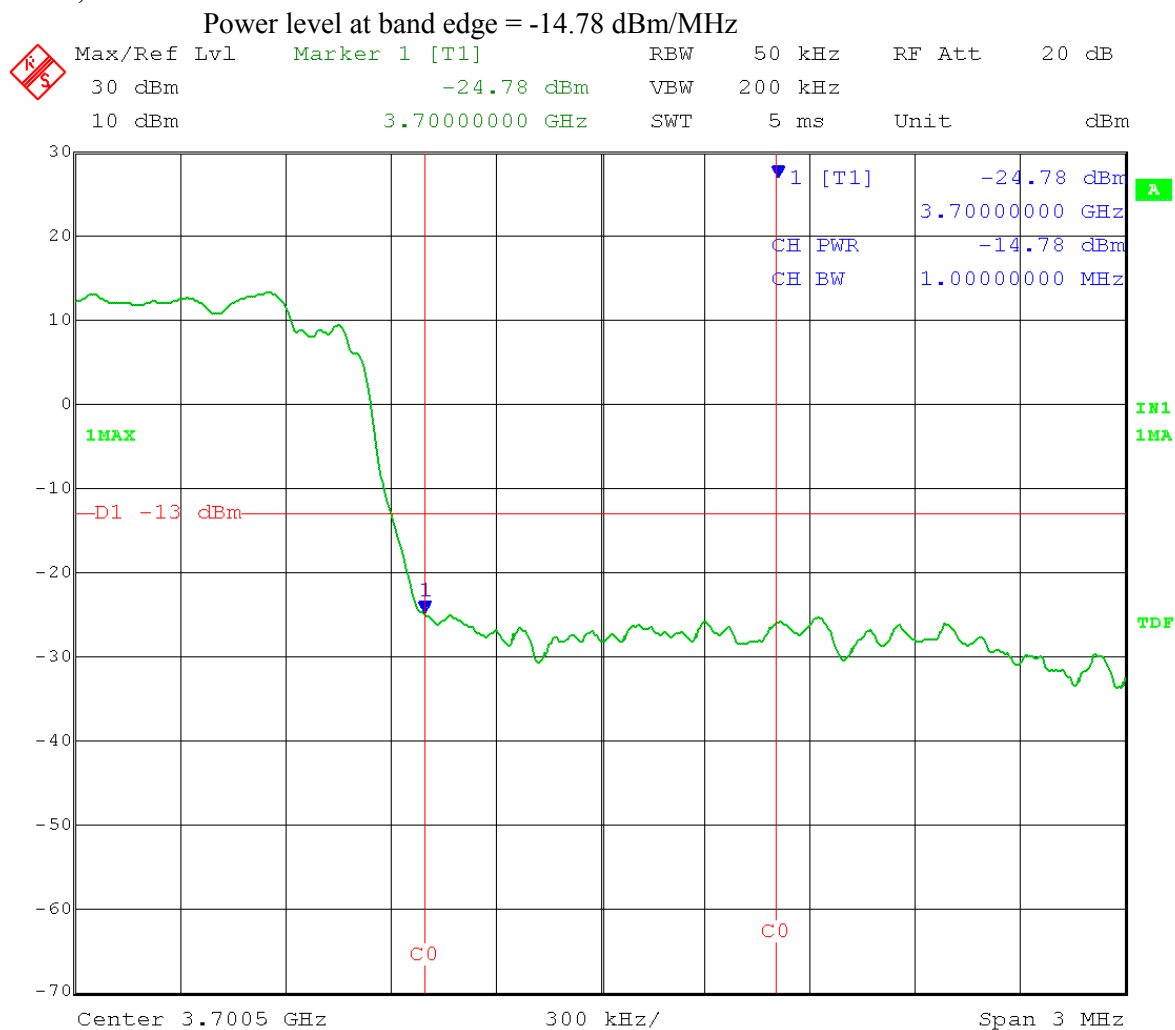


Date: 19.FEB.2014 11:26:36

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V



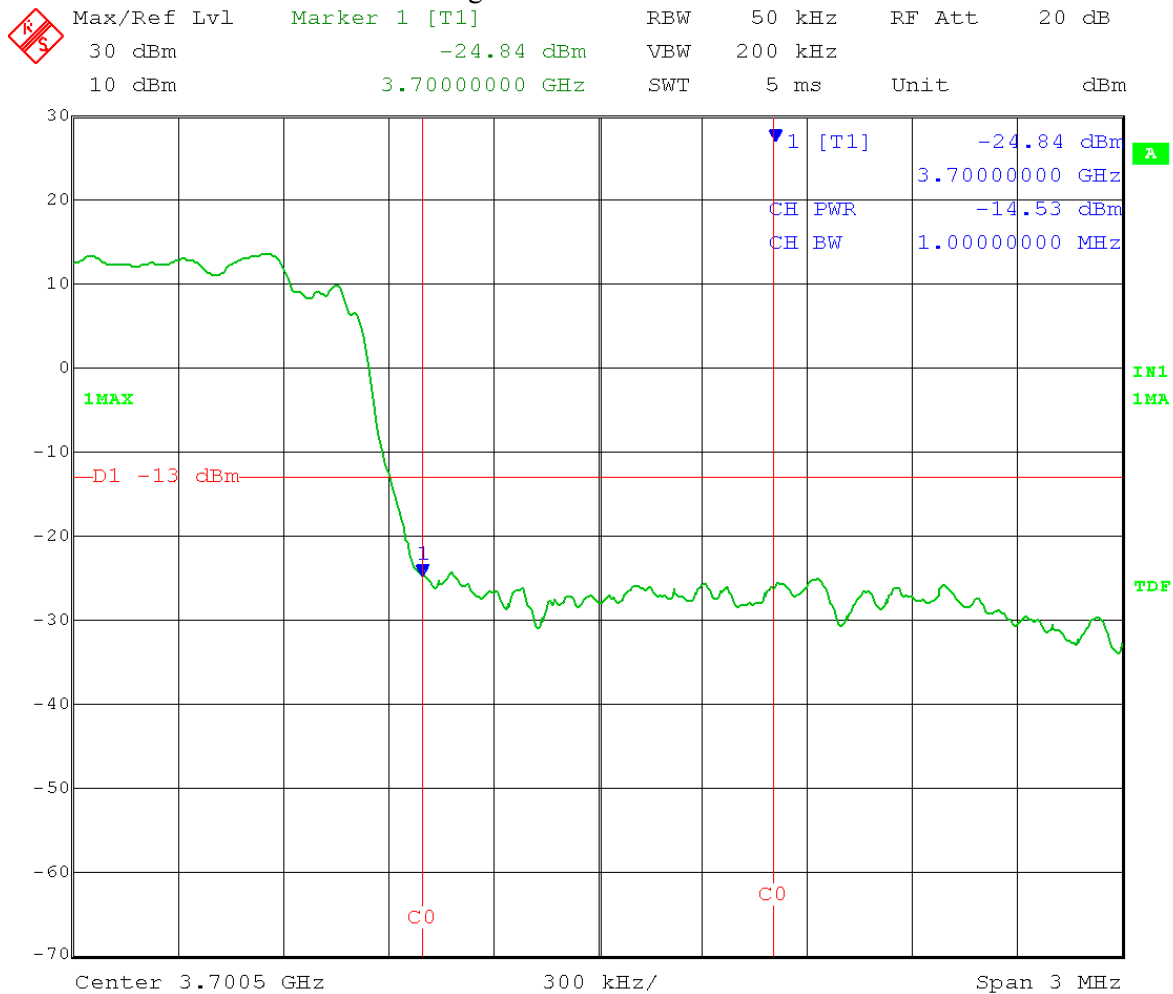
Date: 19.FEB.2014 11:18:23

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 138 V

Power level at band edge = -14.53 dBm/MHz



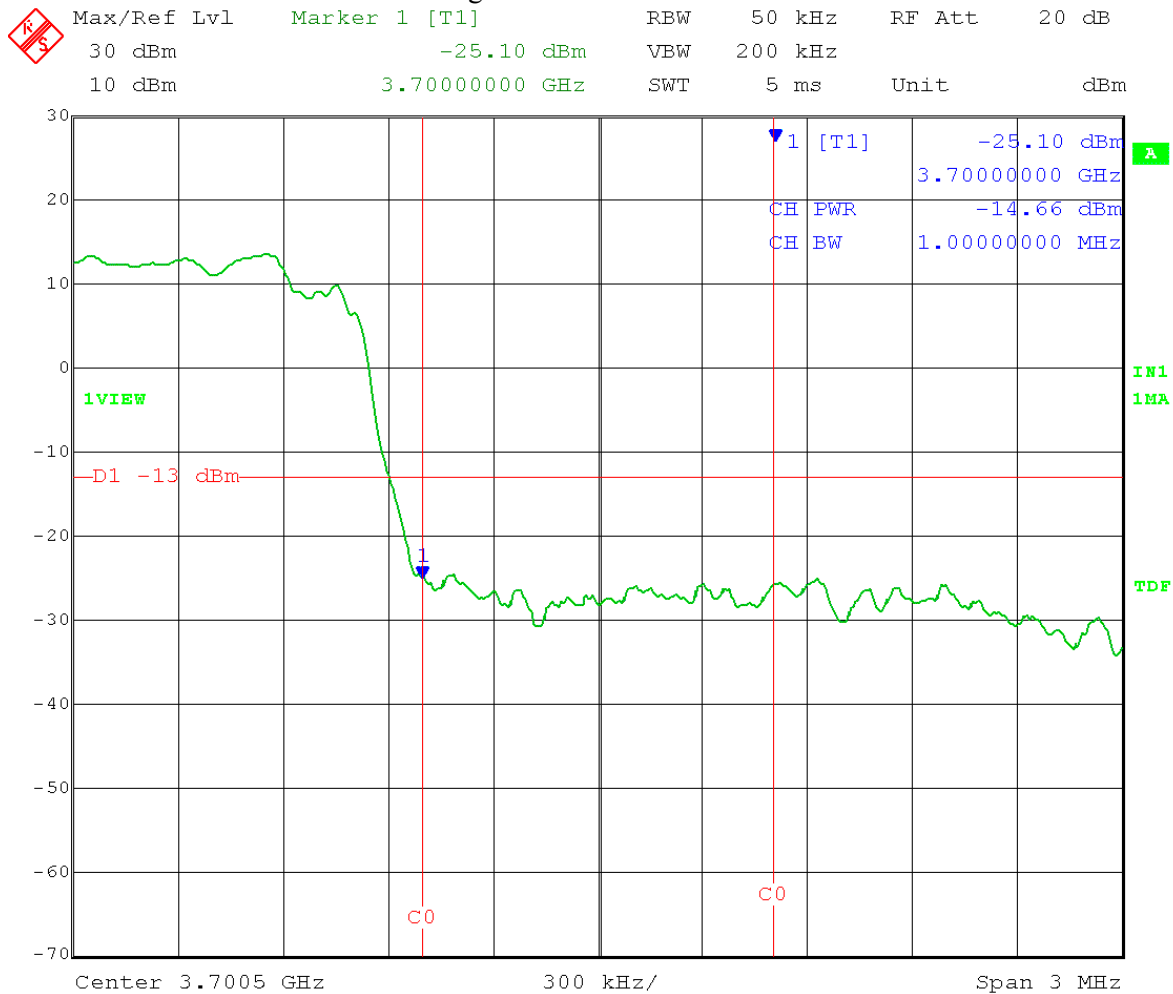
Date: 19.FEB.2014 15:00:23

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 102 V

Power level at band edge = -14.66 dBm/MHz



Date: 19.FEB.2014 14:57:35

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

30 °C, 120 V

Power level at band edge = -14.64 dBm/MHz



Date: 19.FEB.2014 15:26:21

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

40 °C, 120 V

Power level at band edge = -15.13 dBm/MHz



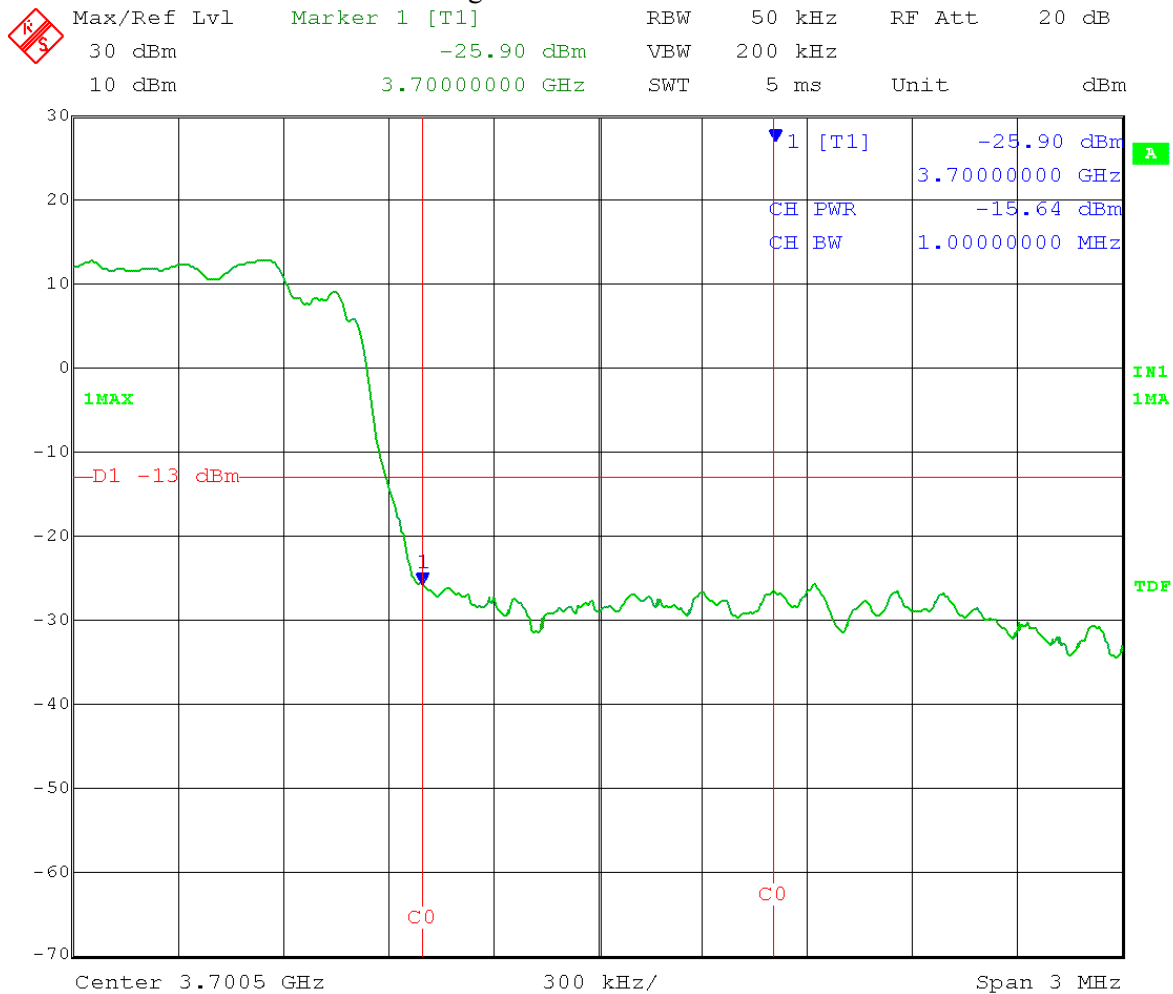
Date: 20.FEB.2014 08:58:43

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

50 °C, 120 V

Power level at band edge = -15.64 dBm/MHz



Date: 20.FEB.2014 10:03:09

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

10 °C, 120 V

Power level at band edge = -14.05 dBm/MHz

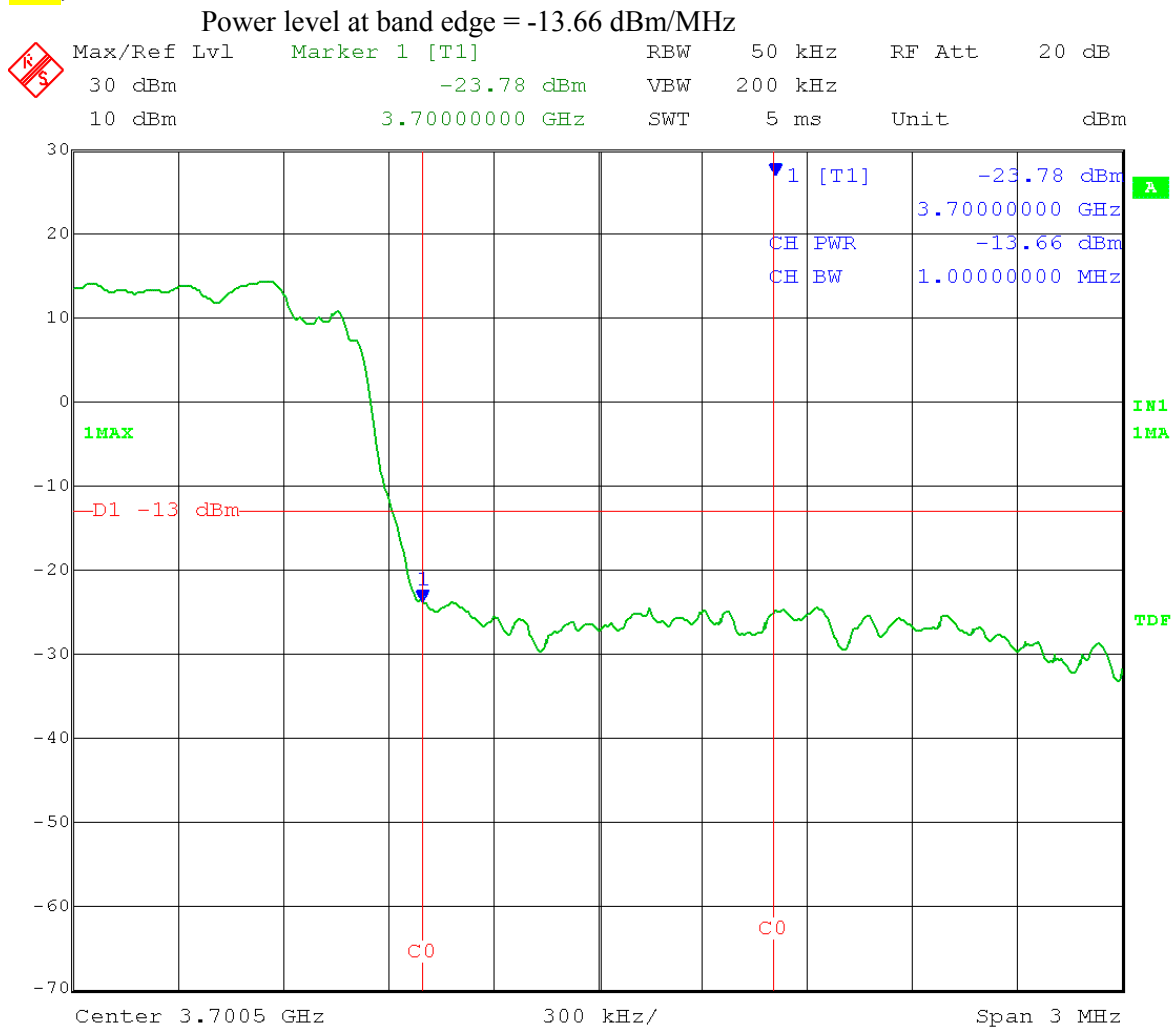


Date: 20.FEB.2014 11:24:39

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

0 °C, 120 V



Date: 20.FEB.2014 12:52:32

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

-10 °C, 120 V

Power level at band edge = -13.34 dBm/MHz



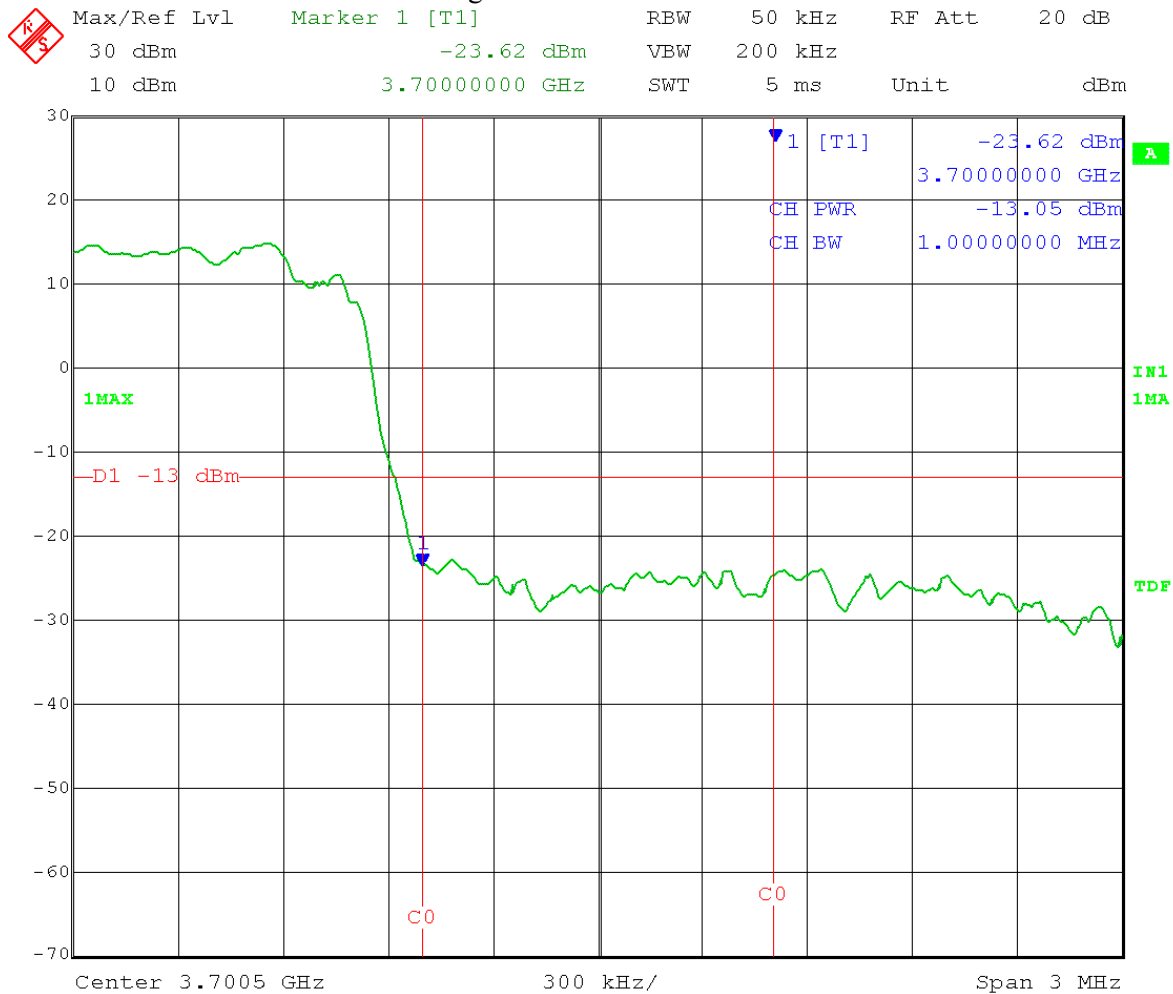
Date: 20.FEB.2014 13:48:10

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 24 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

-20 °C, 120 V

Power level at band edge = -13.05 dBm/MHz



Date: 20.FEB.2014 14:50:14

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz Power setting: 23 total of both chains
Channel bandwidth: 5 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

-30 °C, 120 V

Power level at band edge = -15.70 dBm/MHz

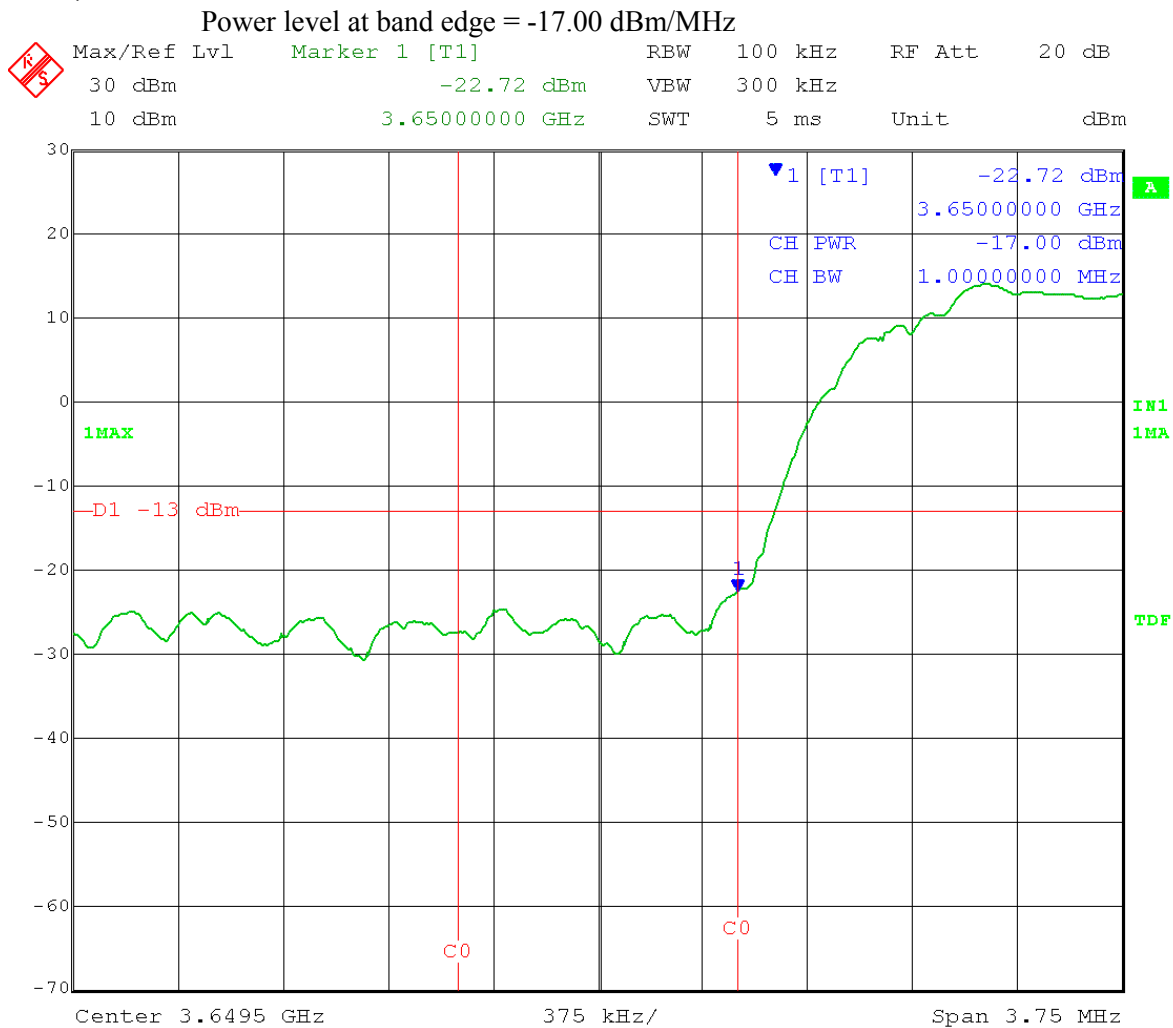


Date: 20.FEB.2014 15:47:58

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3655 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Lower band edge frequency = 3650 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V



Date: 19.FEB.2014 11:39:19

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 22 total of both chains

Channel bandwidth: 10 MHz

for 17 dBi antenna gain

Lower band edge frequency = 3650 MHz

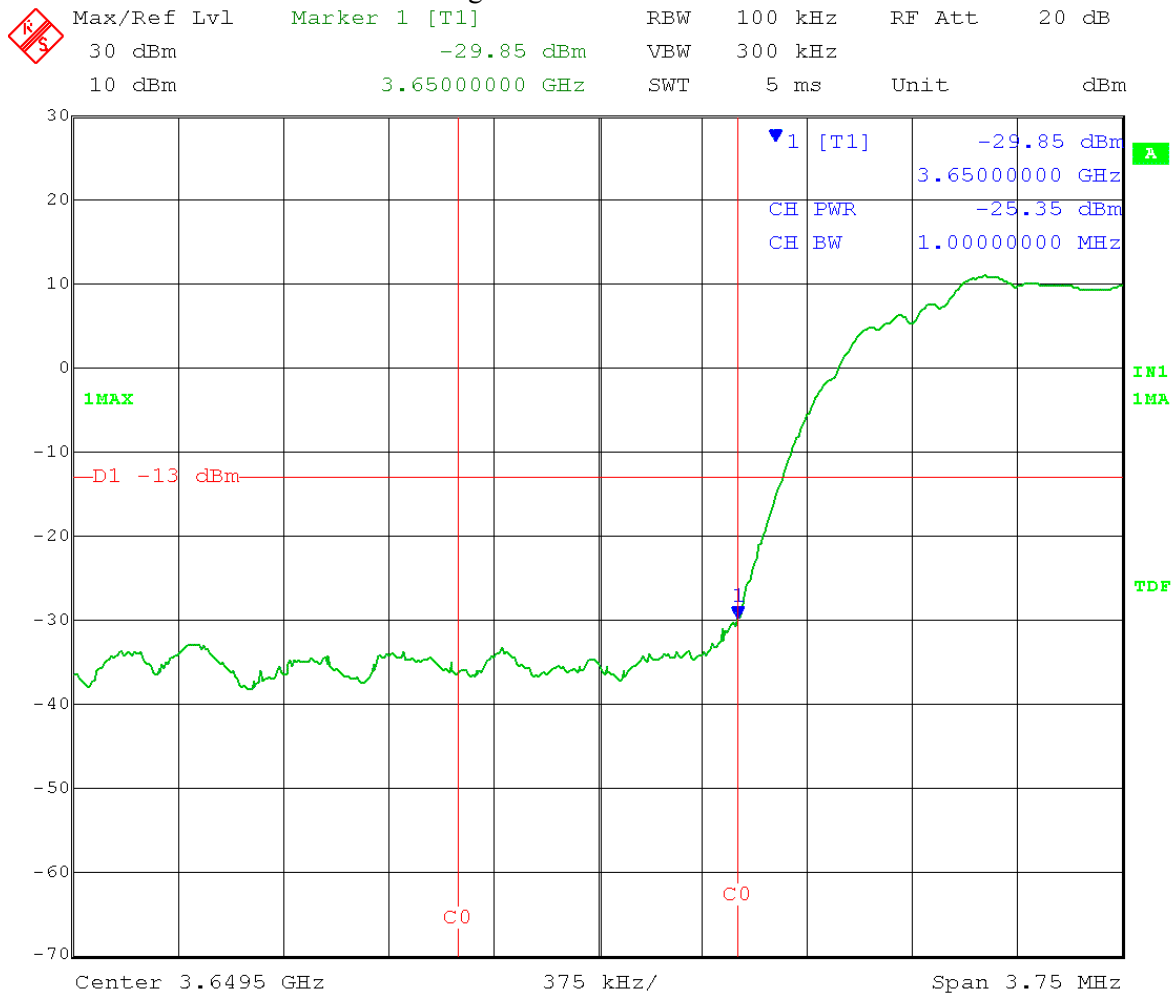
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -25.35 dBm/MHz



Date: 19.FEB.2014 11:42:03

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 19 total of both chains

Channel bandwidth: 10 MHz

for 20 dBi antenna gain

Lower band edge frequency = 3650 MHz

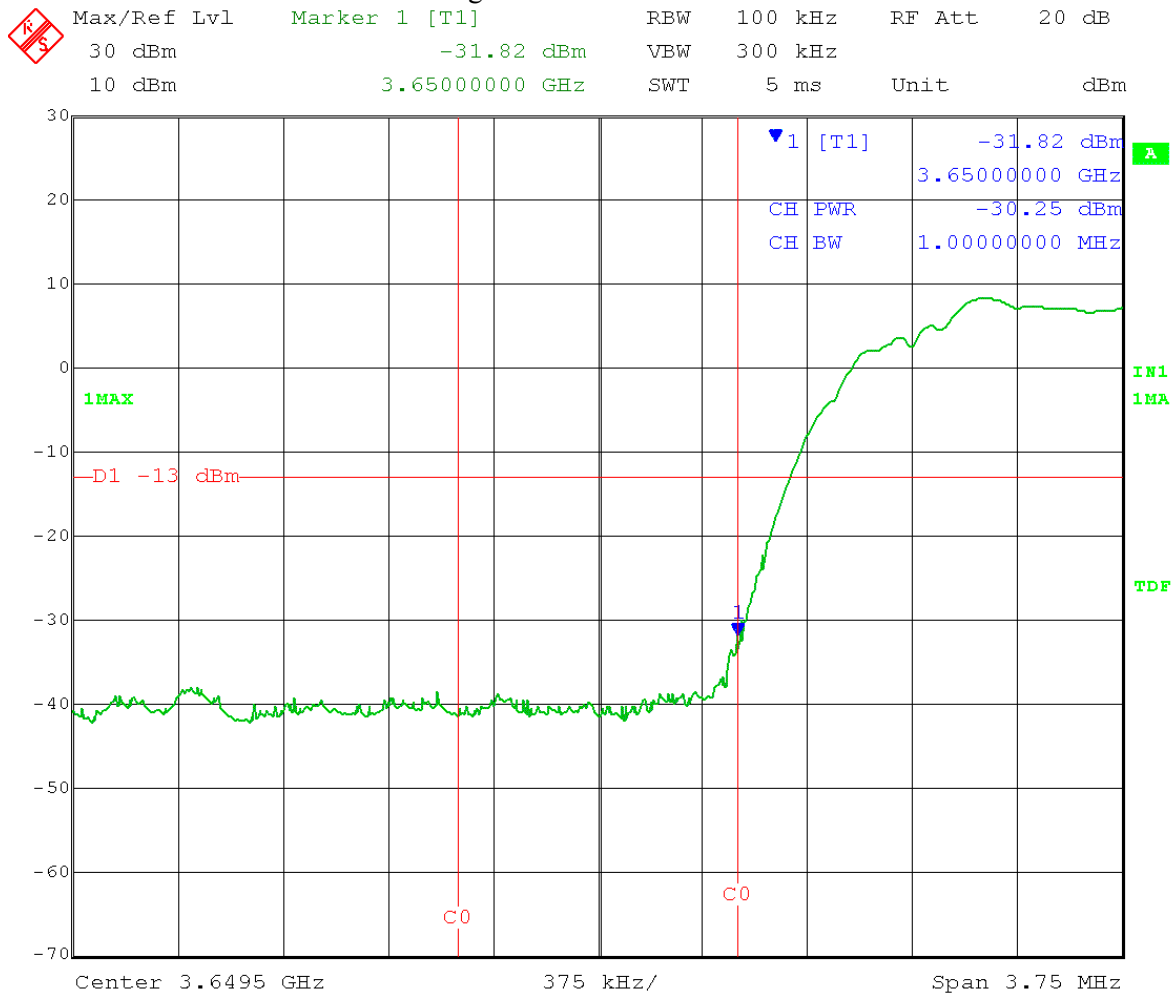
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -30.25 dBm/MHz



Date: 19.FEB.2014 11:44:23

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 16 total of both chains

Channel bandwidth: 10 MHz

for 22 dBi antenna gain

Lower band edge frequency = 3650 MHz

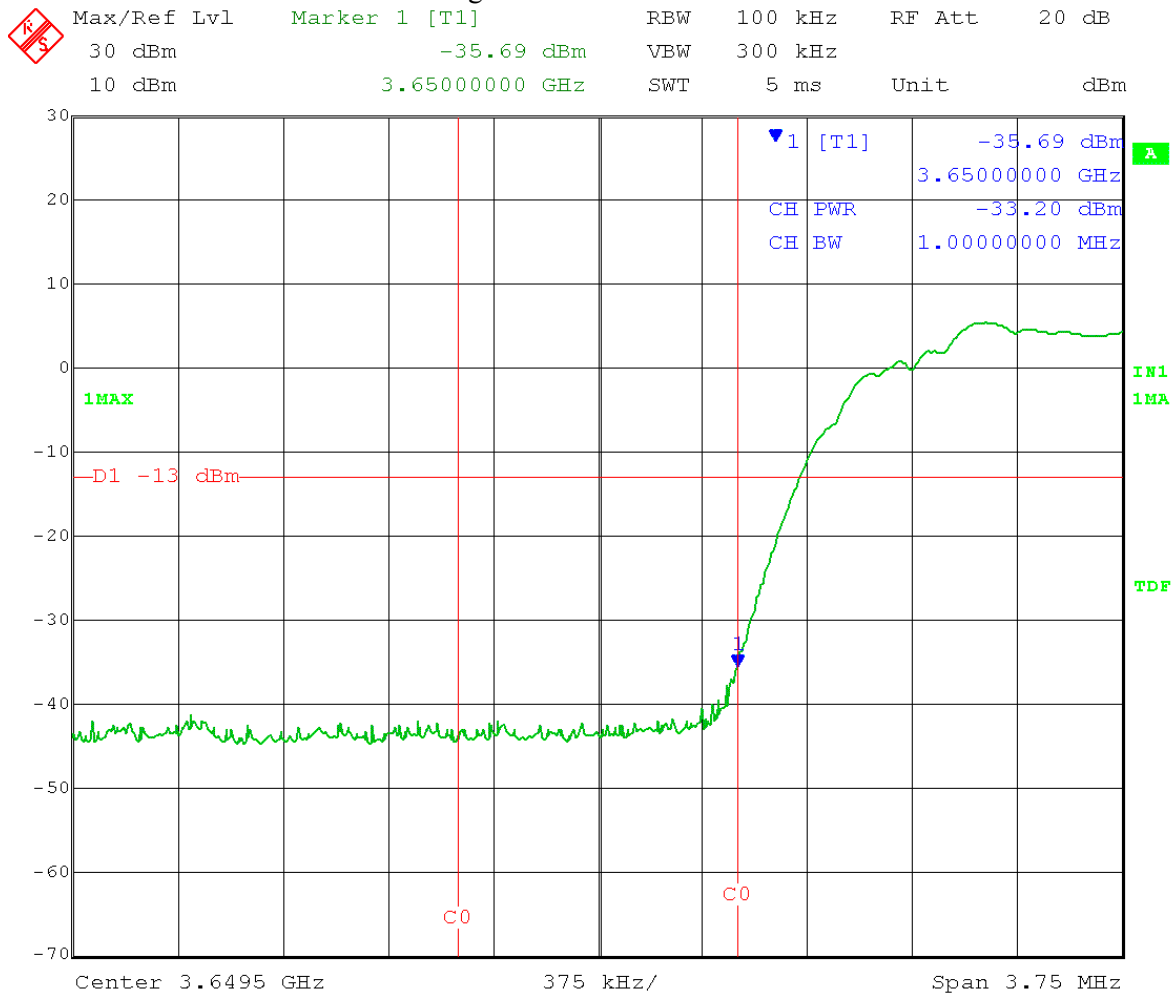
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -33.20 dBm/MHz

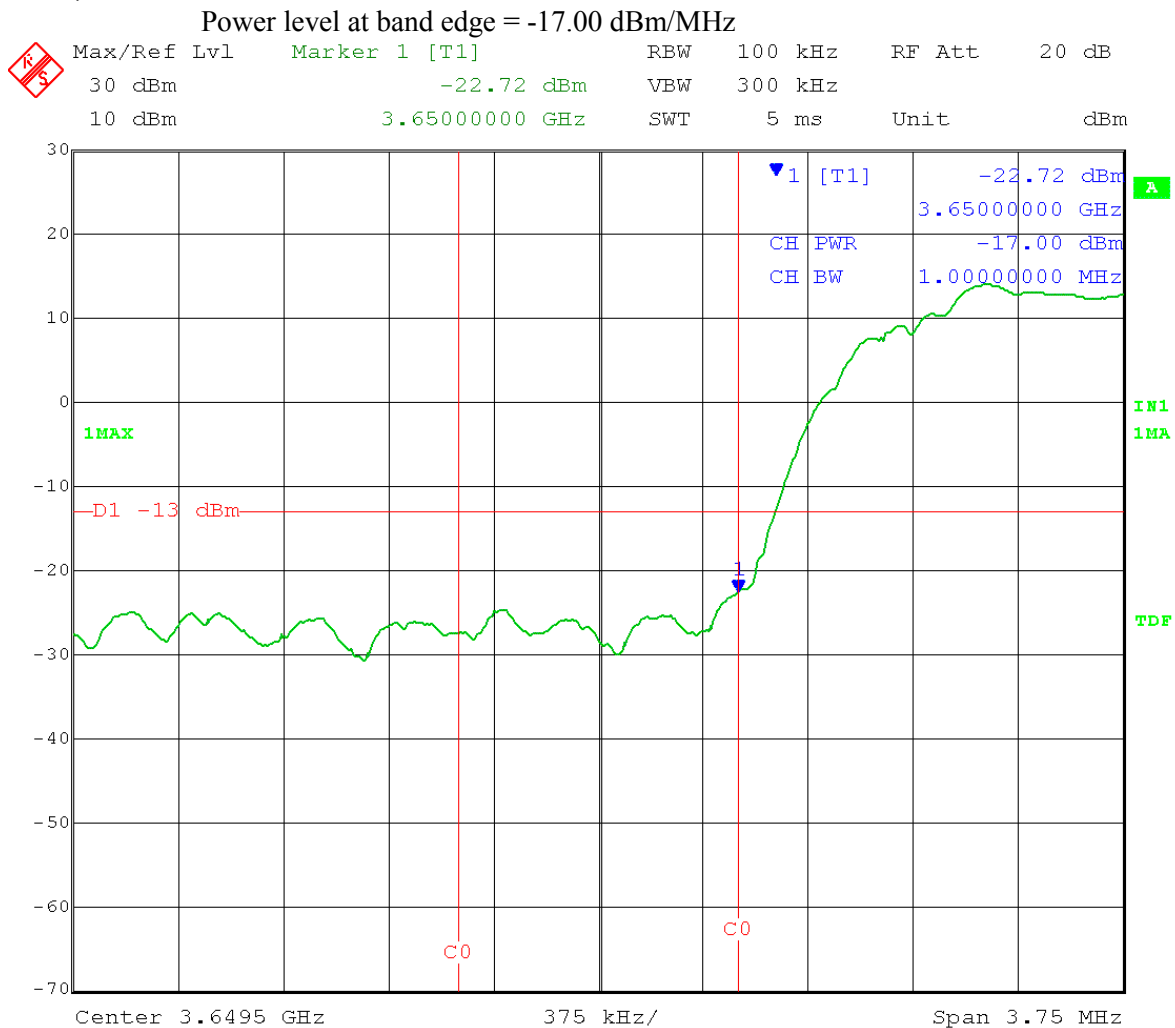


Date: 19.FEB.2014 11:46:32

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3655 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Lower band edge frequency = 3650 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V



Date: 19.FEB.2014 11:39:19

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 25 total of both chains

Channel bandwidth: 10 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

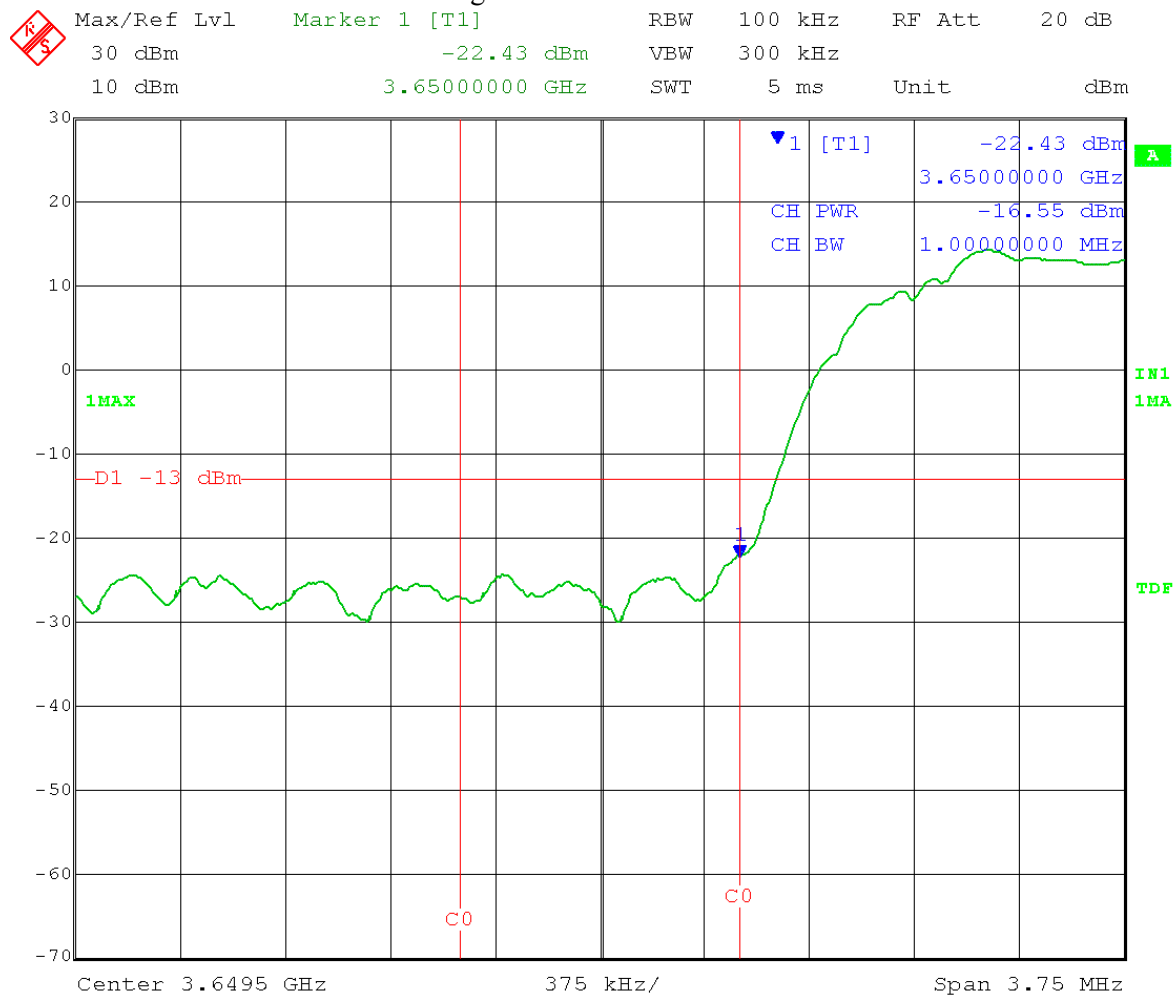
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 138 V

Power level at band edge = -16.55 dBm/MHz



Date: 19.FEB.2014 14:27:13

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 25 total of both chains

Channel bandwidth: 10 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

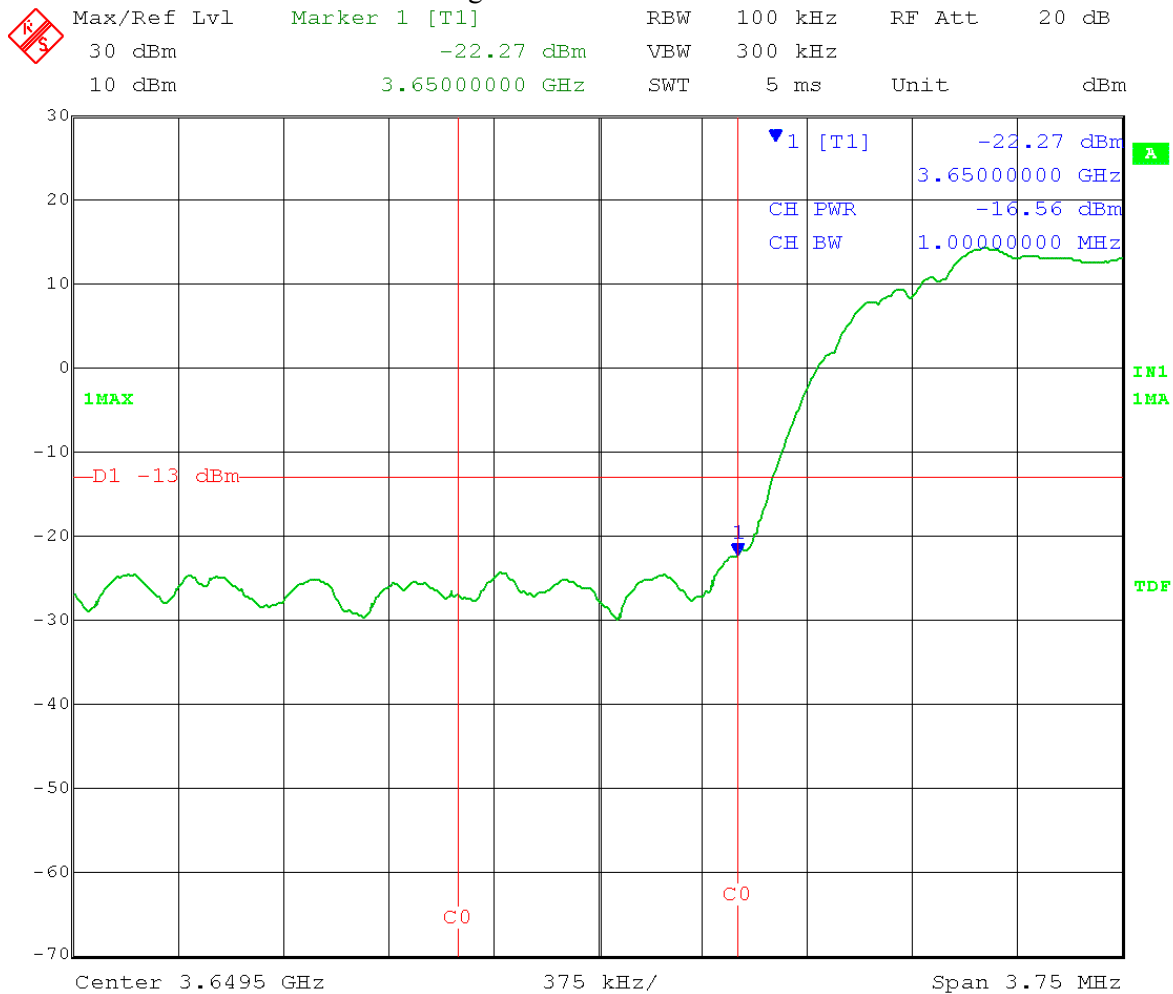
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 102 V

Power level at band edge = -16.56 dBm/MHz



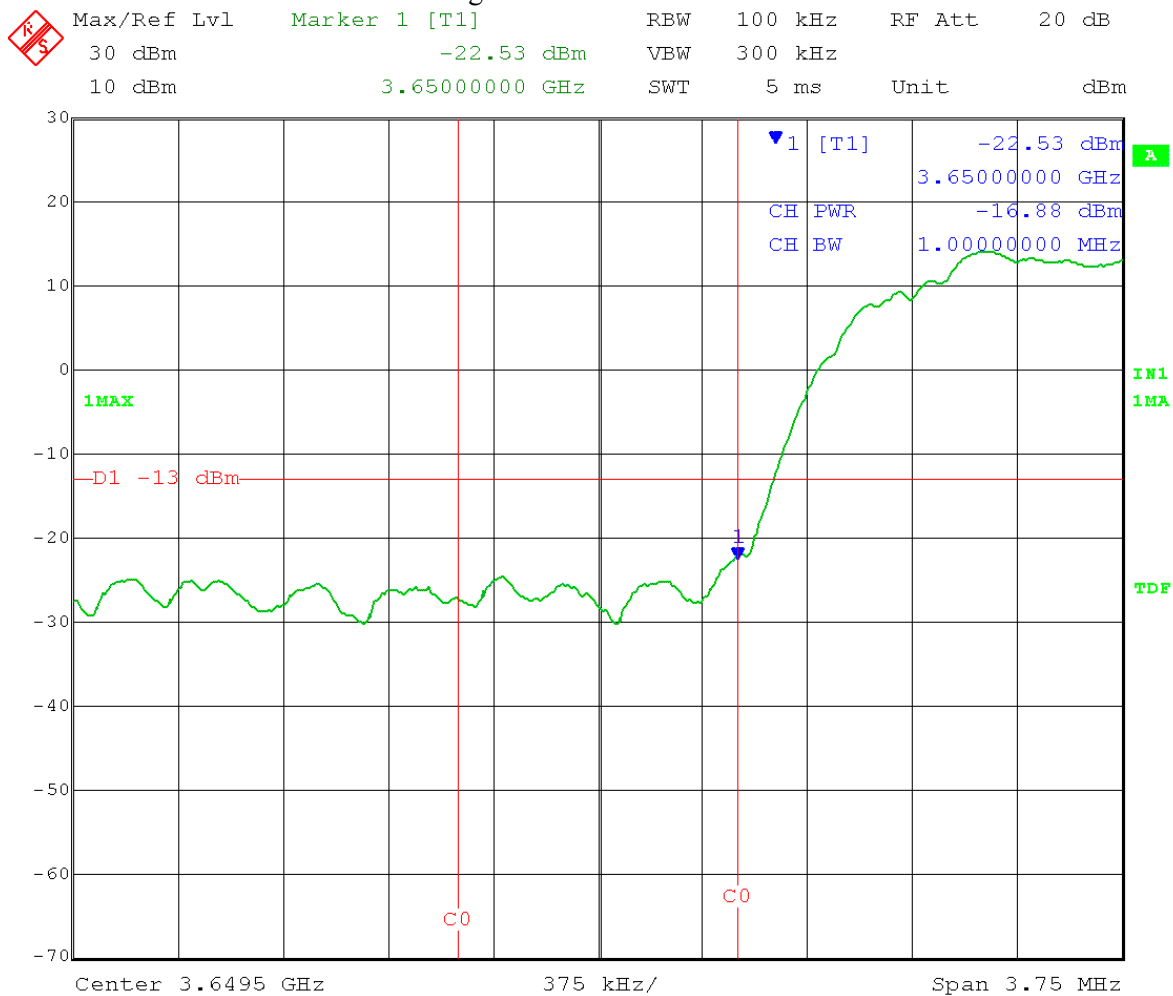
Date: 19.FEB.2014 14:30:00

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3655 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Lower band edge frequency = 3650 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

30 °C, 120 V

Power level at band edge = -16.88 dBm/MHz



Date: 19.FEB.2014 15:33:33

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 25 total of both chains

Channel bandwidth: 10 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

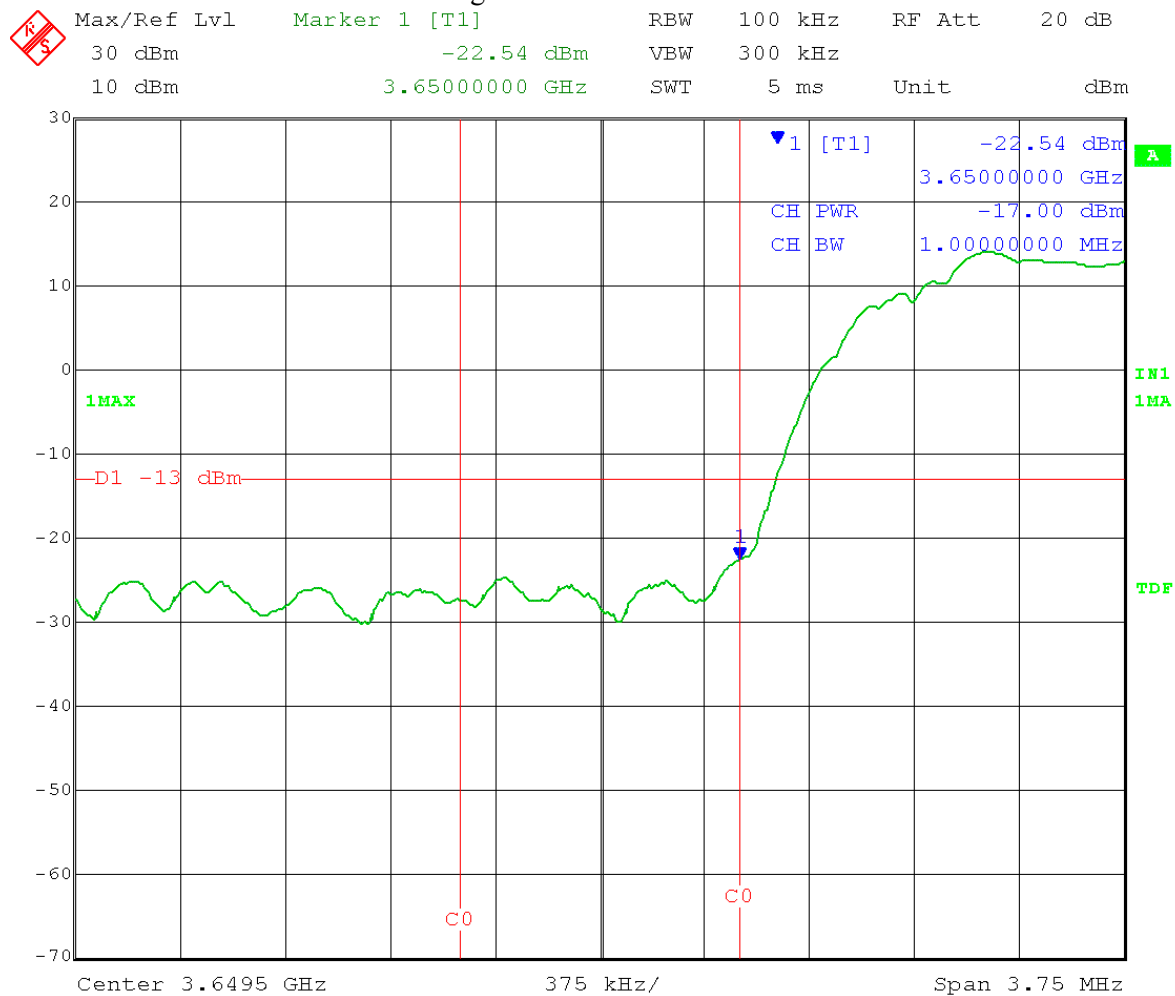
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

40 °C, 120 V

Power level at band edge = -17.00 dBm/MHz



Date: 20.FEB.2014 08:50:21

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 25 total of both chains

Channel bandwidth: 10 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

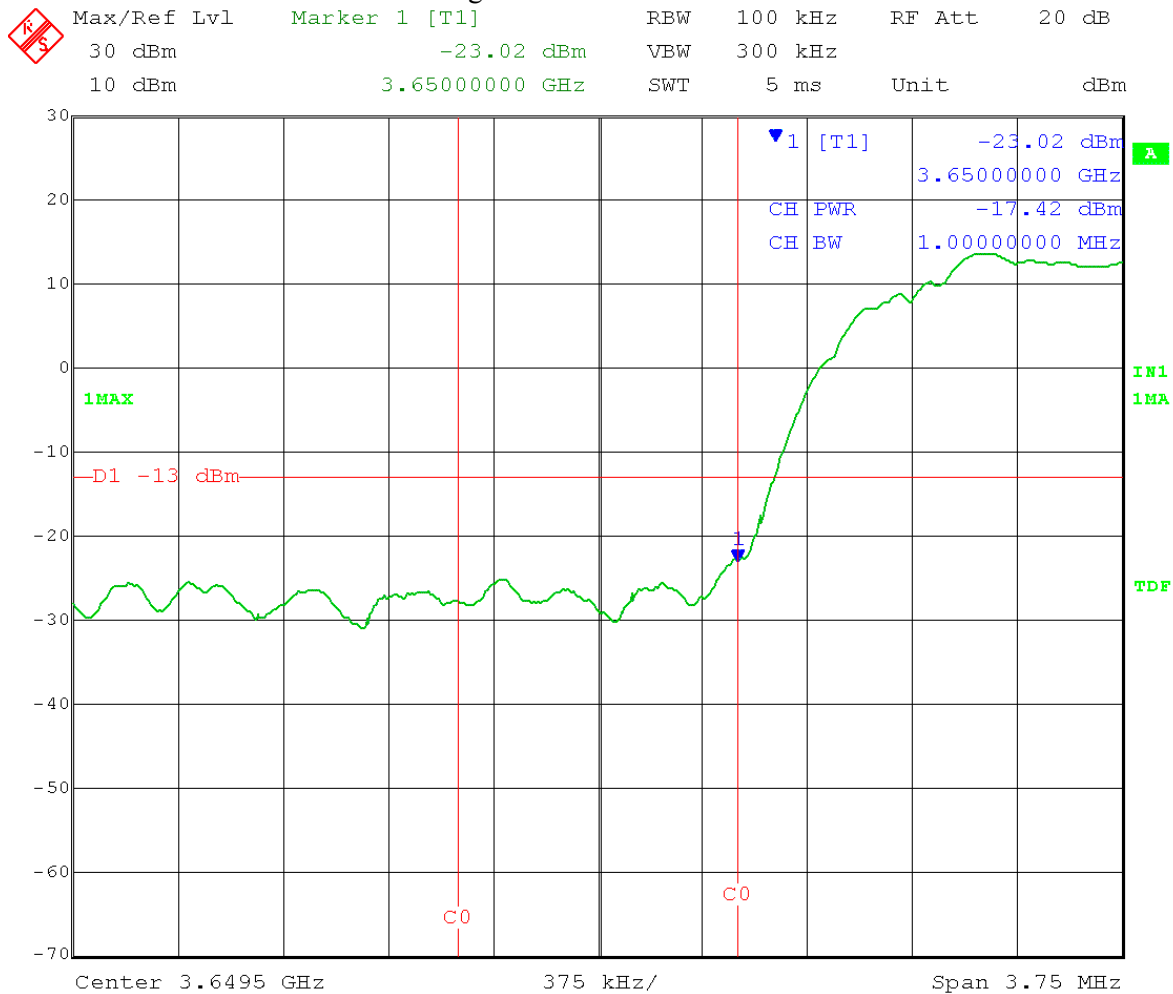
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

50 °C, 120 V

Power level at band edge = -17.42 dBm/MHz



Date: 20.FEB.2014 09:55:15

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% \text{ OBW}$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 25 total of both chains

Channel bandwidth: 10 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

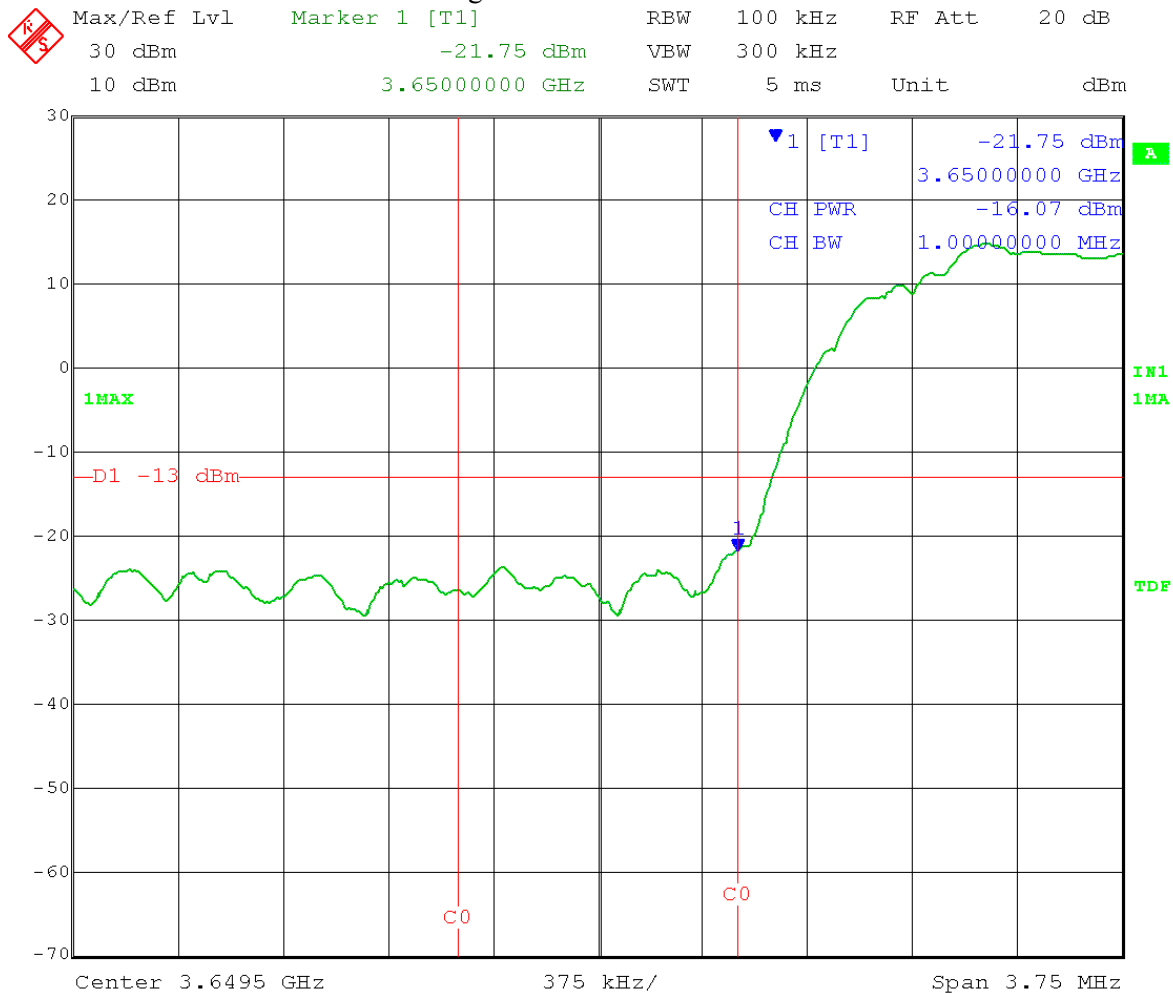
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

10 °C, 120 V

Power level at band edge = -16.07 dBm/MHz



Date: 20.FEB.2014 11:17:05

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 25 total of both chains

Channel bandwidth: 10 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

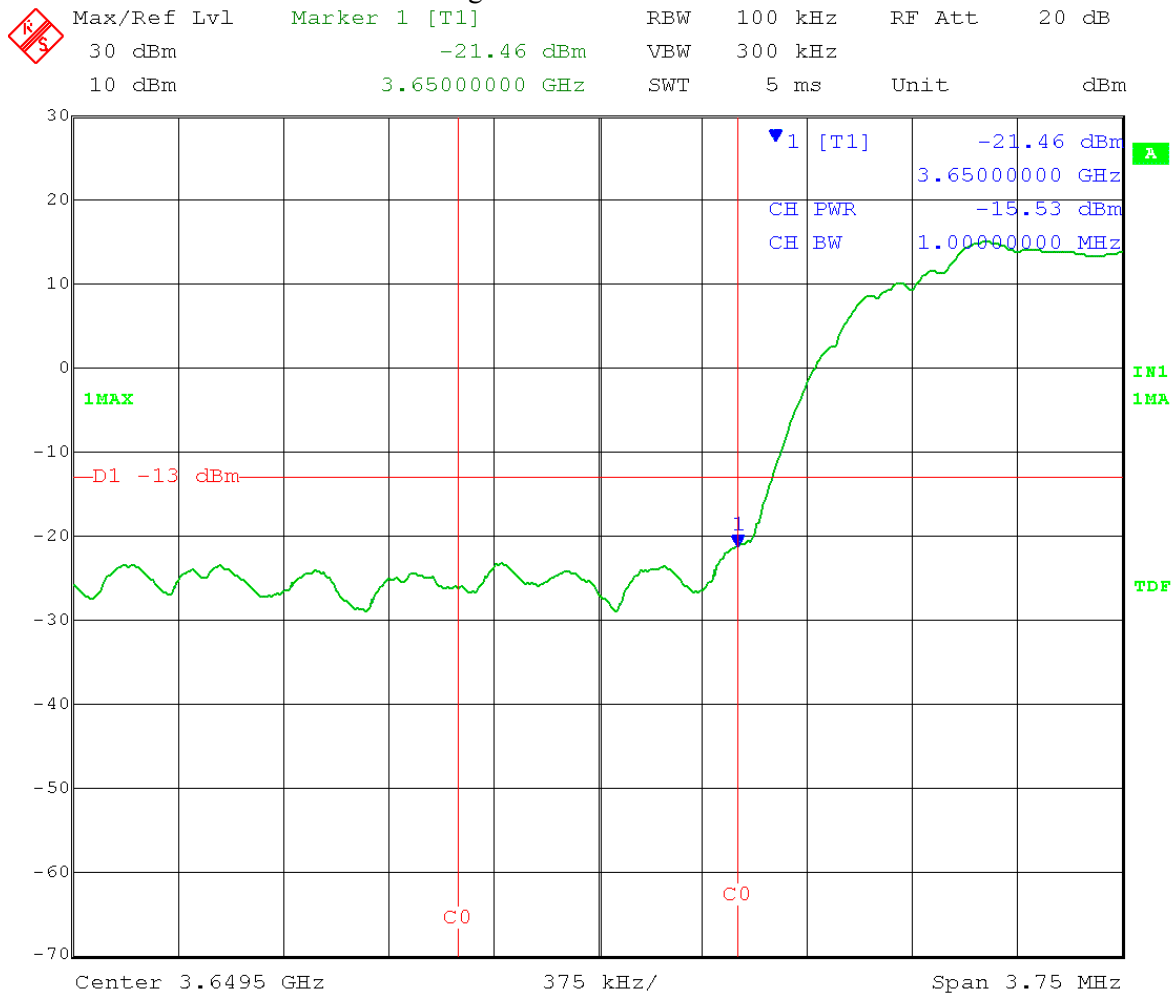
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

0 °C, 120 V

Power level at band edge = -15.53 dBm/MHz



Date: 20.FEB.2014 12:45:19

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 25 total of both chains

Channel bandwidth: 10 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

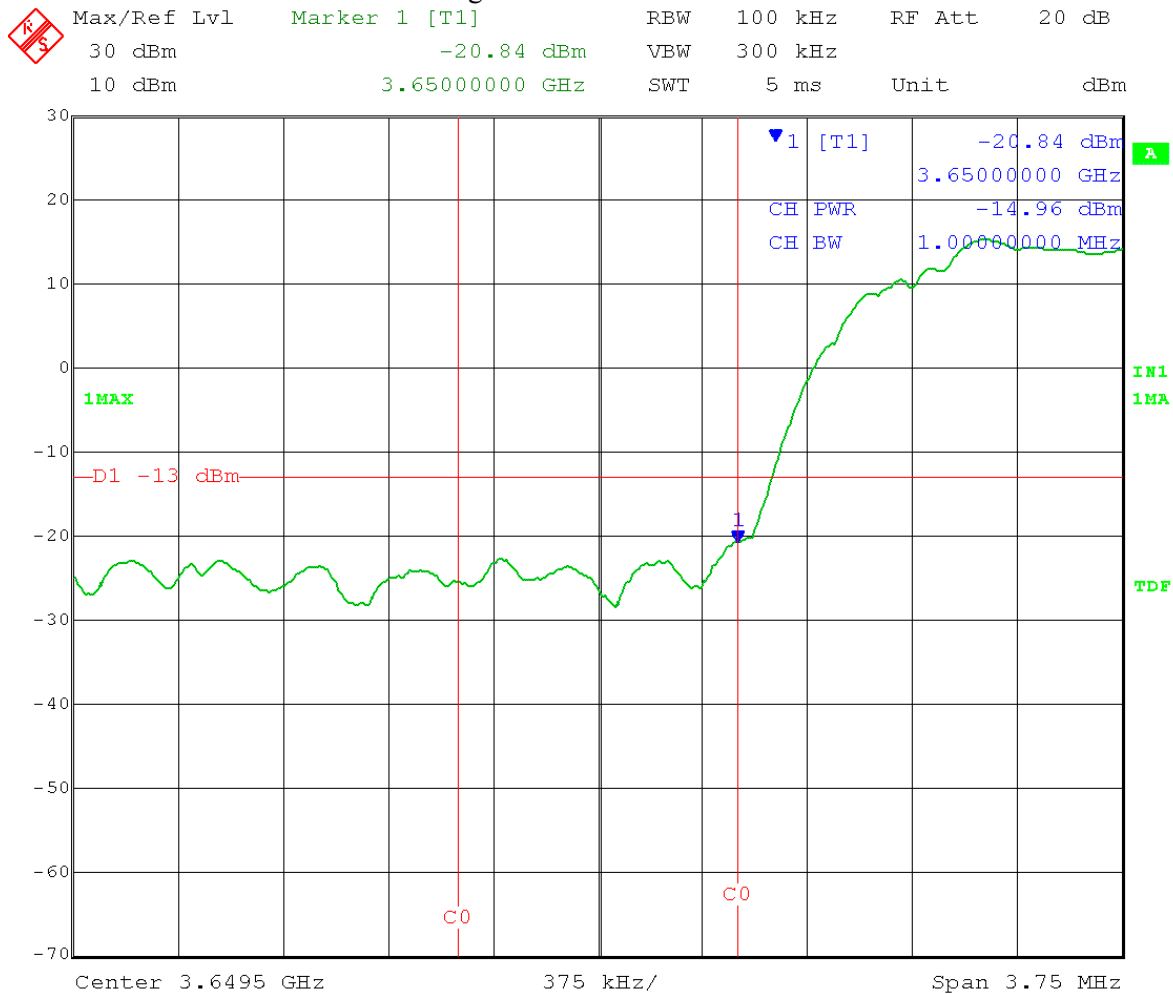
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

-10 °C, 120 V

Power level at band edge = -14.96 dBm/MHz



Date: 20.FEB.2014 13:40:41

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 25 total of both chains

Channel bandwidth: 10 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

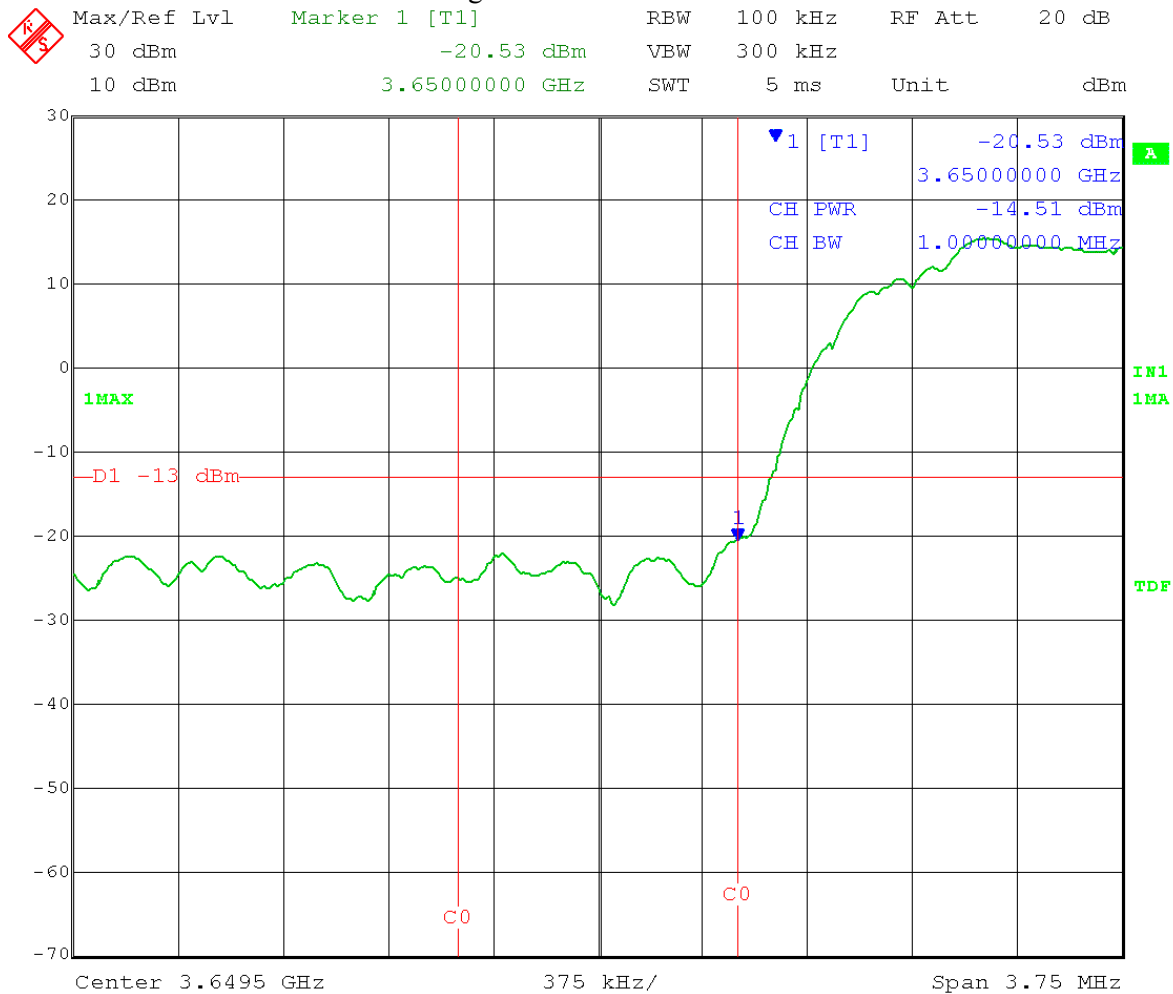
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

-20 °C, 120 V

Power level at band edge = -14.51 dBm/MHz



Date: 20.FEB.2014 14:41:10

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting: 25 total of both chains

Channel bandwidth: 10 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

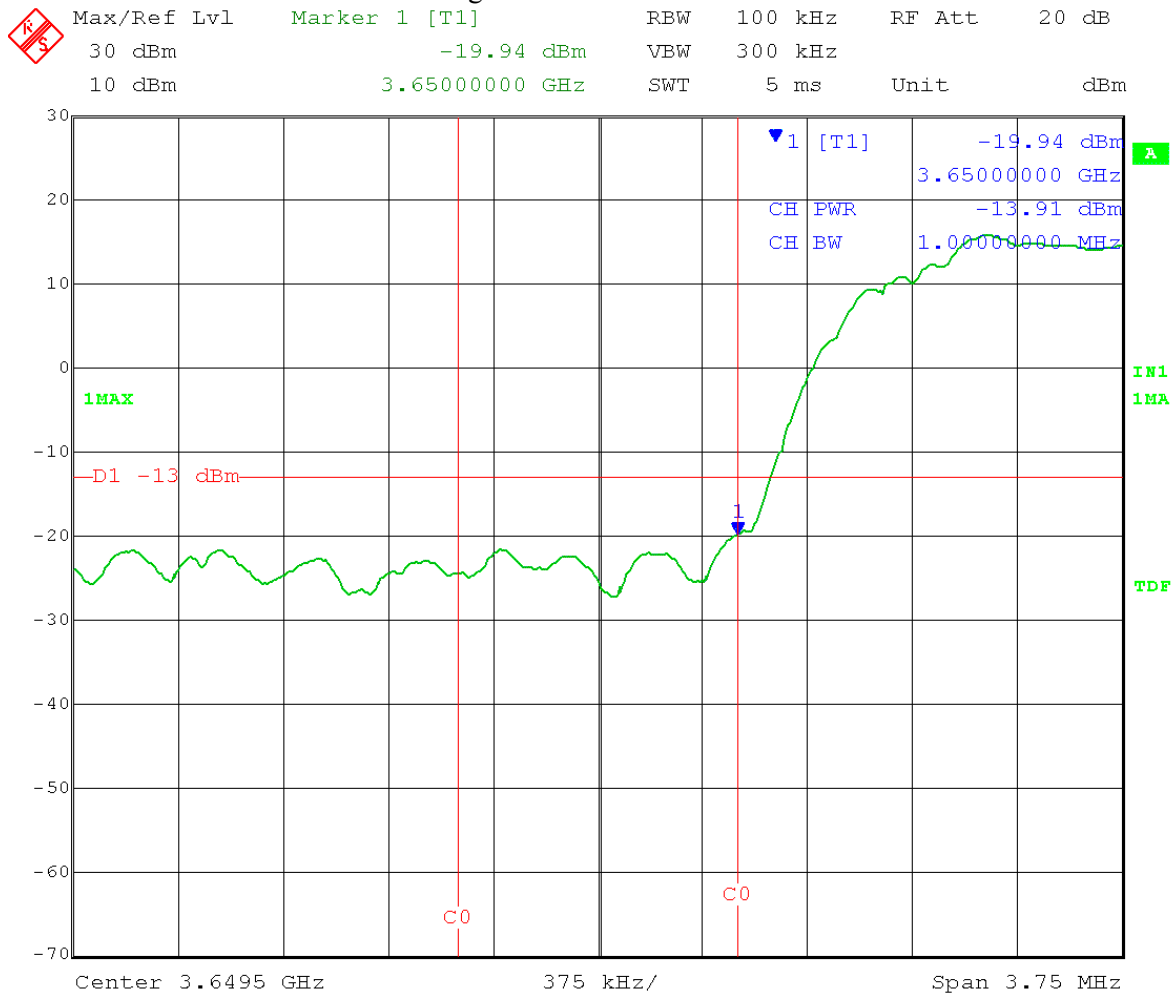
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

-30 °C, 120 V

Power level at band edge = -13.91 dBm/MHz

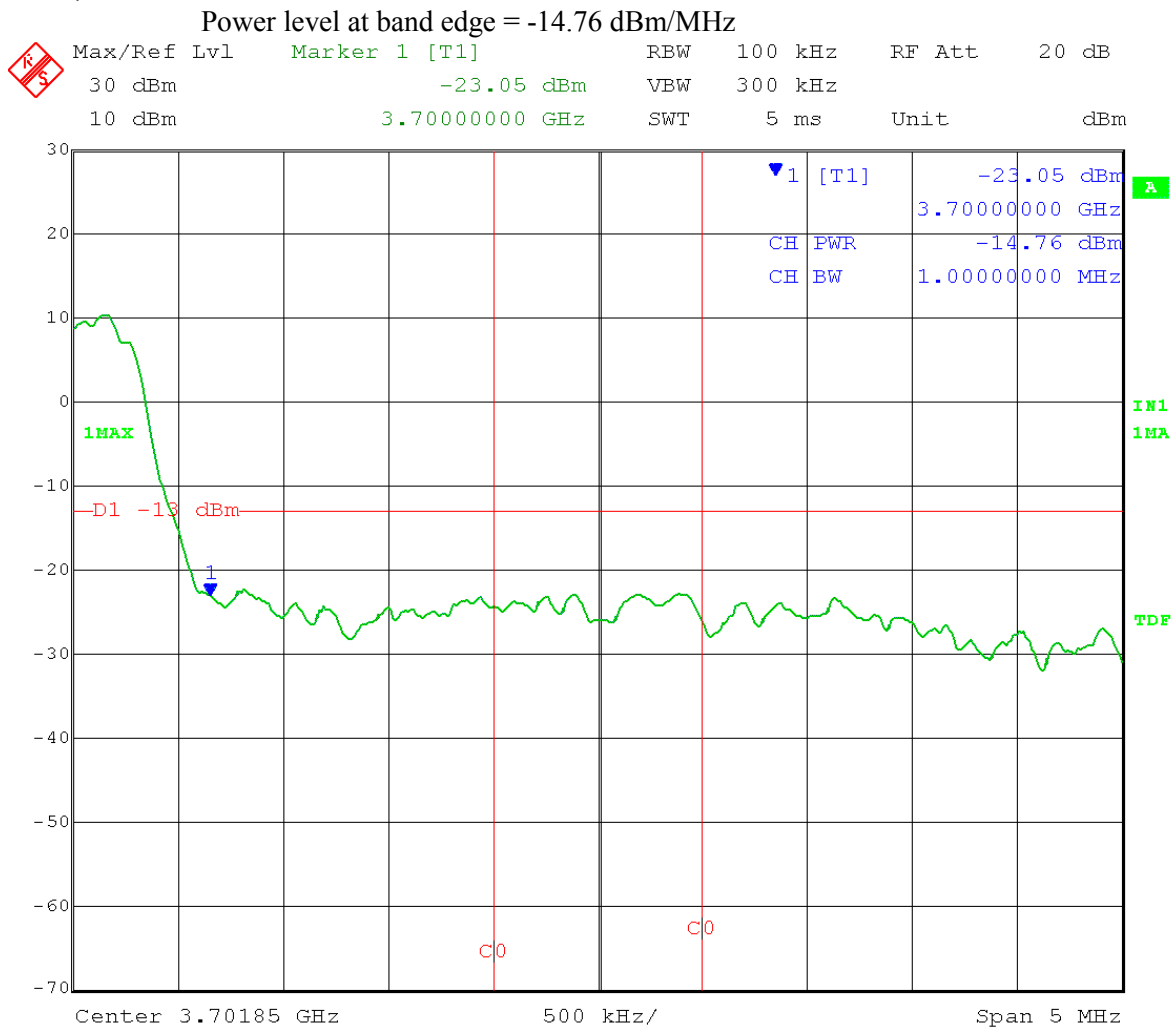


Date: 20.FEB.2014 15:39:21

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

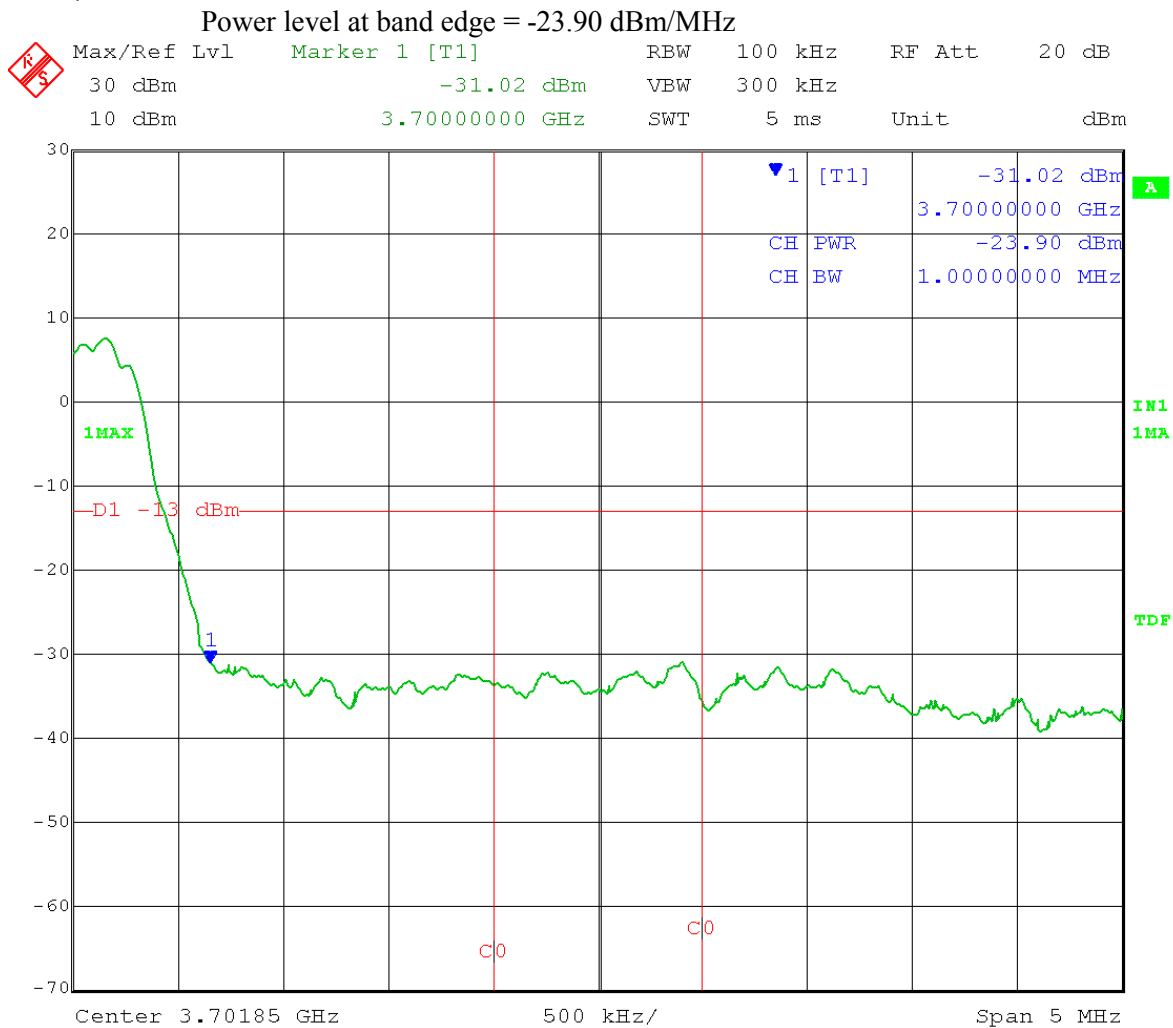


Date: 19.FEB.2014 12:53:36

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 22 total of both chains
Channel bandwidth: 10 MHz for 17 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

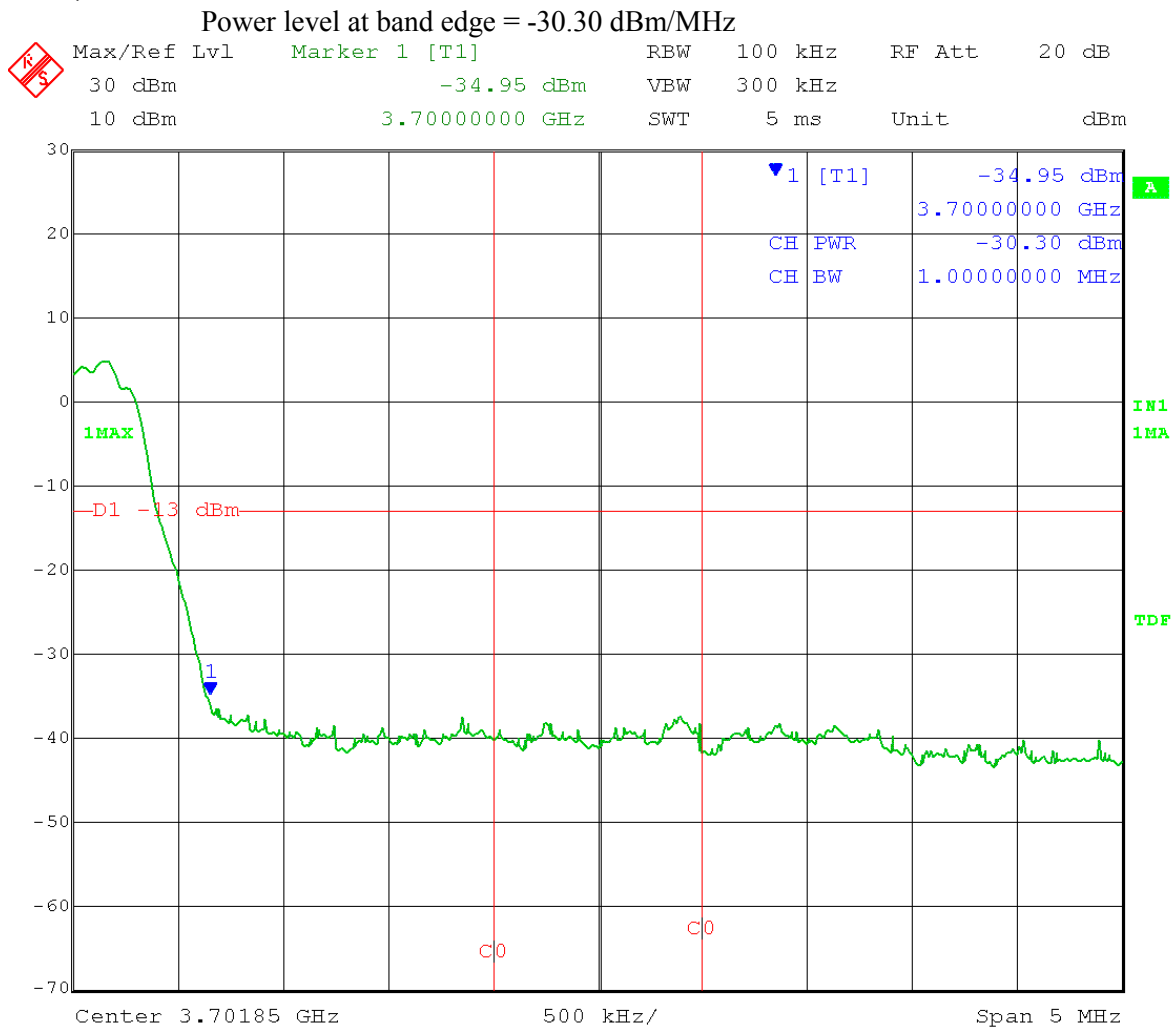


Date: 19.FEB.2014 12:55:41

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 19 total of both chains
Channel bandwidth: 10 MHz for 20 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

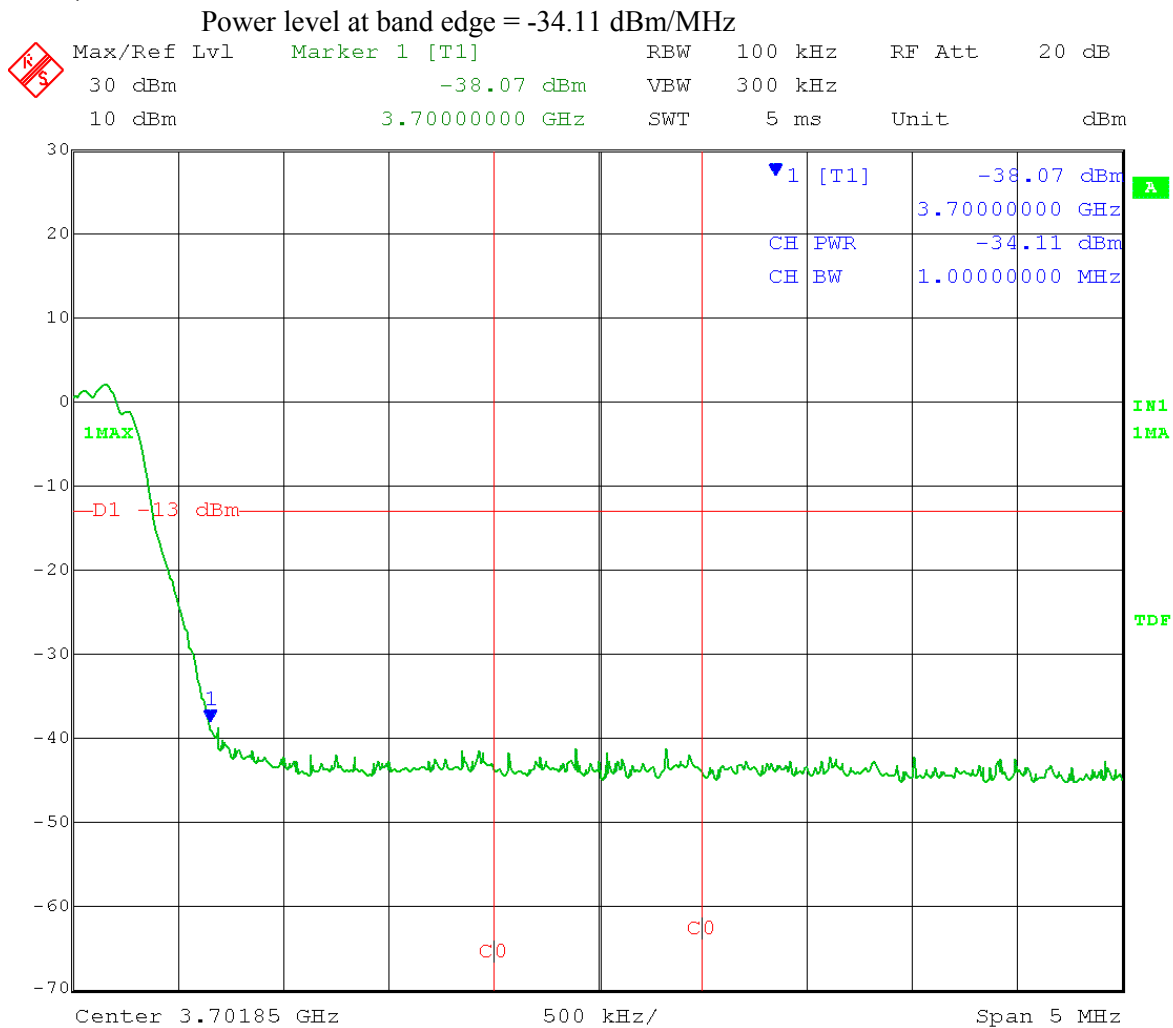


Date: 19.FEB.2014 12:57:10

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 16 total of both chains
Channel bandwidth: 10 MHz for 22 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

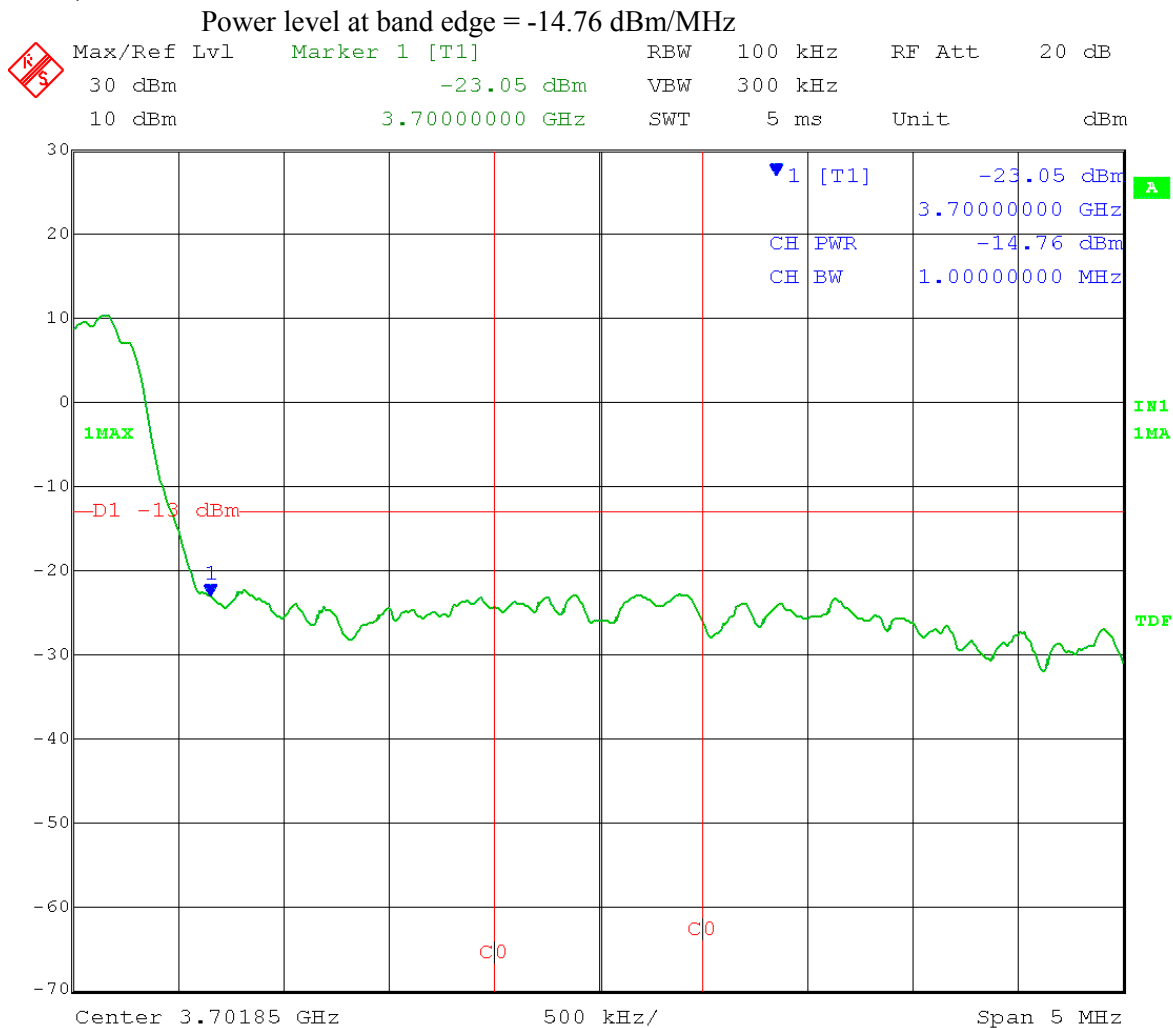


Date: 19.FEB.2014 12:58:51

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V



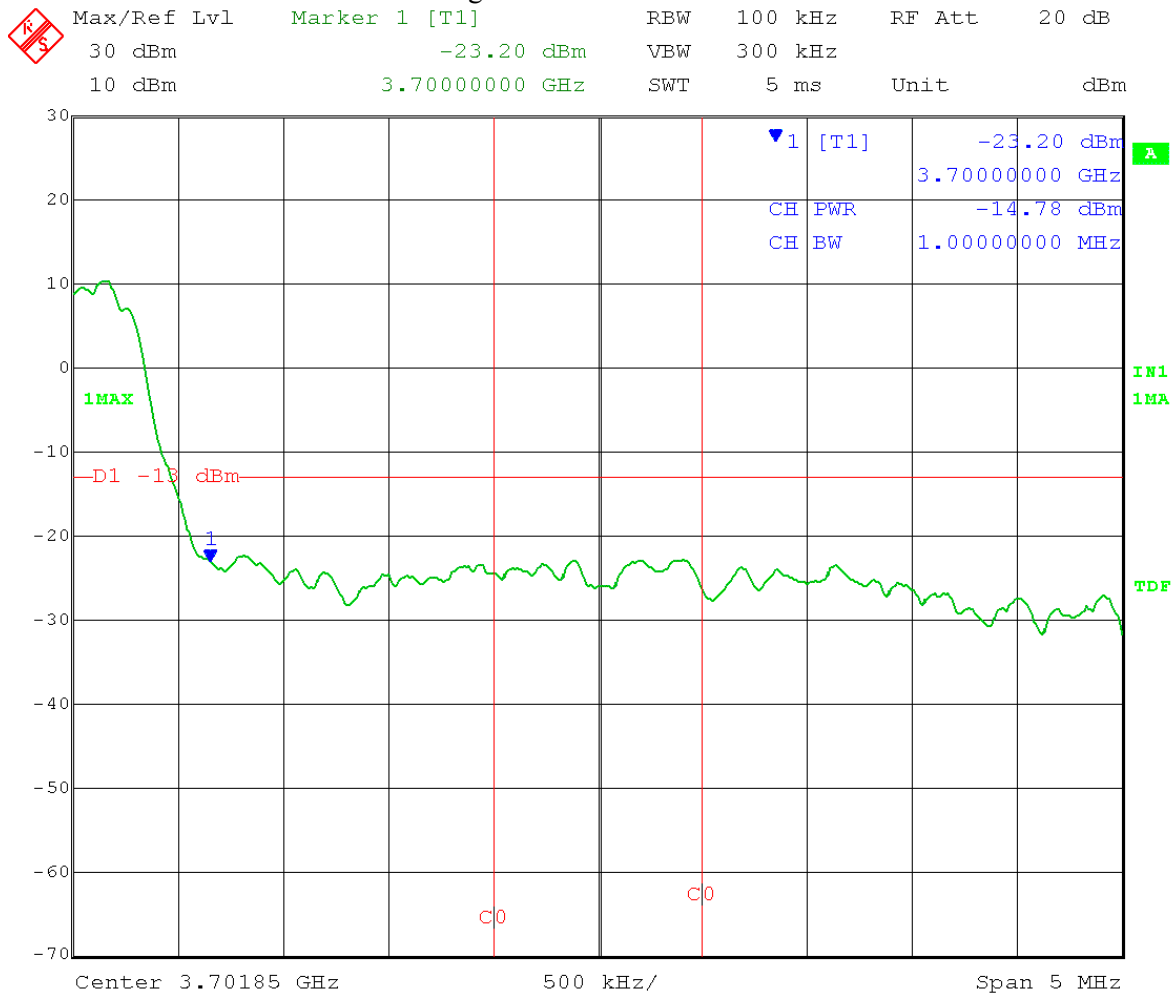
Date: 19.FEB.2014 12:53:36

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 138 V

Power level at band edge = -14.78 dBm/MHz



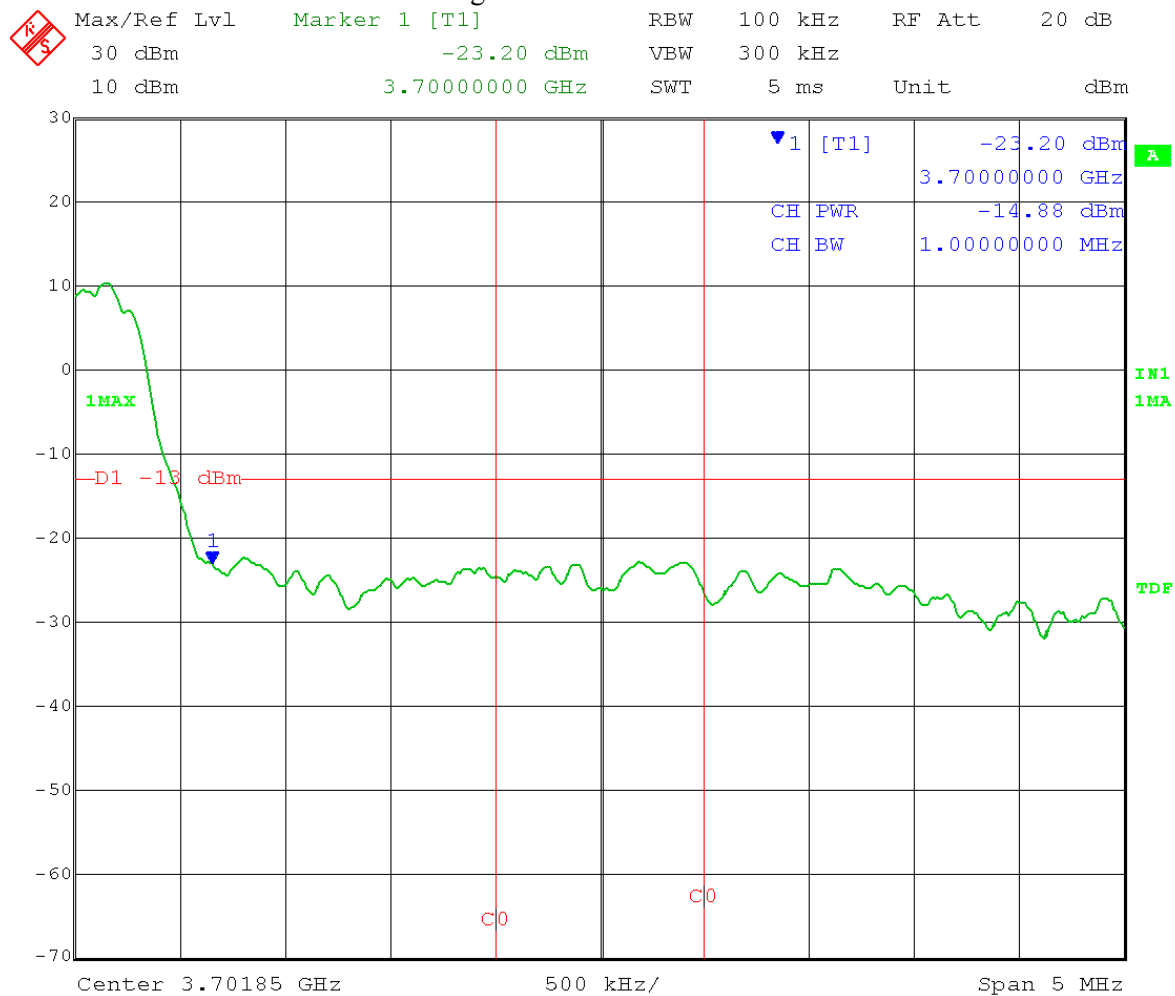
Date: 19.FEB.2014 14:37:08

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 102 V

Power level at band edge = -14.88 dBm/MHz



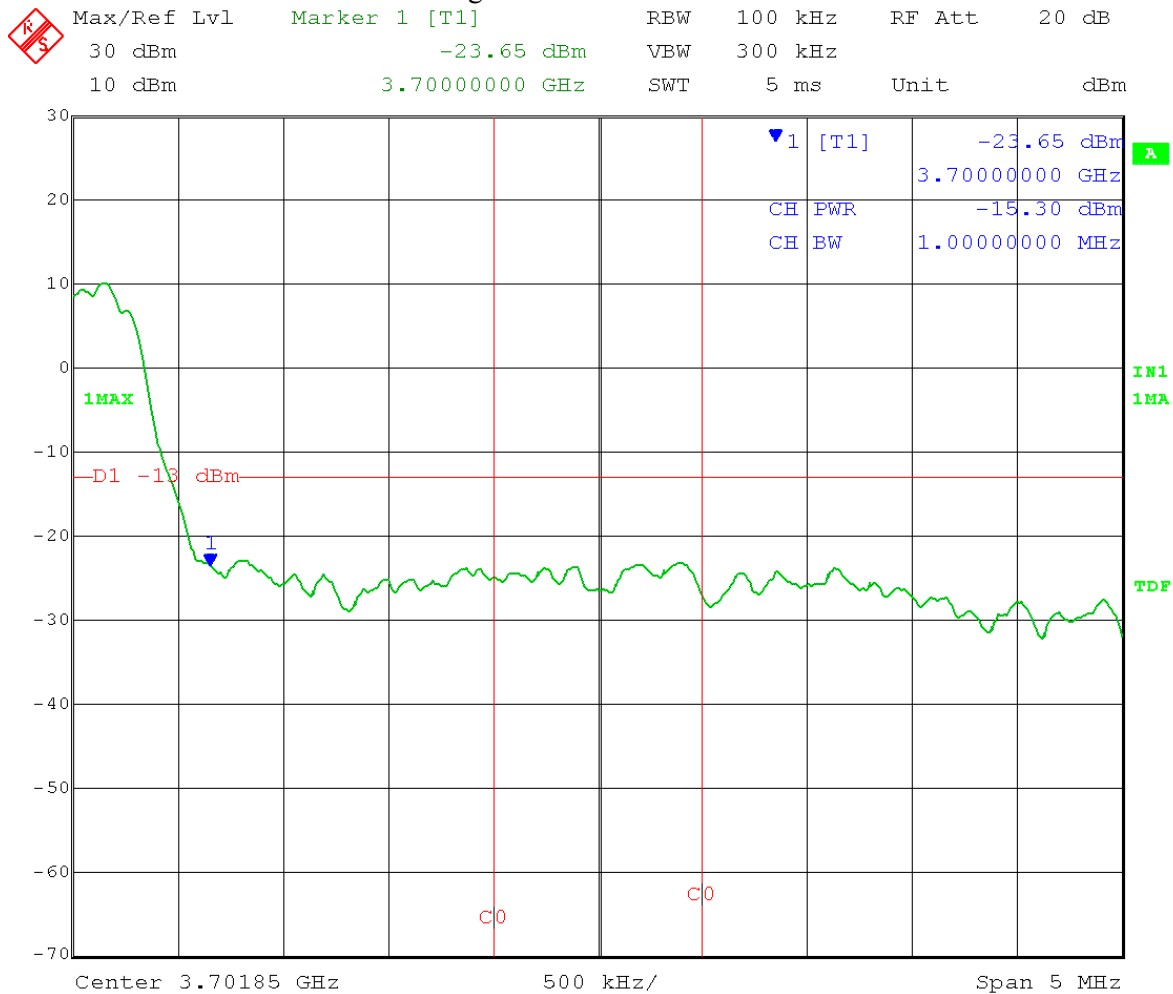
Date: 19.FEB.2014 14:38:37

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

30 °C, 120 V

Power level at band edge = -15.30 dBm/MHz

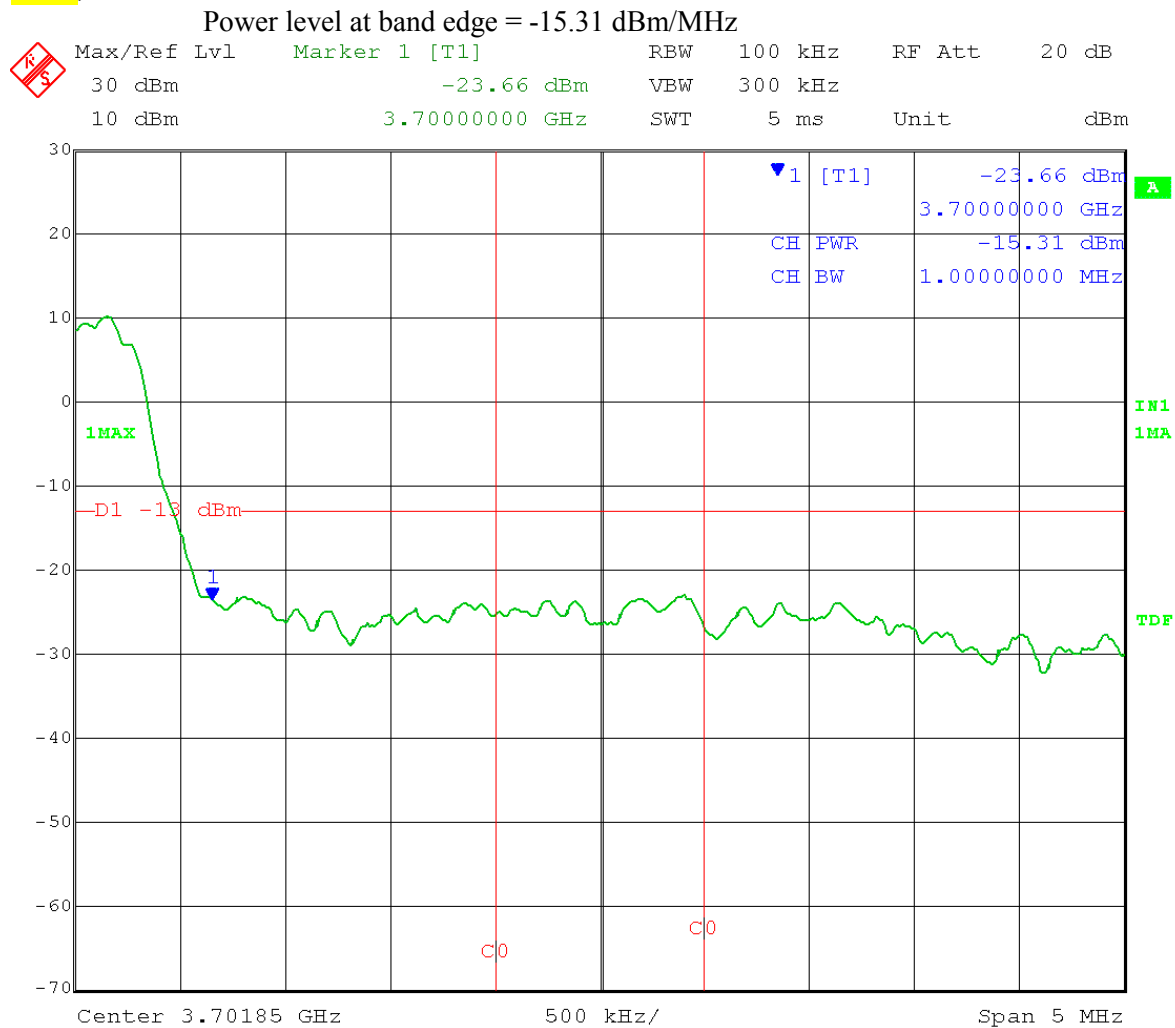


Date: 19.FEB.2014 15:36:27

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% \text{ OBW}$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

40 °C, 120 V



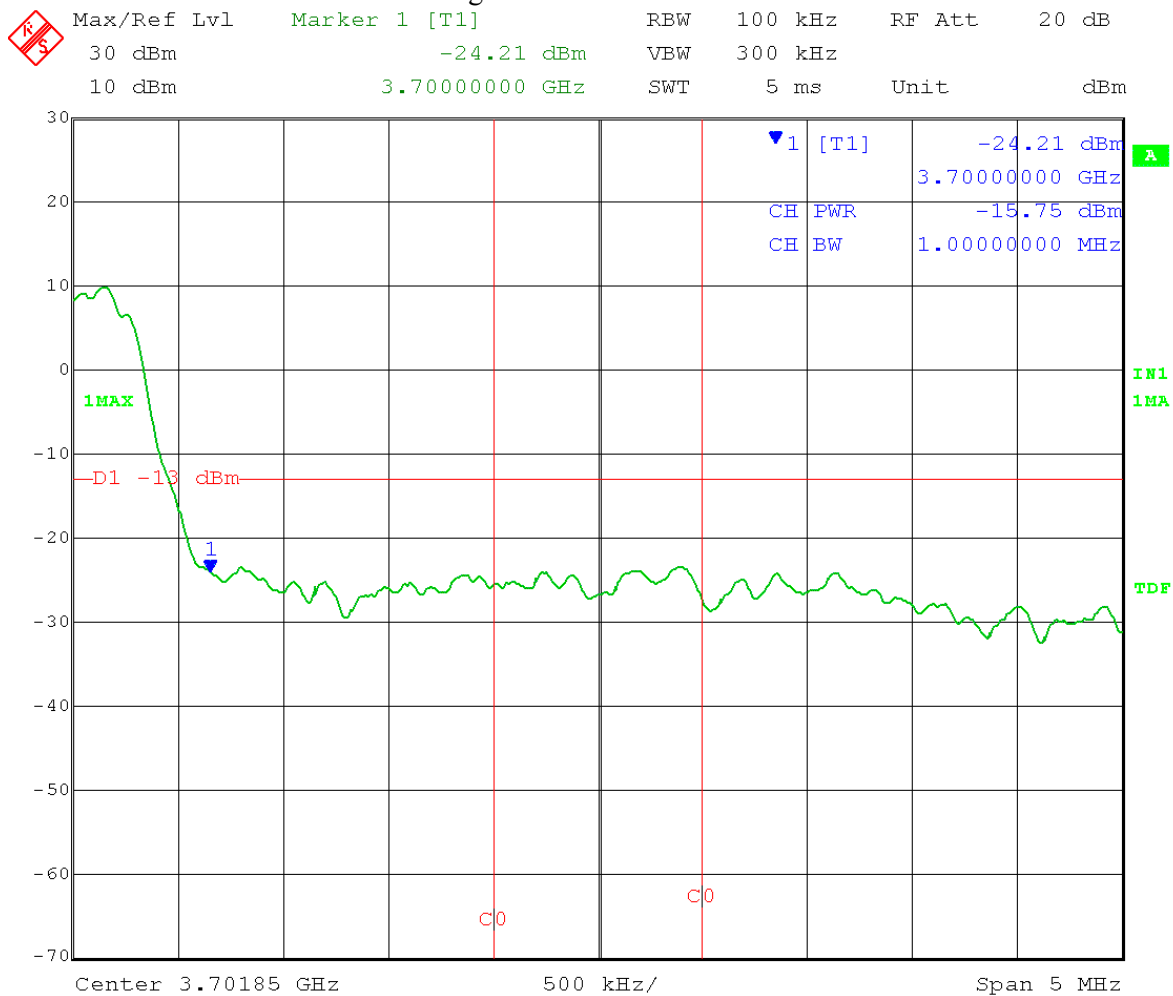
Date: 20.FEB.2014 08:46:39

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

50 °C, 120 V

Power level at band edge = -15.75 dBm/MHz



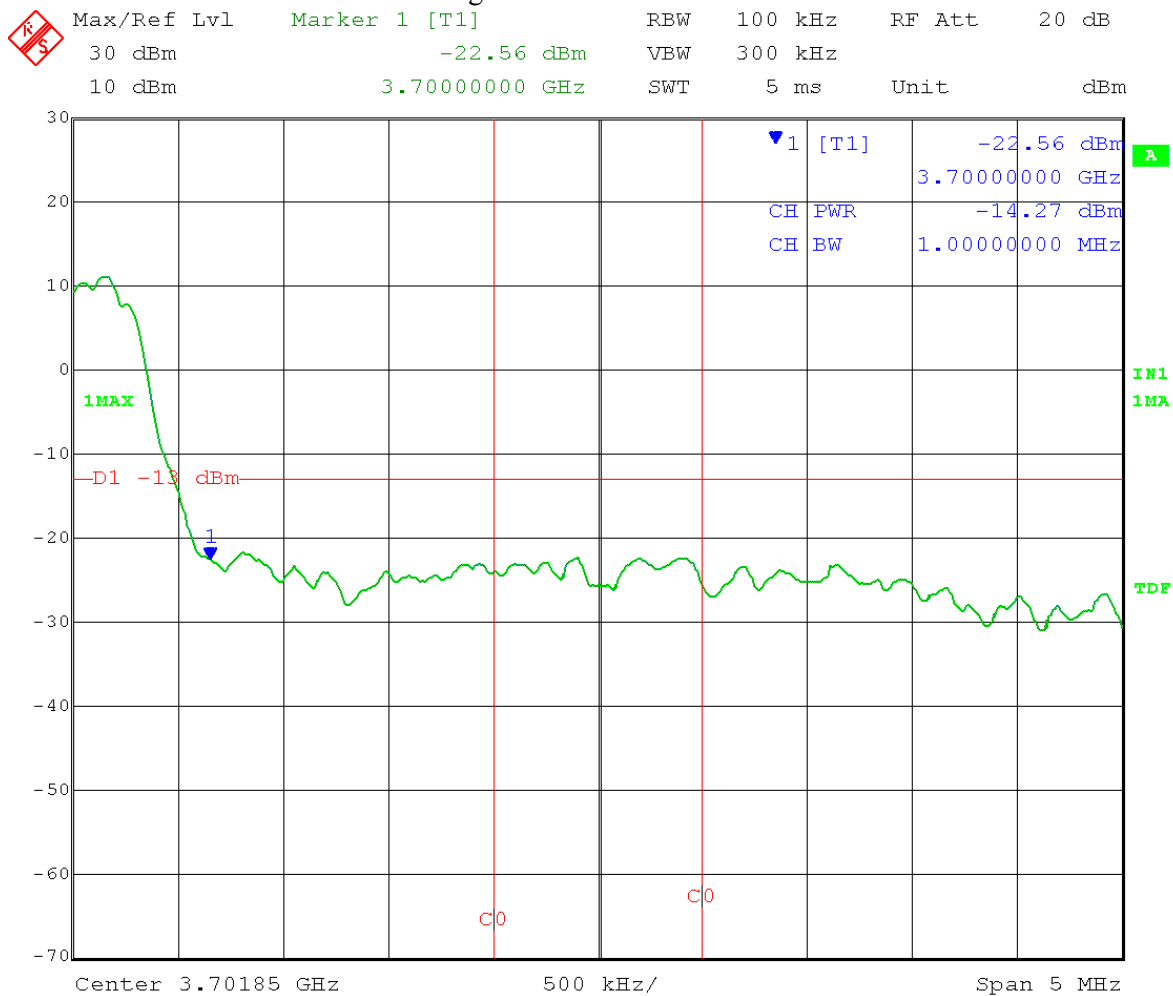
Date: 20.FEB.2014 09:51:53

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

10 °C, 120 V

Power level at band edge = -14.27 dBm/MHz

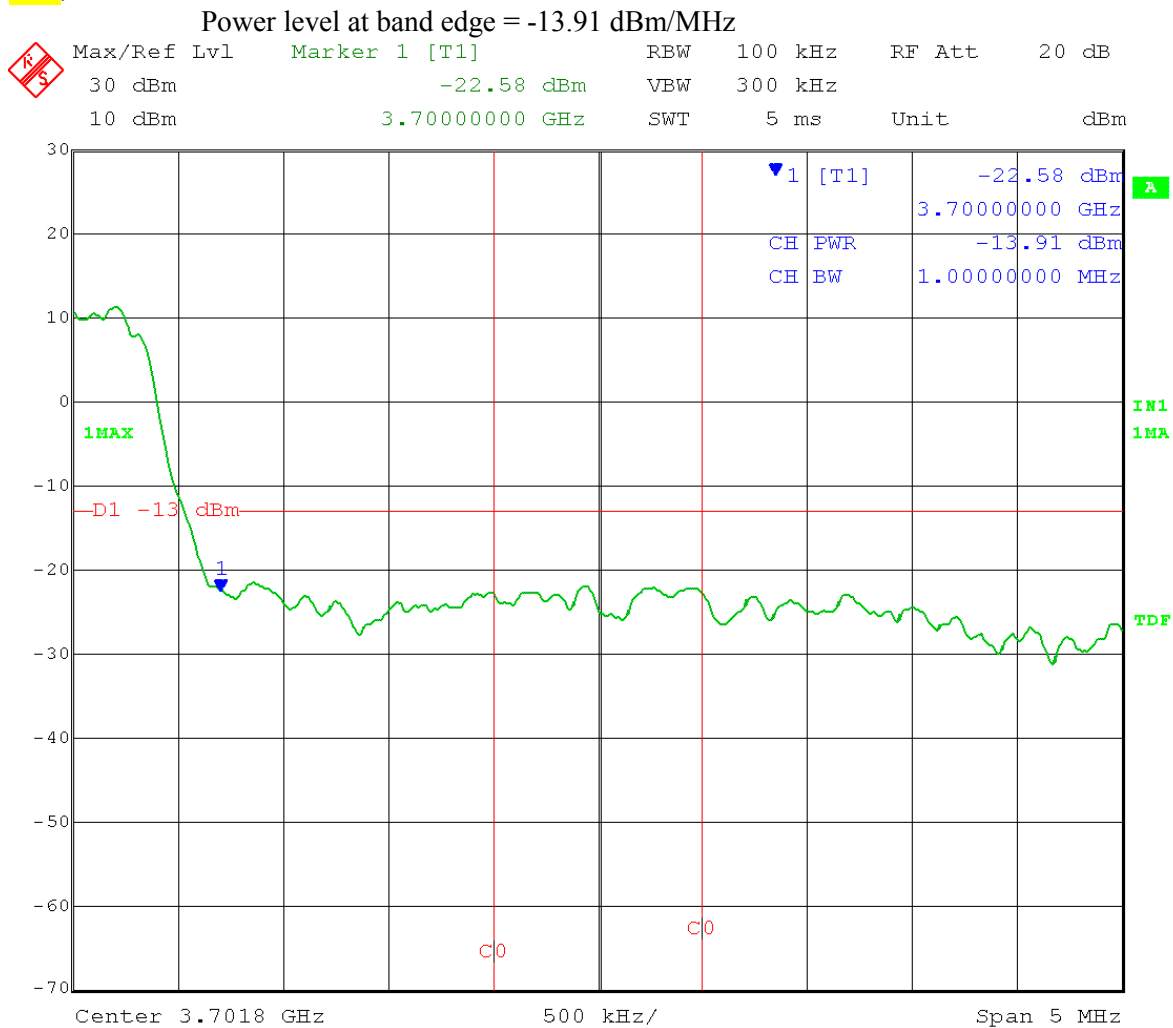


Date: 20.FEB.2014 11:14:00

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

0 °C, 120 V



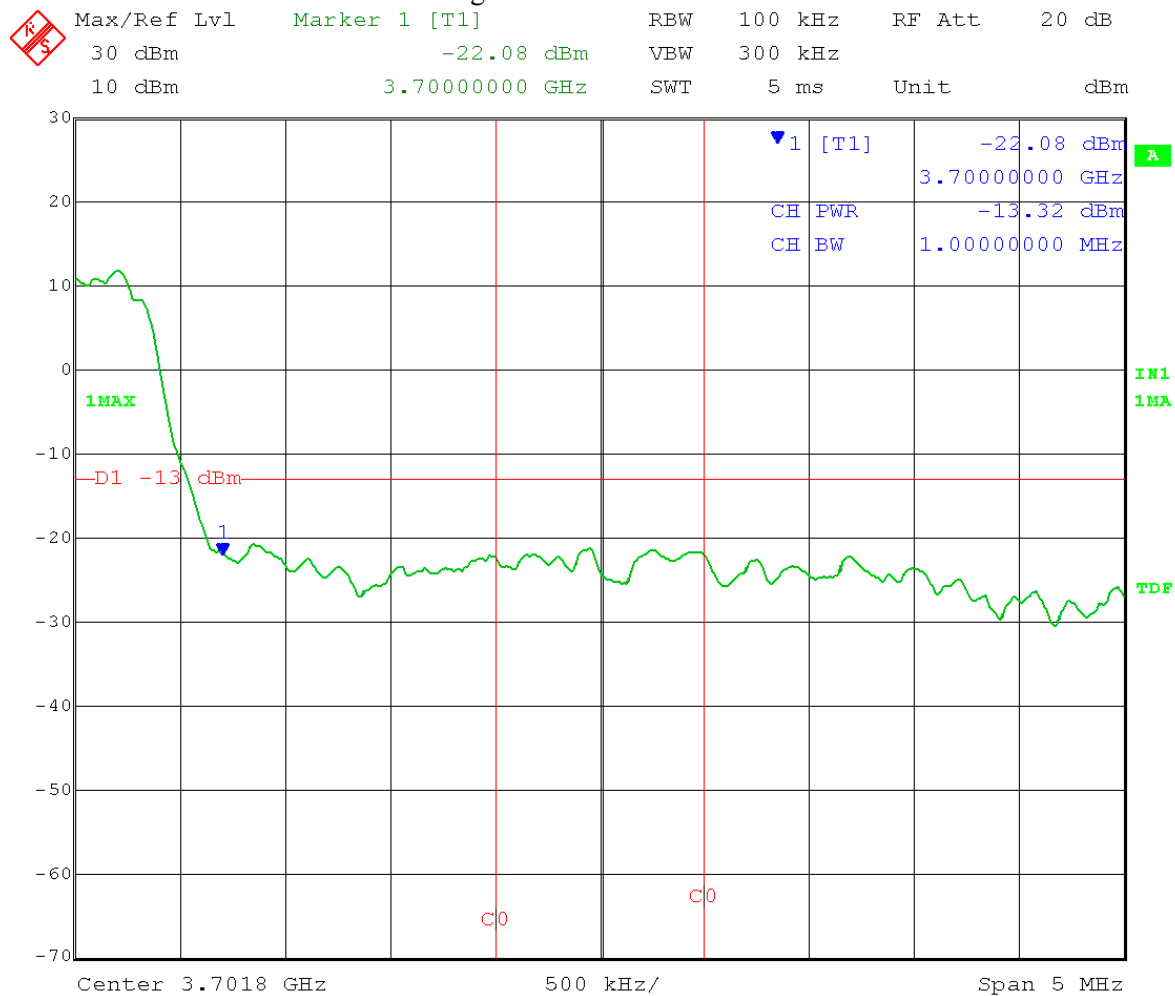
Date: 20.FEB.2014 12:42:10

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

-10 °C, 120 V

Power level at band edge = -13.32 dBm/MHz



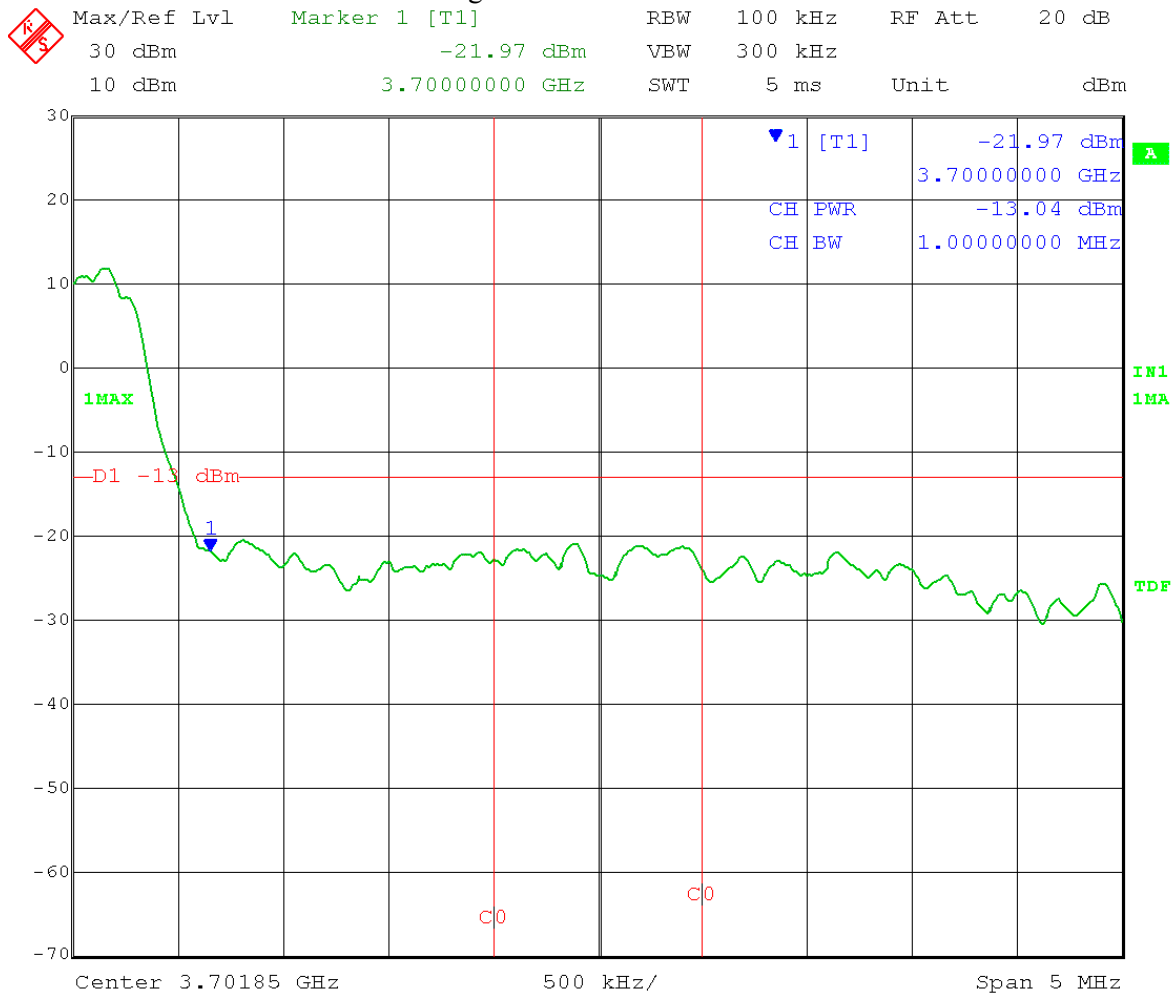
Date: 20.FEB.2014 13:37:52

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 25 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

-20 °C, 120 V

Power level at band edge = -13.04 dBm/MHz



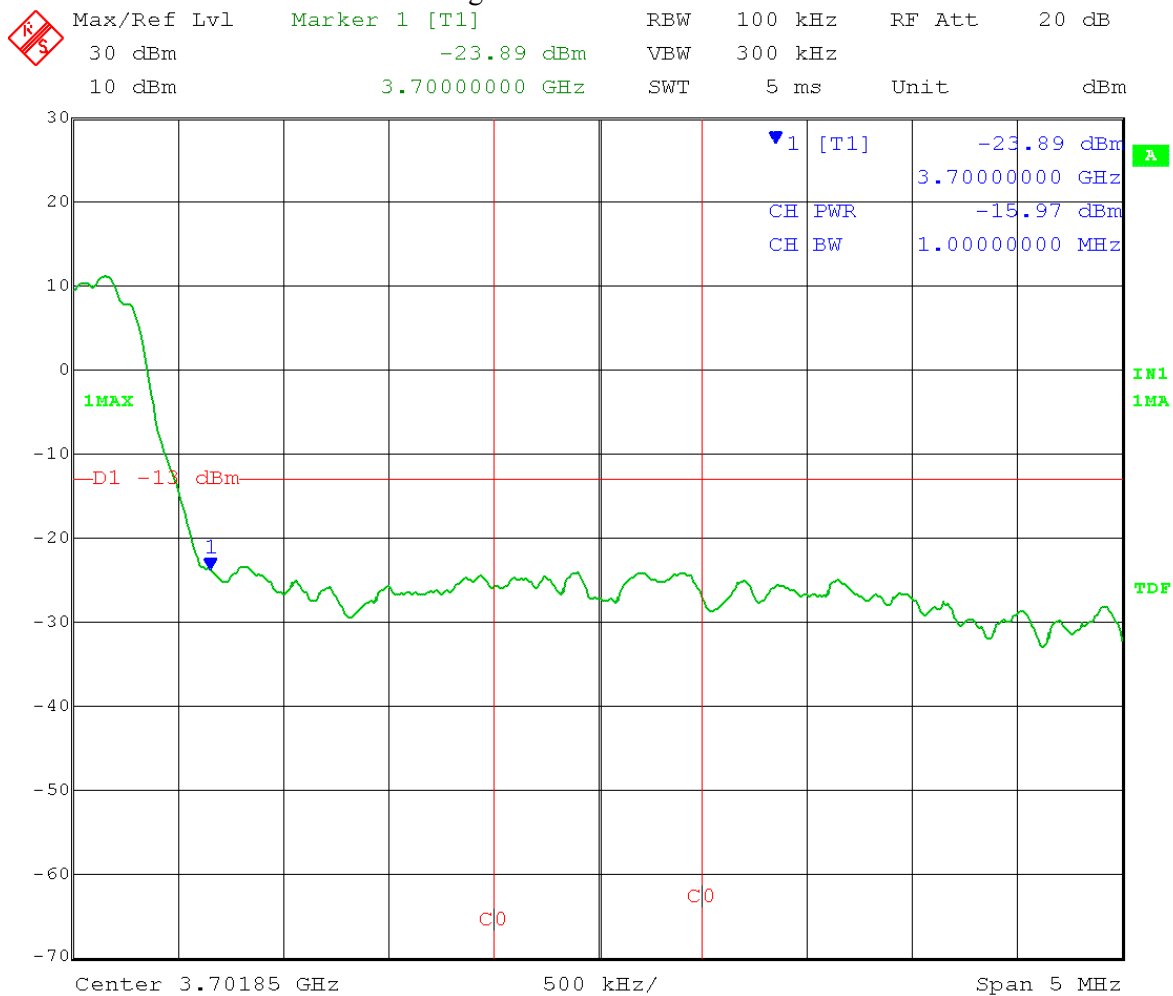
Date: 20.FEB.2014 14:38:39

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz Power setting: 24 total of both chains
Channel bandwidth: 10 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz Output port: A
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

-30 °C, 120 V

Power level at band edge = -15.97 dBm/MHz



Date: 20.FEB.2014 15:36:20

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3660 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

Lower band edge frequency = 3650 MHz

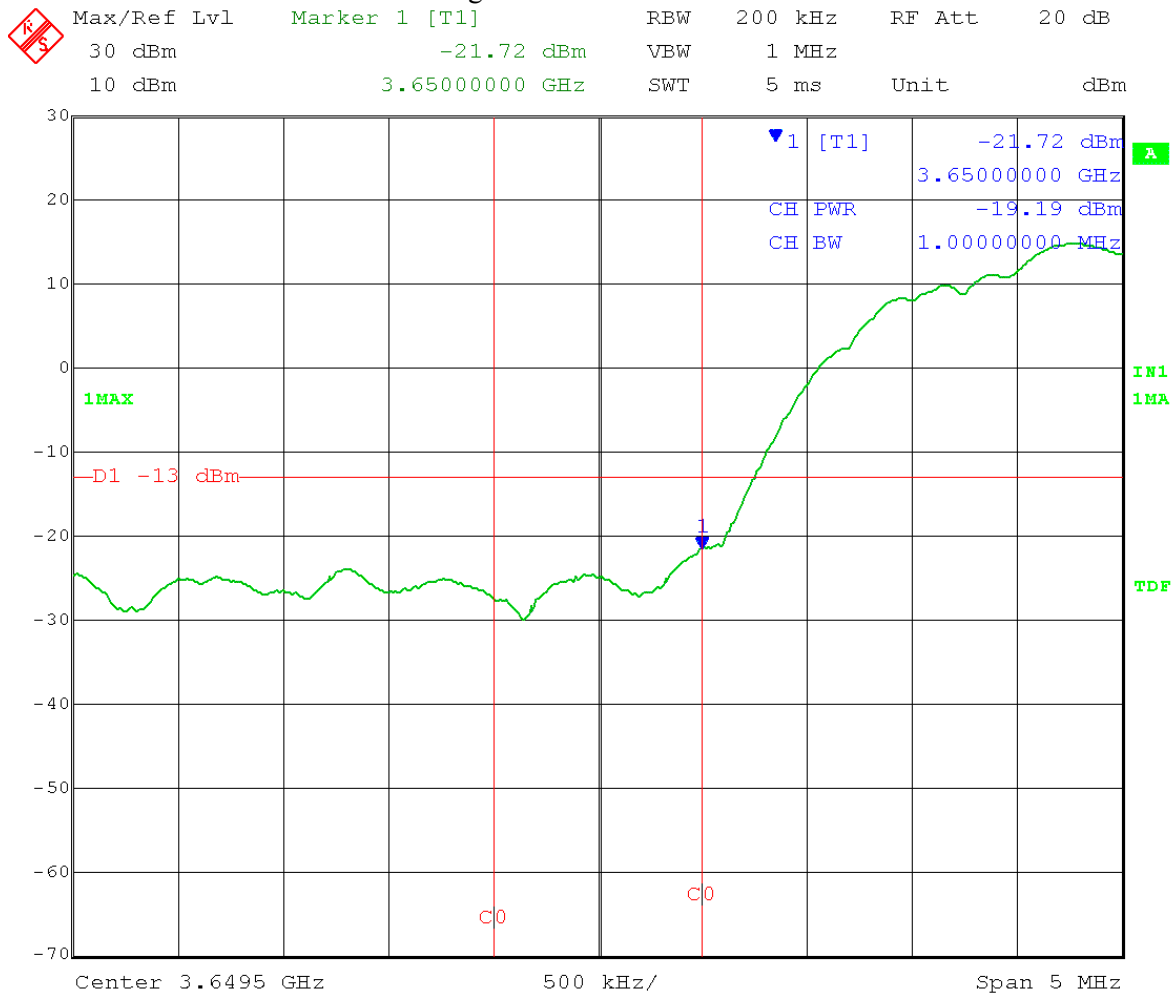
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -19.19 dBm/MHz



Date: 19.FEB.2014 13:10:43

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3660 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 17 dBi antenna gain

Lower band edge frequency = 3650 MHz

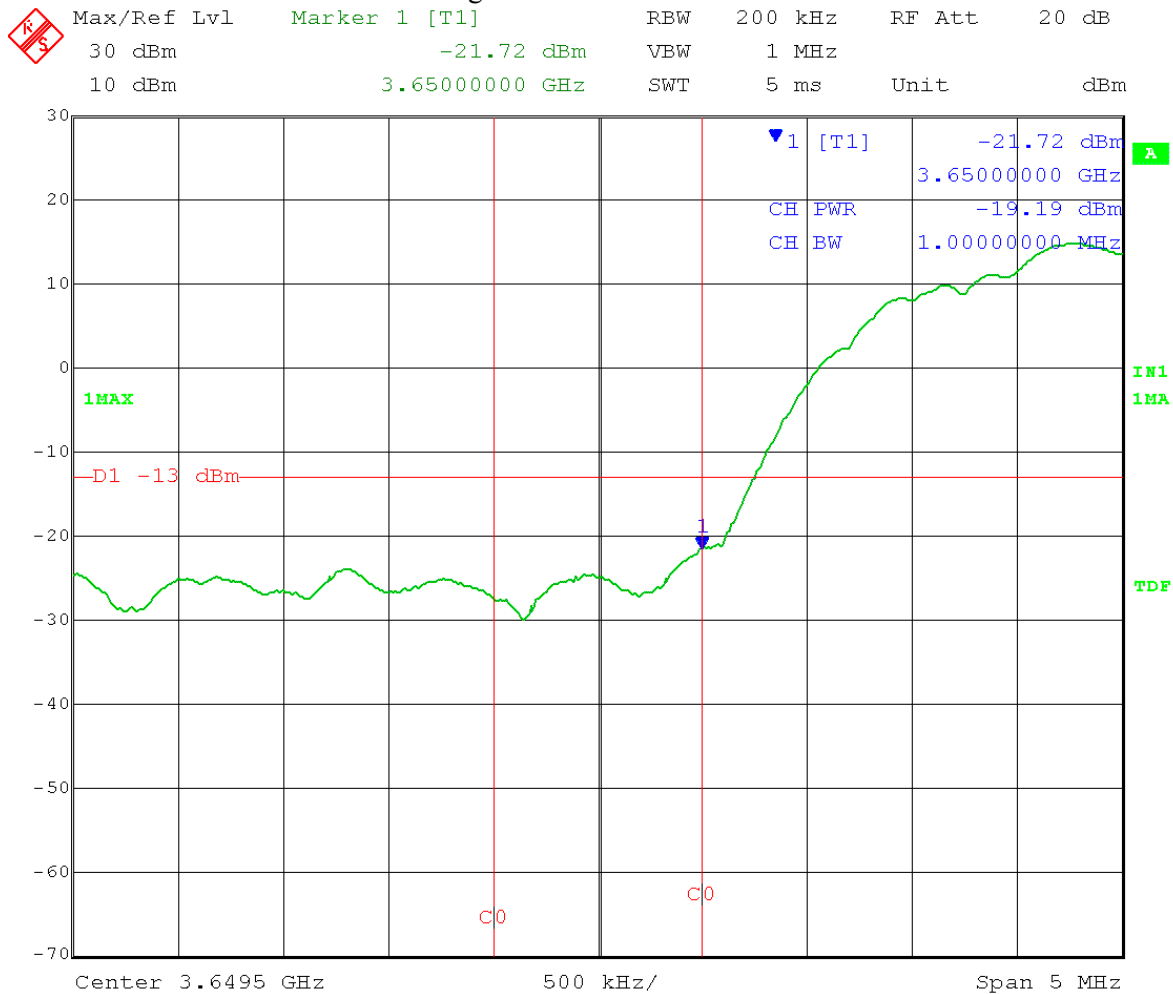
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -19.19 dBm/MHz



Date: 19.FEB.2014 13:10:43

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3660 MHz

Power setting: 22 total of both chains

Channel bandwidth: 20 MHz

for 20 dBi antenna gain

Lower band edge frequency = 3650 MHz

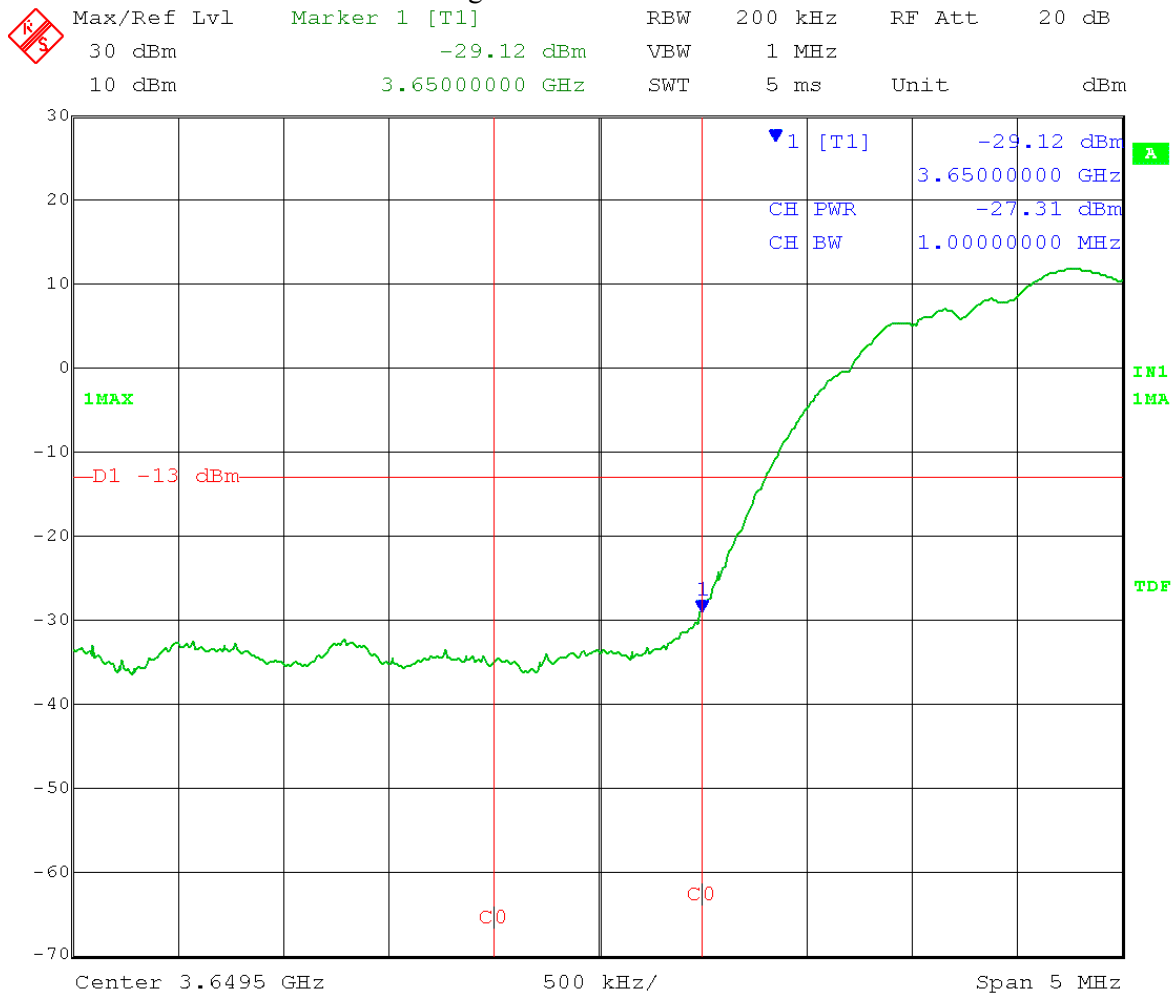
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -27.31 dBm/MHz



Date: 19.FEB.2014 13:22:19

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3660 MHz

Power setting: 19 total of both chains

Channel bandwidth: 20 MHz

for 22 dBi antenna gain

Lower band edge frequency = 3650 MHz

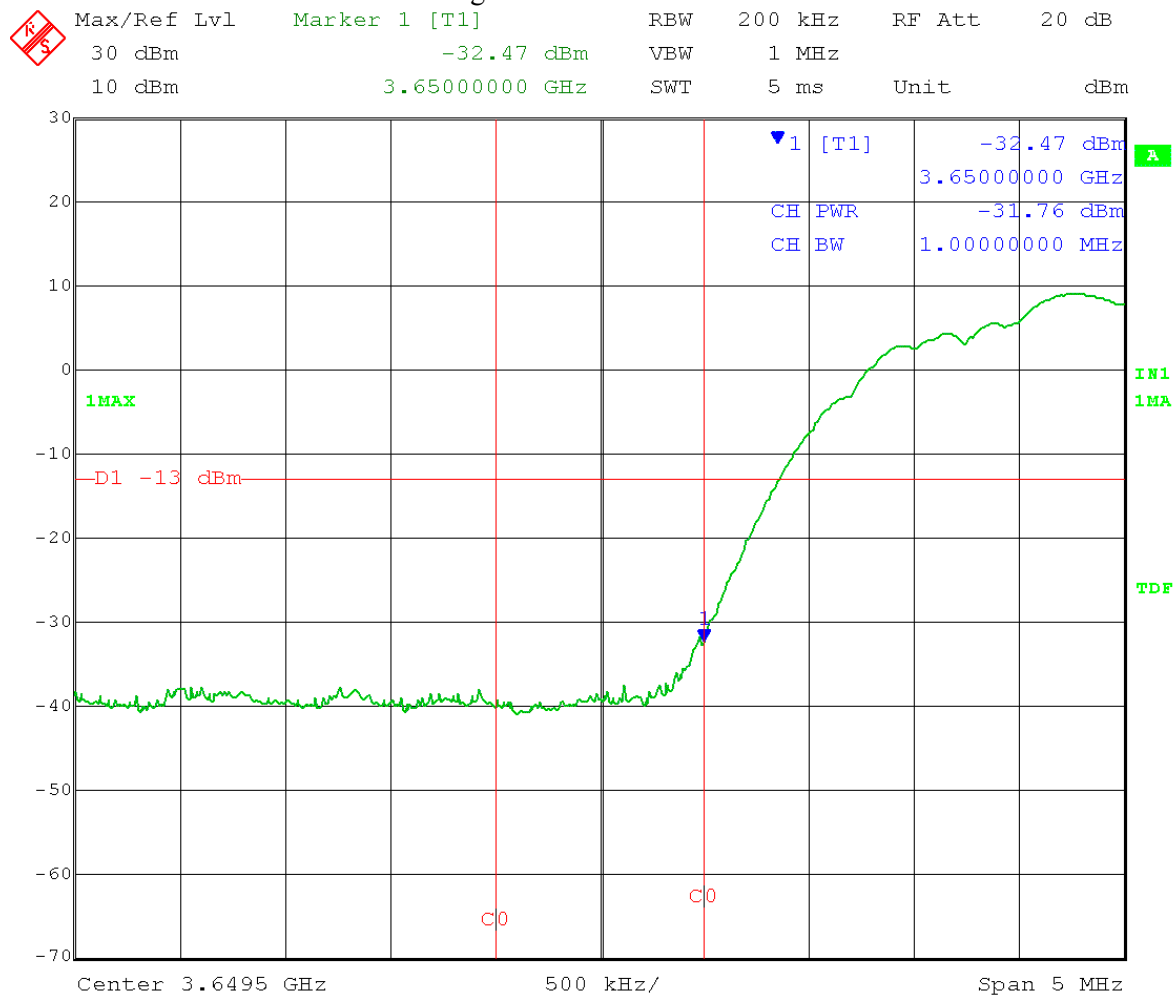
Output port: A

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -31.76 dBm/MHz



Date: 19.FEB.2014 13:24:20

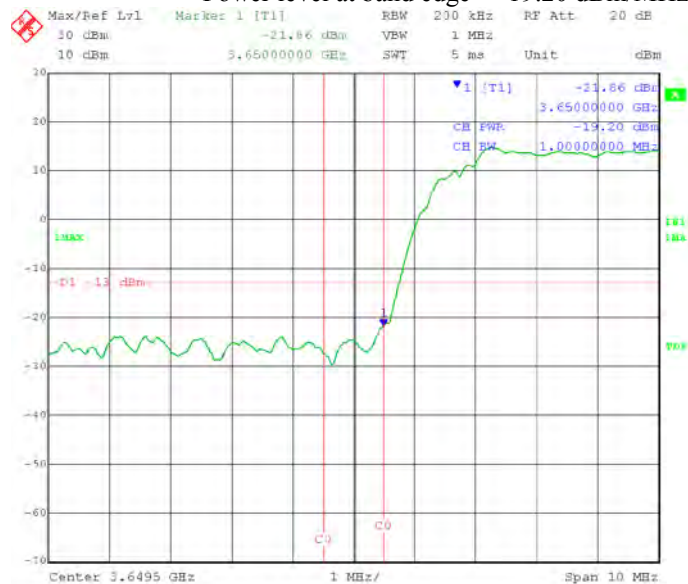
Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq 1\%$ OBW VBW $\geq 3 \times$ RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

Power setting: 25 total of both chains
for 8 dBi antenna gain

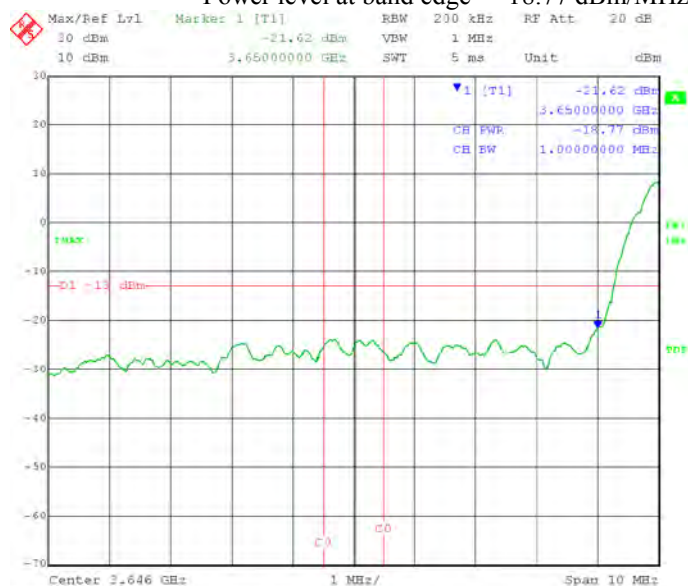
20 °C, 120 V

Power level at band edge = -19.20 dBm/MHz



Date: 19.FEB.2014 13:12:36

Power level at band edge = -18.77 dBm/MHz



Date: 19.FEB.2014 13:14:33

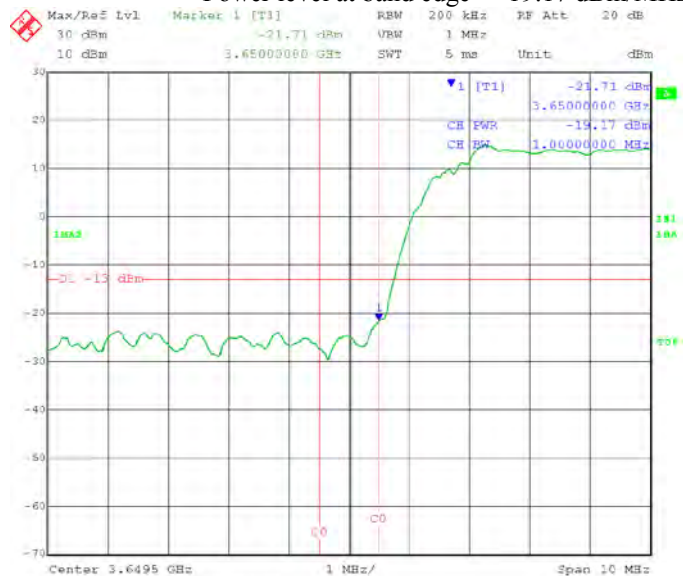
Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

Power setting: 25 total of both chains
for 8 dBi antenna gain

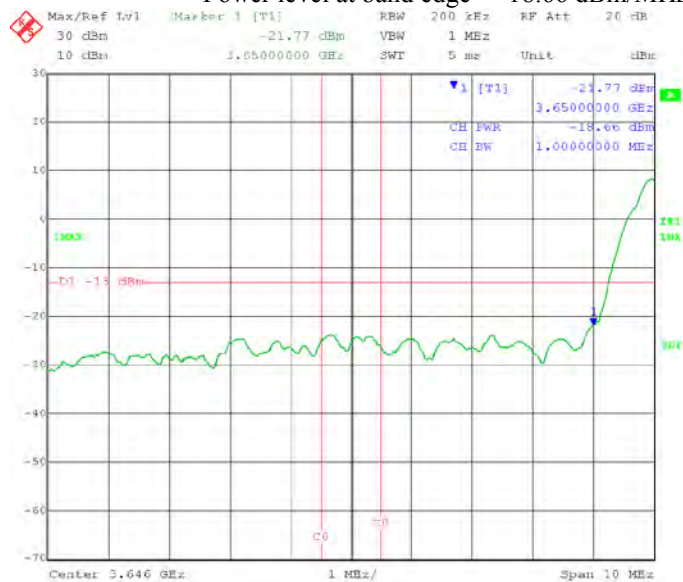
20 °C, 138 V

Power level at band edge = -19.17 dBm/MHz



Date: 19.FEB.2014 13:52:56

Power level at band edge = -18.66 dBm/MHz



Date: 19.FEB.2014 13:54:41

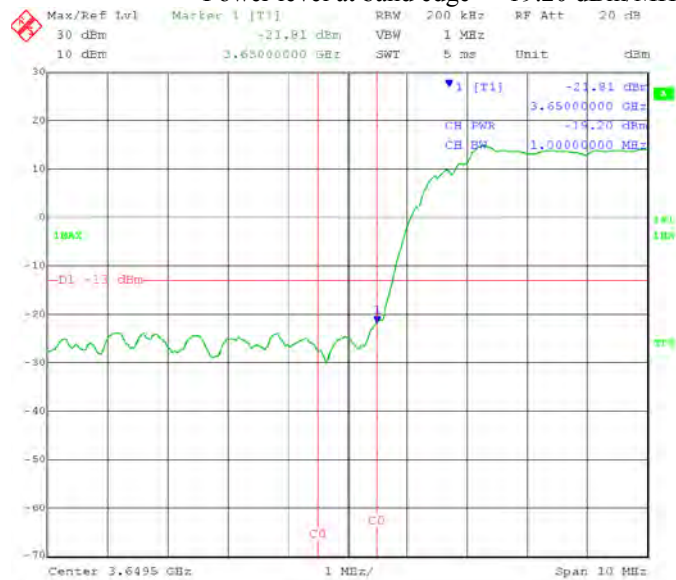
Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: 43 + 10log (P) below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

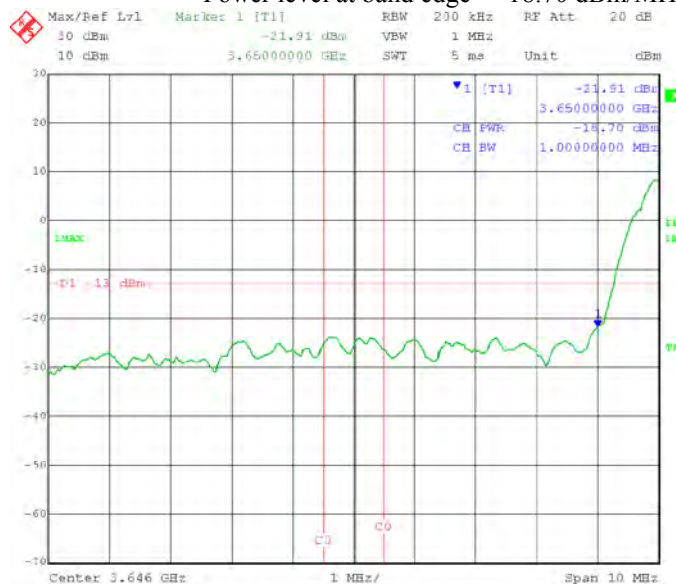
Power setting: 25 total of both chains
for 8 dBi antenna gain

20 °C, 102 V

Power level at band edge = -19.20 dBm/MHz



Power level at band edge = -18.70 dBm/MHz



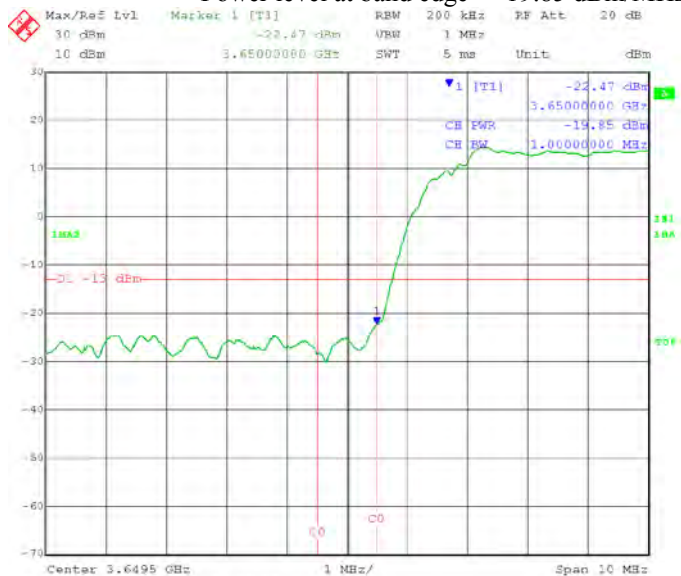
Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

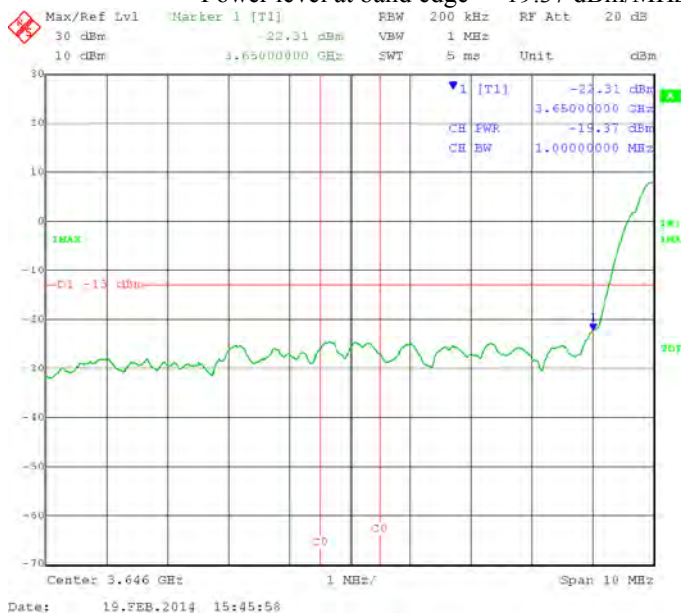
Power setting: 25 total of both chains
for 8 dBi antenna gain

30 °C, 120 V

Power level at band edge = -19.85 dBm/MHz



Power level at band edge = -19.37 dBm/MHz



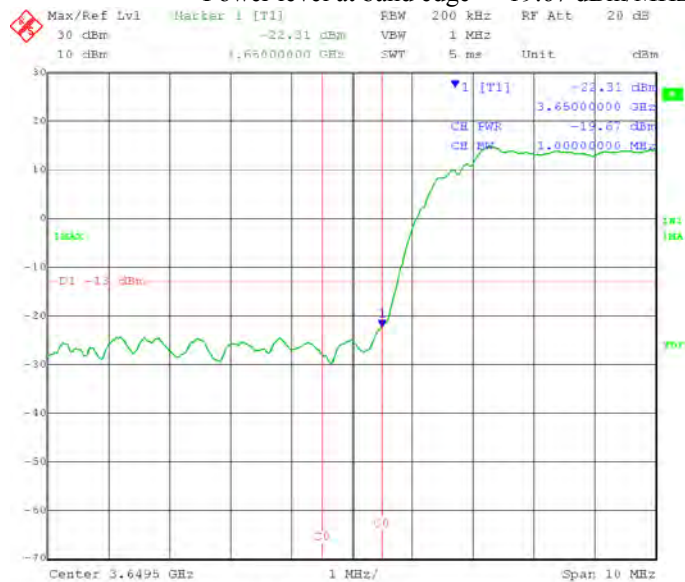
Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: 43 + 10log (P) below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

Power setting: 25 total of both chains
for 8 dBi antenna gain

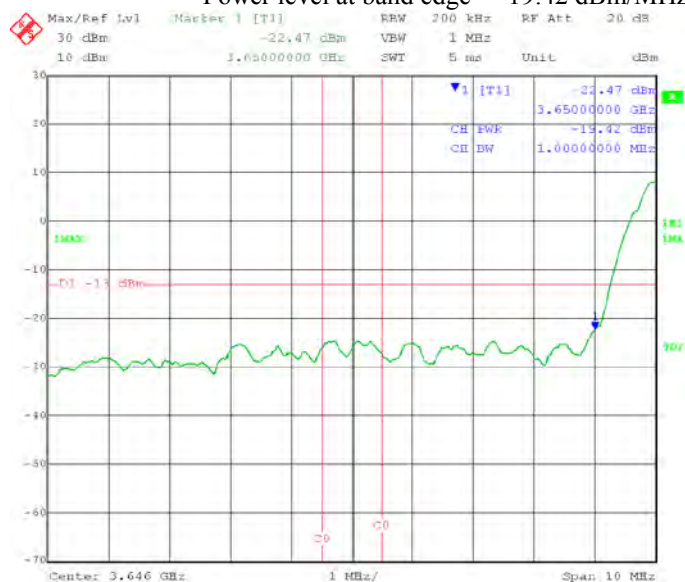
40 °C, 120 V

Power level at band edge = -19.67 dBm/MHz



Date: 20.FEB.2014 08:36:16

Power level at band edge = -19.42 dBm/MHz



Date: 20.FEB.2014 08:37:55

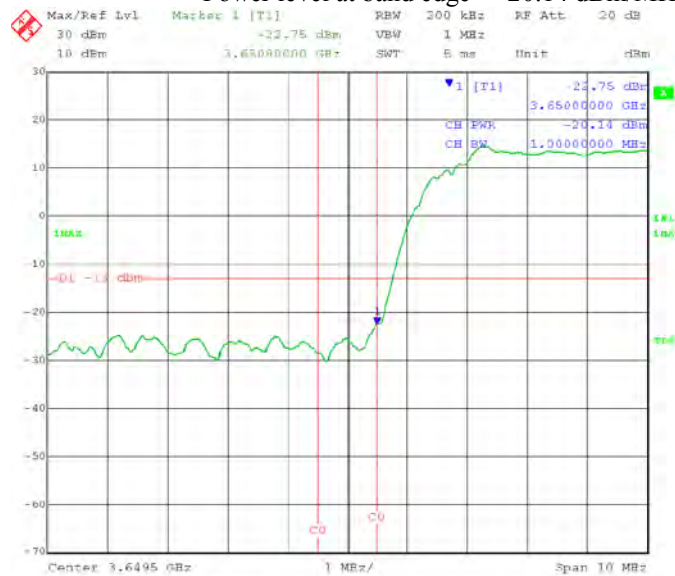
Test Date: 02-20-2014
 Company: Cambium Networks
 EUT: PMP450SM 3.65 GHz, Model C036045C008A
 Test: Lower Band-Edge Measurements - Conducted
 Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
 Detector = Peak Sweep = auto couple
 Trace = max hold
 Low Channel: Transmit = 3660 MHz
 Channel bandwidth: 20 MHz
 Lower band edge frequency = 3650 MHz
 Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 Measured power at band edge is integrated over a 1 MHz bandwidth

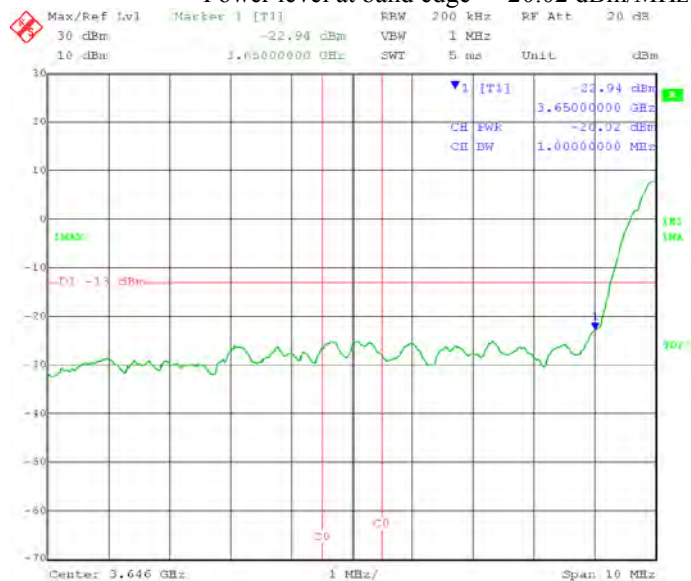
Power setting: 25 total of both chains
 for 8 dBi antenna gain

50 °C, 120 V

Power level at band edge = -20.14 dBm/MHz



Date: 20.FEB.2014 09:42:44
 Power level at band edge = -20.02 dBm/MHz



Date: 20.FEB.2014 09:44:20

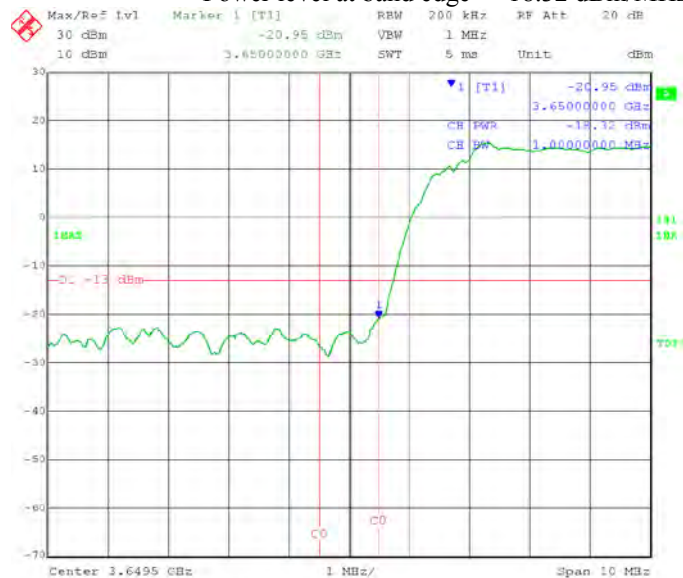
Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

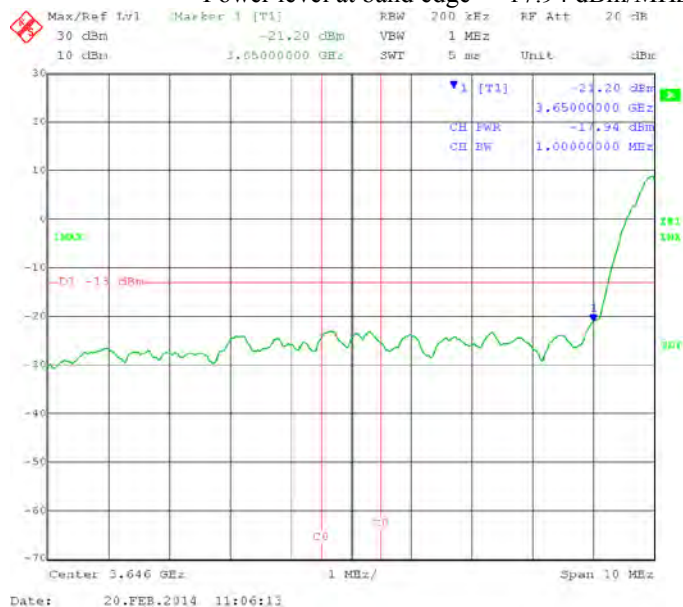
Power setting: 25 total of both chains
for 8 dBi antenna gain

10 °C, 120 V

Power level at band edge = -18.32 dBm/MHz



Power level at band edge = -17.94 dBm/MHz



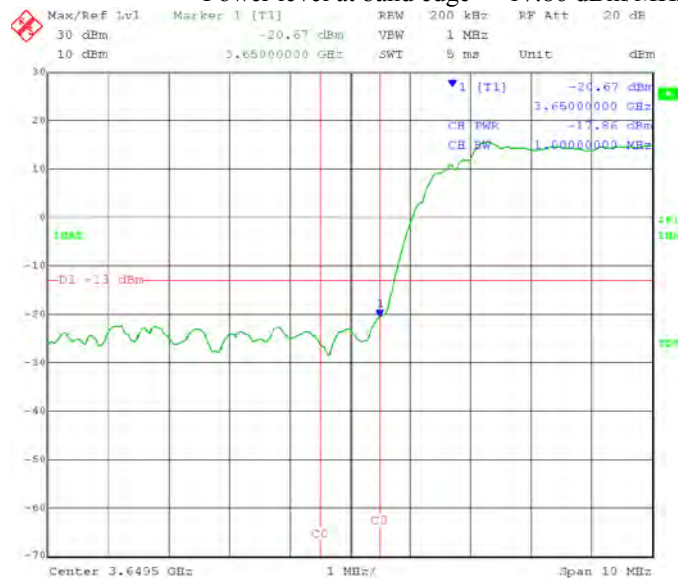
Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: 43 + 10log (P) below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

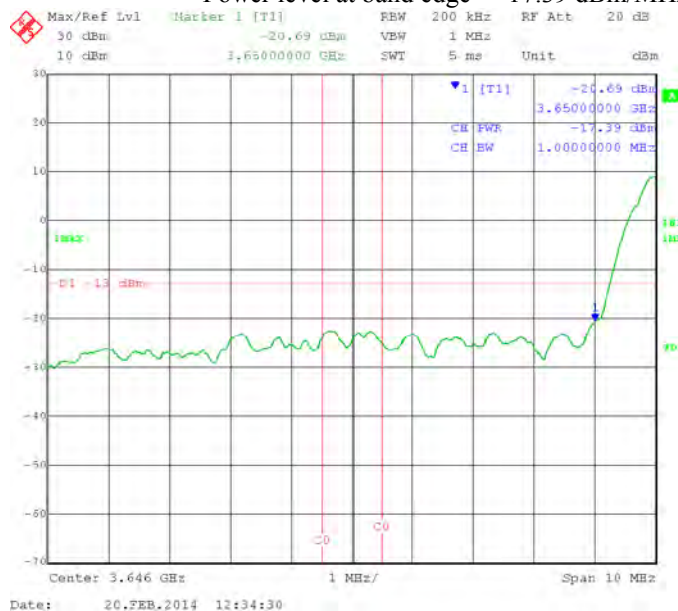
Power setting: 25 total of both chains
for 8 dBi antenna gain

0 °C, 120 V

Power level at band edge = -17.86 dBm/MHz



Power level at band edge = -17.39 dBm/MHz



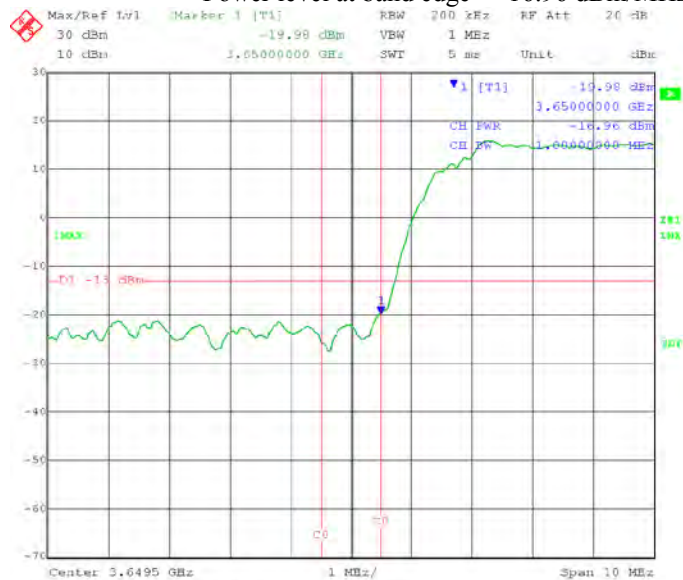
Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: 43 + 10log (P) below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

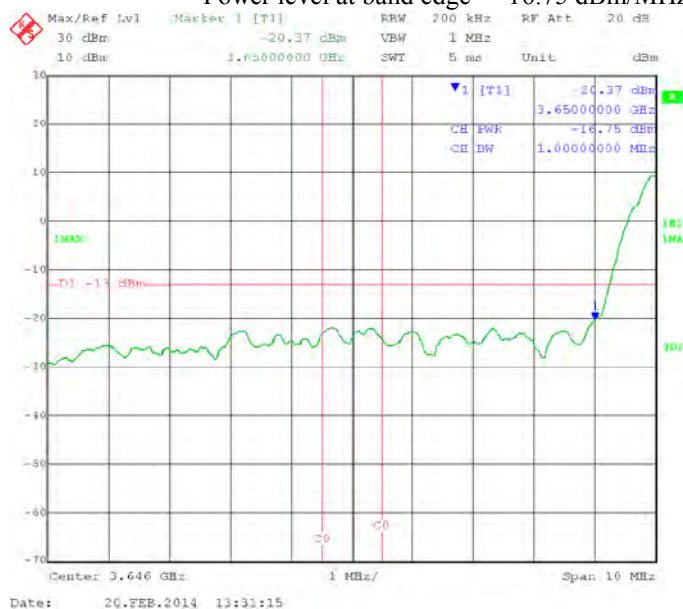
Power setting: 25 total of both chains
for 8 dBi antenna gain

-10 °C, 120 V

Power level at band edge = -16.96 dBm/MHz



Power level at band edge = -16.75 dBm/MHz



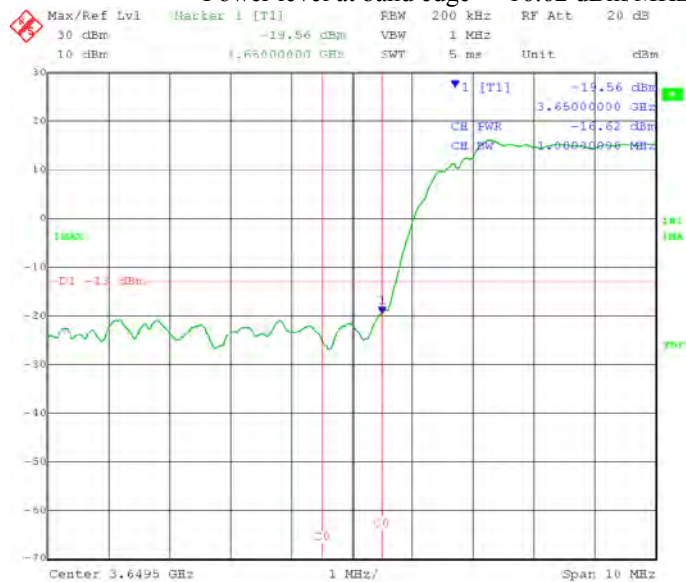
Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

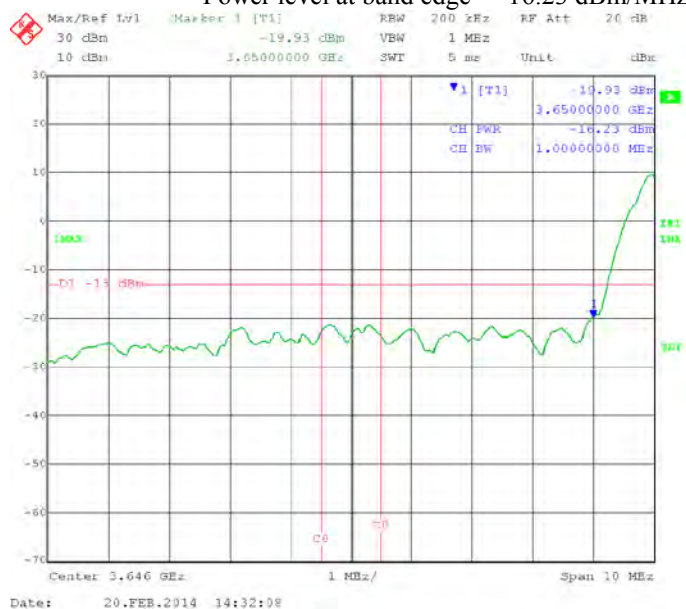
Power setting: 25 total of both chains
for 8 dBi antenna gain

-20 °C, 120 V

Power level at band edge = -16.62 dBm/MHz



Power level at band edge = -16.23 dBm/MHz



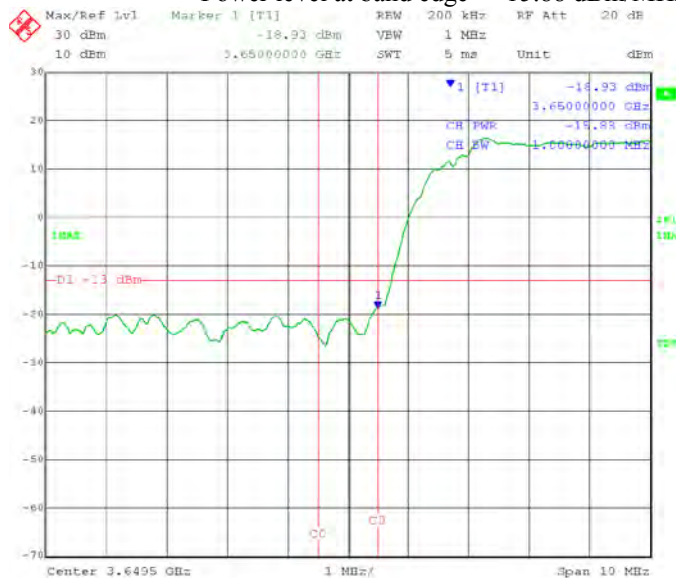
Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Channel bandwidth: 20 MHz
Lower band edge frequency = 3650 MHz
Limit: 43 + 10log (P) below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

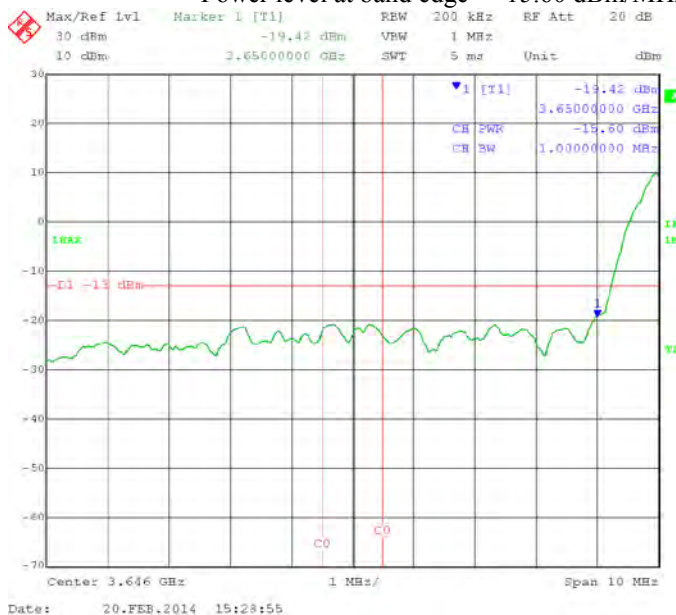
Power setting: 25 total of both chains
for 8 dBi antenna gain

-30 °C, 120 V

Power level at band edge = -15.88 dBm/MHz



Power level at band edge = -15.60 dBm/MHz



Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

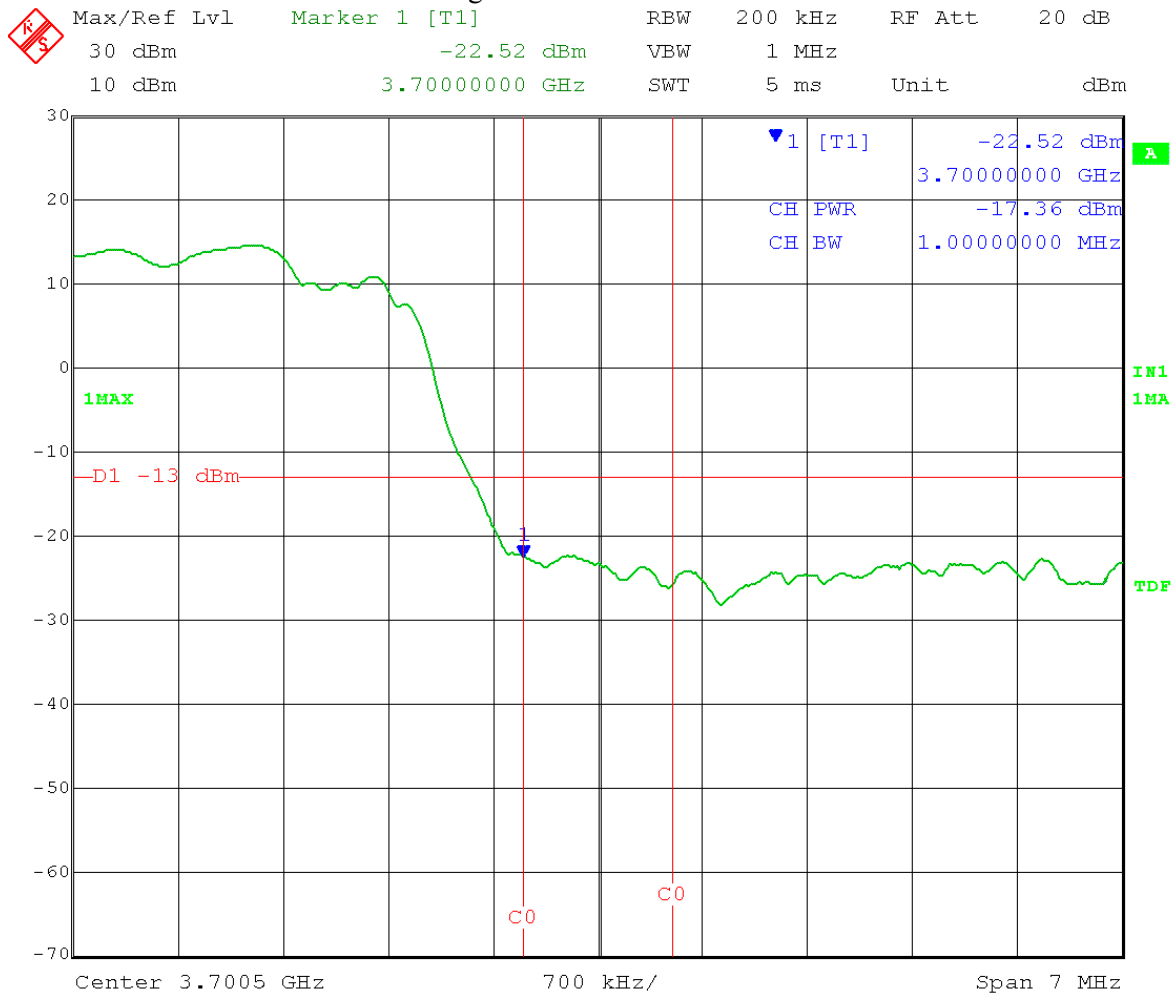
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -17.36 dBm/MHz



Date: 19.FEB.2014 13:30:31

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 17 dBi antenna gain

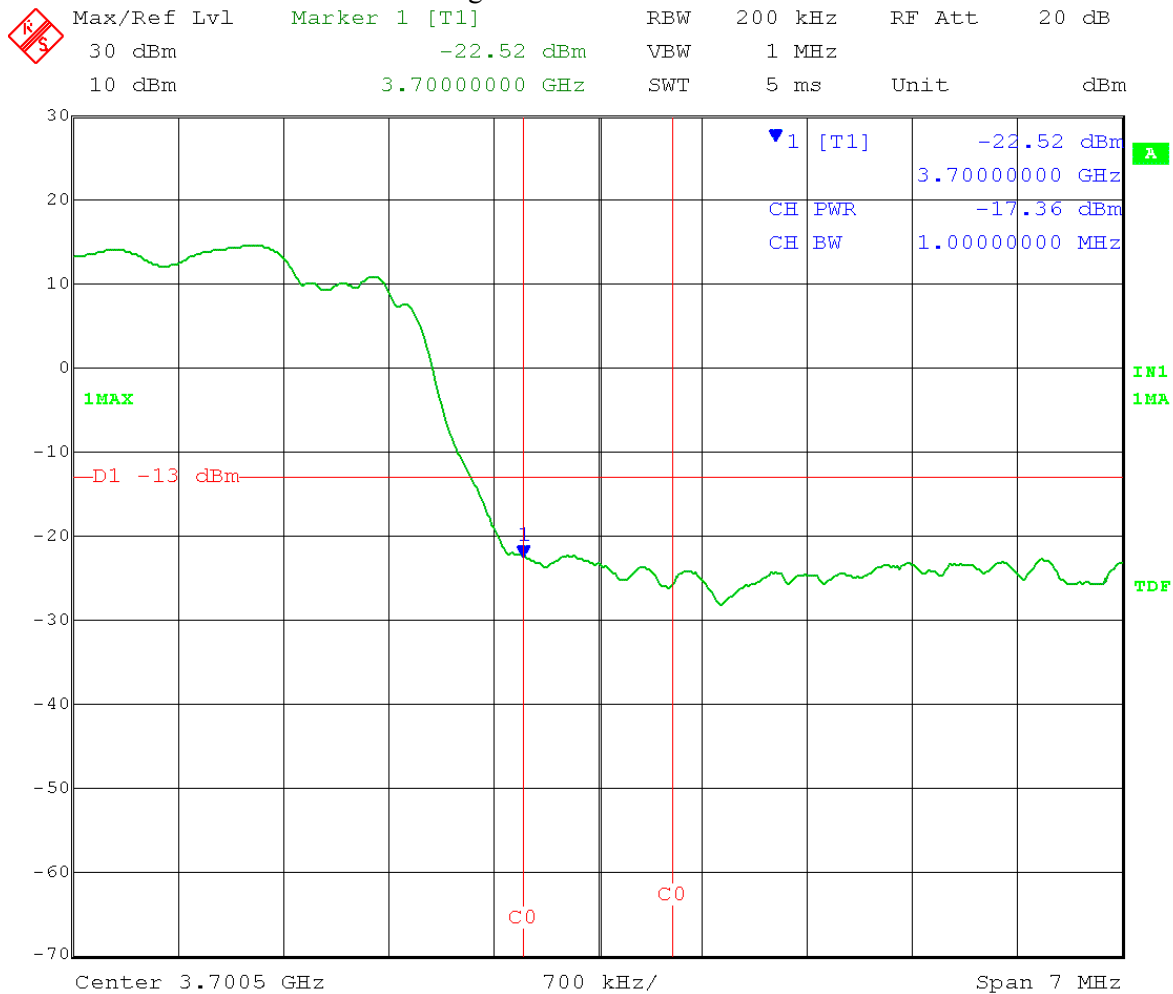
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -17.36 dBm/MHz



Date: 19.FEB.2014 13:30:31

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 22 total of both chains

Channel bandwidth: 20 MHz

for 20 dBi antenna gain

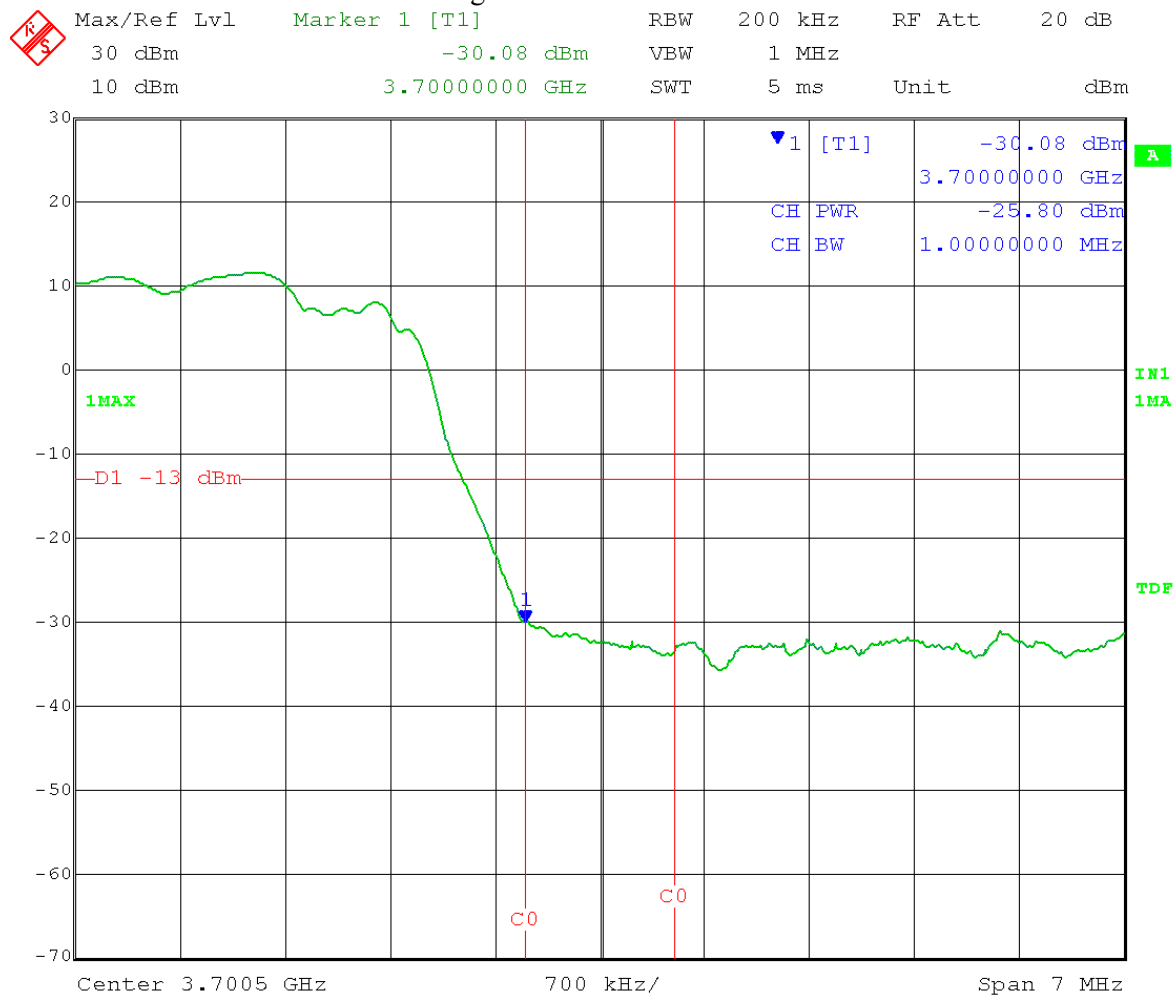
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -25.80 dBm/MHz



Date: 19.FEB.2014 13:44:50

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Lower Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 19 total of both chains

Channel bandwidth: 20 MHz

for 22 dBi antenna gain

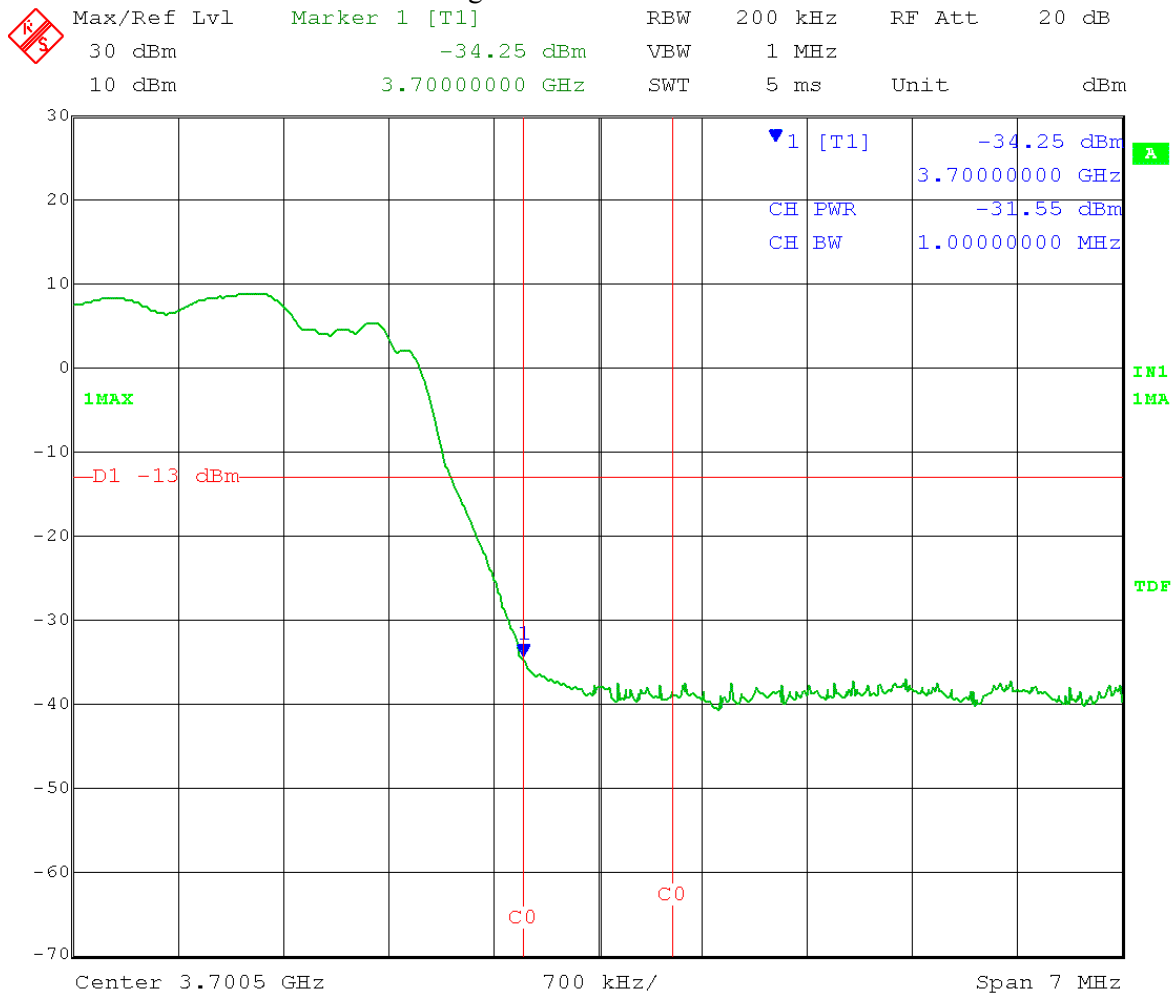
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -31.55 dBm/MHz



Date: 19.FEB.2014 13:46:54

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

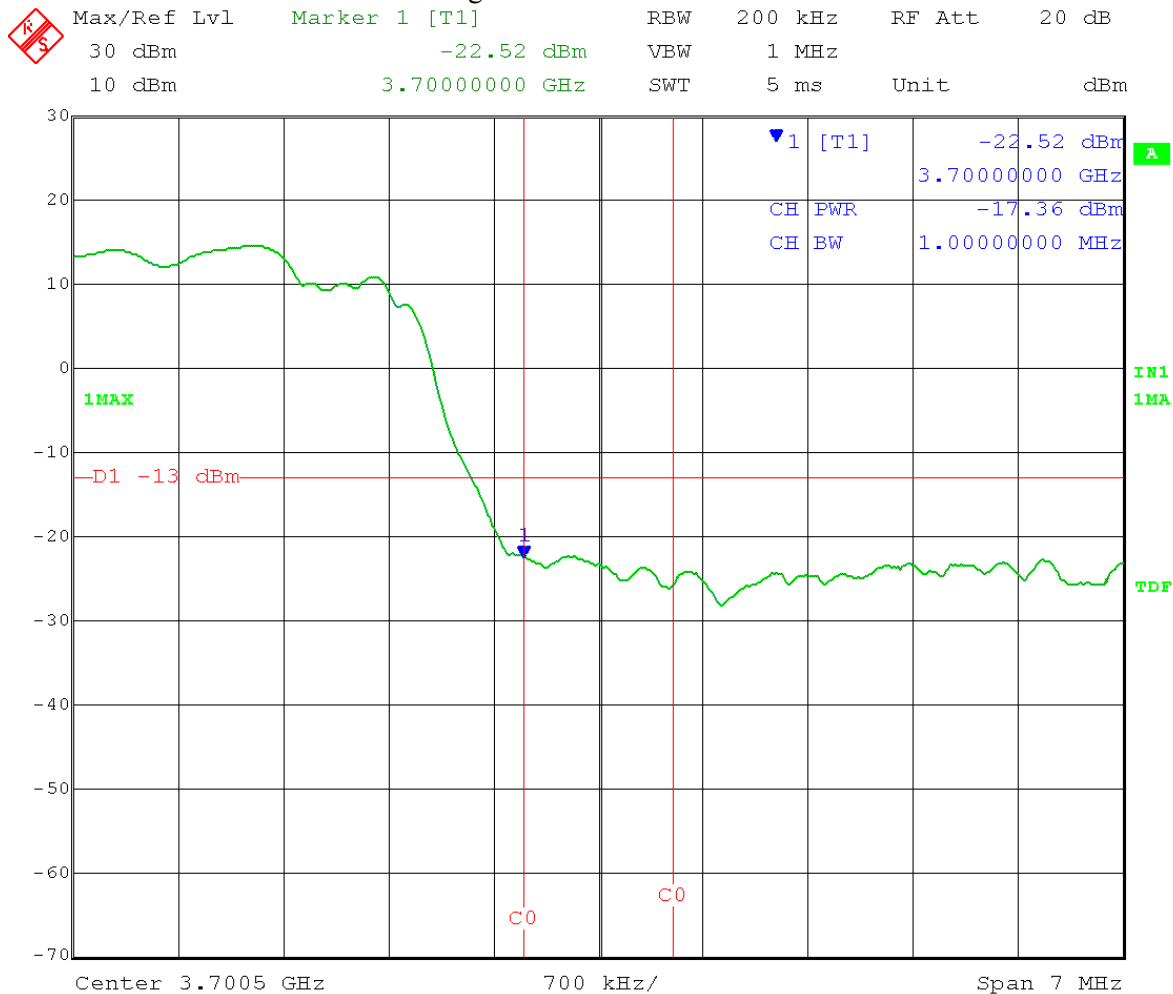
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 120 V

Power level at band edge = -17.36 dBm/MHz



Date: 19.FEB.2014 13:30:31

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

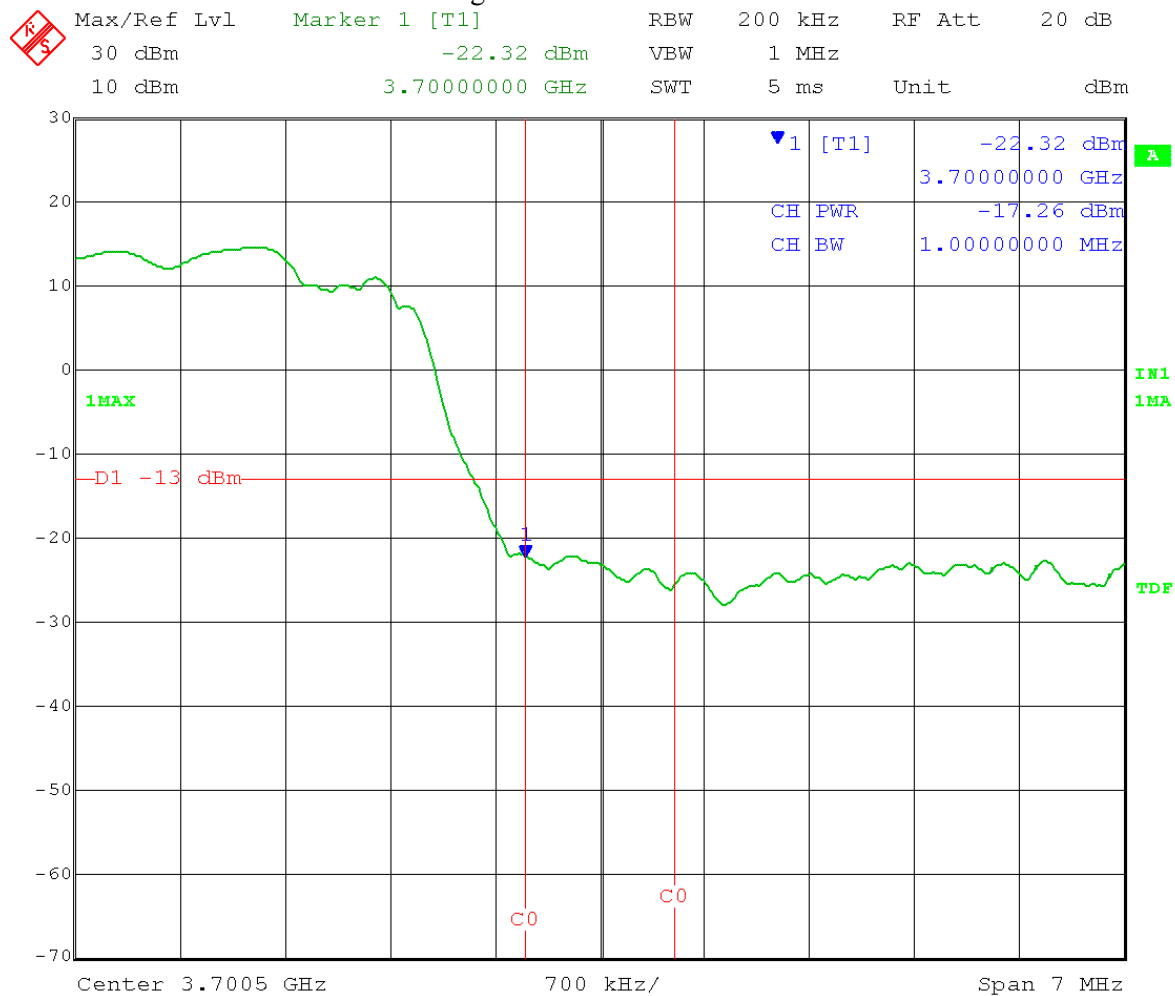
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 138 V

Power level at band edge = -17.26 dBm/MHz



Date: 19.FEB.2014 14:04:18

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

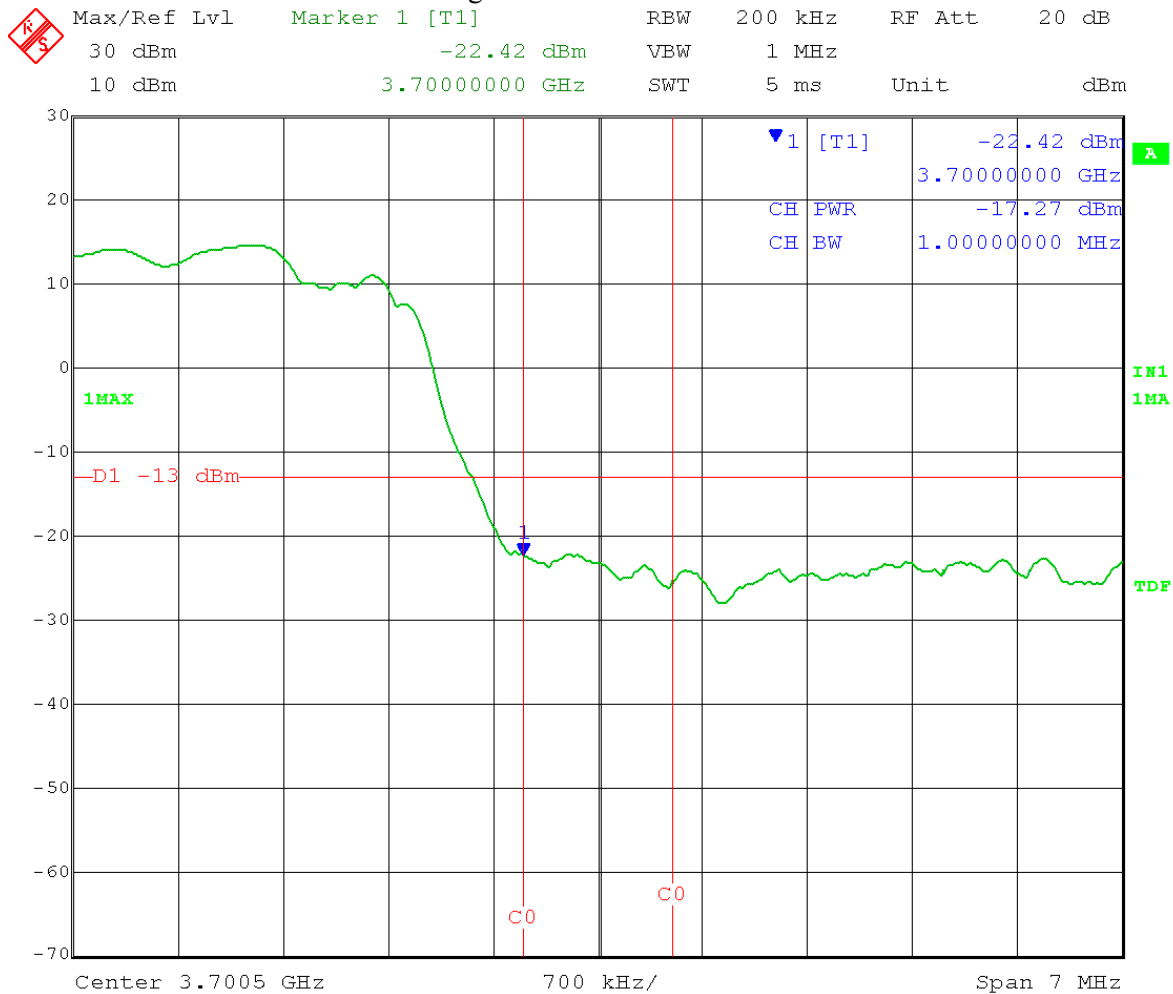
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

20 °C, 102 V

Power level at band edge = -17.27 dBm/MHz



Date: 19.FEB.2014 14:06:34

Test Date: 02-19-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

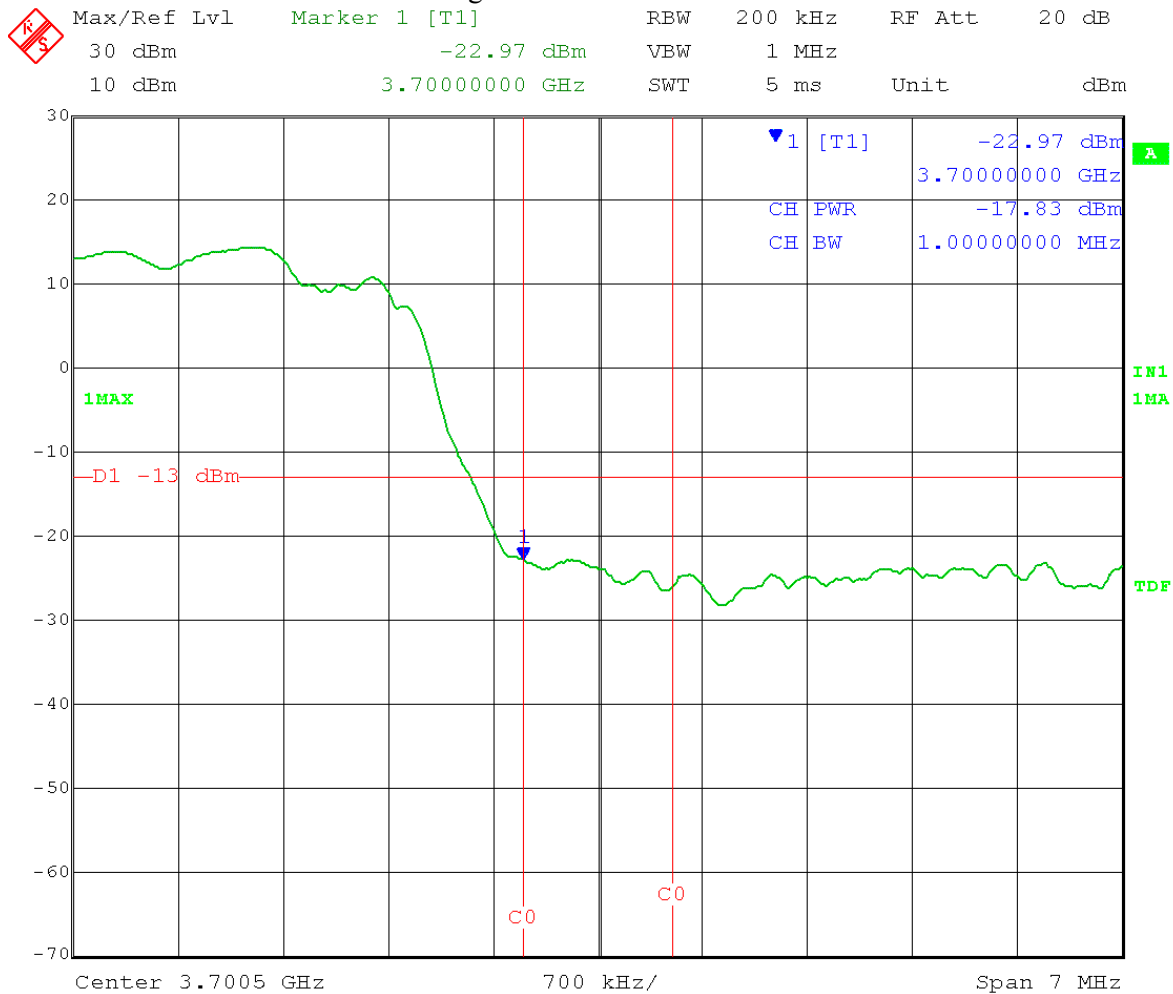
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

30 °C, 120 V

Power level at band edge = -17.83 dBm/MHz



Date: 19.FEB.2014 15:40:56

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

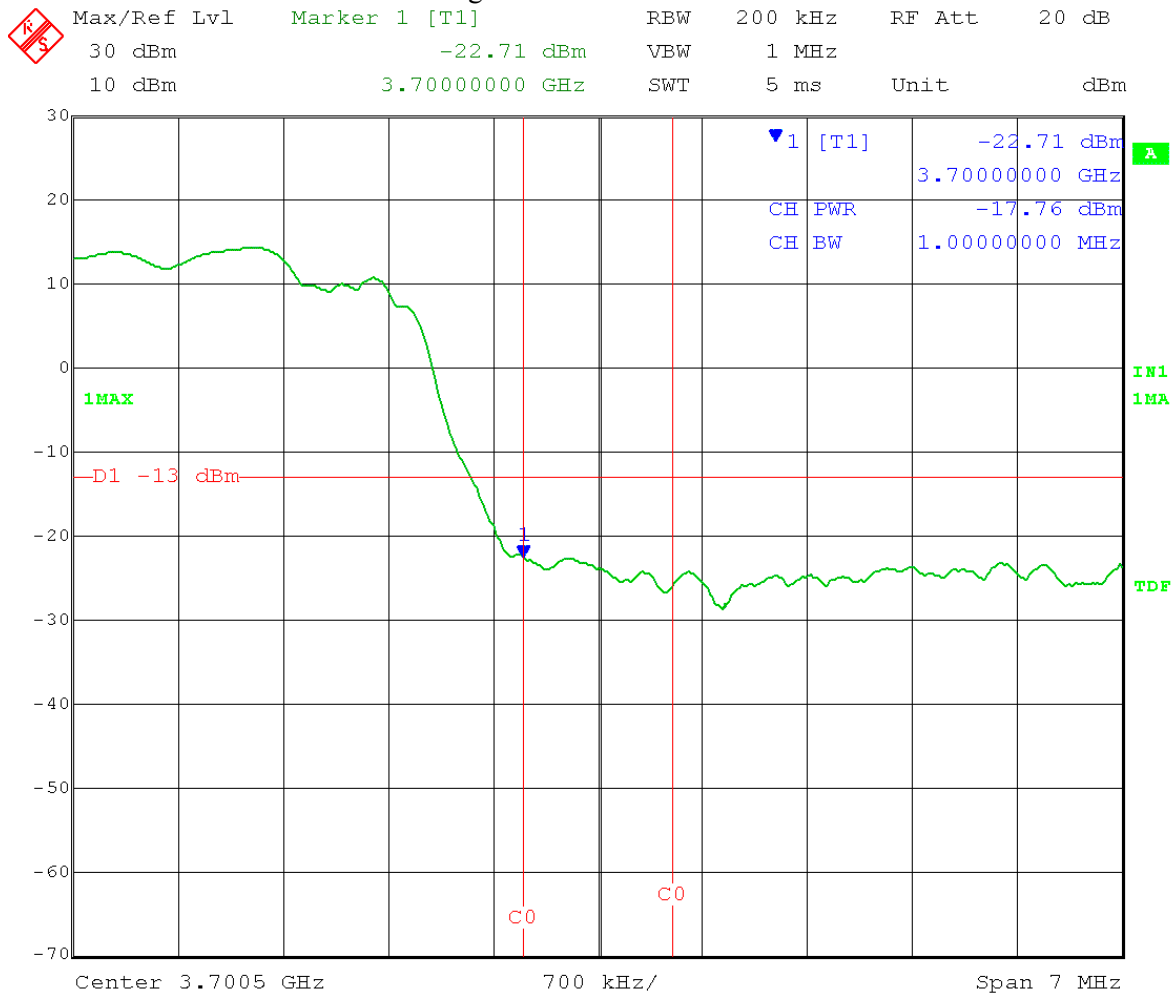
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

40 °C, 120 V

Power level at band edge = -17.76 dBm/MHz



Date: 20.FEB.2014 08:41:34

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

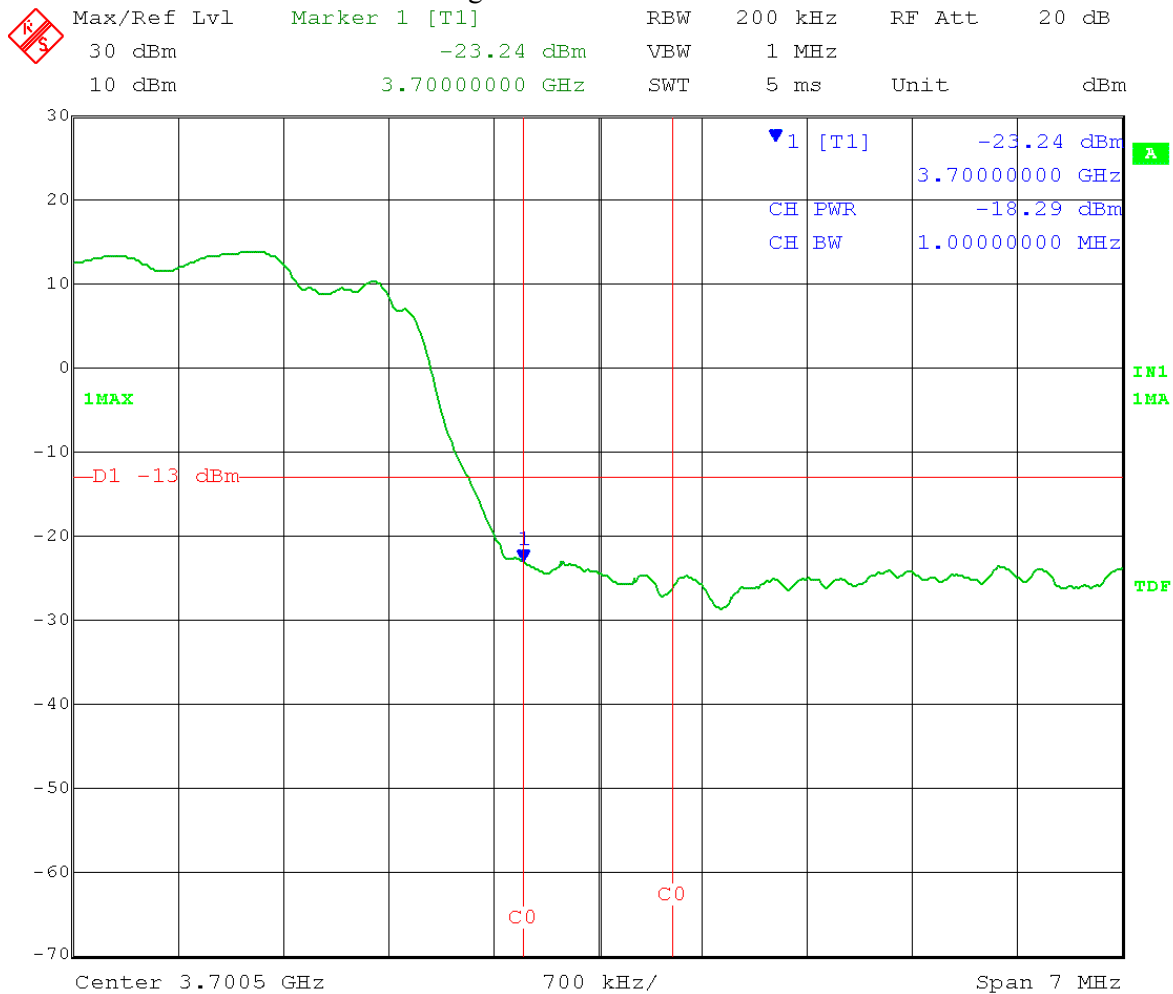
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

50 °C, 120 V

Power level at band edge = -18.29 dBm/MHz



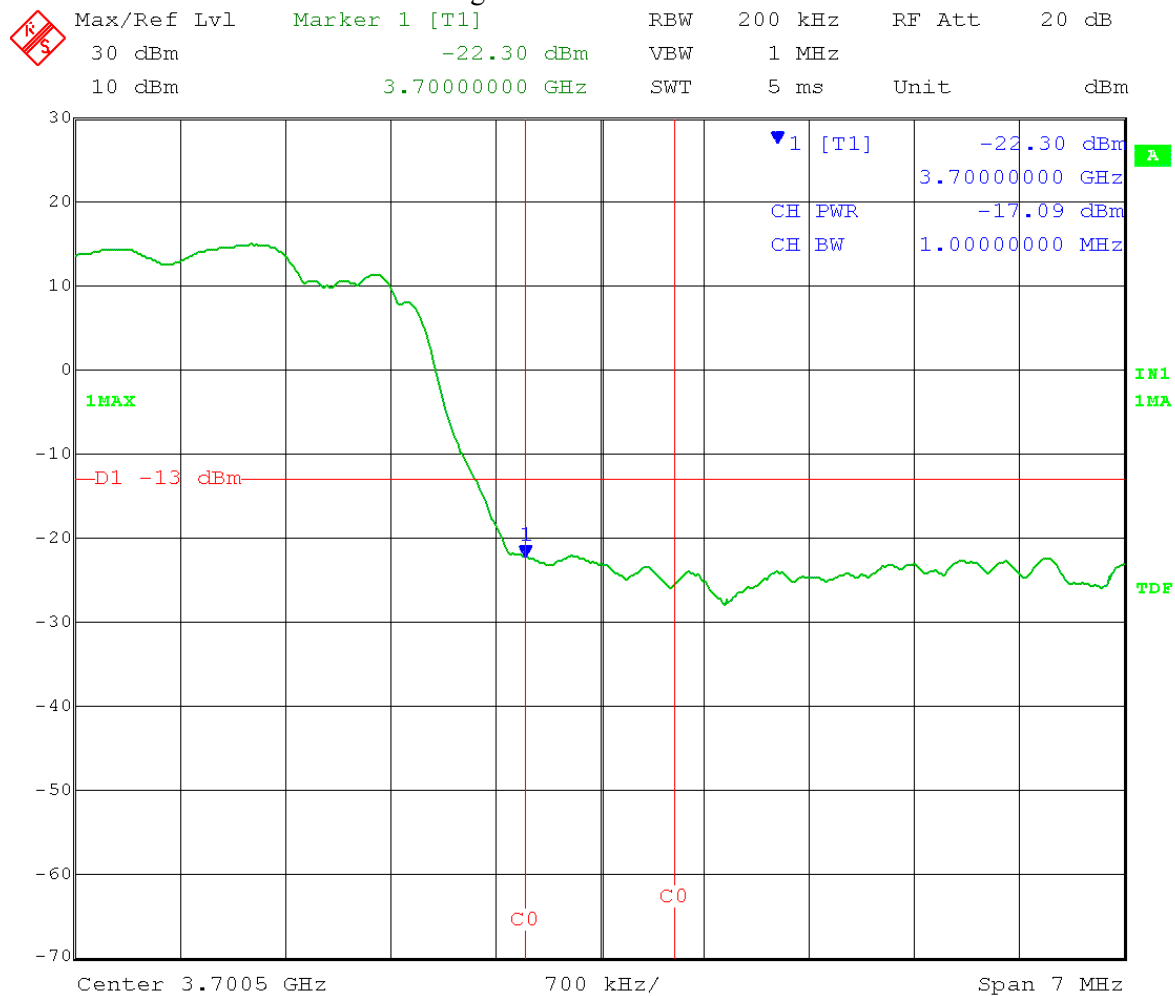
Date: 20.FEB.2014 09:47:46

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: RBW $\geq$ 1% OBW VBW $\geq$ 3 x RBW
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3690 MHz Power setting: 25 total of both chains
Channel bandwidth: 20 MHz for 8 dBi antenna gain
Upper band edge frequency = 3700 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
Measured power at band edge is integrated over a 1 MHz bandwidth

10 °C, 120 V

Power level at band edge = -17.09 dBm/MHz



Date: 20.FEB.2014 11:09:59

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

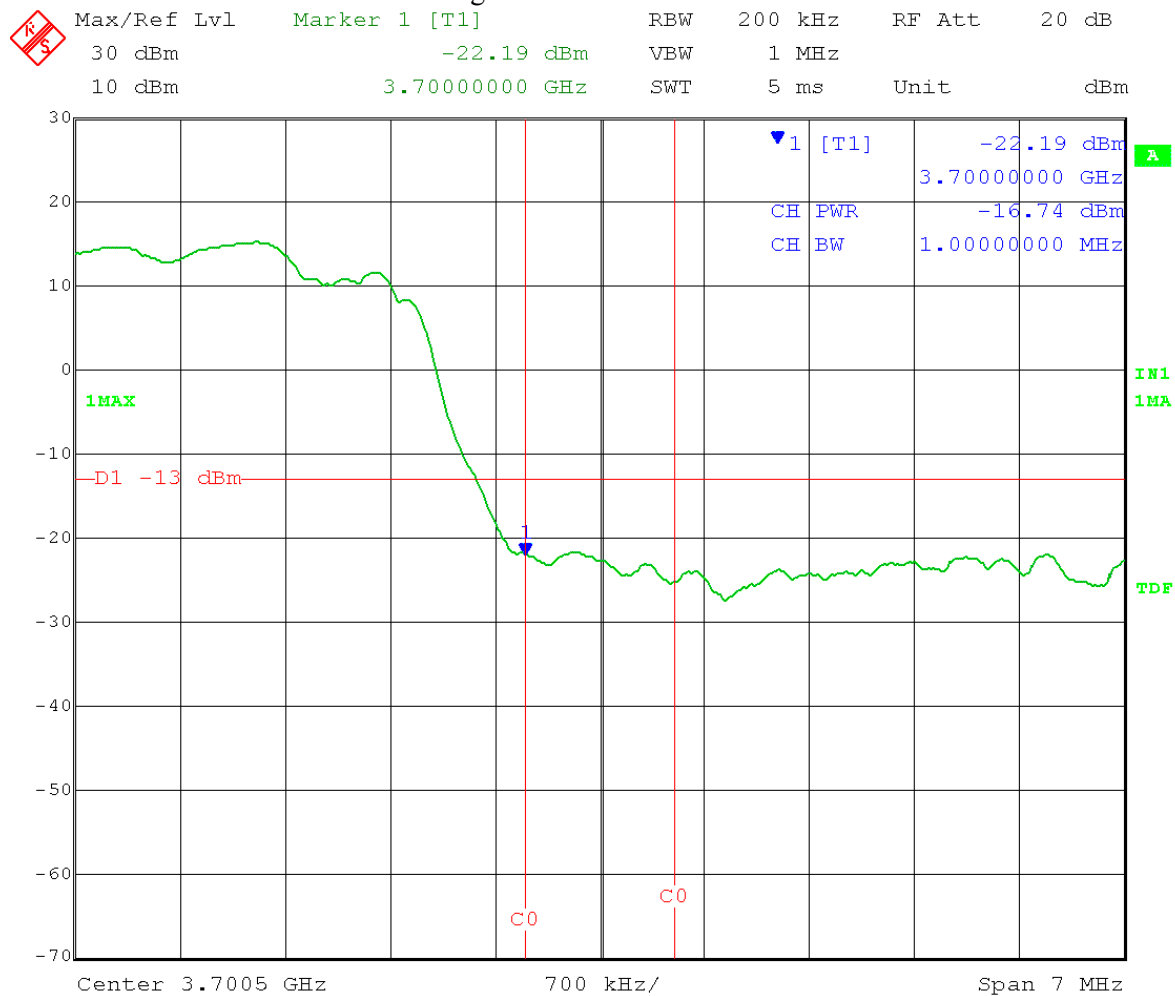
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

0 °C, 120 V

Power level at band edge = -16.74 dBm/MHz



Date: 20.FEB.2014 12:37:56

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% \text{ OBW}$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

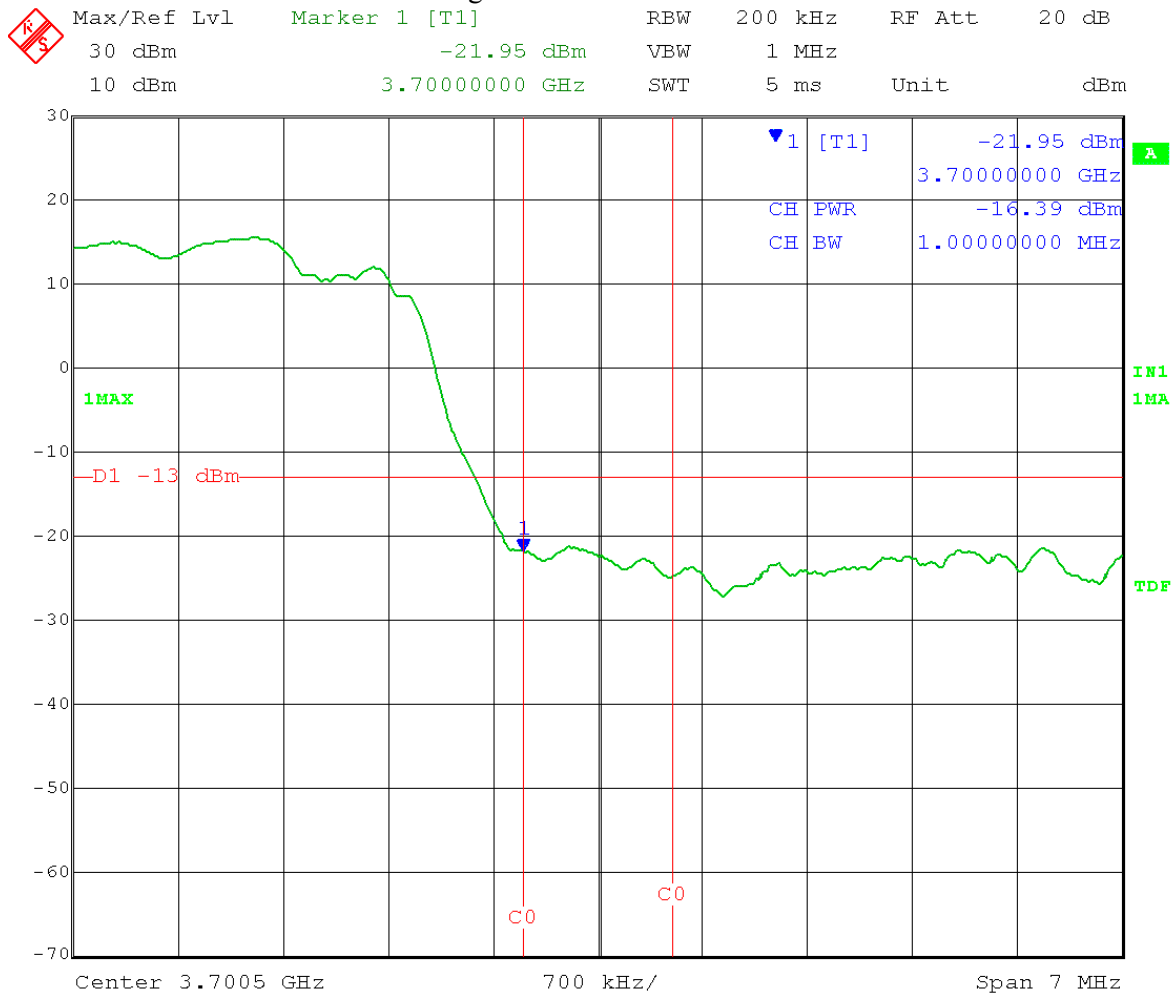
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

-10 °C, 120 V

Power level at band edge = -16.39 dBm/MHz



Date: 20.FEB.2014 13:34:00

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

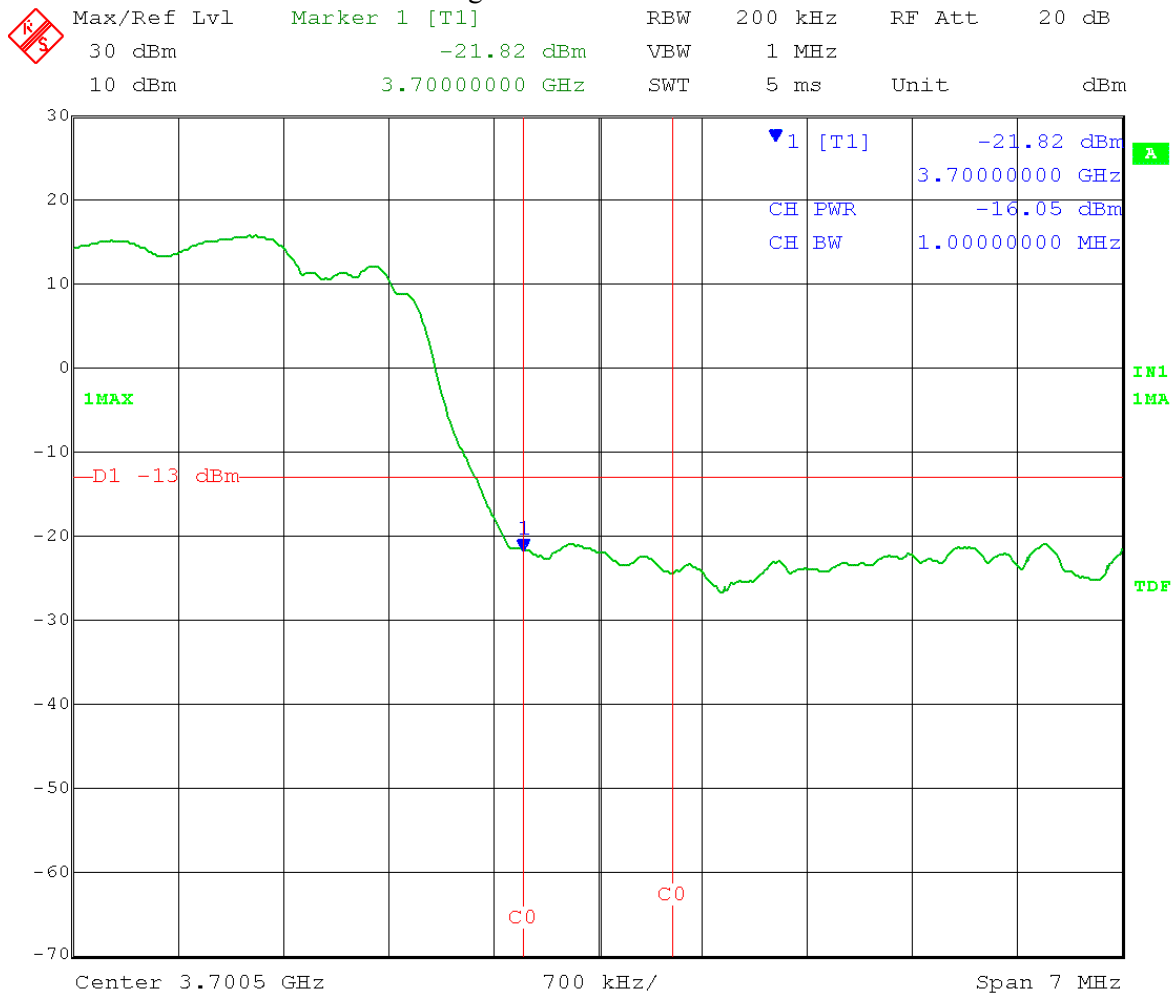
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

-20 °C, 120 V

Power level at band edge = -16.05 dBm/MHz



Date: 20.FEB.2014 14:34:59

Test Date: 02-20-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A
Test: Upper Band-Edge Measurements - Conducted
Operator: Craig B

Comment: $RBW \geq 1\% OBW$ $VBW \geq 3 \times RBW$
Detector = Peak Sweep = auto couple
Trace = max hold

High Channel: Transmit = 3690 MHz

Power setting: 25 total of both chains

Channel bandwidth: 20 MHz

for 8 dBi antenna gain

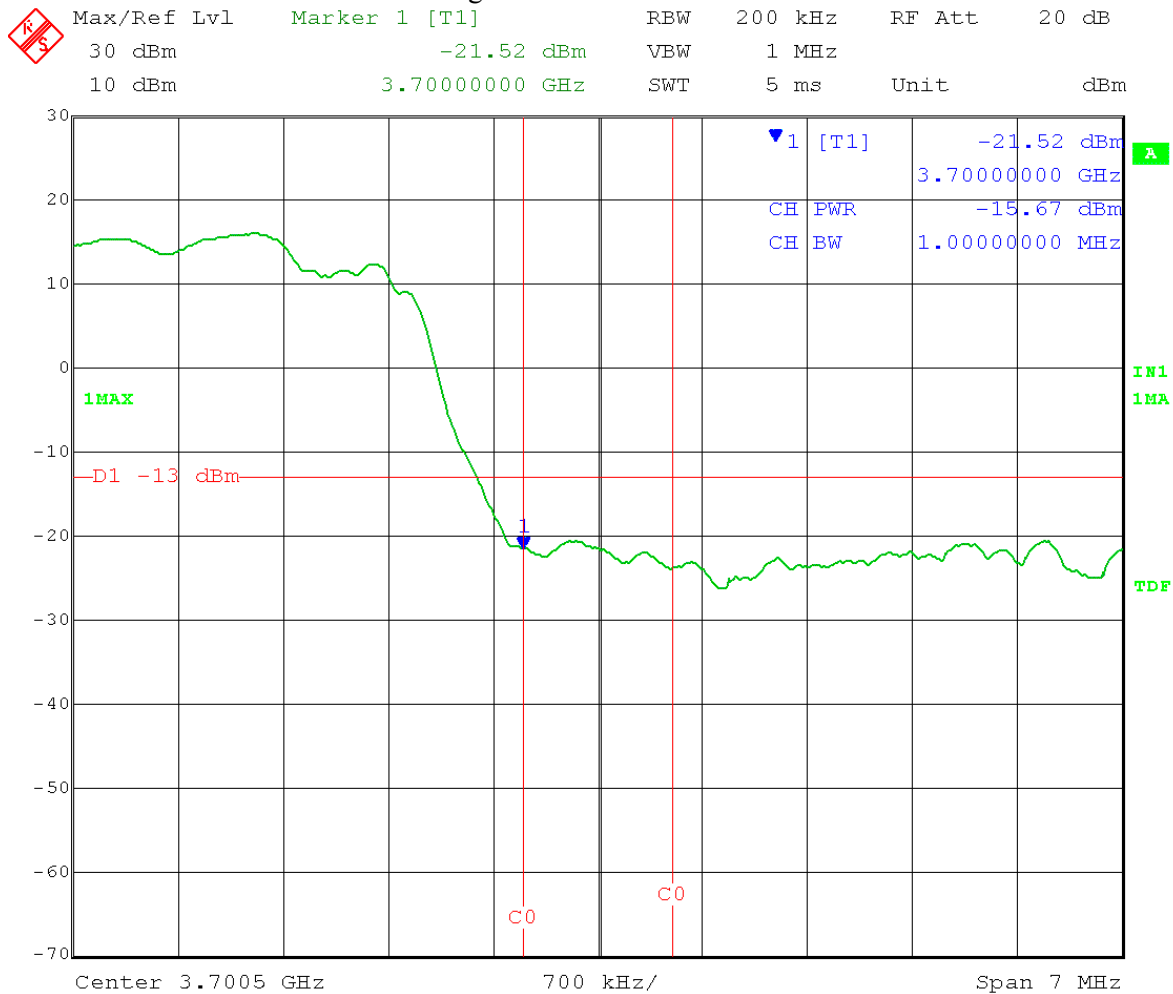
Upper band edge frequency = 3700 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

Measured power at band edge is integrated over a 1 MHz bandwidth

-30 °C, 120 V

Power level at band edge = -15.67 dBm/MHz



Date: 20.FEB.2014 15:32:06



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Models Tested: C036045C004A & C036045C008A
Report Number: 19812
DLS Project: 6384

Appendix B – Measurement Data

B6.0 Radiated Band Edge Compliance

Rule Part: FCC Part 90.1323(a) - Emission limits
FCC Part 2.1053 - Field strength of spurious radiation

Test Procedure: KDB 971168 D01 Power Meas License Digital Systems v02r01
7.0 Field Strength of Spurious Radiation

RBW = 1 MHz; VBW = 3 MHz; Detector = peak; Trace mode = max hold

Radiated from cabinet: Both ports of the EUT were terminated with 50 Ohm terminations. Both ports were active during testing. The output power was set to the highest level used in the Transmitter Output Power test (power level corresponding to the 8 dBi antenna gain).

Limit: The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB.

Calculated limit = -13 dBm.

Results:

Compliant

Notes:

Only tested QPSK modulation mode as determined worst case by Cambium Networks.

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Lower Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting 25 (total of both chains)

Channel bandwidth: 5 MHz Both ports active and 50 Ω terminated

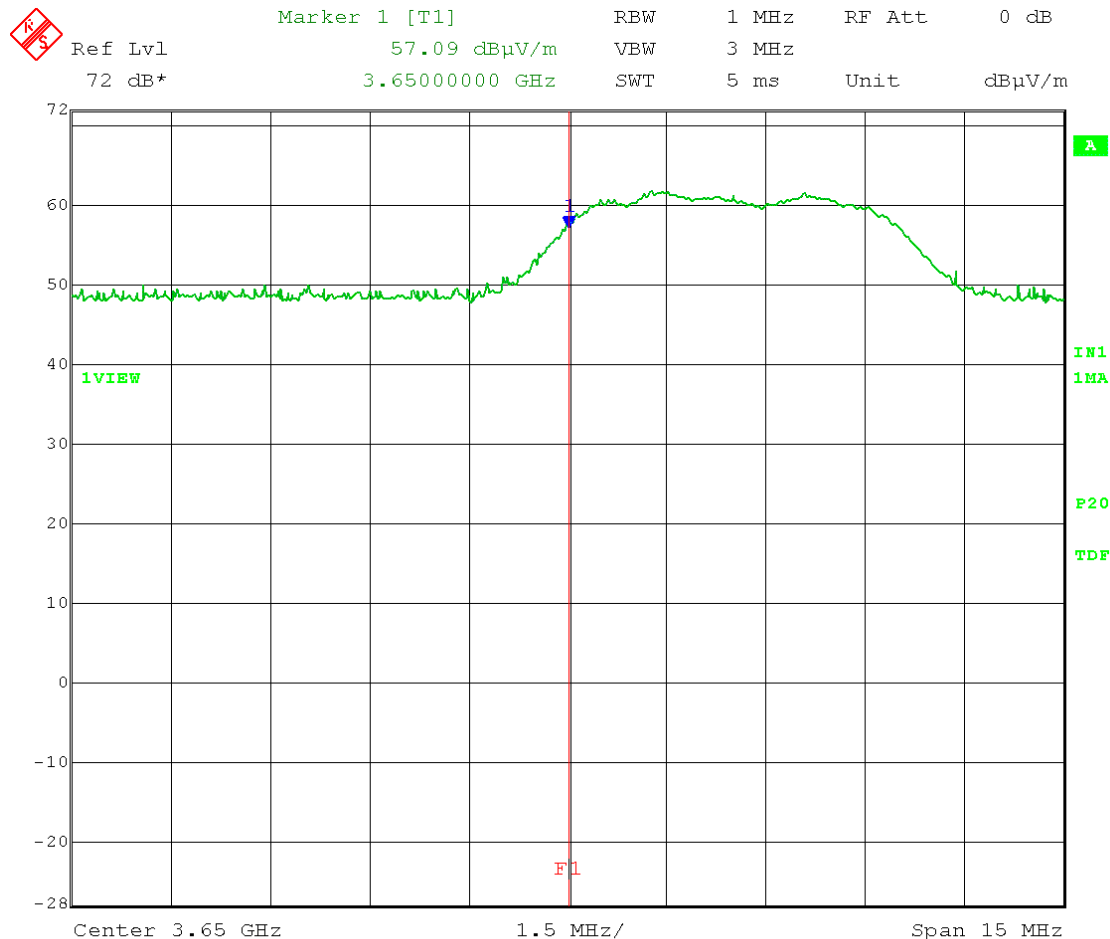
Lower band edge frequency = 3650 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

$EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $57.09 + 20\log(3) - 104.8 = -38.17$ dBm/MHz

Vertical:



Date: 27.FEB.2014 13:08:23

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Lower Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3652.5 MHz

Power setting 25 (total of both chains)

Channel bandwidth: 5 MHz Both ports active and 50 Ω terminated

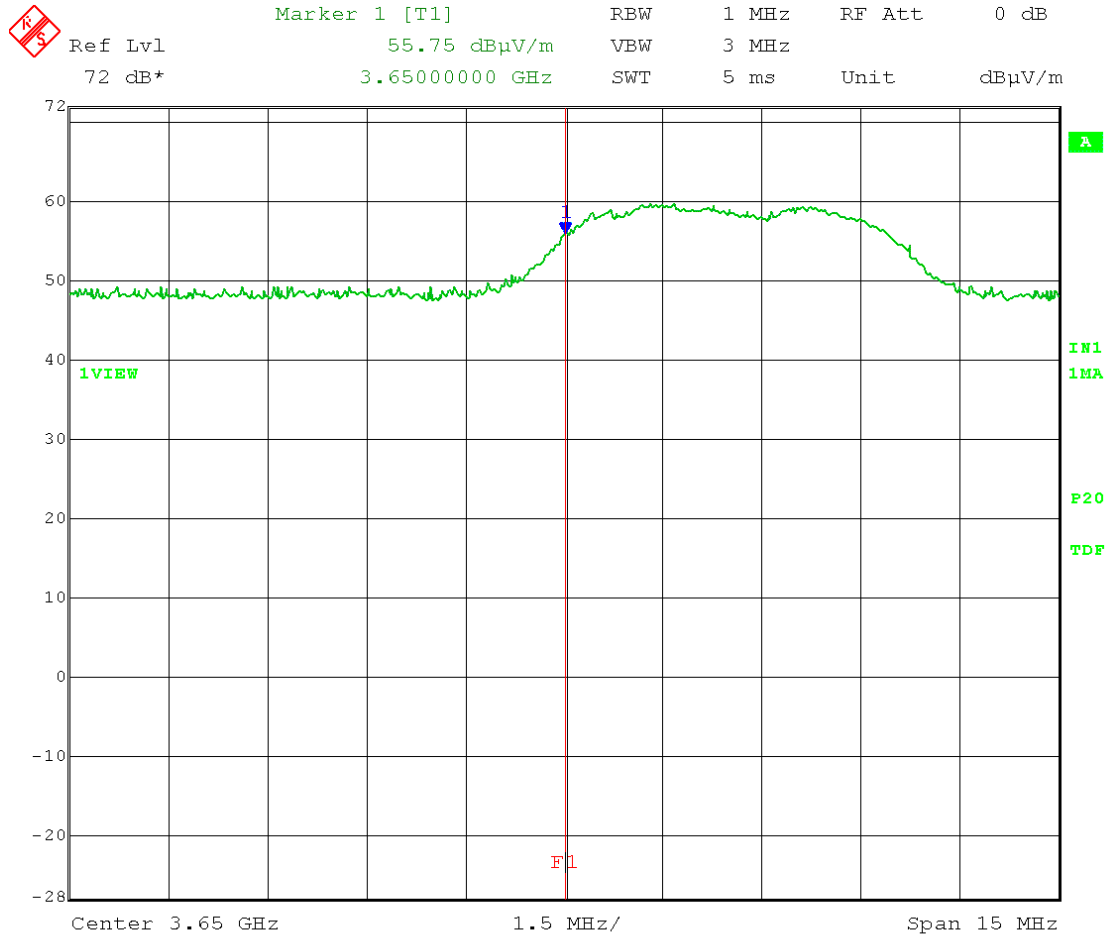
Lower band edge frequency = 3650 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

$EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $55.75 + 20\log(3) - 104.8 = -39.5$ dBm/MHz

Horizontal:



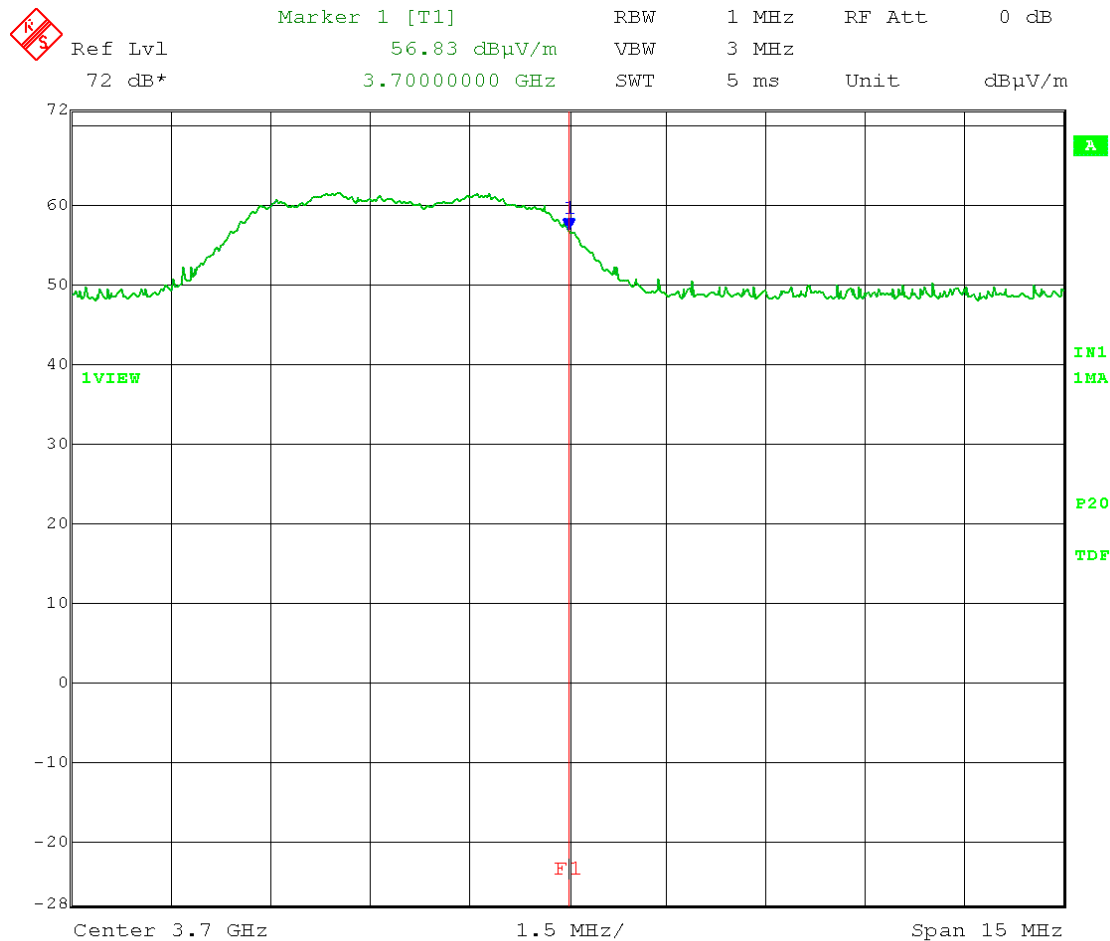
Date: 27.FEB.2014 13:02:36

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Upper Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz
Power setting 25 (total of both chains)
Channel bandwidth: 5 MHz Both ports active and 50 Ω terminated
Upper band edge frequency = 3700 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 $EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $56.83 + 20\log(3) - 104.8 = -38.42$ dBm/MHz

Vertical:



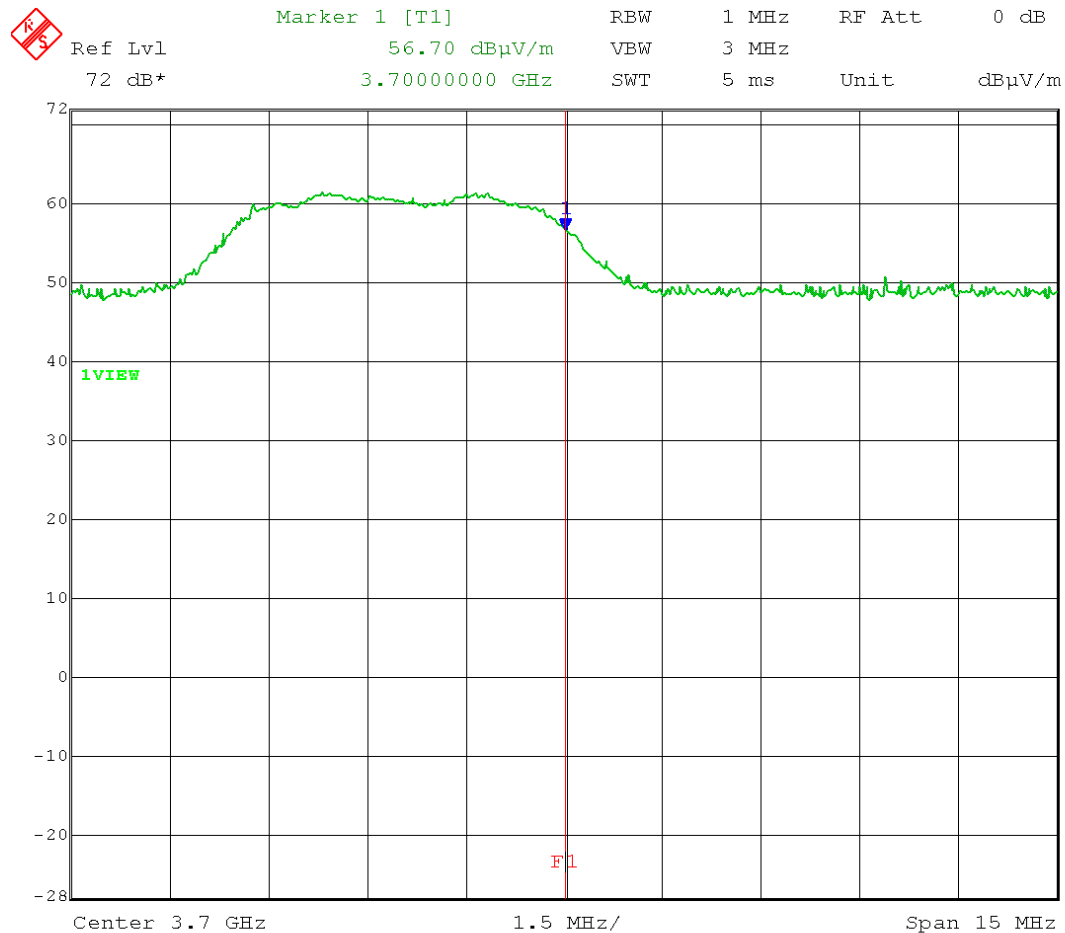
Date: 27.FEB.2014 13:17:46

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Upper Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3697.5 MHz
Power setting 25 (total of both chains)
Channel bandwidth: 5 MHz Both ports active and 50 Ω terminated
Upper band edge frequency = 3700 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 $EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $56.70 + 20\log(3) - 104.8 = -38.55$ dBm/MHz

Horizontal:



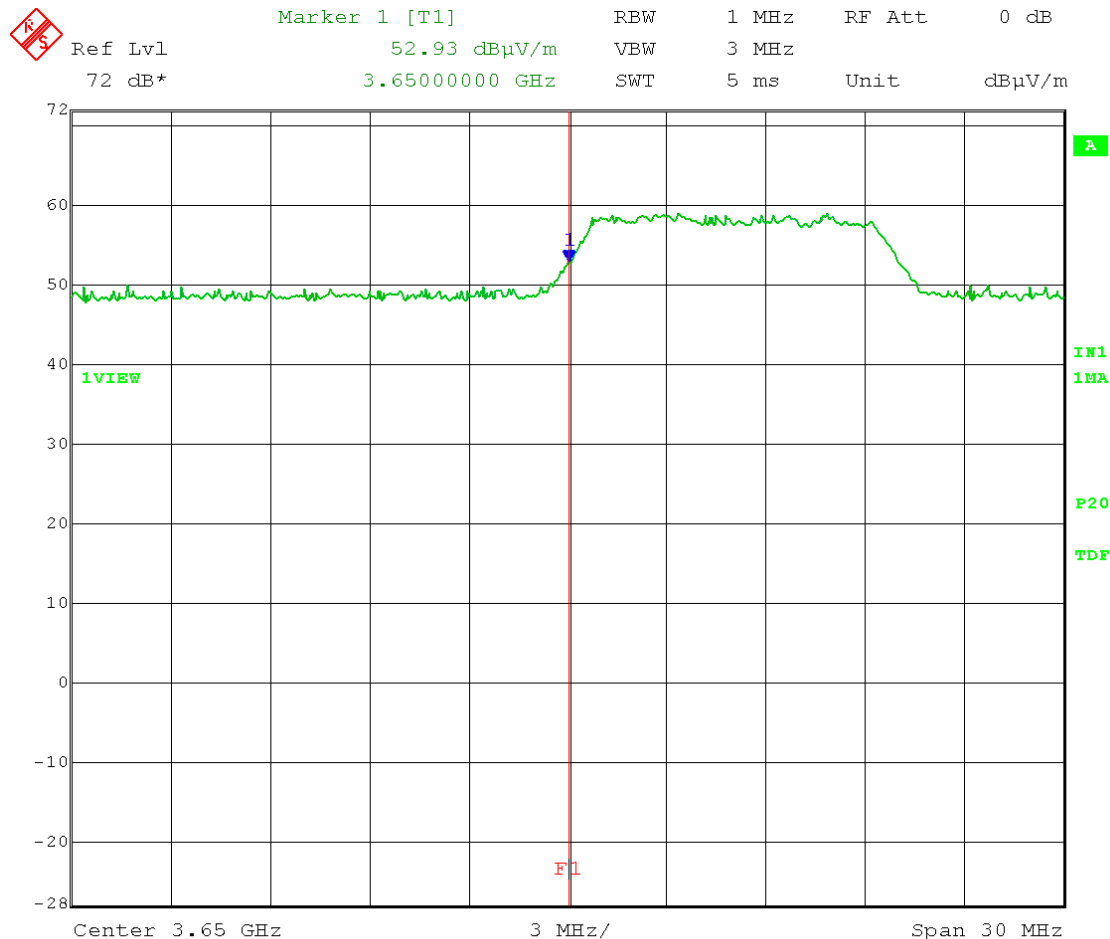
Date: 27.FEB.2014 13:21:40

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Lower Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3655 MHz
Power setting 25 (total of both chains)
Channel bandwidth: 10 MHz Both ports active and 50 Ω terminated
Lower band edge frequency = 3650 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 $EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $52.93 + 20\log(3) - 104.8 = -42.32$ dBm/MHz

Vertical:



Date: 27.FEB.2014 13:36:35

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Lower Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold

Low Channel: Transmit = 3655 MHz

Power setting 25 (total of both chains)

Channel bandwidth: 10 MHz Both ports active and 50 Ω terminated

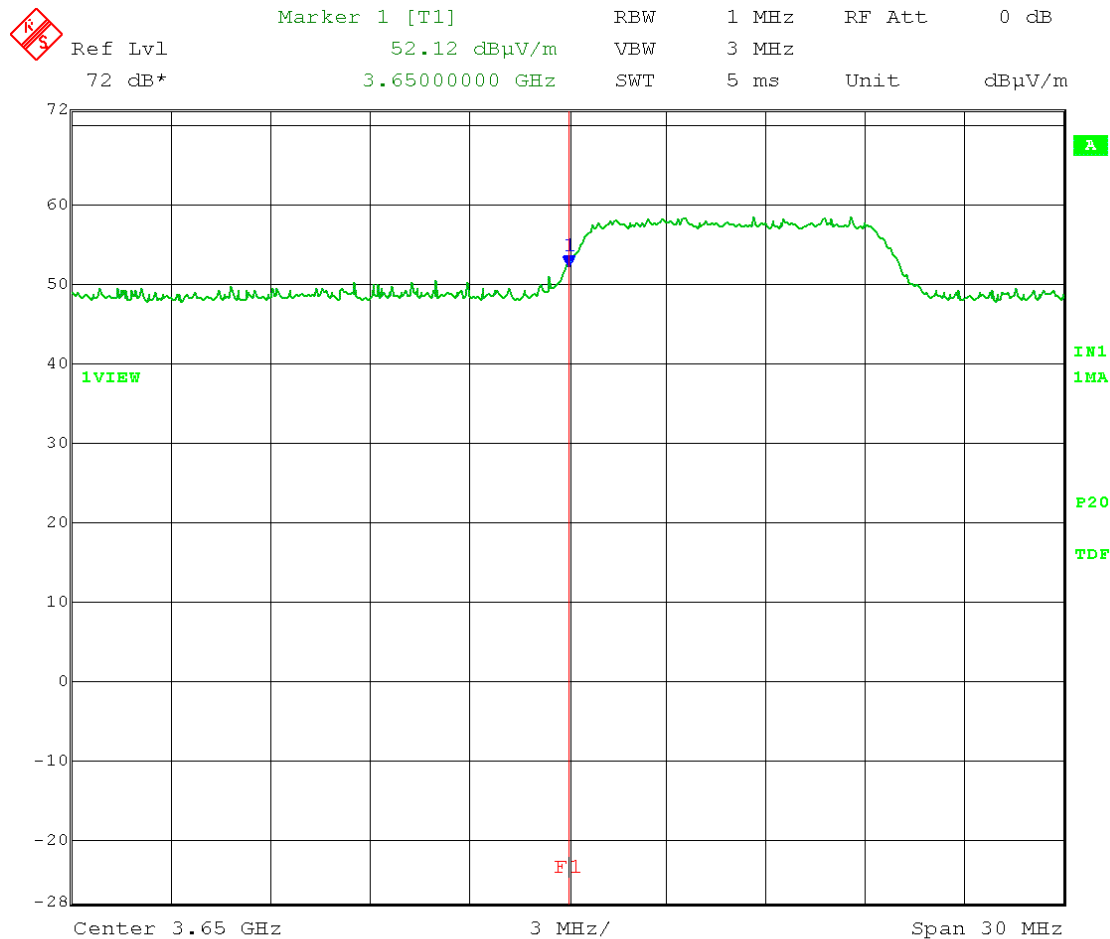
Lower band edge frequency = 3650 MHz

Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz

$EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $52.12 + 20\log(3) - 104.8 = -43.13$ dBm/MHz

Horizontal:



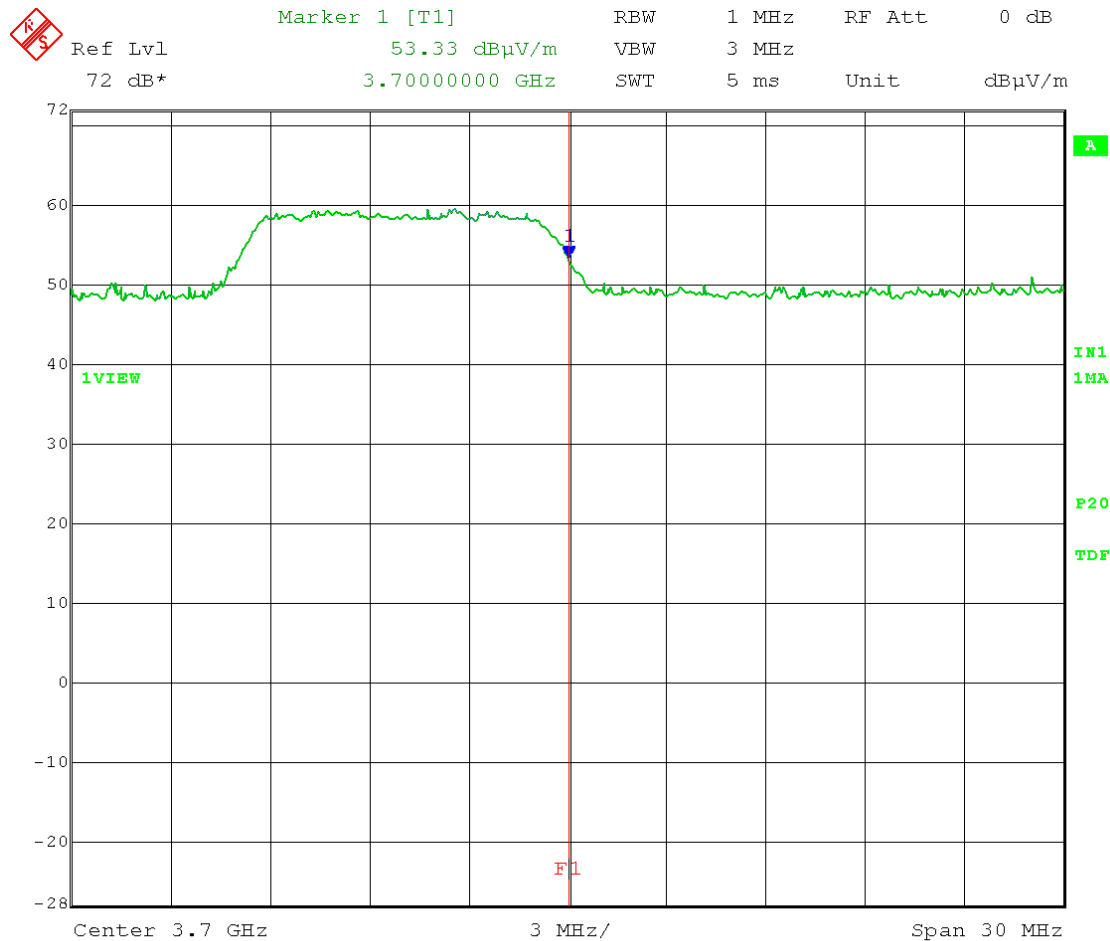
Date: 27.FEB.2014 13:40:53

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Upper Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz
Power setting 25 (total of both chains)
Channel bandwidth: 10 MHz Both ports active and 50 Ω terminated
Upper band edge frequency = 3700 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 $EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $53.33 + 20\log(3) - 104.8 = -41.92$ dBm/MHz

Vertical:



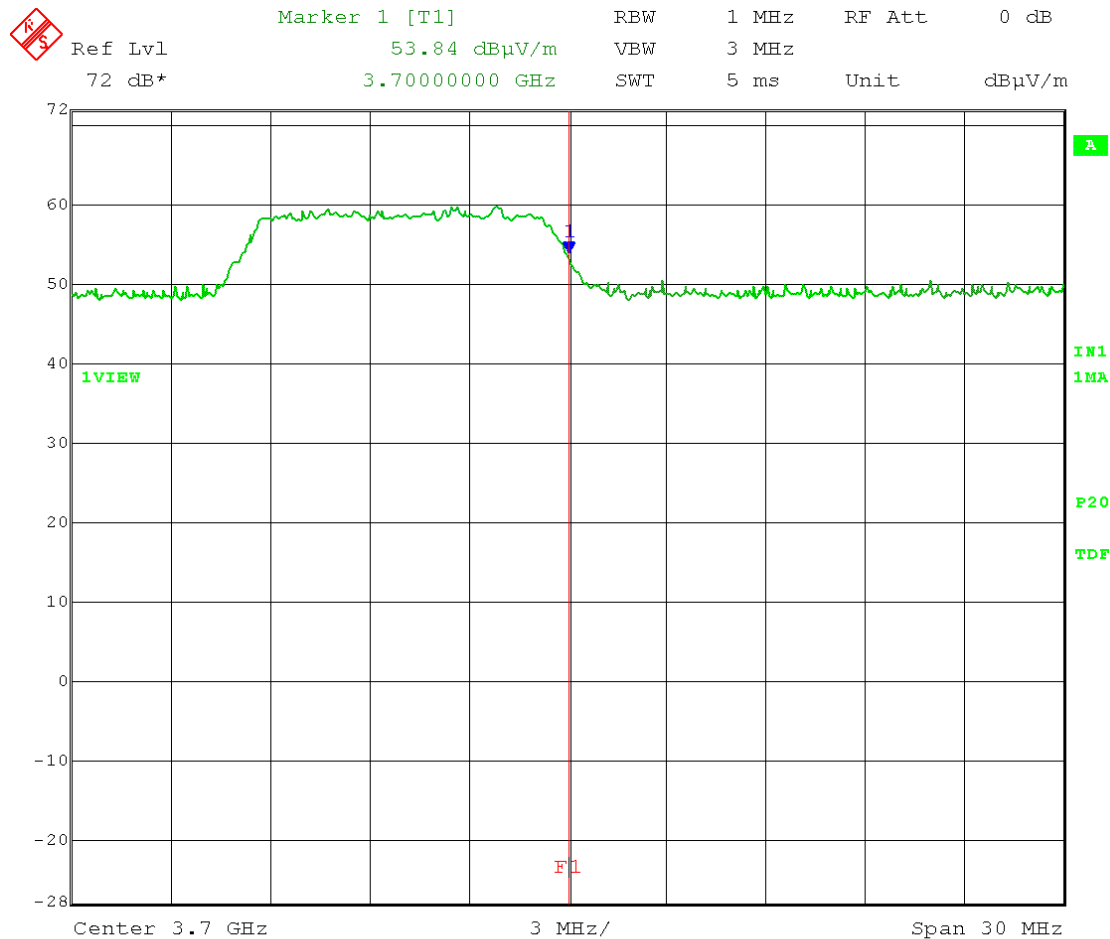
Date: 27.FEB.2014 13:32:28

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Upper Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3695 MHz
Power setting 25 (total of both chains)
Channel bandwidth: 10 MHz Both ports active and 50 Ω terminated
Upper band edge frequency = 3700 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 $EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $53.84 + 20\log(3) - 104.8 = -41.41$ dBm/MHz

Horizontal:



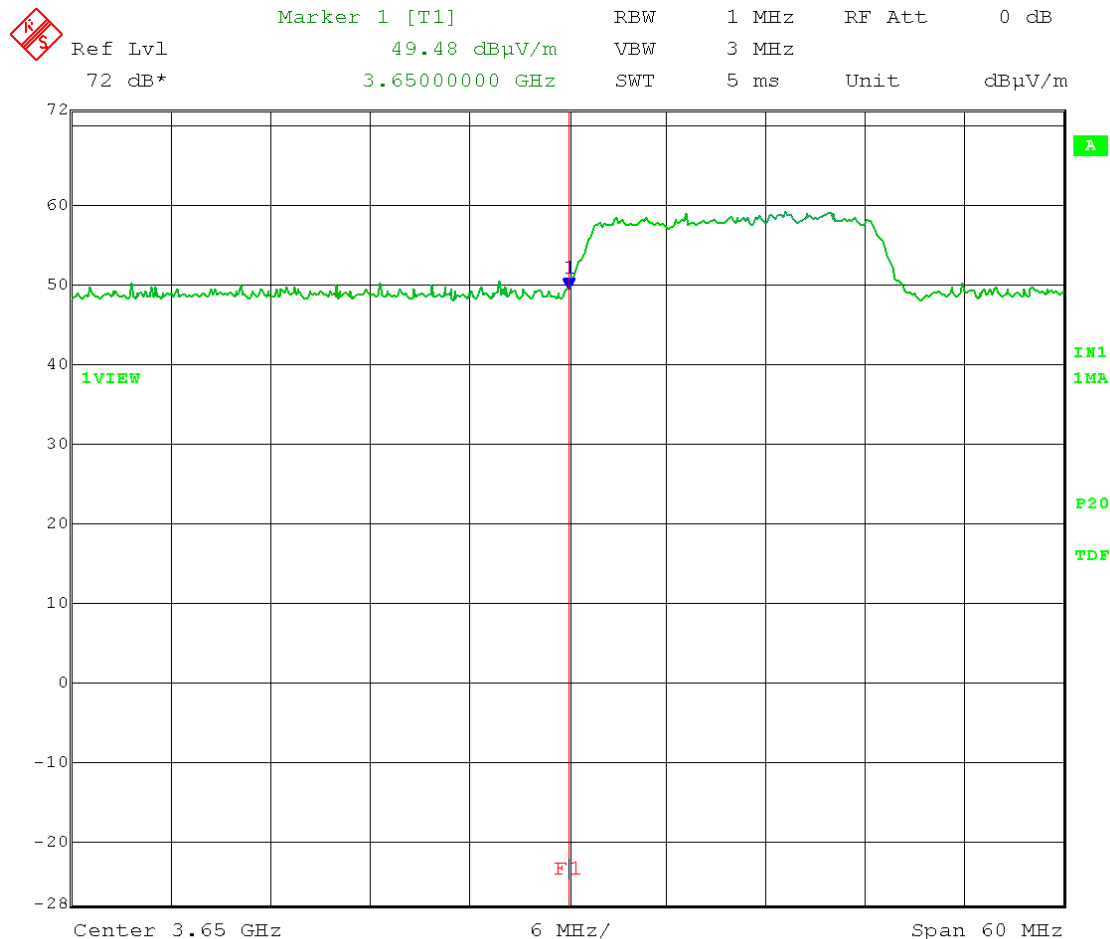
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Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Lower Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Power setting 25 (total of both chains)
Channel bandwidth: 20 MHz Both ports active and 50 Ω terminated
Lower band edge frequency = 3650 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 $EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $49.48 + 20\log(3) - 104.8 = -45.77$ dBm/MHz

Vertical:



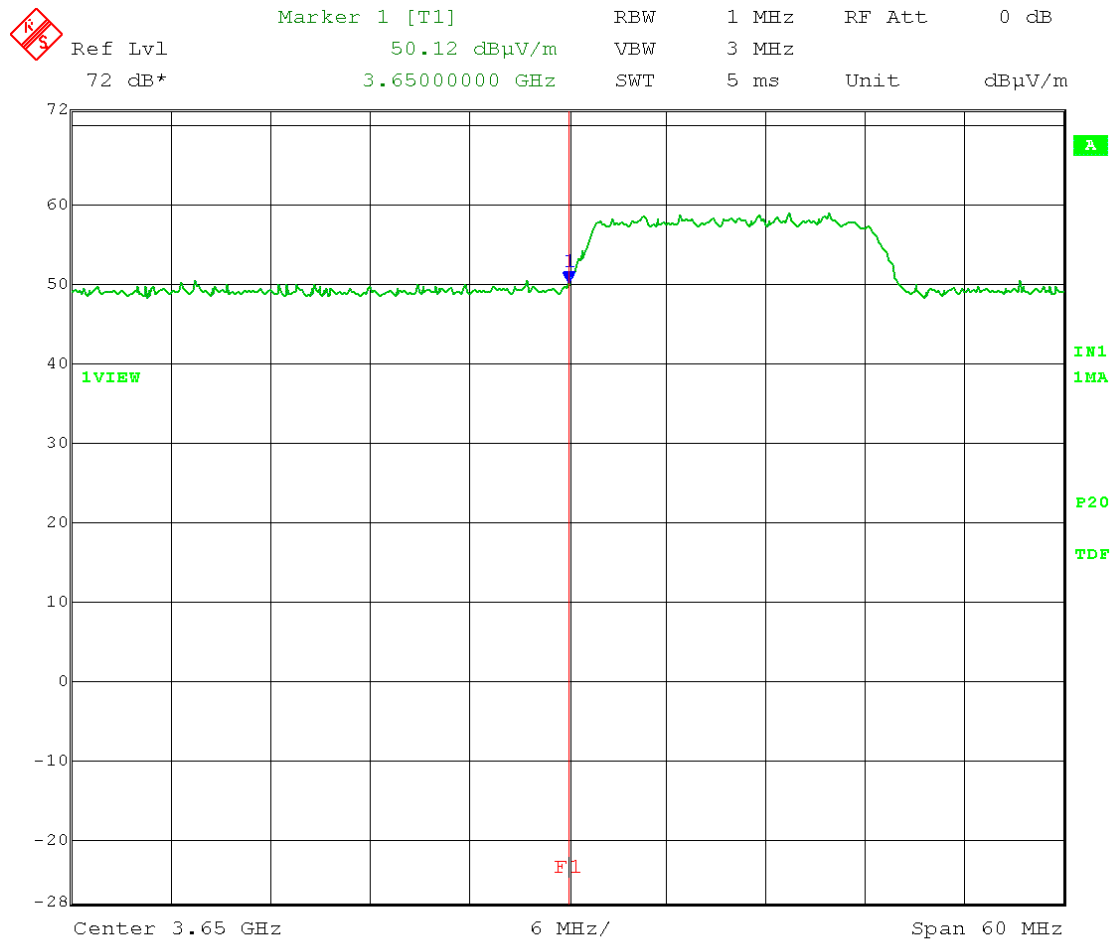
Date: 27.FEB.2014 14:02:30

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Lower Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
Low Channel: Transmit = 3660 MHz
Power setting 25 (total of both chains)
Channel bandwidth: 20 MHz Both ports active and 50 Ω terminated
Lower band edge frequency = 3650 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 $EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $50.12 + 20\log(3) - 104.8 = -45.13$ dBm/MHz

Horizontal:



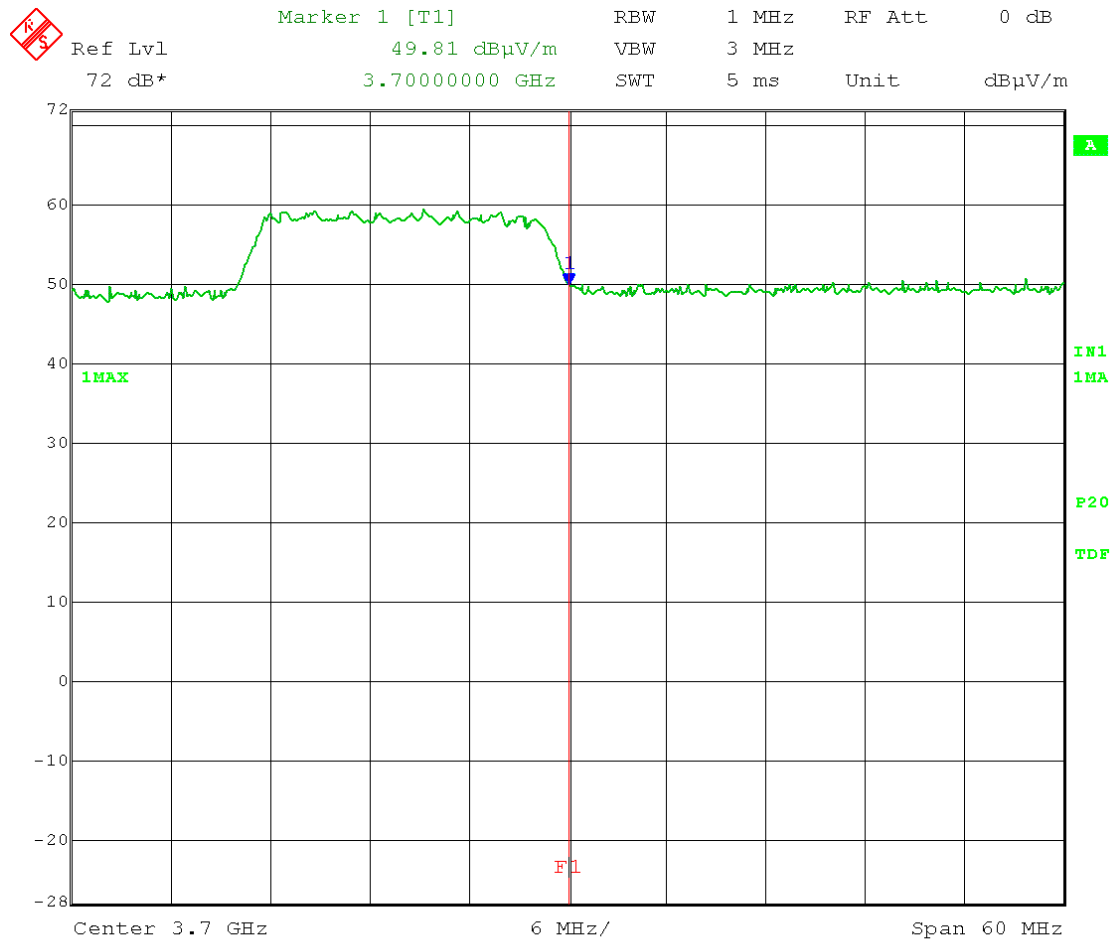
Date: 27.FEB.2014 13:50:28

Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Upper Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3690 MHz
Power setting 25 (total of both chains)
Channel bandwidth: 20 MHz Both ports active and 50 Ω terminated
Upper band edge frequency = 3700 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 $EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $49.81 + 20\log(3) - 104.8 = -45.44$ dBm/MHz

Vertical:



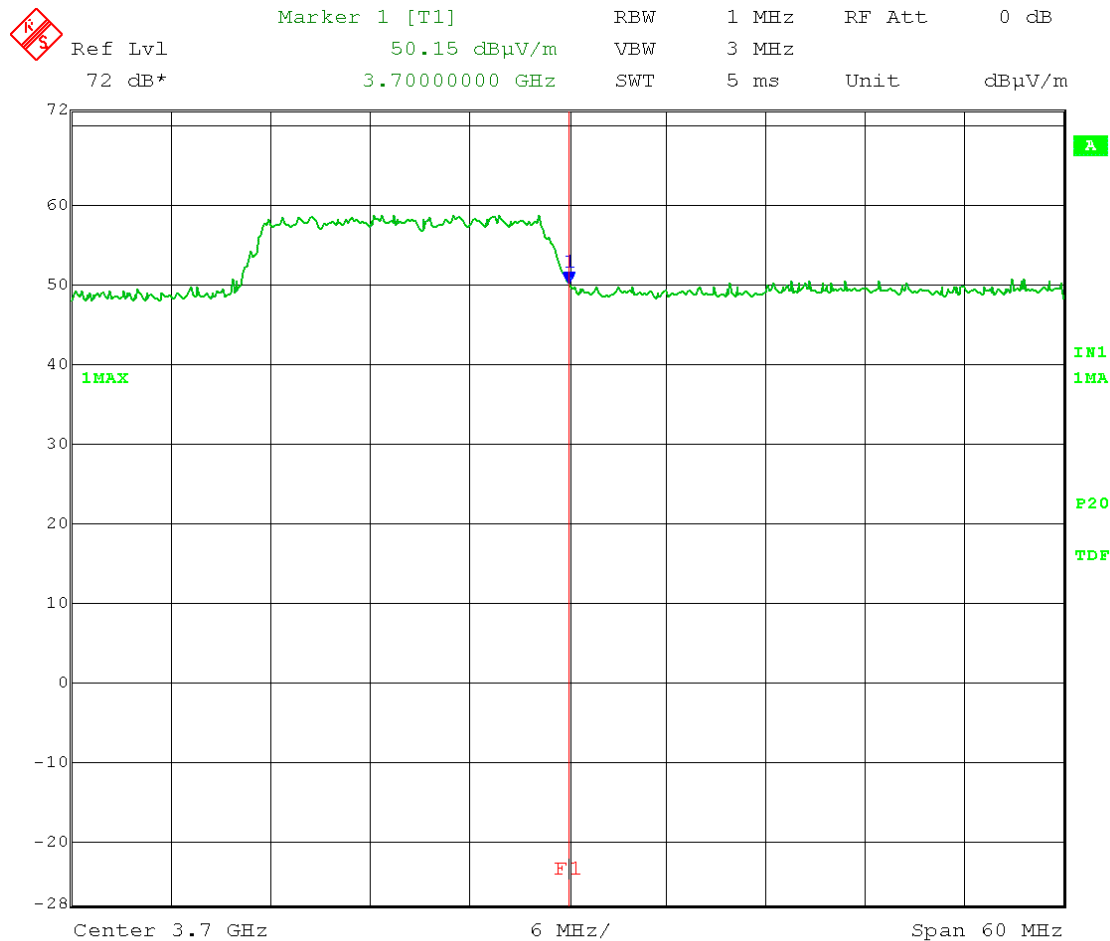
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Test Date: 02-27-2014
Company: Cambium Networks
EUT: PMP450SM 3.65 GHz, Model C036045C008A (with ports 50 Ω terminated)
Test: Upper Band-Edge Measurements – Radiated from cabinet
Operator: Craig B

Comment: RBW = 1 MHz VBW = 3 MHz
Detector = Peak Sweep = auto couple
Trace = max hold
High Channel: Transmit = 3690 MHz
Power setting 25 (total of both chains)
Channel bandwidth: 20 MHz Both ports active and 50 Ω terminated
Upper band edge frequency = 3700 MHz
Limit: $43 + 10\log(P)$ below the channel transmitter power = -13 dBm/MHz
 $EIRP(dBm) = E(dB\mu V/m) + 20\log(d) - 104.8$ where D is the measurement distance in meters.

Power level at band edge = $50.15 + 20\log(3) - 104.8 = -45.10$ dBm/MHz

Horizontal:



Date: 27.FEB.2014 14:13:16



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Models Tested: C036045C004A & C036045C008A
Report Number: 19812
DLS Project: 6384

Appendix B – Measurement Data

B7.0 AC Line Conducted Emissions

Rule Part: FCC Part 15.207

INFORMATIVE

Test Procedure: ANSI C63.10-2009
Section 6.2

Limit: FCC Part 15.207(a)

Results: Compliant

Notes: This was an AC Conducted emissions measurement.
The EUT was powered from a representative AC Adapter with an input of
120 VAC 60 Hz.

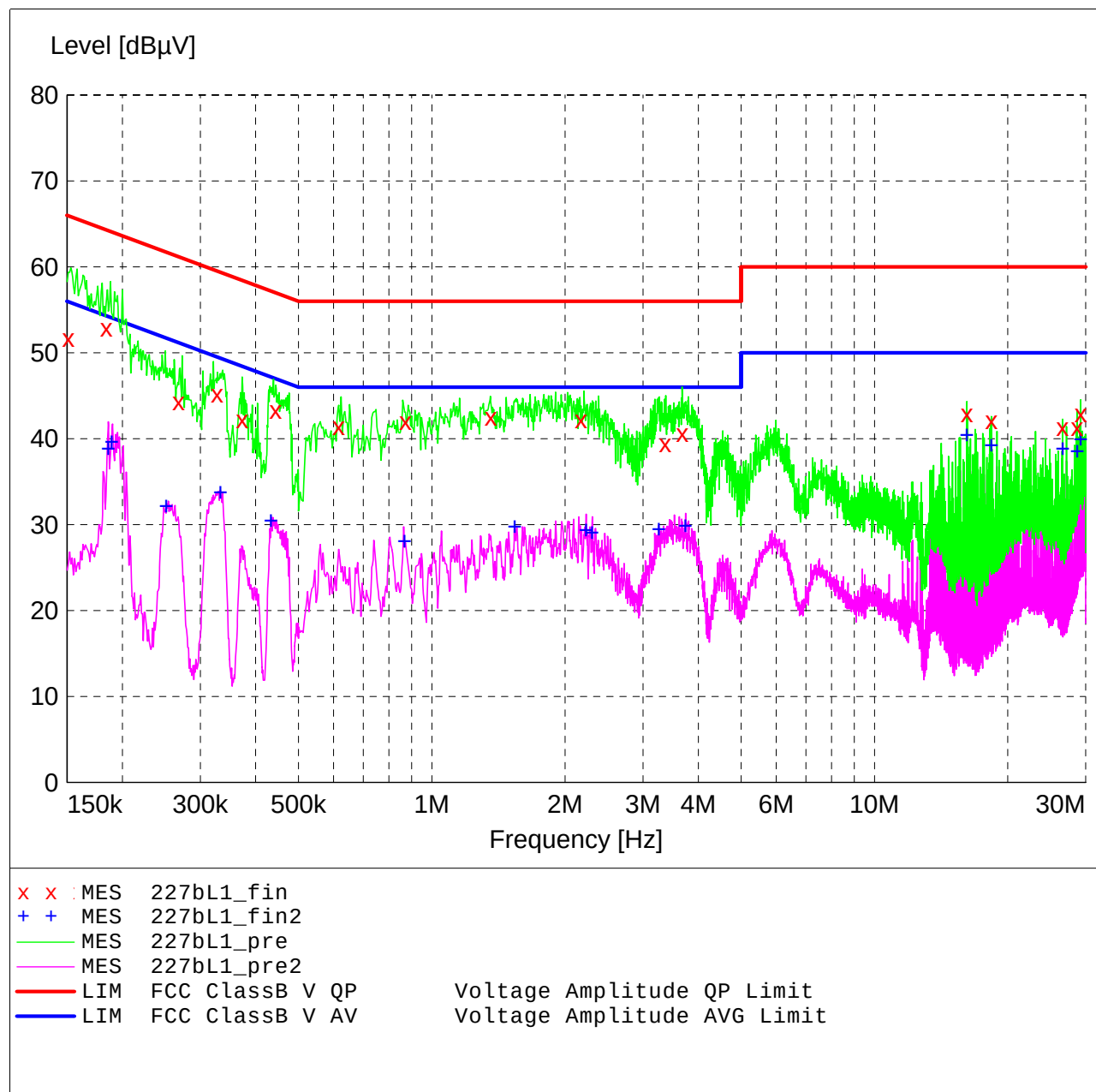
FCC Part 15.207

Voltage Mains Test

EUT: PMP450SM 3.65 GHz, Model C036045C004A
Manufacturer: Cambium Networks
Operating Condition: 72 deg. F, 20% R.H.
Test Site: DLS O.F. Screen Room
Operator: Craig B
Test Specification: 120 V 60 Hz
Comment: Line 1; continuous transmit mode
Date: 02-27-2014

SCAN TABLE: "Line Cond SR Final"

Short Description:		Line Conducted Emissions					
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer	
Frequency 150.0 kHz	Frequency 30.0 MHz	Width 4.0 kHz	QuasiPeak CISPR AV	3.0 s	9 kHz	LISN DLS#128	



MEASUREMENT RESULT: "227bL1_fin"

2/27/2014 3:29PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector
0.151000	51.70	13.8	66	14.2	QP
0.184000	52.90	13.0	64	11.4	QP
0.268000	44.30	12.1	61	16.9	QP
0.327000	45.20	11.7	60	14.3	QP
0.373000	42.20	11.6	58	16.2	QP
0.444000	43.30	11.3	57	13.7	QP
0.616000	41.50	11.0	56	14.5	QP
0.872000	42.00	10.9	56	14.0	QP
1.360000	42.50	10.6	56	13.5	QP
2.176000	42.20	10.6	56	13.8	QP
3.368000	39.50	10.7	56	16.5	QP
3.680000	40.70	10.7	56	15.3	QP
16.169000	42.90	11.1	60	17.1	QP
18.365000	42.10	11.3	60	17.9	QP
26.609000	41.30	11.6	60	18.7	QP
28.688000	41.30	11.6	60	18.7	QP
29.237000	42.90	11.6	60	17.1	QP

MEASUREMENT RESULT: "227bL1_fin2"

2/27/2014 3:29PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector
0.186000	38.80	13.0	54	15.4	CAV
0.189000	39.70	13.0	54	14.4	CAV
0.251000	32.20	12.2	52	19.5	CAV
0.333000	33.80	11.7	49	15.6	CAV
0.433000	30.50	11.4	47	16.7	CAV
0.868000	28.10	10.9	46	17.9	CAV
1.540000	29.80	10.6	46	16.2	CAV
2.232000	29.40	10.6	46	16.6	CAV
2.300000	29.10	10.6	46	16.9	CAV
3.260000	29.50	10.7	46	16.5	CAV
3.740000	29.90	10.7	46	16.1	CAV
16.169000	40.50	11.1	50	9.5	CAV
18.365000	39.30	11.3	50	10.7	CAV
26.609000	38.90	11.6	50	11.1	CAV
28.688000	38.60	11.6	50	11.4	CAV
29.237000	40.00	11.6	50	10.0	CAV

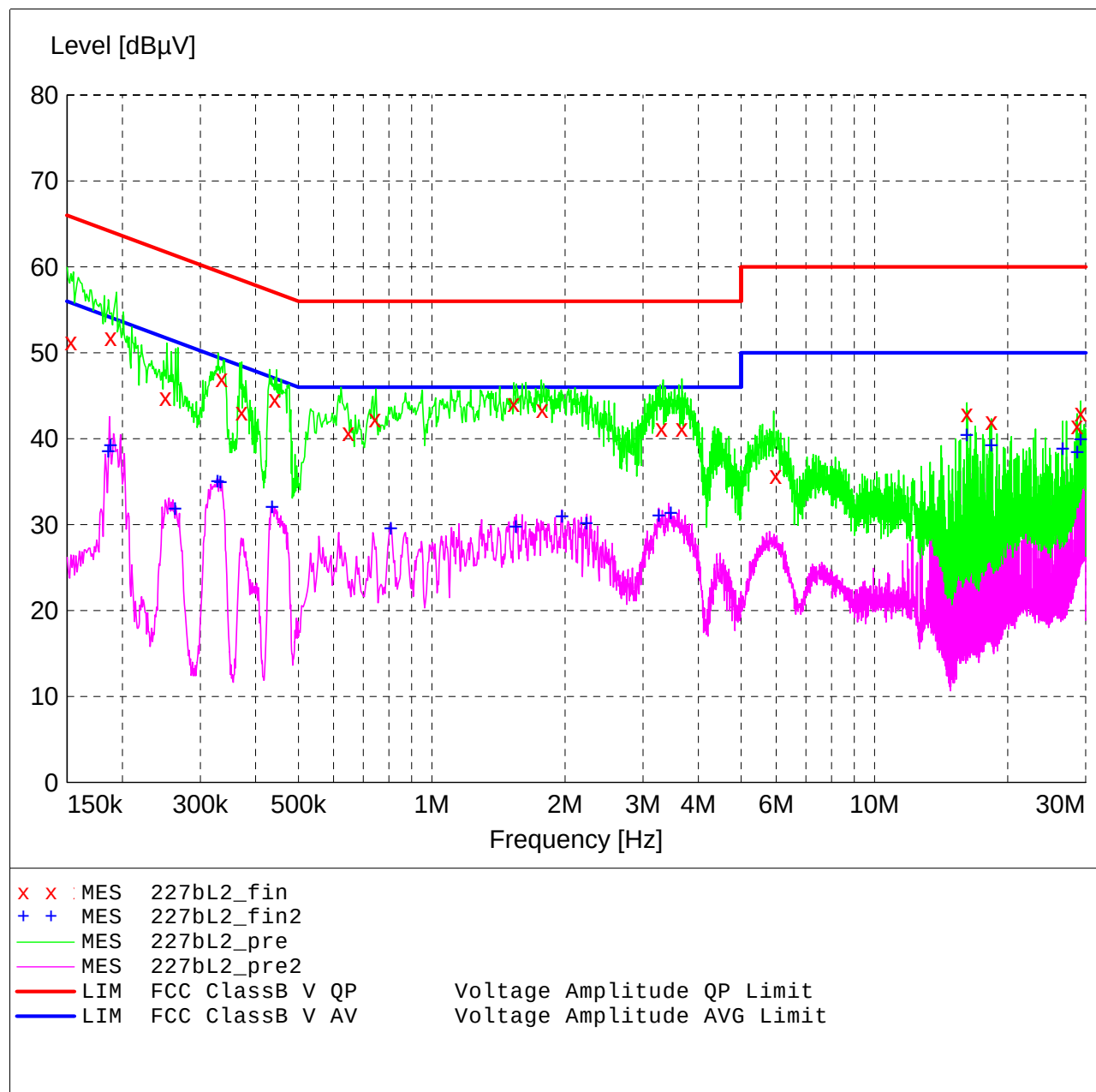
FCC Part 15.207

Voltage Mains Test

EUT: PMP450SM 3.65 GHz, Model C036045C004A
Manufacturer: Cambium Networks
Operating Condition: 72 deg. F, 20% R.H.
Test Site: DLS O.F. Screen Room
Operator: Craig B
Test Specification: 120 V 60 Hz
Comment: Line 2; continuous transmit mode
Date: 02-27-2014

SCAN TABLE: "Line Cond SR Final"

Short Description:		Line Conducted Emissions					Transducer
Start	Stop	Step	Detector	Meas. Time	IF Bandw.		
Frequency	Frequency	Width					
150.0 kHz	30.0 MHz	4.0 kHz	QuasiPeak	3.0 s	9 kHz	LISN DLS#128	
			CISPR AV				



MEASUREMENT RESULT: "227bL2_fin"

2/27/2014 3:35PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector
0.153000	51.30	13.7	66	14.5	QP
0.188000	51.80	13.0	64	12.3	QP
0.250000	44.80	12.2	62	17.0	QP
0.335000	47.00	11.7	59	12.3	QP
0.372000	43.10	11.6	59	15.4	QP
0.442000	44.60	11.3	57	12.4	QP
0.648000	40.70	10.9	56	15.3	QP
0.744000	42.30	10.9	56	13.7	QP
1.532000	44.10	10.6	56	11.9	QP
1.776000	43.40	10.7	56	12.6	QP
3.300000	41.20	10.7	56	14.8	QP
3.672000	41.20	10.7	56	14.8	QP
5.981000	35.80	10.7	60	24.2	QP
16.169000	42.90	11.1	60	17.1	QP
18.365000	42.00	11.3	60	18.0	QP
28.688000	41.50	11.6	60	18.5	QP
29.237000	43.00	11.6	60	17.0	QP

MEASUREMENT RESULT: "227bL2_fin2"

2/27/2014 3:35PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector
0.186000	38.60	13.0	54	15.6	CAV
0.188000	39.30	13.0	54	14.8	CAV
0.263000	31.90	12.1	51	19.4	CAV
0.328000	35.10	11.7	50	14.4	CAV
0.333000	35.00	11.7	49	14.4	CAV
0.436000	32.10	11.4	47	15.0	CAV
0.808000	29.60	10.9	46	16.4	CAV
1.548000	29.80	10.6	46	16.2	CAV
1.968000	31.00	10.6	46	15.0	CAV
2.236000	30.20	10.6	46	15.8	CAV
3.256000	31.10	10.7	46	14.9	CAV
3.464000	31.40	10.7	46	14.6	CAV
16.169000	40.40	11.1	50	9.6	CAV
18.365000	39.20	11.3	50	10.8	CAV
26.609000	38.90	11.6	50	11.1	CAV
28.688000	38.50	11.6	50	11.5	CAV
29.237000	39.90	11.6	50	10.1	CAV



166 South Carter, Genoa City, WI 53128

Company: Cambium Networks
Models Tested: C036045C004A & C036045C008A
Report Number: 19812
DLS Project: 6384

END OF REPORT

Revision #	Date	Comments	By
1.0	03-05-2014	Preliminary Release	JS
1.1	03-07-2014	Minor edits to data notes - section 4	JS