166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C050900P12A
Report Number:	19128
DLS Project:	5941

Code of Federal Regulations 47 Part 15 – Radio Frequency Devices

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

THE FOLLOWING **MEETS** THE ABOVE TEST SPECIFICATION

Formal Name:	Avenger AP 5.7GHz Radio
Kind of Equipment:	Point-to-Multipoint Digital Transmission Transceiver
Frequency Range:	5740 to 5835 MHz (20 MHz bandwidth) 5750 to 5825 MHz (40 MHz bandwidth)
Test Configuration:	Stand-alone
Model Number(s):	C050900P12A
Model(s) Tested:	C050900P12A
Serial Number(s):	000456C005DE & 000456C005E4
Date of Tests:	June 12th to June 17th, and July 1st & 2nd, 2013
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:

James Ochoa
Test Engineer

Reviewed By:

William Stumpf
OATS Manager

Approved By:

Brian Mattson
General Manager

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United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 100276-0

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

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

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

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

2012-10-01 through 2013-09-30
Effective dates

For the National Institute of Standards and Technology

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

1.0 Summary of Test Report

It was determined that the Cambium Networks Avenger AP 5.7GHz Radio, Model: C050900P12A, complies with the requirements of CFR 47 Part 15 Subpart C Section 15.247.

Applicable Technical Requirements Tested:

Section	Description	Procedure	Note	Compliant?
FCC 15.247(a)(2)	6 dB Emission Bandwidth - Conducted	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 8.1 Option 1	1	Yes
FCC 15.247(b)(3)	Fundamental Emission Output Power – Conducted	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 9.2.3.1-AVGPM	1	Yes
FCC 15.247(e)	Maximum Power Spectral Density - Conducted	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 10.3-AVGPSD-1	1	Yes
FCC 15.247(d)	Maximum Unwanted Emission Levels – Conducted	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Sections 11.0, 11.2, 11.3	1	Yes
FCC 15.247(d)	Band Edge Measurements - Conducted	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 13.0, 13.2	1	Yes
FCC 15.247(d), FCC 15.205	Restricted Band Measurements - RF Conducted	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 12.0 & 12.2	1	Yes
FCC 15.247(d), FCC 15.205	Restricted Band Measurements - Radiated	FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 Section 12.0 & 12.1	2	Yes
FCC 15.35(c)	Duty Cycle of Test Unit	ANSI C63.10-2009 Section 7.5	1	NA
FCC 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: AC line conducted measurement.

2.0 Introduction

From June 12th through June 17th and July 1st & 2nd, 2013 the Avenger AP 5.7GHz Radio, Model C050900P12A, as provided from Cambium Networks, was tested to the requirements of CFR 47 Part 15 Subpart C Section 15.247. To meet these requirements, the procedures contained within this report were performed by personnel of D.L.S Electronic Systems, Inc.

3.0 Test Facilities

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

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

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

4.0 Description of Test Sample

Description:

Point-to-Multipoint 5.7GHz 802.11 fixed outdoor transceiver with either 20 MHz or 40 MHz channel bandwidth. 16dBi antenna assembly. OFDM modulation. This is a software defined radio.

Type of Equipment

Stand-Alone

Frequency Range:

5740 to 5835 MHz (20 MHz bandwidth)
5750 to 5825 MHz (40 MHz bandwidth)

Physical Dimensions of Equipment Under Test:

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

Power Source:

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

Internal Frequencies:

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

Transmit Frequencies Used For Test Purpose:

20 MHz Channel Bandwidth:	Low channel: 5740 MHz Middle channel: 5775 MHz High channel: 5835 MHz
40 MHz Channel Bandwidth:	Low channel: 5750 MHz Middle channel: 5785 MHz High channel: 5825 MHz

Power Settings noted on the test data

Type of Modulations:

OFDM: 802.11n: MCS15

Description of Circuit Board(s) / Part Number:

AP PCB	84009654001
external 17dBi antenna w/1dB cables	85009324001 Rev AA
antenna assembly	P005135

5.0 Test Equipment

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

D.L.S. Wisconsin

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Dates	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 40	837808/005	20 Hz – 40 GHz	7-23-12	7-23-13
LISN	Solar	9252-50-R-24-BNC	961019	9 kHz – 30 MHz	5-24-13	5-24-14
Filter- High-Pass	SOLAR	7930-120	090702	120 kHz – 30 MHz	1-7-13	1-7-14
Limiter	Electro-Metrics	EM-7600	706	9 kHz – 30 MHz	1-7-13	1-7-14
Preamp	Miteq	AMF-7D-01001800-22-10P	1809602	1GHz-18GHz	5-29-13	5-29-14
Horn Antenna	EMCO	3115	9502-4451	1-18GHz	3-18-13	3-18-15
Filter- High-Pass	Q-Microwave	100462	2	4.2GHz-18GHz	5-28-13	5-28-14
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26GHz	8-13-12	8-13-13
Horn Antenna	ETS Lindgren	3116	00062917	18 – 40GHz	10-4-11	9-23-13
High Pass Filter	Planar	CL22500-9000-CD-SS	PF1229/0728	15-40 GHz	8-13-12	8-13-13
20 dB attenuator	Aeroflex/weinschel	75A-20-12	1071	DC – 40 GHz	8-13-12	8-13-13
10 dB attenuator	narda	4768-10	0702	DC – 40 GHz	8-13-12	8-13-13
Receiver	Rohde & Schwarz	ESI 26	837491/010	20 Hz – 26 GHz	1-3-13	1-3-14
Preamplifier	Rohde & Schwarz	TS-PR10	032001/005	9 kHz – 1 GHz	1-10-13	1-10-14
Antenna	EMCO	3104C	97014785	20 MHz – 200 MHz	8-22-12	8-22-14
Antenna	EMCO	3146	97024895	200 MHz – 1 GHz	9-6-12	9-6-14

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 KDB 558074 D01 DTS Meas Guidance v03r01 and ANSI C63.10-2009, unless otherwise noted. Description of procedures and measurements can be found in Appendix B – Measurement Data. See Appendix A for photos of the test set up.

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

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

RF Conducted Emissions Measurement Arrangement:

All RF conducted emission measurements were performed at D.L.S. Electronic Systems, Inc. and set up according to FCC Publication KDB 558074 D01 DTS Meas Guidance v03r01 and ANSI C63.10-2009, unless otherwise noted. Description of procedures and measurements can be found in Appendix B – Measurement Data. See Appendix A for photos of the test set up.

7.0 Test Conditions

Normal Test Conditions:

Temperature and Humidity:

70°F at 34% RH (or as noted)

Supply Voltage:

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

8.0 Modifications Made To EUT for Compliance

None noted at time of test.

9.0 Additional Descriptions

Testing was performed at low, mid, and high channels over 2 modulation bandwidths (20MHz & 40MHz). The antenna ports were tested (Channel 0 & 1). Worst case emissions were recorded. AC line conducted tested in transmit mode.

Radiated emissions were tested with a 16dBi panel antenna assembly, Model: 85009324001 Rev AA, below 1 GHz. Tested cabinet radiated emissions (ports terminated into a 50 Ohm load) above 1 GHz.

Emission Designators: 20M0x1D, 40M0x1D

Power Settings noted on the test data.

10.0 Results

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

11.0 Conclusion

The Avenger AP 5.7GHz Radio, Model C050900P12A, as provided from Cambium Networks tested from June 12th to June 17th and July 1st & 2nd, 2013 **meets** the requirements of CFR 47 Part 15 Subpart C Section 15.247.

Appendix A – Test Photos

Photo Information and Test Setup:

Item0: Avenger AP 5.7GHz Radio, Model C050900P12A
Item1: Panel Antenna with cable Model: 85009324001 Rev AA
Item2: Unshielded Ethernet Cable - 20 meters long

Radiated - Below 1 GHz

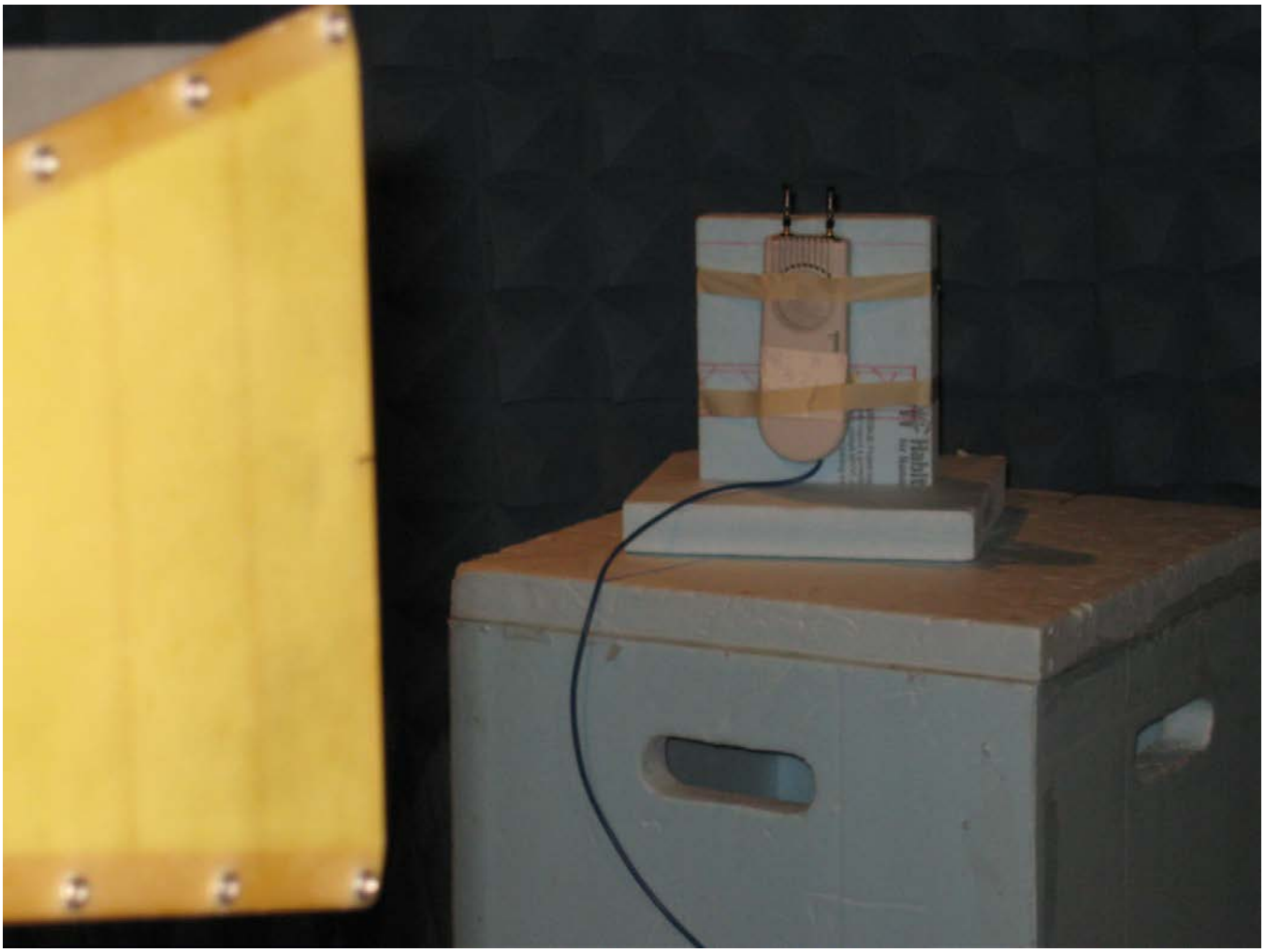
166 South Carter, Genoa City, WI 53128

Appendix A – Test Photos

Radiated - Below 1 GHz - Back - showing Panel Antenna

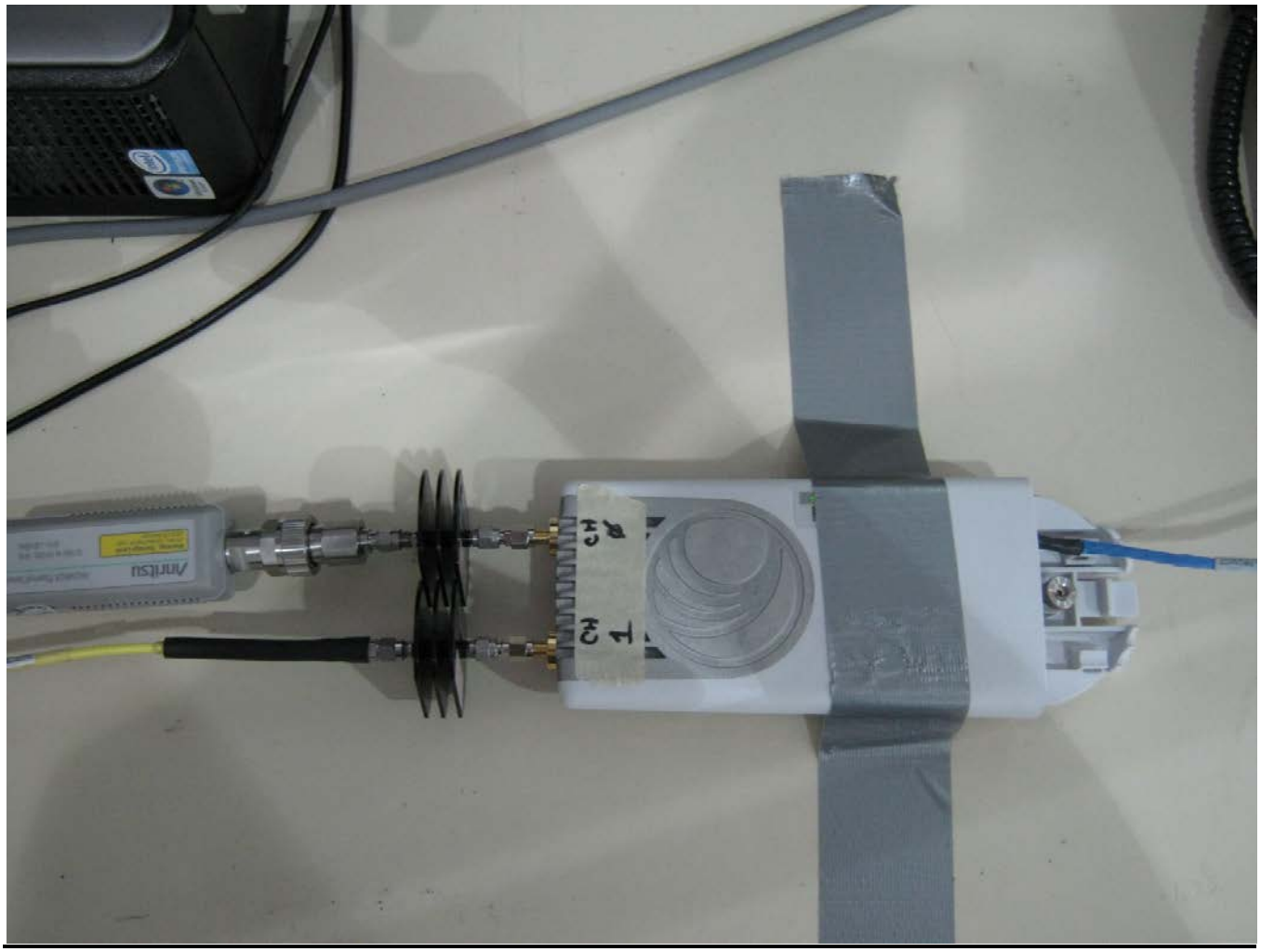
Appendix A – Test Photos

Radiated - above 1 GHz



Appendix A – Test Photos

RF Conducted / Output Power



166 South Carter, Genoa City, WI 53128

Appendix A – Test Photos

AC Line Conducted

166 South Carter, Genoa City, WI 53128

Appendix B – Measurement Data

B1.0 DTS Bandwidth – 6 dB bandwidth - Conducted

Rule Section: Section 15.247(a)(2)

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

Section 8.0 DTS Bandwidth
8.1 Option 1

Description:

RBW = 100kHz
Detector = Peak
Sweep = Auto Couple

VBW ≥ 3 x RBW
Trace mode = Max Hold

Allow the trace to stabilize. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission. Measure the maximum width of the emission between the lower and upper frequencies that measure 6 dB below the maximum level of the in-band emission.

Measurements were taken for an OFDM modulation over a 20MHz and 40MHz modulation bandwidth at the low, mid and high channels of operation. EUT was set to transmit continuously over various frequencies and power settings.

Limit: DTS Bandwidth shall be at least 500 kHz

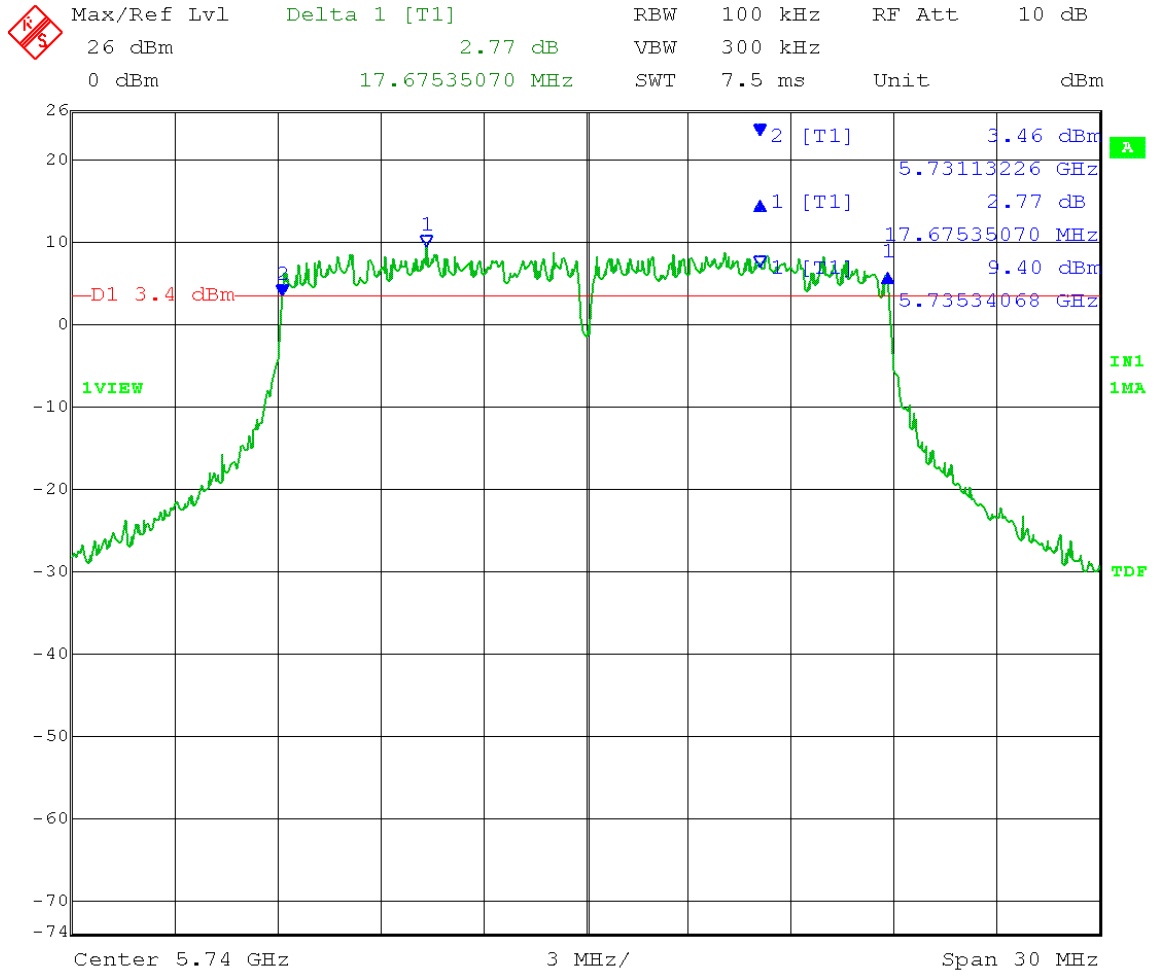
Results: Passed

DLS ELECTRONIC SYSTEMS, INC.
166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C050900P12A
Report Number:	19128
DLS Project:	5941

Test Date:	06-14-2013
Company:	Cambium Networks
EUT:	Avenger AP 5.7GHz OFDM
Test:	DTS Bandwidth (6 dB) - Conducted
Operator:	Jim O
Comment:	FCC DTS operating under 15.247 – OET 4/9/2013
	8.0 DTS Bandwidth: Section 8.1 Option 1
	RBW = 100 kHz VBW = 300 kHz
	Low Channel: Transmit = 5.740 GHz 20MHz BW
	Output power setting: 20 Channel 0
	Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 17.67MHz



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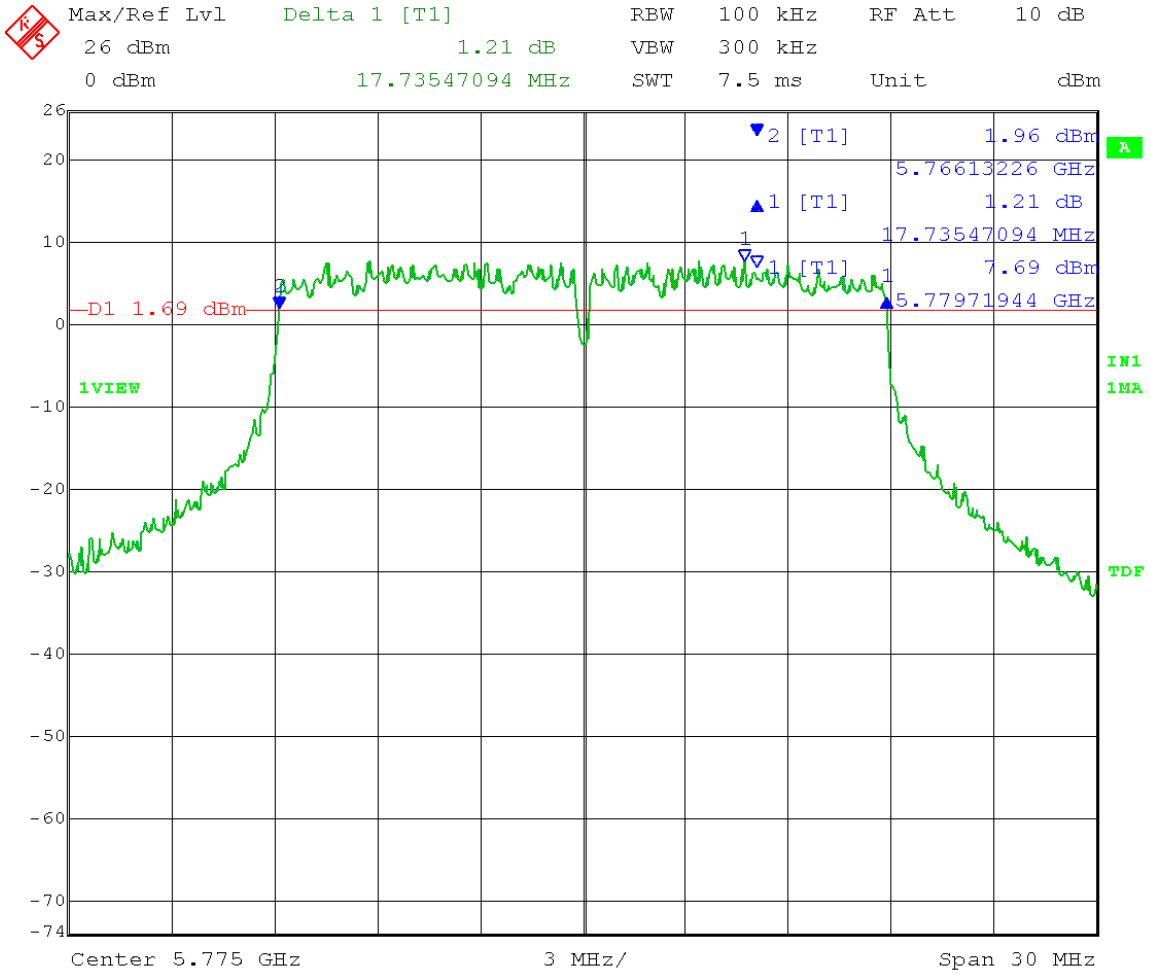
Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: DTS Bandwidth (6 dB) - Conducted
Operator: Jim O
Comment: FCC DTS operating under 15.247 – OET 4/9/2013
8.0 DTS Bandwidth: Section 8.1 Option 1
RBW = 100 kHz VBW = 300 kHz
Mid Channel: Transmit = 5.775 GHz 20MHz BW
Output power setting: 20 Channel 0
Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 17.74MHz



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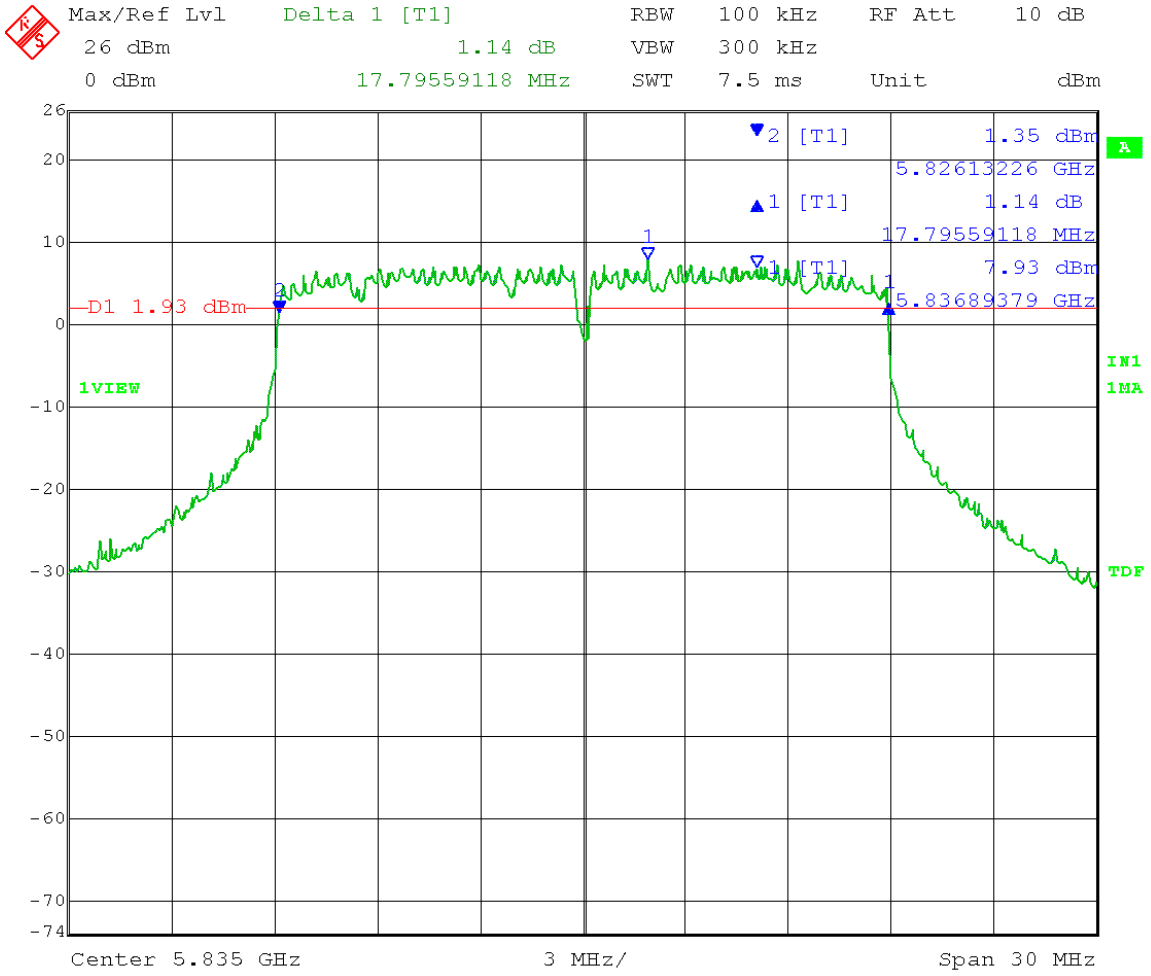
Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: DTS Bandwidth (6 dB) - Conducted
Operator: Jim O
Comment: FCC DTS operating under 15.247 – OET 4/9/2013
8.0 DTS Bandwidth: Section 8.1 Option 1
RBW = 100 kHz VBW = 300 kHz
High Channel: Transmit = 5.835 GHz 20MHz BW
Output power setting: 20 Channel 0
Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 17.80MHz



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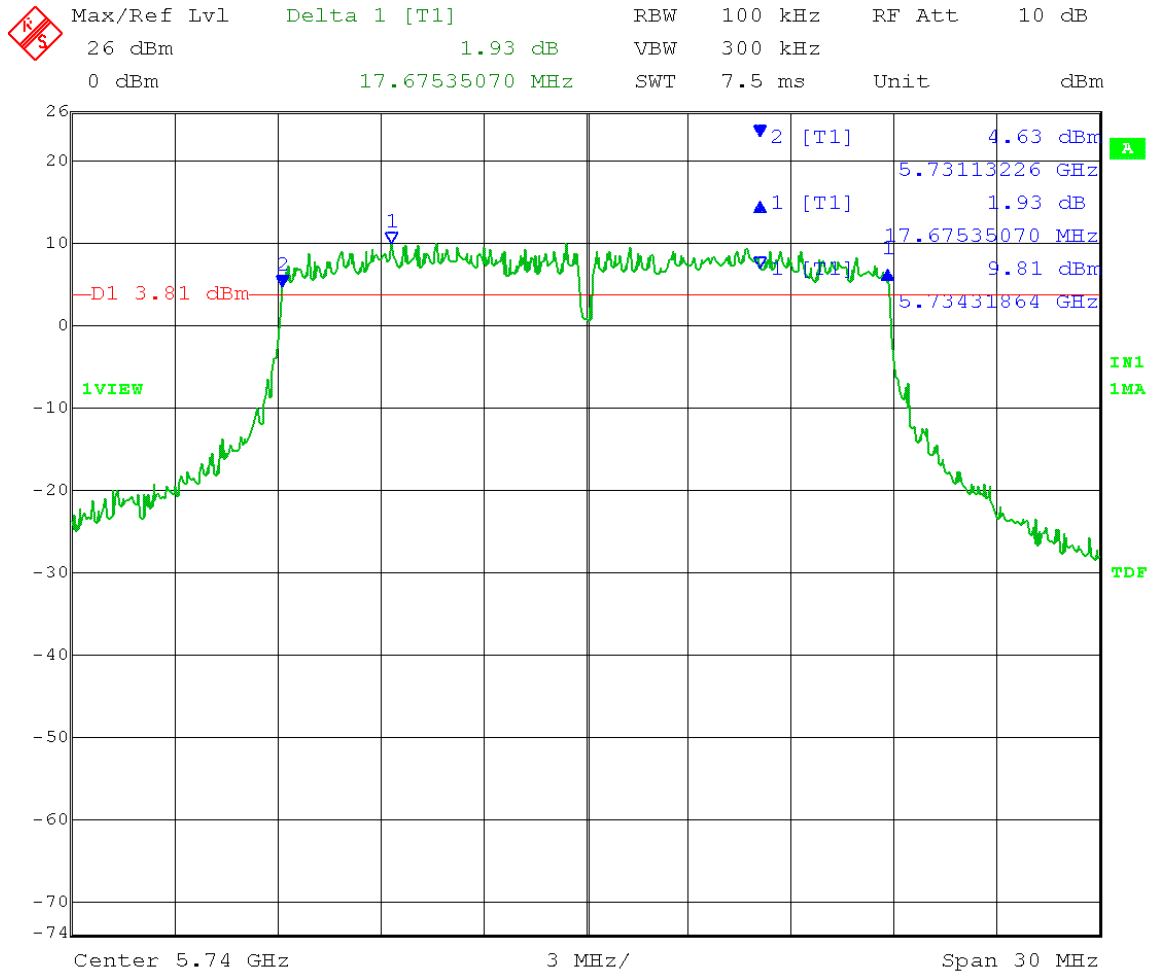
Test Date:	06-14-2013
Company:	Cambium Networks
EUT:	Avenger AP 5.7GHz OFDM
Test:	DTS Bandwidth (6 dB) - Conducted
Operator:	Jim O
Comment:	FCC DTS operating under 15.247 – OET 4/9/2013
	8.0 DTS Bandwidth: Section 8.1 Option 1
	RBW = 100 kHz VBW = 300 kHz
	Low Channel: Transmit = 5.740 GHz 20MHz BW
	Output power setting: 20 Channel 1
	Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 17.67MHz



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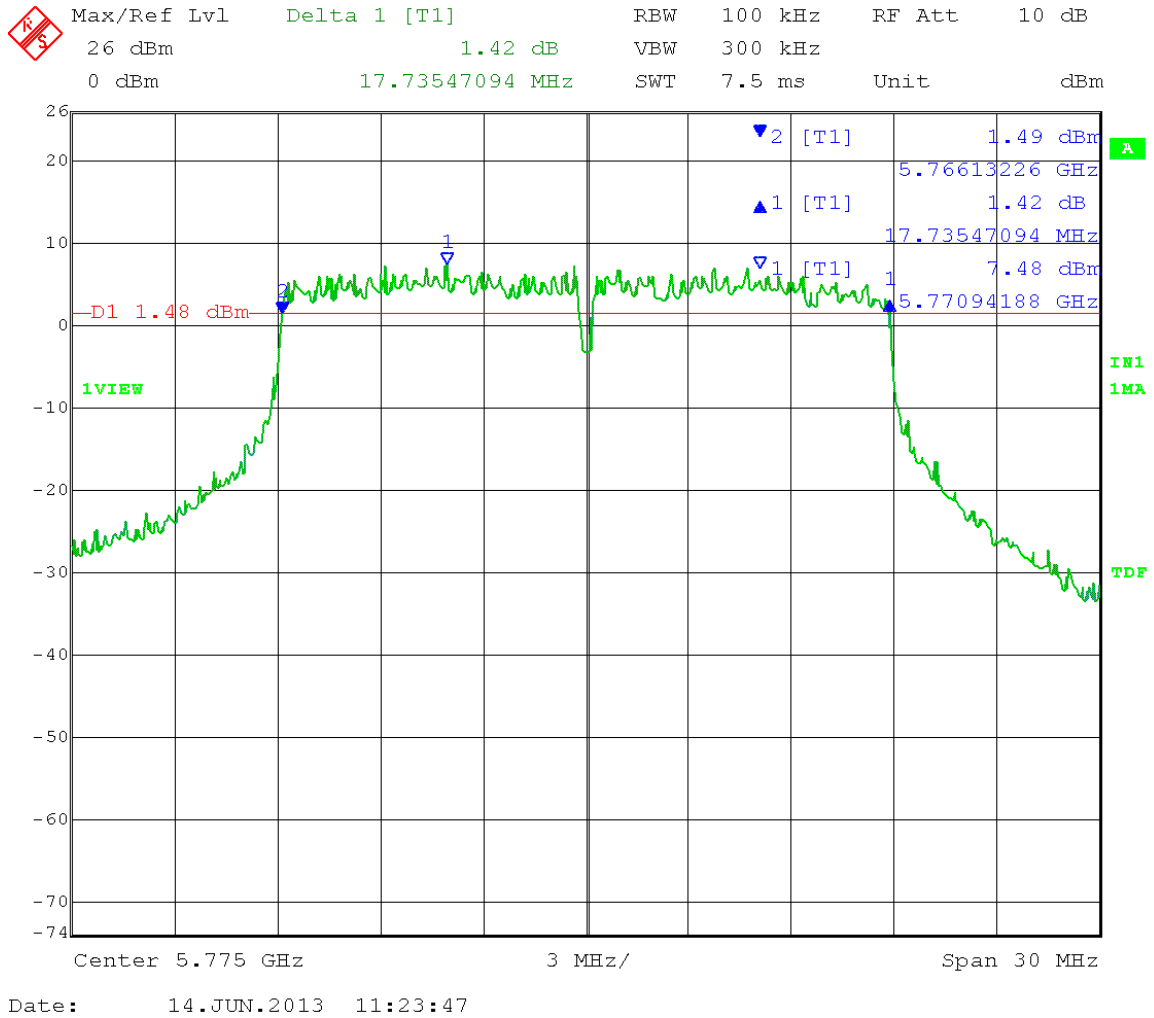
Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: DTS Bandwidth (6 dB) - Conducted
Operator: Jim O
Comment: FCC DTS operating under 15.247 – OET 4/9/2013
8.0 DTS Bandwidth: Section 8.1 Option 1
RBW = 100 kHz VBW = 300 kHz
Mid Channel: Transmit = 5.775 GHz 20MHz BW
Output power setting: 20 Channel 1
Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 17.74MHz



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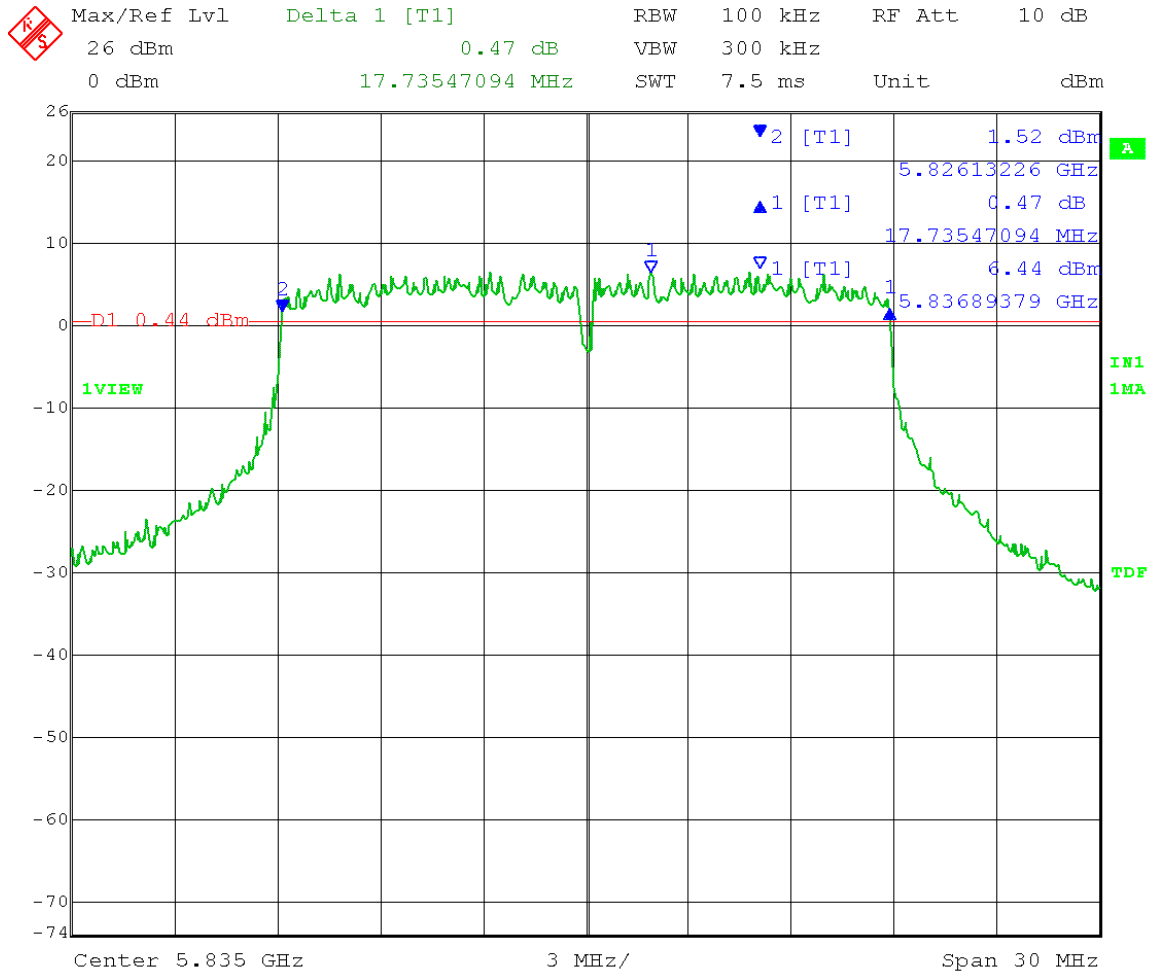
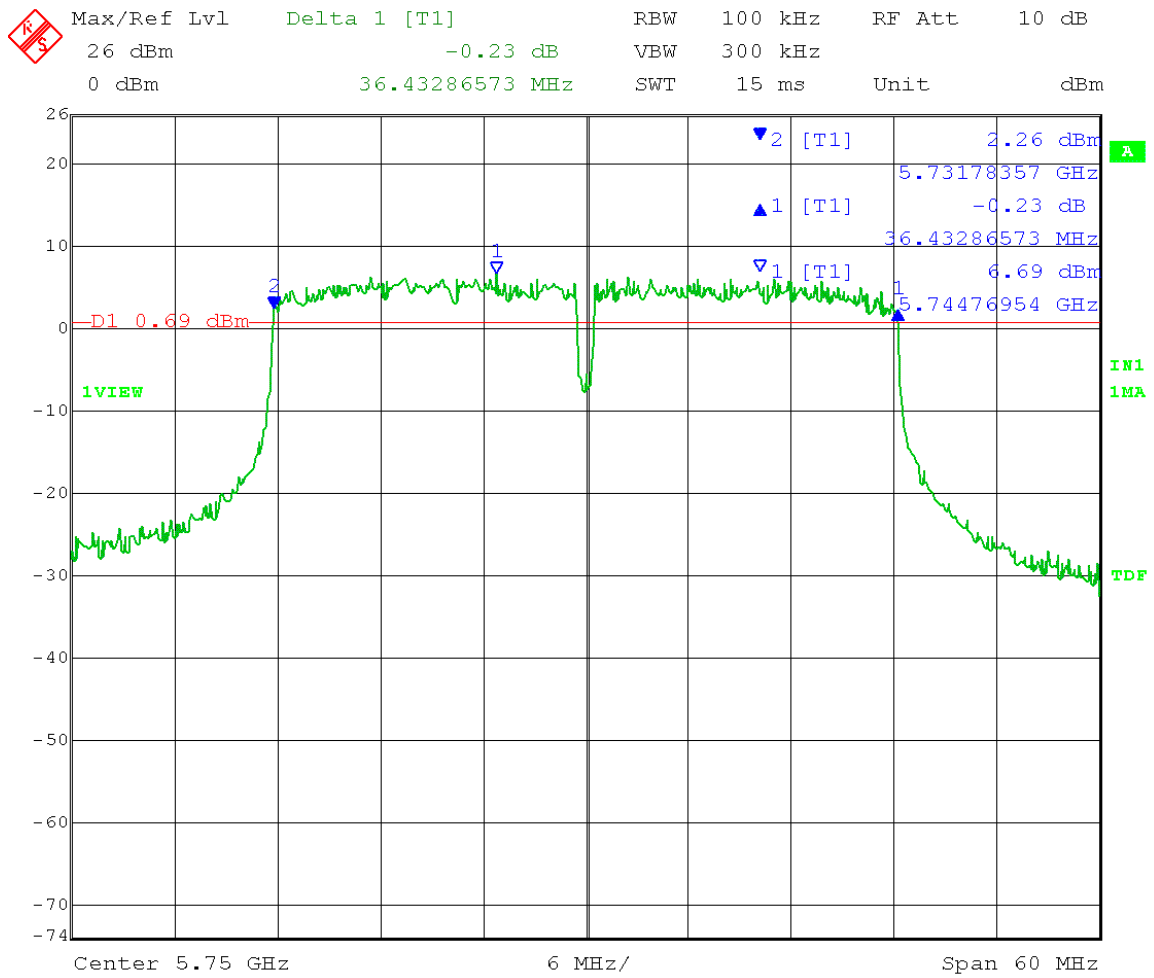
Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: DTS Bandwidth (6 dB) - Conducted
Operator: Jim O
Comment: FCC DTS operating under 15.247 – OET 4/9/2013
8.0 DTS Bandwidth: Section 8.1 Option 1
RBW = 100 kHz VBW = 300 kHz
High Channel: Transmit = 5.835 GHz 20MHz BW
Output power setting: 20 Channel 1
Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 17.74MHz



Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: DTS Bandwidth (6 dB) - Conducted
Operator: Jim O
Comment: FCC DTS operating under 15.247 – OET 4/9/2013
8.0 DTS Bandwidth: Section 8.1 Option 1
RBW = 100 kHz VBW = 300 kHz
Low Channel: Transmit = 5.750 GHz 40MHz BW
Output power setting: 20 Channel 0
Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 36.43MHz



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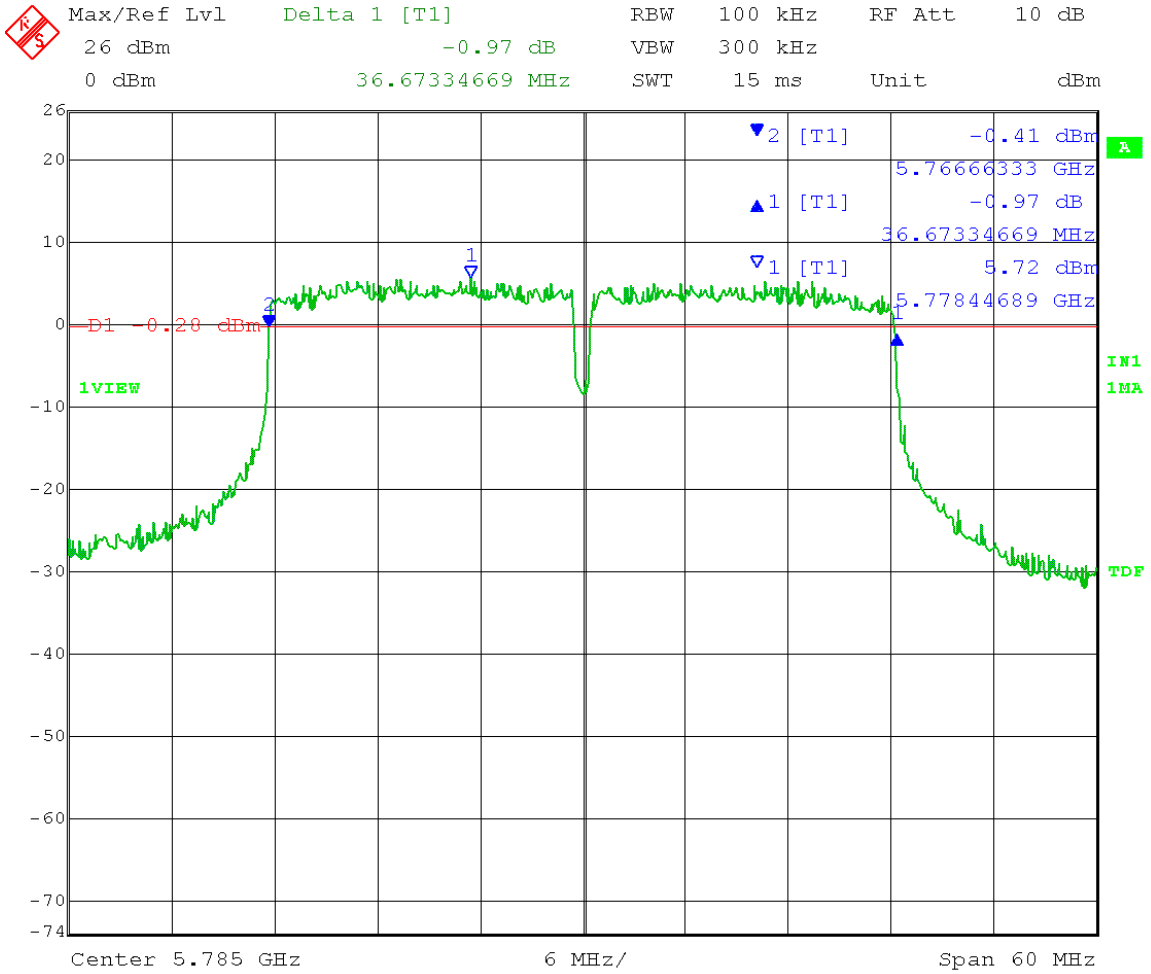
Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: DTS Bandwidth (6 dB) - Conducted
Operator: Jim O
Comment: FCC DTS operating under 15.247 – OET 4/9/2013
8.0 DTS Bandwidth: Section 8.1 Option 1
RBW = 100 kHz VBW = 300 kHz
Mid Channel: Transmit = 5.785 GHz 40MHz BW
Output power setting: 20 Channel 0
Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 36.67MHz



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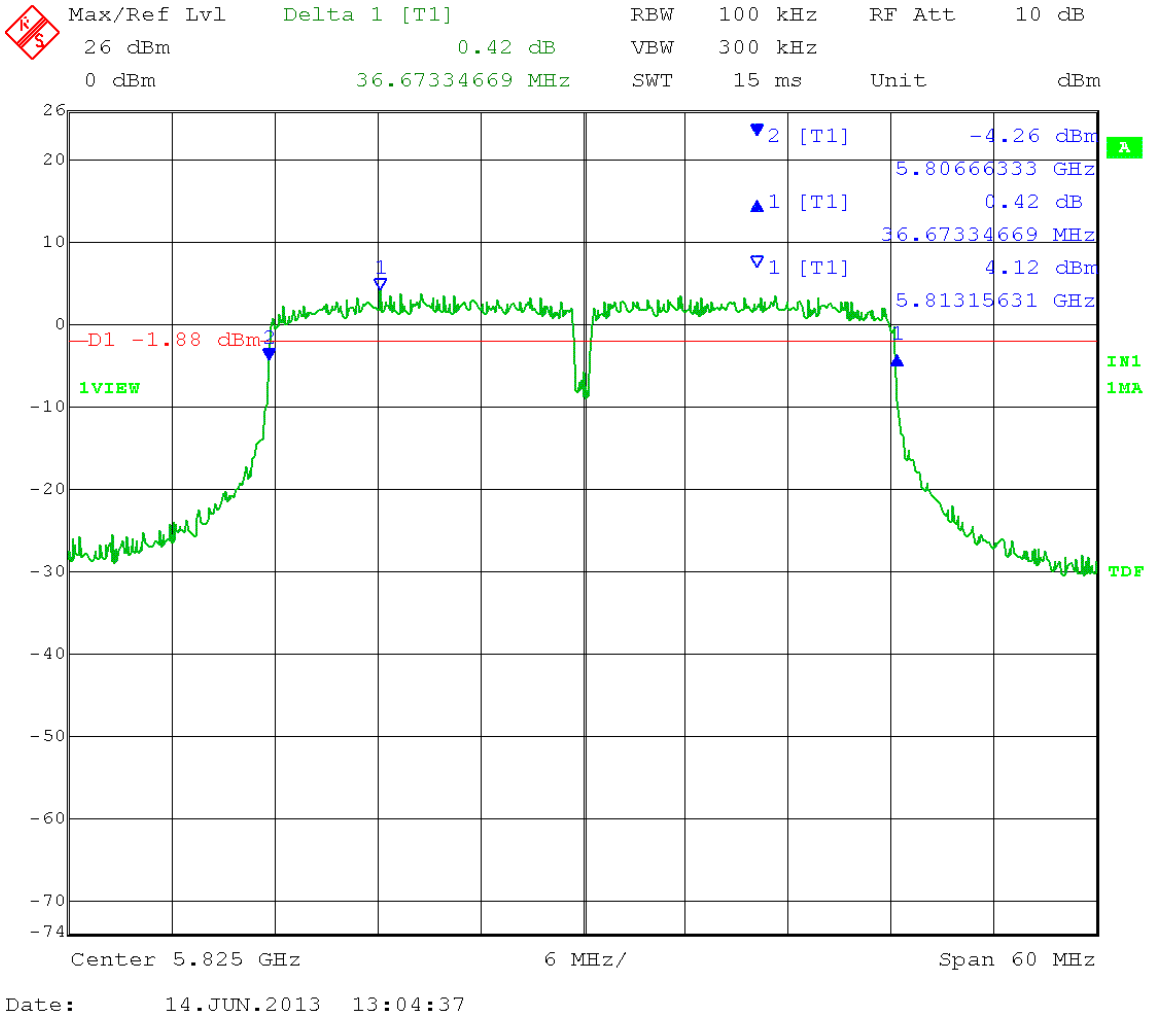
Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: DTS Bandwidth (6 dB) - Conducted
Operator: Jim O
Comment: FCC DTS operating under 15.247 – OET 4/9/2013
8.0 DTS Bandwidth: Section 8.1 Option 1
RBW = 100 kHz VBW = 300 kHz
High Channel: Transmit = 5.825 GHz 40MHz BW
Output power setting: 20 Channel 0
Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 36.67MHz



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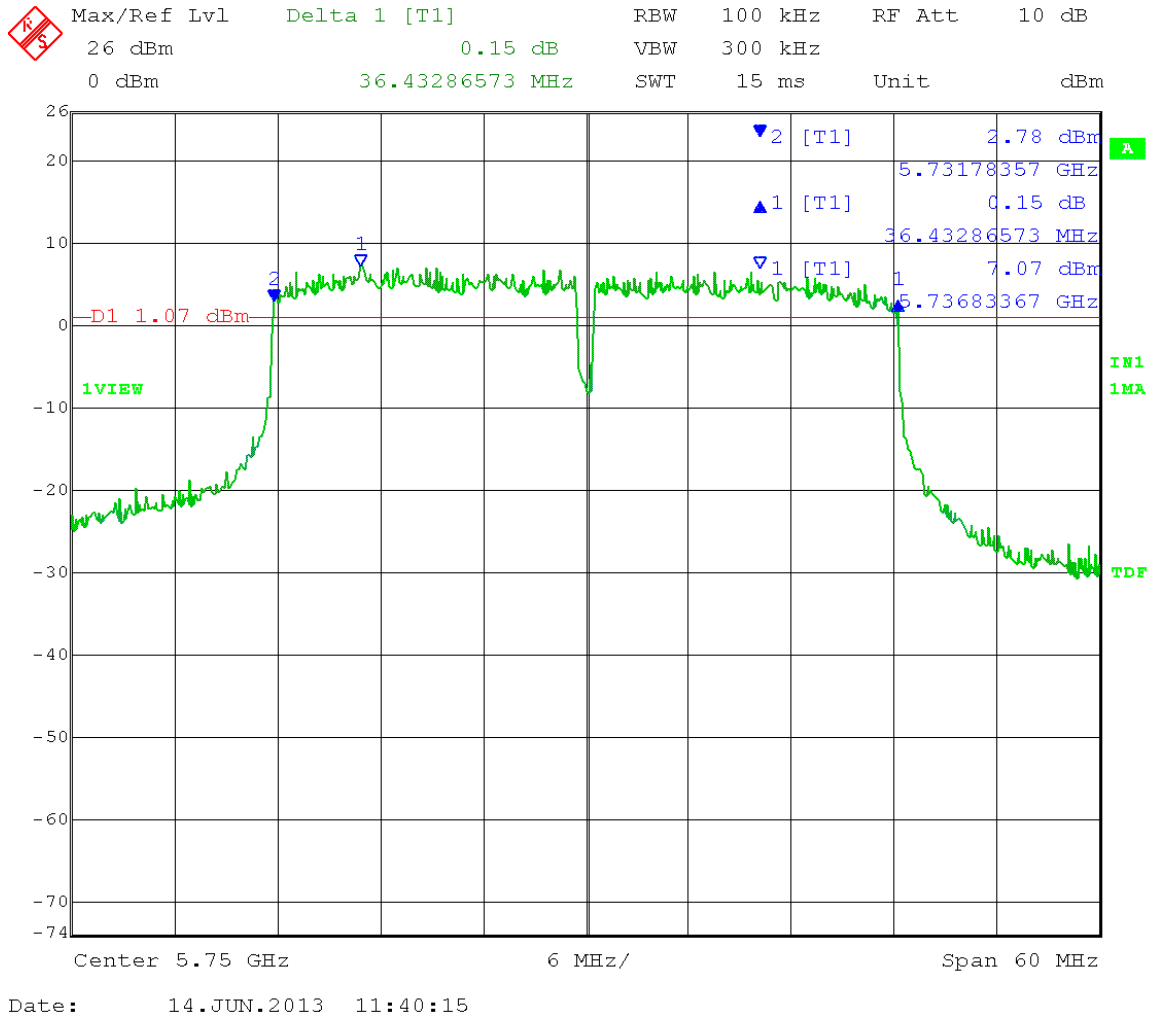
DLS ELECTRONIC SYSTEMS, INC.
166 South Carter, Genoa City, WI 53128

Company:	Cambium Networks
Model Tested:	C050900P12A
Report Number:	19128
DLS Project:	5941

Test Date:	06-14-2013
Company:	Cambium Networks
EUT:	Avenger AP 5.7GHz OFDM
Test:	DTS Bandwidth (6 dB) - Conducted
Operator:	Jim O
Comment:	FCC DTS operating under 15.247 – OET 4/9/2013
	8.0 DTS Bandwidth: Section 8.1 Option 1
	RBW = 100 kHz VBW = 300 kHz
	Low Channel: Transmit = 5.750 GHz 40MHz BW
	Output power setting: 20 Channel 1
	Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 36.43MHz



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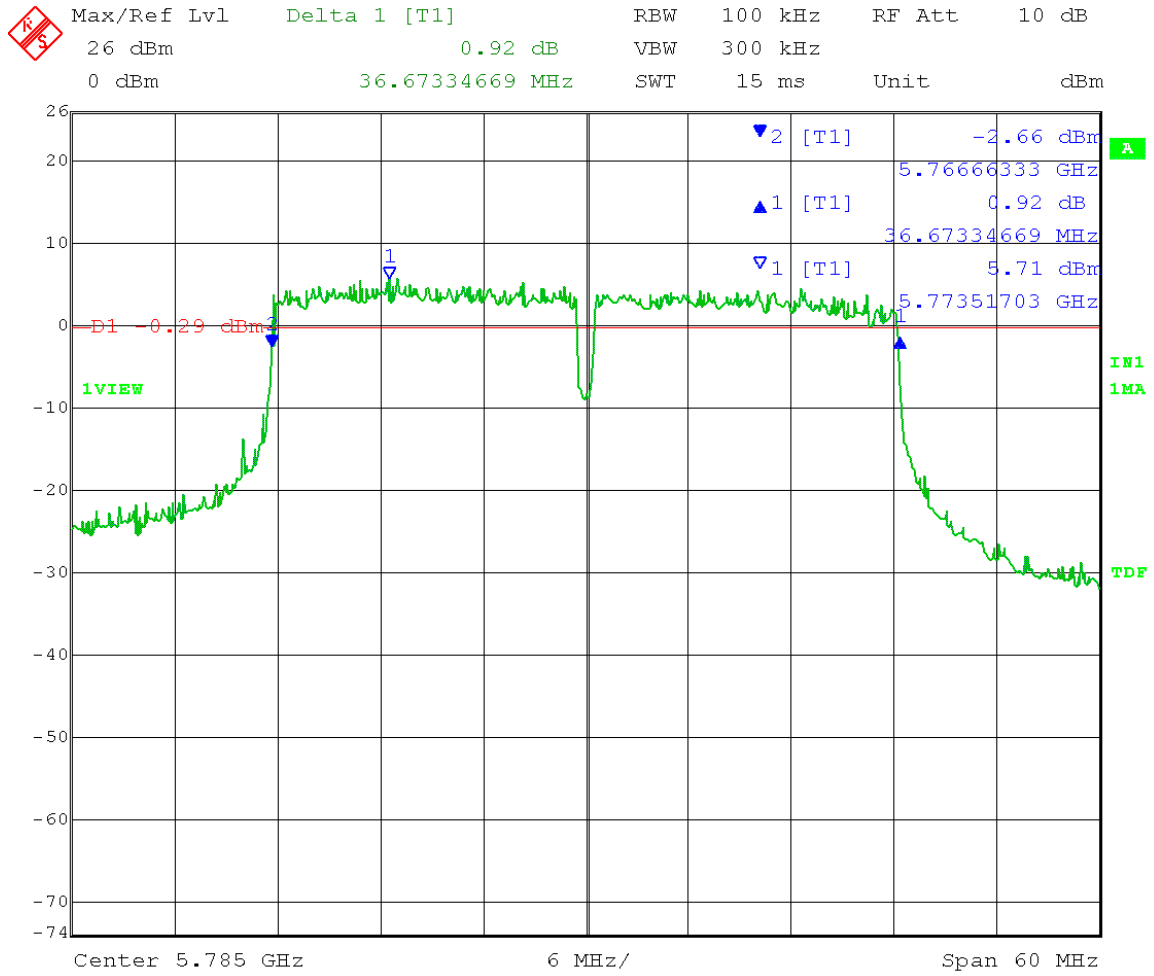
Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: DTS Bandwidth (6 dB) - Conducted
Operator: Jim O
Comment: FCC DTS operating under 15.247 – OET 4/9/2013
8.0 DTS Bandwidth: Section 8.1 Option 1
RBW = 100 kHz VBW = 300 kHz
Mid Channel: Transmit = 5.785 GHz 40MHz BW
Output power setting: 20 Channel 1
Limit > 500 kHz ESN# 000456C005DE

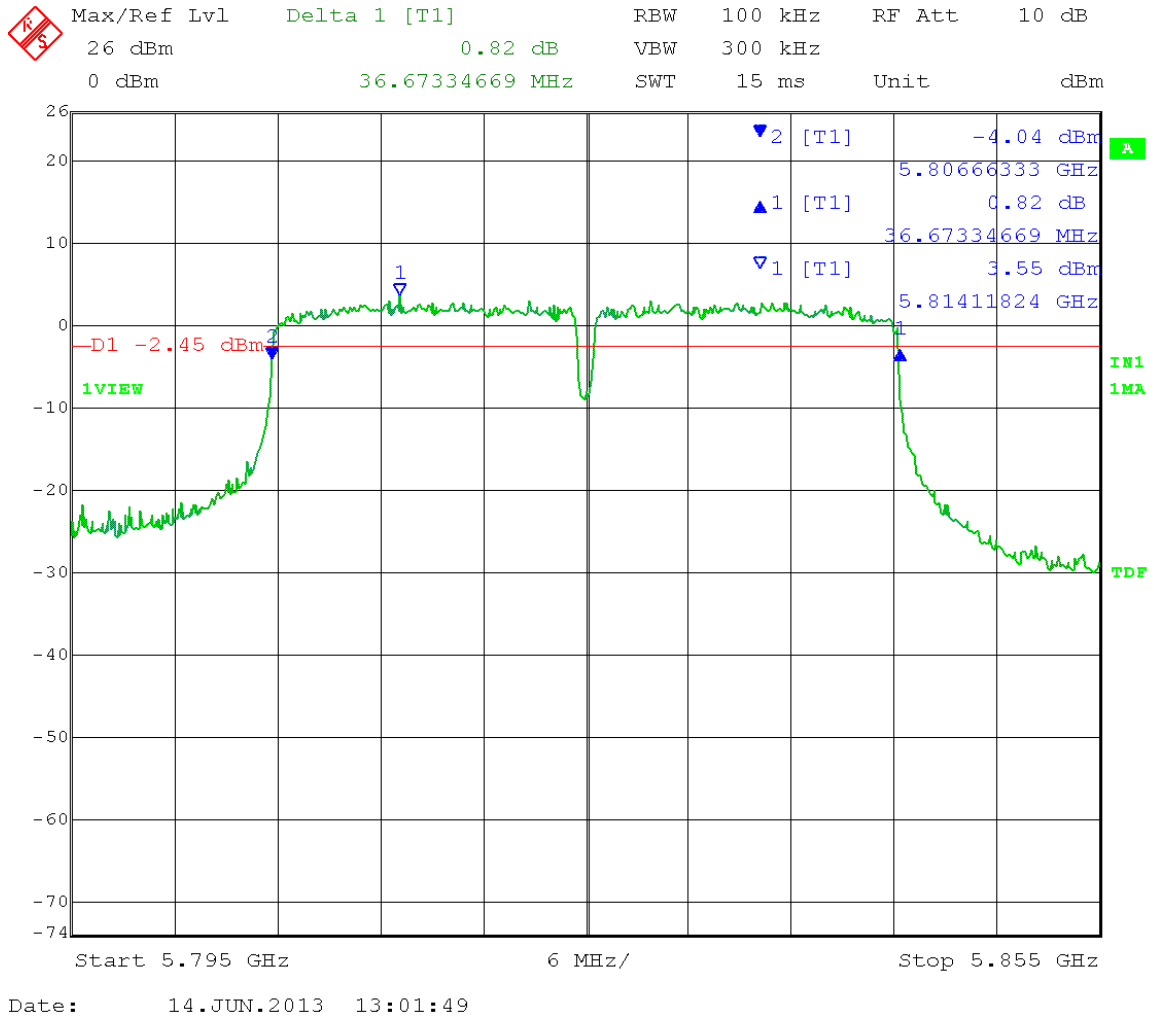
DTS Bandwidth = 36.67MHz



Date: 14.JUN.2013 11:52:04

Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: DTS Bandwidth (6 dB) - Conducted
Operator: Jim O
Comment: FCC DTS operating under 15.247 – OET 4/9/2013
8.0 DTS Bandwidth: Section 8.1 Option 1
RBW = 100 kHz VBW = 300 kHz
High Channel: Transmit = 5.825 GHz 40MHz BW
Output power setting: 20 Channel 1
Limit > 500 kHz ESN# 000456C005DE

DTS Bandwidth = 36.67MHz



Date: 14.JUN.2013 13:01:49

Appendix B – Measurement Data

B2.0 Fundamental Emission Output Power - Conducted

Rule Section: Section 15.247(b)(3)

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

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

Description: As an alternative to spectrum analyzer or EMI receiver measurements, measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent.

Measurements were taken for an OFDM modulation over a 20MHz and 40MHz modulation bandwidth at the low, mid and high channels of operation. EUT was set to transmit continuously over various frequencies and power settings. A duty cycle measurement of greater than 98% was confirmed.

Limit: 1 Watt (30dBm); 20dBm for Point-to-Multipoint mode. (see note below)

Results: Passed

Notes: Antenna gain is 16dBi. Therefore, the RF conducted power limit was reduced by 10 dB to 20dBm (the amount by which the antenna gain exceeds 6dBi) for Point-to-Multipoint mode.

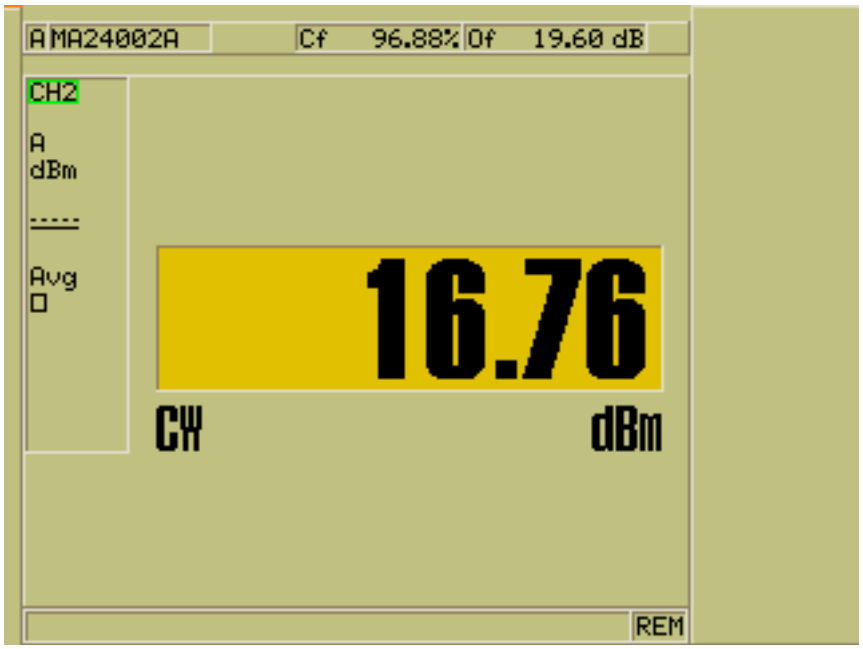
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013
Company:	Cambium Networks
EUT:	Avenger AP 5.7 GHz OFDM
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator:	Jim O ESN# 000456C005DE
Comments:	Output port: Channel 0; Low Channel Frequency: 5.740 GHz Output power setting: 17 Modulation BW: 20MHz Operating Mode: Point-to-Multipoint Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.76dBm + 3 dB (MIMO) = 19.76dBm = 95.1**mW**



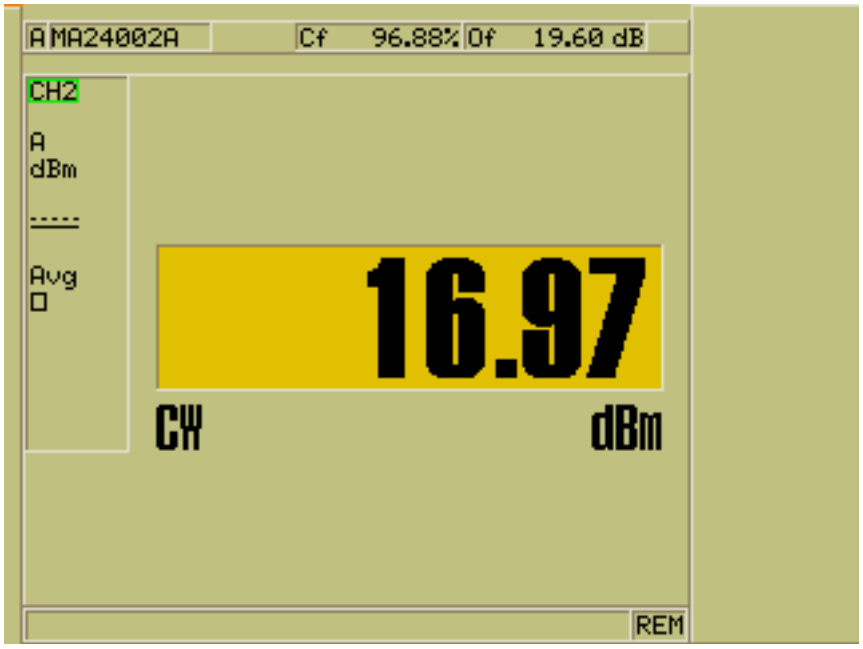
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013	
Company:	Cambium Networks	
EUT:	Avenger AP 5.7 GHz OFDM	
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted	
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)	
Operator:	Jim O	ESN# 000456C005DE
Comments:	Output port: Channel 0;	Mid Channel Frequency: 5.775 GHz
	Output power setting: 17	Modulation BW: 20MHz
	Operating Mode: Point-to-Multipoint	Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.97dBm + 3 dB (MIMO) = 19.97dBm = 99.3**mW**



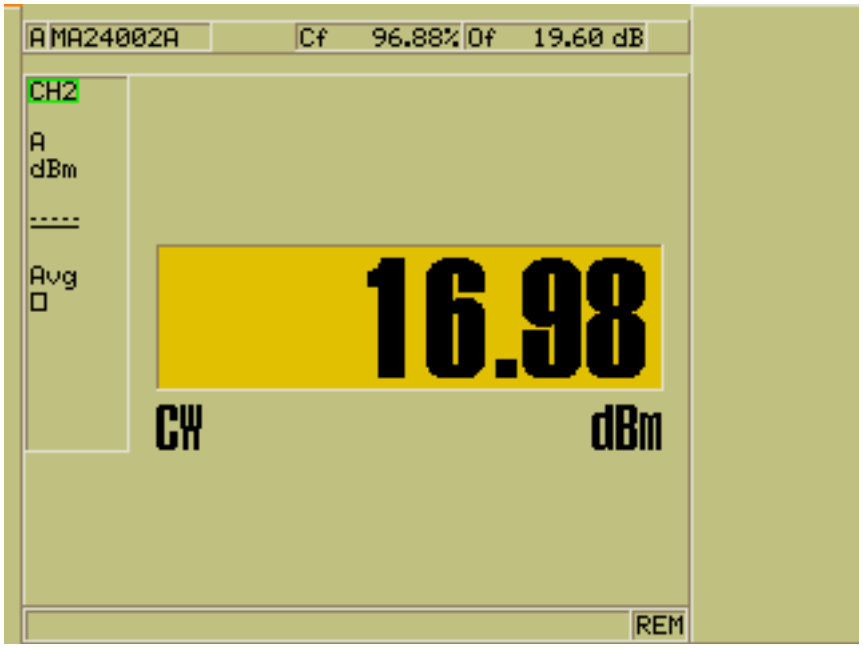
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013	
Company:	Cambium Networks	
EUT:	Avenger AP 5.7 GHz OFDM	
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted	
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)	
Operator:	Jim O	ESN# 000456C005DE
Comments:	Output port: Channel 0	High Channel Frequency: 5.835 GHz
	Output power setting: 17	Modulation BW: 20MHz
	Operating Mode: Point-to-Multipoint	Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.98dBm + 3 dB (MIMO) = 19.98dBm = 99.1**mW**



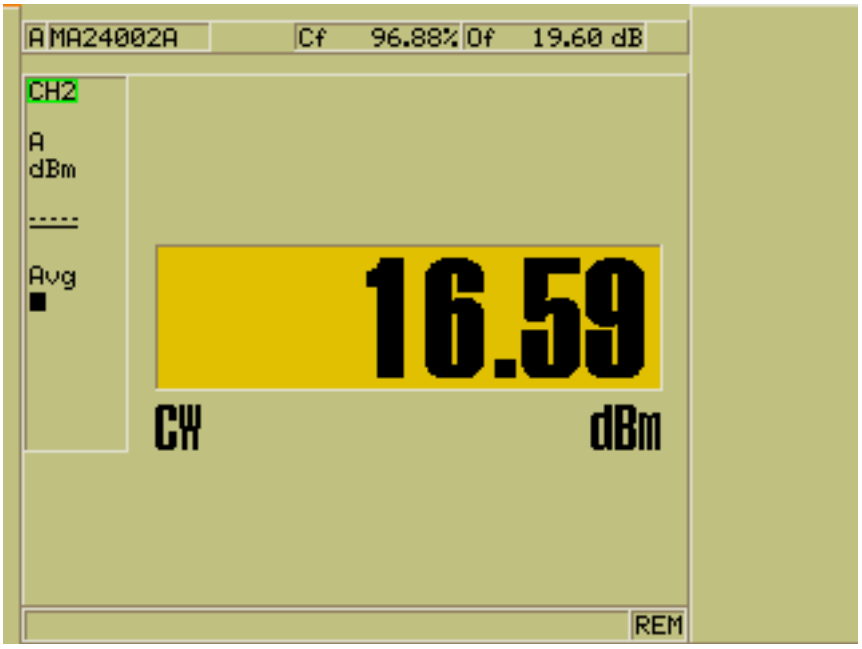
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013	
Company:	Cambium Networks	
EUT:	Avenger AP 5.7 GHz OFDM	
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted	
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)	
Operator:	Jim O	ESN# 000456C005DE
Comments:	Output port: Channel 1; Output power setting: 17 Operating Mode: Point-to-Multipoint	Low Channel Frequency: 5.740 GHz Modulation BW: 20MHz Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.59dBm + 3 dB (MIMO) = 19.59dBm = 91**mW**

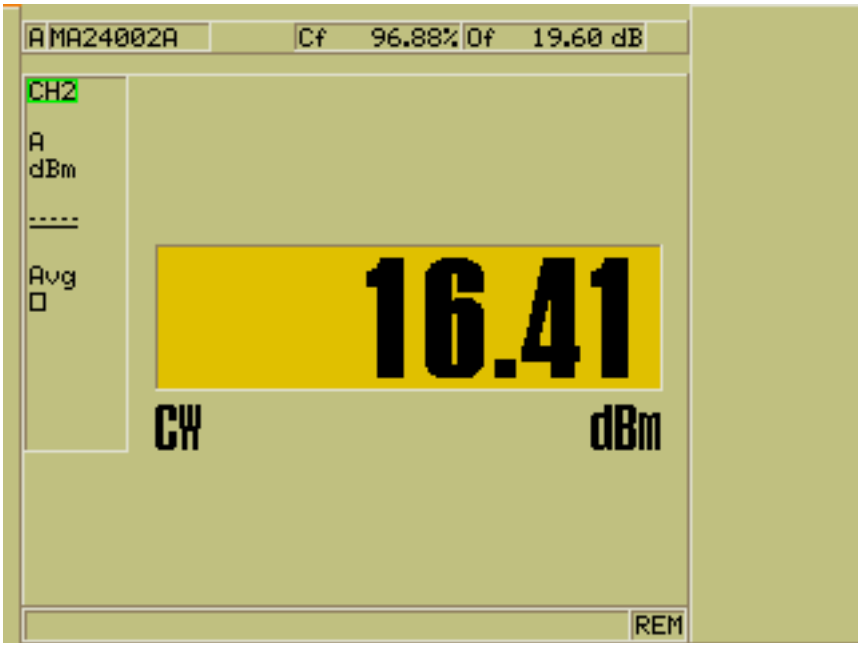


Test Date:	06-12-2013
Company:	Cambium Networks
EUT:	Avenger AP 5.7 GHz OFDM
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator:	Jim O ESN# 000456C005DE
Comments:	Output port: Channel 1 Mid Channel Frequency: 5.775 GHz Output power setting: 17 Modulation BW: 20MHz Operating Mode: Point-to-Multipoint Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.41dBm + 3 dB (MIMO) = 19.41dBm = 87.3**mW**



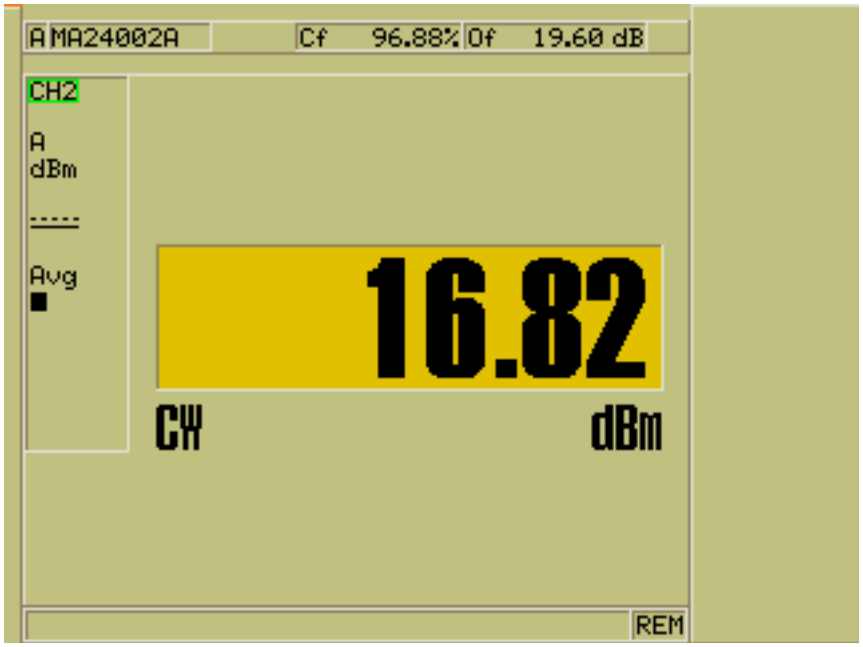
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013	
Company:	Cambium Networks	
EUT:	Avenger AP 5.7 GHz OFDM	
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted	
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)	
Operator:	Jim O	ESN# 000456C005DE
Comments:	Output port: Channel 1	High Channel Frequency: 5.835 GHz
	Output power setting: 17	Modulation BW: 20MHz
	Operating Mode: Point-to-Multipoint	Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.82dBm + 3 dB (MIMO) = 19.82dBm = 95.9**mW**



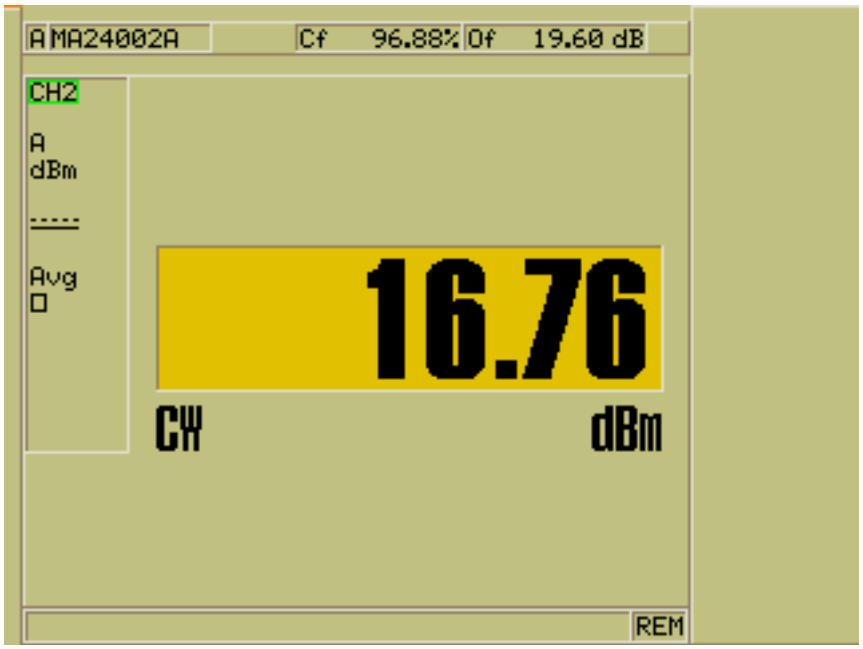
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013	
Company:	Cambium Networks	
EUT:	Avenger AP 5.7 GHz OFDM	
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted	
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)	
Operator:	Jim O	ESN# 000456C005DE
Comments:	Output port: Channel 0	Low Channel Frequency: 5.750 GHz
	Output power setting: 17	Modulation BW: 40MHz
	Operating Mode: Point-to-Multipoint	Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.76dBm + 3 dB (MIMO) = 19.76dBm = 94.6**mW**



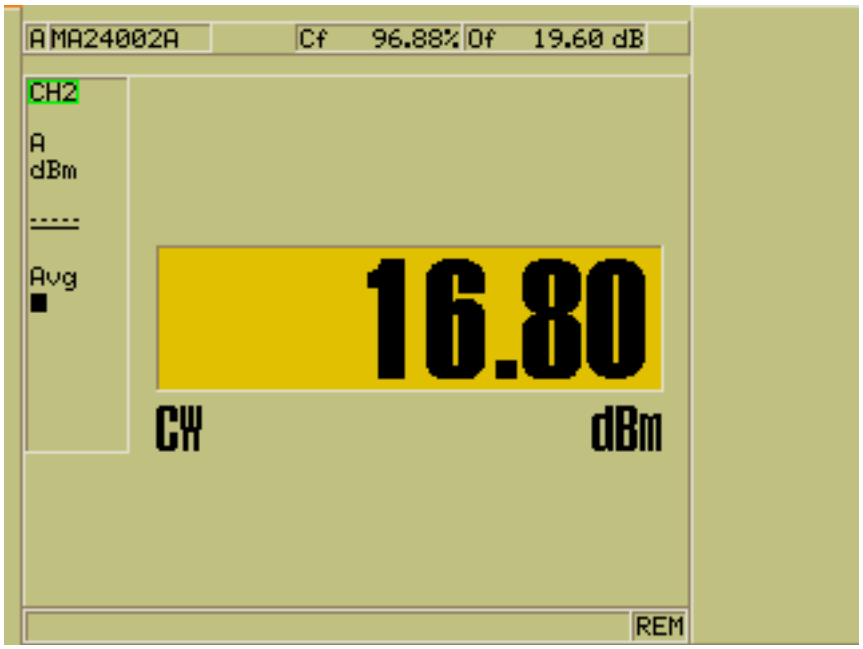
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013	
Company:	Cambium Networks	
EUT:	Avenger AP 5.7 GHz OFDM	
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted	
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)	
Operator:	Jim O	ESN# 000456C005DE
Comments:	Output port: Channel 0	Mid Channel Frequency: 5.775 GHz
	Output power setting: 17	Modulation BW: 40MHz
	Operating Mode: Point-to-Multipoint	Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.80dBm + 3 dB (MIMO) = 19.80dBm = 95.5**mW**



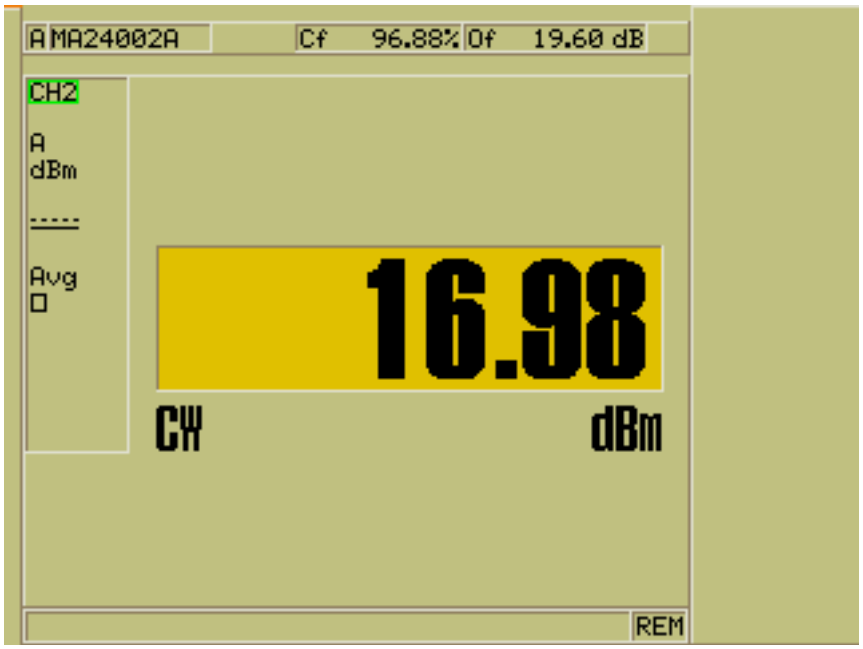
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013	
Company:	Cambium Networks	
EUT:	Avenger AP 5.7 GHz OFDM	
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted	
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)	
Operator:	Jim O	ESN# 000456C005DE
Comments:	Output port: Channel 0	High Channel Frequency: 5.825 GHz
	Output power setting: 17	Modulation BW: 40MHz
	Operating Mode: Point-to-Multipoint	Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.98dBm + 3 dB (MIMO) = 19.98dBm = 99.5**mW**



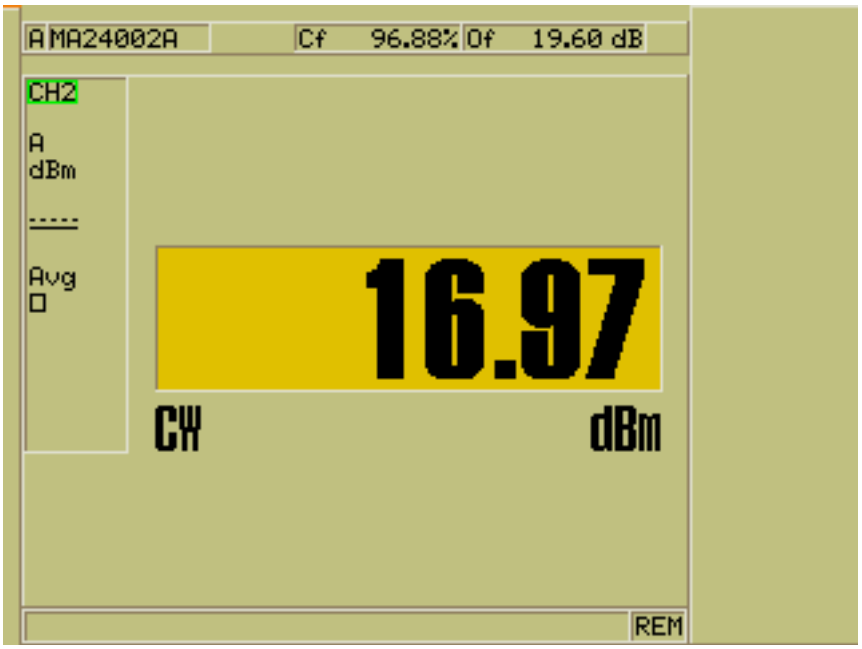
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013	
Company:	Cambium Networks	
EUT:	Avenger AP 5.7 GHz OFDM	
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted	
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)	
Operator:	Jim O	ESN# 000456C005DE
Comments:	Output port: Channel 1	Low Channel Frequency: 5.750 GHz
	Output power setting: 17	Modulation BW: 40MHz
	Operating Mode: Point-to-Multipoint	Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.97dBm + 3 dB (MIMO) = 19.97dBm = 99.3**mW**



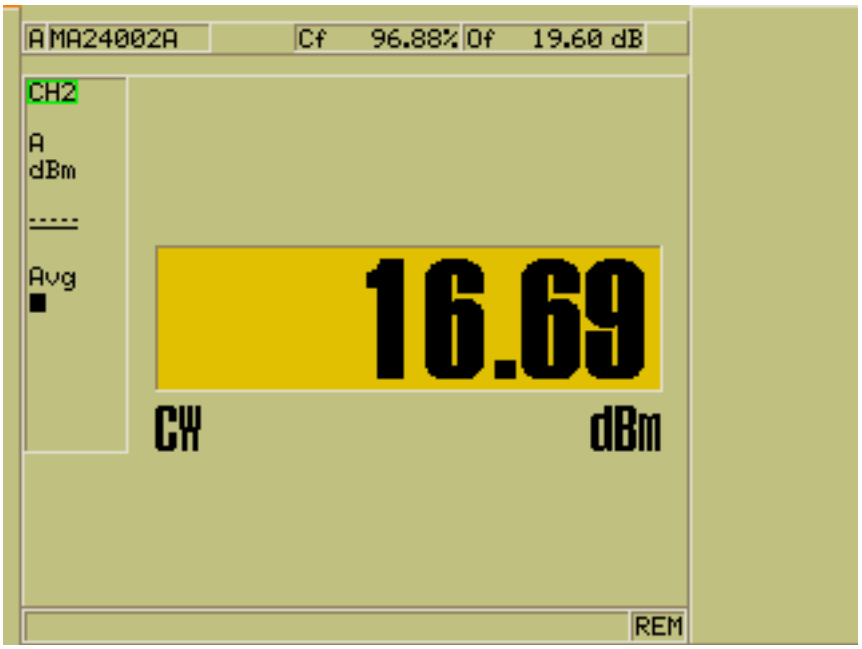
166 South Carter, Genoa City, WI 53128

Test Date:	06-12-2013
Company:	Cambium Networks
EUT:	Avenger AP 5.7 GHz OFDM
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator:	Jim O ESN# 000456C005DE
Comments:	Output port: Channel 1 Mid Channel Frequency: 5.775 GHz Output power setting: 17 Modulation BW: 40MHz Operating Mode: Point-to-Multipoint Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.69dBm + 3 dB (MIMO) = 19.69dBm = 93.1**mW**

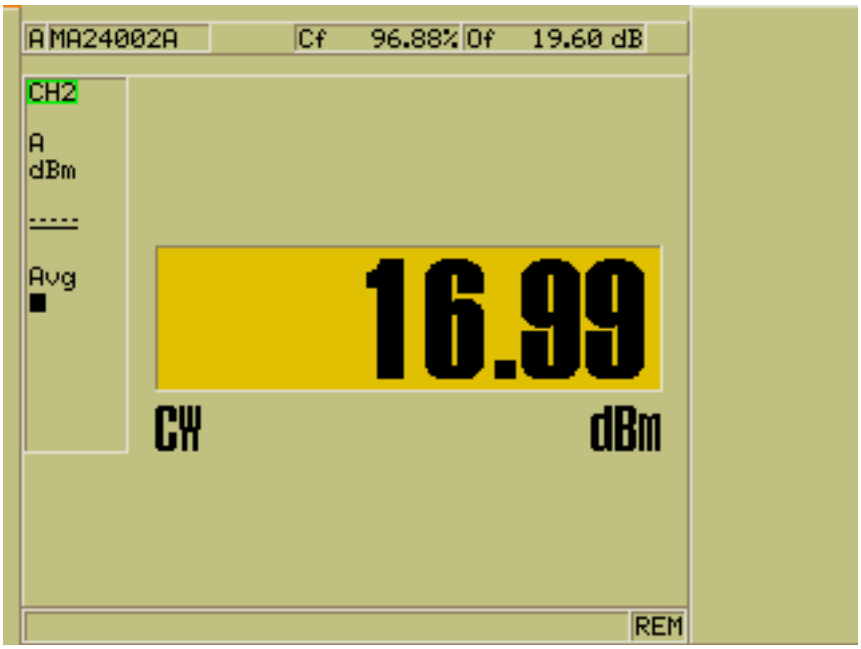


Test Date:	06-12-2013
Company:	Cambium Networks
EUT:	Avenger AP 5.7 GHz OFDM
Test:	AVERAGE AP Fundamental Emission Output Power – Conducted
Procedure:	FCC KDB D01 DTS Meas Guidance v03r01 Section 9.2.3.1 – AVGPM (Measurement using an RF average power meter with a thermocouple detector)
Operator:	Jim O ESN# 000456C005DE
Comments:	Output port: Channel 1 High Channel Frequency: 5.825 GHz Output power setting: 17 Modulation BW: 40MHz Operating Mode: Point-to-Multipoint Antenna Gain = 16dBi

Limit: [15.247(b)(3)]: 30 dBm (1 Watt) – 10 dB (antenna gain is 10 dB greater than the 6 dB allowed) = 20dBm conducted.

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

Fundamental Emission AVERAGE Output Power = 16.99dBm + 3 dB (MIMO) = 19.99dBm = 99.8**mW**



166 South Carter, Genoa City, WI 53128

Appendix B – Measurement Data

B3.0 Maximum Power Spectral Density – Conducted

Rule Section: Section 15.247(e)

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

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

Description:
Set instrument center frequency to DTS channel center frequency.
Set span to at least 1.5 times the OBW.
Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz. .
Set VBW ≥3 x RBW.
Detector = power averaging (RMS) or sample detector (when RMS not available).
Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
Sweep time = auto couple.
Employ trace averaging (RMS) mode over a minimum of 100 traces.
Use the peak marker function to determine the maximum amplitude level.

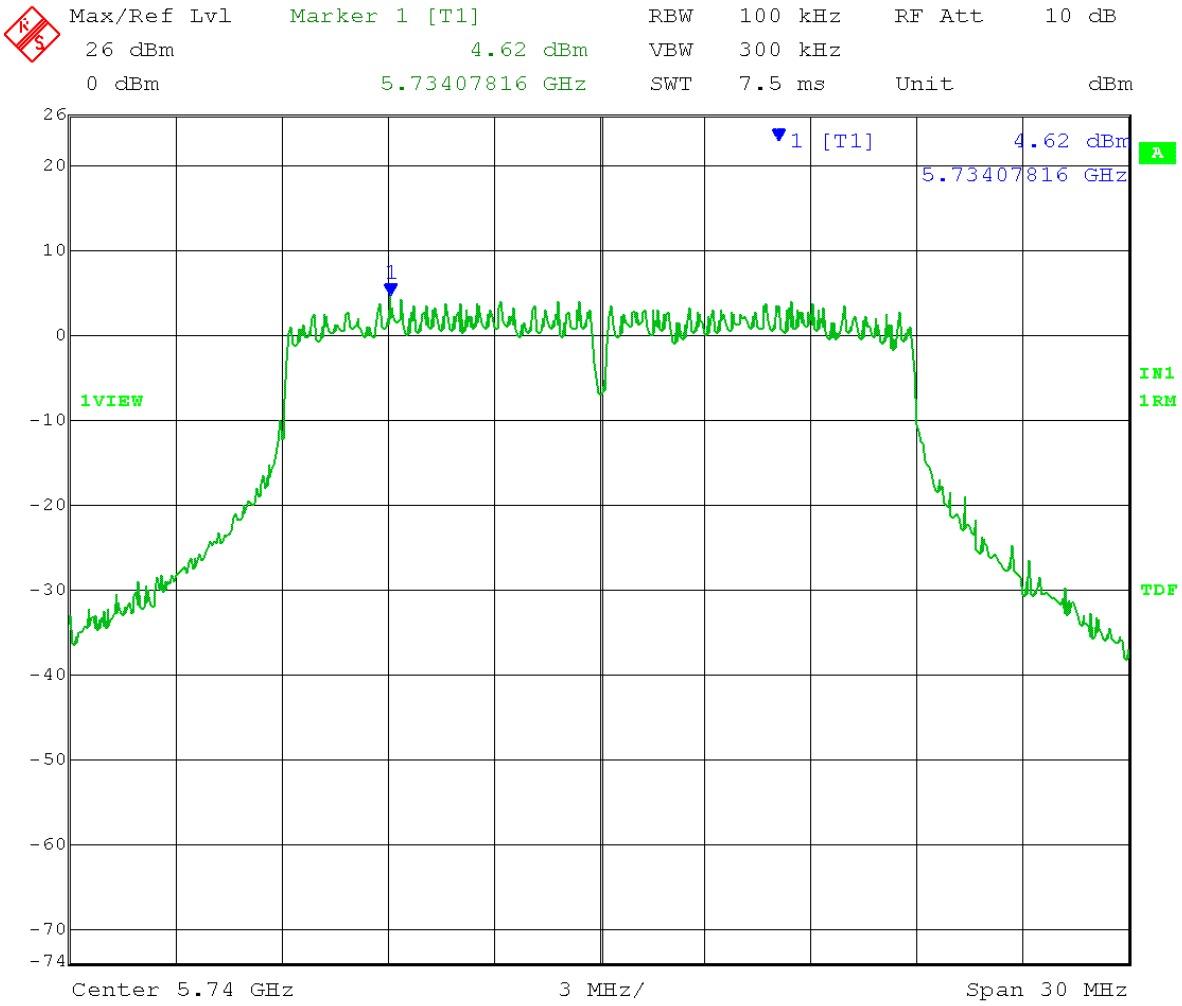
Measurements were taken for an OFDM modulation over a 20MHz and 40MHz modulation bandwidth at the low, mid and high channels of operation. EUT was set to transmit continuously over various frequencies and power settings. A duty cycle measurement of greater than 98% was confirmed.

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

Results: Passed

Test Date: 6-13-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)

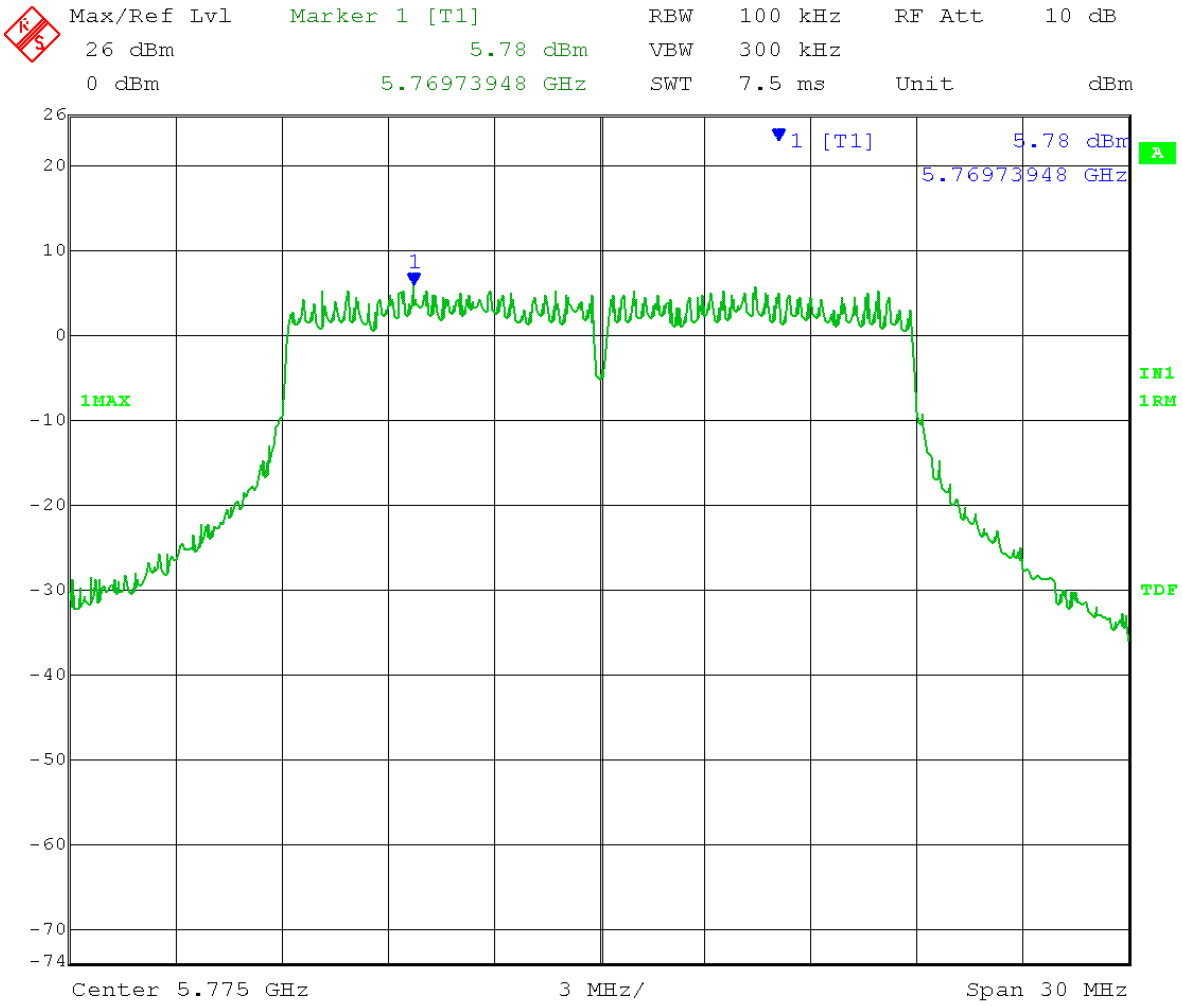
Low Channel: Frequency = 5.740GHz	ESN# 000456C005DE
TX Output Power Setting = 20dBm	20MHz BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x EBW	Detector = RMS
Sweep = Auto Couple	Trace = Max Hold
Channel 0	Limit: +8 dBm/3kHz (RBW)
PSD =4.62dBm = Pass	



Date: 13.JUN.2013 09:24:00

Test Date: 6-13-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)

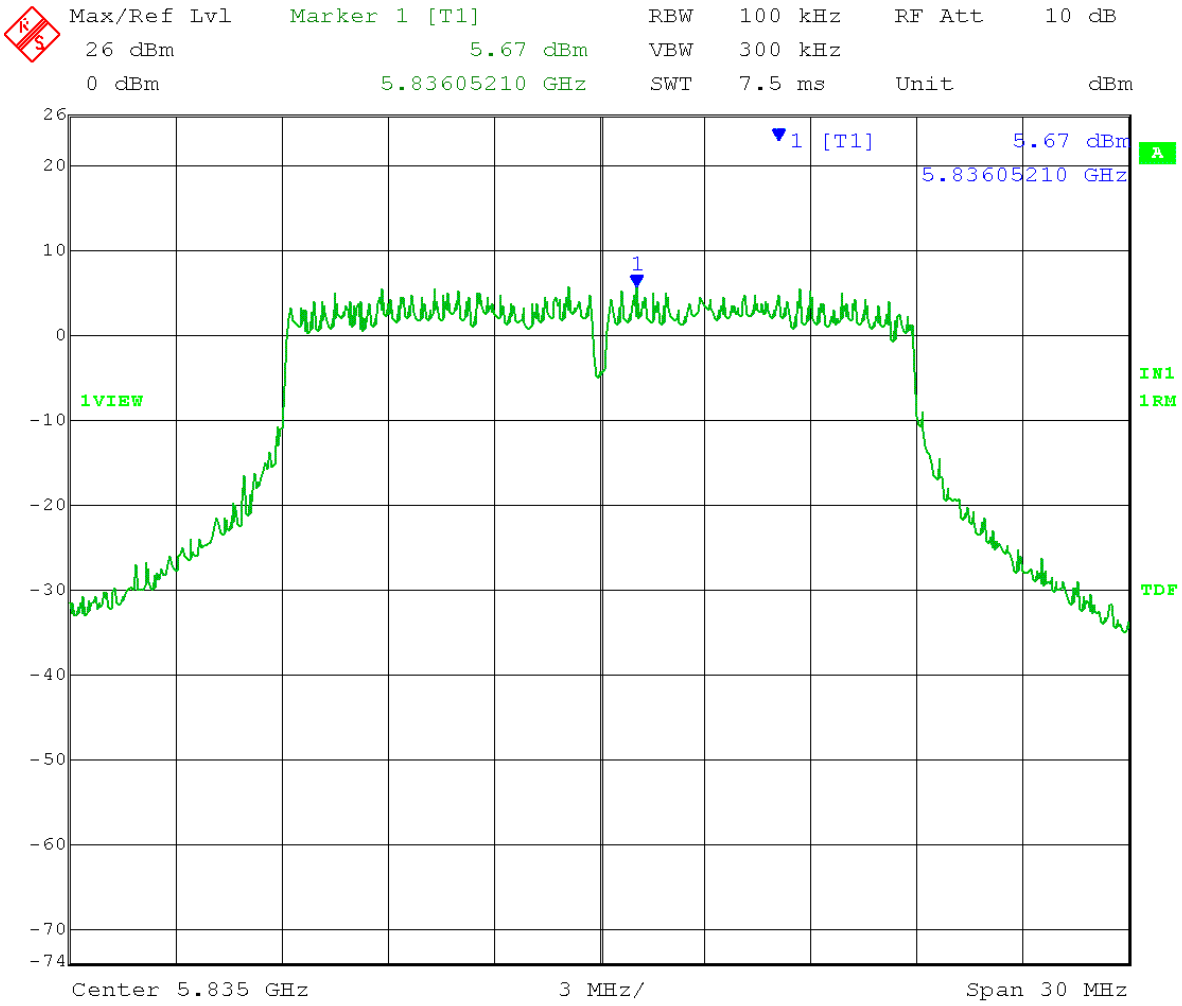
Mid Channel: Frequency = 5.775GHz	ESN# 000456C005DE
TX Output Power Setting = 20dBm	20MHz BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x EBW	Detector = RMS
Sweep = Auto Couple	Trace = Max Hold
Channel 0	Limit: +8 dBm/3kHz (RBW)
PSD =5.78dBm = Pass	



Date: 13.JUN.2013 09:32:20

Test Date: 6-13-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)

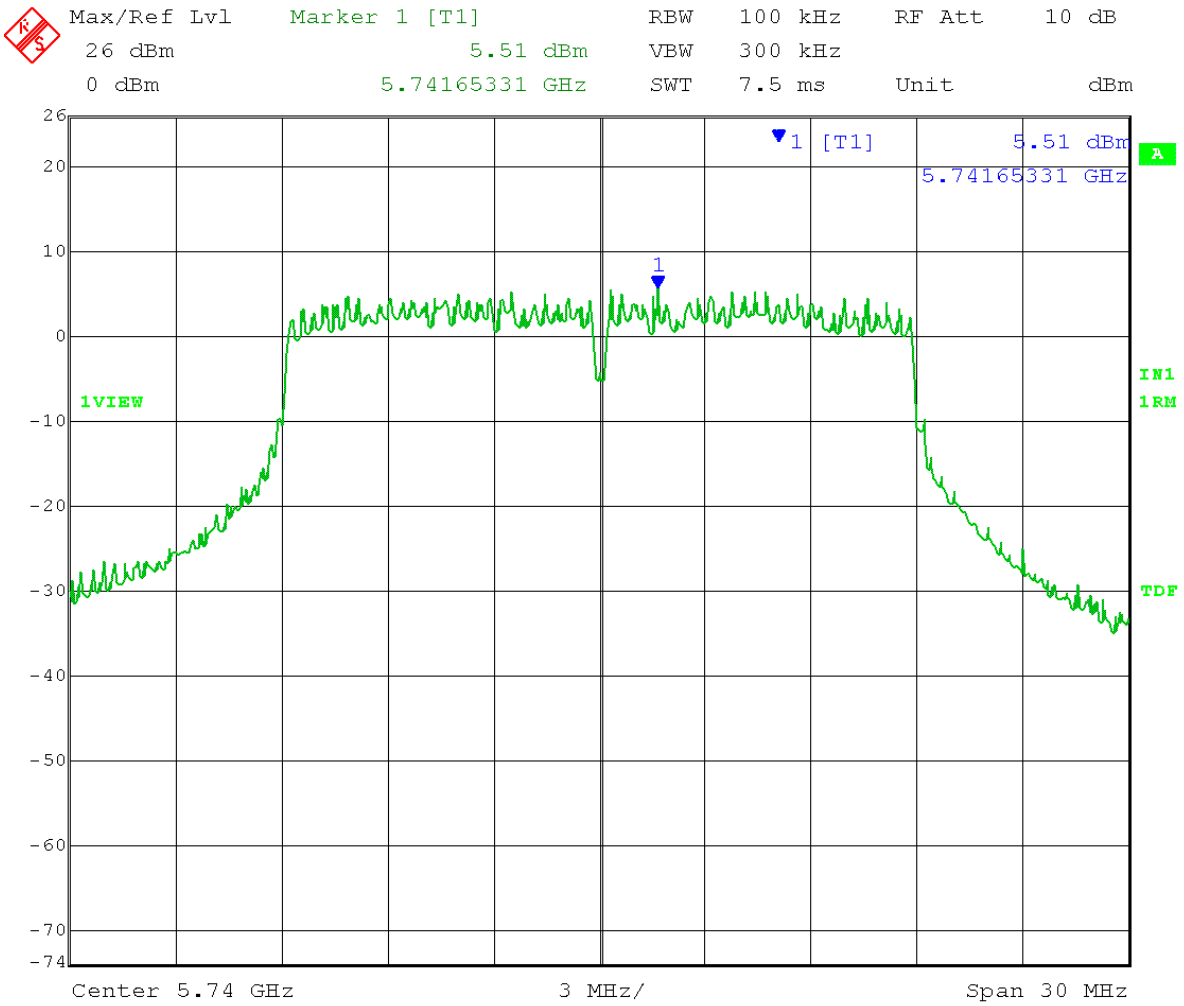
High Channel: Frequency = 5.835GHz	ESN# 000456C005DE
TX Output Power Setting = 20dBm	20MHz BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x EBW	Detector = RMS
Sweep = Auto Couple	Trace = Max Hold
Channel 0	Limit: +8 dBm/3kHz (RBW)
PSD =5.67dBm = Pass	



Date: 13.JUN.2013 09:35:12

Test Date: 6-13-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)

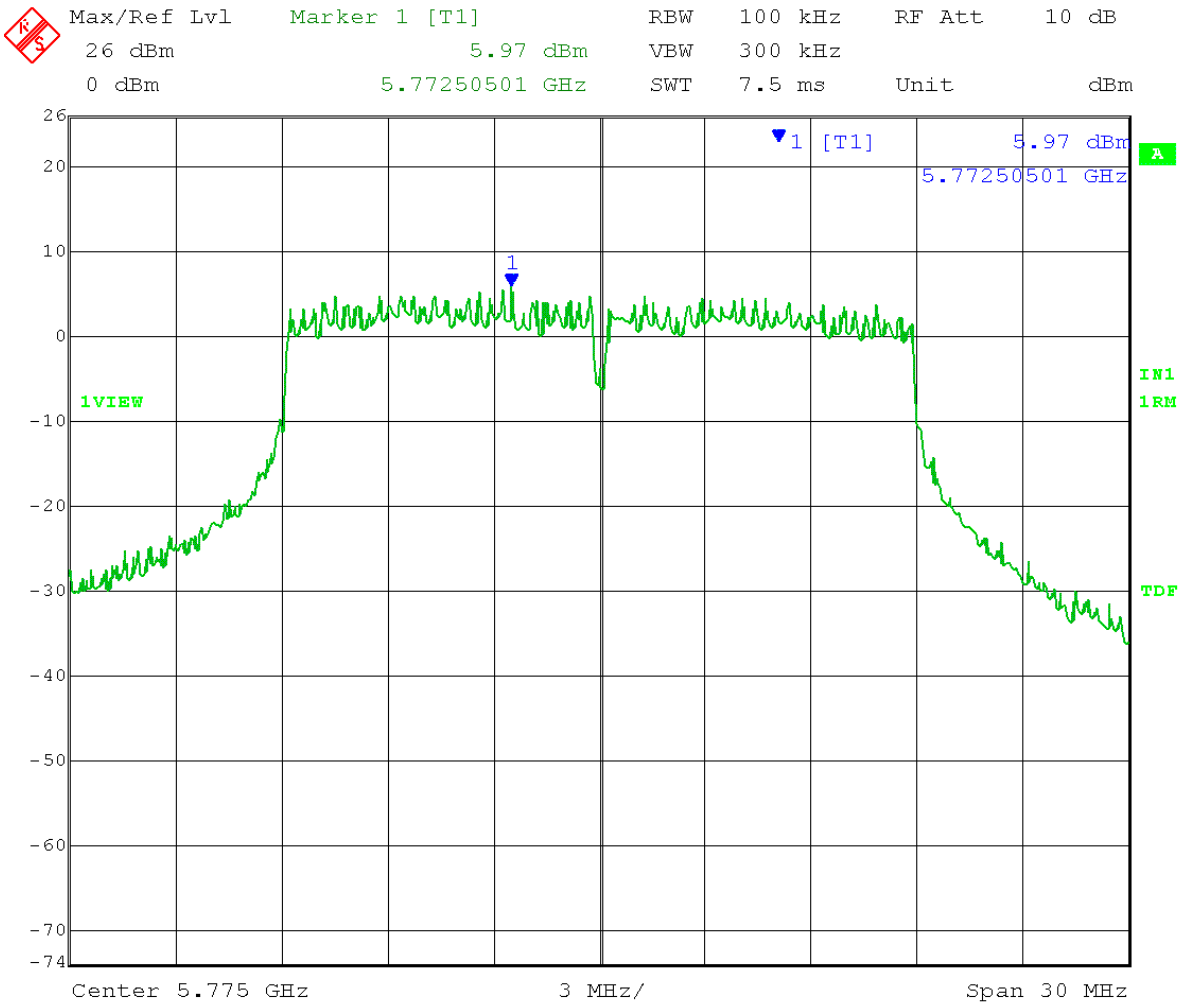
Low Channel: Frequency = 5.740GHz	ESN# 000456C005DE
TX Output Power Setting = 20dBm	20MHz BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x EBW	Detector = RMS
Sweep = Auto Couple	Trace = Max Hold
Channel 1	Limit: +8 dBm/3kHz (RBW)
PSD = 5.51dBm = Pass	



Date: 13.JUN.2013 09:26:49

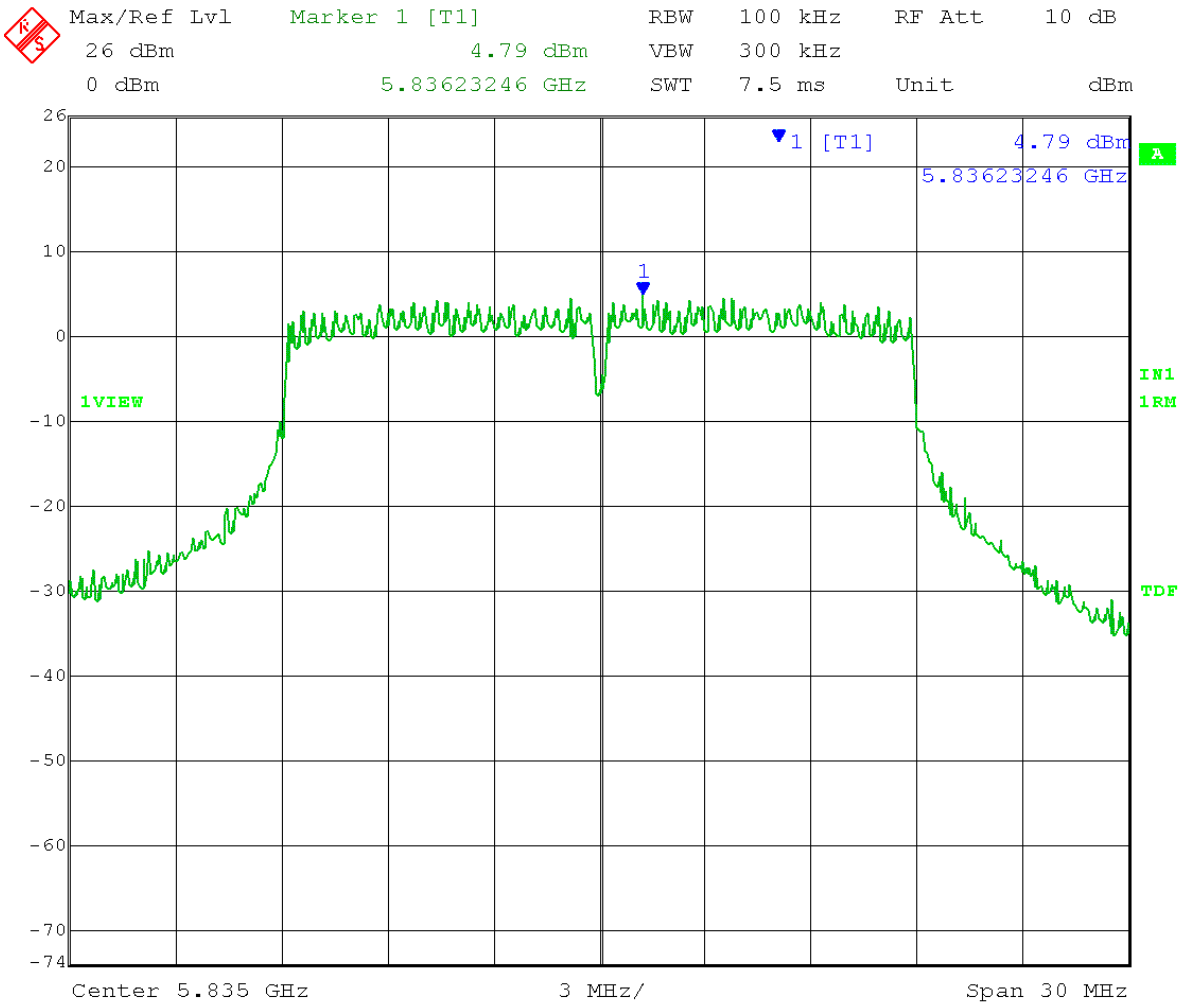
Test Date: 6-13-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)

Mid Channel: Frequency = 5.775GHz	ESN# 000456C005DE
TX Output Power Setting = 20dBm	20MHz BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x EBW	Detector = RMS
Sweep = Auto Couple	Trace = Max Hold
Channel 1	Limit: +8 dBm/3kHz (RBW)
PSD = 5.97dBm = Pass	



Date: 13.JUN.2013 09:29:59

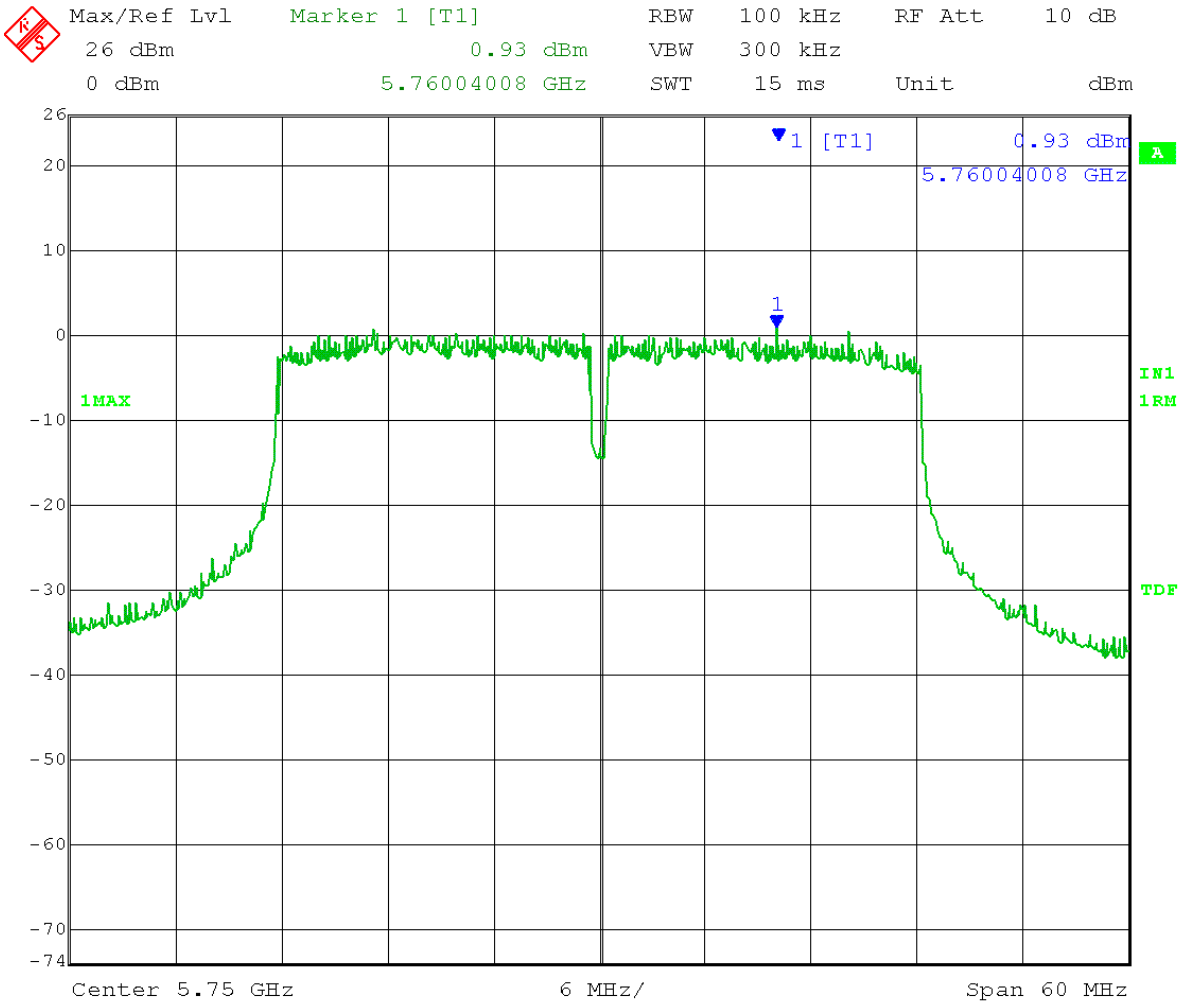
Test Date: 6-13-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)
High Channel: Frequency = 5.835GHz ESN# 000456C005DE
TX Output Power Setting = 20dBm 20MHz BW
RBW = 100 kHz VBW = 300 kHz
Span = 1.5 x EBW Detector = RMS
Sweep = Auto Couple Trace = Max Hold
Channel 1 Limit: +8 dBm/3kHz (RBW)
PSD = 4.79dBm = Pass



Date: 13.JUN.2013 09:37:08

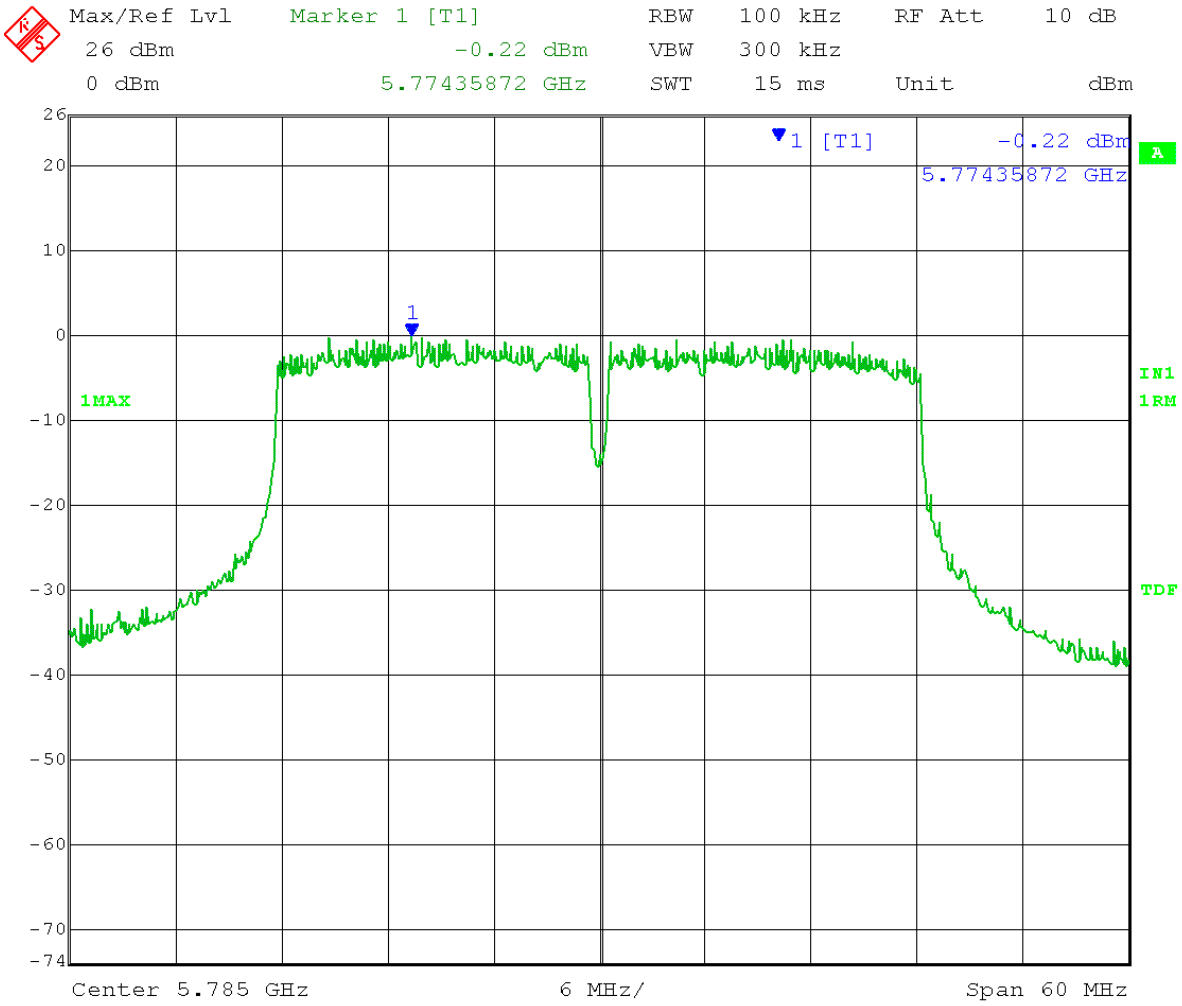
Test Date: 6-12-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)

Low Channel: Frequency = 5.750GHz	ESN# 000456C005DE
TX Output Power Setting = 20dBm	40MHz BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x EBW	Detector = RMS
Sweep = Auto Couple	Trace = Max Hold
Channel 0	Limit: +8 dBm/3kHz (RBW)
PSD =0.93dBm = Pass	



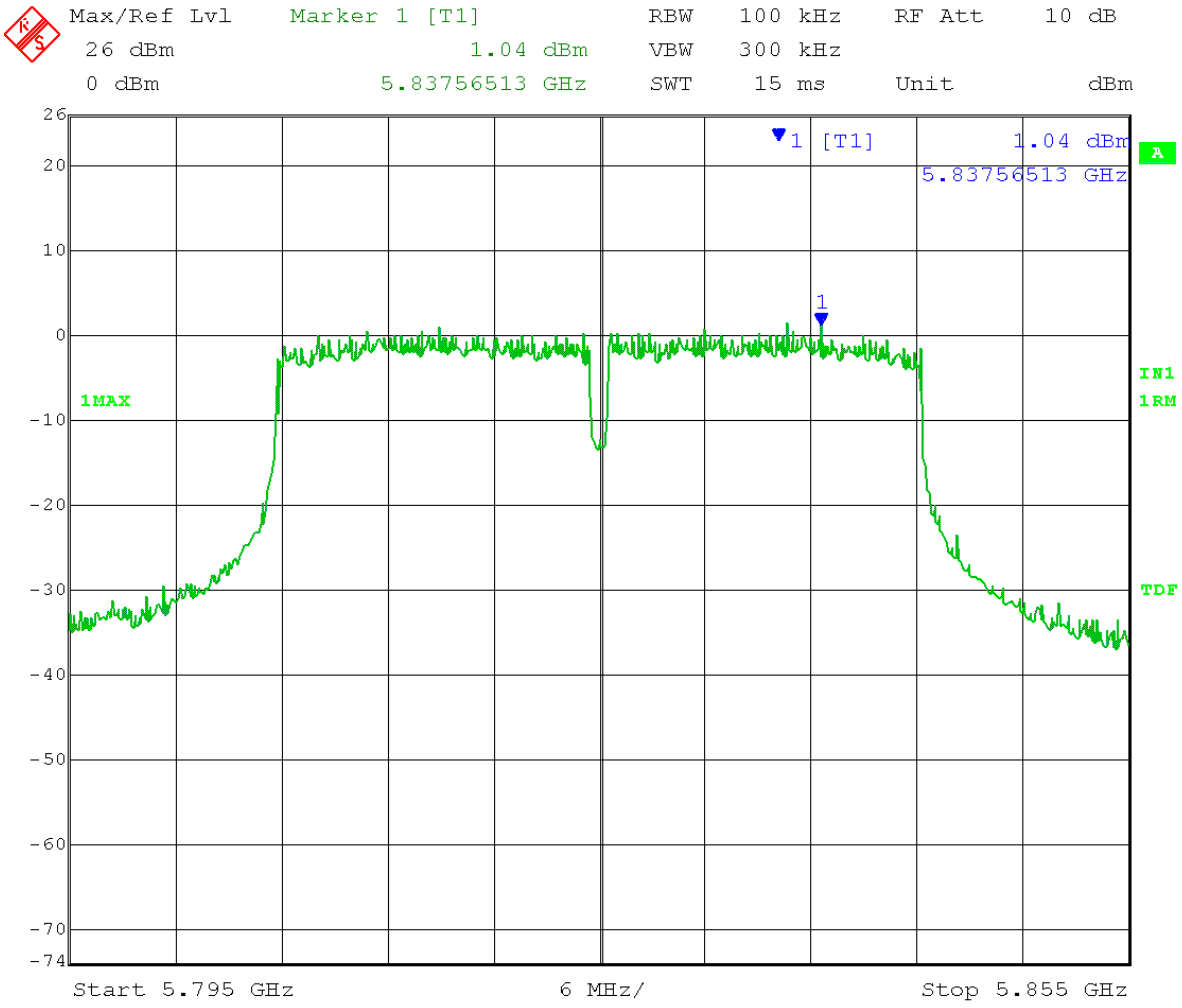
Date: 12.JUN.2013 15:26:41

Test Date: 6-12-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)
Mid Channel: Frequency = 5.785GHz ESN# 000456C005DE
TX Output Power Setting = 20dBm 40MHz BW
RBW = 100 kHz VBW = 300 kHz
Span = 1.5 x EBW Detector = RMS
Sweep = Auto Couple Trace = Max Hold
Channel 0 Limit: +8 dBm/3kHz (RBW)
PSD = -0.22dBm = Pass



Date: 12.JUN.2013 15:13:21

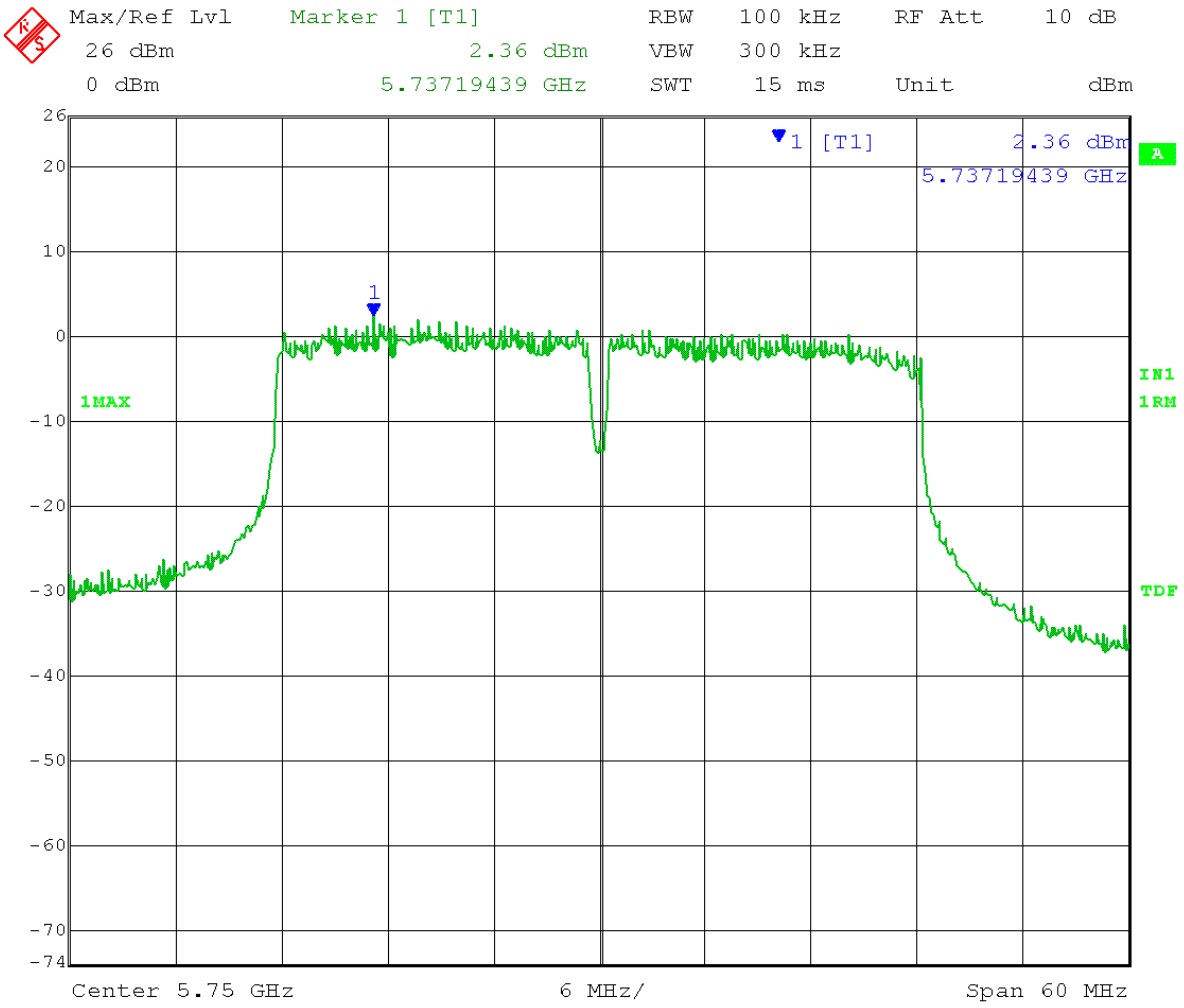
Test Date: 6-12-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)
High Channel: Frequency = 5.825GHz ESN# 000456C005DE
TX Output Power Setting = 20dBm 40MHz BW
RBW = 100 kHz VBW = 300 kHz
Span = 1.5 x EBW Detector = RMS
Sweep = Auto Couple Trace = Max Hold
Channel 0 Limit: +8 dBm/3kHz (RBW)
PSD =1.04dBm = Pass



Date: 12.JUN.2013 14:59:49

Test Date: 6-12-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)

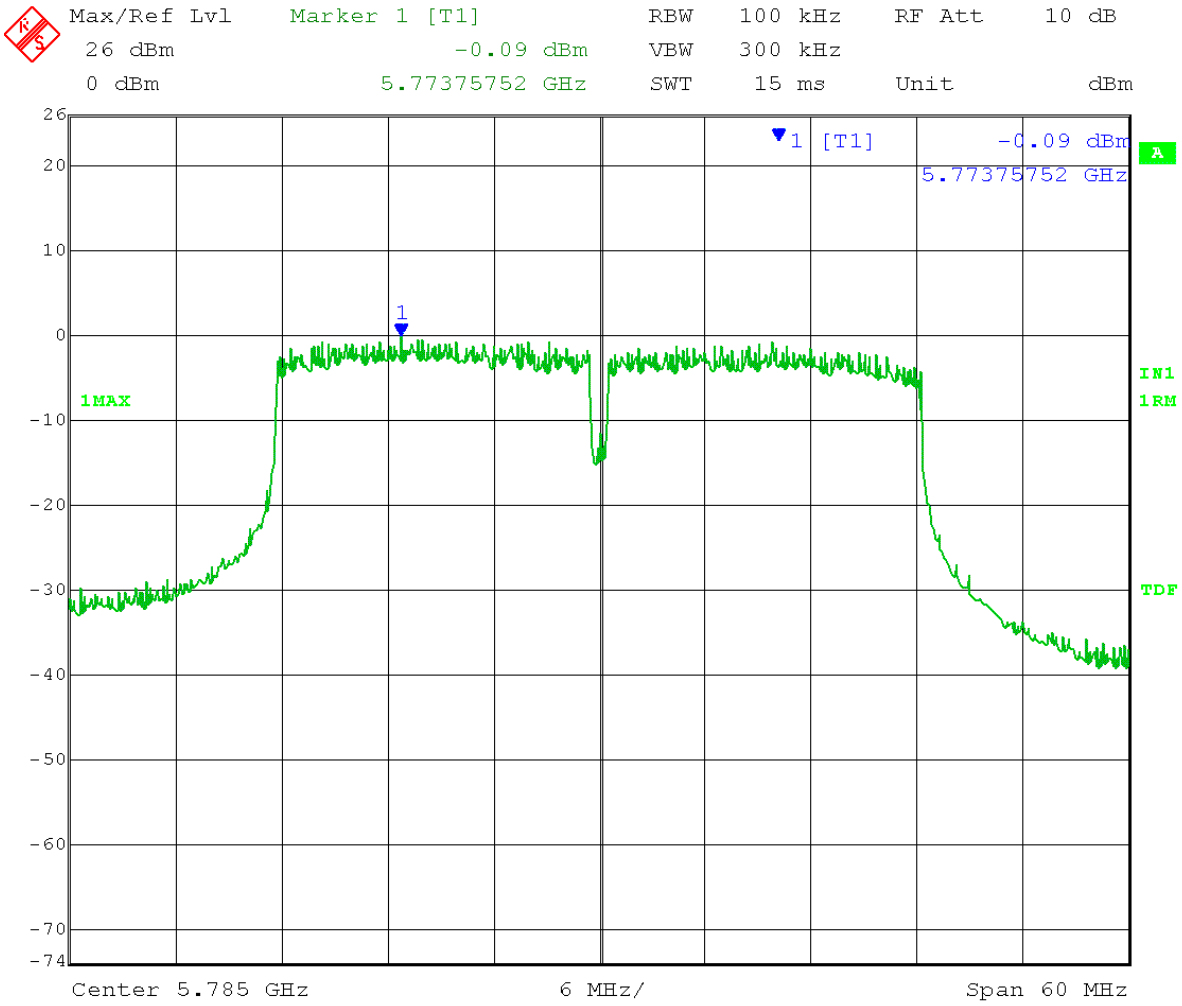
Low Channel: Frequency = 5.750GHz	ESN# 000456C005DE
TX Output Power Setting = 20dBm	40MHz BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x EBW	Detector = RMS
Sweep = Auto Couple	Trace = Max Hold
Channel 1	Limit: +8 dBm/3kHz (RBW)
PSD = 2.36dBm = Pass	



Date: 12.JUN.2013 15:23:09

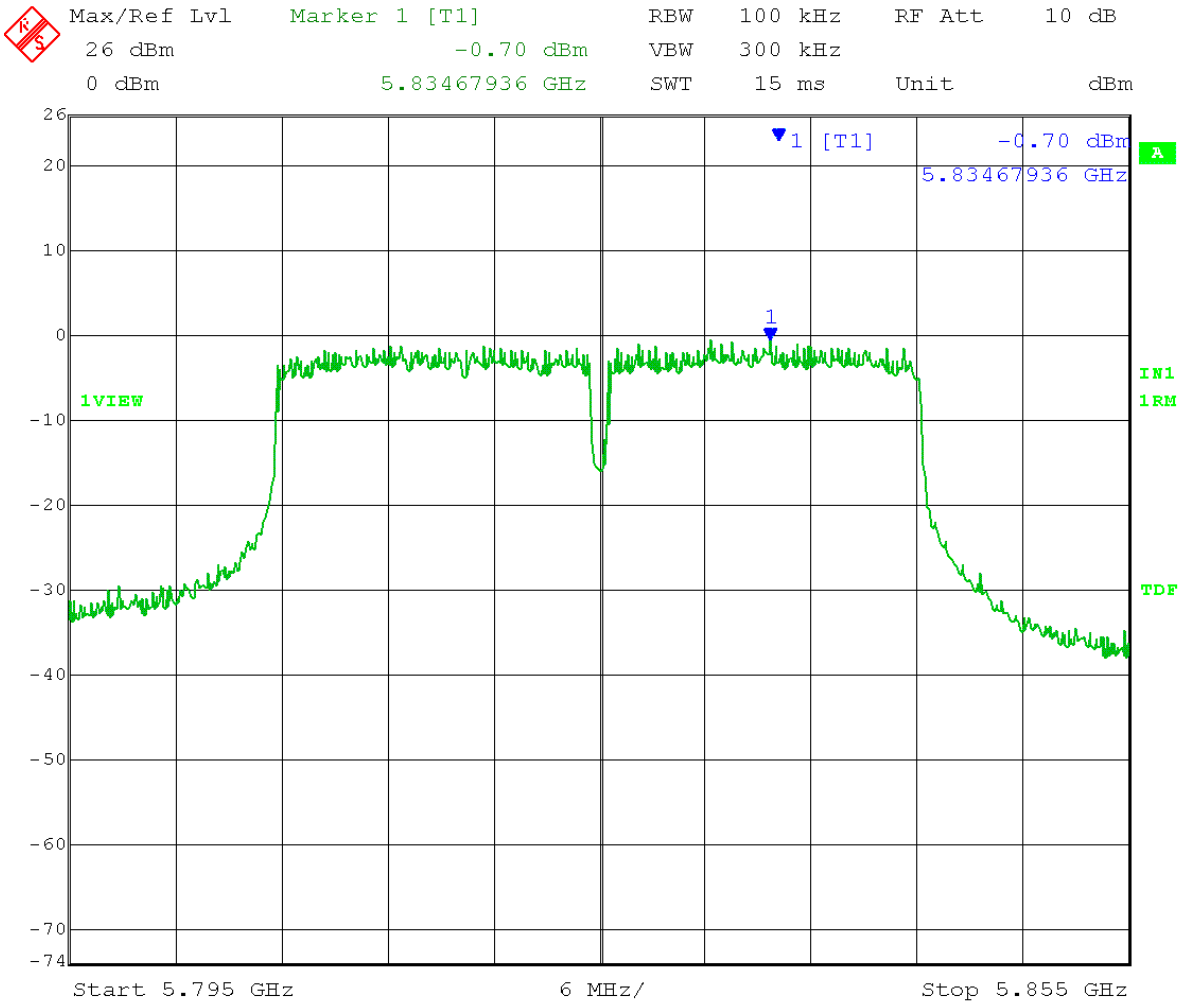
Test Date: 6-12-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)

Mid Channel: Frequency = 5.785GHz	ESN# 000456C005DE
TX Output Power Setting = 20dBm	40MHz BW
RBW = 100 kHz	VBW = 300 kHz
Span = 1.5 x EBW	Detector = RMS
Sweep = Auto Couple	Trace = Max Hold
Channel 1	Limit: +8 dBm/3kHz (RBW)
PSD = -0.09dBm = Pass	



Date: 12.JUN.2013 15:11:03

Test Date: 6-12-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz: OFDM
Test: Maximum Power Spectral Density - Conducted
Operator: Jim O
Comment: Method AVGPSD-1 (FCC DTS operating under 15.247 – OET 4/7/2013)
High Channel: Frequency = 5.825GHz ESN# 000456C005DE
TX Output Power Setting = 20dBm 40MHz BW
RBW = 100 kHz VBW = 300 kHz
Span = 1.5 x EBW Detector = RMS
Sweep = Auto Couple Trace = Max Hold
Channel 1 Limit: +8 dBm/3kHz (RBW)
PSD = -0.70dBm = Pass



Date: 12.JUN.2013 15:06:01

166 South Carter, Genoa City, WI 53128

Appendix B – Measurement Data

B4.0 Maximum Unwanted Emission Levels – Conducted

Rule Section: Section 15.247(d)

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

11.0 -Emissions in non-restricted frequency bands
11.2 - Reference level measurement
11.3 - Emission level measurement

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

Measurements were taken for an OFDM modulation over a 20MHz and 40MHz modulation bandwidth at the low, mid and high channels of operation. EUT was set to transmit continuously over various frequencies and power settings.

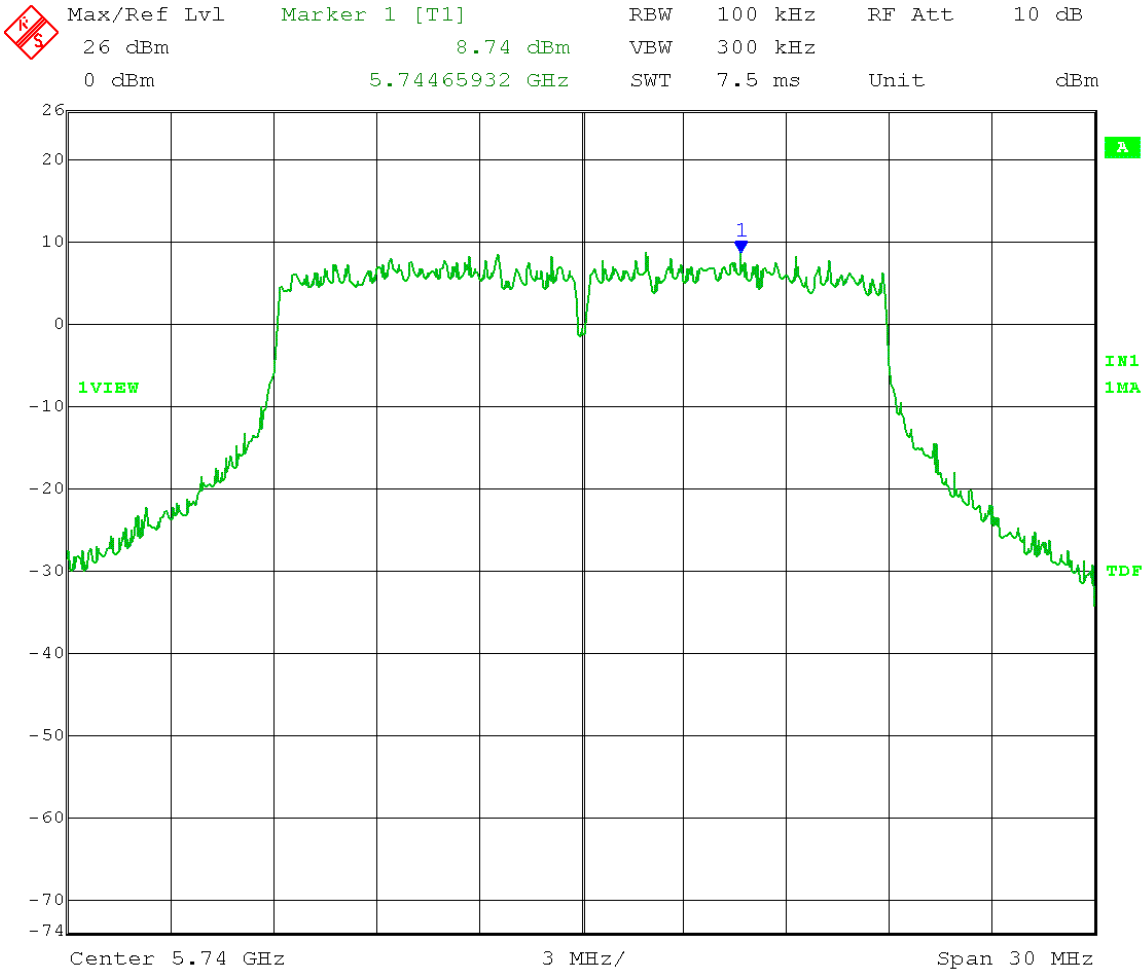
Limit: 30 dB below maximum in-band average PSD level (maximum level in any 100 kHz band). Average output power procedure was used to measure the fundamental emission power

Results: Passed

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE

Reference Level measurement
Limit = 8.74dBm - 30 dB = -21.26dBm

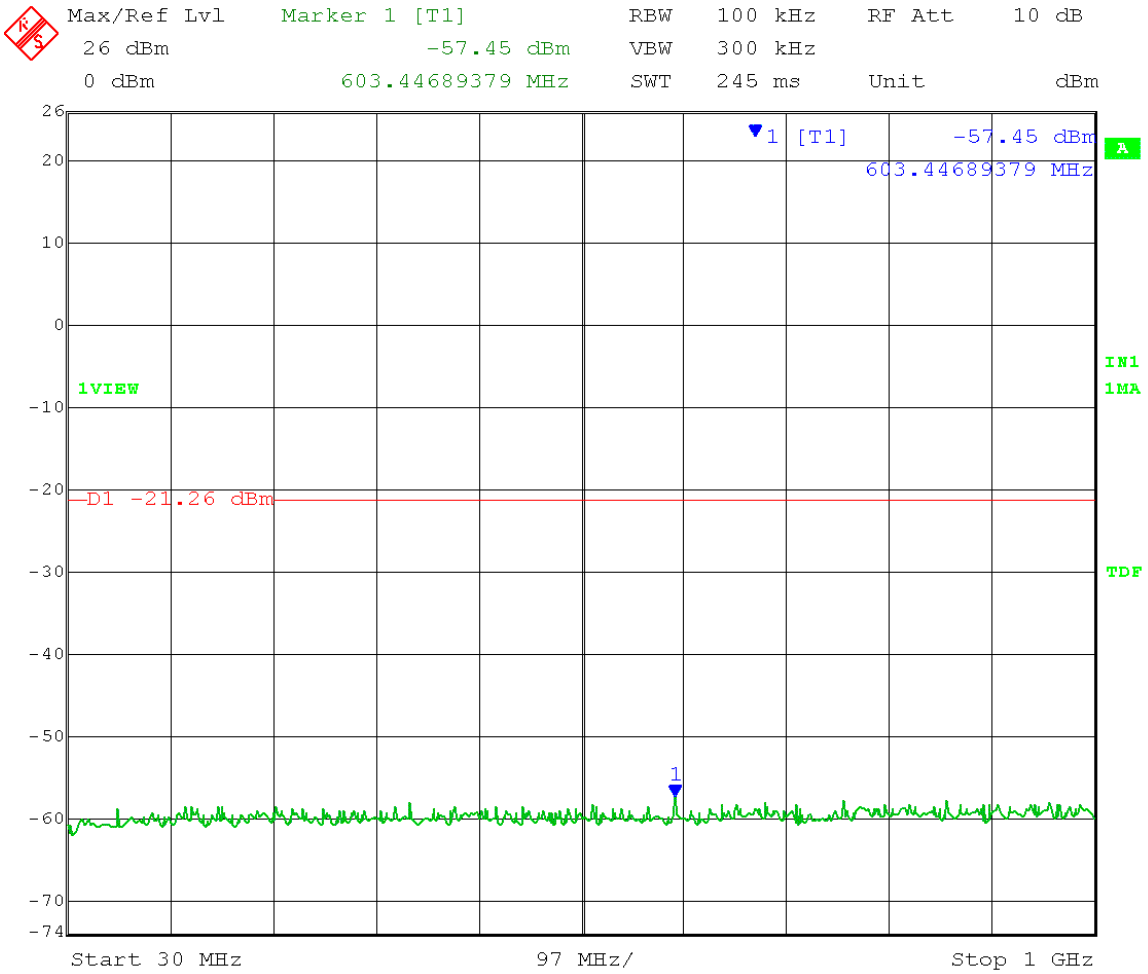


Date: 13.JUN.2013 10:51:18

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 8.74dBm - 30 dB = -21.26dBm

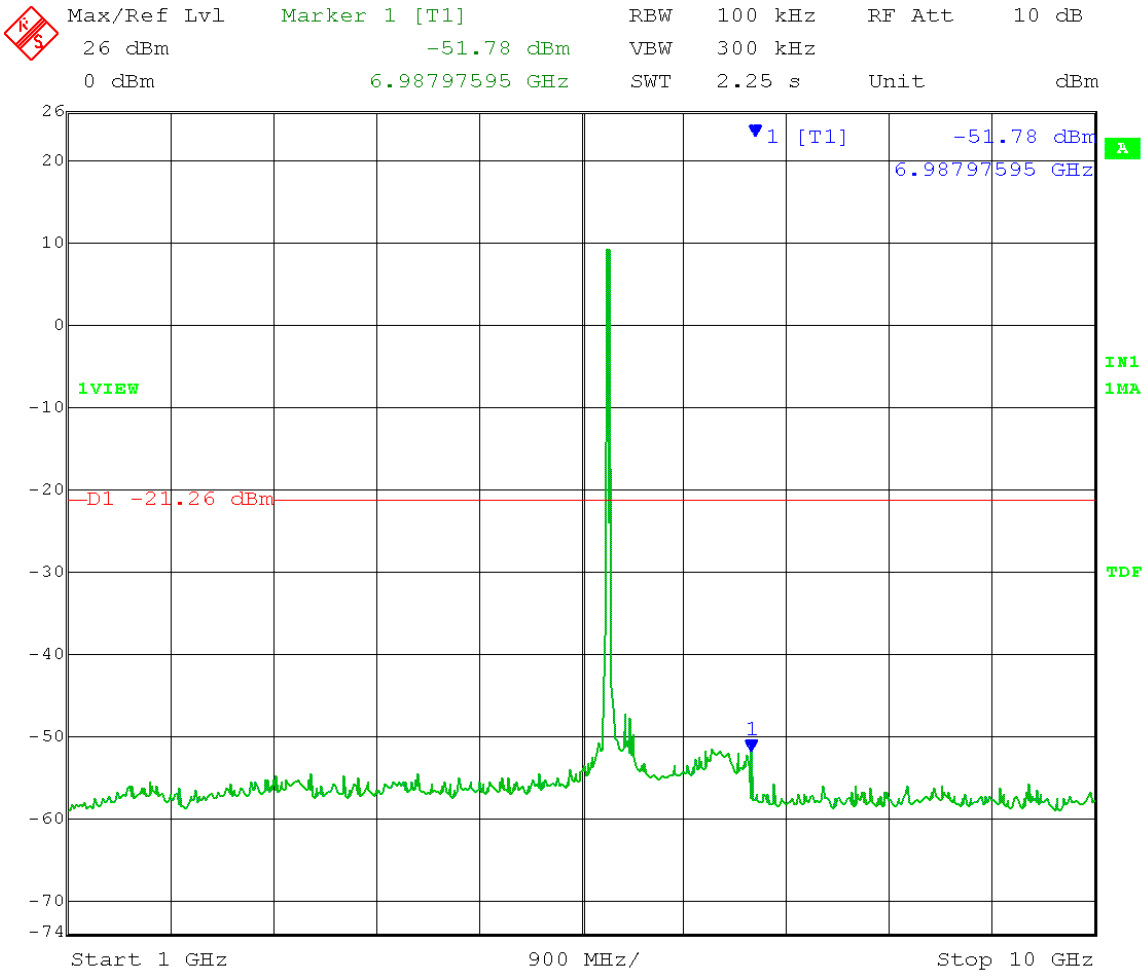


Date: 13.JUN.2013 13:51:13

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 8.74dBm - 30 dB = -21.26dBm

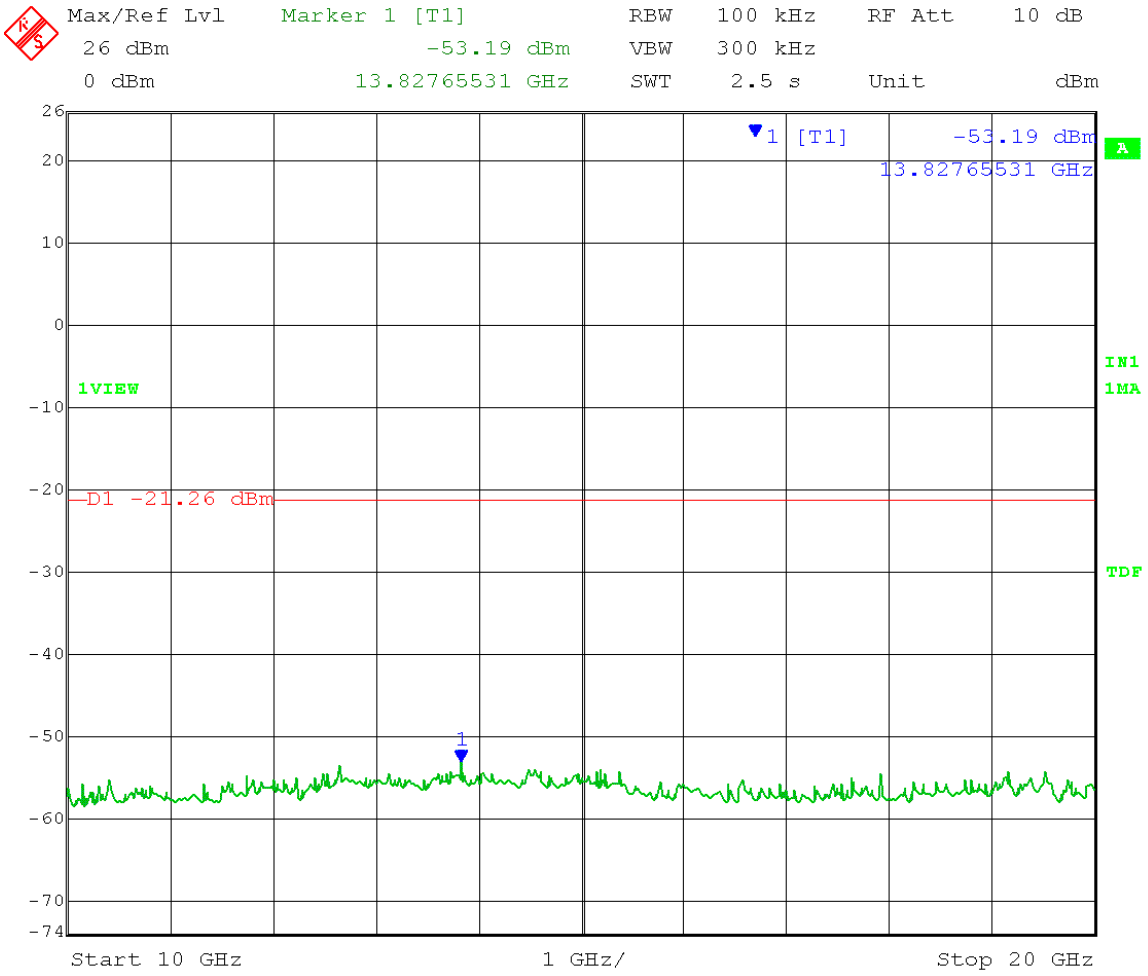


Date: 13.JUN.2013 13:04:25

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 8.74dBm - 30 dB = -21.26dBm

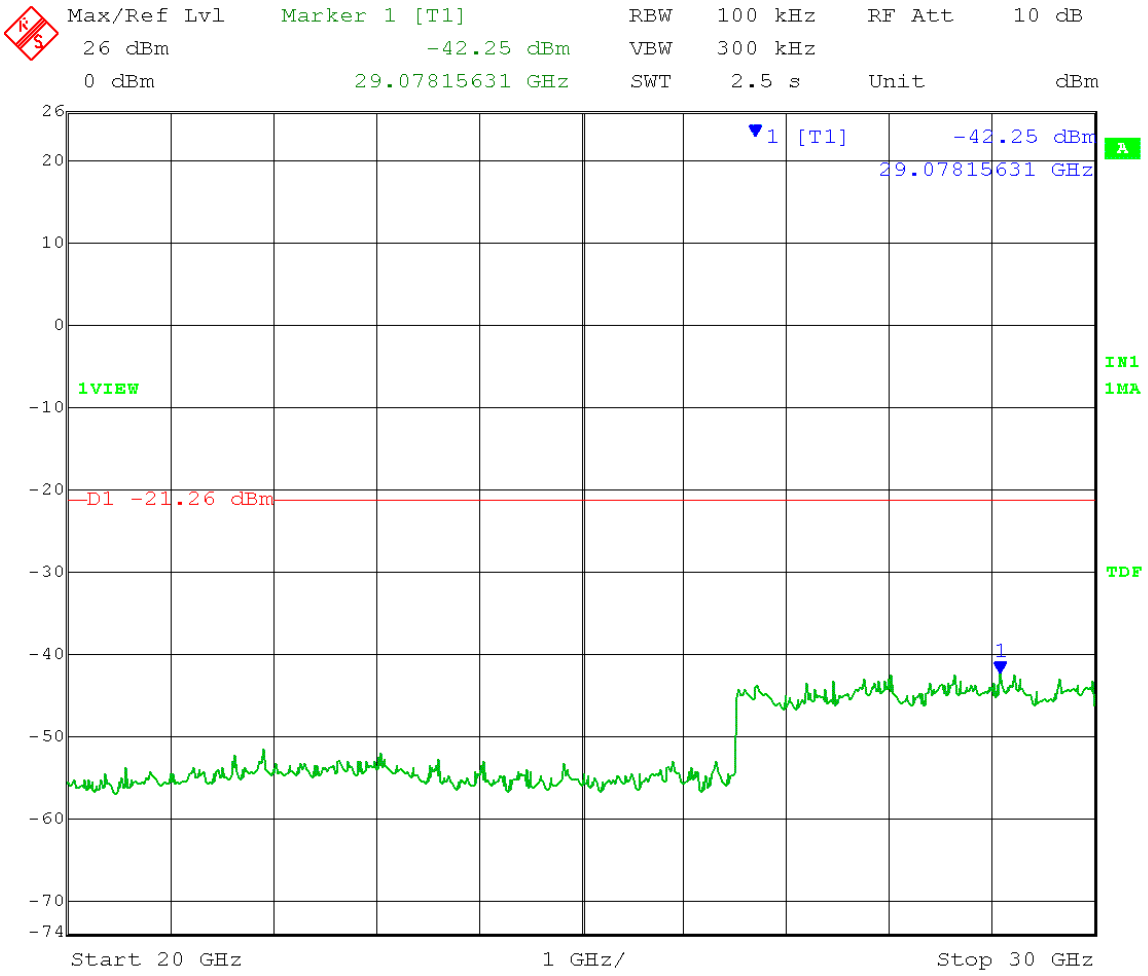


Date: 13.JUN.2013 13:40:05

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 8.74dBm - 30 dB = -21.26dBm

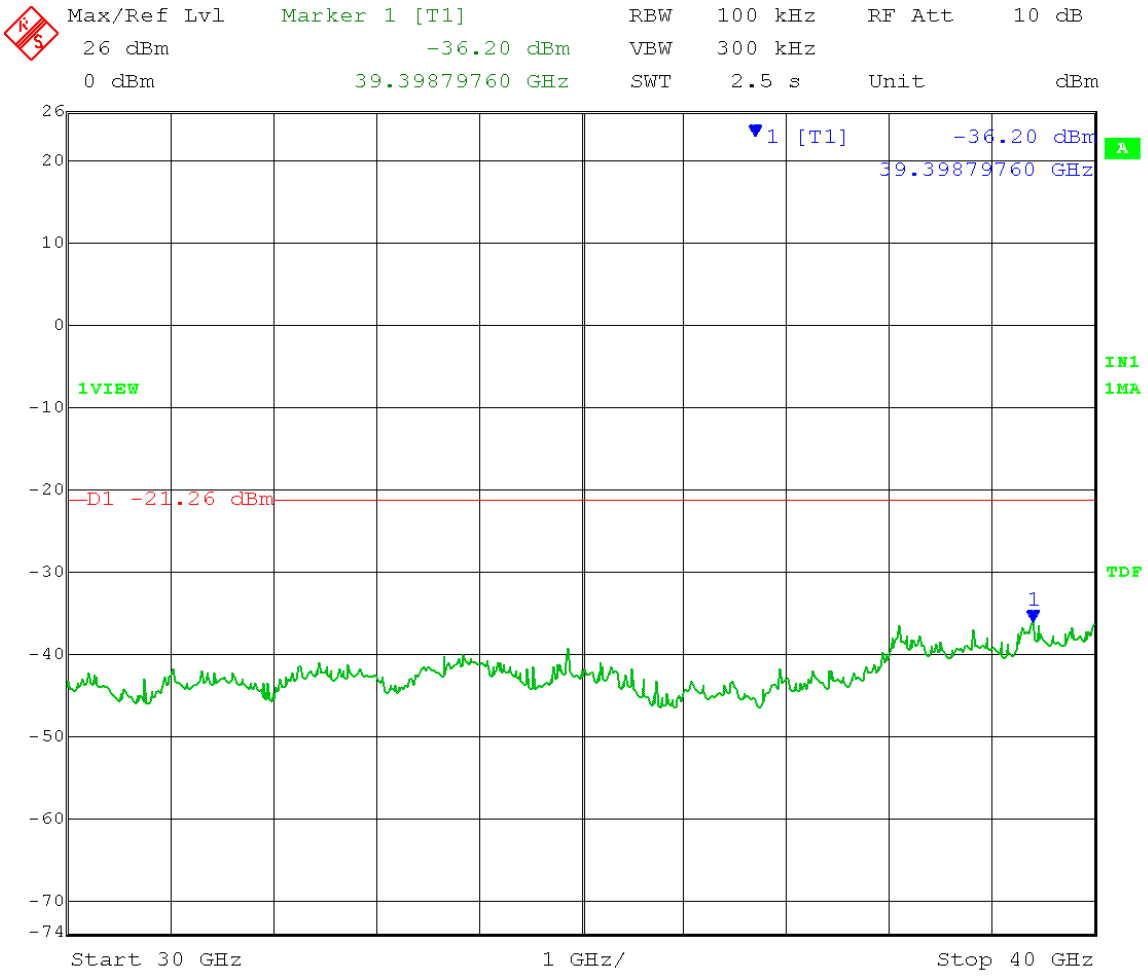


Date: 13.JUN.2013 13:45:02

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 8.74dBm - 30 dB = -21.26dBm

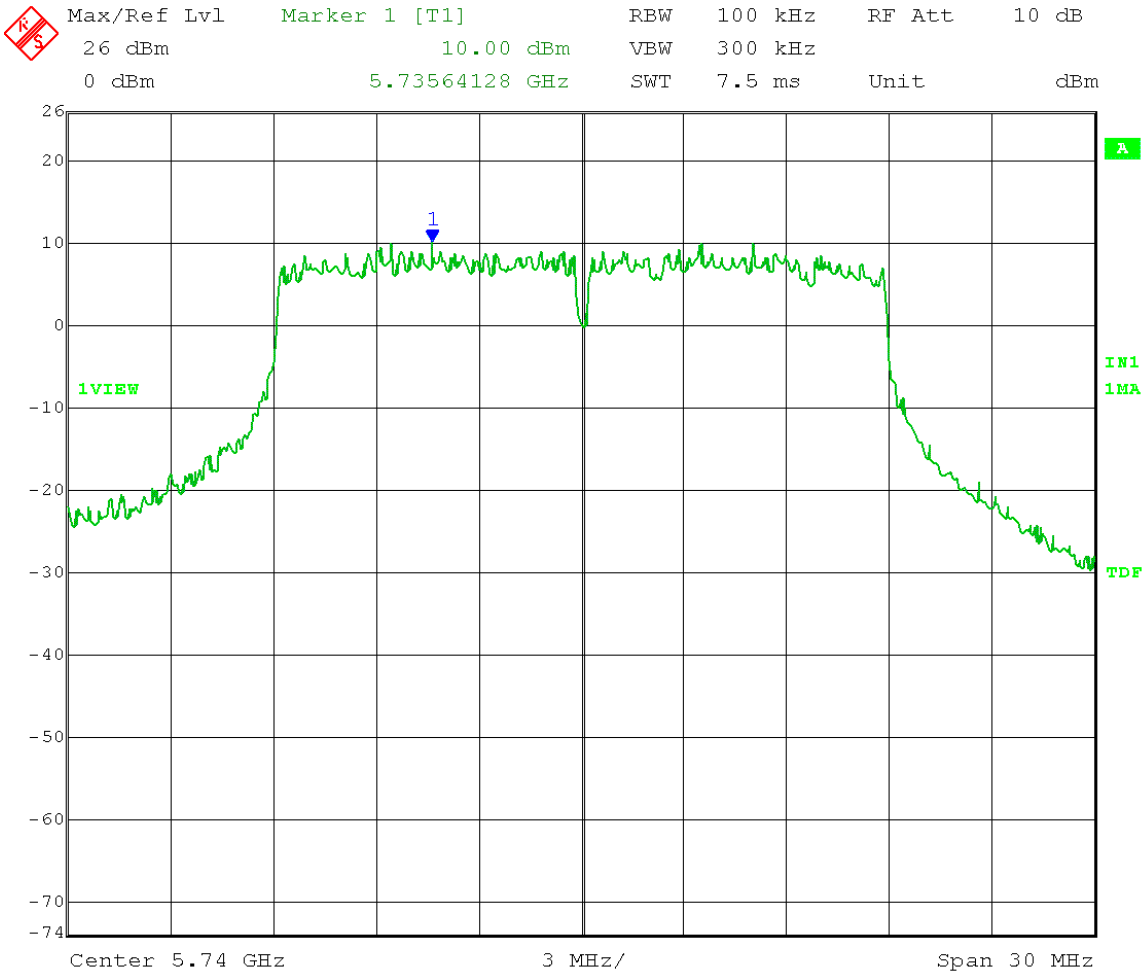


Date: 13.JUN.2013 13:46:42

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting = 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE

Reference Level measurement
Limit = 10.00dBm - 30 dB = -20.00dBm

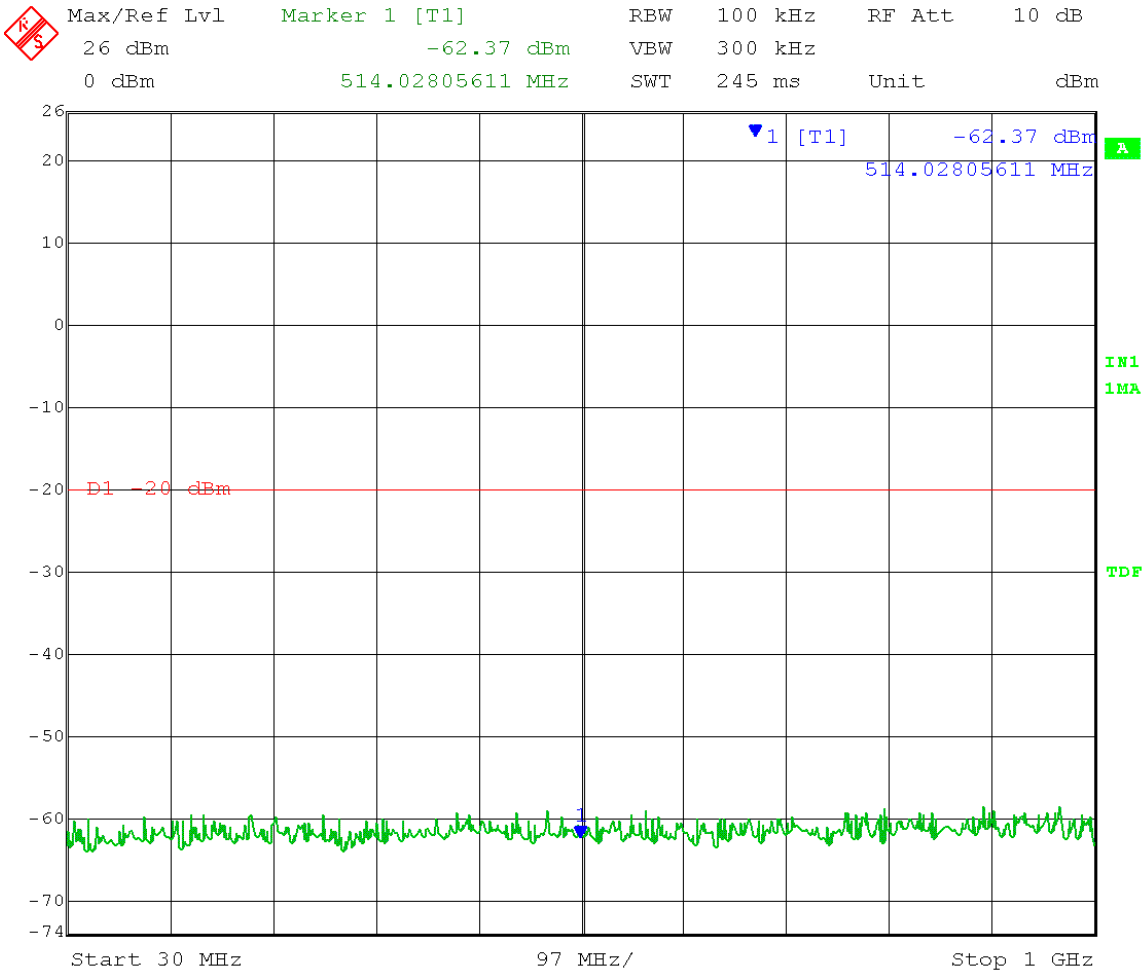


Date: 13.JUN.2013 10:53:29

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 10.00dBm - 30 dB = -20.00dBm

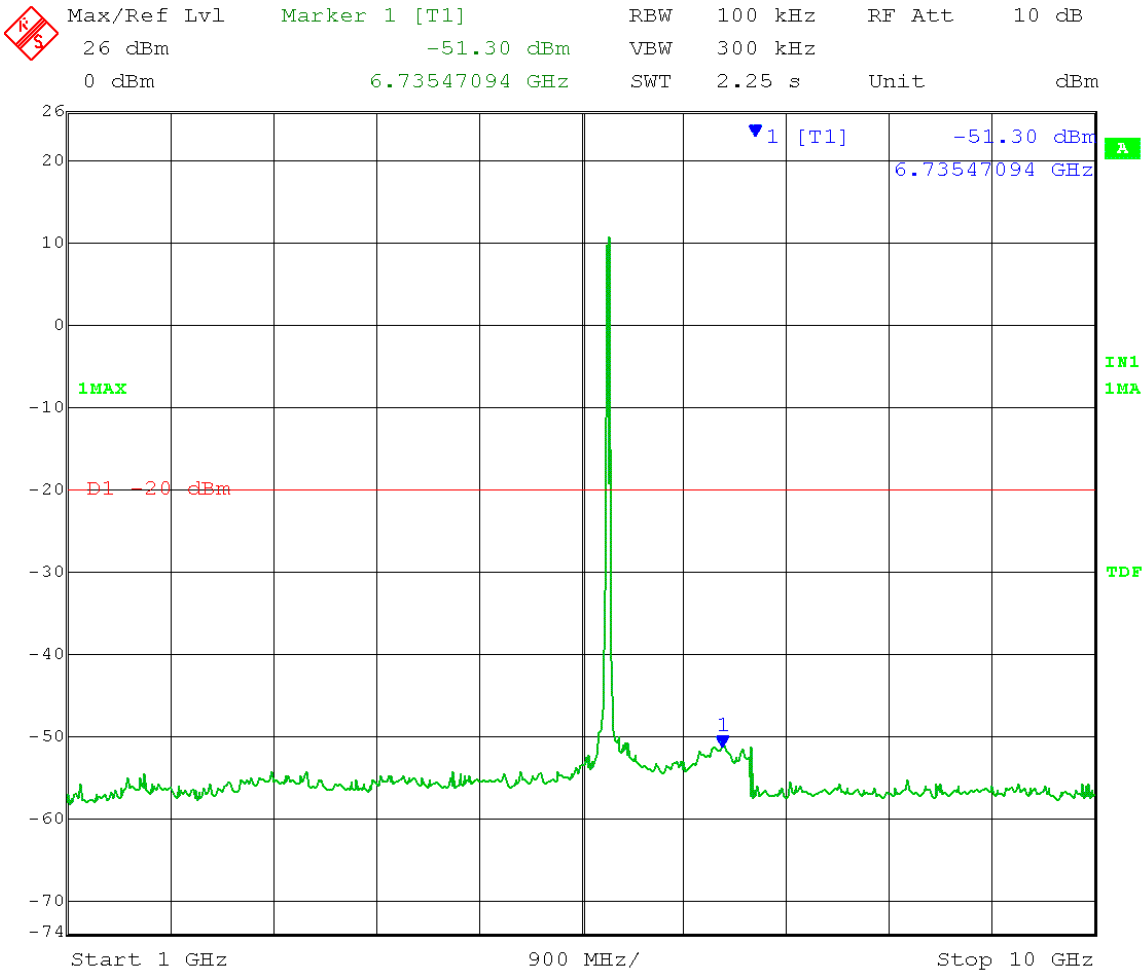


Date: 13.JUN.2013 13:49:41

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 10.00dBm - 30 dB = -20.00dBm

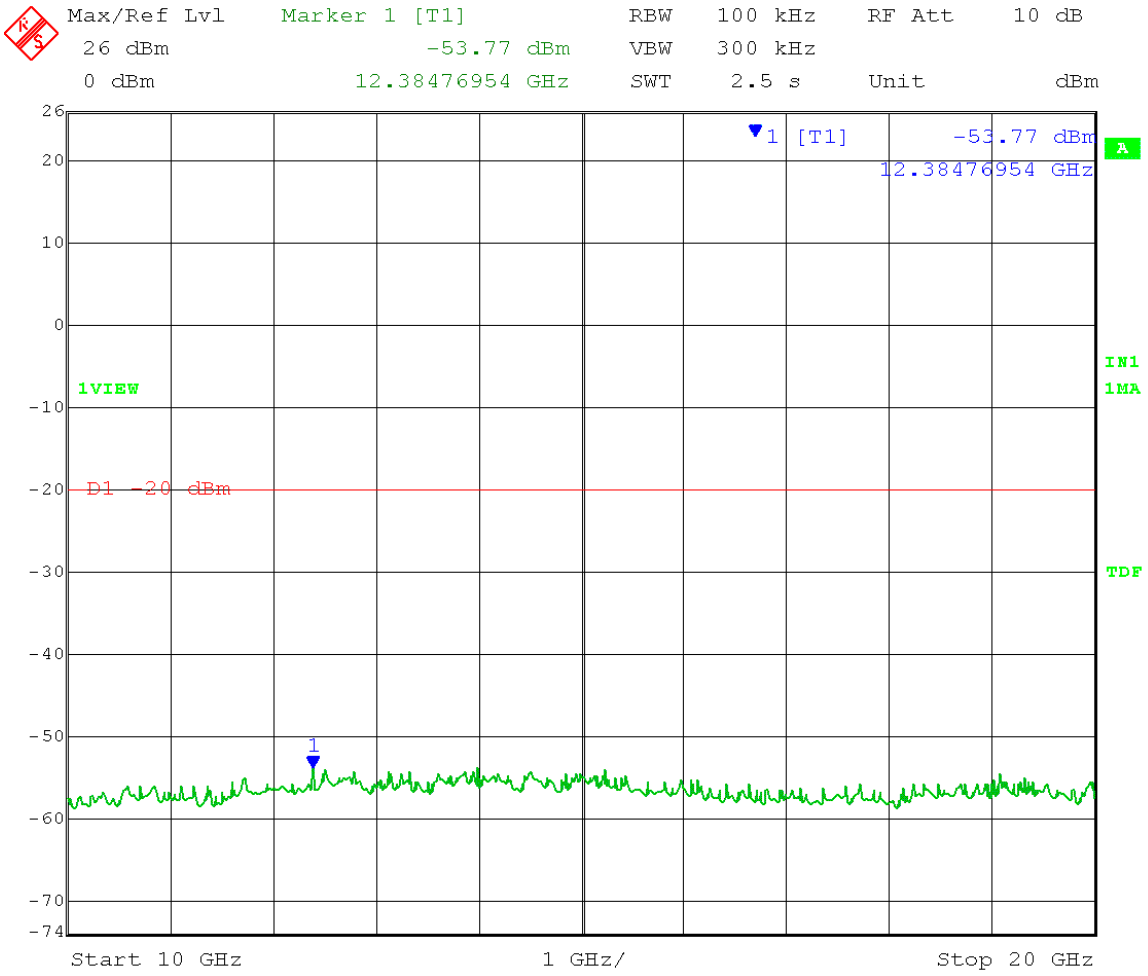


Date: 13.JUN.2013 13:01:50

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 10.00dBm - 30 dB = -20.00dBm

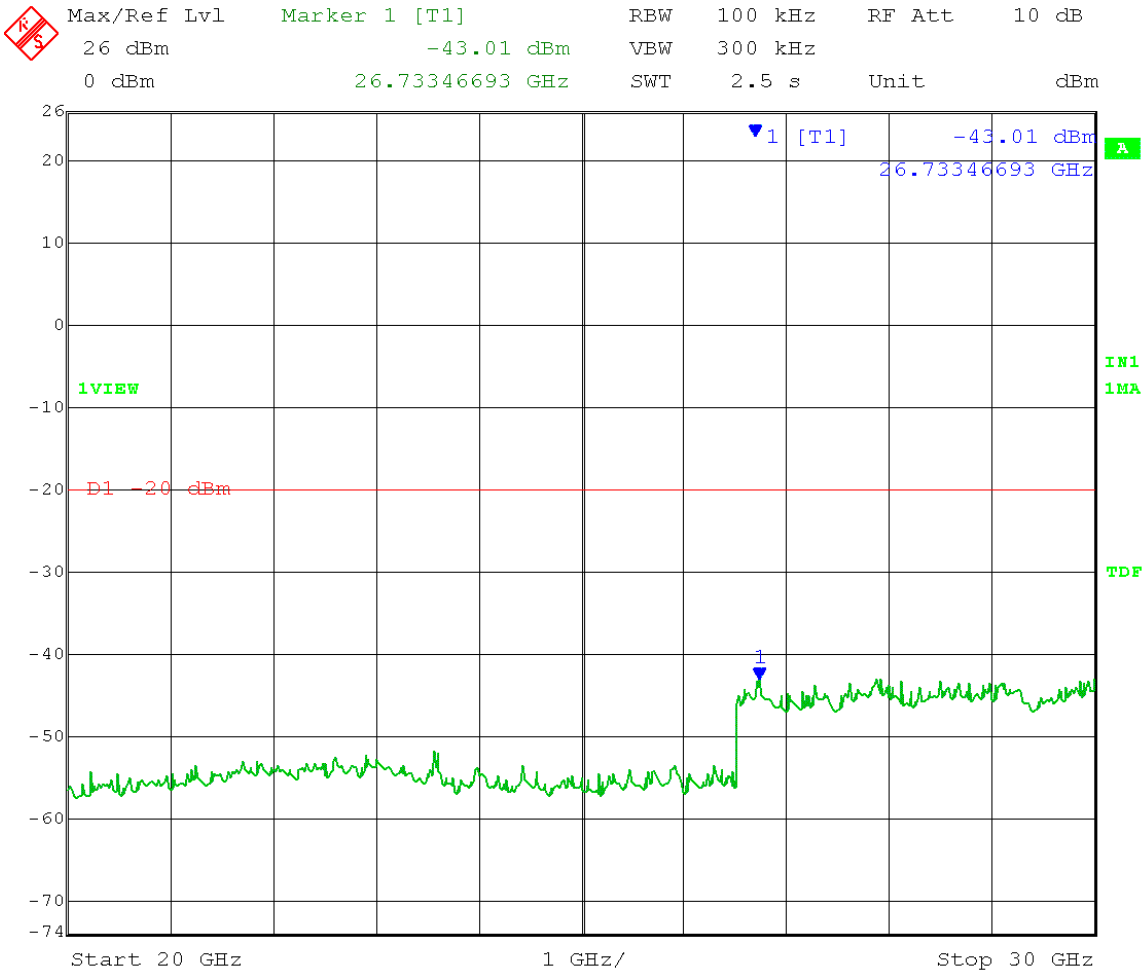


Date: 13.JUN.2013 13:41:43

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 10.00dBm - 30 dB = -20.00dBm

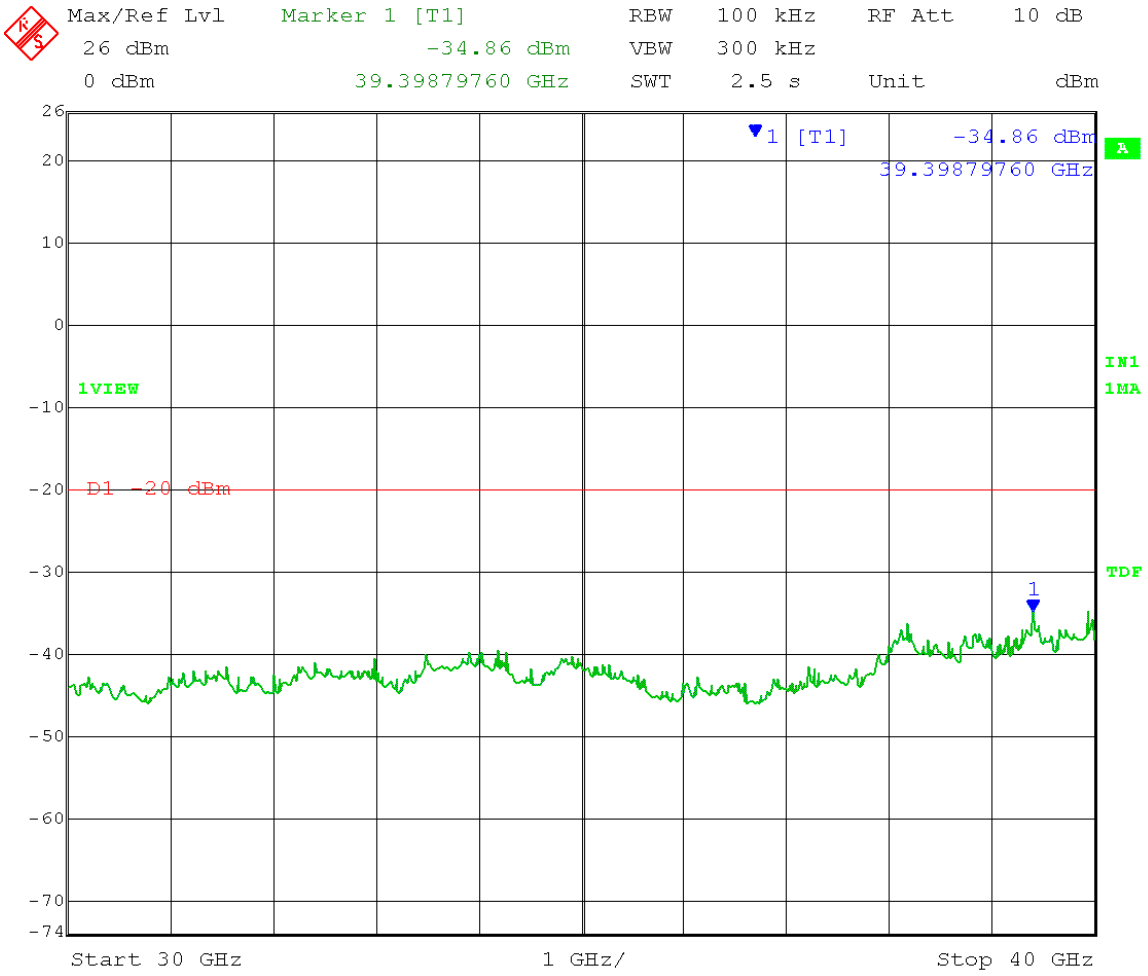


Date: 13.JUN.2013 13:43:35

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.740GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 10.00dBm - 30 dB = -20.00dBm

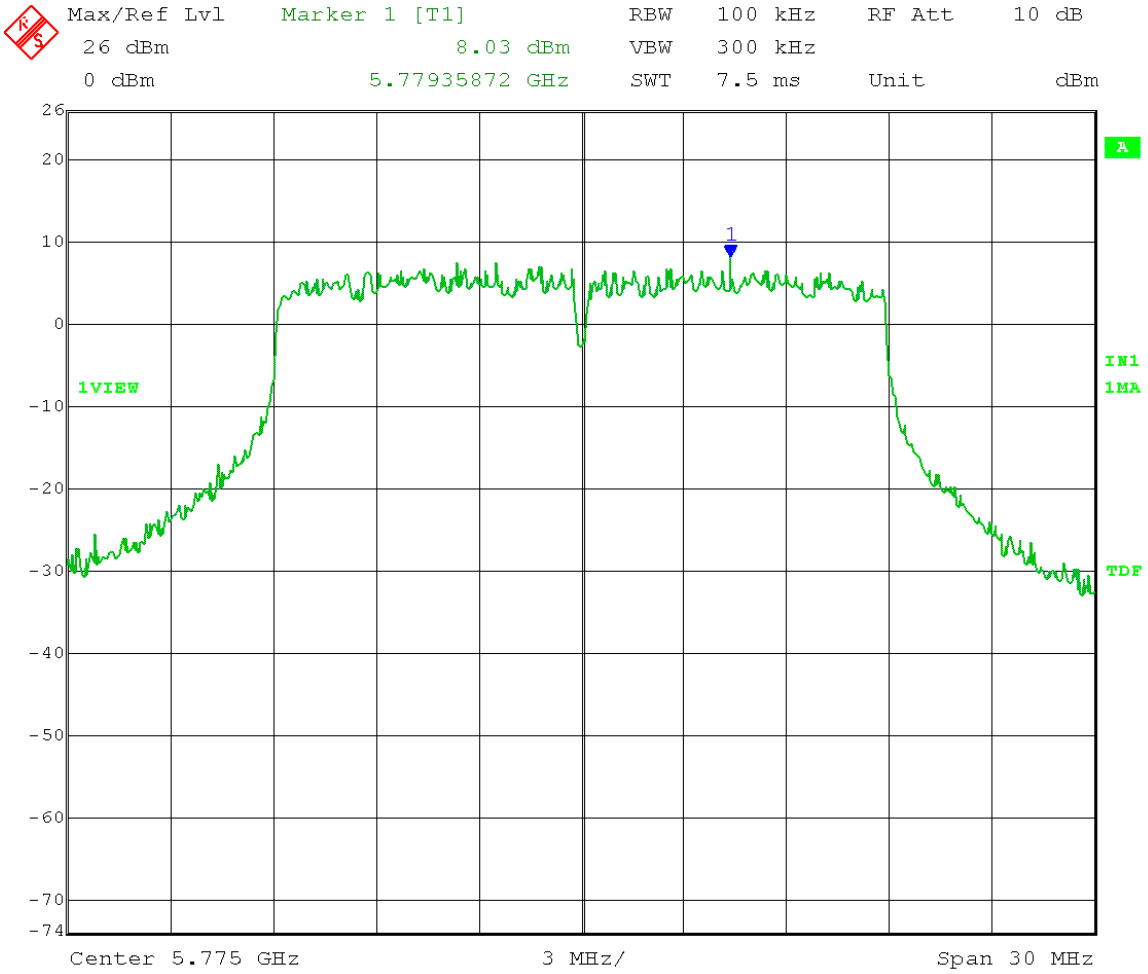


Date: 13.JUN.2013 13:48:01

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.755GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE

Reference Level measurement
Limit = 8.03dBm - 30 dB = -21.97dBm

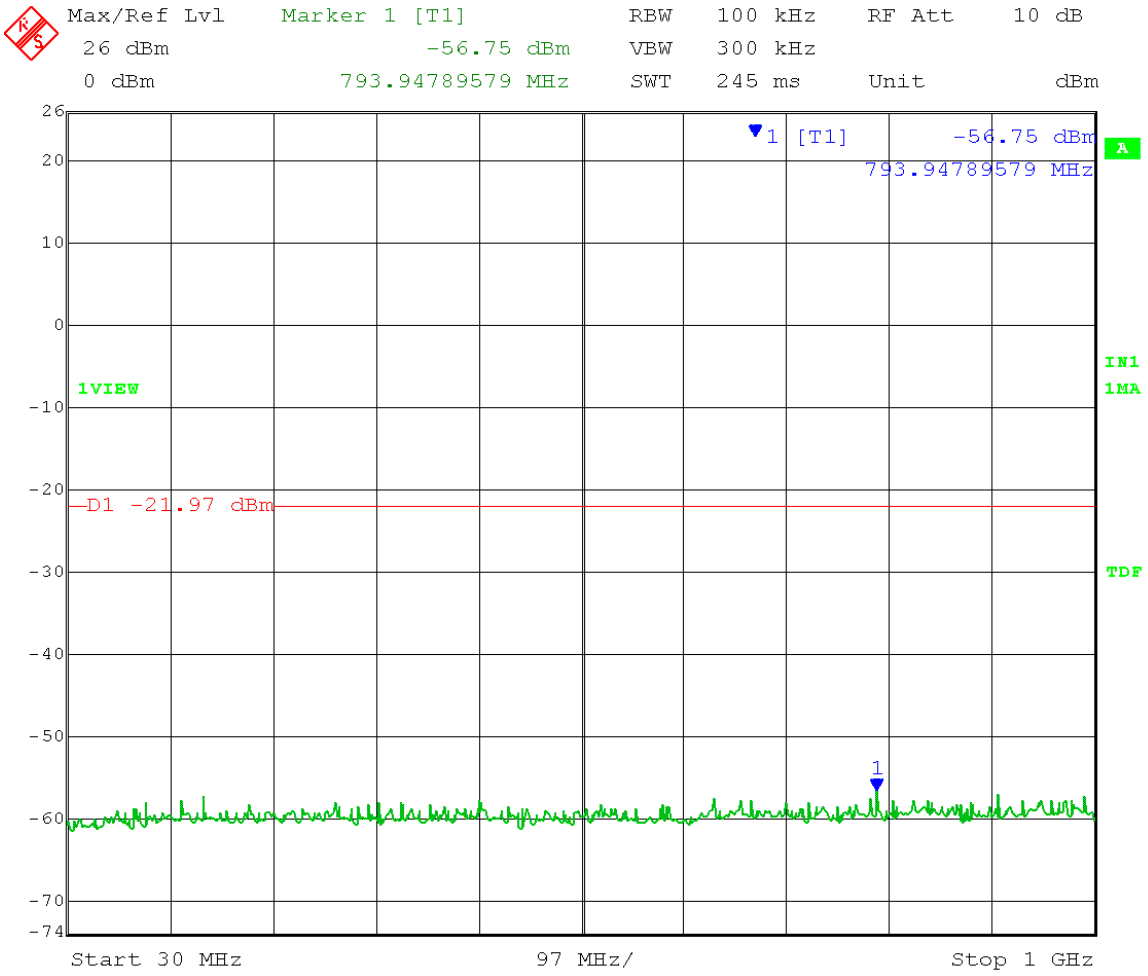


Date: 13.JUN.2013 10:48:40

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

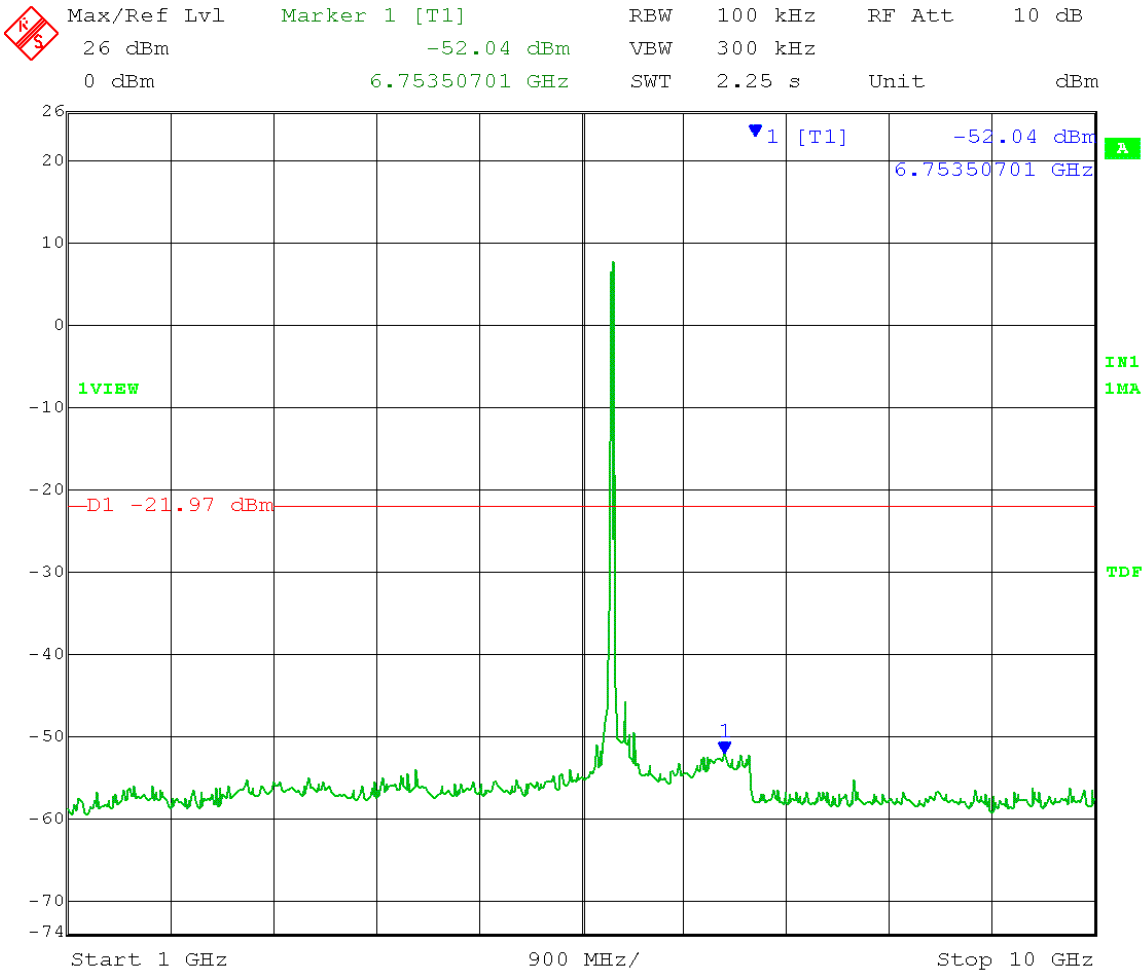


Date: 13.JUN.2013 14:09:15

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

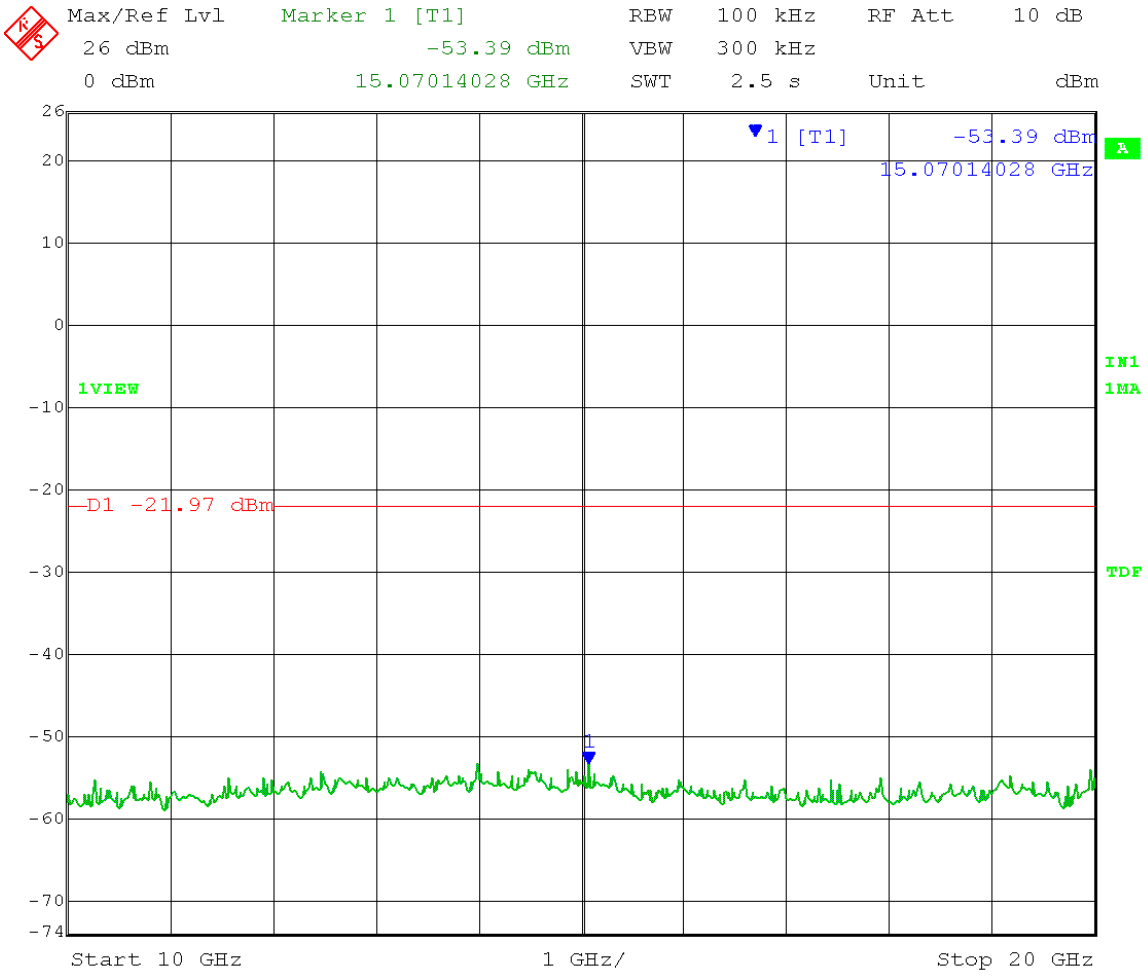


Date: 13.JUN.2013 13:08:48

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

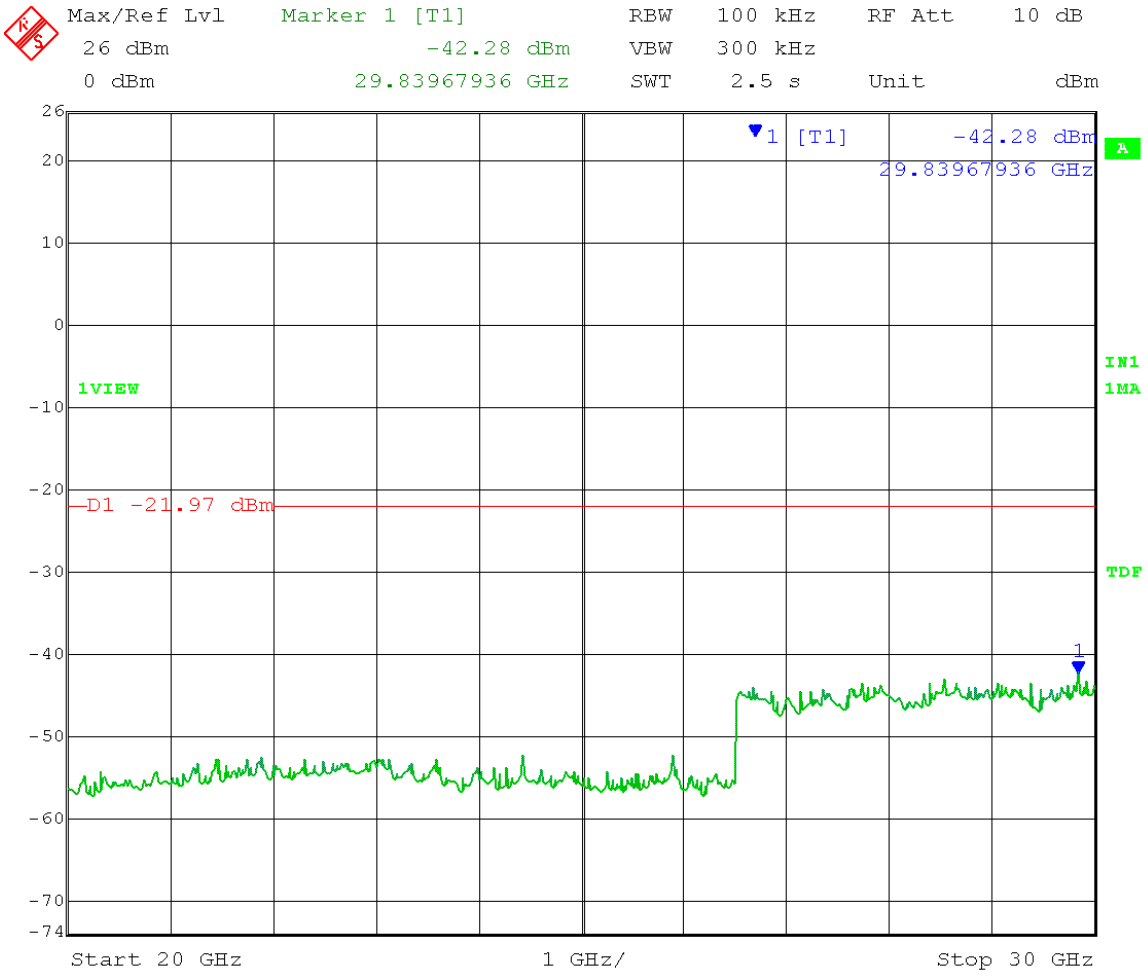


Date: 13.JUN.2013 13:56:39

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

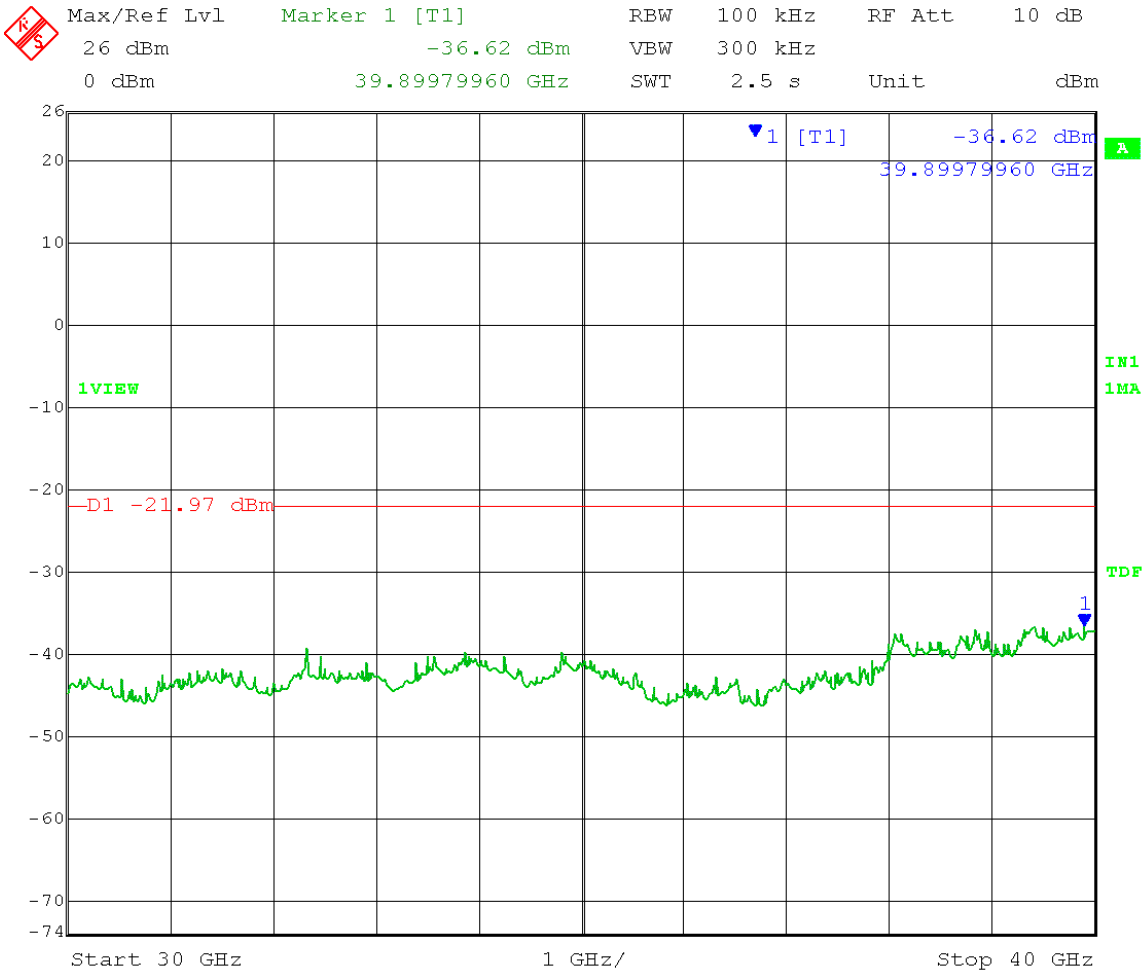


Date: 13.JUN.2013 14:01:37

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

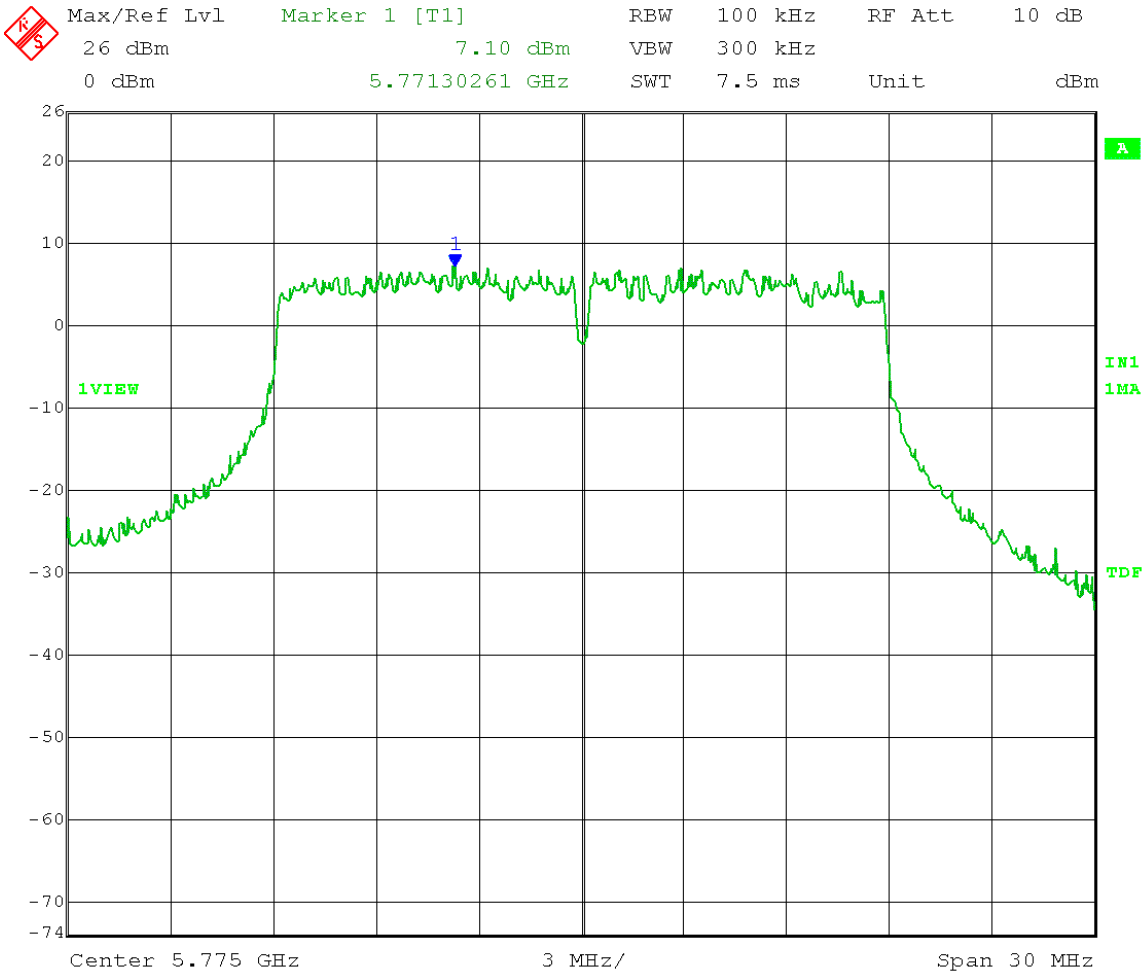


Date: 13.JUN.2013 14:03:24

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.755GHz
Output power setting = 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE

Reference Level measurement
Limit = 7.10dBm - 30 dB = -22.90dBm

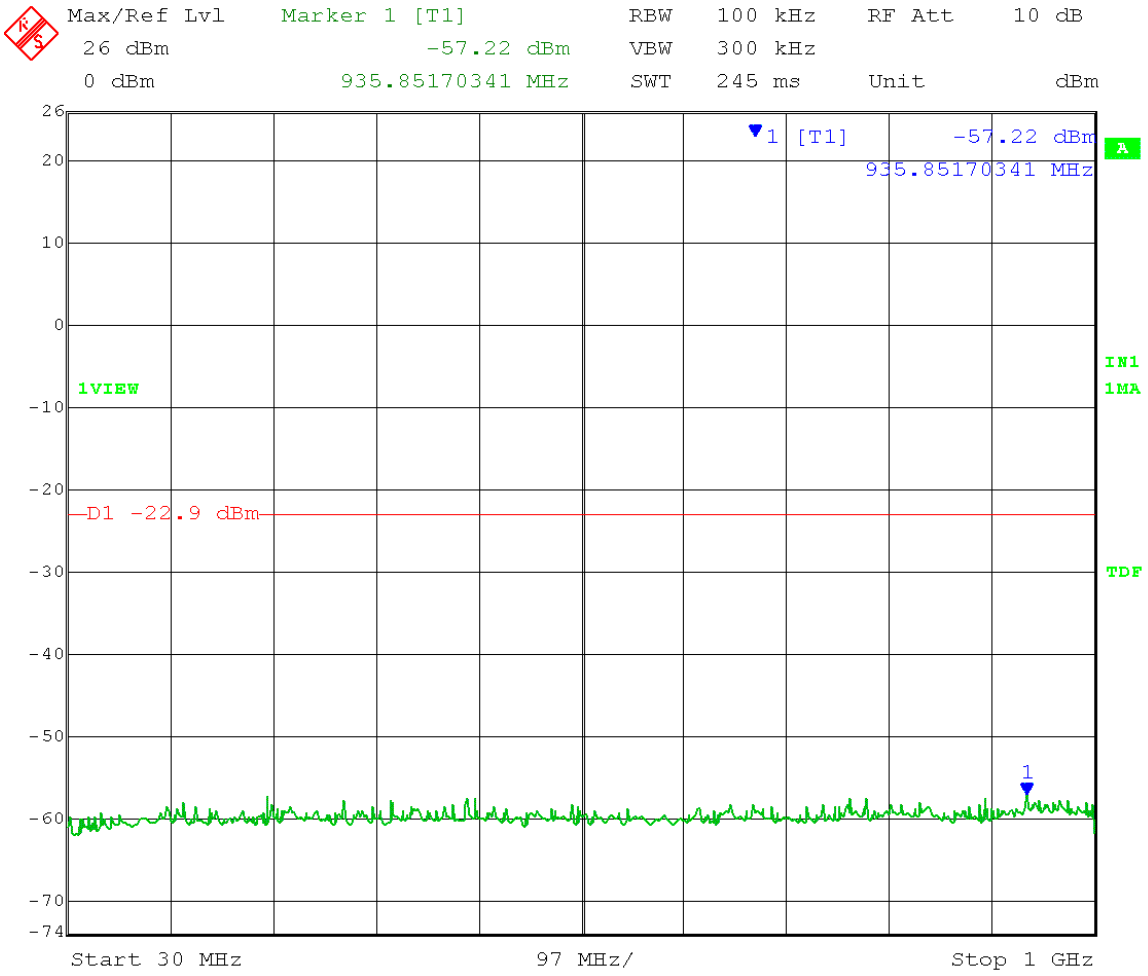


Date: 13.JUN.2013 10:46:54

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 7.10dBm - 30 dB = -22.90dBm

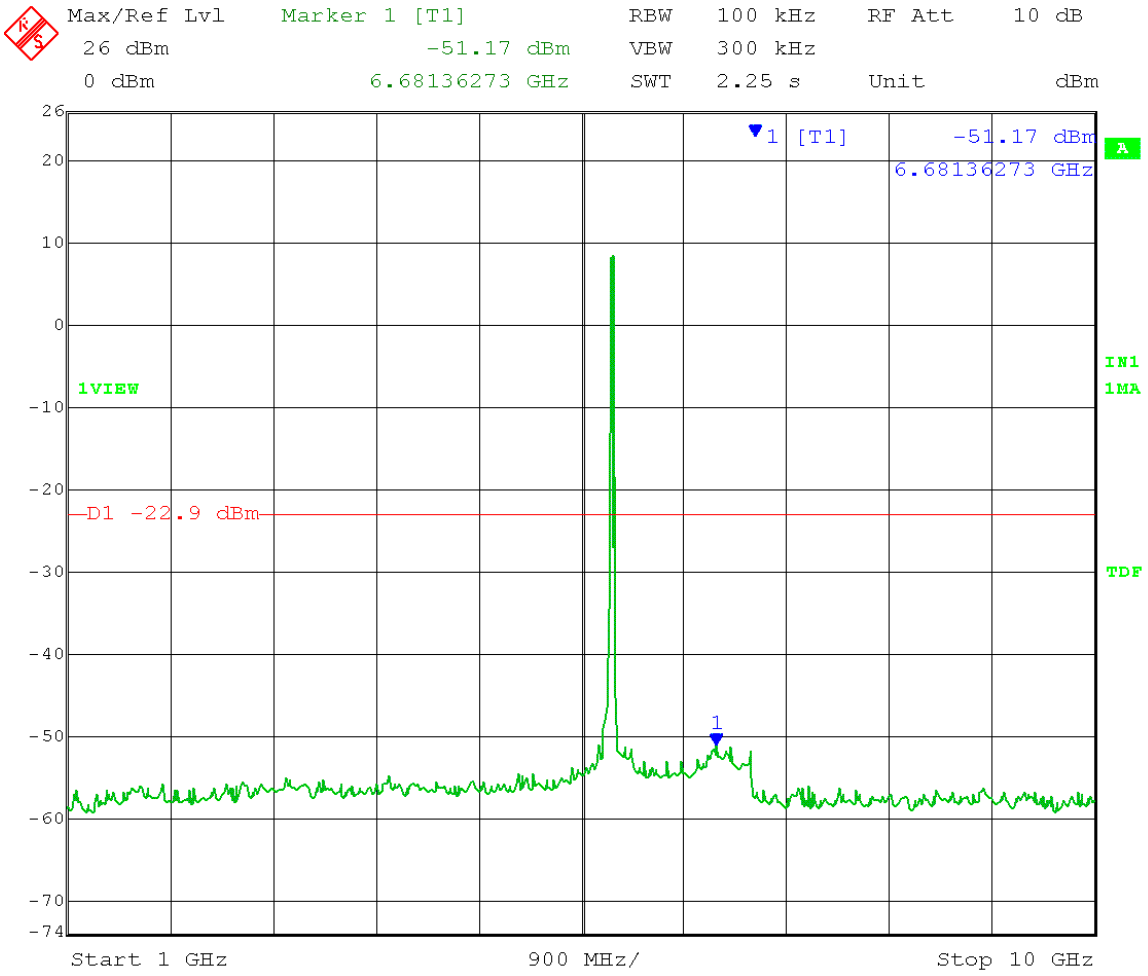


Date: 13.JUN.2013 14:07:47

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 7.10dBm - 30 dB = -22.90dBm

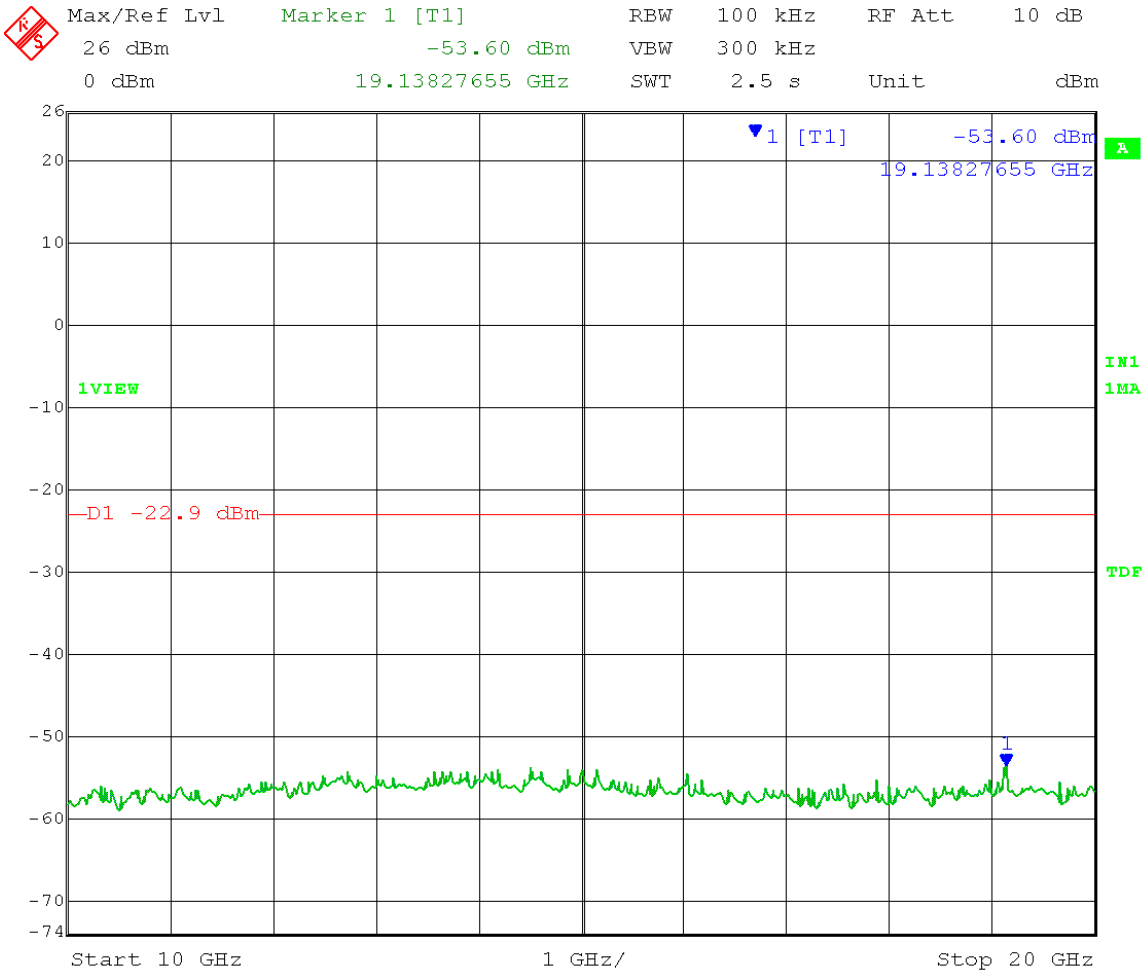


Date: 13.JUN.2013 13:10:22

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 7.10dBm - 30 dB = -22.90dBm

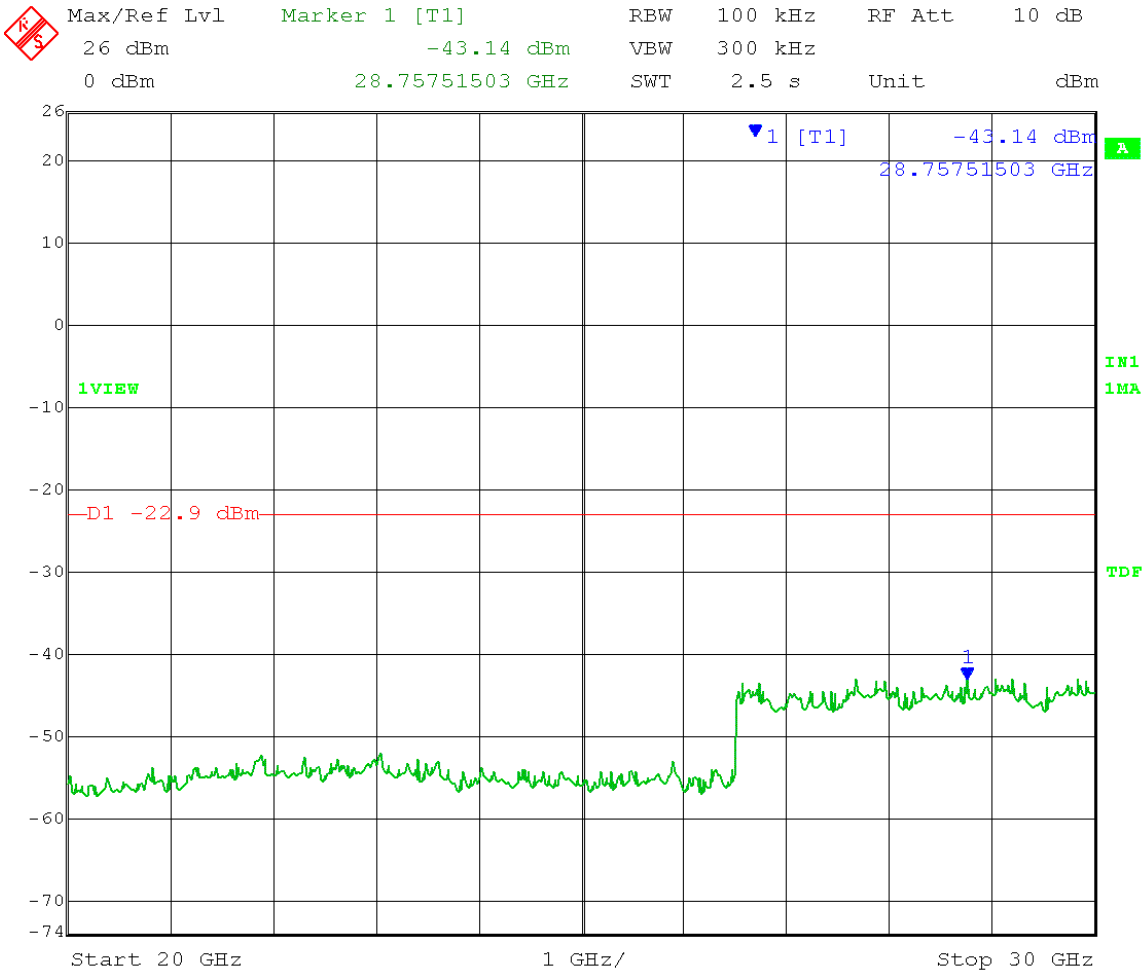


Date: 13.JUN.2013 13:58:19

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 7.10dBm - 30 dB = -22.90dBm

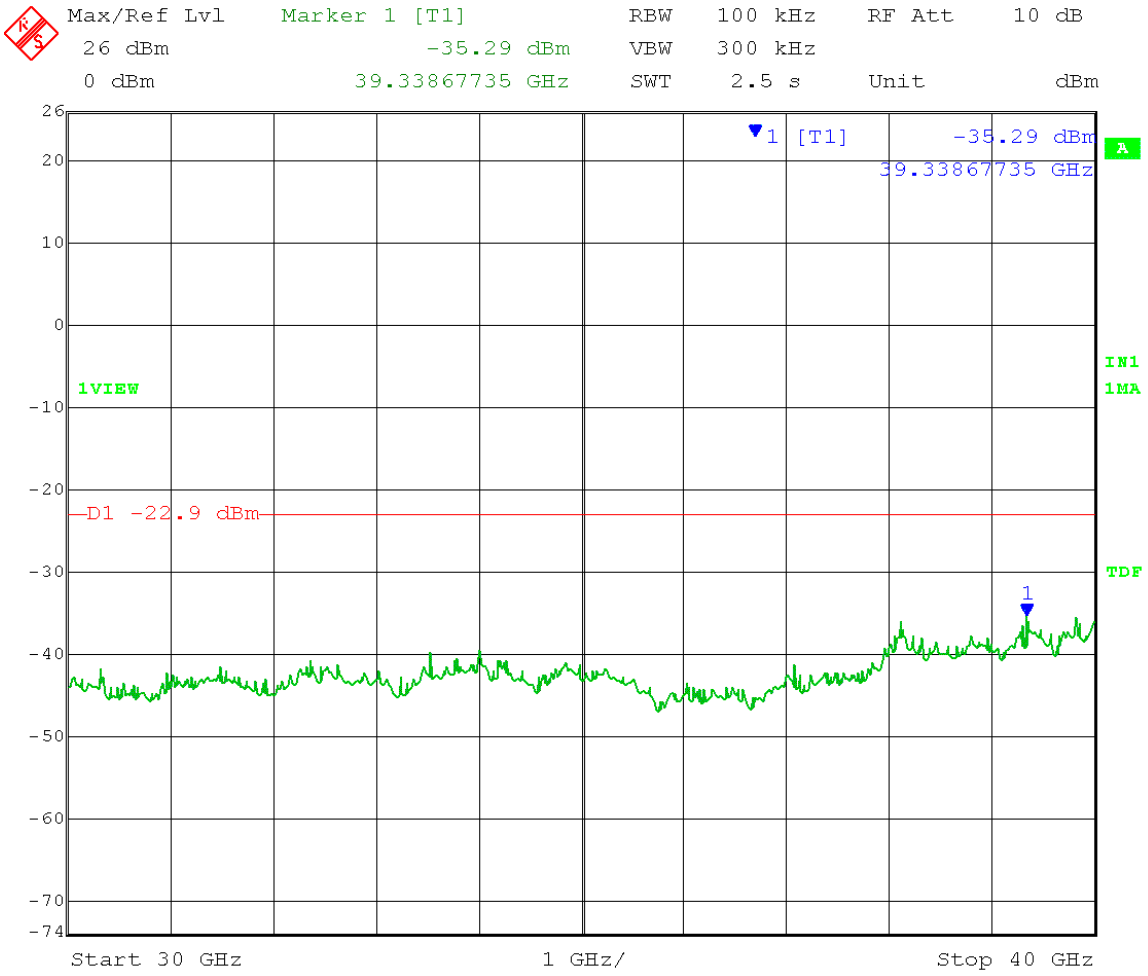


Date: 13.JUN.2013 14:00:01

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.775GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 7.10dBm - 30 dB = -22.90dBm

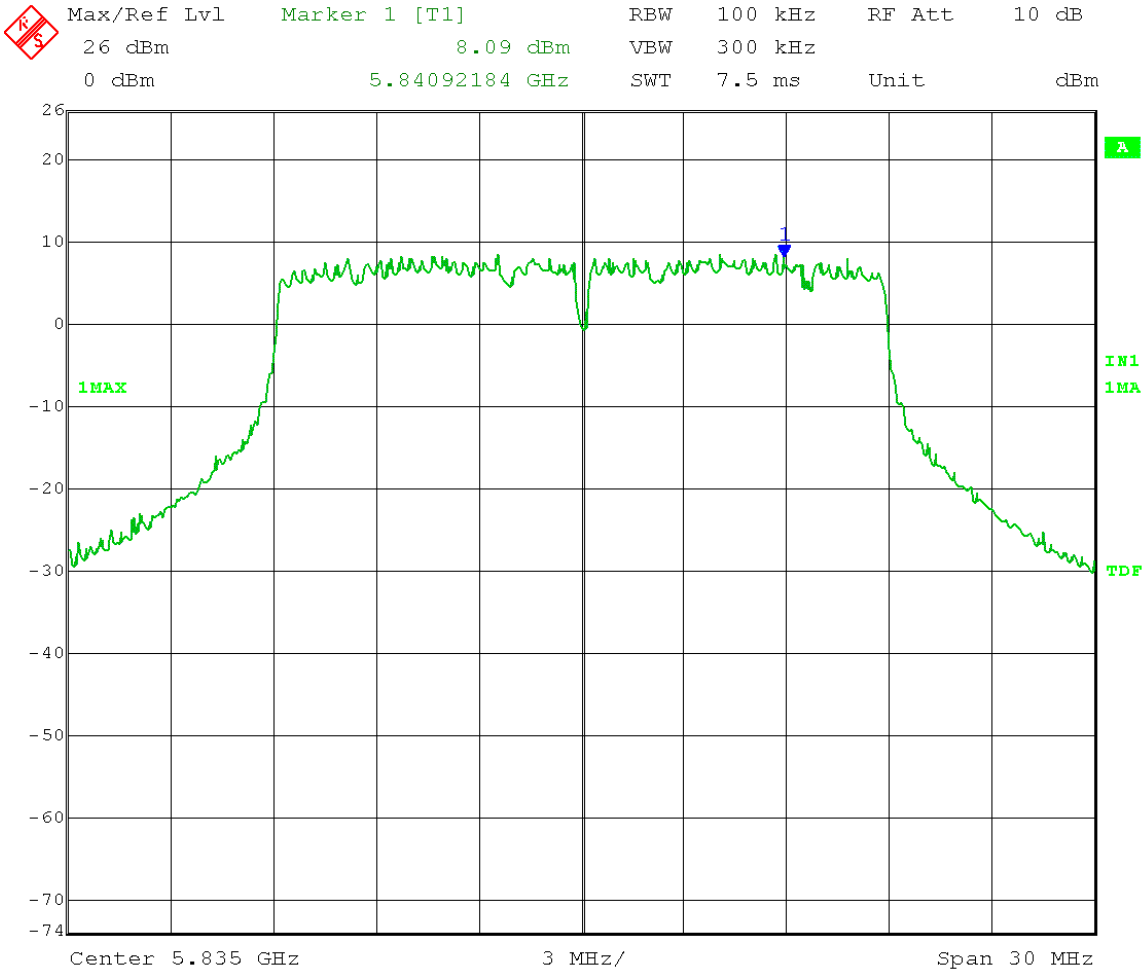


Date: 13.JUN.2013 14:05:29

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE

Reference Level measurement
Limit = 8.09dBm - 30 dB = -21.91dBm

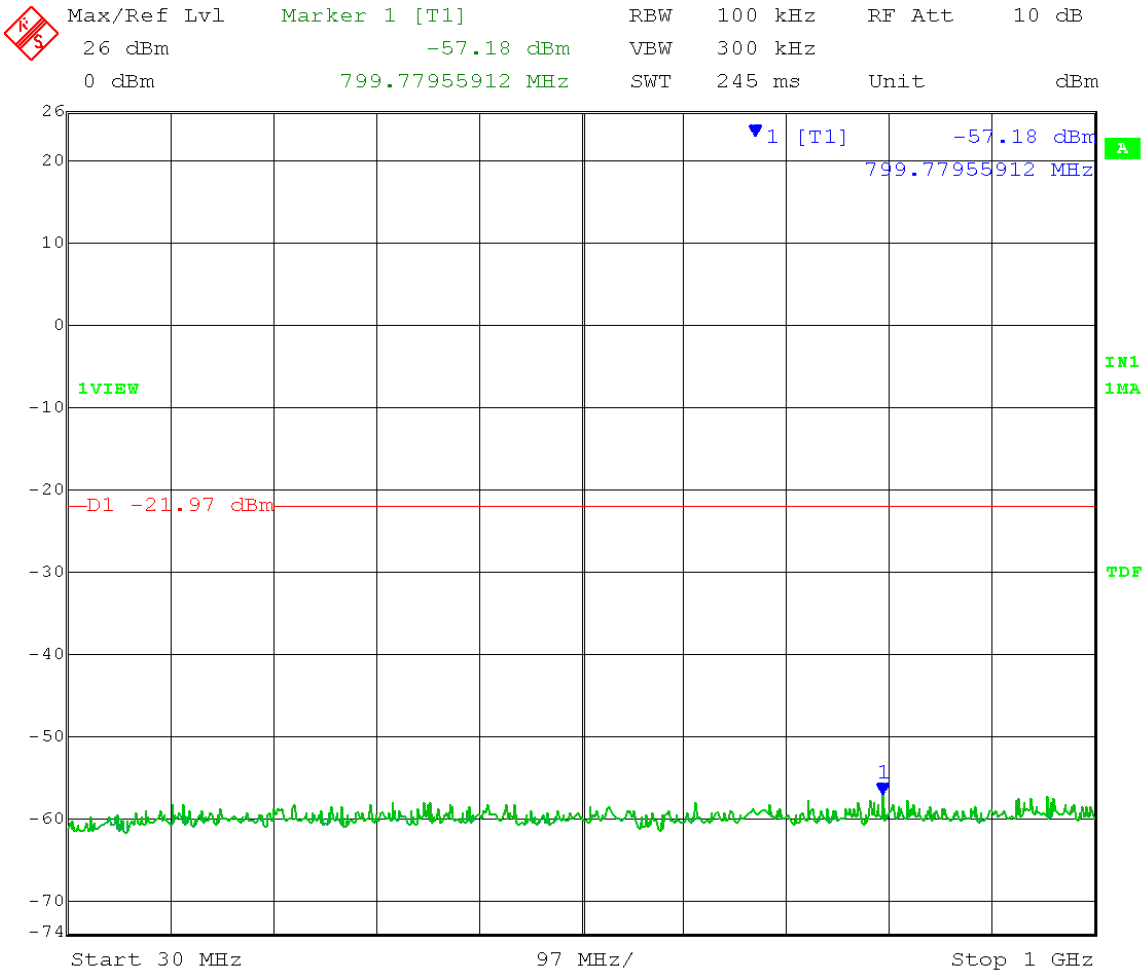


Date: 13.JUN.2013 10:32:42

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

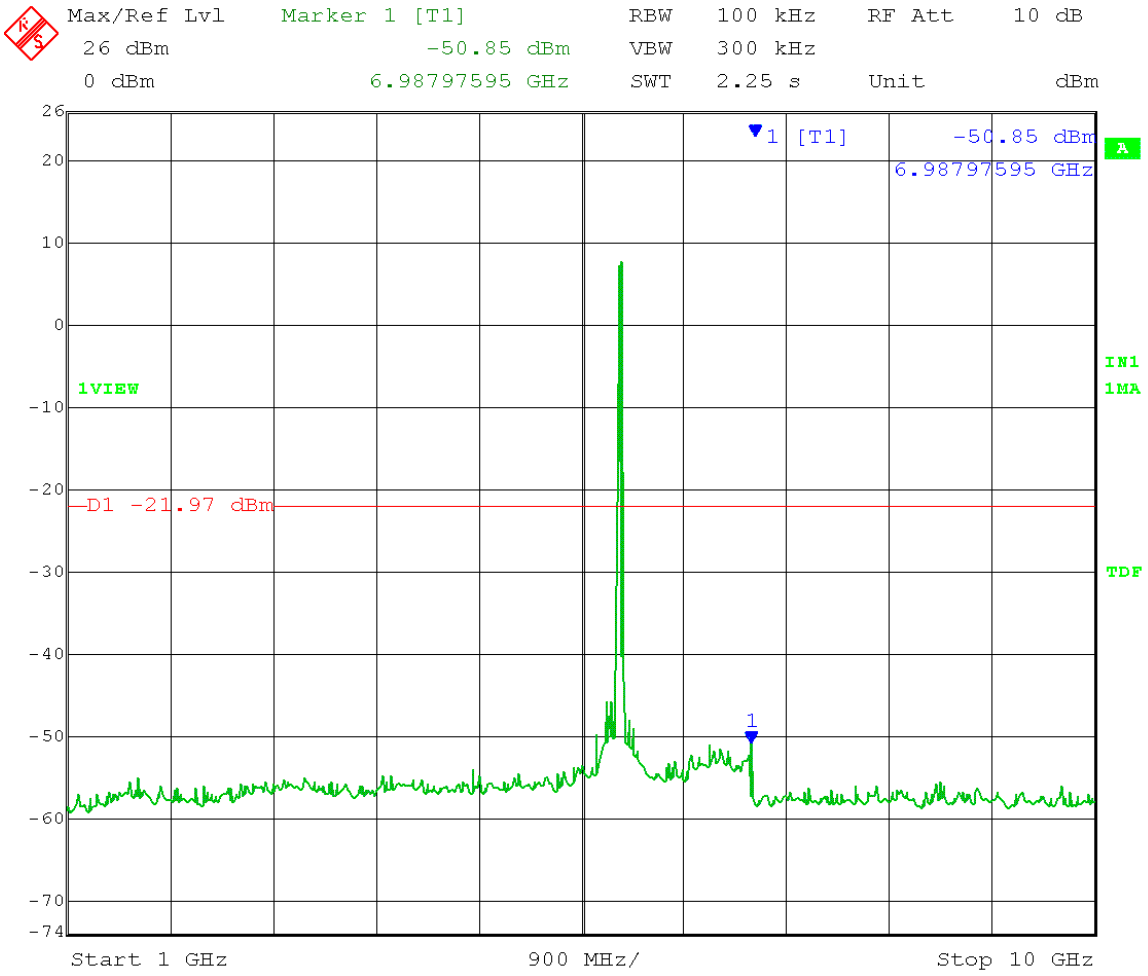


Date: 13.JUN.2013 13:33:37

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

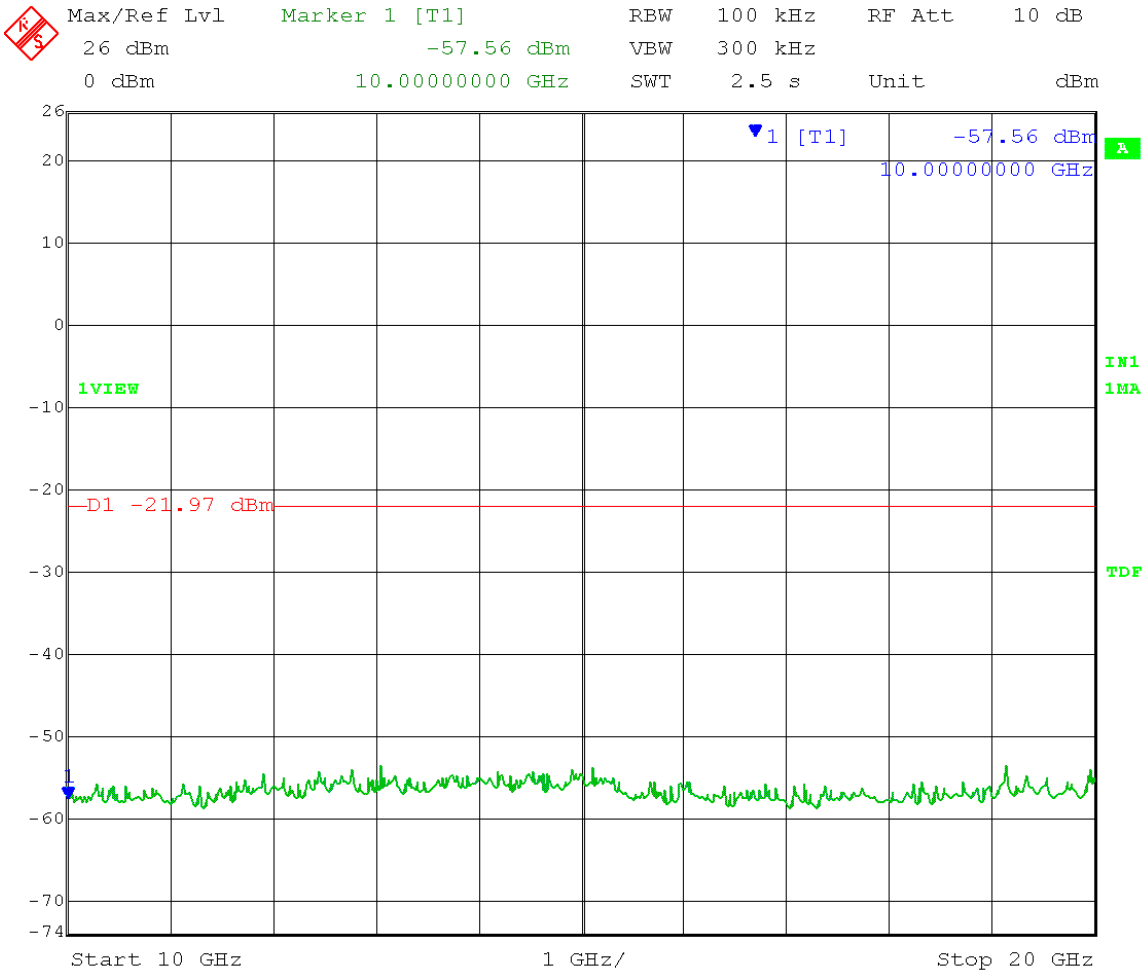


Date: 13.JUN.2013 13:16:19

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

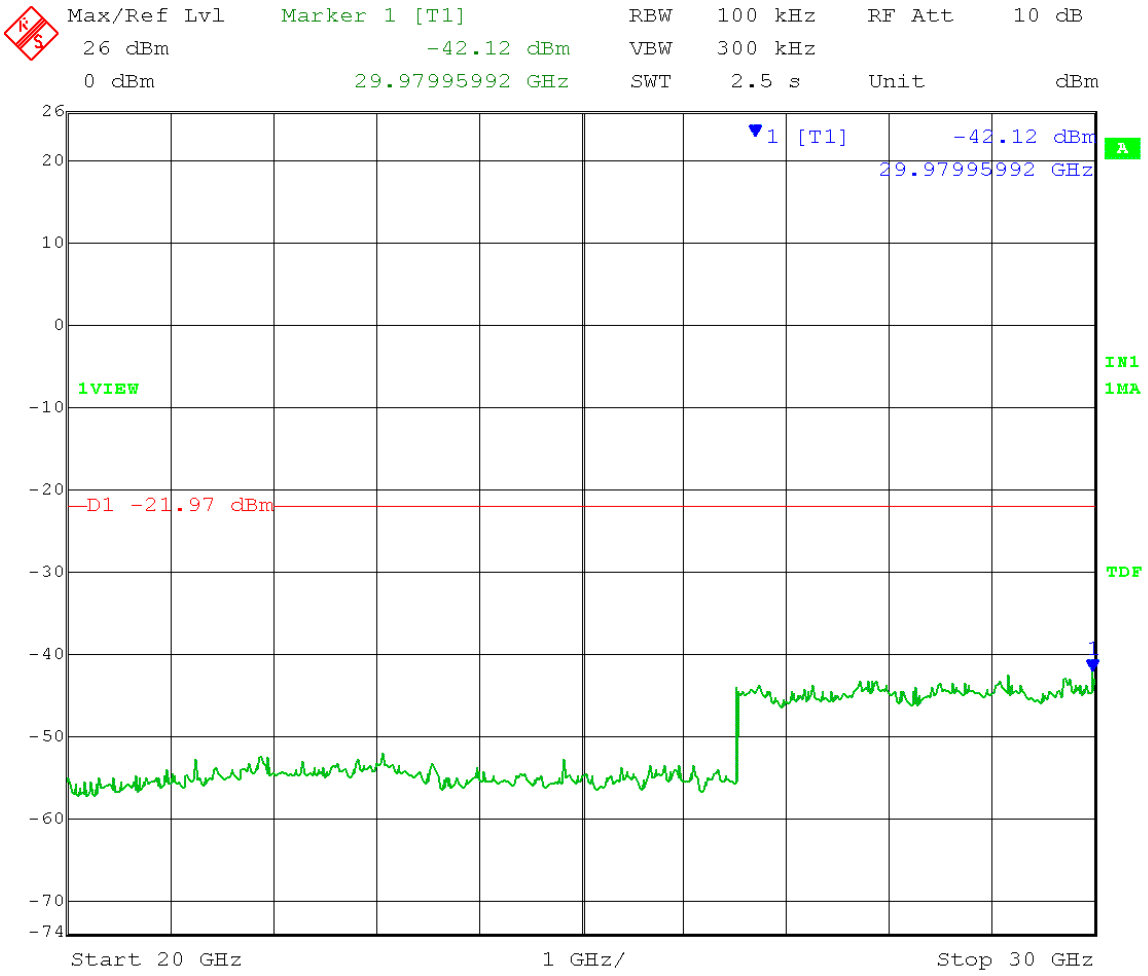


Date: 13.JUN.2013 13:19:07

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

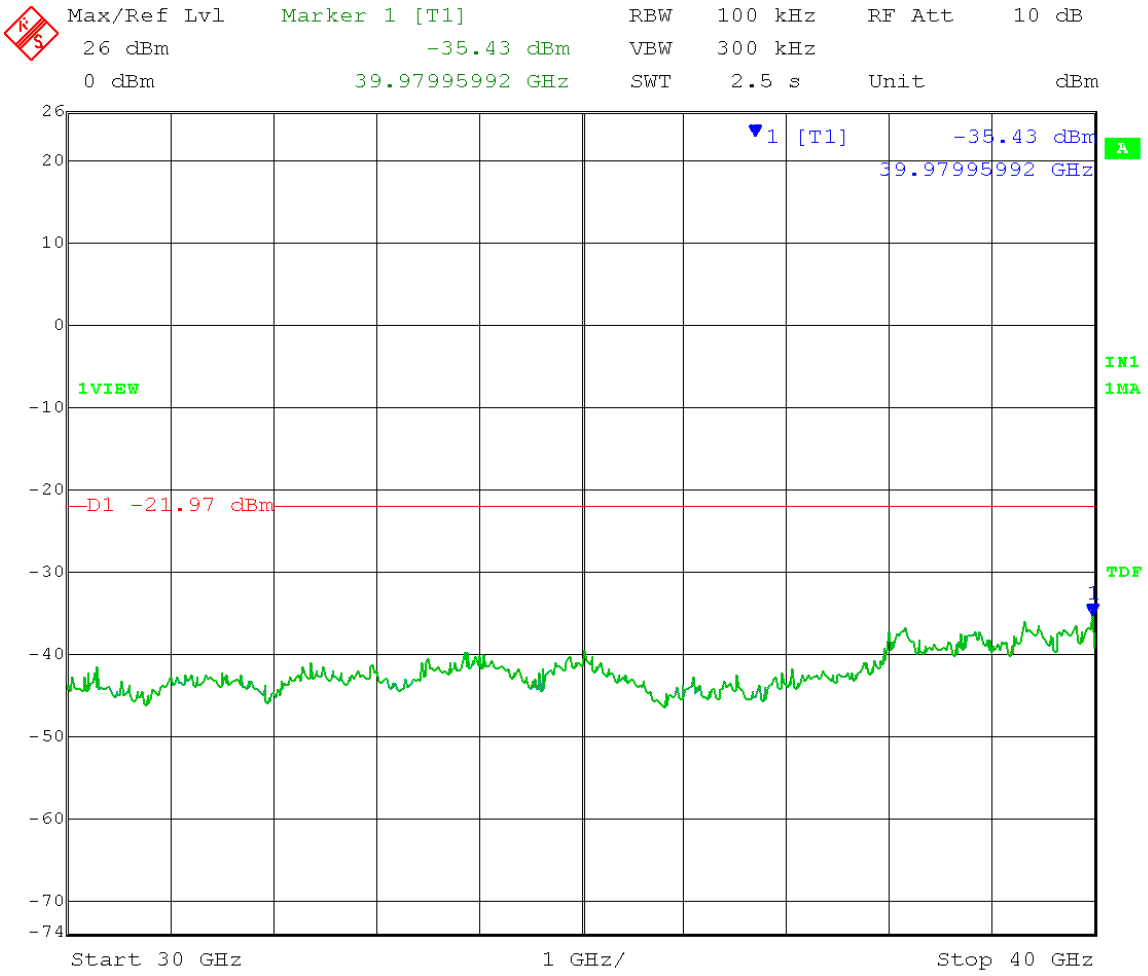


Date: 13.JUN.2013 13:25:48

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 8.03dBm - 30 dB = -21.97dBm

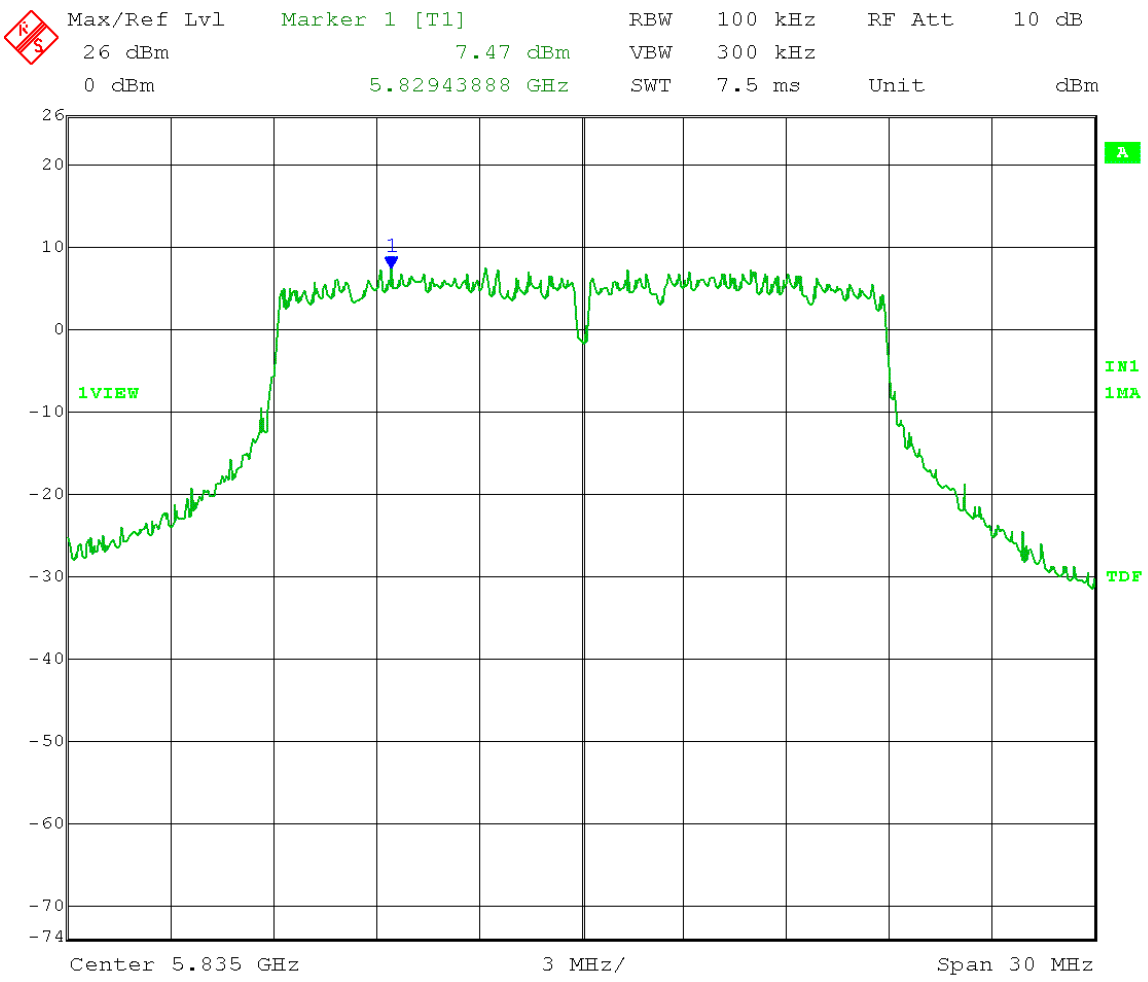


Date: 13.JUN.2013 13:28:02

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting = 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE

Reference Level measurement
Limit = 7.47dBm - 30 dB = -22.53dBm

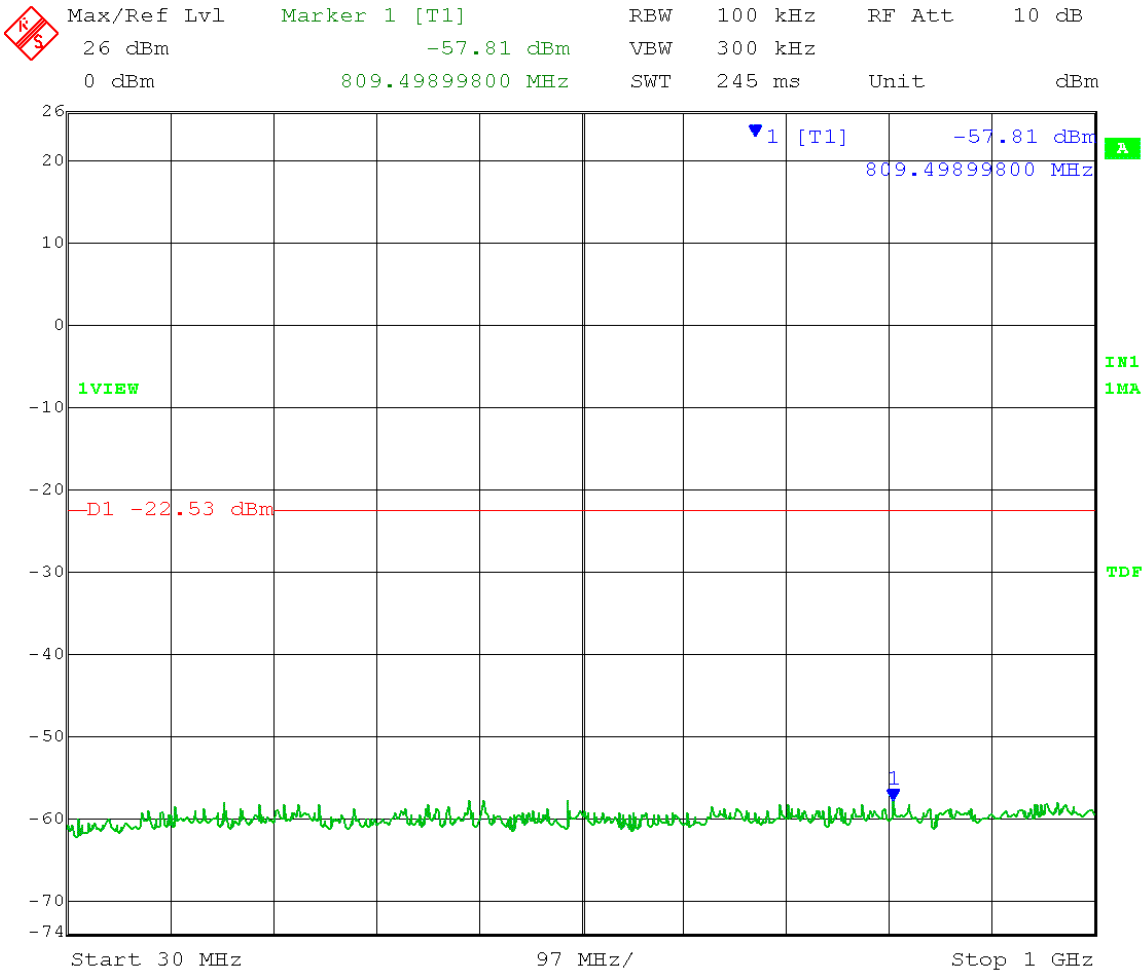


Date: 13.JUN.2013 10:37:30

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 7.47dBm - 30 dB = -22.53dBm

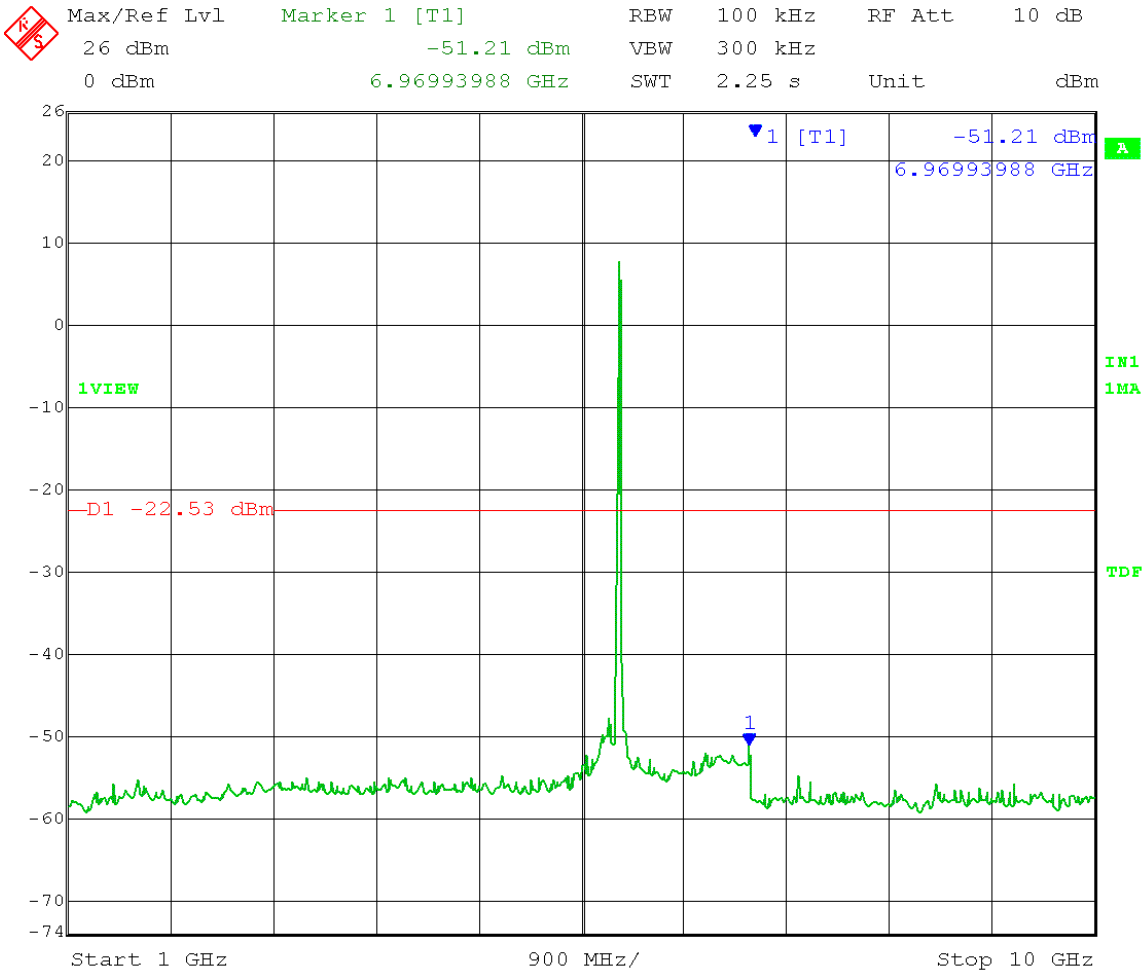


Date: 13.JUN.2013 13:32:10

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 7.47dBm - 30 dB = -22.53dBm

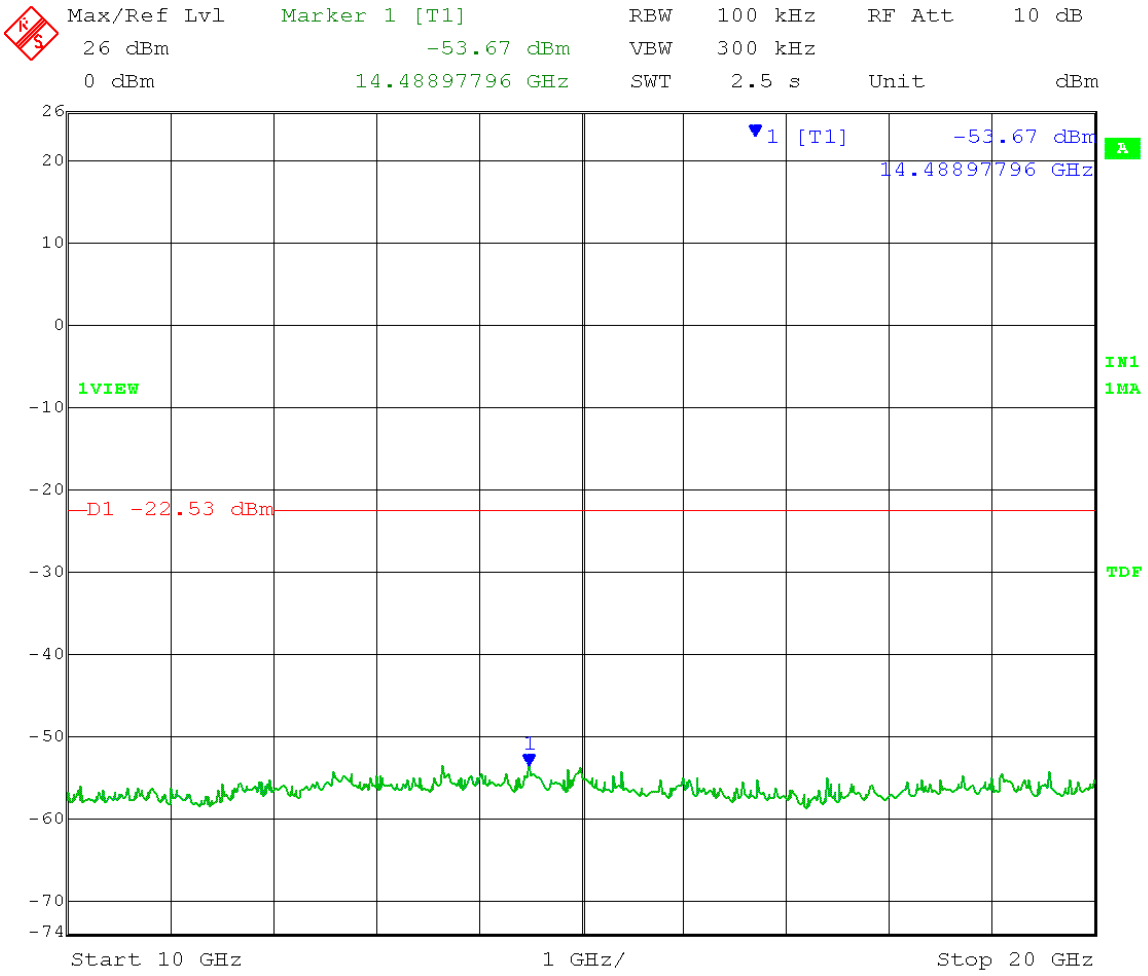


Date: 13.JUN.2013 13:14:36

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 7.47dBm - 30 dB = -22.53dBm

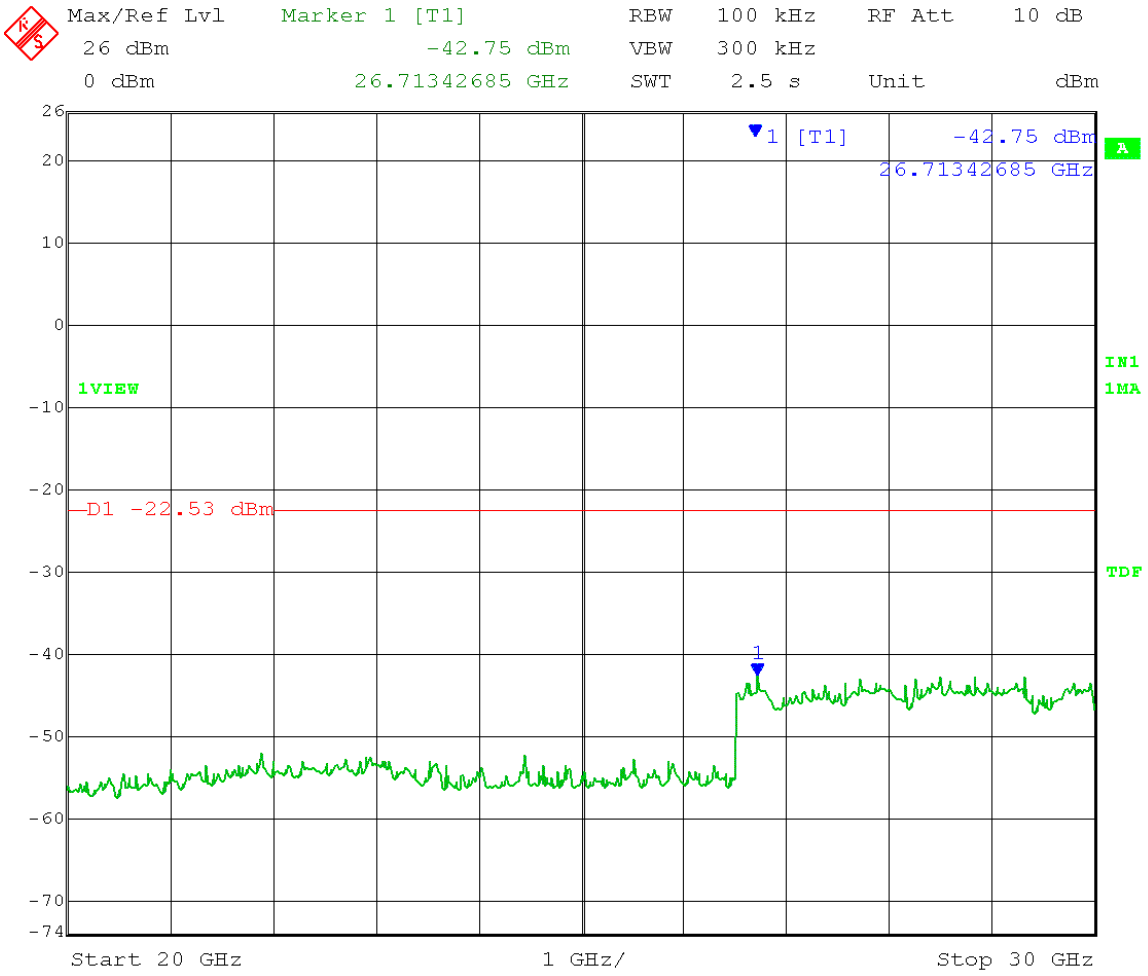


Date: 13.JUN.2013 13:22:01

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 7.47dBm - 30 dB = -22.53dBm

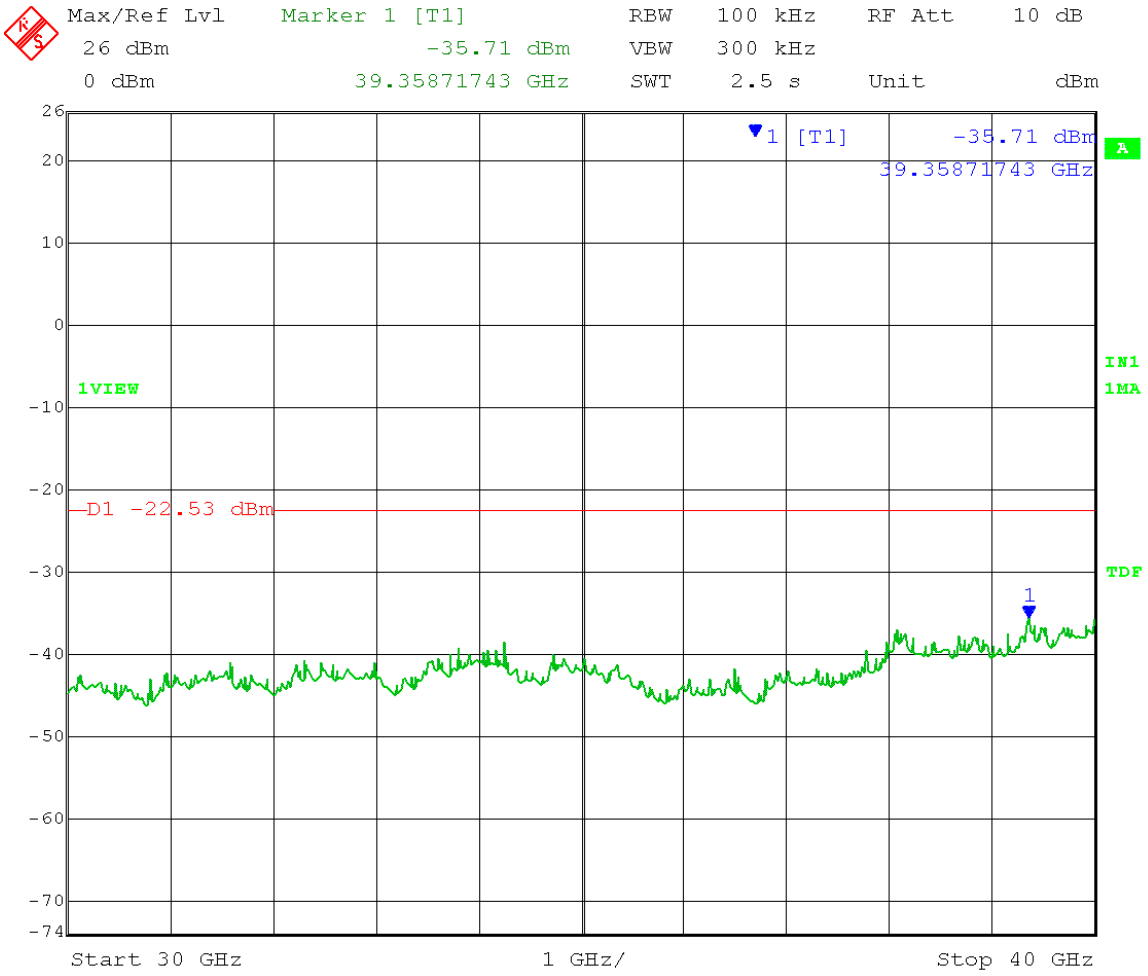


Date: 13.JUN.2013 13:24:18

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.835GHz
Output power setting 20dBm	20MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 7.47dBm - 30 dB = -22.53dBm

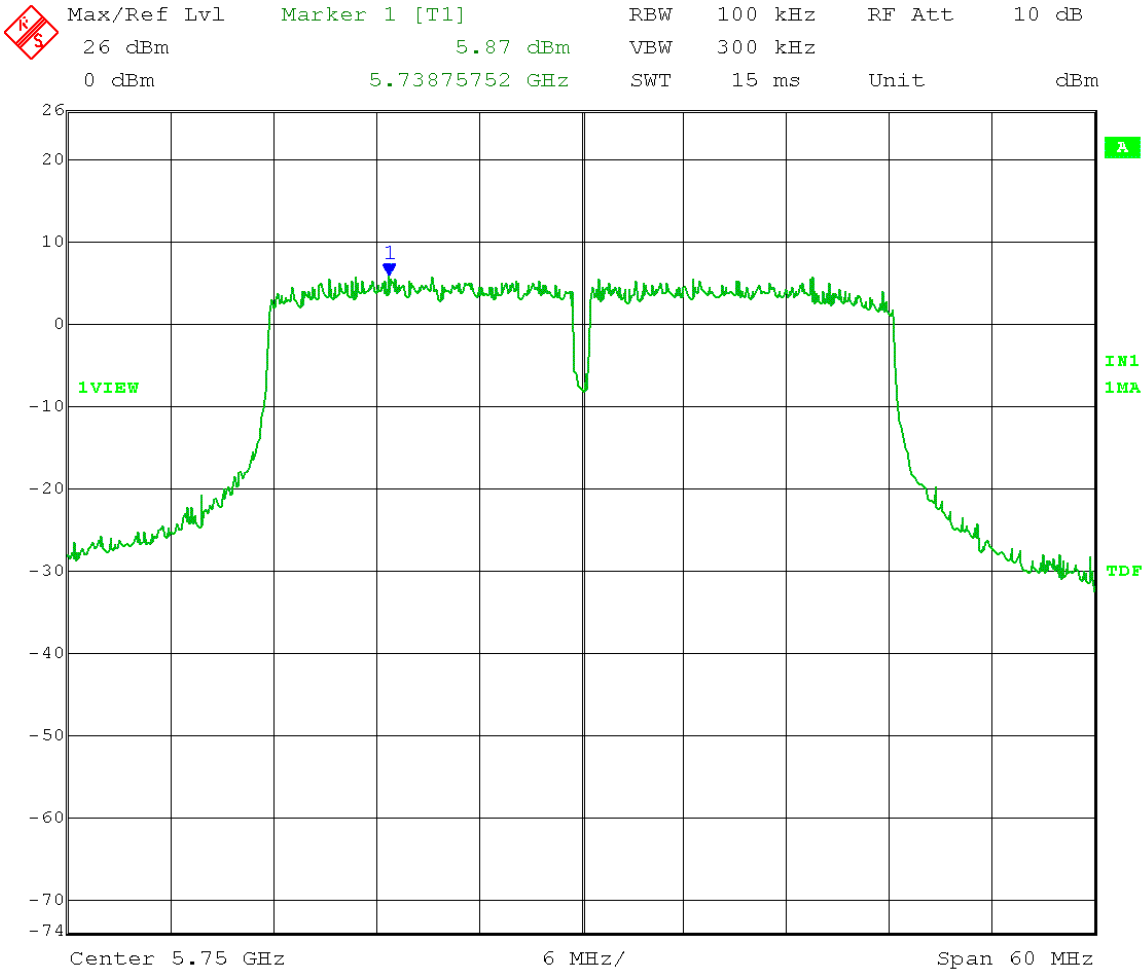


Date: 13.JUN.2013 13:30:07

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE

Reference Level measurement
Limit = 5.87dBm - 30 dB = -24.13dBm

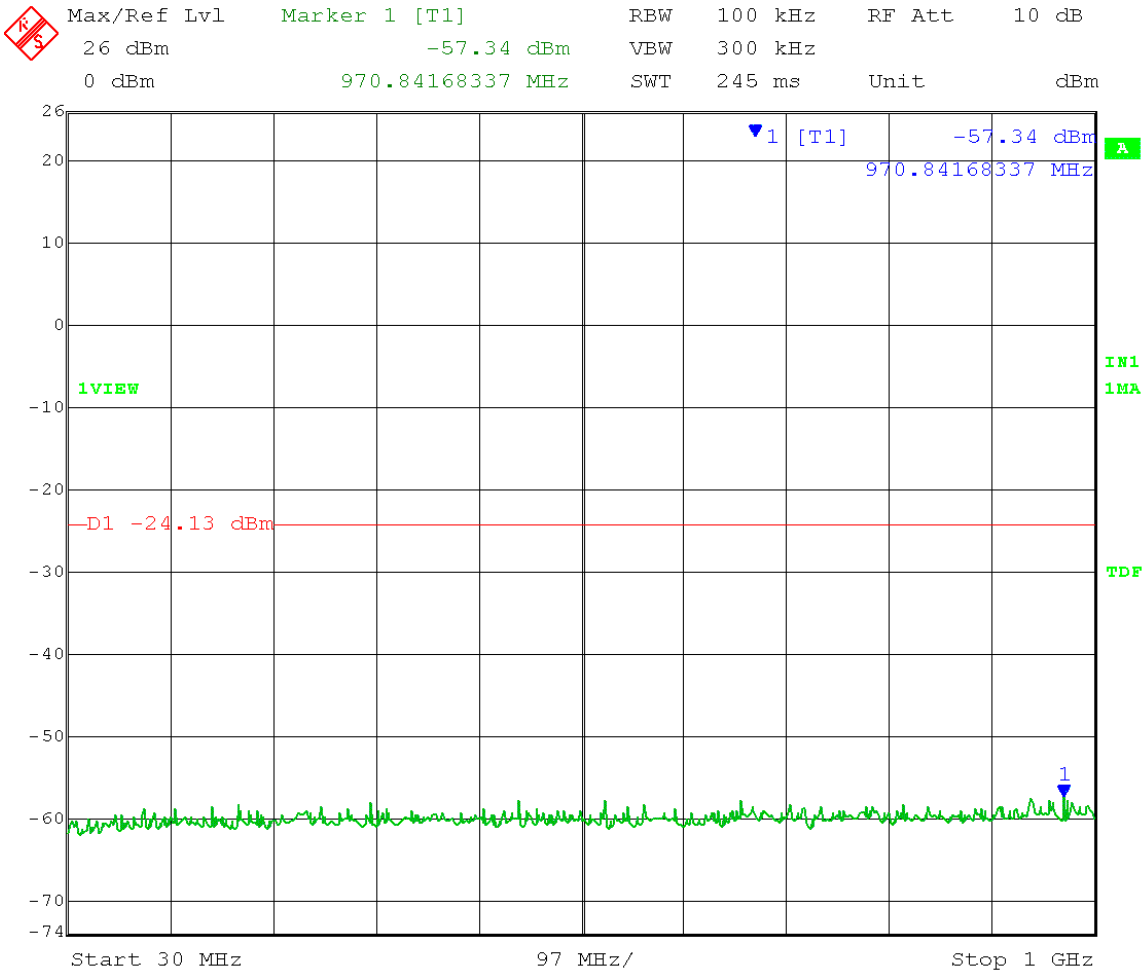


Date: 13.JUN.2013 11:00:52

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 5.87dBm - 30 dB = -24.13dBm

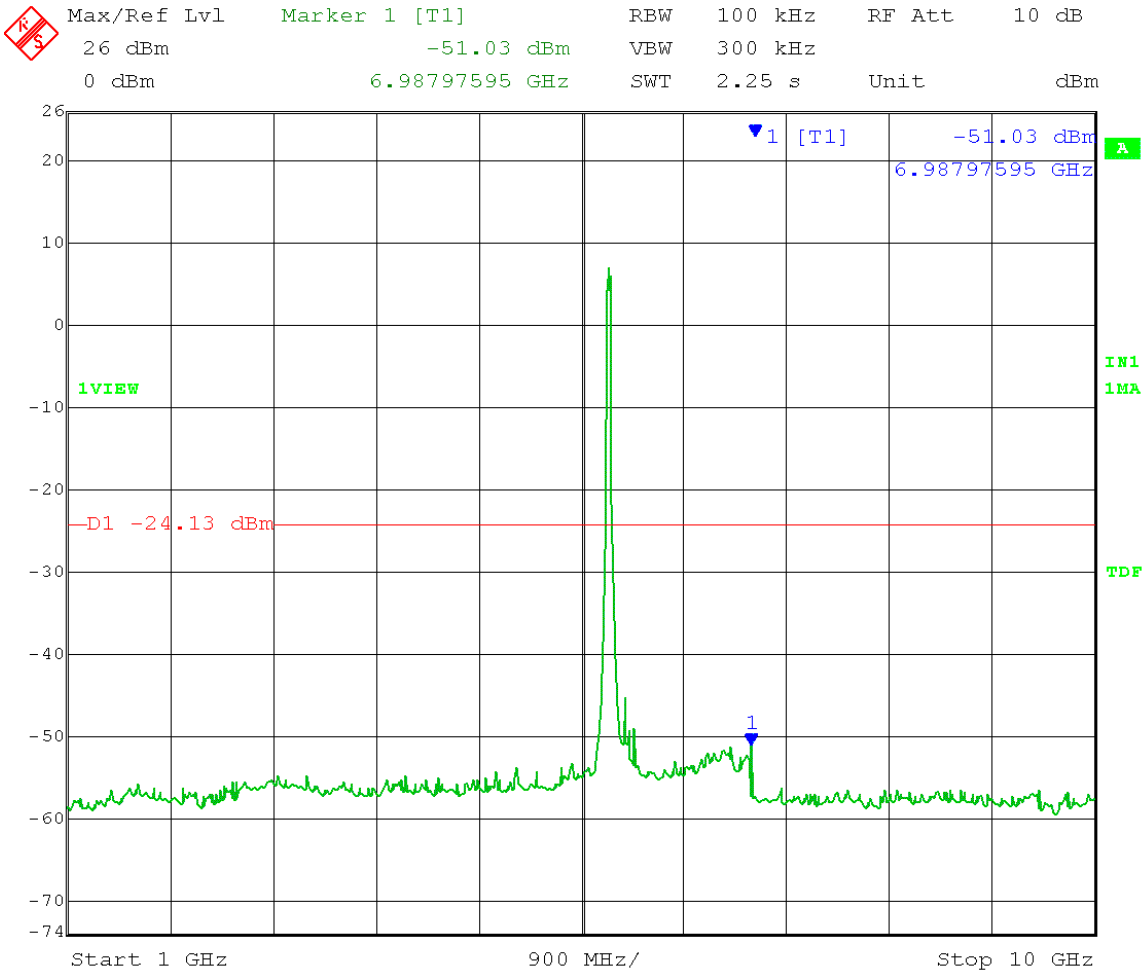


Date: 13.JUN.2013 14:27:48

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 5.87dBm - 30 dB = -24.13dBm

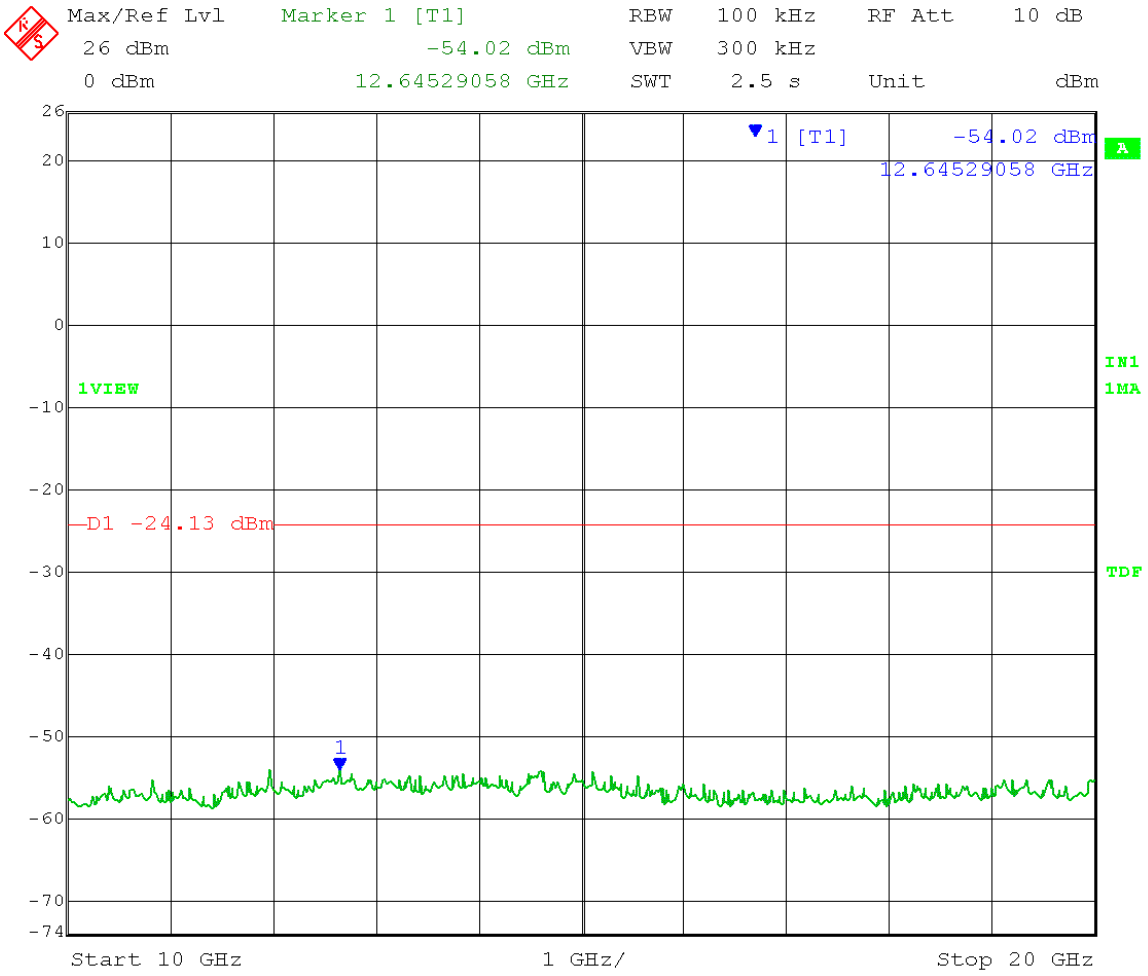


Date: 13.JUN.2013 11:38:22

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 5.87dBm - 30 dB = -24.13dBm

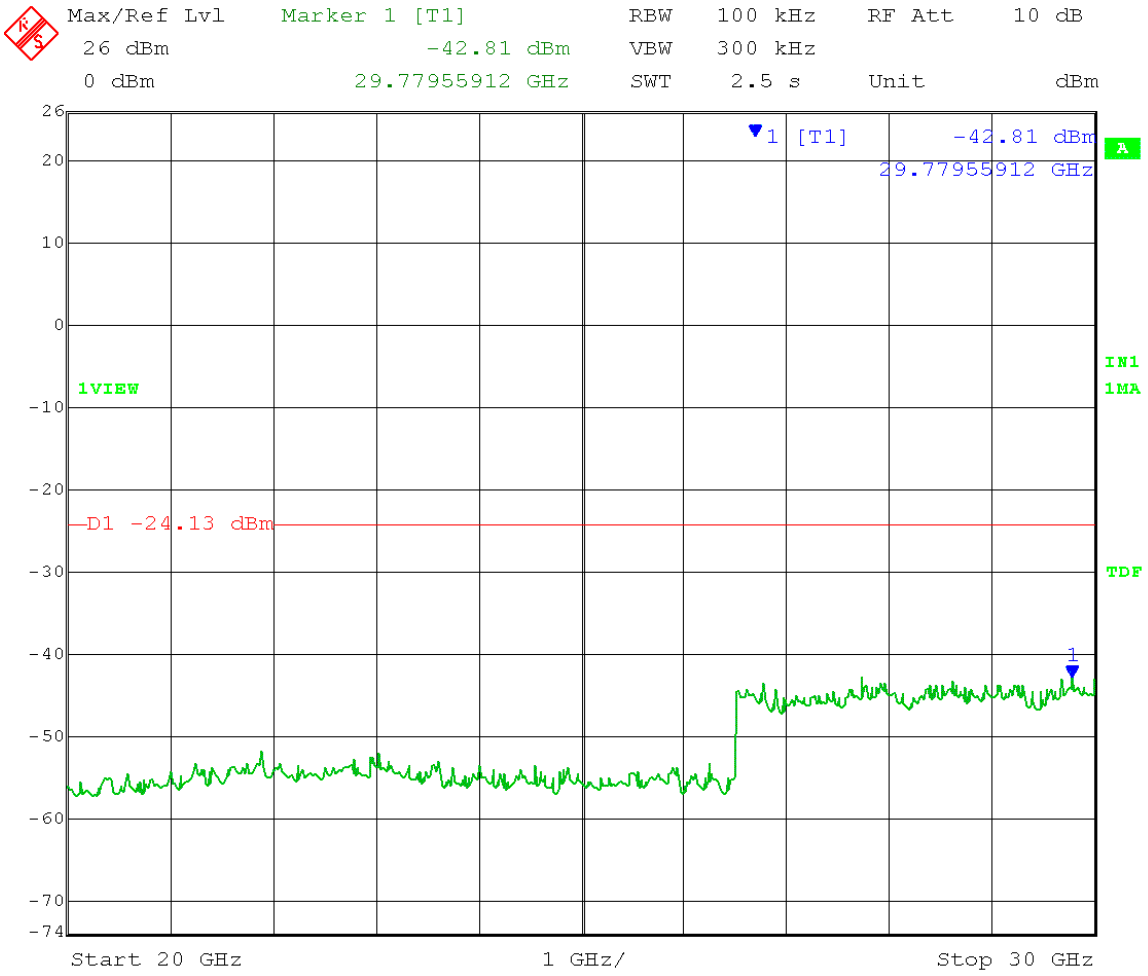


Date: 13.JUN.2013 14:18:01

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 5.87dBm - 30 dB = -24.13dBm

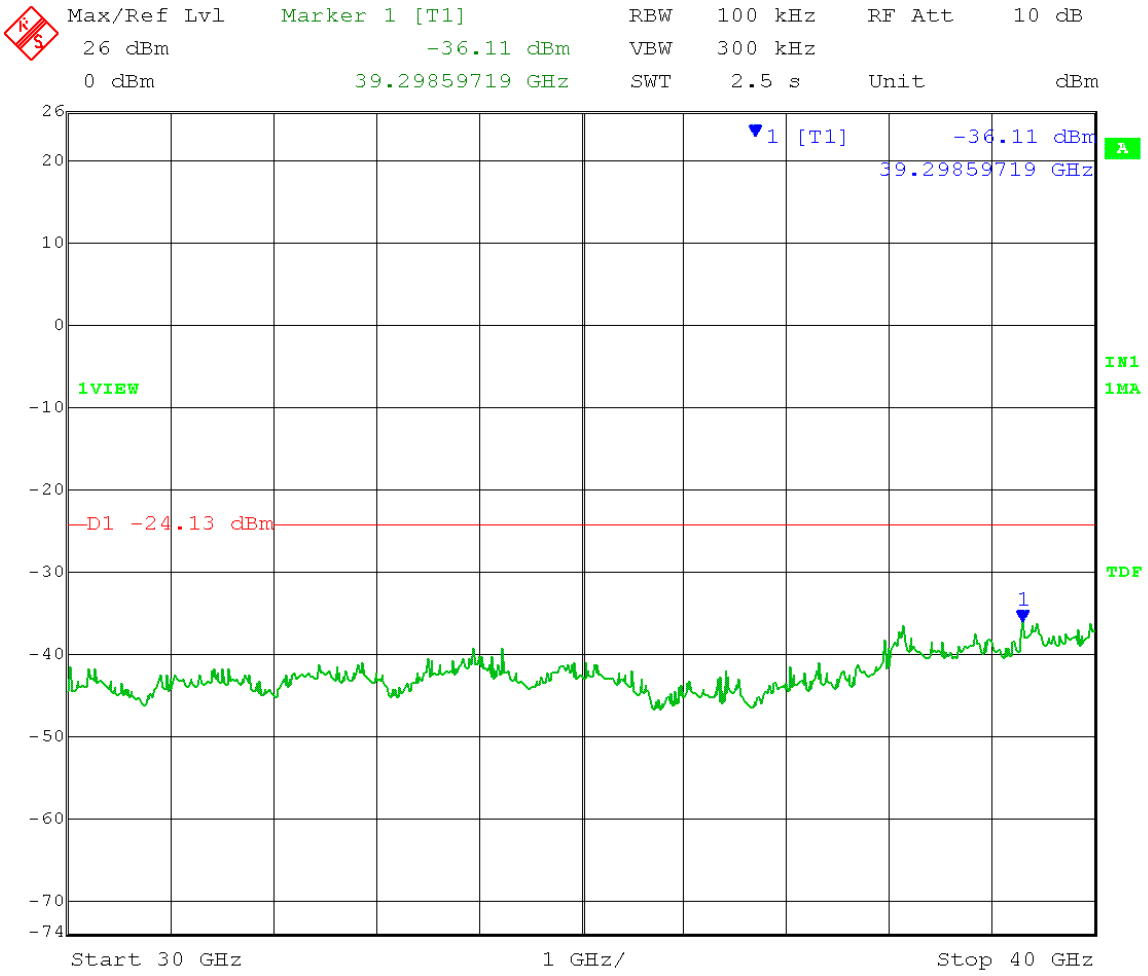


Date: 13.JUN.2013 14:20:02

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 5.87dBm - 30 dB = -24.13dBm

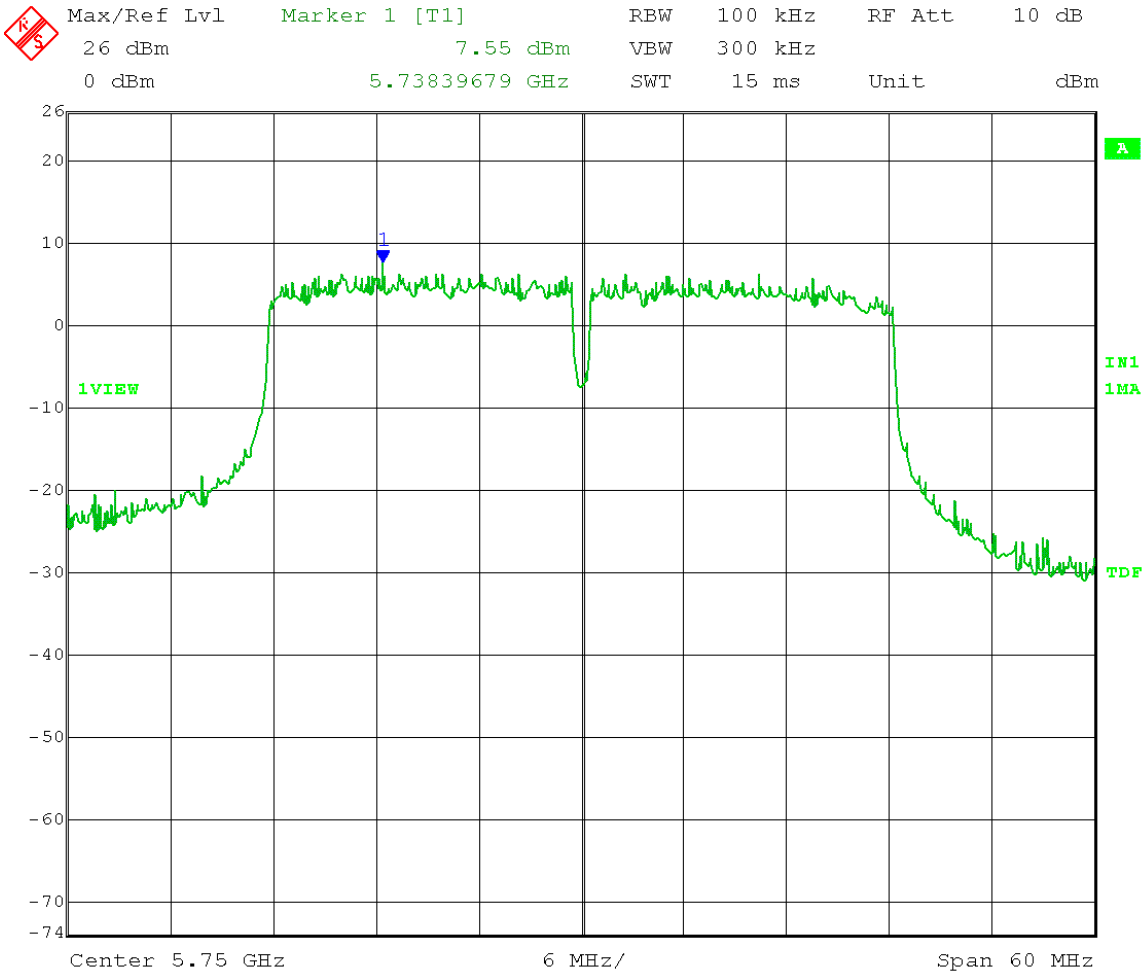


Date: 13.JUN.2013 14:23:45

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting = 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE

Reference Level measurement
Limit = 7.55dBm - 30 dB = -22.45dBm

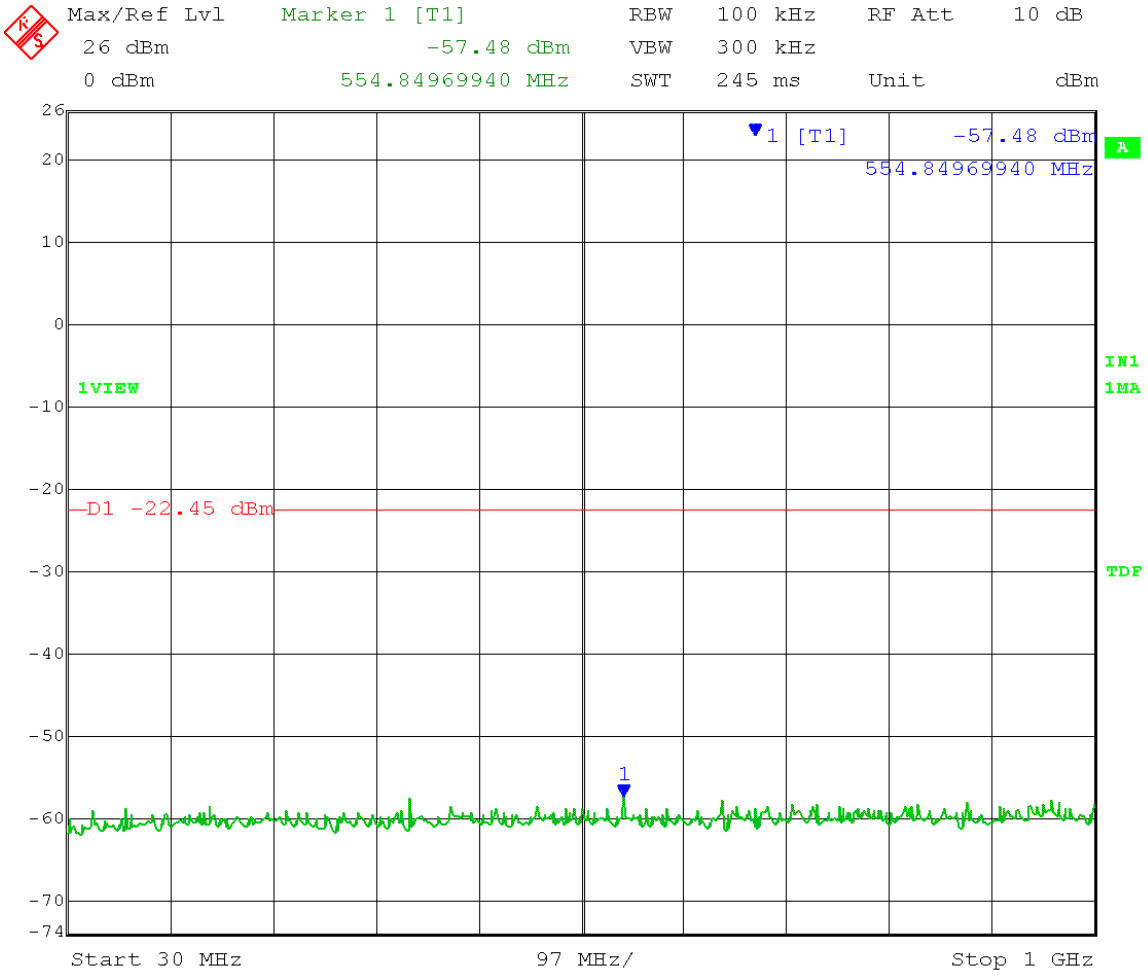


Date: 13.JUN.2013 10:59:10

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 7.55dBm - 30 dB = -22.45dBm

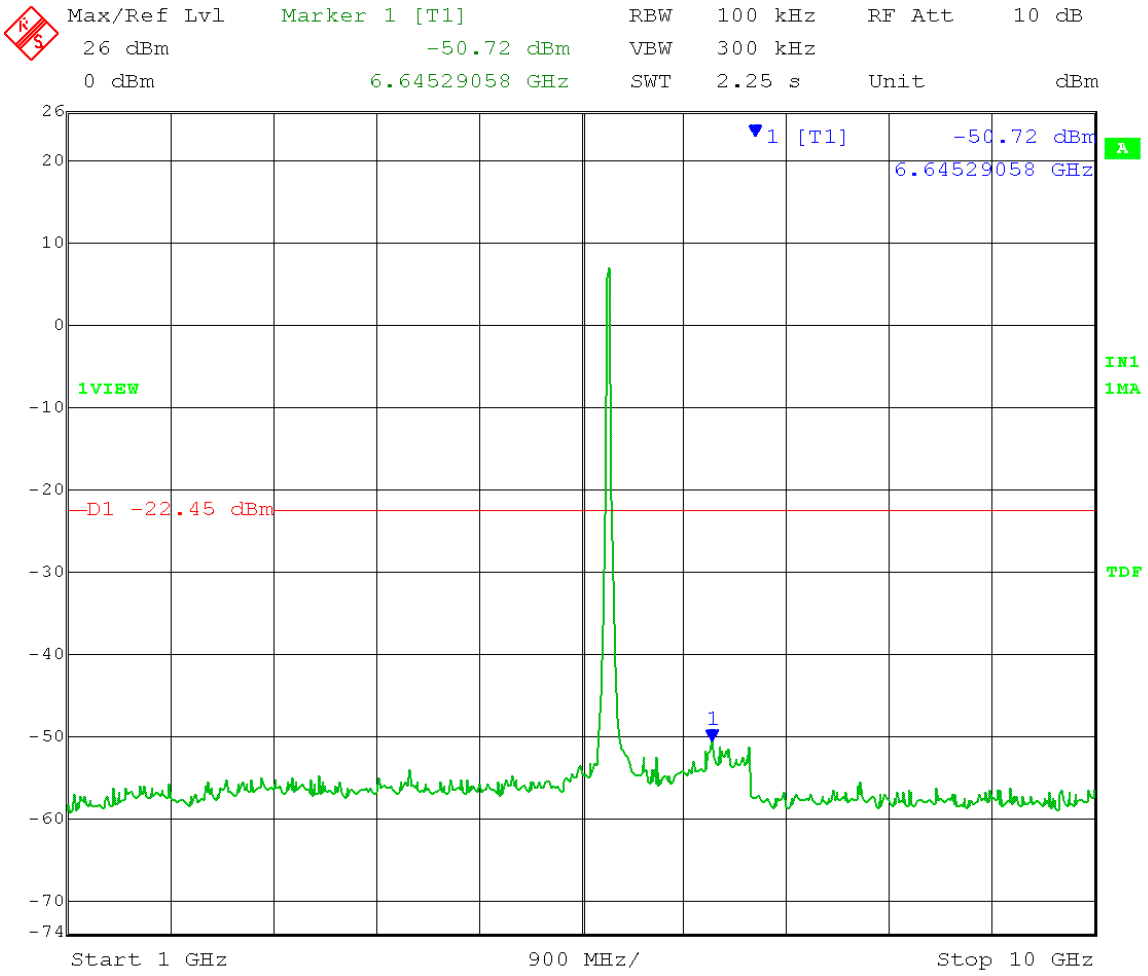


Date: 13.JUN.2013 14:26:38

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 7.55dBm - 30 dB = -22.45dBm

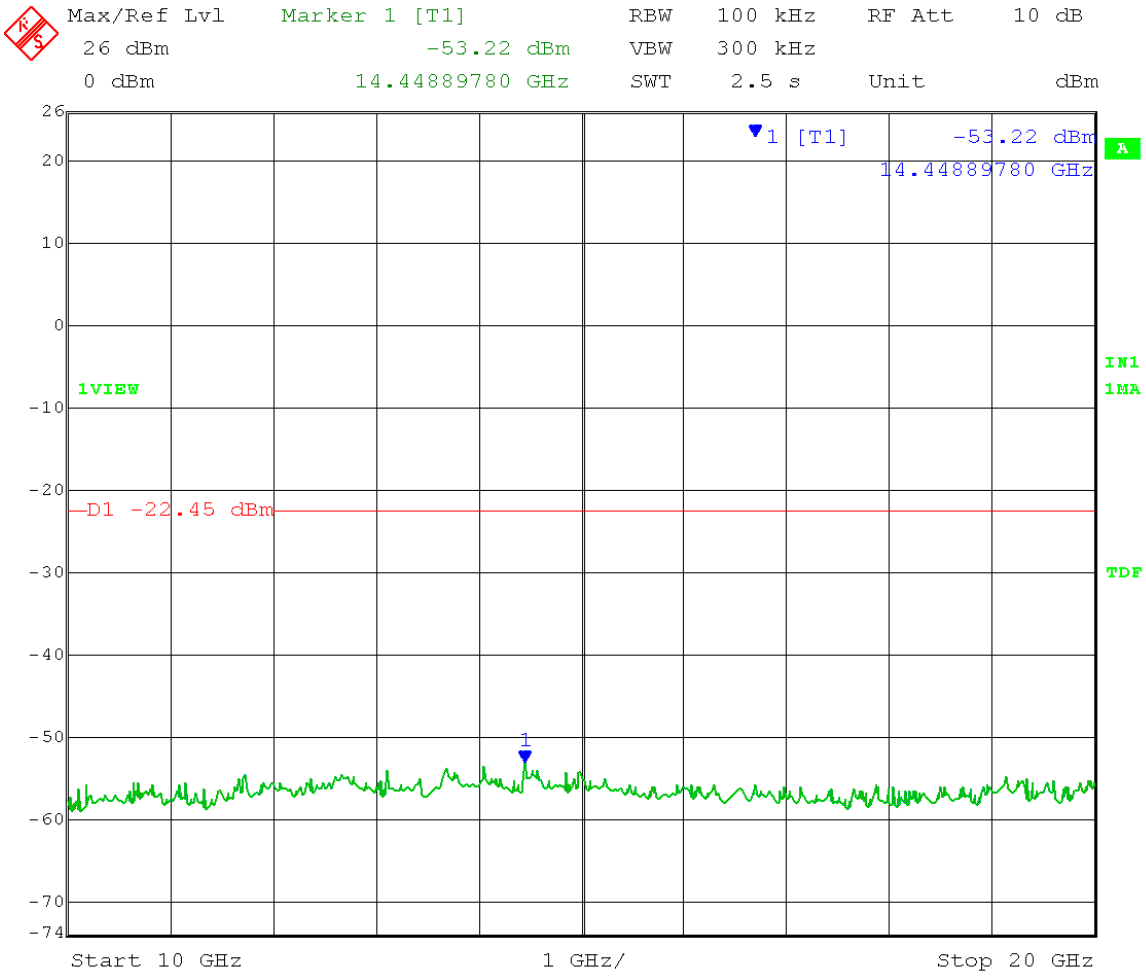


Date: 13.JUN.2013 12:55:34

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 7.55dBm - 30 dB = -22.45dBm

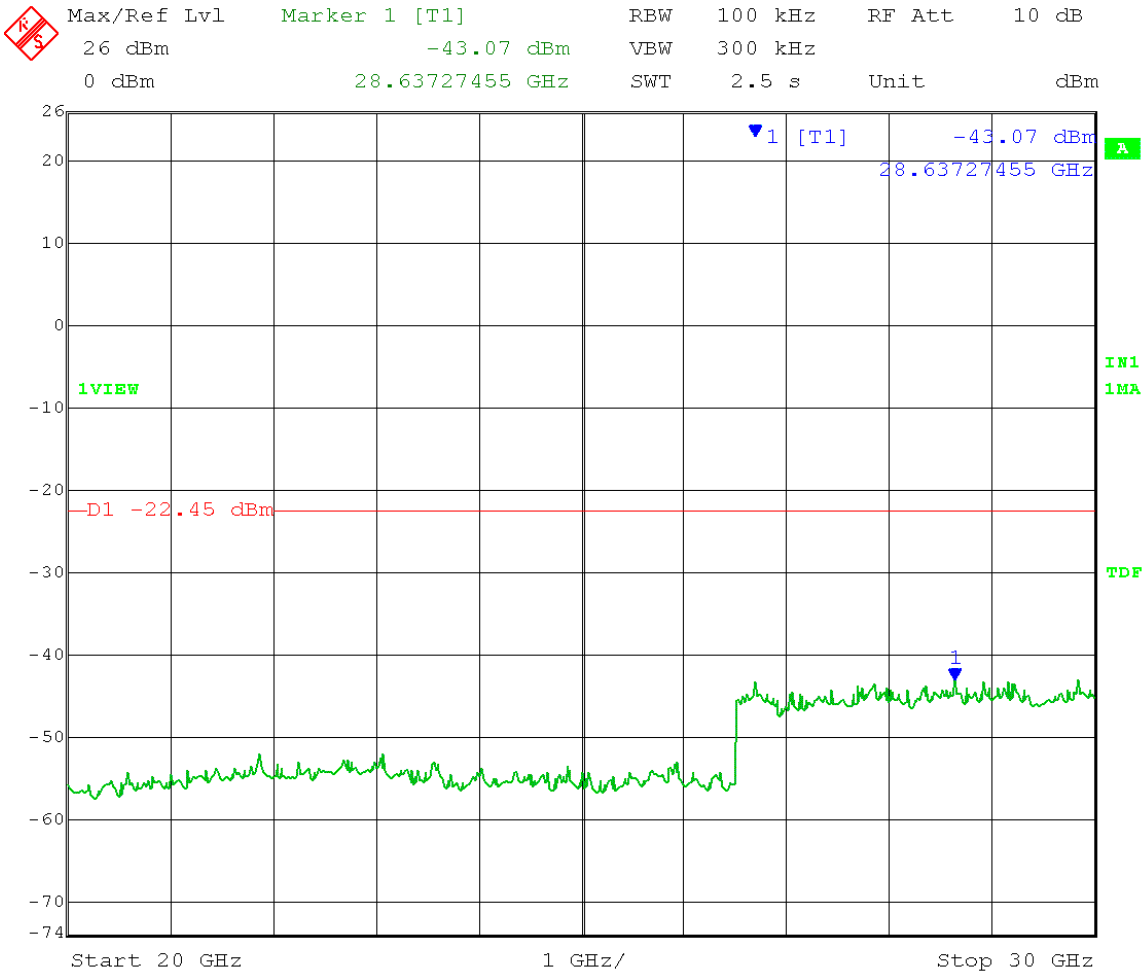


Date: 13.JUN.2013 14:15:19

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 7.55dBm - 30 dB = -22.45dBm

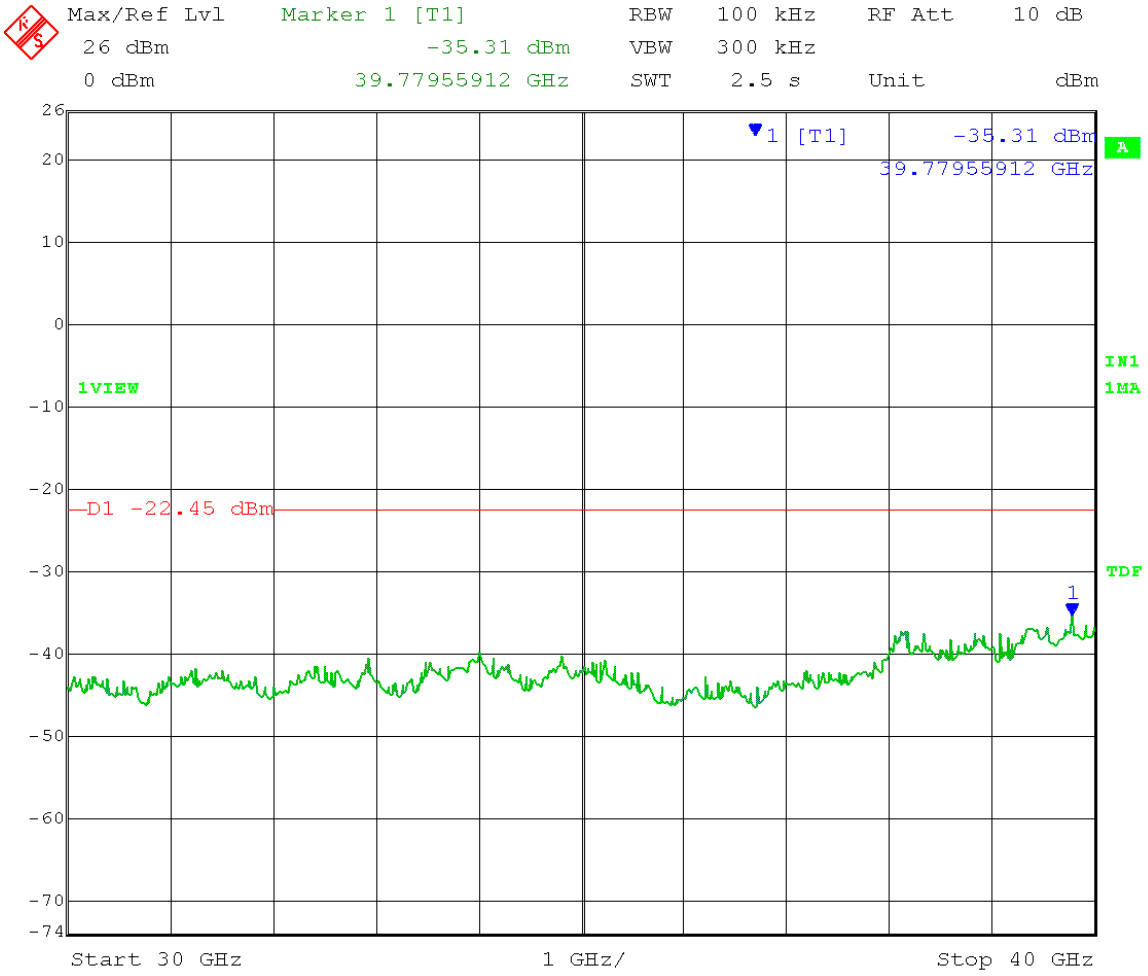


Date: 13.JUN.2013 14:20:55

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Low Channel Transmit = 5.750GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 7.55dBm - 30 dB = -22.45dBm

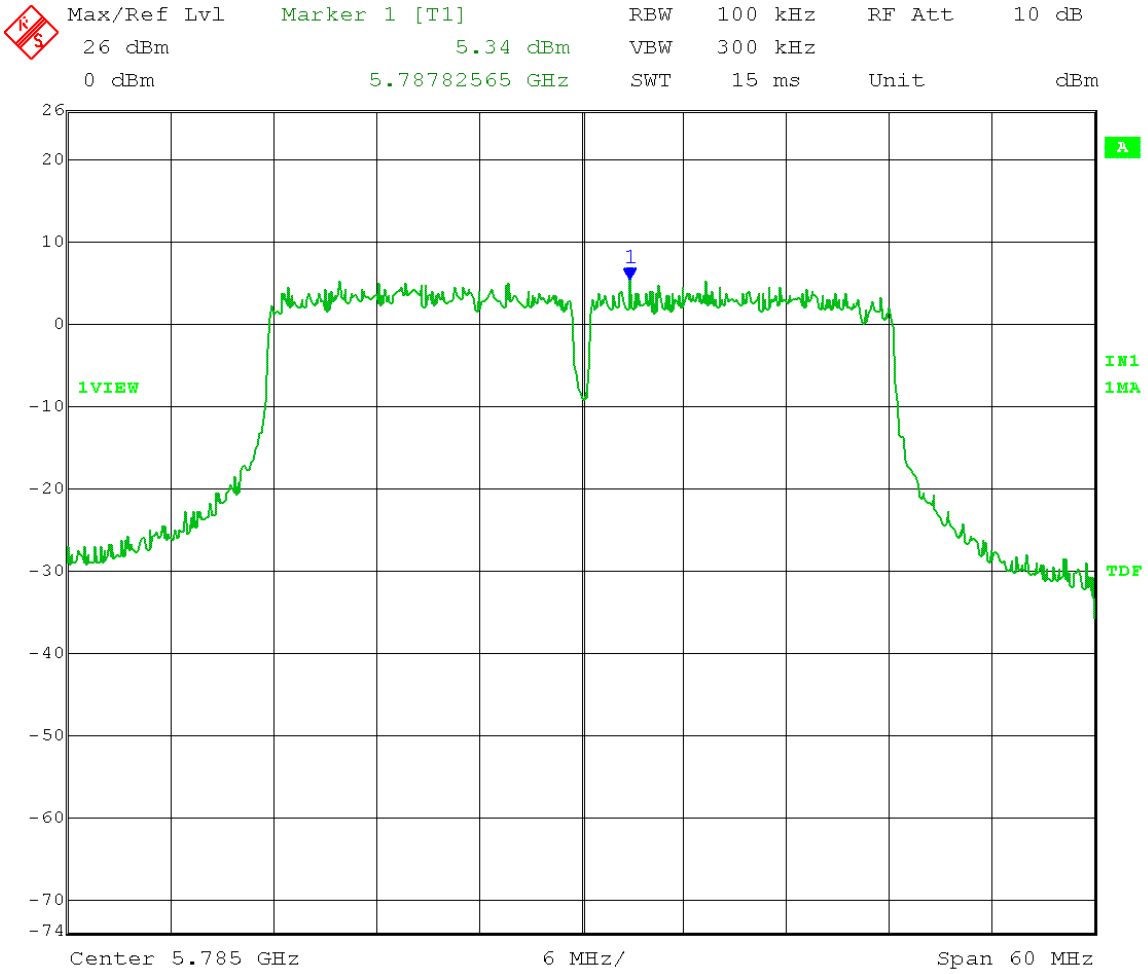


Date: 13.JUN.2013 14:24:58

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE

Reference Level measurement
Limit = 5.34dBm - 30 dB = -24.66dBm

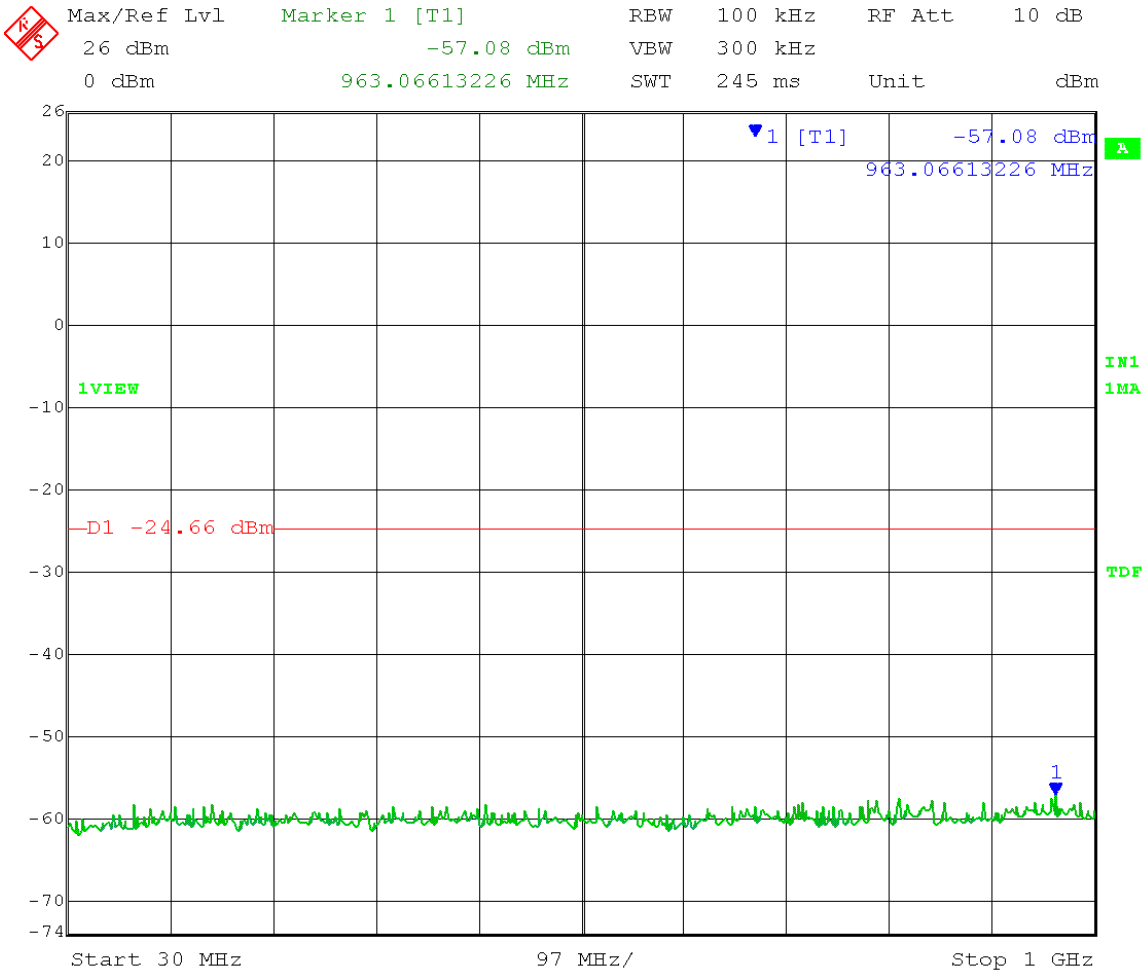


Date: 13.JUN.2013 11:04:42

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 5.34dBm - 30 dB = -24.66dBm

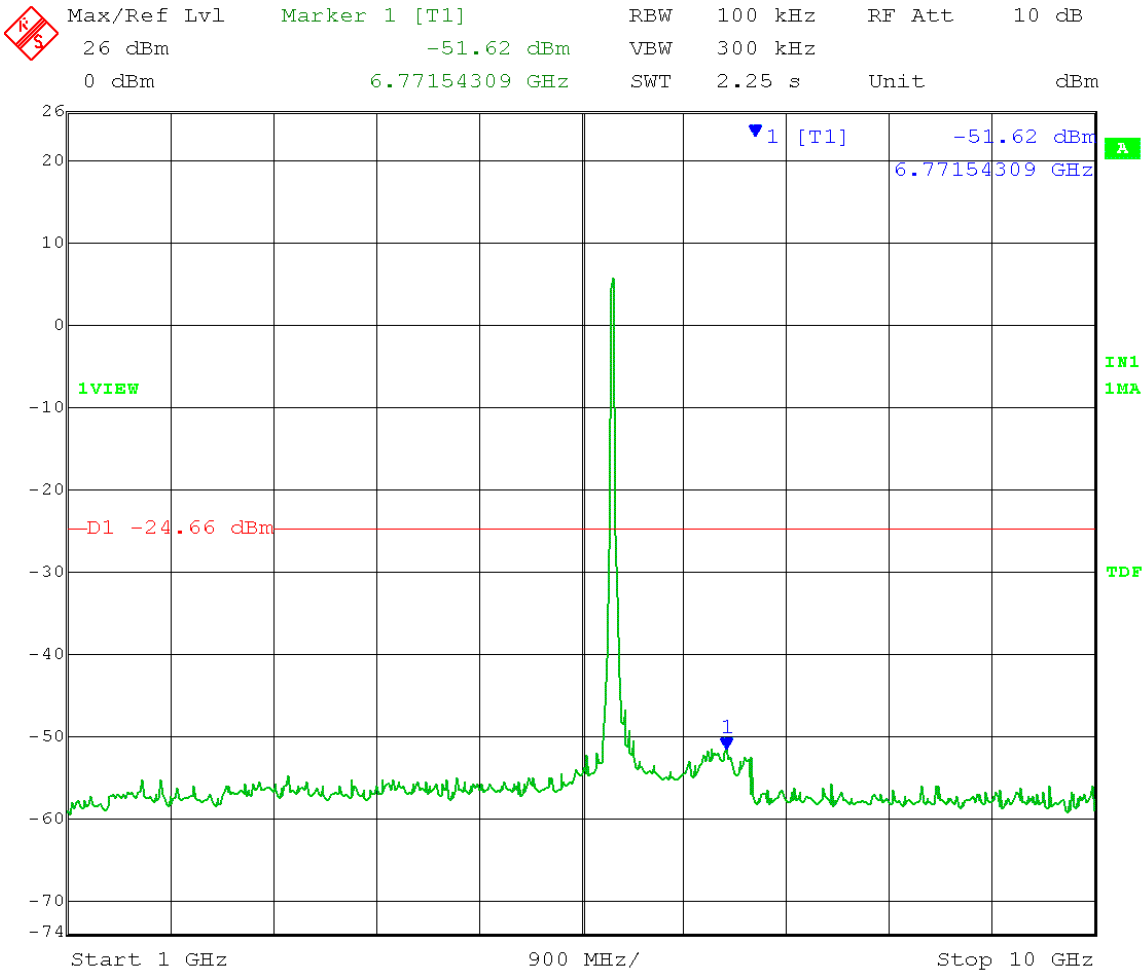


Date: 13.JUN.2013 14:47:02

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 5.34dBm - 30 dB = -24.66dBm

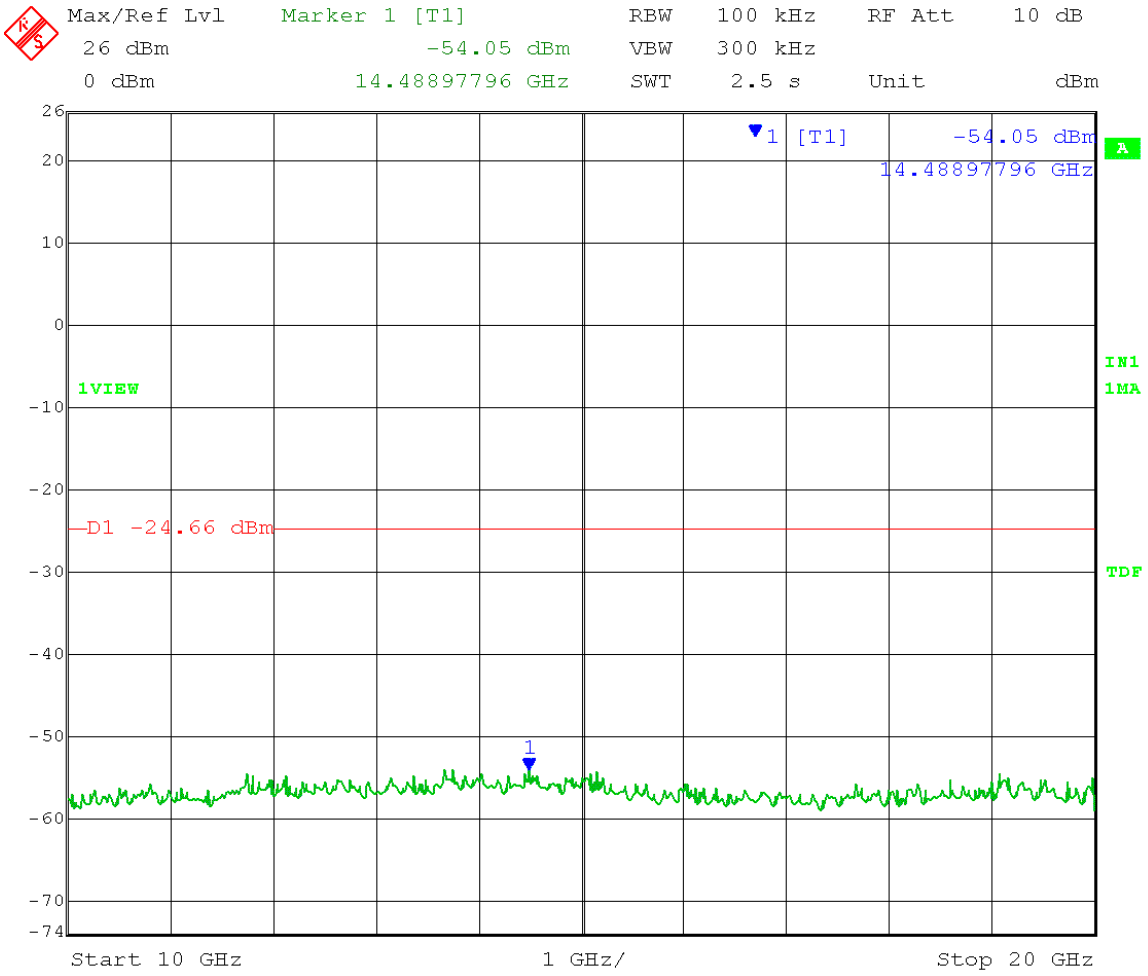


Date: 13.JUN.2013 11:33:04

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 5.34dBm - 30 dB = -24.66dBm

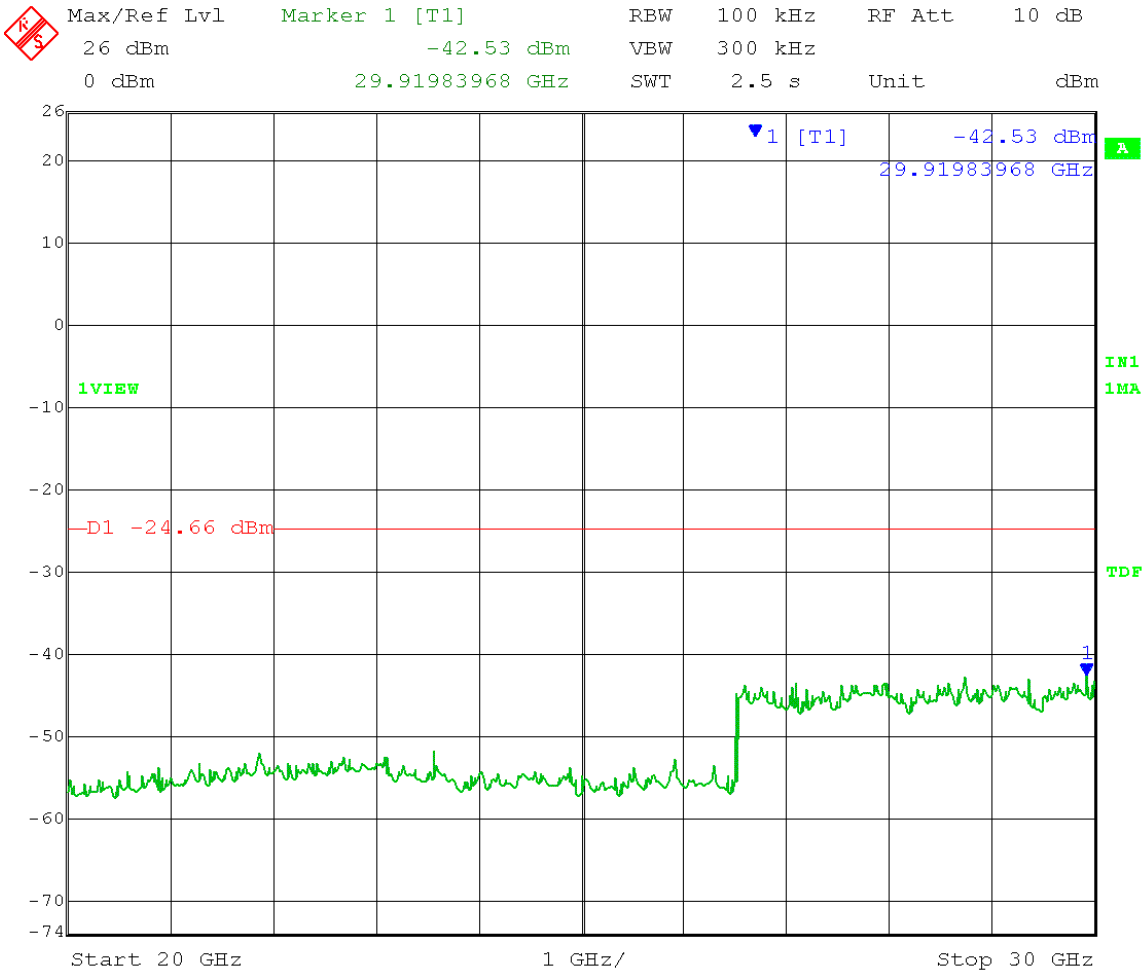


Date: 13.JUN.2013 14:34:38

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 5.34dBm - 30 dB = -24.66dBm

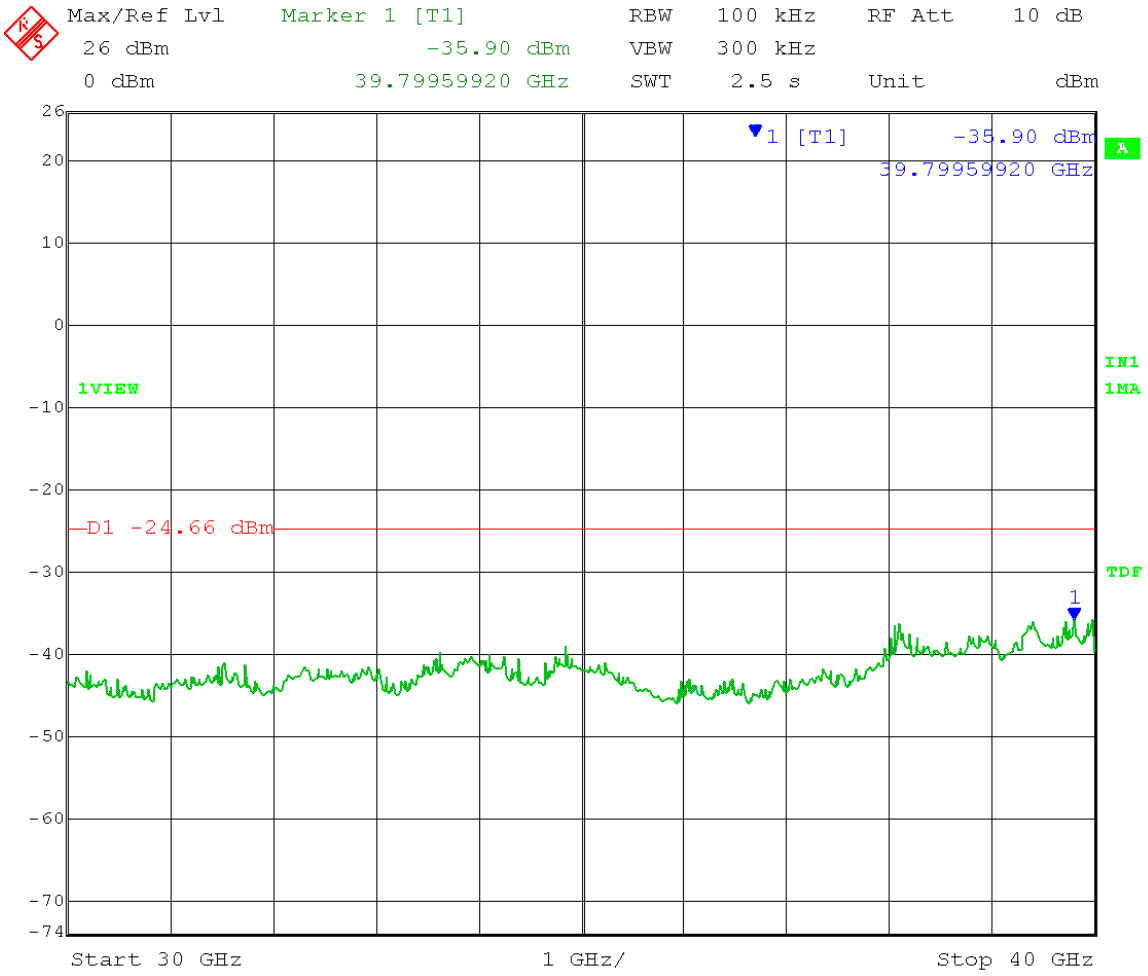


Date: 13.JUN.2013 14:40:01

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 5.34dBm - 30 dB = -24.66dBm

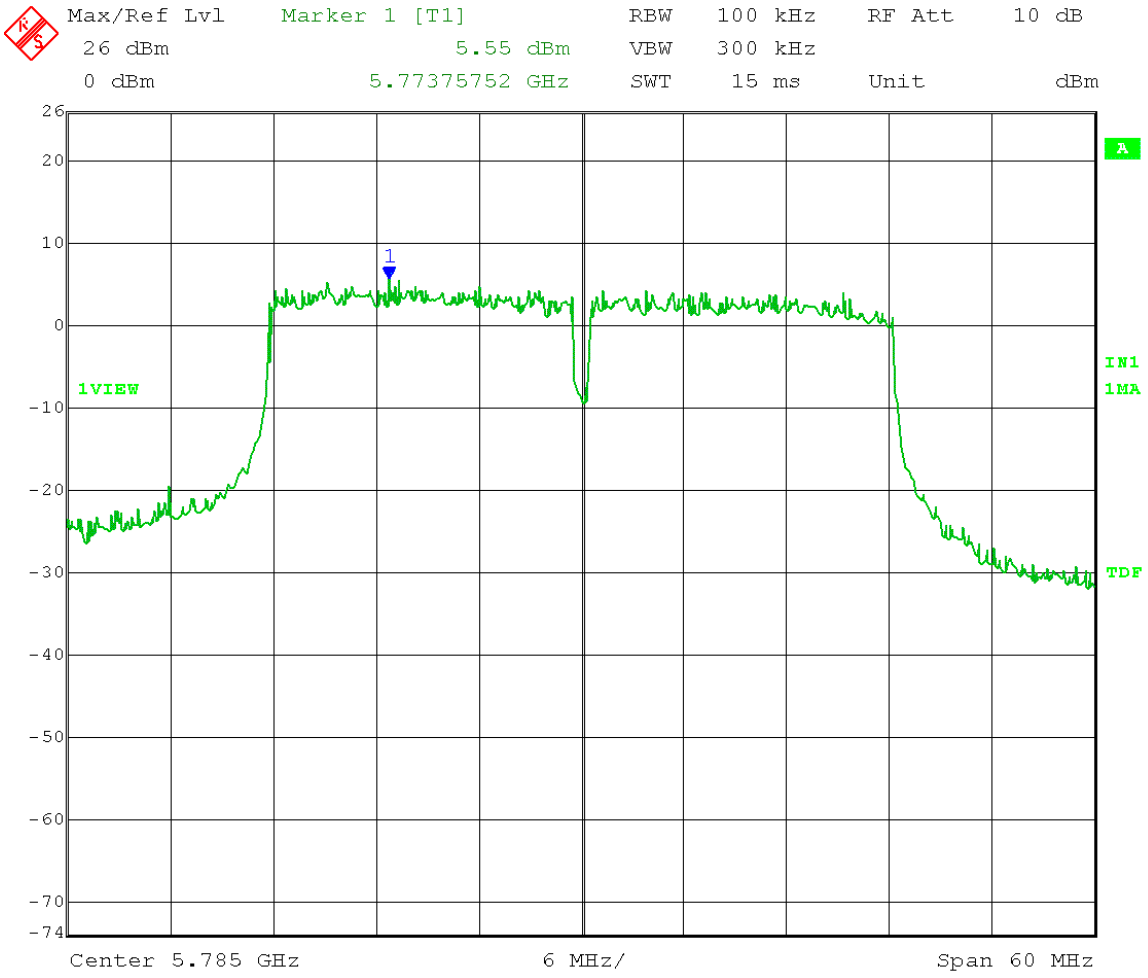


Date: 13.JUN.2013 14:41:59

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting = 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE

Reference Level measurement
Limit = 5.55dBm - 30 dB = -24.45dBm

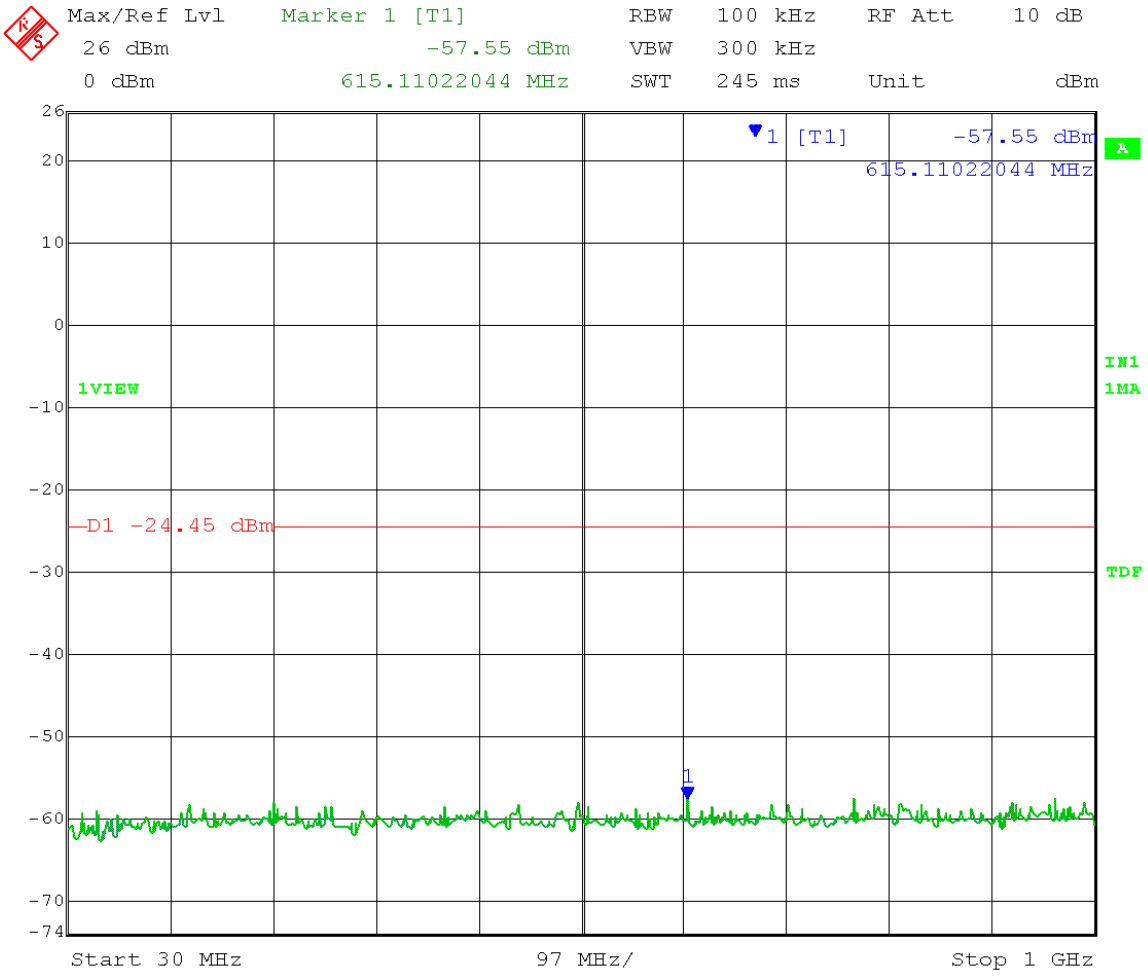


Date: 13.JUN.2013 11:07:01

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 5.55dBm - 30 dB = -24.45dBm

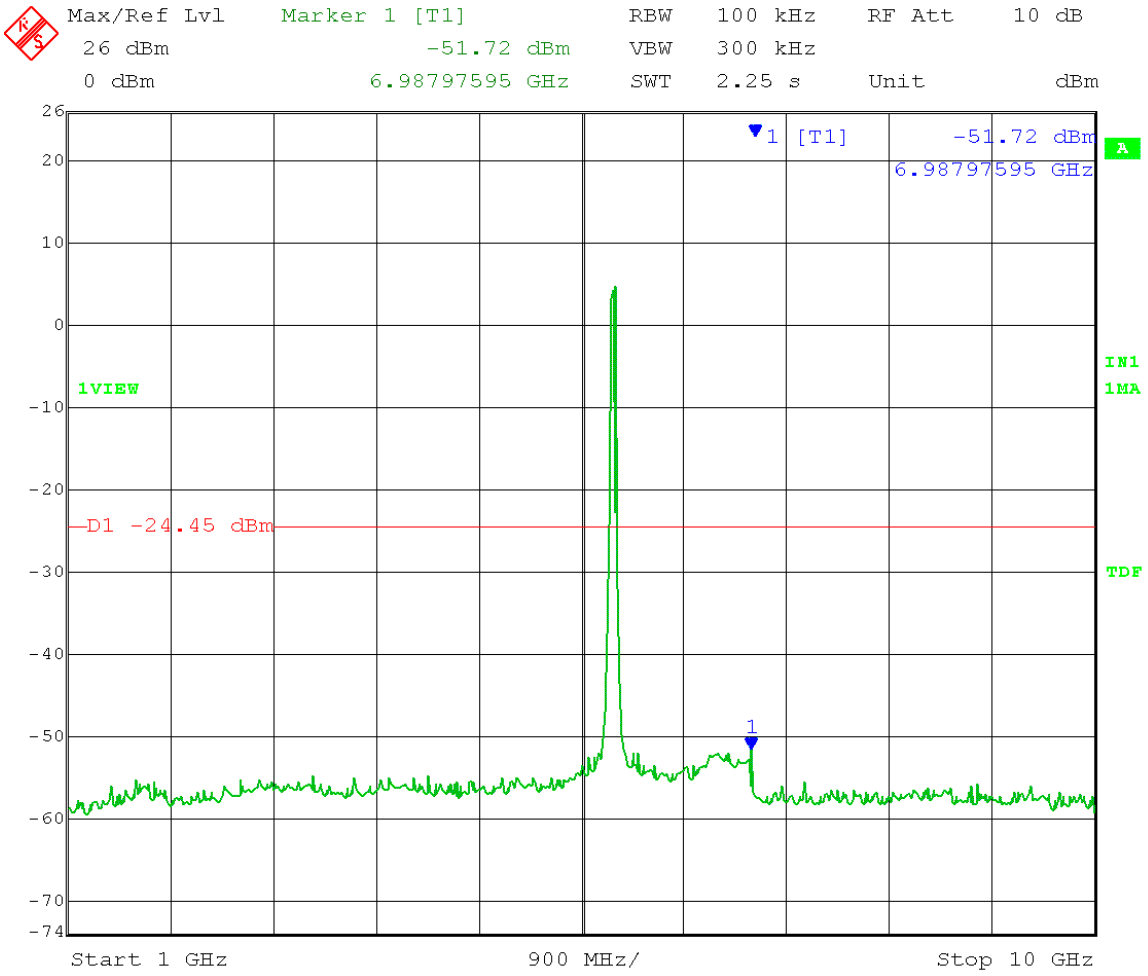


Date: 13.JUN.2013 14:45:05

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 5.55dBm - 30 dB = -24.45dBm

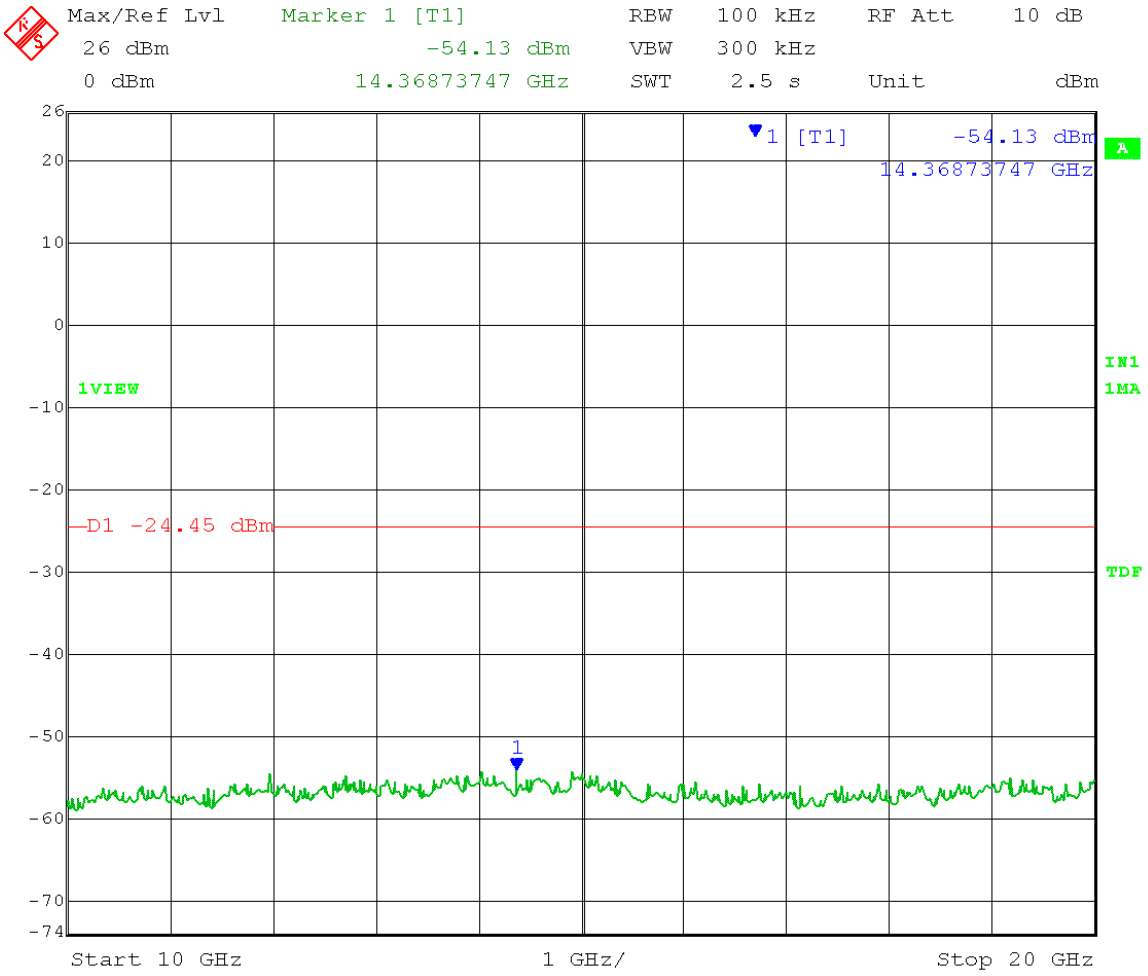


Date: 13.JUN.2013 11:30:57

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 5.55dBm - 30 dB = -24.45dBm

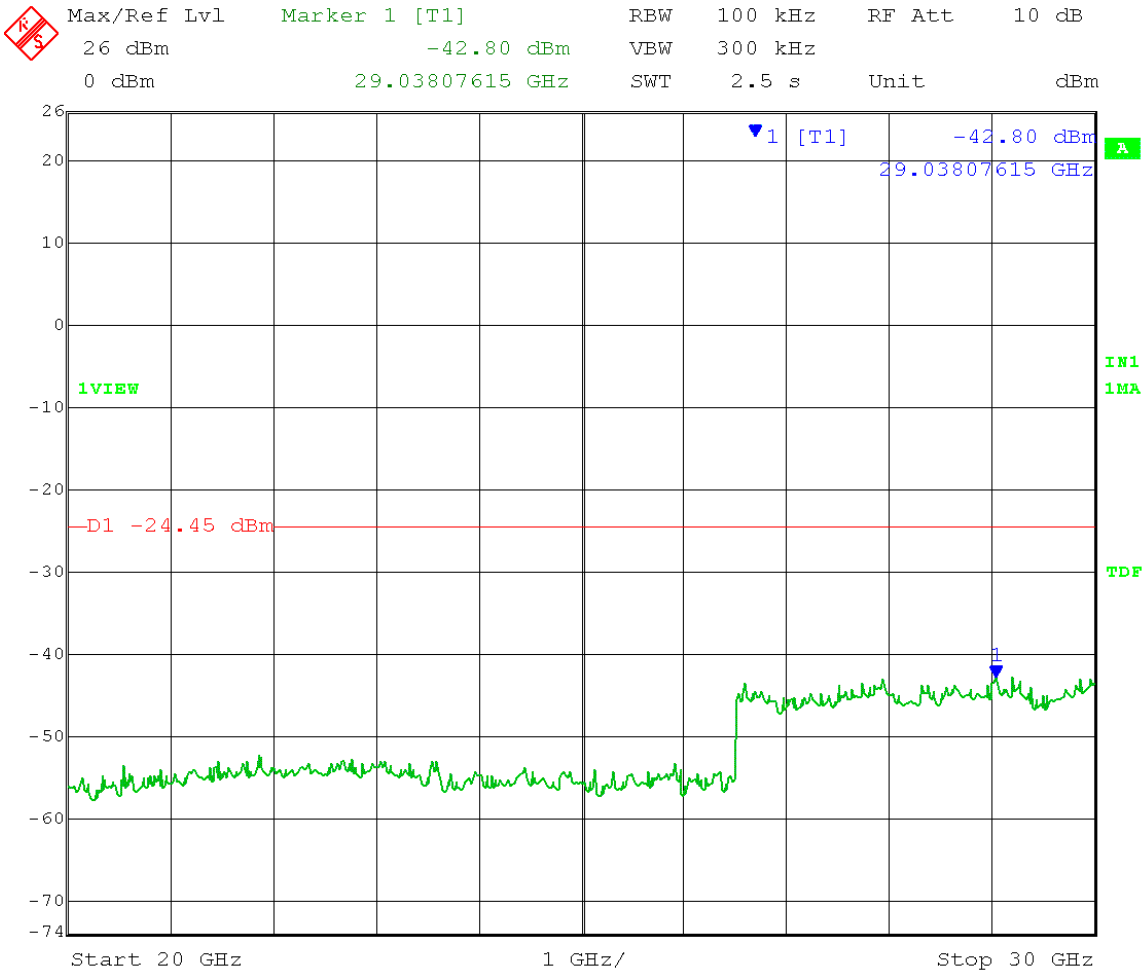


Date: 13.JUN.2013 14:36:44

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 5.55dBm - 30 dB = -24.45dBm

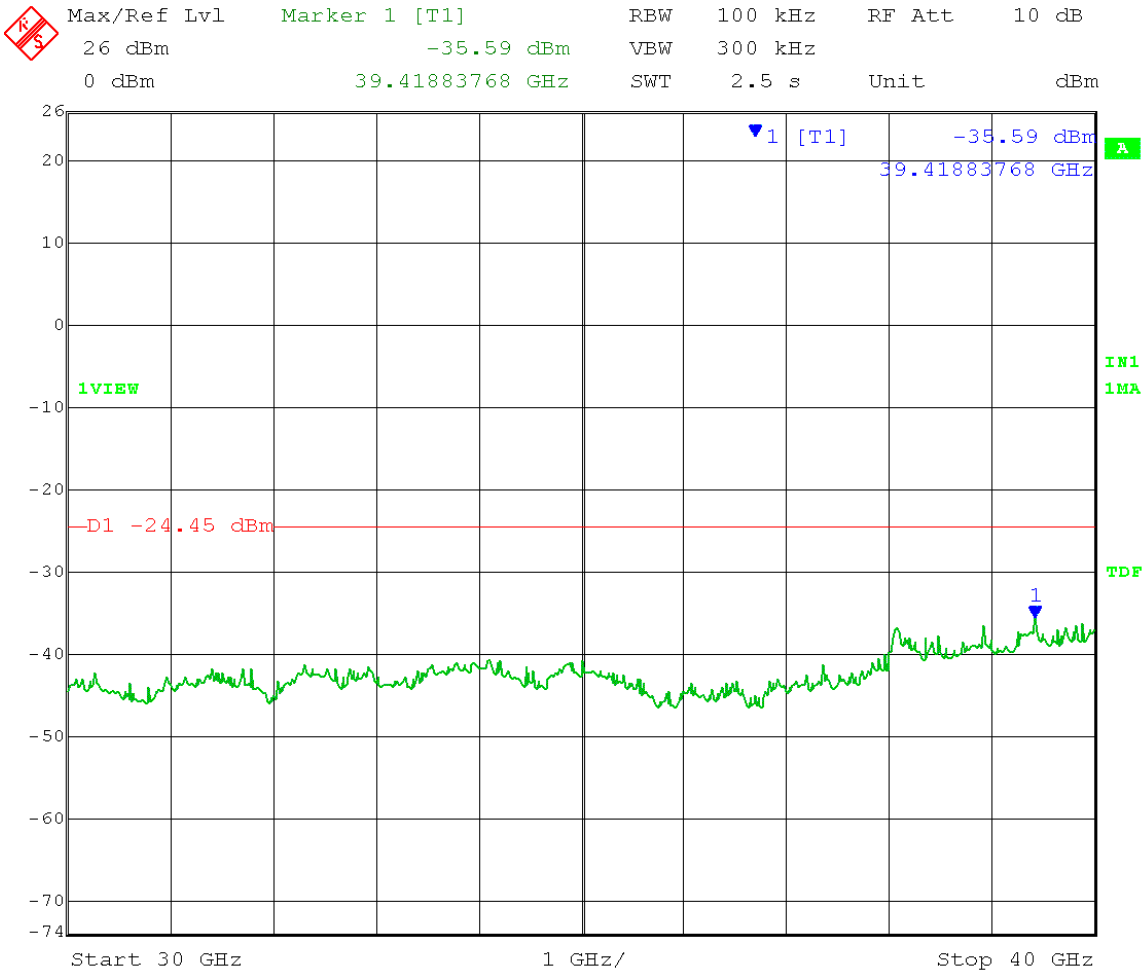


Date: 13.JUN.2013 14:38:43

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	Mid Channel Transmit = 5.785GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 5.55dBm - 30 dB = -24.45dBm

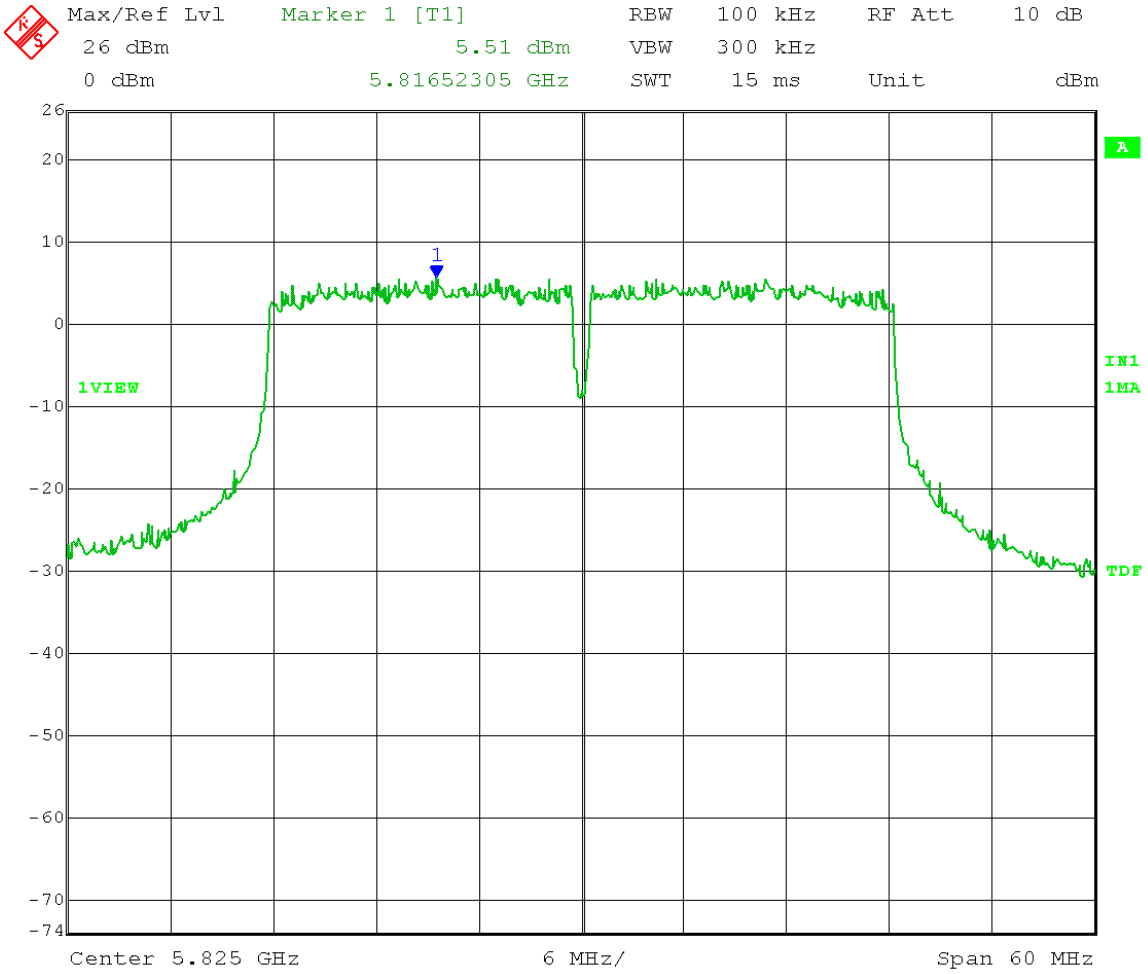


Date: 13.JUN.2013 14:43:25

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE

Reference Level measurement
Limit = 5.51dBm - 30 dB = -24.49dBm

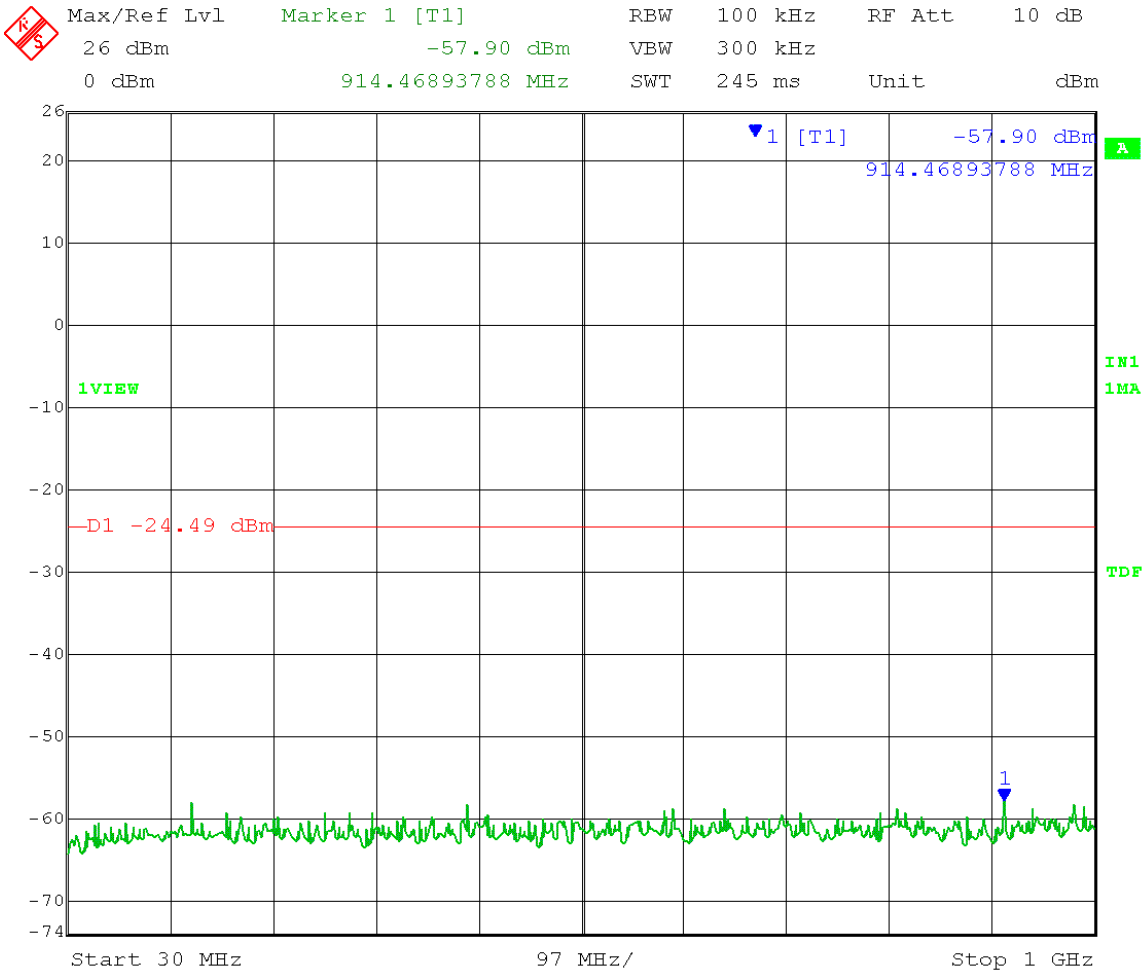


Date: 13.JUN.2013 11:12:20

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 5.51dBm - 30 dB = -24.49dBm

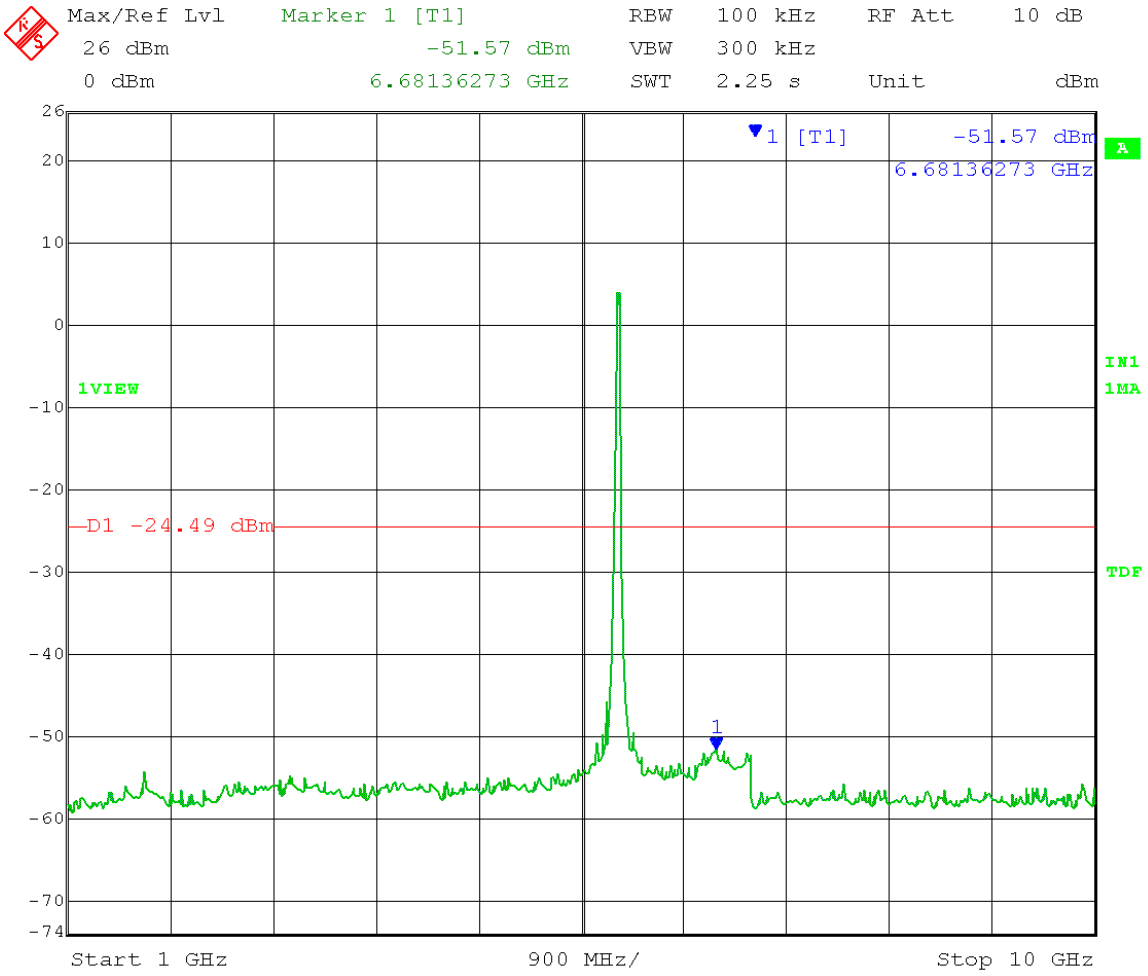


Date: 13.JUN.2013 14:51:03

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 5.51dBm - 30 dB = -24.49dBm

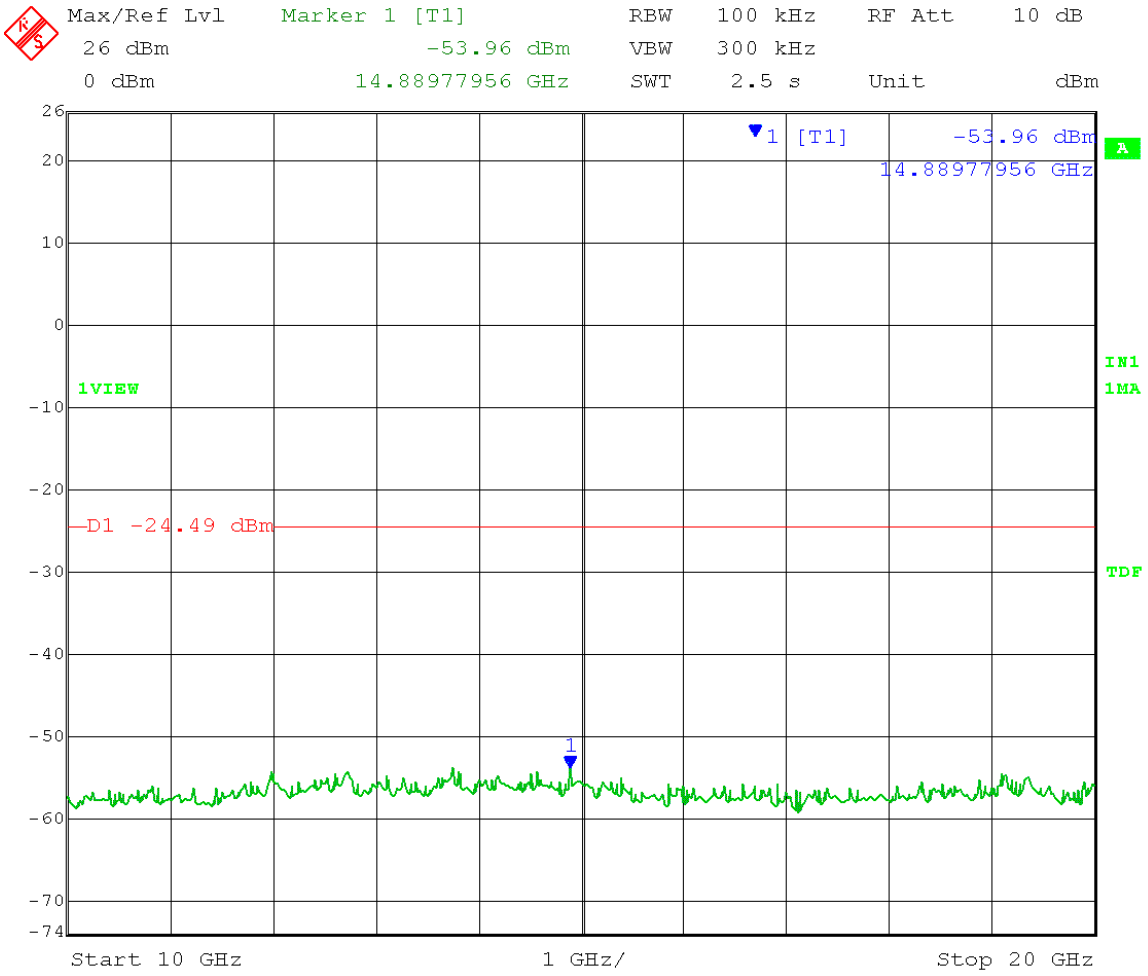


Date: 13.JUN.2013 11:20:23

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 5.51dBm - 30 dB = -24.49dBm

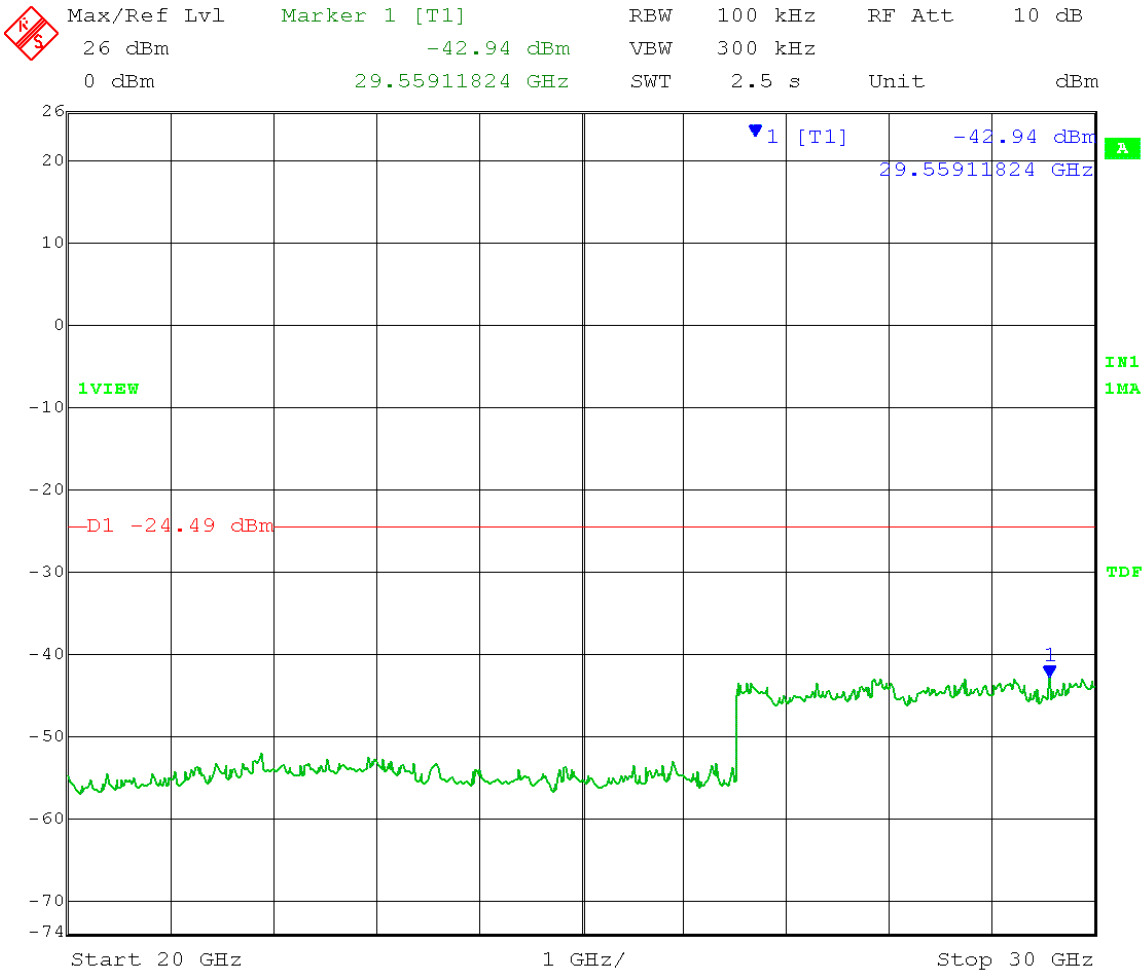


Date: 13.JUN.2013 14:52:18

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 5.51dBm - 30 dB = -24.49dBm

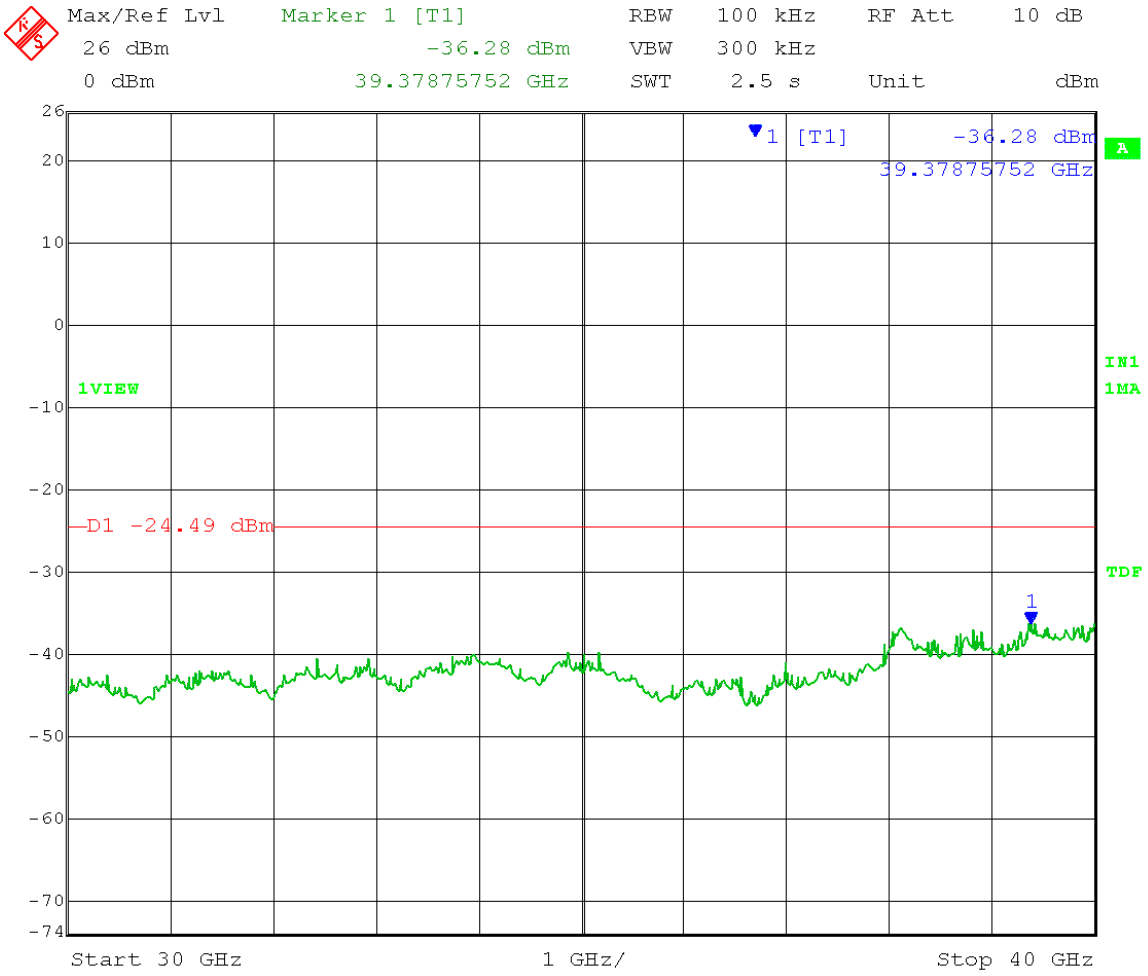


Date: 13.JUN.2013 14:53:58

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels – Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 0	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 5.51dBm - 30 dB = -24.49dBm

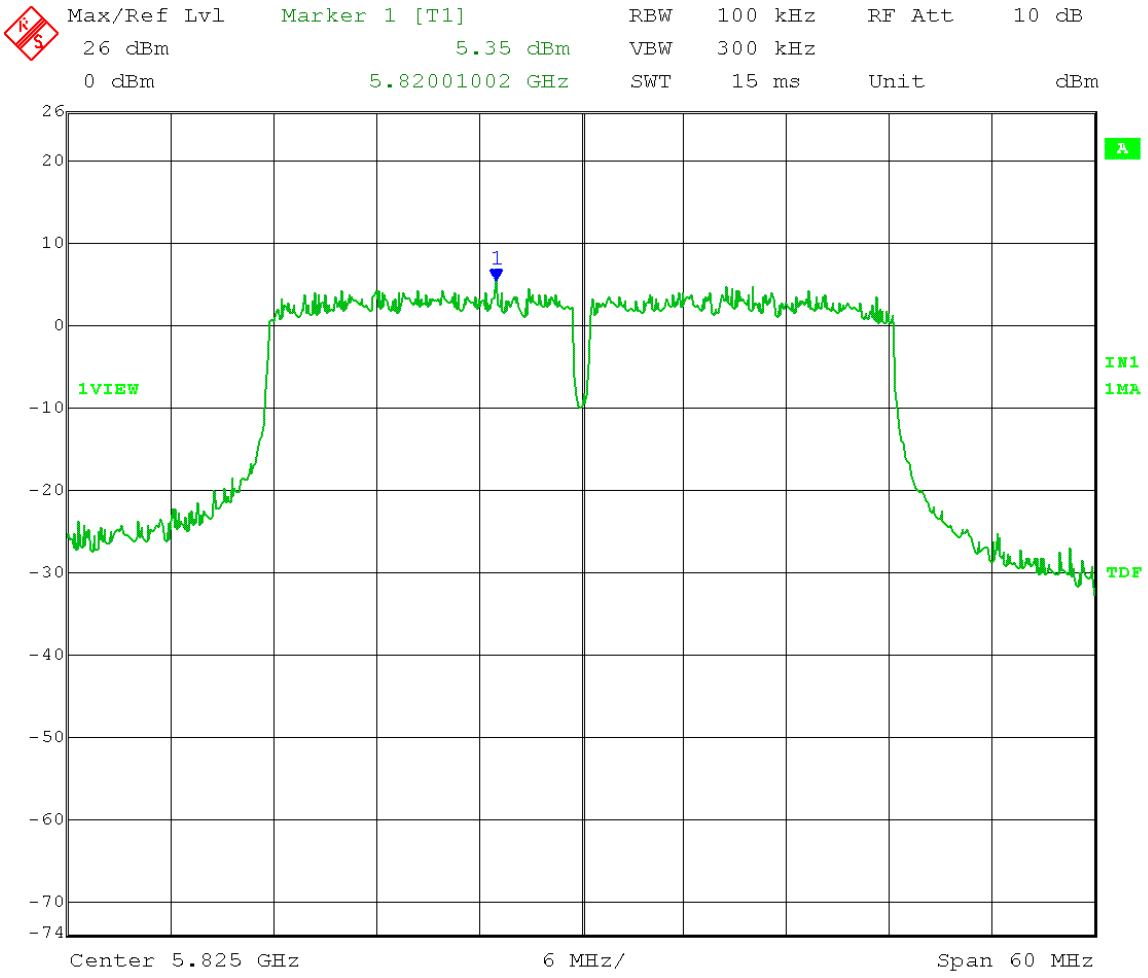


Date: 13.JUN.2013 14:54:51

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.2 Reference Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting = 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE

Reference Level measurement
Limit = 5.35dBm - 30 dB = -24.65dBm

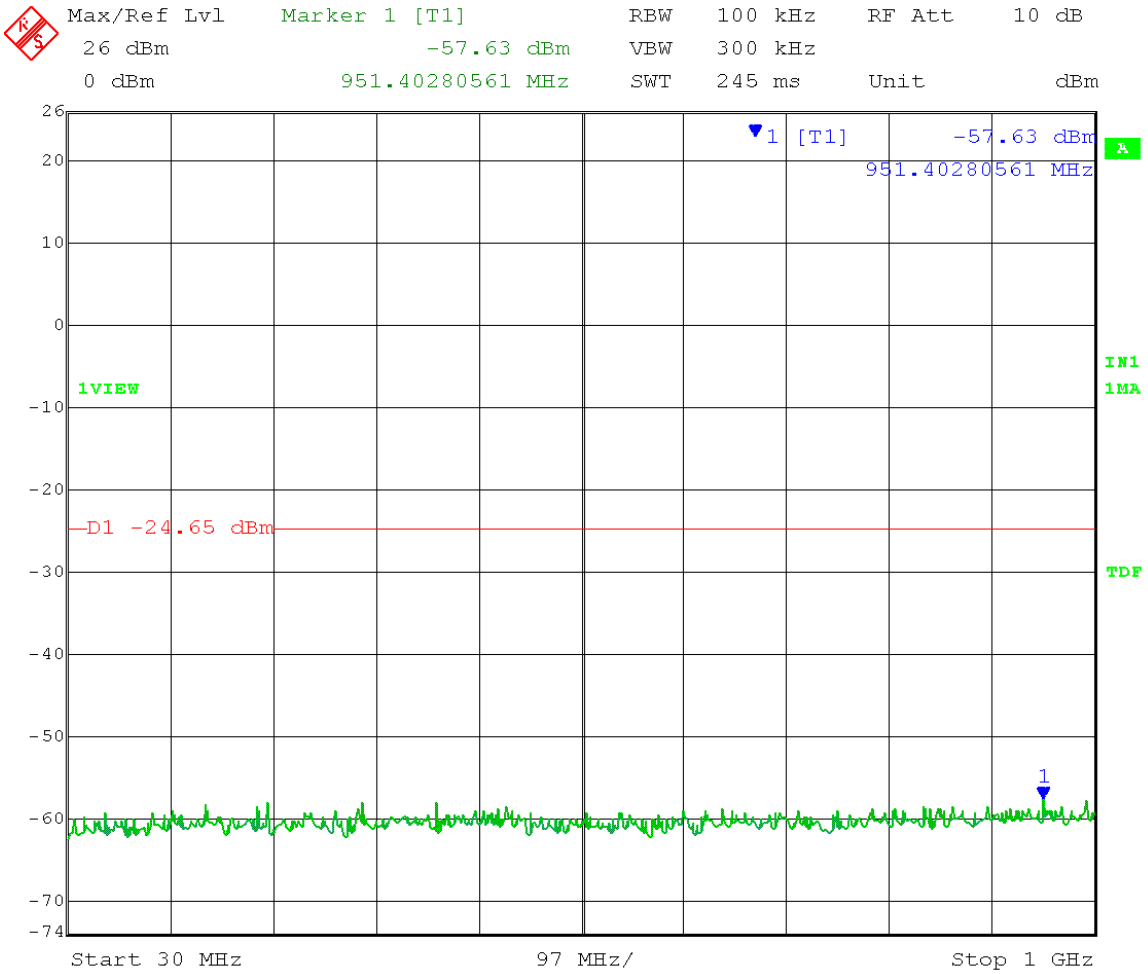


Date: 13.JUN.2013 11:10:23

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30M-1GHz	

Limit = 5.35dBm - 30 dB = -24.65dBm

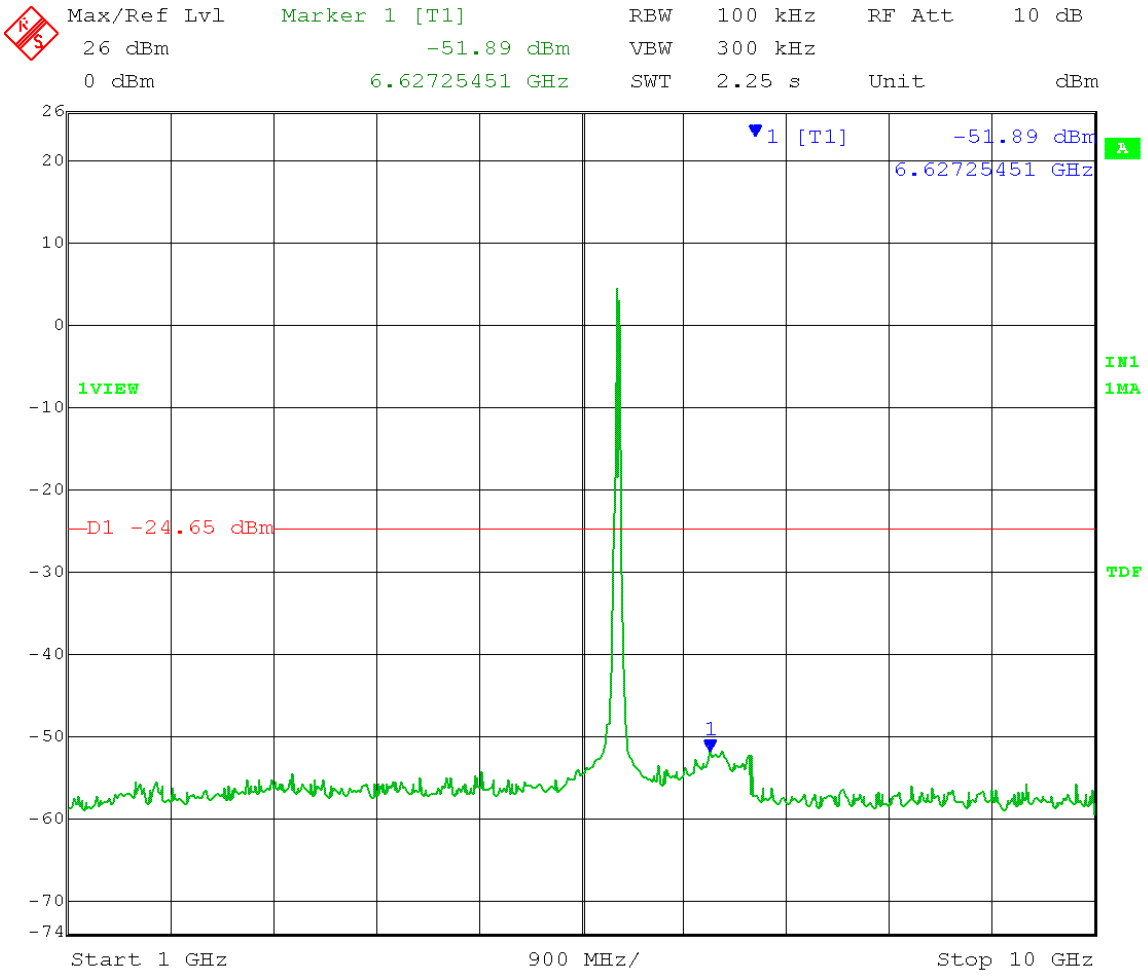


Date: 13.JUN.2013 15:08:46

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 1-10GHz	

Limit = 5.35dBm - 30 dB = -24.65dBm

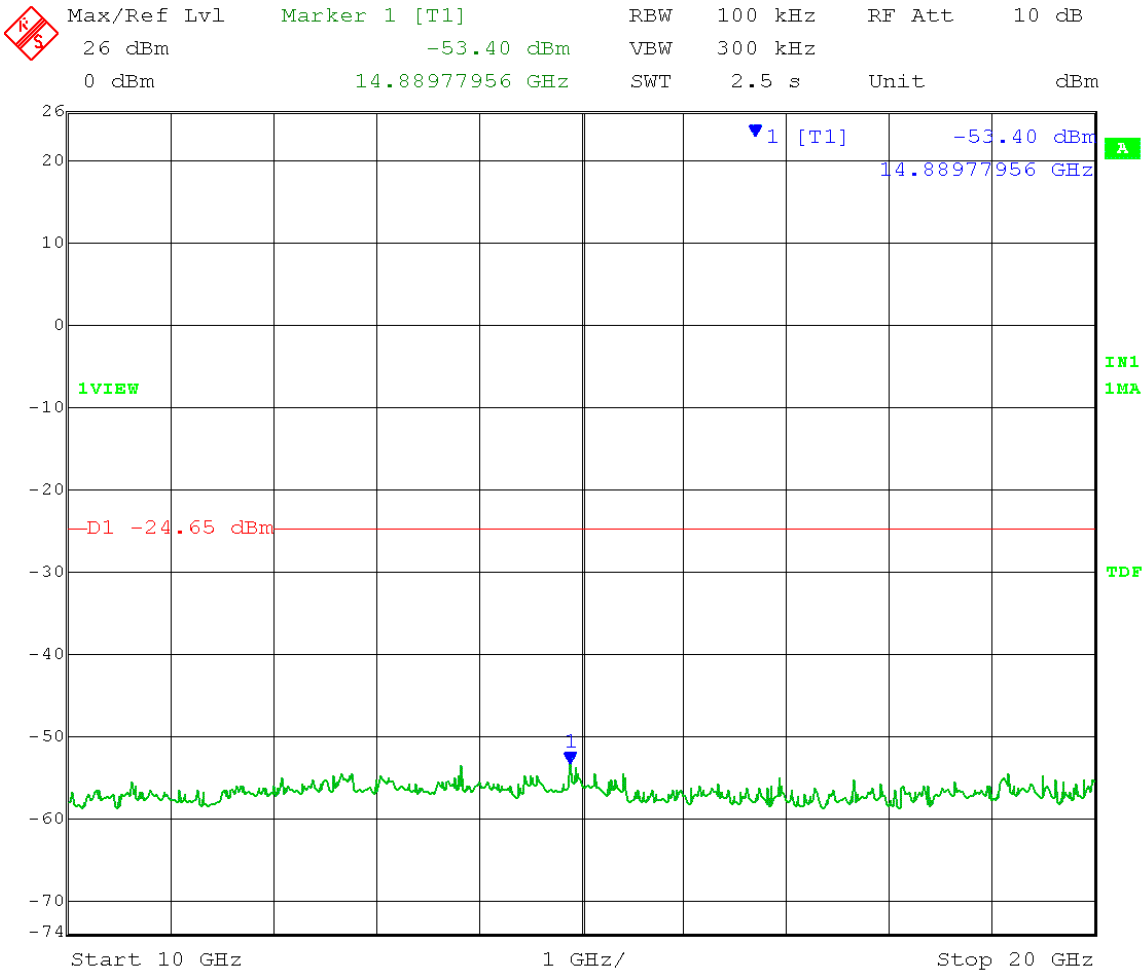


Date: 13.JUN.2013 11:22:49

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 10-20GHz	

Limit = 5.35dBm - 30 dB = -24.65dBm

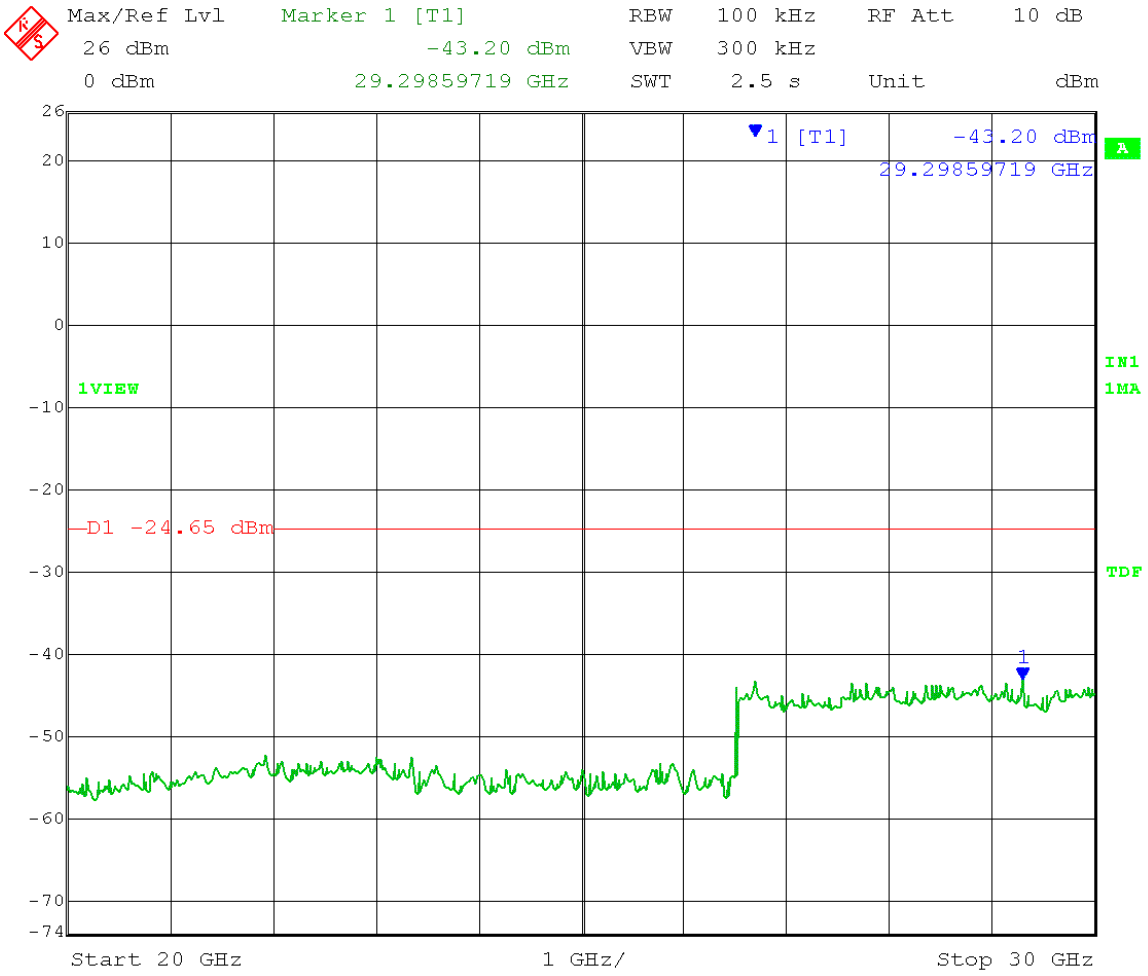


Date: 13.JUN.2013 15:07:33

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 20-30GHz	

Limit = 5.35dBm - 30 dB = -24.65dBm

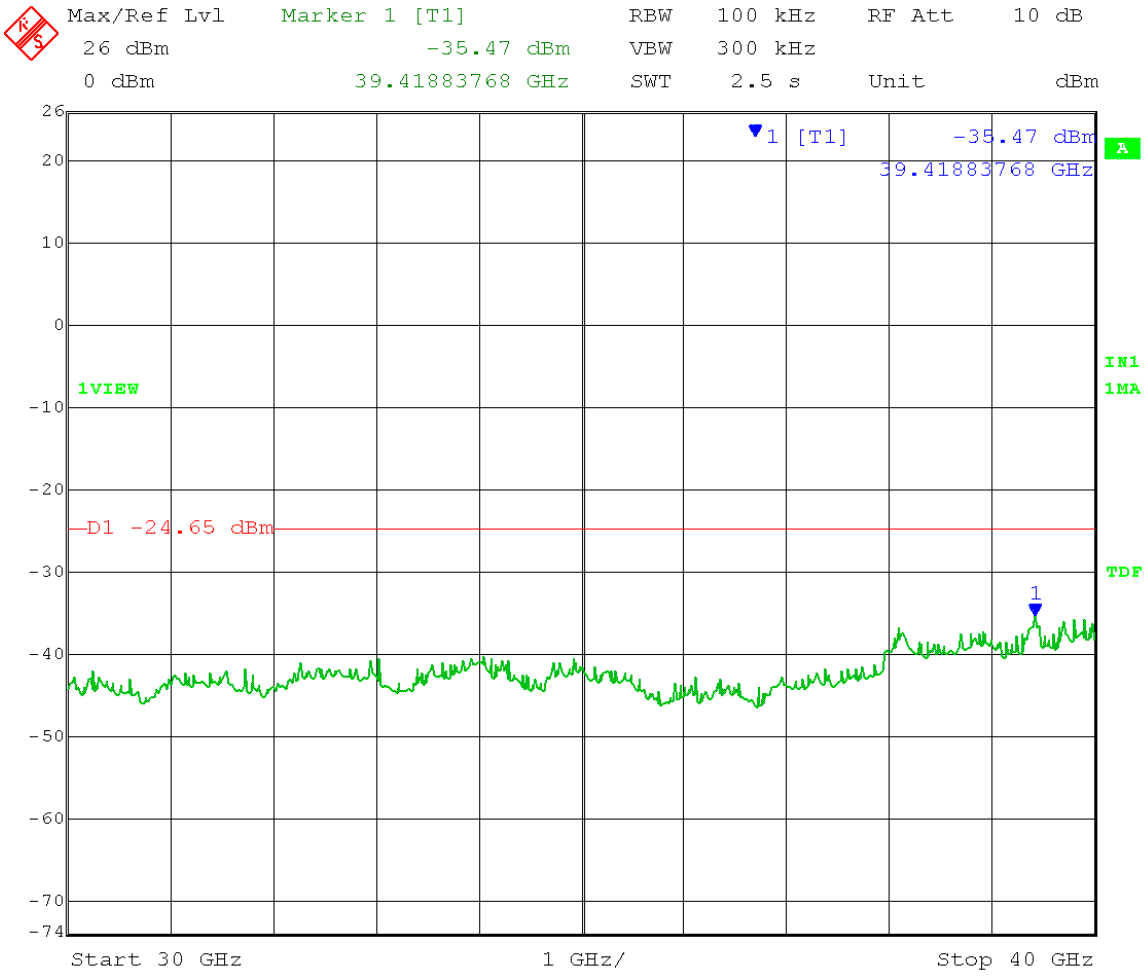


Date: 13.JUN.2013 15:06:41

Test Date: 06-13-2013
Company: Cambium Networks
EUT: Avenger AP (5.7GHz: OFDM)
Test: Maximum Unwanted Emission Levels - Conducted
Operator: Jim O/Lillian Li
Comment: 11.0 Emissions in Non-Restricted Frequency Bands - Conducted
11.3 Emission Level Measurement

RBW = 100 kHz	VBW ≥ 300 kHz
Detector = Peak	Sweep = Auto Couple
Trace = Max Hold	High Channel Transmit = 5.825GHz
Output power setting 20dBm	40MHz BW
Channel 1	ESN# 000456C005DE
Frequency Range 30-40GHz	

Limit = 5.35dBm - 30 dB = -24.65dBm



Date: 13.JUN.2013 15:05:21

166 South Carter, Genoa City, WI 53128

Appendix B – Measurement Data

B5.0 Band-Edge Measurements - Conducted

Rule Section: Section 15.247(d)

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

13.0 Band-edge Measurements

Test Procedure:
RBW = 100 kHz
VBW ≥ 300 kHz
Span = spectrum to be examined
Detector = peak
Sweep = auto couple
Trace mode = max hold

Measurements were taken for an OFDM modulation over a 20MHz and 40MHz modulation bandwidth at the low and high channels and on outputs of CH0 and CH1 of operation. EUT was set to transmit continuously over various low and high channel frequencies and maximum power settings.

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

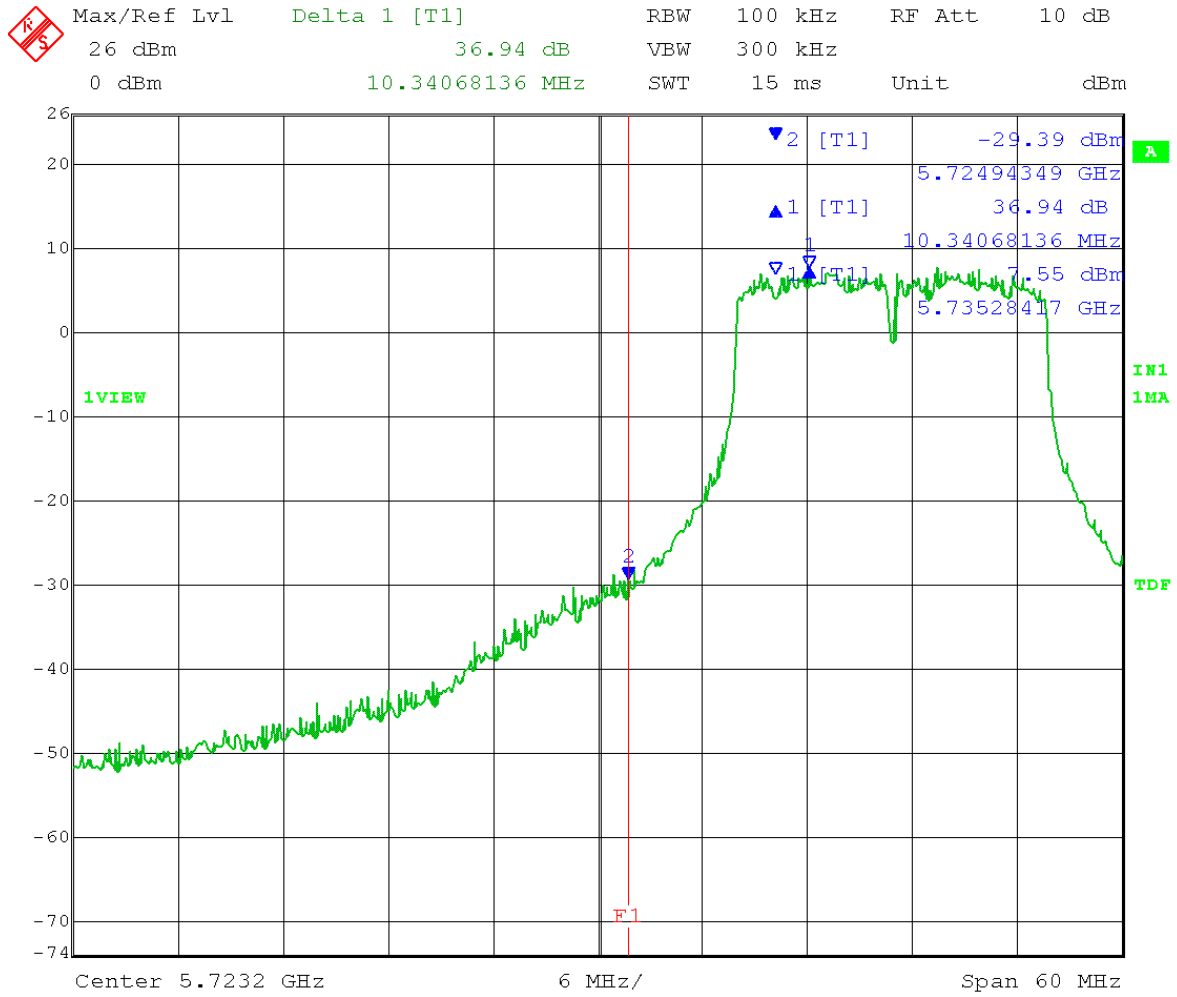
Results: Passed

Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP (5.7 GHz: OFDM)
Test: 13.0 Band-edge Measurement - Conducted

Operator: Jim O/Lillian Li
Comment: RBW = 100 kHz
Detector = Peak
Channel 0
Low Channel Transmit = 5.740GHz
20MHz BW
Marker Delta Limit > 30dB

VBW ≥ 300 kHz
Trace = Max Hold
ESN# 000456C005DE
Output power setting: 20
Band-edge (**F1**) = 5.725GHz

Band-edge Measurement: 36.94dB = Pass



Date: 14.JUN.2013 10:39:34

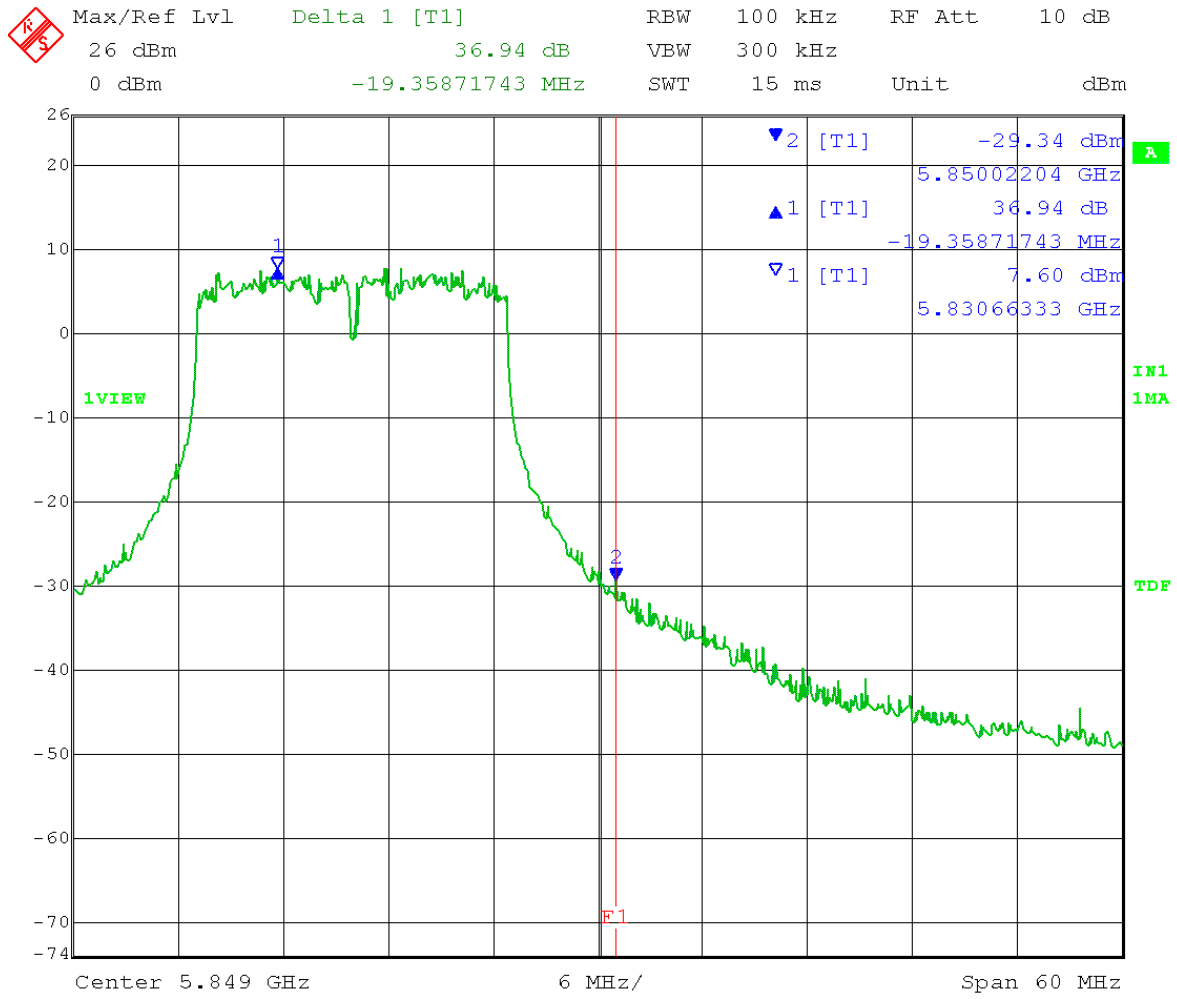
Company:	Cambium Networks
Model Tested:	C050900P12A
Report Number:	19128
DLS Project:	5941

166 South Carter, Genoa City, WI 53128

Test Date:	06-14-2013
Company:	Cambium Networks
EUT:	Avenger AP (5.7 GHz: OFDM)
Test:	13.0 Band-edge Measurement - Conducted

Operator:	Jim O/Lillian Li	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Trace = Max Hold
	Channel 0	ESN# 000456C005DE
	High Channel Transmit = 5.835GHz	Output power setting: 20
	20MHz BW	Band-edge (**F1**) = 5.850GHz
	Marker Delta Limit > 30dB	

Band-edge Measurement: 36.94dB = Pass



Date: 14.JUN.2013 10:32:33

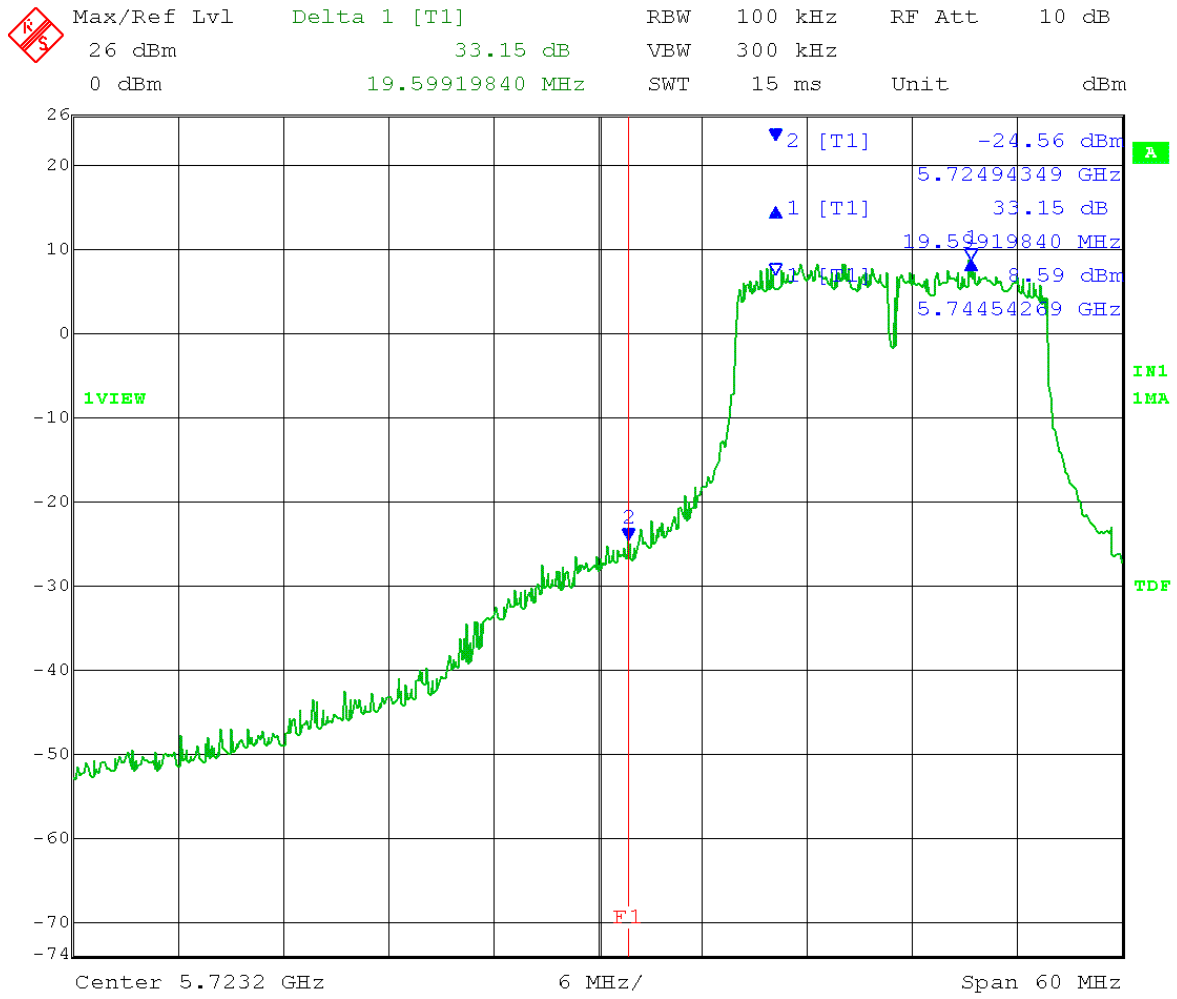
Company:	Cambium Networks
Model Tested:	C050900P12A
Report Number:	19128
DLS Project:	5941

166 South Carter, Genoa City, WI 53128

Test Date:	06-14-2013
Company:	Cambium Networks
EUT:	Avenger AP (5.7 GHz: OFDM)
Test:	13.0 Band-edge Measurement - Conducted

Operator:	Jim O/Lillian Li	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Trace = Max Hold
	Channel 1	ESN# 000456C005DE
	Low Channel Transmit = 5.740GHz	Output power setting: 20
	20MHz BW	Band-edge (**F1**) = 5.725GHz
	Marker Delta Limit > 30dB	

Band-edge Measurement: 33.15dB = Pass



Date: 14.JUN.2013 10:42:41

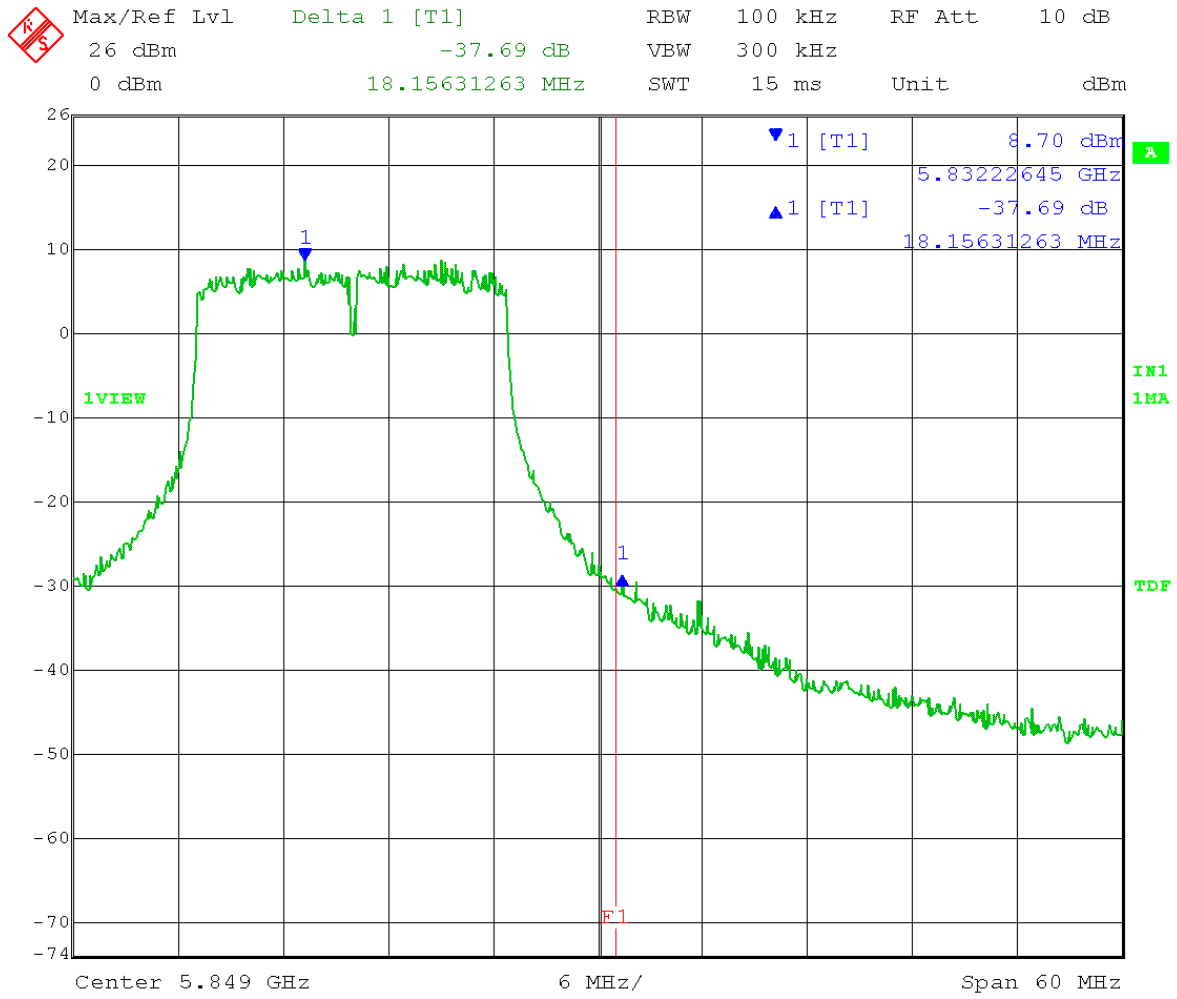
Company:	Cambium Networks
Model Tested:	C050900P12A
Report Number:	19128
DLS Project:	5941

166 South Carter, Genoa City, WI 53128

Test Date:	06-14-2013
Company:	Cambium Networks
EUT:	Avenger AP (5.7 GHz: OFDM)
Test:	13.0 Band-edge Measurement - Conducted

Operator:	Jim O/Lillian Li	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Trace = Max Hold
	Channel 1	ESN# 000456C005DE
	High Channel Transmit = 5.835GHz	Output power setting: 20
	20MHz BW	Band-edge (**F1**) = 5.850GHz
	Marker Delta Limit > 30dB	

Band-edge Measurement: 37.69dB = Pass



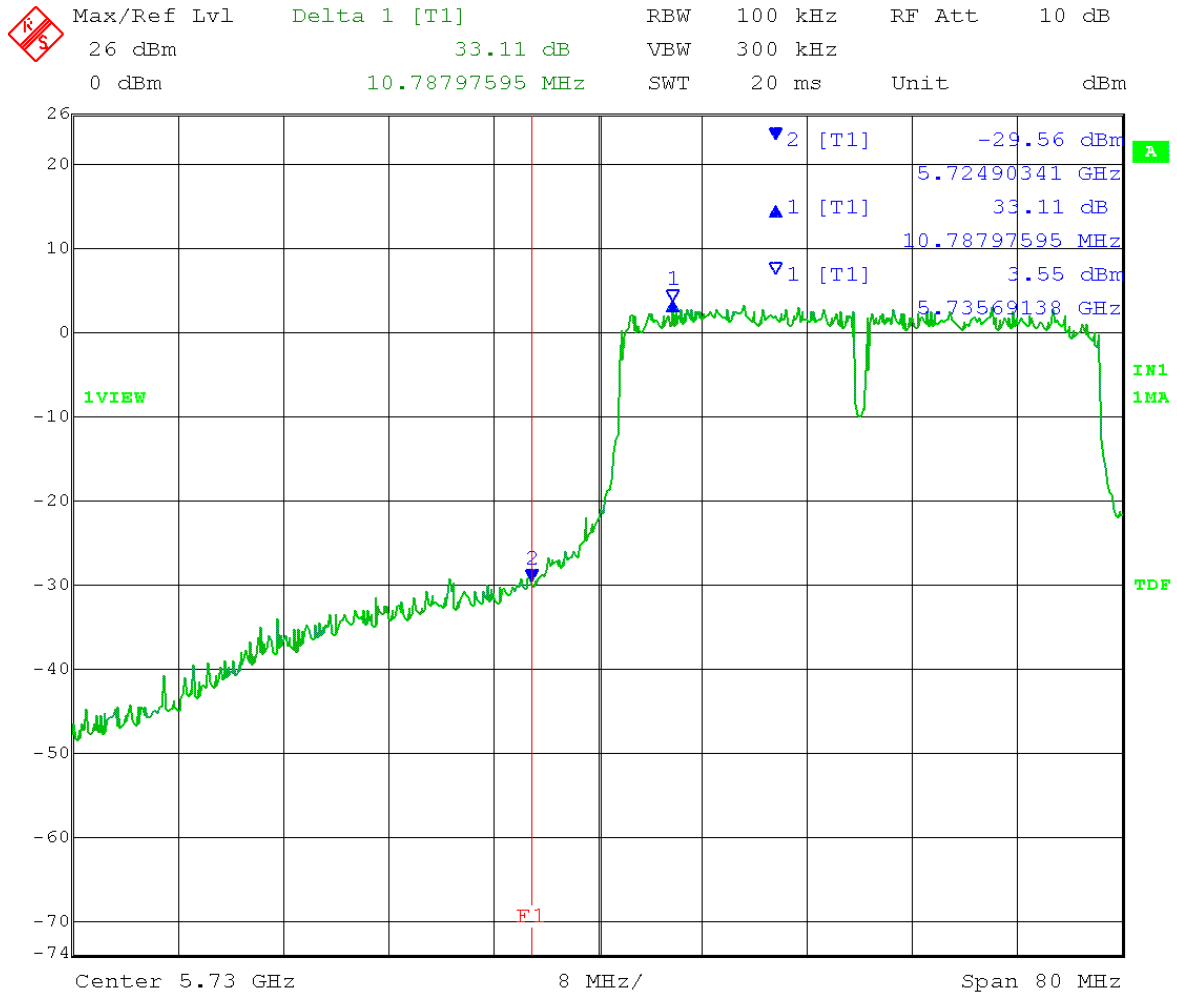
Date: 14.JUN.2013 10:29:18

Test Date: 06-14-2013
Company: Cambium Networks
EUT: Avenger AP (5.7 GHz: OFDM)
Test: 13.0 Band-edge Measurement - Conducted

Operator: Jim O/Lillian Li
Comment: RBW = 100 kHz
Detector = Peak
Channel 0
Low Channel Transmit = 5.750GHz
40MHz BW
Marker Delta Limit > 30dB

VBW ≥ 300 kHz
Trace = Max Hold
ESN# 000456C005DE
Output power setting: 20
Band-edge (**F1**) = 5.725GHz

Band-edge Measurement: 36.94dB = Pass



Date: 14.JUN.2013 10:56:00

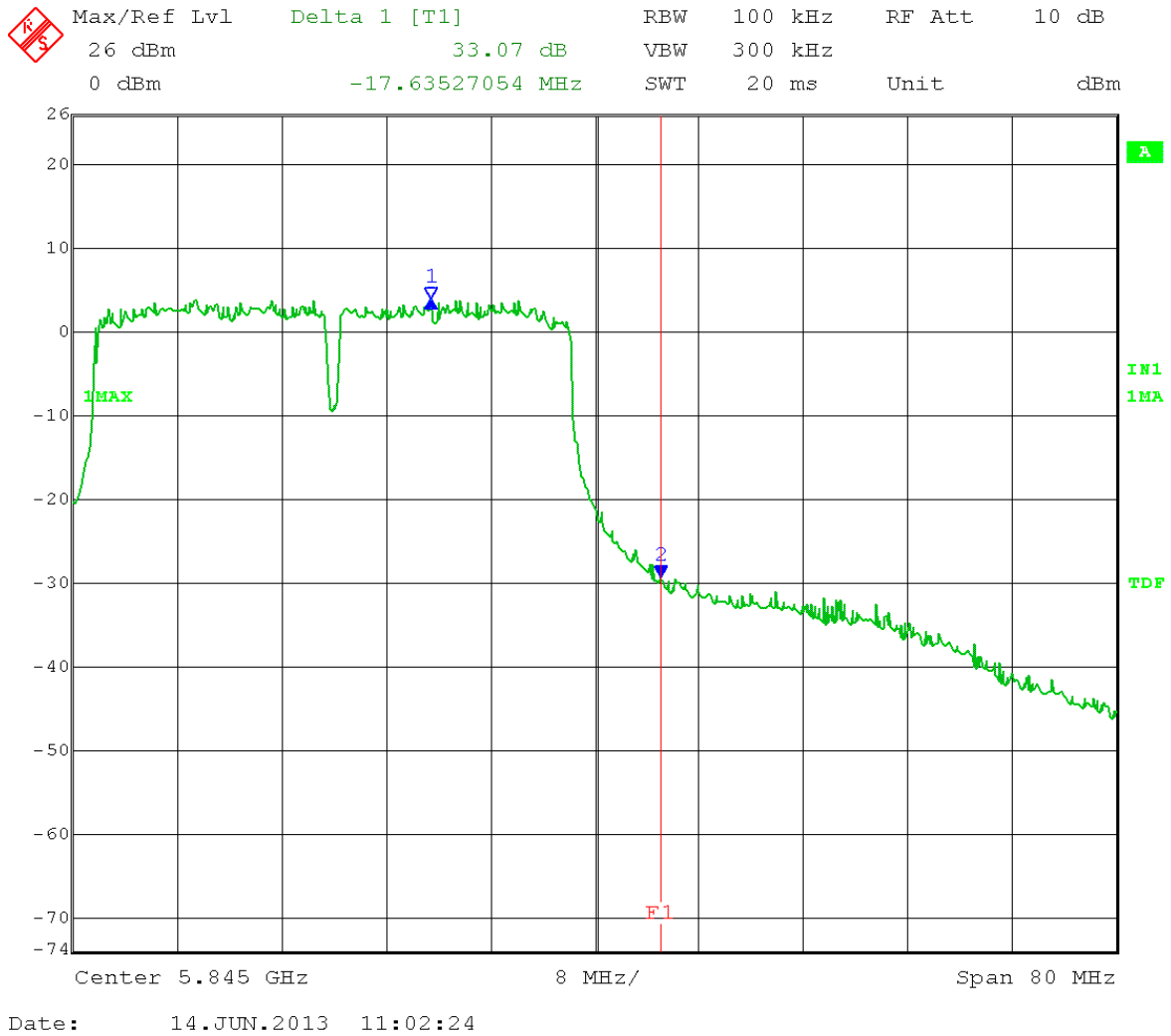
Company:	Cambium Networks
Model Tested:	C050900P12A
Report Number:	19128
DLS Project:	5941

166 South Carter, Genoa City, WI 53128

Test Date:	06-14-2013
Company:	Cambium Networks
EUT:	Avenger AP (5.7 GHz: OFDM)
Test:	13.0 Band-edge Measurement - Conducted

Operator:	Jim O/Lillian Li	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Trace = Max Hold
	Channel 0	ESN# 000456C005DE
	High Channel Transmit = 5.825GHz	Output power setting: 20
	40MHz BW	Band-edge (**F1**) = 5.850GHz
	Marker Delta Limit > 30dB	

Band-edge Measurement: 33.07dB = Pass



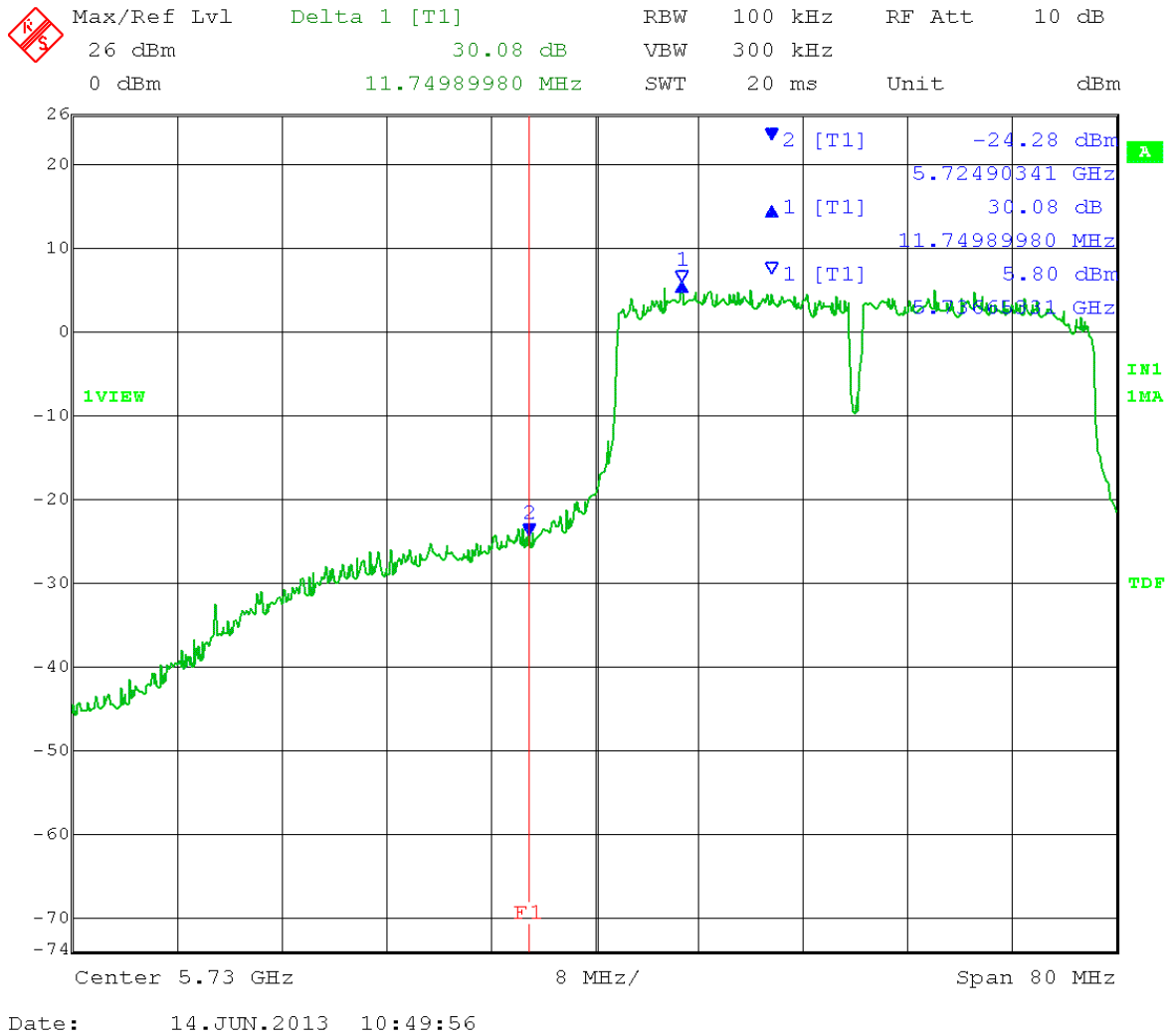
Company:	Cambium Networks
Model Tested:	C050900P12A
Report Number:	19128
DLS Project:	5941

166 South Carter, Genoa City, WI 53128

Test Date:	06-14-2013
Company:	Cambium Networks
EUT:	Avenger AP (5.7 GHz: OFDM)
Test:	13.0 Band-edge Measurement - Conducted

Operator:	Jim O/Lillian Li	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Trace = Max Hold
	Channel 1	ESN# 000456C005DE
	Low Channel Transmit = 5.750GHz	Output power setting: 20
	40MHz BW	Band-edge (**F1**) = 5.725GHz Marker Delta
	Limit > 30dB	

Band-edge Measurement: 33.15dB = Pass



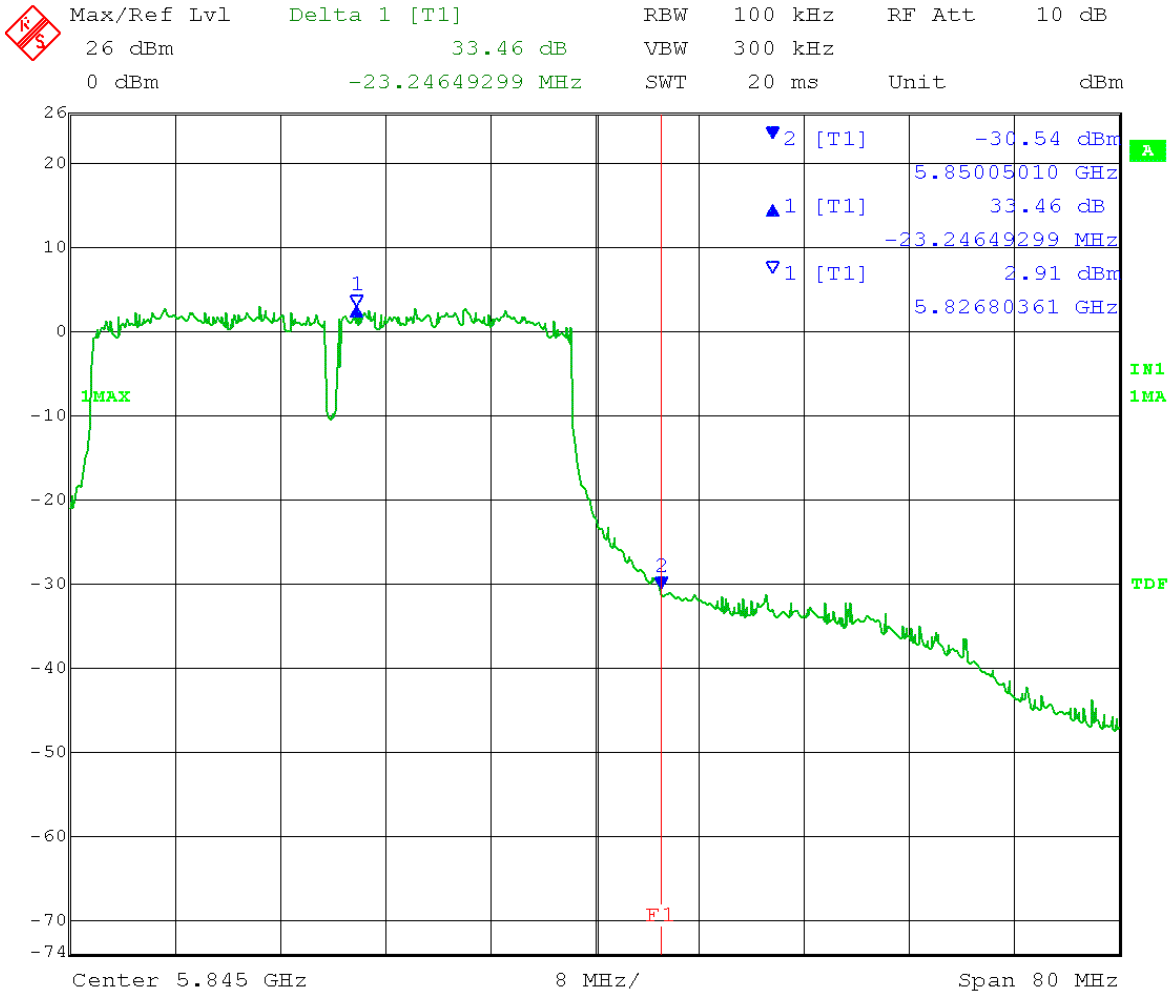
Company:	Cambium Networks
Model Tested:	C050900P12A
Report Number:	19128
DLS Project:	5941

166 South Carter, Genoa City, WI 53128

Test Date:	06-14-2013
Company:	Cambium Networks
EUT:	Avenger AP (5.7 GHz: OFDM)
Test:	13.0 Band-edge Measurement - Conducted

Operator:	Jim O/Lillian Li	
Comment:	RBW = 100 kHz	VBW ≥ 300 kHz
	Detector = Peak	Trace = Max Hold
	Channel 1	ESN# 000456C005DE
	High Channel Transmit = 5.825GHz	Output power setting: 20
	40MHz BW	Band-edge (**F1**) = 5.850GHz
	Marker Delta Limit > 30dB	

Band-edge Measurement: 33.46dB = Pass



Date: 14.JUN.2013 11:07:01

166 South Carter, Genoa City, WI 53128

Appendix B – Measurement Data

B6.0 Max Unwanted Emission Levels into Restricted Frequency Bands - RF Conducted

Rule Section: Sections 15.247(d) and 15.205

Test Procedure: FCC KDB 558074 D01 DTS Meas Guidance v03r01 – *Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247*
12.0 Emissions in restricted frequency bands
12.2 Antenna-port conducted measurements

Below 1000 MHz
Detector = quasi-peak
Alternately, peak detector is permitted

Peak measurements above 1000 MHz
RBW = 1 MHz
VBW ≥ 3 MHz
Detector = peak
Sweep time = auto; increased by a factor of (1 / duty cycle)
Trace mode = max hold

Average measurements above 1000 MHz (required for peak emissions that are above the average limits) – Method AD (Average Detection)
RBW = 1 MHz
VBW ≥ 3 MHz
Detector = RMS (span/(# of points in sweep) ≤ RBW/2)
Averaging type = power
Sweep time = auto; increased by a factor of (1 / duty cycle)
Trace mode = trace average 100 sweeps; increased by a factor of (1 / duty cycle)
For a duty cycle less than 98%, add 10 log (1/duty cycle)

EIRP calculation:
Add upper bound on out-of-band antenna gain to measured antenna port conducted emission power. (This is the maximum in-band gain or 2 dBi, whichever is greater)
For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (*e.g.*, Watts, mW)

Field strength calculation:
Above 1 GHz:
E (dBµV/m) = EIRP (dBm) – 20 log (d{meters}) + 104.8
Below 1 GHz:
E (dBµV/m) = EIRP (dBm) – 20 log (d{meters}) + 104.8 + 4.7 dB

Limits: Peak and Average limits of FCC Part 15.209

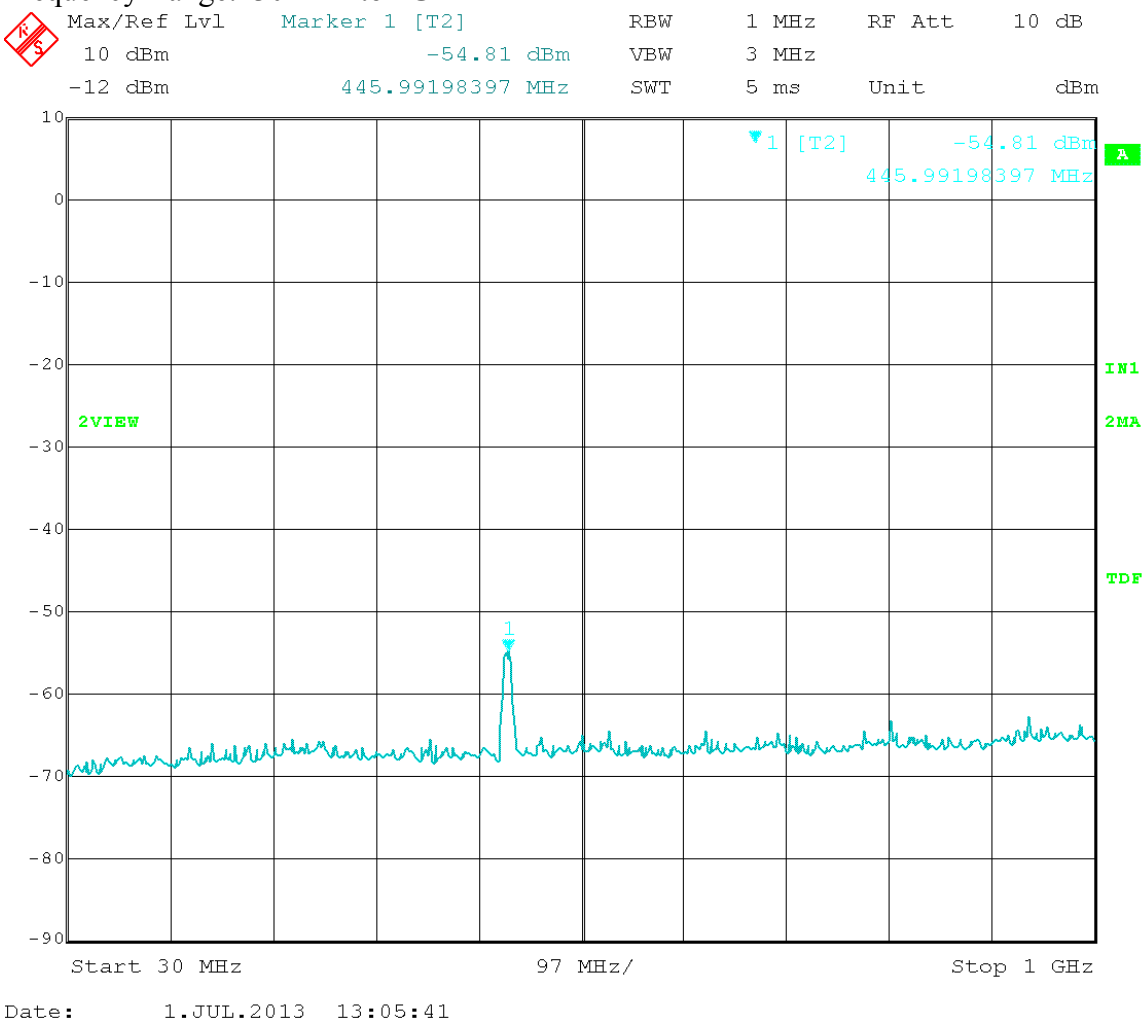
Notes: Measurements were taken for MCS15 OFDM modulation at the lowest, middle, and highest channels of operation. EUT was set to transmit continuously with 100% duty cycle.

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 13:05:41

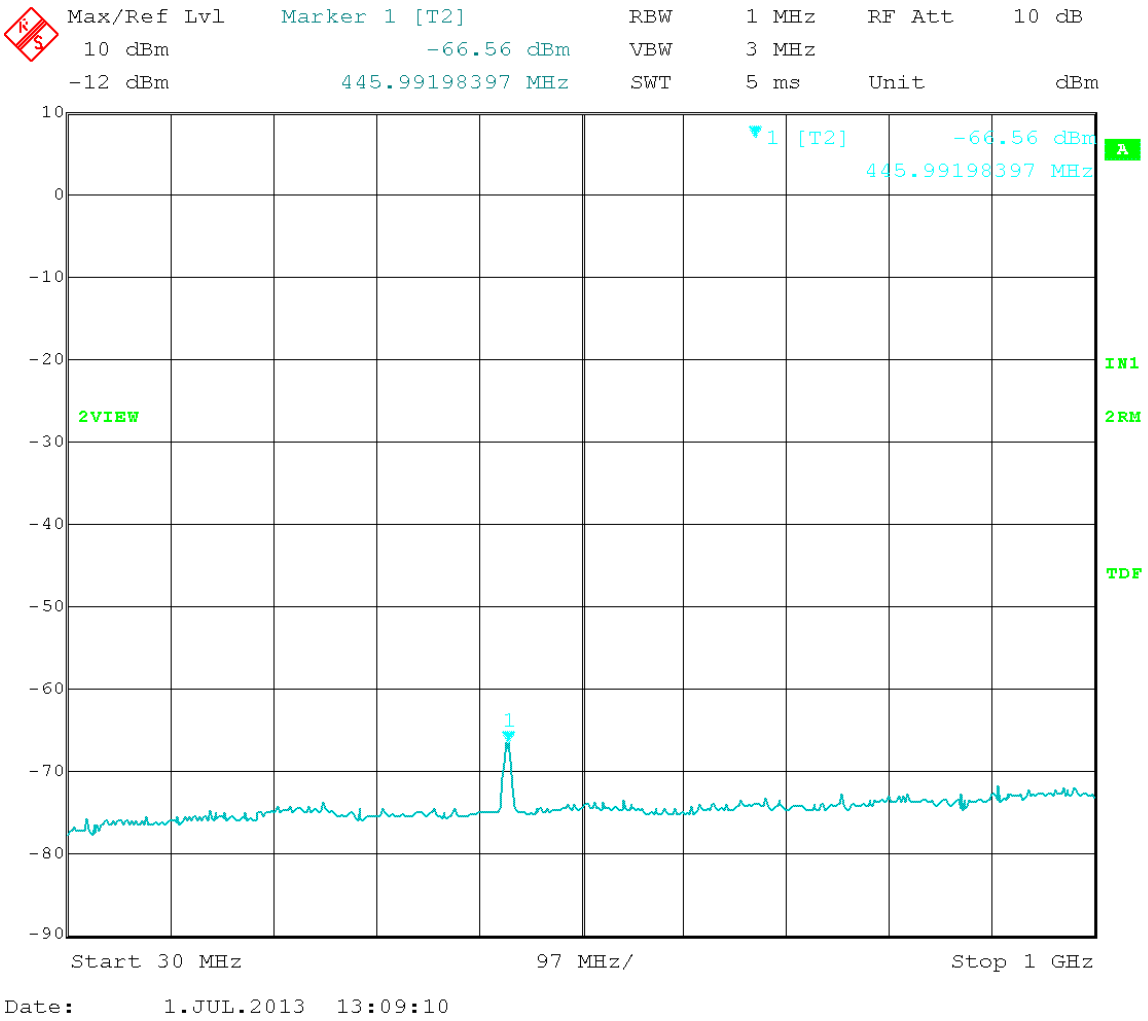
Marker 1: Calculated Field Strength (Restricted Band) = -54.81 + 16dBi antenna gain
+ 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 59.42dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 13:09:10

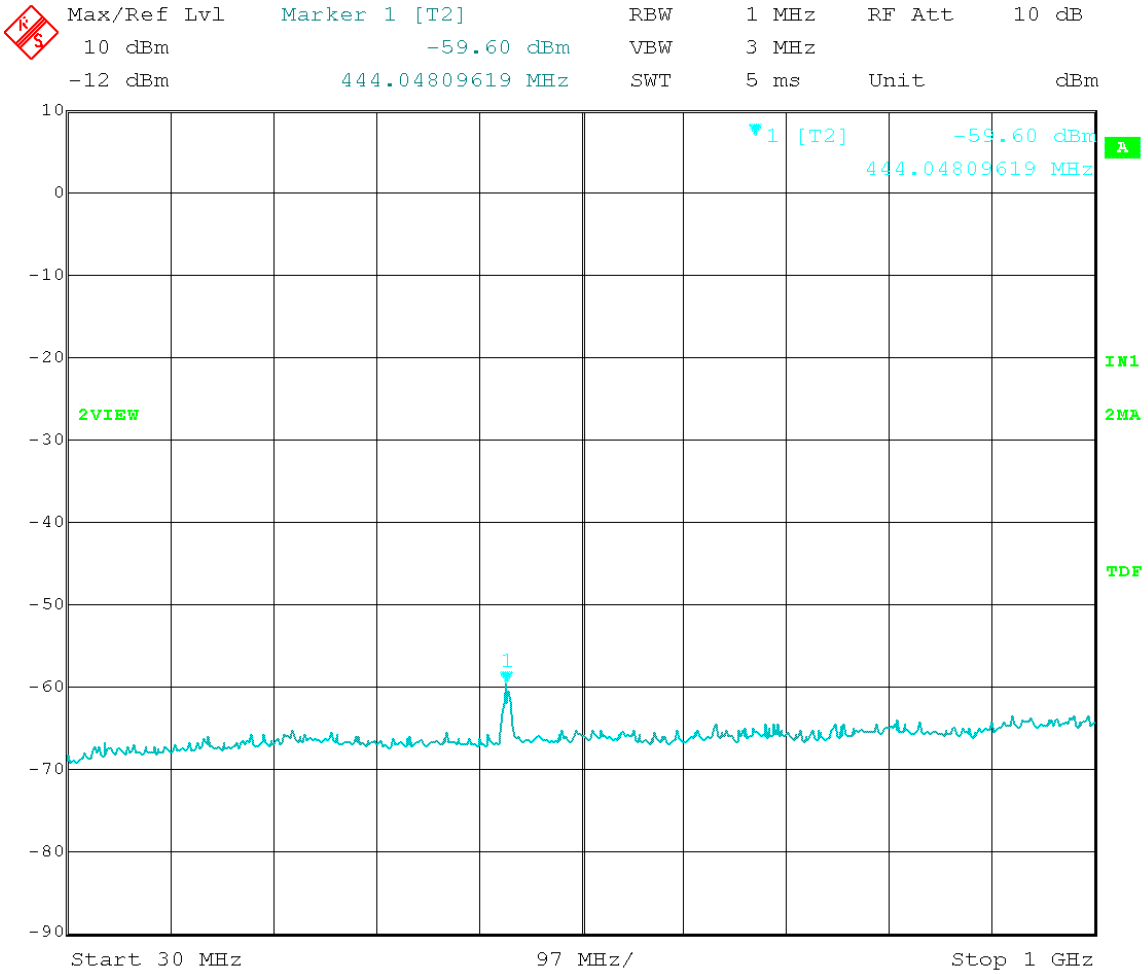
Marker 1: Calculated Field Strength (Restricted Band) = -66.56+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 47.67dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 11:38:15

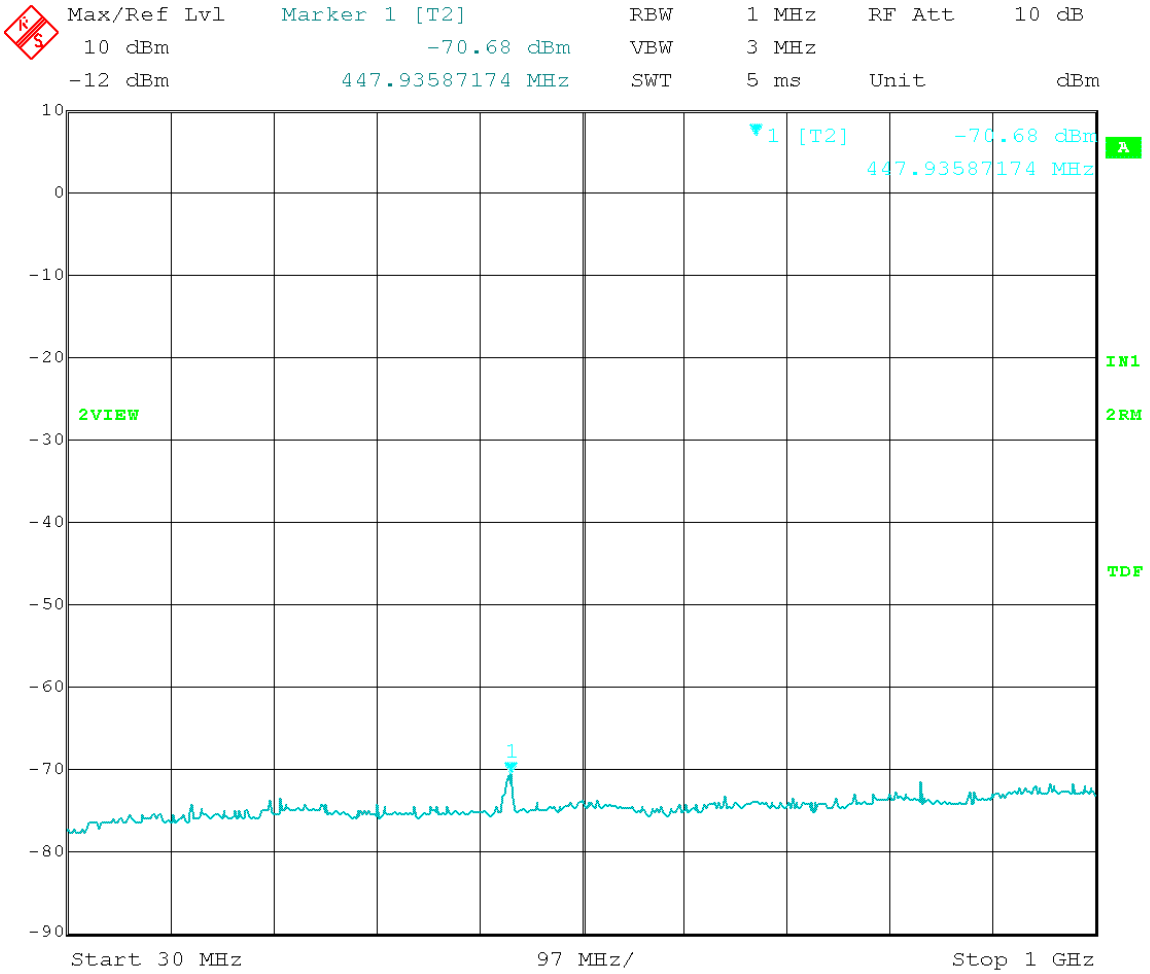
Marker 1: Calculated Field Strength (Restricted Band) = -59.60 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 54.63dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 11:41:01

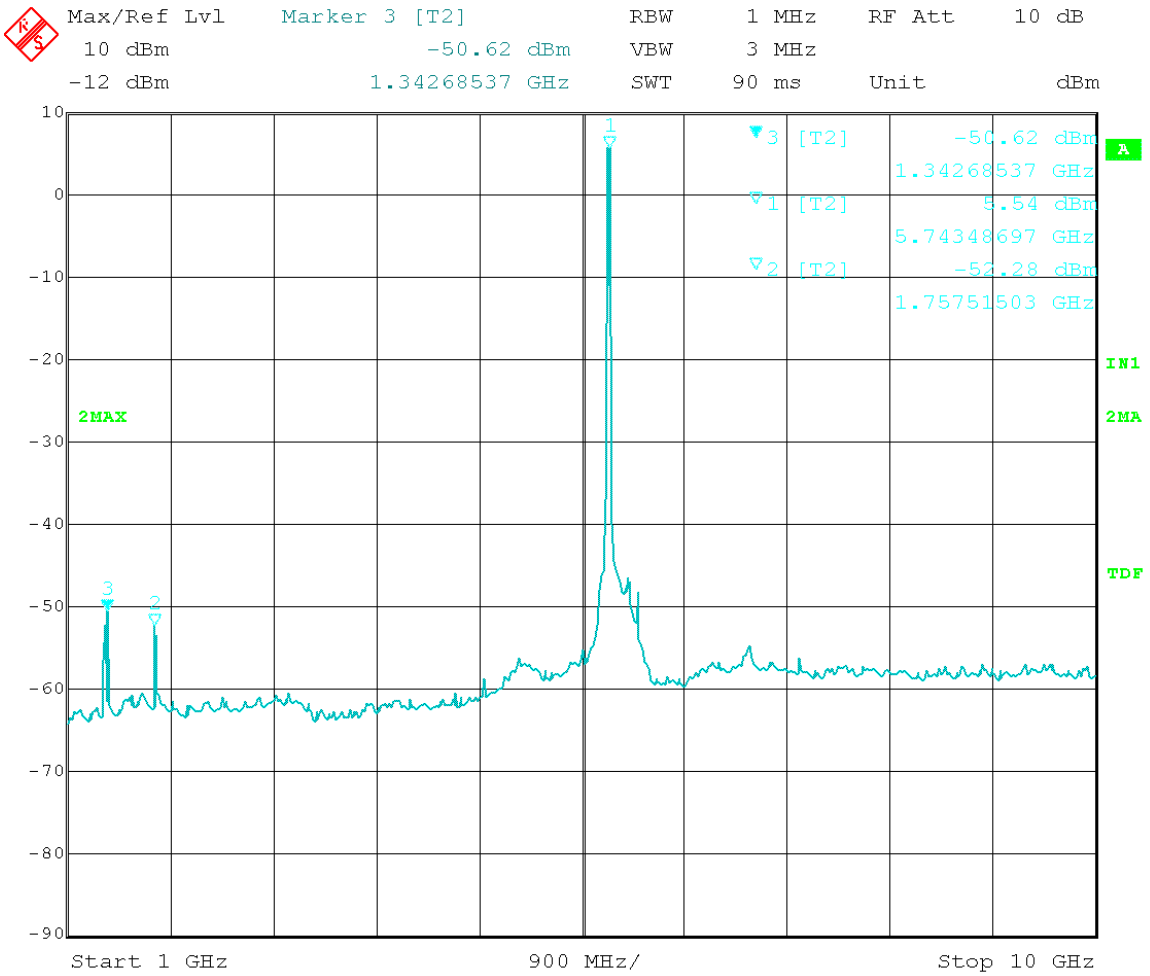
Marker 1: Calculated Field Strength (Restricted Band) = -70.68+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 43.55dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 10:37:58

Marker 2: Calculated Field Strength (Restricted Band) = -52.28 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 61.98dBµV/m Peak

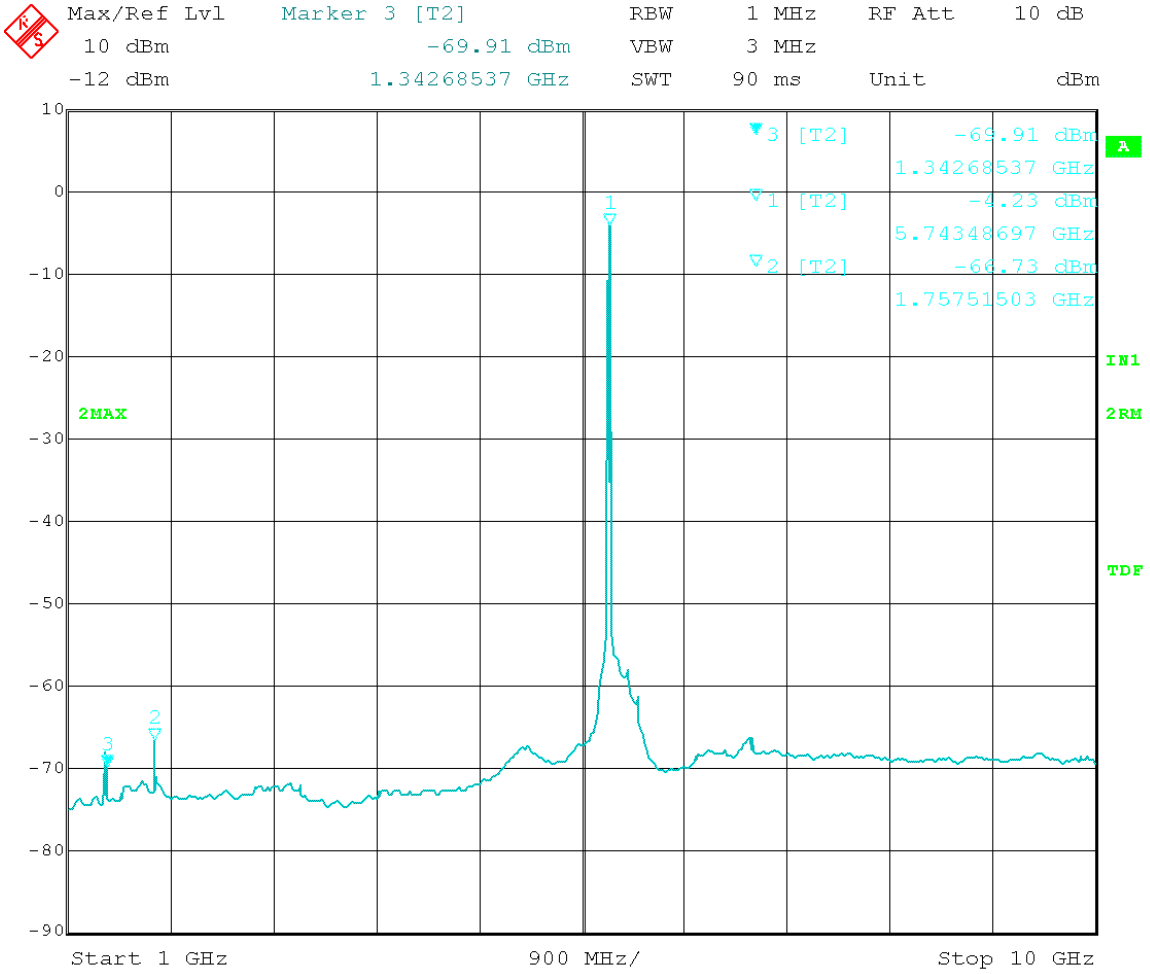
Marker 3: Calculated Field Strength (Restricted Band) = -50.62 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 63.61dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 10:42:27

Marker 2: Calculated Field Strength (Restricted Band) = -66.73+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 47.5dBµV/m Average

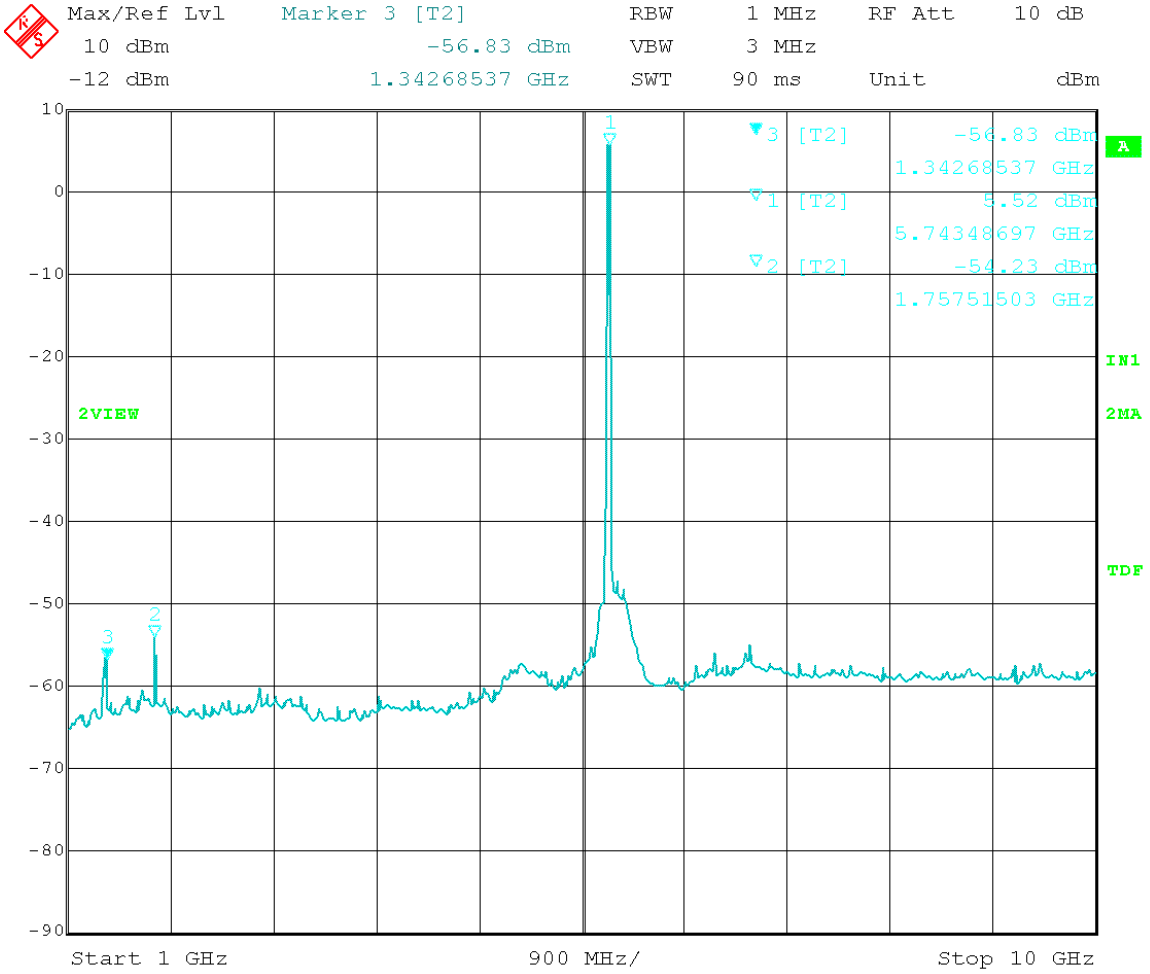
Marker 3: Calculated Field Strength (Restricted Band) = -69.65 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 44.58dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 11:18:38

Marker 2: Calculated Field Strength (Restricted Band) = -54.23 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 60.0dBµV/m Peak

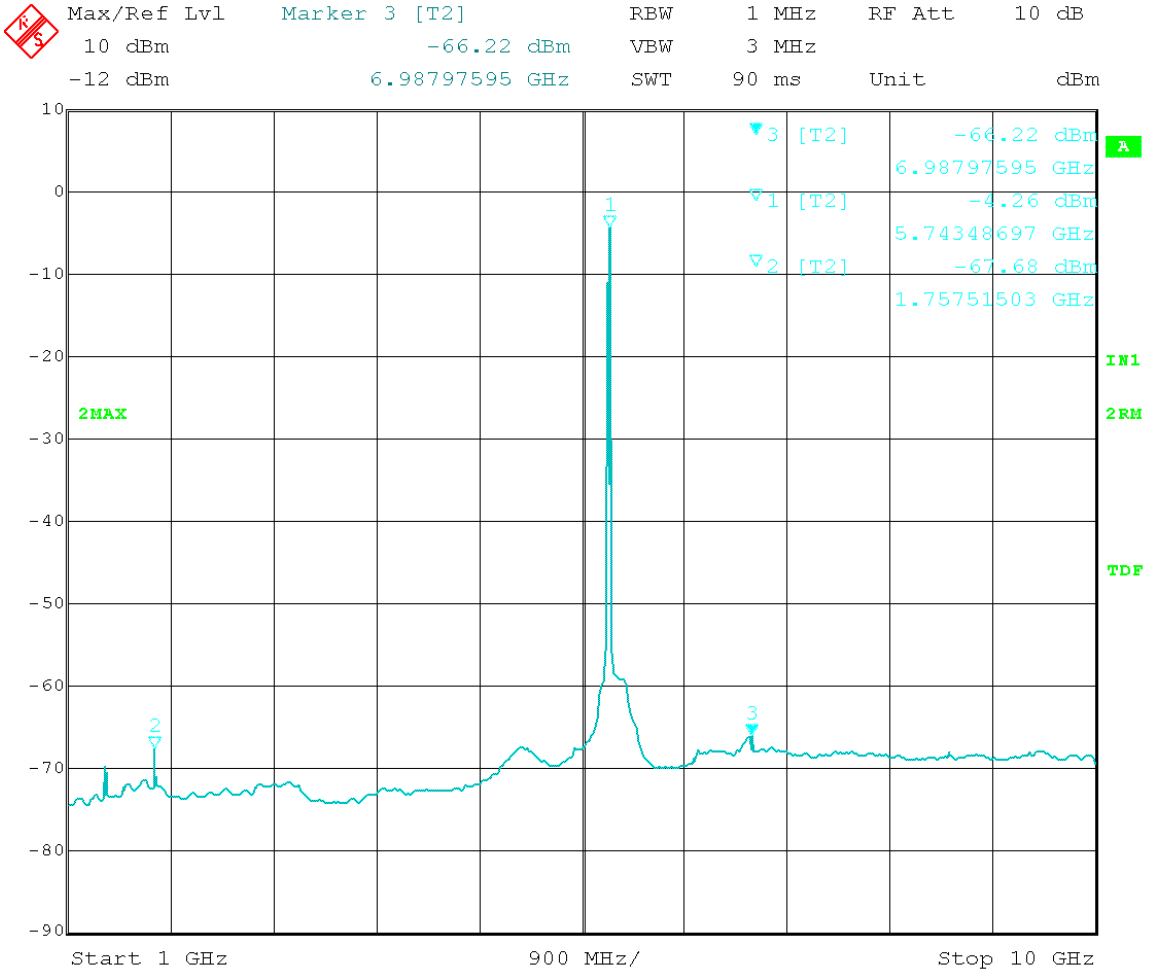
Marker 3: Calculated Field Strength (Restricted Band) = -56.83 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 57.4dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 11:26:10

Marker 2: Calculated Field Strength (Restricted Band) = -67.68+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 46.55dBµV/m Average

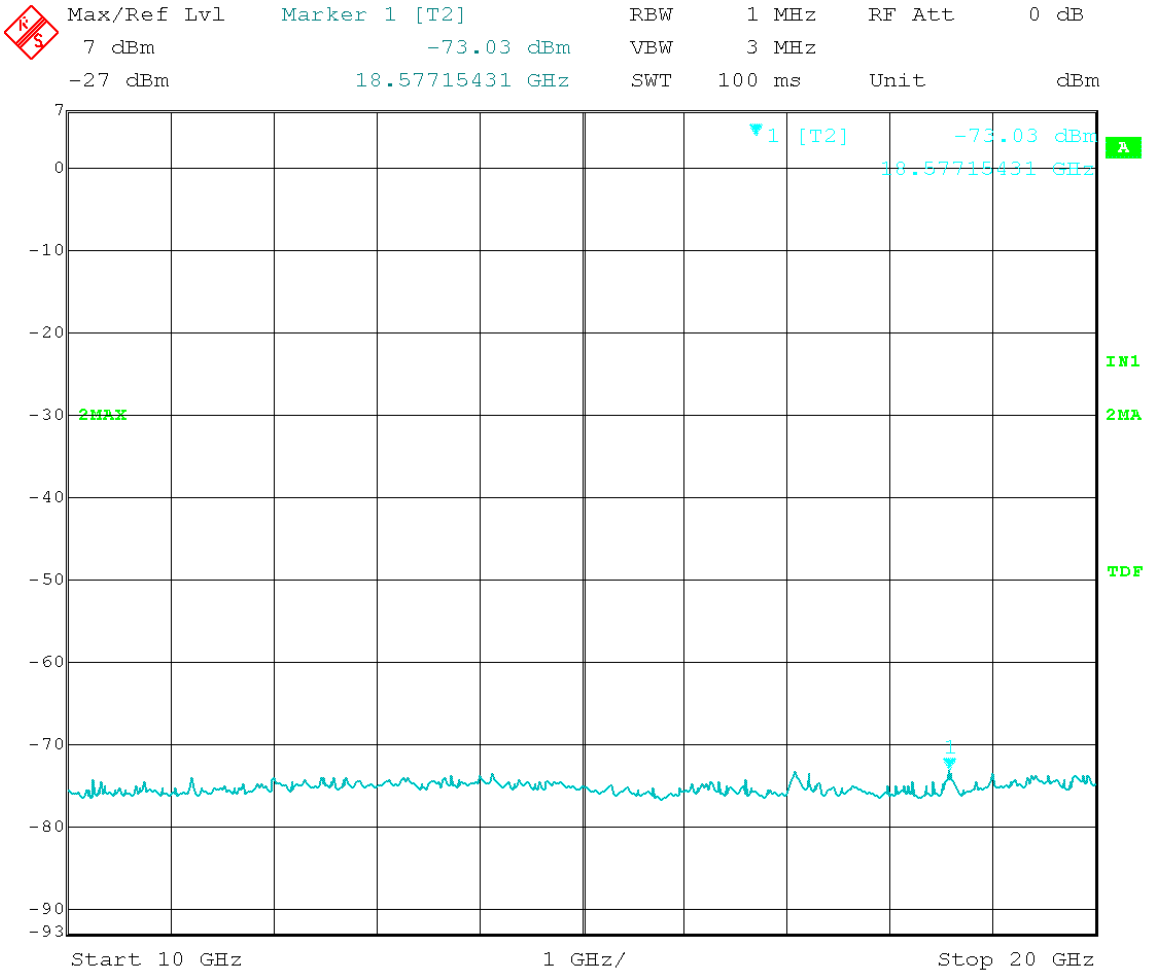
Marker 3: Calculated Field Strength (Restricted Band) = -66.22 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 48.01dBµV/m Average

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:08:46

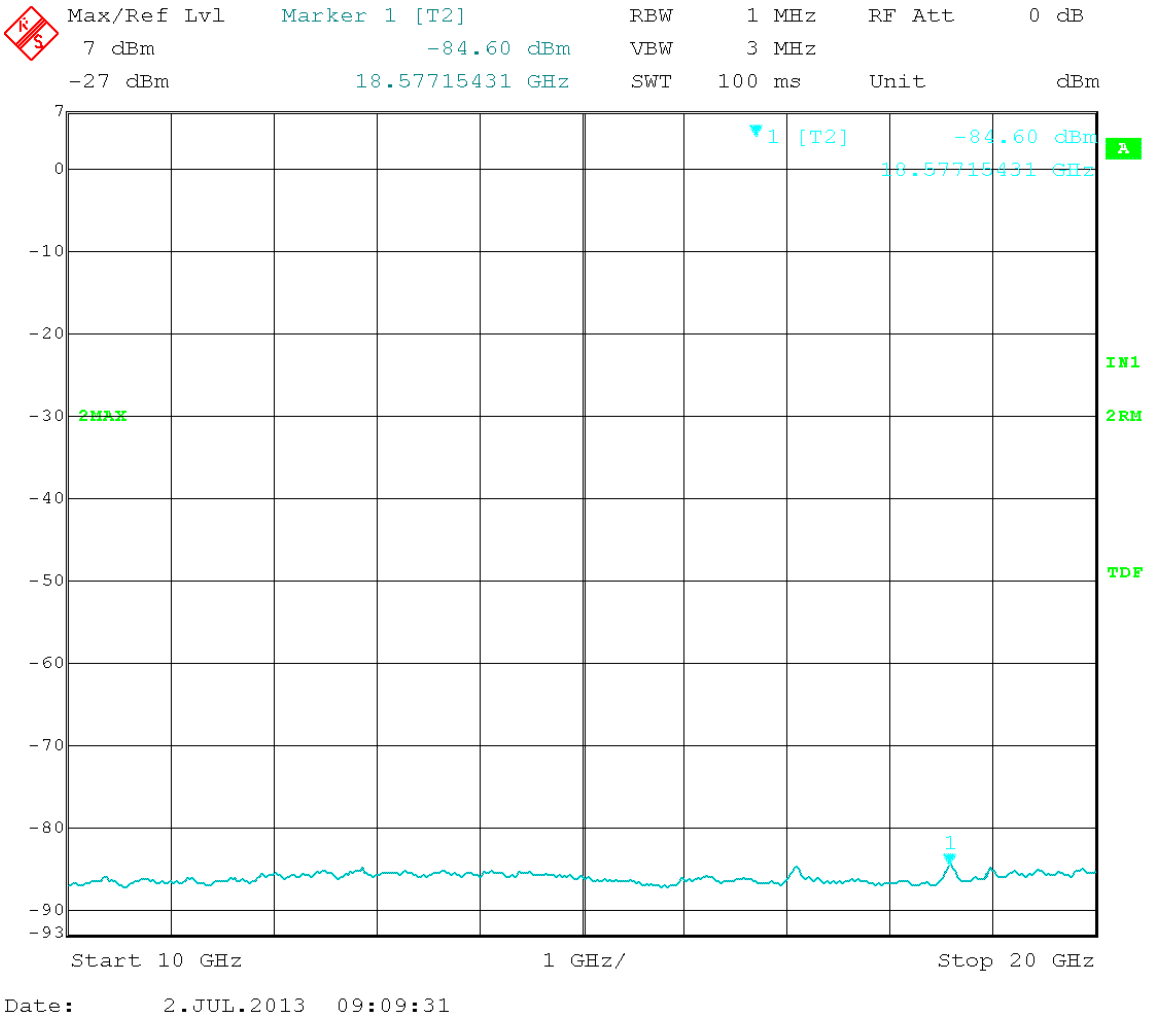
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



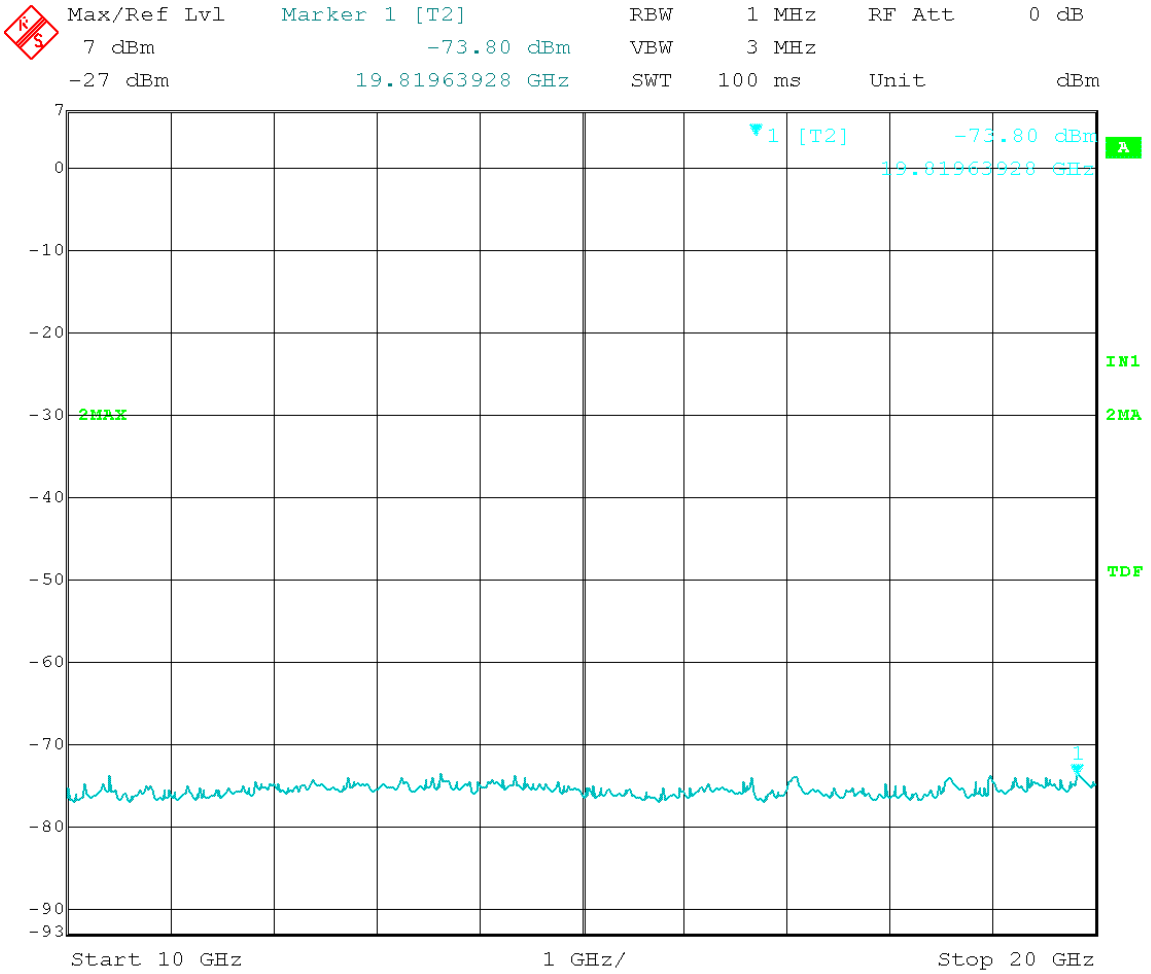
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:14:59

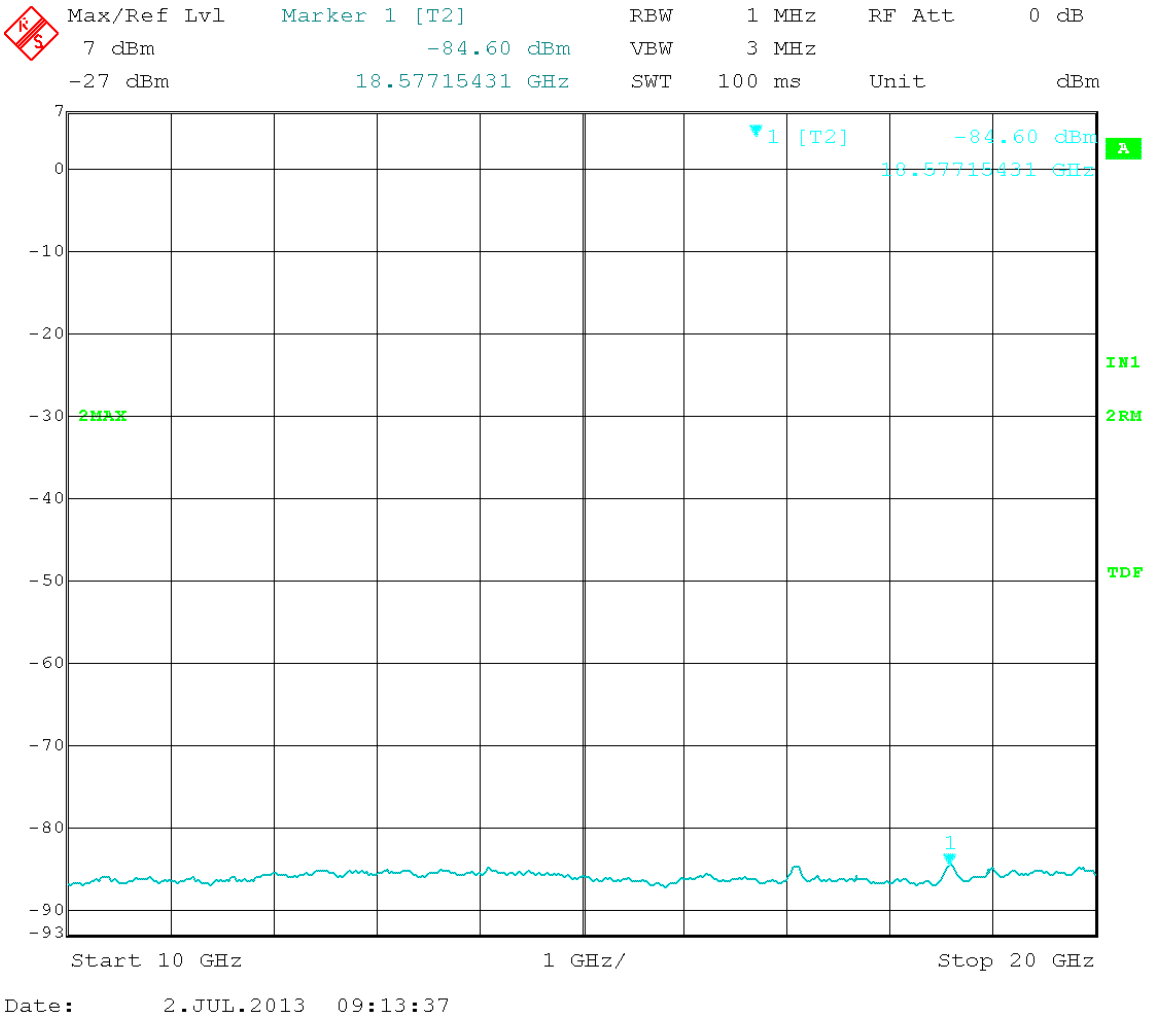
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



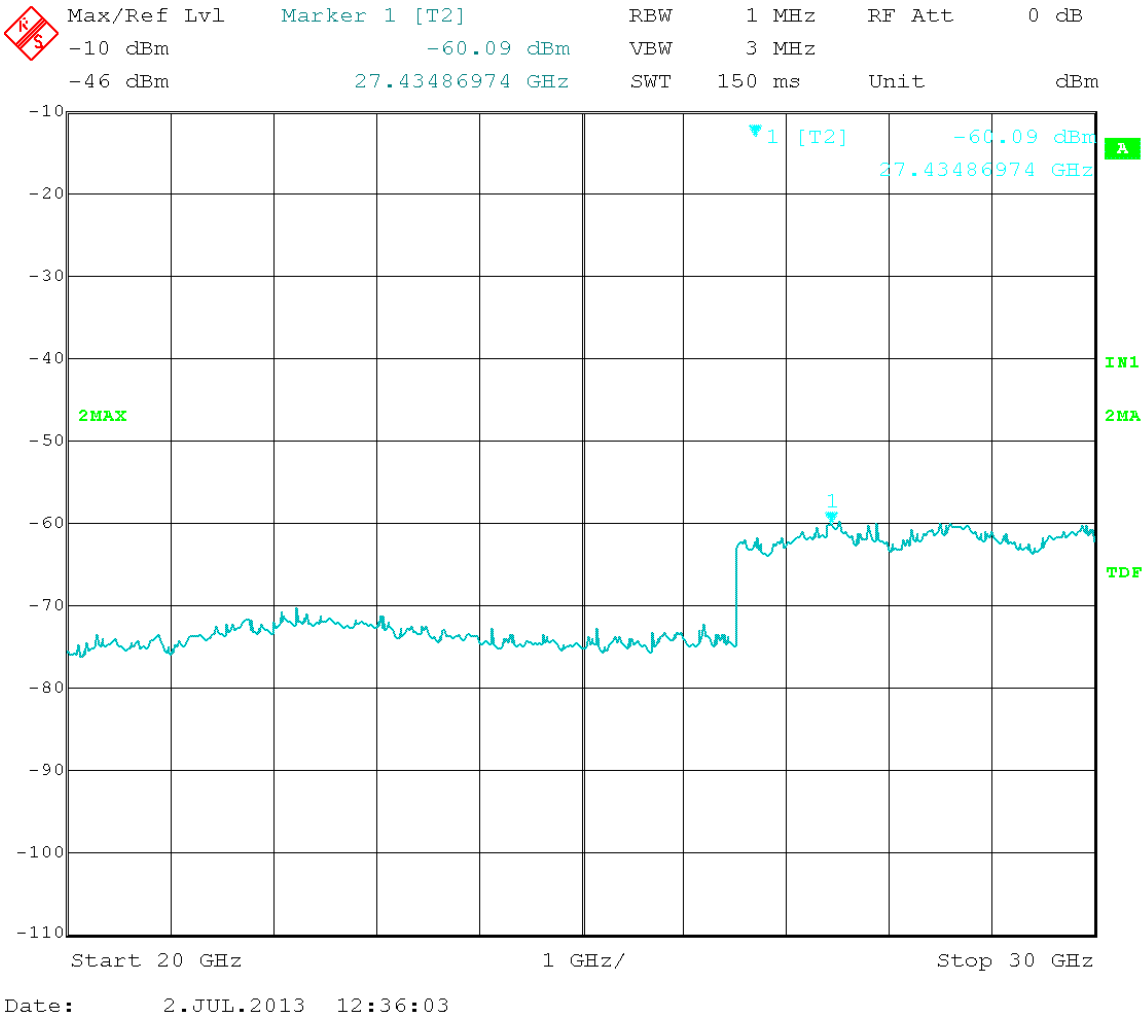
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



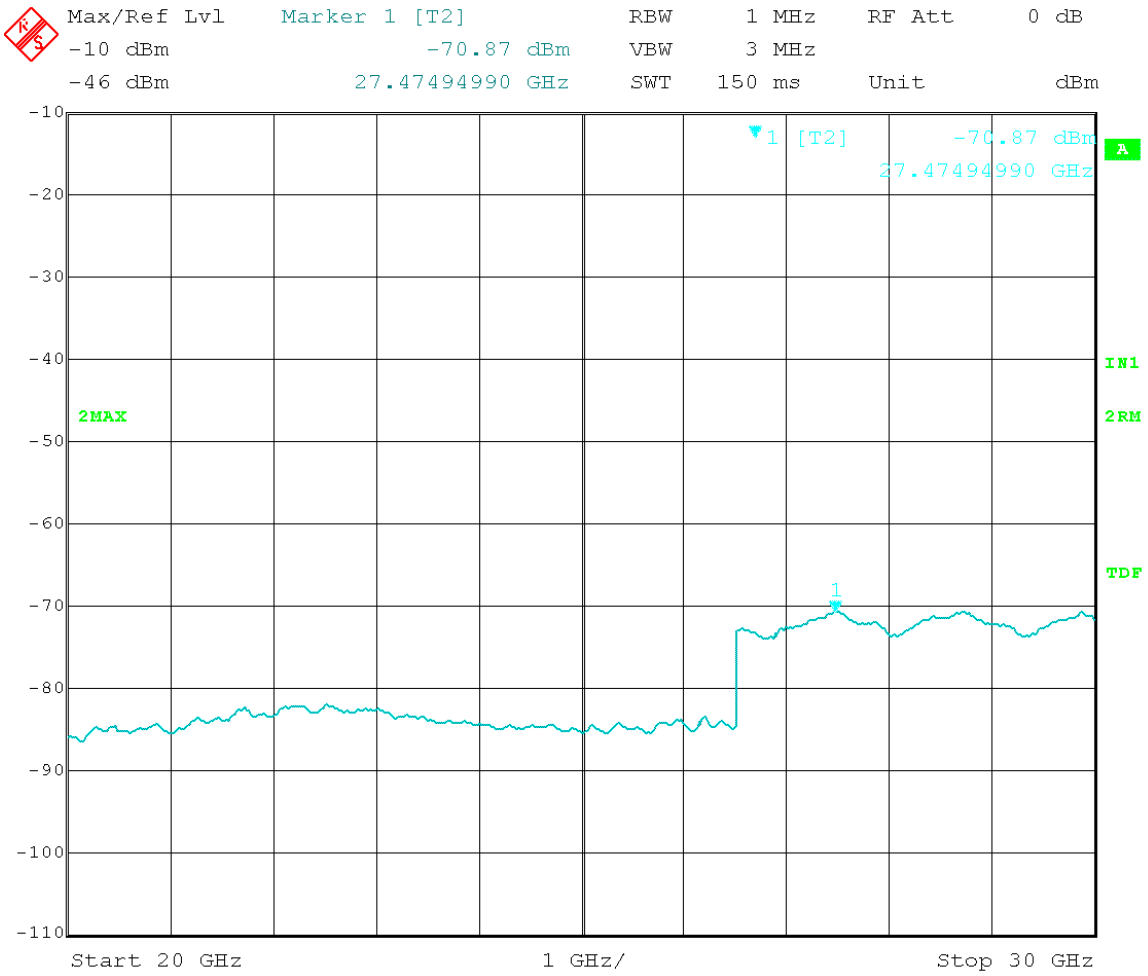
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 12:36:50

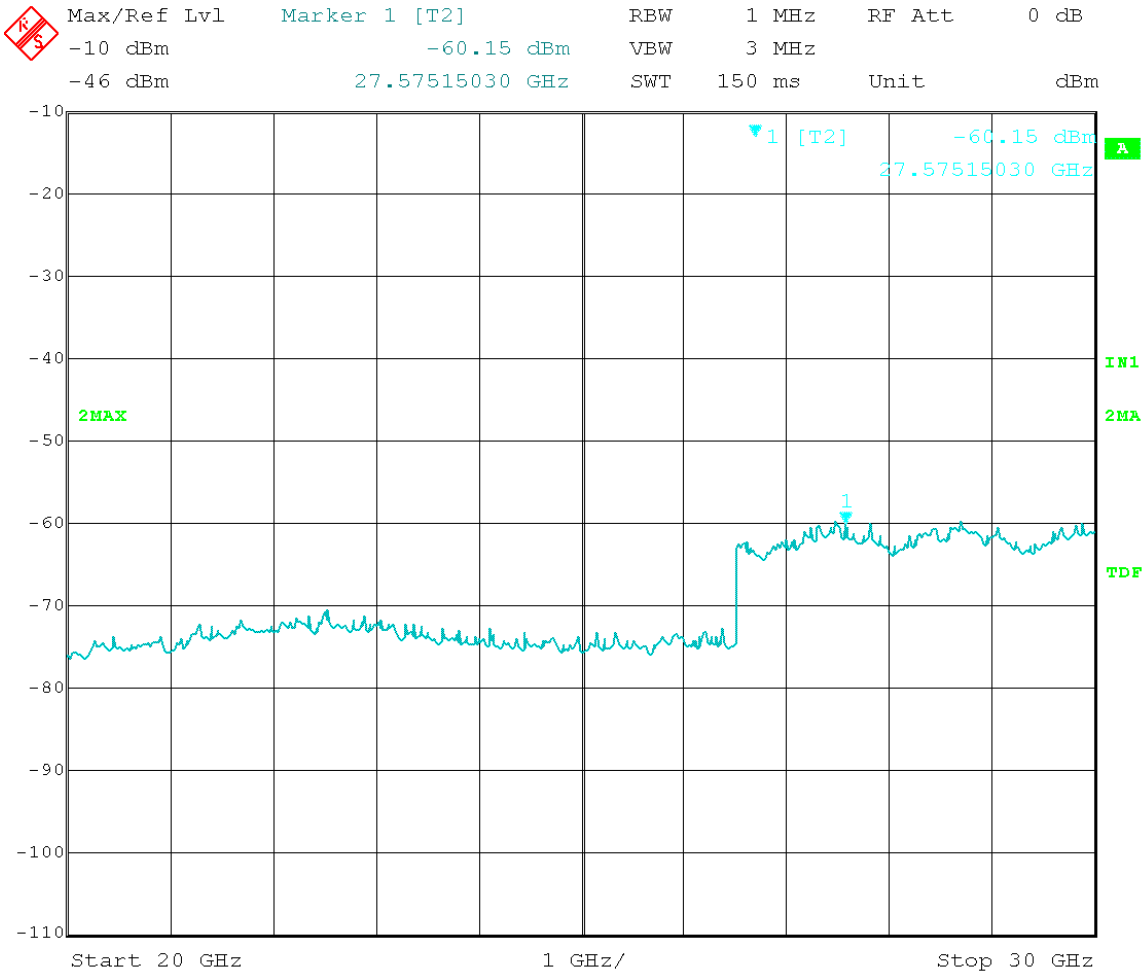
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 12:38:23

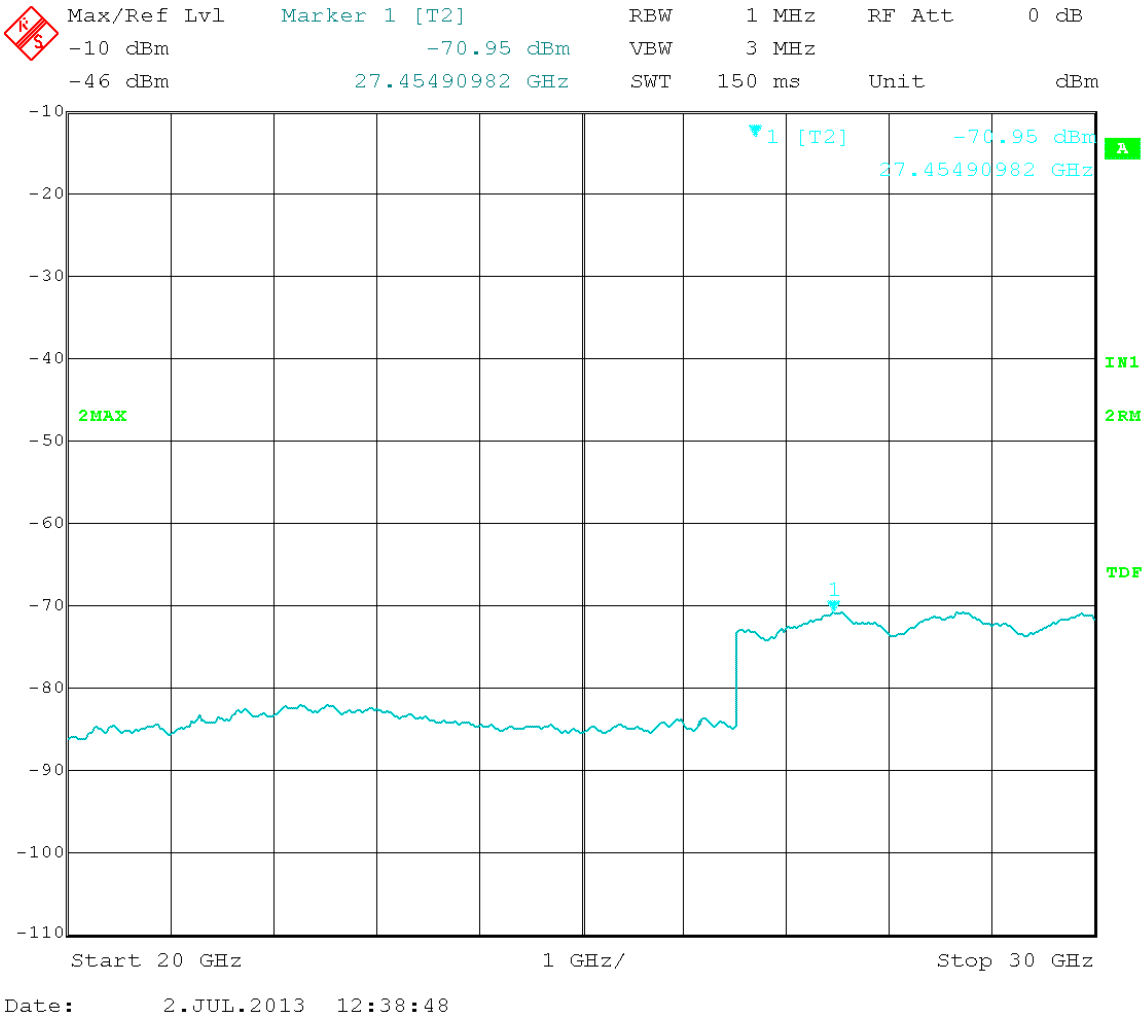
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



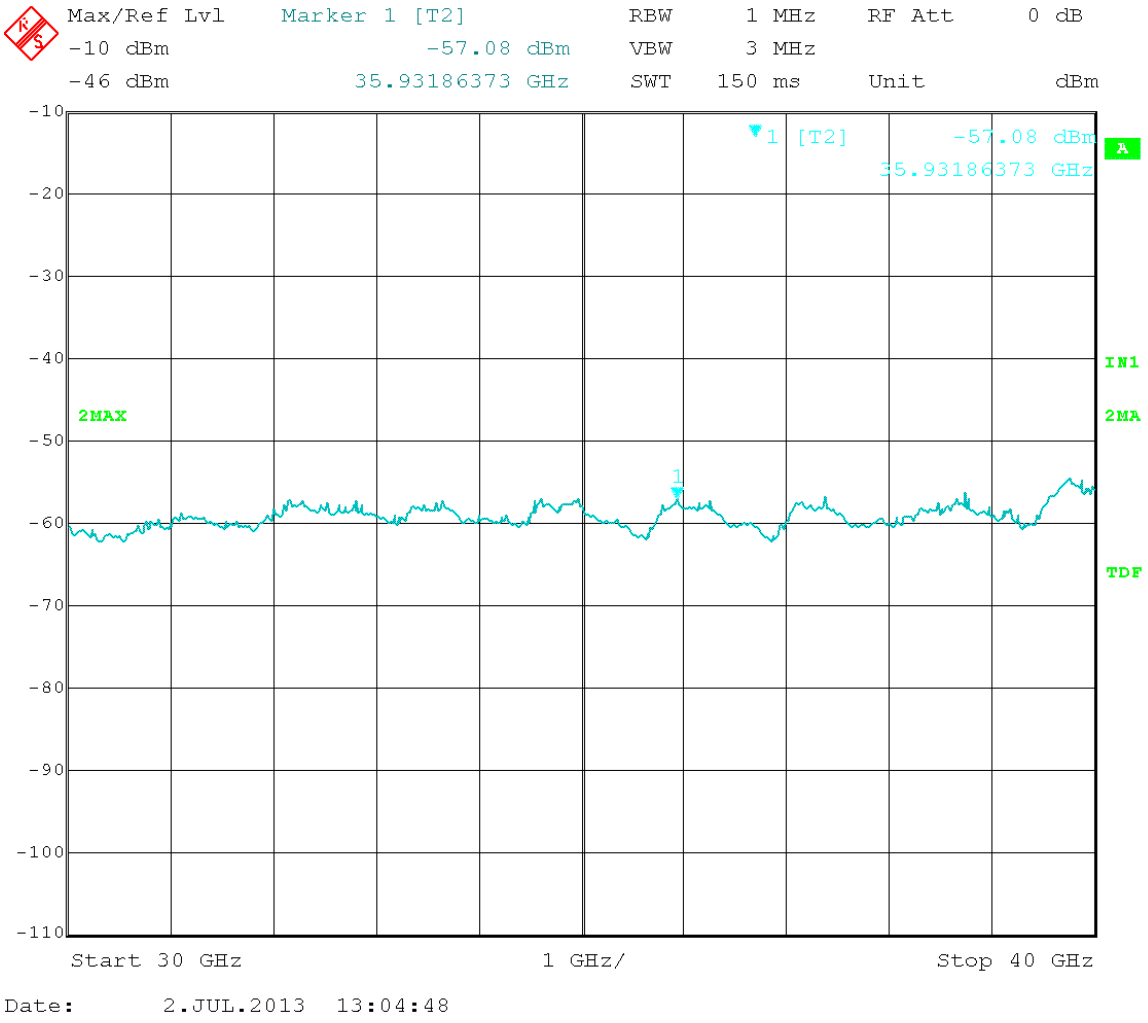
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



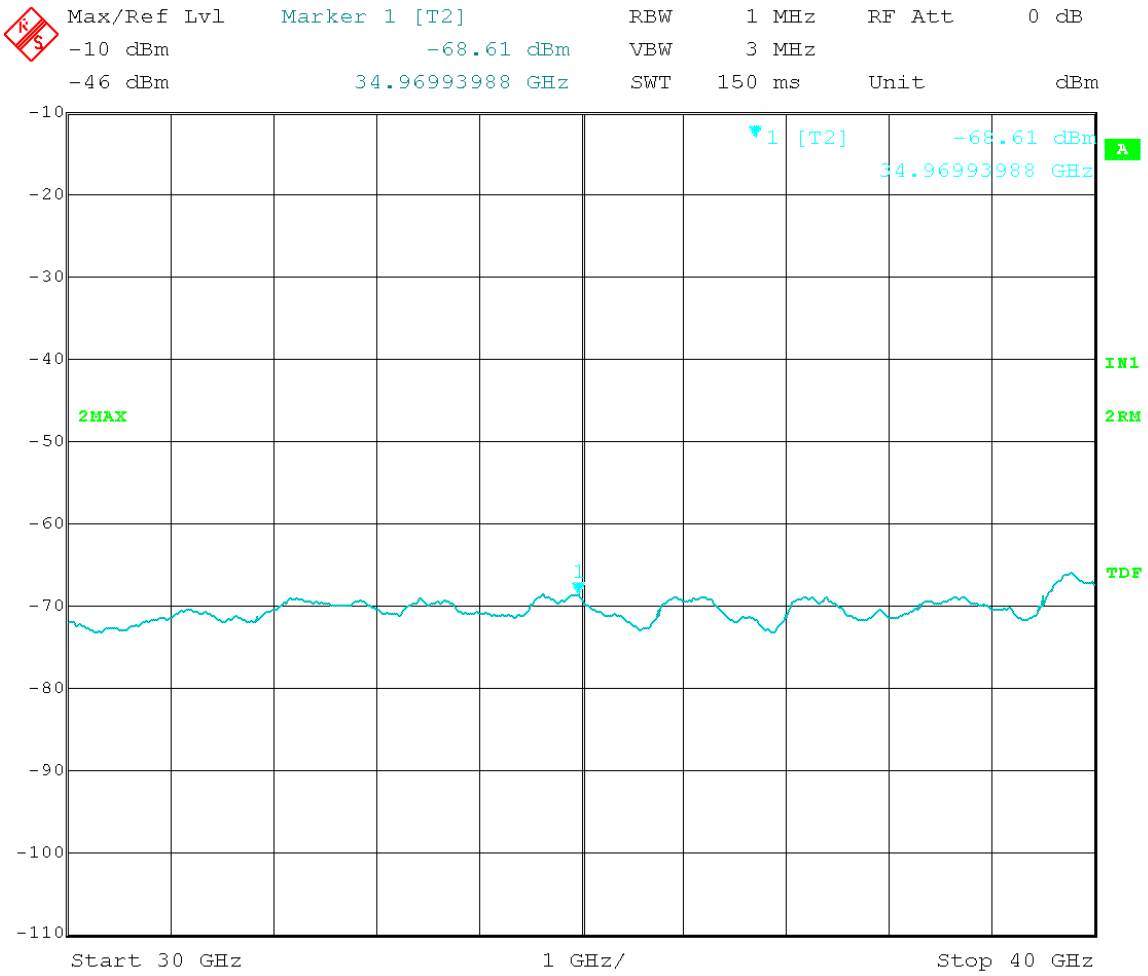
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 13:06:09

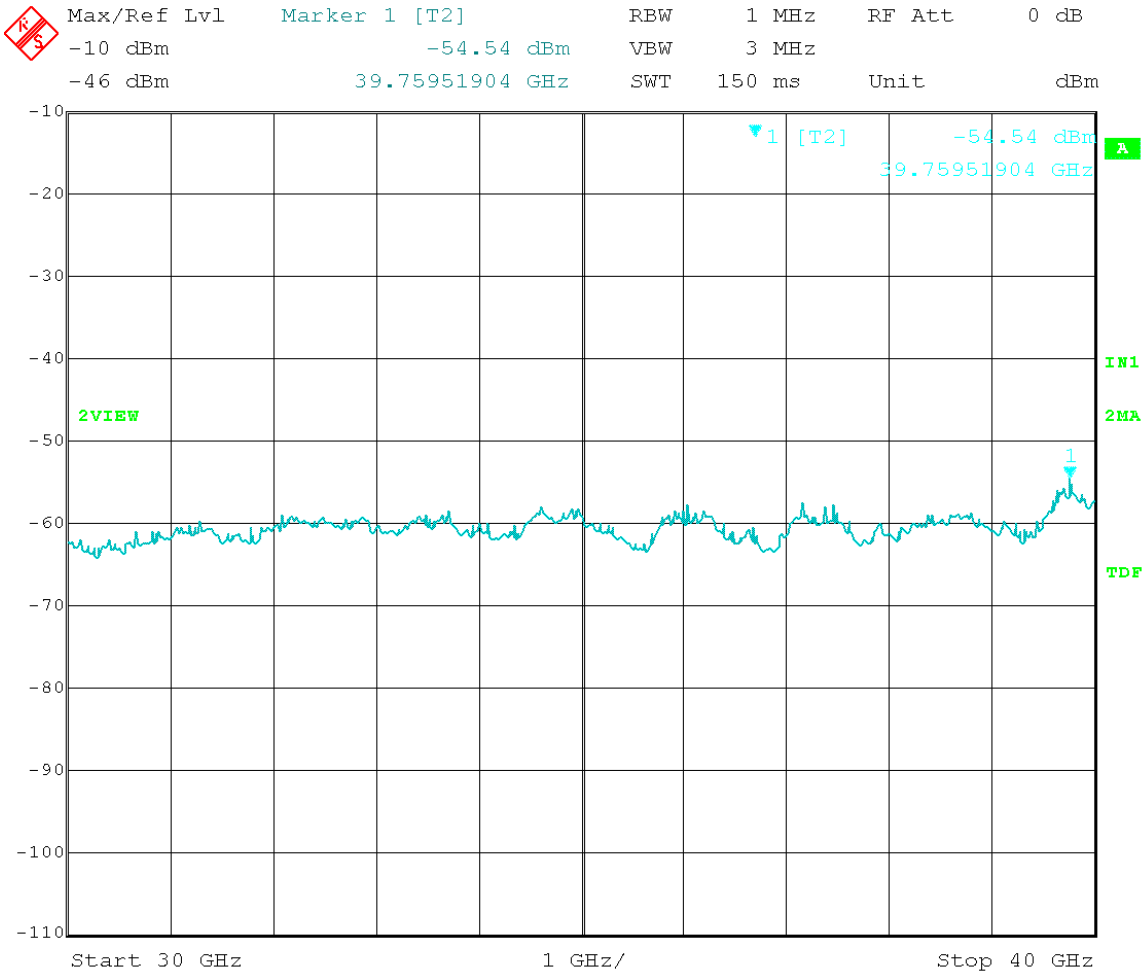
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



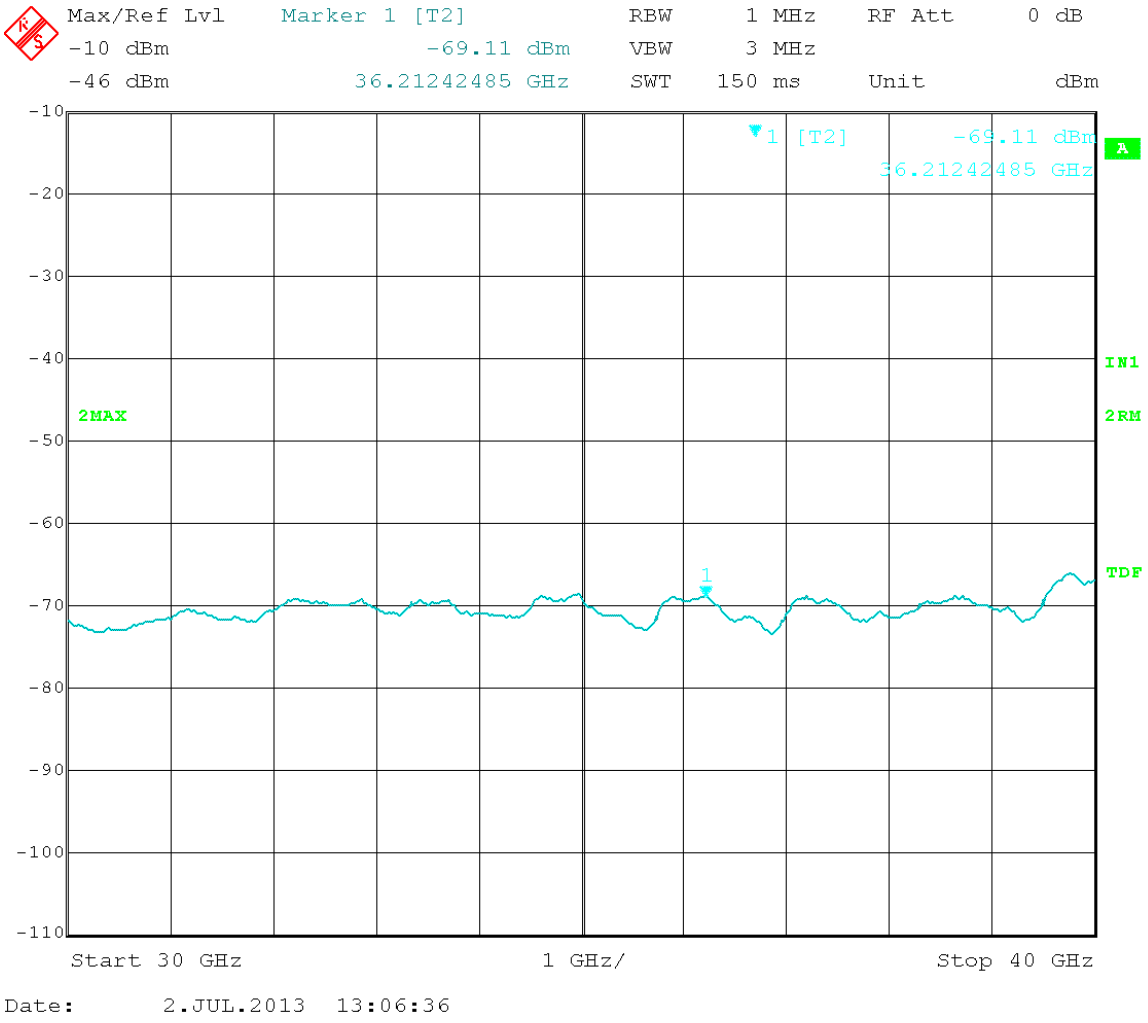
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.740 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



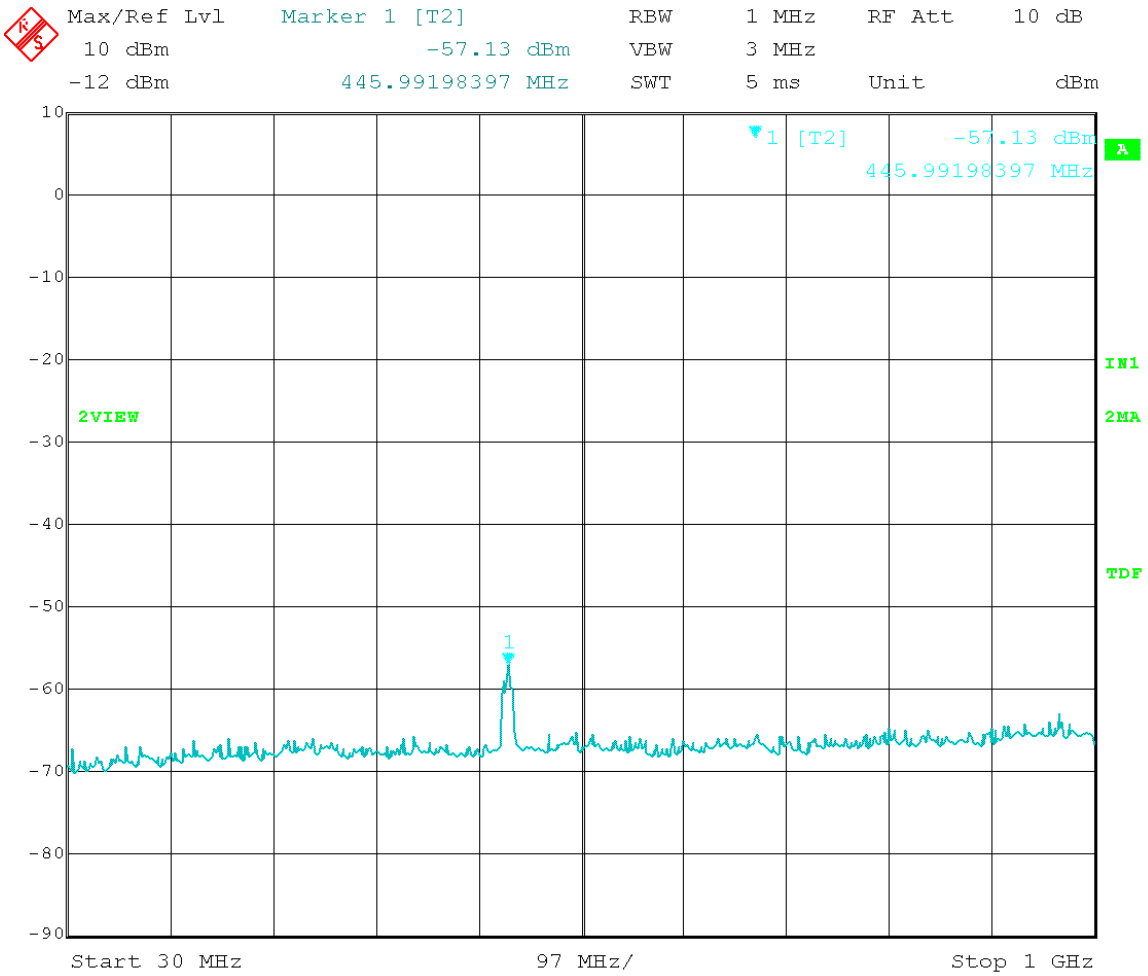
Marker 1: Greater than 20dB below limit

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 13:27:38

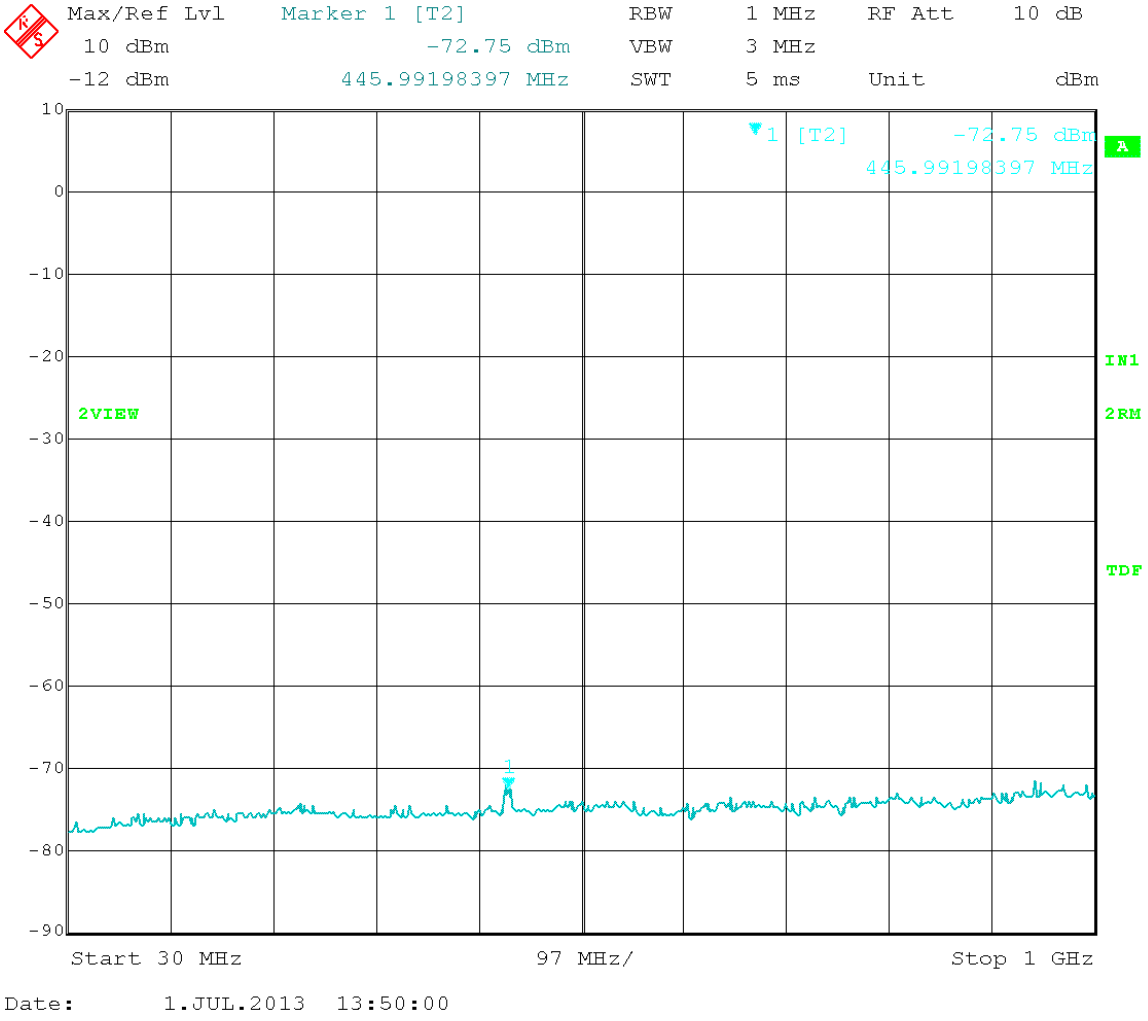
Marker 1: Calculated Field Strength (Restricted Band) = -54.81 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 57.1dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 13:50:00

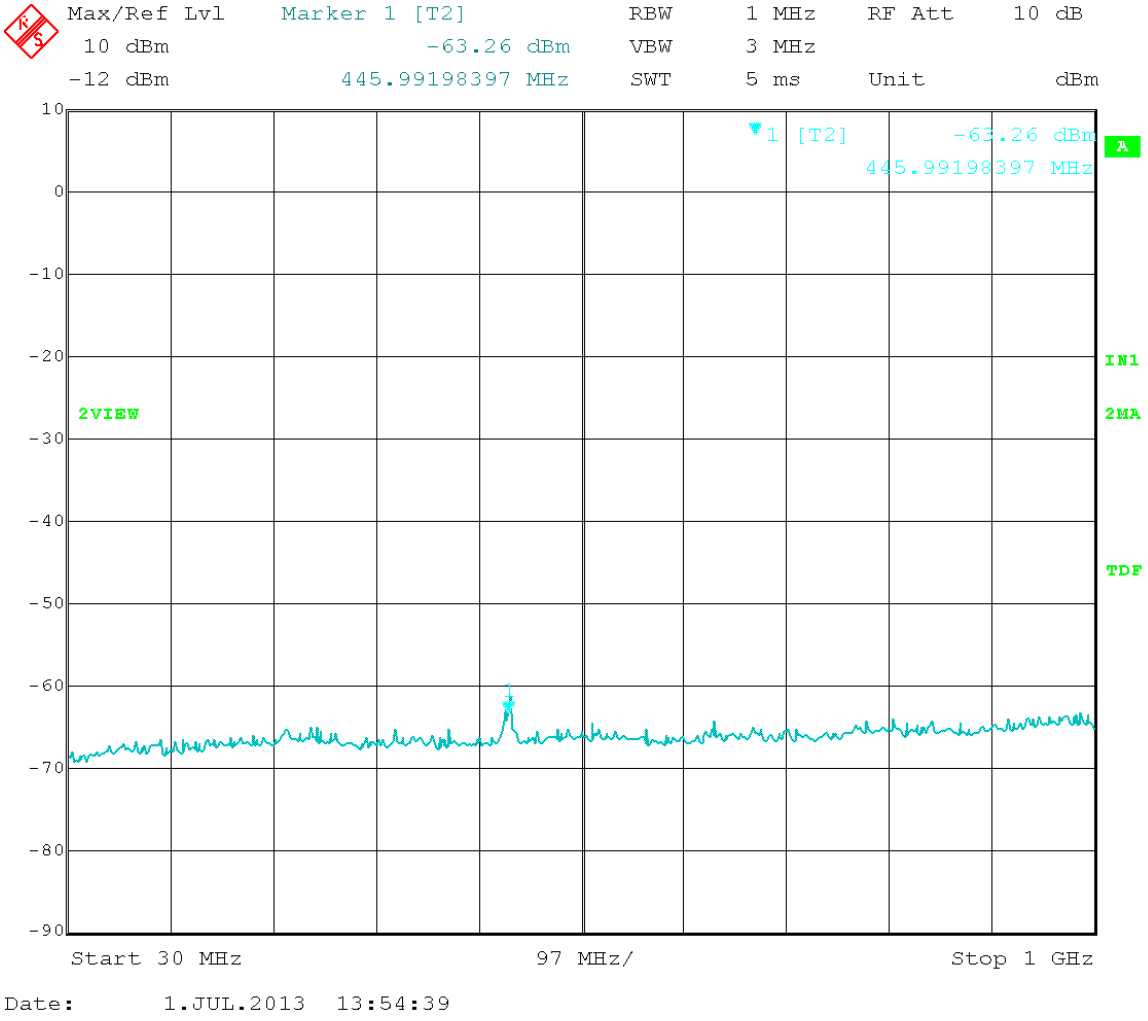
Marker 1: Calculated Field Strength (Restricted Band) = -72.75+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 41.48dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 13:54:39

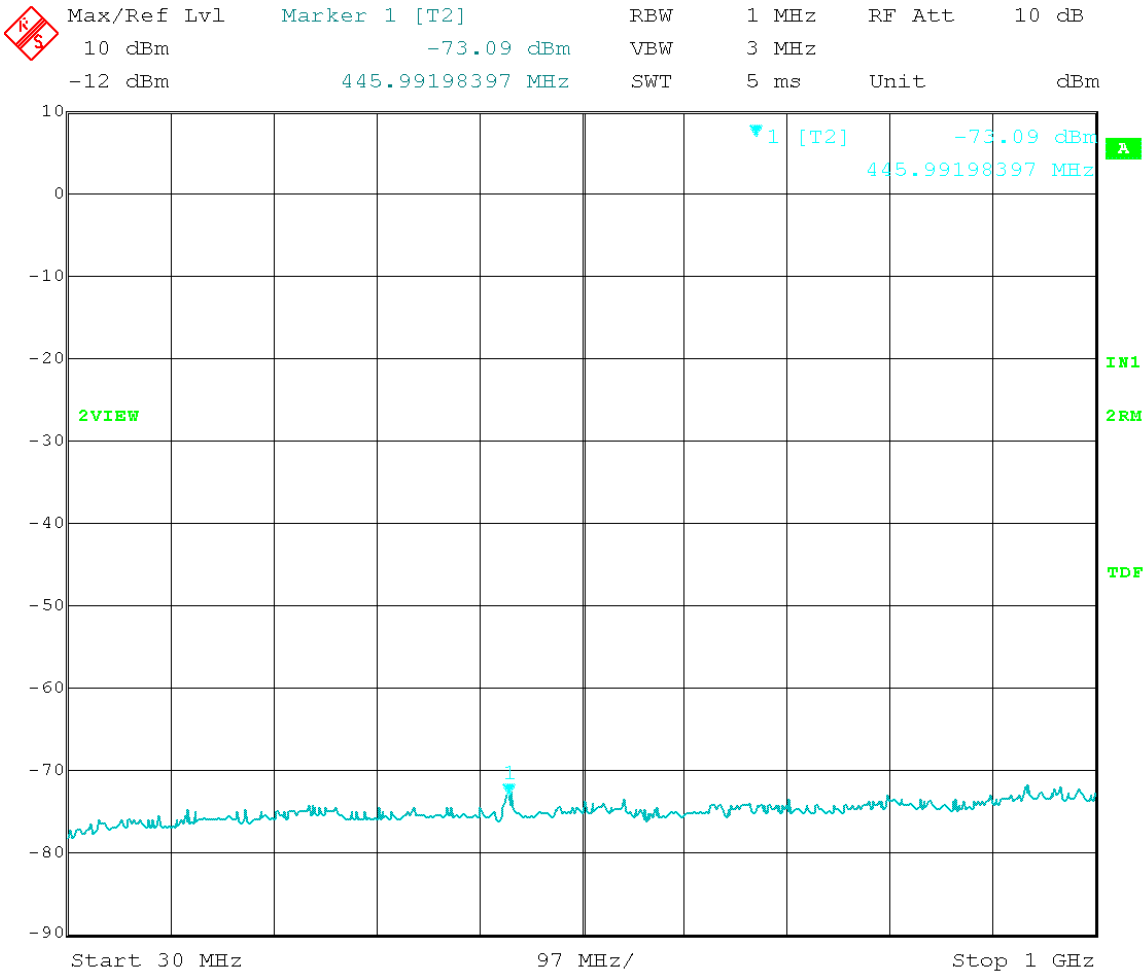
Marker 1: Calculated Field Strength (Restricted Band) = -63.26 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 50.97dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 13:52:17

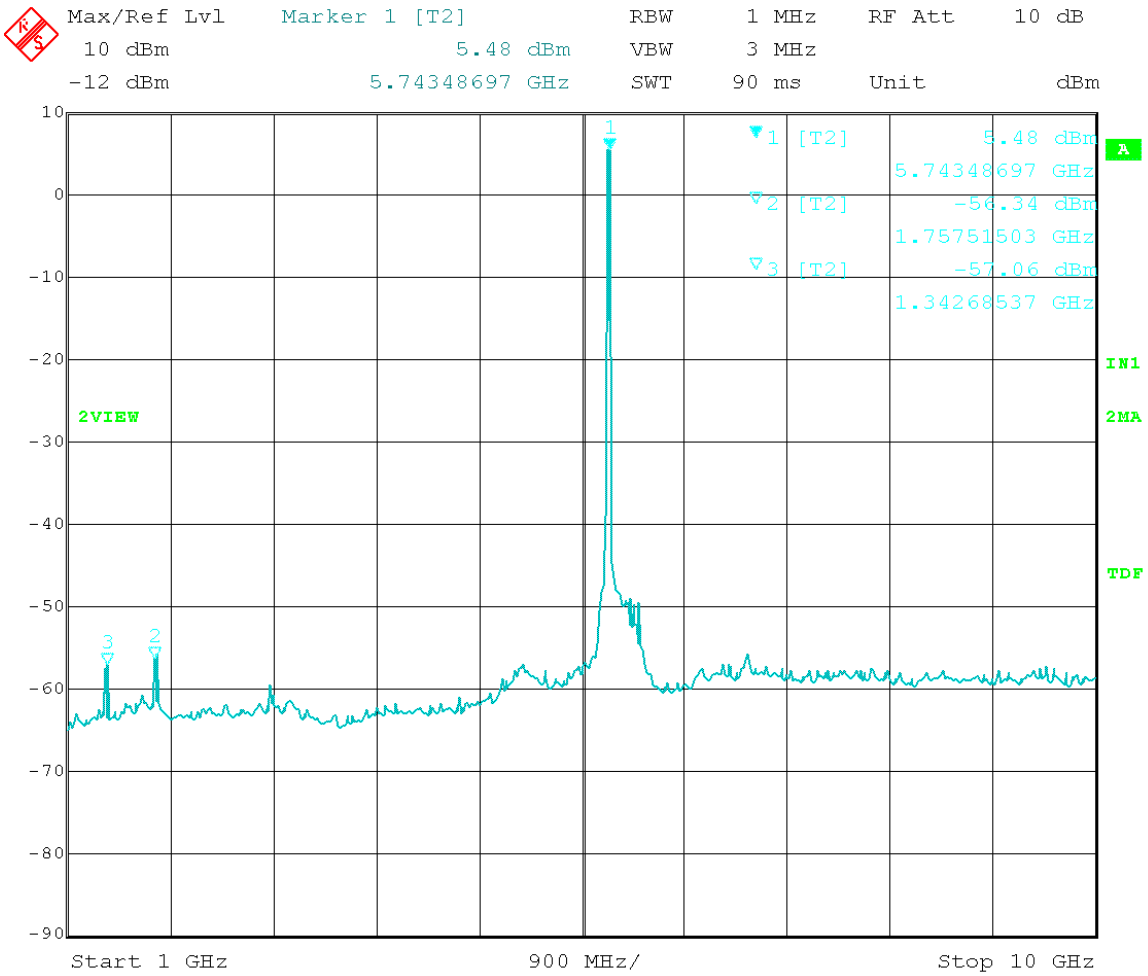
Marker 1: Calculated Field Strength (Restricted Band) = -73.09+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 41.14dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 14:11:03

Marker 2: Calculated Field Strength (Restricted Band) = -56.34 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 57.89dBµV/m Peak

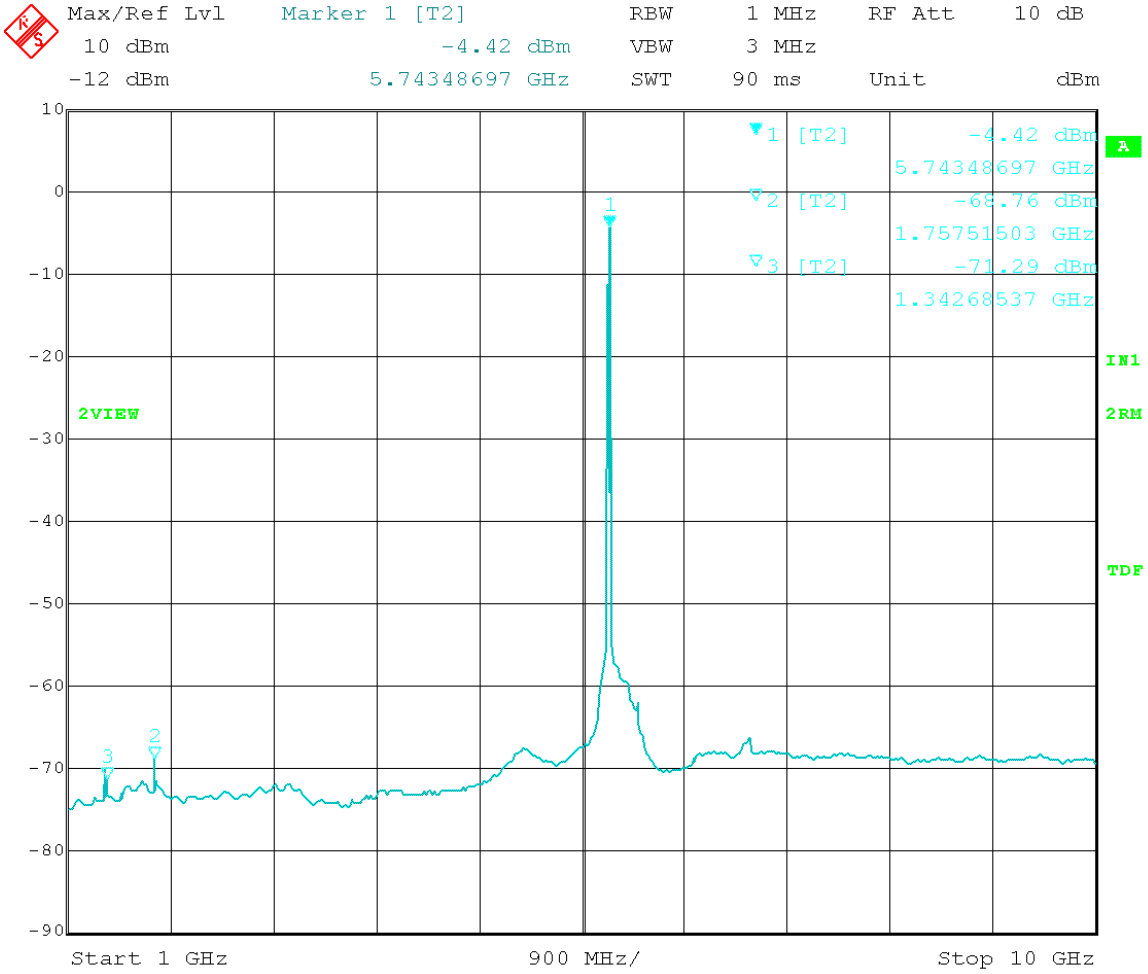
Marker 3: Calculated Field Strength (Restricted Band) = -57.06 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 56.63dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 14:09:31

Marker 2: Calculated Field Strength (Restricted Band) = -68.76+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 45.47dBµV/m Average

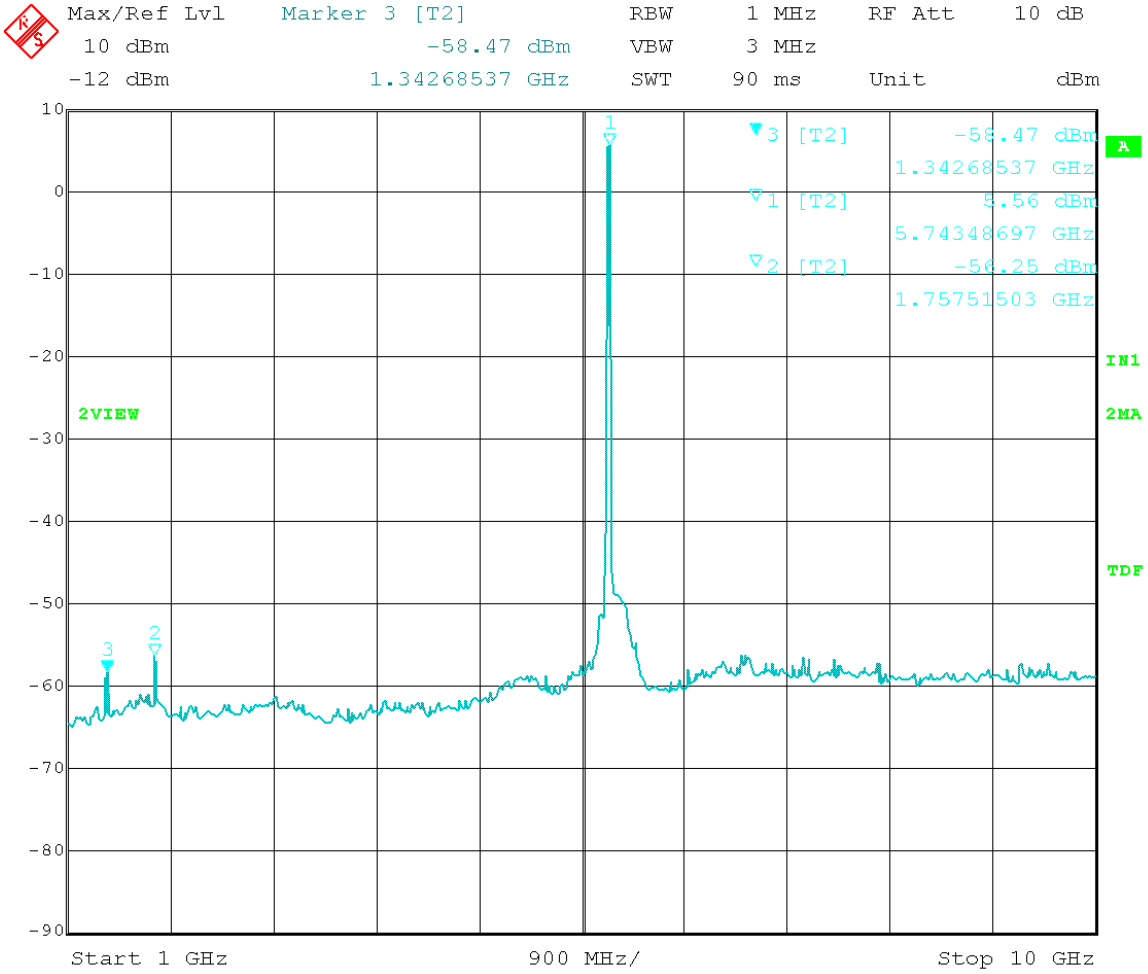
Marker 3: Calculated Field Strength (Restricted Band) = -71.29 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 42.94dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 13:59:38

Marker 2: Calculated Field Strength (Restricted Band) = -56.25 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 57.98dBµV/m Peak

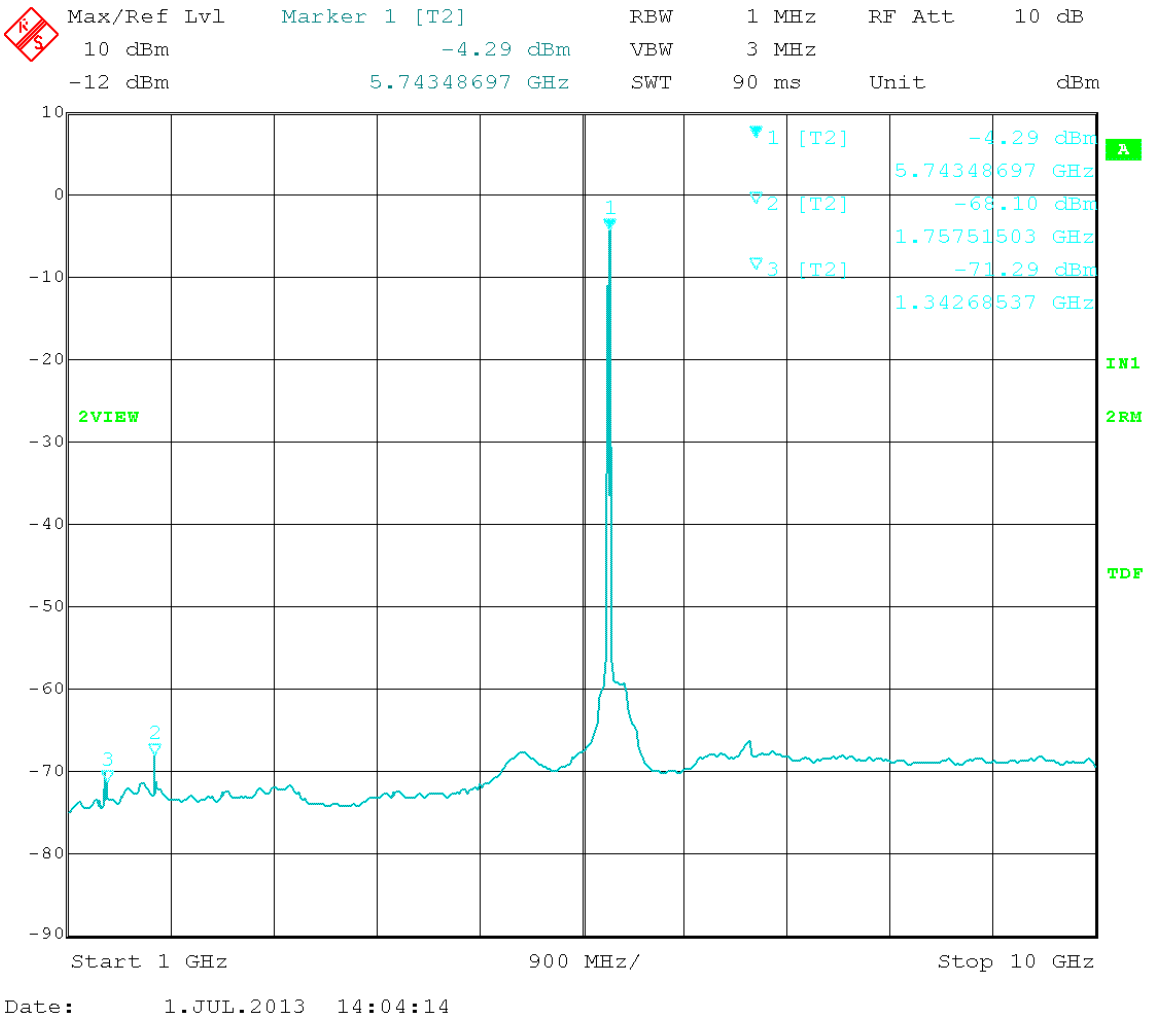
Marker 3: Calculated Field Strength (Restricted Band) = -58.47 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 55.76dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



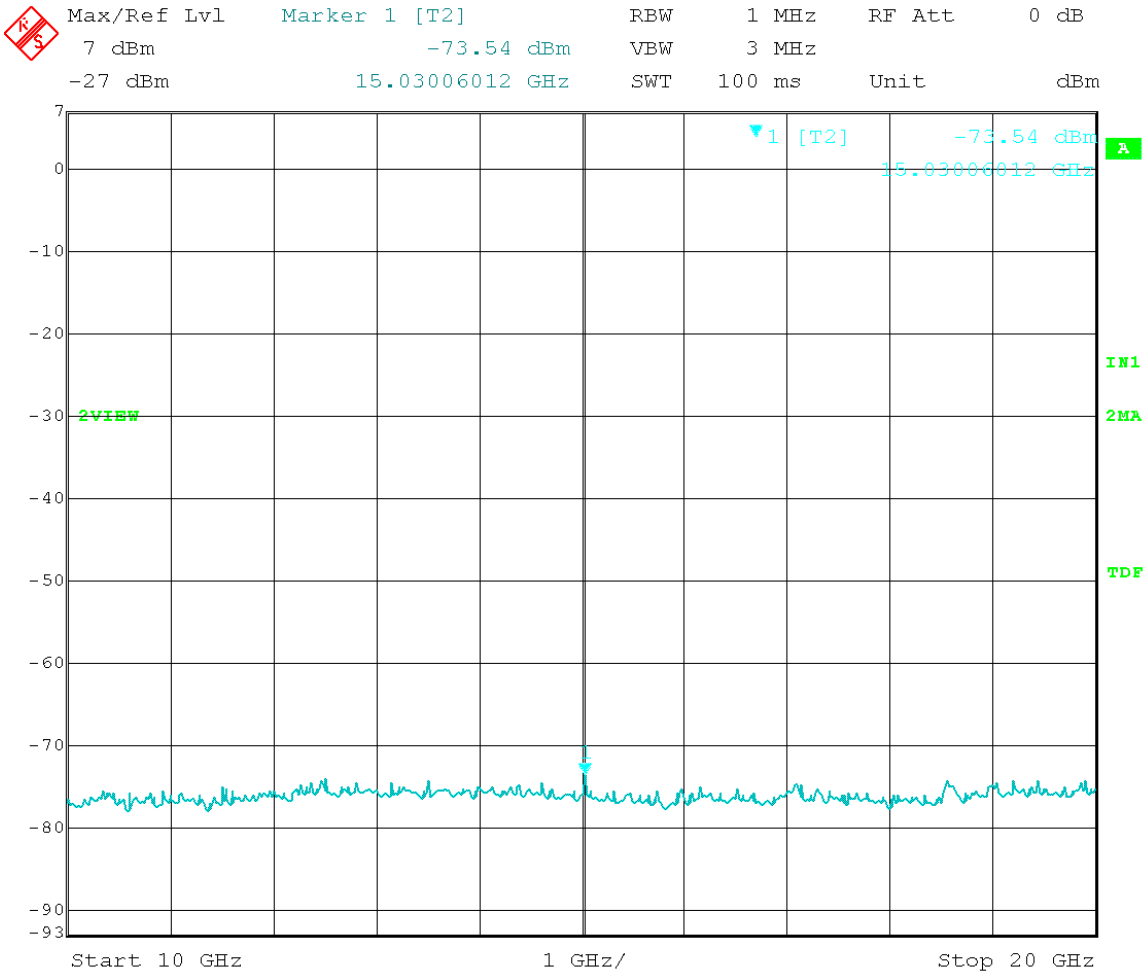
Marker 2: Calculated Field Strength (Restricted Band) = -68.10 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 46.13dBµV/m Average
Marker 3: Calculated Field Strength (Restricted Band) = -71.29 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 42.94dBµV/m Average

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:23:13

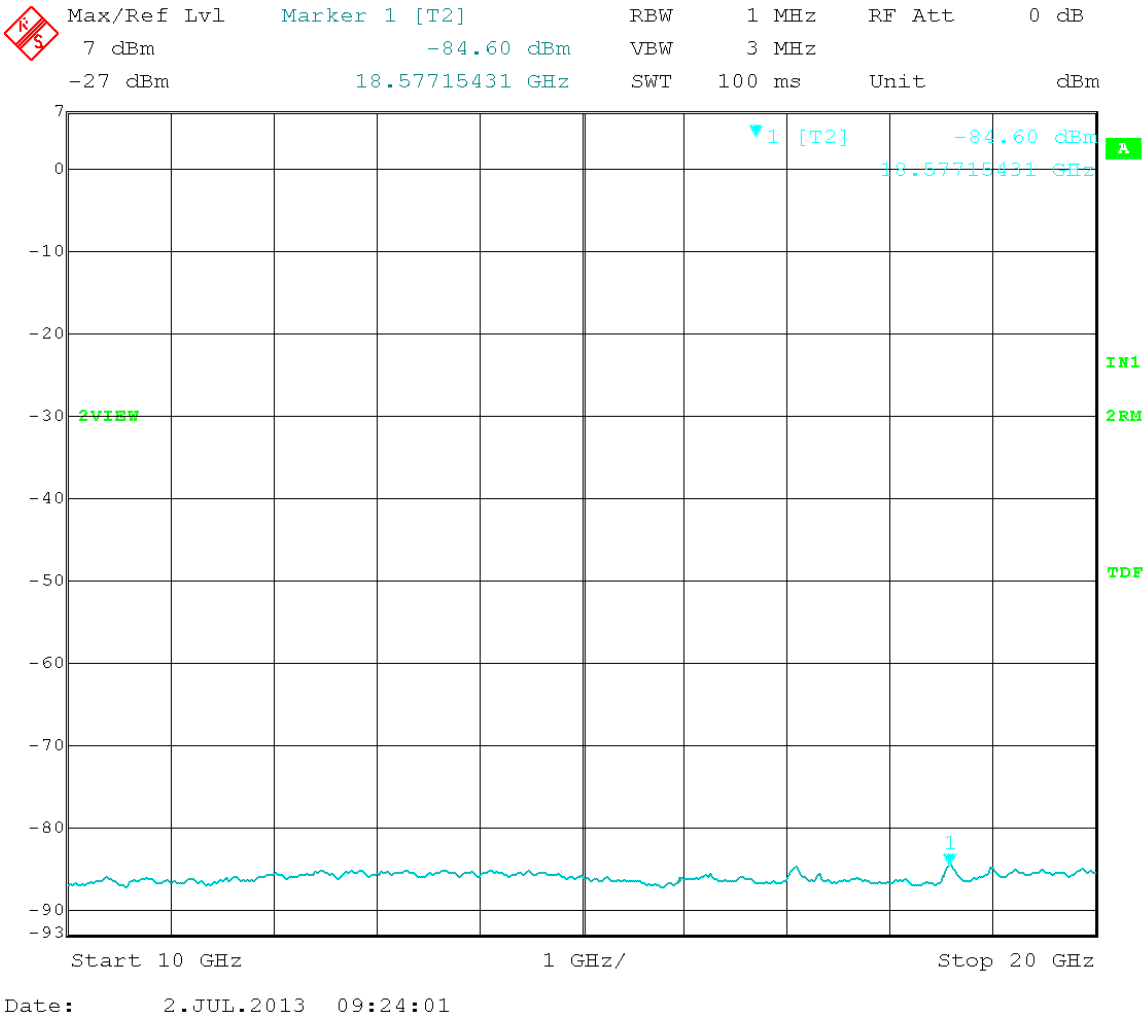
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



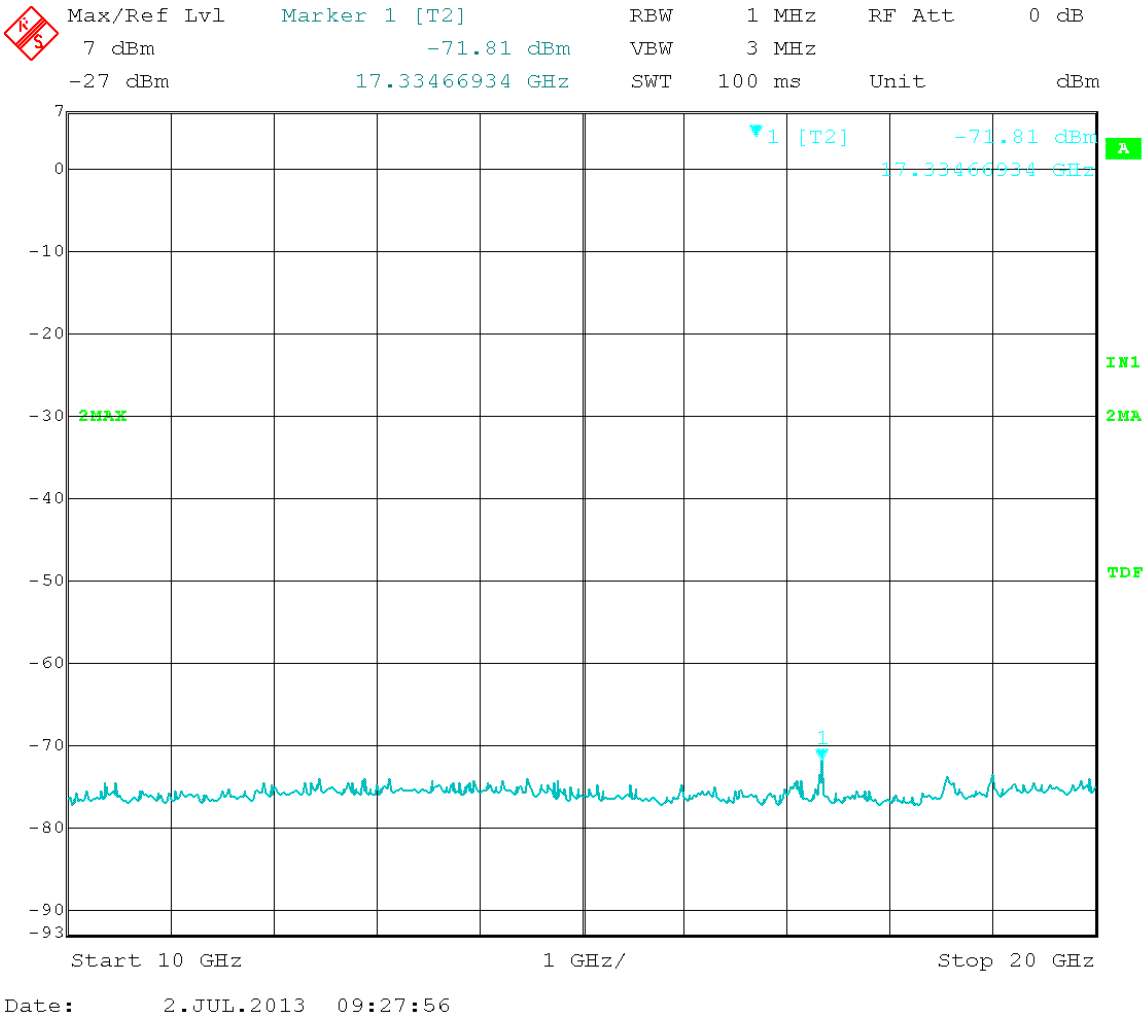
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:27:56

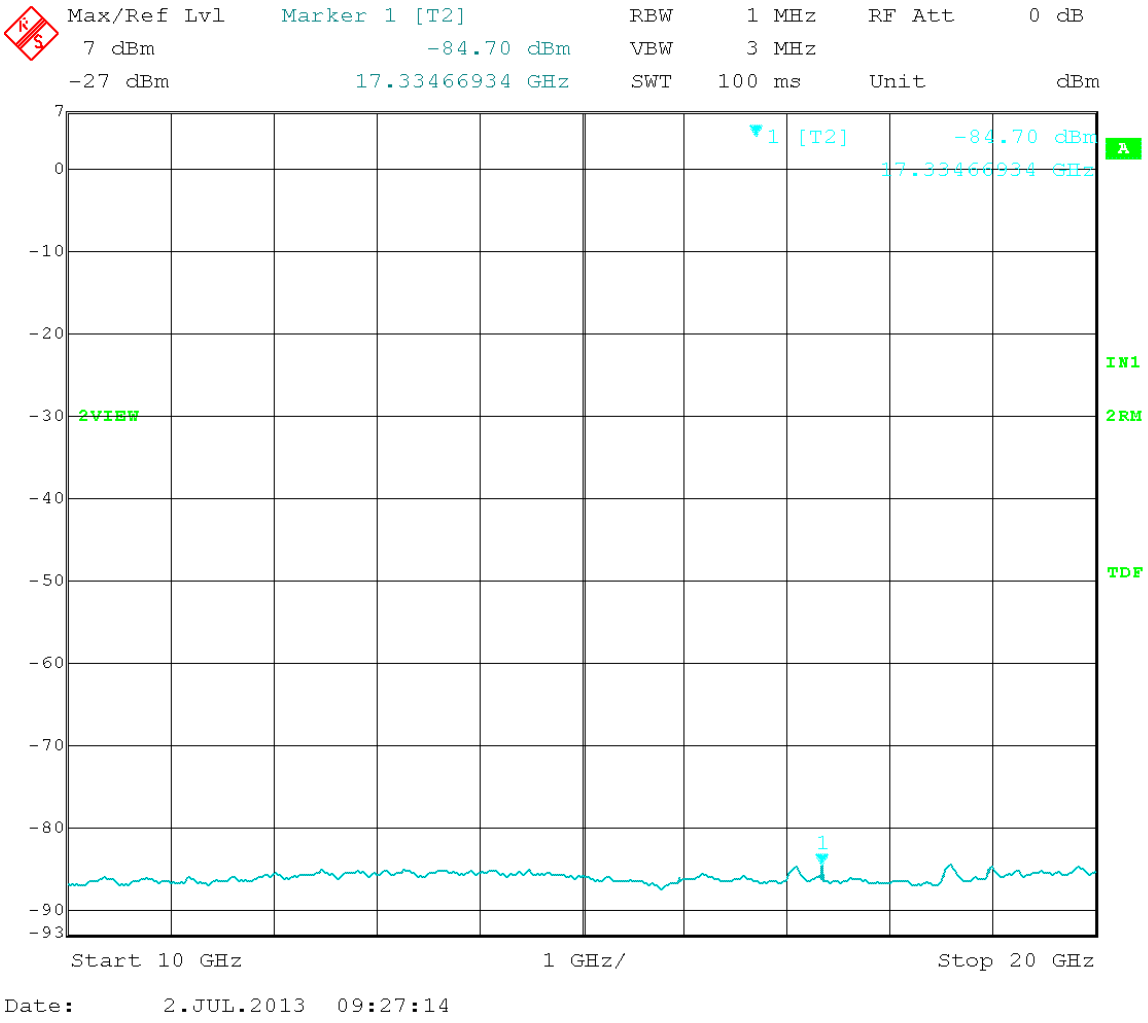
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



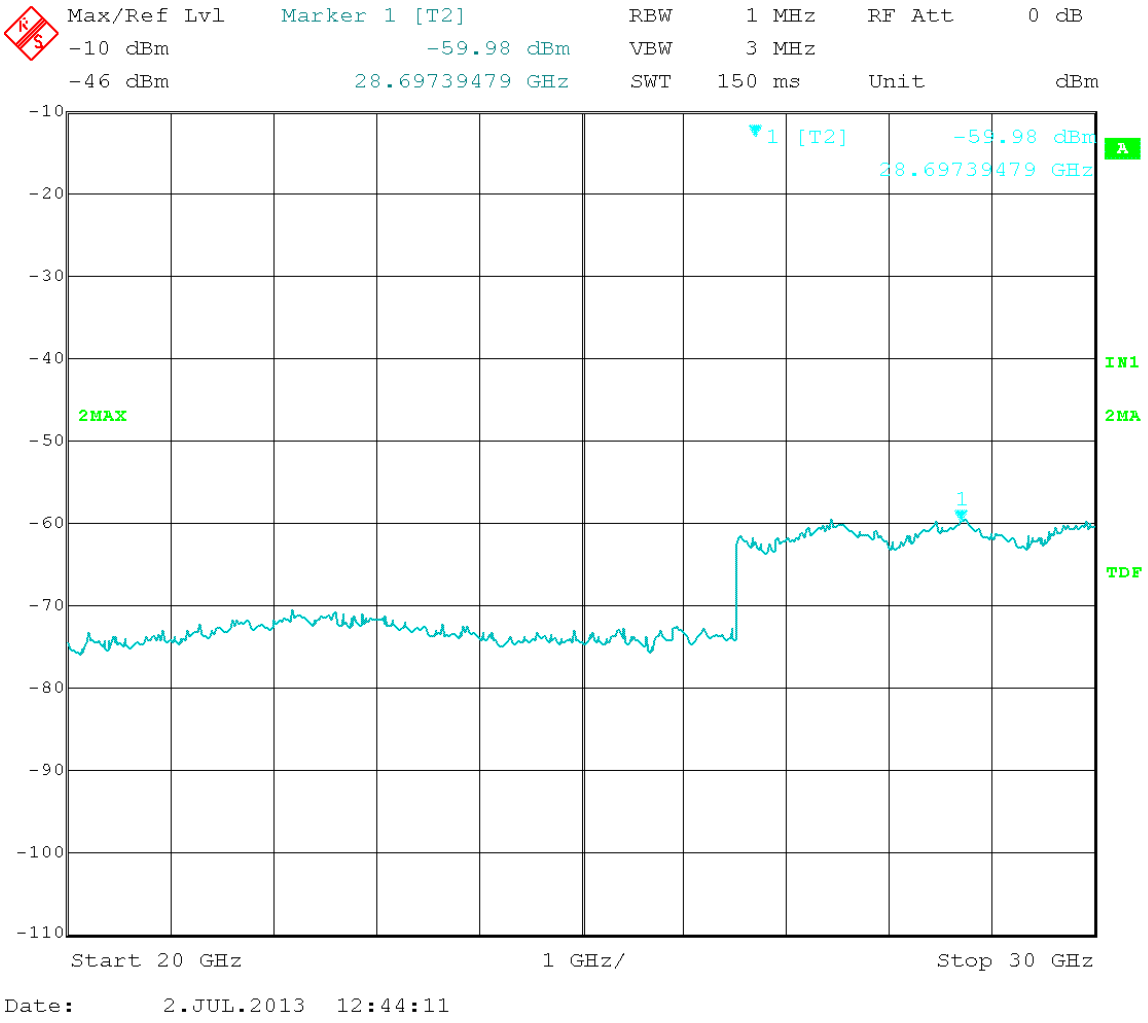
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



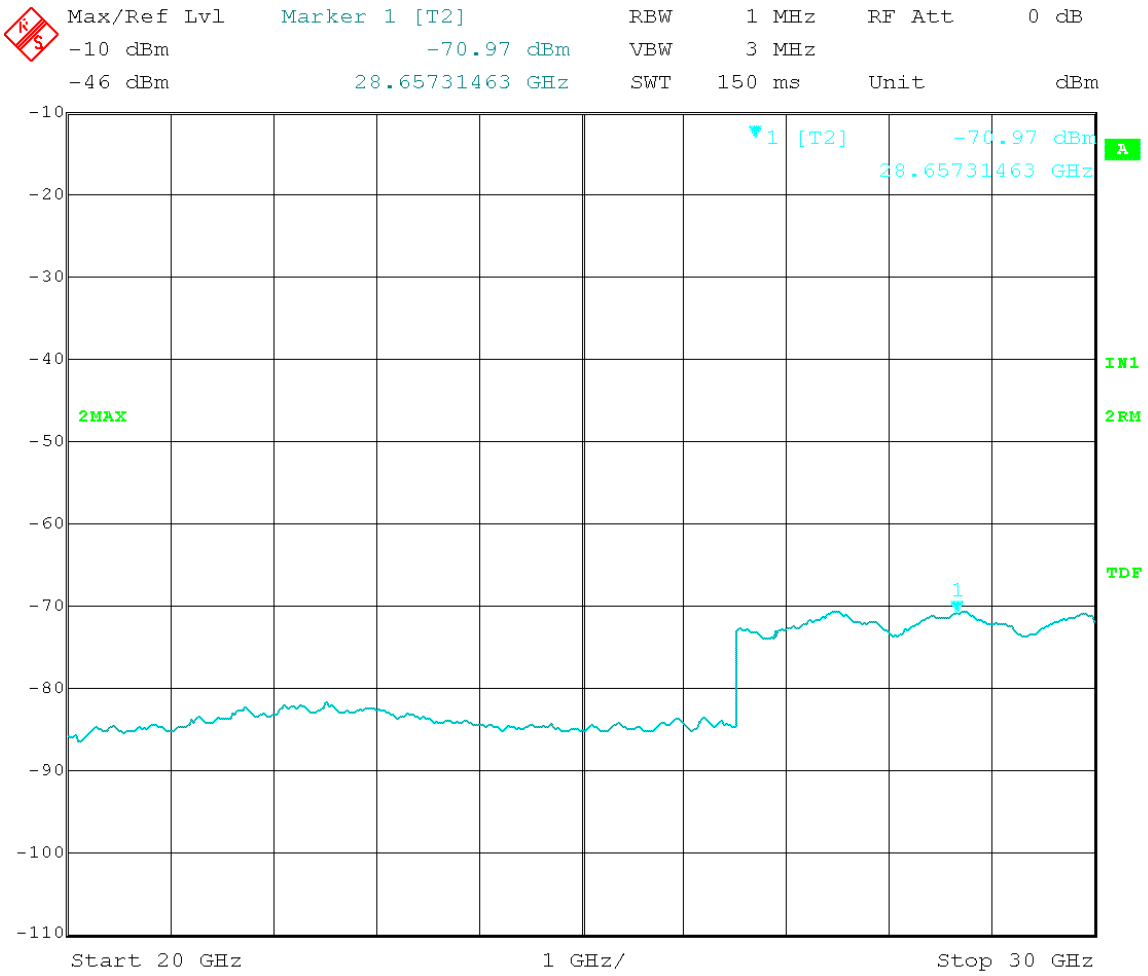
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 12:44:57

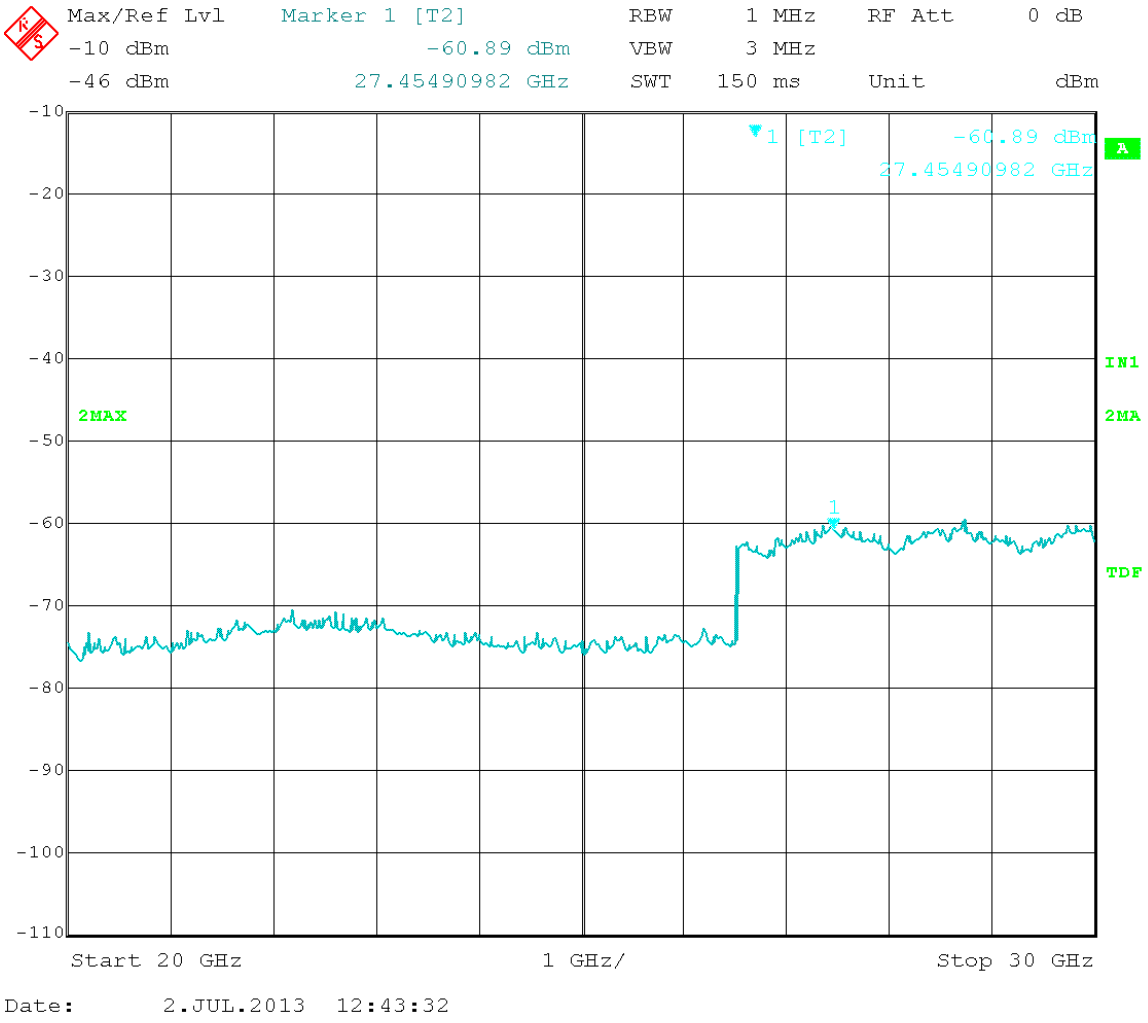
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



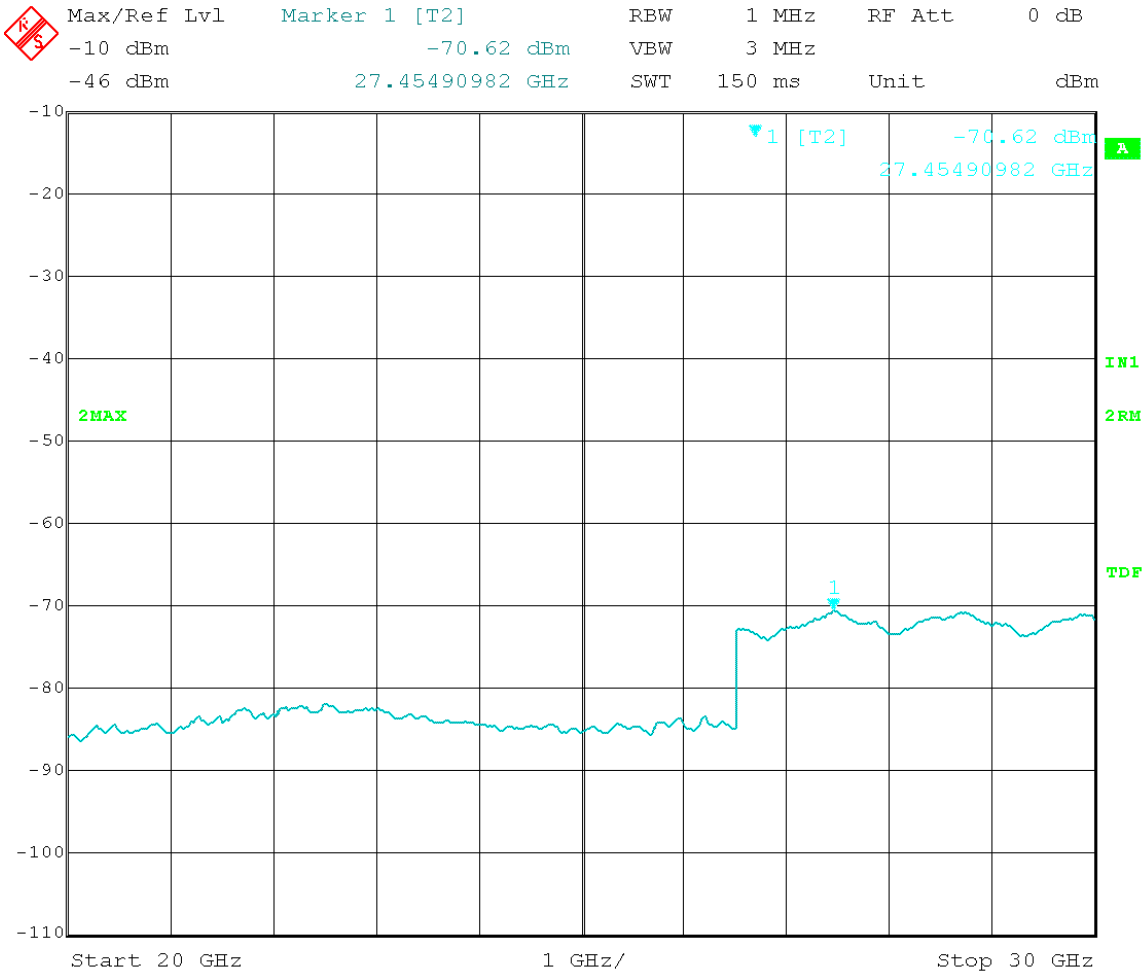
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 12:43:05

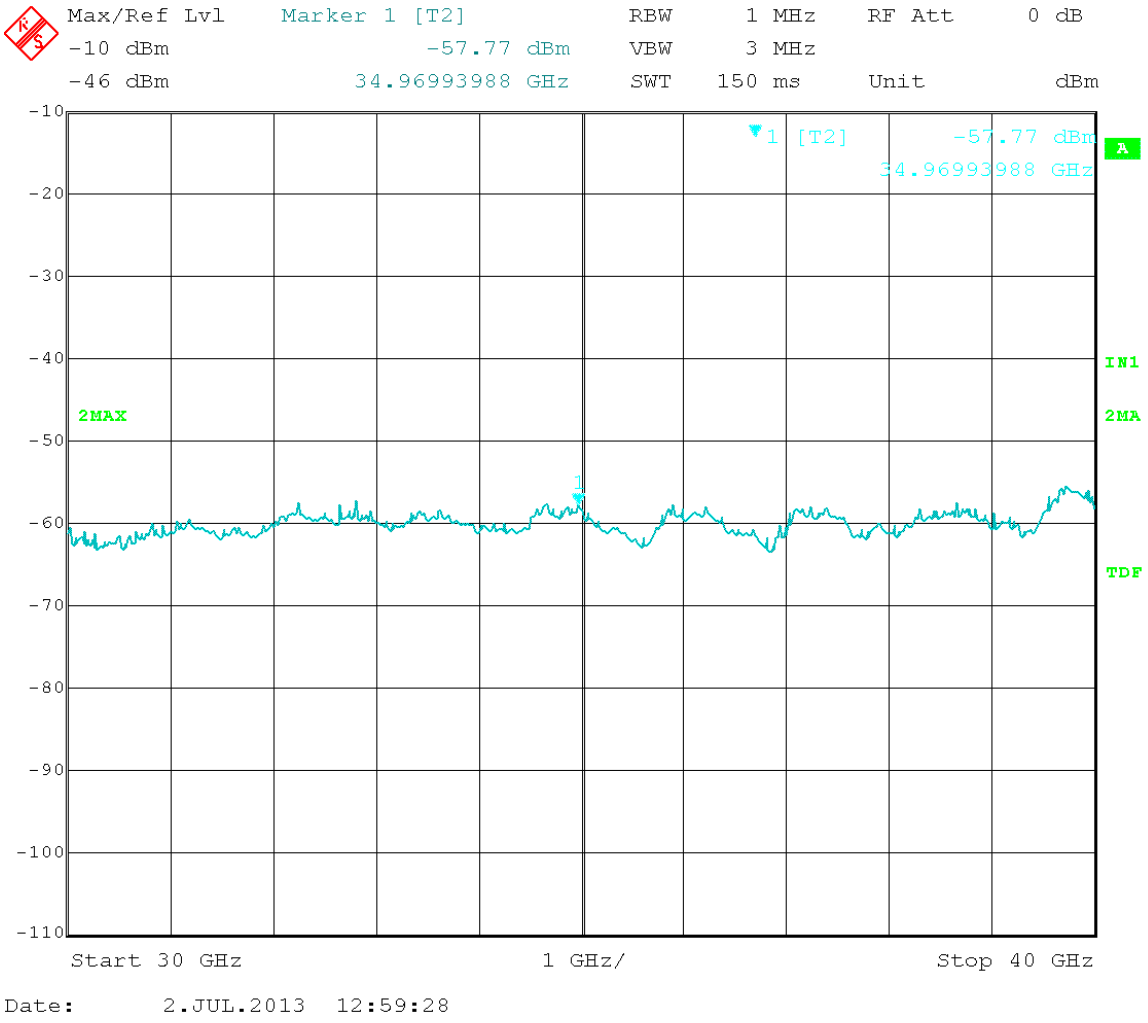
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 12:59:28

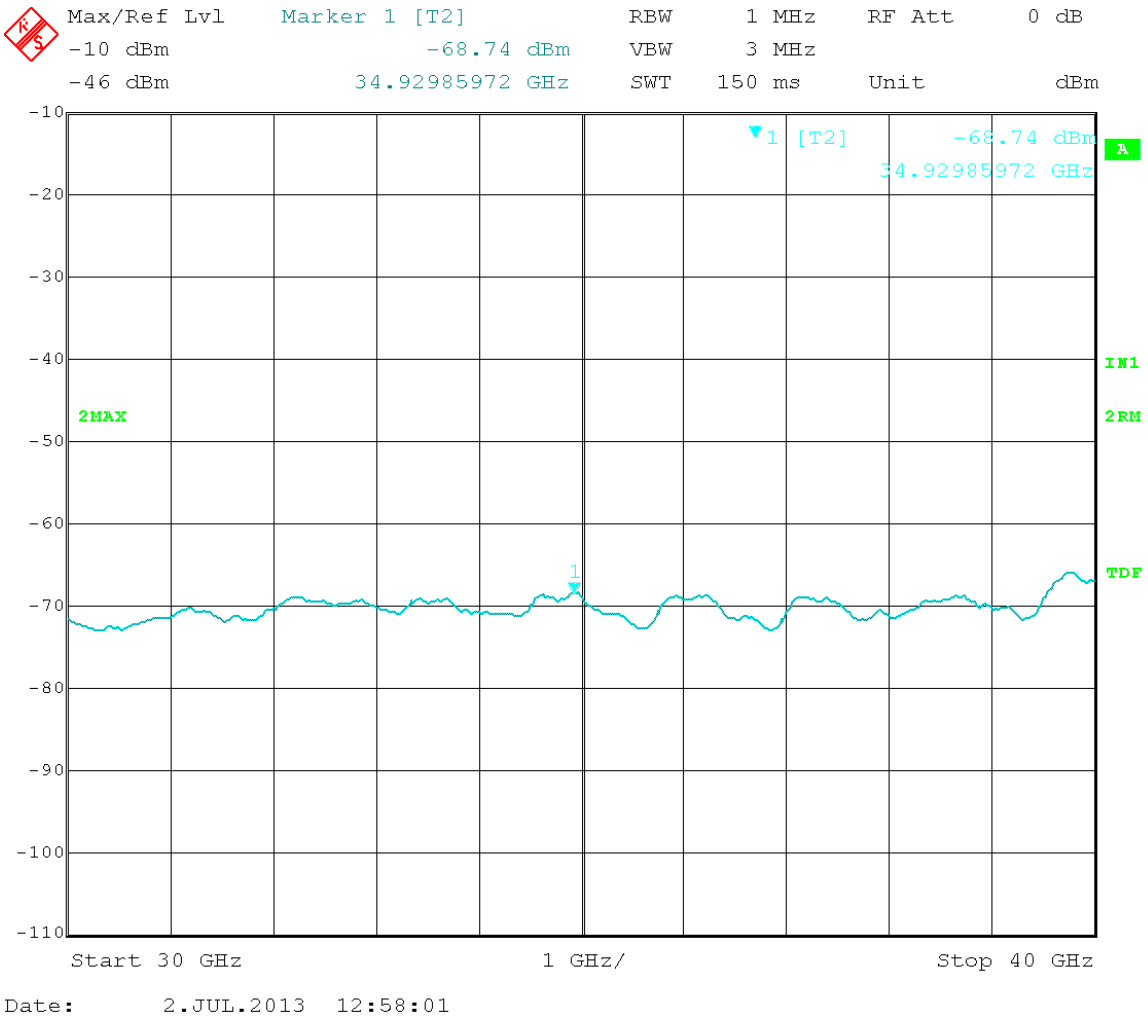
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



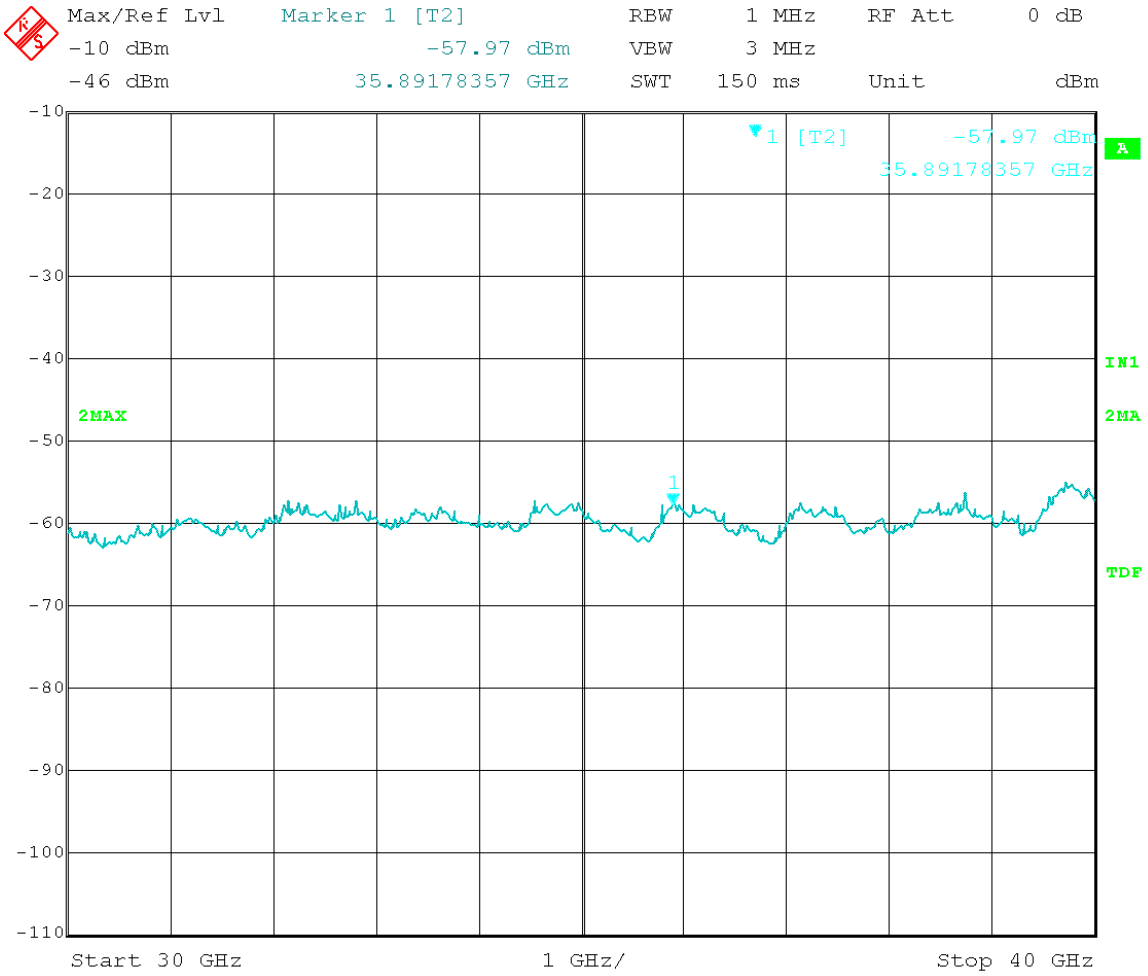
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 13:00:11

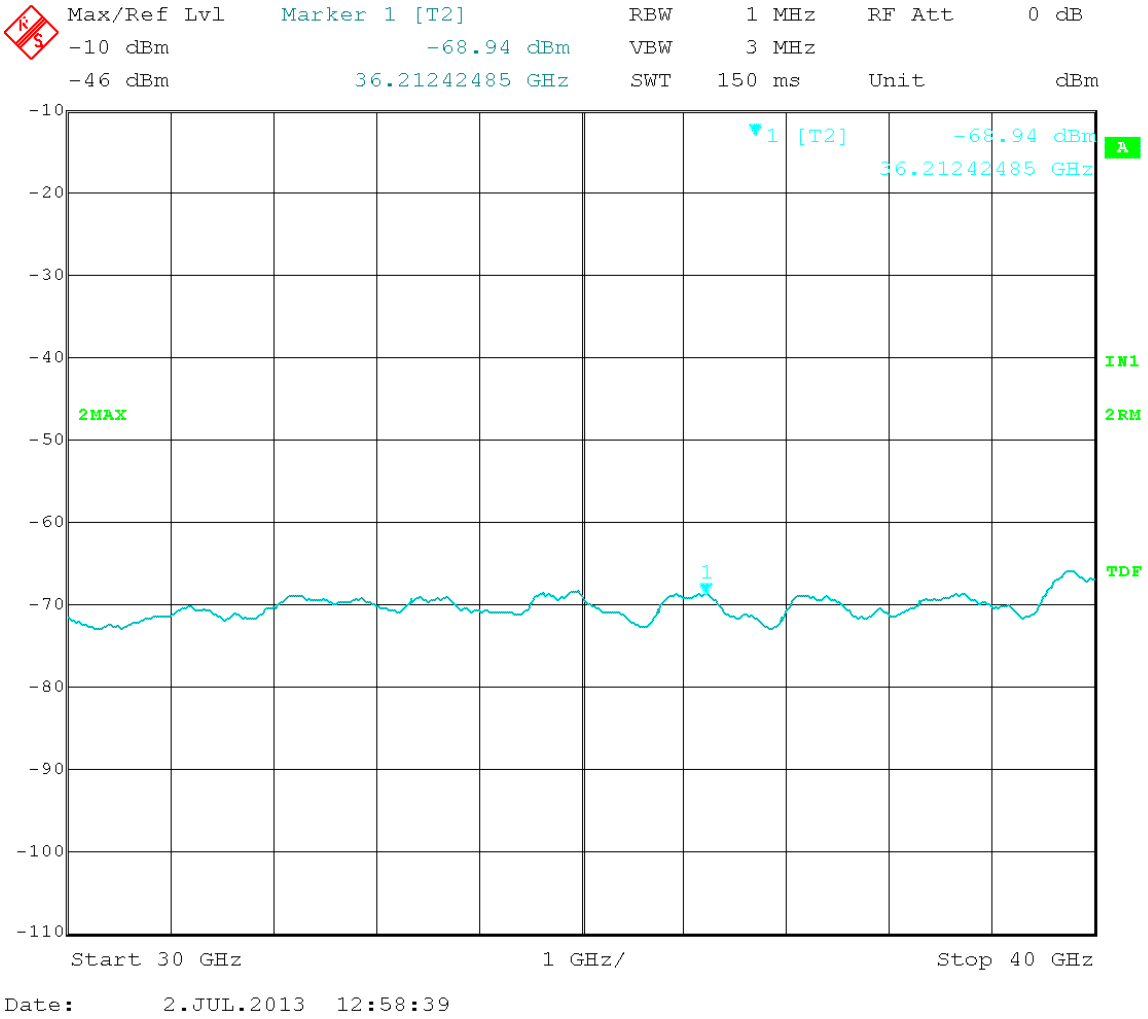
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.775 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 12:58:39

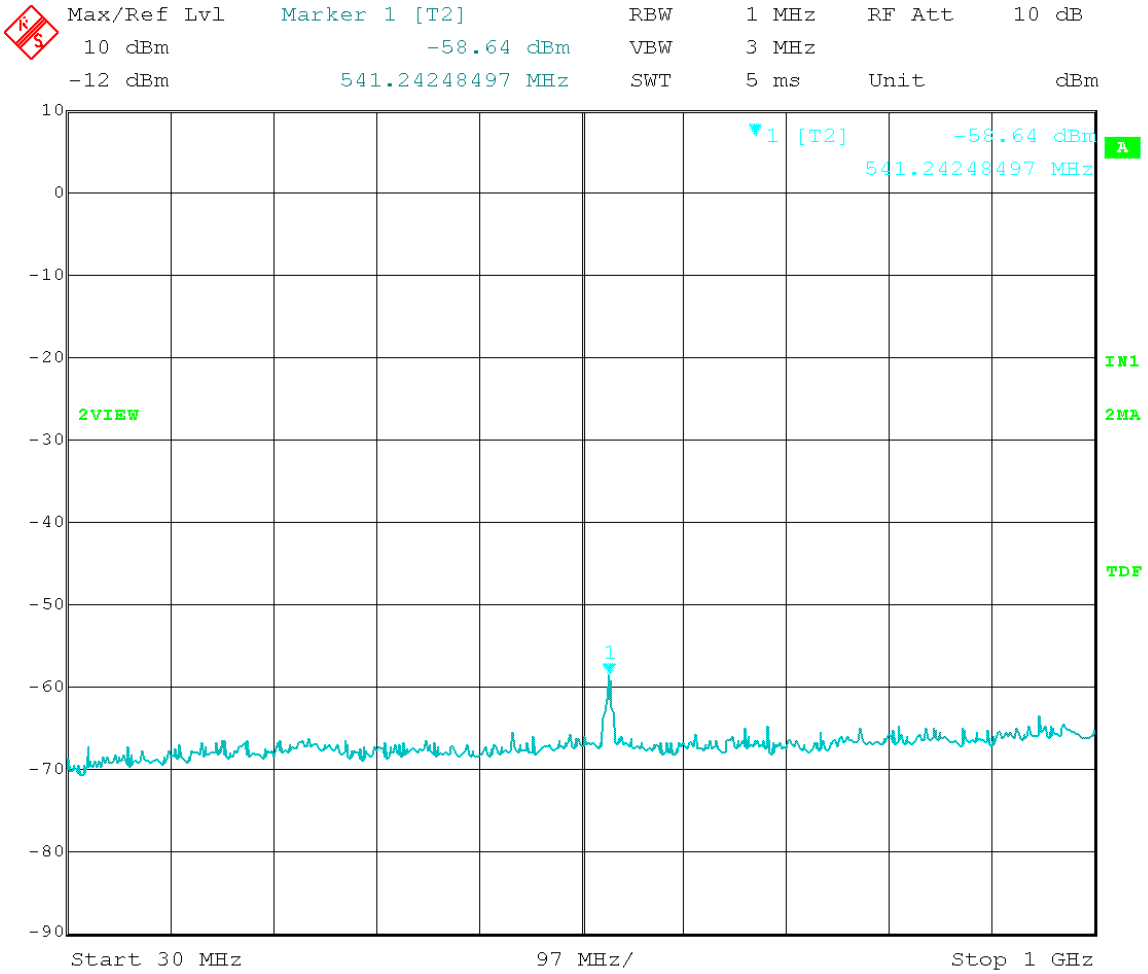
Marker 1: Greater than 20dB below limit

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 14:49:11

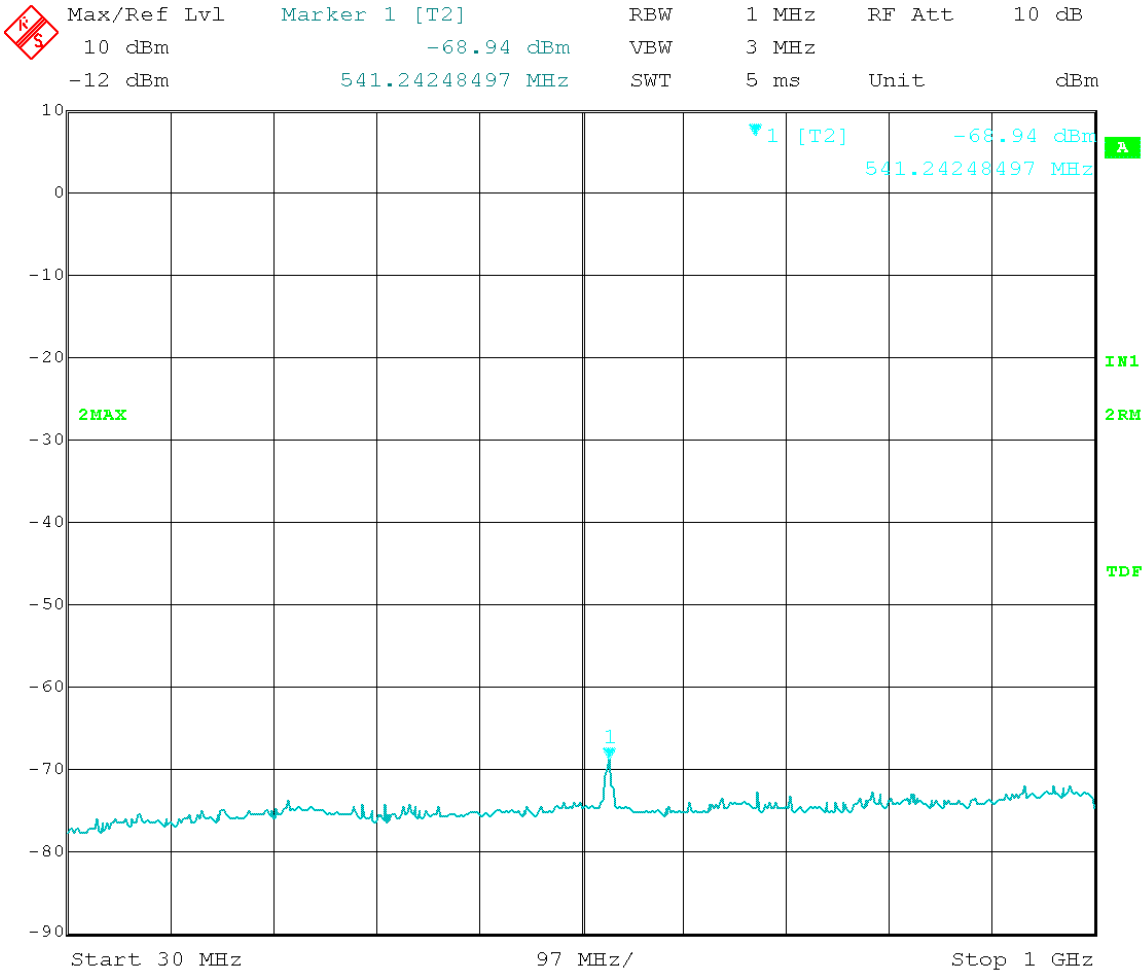
Marker 1: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 14:49:53

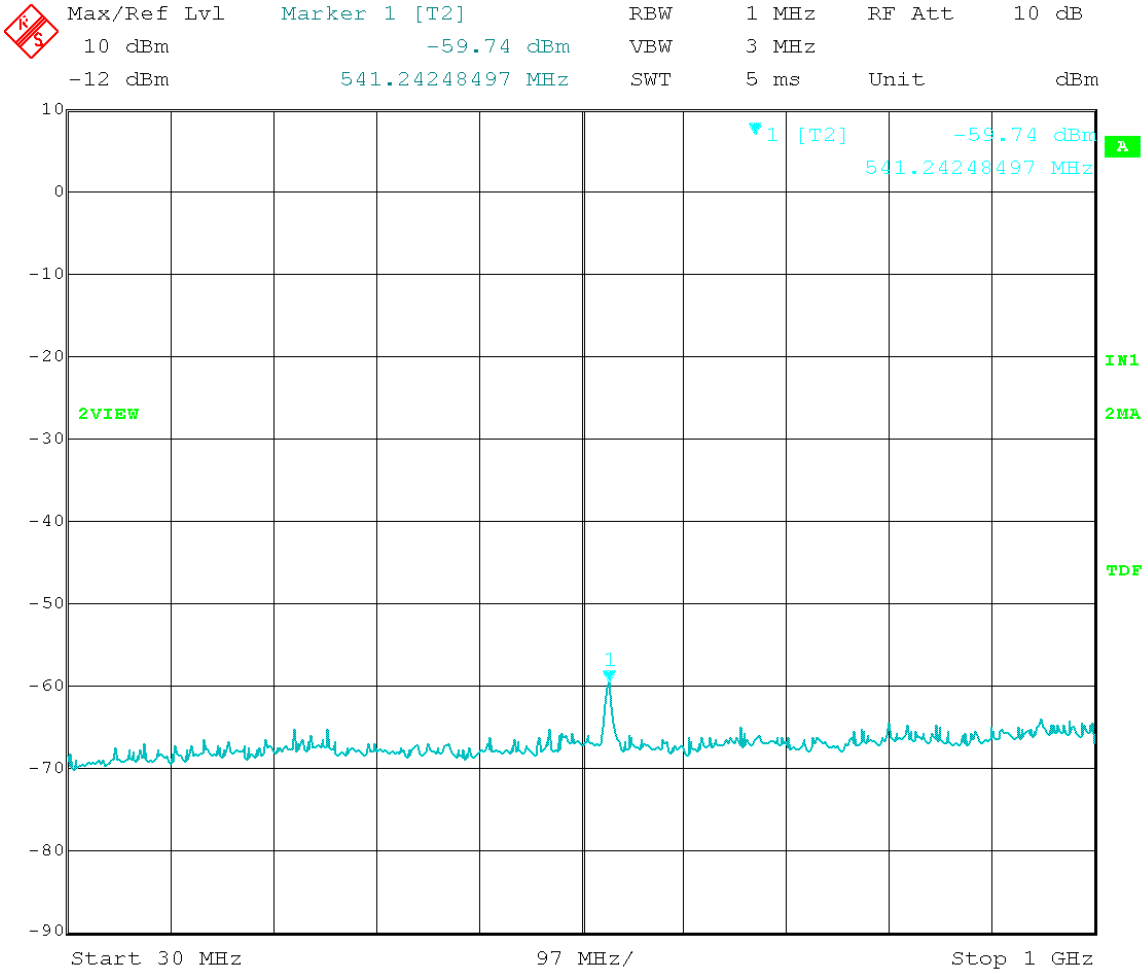
Marker 1: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 14:52:46

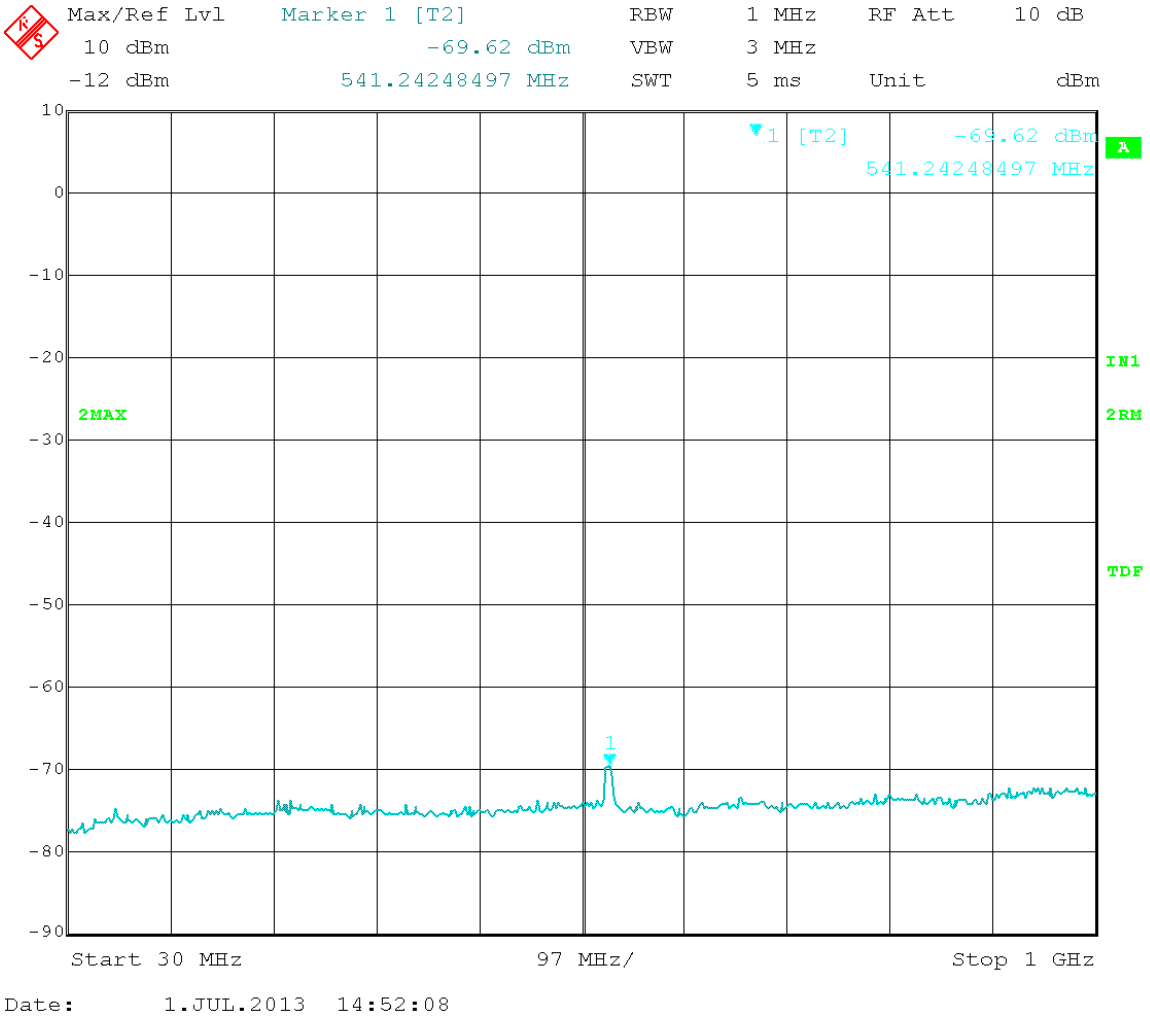
Marker 1: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



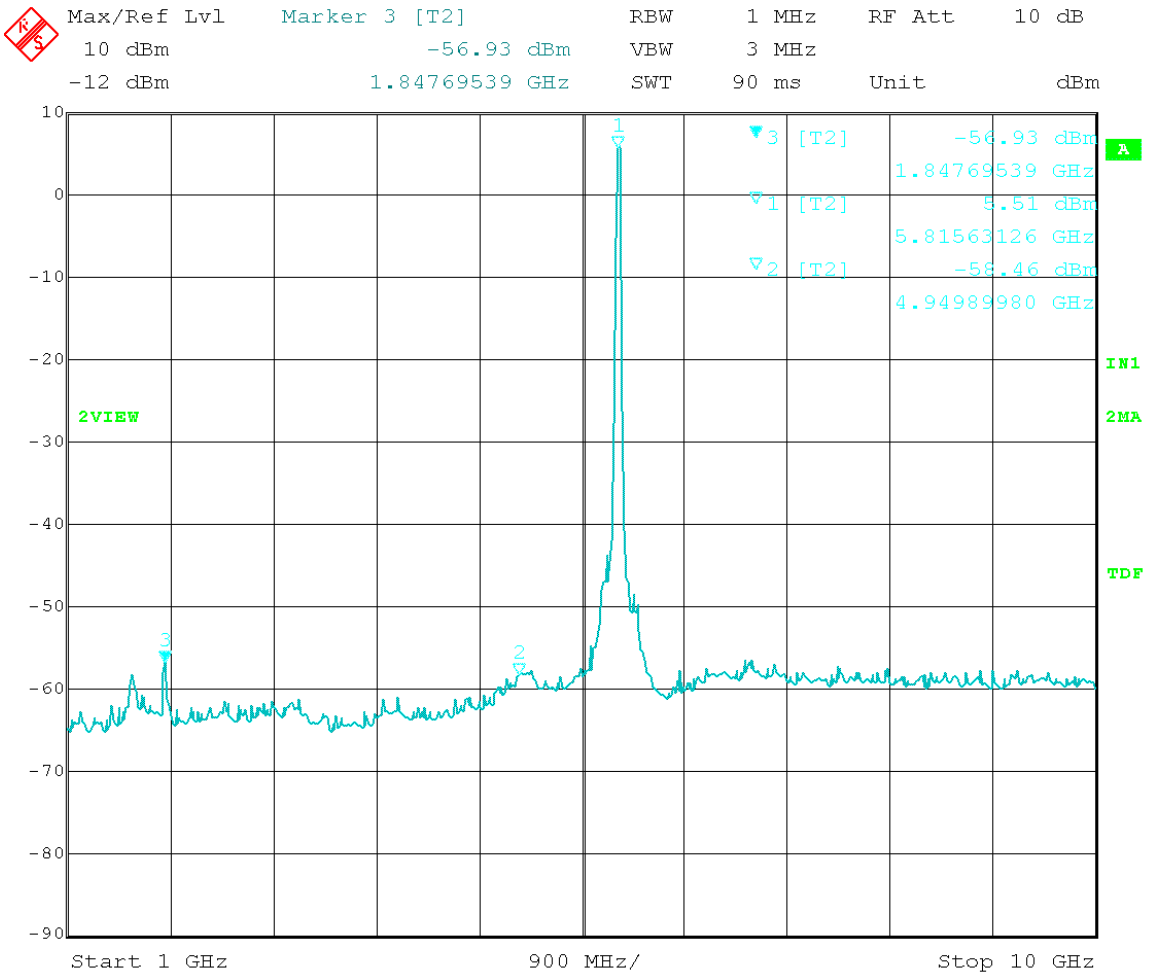
Marker 1: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:19:36

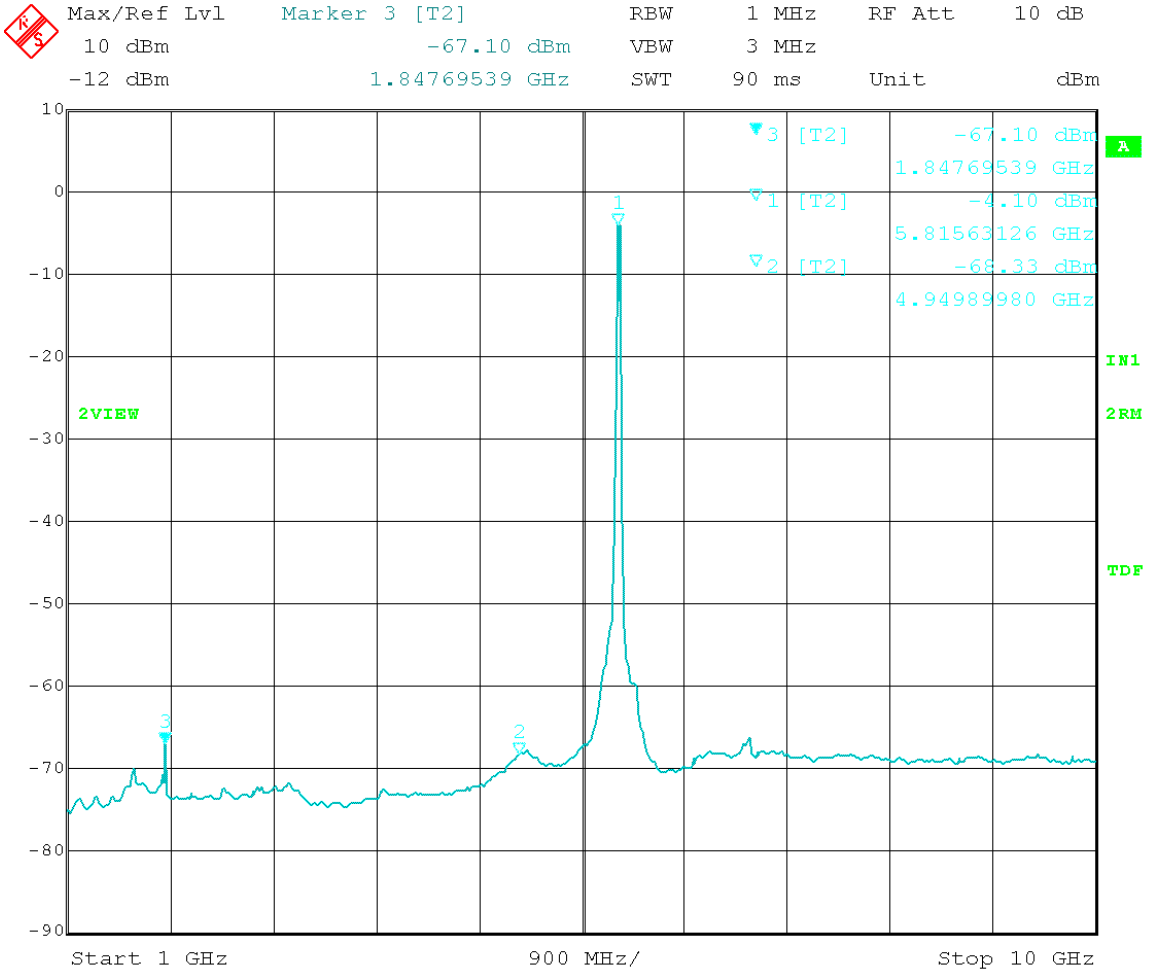
Marker 2: Calculated Field Strength (Restricted Band) = -58.46 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 55.77dBµV/m Peak
Marker 3: Calculated Field Strength (Restricted Band) = -56.93 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 57.3dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:17:26

Marker 2: Calculated Field Strength (Restricted Band) = -68.33+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 45.9dBµV/m Average

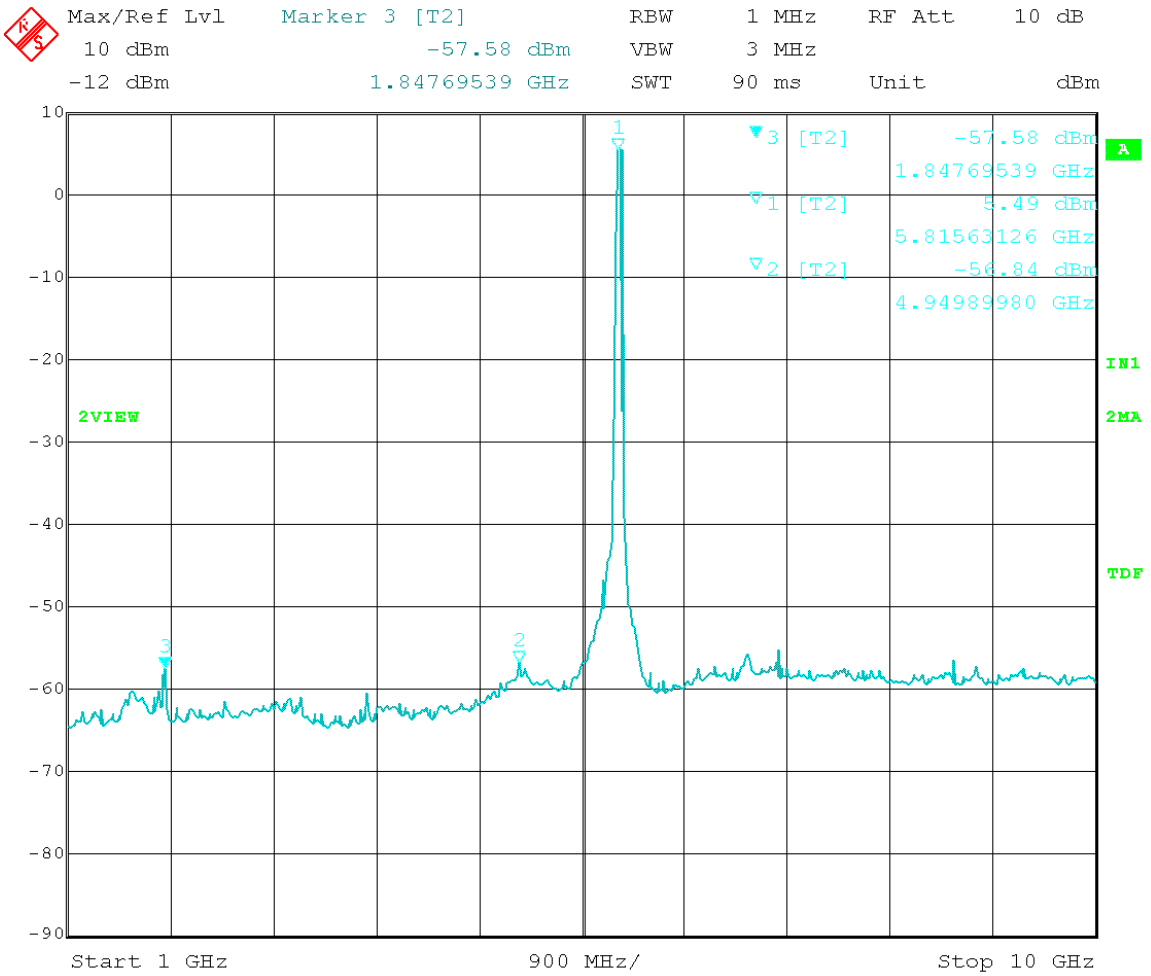
Marker 3: Calculated Field Strength (Restricted Band) = -67.10 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 47.13dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:08:49

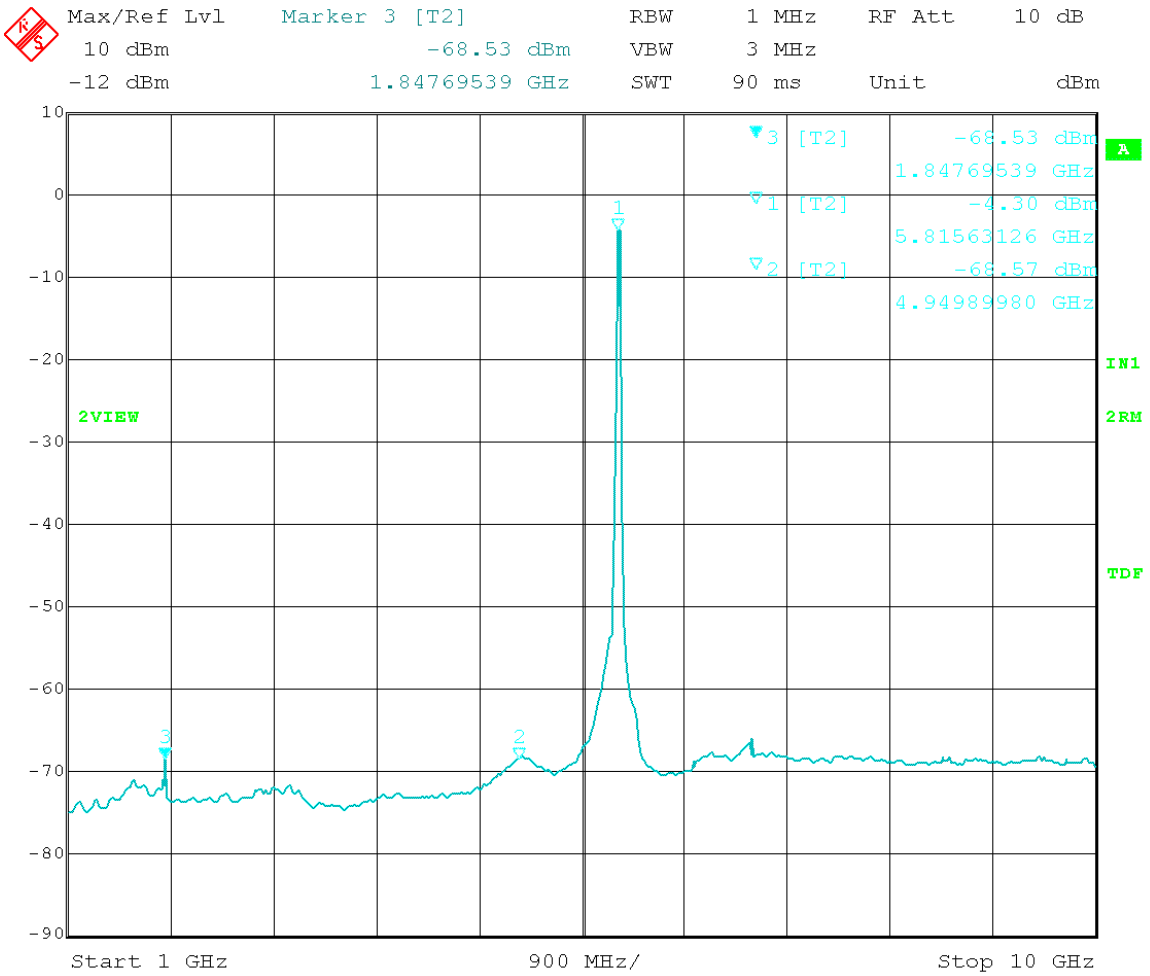
Marker 2: Calculated Field Strength (Restricted Band) = -56.84 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 57.39dBµV/m Peak
Marker 3: Calculated Field Strength (Restricted Band) = -57.58 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 56.65dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 20 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:13:04

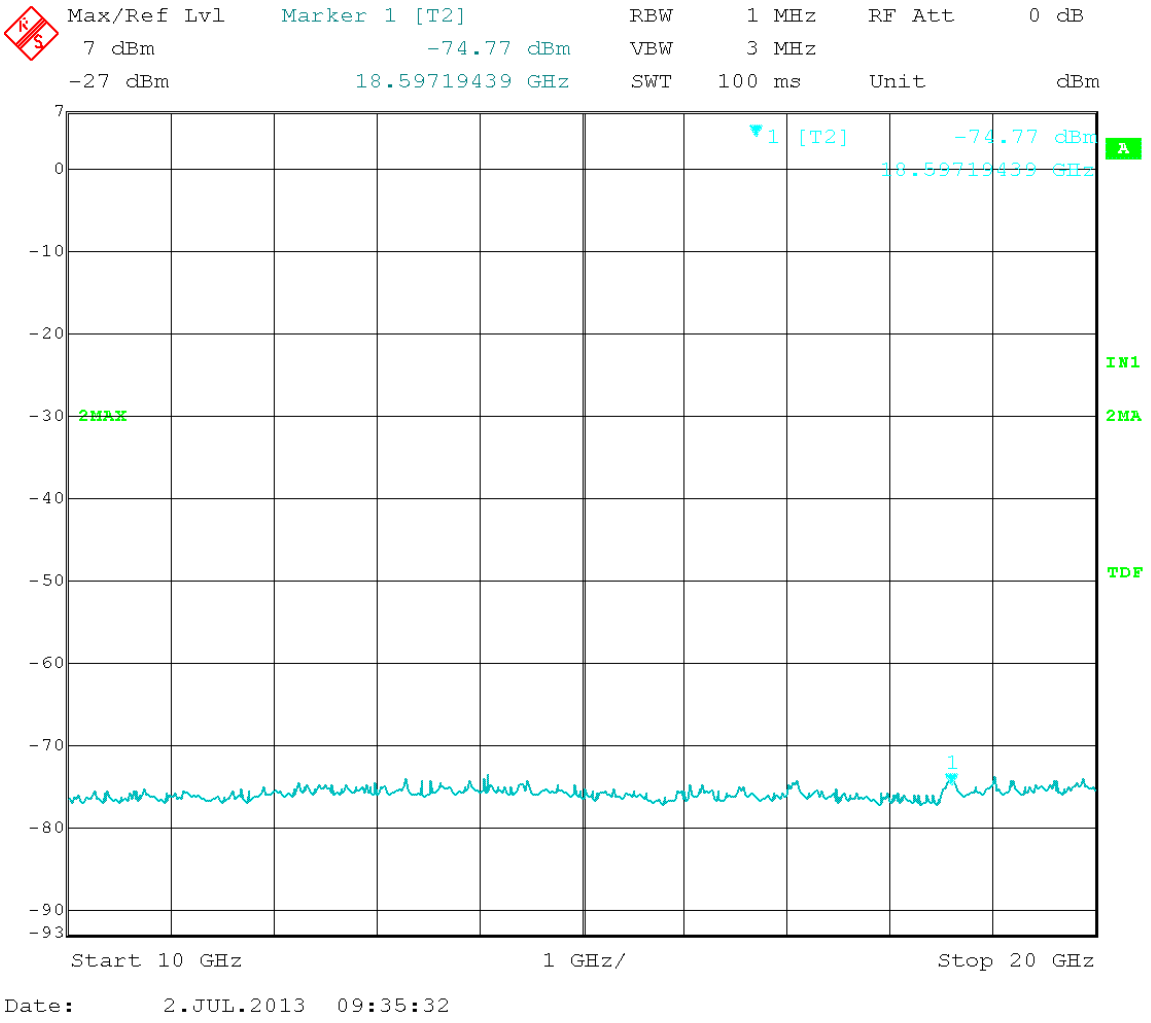
Marker 2: Calculated Field Strength (Restricted Band) = -68.57 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 45.66dBµV/m Average
Marker 3: Calculated Field Strength (Restricted Band) = -68.53 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 45.62dBµV/m Average

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



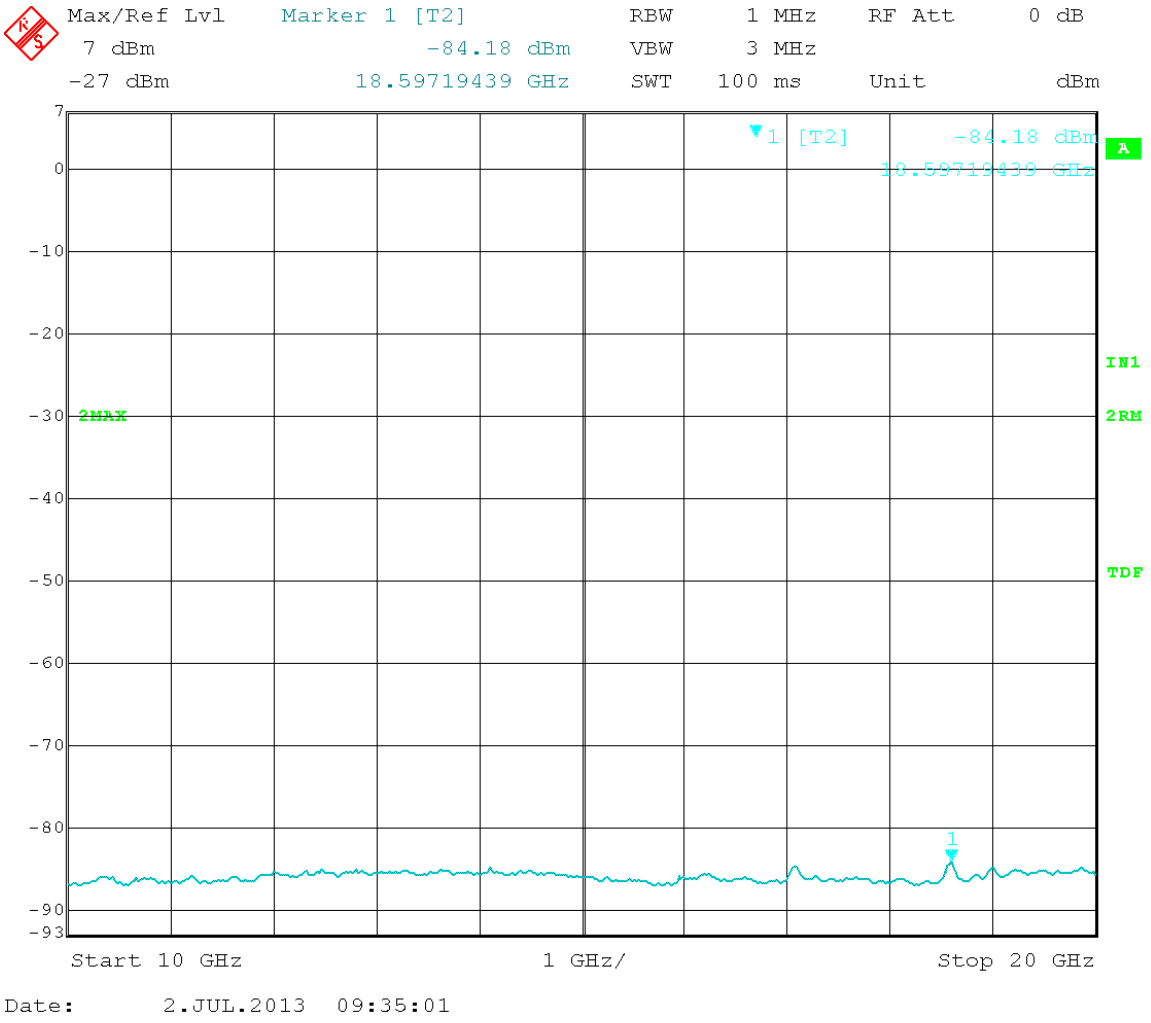
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



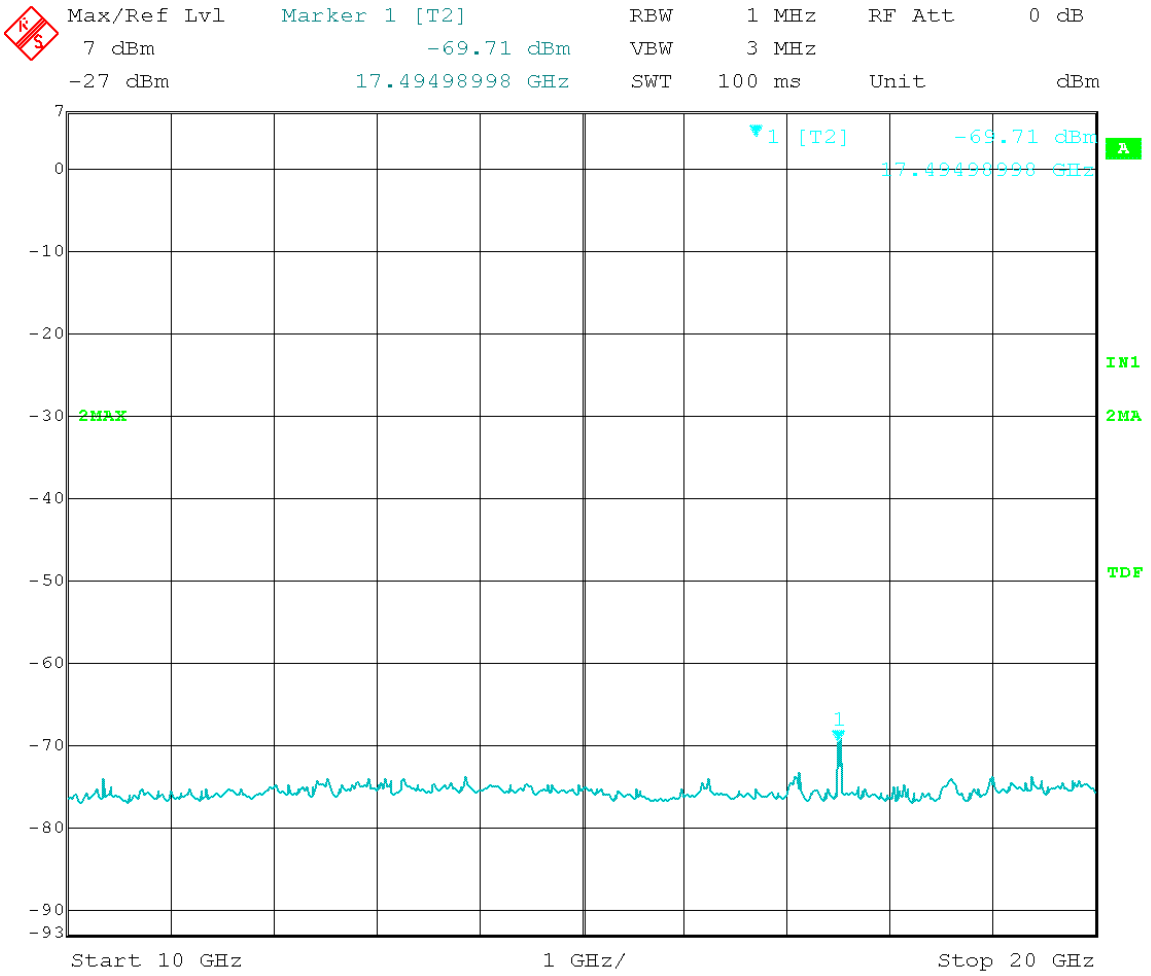
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:32:13

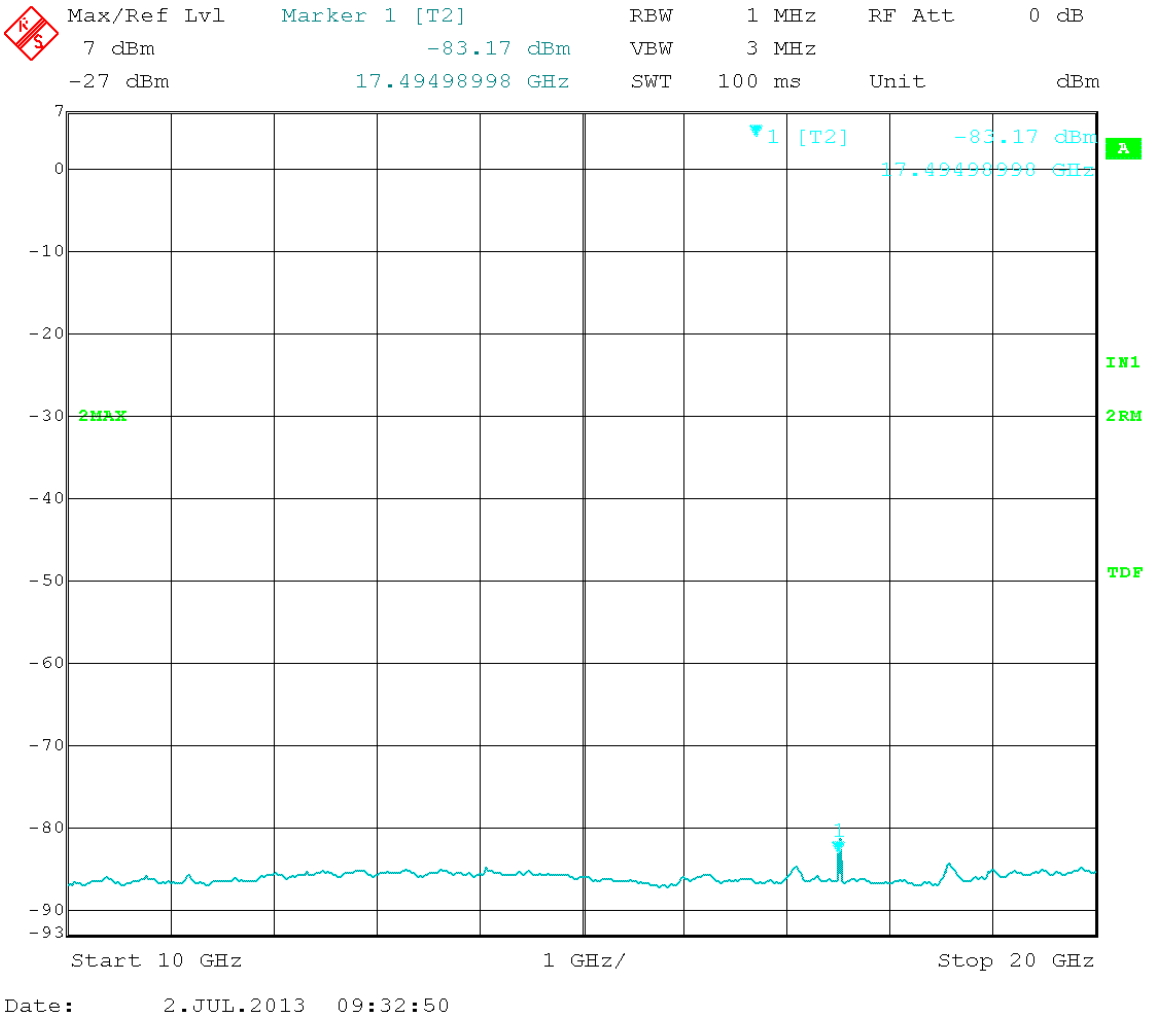
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:32:50

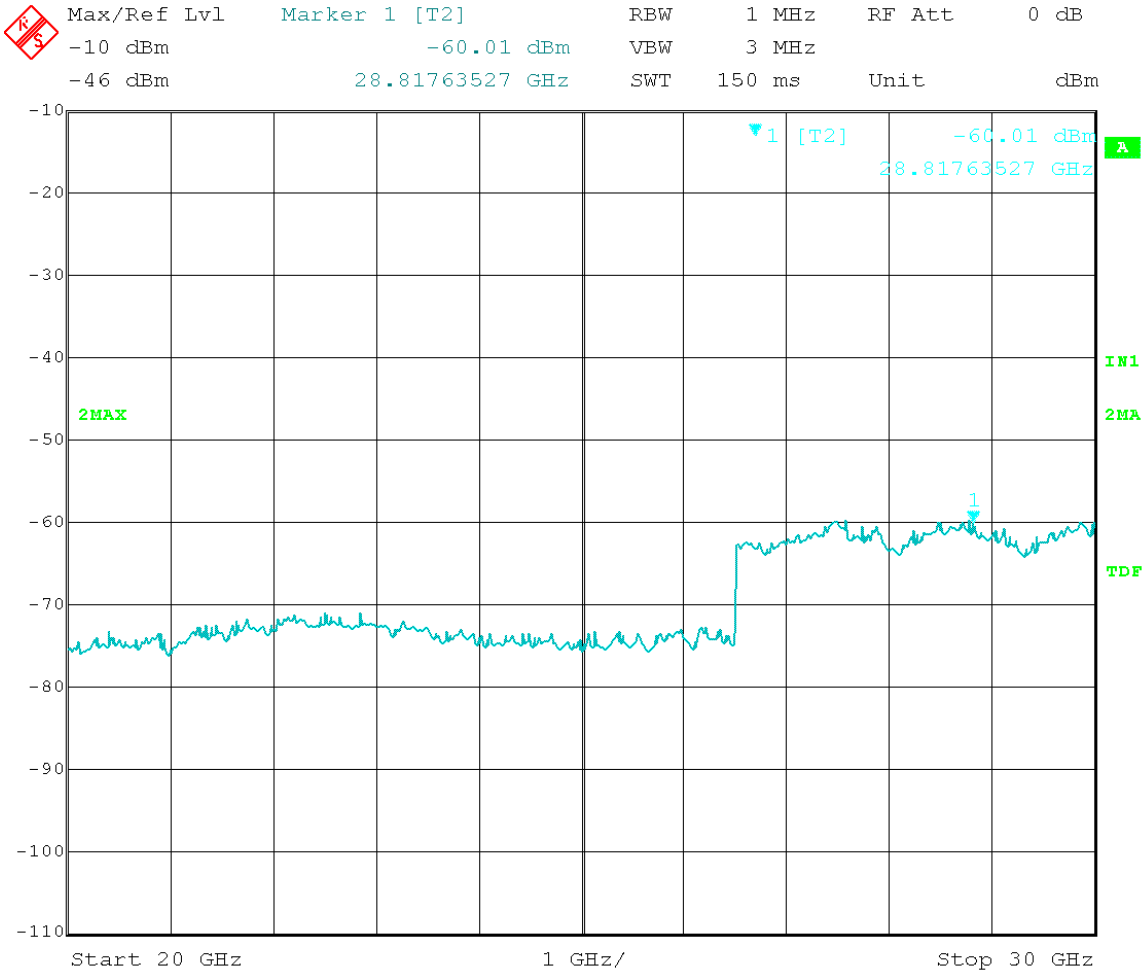
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 12:49:24

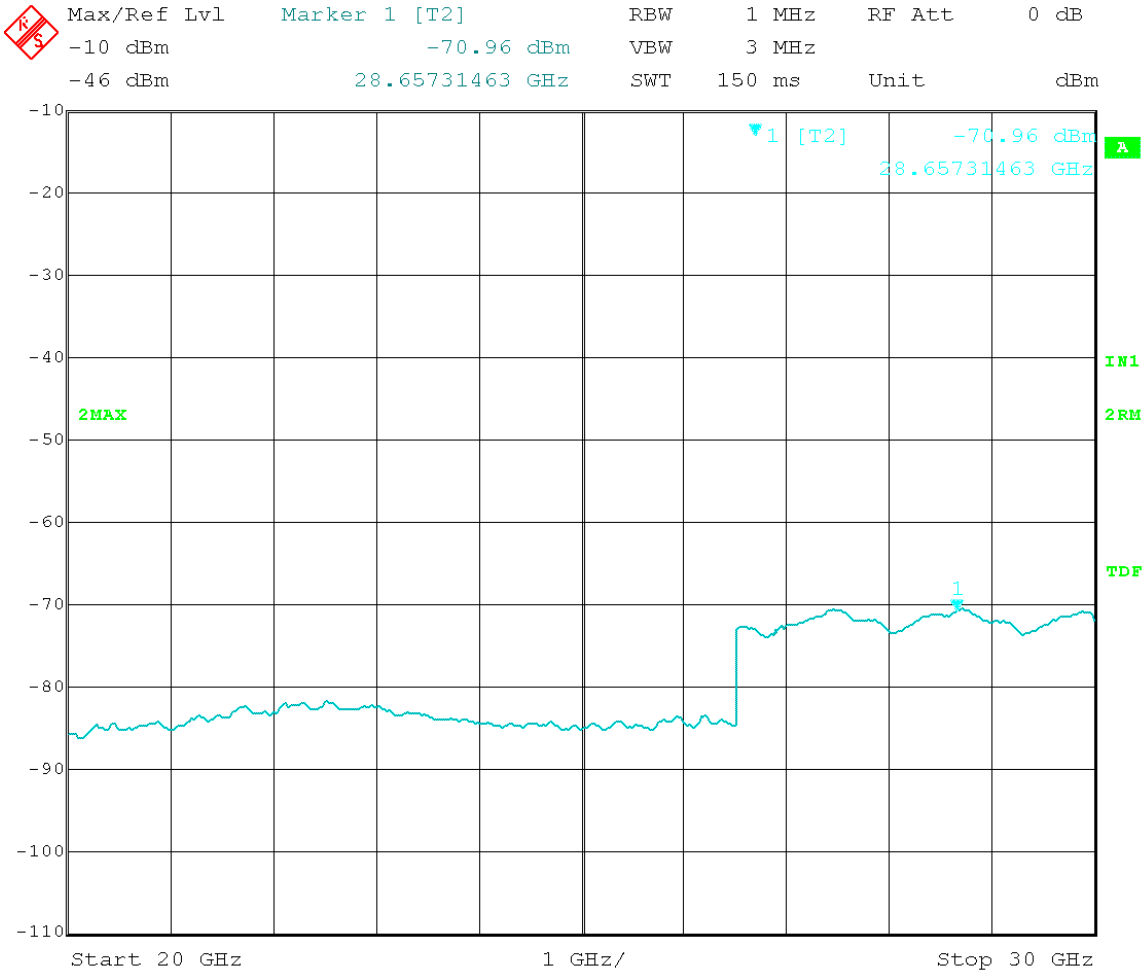
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 12:47:45

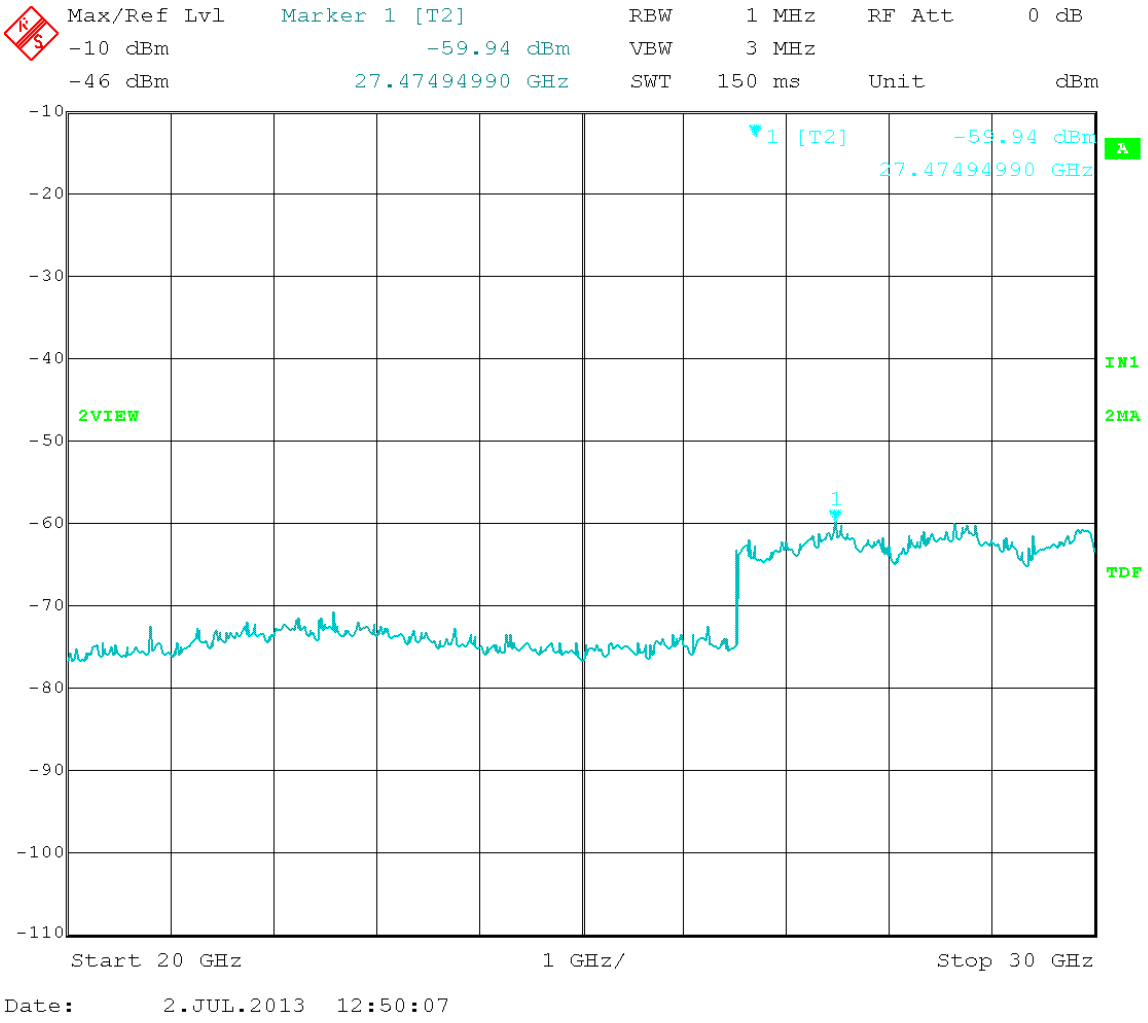
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 12:50:07

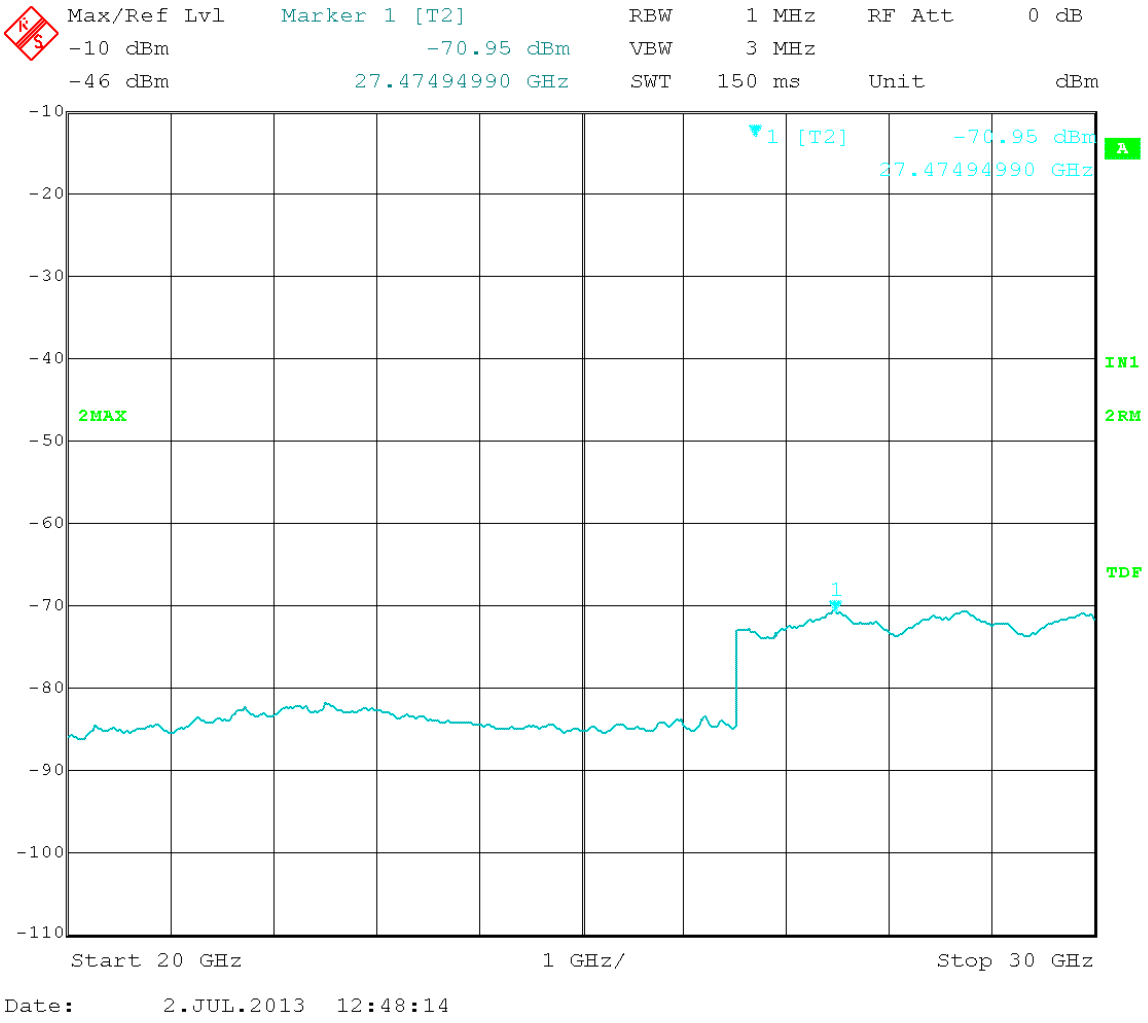
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



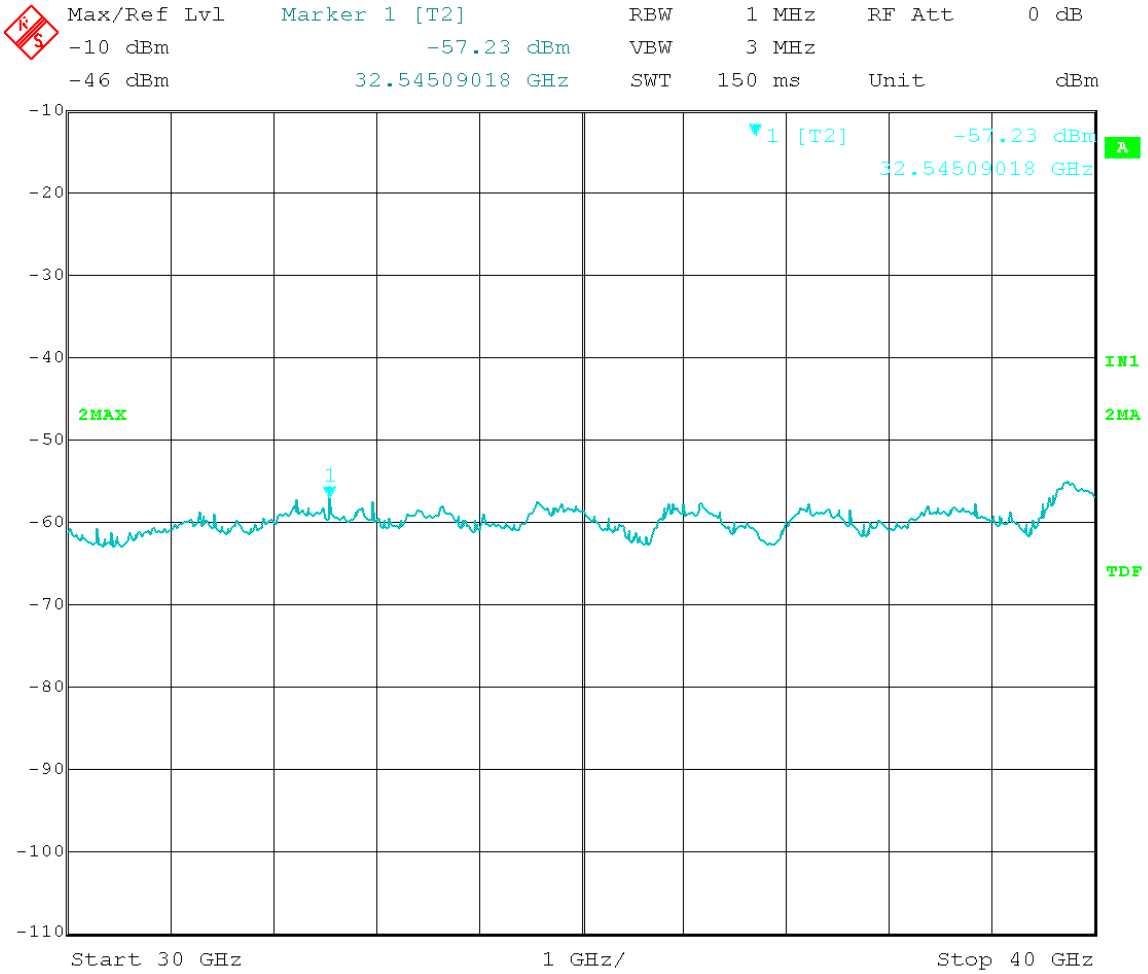
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 12:52:47

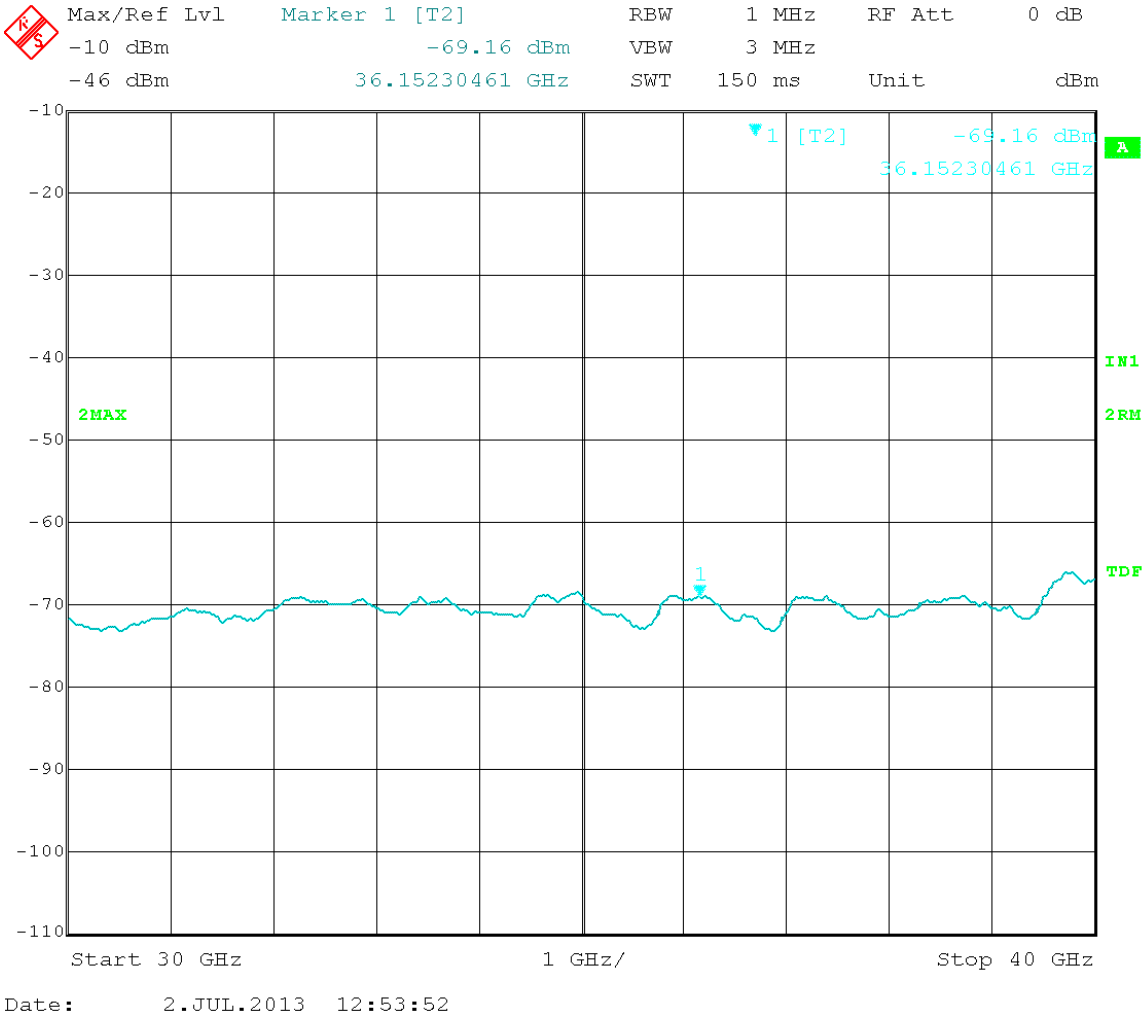
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 12:53:52

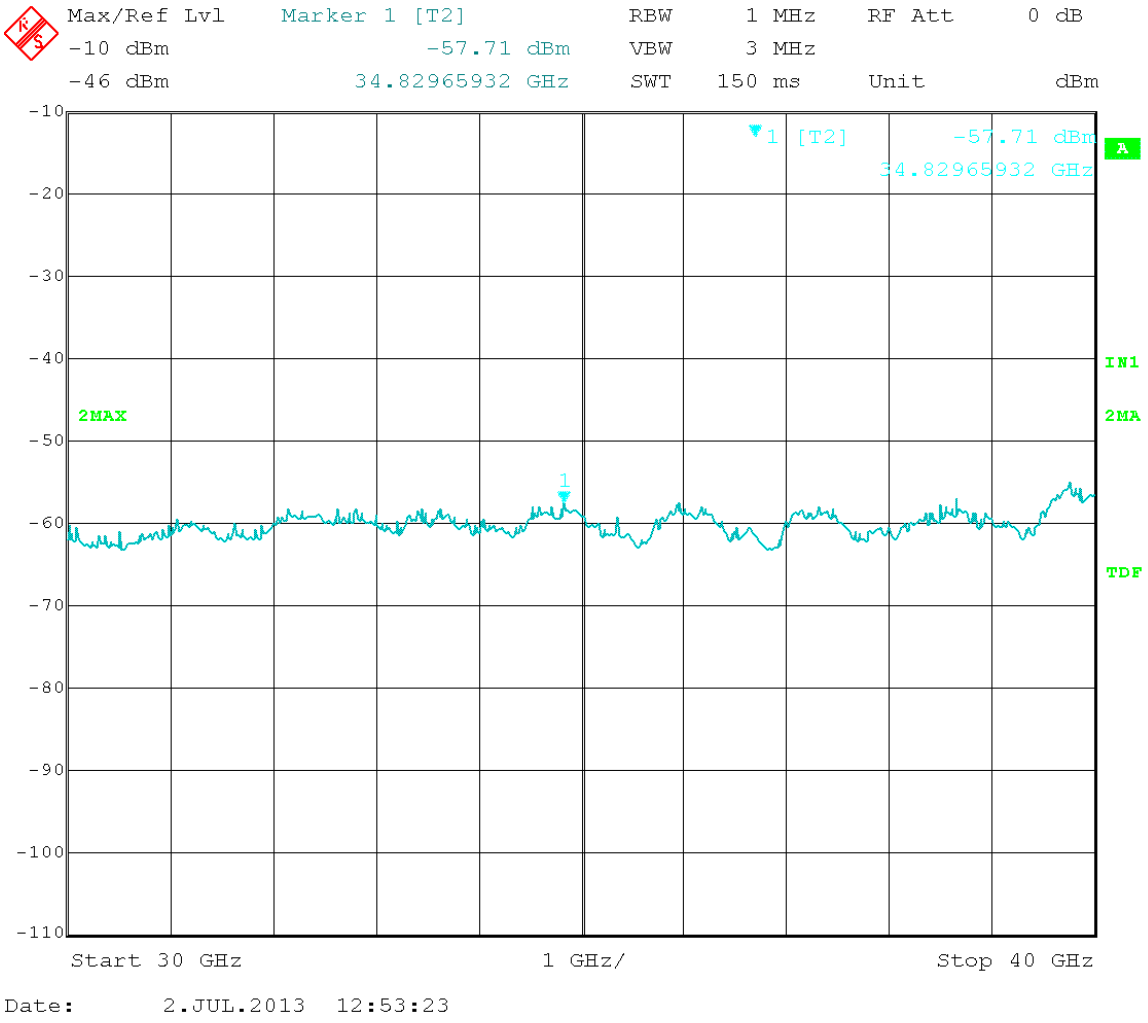
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 12:53:23

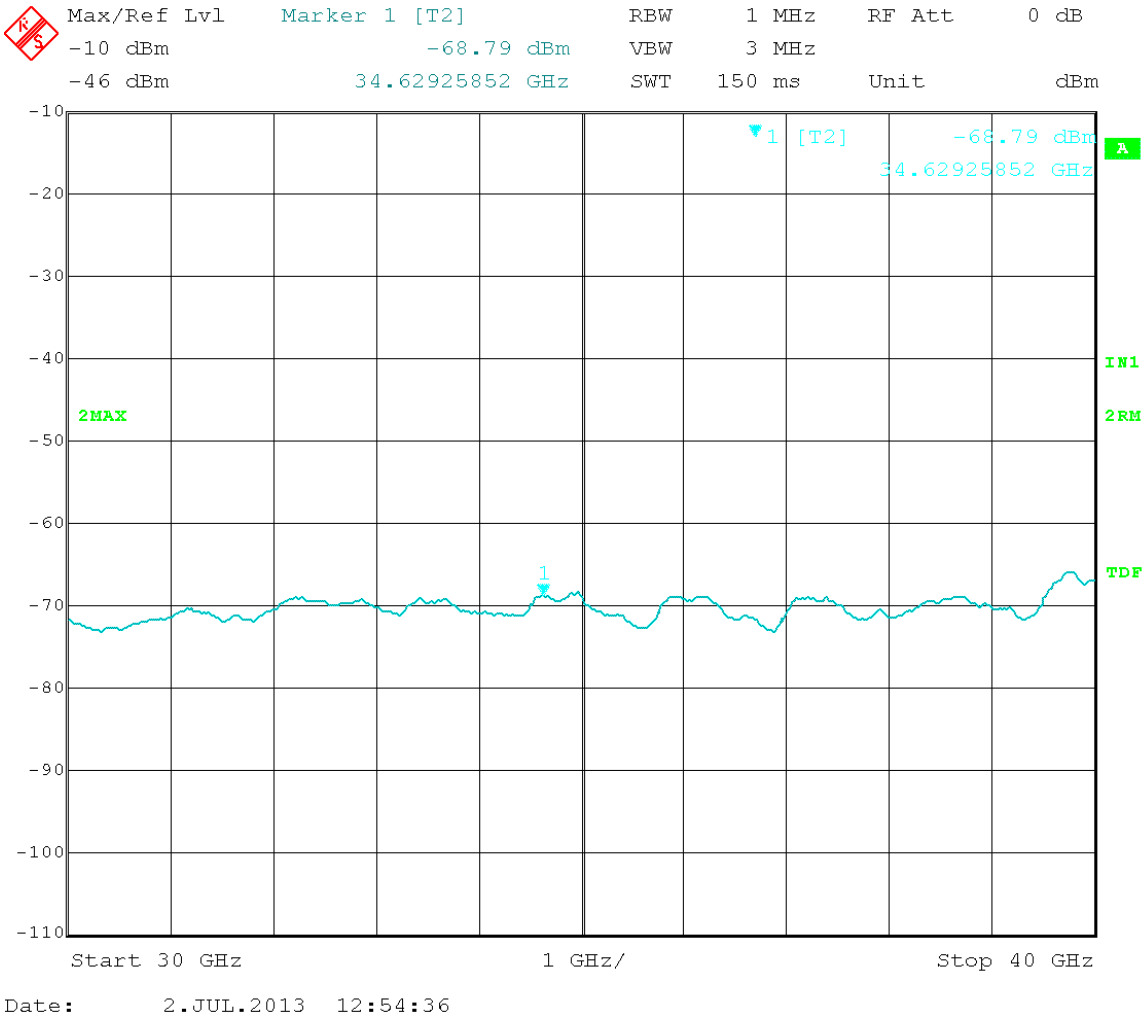
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 20 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.835 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



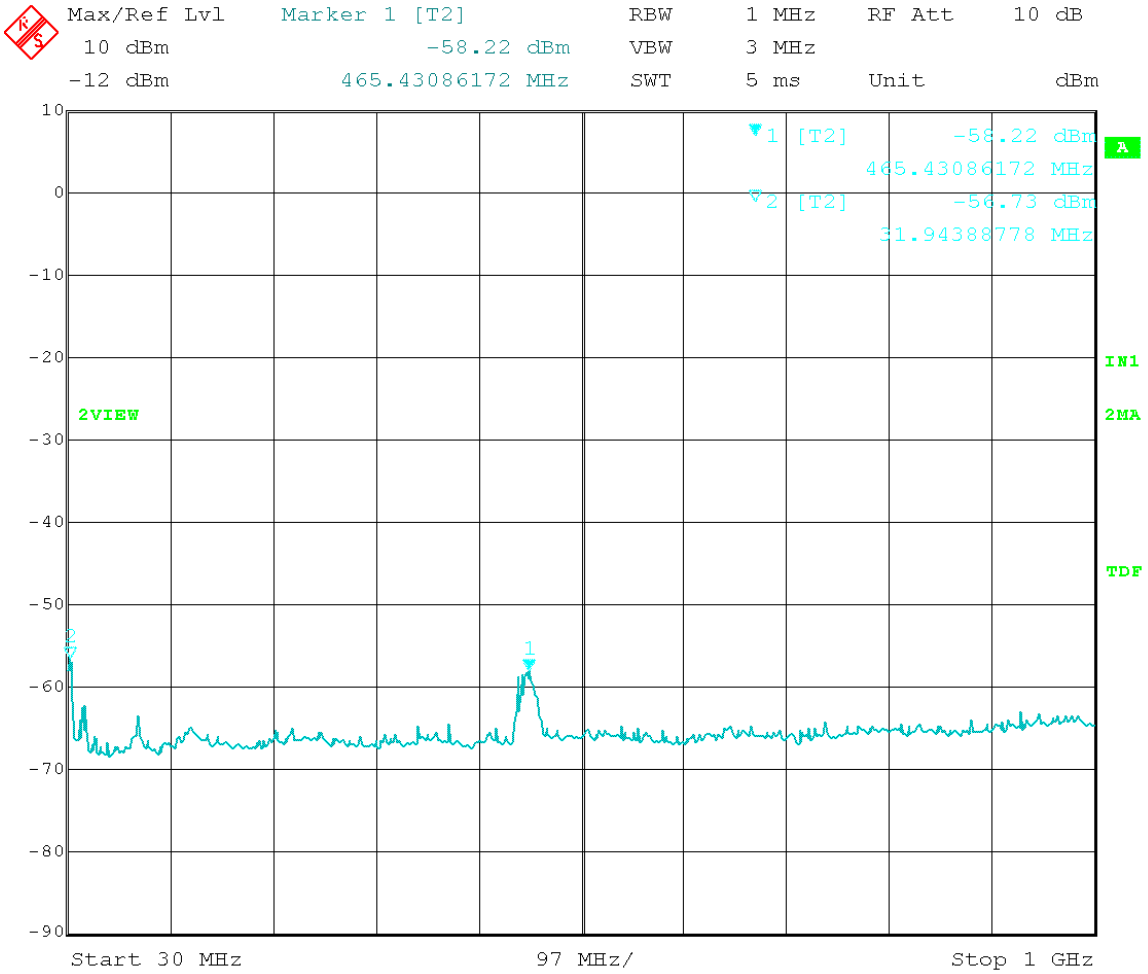
Marker 1: Greater than 20dB below limit

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 16:35:29

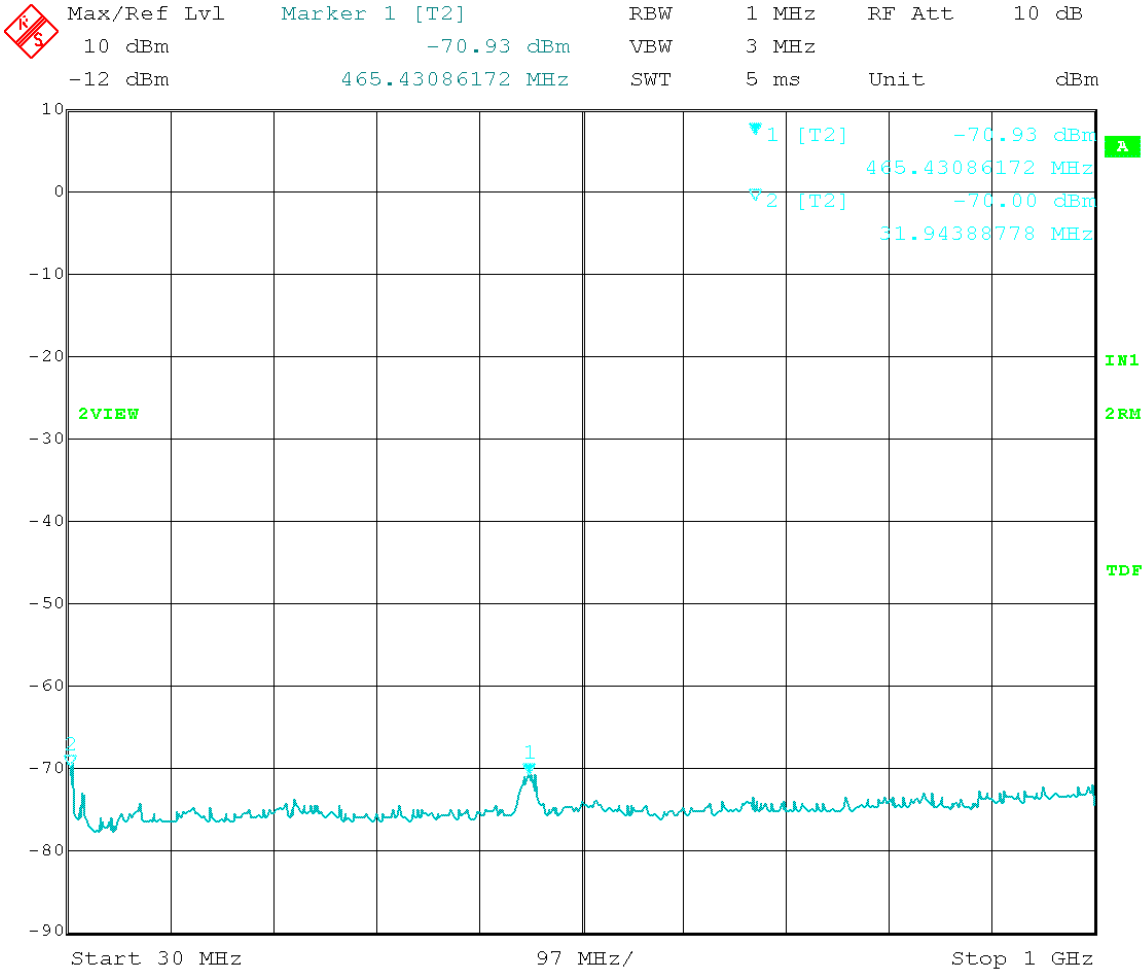
Marker 1: Non-Restricted Band
Marker 2: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 16:36:59

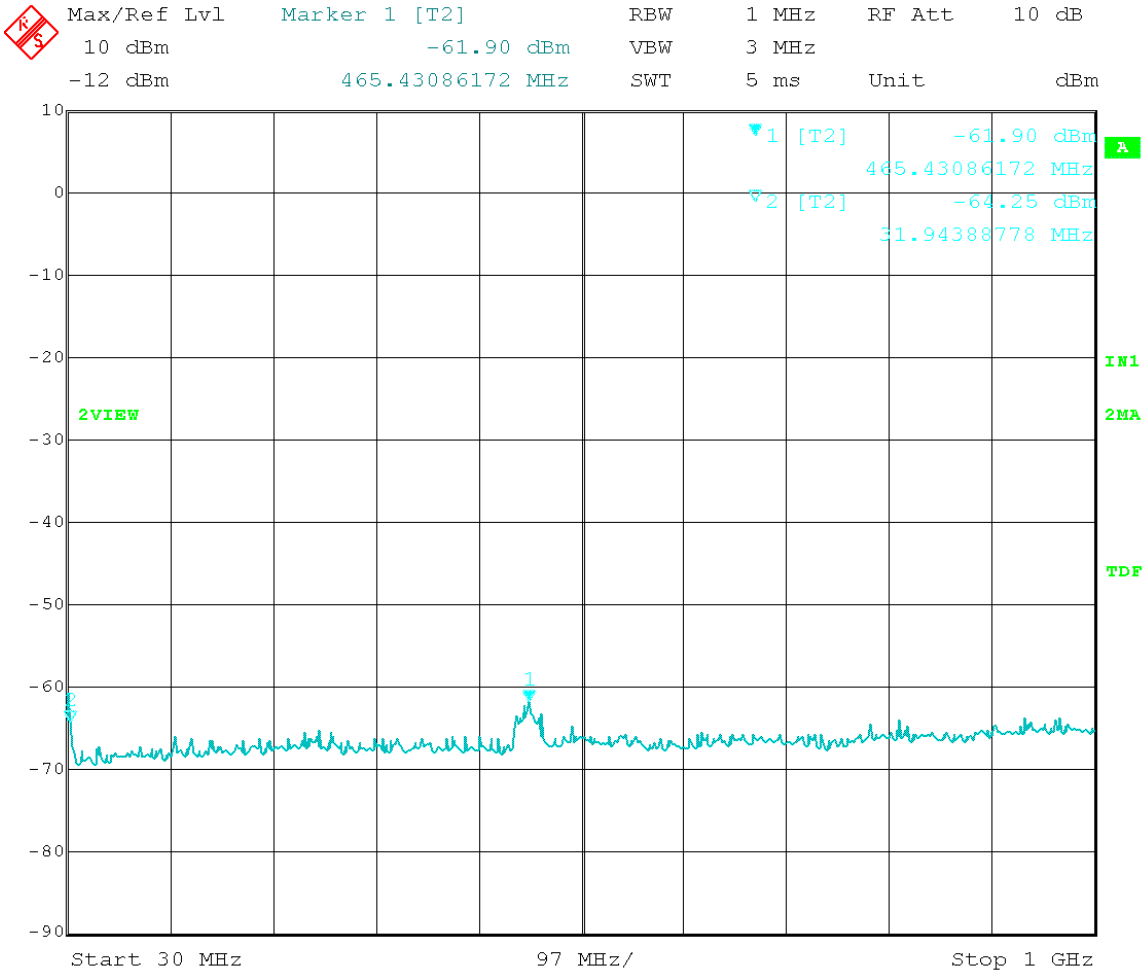
Marker 1: Non-Restricted Band
Marker 2: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 16:40:57

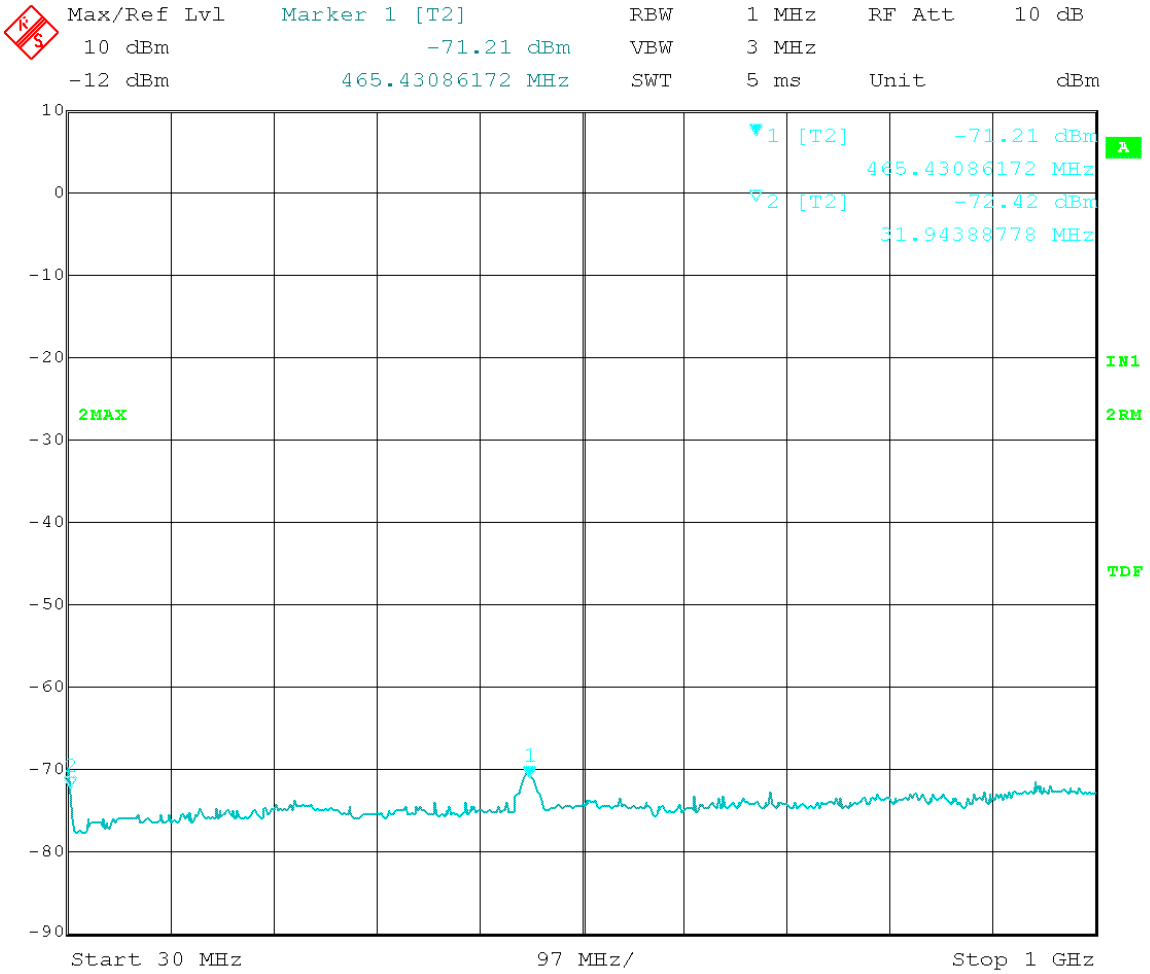
Marker 1: Non-Restricted Band
Marker 2: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 16:38:59

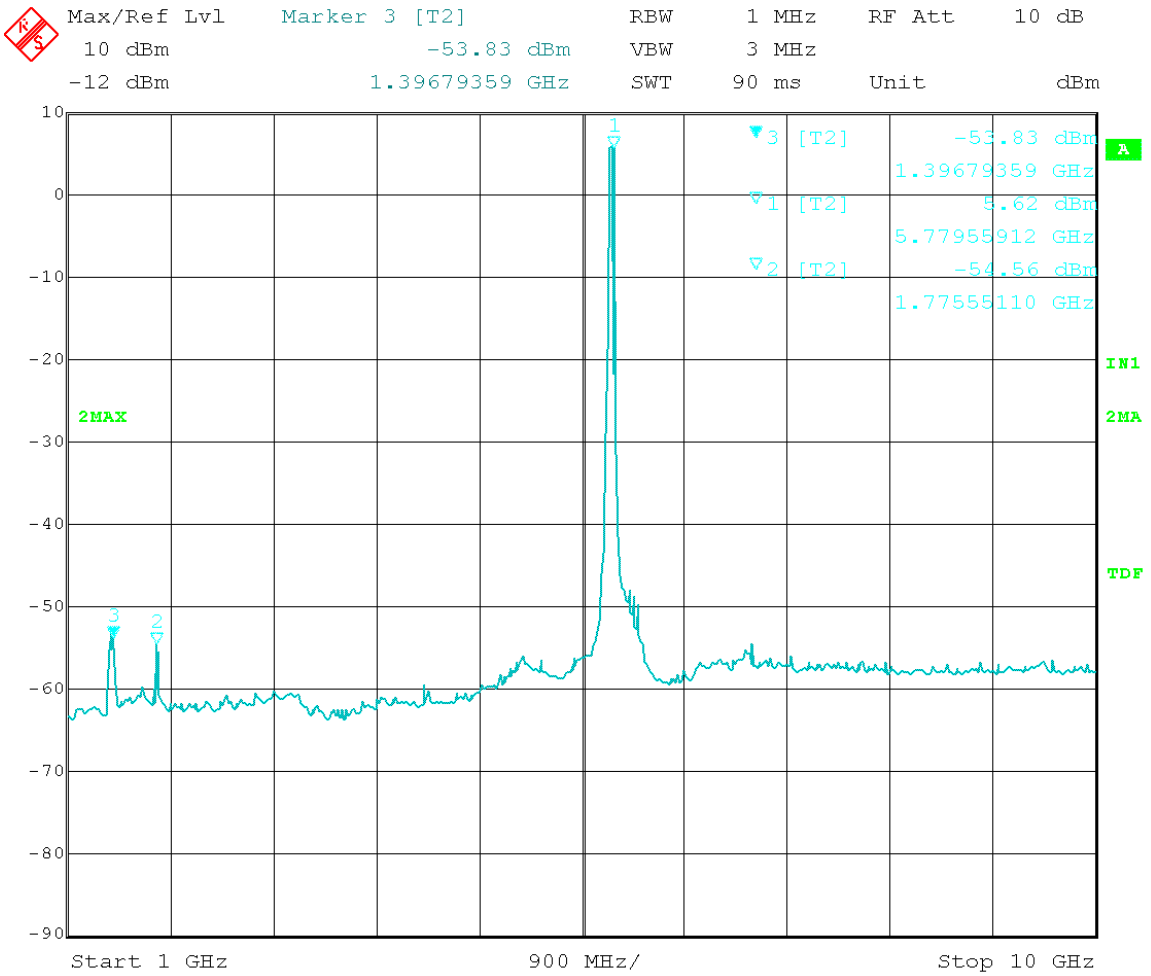
Marker 1: Non-Restricted Band
Marker 2: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 16:27:43

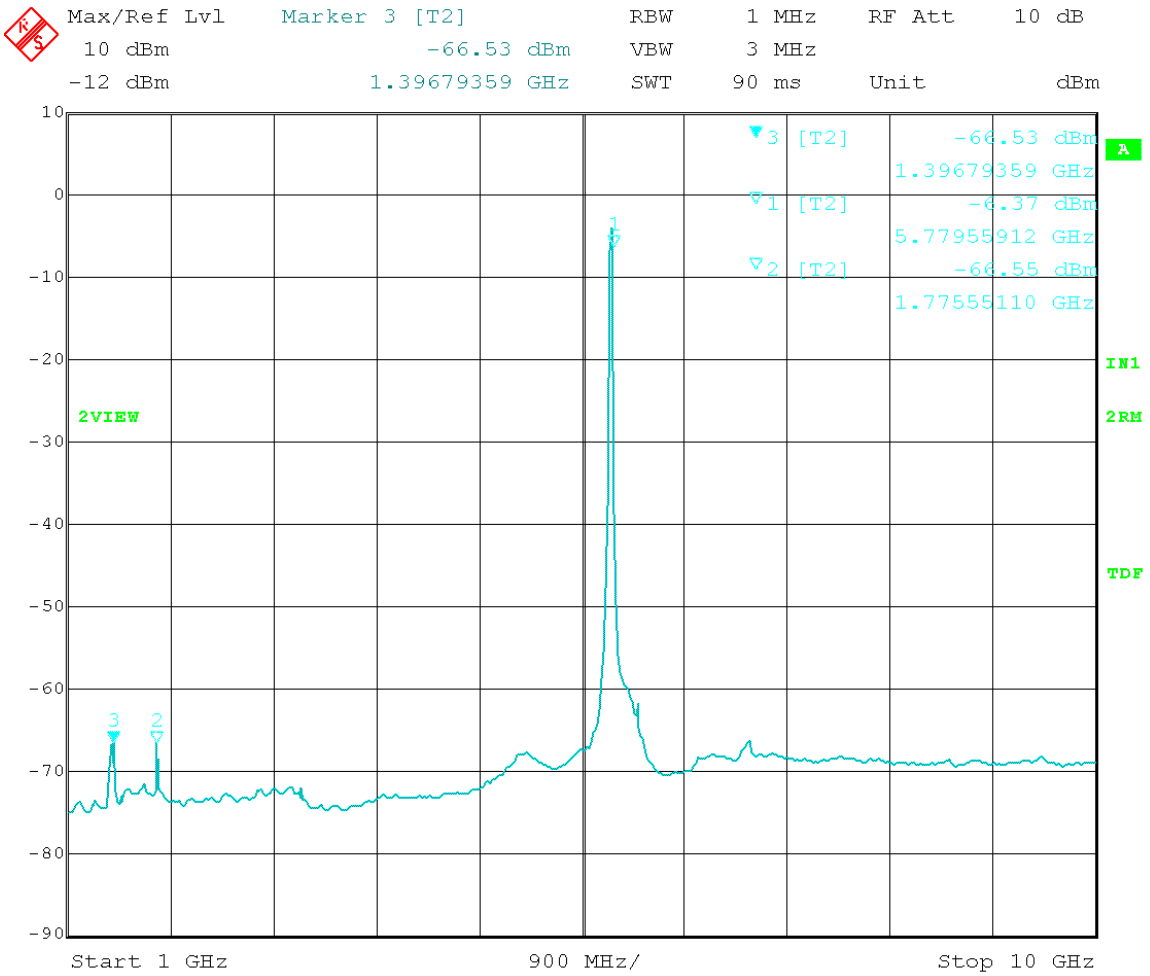
Marker 2: Calculated Field Strength (Restricted Band) = -53.83 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 60.44dBµV/m Peak
Marker 3: Calculated Field Strength (Restricted Band) = -54.56 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 59.67dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 16:21:05

Marker 2: Calculated Field Strength (Restricted Band) = -66.53+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 47.7dBµV/m Average

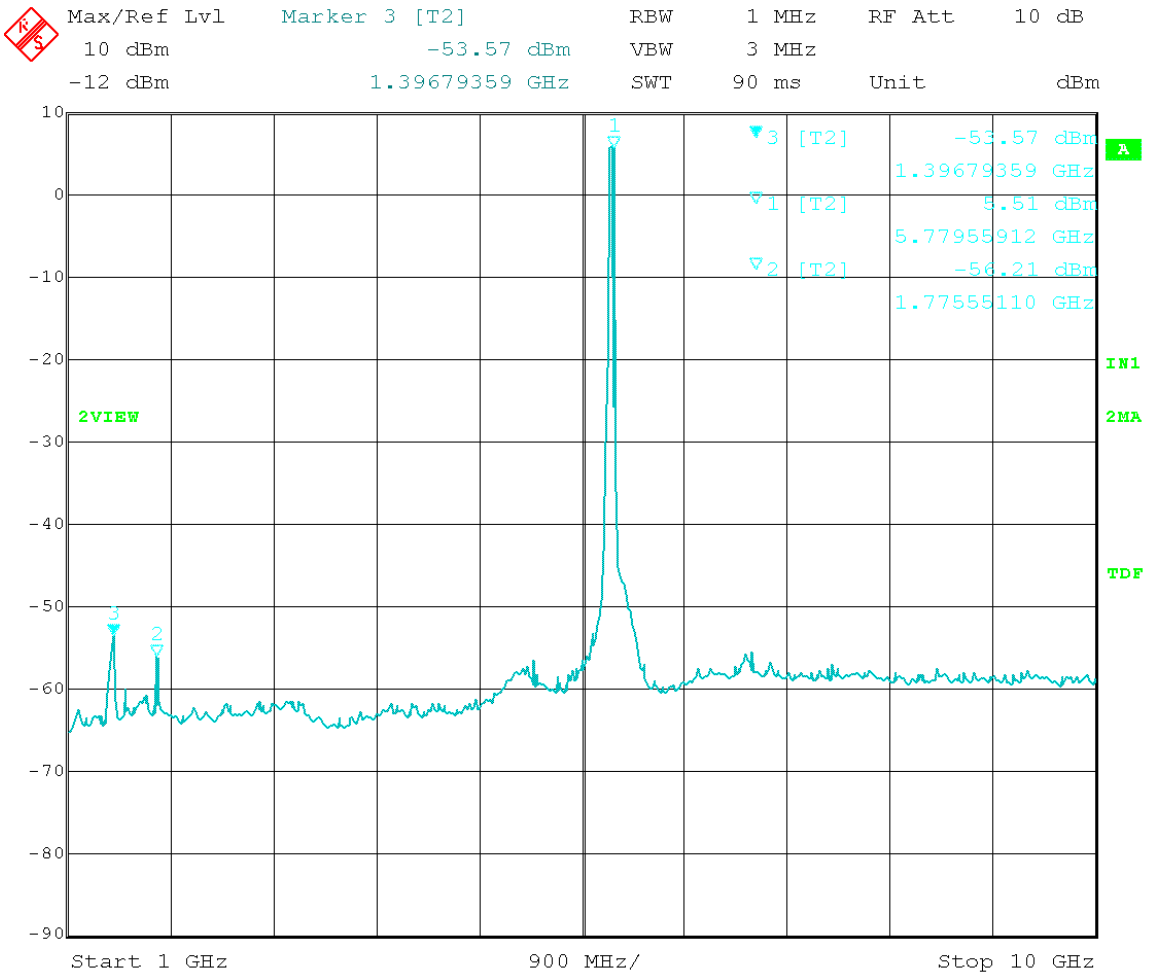
Marker 3: Calculated Field Strength (Restricted Band) = -66.55 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 47.9dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 16:10:38

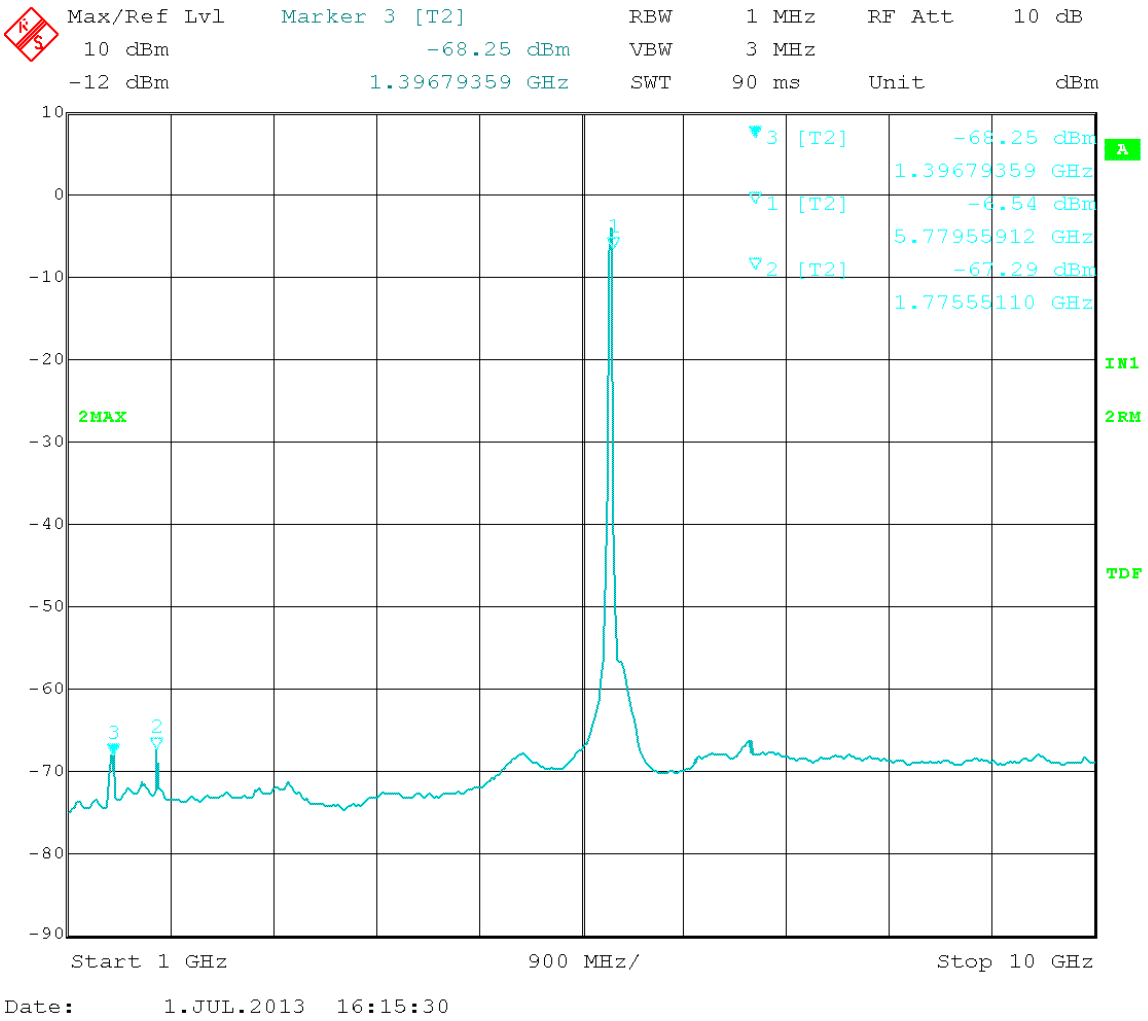
Marker 2: Calculated Field Strength (Restricted Band) = -56.21 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 58.02dBµV/m Peak
Marker 3: Calculated Field Strength (Restricted Band) = -53.57 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 60.66dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 16:15:30

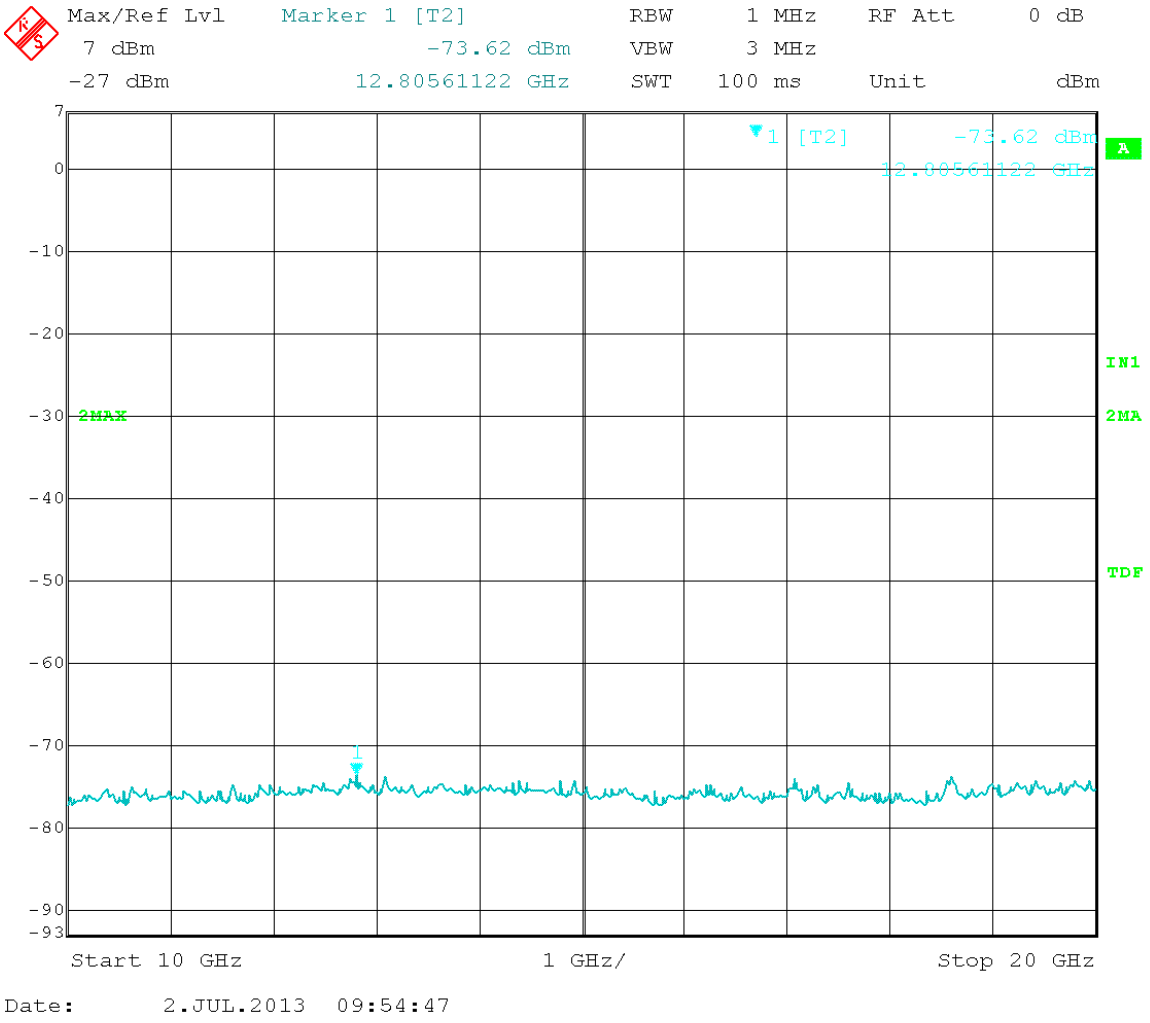
Marker 2: Calculated Field Strength (Restricted Band) = -67.29 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 46.94dBµV/m Average
Marker 3: Calculated Field Strength (Restricted Band) = -68.25 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 45.98dBµV/m Average

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



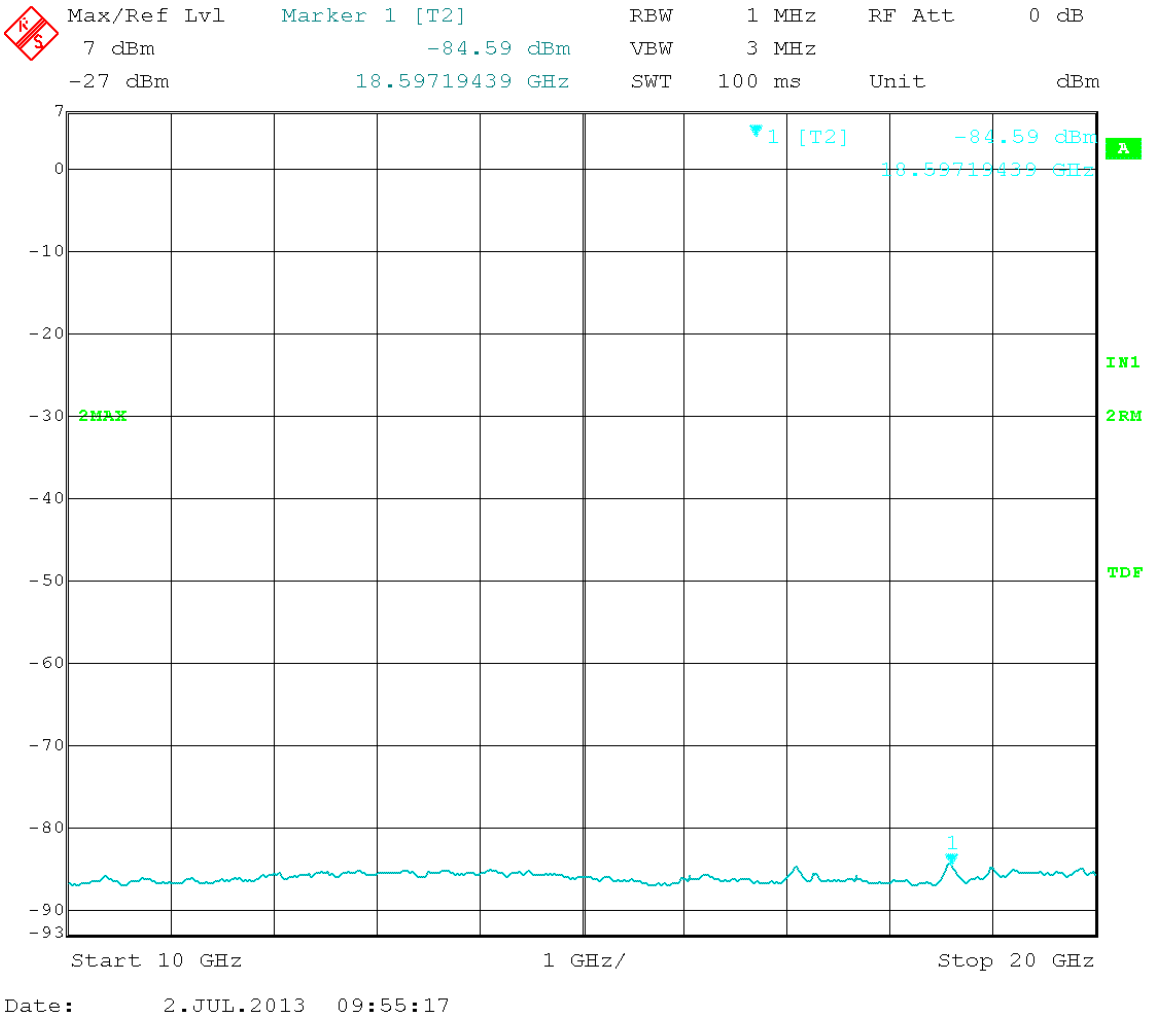
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



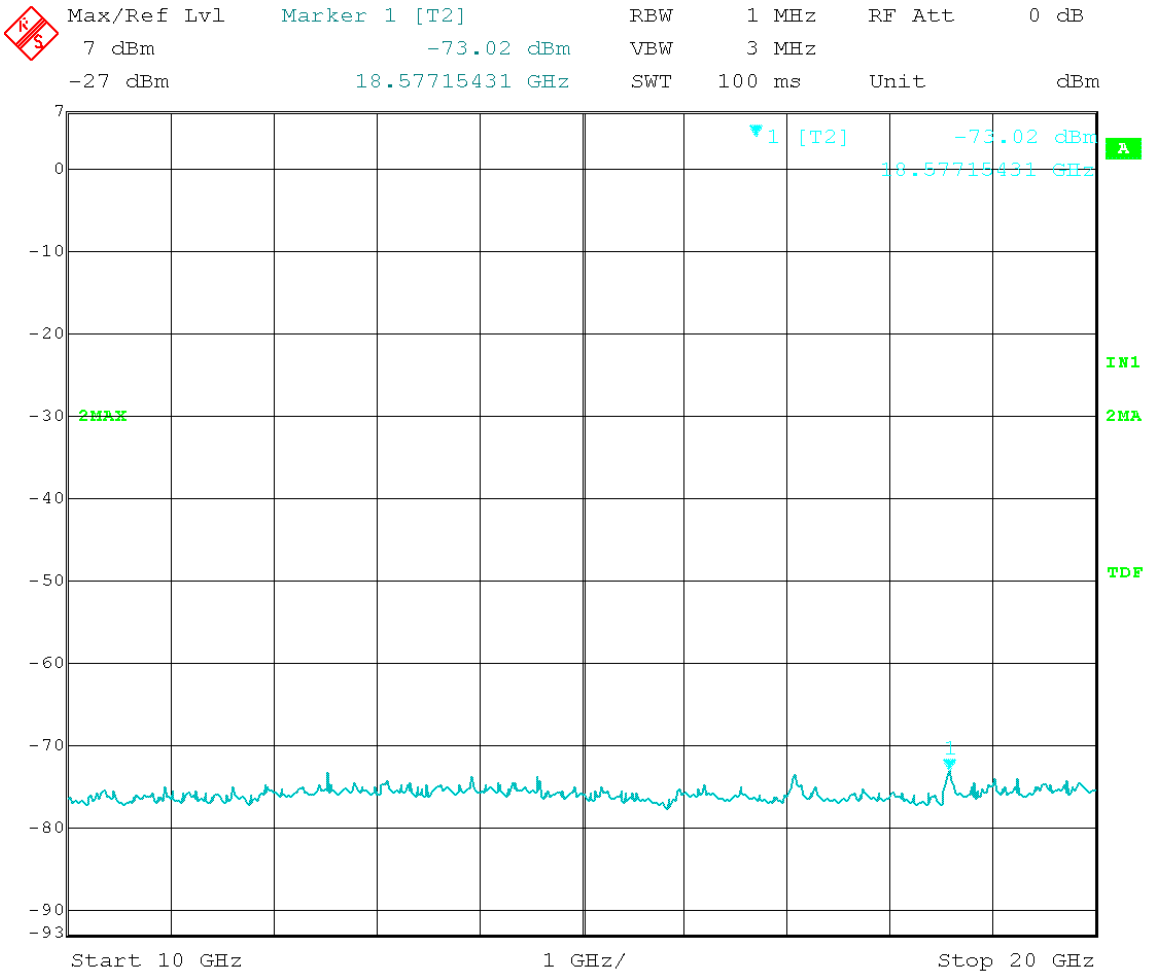
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:58:08

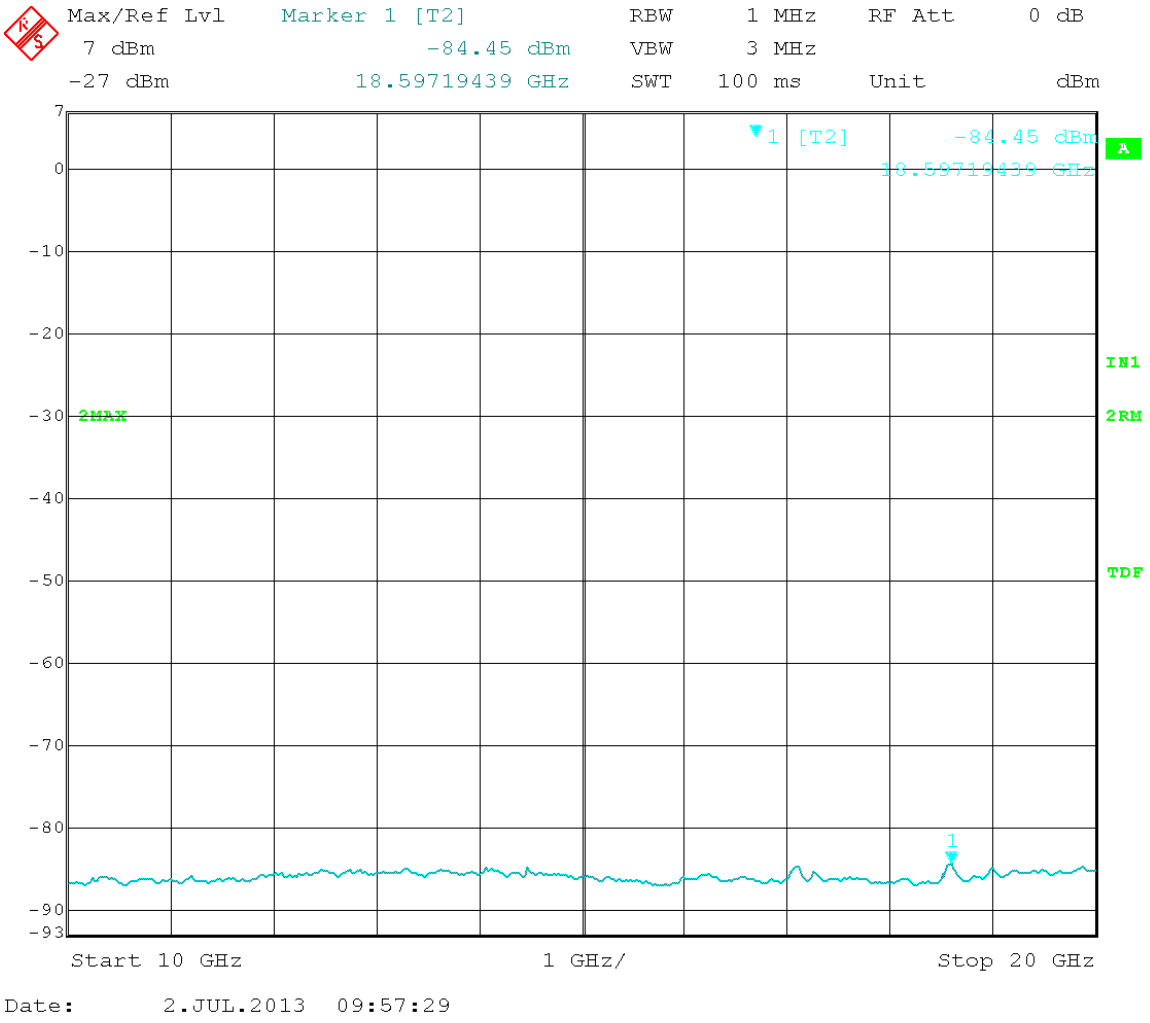
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:57:29

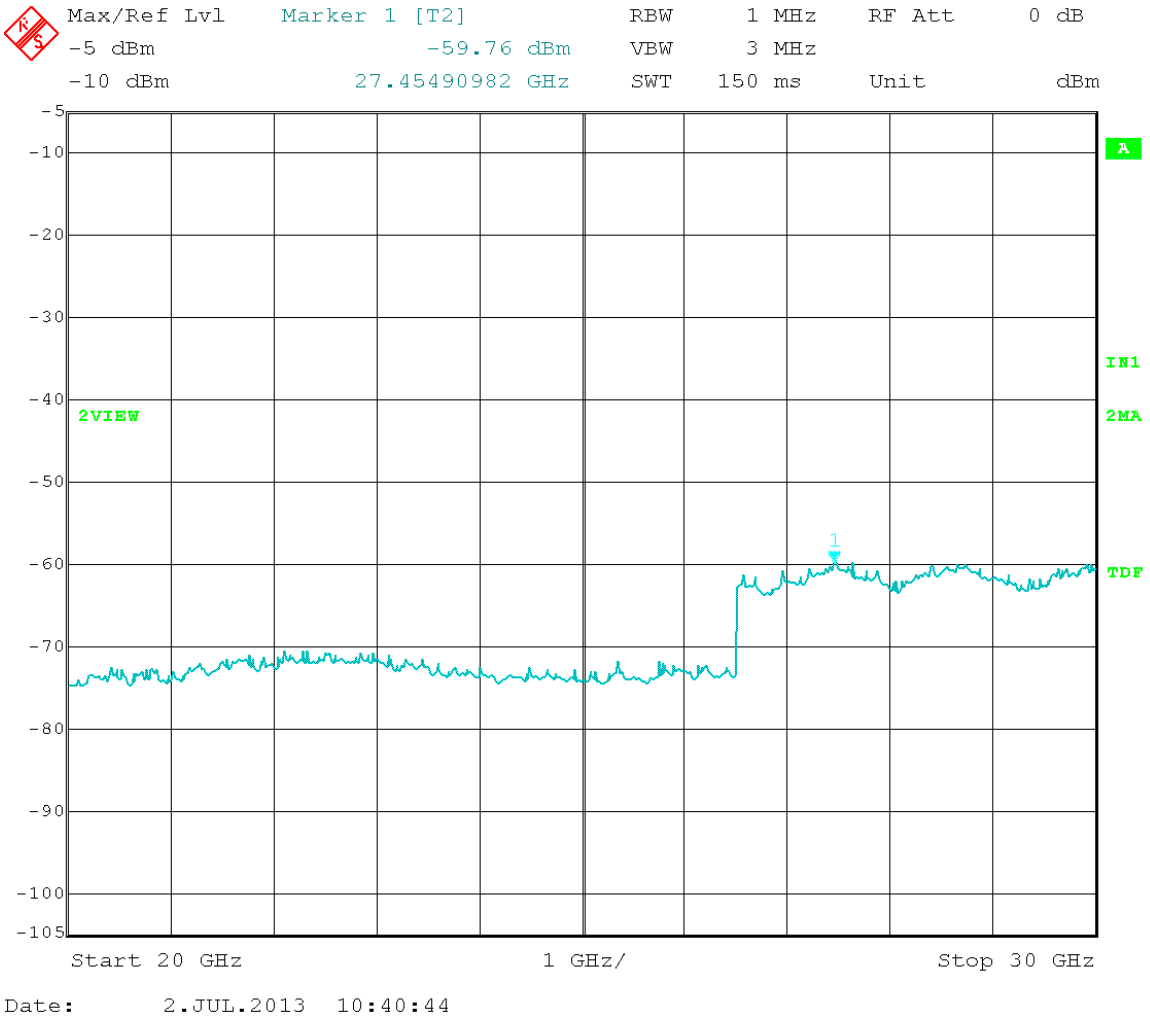
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



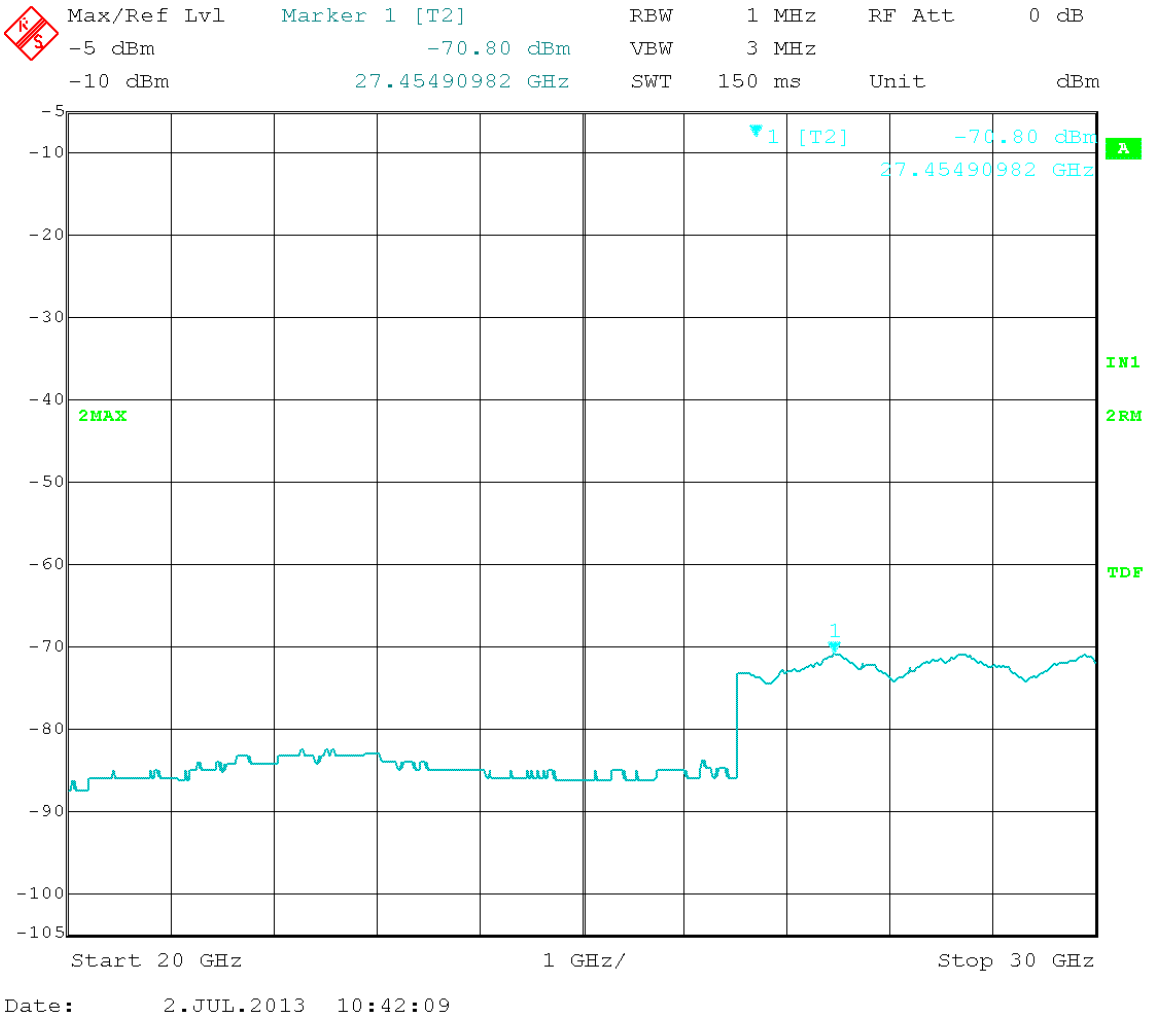
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



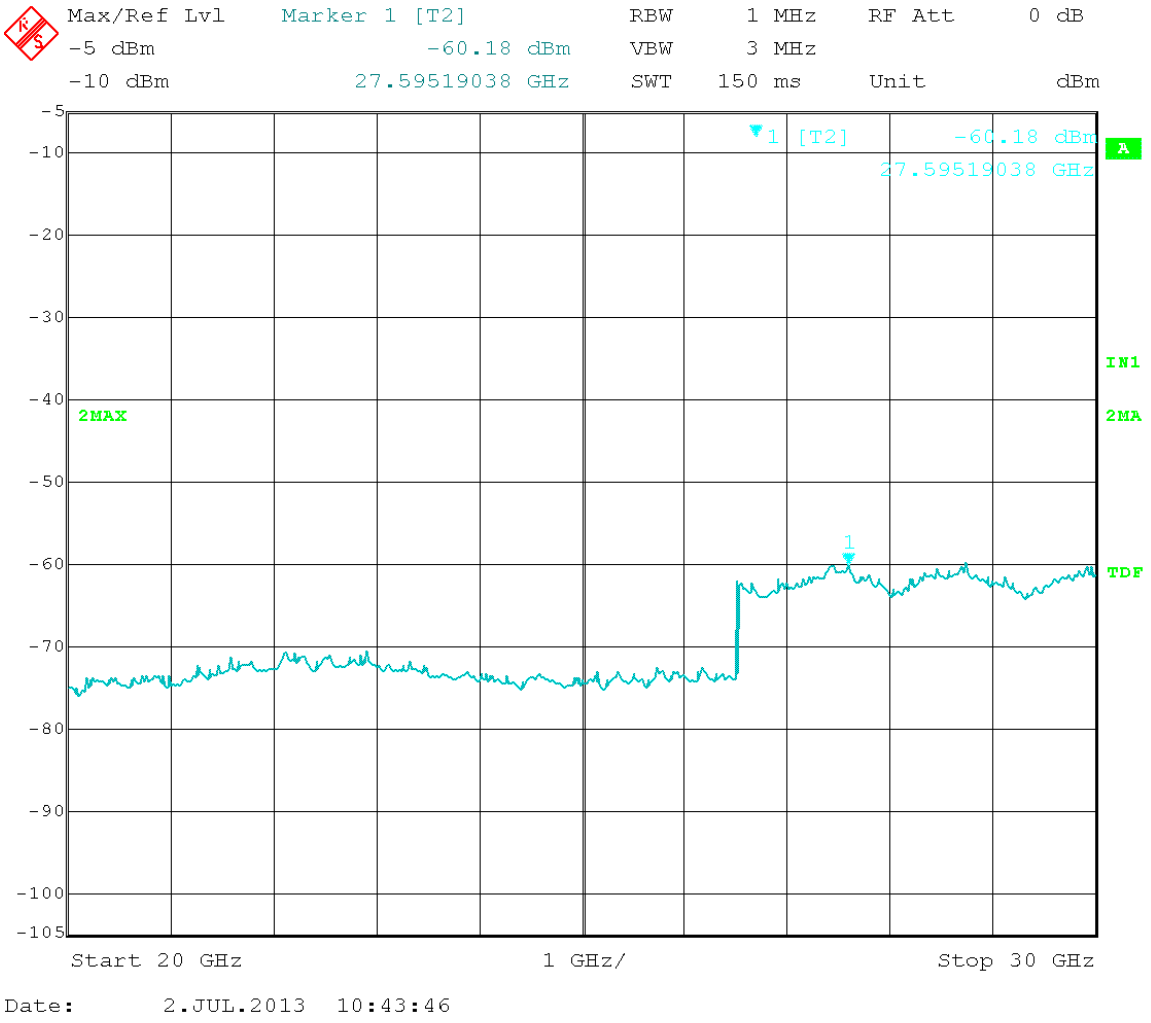
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



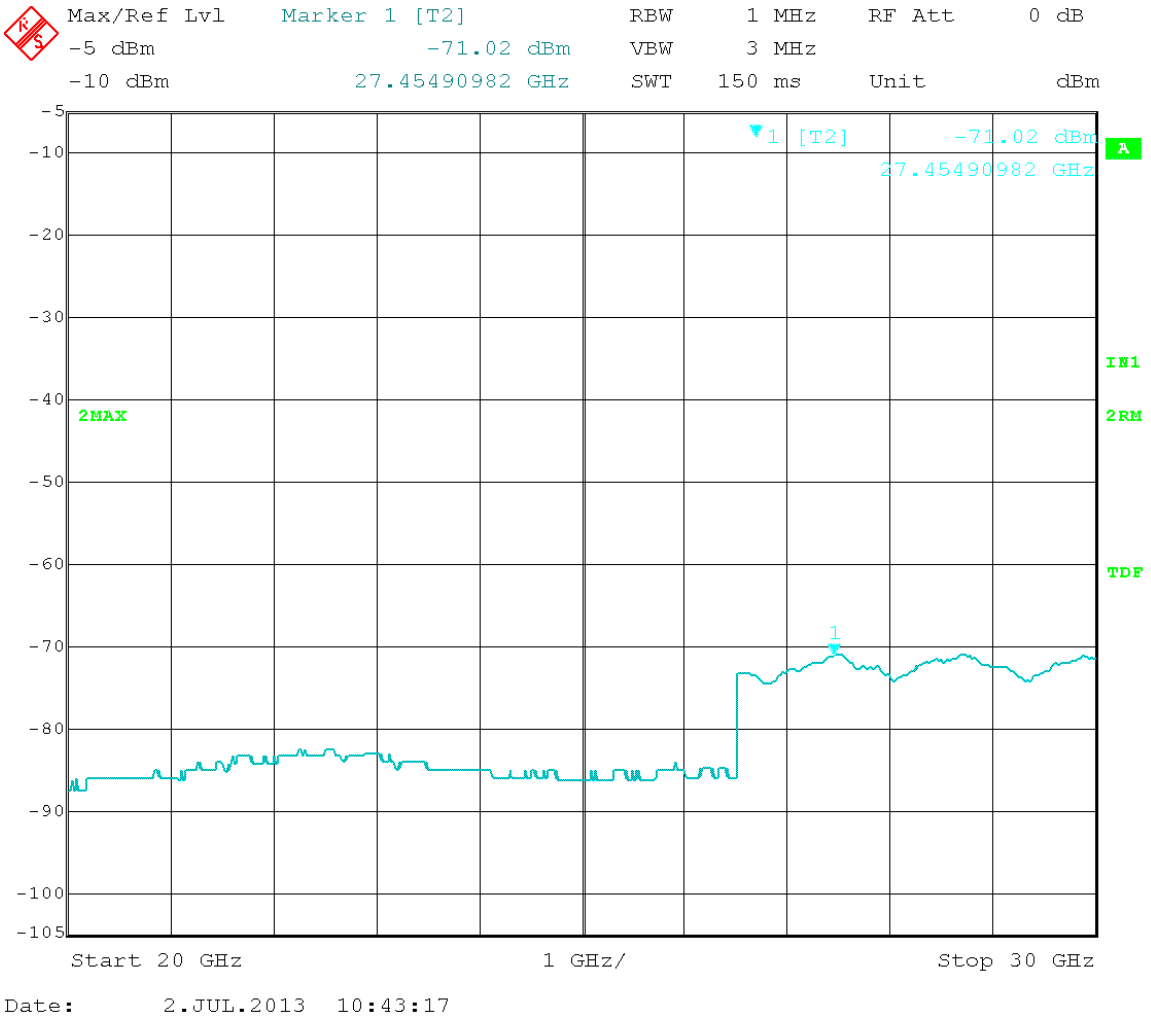
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



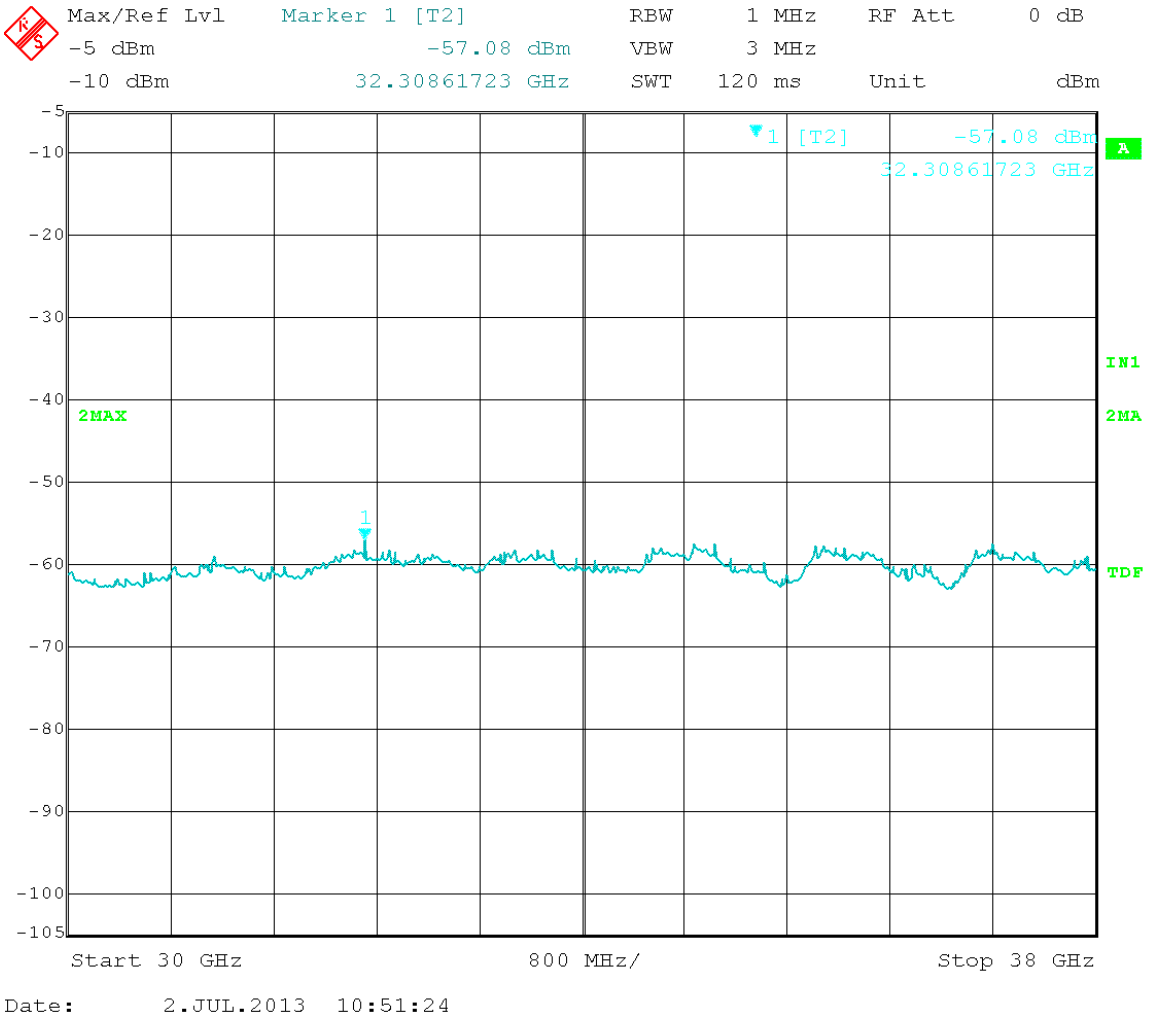
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



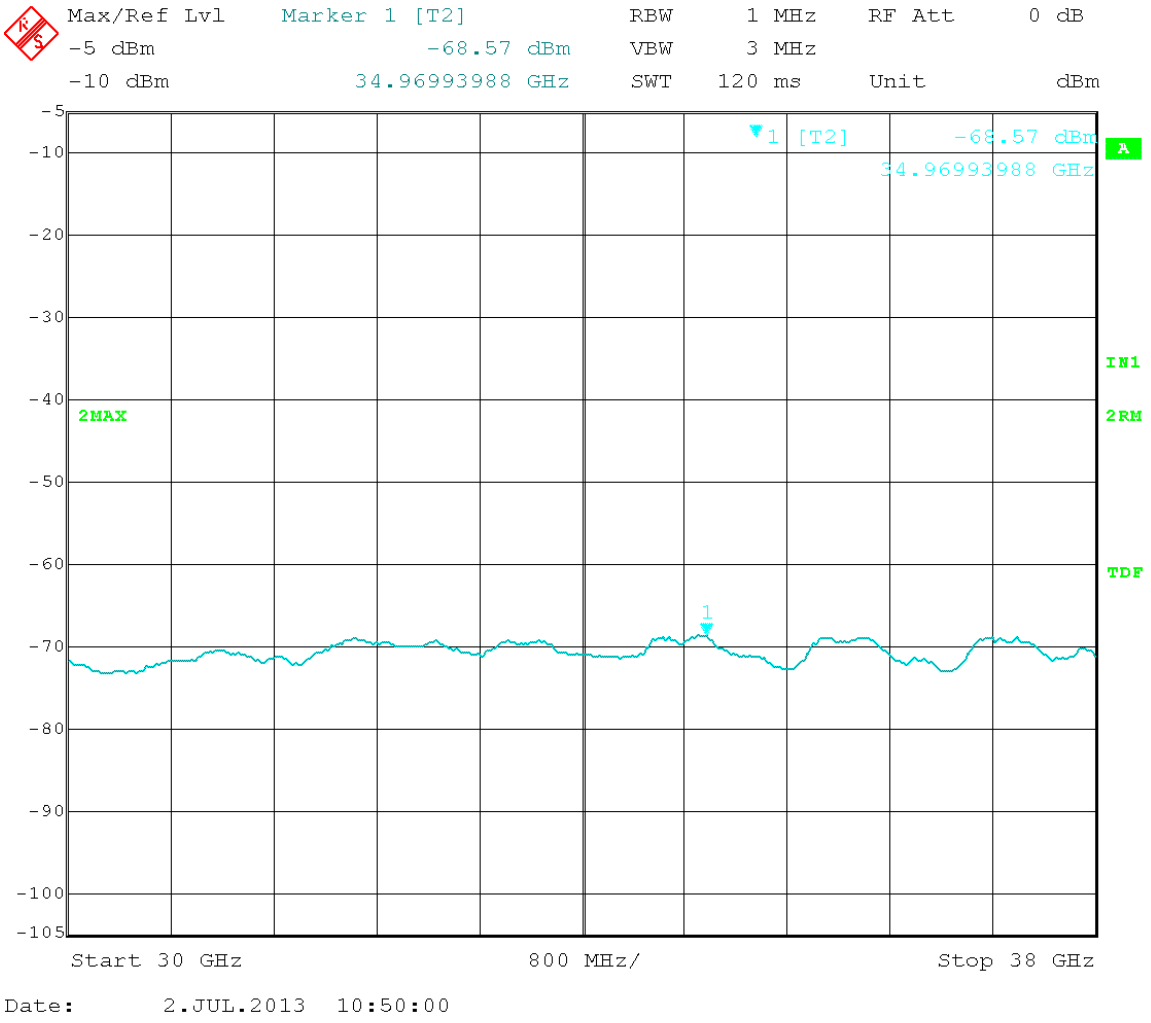
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



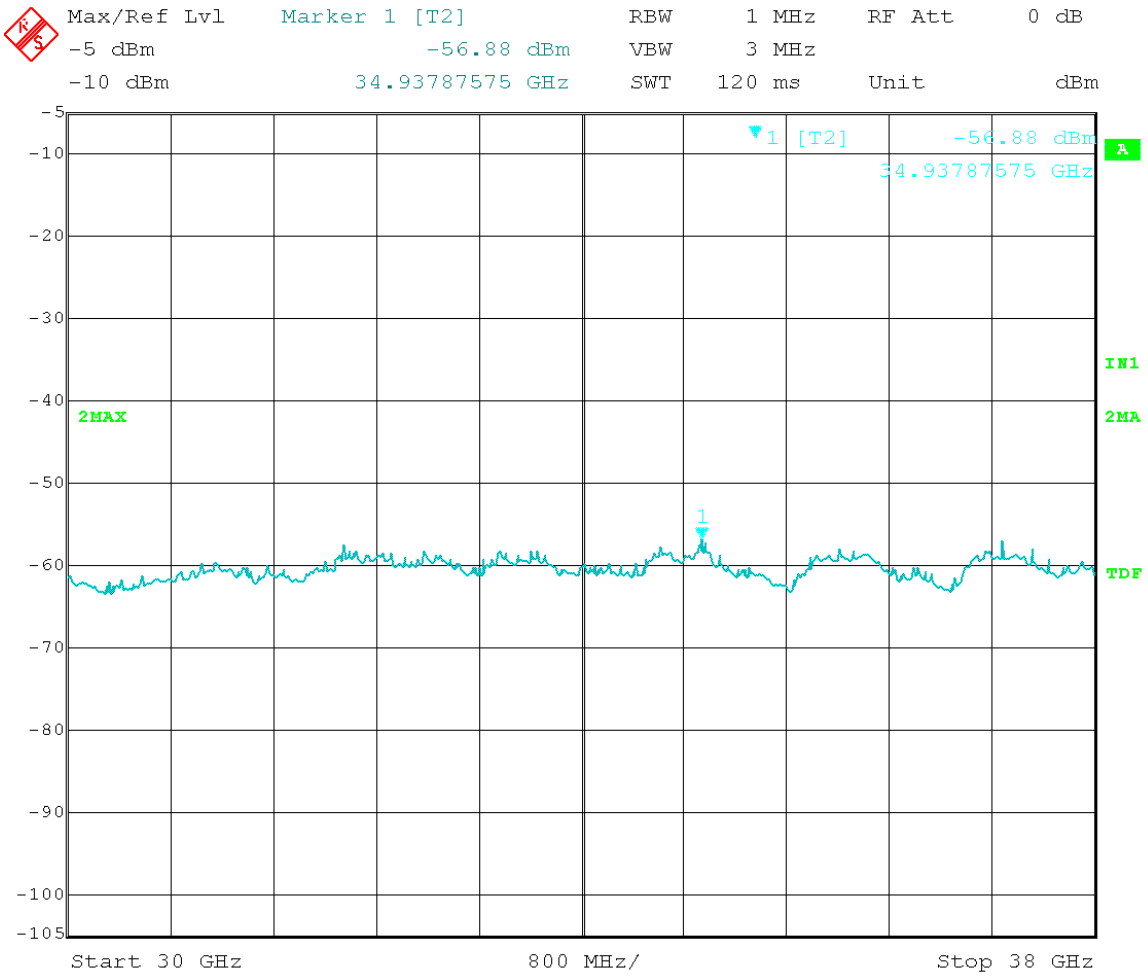
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 10:53:12

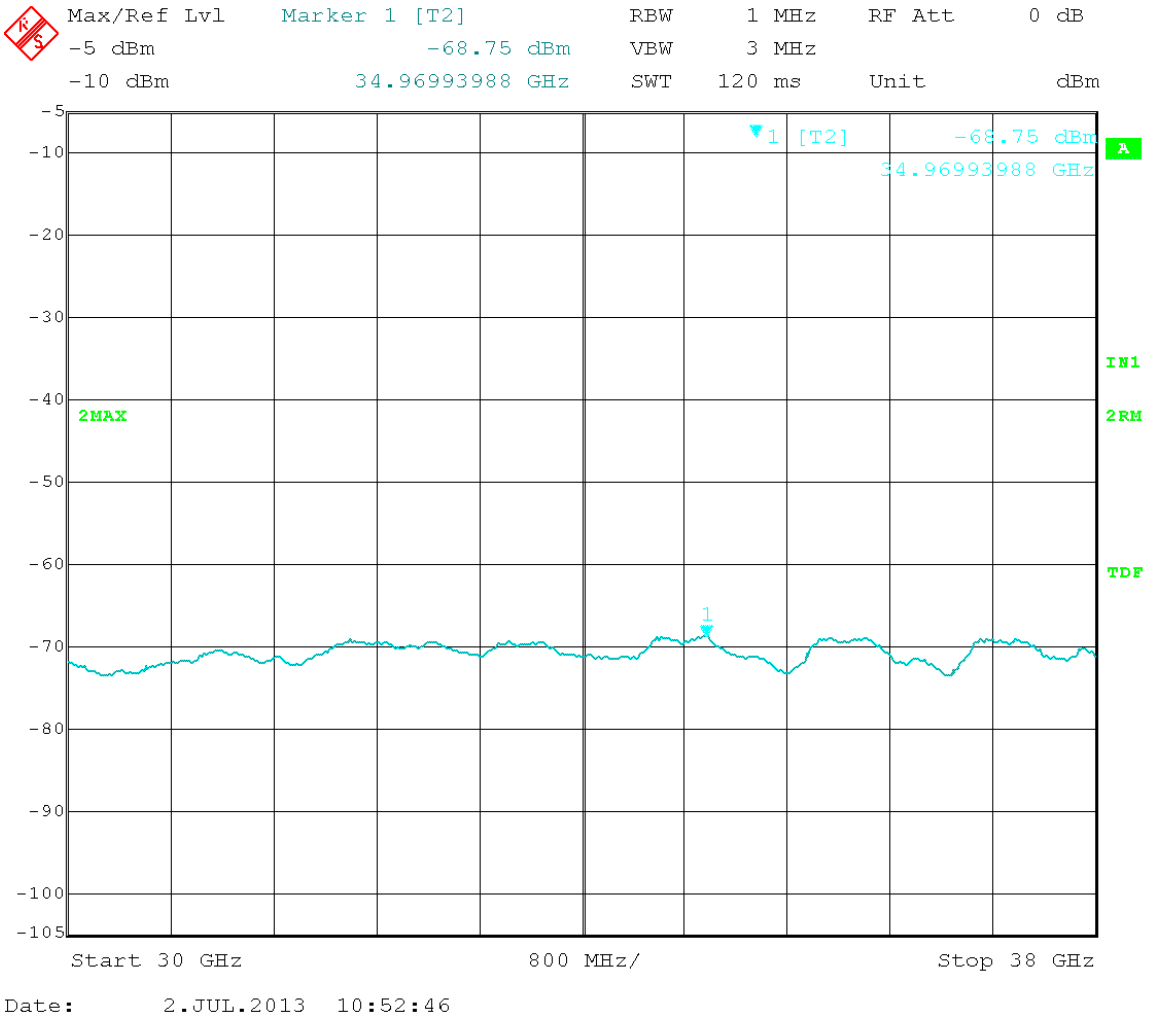
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Low Channel Frequency: 5.750 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



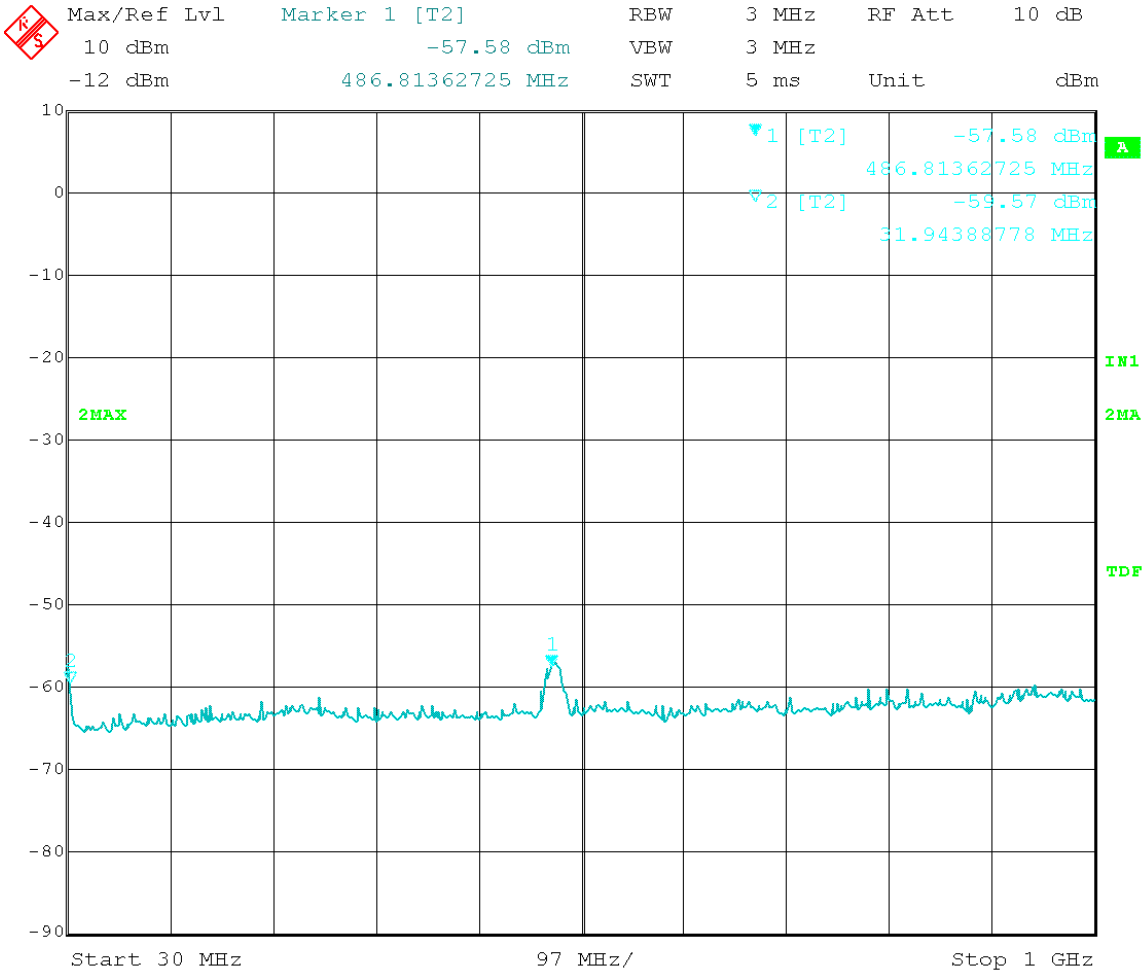
Marker 1: Greater than 20dB below limit

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 16:47:42

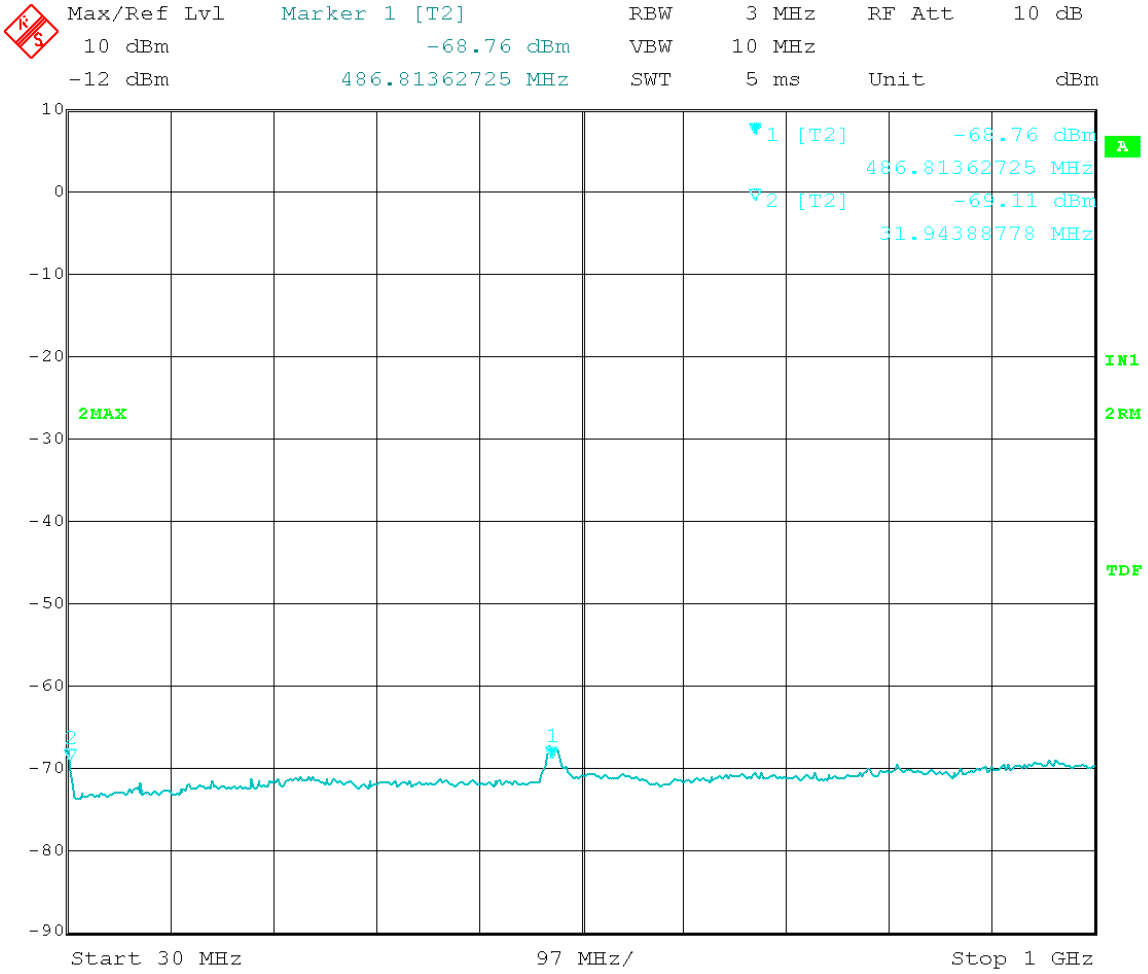
Marker 1: Non-Restricted Band
Marker 2: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 16:48:27

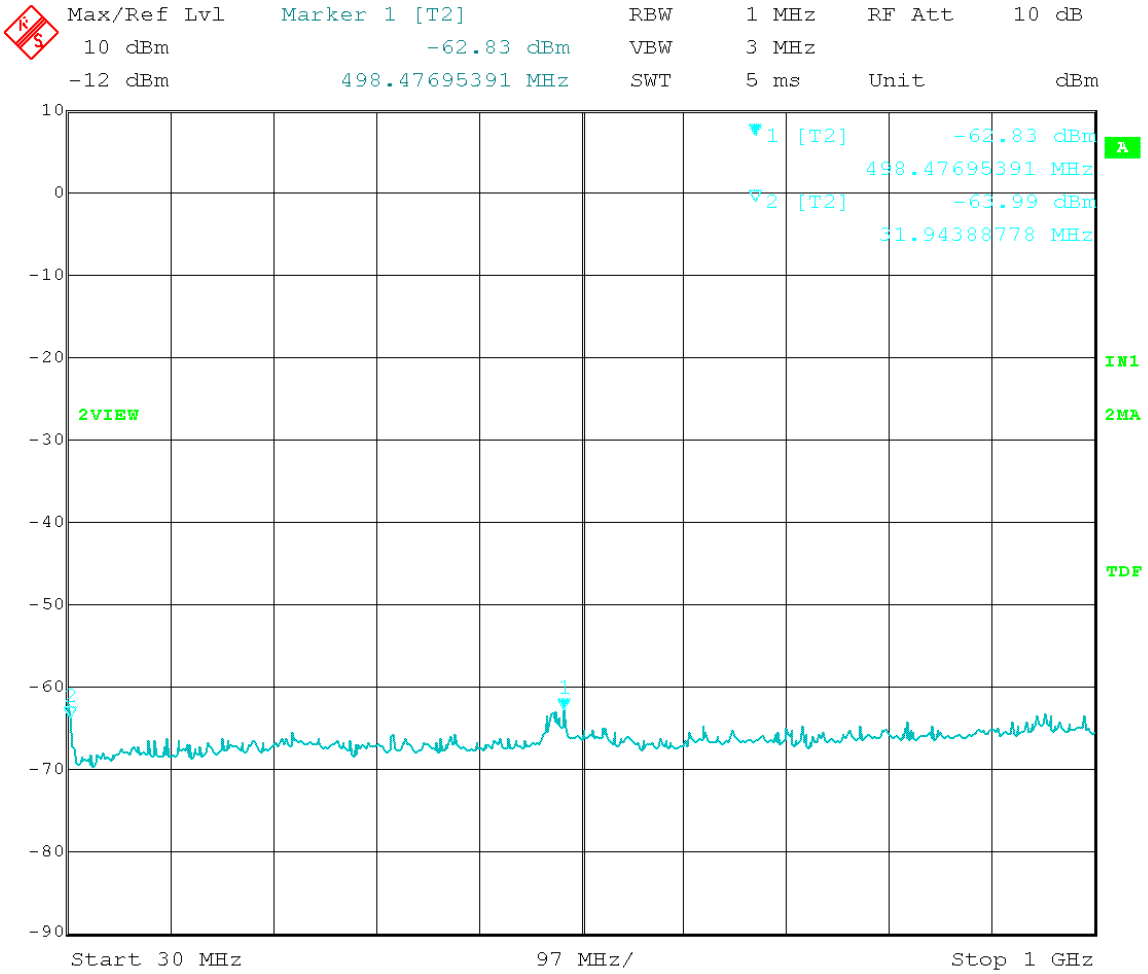
Marker 1: Non-Restricted Band
Marker 2: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 16:46:09

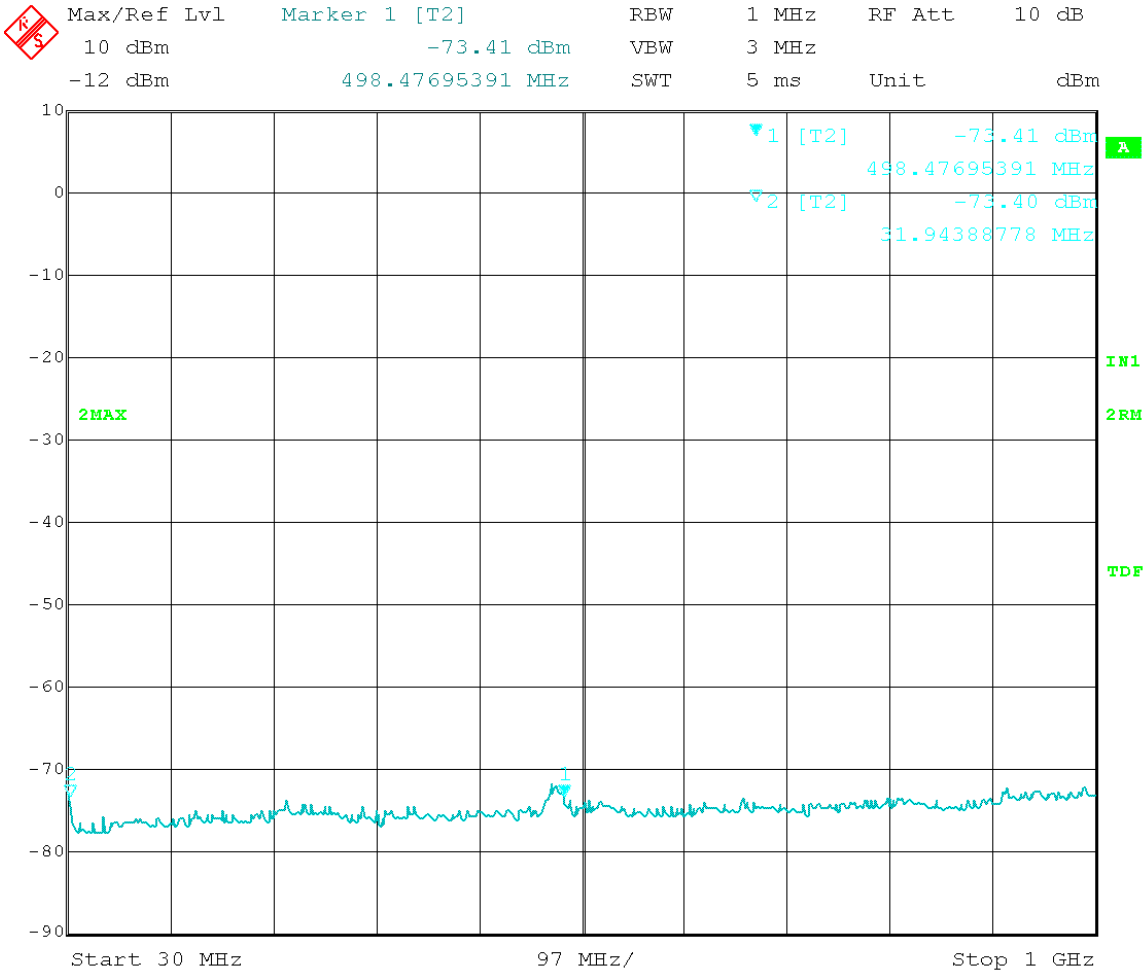
Marker 1: Non-Restricted Band
Marker 2: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 16:46:41

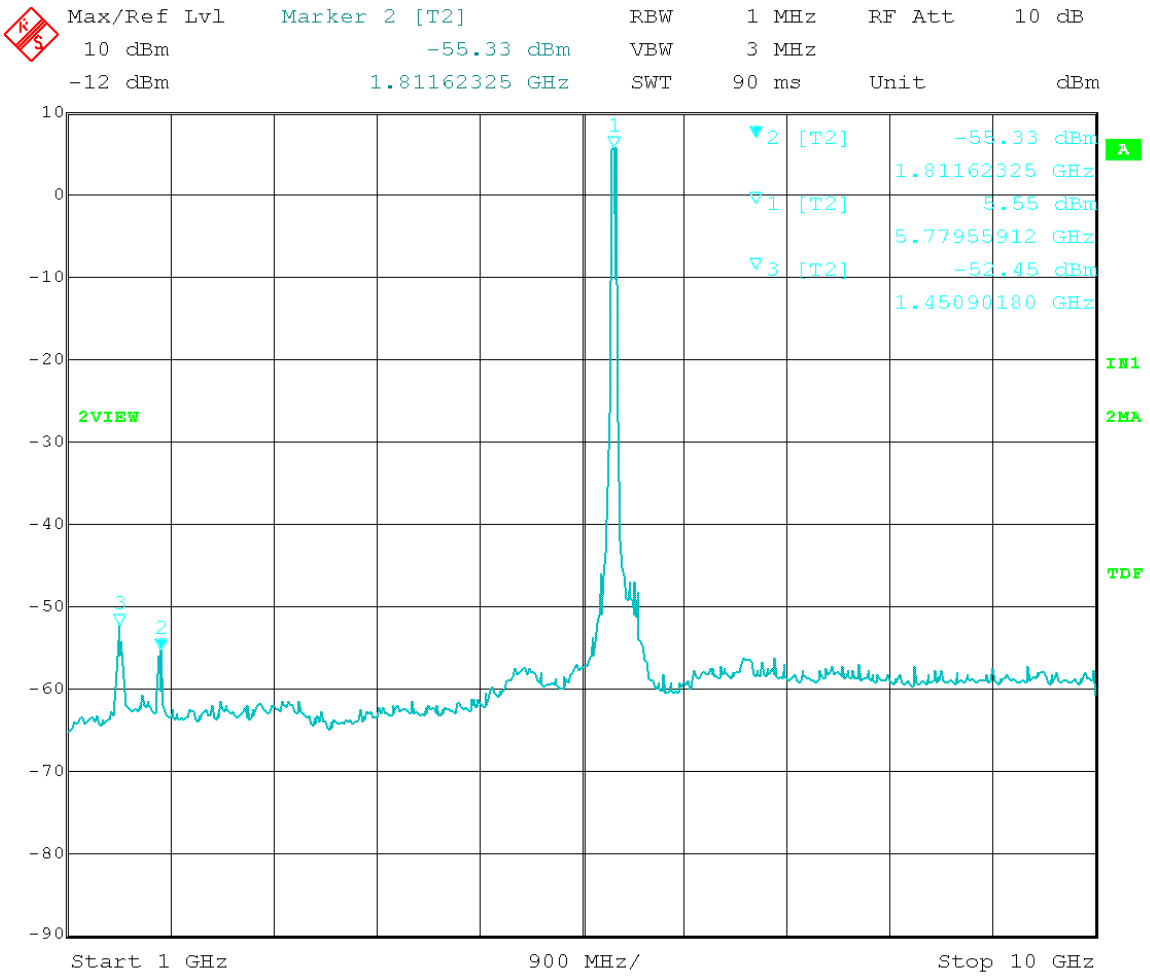
Marker 1: Non-Restricted Band
Marker 2: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:35:55

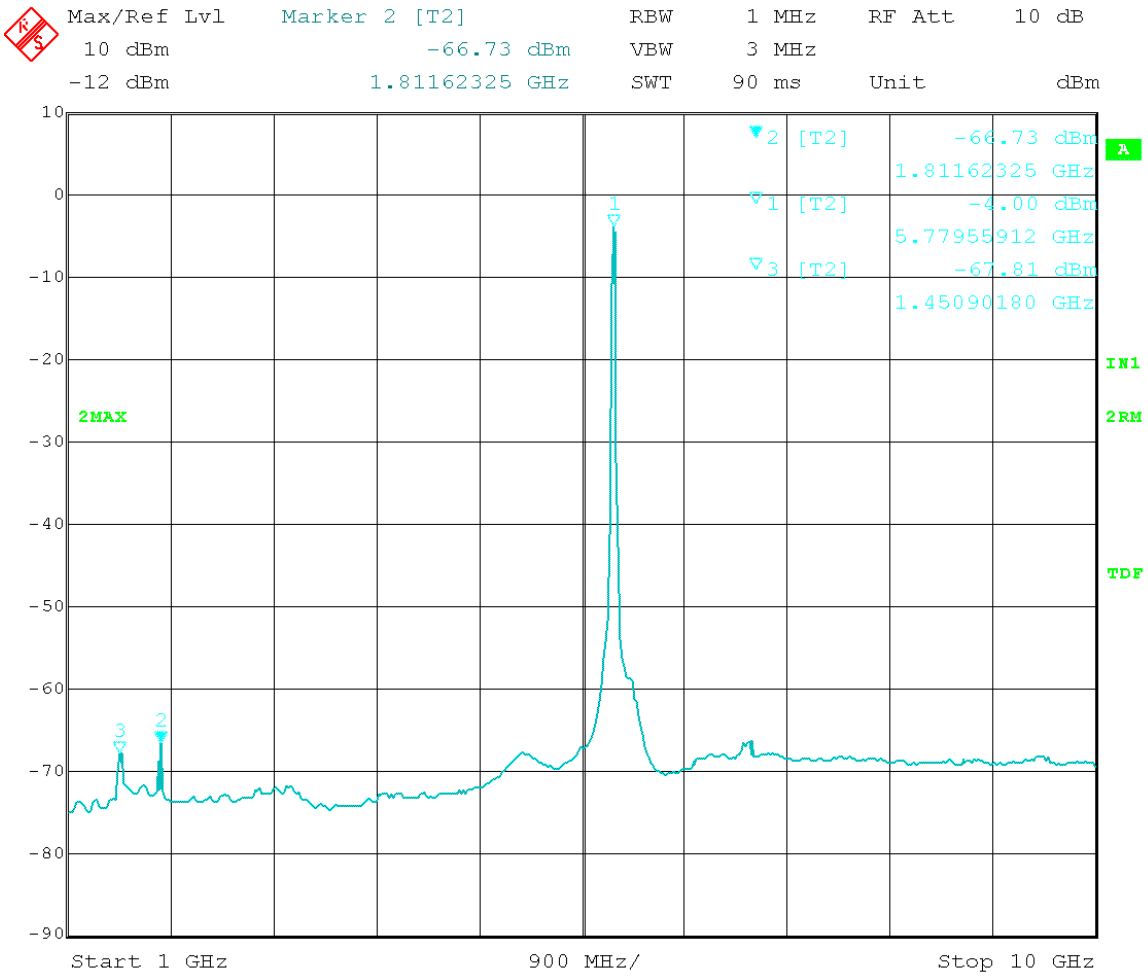
Marker 2: Calculated Field Strength (Restricted Band) = -55.33 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 58.9dBµV/m Peak
Marker 3: Calculated Field Strength (Restricted Band) = -52.45 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 61.78dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:40:47

Marker 2: Calculated Field Strength (Restricted Band) = -66.73+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 47.5dBµV/m Average

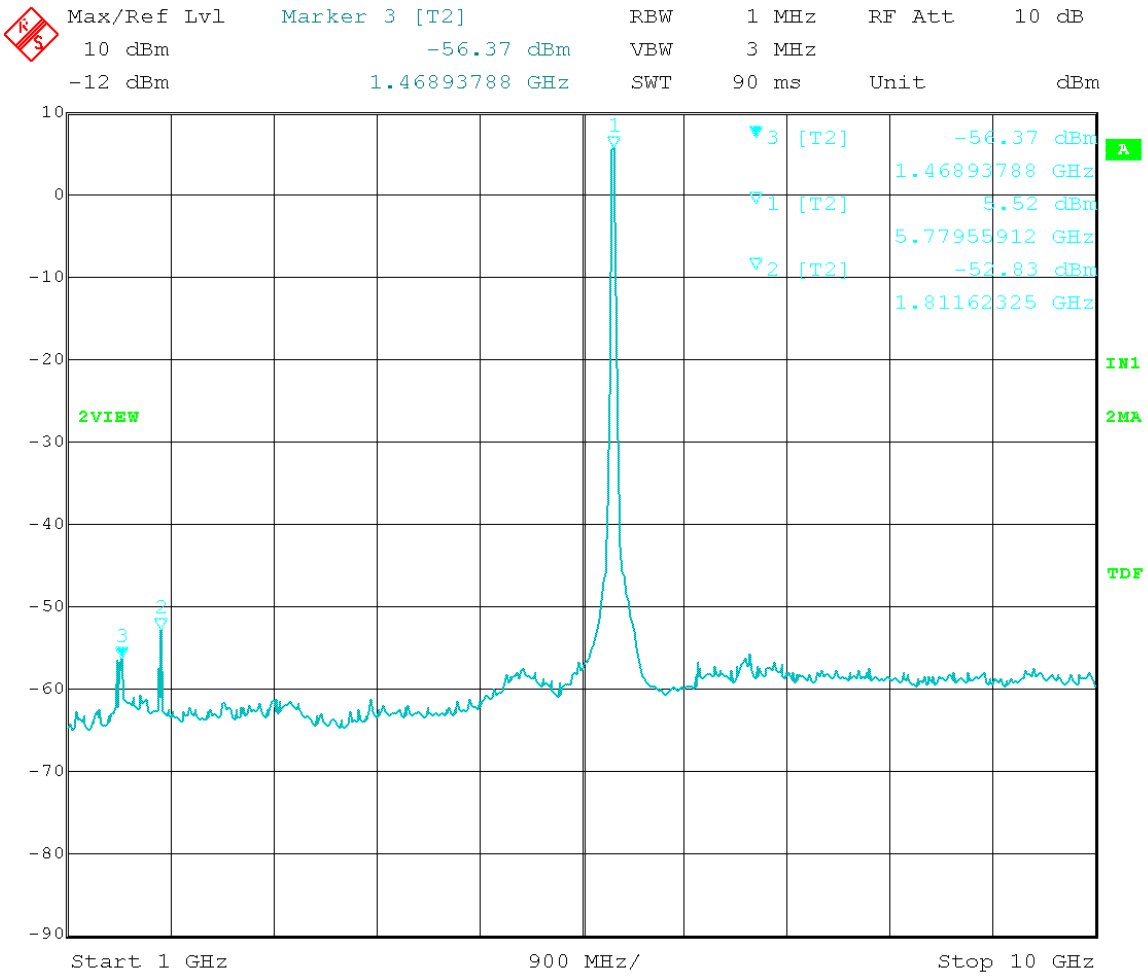
Marker 3: Calculated Field Strength (Restricted Band) = -67.81 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 46.42dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:48:55

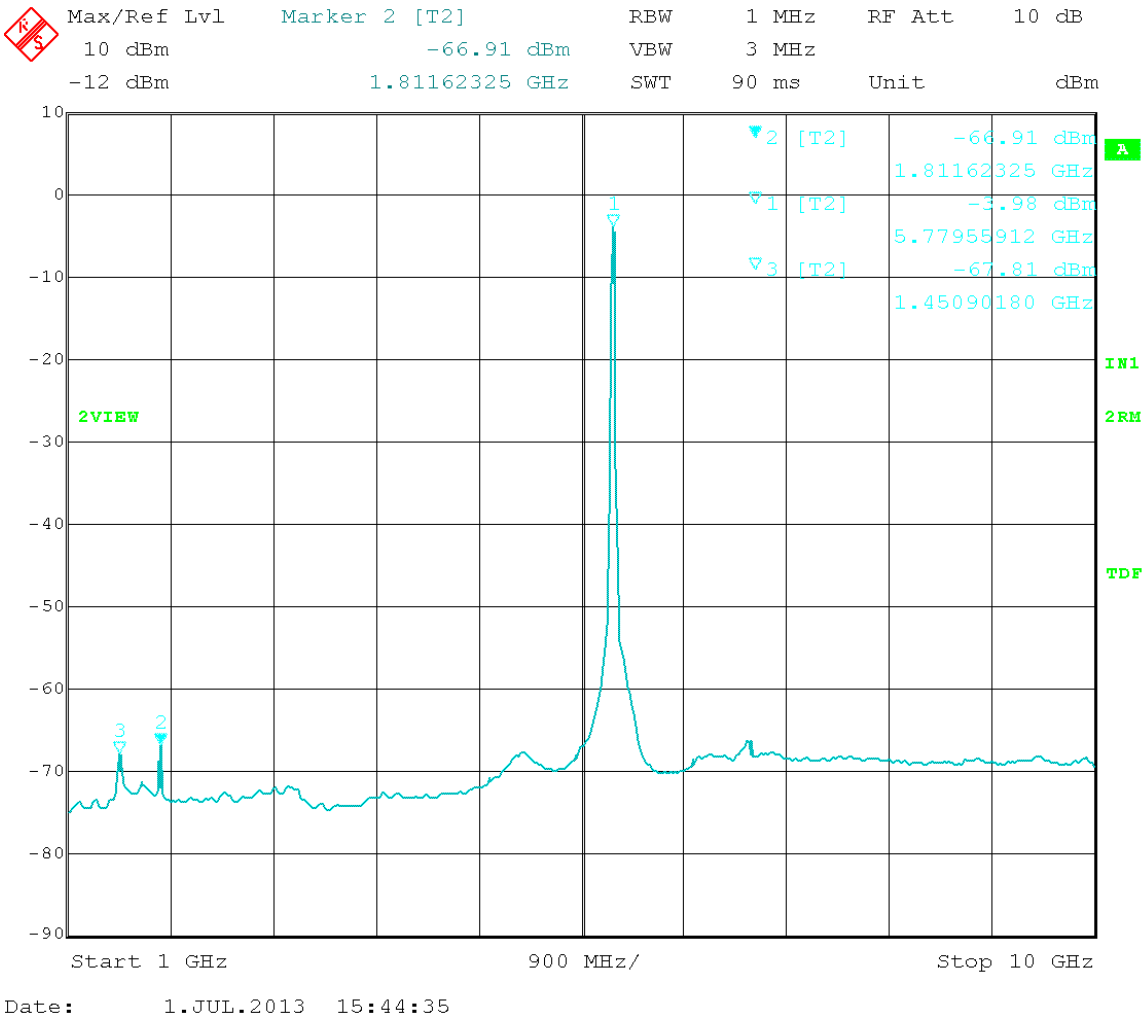
Marker 2: Calculated Field Strength (Restricted Band) = -52.83 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 61.4dBµV/m Peak
Marker 3: Calculated Field Strength (Restricted Band) = -56.37 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 57.86dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:44:35

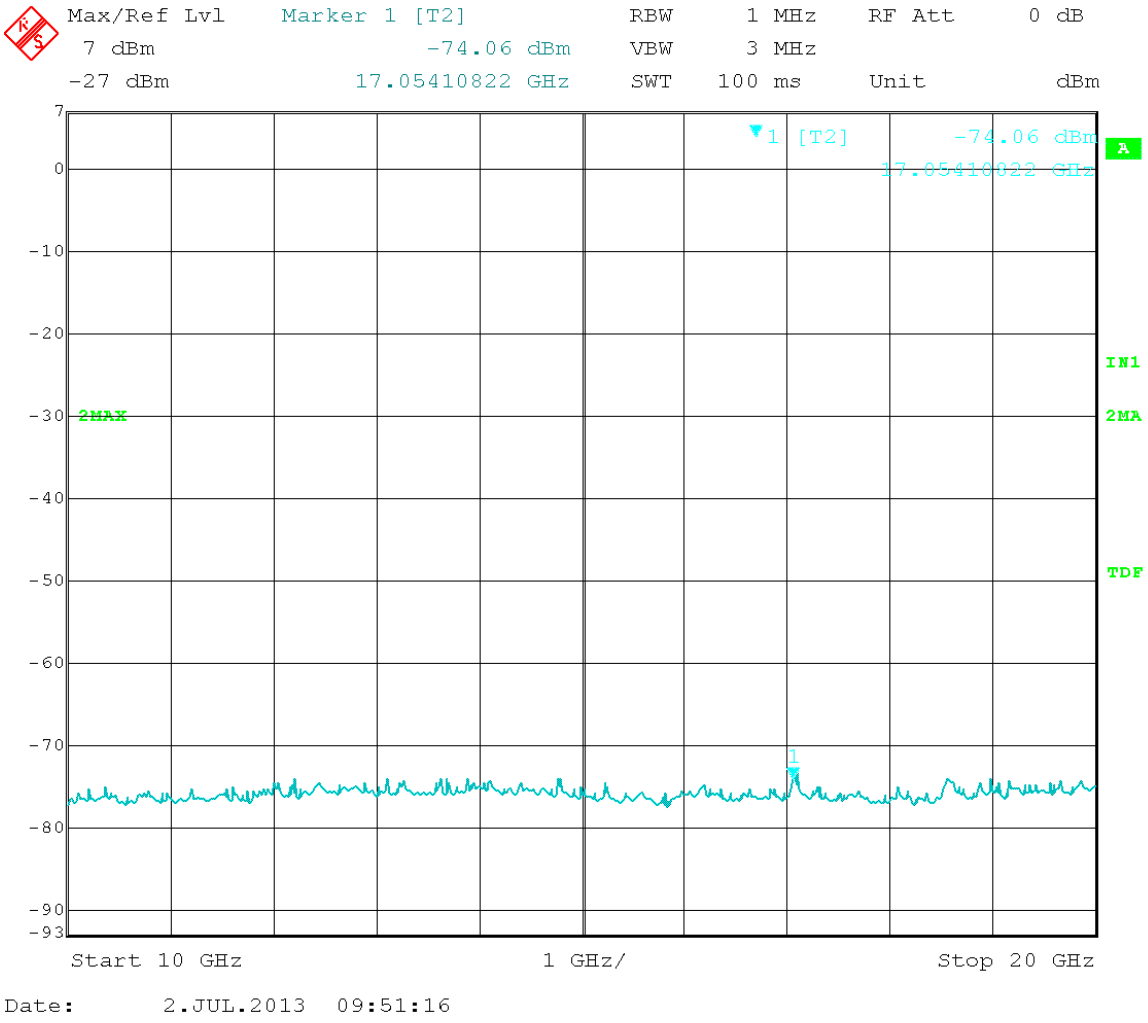
Marker 2: Calculated Field Strength (Restricted Band) = -66.91 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 47.32dBµV/m Average
Marker 3: Calculated Field Strength (Restricted Band) = -67.81 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 46.42dBµV/m Average

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:51:16

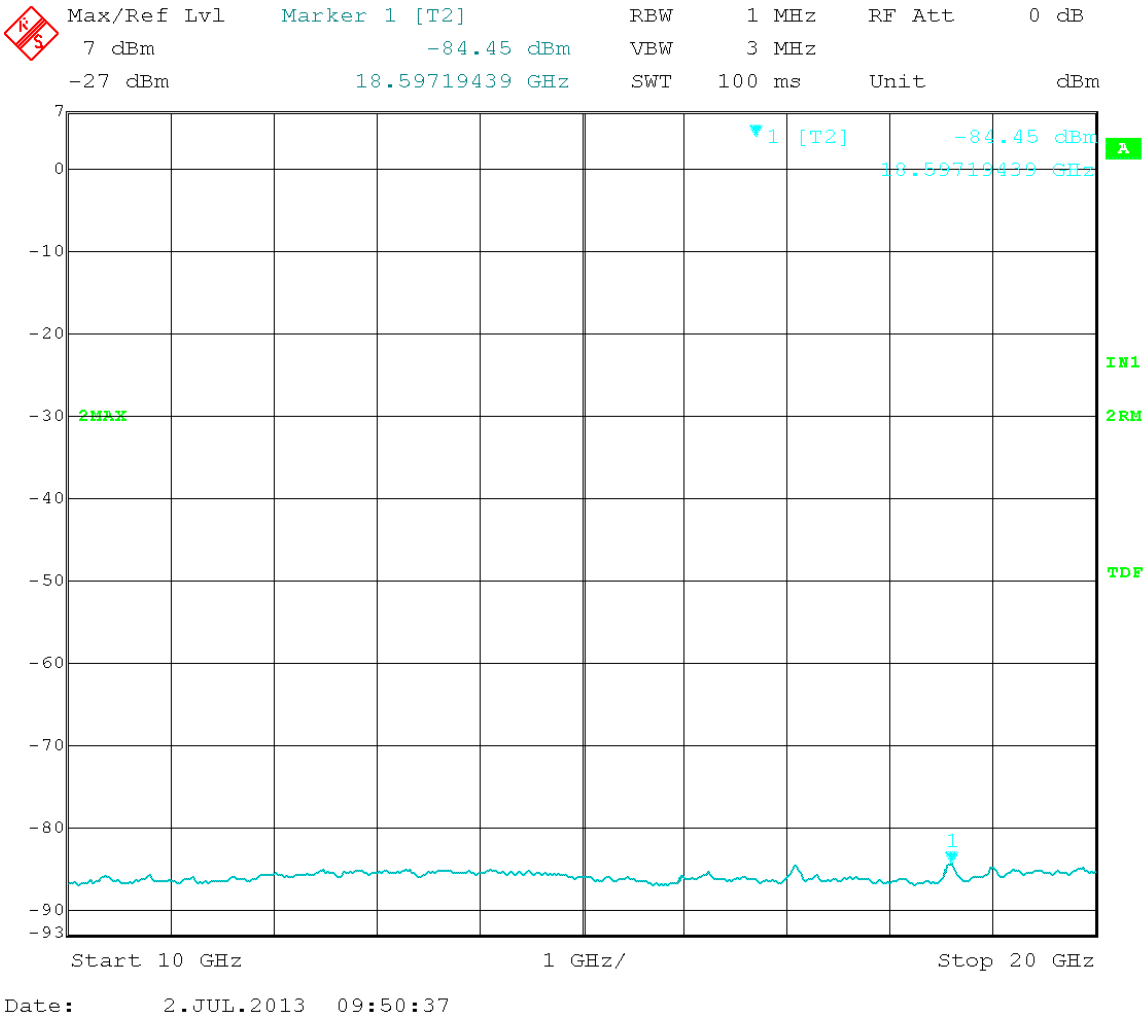
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



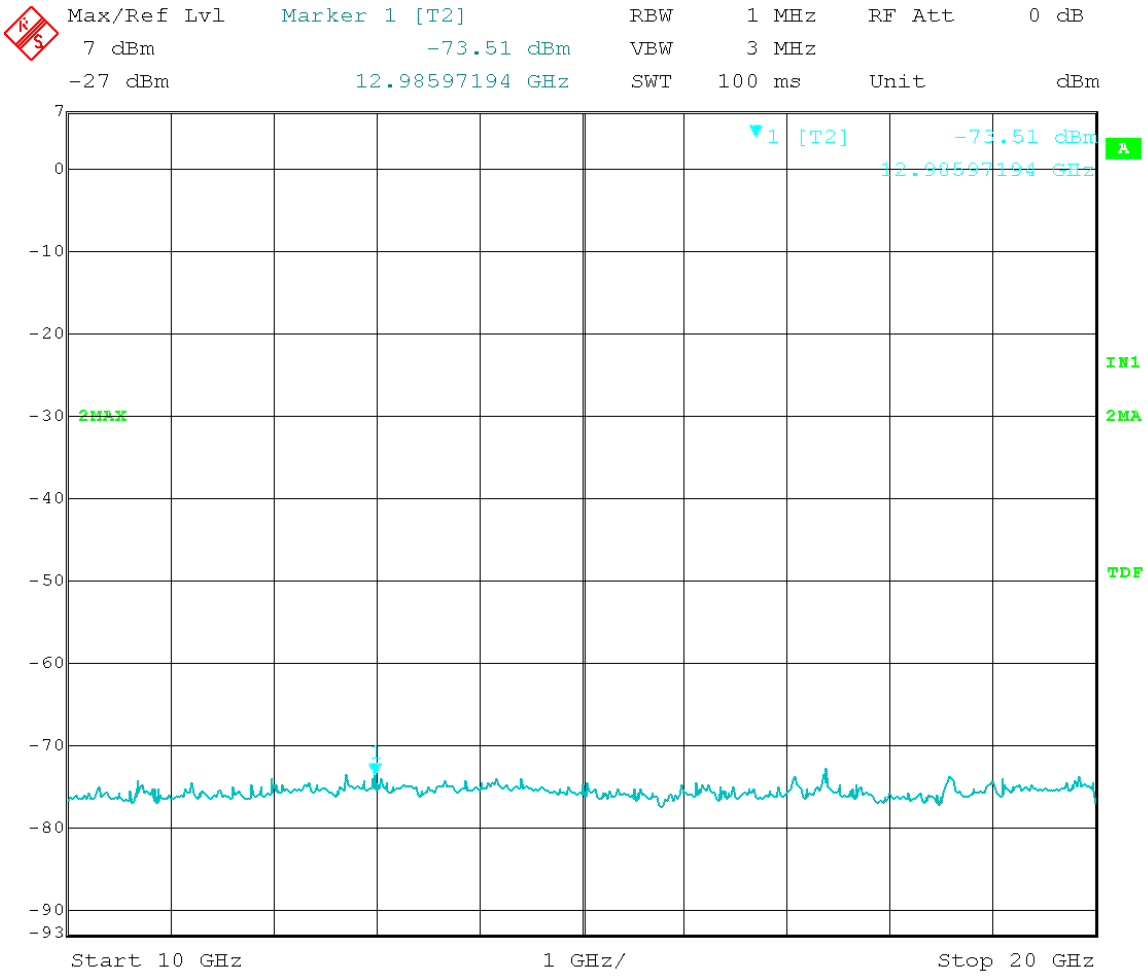
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:47:32

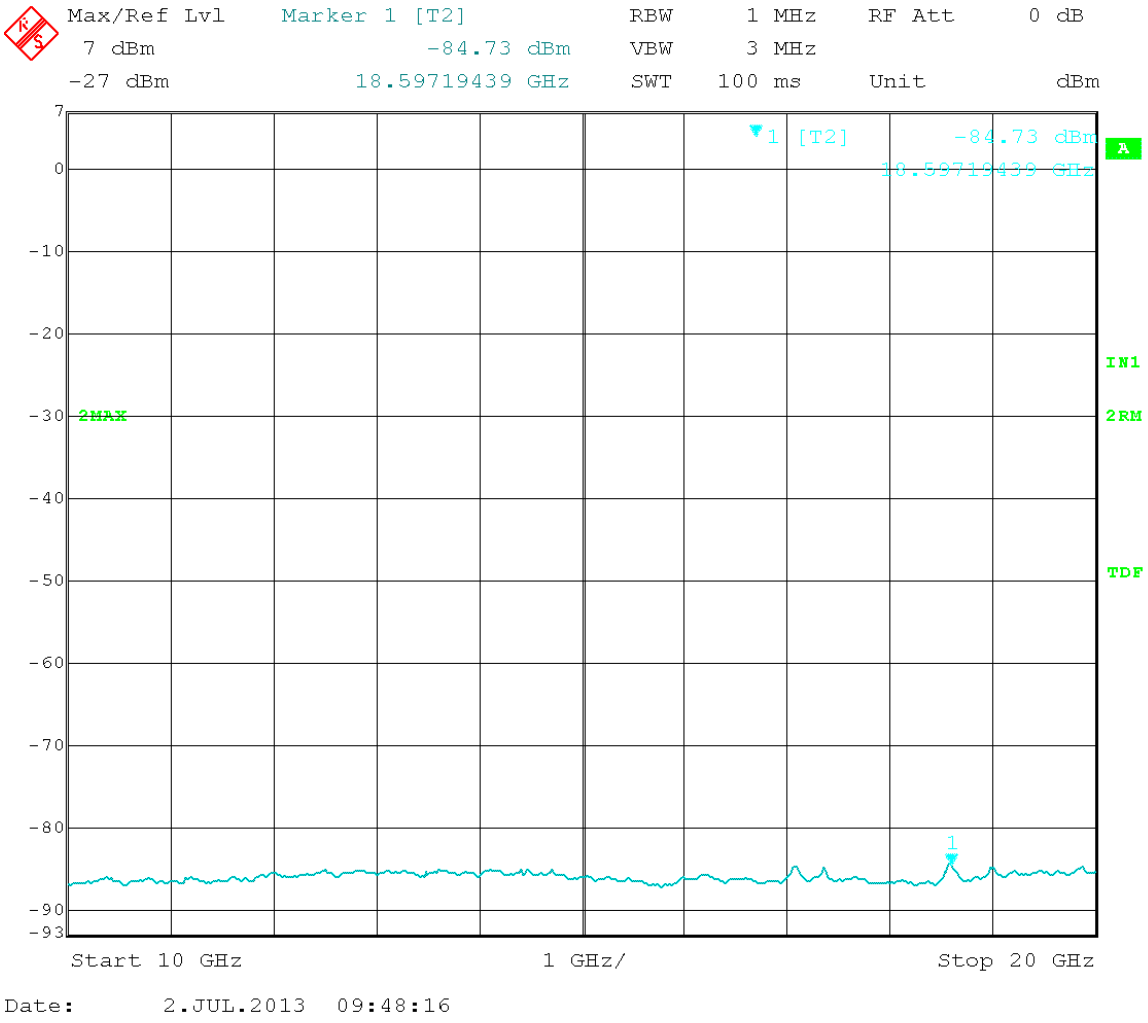
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:48:16

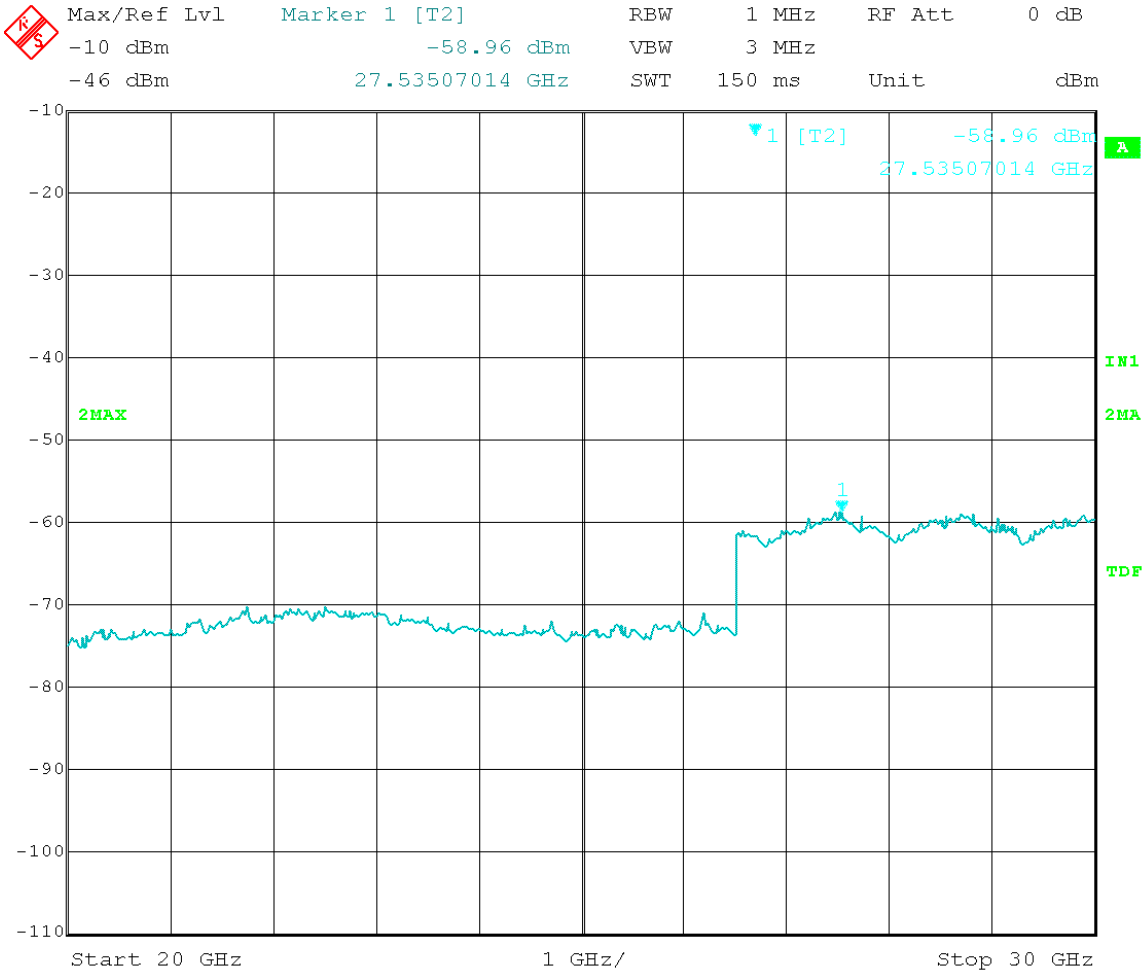
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 11:50:58

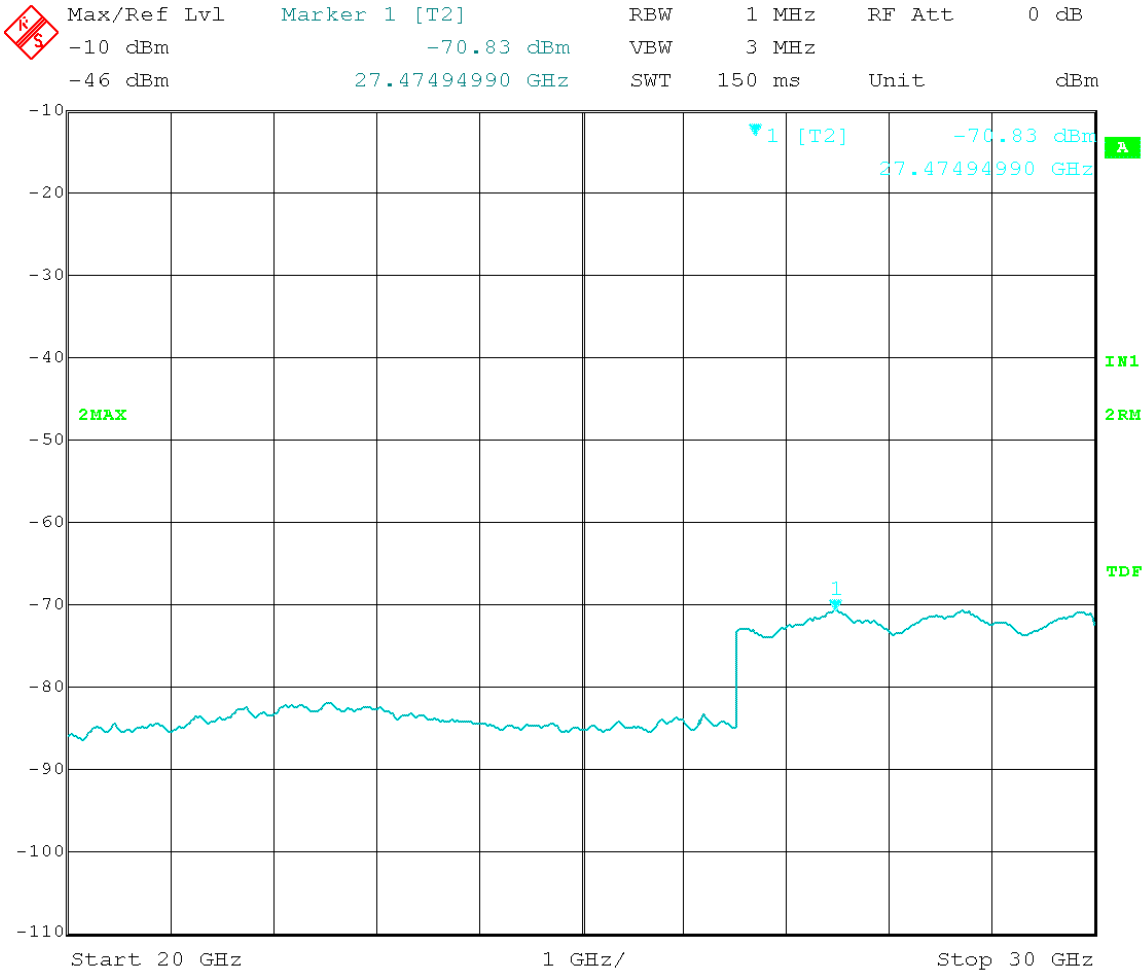
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 11:51:44

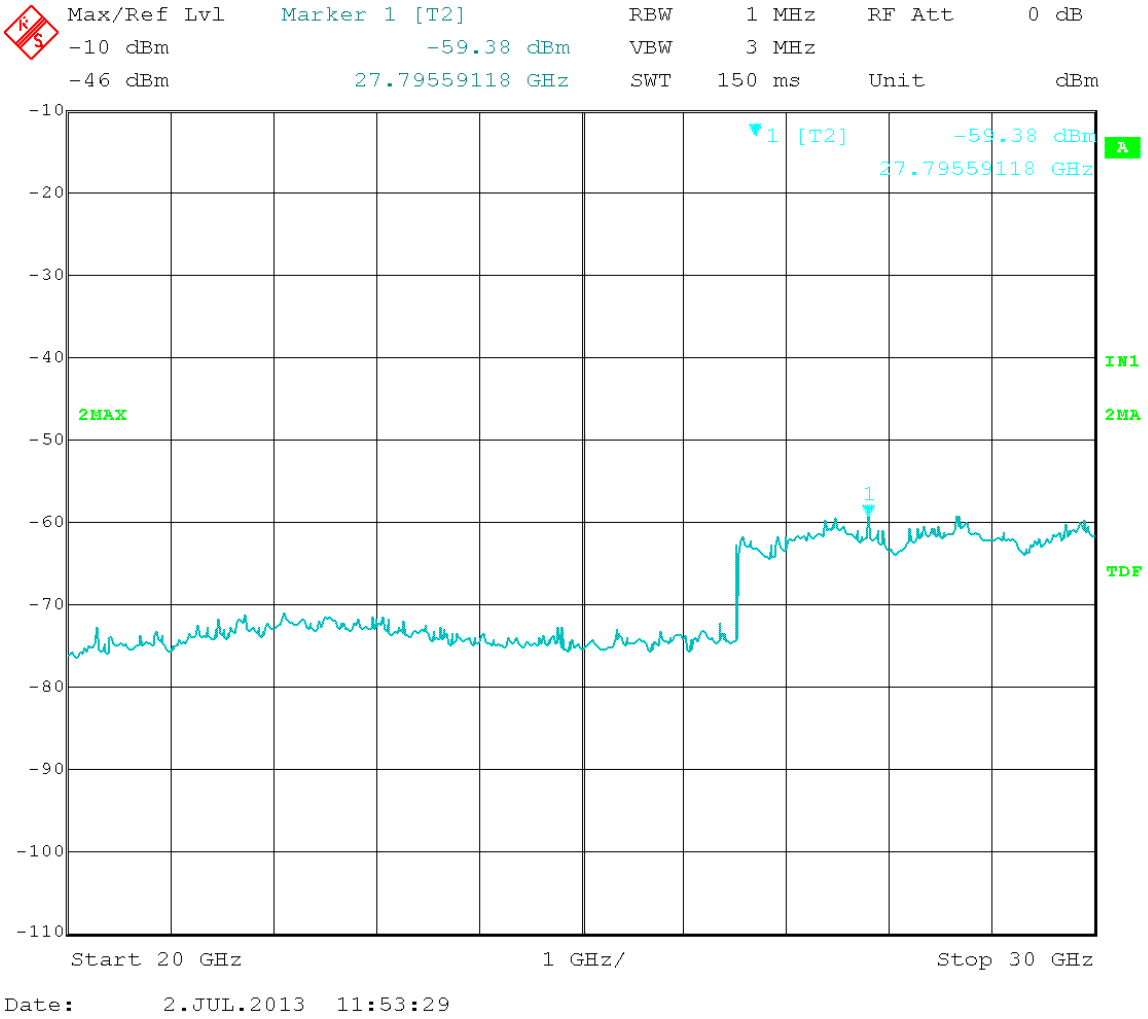
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 11:53:29

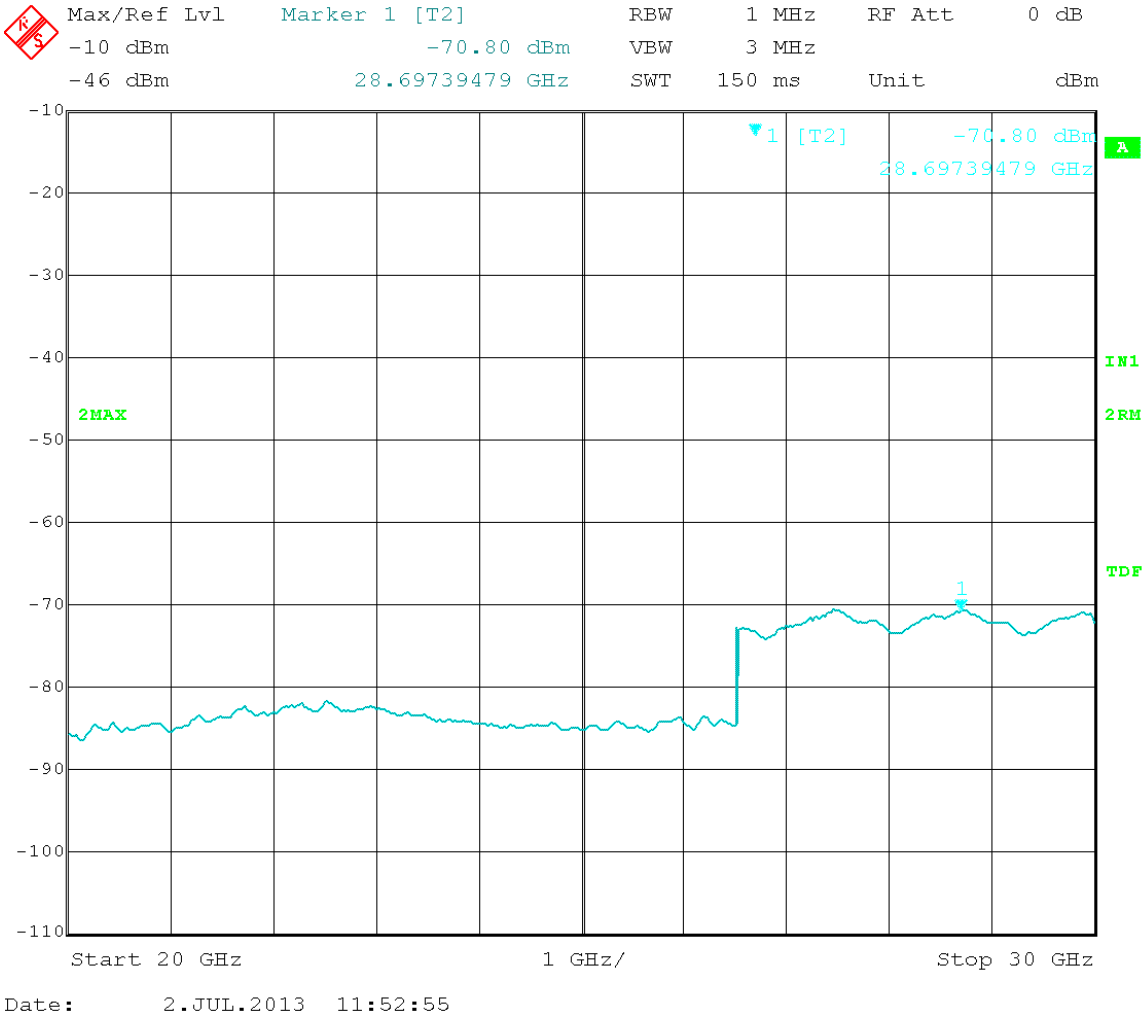
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 11:52:55

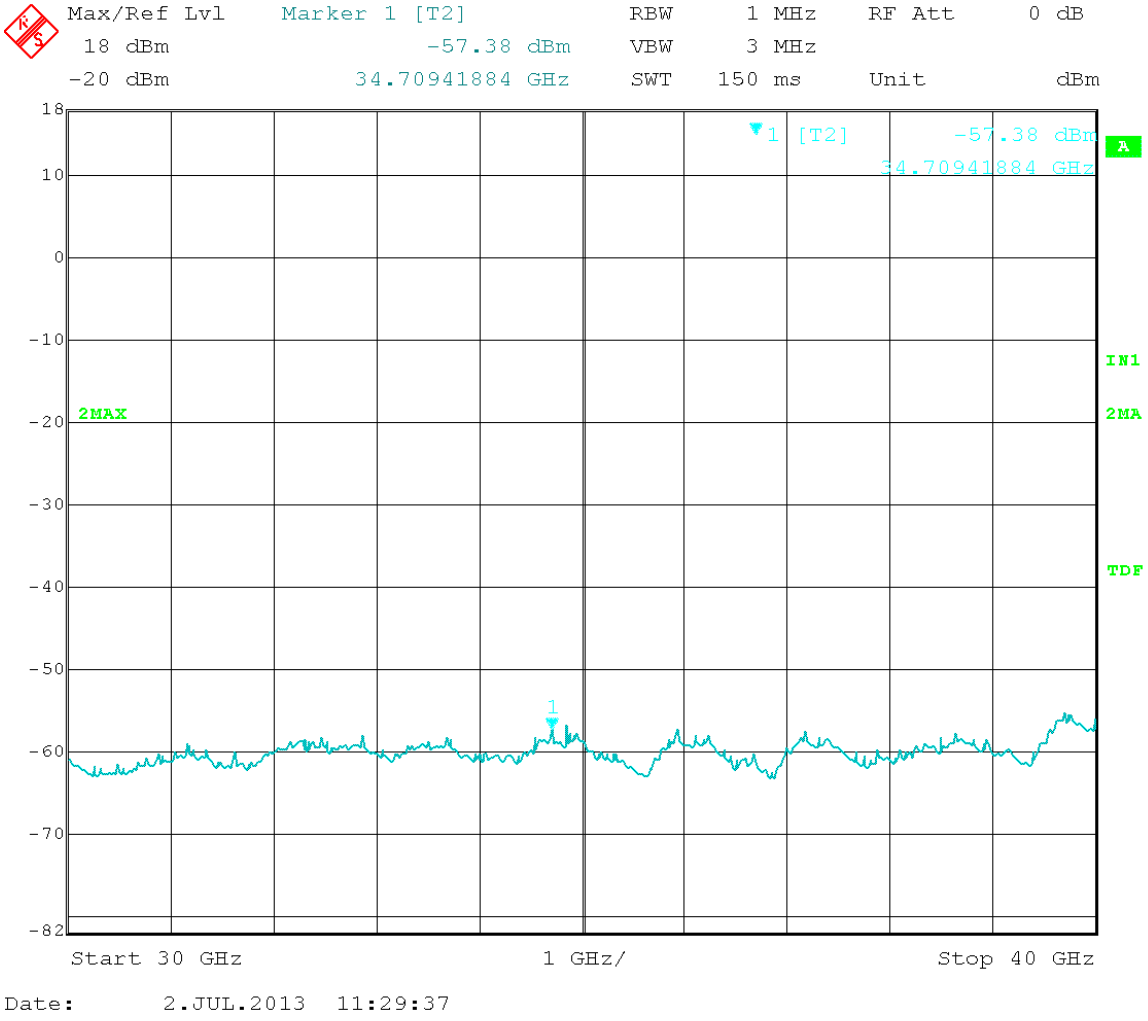
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 11:29:37

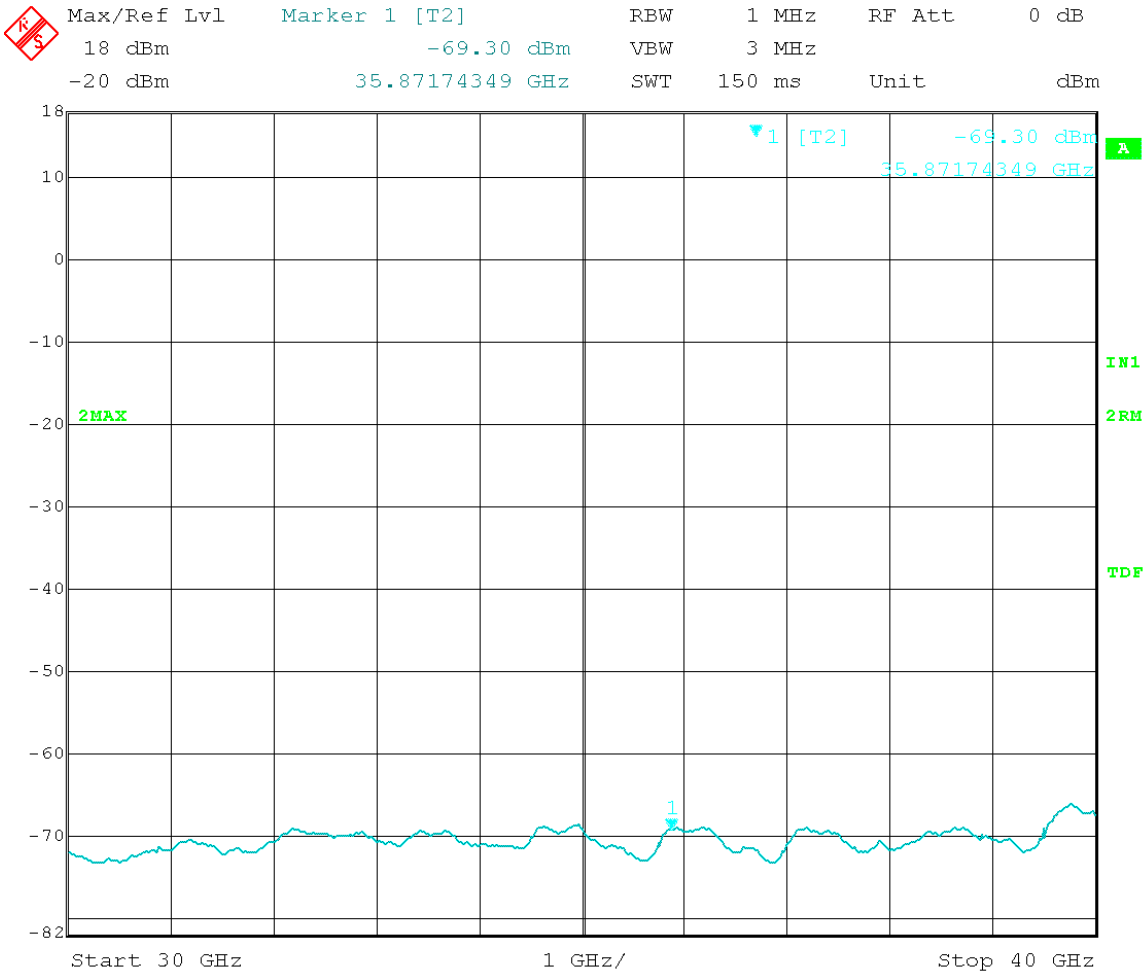
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 11:28:56

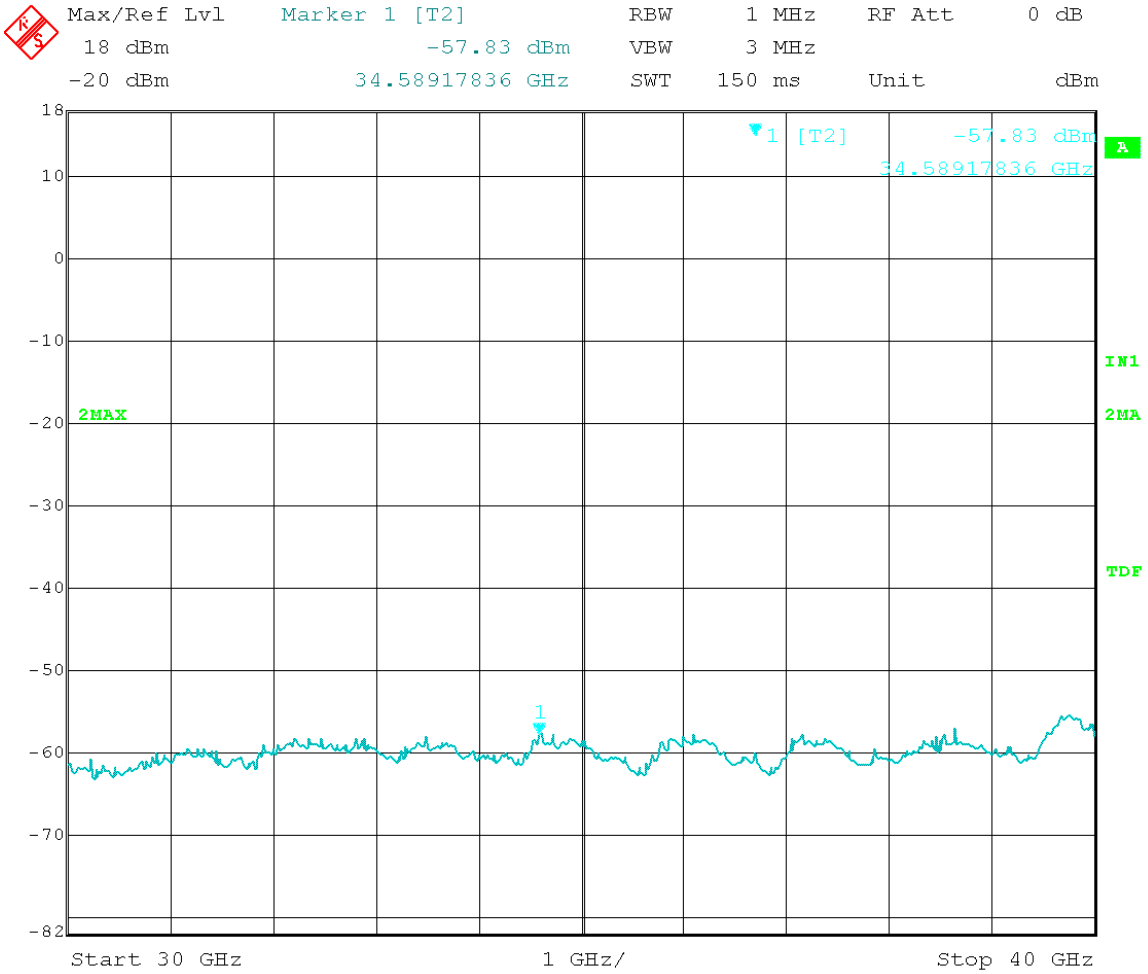
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 11:26:22

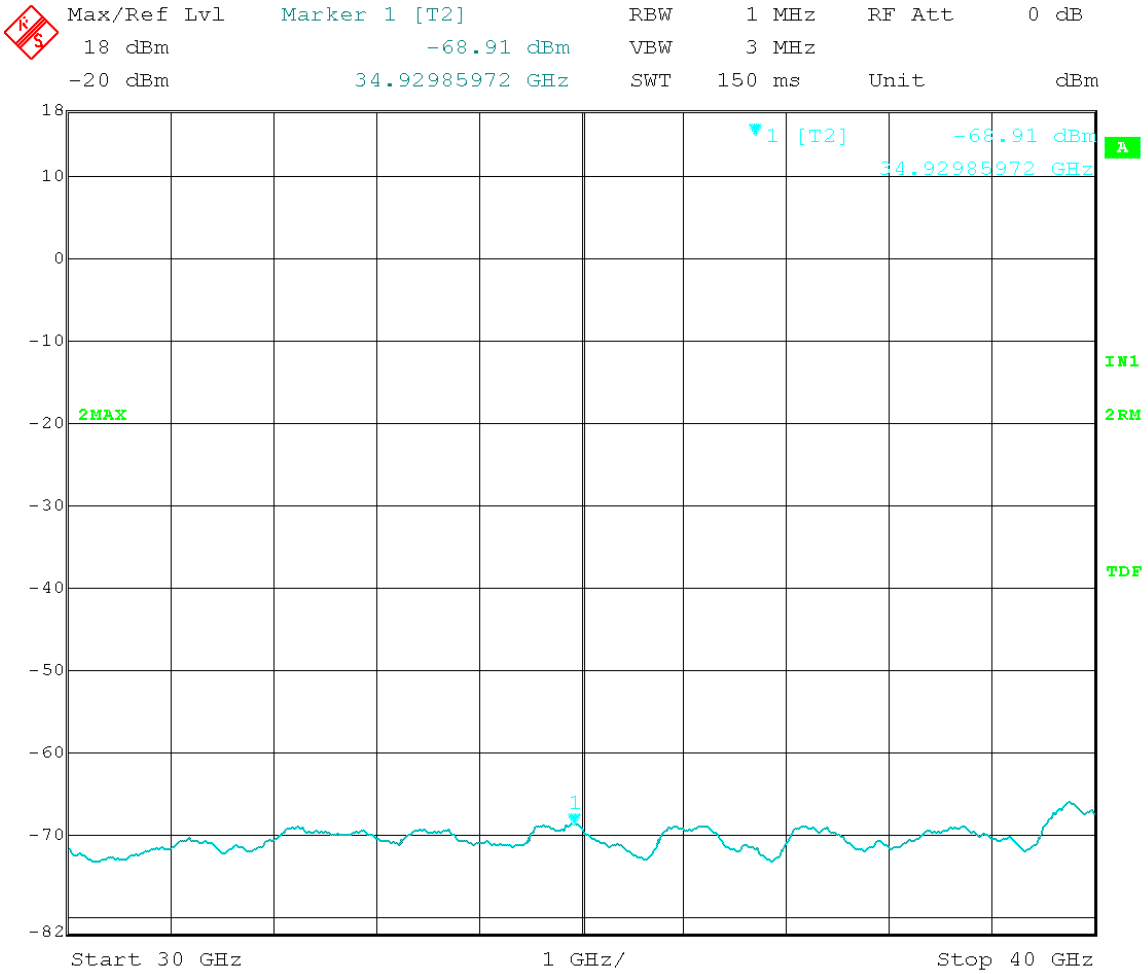
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
Mid Channel Frequency: 5.785 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 11:27:06

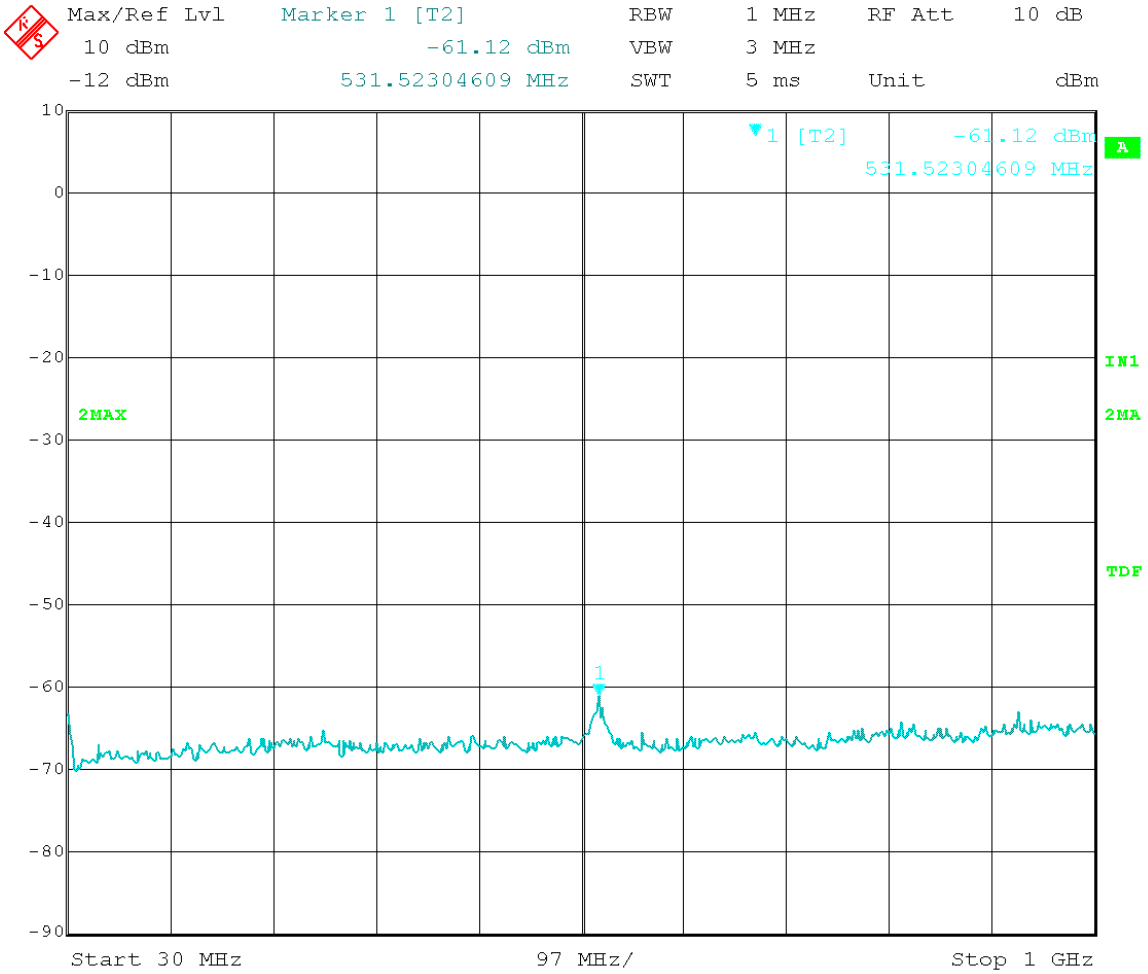
Marker 1: Greater than 20dB below limit

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 15:03:38

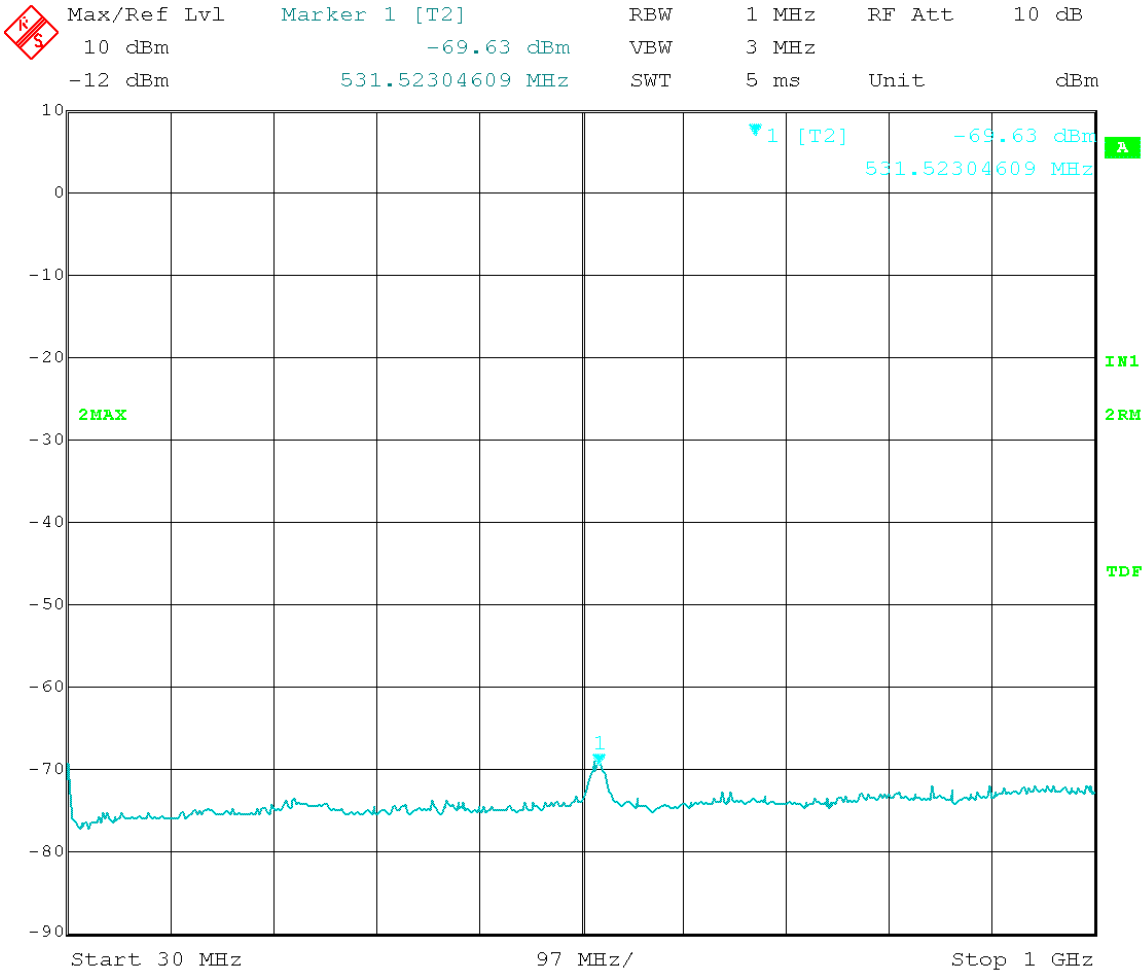
Marker 1: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 15:02:49

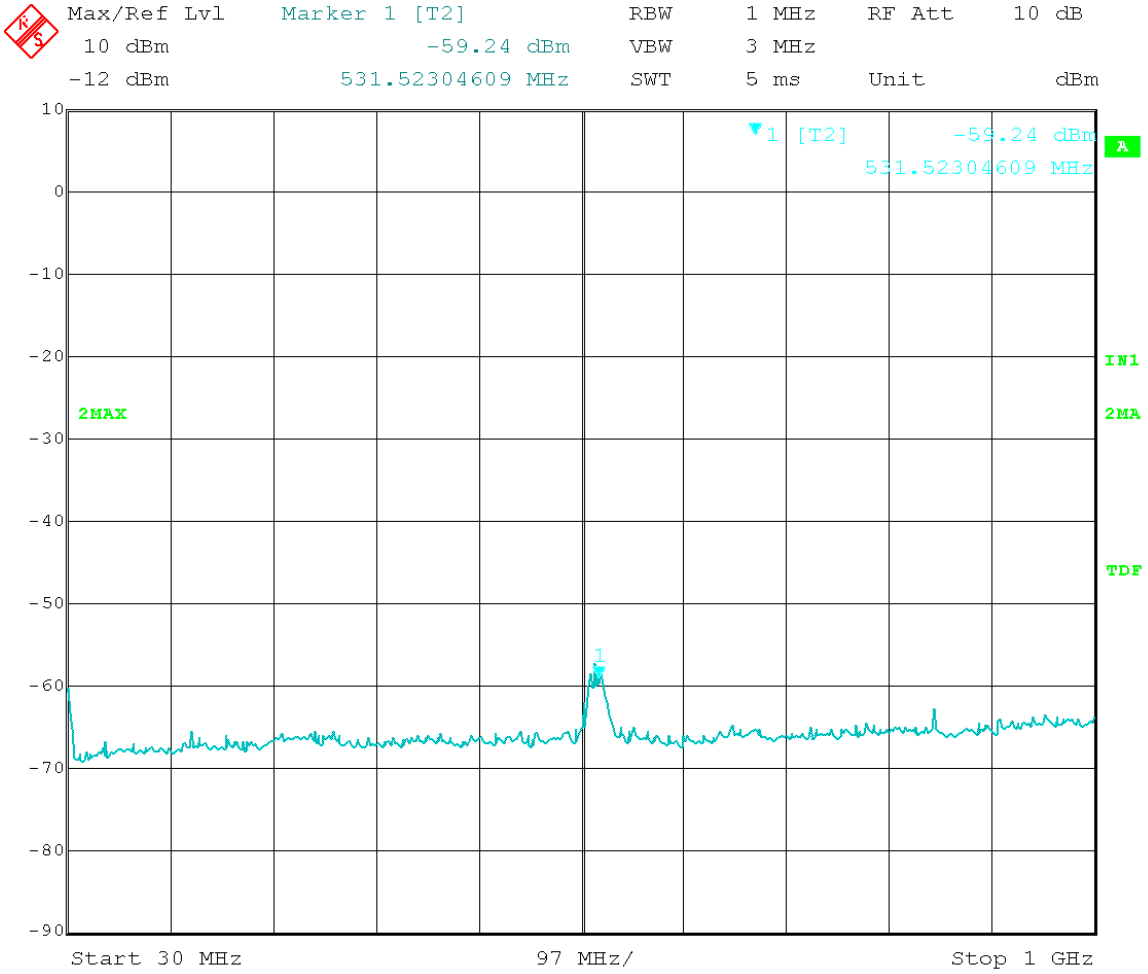
Marker 1: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 14:59:57

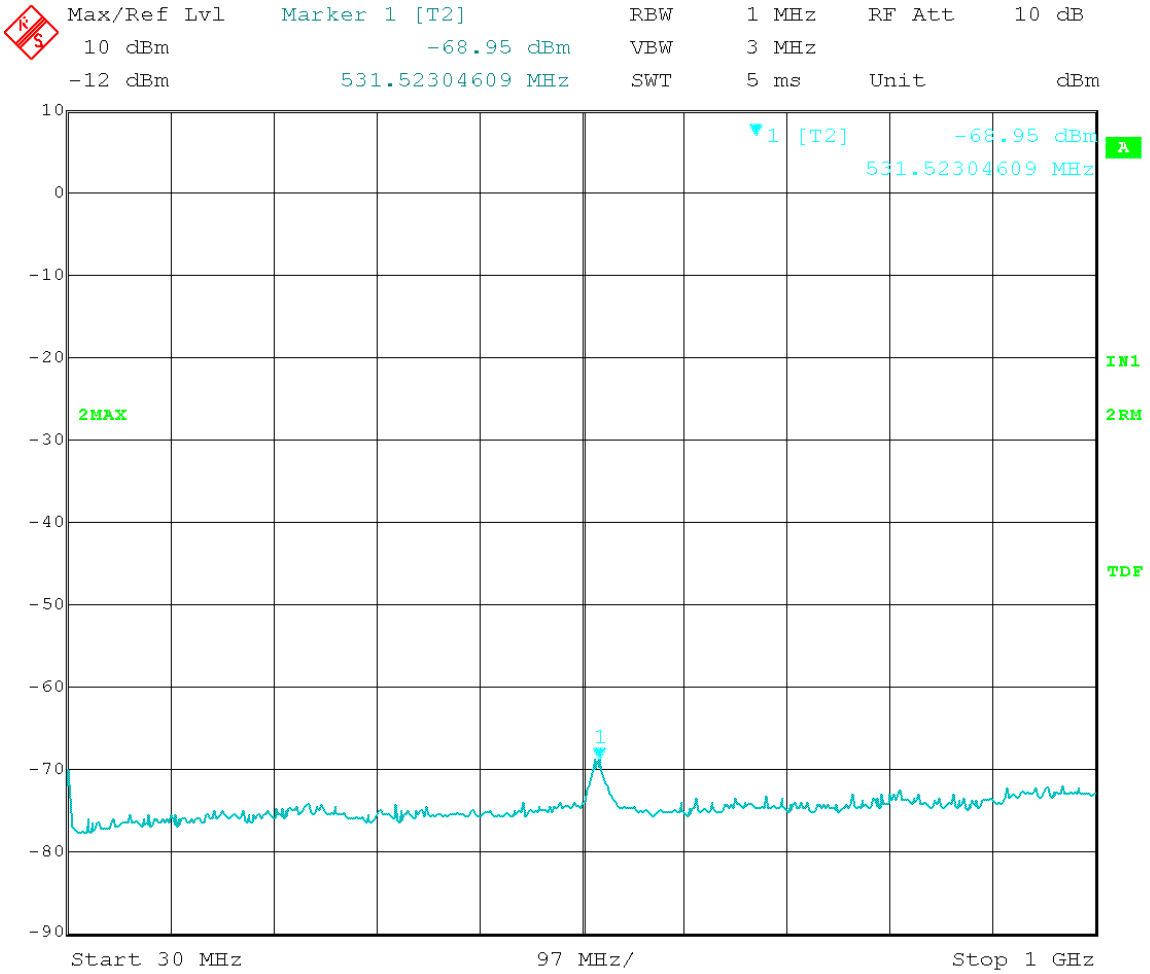
Marker 1: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30MHz to 1GHz



Date: 1.JUL.2013 15:00:26

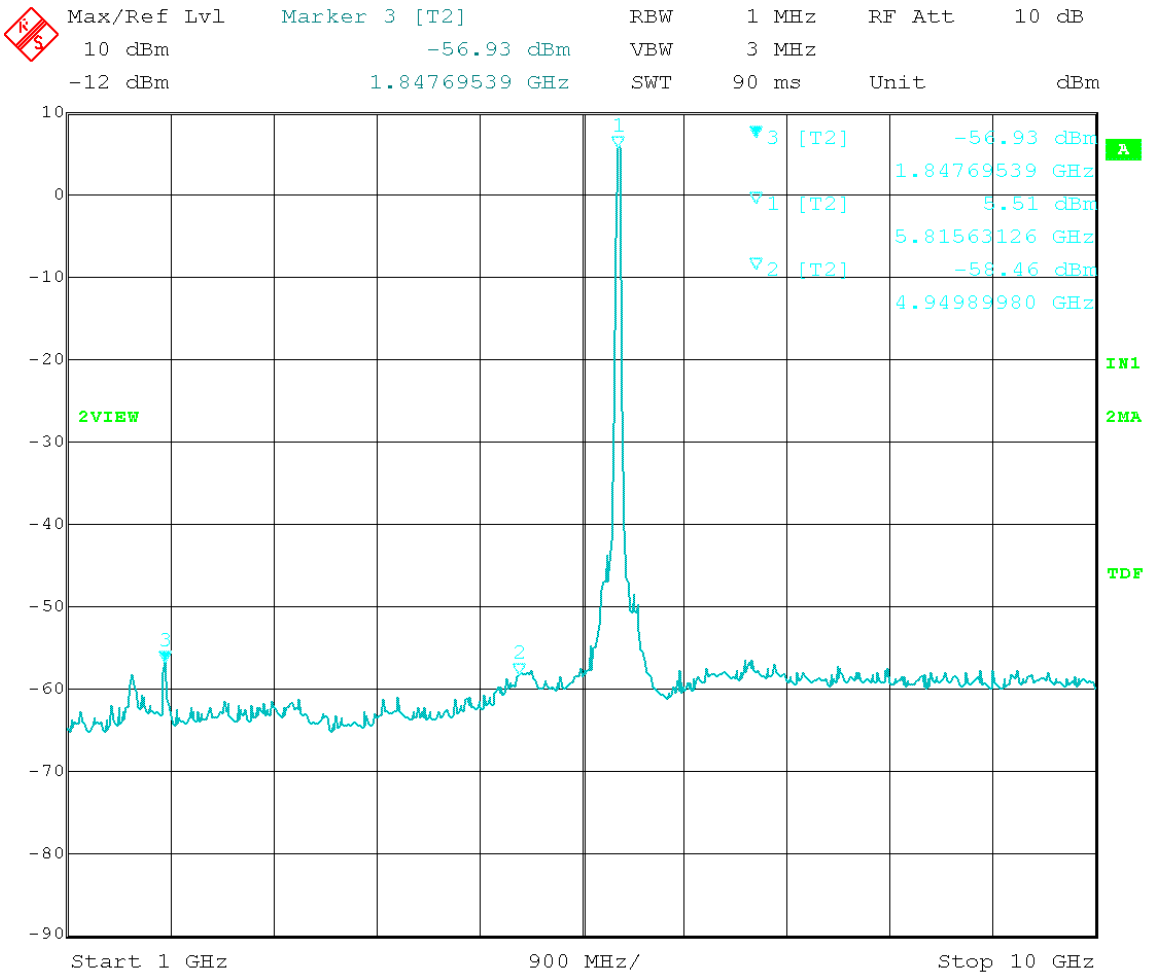
Marker 1: Non-Restricted Band

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:19:36

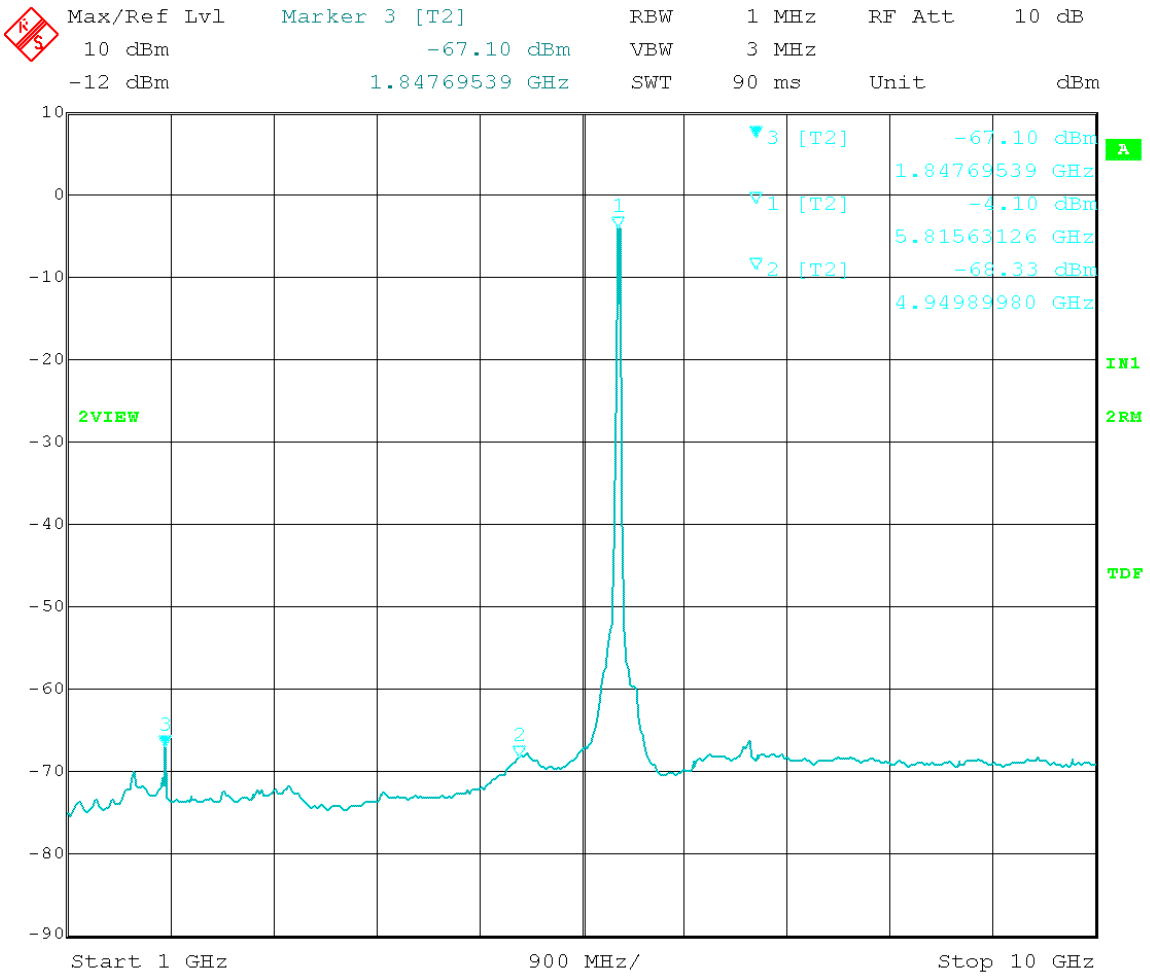
Marker 2: Calculated Field Strength (Restricted Band) = -58.46 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 55.77dBµV/m Peak
Marker 3: Calculated Field Strength (Restricted Band) = -56.93 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 57.3dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 0
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:17:26

Marker 2: Calculated Field Strength (Restricted Band) = -68.33+ 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 45.9dBµV/m Average

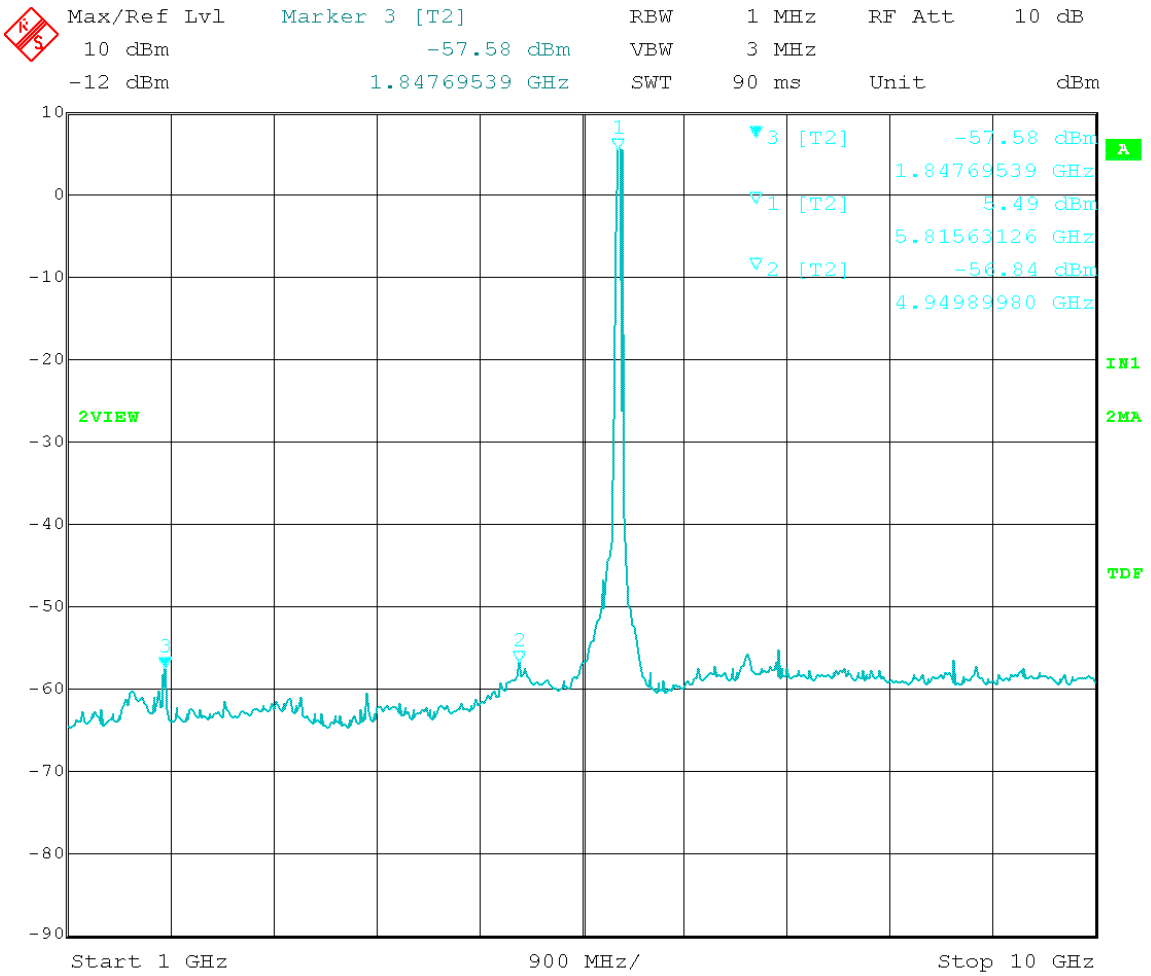
Marker 3: Calculated Field Strength (Restricted Band) = -67.10 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 47.13dBµV/m Average

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:08:49

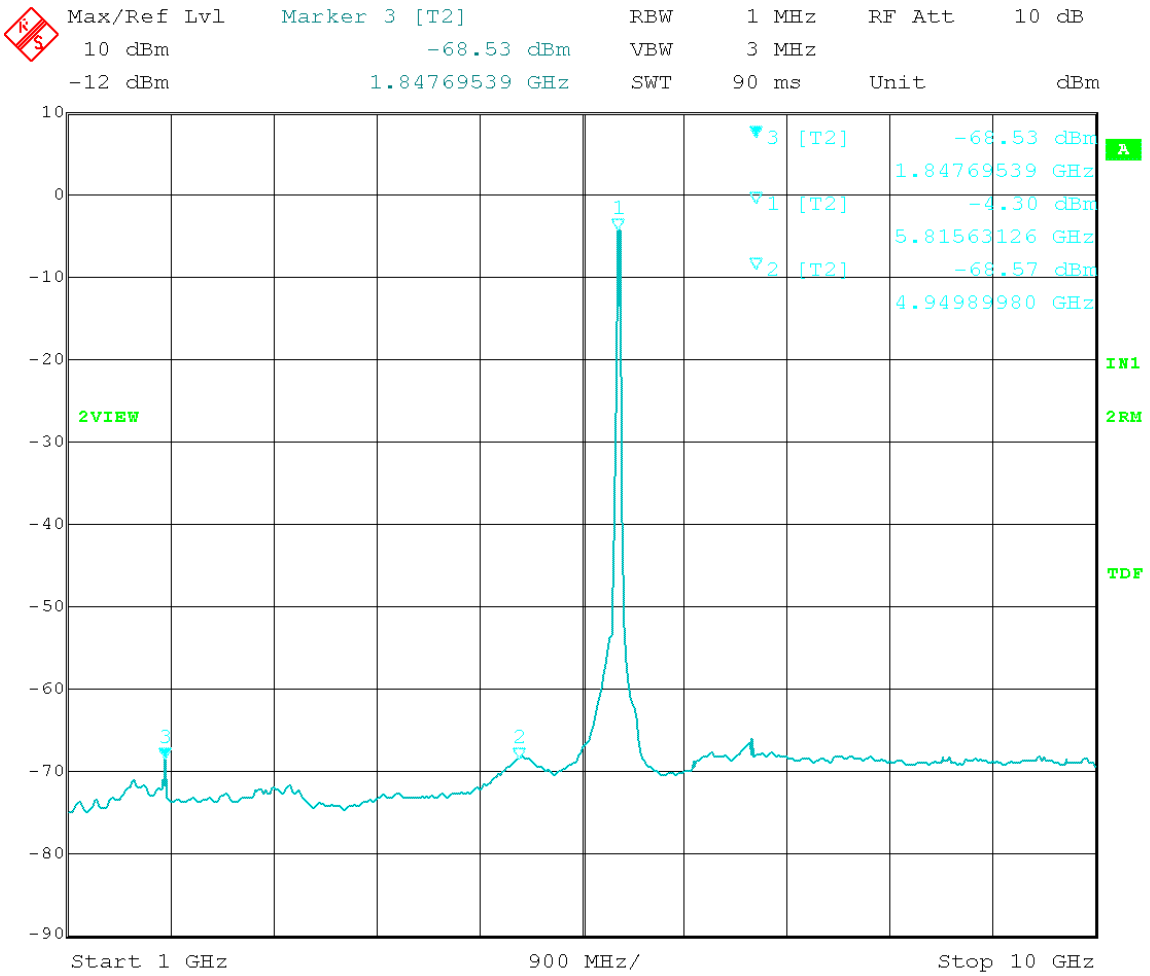
Marker 2: Calculated Field Strength (Restricted Band) = -56.84 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 57.39dBµV/m Peak
Marker 3: Calculated Field Strength (Restricted Band) = -57.58 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 56.65dBµV/m Peak

Test Date: 07-01-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter unwanted emissions – RF conducted
Operator: Jim O

EUT nominal channel bandwidth: 40 MHz
Output port: Channel 1
Output power setting: 17
Antenna gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 1 GHz to 10 GHz



Date: 1.JUL.2013 15:13:04

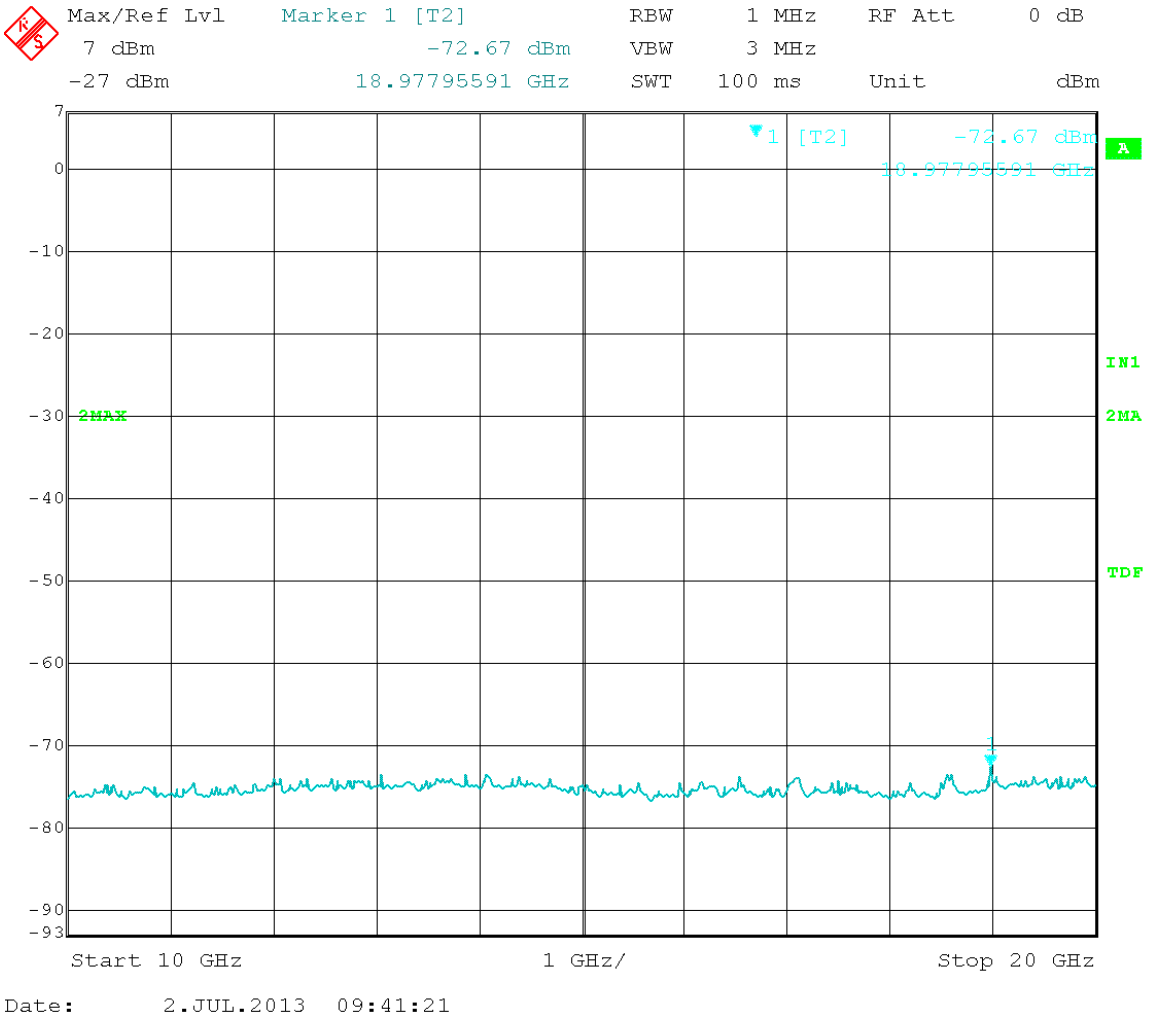
Marker 2: Calculated Field Strength (Restricted Band) = -68.57 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 45.66dBµV/m Average
Marker 3: Calculated Field Strength (Restricted Band) = -68.53 + 16dBi antenna gain + 3 dB (MIMO) – 20 log (3 meters) + 104.77 = 45.62dBµV/m Average

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:41:21

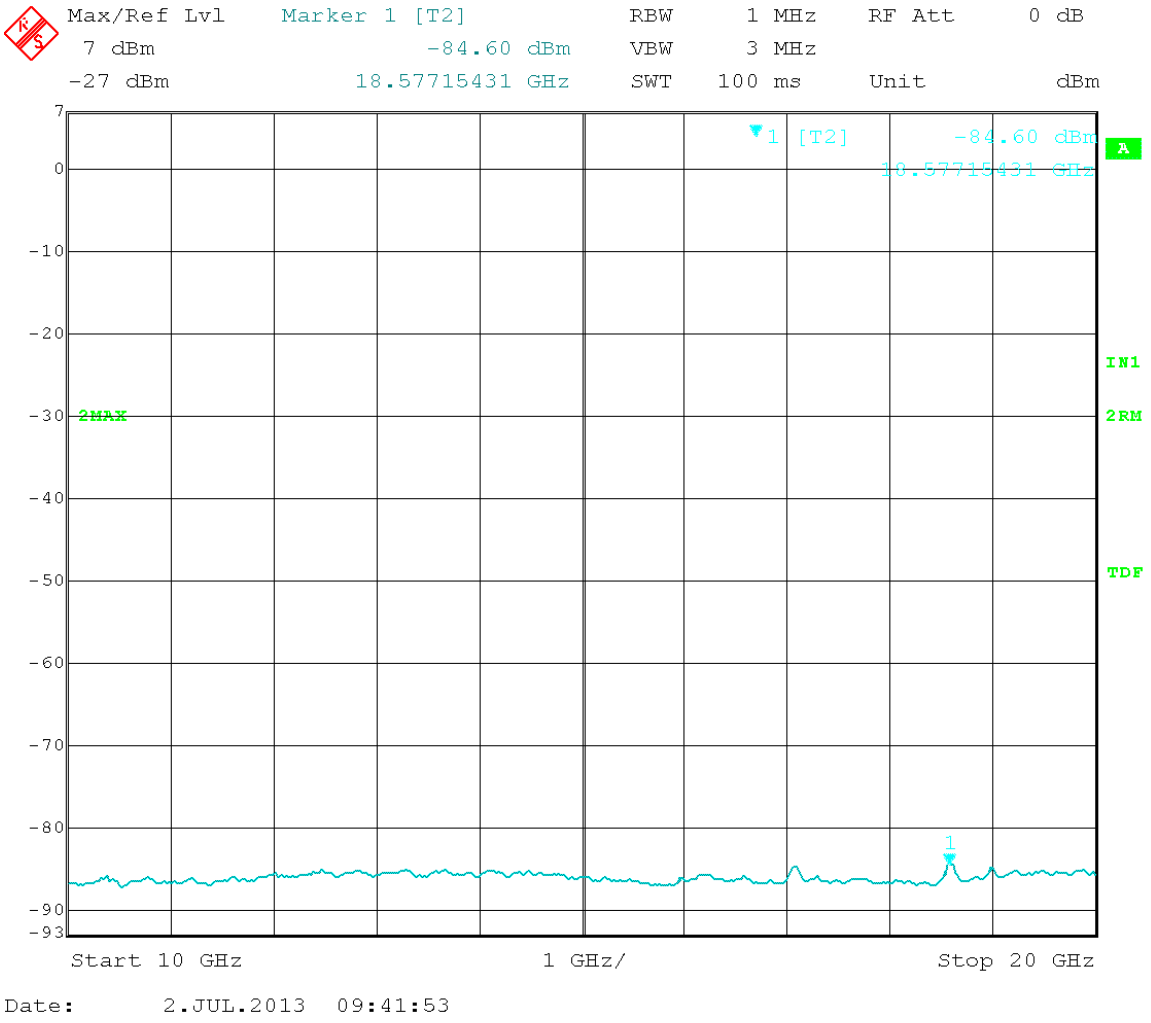
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



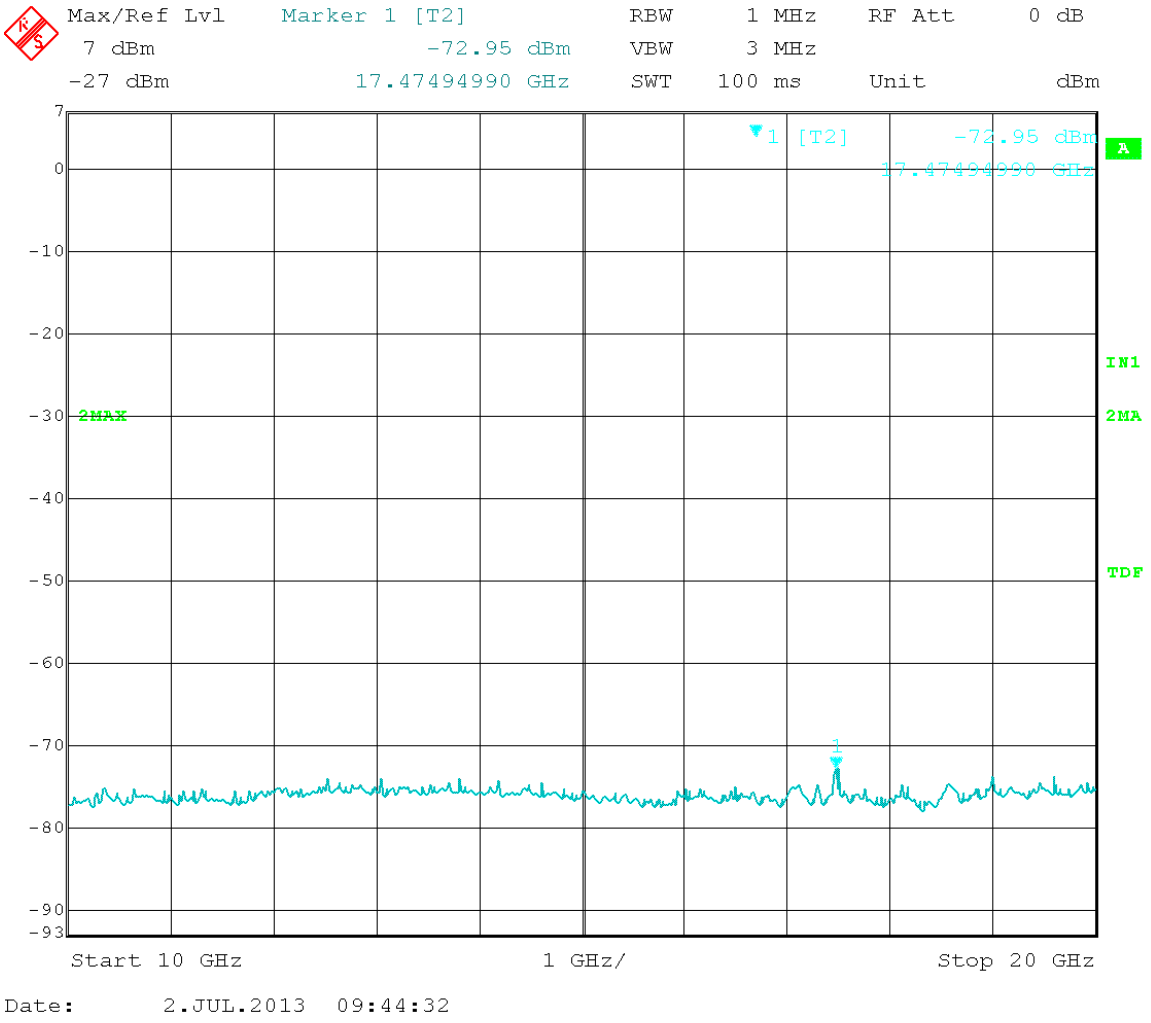
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:44:32

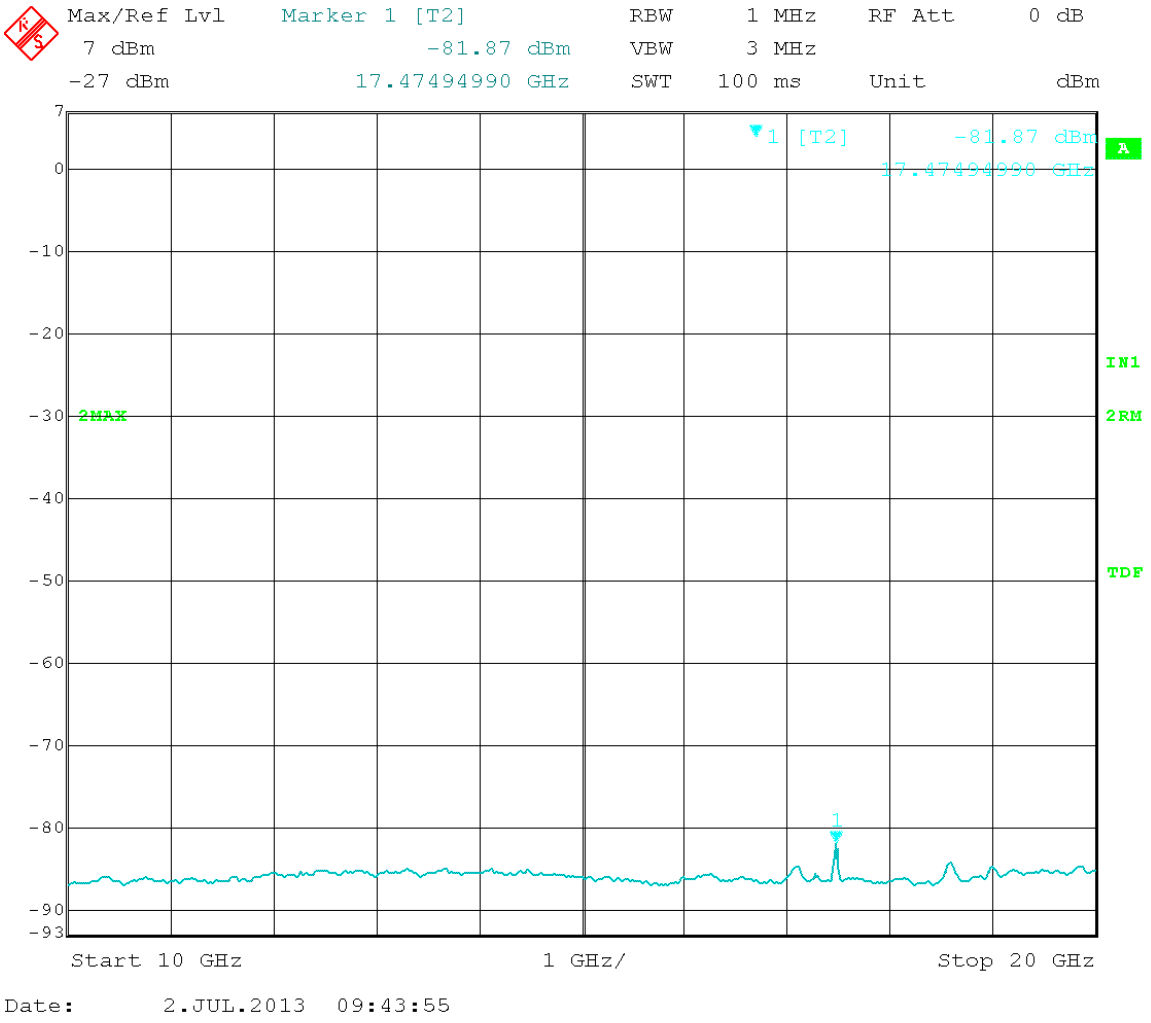
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 10 GHz to 20 GHz



Date: 2.JUL.2013 09:43:55

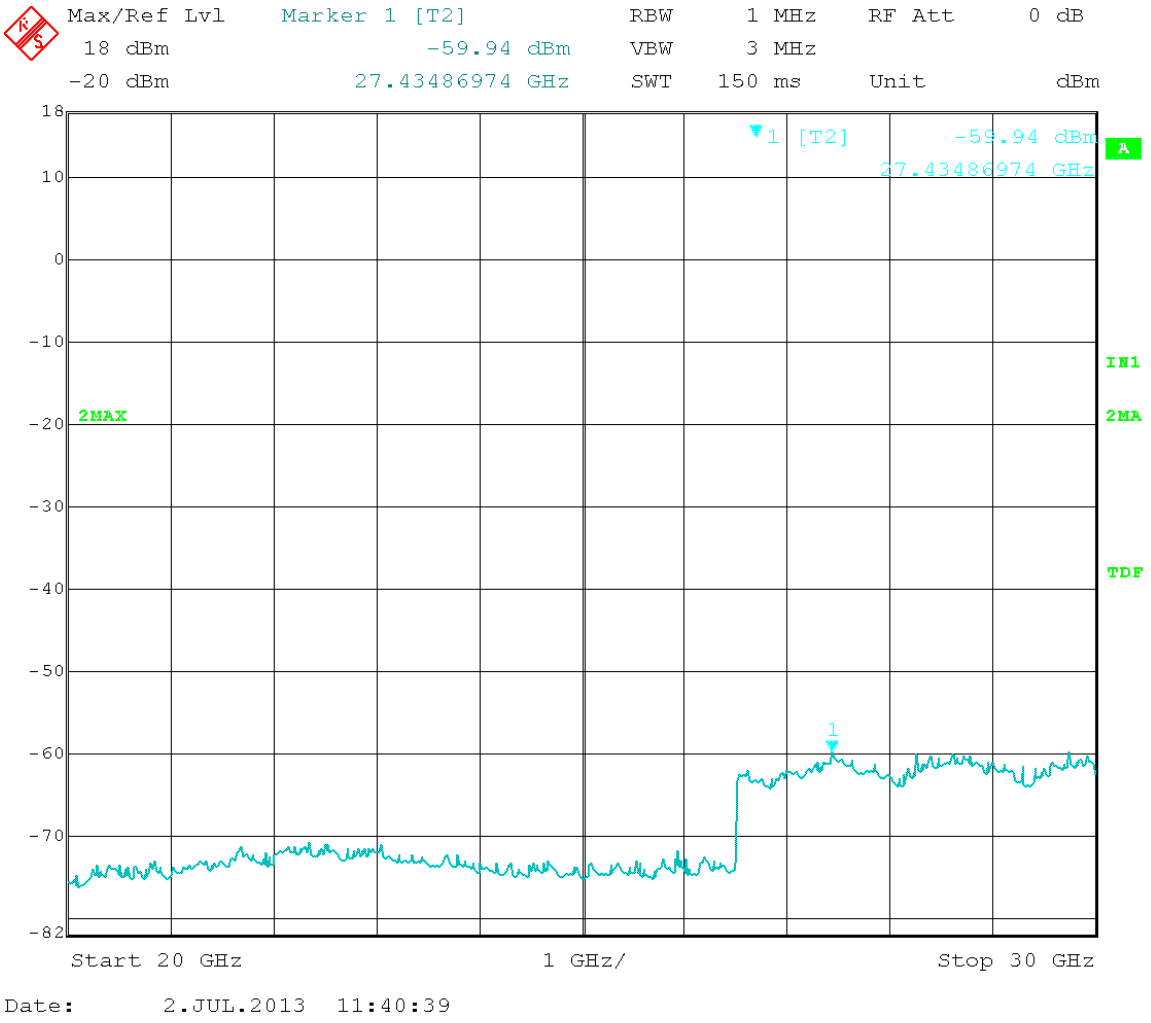
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 11:40:39

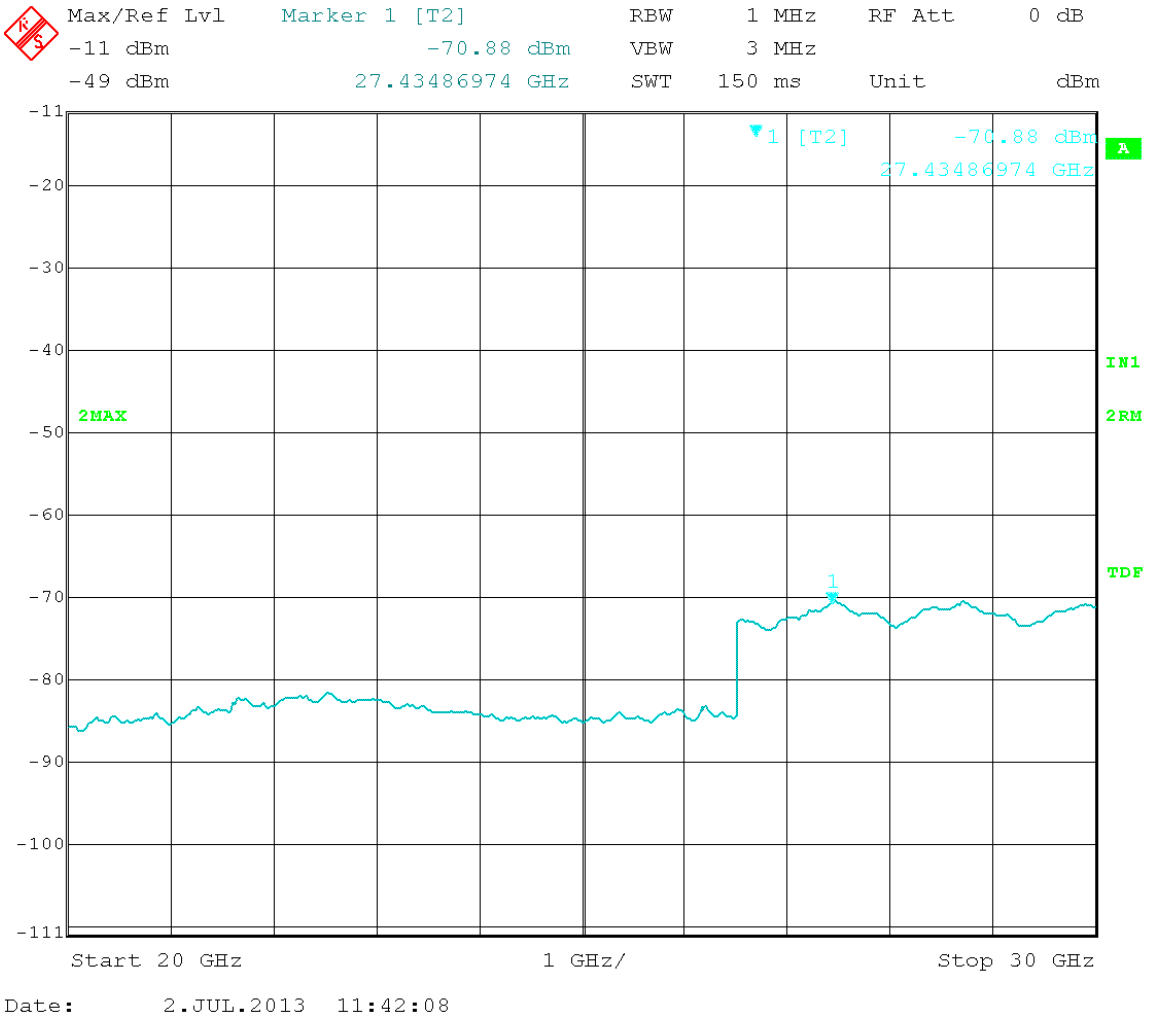
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 11:42:08

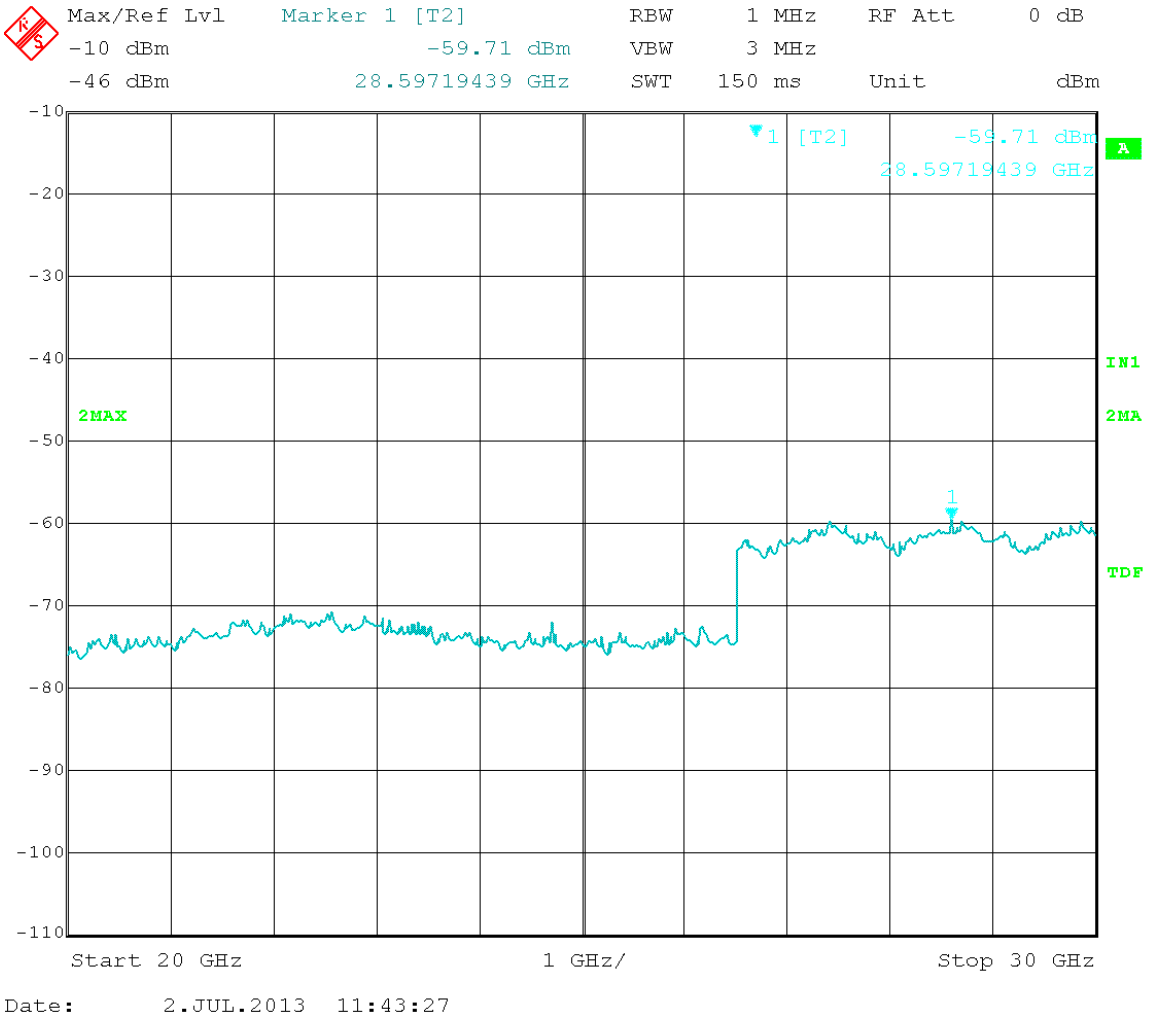
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



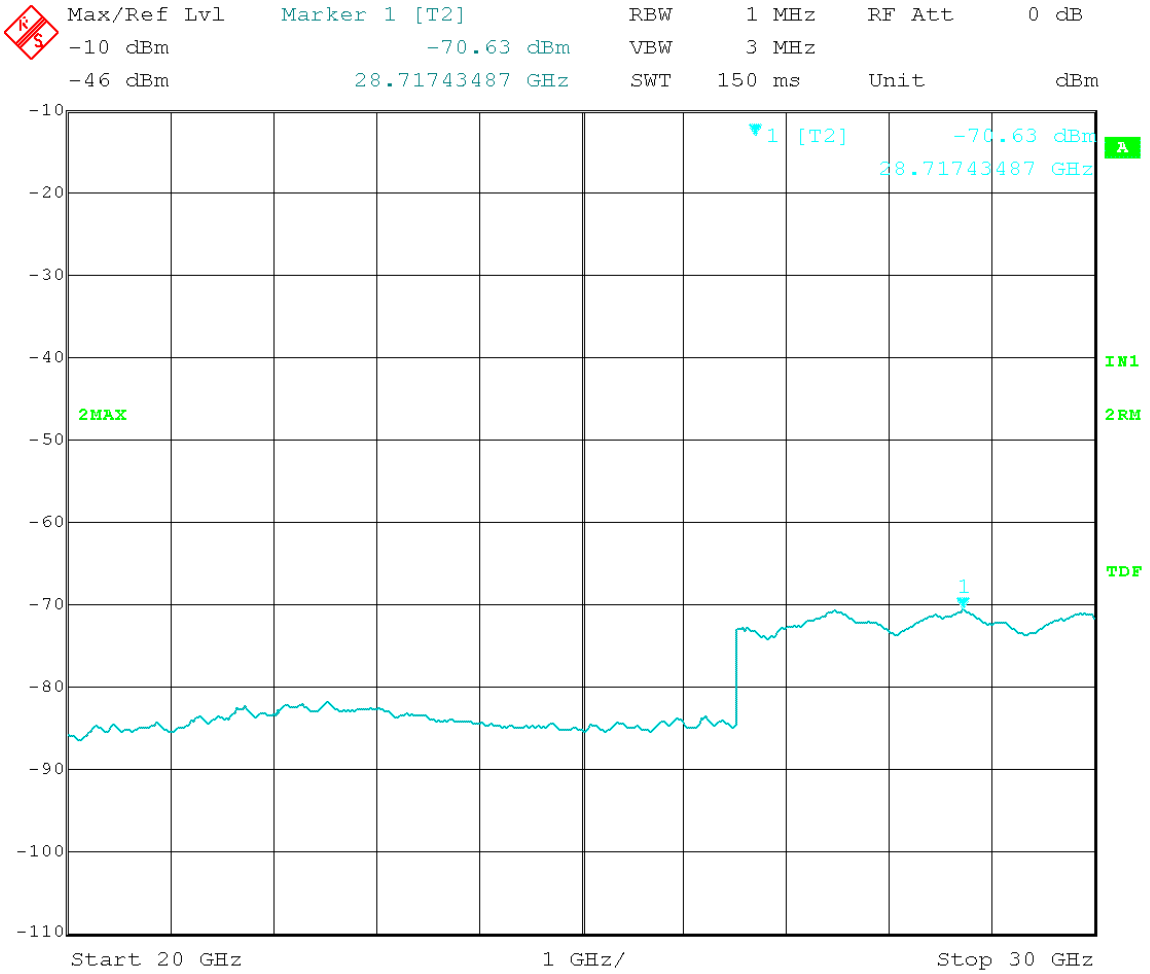
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 20 GHz to 30 GHz



Date: 2.JUL.2013 11:42:50

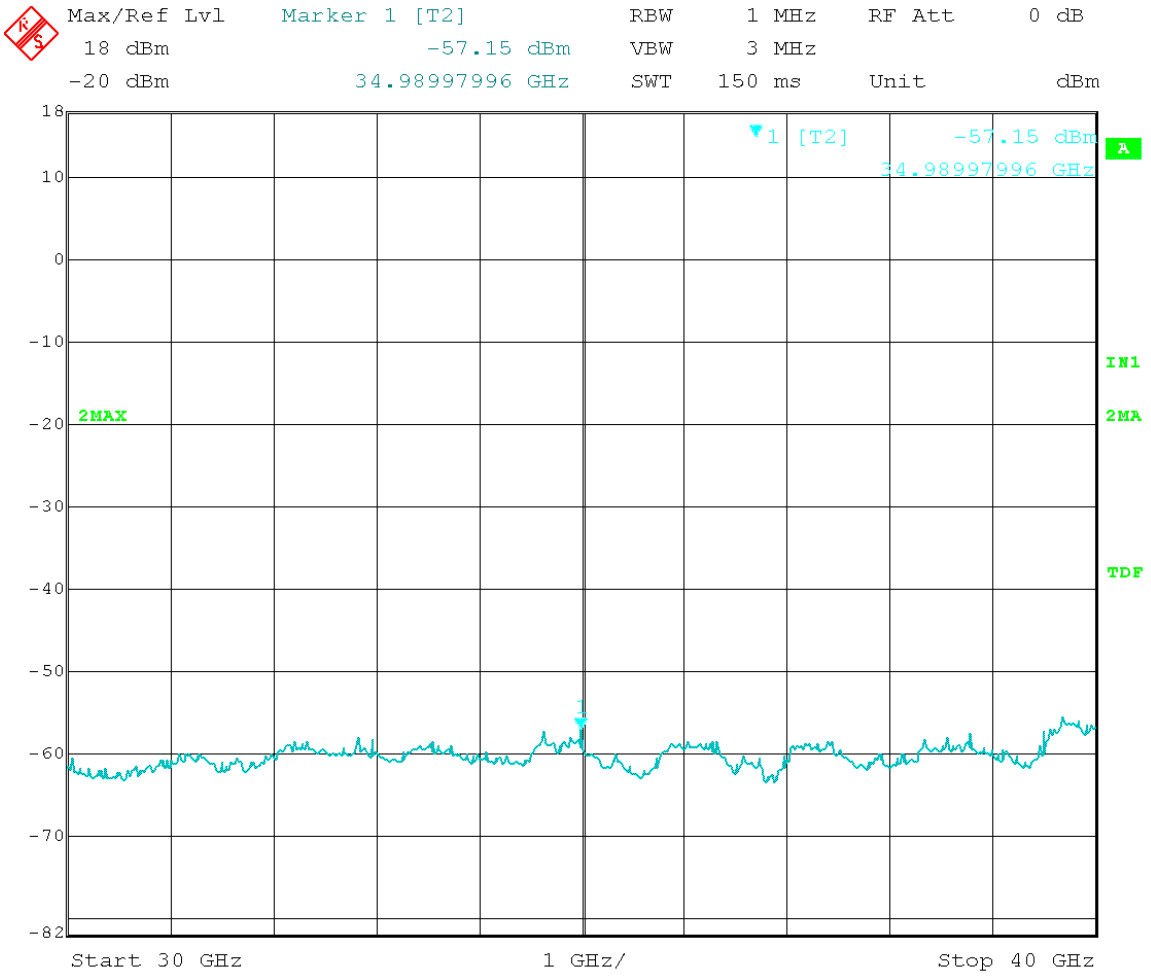
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 11:35:58

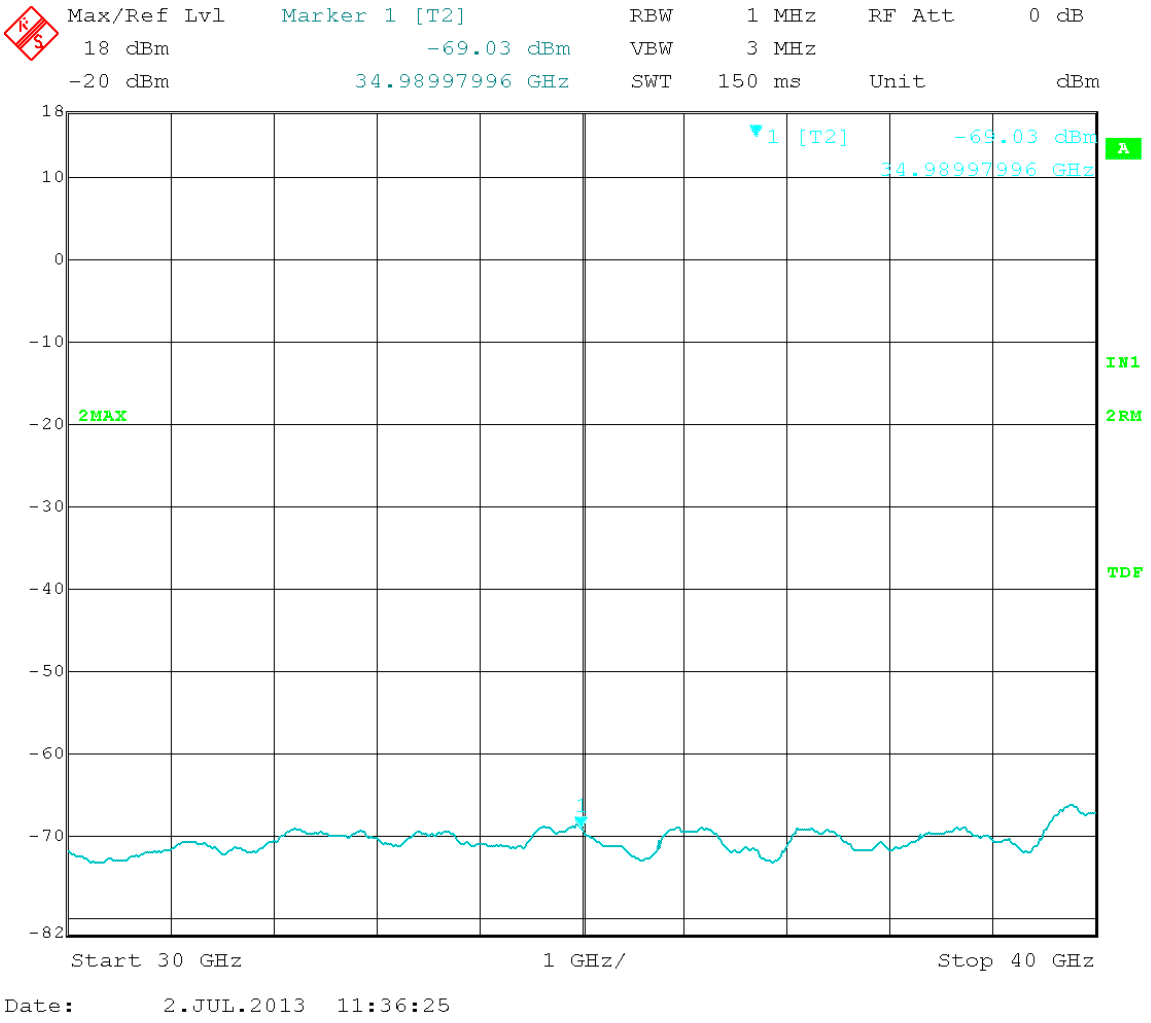
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 0
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



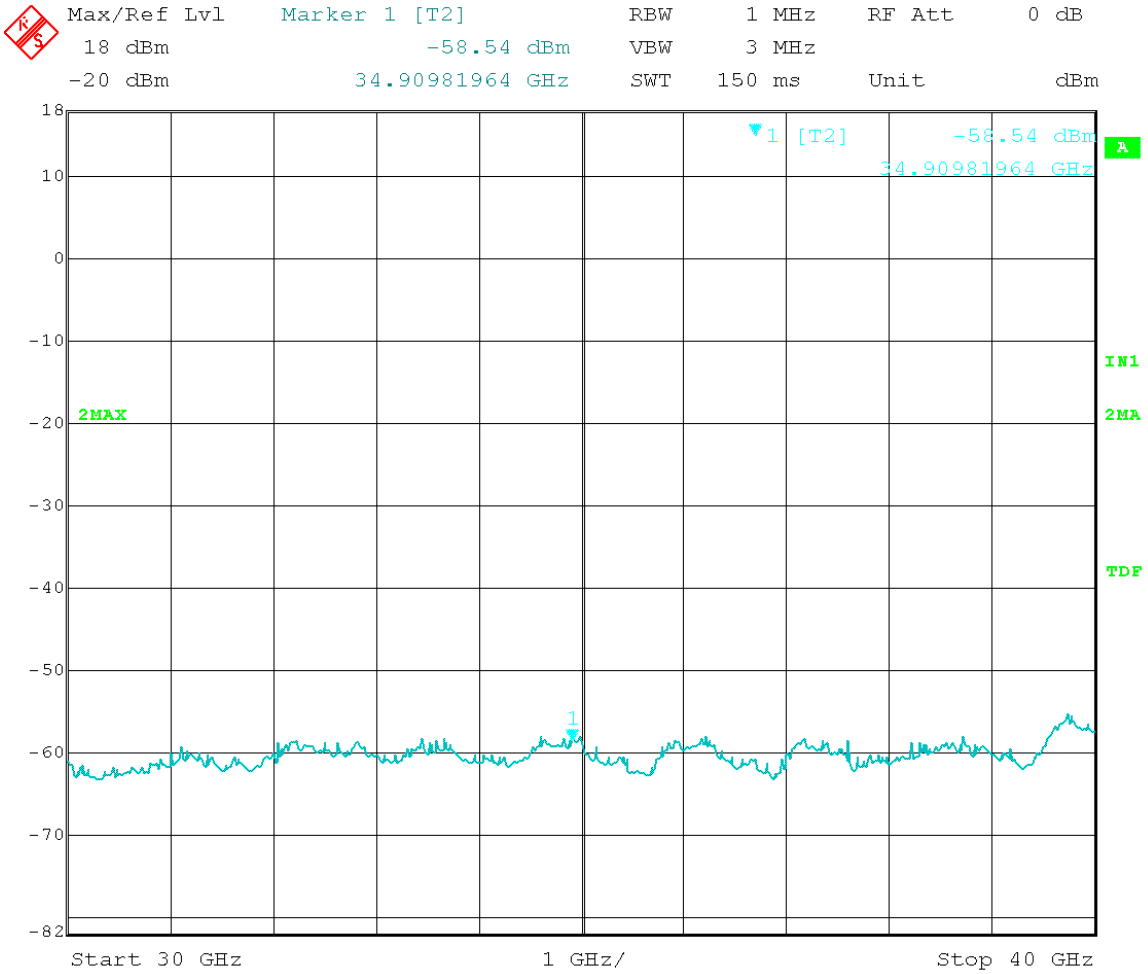
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

Peak Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 11:37:32

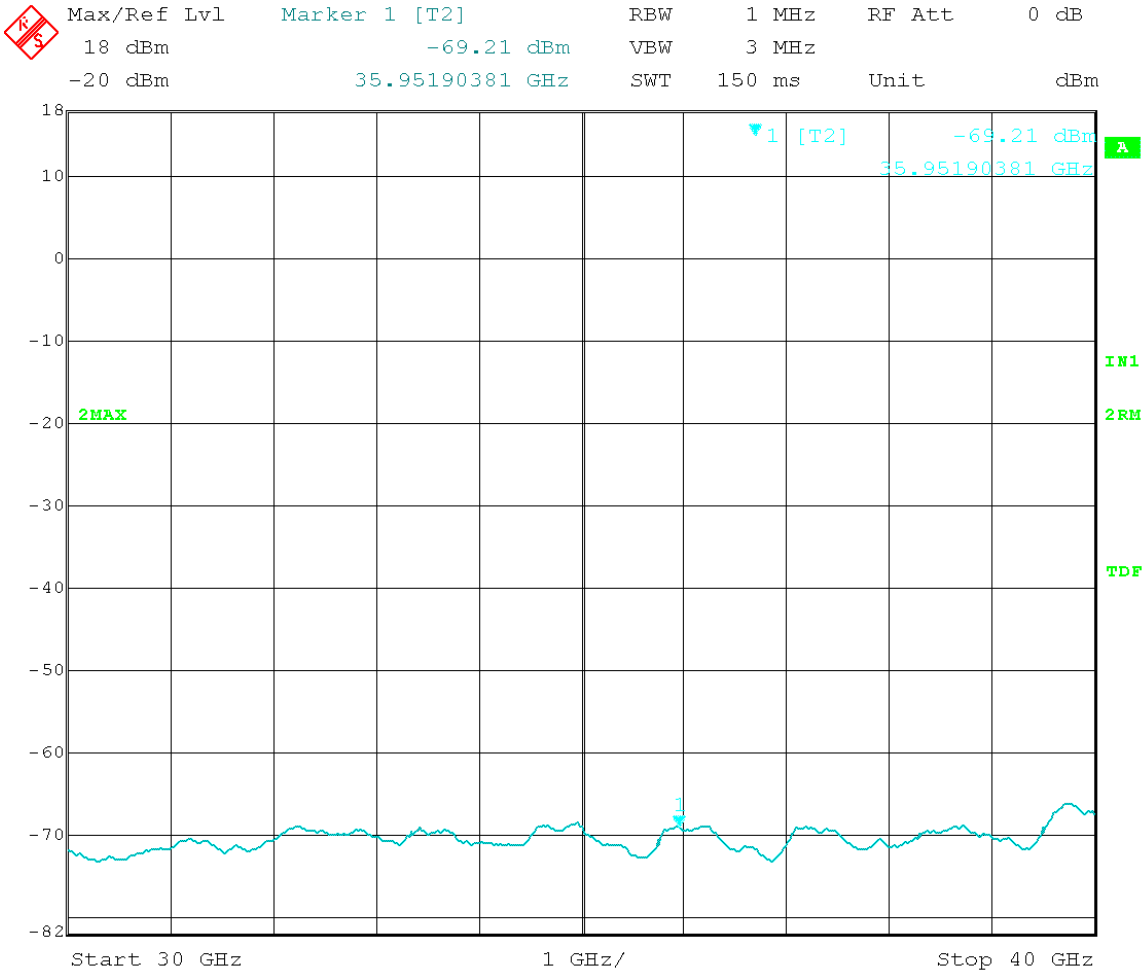
Marker 1: Greater than 20dB below limit

Test Date: 07-02-2013
Company: Cambium Networks
EUT: Avenger AP 5.7 GHz (Pont-to-Multipoint)
Test: Transmitter Unwanted Emissions – RF Conducted
Operator: Jim O

EUT Nominal Channel Bandwidth: 40 MHz
Output Port: Channel 1
Output Power Setting: 17
Antenna Gain: 16dBi

RMS Detector
High Channel Frequency: 5.825 GHz
Modulation Type: OFDM

Field strength limit (3 meters; Restricted Bands): 74dBµV/m Peak, 54dBµV/m Average
Corrected for external attenuation, cable and connector to antenna interface on radio.
Frequency Range: 30 GHz to 40 GHz



Date: 2.JUL.2013 11:36:58

Marker 1: Greater than 20dB below limit

Appendix B – Measurement Data

B7.0 Max Unwanted Emission Levels into Restricted Frequency Bands - Radiated with Cabinet

Rule Section: Section 15.247(d)
Section 15.205

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

ANSI C63.10:2009 – Sections 6.5 and 6.6

12.0 Emissions in restricted frequency bands
12.1 Radiated emission measurements

Description: This test applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. These are radiated emission measurements with the cabinet. The antenna ports were terminated with 50 Ohm terminations.

Measurements were taken for an OFDM modulation over a 20MHz and 40MHz modulation bandwidth at the low, mid and high channels. EUT was set to transmit continuously at their maximum power settings. Radiated measurements were taken both vertically and horizontally. All other restricted band emissions were at least 20 dB under the limit.

Limit: FCC Part 15.209

Results: Passed

Results: Passed

FCC Part 15.205/15.209 Spurious Emissions in Restricted Bands

Electric Field Strength

EUT: 5.7 GHz Avenger AP
Manufacturer: Cambium Networks
Operating Condition: 73 deg. F; 64% R.H.
Test Site: DLS O.F. Site 3
Operator: Craig B
Test Specification: 29.5 V DC (POE); L, M, and H channles
Comment: 20 & 40 MHz ch BW's; both chains active at 20 dBm, MCS15
Date: 06-13-2013

TEXT: "Horz 3 meters"

Short Description: Test Set-up

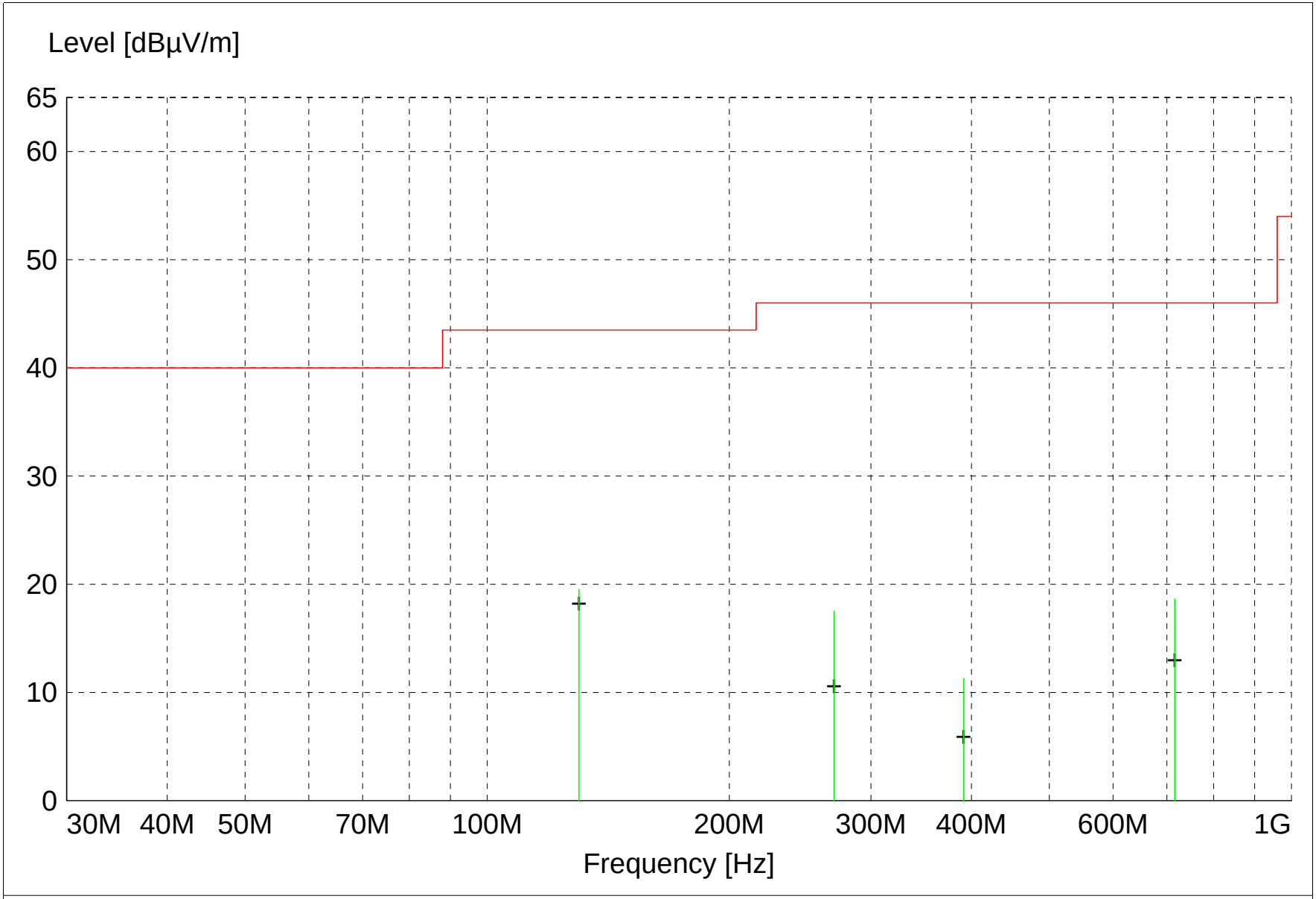
Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

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

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

Graph Markers:

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



MES A6122_F1H_Quasi-Peak
MES A6122_F1H_Peak_List
LIM FCC 15.209 F 3m FCC 15.209, field strength 3m

MEASUREMENT RESULT: "A6122_F1H_Final"

6/13/2013 10:03AM

Frequency MHz	Level dBµV	Antenna Factor dBµV/m	System Loss dB	Total Level dBµV/m	Limit dBµV/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
130.000000	29.07	12.90	-22.4	19.5	43.5	24.0	1.30	250	QUASI-PEAK	broadband
715.970000	16.37	21.04	-18.8	18.6	46.0	27.4	1.50	45	QUASI-PEAK	noise floor
269.970000	25.44	13.40	-21.3	17.5	46.0	28.5	3.10	290	QUASI-PEAK	None
391.250000	16.10	15.83	-20.6	11.3	46.0	34.7	1.00	0	QUASI-PEAK	noise floor

FCC Part 15.205/15.209 Spurious Emissions in Restricted Bands

Electric Field Strength

EUT: 5.7 GHz Avenger AP
Manufacturer: Cambium Networks
Operating Condition: 73 deg. F; 64% R.H.
Test Site: DLS O.F. Site 3
Operator: Craig B
Test Specification: 29.5 V DC (POE); L, M, and H channles
Comment: 20 & 40 MHz ch BW's; both chains active at 20 dBm, MCS15
Date: 06-13-2013

TEXT: "Vert 3 meters"

Short Description: Test Set-up

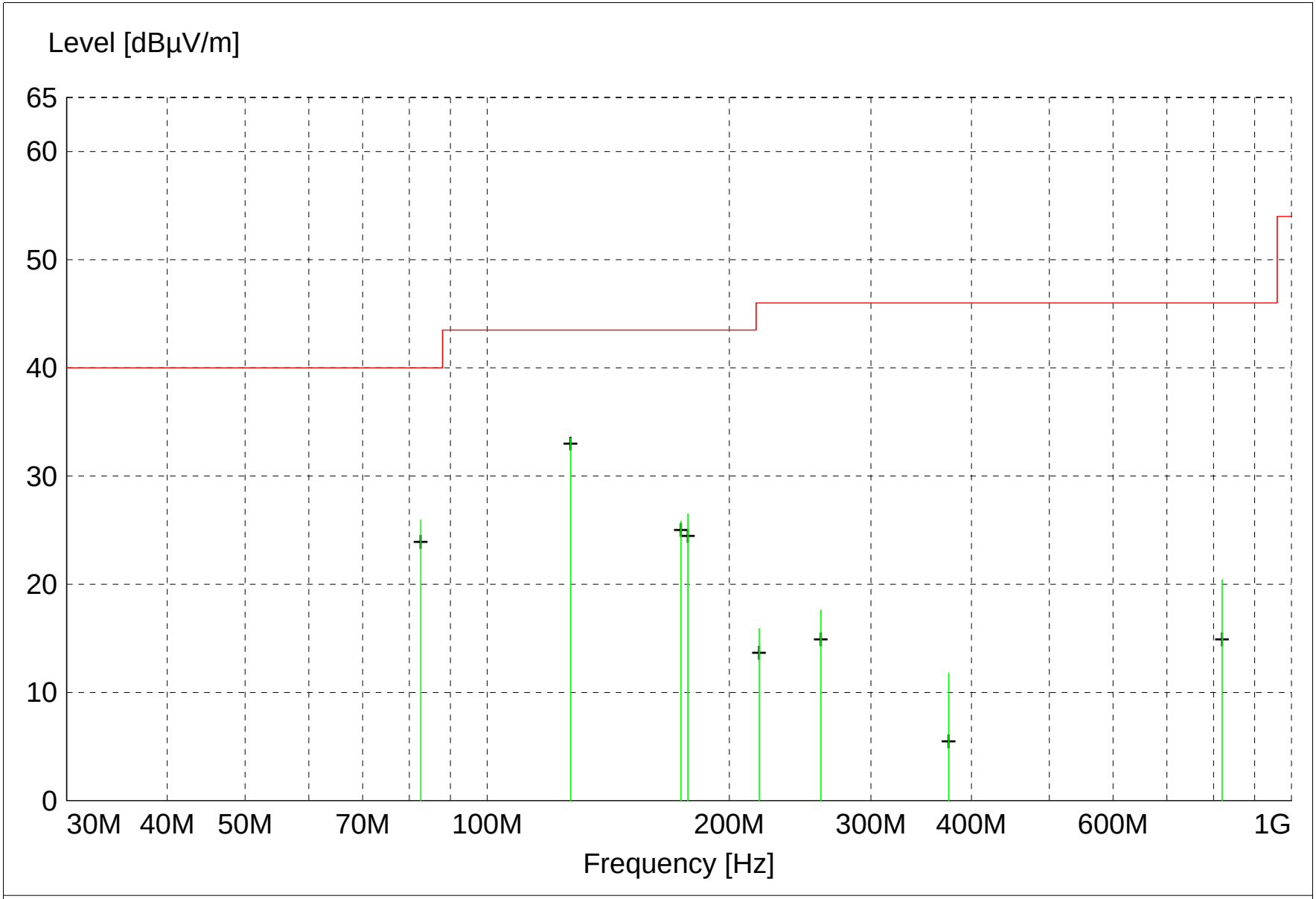
Test Set-up: EUT Measured at 3 Meters with VERTICAL Antenna Polarization

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

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

Graph Markers:

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



MES A6122_F1V_Quasi-Peak
MES A6122_F1V_Peak_List
LIM FCC 15.209 F 3m FCC 15.209, field strength 3m

MEASUREMENT RESULT: "A6122_F1V_Final"

6/13/2013 10:09AM

Frequency MHz	Level dBµV	Antenna Factor dBµV/m	System Loss dB	Total Level dBµV/m	Limit dBµV/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
127.005000	42.95	13.00	-22.5	33.5	43.5	10.0	1.00	260	QUASI-PEAK	broadband
82.675000	42.46	6.67	-23.2	25.9	40.0	14.1	1.20	315	QUASI-PEAK	broadband
177.640000	32.58	16.03	-22.1	26.5	43.5	17.0	1.00	290	QUASI-PEAK	broadband
174.135000	32.44	15.51	-22.1	25.8	43.5	17.7	1.00	270	QUASI-PEAK	broadband
819.980000	16.54	22.30	-18.4	20.4	46.0	25.6	1.00	0	QUASI-PEAK	noise floor
260.000000	26.13	13.00	-21.5	17.6	46.0	28.4	2.00	90	QUASI-PEAK	None
217.860000	26.11	11.54	-21.8	15.9	46.0	30.1	2.20	90	QUASI-PEAK	boradband
374.820000	17.14	15.29	-20.7	11.8	46.0	34.2	1.00	0	QUASI-PEAK	noise floor

FCC Part 15.205/15.209 Spurious Emissions in Restricted Bands

Electric Field Strength

EUT: Avenger AP (5.7GHz OFDM)
Manufacturer: Cambium Networks
Operating Condition: 68 deg C 27% R.H.
Test Site: DLS O.F. G1
Operator: Jim O/Lillian Li
Test Specification: Continuous TX : 20 & 40MHz BW: outputs terminated
Comment: Low, Mid and High Channel
Date: 06-14-2013

TEXT: "Horz 3 meters"

Short Description: Test Set-up

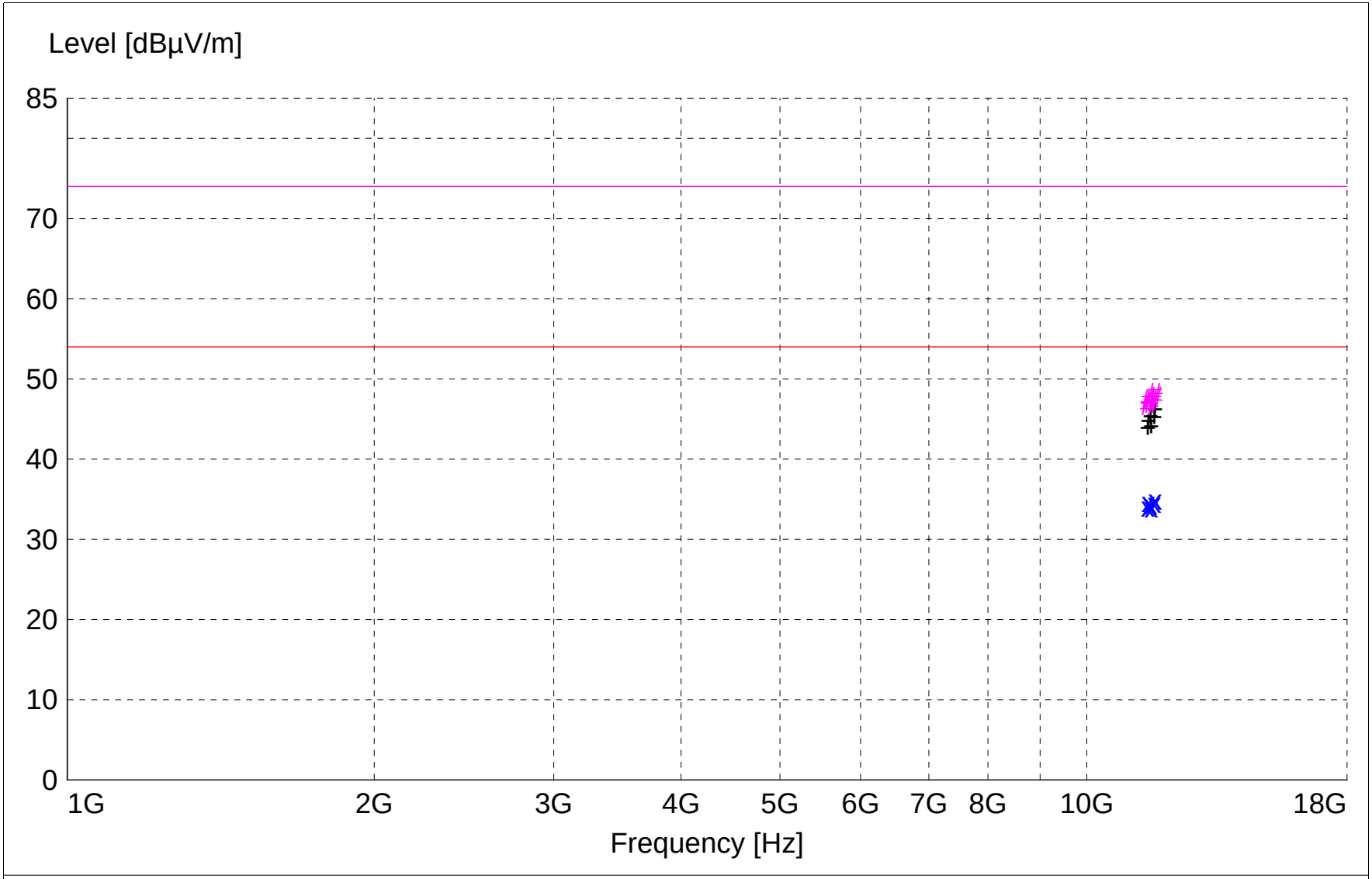
Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

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

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

Graph Markers:

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



x x : MES A614l_sh_Average
: MES A614l_sh_Peak
+ + : MES A614l_sh_Peak_List
——— LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
——— LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A614l_sh_Final"

6/14/2013 3:04PM

Frequency MHz	Level dBµV	Antenna Factor dBµV/m	System Loss dB	Total Level dBµV/m	Limit dBµV/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
11670.060000	31.46	38.92	-35.5	34.9	54.0	19.1	1.00	0	AVERAGE	20M HCH 2nd NF
11500.480000	31.08	38.71	-35.2	34.6	54.0	19.4	1.00	0	AVERAGE	40M LCH 2nd NF
11649.800000	31.21	38.89	-35.6	34.6	54.0	19.4	1.00	0	AVERAGE	40M HCH 2nd NF
11550.020000	30.96	38.78	-35.4	34.3	54.0	19.7	1.00	0	AVERAGE	20M MCH 2nd NF
11480.140000	30.69	38.67	-35.3	34.1	54.0	19.9	1.00	0	AVERAGE	20M LCH 2nd NF
11569.880000	30.69	38.80	-35.5	34.0	54.0	20.0	1.00	0	AVERAGE	40M MCH 2nd NF
11649.800000	44.94	38.89	-35.6	48.3	74.0	25.7	1.00	0	MAX PEAK	40M HCH 2nd NF
11670.060000	44.40	38.92	-35.5	47.8	74.0	26.2	1.00	0	MAX PEAK	20M HCH 2nd NF
11500.480000	43.86	38.71	-35.2	47.3	74.0	26.7	1.00	0	MAX PEAK	40M LCH 2nd NF
11550.020000	44.00	38.78	-35.4	47.3	74.0	26.7	1.00	0	MAX PEAK	20M MCH 2nd NF
11569.880000	43.73	38.80	-35.5	47.0	74.0	27.0	1.00	0	MAX PEAK	40M MCH 2nd NF
11480.140000	43.32	38.67	-35.3	46.7	74.0	27.3	1.00	0	MAX PEAK	20M LCH 2nd NF

FCC Part 15.205/15.209 Spurious Emissions in Restricted Bands

Electric Field Strength

EUT: Avenger AP (5.7GHz OFDM)
Manufacturer: Cambium Networks
Operating Condition: 68 deg C 27% R.H.
Test Site: DLS O.F. G1
Operator: Jim O/Lillian Li
Test Specification: Continuous TX : 20 & 40MHz BW: outputs terminated
Comment: Low, Mid and High Channel
Date: 06-14-2013

TEXT: "Vert 3 meters"

Short Description: Test Set-up

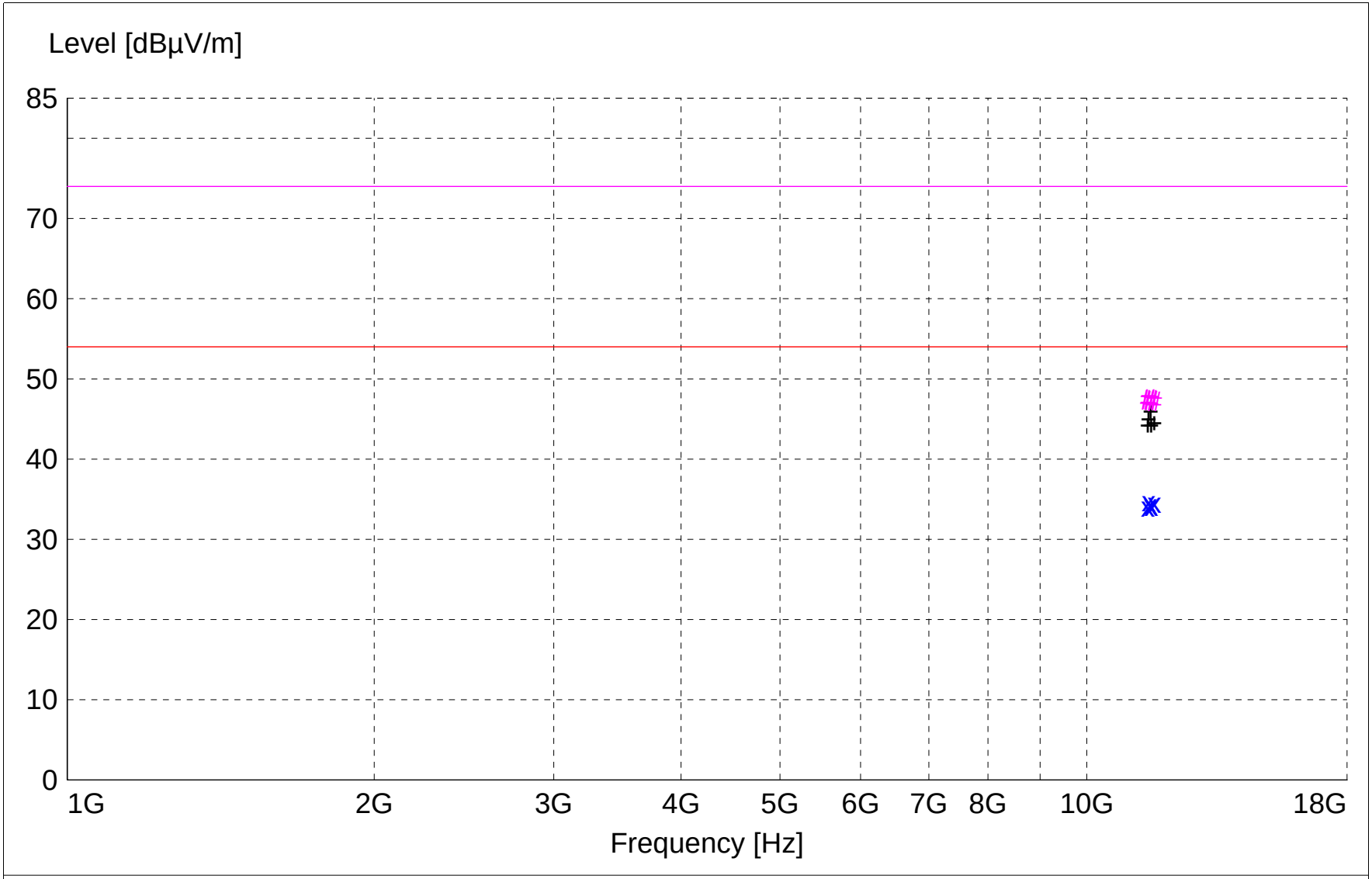
Test Set-up: EUT Measured at 3 Meters with VERTICAL Antenna Polarization

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

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

Graph Markers:

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



x x : MES A614l_sv_Average
: MES A614l_sv_Peak
+ + : MES A614l_sv_Peak_List
——— LIM FCC 15.209 F 3m AVG Field Strength AVG Limit 3m
——— LIM FCC 15.209 F 3m PK Field Strength PEAK Limit 3m

MEASUREMENT RESULT: "A614l_sv_Final"

6/14/2013 2:43PM

Frequency MHz	Level dBµV	Antenna Factor dBµV/m	System Loss dB	Total Level dBµV/m	Limit dBµV/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
11500.020000	31.21	38.71	-35.2	34.7	54.0	19.3	1.00	0	AVERAGE	20M MCH 2nd NF
11650.100000	31.21	38.89	-35.6	34.6	54.0	19.4	1.00	0	AVERAGE	40M HCH 2nd NF
11550.120000	30.96	38.78	-35.4	34.3	54.0	19.7	1.00	0	AVERAGE	40M LCH 2nd NF
11569.800000	30.83	38.80	-35.5	34.1	54.0	19.9	1.00	0	AVERAGE	40M MCH 2nd NF
11479.860000	30.69	38.67	-35.3	34.1	54.0	19.9	1.00	0	AVERAGE	20M LCH 2nd NF
11500.020000	44.00	38.71	-35.2	47.5	74.0	26.5	1.00	0	MAX PEAK	20M MCH 2nd NF
11479.860000	44.00	38.67	-35.3	47.4	74.0	26.6	1.00	0	MAX PEAK	20M LCH 2nd NF
11550.120000	44.00	38.78	-35.4	47.3	74.0	26.7	1.00	0	MAX PEAK	40M LCH 2nd NF
11569.800000	44.00	38.80	-35.5	47.3	74.0	26.7	1.00	0	MAX PEAK	40M MCH 2nd NF
11650.100000	43.86	38.89	-35.6	47.2	74.0	26.8	1.00	0	MAX PEAK	40M HCH 2nd NF

FCC Part 15.205/15.209 Spurious Emissions in Restricted Bands

Electric Field Strength

EUT: 5.7 GHz Avenger AP
Manufacturer: Cambium Networks
Operating Condition: 70 deg. F; 57% R.H.
Test Site: DLS O.F. Site 3
Operator: Craig B
Test Specification: 29.5 V DC (POE); 20 and 40 MHz channel BW; MCS15
Comment: Transmitter emissions in Restricted Bands; L,M,H ch
Date: 06-14-2013

TEXT: "Horz 1 meters"

Short Description: Test Set-up

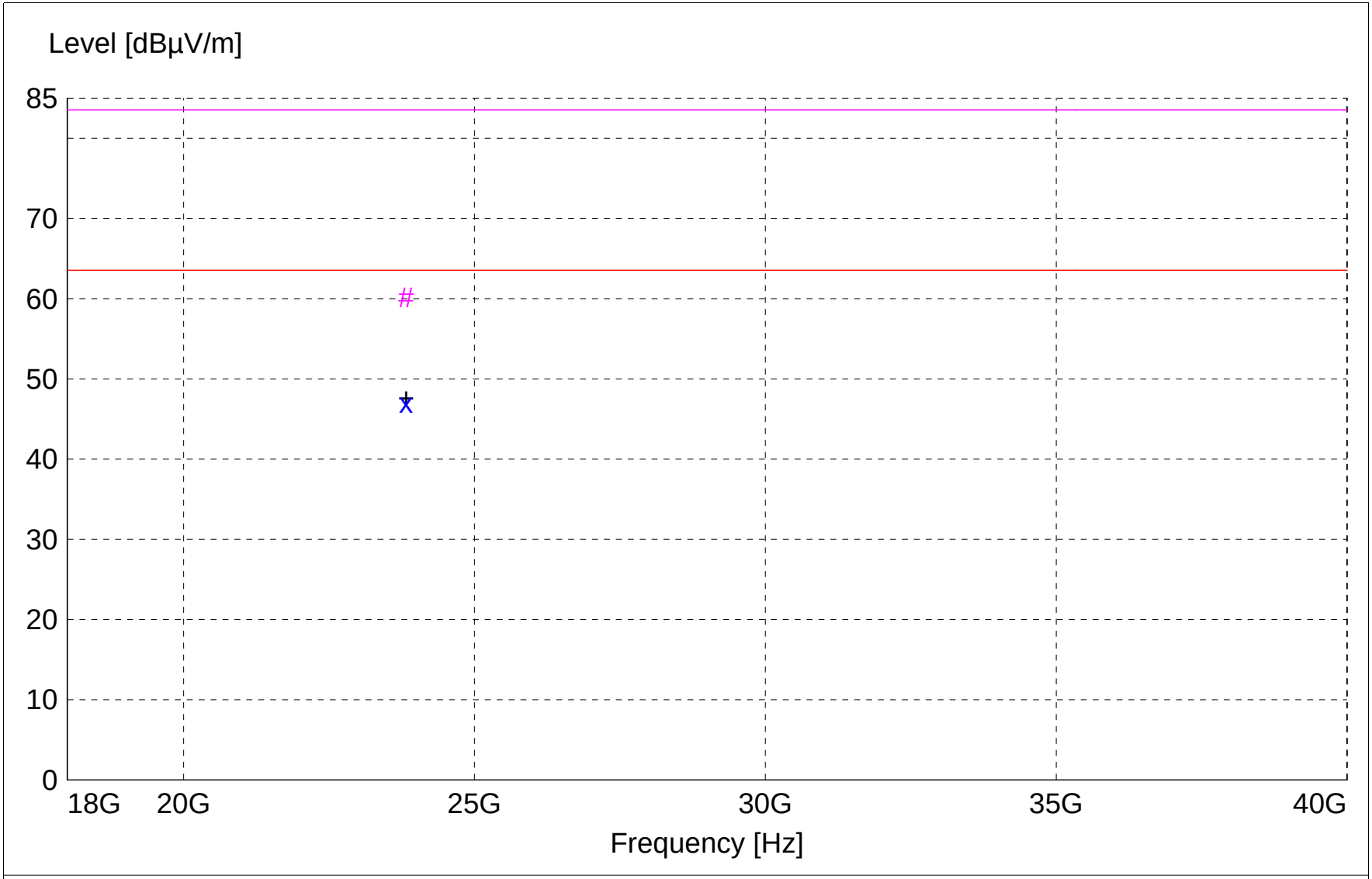
Test Set-up: EUT Measured at 1 Meters with HORIZONTAL Antenna Polarization

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

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

Graph Markers:

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



x x : MES A6141_sh_Average
: MES A6141_sh_Peak
+ + : MES A6141_sh_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A6141_sh_Final"

6/14/2013 11:08AM

Frequency MHz	Level dBµV	Antenna Factor dBµV/m	System Loss dB	Total Level dBµV/m	Limit dBµV/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
23826.200000	47.56	46.06	-46.7	46.9	63.5	16.6	1.00	0	AVERAGE	noise floor
23826.200000	60.78	46.06	-46.7	60.2	83.5	23.4	1.00	0	MAX PEAK	noise floor

FCC Part 15.205/15.209 Spurious Emissions in Restricted Bands

Electric Field Strength

EUT: 5.7 GHz Avenger AP
Manufacturer: Cambium Networks
Operating Condition: 70 deg. F; 57% R.H.
Test Site: DLS O.F. Site 3
Operator: Craig B
Test Specification: 29.5 V DC (POE); 20 and 40 MHz channel BW; MCS15
Comment: Transmitter emissions in Restricted Bands; L,M,H ch
Date: 06-14-2013

TEXT: "Vert 1 meters"

Short Description: Test Set-up

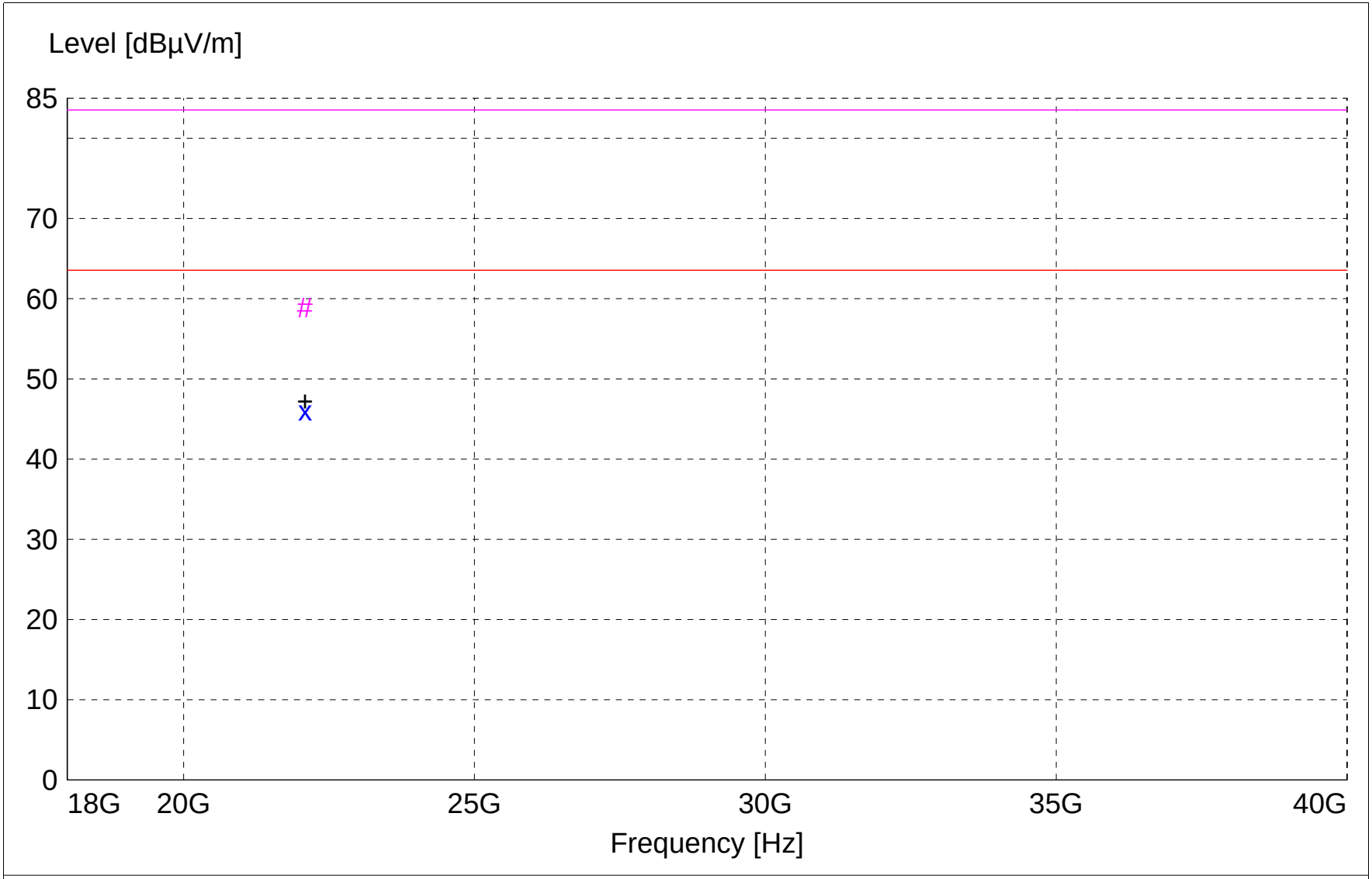
Test Set-up: EUT Measured at 1 Meters with VERTICAL Antenna Polarization

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

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

Graph Markers:

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



x x : MES A6141_sv_Average
: MES A6141_sv_Peak
+ + : MES A6141_sv_Peak_List
——— LIM FCC 15.209 F 1m AVG Field Strength AVG Limit 1m
——— LIM FCC 15.209 F 1m PK Field Strength Peak Limit 1m

MEASUREMENT RESULT: "A6141_sv_Final"

6/14/2013 11:04AM

Frequency MHz	Level dBµV	Antenna Factor dBµV/m	System Loss dB	Total Level dBµV/m	Limit dBµV/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
22087.000000	49.76	46.35	-50.1	46.0	63.5	17.5	1.00	0	AVERAGE	noise floor
22087.000000	62.63	46.35	-50.1	58.9	83.5	24.7	1.00	0	MAX PEAK	noise floor

166 South Carter, Genoa City, WI 53128

Appendix B – Measurement Data

B8.0 Duty Cycle of Test Unit

Rule Part: FCC Section 15.35(c)

Test Procedure: **6.0 Duty cycle, transmission duration**

ANSI C63.10-2009 Section 7.5

Limits: Informative

Results: EUT is continuously transmitting (duty cycle > 98%).

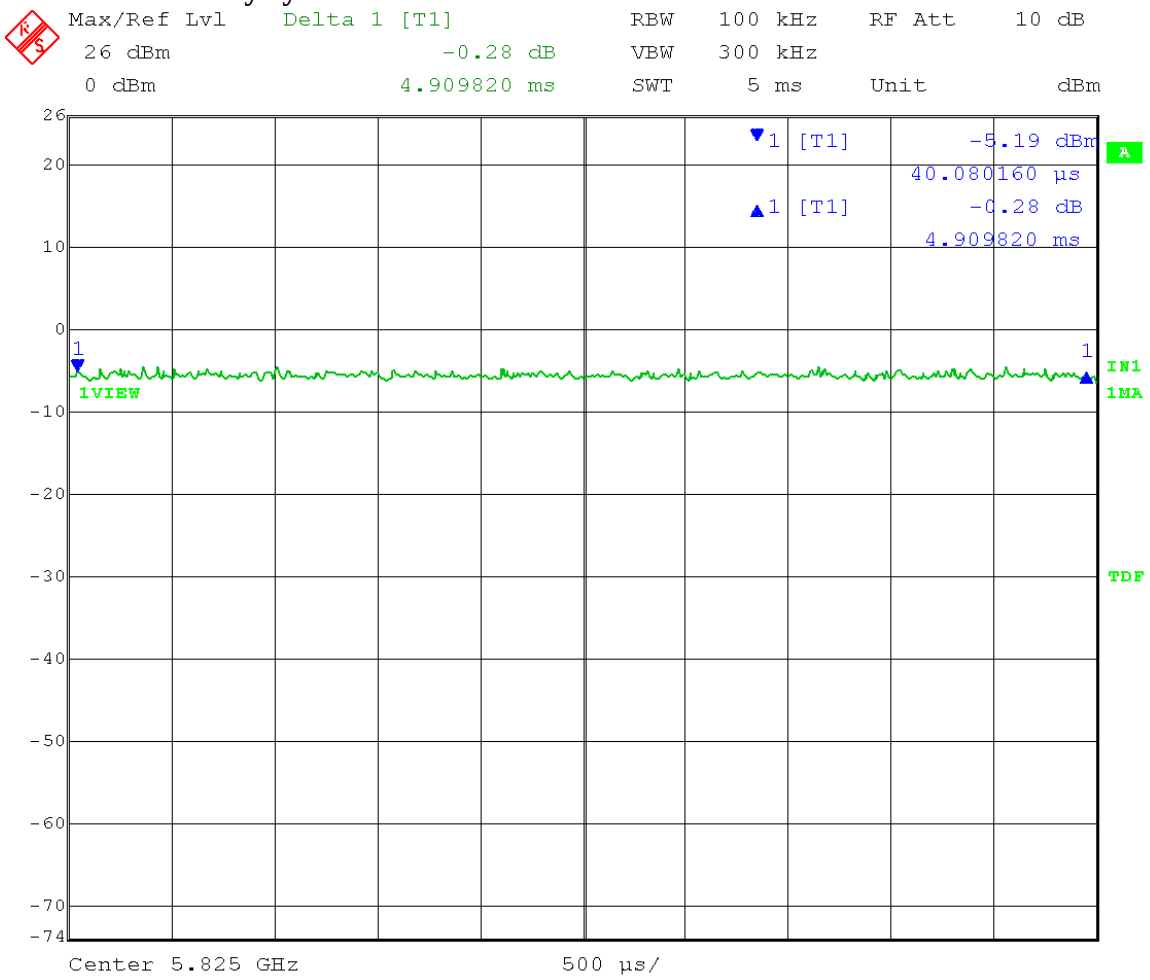
Sample Equations: None

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

The EUT was transmitting above the minimum duty cycle of 98%.

166 South Carter, Genoa City, WI 53128

Test Date: 6-14-2013
Company: Cambium Networks
EUT: Avenger AP 5.7GHz OFDM
Test: Duty Cycle during testing
Operator: Jim O
40 MHz channel bandwidth; OFDM
Comment: Total on Time = 4.91 ms = 4.91 ms sweep
X = 4.91 / 4.91
Duty cycle factor x = 1.00



Date: 14.JUN.2013 13:13:05

Appendix B – Measurement Data

B9.0 AC Line Conducted Emissions

Rule Part: FCC Part 15.207

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

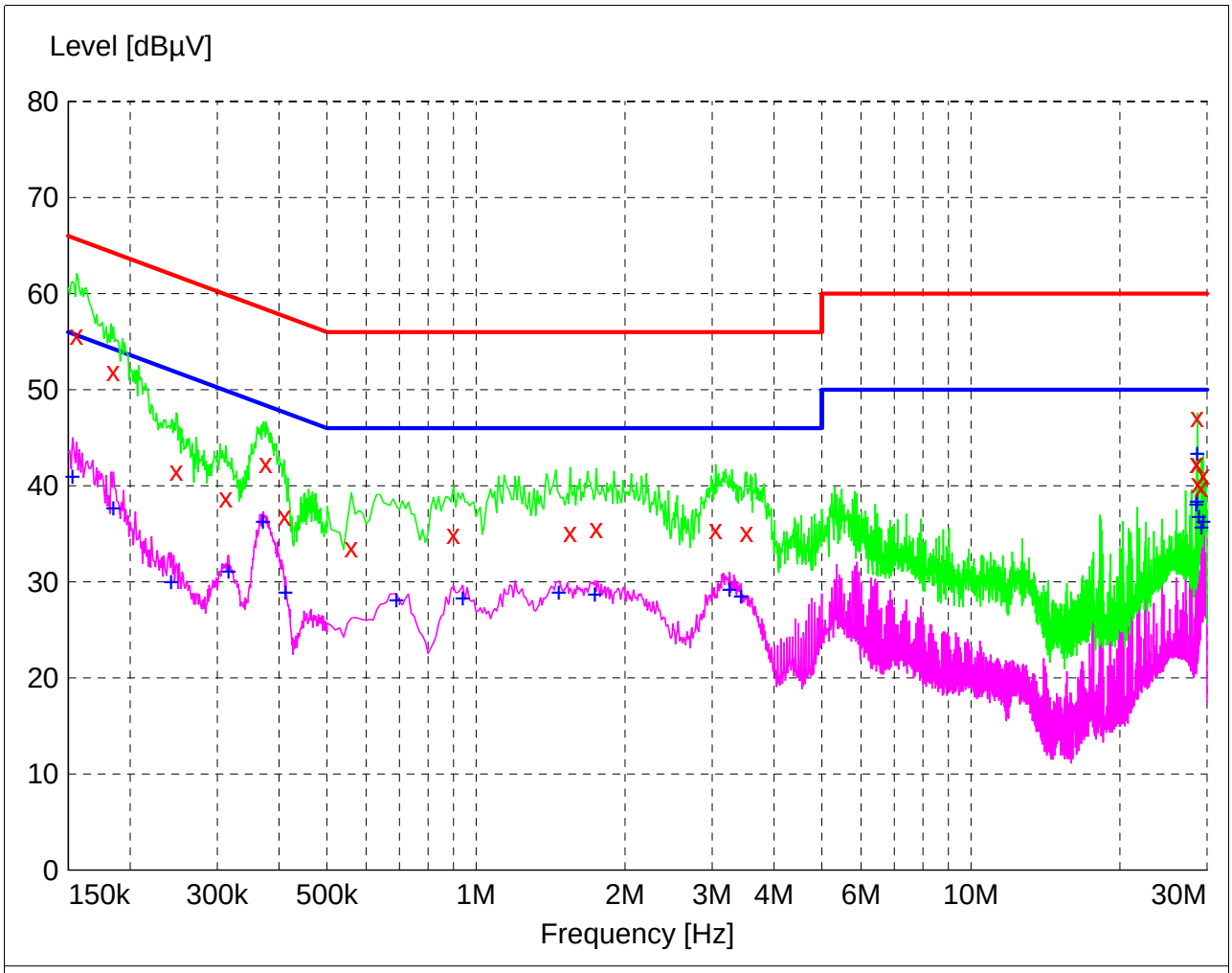
Voltage Mains Test

EUT:	Avenger AP Radio 5.7GHz
Manufacturer:	Cambium Networks
Operating Condition:	70 deg. F, 34% R.H.
Test Site:	DLS O.F. Screen Room
Operator:	Jim O/Lillian Li
Test Specification:	120V, 60Hz
Comment:	Continious TX; Line 1
	6-17-2013

SCAN TABLE: "Line Cond SR Final"

Short Description: Line Conducted Emissions

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.0 kHz	QuasiPeak CISPR AV	5.0 s	9 kHz	LISN DLS#128



MEASUREMENT RESULT: "5941 FCC L1_fin"

6/17/2013 9:06AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector
0.156000	55.70	13.6	66	10.0	QP
0.185000	51.90	12.9	64	12.4	QP
0.248000	41.50	12.1	62	20.3	QP
0.312000	38.80	11.8	60	21.1	QP
0.376000	42.40	11.5	58	16.0	QP
0.410000	36.90	11.4	58	20.7	QP
0.560000	33.60	11.1	56	22.4	QP
0.900000	35.00	10.7	56	21.0	QP
1.550000	35.20	10.6	56	20.8	QP
1.750000	35.60	10.6	56	20.4	QP
3.050000	35.50	10.7	56	20.5	QP
3.520000	35.20	10.7	56	20.8	QP
28.565000	42.30	11.7	60	17.7	QP
28.625000	42.40	11.7	60	17.6	QP
28.685000	47.10	11.7	60	12.9	QP
28.745000	40.20	11.7	60	19.8	QP
29.240000	39.90	11.8	60	20.1	QP
29.480000	41.20	11.8	60	18.8	QP

MEASUREMENT RESULT: "5941 FCC L1_fin2"

6/17/2013 9:06AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector
0.153000	41.00	13.7	56	14.8	CAV
0.185000	37.70	12.9	54	16.6	CAV
0.242000	30.00	12.2	52	22.0	CAV
0.316000	31.10	11.8	50	18.7	CAV
0.371000	36.30	11.5	49	12.2	CAV
0.412000	28.90	11.4	48	18.7	CAV
0.690000	28.10	10.8	46	17.9	CAV
0.940000	28.30	10.7	46	17.7	CAV
1.470000	28.90	10.6	46	17.1	CAV
1.740000	28.70	10.6	46	17.3	CAV
3.250000	29.20	10.7	46	16.8	CAV
3.430000	28.50	10.7	46	17.5	CAV
28.565000	38.10	11.7	50	11.9	CAV
28.625000	38.30	11.7	50	11.7	CAV
28.685000	43.30	11.7	50	6.7	CAV
28.865000	36.80	11.7	50	13.2	CAV
29.240000	35.70	11.8	50	14.3	CAV
29.480000	36.30	11.8	50	13.7	CAV

FCC Part 15.207

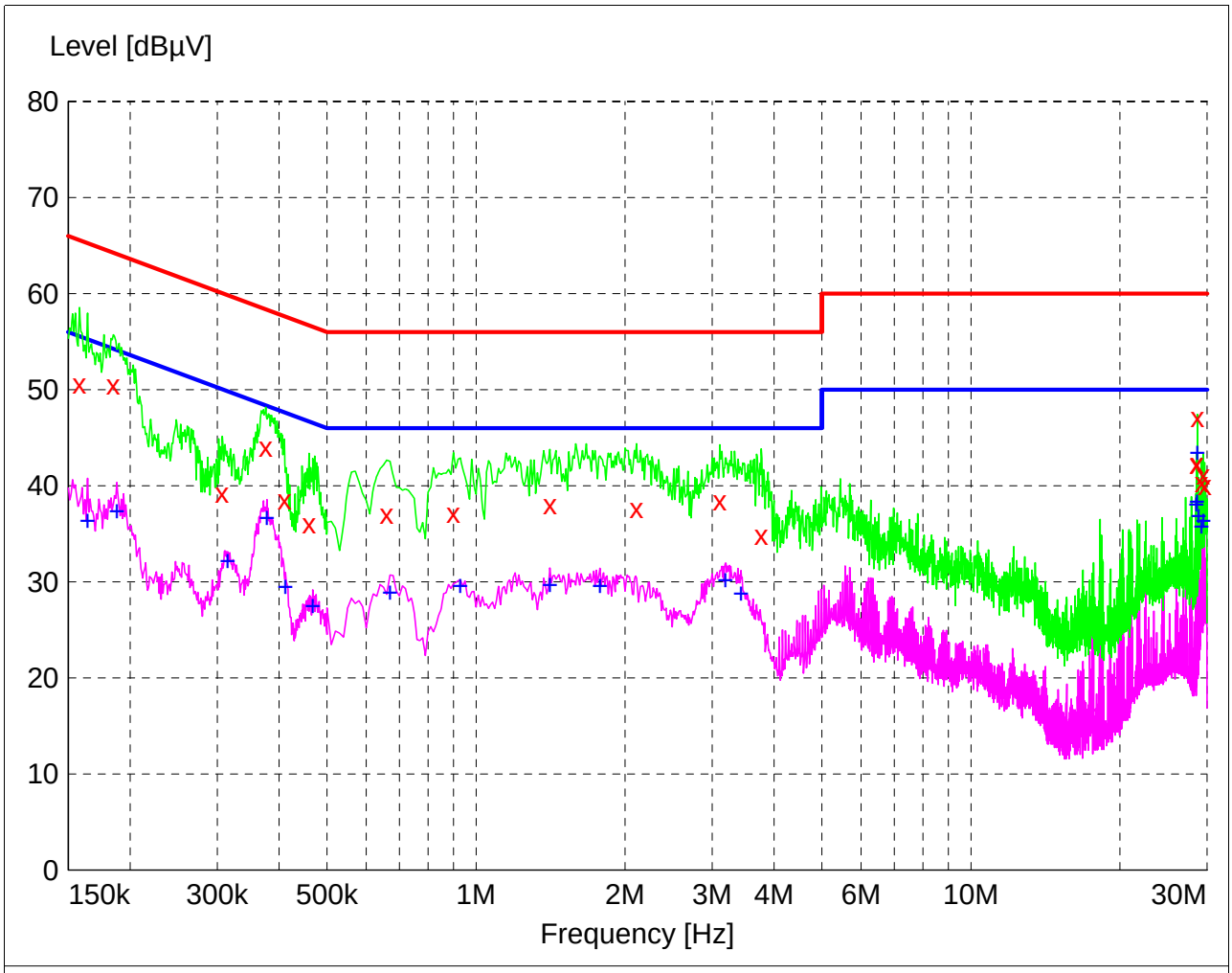
Voltage Mains Test

EUT:	Avenger AP Radio 5.7GHz
Manufacturer:	Cambium Networks
Operating Condition:	70 deg. F, 34% R.H.
Test Site:	DLS O.F. Screen Room
Operator:	Jim O/Lillian Li
Test Specification:	120V, 60Hz
Comment:	Continious TX; Line 2
	6-17-2013

SCAN TABLE: "Line Cond SR Final"

Short Description: Line Conducted Emissions

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.0 kHz	QuasiPeak CISPR AV	5.0 s	9 kHz	LISN DLS#128



MEASUREMENT RESULT: "5941 FCC L2_fin"

6/17/2013 9:17AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector
0.158000	50.60	13.6	66	15.0	QP
0.185000	50.50	12.9	64	13.8	QP
0.307000	39.30	11.8	60	20.8	QP
0.376000	44.00	11.5	58	14.4	QP
0.410000	38.60	11.4	58	19.0	QP
0.460000	36.10	11.3	57	20.6	QP
0.660000	37.10	10.9	56	18.9	QP
0.900000	37.20	10.7	56	18.8	QP
1.410000	38.10	10.6	56	17.9	QP
2.110000	37.60	10.6	56	18.4	QP
3.110000	38.50	10.7	56	17.5	QP
3.770000	34.90	10.7	56	21.1	QP
28.565000	42.20	11.7	60	17.8	QP
28.625000	42.30	11.7	60	17.7	QP
28.685000	47.10	11.7	60	12.9	QP
29.240000	40.30	11.8	60	19.7	QP
29.480000	41.10	11.8	60	18.9	QP
29.660000	40.00	11.8	60	20.0	QP

MEASUREMENT RESULT: "5941 FCC L2_fin2"

6/17/2013 9:17AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector
0.164000	36.40	13.4	55	18.9	CAV
0.188000	37.40	12.9	54	16.7	CAV
0.315000	32.20	11.8	50	17.6	CAV
0.378000	36.70	11.5	48	11.6	CAV
0.412000	29.50	11.4	48	18.1	CAV
0.468000	27.50	11.3	47	19.0	CAV
0.670000	28.90	10.8	46	17.1	CAV
0.930000	29.60	10.7	46	16.4	CAV
1.410000	29.70	10.6	46	16.3	CAV
1.780000	29.60	10.6	46	16.4	CAV
3.190000	30.20	10.7	46	15.8	CAV
3.430000	28.80	10.7	46	17.2	CAV
28.565000	38.10	11.7	50	11.9	CAV
28.625000	38.30	11.7	50	11.7	CAV
28.685000	43.40	11.7	50	6.6	CAV
28.865000	36.90	11.7	50	13.1	CAV
29.240000	35.80	11.8	50	14.2	CAV
29.480000	36.40	11.8	50	13.6	CAV

END OF REPORT

Revision #	Date	Comments	By
1.0	06-24-2013	Preliminary Release	JS
1.1	06-28-2013	Added Part A info from client	JS
1.2	07-08-2013	Added Section 6.0 & minor edits	JS