

Measurement of RF Emissions from an Model C036045A001A Canopy Radio Transmitter

For

P.O. Number	NP82698087
Date Tested	January 7, 2019 through January 17, 2019
Test Personnel	Richard King
Test Specification	FCC "Code of Federal Regulations" Title 47
·	Part 96 Subpart E, Section 96.41

Cambium Networks, Inc.

Rolling Meadows, IL 60714

KDB 940660 January 29, 2018

3800 Golf Road

Test Report By:

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Requested By:

Approved By:

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REVISION HISTORY

Revision	Date	Description
_	05 FEB 2019	Initial release
A	9 APR 2019 By Rick King	 Added Rev A to the report number on the cover and in the header of each page. Added the applicable antenna information to section 1.1 which was originally listed section 3.1.2. Added a table of the PSD results at the end of the PSD plots. Corrected the EIRP output power table on pages 34 and 37 to read dBm/10MHz. Added the EIRP bandwidth correction to the output power table on pages 34 and 37. Added FCC ID Z8H89FT0010 to section 1.1.
В	17 JUN 2019 By Rick King	 Added Rev B to the report number on the cover and in the header of each page. Included a reference to the Total Power table on page 8. Added a Total Power Ports A+B table on pages 36 and 37.
С	25 JUN 2019 By Rick King	 Added Rev C to the report number on the cover and in the header of each page. Corrected a Total Power Ports A+B table on page 36 and 37.



Measurement of RF Emissions from a Canopy Radio Transmitter, Model No. C036045A001A

1. INTRODUCTION

1.1. Scope of Tests

This document represents the results of a series of radio interference measurements performed on a Cambium Networks, Inc. Canopy Radio Transmitter, Model No. C036045A001A, Serial No. 0A003E429FC3 (hereinafter referred to as the Equipment Under Test (EUT)). The EUT was manufactured and submitted for testing by Cambium Networks, Inc. located in Rolling Meadows, IL.

Applicable antennas:

PMP 450 3 GHz Access Point Antenna / Winncom model C030045D901A, serial number 3011130004 3.3-3.8GHz 65 Deg. 17dBi gain antenna.

FCC ID: Z8H89FT0010

1.2. Purpose

The test series was performed to determine if the EUT would meet selected requirements of FCC Part 96, Subpart E, Section 96.41, for Citizens Broadband Radio Service. Testing was performed in accordance with KDB 940660 D01 Part 96 CBRS Eqpt v01 and IEEE C63.26-2015.

1.3. Deviations, Additions and Exclusions

There were no deviations, additions to, or exclusions from the test specification during this test series.

1.4. EMC Laboratory Identification

This series of tests was performed by Elite Electronic Engineering Incorporated of Downers Grove, Illinois. The laboratory is accredited by the American Association for Laboratory Accreditation (A2LA), A2LA Lab Code: 1786-01.

1.5. Laboratory Conditions

The temperature at the time of the test was 23°C and the relative humidity was 18%.

2. APPLICABLE DOCUMENTS

The following documents of the exact issue designated form part of this document to the extent specified herein:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 96, Subpart E, Section 96.41
- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 2
- IEEE C63.26-2015 "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services Accredited by the American National Standards Institute"
- FCC KDB 940660, " Certification and Test Procedures For Citizens Broadband Radio Service Devices Authorized Under PART 96", Released January 29, 2018



3. EUT SETUP AND OPERATION

3.1. General Description

The EUT is a Cambium Networks, Inc., Canopy Radio Transmitter, Model No. C036045A001A. A block diagram of the EUT setup is shown as Figure 1. A photograph of the EUT is shown as Figure 2.

3.1.1.Power Input

The EUT was powered by 56V from a Gigabit Compatible, Model No. PSA15M300 POE power supply.

3.1.2. Peripheral Equipment

The EUT was submitted with a PMP 450 3 GHz Access Point Antenna / Winncom model C030045D901A, serial number 3011130004 3.3-3.8GHz 65 Deg. 17dBi gain antenna. This antenna was used to establish the EIRP output power level.

3.1.3.Signal Input/Output Leads No interconnect cables were submitted with the EUT.

3.1.4.Grounding

The EUT was not grounded.

3.1.5.Frequency of EUT

Per FCC CFR 47 Subpart J §2.1057 - Frequency spectrum to be investigated:

(a) In all of the measurements set forth in §§2.1051 and 2.1053, the spectrum shall be investigated from the lowest radio frequency signal generated in the equipment, without going below 9 kHz, up to at least the frequency shown below:

(1) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

For this test series the frequency spectrum from 30MHz to 37GHz was investigated.

3.2. Operational Mode

All emissions tests were performed separately in the following modes:

Tx @ 3560MHz, 20dBm, 20MHz Tx @ 3600MHz, 20dBm, 20MHz Tx @ 3690MHz, 19dBm, 20MHz Tx @ 3570MHz, 16dBm, 40MHz Tx @ 3600MHz, 16dBm, 40MHz Tx @ 3680MHz, 16dBm, 40MHz

3.3. EUT Modifications

No modifications were required for compliance.

4. TEST FACILITY AND TEST INSTRUMENTATION

4.1. Shielded Enclosure

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. With the exception of the floor, the reflective surfaces of the shielded chamber are lined with ferrite tiles on the walls and ceiling. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2014 and CISPR 16 for site attenuation.



4.2. Test Instrumentation

The test instrumentation and auxiliary equipment used during the tests are listed in Table 9-1.

4.3. Calibration Traceability

Test equipment is maintained and calibrated on a regular basis with a calibration interval not greater than two years. All calibrations are traceable to the International System Units (SI).

4.4. Measurement Uncertainty

All measurements are an estimate of their true value. The measurement uncertainty characterizes, with a specified confidence level, the spread of values which may be possible for a given measurement system.

Values of Expanded Measurement Uncertainty (95% Confidence) are presented below:

Measurement Type	Expanded Measurement Uncertainty
Conducted disturbance (mains port) (150 kHz – 30 MHz)	2.7
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 6 GHz)	3.1
Radiated disturbance (electric field strength on an open area test site or alternative test site) (6 GHz – 18 GHz)	3.2

5. TEST PROCEDURES

5.1. FCC RF Power Output Measurements

5.1.1.Requirements

5.1.1.1 FCC 96.41

Per 96.41(b), Power limits. Unless otherwise specified in this section, the maximum effective isotropic radiated power (EIRP) and maximum Power Spectral Density (PSD) of any CBSD and End User Device must comply with the limits shown in the table in this paragraph (b):

Device	Maximum EIRP (dBm/10 megahertz)	Maximum PSD (dBm/MHz)
End User Device	23	n/a
Category A CBSD	30	20
Category B CBSD ¹	47	37

¹Category B CBSDs will only be authorized for use after an ESC is approved and commercially deployed consistent with §§96.15 and 96.67.

5.1.2. Procedures

5.1.2.1 EIRP/Average Conducted Output Power

5.2.4.3.2 Alternative procedure for measuring average power of a narrowband signal with a constant duty cycle using a spectrum/signal analyzer or EMI receiver.



In accordance with paragraph 5.2.4.3.2 of C63.26: 2015 Alternative procedure for measuring average power of a narrowband signal with a constant duty cycle using a spectrum/signal analyzer or EMI receiver.

When the fundamental condition for average power measurements cannot be realized (i.e., the EUT cannot be configured to transmit at full-power on a continuous basis (i.e., duty cycle < 98%) and the instrumentation cannot be configured to measure only during active full-power transmissions), then the following procedure can be used if the EUT duty cycle is constant (i.e., duty cycle variations are less than or equal to $\pm 2\%$):

- a) Set span to $2 \times to 3 \times the OBW$.
- b) Set RBW \geq OBW.
- c) Set VBW \geq 3 × RBW.
- d) Set number of measurement points in sweep $\ge 2 \times \text{span} / \text{RBW}$.
- e) Sweep time:
 - 1) Set = auto-couple, or
 - Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (automation-compatible) measurement. The transmission period is the (on + off) time.
- f) Detector = power averaging (rms).
- g) Set sweep trigger to "free run."
- h) Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
- i) Use the peak marker function to determine the maximum amplitude level.
- j) Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission. For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is a constant 25%.

5.1.3.Results

The conducted output power data are shown on pages 22 through 33. All output power readings from the EUT were below the limits of FCC 96.41. The EIRP output power is shown on pages 34 through 37. As can be seen from the data all emissions measured were within the specification limits.

- 5.2. Emissions Outside the Fundamental
 - 5.2.1.Requirements
 - 5.2.1.1 FCC 96.41

Emission and interference limits—Confirm that the device satisfies the emission limits specified in Section 96.41(e) for all declared channel sizes, at the lowest and highest edges of the band, and in the middle of the band.

3.5 GHz Emissions and Interference Limits—(1) General protection levels. Except as otherwise specified in paragraph (e)(2) of this section, for channel and frequency assignments made by the SAS to CBSDs, the conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed –13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed –25 dBm/MHz. The upper and lower SAS assigned channel edges are the upper and lower limits of any channel assigned to a CBSD by an SAS, or in the case of multiple contiguous channels, the upper and lower limits of the combined contiguous channels.

Emissions outside the fundamental— The limits for emission outside the fundamental are as follows:

- Within 0 MHz to 10 MHz above and below the assigned channel ≤ -13 dBm/MHz.
- Greater than 10 MHz above and below the assigned channel \leq -25 dBm/MHz.



Any emission below 3530 MHz and above 3720 MHz \leq -40 dBm/MHz.

5.2.2.Procedures

When the fundamental condition for average power measurements cannot be realized (i.e., the EUT cannot be configured to transmit at full-power on a continuous basis (i.e., duty cycle < 98%) and the instrumentation cannot be configured to measure only during active full-power transmissions), then the following procedure can be used if the EUT duty cycle is constant (i.e., duty cycle variations are less than or equal to $\pm 2\%$):

a) Set span to 2 × to 3 × the OBW.

d) Set number of measurement points in sweep $\geq 2 \times \text{span} / \text{RBW}$.

- e) Sweep time:
 - 1) Set = auto-couple, or
 - 2) Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (automation-compatible) measurement. The transmission period is the (on + off) time.
- f) Detector = power averaging (rms).
- g) Set sweep trigger to "free run."
- h) Trace average at least 100 traces in power averaging (rms) mode if sweep is set to autocouple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
- i) Use the peak marker function to determine the maximum amplitude level.

5.2.3.Results

The plots for emissions outside the fundamental are presented on pages 38 through 73. All emissions measured from the EUT were within the specification limits.

5.3. Spurious Radiated Emissions

5.3.1.Requirements

5.3.1.1 FCC 96.41

Emission and interference limits—Confirm that the device satisfies the emission limits specified in Section 96.41(e) for all declared channel sizes, at the lowest and highest edges of the band, and in the middle of the band.

Emissions outside the fundamental—The limits for emission outside the fundamental are as follows.

- Any emission below 3530 MHz and above 3720 MHz \leq -40 dBm/MHz.

5.3.2. Antenna Conducted Spurious Emissions - Procedures

The antenna port of the EUT was connected to the spectrum analyzer through 30dB of attenuation. The emissions in the frequency range from 30MHz to 40GHz were observed and plotted separately with the EUT transmitting at low, middle and high hopping frequencies.

- a) Set RBW 1MHz.
- b) Set VBW \geq 3 × RBW.

c) Sweep time:

1) Set = auto-couple

- d) Detector = power averaging (rms).
- e) Use the peak marker function to determine the maximum amplitude level.

5.3.3. Spurious Radiated Emissions - Procedures

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with CISPR



16 for site attenuation.

The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.

- 1. Preliminary radiated measurements were performed to determine the frequencies where the significant emissions might be found. The EUT was placed on a 1.5 meter high, non-conductive stand and set to transmit. With the EUT at one set position and the measurement antenna at a set height (i.e. without maximizing), the radiated emissions were measured using a peak detector and automatically plotted. The broadband measuring antenna was positioned at a 3 meter distance (1 meter test distance above 1GHz) from the EUT. This data was then automatically plotted up through the tenth harmonic of the transmit frequency of the EUT. All preliminary tests were performed separately with the EUT operating in the modes listed in paragraph 3.2.
- 2. All significant broadband and narrowband signals found in the preliminary sweeps were then maximized. For all measurements below 1GHz, a bilog antenna was used as the measurement antenna. For all tests an RMS average detector was used. For all measurements above 1GHz, a horn antenna was used as the measurement antenna. An average detector was used for all tests above 1GHz.
- 3. To ensure that maximum emission levels were measured, the following steps were taken:
 - a. The EUT was rotated so that all of its sides were exposed to the receiving antenna.
 - b. Since the measuring antennas are linearly polarized, both horizontal and vertical field components were measured.
 - c. The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings.

The equivalent power was determined from the field intensity levels measured at 3 meters (1 meter above 1GHz) using the substitution method. To determine the emission power, another antenna was set in place of the EUT and connected to a calibrated signal generator. (A tuned dipole was used for all measurements below 1GHz and a double ridged waveguide antenna was used for all measurements above 1GHz.) The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was corrected to compensate for cable loss, as required, and for frequencies above 1GHz, increased by the gain of the waveguide.

5.3.4.Results

The plots of the RMS average antenna conducted emissions are presented on pages 98 through 157. All antenna conducted spurious emissions measured from the EUT were within the specification limits.

The plots of the peak preliminary spurious radiated emissions and the final tabular average spurious radiated emissions results are presented on pages 98 through 163. All spurious radiated emissions measured from the EUT were within the specification limits.

Photographs of the test configuration which yielded the highest or worst case, radiated emissions levels are shown as Figure 3 through Figure 6.

5.4. Power Spectral Density

5.4.1.Requirements

Per 96.41(b), Power limits. Unless otherwise specified in this section, the maximum effective isotropic radiated power (EIRP) and maximum Power Spectral Density (PSD) of any CBSD and End User Device must comply with the limits shown in the table in this paragraph (b):



Device	Maximum EIRP (dBm/10 megahertz)	Maximum PSD (dBm/MHz)
End User Device	23	n/a
Category A CBSD	30	20
Category B CBSD ¹	47	37

¹Category B CBSDs will only be authorized for use after an ESC is approved and commercially deployed consistent with §§96.15 and 96.67.

5.4.2.Procedures

In accordance with paragraph 5.2.4.3.2 of C63.26: 2015 Alternative procedure for measuring average power of a narrowband signal with a constant duty cycle using a spectrum/signal analyzer or EMI receiver.

When the fundamental condition for average power measurements cannot be realized (i.e., the EUT cannot be configured to transmit at full-power on a continuous basis (i.e., duty cycle < 98%) and the instrumentation cannot be configured to measure only during active full-power transmissions), then the following procedure can be used if the EUT duty cycle is constant (i.e., duty cycle variations are less than or equal to $\pm 2\%$):

- a) Set span to $2 \times to 3 \times the OBW$.
- b) Set RBW 1MHz.
- c) Set VBW \geq 3 × RBW.
- d) Set number of measurement points in sweep $\ge 2 \times \text{span} / \text{RBW}$.
- e) Sweep time:
 - 1) Set = auto-couple, or
 - 2) Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (automationcompatible) measurement. The transmission period is the (on + off) time.
- f) Detector = power averaging (rms).
- g) Set sweep trigger to "free run."
- h) Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
- i) Use the peak marker function to determine the maximum amplitude level.
- j) Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission. For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is a constant 25%.

5.4.3.Results

The power spectral density plots and table with the EUT transmitting are shown on pages 164 through 177. As can be seen from the data, the power spectral density levels from the EUT are within the limits.

5.5. Peak-to-Average Power Ratio (PAPR)

5.5.1.Requirements

Power measurement: The peak-to-average power ratio (PAPR) of any CBSD transmitter output power must not exceed 13 dB. PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities or another Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

5.5.2.Procedures

In accordance with paragraph 5.2.4.3.2 of C63.26: 2015 Alternative procedure for measuring average power of a narrowband signal with a constant duty cycle using a spectrum/signal analyzer or EMI receiver. The average



power was measured and recorded.

See 5.1.2.1 for the measurement procedure.

In accordance with paragraph 5.2.3.3 of C63.26: 2015 Measurement of peak power in a narrowband signal with a spectrum/signal analyzer or EMI receiver

This procedure can be used to measure the peak power in either a CW-like or noise-like narrowband RF signal. The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW \ge 3 × RBW.

- a) Set the RBW \geq OBW.
- b) Set VBW \geq 3 × RBW.
- c) Set span $\ge 2 \times OBW$.
- d) Sweep time \ge 10 × (number of points in sweep) × (transmission symbol period).
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the peak amplitude level.

5.5.3.Results

The results are presented on data pages 178 and 179. As can be seen from the data the peak to average ratio is less than the 13 dB limit.

6. OTHER TEST CONDITIONS

6.1. Test Personnel and Witnesses

All tests were performed by qualified personnel from Elite Electronic Engineering Incorporated.

6.2. Disposition of the EUT

The EUT and all associated equipment were returned to Cambium Networks, Inc. upon completion of the tests.

7. CONCLUSIONS

The Cambium Networks, Inc. Canopy Radio Transmitter, Model No. C036045A001A, Serial No. 0A003E429FC3 did fully meet the output EIRP power, power spectral density, peak-to-average power ratio, spurious emissions and emissions outside the fundamental requirements of the FCC "Code of Federal Regulations" Title 47, Part 96, Subpart E and FCC KDB 940660 when tested per IEEE C63.26-2015.

8. CERTIFICATION

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specifications.

The data presented in this test report pertains to the EUT at the test date. Any electrical or mechanical modification made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification.

This report must not be used to claim product certification, approval, or endorsement by A2LA, NIST or any agency of the Federal Government.



9. EQUIPMENT LIST

Table 9-1 Equipment List

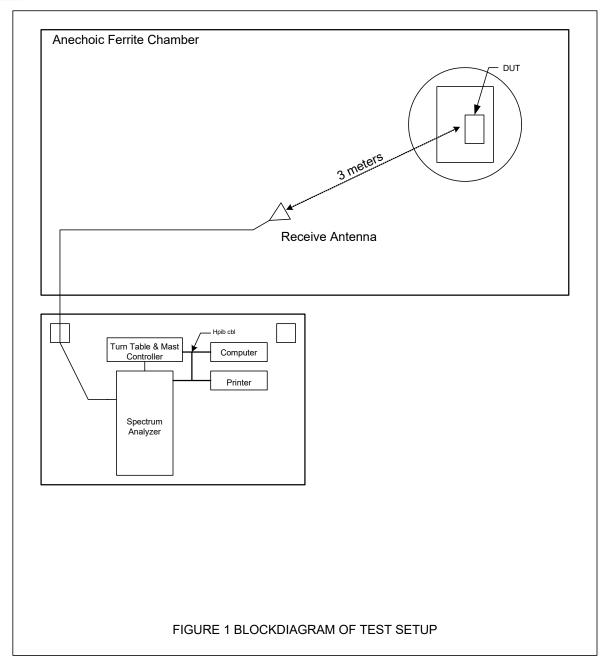
Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW0	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-30-20G20R6G	PL2926/0646	20GHZ-26.5GHZ	4/5/2018	4/5/2019
APW11	PREAMPLIFIER	PMI	PE2-35-120-5R0-10-12- SFF	PL11685/1241	1GHZ-20GHZ	4/5/2018	4/5/2019
APW4	PREAMPLIFIER	PLANAR	PE2-36-2D540G-5R0-10	PL3043/0651	26.5GHZ-40GHZ	7/3/2018	7/3/2019
CDX8	COMPUTER	ELITE	WORKSTATION			N/A	
NHG0	STANDARD GAIN HORN ANTENNA	NARDA	638		18-26.5GHZ	NOTE 1	
NHG1	STANDARD GAIN HORN ANTENNA	NARDA	638		18-26.5GHZ	NOTE 1	
NHH0	STANDARD GAIN HORN ANTENNA	NARDA	V637		26.5-40GHZ	NOTE 1	
NHH1	STANDARD GAIN HORN ANTENNA	NARDA	V637		26.5-40GHZ	NOTE 1	
NWQ0	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS LINDGREN	3117	66657	1GHZ-18GHZ	5/31/2018	5/31/2020
NWQ2	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS LINDGREN	3117	66659	1GHZ-18GHZ	3/22/2018	3/22/2020
RBG2	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101591	2HZ-44GHZ	2/23/2018	2/23/2019
T1ED	10DB 25W ATTENUATOR	WEINSCHEL	46-10-34	BN2320	DC-18GHZ	4/24/2018	4/24/2020
T2SA	20DB 25W ATTENUATOR	WEINSCHEL	46-20-34	CD5015	DC-18GHZ	4/23/2018	4/23/2020
T2SE	20DB 25W ATTENUATOR	WEINSCHEL	46-20-34	CD5019	DC-18GHZ	5/3/2018	5/3/2020
XLJ11	50 OHM, 2W TERMINATION	JFW INDUSTRIES	50T-199		DC-2GHZ	6/29/2017	6/29/2019
XLTV	5W, 50 OHM TERMINATION	JFW INDUSTRIES	50T-052		DC-2GHZ	5/25/2018	5/25/2020
XOA1	WAVE-TO-COAX ADAPTER	HEWLETT PACKARD	R281A	02119	26.5-65GHZ	NOTE 1	
XOA2	WAVE-TO-COAX ADAPTER	HEWLETT PACKARD	R281B	01138	26.5-65GHZ	NOTE 1	
XOB1	ADAPTER	HEWLETT PACKARD	K281C	10422	18-26.5GHZ	NOTE 1	
XOB2	ADAPTER	HEWLETT PACKARD	K281C,012	09407	18-26.5GHZ	NOTE 1	

I/O: Initial Only

N/A: Not Applicable

Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.







Zero Span						_		-	BRm Clove
	mith one con	10 million (100						D3[6]	-21.41 dt -4.9725 m
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10 dam-						_	-	1	0,00000000
20 d8m		1	-	1. 1.2.					
ao dem							_	1	
46 dBm						_			
S2 dBm							_		
an dem	Mary mary and have	tor	The section	unuke	Uning when have	makes bel	359	mar her active light	
70 dêm									
(1) dum									
in dim-									
F 3.56 GHz				1001 p	ots				2.25 ms/
				1.00.00.1					

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MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc. : C036045A001A : 0A003E429FC3 : FCC 96.41 - Compute the Average to 100% duty cycle : January 7, 2019 : Transmit at 3600MHz , 20MHz : On time = 2.4msec : Word = 4.9 msec : duty cycle = 10*log(1/(2.4/4.9)) : duty cycle = 3.01 dB

Checked By:

RICHARD E. KING



Ref Level 10 Att Input TRG://ID	10 dBm 10 dB 1 AC	Offse SWT PS	9.2 ms =		ISPR) 1	MHZ MHZ Off	SGL				Fr	requency 3	.570	0000 GHz
1 Zero Span					-					-			14[6]	 6Rm Clov 3.61 d6
o'um to - to u	THO & DIDA	MEM L	- Mary Mary and Mary	Contraining of	Mult	-	41manpfa	and for any opening of	upre l	-	jedjalihen-skilkan.			1.99110 ms 0.48 dBm 1.47200 ms
-10 d8m-	-			+	-		_		-				+	
-20 d8m	-			-	-		-		-				+	
-30 dBm	-			-	-		_						-	
-46 dBm	-				-		_	-					+	
-50 dBm-				-	-		-						+	
-sið dem	-			-	-alg	halp	-			Alumph	-	-		he panel
Jū dem-	-	-		-	-	-			-	_			-	
-80 d8m	-	-		-	-	-	_		-	-	-	-	+	-
CF 3.57 GHz					_	_	100	l pts		_	_			920.0 µs/
2 Marker Tab Type Re			X-Value	-	1		alue	Euni	ction	1	E	inction Resu	lt.	_
M1 D2 M1 D3 M1 D4 M1	6		1.472 m 1.9751 m 2.4977 m 4.9911 m	5	- 1	0.1	dBm L6 dB 50 dB 51 dB							1

Doto: 15.JAN.2019 12.25.22

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc. : C036045A001A : 0A003E429FC3 : FCC 96.41 - Compute the Average to 100% duty cycle : January 7-17, 2019 : Transmit at 3600MHz , 40MHz : On time = 1.9msec : Word = 2.49 msec : duty cycle = 10*log(1/(1.9/2.49)) : duty cycle = 1.19 dB

Checked By:

RICHARD E. KING



# Att 10 dB SWT Input 1 AC PS	t 30.82 dB = RBW 300 k 1.01 ms = VBW 1 M On Notch		SGL Count 750/750	Frequency 3.5600000 GHz
1 ACLR	1	1		MI[6] -49,01 dBm
				3.5850000 GHr
20 dBm				
10 dBm		MALMAN	monum	
0 dam		1		
ID dBm				
-zo dam				
-10 dlm				
40 d8m	entrantation	~	WELMWHIM .	
SD HIM	when the what			and a lite was a for the second a lite
State warde wet				Wanner Strates Constant
-60 dBm				
CF 3.56 GHz	10	01 pts	8.0 MHz/	Span 80.0 MHz
2 Result Summary Channel T×1 (Ref) T× Total	Bandwidth 10.000 MHz	Offset	ne -46.94 dBm/Hz 23.06 dBm	

Date: 9 JAN 2019 17:24:17

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.

: C036045A001A

- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 7, 2019
- : Transmit at 3560MHz Channel A, 20MHz Channel
- : AVG Cond. Output Power = 23.06dBm + 3.01dB = 26.078dBm

Checked By:

RICHARD E. KING

Richard King



1.01 ms = VBW 1 MHz	SGL	50/750	x (1940) x 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
On Notch Off			O 6Pk Max
			M1[6] -49,19 dBm 3:5850000 GH
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he were w		And the second second	
with man and		mark the Mill	Willia Art
			- marine and the
1001 p	ts	8.0 MHz/	Span 80.0 MHz
Bandwidth 10.000 MHz	None Offset	Power -47.13 dBm/Hz 22.87 dBm	
	10.82 dB = RBW 300 kHz 1.01 ms = VBW 1 MHz On Notch Off	1001 pts None Bandwidth Disk 200 kHz 100 kHz 1	30.82 dB = RBW 300 HHz Mode Auto Sweet Count 750/750

Date: 9 JAN 2019 14:27 18

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 7, 2019
- : Transmit at 3560MHz Channel B, 20MHz Channel
- : AVG Conducted Output Power = 18.56dBm + .97dB = 19.53dBm

Checked By:

RICHARD E. KING



ACLR	1	1		1 1	1.1	O 6Pk Max M1[6] 37.68 dBr 3:5850000 GH
20 dBm						-
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) dBm						_
ID dBm-						_
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and the second sec			-			
10 dim 40 dim 39,4910 - المربع المربع المربع 40 dim	a intel day a state	MUM		Wellward	Maria	
20,400 martin and and	un Ca	-	1		MAN ANN	- medad to the const
60 dBm						
		1001 pts		8.0 MHz/		Span 80.0 MH

Date: 10.JAN.2019 11.04.53

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 15, 2019
- : Transmit at 3600MHz Channel A, 20MHz Channel
- : AVG Conducted Output Power = 23.33dBm + 3.01dB = 26.34dBm

Checked By:

RICHARD E. KING



Input IAC PS	i Ón N	otch Off	-					O 6Pk Max
		1				1	WI[6]	37.61 dBr 3.5850000 GH
0 dBm					_			
10 dBm		T	HULLIN, K. M. M.	MAN MAN	7			
) dBm-	-							
10 dBm						_		-
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an dim		117		_			_	
40 dām	- militari	Transport			halfting.	all all man	_	
40 dēm 50 dēm 50 dēm	Maria				_	werk	Martin M	AAA AAAAAA
ad dam			-					
JF 3.6 GHz		1001 p	ts	8.0	0 MHz/			Span 80.0 MH
Result Summary Channel T×1 (Ref) T× Total	Bandwidth 10.000 MHz		Offset		Power 5.72 dBm/H 23.28 dB	1z		

Date: 9 JAN 2019 14:37:02

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 15, 2019
- : Transmit at 3600MHz Channel B, 20MHz Channel : AVG Cond. Output Power = 23.28dBm + 3.01dB = 26.29dBm

Checked By:

RICHARD E. KING



30.82 dB = RBW 300 kHz 1.01 ms = VBW 1 MHz	SGL	a -c	Frequency 3.6	900000 GHz
on wordt on				O 6Pk Max
			WI(61	10,04 dBm 3.6950350 GHr
				1
	WASHINGTON BURNING	No. x		-
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				-
application and a second		- hatter		
Martin			and the man and the second	an martine
1901 p	ts	8.0 MHz/		Span 80.0 MHz
	None	ono ming		opun ontronn.
Bandwidth 10.000 MHz	Offset	Power -47.51 dBm/Hz 22.49 dBm		
	100 s2 dB = RBW 300 kHz 1.01 ms = VBW 1 MHz On Notch Off	30.52 dB = RBW 200 kHz 1.01 ms = VBW 1 MHz On Notch Off Mode Auto Sween Count 7: On Notch Off Automatical Auto Sween Count 7: Automatical Automatical Auto Sween Count 7: Automatical Automatical Automat	30.52 dB = RBW 300 HHz 1.01 ms = VBW 1 MHz Mode Autó Swéep Count 750/750 On Notch Off Mode Autó Swéep Count 750/750 MAMMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAM	20.62 dB RBW 200.4Hz SGL Count 750/750 Frequency 3.6 Int ms VBW 1 MHz Mode Auto Sweep Count 750/750 Frequency 3.6 Int ms Off Int ms Int ms Miller Int ms Off Int ms Miller Int ms Off Int ms Miller Int ms Off Int ms Miller Int ms Int ms Int ms Miller Int ms

Date: 9 JAN 2019 11:48:36

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 15, 2019
- : Transmit at 3690MHz Channel A, 20MHz Channel
- : AVG Conducted Output Power = 22.49dBm + 3.01dB = 42.5dBm

Checked By:

RICHARD E. KING



StaltsWiere Bear	(X) (9.00			tin a	2		inis. [X	[q_4]	X (Speed	x + + -
Input	10 dBm Offse 10 dB SWT 1 AC PS	1:01 ms = VI 0n N		Mode	Autó Swéép	SGL Count 750	/750	_	Frequency	3.6900000 GHz
1 ACLR		-			-					O 6Pk Max
									MI	[6] 51.57 dBm 3.6500000 GHr
20 dBm			-				1			-
10 dBm	_			a ba L M	w ntm	a mar data	1	-		
				Contra 1	Auge volter - be	and the state	M			
0 d8m		-	-					-		
ID dBm-				-					-	-
-zio dem	_			-						_
-10 dtim					-			-	_	
-40 dām		Ward and the second states	how a wit				Laborer 1	tent finen	_	
1.0		10ml and	1		-			White	Annie	
tad dem	manaparation						1		the second of the second second	Lugunercint
-60 dBm				-		-	-	-		
CF 3.69 GHz	_		1001	pts			8.0 MHz/			Span 80.0 MHz
2 Result Summa	ry		_		Non	ie				
Tx1 (Ref) Tx Total		Bandwidth 10.000 MHz		C	offset		47.16 dBn 22.84	/Hz dBm		
						Rea			09.01.2019 17:16:36	Vew .

Date: 9 JAN 2019 17 16:36

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- :0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 15, 2019
- : Transmit at 3690MHz Channel B, 20MHz Channel
- : AVG Conducted Output Power = 22.84dBm + 3.01dB = 25.85dBm

Checked By:

RICHARD E. KING



ACLR	1 1		1 1 1	i i	6Pk Max M1[6] 4.51 dBn
20 dBm					3.5850000 GH
0 dBra				MD	
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		and the second			
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60.d8m					
70 dêm				_	
JF 3.57 GHz		1001 pts	8.0 MHz/	1	Span 80.0 MHz

Date: 15.JAN.2019 13.49.12

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

: Cambium Networks, Inc.

- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 15, 2019
- : Transmit at 3570MHz Channel A, 40MHz Channel : AVG Conducted Output Power = 16.82dBm + 1.19dB = 18.01dBm

Checked By:

RICHARD E. KING



ACLR				Ī	Offk Max M1[6] -52.63 dBn 3.6100000 GH
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4D dBm-					
to the second second	Addin Simple in the			super	- this may represent
őű, dBm	_			_	
70 dêm				_	
JF 3.57 GHz		1001 pts	8.0 MHz/		Span 80.0 MHz

Date: 15.JAN.2019 12:43:50

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.

- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 15, 2019
- : Transmit at 3570MHz Channel B, 40MHz Channel
- : AVG Conducted Output Power = 16.43dBm + 1.19dB = 17.62dBm

Checked By:

RICHARD E. KING



ACLR	1 1		1 1 1	Ī	●6Pk Max M1[6] -50.61 dBn
20 dBm					3.6400000 GH
10 dBm		(C) 100			
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20 dem -					
ao dem					
40 dBm					
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60.dBm					
7ta dêm					
F 3.6 GHz		1001 pts	8.0 MHz/	2	Span 80.0 MHz

Date: 15.JAN.2019 13:43:40

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.

: C036045A001A

- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 15, 2019
- : Transmit at 3600MHz Channel A, 40MHz Channel
- : AVG Conducted Output Power = 16.92dBm + 1.19dB = 18.11dBm

Checked By:

RICHARD E. King



ACLR	1 1		1 11		M1[6	6Pk Max 5,49 dBn 3,6100000 GH
20 dBm				_		3.5100000 6H
it dBra	- Min	AN WITH A LOT 24 MILLING A	UNIT TRAIL - LANY	addet All ac Public		
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-30 dem						
40 dBm.						
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60.dBm	_				-	-
-7ta dêm						_
JF 3.6 GHz		1001 pts	8.1	MHz/		Span 80.0 MHz

Date: 15.JAN.2019 12:57.09

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc. : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 15, 2019
- : Transmit at 3600MHz Channel B, 40MHz Channel
- : AVG Conducted Output Power = 16.59dBm + 1.19dB = 17.78dBm

Checked By:

RICHARD E. KING



Input 1 ACLR	IAC PS	Ón N	votch Off	1 1	TT	1	Ť	M1(6)	e 6Pk Max
20 dBm							1		3.6400000 GHz
10 dBm		لير	Manarimanyi Mara	anitalation	LAND THE CONTRACT OF AND	Anal Martina	in hus		
0 dBm		1					-		
-10 dBm		1ª					- tu		
-20 d8m									
-30 d8m		1	-			-			
HD dBm	ىر ھردارلىلەن	a.						in and i	1
30 dem								higher the Hick war	mana shine
-60.dBm									
-70 dêm							-		
CF 3.68 GHz	/		1001	pts	None	8.0 MHz/	_		Span 80.0 MHz

Date: 15.JAN.2019 13.40.20

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.

- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power
- : January 15, 2019
- : Transmit at 3680MHz Channel A, 40MHz Channel
- : AVG Conducted Output Power = 17.19dBm + 1.19dB = 18.38dBm

Checked By:

RICHARD E. KING



Input 1	dB SWT 1. AC PS	O1 ms = VB On No	tch Off	Mode Auto Sw	eep Count 75	0/750		Frequency 3.	6800000 GHz
1 ACLR				+	1 1		T.	1	O 6Pk Max
20 dBm						-	-	M1[6]	-49,47 dBn 3.6400000 GH;
10 dBm									
10 080		in M	AMALANNA	A PAN BATIAN	ANTONO	M MARIA PUA	William		
0 dBm-		1	1						
-10 d8m	-	1					1		
-20 d8m		1				-	1		
-30 d8m	-	-			-		+ 1		-
HD dBm-					-		-		
hets dame his a knowledge	harmarket		_		1	_	5	and the second of the second o	when have a
-60.dBm	_			_				-	
-70 dêm	_					-	-		
CF 3.68 GHz			1001 pt	ts		8.0 MHz/		1	Span 80.0 MHz
2 Result Summary Channel		andwidth	1	Offset	vone	Power -53.15 dBm 16.85 d			
T×1 (Ref) T× Total	10	000 MHz				-53.15 dBm	/Hz		

Date: 15.JAN.2019 13:06.32

MANUFACTURER MODEL NO. SERIAL NO. **SPECIFICATION** DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Conducted Output Power : January 7-17, 2019
- : Transmit at 3680MHz Channel B, 40MHz Channel
- : AVG Conducted Output Power = 16.85dBm + 1.19dB = 18.04dBm

Checked By:

RICHARD E. KING

Richard King



MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE NOTES : Cambium Networks, Inc. : C036045A001A : 0A003E429FC3 : FCC 96.41(e) EIRP : January 7, 2019 : 20MHz Channel

Frequency MHz	Antenna Port	RMS Average Meter Reading (dBm)	Duty Cycle Correction dB	Antenna Gain (dBi)	Bandwidth Correction	EIRP Total (dBm/10MHz)	EIRP Limit (dBm/10MHz)	Margin (dB)
3560	Α	23.06	3.01	17	3	46.07	47	-0.93
3560	В	22.87	3.01	17	3	45.88	47	-1.12
3600	Α	23.33	3.01	17	3	46.34	47	-0.66
3600	В	23.28	3.01	17	3	46.29	47	-0.71
3690	Α	22.49	3.01	17	3	45.5	47	-1.5
3690	В	22.84	3.01	17	3	45.85	47	-1.15

EIRP (dBm) = RMS AVG Meter Reading + Duty Cycle Correction + Antenna Gain Bandwidth Correction = 10 * Log (20/10) = 3dB

Checked By:

RICHARD E. KING



MANUFACTURER	: Cambium Networks, Inc.
MODEL NO.	: C036045A001A
SERIAL NO.	: 0A003E429FC3
SPECIFICATION	: FCC 96.41(e) EIRP
DATE	: January 7-17, 2019
NOTES	: 40MHz Channel

Frequency MHz	Antenna Port	RMS Average Meter Reading (dBm)	Duty Cycle Correction dB	Antenna Gain (dBi)	Bandwidth Correction	EIRP Total (dBm/10MHz)	EIRP Limit (dBm/10MHz)	Margin (dB)
3570	А	16.82	1.19	17	6	41.01	47	-5.99
3570	В	16.43	1.19	17	6	40.62	47	-6.38
3600	А	16.92	1.19	17	6	41.11	47	-5.89
3600	В	16.59	1.19	17	6	40.78	47	-6.22
3680	А	17.19	1.19	17	6	41.38	47	-5.62
3680	В	16.85	1.19	17	6	41.04	47	-5.96

EIRP (dBm) = RMS AVG Meter Reading + Duty Cycle Correction + Antenna Gain Bandwidth Correction = 10 * Log (40/10) = 6dB

Checked By:

RICHARD E. KING



Frequency MHz	A and B (dBm) A B 23.06 22.87		RMS Total Average Meter Readings Ports A + B (dBm)	Duty Cycle Correction dB	Antenna Gain (dBi)	Bandwidth Correction	EIRP Total Ports A+B (dBm/10MHz)	EIRP Limit (dBm/10MHz)	
3560	23.06	22.87	25.9	3.01	17	3	48.91	50	
3600	23.33 23.28		26.3	3.01	17	3	49.31	50	
3690	22.49 22.84		25.7	3.01	17	3	48.71	50	

EIRP (dBm) = RMS AVG Meter Reading (Ports A+B) + Duty Cycle Correction + Antenna Gain + Bandwidth Correction Bandwidth Correction = 10 * Log (20/10) = 3dB

Checked By:

RICHARD E. KING



Frequency MHz	A and B (dBm) A B 16.82 16.		eterTotaladingsAverageadingsAverageadingsMeterortsReadingsand BPortsBm)A + BB(dBm)16.4319.6		Antenna Gain (dBi)	Bandwidth Correction	EIRP Total Ports A+B (dBm/10MHz)	EIRP Limit (dBm/10MHz)
3570	16.82	16.43	19.6	1.19	17	6	43.79	53
3600	16.92 16.59		19.8	1.19	17	6	43.81	53
3680	17.19 16.85		20.0	1.19	17	6	44.19	53

EIRP (dBm) = RMS AVG Meter Reading (Ports A+B) + Duty Cycle Correction + Antenna Gain + Bandwidth Correction Bandwidth Correction = 10 * Log (40/10) = 6dB

Checked By:

RICHARD E. KING



Ref Level 2	2.32 dBm Offse 10 dB SWT	t 30.82 dB • RB	W 2	00 MHz	Mode Auto	SGL	× [9445		-	En	equency	3 50	50000	O GH
Input	1 AC PS	1.01 ms VB On No	tch	2 MHz Off	Provide Plants	Sureb erm	1 1000/ 1	000	_		equency .	3.50	_	
1 Frequency	Sweep										MI	[6]		n 1958 57 dBn
20 dBes-			1								(MI)		3.59000	
			14		1				1.					
10 dim-					1	- interes	- Seli	11.				-		_
	i			hered	MANAN	YMANMULA	Net 144	MM						
0 dBm			-	-		_		-	-				-	
10 d8m-				-	-	_			-		-	_	-	
	H1 -13.000 dB/m			1								-		
-30 dêm			-	·		_	_		-			_		
-JiG dBm					-				1			_		
all dim		- Andrew A	NE	_					in	in March 1				
AND ODIN	- Justin MA	ann an							1	brithwark davan r	A and a			
	RINGY										- AV	Mul		
-su dam												-	× Klow	((8.78))
Laddel Marca														
-60 dBm					1				-			-		
									1.1					
-70 dBm-			U3		-			-	1-			-		_
			-					_					-	
CF 3.56 GHz				1001 p	ts		6.0	MHz/		09.01.2		Level	pan 60.	.0 MHz VBW

Date: 9 JAN 2019 17:25:22

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- :0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7, 2019
- : Transmit at 3560MHz, 20MHz Channel, Channel A
- : V1- low edge of the assigned channel minus 10MHz = 3550MHz
- : V2- high edge of the assigned channel plus 10MHz = 3570MHz

Checked By:

RICHARD E. KING

Richard King



Studieve:	Bear	×	×	-	× .	X -		19.45 X	(same	× ×		x	1.	-
Ref Lev # Att Input	vel 22.	32 dBm Offset 10 d8 SWT 1 AC PS	: 30.82 dB 1.01 mi	VB	W 10/		to Sweep Cour	nr 1000/100	10	Fre	quency	3.62	50000	GHz
1 Freque	incy St		-										* 6Rm	MBX
20 dBes	-						-	1			-	-		-
-		and marked							_					
10 dim		MANYANA		-					_			-		
20 dm		1												
-			1.											
0 dBm	-		-					-						
												- 1		
10 d8m	-													
TO OBW														
-30 dêm-	-	-	-	-			-	+				-+		_
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						1		1						
-60 d8m-	-						-	-				-		
-70 dBm-	-			-			-	-	_		-	_		
V)														
CF 3.625	CLIN		_	_	1001 -			19.0 MHz/			-	Con	n 190.0	Adda
GF 3.023	GHZ	W.	-	_	1001 p					09.01.20	119 244	Level		BW
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Date: 9 JAN 2019 17 26 18

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.

: C036045A001A

: 0A003E429FC3

- : FCC 96.41(e) Emissions outside the fundamental
- : January 7, 2019
- : Transmit at 3560MHz, 20MHz Channel, Channel A
- : V1- Greater than 10MHz below assigned channel = 3540MHz
- : V2- Greater than 10MHz above assigned channel = 3590MHz

Checked By:

RICHARD E. KING



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Date: 9 JAN 2019 17 26:51

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES Cambium Networks, Inc.
C036045A001A
0A003E429FC3
FCC 96.41(e) Emissions outside the fundamental
January 7, 2019
Transmit at 3560MHz, 20MHz Channel, Channel A
V1- 3530MHz
V2- 3720MHz

Checked By:

RICHARD E. King



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Ref Level 2 # Att Input	2.32 dBm Offset 10 dB SWT 1.AC PS	t 30.82 (1.01 n	ns VI	BW 200 kHz BW 2 MHz otch Off	Mode Auto Sw	ep Count 100	0/1000		Fn	equency 3.	5600000 GHz
1 Frequency : 20 dbes	Sweep					-		-		M1[6]	-44.63 dBm 3:5800000 GHz
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CF 3.56 GHz	Π			1001	pts	_	4.0 MHz/	-	09.01.2 14:24	019 Ref Lov	Span 40.0 MHz

Dote: 9 JAN 2019 14:29.31

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7, 2019
- : Transmit at 3560MHz, 20MHz Channel, Channel B
- : V1- low edge of the assigned channel minus 10MHz = 3550MHz
- : V2- high edge of the assigned channel plus 10MHz = 3570MHz

Checked By:

RICHARD E. KING



StalkWiew -	Bear	× (+	×			trint .	× (*		19.00	x		(X)[4		x	1.	-
Ref Lev Att Input	el 22.	10 dB SWT 1 AC PS	1.01 m	VE VE	BW (CISPR) BW 10 otch	D MHZ D MHZ OH	Mode Aut	o Sweep C	ount 10	00/1000		Fre	equency	3.62	50000	GHz
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-70 dBm-	-					-			_		-	-	_	-		
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CF 3.625	Chiz			-	1001	nte		-	19.0	MLI-7	-	-		Co.	an 190.	0 MH
ur 3.023	GFIZ	17	_	-	1001	pta	_	1	_			09.01.20	019 Ref	fLevel		
		4						Mee	suring	10.000		14:30	:00		Arrest of	NBW

Date: 9 JAN 2019 14:30.09

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7, 2019
- : Transmit at 3560MHz, 20MHz Channel, Channel B
- : V1- Greater than 10MHz below assigned channel = 3540MHz
- : V2- Greater than 10MHz above assigned channel = 3590MHz

Checked By:

RICHARD E. KING



RefLey	Peer /el 22 32 03	m Offse	-	X RE		Sp.md	1 -	- X		tp.mit	X Nem?	x	· [*	1
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ADD ODIN							-							
-70 dBm													1	
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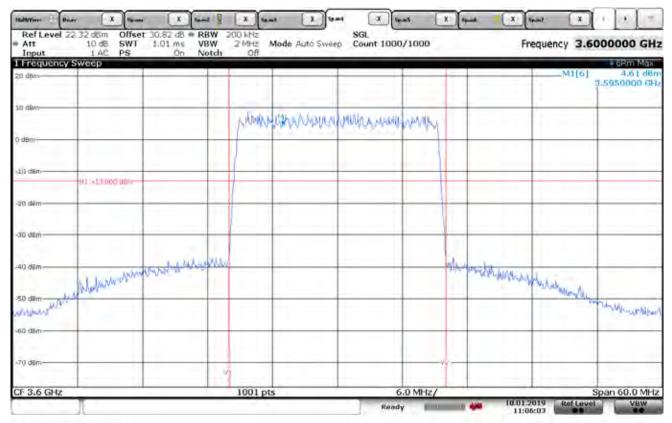
Date: 9 JAN 2019 14:30.56

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES Cambium Networks, Inc.
C036045A001A
0A003E429FC3
FCC 96.41(e) Emissions outside the fundamental
January 7, 2019
Transmit at 3560MHz, 20MHz Channel, Channel B
V1- 3530MHz
V2- 3720MHz

Checked By:

RICHARD E. King





Date: 10.JAN.2019 11.06.03

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.

- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7-17, 2019
- : Transmit at 3600MHz, 20MHz Channel, Channel A
- : V1- low edge of the assigned channel minus 10MHz = 3590MHz
- : V2- high edge of the assigned channel plus 10MHz = 3610MHz

Checked By:

RICHARD E. KING



Stall View	er (- X		X	4 🛛 🖌 🗴	Sp.mit	x	-	X (19.84)		.x.)	(spin)	x	
Ref Level 2 # Att Input	10 dB.	Offset 30.8 SWT 1.01 PS	me VI	BW (CISPR) BW otch	1 MH2 10 MH2 Off	Mode Au	to Sweep	Count 1	000/1000		Frequency	3.62500	00 GHz
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CF 3.625 GH	z		-	100	l pts	-	-	19.	0 MHz/	-	-	Span 19	0.0 MHz
	1							Measuring	G orana (400 10.0	1.2019 Ref :00:21	Level	VBW

Date: 10.JAN.2019 11.08.21

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019
- : Transmit at 3600MHz, 20MHz Channel, Channel A
- : V1- Greater than 10MHz below assigned channel = 3580MHz
- : V2- Greater than 10MHz above assigned channel = 3620MHz

Checked By:

RICHARD E. KING



RefLevel		1 30.82 dB = F	BW IN	500		X (s		lana (x)(1+11)	x · ·	1-
# Att Input	10 de SWT	1.01 ME = N	/BW 3M Notch	Miz Mode	Auto Sweep	Count 933/1	000		Frequency 3	3.625000	0 GH2
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-40 dBm	H1 40,000 dB/m	*			-						-
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-60 d8m			+				+				-
1. T											
-70 d8m			-								
YT.										_	
CF 3.625 GH	łz		-	1001 pts		2	1.0 MHz/	-11-		Span 210	0 MHz
1.	1					Measuri		444	11:00:40 Ref 0		VBW

Date: 10.JAN.2019 11.08.39

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES Cambium Networks, Inc.
C036045A001A
0A003E429FC3
FCC 96.41(e) Emissions outside the fundamental
January 7-17, 2019
Transmit at 3600MHz, 20MHz Channel, Channel A
V1- 3530MHz
V2- 3720MHz

Checked By:

RICHARD E. KING



1	Rear X Span				ipani X)S			s	X	nt [x	1.	-
Ref Level # Att Input	22.32 dBm Offset 10 dB SWT 1 AC PS	: 30.82 d 1.01 m	s VB		Mode Auto Swi	ep Count 1000	0/1000		Fre	quency	3.60	0000	0 GHz
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CF 3.6 GHz		_	-	1001	ots	-	.0 MHz/				S	pan 40	0 MHz
ar and the	1			1001		_	ng 🖡		09.01.20	10 Ref	Lovel		ARM
	21								14:30:	33	1.0000		and the second

Date: 9 JAN 2019 14:38:33

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019
- : Transmit at 3600MHz, 20MHz Channel, Channel B
- : V1- low edge of the assigned channel minus 10MHz = 3590MHz
- : V2- high edge of the assigned channel plus 10MHz = 3610MHz

Checked By:

RICHARD E. KING



Hadavier Per	- X		×	× × ×	piul 🏓	X	44 - (X Tyuny			X Name -	x	• =
Ref Level 2 # Att Input	10 dB.	Offset 30.8 SWT 1.01 PS	Mie VE	W (CISPR) 1 W 10		ode Aut	o Sweep	Count 10	00/1000		Frequency	3.625	0000 GHz
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10 dBm	-	-	_			-	-	-			-	-	
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wijū dām	-				-	-	-		_			-	
-70 d8m-		-	97									-	
CF 3.625 GHz			-	1001	ots	-	-	19.0	MHz/		-	Span	190.0 MHz
	Π						N	leasuring		400 D	9.01.2019 Re 14:39:39 Re	fLevel	VBW

Date: 9 JAN 2019 14:39:40

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019
- : Transmit at 3600MHz, 20MHz Channel, Channel B
- : V1- Greater than 10MHz below assigned channel = 3580MHz
- : V2- Greater than 10MHz above assigned channel = 3620MHz

Checked By:

RICHARD E. KING



HaltWiert	Bear X			nint 🚽 🕅 🖬		-5. <u>X</u>	x	4	· [·] -
# Att Input	122 32 dBm Offsi 10 dB SWT 1 AC PS	et 30.82 dB = R 1.01 mi = V On N	BW 3 MHz N otch Off	Nóde Auto Sweép	Count 1000/1	1000	Fr	equency 3.6	250000 GH2
I Frequen			oren agn						= 6Rm Max
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1.1			INE WY	sin Wa					
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-50 dam	Constant of the	Chapter 1				an Acadese	and the second	an ann an	March Same
-60 dBm									
-70 d8m-		-							
CF 3.625 G	1.15		1001 -	te		LO MHZ/			pan 210.0 MHz
GF 3.023 C	112		1001 p	15			B9.01.2	2019 Ref Level	
					Measurin	ig		0:20	and the same

Date: 9 JAN 2019 14:40.28

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc. : C036045A001A : 0A003E429FC3 : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019 : Transmit at 3600MHz, 20MHz Channel, Channel B : V1- 3530MHz
- : V2- 3720MHz

Checked By:

RICHARD E. KING



Ref Level 2 # Att	2.32 dBm Offse 10 dB SWT	t 30.82		BW 200 kt BW 2 MH		Sweep Cour	1000/1000		Fr	equency :	3.6900	000 GH2
Input	1 AC PS	_	on N	otch 0	ff	100 million (100 million)				advanta) .	A	
20 dites	sweep	-	-						-	M1	[6]	6Em M5A -44.71 dBm 00000 GHz
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-50 d8m	-							_	-		-	too have
-60 dBm	_					_			_		_	
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CF 3.69 GHz		ų			1 pts		4.0 MHz/		-			40.0 MHz

Dote: 9 JAN 2019 13:47 16

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7-17, 2019
- : Transmit at 3690MHz, 20MHz Channel, Channel A
- : V1- low edge of the assigned channel minus 10MHz = 3680MHz
- : V2- high edge of the assigned channel plus 10MHz = 3700MHz

Checked By:

RICHARD E. KING



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Ref Level 2 # Att Input	2.32 dBm Offse 10 dB SWT 1 AC PS	1.01 Mis VE			ode Auto	x Sweep	Count	1000/1000		Frequency 3	.690000	0 GHz
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CF 3.69 GHz			1001 -				10	0.0 MHz/		-	Span 190	OANIS
GF 3:09 GHZ	*		1001 p	US .	_	-			00.01	2019 Ref Le	the second se	the second s
							Measurin	g 🚺 🗰 🖬 🔮	11	52:54 Ref Le		VBW

Date: 9 JAN 2019 11 52 54

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.

: C036045A001A

: 0A003E429FC3

- : FCC 96.41(e) Emissions outside the fundamental
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- : Transmit at 3690MHz, 20MHz Channel, Channel A
- : V1- Greater than 10MHz below assigned channel = 3670MHz
- : V2- Greater than 10MHz above assigned channel = 3710MHz

Checked By:

RICHARD E. KING



Staffeview.	Bear	× +-		🛛 🖊 🗴	Arias -	X	X 5.		tana (X	2.00	x	1	-
RefLev Att Input	rel 22.32 de 10	SWT	t 30.82 dB = 1.01 mi = .0n	RBW 1 MHE VBW 3 MHE Notch Off	Móde Auto	Sweep Co	unt 1000/	1000		Free	quency	3.62	50000	GH
	ncy Sweep		501	WOLCH 321						_			= 6R//	MBA
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Dote: 9 JAN 2019 11:53:32

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc. : C036045A001A : 0A003E429FC3 : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019 : Transmit at 3690MHz, 20MHz Channel, Channel A : V1- 3530MHz : V2- 3720MHz

RICHARD E. KING

Richard King



MalkView -	Bear X Sp.		X	land X Speed		(X) (spine	X (spin)	x +] +] =
Ref Leve # Att Input	1 22 32 dBm Offs 10 dB SW1 1 AC PS	et 30.82 dB = RBV I 1.01 ms VBV On Note	V 2MHz	Mode Auto Sweep	SGL Count 1000/100	0	Frequency	3.6900000 GHz
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20 dBes-							M	1[6] -55.69 dBm 3.6600000 GHz
and the second		-				1		
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-	and all all and						marrise bull to de	N De
MYTHYS MA	AL.							and water the production
-60 dBm								
-70 dBm-			V1			-ve		
CF 3.69 G	12	-	1001	ots	6.0 MI	12/		Span 60.0 MHz
	Л				Ready		09.01.2019 Re 17:16:17	f Level VBW

Date: 9 JAN 2019 17 16 17

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7-17, 2019
- : Transmit at 3690MHz, 20MHz Channel, Channel B
- : V1- low edge of the assigned channel minus 10MHz = 3680MHz
- : V2- high edge of the assigned channel plus 10MHz = 3700MHz

Checked By:

RICHARD E. KING



Ref Level 2 # Att	10 dB. SV	fset 30.82 d VT 1.01 m	6 VBW	SPR) 1 MHz 10 MHz	Mode Auto	Sweep Cour	r 1000/	/1000		F	requency 3.6	25000	O GHz
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Contrat-was	all all water		-	Series and	and all market	where the	maria	Man	1				Mary
-60 dBm						-	-	-	-				
-70 dBm			_			_	-					-17	
									- 1				
CF 3.625 GH	11			1001 pts			19.0 MH	2/		09.01.		pan 190	VBW

Date: 9 JAN 2019 17:18:18

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7-17, 2019
- : Transmit at 3690MHz, 20MHz Channel, Channel B : V1- Greater than 10MHz below assigned channel = 3670MHz
- : V2- Greater than 10MHz above assigned channel = 3710MHz

Checked By:

RICHARD E. KING



	har X	- X		tenne 🕹 🛛 X	X	S===5.) tp.mit	× (+		x	
Ref Level Att Input	22.32 dBm Offse 10 dB SWT 1 AC PS	1.01 mil # 1	BW 3 MHz	Móde Auto Sw	eép Count 100	0/1000		Freq	uency :	3.6250	000 GH
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-60 dBm											_
1.1.2											
-70 dBm	-			-	_	_	_	-		_	-12
CF 3.625 GH	łz	-	1001	pts	1	21.0 MHz/	_	-		Span	210.0 MHz
					Meas	uring		09.01.201	Ref	Level	VBW

Date: 9 JAN 2019 17:19:09

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.
: C036045A001A
: 0A003E429FC3
: FCC 96.41(e) Emissions outside the fundamental
: January 7-17, 2019
: Transmit at 3690MHz, 20MHz Channel, Channel B
: V1- 3530MHz
: V2- 3720MHz

Checked By:

RICHARD E. KING



Hull Wiew	Bear X	- 40	. X 14	nd 🕴 🚺	ant 🔹 X Spa	e4 🗶 (p. m	5 X 5 5 4	A X Span?	× (x)	
Ref Leve Att Input	el 22.32 dBm 0 dB 1 AC	Offse SWT PS	t 30.82 dB = 1 1.01 ms Ón	RBW 500 kHz /BW 5 MHz Notch Off	Mode Auto Swee	SGL Count 1000/	1000	Freque	ency 3.5	700000 GHz
1 Frequer	ncy Sweep									≥ 6Rm Max
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CF 3.57 G	10			1001 -	de la compañía de la comp	61	0 MHz/		-	Span 60.0 MHz
GP 3:37 G	112	-		1001 p	na -			15.01.2010	Ref Lovo	
_	-1	_				Ready	-	15.01.2019 13:40:32	101 000	ABM

Date: 15.JAN.2019 13.48.32

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019
- : Transmit at 3570MHz, 40MHz Channel, Channel A
- : V1- low edge of the assigned channel minus 20MHz = 3550MHz : V2- high edge of the assigned channel plus 20MHz = 3590MHz

RICHARD E. KING

Richard King



	RBW (CISPR) 1 MHz	tunet 💘 (y.m) X (y.m)	X Year Street X
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and the second second			
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1			
2F 3.62 GHz	1001 pts	19.0 MHz/	Span 190.0 MHz
		Measuring 🚺 🔰 🗰	15.01.2019 Ref Level VBW

Date: 15 JAN 2019 13:47:42

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7-17, 2019
- : Transmit at 3570MHz, 40MHz Channel, Channel A : V1- Greater than 10MHz below assigned channel = 3540MHz
- : V2- Greater than 10MHz above assigned channel = 3600MHz

Checked By:

RICHARD E. KING



Halfavieri Bea	- X		×	6-12 🛛 🖊	X	x 🚽 X		X Suma S		tp.mt	X	x	1 1 1
Ref Level 2 # Att Input		WT 1	0.82 dB . .01 ms = .0n		MHZ N MHZ N Off	lóde Auto Sv	SGL Coun	t 1000/10	00		Freque	ncy 3.62	00000 GH
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40 Jan							"Instances"	howwork	Aurijen (raveli		the work	homenical	Manan Manana and
-60 dBm					_								
-70 d8m	-	-		-	_		_	-		-		-	
CF 3.62 GHz	-	_		1	1001 p	ts		21.0	MHz/	-	-	Sp	an 210.0 MHz
	Л						1	Ready	100	444	15.01.2019 13:46:40	RefLevel	VBW

Date: 15.JAN.2019 13.46.48

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.
: C036045A001A
: 0A003E429FC3
: FCC 96.41(e) Emissions outside the fundamental
: January 7-17, 2019
: Transmit at 3570MHz, 40MHz Channel, Channel A

- : V1- 3530MHz
- : V2- 3720MHz

RICHARD E. KING

Richard King



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Ref Lev Att Input	el 22.32 dBm 0 dB 1 AC	Offse SWT PS	t 30.82 dB 1.01 ms Ón	RBW 5 VBW Notch	SMHZ M	ode Auto Swe	ep Count 100	0/1000		Frequer	ncy 3.5	700000 GHz
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CF 3.57 C	GHz			1.1	1001 pts	7		6.0 MHz/				Span 60.0 MHz
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Date: 15.JAN.2019 12:43:25

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- :0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7-17, 2019
- : Transmit at 3570MHz, 40MHz Channel, Channel B
- : V1- low edge of the assigned channel minus 20MHz = 3550MHz
- : V2- high edge of the assigned channel plus 20MHz = 3590MHz

Checked By:

RICHARD E. KING



Ref Level 22	32 dEm Offse 0 dB SWT	t 30.82 dB . R	BW (CISP)	01MP		Sweep Coun	1000/1000		Frequency	3 6250	000 CH
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CF 3.625 GHz		-	100	01 pts		1	9.0 MHz/			Span 1	90.0 MHz
	1					Measuri	ing 170		5.01.2019 Re 12:45:07 Re	Level	ABM

Date: 15 JAN 2019 12 45:07

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019
- : Transmit at 3570MHz, 40MHz Channel, Channel B
- : V1- Greater than 10MHz below assigned channel = 3540MHz
- : V2- Greater than 10MHz above assigned channel = 3600MHz

Checked By:

RICHARD E. KING



Madaviers Bear	× +	X	X	nt 🚽 X - [4,		45. (· X.)	tp.est X		1.1.
Ref Level 22 # Att Input	32 dBm Offset 0 dB SWT 1 AC PS	30.82 dB = RB 1.01 ms = VB On Not		óde Auto Sweep	SGL Count 1000/1	1000	1.1	Frequency 3.	6250000 GHz
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-36 dBm									
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-70 d8m									1
CF 3.625 GHz			1001 pt	s	21	.0 MHz/	1	-	Span 210.0 MHz
	Π				Ready		400 15	01.2019 Ref Le	vel VBW

Date: 15.JAN.2019 12:45:47

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES Cambium Networks, Inc.
C036045A001A
0A003E429FC3
FCC 96.41(e) Emissions outside the fundamental
January 7-17, 2019
Transmit at 3570MHz, 40MHz Channel, Channel B
V1- 3530MHz
V2- 3720MHz

Checked By:

RICHARD E. KING



MultiWiew	Rear	X 54	- (x	Spind 🛛	X Inmi	X) 54-4	4 X 4		Spuid X	line?	× (x)	1 1 7
Ref Lev Att Input	vel 22.32 di 0 1	de SWI	et 30.82 dB 1.01 ms Ón	RBW 5 VBW Notch	00 kHz ≤MHz Mo Off	de Auto Swee	SGL Count 1000	0/1000		Freque	ncy 3.6	000000 GHz
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Date: 15.JAN.2019 13:42:21

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental
- : January 7-17, 2019
- : Transmit at 3600MHz, 40MHz Channel, Channel A
- : V1- low edge of the assigned channel minus 20MHz = 3580MHz
- : V2- high edge of the assigned channel plus 20MHz = 3620MHz

Checked By:

RICHARD E. KING



Studteview 1	iner X	- *	🛛 🔺 🗙	temit 🚽 X -		(an) X G	une X April	× · · ·
Ref Level Att Input	22.32 dBm Offs 0 d8 SW1 1 AC PS	et 30.82 dB • 1.01 ms On			to Sweep Cour	at 1000/1000	Frequen	cy 3.6200000 GHz
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-70 dBm-		V.		1.0	V2			
		1 T		1		and the second second		
CF 3.62 GHz	2		1001	pts	-	19.0 MHz/		Span 190.0 MHz
	1				Measur	ring 🖬	4 15.01.2019 12:45:26	Ref Level VBW
						- C - C - C - C - C - C - C - C - C - C	1444.20	

Date: 15.JAN.2019 13:45:26

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
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- : V1- Greater than 10MHz below assigned channel = 3570MHz
- : V2- Greater than 10MHz above assigned channel = 3630MHz

RICHARD E. KING

Richard King



Ref Level 22.32 dBm Off	- X -	W 1MH		SGL		-	Nami? X	1
Att 0.d8 SW Input 1.AC PS	T 1.01 ms = VB On Not	W 3 MHz Mod tch Off	e Auto Sweep	Count 1000/	1000	F	requency 3.6	200000 GH
Frequency Sweep	011 140							+ 6Pm Max
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F 3.62 GHz		1001 pts	-	2	1.0 MHz/	A		pan 210.0 MH;
Π				Read	y Income	15.01.	2019 Ref Level	VBW

Date: 15.JAN.2019 13.46.01

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc. : C036045A001A : 0A003E429FC3 : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019 : Transmit at 3600MHz, 40MHz Channel, Channel A : V1- 3530MHz
- : V2- 3720MHz

Checked By:

RICHARD E. KING



StalkWiew	Bear X		x	Spind	X	a 🔺 🚺	5p.ml X	anas 🧕 X	(spide	Spin?	X	1 1 -
Ref Leve Att Input	el 22.32 dBm 0 dB 1 AC	Offse SWT PS	t 30.82 dB + 1.01 ms Ón	RBW 5 VBW Notch	SMHZ I	Mode Auto Sw	SGL Count 100	0/1000		Freque	ncy 3.6	000000 GHz
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CF 3.6 GH	12			-	1001 pt		1	6.0 MHz/	-		-	Span 60.0 MHz
or one cire		-			root pt		Rea		15	01.2019	Ref Love	
		-					same.			12:56:39	State of the local division in which the	and the second second

Date: 15.JAN.2019 12.56:39

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
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- : Transmit at 3600MHz, 40MHz Channel, Channel B
- : V1- low edge of the assigned channel minus 20MHz = 3580MHz
- : V2- high edge of the assigned channel plus 20MHz = 3620MHz

Checked By:

RICHARD E. KING



Ref Level 22.32 d	X Offse		RBW (CISPR) 120	-	X		K Sp.m3	x		() (spin) -	x	
# Att 0	de SWT	2.64 Ms	VBW			lode Aut	to Sweep	Count 1	000/1000		Frequency	3.625	0000 GHz
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Date: 15.JAN.2019 13:01:24

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
- : 0A003E429FC3
- : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019
- : Transmit at 3600MHz, 40MHz Channel, Channel B
- : V1- Greater than 10MHz below assigned channel = 3570MHz
- : V2- Greater than 10MHz above assigned channel = 3630MHz

RICHARD E. KING

Richard King



Input 1 AC PS	ms = VBW 3 MH On Notch O	iz Mode Auto Sweep fi				quency 3.62	
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.52 GHz	10	001 pts	2	21.0 MHz/		-	3.73 GH

Date: 15.JAN.2019 13.02:37

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

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- : Transmit at 3600MHz, 40MHz Channel, Channel B
- : V1- 3530MHz
- : V2- 3720MHz

Checked By: RICHARD E. King



Ref Level	22.32 dBm C 0 dB S	TW	: 30.82 dB =	RBW 50	X Inni O kHz S MHz M Off	lode Auto Swe	SGL		spine (X	Freque	x	800000 GH
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CF 3.68 GH	1				1001 pts		Reat	6.0 MHz/	# 15.	01.2019	RefLev	Span 60.0 MHz

Date: 15.JAN.2019 13:39.41

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

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- : Transmit at 3680MHz, 40MHz Channel, Channel A
- : V1- low edge of the assigned channel minus 20MHz = 3660MHz : V2- high edge of the assigned channel plus 20MHz = 3700MHz

RICHARD E. KING

Richard King



HadaWiere	Rear X 144	-	and 🛛 🖊 X tani	Xunt	X Spant	X		X tent	
Ref Leve # Att Input	el 22.32 dEm Offs 0 dB SW1 1 AC PS	1.01 M6	RBW (CISPR) 1 MH VBW 10 MH Notch C		p Count 1000/	1000	Fr	equency 3.6	250000 GH
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-70 dBm-			1 1			_			12
Page 100	-				YI YI				
CF 3.625 (GHz		1001 pts		19.0 MH	z/		Se	an 190.0 MH
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Date: 15.JAN.2019 13:38:45

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
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- : Transmit at 3680MHz, 40MHz Channel, Channel A : V1- Greater than 10MHz below assigned channel = 3650MHz
- : V2- Greater than 10MHz above assigned channel = 3710MHz

Checked By:

RICHARD E. KING



P\$ On	Notch Off					a 6Rm Ma
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	2 PS On	PS On Notch Off				

Date: 15.JAN.2019 13:38:09

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc. : C036045A001A : 0A003E429FC3 : FCC 96.41(e) Emissions outside the fundamental : January 7-17, 2019 : Transmit at 3680MHz, 40MHz Channel, Channel A : V1- 3530MHz

: V2- 3720MHz

RICHARD E. KING

Richard King



MultiWiere	Bear X)	. (x	Spind	X Sp.m.	x (x) 4	al X)	X 🖉 Kan	Spuid X	Sp.m?	×)	
Ref Leve Att Input	0 dB	Offse SWT PS	t 30.82 dB 1.01 ms On	VBW	500 kHz 5 MHz M	lode Auto Swe	SGL Count 100	0/1000		Freque	ency 3.6	800000 GHz
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-60 dBm									_			
-70 dBm												
STO OBIN		1										
CF 3.68 G	Hz	-			1001 pts	7 -	1	6.0 MHz/				Span 60.0 MHz
							Read	dy mon		01.2019	Ref Lovo	VBW

Date: 15.JAN.2019 13.07.31

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

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RICHARD E. KING

Richard King



Staffaret -	Bear X	- (x)	5au 🛛 🖊	X	-1 X		(ma)	× (***		(pau) ()		
Ref Level # Att Input	22.32 dBm Offe 0 dB SW 1 AC PS		RBW (C VBW Notch	15PR) 1 N 10 N		uto Sweep Cour	1000/1	000	Fi	requency 3	.6800000	GHz
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-60 dBm					1							
-70 dBm	-		y			-		a	-		-	
CF 3.68 GH	z	-	-	1001 pt	s		19.0 MHz	/		-	Span 190.0	MHz
	A.						ing 🚛		4 15.012 13:0	2019 Ref L		BW

Date: 15.JAN.2019 13:09:22

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES

- : Cambium Networks, Inc.
- : C036045A001A
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Checked By:

RICHARD E. KING



Ref Level 22 Att	0 dB. SWT	1.01 ms = V 0n N	BW 1MH2 BW 3MH2 N	lóde Auto Sweep	SGL Count 1000/1000		Frequency 3.625000	00 GH
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ia dive								
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60 dBm				-				+
-								
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F 3.625 GHz			1001 p	ts	21.0 MHz	1	Span 21	0.0 MH

Date: 15.JAN.2019 13.10.28

MANUFACTURER MODEL NO. SERIAL NO. SPECIFICATION DATE MODE NOTES : Cambium Networks, Inc.

: C036045A001A

: 0A003E429FC3

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- : V1- 3530MHz
- : V2- 3720MHz



