



Compliance Testing, LLC

Previously Flom Test Lab

EMI, EMC, RF Testing Experts Since 1963

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Test Report

Prepared for: Ubiquiti Networks, Inc

Model: NBE-AC5-19

Description: NanoBeam AC5

FCC ID: SWX-NBE5AC19

To

FCC Part 1.1310

Date of Issue: April 20, 2015

On the behalf of the applicant:

Ubiquiti Networks, Inc
91 E. Tasman Drive
San Jose, CA 95134

Attention of:

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Project No: p14a0020

Greg Corbin
Project Test Engineer

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Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	April 17, 2015	Greg Corbin	Original Document

ILAC / A2LA

Compliance Testing, LLC, has been 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 joint ISO-ILAC-IAF Communiqué dated January 2009)

The tests results contained within this test report all fall within our scope of accreditation, unless below

Please refer to <http://www.compliancetesting.com/labscope.html> for current scope of accreditation.

Testing Certificate Number: **2152.01**



FCC Site Reg. #349717

IC Site Reg. #2044A-2

Non-accredited tests contained in this report:

N/A

EUT Description

Model: NBE-AC5-19

Description: Nanobeam AC5

Firmware: N/A

Software: N/A

Serial Number: N/A

Additional Information:

The EUT was tested conducted mode with RF connectors mounted on the EUT at the antenna input. When the test cable is plugged into the RF connector mounted to the EUT it disables the antenna connection.

The EUT is powered by POE (Power Over Ethernet).

The different data rates were evaluated and the worst case data rate was chosen for all the testing.

Source Based Time Averaged Power Calculation

Average Power calculations

Average Power = Peak Power * duty-cycle%

Tuned Frequency (MHz)	Conducted Peak Output power (mW)	Duty Cycle	Average Power (mW)
5790	354.8	100	354.8

MPE Evaluation

This is a **fixed/mobile** device used in uncontrolled /general population exposure environment.

Limits Uncontrolled Exposure	0.3-1.234 MHz	Limit [mW/cm ²] = 100
47 CFR 1.1310	1.34-30 MHz	Limit [mW/cm ²] = (180/f ²)
Table 1, (B)	30-300 MHz	Limit [mW/cm ²] = 0.2
	300-1500 MHz	Limit [mW/cm ²] = f/1500
	1500-100,000 MHz	Limit [mW/cm ²] = 1.0

Test Data

Test Frequency, MHz	5790
Power, Conducted, mW (P)	354.8
Antenna Gain Isotropic	19
Antenna Gain Numeric (G)	79.43
Antenna Type	Point to Point
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$			
Power Density (S) mw/cm ²	Power mW (P)	Numeric Gain (G)	Distance (r ²) cm
5.607	354.8	79.43	20

Power Density (S) =	5.607
Limit =(from above table) =	1.0

The Power Density of 5.607 mw/cm² is over the limit of 1.0 mw/cm² for the uncontrolled /general population exposure environment so Minimum Safe Distance was calculated on the next page.

Minimum Safe Distance Evaluation

This is a **fixed/mobile** device used in uncontrolled /general population exposure environment

Limits Uncontrolled Exposure 47 CFR 1.1310 Table 1, (B)

0.3-1.234 MHz:	Limit [mW/cm ²] = 100
1.34-30 MHz:	Limit [mW/cm ²] = (180/f ²)
30-300 MHz:	Limit [mW/cm ²] = 0.2
300-1500 MHz:	Limit [mW/cm ²] = f/1500
1500-100,000 MHz	Limit [mW/cm ²] = 1.0

Test Data

Test Frequency, MHz	5790
Power, Conducted, mW (P)	354.8
Antenna Gain Isotropic	19
Antenna Gain Numeric (G)	79.43
Antenna Type	Point to Point
Limit (L)	1.0

$R = \sqrt{(PG/4\pi L)}$			
Distance (R) cm	Power mW (P)	Numeric Gain (G)	Limit (L)
47.4	354.8	79.43	1.0

The minimum safe distance is 47.4 cm.

END OF TEST REPORT