



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: PBE-M5

Description: PowerBeam M5

Serial Number: N/A

FCC ID: SWX-PBE5M

To

FCC Part 1.1310

Date of Issue: May 27, 2015

On the behalf of the applicant:

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

Attention of:

Michael Taylor, Compliance Manager
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Prepared By
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Project No: p14a0028

Alex Macon
Project Test Engineer

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Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	May 22, 2015	Alex Macon	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: PBE-M5

Description: PowerBeam M5

Firmware: N/A

Software: N/A

Serial Number: N/A

Additional Information:

The EUT is a 2x2 MIMO 802.11ac radio.

The EUT was tested conducted mode with RF connectors mounted on the EUT at the antenna ports.

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

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



MPE Limit Calculations

Exposure Limit $1\text{mW}/\text{cm}^2$

Source Based Time Averaged Power Calculation

Average Power Calculations

Average Power = Peak Power * duty-cycle%

Band	Tuned Frequency (MHz)	Conducted Peak Output Power (mW)	Duty Cycle (%)	Average Power (mW)
UNII-2A	5300	110	100	110
UNII-2C	5710	63.1	100	63.1



MPE 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
1.34-30 MHz
30-300 MHz
300-1500 MHz
1500-100,000 MHz

Limit [mW/cm²] = 100
Limit [mW/cm²] = (180/f²)
Limit [mW/cm²] = 0.2
Limit [mW/cm²] = f/1500
Limit [mW/cm²] = 1.0

Test Data

Test Frequency, MHz	5300
Power, Conducted, mW (P)	110
Antenna Gain Isotropic	6
Antenna Gain Numeric (G)	3.98
Antenna Type	Omni
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
0.0871001114	110	3.98	20

Power Density (S) =	0.0871
Limit =(from above table) =	1.0

Note: Due to out of band emission limitations the highest EIRP occurs with the 6dBi Omni antenna. Therefore the power density cannot exceed 0.087 mW/cm²



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Limit [mW/cm²] = 0.2
Limit [mW/cm²] = f/1500
Limit [mW/cm²] = 1.0

Test Data

Test Frequency, MHz	5710
Power, Conducted, mW (P)	63.1
Antenna Gain Isotropic	6
Antenna Gain Numeric (G)	3.98
Antenna Type	Omni
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
0.0499637912	63.1	3.98	20

Power Density (S) =	0.05
Limit =(from above table) =	1.0

Note: Due to out of band emission limitations the highest EIRP occurs with the 6dBi Omni antenna. Therefore the power density cannot exceed 0.05 mW/cm²

END OF TEST REPORT