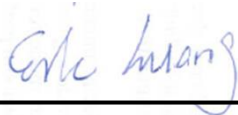


# RF Exposure Evaluation Report

**APPLICANT** : Ubiquiti Network, Inc  
**EQUIPMENT** : Access Point  
**BRAND NAME** : UBIQUITI  
**MODEL NAME** : NBE-5AC-19  
**MARKETING NAME** : NBE-5AC-19  
**FCC ID** : SWX-NBEAC  
**STANDARD** : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and pass the limit. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Eric Huang / Deputy Manager



Approved by: Jones Tsai / Manager



**SPORTON INTERNATIONAL INC.**

No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.)



## Table of Contents

- 1. ADMINISTRATION DATA ..... 3**
  - 1.1. Testing Laboratory ..... 3
- 2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT) ..... 3**
- 3. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS ..... 3**
- 4. RF EXPOSURE LIMIT INTRODUCTION ..... 4**
- 5. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION ..... 5**
  - 5.1. Standalone Power Density Calculation ..... 5

### Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA561115	Rev. 01	Initial issue of report	Jun. 24, 2015

## **1. Administration Data**

### **1.1. Testing Laboratory**

<b>Testing Laboratory</b>	
<b>Test Site</b>	SPORTON INTERNATIONAL INC.
<b>Test Site Location</b>	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978

<b>Applicant</b>	
<b>Company Name</b>	Ubiquiti Network, Inc
<b>Address</b>	12F, No.105, Song Ren Rd., SinYi District, Taipei 110, Taiwan

<b>Manufacturer</b>	
<b>Company Name</b>	Ubiquiti Network, Inc
<b>Address</b>	12F, No.105, Song Ren Rd., SinYi District, Taipei 110, Taiwan

## **2. Description of Equipment Under Test (EUT)**

<b>Product Feature &amp; Specification</b>	
<b>EUT Type</b>	Access Point
<b>Brand Name</b>	UBIQUITI
<b>Model Name</b>	NBE-5AC-19
<b>FCC ID</b>	SWX-NBEAC
<b>Wireless Technology and Frequency Range</b>	5.8GHz WLAN: 5725 MHz ~ 5850 MHz
<b>Mode</b>	• 802.11ac
<b>Antenna Type</b>	Dish Antenna
<b>EUT Stage</b>	Production Unit

## **3. Maximum RF average output power among production units**

<b>Mode</b>	<b>Average Power (dBm)</b>
802.11 ac (VHT10)	22.5
802.11 ac (VHT20)	24.0
802.11 ac (VHT30)	24.5
802.11 ac (VHT40)	24.5
802.11 ac (VHT50)	24.5
802.11 ac (VHT60)	23.5
802.11 ac (VHT80)	23.0



### 4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 43 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



**5. Radio Frequency Radiation Exposure Evaluation**

**5.1. Standalone Power Density Calculation**

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 43cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5GHz WLAN	5725.0	19.00	24.50	43.500	22.387	22387.211	0.964	1.000

**Note:** For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band

**Conclusion:**

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.