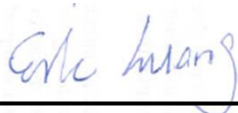


# RF Exposure Evaluation Report

APPLICANT : Ubiquiti Networks, Inc.  
EQUIPMENT : IsoStation AC  
BRAND NAME : UBIQUITI  
MODEL NAME : IS-5AC  
FCC ID : SWX-IS5AC  
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 / 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

<b>1. ADMINISTRATION DATA .....</b>	<b>4</b>
1.1. Testing Laboratory .....	4
<b>2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT) .....</b>	<b>5</b>
<b>3. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS .....</b>	<b>5</b>
<b>4. RF EXPOSURE LIMIT INTRODUCTION .....</b>	<b>6</b>
<b>5. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION .....</b>	<b>7</b>
5.1. Standalone Power Density Calculation .....	7



**Revision History**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA6N2220-02	Rev. 01	Initial issue of report	Mar. 23, 2017



**1. Administration Data**

**1.1. Testing Laboratory**

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	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

Applicant	
Company Name	Ubiquiti Networks, Inc.
Address	2580 Orchard Parkway San Jose, CA 95131

Manufacturer	
Company Name	Ubiquiti Networks, Inc.
Address	2580 Orchard Parkway San Jose, CA 95131



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

Product Feature & Specification	
EUT Type	IsoStation AC
Brand Name	UBIQUITI
Model Name	IS-5AC
FCC ID	SWX-IS5AC
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.5GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5850 MHz
Mode	802.11a/b/g/n/ac HT20/HT40/VHT10/VHT20/VHT30/VHT40/VHT50/VHT60/VHT80
EUT Stage	Identical Prototype
<b>Remark:</b> 1. Variant report to enable 5.3GHz / 5.5GHz WLAN.	

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

Mode	Maximum Average Power (dBm)
	Antenna 1 + 2 (MIMO Mode)
5.3GHz / 5.5GHz WLAN	16



### 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 20 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**

<b>Band</b>	<b>Frequency (MHz)</b>	<b>Antenna Gain (dBi)</b>	<b>Maximum Power (dBm)</b>	<b>Maximum EIRP (dBm)</b>	<b>Maximum EIRP (W)</b>	<b>Average EIRP (mW)</b>	<b>Power Density at 20cm (mW/cm<sup>2</sup>)</b>	<b>Limit (mW/cm<sup>2</sup>)</b>
5.3GHz / 5.5GHz WLAN	5250.0	14.0	16.0	30.000	1.000	1000.000	0.199	1.000

**Note:**

1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. For 2.4GHz WLAN / 5.2GHz WLAN / 5.8GHz WLAN standalone power density calculation can refer to Sporton RF Exposure Evaluation Original Report, Report No: FA6N2220-01.

### **Conclusion:**

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