RF Exposure Evaluation Report

APPLICANT	:	Ubiquiti Networks, Inc.
EQUIPMENT	:	UniFi® AC Access Point
BRAND NAME	:	UBIQUITI
MODEL NAME	:	UAP-AC-M
FCC ID	:	SWX-UAPACM
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

Testing Laboratory
1190

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

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA661624	Rev. 01	Initial issue of report	Aug. 08, 2016

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	12F, No.105, Song Ren Rd.,SinYi District, Taipei 110,Taiwan

Manufacturer	
Company Name	Ubiquiti Networks, Inc.
Address	12F, No.105, Song Ren Rd.,SinYi District, Taipei 110,Taiwan

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	UniFi® AC Access Point
Brand Name	UBIQUITI
Model Name	UAP-AC-M
FCC ID	SWX-UAPACM
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz
Mode	· 802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

3. Maximum RF average output power among production units

Band / Frequency (MHz)		IEEE 802.11 Average Power (dBm)			
		11b	11g	HT20	HT40
2.4GHz Band Ant 1+2	2412	17.5	17.0	18.5	
	2422				17.5
	2437	**21.5**	19.0	19.0	20.5
	2452				18.0
	2462	19.0	19.5	20.0	

Band / Frequency (MHz)		IEEE 802.11 Average Power (dBm)					
		11a	HT20	HT40	VHT20	VHT40	VHT80
5.2GHz Band Ant 1+2	5180	17.0	17.0		17.0		
	5190			11.50		11.0	
	5210						10.0
	5220	17.0	17.0		17.0		
	5230			17.0		17.0	
	5240	17.0	17.0		17.0		
5.8GHz Band Ant 1+2	5745	17.5	17.5		17.5		
	5755			16.0		16.0	
	5775						15.0
	5785	21.0	21.0		21.0		
	5795			21.0		21.0	
	5825	**21.5**	21.5		21.5		

Note: The Max Average Power for WLAN 2.4GHz/5GHz within the table are for MIMO mode.

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^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	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

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
2.4GHz WLAN	2437.0	3.00	21.50	24.500	0.282	281.838	0.056	1.000
5GHz WLAN	5825.0	4.00	21.50	25.500	0.355	354.813	0.071	1.000

Conclusion:

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