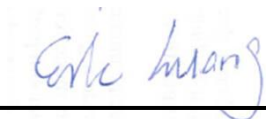


RF Exposure Evaluation Report

APPLICANT : Ubiquiti Networks
EQUIPMENT : mFi Light Dimmer
BRAND NAME : 
MODEL NAME : mFi-LD
FCC ID : SWX-MFILD
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



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FCC ID : SWX-MFILD

Page Number : 1 of 8

Report Issued Date : Nov. 21, 2013

Report Version : Rev. 02



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**Revision History**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA35281	Rev. 01	Initial issue of report	Aug. 16, 2013
FA352810	Rev. 02	Updated gain 1.80 to 2.79.	Nov. 21, 2013

1. Administration Data

1.1. Testing Laboratory

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978

1.2. Applicant

Company Name	Ubiquiti Networks
Address	12F, No. 105, Song Ren Rd., SinYiDestruct, Taipei, Taiwan

1.3. Manufacturer

Company Name	Nanning FuGui Precision Industrial Co., LTD
Address	No. 18, Zhongbu Road, Nanning New & High-Tech Industrial Development Zone, Guangxi

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	mFi Light Dimmer
Brand Name	
Model Name	mFi-LD
FCC ID	SWX-MFILD
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz
Mode	• 802.11b/g/n HT20/HT40
Antenna Type	PCB Antenna
EUT Stage	Production Unit

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

Mode	Maximum Target Average Power
WIFI 802.11 b	18
WIFI 802.11 g	15
WIFI 802.11 n-20MHz	14
WIFI 802.11 n-40MHz	13

4. Conducted RF Output Power (Unit: dBm)

<WLAN 2.4GHz Conducted Power>

WLAN 2.4GHz 802.11b Average Power (dBm)							Tune up Limite (dBm)
Power vs. Channel			Power vs. Data Rate				
Channel	Frequency (MHz)	Data Rate	Channel	2Mbps	5.5Mbps	11Mbps	
		1Mbps					
CH 1	2412	17.86	CH 11	17.89	17.90	17.80	18.0
CH 6	2437	17.86					
CH 11	2462	17.91					

WLAN 2.4GHz 802.11g Average Power (dBm)											Tune up Limite (dBm)
Power vs. Channel			Power vs. Data Rate								
Channel	Frequency (MHz)	Data Rate 6Mbps	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps	
CH 1	2412	13.01	CH 1	14.19	14.17	14.13	14.13	14.11	14.18	14.14	15.0
CH 6	2437	12.79									
CH 11	2462	12.79									

WLAN 2.4GHz 802.11n-HT20 Average Power (dBm)											Tune up Limite (dBm)
Power vs. Channel			Power vs. MCS Index								
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	
		MCS0									
CH 1	2412	13.01	CH 1	12.99	12.95	12.94	12.98	12.93	12.96	13.02	
CH 6	2437	12.79									
CH 11	2462	12.79									

WLAN 2.4GHz 802.11n-HT40 Average Power (dBm)											Tune up Limite (dBm)
Power vs. Channel			Power vs. MCS Index								
Channel	Frequency (MHz)	MCS Index	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	
		MCS0									
CH 3	2422	11.85	CH 6	12.07	11.95	11.92	11.86	11.89	12.05	12.08	
CH 6	2437	12.05									
CH 9	2452	12.02									



5. 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/f ²)	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/f ²)	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



6. Radio Frequency Radiation Exposure Evaluation

6.1. Standalone Power Density Calculations

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
WLAN2.4GHz 802.11b	2412.0	2.79	18.00	119.95	0.02	1.00
WLAN2.4GHz 802.11g	2412.0	2.79	15.00	60.12	0.01	1.00
WLAN2.4GHz 802.11n-HT20	2412.0	2.79	14.00	47.75	0.01	1.00
WLAN2.4GHz 802.11n-HT40	2422.0	2.79	13.00	37.93	0.01	1.00

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

Conclusion:

The power density limit according to the ANSI/IEEE C95.1-1992 for reference levels, and the result of EMF exposure evaluation is compliant.