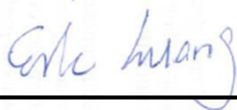


# RF Exposure Evaluation Report

**APPLICANT** : Chilton Fern Limited Liability Company  
**EQUIPMENT** : Digital Media Receiver  
**MODEL NAME** : S04WQR  
**FCC ID** : 2ABDW-1229  
**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.)



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### Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA542541	Rev. 01	Initial issue of report	Oct. 06, 2015
FA542541	Rev. 02	Revised section 5	Oct. 19, 2015



**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	Chilton Fern Limited Liability Company
Address	80 S.W 8th Street Miami, FL 33130

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

Product Feature & Specification	
EUT Type	Digital Media Receiver
Model Name	S04WQR
FCC ID	2ABDW-1229
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 Bluetooth: 2402 MHz ~ 2480 MHz
Mode	• 802.11b/g/n HT20 • 802.11a/n HT20/HT40 • Bluetooth v3.0+EDR

**Remark:**

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. This device, the WLAN and Bluetooth can not transmit simultaneously at the same time.



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

Band / Mode	IEEE 802.11 average power (dBm)					
	Frequency (MHz)	Channel	SISO			MIMO
			11b	11g	HT20	HT20
2.4GHz WLAN	2412	CH 1	16.00	13.50	12.00	14.00
	2437	CH 6	17.50	17.00	17.50	20.00
	2462	CH 11	17.50	14.50	12.50	14.50

Band / Mode	IEEE 802.11 average power (dBm)						
	Frequency (MHz)	Channel	SISO			MIMO	
			11a	HT20	HT40	HT20	HT40
5.2GHz WLAN	5180	CH 36	14.00	14.00		16.00	
	5190	CH 38			10.00		13.00
	5220	CH 44	14.50	14.00		15.50	
	5230	CH 46			14.50		15.50
	5240	CH 48	14.00	14.00		15.00	
5.8GHz WLAN	5745	CH 149	14.00	14.00		15.00	
	5755	CH 151			11.00		13.00
	5785	CH 157	14.50	14.50		17.00	
	5795	CH 159			14.50		17.00
	5825	CH 165	14.50	14.50		17.00	

Mode / Band	Average Power (dBm)		
	1Mbps	2Mbps	3Mbps
Bluetooth v3.0+EDR	8.00	8.00	8.00



### 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. Power Density Calculation**

Band	Calculated Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2.4GHz WLAN	2412.0	2.8	20.00	22.800	0.191	190.546	0.038	1.000
5.2GHz WLAN	5180.0	5.5	16.00	21.500	0.141	141.254	0.028	1.000
5.8GHz WLAN	5745.0	4.4	17.00	21.400	0.138	138.038	0.027	1.000
Bluetooth	2402.0	2.8	8.00	10.800	0.012	12.023	0.002	1.000

### **Conclusion:**

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