

RF Exposure Evaluation Report

APPLICANT : Seventh Mile Square LLC

EQUIPMENT : Appliance

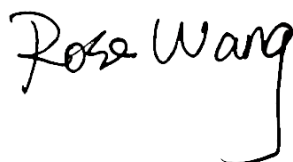
MODEL NAME : EB544N

FCC ID : 2ASD5-3355

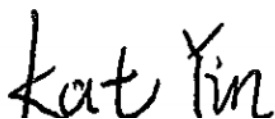
STANDARD : 47 CFR Part 2.1091

FCC KDB 447498 D01 v06

We, Sporton International (Kunshan) Inc., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.



Reviewed by: Rose Wang / Supervisor



Approved by: Kat Yin / Manager



Sporton International (Kunshan) Inc.

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China



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History of this test report

Report No.	Version	Description	Issued Date
FA941805-01	Rev. 01	Initial issue of report	Jul. 22, 2019

**1. Administration Data****1.1. Testing Laboratory**

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory		
Test Firm	Sporton International (Kunshan) Inc.	
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958	
Test Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CN1257	314309

Applicant	
Company Name	Seventh Mile Square LLC
Address	16165 North 83rd Avenue, Suite 200 Peoria, Arizona 85382,United States.



2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Appliance
Model Name	EB544N
FCC ID	2ASD5-3355
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2472 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth LE
Remark:	
1. 802.11n-HT40 is not supported in 2.4GHz WLAN.	

3. Maximum RF average output power among production units

<WLAN 2.4GHz>

2.4GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit (dBm)
	802.11b	1	2412	17.50
		6	2437	17.50
		11	2462	17.50
		12	2467	17.50
		13	2472	11.50
	802.11g	1	2412	16.50
		6	2437	16.50
		11	2462	16.50
		12	2467	11.50
		13	2472	8.50
	802.11n-HT20	1	2412	15.00
		6	2437	15.50
		11	2462	15.00
		12	2467	12.50
		13	2472	9.50

<Bluetooth>

Mode	Channel	Frequency (MHz)	Average power (dBm)
			Tune-up limit (dBm)
LE	CH 00	2402	2.50
	CH 19	2440	2.50
	CH 39	2480	3.00



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 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



5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/mW ²)	Limit (mW/mW ²)
Bluetooth	2402.0	1.47	3.00	4.47	2.80	0.001	1.000
2.4GHz WLAN 802.11b	2412.0	1.47	17.50	18.97	78.89	0.016	1.000

Note:

1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. WLAN2.4GHz, chose 802.11 b mode to do power density calculation for higher tune up power.
3. WLAN and Bluetooth share the same antenna , they can't transmit simultaneously.

Conclusion:

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