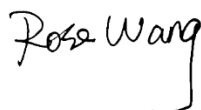


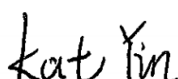
RF Exposure Evaluation Report

APPLICANT : Blackiehead LLC
EQUIPMENT : Smart Soap dispenser
MODEL NAME : G4N5E7
FCC ID : 2AZGB-7679
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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**Revision History**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA130109	Rev. 01	Initial issue of report	Apr. 21, 2021



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	Blackiehead LLC
Address	321 S. Boston, Suite 300 Tulsa, OK 74103

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Smart Soap dispenser
Model Name	G4N5E7
FCC ID	2AZGB-7679
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/HT40 Bluetooth LE
Antenna Type / Gain	WLAN 2.4GHz : Printed Antenna with gain 1.7 dBi Bluetooth: Printed Antenna with gain 1.7 dBi

Comments and Explanations:
1. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.
2. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.

3. Maximum RF Tune Up power among production units

<WLAN 2.4GHz>

Mode		Maximum Average Power (dBm)
802.11b	CH 01	17.50
	CH 06	17.50
	CH 11	17.50
	CH 12	17.00
	CH 13	13.50
802.11g	CH 01	16.00
	CH 06	15.50
	CH 11	16.00
	CH 12	12.50
	CH 13	10.50
802.11n-HT20	CH 01	14.50
	CH 06	14.50
	CH 11	15.00
	CH 12	14.00
	CH 13	10.00
802.11n-HT40	CH 03	13.00
	CH 06	13.00
	CH 09	13.00
	CH 10	10.00
	CH 11	9.50

<Bluetooth>

Mode		Maximum Average Power (dBm)
Bluetooth LE	CH 00	6.50
	CH 19	7.00
	CH 39	6.50

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)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
2.4GHz WLAN	2412	1.70	17.50	19.200	0.083	83.176	0.017	1.000
Bluetooth	2402	1.70	7.00	8.700	0.007	7.413	0.001	1.000

Note:

1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. Chose the maximum power to do MPE analysis.
3. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.

Conclusion:

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

-----THE END-----