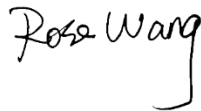


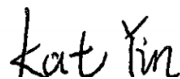
# RF Exposure Evaluation Report

APPLICANT : Hangzhou Tuya Information Technology Co., Ltd  
EQUIPMENT : WIFI-BT module  
MODEL NAME : WBR2L  
FCC ID : 2ANDL-WBR2L  
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
FA032513	Rev. 01	Initial issue of report	Sep. 21, 2020



**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	Hangzhou Tuya Information Technology Co., Ltd
Address	Room701, Building3, More Center, No.87 GuDun Road, Hangzhou, Zhejiang, China

Manufacturer	
Company Name	Hangzhou Tuya Information Technology Co., Ltd
Address	Room701, Building3, More Center, No.87 GuDun Road, Hangzhou, Zhejiang, China

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

<b>Product Feature &amp; Specification</b>	
<b>EUT Type</b>	WIFI-BT module
<b>Model Name</b>	WBR2L
<b>FCC ID</b>	2ANDL-WBR2L
<b>Wireless Technology and Frequency Range</b>	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
<b>Mode</b>	WLAN 2.4GHz : 802.11b/g/n/ HT20 Bluetooth LE
<b>HW Version</b>	V1.0.0
<b>SW Version</b>	V2.1.6
<b>Antenna Type / Gain</b>	WLAN 2.4GHz : PCB Antenna type with gain 1.73 dBi Bluetooth: PCB Antenna type with gain 1.73 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	18.5
802.11g	18.5
802.11n-HT20	18.5

**<Bluetooth>**

Mode	Maximum Average Power (dBm)
Bluetooth LE	8.0

#### **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. 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 <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2.4GHz WLAN	2412	1.73	18.50	20.230	0.105	105.439	0.021	1.000
Bluetooth	2402	1.73	8.00	9.730	0.009	9.397	0.002	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-----