

# RF EXPOSURE EVALUATION REPORT

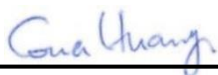
FCC ID : 2AHXCBC2500  
Equipment : BC2500  
Brand Name : BlueCats  
Model Name : BC2500  
Applicant : BlueCats US LLC  
6767 Old Madison Pike NW,  
Suite 300, Hunstville, AL 35806  
Manufacturer : BlueCats US LLC  
6767 Old Madison Pike NW,  
Suite 300, Hunstville, AL 35806  
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 2.1091 and it complies with applicable limit.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.



Approved by: Cona Huang / Deputy Manager

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## History of this test report

| Report No.  | Version | Description             | Issued Date   |
|-------------|---------|-------------------------|---------------|
| FA191217001 | Rev. 01 | Initial issue of report | Jan. 13, 2019 |
|             |         |                         |               |
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**1. Description of Equipment Under Test (EUT)**

| Product Feature & Specification         |                                |
|-----------------------------------------|--------------------------------|
| EUT Type                                | BC2500                         |
| Brand Name                              | BlueCats                       |
| Model Name                              | BC2500                         |
| FCC ID                                  | 2AHXCBC2500                    |
| Wireless Technology and Frequency Range | Bluetooth: 2402 MHz ~ 2480 MHz |
| Mode                                    | Bluetooth LE                   |
| EUT Stage                               | Identical Prototype            |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

**Reviewed by:** Jason Wang

**Report Producer:** Wan Liu

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

| Mode / Band | Average Power (dBm) |
|-------------|---------------------|
|             | BLE                 |
| Bluetooth   | 6.77                |

### 3. 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



## **4. Radio Frequency Radiation Exposure Evaluation**

### **4.1. 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> ) |
|-----------|-----------------|--------------------|---------------------|--------------------|------------------|-------------------|---------------------------------------------|-----------------------------|
| Bluetooth | 2402.0          | 0.74               | 6.77                | 7.510              | 0.006            | 5.636             | 0.001                                       | 1.000                       |

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

### **Conclusion:**

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