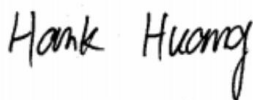


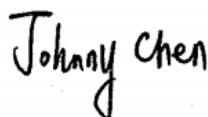
# RF Exposure Evaluation Report

APPLICANT : Thundercomm Technology Co., Ltd  
EQUIPMENT : Calculation Module  
BRAND NAME : TurboX  
MODEL NAME : C6125  
FCC ID : 2AOHHTURBOXC6125  
STANDARD : 47 CFR Part 2.1091  
FCC KDB 447498 D01 v06

We, Sporton International (Shenzhen) 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 (Shenzhen) Inc., the test report shall not be reproduced except in full.



Reviewed by: Hank Huang / Supervisor



Approved by: Johnny Chen / Manager



**Sporton International (ShenZhen) Inc.**

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055  
People's Republic of China



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**Revision History**

| REPORT NO. | VERSION | DESCRIPTION             | ISSUED DATE   |
|------------|---------|-------------------------|---------------|
| FA180601   | Rev. 01 | Initial issue of report | Sep. 30, 2021 |
|            |         |                         |               |
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## **1. Administration Data**

### **1.1. Testing Laboratory**

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

| Testing Laboratory |                                                                                                                                                                         |                     |                                |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------|
| Test Firm          | Sporton International (Shenzhen) Inc.                                                                                                                                   |                     |                                |
| Test Site Location | 1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China<br>TEL: +86-755-86379589<br>FAX: +86-755-86379595 |                     |                                |
| Test Site No.      | Sporton Site No.                                                                                                                                                        | FCC Designation No. | FCC Test Firm Registration No. |
|                    | SAR01-SZ                                                                                                                                                                | CN1256              | 421272                         |

| Applicant    |                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------|
| Company Name | Thundercomm Technology Co., Ltd                                                               |
| Address      | Building 4, No. 99, Data Valley Middle Road,Xiantao District, Yubei District Chongqing, China |

| Manufacturer |                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------|
| Company Name | Thundercomm Technology Co., Ltd                                                               |
| Address      | Building 4, No. 99, Data Valley Middle Road,Xiantao District, Yubei District Chongqing, China |

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

| Product Feature & Specification                                                                                                                                                                                         |                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT Type                                                                                                                                                                                                                | Calculation Module                                                                                                                                                                                                                          |
| Brand Name                                                                                                                                                                                                              | TurboX                                                                                                                                                                                                                                      |
| Model Name                                                                                                                                                                                                              | C6125                                                                                                                                                                                                                                       |
| FCC ID                                                                                                                                                                                                                  | 2AOHHTURBOXC6125                                                                                                                                                                                                                            |
| Wireless Technology and Frequency Range                                                                                                                                                                                 | WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz<br>WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz<br>WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz<br>WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz<br>WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz<br>Bluetooth: 2402 MHz ~ 2480 MHz |
| Mode                                                                                                                                                                                                                    | WLAN 2.4GHz : 802.11b/g/n/ HT20/ HT40<br>WLAN 5GHz : 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80<br>Bluetooth BR/EDR/LE                                                                                                                        |
| Antenna Type                                                                                                                                                                                                            | Bluetooth: Dipole Antenna<br>WLAN: Dipole Antenna                                                                                                                                                                                           |
| Antenna gain                                                                                                                                                                                                            | WLAN 2.4GHz: gain 3.2 dBi<br>WLAN 5.2GHz: gain 4.2 dBi<br>WLAN 5.3GHz: gain 4.25 dBi<br>WLAN 5.5GHz: gain 4.0 dBi<br>WLAN 5.8GHz: gain 4.0 dBi<br>Bluetooth: gain 3.2 dBi                                                                   |
| HW Version                                                                                                                                                                                                              | DVT V03                                                                                                                                                                                                                                     |
| SW Version                                                                                                                                                                                                              | Turbox_C6125_LA1.0.FC.r001                                                                                                                                                                                                                  |
| EUT Stage                                                                                                                                                                                                               | Identical Prototype                                                                                                                                                                                                                         |
| <b>Remark:</b><br>1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.<br>2. WLAN2.4GHz and WLAN5GHz support SISO mode only. |                                                                                                                                                                                                                                             |

| 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.<br>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 average output power among production units

#### <Bluetooth>

| Mode             | Maximum Average Power (dBm) |
|------------------|-----------------------------|
| Bluetooth BR/EDR | 12.50                       |
| Bluetooth LE     | 7.00                        |

#### <WLAN 2.4GHz>

| Mode   |              | Maximum Average Power (dBm) |
|--------|--------------|-----------------------------|
| 2.4GHz | 802.11b      | 18.00                       |
|        | 802.11g      | 17.00                       |
|        | 802.11n-HT20 | 17.00                       |
|        | 802.11n-HT40 | 17.00                       |

#### <WLAN 5GHz>

| Mode        |                | Maximum Average Power (dBm) |
|-------------|----------------|-----------------------------|
| WLAN 5.2GHz | 802.11a        | 17.00                       |
|             | 802.11n-HT20   | 17.00                       |
|             | 802.11n-HT40   | 16.00                       |
|             | 802.11ac-VHT20 | 15.00                       |
|             | 802.11ac-VHT40 | 16.00                       |
|             | 802.11ac-VHT80 | 13.50                       |
| WLAN 5.3GHz | 802.11a        | 17.00                       |
|             | 802.11n-HT20   | 17.00                       |
|             | 802.11n-HT40   | 16.00                       |
|             | 802.11ac-VHT20 | 15.00                       |
|             | 802.11ac-VHT40 | 16.00                       |
|             | 802.11ac-VHT80 | 14.00                       |
| WLAN 5.5GHz | 802.11a        | 17.00                       |
|             | 802.11n-HT20   | 17.00                       |
|             | 802.11n-HT40   | 16.00                       |
|             | 802.11ac-VHT20 | 15.00                       |
|             | 802.11ac-VHT40 | 17.00                       |
|             | 802.11ac-VHT80 | 17.00                       |
| WLAN 5.8GHz | 802.11a        | 17.00                       |
|             | 802.11n-HT20   | 17.00                       |
|             | 802.11n-HT40   | 16.00                       |
|             | 802.11ac-VHT20 | 15.00                       |
|             | 802.11ac-VHT40 | 17.00                       |
|             | 802.11ac-VHT80 | 17.00                       |

#### **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. 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            | 3.20               | 18.00               | 21.20              | 0.13             | 131.83            | 0.026                                       | 1.000                       |
| WLAN 5.2GHz | 5180            | 4.20               | 17.00               | 21.20              | 0.13             | 131.83            | 0.026                                       | 1.000                       |
| WLAN 5.3GHz | 5260            | 4.25               | 17.00               | 21.25              | 0.13             | 133.35            | 0.027                                       | 1.000                       |
| WLAN 5.5GHz | 5500            | 4.00               | 17.00               | 21.00              | 0.13             | 125.89            | 0.025                                       | 1.000                       |
| WLAN 5.8GHz | 5745            | 4.00               | 17.00               | 21.00              | 0.13             | 125.89            | 0.025                                       | 1.000                       |
| Bluetooth   | 2402            | 3.2                | 12.50               | 15.70              | 0.04             | 37.15             | 0.007                                       | 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. According to the EUT characteristic, WLAN 2.4GHz and WLAN 5GHz cannot transmit simultaneously.
4. According to the EUT characteristic, WLAN and Bluetooth cannot transmit simultaneously.

### **Conclusion:**

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

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