



## RF Exposure Evaluation Report

**APPLICANT** : PAX Technology Limited  
**EQUIPMENT** : Multi-Lane Payment Terminal  
**BRAND NAME** : PAX  
**MODEL NAME** : PX7  
**MARKETING NAME** : PX7  
**FCC ID** : V5PPX7W  
**STANDARD** : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.

Prepared by: Mark Qu / Manager

Approved by: Jones Tsai / Manager

**SPORTON INTERNATIONAL (SHENZHEN) INC.**

**1F & 2F, Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town,  
Nanshan District, Shenzhen, Guangdong, P. R. China**



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**Revision History**

| REPORT NO. | VERSION | DESCRIPTION             | ISSUED DATE   |
|------------|---------|-------------------------|---------------|
| FA642904   | Rev. 01 | Initial issue of report | Aug. 19, 2016 |
|            |         |                         |               |
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## **1. Administration Data**

### **1.1. Testing Laboratory**

| Testing Laboratory |                                                                                                                                                                                    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Site          | SPORTON INTERNATIONAL (SHENZHEN) INC.                                                                                                                                              |
| Test Site Location | 1F & 2F,Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China<br>TEL: +86-755-8637-9589<br>FAX: +86-755-8637-9595 |

| Applicant    |                                                                            |
|--------------|----------------------------------------------------------------------------|
| Company Name | PAX Technology Limited                                                     |
| Address      | Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong |

| Manufacturer |                                                                                                                                |
|--------------|--------------------------------------------------------------------------------------------------------------------------------|
| Company Name | PAX Computer Technology (Shenzhen) Co., Ltd.                                                                                   |
| Address      | 4/F, No. 3 Building, Software Park, Second Central Science-Tech Road, High-Tech industrial Park, Shenzhen, Guangdong, P. R. C. |

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

| Product Feature & Specification         |                                                          |
|-----------------------------------------|----------------------------------------------------------|
| EUT Type                                | Multi-Lane Payment Terminal                              |
| Brand Name                              | PAX                                                      |
| Model Name                              | PX7                                                      |
| MARKETING NAME                          | PX7                                                      |
| FCC ID                                  | V5PPX7W                                                  |
| Wireless Technology and Frequency Range | WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz<br>NFC : 13.56 MHz |
| Mode                                    | · 802.11b/g/n HT20<br>· NFC:ASK                          |
| Antenna Type                            | WLAN: Monopole Antenna<br>NFC: PCB Antenna               |
| HW Version                              | PX7-xxx-xxx-xxxx                                         |
| SW Version                              | 14.00.xx                                                 |
| 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.



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

| Mode   |              | Maximum Average Power (dBm) |
|--------|--------------|-----------------------------|
| 2.4GHz | 802.11b      | 16.0                        |
|        | 802.11g      | 12.0                        |
|        | 802.11n-HT20 | 12.0                        |



#### **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> ) |
|-------------------------|-----------------|--------------------|---------------------|--------------------|------------------|-------------------|---------------------------------------------|-----------------------------|
| WLAN2.4GHz 802.11b      | 2412.0          | -0.60              | 16.0                | 15.40              | 0.03             | 34.67             | 0.007                                       | 1.00                        |
| WLAN2.4GHz 802.11g      | 2412.0          | -0.60              | 12.0                | 11.40              | 0.01             | 13.80             | 0.003                                       | 1.00                        |
| WLAN2.4GHz 802.11n-HT20 | 2412.0          | -0.60              | 12.0                | 11.40              | 0.01             | 13.80             | 0.003                                       | 1.00                        |

**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.