



Test Report No.: SA170713W004



# RF EXPOSURE REPORT

**Product:** POS Terminal

**Model Name:** Q20

**FCC ID:** V5PQ20

**Applicant:** PAX Technology Limited

**Address:** Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong

**Manufacturer:** PAX Computer Technology (Shenzhen) Co., Ltd.

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**Prepared by:** Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

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**Report No.:** SA170713W004

**Received Date:** Jun. 29, 2017

**Test Date:** Jul. 01, 2017 ~ Jul. 10, 2017

**Issued Date:** Jul. 11, 2017

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA170713W004	Original release	Jul. 11, 2017



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# 1 CERTIFICATION

**PRODUCT:** POS Terminal  
**BRAND NAME:** PAX  
**MODEL NAME:** Q20  
**APPLICANT:** PAX Technology Limited  
**TESTED:** Jul. 01, 2017 ~ Jul. 10, 2017  
**TEST SAMPLE:** Production Unit  
**STANDARDS:** **FCC Part 2 (Section 2.1091)**  
**FCC OET Bulletin 65, Supplement C (01-01)**  
**KDB 447498 D01 General RF Exposure Guidance v06**  
**IEEE C95.1**

The above equipment has been tested by **Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY :** Harry, **DATE:** Jul. 11, 2017  
(Harry Li/ Engineer)

**APPROVED BY :** Sam Tung, **DATE:** Jul. 11, 2017  
( Sam Tung / Manager)



## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	POS Terminal	
<b>MODEL NAME</b>	Q20	
<b>NOMINAL VOLTAGE</b>	DC 5V	
<b>OPERATING TEMPERATURE RANGE</b>	0 ~ 50°C	
<b>MODULATION TYPE</b>	<b>WLAN</b>	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
	<b>Bluetooth</b>	GFSK, $\pi/4$ -DQPSK, 8DPSK
	<b>BT_LE</b>	BT-LE(GFSK) for DTS
	<b>NFC</b>	ASK
<b>OPERATING FREQUENCY</b>	<b>WLAN</b>	2412 ~ 2462MHz for 11b/g/n(HT20)
	<b>Bluetooth/BT_LE</b>	2402MHz ~ 2480MHz
	<b>NFC</b>	13.56MHz
<b>ANTENNA GAIN</b>	PCB Antenna with 0.7dBi gain	
<b>HW VERSION</b>	Q20-XXX-XXX-XXXX	
<b>SW VERSION</b>	PED 5.X	
<b>I/O PORTS</b>	Refer to user's manual	
<b>CABLE SUPPLIED</b>	USB cable: non-shielded, detachable, 1.0meter	

**NOTE:**

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT matched the following USB cables:

USB CABLE	
<b>BRAND:</b>	N/A
<b>MODEL:</b>	083-302824-001
<b>SIGNAL LINE:</b>	1.0 meter

- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

### 3 RF EXPOSURE

#### 3.1 LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm <sup>2</sup> )	AVERAGE TIME (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

#### 3.2 MPE CALCULATION FORMULA

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in cm

#### 3.3 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile device**.



### 3.4 CONDUCTED POWER

#### WIFI 2.4G

##### 802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	15.47	N/A
6	2437	<b>15.85</b>	N/A
11	2462	15.35	N/A

##### 802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	14.15	N/A
6	2437	14.33	N/A
11	2462	14.61	N/A

##### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	13.04	N/A
6	2437	13.35	N/A
11	2462	14.55	N/A



**Bluetooth**

**GFSK**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	9.02	N/A
39	2441	<b>9.13</b>	N/A
78	2480	8.57	N/A

**DQPSK**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	5.01	N/A
39	2441	5.07	N/A
78	2480	4.97	N/A

**8DPSK**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	5.07	N/A
39	2441	5.15	N/A
78	2480	5.01	N/A

**BT-LE (GFSK)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	8.02	N/A
19	2440	8.17	N/A
39	2480	7.84	N/A



### 3.5 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

#### TUNE-UP POWER TABLE

Band	Frequency (MHz)	Operating Mode	Tune-Up Power and Tolerance (dBm)
Bluetooth	2441	BT_GFSK	9.0 ± 0.5
WIFI 2.4G	2437	11b	15.5 ± 0.5

#### BT & WIFI 2.4G

Band	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	E.I.R.P Power (mW)	Power Density (mW/cm <sup>2</sup> )	limit (mW/cm <sup>2</sup> )	PASS / FAIL
Bluetooth	2441	BT_GFSK	0.7	9.5	10.471	0.002	1.00	PASS
WIFI 2.4G	2437	11b	0.7	16.0	46.774	0.009	1.00	PASS