



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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Report No.: SA170713W004

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

Issued Date: Jul. 11, 2017

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Test Report No.: SA170713W004

TABLE OF CONTENTS

| | |
|---|----------|
| RF EXPOSURE REPORT | 1 |
| RELEASE CONTROL RECORD | 3 |
| 1 CERTIFICATION | 4 |
| 2 GENERAL INFORMATION | 5 |
| 2.1 GENERAL DESCRIPTION OF EUT | 5 |
| 3 RF EXPOSURE | 6 |
| 3.1 LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE) | 6 |
| 3.2 MPE CALCULATION FORMULA | 6 |
| 3.3 CLASSIFICATION | 6 |
| 3.4 CONDUCTED POWER | 7 |
| 3.5 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER | 9 |



Test Report No.: SA170713W004

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

| | | |
|------------------------------------|---|---|
| PRODUCT | POS Terminal | |
| MODEL NAME | Q20 | |
| NOMINAL VOLTAGE | DC 5V | |
| OPERATING TEMPERATURE RANGE | 0 ~ 50°C | |
| MODULATION TYPE | WLAN | CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM |
| | Bluetooth | GFSK, $\pi/4$ -DQPSK, 8DPSK |
| | BT_LE | BT-LE(GFSK) for DTS |
| | NFC | ASK |
| OPERATING FREQUENCY | WLAN | 2412 ~ 2462MHz for 11b/g/n(HT20) |
| | Bluetooth/BT_LE | 2402MHz ~ 2480MHz |
| | NFC | 13.56MHz |
| ANTENNA GAIN | PCB Antenna with 0.7dBi gain | |
| HW VERSION | Q20-XXX-XXX-XXXX | |
| SW VERSION | PED 5.X | |
| I/O PORTS | Refer to user's manual | |
| CABLE SUPPLIED | 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 | |
|---------------------|----------------|
| BRAND: | N/A |
| MODEL: | 083-302824-001 |
| SIGNAL LINE: | 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 ²) | AVERAGE TIME (minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE | | | | |
| 300-1500 | ... | ... | F/1500 | 30 |
| 1500-100,000 | ... | ... | 1.0 | 30 |

F = Frequency in MHz

3.2 MPE CALCULATION FORMULA

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 | 15.85 | 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 | 9.13 | 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 ²) | limit (mW/cm ²) | 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 |