

RF EXPOSURE REPORT

Product: POS Terminal

Model Name: IM20

FCC ID: V5PIM20

Applicant: PAX Technology Limited

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

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Report No.: SA180528W005

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Test Date: May 29, 2018 ~ Jun. 19, 2018

Issued Date: Jun. 20, 2018

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Test Report No.: SA180528W005

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.: SA180528W005

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA180528W005	Original release	Jun. 20, 2018



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1 CERTIFICATION

PRODUCT: POS Terminal
BRAND NAME: PAX
MODEL NAME: IM20
APPLICANT: PAX Technology Limited
TESTED: May 29, 2018 ~ Jun. 19, 2018
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 **BV 7Layers Communications Technology (Shenzhen) Co. Ltd** 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 : Roger, **DATE:** Jun. 20, 2018
(Roger Li/ Engineer)

APPROVED BY : [Signature], **DATE:** Jun. 20, 2018
(Sam Tung / Manager)



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	POS Terminal	
MODEL NAME	IM20	
NOMINAL VOLTAGE	DC 5.0V	
OPERATING TEMPERATURE RANGE	-20 ~ 70°C	
MODULATION TYPE	WLAN	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
	BT_LE	DTS
	Bluetooth	GFSK, $\pi/4$ -DQPSK, 8DPSK
	NFC	ASK
OPERATING FREQUENCY	WLAN	2412 ~ 2462MHz for 11b/g/n(HT20)
	Bluetooth/BT_LE	2402MHz ~ 2480MHz
	NFC	13.56 MHz
ANTENNA GAIN	Ceramic antenna with 0.5dBi gain	
HW VERSION	IM20-XXX-XXX-XXXX	
SW VERSION	V0.0.0.1	
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 cable:

USB CABLE	
BRAND:	SMART KONN
MODEL:	USB A/M TO USB B/M
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

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

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

Bluetooth

GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	9.57	N/A
39	2441	9.52	N/A
78	2480	9.20	N/A

$\pi/4$ DQPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	5.46	N/A
39	2441	5.83	N/A
78	2480	5.62	N/A

8DPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	5.63	N/A
39	2441	5.97	N/A
78	2480	5.60	N/A

BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	8.54	N/A
19	2440	8.35	N/A
39	2480	7.99	N/A

WIFI 2.4G

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	15.12	N/A
6	2437	15.32	N/A
11	2462	15.34	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	13.77	N/A
6	2437	13.57	N/A
11	2462	13.45	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	12.75	N/A
6	2437	12.62	N/A
11	2462	12.73	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	2402	GFSK	9.5 ± 0.5
WIFI 2.4G	2462	11b	15.0 ± 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	2402	GFSK	0.5	10.0	0.316	0.000	1.00	PASS
WIFI 2.4G	2462	11b	0.5	15.5	39.811	0.008	1.00	PASS

--END--