

# RF EXPOSURE REPORT

**Product:** PX Communication Module

**Model Name:** CM7A-NE-1E0

**FCC ID:** V5PCM7ABW

**Applicant:** PAX Technology Limited

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**Report No.:** SA171117W002

**Received Date:** Nov. 13, 2017

**Test Date:** Nov. 13, 2017 ~ Dec. 11, 2017

**Issued Date:** Dec. 13, 2017

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA171117W002	Original release	Dec. 13, 2017



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## 1 CERTIFICATION

**PRODUCT:** PX Communication Module  
**BRAND NAME:** PAX  
**MODEL NAME:** CM7A-NE-1E0  
**APPLICANT:** PAX Technology Limited  
**TESTED:** Nov. 13, 2017 ~ Dec. 11, 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 :** Yuqiang, **DATE:** Dec. 13, 2017  
(Yuqiang Yin/ Engineer)

**APPROVED BY :** Bill, **DATE:** Dec. 13, 2017  
(Bill Yao / Manager)

## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	PX Communication Module	
<b>MODEL NAME</b>	CM7A-NE-1E0	
<b>NOMINAL VOLTAGE</b>	3.3Vdc (host equipment)	
<b>OPERATING TEMPERATURE RANGE</b>	-10 ~ 50℃	
<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>OPERATING FREQUENCY</b>	<b>WLAN</b>	2412 ~ 2462MHz for 11b/g/n(HT20)
	<b>Bluetooth/BT_LE</b>	2402MHz ~ 2480MHz
<b>ANTENNA TYPE</b>	PCB Antenna with 2dBi gain	
<b>HW VERSION</b>	CM7A-XX-XXX	
<b>SW VERSION</b>	25.00.XXXX	
<b>I/O PORTS</b>	Refer to user's manual	
<b>CABLE SUPPLIED</b>	N/A	

**NOTE:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. The product is a module in host (PX7A BW) test configuration.

### 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)
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/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 Approval**.



### 3.4 CONDUCTED POWER

#### WIFI 2.4G

##### 802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	16.42	N/A
6	2437	<b>16.74</b>	N/A
11	2462	16.57	N/A

##### 802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	15.14	N/A
6	2437	15.98	N/A
11	2462	15.17	N/A

##### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	14.58	N/A
6	2437	14.79	N/A
11	2462	14.89	N/A

## Bluetooth

### GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	9.62	N/A
39	2441	9.23	N/A
78	2480	9.03	N/A

### DQPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	4.83	N/A
39	2441	4.95	N/A
78	2480	5.11	N/A

### 8DPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	4.98	N/A
39	2441	5.02	N/A
78	2480	5.34	N/A

## BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	8.17	N/A
19	2440	7.83	N/A
39	2480	7.81	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	BT_GFSK	9.5 ± 0.5
WIFI 2.4G	2437	11b	16.5 ± 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	2402	BT_GFSK	2	10.0	0.316	0.000	1.00	PASS
WIFI 2.4G	2437	11b	2	17.0	79.433	0.016	1.00	PASS

--END--