

RF EXPOSURE REPORT

Product: Integrated Smart Terminal

Model Name: E700

FCC ID: V5PE700

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.

Address: 4/F, No.3 Building, Software Park, Second Central
Science-Tech Road, High-Tech industrial Park, Shenzhen,
Guangdong, P.R.C.

Prepared by: BV 7Layers Communications Technology (Shenzhen) Co. Ltd

Lab Location: No.B102, Dazhu Chuangxin Mansion, North of Beihuan Avenue,
North Area, Hi-Tech Industrial Park, Nanshan District,
Shenzhen, Guangdong, China

TEL: +86 755 8869 6566

FAX: +86 755 8869 6577

E-MAIL: customerservice.dg@cn.bureauveritas.com

Report No.: SA190326W003-1

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA190326W003-1	Original release	Jul 26, 2019



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1 CERTIFICATION

PRODUCT: Integrated Smart Terminal
BRAND NAME: PAX
MODEL NAME: E700
APPLICANT: PAX Technology Limited
TESTED: Jul 18, 2019 ~ Jul 18, 2019
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 : Alex, **DATE:** Jul. 26, 2019
(Alex Chen/ Engineer)

APPROVED BY : Luke Lu, **DATE:** Jul. 26, 2019
(Luke Lu / Manager)



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Integrated Smart Terminal	
MODEL NAME	E700	
NOMINAL VOLTAGE	24Vdc (adapter or host equipment) 3.63Vdc (Li-ion, battery)	
OPERATING TEMPERATURE RANGE	0 ~ 50°C	
MODULATION TYPE	WLAN	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
	BT_LE	BT-LE for GFSK
	Bluetooth	GFSK, 8DPSK, $\pi/4$ DQPSK
	WCDMA	BPSK/QPSK
	LTE	QPSK, 16QAM
	RFID	ASK
OPERATING FREQUENCY	WLAN	2412 ~ 2462MHz for 11b/g/n(HT20) 5180 ~ 5240MHz, 5260 ~ 5320 MHz, 5470 ~ 5700MHz, 5745 ~ 5825 MHz for 11a/ n(HT20)/ n(HT40) / ac(VHT80)
	Bluetooth/BT_LE	2402MHz ~ 2480MHz
	RFID	13.56MHz
	WCDMA	1852.4MHz ~ 1907.6MHz (FOR WCDMA II) 826.4MHz ~ 846.6MHz (FOR WCDMA V)
	LTE	1850.7MHz ~ 1909.3MHz (FOR LTE Band2) 1710.7MHz ~ 1754.3MHz (FOR LTE Band4) 824.7MHz ~ 848.3MHz (FOR LTE Band5) 699.7MHz ~ 715.3MHz (FOR LTE Band12) 706.5MHz ~ 713.5MHz (FOR LTE Band17)
ANTENNA GAIN	Bluetooth/BT_LE	PIFA Antenna with 1.5dBi gain
	WLAN 2.4G	PIFA Antenna with 1.5dBi gain
	WLAN 5G	PIFA Antenna with 1.5dBi gain for B1/ B2/ B3/ B4
	WCDMA V	Fixed Internal Antenna with 1.0dBi gain
	WCDMA II	Fixed Internal Antenna with 1.5dBi gain

	LTE Band 2	Fixed Internal Antenna with 1.5dBi gain
	LTE Band 4	Fixed Internal Antenna with 1.5dBi gain
	LTE Band 5	Fixed Internal Antenna with 1.0dBi gain
	LTE Band 12	Fixed Internal Antenna with 1.0dBi gain
	LTE Band 17	Fixed Internal Antenna with 1.0dBi gain
HW VERSION	NA	
SW VERSION	NA	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	

NOTE:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT was powered by the following adapter:

ADAPTER	
BRAND:	HONOTO
MODEL:	ADS-65HI-19A-3 24065E
INPUT:	AC 100-240V, 1.5A
OUTPUT:	DC 24V, 2.7A

- 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

TUNE-UP POWER TABLE

Band	Frequency (MHz)	Operating Mode	Tune-Up Power And Tolerance (dBm)
BT	2441	GFSK	10.0
BLE	2480	GFSK	6.0
WIFI 2.4G	2437	11g(20MHz)	24.0
WIFI 5G B1	5240	11a(20MHz)	14.5
WIFI 5G B2	5320	11a(20MHz)	15.0
WIFI 5G B3	5580	11a(20MHz)	14.5
WIFI 5G B4	5825	11a(20MHz)	12.5
WCDMA II	1907.6	RMC12.2K	23.5
WCDMA V	846.6	RMC12.2K	23.5
LTE 2	1900	QPSK	23.0
LTE 4	1745	QPSK	22.0
LTE 5	836.5	QPSK	22.5
LTE 12	711	QPSK	22.5
LTE 17	710	QPSK	22.0

3.5 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

BT

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	1.5	10.0	14.125	0.003	1.00	PASS

BLE

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
BLE	2441	BLE_GFSK	1.5	6.0	5.623	0.001	1.00	PASS

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
WIFI 2.4G	2437	11b	1.5	24.0	354.81	0.071	1.00	PASS

WIFI 5G

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
WIFI 5G B1	5240	11a	1.5	14.5	39.811	0.008	1.00	PASS
WIFI 5G B2	5320	11a	1.5	15.0	44.668	0.009	1.00	PASS
WIFI 5G B3	5580	11a	1.5	14.5	39.811	0.008	1.00	PASS
WIFI 5G B4	5825	11a	1.5	12.5	25.119	0.005	1.00	PASS

WCDMA

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
WCDMA II	1907.6	RMC12.2K	1.0	23.5	281.838	0.056	0.56	PASS
WCDMA V	846.6	RMC12.2K	1.5	23.5	316.228	0.063	1.00	PASS

LTE

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
Band 2	1900	QPSK	1.5	23.0	281.838	0.056	1.00	PASS



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Band 4	1745	QPSK	1.5	22.00	223.872	0.045	1.00	PASS
Band 5	836.5	QPSK	1.0	23.00	251.189	0.050	0.56	PASS
Band 12	711	QPSK	1.0	23.00	251.189	0.050	0.47	PASS
Band 17	710	QPSK	1.0	22.00	199.526	0.040	0.47	PASS

3.6 CONCLUSION OF SIMULTANEOUS TRANSMITTER

Both of the WLAN and plug-in device can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1/LPD1+CPD2/LPD2+.....etc. < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore the worst-case situation is, which is less than “1”, This confirmed that the device comply with FCC 1.1310 MPE limit.

Band	Frequency (MHz)	Power Density (mW/cm ²)	limit (mW/cm ²)	Power Density / Limit	Total Power Density / Limit	MPE Limit	PASS / FAIL
WIFI 2.4G-11b	2437	0.071	1	0.071	0.127	1.000	PASS
LTE Band 2	1880	0.056	1	0.056			

--END--