



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



RF EXPOSURE EVALUATION REPORT

Applicant: Shenzhen Xinguodu Technology Co.,Ltd.

Address: 17B JinSong Mansion, Terra Industrial & Trade Park Chegongmiao,
Futian District, Shenzhen,Guangdong, China.

FCC ID: XDQUN20-01

Product Name: POS Terminal

Standard(s): 47 CFR §1.1310, 47 CFR §2.1091

447498 D01 General RF Exposure Guidance v06

The above equipment has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

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Reviewed By: Sun Zhong

Sun Zhong

Title: Manager

Test Laboratory: China Certification ICT Co., Ltd (Dongguan)

No. 113, Pingkang Road, Dalang Town, Dongguan,
Guangdong, China

Tel: +86-769-82016888

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230204666-00H	Original Report	2023/4/11

Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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1.1 Applicable Standard

According to subpart 15.247(i) and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

1.2 EUT Information▲:

Operation Modes	Operation Frequency (MHz)	Max Conducted output power including Tune-up Tolerance (dBm)	Maximum Antenna Gain (dBi)
Bluetooth	2402-2480	6	1.8
2.4G WLAN	2412-2462	14	1.8
5.2G WLAN	5150-5250	16	3.79
5.8G WLAN	5725-5850	15	3.94
GSM850	824-849	32	1.14
PCS1900	1850-1910	29	2.20
WCDMA B2	1850-1910	23	2.20
WCDMA B4	1710-1755	23	1.79
WCDMA B5	824-849	23	1.14
LTE B2	1850-1910	24	2.20
LTE B4	1710-1755	23	1.79
LTE B5	824-849	24	1.14
LTE B7	2500-2570	24	2.51
LTE B40 Lower	2305-2315	22	2.18
LTE B40 Upper	2350-2360	22	2.05
NFC*	13.56	-17.70	/

Note:

1. The Above Parameters were provided by the manufacturer.
2. *NFC field strength is 77.50dBμV/m @ 3m = -17.70 dBm(0.02mW) EIRP. That equal to antenna gain is 0dBi and used the EIRP value as conducted power.

1.3 Measurement Result

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance	Power Density	MPE Limit
		(dBi)	(numeric)	(dBm)	(mW)			
Bluetooth	2402-2480	1.80	1.51	6	3.98	20	0.0012	1
2.4G WLAN	2412-2462	1.80	1.51	14	25.12	20	0.0075	1
5.2G WLAN	5150-5250	3.79	2.39	16.00	39.81	20.00	0.019	1
5.8G WALN	5725-5850	3.94	2.48	15.00	31.62	20.00	0.016	1
GSM850	824-849	1.14	1.3	32	1584.89	20	0.4099	0.549
GSM1900	1850-1910	2.20	1.66	29	794.33	20	0.2623	1
WCDMA B2	1850-1910	2.20	1.66	23	199.53	20	0.0659	1
WCDMA B4	1710-1755	1.79	1.51	23	199.53	20	0.0599	1
WCDMA B5	824-849	1.14	1.3	23	199.53	20	0.0516	0.549
LTE B2	1850-1910	2.20	1.66	24	251.19	20	0.0830	1
LTE B4	1710-1755	1.79	1.51	23	199.53	20	0.0599	1
LTE B5	824-849	1.14	1.3	24	251.19	20	0.0650	0.549
LTE B7	2500-2570	2.51	1.78	24	251.19	20	0.0890	1
LTE B40 Lower	2305-2315	2.18	1.65	22	158.49	20	0.0520	1
LTE B40 Upper	2350-2360	2.05	1.6	22	158.49	20	0.0504	1
NFC	13.56	/	/	-17.70	0.02	20	<0.01	0.98

The NFC, WWAN and Bluetooth or WLAN can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$$=S_{WWAN}/S_{limit-WWAN} + S_{WLAN}/S_{limit-WLAN} + S_{NFC}/S_{limit-NFC}$$

$$=0.4099/0.549+0.019/1+0.01/0.98$$

$$=0.78$$

$$< 1.0$$

Result: The device compliant the Exemption at 20cm distances.

===== END OF REPORT =====