NVLAP TESTING
NVLAP LAB CODE 600341-0

BACL Bay Area Compliance Labs Corp.

MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

Applicant:	**Shenzhen Xinguodu Technology Co., Ltd.**
Address:	**17B JinSong Mansion, Terra Industrial & Trade Park Chegongmiao, Futian District, Shenzhen, Guangdong, China.**
Product Name:	**POS terminal**
FCC ID:	**XDQCT20-02**
Standard(s):	**47 CFR §1.1310, 47 CFR §2.1091, 47 CFR §15.247(i),47 CFR §15.407(f)**
Report Number:	**2402T77670E-RF-00H**
Report Date:	**2024/6/24**

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402T77670E-RF-00H	Original Report	2024/6/24

1. GENERAL INFORMATION

1.1 General Description Of Equipment under Test

EUT Name:	POS Terminal
EUT Model:	CT20
Rated Input Voltage:	DC 9.0V from Adapter
EUT Received Date:	2024/5/23
EUT Received Status:	Good

2. RF EXPOSURE EVALUATION (MPE)

2.1 RF Exposure Evaluation

2.1.1 Applicable Standard

According to subpart 15.247(i)& 15.407(f) 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/f²)	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.

2.1.2 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/cm^2);
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:

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

2.1.3 Calculated Data:

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
BT	2402-2480	3.49	2.23	6	3.98	20.00	0.0018	1.0
BLE	2402-2480	3.49	2.23	-2	0.63	20.00	0.0003	1.0
2.4G Wifi	2412-2462	3.49	2.23	17	50.12	20.00	0.0223	1.0
5G Wifi	5150-5250	2.02	1.59	15	31.62	20.00	0.0100	1.0
	5250-5350	1.83	1.52	15	31.62	20.00	0.0096	1.0
	5470-5725	2.93	1.96	15	31.62	20.00	0.0124	1.0
	5725-5850	1.97	1.57	15	31.62	20.00	0.0099	1.0
NFC	13.56	/	/	-18.26	0.01	20.00	<<0.00001	0.98
NFC field strength is -18.26dBm (0.01mW)EIRP. That equal to antenna gain is 0dBi and used the EIRP value as conducted power.								

Note:
The Conducted output power including Tune-up Tolerance provided by manufacturer.
For NFC, the power of EUT: E Field@3m is 76.94 dBuV/m =-18.26dBm (0.01mW)
E[dBμV/m] = EIRP[dBm] + 95.2 for d = 3 m.

For Simultaneous transmission:

BT/BLE/2.4G Wifi /5G Wifi can`t transmit simultaneously,
But BT,BLE,2.4G Wifi or 5G Wifi can transmit simultaneously with NFC:

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

$= S_{2.4G\ Wifi} / S_{limit\text{-}2.4G\ Wifi} + S_{NFC} / S_{limit\text{-}NFC}$

$=0.0223/1.0+0.00001/0.98$

$=0.022$

<1

Result: Compliant. The device compliant Simultaneous transmission at 20cm distances.

APPENDIX A - EUT PHOTOGRAPHS

Please refer to the attachment 2402T77670E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2402T77670E-RF-INP EUT INTERNAL PHOTOGRAPHS.

******* END OF REPORT *******