



# MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

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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).

Ganin Xn

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from Cas

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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	

Report Template Version: FCC §2.1091-V1.0

## 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		
<b>EUT Received Date:</b>	2024/5/23		
<b>EUT Received Status:</b>	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.

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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/cm²)	Averaging Time (minutes)		
0.3-1.34	614	1.63	*(100)	30		
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	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<sup>2</sup>);

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:

$$\sum_{i} \frac{S_{i}}{S_{Limit,i}} \le 1$$

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#### 2.1.3 Calculated Data:

Operation Modes	Frequency (MHz)	Antenna Gain		power i	ted output including ne-up erance	Evaluation Distance (cm)	Power Density (mW/cm²)	MPE Limit (mW/cm²)
		(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
	5150-5250	2.02	1.59	15	31.62	20.00	0.0100	1.0
5G Wifi	5250-5350	1.83	1.52	15	31.62	20.00	0.0096	1.0
3G WIII	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)  $E[dB\mu V/m] = EIRP[dBm] + 95.2$  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  $_{2.4G \text{ Wifi}}$  / S  $_{\text{limit-2.4G Wifi}}$  + S  $_{\text{NFC}}$  /S  $_{\text{limit-NFC}}$ 

=0.0223/1.0+0.00001/0.98

=0.022

<1

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

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## **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 \*\*\*\*\*

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