NVLAP LAB CODE 600341-0

MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

Applicant:	**INGENICO**
Address:	**9 Avenue de la gare - Rovaltain TGV, BP25156,Valence Cedex 9,26958 ,France**
Product Name:	**Payment Terminals**
FCC ID:	**XKB-SXXCLWIBT**
Standard(s):	**47 CFR §1.1310, 47 CFR §2.1091, 47 CFR §15.247(i), 47 CFR §15.407(f)**
Report Number:	**2402W92356E-RF-00H**
Report Date:	**2024/11/13**

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

Reviewed By:	**Pedro Yun**
Title:	**Project Engineer**
Approved By:	**Ivan Cao**
Title:	**EMC Manager**

Bay Area Compliance Laboratories Corp. (Dongguan)
No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China
Tel: +86-769-86858888
Fax: +86-769-86858891
www.baclcorp.com.cn

CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402W92356E-RF-00H	Original Report	2024/11/13

1. GENERAL INFORMATION

1.1 General Description Of Equipment under Test

EUT Name:	Payment Terminals
EUT Model:	AXIUM SX7000
Multiple Model:	AXIUM SX5000
Rated Input Voltage:	DC 9V-45V
EUT Received Date:	2024/8/29
EUT Received Status:	Good
Note: The multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

Configurations:

Configuration	HVIN	Configuration Description
1#	AXIUM SX7000 CL/Eth/4G/WiFi/BT	With Smartcard reader, With LTE.
2#	AXIUM SX5000 CL/Eth/4G/WiFi/BT	Without Smartcard reader, With LTE.
3#	AXIUM SX7000 CL/Eth/WiFi/BT	With Smartcard reader, Without LTE.
4#	AXIUM SX5000 CL/Eth/WiFi/BT	Without Smartcard reader, Without LTE.

Output Power And Antenna Gain Information:

Operation Modes	Frequency (MHz)	Antenna Gain (dBi)	Conducted output power including Tune-up Tolerance▲ (dBm)	EIRP/ERP (dBm)	Limit (dBm)
GSM 850	824.2-848.8	4.40	27.5	29.75	38.45
GSM 1900	1850.2-1909.8	5.25	24.5	29.75	33.0
WCDMA B2	1852.4-1907.6	5.25	24.5	29.75	33.0
WCDMA B4	1712.4-1752.6	5.09	24.5	29.59	30.0
WCDMA B5	826.4-846.6	4.40	24.5	26.75	38.45
LTE B2	1850.7-1909.3	5.25	24.0	29.25	33.0
LTE B4	1710.7-1754.3	5.09	24.0	29.09	30.0
LTE B5	824.7-848.3	4.40	24.0	26.25	38.45
LTE B7	2502.5-2567.5	5.33	24.0	29.33	33.0
LTE B8	897.5-900.5	3.69	24.0	27.69	34.77
LTE B12	699.7-715.3	3.12	24.0	24.97	34.77
LTE B13	779.5-784.5	4.40	24.0	26.25	34.77
LTE B14	790.5-795.5	4.40	24.0	26.25	34.77
LTE B25	1850.7-1914.3	5.25	24.0	29.25	33.00
LTE B26	814.7-823.3	4.40	24.0	26.25	50.0
LTE B26	824.7-848.3	4.40	24.0	26.25	38.45
Note: ERP is for operation below 1 GHz and EIRP for above 1 GHz.					

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	0.9	1.23	7.0	5.01	25.00	0.001	1.0
BLE	2402-2480	0.9	1.23	-1.5	0.71	25.00	0.0001	1.0
2.4G Wifi	2412-2462	0.9	1.23	16.5	44.67	25.00	0.007	1.0
5.2G Wifi	5150-5250	3.35	2.16	16.5	44.67	25.00	0.012	1.0
5.3G Wifi	5250-5350	3.35	2.16	17.5	56.23	25.00	0.015	1.0
5.6G Wifi	5470-5725	1.47	1.40	17.5	56.23	25.00	0.010	1.0
5.8G Wifi	5725-5850	0.68	1.17	20.0	100.00	25.00	0.015	1.0
5.9G Wifi	5850-5895	0.68	1.17	18.0	63.10	25.00	0.009	1.0
NFC	13.56	/	/	-13.22	0.05	25.00	<<0.0001	0.98
GSM 850	824.2-848.8	4.40	2.75	27.5	562.34	25.00	0.197	0.55
GSM 1900	1850.2-1909.8	5.25	3.35	24.5	281.84	25.00	0.120	1.0
WCDMA B2	1852.4-1907.6	5.25	3.35	24.5	281.84	25.00	0.120	1.0
WCDMA B4	1712.4-1752.6	5.09	3.23	24.5	281.84	25.00	0.116	1.0
WCDMA B5	826.4-846.6	4.40	2.75	24.5	281.84	25.00	0.099	0.55
LTE B2	1850.7-1909.3	5.25	3.35	24.0	251.19	25.00	0.107	1.0
LTE B4	1710.7-1754.3	5.09	3.23	24.0	251.19	25.00	0.103	1.0
LTE B5	824.7-848.3	4.40	2.75	24.0	251.19	25.00	0.088	0.55
LTE B7	2502.5-2567.5	5.33	3.41	24.0	251.19	25.00	0.109	1.0
LTE B8	897.5-900.5	3.69	2.34	24.0	251.19	25.00	0.075	0.60
LTE B12	699.7-715.3	3.12	2.05	24.0	251.19	25.00	0.066	0.47
LTE B13	779.5-784.5	4.40	2.75	24.0	251.19	25.00	0.088	0.52
LTE B14	790.5-795.5	4.40	2.75	24.0	251.19	25.00	0.088	0.53
LTE B25	1850.7-1914.3	5.25	3.35	24.0	251.19	25.00	0.107	1.0
LTE B26	814.7-823.3	4.40	2.75	24.0	251.19	25.00	0.088	0.54
LTE B26	824.7-848.3	4.40	2.75	24.0	251.19	25.00	0.088	0.55

Note:
1. NFC field strength is 81.98dBμV/m @ 3m = -13.22 dBm(0.05mW) EIRP. That equal to antenna gain is 0dBi and used the EIRP value as conducted power.
2. The device contains a certified WWAN module, FCC ID: RI7LE910CXWWX, certified on 03/17/2023

Note:
The Conducted output power including Tune-up Tolerance provided by manufacturer.

Simultaneous transmission:

BT,BLE,2.4G Wifi and 5G Wifi can't transmit simultaneously, but BT,BLE, 2.4G Wifi or 5G Wifi can transmit simultaneously with NFC and WWAN:

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

$S_{NFC}/S_{limit\text{-}NFC} + S_{5G\ Wifi}/S_{limit\text{-}5G\ Wifi} + S_{WWAN}/S_{limit\text{-}WWAN}$

=0.0001/0.98+0.015/1.0+0.197/0.55

=0.37

< 1.0

Result: Compliant. The device compliant Simultaneous transmission at 25cm distances.

EXHIBIT A - EUT PHOTOGRAPHS

Please refer to the attachment 2402W92356E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2402W92356E-RF-INP EUT INTERNAL PHOTOGRAPHS.

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