TEST REPORT

Report No.: SHATBL2310006W11

Applicant	:	SUZHOU XI NENG POWER CO. LTD.
Product Name	:	Xnergy Smart Display Module
Brand Name	:	N/A
Model Name	:	XG-HMI7
FCC ID	:	2BDDT- XG-HMI7
Test Standard	:	47 CFR Part 2.1091
Date of Test	:	2024.01.24

Report Prepared by : (Jack Suo)

Report Approved by : (Ghost Li)

Authorized Signatory : (Terry Yang)

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REVISION HISTORY

Rev.	Issue Date	Revisions	Revised by
00	2024.01.24	Initial Release	Ghost Li

DECLARATION OF REPORT

1. The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the requirements of 47 CFR Part 2.1091. And it is applicable only to the tested sample identified in the report.

2. This report shall not be reproduced except in full, without the written approval of ATBL, this document only be altered or revised by ATBL, personal only, and shall be noted in the revision of the document.

3. The general information of EUT in this report is provided by the customer or manufacture, ATBL is only responsible for the test data but not for the information provided by the customer or manufacture.

4. The results in this report is only apply to the sample as tested under conditions. The customer or manufacturer is responsible for ensuring that the additional production units of this model have the same electrical and mechanical components.

1. GENERAL DESCRIPTION

1.1. Applicant

Name : SUZHOU XI NENG POWER CO. LTD.

Address : Room 212, Block 1, 1st Suhong West Road, Suzhou Industrial Park ,Jiangsu , China

1.2. Manufacturer

Name : SUZHOU XI NENG POWER CO. LTD.

Address : Room 212, Block 1, 1st Suhong West Road, Suzhou Industrial Park ,Jiangsu , China

1.3. Factory

Name : SUZHOU XI NENG POWER CO. LTD.

Address : Room 212, Block 1, 1st Suhong West Road, Suzhou Industrial Park ,Jiangsu , China

1.4. General Information of EUT

General Information	
Equipment Name	Xnergy Smart Display Module
Brand Name	N/A
Model Name	XG-HMI7
Series Model	N/A
Model Difference	N/A
SN or IMEI Code	202310010003001
Adapter	Model:TEKA-TC120150XX Brand:TEKA Input: AC:100~240V 50/60Hz 0.5A MAX Output: DC12V 1.5A 18W
Battery	N/A
Hardware version	R1.01
Software version	V1.0.3
Connecting I/O Port(s)	Refer to the remark below.

Remark:

The above information of EUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.5. Equipment Specification

Equipment Specification			
WWAN	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824 - 849	869 -894
	GSM 1900	1850 - 1910	1930 - 1990
	WCDMA Band II	1850 - 1910	1930 - 1990
	WCDMA Band IV	1710 - 1755	2110 - 2155
	WCDMA Band V	824 - 849	869 -894
	LTE Band 2	1850 - 1910	1930 - 1990
	LTE Band 4	1710 - 1755	2110 - 2155
	LTE Band 5	824 - 849	869 -894
	LTE Band 7	2500 - 2570	2620 - 2690
	LTE Band 12	699 - 716	729 - 764
	LTE Band 13	777 - 787	746 - 756
	LTE Band 25	1850 - 1915	1930 - 1995
	LTE Band 26 (814 - 824 MHz)	814 - 824	859 - 869
	LTE Band 26 (824 - 849 MHz)	824 - 849	869 - 894
	LTE Band 38	2570 - 2620	2570 - 2620
	LTE Band 41	2496 - 2690	2496 - 2690
WLAN	2.4GHz	2400 - 2483.5	
	5.1GHz	5150 - 5250	
	5.8GHz	5725 - 5850	
Antenna Information	Antenna Type:	External Antenna	
	Antenna Gain:	The antenna gain of all bands is 3 dBi.	

1.6. Modification of EUT

No modifications are made to the EUT during all test items.

1.7. Laboratory Information

Company Name	:	Shanghai ATBL Technology Co., Ltd.
Address	:	Building 8,No.160 Basheng Road, Waigaoqiao Free Trade Zone, Pudong New Area, Shanghai
Telephone	:	+86(0)21-51298625

1.8. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

Standard	Description
47 CFR Part 15.247	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.
47 CFR Part 15.407	General technical requirements.
47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
47 CFR Part 22	Subpart H - Cellular Radiotelephone Service
47 CFR Part 24	Subpart E - Broadband PCS
47 CFR Part 27	Subpart C - Technical Standards
47 CFR Part 90	Subpart S - Regulations Governing Licensing and Use of Frequencies in the 806–824, 851–869, 896–901, and 935–940 MHz Bands
47 CFR Part 2.1091	Radio frequency radiation exposure evaluation: mobile devices.

Remark:

All test items were verified and recorded according to the standards and without any deviation during the test.

2. RF EXPOSURE EVALUATION

2.1. Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*($900/f^2$)	<6
30–300	61.4	0.163	1.0	<6
300–1,500			f/300	<6
1,500–100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
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
300–1,500			f/1500	<30
1,500–100,000			1.0	<30

Note:

f = frequency in MHz.

* = Plane-wave equivalent power density.

2.2. Formula

Below method describes a theoretical approach to calculate possible exposure to electromagnetic radiation around a base station transceiver antenna. Precise statements are basically only possible either with measurements or complex calculations considering the complexity of the environment (e.g. soil conditions, near buildings and other obstacles) which causes reflections, scattering of electromagnetic fields. The maximum output power (given in EIRP) of a base station is usually limited by license conditions of the network operator. A rough estimation of the expected exposure in power flux density on a given point can be made with the following equation.

$$Pd_{(mW/cm^2)} = \frac{P_{(mW)} * G_{numeric}}{4 * r^2_{(cm)} * \pi}$$

Pd = Power Density

P = Maximum output power

G numeric = Numeric gain of the antenna relative to isotropic antenna

r = distance between the antenna and the point of exposure

2.3. Reference Document

Document Type	Test Report No./Test Standards	Issued By	Date
Radio Test Report	HR/2019/1001602 / 47 CFR Part 2.1091	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	2019-02-28

2.4. MPE Result

2.4.1. For WWAN

Operating Band	Frequency (MHz)	Ant. Gain (dBi)	Max Conducted Average Output Power (dBm)	EIRP/ERP (dBm)	EIRP/ERP Limit (dBm)	EIRP/ERP (mW)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)	Result
GSM 850	824.2	3.00	25.81	26.66	38.45	463.4469	0.0922	0.5495	Pass
GSM 1900	1850.2	3.00	22.81	25.81	33.00	381.0658	0.0758	1.0000	Pass
WCDMA B2	1852.4	3.00	25.00	28.00	33.00	630.9573	0.1256	1.0000	Pass
WCDMA B4	1712.4	3.00	25.00	28.00	30.00	630.9573	0.1256	1.0000	Pass
WCDMA B5	826.4	3.00	25.00	25.85	38.45	384.5918	0.0766	0.5509	Pass
LTE B2	1850.7	3.00	25.00	25.85	33.00	384.5918	0.0766	1.0000	Pass
LTE B4	1710.7	3.00	25.00	28.00	30.00	630.9573	0.1256	1.0000	Pass
LTE B5	824.7	3.00	25.00	25.85	38.45	384.5918	0.0766	0.5498	Pass
LTE B7	2502.5	3.00	25.00	28.00	33.00	630.9573	0.1256	1.0000	Pass
LTE B12	699.7	3.00	25.00	25.85	34.77	384.5918	0.0766	0.4665	Pass
LTE B13	779.5	3.00	25.00	25.85	34.77	384.5918	0.0766	0.5197	Pass
LTE B25	1850.7	3.00	25.00	28.00	33.00	630.9573	0.1256	1.0000	Pass
LTE B26 (814-824)	814.7	3.00	25.00	25.85	50.00	384.5918	0.0766	0.5431	Pass
LTE B26 (824-849)	824.7	3.00	25.00	25.85	38.45	384.5918	0.0766	0.5498	Pass
LTE B38	2572.5	3.00	25.00	28.00	33.00	630.9573	0.1256	1.0000	Pass
LTE B41	2498.5	3.00	25.00	28.00	33.00	630.9573	0.1256	1.0000	Pass

2.4.2. For WLAN

Operating Band	Frequency (MHz)	Ant. Gain (dBi)	Max Conducted Average Output Power (dBm)	EIRP/ERP (dBm)	EIRP/ERP Limit (dBm)	EIRP/ERP (mW)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)	Result
2.4GHz	2462	3.00	22.17	25.17	36.00	328.8516	0.0655	1.0000	Pass
5.1GHz	5230	3.00	16.39	19.39	30.00	86.8960	0.0173	1.0000	Pass
5.8GHz	5755	3.00	12.63	15.63	36.00	36.5595	0.0073	1.0000	Pass

2.4.3. For WWAN and WLAN work simultaneously

Maximum $\frac{Evaluated_k}{Exposure\ Limit_k}$ Mode	Frequency (MHz)	Power Density at R = 20 cm (mW/cm²)	Limit (mW/cm²)	$\frac{Evaluated_k}{Exposure\ Limit_k}$	Sum	Limit (mW/cm²)	Result
GSM 850	824.2	0.0922	0.5495	0.1679	0.2334	1.0000	Pass
2.4GHz	2462	0.0655	1.0000	0.0655			

※※※※※END OF THE REPORT※※※※※