XCHARGE Energy USA Inc

MPE ASSESSMENT REPORT

REPORT TYPE:
FCC MPE Assessment Report

MODEL:
Please see details in page 4 of this report

REPORT NUMBER:
2406B0910SHA-002

ISSUE DATE:
December 4, 2024

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 2406B0910SHA-002

Applicant:	XCHARGE Energy USA Inc 19121 Marketplace Avenue, Building 2, Suite 2, 145. Kyle, Texas, 78640
Manufacturer:	Beijing X-CHARGE Technology Co., Ltd No.12 Shuangyang Road, Daxing District, Beijing, 100176
Factory:	Beijing X-CHARGE Technology Co., Ltd No.12 Shuangyang Road, Daxing District, Beijing, 100176
FCC ID:	2BCXO-C7AM

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
KDB447498 D01 General RF Exposure Guidance v06 FCC Part2.1091, FCC Part1.1307(b)

PREPARED BY:	**REVIEWED BY:**
Project Engineer Scout Gong	Reviewer Eric Li

TEST REPORT

Revision History

Report No.	Version	Description	Issued Date
2406B0910SHA-002	Rev. 01	Initial issue of report	December 4, 2024

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	DC Electric Vehicle Charging Station
Type/Model:	C7AM-400-CC, C7AM-360-CC, C7AM-320-CC, C7AM-280-CC, C7AM-240-CC, C7AM-400-LQ-CC, C7AM-360-LQ-CC, C7AM-320-LQ-CC, C7AM-280-LQ-CC, C7AM-240-LQ-CC
Description of EUT:	EUT is a DC electric vehicle charger station with RFID function, it supports LTE function. The design, construction and components are the same, the only difference is the output power which is achieved by different numbers of power modules and associated wiring. The model with suffix "LQ" is product with liquid cooling pump and EV connectors. Model C7AM-240-LQ-CC was tested as a representative in this test report. Here is the certificate information about the wireless modules which EUT equipped. The POS machine communicate with the EUT through network cable and the POS machine does not transmit wireless signals. For the LTE modular, FCC ID is QIPPLAS9-X. For the POS machine, FCC ID is 2AHPPAPX01.
Rating:	For General models: Input: 3P 480VAC, 60Hz, up to 570A; Output: 200-1000VDC, up to 400A, 240 - 400kW. For models with suffix LQ (Liquid cooled connector): 3P 480VAC, 60Hz, up to 570A; Output: 200-1000VDC, up to 500A, 240 - 400kW.
EUT type:	☒ Tabletop ☐ Floor standing
Software Version:	/
Hardware Version:	/
Serial numbers:	A240610-05-001
Sample received date:	June 10, 2024
Date of test:	June 10, 2024, to November 25, 2024

1.2 Technical Specification

Frequency Range:	13.56 MHz ~ 13.56 MHz
Modulation:	ASK
Antenna:	PCB antenna

1.3 Description of Test Facility

Name:	Intertek Testing Services (Shanghai FTZ) Co., Ltd.
Address:	Building 86, No. 1198 Qinzhou Road (North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L21189
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Member No: 3598 (Registration No.: R-14243, G-10845, C-14723, T-12252)
	A2LA Accreditation Lab Certificate Number: 3309.02

TEST REPORT

2 MPE Assessment

Test result: **PASS**

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:
According to§1.1310, the limit for general population/uncontrolled exposures

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

Note: Limit for 13.56MHz is 60.77 V/m

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

2.2 Assessment Results

Power density (S) is calculated according to the formula:
$S = PG / (4\pi R^2)$
Where S = power density in mW/cm^2, P = Radiated transmit power in mW
G = numeric gain of transmit antenna, R = distance (cm)

As we can see from the test report 2406B0910SHA-001: 62.60 dBuV/m at 3m
@20cm = @3m + 40 × log (3/0.2) = 109.64 dBuV/m = 0.303 V/m < 60.77 V/m

The power for wireless module refers to the certificate of FCC ID: 2AANYIR6X5-S.

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent the worst case in terms of the exposure levels. Here listed the maximum RF exposure according to the modules' certificated reports.

Radio	Frequency Range	P		G		R	S	Limits
	MHz	dBm	mW	dBi	Numeric	cm	mW/cm^2	mW/cm^2
GSM	850	34.0	2511.89	2.5	1.78	20	**0.44**	0.55
	1900	31.0	1258.93	2.5	1.78	20	0.22	1.0
WCDMA	Band 2	24.5	281.84	2.5	1.78	20	0.10	1.0
	Band 4	24.5	281.84	2.5	1.78	20	0.10	1.0
	Band 5	24.5	281.84	2.5	1.78	20	0.10	0.55
LTE	Band 2	23.5	223.87	2.5	1.78	20	0.08	1.0
	Band 4	23.5	223.87	2.5	1.78	20	0.08	1.0
	Band 5	23.5	223.87	2.5	1.78	20	0.08	0.55
	Band 12	23.5	223.87	2.5	1.78	20	0.08	0.47
	Band 13	23.5	223.87	2.5	1.78	20	0.08	0.52

Note: Limits are calculated from 1.1310 Table 1.

RFID, wireless module, can transmit simultaneously, so the maximum rate of MPE is:
0.303/60.77 + 0.44/0.55 = 0.805 < 1.000.

Therefore, the MPE requirement is deemed to be satisfied without test.

TEST REPORT

Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.

**********END**********