XCHARGE Energy USA Inc

MPE ASSESSMENT REPORT

Report Type:
FCC MPE assessment report

MODEL:
C6AM200CC, C6AM180CC, C6AM160CC, C6AM150CC, C6AM120CC, C6AM90CC, C6AM80CC, C6AM60CC

REPORT NUMBER:
240100354SHA-002

ISSUE DATE:
October 16, 2024

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Intertek Testing Services (Shanghai FTZ) Co., Ltd.
Building No.86, 1198 Qinzhou Road (North)
Caohejing Development Zone
Shanghai 200233, China

Telephone: 86 21 6127 8200
www.intertek.com

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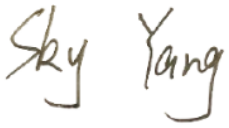
TEST REPORT

Report no.: 240100354SHA-002

Applicant:	XCHARGE Energy USA Inc 19121 Marketplace Avenue, Building 2 - Suite 2-145. Kyle, Texas, USA
Manufacturer:	Beijing X-CHARGE Technology Co., Ltd. No.12, Shuangyang Road, DaxingDistrict, Beijing, China
Factory:	Beijing X-CHARGE Technology Co., Ltd. No.12, Shuangyang Road, DaxingDistrict, Beijing, China
FCC ID:	2BCXO-C6AM200

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 Sky Yang	Reviewer Eric Li

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Revision History

Report No.	Version	Description	Issued Date
240100354SHA-002	Rev. 01	Initial issue of report	October 16, 2024

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	DC Electric Vehicle Charging Station
Type/Model:	C6AM200CC, C6AM180CC, C6AM160CC, C6AM150CC, C6AM120CC, C6AM90CC, C6AM80CC, C6AM60CC
Description of EUT:	The EUT is an electric vehicle DC charger. It contains a certified LTE module, the LTE module FCC ID is 2APNR-GM500U1A. All models are electrically identical except the rated power.
Rating:	Input: 480VAC, 60Hz Output: 200-1000VDC, 300A Max, 60-200kW
Category of EUT:	Class A
EUT type:	☐ Table top ☒ Floor standing
Software Version:	-
Hardware Version:	-
Serial numbers:	A240708-40
Sample received date:	July 8, 2024
Date of test:	July 29, 2024~ September 6, 2024

1.2 Technical Specification

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

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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

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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 = Transmit power in mW
G = numeric gain of transmit antenna
R = distance (cm)

As we can see from the test report 240100354SHA-001:
59.9dBuV/m@3m, @20cm=@3m+40log(3/0.2)=106.94dBuV/m=0.222V/m<60.77.

The power for LTE module refers to certificate of FCC ID: 2APNR-GM500U1A

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Mode	Power (dBm)	Antenna Gain (dBi)	PG (mW)	R (cm)	S (mW/cm2)	Limits (mW/cm2)
GSM850	34.0	3.5	702.927	20	0.140	0.55
GSM1900	30.0	4.8	377.494	20	0.075	1.00
WCDMA Band II	23.5	4.8	630.957	20	0.126	1.00
WCDMA Band V	24.5	3.5	676.083	20	0.135	0.56
LTE Band 2	23.0	4.8	602.560	20	0.120	1.00
LTE Band 4	23.0	4.8	602.560	20	0.120	1.00
LTE Band 5	23.5	3.5	501.187	20	0.100	0.56
LTE Band 12	24.0	3.5	562.341	20	0.112	0.47

Note: 1 mW/cm2 from 1.310 Table 1.

RFID and LTE can transmit simultaneously, so the maximum rate of MPE is,
0.222/60.77+0.14/0.55=0.258 <1.0.

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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**********