Powercore Technology Co., Ltd.

MPE ASSESSMENT REPORT

Report Type:
FCC MPE assessment report

MODEL:
LDC001ABCD-E

REPORT NUMBER:
240300347SHA-002

ISSUE DATE:
July 8, 2024

DOCUMENT CONTROL NUMBER:
TTRFFCCMPE-01_V1 © 2018 Intertek

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

Telephone: 86 21 6127 8200
www.intertek.com

Total Quality. Assured.

TEST REPORT

Report no.: 240300347SHA-002

Applicant:	Powercore Technology Co., Ltd. 4th Floor, Jiangsu Science and Technology Finance Building, No.21 Andemen Street, Yuhuatai District, Nanjing City, Jiangsu Province, P.R. China
Manufacturer:	Powercore Technology Co., Ltd. 4th Floor, Jiangsu Science and Technology Finance Building, No.21 Andemen Street, Yuhuatai District, Nanjing City, Jiangsu Province, P.R. China
Factory:	Powercore Technology Co., Ltd. Zone A, No.1 Yuansi Road, Jiangbei New District, Nanjing City, Jiangsu Province, P.R. China
FCC ID:	2A98K-LDC001

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 Part2.1093 FCC Part1.1307(b)

PREPARED BY:	**REVIEWED BY:**
Project Engineer Sky Yang	Reviewer Eric Li

Total Quality. Assured.

TEST REPORT

Revision History

Report No.	Version	Description	Issued Date
240300347SHA-002	Rev. 01	Initial issue of report	July 8, 2024

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	DC Electric Vehicle Charging Station
Type/Model:	LDC001ABCD-E A may be C1 or NACS, denotes to one of the output connector interface type, C1:CCS1 B may be 120, 150, 175, 180, denotes to one of the output rating, 120:120kW, 150:150kW, 175:175kW, 180:180kW C may be C1 or NACS, denotes to the other of the output connector interface type, C1:CCS1 D may be 120, 150, 175, 180, denotes to the other of the output rating, 120:120kW, 150:150kW, 175:175kW, 180:180kW E may be NC or LC, denotes to the type of the cooling, NC: Natural Cooling, LC: Liquid Cooling LDC001C1120C1120-LC, LDC001C1120NACS120-LC, LDC001NACS120NACS120-LC, LDC001C1150C1120-LC, LDC001C1150NACS120-LC, LDC001NACS150NACS120-LC, LDC001C1150C1150-LC, LDC001C1150NACS150-LC, LDC001NACS150NACS150-LC, LDC001C1180C1150-LC, LDC001C1180NACS150-LC, LDC001NACS180NACS150-LC, LDC001C1175C1175-LC, LDC001C1175NACS175-LC, LDC001NACS175NACS175-LC, LDC001C1180C1180-LC, LDC001C1180NACS180-LC, LDC001NACS180NACS180-LC, LDC001C1120C1120-NC, LDC001C1120NACS120-NC, LDC001NACS120NACS120-NC, LDC001C1150C1120-NC, LDC001C1150NACS120-NC, LDC001NACS150NACS120-NC, LDC001C1150C1150-NC, LDC001C1150NACS150-NC, LDC001NACS150NACS150-NC, LDC001C1180C1150-NC, LDC001C1180NACS150-NC, LDC001NACS180NACS150-NC, LDC001C1175C1175-NC, LDC001C1175NACS175-NC, LDC001NACS175NACS175-NC, LDC001C1180C1180-NC, LDC001C1180NACS180-NC, LDC001NACS180NACS180-NC
Description of EUT:	The EUT is electric vehicle DC charger. It contains two certified modules, the WIFI/Bluetooth module FCC ID is 2AC7Z-ESPWROOM32UE(grant date:01/25/2022), the LTE module FCC ID is XMR201903EG25G.
Rating:	LDC001A120C120-LC: Input: 480VAC±10%, 50/60Hz, 304A Max Output: 150-1000VDC, 500A Max, 240kW Max LDC001A150C120-LC: Input: 480VAC±10%, 50/60Hz, 342A Max Output: 150-1000VDC, 500A Max, 270kW Max LDC001A150C150-LC: Input: 480VAC±10%, 50/60Hz, 380A Max Output: 150-1000VDC, 500A Max, 300kW Max LDC001A180C150-LC: Input: 480VAC±10%, 50/60Hz, 418A Max Output: 150-1000VDC, 500A Max, 330kW Max LDC001A175C175-LC: Input: 480VAC±10%, 50/60Hz, 443A Max Output: 150-1000VDC, 500A Max, 350kW Max LDC001A180C180-LC: Input: 480VAC±10%, 50/60Hz, 456A Max Output: 150-1000VDC, 500A Max, 360kW Max LDC001A120C120-NC: Input: 480VAC±10%, 50/60Hz, 304A Max Output: 150-1000VDC, 300A Max, 240kW Max

TEST REPORT

	LDC001A150C120-NC: Input: 480VAC±10%, 50/60Hz, 342A Max Output: 150-1000VDC, 300A Max, 270kW Max LDC001A150C150-NC: Input: 480VAC±10%, 50/60Hz, 380A Max Output: 150-1000VDC, 300A Max, 300kW Max LDC001A180C150-NC: Input: 480VAC±10%, 50/60Hz, 418A Max Output: 150-1000VDC, 300A Max, 330kW Max LDC001A175C175-NC: Input: 480VAC±10%, 50/60Hz, 443A Max Output: 150-1000VDC, 300A Max, 350kW Max LDC001A180C180-NC: Input: 480VAC±10%, 50/60Hz, 456A Max Output: 150-1000VDC, 300A Max, 360kW Max
Category of EUT:	Class A
EUT type:	☐ Table top ☒ Floor standing
Software Version:	-
Hardware Version:	-
Serial numbers:	A240508-40
Sample received date:	May 8, 2024
Date of test:	May 9, 2024~ May 14, 2024

1.2 Technical Specification

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

TEST REPORT

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
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 L0139
	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

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**

TEST REPORT

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 240300347SHA-001:
68.4dBuV/m@3m, @20cm=@3m+40log(3/0.2)=115.44dBuV/m=0.592V/m<60.77.

The power for WIFI module refers to certificate of FCC ID: 2AC7Z- ESPWROOM32UE
The power for LTE module refers to certificate of FCC ID: XMR201903EG25G

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.

Frequency Range (MHz)	P (dBm)	G (dBi)	PG (mW)	R (cm)	S (mW/cm2)	Limits (mW/cm2)
WIFI 2.4G	15.92	4	98.18	20	0.0195	1.0000
BT	7.59	4	14.42	20	0.0029	1.0000
BLE	4.81	4	7.60	20	0.0015	1.0000
GSM850	25.81	2.29	645.65	20	0.1284	0.5495
GSM1900	22.81	1.59	275.42	20	0.0548	1.0000
WCDMA Band II	25.00	1.59	456.04	20	0.0907	1.0000
WCDMA Band IV	25.00	2.00	501.19	20	0.0997	1.0000
WCDMA Band V	25.00	2.29	535.80	20	0.1066	0.5509
LTE Band 2	25.00	1.59	456.04	20	0.0907	1.0000
LTE Band 4	25.00	2.00	501.19	20	0.0997	1.0000
LTE Band 5	25.00	2.29	535.80	20	0.1066	0.5498
LTE Band 7	25.00	3.00	630.96	20	0.1255	1.0000
LTE Band 12	25.00	3.26	669.88	20	0.1333	0.4665
LTE Band 13	25.00	4.45	881.05	20	0.1753	0.5197
LTE Band 25	25.00	1.59	456.04	20	0.0907	1.0000
LTE Band 26(814-824)	25.00	2.53	566.24	20	0.1126	0.5431
LTE Band 26(824-849)	25.00	2.53	566.24	20	0.1126	0.5498
LTE Band 38	25.00	2.06	508.16	20	0.1011	1.0000
LTE Band 41	25.00	3.00	630.96	20	0.1255	1.0000

Note: 1 mW/cm2 from 1.310 Table 1.

RFID, LTE and WIFI/Bluetooth can transmit simultaneously, so the maximum rate of MPE is, 0.592/60.77+0.0195/1+0.1753/0.5197=0.367 <1.0.

Total Quality. Assured.

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**********