CENNTRO AUTOMOTIVE CORPORATION

MPE ASSESSMENT REPORT

Report Type:
FCCC MPE assessment report

Model:
DCC130C130, DCC160C130, DCC160C160, DCC190C160, DCC190C190

REPORT NUMBER:
230600383SHA-003

ISSUE DATE:
November 2, 2023

DOCUMENT CONTROL NUMBER:
TTRFFCCMPE-01_V1

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TEST REPORT

Report no.: 230600383SHA-003

Applicant:	CENNTRO AUTOMOTIVE CORPORATION 501 OKERSON RD FREEHOLD, NJ 07728, USA
Manufacturer:	CENNTRO AUTOMOTIVE CORPORATION 501 OKERSON RD FREEHOLD, NJ 07728, USA
Factory:	Powercore Technology Co., Ltd. Zone A, No.1 Yuansi Road, Jiangbei New District, Nanjing City, Jiangsu Province, P.R. China
FCC ID:	2BBQD-DC1001

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

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Revision History

Report No.	Version	Description	Issued Date
230600383SHA-003	Rev. 01	Initial issue of report	November 2, 2023

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	DC Electric Vehicle Charging Station
Type/Model:	DCC130C130, DCC160C130, DCC160C160, DCC190C160, DCC190C190
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. All models are electric identical except the rated power. We test DCC190C190 as representative and list the result in this report.
Rating:	DCC130C130: Input: 480VAC±10%, 50/60Hz, 76A Output: 150-1000VDC, 200ADC Max DCC160C130: Input: 480VAC±10%, 50/60Hz, 114A Output: 150-1000VDC, 200ADC Max DCC160C160: Input: 480VAC±10%, 50/60Hz, 152A Output: 150-1000VDC, 200ADC Max DCC190C160: Input: 480VAC±10%, 50/60Hz, 190A Output: 150-1000VDC, 200ADC Max DCC190C190: Input: 480VAC±10%, 50/60Hz, 228A Output: 150-1000VDC, 200ADC Max
EUT type:	☐ Table top ☒ Floor standing
Software Version:	-
Hardware Version:	-
Serial numbers:	0231016-29
Sample received date:	October 16, 2023
Date of test:	October 16, 2023 ~ October 19, 2023

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
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**

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2.2 Assessment Results

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

As we can see from the test report 230600383SHA-002:
52.1dBuV/m@3m, @20cm=@3m+40log(3/0.2)=99.14dBuV/m=0.091V/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	EIRP		Antenna Gain	R	S	Limits
(MHz)	(dBm)	(mW)	(dBi)	(cm)	(mW/cm2)	(mW/cm2)
WIFI 2.4G	19.92	98.18	4	20	0.0195	1.0000
BT	11.59	14.42	4	20	0.0029	1.0000
BLE	8.81	7.60	4	20	0.0015	1.0000
GSM850	28.10	645.65	2.29	20	0.1284	0.5495
GSM1900	24.40	275.42	1.59	20	0.0548	1.0000
WCDMA Band II	26.59	456.04	1.59	20	0.0907	1.0000
WCDMA Band IV	27.00	501.19	2.00	20	0.0997	1.0000
WCDMA Band V	27.29	535.80	2.29	20	0.1066	0.5509
LTE Band 2	26.59	456.04	1.59	20	0.0907	1.0000
LTE Band 4	27.00	501.19	2.00	20	0.0997	1.0000
LTE Band 5	27.29	535.80	2.29	20	0.1066	0.5498
LTE Band 7	28.00	630.96	3.00	20	0.1255	1.0000
LTE Band 12	28.26	669.88	3.26	20	0.1333	0.4665
LTE Band 13	29.45	881.05	4.45	20	0.1753	0.5197
LTE Band 25	26.59	456.04	1.59	20	0.0907	1.0000
LTE Band 26(814-824)	27.53	566.24	2.53	20	0.1126	0.5431
LTE Band 26(824-849)	27.53	566.24	2.53	20	0.1126	0.5498
LTE Band 38	27.06	508.16	2.06	20	0.1011	1.0000
LTE Band 41	28.00	630.96	3.00	20	0.1255	1.0000

Note: 1 mW/cm2 from 1.310 Table 1.

RFID, LTE and WIFI can transmit simultaneously, so the maximum rate of MPE is,
0.091/60.77+0.0195/1+0.1753/0.5197=0.358 <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**********