

PIKKA ELECTRIC CORPORATION

MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

MODEL:

DC103013, DC103015, DC103018,
DC10301A, DC10301B, DC10301E, DC10301F

REPORT NUMBER:

2412B0284SHA-002

ISSUE DATE:

December 23, 2024

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TEST REPORT

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Report no.: 2412B0284SHA-002

Applicant: PIKKA ELECTRIC CORPORATION
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Manufacturer: Xiamen Hongfa Electric Co Ltd.
No. 15, Dongfuxi Second Road, Haicang District, Xiamen, 361028, China

Factory: Xiamen Hongfa Electric Co Ltd.
No. 15, Dongfuxi Second Road, Haicang District, Xiamen, 361028, China

FCC ID: 2BMMYDC103014

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:

Project Engineer
Sky Yang

REVIEWED BY:

Reviewer
Eric Li

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TEST REPORT**Revision History**

Report No.	Version	Description	Issued Date
2412B0284SHA-002	Rev. 01	Initial issue of report	December 23, 2024

TEST REPORT**1 GENERAL INFORMATION****1.1 Description of Equipment Under Test (EUT)**

Product name:	DC EV Charger
Type/Model:	DC103013, DC103015, DC103018, DC10301A, DC10301B, DC10301E, DC10301F DC103013: EUT equipped with one CCS1 output connector DC103015: EUT equipped with two CCS1 output connectors DC103018: EUT equipped with one CCS1 output connector and POS device DC10301A: EUT equipped with one NACS output connector DC10301B: EUT equipped with one NACS output connector and POS device DC10301E: EUT equipped with two NACS output connectors DC10301F: EUT equipped with two NACS output connectors and POS device
Description of EUT:	The EUT is electric vehicle DC charger. It contains a certified LTE module, the LTE module FCC ID is XMR201903EG25G.
Rating:	Input: 480VAC, 60Hz, 40A Max Output: 200-1000VDC, 80A Max, 30kW, Max
Category of EUT:	Class A
EUT type:	<input type="checkbox"/> Table top <input checked="" type="checkbox"/> Floor standing
Software Version:	-
Hardware Version:	-
Serial numbers:	A241118-17
Sample received date:	November 18, 2024
Date of test:	November 18, 2024 ~ November 20, 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 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/f ²)	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:

$$S = PG / (4\pi R^2)$$

Where S = power density in mW/cm²

P = Transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 2412B0284SHA-001:

$$63.2\text{dBuV/m}@3\text{m}, @20\text{cm} = @3\text{m} + 40\log(3/0.2) = 110.24\text{dBuV/m} = 0.325\text{V/m} < 60.77.$$

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		G		R (cm)	S (mW/cm ²)	Limits (mW/cm ²)
	(dBm)	(mW)	(dBi)	(numeric)			
GSM850	25.81	381.07	3.78	2.39	20	0.181	0.5495
GSM1900	22.81	190.99	3.78	2.39	20	0.091	1.0000
WCDMA Band II	25.00	316.23	3.78	2.39	20	0.150	1.0000
WCDMA Band IV	25.00	316.23	3.78	2.39	20	0.150	1.0000
WCDMA Band V	25.00	316.23	3.78	2.39	20	0.150	0.5509
LTE Band 2	25.00	316.23	3.78	2.39	20	0.150	1.0000
LTE Band 4	25.00	316.23	3.78	2.39	20	0.150	1.0000
LTE Band 5	25.00	316.23	3.78	2.39	20	0.150	0.5498
LTE Band 7	25.00	316.23	3.78	2.39	20	0.150	1.0000
LTE Band 12	25.00	316.23	3.78	2.39	20	0.150	0.4665
LTE Band 13	25.00	316.23	3.78	2.39	20	0.150	0.5197
LTE Band 25	25.00	316.23	3.78	2.39	20	0.150	1.0000
LTE Band 26(814-824)	25.00	316.23	3.78	2.39	20	0.150	0.5431
LTE Band 26(824-849)	25.00	316.23	3.78	2.39	20	0.150	0.5498
LTE Band 38	25.00	316.23	3.78	2.39	20	0.150	1.0000
LTE Band 41	25.00	316.23	3.78	2.39	20	0.150	1.0000

Note: 1 mW/cm² from 1.310 Table 1.

RFID and LTE can transmit simultaneously, so the maximum rate of MPE is,
 $0.325/60.77 + 0.181/0.5495 = 0.335 < 1.0$.

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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*****