

Fuzhou Ulandpower Technology Co., Ltd.

MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

MODEL:

UN1-A48

REPORT NUMBER:

2405B2009SHA-003

ISSUE DATE:

September 13, 2024

DOCUMENT CONTROL NUMBER:

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TEST REPORT

Applicant: Fuzhou Ulandpower Technology Co., Ltd.
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Fujian, China

Manufacturer: Fuzhou Ulandpower Technology Co., Ltd.
902, Building 1, Wanfu Center, High tech Zone, Minhou County, Fuzhou City,
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Factory: Fuzhou Ulandpower Technology Co., Ltd.
902, Building 1, Wanfu Center, High tech Zone, Minhou County, Fuzhou City,
Fujian, China

FCC ID: 2BG8P-UN1A48

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
2405B2009SHA-003	Rev. 01	Initial issue of report	September 13, 2024

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Electric Vehicle Charging Station
Type/Model:	UN1-A48
Description of EUT:	The EUT is an electric vehicle charger with Bluetooth and RFID function.
Rating:	240VAC, 50/60Hz, 48A Max
Category of EUT:	Class A
EUT type:	<input checked="" type="checkbox"/> Table top <input type="checkbox"/> Floor standing
Software Version:	-
Hardware Version:	-
Serial numbers:	A240506-38
Sample received date:	May 6, 2024
Date of test:	May 31, 2024 ~ July 9, 2024

1.2 Technical Specification

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	Bluetooth LE 4.2
Type of Modulation:	GFSK
Channel Number:	40
Data Rate:	1Mbps, 2Mbps
Channel Separation:	2MHz
Antenna Information:	2.5dBi, chip Antenna

Frequency Range:	13.56 MHz ~ 13.56 MHz
Modulation:	ASK
Antenna gain:	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/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**

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 = Power in mW

G = numeric gain of transmit antenna

R = distance (cm)

For RFID function, as we can see from the test report 2405B2009SHA-002:

$$58.3\text{dBuV/m}@3\text{m}, @20\text{cm}=@3\text{m}+40\log(3/0.2)=105.34\text{dBuV/m}=0.185\text{V/m}<60.77.$$

For Bluetooth function, as we can see from the test report 2405B2009SHA-001:

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	P		G		R	S	Limits
(MHz)	(dBm)	(mW)	(dBi)	(numeric)	(cm)	(mW/cm ²)	(mW/cm ²)
Bluetooth LE(1M)	6.83	4.82	2.5	1.78	20	0.00171	1
Bluetooth LE(2M)	6.77	4.75	2.5	1.78	20	0.00168	1

Note: 1 mW/cm² from 1.310 Table 1.

RFID and Bluetooth can transmit simultaneously, so the maximum rate of MPE is,
 $0.185/60.77+0.00171/1=0.00475 < 1.0.$

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*****