

Fuzhou Ulandpower Technology Co., LTD.

MPE ASSESSMENT REPORT

REPORT TYPE:

FCC MPE Assessment Report

MODEL:

UNR1-A40T, UNR1-A48T

REPORT NUMBER:

2410B0983SHA-002

ISSUE DATE:

March 15, 2025

DOCUMENT CONTROL NUMBER:

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Applicant: Fuzhou Ulandpower Technology Co., LTD.
902, Building 1, Wanfu Center, High-Tech Zone, Minhou County,
Fuzhou City, Fujian Province, 35000

Manufacturer: Fuzhou Ulandpower Technology Co., LTD.
902, Building 1, Wanfu Center, High-Tech Zone, Minhou County,
Fuzhou City, Fujian Province, 35000

Factory: Fuzhou Ulandpower Technology Co., LTD.
902, Building 1, Wanfu Center, High-Tech Zone, Minhou County,
Fuzhou City, Fujian Province, 35000

FCC ID: 2BG8P-UNR148T

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
Scout Gong



Reviewer
Eric Li

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Revision History

Report No.	Version	Description	Issued Date
2410B0983SHA-002	Rev. 01	Initial issue of report	March 15, 2025

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Electric Vehicle Charging Station
Type/Model:	UNR1-A40T, UNR1-A48T
Description of EUT:	EUT is an electric vehicle AC charger with RFID function. There are two models, the products are electrically identical except for differences in rated output current. UNR1-A48T was tested as a representative. EUT supports Wi-Fi/BLE function. Here is the certificate information about the Wi-Fi module, FCC ID: 2AC7Z-ESPWROOM32UE.
Rating:	For UNR1-A40T: 240V, 40A For UNR1-A48T: 240V, 48A
EUT type:	☒ Tabletop ☐ Floor standing
Software Version:	/
Hardware Version:	/
Serial numbers:	A250301-22-001
Sample received date:	March 1, 2025
Date of test:	March 1, 2025, to March 15, 2025

1.2 Technical Specification

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

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**

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/cm²,

P = Radiated transmit power in mW

G = numeric gain of transmit antenna,

R = distance (cm)

As we can see from the test report 2409B1594SHA-001: 61.90 dBuV/m at 3m

@20cm = @3m + 40 × log (3/0.2) = 108.95 dBuV/m = 0.28 V/m < 60.77 V/m

The power for WIFI/BLE module refers to the certificate of FCC ID: 2AC7Z-ESPWROOM32UE

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent the worst case in terms of the exposure levels. Here listed the maximum RF exposure according to the modules' certificated reports.

Radio	Frequency Range	P		G		R	S	Limits
	MHz	dBm	mW	dBi	Numeric	cm	mW/cm ²	mW/cm ²
BLE	2402-2480	4.81	3.03	3.80	2.40	20	0.0015	1.0000
BT3.0	2402-2480	7.59	5.74	3.80	2.40	20	0.0028	1.0000
802.11b	2412-2462	15.92	39.08	3.80	2.40	20	0.0187	1.0000
802.11g	2412-2462	12.31	17.02	3.80	2.40	20	0.0082	1.0000
802.11n-HT20	2412-2462	12.23	16.71	3.80	2.40	20	0.0080	1.0000
802.11n-HT40	2422-2452	8.95	7.85	3.80	2.40	20	0.0038	1.0000

Note: Limits are calculated from 1.1310 Table 1.

RFID and 2.4G module can transmit simultaneously, so the maximum rate of MPE is:

$$0.28 / 60.77 + 0.0187 / 1.0000 = 0.024 < 1.000$$

Therefore, the MPE requirement is deemed to be satisfied without test.

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*****