RIPPLEON LTD.

MPE ASSESSMENT REPORT

REPORT TYPE:
FCC MPE Assessment Report

MODEL:
Please see details in page 4 of this report

REPORT NUMBER:
2409B1594SHA-002

ISSUE DATE:
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Intertek Testing Services (Shanghai FTZ) Co., Ltd.
Building No.86, 1198 Qinzhou Road (North)
Caohejing Development Zone
Shanghai 200233, China

Telephone: 86 21 6127 8200
www.intertek.com

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TEST REPORT

Report no.: 2409B1594SHA-002

Applicant:	RIPPLEON LTD. 110 16th St Ste 1400, Denver, Colorado, USA, 80202
Manufacturer:	Nightend Smart Tech. Co., Ltd. No.528, Daluzhou, Meilin Street, Ninghai county, Ningbo, China
Factory:	Nightend Smart Tech. Co., Ltd. No.528, Daluzhou, Meilin Street, Ninghai county, Ningbo, China
FCC ID:	2BLBS-ROCHL2US

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

Revision History

Report No.	Version	Description	Issued Date
2409B1594SHA-002	Rev. 01	Initial issue of report	November 11, 2024

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	EV Charger
Type/Model:	ROC001W, ROC001B, ROC001G, ROC001L, ROC003W, ROC003B, ROC003G, ROC003L, ROC005W, ROC005B, ROC005G, ROC005L, ROC007W, ROC007B, ROC007G, ROC007L, ROC004W, ROC004B, ROC004G, ROC004L, ROC002W, ROC002B, ROC002G, ROC002L, ROC006W, ROC006B, ROC006G, ROC006L, ROC008W, ROC008B, ROC008G, ROC008L, ROC009W, ROC009B, ROC009G, ROC009L, ROC010W, ROC010B, ROC010G, ROC010L, NECS-ACW-7-1-US-3010, NECS-ACW-7-1-US-3018, NECS-ACW-7-1-US-3020, NECS-ACW-7-1-US-3027, NECS-ACW-7-1-US-3028, NECS-ACW-7-1-US-3110, NECS-ACW-7-1-US-3111, NECS-ACW-7-1-US-3112, NECS-ACW-7-1-US-3113, NECS-ACW-7-1-US-3114, NECS-ACW-7-1-US-3115, NECS-ACW-9.6-1-US-3010, NECS-ACW-9.6-1-US-3018, NECS-ACW-9.6-1-US-3020, NECS-ACW-9.6-1-US-3027, NECS-ACW-9.6-1-US-3028, NECS-ACW-9.6-1-US-3110, NECS-ACW-9.6-1-US-3111, NECS-ACW-9.6-1-US-3112, NECS-ACW-9.6-1-US-3113, NECS-ACW-9.6-1-US-3114, NECS-ACW-9.6-1-US-3115, NECS-ACW-11.5-1-US-3010, NECS-ACW-11.5-1-US-3018, NECS-ACW-11.5-1-US-3020, NECS-ACW-11.5-1-US-3027, NECS-ACW-11.5-1-US-3028, NECS-ACW-11.5-1-US-3110, NECS-ACW-11.5-1-US-3111, NECS-ACW-11.5-1-US-3112, NECS-ACW-11.5-1-US-3113, NECS-ACW-11.5-1-US-3114, NECS-ACW-11.5-1-US-3115
Description of EUT:	The EUT is an electric vehicle AC charger with RFID function, it supports Wi-Fi/BLE and LTE function. There are 73 models. Model "ROC00**L" differs in color. The model "NECS-ACW-**-1-US-3***" differs in the product appearance. Except for differences in specifications, appearance, and color, the key components and electrical schematics of the product are the same. Model ROC001W was tested as a representative. Here is the certificate information about the wireless modules which EUT equipped. For the Wi-Fi/BLE modular, FCC ID is XMR20211108FC41D. For the LTE modular, FCC ID is XMR201903EG25G.

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Rating: Input: L1-L2 240V AC, 60Hz

Order	Model	Rated Power	Input Current
1	ROC001W	11.5kW	48A MAX
2	ROC001B	11.5kW	48A MAX
3	ROC001G	11.5kW	48A MAX
4	ROC001L	11.5kW	48A MAX
5	ROC003W	11.5kW	48A MAX
6	ROC003B	11.5kW	48A MAX
7	ROC003G	11.5kW	48A MAX
8	ROC003L	11.5kW	48A MAX
9	ROC005W	11.5kW	48A MAX
10	ROC005B	11.5kW	48A MAX
11	ROC005G	11.5kW	48A MAX
12	ROC005L	11.5kW	48A MAX
13	ROC007W	11.5kW	48A MAX
14	ROC007B	11.5kW	48A MAX
15	ROC007G	11.5kW	48A MAX
16	ROC007L	11.5kW	48A MAX
17	ROC004W	9.6kW	40A MAX
18	ROC004B	9.6kW	40A MAX
19	ROC004G	9.6kW	40A MAX
20	ROC004L	9.6kW	40A MAX
21	ROC002W	9.6kW	40A MAX
22	ROC002B	9.6kW	40A MAX
23	ROC002G	9.6kW	40A MAX
24	ROC002L	9.6kW	40A MAX
25	ROC006W	9.6kW	40A MAX
26	ROC006B	9.6kW	40A MAX
27	ROC006G	9.6kW	40A MAX
28	ROC006L	9.6kW	40A MAX
29	ROC008W	9.6kW	40A MAX
30	ROC008B	9.6kW	40A MAX
31	ROC008G	9.6kW	40A MAX
32	ROC008L	9.6kW	40A MAX
33	ROC009W	7kW	32A MAX
34	ROC009B	7kW	32A MAX
35	ROC009G	7kW	32A MAX

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		36	ROC009L	7kW	32A MAX
		37	ROC010W	7kW	32A MAX
		38	ROC010B	7kW	32A MAX
		39	ROC010G	7kW	32A MAX
		40	ROC010L	7kW	32A MAX
		41	NECS-ACW-7-1-US-3010	7kW	32A MAX
		42	NECS-ACW-7-1-US-3018	7kW	32A MAX
		43	NECS-ACW-7-1-US-3020	7kW	32A MAX
		44	NECS-ACW-7-1-US-3027	7kW	32A MAX
		45	NECS-ACW-7-1-US-3028	7kW	32A MAX
		46	NECS-ACW-7-1-US-3110	7kW	32A MAX
		47	NECS-ACW-7-1-US-3111	7kW	32A MAX
		48	NECS-ACW-7-1-US-3112	7kW	32A MAX
		49	NECS-ACW-7-1-US-3113	7kW	32A MAX
		50	NECS-ACW-7-1-US-3114	7kW	32A MAX
		51	NECS-ACW-7-1-US-3115	7kW	32A MAX
		52	NECS-ACW-9.6-1-US-3010	9.6kW	40A MAX
		53	NECS-ACW-9.6-1-US-3018	9.6kW	40A MAX
		54	NECS-ACW-9.6-1-US-3020	9.6kW	40A MAX
		55	NECS-ACW-9.6-1-US-3027	9.6kW	40A MAX
		56	NECS-ACW-9.6-1-US-3028	9.6kW	40A MAX
		57	NECS-ACW-9.6-1-US-3110	9.6kW	40A MAX
		58	NECS-ACW-9.6-1-US-3111	9.6kW	40A MAX
		59	NECS-ACW-9.6-1-US-3112	9.6kW	40A MAX
		60	NECS-ACW-9.6-1-US-3113	9.6kW	40A MAX
		61	NECS-ACW-9.6-1-US-3114	9.6kW	40A MAX
		62	NECS-ACW-9.6-1-US-3115	9.6kW	40A MAX
		63	NECS-ACW-11.5-1-US-3010	11.5kW	48A MAX
		64	NECS-ACW-11.5-1-US-3018	11.5kW	48A MAX
		65	NECS-ACW-11.5-1-US-3020	11.5kW	48A MAX
		66	NECS-ACW-11.5-1-US-3027	11.5kW	48A MAX
		67	NECS-ACW-11.5-1-US-3028	11.5kW	48A MAX
		68	NECS-ACW-11.5-1-US-3110	11.5kW	48A MAX
		69	NECS-ACW-11.5-1-US-3111	11.5kW	48A MAX
		70	NECS-ACW-11.5-1-US-3112	11.5kW	48A MAX
		71	NECS-ACW-11.5-1-US-3113	11.5kW	48A MAX
		72	NECS-ACW-11.5-1-US-3114	11.5kW	48A MAX
		73	NECS-ACW-11.5-1-US-3115	11.5kW	48A MAX
EUT type:	☒ Tabletop ☐ Floor standing				

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Software Version:	/
Hardware Version:	/
Serial numbers:	A240915-24-001
Sample received date:	September 15, 2024
Date of test:	September 15, 2024, to October 15, 2024

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/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**

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 = Radiated transmit power in mW
G = numeric gain of transmit antenna, R = distance (cm)

As we can see from the test report 2409B1594SHA-001: 66.50 dBuV/m at 3m
@20cm = @3m + 40 × log (3/0.2) = 113.54 dBuV/m = 0.48 V/m < 60.77 V/m

The power for WIFI/BLE module refers to the certificate of FCC ID: XMR20211108FC41D.
The power for LTE module refers to the certificate of FCC ID: XMR201903EG25G.

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	2400-2483.5	7.50	5.62	2.00	1.58	20	**0.0018**	1.0000
2.4G Wi-Fi	2400-2483.5	23.50	223.87	2.00	1.58	20	**0.0706**	1.0000
GSM	850	25.81	381.06	2.29	1.69	20	0.1285	0.5495
	1900	22.81	190.98	1.59	1.44	20	0.0548	1.0000
WCDMA	Band 2	25.00	316.22	1.59	1.44	20	0.0908	1.0000
	Band 4	25.00	316.22	2.00	1.58	20	0.0998	1.0000
	Band 5	25.00	316.22	2.29	1.69	20	0.1066	0.5509
LTE	Band 2	25.00	316.22	1.59	1.44	20	0.0908	1.0000
	Band 4	25.00	316.22	2.00	1.58	20	0.0998	1.0000
	Band 5	25.00	316.22	2.29	1.69	20	0.1066	0.5498
	Band 7	25.00	316.22	3.00	1.99	20	0.1256	1.0000
	Band 12	25.00	316.22	3.26	2.11	20	0.1333	0.4665
	Band 13	25.00	316.22	4.45	2.78	20	**0.1754**	0.5197
	Band 25	25.00	316.22	1.59	1.44	20	0.0908	1.0000
	Band 26 (814-824)	25.00	316.22	2.53	1.79	20	0.1127	0.5431
	Band 26 (824-849)	25.00	316.22	2.53	1.79	20	0.1127	0.5498
	Band 38	25.00	316.22	2.06	1.60	20	0.1011	1.0000
	Band 41	25.00	316.22	3.00	1.99	20	0.1256	1.0000

Note: Limits are calculated from 1.1310 Table 1.

RFID, Wi-Fi 2.4G, LTE module can transmit simultaneously, so the maximum rate of MPE is:
0.48/60.77 + 0.0706/1 + 0.1754/0.5197 = 0.4160 < 1.000.

RFID, BLE, LTE module can transmit simultaneously, so the maximum rate of MPE is:
0.48/60.77 + 0.0018/1 + 0.1754/0.5197 = 0.3472 < 1.000.

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

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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**********