

RF EXPOSURE EVALUATION REPORT

FCC ID : 2AW3A-2NAC24ACUCM
Equipment : EV Charger
Brand Name : RIVIAN
Model Name : 2NAC24ACUCM
Marketing Name : RIVIAN WAYPOINTS CHARGER
Applicant : Rivian Automotive LLC.
14600 Myford Road, Irvine Irvine CA, 92606
Lite-On Technology Corporation
Manufacturer : 29F , No.555, Siyuan Rd., Xinzhuang Dist., New Taipei
City, Taiwan (R.O.C.)
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

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Approved by: Cona Huang / Deputy Manager



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History of this test report

Report No.	Version	Description	Issued Date
FA432616	Rev. 01	Initial issue of report	Jul. 30, 2024

**1. Description of Equipment Under Test (EUT)**

Product Feature & Specification	
EUT Type	EV Charger
Brand Name	RIVIAN
Model Name	2NAC24ACUCM
FCC ID	2AW3A-2NAC24ACUCM
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 25: 1850 MHz ~ 1915 MHz WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC : 13.56 MHz
Mode	GSM/GPRS LTE: QPSK, 16QAM WLAN: 802.11b/g/n HT20 Bluetooth LE NFC: ASK
HW Version	1
EUT Stage	Production Unit

Reviewed by: Jason Wang**Report Producer: Daisy Peng**

2. Maximum RF average output power among production units

Mode		Maximum Average power(dBm)
GSM	850	24
	1900	21
LTE(Cat-M1)	Band 2	24
	Band 4	23
	Band 5	24
	Band12	24
	Band 13	24
	Band 25	25
LTE(NB-IOT)	Band 2	25
	Band 4	25
	Band 5	25
	Band12	25
	Band 13	25
	Band 25	25
2.4GHz WLAN		21
BLE		-5

Mode	EIRP(mW)
NFC	0.0000015

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
GSM/GPRS 850 (1 Tx slot)	2.90	24.00	26.9	0.49	61.66	0.012	0.549	0.022
GSM/GPRS 1900 (1 Tx slot)	3.20	21.00	24.2	0.26	33.11	0.007	1.000	0.007
Cat-M1	LTE Band 2	3.20	24.00	27.2	0.52	524.81	0.104	0.104
	LTE Band 4	2.90	23.00	25.9	0.39	389.05	0.077	0.077
	LTE Band 5	2.90	24.00	26.9	0.49	489.78	0.097	0.177
	LTE Band 12	3.90	24.00	27.9	0.62	616.60	0.123	0.263
	LTE Band 13	2.80	24.00	26.8	0.48	478.63	0.095	0.184
	LTE Band 25	3.20	25.00	28.2	0.66	660.69	0.132	0.132
NB-IOT	LTE Band 2	3.20	25.00	28.2	0.66	660.69	0.132	0.132
	LTE Band 4	2.90	25.00	27.9	0.62	616.60	0.123	0.123
	LTE Band 5	2.90	25.00	27.9	0.62	616.60	0.123	0.549
	LTE Band 12	3.90	25.00	28.9	0.78	776.25	0.155	0.466
	LTE Band 13	2.80	25.00	27.8	0.60	602.56	0.120	0.518
	LTE Band 25	3.20	25.00	28.2	0.66	660.69	0.132	1.000
WLAN2.4GHz Band	2.2	21.0	23.2	0.21	208.93	0.042	1.000	0.042
Bluetooth	0.5	-5.0	-4.5	0.00	0.35	0.00007	1.000	0.00007
NFC			0.0000015	0.001	1.00	0.00020	0.979	0.00020

Note:

1. The NFC EIRP is convert by 3meter field strength according to NFC RF Report

4.2. Collocated Power Density Calculation

WWAN Power Density / Limit	WLAN Power Density / Limit	Bluetooth Power Density / Limit	NFC Power Density / Limit	Σ (Power Density / Limit) of WWAN+WLAN+Bluetooth+NFC
0.332	0.042	0.00007	0.00020	0.37427

Note:

1. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN + Bluetooth + NFC.
2. Considering the WWAN module collocation with the WLAN, Bluetooth and NFC transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 4 collocated transmitters is compliant

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.