



Radio Frequency Exposure Evaluation Report

For:
Rivian Automotive, LLC

Brand:
-

Marketing Name:
Radio Farm (RFM)

Model Name:
RFM1.0

Product Description:
Radio Farm (RFM)

FCC ID: contains 2AW3A-MRN932N & 2AW3A-MRW962B
ISED: contains 26958-MRN932N & 26958-MRW962B

Applied Rules and Standards:
CFR Part1 (1.1307 & 1.1310), Part 2 (2.1091),
FCC KDB 447498 D01 General RF Exposure Guidance v06
ISED RSS-102 Issue 6

REPORT #: EMC_RIVIA_100_25001_FCC_RF_Exposure_Rev1

DATE: 2025-12-19



IC recognized #
3462B

CETECOM Inc.

411 Dixon Landing Road ♦ Milpitas, CA 95035 ♦ U.S.A.

Phone: + 1 (408) 586 6200 ♦ Fax: + 1 (408) 586 6299 ♦ E-mail: contact@cetecom.com ♦ <http://www.cetecom.com>

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1 Assessment

This RF Exposure evaluation report provides evidence for compliance of the below identified device with the RF Exposure limits for mobile devices as defined in FCC CFR Part 1 (1.1307 & 1.1310), Part 2 (2.1091 & 2.1093) and ISED standard RSS-102 issue 6 under worst case conditions (measured or rated RF output power, antenna gain, distance towards human body, multiple transmitter information as presented by the applicant).

In addition, maximum antenna gain or minimum distance towards the human body is calculated respectively, where relevant.

The device meets the limits as stipulated by the above given FCC and ISED rule parts based on available specifications for worst-case conditions at 20 cm distance to the body.

Company	Description	Model #
Rivian Automotive, LLC	Radio Farm (RFM)	RFM1.0

Report Authorized by:

Responsible for testing Laboratory:

2025-12-19

Compliance

Alvin, Ilarina
(Director of EMC Services)Alvin
ILARINADigitally signed by Alvin
ILARINA
Date: 2025.12.22 10:03:59
-08'00'

Date	Section	Name	Signature
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Responsible for the Report:

2025-12-19

Compliance

Guangcheng Huang
(Senior EMC Test Engineer)

Date	Section	Name	Signature
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The test results of this test report relate exclusively to the test item specified in Section 3.

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2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Street Address:	411 Dixon Landing
City/Zip Code	Milpitas, 95035 CA
Country	USA
Telephone:	+ 1 (408) 586 6200
Fax:	+ 1 (408) 586 6299
EMC Lab Manager:	Alvin Ilarina
Project Manager:	Ruby Hall

2.2 Identification of the Client

Client's Name:	Rivian Automotive, LLC
Street Address:	14600 Myford Road
City/Zip Code	Irvine CA 92606
Country	USA

2.3 Identification of the Manufacturer

Manufacturer's Name:	same as client
Manufacturers Address:	same as client
City/Zip Code	same as client
Country	same as client

3 Equipment Under Test (EUT)

3.1 EUT Specifications

Model No:	RFM1.0
Marketing Name:	Radio Farm (RFM)
HW Version:	Rev.C
SW Version:	Not applicable
FCC ID:	contains 2AW3A-MRN932N & 2AW3A-MRW962B
ISED:	contains 26958-MRN932N & 26958-MRW962B
FWIN:	Not Applicable
HVIN:	RN932N, RW962B
PMN:	Radio Farm (RFM)
Product Description:	Radio Farm (RFM)
Power Supply / Rated operating Voltage Range:	9.6V (Low) 16V (High) 13.5V (Nominal)
Operating Temperature Range	-40c to 85c
Sample Revision	pre-production
EUT Dimensions	47.2x8x4.04 cm
Note: All information provided by the client.	

3.2 Radio Specifications

Embedded Radio Technologies	3G,4G,5G,Wi-Fi6 (Cellular & Wi-Fi)
Frequency Range / number of channels:	See Annex 1
Antenna Type / Gain	Stamped Metal/4.89, 5.16,4.16, 5.14, Wi-Fi-1: 4.609 [2.4GHz], 7.85[5GHz], Wi-Fi-2: 4.15[2.4GHz], 6.9[5GHz], Cellular antenna LTE_1: 3.59 [663 MHz] (in dBi)
Modes of Operation	Always on
Note: All information provided by the client.	

4 RF Exposure Exemption Limits for FCC and IC

4.1 FCC Rule Part

4.1.1 Single RF source

§ 2.1091(c)(1)

Evaluation of compliance with the exposure limits in § 1.1310 of this chapter, and preparation of an EA if the limits are exceeded, is necessary for mobile devices with single RF sources having either more than an available maximum time-averaged power of 1 mW or more than the ERP listed in Table 1 to § 1.1307(b)(3)(i)(C), whichever is greater.

TABLE 1 TO § 1.1307(b)(3)(i)(C)—SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.

For mobile devices not exempt by § 1.1307(b)(3)(i)(C) at distances from 20 centimeters to 40 centimeters and frequencies from 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 of this chapter is necessary if the ERP of the device is greater than $ERP_{20\text{cm}}$ in the formula below. If the ERP of a single RF source at distances from 20 centimeters to 40 centimeters and frequencies from 0.3 GHz to 6 GHz is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP) in comparison with the following formula only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

$$P_{th}(\text{mW}) = ERP_{20\text{ cm}}(\text{mW}) = \begin{cases} 2040f & 0.3\text{ GHz} \leq f < 1.5\text{ GHz} \\ 3060 & 1.5\text{ GHz} \leq f \leq 6\text{ GHz} \end{cases}$$

§ 2.1093(c)(1)

The following formula shall only be used in conjunction with portable devices not exempt by § 1.1307(b)(3)(i)(C) at distances from 0.5 centimeters to 20 centimeters and frequencies from 0.3 GHz to 6 GHz

$$P_{th}(\text{mW}) = \begin{cases} ERP_{20\text{ cm}}(d/20\text{ cm})^x & d \leq 20\text{ cm} \\ ERP_{20\text{ cm}} & 20\text{ cm} < d \leq 40\text{ cm} \end{cases}$$

4.1.2 Multiple RF sources

§ 1.1307(b)(3)(ii)(A)

Exempt, if the available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required).

§ 1.1307(b)(3)(ii)(B)

Exempt, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

4.2 IC Rule Part

4.2.1 Exemption limits for routine evaluation on field reference level exposure according to RSS-102 i6, cl.6.6

Frequency [MHz]	Time-averaged EIRP [W]
Below 20	1
20-48	$4.49/f^{0.5}$
48-300	0.6
300-6000	$1.31 \cdot 10^{-2} \cdot f^{0.6834}$
Above 6000	5

5 Evaluations

Analysis of RF Exposure for simultaneous transmission

- Radiation source to human body distance: min. 20cm.
- Evaluations are based on ERP/EIRP measured or calculated from given antenna gain and conducted output power.
- Multiple radiation sources that transmit simultaneously: Cellular and Wi-Fi dual band simultaneous.

5.1 FCC Exemption

Radio	F Low [MHz]	Output Power [dBm]	Output Power [mW]	AG [dBi]	AG_i linear	ERP [mW]	ERP _{20cm} [mW]	Quantity	Limit ratio
LTE Band 71	663	24.50	281.8	3.59	2.29	392.79	1353	ERP	29%
Wi-Fi 2.4 GHz	2412	18.77	75.3	7.17	5.21	239.42	3060	ERP	7.8%
Wi-Fi 5 GHz	5580	15.97	39.5	10.22	12.52	253.60	3060	ERP	8.3%
Sum	-	-	-	-	-	-	-	-	45.2%

Note:

1. leverage results from cellular module RF exposure report (FCC ID: 2AX2URN932N, report no.: FA420801 by SPORTON LAB)
2. leverage results from Wi-Fi module report (FCC ID: 2AX2URW962B, report no.: SZCR241100443603 by SGS-CSTC)
3. worst case from each module report picked for multiple RF sources RF exposure evaluation
4. Antenna gain provided by test report 2025_Rivian_RFM_passive_antenna_report by CETECOM.
5. Calculation is based on separation of 20 cm to human body.
6. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
7. Choose the maximum power to do MPE analysis.

Conclusion:

The worst-case simultaneous transmission sums up to 45.2% and is within the exemption limit of 100%. The EUT is exempt from RF exposure evaluation.

5.2 IC Exemption

Radio	F Low [MHz]	Output Power [dBm]	Output Power [mW]	AG [dBi]	AG_i linear	EIRP [W]	EIRP Limit [W]	Limit ratio
LTE Band 71	663	24.50	281.8	3.59	2.29	0.64	1.11	58%
Wi-Fi 2.4 GHz	2412	18.77	75.3	7.17	5.21	0.39	2.68	14.6%
Wi-Fi 5 GHz	5580	15.97	39.5	10.22	10.52	0.42	4.76	8.7%
Sum	-	-	-	-	-	-	-	81.4%

Note:

1. leverage results from cellular module RF exposure report (FCC ID: 2AX2URN932N, report no.: FA420801 by SPORTON LAB)
2. leverage results from Wi-Fi module report (FCC ID: 2AX2URW962B, report no.: SZCR241100443603 by SGS-CSTC)
3. worst case from each module report picked for multiple RF sources RF exposure evaluation
4. Antenna gain provided by test report 2025_Rivian_RFM_passive_antenna_report by CETECOM.
5. Calculation is based on separation of 20 cm to human body.
6. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
7. Choose the maximum power to do MPE analysis.

Conclusion:

The worst-case simultaneous transmission sums up to 81.4% and is within the exemption limit of 100%. The EUT is exempt from RF exposure evaluation.

Test Report #: EMC_RIVIA_100_25001_FCC15247_RF_Exposure_Rev1

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2AW3A-MRW962B

Date of Report 2025-12-19

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ISED: contains 26958-MRN932N & 26958-
MRW962B



6 Revision History

Date	Report name	Changes to report	Prepared by
2025-12-15	EMC_RIVIA_100_25001_RF_Exposure	Initial version	Guangcheng Huang
2025-12-19	EMC_RIVIA_100_25001_RF_Exposure_Rev1	Update antenna gain	Guangcheng Huang

[illegible]

LTE	B2	1930	1960	1990	1850	1880	1910	1.4,3,5,10,15,20		3	23	yes
	B4	2110	2132	2155	1710	1732	1755	1.4,3,5,10,15,20		3	23	yes
	B5	869	881	894	824	836.5	849	1.4,3,5,10		3	23	
	B12	729	737	746	699	707	716	1.4,3,5,10		3	23	
	B13	746	751	756	777	782	787	5,10		3	23	
	B14	758	763	768	788	793	798	5,10		3	23	
	B17	734	740	746	704	710	716	5,10		3	23	
	B41	2496	2593	2690	2496	2593	2690	5,10,15,20		2 (standalone mode only)	25	yes
	B66	2110	2155	2200	1710	1745	1780	1.4,3,5,10,15,20		3	23	yes
	B71	617	634	652	663	680	698	5,10,15,20		3	23	
5G	n2	1930	1960	1990	1850	1880	1910	5,10,15,20,25,30,40	15	3	23	yes
	n5	869	881	894	824	836.5	849	5,10,15,20	15	3	23	
	n41	2496	2593	2690	2496	2593	2690	20, 30, 40, 50, 60, 70, 80, 90, 100	30	3	23	yes
	n66	2110	2155	2200	1710	1745	1780	5,10,15,20,25,30,40	15	3	23	yes
	n71	617	634	652	663	680	698	5,10,15,20	15	3	23	
	n77	3300	3750	4200	3300	3750	4200	30, 40, 50, 60, 70, 80, 90, 100	30	2 (for EN-DC)	26	yes
	n78	3300	3550	3800	3300	3550	3800	30, 40, 50, 60, 70, 80, 90, 100	30	2 (for EN-DC)	26	yes

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