



Radio Frequency Exposure Evaluation Report

For:
Rivian Automotive, LLC

Brand:
-

Marketing Name:
Autonomy Experience Module

Model Name:
AXM2.5

Product Description:
Autonomy Experience Module

FCC ID: contains 2AW3A-MRB931A
ISED: contains 26958-MRB931A

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_101_25001_FCC_RF_Exposure

DATE: 2025-12-15



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	Autonomy Experience Module	AXM2.5

Report Authorized by:

Responsible for testing Laboratory:

2025-12-15	Compliance	Alvin Ilarina (Director of EMC Services)	Alvin ILARINA Digitally signed by Alvin ILARINA Date: 2025.12.15 19:43:23 -08'00'
Date	Section	Name	Signature

Responsible for the Report:

2025-12-15	Compliance	Guangcheng Huang (Senior EMC Engineer)	
Date	Section	Name	Signature

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

CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM Inc. USA.

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:	AXM2.5
Marketing Name:	Autonomy Experience Module
HW Version:	RevC
SW Version:	not applicable
FCC ID:	contains 2AW3A-MRB931A
ISED:	contains 26958-MRB931A
FWIN:	not applicable
HVIN:	RB931A
PMN:	Autonomy Experience Module
Product Description:	Autonomy Experience Module
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	38.8 x 23.5 x 7.5cm
Note: All information provided by the client.	

3.2 Radio Specifications

Embedded Radio Technologies	Bluetooth, GNSS
Frequency Range / number of channels:	BT Classic 2.402GHz to 2.480GHz BT Low Energy Radio 2.402GHz to 2.480GHz
Antenna Type / Gain	BT/BLE: 2.22 dBi (2402-2480 MHz) GNSS Ant. External, active Gain L1:36, L2:35 L5:36
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.

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	Verdict
BT	2480	12.79	19.01	2.22	1.67	19.33	3060	ERP	Exempt
BLE	2440	13.21	20.94	2.22	1.67	21.29	3060	ERP	Exempt

Note:

1. Exemption option: § 1.1307(b)(3)(i)(B)
2. leverage results from module RF exposure report (FCC ID: 2AX2URB931A, report no.: SZCR250400134504 by SGS-CSTC)
3. Antenna gain provided by test report 2024_Rivian_WiFi_BT_Internal_passive_antenna_report by CETECOM.
4. Calculation is based on separation of 20 cm to human body.
5. BT and BLE don't transmit simultaneously.
6. Choose the maximum power to do MPE analysis.

Conclusion:

The ERP of each RF source is below the exemption threshold, hence 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]	Verdict
BT	2480	12.79	19.01	2.22	1.67	0.0317	2.74	Exempt
BLE	2440	13.21	20.94	2.22	1.67	0.0349	2.71	Exempt

Note:

1. Exemption option: RSS-102 i6, cl.6.6
2. leverage results from module RF exposure report (FCC ID: 2AX2URB931A, report no.: SZCR250400134504 by SGS-CSTC)
3. Antenna gain provided by test report 2024_Rivian_WiFi_BT_Internal_passive_antenna_report by CETECOM.
4. Calculation is based on separation of 20 cm to human body.
5. BT and BLE don't transmit simultaneously.
6. Choose the maximum power to do MPE analysis.

Conclusion:

The ERP of each RF source is below the exemption threshold, hence the EUT is exempt from RF exposure evaluation.

6 Revision History

Date	Report name	Changes to report	Prepared by
2025-12-15	EMC_RIVIA_101_25001_RF_Exposure	Initial version	Guangcheng Huang

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