RF Exposure Evaluation Report

Report No.:	JYTSZ-R12-2400347
Applicant:	Voxx Electronics Corporation
Address of Applicant:	2365 Pontiac Road, Auburn Hills, Michigan 48326 - USA
Equipment Under Test (EUT)	
Product Name:	KiB Valet Fob
Model No.:	RSR1
Trade mark:	N/A
FCC ID:	EZSRSR1
Applicable standards:	KDB 447498 D04 Interim General RF Exposure Guidance v01
Date of sample receipt:	26 Mar., 2024
Date of Test:	27 Mar., to 09 Apr., 2024
Date of report issue:	09 Apr., 2024
Test Result:	PASS

Project by:	***Project Engineer***	***Date:***	*09 Apr., 2024*
Reviewed by:	***Senior Engineer***	***Date:***	*09 Apr., 2024*
Approved by:	***Manager***	***Date:***	*09 Apr., 2024*

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

1 Version

Version No.	Date	Description
00	*09 Apr., 2024*	*Original*

2 Contents

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3 General Information

3.1 Client Information

Applicant:	Voxx Electronics Corporation
Address:	2365 Pontiac Road, Auburn Hills, Michigan 48326 - USA
Manufacturer:	Nutek Coropration
Address:	no. 167, Lane 235, Bauchiau Rd, Xindian District, New Taeipi City 23145, Taiwan
Factory:	Voxx Automotive Corporation
Address:	2351 J. Lawson Blvd, Orlando, FL 32824 - USA

3.2 General Description of E.U.T.

Product Name:	KiB Valet Fob
Model No.:	RSR1
Operation Frequency:	BLE: 2402MHz~2480MHz
Modulation technology:	BLE: GFSK
Antenna Type:	PCB Antenna
Antenna gain:	BLE: 1.95 dBi (declare by Applicant);
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

3.3 Operating Modes

Operating mode	Detail description
BLE mode	Keep the EUT in continuously transmitting in BLE mode

3.4 Additions to, deviations, or exclusions from the method

No

3.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC – Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. Has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS – Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. Is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

- **A2LA – Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

3.6 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.
Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info-JYTee@lets.com, Website: http://jyt.lets.com

4 Technical Requirements Specification

4.1 Limits

According to KDB 447498 D04 Interim General RF Exposure Guidance v01 RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices.

RF Exposure Test Exemptions for Single Source

SAR-based Exemption

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 portable devices having single RF sources with more than an available maximum time-averaged power of 1 mW, more than the ERP listed in Table 1 to §1.1307(b)(3)(i)(C), or more than the P_{th} in the following formula, whichever is greater. 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.

$$P_{\text{th}}\ (\text{mW}) = \begin{cases} ERP_{20\ \text{cm}}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\ \text{cm}} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases} \qquad \text{(B. 2)}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ \text{cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

$$P_{\text{th}}\ (\text{mW}) = ERP_{20\ \text{cm}}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases} \qquad \text{(B. 1)}$$

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

4.2 Result

Frequency (MHz)	Maximum Output power (dBm)	Maximum Output power (mW)	Distance (cm)	Limits for General Population/ Uncontrolled Exposure (mW)
BLE				
2402	1.696	1.478	0.5	2.78

Note: Just the worst case mode was shown in report.

4.3 Conclusion

Cuz 1.478 mW< 2.78 mW ,the device is exempt from the SAR test and satisfies RF exposure evaluation.

------End of report------