TEST REPORT

Applicant:	Jiangsu Niu Electric Technology Co., Ltd
Address:	No.387 Changting Road, West Taihu Science and Technology Industrial Park, Changzhou City, Jiangsu P.R. China
Equipment Type:	NIU Kick Scooter
Model Name:	KQi Air(refer to section 2.4)
Brand Name:	NIU
FCC ID:	2AZ6G-KAYC3121
Test Standard:	47 CFR Part 2.1093 KDB 447498 D01 v06
Sample Arrival Date:	Aug. 28, 2023
Test Date:	Aug. 28, 2023 - Sep. 05, 2023
Date of Issue:	Oct. 08, 2023

ISSUED BY:

Kunshan Balun Communications Technology Co., Ltd.

Tested by: Li Yupeng **Checked by:** Ye Feng **Approved by:** Luo Biao

(General Manager)

Revision History

Version	Issue Date	Revisions Content
Rev. 01	Sep. 25, 2023	Initial Issue
Rev. 02	Oct. 08, 2023	Update Section 5 ASSESSMENT RESULT. The original report is invalid.

TABLE OF CONTENTS

1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Kunshan Balun Communications Technology Co., Ltd.
Address	Room 101, Building 5, No. 1689, Zizhu Road, Yushan, Kunshan, Jiangsu, China

1.2 Test Location

Name	Kunshan Balun Communications Technology Co., Ltd.
Location	Room 101, Building 5, No. 1689, Zizhu Road, Yushan, Kunshan, Jiangsu, China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as an accredited testing laboratory. The designation number is CN1352.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Jiangsu Niu Electric Technology Co., Ltd
Address	No.387 Changting Road, West Taihu Science and Technology Industrial Park, Changzhou City, Jiangsu P.R. China

2.2 Manufacturer Information

Manufacturer	Jiangsu Niu Electric Technology Co., Ltd
Address	No.387 Changting Road, West Taihu Science and Technology Industrial Park, Changzhou City, Jiangsu P.R. China

2.3 Factory Information

Factory	Jiangsu Niu Electric Technology Co., Ltd
Address	No.387 Changting Road, West Taihu Science and Technology Industrial Park, Changzhou City, Jiangsu P.R. China

2.4 General Description for Equipment under Test (EUT)

EUT Name	NIU Kick Scooter
Model Name Under Test	KQi Air
Series Model Name	KQi Air X
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in material. Details please refer to the difference declaration file.
Sample No.	SC-EC2380220-S06
Hardware Version	N/A
Software Version	N/A

2.5 Ancillary Equipment

N/A

Technical Information

All Network and Wireless connectivity for EUT	Bluetooth (BLE) RFID

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	Bluetooth; RFID	
Frequency Range	Bluetooth	2400 ~ 2483.5 MHz
Antenna Type	Bluetooth	PCB Antenna
Exposure Category	General Population/Uncontrolled Exposure	
EUT Type	Portable Device	

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices
2	KDB 447498 D01 v06	KDB 447498 General RF Exposure Guidance D01 v06

4 DEVICE CATEGORY AND LEVELS LIMITS

Portable Derives:

CFR Title 47 §2.1093(b)

(b) For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

FCC KDB 447498 D01 General RF Exposure Guidance v06 Limit

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition, listed below, is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ⩽ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [$\sqrt{}$ f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

Where

- f (GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ⩽ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

5 ASSESSMENT RESULT

5.1 Output Power

Mode	Bluetooth
Conducted Power (dBm)	0.92
Antenna Gain (dBi)	-0.93
EIRP	-0.01
Note: This report listed the worst case conducted power value, please refer to BL-EC2380297-601 report for more details.	

5.2 Turn-up power

Mode	Conducted Power Range (dBm)	EIRP Range (dBm)
Bluetooth	[-1.00,1.00]	[-2.00,0.00]

5.3 RF Exposure Evaluation Result

Mode	Tune-up limit power (dBm)	Maximum power (mw)	Distance (mm)	Calculation Frequency (MHz)	Calculation Results	Threshold Value	Calculation Results /Threshold Value	Verdict
Bluetooth	1.00	1.2589	5	2480	0.3965	3.0	0.1322	Compliance

5.4 Collocated Power Density Calculation

Evolution mode	Frequency(MHz)	Calculation Results /Threshold Value	Σ(Calculation Results /Threshold Value) of Bluetooth + RFID	Verdict
Bluetooth	2400MHz ~ 2483.5MHz	0.1322	**0.1322**	Pass
RFID	13.56MHz	0.0000		

Note:

1. Σ(Calculation Results /Threshold Value): This is a summation of [(Calculation Results for each transmitter/ antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for Bluetooth + RFID.
2. Both of the RFID/Bluetooth can transmit simultaneously, the formula of calculated the MPE is
   CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1
   CPD = Calculation power
   LPD = Limit of power
3. The worst-case situation is 0.1322, which is less than “1”. This confirmed that the device comply with FCC 1.1310 MPE limit.
4. The DUT work frequency range used is 2400 MHz ~ 2483.5 MHz and 13.56 MHz the result close to the limit by the above formula, so we select worst case power to calculate the exclusion power threshold.
5. More power list please refer to BL-EC2380297-601 test report.
6. RFID RF Exposure Evaluation Result test result please refer to BL-EC2380297-702 test report.

5.5 Conclusion

This EUT is deemed to comply with the reference level limits , therefore the basic restrictions are compliant with human exposure limits.

Statement

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--END OF REPORT--