

TEST REPORT

Applicant: BeiJing Stronglink Technology Co., Ltd.
Address: A402, Building 8, No. 97, Changping Road, Shahe Town, Changping District, Beijing (Changping Demonstration Park)
Equipment Type: NFC Writer Module
Model Name: SL040
Brand Name: Stronglink
FCC ID: 2A6JP-SL040
Test Standard: 47 CFR Part 2.1093
KDB 447498 D01 v06
Test Date: Apr. 28, 2022 ~ May 18, 2022
Date of Issue: Jun. 01, 2022

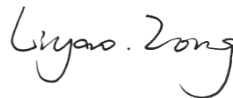
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Shenzhen BALUN Technology Co., Ltd.

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(Chief Engineer)



Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>May 18, 2022</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>May 27, 2022</u>	<u>Add serial number in section 2.4 and replace the standard</u>
<u>Rev. 03</u>	<u>Jun. 01, 2022</u>	<u>Update calculation results in section 5.3</u>

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.
Description	All measurement facilities used to collect the measurement data are located at Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	BeiJing Stronglink Technology Co., Ltd.
Address	A402, Building 8, No. 97, Changping Road, Shahe Town, Changping District, Beijing (Changping Demonstration Park)

2.2 Manufacturer Information

Manufacturer	BeiJing Stronglink Technology Co., Ltd.
Address	A402, Building 8, No. 97, Changping Road, Shahe Town, Changping District, Beijing (Changping Demonstration Park)

2.3 Factory Information

Factory	BeiJing Stronglink Technology Co., Ltd.
Address	A402, Building 8, No. 97, Changping Road, Shahe Town, Changping District, Beijing (Changping Demonstration Park)

2.4 General Description for Equipment under Test (EUT)

EUT Name	NFC Writer Module
Model Name Under Test	SL040
Series Model Name	N/A
Description of Model name differentiation	N/A
Serial Number	220504000001
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Note: Not applicable.

2.6 Technical Information

Network and Wireless connectivity	NFC
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	NFC	
Frequency Range	NFC	13.56 MHz
Antenna Type	NFC	PCB Antenna
Exposure Category	General Population/Uncontrolled Exposure	
EUT Stage	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.

a) 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:

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

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.

b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):

1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz

2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50$

mm) · 10}] mW, for > 1500 MHz and \leq 6 GHz

c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$

2) For test separation distances \leq 50 mm, the power threshold determined by the equation in c) 1)

for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$

3) SAR measurement procedures are not established below 100 MHz.

5 ASSESSMENT RESULT

5.1 Output Power

Mode	Max. E-Field strength (dBuV/m)	Max. EIRP Power (dBm)
NFC	46.84	-37.96

Note 1: This report listed the worst case power value, please refer to BL-SZ2240686-401 test report for more details.

Note 2:

The value of maximum peak output power is according to the method described in ANSI C63.10 clause 11.12.2.2

General procedure for conducted measurements in restricted bands:

a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).

b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)

c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies \leq 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).

d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).

e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = \text{EIRP} - 20\log D + 104.8$$

where:

E = electric field strength in dB μ V/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

5.2 Turn-up power

Mode	Range (dBm)
NFC	(-39.00)-(-37.00)

5.3 RF Exposure Evaluation Result

Mode	Tune-up limit power (dBm)	Distance (mm)	Calculation Frequency (MHz)	Calculation Results (mW)	Threshold Value (mW)	Verdict
NFC	-37.00	5	13.56	0.0002	443.0	Compliance

Note: The threshold power value according KDB 447498 D01 v06 section 4.3.1 c) 2).

5.4 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--