MEASUREMENT REPORT

RF Exposure Evaluation Declaration

Applicant: BEIJING STRONGLINK TECHNOLOGY CO,. LTD.

Address: Building C No.39 Xi'erqi street Haidian district, Beijing, 100085 China

Product: NFC MIFARE MODULE

Model No.: SL060

Standards: EN 50364: 2010
Radiation Protection Series Publication No.3

Result: Complies

Test Date: October 27 ~ November 07, 2019

Reviewed By : Sunny Sun
(Sunny Sun)

Approved By : Robin Wu
(Robin Wu)

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.
The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
1910RSU050-E2	Rev. 01	Initial report	11-28-2019	Valid

1. General Information

1.1. Applicant

BEIJING STRONGLINK TECHNOLOGY CO,. LTD.
Building C No.39 Xi'erqi street Haidian district, Beijing, 100085 China

1.2. Manufacturer

BEIJING STRONGLINK TECHNOLOGY CO,. LTD.
Building C No.39 Xi'erqi street Haidian district, Beijing, 100085 China

1.3. Testing Facility

Test Site

MRT Technology (Suzhou) Co., Ltd

Test Site Location

D8 Building, Youxin Industrial Park, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- **MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.**
- **MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.**
- **MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.**
- **MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.**

ilac-MRA A2LA

Accredited Laboratory

A2LA has accredited

MRT TECHNOLOGY (SUZHOU) CO., LTD.

Suzhou, Jiangsu, People's Republic of China

for technical competence in the field of

Electrical Testing

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. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

Presented this 24th day of July 2018.

President and CEO
For the Accreditation Council
Certificate Number 3628.01
Valid to August 31, 2020

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

2. RF Exposure Evaluation

2.1. Limits

The electronic and electro-technical apparatus shall comply with the basic restriction as specified in Annex II of Council Recommendation 1999/519/EC.

The reference levels in the Council Recommendation 1999/519/EC on public exposure to electromagnetic fields are derived from the basic restrictions using worst-case assumptions about exposure.

According to EN50364, the reference level listed in the following table shall be used to evaluate the environment impact of human exposure human exposure to electromagnetic fields (0 Hz - 300 GHz) as specified in 1999/519/EC.

Frequency Range	E-field Strength (V/m)	H-field Strength (A/m)	B-field (μT)	Equivalent plane wave power density Seq (W/m2)
0-1 Hz	–	3.2×10^4	4×10^4	–
1-8 Hz	10000	$3.2 \times 10^4/f^2$	$4 \times 10^4/f^2$	–
8-25 Hz	10000	4000/f	5000/f	–
0.025-0.8 kHz	250/f	4/f	5/f	–
0.8-3 kHz	250/f	5	6.25	–
3-150 kHz	87	5	6.25	–
0.15-1 MHz	87	0.73/f	0.92/f	–
1-10 MHz	$87/f^{1/2}$	0.73/f	0.92/f	–
10-400 MHz	28	0.73	0.092	2
400-2000 MHz	$1.375\ f^{1/2}$	$0.0037\ f^{1/2}$	$0.0046\ f^{1/2}$	f/200
2-300G Hz	61	0.16	0.20	10

Note:

1. f as indicated in the frequency range column.
2. For frequencies between 100 kHz and 10 GHz, S_{eq}, E^2, H^2 and B^2 are to be averaged over any six-minute period.
3. For frequencies exceeding 10 GHz, S_{eq}, E^2, H^2 and B^2 are to be averaged over any $68 / f^{1.05}$ minute period (f in GHz).

2.2. RF Exposure Calculations

A radiation exposure statement" this equipment should be installed and operated with minimum distance between the antenna and your body" is shown on the user manual, so human exposure to the electromagnetic field of this product is at far-field region under normal use.

Far-field region Calculation Formula:

P watts are radiated, from a point, uniformly over the surface of sphere of radius r.

In free space

E = η0H = [30*P*G(θ,ϕ)]^0.5 / r

Where

G = antenna gain relative to an isotropic antenna

θ,ϕ = elevation and azimuth angles to point of investigation

r = distance from observation point to the antenna (m)

η = characteristic impedance of free space

Safety Distance Calculation Formula:

The power flux:

$$S = \frac{P*G_{(\theta,\phi)}}{4*\pi*r^2}$$

So safety distance as following:

$$r = \sqrt{\frac{P*G}{4*\pi*S}}$$

P = input power of the antenna

G = antenna gain relative to an isotropic antenna

θ, Φ = elevation and azimuth angles.

r = distance from the antenna to the point of investigation

2.3. The Result of RF Exposure Evaluation

Product	NFC MIFARE MODULE	Temperature	20°C
Test Engineer	Vincent Yu	Relative Humidity	52%
Test Site	AC2	Test Date	2019/11/07
Test Mode	Transmit		

E-field Strength			
Test Distance (cm)	Measure Value (V/m)	Limit (V/m)	Result
0.01	2.34	28	Pass
H-field Strength			
Test Distance (cm)	Measure Value (A/m)	Limit (A/m)	Result
0.01	0.0035	0.73	Pass

2.4. Measurement Uncertainty

The following measurement uncertainty can be obtained from EN 62369-1.

Frequency	Measurement	Numerical Modeling
1 MHz to 30 MHz	+41 %, 30 % (+/ 3 dB)	+/ 40 %

2.5. List of Measuring Instrument

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
CARRIES SENSOR	narda	EMR-20	MRTSUE10033	1 year	2020/07/27
Temperature/Humidity Meter	Minggao	ETH529	MRTSUE06170	1 year	2019/12/13
Anechoic Chamber	RIKEN	Chamber-AC2	MRTSUE06213	1 year	2020/04/30

The End

Appendix - EUT Photograph

Refer to “1910RSU050-EE” file.