




RF EXPOSURE EVALUATION REPORT

Application No.: GZEM2007013987CR
Applicant: Guangzhou Andea Electronics Technology Co., Ltd.
Address of Applicant: Room 401, Building H, Jingye San Street, Yushu Industrial Park, Economic And Technological Development Zone, Guangzhou
Manufacturer: Guangzhou Andea Electronics Technology Co., Ltd.
Address of Manufacturer: Room 401, Building H, Jingye San Street, Yushu Industrial Park, Economic And Technological Development Zone, Guangzhou
Factory: Guangzhou Andea Electronics Technology Co., Ltd.
Address of Factory: Room 401, Building H, Jingye San Street, Yushu Industrial Park, Economic And Technological Development Zone, Guangzhou
Equipment Under Test (EUT):
FCC ID: 2AFI8-RL865
EUT Name: Micropower Reader
Model No.: RL865
Trade Mark: 
Standard(s): 47 CFR Part 1.1307, Part 1.1310
Date of Receipt: 2020-07-27
Date of Test: 2020-08-12 to 2020-09-08
Date of Issue: 2020-09-09

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.



Kobe Jian
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2020-09-09		Original

Authorized for issue by:			
Tested By		2020-08-12 to 2020-09-08	
Checked By		2020-09-09	
	Jackson_Yuan /Project Engineer	Date	
	Ricky_Liu /Reviewer	Date	



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2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
RF Exposure	47 CFR Part 1.1307, Part 1.1310	CFR 47 Part 1.1310	CFR 47 Part 1.1310	Pass



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4 General Information

4.1 Details of E.U.T.

Power Supply:	DC 5V
Test Voltage:	AC 120 V, 60 Hz powered by USB ports of PC
Cable:	USB cables with Ferrite (unshielded, 3 m)
Antenna Gain	0dBi declared by applicant
Antenna Type	PCB Antenna
Channel Spacing	N/A
Modulation Type	ASK declared by applicant
Number of Channels	1
Operation Frequency	13.56MHz
Function:	Micropower Reader with RF ID function
S/N	GZ_SP_20200733903
Hardware Version	RL865_V00.05
Firmware	SV01
Test Software	R-Tool.exe
Power Setting	Default and can not be changed by user

4.2 Description of Support Units

The EUT has been evaluated as an independent unit.

4.3 Evaluation Location

All evaluations were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
 Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No evaluations were sub-contracted.



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4.4 Test Facility

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

● **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

● **FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

● **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

● **Industry Canada (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● **VCCI (Registration No.: R-12460, C-12584, G-10449 and T-11179)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-10449 and T-11179 respectively.

● **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



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4.5 Deviation from Standards

None

4.6 Abnormalities from Standard Conditions

None



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5 Radio Spectrum Technical Requirement

5.1 RF Exposure

5.1.1 Test Requirement:

CFR 47 Part 1.1310

Limit:

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in Part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30
f = frequency in MHz				
* = Plane-wave equivalent power density				

According to IEEE C95.3:2002 section 5.5.1.1, The power density S at a point on the axis at a distance d from a transmitting antenna is given by the Friis free-space transmission formula

$$S = \frac{PG}{4\pi d^2}$$

S = power density (mW/cm²)

P = the net power delivered to the antenna (mW)

G = gain of the antenna in linear scale

d = distance between observation point and center of the radiator (cm)



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5.1.2 Conclusion

Refer to the report GZEM200701398702, the max. peak output power is 41.06dBuV/m @10m

Frequency (MHz)	E-field (dBuV/m @10m)	E-field* (dBuV/m @20cm)	Electric field strength (V/m)	Limit (V/m)	Result
13.56	41.06	109.02	0.2824	135.84	Pass

*: E-field (dBuV/m @20cm)= E-field (dBuV/m @10m)+40log(10/0.2)

So the device is exclusion from SAR test.



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6 Photographs

6.1 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for GZEM2007013987CR

--End of Report--



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