



1 Cover Page

RF Exposure Evaluation Report

Application No.: SHEM1904012341CR
FCC ID: 2ASRJHS-AT2401
Applicant: Zhejiang Hanshow Technology Co., Ltd
Address of Applicant: Bld.33, Zhifu Center, Jiaxing, Zhejiang, P.R.China
Manufacturer: Suzhou Caina Electronics Technology Co., Ltd
Address of Manufacturer: No.588 San Xing Rd, Wujiang District, Suzhou, Jiangsu Province, P.R. China
Factory: Suzhou Caina Electronics Technology Co., Ltd
Address of Factory: No.588 San Xing Rd, Wujiang District, Suzhou, Jiangsu Province, P.R. China

Equipment Under Test (EUT):

EUT Name: DIGITAL SIGNAGE 24INCH
Model No.: HS-AT2401
Trade mark: Hanshow
Standard(s) : FCC Rules 47 CFR §2.1091
 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2019-04-12
Date of Test: 2019-04-16 to 2019-04-18
Date of Issue: 2019-04-24

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

Parlam Zhan

Parlam Zhan
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com



Revision Record			
Version	Description	Date	Remark
00	Original	2019-04-24	/

Authorized for issue by:			
			
		<hr/>	
		Bill Wu / Project Engineer	
			
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		Parlam Zhan /Reviewer	



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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 12V 3A By adapter
Test voltage:	AC 120V/60Hz
Antenna Gain	2dBi
Antenna Type	Dipole Antenna
Channel Spacing	5MHz
Modulation Type	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels	802.11b/g/n(HT20):11 802.11n(HT40):7
Operation Frequency	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz

3.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shanghai Branch

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

3.3 Test Facility

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

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **NVLAP (Certificate No. 201034-0)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Certificate No. 201034-0.

- **FCC –Designation Number: CN5033**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

Designation Number: CN5033. Test Firm Registration Number: 479755.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

IC Registration No.: 8617A-1. CAB identifier: CN0020.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

4 Test Standards and Limits

4.1 FCC Radiofrequency radiation exposure limits:

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency	Power density(mW/cm ²)	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM190401234101

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	14.50	28.18
11B	2437	Ant1	14.55	28.51
11B	2462	Ant1	14.61	28.91
11G	2412	Ant1	13.62	23.01
11G	2437	Ant1	13.52	22.49
11G	2462	Ant1	13.21	20.94
11N20SISO	2412	Ant1	12.60	18.20
11N20SISO	2437	Ant1	12.33	17.10
11N20SISO	2462	Ant1	12.00	15.85
11N40SISO	2422	Ant1	12.33	17.10
11N40SISO	2437	Ant1	12.52	17.86
11N40SISO	2452	Ant1	12.13	16.33

5.2 MPE Calculation

For FCC:

According to the formula $S=P/4\pi R^2$, we can calculate S which is MPE.

Note:

- 1) P (mW)
- 2) R = distance to the center of radiation of antenna (in meter) = 20cm
- 3) MPE limit = 1mW/cm²

The max conducted output power is 28.91 mW .

The best case gain of the antenna is 2 dBi. 2dB logarithmic terms convert to numeric result is nearly 1.58 .

$$\text{So, } S = \frac{PG}{4R^2\pi} = 0.01 \text{ mW/cm}^2 < 1\text{mW/cm}^2$$

So the device is exclusion from SAR test.

--End of the Report--