

Report No.: SZEM190901865503

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RF Exposure Evaluation Report

Application No.: SZEM1909018655CR

Applicant: Chongqing YEASN Science-Technology Co., Ltd.

Address of Applicant: No.5 Danlong Road, Nan'an District, Chongqing, 400060, P.R.China

Manufacturer: Chongqing YEASN Science-Technology Co., Ltd.

Address of Manufacturer: No.5 Danlong Road, Nan'an District, Chongqing, 400060, P.R.China

Factory: Chongqing YEASN Science-Technology Co., Ltd.

Address of Factory: No.5 Danlong Road, Nan'an District, Chongqing, 400060, P.R.China

Product Name: LCD Visual Chart

Model No.: YPB-2100 Trade Mark: YEASN

FCC ID: 2APEYYPB2100V1

47 CFR Part 1.1307

Standards: 47 CFR Part 1.1310

47 CFR Part 2.1091

Date of Receipt: 2019-09-19

Date of Test: 2019-09-19 to 2019-11-15

Date of Issue: 2019-11-18

Test Result : Pass*

Keny Xu EMC Laboratory Manager

Ceny. Ku



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^{*} In the configuration tested, the EUT complied with the standards specified above.



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2 Version

Revision Record							
Version Chapter		Date	Modifier	Remark			
01		2019-11-18		Original			

Authorized for issue by:		
	Robsonti	
	Edison Li /Project Engineer	-
	EvicFu	
	Eric Fu /Reviewer	-



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4 General Information

4.1 General Description of EUT

Power Supply:	AC/DC Adapter
	Model: GSM40A15
	Input: AC 100-240V, 50/60Hz, 1.0-0.5A
	Output: DC 15V, 2.67A, 40W Max
	3.0V DC (1.5V x 2 "AAA" Size Batteries) for remote controller
Test Voltage:	DC 15V
Cable:	AC cable: 180cm with a ferrite core
	DC cable: 150cm unshielded
Type of Modulation:	802.11b: DSSS (CCK, DQPSK, DBPSK)
	802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK)
	802.11n (HT20/HT40): OFDM (64QAM, 16QAM, QPSK, BPSK)
Operating Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz
	802.11n(HT40): 2422MHz to 2452MHz
Channel Number:	802.11b/g/n(HT20): 11 Channels
	802.11n(HT40): 7 Channels
Channels Step:	Channels with 5MHz step
Sample Type:	Fixed production
Antenna Type:	PIFA
Antenna Gain:	0dBi



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4.2 Test Location

All tests were performed at:

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

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.3 Test Facility

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

· A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

FCC –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

Innovation, Science and Economic Development Canada

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

CAB identifier: CN0006.

IC#: 4620C.

4.4 Deviation from Standards

None

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.



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5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

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 Magnetic fie strength (V/m) (A/m)		Power density (mW/cm²)	Averaging time (minutes)			
(A) Limits for Occupational/Controlled Exposures							
0.3–3.0	614 1842/f 61.4	1.63 4.89/f 0.163	*(100) *(900/f²) 1.0 f/300 5	6 6 6 6			
(B) Limits	for General Populati	on/Uncontrolled Exp	posure				
0.3–1.34	614 824/f 27.5	1.63 2.19/f 0.073	*(100) *(180/f²) 0.2 f/1500 1.0	30 30 30 30 30			

F= Frequency in MHz

Friis Formula

Friis transmission formula: $Pd = (Pout*G)/(4*Pi*R^2)$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

For Uncontrolled Environment, the MPE limit of 1500MHz to 100000MHz is 1.0 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.



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5.1.3 EUT RF Exposure Evaluation

1) Test Results

The max tune-up tolerance power Into Antenna & RF Exposure Evaluation Distance:

,	Antenna	Max Antenna Gain (dBi)	Max Antenna Gain (Numeric)	Max tune-up tolerance power (dBm)	Max tune-up Tolerance power to Antenna (mW)	Power Density at R = 20 cm (mW/cm²)	Limit (mW/cm²)	MPE Ratios	Result
	Ant1	0	1.00	17.71	59.02	0.0117	1	0.0117	PASS

Note: Refer to report No. SZEM190901865502 or EUT test Max Conducted Peak Output Power value. The distancer (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

End of Report



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