



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

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Report No.: SZEM170300160502  
Page: 1 of 8

## RF Exposure Evaluation Report

**Application No.:** SZEM1703001605CR  
**Applicant:** ADATA Technology Co., Ltd  
**Manufacturer:** ADATA Technology Co., Ltd  
**Factory:** Nanjing Skyworth Institute of Information Technology Co., Ltd  
**Product Name:** HDMI Streaming Media Adapter  
**Model No.(EUT):** MV100  
**Trade mark:** ADATA  
**FCC ID:** RLYMV100  
**Standards:** 47 CFR Part 1.1307 (2016)  
47 CFR Part 1.1310 (2016)  
**Date of Receipt:** 2017-03-08  
**Date of Test:** 2017-04-17 to 2017-07-19  
**Date of Issue:** 2017-07-20

<b>Test Result :</b>	<b>PASS*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang  
EMC Laboratory 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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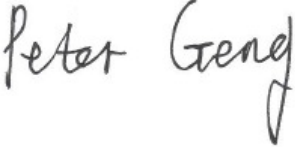



**SGS-CSTC Standards Technical Services Co., Ltd  
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Report No.: SZEM170300160502  
Page: 2 of 8

## 2 Version

<i>Revision Record</i>				
<i>Version</i>	<i>Chapter</i>	<i>Date</i>	<i>Modifier</i>	<i>Remark</i>
01		2017-07-20		Original

<b>Authorized for issue by:</b>				
				
		<hr/>		
		<b>Peter Geng /Project Engineer</b>		
				
		<hr/>		
		<b>Eric Fu /Reviewer</b>		



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

Report No.: SZEM170300160502  
Page: 3 of 8

**3 Contents**

	Page
<b>1 COVER PAGE.....</b>	<b>1</b>
<b>2 VERSION .....</b>	<b>2</b>
<b>3 CONTENTS .....</b>	<b>3</b>
<b>4 GENERAL INFORMATION.....</b>	<b>4</b>
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT.....	4
4.3 TEST LOCATION.....	5
4.4 TEST FACILITY.....	5
4.5 DEVIATION FROM STANDARDS.....	6
4.6 ABNORMALITIES FROM STANDARD CONDITIONS .....	6
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....	6
<b>5 RF EXPOSURE EVALUATION.....</b>	<b>7</b>
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	7
5.1.1 Limits.....	7
5.1.2 Test Procedure.....	7
4.1.3 EUT RF EXPOSURE EVALUATION.....	8



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

Report No.: SZEM170300160502  
Page: 4 of 8

## 4 General Information

### 4.1 Client Information

Applicant:	ADATA Technology Co., Ltd
Address of Applicant:	2F, NO.258, Lian Cheng RD., Chung Ho Dist., New Taipei City, Taiwan
Manufacturer:	ADATA Technology Co., Ltd
Address of Manufacturer:	2F, NO.258, Lian Cheng RD., Chung Ho Dist., New Taipei City, Taiwan
Factory:	Nanjing Skyworth Institute of Information Technology Co., Ltd
Address of Factory:	1036, 10th. Floor, No.28 of Ningshuang Rd., Yuhuatai District, Nanjing, Jingsu Pro., PRC

### 4.2 General Description of EUT

Product Name:	HDMI Streaming Media Adapter
Model No.:	MV100
Trade Mark:	ADATA
Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK,BPSK)
Antenna Type:	PIFA
Antenna Gain:	2dBi
Power supply:	DC 5V from USB port
Test voltage	AC 120V/60Hz
Cable:	USB cable:60cm unshielded



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

Report No.: SZEM170300160502

Page: 5 of 8

### 4.3 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.

### 4.4 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC

Lab 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.

- **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 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.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen 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 No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.



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

Report No.: SZEM170300160502  
Page: 6 of 8

**4.5 Deviation from Standards**

None.

**4.6 Abnormalities from Standard Conditions**

None.

**4.7 Other Information Requested by the Customer**

None.



## 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 strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300 .....	27.5	0.073	0.2	30
300–1500 .....	.....	.....	f/1500	30
1500–100,000 .....	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1 mW/cm<sup>2</sup>. 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.



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

Report No.: SZEM170300160502  
Page: 8 of 8

**4.1.3 EUT RF Exposure Evaluation**

Antenna Gain: 2dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.58 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Test Mode	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
11B	2462	14.02	25.23	0.0079	1	PASS
11G	2462	16.8	47.86	0.0151	1	PASS
11N20SISO	2462	17	50.12	0.0158	1	PASS
11N40SISO	2452	15.42	34.83	0.0110	1	PASS

Note: Refer to report No. SZEM1703001605001 for EUT test Max Conducted Peak Output Power value.

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.