

FCC / Certification Test Report

Megaphoton Inc.
Electronic Ballast for HID Lamp
Model: H1-600COB-GAA
REPORT# 16WB0715165F Rev 0
FCC ID: 2AH3B-H1-600COB-GAA

Jul.15,2016

Prepared for:

Megaphoton Inc.
No.15, North of Airport Road, Sanzao Town, Jinwan District,
Zhuhai City

Prepared By:

Washington International Technology Limited

Megaphoton Inc.

Electronic Ballast for HID Lamp

FCC ID: 2AH3B-H1-600COB-GAA

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MODEL: H1-600COB-GAA

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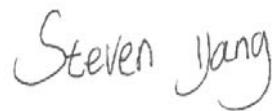
WLL REPORT# 16WB0715165F Rev 0

Jul.15,2016



Henry guo

Reviewed by:



Steven yang

Abstract

This report has been prepared on behalf of Megaphoton Inc. to document compliance with the limits for a digital device required under Part 18 of the FCC Rules and Regulations. This Industrial, scientific and medical equipment (FCC) Test Report documents the test configuration and test results for the Megaphoton Inc. Electronic Ballast for HID Lamp. Testing was performed on Audix Technology (Shenzhen) Co., Ltd. has been accepted by the FCC, the FCC Registration Number is 90454.

The Megaphoton Inc. Electronic Ballast for HID Lamp complies with the requirements for a device.

Revision History	Reason	Date
Rev 0	Initial Release	Jul.15,2016

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1 Introduction

1.1 Compliance Statement

The Megaphoton Inc. Electronic Ballast for HID Lamp complied with the requirements for a digital device under Part 18 of the FCC Rules and Regulations

1.2 Test Scope Summary

Tests for radiated and conducted emissions were performed. All measurements were performed according to the 2014 version of ANSI C63.4. The measurement equipment conforms to ANSI C63.4 Specifications for Electromagnetic Noise and Field Strength Instrumentation.

Test Specification	Specific Description	Date Completed	Result	Test location	Modifications (Y/N)
CFR47 Part 18	Conducted Emissions at the Mains Port	Jul.12, 2016	Complied	Audix Technology (Shenzhen) Co., Ltd.	Y
CFR47 Part 18	Radiated Emissions	Jul.12~13, 2016	Complied	Audix Technology (Shenzhen) Co., Ltd.	Y

1.3 Contract Information

Customer: Megaphoton Inc.

No.15, North of Airport Road, Sanzao Town, Jinwan District, Zhuhai City

Abbreviations

A	Ampere
ac	alternating current
AM	Amplitude Modulation
Amps	Ampères
b/s	bits per second
BW	BandWidth
CE	Conducted Emission
cm	centimeter
CW	Continuous Wave
dB	deciBel
dc	direct current
EMI	Electromagnetic Interference
EUT	Equipment Under Test
FM	Frequency Modulation
G	giga - prefix for 10^9 multiplier
Hz	Hertz
IF	Intermediate Frequency
k	kilo - prefix for 10^3 multiplier
LISN	Line Impedance Stabilization Network
M	Mega - prefix for 10^6 multiplier
m	meter
µ	micro - prefix for 10^{-6} multiplier
NB	Narrowband
QP	Quasi-Peak
RE	Radiated Emissions
RF	Radio Frequency
rms	root-mean-square
SN	Serial Number
S/A	Spectrum Analyzer
V	Volt

2 Equipment Under Test

2.1 EUT Identification

The results obtained relate only to the item(s) tested.

Table 1: Overview of Electronic Ballast for HID Lamp, Equipment Under Test

Model(s) Tested:	Electronic Ballast for HID Lamp H1-600COB-GAA
EUT Specifications:	In the tests the primary power was provided by AC 120V/60Hz & AC 240V/60Hz
Test Date(s):	Jul.12~13,2016

2.2 EUT Description

Product Name: Electronic Ballast for HID Lamp

Model No. : H1-600COB-GAA

Test Model: H1-600COB-GAA

EUT Rated Voltage: AC 120V/60Hz & AC 240V/60Hz

2.3 Test Configuration

The Megaphoton Inc. Electronic Ballast for HID Lamp, Equipment Under Test (EUT), was operated from AC power supply.

EUT connect to the Adapter, Running test soft and PC running ping to EUT, Check or Repair it.

The Electronic Ballast for HID Lamp was configured as below:



Figure 1: Test Configuration

2.4 Equipment Configuration

The EUT was set up as outlined in Figure 1. The EUT was comprised of the following equipment. (All Modules, PCBs, etc. listed were considered as part of the EUT, as tested.)

Table 2: Equipment Configuration

Slot #	Name / Description	Model Number	Part Number	Serial Number	Revision
1.	Electronic Ballast for HID Lamp	H1-600COB-GAA	/	/	/

2.5 Tested Supporting System Details

Table 3: Tested Supporting System Details

Slot #	Port Identification	Connector Type	Cable Length	Shielded (Y/N)	Termination Point
1.	Power Cord	Unshielded, Detachable	3.0m	N	AE

2.6 Testing Algorithm

The Electronic Ballast for HID Lamp was operated continuously by normal operating conditions.

2.7 Modification

See the Annex 1.

2.8 Test Location

NAME: Audix Technology (Shenzhen) Co., Ltd. by CNAS. The CNAS Registration No.: L4117.

FCC Registration Number is 90454

Address: No. 6, Kefeng Road, Science & Technology Park, Nanshan District , Shenzhen, Guangdong, China



China National Accreditation Service for Conformity Assessment
LABORATORY ACCREDITATION CERTIFICATE
(Registration No. CNAS L4117)

Audix Technology(Shenzhen) Co., Ltd.

No.6, Kefeng Road, Science & Technology Park,
Nanshan District, Shenzhen, Guangdong, China

is accredited in accordance with 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 to undertake testing service as described in the schedule attached to this certificate.

The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule form an integral part of this certificate.

Date of Issue: 2016-01-11

Date of Expiry: 2019-02-03

Date of Initial Accreditation: 2009-07-16

Signed on behalf of China National Accreditation Service for Conformity Assessment

China National Accreditation Service for Conformity Assessment(CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is a signatory of the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) and the Asia Pacific Laboratory Accreditation Cooperation Mutual Recognition Arrangement (APLAC MRA). The validity of the certificate can be checked on CNAS website at <http://www.cnas.org.cn/english/findanaccreditedbody/index.shtml>

2.9 Measurements

2.9.1 Measurement Method

All measurements herein were performed according to the 2014 version of ANSI C63.4. The measurement equipment conforms to ANSI C63.4 Specifications for Electromagnetic Noise and Field Strength Instrumentation. Calibration checks are made periodically to verify proper performance of the measuring instrumentation.

2.10 Measurement Uncertainty

All results reported herein relate only to the equipment tested. The basis for uncertainty calculation uses ANSI/NCSL Z540-2-1997 with a type B evaluation of the standard uncertainty. Elements contributing to the standard uncertainty are combined using the method described in Equation 1 to arrive at the total standard uncertainty. The standard uncertainty is multiplied by the coverage factor to determine the expanded uncertainty which is generally accepted for use in commercial, industrial, and regulatory applications and when health and safety are concerned (see Equation 2). A coverage factor was selected to yield a 95% confidence in the uncertainty estimation.

Equation 1: Standard Uncertainty

$$u_c = \pm \sqrt{\frac{a^2}{div_a^2} + \frac{b^2}{div_b^2} + \frac{c^2}{div_c^2} + \dots}$$

where u_c = standard uncertainty

a, b, c, \dots = individual uncertainty elements

$div_{a, b, c}$ = the individual uncertainty element divisor based on the probability distribution

divisor = 1.732 for rectangular distribution

divisor = 2 for normal distribution

divisor = 1.414 for trapezoid distribution

Equation 2: Expanded Uncertainty

$$U = k u_c$$

where U = expanded uncertainty
 k = coverage factor
 $k \leq 2$ for 95% coverage (ANSI/NCSL Z540-2 Annex G)
 u_c = standard uncertainty

The measurement uncertainty complies with the maximum allowed uncertainty from CISPR 16-4-2. Measurement uncertainty is not used to adjust the measurements to determine compliance. The expanded uncertainty values for the various scopes in the WLL accreditation are provided in Table 4 below.

Table 4: Expanded Uncertainty List

Scope	Standard(s)	Expanded Uncertainty
Conducted Emissions	FCC Part 18	3.2dB(150KHz to 30MHz)
Radiated Emissions (9kHz-30MHz)	FCC Part 18	2.8dB(9KHz~30MHz, Distance: 3m)

3 Test Results

3.1 Conducted Emissions

3.1.1 Requirements

Test Arrangement: Table Top

Compliance Standard: FCC Part 18

Compliance Limits	
Frequency	Quasi-Peak Level dB(μV)
450kHz~2.51MHz	48
2.51MHz~3.0MHz	70
3.0MHz~30MHz	48

3.1.2 Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	1# Shielding Room	AUDIX	N/A	N/A	Apr.17,16	1 Year
2.	Test Receiver	Rohde & Schwarz	ESCI	100842	Apr.24,16	1 Year
3.	L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	100429	Oct.18,15	1 Year
4.	L.I.S.N.#2	Kyoritsu	K NW-403D	8-1750-2	Apr.24,16	1 Year
5.	Terminator	Hubersuhner	50Ω	No.1	May.05.16	1 Year
6.	Terminator	Hubersuhner	50Ω	No.2	May.05.16	1 Year
7.	RF Cable	MIYAZAKI	3D-2W	No.1	Apr.24,16	1 Year
8.	Coaxial Switch	Anritsu	MP59B	6200766906	Apr.23,16	1 Year
9.	Test Software	AUDIX	e3	6.100913a	N/A	N/A

3.1.3 *Test Procedure*

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. #1). This provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#2).Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4: 2014 on conducted Emission test.

The bandwidth of the R&S Test Receiver ESCI was set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.1.4 *Test Data*

The EUT Electronic Ballast for HID Lamp complied with the Conducted Emissions requirements. Table 5 provides the test results for Conducted emissions.

Photograph 1 and Photograph 2 shows the Conducted emission test configuration.

Test Engineer(s): Alvis

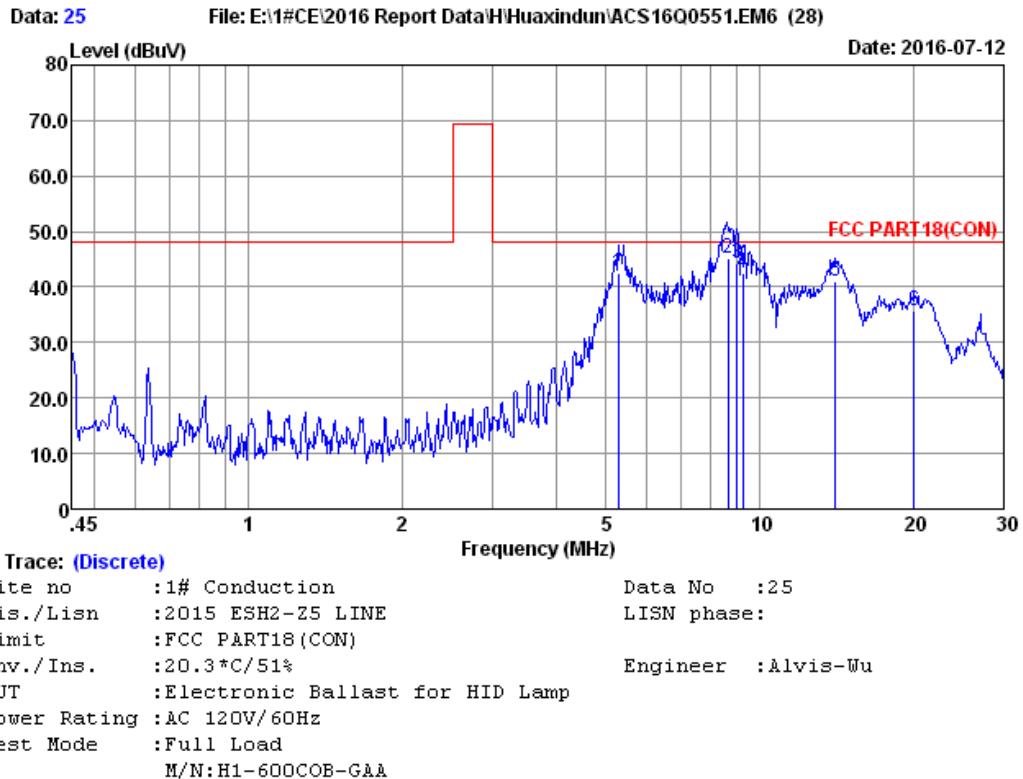
Test Date(s): 2016/07.12

Test Location: Audix Technology (Shenzhen) Co., Ltd.

Table 5: Conducted Emissions Test Data



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Nantou,ShenZhen,GuangDong,China
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Fax:+86-755-26632877
Postcode:518057



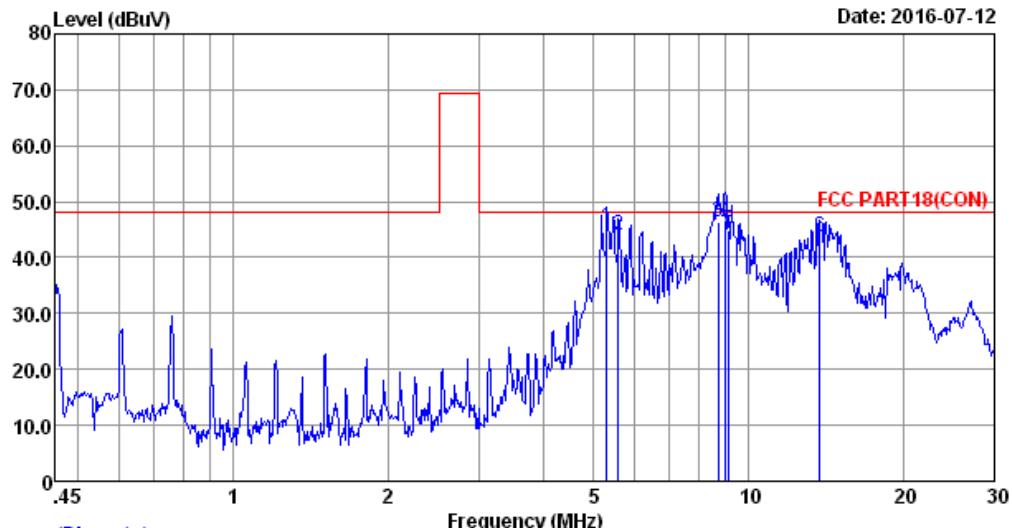
No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	5.277	0.26	0.09	42.09	42.44	48.00	5.56	QP
2	8.650	0.34	0.13	44.80	45.27	48.00	2.73	QP
3	9.011	0.35	0.13	43.86	44.34	48.00	3.66	QP
4	9.253	0.35	0.13	42.17	42.65	48.00	5.35	QP
5	14.063	0.52	0.17	40.44	41.13	48.00	6.87	QP
6	20.056	0.84	0.20	34.78	35.82	48.00	12.18	QP

Remarks: 1. Emission Level=LISN Factor+Cable Loss+Reading.
2. If the average limit is met when using a quasi-peak detector.
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.



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Data: 26 File: E:\1#CE\2016 Report Data\Huaxindun\ACS16Q0551.EM6 (28)



Trace: (Discrete)

Site no :1# Conduction Data No :26
Dis./Lisn :2015 ESH2-Z5 NEUTRAL LISN phase:
Limit :FCC PART18 (CON)
Env./Ins. :20.3°C/51% Engineer :Alvis-Wu
EUT :Electronic Ballast for HID Lamp
Power Rating :AC 120V/60Hz
Test Mode :Full Load
M/N:H1-600COB-GAA

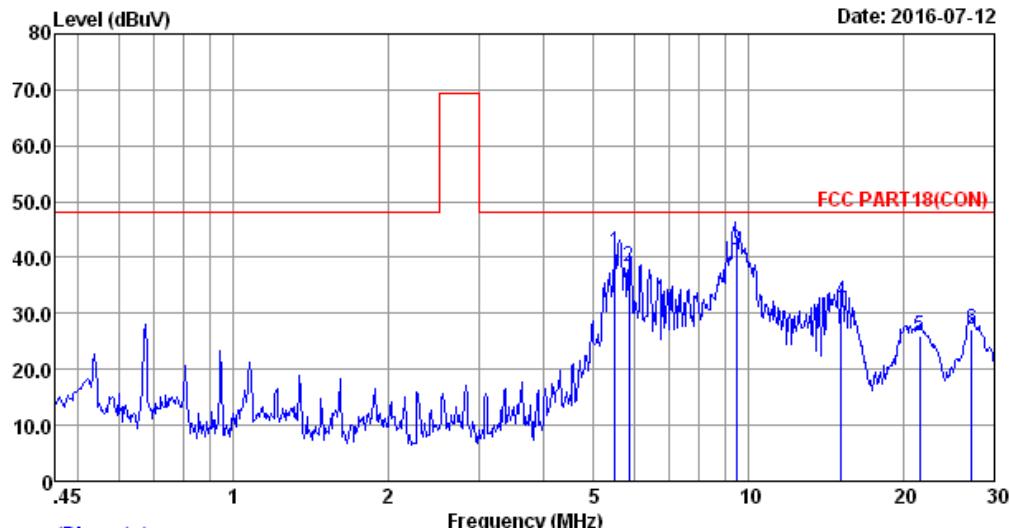
No	Freq (MHz)	LISN		Cable		Emission		
		Factor (dB)	Loss (dB)	Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	5.305	0.29	0.09	45.05	45.43	48.00	2.57	QP
2	5.594	0.30	0.10	43.50	43.90	48.00	4.10	QP
3	8.729	0.39	0.13	45.83	46.35	48.00	1.65	QP
4	9.011	0.40	0.13	46.01	46.54	48.00	1.46	QP
5	9.173	0.40	0.13	44.20	44.73	48.00	3.27	QP
6	13.768	0.69	0.17	42.69	43.55	48.00	4.45	QP

Remarks: 1. Emission Level=LISN Factor+Cable Loss+Reading.
2. If the average limit is met when using a quasi-peak detector.
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.



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Data: 28 File: E:\1#CE\2016 Report Data\Huaxindun\ACS16Q0551.EM6 (28)



Trace: (Discrete)

Site no :1# Conduction Data No :28
Dis./Lisn :2015 ESH2-Z5 LINE LISN phase:
Limit :FCC PART18 (CON)
Env./Ins. :20.3°C/51% Engineer :Alvis-Wu
EUT :Electronic Ballast for HID Lamp
Power Rating :AC 240V/60Hz
Test Mode :Full Load
M/N:H1-600COB-GAA

No	Freq (MHz)	LISN		Cable		Emission		
		Factor (dB)	Loss (dB)	Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	5.505	0.27	0.10	40.63	41.00	48.00	7.00	QP
2	5.867	0.28	0.10	37.92	38.30	48.00	9.70	QP
3	9.452	0.35	0.13	40.81	41.29	48.00	6.71	QP
4	15.146	0.56	0.18	31.51	32.25	48.00	15.75	QP
5	21.486	0.88	0.21	24.85	25.94	48.00	22.06	QP
6	27.127	1.00	0.23	26.04	27.27	48.00	20.73	QP

Remarks: 1. Emission Level=LISN Factor+Cable Loss+Reading.
2. If the average limit is met when using a quasi-peak detector.
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

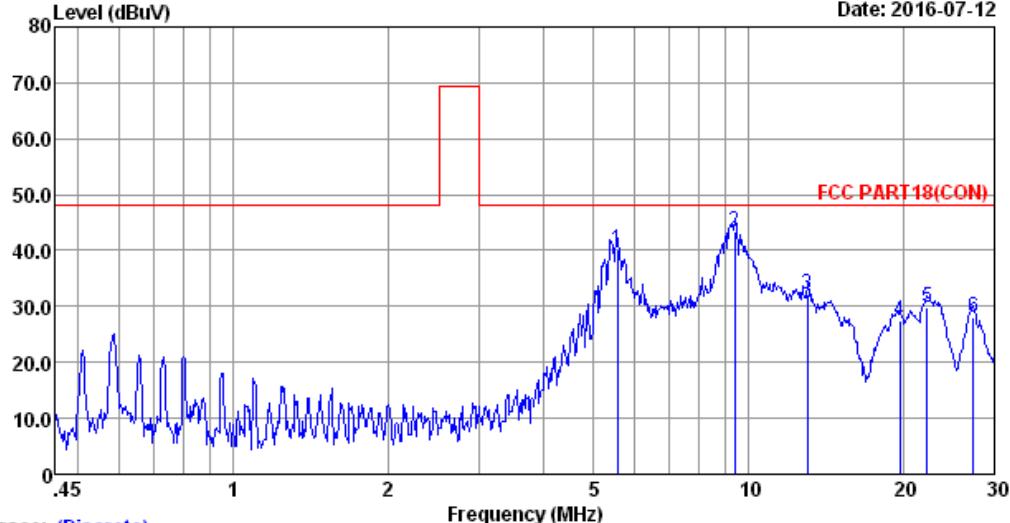


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Data: 27

File: E:\1#CE\2016 Report Data\Huaxindun\ACS16Q0551.EM6 (28)

Date: 2016-07-12



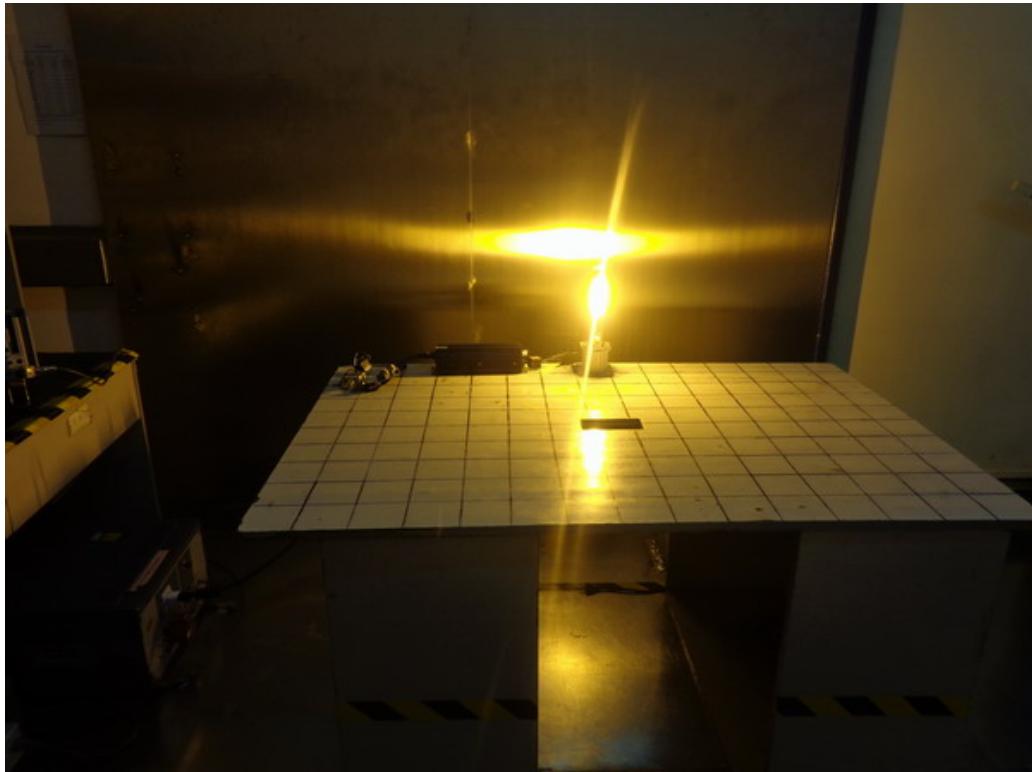
Trace: (Discrete)

Site no :1# Conduction Data No :27
Dis./Lisn :2015 ESH2-Z5 NEUTRAL LISN phase:
Limit :FCC PART18 (CON)
Env./Ins. :20.3°C/51% Engineer :Alvis-Wu
EUT :Electronic Ballast for HID Lamp
Power Rating :AC 240V/60Hz
Test Mode :Full Load
M/N:H1-600COB-GAA

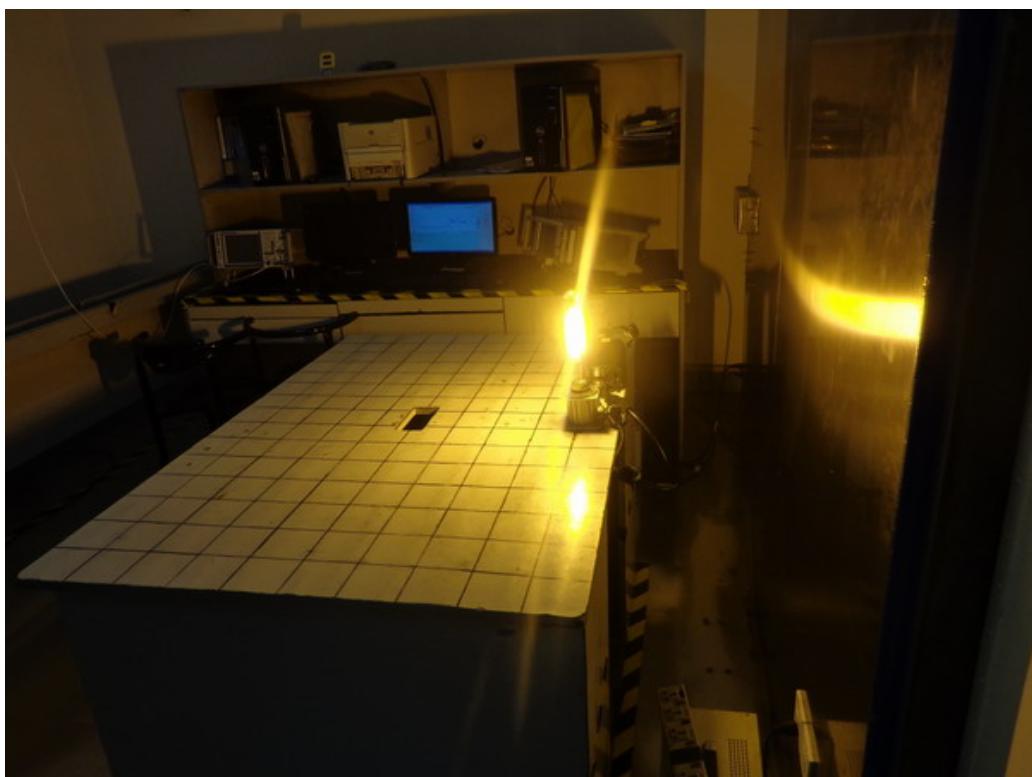
No	Freq (MHz)	LISN		Cable		Emission		
		Factor (dB)	Loss (dB)	Reading (dBuV)	Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	5.564	0.30	0.10	39.68	40.08	48.00	7.92	QP
2	9.401	0.41	0.13	42.87	43.41	48.00	4.59	QP
3	12.988	0.64	0.16	31.41	32.21	48.00	15.79	QP
4	19.635	1.02	0.20	26.15	27.37	48.00	20.63	QP
5	22.180	1.07	0.21	28.48	29.76	48.00	18.24	QP
6	27.271	1.14	0.23	26.67	28.04	48.00	19.96	QP

Remarks: 1. Emission Level=LISN Factor+Cable Loss+Reading.
2. If the average limit is met when using a quasi-peak detector.
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

Photograph 1: Conducted Emissions Front



Photograph 2: Conducted Emissions Back



3.2 Radiated Emissions

3.2.1 Requirements

Test Arrangement: Table Top

Compliance Standard: FCC Part 18

FCC Compliance Limits	
Frequency	Limits
30~88 MHz	40.0dB _V
88~216 MHz	43.5dB _V
216~1000 MHz	46.0dB _V
0.009~30 MHz	65.1dB _V

Note:1. The unit conversion: y (limit) dB_{V} $= 20 \log x \text{uV}/\text{m}$

2. Test the change of the distance and limit is inversely proportional: $L_2/L_1 = d_1/d_2$

3. Test Frequency range:30~1000MHz $y = 20 \log(L_1 * d_1)/d_2$

Test Frequency range:0.009~30 MHz Power below 500W $y = 20 \log(L_1 * d_1)/d_2$

Power 500W or more $y = 20 \log[(L_1 * d_1)/d_2] * (\text{power}/500)$

3.2.2 Test Equipments

For frequency range 30MHz~1000MHz (In 3m Anechoic Chamber)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Mar.28,16	1 Year
2.	EMI Spectrum	Agilent	E4407B	MY41440292	Apr.24,16	1 Year
3.	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	Apr.24,16	1 Year
4.	Amplifier	HP	8447D	2648A04738	Apr.24,16	1 Year
5.	Tri-log-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-493	Jun.03,16	1 Year
6.	RF Cable	MIYAZAKI	CFD400-NW(3.5M)	No.3	Apr.24,16	1 Year
7.	RF Cable	MIYAZAKI	CFD400-LW(22M)	No.7	Apr.24,16	1 Year
8.	Coaxial Switch	Anritsu	MP59B	6201397222	Apr.23,16	1 Year
9.	Test Software	AUDIX	e3	6.2009-5-21a(n)	N/A	N/A

For frequency range 0.009MHz~30MHz (In 3m Anechoic Chamber)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Loop Antenna	Chase	HLA6120	1193	Mar.31.16	1 Year
2	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	Apr.24,16	1 Year
3	RF Cable	Hubersuhner	RG400	NO.1	Apr.24,16	1 Year

3.2.3 Test Procedure

The requirements of FCC Part 18 call for the EUT to be placed on an 80 cm(100cm for 9kHz-30MHz) high 1 X 1.5 meters non-conductive motorized turntable for radiated testing on a 3-meter chamber. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Bi-conical and log periodic broadband antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters. The output of the antenna was connected to the input of the spectrum analyzer and the emissions in the frequency range of 9 KHz to 1 GHz were measured. The peripherals were placed on the table in accordance with ANSI C63.4-2014. Cables were varied in position to produce maximum emissions. Both the horizontal and vertical field components were measured.

The output from the antenna was connected, via a preamplifier, to the input of the spectrum analyzer. The detector function was set to quasi-peak or peak, as appropriate. Above 1GHz average measurement are recorded. The measurement bandwidth of the spectrum analyzer system was set to at least 120 kHz, with all post-detector filtering no less than 10 times the measurement bandwidth. Frequencies above 1GHz were performed using a measurement bandwidth of 1MHz with a video bandwidth setting of 10 Hz for the average measurement.

3.2.4 Radiated Data Reduction and Reporting

To convert the raw spectrum analyzer radiated data into a form that can be compared with the FCC limits, it is necessary to account for various calibration factors that are supplied with the antennas and other measurement accessories. These factors are included into the antenna factor (AF) column of the table and in the cable factor (CF) column of the table. The AF (in dB/m) and the CF (in dB) is algebraically added to the raw Spectrum Analyzer Voltage in dB μ V to obtain the Radiated Electric Field in dB μ V/m. This logarithm amplitude is converted to a linear amplitude, then compared to the FCC limit. Example:

Spectrum Analyzer Voltage: VdB μ V

Antenna Correction Factor: dB/m

Electric Field: $EdB\mu V/m = V dB\mu V + AFdB/m + CFdB - GdB$

To convert to linear units of measure: $EdBV/m = 10^{(EdB\mu V/20)} \text{ Inv log}$

3.2.5 Test Data

The EUT Hair removal & rejuvenation instrument complied with the Radiated Emissions requirements. Table 6 provides the test results for radiated emissions. Photograph 3, Photograph 4 and Photograph 5 shows the radiated emission test configuration.

Test Engineer(s): Brown

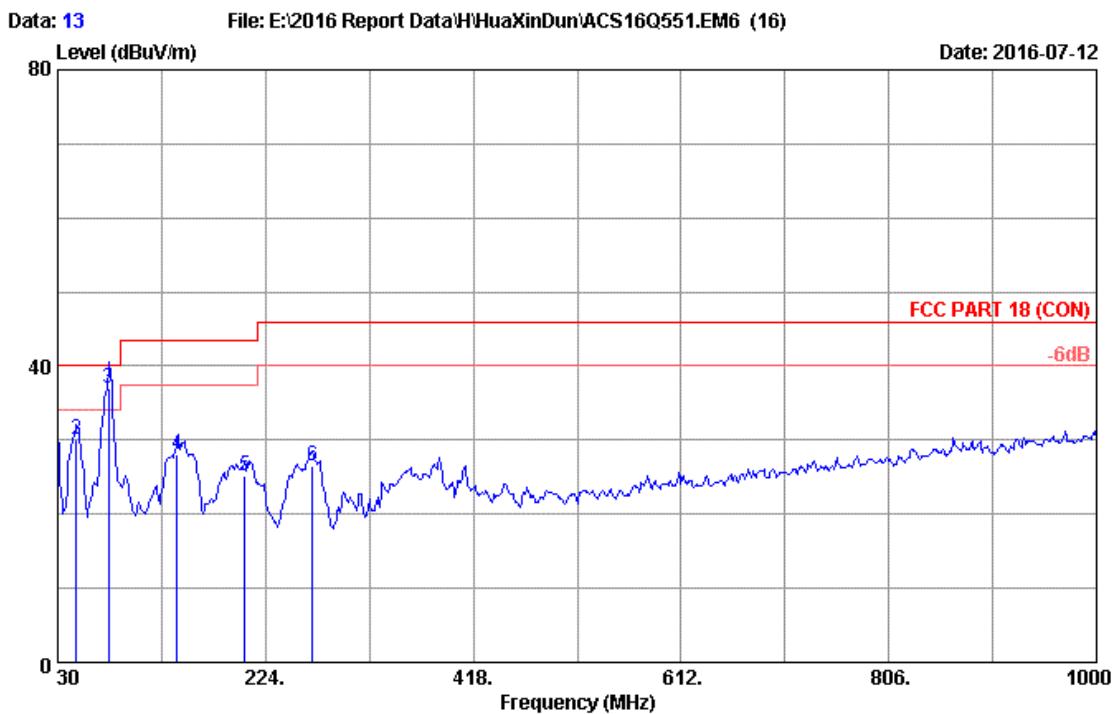
Test Date(s): 2016/07/12~13

Test Location: Audix Technology (Shenzhen) Co., Ltd.

Table 6: Radiated Emission Test Data



No.6 Ke Feng Road,Block 52,
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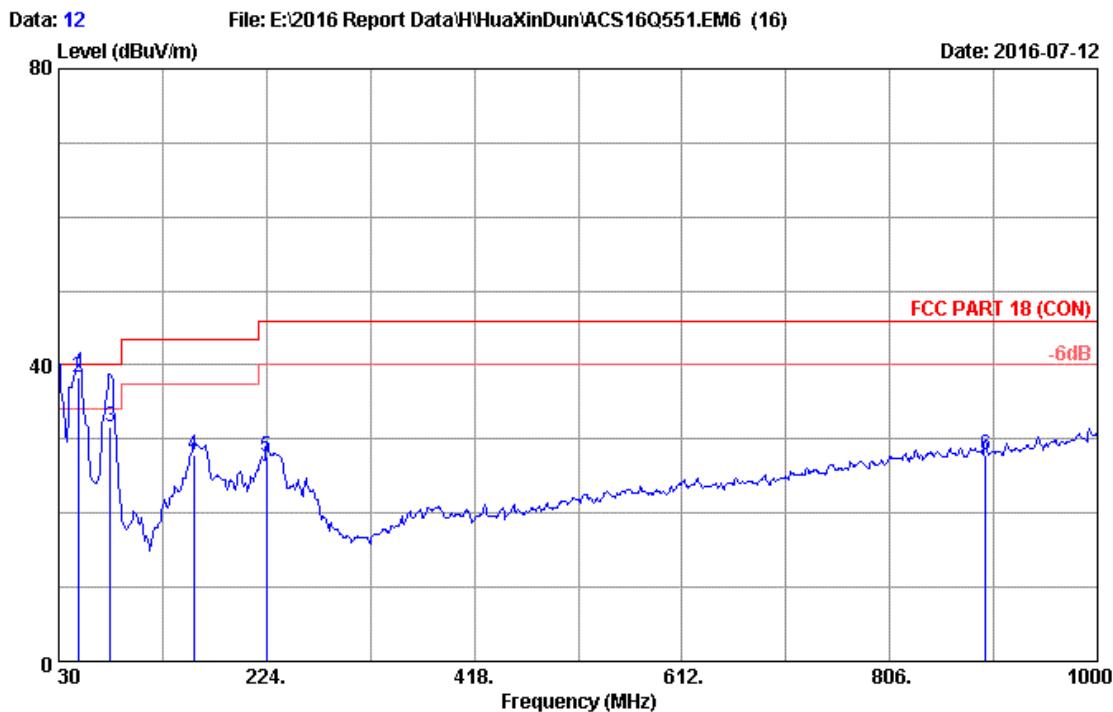
Site no. : 3m Chamber Data no. : 13
Dis. / Ant. : 3m 2016 9168-493 Ant. pol. : HORIZONTAL
Limit : FCC PART 18 (CON)
Env. / Ins. : 20.1*C/65% Engineer : Brown
EUT : Electronic Ballast for HID Lamp
Power rating : AC 120V/60Hz
Test Mode : Full Load
M/N:H1-600COB-GAA

No.	Freq. (MHz)	Factor (dB/m)	Ant.		Cable		Emission		
			Loss (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	30.000	14.30	0.70	14.48	29.48	40.00	10.52	QP	
2	47.460	14.24	0.83	14.98	30.05	40.00	9.95	QP	
3	77.580	10.55	1.05	25.39	36.99	40.00	3.01	QP	
4	141.550	12.61	1.53	13.90	28.04	43.50	15.46	QP	
5	204.600	11.13	1.99	12.17	25.29	43.50	18.21	QP	
6	267.650	13.10	2.23	11.26	26.59	46.00	19.41	QP	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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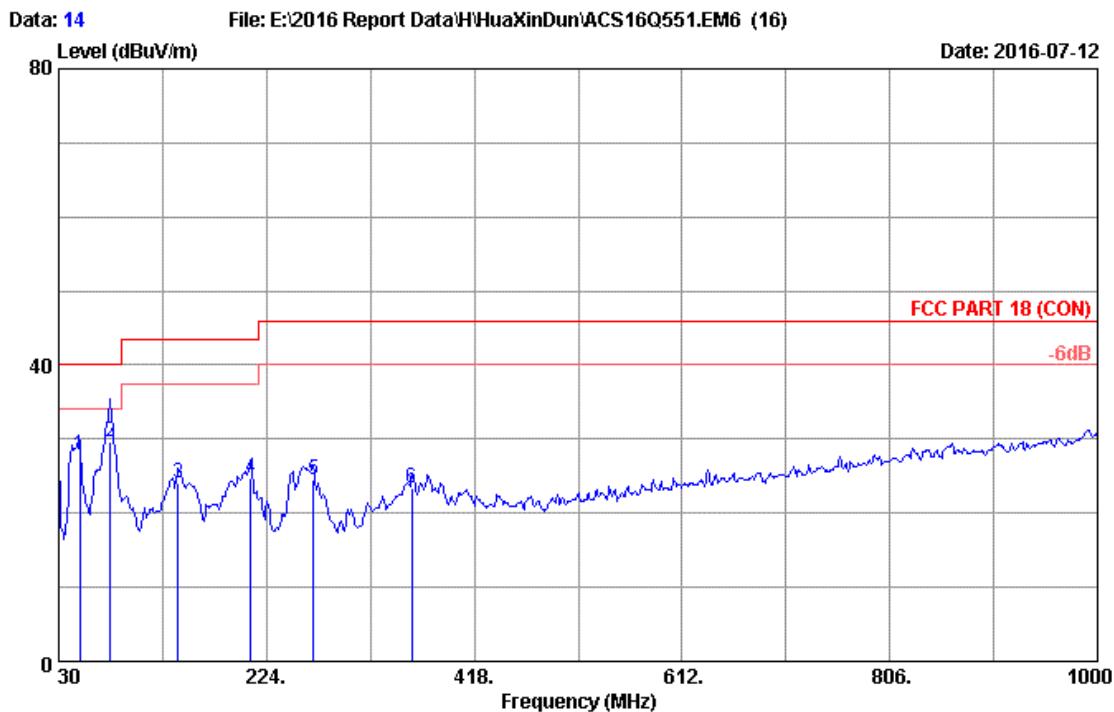
Site no. : 3m Chamber Data no. : 12
Dis. / Ant. : 3m 2016 9168-493 Ant. pol. : VERTICAL
Limit : FCC PART 18 (CON)
Env. / Ins. : 20.1*C/65% Engineer : Brown
EUT : Electronic Ballast for HID Lamp
Power rating : AC 120V/60Hz
Test Mode : Full Load
M/N:H1-600COB-GAA

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission			
					Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.020	14.30	0.70	22.50	37.50	40.00	2.50	QP
2	47.750	14.24	0.83	23.30	38.37	40.00	1.63	QP
3	78.500	10.26	1.06	20.30	31.62	40.00	8.38	QP
4	156.100	13.47	1.64	12.67	27.78	43.50	15.72	QP
5	224.000	11.18	2.06	14.39	27.63	46.00	18.37	QP
6	895.240	23.55	5.07	-0.71	27.91	46.00	18.09	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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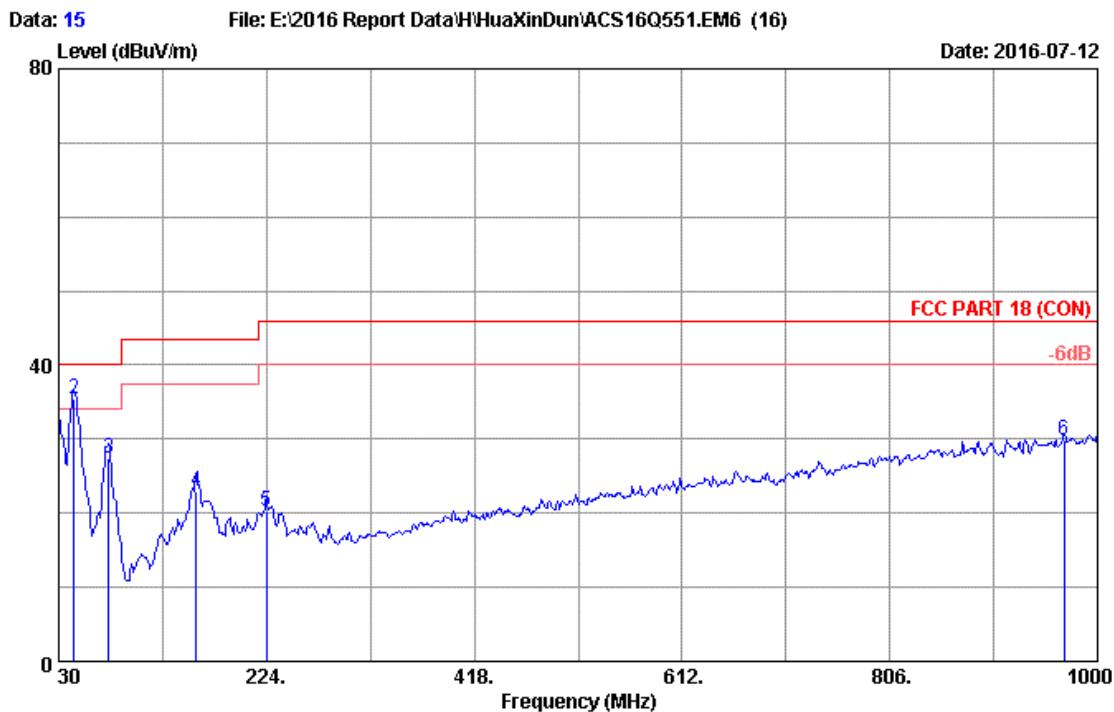
Site no. : 3m Chamber Data no. : 14
Dis. / Ant. : 3m 2016 9168-493 Ant. pol. : HORIZONTAL
Limit : FCC PART 18 (CON)
Env. / Ins. : 20.1*C/65% Engineer : Brown
EUT : Electronic Ballast for HID Lamp
Power rating : AC 240V/60Hz
Test Mode : Full Load
M/N:H1-600COB-GAA

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission			
					Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	49.400	14.35	0.85	12.70	27.90	40.00	12.10	QP
2	77.830	10.55	1.05	18.10	29.70	40.00	10.30	QP
3	141.550	12.61	1.53	9.93	24.07	43.50	19.43	QP
4	209.450	11.06	2.01	11.62	24.69	43.50	18.81	QP
5	267.650	13.10	2.23	9.11	24.44	46.00	21.56	QP
6	359.800	15.44	2.69	5.20	23.33	46.00	22.67	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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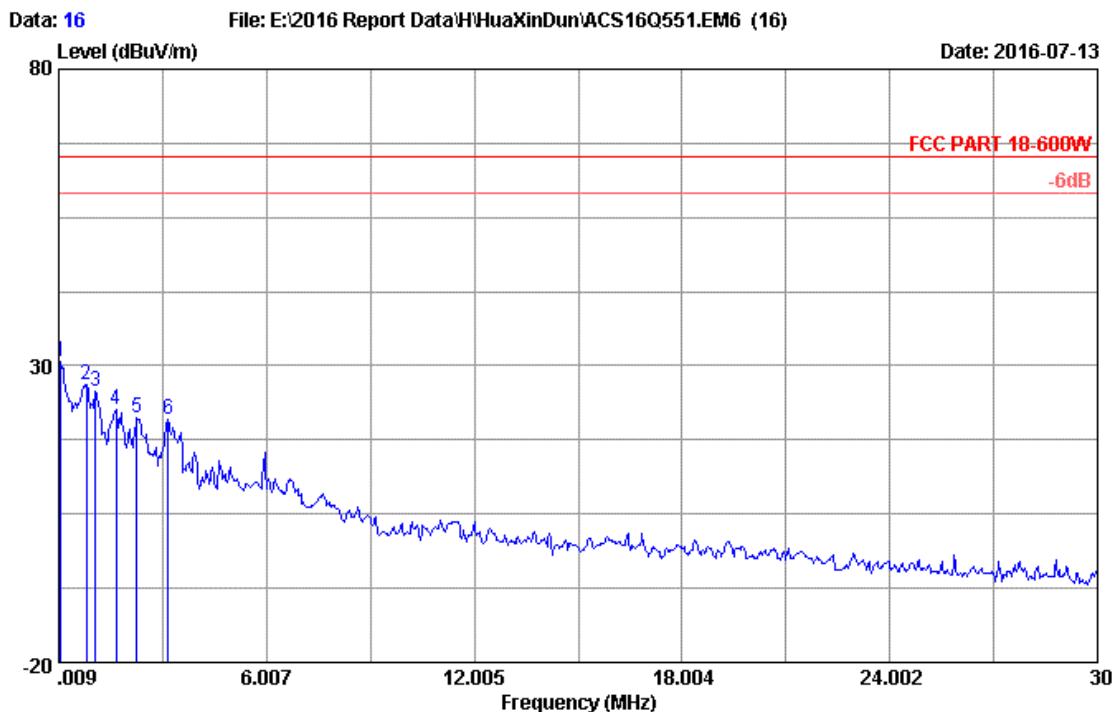
Site no. : 3m Chamber Data no. : 15
Dis. / Ant. : 3m 2016 9168-493 Ant. pol. : VERTICAL
Limit : FCC PART 18 (CON)
Env. / Ins. : 20.1*C/65% Engineer : Brown
EUT : Electronic Ballast for HID Lamp
Power rating : AC 240V/60Hz
Test Mode : Full Load
M/N:H1-600COB-GAA

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission			
					Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	14.30	0.70	14.29	29.29	40.00	10.71	QP
2	43.910	14.02	0.80	20.70	35.52	40.00	4.48	QP
3	76.560	10.83	1.04	15.58	27.45	40.00	12.55	QP
4	158.040	13.59	1.65	7.63	22.87	43.50	20.63	QP
5	224.000	11.18	2.06	7.05	20.29	46.00	25.71	QP
6	968.960	24.43	5.22	0.21	29.86	46.00	16.14	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



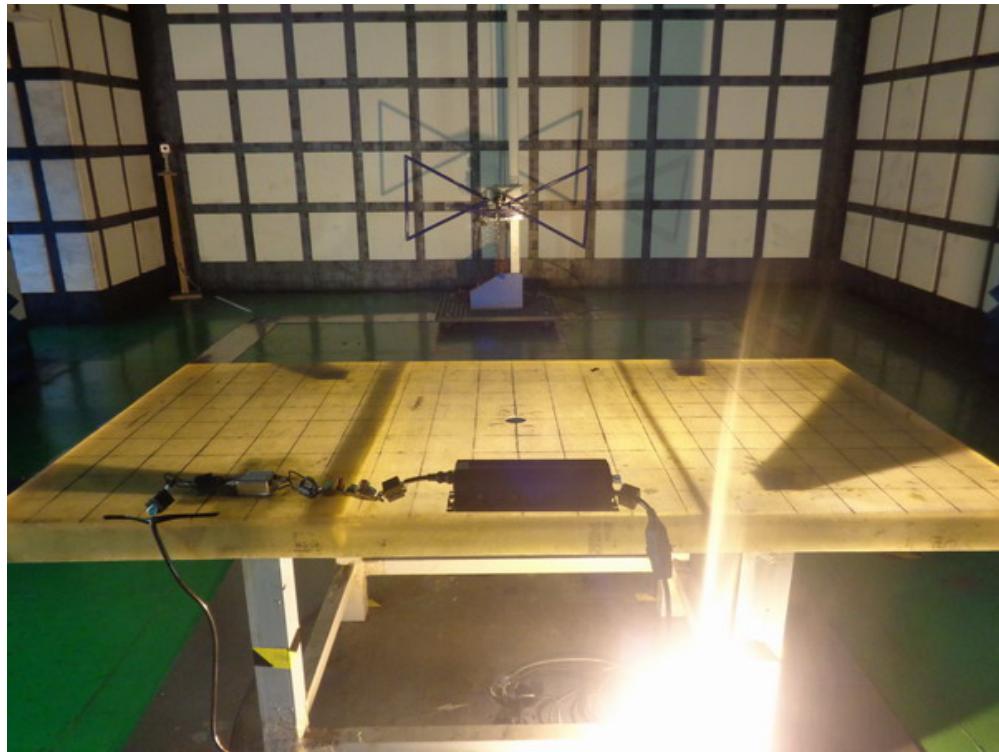
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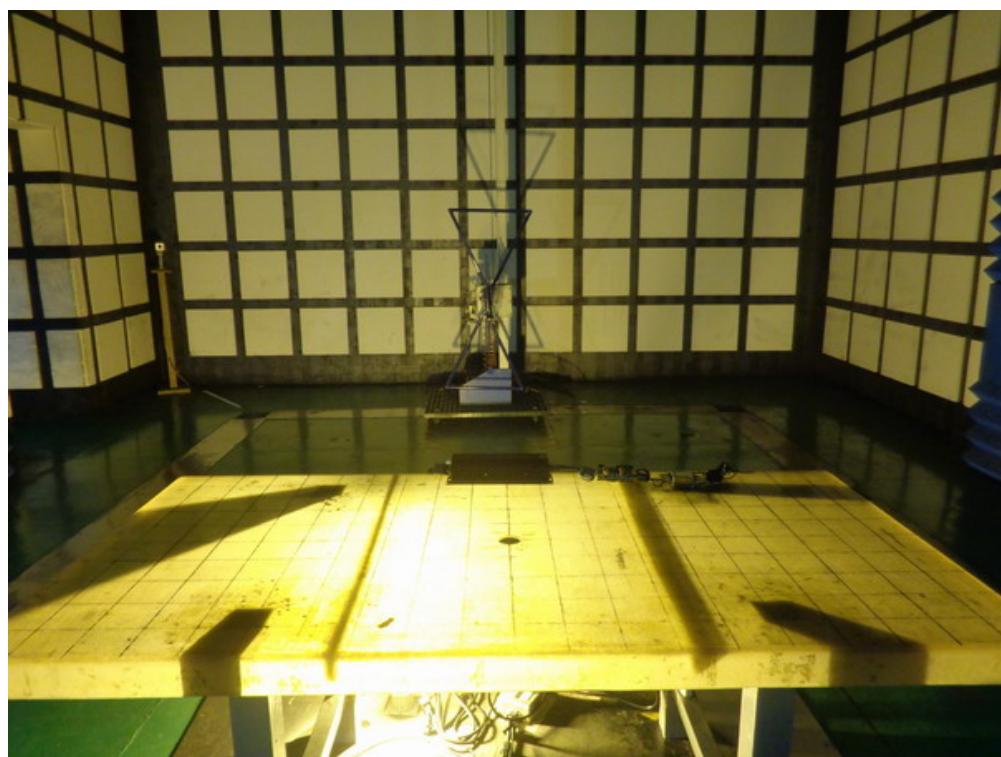
Site no. : 3m Chamber Data no. : 16
Dis. / Ant. : 3m 2016 LOOP HLA6120 Ant. pol. : HORIZONTAL
Limit : FCC PART 18-600W
Env. / Ins. : 20.1*C/65% Engineer : Brown
EUT : Electronic Ballast for HID Lamp
Power rating : AC 120V/60Hz
Test Mode : Full Load
M/N:H1-600COB-GAA

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission			
					Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	0.069	19.42	0.05	11.26	30.73	65.10	34.37	QP
2	0.819	19.97	0.05	6.73	26.75	65.10	38.35	QP
3	1.059	19.88	0.05	5.74	25.67	65.10	39.43	QP
4	1.659	19.70	0.05	2.90	22.65	65.10	42.45	QP
5	2.258	19.50	0.05	1.56	21.11	65.10	43.99	QP
6	3.158	19.20	0.05	1.63	20.88	65.10	44.22	QP

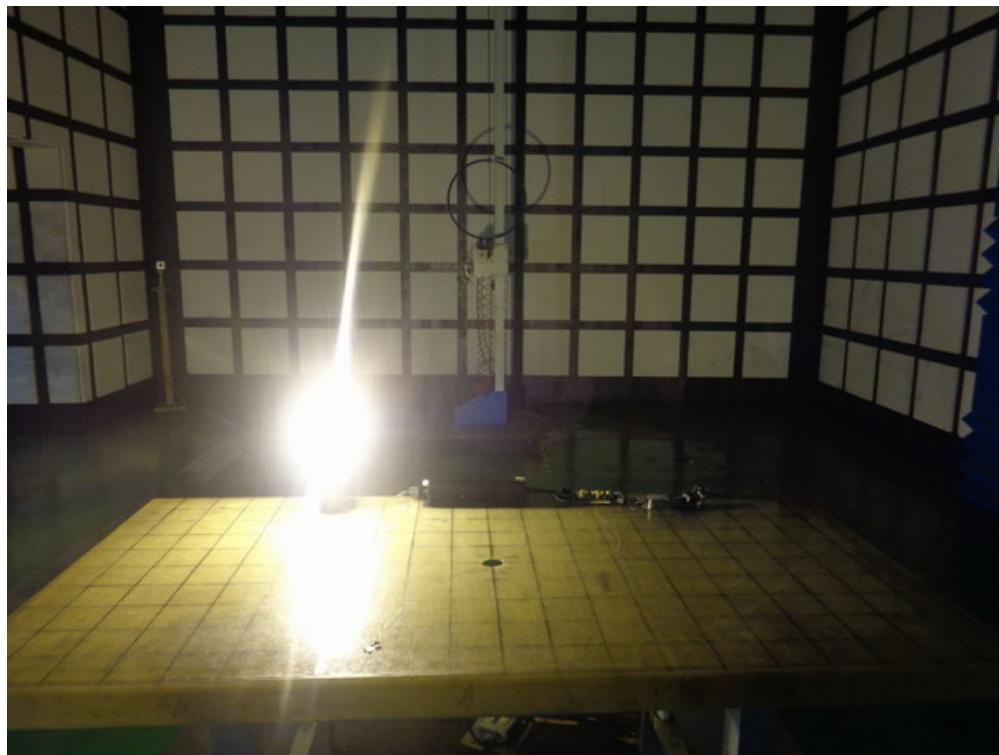
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Photograph 3: Radiated Emission Test Configuration, (30-1000MHz), Front



Photograph 4: Radiated Emission Test Configuration, (30-1000MHz), Back



Photograph 5: Radiated Emission Test Configuration, (9kHz-30MHz)

3.3 Information to User

The following warning or similar statement shall be provided in a conspicuous location in the operator's manual so that the user of a digital device is aware of its interference potential. Additional information about corrective measures may also be provided to the user at the manufacturer's option.

NOTE: This equipment has been tested and found to comply with the limits for a digital device, pursuant to Part 18 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- o **Reorient or relocate the receiving antenna**
- o **Increase the separation between the equipment and receiver**
- o **Connect the equipment into an outlet on a circuit different from that to which the receiver is connected**
- o **Consult the dealer or an experienced radio/TV technician for help**

The instruction manual for a computer peripheral that is separately marketed shall also include sufficient information to insure that the complete system is capable of complying with the requirements for a computing device. The manual should also caution the user that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment. Finally, the manual should instruct the user to use any special accessories, i.e. shielded cables, necessary for compliance with the standards.

In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required above may be included in the manual in that alternative form, provided that the user can be reasonably expected to have the capability to access information in that form.