

Application for FCC Certificate
On Behalf of
Hisense Electric Co., Ltd.

LED LCD TV

Model No.: 65H8C

Brand: Hisense

FCC ID : W9HLCDF0095

Prepared For : Hisense Electric Co., Ltd.
No.218 Qianwangang Road, Economy & Technology
Development Zone, Qingdao, China

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Report No. : ACI-F16265
Date of Test : Oct 31 - Nov 03, 2016
Date of Report : Nov 08, 2016

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.
Manufacturer : Hisense Electric Co., Ltd.
Factory #1 : Hisense Electric Co., Ltd.
Factory #2 : Tatum Mexico S.A. de C.V.
Factory #3 : HISENSE ELECTRONICA MEXICO, S.A. DE C.V.
EUT Description : LED LCD TV
Model No. : 65H8C
Brand : Hisense
Power Supply : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2015
AND ANSI C63.4-2014*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B (Class B) limits both radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: Refer to Sec2.1) which was tested in 3m anechoic chamber Oct 31 - Nov 03, 2016 is technically compliance with the FCC official limits also.

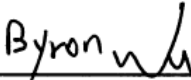
This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This 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.

The test results for EUT's TV functions are contained in No.F16264, a Verification report.

Date of Test : Oct 31 - Nov 03, 2016 Date of Report : Nov 08, 2016

Producer : 
ALAN HE / Assistant

Review : 
BYRON WU / Deputy Assistant Manager



For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory : 
Authorized Signature EMC BYRON KWO / Assistant General Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2015 AND ANSI C63.4-2014	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2015 AND ANSI C63.4-2014	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	LED LCD TV
Type of EUT	:	<input checked="" type="checkbox"/> Production <input type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No	:	65H8C
Brand	:	Hisense
Applicant	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Manufacturer	:	Same as Applicant
Factory #1	:	Same as Applicant
Factory #2	:	Tatung Mexico S.A. de C.V. Miguel Catalán 420, Parque Industrial Rio Bravo, Cd. Juarez, Chih., CP 32557
Factory #3	:	HISENSE ELECTRONICA MEXICO,S.A. DE C.V. Blvd. Hisense #3510 Parque Industrial Rosarito, C.P. 22710 Playas de Rosarito, B.C.
LCD Panel	:	Manufacturer : Hisense M/N : HE650K5U51-L1
Tuner	:	Manufacturer : XUGUANG M/N : HFT-96S3/W11FJ2H
Max Resolution	:	3840*2160@60Hz
HDMI Cable*4 (Lab provide)	:	Shielded, Detachable, 1.50m
Power Cord	:	Unshielded, Detachable, 1.80m, 2C
USB Cable*3 (Lab provide)	:	Shielded, Detachable, 1.00m
LAN Cable	:	Shielded, Detachable, 1.50m
MHL to HDMI Adaptor: with RCP (Lab provide)	:	Manufacture: CE-Link M/N: 3002

Remark:

The EUT is a LED LCD TV which input/output ports as follows:

Side Port:

- (1) One ANT Port : Connected with ATSC SG/TV SG
- (2) One USB1 Port : Connected with Hard-Disk #1
- (3) One USB2 Port : Connected with Hard-Disk #2
- (4) One Service Port : Do not open to customer
- (5) One AUDIO OUT Port : Connected with Earphone1
- (6) One HDMI1/MHL Port : Connected with PC
- (7) One HDMI2 Port : Connected with PC
- (8) One USB3 Port : Connected with Hard –Disk #3

Bottom Port:

- (9) One COMPONENT IN/AV IN Port : Connected with DVD PLAYER #1
- (10) One LAN Port : Connected with PC
- (11) One DIGITALAUDIO OUT Port : Connected with Audio Converter to Earphone
- (12) One HDMI3 Port : Connected with DVD PLAYER #1
- (13) One HDMI4 Port : Connected with DVD PLAYER #2

2.2 Peripherals

2.2.1 PC

Manufacturer : HP
 Model Number : Pro3340
 Serial Number : 6CR2512VFD
 Power Cord : Unshielded, Detachable, 1.8m
 Certificate : FCC DoC; CE/EMC; VCCI; C-Tick

2.2.2 Keyboard

Manufacturer : Microsoft
 Model Number : RT2300
 Serial Number : 7668200662248
 Data Cable : Shielded, Detachable, 1.5m
 Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.3 Mouse

Manufacturer : Microsoft
Model Number : RT2300
Serial Number : 6965712071551
Data Cable : Shielded, Detachable, 1.5m.
Certificate : CE/EMC, FCC DoC, VCCI, MIC,
C-Tick, BSMI

2.2.4 Modem

Manufacturer : TP-LINK
Model Number : TM-EC5658V
Serial Number : 07123301053
Data Cable : Shielded, Detachable, 1.5m
Certificate : CCC

2.2.5 Earphone *2

Manufacturer : EDIFIER
Model Number : H210

2.2.6 DVD PLAYER #1

Manufacturer : PHILIPS
Model Number : DVP3986K/93
Serial Number : KX1A0902120108
Certificate : CCC

2.2.7 DVD PLAYER #2

Manufacturer : PHILIPS
Model Number : DVP3986K/93
Serial Number : KX1A0902120082
Certificate : CCC

2.2.8 Hard Disk #1

Manufacturer : Tetasys
Model Number : F12
Serial Number : A010022-4860010X
Data Cable : Shielded, Undetachable, 1.8m.
Certificate : CE, FCC DoC

2.2.9 Hard Disk #2

Manufacturer : Tetasys
Model Number : F12
Serial Number : A010022-4A60007
Data Cable : Shielded, Undetachable, 1.8m.
Certificate : CE, FCC DoC

2.2.10 Hard Disk #3

Manufacturer : Tetasys
Model Number : F12
Serial Number : A010022-486006
Data Cable : Shielded, Undetachable, 1.8m.
Certificate : CE, FCC DoC

2.2.11 Smart Mobile Phone

Manufacturer : SAMSUNG
Model Number : GT-I9100G
Serial Number : 6935152011519
Certificate : CE/EMC

2.2.12 ATSC Signal Generator

Manufacturer : SENCORE
Model Number : ATSC997
Serial Number : 6790071

2.2.13 TV Signal Generator

Manufacturer : FLUKE
Model Number : 54200M01
Serial Number : 814008

2.3 Description of Test Facility

Site Description (No.3 3m Chamber)	:	Sept. 17, 1998 file on Jan.15, 2015 Renewed Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3F 34Bldg 680 Guiping Rd, Caohejing Hi-Tech Park, Shanghai 200233, China
FCC registration Number	:	91789
NVLAP Lab Code	:	200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty :	U = 3.4dB
Radiated Emission Expanded Uncertainty (30-200MHz):	U = 4.6dB(Horizontal) U = 4.3dB (Vertical)
Radiated Emission Expanded Uncertainty (200M-1GHz):	U = 4.5dB (Horizontal) U = 5.4dB (Vertical)
Radiated Emission Expanded Uncertainty (1GHz-6GHz):	U = 5.1dB

3 CONDUCTED EMISSION TEST

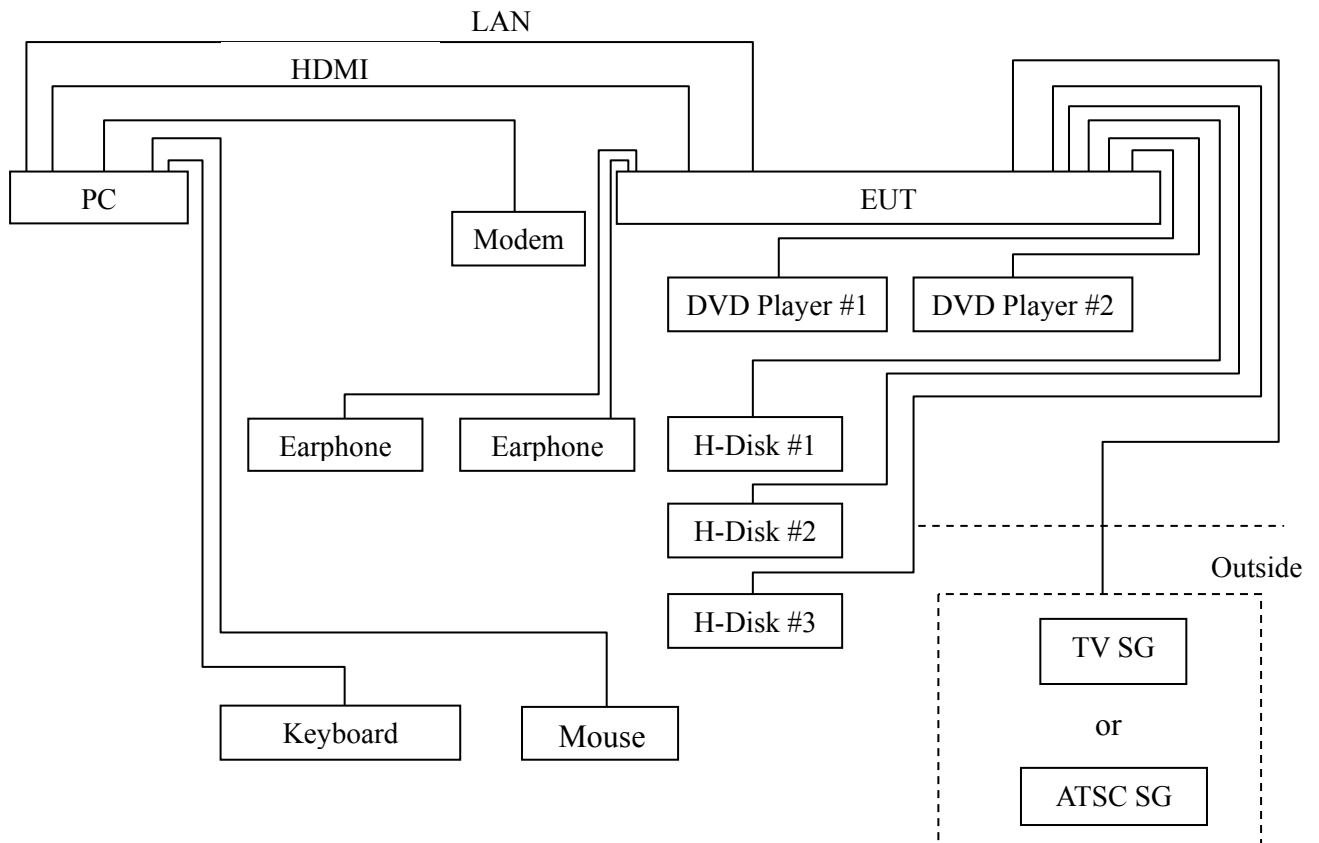
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

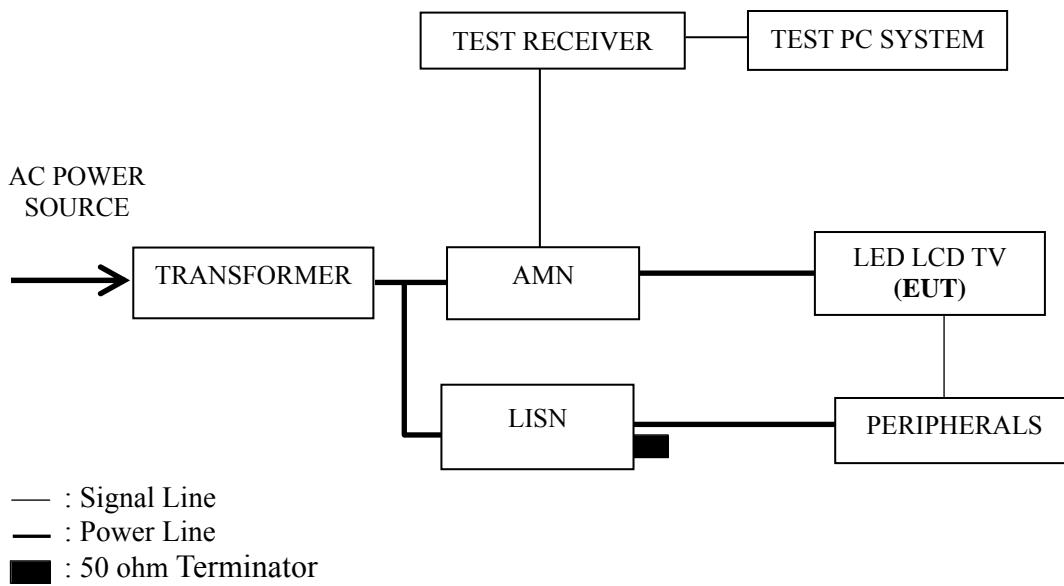
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	Apr 27, 2016	Apr 26, 2017
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Mar 20, 2016	Mar 19, 2017
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	May 15, 2016	May 14, 2017
4.	50Ω Terminator	Anritsu	BNC	001	Sep 18, 2016	Mar 17, 2017
5.	Software	Audix	E3	6.111206	--	--

3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



3.2.2 Conducted Disturbance Test Setup



3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)]

Frequency Range (MHz)	Limits Db (μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE 1 – The lower limit shall apply at the transition frequencies.
 NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the peripherals (listed in Sec 2.2) were installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner that tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

- 3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.
- 3.5.2 Turn on the power of all equipments and the EUT.
- 3.5.3 Set the contrast & brightness of EUT to maximum.
- 3.5.4 PC system ran the self-test program “EMC Test” by windows XP and sent “H” characters to EUT through graphic card, the EUT’s screen displayed and filled with “H” pattern by its resolution (Via HDMI Input).
- 3.5.5 PC system sent the 1kHz audio signal to EUT through audio port, the EUT speak out 1kHz audio signal.
- 3.5.6 In USB Play mode, set the EUT play digital media from H-Disk.
- 3.5.7 In LAN Play mode, set the EUT play digital media through LAN port.
- 3.5.8 In MHL mode, set the EUT play digital media from mobile phone.
- 3.5.9 The other peripherals devices were driven and operated during the test.
- 3.5.10 The test modes are as follows:

Test Mode
HDMI 3840*2160@60Hz & 1kHz playing
HDMI 1920*1080@60Hz & 1kHz playing
HDMI 1280*1024@60Hz & 1kHz playing
HDMI 640*480@60Hz & 1kHz playing
HDMI1080P
USB Play
LAN Play
MHL

3.6 Test Procedures

The EUT and peripherals were connected to the power mains through an Artificial Mains Network (AMN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (Line & Neutral) were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to ANSI C63.4 during conducted emission test.

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

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

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< **PASS** >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

Test Mode	Data Page
HDMI 3840*2160@60Hz & 1kHz playing	P14
HDMI 1920*1080@60Hz & 1kHz playing	P15
HDMI 1280*1024@60Hz & 1kHz playing	P16
HDMI 640*480@60Hz & 1kHz playing	P17
HDMI1080P	P18
USB Play	P19
LAN Play	P20
MHL	P21

NOTE 1 – Factor = Cable Loss + AMN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 4 – The worst case is for USB Play test mode. The worst emission is detected at 0.152MHz (Quasi-Peak Value) with corrected signal level of 55.98dB (μ V) (limit is 65.91 dB (μ V)), when the Neutral of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 48%RH

Test Mode : HDMI 3840*2160@60Hz Date of Test : Oct 31, 2016
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.153	42.51	10.58	53.09	65.82	12.73	QP
	0.406	29.20	10.43	39.63	57.73	18.10	
	0.661	28.00	10.40	38.40	56.00	17.60	
	1.184	26.60	10.40	37.00	56.00	19.00	
	2.527	24.50	10.42	34.92	56.00	21.08	
	7.364	19.10	10.47	29.57	60.00	30.43	
	0.153	28.51	10.58	39.09	55.82	16.73	AV
	0.406	18.60	10.43	29.03	47.73	18.70	
	0.661	18.40	10.40	28.80	46.00	17.20	
	1.184	17.10	10.40	27.50	46.00	18.50	
	2.527	16.00	10.42	26.42	46.00	19.58	
	7.364	12.50	10.47	22.97	50.00	27.03	
Neutral	0.156	42.40	10.57	52.97	65.65	12.68	QP
	0.402	29.40	10.42	39.82	57.82	18.00	
	0.933	26.10	10.40	36.50	56.00	19.50	
	1.735	25.59	10.43	36.02	56.00	19.98	
	4.719	24.10	10.50	34.60	56.00	21.40	
	7.251	18.80	10.53	29.33	60.00	30.67	
	0.156	30.80	10.57	41.37	55.65	14.28	AV
	0.402	20.10	10.42	30.52	47.82	17.30	
	0.933	17.20	10.40	27.60	46.00	18.40	
	1.735	16.49	10.43	26.92	46.00	19.08	
	4.719	17.00	10.50	27.50	46.00	18.50	
	7.251	12.90	10.53	23.43	50.00	26.57	

TEST ENGINEER: BYRON WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 48%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Oct 31, 2016
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.155	42.70	10.58	53.28	65.74	12.46	QP
	0.398	30.20	10.43	40.63	57.91	17.28	
	0.672	28.30	10.40	38.70	56.00	17.30	
	1.737	25.20	10.41	35.61	56.00	20.39	
	4.771	23.70	10.45	34.15	56.00	21.85	
	6.951	21.50	10.47	31.97	60.00	28.03	
	AV	0.155	29.30	10.58	39.88	55.74	15.86
		0.398	22.50	10.43	32.93	47.91	14.98
		0.672	19.20	10.40	29.60	46.00	16.40
		1.737	16.30	10.41	26.71	46.00	19.29
		4.771	16.00	10.45	26.45	46.00	19.55
		6.951	16.20	10.47	26.67	50.00	23.33
Neutral	0.156	42.70	10.57	53.27	65.65	12.38	QP
	0.422	29.99	10.42	40.41	57.42	17.01	
	0.654	27.90	10.39	38.29	56.00	17.71	
	1.195	26.90	10.41	37.31	56.00	18.69	
	2.527	25.10	10.45	35.55	56.00	20.45	
	7.444	18.00	10.54	28.54	60.00	31.46	
	AV	0.156	31.00	10.57	41.57	55.65	14.08
		0.422	21.49	10.42	31.91	47.42	15.51
		0.654	17.90	10.39	28.29	46.00	17.71
		1.195	17.30	10.41	27.71	46.00	18.29
		2.527	15.90	10.45	26.35	46.00	19.65
		7.444	12.70	10.54	23.24	50.00	26.76

TEST ENGINEER: BYRON WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 48%RH

Test Mode : HDMI 1280*1024@60Hz Date of Test : Oct 31, 2016
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.153	43.71	10.58	54.29	65.84	11.55	QP
	0.406	30.00	10.43	40.43	57.73	17.30	
	0.661	28.80	10.40	39.20	56.00	16.80	
	1.744	26.10	10.41	36.51	56.00	19.49	
	4.772	24.50	10.45	34.95	56.00	21.05	
	6.186	21.00	10.46	31.46	60.00	28.54	
	0.153	29.61	10.58	40.19	55.84	15.65	AV
	0.406	21.60	10.43	32.03	47.73	15.70	
	0.661	20.90	10.40	31.30	46.00	14.70	
	1.744	17.30	10.41	27.71	46.00	18.29	
	4.772	16.30	10.45	26.75	46.00	19.25	
	6.186	15.20	10.46	25.66	50.00	24.34	
Neutral	0.156	43.20	10.57	53.77	65.65	11.88	QP
	0.421	30.19	10.42	40.61	57.42	16.81	
	0.655	27.10	10.39	37.49	56.00	18.51	
	1.743	26.09	10.43	36.52	56.00	19.48	
	4.070	23.39	10.49	33.88	56.00	22.12	
	7.365	18.81	10.53	29.34	60.00	30.66	
	0.156	31.40	10.57	41.97	55.65	13.68	AV
	0.421	22.19	10.42	32.61	47.42	14.81	
	0.655	16.50	10.39	26.89	46.00	19.11	
	1.743	16.79	10.43	27.22	46.00	18.78	
	4.070	15.59	10.49	26.08	46.00	19.92	
	7.365	12.51	10.53	23.04	50.00	26.96	

TEST ENGINEER: BYRON WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 48%RH

Test Mode : HDMI 640*480@60Hz & 1kHz Playing Date of Test : Oct 31, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.153	44.01	10.58	54.59	65.82	11.23	QP
	0.408	30.10	10.43	40.53	57.68	17.15	
	0.679	28.20	10.40	38.60	56.00	17.40	
	1.733	25.40	10.41	35.81	56.00	20.19	
	4.768	24.00	10.45	34.45	56.00	21.55	
	7.175	20.50	10.47	30.97	60.00	29.03	AV
	0.153	29.71	10.58	40.29	55.82	15.53	
	0.408	21.20	10.43	31.63	47.68	16.05	
	0.679	19.50	10.40	29.90	46.00	16.10	
	1.733	17.80	10.41	28.21	46.00	17.79	
4.768	16.20	10.45	26.65	46.00	19.35	Neutral	
7.175	13.70	10.47	24.17	50.00	25.83		
0.152	44.60	10.58	55.18	65.91	10.73		
0.421	30.19	10.42	40.61	57.42	16.81		QP
0.701	27.20	10.39	37.59	56.00	18.41		
1.970	25.00	10.43	35.43	56.00	20.57		
4.069	23.39	10.49	33.88	56.00	22.12		
7.250	21.90	10.53	32.43	60.00	27.57		
0.152	29.50	10.58	40.08	55.91	15.83		AV
0.421	21.09	10.42	31.51	47.42	15.91		
0.701	17.60	10.39	27.99	46.00	18.01		
1.970	14.50	10.43	24.93	46.00	21.07		
4.069	16.19	10.49	26.68	46.00	19.32		
7.250	14.30	10.53	24.83	50.00	25.17		

TEST ENGINEER: BYRON WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 48%RH

Test Mode : HDMI 1080P Date of Test : Oct 31, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.155	43.60	10.58	54.18	65.75	11.57	QP
	0.398	29.80	10.43	40.23	57.91	17.68	
	0.672	29.60	10.40	40.00	56.00	16.00	
	1.746	26.20	10.41	36.61	56.00	19.39	
	4.770	24.00	10.45	34.45	56.00	21.55	
	6.880	22.30	10.47	32.77	60.00	27.23	
	0.155	30.20	10.58	40.78	55.75	14.97	AV
	0.398	22.20	10.43	32.63	47.91	15.28	
	0.672	22.00	10.40	32.40	46.00	13.60	
	1.746	17.80	10.41	28.21	46.00	17.79	
	4.770	16.40	10.45	26.85	46.00	19.15	
	6.880	16.60	10.47	27.07	50.00	22.93	
Neutral	0.156	43.60	10.57	54.17	65.65	11.48	QP
	0.422	30.19	10.42	40.61	57.42	16.81	
	0.662	27.60	10.39	37.99	56.00	18.01	
	1.734	25.69	10.43	36.12	56.00	19.88	
	4.669	23.09	10.50	33.59	56.00	22.41	
	7.251	18.30	10.53	28.83	60.00	31.17	
	0.156	31.10	10.57	41.67	55.65	13.98	AV
	0.422	20.99	10.42	31.41	47.42	16.01	
	0.662	19.70	10.39	30.09	46.00	15.91	
	1.734	17.79	10.43	28.22	46.00	17.78	
	4.669	16.79	10.50	27.29	46.00	18.71	
	7.251	13.30	10.53	23.83	50.00	26.17	

EUT : LED LCD TV Temperature : 22°C
 Model No. : 65H8C Humidity : 48%RH
 Test Mode : USB Play Date of Test : Oct 31, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	45.40	10.59	55.99	66.00	10.01	QP
	0.402	30.60	10.43	41.03	57.81	16.78	
	0.672	28.40	10.40	38.80	56.00	17.20	
	1.742	26.20	10.41	36.61	56.00	19.39	
	4.621	23.80	10.45	34.25	56.00	21.75	
	6.878	22.20	10.47	32.67	60.00	27.33	
	AV	0.150	27.20	10.59	37.79	56.00	18.21
		0.402	22.40	10.43	32.83	47.81	14.98
		0.672	19.00	10.40	29.40	46.00	16.60
		1.742	17.50	10.41	27.91	46.00	18.09
		4.621	17.40	10.45	27.85	46.00	18.15
		6.878	16.50	10.47	26.97	50.00	23.03
Neutral	0.152	45.40	10.58	55.98	65.91	9.93	QP
	0.408	30.00	10.42	40.42	57.69	17.27	
	0.679	28.40	10.39	38.79	56.00	17.21	
	1.719	24.89	10.43	35.32	56.00	20.68	
	3.899	21.80	10.48	32.28	56.00	23.72	
	7.250	18.50	10.53	29.03	60.00	30.97	
	AV	0.152	30.30	10.58	40.88	55.91	15.03
		0.408	21.30	10.42	31.72	47.69	15.97
		0.679	20.30	10.39	30.69	46.00	15.31
		1.719	16.29	10.43	26.72	46.00	19.28
		3.899	14.90	10.48	25.38	46.00	20.62
		7.250	13.50	10.53	24.03	50.00	25.97

TEST ENGINEER: BYRON WU

EUT : LED LCD TV Temperature : 22°C
 Model No. : 65H8C Humidity : 48%RH
 Test Mode : LAN Play Date of Test : Oct 31, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.152	44.90	10.59	55.49	65.92	10.43	QP
	0.406	30.50	10.43	40.93	57.73	16.80	
	0.686	27.40	10.40	37.80	56.00	18.20	
	1.743	26.10	10.41	36.51	56.00	19.49	
	4.772	24.00	10.45	34.45	56.00	21.55	
	6.282	20.20	10.46	30.66	60.00	29.34	
	AV	0.152	28.40	10.59	38.99	55.92	16.93
		0.406	22.60	10.43	33.03	47.73	14.70
		0.686	17.00	10.40	27.40	46.00	18.60
		1.743	16.30	10.41	26.71	46.00	19.29
		4.772	16.50	10.45	26.95	46.00	19.05
		6.282	14.60	10.46	25.06	50.00	24.94
Neutral	0.152	45.20	10.58	55.78	65.91	10.13	QP
	0.406	30.10	10.42	40.52	57.73	17.21	
	0.665	28.40	10.39	38.79	56.00	17.21	
	1.764	24.59	10.43	35.02	56.00	20.98	
	4.720	22.60	10.50	33.10	56.00	22.90	
	6.805	21.50	10.53	32.03	60.00	27.97	
	AV	0.152	30.30	10.58	40.88	55.91	15.03
		0.406	21.60	10.42	32.02	47.73	15.71
		0.665	18.80	10.39	29.19	46.00	16.81
		1.764	14.99	10.43	25.42	46.00	20.58
		4.720	15.20	10.50	25.70	46.00	20.30
		6.805	16.10	10.53	26.63	50.00	23.37

TEST ENGINEER: BYRON WU

EUT : LED LCD TV Temperature : 22°C
 Model No. : 65H8C Humidity : 48%RH
 Test Mode : MHL Date of Test : Oct 31, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark	
Line	0.151	44.80	10.59	55.39	65.92	10.53	QP	
	0.402	30.50	10.43	40.93	57.82	16.89		
	0.665	29.20	10.40	39.60	56.00	16.40		
	1.761	24.40	10.41	34.81	56.00	21.19		
	4.454	20.40	10.44	30.84	56.00	25.16		
	7.100	19.50	10.47	29.97	60.00	30.03		
	0.151	28.20	10.59	38.79	55.92	17.13	AV	
	0.402	22.30	10.43	32.73	47.82	15.09		
	0.665	21.00	10.40	31.40	46.00	14.60		
	1.761	15.20	10.41	25.61	46.00	20.39		
	4.454	16.20	10.44	26.64	46.00	19.36		
	7.100	14.30	10.47	24.77	50.00	25.23		
	Neutral	0.153	44.61	10.57	55.18	65.82	10.64	QP
		0.413	30.10	10.42	40.52	57.59	17.07	
0.679		28.10	10.39	38.49	56.00	17.51		
1.744		26.19	10.43	36.62	56.00	19.38		
4.672		23.19	10.50	33.69	56.00	22.31		
6.627		19.50	10.53	30.03	60.00	29.97		
0.153		31.21	10.57	41.78	55.82	14.04	AV	
0.413		20.30	10.42	30.72	47.59	16.87		
0.679		18.70	10.39	29.09	46.00	16.91		
1.744		16.39	10.43	26.82	46.00	19.18		
4.672		16.79	10.50	27.29	46.00	18.71		
6.627		15.30	10.53	25.83	50.00	24.17		

4 RADIATED EMISSION TEST

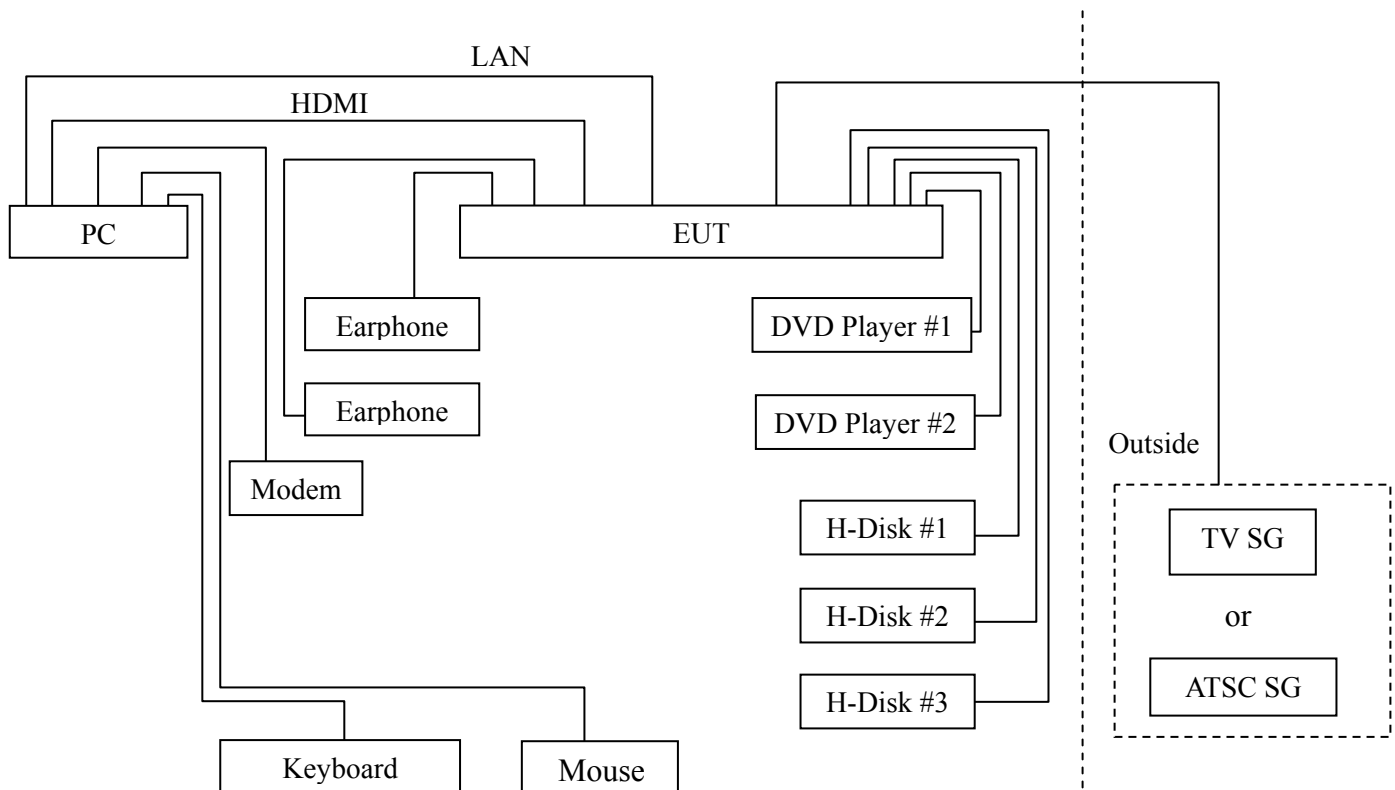
4.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101303	May 07, 2016	May 06, 2017
2.	Preamplifier	Agilent	8447D	2944A06664	Apr 27, 2016	Apr 26, 2017
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2016	Mar 19, 2017
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 15, 2016	May 14, 2017
5.	Horn Antenna	EMCO	3115	9607-4878	Jun 03, 2016	Jun 02, 2017
6.	Spectrum	Agilent	E7405A	MY45106600	Apr 26, 2016	Apr 25, 2017
7.	Spectrum	HP	8591EM	3628A00908	May 07, 2016	May 06, 2017
8.	Software	Audix	e3	6.2007-9-10	--	--

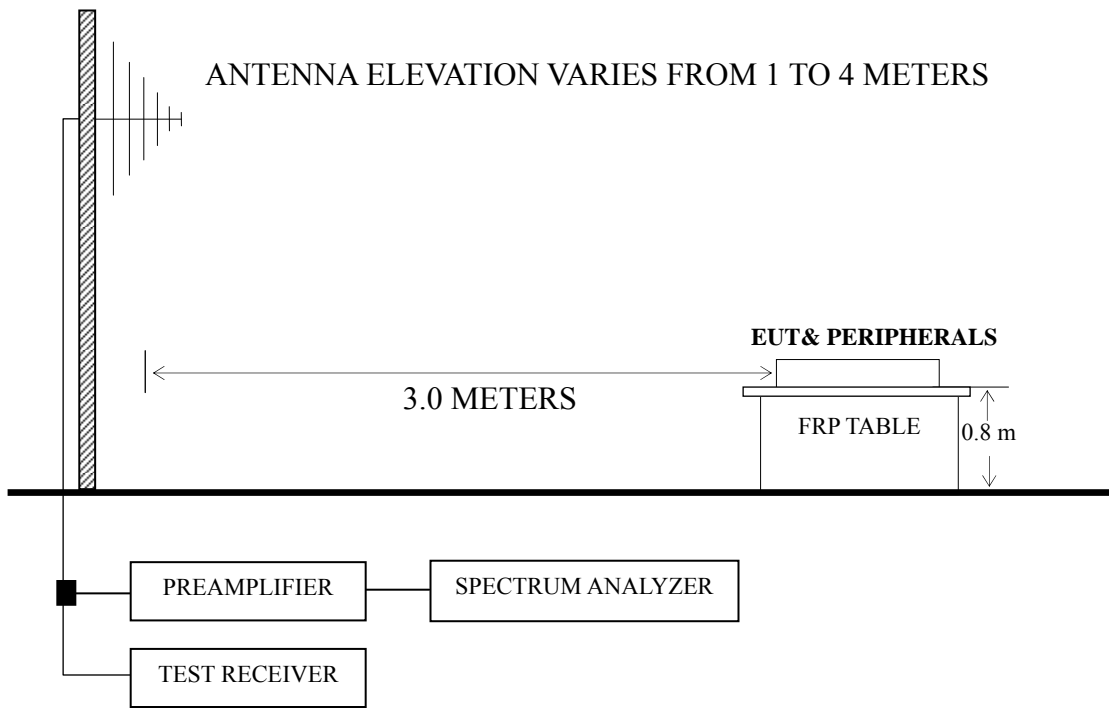
4.2 Block Diagram of Test Setup

4.2.1 EUT & Peripherals

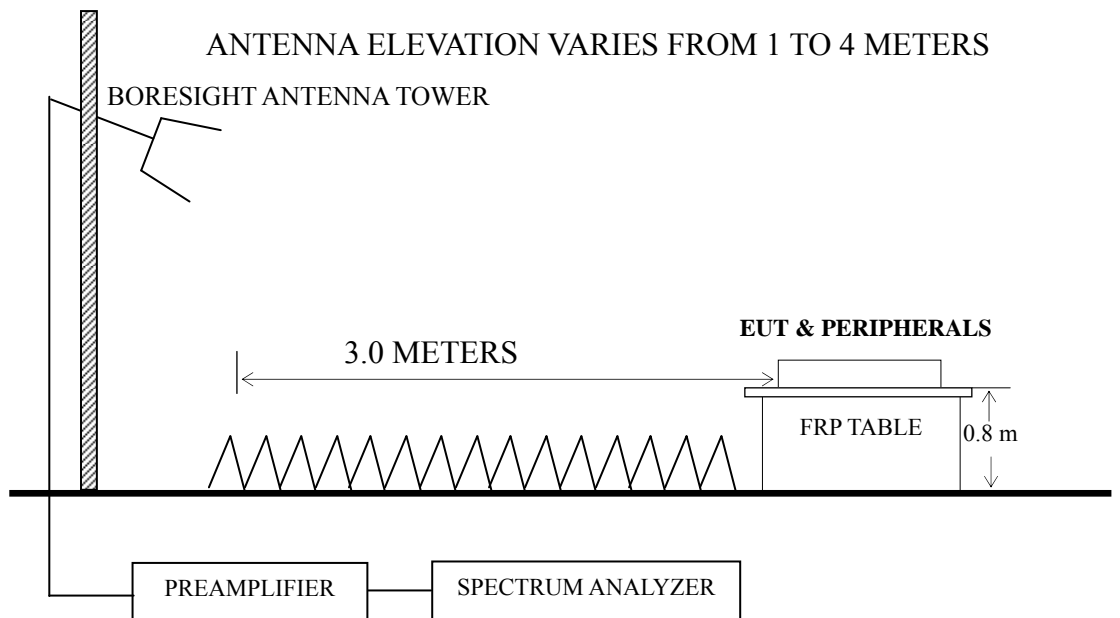


4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



4.2.2.2 Above 1GHz



4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)]

Frequency (MHz)	Distance (m)	Field strength limits	
		($\mu\text{V}/\text{m}$)	dB ($\mu\text{V}/\text{m}$)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB ($\mu\text{V}/\text{m}$) = 20 log Emission Level ($\mu\text{V}/\text{m}$)
 NOTE 2 - The tighter limit applies at the band edges.
 NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
 NOTE 4 - The limits shown are based on Quasi-peak value detector.
 NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.

4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4 requirements during radiated emission test.

The I.F. bandwidth of Test Receiver R&S ESCI was set at 120 kHz.

The frequency range from 30 MHz to 1000MHz was checked for all test modes.

The frequency range from 1 GHz to 6 GHz was checked for the maximum resolution test mode.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Test Mode	Data Page
HDMI 3840*2160@60Hz & 1kHz playing	P26-P27
HDMI 1920*1080@60Hz & 1kHz playing	P28
HDMI 1280*1024@60Hz & 1kHz playing	P29
HDMI 640*480@60Hz & 1kHz playing	P30
HDMI1080P	P31
USB Play	P32
LAN Play	P33
MHL	P34

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading. (< 1GHz);

Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading. (> 1GHz)

NOTE 2 – All readings are Quasi-Peak values below or equal to 1GHz, Peak and Average values above 1GHz.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The worst case is for HDMI 3840*2160@60Hz & 1kHz playing test mode. The worst emission at horizontal polarization was detected at 593.050 MHz with corrected signal level of 43.66 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 2.20 m height and the turntable was at 65°. The worst emission at vertical polarization was detected at 593.050 MHz with corrected signal level of 42.86 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.80 m height and the turntable was at 240°.

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 60%RH

Test Mode : HDMI 3840*2160@60Hz Date of Test : Nov 03, 2016
& 1kHz Playing

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)	Remark
Horizontal	82.071	22.54	9.41	0.90	--	32.85	40.00	7.15	QP
	147.921	22.89	12.29	1.27	--	36.45	43.50	7.05	
	306.754	25.97	13.82	1.77	--	41.56	46.00	4.44	
	435.590	20.32	16.52	2.13	--	38.97	46.00	7.03	
	593.050	22.91	18.25	2.50	--	43.66	46.00	2.34	
	912.862	18.82	21.37	3.09	--	43.28	46.00	2.72	PK
	1271.371	56.77	24.75	3.61	36.05	49.08	74.00	24.92	
	1809.539	52.66	26.84	4.19	35.39	48.30	74.00	25.70	
	2659.932	49.37	29.10	5.18	35.20	48.45	74.00	25.55	AV
	1271.371	36.66	24.75	3.61	36.05	28.97	54.00	25.03	
	1809.539	31.72	26.84	4.19	35.39	27.36	54.00	26.64	
	2659.932	30.99	29.10	5.18	35.20	30.07	54.00	23.93	

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 60%RH

Test Mode : HDMI 3840*2160@60Hz & 1kHz Playing Date of Test : Nov 03, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	31.955	17.74	17.10	0.58	--	35.42	40.00	4.58	QP
	152.130	24.55	11.80	1.29	--	37.64	43.50	5.86	
	271.325	25.45	13.28	1.69	--	40.42	46.00	5.58	
	437.120	22.52	16.56	2.13	--	41.21	46.00	4.79	
	593.050	22.11	18.25	2.50	--	42.86	46.00	3.14	
	912.862	18.20	21.37	3.09	--	42.66	46.00	3.34	PK
	1215.678	63.17	24.52	3.54	36.13	55.10	74.00	18.90	
	1806.300	58.19	26.84	4.19	35.40	53.82	74.00	20.18	
	2683.869	56.78	29.23	5.25	35.20	56.06	74.00	17.94	AV
	1215.678	43.23	24.52	3.54	36.13	35.16	54.00	18.84	
	1806.300	39.03	26.84	4.19	35.40	34.66	54.00	19.34	
	2683.869	35.89	29.23	5.25	35.20	35.17	54.00	18.83	

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 60%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Nov 03, 2016
& 1kHz Playing

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	82.938	22.75	9.59	0.90	33.24	40.00	6.76
	116.132	24.54	12.34	1.10	37.98	43.50	5.52
	164.908	26.63	11.10	1.35	39.08	43.50	4.42
	181.920	26.54	10.27	1.41	38.22	43.50	5.28
	590.974	21.88	18.17	2.50	42.55	46.00	3.45
	890.728	19.03	21.10	3.07	43.20	46.00	2.80
Vertical	116.132	23.20	12.34	1.10	36.64	43.50	6.86
	132.221	21.13	12.86	1.19	35.18	43.50	8.32
	290.017	22.25	13.50	1.73	37.48	46.00	8.52
	435.590	21.38	16.52	2.13	40.03	46.00	5.97
	595.133	21.13	18.25	2.50	41.88	46.00	4.12
	900.147	18.67	21.20	3.09	42.96	46.00	3.04

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 60%RH

Test Mode : HDMI 1280*1024@60Hz & 1kHz Playing Date of Test : Nov 03, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	84.110	19.52	9.84	0.91	30.27	40.00	9.73
	164.908	23.64	11.10	1.35	36.09	43.50	7.41
	291.036	23.39	13.52	1.74	38.65	46.00	7.35
	435.590	19.44	16.52	2.13	38.09	46.00	7.91
	595.133	21.50	18.25	2.50	42.25	46.00	3.75
	890.728	18.74	21.10	3.07	42.91	46.00	3.09
Vertical	31.955	15.68	17.10	0.58	33.36	40.00	6.64
	152.130	20.78	11.80	1.29	33.87	43.50	9.63
	270.375	21.98	13.28	1.69	36.95	46.00	9.05
	435.590	21.21	16.52	2.13	39.86	46.00	6.14
	593.050	21.13	18.25	2.50	41.88	46.00	4.12
	890.728	17.11	21.10	3.07	41.28	46.00	4.72

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 60%RH

Test Mode : HDMI 640*480@60Hz & 1kHz Playing Date of Test : Nov 03, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	80.927	21.95	9.07	0.89	31.91	40.00	8.09
	147.921	20.95	12.29	1.27	34.51	43.50	8.99
	297.224	24.79	13.60	1.75	40.14	46.00	5.86
	435.590	20.12	16.52	2.13	38.77	46.00	7.23
	590.974	21.44	18.17	2.50	42.11	46.00	3.89
	912.862	17.05	21.37	3.09	41.51	46.00	4.49
Vertical	31.955	14.63	17.10	0.58	32.31	40.00	7.69
	144.842	20.64	12.60	1.26	34.50	43.50	9.00
	270.375	21.81	13.28	1.69	36.78	46.00	9.22
	435.590	22.02	16.52	2.13	40.67	46.00	5.33
	593.050	21.23	18.25	2.50	41.98	46.00	4.02
	890.728	17.52	21.10	3.07	41.69	46.00	4.31

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C
 Model No. : 65H8C Humidity : 60%RH
 Test Mode : HDMI1080P Date of Test : Nov 03, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	116.132	20.62	12.34	1.10	34.06	43.50	9.44
	169.005	25.62	10.93	1.36	37.91	43.50	5.59
	290.017	24.50	13.50	1.73	39.73	46.00	6.27
	435.590	21.26	16.52	2.13	39.91	46.00	6.09
	578.670	19.97	18.30	2.46	40.73	46.00	5.27
	912.862	16.85	21.37	3.09	41.31	46.00	4.69
Vertical	30.962	15.13	17.71	0.57	33.41	40.00	6.59
	132.221	22.98	12.86	1.19	37.03	43.50	6.47
	270.375	23.11	13.28	1.69	38.08	46.00	7.92
	435.590	21.99	16.52	2.13	40.64	46.00	5.36
	590.974	21.01	18.17	2.50	41.68	46.00	4.32
	909.667	17.80	21.30	3.09	42.19	46.00	3.81

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 60%RH

Test Mode : USB Play Date of Test : Nov 03, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	85.598	22.05	10.20	0.92	33.17	40.00	6.83
	124.569	22.42	12.28	1.15	35.85	43.50	7.65
	167.824	25.91	10.99	1.36	38.26	43.50	5.24
	231.718	25.61	11.62	1.58	38.81	46.00	7.19
	513.633	19.11	17.58	2.30	38.99	46.00	7.01
	836.244	16.20	20.30	2.96	39.46	46.00	6.54
Vertical	32.979	16.10	16.67	0.59	33.36	40.00	6.64
	104.170	20.47	12.32	1.03	33.82	43.50	9.68
	171.995	23.86	10.77	1.37	36.00	43.50	7.50
	309.998	24.20	13.90	1.79	39.89	46.00	6.11
	497.677	17.58	17.46	2.26	37.30	46.00	8.70
	755.387	16.76	19.60	2.81	39.17	46.00	6.83

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 60%RH

Test Mode : LAN Play Date of Test : Nov 03, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	146.888	24.63	12.41	1.27	38.31	43.50	5.19
	164.908	25.36	11.10	1.35	37.81	43.50	5.69
	291.036	22.88	13.52	1.74	38.14	46.00	7.86
	435.590	20.26	16.52	2.13	38.91	46.00	7.09
	590.974	20.31	18.17	2.50	40.98	46.00	5.02
	912.862	16.80	21.37	3.09	41.26	46.00	4.74
Vertical	31.843	16.55	17.19	0.58	34.32	40.00	5.68
	145.861	21.48	12.48	1.26	35.22	43.50	8.28
	290.017	20.54	13.50	1.73	35.77	46.00	10.23
	435.590	20.89	16.52	2.13	39.54	46.00	6.46
	595.133	18.34	18.25	2.50	39.09	46.00	6.91
	912.862	15.46	21.37	3.09	39.92	46.00	6.08

TEST ENGINEER: CAESAR WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 65H8C Humidity : 60%RH

Test Mode : MHL Date of Test : Nov 03, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	70.337	25.57	7.46	0.84	33.87	40.00	6.13
	101.644	22.07	12.36	1.01	35.44	43.50	8.06
	185.788	23.99	10.17	1.43	35.59	43.50	7.91
	284.977	25.27	13.40	1.72	40.39	46.00	5.61
	524.554	20.26	17.62	2.32	40.20	46.00	5.80
	810.265	17.28	20.30	2.91	40.49	46.00	5.51
Vertical	34.396	15.44	16.02	0.60	32.06	40.00	7.94
	80.081	24.68	8.90	0.89	34.47	40.00	5.53
	202.100	24.59	10.17	1.49	36.25	43.50	7.25
	372.005	22.76	15.63	1.97	40.36	46.00	5.64
	556.774	19.39	18.05	2.40	39.84	46.00	6.16
	734.491	15.01	19.47	2.79	37.27	46.00	8.73

TEST ENGINEER: CAESAR WU

5 DEVIATION TO TEST SPECIFICATIONS

None.

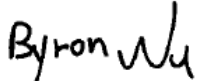
6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
SMcontact	SMR-TSL-4-3.5-5R	Qingdao Joinset Co., Ltd	See Internal Photos Figure 21

Note: We had required the applicant and manufacturer that all electrical and mechanical devices employed for spurious radiation suppression, including any modifications made during certification testing, must be incorporated in each unit marked

TEST ENGINEER:



(BYRON WU)