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

LED LCD TV

Model No.	Brand
65H7B	Hisense
65H7B0	
65H7B1	
65H7B2	

FCC ID : W9HLCDF0061

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.
3F and 4F, 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Tel: +86-21-64955500
Fax: +86-21-64955491

Report No. : ACI-F15118
Date of Test : Jun 24-26, 2015
Date of Report : Jul 06, 2015

TABLE OF CONTENTS

Page

TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.

Manufacturer : Hisense Electric Co., Ltd.

Factory #1 : Hisense Electric Co., Ltd.

Factory #2 : Tatung Mexico S.A. de C.V.

EUT Description : LED LCD TV

Model No.	Brand	Power Supply
Refer to Sec2.1	Hisense	120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2014 AND ANSI C63.4-2003

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 Jun 24-26, 2015 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 contains data that are not covered by the NVLAP accreditation.

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.F15117, a Verification report.

Date of Test : Jun 24 - Jul 03, 2015 **Date of Report :** Jul 07, 2015

Producer : Alan He
ALAN HE / Assistant

Review : Wency Yang
WENCY YANG / Deputy Assistant Manager

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

Signatory : Byron Kwo
Authorized Signature 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 2014 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2014 AND ANSI C63.4-2003	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	LED LCD TV
Type of EUT	:	☑ Production ☐ Pre-product ☐ Pro-type
Model No.	:	65H7B, 65H7B0, 65H7B1, 65H7B2
Note	:	The EUT has two appearances. The above models are all the same except for model name. 65H7B model is tested and recorded in the report.
Brand Name	:	Hisense
Applicant	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Manufacturer	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Factory #1	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Factory #2	:	Tatung Mexico S.A. de C.V. Miguel Catalán 420, Parque Industrial Rio Bravo, Cd. Juarez, Chih., CP 32557
LCD Panel	:	Manufacturer : Hisense M/N : HE650HU-B01\S1.B2\ROH
Tuner	:	Manufacturer : XuGuang Tech. Co., Ltd. M/N : HFT-96S3/W11FJ2H\RoH
Max Resolution	:	3840*2160@60Hz
HDMI Cable*4 (Lab provide)	:	Shielded, Detachable, 1.00m, with two cores
Power Cord	:	Unshielded, Detachable, 1.80m, without core
LAN Cable (Lab provide)	:	Unshielded, Detachable, 1.50m, without core
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 USB3 Port
: Connected with U-Disk #1
(1) One HDMI2/ARC Port
: Connected with DVD PLAYER #2
(2) One HDMI1/MHL Port
: Connected with Smart Mobile Phone
(2) One Audio out Port
: Connected with Earphone
(3) One Service Port
: Do not open to customer
(4) One USB1 Port
: Connected with U-Disk #2
(5) One USB2 Port
: Connected with U-Disk #3
(6) One ANT/CABLE IN Port
: Connected with Antenna or ATSC SG / TV SG

Back Port:
(3) One LAN Port
: Connected with PC
(4) One HDMI3(2.0) Port
: Connected with DVD PLAYER #1
(5) One HDMI4(2.0) Port
: Connected with PC
(6) One Digital Audio Out Port
: Connected with DVD PLAYER #1
(7) One component of YPbPr+Video Port
: Connected with DVD PLAYER #2
(7) One AV Port
: Connected with DVD PLAYER #1

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx7200MT
Serial Number	:	CNG622017W
Power Cord	:	Unshielded, Detachable, 1.8m
Certificate	:	FCC DoC; CE/EMC; VCCI; C-Tick; BSMI, 3C, MIC

2.2.2 Printer

Manufacturer	:	HP
Model Number	:	P1007
Serial Number	:	VNFN713831
Data Cable	:	Shielded, detachable, 1.8m
Certificate	:	GS, CE/EMC, C-Tick, FCC DoC

2.2.3 Keyboard

Manufacturer	:	Microsoft
Model Number	:	RT2300
Serial Number	:	7668200662248
Data Cable	:	Shielded, Undetachable, 1.8m
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.4 Mouse

Manufacturer	:	Microsoft
Model Number	:	RT2300
Serial Number	:	6965712071551
Data Cable	:	Shielded, Undetachable, 1.8m.
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.5 Modem

Manufacturer	:	TP-LINK
Model Number	:	TM-EC5658V
Serial Number	:	07123301053
Data Cable	:	Shielded, Detachable, 1.8m
Certificate	:	FCC DoC, CE/EMC, CCC

2.2.6 Earphone

Manufacturer	:	audio-technica
Model Number	:	ATH-CKL200

2.2.7 TV Signal Generator

Manufacturer	:	FLUKE
Model Number	:	54200m01
Serial Number	:	814008
Data Cable	:	Shielded, detachable, 2.0m
Power Cord	:	Unshielded, detachable, 2.0m
Certificate	:	CE/EMC, FCC DoC, CCC

2.2.8 ATSC Signal Generator

Manufacturer	:	SENCORE
Model Number	:	ATSC997
Serial Number	:	6790071

2.2.9 Smart Mobile Phone

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

2.2.10 DVD PLAYER #1

Manufacturer	:	PHILIPS
Model Number	:	DVP3986K/93
Serial Number	:	KX1A0902120108
Certificate	:	FCC DoC, CE/EMC, CCC

2.2.11 DVD PLAYER #2

Manufacturer	:	PHILIPS
Model Number	:	DVP3986K/93
Serial Number	:	KX1A0902120082
Certificate	:	FCC DoC, CE/EMC, CCC

2.2.12 U-Disk #1

Manufacturer	:	Kingmax
Model Number	:	8G
Certificate	:	CE/EMC, FCC DoC, IC

2.2.13 U-Disk #2

Manufacturer	:	Kingmax
Model Number	:	8G
Certificate	:	CE/EMC, FCC DoC, IC

2.2.14 U-Disk #3

Manufacturer	:	Transcend
Model Number	:	8G
Certificate	:	CE/EMC, FCC DoC, IC

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
NVLAP Lab Code	:	200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty : U = 2.8dB

Radiated Emission Expanded Uncertainty (30-200MHz):

U = 4.4dB (Horizontal)

U = 4.4dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):

U = 4.4dB (Horizontal)

U = 5.5dB (Vertical)

Radiated Emission Expanded Uncertainty (1GHz-6GHz):

U = 5.1dB

3 CONDUCTED EMISSION TEST

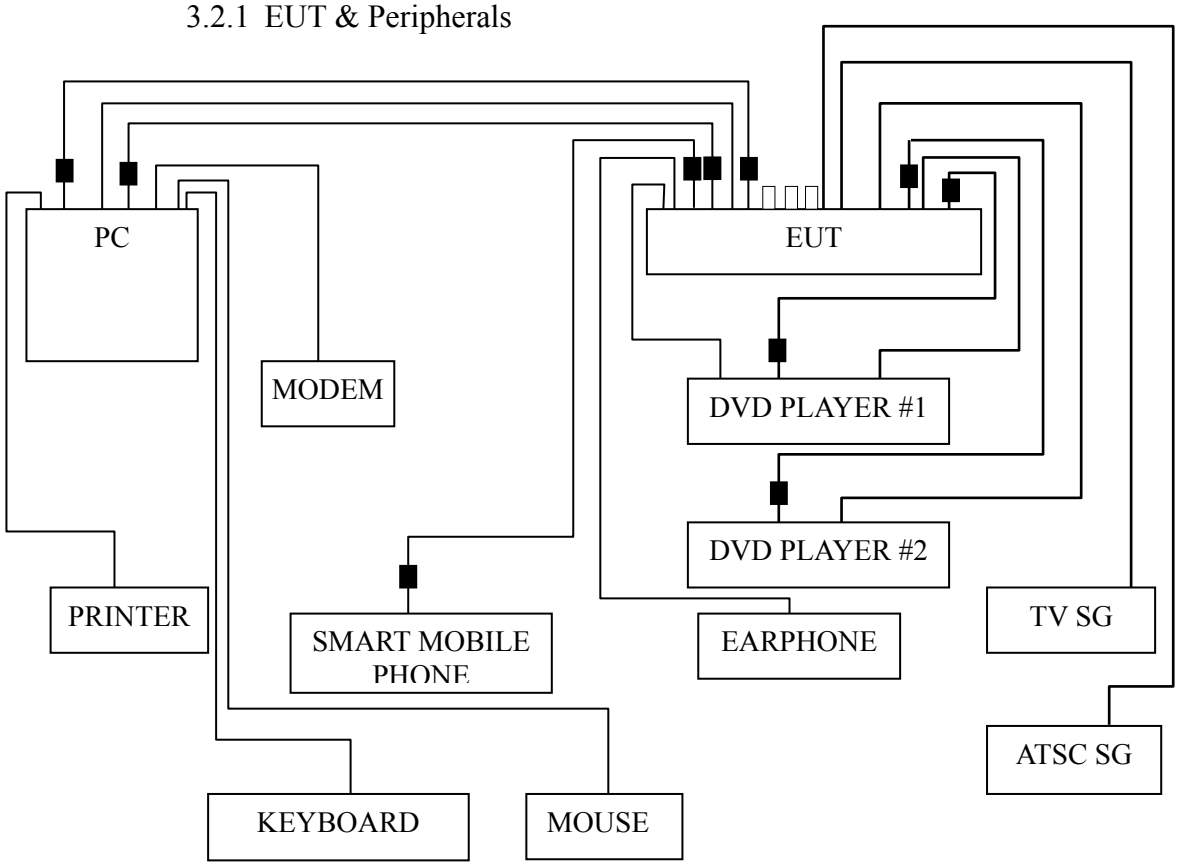
3.1 Test Equipment

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	101303	Jul 01, 2014	Jun 30, 2015
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jun 27, 2014	Jun 26, 2015
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Mar 20, 2015	Mar 19, 2016
4.	50Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2015	Sep 17, 2015
5.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2015	Mar 19, 2016
6.	Software	Audix	E3	6.111206	--	--

3.2 Block Diagram of Test Setup

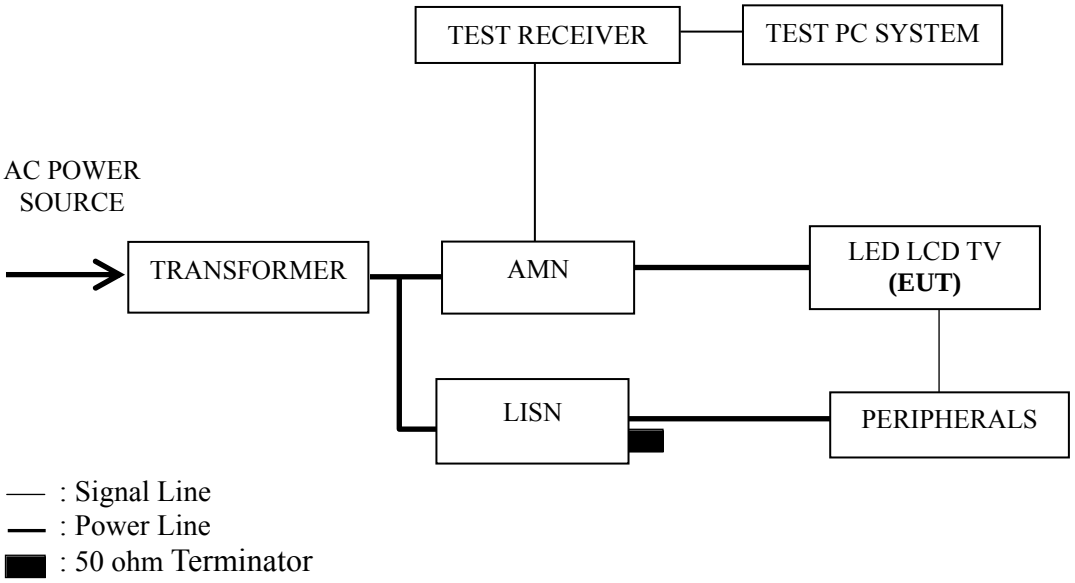
3.2.1 EUT & Peripherals



▯ : U-Disk

■ : Ferrite Core

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 (μV)	
	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 U-Disk.

3.5.7 In LAN Play mode, set the EUT play digital media through LAN port.

3.5.8 The other peripherals devices were driven and operated during the test.

3.5.9 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
USB Play
LAN Play

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 C63.4:2003 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	P13
HDMI 1920*1080@60Hz & 1kHz playing	P14
HDMI 1280*1024@60Hz & 1kHz playing	P15
HDMI 640*480@60Hz & 1kHz playing	P16
USB Play	P17
LAN Play	P18

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 HDMI 640*480@60Hz & 1kHz playing test mode. The worst emission is detected at 0.150 MHz (Average Value) with corrected signal level of 53.48 dB (μV) (limit is 56.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	65H7B	Humidity :	48%RH	
Test Mode	:	HDMI 3840*2160@60Hz & 1kHz Playing	Date of Test :	Jun 24, 2015	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	47.10	10.58	57.68	66.00	8.32	QP
	0.195	41.49	10.55	52.04	63.83	11.79	
	0.237	38.60	10.52	49.12	62.21	13.09	
	0.414	34.49	10.44	44.93	57.57	12.64	
	0.689	27.50	10.43	37.93	56.00	18.07	
	6.833	23.20	10.44	33.64	60.00	26.36	
	0.150	**38.50**	**10.58**	**49.08**	**56.00**	**6.92**	AV
	0.195	31.59	10.55	42.14	53.83	11.69	
	0.237	24.40	10.52	34.92	52.21	17.29	
	0.414	27.19	10.44	37.63	47.57	9.94	
	0.689	18.70	10.43	29.13	46.00	16.87	
	6.833	13.60	10.44	24.04	50.00	25.96	
Neutral	0.150	45.90	10.58	56.48	66.00	9.52	QP
	0.204	40.90	10.53	51.43	63.44	12.01	
	0.412	34.19	10.43	44.62	57.60	12.98	
	0.716	26.80	10.42	37.22	56.00	18.78	
	0.953	19.40	10.41	29.81	56.00	26.19	
	6.607	26.30	10.51	36.81	60.00	23.19	
	0.150	37.00	10.58	47.58	56.00	8.42	AV
	0.204	32.70	10.53	43.23	53.44	10.21	
	0.412	26.59	10.43	37.02	47.60	10.58	
	0.716	17.90	10.42	28.32	46.00	17.68	
	0.953	9.60	10.41	20.01	46.00	25.99	
	6.607	16.10	10.51	26.61	50.00	23.39	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	65H7B	Humidity :	48%RH	
Test Mode	:	HDMI 1920*1080@60Hz & 1kHz Playing	Date of Test :	Jun 24, 2015	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	49.40	10.58	59.98	65.99	6.01	QP
	0.203	41.60	10.54	52.14	63.50	11.36	
	0.237	38.20	10.52	48.72	62.22	13.50	
	0.429	32.81	10.43	43.24	57.28	14.04	
	0.689	27.90	10.43	38.33	56.00	17.67	
	6.970	24.50	10.45	34.95	60.00	25.05	
	0.150	41.00	10.58	51.58	55.99	4.41	AV
	0.203	32.90	10.54	43.44	53.50	10.06	
	0.237	24.60	10.52	35.12	52.22	17.10	
	0.429	26.01	10.43	36.44	47.28	10.84	
	0.689	19.00	10.43	29.43	46.00	16.57	
	6.970	11.10	10.45	21.55	50.00	28.45	
Neutral	0.150	49.80	10.58	60.38	66.00	5.62	QP
	0.197	41.70	10.53	52.23	63.74	11.51	
	0.414	34.59	10.43	45.02	57.56	12.54	
	0.718	26.70	10.42	37.12	56.00	18.88	
	1.005	22.20	10.41	32.61	56.00	23.39	
	6.635	25.90	10.51	36.41	60.00	23.59	
	0.150	**41.40**	**10.58**	**51.98**	**56.00**	**4.02**	AV
	0.197	32.20	10.53	42.73	53.74	11.01	
	0.414	26.79	10.43	37.22	47.56	10.34	
	0.718	18.10	10.42	28.52	46.00	17.48	
	1.005	12.90	10.41	23.31	46.00	22.69	
	6.635	11.60	10.51	22.11	50.00	27.89	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	65H7B	Humidity :	48%RH	
Test Mode	:	HDMI 1280*1024@60Hz & 1kHz Playing	Date of Test :	Jun 24, 2015	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	51.10	10.58	61.68	66.00	4.32	QP
	0.177	43.00	10.56	53.56	64.64	11.08	
	0.412	33.60	10.43	44.03	57.62	13.59	
	0.699	27.00	10.43	37.43	56.00	18.57	
	0.973	22.90	10.40	33.30	56.00	22.70	
	6.656	27.31	10.43	37.74	60.00	22.26	
	0.150	**42.50**	**10.58**	**53.08**	**56.00**	**2.92**	AV
	0.177	28.50	10.56	39.06	54.64	15.58	
	0.412	24.90	10.43	35.33	47.62	12.29	
	0.699	17.30	10.43	27.73	46.00	18.27	
	0.973	13.00	10.40	23.40	46.00	22.60	
	6.656	16.41	10.43	26.84	50.00	23.16	
Neutral	0.150	50.40	10.58	60.98	66.00	5.02	QP
	0.197	41.60	10.53	52.13	63.74	11.61	
	0.244	38.10	10.51	48.61	61.95	13.34	
	0.415	34.59	10.43	45.02	57.55	12.53	
	0.690	27.40	10.42	37.82	56.00	18.18	
	6.630	26.40	10.51	36.91	60.00	23.09	
	0.150	41.90	10.58	52.48	56.00	3.52	AV
	0.197	32.30	10.53	42.83	53.74	10.91	
	0.244	25.00	10.51	35.51	51.95	16.44	
	0.415	26.79	10.43	37.22	47.55	10.33	
	0.690	18.20	10.42	28.62	46.00	17.38	
	6.630	13.50	10.51	24.01	50.00	25.99	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	65H7B	Humidity	:	48%RH
Test Mode	:	HDMI 640*480@60Hz & 1kHz Playing	Date of Test	:	Jun 24, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	51.00	10.58	61.58	66.00	4.42	QP
	0.208	41.51	10.53	52.04	63.29	11.25	
	0.415	34.89	10.44	45.33	57.54	12.21	
	0.694	28.20	10.43	38.63	56.00	17.37	
	1.289	19.10	10.40	29.50	56.00	26.50	
	6.618	26.60	10.43	37.03	60.00	22.97	
	0.150	**42.90**	**10.58**	**53.48**	**56.00**	**2.52**	AV
	0.208	32.41	10.53	42.94	53.29	10.35	
	0.415	26.99	10.44	37.43	47.54	10.11	
	0.694	19.70	10.43	30.13	46.00	15.87	
	1.289	7.90	10.40	18.30	46.00	27.70	
	6.618	13.40	10.43	23.83	50.00	26.17	
Neutral	0.150	50.80	10.58	61.38	66.00	4.62	QP
	0.199	41.80	10.53	52.33	63.67	11.34	
	0.235	37.90	10.51	48.41	62.27	13.86	
	0.417	34.10	10.43	44.53	57.51	12.98	
	0.695	27.30	10.42	37.72	56.00	18.28	
	6.627	26.30	10.51	36.81	60.00	23.19	
	0.150	42.50	10.58	53.08	56.00	2.92	AV
	0.199	32.60	10.53	43.13	53.67	10.54	
	0.235	23.60	10.51	34.11	52.27	18.16	
	0.417	26.90	10.43	37.33	47.51	10.18	
	0.695	19.10	10.42	29.52	46.00	16.48	
	6.627	13.40	10.51	23.91	50.00	26.09	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	65H7B	Humidity	:	48%RH
Test Mode	:	USB Play	Date of Test	:	Jun 24, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	51.20	10.58	61.78	66.00	4.22	QP
	0.180	42.90	10.55	53.45	64.47	11.02	
	0.234	38.09	10.53	48.62	62.30	13.68	
	0.420	33.50	10.44	43.94	57.46	13.52	
	0.693	28.30	10.43	38.73	56.00	17.27	
	6.686	26.60	10.44	37.04	60.00	22.96	
	0.150	42.90	10.58	53.48	56.00	2.52	AV
	0.180	30.30	10.55	40.85	54.47	13.62	
	0.234	23.19	10.53	33.72	52.30	18.58	
	0.420	26.30	10.44	36.74	47.46	10.72	
	0.693	19.70	10.43	30.13	46.00	15.87	
	6.686	13.30	10.44	23.74	50.00	26.26	
Neutral	0.150	51.30	10.58	61.88	66.00	4.12	QP
	0.199	41.90	10.53	52.43	63.67	11.24	
	0.237	38.00	10.51	48.51	62.22	13.71	
	0.432	33.11	10.42	43.53	57.21	13.68	
	0.687	25.10	10.42	35.52	56.00	20.48	
	6.632	26.40	10.51	36.91	60.00	23.09	
	0.150	**42.60**	**10.58**	**53.18**	**56.00**	**2.82**	AV
	0.199	32.70	10.53	43.23	53.67	10.44	
	0.237	24.50	10.51	35.01	52.22	17.21	
	0.432	25.71	10.42	36.13	47.21	11.08	
	0.687	15.70	10.42	26.12	46.00	19.88	
	6.632	13.30	10.51	23.81	50.00	26.19	

TEST ENGINEER: WENCY YANG

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	65H7B	Humidity	:	48%RH
Test Mode	:	LAN Play	Date of Test	:	Jun 24, 2015

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	51.00	10.58	61.58	66.00	4.42	QP
	0.200	41.50	10.54	52.04	63.62	11.58	
	0.244	38.00	10.52	48.52	61.95	13.43	
	0.415	34.59	10.44	45.03	57.56	12.53	
	0.693	28.40	10.43	38.83	56.00	17.17	
	6.628	26.60	10.43	37.03	60.00	22.97	
	0.150	42.70	10.58	53.28	56.00	2.72	AV
	0.200	32.60	10.54	43.14	53.62	10.48	
	0.244	25.20	10.52	35.72	51.95	16.23	
	0.415	26.49	10.44	36.93	47.56	10.63	
	0.693	19.70	10.43	30.13	46.00	15.87	
	6.628	13.40	10.43	23.83	50.00	26.17	
Neutral	0.150	49.90	10.58	60.48	66.00	5.52	QP
	0.204	41.40	10.53	51.93	63.45	11.52	
	0.247	37.80	10.51	48.31	61.86	13.55	
	0.419	33.20	10.43	43.63	57.46	13.83	
	0.720	26.60	10.42	37.02	56.00	18.98	
	6.644	26.60	10.51	37.11	60.00	22.89	
	0.150	**42.80**	**10.58**	**53.38**	**56.00**	**2.62**	AV
	0.204	33.50	10.53	44.03	53.45	9.42	
	0.247	25.30	10.51	35.81	51.86	16.05	
	0.419	26.40	10.43	36.83	47.46	10.63	
	0.720	18.20	10.42	28.62	46.00	17.38	
	6.644	13.50	10.51	24.01	50.00	25.99	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

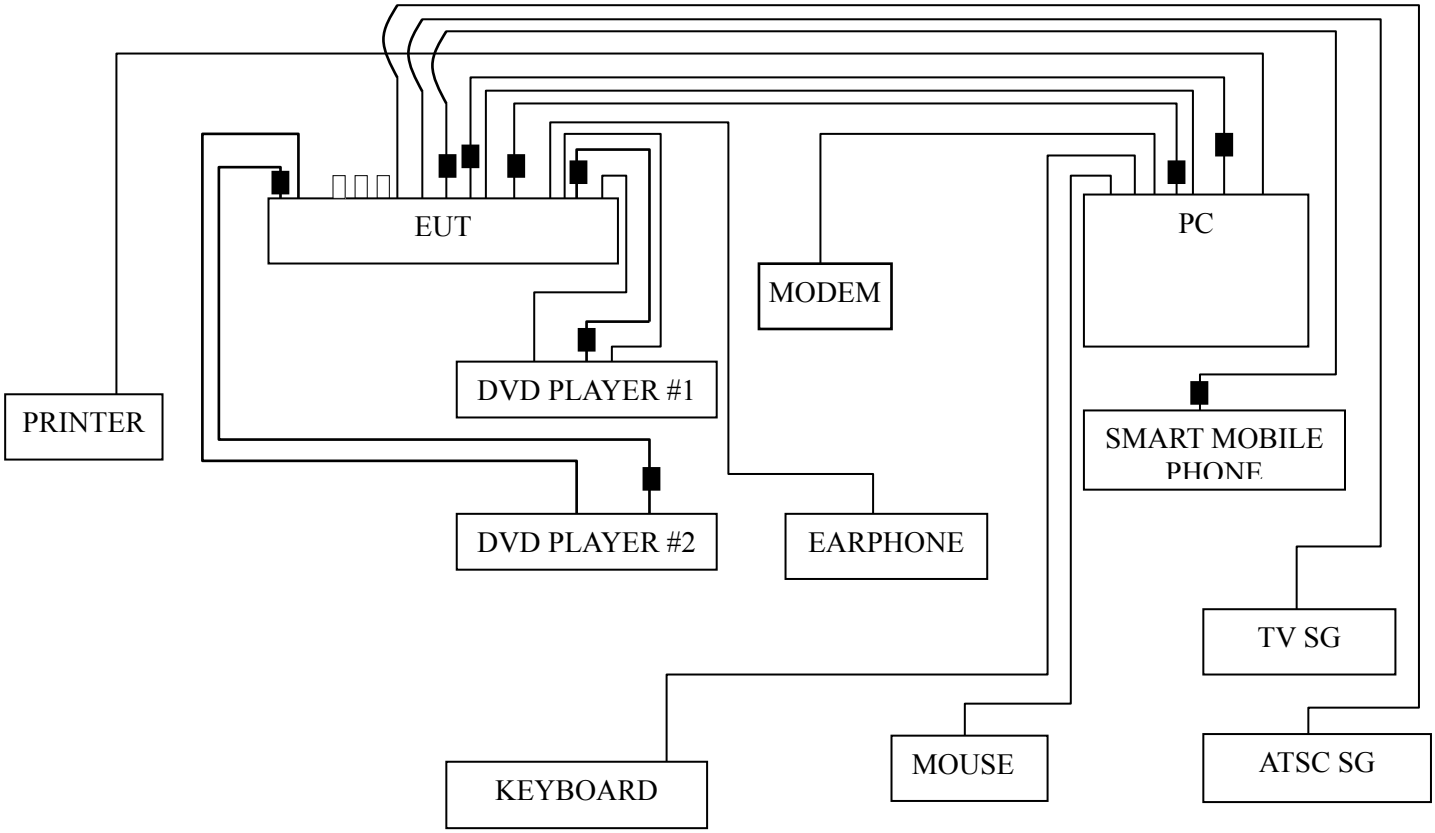
4.1 Test Equipment

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	101302	Jul 03, 2014	Jul 02, 2015
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2015	Sep 17, 2015
3.	Preamplifier	HP	8449B	3008A00864	May 20, 2015	May 19, 2016
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 24, 2015	May 23, 2016
5.	Horn Antenna	EMCO	3115	9607-4878	Jun 16, 2015	Jun 15, 2016
6.	Spectrum	Agilent	E7405A	MY45106600	Jul 03, 2014	Jul 02, 2015
7.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2015	Sep 17, 2015
8.	Software	Audix	E3	6.2007-9-10	--	--

4.2 Block Diagram of Test Setup

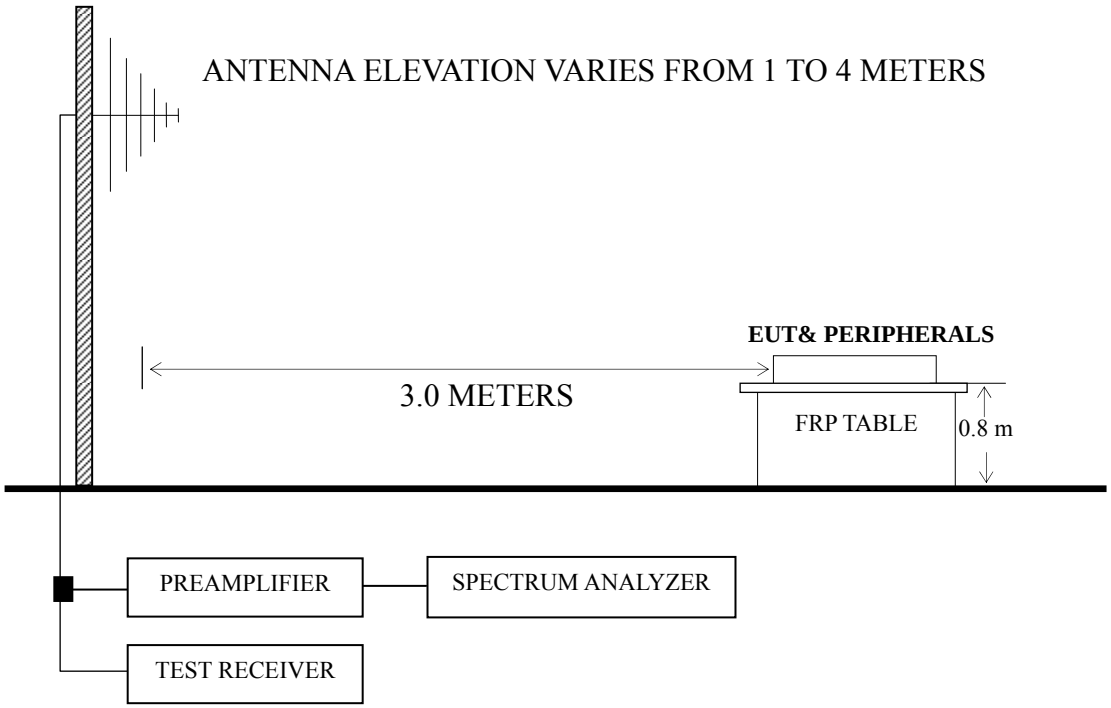
4.2.1 EUT & Peripherals



□ : U-Disk

■ : Ferrite Core

4.2.2 Radiated emission test setup



■ : 50 ohm Coaxial Switch

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

Frequency (MHz)	Distance (m)	Field strength limits	
		(μV/m)	dB (μV/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 (μV/m) = 20 log Emission Level (μV/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 C63.4:2003 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 2 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	P23-P24
HDMI 1920*1080@60Hz & 1kHz playing	P25
HDMI 1280*1024@60Hz & 1kHz playing	P26
HDMI 640*480@60Hz & 1kHz playing	P27
USB Play	P28
LAN Play	P29

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 1920*1080@60Hz & 1kHz playing test mode. The worst emission at horizontal polarization was detected at 593.960 MHz with corrected signal level of 45.04 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.13 m height and the turntable was at 326°. The worst emission at vertical polarization was detected at 849.650 MHz with corrected signal level of 43.84 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00m height and the turntable was at 38°.

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	65H7B	Humidity :	60%RH
Test Mode	:	HDMI 3840*2160@60Hz & 1kHz Playing	Date of Test :	Jun 26, 2015

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
Horizontal	156.100	20.66	11.18	0.33	--	32.17	43.50	11.33	QP
	238.550	17.74	11.72	0.41	--	29.87	46.00	16.13	
	296.680	**30.31**	**13.70**	**0.46**	**--**	**44.47**	**46.00**	**1.53**	
	660.500	19.36	19.60	0.69	--	39.65	46.00	6.35	
	691.540	20.50	19.70	0.70	--	40.90	46.00	5.10	
	720.640	20.68	19.90	0.72	--	41.30	46.00	4.70	
	1030.000	51.18	23.34	0.85	36.44	38.93	74.00	35.07	PK
	1115.000	50.96	23.80	0.89	36.28	39.37	74.00	34.63	
	1220.000	49.74	24.43	0.93	36.10	39.00	74.00	35.00	
	1327.000	49.94	25.03	0.97	35.93	40.01	74.00	33.99	
	1555.000	51.42	25.89	1.04	35.61	42.74	74.00	31.26	
	1739.000	55.09	26.57	1.09	35.38	47.37	74.00	26.63	
	1030.000	38.54	23.34	0.85	36.44	26.29	54.00	27.71	AV
	1115.000	38.63	23.80	0.89	36.28	27.04	54.00	26.96	
	1220.000	36.40	24.43	0.93	36.10	25.66	54.00	28.34	
	1327.000	37.32	25.03	0.97	35.93	27.39	54.00	26.61	
	1555.000	38.31	25.89	1.04	35.61	29.63	54.00	24.37	
	1739.000	43.25	26.57	1.09	35.38	35.53	54.00	18.47	

TEST ENGINEER: BILL WU

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	65H7B	Humidity :	60%RH
Test Mode	:	HDMI 3840*2160@60Hz & 1kHz Playing	Date of Test :	Jun 26, 2015

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	30.970	16.93	18.15	0.15	--	35.23	40.00	4.77	QP
	83.350	16.52	9.66	0.24	--	26.42	40.00	13.58	
	154.160	23.89	11.24	0.33	--	35.46	43.50	8.04	
	235.640	19.53	11.48	0.41	--	31.42	46.00	14.58	
	423.400	21.33	16.80	0.55	--	38.68	46.00	7.32	
	847.280	**19.94**	**20.73**	**0.78**	--	**41.45**	**46.00**	**4.55**	
	1158.000	48.66	24.04	0.91	36.20	37.41	74.00	36.59	PK
	1305.000	49.33	24.92	0.96	35.97	39.24	74.00	34.76	
	1471.000	48.28	25.62	1.01	35.72	39.19	74.00	34.81	
	1630.000	51.18	26.15	1.06	35.52	42.87	74.00	31.13	
	1750.000	53.40	26.63	1.09	35.37	45.75	74.00	28.25	
	1837.000	51.82	26.93	1.12	35.27	44.60	74.00	29.40	
	1158.000	37.25	24.04	0.91	36.20	26.00	54.00	28.00	AV
	1305.000	37.96	24.92	0.96	35.97	27.87	54.00	26.13	
	1471.000	36.30	25.62	1.01	35.72	27.21	54.00	26.79	
	1630.000	38.40	26.15	1.06	35.52	30.09	54.00	23.91	
	1750.000	41.22	26.63	1.09	35.37	33.57	54.00	20.43	
	1837.000	39.72	26.93	1.12	35.27	32.50	54.00	21.50	

TEST ENGINEER: BILL WU

EUT	:	LED LCD TV	Temperature	:	22℃
Model No.	:	65H7B	Humidity	:	60%RH
Test Mode	:	HDMI 1920*1080@60Hz & 1kHz Playing	Date of Test	:	Jun 26, 2015

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	78.500	18.77	9.12	0.23	28.12	40.00	11.88
	165.800	20.29	11.24	0.34	31.87	43.50	11.63
	235.640	19.07	11.48	0.41	30.96	46.00	15.04
	311.300	19.79	14.15	0.47	34.41	46.00	11.59
	593.960	**25.54**	**18.85**	**0.65**	**45.04**	**46.00**	**0.96**
	846.740	21.30	20.73	0.78	42.81	46.00	3.19
Vertical	30.000	17.14	18.90	0.15	36.19	40.00	3.81
	76.560	16.61	8.78	0.23	25.62	40.00	14.38
	156.100	22.45	11.18	0.33	33.96	43.50	9.54
	427.700	21.56	16.80	0.55	38.91	46.00	7.09
	542.160	20.65	18.56	0.62	39.83	46.00	6.17
	849.650	**22.36**	**20.70**	**0.78**	**43.84**	**46.00**	**2.16**

TEST ENGINEER: BILL WU

EUT	:	LED LCD TV	Temperature	:	22℃
Model No.	:	65H7B	Humidity	:	60%RH
Test Mode	:	HDMI 1280*1024@60Hz & 1kHz Playing	Date of Test	:	Jun 26, 2015

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	76.560	16.13	8.78	0.23	25.14	40.00	14.86
	160.950	19.33	11.13	0.34	30.80	43.50	12.70
	241.460	18.78	12.00	0.42	31.20	46.00	14.80
	311.300	18.31	14.15	0.47	32.93	46.00	13.07
	593.960	**24.84**	**18.85**	**0.65**	**44.34**	**46.00**	**1.66**
	846.740	17.29	20.73	0.78	38.80	46.00	7.20
Vertical	**30.000**	**17.61**	**18.90**	**0.15**	**36.66**	**40.00**	**3.34**
	77.530	16.93	8.95	0.23	26.11	40.00	13.89
	151.250	18.75	11.43	0.33	30.51	43.50	12.99
	423.820	20.90	16.80	0.55	38.25	46.00	7.75
	532.460	15.83	18.35	0.61	34.79	46.00	11.21
	849.650	20.89	20.70	0.78	42.37	46.00	3.63

TEST ENGINEER: BILL WU

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	65H7B	Humidity :	60%RH
Test Mode	:	HDMI 640*480@60Hz & 1kHz Playing	Date of Test :	Jun 26, 2015

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	78.500	21.63	9.12	0.23	30.98	40.00	9.02
	154.160	24.67	11.24	0.33	36.24	43.50	7.26
	241.460	18.14	12.00	0.42	30.56	46.00	15.44
	311.300	16.34	14.15	0.47	30.96	46.00	15.04
	600.360	13.27	19.10	0.66	33.03	46.00	12.97
	849.650	**20.05**	**20.70**	**0.78**	**41.53**	**46.00**	**4.47**
Vertical	**30.000**	**18.06**	**18.90**	**0.15**	**37.11**	**40.00**	**2.89**
	78.500	17.62	9.12	0.23	26.97	40.00	13.03
	151.250	24.40	11.43	0.33	36.16	43.50	7.34
	425.760	21.11	16.80	0.55	38.46	46.00	7.54
	844.800	20.02	20.73	0.78	41.53	46.00	4.47
	927.250	17.96	21.63	0.81	40.40	46.00	5.60

TEST ENGINEER: BILL WU

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	65H7B	Humidity :	60%RH	
Test Mode	:	USB Play	Date of Test :	Jun 26, 2015	

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	97.900	15.20	12.07	0.26	27.53	43.50	15.97
	156.100	20.96	11.18	0.33	32.47	43.50	11.03
	235.640	15.67	11.48	0.41	27.56	46.00	18.44
	425.760	14.83	16.80	0.55	32.18	46.00	13.82
	742.950	**22.88**	**19.97**	**0.73**	**43.58**	**46.00**	**2.42**
	842.860	19.44	20.77	0.78	40.99	46.00	5.01
Vertical	30.000	16.91	18.90	0.15	35.96	40.00	4.04
	153.190	24.42	11.31	0.33	36.06	43.50	7.44
	235.640	18.33	11.48	0.41	30.22	46.00	15.78
	427.700	22.96	16.80	0.55	40.31	46.00	5.69
	742.470	22.08	19.97	0.73	42.78	46.00	3.22
	842.860	**22.62**	**20.77**	**0.78**	**44.17**	**46.00**	**1.83**

TEST ENGINEER: BILL WU

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	65H7B	Humidity :	60%RH
Test Mode	:	LAN Play	Date of Test :	Jun 26, 2015

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	65.890	20.35	6.63	0.21	27.19	40.00	12.81
	198.780	20.12	9.83	0.37	30.32	43.50	13.18
	244.370	18.49	12.20	0.42	31.11	46.00	14.89
	270.560	17.09	13.28	0.44	30.81	46.00	15.19
	323.910	**22.45**	**14.63**	**0.49**	**37.57**	**46.00**	**8.43**
	803.090	15.02	20.60	0.76	36.38	46.00	9.62
Vertical	49.400	21.12	7.99	0.18	29.29	40.00	10.71
	67.830	**26.37**	**6.94**	**0.22**	**33.53**	**40.00**	**6.47**
	229.820	16.03	11.20	0.40	27.63	46.00	18.37
	322.940	19.17	14.59	0.49	34.25	46.00	11.75
	738.100	11.74	19.90	0.73	32.37	46.00	13.63
	872.930	12.03	20.97	0.79	33.79	46.00	12.21

TEST ENGINEER: BILL WU

5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Conductive Tape	5X30MM\ROH	Qingdao Joinset Co., Ltd	See Internal Photo 28, 29, 30

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: Wency Yang

(WENCY YANG)

6 DEVIATION TO TEST SPECIFICATIONS

None.