

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

LED LCD TV

Model No.	Brand
LTDN55K2203GWUS	Hisense
55H6B	

FCC ID : W9HLCDF0051

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

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Report No. : ACI-F15001  
Date of Test : Dec 24 – 29, 2014  
Date of Report : Jan 15, 2015

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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 : 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 2013  
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 Dec 24 - 29, 2014 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.F15002, a Verification report.***

Date of Test : Dec 24 - 29, 2014 Date of Report : Jan 15, 2015

Producer : Alan He  
ALAN HE / Assistant

Review : Sammy Chen  
SAMMY CHEN / Deputy Manager

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

Signatory : Byron Kwo  
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
<b>EMISSION</b>			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2013 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2013 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	:	<input checked="" type="checkbox"/> Production <input type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No.	:	LTDN55K2203GWUS, 55H6B
Note	:	The above models are all the same except for model name. 55H6B 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 : HD550DF-B52(010)\S0\ROH
Max Resolution	:	1920*1080@60Hz
HDMI Cable	:	Shielded, Detachable, 1.00m
Power Cord	:	Unshielded, Detachable, 1.80m

**Remark:**

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

**Back Port:**

- (1) One LAN Port : Connected with PC
- (2) One HDMI3 Port : Connected with DVD PLAYER
- (3) One DIGITAL AUDIO OUT Port : Connected with DVD PLAYER
- (4) One component of Audio/YPbPr Audio Port : Connected with DVD PLAYER
- (5) One component of Video/YPbPr Port : Connected with DVD PLAYER
- (6) One AV In Port : Connected with DVD PLAYER

**Side Port:**

- (1) Two USB Ports : Connected with U-Disk #1/#2 / H-Disk
- (2) One HDMI2/ARC Port : Connected with PC
- (3) One HDMI1/MHL Port : Connected with Smart Mobile Phone
- (4) One AUDIO OUT Port : Connected with Earphone
- (5) One ANT/CABLE IN Port : Connected with Antenna or ATSC SG / TV SG
- (6) One Debug Port : Do not open to customer

## 2.2 Peripherals

### 2.2.1 PC

Manufacturer : HP  
Model Number : dx7400MT  
Serial Number : CNG8130K89  
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 #1

Manufacturer : HP  
Model Number : CS105  
Serial Number : 9GTRNB1300120632  
Data Cable : Shielded, undetachable, 1.8m  
Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

## 2.2.4 Keyboard #2

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

## 2.2.5 Mouse

Manufacturer : HP  
Model Number : CS105  
Serial Number : 9GTRNB1300120632  
Data Cable : Shielded, Undetachable, 1.8m.  
Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

## 2.2.6 Modem

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

## 2.2.7 Earphone

Manufacturer : audio-technica  
Model Number : ATH-CKL200

## 2.2.8 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

## 2.2.9 ATSC Signal Generator

Manufacturer : SENCORE  
Model Number : ATSC997  
Serial Number : 6790071

## 2.2.10 DVD PLAYER

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

## 2.2.11 Smart Mobile Phone

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

## 2.2.12 H-DISK

Manufacturer : Tetasys  
Model Number : F12  
Serial Number : A010022-4A60007  
Certificate : FCC DoC, CE/EMC

## 2.2.13 U-DISK #1

Manufacturer : Kingmax  
Model Number : 8GB

## 2.2.14 U-DISK #2

Manufacturer : Transcend  
Model Number : 8GB



## 2.3 Description of Test Facility

Site Description (No.3 3m Chamber) : Sept. 17, 1998 file on  
Mar 16, 2012 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 = 2.77dB

Radiated Emission Expanded Uncertainty (30-200MHz):  
U = 4.40dB (Horizontal)  
U = 4.40dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):  
U = 4.40dB (Horizontal)  
U = 5.40dB (Vertical)

Radiated Emission Expanded Uncertainty (1GHz-6GHz):  
U = 5.08 dB

### 3 CONDUCTED EMISSION TEST

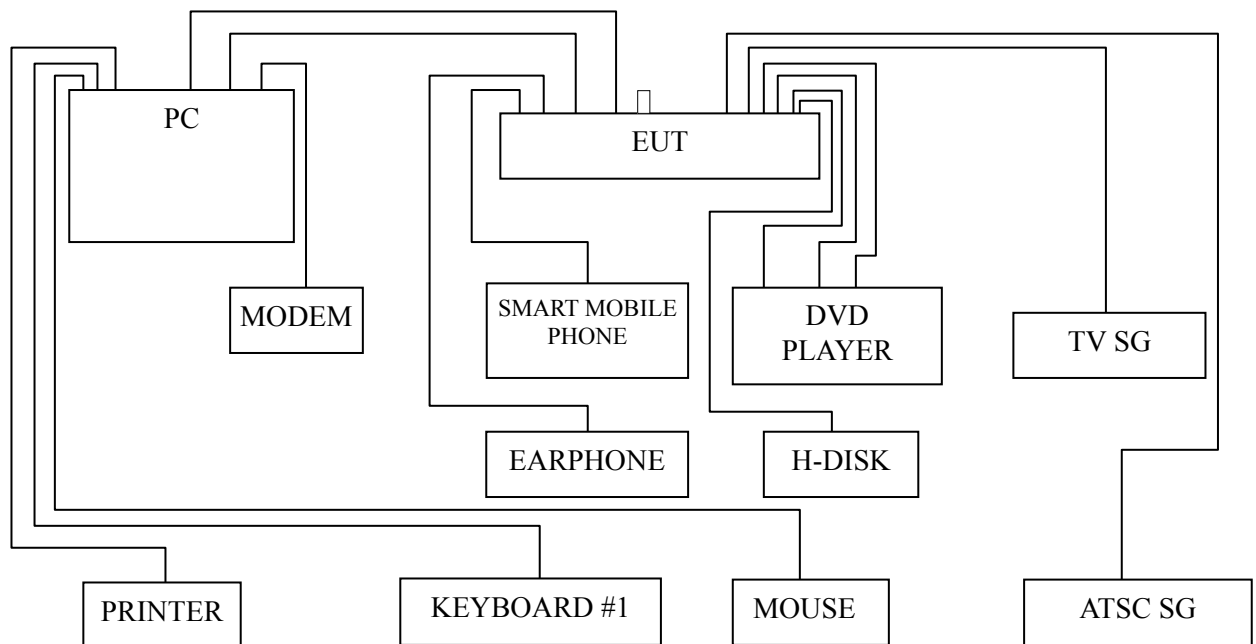
#### 3.1 Test Equipment

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	Sep 11, 2014	Sep 10, 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, 2014	Mar 19, 2015
4.	50Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 18, 2014	Mar 17, 2015
5.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2014	Mar 19, 2015
6.	Software	Audix	E3	6.111206	--	--

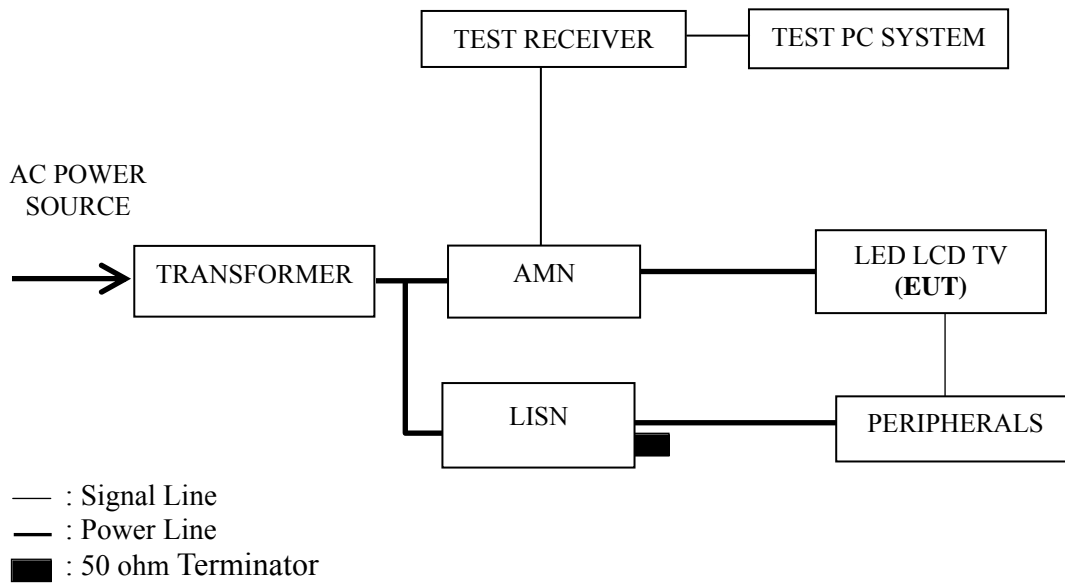
#### 3.2 Block Diagram of Test Setup

##### 3.2.1 EUT & Peripherals



□ : U-Disk

### 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 1920*1080@60Hz & 1kHz playing
HDMI 1280*1024@75Hz & 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 1920*1080@60Hz & 1kHz playing	P14
HDMI 1280*1024@75Hz & 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 LAN Play test mode. The worst emission is detected at 0.552 MHz (AV Value) with corrected signal level of 46.42 dB (μV) (limit is 56.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 48%RH

Test Mode : HDMI 1920\*1080@60Hz Date of Test : Dec 24, 2014  
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	<b>0.160</b>	<b>44.70</b>	<b>10.57</b>	<b>55.27</b>	<b>65.44</b>	<b>10.17</b>	QP
	0.376	33.61	10.44	44.05	58.37	14.32	
	0.566	31.40	10.44	41.84	56.00	14.16	
	1.123	26.90	10.40	37.30	56.00	18.70	
	3.130	21.00	10.45	31.45	56.00	24.55	
	18.000	19.90	10.58	30.48	60.00	29.52	
	0.160	32.40	10.57	42.97	55.44	12.47	AV
	0.376	23.51	10.44	33.95	48.37	14.42	
	0.566	19.10	10.44	29.54	46.00	16.46	
	1.123	17.20	10.40	27.60	46.00	18.40	
	3.130	10.70	10.45	21.15	46.00	24.85	
	18.000	13.20	10.58	23.78	50.00	26.22	
Neutral	0.162	44.60	10.57	55.17	65.37	10.20	QP
	0.374	36.91	10.43	47.34	58.40	11.06	
	0.565	34.20	10.43	44.63	56.00	11.37	
	1.119	29.20	10.41	39.61	56.00	16.39	
	3.897	22.50	10.49	32.99	56.00	23.01	
	18.890	19.80	10.70	30.50	60.00	29.50	
	0.162	33.30	10.57	43.87	55.37	11.50	AV
	0.374	25.41	10.43	35.84	48.40	12.56	
	0.565	22.00	10.43	32.43	46.00	13.57	
	1.119	16.00	10.41	26.41	46.00	19.59	
	3.897	14.70	10.49	25.19	46.00	20.81	
	18.890	13.20	10.70	23.90	50.00	26.10	

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 48%RH

Test Mode : HDMI 1280\*1024@75Hz Date of Test : Dec 24, 2014  
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.160	44.60	10.57	55.17	65.46	10.29	QP
	0.377	33.91	10.44	44.35	58.35	14.00	
	0.564	31.30	10.44	41.74	56.00	14.26	
	0.901	26.20	10.40	36.60	56.00	19.40	
	1.873	24.40	10.43	34.83	56.00	21.17	
	20.360	18.61	10.61	29.22	60.00	30.78	
	0.160	31.80	10.57	42.37	55.46	13.09	AV
	0.377	23.21	10.44	33.65	48.35	14.70	
	0.564	19.40	10.44	29.84	46.00	16.16	
	0.901	9.10	10.40	19.50	46.00	26.50	
	1.873	15.00	10.43	25.43	46.00	20.57	
	20.360	12.11	10.61	22.72	50.00	27.28	
Neutral	<b>0.161</b>	<b>44.60</b>	<b>10.57</b>	<b>55.17</b>	<b>65.41</b>	<b>10.24</b>	QP
	0.373	36.91	10.43	47.34	58.44	11.10	
	0.567	34.90	10.43	45.33	56.00	10.67	
	1.120	29.00	10.41	39.41	56.00	16.59	
	3.390	22.60	10.49	33.09	56.00	22.91	
	18.770	20.50	10.70	31.20	60.00	28.80	
	0.161	33.00	10.57	43.57	55.41	11.84	AV
	0.373	25.41	10.43	35.84	48.44	12.60	
	0.567	21.50	10.43	31.93	46.00	14.07	
	1.120	17.70	10.41	28.11	46.00	17.89	
	3.390	12.90	10.49	23.39	46.00	22.61	
	18.770	14.40	10.70	25.10	50.00	24.90	

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 48%RH

Test Mode : HDMI 640\*480@60Hz & 1kHz Playing Date of Test : Dec 24, 2014

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.161	44.60	10.57	55.17	65.42	10.25	QP
	0.376	33.31	10.44	43.75	58.37	14.62	
	0.565	31.30	10.44	41.74	56.00	14.26	
	1.119	26.80	10.40	37.20	56.00	18.80	
	1.867	25.00	10.43	35.43	56.00	20.57	
	19.760	20.40	10.60	31.00	60.00	29.00	
	0.161	32.60	10.57	43.17	55.42	12.25	AV
	0.376	23.01	10.44	33.45	48.37	14.92	
	0.565	18.90	10.44	29.34	46.00	16.66	
	1.119	16.40	10.40	26.80	46.00	19.20	
	1.867	15.30	10.43	25.73	46.00	20.27	
	19.760	13.30	10.60	23.90	50.00	26.10	
Neutral	<b>0.162</b>	<b>44.60</b>	<b>10.57</b>	<b>55.17</b>	<b>65.35</b>	<b>10.18</b>	QP
	0.373	36.91	10.43	47.34	58.44	11.10	
	0.565	34.70	10.43	45.13	56.00	10.87	
	0.891	29.00	10.41	39.41	56.00	16.59	
	1.853	25.30	10.45	35.75	56.00	20.25	
	17.060	18.00	10.68	28.68	60.00	31.32	
	0.162	33.50	10.57	44.07	55.35	11.28	AV
	0.373	25.31	10.43	35.74	48.44	12.70	
	0.565	21.70	10.43	32.13	46.00	13.87	
	0.891	12.40	10.41	22.81	46.00	23.19	
	1.853	14.20	10.45	24.65	46.00	21.35	
	17.060	11.20	10.68	21.88	50.00	28.12	

TEST ENGINEER: WENCY YANG



EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 48%RH

Test Mode : USB Play Date of Test : Dec 24, 2014

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.163	44.10	10.57	54.67	65.33	10.66	QP
	0.379	33.51	10.44	43.95	58.30	14.35	
	0.566	31.50	10.44	41.94	56.00	14.06	
	1.136	25.50	10.40	35.90	56.00	20.10	
	1.874	24.40	10.43	34.83	56.00	21.17	
	18.140	21.70	10.58	32.28	60.00	27.72	
	0.163	33.20	10.57	43.77	55.33	11.56	AV
	0.379	22.41	10.44	32.85	48.30	15.45	
	0.566	19.50	10.44	29.94	46.00	16.06	
	1.136	15.80	10.40	26.20	46.00	19.80	
	1.874	14.50	10.43	24.93	46.00	21.07	
	18.140	15.90	10.58	26.48	50.00	23.52	
Neutral	<b>0.161</b>	<b>44.60</b>	<b>10.57</b>	<b>55.17</b>	<b>65.40</b>	<b>10.23</b>	QP
	0.373	36.81	10.43	47.24	58.43	11.19	
	0.559	33.50	10.43	43.93	56.00	12.07	
	0.985	28.00	10.41	38.41	56.00	17.59	
	2.645	23.40	10.48	33.88	56.00	22.12	
	18.440	20.61	10.69	31.30	60.00	28.70	
	0.161	33.30	10.57	43.87	55.40	11.53	AV
	0.373	25.51	10.43	35.94	48.43	12.49	
	0.559	20.80	10.43	31.23	46.00	14.77	
	0.985	11.80	10.41	22.21	46.00	23.79	
	2.645	13.20	10.48	23.68	46.00	22.32	
	18.440	14.71	10.69	25.40	50.00	24.60	

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 48%RH

Test Mode : LAN Play Date of Test : Dec 24, 2014

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.177	40.13	10.56	50.69	64.64	13.95	QP
	0.356	32.96	10.46	43.42	58.83	15.41	
	0.890	31.73	10.40	42.13	56.00	13.87	
	0.953	30.94	10.40	41.34	56.00	14.66	
	16.486	27.44	10.56	38.00	60.00	22.00	
	21.147	25.28	10.65	35.93	60.00	24.07	
	0.177	28.26	10.56	38.82	54.64	15.82	AV
	0.356	21.45	10.46	31.91	48.83	16.92	
	0.890	21.45	10.40	31.85	46.00	14.15	
	0.953	20.15	10.40	30.55	46.00	15.45	
	16.486	15.69	10.56	26.25	50.00	23.75	
	21.147	15.46	10.65	26.11	50.00	23.89	
Neutral	0.169	42.21	10.56	52.77	64.99	12.22	QP
	0.358	34.56	10.45	45.01	58.78	13.77	
	<b>0.552</b>	<b>35.99</b>	<b>10.43</b>	<b>46.42</b>	<b>56.00</b>	<b>9.58</b>	
	0.679	29.95	10.42	40.37	56.00	15.63	
	4.027	26.12	10.49	36.61	56.00	19.39	
	20.924	25.08	10.75	35.83	60.00	24.17	
	0.169	30.48	10.56	41.04	54.99	13.95	AV
	0.358	20.65	10.45	31.10	48.78	17.68	
	0.552	20.48	10.43	30.91	46.00	15.09	
	0.679	19.58	10.42	30.00	46.00	16.00	
	4.027	16.59	10.49	27.08	46.00	18.92	
	20.924	14.47	10.75	25.22	50.00	24.78	

TEST ENGINEER: WENCY YANG

## 4 RADIATED EMISSION TEST

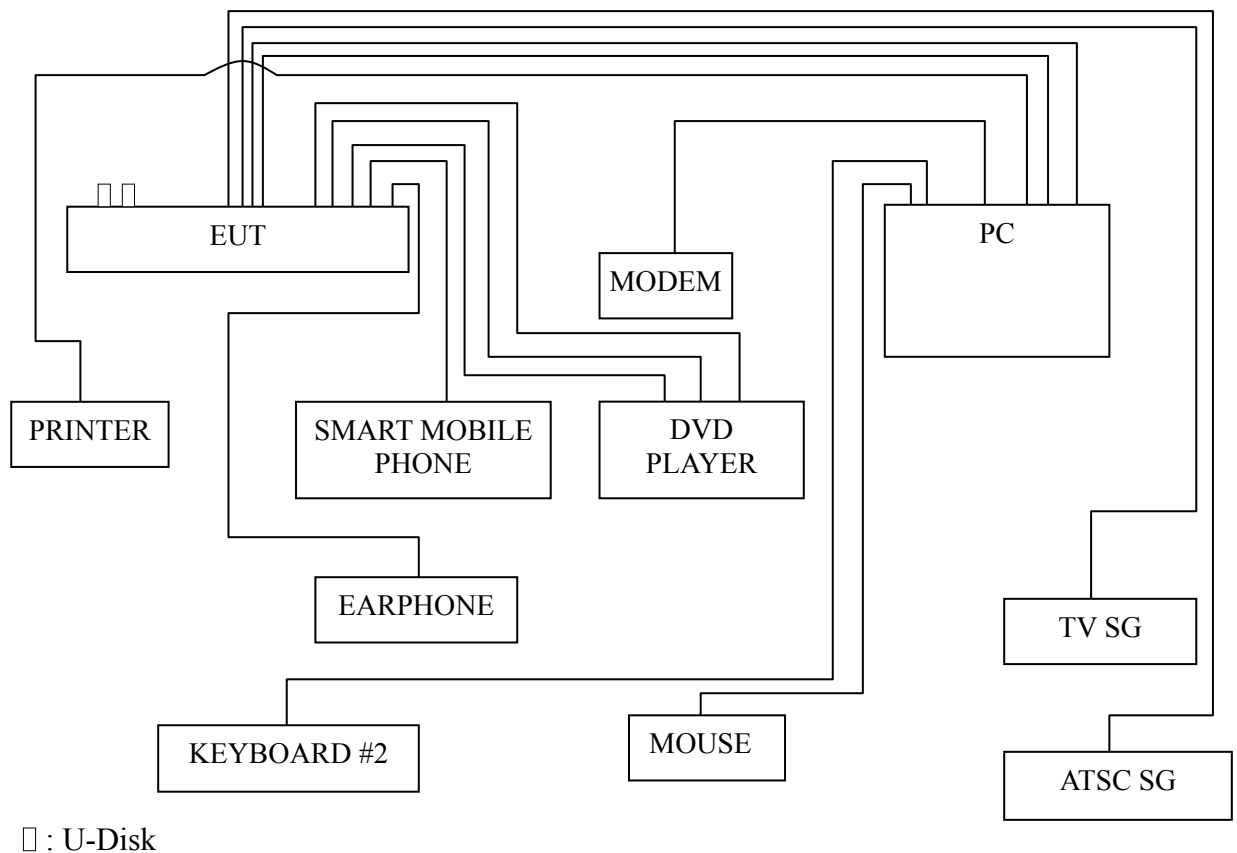
### 4.1 Test Equipment

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	Sep 18, 2014	Mar 17, 2015
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 20, 2014	Mar 19, 2015
3.	Preamplifier	HP	8449B	3008A00864	May 03, 2014	May 02, 2015
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 11, 2014	May 10, 2015
5.	Horn Antenna	EMCO	3115	9607-4878	Nov 11, 2014	Nov 10, 2015
6.	Spectrum	Agilent	E7405A	MY45106600	Sep 18, 2014	Mar 17, 2015
7.	50 $\Omega$ Coaxial Switch	Anritsu	MP59B	6200426390	Sep 18, 2014	Mar 17, 2015
8.	Software	Audix	E3	6.2007-9-10	--	--

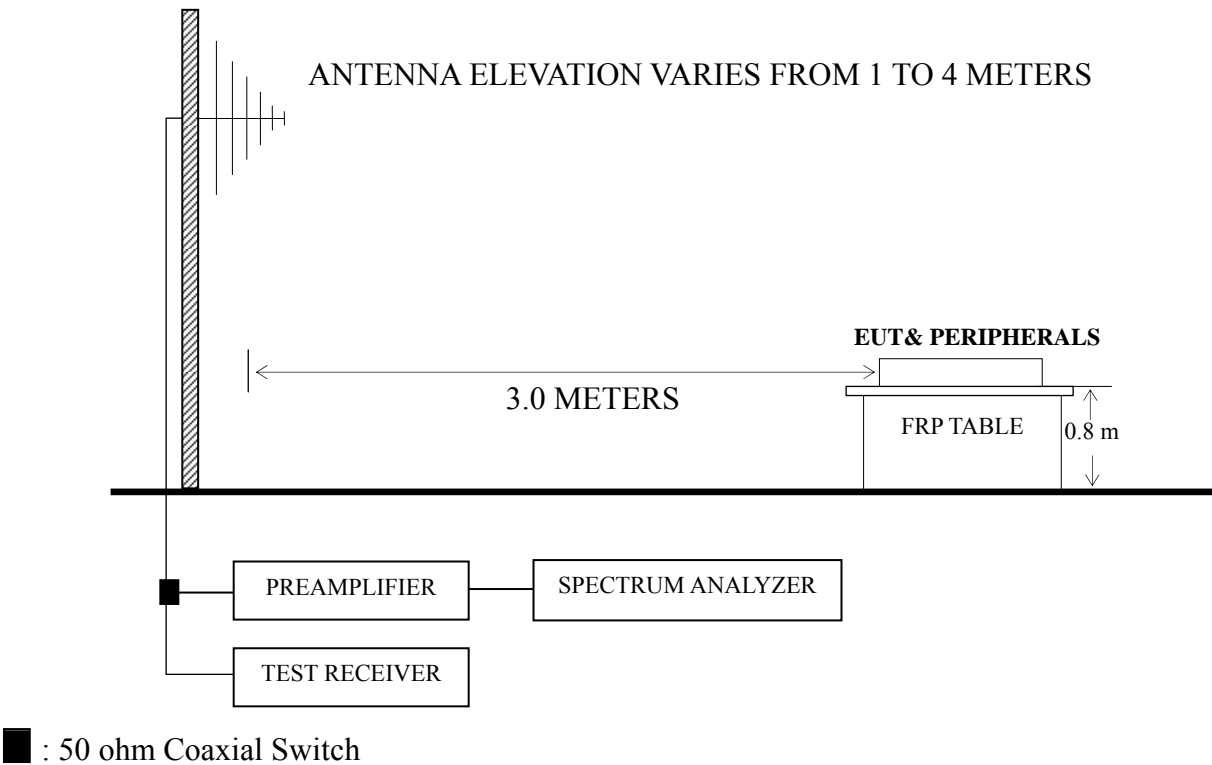
### 4.2 Block Diagram of Test Setup

#### 4.2.1 EUT & Peripherals



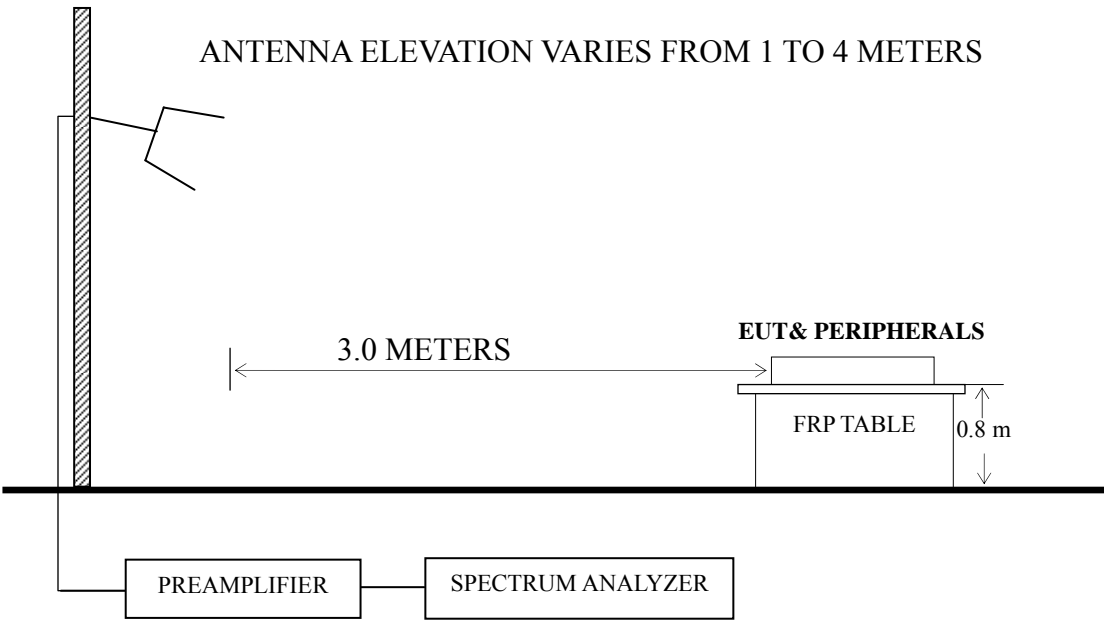
4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



4.2.2.1 Above 1GHz

BORE-SIGHT ANTENNA TOWER



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

Frequency (MHz)	Distance (m)	Field strength limits	
		( $\mu\text{V/m}$ )	dB ( $\mu\text{V/m}$ )
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 ( $\mu\text{V/m}$ ) = 20 log Emission Level ( $\mu\text{V/m}$ ) 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 1920*1080@60Hz & 1kHz playing	P23 – P24
HDMI 1280*1024@75Hz & 1kHz playing	P25
HDMI 640*480@60Hz & 1kHz playing	P26
USB Play	P27
LAN Play	P28

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 1280\*1024@75Hz & 1kHz playing test mode. The worst emission at horizontal polarization was detected at 798.980 MHz with corrected signal level of 40.85 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.20 m height and the turntable was at 156°. The worst emission at vertical polarization was detected at 615.010 MHz with corrected signal level of 43.53 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.10 m height and the turntable was at 246°.

EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 60%RH

Test Mode : HDMI 1920\*1080@60Hz & 1kHz Playing Date of Test : Dec 29, 2014

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	74.919	21.74	7.40	0.86	--	30.00	40.00	10.00	QP
	112.131	19.02	12.17	1.06	--	32.25	43.50	11.25	
	318.817	20.67	14.49	1.84	--	37.00	46.00	9.00	
	408.946	19.04	16.60	2.07	--	37.71	46.00	8.29	
	<b>742.550</b>	<b>22.89</b>	<b>18.07</b>	<b>2.78</b>	<b>--</b>	<b>43.74</b>	<b>46.00</b>	<b>2.26</b>	
	798.040	18.10	20.17	2.87	--	41.14	46.00	4.86	
	1221.194	50.98	24.43	3.58	36.36	42.63	74.00	31.37	PK
	1342.266	51.73	25.10	3.75	36.14	44.44	74.00	29.56	
	1357.369	51.72	25.17	3.78	36.12	44.55	74.00	29.45	
	1416.765	51.81	25.42	3.87	36.00	45.10	74.00	28.90	
	1509.894	51.30	25.74	3.98	35.82	45.20	74.00	28.80	
	1660.229	53.52	26.26	4.18	35.61	48.35	74.00	25.65	
	1221.194	34.00	24.43	3.58	36.36	25.65	54.00	28.35	AV
	1342.266	37.64	25.10	3.75	36.14	30.35	54.00	23.65	
	1357.369	37.69	25.17	3.78	36.12	30.52	54.00	23.48	
	1416.765	35.37	25.42	3.87	36.00	28.66	54.00	25.34	
	1509.894	34.79	25.74	3.98	35.82	28.69	54.00	25.31	
	1660.229	35.28	26.26	4.18	35.61	30.11	54.00	23.89	

TEST ENGINEER: BILL WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 60%RH

Test Mode : HDMI 1920\*1080@60Hz & 1kHz Playing Date of Test : Dec 29, 2014

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	30.853	12.40	18.43	0.54	--	31.37	40.00	8.63	QP
	55.415	24.26	6.00	0.73	--	30.99	40.00	9.01	
	<b>75.720</b>	<b>27.20</b>	<b>7.30</b>	<b>0.87</b>	--	<b>35.37</b>	<b>40.00</b>	<b>4.63</b>	
	397.633	17.67	15.40	2.04	--	35.11	46.00	10.89	
	556.774	15.80	19.10	2.39	--	37.29	46.00	8.71	
	796.183	14.03	20.17	2.87	--	37.07	46.00	8.93	
	1242.629	49.59	24.56	3.61	36.33	41.43	74.00	32.57	PK
	1318.579	50.84	24.99	3.72	36.19	43.36	74.00	30.64	
	1374.227	50.22	25.24	3.81	36.08	43.19	74.00	30.81	
	1425.661	50.20	25.45	3.87	35.98	43.54	74.00	30.46	
	1577.246	51.97	25.97	4.06	35.72	46.28	74.00	27.72	
	1757.013	51.98	26.65	4.29	35.51	47.41	74.00	26.59	
	1242.629	32.26	24.56	3.61	36.33	24.10	74.00	49.90	AV
	1318.579	34.56	24.99	3.72	36.19	27.08	74.00	46.92	
	1374.227	34.65	25.24	3.81	36.08	27.62	74.00	46.38	
	1425.661	35.65	25.45	3.87	35.98	28.99	74.00	45.01	
	1577.246	34.27	25.97	4.06	35.72	28.58	74.00	45.42	
	1757.013	34.28	26.65	4.29	35.51	29.71	74.00	44.29	

TEST ENGINEER: BILL WU



EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 60%RH

Test Mode : HDMI 1280\*1024@75Hz Date of Test : Dec 29, 2014  
& 1kHz Playing

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	56.001	22.03	5.90	0.73	28.66	40.00	11.34
	74.919	22.78	7.40	0.86	31.04	40.00	8.96
	116.950	16.64	12.10	1.09	29.83	43.50	13.67
	329.039	21.09	14.79	1.87	37.75	46.00	8.25
	416.179	18.15	16.50	2.08	36.73	46.00	9.27
	<b>798.980</b>	<b>17.28</b>	<b>20.70</b>	<b>2.87</b>	<b>40.85</b>	<b>46.00</b>	<b>5.15</b>
Vertical	56.001	24.66	5.90	0.73	31.29	40.00	8.71
	73.103	27.76	6.76	0.85	35.37	40.00	4.63
	125.007	21.43	12.00	1.12	34.55	43.50	8.95
	202.100	19.81	8.20	1.42	29.43	43.50	14.07
	399.030	16.53	15.50	2.04	34.07	46.00	11.93
	<b>615.010</b>	<b>22.10</b>	<b>18.90</b>	<b>2.53</b>	<b>43.53</b>	<b>46.00</b>	<b>2.47</b>

TEST ENGINEER: BILL WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 60%RH

Test Mode : HDMI 640\*480@60Hz & 1kHz Playing Date of Test : Dec 29, 2014

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	56.001	22.58	5.90	0.73	29.21	40.00	10.79
	74.919	21.95	7.40	0.86	30.21	40.00	9.79
	112.920	17.90	12.08	1.06	31.04	43.50	12.46
	316.589	21.70	14.06	1.84	37.60	46.00	8.40
	416.179	19.01	16.50	2.08	37.59	46.00	8.41
	<b>798.980</b>	<b>17.11</b>	<b>20.70</b>	<b>2.87</b>	<b>40.68</b>	<b>46.00</b>	<b>5.32</b>
Vertical	30.211	14.78	19.27	0.54	34.59	40.00	5.41
	<b>75.977</b>	<b>27.37</b>	<b>7.25</b>	<b>0.87</b>	<b>35.49</b>	<b>40.00</b>	<b>4.51</b>
	125.886	18.70	12.07	1.13	31.90	43.50	11.60
	210.048	20.18	8.10	1.45	29.73	43.50	13.77
	396.242	17.73	15.40	2.04	35.17	46.00	10.83
	796.183	13.03	20.17	2.87	36.07	46.00	9.93

TEST ENGINEER: BILL WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 60%RH

Test Mode : USB Play Date of Test : Dec 29, 2014

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	77.051	21.83	7.05	0.87	29.75	40.00	10.25
	185.788	27.13	8.81	1.37	37.31	43.50	6.19
	326.740	25.44	14.77	1.87	42.08	46.00	3.92
	<b>520.888</b>	<b>22.11</b>	<b>18.20</b>	<b>2.32</b>	<b>42.63</b>	<b>46.00</b>	<b>3.37</b>
	668.260	20.20	19.25	2.64	42.09	46.00	3.91
	779.607	20.23	18.60	2.85	41.68	46.00	4.32
Vertical	39.024	14.79	13.96	0.61	29.36	40.00	10.64
	77.051	28.49	7.05	0.87	36.41	40.00	3.59
	185.788	23.04	8.81	1.37	33.22	43.50	10.28
	370.702	22.64	14.79	1.98	39.41	46.00	6.59
	520.888	18.34	18.20	2.32	38.86	46.00	7.14
	<b>668.260</b>	<b>21.00</b>	<b>19.25</b>	<b>2.64</b>	<b>42.89</b>	<b>46.00</b>	<b>3.11</b>

TEST ENGINEER: BILL WU

EUT : LED LCD TV Temperature : 22°C

Model No. : 55H6B Humidity : 60%RH

Test Mode : LAN Play Date of Test : Dec 29, 2014

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	56.001	22.92	5.90	0.73	29.55	40.00	10.45
	148.963	17.66	10.66	1.23	29.55	43.50	13.95
	370.702	25.73	14.79	1.98	42.50	46.00	3.50
	520.888	18.72	18.20	2.32	39.24	46.00	6.76
	<b>668.142</b>	<b>21.17</b>	<b>19.25</b>	<b>2.64</b>	<b>43.06</b>	<b>46.00</b>	<b>2.94</b>
	815.968	16.17	20.60	2.91	39.68	46.00	6.32
Vertical	30.962	14.31	18.27	0.54	33.12	40.00	6.88
	39.024	18.94	13.96	0.61	33.51	40.00	6.49
	73.103	27.60	6.76	0.85	35.21	40.00	4.79
	127.218	23.63	12.27	1.14	37.04	43.50	6.46
	370.702	22.05	14.79	1.98	38.82	46.00	7.18
	<b>928.170</b>	<b>20.10</b>	<b>19.17</b>	<b>3.08</b>	<b>42.35</b>	<b>46.00</b>	<b>3.65</b>

TEST ENGINEER: BILL WU

## **5 DEVIATION TO TEST SPECIFICATIONS**

None.

## 6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Conductive Tape	JCT-RF-5-0.12-50\ROH	Qingdao Joinset S&T Co., Ltd.	See Internal Photo Appendix Figure 17
		Shenzhen TAT Electronic Technology Co., Ltd.	

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)