

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

LED LCD TV

Model No.	Brand
LHD32K316MH	Hisense

FCC ID : W9HLCDC0018

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-F13009  
Date of Test : Dec 20, 2012  
Date of Report : Jan 10, 2013

## TABLE OF CONTENTS

	Page
<b>1 SUMMARY OF STANDARDS AND RESULTS</b> .....	<b>4</b>
1.1 Description of Standards and Results.....	4
<b>2 GENERAL INFORMATION</b> .....	<b>5</b>
2.1 Description of Equipment Under Test.....	5
2.2 Peripherals.....	6
2.3 Description of Test Facility.....	7
2.4 Measurement Uncertainty.....	8
<b>3 CONDUCTED EMISSION TEST</b> .....	<b>9</b>
3.1 Test Equipment.....	9
3.2 Block Diagram of Test Setup.....	9
3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)].....	10
3.4 Test Configuration.....	10
3.5 Operating Condition of EUT.....	11
3.6 Test Procedures.....	11
3.7 Test Results.....	12
<b>4 RADIATED EMISSION TEST</b> .....	<b>18</b>
4.1 Test Equipment.....	18
4.2 Block Diagram of Test Setup.....	18
4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)].....	19
4.4 Test Configuration.....	19
4.5 Operating Condition of EUT.....	19
4.6 Test Procedures.....	20
4.7 Test Results.....	20
<b>5 DEVIATION TO TEST SPECIFICATIONS</b> .....	<b>26</b>

## TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.

Manufacturer : Hisense Electric Co., Ltd.

EUT Description : LED LCD TV

Model No.	Brand	Power Supply
LHD32K316MH	Hisense	120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2012  
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 20, 2012 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.

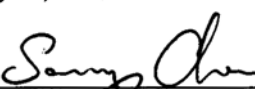
***The test results for EUT's TV functions are contained in No.F13010, a Verification report.***

Date of Test : Dec 20, 2012 Date of Report : Jan 10, 2013

Producer :   
KATHY WANG / Assistant

Review :   
DIO YANG / Assistant Manager

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

Signatory :   
Authorized Signature EMC SAMMY CHEN / Deputy 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 2012 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2012 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 type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No.	:	LHD32K316MH
Bread 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
LCD Panel	:	Manufacturer : Hisense M/N : HE315FH-E78\PW1
Max Resolution	:	1024*768@60Hz
D-Sub Cable	:	Shielded, Detachable, 1.85m, with two cores on cable
HDMI Cable	:	Shielded, Detachable, 1.00m,
Power Cord	:	Unshielded, Detachable, 1.80m

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

#### Side Port:

- (1) One PC Audio In Port : Connected with PC
- (2) One VGA Port : Connected with PC
- (3) One DIGITAL AUDIO OUT Port : Connected with Speaker
- (4) One HDMI2 Port : Connected with DVD PLAYER
- (5) One RJ12 Port : Connected with PC
- (6) One AUDIO OUT Port : Connected with Earphone
- (7) One USB Port : Connected with U-Disk
- (8) One Component of AV In Port : Connected with DVD PLAYER

## Bottom Port:

- (9) One ANT/CABLE IN Port  
: Connected with ATSC SG / TV SG
- (10) One Service Port  
: Do not open to the customer
- (11) One component of YPbPr Port  
: Connected with DVD PLAYER
- (12) One component of YPbPr Audio Port  
: Connected with DVD PLAYER
- (13) One HDMI1 Port  
: Connected with PC

## 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; UL  
 BSMI (R33001) 3C (A000111)  
 MIC (E-A011-04-2659(B))

### 2.2.2 Printer

Manufacturer : HP  
 Model Number : C3990A  
 Serial Number : JPZX020487  
 Data Cable : Shielded, detachable, 1.5m  
 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 : SONY  
Model Number : MDR-E808  
Serial Number : 1808030805305506

### 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 DVD PLAYER

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

### 2.2.10 Speaker

Manufacturer : DIBA  
Model Number : FS-04

### 2.2.11 U-DISK

Manufacturer : LG  
Model Number : 1GB

## 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 = 3.42 dB
Radiated Emission Expanded Uncertainty (30-200MHz):	U = 4.14 dB (Horizontal)
	U = 4.28 dB (Vertical)
Radiated Emission Expanded Uncertainty (200M-1GHz):	U = 4.18 dB (Horizontal)
	U = 4.26 dB (Vertical)



### 3 CONDUCTED EMISSION TEST

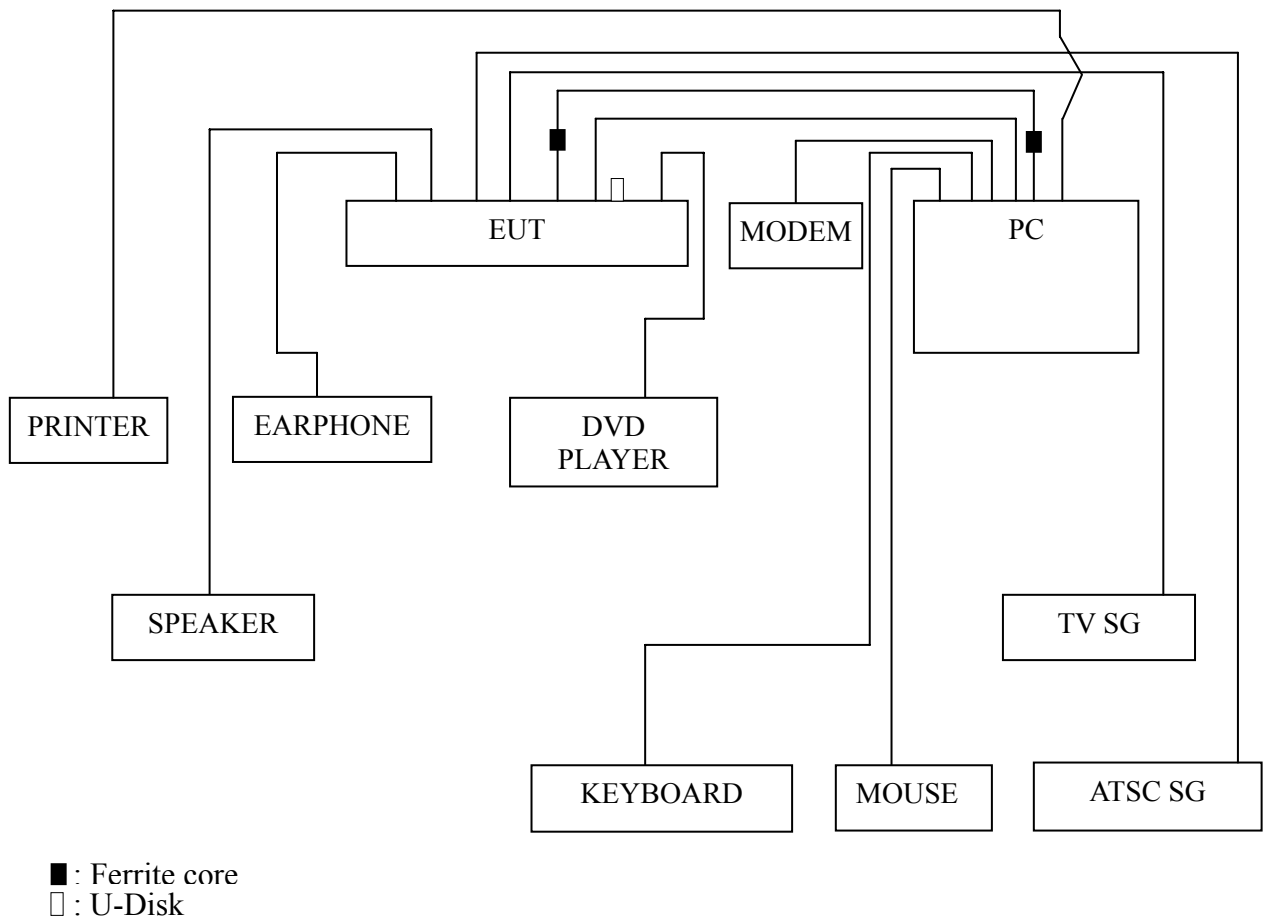
#### 3.1 Test Equipment

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

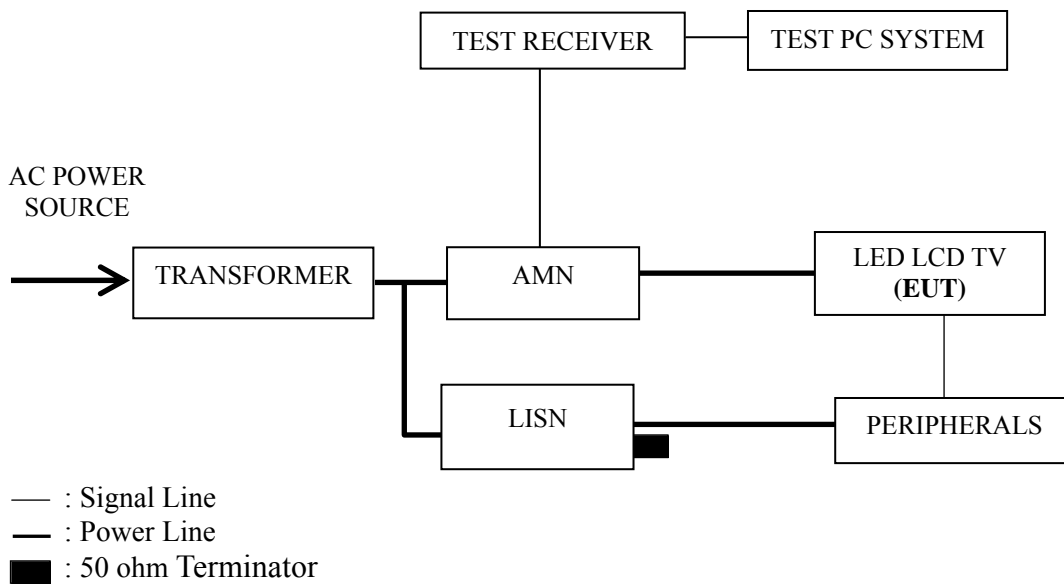
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 22, 2012	Mar 22, 2013
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Feb 13, 2012	Feb 13, 2013
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Mar 22, 2012	Mar 22, 2013
4.	50 $\Omega$ Coaxial Switch	Anritsu	MP59B	6200426389	Sep 18, 2012	Mar 18, 2013
5.	50 $\Omega$ Terminator	Anritsu	BNC	001	Mar 22, 2012	Mar 22, 2013
6.	Software	Audix	E3	SET00200 9804M592	--	--

#### 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 (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 D-Sub & HDMI Input).

3.5.5 In USB Play mode, set the EUT play digital media from U-Disk.

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

3.5.7 The test modes are as follows:

Test Mode
D-Sub 1024*768@60Hz
HDMI 1024*768@60Hz
D-Sub 800*600@60Hz
D-Sub 640*480@60Hz
USB 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
D-Sub 1024*768@60Hz	P13
HDMI 1024*768@60Hz	P14
D-Sub 800*600@60Hz	P15
D-Sub 640*480@60Hz	P16
USB Play	P17

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 HDMI 1080p mode was tested and recorded in a FCC Verification test report (No. F13010).

NOTE 5 – The worst case is for D-Sub 1024\*768@60Hz test mode. The worst emission is detected at 7.606 MHz (Quasi-Peak Value) with corrected signal level of 35.84 dB ( $\mu$ V) (limit is 60.00 dB ( $\mu$ V)), when the Neutral of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22°C

Model No. : LHD32K316MH Humidity : 48%RH

Test Mode : D-Sub 1024\*768@60Hz Date of Test : Dec 20, 2012

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.169	34.71	0.24	34.95	64.99	30.04	QP
	0.564	27.92	0.31	28.23	56.00	27.77	
	1.129	29.13	0.32	29.45	56.00	26.55	
	2.962	29.78	0.42	30.20	56.00	25.80	
	7.606	32.99	0.68	33.67	60.00	26.33	
	9.011	29.69	0.72	30.41	60.00	29.59	
	AV	0.169	21.74	0.24	21.98	54.99	33.01
		0.564	15.89	0.31	16.20	46.00	29.80
		1.129	16.89	0.32	17.21	46.00	28.79
		2.962	17.98	0.42	18.40	46.00	27.60
7.606		19.89	0.68	20.57	50.00	29.43	
9.011		18.56	0.72	19.28	50.00	30.72	
Neutral	0.170	34.97	0.12	35.09	64.94	29.85	QP
	0.564	27.82	0.17	27.99	56.00	28.01	
	1.129	28.93	0.22	29.15	56.00	26.85	
	2.962	29.63	0.23	29.86	56.00	26.14	
	<b>7.606</b>	<b>35.25</b>	<b>0.59</b>	<b>35.84</b>	<b>60.00</b>	<b>24.16</b>	
	21.600	30.09	0.88	30.97	60.00	29.03	AV
	0.170	21.25	0.12	21.37	54.94	33.57	
	0.564	15.61	0.17	15.78	46.00	30.22	
	1.129	16.56	0.22	16.78	46.00	29.22	
	2.962	16.36	0.23	16.59	46.00	29.41	
7.606	22.55	0.59	23.14	50.00	26.86		
21.600	18.56	0.88	19.44	50.00	30.56		

TEST ENGINEER: SAWEN LI

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LTDN40K360MUS Humidity : 48%RH  
 Test Mode : HDMI 1024\*768@60Hz Date of Test : Dec 20, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark	
Line	0.169	34.86	0.24	35.10	64.99	29.89	QP	
	0.567	27.71	0.31	28.02	56.00	27.98		
	1.129	29.26	0.32	29.58	56.00	26.42		
	2.962	29.69	0.42	30.11	56.00	25.89		
	7.606	33.57	0.68	34.25	60.00	25.75		
	9.011	31.02	0.72	31.74	60.00	28.26		
	Line	0.169	23.32	0.24	23.56	54.99	31.43	AV
		0.567	15.90	0.31	16.21	46.00	29.79	
		1.129	18.50	0.32	18.82	46.00	27.18	
		2.962	16.55	0.42	16.97	46.00	29.03	
7.606		20.22	0.68	20.90	50.00	29.10		
9.011		20.30	0.72	21.02	50.00	28.98		
Neutral	0.172	34.80	0.12	34.92	64.86	29.94	QP	
	0.567	27.53	0.17	27.70	56.00	28.30		
	1.129	27.98	0.22	28.20	56.00	27.80		
	<b>2.962</b>	<b>30.14</b>	<b>0.23</b>	<b>30.37</b>	<b>56.00</b>	<b>25.63</b>		
	7.606	33.32	0.59	33.91	60.00	26.09		
	21.600	29.34	0.88	30.22	60.00	29.78		
	Neutral	0.172	21.50	0.12	21.62	54.86	33.24	AV
		0.567	14.57	0.17	14.74	46.00	31.26	
		1.129	17.56	0.22	17.78	46.00	28.22	
		2.962	18.56	0.23	18.79	46.00	27.21	
7.606		21.22	0.59	21.81	50.00	28.19		
21.600		17.56	0.88	18.44	50.00	31.56		

TEST ENGINEER: SAWEN LI

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LHD32K316MH Humidity : 48%RH  
 Test Mode : D-Sub 800\*600@60Hz Date of Test : Dec 20, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark	
Line	0.170	35.48	0.24	35.72	64.94	29.22	QP	
	0.567	27.69	0.31	28.00	56.00	28.00		
	1.129	28.23	0.32	28.55	56.00	27.45		
	2.678	28.30	0.40	28.70	56.00	27.30		
	7.606	32.37	0.68	33.05	60.00	26.95		
	21.600	30.49	0.99	31.48	60.00	28.52		
	0.170	21.26	0.24	21.50	54.94	33.44	AV	
	0.567	16.56	0.31	16.87	46.00	29.13		
	1.129	16.58	0.32	16.90	46.00	29.10		
	2.678	17.51	0.40	17.91	46.00	28.09		
	7.606	17.79	0.68	18.47	50.00	31.53		
	21.600	17.08	0.99	18.07	50.00	31.93		
	Neutral	0.170	34.57	0.12	34.69	64.94	30.25	QP
		0.567	26.71	0.17	26.88	56.00	29.12	
1.129		28.19	0.22	28.41	56.00	27.59		
<b>2.962</b>		<b>29.54</b>	<b>0.23</b>	<b>29.77</b>	<b>56.00</b>	<b>26.23</b>		
7.606		33.03	0.59	33.62	60.00	26.38		
21.600		30.41	0.88	31.29	60.00	28.71		
0.170		21.40	0.12	21.52	54.94	33.42	AV	
0.567		13.51	0.17	13.68	46.00	32.32		
1.129		15.70	0.22	15.92	46.00	30.08		
2.962		16.80	0.23	17.03	46.00	28.97		
7.606		20.39	0.59	20.98	50.00	29.02		
21.600		19.40	0.88	20.28	50.00	29.72		

TEST ENGINEER: SAWEN LI

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LHD32K316MH Humidity : 48%RH  
 Test Mode : D-Sub 640\*480@60Hz Date of Test : Dec 20, 2012

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.172	33.90	0.24	34.14	64.86	30.72	QP
	0.564	27.37	0.31	27.68	56.00	28.32	
	1.129	28.88	0.32	29.20	56.00	26.80	
	<b>2.962</b>	<b>29.58</b>	<b>0.42</b>	<b>30.00</b>	<b>56.00</b>	<b>26.00</b>	
	7.606	33.14	0.68	33.82	60.00	26.18	
	21.600	29.82	0.99	30.81	60.00	29.19	
	0.172	23.65	0.24	23.89	54.86	30.97	AV
	0.564	16.41	0.31	16.72	46.00	29.28	
	1.129	16.78	0.32	17.10	46.00	28.90	
	2.962	17.39	0.42	17.81	46.00	28.19	
	7.606	20.32	0.68	21.00	50.00	29.00	
	21.600	17.43	0.99	18.42	50.00	31.58	
Neutral	0.170	35.12	0.12	35.24	64.94	29.70	QP
	0.567	27.15	0.17	27.32	56.00	28.68	
	1.129	27.72	0.22	27.94	56.00	28.06	
	2.962	28.47	0.23	28.70	56.00	27.30	
	7.606	32.14	0.59	32.73	60.00	27.27	
	21.600	29.78	0.88	30.66	60.00	29.34	
	0.170	22.50	0.12	22.62	54.94	32.32	AV
	0.567	16.51	0.17	16.68	46.00	29.32	
	1.129	16.80	0.22	17.02	46.00	28.98	
	2.962	18.40	0.23	18.63	46.00	27.37	
	7.606	17.88	0.59	18.47	50.00	31.53	
	21.600	16.80	0.88	17.68	50.00	32.32	

TEST ENGINEER: SAWEN LI



EUT : LED LCD TV Temperature : 22°C

Model No. : LHD32K316MH Humidity : 48%RH

Test Mode : USB Play Date of Test : Dec 20, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.170	34.26	0.24	34.50	64.94	30.44	QP
	0.564	27.84	0.31	28.15	56.00	27.85	
	1.129	28.59	0.32	28.91	56.00	27.09	
	<b>2.962</b>	<b>30.19</b>	<b>0.42</b>	<b>30.61</b>	<b>56.00</b>	<b>25.39</b>	
	7.606	32.95	0.68	33.63	60.00	26.37	
	21.600	30.17	0.99	31.16	60.00	28.84	
	AV	0.170	21.47	0.24	21.71	54.94	33.23
		0.564	13.51	0.31	13.82	46.00	32.18
		1.129	16.50	0.32	16.82	46.00	29.18
		2.962	19.29	0.42	19.71	46.00	26.29
		7.606	19.49	0.68	20.17	50.00	29.83
		21.600	18.49	0.99	19.48	50.00	30.52
Neutral	0.170	34.78	0.12	34.90	64.94	30.04	QP
	0.564	27.25	0.17	27.42	56.00	28.58	
	1.129	27.49	0.22	27.71	56.00	28.29	
	2.962	28.99	0.23	29.22	56.00	26.78	
	7.606	32.45	0.59	33.04	60.00	26.96	
	21.600	29.64	0.88	30.52	60.00	29.48	
	AV	0.170	21.30	0.12	21.42	54.94	33.52
		0.564	15.61	0.17	15.78	46.00	30.22
		1.129	17.50	0.22	17.72	46.00	28.28
		2.962	16.56	0.23	16.79	46.00	29.21
		7.606	18.55	0.59	19.14	50.00	30.86
		21.600	16.30	0.88	17.18	50.00	32.82

TEST ENGINEER: SAWEN LI

## 4 RADIATED EMISSION TEST

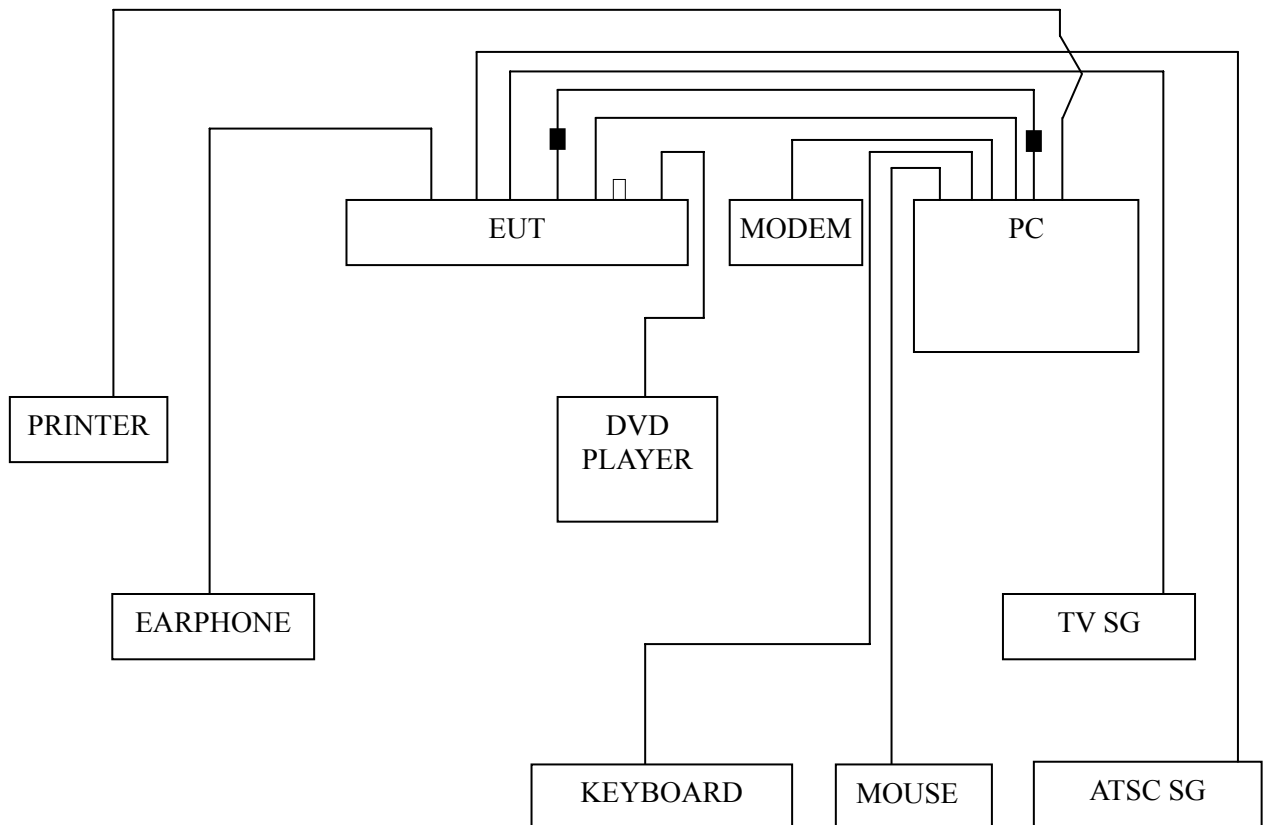
### 4.1 Test Equipment

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 11, 2012	Sep 11, 2013
2.	Preamplifier	Agilent	8447D	2944A10548	Sep 18, 2012	Mar 18, 2013
3.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 03, 2012	May 03, 2013
4.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2012	Mar 22, 2013
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Sep 18, 2012	Mar 18, 2013
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

### 4.2 Block Diagram of Test Setup

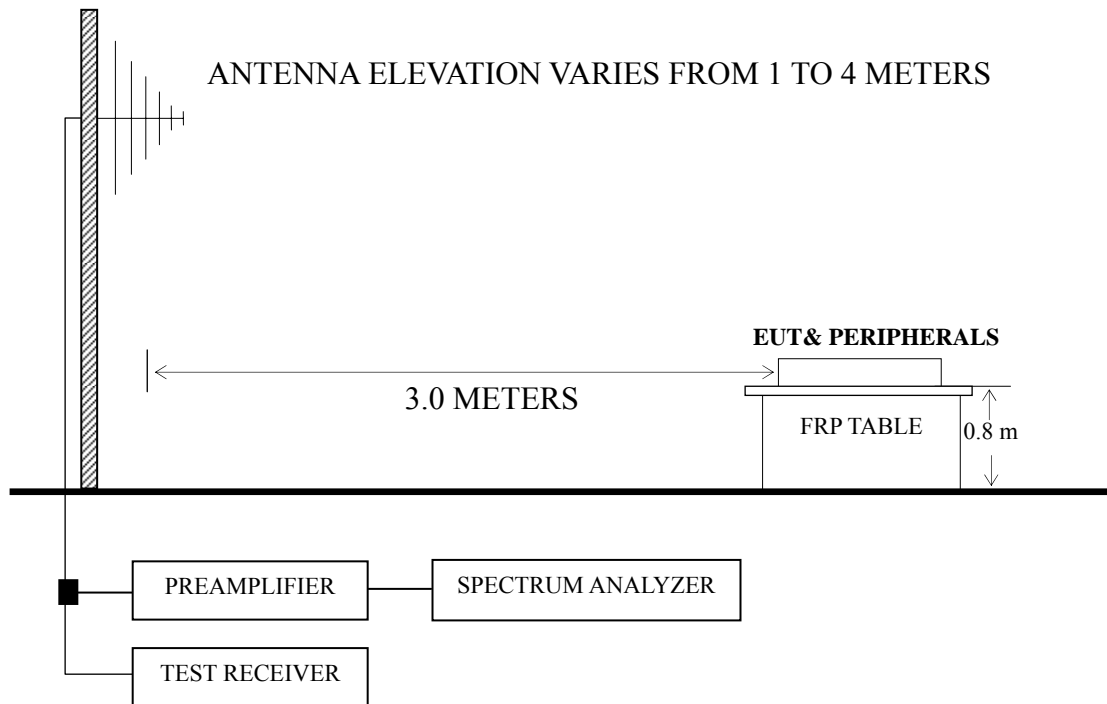
#### 4.2.1 EUT and Peripherals



■ : Ferrite core

□ : U-Disk

#### 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	
		( $\mu\text{V}/\text{m}$ )	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 C63.4:2003 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 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
D-Sub 1024*768@60Hz	P21
HDMI 1024*768@60Hz	P22
D-S ub800*600@60Hz	P23
D-Sub 640*480@60Hz	P24
USB Play	P25

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.

NOTE 2 – All readings are Quasi-Peak values.

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

NOTE 4 – The HDMI 1080p mode was tested and recorded in a FCC Verification test report (No. F13010).

NOTE 5 – The worst case is for D-Sub 1024\*768@60Hz test mode. The worst emission at horizontal polarization was detected at 360.000 MHz with corrected signal level of 43.13 dB ( $\mu\text{V}/\text{m}$ ) (limit is 46.00 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 1.00 m height and the turntable was at 250°. The worst emission at vertical polarization was detected at 359.800 MHz with corrected signal level of 41.52 dB ( $\mu\text{V}/\text{m}$ ) (limit is 46.00 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 1.00 m height and the turntable was at 120°.

EUT : LED LCD TV Temperature : 22°C

Model No. : LHD32K316MH Humidity : 60%RH

Test Mode : D-Sub 1024\*768@60Hz Date of Test : Dec 20, 2012

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	87.230	20.49	7.74	1.18	29.41	40.00	10.59
	108.570	22.77	11.72	1.40	35.89	43.50	7.61
	152.220	25.17	9.85	1.65	36.67	43.50	6.83
	237.580	29.02	10.67	2.15	41.84	46.00	4.16
	<b>360.000</b>	<b>25.50</b>	<b>15.00</b>	<b>2.63</b>	<b>43.13</b>	<b>46.00</b>	<b>2.87</b>
	629.460	18.96	18.40	3.32	40.68	46.00	5.32
Vertical	35.820	16.18	15.63	0.73	32.54	40.00	7.46
	127.000	23.86	11.70	1.52	37.08	43.50	6.42
	145.430	26.46	10.28	1.62	38.36	43.50	5.14
	238.550	24.92	10.83	2.15	37.90	46.00	8.10
	<b>359.800</b>	<b>23.89</b>	<b>15.00</b>	<b>2.63</b>	<b>41.52</b>	<b>46.00</b>	<b>4.48</b>
	629.460	18.98	18.40	3.32	40.70	46.00	5.30

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LHD32K316MH Humidity : 60%RH  
 Test Mode : HDMI 1024\*768@60Hz Date of Test : Dec 20, 2012

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	108.570	18.77	11.72	1.40	31.89	43.50	11.61
	179.380	24.11	8.22	1.83	34.16	43.50	9.34
	237.580	25.02	10.67	2.15	37.84	46.00	8.16
	<b>359.800</b>	<b>20.51</b>	<b>15.00</b>	<b>2.63</b>	<b>38.14</b>	<b>46.00</b>	<b>7.86</b>
	477.170	13.91	17.90	2.92	34.73	46.00	11.27
	694.450	8.21	20.30	3.54	32.05	46.00	13.95
Vertical	35.820	12.18	15.63	0.73	28.54	40.00	11.46
	127.000	19.86	11.70	1.52	33.08	43.50	10.42
	145.430	22.46	10.28	1.62	34.36	43.50	9.14
	238.550	20.92	10.83	2.15	33.90	46.00	12.10
	<b>359.800</b>	<b>19.89</b>	<b>15.00</b>	<b>2.63</b>	<b>37.52</b>	<b>46.00</b>	<b>8.48</b>
	425.760	13.93	17.47	2.76	34.16	46.00	11.84

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22°C

Model No. : LHD32K316MH Humidity : 60%RH

Test Mode : D-Sub 800\*600@60Hz Date of Test : Dec 20, 2012

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	36.790	16.95	14.92	0.74	32.61	40.00	7.39
	141.550	24.59	10.30	1.60	36.49	43.50	7.01
	180.350	27.15	8.20	1.84	37.19	43.50	6.31
	<b>349.130</b>	<b>23.52</b>	<b>14.80</b>	<b>2.62</b>	<b>40.94</b>	<b>46.00</b>	<b>5.06</b>
	425.760	18.59	17.47	2.76	38.82	46.00	7.18
	626.550	15.17	18.52	3.32	37.01	46.00	8.99
Vertical	94.020	16.94	9.12	1.27	27.33	43.50	16.17
	110.510	17.24	11.87	1.41	30.52	43.50	12.98
	178.410	27.39	8.23	1.83	37.45	43.50	6.05
	317.120	21.01	13.68	2.58	37.27	46.00	8.73
	<b>359.800</b>	<b>23.48</b>	<b>15.00</b>	<b>2.63</b>	<b>41.11</b>	<b>46.00</b>	<b>4.89</b>
	626.550	16.04	18.52	3.32	37.88	46.00	8.12

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22°C

Model No. : LHD32K316MH Humidity : 60%RH

Test Mode : D-Sub 640\*480@60Hz Date of Test : Dec 20, 2012

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	180.350	27.26	8.20	1.84	37.30	43.50	6.20
	317.120	20.03	13.68	2.58	36.29	46.00	9.71
	<b>359.800</b>	<b>22.84</b>	<b>15.00</b>	<b>2.63</b>	<b>40.47</b>	<b>46.00</b>	<b>5.53</b>
	425.760	15.20	17.47	2.76	35.43	46.00	10.57
	519.850	12.92	18.30	3.03	34.25	46.00	11.75
	944.710	12.30	19.40	4.68	36.38	46.00	9.62
Vertical	35.820	15.10	15.63	0.73	31.46	40.00	8.54
	132.820	23.94	11.45	1.56	36.95	43.50	6.55
	142.520	25.28	10.30	1.60	37.18	43.50	6.32
	179.380	27.81	8.22	1.83	37.86	43.50	5.64
	<b>359.800</b>	<b>23.55</b>	<b>15.00</b>	<b>2.63</b>	<b>41.18</b>	<b>46.00</b>	<b>4.82</b>
	425.760	17.56	17.47	2.76	37.79	46.00	8.21

TEST ENGINEER: ERIC TANG



EUT : LED LCD TV Temperature : 22°C

Model No. : LHD32K316MH Humidity : 60%RH

Test Mode : USB Play Date of Test : Dec 20, 2012

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	152.220	21.17	9.85	1.65	32.67	43.50	10.83
	179.380	24.11	8.22	1.83	34.16	43.50	9.34
	237.580	25.02	10.67	2.15	37.84	46.00	8.16
	<b>359.800</b>	<b>20.51</b>	<b>15.00</b>	<b>2.63</b>	<b>38.14</b>	<b>46.00</b>	<b>7.86</b>
	477.170	13.91	17.90	2.92	34.73	46.00	11.27
	629.460	14.96	18.40	3.32	36.68	46.00	9.32
Vertical	35.820	11.18	15.63	0.73	27.54	40.00	12.46
	127.000	18.86	11.70	1.52	32.08	43.50	11.42
	238.550	19.92	10.83	2.15	32.90	46.00	13.10
	<b>359.800</b>	<b>18.89</b>	<b>15.00</b>	<b>2.63</b>	<b>36.52</b>	<b>46.00</b>	<b>9.48</b>
	425.760	12.93	17.47	2.76	33.16	46.00	12.84
	629.460	13.98	18.40	3.32	35.70	46.00	10.30

TEST ENGINEER: ERIC TANG

## **5 DEVIATION TO TEST SPECIFICATIONS**

None.