

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

LED LCD TV

Model No.	Brand
LTDN40K20DUS	Hisense
40H3C	
40K20D	
40K21D	
40K22D	
40K23D	
40K24D	
40K25D	

FCC ID : W9HLCDD0036

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

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Report No. : ACI-F13203  
Date of Test : Nov 11 – 14, 2013  
Date of Report : Nov 21, 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.....	8
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>17</b>
4.1 Test Equipment.....	17
4.2 Block Diagram of Test Setup.....	17
4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)].....	18
4.4 Test Configuration.....	18
4.5 Operating Condition of EUT.....	18
4.6 Test Procedures.....	19
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.  
 Factory #1 : Hisense Electric Co., Ltd.  
 Factory #2 : Tatung Mexico S.A. de C.V.  
 EUT Description : LED LCD TV  
                   (A) Model No. : Refer to Sec.2.1.  
                   (B) Power Supply : 120V/60Hz  
                   (C) Brand : Hisense

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 Nov 11 – 14, 2013 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.

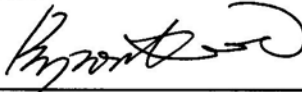
***The test results for EUT's TV functions are contained in No.F13204, a Verification report.***

Date of Test : Nov 11 – 14, 2013 Date of Report : Nov 21, 2013

Producer :   
                   KATHY WANG / Supervisor

Review :   
                   DIO YANG / 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
<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.	:	LTDN40K20DUS, 40H3C, 40K20D, 40K21D, 40K22D, 40K23D, 40K24D, 40K25D
Brand Name	:	Hisense
Note	:	The above models are all the same except for the model name. LTDN40K20DUS model was tested and recorded in the report.
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 : HD400DF-E37\S0.B2
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:

## Bottom Port:

- (1) One HDMI1 Port : Connected with PC
- (2) One USB Port : Connected with U-Disk
- (3) One AV/ COMPONENT IN Port : Connected with DVD PLAYER

## Side Port:

- (1) One DIGITAL AUDIO OUT : Connected with DVD PLAYER
- (2) One ANT /Cable in Port : Connected with ATSC SG / TV SG
- (3) One Audio Out Port : Connected with Earphone
- (4) One HDMI2/MHL Port : Connected with Smart Mobile Phone
- (5) One DVI Audio In 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 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

## 2.2.7 ATSC Signal Generator

Manufacturer : SENCORE  
Model Number : ATSC997  
Serial Number : 6790071

## 2.2.8 DVD PLAYER

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

## 2.2.9 Earphone

Manufacturer : Skullcandy  
Model Number : FMJ

## 2.2.10 U-DISK

Manufacturer : LG  
Model Number : 1GB

## 2.2.11 Smart Mobile Phone

Manufacturer : SAMSUNG  
Model Number : GT-I9100G  
Serial Number : RV1C2250B7J  
Certificate : CE/EMC, CCC

## 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 = 3.02 dB
Radiated Emission Expanded Uncertainty (30-200MHz):	U = 4.17 dB (Horizontal) U = 4.02 dB (Vertical)
Radiated Emission Expanded Uncertainty (200M-1GHz):	U = 3.38 dB (Horizontal) U = 3.28 dB (Vertical)
Radiated Emission Expanded Uncertainty (Above 1GHz):	U = 4.68 dB (Horizontal) U = 4.87 dB (Vertical)



### 3 CONDUCTED EMISSION TEST

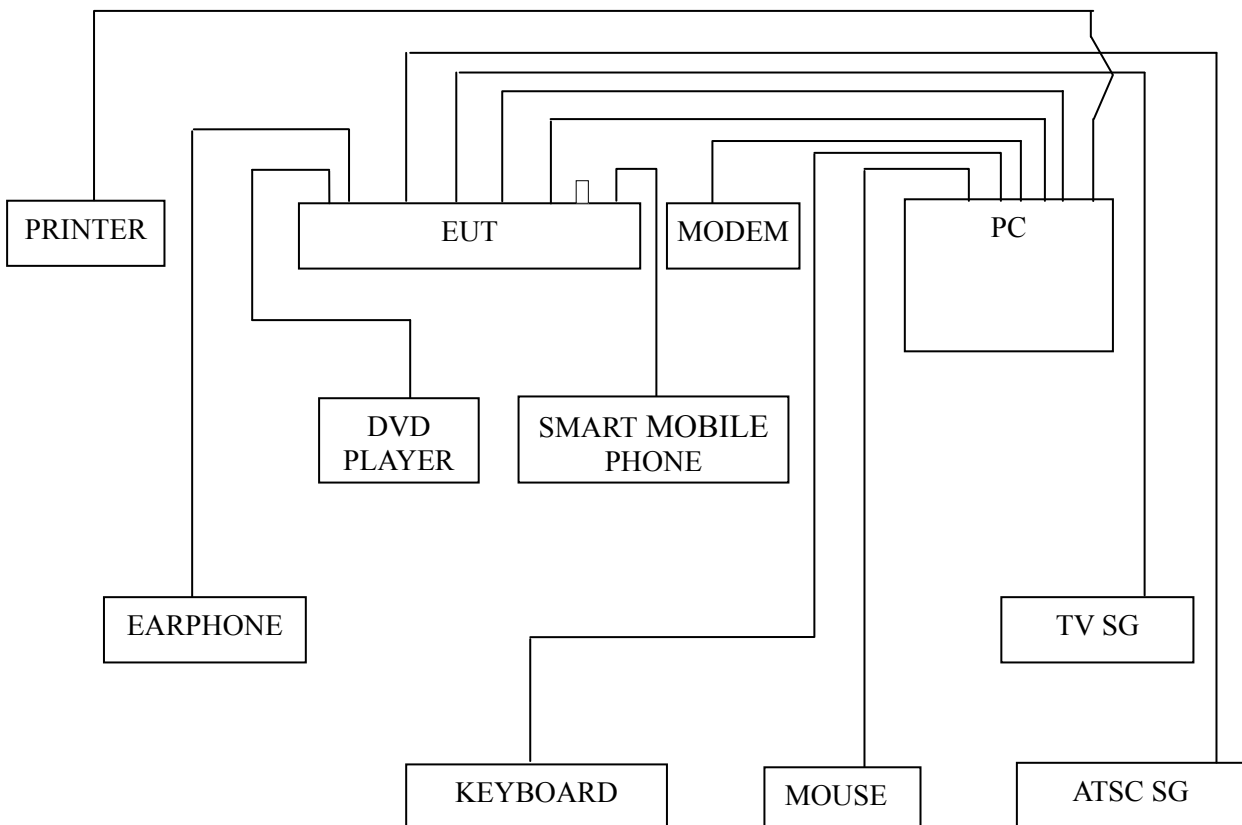
#### 3.1 Test Equipment

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 20, 2013	Mar 19, 2014
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Feb 25, 2013	Feb 24, 2014
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Mar 20, 2013	Mar 19, 2014
4.	50 $\Omega$ Coaxial Switch	Anritsu	MP59B	6200426389	Sep 18, 2013	Mar 17, 2014
5.	50 $\Omega$ Terminator	Anritsu	BNC	001	Mar 20, 2013	Mar 19, 2014
6.	Software	Audix	E3	6.2009-1-15	--	--

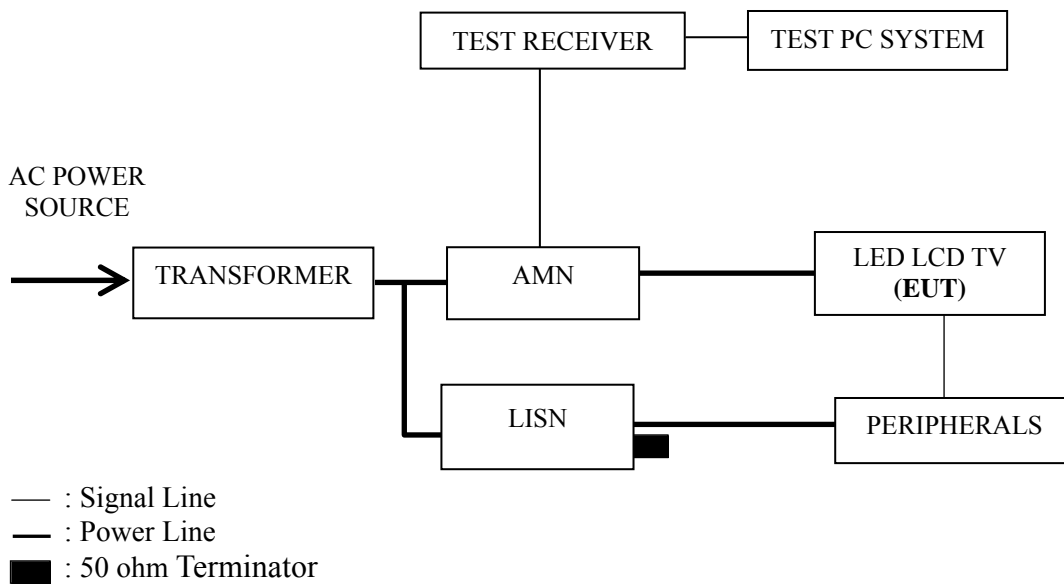
#### 3.2 Block Diagram of Test Setup

##### 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 ( $\mu$ 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 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
HDMI 1920*1080@60Hz
HDMI 1280*1024@60Hz
HDMI 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
HDMI 1920*1080@60Hz	P13
HDMI 1280*1024@60Hz	P14
HDMI 640*480@60Hz	P15
USB Play	P16

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 1920\*1080@60Hz test mode. The worst emission is detected at 0.166 MHz Quasi-Peak Value) with corrected signal level of 63.48 dB (μV) (limit is 65.15 dB (μV)), when the Line of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LTDN40K20DUS Humidity : 48%RH  
 Test Mode : HDMI 1920\*1080@60Hz Date of Test : Nov 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	<b>0.166</b>	<b>63.34</b>	<b>0.14</b>	<b>63.48</b>	<b>65.15</b>	<b>1.67</b>	QP
	0.623	32.70	0.05	32.75	56.00	23.25	
	1.326	30.21	0.05	30.26	56.00	25.74	
	7.462	41.70	0.26	41.96	60.00	18.04	
	17.400	48.70	-0.03	48.67	60.00	11.33	
	26.350	46.10	-0.32	45.78	60.00	14.22	
	AV	0.166	48.70	0.14	48.84	55.15	6.31
		0.623	19.50	0.05	19.55	46.00	26.45
		1.326	16.31	0.05	16.36	46.00	29.64
		7.462	34.90	0.26	35.16	50.00	14.84
		17.400	43.50	-0.03	43.47	50.00	6.53
		26.350	40.60	-0.32	40.28	50.00	9.72
Neutral	0.166	63.20	0.16	63.36	65.15	1.79	QP
	0.629	27.80	0.14	27.94	56.00	28.06	
	1.488	23.10	0.17	23.27	56.00	32.73	
	7.788	39.60	0.37	39.97	60.00	20.03	
	17.970	52.00	0.70	52.70	60.00	7.30	
	27.030	44.80	0.97	45.77	60.00	14.23	
	AV	0.166	48.71	0.16	48.87	55.15	6.28
		0.629	15.60	0.14	15.74	46.00	30.26
		1.488	11.50	0.17	11.67	46.00	34.33
		7.788	34.60	0.37	34.97	50.00	15.03
		17.970	46.70	0.70	47.40	50.00	2.60
		27.030	39.10	0.97	40.07	50.00	9.93

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LTDN40K20DUS Humidity : 48%RH  
 Test Mode : HDMI 1280\*1024@60Hz Date of Test : Nov 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	<b>0.166</b>	<b>62.90</b>	<b>0.14</b>	<b>63.04</b>	<b>65.17</b>	<b>2.13</b>	QP
	0.629	32.90	0.05	32.95	56.00	23.05	
	1.332	29.51	0.05	29.56	56.00	26.44	
	7.470	42.40	0.26	42.66	60.00	17.34	
	17.530	49.30	-0.03	49.27	60.00	10.73	
	26.880	45.80	-0.26	45.54	60.00	14.46	
	AV	0.166	48.40	0.14	48.54	55.17	6.63
		0.629	20.80	0.05	20.85	46.00	25.15
		1.332	15.91	0.05	15.96	46.00	30.04
		7.470	35.40	0.26	35.66	50.00	14.34
		17.530	44.20	-0.03	44.17	50.00	5.83
		26.880	40.20	-0.26	39.94	50.00	10.06
Neutral	0.165	62.91	0.16	63.07	65.19	2.12	QP
	0.652	32.41	0.13	32.54	56.00	23.46	
	1.232	23.90	0.17	24.07	56.00	31.93	
	7.324	41.71	0.34	42.05	60.00	17.95	
	17.970	52.10	0.70	52.80	60.00	7.20	
	27.370	45.00	0.99	45.99	60.00	14.01	
	AV	0.165	48.11	0.16	48.27	55.19	6.92
		0.652	16.41	0.13	16.54	46.00	29.46
		1.232	10.20	0.17	10.37	46.00	35.63
		7.324	34.91	0.34	35.25	50.00	14.75
		17.970	46.80	0.70	47.50	50.00	2.50
		27.370	39.00	0.99	39.99	50.00	10.01

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LTDN40K20DUS Humidity : 48%RH  
 Test Mode : HDMI 640\*480@60Hz Date of Test : Nov 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	<b>0.166</b>	<b>62.76</b>	<b>0.14</b>	<b>62.90</b>	<b>65.17</b>	<b>2.27</b>	QP
	0.650	32.40	0.07	32.47	56.00	23.53	
	1.268	27.30	0.05	27.35	56.00	28.65	
	7.740	40.80	0.26	41.06	60.00	18.94	
	17.380	49.50	-0.03	49.47	60.00	10.53	
	26.310	46.00	-0.32	45.68	60.00	14.32	
	0.166	48.35	0.14	48.49	55.17	6.68	AV
	0.650	19.50	0.07	19.57	46.00	26.43	
	1.268	14.50	0.05	14.55	46.00	31.45	
	7.740	35.90	0.26	36.16	50.00	13.84	
	17.380	44.30	-0.03	44.27	50.00	5.73	
	26.310	40.50	-0.32	40.18	50.00	9.82	
Neutral	0.168	62.40	0.17	62.57	65.05	2.48	QP
	0.421	31.59	0.22	31.81	57.43	25.62	
	0.867	30.40	0.15	30.55	56.00	25.45	
	7.446	40.79	0.36	41.15	60.00	18.85	
	17.660	52.10	0.69	52.79	60.00	7.21	
	26.670	44.40	0.96	45.36	60.00	14.64	
	0.168	49.60	0.17	49.77	55.05	5.28	AV
	0.421	19.99	0.22	20.21	47.43	27.22	
	0.867	16.90	0.15	17.05	46.00	28.95	
	7.446	35.09	0.36	35.45	50.00	14.55	
	17.660	46.90	0.69	47.59	50.00	2.41	
	26.670	38.90	0.96	39.86	50.00	10.14	

TEST ENGINEER: ERIC TANG

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN40K20DUS Humidity : 48%RH

Test Mode : USB Play Date of Test : Nov 11, 2013

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.167	62.70	0.14	62.84	65.10	2.26	QP
	0.346	36.01	0.02	36.03	59.05	23.02	
	0.631	33.20	0.06	33.26	56.00	22.74	
	8.062	39.00	0.26	39.26	60.00	20.74	
	17.500	49.20	-0.03	49.17	60.00	10.83	
	26.840	46.20	-0.26	45.94	60.00	14.06	
	AV	0.167	49.40	0.14	49.54	55.10	5.56
		0.346	25.91	0.02	25.93	49.05	23.12
		0.631	21.40	0.06	21.46	46.00	24.54
		8.062	34.20	0.26	34.46	50.00	15.54
		17.500	43.90	-0.03	43.87	50.00	6.13
		26.840	40.60	-0.26	40.34	50.00	9.66
Neutral	<b>0.165</b>	<b>63.01</b>	<b>0.16</b>	<b>63.17</b>	<b>65.19</b>	<b>2.02</b>	QP
	0.420	31.79	0.22	32.01	57.45	25.44	
	0.770	27.90	0.13	28.03	56.00	27.97	
	7.329	42.01	0.34	42.35	60.00	17.65	
	18.010	51.90	0.70	52.60	60.00	7.40	
	27.390	45.00	0.99	45.99	60.00	14.01	
	AV	0.165	48.61	0.16	48.77	55.19	6.42
		0.420	19.89	0.22	20.11	47.45	27.34
		0.770	14.00	0.13	14.13	46.00	31.87
		7.329	35.21	0.34	35.55	50.00	14.45
		18.010	46.80	0.70	47.50	50.00	2.50
		27.390	39.60	0.99	40.59	50.00	9.41

TEST ENGINEER: ERIC TANG



## 4 RADIATED EMISSION TEST

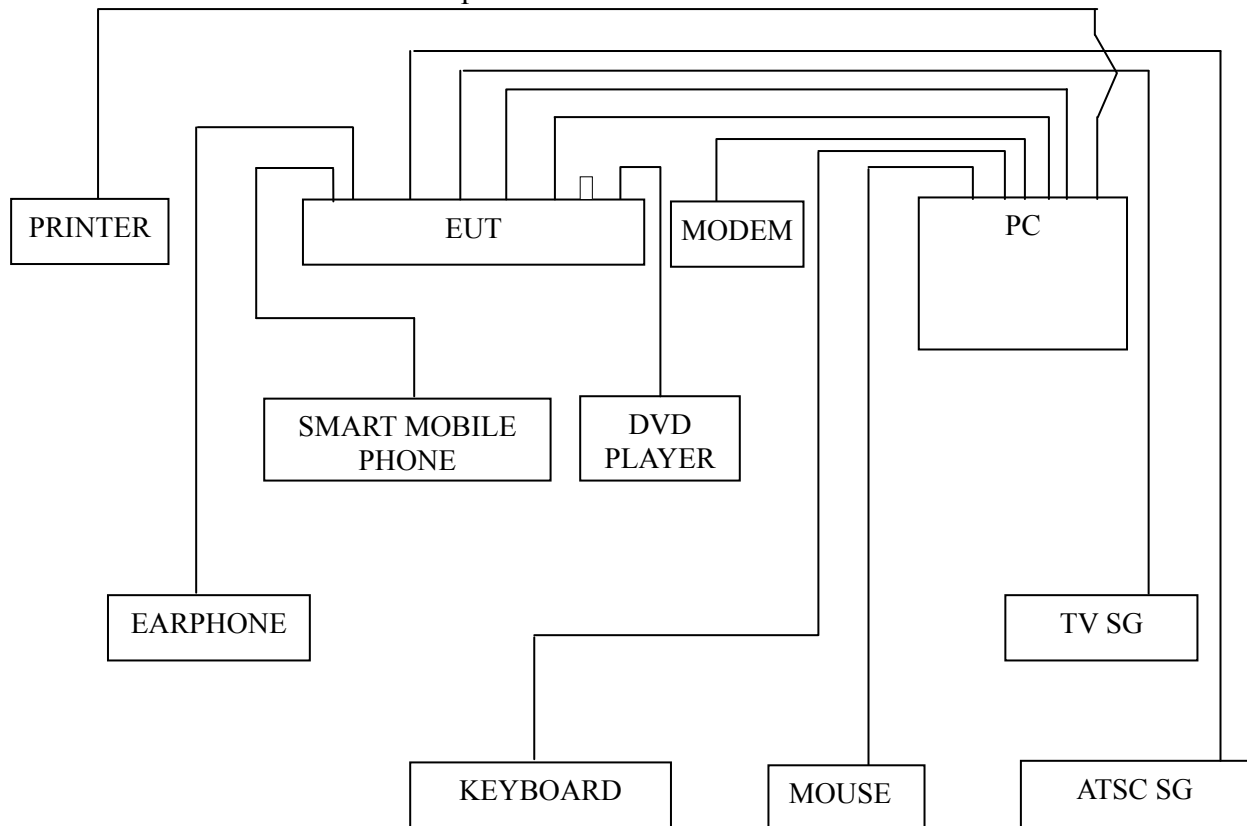
### 4.1 Test Equipment

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 03, 2013	Sep 02, 2014
2.	Preamplifier	Agilent	8447D	2944A10548	Sep 18, 2013	Mar 17, 2014
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2013	Mar 19, 2014
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 03, 2013	May 02, 2014
5.	Horn Antenna	EMCO	3115	9607-4878	May 11, 2013	May 10, 2014
6.	Spectrum	Agilent	E7405A	MY45106600	Dec 17, 2012	Dec 16, 2013
7.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Sep 18, 2013	Mar 17, 2014
8.	Software	Audix	E3	6.2007-9-10	--	--

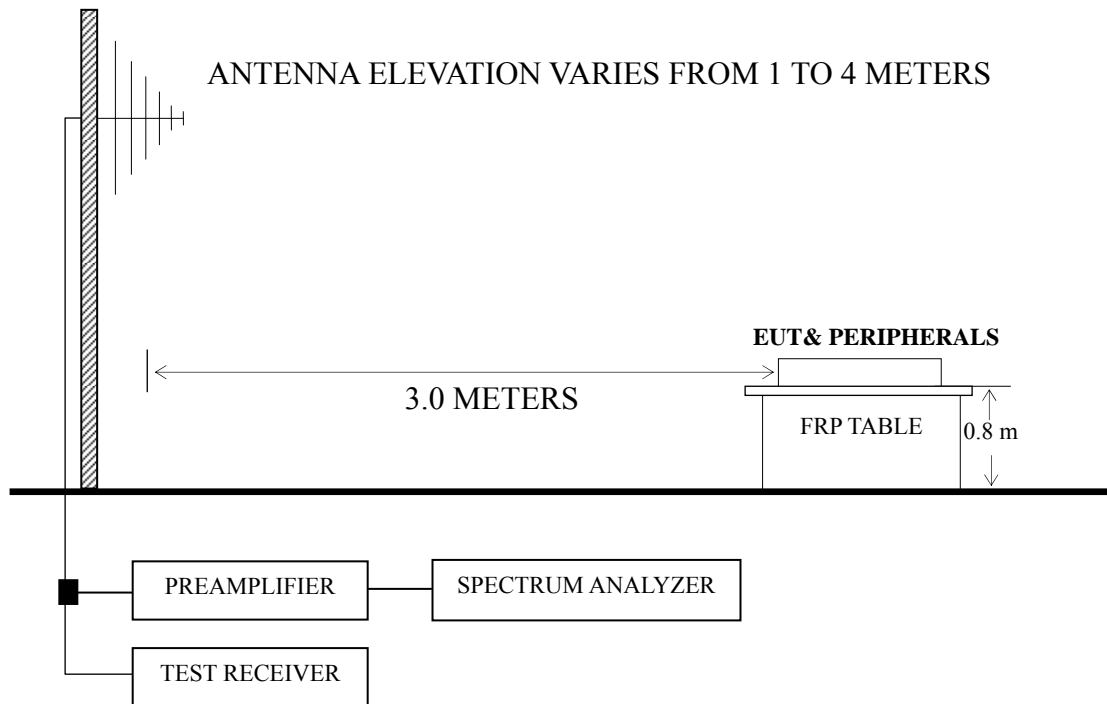
### 4.2 Block Diagram of Test Setup

#### 4.2.1 EUT & Peripherals



□ : 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	
		( $\mu\text{V/m}$ )	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 worst test mode in 30 – 1000 MHz test.

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	P21 – P22
HDMI 1280*1024@60Hz	P23
HDMI 640*480@60Hz	P24
USB Play	P25

- 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 test mode. The worst emission at horizontal polarization was detected at 130.880 MHz with corrected signal level of 40.98 dB (μV/m) (limit is 43.50 dB (μV/m)), when the antenna was 2.00 m height and the turntable was at 250°. The worst emission at vertical polarization was detected at 31.940 MHz with corrected signal level of 37.67 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.70 m height and the turntable was at 68°.

EUT : LED LCD TV Temperature : 22°C  
 Model No. : LTDN40K20DUS Humidity : 60%RH  
 Test Mode : HDMI 1920\*1080@60Hz Date of Test : Nov 14, 2013

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	80.440	24.02	6.84	1.08	--	31.94	40.00	8.06	QP
	104.690	20.03	11.30	1.37	--	32.70	43.50	10.80	
	<b>130.880</b>	<b>27.71</b>	<b>11.72</b>	<b>1.55</b>	--	<b>40.98</b>	<b>43.50</b>	<b>2.52</b>	
	208.480	28.05	7.63	2.00	--	37.68	43.50	5.82	
	378.230	21.08	15.07	2.66	--	38.81	46.00	7.19	
	698.330	18.24	20.30	3.54	--	42.08	46.00	3.92	
	1040.000	48.17	23.85	4.92	38.11	38.83	74.00	35.17	PK
	1158.000	46.64	24.34	5.07	37.84	38.21	74.00	35.79	
	1248.000	46.10	24.77	5.25	37.62	38.50	74.00	35.50	
	1397.000	46.19	25.33	5.59	37.19	39.92	74.00	34.08	
	1537.000	46.50	26.01	5.64	36.82	41.33	74.00	32.67	
	1846.000	45.60	29.62	6.16	36.29	45.09	74.00	28.91	
	1040.000	34.83	23.85	4.92	38.11	25.49	54.00	28.51	AV
	1158.000	33.13	24.34	5.07	37.84	24.70	54.00	29.30	
	1248.000	33.83	24.77	5.25	37.62	26.23	54.00	27.77	
	1397.000	33.20	25.33	5.59	37.19	26.93	54.00	27.07	
	1537.000	33.29	26.01	5.64	36.82	28.12	54.00	25.88	
	1846.000	32.11	29.62	6.16	36.29	31.60	54.00	22.40	

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN40K20DUS Humidity : 60%RH

Test Mode : HDMI 1920\*1080@60Hz Date of Test : Nov 14, 2013

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	<b>31.940</b>	<b>20.49</b>	<b>16.50</b>	<b>0.68</b>	--	<b>37.67</b>	<b>40.00</b>	<b>2.33</b>	QP
	130.880	23.67	11.72	1.55	--	36.94	43.50	6.56	
	145.430	24.89	10.28	1.62	--	36.79	43.50	6.71	
	424.790	20.59	17.40	2.76	--	40.75	46.00	5.25	
	594.540	18.01	18.50	3.20	--	39.71	46.00	6.29	
	741.980	19.37	18.87	3.57	--	41.81	46.00	4.19	
	1086.000	46.75	24.03	4.98	38.01	37.75	74.00	36.25	PK
	1210.000	45.98	24.58	5.15	37.71	38.00	74.00	36.00	
	1289.000	45.35	24.95	5.35	37.51	38.14	74.00	35.86	
	1485.000	45.45	25.57	5.63	36.95	39.70	74.00	34.30	
	1653.000	47.16	27.31	5.81	36.58	43.70	74.00	30.30	
	1903.000	44.90	30.20	6.18	36.22	45.06	74.00	28.94	
	1086.000	33.48	24.03	4.98	38.01	24.48	54.00	29.52	AV
	1210.000	32.20	24.58	5.15	37.71	24.22	54.00	29.78	
	1289.000	32.10	24.95	5.35	37.51	24.89	54.00	29.11	
	1485.000	32.10	25.57	5.63	36.95	26.35	54.00	27.65	
	1653.000	34.34	27.31	5.81	36.58	30.88	54.00	23.12	
	1903.000	31.03	30.20	6.18	36.22	31.19	54.00	22.81	

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN40K20DUS Humidity : 60%RH

Test Mode : HDMI 1280\*1024@60Hz Date of Test : Nov 14, 2013

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	77.530	25.24	6.65	1.05	32.94	40.00	7.06
	121.180	24.18	11.42	1.48	37.08	43.50	6.42
	<b>130.880</b>	<b>27.32</b>	<b>11.72</b>	<b>1.55</b>	<b>40.59</b>	<b>43.50</b>	<b>2.91</b>
	208.480	28.50	7.63	2.00	38.13	43.50	5.37
	441.280	18.69	17.32	2.80	38.81	46.00	7.19
	699.300	18.58	20.30	3.54	42.42	46.00	3.58
Vertical	33.880	19.50	16.12	0.70	36.32	40.00	3.68
	130.880	23.39	11.72	1.55	36.66	43.50	6.84
	211.390	26.43	7.60	2.01	36.04	43.50	7.46
	313.240	20.71	13.52	2.57	36.80	46.00	9.20
	<b>431.580</b>	<b>22.10</b>	<b>17.55</b>	<b>2.78</b>	<b>42.43</b>	<b>46.00</b>	<b>3.57</b>
	972.840	13.09	20.80	4.78	38.67	54.00	15.33

TEST ENGINEER: NEAL WANG

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN40K20DUS Humidity : 60%RH

Test Mode : HDMI 640\*480@60Hz Date of Test : Nov 14, 2013

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	80.440	24.32	6.84	1.08	32.24	40.00	7.76
	130.880	26.35	11.72	1.55	39.62	43.50	3.88
	211.390	27.98	7.60	2.01	37.59	43.50	5.91
	318.090	19.50	13.75	2.58	35.83	46.00	10.17
	381.140	20.12	15.20	2.66	37.98	46.00	8.02
	<b>699.300</b>	<b>18.70</b>	<b>20.30</b>	<b>3.54</b>	<b>42.54</b>	<b>46.00</b>	<b>3.46</b>
Vertical	38.730	21.56	13.30	0.76	35.62	40.00	4.38
	80.440	21.49	6.84	1.08	29.41	40.00	10.59
	145.430	24.07	10.28	1.62	35.97	43.50	7.53
	211.390	27.91	7.60	2.01	37.52	43.50	5.98
	318.090	19.43	13.75	2.58	35.76	46.00	10.24
	<b>434.490</b>	<b>22.28</b>	<b>17.50</b>	<b>2.78</b>	<b>42.56</b>	<b>46.00</b>	<b>3.44</b>

TEST ENGINEER: NEAL WANG



EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN40K20DUS Humidity : 60%RH

Test Mode : USB Play Date of Test : Nov 14, 2013

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	33.880	8.98	16.12	0.70	25.80	40.00	14.20
	79.470	23.92	6.76	1.06	31.74	40.00	8.26
	140.580	21.48	10.30	1.60	33.38	43.50	10.12
	228.850	23.38	9.50	2.09	34.97	46.00	11.03
	<b>375.320</b>	<b>20.30</b>	<b>15.00</b>	<b>2.66</b>	<b>37.96</b>	<b>46.00</b>	<b>8.04</b>
	753.620	14.18	18.65	3.58	36.41	46.00	9.59
Vertical	<b>34.850</b>	<b>17.17</b>	<b>15.85</b>	<b>0.71</b>	<b>33.73</b>	<b>40.00</b>	<b>6.27</b>
	47.460	20.84	8.30	0.84	29.98	40.00	10.02
	114.390	19.19	11.62	1.43	32.24	43.50	11.26
	175.500	13.91	8.29	1.81	24.01	43.50	19.49
	304.510	18.22	12.90	2.56	33.68	46.00	12.32
	578.050	7.16	18.95	3.16	29.27	46.00	16.73

TEST ENGINEER: NEAL WANG

## **5 DEVIATION TO TEST SPECIFICATIONS**

None.