

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

LED LCD TV

Model No.	Brand
46K360M	Hisense

FCC ID : W9HLCDD0028

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.  
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Report No. : ACI-F13041  
Date of Test : Mar 09 – 12, 2013  
Date of Report : Mar 20, 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>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.  
 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
46K360M	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 Sec.2.1) which was tested in 3m anechoic chamber Mar 09 – 12, 2013 is technically compliance with the FCC official limits also.

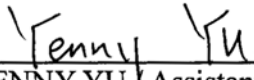
This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

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.

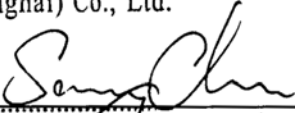
***The test results for EUT's TV functions are contained in No.F13007A2, a Verification report.***

Date of Test : Mar 09 – 12, 2013 Date of Report : Mar 20, 2013

Producer :   
 YENNY YU / Assistant

Review :   
 BYRON WU / Supervisor

 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:

<b>Description of Test Item</b>	<b>Standard</b>	<b>Limits</b>	<b>Results</b>
<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 :  Production  Pre-product  Pro-type

Model No. : 46K360M

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

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 : HE460GF-B51\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

**Remark:**

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

## Side Port:

- (1) One ANT/CABLE IN Port  
: Connected with ATSC SG / TV SG
- (2) One VGA Port  
: Connected with PC
- (3) One PC/D-Sub Audio In Port  
: Connected with PC
- (4) One DIGITAL AUDIO OUT Port  
: Connected with PC
- (5) One HDMI3 Port  
: Connected with Smart Mobile Phone

## Bottom Port:

- (1) One AUDIO OUT Port  
: Connected with Earphone
- (2) One USB Port  
: Connected with U-Disk
- (3) One HDMI1 Port  
: Connected with PC
- (4) One HDMI2 Port  
: Connected with DVD PLAYER
- (5) One component of AV/YPbPr Port  
: Connected with DVD PLAYER

## 2.2 Peripherals

### 2.2.1 PC

Manufacturer : HP  
Model Number : Pro3340  
Serial Number : 6CR2512VFD  
Power Cord : Unshielded, Detachable, 1.8m  
Certificate : FCC DoC; CE/EMC; VCCI; C-Tick; 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 : LG  
Model Number : DF9921N  
Serial Number : 3850R-M846W  
Certificate : FCC DoC, CE/EMC, CCC

### 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 = 3.42 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

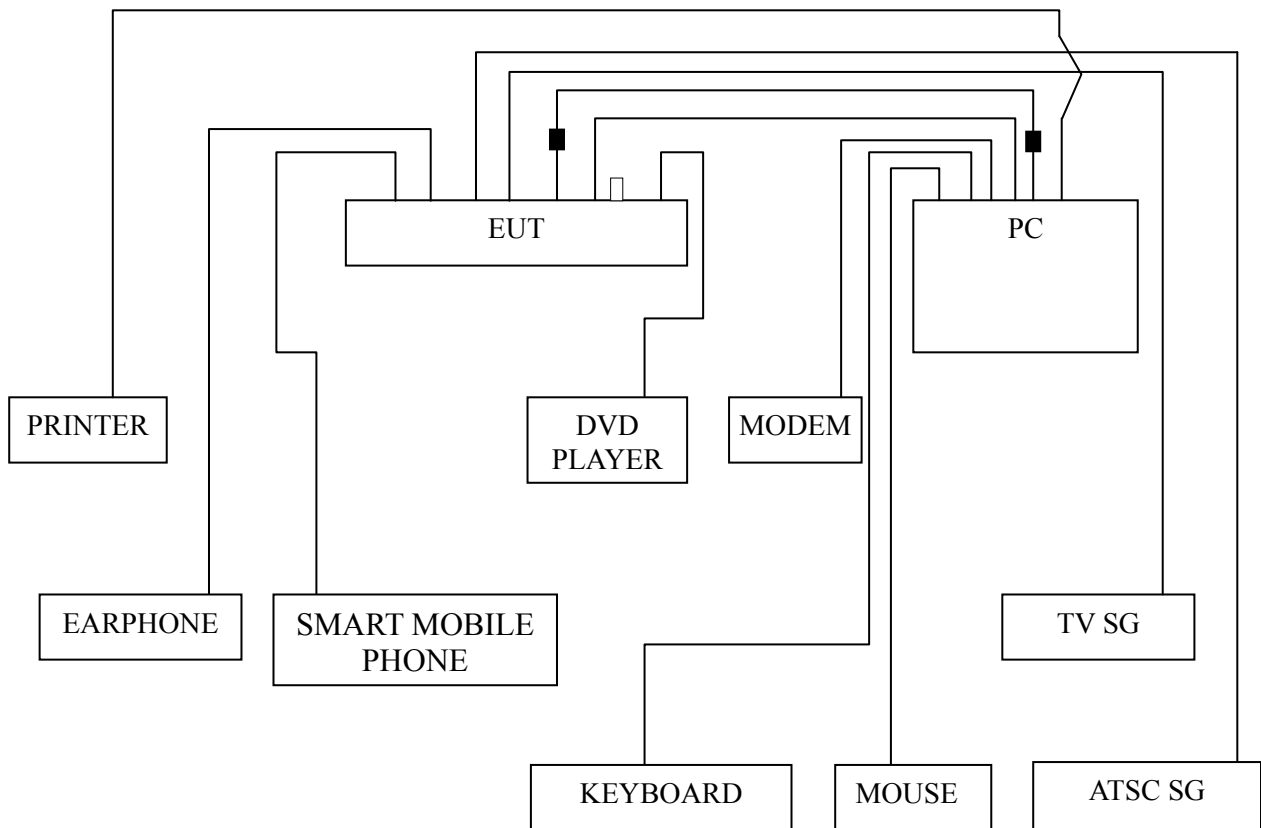
#### 3.1 Test Equipment

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 25, 2013	Feb 25, 2014
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

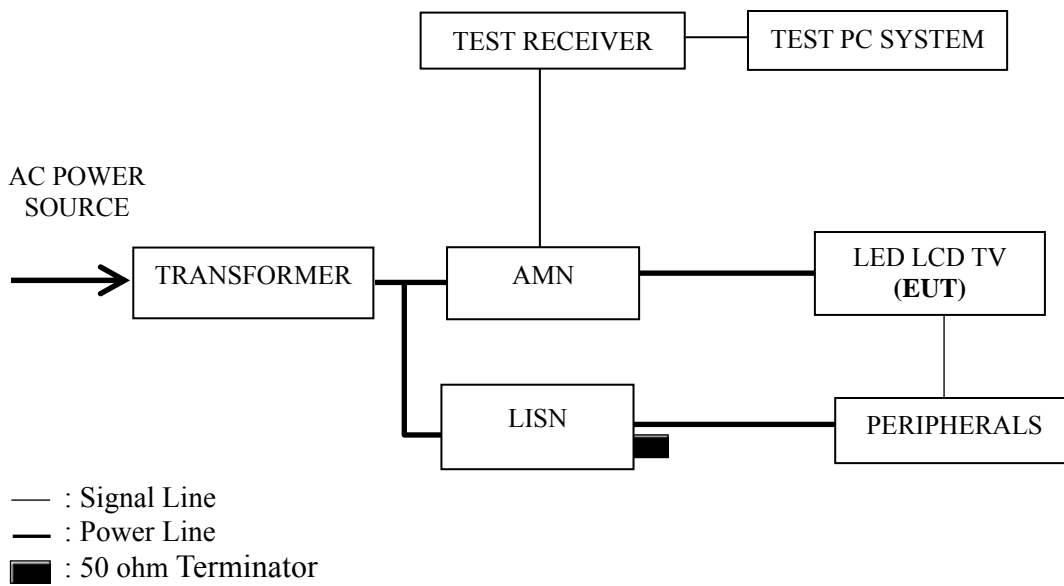
##### 3.2.1 EUT & Peripherals



■ : Ferrite core

□ : 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 D-Sub & HDMI Input).

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

3.5.6 In MHL mode, set the EUT play digital media from smart mobile phone.

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

3.5.8 The test modes are as follows:

Test Mode
D-Sub 1024*768@60Hz
HDMI 1024*768@60Hz
HDMI 800*600@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
D-Sub 1024*768@60Hz	P13
HDMI 1024*768@60Hz	P14
HDMI 800*600@60Hz	P15
HDMI 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 worst case is for HDMI 800\*600@60Hz test mode. The worst emission is detected at 0.159 MHz (Quasi-Peak Value) with corrected signal level of 56.20 dB (μV) (limit is 65.52 dB (μV)), when the Line of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 48%RH

Test Mode : D-Sub 1024\*768@60Hz Date of Test : Mar 09, 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>0.159</b>	<b>55.94</b>	<b>0.24</b>	<b>56.18</b>	<b>65.52</b>	<b>9.34</b>	QP
	0.627	41.45	0.21	41.66	56.00	14.34	
	1.585	39.88	0.37	40.25	56.00	15.75	
	2.622	41.07	0.40	41.47	56.00	14.53	
	3.681	35.52	0.48	36.00	56.00	20.00	
	16.226	35.56	0.85	36.41	60.00	23.59	
	0.159	45.62	0.24	45.86	55.52	9.66	AV
	0.627	31.21	0.21	31.42	46.00	14.58	
	1.585	29.56	0.37	29.93	46.00	16.07	
	2.622	31.00	0.40	31.40	46.00	14.60	
	3.681	25.29	0.48	25.77	46.00	20.23	
	16.226	25.12	0.85	25.97	50.00	24.03	
Neutral	0.159	55.60	0.13	55.73	65.52	9.79	QP
	0.621	41.17	0.19	41.36	56.00	14.64	
	1.602	39.56	0.17	39.73	56.00	16.27	
	2.650	39.79	0.20	39.99	56.00	16.01	
	5.166	37.19	0.42	37.61	60.00	22.39	
	16.226	36.32	0.74	37.06	60.00	22.94	
	0.159	45.20	0.13	45.33	55.52	10.19	AV
	0.621	31.05	0.19	31.24	46.00	14.76	
	1.602	28.65	0.17	28.82	46.00	17.18	
	2.650	29.42	0.20	29.62	46.00	16.38	
	5.166	26.63	0.42	27.05	50.00	22.95	
	16.226	26.20	0.74	26.94	50.00	23.06	

TEST ENGINEER: SAWEN LI

EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 48%RH

Test Mode : HDMI 1024\*768@60Hz Date of Test : Mar 09, 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>0.159</b>	<b>55.95</b>	<b>0.24</b>	<b>56.19</b>	<b>65.52</b>	<b>9.33</b>	QP
	0.604	40.72	0.23	40.95	56.00	15.05	
	1.602	39.41	0.37	39.78	56.00	16.22	
	2.650	40.05	0.40	40.45	56.00	15.55	
	5.166	35.87	0.50	36.37	60.00	23.63	
	16.661	36.54	0.86	37.40	60.00	22.60	
	AV	0.159	45.69	0.24	45.93	55.52	9.59
		0.604	30.31	0.23	30.54	46.00	15.46
		1.602	28.60	0.37	28.97	46.00	17.03
		2.650	30.20	0.40	30.60	46.00	15.40
		5.166	25.31	0.50	25.81	50.00	24.19
		16.661	26.25	0.86	27.11	50.00	22.89
Neutral	0.159	55.65	0.13	55.78	65.52	9.74	QP
	0.592	40.60	0.18	40.78	56.00	15.22	
	1.602	39.50	0.17	39.67	56.00	16.33	
	2.622	39.67	0.20	39.87	56.00	16.13	
	3.681	37.44	0.38	37.82	56.00	18.18	
	15.226	35.55	0.73	36.28	60.00	23.72	
	AV	0.159	45.60	0.13	45.73	55.52	9.79
		0.592	30.30	0.18	30.48	46.00	15.52
		1.602	29.21	0.17	29.38	46.00	16.62
		2.622	29.25	0.20	29.45	46.00	16.55
		3.681	27.19	0.38	27.57	46.00	18.43
		15.226	25.34	0.73	26.07	50.00	23.93

TEST ENGINEER: SAWEN LI

EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 48%RH

Test Mode : HDMI 800\*600@60Hz Date of Test : Mar 09, 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>0.159</b>	<b>55.96</b>	<b>0.24</b>	<b>56.20</b>	<b>65.52</b>	<b>9.32</b>	QP	
	0.627	41.33	0.21	41.54	56.00	14.46		
	1.585	40.52	0.37	40.89	56.00	15.11		
	2.650	41.17	0.40	41.57	56.00	14.43		
	3.720	36.92	0.48	37.40	56.00	18.60		
	16.055	36.05	0.85	36.90	60.00	23.10		
	0.159	45.60	0.24	45.84	55.52	9.68	AV	
	0.627	31.21	0.21	31.42	46.00	14.58		
	1.585	30.30	0.37	30.67	46.00	15.33		
	2.650	31.05	0.40	31.45	46.00	14.55		
	3.720	26.36	0.48	26.84	46.00	19.16		
	16.055	25.50	0.85	26.35	50.00	23.65		
	Neutral	0.159	55.65	0.13	55.78	65.52	9.74	QP
		0.611	40.79	0.18	40.97	56.00	15.03	
1.585		40.41	0.17	40.58	56.00	15.42		
2.993		39.27	0.24	39.51	56.00	16.49		
3.720		36.80	0.38	37.18	56.00	18.82		
16.055		36.76	0.74	37.50	60.00	22.50		
0.159		45.60	0.13	45.73	55.52	9.79	AV	
0.611		30.31	0.18	30.49	46.00	15.51		
1.585		30.12	0.17	30.29	46.00	15.71		
2.993		29.10	0.24	29.34	46.00	16.66		
3.720		26.60	0.38	26.98	46.00	19.02		
16.055		26.31	0.74	27.05	50.00	22.95		

TEST ENGINEER: SAWEN LI

EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 48%RH

Test Mode : HDMI 640\*480@60Hz Date of Test : Mar 09, 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>0.159</b>	<b>55.96</b>	<b>0.24</b>	<b>56.20</b>	<b>65.52</b>	<b>9.32</b>	QP
	0.598	41.72	0.25	41.97	56.00	14.03	
	1.568	39.66	0.37	40.03	56.00	15.97	
	2.622	39.92	0.40	40.32	56.00	15.68	
	3.720	36.72	0.48	37.20	56.00	18.80	
	16.055	34.75	0.85	35.60	60.00	24.40	
	0.159	45.23	0.24	45.47	55.52	10.05	AV
	0.598	31.20	0.25	31.45	46.00	14.55	
	1.568	29.20	0.37	29.57	46.00	16.43	
	2.622	29.60	0.40	30.00	46.00	16.00	
	3.720	26.60	0.48	27.08	46.00	18.92	
	16.055	24.42	0.85	25.27	50.00	24.73	
Neutral	0.159	55.68	0.13	55.81	65.52	9.71	QP
	0.611	40.96	0.18	41.14	56.00	14.86	
	1.602	40.86	0.17	41.03	56.00	14.97	
	2.309	38.78	0.19	38.97	56.00	17.03	
	3.364	36.33	0.32	36.65	56.00	19.35	
	14.672	36.90	0.73	37.63	60.00	22.37	
	0.159	45.21	0.13	45.34	55.52	10.18	AV
	0.611	30.51	0.18	30.69	46.00	15.31	
	1.602	30.60	0.17	30.77	46.00	15.23	
	2.309	28.60	0.19	28.79	46.00	17.21	
	3.364	26.20	0.32	26.52	46.00	19.48	
	14.672	26.59	0.73	27.32	50.00	22.68	

TEST ENGINEER: SAWEN LI



EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 48%RH

Test Mode : USB Play Date of Test : Mar 09, 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>0.159</b>	<b>55.95</b>	<b>0.24</b>	<b>56.19</b>	<b>65.52</b>	<b>9.33</b>	QP	
	0.621	41.19	0.22	41.41	56.00	14.59		
	1.602	39.95	0.37	40.32	56.00	15.68		
	2.622	40.06	0.40	40.46	56.00	15.54		
	3.720	35.26	0.48	35.74	56.00	20.26		
	14.672	35.85	0.84	36.69	60.00	23.31		
	0.159	45.62	0.24	45.86	55.52	9.66	AV	
	0.621	31.25	0.22	31.47	46.00	14.53		
	1.602	29.62	0.37	29.99	46.00	16.01		
	2.622	30.00	0.40	30.40	46.00	15.60		
	3.720	25.12	0.48	25.60	46.00	20.40		
	14.672	25.42	0.84	26.26	50.00	23.74		
	Neutral	0.159	55.63	0.13	55.76	65.52	9.76	QP
		0.621	40.97	0.19	41.16	56.00	14.84	
1.585		40.14	0.17	40.31	56.00	15.69		
2.678		40.58	0.20	40.78	56.00	15.22		
5.166		37.60	0.42	38.02	60.00	21.98		
13.408		35.95	0.69	36.64	60.00	23.36		
0.159		45.20	0.13	45.33	55.52	10.19	AV	
0.621		30.25	0.19	30.44	46.00	15.56		
1.585		30.14	0.17	30.31	46.00	15.69		
2.678		30.47	0.20	30.67	46.00	15.33		
5.166		27.61	0.42	28.03	50.00	21.97		
13.408		25.40	0.69	26.09	50.00	23.91		

TEST ENGINEER: SAWEN LI

## 4 RADIATED EMISSION TEST

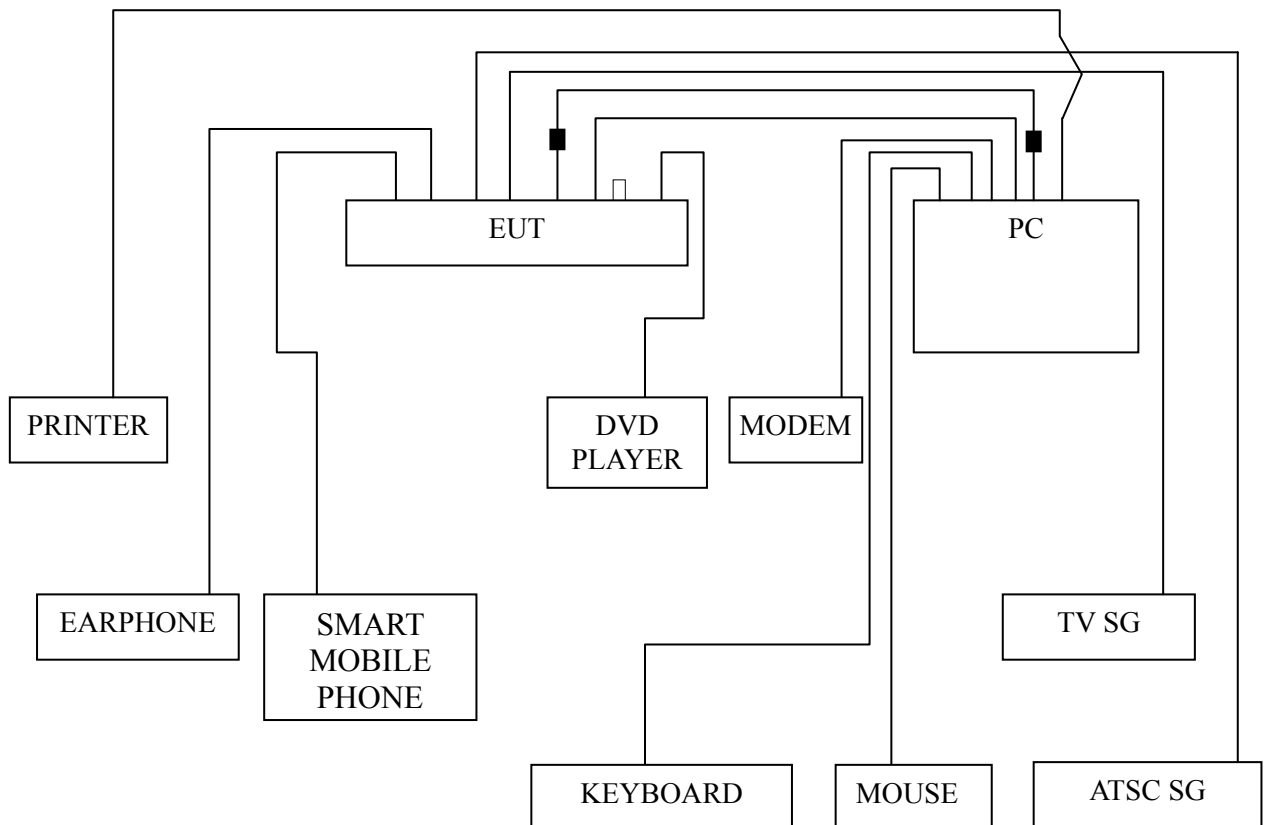
### 4.1 Test Equipment

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	Dec 17, 2012	Dec 17, 2013
5.	50 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

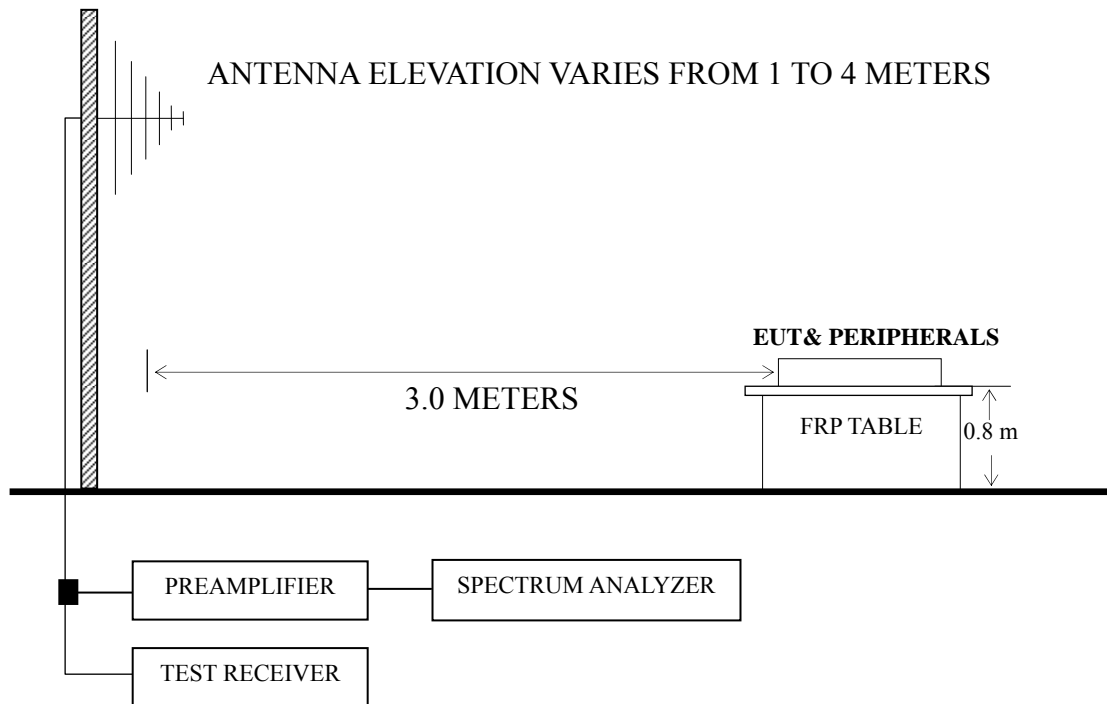
#### 4.2.1 EUT and Peripherals



■ : 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-Sub 800*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 worst case is for D-Sub 1024\*768@60Hz test mode. The worst emission at horizontal polarization was detected at 174.530 MHz with corrected signal level of 36.01 dB ( $\mu\text{V}/\text{m}$ ) (limit is 43.50 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 1.60 m height and the turntable was at 125°. The worst emission at vertical polarization was detected at 126.600 MHz with corrected signal level of 43.06 dB ( $\mu\text{V}/\text{m}$ ) (limit is 43.50 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 1.60 m height and the turntable was at 215°.

EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 60%RH

Test Mode : D-Sub 1024\*768@60Hz Date of Test : Mar 12, 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	72.680	21.78	6.20	0.97	28.95	40.00	11.05
	<b>174.530</b>	<b>25.90</b>	<b>8.31</b>	<b>1.80</b>	<b>36.01</b>	<b>43.50</b>	<b>7.49</b>
	223.030	27.64	8.43	2.06	38.13	46.00	7.87
	256.980	20.37	12.30	2.25	34.92	46.00	11.08
	444.190	15.12	17.15	2.82	35.09	46.00	10.91
Vertical	589.690	12.05	18.70	3.18	33.93	46.00	12.07
	48.430	20.03	7.98	0.84	28.85	40.00	11.15
	70.740	23.25	5.89	0.94	30.08	40.00	9.92
	<b>126.600</b>	<b>29.90</b>	<b>11.65</b>	<b>1.51</b>	<b>43.06</b>	<b>43.50</b>	<b>0.44</b>
	159.980	28.47	9.60	1.70	39.77	43.50	3.73
	295.780	17.36	12.58	2.52	32.46	46.00	13.54
444.190	13.27	17.15	2.82	33.24	46.00	12.76	

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 60%RH

Test Mode : HDMI 1024\*768@60Hz Date of Test : Mar 12, 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	72.680	19.25	6.20	0.97	26.42	40.00	13.58
	101.780	18.09	10.76	1.35	30.20	43.50	13.30
	130.880	21.63	11.72	1.55	34.90	43.50	8.60
	<b>240.490</b>	<b>24.54</b>	<b>11.03</b>	<b>2.17</b>	<b>37.74</b>	<b>46.00</b>	<b>8.26</b>
	305.480	19.55	13.00	2.56	35.11	46.00	10.89
	591.630	12.33	18.60	3.20	34.13	46.00	11.87
Vertical	<b>38.730</b>	<b>20.19</b>	<b>13.30</b>	<b>0.76</b>	<b>34.25</b>	<b>40.00</b>	<b>5.75</b>
	53.280	22.61	6.46	0.86	29.93	40.00	10.07
	240.490	18.05	11.03	2.17	31.25	46.00	14.75
	371.440	13.97	14.85	2.66	31.48	46.00	14.52
	444.190	11.12	17.15	2.82	31.09	46.00	14.91
	868.080	9.80	20.43	4.20	34.43	46.00	11.57

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 60%RH

Test Mode : D-Sub 800\*600@60Hz Date of Test : Mar 12, 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	72.680	23.07	6.20	0.97	30.24	40.00	9.76
	101.780	20.92	10.76	1.35	33.03	43.50	10.47
	133.790	25.76	11.22	1.56	38.54	43.50	4.96
	<b>167.740</b>	<b>29.14</b>	<b>8.40</b>	<b>1.76</b>	<b>39.30</b>	<b>43.50</b>	<b>4.20</b>
	240.490	25.01	11.03	2.17	38.21	46.00	7.79
	591.630	12.82	18.60	3.20	34.62	46.00	11.38
Vertical	<b>38.730</b>	<b>23.65</b>	<b>13.30</b>	<b>0.76</b>	<b>37.71</b>	<b>40.00</b>	<b>2.29</b>
	53.280	26.02	6.46	0.86	33.34	40.00	6.66
	174.530	28.90	8.31	1.80	39.01	43.50	4.49
	240.490	15.58	11.03	2.17	28.78	46.00	17.22
	480.080	8.65	18.00	2.92	29.57	46.00	16.43
	526.640	8.34	18.35	3.05	29.74	46.00	16.26

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 60%RH

Test Mode : D-Sub 640\*480@60Hz Date of Test : Mar 12, 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	75.590	18.63	6.54	1.01	26.18	40.00	13.82
	101.780	18.05	10.76	1.35	30.16	43.50	13.34
	130.880	22.00	11.72	1.55	35.27	43.50	8.23
	<b>174.530</b>	<b>28.57</b>	<b>8.31</b>	<b>1.80</b>	<b>38.68</b>	<b>43.50</b>	<b>4.82</b>
	240.490	23.70	11.03	2.17	36.90	46.00	9.10
	305.480	18.56	13.00	2.56	34.12	46.00	11.88
Vertical	<b>38.730</b>	<b>22.50</b>	<b>13.30</b>	<b>0.76</b>	<b>36.56</b>	<b>40.00</b>	<b>3.44</b>
	53.280	25.40	6.46	0.86	32.72	40.00	7.28
	240.490	18.52	11.03	2.17	31.72	46.00	14.28
	371.440	14.18	14.85	2.66	31.69	46.00	14.31
	470.380	12.13	17.60	2.90	32.63	46.00	13.37
	848.680	11.12	21.00	3.98	36.10	46.00	9.90

TEST ENGINEER: RAVEN JIN



EUT : LED LCD TV Temperature : 22

Model No. : 46K360M Humidity : 60%RH

Test Mode : USB Play Date of Test : Mar 12, 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	76.560	22.03	6.59	1.03	29.65	40.00	10.35
	131.850	17.49	11.54	1.55	30.58	43.50	12.92
	297.720	20.65	12.55	2.52	35.72	46.00	10.28
	446.130	17.05	17.07	2.82	36.94	46.00	9.06
	594.540	13.51	18.50	3.20	35.21	46.00	10.79
	<b>816.670</b>	<b>15.00</b>	<b>20.53</b>	<b>3.80</b>	<b>39.33</b>	<b>46.00</b>	<b>6.67</b>
Vertical	52.310	25.46	6.83	0.86	33.15	40.00	6.85
	<b>159.980</b>	<b>25.57</b>	<b>9.60</b>	<b>1.70</b>	<b>36.87</b>	<b>43.50</b>	<b>6.63</b>
	297.720	15.66	12.55	2.52	30.73	46.00	15.27
	446.130	18.24	17.07	2.82	38.13	46.00	7.87
	471.350	14.84	17.67	2.90	35.41	46.00	10.59
	859.350	11.41	20.70	4.08	36.19	46.00	9.81

TEST ENGINEER: RAVEN JIN

## **5 DEVIATION TO TEST SPECIFICATIONS**

None.