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

LED LCD TV

Model No.	Brand
LTDN46K360MUS	Hisense
46K360M	

FCC ID : W9HLCDE0011

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-F13005
Date of Test : Dec 21, 2012 – Jan 05, 2013
Date of Report : Jan 08, 2013

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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
LTDN46K360MUS	Hisense	120V/60Hz
46K360M		

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 21, 2012 – Jan 05, 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.F13007, a Verification report.

Date of Test : Dec 21, 2012 – Jan 05, 2013 Date of Report : Jan 08, 2013

Producer : Yenny Yu.
YENNY YU / Assistant

Review : Dio Yang
DIO YANG/ Assistant Manager

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

Signatory : Sammy Chen
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
EMISSION			
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.	:	LTDN46K360MUS / 46K360M
Bread Name	:	Hisense
Note	:	The above models are all the same except for the different model name. The LTDN46K360MUS was tested and reported 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
LCD Panel	:	Manufacturer : Hisense M/N : HE460GF-B37\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 ANT/CABLE IN Port
: Connected with ATSC SG / TV SG

(2) One VGA Port
: Connected with PC

(3) One PC/DVI Audio In Port
: Connected with PC

(4) One DIGITAL AUDIO OUT Port
: Connected with DVD PLAYER #1

(5) One HDMI3 Port
: Connected with DVD PLAYER #2

Bottom Port:

(1) One Headphone 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 #1

(5) One component of AV/YPbPr Port
: Connected with DVD PLAYER #1

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx7200MT
Serial Number	:	CNG622017W
Power Cord	:	Unshielded, Detachable, 1.8m
Certificate	:	FCC DoC; CE/EMC; VCCI; C-Tick; 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 #1

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

2.2.10 DVD PLAYER #2

Manufacturer	:	LG
Model Number	:	DF9921N
Serial Number	:	3850R-M846W
Certificate	:	FCC DoC, CE/EMC, CCC

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

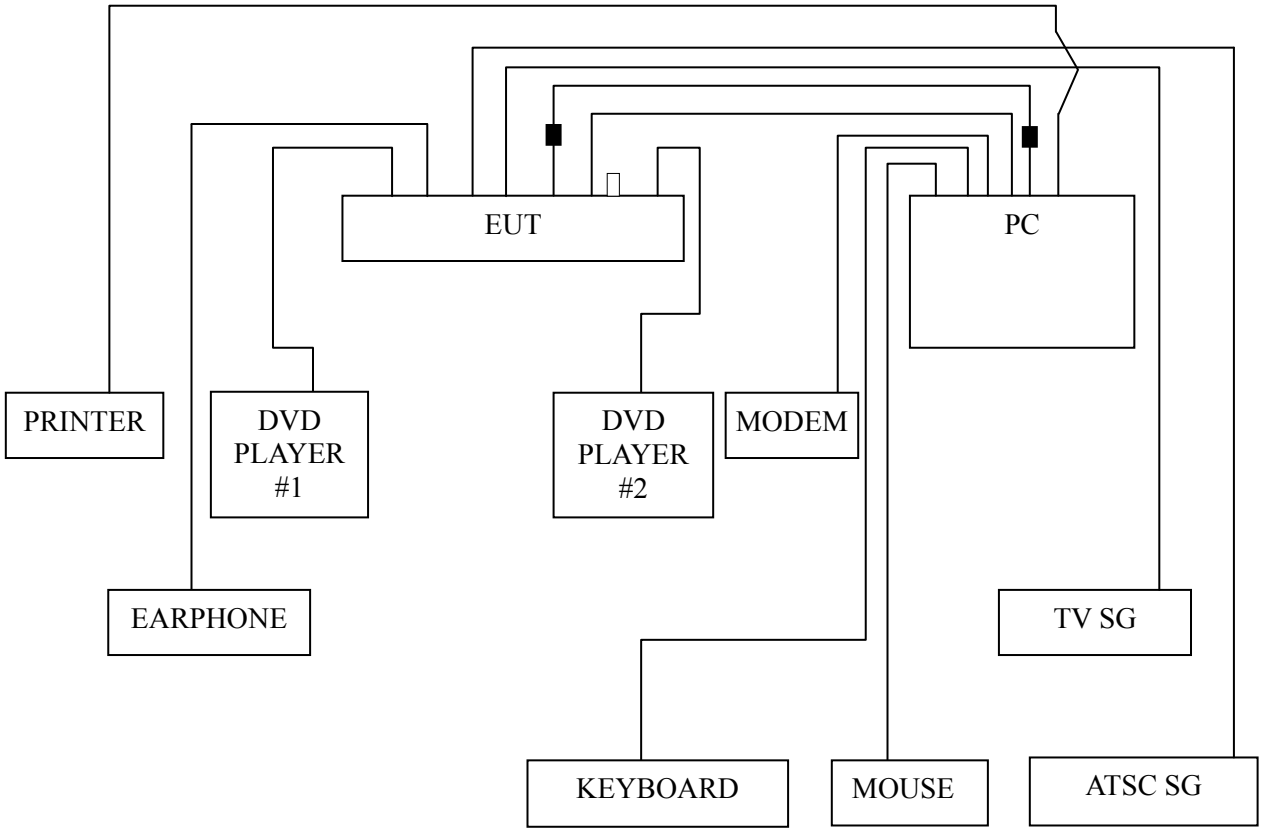
3.1 Test Equipment

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 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 18, 2012	Mar 18, 2013
5.	50Ω Terminator	Anritsu	BNC	001	Mar 22, 2012	Mar 22, 2013
6.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup

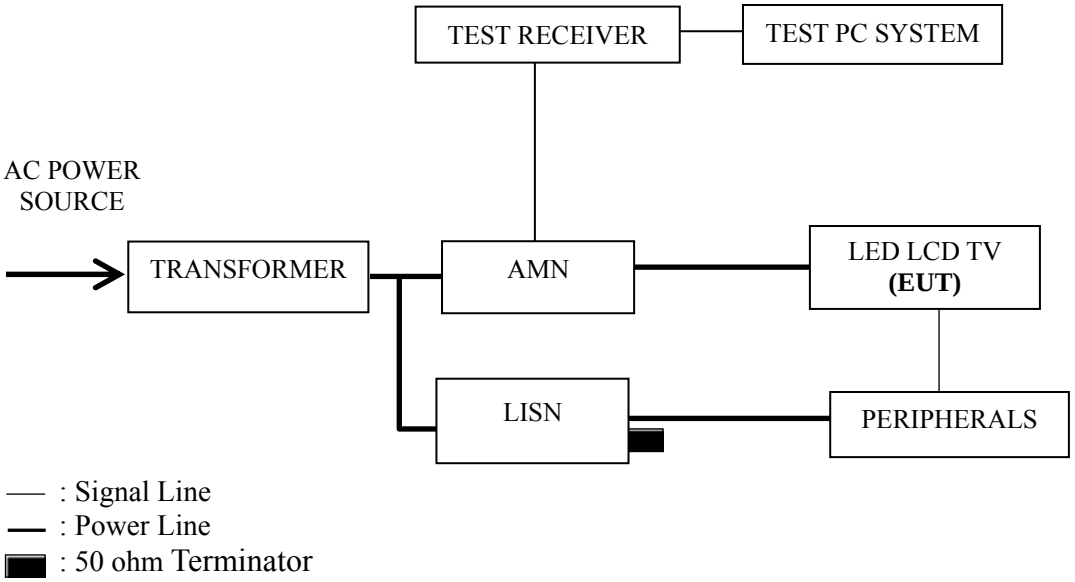
3.2.1 EUT & Peripherals



■: 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 (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 worst case is for D-Sub 800*600@60Hz test mode. The worst emission is detected at 0.174 MHz (Quasi-Peak Value) with corrected signal level of 53.51 dB (μV) (limit is 64.77 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN46K360MUS	Humidity	:	48%RH
Test Mode	:	D-Sub 1024*768@60Hz	Date of Test	:	Dec 21, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	52.64	0.24	52.88	64.86	11.98	QP
	0.573	44.25	0.30	44.55	56.00	11.45	
	1.716	40.29	0.38	40.67	56.00	15.33	
	2.839	39.88	0.41	40.29	56.00	15.71	
	5.535	46.71	0.53	47.24	60.00	12.76	
	14.213	34.23	0.84	35.07	60.00	24.93	
	0.172	38.50	0.24	38.74	54.86	16.12	AV
	0.573	31.21	0.30	31.51	46.00	14.49	
	1.716	28.80	0.38	29.18	46.00	16.82	
	2.839	27.50	0.41	27.91	46.00	18.09	
	5.535	33.25	0.53	33.78	50.00	16.22	
	14.213	21.46	0.84	22.30	50.00	27.70	
Neutral	**0.172**	**53.43**	**0.12**	**53.55**	**64.86**	**11.31**	QP
	0.573	42.97	0.18	43.15	56.00	12.85	
	1.662	39.69	0.17	39.86	56.00	16.14	
	2.707	38.78	0.20	38.98	56.00	17.02	
	5.419	45.18	0.44	45.62	60.00	14.38	
	13.127	33.08	0.69	33.77	60.00	26.23	
	0.172	38.40	0.12	38.52	54.86	16.34	AV
	0.573	29.40	0.18	29.58	46.00	16.42	
	1.662	26.45	0.17	26.62	46.00	19.38	
	2.707	27.56	0.20	27.76	46.00	18.24	
	5.419	32.55	0.44	32.99	50.00	17.01	
	13.127	20.44	0.69	21.13	50.00	28.87	

TEST ENGINEER: SAWEN LI

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN46K360MUS	Humidity	:	48%RH
Test Mode	:	HDMI 1024*768@60Hz	Date of Test	:	Dec 21, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	52.71	0.24	52.95	64.86	11.91	QP
	0.567	43.30	0.31	43.61	56.00	12.39	
	1.716	40.04	0.38	40.42	56.00	15.58	
	2.839	40.17	0.41	40.58	56.00	15.42	
	5.419	47.52	0.52	48.04	60.00	11.96	
	13.989	34.31	0.83	35.14	60.00	24.86	
	0.172	38.50	0.24	38.74	54.86	16.12	AV
	0.567	31.60	0.31	31.91	46.00	14.09	
	1.716	29.50	0.38	29.88	46.00	16.12	
	2.839	27.40	0.41	27.81	46.00	18.19	
	5.419	34.23	0.52	34.75	50.00	15.25	
	13.989	23.10	0.83	23.93	50.00	26.07	
Neutral	**0.172**	**53.11**	**0.12**	**53.23**	**64.86**	**11.63**	QP
	0.585	42.93	0.18	43.11	56.00	12.89	
	1.662	39.74	0.17	39.91	56.00	16.09	
	2.707	39.20	0.20	39.40	56.00	16.60	
	5.476	45.41	0.44	45.85	60.00	14.15	
	13.989	33.63	0.71	34.34	60.00	25.66	
	0.172	36.47	0.12	36.59	54.86	18.27	AV
	0.585	27.40	0.18	27.58	46.00	18.42	
	1.662	26.40	0.17	26.57	46.00	19.43	
	2.707	24.76	0.20	24.96	46.00	21.04	
	5.476	31.43	0.44	31.87	50.00	18.13	
	13.989	20.12	0.71	20.83	50.00	29.17	

TEST ENGINEER: SAWEN LI

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN46K360MUS	Humidity	:	48%RH
Test Mode	:	D-Sub 800*600@60Hz	Date of Test	:	Dec 21, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	52.71	0.24	52.95	64.86	11.91	QP
	0.573	44.28	0.30	44.58	56.00	11.42	
	1.662	40.00	0.37	40.37	56.00	15.63	
	2.707	40.22	0.40	40.62	56.00	15.38	
	5.058	46.69	0.50	47.19	60.00	12.81	
	13.127	35.25	0.82	36.07	60.00	23.93	
	0.172	39.50	0.24	39.74	54.86	15.12	AV
	0.573	30.21	0.30	30.51	46.00	15.49	
	1.662	24.71	0.37	25.08	46.00	20.92	
	2.707	28.51	0.40	28.91	46.00	17.09	
	5.058	31.40	0.50	31.90	50.00	18.10	
	13.127	21.40	0.82	22.22	50.00	27.78	
Neutral	**0.174**	**53.39**	**0.12**	**53.51**	**64.77**	**11.26**	QP
	0.567	43.16	0.17	43.33	56.00	12.67	
	1.662	39.74	0.17	39.91	56.00	16.09	
	2.707	39.42	0.20	39.62	56.00	16.38	
	5.112	45.79	0.42	46.21	60.00	13.79	
	13.127	34.52	0.69	35.21	60.00	24.79	
	0.174	38.50	0.12	38.62	54.77	16.15	AV
	0.567	29.64	0.17	29.81	46.00	16.19	
	1.662	24.50	0.17	24.67	46.00	21.33	
	2.707	24.51	0.20	24.71	46.00	21.29	
	5.112	31.24	0.42	31.66	50.00	18.34	
	13.127	21.11	0.69	21.80	50.00	28.20	

TEST ENGINEER: SAWEN LI

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN46K360MUS	Humidity	:	48%RH
Test Mode	:	D-Sub 640*480@60Hz	Date of Test	:	Dec 21, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	52.69	0.24	52.93	64.86	11.93	QP
	0.579	43.59	0.30	43.89	56.00	12.11	
	1.698	40.23	0.38	40.61	56.00	15.39	
	2.622	39.32	0.40	39.72	56.00	16.28	
	5.535	47.01	0.53	47.54	60.00	12.46	
	12.988	35.87	0.82	36.69	60.00	23.31	
	0.172	38.90	0.24	39.14	54.86	15.72	AV
	0.579	30.20	0.30	30.50	46.00	15.50	
	1.698	28.40	0.38	28.78	46.00	17.22	
	2.622	27.53	0.40	27.93	46.00	18.07	
	5.535	34.57	0.53	35.10	50.00	14.90	
	12.988	21.23	0.82	22.05	50.00	27.95	
Neutral	**0.172**	**53.08**	**0.12**	**53.20**	**64.86**	**11.66**	QP
	0.579	42.73	0.18	42.91	56.00	13.09	
	1.662	38.94	0.17	39.11	56.00	16.89	
	2.839	39.44	0.22	39.66	56.00	16.34	
	5.535	46.29	0.46	46.75	60.00	13.25	
	12.988	34.96	0.68	35.64	60.00	24.36	
	0.172	40.20	0.12	40.32	54.86	14.54	AV
	0.579	29.54	0.18	29.72	46.00	16.28	
	1.662	24.58	0.17	24.75	46.00	21.25	
	2.839	24.56	0.22	24.78	46.00	21.22	
	5.535	32.40	0.46	32.86	50.00	17.14	
	12.988	21.23	0.68	21.91	50.00	28.09	

TEST ENGINEER: SAWEN LI

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN46K360MUS	Humidity	:	48%RH
Test Mode	:	USB Play	Date of Test	:	Dec 21, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	52.69	0.24	52.93	64.86	11.93	QP
	0.579	43.91	0.30	44.21	56.00	11.79	
	1.662	39.56	0.37	39.93	56.00	16.07	
	2.622	39.44	0.40	39.84	56.00	16.16	
	5.166	46.28	0.50	46.78	60.00	13.22	
	13.127	34.74	0.82	35.56	60.00	24.44	
	0.172	38.50	0.24	38.74	54.86	16.12	AV
	0.579	30.25	0.30	30.55	46.00	15.45	
	1.662	26.59	0.37	26.96	46.00	19.04	
	2.622	26.87	0.40	27.27	46.00	18.73	
	5.166	32.46	0.50	32.96	50.00	17.04	
	13.127	21.20	0.82	22.02	50.00	27.98	
Neutral	**0.172**	**53.11**	**0.12**	**53.23**	**64.86**	**11.63**	QP
	0.573	43.64	0.18	43.82	56.00	12.18	
	1.716	39.97	0.17	40.14	56.00	15.86	
	2.622	39.25	0.20	39.45	56.00	16.55	
	5.476	45.19	0.44	45.63	60.00	14.37	
	13.127	34.70	0.69	35.39	60.00	24.61	
	0.172	40.10	0.12	40.22	54.86	14.64	AV
	0.573	28.77	0.18	28.95	46.00	17.05	
	1.716	28.50	0.17	28.67	46.00	17.33	
	2.622	27.40	0.20	27.60	46.00	18.40	
	5.476	30.25	0.44	30.69	50.00	19.31	
	13.127	20.01	0.69	20.70	50.00	29.30	

TEST ENGINEER: SAWEN LI

4 RADIATED EMISSION TEST

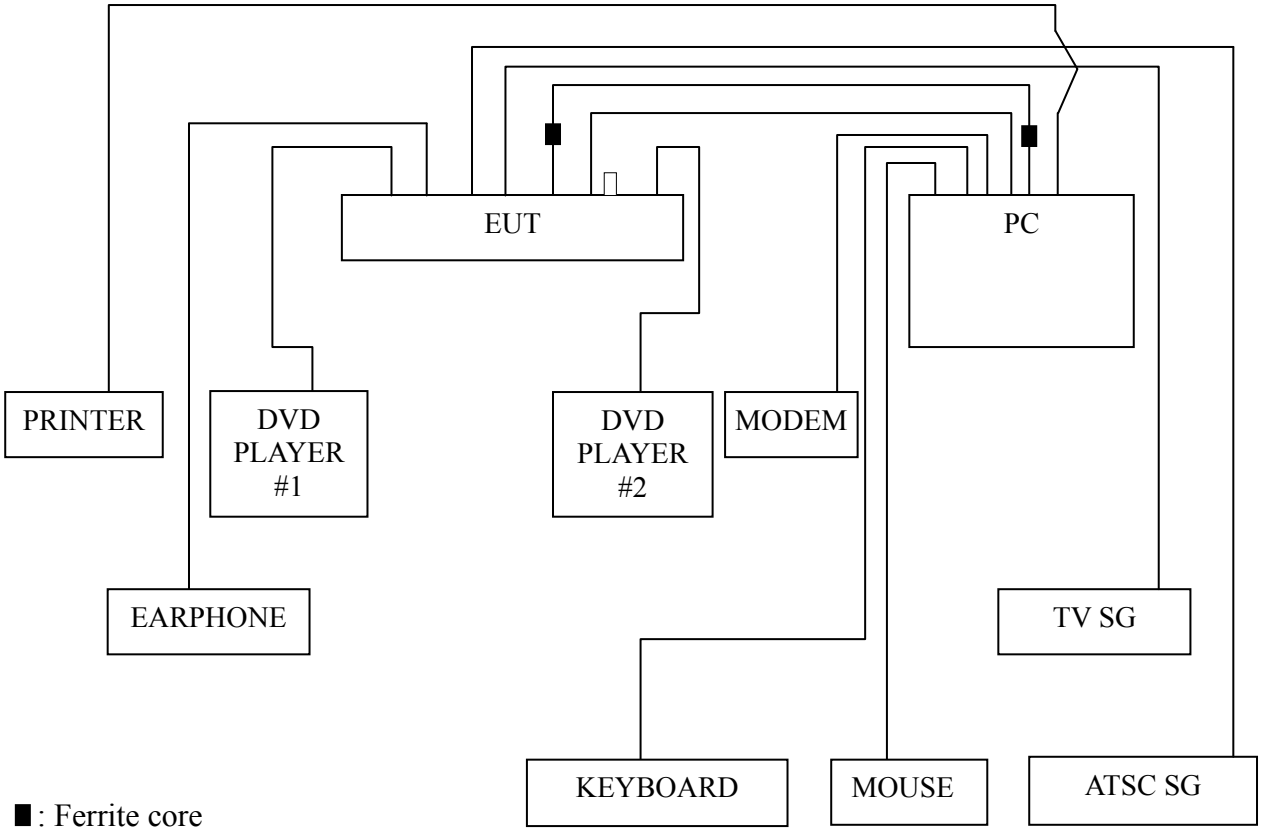
4.1 Test Equipment

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

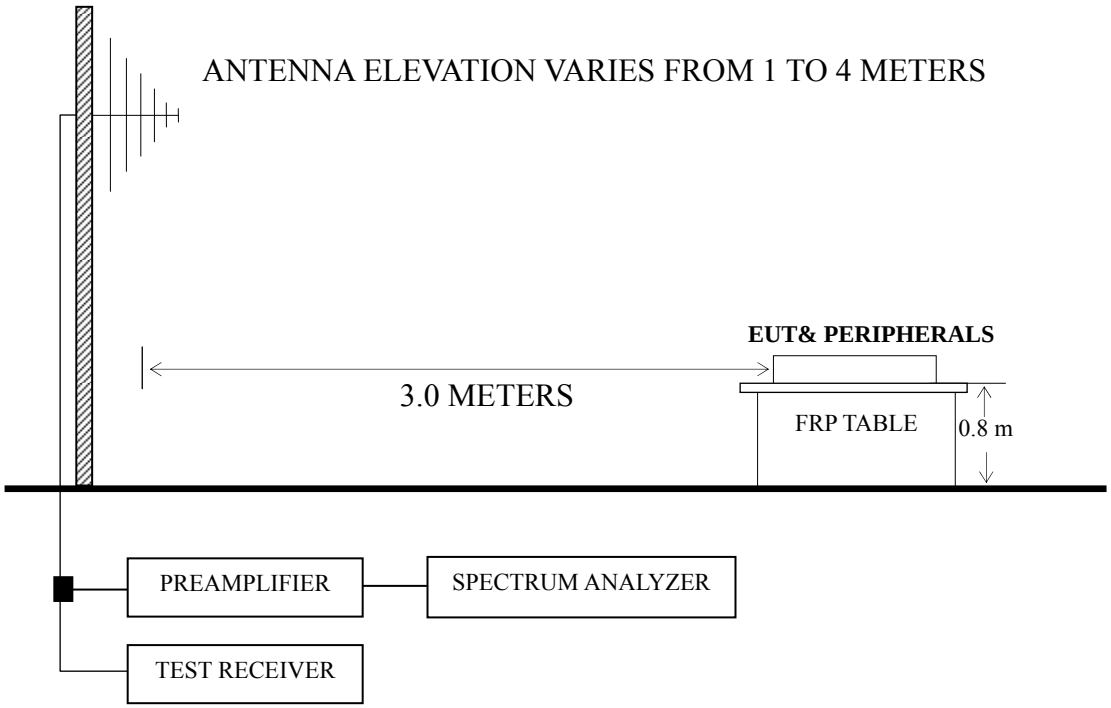
4.2.1 EUT and Peripherals



■: 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	
		(μV/m)	dB (μV/m)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)
NOTE 2 - The tighter limit applies at the band edges.
NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
NOTE 4 - The limits shown are based on Quasi-peak value detector.
NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.

4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2003 requirements during radiated emission test.

The I.F. bandwidth of Test Receiver R&S ESCI was set at 120 kHz.

The frequency range from 30 MHz to 1000MHz was checked for all test modes.

The 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 HDMI 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 181.320 MHz with corrected signal level of 40.63 dB (μV/m) (limit is 43.50 dB (μV/m)), when the antenna was 1.20 m height and the turntable was at 117°. The worst emission at vertical polarization was detected at 238.550 MHz with corrected signal level of 42.16 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 260°.

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN46K360MUS	Humidity :	60%RH
Test Mode	:	D-Sub 1024*768@60Hz	Date of Test :	Jan 05, 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	**36.790**	**20.45**	**14.92**	**0.74**	**36.11**	**40.00**	**3.89**
	162.000	28.20	9.00	1.72	38.92	43.50	4.58
	322.940	17.36	14.02	2.58	33.96	46.00	12.04
	449.040	18.97	16.98	2.84	38.79	46.00	7.21
	591.630	19.77	18.60	3.20	41.57	46.00	4.43
	853.530	11.98	20.90	4.08	36.96	46.00	9.04
Vertical	92.080	26.58	8.66	1.24	36.48	43.50	7.02
	159.000	**26.10**	**9.60**	**1.70**	**37.40**	**43.50**	**6.10**
	240.490	24.61	11.03	2.17	37.81	46.00	8.19
	449.040	19.46	16.98	2.84	39.28	46.00	6.72
	591.630	16.92	18.60	3.20	38.72	46.00	7.28
	746.830	13.32	18.83	3.58	35.73	46.00	10.27

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN46K360MUS	Humidity :	60%RH
Test Mode	:	HDMI 1024*768@60Hz	Date of Test :	Jan 05, 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	52.310	23.83	6.83	0.86	31.52	40.00	8.48
	146.400	27.42	10.25	1.62	39.29	43.50	4.21
	181.320	**30.57**	**8.22**	**1.84**	**40.63**	**43.50**	**2.87**
	238.550	24.22	10.83	2.15	37.20	46.00	8.80
	446.130	20.15	17.07	2.82	40.04	46.00	5.96
	742.950	19.34	18.87	3.57	41.78	46.00	4.22
Vertical	83.350	26.37	7.19	1.13	34.69	40.00	5.31
	108.570	19.55	11.72	1.40	32.67	43.50	10.83
	152.220	25.42	9.85	1.65	36.92	43.50	6.58
	188.110	27.24	8.05	1.89	37.18	43.50	6.32
	238.550	**29.18**	**10.83**	**2.15**	**42.16**	**46.00**	**3.84**
	593.570	19.98	18.50	3.20	41.68	46.00	4.32

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN46K360MUS	Humidity :	60%RH
Test Mode	:	HDMI 800*600@60Hz	Date of Test :	Jan 05, 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	93.050	24.71	8.94	1.26	34.91	43.50	8.59
	148.340	25.28	10.15	1.63	37.06	43.50	6.44
	296.750	20.53	12.55	2.52	35.60	46.00	10.40
	427.700	17.98	17.53	2.76	38.27	46.00	7.73
	594.540	**19.84**	**18.50**	**3.20**	**41.54**	**46.00**	**4.46**
	701.240	17.69	20.30	3.54	41.53	46.00	4.47
Vertical	79.470	26.04	6.76	1.06	33.86	40.00	6.14
	138.640	17.55	10.51	1.59	29.65	43.50	13.85
	174.530	20.82	8.31	1.80	30.93	43.50	12.57
	350.100	14.72	14.80	2.62	32.14	46.00	13.86
	644.980	18.31	18.43	3.38	40.12	46.00	5.88
	723.550	**20.11**	**19.27**	**3.56**	**42.94**	**46.00**	**3.06**

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN46K360MUS	Humidity	:	60%RH
Test Mode	:	HDMI 640*480@60Hz	Date of Test	:	Jan 05, 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	97.900	23.99	10.01	1.32	35.32	43.50	8.18
	175.500	27.86	8.29	1.81	37.96	43.50	5.54
	297.720	19.84	12.55	2.52	34.91	46.00	11.09
	446.130	22.33	17.07	2.82	42.22	46.00	3.78
	594.540	18.50	18.50	3.20	40.20	46.00	5.80
	742.950	**20.31**	**18.87**	**3.57**	**42.75**	**46.00**	**3.25**
Vertical	79.470	25.16	6.76	1.06	32.98	40.00	7.02
	96.930	24.19	9.76	1.31	35.26	43.50	8.24
	175.500	27.99	8.29	1.81	38.09	43.50	5.41
	238.550	**29.48**	**10.83**	**2.15**	**42.46**	**46.00**	**3.54**
	446.130	17.01	17.07	2.82	36.90	46.00	9.10
	594.540	18.27	18.50	3.20	39.97	46.00	6.03

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN46K360MUS	Humidity	:	60%RH
Test Mode	:	USB Play	Date of Test	:	Jan 05, 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	77.530	25.46	6.65	1.05	33.16	40.00	6.84
	175.500	23.66	8.29	1.81	33.76	43.50	9.74
	251.160	20.61	12.18	2.22	35.01	46.00	10.99
	288.990	18.94	12.73	2.46	34.13	46.00	11.87
	592.600	16.98	18.60	3.20	38.78	46.00	7.22
	740.040	**17.08**	**18.90**	**3.57**	**39.55**	**46.00**	**6.45**
Vertical	32.910	14.11	16.30	0.69	31.10	40.00	8.90
	51.340	21.38	7.20	0.86	29.44	40.00	10.56
	133.790	24.99	11.22	1.56	37.77	43.50	5.73
	175.500	**28.49**	**8.29**	**1.81**	**38.59**	**43.50**	**4.91**
	444.190	15.81	17.15	2.82	35.78	46.00	10.22
	820.550	12.27	20.70	3.80	36.77	46.00	9.23

TEST ENGINEER: RAVEN JIN

5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Gasket	35X0.7X41mm\VGA\ROH	Qingdao Joinset S&T Co., Ltd.	See Internal Photos Figure 17

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: Raven Jin

(RAVEN JIN)

6 DEVIATION TO TEST SPECIFICATIONS

None.