

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

LCD TV

Model No.	Serial No.	Brand
LHDN32V68HUS	E2010080908	Hisense
NX32H60	--	NEXUS

FCC ID : W9HLCDC0005

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.
3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Tel: +86-21-64955500
Fax: +86-21-64955491

Report No. : ACI-F10103
Date of Test : Aug 10, 2010
Date of Report : Aug 13, 2010

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.
 Manufacturer : Hisense Electric Co., Ltd.
 EUT Description : LCD TV

Model No.	Serial No.	Brand	Power Supply
LHDN32V68HUS	E2010080908	Hisense	120V/60Hz
NX32H60	--	NEXUS	

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2009
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; S/N: Refer to Sec.2.1) which was tested in 3m anechoic chamber Aug 10, 2010 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.

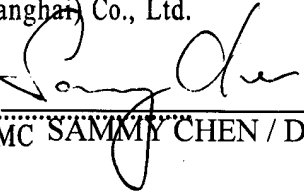
The test results for EUT's TV functions are contained in No.F10102, a Verification report.

Date of Test : Aug 10, 2010 Date of Report : Aug 13, 2010

Producer : 
CANDY XI / Assistant

Review : 
DIO YANG / Deputy Assistant Manager

AUDIX[®] 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
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2009 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2009 AND ANSI C63.4-2003	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description : LCD TV

Type of EUT : Production Pre-product Pro-type

Model No.	Serial No.	Brand
LHDN32V68HUS	E2010080908	Hisense
NX32H60	--	NEXUS

Note1 : The above models are all the same except for the different model number and brand.

Note2 : The LHDN32V68HUS was tested and recorded in this 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 : HS32LN1-CMO(X03)

Max Resolution : 1024*768@60Hz

D-Sub Cable : Shielded, Detachable, 1.85m,
with two cores on cable

HDMI Cable : Shielded, Detachable, 1.85m,
without core on cable

Power Cord : Unshielded, Detachable, 1.80m

Remark:

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

Back Port:

- (1) One Component of YPbPr2 Port
: Connected with DVD #1
- (2) One Component of YPbPr2 Audio Port
: Connected with DVD #1
- (3) One Component of AV2 Port
: Connected with DVD #2
- (4) One HDMI2 Port
: Connected with DVD #1
- (5) One HDMI3 Port
: Connected with DVD #2
- (6) One Digital Audio Port
: Connected with DVD#2
- (7) One S-Video Port:
: Connected with DVD#1
- (8) One RS232 Port:
: Connected with PC
- (9) One Audio Out Port:
: Connected with Speaker

Side Port

- (10) One VGA Port
: Connected with PC
- (11) One VGA Audio Port
: Connected with PC
- (12) One Component of AV1 Port
: Connected with DVD #1
- (13) One Component of YPbPr1 Port
: Connected with DVD #2
- (14) One Component of YPbPr1 Audio Port
: Connected with DVD #2
- (15) One HDMI1 Port
: Connected with PC
- (16) One ANT Port
: Connected with ATSC SG/TV SG
- (17) One Headphone Port
: Connected with Earphone
- (18) One Service Port
: Do not open to customer

2.2 Peripherals

2.2.1 PC

Manufacturer : HP
Model Number : dx7200MT
Serial Number : CNG8130K89
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 Earphone

Manufacturer : SONY
Model Number : MDR-E808
Serial Number : 1808030805305506

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 #1

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

2.2.9 DVD#2

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

2.2.10 Speaker

Manufacturer : DIBA
Model Number : FS-04
Serial Number : 002

2.3 Description of Test Facility

Site Description (No.3 3m Chamber)	:	Sept. 17, 1998 file on Apr 29, 2009 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 = 1.26 dB
Radiated Emission Expanded Uncertainty :	U = 3.02 dB

3 CONDUCTED EMISSION TEST

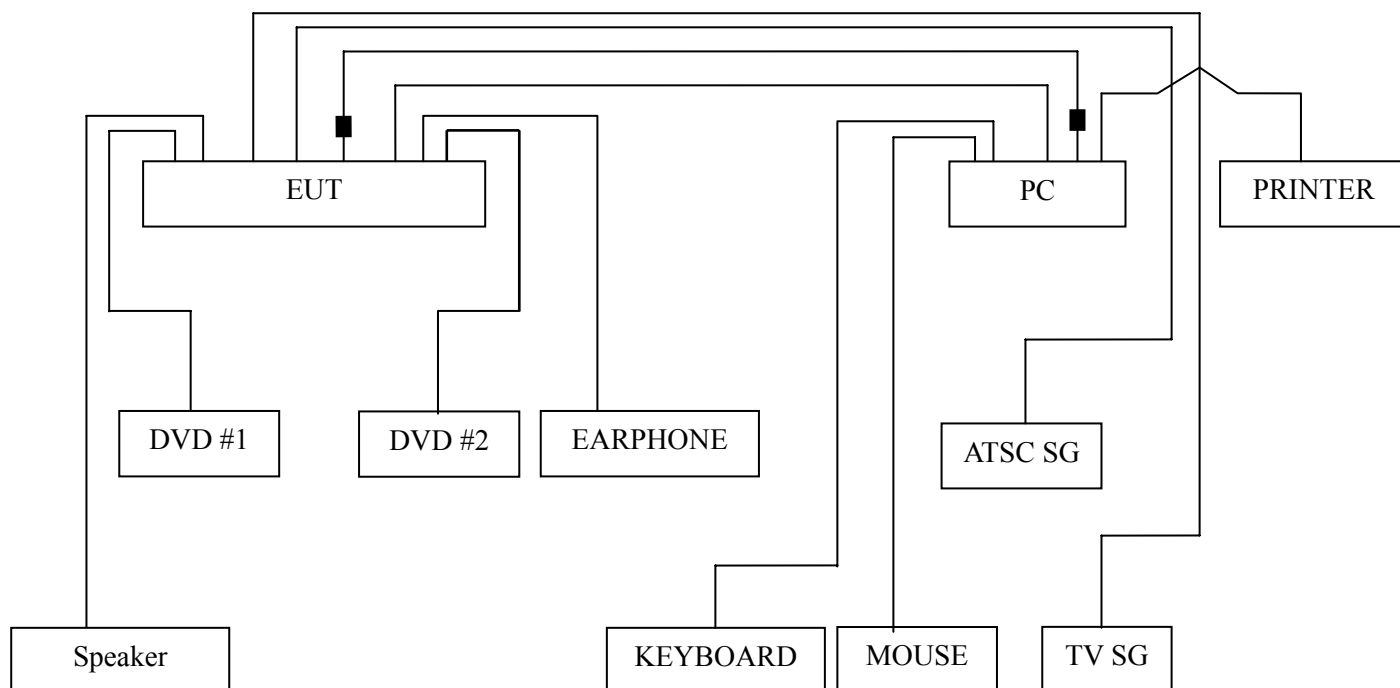
3.1 Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Oct 15, 2009	Oct 15, 2010
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2010	Apr 02, 2011
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2010	Apr 02, 2011
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 19, 2010	Sep 19, 2010
5.	50Ω Terminator	Anritsu	BNC	001	Apr 02, 2010	Apr 02, 2011
6.	Software	Audix	E3	SET00200 9804M592	--	--

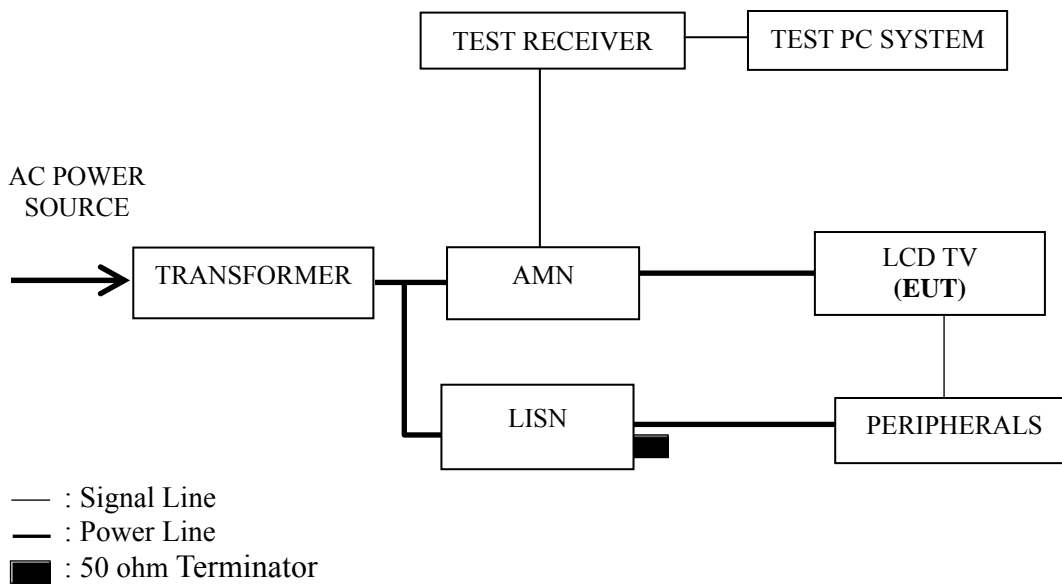
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



■ : Ferrite core

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 (μ 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 Repeat above procedure 3.5.4 for difference test mode.

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 640*480@60Hz
D-Sub 800*600@60Hz
D-Sub 1024*768@60Hz
HDMI 640*480@60Hz
HDMI 800*600@60Hz
HDMI 1024*768@60Hz

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 640*480@60Hz	P14
D-Sub 800*600@60Hz	P15
D-Sub 1024*768@60Hz	P16
HDMI 640*480@60Hz	P17
HDMI 800*600@60Hz	P18
HDMI 1024*768@60Hz	P19

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 16.055 MHz (Average value) with corrected signal level of 41.67 dB (μV) (limit is 50.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 48%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : D-Sub 640*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.264	39.24	0.43	39.67	61.29	21.62	QP
	0.325	38.75	0.45	39.20	59.57	20.37	
	0.708	40.80	0.52	41.32	56.00	14.68	
	1.585	36.96	0.58	37.54	56.00	18.46	
	5.112	33.16	0.80	33.96	60.00	26.04	
	15.718	33.38	1.31	34.69	60.00	25.31	
	0.264	32.09	0.43	32.52	51.29	18.77	AV
	0.325	28.65	0.45	29.10	49.57	20.47	
	0.708	33.22	0.52	33.74	46.00	12.26	
	1.585	28.48	0.58	29.06	46.00	16.94	
	5.112	19.65	0.80	20.45	50.00	29.55	
	15.718	14.44	1.31	15.75	50.00	34.25	
Neutral	0.178	40.91	0.31	41.22	64.59	23.37	QP
	0.447	39.04	0.47	39.51	56.93	17.42	
	0.708	38.24	0.49	38.73	56.00	17.27	
	1.716	34.21	0.56	34.77	56.00	21.23	
	5.535	27.79	0.78	28.57	60.00	31.43	
	16.226	40.38	1.54	41.92	60.00	18.08	
	0.178	29.77	0.31	30.08	54.59	24.51	AV
	0.447	30.25	0.47	30.72	46.93	16.21	
	0.708	34.11	0.49	34.60	46.00	11.40	
	1.716	29.07	0.56	29.63	46.00	16.37	
	5.535	14.86	0.78	15.64	50.00	34.36	
	16.226	21.78	1.54	23.32	50.00	26.68	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 48%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : D-Sub 800*600@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.267	38.72	0.43	39.15	61.20	22.05	QP
	0.329	39.74	0.45	40.19	59.49	19.30	
	0.579	38.73	0.52	39.25	56.00	16.75	
	1.716	35.52	0.59	36.11	56.00	19.89	
	5.929	27.02	0.85	27.87	60.00	32.13	
	14.440	32.38	1.23	33.61	60.00	26.39	
	0.267	30.40	0.43	30.83	51.20	20.37	AV
	0.329	33.61	0.45	34.06	49.49	15.43	
	0.579	31.15	0.52	31.67	46.00	14.33	
	1.716	30.02	0.59	30.61	46.00	15.39	
	5.929	18.84	0.85	19.69	50.00	30.31	
	14.440	24.30	1.23	25.53	50.00	24.47	
Neutral	0.180	40.76	0.31	41.07	64.50	23.43	QP
	0.452	39.18	0.47	39.65	56.85	17.20	
	0.708	37.78	0.49	38.27	56.00	17.73	
	1.781	34.82	0.56	35.38	56.00	20.62	
	5.005	28.74	0.74	29.48	60.00	30.52	
	16.226	39.87	1.54	41.41	60.00	18.59	
	0.180	29.23	0.31	29.54	54.50	24.96	AV
	0.452	32.13	0.47	32.60	46.85	14.25	
	0.708	33.74	0.49	34.23	46.00	11.77	
	1.781	27.07	0.56	27.63	46.00	18.37	
	5.005	14.50	0.74	15.24	50.00	34.76	
	16.226	23.41	1.54	24.95	50.00	25.05	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 48%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : D-Sub 1024*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark	
Line	0.267	38.55	0.43	38.98	61.20	22.22	QP	
	0.329	39.91	0.45	40.36	59.49	19.13		
	0.579	38.53	0.52	39.05	56.00	16.95		
	2.237	33.62	0.64	34.26	56.00	21.74		
	5.653	27.62	0.83	28.45	60.00	31.55		
	14.364	31.86	1.23	33.09	60.00	26.91		
	0.267	31.32	0.43	31.75	51.20	19.45	AV	
	0.329	33.22	0.45	33.67	49.49	15.82		
	0.579	31.84	0.52	32.36	46.00	13.64		
	2.237	20.79	0.64	21.43	46.00	24.57		
	5.653	18.46	0.83	19.29	50.00	30.71		
	14.364	19.69	1.23	20.92	50.00	29.08		
	Neutral	0.176	40.42	0.31	40.73	64.68	23.95	QP
		0.452	39.74	0.47	40.21	56.85	16.64	
0.989		37.49	0.51	38.00	56.00	18.00		
1.781		35.59	0.56	36.15	56.00	19.85		
5.005		28.80	0.74	29.54	60.00	30.46		
16.226		41.71	1.54	43.25	60.00	16.75		
0.176		28.45	0.31	28.76	54.68	25.92	AV	
0.452		31.57	0.47	32.04	46.85	14.81		
0.989		29.13	0.51	29.64	46.00	16.36		
1.781		24.94	0.56	25.50	46.00	20.50		
5.005		16.81	0.74	17.55	50.00	32.45		
16.226		24.17	1.54	25.71	50.00	24.29		

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 48%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : HDMI 640*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.264	39.53	0.43	39.96	61.29	21.33	QP
	0.325	38.67	0.45	39.12	59.57	20.45	
	0.708	39.59	0.52	40.11	56.00	15.89	
	1.585	37.51	0.58	38.09	56.00	17.91	
	5.333	33.30	0.82	34.12	60.00	25.88	
	14.288	34.67	1.22	35.89	60.00	24.11	
	0.264	32.89	0.43	33.32	51.29	17.97	AV
	0.325	29.43	0.45	29.88	49.57	19.69	
	0.708	33.64	0.52	34.16	46.00	11.84	
	1.585	30.24	0.58	30.82	46.00	15.18	
	5.333	20.60	0.82	21.42	50.00	28.58	
	14.288	16.23	1.22	17.45	50.00	32.55	
Neutral	0.176	40.99	0.31	41.30	64.68	23.38	QP
	0.329	38.19	0.40	38.59	59.49	20.90	
	0.529	38.68	0.49	39.17	56.00	16.83	
	1.781	32.06	0.56	32.62	56.00	23.38	
	8.062	21.64	0.92	22.56	60.00	37.44	
	15.718	29.03	1.51	30.54	60.00	29.46	
	0.176	29.66	0.31	29.97	54.68	24.71	AV
	0.329	32.09	0.40	32.49	49.49	17.00	
	0.529	29.88	0.49	30.37	46.00	15.63	
	1.781	27.64	0.56	28.20	46.00	17.80	
	8.062	15.40	0.92	16.32	50.00	33.68	
	15.718	21.37	1.51	22.88	50.00	27.12	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 48%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : HDMI 800*600@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.264	39.60	0.43	40.03	61.29	21.26	QP
	0.329	39.55	0.45	40.00	59.49	19.49	
	0.592	36.55	0.52	37.07	56.00	18.93	
	1.716	37.17	0.59	37.76	56.00	18.24	
	5.333	34.10	0.82	34.92	60.00	25.08	
	15.226	35.03	1.27	36.30	60.00	23.70	
	0.264	31.35	0.43	31.78	51.29	19.51	AV
	0.329	32.77	0.45	33.22	49.49	16.27	
	0.592	29.81	0.52	30.33	46.00	15.67	
	1.716	31.13	0.59	31.72	46.00	14.28	
	5.333	18.07	0.82	18.89	50.00	31.11	
	15.226	12.86	1.27	14.13	50.00	35.87	
Neutral	0.176	40.97	0.31	41.28	64.68	23.40	QP
	0.329	38.21	0.40	38.61	59.49	20.88	
	0.708	37.62	0.49	38.11	56.00	17.89	
	1.908	34.51	0.58	35.09	56.00	20.91	
	8.062	29.42	0.92	30.34	60.00	29.66	
	16.055	41.87	1.53	43.40	60.00	16.60	
	0.176	33.12	0.31	33.43	54.68	21.25	AV
	0.329	32.47	0.40	32.87	49.49	16.62	
	0.708	33.67	0.49	34.16	46.00	11.84	
	1.908	17.67	0.58	18.25	46.00	27.75	
	8.062	16.12	0.92	17.04	50.00	32.96	
	16.055	40.14	1.53	41.67	50.00	8.33	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 48%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : HDMI 1024*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.262	39.16	0.42	39.58	61.38	21.80	QP
	0.398	37.58	0.48	38.06	57.90	19.84	
	0.592	39.52	0.52	40.04	56.00	15.96	
	2.500	35.48	0.66	36.14	56.00	19.86	
	5.058	32.78	0.80	33.58	60.00	26.42	
	15.552	32.27	1.30	33.57	60.00	26.43	
	0.262	30.83	0.42	31.25	51.38	20.13	AV
	0.398	30.86	0.48	31.34	47.90	16.56	
	0.592	30.08	0.52	30.60	46.00	15.40	
	2.500	20.28	0.66	20.94	46.00	25.06	
	5.058	20.00	0.80	20.80	50.00	29.20	
	15.552	14.64	1.30	15.94	50.00	34.06	
Neutral	0.161	39.91	0.32	40.23	65.43	25.20	QP
	0.332	36.69	0.40	37.09	59.40	22.31	
	0.579	35.13	0.49	35.62	56.00	20.38	
	1.839	27.79	0.57	28.36	56.00	27.64	
	6.878	22.51	0.86	23.37	60.00	36.63	
	15.885	45.44	1.52	46.96	60.00	13.04	
	0.161	27.30	0.32	27.62	55.43	27.81	AV
	0.332	31.23	0.40	31.63	49.40	17.77	
	0.579	30.99	0.49	31.48	46.00	14.52	
	1.839	19.40	0.57	19.97	46.00	26.03	
	6.878	14.74	0.86	15.60	50.00	34.40	
	15.885	38.22	1.52	39.74	50.00	10.26	

TEST ENGINEER: TED ZHU

4 RADIATED EMISSION TEST

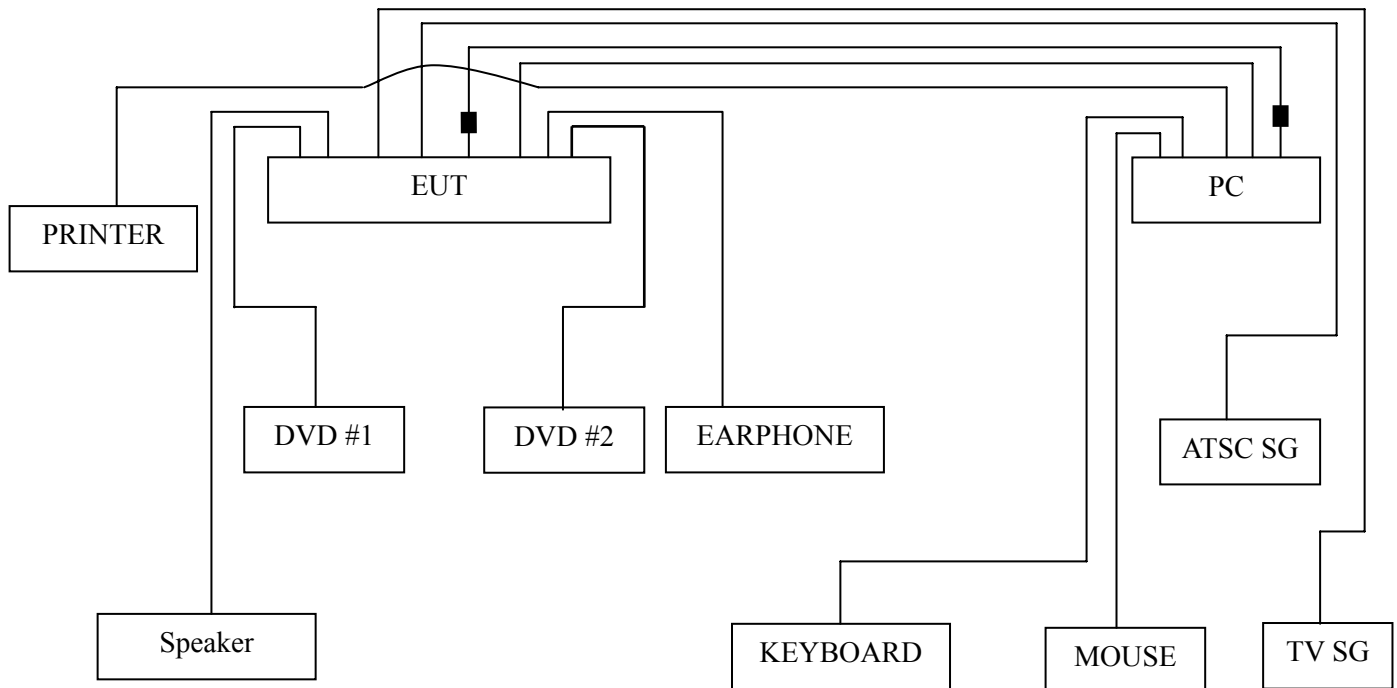
4.1 Test Equipment

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	ESVS10	844594/001	Mar 07, 2010	Mar 07, 2011
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 19, 2010	Sep 19, 2010
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2009	Dec 01, 2010
4.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2010	May 19, 2011
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

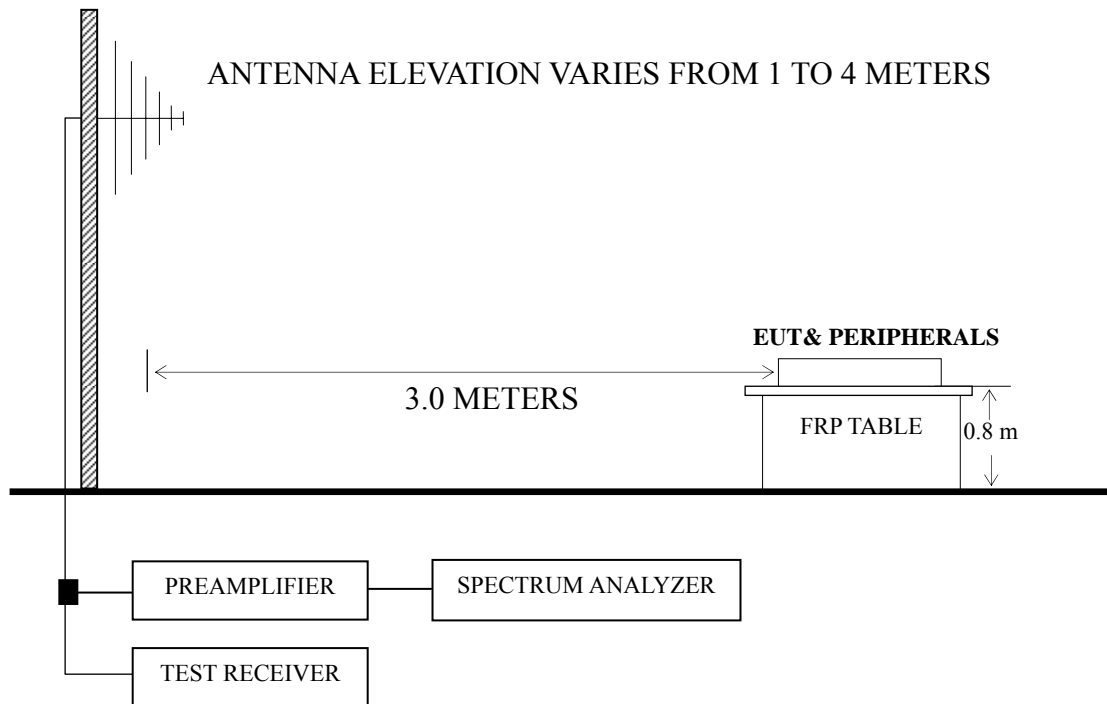
4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals



■ : Ferrite core

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.

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 bandwidth of Test Receiver R&S ESVS10 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 640*480@60Hz	P23
D-Sub 800*600@60Hz	P24
D-Sub 1024*768@60Hz	P25
HDMI 640*480@60Hz	P26
HDMI 800*600@60Hz	P27
HDMI 1024*768@60Hz	P28

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

NOTE 2 – The emission levels that are 20dB below the official limit are not reported.

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 640*480@60Hz test mode. The worst emission at horizontal polarization was detected at 70.74 MHz with corrected signal level of 33.90 dB ($\mu\text{V}/\text{m}$) (limit is 40.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.00 m height and the turntable was at 160°. The worst emission at vertical polarization was detected at 61.04 MHz with corrected signal level of 37.00 dB ($\mu\text{V}/\text{m}$) (limit is 40.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.00 m height and the turntable was at 280°.

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 60%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : D-Sub 640*480@60Hz

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	61.04	24.14	6.59	0.85	31.58	40.00	8.42
	70.74	24.32	6.58	0.90	31.80	40.00	8.20
	101.78	21.39	11.63	1.05	34.07	43.50	9.43
	153.19	23.63	11.04	1.25	35.92	43.50	7.58
	242.43	23.75	12.64	1.58	37.97	46.00	8.03
	358.83	19.98	15.57	1.95	37.50	46.00	8.50
Vertical	30.00	15.79	19.60	0.63	36.02	40.00	3.98
	36.79	18.48	15.80	0.69	34.97	40.00	5.03
	59.10	29.25	6.80	0.83	36.88	40.00	3.12
	101.78	21.26	11.63	1.05	33.94	43.50	9.56
	232.73	22.68	12.24	1.55	36.47	46.00	9.53
	458.74	13.22	17.35	2.18	32.75	46.00	13.25

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 60%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : D-Sub 800*600@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	67.83	28.12	6.52	0.88	35.52	40.00	4.48
	101.78	23.08	11.63	1.05	35.76	43.50	7.74
	119.24	21.75	12.97	1.12	35.84	43.50	7.66
	153.19	25.59	11.04	1.25	37.88	43.50	5.62
	240.49	22.82	12.56	1.58	36.96	46.00	9.04
	295.78	21.22	13.84	1.76	36.82	46.00	9.18
Vertical	30.00	15.40	19.60	0.63	35.63	40.00	4.37
	36.79	19.74	15.80	0.69	36.23	40.00	3.77
	59.10	28.66	6.80	0.83	36.29	40.00	3.71
	101.78	24.48	11.63	1.05	37.16	43.50	6.34
	232.73	23.15	12.24	1.55	36.94	46.00	9.06
	293.84	21.62	13.79	1.74	37.15	46.00	8.85

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 60%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : D-Sub 1024*768@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	70.74	26.64	6.58	0.90	34.12	40.00	5.88
	121.18	23.55	12.95	1.13	37.63	43.50	5.87
	153.19	28.05	11.04	1.25	40.34	43.50	3.16
	240.49	26.33	12.56	1.58	40.47	46.00	5.53
	303.54	23.99	14.00	1.78	39.77	46.00	6.23
	358.83	24.76	15.57	1.95	42.28	46.00	3.72
Vertical	36.79	17.18	15.80	0.69	33.67	40.00	6.33
	59.10	28.32	6.80	0.83	35.95	40.00	4.05
	109.54	18.91	12.25	1.08	32.24	43.50	11.26
	174.53	21.54	10.07	1.35	32.96	43.50	10.54
	232.73	22.13	12.24	1.55	35.92	46.00	10.08
	329.73	15.89	14.74	1.86	32.49	46.00	13.51

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 60%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : HDMI 640*480@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	70.74	26.42	6.58	0.90	33.90	40.00	6.10
	121.18	21.44	12.95	1.13	35.52	43.50	7.98
	174.53	21.88	10.07	1.35	33.30	43.50	10.20
	235.64	19.78	12.36	1.56	33.70	46.00	12.30
	358.83	18.39	15.57	1.95	35.91	46.00	10.09
	465.53	11.59	17.46	2.20	31.25	46.00	14.75
Vertical	36.79	16.72	15.80	0.69	33.21	40.00	6.79
	61.04	29.56	6.59	0.85	37.00	40.00	3.00
	92.08	18.87	9.82	1.00	29.69	43.50	13.81
	201.69	17.35	10.78	1.45	29.58	43.50	13.92
	232.73	17.70	12.24	1.55	31.49	46.00	14.51
	358.83	15.60	15.57	1.95	33.12	46.00	12.88

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 60%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : HDMI 800*600@60Hz

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	61.04	23.14	6.59	0.85	30.58	40.00	9.42
	87.23	21.36	8.96	0.98	31.30	40.00	8.70
	153.19	24.56	11.04	1.25	36.85	43.50	6.65
	201.69	23.24	10.78	1.45	35.47	43.50	8.03
	295.78	19.26	13.84	1.76	34.86	46.00	11.14
	368.53	16.41	15.81	1.98	34.20	46.00	11.80
Vertical	30.97	42.78	19.03	0.64	34.33	40.00	5.67
	36.79	46.19	15.80	0.69	34.53	40.00	5.47
	61.04	57.23	6.59	0.85	36.77	40.00	3.23
	109.54	49.00	12.25	1.08	34.53	43.50	8.97
	174.53	50.26	10.07	1.35	34.28	43.50	9.22
	232.73	49.82	12.24	1.55	36.68	46.00	9.32

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LHDN32V68HUS Humidity : 60%RH

Serial No. : E2010080908 Date of Test : Aug 10, 2010

Test Mode : HDMI 1024*768@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	67.83	23.78	6.52	0.88	31.18	40.00	8.82
	101.78	20.77	11.63	1.05	33.45	43.50	10.05
	120.21	18.72	12.98	1.13	32.83	43.50	10.67
	174.53	15.00	10.07	1.35	26.42	43.50	17.08
	235.64	17.06	12.36	1.56	30.98	46.00	15.02
	295.78	11.64	13.84	1.76	27.24	46.00	18.76
Vertical	30.97	14.35	19.03	0.64	34.02	40.00	5.98
	37.76	16.94	15.20	0.70	32.84	40.00	7.16
	61.04	29.54	6.59	0.85	36.98	40.00	3.02
	101.78	20.88	11.63	1.05	33.56	43.50	9.94
	174.53	21.16	10.07	1.35	32.58	43.50	10.92
	368.53	12.30	15.81	1.98	30.09	46.00	15.91

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Ferrite core	ZCAT2132-1130\ROH	FEELUX	See Internal Photos Figure 13
		Rui Feng Electronic Co., Ltd.	
		Hai An Magnetic Material No.2 Factory	
		JIANGSU LETTALL ELECTRONICS CO., LTD.	
Ferrite core	ZCAT3035-1330\ROH	FEELUX	See Internal Photos Figure 14
		Rui Feng Electronic Co., Ltd.	
		Hai An Magnetic Material No.2 Factory	
		JIANGSU LETTALL ELECTRONICS CO., LTD.	
Ferrite core	T22X14X10\ROH	JIANGSU LETTALL ELECTRONICS CO., LTD.	See Internal Photos Figure 14

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)