

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

LCD TV

Model No.	Serial No.	Brand
LTDN24V86US	--	Hisense
LTDN24V68US	--	
LTND24V86US	--	
LTDN24V86NUS	E2010051201	
NX2403	--	NEXUS
ELDHT241	--	ELEMENT

FCC ID : W9HLCDA0003

Prepared For : Hisense Electric Co., Ltd.
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Development Zone, Qingdao, China

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Report No. : ACI-F10003A2
Date of Test : May 20, 2010
Date of Report : May 26, 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
LTDN24V86US	--	Hisense	120V/60Hz
LTDN24V68US	--		
LTND24V86US	--		
LTDN24V86NUS	E2010051201		
NX2403	--	NEXUS	
ELDHT241	--	ELEMENT	

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 May 20, 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.

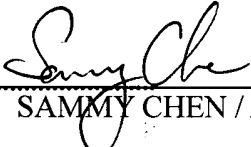
The test results for EUT's TV functions are contained in No.F10002A2, a Verification report.

Date of Test : May 20, 2010 Date of Report : May 26, 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 / Assistant 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
LTDN24V86US	--	Hisense
LTDN24V68US	--	
LTND24V86US	--	
LTDN24V86NUS	E2010051201	
NX2403	--	NEXUS
ELDHT241	--	ELEMENT

Note 1 : The different list for all the models are as follows:

Report No.	Model No.	Rev. Summary	Edition No.	Data of Rev.
ACI-F10003	LTDN24V86US, LTDN24V68US, NX2403 ELDHT241	Original Report.	0	Jan 07, 2010
ACI-F10003A1	LTDN24V86US, LTDN24V68US, LTND24V86US, NX2403 ELDHT241	To add a new model number	Rev. A1	May 12, 2010
ACI-F10003A2	LTDN24V86US, LTDN24V68US, LTND24V86US, LTDN24V86NUS NX2403 ELDHT241	To add a new model number and Power board and main IC	Rev. A2	May 26, 2010

Note 2 : The above models are all the same except for the different model number and brand.

Note 3 : The LTDN24V86NUS 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 : CHI MEI OPTOELECRTONICS
M/N : V236H1-L01

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:

Bottom Port:

- (1) One Component of YPbPr Port
: Connected with DVD
- (2) One Component of YPbPr Audio Port
: Connected with DVD
- (3) One HDMI Port
: Connected with PC
- (4) One Component of AV Port
: Connected with DVD
- (5) One Headphone Port
: Connected with Earphone
- (6) One VGA Port
: Connected with PC
- (7) One VGA Audio Port
: Connected with PC
- (8) One ANT Port
: Connected with ATSC SG/TV SG
- (9) 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 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

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

2.3 Description of Test Facility

Site Description (Semi-Anechoic 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

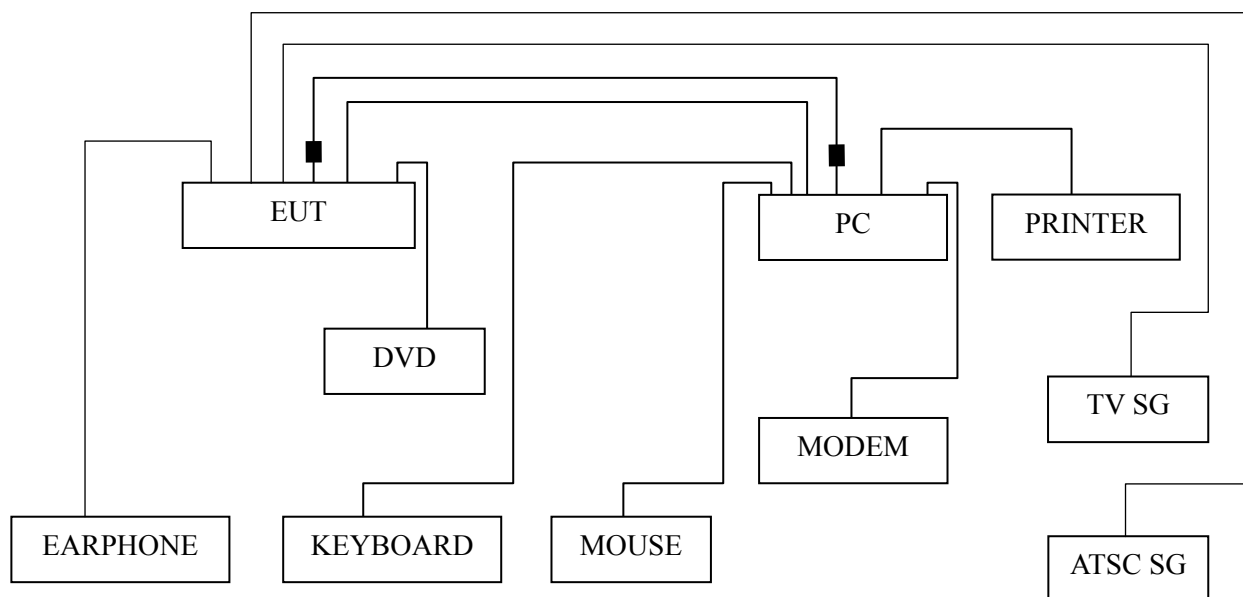
3.1 Test Equipment

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.	50 Ω Terminator	Anritsu	BNC	001	Apr 02, 2010	Apr 02, 2011
6.	Software	Audix	E3	SET00200 9804M592	--	--

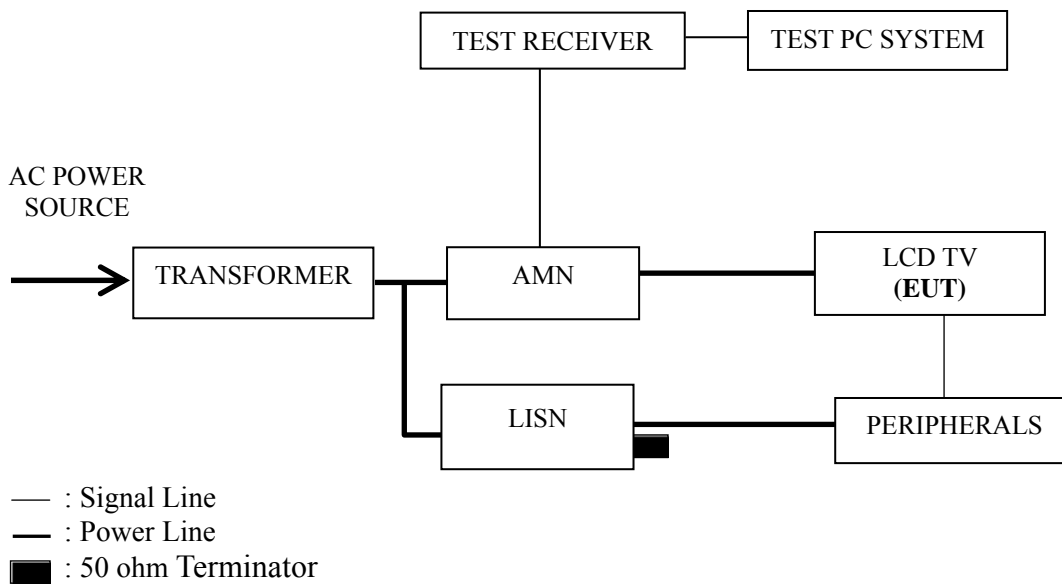
3.2 Block Diagram of Test Setup

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 from 3.5.3 to 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 1024*768@60Hz test mode. The worst emission is detected at 0.267 MHz (Average value) with corrected signal level of 40.84 dB (μ V) (limit is 51.20 dB (μ V)), when the Line of the EUT is connected to AMN.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 48%RH

Serial No. : E2010051201 Date of Test : May 20, 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	44.81	0.34	45.15	61.29	16.14	QP
	0.567	37.98	0.47	38.45	56.00	17.55	
	1.949	33.93	0.55	34.48	56.00	21.52	
	8.235	30.28	0.71	30.99	60.00	29.01	
	14.364	27.68	0.89	28.57	60.00	31.43	
	0.264	36.00	0.34	36.34	51.29	14.95	AV
	0.567	29.40	0.47	29.87	46.00	16.13	
	1.949	24.50	0.55	25.05	46.00	20.95	
	8.235	24.50	0.71	25.21	50.00	24.79	
	14.364	23.50	0.89	24.39	50.00	25.61	
Neutral	0.264	44.81	0.34	45.15	61.29	16.14	QP
	0.567	37.98	0.47	38.45	56.00	17.55	
	0.262	43.20	0.31	43.51	61.38	17.87	
	0.317	36.67	0.36	37.03	59.80	22.77	
	0.516	35.59	0.45	36.04	56.00	19.96	
	4.224	30.76	0.63	31.39	56.00	24.61	
	8.062	36.25	0.72	36.97	60.00	23.03	AV
	14.364	30.69	0.85	31.54	60.00	28.46	
	0.262	39.14	0.31	39.45	51.38	11.93	
	0.317	33.94	0.36	34.30	49.80	15.50	
	0.516	28.24	0.45	28.69	46.00	17.31	
	4.224	21.00	0.63	21.63	46.00	24.37	
8.062	26.28	0.72	27.00	50.00	23.00	AV	
14.364	14.97	0.85	15.82	50.00	34.18		

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 48%RH

Serial No. : E2010051201 Date of Test : May 20, 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	45.86	0.34	46.20	61.20	15.00	QP	
	0.317	41.10	0.39	41.49	59.80	18.31		
	0.567	37.68	0.47	38.15	56.00	17.85		
	2.066	35.80	0.55	36.35	56.00	19.65		
	7.175	29.74	0.69	30.43	60.00	29.57		
	14.364	27.18	0.89	28.07	60.00	31.93		
	0.267	36.37	0.34	36.71	51.20	14.49	AV	
	0.317	34.86	0.39	35.25	49.80	14.55		
	0.567	22.28	0.47	22.75	46.00	23.25		
	2.066	24.66	0.55	25.21	46.00	20.79		
	7.175	17.41	0.69	18.10	50.00	31.90		
	14.364	14.21	0.89	15.10	50.00	34.90		
	Neutral	0.259	43.43	0.31	43.74	61.47	17.73	QP
		0.313	38.20	0.36	38.56	59.88	21.32	
0.510		36.25	0.45	36.70	56.00	19.30		
4.269		32.26	0.63	32.89	56.00	23.11		
8.062		38.35	0.72	39.07	60.00	20.93		
14.364		31.38	0.85	32.23	60.00	27.77		
0.259		38.25	0.31	38.56	51.47	12.91	AV	
0.313		37.61	0.36	37.97	49.88	11.91		
0.510		18.92	0.45	19.37	46.00	26.63		
4.269		17.32	0.63	17.95	46.00	28.05		
8.062		25.75	0.72	26.47	50.00	23.53		
14.364		15.23	0.85	16.08	50.00	33.92		

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 48%RH

Serial No. : E2010051201 Date of Test : May 20, 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	0.270	44.91	0.35	45.26	61.12	15.86	QP
	0.339	40.06	0.40	40.46	59.22	18.76	
	0.573	39.73	0.47	40.20	56.00	15.80	
	2.066	34.76	0.55	35.31	56.00	20.69	
	8.062	31.72	0.71	32.43	60.00	27.57	
	14.364	28.14	0.89	29.03	60.00	30.97	
	0.270	34.90	0.35	35.25	51.12	15.87	AV
	0.339	25.49	0.40	25.89	49.22	23.33	
	0.573	25.89	0.47	26.36	46.00	19.64	
	2.066	24.26	0.55	24.81	46.00	21.19	
8.062	20.48	0.71	21.19	50.00	28.81		
14.364	13.75	0.89	14.64	50.00	35.36		
Neutral	0.270	43.28	0.32	43.60	61.12	17.52	QP
	0.317	36.67	0.36	37.03	59.80	22.77	
	0.510	36.40	0.45	36.85	56.00	19.15	
	4.202	30.67	0.63	31.30	56.00	24.70	
	7.977	37.68	0.72	38.40	60.00	21.60	
	14.364	28.37	0.85	29.22	60.00	30.78	AV
	0.270	31.41	0.32	31.73	51.12	19.39	
	0.317	33.79	0.36	34.15	49.80	15.65	
	0.510	28.53	0.45	28.98	46.00	17.02	
	4.202	16.79	0.63	17.42	46.00	28.58	
7.977	28.11	0.72	28.83	50.00	21.17	AV	
14.364	14.78	0.85	15.63	50.00	34.37		

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 48%RH

Serial No. : E2010051201 Date of Test : May 20, 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	45.64	0.34	45.98	61.29	15.31	QP	
	0.317	41.00	0.39	41.39	59.80	18.41		
	0.573	39.74	0.47	40.21	56.00	15.79		
	2.033	33.96	0.55	34.51	56.00	21.49		
	7.852	29.71	0.71	30.42	60.00	29.58		
	14.364	22.26	0.89	23.15	60.00	36.85		
		0.264	38.31	0.34	38.65	51.29	12.64	AV
		0.317	34.02	0.39	34.41	49.80	15.39	
		0.573	26.42	0.47	26.89	46.00	19.11	
		2.033	17.94	0.55	18.49	46.00	27.51	
		7.852	16.92	0.71	17.63	50.00	32.37	
		14.364	14.57	0.89	15.46	50.00	34.54	
Neutral	0.270	43.45	0.32	43.77	61.12	17.35	QP	
	0.317	39.72	0.36	40.08	59.80	19.72		
	0.510	36.40	0.45	36.85	56.00	19.15		
	4.361	32.01	0.63	32.64	56.00	23.36		
	7.935	36.10	0.72	36.82	60.00	23.18		
	14.364	31.29	0.85	32.14	60.00	27.86		
		0.270	31.86	0.32	32.18	51.12	18.94	AV
		0.317	33.52	0.36	33.88	49.80	15.92	
		0.510	27.99	0.45	28.44	46.00	17.56	
		4.361	20.85	0.63	21.48	46.00	24.52	
		7.935	26.44	0.72	27.16	50.00	22.84	
		14.364	14.10	0.85	14.95	50.00	35.05	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 48%RH

Serial No. : E2010051201 Date of Test : May 20, 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	45.62	0.34	45.96	61.29	15.33	QP
	0.336	42.51	0.39	42.90	59.31	16.41	
	0.567	36.73	0.47	37.20	56.00	18.80	
	2.066	33.76	0.55	34.31	56.00	21.69	
	7.175	31.88	0.69	32.57	60.00	27.43	
	14.364	29.50	0.89	30.39	60.00	29.61	
	0.264	39.07	0.34	39.41	51.29	11.88	AV
	0.336	34.64	0.39	35.03	49.31	14.28	
	0.567	19.28	0.47	19.75	46.00	26.25	
	2.066	19.25	0.55	19.80	46.00	26.20	
	7.175	16.54	0.69	17.23	50.00	32.77	
	14.364	14.18	0.89	15.07	50.00	34.93	
Neutral	0.267	44.13	0.32	44.45	61.20	16.75	QP
	0.317	36.69	0.36	37.05	59.80	22.75	
	0.516	35.87	0.45	36.32	56.00	19.68	
	4.361	30.98	0.63	31.61	56.00	24.39	
	7.852	36.29	0.72	37.01	60.00	22.99	
	14.364	31.36	0.85	32.21	60.00	27.79	
	0.267	38.78	0.32	39.10	51.20	12.10	AV
	0.317	33.82	0.36	34.18	49.80	15.62	
	0.516	25.72	0.45	26.17	46.00	19.83	
	4.361	21.32	0.63	21.95	46.00	24.05	
	7.852	25.45	0.72	26.17	50.00	23.83	
	14.364	15.04	0.85	15.89	50.00	34.11	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 48%RH

Serial No. : E2010051201 Date of Test : May 20, 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	0.267	45.89	0.34	46.23	61.20	14.97	QP	
	0.317	41.11	0.39	41.50	59.80	18.30		
	0.567	37.08	0.47	37.55	56.00	18.45		
	2.066	33.72	0.55	34.27	56.00	21.73		
	8.062	31.06	0.71	31.77	60.00	28.23		
	14.364	29.56	0.89	30.45	60.00	29.55		
	0.267	40.50	0.34	40.84	51.20	10.36	AV	
	0.317	32.63	0.39	33.02	49.80	16.78		
	0.567	20.12	0.47	20.59	46.00	25.41		
	2.066	20.82	0.55	21.37	46.00	24.63		
	8.062	17.78	0.71	18.49	50.00	31.51		
	14.364	14.48	0.89	15.37	50.00	34.63		
	Neutral	0.259	43.49	0.31	43.80	61.47	17.67	QP
		0.317	36.68	0.36	37.04	59.80	22.76	
0.516		35.87	0.45	36.32	56.00	19.68		
4.202		30.64	0.63	31.27	56.00	24.73		
7.852		36.05	0.72	36.77	60.00	23.23		
14.364		27.06	0.85	27.91	60.00	32.09		
0.259		36.89	0.31	37.20	51.47	14.27	AV	
0.317		33.75	0.36	34.11	49.80	15.69		
0.516		28.87	0.45	29.32	46.00	16.68		
4.202		18.43	0.63	19.06	46.00	26.94		
7.852		27.33	0.72	28.05	50.00	21.95		
14.364		14.95	0.85	15.80	50.00	34.20		

TEST ENGINEER: TED ZHU

4 RADIATED EMISSION TEST

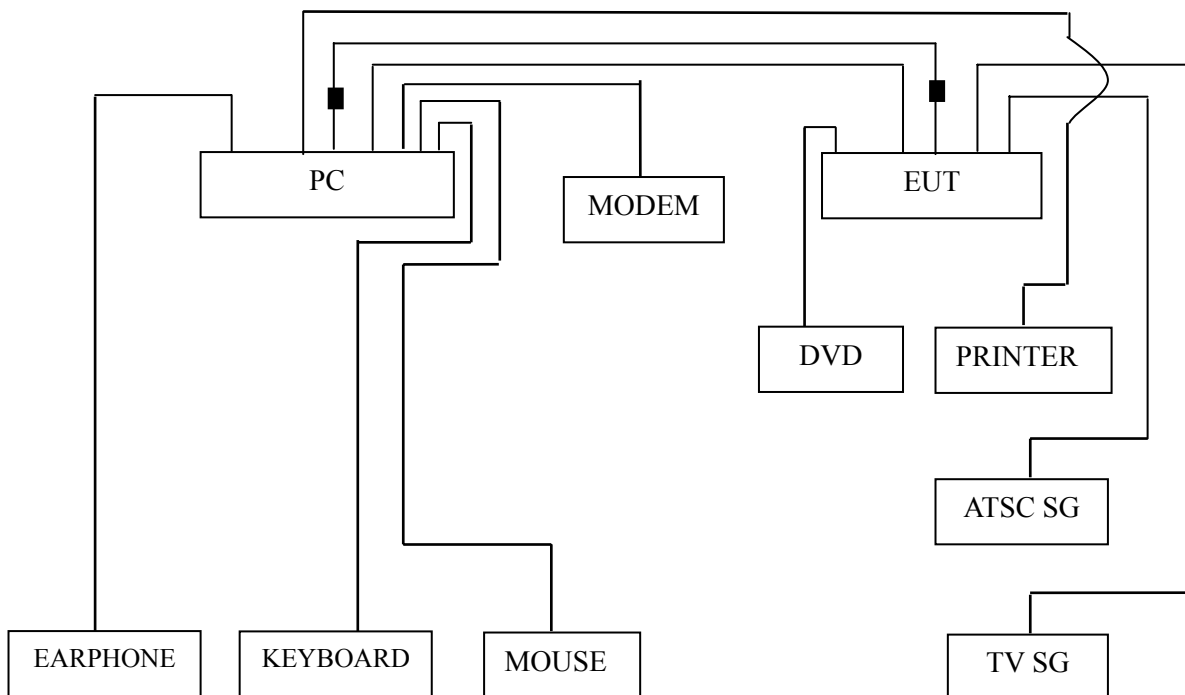
4.1 Test Equipment

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	23193	May 14, 2009	May 14, 2011
4.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2010	May 19, 2011
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

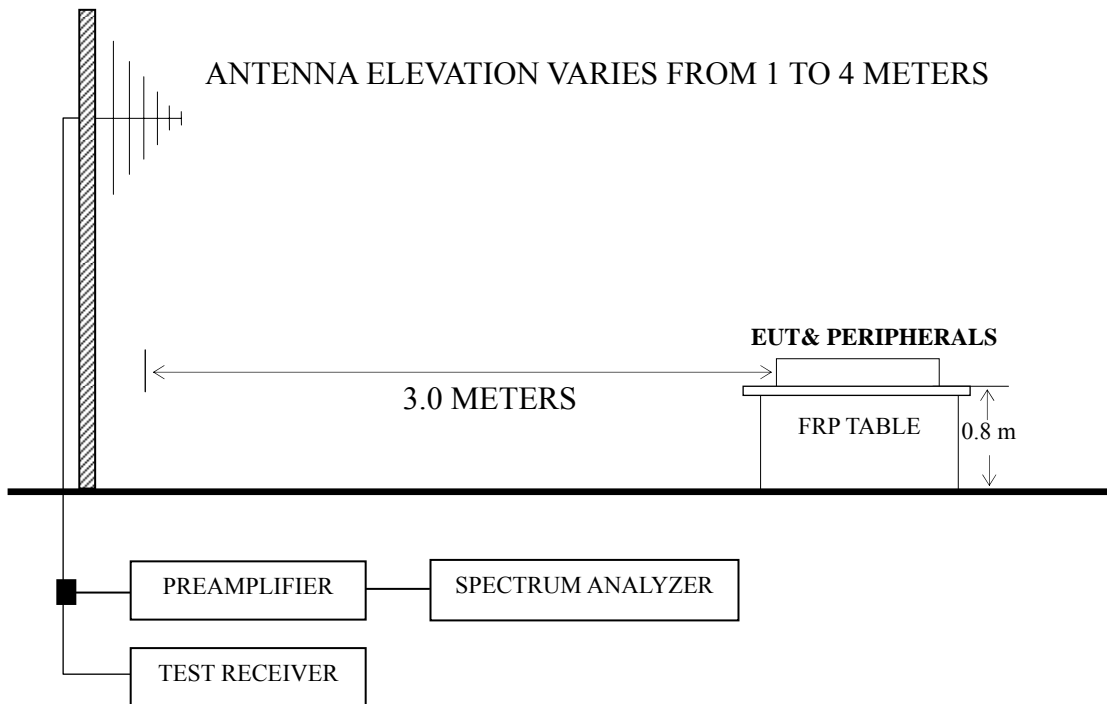
4.2 Block Diagram of Test Setup

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 D-Sub 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 347.190 MHz with corrected signal level of 42.09 dB ($\mu\text{V}/\text{m}$) (limit is 46.00dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.00 m height and the turntable was at 70°. The worst emission at vertical polarization was detected at 347.190 MHz with corrected signal level of 42.56 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.00 m height and the turntable was at 310°.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 60%RH

Serial No. : E2010051201 Date of Test : May 20, 2010

Test Mode : D-Sub 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	30.000	3.00	19.60	0.63	23.23	40.00	16.77
	77.530	23.37	7.49	0.94	31.80	40.00	8.20
	193.930	20.88	10.44	1.43	32.75	43.50	10.75
	334.580	18.91	14.86	1.87	35.64	46.00	10.36
	599.390	10.84	19.20	2.46	32.50	46.00	13.50
	730.340	10.51	20.00	2.75	33.26	46.00	12.74
Vertical	33.880	10.69	17.44	0.67	28.80	40.00	11.20
	75.590	26.53	7.24	0.92	34.69	40.00	5.31
	159.980	16.64	10.50	1.28	28.42	43.50	15.08
	344.280	18.95	15.16	1.90	36.01	46.00	9.99
	584.840	12.34	19.03	2.43	33.80	46.00	12.20
	727.430	6.48	19.97	2.75	29.20	46.00	16.80

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 60%RH

Serial No. : E2010051201 Date of Test : May 20, 2010

Test Mode : D-Sub 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	30.970	2.71	19.03	0.64	22.38	40.00	17.62
	75.590	22.34	7.24	0.92	30.50	40.00	9.50
	187.140	19.54	10.17	1.40	31.11	43.50	12.39
	347.190	23.59	15.24	1.91	40.74	46.00	5.26
	572.230	11.94	18.88	2.39	33.21	46.00	12.79
	735.190	11.19	20.07	2.78	34.04	46.00	11.96
Vertical	33.880	9.71	17.44	0.67	27.82	40.00	12.18
	77.530	26.68	7.49	0.94	35.11	40.00	4.89
	187.140	18.90	10.17	1.40	30.47	43.50	13.03
	347.190	22.05	15.24	1.91	39.20	46.00	6.80
	572.230	15.24	18.88	2.39	36.51	46.00	9.49
	783.690	6.32	20.55	2.87	29.74	46.00	16.26

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 60%RH

Serial No. : E2010051201 Date of Test : May 20, 2010

Test Mode : D-Sub 1024*768@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	30.000	3.07	19.60	0.63	23.30	40.00	16.70
	75.590	23.73	7.24	0.92	31.89	40.00	8.11
	153.190	24.38	11.04	1.25	36.67	43.50	6.83
	347.190	24.94	15.24	1.91	42.09	46.00	3.91
	562.530	13.59	18.75	2.38	34.72	46.00	11.28
	735.190	14.26	20.07	2.78	37.11	46.00	8.89
Vertical	43.580	16.88	11.88	0.74	29.50	40.00	10.50
	75.590	27.04	7.24	0.92	35.20	40.00	4.80
	153.190	24.87	11.04	1.25	37.16	43.50	6.34
	347.190	25.41	15.24	1.91	42.56	46.00	3.44
	541.190	17.49	18.45	2.33	38.27	46.00	7.73
	744.890	5.59	20.17	2.78	28.54	46.00	17.46

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 60%RH

Serial No. : E2010051201 Date of Test : May 20, 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	30.000	3.47	19.60	0.63	23.70	40.00	16.30
	80.440	22.85	7.85	0.95	31.65	40.00	8.35
	193.930	21.53	10.44	1.43	33.40	43.50	10.10
	390.840	18.77	16.30	2.03	37.10	46.00	8.90
	584.840	13.42	19.03	2.43	34.88	46.00	11.12
	730.340	15.56	20.00	2.75	38.31	46.00	7.69
Vertical	38.730	14.81	14.62	0.71	30.14	40.00	9.86
	77.530	27.34	7.49	0.94	35.77	40.00	4.23
	193.930	19.39	10.44	1.43	31.26	43.50	12.24
	344.280	19.95	15.16	1.90	37.01	46.00	8.99
	584.840	17.66	19.03	2.43	39.12	46.00	6.88
	701.240	11.69	19.70	2.67	34.06	46.00	11.94

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 60%RH

Serial No. : E2010051201 Date of Test : May 20, 2010

Test Mode : HDMI 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	30.000	3.82	19.60	0.63	24.05	40.00	15.95
	72.680	25.33	6.85	0.91	33.09	40.00	6.91
	193.930	22.34	10.44	1.43	34.21	43.50	9.29
	344.280	21.48	15.16	1.90	38.54	46.00	7.46
	586.780	13.83	19.06	2.43	35.32	46.00	10.68
	586.780	13.95	19.06	2.43	35.44	46.00	10.56
Vertical	30.000	8.88	19.60	0.63	29.11	40.00	10.89
	77.530	27.66	7.49	0.94	36.09	40.00	3.91
	159.980	17.82	10.50	1.28	29.60	43.50	13.90
	344.280	18.94	15.16	1.90	36.00	46.00	10.00
	584.840	17.98	19.03	2.43	39.44	46.00	6.56
	730.340	10.54	20.00	2.75	33.29	46.00	12.71

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN24V86NUS Humidity : 60%RH

Serial No. : E2010051201 Date of Test : May 20, 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	30.970	4.81	19.03	0.64	24.48	40.00	15.52
	80.440	25.94	7.85	0.95	34.74	40.00	5.26
	193.930	21.41	10.44	1.43	33.28	43.50	10.22
	344.280	19.76	15.16	1.90	36.82	46.00	9.18
	586.780	14.33	19.06	2.43	35.82	46.00	10.18
	730.340	14.01	20.00	2.75	36.76	46.00	9.24
Vertical	30.000	16.04	19.60	0.63	36.27	40.00	3.73
	75.590	26.90	7.24	0.92	35.06	40.00	4.94
	193.930	18.52	10.44	1.43	30.39	43.50	13.11
	344.280	20.34	15.16	1.90	37.40	46.00	8.60
	584.840	17.48	19.03	2.43	38.94	46.00	7.06
	798.240	9.07	20.67	2.89	32.63	46.00	13.37

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

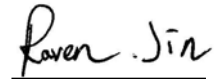
6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Ferrite core	ZCAT3035-1330\ROH	FEELUX	See Internal photo Figure 15
		Rui Feng Electronic Co., Ltd.	
		Hai An Magnetic Material No.2 Factory	

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)