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

LCD TV

Model No.	Serial No.	Brand
LHDN32V87HUS	E20101220-01-01	Hisense

FCC ID : W9HLCDC0002

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-F10025A3
Date of Test : Dec 25, 2010 & Jan 05, 2011
Date of Report : Jan 12, 2010

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.

Manufacturer#1 : Hisense Electric Co., Ltd.

Manufacturer#2 : DELTA ELECTRONICS MEXICO S.A. DE C.V.

EUT Description : LCD TV

Model No.	Serial No.	Brand	Power Supply
LHDN32V87HUS	E20101220-01-01	Hisense	120V/60Hz

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 Dec 25, 2010 & Jan 05, 2011 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.F10024A3, a Verification report.

Date of Test : Dec 25, 2010 & Jan 05, 2011 Date of Report : Jan 12, 2011

Producer : Candyxi
CANDY XI / Assistant

Review : Dio Yang
DIO YANG / Deputy Assistant Manager

AUDIX® 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 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. : LHDN32V87HUS

Serial No. : E20101220-01-01

Brand : Hisense

Note #1 : The difference list for all models is as follows:

Report No.	Model No.	Rev. Summary	Edition No.	Data of Rev.
ACI-F10025	LHDN32V87HUS	Original Report.	0	Mar 04, 2010
ACI-F10025A1	LHDN32V87HUS	To add a new LCD panel	Rev. A1	Aug 26, 2010
ACI-F10025A2	LHDN32V87HUS	To add a manufacturer	Rev. A2	Dec 09, 2010
ACI-F10025A3	LHDN32V87HUS	To add two new LCD panel	Rev. A3	Jan 12, 2011

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

Manufacturer#1 : Hisense Electric Co., Ltd.
No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China

Manufacturer#2 : DELTA ELECTRONICS MEXICO S.A. DE C.V.
UNO PONIENTE NO.19955 CD INDUSTRIAL NUEVA TIJUANA, B.C., MEXICO C.P.22444

LCD Panel 1 : Manufacturer : SAMSUNG
M/N : LTA320AP05-1

LCD Panel 2 : Manufacturer : SAMSUNG
M/N : LTA320AP05-Q

Note #2 : LCD Panel 1 and LCD Panel 2 are all the same except for different demand of pixel defect. LCD Panel 1 was tested and recorded in this report.

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 View:

(1) One component of YPbPr2 Port
Connected with DVD #2

(2) One component of YPbPr2 Audio Port
Connected with DVD #2

(3) One HDMI2 Port
Connected with DVD #1

(4) One HDMI3 Port
Connected with DVD #2

(5) One Digital Audio Out Port
Connected with DVD #2

(6) One Component of Audio Out Port
Connected with Speaker

(7) One S-Video Port
Connected with DVD #2

(8) One Component of AV2 Port
Connected with DVD #2

(9) One RS232 Port
Connected with PC

Side View:

(1) One component of YPbPr1 Port
Connected with DVD #1

(2) One component of YPbPr1 Audio Port
Connected with DVD #1

(3) One RF Port
Connected with ATSC SG

(4) One VGA Port
Connected with PC

(5) One VGA Audio Port
Connected with PC

(6) One HDMI1 Port
Connected with PC

(7) One Component of AV1 Port
Connected with DVD #1

(8) One Headphone Port
Connected with Earphone

(9) One Service Port
Do not opened 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

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 #1

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

2.2.10 DVD#2

Manufacturer : LG
Model Number : DF9921N
Serial Number : 3850R-N846W
Certificate : FCC DoC, CE/EMC, CCC

2.2.11 Speaker

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

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

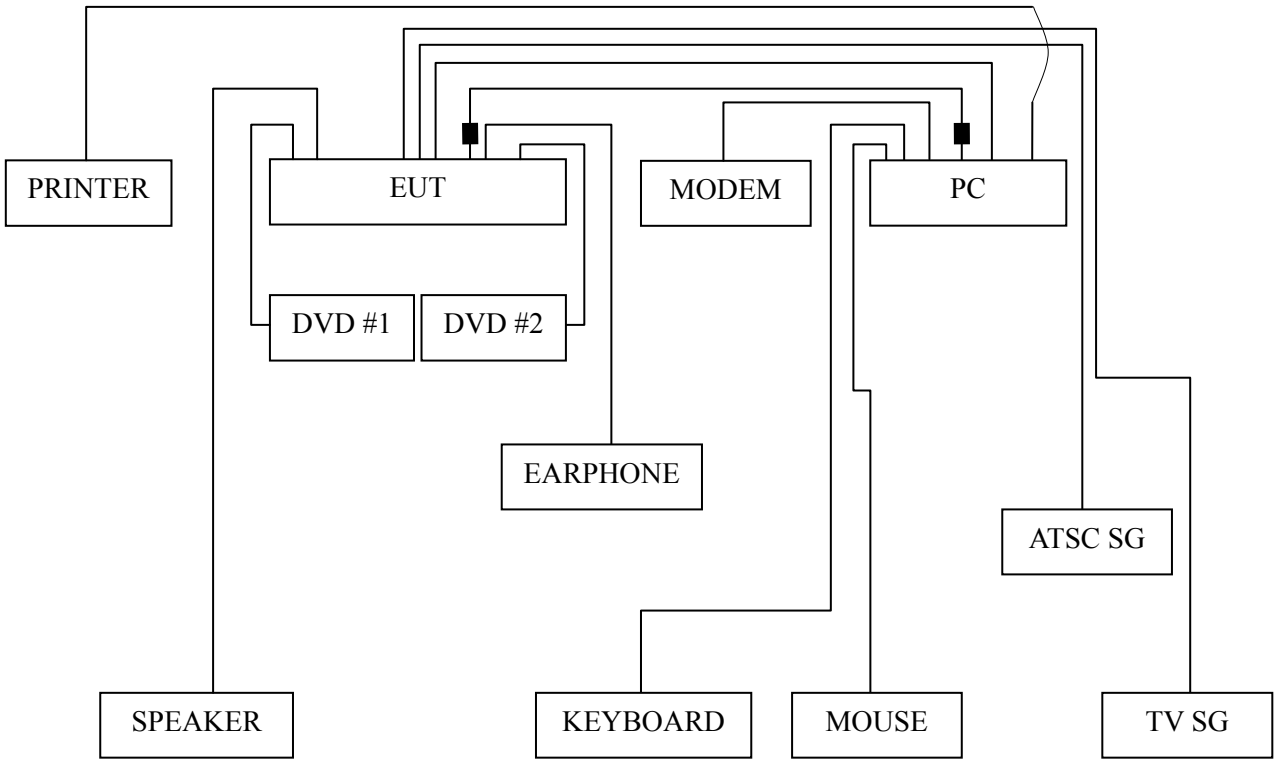
3.1 Test Equipment

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, 2010	Oct 15, 2011
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	Sep 19, 2010	Mar 19, 2011
5.	50Ω Terminator	Anritsu	BNC	001	Apr 02, 2010	Apr 02, 2011
6.	Software	Audix	E3	SET00200 9804M592	--	--

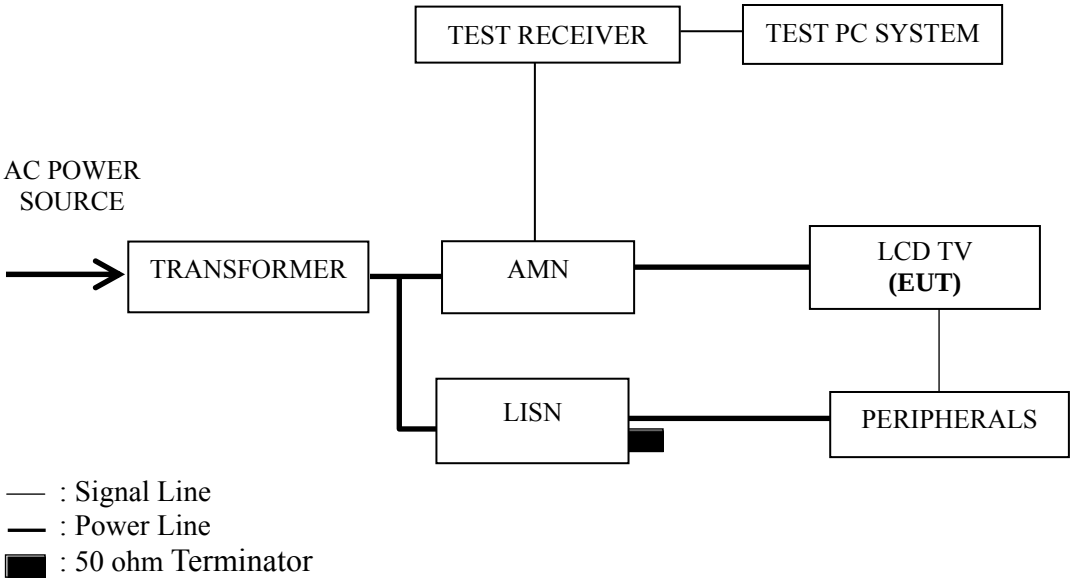
3.2 Block Diagram of Test Setup

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 (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 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 D-Sub 800*600@60Hz test mode. The worst emission is detected at 0.178 MHz (QP) with corrected signal level of 59.46 dB (μV) (limit is 64.59 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LHDN32V87HUS	Humidity :	48%RH	
Serial No.	:	E20101220-01-01	Date of Test :	Dec 25, 2010	
Test Mode	:	D-Sub 640*480@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	53.26	0.37	53.63	66.00	12.37	QP
	0.176	58.70	0.38	59.08	64.68	5.60	
	0.262	48.24	0.42	48.66	61.38	12.72	
	0.393	49.80	0.48	50.28	57.99	7.71	
	0.654	41.19	0.52	41.71	56.00	14.29	
	20.377	45.75	1.63	47.38	60.00	12.62	
	0.150	43.25	0.37	43.62	56.00	12.38	AV
	0.176	47.80	0.38	48.18	54.68	6.50	
	0.262	32.54	0.42	32.96	51.38	18.42	
	0.393	38.70	0.48	39.18	47.99	8.81	
	0.654	31.25	0.52	31.77	46.00	14.23	
	20.377	35.26	1.63	36.89	50.00	13.11	
Neutral	0.150	52.80	0.32	53.12	66.00	12.88	QP
	0.176	**59.20**	**0.31**	**59.51**	**64.68**	**5.17**	
	0.262	48.08	0.35	48.43	61.38	12.95	
	0.393	47.77	0.44	48.21	57.99	9.78	
	0.654	39.59	0.49	40.08	56.00	15.92	
	18.820	37.22	1.71	38.93	60.00	21.07	
	0.150	42.00	0.32	42.32	56.00	13.68	AV
	0.176	48.50	0.31	48.81	54.68	5.87	
	0.262	32.55	0.35	32.90	51.38	18.48	
	0.393	36.50	0.44	36.94	47.99	11.05	
	0.654	29.65	0.49	30.14	46.00	15.86	
	18.820	28.44	1.71	30.15	50.00	19.85	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LHDN32V87HUS	Humidity :	48%RH	
Serial No.	:	E20101220-01-01	Date of Test :	Dec 25, 2010	
Test Mode	:	D-Sub 800*600@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	53.34	0.37	53.71	66.00	12.29	QP
	0.176	58.52	0.38	58.90	64.68	5.78	
	0.262	48.47	0.42	48.89	61.38	12.49	
	0.393	49.56	0.48	50.04	57.99	7.95	
	0.654	41.37	0.52	41.89	56.00	14.11	
	19.532	44.47	1.58	46.05	60.00	13.95	
	0.150	43.26	0.37	43.63	56.00	12.37	AV
	0.176	47.60	0.38	47.98	54.68	6.70	
	0.262	35.64	0.42	36.06	51.38	15.32	
	0.393	38.60	0.48	39.08	47.99	8.91	
	0.654	32.26	0.52	32.78	46.00	13.22	
	19.532	32.55	1.58	34.13	50.00	15.87	
Neutral	0.150	52.67	0.32	52.99	66.00	13.01	QP
	0.178	**59.15**	**0.31**	**59.46**	**64.59**	**5.13**	
	0.262	48.31	0.35	48.66	61.38	12.72	
	0.393	48.45	0.44	48.89	57.99	9.10	
	0.661	38.80	0.49	39.29	56.00	16.71	
	18.232	37.75	1.67	39.42	60.00	20.58	
	0.150	43.29	0.32	43.61	56.00	12.39	AV
	0.178	48.20	0.31	48.51	54.59	6.08	
	0.262	35.65	0.35	36.00	51.38	15.38	
	0.393	37.80	0.44	38.24	47.99	9.75	
	0.661	28.54	0.49	29.03	46.00	16.97	
	18.232	27.18	1.67	28.85	50.00	21.15	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LHDN32V87HUS	Humidity :	48%RH	
Serial No.	:	E20101220-01-01	Date of Test :	Dec 25, 2010	
Test Mode	:	D-Sub 1024*768@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	53.34	0.37	53.71	66.00	12.29	QP
	0.180	58.16	0.38	58.54	64.50	5.96	
	0.264	48.38	0.43	48.81	61.29	12.48	
	0.393	50.06	0.48	50.54	57.99	7.45	
	0.654	41.27	0.52	41.79	56.00	14.21	
	20.814	45.88	1.65	47.53	60.00	12.47	
	0.150	44.65	0.37	45.02	56.00	10.98	AV
	0.180	47.30	0.38	47.68	54.50	6.82	
	0.264	35.25	0.43	35.68	51.29	15.61	
	0.393	39.70	0.48	40.18	47.99	7.81	
	0.654	31.25	0.52	31.77	46.00	14.23	
	20.814	35.24	1.65	36.89	50.00	13.11	
Neutral	0.150	53.48	0.32	53.80	66.00	12.20	QP
	0.180	**58.27**	**0.31**	**58.58**	**64.50**	**5.92**	
	0.264	47.72	0.36	48.08	61.29	13.21	
	0.393	48.80	0.44	49.24	57.99	8.75	
	0.661	38.89	0.49	39.38	56.00	16.62	
	19.532	37.92	1.74	39.66	60.00	20.34	
	0.150	43.26	0.32	43.58	56.00	12.42	AV
	0.180	47.80	0.31	48.11	54.50	6.39	
	0.264	35.15	0.36	35.51	51.29	15.78	
	0.393	37.50	0.44	37.94	47.99	10.05	
	0.661	28.15	0.49	28.64	46.00	17.36	
	19.532	27.15	1.74	28.89	50.00	21.11	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LHDN32V87HUS	Humidity	:	48%RH
Serial No.	:	E20101220-01-01	Date of Test	:	Dec 25, 2010
Test Mode	:	HDMI 640*480@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	53.29	0.37	53.66	66.00	12.34	QP
	0.182	**57.90**	**0.38**	**58.28**	**64.42**	**6.14**	
	0.253	47.52	0.42	47.94	61.64	13.70	
	0.393	50.53	0.48	51.01	57.99	6.98	
	0.654	41.05	0.52	41.57	56.00	14.43	
	20.594	45.32	1.65	46.97	60.00	13.03	
	0.150	42.54	0.37	42.91	56.00	13.09	AV
	0.182	46.20	0.38	46.58	54.42	7.84	
	0.253	35.26	0.42	35.68	51.64	15.96	
	0.393	39.70	0.48	40.18	47.99	7.81	
	0.654	31.27	0.52	31.79	46.00	14.21	
	20.594	35.61	1.65	37.26	50.00	12.74	
Neutral	0.150	53.46	0.32	53.78	66.00	12.22	QP
	0.180	57.89	0.31	58.20	64.50	6.30	
	0.264	47.72	0.36	48.08	61.29	13.21	
	0.393	46.93	0.44	47.37	57.99	10.62	
	0.661	39.14	0.49	39.63	56.00	16.37	
	19.224	37.36	1.73	39.09	60.00	20.91	
	0.150	43.26	0.32	43.58	56.00	12.42	AV
	0.180	46.50	0.31	46.81	54.50	7.69	
	0.264	32.65	0.36	33.01	51.29	18.28	
	0.393	35.80	0.44	36.24	47.99	11.75	
	0.661	29.65	0.49	30.14	46.00	15.86	
	19.224	28.54	1.73	30.27	50.00	19.73	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LHDN32V87HUS	Humidity :	48%RH	
Serial No.	:	E20101220-01-01	Date of Test :	Dec 25, 2010	
Test Mode	:	HDMI 800*600@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	53.50	0.37	53.87	66.00	12.13	QP
	0.180	**58.23**	**0.38**	**58.61**	**64.50**	**5.89**	
	0.262	48.22	0.42	48.64	61.38	12.74	
	0.393	49.78	0.48	50.26	57.99	7.73	
	0.661	40.89	0.52	41.41	56.00	14.59	
	20.377	45.34	1.63	46.97	60.00	13.03	
	0.150	43.26	0.37	43.63	56.00	12.37	AV
	0.180	47.60	0.38	47.98	54.50	6.52	
	0.262	36.22	0.42	36.64	51.38	14.74	
	0.393	38.60	0.48	39.08	47.99	8.91	
	0.661	32.50	0.52	33.02	46.00	12.98	
	20.377	35.26	1.63	36.89	50.00	13.11	
Neutral	0.150	53.25	0.32	53.57	66.00	12.43	QP
	0.178	57.87	0.31	58.18	64.59	6.41	
	0.262	47.89	0.35	48.24	61.38	13.14	
	0.393	47.37	0.44	47.81	57.99	10.18	
	0.661	39.04	0.49	39.53	56.00	16.47	
	19.224	38.87	1.73	40.60	60.00	19.40	
	0.150	46.23	0.32	46.55	56.00	9.45	AV
	0.178	46.80	0.31	47.11	54.59	7.48	
	0.262	35.65	0.35	36.00	51.38	15.38	
	0.393	36.40	0.44	36.84	47.99	11.15	
	0.661	28.56	0.49	29.05	46.00	16.95	
	19.224	28.56	1.73	30.29	50.00	19.71	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LHDN32V87HUS	Humidity	:	48%RH
Serial No.	:	E20101220-01-01	Date of Test	:	Dec 25, 2010
Test Mode	:	HDMI 1024*768@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	53.07	0.37	53.44	66.00	12.56	QP
	0.180	58.28	0.38	58.66	64.50	5.84	
	0.264	47.94	0.43	48.37	61.29	12.92	
	0.393	49.76	0.48	50.24	57.99	7.75	
	0.654	41.48	0.52	42.00	56.00	14.00	
	20.377	45.83	1.63	47.46	60.00	12.54	
	0.150	43.65	0.37	44.02	56.00	11.98	AV
	0.180	47.60	0.38	47.98	54.50	6.52	
	0.264	35.46	0.43	35.89	51.29	15.40	
	0.393	38.50	0.48	38.98	47.99	9.01	
	0.654	35.26	0.52	35.78	46.00	10.22	
	20.377	35.48	1.63	37.11	50.00	12.89	
Neutral	0.150	52.64	0.32	52.96	66.00	13.04	QP
	0.180	**58.89**	**0.31**	**59.20**	**64.50**	**5.30**	
	0.264	47.28	0.36	47.64	61.29	13.65	
	0.393	47.93	0.44	48.37	57.99	9.62	
	0.661	38.74	0.49	39.23	56.00	16.77	
	18.820	38.74	1.71	40.45	60.00	19.55	
	0.150	42.36	0.32	42.68	56.00	13.32	AV
	0.180	48.00	0.31	48.31	54.50	6.19	
	0.264	35.40	0.36	35.76	51.29	15.53	
	0.393	36.70	0.44	37.14	47.99	10.85	
	0.661	28.58	0.49	29.07	46.00	16.93	
	18.820	28.53	1.71	30.24	50.00	19.76	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

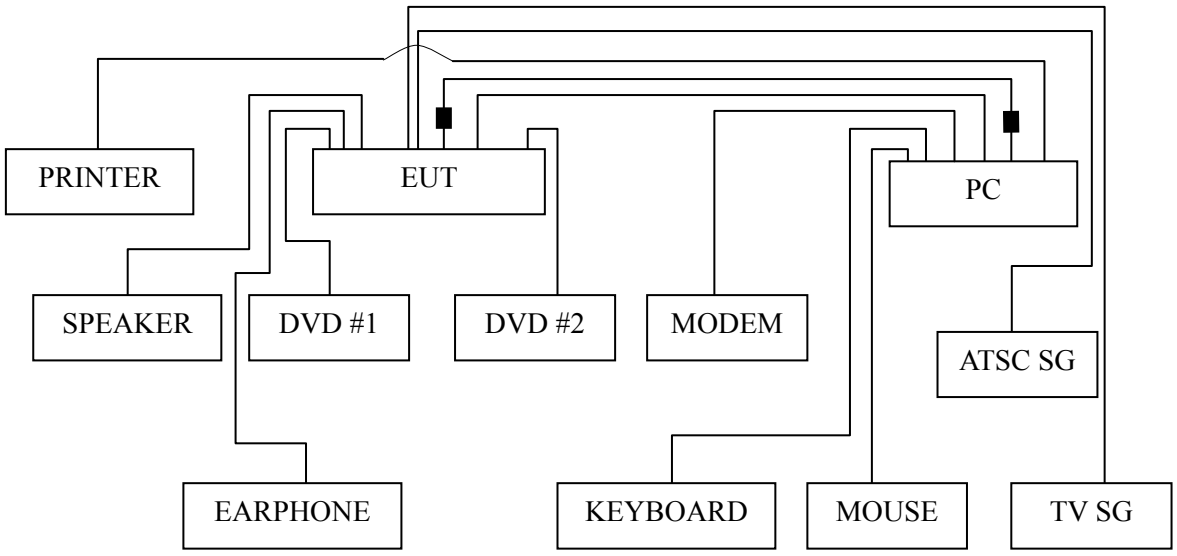
4.1 Test Equipment

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	Sep 19, 2010	Mar 19, 2011
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2010	Dec 01, 2011
4.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2010	May 19, 2011
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

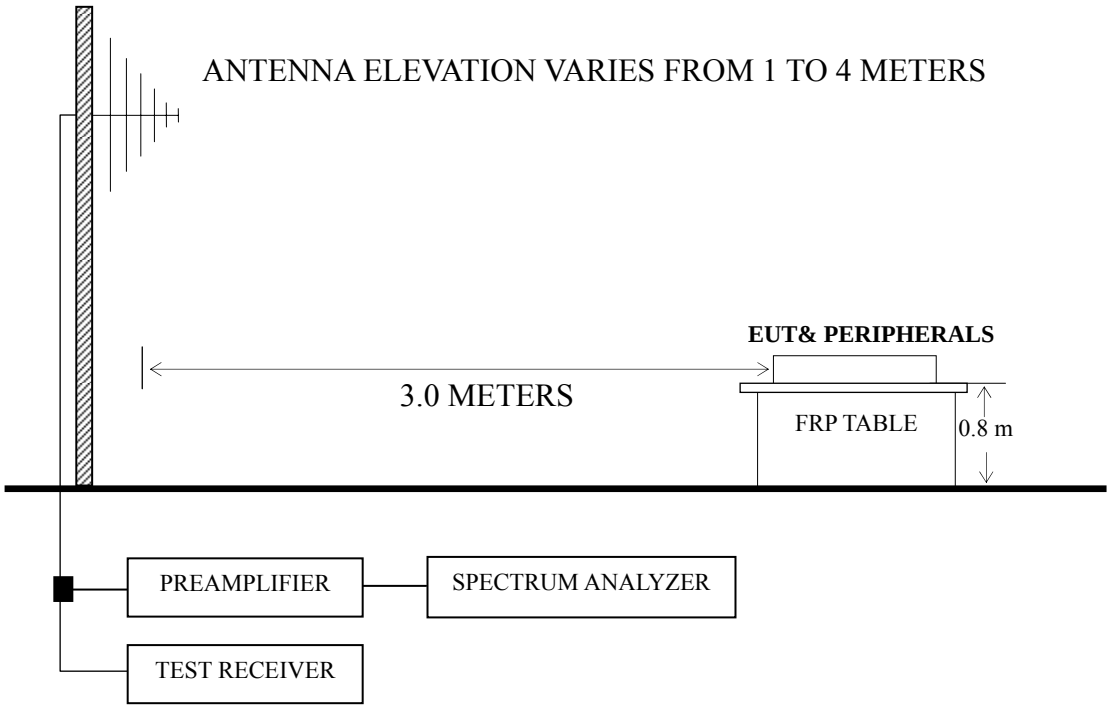
4.2 Block Diagram of Test Setup

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	
		(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.

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 800*600@60Hz test mode. The worst emission at horizontal polarization was detected at 341.370 MHz with corrected signal level of 43.12dB (μV/m) (limit is 46.00dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 130°. The worst emission at vertical polarization was detected at 87.300 MHz with corrected signal level of 35.97 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 300°.

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LHDN32V87HUS	Humidity :	60%RH
Serial No.	:	E20101220-01-01	Date of Test :	Jan 05, 2011
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	80.440	24.86	10.56	0.95	36.37	40.00	3.63
	173.000	**28.59**	**10.08**	**1.35**	**40.02**	**43.50**	**3.48**
	343.310	25.12	14.91	1.90	41.93	46.00	4.07
	432.550	20.43	16.72	2.13	39.28	46.00	6.72
	519.850	17.73	17.72	2.30	37.75	46.00	8.25
	736.160	12.78	19.90	2.78	35.46	46.00	10.54
Vertical	**87.360**	**25.10**	**10.90**	**0.98**	**36.98**	**40.00**	**3.02**
	152.220	27.72	10.37	1.25	39.34	43.50	4.16
	238.550	27.13	11.46	1.57	40.16	46.00	5.84
	347.190	22.10	15.04	1.91	39.05	46.00	6.95
	388.900	14.47	16.07	2.03	32.57	46.00	13.43
	671.170	13.14	19.15	2.61	34.90	46.00	11.10

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LHDN32V87HUS	Humidity :	60%RH
Serial No.	:	E20101220-01-01	Date of Test :	Jan 05, 2011
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	87.230	23.75	10.88	0.98	35.61	40.00	4.39
	108.570	24.50	11.21	1.08	36.79	43.50	6.71
	152.300	28.10	10.37	1.25	39.72	43.50	3.78
	341.370	**26.35**	**14.87**	**1.90**	**43.12**	**46.00**	**2.88**
	412.180	20.54	16.45	2.09	39.08	46.00	6.92
	519.850	15.95	17.72	2.30	35.97	46.00	10.03
Vertical	44.550	18.86	10.47	0.75	30.08	40.00	9.92
	87.300	**24.11**	**10.88**	**0.98**	**35.97**	**40.00**	**4.03**
	238.550	26.81	11.46	1.57	39.84	46.00	6.16
	341.370	24.53	14.87	1.90	41.30	46.00	4.70
	469.410	18.12	17.24	2.21	37.57	46.00	8.43
	671.170	14.22	19.15	2.61	35.98	46.00	10.02

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LHDN32V87HUS	Humidity :	60%RH
Serial No.	:	E20101220-01-01	Date of Test :	Jan 05, 2011
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	97.900	25.16	11.28	1.03	37.47	43.50	6.03
	173.000	28.10	10.08	1.35	39.53	43.50	3.97
	282.200	27.10	13.21	1.72	42.03	46.00	3.97
	341.370	**25.31**	**14.87**	**1.90**	**42.08**	**46.00**	**3.92**
	412.180	20.45	16.45	2.09	38.99	46.00	7.01
	671.170	14.17	19.15	2.61	35.93	46.00	10.07
Vertical	87.630	23.10	10.90	0.98	34.98	40.00	5.02
	145.430	**28.48**	**10.50**	**1.23**	**40.21**	**43.50**	**3.29**
	173.560	27.74	10.07	1.35	39.16	43.50	4.34
	217.210	28.59	10.48	1.51	40.58	46.00	5.42
	347.190	24.47	15.04	1.91	41.42	46.00	4.58
	468.440	19.23	17.22	2.21	38.66	46.00	7.34

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LHDN32V87HUS	Humidity :	60%RH
Serial No.	:	E20101220-01-01	Date of Test :	Jan 05, 2011
Test Mode	:	HDMI 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	87.230	21.96	10.88	0.98	33.82	40.00	6.18
	152.220	26.65	10.37	1.25	38.27	43.50	5.23
	173.560	**27.73**	**10.07**	**1.35**	**39.15**	**43.50**	**4.35**
	282.200	23.10	13.21	1.72	38.03	46.00	7.97
	341.370	19.31	14.87	1.90	36.08	46.00	9.92
	671.170	8.17	19.15	2.61	29.93	46.00	16.07
Vertical	108.570	20.28	11.21	1.08	32.57	43.50	10.93
	173.560	22.74	10.07	1.35	34.16	43.50	9.34
	217.210	22.59	10.48	1.51	34.58	46.00	11.42
	347.190	**20.47**	**15.04**	**1.91**	**37.42**	**46.00**	**8.58**
	468.440	16.23	17.22	2.21	35.66	46.00	10.34
	871.960	13.88	20.38	2.98	37.24	46.00	8.76

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LHDN32V87HUS	Humidity :	60%RH
Serial No.	:	E20101220-01-01	Date of Test :	Jan 05, 2011
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	87.230	17.75	10.88	0.98	29.61	40.00	10.39
	152.220	**26.66**	**10.37**	**1.25**	**38.28**	**43.50**	**5.22**
	173.560	26.42	10.07	1.35	37.84	43.50	5.66
	217.210	25.29	10.48	1.51	37.28	46.00	8.72
	282.200	23.66	13.21	1.72	38.59	46.00	7.41
	341.370	20.35	14.87	1.90	37.12	46.00	8.88
Vertical	80.440	19.04	10.56	0.95	30.55	40.00	9.45
	108.570	**21.97**	**11.21**	**1.08**	**34.26**	**43.50**	**9.24**
	173.560	22.83	10.07	1.35	34.25	43.50	9.25
	238.550	18.81	11.46	1.57	31.84	46.00	14.16
	341.370	16.53	14.87	1.90	33.30	46.00	12.70
	469.410	10.12	17.24	2.21	29.57	46.00	16.43

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LHDN32V87HUS	Humidity :	60%RH
Serial No.	:	E20101220-01-01	Date of Test :	Jan 05, 2011
Test Mode	:	HDMI 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	**87.230**	**23.74**	**10.88**	**0.98**	**35.60**	**40.00**	**4.40**
	152.220	26.78	10.37	1.25	38.40	43.50	5.10
	173.560	27.54	10.07	1.35	38.96	43.50	4.54
	282.200	23.77	13.21	1.72	38.70	46.00	7.30
	343.310	19.12	14.91	1.90	35.93	46.00	10.07
	432.550	14.43	16.72	2.13	33.28	46.00	12.72
Vertical	**87.230**	**24.88**	**10.88**	**0.98**	**36.74**	**40.00**	**3.26**
	108.570	22.13	11.21	1.08	34.42	43.50	9.08
	173.560	23.45	10.07	1.35	34.87	43.50	8.63
	238.550	20.13	11.46	1.57	33.16	46.00	12.84
	347.190	15.10	15.04	1.91	32.05	46.00	13.95
	872.930	6.68	20.37	2.98	30.03	46.00	15.97

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 Rui Feng Electronic Co., Ltd. Hai An Magnetic Material No.2 Factory	See Appendix Figure 21
Ferrite core	ZCAT3035-1330\ROH	FEELUX Rui Feng Electronic Co., Ltd. Hai An Magnetic Material No.2 Factory	See Appendix Figure 22
Gasket	35X0.7X41mm\VGA\ROH	Qingdao Joinset S&T Co., Ltd.	See Appendix Figure 23

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)