

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

LCD TV

Model No.	Serial No.	Brand
LTDN42V87XUS	E2009102804	Hisense
42LC55S240V87	--	Proscan

FCC ID : W9HLCDD0003

Prepared For : Hisense Electric Co., Ltd.
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Report No. : ACI-F09115
Date of Test : Nov 09 - 18, 2009
Date of Report : Nov 19, 2009

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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
LTDN42V87XUS	E2009102804	Hisense	120V/60Hz
42LC55S240V87	--	PROSCAN	

Test Procedure Used:

***FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2008
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 Nov 09 - 18, 2009 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.F09114, a Verification report.

Date of Test : Nov 09 - 18, 2009 Date of Report : Nov 19, 2009

Producer : Kathy Wang
KATHY WANG / Assistant

Review : Dio Yang
DIO YANG / Deputy Assistant Manager

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

Signatory : Samy Chen
Authorized Signature EMCSAMMY 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 2008 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2008 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
LTDN42V87XUS	E2009102804	Hisense
42LC55S240V87	--	Proscan

Note 1 : The above models are all the same except for the different model number and brand.

Note 2 : The LTDN42V87XUS 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 : LG Display
M/N : LC420WUD-SBM1

Tuner : Manufacturer : XuGuang Tech. Co., Ltd.
M/N : DVT-8ADC1/W41F2\ROH

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 View:

- (1) One component of YPbPr#2 Port
Connected with DVD#2
- (2) One component of YPbPr#2 Audio Port
Connected with DVD#2
- (3) One HDMI#2 Port
Connected with DVD#1

- | | | |
|-----|------------------------------|------------------------|
| (4) | One HDMI#3 Port | Connected with DVD#2 |
| (5) | One HDMI#4 Port | Connected with DVD#3 |
| (6) | One COAXIAL Port | Connected with DVD#1 |
| (7) | One Component of AV Out Port | Connected with Speaker |
| (8) | One S-Video Port | Connected with DVD#2 |
| (9) | One Component of AV#2 Port | Connected with DVD#2 |

Side View:

- | | | |
|------|-------------------------------------|------------------------------|
| (10) | One component of YPbPr#1 Port | Connected with DVD#1 |
| (11) | One component of YPbPr#1 Audio Port | Connected with DVD#1 |
| (12) | One RF Port | Connected with TV SG/ATSC SG |
| (13) | One VGA Port | Connected with PC |
| (14) | One VGA Audio Port | Connected with PC |
| (15) | One HDMI#1 Port | Connected with PC |
| (16) | One Component of AV#1 Port | Connected with DVD#1 |
| (17) | One Earphone Port | Connected with Earphone |
| (18) | One Service Port | Do not open to Customer |

2.2 Peripherals

2.2.1 PC

Manufacturer : HP
Model Number : dx7400MT
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#1

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

2.2.10 DVD#2

Manufacturer : PHILIPS
Model Number : DVP3986K/93
Serial Number : KX1A0902120082
Certificate : FCC DoC, CE/EMC, CCC

2.2.11 DVD#3

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

2.2.12 Speaker

Manufacturer : DIBA
Model Number : T520
Serial Number : 10628

2.3 Description of Test Facility

Site Description : Sept. 17, 1998 file on
(Semi-Anechoic Chamber) 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

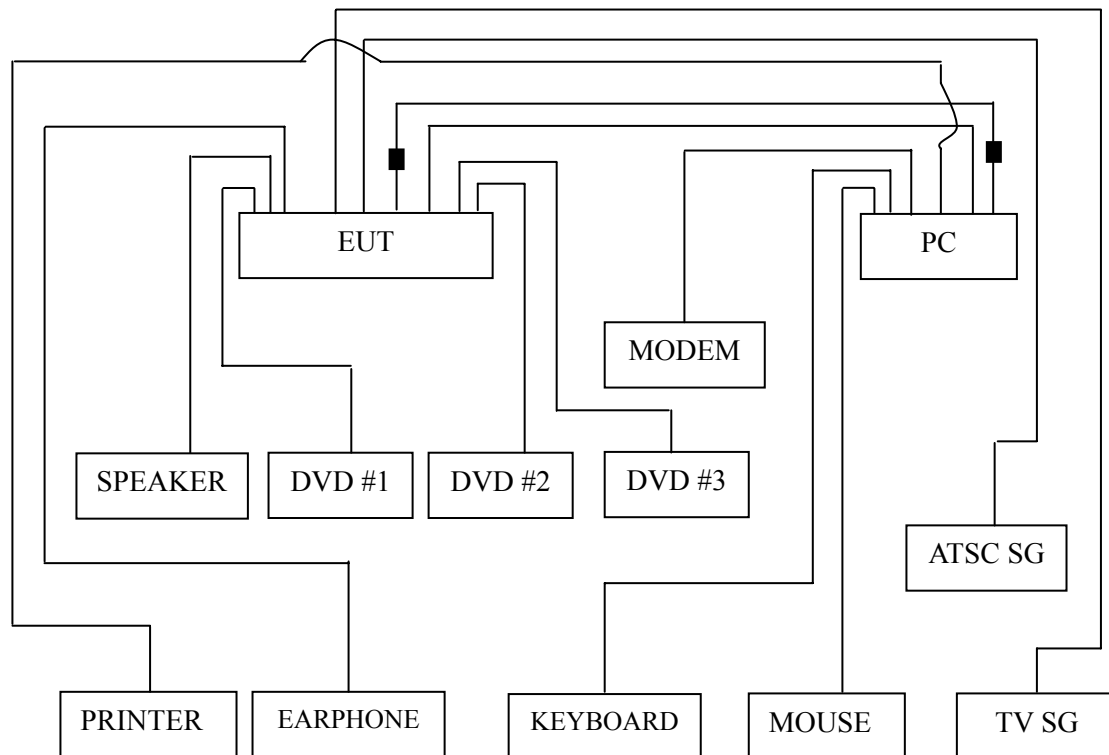
3.1.1 Test Equipment

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

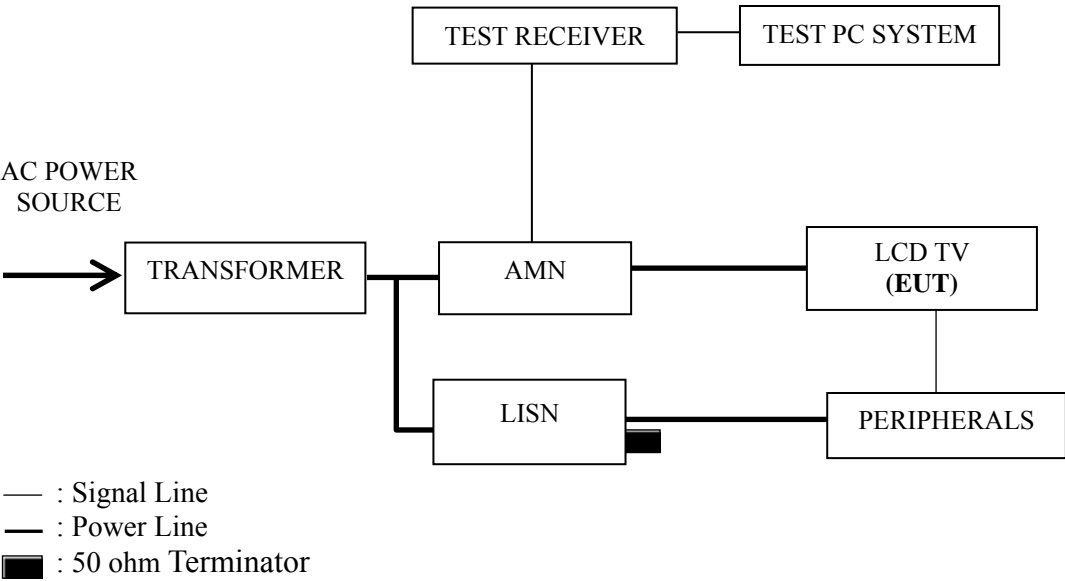
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Nov 21, 2008	Nov 21, 2009
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2009	Apr 02, 2010
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2009	Apr 02, 2010
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 19, 2009	Mar 19, 2010
5.	50 Ω Terminator	Anritsu	BNC	001	Apr 02, 2009	Apr 02, 2010
6.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



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	P13
D-Sub 800*600@60Hz	P14
D-Sub 1024*768@60Hz	P15
HDMI 640*480@60Hz	P16
HDMI 800*600@60Hz	P17
HDMI 1024*768@60Hz	P18

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 10.452 MHz (Average Value) with corrected signal level of 34.26 dB (μV) (limit is 50.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD TV Temperature : 21°C

Model No. : LTDN42V87XUS Humidity : 49%RH

Serial No. : E2009102804 Date of Test : Nov 18, 2009

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	46.99	0.23	47.22	66.00	18.78	QP
	0.186	43.85	0.22	44.07	64.20	20.13	
	0.579	25.24	0.28	25.52	56.00	30.48	
	3.881	27.20	0.42	27.62	56.00	28.38	
	11.807	23.30	0.58	23.88	60.00	36.12	
	18.039	26.78	0.83	27.61	60.00	32.39	
	0.150	31.89	0.23	32.12	56.00	23.88	AV
	0.186	33.21	0.22	33.43	54.20	20.77	
	0.579	17.54	0.28	17.82	46.00	28.18	
	3.881	8.90	0.42	9.32	46.00	36.68	
	11.807	14.02	0.58	14.60	50.00	35.40	
	18.039	12.64	0.83	13.47	50.00	36.53	
Neutral	0.153	46.37	0.20	46.57	65.82	19.25	QP
	0.252	34.97	0.22	35.19	61.69	26.50	
	0.529	26.34	0.26	26.60	56.00	29.40	
	3.399	21.21	0.41	21.62	56.00	34.38	
	9.966	28.00	0.51	28.51	60.00	31.49	
	24.400	18.66	0.75	19.41	60.00	40.59	
	0.153	25.10	0.20	25.30	55.82	30.52	AV
	0.252	19.64	0.22	19.86	51.69	31.83	
	0.529	13.59	0.26	13.85	46.00	32.15	
	3.399	10.79	0.41	11.20	46.00	34.80	
	9.966	15.00	0.51	15.51	50.00	34.49	
	24.400	16.73	0.75	17.48	50.00	32.52	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 21°C

Model No. : LTDN42V87XUS Humidity : 49%RH

Serial No. : E2009102804 Date of Test : Nov 18, 2009

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	0.153	46.73	0.23	46.96	65.82	18.86	QP
	0.247	34.97	0.24	35.21	61.86	26.65	
	0.830	22.61	0.29	22.90	56.00	33.10	
	3.642	22.30	0.42	22.72	56.00	33.28	
	22.535	28.58	0.84	29.42	60.00	30.58	
	24.790	25.43	0.81	26.24	60.00	33.76	
	0.153	25.19	0.23	25.42	55.82	30.40	AV
	0.247	19.10	0.24	19.34	51.86	32.52	
	0.830	16.30	0.29	16.59	46.00	29.41	
	3.642	15.00	0.42	15.42	46.00	30.58	
	22.535	25.00	0.84	25.84	50.00	24.16	
	24.790	24.00	0.81	24.81	50.00	25.19	
Neutral	0.159	44.39	0.20	44.59	65.52	20.93	QP
	0.206	35.28	0.20	35.48	63.36	27.88	
	0.558	24.14	0.26	24.40	56.00	31.60	
	3.140	22.47	0.41	22.88	56.00	33.12	
	10.452	33.13	0.53	33.66	60.00	26.34	
	25.055	38.74	0.73	39.47	60.00	20.53	
	0.159	25.16	0.20	25.36	55.52	30.16	AV
	0.206	12.26	0.20	12.46	53.36	40.90	
	0.558	12.18	0.26	12.44	46.00	33.56	
	3.140	13.52	0.41	13.93	46.00	32.07	
	10.452	13.99	0.53	14.52	50.00	35.48	
	25.055	16.56	0.73	17.29	50.00	32.71	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 21°C

Model No. : LTDN42V87XUS Humidity : 49%RH

Serial No. : E2009102804 Date of Test : Nov 18, 2009

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	0.152	46.60	0.23	46.83	65.87	19.04	QP
	0.253	35.05	0.24	35.29	61.64	26.35	
	0.510	23.27	0.29	23.56	56.00	32.44	
	3.901	24.43	0.42	24.85	56.00	31.15	
	11.021	29.80	0.54	30.34	60.00	29.66	
	24.790	23.99	0.81	24.80	60.00	35.20	
	0.152	25.22	0.23	25.45	55.87	30.42	AV
	0.253	19.29	0.24	19.53	51.64	32.11	
	0.510	14.97	0.29	15.26	46.00	30.74	
	3.901	10.69	0.42	11.11	46.00	34.89	
	11.021	12.52	0.54	13.06	50.00	36.94	
	24.790	15.51	0.81	16.32	50.00	33.68	
Neutral	0.153	46.28	0.20	46.48	65.82	19.34	QP
	0.247	35.39	0.22	35.61	61.86	26.25	
	0.510	25.46	0.26	25.72	56.00	30.28	
	3.399	21.01	0.41	21.42	56.00	34.58	
	9.966	26.10	0.51	26.61	60.00	33.39	
	24.529	36.89	0.75	37.64	60.00	22.36	
	0.153	25.25	0.20	25.45	55.82	30.37	AV
	0.247	14.62	0.22	14.84	51.86	37.02	
	0.510	12.92	0.26	13.18	46.00	32.82	
	3.399	8.13	0.41	8.54	46.00	37.46	
	9.966	13.77	0.51	14.28	50.00	35.72	
	24.529	16.39	0.75	17.14	50.00	32.86	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 21°C

Model No. : LTDN42V87XUS Humidity : 49%RH

Serial No. : E2009102804 Date of Test : Nov 18, 2009

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	0.152	45.62	0.23	45.85	65.87	20.02	QP
	0.249	35.45	0.24	35.69	61.78	26.09	
	0.585	25.28	0.28	25.56	56.00	30.44	
	4.114	24.56	0.42	24.98	56.00	31.02	
	9.966	34.29	0.49	34.78	60.00	25.22	
	21.147	25.40	0.86	26.26	60.00	33.74	
	0.152	24.83	0.23	25.06	55.87	30.81	AV
	0.249	20.37	0.24	20.61	51.78	31.17	
	0.585	19.36	0.28	19.64	46.00	26.36	
	4.114	15.01	0.42	15.43	46.00	30.57	
	9.966	29.01	0.49	29.50	50.00	20.50	
	21.147	19.36	0.86	20.22	50.00	29.78	
Neutral	0.159	44.31	0.20	44.51	65.52	21.01	QP
	0.256	36.18	0.22	36.40	61.56	25.16	
	0.552	24.52	0.26	24.78	56.00	31.22	
	4.202	21.93	0.43	22.36	56.00	33.64	
	9.966	36.97	0.51	37.48	60.00	22.52	
	20.814	31.42	0.83	32.25	60.00	27.75	
	0.159	25.09	0.20	25.29	55.52	30.23	AV
	0.256	18.58	0.22	18.80	51.56	32.76	
	0.552	11.09	0.26	11.35	46.00	34.65	
	4.202	13.39	0.43	13.82	46.00	32.18	
	9.966	33.35	0.51	33.86	50.00	16.14	
	20.814	23.12	0.83	23.95	50.00	26.05	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 21°C

Model No. : LTDN42V87XUS Humidity : 49%RH

Serial No. : E2009102804 Date of Test : Nov 18, 2009

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	35.57	0.24	35.81	61.69	25.88	QP
	0.252	25.78	0.28	26.06	56.00	29.94	
	0.592	24.93	0.28	25.21	56.00	30.79	
	3.642	23.98	0.42	24.40	56.00	31.60	
	10.452	35.86	0.51	36.37	60.00	23.63	
	21.147	24.59	0.86	25.45	60.00	34.55	
	0.150	32.95	0.23	33.18	56.00	22.82	AV
	0.252	19.57	0.24	19.81	51.69	31.88	
	0.592	20.10	0.28	20.38	46.00	25.62	
	3.642	8.43	0.42	8.85	46.00	37.15	
	10.452	32.80	0.51	33.31	50.00	16.69	
	21.147	21.59	0.86	22.45	50.00	27.55	
Neutral	0.150	46.24	0.20	46.44	66.00	19.56	QP
	0.239	36.23	0.22	36.45	62.13	25.68	
	0.505	22.42	0.26	22.68	56.00	33.32	
	3.985	22.05	0.43	22.48	56.00	33.52	
	10.452	35.83	0.53	36.36	60.00	23.64	
	20.814	28.91	0.83	29.74	60.00	30.26	
	0.150	32.89	0.20	33.09	56.00	22.91	AV
	0.239	26.97	0.22	27.19	52.13	24.94	
	0.505	12.32	0.26	12.58	46.00	33.42	
	3.985	9.45	0.43	9.88	46.00	36.12	
	10.452	12.96	0.53	13.49	50.00	36.51	
	20.814	21.91	0.83	22.74	50.00	27.26	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 21°C

Model No. : LTDN42V87XUS Humidity : 49%RH

Serial No. : E2009102804 Date of Test : Nov 18, 2009

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	0.155	45.03	0.23	45.26	65.74	20.48	QP
	0.228	36.93	0.24	37.17	62.52	25.35	
	0.585	25.48	0.28	25.76	56.00	30.24	
	4.070	25.01	0.42	25.43	56.00	30.57	
	10.452	33.39	0.51	33.90	60.00	26.10	
	20.594	25.41	0.88	26.29	60.00	33.71	
	0.155	24.41	0.23	24.64	55.74	31.10	AV
	0.228	21.39	0.24	21.63	52.52	30.89	
	0.585	21.25	0.28	21.53	46.00	24.47	
	4.070	16.58	0.42	17.00	46.00	29.00	
	10.452	32.53	0.51	33.04	50.00	16.96	
	20.594	22.03	0.88	22.91	50.00	27.09	
Neutral	0.150	46.39	0.20	46.59	66.00	19.41	QP
	0.188	43.93	0.20	44.13	64.11	19.98	
	0.466	24.02	0.26	24.28	56.58	32.30	
	4.202	23.25	0.43	23.68	56.00	32.32	
	10.452	35.21	0.53	35.74	60.00	24.26	
	20.162	27.91	0.85	28.76	60.00	31.24	
	0.150	31.60	0.20	31.80	56.00	24.20	AV
	0.188	32.76	0.20	32.96	54.11	21.15	
	0.466	17.53	0.26	17.79	46.58	28.79	
	4.202	13.20	0.43	13.63	46.00	32.37	
	10.452	33.73	0.53	34.26	50.00	15.74	
	20.162	22.15	0.85	23.00	50.00	27.00	

TEST ENGINEER: HUGH HUANG

4 RADIATED EMISSION TEST

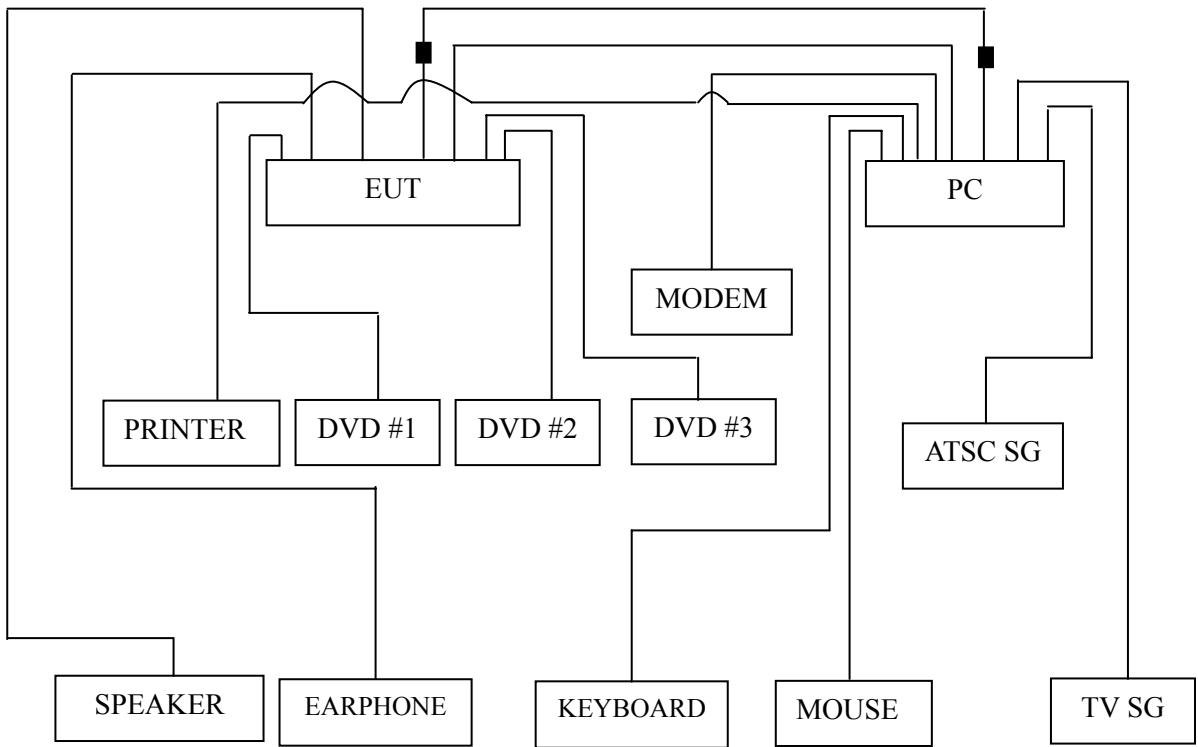
4.1 Test Equipment

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, 2009	Mar 07, 2010
2.	Preamplifier	Agilent	8447D	2944A10548	Sep 19, 2009	Mar 19, 2010
3.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 14, 2008	May 14, 2010
4.	Spectrum	Agilent	E7405A	MY45106600	May 19, 2009	May 19, 2010
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

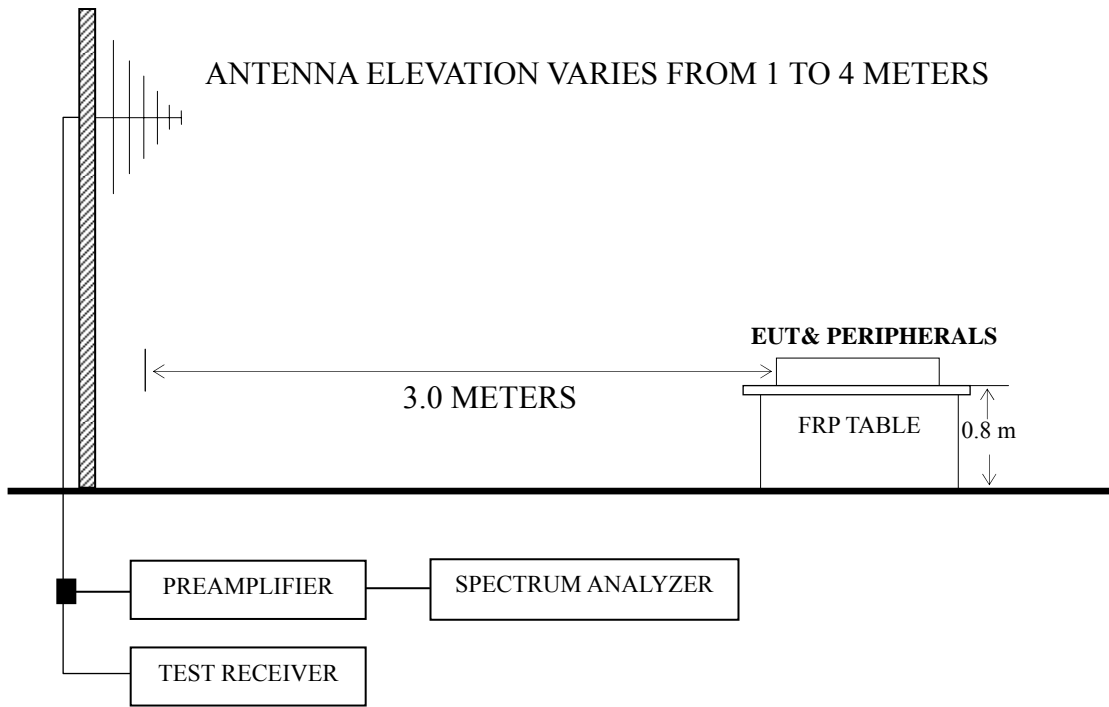
4.2 Block Diagram of Test Setup

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	P22
D-Sub 800*600@60Hz	P23
D-Sub 1024*768@60Hz	P24
HDMI 640*480@60Hz	P25
HDMI 800*600@60Hz	P26
HDMI 1024*768@60Hz	P27

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 898.150 MHz with corrected signal level of 43.03 dB (μV/m) (limit is 46.00dB (μV/m)), when the antenna was 1.60 m height and the turntable was at 160°. The worst emission at vertical polarization was detected at 599.390 MHz with corrected signal level of 41.19dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.60 m height and the turntable was at 330°.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V87XUS Humidity : 60%RH

Serial No. : E2009102804 Date of Test : Nov 09, 2009

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	50.370	18.05	8.85	0.70	27.60	40.00	12.40
	87.230	26.16	8.96	1.00	36.12	40.00	3.88
	152.220	25.08	11.09	1.25	37.42	43.50	6.08
	440.310	20.22	17.09	2.30	39.61	46.00	6.39
	659.530	17.97	19.51	2.86	40.34	46.00	5.66
	879.720	14.67	21.49	3.39	39.55	46.00	6.45
Vertical	32.910	13.42	17.95	0.64	32.01	40.00	7.99
	87.230	23.61	8.96	1.00	33.57	40.00	6.43
	172.590	27.48	10.11	1.38	38.97	43.50	4.53
	440.310	20.01	17.09	2.30	39.40	46.00	6.60
	659.530	17.44	19.51	2.86	39.81	46.00	6.19
	953.440	11.84	22.11	3.53	37.48	46.00	8.52

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V87XUS Humidity : 60%RH

Serial No. : E2009102804 Date of Test : Nov 09, 2009

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	50.370	18.18	8.85	0.70	27.73	40.00	12.27
	94.020	22.76	10.27	1.05	34.08	43.50	9.42
	187.140	24.80	10.17	1.47	36.44	43.50	7.06
	298.690	21.62	13.88	1.88	37.38	46.00	8.62
	599.390	20.69	19.20	2.74	42.63	46.00	3.37
	898.150	17.92	21.67	3.44	43.03	46.00	2.97
Vertical	32.910	13.02	17.95	0.64	31.61	40.00	8.39
	94.020	20.38	10.27	1.05	31.70	43.50	11.80
	187.140	26.64	10.17	1.47	38.28	43.50	5.22
	449.040	18.39	17.20	2.32	37.91	46.00	8.09
	599.390	19.25	19.20	2.74	41.19	46.00	4.81
	972.840	11.87	22.22	3.58	37.67	54.00	16.33

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V87XUS Humidity : 60%RH

Serial No. : E2009102804 Date of Test : Nov 09, 2009

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	50.370	17.85	8.85	0.70	27.40	40.00	12.60
	87.230	26.63	8.96	1.00	36.59	40.00	3.41
	152.220	24.50	11.09	1.25	36.84	43.50	6.66
	371.440	19.63	15.88	2.12	37.63	46.00	8.37
	592.600	20.13	19.11	2.72	41.96	46.00	4.04
	890.390	17.31	21.60	3.42	42.33	46.00	3.67
Vertical	31.940	12.25	18.49	0.64	31.38	40.00	8.62
	87.230	23.66	8.96	1.00	33.62	40.00	6.38
	172.590	27.16	10.11	1.38	38.65	43.50	4.85
	445.160	17.41	17.14	2.31	36.86	46.00	9.14
	592.600	17.70	19.11	2.72	39.53	46.00	6.47
	890.390	13.12	21.60	3.42	38.14	46.00	7.86

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V87XUS Humidity : 60%RH

Serial No. : E2009102804 Date of Test : Nov 09, 2009

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	50.370	15.05	8.85	0.70	24.60	40.00	15.40
	87.230	24.16	8.96	1.00	34.12	40.00	5.88
	152.220	22.08	11.09	1.25	34.42	43.50	9.08
	440.310	19.22	17.09	2.30	38.61	46.00	7.39
	585.810	18.22	19.06	2.70	39.98	46.00	6.02
	879.720	13.67	21.49	3.39	38.55	46.00	7.45
Vertical	32.910	14.42	17.95	0.64	33.01	40.00	6.99
	87.230	21.61	8.96	1.00	31.57	40.00	8.43
	152.220	23.25	11.09	1.25	35.59	43.50	7.91
	440.310	19.01	17.09	2.30	38.40	46.00	7.60
	659.530	15.44	19.51	2.86	37.81	46.00	8.19
	953.440	10.84	22.11	3.53	36.48	46.00	9.52

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V87XUS Humidity : 60%RH

Serial No. : E2009102804 Date of Test : Nov 09, 2009

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	50.370	16.18	8.85	0.70	25.73	40.00	14.27
	94.020	19.76	10.27	1.05	31.08	43.50	12.42
	147.370	24.74	11.51	1.22	37.47	43.50	6.03
	374.350	17.95	15.95	2.13	36.03	46.00	9.97
	599.390	17.69	19.20	2.74	39.63	46.00	6.37
	898.150	14.92	21.67	3.44	40.03	46.00	5.97
Vertical	49.400	19.86	9.16	0.70	29.72	40.00	10.28
	94.020	15.38	10.27	1.05	26.70	43.50	16.80
	187.140	24.64	10.17	1.47	36.28	43.50	7.22
	449.040	14.39	17.20	2.32	33.91	46.00	12.09
	599.390	17.25	19.20	2.74	39.19	46.00	6.81
	972.840	8.87	22.22	3.58	34.67	54.00	19.33

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V87XUS Humidity : 60%RH

Serial No. : E2009102804 Date of Test : Nov 09, 2009

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	50.370	14.85	8.85	0.70	24.40	40.00	15.60
	87.230	22.63	8.96	1.00	32.59	40.00	7.41
	152.220	23.50	11.09	1.25	35.84	43.50	7.66
	371.440	19.63	15.88	2.12	37.63	46.00	8.37
	592.600	16.13	19.11	2.72	37.96	46.00	8.04
	890.390	13.31	21.60	3.42	38.33	46.00	7.67
Vertical	31.940	12.25	18.49	0.64	31.38	40.00	8.62
	87.230	21.66	8.96	1.00	31.62	40.00	8.38
	172.590	25.16	10.11	1.38	36.65	43.50	6.85
	445.160	13.41	17.14	2.31	32.86	46.00	13.14
	592.600	15.70	19.11	2.72	37.53	46.00	8.47
	890.390	10.12	21.60	3.42	35.14	46.00	10.86

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	Specification	Manufacturer	Location
Ferrite Core	ZCAT3035-1130 \ROH	--	FEELUX	See Internal Photo Figure 21
			REALFINE	
			Haian County Magnetic Material No. 2 Factory	
			LETTALL	
Ferrite Core	ZCAT2132-1330 \ROH	--	FEELUX	See Internal Photo Figure 22
			REALFINE	
			Haian County Magnetic Material No. 2 Factory	
			LETTALL	
Ferrite Core	BNF-12\ZCAT15 19-0830\ROH	--	FEELUX	See Internal Photo Figure 22, 23
			REALFINE	
			Haian County Magnetic Material No. 2 Factory	
			LETTALL	
Aluminum foil	50*100	--	FEELUX	See Internal Photo Figure 24

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)