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

LCD TV

Model No.	Serial No.	Brand
LTDN42W58US	E2009121407	Hisense
ELDHW421	--	ELEMENT

FCC ID : W9HLCDD0001

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-F09139
Date of Test : Dec 21-28, 2009
Date of Report : Dec 31, 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
LTDN42W58US	E2009121407	Hisense	120V/60Hz
ELDHW421	--	ELEMENT	

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 Dec 24-25, 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.F09138, a Verification report.

Date of Test : Dec 21-28, 2009 Date of Report : Dec 31, 2009

Producer : Zeno Gu
ZENO GU / 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/ 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
LTDN42W58US	E2009121407	Hisense
ELDHW421	--	ELEMENT

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

Note 2 : The LTDN42W58US 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 OPTOELECTRONICS
M/N : V420H1-L15

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:
Side View:
(1) One ANT Port
Connected with TV SG / ATSC SG
(2) One Optical Port
Connected with DVD #2
(3) One Headphone Port
Connected with Earphone

(4) One S-Video Port
Connected with TV SG

(5) One component of AV1 Port
Connected with DVD #1

(6) One HDMI1 Port
Connected with DVD #1

(7) One Service Port
Do not open to Customer

Back View:

(8) One VGA Port
Connected with PC

(9) One VGA Audio In Port
Connected with PC

(10) One HDMI#2 Port
Connected with DVD#2

(11) One HDMI#3 Port
Connected with PC

(12) One component of Audio out Port
Connected with speaker

(13) One service Port
Do not open to Customer

(14) One component of AV2 Port
Connected with DVD#3

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

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

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 (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

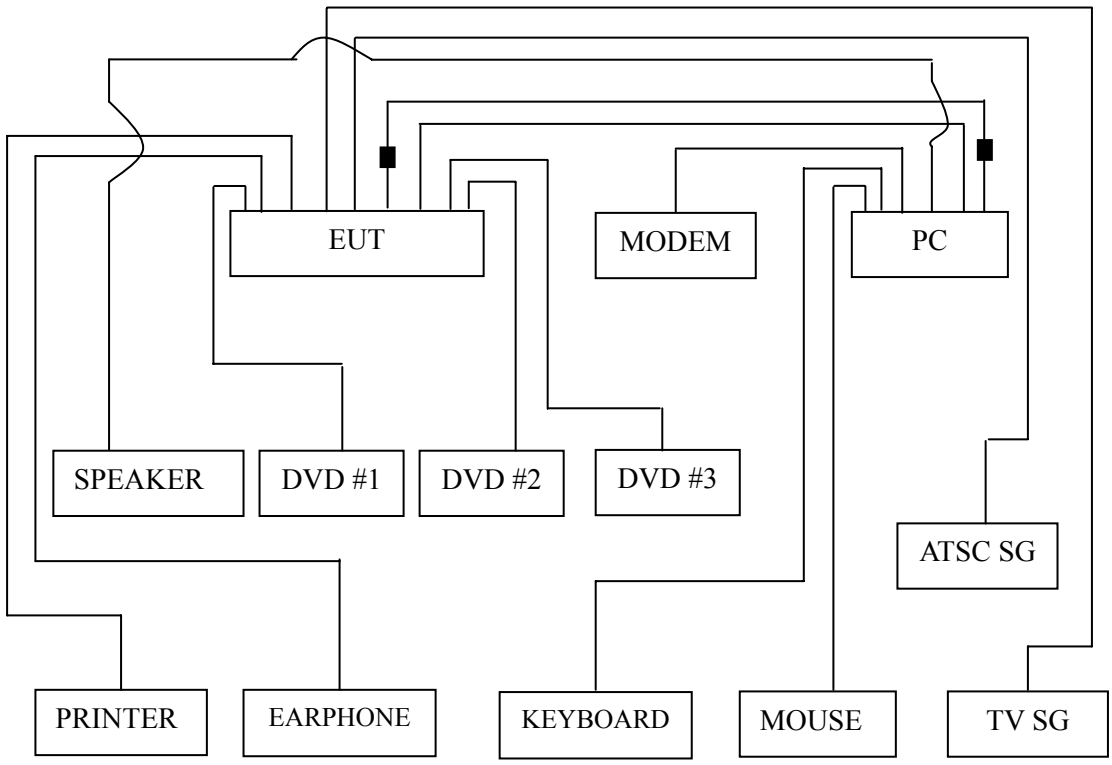
3.1.1 Test Equipment

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, 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.	50Ω Terminator	Anritsu	BNC	001	Apr 02, 2009	Apr 02, 2010
6.	Software	Audix	E3	SET00200 9804M592	--	--

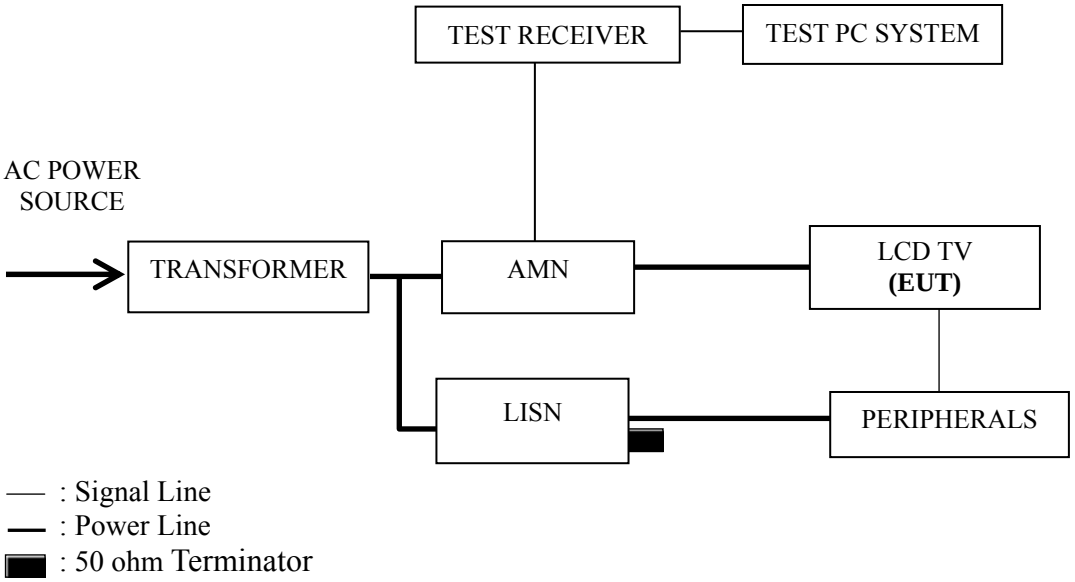
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



▮ : 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	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 640*480@60Hz test mode. The worst emission is detected at 25.321 MHz (Quasi-Peak Value) with corrected signal level of 47.90 dB (μV) (limit is 50.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LTDN42W58US	Humidity	:	48%RH
Serial No.	:	E2009121407	Date of Test	:	Dec 21, 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	0.194	43.62	0.22	43.84	63.84	20.00	QP
	0.408	26.40	0.28	26.68	57.68	31.00	
	3.547	36.20	0.42	36.62	56.00	19.38	
	5.005	41.13	0.44	41.57	60.00	18.43	
	18.232	44.59	0.84	45.43	60.00	14.57	
	29.371	46.55	0.90	47.45	60.00	12.55	
	0.194	32.60	0.22	32.82	53.84	21.02	AV
	0.408	19.19	0.28	19.47	47.68	28.21	
	3.547	30.16	0.42	30.58	46.00	15.42	
	5.005	39.03	0.44	39.47	50.00	10.53	
	18.232	39.15	0.84	39.99	50.00	10.01	
	29.371	40.24	0.90	41.14	50.00	8.86	
Neutral	0.194	42.43	0.20	42.63	63.84	21.21	QP
	0.406	30.46	0.25	30.71	57.73	27.02	
	0.830	29.34	0.29	29.63	56.00	26.37	
	4.832	45.45	0.45	45.90	56.00	10.10	
	19.010	54.68	0.83	55.51	60.00	4.49	
	26.470	52.31	0.76	53.07	60.00	6.93	
	0.194	34.79	0.20	34.99	53.84	18.85	AV
	0.406	18.00	0.25	18.25	47.73	29.48	
	0.830	19.70	0.29	19.99	46.00	26.01	
	4.832	36.01	0.45	36.46	46.00	9.54	
	19.010	47.02	0.83	47.85	50.00	2.15	
	26.470	**47.12**	**0.76**	**47.88**	**50.00**	**2.12**	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LTDN42W58US	Humidity :	48%RH	
Serial No.	:	E2009121407	Date of Test :	Dec 21, 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	0.194	42.36	0.22	42.58	63.84	21.26	QP
	0.408	25.62	0.28	25.90	57.68	31.78	
	3.123	33.50	0.40	33.90	56.00	22.10	
	4.822	43.64	0.44	44.08	56.00	11.92	
	18.622	43.40	0.85	44.25	60.00	15.75	
	27.708	43.36	0.86	44.22	60.00	15.78	
	0.194	30.89	0.22	31.11	53.84	22.73	AV
	0.408	14.99	0.28	15.27	47.68	32.41	
	3.123	22.43	0.40	22.83	46.00	23.17	
	4.822	30.35	0.44	30.79	46.00	15.21	
	18.622	35.93	0.85	36.78	50.00	13.22	
	27.708	38.40	0.86	39.26	50.00	10.74	
Neutral	0.194	42.31	0.20	42.51	63.84	21.33	QP
	0.408	28.83	0.25	29.08	57.68	28.60	
	0.822	28.54	0.29	28.83	56.00	27.17	
	4.822	43.34	0.45	43.79	56.00	12.21	
	18.820	54.49	0.83	55.32	60.00	4.68	
	27.127	49.24	0.77	50.01	60.00	9.99	
	0.194	32.05	0.20	32.25	53.84	21.59	AV
	0.408	19.29	0.25	19.54	47.68	28.14	
	0.822	18.79	0.29	19.08	46.00	26.92	
	4.822	31.33	0.45	31.78	46.00	14.22	
	18.820	**45.94**	**0.83**	**46.77**	**50.00**	**3.23**	
	27.127	44.09	0.77	44.86	50.00	5.14	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LTDN42W58US	Humidity :	48%RH	
Serial No.	:	E2009121407	Date of Test :	Dec 21, 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	0.194	42.38	0.22	42.60	63.84	21.24	QP
	0.413	25.65	0.28	25.93	57.59	31.66	
	3.140	34.95	0.41	35.36	56.00	20.64	
	4.822	42.07	0.44	42.51	56.00	13.49	
	18.622	43.11	0.85	43.96	60.00	16.04	
	29.061	43.93	0.89	44.82	60.00	15.18	
	0.194	31.94	0.22	32.16	53.84	21.68	AV
	0.413	16.08	0.28	16.36	47.59	31.23	
	3.140	22.84	0.41	23.25	46.00	22.75	
	4.822	29.89	0.44	30.33	46.00	15.67	
	18.622	36.21	0.85	37.06	50.00	12.94	
	29.061	38.74	0.89	39.63	50.00	10.37	
Neutral	0.194	42.21	0.20	42.41	63.84	21.43	QP
	0.406	28.64	0.25	28.89	57.73	28.84	
	0.813	27.95	0.29	28.24	56.00	27.76	
	4.822	42.72	0.45	43.17	56.00	12.83	
	18.820	54.14	0.83	54.97	60.00	5.03	
	25.591	48.91	0.74	49.65	60.00	10.35	
	0.194	34.61	0.20	34.81	53.84	19.03	AV
	0.406	17.61	0.25	17.86	47.73	29.87	
	0.813	16.30	0.29	16.59	46.00	29.41	
	4.822	30.02	0.45	30.47	46.00	15.53	
	18.820	**46.39**	**0.83**	**47.22**	**50.00**	**2.78**	
	25.591	43.82	0.74	44.56	50.00	5.44	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LTDN42W58US	Humidity :	48%RH	
Serial No.	:	E2009121407	Date of Test :	Dec 21, 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	0.194	42.17	0.22	42.39	63.84	21.45	QP
	0.406	25.26	0.28	25.54	57.73	32.19	
	0.822	23.67	0.29	23.96	56.00	32.04	
	4.822	41.75	0.44	42.19	56.00	13.81	
	18.820	41.61	0.86	42.47	60.00	17.53	
	28.302	43.59	0.88	44.47	60.00	15.53	
	0.194	28.95	0.22	29.17	53.84	24.67	AV
	0.406	17.21	0.28	17.49	47.73	30.24	
	0.822	17.60	0.29	17.89	46.00	28.11	
	4.822	30.35	0.44	30.79	46.00	15.21	
	18.820	34.69	0.86	35.55	50.00	14.45	
	28.302	38.58	0.88	39.46	50.00	10.54	
Neutral	0.194	42.07	0.20	42.27	63.84	21.57	QP
	0.406	29.00	0.25	29.25	57.73	28.48	
	0.822	28.57	0.29	28.86	56.00	27.14	
	4.822	43.36	0.45	43.81	56.00	12.19	
	19.326	54.30	0.84	55.14	60.00	4.86	
	25.321	52.77	0.73	53.50	60.00	6.50	
	0.194	33.18	0.20	33.38	53.84	20.46	AV
	0.406	19.02	0.25	19.27	47.73	28.46	
	0.822	22.72	0.29	23.01	46.00	22.99	
	4.822	37.37	0.45	37.82	46.00	8.18	
	19.326	47.04	0.84	47.88	50.00	2.12	
	25.321	**47.17**	**0.73**	**47.90**	**50.00**	**2.10**	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LTDN42W58US	Humidity :	48%RH	
Serial No.	:	E2009121407	Date of Test :	Dec 21, 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	0.194	42.40	0.22	42.62	63.84	21.22	QP
	0.408	25.88	0.28	26.16	57.68	31.52	
	2.309	31.10	0.37	31.47	56.00	24.53	
	4.822	42.26	0.44	42.70	56.00	13.30	
	18.820	43.88	0.86	44.74	60.00	15.26	
	29.061	44.07	0.89	44.96	60.00	15.04	
	0.194	33.36	0.22	33.58	53.84	20.26	AV
	0.408	16.81	0.28	17.09	47.68	30.59	
	2.309	21.30	0.37	21.67	46.00	24.33	
	4.822	30.91	0.44	31.35	46.00	14.65	
	18.820	35.69	0.86	36.55	50.00	13.45	
	29.061	40.04	0.89	40.93	50.00	9.07	
Neutral	0.194	42.10	0.20	42.30	63.84	21.54	QP
	0.402	27.82	0.25	28.07	57.81	29.74	
	1.054	26.31	0.30	26.61	56.00	29.39	
	4.407	41.94	0.45	42.39	56.00	13.61	
	19.021	53.72	0.83	54.55	60.00	5.45	
	26.558	49.70	0.76	50.46	60.00	9.54	
	0.194	31.80	0.20	32.00	53.84	21.84	AV
	0.402	17.13	0.25	17.38	47.81	30.43	
	1.054	19.78	0.30	20.08	46.00	25.92	
	4.407	28.33	0.45	28.78	46.00	17.22	
	19.021	**45.61**	**0.83**	**46.44**	**50.00**	**3.56**	
	26.558	44.80	0.76	45.56	50.00	4.44	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD TV	Temperature	:	22℃
Model No.	:	LTDN42W58US	Humidity	:	48%RH
Serial No.	:	E2009121407	Date of Test	:	Dec 21, 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	0.194	42.29	0.22	42.51	63.84	21.33	QP
	0.406	25.46	0.28	25.74	57.73	31.99	
	1.464	24.94	0.34	25.28	56.00	30.72	
	4.822	42.19	0.44	42.63	56.00	13.37	
	18.622	43.91	0.85	44.76	60.00	15.24	
	29.061	43.96	0.89	44.85	60.00	15.15	
	0.194	29.01	0.22	29.23	53.84	24.61	AV
	0.406	17.07	0.28	17.35	47.73	30.38	
	1.464	15.85	0.34	16.19	46.00	29.81	
	4.822	31.49	0.44	31.93	46.00	14.07	
	18.622	34.45	0.85	35.30	50.00	14.70	
	29.061	39.64	0.89	40.53	50.00	9.47	
Neutral	0.194	42.13	0.20	42.33	63.84	21.51	QP
	0.413	29.01	0.25	29.26	57.59	28.33	
	0.822	28.70	0.29	28.99	56.00	27.01	
	4.407	42.60	0.45	43.05	56.00	12.95	
	18.820	54.06	0.83	54.89	60.00	5.11	
	26.139	49.64	0.75	50.39	60.00	9.61	
	0.194	32.61	0.20	32.81	53.84	21.03	AV
	0.413	18.41	0.25	18.66	47.59	28.93	
	0.822	18.40	0.29	18.69	46.00	27.31	
	4.407	29.51	0.45	29.96	46.00	16.04	
	18.820	**45.29**	**0.83**	**46.12**	**50.00**	**3.88**	
	26.139	44.34	0.75	45.09	50.00	4.91	

TEST ENGINEER: HUGH HUANG

4 RADIATED EMISSION TEST

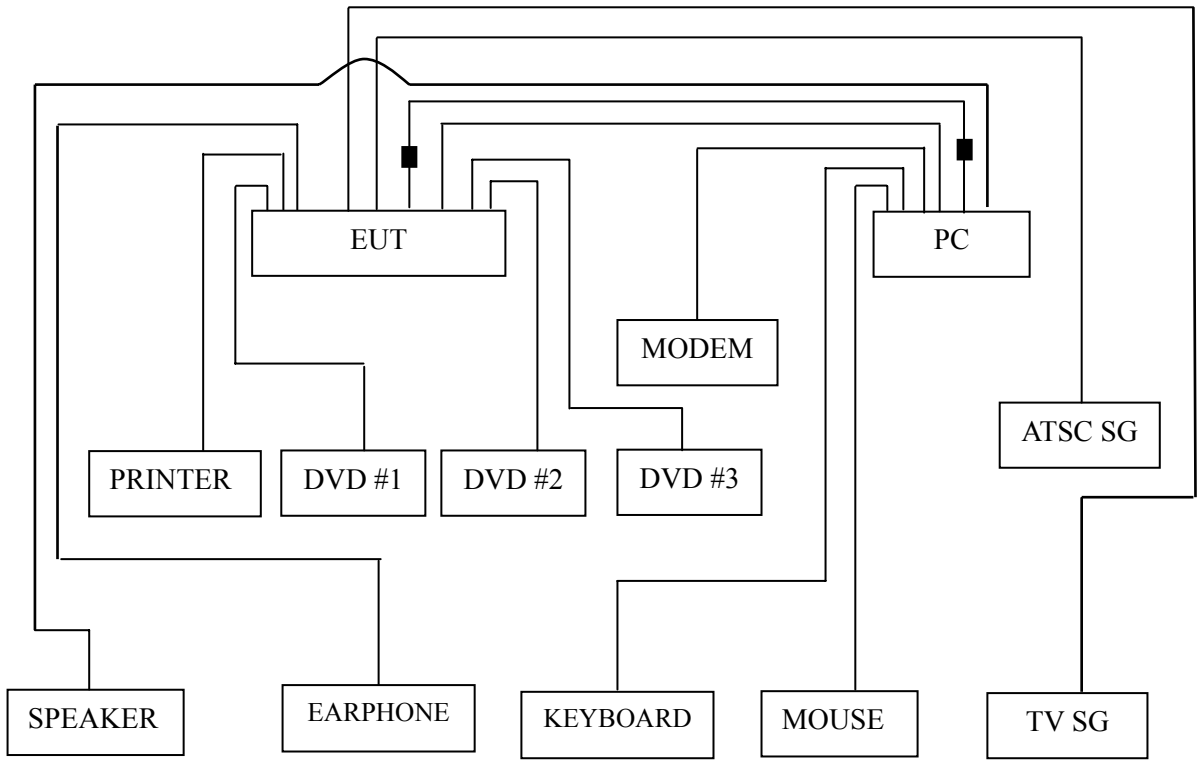
4.1 Test Equipment

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 Analyzer	Agilent	E7405A	MY45106600	May 19, 2009	May 19, 2010
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

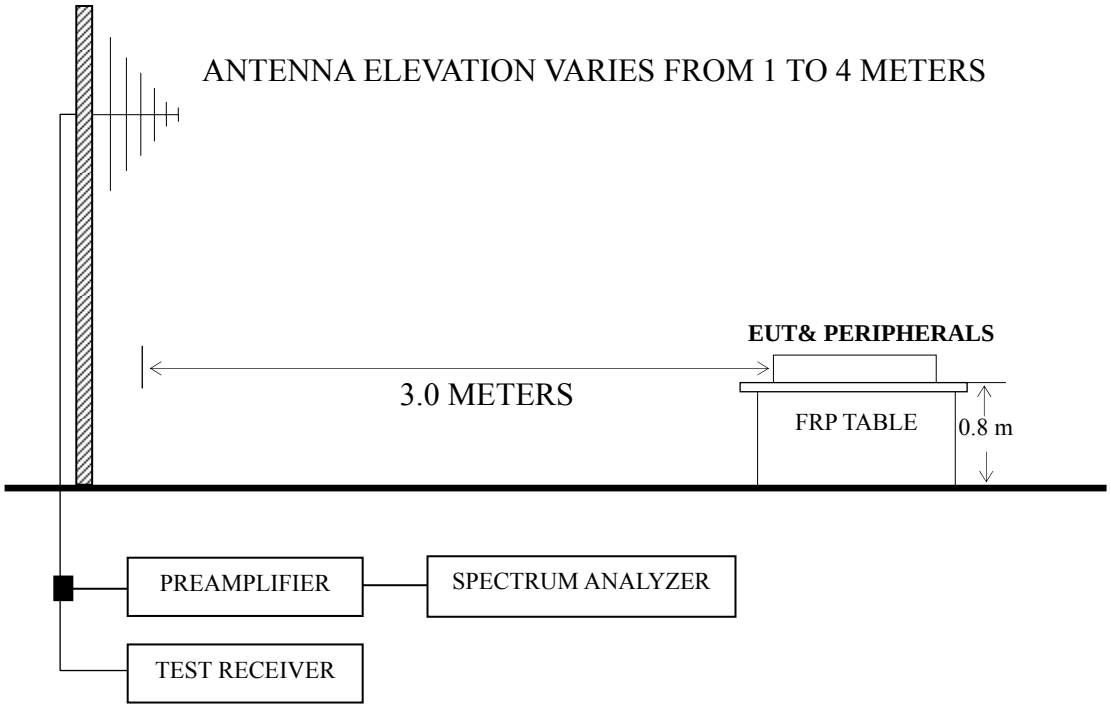
4.2 Block Diagram of Test Setup

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	
		(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	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 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 609.090 MHz with corrected signal level of 38.22dB (μV/m) (limit is 46.00dB (μV/m)), when the antenna was 1.30 m height and the turntable was at 140°. The worst emission at vertical polarization was detected at 106.630 MHz with corrected signal level of 41.30 dB (μV/m) (limit is 43.50 dB (μV/m)), when the antenna was 1.30 m height and the turntable was at 310°.

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LTDN42W58US	Humidity :	60%RH
Serial No.	:	E2009121407	Date of Test :	Dec 28, 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	116.330	19.49	12.78	1.16	33.43	43.50	10.07
	174.530	**25.23**	**10.07**	**1.36**	**36.66**	**43.50**	**6.84**
	218.180	22.17	11.52	1.50	35.19	46.00	10.81
	295.780	19.54	13.84	1.76	35.14	46.00	10.86
	512.090	15.67	18.06	2.30	36.03	46.00	9.97
	609.090	14.56	19.25	2.48	36.29	46.00	9.71
Vertical	**106.630**	**27.27**	**12.02**	**1.08**	**40.37**	**43.50**	**3.13**
	116.330	25.99	12.78	1.16	39.93	43.50	3.57
	153.190	23.86	11.04	1.24	36.14	43.50	7.36
	174.530	24.62	10.07	1.36	36.05	43.50	7.45
	218.180	20.70	11.52	1.50	33.72	46.00	12.28
	523.730	17.07	18.21	2.32	37.60	46.00	8.40

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LTDN42W58US	Humidity :	60%RH
Serial No.	:	E2009121407	Date of Test :	Dec 28, 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	116.330	16.96	12.78	1.16	30.90	43.50	12.60
	174.530	23.11	10.07	1.36	34.54	43.50	8.96
	218.180	22.03	11.52	1.50	35.05	46.00	10.95
	298.690	20.01	13.88	1.76	35.65	46.00	10.35
	609.090	**17.11**	**19.25**	**2.48**	**38.84**	**46.00**	**7.16**
	809.880	12.91	20.80	2.87	36.58	46.00	9.42
Vertical	48.430	21.47	9.62	0.75	31.84	40.00	8.16
	106.630	27.10	12.02	1.08	40.20	43.50	3.30
	114.390	**26.76**	**12.64**	**1.08**	**40.48**	**43.50**	**3.02**
	174.530	24.80	10.07	1.36	36.23	43.50	7.27
	218.180	20.58	11.52	1.50	33.60	46.00	12.40
	523.730	17.79	18.21	2.32	38.32	46.00	7.68

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LTDN42W58US	Humidity :	60%RH
Serial No.	:	E2009121407	Date of Test :	Dec 28, 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	153.190	21.36	11.04	1.24	33.64	43.50	9.86
	174.530	22.83	10.07	1.36	34.26	43.50	9.24
	218.180	22.81	11.52	1.50	35.83	46.00	10.17
	298.690	19.33	13.88	1.76	34.97	46.00	11.03
	523.730	12.99	18.21	2.32	33.52	46.00	12.48
	609.090	**16.49**	**19.25**	**2.48**	**38.22**	**46.00**	**7.78**
Vertical	48.430	20.97	9.62	0.75	31.34	40.00	8.66
	106.630	**28.20**	**12.02**	**1.08**	**41.30**	**43.50**	**2.20**
	116.330	26.50	12.78	1.16	40.44	43.50	3.06
	174.530	24.34	10.07	1.36	35.77	43.50	7.73
	218.180	21.08	11.52	1.50	34.10	46.00	11.90
	523.730	15.99	18.21	2.32	36.52	46.00	9.48

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LTDN42W58US	Humidity :	60%RH
Serial No.	:	E2009121407	Date of Test :	Dec 28, 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	116.330	16.61	12.78	1.16	30.55	43.50	12.95
	153.190	20.57	11.04	1.24	32.85	43.50	10.65
	174.530	22.17	10.07	1.36	33.60	43.50	9.90
	218.180	22.65	11.52	1.50	35.67	46.00	10.33
	290.930	**20.78**	**13.75**	**1.72**	**36.25**	**46.00**	**9.75**
	523.730	13.48	18.21	2.32	34.01	46.00	11.99
Vertical	**106.630**	**25.47**	**12.02**	**1.08**	**38.57**	**43.50**	**4.93**
	114.390	24.08	12.64	1.08	37.80	43.50	5.70
	153.190	21.07	11.04	1.24	33.35	43.50	10.15
	218.180	18.29	11.52	1.50	31.31	46.00	14.69
	439.340	9.57	17.06	2.12	28.75	46.00	17.25
	523.730	14.19	18.21	2.32	34.72	46.00	11.28

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LTDN42W58US	Humidity :	60%RH
Serial No.	:	E2009121407	Date of Test :	Dec 28, 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	**174.530**	**23.14**	**10.07**	**1.36**	**34.57**	**43.50**	**8.93**
	218.180	22.90	11.52	1.50	35.92	46.00	10.08
	295.780	20.00	13.84	1.76	35.60	46.00	10.40
	523.730	12.60	18.21	2.32	33.13	46.00	12.87
	599.390	10.60	19.20	2.46	32.26	46.00	13.74
	809.880	12.80	20.80	2.87	36.47	46.00	9.53
Vertical	106.630	26.75	12.02	1.08	39.85	43.50	3.65
	114.390	**26.81**	**12.64**	**1.08**	**40.53**	**43.50**	**2.97**
	153.190	22.11	11.04	1.24	34.39	43.50	9.11
	174.530	24.15	10.07	1.36	35.58	43.50	7.92
	523.730	17.61	18.21	2.32	38.14	46.00	7.86
	904.940	12.17	21.73	3.05	36.95	46.00	9.05

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LTDN42W58US	Humidity :	60%RH
Serial No.	:	E2009121407	Date of Test :	Dec 28, 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	118.270	13.94	12.91	1.13	27.98	43.50	15.52
	153.190	19.13	11.04	1.24	31.41	43.50	12.09
	167.740	20.51	10.27	1.31	32.09	43.50	11.41
	203.630	**22.33**	**10.85**	**1.47**	**34.65**	**43.50**	**8.85**
	288.990	19.29	13.71	1.71	34.71	46.00	11.29
	523.730	13.08	18.21	2.32	33.61	46.00	12.39
Vertical	**87.230**	**22.12**	**8.96**	**0.99**	**32.07**	**40.00**	**7.93**
	104.690	22.50	11.88	1.07	35.45	43.50	8.05
	153.190	21.99	11.04	1.24	34.27	43.50	9.23
	174.530	23.56	10.07	1.36	34.99	43.50	8.51
	218.180	20.40	11.52	1.50	33.42	46.00	12.58
	523.730	17.12	18.21	2.32	37.65	46.00	8.35

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 (mm)	Manufacturer	Location
Ferrite core	ZCAT2132-1130\ROH	21*32*11	FEELUX CO.,LTD	See Internal Photo Figure 21, 23
Ferrite core	ZCAT3035-1330\ROH	30*35*13	FEELUX CO.,LTD	See Internal Photo Figure 22
Aluminum foil	DBA40X100\ROH	40*100	QDJOINSET S&T CO., LTD	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

(RAVEN JIN)