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

LCD TV

Model No.	Serial No.	Brand
LEDN19K15US	E1105328-01/01	Hisense
H19K15E	--	

FCC ID : W9HLCDX0005

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-F11069
Date of Test : May 04 – 19, 2011
Date of Report : May 26, 2011

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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
LEDN19K15US	E1105328-01/01	Hisense	120V/60Hz
H19K15E	--		

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2010 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 04 – 19, 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.F11068, a Verification report.

Date of Test : May 04 – 19, 2011 Date of Report : May 26, 2011

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 : Byron Kwo
Authorized Signature EMC BYRON KWO / 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 2010 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2010 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.	LEDN19K15US	H19K15E
Serial No.	E1105328-01/01	--
Brand	Hisense	

Note : The above two models are all the same except for the model name. The LEDN19K15US was tested and recorded in the report.

AC Adaptor : Manufacturer : HGPOWER
Model Number: ADPV16
Input : AC~100-240V 50W 50/60Hz
Output : DC ⎓ 12V 3.0A

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 : V185B1-LE1

Max Resolution : 1024*768@60Hz

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

HDMI Cable : Shielded, Detachable, 1.00m,

Power Cord : Unshielded, Detachable, 1.80m

Remark:

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

Back Port:

(1) One component of YPbPr Port
: Connected with DVD

(2) One component of YPbPr Audio Port
: Connected with DVD

(3) One HDMI Port
: Connected with DVD

(4) One component of AV Port
: Connected with DVD

(5) One VGA Port
: Connected with PC

(6) One PC AUDIO Port
: Connected with PC

(7) One DIGITAL AUDIO OUT Port
: Connected with DVD

(8) One DC Port
: Connected with Adaptor

Side Port

(9) One ANT Port
: Connected with ATSC SG / TV SG

(10) One Audio Out port
: Do not open to Speaker

(11) One Earphone Port
: Connected with Earphone

(12) One USB Port
: Do not open to the customer

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx7200MT
Serial Number	:	CNG622017W
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, undetachable, 1.8m.
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

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

2.2.10 Speaker

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

2.3 Description of Test Facility

Site Description (No.3 3m Chamber)	:	Sept. 17, 1998 file on Apr 29, 2009 Renewed Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3F 34Bldg 680 Guiping Rd, Caohejing Hi-Tech Park, Shanghai 200233, China
NVLAP Lab Code	:	200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty: U = 3.38dB

Radiated Emission Expanded Uncertainty (30-200MHz):

U = 4.58 dB (horizontal)

U = 4.70 dB (vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):

U = 4.84 dB (horizontal)

U = 4.70 dB (vertical)

3 CONDUCTED EMISSION TEST

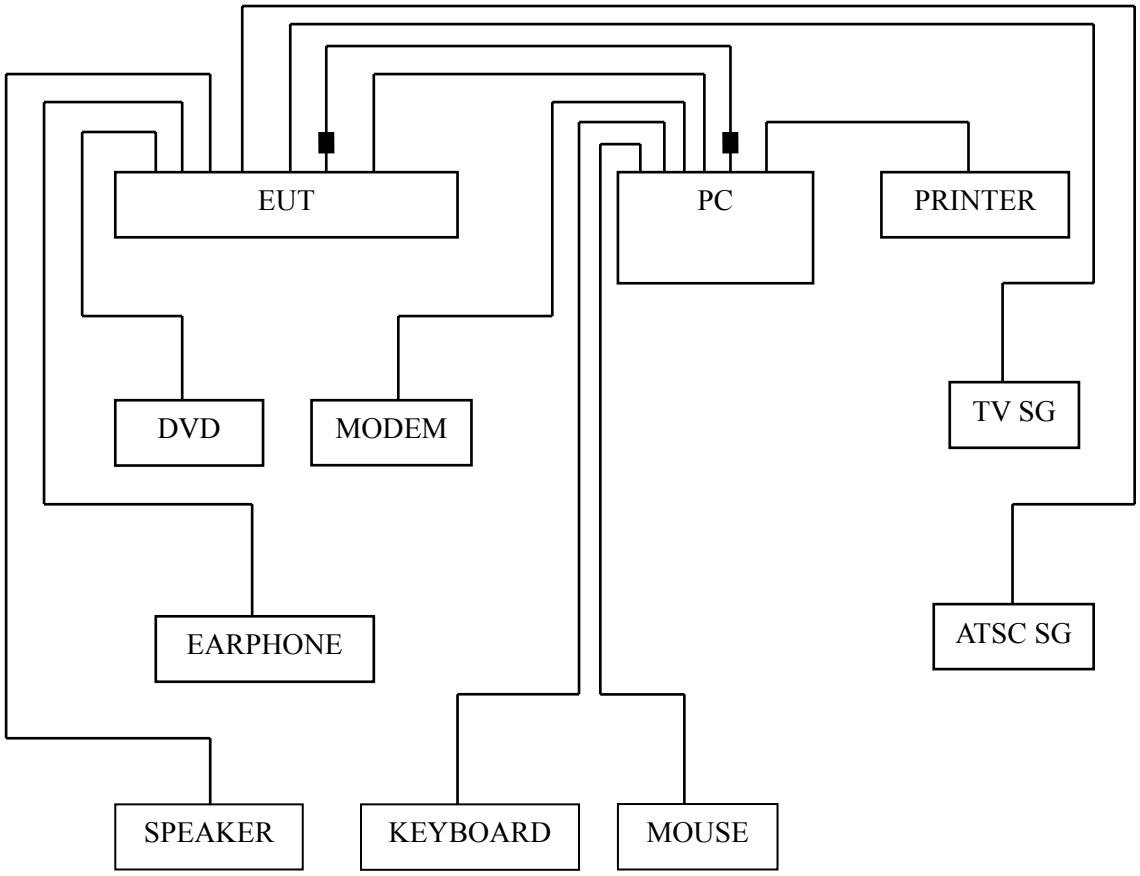
3.1 Test Equipment

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	Mar 22, 2011	Mar 22, 2012
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Mar 22, 2011	Mar 22, 2012
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2011	Mar 22, 2012
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2011	Sep 18, 2011
5.	50Ω Terminator	Anritsu	BNC	001	Mar 22, 2011	Mar 22, 2012
6.	Software	Audix	E3	SET00200 9804M592	--	--

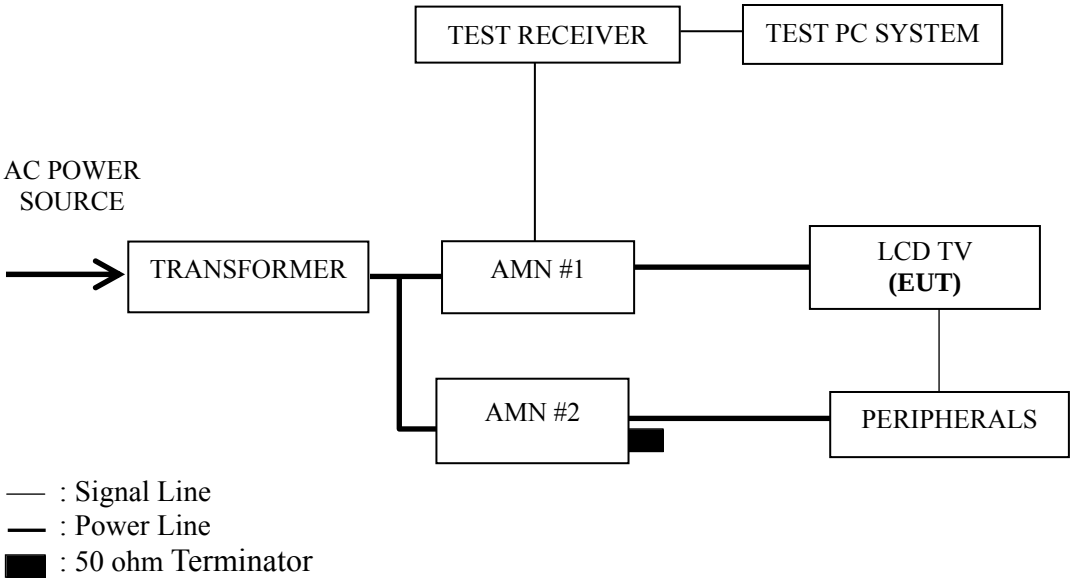
3.2 Block Diagram of Test Setup

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 (we use white letters on a black background to represent all colors), the EUT's screen displayed and filled with "H" pattern by its resolution (Via D-Sub/HDMI Input).

3.5.5 Repeat above procedure 3.5.4 for difference test mode.

3.5.6 The other peripherals devices were driven and operated during the test.

3.5.7 The test modes are as follows:

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

3.6 Test Procedures

The EUT and peripherals were connected to the power mains through an Artificial Mains Network (AMN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (Line & Neutral) were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to ANSI C63.4:2003 during conducted emission test.

The bandwidth of R&S Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< PASS >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

Test Mode	Data Page
D-Sub 640*480@60Hz	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 D-Sub 640*480@60Hz test mode. The worst emission is detected at 0.194 MHz (Average value) with corrected signal level of 44.99 dB (μV) (limit is 53.84 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LEDN19K15US	Humidity	:	48%RH
Serial No.	:	E1105328-01/01	Date of Test	:	May 04, 2011
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	51.10	0.23	51.33	63.84	12.51	QP
	0.259	43.39	0.23	43.62	61.47	17.85	
	0.516	32.94	0.31	33.25	56.00	22.75	
	1.552	26.90	0.42	27.32	56.00	28.68	
	7.025	32.62	0.67	33.29	60.00	26.71	
	21.830	32.71	1.04	33.75	60.00	26.25	
	0.194	44.10	0.23	44.33	53.84	9.51	AV
	0.259	38.10	0.23	38.33	51.47	13.14	
	0.516	27.50	0.31	27.81	46.00	18.19	
	1.552	22.00	0.42	22.42	46.00	23.58	
	7.025	27.30	0.67	27.97	50.00	22.03	
	21.830	27.30	1.04	28.34	50.00	21.66	
Neutral	0.194	51.95	0.19	52.14	63.84	11.70	QP
	0.259	44.45	0.18	44.63	61.47	16.84	
	0.647	33.36	0.28	33.64	56.00	22.36	
	1.552	29.30	0.52	29.82	56.00	26.18	
	7.175	31.74	0.98	32.72	60.00	27.28	
	21.830	33.25	1.22	34.47	60.00	25.53	
	0.194	**44.80**	**0.19**	**44.99**	**53.84**	**8.85**	AV
	0.259	37.51	0.18	37.69	51.47	13.78	
	0.647	28.19	0.28	28.47	46.00	17.53	
	1.552	24.20	0.52	24.72	46.00	21.28	
	7.175	26.20	0.98	27.18	50.00	22.82	
	21.830	28.10	1.22	29.32	50.00	20.68	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LEDN19K15US	Humidity :	48%RH	
Serial No.	:	E1105328-01/01	Date of Test :	May 04, 2011	
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	50.43	0.23	50.66	63.84	13.18	QP
	0.259	42.73	0.23	42.96	61.47	18.51	
	0.516	32.38	0.31	32.69	56.00	23.31	
	1.160	25.86	0.37	26.23	56.00	29.77	
	6.951	32.87	0.67	33.54	60.00	26.46	
	21.830	32.44	1.04	33.48	60.00	26.52	
	0.194	43.10	0.23	43.33	53.84	10.51	AV
	0.259	37.20	0.23	37.43	51.47	14.04	
	0.516	27.10	0.31	27.41	46.00	18.59	
	1.160	21.01	0.37	21.38	46.00	24.62	
	6.951	27.60	0.67	28.27	50.00	21.73	
	21.830	27.20	1.04	28.24	50.00	21.76	
Neutral	0.194	50.27	0.19	50.46	63.84	13.38	QP
	0.259	42.74	0.18	42.92	61.47	18.55	
	0.647	33.40	0.28	33.68	56.00	22.32	
	1.552	29.38	0.52	29.90	56.00	26.10	
	7.175	32.07	0.98	33.05	60.00	26.95	
	21.830	31.77	1.22	32.99	60.00	27.01	
	0.194	**44.10**	**0.19**	**44.29**	**53.84**	**9.55**	AV
	0.259	38.01	0.18	38.19	51.47	13.28	
	0.647	28.29	0.28	28.57	46.00	17.43	
	1.552	25.00	0.52	25.52	46.00	20.48	
	7.175	27.00	0.98	27.98	50.00	22.02	
	21.830	26.30	1.22	27.52	50.00	22.48	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LEDN19K15US	Humidity :	48%RH	
Serial No.	:	E1105328-01/01	Date of Test :	May 04, 2011	
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	49.84	0.23	50.07	63.84	13.77	QP
	0.259	42.14	0.23	42.37	61.47	19.10	
	0.516	33.05	0.31	33.36	56.00	22.64	
	3.293	31.71	0.48	32.19	56.00	23.81	
	6.951	33.03	0.67	33.70	60.00	26.30	
	21.830	31.12	1.04	32.16	60.00	27.84	
	0.194	43.90	0.23	44.13	53.84	9.71	AV
	0.259	37.20	0.23	37.43	51.47	14.04	
	0.516	28.20	0.31	28.51	46.00	17.49	
	3.293	26.50	0.48	26.98	46.00	19.02	
	6.951	28.10	0.67	28.77	50.00	21.23	
	21.830	26.10	1.04	27.14	50.00	22.86	
Neutral	0.194	50.10	0.19	50.29	63.84	13.55	QP
	0.259	42.37	0.18	42.55	61.47	18.92	
	0.647	33.41	0.28	33.69	56.00	22.31	
	1.160	28.72	0.45	29.17	56.00	26.83	
	7.175	31.92	0.98	32.90	60.00	27.10	
	21.373	35.88	1.21	37.09	60.00	22.91	
	0.194	**44.00**	**0.19**	**44.19**	**53.84**	**9.65**	AV
	0.259	38.11	0.18	38.29	51.47	13.18	
	0.647	28.19	0.28	28.47	46.00	17.53	
	1.160	24.00	0.45	24.45	46.00	21.55	
	7.175	26.86	0.98	27.84	50.00	22.16	
	21.373	31.65	1.21	32.86	50.00	17.14	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LEDN19K15US	Humidity	:	48%RH
Serial No.	:	E1105328-01/01	Date of Test	:	May 04, 2011
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	48.46	0.23	48.69	63.84	15.15	QP
	0.259	40.71	0.23	40.94	61.47	20.53	
	0.647	32.48	0.38	32.86	56.00	23.14	
	2.900	26.61	0.46	27.07	56.00	28.93	
	6.951	33.22	0.67	33.89	60.00	26.11	
	21.373	30.16	1.01	31.17	60.00	28.83	
	0.194	**43.10**	**0.23**	**43.33**	**53.84**	**10.51**	AV
	0.259	35.65	0.23	35.88	51.47	15.59	
	0.647	27.31	0.38	27.69	46.00	18.31	
	2.900	22.89	0.46	23.35	46.00	22.65	
	6.951	27.12	0.67	27.79	50.00	22.21	
	21.373	25.60	1.01	26.61	50.00	23.39	
Neutral	0.194	48.30	0.19	48.49	63.84	15.35	QP
	0.259	40.60	0.18	40.78	61.47	20.69	
	0.647	33.82	0.28	34.10	56.00	21.90	
	2.900	29.17	0.60	29.77	56.00	26.23	
	7.526	33.20	0.99	34.19	60.00	25.81	
	21.373	30.21	1.21	31.42	60.00	28.58	
	0.194	43.01	0.19	43.20	53.84	10.64	AV
	0.259	35.23	0.18	35.41	51.47	16.06	
	0.647	29.19	0.28	29.47	46.00	16.53	
	2.900	25.30	0.60	25.90	46.00	20.10	
	7.526	28.12	0.99	29.11	50.00	20.89	
	21.373	24.87	1.21	26.08	50.00	23.92	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LEDN19K15US	Humidity :	48%RH	
Serial No.	:	E1105328-01/01	Date of Test :	May 04, 2011	
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	48.45	0.23	48.68	63.84	15.16	QP
	0.259	40.82	0.23	41.05	61.47	20.42	
	0.516	32.88	0.31	33.19	56.00	22.81	
	2.900	26.76	0.46	27.22	56.00	28.78	
	6.951	33.32	0.67	33.99	60.00	26.01	
	21.373	30.82	1.01	31.83	60.00	28.17	
	0.194	**43.20**	**0.23**	**43.43**	**53.84**	**10.41**	AV
	0.259	34.60	0.23	34.83	51.47	16.64	
	0.516	27.60	0.31	27.91	46.00	18.09	
	2.900	22.80	0.46	23.26	46.00	22.74	
	6.951	27.90	0.67	28.57	50.00	21.43	
	21.373	25.65	1.01	26.66	50.00	23.34	
Neutral	0.194	48.60	0.19	48.79	63.84	15.05	QP
	0.259	40.99	0.18	41.17	61.47	20.30	
	0.647	33.70	0.28	33.98	56.00	22.02	
	2.900	29.11	0.60	29.71	56.00	26.29	
	7.526	33.20	0.99	34.19	60.00	25.81	
	21.373	30.15	1.21	31.36	60.00	28.64	
	0.194	42.90	0.19	43.09	53.84	10.75	AV
	0.259	35.61	0.18	35.79	51.47	15.68	
	0.647	28.59	0.28	28.87	46.00	17.13	
	2.900	25.09	0.60	25.69	46.00	20.31	
	7.526	28.00	0.99	28.99	50.00	21.01	
	21.373	24.87	1.21	26.08	50.00	23.92	

TEST ENGINEER: WENCY YANG

EUT	:	LCD TV	Temperature	:	22℃
Model No.	:	LEDN19K15US	Humidity	:	48%RH
Serial No.	:	E1105328-01/01	Date of Test	:	May 04, 2011
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	48.93	0.23	49.16	63.84	14.68	QP
	0.259	41.30	0.23	41.53	61.47	19.94	
	0.647	32.88	0.38	33.26	56.00	22.74	
	2.900	26.33	0.46	26.79	56.00	29.21	
	6.951	33.68	0.67	34.35	60.00	25.65	
	21.373	29.70	1.01	30.71	60.00	29.29	
	0.194	42.60	0.23	42.83	53.84	11.01	AV
	0.259	36.00	0.23	36.23	51.47	15.24	
	0.647	26.78	0.38	27.16	46.00	18.84	
	2.900	21.20	0.46	21.66	46.00	24.34	
	6.951	28.30	0.67	28.97	50.00	21.03	
	21.373	24.80	1.01	25.81	50.00	24.19	
Neutral	0.194	48.71	0.19	48.90	63.84	14.94	QP
	0.259	41.33	0.18	41.51	61.47	19.96	
	0.647	33.63	0.28	33.91	56.00	22.09	
	2.900	29.00	0.60	29.60	56.00	26.40	
	7.526	32.72	0.99	33.71	60.00	26.29	
	21.373	30.25	1.21	31.46	60.00	28.54	
	0.194	**42.89**	**0.19**	**43.08**	**53.84**	**10.76**	AV
	0.259	36.21	0.18	36.39	51.47	15.08	
	0.647	28.49	0.28	28.77	46.00	17.23	
	2.900	24.99	0.60	25.59	46.00	20.41	
	7.526	27.51	0.99	28.50	50.00	21.50	
	21.373	25.10	1.21	26.31	50.00	23.69	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

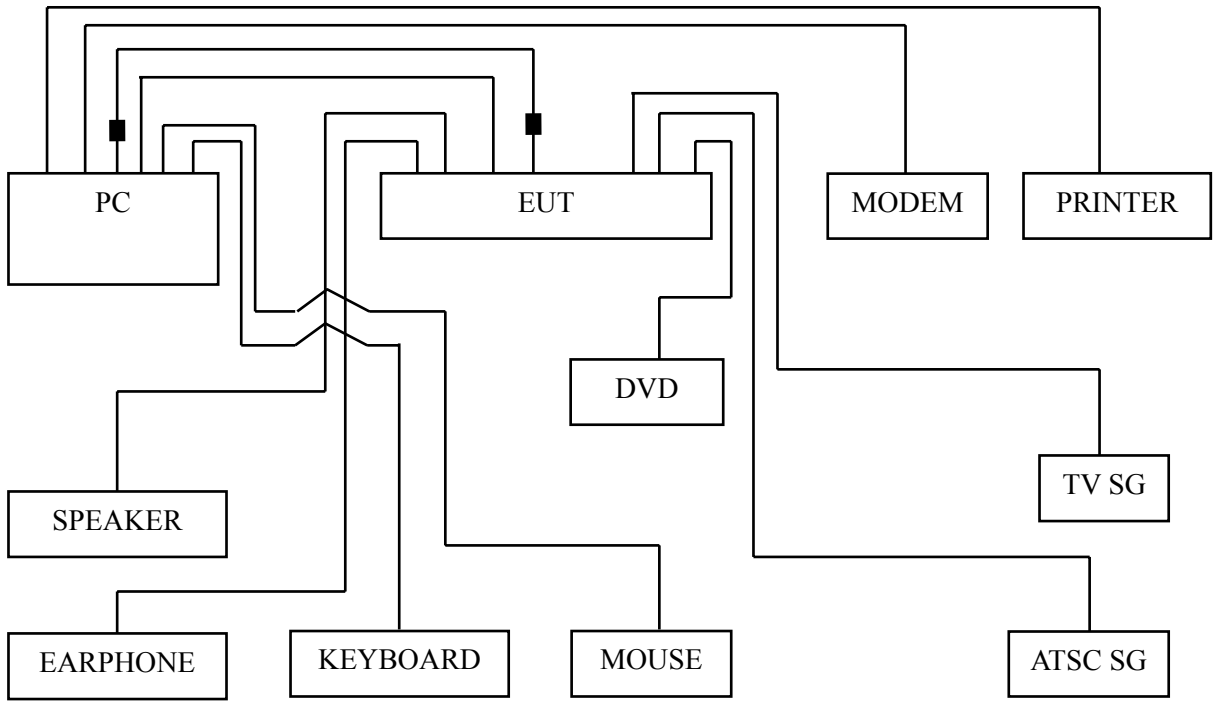
4.1 Test Equipment

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 22, 2011	Mar 22, 2012
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2011	Sep 18, 2011
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2010	Dec 01, 2011
4.	Spectrum Analyzer	Agilent	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2011	Sep 18, 2011
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

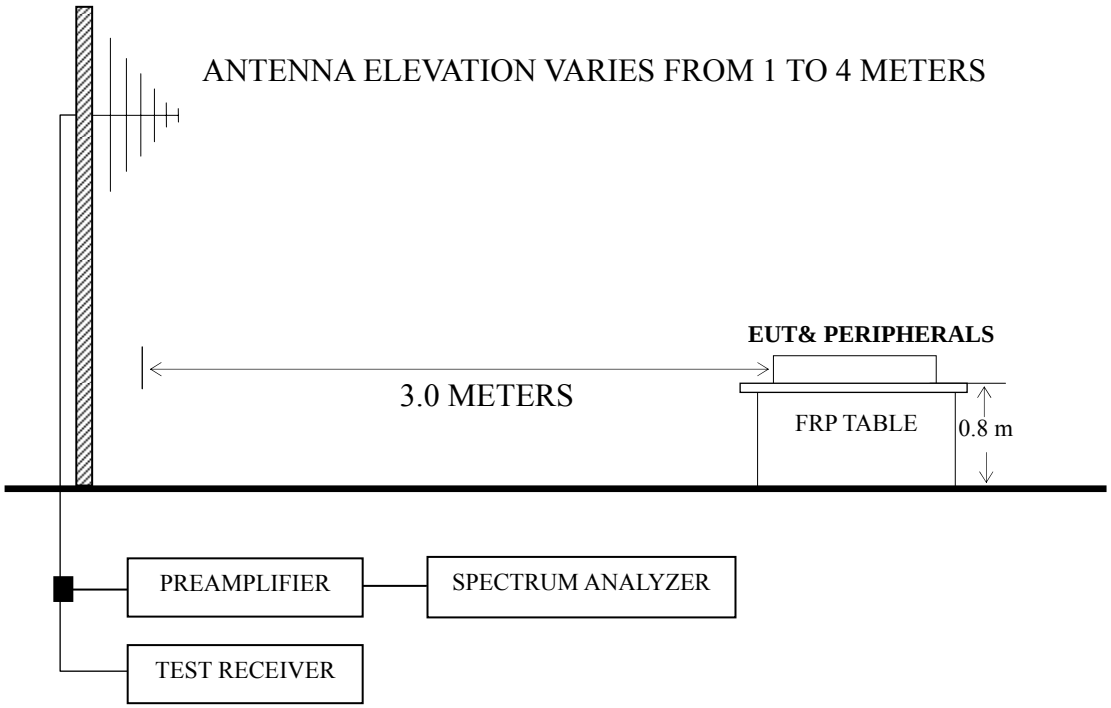
4.2 Block Diagram of Test Setup

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 I.F. 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 1028*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 – All readings are Quasi-Peak values.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The worst case is for HDMI 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 217.210 MHz with corrected signal level of 38.16 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 160°. The worst emission at vertical polarization was detected at 924.340 MHz with corrected signal level of 43.55 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 275°.

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LEDN19K15US	Humidity :	60%RH
Serial No.	:	E1105328-01/01	Date of Test :	May 19, 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	71.710	23.79	6.69	0.90	31.38	40.00	8.62
	122.150	18.17	12.91	1.14	32.22	43.50	11.28
	293.840	19.89	13.79	1.74	35.42	46.00	10.58
	456.800	13.74	17.32	2.18	33.24	46.00	12.76
	681.840	13.77	19.62	2.63	36.02	46.00	9.98
	891.360	**13.59**	**21.63**	**3.02**	**38.24**	**46.00**	**7.76**
Vertical	36.790	10.69	15.80	0.69	27.18	40.00	12.82
	70.740	21.65	6.58	0.90	29.13	40.00	10.87
	107.600	14.82	12.10	1.07	27.99	43.50	15.51
	144.460	19.36	11.76	1.22	32.34	43.50	11.16
	223.030	**25.17**	**11.80**	**1.52**	**38.49**	**46.00**	**7.51**
	519.850	17.28	18.15	2.30	37.73	46.00	8.27

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LEDN19K15US	Humidity :	60%RH
Serial No.	:	E1105328-01/01	Date of Test :	May 19, 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	70.740	21.75	6.58	0.90	29.23	40.00	10.77
	144.460	15.98	11.76	1.22	28.96	43.50	14.54
	223.030	24.13	11.80	1.52	37.45	46.00	8.55
	294.810	23.87	13.82	1.76	39.45	46.00	6.55
	465.530	13.57	17.46	2.20	33.23	46.00	12.77
	742.950	**19.72**	**20.13**	**2.78**	**42.63**	**46.00**	**3.37**
Vertical	70.740	23.61	6.58	0.90	31.09	40.00	8.91
	144.460	22.24	11.76	1.22	35.22	43.50	8.28
	223.030	21.88	11.80	1.52	35.20	46.00	10.80
	372.410	17.44	15.92	1.99	35.35	46.00	10.65
	519.850	**19.69**	**18.15**	**2.30**	**40.14**	**46.00**	**5.86**
	742.950	16.62	20.13	2.78	39.53	46.00	6.47

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃	
Model No.	:	LEDN19K15US	Humidity :	60%RH	
Serial No.	:	E1105328-01/01	Date of Test :	May 19, 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	**36.790**	**20.76**	**15.80**	**0.69**	**37.25**	**40.00**	**2.75**
	120.210	17.61	12.98	1.13	31.72	43.50	11.78
	148.340	18.66	11.41	1.23	31.30	43.50	12.20
	200.720	18.75	10.74	1.45	30.94	43.50	12.56
	448.070	12.86	17.20	2.16	32.22	46.00	13.78
	850.620	18.54	21.20	2.97	42.71	46.00	3.29
Vertical	37.760	1.91	15.20	0.70	17.81	40.00	22.19
	56.190	10.08	7.46	0.82	18.36	40.00	21.64
	134.760	13.69	12.30	1.19	27.18	43.50	16.32
	226.910	**24.02**	**11.98**	**1.54**	**37.54**	**46.00**	**8.46**
	390.840	11.42	16.30	2.03	29.75	46.00	16.25
	850.620	11.67	21.20	2.97	35.84	46.00	10.16

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LEDN19K15US	Humidity :	60%RH
Serial No.	:	E1105328-01/01	Date of Test :	May 19, 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	74.620	23.62	10.21	0.92	34.75	40.00	5.25
	87.230	**23.65**	**10.88**	**0.98**	**35.51**	**40.00**	**4.49**
	217.210	23.58	10.48	1.51	35.57	46.00	10.43
	303.540	19.72	13.80	1.78	35.30	46.00	10.70
	688.630	13.05	19.36	2.65	35.06	46.00	10.94
	978.660	9.62	20.71	4.01	34.34	54.00	19.66
Vertical	32.910	15.19	16.79	0.66	32.64	40.00	7.36
	57.160	21.88	8.96	0.83	31.67	40.00	8.33
	89.170	23.45	10.96	0.99	35.40	43.50	8.10
	217.210	23.21	10.48	1.51	35.20	46.00	10.80
	425.760	**19.89**	**16.64**	**2.12**	**38.65**	**46.00**	**7.35**
	487.840	13.85	17.46	2.24	33.55	46.00	12.45

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LEDN19K15US	Humidity :	60%RH
Serial No.	:	E1105328-01/01	Date of Test :	May 19, 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	56.190	20.97	8.88	0.82	30.67	40.00	9.33
	74.620	**24.01**	**10.21**	**0.92**	**35.14**	**40.00**	**4.86**
	133.790	21.04	10.74	1.18	32.96	43.50	10.54
	293.840	20.99	13.53	1.74	36.26	46.00	9.74
	468.440	16.66	17.22	2.21	36.09	46.00	9.91
	685.720	13.83	19.33	2.65	35.81	46.00	10.19
Vertical	**32.910**	**17.08**	**16.79**	**0.66**	**34.53**	**40.00**	**5.47**
	36.790	19.11	14.57	0.69	34.37	40.00	5.63
	74.620	22.01	10.21	0.92	33.14	40.00	6.86
	90.140	24.32	11.00	1.00	36.32	43.50	7.18
	263.770	21.87	12.57	1.65	36.09	46.00	9.91
	491.720	16.90	17.51	2.25	36.66	46.00	9.34

TEST ENGINEER: RAVEN JIN

EUT	:	LCD TV	Temperature :	22℃
Model No.	:	LEDN19K15US	Humidity :	60%RH
Serial No.	:	E1105328-01/01	Date of Test :	May 19, 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	32.910	-0.74	17.95	0.66	17.87	40.00	22.13
	54.250	8.80	7.92	0.81	17.53	40.00	22.47
	134.760	13.57	12.30	1.19	27.06	43.50	16.44
	217.210	**25.17**	**11.48**	**1.51**	**38.16**	**46.00**	**7.84**
	325.850	11.74	14.62	1.84	28.20	46.00	17.80
	702.210	9.59	19.73	2.67	31.99	46.00	14.01
Vertical	38.730	18.61	14.62	0.71	33.94	40.00	6.06
	121.180	18.17	12.95	1.13	32.25	43.50	11.25
	191.990	19.19	10.37	1.42	30.98	43.50	12.52
	353.010	11.51	15.41	1.93	28.85	46.00	17.15
	588.720	9.50	19.09	2.43	31.02	46.00	14.98
	924.340	**18.46**	**21.87**	**3.22**	**43.55**	**46.00**	**2.45**

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
Gasket	DAA1001\ROH	JOINSET	See Internal Photos Figure 22
		SZTAT	
Gasket	DAA1002\ROH	JOINSET	See Internal Photos Figure 22
		SZTAT	

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)