

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

LCD TV

Model No.	Serial No.	Brand
LTDN55T18GUS	--	Hisense
NX5503L120	--	NEXUS
55LED55SA	E2009122108	Proscan

FCC ID : W9HLCDX0003

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.
3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Tel: +86-21-64955500
Fax: +86-21-64955491

Report No. : ACI-F09137
Date of Test : Dec 24-25, 2009
Date of Report : Dec 28, 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
LTDN55T18GUS	--	Hisense	120V/60Hz
NX5503L120	--	NEXUS	
55LED55SA	E2009122108	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 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.F09136, a Verification report.

Date of Test : Dec 24-25, 2009 Date of Report : Dec 28, 2009

Producer : ALAN HE / Assistant

Review : DIO YANG / Deputy Assistant Manager

Signatory : 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
LTDN55T18GUS	--	Hisense
NX5503L120	--	NEXUS
55LED55SA	E2009122108	Proscan

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

Note 2 : The 55LED55SA 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 : SAMSUNG
M/N : LTA550HF03
S/N : 8E9J2W6U0D

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 Component of Audio Out Port | Connected with Speaker |
| (2) | One ANT Port | Connected with TV SG/ATSC SG |
| (3) | One component of YPbPr1 Port | Connected with DVD#1 |
| (4) | One VGA Audio Port | Connected with PC |

(5)	One VGA Port	Connected with PC
(6)	One HDMI#1 Port	Connected with DVD #1
(7)	One HDMI#2 Port	Connected with DVD #2
(8)	One HDMI#3 Port	Connected with DVD #3
Bottom Ports:		
(9)	One component of YPbPr2 Port	Connected with DVD#2
(10)	One COAXIAL Port	Connected with DVD#2
(11)	One Headphone Port	Connected with Earphone
(12)	One Service Port	Do not open to customer
(13)	One HDMI#4 Port	Connected with PC

2.2 Peripherals

2.2.1 PC #1

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 PC #2

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))

2.2.3 Printer

Manufacturer : HP
 Model Number : C3990A
 Serial Number : JPZX020487
 Data Cable : Shielded, detachable, 1.5m
 Certificate : GS, CE/EMC, C-Tick, FCC DoC

2.2.4 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

2.2.5 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

2.2.6 Modem

Manufacturer : TP-LINK
Model Number : TM-EC5658V
Serial Number : 07123301053
Data Cable : Shielded, Detachable, 1.8m
Certificate : FCC DoC, CE/EMC, CCC

2.2.7 Earphone

Manufacturer : SONY
Model Number : MDR-E808
Serial Number : 1808030805305506

2.2.8 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

2.2.9 ATSC Signal Generator

Manufacturer : SENCORE
Model Number : ATSC997
Serial Number : 6790071

2.2.10 DVD#1

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

2.2.11 DVD#2

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

2.2.12 DVD#3

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

2.2.13 Speaker

Manufacturer : DIBA
Model Number : T520
Serial Number : 10628

Note: PC #2 was used in Radiated Emission test while PC #1 was used in Conducted Emission test.

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

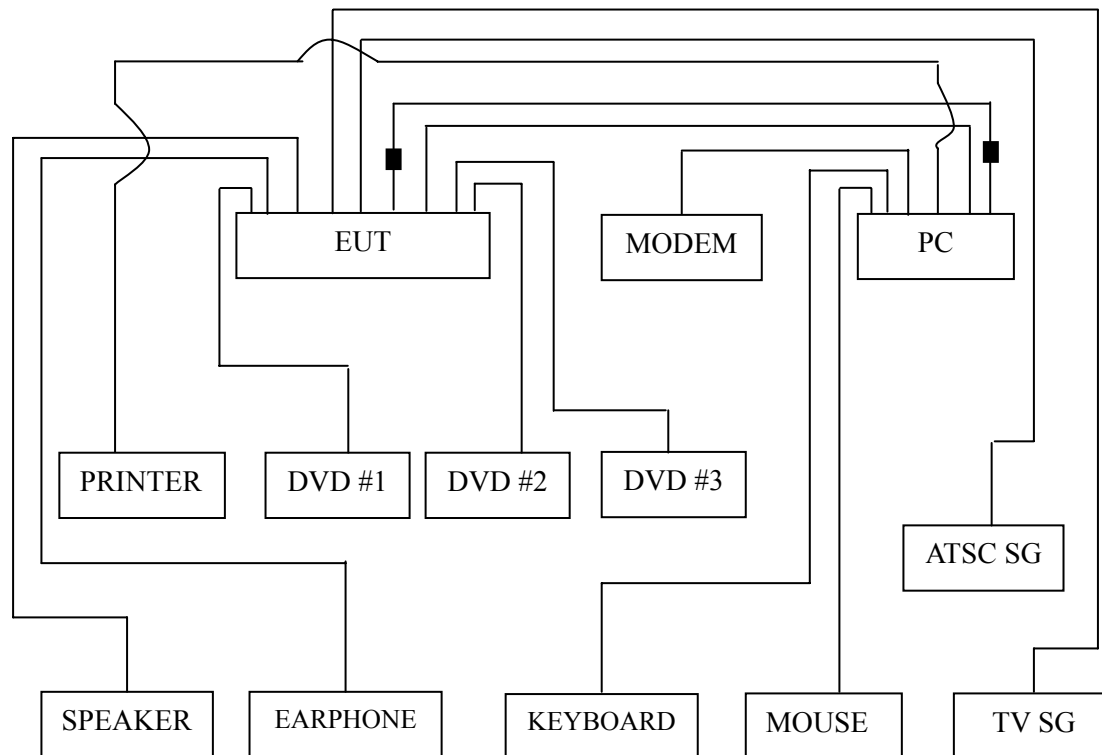
3.1.1 Test Equipment

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

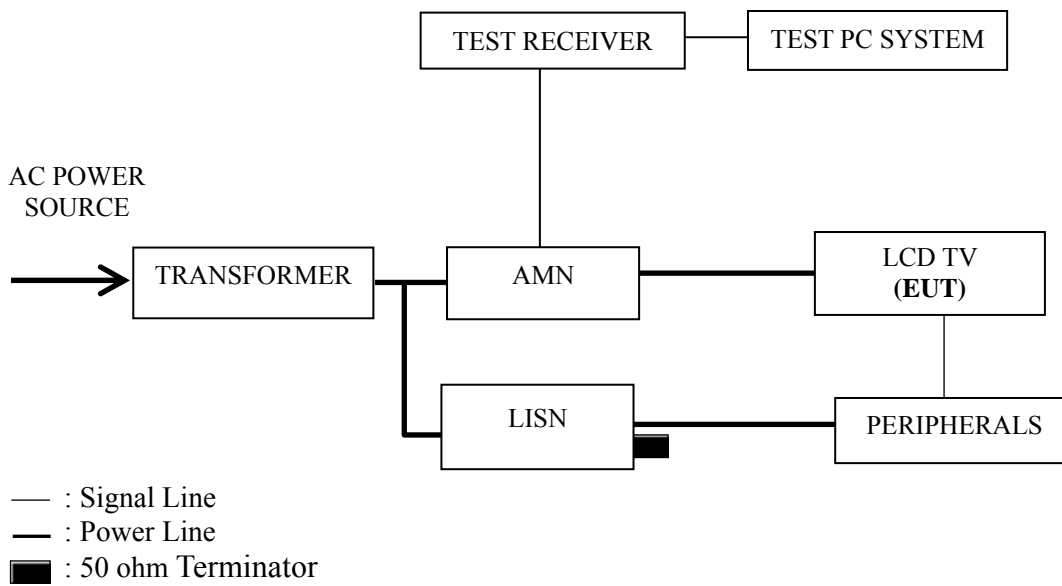
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



■ : Ferrite core

3.2.2 Conducted Disturbance Test Setup



3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)]

Frequency Range (MHz)	Limits dB (μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE 1 – The lower limit shall apply at the transition frequencies.
 NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the peripherals (listed in Sec 2.2) were installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner that tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipments and the EUT.

3.5.3 Set the contrast & brightness of EUT to maximum.

3.5.4 PC system ran the self-test program “EMC Test” by windows XP and sent “H” characters to EUT through graphic card, the EUT’s screen displayed and filled with “H” pattern by its resolution (Via D-Sub & HDMI Input).

3.5.5 Repeat above procedure from 3.5.3 to 3.5.4 for difference test mode.

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

3.5.7 The test modes are as follows:

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

3.6 Test Procedures

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

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

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

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

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

3.7 Test Results

< **PASS** >

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

Test Mode	Data Page
D-Sub 640*480@60Hz	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 13.267 MHz (Quasi-Peak Value) with corrected signal level of 47.63 dB (μV) (limit is 60.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 48%RH

Serial No. : E2009122108 Date of Test : Dec 24, 2009

Test Mode : D-Sub 640*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.208	33.38	0.22	33.60	63.27	29.67	QP
	0.529	23.98	0.29	24.27	56.00	31.73	
	0.751	26.23	0.28	26.51	56.00	29.49	
	1.388	28.01	0.33	28.34	56.00	27.66	
	2.033	27.47	0.36	27.83	56.00	28.17	
	13.230	40.12	0.64	40.76	60.00	19.24	
	0.208	24.20	0.22	24.42	53.27	28.85	AV
	0.529	20.10	0.29	20.39	46.00	25.61	
	0.751	23.28	0.28	23.56	46.00	22.44	
	1.388	23.07	0.33	23.40	46.00	22.60	
	2.033	17.21	0.36	17.57	46.00	28.43	
	13.230	30.72	0.64	31.36	50.00	18.64	
Neutral	0.197	33.75	0.20	33.95	63.76	29.81	QP
	0.322	25.03	0.23	25.26	59.66	34.40	
	0.535	25.12	0.26	25.38	56.00	30.62	
	0.963	28.33	0.30	28.63	56.00	27.37	
	1.388	27.82	0.33	28.15	56.00	27.85	
	13.551	40.20	0.64	40.84	60.00	19.16	
	0.197	27.29	0.20	27.49	53.76	26.27	AV
	0.322	23.16	0.23	23.39	49.66	26.27	
	0.535	23.77	0.26	24.03	46.00	21.97	
	0.963	25.64	0.30	25.94	46.00	20.06	
	1.388	22.89	0.33	23.22	46.00	22.78	
	13.551	30.02	0.64	30.66	50.00	19.34	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 48%RH

Serial No. : E2009122108 Date of Test : Dec 24, 2009

Test Mode : D-Sub 800*600@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.211	33.90	0.22	34.12	63.18	29.06	QP
	0.320	25.79	0.26	26.05	59.71	33.66	
	0.535	25.82	0.29	26.11	56.00	29.89	
	0.751	26.55	0.28	26.83	56.00	29.17	
	1.388	27.97	0.33	28.30	56.00	27.70	
	13.127	36.22	0.64	36.86	60.00	23.14	
	0.211	25.44	0.22	25.66	53.18	27.52	AV
	0.320	24.68	0.26	24.94	49.71	24.77	
	0.535	25.10	0.29	25.39	46.00	20.61	
	0.751	24.07	0.28	24.35	46.00	21.65	
	1.388	21.01	0.33	21.34	46.00	24.66	
	13.127	29.89	0.64	30.53	50.00	19.47	
Neutral	0.194	32.94	0.20	33.14	63.84	30.70	QP
	0.322	25.19	0.23	25.42	59.66	34.24	
	0.751	26.93	0.28	27.21	56.00	28.79	
	0.963	28.23	0.30	28.53	56.00	27.47	
	1.172	28.68	0.32	29.00	56.00	27.00	
	12.988	38.67	0.62	39.29	60.00	20.71	
	0.194	24.92	0.20	25.12	53.84	28.72	AV
	0.322	23.56	0.23	23.79	49.66	25.87	
	0.751	23.62	0.28	23.90	46.00	22.10	
	0.963	24.75	0.30	25.05	46.00	20.95	
	1.172	24.52	0.32	24.84	46.00	21.16	
	12.988	32.66	0.62	33.28	50.00	16.72	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 48%RH

Serial No. : E2009122108 Date of Test : Dec 24, 2009

Test Mode : D-Sub 1024*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.197	30.36	0.22	30.58	63.76	33.18	QP
	0.535	25.83	0.29	26.12	56.00	29.88	
	0.751	26.52	0.28	26.80	56.00	29.20	
	1.388	28.03	0.33	28.36	56.00	27.64	
	2.033	27.77	0.36	28.13	56.00	27.87	
	13.267	39.13	0.64	39.77	60.00	20.23	
	0.197	24.73	0.22	24.95	53.76	28.81	AV
	0.535	25.21	0.29	25.50	46.00	20.50	
	0.751	23.27	0.28	23.55	46.00	22.45	
	1.388	22.75	0.33	23.08	46.00	22.92	
	2.033	17.78	0.36	18.14	46.00	27.86	
	13.267	29.86	0.64	30.50	50.00	19.50	
Neutral	0.197	34.51	0.20	34.71	63.76	29.05	QP
	0.322	25.45	0.23	25.68	59.66	33.98	
	0.535	25.26	0.26	25.52	56.00	30.48	
	0.751	26.96	0.28	27.24	56.00	28.76	
	1.172	28.73	0.32	29.05	56.00	26.95	
	13.267	37.74	0.62	38.36	60.00	21.64	
	0.197	25.94	0.20	26.14	53.76	27.62	AV
	0.322	23.91	0.23	24.14	49.66	25.52	
	0.535	23.92	0.26	24.18	46.00	21.82	
	0.751	23.99	0.28	24.27	46.00	21.73	
	1.172	22.80	0.32	23.12	46.00	22.88	
	13.267	30.07	0.62	30.69	50.00	19.31	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 48%RH

Serial No. : E2009122108 Date of Test : Dec 24, 2009

Test Mode : HDMI 640*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.208	35.81	0.22	36.03	63.27	27.24	QP
	0.320	27.81	0.26	28.07	59.71	31.64	
	0.751	27.16	0.28	27.44	56.00	28.56	
	1.388	28.44	0.33	28.77	56.00	27.23	
	2.261	29.27	0.37	29.64	56.00	26.36	
	13.197	43.24	0.64	43.88	60.00	16.12	
	0.208	29.50	0.22	29.72	53.27	23.55	AV
	0.320	26.58	0.26	26.84	49.71	22.87	
	0.751	24.78	0.28	25.06	46.00	20.94	
	1.388	22.98	0.33	23.31	46.00	22.69	
	2.261	20.03	0.37	20.40	46.00	25.60	
	13.197	32.30	0.64	32.94	50.00	17.06	
Neutral	0.197	35.73	0.20	35.93	63.76	27.83	QP
	0.529	27.54	0.26	27.80	56.00	28.20	
	0.743	26.77	0.28	27.05	56.00	28.95	
	1.172	29.17	0.32	29.49	56.00	26.51	
	1.819	28.46	0.36	28.82	56.00	27.18	
	13.267	41.52	0.62	42.14	60.00	17.86	
	0.197	28.74	0.20	28.94	53.76	24.82	AV
	0.529	20.42	0.26	20.68	46.00	25.32	
	0.743	20.51	0.28	20.79	46.00	25.21	
	1.172	24.69	0.32	25.01	46.00	20.99	
	1.819	20.19	0.36	20.55	46.00	25.45	
	13.267	31.01	0.62	31.63	50.00	18.37	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 48%RH

Serial No. : E2009122108 Date of Test : Dec 24, 2009

Test Mode : HDMI 800*600@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.211	35.27	0.22	35.49	63.18	27.69	QP
	0.320	27.83	0.26	28.09	59.71	31.62	
	0.751	27.24	0.28	27.52	56.00	28.48	
	1.388	28.36	0.33	28.69	56.00	27.31	
	2.033	28.59	0.36	28.95	56.00	27.05	
	13.267	45.17	0.64	45.81	60.00	14.19	
	0.211	27.31	0.22	27.53	53.18	25.65	AV
	0.320	26.40	0.26	26.66	49.71	23.05	
	0.751	25.03	0.28	25.31	46.00	20.69	
	1.388	21.81	0.33	22.14	46.00	23.86	
	2.033	19.51	0.36	19.87	46.00	26.13	
	13.267	30.90	0.64	31.54	50.00	18.46	
Neutral	0.152	37.23	0.20	37.43	65.91	28.48	QP
	0.194	37.19	0.20	37.39	63.84	26.45	
	0.743	26.84	0.28	27.12	56.00	28.88	
	1.172	29.15	0.32	29.47	56.00	26.53	
	1.388	28.40	0.33	28.73	56.00	27.27	
	13.267	42.36	0.62	42.98	60.00	17.02	
	0.152	4.57	0.20	4.77	55.91	51.14	AV
	0.194	25.77	0.20	25.97	53.84	27.87	
	0.743	19.79	0.28	20.07	46.00	25.93	
	1.172	23.59	0.32	23.91	46.00	22.09	
	1.388	23.97	0.33	24.30	46.00	21.70	
	13.267	31.08	0.62	31.70	50.00	18.30	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 48%RH

Serial No. : E2009122108 Date of Test : Dec 24, 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	0.211	35.24	0.22	35.46	63.18	27.72	QP
	0.320	27.76	0.26	28.02	59.71	31.69	
	0.751	27.22	0.28	27.50	56.00	28.50	
	1.172	27.57	0.32	27.89	56.00	28.11	
	1.388	28.27	0.33	28.60	56.00	27.40	
	13.267	46.99	0.64	47.63	60.00	12.37	
	0.211	26.56	0.22	26.78	53.18	26.40	AV
	0.320	26.31	0.26	26.57	49.71	23.14	
	0.751	25.23	0.28	25.51	46.00	20.49	
	1.172	23.10	0.32	23.42	46.00	22.58	
	1.388	22.61	0.33	22.94	46.00	23.06	
	13.267	31.56	0.64	32.20	50.00	17.80	
Neutral	0.199	36.55	0.20	36.75	63.67	26.92	QP
	0.322	25.78	0.23	26.01	59.66	33.65	
	0.751	27.78	0.28	28.06	56.00	27.94	
	0.963	28.66	0.30	28.96	56.00	27.04	
	1.388	28.31	0.33	28.64	56.00	27.36	
	13.267	39.39	0.62	40.01	60.00	19.99	
	0.199	26.66	0.20	26.86	53.67	26.81	AV
	0.322	23.80	0.23	24.03	49.66	25.63	
	0.751	25.34	0.28	25.62	46.00	20.38	
	0.963	25.33	0.30	25.63	46.00	20.37	
	1.388	23.63	0.33	23.96	46.00	22.04	
	13.267	30.61	0.62	31.23	50.00	18.77	

TEST ENGINEER: HUGH HUANG

4 RADIATED EMISSION TEST

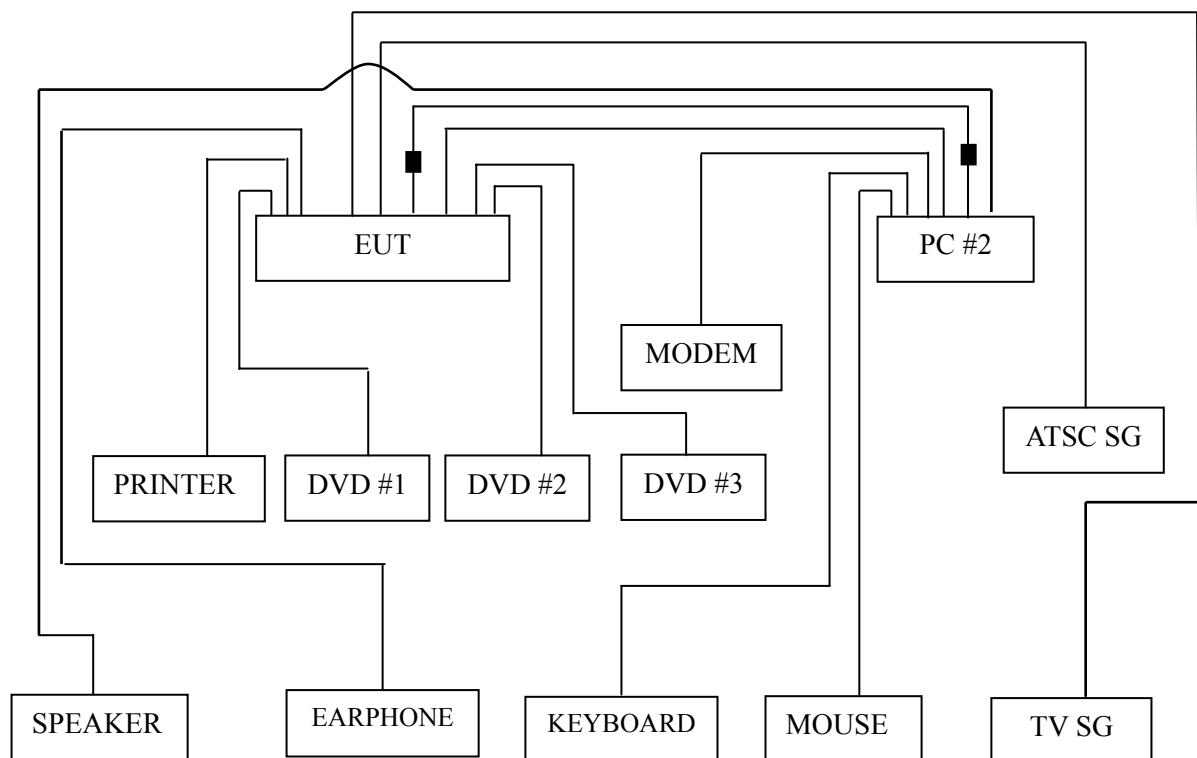
4.1 Test Equipment

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	--	--

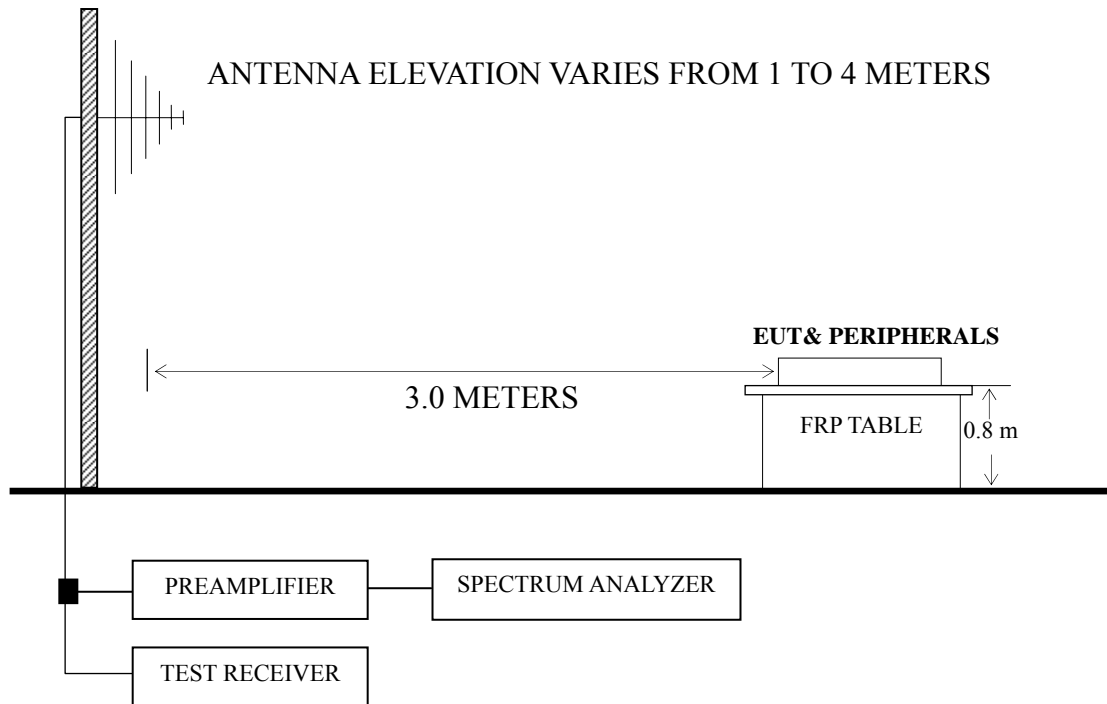
4.2 Block Diagram of Test Setup

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 31.557 MHz with corrected signal level of 37.76 dB ($\mu\text{V}/\text{m}$) (limit is 40.00dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.70 m height and the turntable was at 250°. The worst emission at vertical polarization was detected at 510.150 MHz with corrected signal level of 40.47 dB ($\mu\text{V}/\text{m}$) (limit is 46.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.50 m height and the turntable was at 135°.

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 60%RH

Serial No. : E2009122108 Date of Test : Dec 25, 2009

Test Mode : D-Sub 800*600@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	31.557	18.41	18.73	0.62	37.76	40.00	2.24
	49.400	24.07	9.16	0.76	33.99	40.00	6.01
	101.000	25.50	11.57	1.05	38.12	43.50	5.38
	187.140	21.66	10.17	1.38	33.21	43.50	10.29
	281.230	15.65	13.57	1.68	30.90	46.00	15.10
	521.790	18.97	18.18	2.32	39.47	46.00	6.53
Vertical	142.520	19.94	11.91	1.21	33.06	43.50	10.44
	202.660	21.55	10.81	1.46	33.82	43.50	9.68
	292.870	18.89	13.79	1.75	34.43	46.00	11.57
	405.390	12.11	16.57	2.04	30.72	46.00	15.28
	510.150	20.16	18.04	2.27	40.47	46.00	5.53
	793.390	15.21	20.64	2.88	38.73	46.00	7.27

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 60%RH

Serial No. : E2009122108 Date of Test : Dec 25, 2009

Test Mode : D-Sub 1024*768@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	31.500	18.00	18.73	0.62	37.35	40.00	2.65
	49.400	25.55	9.16	0.76	35.47	40.00	4.53
	104.690	24.50	11.88	1.07	37.45	43.50	6.05
	202.660	20.59	10.81	1.46	32.86	43.50	10.64
	281.230	14.09	13.57	1.68	29.34	46.00	16.66
	511.120	18.98	18.04	2.28	39.30	46.00	6.70
Vertical	103.720	18.81	11.77	1.07	31.65	43.50	11.85
	152.220	23.06	11.09	1.22	35.37	43.50	8.13
	290.930	18.96	13.75	1.72	34.43	46.00	11.57
	511.120	16.76	18.04	2.28	37.08	46.00	8.92
	608.120	13.98	19.25	2.48	35.71	46.00	10.29
	809.880	12.75	20.80	2.87	36.42	46.00	9.58

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 60%RH

Serial No. : E2009122108 Date of Test : Dec 25, 2009

Test Mode : HDMI 640*480@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	103.720	17.04	11.77	1.07	29.88	43.50	13.62
	147.370	19.32	11.51	1.24	32.07	43.50	11.43
	192.960	19.93	10.40	1.42	31.75	43.50	11.75
	288.020	17.00	13.71	1.71	32.42	46.00	13.58
	535.370	14.06	18.36	2.35	34.77	46.00	11.23
	608.120	14.27	19.25	2.48	36.00	46.00	10.00
Vertical	31.940	44.74	18.49	0.62	35.39	40.00	4.61
	49.400	48.35	9.16	0.76	29.98	40.00	10.02
	113.420	52.93	12.58	1.08	38.48	43.50	5.02
	202.660	44.22	10.81	1.46	28.91	43.50	14.59
	535.370	43.15	18.36	2.35	35.23	46.00	10.77
	996.120	39.54	22.37	3.24	37.56	54.00	16.44

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 60%RH

Serial No. : E2009122108 Date of Test : Dec 25, 2009

Test Mode : HDMI 800*600@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	31.940	16.00	18.49	0.62	35.11	40.00	4.89
	49.400	19.07	9.16	0.76	28.99	40.00	11.01
	100.810	22.48	11.57	1.05	35.10	43.50	8.40
	114.390	18.39	12.64	1.08	32.11	43.50	11.39
	187.140	14.66	10.17	1.38	26.21	43.50	17.29
	521.790	16.97	18.18	2.32	37.47	46.00	8.53
Vertical	30.970	3.53	19.03	0.62	23.18	40.00	16.82
	94.020	14.64	10.27	1.01	25.92	43.50	17.58
	104.690	16.20	11.88	1.07	29.15	43.50	14.35
	202.660	18.55	10.81	1.46	30.82	43.50	12.68
	292.870	15.89	13.79	1.75	31.43	46.00	14.57
	510.150	17.16	18.04	2.27	37.47	46.00	8.53

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : 55LED55SA Humidity : 60%RH

Serial No. : E2009122108 Date of Test : Dec 25, 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	30.970	16.90	19.03	0.62	36.55	40.00	3.45
	49.400	22.55	9.16	0.76	32.47	40.00	7.53
	104.690	25.51	11.88	1.07	38.46	43.50	5.04
	115.360	24.16	12.71	1.12	37.99	43.50	5.51
	202.660	18.59	10.81	1.46	30.86	43.50	12.64
	511.120	16.98	18.04	2.28	37.30	46.00	8.70
Vertical	103.720	16.81	11.77	1.07	29.65	43.50	13.85
	152.220	21.06	11.09	1.22	33.37	43.50	10.13
	290.930	16.96	13.75	1.72	32.43	46.00	13.57
	511.120	14.76	18.04	2.28	35.08	46.00	10.92
	608.120	11.98	19.25	2.48	33.71	46.00	12.29
	809.880	10.75	20.80	2.87	34.42	46.00	11.58

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

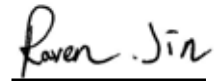
6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Gasket	DAA1001\ROH	QDJOINSET S&T CO., LTD	See Internal Photo Figure 20, 21, 22, 23
Gasket	20X20X\ROH	QDJOINSET S&T CO., LTD	See Internal Photo Figure 20, 21
Aluminum foil	DBA40X100\ROH	QDJOINSET S&T CO., LTD	See Internal Photo Figure 20

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)