

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

LCD TV

Model No.	Serial No.	Brand
LTDN40V86MH	E11101257-01/01	Hisense

FCC ID : W9HLCDD0011

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

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Report No. : ACI-F11148
Date of Test : Oct 11 – 21, 2011
Date of Report : Oct 27, 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
LTDN40V86MH	E11101257-01/01	Hisense	120V/60Hz

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: LTDN40V86MH; S/N: E11101257-01/01) which was tested in 3m anechoic chamber Oct 11 – 21, 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.F11149, a Verification report.

Date of Test : Oct 11 – 21, 2011 Date of Report : Oct 27, 2011

Producer :

Kathy Wang
KATHY WANG/ Assistant

Review :

Dio Yang
DIO YANG/ Assistant Manager



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

Signatory :

Sammy Chen
Authorized Signature EMC SAMMY CHEN / Deputy Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 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	:	<input checked="" type="checkbox"/> Production <input type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No.	:	LTDN40V86MH
Serial No.	:	E11101257-01/01
Brand	:	Hisense
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 : LTA400HM09
Tuner	:	Manufacturer : XuGuang Tech. Co., Ltd. M/N : DVTX-9D/GW41F2\ROH
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 HDMI1 Port : Connected with PC
- (2) One HDMI2 Port : Connected with DVD #1
- (3) One component of YPbPr2 Port : Connected with DVD #2
- (4) One component of YPbPr2 Audio Port : Connected with DVD #2
- (5) One component of AV Port : Connected with DVD #1
- (6) One component of Audio Out Port : Connected with Speaker
- (7) One Headphone Port : Connected with Earphone
- (8) One ANT Port : Connected with TV SG / ATSC SG
- (9) One Digital Audio Out Port : Connected with DVD #1
- (10) One SERVICE port : do not open to customer

Side Port

- (1) One HDMI3 Port : Connected with DVD #2
- (2) One USB Port : Connected with U-Disk
- (3) One PC Audio Port : Connected with PC
- (4) One VGA Port : Connected with PC
- (5) One component of YPbPr1 Port : Connected with DVD #1
- (6) One component of YPbPr1 Audio Port : Connected with DVD #1
- (7) One RJ12 port : Connected with PC

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 #1

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

2.2.10 DVD #2

Manufacturer : LG
Model Number : DF9921N
Serial Number : 3850R-M846W
Certificate : FCC DoC, CE/EMC, CCC

2.2.11 Speaker

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

2.3 Description of Test Facility

Site Description : Sept. 17, 1998 file on
(No.3 3m 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: $U = 3.38\text{dB}$

Radiated Emission Expanded Uncertainty (30-200MHz):

$U = 4.58\text{ dB}$ (horizontal)

$U = 4.70\text{ dB}$ (vertical)

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

$U = 4.84\text{ dB}$ (horizontal)

$U = 4.70\text{ dB}$ (vertical)

3 CONDUCTED EMISSION TEST

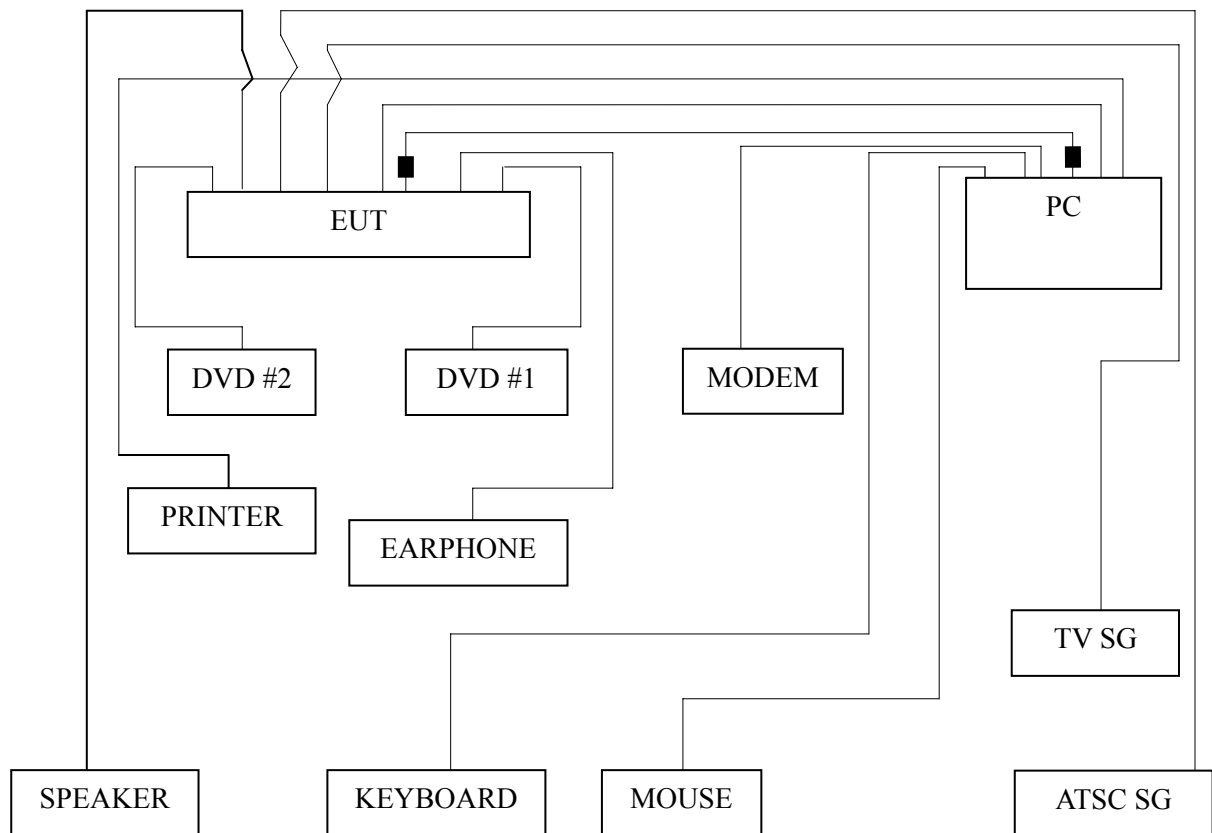
3.1 Test Equipment

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

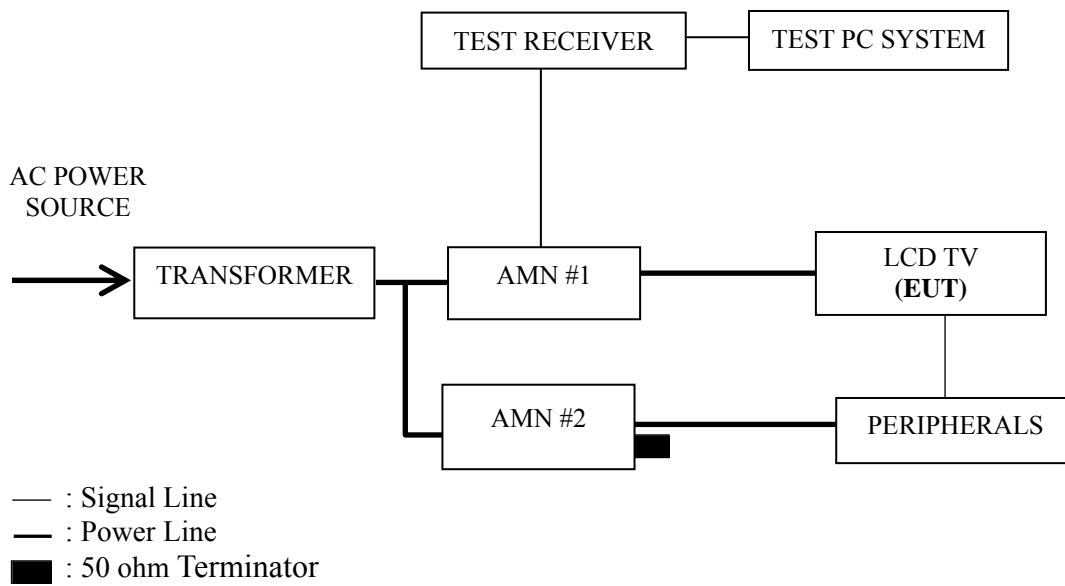
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 22, 2011	Mar 22, 2012
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Mar 22, 2011	Mar 22, 2012
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2011	Mar 22, 2012
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 18, 2011	Mar 18, 2012
5.	50 Ω 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



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 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
USB Play

3.6 Test Procedures

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

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

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

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

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

3.7 Test Results

< PASS >

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

Test Mode	Data Page
D-Sub 640*480@60Hz	P14
D-Sub 800*600@60Hz	P15
D-Sub 1024*768@60Hz	P16
HDMI 640*480@60Hz	P17
HDMI 800*600@60Hz	P18
HDMI 1024*768@60Hz	P19
USB Play	P20

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 6.285 MHz (Quasi-Peak Value) with corrected signal level of 48.30 dB (μV) (limit is 60.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 48%RH

Serial No. : E11101257-01/01 Date of Test : Oct 11, 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	0.166	41.59	0.22	41.81	65.16	23.35	QP
	0.567	29.47	0.33	29.80	56.00	26.20	
	1.000	30.68	0.37	31.05	56.00	24.95	
	2.839	29.48	0.46	29.94	56.00	26.06	
	6.488	45.47	0.64	46.11	60.00	13.89	
	16.661	36.92	0.89	37.81	60.00	22.19	
	0.166	31.50	0.22	31.72	55.16	23.44	AV
	0.567	19.60	0.33	19.93	46.00	26.07	
	1.000	20.20	0.37	20.57	46.00	25.43	
	2.839	19.10	0.46	19.56	46.00	26.44	
	6.488	35.09	0.64	35.73	50.00	14.27	
	16.661	26.49	0.89	27.38	50.00	22.62	
Neutral	0.166	41.85	0.19	42.04	65.16	23.12	QP
	0.510	25.52	0.24	25.76	56.00	30.24	
	1.464	25.21	0.51	25.72	56.00	30.28	
	3.173	28.82	0.64	29.46	56.00	26.54	
	6.285	45.32	0.91	46.23	60.00	13.77	
	19.532	37.51	1.18	38.69	60.00	21.31	
	0.166	31.00	0.19	31.19	55.16	23.97	AV
	0.510	16.80	0.24	17.04	46.00	28.96	
	1.464	16.30	0.51	16.81	46.00	29.19	
	3.173	19.70	0.64	20.34	46.00	25.66	
	6.285	34.90	0.91	35.81	50.00	14.19	
	19.532	27.10	1.18	28.28	50.00	21.72	

TEST ENGINEER: WENCY YANG

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 48%RH

Serial No. : E11101257-01/01 Date of Test : Oct 11, 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	0.172	41.35	0.23	41.58	64.86	23.28	QP
	0.567	29.66	0.33	29.99	56.00	26.01	
	0.796	31.09	0.40	31.49	56.00	24.51	
	3.364	30.64	0.48	31.12	56.00	24.88	
	6.285	45.97	0.62	46.59	60.00	13.41	
	15.718	35.98	0.87	36.85	60.00	23.15	
	0.172	30.49	0.23	30.72	54.86	24.14	AV
	0.567	19.60	0.33	19.93	46.00	26.07	
	0.796	21.20	0.40	21.60	46.00	24.40	
	3.364	20.61	0.48	21.09	46.00	24.91	
	6.285	35.80	0.62	36.42	50.00	13.58	
	15.718	25.80	0.87	26.67	50.00	23.33	
Neutral	0.166	41.26	0.19	41.45	65.16	23.71	QP
	0.510	25.70	0.24	25.94	56.00	30.06	
	1.223	26.29	0.45	26.74	56.00	29.26	
	3.041	29.71	0.61	30.32	56.00	25.68	
	6.557	46.14	0.95	47.09	60.00	12.91	
	16.661	39.56	1.17	40.73	60.00	19.27	
	0.166	31.30	0.19	31.49	55.16	23.67	AV
	0.510	16.70	0.24	16.94	46.00	29.06	
	1.223	17.21	0.45	17.66	46.00	28.34	
	3.041	19.50	0.61	20.11	46.00	25.89	
	6.557	36.20	0.95	37.15	50.00	12.85	
	16.661	30.39	1.17	31.56	50.00	18.44	

TEST ENGINEER: WENCY YANG

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 48%RH

Serial No. : E11101257-01/01 Date of Test : Oct 11, 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	0.172	41.00	0.23	41.23	64.86	23.63	QP
	0.567	29.86	0.33	30.19	56.00	25.81	
	0.796	33.05	0.40	33.45	56.00	22.55	
	2.594	30.60	0.45	31.05	56.00	24.95	
	6.488	46.42	0.64	47.06	60.00	12.94	
	14.364	35.43	0.86	36.29	60.00	23.71	
	0.172	30.49	0.23	30.72	54.86	24.14	AV
	0.567	20.20	0.33	20.53	46.00	25.47	
	0.796	23.20	0.40	23.60	46.00	22.40	
	2.594	20.30	0.45	20.75	46.00	25.25	
	6.488	36.29	0.64	36.93	50.00	13.07	
	14.364	25.59	0.86	26.45	50.00	23.55	
Neutral	0.172	41.09	0.19	41.28	64.86	23.58	QP
	0.510	25.79	0.24	26.03	56.00	29.97	
	1.223	26.44	0.45	26.89	56.00	29.11	
	3.293	30.02	0.66	30.68	56.00	25.32	
	5.867	45.86	0.85	46.71	60.00	13.29	
	16.661	39.02	1.17	40.19	60.00	19.81	
	0.172	31.20	0.19	31.39	54.86	23.47	AV
	0.510	16.40	0.24	16.64	46.00	29.36	
	1.223	16.21	0.45	16.66	46.00	29.34	
	3.293	20.60	0.66	21.26	46.00	24.74	
	5.867	34.10	0.85	34.95	50.00	15.05	
	16.661	28.89	1.17	30.06	50.00	19.94	

TEST ENGINEER: WENCY YANG

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 48%RH

Serial No. : E11101257-01/01 Date of Test : Oct 11, 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	0.176	40.39	0.23	40.62	64.68	24.06	QP
	0.567	30.33	0.33	30.66	56.00	25.34	
	0.796	32.62	0.40	33.02	56.00	22.98	
	2.358	30.63	0.45	31.08	56.00	24.92	
	6.769	46.33	0.66	46.99	60.00	13.01	
	14.364	35.60	0.86	36.46	60.00	23.54	
	0.176	30.60	0.23	30.83	54.68	23.85	AV
	0.567	20.30	0.33	20.63	46.00	25.37	
	0.796	22.10	0.40	22.50	46.00	23.50	
	2.358	20.40	0.45	20.85	46.00	25.15	
	6.769	36.30	0.66	36.96	50.00	13.04	
	14.364	25.09	0.86	25.95	50.00	24.05	
Neutral	0.180	40.35	0.19	40.54	64.50	23.96	QP
	0.567	26.15	0.25	26.40	56.00	29.60	
	1.464	30.13	0.51	30.64	56.00	25.36	
	3.293	30.46	0.66	31.12	56.00	24.88	
	6.285	47.39	0.91	48.30	60.00	11.70	
	17.199	38.41	1.17	39.58	60.00	20.42	
	0.180	30.10	0.19	30.29	54.50	24.21	AV
	0.567	16.20	0.25	16.45	46.00	29.55	
	1.464	20.80	0.51	21.31	46.00	24.69	
	3.293	20.20	0.66	20.86	46.00	25.14	
	6.285	36.90	0.91	37.81	50.00	12.19	
	17.199	28.40	1.17	29.57	50.00	20.43	

TEST ENGINEER: WENCY YANG

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 48%RH

Serial No. : E11101257-01/01 Date of Test : Oct 11, 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	0.172	40.51	0.23	40.74	64.86	24.12	QP
	0.567	29.93	0.33	30.26	56.00	25.74	
	0.796	33.60	0.40	34.00	56.00	22.00	
	2.809	30.88	0.45	31.33	56.00	24.67	
	6.488	46.70	0.64	47.34	60.00	12.66	
	14.364	36.48	0.86	37.34	60.00	22.66	
	0.172	30.59	0.23	30.82	54.86	24.04	AV
	0.567	20.10	0.33	20.43	46.00	25.57	
	0.796	22.90	0.40	23.30	46.00	22.70	
	2.809	20.71	0.45	21.16	46.00	24.84	
	6.488	26.69	0.64	27.33	50.00	22.67	
	14.364	26.69	0.86	27.55	50.00	22.45	
Neutral	0.170	40.59	0.19	40.78	64.94	24.16	QP
	0.510	26.21	0.24	26.45	56.00	29.55	
	1.000	27.70	0.44	28.14	56.00	27.86	
	3.140	30.42	0.63	31.05	56.00	24.95	
	6.352	46.18	0.92	47.10	60.00	12.90	
	16.661	39.24	1.17	40.41	60.00	19.59	
	0.170	30.20	0.19	30.39	54.94	24.55	AV
	0.510	17.30	0.24	17.54	46.00	28.46	
	1.000	18.80	0.44	19.24	46.00	26.76	
	3.140	20.80	0.63	21.43	46.00	24.57	
	6.352	35.70	0.92	36.62	50.00	13.38	
	16.661	29.59	1.17	30.76	50.00	19.24	

TEST ENGINEER: WENCY YANG

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 48%RH

Serial No. : E11101257-01/01 Date of Test : Oct 11, 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	0.172	40.85	0.23	41.08	64.86	23.78	QP
	0.567	30.00	0.33	30.33	56.00	25.67	
	0.796	32.86	0.40	33.26	56.00	22.74	
	2.384	30.57	0.45	31.02	56.00	24.98	
	6.252	46.91	0.62	47.53	60.00	12.47	
	16.486	36.65	0.89	37.54	60.00	22.46	
	0.172	30.09	0.23	30.32	54.86	24.54	AV
	0.567	20.30	0.33	20.63	46.00	25.37	
	0.796	22.50	0.40	22.90	46.00	23.10	
	2.384	20.40	0.45	20.85	46.00	25.15	
	6.252	36.10	0.62	36.72	50.00	13.28	
	16.486	25.79	0.89	26.68	50.00	23.32	
Neutral	0.172	40.80	0.19	40.99	64.86	23.87	QP
	0.510	25.99	0.24	26.23	56.00	29.77	
	0.796	26.90	0.33	27.23	56.00	28.77	
	3.364	30.44	0.67	31.11	56.00	24.89	
	6.352	46.11	0.92	47.03	60.00	12.97	
	16.661	39.15	1.17	40.32	60.00	19.68	
	0.172	30.10	0.19	30.29	54.86	24.57	AV
	0.510	16.60	0.24	16.84	46.00	29.16	
	0.796	17.30	0.33	17.63	46.00	28.37	
	3.364	20.78	0.67	21.45	46.00	24.55	
	6.352	35.50	0.92	36.42	50.00	13.58	
	16.661	30.09	1.17	31.26	50.00	18.74	

TEST ENGINEER: WENCY YANG

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 48%RH

Serial No. : E11101257-01/01 Date of Test : Oct 11, 2011

Test Mode : USB Play

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	40.80	0.19	40.99	64.86	23.87	QP
	0.510	25.52	0.24	25.76	56.00	30.24	
	1.464	25.21	0.51	25.72	56.00	30.28	
	3.293	30.46	0.66	31.12	56.00	24.88	
	6.285	45.32	0.91	46.23	60.00	13.77	
	17.199	38.41	1.17	39.58	60.00	20.42	
	0.172	30.10	0.19	30.29	54.86	24.57	AV
	0.510	16.80	0.24	17.04	46.00	28.96	
	1.464	16.30	0.51	16.81	46.00	29.19	
	3.293	20.20	0.66	20.86	46.00	25.14	
	6.285	34.90	0.91	35.81	50.00	14.19	
	17.199	28.40	1.17	29.57	50.00	20.43	
Neutral	0.172	40.85	0.23	41.08	64.86	23.78	QP
	0.567	29.86	0.33	30.19	56.00	25.81	
	1.000	30.68	0.37	31.05	56.00	24.95	
	2.839	29.48	0.46	29.94	56.00	26.06	
	6.488	45.47	0.64	46.11	60.00	13.89	
	15.718	35.98	0.87	36.85	60.00	23.15	
	0.172	30.09	0.23	30.32	54.86	24.54	AV
	0.567	20.20	0.33	20.53	46.00	25.47	
	1.000	20.20	0.37	20.57	46.00	25.43	
	2.839	19.10	0.46	19.56	46.00	26.44	
	6.488	35.09	0.64	35.73	50.00	14.27	
	15.718	25.80	0.87	26.67	50.00	23.33	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

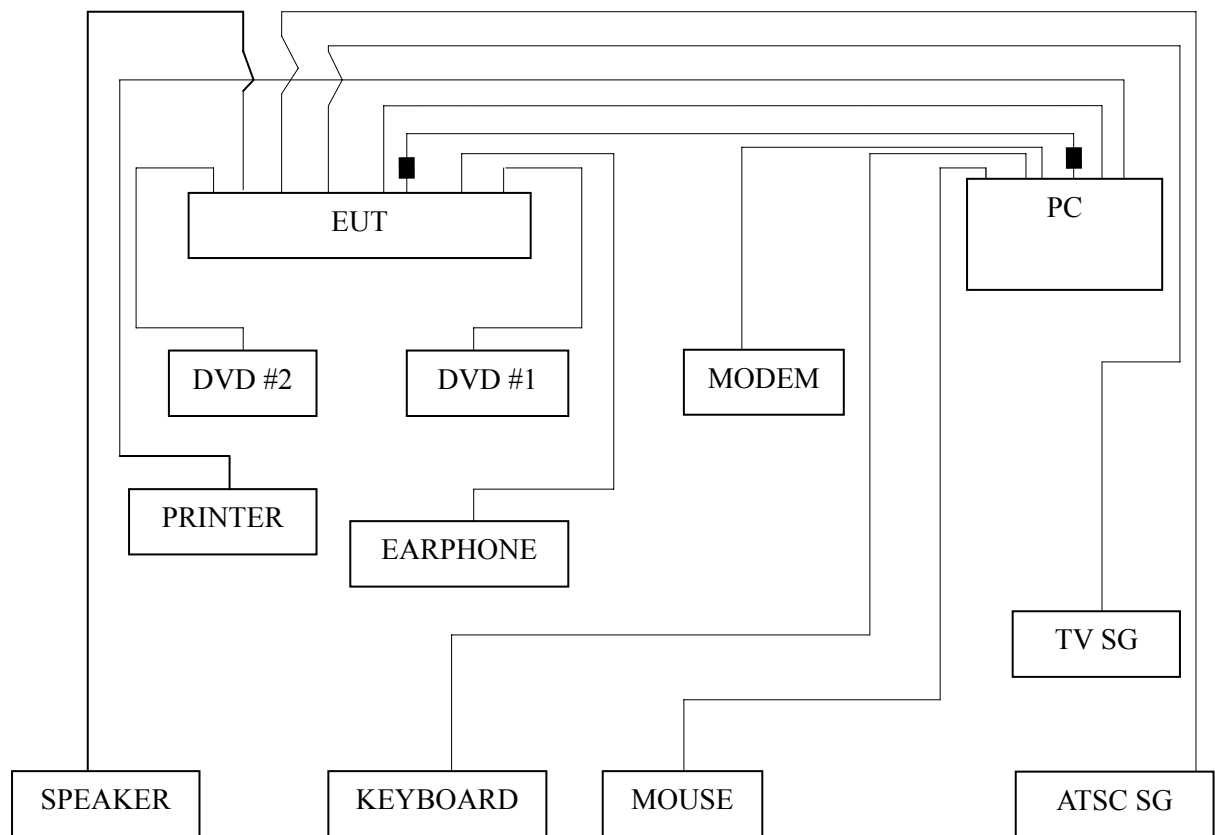
4.1 Test Equipment

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	Sep 18, 2011	Mar 18, 2012
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.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426390	Sep 18, 2011	Mar 18, 2012
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

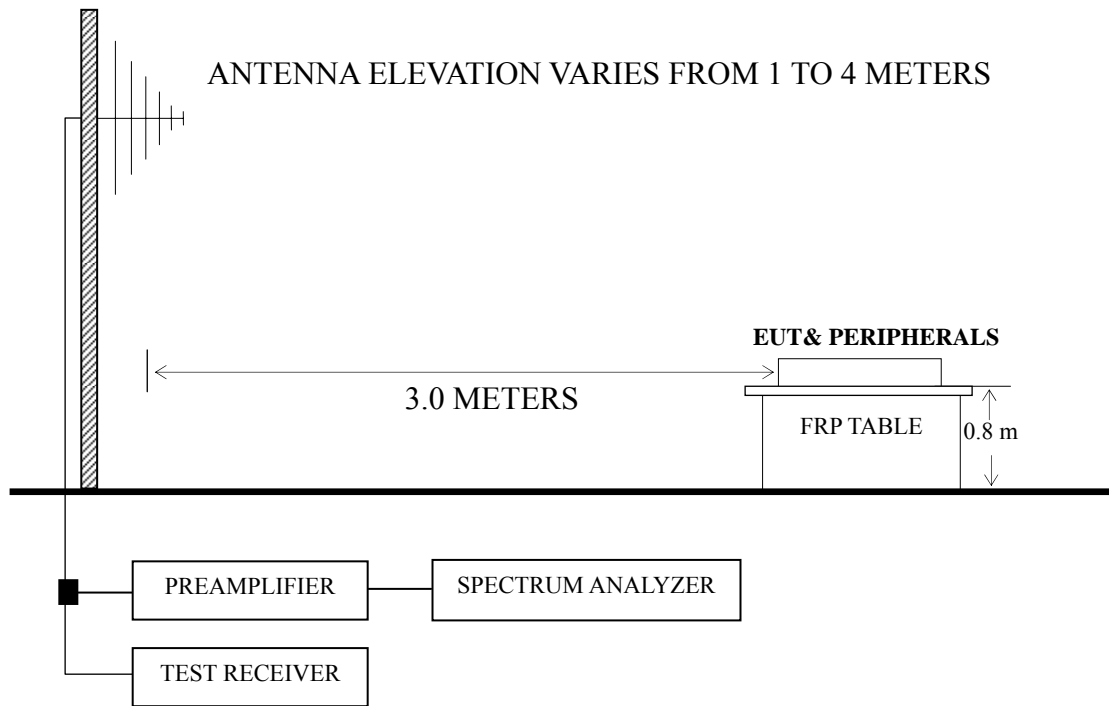
4.2 Block Diagram of Test Setup

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	
		($\mu\text{V/m}$)	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 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	P24
D-Sub 800*600@60Hz	P25
D-Sub 1024*768@60Hz	P26
HDMI 640*480@60Hz	P27
HDMI 800*600@60Hz	P28
HDMI 1024*768@60Hz	P29
USB Play	P30

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 D-Sub 800*600@60Hz test mode. The worst emission at horizontal polarization was detected at 47.460 MHz with corrected signal level of 38.52 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.80 m height and the turntable was at 120°. The worst emission at vertical polarization was detected at 75.590 MHz with corrected signal level of 30.02 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.70 m height and the turntable was at 265°.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 60%RH

Serial No. : E11101257-01/01 Date of Test : Oct 21, 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	49.100	28.00	8.82	0.78	37.60	40.00	2.40
	70.740	50.36	9.93	0.90	33.40	40.00	6.60
	98.870	46.31	11.31	1.03	30.75	43.50	12.75
	183.260	52.00	9.96	1.39	36.03	43.50	7.47
	265.710	45.79	12.62	1.65	33.18	46.00	12.82
	803.090	38.05	20.59	2.90	33.81	46.00	12.19
Vertical	49.400	48.09	8.69	0.78	29.52	40.00	10.48
	76.560	44.31	10.34	0.93	27.70	40.00	12.30
	175.500	48.85	10.04	1.36	32.85	43.50	10.65
	272.500	42.11	12.86	1.68	29.77	46.00	16.23
	496.570	30.82	17.56	2.26	22.54	46.00	23.46
	808.910	37.53	20.58	2.90	33.30	46.00	12.70

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 60%RH

Serial No. : E11101257-01/01 Date of Test : Oct 21, 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	47.460	56.48	9.37	0.77	38.52	40.00	1.48
	73.650	48.61	10.15	0.91	31.84	40.00	8.16
	99.840	46.70	11.34	1.04	31.18	43.50	12.32
	183.260	51.88	9.96	1.39	35.91	43.50	7.59
	361.740	36.15	15.45	1.96	26.24	46.00	19.76
	819.580	32.06	20.54	2.92	27.83	46.00	18.17
Vertical	50.370	48.12	8.51	0.78	29.39	40.00	10.61
	75.590	46.70	10.27	0.92	30.02	40.00	9.98
	159.980	47.63	10.25	1.28	31.66	43.50	11.84
	212.360	44.47	10.29	1.49	29.23	43.50	14.27
	266.680	41.91	12.66	1.66	29.35	46.00	16.65
	828.310	37.91	20.52	2.93	33.69	46.00	12.31

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 60%RH

Serial No. : E11101257-01/01 Date of Test : Oct 21, 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	72.680	46.64	10.08	0.91	29.81	40.00	10.19
	185.200	51.76	9.94	1.40	35.81	43.50	7.69
	216.400	29.69	10.45	1.50	41.64	46.00	4.36
	282.200	54.14	13.21	1.72	42.19	46.00	3.81
	708.030	37.15	19.60	2.70	31.39	46.00	14.61
	903.970	35.10	20.32	3.04	30.98	46.00	15.02
Vertical	47.500	26.39	9.37	0.77	36.53	40.00	3.47
	69.770	45.41	9.85	0.89	28.37	40.00	11.63
	105.660	46.49	11.26	1.07	30.98	43.50	12.52
	186.170	51.84	9.93	1.40	35.90	43.50	7.60
	357.860	42.61	15.33	1.95	32.60	46.00	13.40
	708.030	33.93	19.60	2.70	28.17	46.00	17.83

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 60%RH

Serial No. : E11101257-01/01 Date of Test : Oct 21, 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	48.430	56.14	9.02	0.77	37.86	40.00	2.14
	72.680	46.79	10.08	0.91	29.96	40.00	10.04
	102.750	47.92	11.31	1.05	32.41	43.50	11.09
	186.170	51.86	9.93	1.40	35.92	43.50	7.58
	353.980	42.83	15.25	1.93	32.75	46.00	13.25
	708.030	34.72	19.60	2.70	28.96	46.00	17.04
Vertical	72.680	46.29	10.08	0.91	29.46	40.00	10.54
	182.290	53.12	9.97	1.38	37.14	43.50	6.36
	266.680	45.53	12.66	1.66	32.97	46.00	13.03
	307.420	40.01	13.90	1.78	28.75	46.00	17.25
	507.240	31.19	17.64	2.27	22.96	46.00	23.04
	698.330	35.62	19.47	2.67	29.66	46.00	16.34

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 60%RH

Serial No. : E11101257-01/01 Date of Test : Oct 21, 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	47.460	44.05	9.37	0.77	26.09	40.00	13.91
	73.650	45.96	10.15	0.91	29.19	40.00	10.81
	183.260	51.90	9.96	1.39	35.93	43.50	7.57
	249.220	45.88	11.95	1.60	32.56	46.00	13.44
	710.940	36.94	19.63	2.70	31.21	46.00	14.79
	955.380	33.58	20.59	3.76	30.66	46.00	15.34
Vertical	47.200	26.00	9.44	0.76	36.20	40.00	3.80
	70.740	47.54	9.93	0.90	30.58	40.00	9.42
	100.810	47.04	11.34	1.05	31.54	43.50	11.96
	183.600	20.20	9.96	1.39	31.55	43.50	11.95
	264.740	44.13	12.62	1.65	31.52	46.00	14.48
	361.740	40.87	15.45	1.96	30.96	46.00	15.04

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 60%RH

Serial No. : E11101257-01/01 Date of Test : Oct 21, 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	47.460	55.53	9.37	0.77	37.57	40.00	2.43
	74.620	44.95	10.21	0.92	28.23	40.00	11.77
	103.720	48.27	11.29	1.06	32.76	43.50	10.74
	183.260	51.91	9.96	1.39	35.94	43.50	7.56
	250.190	46.11	11.99	1.60	32.83	46.00	13.17
	355.920	43.41	15.29	1.95	33.38	46.00	12.62
Vertical	47.460	43.94	9.37	0.77	25.98	40.00	14.02
	75.590	45.46	10.27	0.92	28.78	40.00	11.22
	99.840	42.96	11.34	1.04	27.44	43.50	16.06
	182.290	53.12	9.97	1.38	37.14	43.50	6.36
	706.090	39.28	19.56	2.70	33.47	46.00	12.53
	923.370	33.34	20.42	3.22	29.58	46.00	16.42

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN40V86MH Humidity : 60%RH

Serial No. : E11101257-01/01 Date of Test : Oct 21, 2011

Test Mode : USB Play

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	76.560	15.44	10.34	0.93	26.71	40.00	13.29
	188.110	26.25	9.91	1.41	37.57	43.50	5.93
	344.280	20.37	14.96	1.90	37.23	46.00	8.77
	372.410	19.09	15.72	1.99	36.80	46.00	9.20
	400.540	21.04	16.30	2.06	39.40	46.00	6.60
	872.930	11.30	20.37	2.98	34.65	46.00	11.35
Vertical	33.210	19.90	16.64	0.66	37.20	40.00	2.80
	79.470	20.24	10.51	0.94	31.69	40.00	8.31
	153.190	23.55	10.36	1.25	35.16	43.50	8.34
	344.280	24.45	14.96	1.90	41.31	46.00	4.69
	372.410	24.49	15.72	1.99	42.20	46.00	3.80
	872.930	16.52	20.37	2.98	39.87	46.00	6.13

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
Al Tape	DBA40X100\ROH	JOINSET	See Internal Photos Figure 18
Foam	DAA14X1X55.7\CR\VGA\ROH	JOINSET	See Internal Photos Figure 19
Ferrite core	ZCAT3035-1330\ROH	FEELUX	See Internal Photos Figure 16
		Rui Feng Electronic Co., Ltd.	
		Hai An Magnetic Material No.2 Factory	
		JIANGSU LETTALL ELECTRONICS CO., LTD.	
Ferrite core	ZCAT2132-1130\ROH	FEELUX	See Internal Photos Figure 17
		Rui Feng Electronic Co., Ltd.	
		Hai An Magnetic Material No.2 Factory	
		JIANGSU LETTALL ELECTRONICS CO., LTD.	

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)