

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

LCD TV

Model No.	Serial No.	Brand
LTDN39V77MH	E1202161-01/01	Hisense

FCC ID : W9HLCDD0015

Prepared For : Hisense Electric Co., Ltd.  
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Report No. : ACI-F12032  
Date of Test : Feb 23 – 27, 2012  
Date of Report : Mar 05, 2012

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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
LTDN39V77MH	E1202161-01/01	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: LTDN39V77MH; S/N: E1202161-01/01) which was tested in 3m anechoic chamber Feb 23 – 27, 2012 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.F12033, a Verification report.***

Date of Test : Feb 23 – 27, 2012 Date of Report : Mar 05, 2012

Producer :   
KATHY WANG / Assistant

Review :   
DIO YANG / Assistant Manager

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

Signatory :   
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:

<b>Description of Test Item</b>	<b>Standard</b>	<b>Limits</b>	<b>Results</b>
<b>EMISSION</b>			
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.	:	LTDN39V77MH
Serial No.	:	E1202161-01/01

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 : CHIMEI INNOLUX  
M/N : V390HJ1 -L01

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 DIGITAL AUDIO OUT Port : Connected with DVD #1
- (7) One Headphone Port : Connected with Earphone
- (8) One ANT Port : Connected with ATSC SG / TV SG
- (9) One 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 Modem

## 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 U-Disk

Manufacturer : LG  
Model Number : 1GB  
Serial Number : N/A

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

## 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

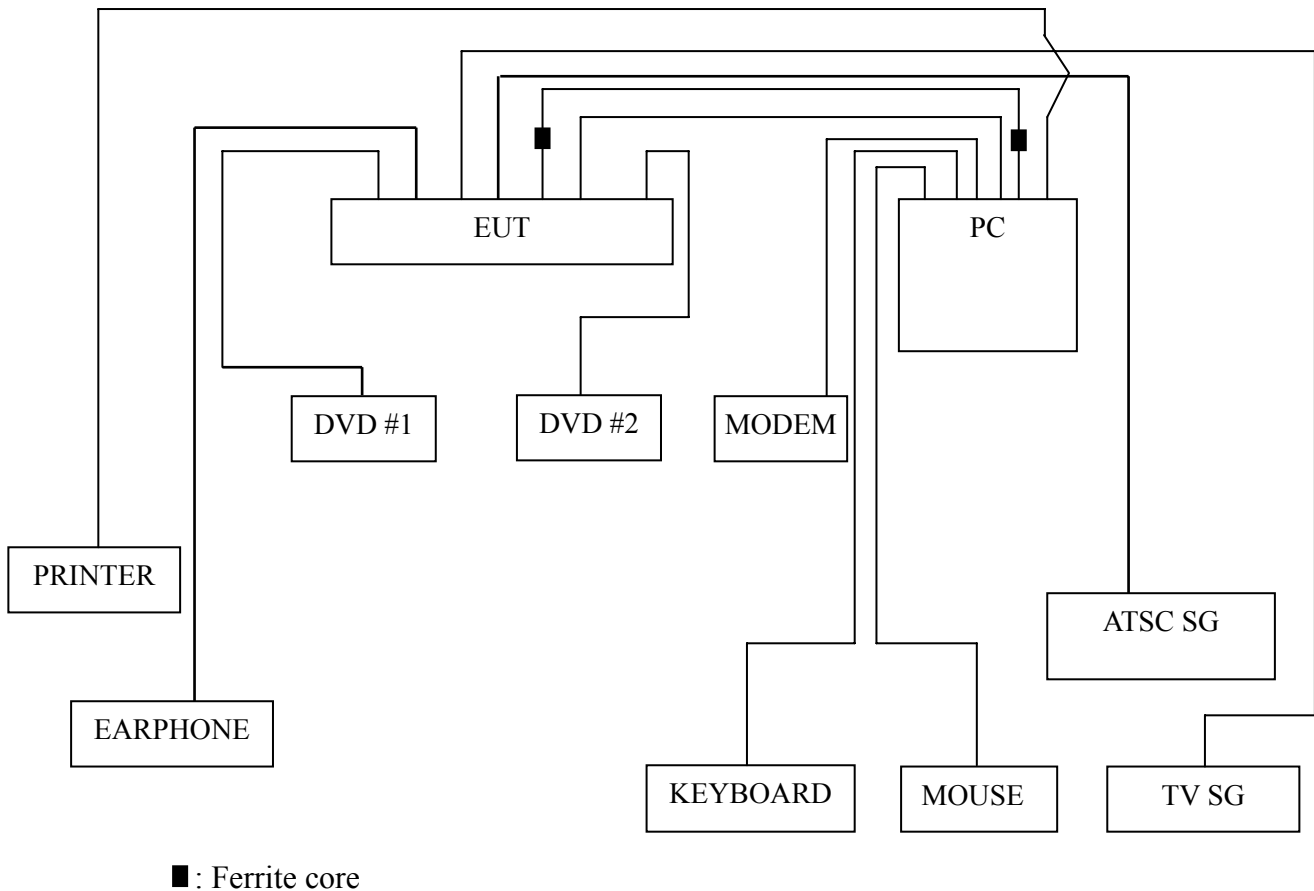
#### 3.1 Test Equipment

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

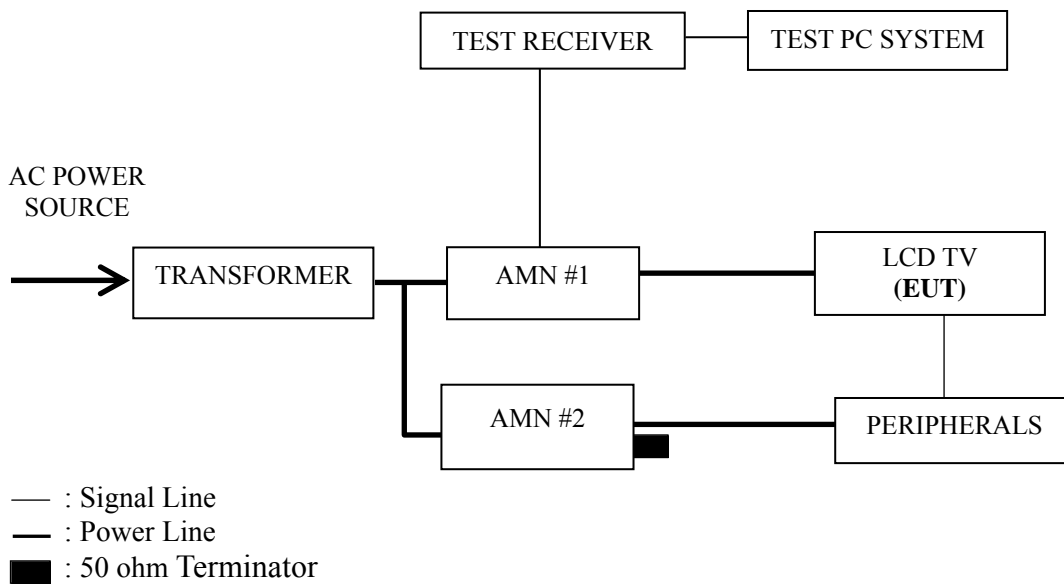
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 22, 2011	Mar 22, 2012
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Mar 22, 2011	Mar 22, 2012
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2011	Mar 22, 2012
4.	50 $\Omega$ Coaxial Switch	Anritsu	MP59B	6200426389	Sep 18, 2011	Mar 18, 2012
5.	50 $\Omega$ 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 ( $\mu$ 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 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 D-Sub 1024\*768@60Hz test mode. The worst emission is detected at 1.021 MHz (Average Value) with corrected signal level of 31.04 dB (μV) (limit is 46.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 48%RH

Serial No. : E1202161-01/01 Date of Test : Feb 23, 2012

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

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.206	39.96	0.23	40.19	63.36	23.17	QP
	0.379	34.31	0.29	34.60	58.30	23.70	
	0.871	33.42	0.38	33.80	56.00	22.20	
	2.358	35.86	0.45	36.31	56.00	19.69	
	5.805	38.67	0.59	39.26	60.00	20.74	
	22.535	38.36	1.12	39.48	60.00	20.52	
	0.206	29.86	0.23	30.09	53.36	23.27	AV
	0.379	24.15	0.29	24.44	48.30	23.86	
	0.871	23.74	0.38	24.12	46.00	21.88	
	2.358	25.49	0.45	25.94	46.00	20.06	
	5.805	28.49	0.59	29.08	50.00	20.92	
	22.535	28.45	1.12	29.57	50.00	20.43	
Neutral	0.184	38.57	0.19	38.76	64.28	25.52	QP
	0.456	35.06	0.24	35.30	56.76	21.46	
	1.117	32.03	0.44	32.47	56.00	23.53	
	3.074	30.32	0.61	30.93	56.00	25.07	
	6.627	39.44	0.96	40.40	60.00	19.60	
	<b>21.830</b>	<b>40.50</b>	<b>1.22</b>	<b>41.72</b>	<b>60.00</b>	<b>18.28</b>	
	0.184	28.46	0.19	28.65	54.28	25.63	AV
	0.456	25.49	0.24	25.73	46.76	21.03	
	1.117	23.41	0.44	23.85	46.00	22.15	
	3.074	20.59	0.61	21.20	46.00	24.80	
	6.627	29.73	0.96	30.69	50.00	19.31	
	21.830	30.10	1.22	31.32	50.00	18.68	

TEST ENGINEER: LUY LV

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 48%RH

Serial No. : E1202161-01/01 Date of Test : Feb 23, 2012

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

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.186	39.91	0.23	40.14	64.20	24.06	QP
	0.456	35.12	0.31	35.43	56.76	21.33	
	0.862	33.47	0.38	33.85	56.00	22.15	
	2.358	35.74	0.45	36.19	56.00	19.81	
	5.867	38.22	0.60	38.82	60.00	21.18	
	22.535	37.97	1.12	39.09	60.00	20.91	
	0.186	29.46	0.23	29.69	54.20	24.51	AV
	0.456	25.48	0.31	25.79	46.76	20.97	
	0.862	23.74	0.38	24.12	46.00	21.88	
	2.358	25.19	0.45	25.64	46.00	20.36	
	5.867	28.58	0.60	29.18	50.00	20.82	
	22.535	27.15	1.12	28.27	50.00	21.73	
Neutral	0.186	38.40	0.19	38.59	64.20	25.61	QP
	0.452	34.46	0.24	34.70	56.85	22.15	
	1.117	31.44	0.44	31.88	56.00	24.12	
	2.809	31.14	0.58	31.72	56.00	24.28	
	6.488	39.14	0.93	40.07	60.00	19.93	
	<b>22.896</b>	<b>40.30</b>	<b>1.30</b>	<b>41.60</b>	<b>60.00</b>	<b>18.40</b>	
	0.186	28.59	0.19	28.78	54.20	25.42	AV
	0.452	24.16	0.24	24.40	46.85	22.45	
	1.117	21.06	0.44	21.50	46.00	24.50	
	2.809	21.07	0.58	21.65	46.00	24.35	
	6.488	29.46	0.93	30.39	50.00	19.61	
	22.896	30.16	1.30	31.46	50.00	18.54	

TEST ENGINEER: LUY LV

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 48%RH

Serial No. : E1202161-01/01 Date of Test : Feb 23, 2012

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

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.184	40.72	0.23	40.95	64.28	23.33	QP
	0.456	35.36	0.31	35.67	56.76	21.09	
	0.953	33.33	0.37	33.70	56.00	22.30	
	2.334	35.38	0.45	35.83	56.00	20.17	
	4.574	39.07	0.55	39.62	56.00	16.38	
	22.063	38.80	1.05	39.85	60.00	20.15	
	0.184	30.26	0.23	30.49	54.28	23.79	AV
	0.456	25.19	0.31	25.50	46.76	21.26	
	0.953	23.70	0.37	24.07	46.00	21.93	
	2.334	25.19	0.45	25.64	46.00	20.36	
	4.574	29.36	0.55	29.91	46.00	16.09	
	22.063	28.59	1.05	29.64	50.00	20.36	
Neutral	0.184	38.55	0.19	38.74	64.28	25.54	QP
	0.456	35.07	0.24	35.31	56.76	21.45	
	1.021	30.96	0.44	31.40	56.00	24.60	
	3.107	30.05	0.62	30.67	56.00	25.33	
	5.929	39.79	0.86	40.65	60.00	19.35	
	22.063	40.07	1.24	41.31	60.00	18.69	
	0.184	28.49	0.19	28.68	54.28	25.60	AV
	0.456	25.16	0.24	25.40	46.76	21.36	
	<b>1.021</b>	<b>30.60</b>	<b>0.44</b>	<b>31.04</b>	<b>46.00</b>	<b>14.96</b>	
	3.107	20.16	0.62	20.78	46.00	25.22	
	5.929	29.54	0.86	30.40	/50.00	19.60	
	22.063	30.28	1.24	31.52	50.00	18.48	

TEST ENGINEER: LUY LV



EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 48%RH

Serial No. : E1202161-01/01 Date of Test : Feb 23, 2012

Test Mode : HDMI 640\*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.180	40.39	0.23	40.62	64.50	23.88	QP
	0.535	35.26	0.32	35.58	56.00	20.42	
	1.106	32.96	0.37	33.33	56.00	22.67	
	2.358	36.46	0.45	36.91	56.00	19.09	
	5.221	38.20	0.55	38.75	60.00	21.25	
	20.924	39.05	0.99	40.04	60.00	19.96	
	0.180	30.26	0.23	30.49	54.50	24.01	AV
	0.535	25.19	0.32	25.51	46.00	20.49	
	1.106	23.56	0.37	23.93	46.00	22.07	
	2.358	26.48	0.45	26.93	46.00	19.07	
5.221	28.50	0.55	29.05	50.00	20.95		
20.924	29.79	0.99	30.78	50.00	19.22		
Neutral	0.182	38.65	0.19	38.84	64.42	25.58	QP
	0.452	35.36	0.24	35.60	56.85	21.25	
	1.106	30.79	0.44	31.23	56.00	24.77	
	2.422	30.87	0.57	31.44	56.00	24.56	
	6.557	40.28	0.95	41.23	60.00	18.77	
	21.600	40.41	1.22	41.63	60.00	18.37	
	0.182	28.59	0.19	28.78	54.42	25.64	AV
	0.452	25.16	0.24	25.40	46.85	21.45	
	1.106	20.71	0.44	21.15	46.00	24.85	
	2.422	20.30	0.57	20.87	46.00	25.13	
6.557	30.74	0.95	31.69	50.00	18.31		
<b>21.600</b>	<b>30.74</b>	<b>1.22</b>	<b>31.96</b>	<b>50.00</b>	<b>18.04</b>		

TEST ENGINEER: LUY LV

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 48%RH

Serial No. : E1202161-01/01 Date of Test : Feb 23, 2012

Test Mode : HDMI 800\*600@60Hz

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.184	40.70	0.23	40.93	64.28	23.35	QP
	0.447	34.48	0.31	34.79	56.93	22.14	
	1.032	33.04	0.37	33.41	56.00	22.59	
	2.358	35.90	0.45	36.35	56.00	19.65	
	<b>4.454</b>	<b>38.62</b>	<b>0.55</b>	<b>39.17</b>	<b>56.00</b>	<b>16.83</b>	
	22.298	39.05	1.06	40.11	60.00	19.89	
	0.184	30.26	0.23	30.49	54.28	23.79	AV
	0.447	24.10	0.31	24.41	46.93	22.52	
	1.032	23.59	0.37	23.96	46.00	22.04	
	2.358	25.48	0.45	25.93	46.00	20.07	
	4.454	28.48	0.55	29.03	46.00	16.97	
	22.298	29.75	1.06	30.81	50.00	19.19	
Neutral	0.183	39.02	0.19	39.21	64.33	25.12	QP
	0.456	35.40	0.24	35.64	56.76	21.12	
	1.021	31.58	0.44	32.02	56.00	23.98	
	3.241	30.57	0.66	31.23	56.00	24.77	
	6.557	39.33	0.95	40.28	60.00	19.72	
	21.373	40.18	1.21	41.39	60.00	18.61	
	0.183	29.45	0.19	29.64	54.33	24.69	AV
	0.456	25.16	0.24	25.40	46.76	21.36	
	1.021	21.03	0.44	21.47	46.00	24.53	
	3.241	20.60	0.66	21.26	46.00	24.74	
	6.557	29.56	0.95	30.51	50.00	19.49	
	21.373	30.24	1.21	31.45	50.00	18.55	

TEST ENGINEER: LUY LV

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 48%RH

Serial No. : E1202161-01/01 Date of Test : Feb 23, 2012

Test Mode : HDMI 1024\*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB( $\mu$ V)	Factor (dB)	Emission Level dB( $\mu$ V)	Limits dB( $\mu$ V)	Margin (dB)	Remark
Line	0.186	40.59	0.23	40.82	64.20	23.38	QP
	0.452	35.62	0.31	35.93	56.85	20.92	
	0.862	33.08	0.38	33.46	56.00	22.54	
	2.358	36.08	0.45	36.53	56.00	19.47	
	5.867	39.57	0.60	40.17	60.00	19.83	
	22.298	38.88	1.06	39.94	60.00	20.06	
	0.186	30.90	0.23	31.13	54.20	23.07	AV
	0.452	25.10	0.31	25.41	46.85	21.44	
	0.862	23.78	0.38	24.16	46.00	21.84	
	2.358	26.90	0.45	27.35	46.00	18.65	
	5.867	29.73	0.60	30.33	50.00	19.67	
	22.298	28.60	1.06	29.66	50.00	20.34	
Neutral	0.184	38.74	0.19	38.93	64.28	25.35	QP
	0.452	35.10	0.24	35.34	56.85	21.51	
	0.862	30.44	0.40	30.84	56.00	25.16	
	2.334	30.02	0.57	30.59	56.00	25.41	
	6.557	39.30	0.95	40.25	60.00	19.75	
	<b>22.298</b>	<b>41.33</b>	<b>1.24</b>	<b>42.57</b>	<b>60.00</b>	<b>17.43</b>	
	0.184	28.50	0.19	28.69	54.28	25.59	AV
	0.452	25.60	0.24	25.84	46.85	21.01	
	0.862	20.19	0.40	20.59	46.00	25.41	
	2.334	20.16	0.57	20.73	46.00	25.27	
	6.557	29.70	0.95	30.65	50.00	19.35	
	22.298	30.25	1.24	31.49	50.00	18.51	

TEST ENGINEER: LUY LV

EUT :           LCD TV           Temperature :           22°C          

Model No. :           LTDN39V77MH           Humidity :           48%RH          

Serial No. :           E1202161-01/01           Date of Test :           Feb 23, 2012          

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	0.184	40.72	0.23	40.95	64.28	23.33	QP
	0.535	35.26	0.32	35.58	56.00	20.42	
	0.862	33.47	0.38	33.85	56.00	22.15	
	2.334	35.38	0.45	35.83	56.00	20.17	
	5.221	38.20	0.55	38.75	60.00	21.25	
	22.535	37.97	1.12	39.09	60.00	20.91	
	0.184	30.26	0.23	30.49	54.28	23.79	AV
	0.535	25.19	0.32	25.51	46.00	20.49	
	0.862	23.74	0.38	24.12	46.00	21.88	
	2.334	25.19	0.45	25.64	46.00	20.36	
	5.221	28.50	0.55	29.05	50.00	20.95	
	22.535	27.15	1.12	28.27	50.00	21.73	
Neutral	0.183	39.02	0.19	39.21	64.33	25.12	QP
	0.452	35.36	0.24	35.60	56.85	21.25	
	1.106	30.79	0.44	31.23	56.00	24.77	
	3.074	30.32	0.61	30.93	56.00	25.07	
	6.488	39.14	0.93	40.07	60.00	19.93	
	<b>22.896</b>	<b>40.30</b>	<b>1.30</b>	<b>41.60</b>	<b>60.00</b>	<b>18.40</b>	
	0.183	29.45	0.19	29.64	54.33	24.69	AV
	0.452	25.16	0.24	25.40	46.85	21.45	
	1.106	20.71	0.44	21.15	46.00	24.85	
	3.074	20.59	0.61	21.20	46.00	24.80	
	6.488	29.46	0.93	30.39	50.00	19.61	
	22.896	30.16	1.30	31.46	50.00	18.54	

TEST ENGINEER: LUY LV

## 4 RADIATED EMISSION TEST

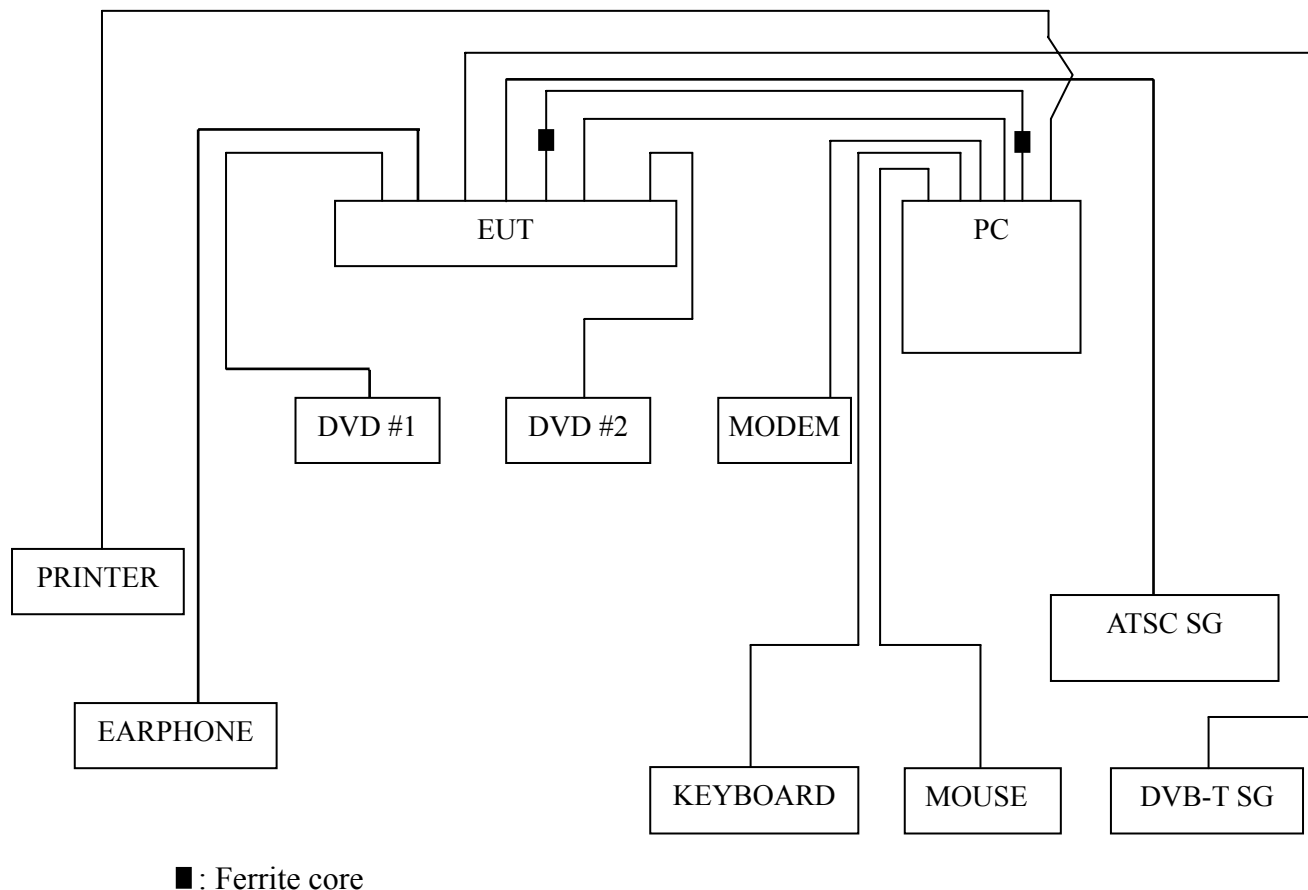
### 4.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

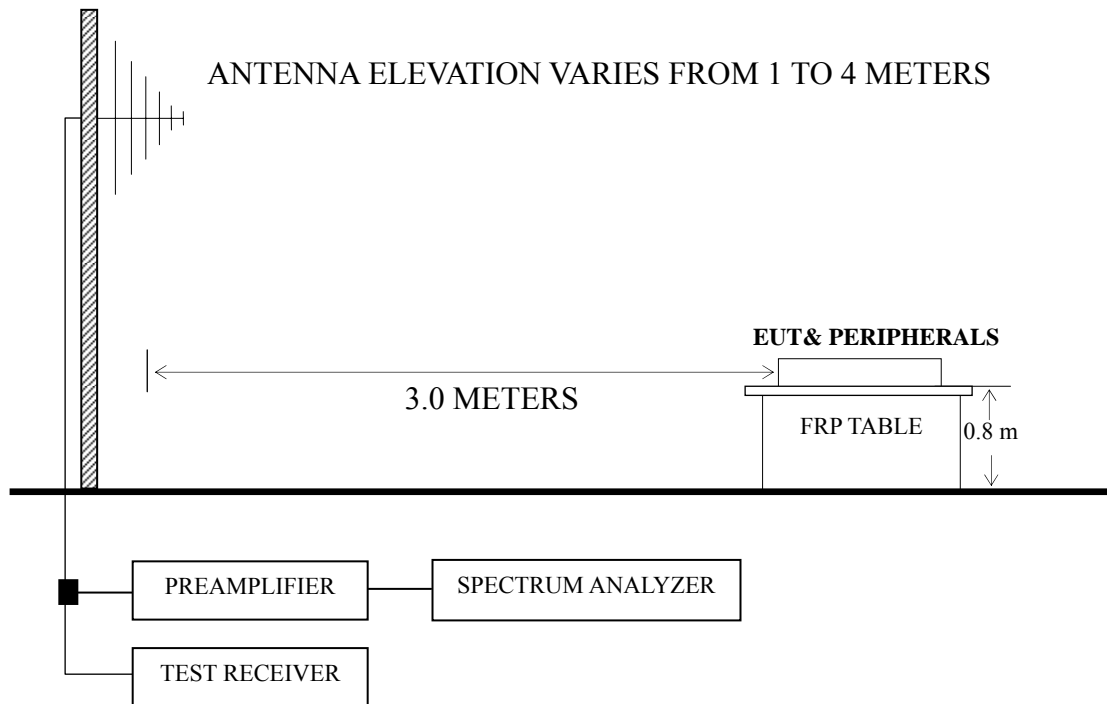
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 22, 2011	Mar 22, 2012
2.	Preamplifier	Agilent	8447D	2944A10548	Sep 18, 2011	Mar 18, 2012
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2011	Dec 01, 2012
4.	Spectrum Analyzer	Agilent	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
5.	50 $\Omega$ 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



#### 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 162.890MHz with corrected signal level of 37.22 dB ( $\mu\text{V}/\text{m}$ ) (limit is 43.50 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 2.00 m height and the turntable was at 20°. The worst emission at vertical polarization was detected at 269.590 MHz with corrected signal level of 43.60 dB ( $\mu\text{V}/\text{m}$ ) (limit is 46.00 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 2.00 m height and the turntable was at 300°.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 60%RH

Serial No. : E1202161-01/01 Date of Test : Feb 27, 2012

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

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	<b>34.129</b>	<b>18.00</b>	<b>17.30</b>	<b>0.83</b>	<b>36.13</b>	<b>40.00</b>	<b>3.87</b>
	98.870	50.42	11.27	1.83	35.62	43.50	7.88
	136.700	43.52	12.23	2.15	30.36	43.50	13.14
	232.730	44.77	12.24	2.55	32.63	46.00	13.37
	487.840	39.32	17.75	3.23	32.24	46.00	13.76
	733.250	39.29	20.04	3.75	35.11	46.00	10.89
Vertical	<b>33.880</b>	<b>45.15</b>	<b>17.44</b>	<b>0.83</b>	<b>35.25</b>	<b>40.00</b>	<b>4.75</b>
	97.900	49.82	11.11	1.83	34.86	43.50	8.64
	164.830	44.90	10.35	2.30	30.08	43.50	13.42
	232.730	45.32	12.24	2.55	33.18	46.00	12.82
	441.280	40.68	17.09	3.09	33.07	46.00	12.93
	742.950	39.82	20.13	3.78	35.79	46.00	10.21

TEST ENGINEER: RAVEN JIN



EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 60%RH

Serial No. : E1202161-01/01 Date of Test : Feb 27, 2012

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	94.020	45.91	10.27	1.78	30.07	43.50	13.43
	122.150	38.96	12.91	2.04	26.23	43.50	17.27
	<b>162.890</b>	<b>51.99</b>	<b>10.42</b>	<b>2.29</b>	<b>37.22</b>	<b>43.50</b>	<b>6.28</b>
	296.750	48.66	13.86	2.75	38.38	46.00	7.62
	594.540	39.24	19.14	3.45	33.49	46.00	12.51
	888.450	40.16	21.60	4.89	39.13	46.00	6.87
Vertical	54.250	53.43	7.92	1.03	34.41	40.00	5.59
	71.710	53.44	6.69	1.45	33.77	40.00	6.23
	107.600	50.98	12.10	1.92	37.18	43.50	6.32
	217.210	48.18	11.48	2.50	35.16	46.00	10.84
	<b>269.590</b>	<b>54.50</b>	<b>13.32</b>	<b>2.66</b>	<b>43.60</b>	<b>46.00</b>	<b>2.40</b>
	378.230	50.98	16.03	2.95	42.54	46.00	3.46

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 60%RH

Serial No. : E1202161-01/01 Date of Test : Feb 27, 2012

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

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	54.250	54.43	7.92	1.03	35.41	40.00	4.59
	71.710	53.93	6.69	1.45	34.26	40.00	5.74
	<b>108.300</b>	<b>25.97</b>	<b>12.17</b>	<b>1.93</b>	<b>40.07</b>	<b>43.50</b>	<b>3.43</b>
	180.350	53.74	9.90	2.36	38.64	43.50	4.86
	269.590	51.70	13.32	2.66	40.80	46.00	5.20
	666.320	39.26	19.54	3.62	34.24	46.00	11.76
Vertical	34.850	43.85	16.97	0.84	33.48	40.00	6.52
	80.440	48.97	7.85	1.59	30.48	40.00	9.52
	222.060	44.26	11.75	2.51	31.54	46.00	14.46
	296.750	47.82	13.86	2.75	37.54	46.00	8.46
	596.480	44.09	19.17	3.45	38.36	46.00	7.64
	<b>892.330</b>	<b>42.10</b>	<b>21.63</b>	<b>4.89</b>	<b>41.12</b>	<b>46.00</b>	<b>4.88</b>

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 60%RH

Serial No. : E1202161-01/01 Date of Test : Feb 27, 2012

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	<b>54.250</b>	<b>56.43</b>	<b>7.92</b>	<b>1.03</b>	<b>37.41</b>	<b>40.00</b>	<b>2.59</b>
	134.760	46.02	12.30	2.14	32.90	43.50	10.60
	190.050	46.48	10.30	2.39	31.95	43.50	11.55
	371.440	45.28	15.88	2.93	36.71	46.00	9.29
	630.430	42.60	19.35	3.53	37.21	46.00	8.79
	871.960	44.09	21.42	4.60	42.56	46.00	3.44
Vertical	42.610	44.20	12.39	0.88	29.32	40.00	10.68
	80.440	48.97	7.85	1.59	30.48	40.00	9.52
	149.310	44.07	11.35	2.23	30.14	43.50	13.36
	296.750	47.82	13.86	2.75	37.54	46.00	8.46
	588.720	41.17	19.09	3.44	35.37	46.00	10.63
	<b>892.330</b>	<b>42.10</b>	<b>21.63</b>	<b>4.89</b>	<b>41.12</b>	<b>46.00</b>	<b>4.88</b>

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 60%RH

Serial No. : E1202161-01/01 Date of Test : Feb 27, 2012

Test Mode : HDMI 800\*600@60Hz

Polarization	Frequency (MHz)	Meter Reading dB ( $\mu$ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB ( $\mu$ V/m)	Limits dB ( $\mu$ V/m)	Margin (dB)
Horizontal	<b>34.850</b>	<b>43.33</b>	<b>16.97</b>	<b>0.84</b>	<b>32.96</b>	<b>40.00</b>	<b>7.04</b>
	79.470	51.02	7.72	1.58	32.40	40.00	7.60
	148.340	45.18	11.41	2.22	31.30	43.50	12.20
	295.780	43.06	13.84	2.75	32.76	46.00	13.24
	597.000	17.51	19.17	3.45	40.13	46.00	5.87
	743.000	13.00	20.13	3.78	36.91	46.00	9.09
Vertical	<b>54.250</b>	<b>54.43</b>	<b>7.92</b>	<b>1.03</b>	<b>35.41</b>	<b>40.00</b>	<b>4.59</b>
	116.330	44.31	12.78	2.00	31.36	43.50	12.14
	195.870	50.74	10.54	2.41	36.56	43.50	6.94
	393.750	41.21	16.37	2.98	33.06	46.00	12.94
	547.010	39.95	18.52	3.36	33.59	46.00	12.41
	777.870	38.30	20.49	3.84	34.82	46.00	11.18

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN39V77MH Humidity : 60%RH

Serial No. : E1202161-01/01 Date of Test : Feb 27, 2012

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	34.850	36.57	16.97	0.84	26.20	40.00	13.80
	93.050	42.01	10.09	1.77	25.98	43.50	17.52
	169.680	50.96	10.20	2.32	36.04	43.50	7.46
	<b>297.000</b>	<b>26.00</b>	<b>13.86</b>	<b>2.75</b>	<b>42.61</b>	<b>46.00</b>	<b>3.39</b>
	594.540	38.67	19.14	3.45	32.92	46.00	13.08
	896.210	35.70	21.67	4.89	34.76	46.00	11.24
Vertical	100.810	45.55	11.57	1.86	31.09	43.50	12.41
	169.680	50.05	10.20	2.32	35.13	43.50	8.37
	<b>297.000</b>	<b>25.20</b>	<b>13.86</b>	<b>2.75</b>	<b>41.81</b>	<b>46.00</b>	<b>4.19</b>
	506.270	43.93	17.98	3.28	37.05	46.00	8.95
	594.540	41.82	19.14	3.45	36.07	46.00	9.93
	900.090	34.13	21.70	5.03	33.37	46.00	12.63

TEST ENGINEER: RAVEN JIN



## **5 DEVIATION TO TEST SPECIFICATIONS**

None.