

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

LCD TV

Model No.	Serial No.	Brand
LTDN42V77US	E11091091-01/01	Hisense
F42V77C	--	
F42V75C		

FCC ID : W9HLCDD0007

Prepared For : Hisense Electric Co., Ltd.  
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Report No. : ACI-F11082A1  
Date of Test : Sep 16 – 19, 2011  
Date of Report : Sep 28, 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
LTDN42V77US	E11091091-01/01	Hisense	120V/60Hz
F42V77C	--		
F42V75C			

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 Sep 16 – 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.F11081A1, a Verification report.***

Date of Test : Sep 16 – 19, 2011 Date of Report : Sep 28, 2011

Producer : Yenny Yu.  
 YENNY YU / Assistant

Review : Dio Yang.  
 DIO YANG / Assistant Manager

**AUDIX**<sup>®</sup> For and on behalf of  
 Audix Technology (Shanghai) Co., Ltd.

Signatory : Byron Kwo  
 Authorized Signature EMC BYRON KWO / Senior 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.	Serial No.	Brand
LTDN42V77US	E11091091-01/01	Hisense
F42V77C	--	
F42V75C		

Note #1: The different list for all the models are as follows:

Report No.	Model No.	Rev. Summary	Edition No.	Data of Rev.
ACI-F11082	LTDN42V77US, F42V77C	Original Report.	0	Jun 15, 2011
ACI-F11082A1	LTDN42V77US, F42V77C, F42V75C	1.To add a new model. 2.To add a new panel.	Rev. A1	Sep 28, 2011

Note #2 : The above models are all the same except for the different model name. The LTDN42V77US was tested and recorded in the 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 : CHIMEI INNOLUX  
M/N : V420H2-L06

Tuner : Manufacturer : XuGuang Tech. Co., Ltd.  
M/N : DVT-8C/W41F2HS\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 HDMI2 Port : Connected with DVD #1
- (2) One HDMI3 Port : Connected with DVD #2
- (3) One DIGITAL AUDIO OUT Port : Connected with DVD #1
- (4) One VGA Port : Connected with PC
- (5) One PC AUDIO Port : Connected with PC

## Side Port

- (1) One component of YPbPr Port : Connected with DVD #1
- (2) One component of YPbPr Audio Port : Connected with DVD #1
- (3) One component of AV Port : Connected with DVD #1
- (4) One ANT Port : Connected with TV SG
- (5) One Headphone Port : Connected with Headphone
- (6) One SERVICE port : Do not open to customer
- (7) One HDMI1 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



## 2.3 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

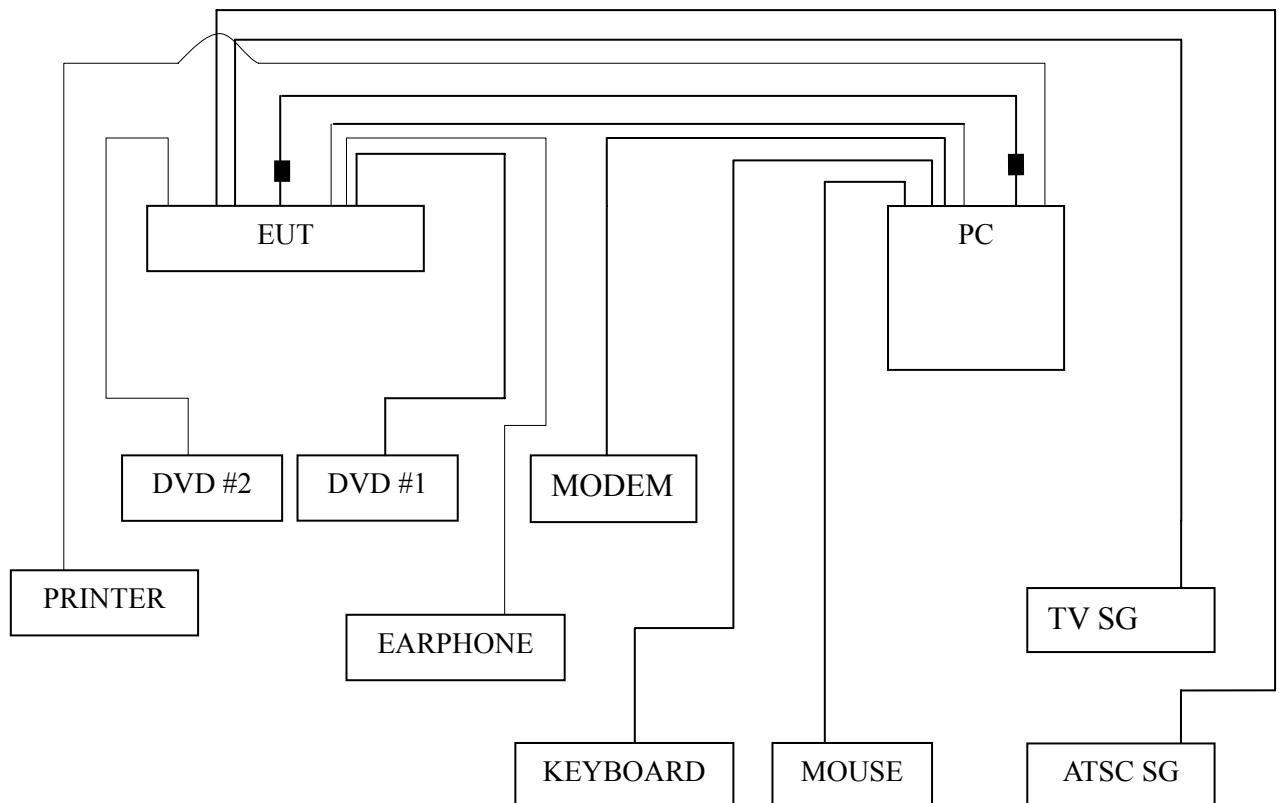
#### 3.1 Test Equipment

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	--	--

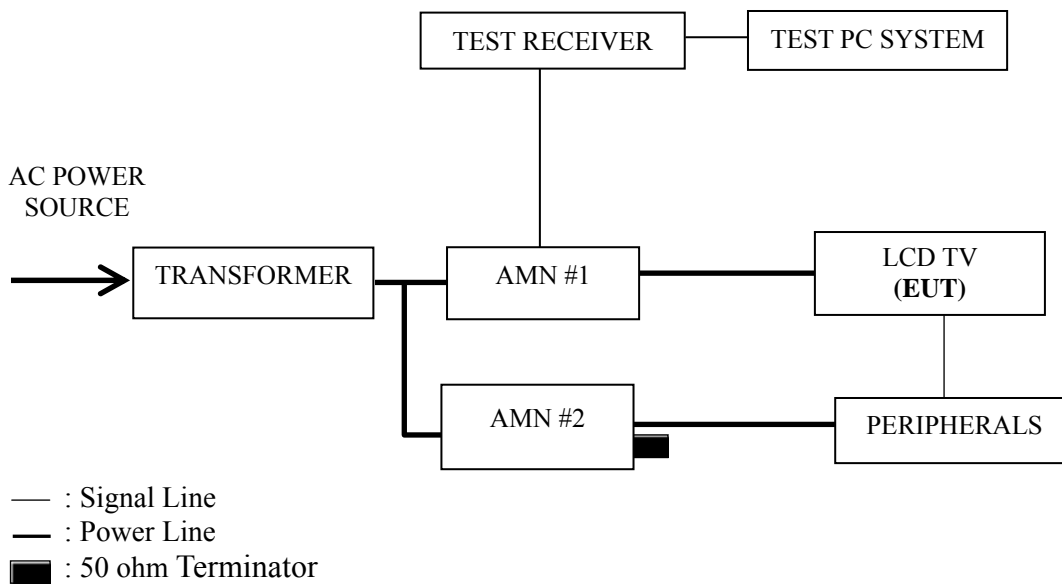
#### 3.2 Block Diagram of Test Setup

##### 3.2.1 EUT & Peripherals



■ : 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 ( $\mu$ 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

### 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

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 4.721 MHz (Average value) with corrected signal level of 29.19 dB ( $\mu$ V) (limit is 46.00 dB ( $\mu$ V)), when the Neutral of the EUT is connected to AMN.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 48%RH

Serial No. : E11091091-01/01 Date of Test : Sep 19, 2011

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	0.157	40.63	0.22	40.85	65.60	24.75	QP
	0.398	35.01	0.29	35.30	57.90	22.60	
	0.564	34.79	0.33	35.12	56.00	20.88	
	1.262	33.42	0.39	33.81	56.00	22.19	
	7.446	32.96	0.67	33.63	60.00	26.37	
	21.830	38.41	1.04	39.45	60.00	20.55	
	0.157	30.15	0.22	30.37	55.60	25.23	AV
	0.398	26.90	0.29	27.19	47.90	20.71	
	0.564	25.61	0.33	25.94	46.00	20.06	
	1.262	23.53	0.39	23.92	46.00	22.08	
	7.446	23.52	0.67	24.19	50.00	25.81	
	21.830	28.60	1.04	29.64	50.00	20.36	
Neutral	0.159	39.95	0.19	40.14	65.52	25.38	QP
	0.398	36.55	0.23	36.78	57.90	21.12	
	0.564	36.72	0.25	36.97	56.00	19.03	
	1.338	37.59	0.47	38.06	56.00	17.94	
	4.721	36.43	0.76	37.19	56.00	18.81	
	23.140	37.85	1.30	39.15	60.00	20.85	
	0.159	29.89	0.19	30.08	55.52	25.44	AV
	0.398	26.45	0.23	26.68	47.90	21.22	
	0.564	27.64	0.25	27.89	46.00	18.11	
	1.338	26.15	0.47	26.62	46.00	19.38	
	<b>4.721</b>	<b>28.43</b>	<b>0.76</b>	<b>29.19</b>	<b>46.00</b>	<b>16.81</b>	
	23.140	26.45	1.30	27.75	50.00	22.25	

TEST ENGINEER: LVY LV

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 48%RH

Serial No. : E11091091-01/01 Date of Test : Sep 19, 2011

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	0.157	40.70	0.22	40.92	65.60	24.68	QP
	0.393	35.10	0.29	35.39	57.99	22.60	
	0.564	35.23	0.33	35.56	56.00	20.44	
	1.262	33.95	0.39	34.34	56.00	21.66	
	7.526	32.94	0.68	33.62	60.00	26.38	
	21.830	37.99	1.04	39.03	60.00	20.97	
	0.157	30.26	0.22	30.48	55.60	25.12	AV
	0.393	26.79	0.29	27.08	47.99	20.91	
	0.564	26.15	0.33	26.48	46.00	19.52	
	1.262	24.79	0.39	25.18	46.00	20.82	
	7.526	23.87	0.68	24.55	50.00	25.45	
	21.830	28.40	1.04	29.44	50.00	20.56	
Neutral	0.157	40.16	0.19	40.35	65.60	25.25	QP
	0.398	36.32	0.23	36.55	57.90	21.35	
	0.564	36.93	0.25	37.18	56.00	18.82	
	1.367	34.39	0.48	34.87	56.00	21.13	
	4.952	36.09	0.76	36.85	56.00	19.15	
	22.896	36.68	1.30	37.98	60.00	22.02	
	0.157	30.61	0.19	30.80	55.60	24.80	AV
	0.398	26.94	0.23	27.17	47.90	20.73	
	0.564	27.80	0.25	28.05	46.00	17.95	
	1.367	23.15	0.48	23.63	46.00	22.37	
	<b>4.952</b>	<b>27.86</b>	<b>0.76</b>	<b>28.62</b>	<b>46.00</b>	<b>17.38</b>	
	22.896	27.80	1.30	29.10	50.00	20.90	

TEST ENGINEER: L V Y L V

EUT :           LCD TV                Temperature :           22°C          

Model No. :           LTDN42V77US                Humidity :           48%RH          

Serial No. :           E11091091-01/01                Date of Test :           Sep 19, 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	0.156	40.93	0.22	41.15	65.65	24.50	QP
	0.398	35.05	0.29	35.34	57.90	22.56	
	0.661	34.93	0.38	35.31	56.00	20.69	
	1.262	33.24	0.39	33.63	56.00	22.37	
	7.526	32.71	0.68	33.39	60.00	26.61	
	20.814	37.51	0.99	38.50	60.00	21.50	
	0.156	30.79	0.22	31.01	55.65	24.64	AV
	0.398	26.81	0.29	27.10	47.90	20.80	
	0.661	24.10	0.38	24.48	46.00	21.52	
	1.262	23.63	0.39	24.02	46.00	21.98	
	7.526	23.68	0.68	24.36	50.00	25.64	
	20.814	28.19	0.99	29.18	50.00	20.82	
Neutral	0.157	40.14	0.19	40.33	65.60	25.27	QP
	0.398	36.69	0.23	36.92	57.90	20.98	
	0.564	36.78	0.25	37.03	56.00	18.97	
	1.367	34.10	0.48	34.58	56.00	21.42	
	5.112	36.12	0.76	36.88	60.00	23.12	
	23.387	37.24	1.31	38.55	60.00	21.45	
	0.157	30.50	0.19	30.69	55.60	24.91	AV
	0.398	26.46	0.23	26.69	47.90	21.21	
	<b>0.564</b>	<b>27.40</b>	<b>0.25</b>	<b>27.65</b>	<b>46.00</b>	<b>18.35</b>	
	1.367	24.20	0.48	24.48	46.00	21.52	
	5.112	27.62	0.76	28.38	50.00	21.62	
	23.387	28.61	1.31	29.92	50.00	20.08	

TEST ENGINEER: L V Y L V



EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 48%RH

Serial No. : E11091091-01/01 Date of Test : Sep 19, 2011

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	0.150	41.79	0.22	42.01	66.00	23.99	QP
	0.389	34.74	0.29	35.03	58.08	23.05	
	0.558	34.80	0.32	35.12	56.00	20.88	
	1.262	33.61	0.39	34.00	56.00	22.00	
	7.329	33.96	0.67	34.63	60.00	25.37	
	19.224	37.95	0.97	38.92	60.00	21.08	
	0.150	31.56	0.22	31.78	56.00	24.22	AV
	0.389	24.97	0.29	25.26	48.08	22.82	
	0.558	23.62	0.32	23.94	46.00	22.06	
	1.262	23.49	0.39	23.88	46.00	22.12	
	7.329	24.15	0.67	24.82	50.00	25.18	
	19.224	26.89	0.97	27.86	50.00	22.14	
Neutral	0.150	41.79	0.18	41.97	66.00	24.03	QP
	0.393	36.26	0.23	36.49	57.99	21.50	
	<b>0.564</b>	<b>36.97</b>	<b>0.25</b>	<b>37.22</b>	<b>56.00</b>	<b>18.78</b>	
	1.949	33.63	0.55	34.18	56.00	21.82	
	5.058	36.48	0.76	37.24	60.00	22.76	
	23.140	37.77	1.30	39.07	60.00	20.93	
	0.150	31.50	0.18	31.68	56.00	24.32	AV
	0.393	25.70	0.23	25.93	47.99	22.06	
	0.564	25.80	0.25	26.05	46.00	19.95	
	1.949	21.64	0.55	22.19	46.00	23.81	
	5.058	25.89	0.76	26.65	50.00	23.35	
	23.140	27.51	1.30	28.81	50.00	21.19	

TEST ENGINEER: LVY LV

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 48%RH

Serial No. : E11091091-01/01 Date of Test : Sep 19, 2011

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	0.152	41.65	0.22	41.87	65.91	24.04	QP
	0.303	34.84	0.24	35.08	60.15	25.07	
	0.558	34.67	0.32	34.99	56.00	21.01	
	1.249	33.43	0.39	33.82	56.00	22.18	
	7.329	34.01	0.67	34.68	60.00	25.32	
	20.162	38.81	0.97	39.78	60.00	20.22	
	0.152	19.78	0.22	20.00	55.91	35.91	AV
	0.303	23.45	0.24	23.69	50.15	26.46	
	0.558	23.62	0.32	23.94	46.00	22.06	
	1.249	24.89	0.39	25.28	46.00	20.72	
	7.329	25.80	0.67	26.47	50.00	23.53	
	20.162	26.45	0.97	27.42	50.00	22.58	
Neutral	0.152	41.00	0.19	41.19	65.91	24.72	QP
	0.393	36.20	0.23	36.43	57.99	21.56	
	<b>0.558</b>	<b>36.95</b>	<b>0.25</b>	<b>37.20</b>	<b>56.00</b>	<b>18.80</b>	
	1.223	34.01	0.45	34.46	56.00	21.54	
	5.058	36.89	0.76	37.65	60.00	22.35	
	23.636	36.61	1.31	37.92	60.00	22.08	
	0.152	31.62	0.19	31.81	55.91	24.10	AV
	0.393	25.84	0.23	26.07	47.99	21.92	
	0.558	26.31	0.25	26.56	46.00	19.44	
	1.223	23.90	0.45	24.35	46.00	21.65	
	5.058	27.51	0.76	28.27	50.00	21.73	
	23.636	27.96	1.31	29.27	50.00	20.73	

TEST ENGINEER: L V Y L V

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 48%RH

Serial No. : E11091091-01/01 Date of Test : Sep 19, 2011

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	0.153	41.29	0.22	41.51	65.82	24.31	QP
	0.307	34.69	0.25	34.94	60.06	25.12	
	0.661	34.00	0.38	34.38	56.00	21.62	
	1.269	33.81	0.39	34.20	56.00	21.80	
	8.062	33.65	0.69	34.34	60.00	25.66	
	21.600	37.98	1.03	39.01	60.00	20.99	
	0.153	30.79	0.22	31.01	55.82	24.81	AV
	0.307	25.63	0.25	25.88	50.06	24.18	
	0.661	24.19	0.38	24.57	46.00	21.43	
	1.269	23.78	0.39	24.17	46.00	21.83	
	8.062	23.90	0.69	24.59	50.00	25.41	
	21.600	28.30	1.03	28.63	50.00	21.37	
Neutral	0.153	40.92	0.19	41.11	65.82	24.71	QP
	0.389	36.04	0.23	36.27	58.08	21.81	
	0.564	37.22	0.25	37.47	56.00	18.53	
	1.296	34.47	0.47	34.94	56.00	21.06	
	5.058	36.75	0.76	37.51	60.00	22.49	
	22.063	36.64	1.24	37.88	60.00	22.12	
	0.153	31.02	0.19	31.21	55.82	24.61	AV
	0.389	26.89	0.23	27.12	48.08	20.96	
	<b>0.564</b>	<b>27.61</b>	<b>0.25</b>	<b>27.86</b>	<b>46.00</b>	<b>18.14</b>	
	1.296	23.79	0.47	24.26	46.00	21.74	
	5.058	26.46	0.76	27.22	50.00	22.78	
	22.063	27.83	1.24	29.07	50.00	20.93	

TEST ENGINEER: L V Y L V

## 4 RADIATED EMISSION TEST

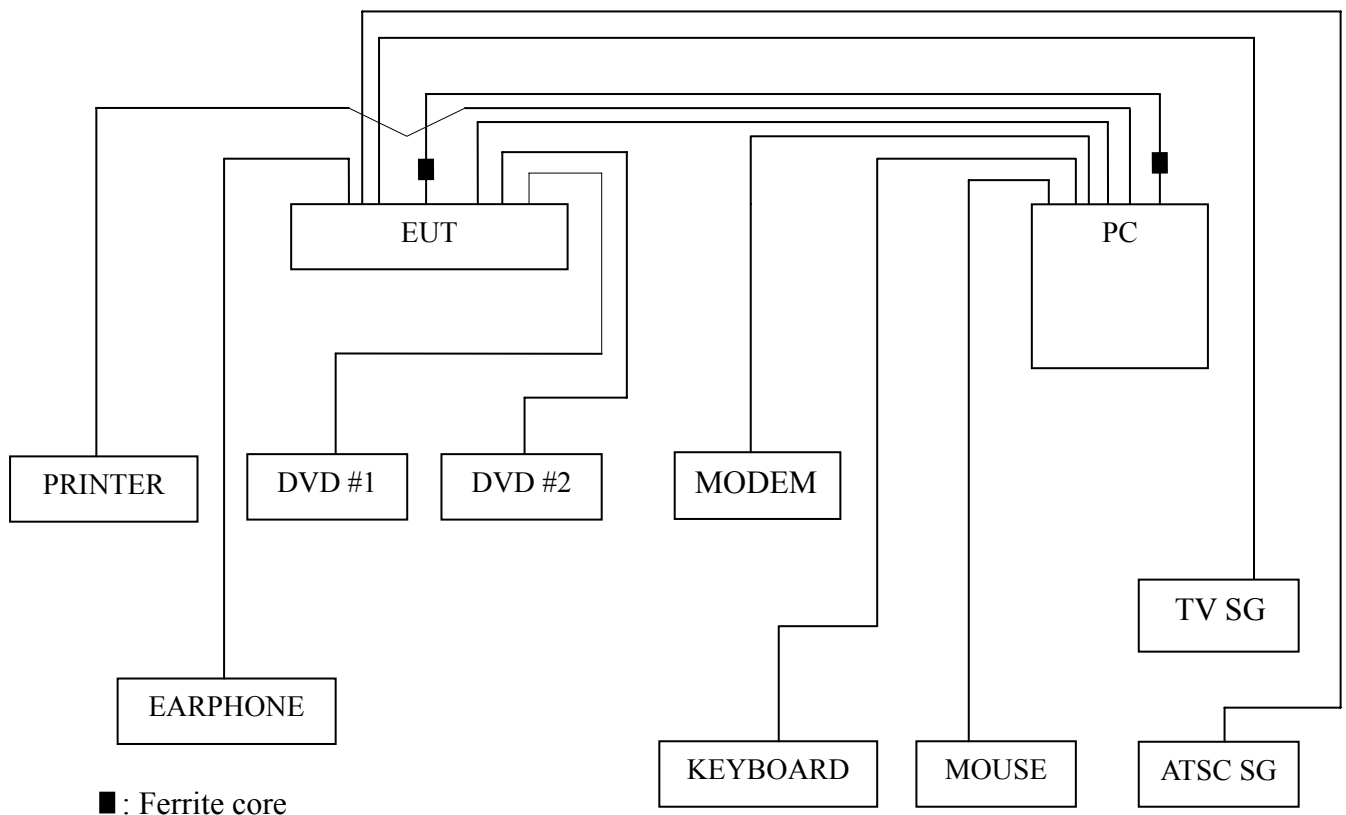
### 4.1 Test Equipment

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

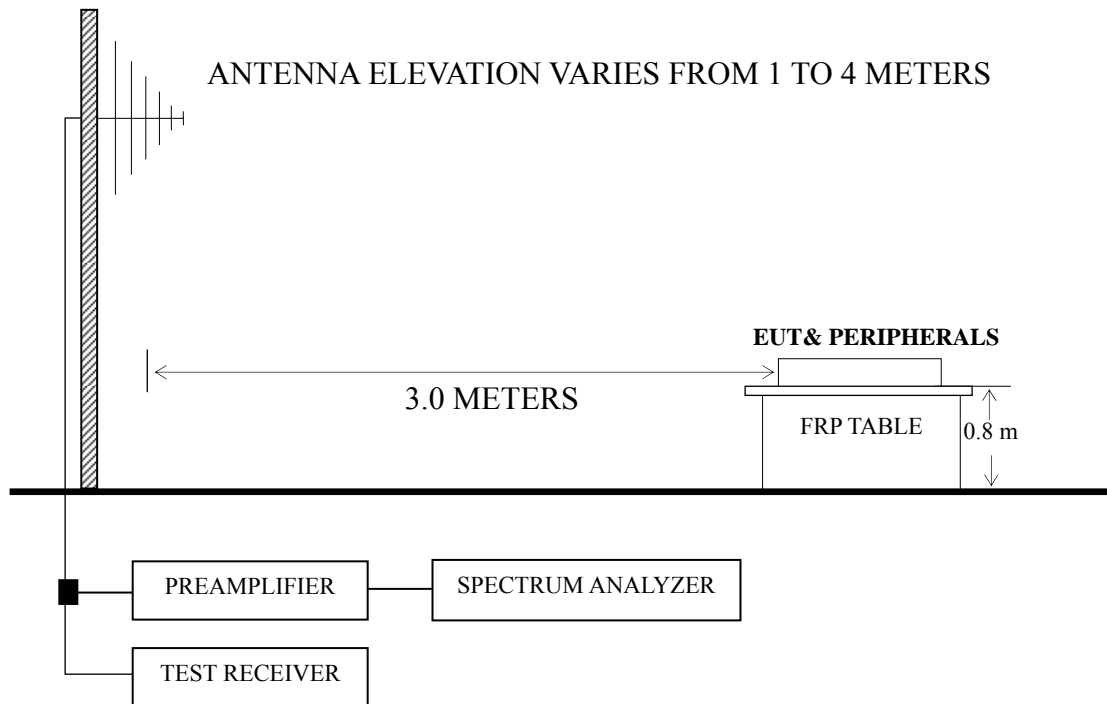
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 22, 2011	Mar 22, 2012
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2011	Sep 18, 2011
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2010	Dec 01, 2011
4.	Spectrum Analyzer	Agilent	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
5.	50 $\Omega$ 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



#### 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

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 1024\*768@60Hz test mode. The worst emission at horizontal polarization was detected at 664.380MHz with corrected signal level of 42.49 dB ( $\mu\text{V}/\text{m}$ ) (limit is 46.00 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 1.90 m height and the turntable was at 240°. The worst emission at vertical polarization was detected at 668.000 MHz with corrected signal level of 42.17 dB ( $\mu\text{V}/\text{m}$ ) (limit is 46.00 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 1.80 m height and the turntable was at 150°.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 60%RH

Serial No. : E11091091-01/01 Date of Test : Sep 16, 2011

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	82.380	23.97	8.19	0.98	33.14	40.00	6.86
	101.780	19.60	11.63	1.05	32.28	43.50	11.22
	<b>202.500</b>	<b>25.80</b>	<b>10.81</b>	<b>1.46</b>	<b>38.07</b>	<b>43.50</b>	<b>5.43</b>
	271.530	17.26	13.37	1.67	32.30	46.00	13.70
	405.390	14.60	16.57	2.04	33.21	46.00	12.79
	667.290	15.93	19.55	2.62	38.10	46.00	7.90
Vertical	<b>48.430</b>	<b>24.20</b>	<b>9.62</b>	<b>0.75</b>	<b>34.57</b>	<b>40.00</b>	<b>5.43</b>
	77.530	23.12	7.49	0.93	31.54	40.00	8.46
	101.780	20.33	11.63	1.05	33.01	43.50	10.49
	203.630	23.37	10.85	1.47	35.69	43.50	7.81
	271.530	18.46	13.37	1.67	33.50	46.00	12.50
	363.680	22.32	15.69	1.94	39.95	46.00	6.05

TEST ENGINEER: RAVEN JIN



EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 60%RH

Serial No. : E11091091-01/01 Date of Test : Sep 16, 2011

Test Mode : D-Sub 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	48.430	22.72	9.62	0.75	33.09	40.00	6.91
	101.780	20.68	11.63	1.05	33.36	43.50	10.14
	203.630	25.37	10.85	1.47	37.69	43.50	5.81
	368.530	23.07	15.81	1.96	40.84	46.00	5.16
	412.180	20.53	16.67	2.07	39.27	46.00	6.73
	<b>662.440</b>	<b>19.44</b>	<b>19.52</b>	<b>2.62</b>	<b>41.58</b>	<b>46.00</b>	<b>4.42</b>
Vertical	82.380	24.18	8.19	0.98	33.35	40.00	6.65
	202.500	27.00	10.81	1.46	39.27	43.50	4.23
	293.840	21.24	13.79	1.76	36.79	46.00	9.21
	405.390	14.54	16.57	2.04	33.15	46.00	12.85
	<b>672.140</b>	<b>19.90</b>	<b>19.57</b>	<b>2.59</b>	<b>42.06</b>	<b>46.00</b>	<b>3.94</b>
	809.880	12.45	20.80	2.87	36.12	46.00	9.88

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 60%RH

Serial No. : E11091091-01/01 Date of Test : Sep 16, 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	82.380	23.78	8.19	0.98	32.95	40.00	7.05
	145.430	23.86	11.66	1.22	36.74	43.50	6.76
	182.290	27.03	9.99	1.38	38.40	43.50	5.10
	202.500	26.00	10.81	1.46	38.27	43.50	5.23
	288.990	21.35	13.71	1.71	36.77	46.00	9.23
	<b>664.380</b>	<b>20.33</b>	<b>19.54</b>	<b>2.62</b>	<b>42.49</b>	<b>46.00</b>	<b>3.51</b>
Vertical	48.430	24.27	9.62	0.75	34.64	40.00	5.36
	101.780	20.98	11.63	1.05	33.66	43.50	9.84
	368.530	23.25	15.81	1.96	41.02	46.00	4.98
	412.180	21.87	16.67	2.07	40.61	46.00	5.39
	<b>668.000</b>	<b>20.00</b>	<b>19.55</b>	<b>2.62</b>	<b>42.17</b>	<b>46.00</b>	<b>3.83</b>
	732.280	16.15	20.04	2.75	38.94	46.00	7.06

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 60%RH

Serial No. : E11091091-01/01 Date of Test : Sep 16, 2011

Test Mode : HDMI 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	82.380	21.97	8.19	0.98	31.14	40.00	8.86
	101.780	17.60	11.63	1.05	30.28	43.50	13.22
	153.190	12.89	11.04	1.24	25.17	43.50	18.33
	<b>203.630</b>	<b>23.57</b>	<b>10.85</b>	<b>1.47</b>	<b>35.89</b>	<b>43.50</b>	<b>7.61</b>
	303.540	14.22	14.00	1.75	29.97	46.00	16.03
	405.390	12.60	16.57	2.04	31.21	46.00	14.79
Vertical	48.430	21.20	9.62	0.75	31.57	40.00	8.43
	77.530	20.12	7.49	0.93	28.54	40.00	11.46
	101.780	16.33	11.63	1.05	29.01	43.50	14.49
	203.630	20.37	10.85	1.47	32.69	43.50	10.81
	363.680	20.32	15.69	1.94	37.95	46.00	8.05
	<b>652.740</b>	<b>16.00</b>	<b>19.47</b>	<b>2.61</b>	<b>38.08</b>	<b>46.00</b>	<b>7.92</b>

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 60%RH

Serial No. : E11091091-01/01 Date of Test : Sep 16, 2011

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	48.430	19.72	9.62	0.75	30.09	40.00	9.91
	101.780	18.68	11.63	1.05	31.36	43.50	12.14
	203.630	23.37	10.85	1.47	35.69	43.50	7.81
	<b>368.530</b>	<b>21.07</b>	<b>15.81</b>	<b>1.96</b>	<b>38.84</b>	<b>46.00</b>	<b>7.16</b>
	412.180	18.53	16.67	2.07	37.27	46.00	8.73
	662.440	17.44	19.52	2.62	39.58	46.00	6.42
Vertical	82.380	21.18	8.19	0.98	30.35	40.00	9.65
	101.780	16.18	11.63	1.05	28.86	43.50	14.64
	<b>203.630</b>	<b>24.00</b>	<b>10.85</b>	<b>1.47</b>	<b>36.32</b>	<b>43.50</b>	<b>7.18</b>
	293.840	16.24	13.79	1.76	31.79	46.00	14.21
	405.390	9.54	16.57	2.04	28.15	46.00	17.85
	672.140	14.90	19.57	2.59	37.06	46.00	8.94

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN42V77US Humidity : 60%RH

Serial No. : E11091091-01/01 Date of Test : Sep 16, 2011

Test Mode : HDMI 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	82.380	21.78	8.19	0.98	30.95	40.00	9.05
	145.430	20.86	11.66	1.22	33.74	43.50	9.76
	203.630	24.41	10.85	1.47	36.73	43.50	6.77
	288.990	17.35	13.71	1.71	32.77	46.00	13.23
	366.590	14.65	15.77	1.96	32.38	46.00	13.62
	<b>664.380</b>	<b>18.33</b>	<b>19.54</b>	<b>2.62</b>	<b>40.49</b>	<b>46.00</b>	<b>5.51</b>
Vertical	48.430	20.27	9.62	0.75	30.64	40.00	9.36
	101.780	15.98	11.63	1.05	28.66	43.50	14.84
	288.990	15.82	13.71	1.71	31.24	46.00	14.76
	368.530	18.25	15.81	1.96	36.02	46.00	9.98
	412.180	16.87	16.67	2.07	35.61	46.00	10.39
	<b>669.230</b>	<b>17.04</b>	<b>19.55</b>	<b>2.62</b>	<b>39.21</b>	<b>46.00</b>	<b>6.79</b>

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
Ferrite core	ZCAT3035-1330\ROH	FEELUX	See Internal Photos Figure 17
		Rui Feng Electronic Co., Ltd.	
		Hai An Magnetic Material No.2 Factory	
		JIANGSU LETTALL ELECTRONICS CO., LTD.	
Ferrite core	BNF-12\ZCAT1519-0830\ROH	FEELUX	See Internal Photos Figure 18, 19
		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)