

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

LCD TV

Model No.	Serial No.	Brand
LTDN55T57XUS	E2009103001	Hisense
55LC55S240V69	--	Proscan

FCC ID : W9HLCDF0001

Prepared For : Hisense Electric Co., Ltd.  
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Report No. : ACI-F09123  
Date of Test : Nov 04 - 25, 2009  
Date of Report : Dec 02, 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
LTDN55T57XUS	E2009103001	Hisense	120V/60Hz
55LC55S240V69	--	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 Nov 04 - 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.F09122, a Verification report.***

Date of Test : Nov 04 - 25, 2009 Date of Report : Dec 02, 2009

Producer : Zeno Gu  
 ZENO GU / Assistant

Review : Dio Yang  
 DIO YANG / Deputy Assistant Manager

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

Signatory : Sammy Chen  
 Authorized Signature EMC SAMMY CHEN / Assistant Managerx

# 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
<b>EMISSION</b>			
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
LTDN55T57XUS	E2009103001	Hisense
55LC55S240V69	--	Proscan

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

Note 2 : The LTDN55T57XUS 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 : LG Display  
M/N : LC550WUD-SBM1

Tuner : Manufacturer : XuGuang Tech. Co., Ltd.  
M/N : DVT-8ADC1/W41F2/ROH

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:

Back View:

- (1) One component of YPbPr#2 Port  
Connected with DVD#2
- (2) One component of YPbPr#2 Audio Port  
Connected with DVD#2
- (3) One HDMI#2 Port  
Connected with DVD#1

- |            |                                     |                                     |
|------------|-------------------------------------|-------------------------------------|
| (4)        | One HDMI#3 Port                     | Connected with DVD#2                |
| (5)        | One HDMI#4 Port                     | Connected with DVD#3                |
| (6)        | One COAXIAL Port                    | Connected with DVD#1                |
| (7)        | One component of Audio out Port     | Connected with Speaker              |
| (8)        | One S-Video Port                    | Connected with DVD#2                |
| (9)        | One component of AV2 out Port       | Connected with DVD#2                |
| Side Port: |                                     |                                     |
| (10)       | One component of YPbPr#1 Port       | Connected with DVD#1                |
| (11)       | One component of YPbPr#1 Audio Port | Connected with DVD#1                |
| (12)       | One Ant Port                        | Connected with ATSC SG/TV SG        |
| (13)       | One VGA Port                        | Connected with PC                   |
| (14)       | One VGA Audio In Port               | Connected with PC                   |
| (15)       | One HDMI#1 Port                     | Connected with PC                   |
| (16)       | One component of AV1 Port           | Connected with DVD#1                |
| (17)       | One Headphone Port                  | Connected with Earphone             |
| (18)       | One USB (Service) Port              | Connected with U-Disk as Terminator |

## 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 DVD#1

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

### 2.2.10 DVD#2

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

### 2.2.11 DVD#3

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

### 2.2.12 Speaker

Manufacturer : DIBA  
Model Number : T520  
Serial Number : 10628

## 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

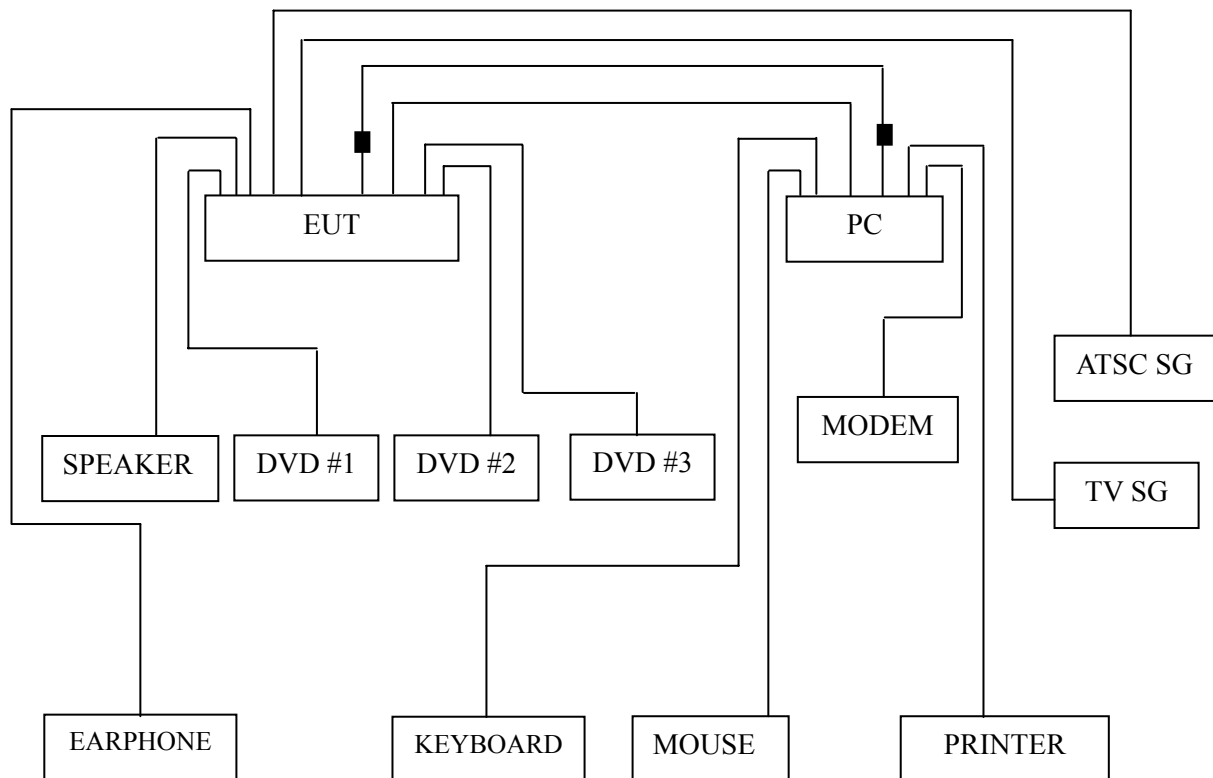
#### 3.1.1 Test Equipment

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	Nov 21, 2008	Nov 21, 2009
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 $\Omega$ Coaxial Switch	Anritsu	MP59B	6200426389	Sep 19, 2009	Mar 19, 2010
5.	50 $\Omega$ Terminator	Anritsu	BNC	001	Apr 02, 2009	Apr 02, 2010
6.	Software	Audix	E3	SET00200 9804M592	--	--

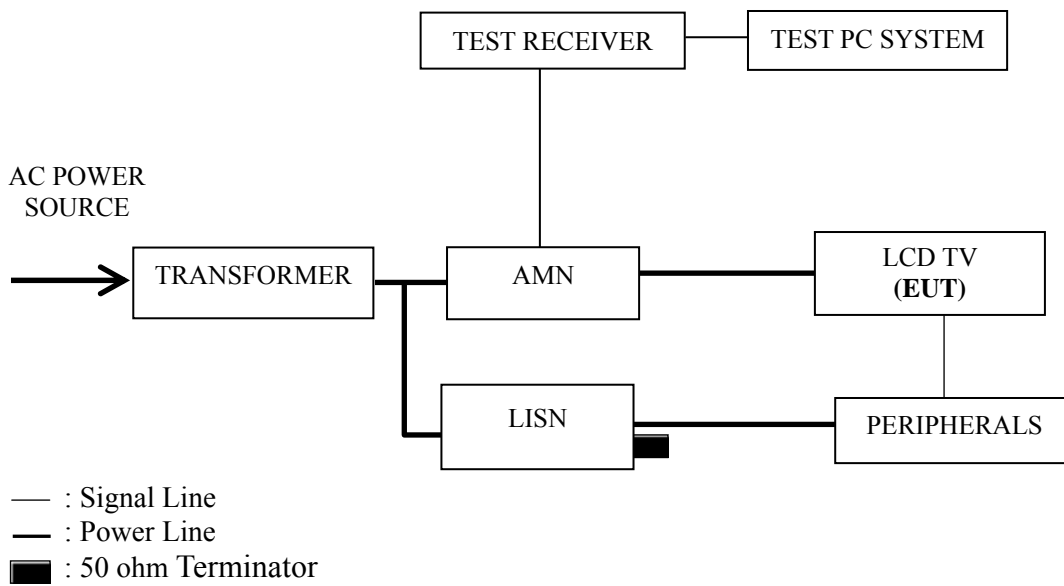
#### 3.2 Block Diagram of Test Setup

##### 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 ( $\mu$ 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 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 D-Sub 800\*600@60Hz test mode. The worst emission is detected at 0.521 MHz (Average) with corrected signal level of 33.69 dB ( $\mu$ V) (limit is 46.00 dB ( $\mu$ V)), when the Line of the EUT is connected to AMN.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 49%RH

Serial No. : E2009103001 Date of Test : Nov 04, 2009

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	0.151	42.90	0.23	43.13	65.96	22.83	QP
	0.541	35.46	0.29	35.75	56.00	20.25	
	0.759	37.10	0.28	37.38	56.00	18.62	
	1.908	34.97	0.36	35.33	56.00	20.67	
	5.774	35.75	0.45	36.20	60.00	23.80	
	21.600	31.68	0.86	32.54	60.00	27.46	
	0.151	36.04	0.23	36.27	55.96	19.69	AV
	0.541	17.24	0.29	17.53	46.00	28.47	
	0.759	26.17	0.28	26.45	46.00	19.55	
	1.908	26.29	0.36	26.65	46.00	19.35	
	5.774	28.60	0.45	29.05	50.00	20.95	
	21.600	25.38	0.86	26.24	50.00	23.76	
Neutral	0.155	42.54	0.20	42.74	65.74	23.00	QP
	0.543	36.20	0.26	36.46	56.00	19.54	
	0.963	35.47	0.30	35.77	56.00	20.23	
	2.581	36.38	0.39	36.77	56.00	19.23	
	6.121	37.35	0.46	37.81	60.00	22.19	
	12.649	28.07	0.61	28.68	60.00	31.32	
	<b>0.155</b>	<b>39.64</b>	<b>0.20</b>	<b>39.84</b>	<b>55.74</b>	<b>15.90</b>	AV
	0.543	20.05	0.26	20.31	46.00	25.69	
	0.963	27.67	0.30	27.97	46.00	18.03	
	2.581	27.64	0.39	28.03	46.00	17.97	
	6.121	28.98	0.46	29.44	50.00	20.56	
	12.649	19.75	0.61	20.36	50.00	29.64	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 49%RH

Serial No. : E2009103001 Date of Test : Nov 04, 2009

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	0.151	43.16	0.23	43.39	65.96	22.57	QP	
	0.521	39.68	0.29	39.97	56.00	16.03		
	1.585	32.94	0.34	33.28	56.00	22.72		
	3.364	36.41	0.41	36.82	56.00	19.18		
	8.235	32.39	0.48	32.87	60.00	27.13		
	21.430	37.29	0.87	38.16	60.00	21.84		
	0.151	37.45	0.23	37.68	55.96	18.28	AV	
	<b>0.521</b>	<b>33.40</b>	<b>0.29</b>	<b>33.69</b>	<b>46.00</b>	<b>12.31</b>		
	1.585	24.09	0.34	24.43	46.00	21.57		
	3.364	29.04	0.41	29.45	46.00	16.55		
	8.235	25.33	0.48	25.81	50.00	24.19		
	21.430	31.87	0.87	32.74	50.00	17.26		
	Neutral	0.150	32.65	0.26	32.91	56.00	23.09	QP
		0.546	34.47	0.34	34.81	56.00	21.19	
1.585		36.97	0.39	37.36	56.00	18.64		
2.839		37.23	0.45	37.68	60.00	22.32		
5.419		33.60	0.49	34.09	60.00	25.91		
8.412		34.37	0.49	34.86	60.00	25.14		
0.150		37.13	0.20	37.33	56.00	18.67	AV	
0.546		22.35	0.26	22.61	46.00	23.39		
1.585		26.31	0.34	26.65	46.00	19.35		
2.839		27.15	0.39	27.54	46.00	18.46		
5.419		29.72	0.45	30.17	50.00	19.83		
8.412		29.11	0.49	29.60	50.00	20.40		

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 49%RH

Serial No. : E2009103001 Date of Test : Nov 04, 2009

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	0.153	42.78	0.23	43.01	65.82	22.81	QP
	0.535	37.67	0.29	37.96	56.00	18.04	
	0.963	36.20	0.30	36.50	56.00	19.50	
	2.334	34.59	0.37	34.96	56.00	21.04	
	5.594	35.75	0.45	36.20	60.00	23.80	
	21.830	31.68	0.86	32.54	60.00	27.46	
	0.153	39.06	0.23	39.29	55.82	16.53	AV
	0.535	23.64	0.29	23.93	46.00	22.07	
	0.963	27.73	0.30	28.03	46.00	17.97	
	2.334	28.14	0.37	28.51	46.00	17.49	
	5.594	30.23	0.45	30.68	50.00	19.32	
	21.830	25.13	0.86	25.99	50.00	24.01	
Neutral	0.151	43.99	0.20	44.19	65.96	21.77	QP
	0.552	35.61	0.26	35.87	56.00	20.13	
	0.963	36.69	0.30	36.99	56.00	19.01	
	2.678	36.08	0.39	36.47	56.00	19.53	
	5.713	35.51	0.46	35.97	60.00	24.03	
	13.408	31.37	0.62	31.99	60.00	28.01	
	<b>0.151</b>	<b>39.50</b>	<b>0.20</b>	<b>39.70</b>	<b>55.96</b>	<b>16.26</b>	AV
	0.552	25.88	0.26	26.14	46.00	19.86	
	0.963	26.22	0.30	26.52	46.00	19.48	
	2.678	25.80	0.39	26.19	46.00	19.81	
	5.713	27.44	0.46	27.90	50.00	22.10	
	13.408	24.49	0.62	25.11	50.00	24.89	

TEST ENGINEER: HUGH HUANG

EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 49%RH

Serial No. : E2009103001 Date of Test : Nov 04, 2009

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	0.151	43.03	0.23	43.26	65.96	22.70	QP
	0.481	36.52	0.29	36.81	56.32	19.51	
	2.396	39.78	0.39	40.17	56.00	15.83	
	3.565	39.16	0.42	39.58	56.00	16.42	
	5.362	40.72	0.44	41.16	60.00	18.84	
	8.592	35.90	0.48	36.38	60.00	23.62	
	AV	0.151	36.28	0.23	36.51	55.96	19.45
		0.481	28.55	0.29	28.84	46.32	17.48
		2.396	31.96	0.39	32.35	46.00	13.65
		3.565	30.82	0.42	31.24	46.00	14.76
		5.362	33.40	0.44	33.84	50.00	16.16
		8.592	29.87	0.48	30.35	50.00	19.65
Neutral	0.151	42.73	0.20	42.93	65.96	23.03	QP
	0.377	31.79	0.24	32.03	58.34	26.31	
	0.529	33.08	0.26	33.34	56.00	22.66	
	3.041	40.92	0.41	41.33	56.00	14.67	
	5.362	39.08	0.45	39.53	60.00	20.47	
	8.592	37.16	0.50	37.66	60.00	22.34	
	AV	0.151	35.65	0.20	35.85	55.96	20.11
		0.377	27.63	0.24	27.87	48.34	20.47
		0.529	22.33	0.26	22.59	46.00	23.41
		<b>3.041</b>	<b>32.83</b>	<b>0.41</b>	<b>33.24</b>	<b>46.00</b>	<b>12.76</b>
		5.362	32.82	0.45	33.27	50.00	16.73
		8.592	30.32	0.50	30.82	50.00	19.18

TEST ENGINEER: HUGH HUANG



EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 49%RH

Serial No. : E2009103001 Date of Test : Nov 04, 2009

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	0.151	43.06	0.23	43.29	65.96	22.67	QP
	0.481	36.76	0.29	37.05	56.32	19.27	
	1.106	37.19	0.30	37.49	56.00	18.51	
	3.041	40.52	0.40	40.92	56.00	15.08	
	5.362	38.91	0.44	39.35	60.00	20.65	
	20.924	31.63	0.87	32.50	60.00	27.50	
	0.151	37.64	0.23	37.87	55.96	18.09	AV
	0.481	29.24	0.29	29.53	46.32	16.79	
	1.106	31.77	0.30	32.07	46.00	13.93	
	<b>3.041</b>	<b>32.43</b>	<b>0.40</b>	<b>32.83</b>	<b>46.00</b>	<b>13.17</b>	
	5.362	33.48	0.44	33.92	50.00	16.08	
	20.924	25.12	0.87	25.99	50.00	24.01	
Neutral	0.151	42.78	0.20	42.98	65.96	22.98	QP
	0.529	32.35	0.26	32.61	56.00	23.39	
	2.396	39.88	0.39	40.27	56.00	15.73	
	3.700	41.20	0.43	41.63	56.00	14.37	
	5.511	40.50	0.46	40.96	60.00	19.04	
	8.592	36.73	0.50	37.23	60.00	22.77	
	0.151	38.29	0.20	38.49	55.96	17.47	AV
	0.529	20.92	0.26	21.18	46.00	24.82	
	2.396	31.17	0.39	31.56	46.00	14.44	
	3.700	30.60	0.43	31.03	46.00	14.97	
	5.511	33.07	0.46	33.53	50.00	16.47	
	8.592	30.49	0.50	30.99	50.00	19.01	

TEST ENGINEER: HUGH HUANG

EUT :           LCD TV           Temperature :           22°C          

Model No. :           LTDN55T57XUS           Humidity :           49%RH          

Serial No. :           E2009103001           Date of Test :           Nov 04, 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	0.151	43.26	0.20	43.46	65.96	22.50	QP
	0.466	38.52	0.26	38.78	56.58	17.80	
	1.106	36.58	0.30	36.88	56.00	19.12	
	2.396	40.60	0.39	40.99	56.00	15.01	
	5.362	39.59	0.45	40.04	60.00	19.96	
	8.592	37.08	0.50	37.58	60.00	22.42	
	0.151	36.97	0.20	37.17	55.96	18.79	AV
	<b>0.466</b>	<b>33.27</b>	<b>0.26</b>	<b>33.53</b>	<b>46.58</b>	<b>13.05</b>	
	1.106	31.51	0.30	31.81	46.00	14.19	
	2.396	32.10	0.39	32.49	46.00	13.51	
	5.362	32.94	0.45	33.39	50.00	16.61	
	8.592	31.39	0.50	31.89	50.00	18.11	
Neutral	0.151	43.26	0.20	43.46	65.96	22.50	QP
	0.466	38.52	0.26	38.78	56.58	17.80	
	1.106	36.58	0.30	36.88	56.00	19.12	
	2.396	40.60	0.39	40.99	56.00	15.01	
	5.362	39.59	0.45	40.04	60.00	19.96	
	8.592	37.08	0.50	37.58	60.00	22.42	
	0.151	36.97	0.20	37.17	55.96	18.79	AV
	<b>0.466</b>	<b>33.27</b>	<b>0.26</b>	<b>33.53</b>	<b>46.58</b>	<b>13.05</b>	
	1.106	31.51	0.30	31.81	46.00	14.19	
	2.396	32.10	0.39	32.49	46.00	13.51	
	5.362	32.94	0.45	33.39	50.00	16.61	
	8.592	31.39	0.50	31.89	50.00	18.11	

TEST ENGINEER: HUGH HUANG

## 4 RADIATED EMISSION TEST

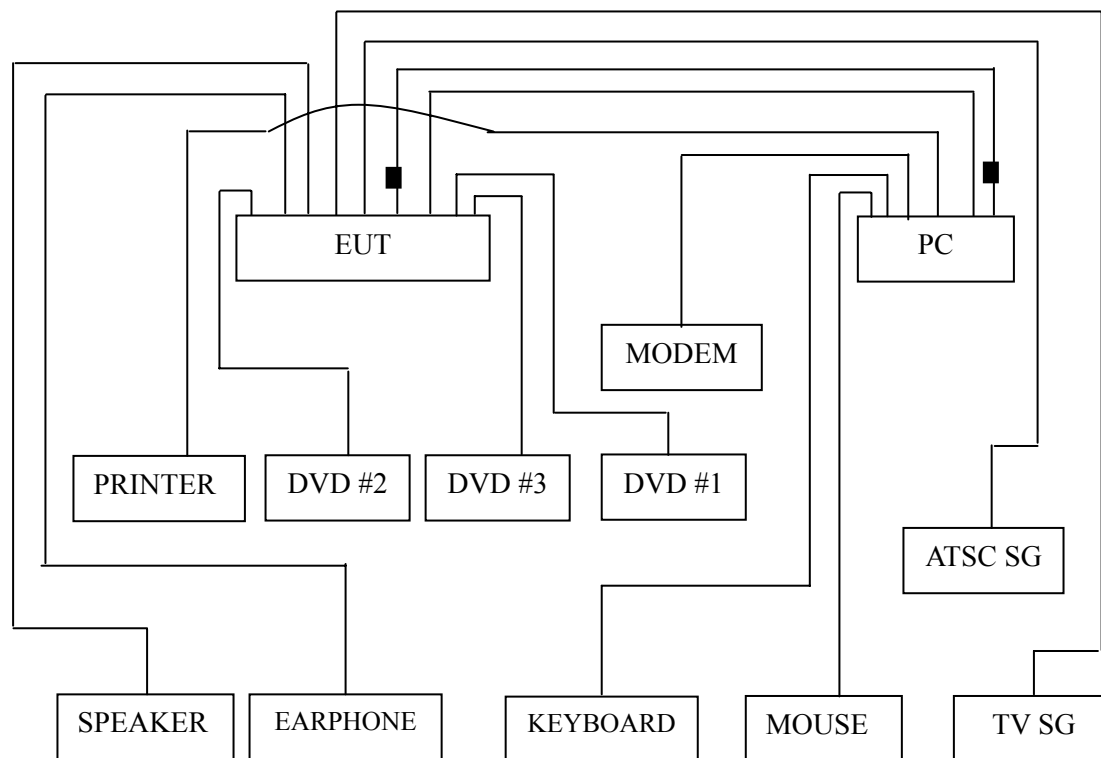
### 4.1 Test Equipment

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	--	--

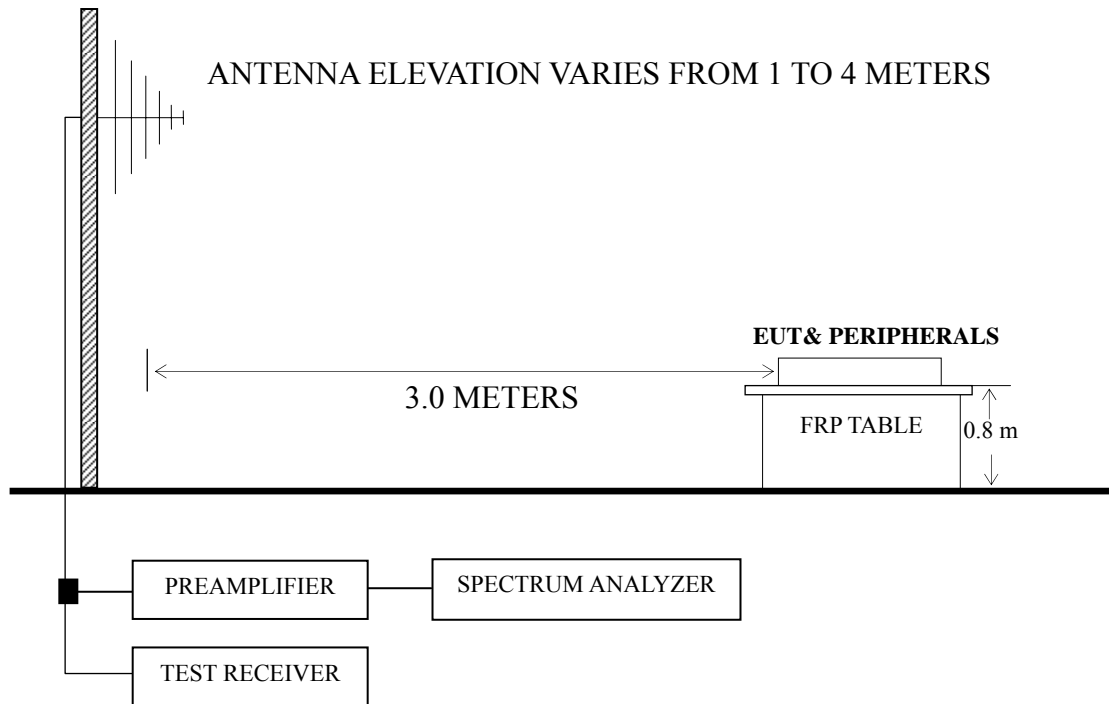
### 4.2 Block Diagram of Test Setup

#### 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 HDMI 640\*480@60Hz test mode. The worst emission at horizontal polarization was detected at 652.740 MHz with corrected signal level of 43.57dB ( $\mu\text{V}/\text{m}$ ) (limit is 46.00dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 2.00 m height and the turntable was at 150°. The worst emission at vertical polarization was detected at 675.050 MHz with corrected signal level of 42.54dB ( $\mu\text{V}/\text{m}$ ) (limit is 46.00 dB ( $\mu\text{V}/\text{m}$ )), when the antenna was 2.00 m height and the turntable was at 240°.

EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 60%RH

Serial No. : E2009103001 Date of Test : Nov 25, 2009

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	36.790	15.07	15.80	0.66	31.53	40.00	8.47
	93.050	17.50	10.09	1.01	28.60	43.50	14.90
	127.000	20.06	12.66	1.17	33.89	43.50	9.61
	191.990	19.32	10.37	1.43	31.12	43.50	12.38
	616.850	14.42	19.29	2.51	36.22	46.00	9.78
	<b>696.390</b>	<b>15.45</b>	<b>19.69</b>	<b>2.69</b>	<b>37.83</b>	<b>46.00</b>	<b>8.17</b>
Vertical	40.670	15.08	13.62	0.71	29.41	40.00	10.59
	81.410	20.32	8.02	0.98	29.32	40.00	10.68
	127.000	22.39	12.66	1.17	36.22	43.50	7.28
	188.110	21.85	10.20	1.39	33.44	43.50	10.06
	<b>302.570</b>	<b>23.30</b>	<b>13.97</b>	<b>1.73</b>	<b>39.00</b>	<b>46.00</b>	<b>7.00</b>
	490.750	15.11	17.78	2.23	35.12	46.00	10.88

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 60%RH

Serial No. : E2009103001 Date of Test : Nov 25, 2009

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	55.220	21.50	7.69	0.78	29.97	40.00	10.03
	80.440	25.36	7.85	0.97	34.18	40.00	5.82
	98.870	17.88	11.27	1.04	30.19	43.50	13.31
	165.800	23.39	10.33	1.31	35.03	43.50	8.47
	408.300	20.97	16.62	2.07	39.66	46.00	6.34
	<b>628.490</b>	<b>20.99</b>	<b>19.34</b>	<b>2.54</b>	<b>42.87</b>	<b>46.00</b>	<b>3.13</b>
Vertical	39.700	17.66	14.08	0.68	32.42	40.00	7.58
	58.130	24.37	6.96	0.79	32.12	40.00	7.88
	<b>123.120</b>	<b>25.35</b>	<b>12.86</b>	<b>1.16</b>	<b>39.37</b>	<b>43.50</b>	<b>4.13</b>
	173.560	21.16	10.09	1.32	32.57	43.50	10.93
	381.140	15.03	16.10	1.99	33.12	46.00	12.88
	628.490	14.60	19.34	2.54	36.48	46.00	9.52

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 60%RH

Serial No. : E2009103001 Date of Test : Nov 25, 2009

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	39.700	12.97	14.08	0.68	27.73	40.00	12.27
	81.410	23.31	8.02	0.98	32.31	40.00	7.69
	117.300	18.10	12.84	1.14	32.08	43.50	11.42
	202.660	22.75	10.81	1.46	35.02	43.50	8.48
	383.080	17.58	16.13	1.98	35.69	46.00	10.31
	<b>637.220</b>	<b>16.74</b>	<b>19.39</b>	<b>2.59</b>	<b>38.72</b>	<b>46.00</b>	<b>7.28</b>
Vertical	40.670	16.80	13.62	0.71	31.13	40.00	8.87
	83.350	23.12	8.30	0.98	32.40	40.00	7.60
	128.940	21.64	12.58	1.14	35.36	43.50	8.14
	258.920	19.81	13.08	1.61	34.50	46.00	11.50
	<b>408.300</b>	<b>21.43</b>	<b>16.62</b>	<b>2.07</b>	<b>40.12</b>	<b>46.00</b>	<b>5.88</b>
	633.340	18.01	19.37	2.57	39.95	46.00	6.05

TEST ENGINEER: RAVEN JIN



EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 60%RH

Serial No. : E2009103001 Date of Test : Nov 25, 2009

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	70.740	27.41	6.58	0.89	34.88	40.00	5.12
	150.280	27.43	11.25	1.23	39.91	43.50	3.59
	279.290	26.42	13.52	1.68	41.62	46.00	4.38
	376.290	24.59	15.99	1.95	42.53	46.00	3.47
	460.680	20.51	17.38	2.15	40.04	46.00	5.96
	<b>652.740</b>	<b>21.49</b>	<b>19.47</b>	<b>2.61</b>	<b>43.57</b>	<b>46.00</b>	<b>2.43</b>
Vertical	36.790	10.51	15.80	0.66	26.97	40.00	13.03
	77.530	25.85	7.49	0.93	34.27	40.00	5.73
	124.090	23.60	12.81	1.15	37.56	43.50	5.94
	174.530	19.49	10.07	1.36	30.92	43.50	12.58
	426.730	20.09	16.87	2.08	39.04	46.00	6.96
	<b>675.050</b>	<b>20.30</b>	<b>19.58</b>	<b>2.66</b>	<b>42.54</b>	<b>46.00</b>	<b>3.46</b>

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 60%RH

Serial No. : E2009103001 Date of Test : Nov 25, 2009

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	77.530	22.44	7.49	0.93	30.86	40.00	9.14
	201.690	20.75	10.78	1.45	32.98	43.50	10.52
	279.290	22.54	13.52	1.68	37.74	46.00	8.26
	300.630	18.23	13.93	1.75	33.91	46.00	12.09
	538.280	17.35	18.39	2.35	38.09	46.00	7.91
	<b>652.740</b>	<b>20.05</b>	<b>19.47</b>	<b>2.61</b>	<b>42.13</b>	<b>46.00</b>	<b>3.87</b>
Vertical	81.410	21.95	8.02	0.95	30.92	40.00	9.08
	128.940	19.51	12.58	1.17	33.26	43.50	10.24
	280.260	16.71	13.55	1.81	32.07	46.00	13.93
	<b>405.390</b>	<b>20.82</b>	<b>16.57</b>	<b>2.22</b>	<b>39.61</b>	<b>46.00</b>	<b>6.39</b>
	653.710	16.69	19.48	2.86	39.03	46.00	6.97
	809.880	14.82	20.80	3.21	38.83	46.00	7.17

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LTDN55T57XUS Humidity : 60%RH

Serial No. : E2009103001 Date of Test : Nov 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	77.530	19.09	7.49	0.93	27.51	40.00	12.49
	143.490	24.25	11.81	1.20	37.26	43.50	6.24
	225.940	22.31	11.94	1.55	35.80	46.00	10.20
	460.680	19.50	17.38	2.15	39.03	46.00	6.97
	652.740	20.51	19.47	2.61	42.59	46.00	3.41
	<b>754.590</b>	<b>19.74</b>	<b>20.27</b>	<b>2.80</b>	<b>42.81</b>	<b>46.00</b>	<b>3.19</b>
Vertical	62.980	27.31	6.57	0.85	34.73	40.00	5.27
	80.440	23.31	7.85	0.97	32.13	40.00	7.87
	150.280	26.88	11.25	1.23	39.36	43.50	4.14
	405.390	22.39	16.57	2.04	41.00	46.00	5.00
	450.980	23.04	17.23	2.10	42.37	46.00	3.63
	<b>674.080</b>	<b>20.41</b>	<b>19.58</b>	<b>2.64</b>	<b>42.63</b>	<b>46.00</b>	<b>3.37</b>

TEST ENGINEER: RAVEN JIN

## **5 DEVIATION TO TEST SPECIFICATIONS**

None.

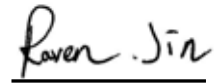
## 6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	Specification	M/N	Manufacturer	Location
Ferrite Core	ZCAT2132-1130\ROH	--	Bilusi	See Internal Photo Figure 21, 23, 24, 26
Aluminum foil	50*120	--	Bilusi	See Internal Photo Figure 22
Tape	150*50	--	Bilusi	See Internal Photo Figure 25

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)**