

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

LED LCD TV

Model No.	Serial No.	Brand
LTDN55XT770XWUS3D	E1203284-02/02	Hisense
55T770DW	--	

FCC ID : W9HLCDF0005

Prepared For : Hisense Electric Co., Ltd.
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Development Zone, Qingdao, China

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Report No. : ACI-F12080
Date of Test : Apr 26 – May 07, 2012
Date of Report : May 09, 2012

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.

Manufacturer : Hisense Electric Co., Ltd.

EUT Description : LED LCD TV

Model No.	Serial No.	Brand	Power Supply
LTDN55XT770XWUS3D	E1203284-02/02	Hisense	120V/60Hz
55T770DW	--		

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2011
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 Sec2.1; S/N: Refer to Sec2.1) which was tested in 3m anechoic chamber Apr 26 – May 07, 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.F12079, a Verification report.

Date of Test : Apr 26 – May 07, 2012 Date of Report : May 09, 2012

Producer : 
YENNY YU 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:

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2011 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2011 AND ANSI C63.4-2003	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description : LED LCD TV

Type of EUT : Production Pre-product Pro-type

Model No.	Serial No.	Brand
LTDN55XT770XWUS3D	E1203284-02/02	Hisense
55T770DW	--	

Note : The above models are all the same except for the different model name.
The LTDN55XT770XWUS3D was tested and reported 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 : Hisense
M/N : HE550HD-B01(1000)\PW1

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

The EUT is a LED LCD TV which input/output ports as follows:

Side Port:

- (1) One HDMI2 Port : Connected with DVD PLAYER #1
- (2) One HDMI1 Port : Connected with PC
- (3) One DIGITAL AUDIO OUT Port : Connected with DVD PLAYER #1
- (4) One Headphone Port : Connected with Earphone
- (5) One ANT/CABLE IN Port : Connected with ATSC SG / TV SG
- (6) One component of YPbPr Port : Connected with DVD PLAYER #1
- (7) One component of YPbPr Audio Port : Connected with DVD PLAYER #1
- (8) One component of AV Port : Connected with DVD PLAYER #1

Bottom Port:

- (9) One LAN Port : Connected with PC
- (10) One USB2 Port : Connected with U-Disk
- (11) One USB1 Port : Connected with U-Disk
- (12) One VGA Port : Connected with PC
- (13) One PC/DVI Audio In Port : Connected with PC
- (14) One HDMI4 Port : Connected with DVD PLAYER #3
- (15) One HDMI3 Port : Connected with DVD PLAYER #2

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, 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 PLAYER #1

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

2.2.10 DVD PLAYER #2

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

2.2.11 DVD PLAYER #3

Manufacturer : DGT RONIK
 Model Number : DV-A340
 Serial Number : 10004184-C
 Certificate : FCC DoC, CE/EMC, CCC

2.2.12 U-DISK

Manufacturer : LG
 Model Number : 1GB

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 = 3.43 dB
 Radiated Emission Expanded Uncertainty (30-200MHz):
 U = 4.67 dB (Horizontal)
 U = 4.72 dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):
 U = 4.81 dB (Horizontal)
 U = 4.69 dB (Vertical)

3 CONDUCTED EMISSION TEST

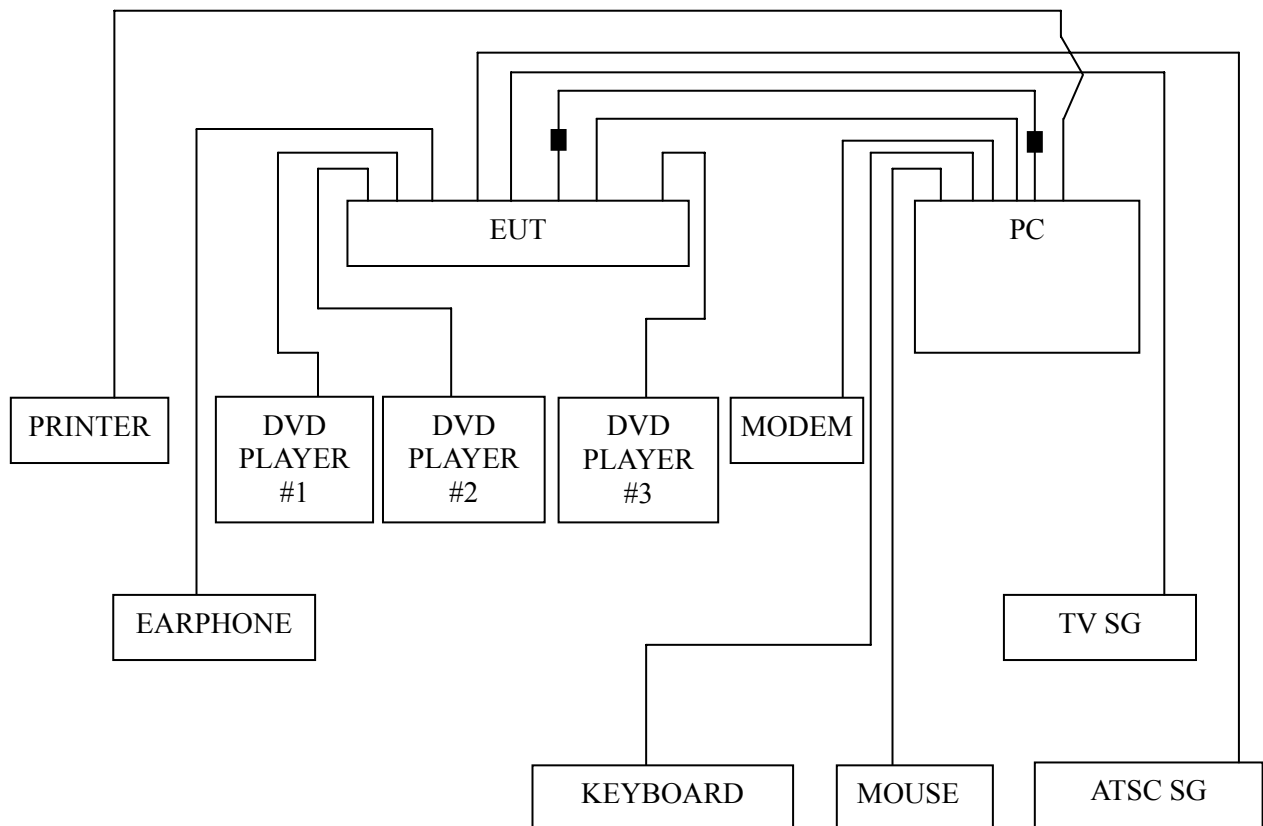
3.1 Test Equipment

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, 2012	Mar 22, 2013
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Feb 13, 2012	Feb 13, 2013
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2012	Mar 22, 2013
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2012	Sep 18, 2012
5.	50 Ω Terminator	Anritsu	BNC	001	Mar 22, 2012	Mar 22, 2013
6.	Software	Audix	E3	SET00200 9804M592	--	--

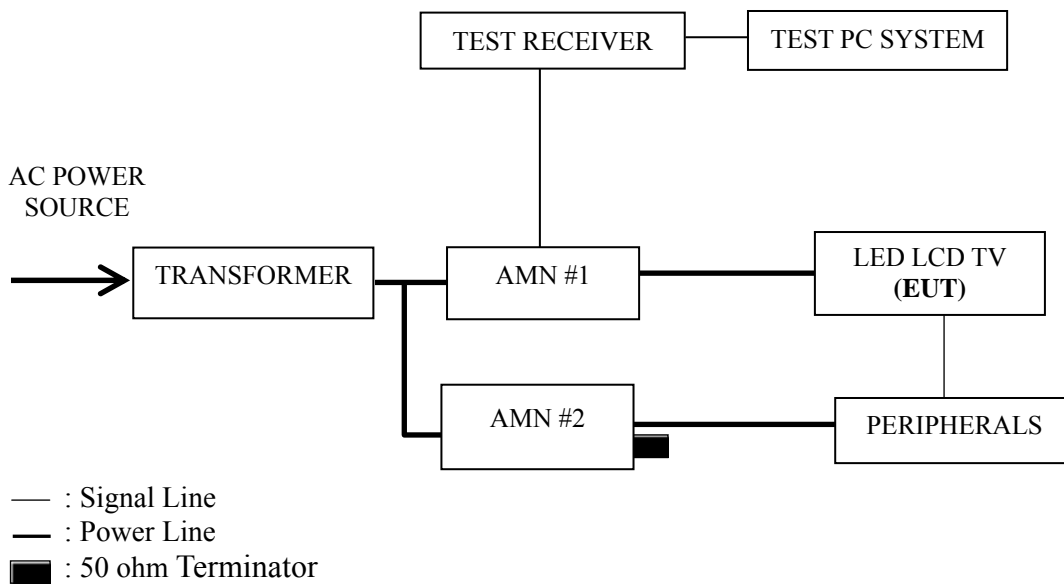
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



■ : Ferrite core

3.2.2 Conducted Disturbance Test Setup



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

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

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

3.4 Test Configuration

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

3.5 Operating Condition of EUT

- 3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.
- 3.5.2 Turn on the power of all equipments and the EUT.
- 3.5.3 Set the contrast & brightness of EUT to maximum.
- 3.5.4 PC system ran the self-test program “EMC Test” by windows XP and sent “H” characters to EUT through graphic card, the EUT’s screen displayed and filled with “H” pattern by its resolution (Via D-Sub & HDMI Input).
- 3.5.5 In USB Play mode, set the EUT play digital media from U-Disk.
- 3.5.6 In LAN mode, set the EUT play digital media through LAN port.
- 3.5.7 Repeat above procedure 3.5.6 for difference test mode.
- 3.5.8 The other peripherals devices were driven and operated during the test.
- 3.5.9 The test modes are as follows:

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

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 1024*768@60Hz	P13
HDMI 1024*768@60Hz	P14
HDMI 800*600@60Hz	P15
HDMI 640*480@60Hz	P16
USB Play	P17
LAN	P18

NOTE 1 – Factor = Cable Loss + AMN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 4 – The worst case is for HDMI 1024*768@60Hz test mode. The worst emission is detected at 23.636 MHz (Quasi-Peak Value) with corrected signal level of 40.77 dB (μV) (limit is 60.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 48%RH

Serial No. : E1203284-02/02 Date of Test : Apr 26, 2012

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

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.204	40.23	0.25	40.48	63.45	22.97	QP
	0.447	34.32	0.35	34.67	56.93	22.26	
	0.933	32.65	0.31	32.96	56.00	23.04	
	4.407	33.53	0.49	34.02	56.00	21.98	
	6.056	34.44	0.59	35.03	60.00	24.97	
	23.140	38.94	1.11	40.05	60.00	19.95	
	0.204	30.10	0.25	30.35	53.45	23.10	AV
	0.447	23.85	0.35	24.20	46.93	22.73	
	0.933	22.40	0.31	22.71	46.00	23.29	
	4.407	23.17	0.49	23.66	46.00	22.34	
	6.056	23.80	0.59	24.39	50.00	25.61	
	23.140	28.62	1.11	29.73	50.00	20.27	
Neutral	0.206	40.43	0.12	40.55	63.36	22.81	QP
	0.447	33.57	0.17	33.74	56.93	23.19	
	1.184	33.54	0.21	33.75	56.00	22.25	
	3.943	30.04	0.39	30.43	56.00	25.57	
	6.056	31.46	0.51	31.97	60.00	28.03	
	21.830	39.26	0.89	40.15	60.00	19.85	
	0.206	30.40	0.12	30.52	53.36	22.84	AV
	0.447	23.28	0.17	23.45	46.93	23.48	
	1.184	23.19	0.21	23.40	46.00	22.60	
	3.943	19.67	0.39	20.06	46.00	25.94	
	6.056	21.08	0.51	21.59	50.00	28.41	
	21.830	28.76	0.89	29.65	50.00	20.35	

TEST ENGINEER: LVY LV

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 48%RH

Serial No. : E1203284-02/02 Date of Test : Apr 26, 2012

Test Mode : HDMI 1024*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.208	39.44	0.25	39.69	63.27	23.58	QP
	0.447	34.21	0.35	34.56	56.93	22.37	
	0.943	32.74	0.31	33.05	56.00	22.95	
	4.407	33.67	0.49	34.16	56.00	21.84	
	6.056	34.61	0.59	35.20	60.00	24.80	
	23.636	39.63	1.14	40.77	60.00	19.23	
	0.208	28.78	0.25	29.03	53.27	24.24	AV
	0.447	23.75	0.35	24.10	46.93	22.83	
	0.943	22.41	0.31	22.72	46.00	23.28	
	4.407	23.18	0.49	23.67	46.00	22.33	
	6.056	24.15	0.59	24.74	50.00	25.26	
23.636	29.10	1.14	30.24	50.00	19.76		
Neutral	0.202	40.75	0.12	40.87	63.54	22.67	QP
	0.452	34.07	0.17	34.24	56.85	22.61	
	1.184	34.01	0.21	34.22	56.00	21.78	
	4.158	31.48	0.40	31.88	56.00	24.12	
	8.148	33.11	0.56	33.67	60.00	26.33	
	22.535	38.85	0.97	39.82	60.00	20.18	
	0.202	30.50	0.12	30.62	53.54	22.92	AV
	0.452	23.41	0.17	23.58	46.85	23.27	
	1.184	23.43	0.21	23.64	46.00	22.36	
	4.158	21.15	0.40	21.55	46.00	24.45	
	8.148	22.50	0.56	23.06	50.00	26.94	
	22.535	28.41	0.97	29.38	50.00	20.62	

TEST ENGINEER: LUY LV

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 48%RH

Serial No. : E1203284-02/02 Date of Test : Apr 26, 2012

Test Mode : HDMI 800*600@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.200	40.35	0.25	40.60	63.62	23.02	QP
	0.452	33.90	0.35	34.25	56.85	22.60	
	0.933	32.33	0.31	32.64	56.00	23.36	
	4.501	33.67	0.50	34.17	56.00	21.83	
	6.056	34.91	0.59	35.50	60.00	24.50	
	23.636	39.32	1.14	40.46	60.00	19.54	
	0.200	30.10	0.25	30.35	53.62	23.27	AV
	0.452	23.41	0.35	23.76	46.85	23.09	
	0.933	22.00	0.31	22.31	46.00	23.69	
	4.501	23.17	0.50	23.67	46.00	22.33	
	6.056	24.15	0.59	24.74	50.00	25.26	
23.636	28.76	1.14	29.90	50.00	20.10		
Neutral	0.202	40.78	0.12	40.90	63.54	22.64	QP
	0.447	34.04	0.17	34.21	56.93	22.72	
	1.184	33.52	0.21	33.73	56.00	22.27	
	3.881	29.68	0.38	30.06	56.00	25.94	
	8.148	32.03	0.56	32.59	60.00	27.41	
	22.063	39.48	0.90	40.38	60.00	19.62	
	0.202	30.18	0.12	30.30	53.54	23.24	AV
	0.447	23.65	0.17	23.82	46.93	23.11	
	1.184	23.11	0.21	23.32	46.00	22.68	
	3.881	19.25	0.38	19.63	46.00	26.37	
	8.148	21.58	0.56	22.14	50.00	27.86	
22.063	28.79	0.90	29.69	50.00	20.31		

TEST ENGINEER: LUY LV

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 48%RH

Serial No. : E1203284-02/02 Date of Test : Apr 26, 2012

Test Mode : HDMI 640*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.206	39.89	0.25	40.14	63.36	23.22	QP
	0.447	34.00	0.35	34.35	56.93	22.58	
	0.933	33.54	0.31	33.85	56.00	22.15	
	4.454	33.40	0.50	33.90	56.00	22.10	
	8.148	34.08	0.68	34.76	60.00	25.24	
	23.636	39.43	1.14	40.57	60.00	19.43	
	0.206	29.64	0.25	29.89	53.36	23.47	AV
	0.447	23.53	0.35	23.88	46.93	23.05	
	0.933	23.10	0.31	23.41	46.00	22.59	
	4.454	22.85	0.50	23.35	46.00	22.65	
	8.148	23.64	0.68	24.32	50.00	25.68	
	23.636	28.78	1.14	29.92	50.00	20.08	
Neutral	0.204	41.28	0.12	41.40	63.45	22.05	QP
	0.452	34.73	0.17	34.90	56.85	21.95	
	1.184	32.86	0.21	33.07	56.00	22.93	
	3.799	29.09	0.38	29.47	56.00	26.53	
	8.148	31.13	0.56	31.69	60.00	28.31	
	22.063	39.50	0.90	40.40	60.00	19.60	
	0.204	30.85	0.12	30.97	53.45	22.48	AV
	0.452	24.16	0.17	24.33	46.85	22.52	
	1.184	22.43	0.21	22.64	46.00	23.36	
	3.799	18.57	0.38	18.95	46.00	27.05	
	8.148	20.54	0.56	21.10	50.00	28.90	
	22.063	28.76	0.90	29.66	50.00	20.34	

TEST ENGINEER: LUY LV

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 48%RH

Serial No. : E1203284-02/02 Date of Test : Apr 26, 2012

Test Mode : USB Play

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark	
Line	0.204	39.88	0.25	40.13	63.45	23.32	QP	
	0.452	34.44	0.35	34.79	56.85	22.06		
	0.853	32.63	0.28	32.91	56.00	23.09		
	4.407	33.51	0.49	34.00	56.00	22.00		
	6.805	34.53	0.65	35.18	60.00	24.82		
	23.140	38.65	1.11	39.76	60.00	20.24	AV	
	0.204	29.75	0.25	30.00	53.45	23.45		
	0.452	24.10	0.35	24.45	46.85	22.40		
	0.853	22.40	0.28	22.68	46.00	23.32		
	4.407	23.10	0.49	23.59	46.00	22.41		
6.805	24.15	0.65	24.80	50.00	25.20	AV		
23.140	28.44	1.11	29.55	50.00	20.45			
Neutral	0.200	40.80	0.12	40.92	63.62		22.70	QP
	0.447	34.07	0.17	34.24	56.93		22.69	
	1.184	34.58	0.21	34.79	56.00		21.21	
	4.549	28.79	0.41	29.20	56.00	26.80		
	6.186	31.76	0.52	32.28	60.00	27.72		
	22.535	39.33	0.97	40.30	60.00	19.70	AV	
	0.200	30.24	0.12	30.36	53.62	23.26		
	0.447	23.54	0.17	23.71	46.93	23.22		
	1.184	24.14	0.21	24.35	46.00	21.65		
	4.549	18.63	0.41	19.04	46.00	26.96		
	6.186	21.48	0.52	22.00	50.00	28.00		
	22.535	28.84	0.97	29.81	50.00	20.19		

TEST ENGINEER: LUY LV

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 48%RH

Serial No. : E1203284-02/02 Date of Test : Apr 26, 2012

Test Mode : LAN

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.204	39.70	0.25	39.95	63.45	23.50	QP
	0.447	34.93	0.35	35.28	56.93	21.65	
	0.862	33.20	0.29	33.49	56.00	22.51	
	4.407	33.58	0.49	34.07	56.00	21.93	
	7.526	34.47	0.67	35.14	60.00	24.86	
	23.387	39.60	1.13	40.73	60.00	19.27	
	0.204	29.13	0.25	29.38	53.45	24.07	AV
	0.447	24.25	0.35	24.60	46.93	22.33	
	0.862	22.57	0.29	22.86	46.00	23.14	
	4.407	23.10	0.49	23.59	46.00	22.41	
	7.526	23.67	0.67	24.34	50.00	25.66	
23.387	28.94	1.13	30.07	50.00	19.93		
Neutral	0.204	41.67	0.12	41.79	63.45	21.66	QP
	0.452	34.42	0.17	34.59	56.85	22.26	
	1.184	33.59	0.21	33.80	56.00	22.20	
	3.799	29.09	0.38	29.47	56.00	26.53	
	7.526	32.09	0.59	32.68	60.00	27.32	
	22.896	39.38	0.99	40.37	60.00	19.63	
	0.204	31.08	0.12	31.20	53.45	22.25	AV
	0.452	24.10	0.17	24.27	46.85	22.58	
	1.184	23.42	0.21	23.63	46.00	22.37	
	3.799	18.60	0.38	18.98	46.00	27.02	
	7.526	21.45	0.59	22.04	50.00	27.96	
	22.896	28.77	0.99	29.76	50.00	20.24	

TEST ENGINEER: LUY LV

4 RADIATED EMISSION TEST

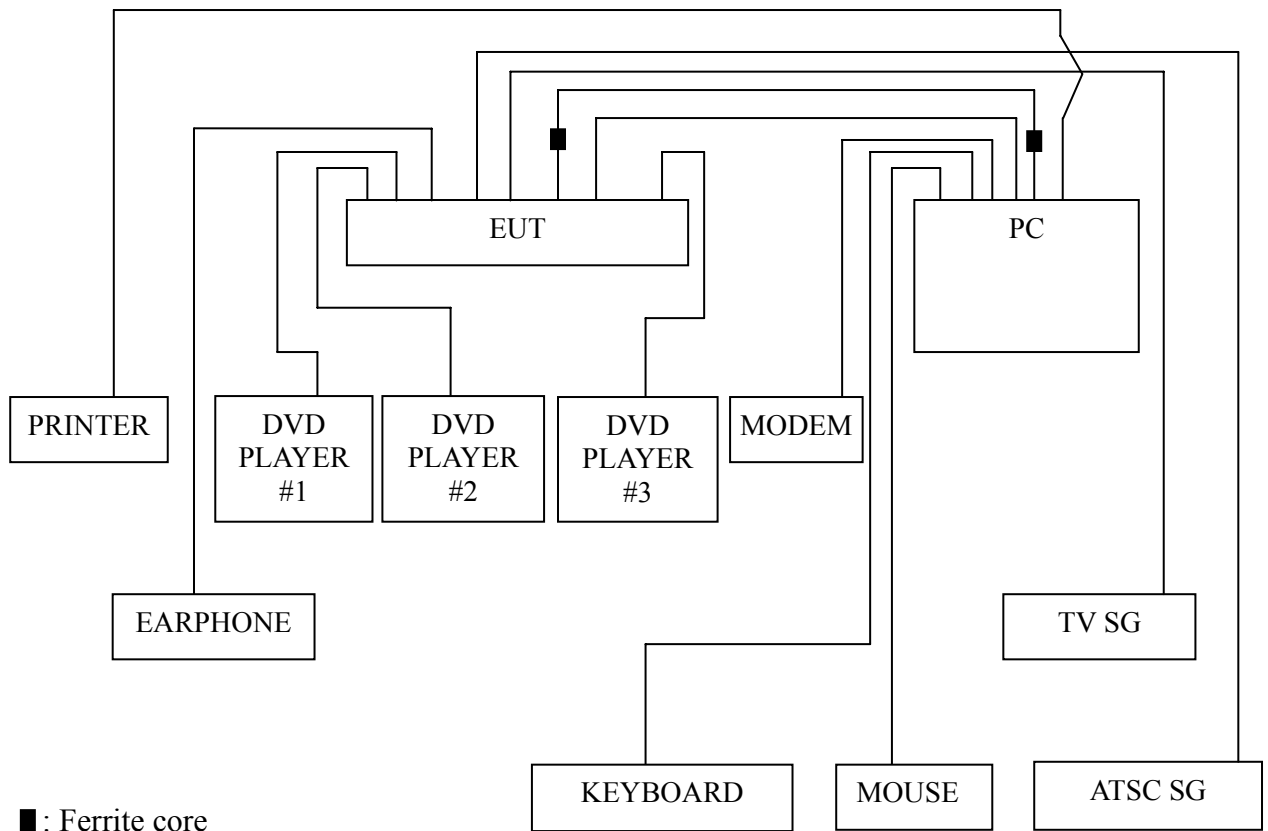
4.1 Test Equipment

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

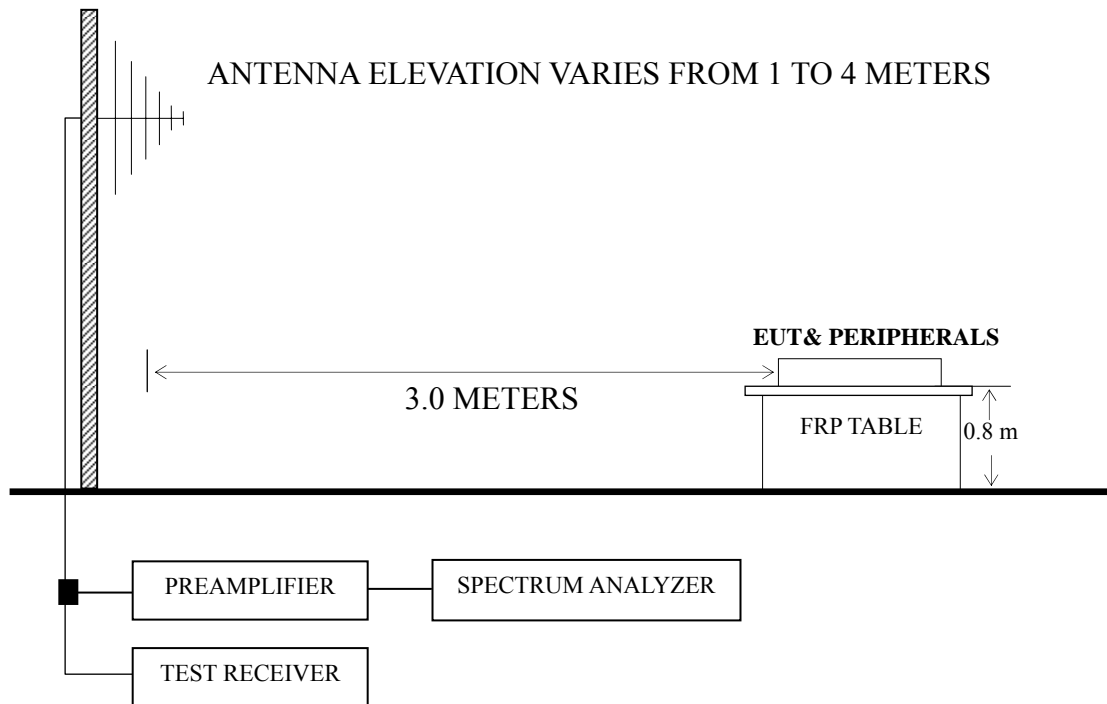
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 22, 2012	Mar 22, 2013
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2012	Sep 18, 2012
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2011	Dec 01, 2012
4.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2012	Mar 22, 2013
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2012	Sep 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.

NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.

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 1024*768@60Hz	P22
HDMI 1024*768@60Hz	P23
HDMI 800*600@60Hz	P24
HDMI 640*480@60Hz	P25
USB Play	P26
LAN	P27

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 HDMI 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 32.910 MHz with corrected signal level of 37.02 dB ($\mu\text{V}/\text{m}$) (limit is 40.00 dB ($\mu\text{V}/\text{m}$)), when the antenna was 1.80 m height and the turntable was at 105°. The worst emission at vertical polarization was detected at 539.570 MHz with corrected signal level of 41.35 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 240°.

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 60%RH

Serial No. : E1203284-02/02 Date of Test : May 07, 2012

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

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	84.320	24.33	10.75	1.64	36.72	40.00	3.28
	108.570	26.11	11.21	1.93	39.25	43.50	4.25
	166.770	23.16	10.16	2.30	35.62	43.50	7.88
	295.780	22.68	13.60	2.75	39.03	46.00	6.97
	407.330	20.89	16.39	3.01	40.29	46.00	5.71
	741.980	16.19	19.98	3.78	39.95	46.00	6.05
Vertical	33.880	12.05	16.26	0.83	29.14	40.00	10.86
	73.650	18.93	10.15	1.49	30.57	40.00	9.43
	165.800	26.00	10.17	2.30	38.47	43.50	5.03
	212.360	26.86	10.29	2.47	39.62	43.50	3.88
	296.750	25.98	13.63	2.75	42.36	46.00	3.64
	371.440	17.40	15.68	2.93	36.01	46.00	9.99

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 60%RH

Serial No. : E1203284-02/02 Date of Test : May 07, 2012

Test Mode : HDMI 1024*768@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	32.910	19.41	16.79	0.82	37.02	40.00	2.98
	74.620	16.11	10.21	1.51	27.83	40.00	12.17
	107.600	14.51	11.22	1.92	27.65	43.50	15.85
	172.590	20.34	10.08	2.33	32.75	43.50	10.75
	231.760	23.65	11.14	2.55	37.34	46.00	8.66
	283.170	21.96	13.24	2.71	37.91	46.00	8.09
Vertical	87.230	15.90	10.88	1.70	28.48	40.00	11.52
	152.220	19.26	10.37	2.24	31.87	43.50	11.63
	172.590	22.55	10.08	2.33	34.96	43.50	8.54
	223.030	25.28	10.76	2.51	38.55	46.00	7.45
	367.560	21.76	15.61	2.92	40.29	46.00	5.71
	593.570	19.73	18.17	3.45	41.35	46.00	4.65

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 60%RH

Serial No. : E1203284-02/02 Date of Test : May 07, 2012

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	58.130	17.99	9.02	1.14	28.15	40.00	11.85
	107.600	16.12	11.22	1.92	29.26	43.50	14.24
	172.590	24.34	10.08	2.33	36.75	43.50	6.75
	237.580	26.24	11.41	2.57	40.22	46.00	5.78
	371.440	24.37	15.68	2.93	42.98	46.00	3.02
	890.390	16.15	20.33	4.89	41.37	46.00	4.63
Vertical	61.040	19.04	9.21	1.21	29.46	40.00	10.54
	80.440	15.52	10.56	1.59	27.67	40.00	12.33
	165.800	13.44	10.17	2.30	25.91	43.50	17.59
	233.700	23.82	11.23	2.56	37.61	46.00	8.39
	297.720	23.37	13.63	2.75	39.75	46.00	6.25
	381.140	21.78	15.90	2.95	40.63	46.00	5.37

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22°C
 Model No. : LTDN55XT770XWUS3D Humidity : 60%RH
 Serial No. : E1203284-02/02 Date of Test : May 07, 2012
 Test Mode : HDMI 640*480@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	59.100	16.48	9.07	1.16	26.71	40.00	13.29
	106.630	20.47	11.24	1.92	33.63	43.50	9.87
	173.560	18.91	10.07	2.33	31.31	43.50	12.19
	217.210	19.86	10.48	2.50	32.84	46.00	13.16
	351.070	18.69	15.17	2.89	36.75	46.00	9.25
	873.900	17.55	20.37	4.60	42.52	46.00	3.48
Vertical	42.610	11.02	11.27	0.88	23.17	40.00	16.83
	79.470	19.89	10.51	1.58	31.98	40.00	8.02
	107.600	18.99	11.22	1.92	32.13	43.50	11.37
	152.220	22.15	10.37	2.24	34.76	43.50	8.74
	371.440	20.78	15.68	2.93	39.39	46.00	6.61
	518.880	18.90	17.72	3.31	39.93	46.00	6.07

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 60%RH

Serial No. : E1203284-02/02 Date of Test : May 07, 2012

Test Mode : USB Play

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	80.440	20.34	10.56	1.59	32.49	40.00	7.51
	116.330	12.71	11.07	2.00	25.78	43.50	17.72
	172.590	19.15	10.08	2.33	31.56	43.50	11.94
	237.580	22.29	11.41	2.57	36.27	46.00	9.73
	323.910	16.92	14.38	2.82	34.12	46.00	11.88
	597.450	15.42	18.19	3.45	37.06	46.00	8.94
Vertical	107.600	10.73	11.22	1.92	23.87	43.50	19.63
	172.590	14.08	10.08	2.33	26.49	43.50	17.01
	237.580	17.75	11.41	2.57	31.73	46.00	14.27
	283.170	16.08	13.24	2.71	32.03	46.00	13.97
	444.190	19.06	16.90	3.11	39.07	46.00	6.93
	593.570	14.26	18.17	3.45	35.88	46.00	10.12

TEST ENGINEER: RAVEN JIN

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN55XT770XWUS3D Humidity : 60%RH

Serial No. : E1203284-02/02 Date of Test : May 07, 2012

Test Mode : LAN

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	85.290	14.72	10.80	1.66	27.18	40.00	12.82
	150.280	19.07	10.41	2.23	31.71	43.50	11.79
	208.480	22.14	10.15	2.46	34.75	43.50	8.75
	281.230	17.75	13.17	2.70	33.62	46.00	12.38
	458.740	9.83	17.09	3.15	30.07	46.00	15.93
	837.040	10.99	20.48	4.34	35.81	46.00	10.19
Vertical	33.880	15.30	16.26	0.83	32.39	40.00	7.61
	53.280	23.55	8.70	1.01	33.26	40.00	6.74
	140.580	22.14	10.60	2.18	34.92	43.50	8.58
	281.230	19.98	13.17	2.70	35.85	46.00	10.15
	494.630	17.25	17.53	3.25	38.03	46.00	7.97
	875.840	15.62	20.37	4.75	40.74	46.00	5.26

TEST ENGINEER: RAVEN JIN

5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Aluminum Tape	DBA40X100\ROH	Qingdao Joinset S&T Co., Ltd.	See Internal Photos Figure 17
Gasket	DAA25X20X150\ROH	Qingdao Joinset S&T Co., Ltd.	See Internal Photos Figure 16
		TAT ELECTRONIC TECH CO.,LTD.	
Gasket	DAA1002\ROH	Qingdao Joinset S&T Co., Ltd.	See Internal Photos Figure 16, 17, 18, 19, 20
		TAT ELECTRONIC TECH 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.	
Ferrite core	BNF-12\ZCAT1519-0830\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)

6 DEVIATION TO TEST SPECIFICATIONS

None.