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

LED LCD TV

Model No.	Serial No.	Brand
LTDN42K316XWUS3D	E1204415-01/02	Hisense
42K316DW	--	

FCC ID : W9HLCDD0018

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.
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Report No. : ACI-F12068
Date of Test : Apr 14 – 22, 2012
Date of Report : Apr 26, 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
LTDN42K316XWUS3D	E1204415-01/02	Hisense	120V/60Hz
42K316DW	--		

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 14 – 22, 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.F12069, a Verification report.

Date of Test : Apr 14 – 22, 2012 Date of Report : Apr 26, 2012

Producer : Kathy Wang
KATHY WANG / Assistant

Review : Dio Yang
DIO YANG/ Assistant Manager

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

Signatory : Sammy Chen
Authorized Signature EMC SAMMY CHEN / Deputy Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

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

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 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
LTDN42K316XWUS3D	E1204415-01/02	Hisense
42K316DW	--	

Brand : Hisense

Note : The above models are all the same except for the different model name.
The LTDN42K316XWUS3D 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 : AU OPTRONICS
M/N : T420HW08 V8

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 Headphone Port
: Connected with Earphone

(4) One ANT Port
: Connected with ATSC SG / TV SG

(5) One component of YPbPr Port
: Connected with DVD PLAYER #1

(6) One component of YPbPr Audio Port
: Connected with DVD PLAYER #1

(7) One component of AV Port
: Connected with DVD PLAYER #1

(8) One DIGITAL AUDIO OUT 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	:	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 PLAYER PLAYER #1

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

2.2.10 DVD PLAYER PLAYER #2

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

2.2.11 DVD PLAYER 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

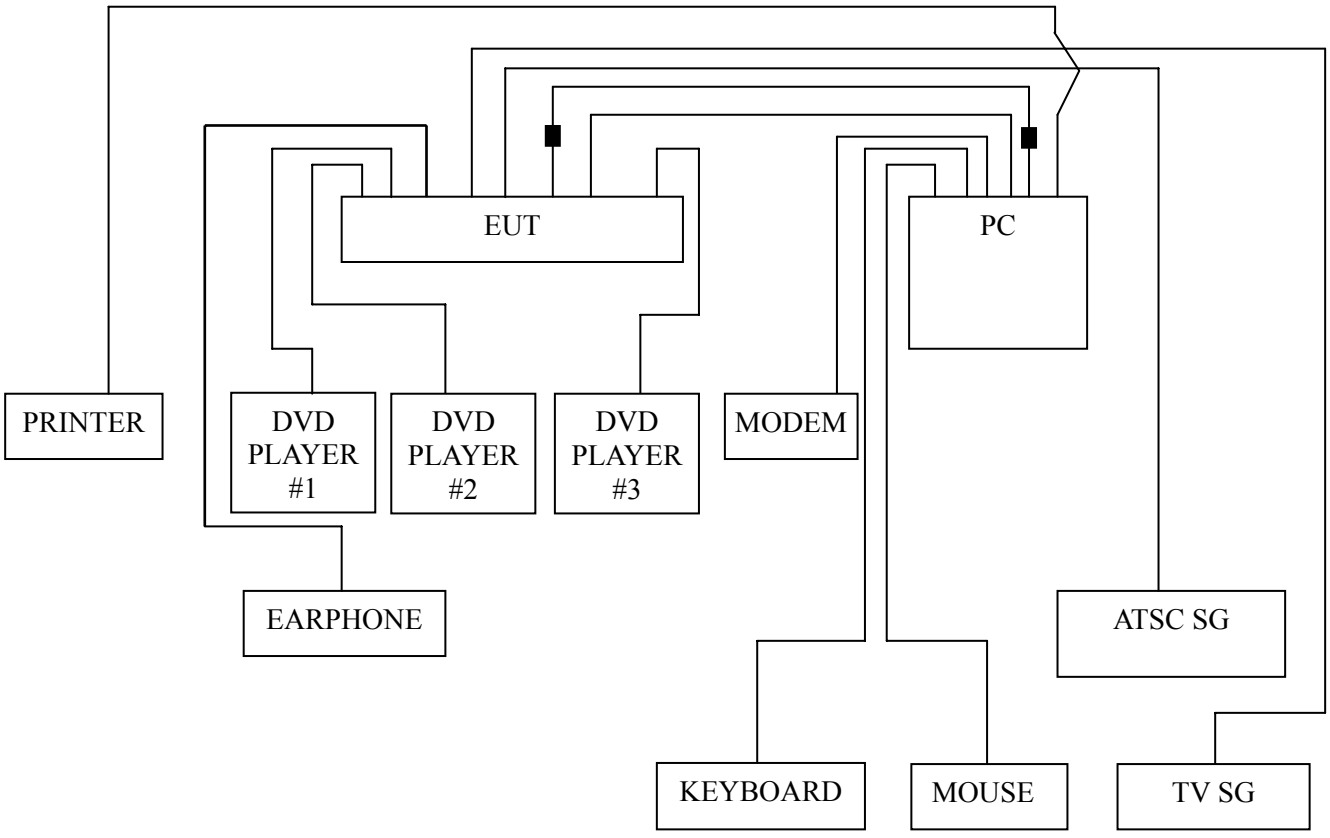
3.1 Test Equipment

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.	50Ω Terminator	Anritsu	BNC	001	Mar 22, 2012	Mar 22, 2013
6.	Software	Audix	E3	SET00200 9804M592	--	--

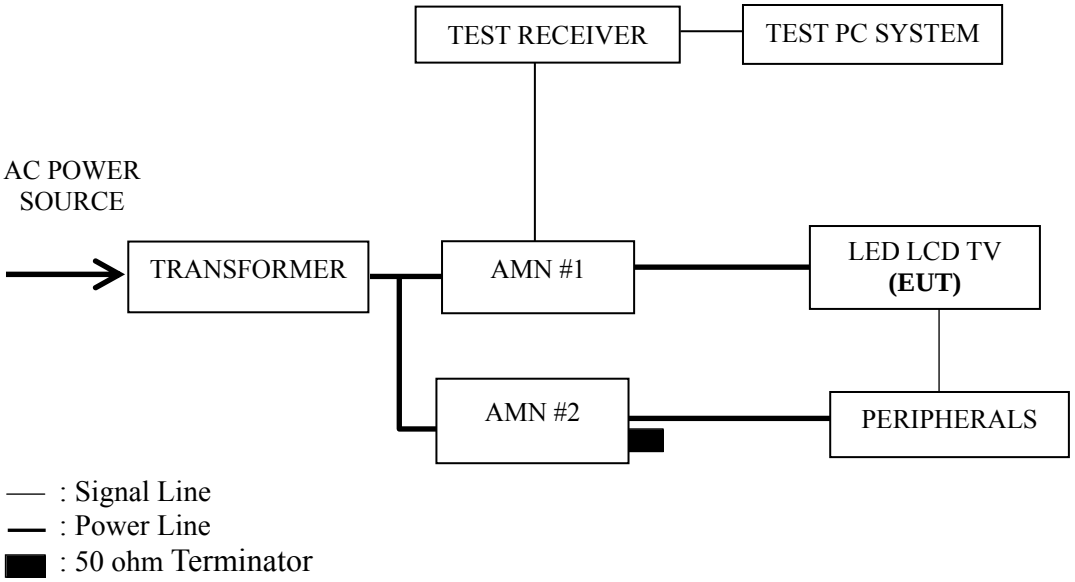
3.2 Block Diagram of Test Setup

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 (μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

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

3.4 Test Configuration

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

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipments and the EUT.

3.5.3 Set the contrast & brightness of EUT to maximum.

3.5.4 PC system ran the self-test program "EMC Test" by windows XP and sent "H" characters to EUT through graphic card, the EUT's screen displayed and filled with "H" pattern by its resolution (Via D-Sub & HDMI Input).

3.5.5 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
D-Sub 800*600@60Hz
D-Sub 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
D-Sub 800*600@60Hz	P15
D-Sub 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 D-Sub 640*480@60Hz test mode. The worst emission is detected at 0.164 MHz (Quasi-Peak Value) with corrected signal level of 47.06 dB (μV) (limit is 65.25 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN42K316XWUS3D	Humidity	:	48%RH
Serial No.	:	E1204415-01/02	Date of Test	:	Apr 14, 2012
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	0.164	46.11	0.24	46.35	65.25	18.90	QP
	0.611	29.93	0.23	30.16	56.00	25.84	
	1.043	32.70	0.32	33.02	56.00	22.98	
	2.650	27.89	0.40	28.29	56.00	27.71	
	3.547	25.26	0.47	25.73	56.00	30.27	
	24.400	33.69	1.16	34.85	60.00	25.15	
	0.164	35.80	0.24	36.04	55.25	19.21	AV
	0.611	20.10	0.23	20.33	46.00	25.67	
	1.043	22.10	0.32	22.42	46.00	23.58	
	2.650	17.30	0.40	17.70	46.00	28.30	
	3.547	16.49	0.47	16.96	46.00	29.04	
	24.400	23.31	1.16	24.47	50.00	25.53	
Neutral	**0.164**	**46.87**	**0.13**	**47.00**	**65.25**	**18.25**	QP
	0.604	29.00	0.18	29.18	56.00	26.82	
	1.043	31.77	0.22	31.99	56.00	24.01	
	2.448	28.27	0.19	28.46	56.00	27.54	
	4.027	25.67	0.40	26.07	56.00	29.93	
	24.142	33.42	1.04	34.46	60.00	25.54	
	0.164	36.50	0.13	36.63	55.25	18.62	AV
	0.604	19.51	0.18	19.69	46.00	26.31	
	1.043	21.30	0.22	21.52	46.00	24.48	
	2.448	19.30	0.19	19.49	46.00	26.51	
	4.027	16.19	0.40	16.59	46.00	29.41	
	24.142	23.10	1.04	24.14	50.00	25.86	

TEST ENGINEER: LVY LV

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN42K316XWUS3D	Humidity	:	48%RH
Serial No.	:	E1204415-01/02	Date of Test	:	Apr 14, 2012
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	0.164	46.11	0.24	46.35	65.25	18.90	QP
	0.585	29.68	0.28	29.96	56.00	26.04	
	1.037	31.71	0.32	32.03	56.00	23.97	
	2.554	27.28	0.40	27.68	56.00	28.32	
	3.799	25.55	0.48	26.03	56.00	29.97	
	24.400	35.20	1.16	36.36	60.00	23.64	
	0.164	35.69	0.24	35.93	55.25	19.32	AV
	0.585	20.40	0.28	20.68	46.00	25.32	
	1.037	21.80	0.32	22.12	46.00	23.88	
	2.554	18.50	0.40	18.90	46.00	27.10	
	3.799	15.80	0.48	16.28	46.00	29.72	
	24.400	25.21	1.16	26.37	50.00	23.63	
Neutral	**0.164**	**46.71**	**0.13**	**46.84**	**65.25**	**18.41**	QP
	0.611	29.11	0.18	29.29	56.00	26.71	
	1.043	32.03	0.22	32.25	56.00	23.75	
	2.554	28.63	0.20	28.83	56.00	27.17	
	3.565	26.27	0.36	26.63	56.00	29.37	
	24.529	34.05	1.04	35.09	60.00	24.91	
	0.164	36.50	0.13	36.63	55.25	18.62	AV
	0.611	20.11	0.18	20.29	46.00	25.71	
	1.043	22.30	0.22	22.52	46.00	23.48	
	2.554	19.30	0.20	19.50	46.00	26.50	
	3.565	17.30	0.36	17.66	46.00	28.34	
	24.529	24.41	1.04	25.45	50.00	24.55	

TEST ENGINEER: LVY LV

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN42K316XWUS3D	Humidity :	48%RH	
Serial No.	:	E1204415-01/02	Date of Test :	Apr 14, 2012	
Test Mode	:	D-Sub 800*600@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.164	46.07	0.24	46.31	65.25	18.94	QP
	0.579	29.65	0.30	29.95	56.00	26.05	
	1.054	31.85	0.32	32.17	56.00	23.83	
	2.650	27.85	0.40	28.25	56.00	27.75	
	3.759	25.22	0.48	25.70	56.00	30.30	
	24.142	34.31	1.16	35.47	60.00	24.53	
	0.164	35.70	0.24	35.94	55.25	19.31	AV
	0.579	19.50	0.30	19.80	46.00	26.20	
	1.054	21.60	0.32	21.92	46.00	24.08	
	2.650	17.50	0.40	17.90	46.00	28.10	
	3.759	15.10	0.48	15.58	46.00	30.42	
	24.142	23.30	1.16	24.46	50.00	25.54	
Neutral	**0.164**	**46.81**	**0.13**	**46.94**	**65.25**	**18.31**	QP
	0.611	29.02	0.18	29.20	56.00	26.80	
	1.037	31.68	0.22	31.90	56.00	24.10	
	2.622	28.41	0.20	28.61	56.00	27.39	
	3.759	26.00	0.38	26.38	56.00	29.62	
	24.142	34.63	1.04	35.67	60.00	24.33	
	0.164	35.80	0.13	35.93	55.25	19.32	AV
	0.611	20.21	0.18	20.39	46.00	25.61	
	1.037	21.70	0.22	21.92	46.00	24.08	
	2.622	19.30	0.20	19.50	46.00	26.50	
	3.759	16.60	0.38	16.98	46.00	29.02	
	24.142	24.60	1.04	25.64	50.00	24.36	

TEST ENGINEER: LVY LV

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN42K316XWUS3D	Humidity :	48%RH	
Serial No.	:	E1204415-01/02	Date of Test :	Apr 14, 2012	
Test Mode	:	D-Sub 640*480@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.162	46.48	0.24	46.72	65.34	18.62	QP
	0.604	29.86	0.23	30.09	56.00	25.91	
	1.043	31.88	0.32	32.20	56.00	23.80	
	2.285	27.92	0.40	28.32	56.00	27.68	
	3.985	25.71	0.49	26.20	56.00	29.80	
	23.888	33.93	1.15	35.08	60.00	24.92	
	0.162	36.30	0.24	36.54	55.34	18.80	AV
	0.604	20.11	0.23	20.34	46.00	25.66	
	1.043	21.10	0.32	21.42	46.00	24.58	
	2.285	18.30	0.40	18.70	46.00	27.30	
	3.985	16.40	0.49	16.89	46.00	29.11	
	23.888	24.30	1.15	25.45	50.00	24.55	
Neutral	**0.164**	**46.93**	**0.13**	**47.06**	**65.25**	**18.19**	QP
	0.585	28.88	0.18	29.06	56.00	26.94	
	1.054	30.63	0.22	30.85	56.00	25.15	
	2.650	29.64	0.20	29.84	56.00	26.16	
	3.759	25.93	0.38	26.31	56.00	29.69	
	24.400	33.77	1.04	34.81	60.00	25.19	
	0.164	36.50	0.13	36.63	55.25	18.62	AV
	0.585	18.70	0.18	18.88	46.00	27.12	
	1.054	20.40	0.22	20.62	46.00	25.38	
	2.650	19.50	0.20	19.70	46.00	26.30	
	3.759	16.30	0.38	16.68	46.00	29.32	
	24.400	23.41	1.04	24.45	50.00	25.55	

TEST ENGINEER: LVY LV

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN42K316XWUS3D	Humidity	:	48%RH
Serial No.	:	E1204415-01/02	Date of Test	:	Apr 14, 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	0.164	45.79	0.24	46.03	65.25	19.22	QP
	0.604	29.68	0.23	29.91	56.00	26.09	
	1.054	31.33	0.32	31.65	56.00	24.35	
	2.650	27.39	0.40	27.79	56.00	28.21	
	3.759	25.23	0.48	25.71	56.00	30.29	
	24.142	34.21	1.16	35.37	60.00	24.63	
	0.164	35.30	0.24	35.54	55.25	19.71	AV
	0.604	20.61	0.23	20.84	46.00	25.16	
	1.054	21.20	0.32	21.52	46.00	24.48	
	2.650	18.70	0.40	19.10	46.00	26.90	
	3.759	16.40	0.48	16.88	46.00	29.12	
	24.142	23.80	1.16	24.96	50.00	25.04	
Neutral	**0.166**	**46.60**	**0.13**	**46.73**	**65.16**	**18.43**	QP
	0.579	27.88	0.18	28.06	56.00	27.94	
	1.043	31.88	0.22	32.10	56.00	23.90	
	2.650	28.39	0.20	28.59	56.00	27.41	
	3.720	26.43	0.38	26.81	56.00	29.19	
	24.400	34.03	1.04	35.07	60.00	24.93	
	0.166	35.30	0.13	35.43	55.16	19.73	AV
	0.579	18.50	0.18	18.68	46.00	27.32	
	1.043	21.80	0.22	22.02	46.00	23.98	
	2.650	18.60	0.20	18.80	46.00	27.20	
	3.720	16.90	0.38	17.28	46.00	28.72	
	24.400	24.51	1.04	25.55	50.00	24.45	

TEST ENGINEER: LVY LV

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN42K316XWUS3D	Humidity	:	48%RH
Serial No.	:	E1204415-01/02	Date of Test	:	Apr 14, 2012
Test Mode	:	LAN			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.164	45.92	0.24	46.16	65.25	19.09	QP
	0.614	29.41	0.22	29.63	56.00	26.37	
	1.054	31.73	0.32	32.05	56.00	23.95	
	2.309	27.82	0.40	28.22	56.00	27.78	
	3.720	25.99	0.48	26.47	56.00	29.53	
	24.400	35.83	1.16	36.99	60.00	23.01	
	0.164	35.60	0.24	35.84	55.25	19.41	AV
	0.614	20.61	0.22	20.83	46.00	25.17	
	1.054	21.60	0.32	21.92	46.00	24.08	
	2.309	18.40	0.40	18.80	46.00	27.20	
	3.720	16.80	0.48	17.28	46.00	28.72	
	24.400	26.61	1.16	27.77	50.00	22.23	
Neutral	**0.166**	**46.55**	**0.13**	**46.68**	**65.16**	**18.48**	QP
	0.604	28.60	0.18	28.78	56.00	27.22	
	1.054	31.43	0.22	31.65	56.00	24.35	
	2.448	28.42	0.19	28.61	56.00	27.39	
	3.720	25.99	0.38	26.37	56.00	29.63	
	24.400	34.58	1.04	35.62	60.00	24.38	
	0.166	35.69	0.13	35.82	55.16	19.34	AV
	0.604	18.41	0.18	18.59	46.00	27.41	
	1.054	21.20	0.22	21.42	46.00	24.58	
	2.448	18.20	0.19	18.39	46.00	27.61	
	3.720	16.60	0.38	16.98	46.00	29.02	
	24.400	24.81	1.04	25.85	50.00	24.15	

TEST ENGINEER: LVY LV

4 RADIATED EMISSION TEST

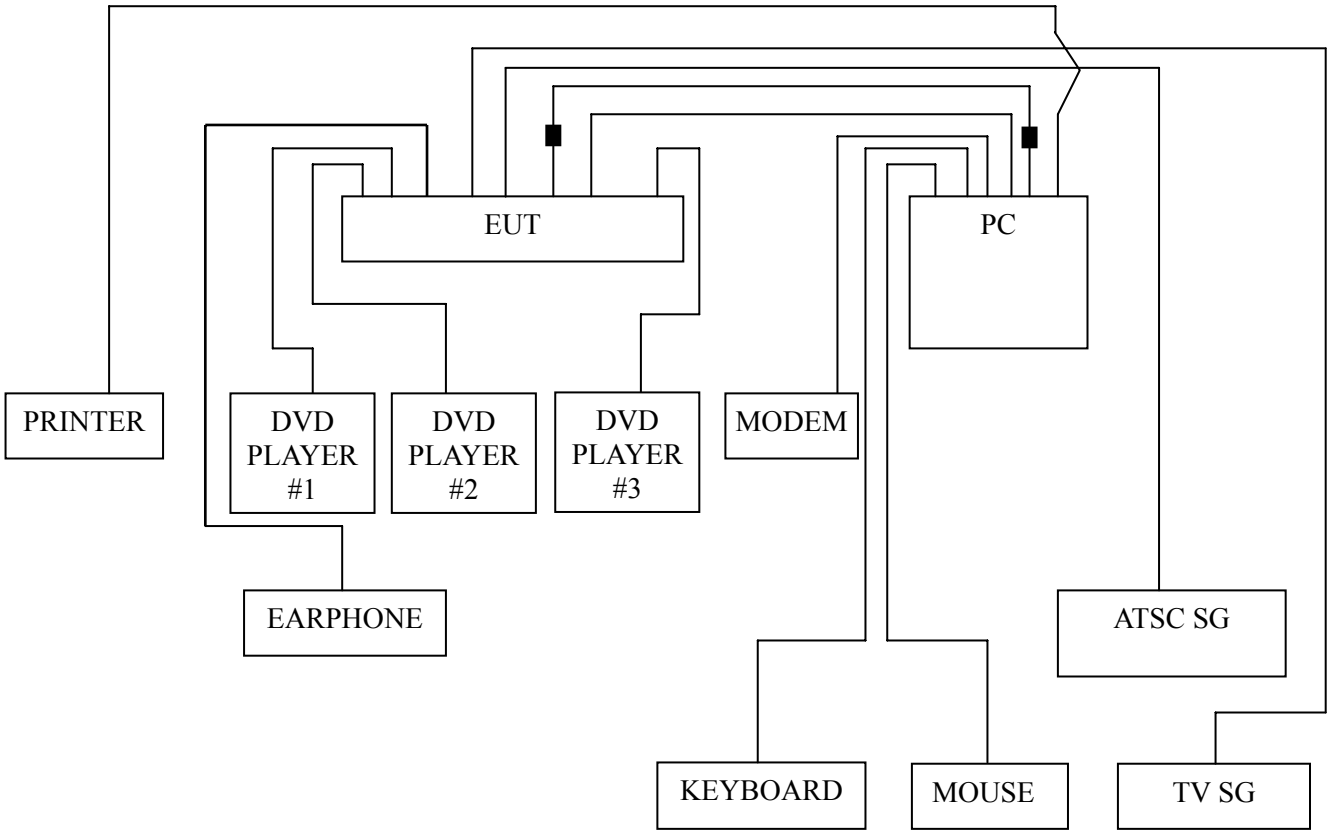
4.1 Test Equipment

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	--	--

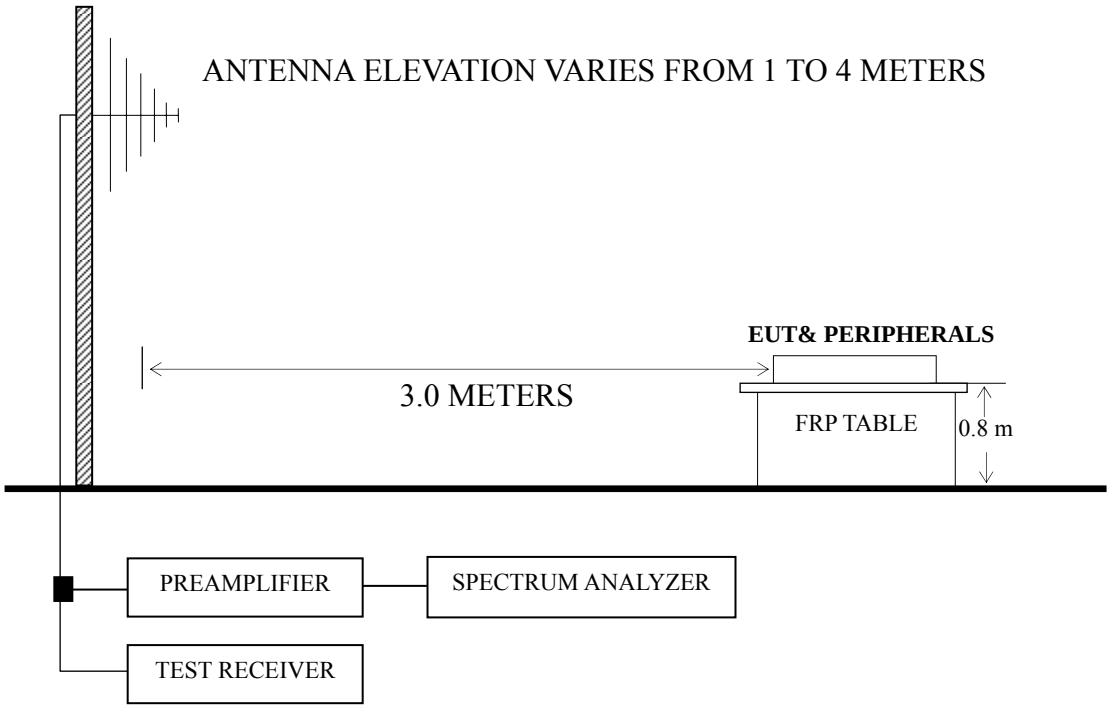
4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals



■: 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	
		(μV/m)	dB (μV/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 (μV/m) = 20 log Emission Level (μV/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 LAN test mode. The worst emission at horizontal polarization was detected at 219.150 MHz with corrected signal level of 38.46 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.00 m height and the turntable was at 60°. The worst emission at vertical polarization was detected at 38.660 MHz with corrected signal level of 37.96 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 2.00 m height and the turntable was at 330°.

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN42K316XWUS3D	Humidity :	60%RH
Serial No.	:	E1204415-01/02	Date of Test :	Apr 20, 2012
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	37.760	22.14	14.00	0.86	37.00	40.00	3.00
	61.040	**26.96**	**9.21**	**1.21**	**37.38**	**40.00**	**2.62**
	77.530	21.25	10.39	1.56	33.20	40.00	6.80
	198.780	22.30	9.81	2.42	34.53	43.50	8.97
	594.540	18.07	18.17	3.45	39.69	46.00	6.31
	882.630	5.51	20.35	4.75	30.61	46.00	15.39
Vertical	72.680	16.95	10.08	1.47	28.50	40.00	11.50
	137.670	18.13	10.66	2.15	30.94	43.50	12.56
	218.180	24.95	10.52	2.50	37.97	46.00	8.03
	305.480	15.88	13.87	2.77	32.52	46.00	13.48
	591.630	**18.32**	**18.16**	**3.45**	**39.93**	**46.00**	**6.07**
	877.780	13.78	20.36	4.75	38.89	46.00	7.11

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN42K316XWUS3D	Humidity :	60%RH
Serial No.	:	E1204415-01/02	Date of Test :	Apr 20, 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	72.130	25.10	10.04	1.47	36.61	40.00	3.39
	128.000	27.80	10.86	2.08	40.74	43.50	2.76
	152.220	28.53	10.37	2.24	41.14	43.50	2.36
	222.060	22.11	10.72	2.51	35.34	46.00	10.66
	447.000	23.00	16.92	3.11	43.03	46.00	2.97
	597.450	**22.03**	**18.19**	**3.45**	**43.67**	**46.00**	**2.33**
Vertical	**79.640**	**25.29**	**10.51**	**1.58**	**37.38**	**40.00**	**2.62**
	134.760	22.33	10.72	2.14	35.19	43.50	8.31
	151.250	22.97	10.39	2.24	35.60	43.50	7.90
	302.570	17.08	13.77	2.76	33.61	46.00	12.39
	591.630	15.45	18.16	3.45	37.06	46.00	8.94
	796.300	15.40	20.57	3.88	39.85	46.00	6.15

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN42K316XWUS3D	Humidity :	60%RH	
Serial No.	:	E1204415-01/02	Date of Test :	Apr 20, 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	79.340	22.39	10.51	1.58	34.48	40.00	5.52
	132.820	26.23	10.77	2.12	39.12	43.50	4.38
	296.750	21.83	13.63	2.75	38.21	46.00	7.79
	367.960	24.50	15.61	2.92	43.03	46.00	2.97
	447.000	**23.30**	**16.92**	**3.11**	**43.33**	**46.00**	**2.67**
	594.540	21.01	18.17	3.45	42.63	46.00	3.37
Vertical	79.470	20.10	10.51	1.58	32.19	40.00	7.81
	137.670	22.56	10.66	2.15	35.37	43.50	8.13
	216.410	29.50	10.48	2.49	42.47	46.00	3.53
	296.750	**27.54**	**13.63**	**2.75**	**43.92**	**46.00**	**2.08**
	447.000	22.70	16.92	3.11	42.73	46.00	3.27
	594.540	17.61	18.17	3.45	39.23	46.00	6.77

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN42K316XWUS3D	Humidity :	60%RH
Serial No.	:	E1204415-01/02	Date of Test :	Apr 20, 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	48.430	23.26	9.02	0.90	33.18	40.00	6.82
	140.580	25.19	10.60	2.18	37.97	43.50	5.53
	166.770	20.70	10.16	2.30	33.16	43.50	10.34
	294.810	17.47	13.56	2.75	33.78	46.00	12.22
	431.580	**23.97**	**16.72**	**3.08**	**43.77**	**46.00**	**2.23**
	589.690	18.88	18.15	3.44	40.47	46.00	5.53
Vertical	**63.950**	**26.34**	**9.41**	**1.28**	**37.03**	**40.00**	**2.97**
	79.470	19.28	10.51	1.58	31.37	40.00	8.63
	220.120	25.01	10.64	2.50	38.15	46.00	7.85
	446.130	18.38	16.92	3.11	38.41	46.00	7.59
	597.450	17.00	18.19	3.45	38.64	46.00	7.36
	890.390	17.01	20.33	4.89	42.23	46.00	3.77

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN42K316XWUS3D	Humidity :	60%RH	
Serial No.	:	E1204415-01/02	Date of Test :	Apr 20, 2012	
Test Mode	:	USB Play			

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	38.860	22.50	13.30	0.86	36.66	40.00	3.34
	79.470	**24.69**	**10.51**	**1.58**	**36.78**	**40.00**	**3.22**
	139.160	26.80	10.64	2.16	39.60	43.50	3.90
	219.150	20.77	10.56	2.50	33.83	46.00	12.17
	594.540	18.88	18.17	3.45	40.50	46.00	5.50
	894.270	14.75	20.32	4.89	39.96	46.00	6.04
Vertical	75.590	14.46	10.27	1.53	26.26	40.00	13.74
	139.610	23.81	10.63	2.16	36.60	43.50	6.90
	217.310	**26.30**	**10.48**	**2.50**	**39.28**	**46.00**	**6.72**
	288.020	18.41	13.39	2.72	34.52	46.00	11.48
	591.630	15.41	18.16	3.45	37.02	46.00	8.98
	886.510	12.52	20.34	4.75	37.61	46.00	8.39

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN42K316XWUS3D	Humidity :	60%RH
Serial No.	:	E1204415-01/02	Date of Test :	Apr 20, 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	76.560	16.71	10.34	1.54	28.59	40.00	11.41
	137.670	22.45	10.66	2.15	35.26	43.50	8.24
	219.150	**25.40**	**10.56**	**2.50**	**38.46**	**46.00**	**7.54**
	303.540	11.79	13.80	2.77	28.36	46.00	17.64
	597.450	15.99	18.19	3.45	37.63	46.00	8.37
	899.120	7.38	20.30	4.89	32.57	46.00	13.43
Vertical	**38.660**	**23.60**	**13.50**	**0.86**	**37.96**	**40.00**	**2.04**
	71.710	23.81	9.99	1.45	35.25	40.00	4.75
	124.090	27.11	10.93	2.05	40.09	43.50	3.41
	138.740	27.30	10.64	2.16	40.10	43.50	3.40
	289.960	16.57	13.42	2.72	32.71	46.00	13.29
	594.540	19.37	18.17	3.45	40.99	46.00	5.01

TEST ENGINEER: RAVEN JIN

5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Gasket	35X0.7X56mm\VGA\ROH	SZTAT	See Internal Photos Figure 20
		JOINSET	
Gasket	DAA25X20X75\ROH	SZTAT	See Internal Photos Figure 19
		JOINSET	
Gasket	DAA1002\ROH	SZTAT	See Internal Photos Figure 19
		JOINSET	

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

(RAVEN JIN)

6 DEVIATION TO TEST SPECIFICATIONS

None.