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

LED LCD TV

Model No.	Brand
LTDN65K560XWUS3D	Hisense
65K560DW	

FCC ID : W9HLCDF0012

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-F12182
Date of Test : Nov 08 – 15, 2012
Date of Report : Nov 19, 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.	Brand	Power Supply
LTDN65K560XWUS3D	Hisense	120V/60Hz
65K560DW		

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) which was tested in 3m anechoic chamber Nov 08 – 15, 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.F12183, a Verification report.

Date of Test : Nov 08 – 15, 2012 Date of Report : Nov 19, 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.	Brand
LHD65K560DWNUS	Hisense
65K560DW	

Note : The model LTDN65K560XWUS3D and 65K560DW are all the same except for the different model number.
LTDN65K560XWUS3D 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 : V645HQ1-LS1

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, Undetachable, 1.80m

Remark:
The EUT is a LED LCD TV which input/output ports as follows:
Bottom Port:
(1) One HDMI3 Port
: Connected with DVD PLAYER #2
(2) One HDMI4 Port
: Connected with DVD PLAYER #3
(3) One USB1 Port
: Connected with U-Disk
(4) One USB2 Port
: Connected with U-Disk
(5) One VGA Port
: Connected with PC

(6) One PC Audio Port
: Connected with PC
(7) One LAN Port
: Connected with PC

Side Port:
(8) One HDMI1 Port
: Connected with PC
(9) One HDMI2 Port
: Connected with DVD PLAYER #1
(10) One ANT Port
: Connected with ATSC SG / TV SG
(11) One Headphone Port
: Connected with Earphone
(12) One component of AV Port
: Connected with DVD PLAYER #1
(13) One component of YPbPr Port
: Connected with DVD PLAYER #1
(14) One DIGITAL OUTPUT Port
: Connected with PC

2.2 Peripherals

2.2.1 PC #1

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 PC #2

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))

2.2.3 Printer

Manufacturer	:	HP
Model Number	:	C3990A
Serial Number	:	JPZX020487
Data Cable	:	Shielded, detachable, 1.5m
Certificate	:	GS, CE/EMC, C-Tick, FCC DoC

2.2.4 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

2.2.5 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

2.2.6 Modem

Manufacturer	:	TP-LINK
Model Number	:	TM-EC5658V
Serial Number	:	07123301053
Data Cable	:	Shielded, Detachable, 1.8m
Certificate	:	FCC DoC, CE/EMC, CCC

2.2.7 Earphone

Manufacturer	:	SONY
Model Number	:	MDR-E808
Serial Number	:	1808030805305506

2.2.8 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

2.2.9 ATSC Signal Generator

Manufacturer	:	SENCORE
Model Number	:	ATSC997
Serial Number	:	6790071

2.2.10 DVD PLAYER #1

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

2.2.11 DVD PLAYER #2

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

2.2.12 DVD PLAYER #3

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

2.2.13 U-DISK

Manufacturer	:	LG
Model Number	:	1GB

Note: PC #1 used in Conducted Emission test while PC #2 was used in Radiated Emission test.

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 = 3.42dB

Radiated Emission Expanded Uncertainty (30-200MHz):

U = 4.14 dB (horizontal)

U = 4.28 dB (vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):

U = 4.18 dB (horizontal)

U = 4.26 dB (vertical)

3 CONDUCTED EMISSION TEST

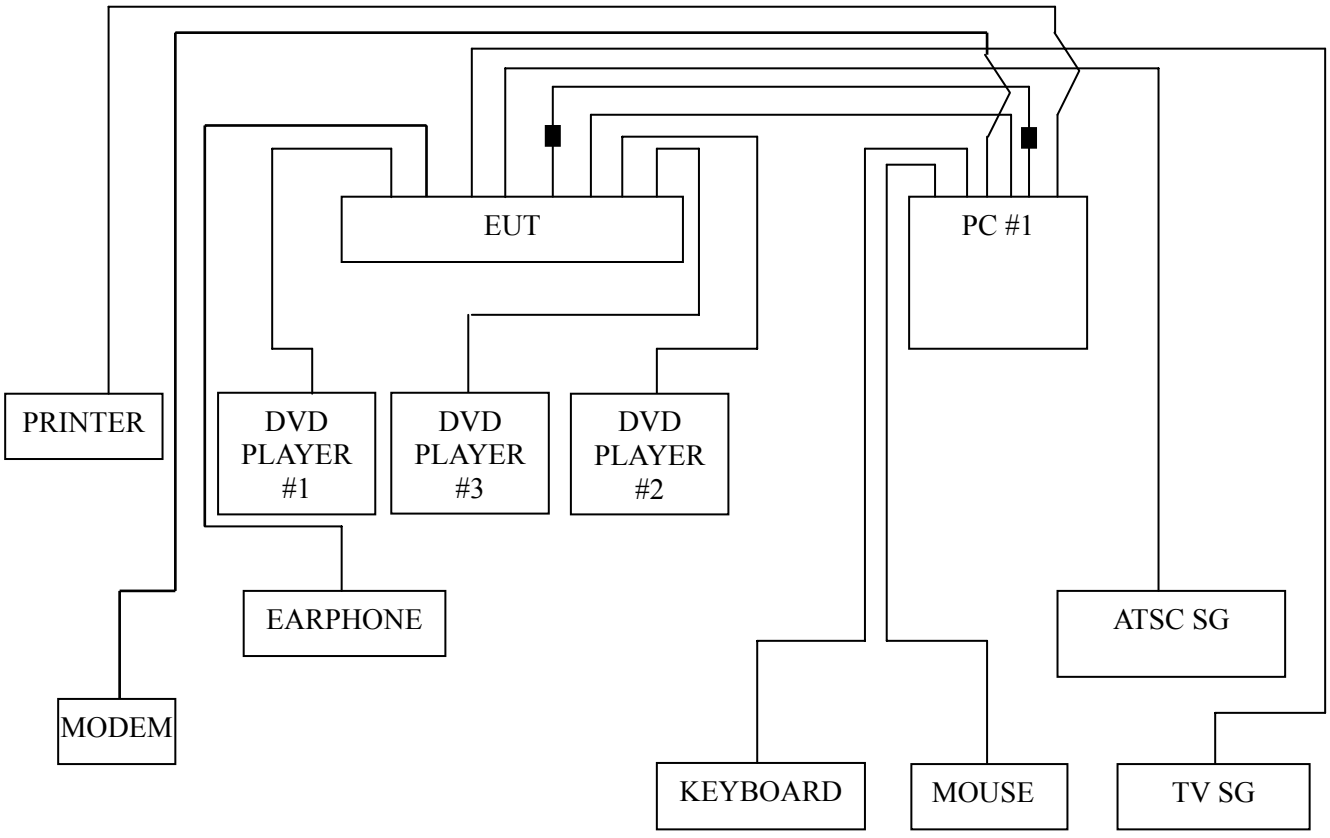
3.1 Test Equipment

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	Sep 18, 2012	Mar 18, 2013
5.	50Ω Terminator	Anritsu	BNC	001	Mar 22, 2012	Mar 22, 2013
6.	Software	Audix	E3	SET00200 9804M592	--	--

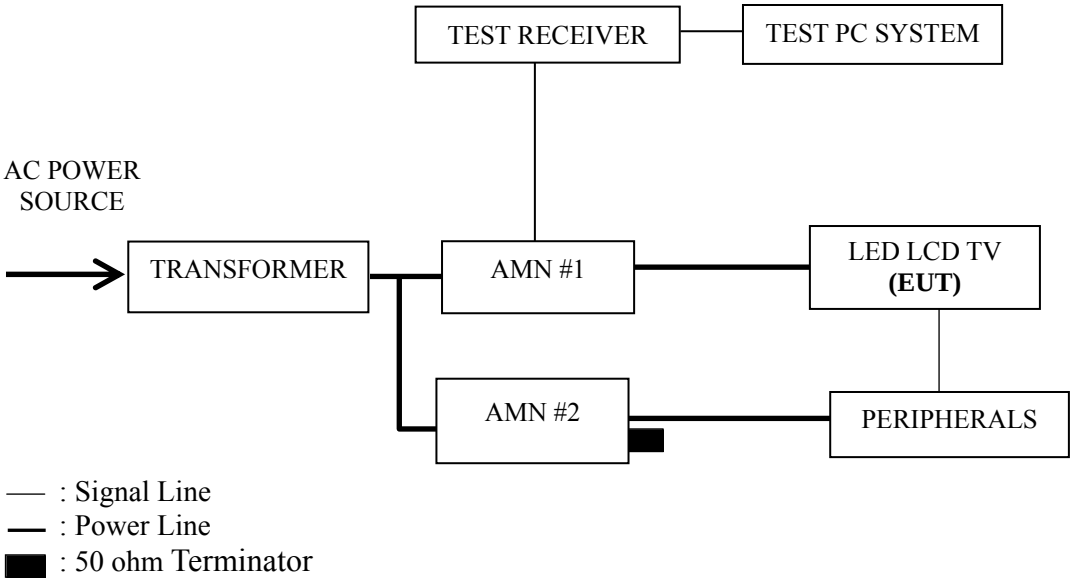
3.2 Block Diagram of Test Setup

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
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 6.056 MHz (QP Value) with corrected signal level of 45.55 dB (μV) (limit is 60.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN65K560XWUS3D	Humidity	:	48%RH
Test Mode	:	D-Sub 1024*768@60Hz	Date of Test	:	Nov 08, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	42.52	0.25	42.77	64.42	21.65	QP
	0.242	42.17	0.25	42.42	62.04	19.62	
	0.481	30.78	0.35	31.13	56.32	25.19	
	1.160	26.08	0.32	26.40	56.00	29.60	
	5.005	34.53	0.50	35.03	60.00	24.97	
	6.056	42.44	0.59	43.03	60.00	16.97	
	0.182	32.30	0.25	32.55	54.42	21.87	AV
	0.242	32.10	0.25	32.35	52.04	19.69	
	0.481	20.60	0.35	20.95	46.32	25.37	
	1.160	15.11	0.32	15.43	46.00	30.57	
	5.005	24.20	0.50	24.70	50.00	25.30	
	6.056	32.20	0.59	32.79	50.00	17.21	
Neutral	0.180	42.49	0.12	42.61	64.50	21.89	QP
	0.242	42.18	0.11	42.29	62.04	19.75	
	0.484	31.46	0.17	31.63	56.27	24.64	
	1.010	26.64	0.22	26.86	56.00	29.14	
	4.874	35.06	0.42	35.48	56.00	20.52	
	6.252	**43.84**	**0.53**	**44.37**	**60.00**	**15.63**	
	0.180	32.50	0.12	32.62	54.50	21.88	AV
	0.242	32.70	0.11	32.81	52.04	19.23	
	0.484	21.80	0.17	21.97	46.27	24.30	
	1.010	18.30	0.22	18.52	46.00	27.48	
	4.874	25.80	0.42	26.22	46.00	19.78	
	6.252	33.50	0.53	34.03	50.00	15.97	

TEST ENGINEER: SAWEN LI

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN65K560XWUS3D	Humidity	:	48%RH
Test Mode	:	HDMI 1024*768@60Hz	Date of Test	:	Nov 08, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.176	42.47	0.24	42.71	64.68	21.97	QP
	0.247	41.38	0.25	41.63	61.86	20.23	
	0.489	31.13	0.35	31.48	56.19	24.71	
	1.000	26.18	0.32	26.50	56.00	29.50	
	4.926	35.50	0.50	36.00	56.00	20.00	
	6.056	**44.96**	**0.59**	**45.55**	**60.00**	**14.45**	
	0.176	32.50	0.24	32.74	54.68	21.94	AV
	0.247	31.50	0.25	31.75	51.86	20.11	
	0.489	21.40	0.35	21.75	46.19	24.44	
	1.000	16.70	0.32	17.02	46.00	28.98	
	4.926	25.80	0.50	26.30	46.00	19.70	
	6.056	34.50	0.59	35.09	50.00	14.91	
Neutral	0.180	42.30	0.12	42.42	64.50	22.08	QP
	0.242	41.75	0.11	41.86	62.04	20.18	
	0.489	31.11	0.17	31.28	56.19	24.91	
	1.043	25.94	0.22	26.16	56.00	29.84	
	5.005	34.17	0.42	34.59	60.00	25.41	
	6.056	43.96	0.51	44.47	60.00	15.53	
	0.180	32.50	0.12	32.62	54.50	21.88	AV
	0.242	31.50	0.11	31.61	52.04	20.43	
	0.489	21.50	0.17	21.67	46.19	24.52	
	1.043	15.90	0.22	16.12	46.00	29.88	
	5.005	24.80	0.42	25.22	50.00	24.78	
	6.056	33.50	0.51	34.01	50.00	15.99	

TEST ENGINEER: SAWEN LI

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN65K560XWUS3D	Humidity :	48%RH	
Test Mode	:	HDMI 800*600@60Hz	Date of Test :	Nov 08, 2012	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	42.15	0.25	42.40	64.42	22.02	QP
	0.242	41.42	0.25	41.67	62.04	20.37	
	0.481	32.03	0.35	32.38	56.32	23.94	
	0.974	26.85	0.32	27.17	56.00	28.83	
	4.926	35.82	0.50	36.32	56.00	19.68	
	6.056	42.77	0.59	43.36	60.00	16.64	
	0.182	32.50	0.25	32.75	54.42	21.67	AV
	0.242	31.40	0.25	31.65	52.04	20.39	
	0.481	22.40	0.35	22.75	46.32	23.57	
	0.974	16.80	0.32	17.12	46.00	28.88	
	4.926	25.80	0.50	26.30	46.00	19.70	
	6.056	32.80	0.59	33.39	50.00	16.61	
Neutral	0.183	41.98	0.12	42.10	64.33	22.23	QP
	0.244	41.79	0.11	41.90	61.95	20.05	
	0.579	32.19	0.18	32.37	56.00	23.63	
	1.043	29.50	0.22	29.72	56.00	26.28	
	4.952	33.93	0.42	34.35	56.00	21.65	
	6.056	**43.80**	**0.51**	**44.31**	**60.00**	**15.69**	
	0.183	31.50	0.12	31.62	54.33	22.71	AV
	0.244	31.50	0.11	31.61	51.95	20.34	
	0.579	22.10	0.18	22.28	46.00	23.72	
	1.043	19.40	0.22	19.62	46.00	26.38	
	4.952	23.90	0.42	24.32	46.00	21.68	
	6.056	33.50	0.51	34.01	50.00	15.99	

TEST ENGINEER: SAWEN LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN65K560XWUS3D	Humidity :	48%RH
Test Mode	:	HDMI 640*480@60Hz	Date of Test :	Nov 08, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	43.15	0.24	43.39	64.86	21.47	QP
	0.242	42.17	0.25	42.42	62.04	19.62	
	0.735	33.18	0.21	33.39	56.00	22.61	
	0.989	28.63	0.32	28.95	56.00	27.05	
	4.952	35.11	0.50	35.61	56.00	20.39	
	6.252	**43.90**	**0.60**	**44.50**	**60.00**	**15.50**	
	0.172	33.20	0.24	33.44	54.86	21.42	AV
	0.242	32.50	0.25	32.75	52.04	19.29	
	0.735	23.10	0.21	23.31	46.00	22.69	
	0.989	19.70	0.32	20.02	46.00	25.98	
	4.952	25.20	0.50	25.70	46.00	20.30	
	6.252	33.20	0.60	33.80	50.00	16.20	
Neutral	0.176	42.69	0.12	42.81	64.68	21.87	QP
	0.242	41.47	0.11	41.58	62.04	20.46	
	0.484	33.41	0.17	33.58	56.27	22.69	
	1.338	30.14	0.21	30.35	56.00	25.65	
	4.952	34.89	0.42	35.31	56.00	20.69	
	6.056	43.65	0.51	44.16	60.00	15.84	
	0.176	32.50	0.12	32.62	54.68	22.06	AV
	0.242	31.50	0.11	31.61	52.04	20.43	
	0.484	23.40	0.17	23.57	46.27	22.70	
	1.338	20.10	0.21	20.31	46.00	25.69	
	4.952	24.50	0.42	24.92	46.00	21.08	
	6.056	33.60	0.51	34.11	50.00	15.89	

TEST ENGINEER: SAWEN LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN65K560XWUS3D	Humidity	:	48%RH
Test Mode	:	USB Play	Date of Test	:	Nov 08, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	42.07	0.24	42.31	64.86	22.55	QP
	0.247	41.66	0.25	41.91	61.86	19.95	
	0.484	31.78	0.35	32.13	56.27	24.14	
	1.010	26.07	0.32	26.39	56.00	29.61	
	5.005	33.82	0.50	34.32	60.00	25.68	
	6.488	43.47	0.62	44.09	60.00	15.91	
	0.172	32.50	0.24	32.74	54.86	22.12	AV
	0.247	31.80	0.25	32.05	51.86	19.81	
	0.484	22.20	0.35	22.55	46.27	23.72	
	1.010	18.20	0.32	18.52	46.00	27.48	
	5.005	23.40	0.50	23.90	50.00	26.10	
	6.488	**33.80**	**0.62**	**34.42**	**50.00**	**15.58**	
Neutral	0.183	41.69	0.12	41.81	64.33	22.52	QP
	0.249	41.18	0.11	41.29	61.78	20.49	
	0.484	31.73	0.17	31.90	56.27	24.37	
	0.933	28.00	0.22	28.22	56.00	27.78	
	4.926	35.20	0.42	35.62	56.00	20.38	
	6.488	43.02	0.55	43.57	60.00	16.43	
	0.183	32.10	0.12	32.22	54.33	22.11	AV
	0.249	31.41	0.11	31.52	51.78	20.26	
	0.484	21.80	0.17	21.97	46.27	24.30	
	0.933	19.20	0.22	19.42	46.00	26.58	
	4.926	26.40	0.42	26.82	46.00	19.18	
	6.488	33.30	0.55	33.85	50.00	16.15	

TEST ENGINEER: SAWEN LI

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN65K560XWUS3D	Humidity	: 48%RH
Test Mode	:	LAN	Date of Test	: Nov 08, 2012

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	42.73	0.25	42.98	64.42	21.44	QP
	0.247	41.80	0.25	42.05	61.86	19.81	
	0.743	31.01	0.21	31.22	56.00	24.78	
	1.010	26.44	0.32	26.76	56.00	29.24	
	4.952	33.64	0.50	34.14	56.00	21.86	
	6.488	43.44	0.62	44.06	60.00	15.94	
	0.182	32.70	0.25	32.95	54.42	21.47	AV
	0.247	31.40	0.25	31.65	51.86	20.21	
	0.743	21.70	0.21	21.91	46.00	24.09	
	1.010	17.60	0.32	17.92	46.00	28.08	
	4.952	23.50	0.50	24.00	46.00	22.00	
	6.488	**33.80**	**0.62**	**34.42**	**50.00**	**15.58**	
Neutral	0.183	41.56	0.12	41.68	64.33	22.65	QP
	0.242	41.26	0.11	41.37	62.04	20.67	
	0.481	31.33	0.17	31.50	56.32	24.82	
	0.943	26.74	0.22	26.96	56.00	29.04	
	5.005	35.26	0.42	35.68	60.00	24.32	
	6.488	42.38	0.55	42.93	60.00	17.07	
	0.183	31.20	0.12	31.32	54.33	23.01	AV
	0.242	31.50	0.11	31.61	52.04	20.43	
	0.481	21.20	0.17	21.37	46.32	24.95	
	0.943	17.60	0.22	17.82	46.00	28.18	
	5.005	25.10	0.42	25.52	50.00	24.48	
	6.488	32.10	0.55	32.65	50.00	17.35	

TEST ENGINEER: SAWEN LI

4 RADIATED EMISSION TEST

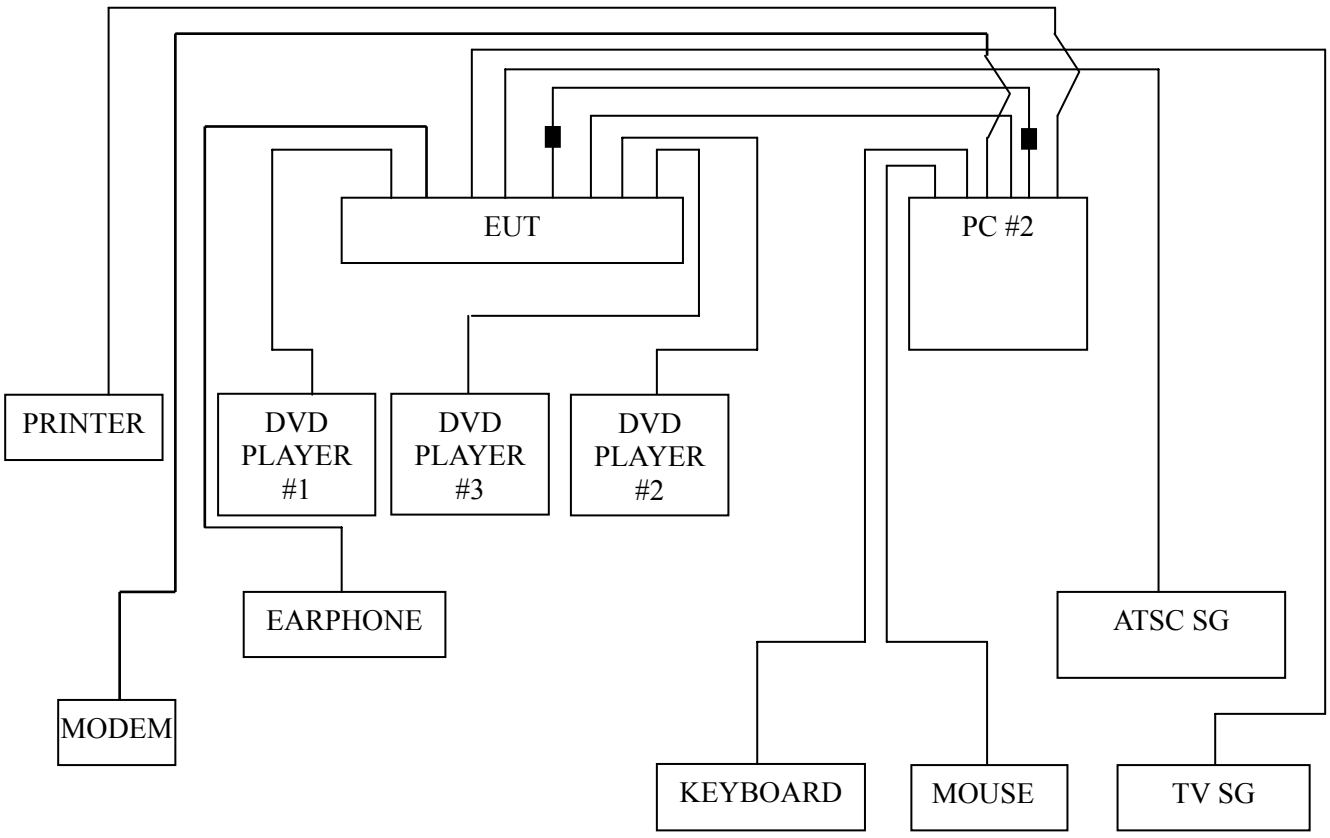
4.1 Test Equipment

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	Sep 18, 2012	Mar 18, 2013
3.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 03, 2012	May 03, 2013
4.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2012	Mar 22, 2013
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Sep 18, 2012	Mar 18, 2013
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

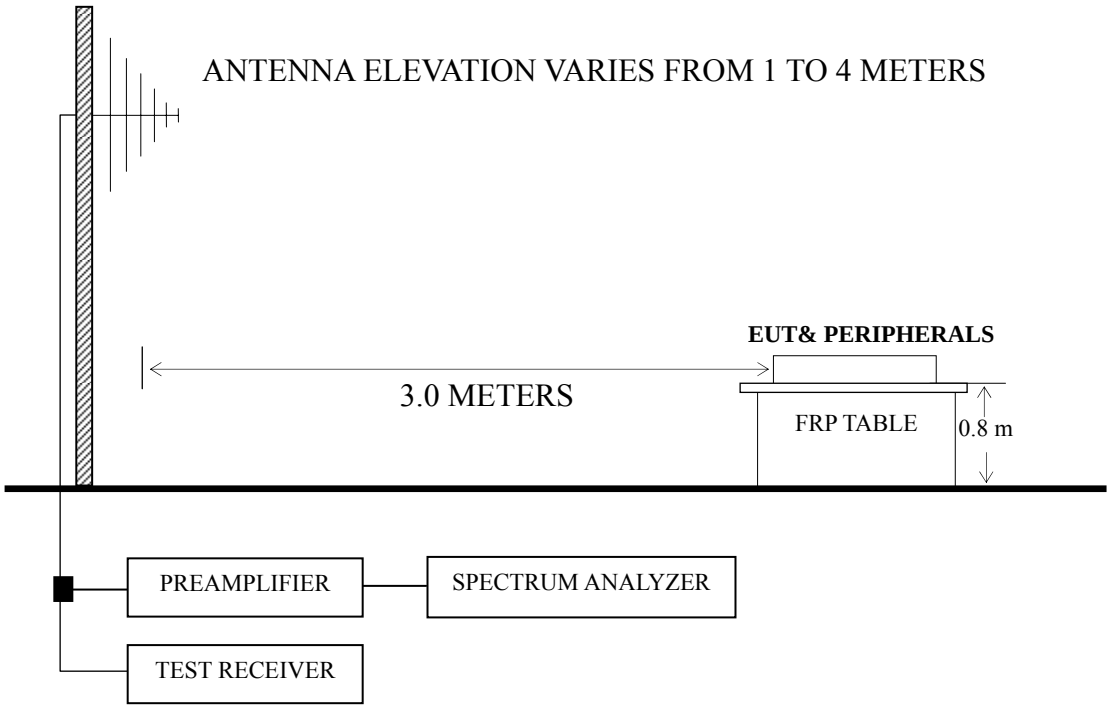
4.2 Block Diagram of Test Setup

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
D-Sub 800*600@60Hz	P24
D-Sub 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 D-Sub 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 128.940 MHz with corrected signal level of 40.18 dB (μV/m) (limit is 43.50 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 320°. The worst emission at vertical polarization was detected at 819.500 MHz with corrected signal level of 42.90 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 45°.

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN65K560XWUS3D	Humidity	:	60%RH
Test Mode	:	D-Sub 1024*768@60Hz	Date of Test	:	Nov 15, 2012

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	38.730	21.41	13.30	0.76	35.47	40.00	4.53
	128.940	**26.83**	**11.82**	**1.53**	**40.18**	**43.50**	**3.32**
	218.180	26.84	7.95	2.04	36.83	46.00	9.17
	449.040	22.59	16.98	2.84	42.41	46.00	3.59
	833.500	17.50	20.30	3.89	41.69	46.00	4.31
	954.000	17.40	19.85	4.72	41.97	46.00	4.03
Vertical	53.200	29.00	6.55	0.86	36.41	40.00	3.59
	158.040	25.93	9.60	1.70	37.23	43.50	6.27
	191.990	26.73	8.00	1.91	36.64	43.50	6.86
	356.890	23.70	14.95	2.63	41.28	46.00	4.72
	819.500	**18.40**	**20.70**	**3.80**	**42.90**	**46.00**	**3.10**
	968.000	18.49	20.57	4.78	43.84	54.00	10.16

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN65K560XWUS3D	Humidity :	60%RH	
Test Mode	:	HDMI 1024*768@60Hz	Date of Test :	Nov 15, 2012	

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	38.730	18.41	13.30	0.76	32.47	40.00	7.53
	128.940	21.83	11.82	1.53	35.18	43.50	8.32
	218.180	21.84	7.95	2.04	31.83	46.00	14.17
	449.040	17.59	16.98	2.84	37.41	46.00	8.59
	672.140	8.37	19.60	3.44	31.41	46.00	14.59
	822.490	**17.49**	**20.70**	**3.80**	**41.99**	**46.00**	**4.01**
Vertical	**53.280**	**27.70**	**6.46**	**0.86**	**35.02**	**40.00**	**4.98**
	87.230	25.01	7.74	1.18	33.93	40.00	6.07
	158.040	20.93	9.60	1.70	32.23	43.50	11.27
	223.030	24.81	8.43	2.06	35.30	46.00	10.70
	356.890	18.70	14.95	2.63	36.28	46.00	9.72
	596.480	14.60	18.40	3.20	36.20	46.00	9.80

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN65K560XWUS3D	Humidity :	60%RH
Test Mode	:	D-Sub 800*600@60Hz	Date of Test :	Nov 15, 2012

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	38.730	20.08	13.30	0.76	34.14	40.00	5.86
	53.280	**28.28**	**6.46**	**0.86**	**35.60**	**40.00**	**4.40**
	128.940	22.47	11.82	1.53	35.82	43.50	7.68
	295.780	19.45	12.58	2.52	34.55	46.00	11.45
	444.190	20.13	17.15	2.82	40.10	46.00	5.90
	591.630	14.41	18.60	3.20	36.21	46.00	9.79
Vertical	53.280	28.37	6.46	0.86	35.69	40.00	4.31
	87.230	**27.05**	**7.74**	**1.18**	**35.97**	**40.00**	**4.03**
	158.040	23.28	9.60	1.70	34.58	43.50	8.92
	223.030	26.63	8.43	2.06	37.12	46.00	8.88
	356.890	21.23	14.95	2.63	38.81	46.00	7.19
	596.480	17.68	18.40	3.20	39.28	46.00	6.72

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN65K560XWUS3D	Humidity	:	60%RH
Test Mode	:	D-Sub 640*480@60Hz	Date of Test	:	Nov 15, 2012

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	**53.280**	**28.14**	**6.46**	**0.86**	**35.46**	**40.00**	**4.54**
	87.230	25.21	7.74	1.18	34.13	40.00	5.87
	158.040	23.83	9.60	1.70	35.13	43.50	8.37
	221.090	25.84	8.37	2.06	36.27	46.00	9.73
	295.780	23.77	12.58	2.52	38.87	46.00	7.13
	356.890	21.10	14.95	2.63	38.68	46.00	7.32
Vertical	53.280	27.42	6.46	0.86	34.74	40.00	5.26
	87.230	24.06	7.74	1.18	32.98	40.00	7.02
	128.940	20.52	11.82	1.53	33.87	43.50	9.63
	221.090	20.91	8.37	2.06	31.34	46.00	14.66
	368.530	12.04	14.83	2.65	29.52	46.00	16.48
	819.580	**17.44**	**20.70**	**3.80**	**41.94**	**46.00**	**4.06**

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃
Model No.	:	LTDN65K560XWUS3D	Humidity :	60%RH
Test Mode	:	USB Play	Date of Test :	Nov 15, 2012

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	**128.940**	**22.47**	**11.82**	**1.53**	**35.82**	**43.50**	**7.68**
	193.930	22.12	8.10	1.92	32.14	43.50	11.36
	295.780	18.45	12.58	2.52	33.55	46.00	12.45
	444.190	18.13	17.15	2.82	38.10	46.00	7.90
	591.630	14.41	18.60	3.20	36.21	46.00	9.79
	667.290	11.08	19.45	3.44	33.97	46.00	12.03
Vertical	48.430	23.27	7.98	0.84	32.09	40.00	7.91
	87.230	23.05	7.74	1.18	31.97	40.00	8.03
	158.040	24.28	9.60	1.70	35.58	43.50	7.92
	223.030	24.63	8.43	2.06	35.12	46.00	10.88
	356.890	21.23	14.95	2.63	38.81	46.00	7.19
	596.480	**17.68**	**18.40**	**3.20**	**39.28**	**46.00**	**6.72**

TEST ENGINEER: RAVEN JIN

EUT	:	LED LCD TV	Temperature :	22℃	
Model No.	:	LTDN65K560XWUS3D	Humidity :	60%RH	
Test Mode	:	LAN	Date of Test :	Nov 15, 2012	

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	49.400	24.55	7.93	0.85	33.33	40.00	6.67
	128.940	19.58	11.82	1.53	32.93	43.50	10.57
	189.080	25.70	8.00	1.89	35.59	43.50	7.91
	295.780	23.77	12.58	2.52	38.87	46.00	7.13
	552.830	**17.43**	**19.30**	**3.10**	**39.83**	**46.00**	**6.17**
	819.580	15.06	20.70	3.80	39.56	46.00	6.44
Vertical	**31.940**	**14.69**	**16.50**	**0.68**	**31.87**	**40.00**	**8.13**
	69.770	21.48	5.74	0.92	28.14	40.00	11.86
	90.140	17.93	8.20	1.22	27.35	43.50	16.15
	116.330	12.90	11.54	1.46	25.90	43.50	17.60
	221.090	21.91	8.37	2.06	32.34	46.00	13.66
	441.280	15.15	17.32	2.80	35.27	46.00	10.73

TEST ENGINEER: RAVEN JIN

5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Ferrite Core	BNF-12\ZCAT1519-0830\ROH	FEELUX Rui Feng Electronic Co., Ltd. Hai An Magnetic Material No.2 Factory JIANGSU LETTALL ELECTRONICS CO., LTD.	See Internal Photos Figure 18
Ferrite Core	ZCAT2132-1130\ROH	FEELUX Rui Feng Electronic Co., Ltd. Hai An Magnetic Material No.2 Factory JIANGSU LETTALL ELECTRONICS CO., LTD.	See Internal Photos Figure 19
Gasket	35X0.7X41mm\VGA\ROH	Qingdao Joinset S&T Co., Ltd.	See Internal Photos Figure 20

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.