

Application for FCC Certificate
On Behalf of
ZHEJIANG XINGXING ELECTRONIC TECHNOLOGY AND
DEVELOPMENT CO., LTD

LCD TV

Model No.	LD4XXX	T40XXX	T42XXX
	TQ4XXX	TE4XXX	--

FCC ID : R95LD4088

LTD

Prepared For : ZHEJIANG XINGXING ELECTRONIC
TECHNOLOGY AND DEVELOPMENT CO.,

11、12 #Xingxing Electronics Industrial Park,
Hongxi Road, Jiaojiang, Taizhou, Zhejiang, P.R.China

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Report No. : ACI-F10079
Date of Test : Jun 23, 2010
Date of Report : Jul 12, 2010

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TEST REPORT FOR FCC CERTIFICATE

Applicant : ZHEJIANG XINGXING ELECTRONIC TECHNOLOGY AND DEVELOPMENT CO., LTD

Manufacturer : ZHEJIANG XINGXING ELECTRONIC TECHNOLOGY AND DEVELOPMENT CO., LTD

Manufacturer#2 : SHENZHEN HENGUAN ELECTRONICS CO., LTD

EUT Description : LCD TV

(A) Model No. :	LD4xxx	T40xxx	T42xxx
	TQ4xxx	TE4xxx	--
(B) Power Supply:	120V/60Hz		

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2009
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 Jun 23, 2010 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 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.F10080, a Verification report.

Date of Test : Jun 23, 2010 Date of Report : Jul 12, 2010

Producer : Candy Xi
CANDY XI / Assistant

Review : Dio Yang
DIO YANG / Deputy Assistant Manager

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

Signatory : Sammy Chen
Authorized Signature EMC SAMMY CHEN / Assistant 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 2009 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2009 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. :

LD4XXX	T40XXX	T42XXX
TQ4XXX	TE4XXX	--

Test Model Number : LD4088

Serial Number : S2010061701

Note1 : The “XXX” in above models can be indicated by 0~9, A to Z. These models are all the same except for the different model number. Different model number for different customers

Note2 : The LD4088 model was tested and recorded in this report.

Applicant : ZHEJIANG XINGXING ELECTRONIC
TECHNOLOGY AND DEVELOPMENT CO.,
LTD
11、12 #Xingxing Electronics Industrial Park,
Hongxi Road, Jiaojiang, Taizhou, Zhejiang,
P.R.China

Manufacturer#1 : ZHEJIANG XINGXING ELECTRONIC
TECHNOLOGY AND DEVELOPMENT CO.,
LTD
11、12 #Xingxing Electronics Industrial Park,
Hongxi Road, Jiaojiang, Taizhou, Zhejiang,
P.R.China

Manufacturer#2 : SHENZHEN HENGUAN ELECTRONICS CO.,
LTD
1-3F, BLOCK EAST, KAIXINDA
ELECTRONIC INDUSTRIAL PARK, NO.49
ZHOU SHI ROAD LANGXIN COMMUNITY,
SHIYAN STREET, BAOAN DISTRICT,
SHENZHEN CITY, CHINA

LCD Panel	:	Manufacturer : SAMSUNG M/N : LTA400HA07
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:

Bottom View:

- | | | |
|------|------------------------------------|------------------------------|
| (1) | One component of YPbPr1 Port | Connected with DVD #1 |
| (2) | One component of YPbPr1 Audio Port | Connected with DVD #1 |
| (3) | One component of YPbPr2 Port | Connected with DVD #2 |
| (4) | One component of YPbPr2 Audio Port | Connected with DVD #2 |
| (5) | One HDMI1 Port | Connected with DVD #1 |
| (6) | One HDMI2 Port | Connected with DVD #2 |
| (7) | One HDMI3 Port | Connected with PC |
| (8) | One VGA Port | Connected with PC |
| (9) | One VGA Audio Port | Connected with PC |
| (10) | One Coaxial Port | Connected with DVD #2 |
| (11) | One ANT Port | Connected with ATSC SG/TV SG |
| (12) | One component of AV1 Port | Connected with DVD #1 |
| (13) | One component of AV2 Port | Connected with DVD #2 |
| (14) | One S-Video Port | Connected with DVD #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 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

2.2.7 ATSC Signal Generator

Manufacturer : SENCORE
Model Number : ATSC997
Serial Number : 6790071

2.2.8 DVD #1

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

2.2.9 DVD#2

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

2.3 Description of Test Facility

Site Description : 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

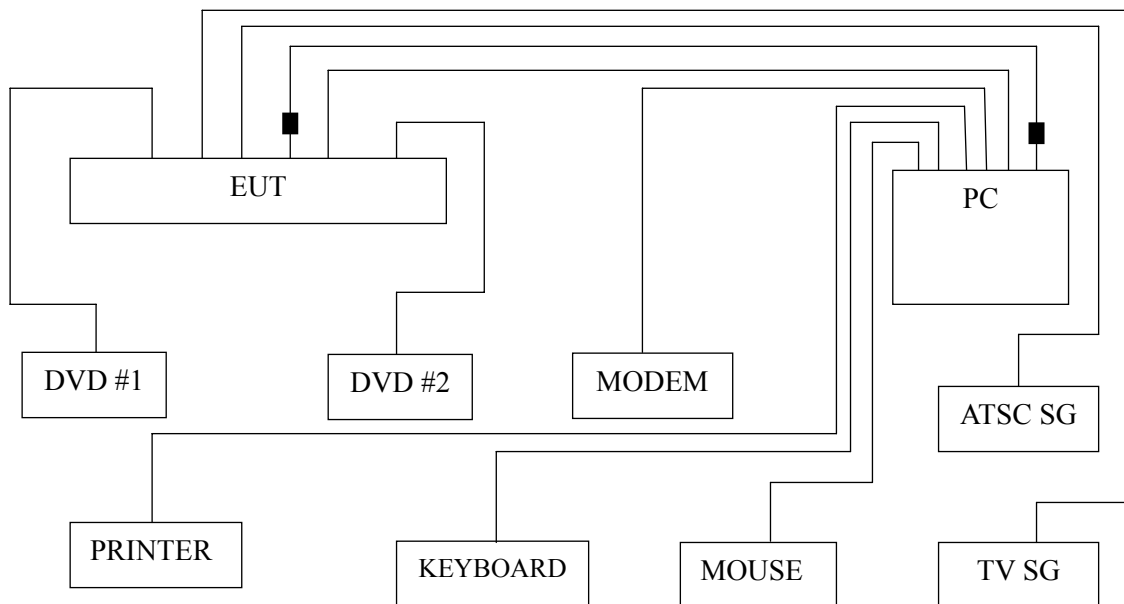
3.1 Test Equipment

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	Oct 15, 2009	Oct 15, 2010
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2010	Apr 02, 2011
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2010	Apr 02, 2011
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 19, 2010	Sep 19, 2010
5.	50 Ω Terminator	Anritsu	BNC	001	Apr 02, 2010	Apr 02, 2011
6.	Software	Audix	E3	SET00200 9804M592	--	--

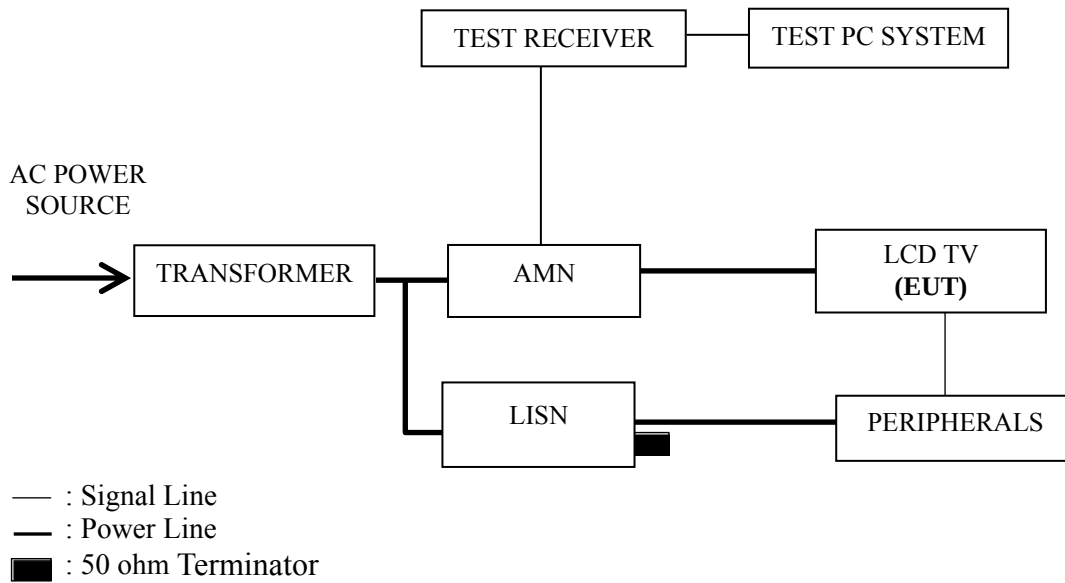
3.2 Block Diagram of Test Setup

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 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 HDMI 1024*768@60Hz test mode. The worst emission is detected at 0.150 MHz (Quasi-Peak Value) with corrected signal level of 58.60 dB (μV) (limit is 65.99 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 48%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

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	0.150	57.86	0.37	58.23	65.99	7.76	QP
	0.377	40.45	0.47	40.92	58.34	17.42	
	0.654	35.95	0.52	36.47	56.00	19.53	
	2.809	31.23	0.68	31.91	56.00	24.09	
	11.198	36.43	1.11	37.54	60.00	22.46	
	14.063	36.39	1.22	37.61	60.00	22.39	
	0.150	42.46	0.37	42.83	55.99	13.16	AV
	0.377	18.01	0.47	18.48	48.34	29.86	
	0.654	18.35	0.52	18.87	46.00	27.13	
	2.809	20.94	0.68	21.62	46.00	24.38	
	11.198	29.99	1.11	31.10	50.00	18.90	
	14.063	27.74	1.22	28.96	50.00	21.04	
Neutral	0.150	57.93	0.05	57.98	65.99	8.01	QP
	0.375	40.42	0.18	40.60	58.39	17.79	
	0.661	36.61	0.23	36.84	56.00	19.16	
	1.628	32.88	0.26	33.14	56.00	22.86	
	12.784	35.83	0.44	36.27	60.00	23.73	
	14.213	35.23	0.45	35.68	60.00	24.32	
	0.150	43.30	0.05	43.35	55.99	12.64	AV
	0.375	17.63	0.18	17.81	48.39	30.58	
	0.661	22.56	0.23	22.79	46.00	23.21	
	1.628	20.80	0.26	21.06	46.00	24.94	
	12.784	29.70	0.44	30.14	50.00	19.86	
	14.213	27.69	0.45	28.14	50.00	21.86	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 48%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

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	0.150	57.89	0.05	57.94	65.99	8.05	QP
	0.381	40.39	0.18	40.57	58.25	17.68	
	0.647	35.79	0.23	36.02	56.00	19.98	
	1.680	29.26	0.26	29.52	56.00	26.48	
	10.564	34.00	0.42	34.42	60.00	25.58	
	14.364	36.51	0.45	36.96	60.00	23.04	
	0.150	43.23	0.05	43.28	55.99	12.71	AV
	0.381	19.21	0.18	19.39	48.25	28.86	
	0.647	17.54	0.23	17.77	46.00	28.23	
	1.680	22.19	0.26	22.45	46.00	23.55	
	10.564	28.88	0.42	29.30	50.00	20.70	
	14.364	26.98	0.45	27.43	50.00	22.57	
Neutral	0.150	58.46	0.05	58.51	65.99	7.48	QP
	0.393	39.80	0.19	39.99	57.99	18.00	
	0.909	35.65	0.24	35.89	56.00	20.11	
	1.762	32.34	0.26	32.60	56.00	23.40	
	12.988	33.40	0.44	33.84	60.00	26.16	
	14.364	38.84	0.45	39.29	60.00	20.71	
	0.150	43.74	0.05	43.79	55.99	12.20	AV
	0.393	18.07	0.19	18.26	47.99	29.73	
	0.909	23.97	0.24	24.21	46.00	21.79	
	1.762	18.67	0.26	18.93	46.00	27.07	
	12.988	27.81	0.44	28.25	50.00	21.75	
	14.364	23.62	0.45	24.07	50.00	25.93	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 48%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

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	0.150	58.40	0.05	58.45	65.99	7.54	QP
	0.377	40.18	0.18	40.36	58.34	17.98	
	0.647	35.62	0.23	35.85	56.00	20.15	
	1.503	33.97	0.25	34.22	56.00	21.78	
	10.676	33.28	0.42	33.70	60.00	26.30	
	13.267	36.95	0.44	37.39	60.00	22.61	
	0.150	44.48	0.05	44.53	55.99	11.46	AV
	0.377	17.50	0.18	17.68	48.34	30.66	
	0.647	16.78	0.23	17.01	46.00	28.99	
	1.503	23.74	0.25	23.99	46.00	22.01	
	10.676	26.90	0.42	27.32	50.00	22.68	
	13.267	25.06	0.44	25.50	50.00	24.50	
Neutral	0.150	58.34	0.05	58.39	65.99	7.60	QP
	0.375	40.44	0.18	40.62	58.39	17.77	
	0.672	37.79	0.23	38.02	56.00	17.98	
	1.610	34.18	0.25	34.43	56.00	21.57	
	7.977	30.48	0.38	30.86	60.00	29.14	
	13.267	37.19	0.44	37.63	60.00	22.37	
	0.150	43.84	0.05	43.89	55.99	12.10	AV
	0.375	17.53	0.18	17.71	48.39	30.68	
	0.672	24.63	0.23	24.86	46.00	21.14	
	1.610	15.66	0.25	15.91	46.00	30.09	
	7.977	25.11	0.38	25.49	50.00	24.51	
	13.267	28.54	0.44	28.98	50.00	21.02	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 48%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

Test Mode : HDMI 640*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	57.53	0.19	57.72	65.99	8.27	QP
	0.381	40.41	0.31	40.72	58.25	17.53	
	0.665	38.56	0.36	38.92	56.00	17.08	
	2.213	29.88	0.44	30.32	56.00	25.68	
	10.452	34.74	0.61	35.35	60.00	24.65	
	14.986	36.74	0.66	37.40	60.00	22.60	
	0.150	43.92	0.19	44.11	55.99	11.88	AV
	0.381	19.02	0.31	19.33	48.25	28.92	
	0.665	26.63	0.36	26.99	46.00	19.01	
	2.213	22.69	0.44	23.13	46.00	22.87	
	10.452	28.87	0.61	29.48	50.00	20.52	
	14.986	26.89	0.66	27.55	50.00	22.45	
Neutral	0.150	58.30	0.20	58.40	65.99	7.49	QP
	0.375	40.22	0.31	40.53	58.39	17.86	
	0.953	33.61	0.43	34.04	56.00	21.96	
	2.358	32.04	0.50	32.54	56.00	23.46	
	12.649	31.71	0.67	32.38	60.00	27.62	
	15.226	32.90	0.69	33.59	60.00	26.41	
	0.150	44.83	0.20	45.03	55.99	10.96	AV
	0.375	17.40	0.31	17.71	48.39	30.68	
	0.953	19.26	0.43	19.69	46.00	26.31	
	2.358	21.44	0.50	21.94	46.00	24.06	
	12.649	28.87	0.67	29.54	50.00	20.46	
	15.226	25.14	0.69	25.83	50.00	24.17	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 48%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

Test Mode : HDMI 800*600@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	58.36	0.19	58.55	65.99	7.44	QP
	0.389	39.93	0.32	40.25	58.08	17.83	
	0.933	34.13	0.38	34.51	56.00	21.49	
	1.680	31.79	0.42	32.21	56.00	23.79	
	12.988	33.79	0.65	34.44	60.00	25.56	
	15.146	32.53	0.66	33.19	60.00	26.81	
	0.150	45.38	0.19	45.57	55.99	10.42	AV
	0.389	17.39	0.32	17.71	48.08	30.37	
	0.933	17.66	0.38	18.04	46.00	27.96	
	1.680	23.33	0.42	23.75	46.00	22.25	
	12.988	28.28	0.65	28.93	50.00	21.07	
	15.146	25.72	0.66	26.38	50.00	23.62	
Neutral	0.150	57.82	0.20	58.02	65.99	7.97	QP
	0.375	40.42	0.31	40.73	58.39	17.66	
	0.890	36.78	0.42	37.20	56.00	18.80	
	2.066	27.32	0.48	27.80	56.00	28.20	
	12.784	34.71	0.67	35.38	60.00	24.62	
	15.146	33.64	0.69	34.33	60.00	25.67	
	0.150	43.71	0.20	43.91	55.99	12.08	AV
	0.375	17.52	0.31	17.83	48.39	30.56	
	0.890	25.79	0.42	26.21	46.00	19.79	
	2.066	20.89	0.48	21.37	46.00	24.63	
	12.784	29.43	0.67	30.10	50.00	19.90	
	15.146	27.12	0.69	27.81	50.00	22.19	

TEST ENGINEER: TED ZHU

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 48%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

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	0.150	57.59	0.19	57.78	65.99	8.21	QP
	0.398	40.42	0.33	40.75	57.90	17.15	
	0.679	35.22	0.36	35.58	56.00	20.42	
	1.519	30.37	0.41	30.78	56.00	25.22	
	12.920	36.05	0.65	36.70	60.00	23.30	
	14.986	34.83	0.66	35.49	60.00	24.51	
	0.150	43.94	0.19	44.13	55.99	11.86	AV
	0.398	18.47	0.33	18.80	47.90	29.10	
	0.679	15.86	0.36	16.22	46.00	29.78	
	1.519	19.78	0.41	20.19	46.00	25.81	
	12.920	30.11	0.65	30.76	50.00	19.24	
	14.986	26.61	0.66	27.27	50.00	22.73	
Neutral	0.150	58.55	0.05	58.60	65.99	7.39	QP
	0.393	39.82	0.19	40.01	57.99	17.98	
	0.743	36.73	0.23	36.96	56.00	19.04	
	1.698	31.23	0.26	31.49	56.00	24.51	
	12.988	36.71	0.44	37.15	60.00	22.85	
	15.388	38.01	0.46	38.47	60.00	21.53	
	0.150	44.92	0.05	44.97	55.99	11.02	AV
	0.393	18.26	0.19	18.45	47.99	29.54	
	0.743	19.78	0.23	20.01	46.00	25.99	
	1.698	19.99	0.26	20.25	46.00	25.75	
	12.988	28.42	0.44	28.86	50.00	21.14	
	15.388	25.41	0.46	25.87	50.00	24.13	

TEST ENGINEER: TED ZHU

4 RADIATED EMISSION TEST

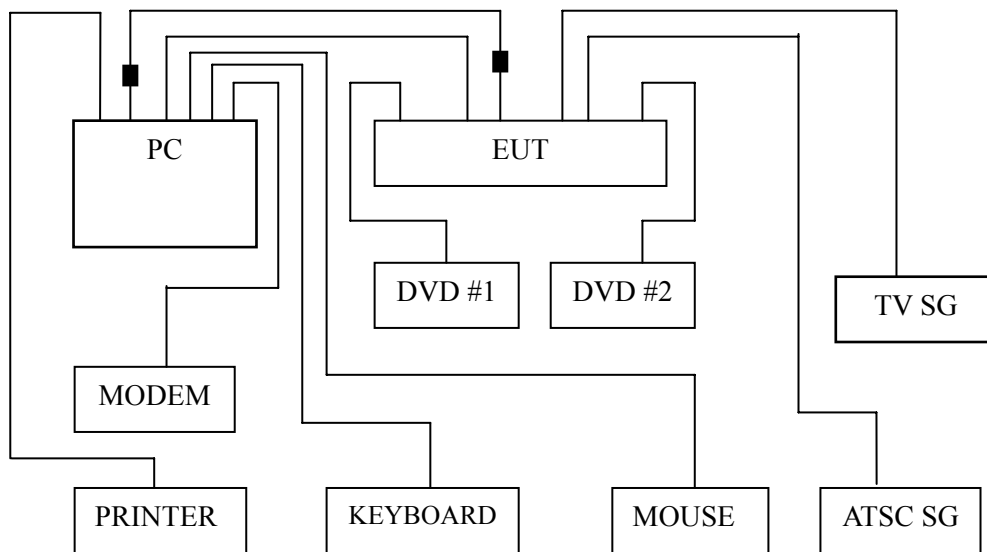
4.1 Test Equipment

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, 2010	Mar 07, 2011
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 19, 2010	Sep 19, 2010
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2009	Dec 01, 2010
4.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2010	May 19, 2011
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

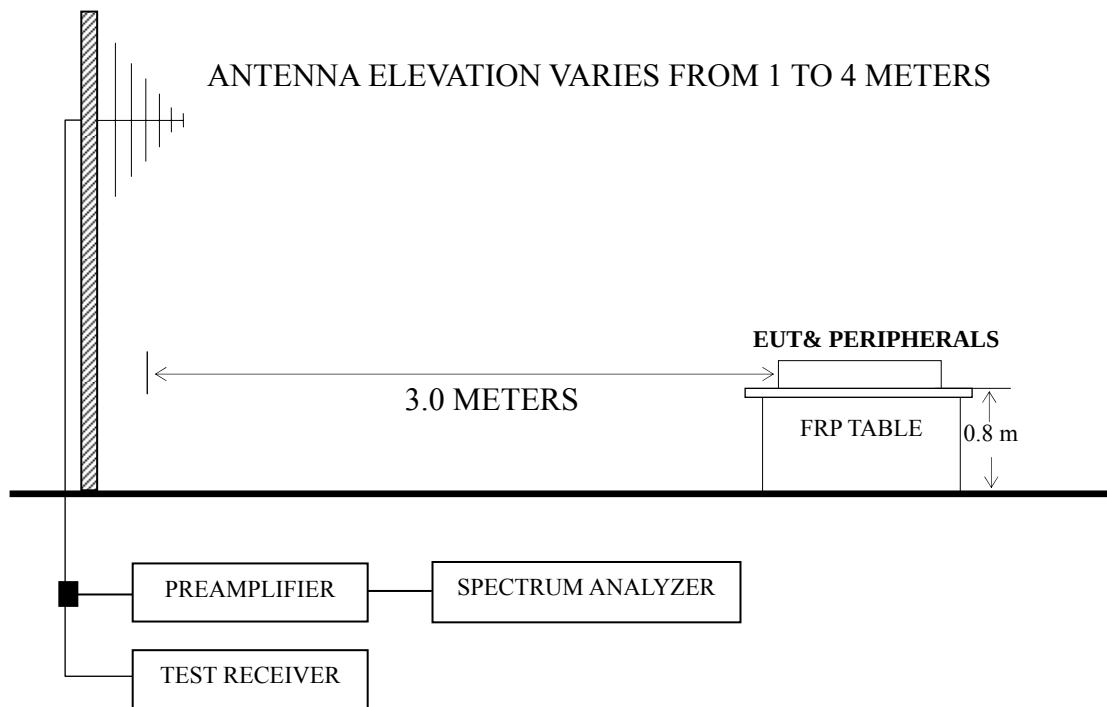
4.2 Block Diagram of Test Setup

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 D-Sub 640*480@60Hz test mode. The worst emission at horizontal polarization was detected at 290.93 MHz with corrected signal level of 42.87dB (μV/m) (limit is 46.00dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 140°. The worst emission at vertical polarization was detected at 288.02 MHz with corrected signal level of 41.70 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 : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 60%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

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	31.94	15.17	18.49	0.65	34.31	40.00	5.69
	58.13	19.52	6.96	0.83	27.31	40.00	12.69
	290.93	27.38	13.75	1.74	42.87	46.00	3.13
	457.77	16.54	17.35	2.18	36.07	46.00	9.93
	706.09	14.19	19.76	2.70	36.65	46.00	9.35
	870.99	14.79	21.42	2.98	39.19	46.00	6.81
Vertical	87.23	18.28	8.96	0.98	28.22	40.00	11.78
	191.99	24.35	10.37	1.42	36.14	43.50	7.36
	288.02	26.26	13.71	1.73	41.70	46.00	4.30
	321.97	21.22	14.50	1.84	37.56	46.00	8.44
	688.63	11.88	19.65	2.65	34.18	46.00	11.82
	913.67	10.91	21.78	3.22	35.91	46.00	10.09

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 60%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

Test Mode : D-Sub 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	32.91	15.18	17.95	0.66	33.79	40.00	6.21
	58.13	19.87	6.96	0.83	27.66	40.00	12.34
	84.32	17.99	8.48	0.96	27.43	40.00	12.57
	291.90	26.01	13.77	1.74	41.52	46.00	4.48
	451.95	16.82	17.26	2.17	36.25	46.00	9.75
	870.99	15.24	21.42	2.98	39.64	46.00	6.36
Vertical	191.99	23.74	10.37	1.42	35.53	43.50	7.97
	290.93	24.93	13.75	1.74	40.42	46.00	5.58
	355.92	18.42	15.49	1.95	35.86	46.00	10.14
	548.95	12.12	18.55	2.35	33.02	46.00	12.98
	690.57	10.73	19.66	2.65	33.04	46.00	12.96
	973.81	10.53	22.24	4.01	36.78	54.00	17.22

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 60%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

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	32.91	15.48	17.95	0.66	34.09	40.00	5.91
	58.13	19.19	6.96	0.83	26.98	40.00	13.02
	116.33	12.97	12.78	1.12	26.87	43.50	16.63
	290.93	22.48	13.75	1.74	37.97	46.00	8.03
	452.92	15.98	17.26	2.17	35.41	46.00	10.59
	870.99	13.66	21.42	2.98	38.06	46.00	7.94
Vertical	83.35	12.72	8.30	0.96	21.98	40.00	18.02
	192.96	24.84	10.40	1.42	36.66	43.50	6.84
	288.99	25.35	13.71	1.73	40.79	46.00	5.21
	355.92	18.09	15.49	1.95	35.53	46.00	10.47
	709.97	10.41	19.79	2.70	32.90	46.00	13.10
	907.85	10.66	21.76	3.04	35.46	46.00	10.54

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 60%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

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	114.39	7.87	12.64	1.10	21.61	43.50	21.89
	193.93	24.28	10.44	1.43	36.15	43.50	7.35
	288.99	24.79	13.71	1.73	40.23	46.00	5.77
	315.18	21.57	14.32	1.81	37.70	46.00	8.30
	548.95	11.20	18.55	2.35	32.10	46.00	13.90
	907.85	8.92	21.76	3.04	33.72	46.00	12.28
Vertical	32.91	13.84	17.95	0.66	32.45	40.00	7.55
	58.13	18.32	6.96	0.83	26.11	40.00	13.89
	289.96	25.70	13.73	1.73	41.16	46.00	4.84
	365.62	18.64	15.73	1.96	36.33	46.00	9.67
	457.77	14.90	17.35	2.18	34.43	46.00	11.57
	677.96	12.75	19.59	2.63	34.97	46.00	11.03

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 60%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

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	83.35	12.13	8.30	0.96	21.39	40.00	18.61
	192.96	25.57	10.40	1.42	37.39	43.50	6.11
	291.90	21.97	13.77	1.74	37.48	46.00	8.52
	312.27	19.44	14.24	1.81	35.49	46.00	10.51
	365.62	16.60	15.73	1.96	34.29	46.00	11.71
	701.24	11.48	19.70	2.67	33.85	46.00	12.15
Vertical	32.91	14.11	17.95	0.66	32.72	40.00	7.28
	58.13	16.49	6.96	0.83	24.28	40.00	15.72
	83.35	18.16	8.30	0.96	27.42	40.00	12.58
	291.90	25.83	13.77	1.74	41.34	46.00	4.66
	365.62	17.62	15.73	1.96	35.31	46.00	10.69
	706.09	11.64	19.76	2.70	34.10	46.00	11.90

TEST ENGINEER: RAVEN JIN

EUT : LCD TV Temperature : 22°C

Model No. : LD4088 Humidity : 60%RH

Serial No. : E2010061701 Date of Test : Jun 23, 2010

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	142.52	10.20	11.91	1.21	23.32	43.50	20.18
	193.93	27.15	10.44	1.43	39.02	43.50	4.48
	290.93	25.76	13.75	1.74	41.25	46.00	4.75
	547.98	13.66	18.55	2.35	34.56	46.00	11.44
	743.92	11.69	20.17	2.78	34.64	46.00	11.36
	907.85	14.05	21.76	3.04	38.85	46.00	7.15
Vertical	32.91	14.61	17.95	0.66	33.22	40.00	6.78
	83.35	17.95	8.30	0.96	27.21	40.00	12.79
	115.36	11.31	12.71	1.11	25.13	43.50	18.37
	195.87	16.59	10.54	1.43	28.56	43.50	14.94
	292.87	24.43	13.79	1.74	39.96	46.00	6.04
	452.92	14.88	17.26	2.17	34.31	46.00	11.69

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

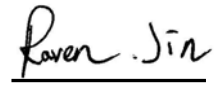
6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
Ferrite core	WRC-90B	DongGuan CiFeng Electronic Co Ltd.	See Appendix Figure 22
Tape	20mm	Zhejiang CangNan Sanwei Electronic& Plastic Ltd.	See Appendix Figure 22
Gasket	15*5mm	NingBo YongJi Electronic Ltd.	See Appendix Figure 22

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)