Application for FCC Certificate
On Behalf of
LG Electronics U.S.A., Inc.

LCD Monitor

Model No.: L1942PMT

Serial No.: E08061805

FCC ID : BEJL1942HT

Prepared For : LG Electronics U.S.A., Inc.
1000 Sylvan Avenue, Englewood Cliffs,
NJ 07632, United States

Prepared By : Audix Technology (Shanghai) Co., Ltd.
3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Tel: +86-21-64955500
Fax: +86-21-64955491

Report No. : ACI-F08042
Date of Test : Jun 25 – 26, 2008
Date of Report : Jun 27, 2008

TABLE OF CONTENTS

Page

1 SUMMARY OF STANDARDS AND RESULTS 4
1.1 Description of Standards and Results 4
2 GENERAL INFORMATION 5
2.1 Description of Equipment Under Test 5
2.2 Peripherals 6
2.3 Description of Test Facility 7
2.4 Measurement Uncertainty 7
3 CONDUCTED EMISSION TEST 8
3.1 Test Equipment 8
3.2 Block Diagram of Test Setup 8
3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)] 9
3.4 Test Configuration 9
3.5 Operating Condition of EUT 10
3.6 Test Procedures 10
3.7 Test Results 11
4 RADIATED EMISSION TEST 18
4.1 Test Equipment 18
4.2 Block Diagram of Test Setup 18
4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)] 19
4.4 Test Configuration 19
4.5 Operating Condition of EUT 20
4.6 Test Procedures 20
4.7 Test Results 21
5 DEVIATION TO TEST SPECIFICATIONS 29
6 DEBUG DESCRIPTION 30

TEST REPORT FOR FCC CERTIFICATE

Applicant	:	LG Electronics U.S.A., Inc.
Manufacturer	:	LG Electronics Nanjing Display Co., Ltd.
EUT Description	:	LCD Monitor
		(A) Model No. : L1942PMT
		(B) Serial No. : E08061805
		(C) Power Supply : 120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B 2007.10 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) and ICES-003, Issue 4 February 2004 (CISPR 22:2002) 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: L1942PMT; S/N: E08061805) which was tested in 3m anechoic chamber on Jun 25 – 26, 2008 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.

Date of Test : Jun 25 – 26, 2008

Prepared By: Zeno Gu 2008.07.01
ZENO GU / Assistant

Reviewer: Dio Yang 2008.7.1
DIO YANG / Supervisor

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

Approved Signatory: Sammy Chen 2008.07.01
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 Terminals	FCC RULES AND REGULATIONS PART 15 SUBPART B 2007.10 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B 2007.10 AND ANSI C63.4-2003	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	LCD Monitor
Type of EUT	:	☑ Production ☐ Pre-product ☐ Pro-type
Model No.	:	L1942PMT
Serial No.	:	E08061805
Real Power	:	35.00W
Note	:	The data of L1942PMT at rotate 90 degree condition (only radiated emission) is also tested and recorded in this report. The mode tested was the worst case of L1942PMT in normal condition.
Applicant	:	LG Electronics U.S.A., Inc. 1000 Sylvan Avenue, Englewood Cliffs, NJ 07632, United States
Manufacturer	:	LG Electronics Nanjing Display Co., Ltd. No.346, Yao Xin Road, Economic & Technical Development Zone, Nanjing, China
LCD Panel	:	Manufacturer: LG.PHILIPS LCD M/N : LM190E08 (TL) (G1)
Max Resolution	:	1280*1024@60Hz
D-Sub Cable	:	Shielded, Detachable, 1.85m, with two cores
DVI Cable	:	Shielded, Detachable, 1.90m, with two cores
Audio Cable	:	Shielded, Detachable, 1.50m, with one core
Power Cord	:	Unshielded, Detachable, 1.80m

Remark:

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

(1) One D-Sub Port
: Connected with PC

(2) One DVI Port
: Connected with PC

(3) One Audio In Port
: Connected with PC

(3) One AC In Port
: Connected with Power

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx6120MT
Serial Number	:	CNG53004J2
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, 1.85m.
Certificate	:	FCC DoC, VCCI, CE/EMC, MIC, GS

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

2.3 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on July 26, 2006 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 = 1.84 dB
Radiated Emission Expanded Uncertainty	:	U = 2.96 dB

3 CONDUCTED EMISSION TEST

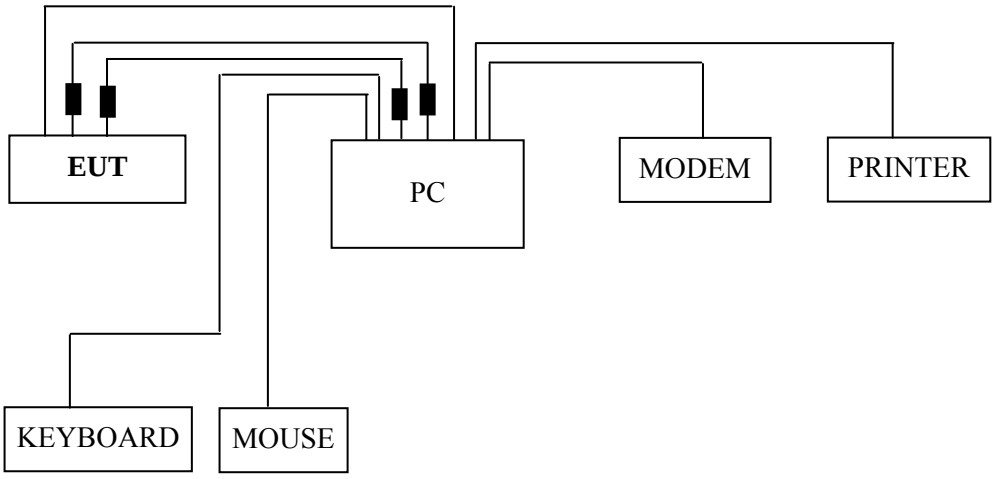
3.1 Test Equipment

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	ESHS10	830223/007	Oct 26, 2007	Oct 26, 2008
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 06, 2008	Apr 06, 2009
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 06, 2008	Apr 06, 2009
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2008	Sep 18, 2008
5.	50Ω Terminator	Anritsu	BNC	001	Apr 06, 2008	Apr 06, 2009
6.	Software	Audix	E3	SET00200 9804M592	--	--

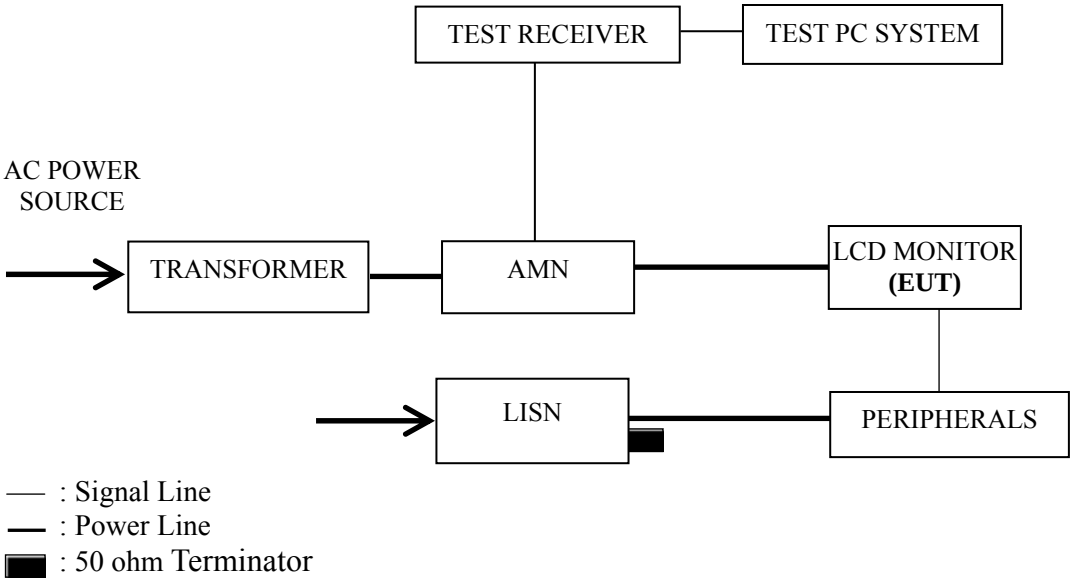
3.2 Block Diagram of Test Setup

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 & DVI Input).

3.5.5 PC system played music and sent audio signal to EUT through the audio in port of EUT.

3.5.6 Repeat above procedure from 3.5.3 to 3.5.5 for difference test mode.

3.5.7 The other peripherals devices were driven and operated during the test.

3.5.8 The test modes are as follows:

Test Mode
VGA 640*480@60Hz
VGA 1024*768@60Hz
VGA 1280*1024@60Hz
DVI 640*480@60Hz
DVI 1024*768@60Hz
DVI 1280*1024@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 ESHS10 was set at 10 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
VGA 640*480@60Hz	P12
VGA 1024*768@60Hz	P13
VGA 1280*1024@60Hz	P14
DVI 640*480@60Hz	P15
DVI 1024*768@60Hz	P16
DVI 1280*1024@60Hz	P17

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 DVI 1280*1024@60Hz test mode. The worst emission is detected at 4.114 MHz (Average Value) with corrected signal level of 42.76 dB (μV) (limit is 56.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	L1942PMT	Humidity :	60%RH
Serial No.	:	E08061805	Date of Test :	Jun 25, 2008
Test Mode	:	VGA 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	44.34	0.19	44.53	66.00	21.47	QP
	0.213	45.22	0.15	45.37	63.10	17.73	
	0.354	37.67	0.16	37.83	58.87	21.04	
	0.494	34.88	0.18	35.06	56.10	21.04	
	4.114	**42.46**	**0.28**	**42.74**	**56.00**	**13.26**	
	6.024	40.54	0.29	40.83	60.00	19.17	
	0.150	28.34	0.19	28.53	56.00	27.47	AV
	0.213	37.22	0.15	37.37	53.10	15.73	
	0.354	29.67	0.16	29.83	48.87	19.04	
	0.494	26.88	0.18	27.06	46.10	19.04	
	4.114	32.46	0.28	32.74	46.00	13.26	
	6.024	30.54	0.29	30.83	50.00	19.17	
Neutral	0.152	44.62	0.15	44.77	65.87	21.10	QP
	0.213	46.28	0.15	46.43	63.10	16.67	
	0.282	40.04	0.15	40.19	60.76	20.57	
	0.426	37.23	0.17	37.40	57.33	19.93	
	4.180	37.07	0.25	37.32	56.00	18.68	
	4.822	39.18	0.25	39.43	56.00	16.57	
	0.152	35.62	0.15	35.77	55.87	20.10	AV
	0.213	37.28	0.15	37.43	53.10	15.67	
	0.282	33.04	0.15	33.19	50.76	17.57	
	0.426	29.23	0.17	29.40	47.33	17.93	
	4.180	28.07	0.25	28.32	46.00	17.68	
	4.822	30.18	0.25	30.43	46.00	15.57	

TEST ENGINEER: TOM SI

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	L1942PMT	Humidity	:	60%RH
Serial No.	:	E08061805	Date of Test	:	Jun 25, 2008
Test Mode	:	VGA 1024*768@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.151	44.35	0.19	44.54	65.96	21.42	QP
	0.213	43.48	0.15	43.63	63.10	19.47	
	0.286	38.80	0.15	38.95	60.63	21.68	
	0.354	35.46	0.16	35.62	58.87	23.25	
	3.840	38.91	0.28	39.19	56.00	16.81	
	4.180	39.16	0.28	39.44	56.00	16.56	
	0.151	34.35	0.19	34.54	55.96	21.42	AV
	0.213	35.48	0.15	35.63	53.10	17.47	
	0.286	29.80	0.15	29.95	50.63	20.68	
	0.354	27.46	0.16	27.62	48.87	21.25	
	3.840	28.91	0.28	29.19	46.00	16.81	
	4.180	29.16	0.28	29.44	46.00	16.56	
Neutral	0.150	45.40	0.15	45.55	66.00	20.45	QP
	0.211	45.76	0.15	45.91	63.18	17.27	
	0.286	40.70	0.15	40.85	60.63	19.78	
	0.428	35.16	0.17	35.33	57.29	21.96	
	4.114	37.75	0.25	38.00	56.00	18.00	
	4.746	39.31	0.25	39.56	56.00	16.44	
	0.150	36.40	0.15	36.55	56.00	19.45	AV
	0.211	37.76	0.15	37.91	53.18	15.27	
	0.286	33.70	0.15	33.85	50.63	16.78	
	0.428	28.16	0.17	28.33	47.29	18.96	
	4.114	**31.75**	**0.25**	**32.00**	**46.00**	**14.00**	
	4.746	30.31	0.25	30.56	46.00	15.44	

TEST ENGINEER: TOM SI

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	L1942PMT	Humidity	:	60%RH
Serial No.	:	E08061805	Date of Test	:	Jun 25, 2008
Test Mode	:	VGA 1280*1024@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	43.47	0.19	43.66	66.00	22.34	QP
	0.213	43.88	0.15	44.03	63.10	19.07	
	0.286	38.50	0.15	38.65	60.63	21.98	
	0.567	33.85	0.18	34.03	56.00	21.97	
	3.840	36.48	0.28	36.76	56.00	19.24	
	4.180	41.98	0.28	42.26	56.00	13.74	
	0.150	26.47	0.19	26.66	56.00	29.34	AV
	0.213	36.88	0.15	37.03	53.10	16.07	
	0.286	31.50	0.15	31.65	50.63	18.98	
	0.567	26.85	0.18	27.03	46.00	18.97	
	3.840	29.48	0.28	29.76	46.00	16.24	
	4.180	**32.00**	**0.28**	**32.28**	**46.00**	**13.72**	
Neutral	0.152	44.45	0.15	44.60	65.87	21.27	QP
	0.214	44.22	0.15	44.37	63.05	18.68	
	0.282	39.34	0.15	39.49	60.76	21.27	
	0.426	35.62	0.17	35.79	57.33	21.54	
	4.180	37.85	0.25	38.10	56.00	17.90	
	4.746	39.41	0.25	39.66	56.00	16.34	
	0.152	35.45	0.15	35.60	55.87	20.27	AV
	0.214	36.22	0.15	36.37	53.05	16.68	
	0.282	33.34	0.15	33.49	50.76	17.27	
	0.426	28.62	0.17	28.79	47.33	18.54	
	4.180	29.85	0.25	30.10	46.00	15.90	
	4.746	29.41	0.25	29.66	46.00	16.34	

TEST ENGINEER: TOM SI

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	L1942PMT	Humidity :	60%RH
Serial No.	:	E08061805	Date of Test :	Jun 25, 2008
Test Mode	:	DVI 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	45.36	0.19	45.55	66.00	20.45	QP
	0.213	43.36	0.15	43.51	63.10	19.59	
	0.283	37.69	0.15	37.84	60.72	22.88	
	0.354	35.68	0.16	35.84	58.87	23.03	
	0.567	33.67	0.18	33.85	56.00	22.15	
	4.114	40.44	0.28	40.72	56.00	15.28	
	0.150	37.36	0.19	37.55	56.00	18.45	AV
	0.213	36.36	0.15	36.51	53.10	16.59	
	0.283	30.69	0.15	30.84	50.72	19.88	
	0.354	30.68	0.16	30.84	48.87	18.03	
	0.567	28.67	0.18	28.85	46.00	17.15	
	4.114	**32.44**	**0.28**	**32.72**	**46.00**	**13.28**	
Neutral	0.152	45.11	0.15	45.26	65.87	20.61	QP
	0.214	43.98	0.15	44.13	63.05	18.92	
	0.286	39.12	0.15	39.27	60.63	21.36	
	0.426	34.13	0.17	34.30	57.33	23.03	
	4.180	37.13	0.25	37.38	56.00	18.62	
	4.746	38.67	0.25	38.92	56.00	17.08	
	0.152	37.11	0.15	37.26	55.87	18.61	AV
	0.214	35.98	0.15	36.13	53.05	16.92	
	0.286	33.12	0.15	33.27	50.63	17.36	
	0.426	28.13	0.17	28.30	47.33	19.03	
	4.180	30.13	0.25	30.38	46.00	15.62	
	4.746	30.67	0.25	30.92	46.00	15.08	

TEST ENGINEER: TOM SI

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	L1942PMT	Humidity	:	60%RH
Serial No.	:	E08061805	Date of Test	:	Jun 25, 2008
Test Mode	:	DVI 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	47.93	0.19	48.12	66.00	17.88	QP
	0.214	43.68	0.15	43.83	63.05	19.22	
	0.283	38.64	0.15	38.79	60.72	21.93	
	0.354	35.14	0.16	35.30	58.87	23.57	
	0.494	33.61	0.18	33.79	56.10	22.31	
	4.180	39.82	0.28	40.10	56.00	15.90	
	0.150	**41.93**	**0.19**	**42.12**	**56.00**	**13.88**	AV
	0.214	37.68	0.15	37.83	53.05	15.22	
	0.283	32.64	0.15	32.79	50.72	17.93	
	0.354	29.14	0.16	29.30	48.87	19.57	
	0.494	26.61	0.18	26.79	46.10	19.31	
	4.180	30.82	0.28	31.10	46.00	14.90	
Neutral	0.152	46.81	0.15	46.96	65.87	18.91	QP
	0.214	44.96	0.15	45.11	63.05	17.94	
	0.283	39.16	0.15	39.31	60.72	21.41	
	0.426	36.12	0.17	36.29	57.33	21.04	
	4.180	37.69	0.25	37.94	56.00	18.06	
	4.746	38.63	0.25	38.88	56.00	17.12	
	0.152	39.81	0.15	39.96	55.87	15.91	AV
	0.214	37.96	0.15	38.11	53.05	14.94	
	0.283	32.16	0.15	32.31	50.72	18.41	
	0.426	29.12	0.17	29.29	47.33	18.04	
	4.180	31.69	0.25	31.94	46.00	14.06	
	4.746	30.63	0.25	30.88	46.00	15.12	

TEST ENGINEER: TOM SI

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	L1942PMT	Humidity	:	60%RH
Serial No.	:	E08061805	Date of Test	:	Jun 25, 2008
Test Mode	:	DVI 1280*1024@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	41.16	0.19	41.35	66.00	24.65	QP
	0.214	44.58	0.15	44.73	63.05	18.32	
	0.283	38.20	0.15	38.35	60.72	22.37	
	0.354	35.28	0.16	35.44	58.87	23.43	
	0.494	34.27	0.18	34.45	56.10	21.65	
	4.114	**42.48**	**0.28**	**42.76**	**56.00**	**13.24**	
	0.150	27.16	0.19	27.35	56.00	28.65	AV
	0.214	36.58	0.15	36.73	53.05	16.32	
	0.283	31.20	0.15	31.35	50.72	19.37	
	0.354	27.28	0.16	27.44	48.87	21.43	
	0.494	27.27	0.18	27.45	46.10	18.65	
	4.114	31.48	0.28	31.76	46.00	14.24	
Neutral	0.150	44.97	0.15	45.12	66.00	20.88	QP
	0.214	45.06	0.15	45.21	63.05	17.84	
	0.286	39.88	0.15	40.03	60.63	20.60	
	0.426	34.98	0.17	35.15	57.33	22.18	
	3.840	37.44	0.25	37.69	56.00	18.31	
	5.112	40.00	0.25	40.25	60.00	19.75	
	0.150	37.97	0.15	38.12	56.00	17.88	AV
	0.214	39.06	0.15	39.21	53.05	13.84	
	0.286	33.88	0.15	34.03	50.63	16.60	
	0.426	28.98	0.17	29.15	47.33	18.18	
	3.840	30.44	0.25	30.69	46.00	15.31	
	5.112	32.00	0.25	32.25	50.00	17.75	

TEST ENGINEER: TOM SI

4 RADIATED EMISSION TEST

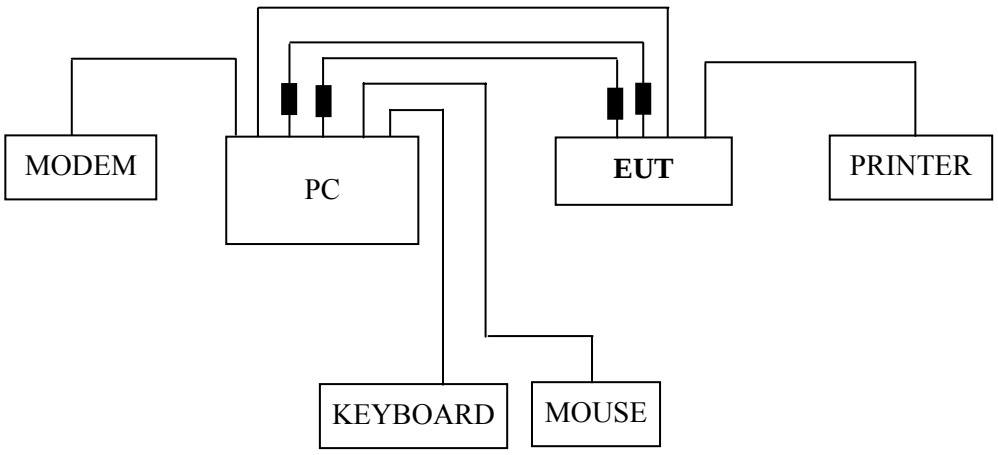
4.1 Test Equipment

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	Oct 26, 2007	Oct 26, 2008
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 19, 2008	Sep 19, 2008
3.	Preamplifier	HP	8449B	3008A00864	Apr 06, 2008	Apr 06, 2009
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	Aug 16, 2007	Aug 16, 2008
5.	Spectrum	Agilent	E7405A	MY45106600	Apr 06, 2008	Apr 06, 2009
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

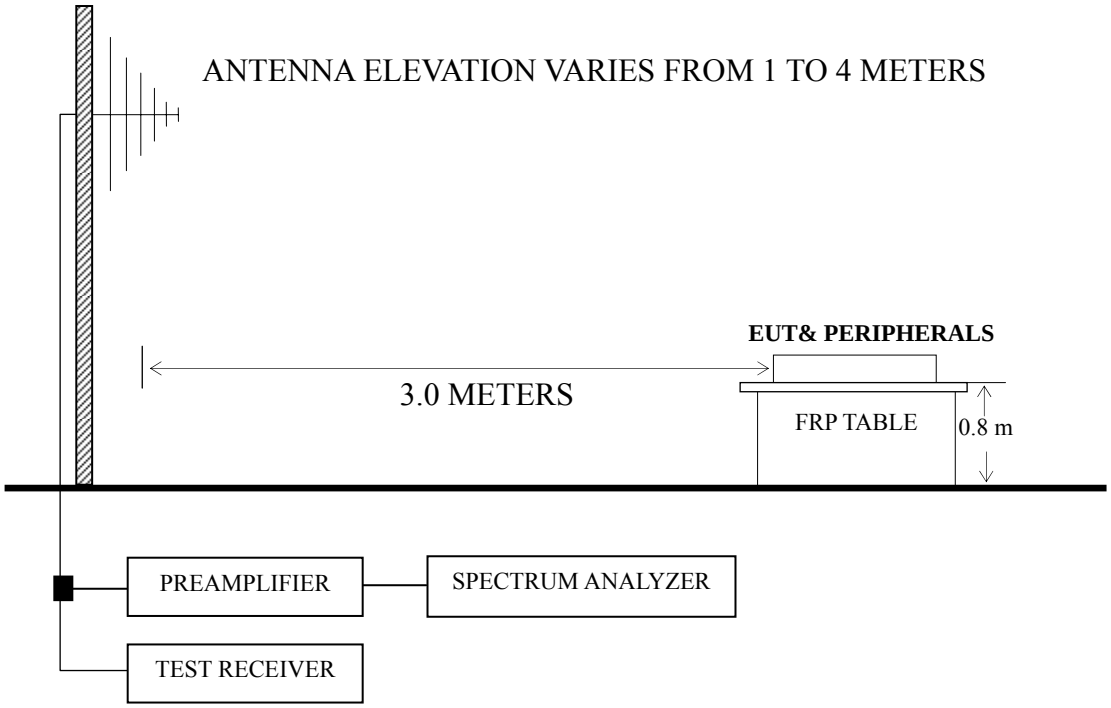
4.2 Block Diagram of Test Setup

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 below or equal to 1GHz and Average value detector above 1GHz.
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 bandwidth of Test Receiver R&S ESVS10 was set at 120 kHz below 1GHz and The Spectrum Agilent E7405A was set at 1MHz above 1GHz.

The frequency range from 30 MHz to 1000MHz was checked for all test modes.

The frequency range from 1 GHz to 2 GHz was checked for VGA/DVI 1280*1024@60Hz 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
VGA 640*480@60Hz	P22
VGA 1024*768@60Hz	P23
VGA 1280*1024@60Hz	P24
DVI 640*480@60Hz	P25
DVI 1024*768@60Hz	P26
DVI 1280*1024@60Hz	P27
VGA 640*480@60Hz (Rotate 90 degree)	P28

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.(< 1GHz)

NOTE 2 – Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading.(> 1GHz)

NOTE 3 – The emission levels that are 20dB below the official limit are not reported.

NOTE 4 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 5 – All reading are Quasi-Peak values below or equal to 1GHz and Peak values above 1GHz.

NOTE 6 – The worst case is for VGA 640*480@60Hz test mode. The worst emission at horizontal polarization was detected at 227.880 MHz with corrected signal level of 40.01 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.10 m height and the turntable was at 130°. The worst emission at vertical polarization was detected at 30.000 MHz with corrected signal level of 36.21 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 240°.

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	L1942PMT	Humidity :	60%RH
Serial No.	:	E08061805	Date of Test :	Jun 26, 2008
Test Mode	:	VGA 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	30.970	4.13	19.03	0.91	24.07	40.00	15.93
	114.390	6.81	12.64	1.81	21.26	43.50	22.24
	138.640	11.73	12.17	2.00	25.90	43.50	17.60
	169.680	15.74	10.20	2.18	28.12	43.50	15.38
	227.880	**25.39**	**12.02**	**2.60**	**40.01**	**46.00**	**5.99**
	281.230	17.08	13.57	3.01	33.66	46.00	12.34
Vertical	**30.000**	**15.70**	**19.60**	**0.91**	**36.21**	**40.00**	**3.79**
	67.830	13.73	6.52	1.37	21.62	40.00	18.38
	138.640	9.57	12.17	2.00	23.74	43.50	19.76
	172.590	15.82	10.11	2.20	28.13	43.50	15.37
	225.940	17.66	11.94	2.58	32.18	46.00	13.82
	281.230	15.40	13.57	3.01	31.98	46.00	14.02

TEST ENGINEER: JACKY CHEN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	L1942PMT	Humidity :	60%RH
Serial No.	:	E08061805	Date of Test :	Jun 26, 2008
Test Mode	:	VGA 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	30.970	4.78	19.03	0.91	24.72	40.00	15.28
	109.540	5.62	12.25	1.78	19.65	43.50	23.85
	138.640	11.51	12.17	2.00	25.68	43.50	17.82
	153.190	13.68	11.04	2.10	26.82	43.50	16.68
	216.240	**23.89**	**11.43**	**2.50**	**37.82**	**46.00**	**8.18**
	269.590	20.09	13.32	2.93	36.34	46.00	9.66
Vertical	**30.970**	**13.92**	**19.03**	**0.91**	**33.86**	**40.00**	**6.14**
	53.280	17.49	8.14	1.07	26.70	40.00	13.30
	164.830	14.71	10.35	2.16	27.22	43.50	16.28
	216.240	18.85	11.43	2.50	32.78	46.00	13.22
	269.590	13.58	13.32	2.93	29.83	46.00	16.17
	429.640	11.02	16.92	3.74	31.68	46.00	14.32

TEST ENGINEER: JACKY CHEN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	L1942PMT	Humidity :	60%RH
Serial No.	:	E08061805	Date of Test :	Jun 26, 2008
Test Mode	:	VGA 1280*1024@60Hz		

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	30.970	4.77	19.03	0.91	--	24.71	40.00	15.29	QP
	48.430	12.75	9.62	0.98	--	23.35	40.00	16.65	
	72.680	11.14	6.85	1.44	--	19.43	40.00	20.57	
	109.540	6.23	12.25	1.78	--	20.26	43.50	23.24	
	218.180	**23.52**	**11.52**	**2.52**	**--**	**37.56**	**46.00**	**8.44**	
	271.530	17.52	13.37	2.94	--	33.83	46.00	12.17	
	1069.000	53.79	22.88	6.82	37.51	45.98	74.00	28.02	PK
	1274.000	54.03	24.32	7.41	37.00	48.76	74.00	25.24	
	1505.000	50.28	25.84	8.43	36.52	48.03	74.00	25.97	
	1675.000	42.99	26.59	8.92	36.21	42.29	74.00	31.71	
	1723.000	42.65	26.72	9.07	36.12	42.32	74.00	31.68	
	1917.000	42.35	27.60	9.73	35.82	43.86	74.00	30.14	
Vertical	**30.970**	**13.30**	**19.03**	**0.91**	**--**	**33.24**	**40.00**	**6.76**	QP
	56.190	18.16	7.46	1.13	--	26.75	40.00	13.25	
	67.830	14.60	6.52	1.37	--	22.49	40.00	17.51	
	182.290	12.97	9.99	2.25	--	25.21	43.50	18.29	
	216.240	16.43	11.43	2.50	--	30.36	46.00	15.64	
	281.230	13.11	13.57	3.01	--	29.69	46.00	16.31	
	1066.000	48.08	22.85	6.82	37.52	40.23	74.00	33.77	PK
	1224.000	55.21	23.90	7.24	37.12	49.23	74.00	24.77	
	1454.000	46.73	25.53	8.26	36.62	43.90	74.00	30.10	
	1615.000	46.79	26.43	8.78	36.31	45.69	74.00	28.31	
	1701.000	43.31	26.65	8.99	36.17	42.78	74.00	31.22	
	1952.000	42.16	27.81	9.81	35.77	44.01	74.00	29.99	

TEST ENGINEER: JACKY CHEN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	L1942PMT	Humidity :	60%RH
Serial No.	:	E08061805	Date of Test :	Jun 26, 2008
Test Mode	:	DVI 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	30.970	5.73	19.03	0.91	25.67	40.00	14.33
	48.430	11.43	9.62	0.98	22.03	40.00	17.97
	158.040	18.11	10.64	2.12	30.87	43.50	12.63
	211.390	**22.68**	**11.22**	**2.46**	**36.36**	**43.50**	**7.14**
	541.190	14.78	18.45	4.10	37.33	46.00	8.67
	601.330	12.61	19.21	4.27	36.09	46.00	9.91
Vertical	**30.970**	**14.15**	**19.03**	**0.91**	**34.09**	**40.00**	**5.91**
	53.280	19.01	8.14	1.07	28.22	40.00	11.78
	158.040	18.62	10.64	2.12	31.38	43.50	12.12
	211.390	15.00	11.22	2.46	28.68	43.50	14.82
	324.880	11.44	14.58	3.25	29.27	46.00	16.73
	541.190	16.24	18.45	4.10	38.79	46.00	7.21

TEST ENGINEER: JACKY CHEN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	L1942PMT	Humidity :	60%RH
Serial No.	:	E08061805	Date of Test :	Jun 26, 2008
Test Mode	:	DVI 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	30.970	4.36	19.03	0.91	24.30	40.00	15.70
	155.130	15.86	10.89	2.11	28.86	43.50	14.64
	164.830	19.44	10.35	2.16	31.95	43.50	11.55
	218.180	**24.24**	**11.52**	**2.52**	**38.28**	**46.00**	**7.72**
	269.590	19.89	13.32	2.93	36.14	46.00	9.86
	327.790	14.01	14.66	3.27	31.94	46.00	14.06
Vertical	**30.970**	**15.03**	**19.03**	**0.91**	**34.97**	**40.00**	**5.03**
	53.280	18.09	8.14	1.07	27.30	40.00	12.70
	153.190	14.75	11.04	2.10	27.89	43.50	15.61
	162.890	16.01	10.42	2.15	28.58	43.50	14.92
	218.180	16.06	11.52	2.52	30.10	46.00	15.90
	858.380	7.19	21.31	5.57	34.07	46.00	11.93

TEST ENGINEER: JACKY CHEN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	L1942PMT	Humidity :	60%RH
Serial No.	:	E08061805	Date of Test :	Jun 26, 2008
Test Mode	:	DVI 1280*1024@60Hz		

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	48.430	12.75	9.62	0.98	--	23.35	40.00	16.65	QP
	114.390	6.99	12.64	1.81	--	21.44	43.50	22.06	
	138.640	10.70	12.17	2.00	--	24.87	43.50	18.63	
	169.680	18.59	10.20	2.18	--	30.97	43.50	12.53	
	225.940	**21.60**	**11.94**	**2.58**	**--**	**36.12**	**46.00**	**9.88**	
	281.230	16.00	13.57	3.01	--	32.58	46.00	13.42	
	1021.000	45.66	22.54	6.73	37.64	37.29	74.00	36.71	PK
	1232.000	47.62	23.98	7.24	37.09	41.75	74.00	32.25	
	1398.000	49.11	25.20	8.01	36.73	45.59	74.00	28.41	
	1508.000	42.93	25.88	8.43	36.51	40.73	74.00	33.27	
	1740.000	45.93	26.76	9.15	36.10	45.74	74.00	28.26	
	1860.000	42.17	27.26	9.57	35.91	43.09	74.00	30.91	
Vertical	**30.970**	**15.02**	**19.03**	**0.91**	**--**	**34.96**	**40.00**	**5.04**	QP
	114.390	11.67	12.64	1.81	--	26.12	43.50	17.38	
	169.680	17.50	10.20	2.18	--	29.88	43.50	13.62	
	227.880	16.61	12.02	2.60	--	31.23	46.00	14.77	
	281.230	16.77	13.57	3.01	--	33.35	46.00	12.65	
	504.330	10.46	17.95	4.00	--	32.41	46.00	13.59	
	1074.000	49.64	22.92	6.85	37.49	41.92	74.00	32.08	PK
	1205.000	44.48	23.74	7.16	37.16	38.22	74.00	35.78	
	1330.000	42.80	24.74	7.66	36.88	38.32	74.00	35.68	
	1431.000	46.41	25.38	8.09	36.66	43.22	74.00	30.78	
	1698.000	47.49	26.65	8.99	36.17	46.96	74.00	27.04	
	1822.000	45.40	27.03	9.40	35.97	45.86	74.00	28.14	

TEST ENGINEER: JACKY CHEN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	L1942PMT	Humidity :	60%RH
Serial No.	:	E08061805	Date of Test :	Jun 26, 2008
Test Mode	:	VGA 640*480@60Hz (Rotate 90 degree)		

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	**215.270**	**22.04**	**11.39**	**2.50**	**35.93**	**43.50**	**7.57**
	271.530	17.01	13.37	2.94	33.32	46.00	12.68
	538.280	14.40	18.39	4.08	36.87	46.00	9.13
	591.630	12.28	19.11	4.22	35.61	46.00	10.39
	644.980	10.28	19.44	4.53	34.25	46.00	11.75
	977.690	9.76	22.27	5.96	37.99	54.00	16.01
Vertical	**30.000**	**15.67**	**19.60**	**0.91**	**36.18**	**40.00**	**3.82**
	48.430	13.92	9.62	0.98	24.52	40.00	15.48
	142.520	9.33	11.91	2.03	23.27	43.50	20.23
	217.210	19.42	11.48	2.50	33.40	46.00	12.60
	389.870	8.73	16.30	3.57	28.60	46.00	17.40
	486.870	9.02	17.75	3.94	30.71	46.00	15.29

TEST ENGINEER: JACKY CHEN

5 DEVIATION TO TEST SPECIFICATIONS

None.

6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Specifications (mm)	Manufacturer	Location
Aluminum foil	T-308	50mm*30mm	DAEHUNG	See Internal Photo Figure 18, 19, 20