

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

LCD Monitor

Model No.: E2742VA, 27EA33VA

Serial No.: E1208999-01/01

FCC ID : BEJE2742VA

Prepared For : LG Electronics U.S.A., Inc.
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NJ 07632, United States

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Report No. : ACI-F12027A2
Date of Test : Aug 31, 2012
Date of Report : Sep 04, 2012

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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. : E2742VA, 27EA33VA
(B) Serial No. : E1208999-01/01
(C) Power Supply : 120V/60Hz

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) 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: E2742VA, 27EA33VA; S/N: E1208999-01/01) which was tested in 3m anechoic chamber Aug 31, 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.

Date of Test : Aug 31, 2012 Date of Report : Sep 04, 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.

.....
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 : LCD Monitor

Model No. : E2742VA, 27EA33VA

Serial No. : E1208999-01/01

Real Power : 29.50W

Note #1 : The different list for all the models are as follows:

Report No.	Model No.	Rev. Summary	Edition No.	Data of Rev.
ACI-F12027	E2742VA	Original Report	0	Feb 27, 2012
ACI- F12027A1	E2742VA	To add a new panel.	Rev. A1	Mar 26, 2012
ACI- F12027A2	E2742VA, 27EA33VA	1. To add a new model. 2. To add a new panel. 3. To update the standards.	Rev.A2	Sep 04, 2012

Note #2 : E2742VA and 27EA33VA are all the same except for the model name.
E2742VA was tested and recorded in the report.

AC Adapter : Manufacturer : LITE-ON
Model Number : PA-1650-68
Input : 100-240V~, 50-60Hz 2.0A
Output : 19V  3.42A
Output Cable : Unshielded, Undetachable, 1.8m with one core

Applicant : LG Electronics Nanjing Display Co., Ltd.
No.346, YaoXin Road Economic&Technical Development Zone,
Nanjing, China

Manufacturer : LG Electronics Nanjing Display Co., Ltd.
No.346, YaoXin Road Economic&Technical Development Zone,
Nanjing, China

LCD Panel :	Original Panel	Rev. A1 added Panel
	Manufacturer : CHI MEI OPTOELECTRONICS	Manufacturer : LG Display
	M/N : M270HGE	M/N : LM270WF2
	Rev. A2 added Panel	--
	Manufacturer : LG Display	--
	M/N : LM270WF5	

Max Resolution	:	1920*1080@60Hz
D-Sub Cable #1	:	Shielded, Detachable, 1.85m, with two cores on cable
D-Sub Cable #2	:	Shielded, Detachable, 1.50m, with two cores in connector
DVI Cable #1	:	Shielded, Detachable, 1.85m, with two cores on cable
DVI Cable #2	:	Shielded, Detachable, 1.50m, with two cores in connector
Power Cord	:	Unshielded, Detachable, 1.50m
Note	:	The D-Sub cable #2 and DVI cable #2 were selected to be used in the test.

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 HDMI Port | : Connected with PC / DVD PLAYER |
| (4) One Earphone Port | : Connected with Earphone |
| (5) One DC In Port | : Connected with Adapter |

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 Graphics Card (Used in PC)

Manufacturer	:	Asus
Model Number	:	EAH6670
Output port	:	DVI, D-Sub, HDMI

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 DVD PLAYER

Manufacturer : PHILIPS
Model Number : DVP3986K/93
Serial Number : KX1A0902120108
Data Cable : Shielded, Detachable, 1.80m
Certificate : FCC DoC, CE/EMC, CCC

2.2.8 Earphone

Manufacturer : SONY
Model Number : MDR-E808
Serial Number : 1808030805305506
Data Cable : Shielded, Detachable, 1.8m

2.3 Description of Test Facility

Site Description (Semi-Anechoic 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 = 3.42 dB

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)

Radiated Emission Expanded Uncertainty (Above 1GHz):
U= 4.50 dB (Horizontal)
U= 4.16 dB (Vertical)

3 CONDUCTED EMISSION TEST

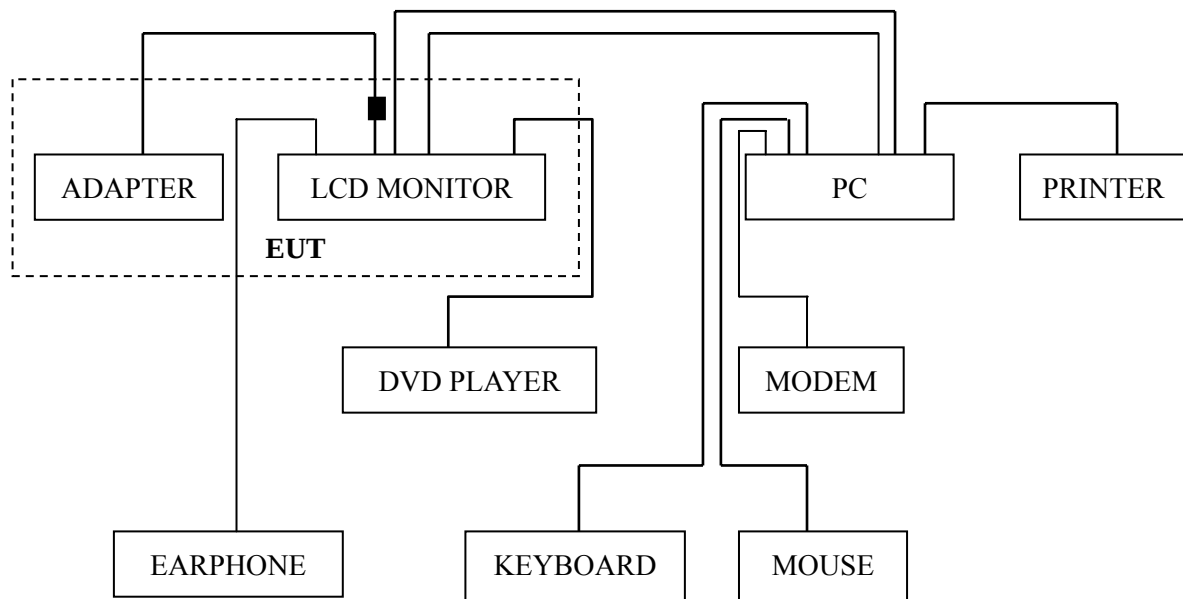
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 22, 2012	Mar 22, 2013
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Feb 13, 2012	Feb 13, 2013
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2012	Mar 22, 2013
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2012	Sep 18, 2012
5.	50 Ω Terminator	Anritsu	BNC	001	Mar 22, 2012	Mar 22, 2013
6.	Software	Audix	E3	SET00200 9804M592	--	--

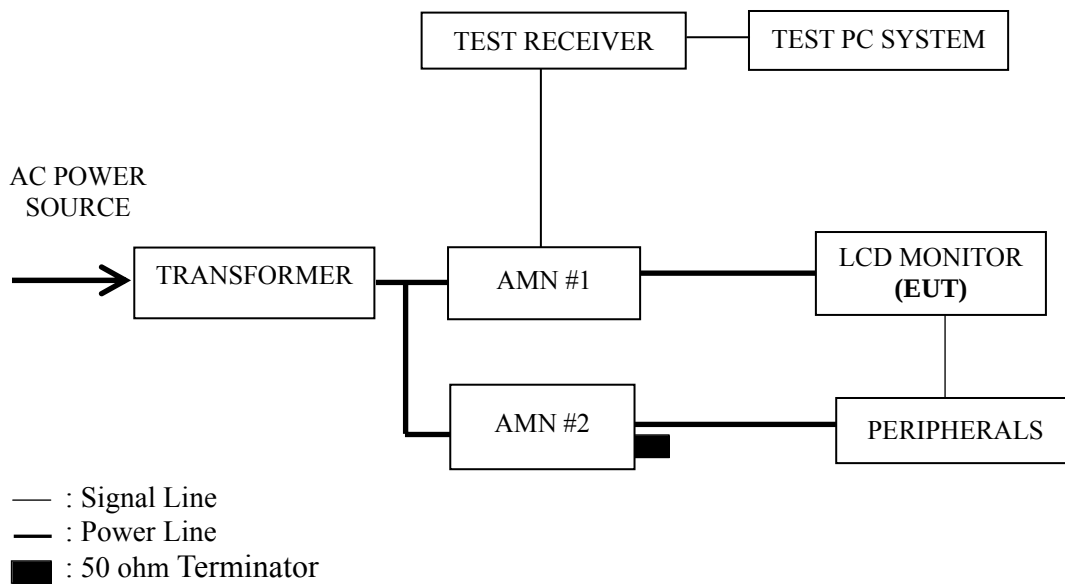
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



■ : Ferrite core

3.2.2 Conducted Disturbance Test Setup



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

Frequency Range (MHz)	Limits dB (μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz		

3.4 Test Configuration

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

3.5 Operating Condition of EUT

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

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

3.5.3 Set the contrast & brightness of EUT to maximum.

3.5.4 PC system ran the self-test program "EMC Test" by windows XP and sent "H" characters to EUT through graphic card (we use white letters on a black background to represent all colors), the EUT's screen displayed and filled with "H" pattern by its resolution (Via D-Sub/DVI Input).

3.5.5 In HDMI mode, the EUT connected to PC or DVD PLAYER through HDMI port.

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
D-Sub 1920*1080@60Hz
DVI 1920*1080@60Hz
HDMI 1920*1080@60Hz
HDMI 1080P
DVI 1680*1050@60Hz
DVI 1280*1024@75Hz
DVI 640*480@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	Page
D-Sub 1920*1080@60Hz	P13
DVI 1920*1080@60Hz	P14
HDMI 1920*1080@60Hz	P15
HDMI 1080P	P16
DVI 1680*1050@60Hz	P17
DVI 1280*1024@75Hz	P18
DVI 640*480@60Hz	P19

NOTE 1 – The **bold test mode** listed above means the worst test mode.

NOTE 2 – Factor = Cable Loss + AMN Factor.

NOTE 3 – Emission Level = Meter Reading + Factor.

NOTE 4 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 5 – The worst case is for DVI 1920*1080@60Hz test mode. The worst emission is detected at 0.150 MHz (Quasi-Peak Value) with corrected signal level of 62.23 dB (μV) (limit is 66.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : D-Sub 1920*1080@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.151	59.82	0.23	60.05	65.93	5.88	QP
	0.237	43.56	0.25	43.81	62.22	18.41	
	1.480	17.00	0.37	17.37	56.00	38.63	
	4.501	31.53	0.50	32.03	56.00	23.97	
	7.175	23.28	0.66	23.94	60.00	36.06	
	15.552	34.24	0.84	35.08	60.00	24.92	
	0.151	47.56	0.23	47.79	55.93	8.14	AV
	0.237	33.80	0.25	34.05	52.22	18.17	
	1.480	10.27	0.37	10.64	46.00	35.36	
	4.501	20.19	0.50	20.69	46.00	25.31	
	7.175	13.80	0.66	14.46	50.00	35.54	
	15.552	24.80	0.84	25.64	50.00	24.36	
Neutral	0.151	59.93	0.13	60.06	65.93	5.87	QP
	0.237	44.36	0.11	44.47	62.22	17.75	
	1.106	20.78	0.22	21.00	56.00	35.00	
	4.574	32.59	0.42	33.01	56.00	22.99	
	7.329	22.32	0.58	22.90	60.00	37.10	
	15.388	35.18	0.73	35.91	60.00	24.09	
	0.151	48.70	0.13	48.83	55.93	7.10	AV
	0.237	34.20	0.11	34.31	52.22	17.91	
	1.106	10.80	0.22	11.02	46.00	34.98	
	4.574	22.79	0.42	23.21	46.00	22.79	
	7.329	12.90	0.58	13.48	50.00	36.52	
	15.388	25.70	0.73	26.43	50.00	23.57	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : DVI 1920*1080@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	62.00	0.23	62.23	66.00	3.77	QP
	0.180	53.25	0.25	53.50	64.50	11.00	
	0.339	34.85	0.31	35.16	59.22	24.06	
	0.444	30.93	0.35	31.28	56.98	25.70	
	4.672	31.64	0.50	32.14	56.00	23.86	
	15.730	33.84	0.84	34.68	60.00	25.32	
	0.150	46.60	0.23	46.83	56.00	9.17	AV
	0.180	30.09	0.25	30.34	54.50	24.16	
	0.339	17.60	0.31	17.91	49.22	31.31	
	0.444	21.49	0.35	21.84	46.98	25.14	
	4.672	21.20	0.50	21.70	46.00	24.30	
	15.730	25.71	0.84	26.55	50.00	23.45	
Neutral	0.150	57.82	0.13	57.95	66.00	8.05	QP
	0.184	53.57	0.12	53.69	64.28	10.59	
	0.233	45.30	0.11	45.41	62.35	16.94	
	4.672	31.20	0.42	31.62	56.00	24.38	
	15.718	34.82	0.73	35.55	60.00	24.45	
	21.600	33.24	0.88	34.12	60.00	25.88	
	0.150	45.90	0.13	46.03	56.00	9.97	AV
	0.184	43.90	0.12	44.02	54.28	10.26	
	0.233	35.90	0.11	36.01	52.35	16.34	
	4.672	21.89	0.42	22.31	46.00	23.69	
	15.718	24.11	0.73	24.84	50.00	25.16	
	21.600	23.80	0.88	24.68	50.00	25.32	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : HDMI 1920*1080@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.152	58.99	0.23	59.22	65.88	6.66	QP
	0.242	43.06	0.25	43.31	62.04	18.73	
	1.464	17.80	0.36	18.16	56.00	37.84	
	4.574	32.45	0.50	32.95	56.00	23.05	
	7.100	24.48	0.66	25.14	60.00	34.86	
	15.552	35.88	0.84	36.72	60.00	23.28	
	0.152	48.20	0.23	48.43	55.88	7.45	AV
	0.242	33.94	0.25	34.19	52.04	17.85	
	1.464	9.54	0.36	9.90	46.00	36.10	
	4.574	22.80	0.50	23.30	46.00	22.70	
	7.100	14.80	0.66	15.46	50.00	34.54	
	15.552	35.30	0.84	36.14	50.00	13.86	
Neutral	0.153	59.52	0.13	59.65	65.85	6.20	QP
	0.237	43.38	0.11	43.49	62.22	18.73	
	1.236	21.68	0.22	21.90	56.00	34.10	
	4.622	31.60	0.42	32.02	56.00	23.98	
	7.252	22.77	0.59	23.36	60.00	36.64	
	15.552	35.69	0.73	36.42	60.00	23.58	
	0.153	49.87	0.13	50.00	55.85	5.85	AV
	0.237	23.56	0.11	23.67	52.22	28.55	
	1.236	11.87	0.22	12.09	46.00	33.91	
	4.622	20.96	0.42	21.38	46.00	24.62	
	7.252	12.90	0.59	13.49	50.00	36.51	
	15.552	25.70	0.73	26.43	50.00	23.57	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : HDMI 1080P

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	59.62	0.23	59.85	65.99	6.14	QP
	0.237	42.64	0.25	42.89	62.22	19.33	
	1.010	17.12	0.32	17.44	56.00	38.56	
	4.721	28.55	0.50	29.05	56.00	26.95	
	7.329	23.36	0.66	24.02	60.00	35.98	
	15.226	35.08	0.84	35.92	60.00	24.08	
	0.150	49.32	0.23	49.55	55.99	6.44	AV
	0.237	32.88	0.25	33.13	52.22	19.09	
	1.010	18.96	0.32	19.28	46.00	26.72	
	4.721	18.40	0.50	18.90	46.00	27.10	
	7.329	13.84	0.66	14.50	50.00	35.50	
	15.226	26.40	0.84	27.24	50.00	22.76	
Neutral	0.155	58.72	0.13	58.85	65.74	6.89	QP
	0.237	43.59	0.11	43.70	62.22	18.52	
	1.262	21.32	0.22	21.54	56.00	34.46	
	4.721	31.77	0.42	32.19	56.00	23.81	
	7.175	22.11	0.59	22.70	60.00	37.30	
	15.226	35.16	0.73	35.89	60.00	24.11	
	0.155	48.50	0.13	48.63	55.74	7.11	AV
	0.237	33.70	0.11	33.81	52.22	18.41	
	1.262	11.90	0.22	12.12	46.00	33.88	
	4.721	21.79	0.42	22.21	46.00	23.79	
	7.175	12.40	0.59	12.99	50.00	37.01	
	15.226	25.60	0.73	26.33	50.00	23.67	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : DVI 1680*1050@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.153	59.71	0.23	59.94	65.84	5.90	QP
	0.239	43.22	0.25	43.47	62.13	18.66	
	1.464	16.42	0.36	16.78	56.00	39.22	
	4.721	32.75	0.50	33.25	56.00	22.75	
	7.175	24.61	0.66	25.27	60.00	34.73	
	21.600	34.41	0.99	35.40	60.00	24.60	
	0.153	49.80	0.23	50.03	55.84	5.81	AV
	0.239	33.60	0.25	33.85	52.13	18.28	
	1.464	6.90	0.36	7.26	46.00	38.74	
	4.721	22.90	0.50	23.40	46.00	22.60	
	7.175	14.80	0.66	15.46	50.00	34.54	
	21.600	24.79	0.99	25.78	50.00	24.22	
Neutral	0.153	59.74	0.13	59.87	65.85	5.98	QP
	0.239	43.90	0.11	44.01	62.13	18.12	
	1.021	21.97	0.22	22.19	56.00	33.81	
	4.501	32.45	0.41	32.86	56.00	23.14	
	7.446	22.49	0.58	23.07	60.00	36.93	
	15.388	36.20	0.73	36.93	60.00	23.07	
	0.153	49.80	0.13	49.93	55.85	5.92	AV
	0.239	33.90	0.11	34.01	52.13	18.12	
	1.021	11.80	0.22	12.02	46.00	33.98	
	4.501	22.90	0.41	23.31	46.00	22.69	
	7.446	12.80	0.58	13.38	50.00	36.62	
	15.388	26.40	0.73	27.13	50.00	22.87	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : DVI 1280*1024@75Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.152	59.62	0.23	59.85	65.87	6.02	QP
	0.239	43.18	0.25	43.43	62.13	18.70	
	1.464	16.52	0.36	16.88	56.00	39.12	
	4.672	31.36	0.50	31.86	56.00	24.14	
	7.252	23.65	0.66	24.31	60.00	35.69	
	15.552	33.90	0.84	34.74	60.00	25.26	
	0.152	48.50	0.23	48.73	55.87	7.14	AV
	0.239	23.64	0.25	23.89	52.13	28.24	
	1.464	8.90	0.36	9.26	46.00	36.74	
	4.672	21.80	0.50	22.30	46.00	23.70	
	7.252	13.80	0.66	14.46	50.00	35.54	
	15.552	23.50	0.84	24.34	50.00	25.66	
Neutral	0.153	59.39	0.13	59.52	65.86	6.34	QP
	0.239	43.51	0.11	43.62	62.13	18.51	
	1.403	19.96	0.20	20.16	56.00	35.84	
	4.672	28.43	0.42	28.85	56.00	27.15	
	7.329	22.30	0.58	22.88	60.00	37.12	
	15.718	33.69	0.73	34.42	60.00	25.58	
	0.153	48.73	0.13	48.86	55.86	7.00	AV
	0.239	33.60	0.11	33.71	52.13	18.42	
	1.403	9.87	0.20	10.07	46.00	35.93	
	4.672	18.39	0.42	18.81	46.00	27.19	
	7.329	12.66	0.58	13.24	50.00	36.76	
	15.718	23.81	0.73	24.54	50.00	25.46	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

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	0.152	58.73	0.23	58.96	65.91	6.95	QP
	0.244	42.40	0.25	42.65	61.95	19.30	
	1.519	17.88	0.37	18.25	56.00	37.75	
	4.672	29.26	0.50	29.76	56.00	26.24	
	7.252	24.10	0.66	24.76	60.00	35.24	
	15.226	35.75	0.84	36.59	60.00	23.41	
	0.152	47.64	0.23	47.87	55.91	8.04	AV
	0.244	32.40	0.25	32.65	51.95	19.30	
	1.519	10.28	0.37	10.65	46.00	35.35	
	4.672	20.36	0.50	20.86	46.00	25.14	
	7.252	14.25	0.66	14.91	50.00	35.09	
	15.226	25.40	0.84	26.24	50.00	23.76	
Neutral	0.150	59.15	0.13	59.28	65.99	6.71	QP
	0.247	42.64	0.11	42.75	61.86	19.11	
	1.519	20.24	0.18	20.42	56.00	35.58	
	4.501	27.85	0.41	28.26	56.00	27.74	
	7.175	22.36	0.59	22.95	60.00	37.05	
	21.600	33.04	0.88	33.92	60.00	26.08	
	0.150	48.72	0.13	48.85	55.99	7.14	AV
	0.247	31.30	0.11	31.41	51.86	20.45	
	1.519	9.80	0.18	9.98	46.00	36.02	
	4.501	17.90	0.41	18.31	46.00	27.69	
	7.175	12.90	0.59	13.49	50.00	36.51	
	21.600	23.60	0.88	24.48	50.00	25.52	

TEST ENGINEER: SAWEN LI

4 RADIATED EMISSION TEST

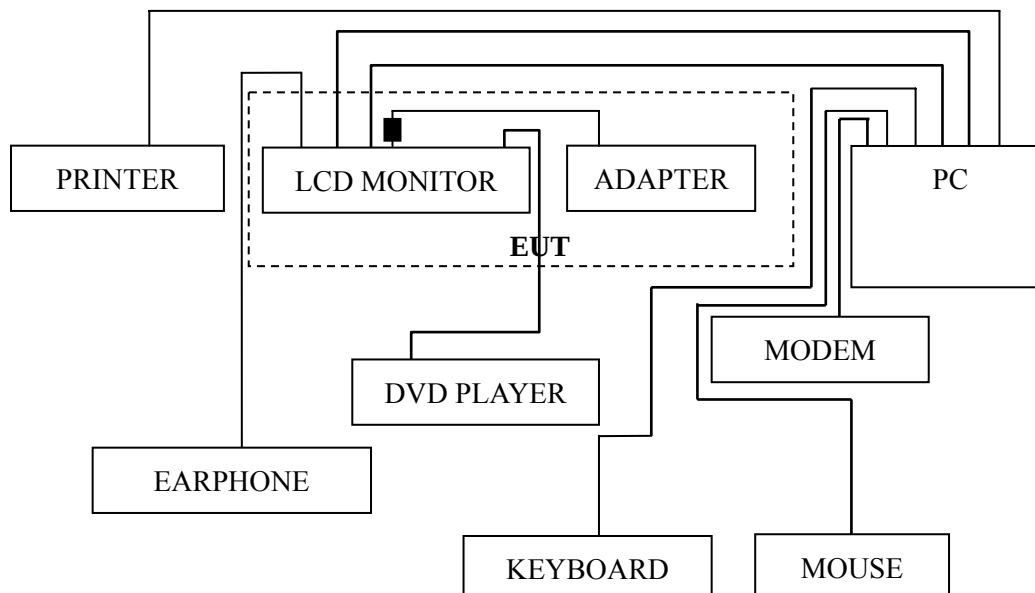
4.1 Test Equipment

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	Mar 18, 2012	Sep 18, 2012
3.	Preamplifier	HP	8449B	3008A00864	Mar 22, 2012	Mar 22, 2013
4.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2011	Dec 01, 2012
5.	Horn Antenna	EMCO	3115	9607-4878	May 03, 2012	May 03, 2013
6.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2012	Mar 22, 2013
7.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2012	Sep 18, 2012
8.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

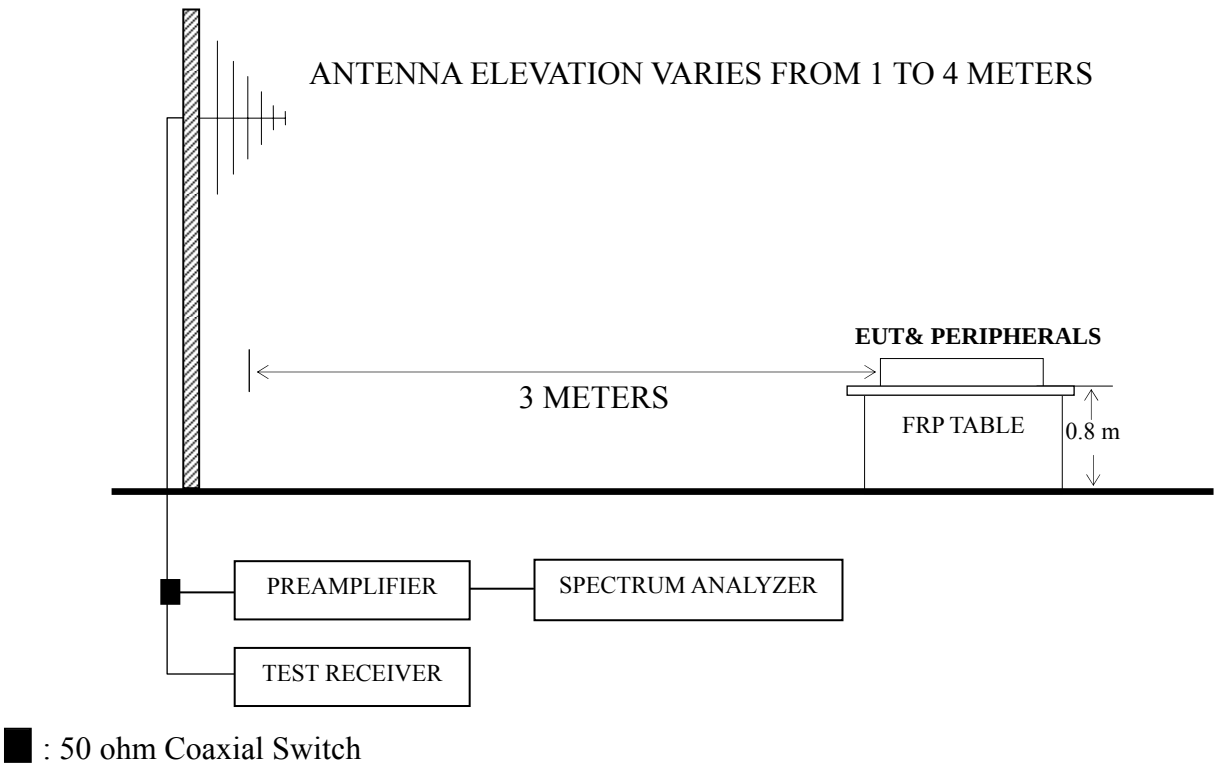
4.2.1 EUT and Peripherals



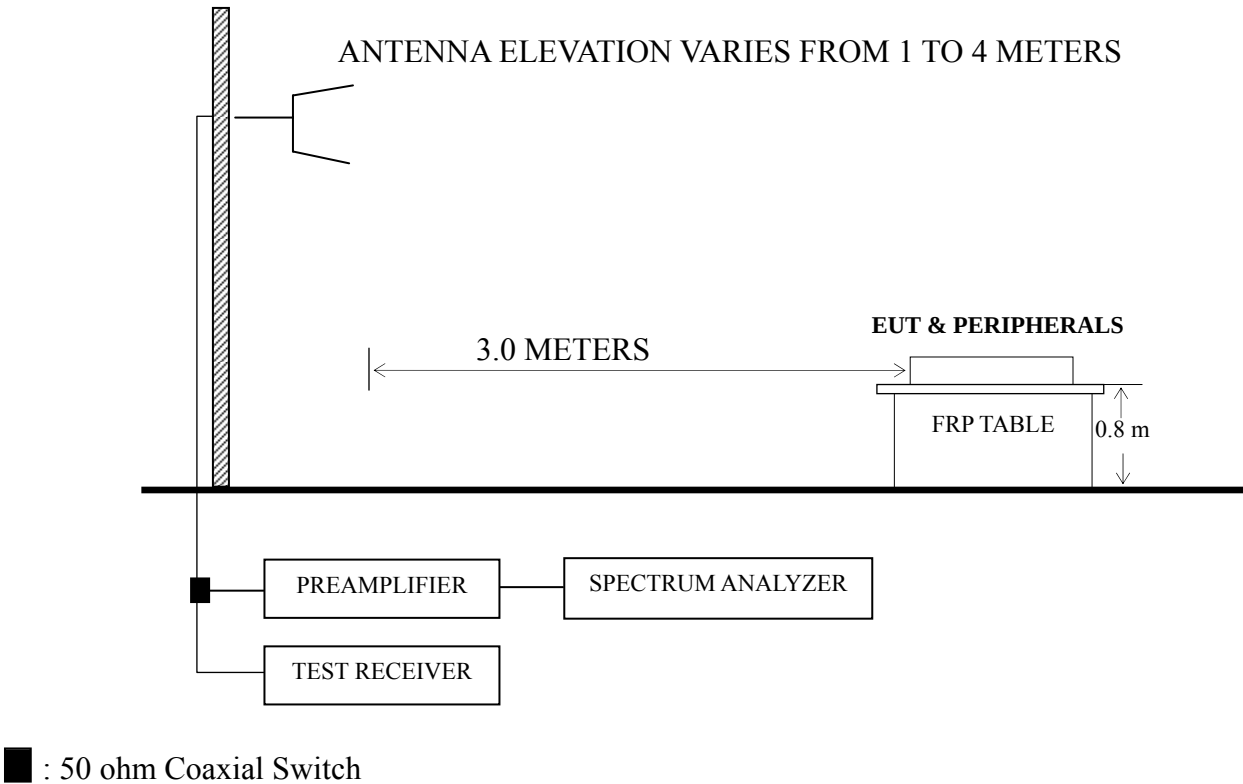
■ : Ferrite core

4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



4.2.2.2 Above 1GHz



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 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) or Horn 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 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 worst test mode in 30 - 1000 MHz test.

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 1920*1080@60Hz	P25
DVI 1920*1080@60Hz	P26 – P27
HDMI 1920*1080@60Hz	P28
HDMI 1080P	P29
DVI 1680*1050@60Hz	P30
DVI 1280*1024@75Hz	P31
DVI 640*480@60Hz	P32

NOTE 1 – **The bold test mode** listed above means the worst test mode.

NOTE 2 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.($< 1\text{GHz}$)

NOTE 3 – Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading.($> 1\text{GHz}$)

NOTE 4 – All readings are Quasi-Peak values below or equal to 1GHz, Peak and average values above 1GHz.

NOTE 5 – The emission levels that are 20dB below the official limit are not reported.

NOTE 6 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 7 – The worst case is for DVI 1920*1080@60Hz test mode. The worst emission at horizontal polarization was detected at 347.190 MHz with corrected signal level of 39.78 dB ($\mu\text{V/m}$) (limit is 46.00 dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 150° . The worst emission at vertical polarization was detected at 50.370 MHz with corrected signal level of 36.34 dB ($\mu\text{V/m}$) (limit is 40.00 dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 210° .

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : D-Sub 1920*1080@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	139.610	11.81	10.63	1.59	24.03	43.50	19.47
	211.390	15.57	10.26	2.01	27.84	43.50	15.66
	478.140	9.80	17.34	2.92	30.06	46.00	15.94
	614.910	12.95	18.39	3.25	34.59	46.00	11.41
	742.950	10.15	19.98	3.57	33.70	46.00	12.30
	902.030	10.13	20.30	4.55	34.98	46.00	11.02
Vertical	69.770	19.81	9.85	0.92	30.58	40.00	9.42
	136.700	20.51	10.69	1.58	32.78	43.50	10.72
	280.260	12.45	13.13	2.40	27.98	46.00	18.02
	478.140	14.79	17.34	2.92	35.05	46.00	10.95
	613.940	16.14	18.39	3.25	37.78	46.00	8.22
	872.930	12.47	20.37	4.20	37.04	46.00	8.96

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : DVI 1920*1080@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	50.370	17.05	8.51	0.85	--	26.41	40.00	13.59	QP
	98.870	17.14	11.31	1.32	--	29.77	43.50	13.73	
	136.700	16.85	10.69	1.58	--	29.12	43.50	14.38	
	248.250	23.62	11.90	2.20	--	37.72	46.00	8.28	
	347.190	22.12	15.04	2.62	--	39.78	46.00	6.22	
	800.180	15.03	20.60	3.61	--	39.24	46.00	6.76	
	1149.000	49.82	24.29	5.32	37.86	41.57	74.00	32.43	PK
	1235.000	51.03	24.70	5.40	37.65	43.48	74.00	30.52	
	1537.000	50.98	26.01	5.83	36.82	46.00	74.00	28.00	
	1598.000	51.24	26.66	5.93	36.69	47.14	74.00	26.86	
	1799.000	51.18	29.11	6.20	36.35	50.14	74.00	23.86	
	1912.000	49.74	30.25	6.32	36.20	50.11	74.00	23.89	
	1148.200	27.80	24.29	5.32	37.87	19.54	54.00	34.46	AV
	1234.100	27.60	24.70	5.40	37.65	20.05	54.00	33.95	
	1536.700	26.50	26.01	5.83	36.82	21.52	54.00	32.48	
	1596.000	31.40	26.66	5.93	36.70	27.29	54.00	26.71	
	1798.500	30.60	29.11	6.20	36.35	29.56	54.00	24.44	
	1910.200	30.10	30.25	6.32	36.20	30.47	54.00	23.53	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : DVI 1920*1080@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	50.370	26.98	8.51	0.85	--	36.34	40.00	3.66	QP
	98.870	22.50	11.31	1.32	--	35.13	43.50	8.37	
	139.610	23.06	10.63	1.59	--	35.28	43.50	8.22	
	215.270	22.39	10.41	2.03	--	34.83	43.50	8.67	
	478.140	17.22	17.34	2.92	--	37.48	46.00	8.52	
	615.880	13.72	18.43	3.25	--	35.40	46.00	10.60	
	1034.000	56.57	23.83	5.23	38.13	47.50	74.00	26.50	PK
	1165.000	57.53	24.37	5.33	37.82	49.41	74.00	24.59	
	1257.000	55.39	24.80	5.45	37.60	48.04	74.00	25.96	
	1532.000	53.72	25.96	5.83	36.83	48.68	74.00	25.32	
	1600.000	53.43	26.71	5.93	36.69	49.38	74.00	24.62	
	1981.000	52.96	30.87	6.41	36.12	54.12	74.00	19.88	
	1033.200	28.50	23.82	5.23	38.13	19.42	54.00	34.58	AV
	1166.700	32.09	24.37	5.33	37.82	23.97	54.00	30.03	
	1256.700	29.50	24.80	5.45	37.60	22.15	54.00	31.85	
	1530.100	31.30	25.92	5.83	36.83	26.22	54.00	27.78	
	1601.500	30.09	26.71	5.93	36.67	26.06	54.00	27.94	
	1980.200	31.90	30.82	6.41	36.12	33.01	54.00	20.99	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : HDMI 1920*1080@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	69.770	17.36	9.85	0.92	28.13	40.00	11.87
	92.080	16.45	11.08	1.24	28.77	43.50	14.73
	139.610	19.12	10.63	1.59	31.34	43.50	12.16
	210.420	22.68	10.22	2.00	34.90	43.50	8.60
	613.940	16.44	18.39	3.25	38.08	46.00	7.92
	742.950	14.37	19.98	3.57	37.92	46.00	8.08
Vertical	67.830	22.23	9.70	0.91	32.84	40.00	7.16
	136.700	22.74	10.69	1.58	35.01	43.50	8.49
	478.140	17.23	17.34	2.92	37.49	46.00	8.51
	615.880	18.22	18.43	3.25	39.90	46.00	6.10
	742.950	12.60	19.98	3.57	36.15	46.00	9.85
	870.990	14.87	20.38	4.20	39.45	46.00	6.55

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : HDMI 1080P

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	30.000	10.79	18.30	0.80	29.89	40.00	10.11
	38.730	14.05	13.40	0.86	28.31	40.00	11.69
	65.890	23.83	9.55	1.32	34.70	40.00	5.30
	221.090	19.11	10.68	2.51	32.30	46.00	13.70
	281.230	18.84	13.17	2.70	34.71	46.00	11.29
	431.580	16.88	16.72	3.08	36.68	46.00	9.32
Vertical	33.880	4.15	16.26	0.83	21.24	40.00	18.76
	65.890	16.57	9.55	1.32	27.44	40.00	12.56
	109.540	13.17	11.19	1.93	26.29	43.50	17.21
	169.680	18.35	10.11	2.32	30.78	43.50	12.72
	201.690	16.25	9.87	2.43	28.55	43.50	14.95
	281.230	19.30	13.17	2.70	35.17	46.00	10.83

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : DVI 1680*1050@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	69.770	12.87	9.85	0.92	23.64	40.00	16.36
	139.610	15.44	10.63	1.59	27.66	43.50	15.84
	210.420	16.05	10.22	2.00	28.27	43.50	15.23
	614.910	13.28	18.39	3.25	34.92	46.00	11.08
	742.950	11.62	19.98	3.57	35.17	46.00	10.83
	840.920	8.89	20.47	3.98	33.34	46.00	12.66
Vertical	69.770	20.95	9.85	0.92	31.72	40.00	8.28
	136.700	20.55	10.69	1.58	32.82	43.50	10.68
	478.140	14.12	17.34	2.92	34.38	46.00	11.62
	614.910	17.00	18.39	3.25	38.64	46.00	7.36
	742.950	9.94	19.98	3.57	33.49	46.00	12.51
	870.990	12.97	20.38	4.20	37.55	46.00	8.45

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

Test Mode : DVI 1280*1024@75Hz

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	139.610	12.76	10.63	1.59	24.98	43.50	18.52
	210.420	16.69	10.22	2.00	28.91	43.50	14.59
	400.540	8.81	16.30	2.69	27.80	46.00	18.20
	477.170	8.53	17.34	2.92	28.79	46.00	17.21
	613.940	12.92	18.39	3.25	34.56	46.00	11.44
	742.950	11.33	19.98	3.57	34.88	46.00	11.12
Vertical	69.770	20.38	9.85	0.92	31.15	40.00	8.85
	136.700	20.88	10.69	1.58	33.15	43.50	10.35
	280.260	11.36	13.13	2.40	26.89	46.00	19.11
	479.110	14.95	17.37	2.92	35.24	46.00	10.76
	613.940	16.40	18.39	3.25	38.04	46.00	7.96
	871.960	12.84	20.38	4.20	37.42	46.00	8.58

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : E1208999-01/01 Date of Test : Aug 31, 2012

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	30.000	0.17	18.30	0.80	19.27	40.00	20.73
	61.040	10.89	9.21	1.21	21.31	40.00	18.69
	92.080	8.14	11.08	1.75	20.97	43.50	22.53
	128.940	12.59	10.84	2.10	25.53	43.50	17.97
	177.440	19.86	10.02	2.35	32.23	43.50	11.27
	281.230	20.99	13.17	2.70	36.86	46.00	9.14
Vertical	36.790	14.75	14.57	0.85	30.17	40.00	9.83
	61.040	23.28	9.21	1.21	33.70	40.00	6.30
	82.380	13.53	10.67	1.63	25.83	40.00	14.17
	153.190	12.94	10.36	2.24	25.54	43.50	17.96
	221.090	18.47	10.68	2.51	31.66	46.00	14.34
	281.230	20.03	13.17	2.70	35.90	46.00	10.10

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.