

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

LCD Monitor

Model No.: E2742VA

Serial No.: 203NDJX00052

FCC ID : BEJE2742VA

Prepared For : LG Electronics U.S.A., Inc.
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Report No. : ACI-F12027A1
Date of Test : Mar 16 – 20, 2012
Date of Report : Mar 26, 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
(B) Serial No. : 203NDJX00052
(C) Power Supply : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2010
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; S/N: 203NDJX00052) which was tested in 3m anechoic chamber Mar 16 – 20, 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 : Mar 16 – 20, 2012 Date of Report : Mar 26, 2012

Producer : Kathy Wang
KATHY WANG / Assistant

Review : Dio Yang
DIO YANG / Assistant Manager

 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 2010 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2010 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

Serial No. : 203NDJX00052

Real Power : 29.60W

Note : 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

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 :		Manufacturer :	
	CHI MEI OPTOELECTRONICS		LG Display	
	M/N : M270HGE		M/N : LM270WF2	

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 : Sept. 17, 1998 file on
(Semi-Anechoic Chamber) 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 = 3.38 dB

Radiated Emission Expanded Uncertainty (30-200MHz):

U = 4.58 dB (Horizontal)

U = 4.70 dB (Vertical)

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

U = 4.84 dB (Horizontal)

U = 4.70 dB (Vertical)

Radiated Emission Expanded Uncertainty (Above 1GHz):

U = 4.60 dB (Horizontal)

U = 4.18 dB (Vertical)

3 CONDUCTED EMISSION TEST

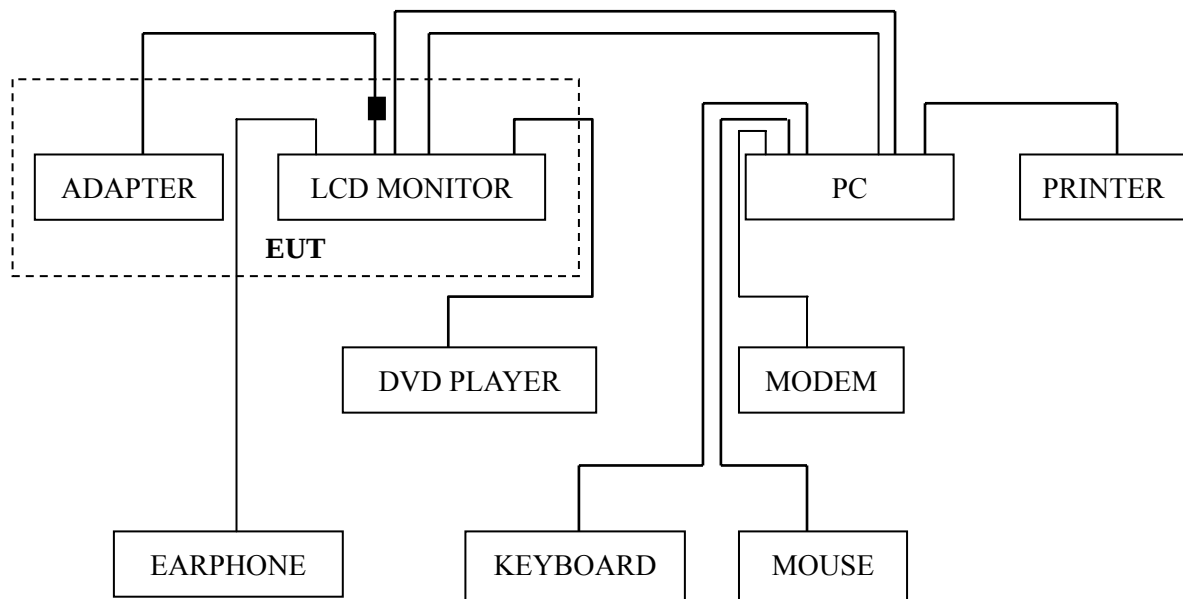
3.1 Test Equipment

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, 2011	Mar 22, 2012
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Mar 22, 2011	Mar 22, 2012
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2011	Mar 22, 2012
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 18, 2011	Mar 18, 2012
5.	50 Ω Terminator	Anritsu	BNC	001	Mar 22, 2011	Mar 22, 2012
6.	Software	Audix	E3	SET00200 9804M592	--	--

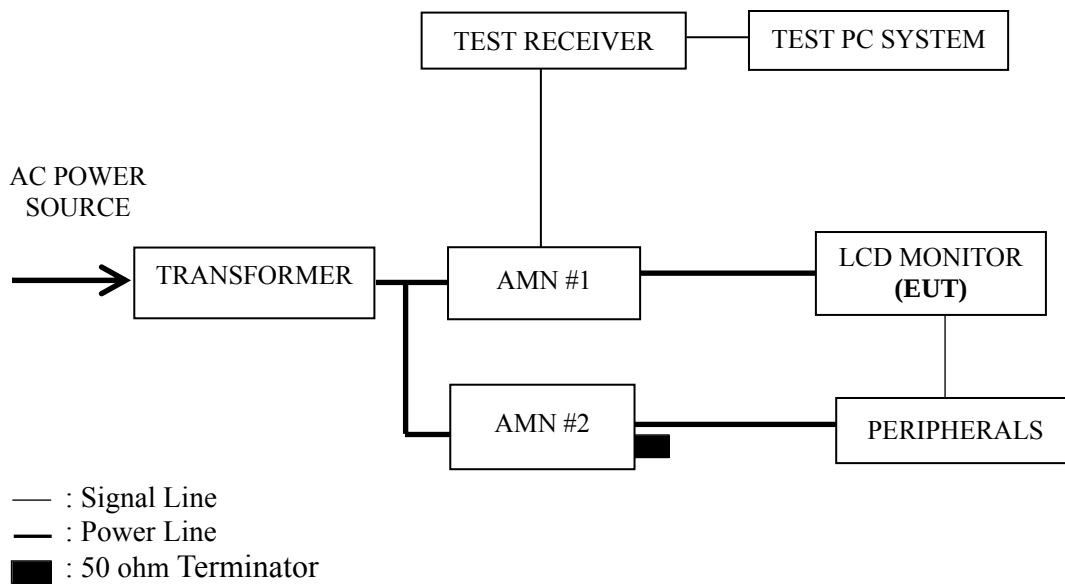
3.2 Block Diagram of Test Setup

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 (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 0.155 MHz (Quasi-Peak Value) with corrected signal level of 57.74 dB (μV) (limit is 65.740 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. : 203NDJX00052 Date of Test : Mar 16, 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	0.156	56.76	0.22	56.98	65.65	8.67	QP
	0.216	47.98	0.22	48.20	62.96	14.76	
	0.426	33.82	0.31	34.13	57.33	23.20	
	0.665	23.08	0.38	23.46	56.00	32.54	
	3.681	27.62	0.53	28.15	56.00	27.85	
	10.905	29.94	0.75	30.69	60.00	29.31	
	0.156	44.29	0.22	44.51	55.65	11.14	AV
	0.216	37.41	0.22	37.63	52.96	15.33	
	0.426	23.57	0.31	23.88	47.33	23.45	
	0.665	12.85	0.38	13.23	46.00	32.77	
	3.681	17.39	0.53	17.92	46.00	28.08	
	10.905	19.48	0.75	20.23	50.00	29.77	
Neutral	0.159	55.22	0.19	55.41	65.52	10.11	QP
	0.211	46.95	0.19	47.14	63.18	16.04	
	0.381	35.34	0.23	35.57	58.25	22.68	
	0.735	30.65	0.30	30.95	56.00	25.05	
	3.985	30.93	0.74	31.67	56.00	24.33	
	10.125	30.50	1.03	31.53	60.00	28.47	
	0.159	42.86	0.19	43.05	55.52	12.47	AV
	0.211	36.70	0.19	36.89	53.18	16.29	
	0.381	25.29	0.23	25.52	48.25	22.73	
	0.735	20.19	0.30	20.49	46.00	25.51	
	3.985	20.53	0.74	21.27	46.00	24.73	
	10.125	20.13	1.03	21.16	50.00	28.84	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : 203NDJX00052 Date of Test : Mar 16, 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	0.155	57.52	0.22	57.74	65.74	8.00	QP
	0.215	48.17	0.22	48.39	63.01	14.62	
	0.406	36.79	0.29	37.08	57.73	20.65	
	0.647	26.80	0.38	27.18	56.00	28.82	
	4.070	30.91	0.54	31.45	56.00	24.55	
	10.676	31.01	0.74	31.75	60.00	28.25	
	0.155	44.42	0.22	44.64	55.74	11.10	AV
	0.215	37.66	0.22	37.88	53.01	15.13	
	0.406	26.39	0.29	26.68	47.73	21.05	
	0.647	16.30	0.38	16.68	46.00	29.32	
	4.070	20.40	0.54	20.94	46.00	25.06	
	10.676	20.64	0.74	21.38	50.00	28.62	
Neutral	0.159	56.81	0.19	57.00	65.52	8.52	QP
	0.215	48.19	0.18	48.37	63.01	14.64	
	0.389	35.38	0.23	35.61	58.08	22.47	
	0.614	31.27	0.26	31.53	56.00	24.47	
	3.985	30.26	0.74	31.00	56.00	25.00	
	10.564	32.03	1.03	33.06	60.00	26.94	
	0.159	46.28	0.19	46.47	55.52	9.05	AV
	0.215	37.69	0.18	37.87	53.01	15.14	
	0.389	25.17	0.23	25.40	48.08	22.68	
	0.614	21.31	0.26	21.57	46.00	24.43	
	3.985	19.68	0.74	20.42	46.00	25.58	
	10.564	21.59	1.03	22.62	50.00	27.38	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : 203NDJX00052 Date of Test : Mar 16, 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	0.159	54.98	0.22	55.20	65.52	10.32	QP
	0.213	46.46	0.22	46.68	63.10	16.42	
	0.417	34.47	0.31	34.78	57.51	22.73	
	0.641	25.06	0.38	25.44	56.00	30.56	
	3.840	28.18	0.53	28.71	56.00	27.29	
	10.676	30.31	0.74	31.05	60.00	28.95	
	0.159	42.16	0.22	42.38	55.52	13.14	AV
	0.213	36.21	0.22	36.43	53.10	16.67	
	0.417	24.49	0.31	24.80	47.51	22.71	
	0.641	14.36	0.38	14.74	46.00	31.26	
	3.840	17.68	0.53	18.21	46.00	27.79	
	10.676	19.61	0.74	20.35	50.00	29.65	
Neutral	0.159	54.99	0.19	55.18	65.52	10.34	QP
	0.215	46.81	0.18	46.99	63.01	16.02	
	0.456	33.40	0.24	33.64	56.76	23.12	
	0.611	28.84	0.26	29.10	56.00	26.90	
	3.943	27.99	0.74	28.73	56.00	27.27	
	11.021	30.16	1.05	31.21	60.00	28.79	
	0.159	42.16	0.19	42.35	55.52	13.17	AV
	0.215	36.21	0.18	36.39	53.01	16.62	
	0.456	23.18	0.24	23.42	46.76	23.34	
	0.611	18.07	0.26	18.33	46.00	27.67	
	3.943	17.62	0.74	18.36	46.00	27.64	
	11.021	19.63	1.05	20.68	50.00	29.32	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : 203NDJX00052 Date of Test : Mar 16, 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	0.156	56.71	0.22	56.93	65.65	8.72	QP
	0.215	47.16	0.22	47.38	63.01	15.63	
	0.393	35.94	0.29	36.23	57.99	21.76	
	0.661	25.91	0.38	26.29	56.00	29.71	
	3.840	31.55	0.53	32.08	56.00	23.92	
	10.564	31.09	0.74	31.83	60.00	28.17	
	0.156	44.20	0.22	44.42	55.65	11.23	AV
	0.215	37.11	0.22	37.33	53.01	15.68	
	0.393	25.14	0.29	25.43	47.99	22.56	
	0.661	15.37	0.38	15.75	46.00	30.25	
	3.840	21.00	0.53	21.53	46.00	24.47	
	10.564	20.55	0.74	21.29	50.00	28.71	
Neutral	0.159	56.15	0.19	56.34	65.52	9.18	QP
	0.213	48.01	0.18	48.19	63.10	14.91	
	0.447	35.20	0.24	35.44	56.93	21.49	
	0.686	30.83	0.28	31.11	56.00	24.89	
	3.985	30.99	0.74	31.73	56.00	24.27	
	11.021	31.75	1.05	32.80	60.00	27.20	
	0.159	44.30	0.19	44.49	55.52	11.03	AV
	0.213	37.62	0.18	37.80	53.10	15.30	
	0.447	25.30	0.24	25.54	46.93	21.39	
	0.686	20.47	0.28	20.75	46.00	25.25	
	3.985	20.56	0.74	21.30	46.00	24.70	
	11.021	21.27	1.05	22.32	50.00	27.68	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : 203NDJX00052 Date of Test : Mar 16, 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	0.156	56.89	0.22	57.11	65.65	8.54	QP
	0.213	48.36	0.22	48.58	63.10	14.52	
	0.408	36.17	0.29	36.46	57.68	21.22	
	0.661	26.33	0.38	26.71	56.00	29.29	
	4.070	31.52	0.54	32.06	56.00	23.94	
	11.317	31.01	0.76	31.77	60.00	28.23	
	0.156	46.28	0.22	46.50	55.65	9.15	AV
	0.213	37.70	0.22	37.92	53.10	15.18	
	0.408	25.63	0.29	25.92	47.68	21.76	
	0.661	15.60	0.38	15.98	46.00	30.02	
	4.070	21.06	0.54	21.60	46.00	24.40	
	11.317	20.50	0.76	21.26	50.00	28.74	
Neutral	0.159	56.37	0.19	56.56	65.52	8.96	QP
	0.211	48.21	0.19	48.40	63.18	14.78	
	0.379	36.09	0.22	36.31	58.30	21.99	
	0.735	31.48	0.30	31.78	56.00	24.22	
	3.759	32.56	0.72	33.28	56.00	22.72	
	10.905	30.47	1.05	31.52	60.00	28.48	
	0.159	43.10	0.19	43.29	55.52	12.23	AV
	0.211	37.88	0.19	38.07	53.18	15.11	
	0.379	25.80	0.22	26.02	48.30	22.28	
	0.735	21.50	0.30	21.80	46.00	24.20	
	3.759	22.40	0.72	23.12	46.00	22.88	
	10.905	20.16	1.05	21.21	50.00	28.79	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : 203NDJX00052 Date of Test : Mar 16, 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	0.157	55.96	0.22	56.18	65.60	9.42	QP
	0.213	47.90	0.22	48.12	63.10	14.98	
	0.413	36.28	0.30	36.58	57.59	21.01	
	0.647	26.61	0.38	26.99	56.00	29.01	
	3.720	31.14	0.53	31.67	56.00	24.33	
	10.905	31.11	0.75	31.86	60.00	28.14	
	0.157	45.36	0.22	45.58	55.60	10.02	AV
	0.213	37.53	0.22	37.75	53.10	15.35	
	0.413	25.84	0.30	26.14	47.59	21.45	
	0.647	16.34	0.38	16.72	46.00	29.28	
	3.720	20.86	0.53	21.39	46.00	24.61	
	10.905	20.69	0.75	21.44	50.00	28.56	
Neutral	0.157	56.14	0.19	56.33	65.60	9.27	QP
	0.213	48.45	0.18	48.63	63.10	14.47	
	0.381	35.62	0.23	35.85	58.25	22.40	
	0.727	30.99	0.30	31.29	56.00	24.71	
	3.901	31.64	0.74	32.38	56.00	23.62	
	10.676	31.14	1.03	32.17	60.00	27.83	
	0.157	43.52	0.19	43.71	55.60	11.89	AV
	0.213	38.21	0.18	38.39	53.10	14.71	
	0.381	25.29	0.23	25.52	48.25	22.73	
	0.727	20.15	0.30	20.45	46.00	25.55	
	3.901	21.39	0.74	22.13	46.00	23.87	
	10.676	20.51	1.03	21.54	50.00	28.46	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 48%RH

Serial No. : 203NDJX00052 Date of Test : Mar 16, 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	0.157	57.00	0.22	57.22	65.60	8.38	QP
	0.215	47.77	0.22	47.99	63.01	15.02	
	0.421	36.23	0.31	36.54	57.42	20.88	
	0.634	26.90	0.37	27.27	56.00	28.73	
	4.158	31.75	0.54	32.29	56.00	23.71	
	11.021	32.01	0.76	32.77	60.00	27.23	
	0.157	43.28	0.22	43.50	55.60	12.10	AV
	0.215	37.51	0.22	37.73	53.01	15.28	
	0.421	25.89	0.31	26.20	47.42	21.22	
	0.634	16.38	0.37	16.75	46.00	29.25	
	4.158	21.42	0.54	21.96	46.00	24.04	
	11.021	21.57	0.76	22.33	50.00	27.67	
Neutral	0.157	56.98	0.19	57.17	65.60	8.43	QP
	0.211	49.22	0.19	49.41	63.18	13.77	
	0.389	35.46	0.23	35.69	58.08	22.39	
	0.727	31.27	0.30	31.57	56.00	24.43	
	3.985	32.48	0.74	33.22	56.00	22.78	
	11.021	31.59	1.05	32.64	60.00	27.36	
	0.157	43.28	0.19	43.47	55.60	12.13	AV
	0.211	38.78	0.19	38.97	53.18	14.21	
	0.389	25.30	0.23	25.53	48.08	22.55	
	0.727	21.07	0.30	21.37	46.00	24.63	
	3.985	22.50	0.74	23.24	46.00	22.76	
	11.021	21.29	1.05	22.34	50.00	27.66	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

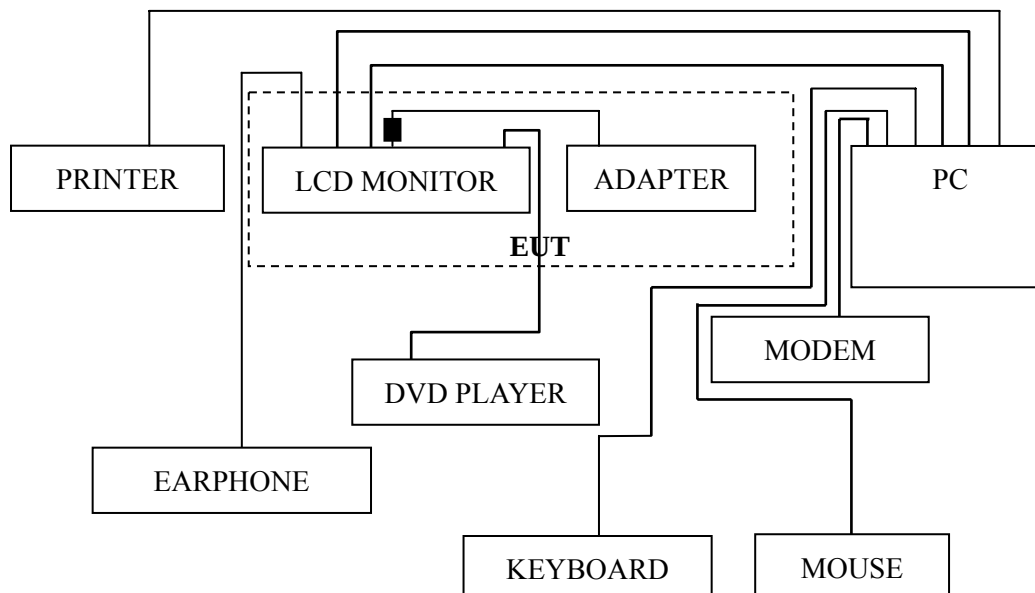
4.1 Test Equipment

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, 2011	Mar 22, 2012
2.	Preamplifier	Agilent	8447D	2944A10548	Sep 18, 2011	Mar 18, 2012
3.	Preamplifier	HP	8449B	3008A00864	Mar 22, 2011	Mar 22, 2012
4.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2011	Dec 01, 2012
5.	Horn Antenna	EMCO	3115	9607-4878	May 06, 2011	May 06, 2012
6.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
7.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426390	Sep 18, 2011	Mar 18, 2012
8.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

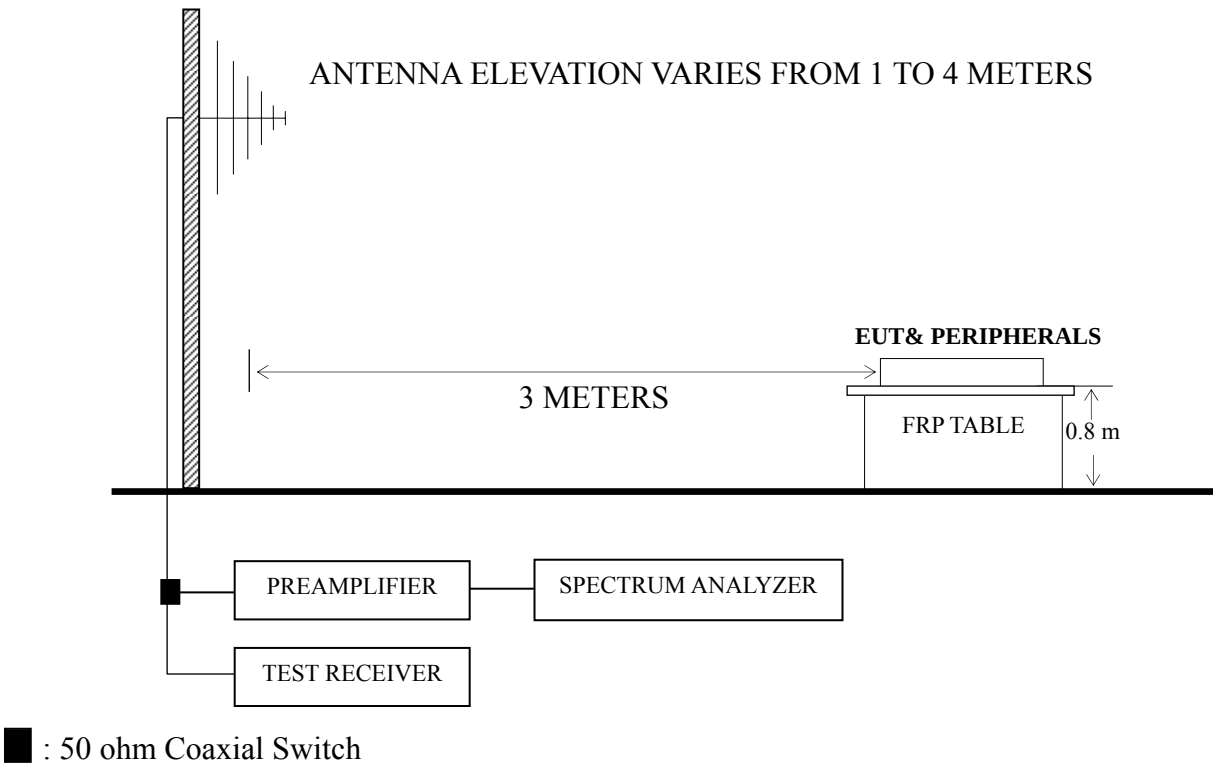
4.2.1 EUT and Peripherals



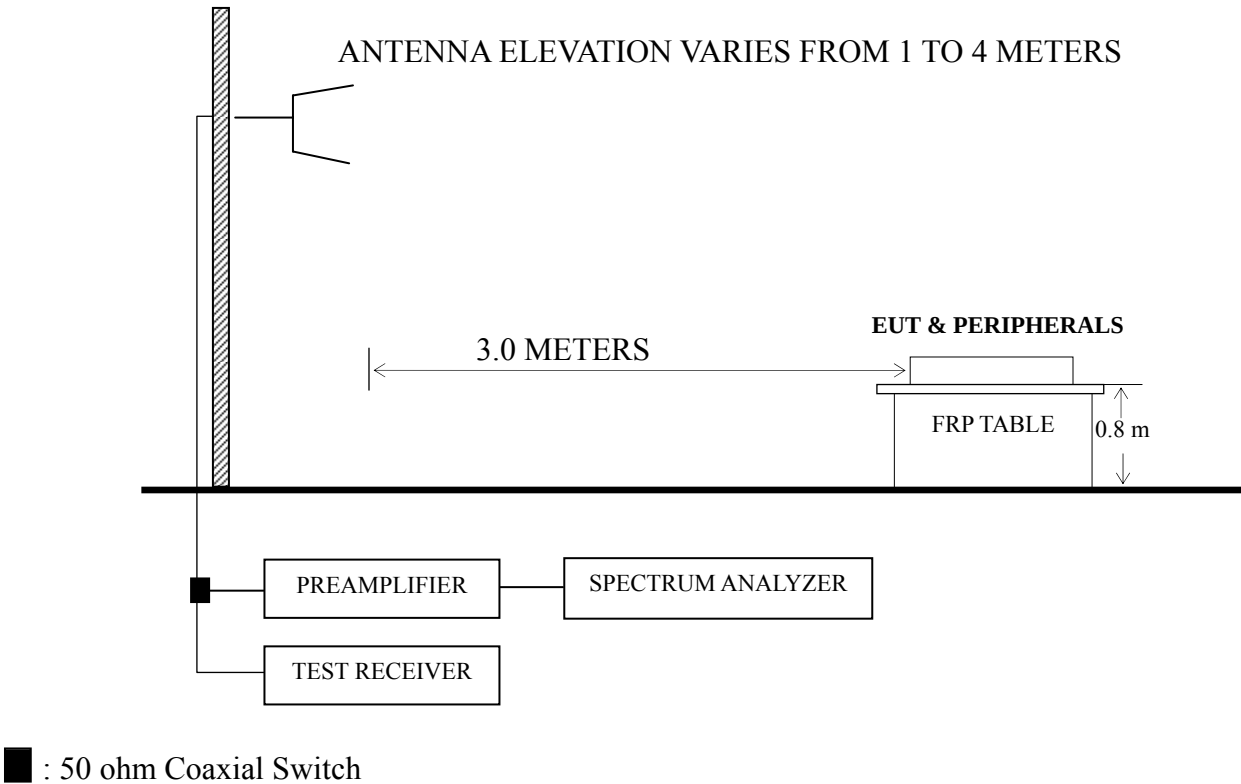
■ : Ferrite core

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
HDMI 1920*1080@60Hz	P27 – P28
HDMI 1080P	P29
HDMI 1680*1050@60Hz	P30
HDMI 1280*1024@75Hz	P31
HDMI 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 HDMI 1920*1080@60Hz test mode. The worst emission at horizontal polarization was detected at 909.990 MHz with corrected signal level of 43.37 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 25° . The worst emission at vertical polarization was detected at 429.530 MHz with corrected signal level of 44.77 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 230° .

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : 203NDJX00052 Date of Test : Mar 20, 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	33.880	9.10	16.26	0.83	26.19	40.00	13.81
	50.370	16.33	8.51	0.93	25.77	40.00	14.23
	108.570	16.89	11.21	1.93	30.03	43.50	13.47
	412.180	10.63	16.45	3.02	30.10	46.00	15.90
	482.990	9.62	17.42	3.23	30.27	46.00	15.73
	871.960	10.59	20.38	4.60	35.57	46.00	10.43
Vertical	106.630	13.02	11.24	1.92	26.18	43.50	17.32
	137.670	16.06	10.66	2.15	28.87	43.50	14.63
	167.740	16.26	10.14	2.31	28.71	43.50	14.79
	276.380	9.46	13.02	2.68	25.16	46.00	20.84
	429.640	23.18	16.69	3.08	42.95	46.00	3.05
	875.840	10.26	20.37	4.75	35.38	46.00	10.62

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : 203NDJX00052 Date of Test : Mar 20, 2012

Test Mode : DVI 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	116.330	15.84	11.07	2.00	28.91	43.50	14.59
	189.080	22.96	9.90	2.39	35.25	43.50	8.25
	210.420	20.32	10.22	2.46	33.00	43.50	10.50
	429.540	24.00	16.69	3.08	43.77	46.00	2.23
	632.370	7.98	18.63	3.53	30.14	46.00	15.86
	875.840	10.66	20.37	4.75	35.78	46.00	10.22
Vertical	74.620	20.28	10.21	1.51	32.00	40.00	8.00
	109.540	18.11	11.19	1.93	31.23	43.50	12.27
	142.520	22.81	10.56	2.18	35.55	43.50	7.95
	280.260	13.53	13.13	2.70	29.36	46.00	16.64
	487.840	11.94	17.46	3.23	32.63	46.00	13.37
	875.840	11.11	20.37	4.75	36.23	46.00	9.77

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : 203NDJX00052 Date of Test : Mar 20, 2012

Test Mode : HDMI 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	86.260	17.01	10.83	1.68	--	29.52	40.00	10.48	QP
	201.690	18.53	9.87	2.43	--	30.83	43.50	12.67	
	417.030	12.40	16.52	3.04	--	31.96	46.00	14.04	
	485.900	12.06	17.44	3.23	--	32.73	46.00	13.27	
	909.990	18.00	20.34	5.03	--	43.37	46.00	2.63	
	975.010	23.00	20.69	5.15	--	48.84	54.00	5.16	
	1065.000	45.37	25.17	4.50	38.07	36.97	70.00	33.03	PK
	1140.000	44.43	25.51	4.51	37.90	36.55	70.00	33.45	
	1200.000	42.81	25.82	4.51	37.76	35.38	70.00	34.62	
	1500.000	43.10	27.00	4.55	36.97	37.68	70.00	32.32	
	1790.000	44.15	27.25	4.58	36.45	39.53	70.00	30.47	
	1960.000	47.56	27.38	4.75	36.24	43.45	70.00	26.55	
	1065.000	37.37	25.17	4.50	38.07	28.97	50.00	21.03	AV
	1140.000	35.43	25.51	4.51	37.90	27.55	50.00	22.45	
	1200.000	35.81	25.82	4.51	37.76	28.38	50.00	21.62	
	1500.000	34.10	27.00	4.55	36.97	28.68	50.00	21.32	
	1790.000	35.15	27.25	4.58	36.45	30.53	50.00	19.47	
	1960.000	38.56	27.38	4.75	36.24	34.45	50.00	15.55	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : 203NDJX00052 Date of Test : Mar 20, 2012

Test Mode : HDMI 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	97.900	14.40	11.28	1.83	--	27.51	43.50	15.99	QP
	137.670	16.29	10.66	2.15	--	29.10	43.50	14.40	
	195.020	25.00	9.84	2.41	--	37.25	43.50	6.25	
	324.880	21.38	14.38	2.82	--	38.58	46.00	7.42	
	429.530	25.00	16.69	3.08	--	44.77	46.00	1.23	
	875.840	8.90	20.37	4.75	--	34.02	46.00	11.98	
	1075.000	45.36	25.21	4.50	38.04	37.03	70.00	32.97	PK
	1165.000	42.71	25.64	4.51	37.84	35.02	70.00	34.98	
	1280.000	43.94	26.23	4.53	37.56	37.14	70.00	32.86	
	1535.000	43.27	27.03	4.55	36.88	37.97	70.00	32.03	
	1795.000	40.69	27.26	4.58	36.44	36.09	70.00	33.91	
	1950.000	44.25	27.37	4.75	36.25	40.12	70.00	29.88	
	1075.000	37.36	25.21	4.50	38.04	29.03	50.00	20.97	AV
	1165.000	34.71	25.64	4.51	37.84	27.02	50.00	22.98	
	1280.000	33.94	26.23	4.53	37.56	27.14	50.00	22.86	
	1535.000	36.27	27.03	4.55	36.88	30.97	50.00	19.03	
	1795.000	32.69	27.26	4.58	36.44	28.09	50.00	21.91	
	1950.000	36.25	27.37	4.75	36.25	32.12	50.00	17.88	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : 203NDJX00052 Date of Test : Mar 20, 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	138.640	18.88	10.65	2.16	31.69	43.50	11.81
	194.900	23.44	9.84	2.41	35.69	43.50	7.81
	208.480	21.10	10.15	2.46	33.71	43.50	9.79
	277.350	20.32	13.05	2.68	36.05	46.00	9.95
	440.310	13.89	16.84	3.09	33.82	46.00	12.18
	875.840	8.84	20.37	4.75	33.96	46.00	12.04
Vertical	129.910	21.71	10.82	2.10	34.63	43.50	8.87
	137.670	20.18	10.66	2.15	32.99	43.50	10.51
	194.900	23.68	9.84	2.41	35.93	43.50	7.57
	324.880	22.71	14.38	2.82	39.91	46.00	6.09
	414.120	14.74	16.48	3.02	34.24	46.00	11.76
	832.190	10.37	20.51	4.22	35.10	46.00	10.90

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : 203NDJX00052 Date of Test : Mar 20, 2012

Test Mode : HDMI 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	96.930	16.58	11.24	1.82	29.64	43.50	13.86
	128.940	13.75	10.84	2.10	26.69	43.50	16.81
	201.690	17.10	9.87	2.43	29.40	43.50	14.10
	417.030	11.58	16.52	3.04	31.14	46.00	14.86
	485.900	11.51	17.44	3.23	32.18	46.00	13.82
	875.840	8.07	20.37	4.75	33.19	46.00	12.81
Vertical	195.000	29.00	9.84	2.41	41.25	43.50	2.25
	259.890	18.01	12.40	2.64	33.05	46.00	12.95
	324.880	18.52	14.38	2.82	35.72	46.00	10.28
	429.500	24.00	16.69	3.08	43.77	46.00	2.23
	443.220	12.53	16.87	3.11	32.51	46.00	13.49
	871.960	7.15	20.38	4.60	32.13	46.00	13.87

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : 203NDJX00052 Date of Test : Mar 20, 2012

Test Mode : HDMI 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	108.570	14.79	11.21	1.93	27.93	43.50	15.57
	209.450	22.21	10.18	2.46	34.85	43.50	8.65
	277.350	20.32	13.05	2.68	36.05	46.00	9.95
	443.220	14.42	16.87	3.11	34.40	46.00	11.60
	696.390	7.48	19.47	3.68	30.63	46.00	15.37
	875.840	8.84	20.37	4.75	33.96	46.00	12.04
Vertical	69.770	19.01	9.85	1.41	30.27	40.00	9.73
	137.670	20.18	10.66	2.15	32.99	43.50	10.51
	194.900	23.68	9.84	2.41	35.93	43.50	7.57
	324.880	22.71	14.38	2.82	39.91	46.00	6.09
	414.120	14.74	16.48	3.02	34.24	46.00	11.76
	837.040	12.50	20.48	4.34	37.32	46.00	8.68

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2742VA Humidity : 60%RH

Serial No. : 203NDJX00052 Date of Test : Mar 20, 2012

Test Mode : HDMI 640*480@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	95.960	15.04	11.22	1.80	28.06	43.50	15.44
	201.690	20.19	9.87	2.43	32.49	43.50	11.01
	289.960	14.77	13.42	2.72	30.91	46.00	15.09
	429.500	24.00	16.69	3.08	43.77	46.00	2.23
	568.350	5.89	18.02	3.40	27.31	46.00	18.69
	871.960	7.49	20.38	4.60	32.47	46.00	13.53
Vertical	95.960	17.17	11.22	1.80	30.19	43.50	13.31
	126.030	21.32	10.89	2.07	34.28	43.50	9.22
	217.210	18.66	10.48	2.50	31.64	46.00	14.36
	505.300	14.83	17.62	3.28	35.73	46.00	10.27
	651.770	8.52	18.89	3.58	30.99	46.00	15.01
	871.960	10.84	20.38	4.60	35.82	46.00	10.18

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.