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

LCD Monitor

Model No.: E2342VA

Serial No.: 112NDRF88174

FCC ID : BEJE2342VA

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

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Report No. : ACI-F12003A1
Date of Test : Aug 14 – 16, 2012
Date of Report : Aug 21, 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. : E2342VA

(B) Serial No. : 112NDRF88174

(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: E2342VA; S/N: 112NDRF88174) which was tested in 3m anechoic chamber Aug 14 – 16, 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 14 – 16, 2012 Date of Report : Aug 21, 2012

Producer : YENNY YU / Assistant

Review : DIO YANG / Assistant Manager

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

Signatory : SAMMY CHEN / Deputy Manager
Authorized Signature EMC

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. : E2342VA

Serial No. : 112NDRF88174

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

Report No.	Model No.	Rev. Summary	Edition No.	Data of Rev.
ACI-F12003	E2342VA	Original Report	0	Jan 06, 2012
ACI-F12003A1	E2342VA	To add two new adapters.	Rev. A1	Aug 21, 2012

AC Adapter #1 : Manufacturer : LG
Model Number : PSAB-L203A
Input : 100-240V~, 50/60Hz 1.1A
Output : 19V ⎓ 1.3A
Output Cable : Unshielded, Undetachable, 1.8m, with one core

AC Adapter #2 : Manufacturer : LG
Model Number : PSAB-L202*
(* can be A, B, C, D,
A, B, C, D stand for different AC plug type.
PSAB-L202C was selected as the test model.)
Input : 100-240V~, 50/60Hz 1.1A
Output : 19V ⎓ 1.3A
Output Cable : Unshielded, Undetachable, 1.8m, with one core

Note #2 : The above adapters are all the same except for the different type of AC input.
The Adapter PSAB-L202C was selected and recorded in the report.

Adapter :

Original Adapter	New Adapter
Manufacturer : HONOR M/N : ADS-40SG-19-3 19025G	Manufacturer : LG M/N : PSAB-L203A
Manufacturer : HONOR M/N : ADS-40SG-19-3 19032G	Manufacturer : LG M/N : PSAB-L202*
Manufacturer : LIEN CHANG M/N : LCAP21	--
Manufacturer : LIEN CHANG M/N : LCAP21A	--
Manufacturer : LIEN CHANG M/N : LCAP26A-*	--
Manufacturer : LIEN CHANG M/N : LCAP26-*	--
Manufacturer : HONOR M/N : ADS-40FSG-19 19032G***-1	--
Manufacturer : HONOR M/N : ADS-40FSG-19 19025G***-1	--

Real Power : 24.40W

Applicant : LG Electronics U.S.A., Inc.
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 : Manufacturer : LG Display
M/N : LM230WF5

Max Resolution : 1920*1080@60Hz

D-Sub Cable #1 : Shielded, Detachable, 1.50m, with two cores on cable

D-Sub Cable #2 : Shielded, Detachable, 1.85m, with two cores in connector

DVI Cable #1 : Shielded, Detachable, 1.50m, with two cores on cable

DVI Cable #2 : Shielded, Detachable, 1.85m, 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 DVD
(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

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

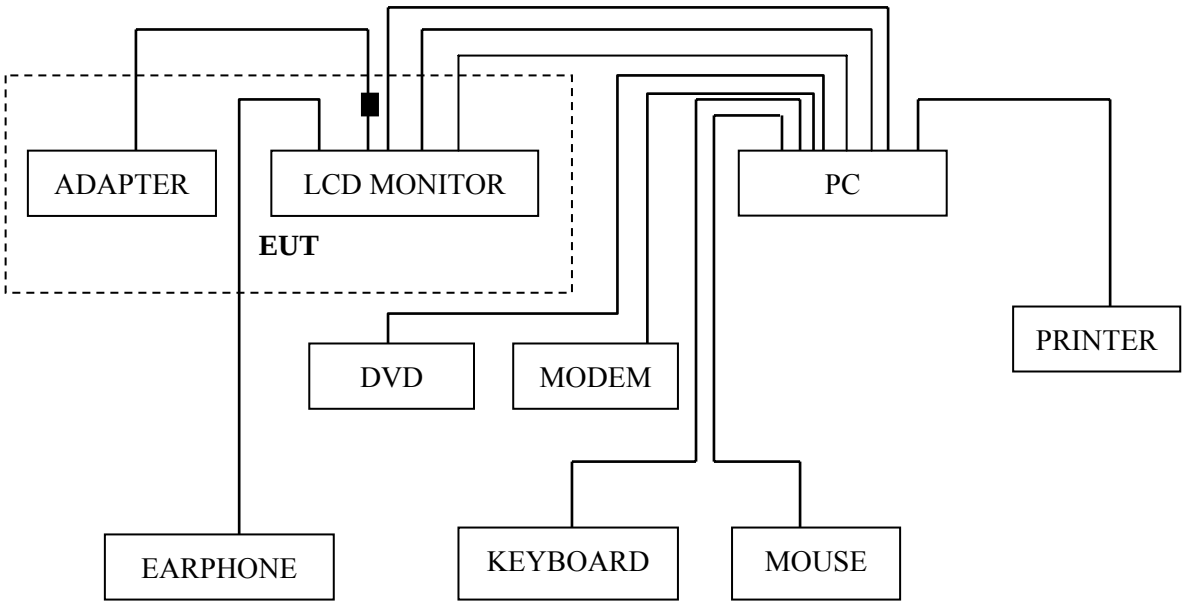
3.1 Test Equipment

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

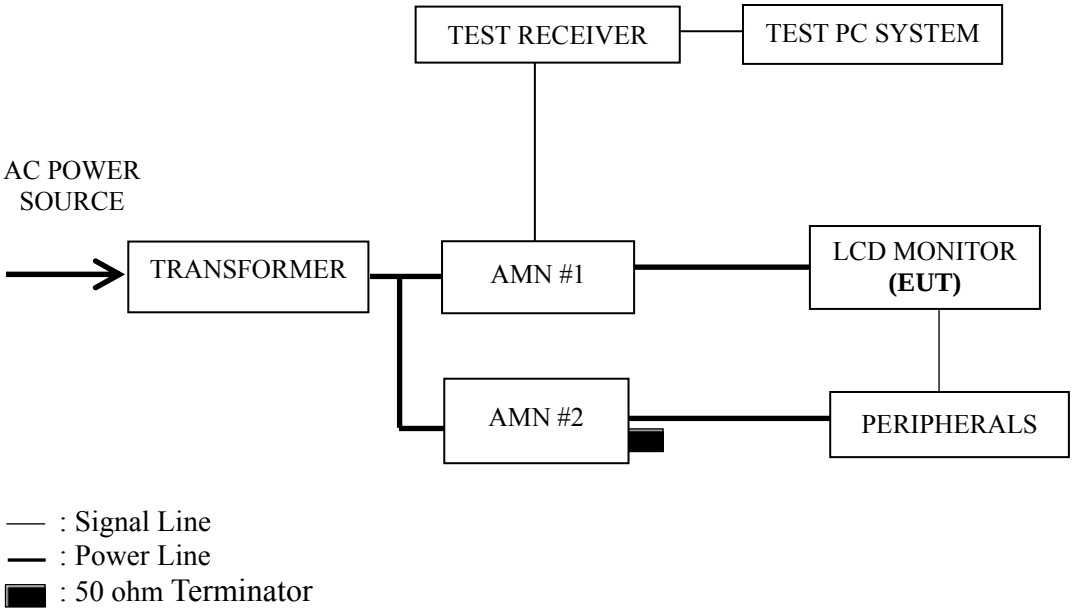
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



■ : Ferrite core

3.2.2 Conducted Disturbance Test Setup



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

Frequency Range (MHz)	Limits dB (μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE 1 – The lower limit shall apply at the transition frequencies.
NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

3.4 Test Configuration

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

3.5 Operating Condition of EUT

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

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

3.5.3 Set the contrast & brightness of EUT to maximum.

3.5.4 PC system ran the self-test program "EMC Test" by windows XP and sent "H" characters to EUT through graphic card (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 DVD 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
D-Sub 1680*1050@60Hz
D-Sub 1280*1024@75Hz
D-Sub 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
D-Sub 1680*1050@60Hz	P17
D-Sub 1280*1024@75Hz	P18
D-Sub 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 D-Sub 1920*1080@60Hz test mode. The worst emission is detected at 15.552 MHz (Average Value) with corrected signal level of 34.74 dB (μV) (limit is 50.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342VA	Humidity	:	48%RH
Serial No.	:	112NDRF88174	Date of Test	:	Aug 14, 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	0.188	47.51	0.25	47.76	64.11	16.35	QP
	0.343	40.63	0.31	40.94	59.13	18.19	
	0.694	33.99	0.19	34.18	56.00	21.82	
	3.759	34.27	0.48	34.75	56.00	21.25	
	9.451	33.41	0.73	34.14	60.00	25.86	
	15.552	43.20	0.84	44.04	60.00	15.96	
	0.188	37.80	0.25	38.05	54.11	16.06	AV
	0.343	29.70	0.31	30.01	49.13	19.12	
	0.694	23.40	0.19	23.59	46.00	22.41	
	3.759	24.50	0.48	24.98	46.00	21.02	
	9.451	23.90	0.73	24.63	50.00	25.37	
	15.552	**33.90**	**0.84**	**34.74**	**50.00**	**15.26**	
Neutral	0.186	46.77	0.12	46.89	64.20	17.31	QP
	0.339	40.19	0.14	40.33	59.22	18.89	
	0.686	34.24	0.20	34.44	56.00	21.56	
	3.759	33.32	0.38	33.70	56.00	22.30	
	9.451	34.42	0.49	34.91	60.00	25.09	
	15.388	42.05	0.73	42.78	60.00	17.22	
	0.186	36.90	0.12	37.02	54.20	17.18	AV
	0.339	31.50	0.14	31.64	49.22	17.58	
	0.686	24.80	0.20	25.00	46.00	21.00	
	3.759	23.69	0.38	24.07	46.00	21.93	
	9.451	24.80	0.49	25.29	50.00	24.71	
	15.388	32.50	0.73	33.23	50.00	16.77	

TEST ENGINEER: SAWEN LI

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342VA	Humidity	:	48%RH
Serial No.	:	112NDRF88174	Date of Test	:	Aug 14, 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	0.188	47.20	0.25	47.45	64.11	16.66	QP
	0.343	40.19	0.31	40.50	59.13	18.63	
	0.694	34.13	0.19	34.32	56.00	21.68	
	3.759	33.20	0.48	33.68	56.00	22.32	
	9.654	33.11	0.73	33.84	60.00	26.16	
	15.552	42.21	0.84	43.05	60.00	16.95	
	0.188	37.40	0.25	37.65	54.11	16.46	AV
	0.343	29.80	0.31	30.11	49.13	19.02	
	0.694	24.80	0.19	24.99	46.00	21.01	
	3.759	23.80	0.48	24.28	46.00	21.72	
	9.654	23.80	0.73	24.53	50.00	25.47	
	15.552	32.50	0.84	33.34	50.00	16.66	
Neutral	**0.186**	**47.72**	**0.12**	**47.84**	**64.20**	**16.36**	QP
	0.343	40.23	0.14	40.37	59.13	18.76	
	0.686	34.16	0.20	34.36	56.00	21.64	
	3.840	34.32	0.38	34.70	56.00	21.30	
	9.451	34.04	0.49	34.53	60.00	25.47	
	15.885	42.60	0.74	43.34	60.00	16.66	
	0.186	37.50	0.12	37.62	54.20	16.58	AV
	0.343	29.40	0.14	29.54	49.13	19.59	
	0.686	24.80	0.20	25.00	46.00	21.00	
	3.840	24.81	0.38	25.19	46.00	20.81	
	9.451	24.80	0.49	25.29	50.00	24.71	
	15.885	32.50	0.74	33.24	50.00	16.76	

TEST ENGINEER: SAWEN LI

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342VA	Humidity	:	48%RH
Serial No.	:	112NDRF88174	Date of Test	:	Aug 14, 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	0.188	47.66	0.25	47.91	64.11	16.20	QP
	0.343	40.24	0.31	40.55	59.13	18.58	
	0.686	34.30	0.19	34.49	56.00	21.51	
	3.840	32.95	0.48	33.43	56.00	22.57	
	9.451	32.31	0.73	33.04	60.00	26.96	
	15.388	42.38	0.84	43.22	60.00	16.78	
	0.188	27.80	0.25	28.05	54.11	26.06	AV
	0.343	30.80	0.31	31.11	49.13	18.02	
	0.686	25.80	0.19	25.99	46.00	20.01	
	3.840	22.40	0.48	22.88	46.00	23.12	
	9.451	22.80	0.73	23.53	50.00	26.47	
	15.388	32.80	0.84	33.64	50.00	16.36	
Neutral	0.188	47.70	0.12	47.82	64.11	16.29	QP
	0.343	40.28	0.14	40.42	59.13	18.71	
	0.686	33.96	0.20	34.16	56.00	21.84	
	3.840	33.91	0.38	34.29	56.00	21.71	
	9.451	32.91	0.49	33.40	60.00	26.60	
	15.718	41.98	0.73	42.71	60.00	17.29	
	0.188	**37.80**	**0.12**	**37.92**	**54.11**	**16.19**	AV
	0.343	30.20	0.14	30.34	49.13	18.79	
	0.686	23.50	0.20	23.70	46.00	22.30	
	3.840	23.91	0.38	24.29	46.00	21.71	
	9.451	22.20	0.49	22.69	50.00	27.31	
	15.718	30.81	0.73	31.54	50.00	18.46	

TEST ENGINEER: SAWEN LI

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342VA	Humidity	:	48%RH
Serial No.	:	112NDRF88174	Date of Test	:	Aug 14, 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	0.186	46.63	0.25	46.88	64.20	17.32	QP
	0.322	38.26	0.30	38.56	59.66	21.10	
	0.686	31.97	0.19	32.16	56.00	23.84	
	3.799	32.11	0.48	32.59	56.00	23.41	
	10.676	34.79	0.73	35.52	60.00	24.48	
	12.920	43.44	0.81	44.25	60.00	15.75	
	0.186	36.90	0.25	37.15	54.20	17.05	AV
	0.322	28.70	0.30	29.00	49.66	20.66	
	0.686	21.80	0.19	21.99	46.00	24.01	
	3.799	22.10	0.48	22.58	46.00	23.42	
	10.676	25.61	0.73	26.34	50.00	23.66	
	12.920	**33.60**	**0.81**	**34.41**	**50.00**	**15.59**	
Neutral	0.186	47.82	0.12	47.94	64.20	16.26	QP
	0.343	40.29	0.14	40.43	59.13	18.70	
	0.686	34.08	0.20	34.28	56.00	21.72	
	3.759	33.96	0.38	34.34	56.00	21.66	
	9.451	33.81	0.49	34.30	60.00	25.70	
	15.885	43.55	0.74	44.29	60.00	15.71	
	0.186	37.50	0.12	37.62	54.20	16.58	AV
	0.343	29.90	0.14	30.04	49.13	19.09	
	0.686	23.30	0.20	23.50	46.00	22.50	
	3.759	23.60	0.38	23.98	46.00	22.02	
	9.451	23.60	0.49	24.09	50.00	25.91	
	15.885	33.60	0.74	34.34	50.00	15.66	

TEST ENGINEER: SAWEN LI

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342VA	Humidity	:	48%RH
Serial No.	:	112NDRF88174	Date of Test	:	Aug 14, 2012
Test Mode	:	D-Sub 1680*1050@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	46.83	0.25	47.08	64.11	17.03	QP
	0.343	40.35	0.31	40.66	59.13	18.47	
	0.686	33.89	0.19	34.08	56.00	21.92	
	3.759	33.33	0.48	33.81	56.00	22.19	
	9.451	33.35	0.73	34.08	60.00	25.92	
	15.552	41.91	0.84	42.75	60.00	17.25	
	0.188	36.00	0.25	36.25	54.11	17.86	AV
	0.343	29.80	0.31	30.11	49.13	19.02	
	0.686	22.50	0.19	22.69	46.00	23.31	
	3.759	25.20	0.48	25.68	46.00	20.32	
	9.451	24.80	0.73	25.53	50.00	24.47	
	15.552	32.70	0.84	33.54	50.00	16.46	
Neutral	0.188	47.58	0.12	47.70	64.11	16.41	QP
	0.339	40.72	0.14	40.86	59.22	18.36	
	0.694	34.10	0.20	34.30	56.00	21.70	
	3.759	34.36	0.38	34.74	56.00	21.26	
	9.451	34.07	0.49	34.56	60.00	25.44	
	15.718	43.10	0.73	43.83	60.00	16.17	
	0.188	37.40	0.12	37.52	54.11	16.59	AV
	0.339	31.30	0.14	31.44	49.22	17.78	
	0.694	25.10	0.20	25.30	46.00	20.70	
	3.759	22.60	0.38	22.98	46.00	23.02	
	9.451	25.10	0.49	25.59	50.00	24.41	
	15.718	**33.41**	**0.73**	**34.14**	**50.00**	**15.86**	

TEST ENGINEER: SAWEN LI

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342VA	Humidity	:	48%RH
Serial No.	:	112NDRF88174	Date of Test	:	Aug 14, 2012
Test Mode	:	D-Sub 1280*1024@75Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	46.77	0.25	47.02	64.11	17.09	QP
	0.343	40.17	0.31	40.48	59.13	18.65	
	0.686	34.19	0.19	34.38	56.00	21.62	
	3.759	33.21	0.48	33.69	56.00	22.31	
	9.451	33.55	0.73	34.28	60.00	25.72	
	15.718	42.78	0.84	43.62	60.00	16.38	
	0.188	36.90	0.25	37.15	54.11	16.96	AV
	0.343	29.60	0.31	29.91	49.13	19.22	
	0.686	24.50	0.19	24.69	46.00	21.31	
	3.759	23.50	0.48	23.98	46.00	22.02	
	9.451	23.80	0.73	24.53	50.00	25.47	
	15.718	32.41	0.84	33.25	50.00	16.75	
Neutral	**0.186**	**47.71**	**0.12**	**47.83**	**64.20**	**16.37**	QP
	0.339	40.43	0.14	40.57	59.22	18.65	
	0.686	33.94	0.20	34.14	56.00	21.86	
	3.799	33.80	0.38	34.18	56.00	21.82	
	10.676	33.30	0.49	33.79	60.00	26.21	
	15.226	42.60	0.73	43.33	60.00	16.67	
	0.186	37.40	0.12	37.52	54.20	16.68	AV
	0.339	29.90	0.14	30.04	49.22	19.18	
	0.686	23.50	0.20	23.70	46.00	22.30	
	3.799	23.80	0.38	24.18	46.00	21.82	
	10.676	23.51	0.49	24.00	50.00	26.00	
	15.226	32.80	0.73	33.53	50.00	16.47	

TEST ENGINEER: SAWEN LI

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342VA	Humidity	:	48%RH
Serial No.	:	112NDRF88174	Date of Test	:	Aug 14, 2012
Test Mode	:	D-Sub 640*480@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	46.82	0.25	47.07	64.11	17.04	QP
	0.343	40.29	0.31	40.60	59.13	18.53	
	0.686	34.43	0.19	34.62	56.00	21.38	
	3.759	33.28	0.48	33.76	56.00	22.24	
	9.654	33.94	0.73	34.67	60.00	25.33	
	15.552	41.84	0.84	42.68	60.00	17.32	
	0.188	36.80	0.25	37.05	54.11	17.06	AV
	0.343	29.60	0.31	29.91	49.13	19.22	
	0.686	24.40	0.19	24.59	46.00	21.41	
	3.759	23.60	0.48	24.08	46.00	21.92	
	9.654	23.50	0.73	24.23	50.00	25.77	
	15.552	31.50	0.84	32.34	50.00	17.66	
Neutral	**0.188**	**47.63**	**0.12**	**47.75**	**64.11**	**16.36**	QP
	0.339	40.62	0.14	40.76	59.22	18.46	
	0.694	34.04	0.20	34.24	56.00	21.76	
	3.720	34.47	0.38	34.85	56.00	21.15	
	9.451	34.32	0.49	34.81	60.00	25.19	
	15.552	42.56	0.73	43.29	60.00	16.71	
	0.188	37.20	0.12	37.32	54.11	16.79	AV
	0.339	29.90	0.14	30.04	49.22	19.18	
	0.694	24.80	0.20	25.00	46.00	21.00	
	3.720	24.80	0.38	25.18	46.00	20.82	
	9.451	24.80	0.49	25.29	50.00	24.71	
	15.552	32.50	0.73	33.23	50.00	16.77	

TEST ENGINEER: SAWEN LI

4 RADIATED EMISSION TEST

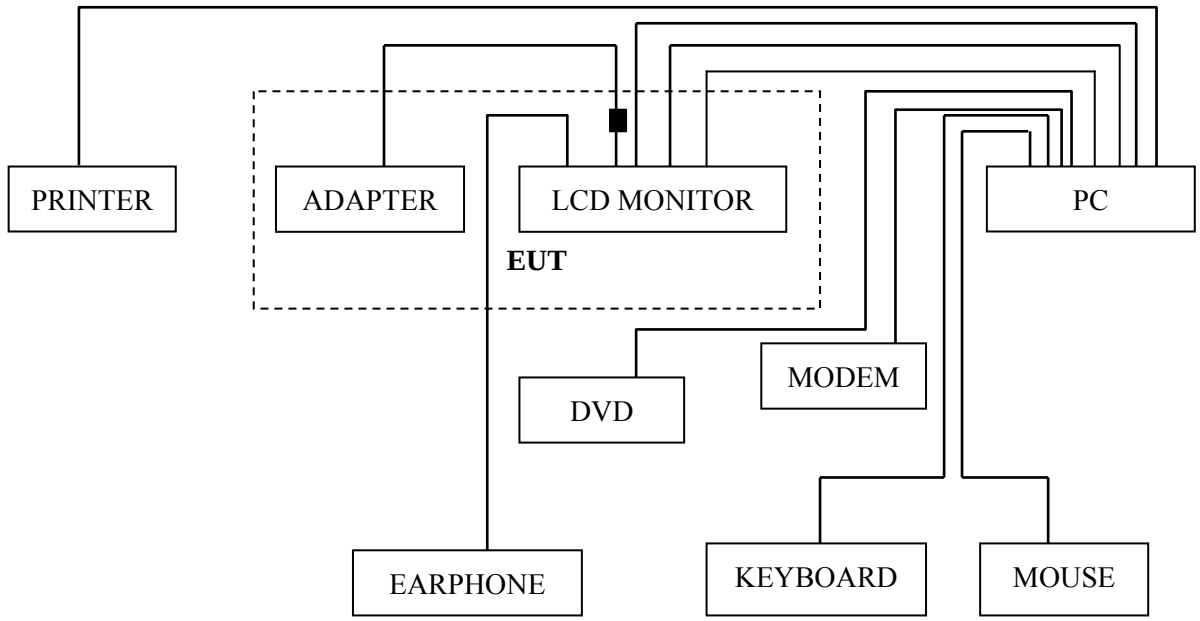
4.1 Test Equipment

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.	50Ω 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

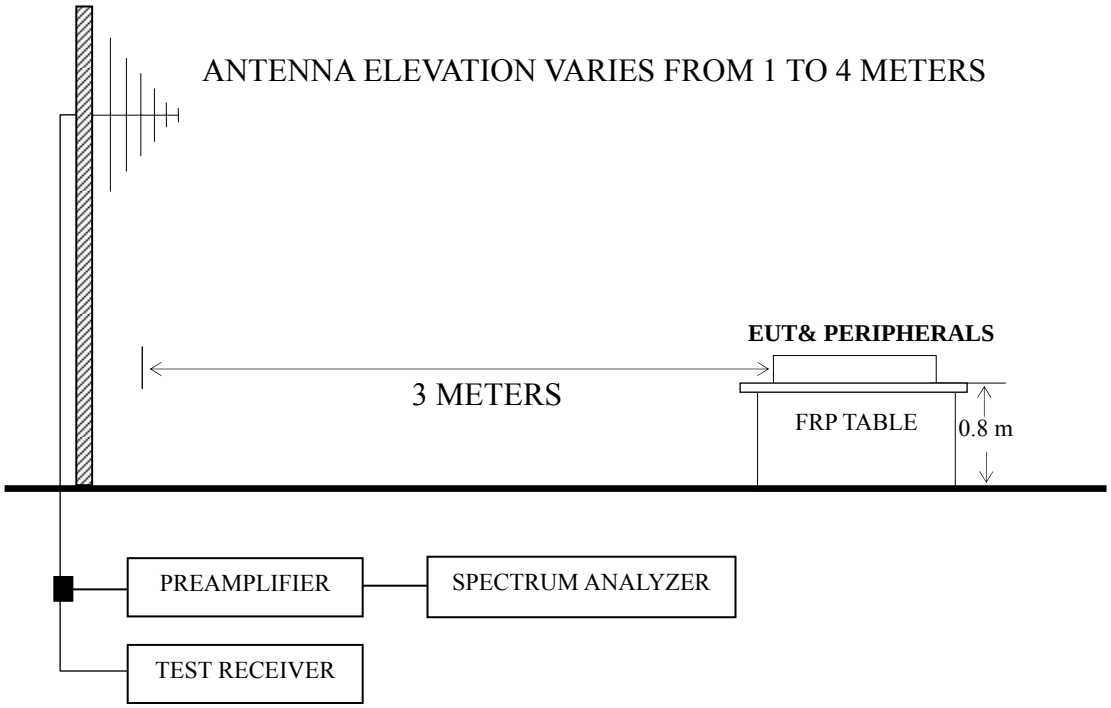
4.2.1 EUT and Peripherals



■ : Ferrite core

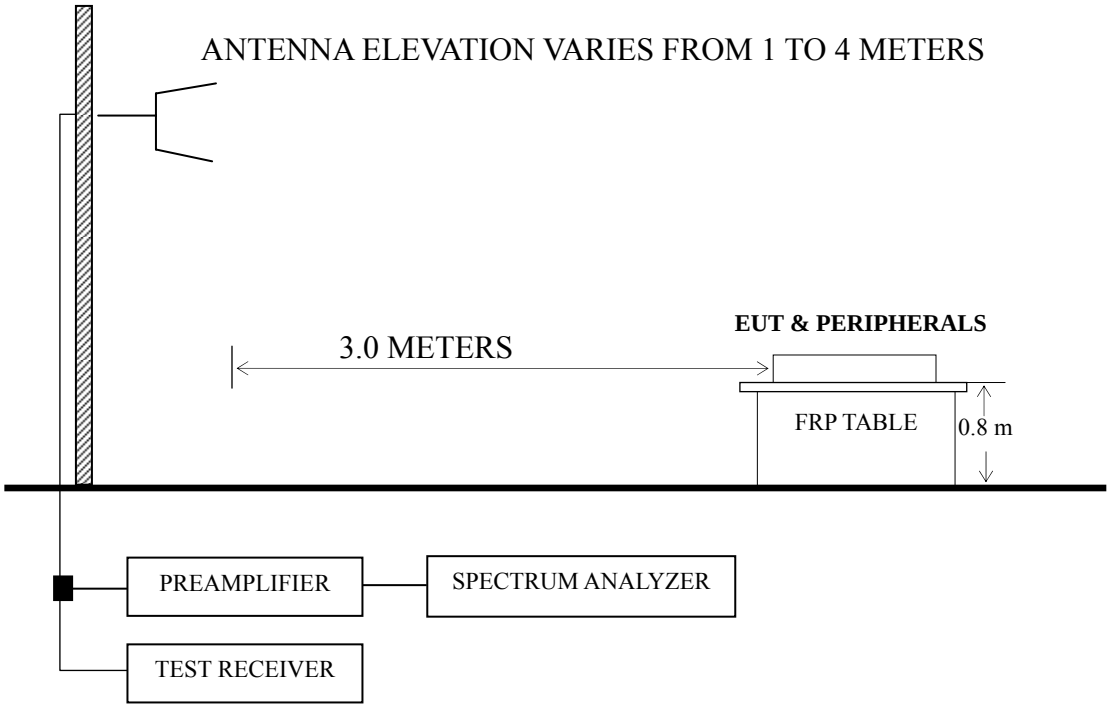
4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



■ : 50 ohm Coaxial Switch

4.2.2.2 Above 1GHz



■ : 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) 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
HDMI 1080P	P28
D-Sub 1680*1050@60Hz	**P29 – P30**
D-Sub 1280*1024@75Hz	P31
D-Sub 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.(< 1GHz)
NOTE 3 – Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading.(> 1GHz)
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 D-Sub 1680*1050@60Hz test mode. The worst emission at horizontal polarization was detected at 439.340 MHz with corrected signal level of 43.85 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.30 m height and the turntable was at 240°. The worst emission at vertical polarization was detected at 649.830 MHz with corrected signal level of 39.84 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.30 m height and the turntable was at 150°.

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	E2342VA	Humidity :	60%RH
Serial No.	:	112NDRF88174	Date of Test :	Aug 16, 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	50.370	26.34	8.51	0.93	35.78	40.00	4.22
	88.200	22.92	10.93	1.70	35.55	43.50	7.95
	230.790	24.90	11.10	2.55	38.55	46.00	7.45
	395.690	19.69	16.20	2.98	38.87	46.00	7.13
	494.630	**22.21**	**17.53**	**3.25**	**42.99**	**46.00**	**3.01**
	593.570	14.02	18.17	3.45	35.64	46.00	10.36
Vertical	50.370	20.72	8.51	0.93	30.16	40.00	9.84
	98.870	15.83	11.31	1.83	28.97	43.50	14.53
	131.850	20.18	10.78	2.11	33.07	43.50	10.43
	230.790	23.55	11.10	2.55	37.20	46.00	8.80
	395.690	**21.19**	**16.20**	**2.98**	**40.37**	**46.00**	**5.63**
	494.630	17.40	17.53	3.25	38.18	46.00	7.82

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	E2342VA	Humidity :	60%RH
Serial No.	:	112NDRF88174	Date of Test :	Aug 16, 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	149.310	21.05	10.43	2.23	33.71	43.50	9.79
	210.420	18.89	10.22	2.46	31.57	43.50	11.93
	296.750	16.06	13.63	2.75	32.44	46.00	13.56
	446.130	**22.55**	**16.92**	**3.11**	**42.58**	**46.00**	**3.42**
	676.990	13.02	19.22	3.64	35.88	46.00	10.12
	891.360	15.64	20.32	4.89	40.85	46.00	5.15
Vertical	62.010	22.38	9.28	1.23	32.89	40.00	7.11
	88.200	23.14	10.93	1.70	35.77	43.50	7.73
	136.700	21.85	10.69	2.15	34.69	43.50	8.81
	210.420	22.54	10.22	2.46	35.22	43.50	8.28
	446.130	**22.03**	**16.92**	**3.11**	**42.06**	**46.00**	**3.94**
	593.570	16.15	18.17	3.45	37.77	46.00	8.23

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	E2342VA	Humidity :	60%RH
Serial No.	:	112NDRF88174	Date of Test :	Aug 16, 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	36.790	11.28	14.57	0.85	26.70	40.00	13.30
	149.310	22.22	10.43	2.23	34.88	43.50	8.62
	247.280	21.41	11.85	2.60	35.86	46.00	10.14
	445.160	13.98	16.90	3.11	33.99	46.00	12.01
	593.570	17.39	18.17	3.45	39.01	46.00	6.99
	890.390	**16.57**	**20.33**	**4.89**	**41.79**	**46.00**	**4.21**
Vertical	89.170	22.57	10.96	1.72	35.25	43.50	8.25
	136.700	**24.77**	**10.69**	**2.15**	**37.61**	**43.50**	**5.89**
	191.990	24.03	9.87	2.40	36.30	43.50	7.20
	445.160	17.81	16.90	3.11	37.82	46.00	8.18
	593.570	16.63	18.17	3.45	38.25	46.00	7.75
	658.560	16.62	18.97	3.60	39.19	46.00	6.81

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	E2342VA	Humidity :	60%RH
Serial No.	:	112NDRF88174	Date of Test :	Aug 16, 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	98.870	18.55	11.31	1.03	30.89	43.50	12.61
	159.980	17.40	10.25	1.28	28.93	43.50	14.57
	216.240	21.52	10.45	1.50	33.47	46.00	12.53
	315.180	18.62	14.12	1.81	34.55	46.00	11.45
	431.580	**17.08**	**16.72**	**2.13**	**35.93**	**46.00**	**10.07**
	800.180	11.28	20.60	2.89	34.77	46.00	11.23
Vertical	36.790	11.53	14.57	0.69	26.79	40.00	13.21
	87.230	**22.34**	**10.88**	**0.98**	**34.20**	**40.00**	**5.80**
	214.300	24.01	10.37	1.50	35.88	43.50	7.62
	431.580	18.62	16.72	2.13	37.47	46.00	8.53
	541.190	14.89	17.86	2.33	35.08	46.00	10.92
	873.900	16.68	20.37	2.98	40.03	46.00	5.97

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	E2342VA	Humidity :	60%RH
Serial No.	:	112NDRF88174	Date of Test :	Aug 16, 2012
Test Mode	:	D-Sub 1680*1050@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	106.630	15.86	11.24	1.92	--	29.02	43.50	14.48	QP
	146.400	28.34	10.49	2.20	--	41.03	43.50	2.47	
	292.870	24.41	13.53	2.74	--	40.68	46.00	5.32	
	439.340	**23.94**	**16.82**	**3.09**	**--**	**43.85**	**46.00**	**2.15**	
	666.320	15.25	19.08	3.62	--	37.95	46.00	8.05	
	877.780	17.07	20.36	4.75	--	42.18	46.00	3.82	
	1020.000	49.57	24.98	5.22	38.16	41.61	74.00	32.39	PK
	1180.000	51.13	25.71	5.34	37.81	44.37	74.00	29.63	
	1250.000	52.43	26.08	5.42	37.65	46.28	74.00	27.72	
	1280.000	51.93	26.23	5.47	37.56	46.07	74.00	27.93	
	1520.000	48.05	27.02	5.83	36.92	43.98	74.00	30.02	
	1620.000	49.17	27.10	5.96	36.72	45.51	74.00	28.49	
	1020.000	40.57	24.98	5.22	38.16	32.61	54.00	21.39	AV
	1180.000	36.13	25.71	5.34	37.81	29.37	54.00	24.63	
	1250.000	39.43	26.08	5.42	37.65	33.28	54.00	20.72	
	1280.000	37.93	26.23	5.47	37.56	32.07	54.00	21.93	
	1520.000	37.05	27.02	5.83	36.92	32.98	54.00	21.02	
	1620.000	34.17	27.10	5.96	36.72	30.51	54.00	23.49	

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :		22℃
Model No.	:	E2342VA	Humidity	:	60%RH
Serial No.	:	112NDRF88174	Date of Test	:	Aug 16, 2012
Test Mode	:	D-Sub 1680*1050@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
Vertical	88.200	23.47	10.93	1.70	--	36.10	43.50	7.40	QP
	191.990	24.28	9.87	2.40	--	36.55	43.50	6.95	
	292.870	18.12	13.53	2.74	--	34.39	46.00	11.61	
	439.340	19.71	16.82	3.09	--	39.62	46.00	6.38	
	584.840	15.82	18.12	3.44	--	37.38	46.00	8.62	
	649.830	**17.41**	**18.85**	**3.58**	--	**39.84**	**46.00**	**6.16**	
	1080.000	50.01	25.24	4.50	38.03	41.72	74.00	32.28	PK
	1170.000	49.02	25.66	4.51	37.83	41.36	74.00	32.64	
	1315.000	51.96	26.39	4.53	37.48	45.40	74.00	28.60	
	1465.000	47.64	26.90	4.55	37.06	42.03	74.00	31.97	
	1600.000	52.21	27.08	4.56	36.76	47.09	74.00	26.91	
	1850.000	47.84	27.30	4.64	36.37	43.41	74.00	30.59	
	1080.000	38.01	25.24	4.50	38.03	29.72	54.00	24.28	AV
	1170.000	35.02	25.66	4.51	37.83	27.36	54.00	26.64	
	1315.000	37.96	26.39	4.53	37.48	31.40	54.00	22.60	
	1465.000	34.64	26.90	4.55	37.06	29.03	54.00	24.97	
	1600.000	43.21	27.08	4.56	36.76	38.09	54.00	15.91	
	1850.000	34.84	27.30	4.64	36.37	30.41	54.00	23.59	

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :		22℃
Model No.	:	E2342VA	Humidity	:	60%RH
Serial No.	:	112NDRF88174	Date of Test	:	Aug 16, 2012
Test Mode	:	D-Sub 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	62.980	21.05	9.36	1.26	31.67	40.00	8.33
	88.200	23.61	10.93	1.70	36.24	43.50	7.26
	198.780	26.26	9.81	2.42	38.49	43.50	5.01
	431.580	20.81	16.72	3.08	40.61	46.00	5.39
	600.360	17.52	18.20	3.47	39.19	46.00	6.81
	755.560	**18.81**	**20.12**	**3.80**	**42.73**	**46.00**	**3.27**
Vertical	36.790	9.95	14.57	0.85	25.37	40.00	14.63
	107.600	27.34	11.22	1.92	40.48	43.50	3.02
	263.770	24.50	12.57	2.65	39.72	46.00	6.28
	323.910	23.74	14.38	2.82	40.94	46.00	5.06
	431.580	**23.82**	**16.72**	**3.08**	**43.62**	**46.00**	**2.38**
	540.220	21.43	17.84	3.34	42.61	46.00	3.39

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	E2342VA	Humidity :	60%RH
Serial No.	:	112NDRF88174	Date of Test :	Aug 16, 2012
Test Mode	:	D-Sub 640*480@60Hz		

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	**146.400**	**26.34**	**10.49**	**2.20**	**39.03**	**43.50**	**4.47**
	221.090	27.62	10.68	2.51	40.81	46.00	5.19
	292.870	22.41	13.53	2.74	38.68	46.00	7.32
	439.340	20.94	16.82	3.09	40.85	46.00	5.15
	666.320	14.25	19.08	3.62	36.95	46.00	9.05
	877.780	16.07	20.36	4.75	41.18	46.00	4.82
Vertical	62.010	19.37	9.28	1.23	29.88	40.00	10.12
	89.170	22.29	10.96	1.72	34.97	43.50	8.53
	191.990	23.28	9.87	2.40	35.55	43.50	7.95
	292.870	18.12	13.53	2.74	34.39	46.00	11.61
	439.340	19.71	16.82	3.09	39.62	46.00	6.38
	877.780	**17.67**	**20.36**	**4.75**	**42.78**	**46.00**	**3.22**

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.