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

LCD Monitor

Model No.: N2311AZ

Serial No.: E1202213-01/01

FCC ID : BEJN2311AZ

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.
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Report No. : ACI-F12035
Date of Test : Feb 29 – Mar 03, 2012
Date of Report : Mar 07, 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. : N2311AZ
		(B) Serial No. : E1202213-01/01
		(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: N2311AZ; S/N: E1202213-01/01) which was tested in 3m anechoic chamber Feb 29 – Mar 03, 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 : Feb 29 – Mar 03, 2012 Date of Report : Mar 07, 2012

Producer : Yenny Yu.
YENNY YU / 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.	:	N2311AZ
Serial No.	:	E1202213-01/01
Real Power	:	23.10W
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	:	Manufacturer : LG Display M/N : LM230WF3
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
Power Cord		Unshielded, Detachable, 1.50m
Note	:	The D-Sub cable #2 was selected to be used in the test.

Remark:

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

Bottom Port:

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

(2) One D-Sub Out Port
: Connected with LCD Monitor

(3) One DVI Out Port
: Connected with LCD Monitor

(4) One USB Port
: Connected with Keyboard #1

(5) One USB Port
: Connected with Mouse #1

(6) One DC In Port
: Connected with Adapter

Side Port:

(7) One Earphone Port
: Connected with Earphone

(8) One Microphone Port
: Connected with Microphone

(9) Two USB Ports
: Connected with HDD #1/#2

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx7200MT
Serial Number	:	CNG622017W
Power Cord	:	Unshielded, Detachable, 1.8m
Certificate	:	FCC DoC; CE/EMC; VCCI; C-Tick; UL BSMI (R33001) 3C (A000111) MIC (E-A011-04-2659(B))

2.2.2 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 #1

Manufacturer	:	HP
Model Number	:	SK-2880
Serial Number	:	BC346VN2N9
Data Cable	:	Shielded, Undetachable, 1.8m
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.5 Keyboard #2

Manufacturer	:	Microsoft
Model Number	:	RT2300
Serial Number	:	7668200662248
Data Cable	:	Shielded, Undetachable, 1.8m
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.6 Mouse #1

Manufacturer	:	Microsoft
Model Number	:	RT2300
Serial Number	:	6965712071551
Data Cable	:	Shielded, Undetachable, 1.8m.
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.7 Mouse #2

Manufacturer	:	HP
Model Number	:	SBF96
Serial Number	:	17441-00
Data Cable	:	Shielded, Undetachable, 1.8m.
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.8 Modem

Manufacturer	:	TP-LINK
Model Number	:	TM-EC5658V
Serial Number	:	07123301053
Data Cable	:	Shielded, Detachable, 1.8m
Certificate	:	FCC DoC, CE/EMC, CCC

2.2.9 LCD Monitor

Manufacturer	:	Benq
Model Number	:	FP241W
Serial Number	:	ET61700278C
Certificate	:	FCC DoC, CE/EMC, CCC

2.2.10 Microphone

Manufacturer : Microsoft
Serial Number : 001

2.2.11 Earphone

Manufacturer : SONY
Model Number : MDR-E808
Serial Number : 1808030805305506

2.2.12 HDD #1

Manufacturer : ACCOM
Model Number : F12-UF
Serial Number : A01002224A60007

2.2.13 HDD #2

Manufacturer : ACCOM
Model Number : F12-UF
Serial Number : A01002224860006

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

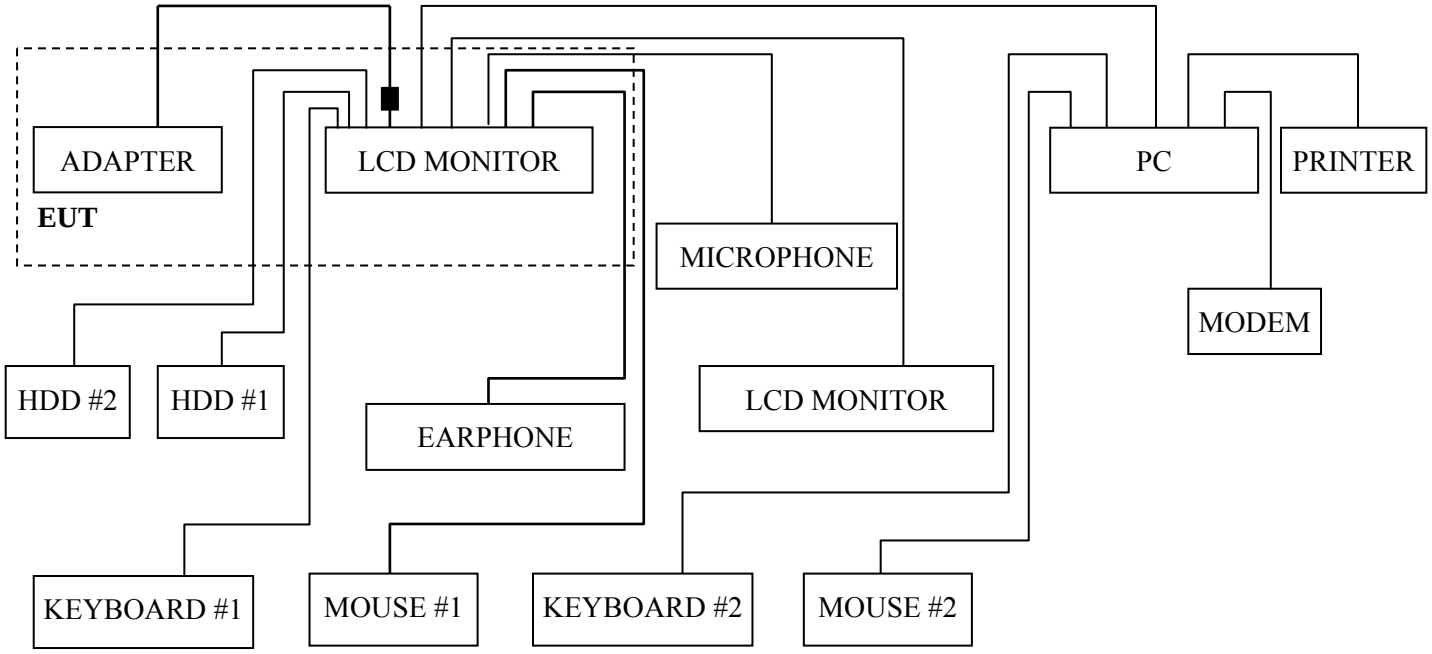
3.1 Test Equipment

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.	50Ω Terminator	Anritsu	BNC	001	Mar 22, 2011	Mar 22, 2012
6.	Software	Audix	E3	SET00200 9804M592	--	--

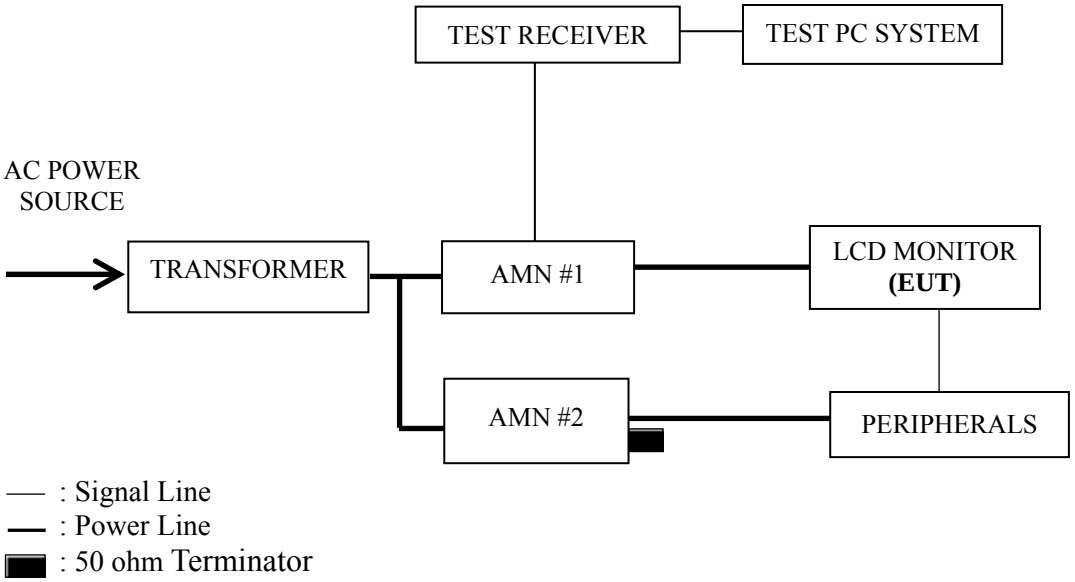
3.2 Block Diagram of Test Setup

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 Input).

3.5.5 Repeat above procedure from 3.5.3 to 3.5.4 for difference test mode.

3.5.6 For PCoIP test mode, the EUT display through LAN port.

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
D-Sub 1680*1050@60Hz
D-Sub 1280*1024@60Hz
D-Sub 640*480@60Hz
PCoIP

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**
D-Sub 1680*1050@60Hz	P14
D-Sub 1280*1024@60Hz	P15
D-Sub 640*480@60Hz	P16
PCoIP	P17

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 0.150 MHz (Quasi-Peak Value) with corrected signal level of 57.98 dB (μV) (limit is 66.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	N2311AZ	Humidity	:	48%RH
Serial No.	:	E1202213-01/01	Date of Test	:	Feb 29, 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	0.150	55.30	0.22	55.52	66.00	10.48	QP
	0.230	44.52	0.22	44.74	62.44	17.70	
	0.426	33.38	0.31	33.69	57.33	23.64	
	0.813	24.46	0.40	24.86	56.00	31.14	
	3.472	27.89	0.50	28.39	56.00	27.61	
	14.672	39.01	0.86	39.87	60.00	20.13	
	0.150	36.52	0.22	36.74	56.00	19.26	AV
	0.230	34.29	0.22	34.51	52.44	17.93	
	0.426	23.09	0.31	23.40	47.33	23.93	
	0.813	14.37	0.40	14.77	46.00	31.23	
	3.472	17.57	0.50	18.07	46.00	27.93	
	14.672	28.67	0.86	29.53	50.00	20.47	
Neutral	**0.150**	**57.80**	**0.18**	**57.98**	**66.00**	**8.02**	QP
	0.233	44.57	0.18	44.75	62.35	17.60	
	0.406	32.85	0.23	33.08	57.73	24.65	
	0.813	25.19	0.34	25.53	56.00	30.47	
	3.509	29.47	0.69	30.16	56.00	25.84	
	14.672	38.79	1.16	39.95	60.00	20.05	
	0.150	36.47	0.18	36.65	56.00	19.35	AV
	0.233	34.26	0.18	34.44	52.35	17.91	
	0.406	22.57	0.23	22.80	47.73	24.93	
	0.813	15.36	0.34	15.70	46.00	30.30	
	3.509	18.97	0.69	19.66	46.00	26.34	
	14.672	28.61	1.16	29.77	50.00	20.23	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	N2311AZ	Humidity	:	48%RH
Serial No.	:	E1202213-01/01	Date of Test	:	Feb 29, 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	0.150	56.50	0.22	56.72	66.00	9.28	QP
	0.182	51.43	0.23	51.66	64.42	12.76	
	0.400	35.07	0.29	35.36	57.86	22.50	
	0.813	24.27	0.40	24.67	56.00	31.33	
	3.901	28.76	0.54	29.30	56.00	26.70	
	14.828	38.37	0.86	39.23	60.00	20.77	
	0.150	36.87	0.22	37.09	56.00	18.91	AV
	0.182	36.27	0.23	36.50	54.42	17.92	
	0.400	24.69	0.29	24.98	47.86	22.88	
	0.813	14.49	0.40	14.89	46.00	31.11	
	3.901	18.36	0.54	18.90	46.00	27.10	
	14.828	29.40	0.86	30.26	50.00	19.74	
Neutral	**0.150**	**56.80**	**0.18**	**56.98**	**66.00**	**9.02**	QP
	0.230	43.90	0.18	44.08	62.44	18.36	
	0.400	34.43	0.23	34.66	57.86	23.20	
	0.800	23.52	0.33	23.85	56.00	32.15	
	3.364	28.73	0.67	29.40	56.00	26.60	
	14.672	38.43	1.16	39.59	60.00	20.41	
	0.150	37.29	0.18	37.47	56.00	18.53	AV
	0.230	34.52	0.18	34.70	52.44	17.74	
	0.400	24.81	0.23	25.04	47.86	22.82	
	0.800	14.35	0.33	14.68	46.00	31.32	
	3.364	18.42	0.67	19.09	46.00	26.91	
	14.672	28.31	1.16	29.47	50.00	20.53	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	N2311AZ	Humidity	:	48%RH
Serial No.	:	E1202213-01/01	Date of Test	:	Feb 29, 2012
Test Mode	:	D-Sub 1280*1024@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.150**	**56.20**	**0.22**	**56.42**	**66.00**	**9.58**	QP
	0.230	44.68	0.22	44.90	62.44	17.54	
	0.402	34.88	0.29	35.17	57.81	22.64	
	0.862	23.88	0.38	24.26	56.00	31.74	
	3.328	28.02	0.48	28.50	56.00	27.50	
	14.672	40.29	0.86	41.15	60.00	18.85	
	0.150	36.81	0.22	37.03	56.00	18.97	AV
	0.230	34.29	0.22	34.51	52.44	17.93	
	0.402	25.68	0.29	25.97	47.81	21.84	
	0.862	14.38	0.38	14.76	46.00	31.24	
	3.328	17.68	0.48	18.16	46.00	27.84	
	14.672	29.87	0.86	30.73	50.00	19.27	
Neutral	0.172	52.40	0.19	52.59	64.86	12.27	QP
	0.237	44.06	0.18	44.24	62.22	17.98	
	0.400	32.96	0.23	33.19	57.86	24.67	
	0.804	24.23	0.33	24.56	56.00	31.44	
	3.565	28.94	0.71	29.65	56.00	26.35	
	14.672	38.67	1.16	39.83	60.00	20.17	
	0.172	36.81	0.19	37.00	54.86	17.86	AV
	0.237	33.57	0.18	33.75	52.22	18.47	
	0.400	23.41	0.23	23.64	47.86	24.22	
	0.804	14.53	0.33	14.86	46.00	31.14	
	3.565	19.23	0.71	19.94	46.00	26.06	
	14.672	28.16	1.16	29.32	50.00	20.68	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	N2311AZ	Humidity	:	48%RH
Serial No.	:	E1202213-01/01	Date of Test	:	Feb 29, 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	0.150	56.28	0.22	56.50	66.00	9.50	QP
	0.230	44.52	0.22	44.74	62.44	17.70	
	0.456	32.96	0.31	33.27	56.76	23.49	
	0.862	24.91	0.38	25.29	56.00	30.71	
	4.672	28.76	0.55	29.31	56.00	26.69	
	14.672	38.96	0.86	39.82	60.00	20.18	
	0.150	36.48	0.22	36.70	56.00	19.30	AV
	0.230	34.21	0.22	34.43	52.44	18.01	
	0.456	23.40	0.31	23.71	46.76	23.05	
	0.862	14.62	0.38	15.00	46.00	31.00	
	4.672	18.42	0.55	18.97	46.00	27.03	
	14.672	28.14	0.86	29.00	50.00	21.00	
Neutral	**0.150**	**56.54**	**0.18**	**56.72**	**66.00**	**9.28**	QP
	0.239	43.84	0.18	44.02	62.13	18.11	
	0.406	33.43	0.23	33.66	57.73	24.07	
	0.804	24.24	0.33	24.57	56.00	31.43	
	3.565	29.22	0.71	29.93	56.00	26.07	
	14.672	38.09	1.16	39.25	60.00	20.75	
	0.150	37.05	0.18	37.23	56.00	18.77	AV
	0.239	33.71	0.18	33.89	52.13	18.24	
	0.406	23.58	0.23	23.81	47.73	23.92	
	0.804	13.58	0.33	13.91	46.00	32.09	
	3.565	18.64	0.71	19.35	46.00	26.65	
	14.672	27.64	1.16	28.80	50.00	21.20	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	N2311AZ	Humidity	:	48%RH
Serial No.	:	E1202213-01/01	Date of Test	:	Feb 29, 2012
Test Mode	:	PCoIP			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	56.28	0.22	56.50	66.00	9.50	QP
	0.179	52.05	0.23	52.28	64.52	12.24	
	0.402	39.29	0.29	39.58	57.81	18.23	
	0.804	28.15	0.40	28.55	56.00	27.45	
	3.799	32.06	0.53	32.59	56.00	23.41	
	14.672	41.78	0.86	42.64	60.00	17.36	
	0.150	36.50	0.22	36.72	56.00	19.28	AV
	0.179	36.20	0.23	36.43	54.52	18.09	
	0.402	28.47	0.29	28.76	47.81	19.05	
	0.804	18.06	0.40	18.46	46.00	27.54	
	3.799	19.86	0.53	20.39	46.00	25.61	
	14.672	31.54	0.86	32.40	50.00	17.60	
Neutral	**0.150**	**57.32**	**0.18**	**57.50**	**66.00**	**8.50**	QP
	0.174	53.56	0.19	53.75	64.77	11.02	
	0.230	45.14	0.18	45.32	62.44	17.12	
	0.400	35.07	0.23	35.30	57.86	22.56	
	3.509	29.30	0.69	29.99	56.00	26.01	
	14.672	39.33	1.16	40.49	60.00	19.51	
	0.150	37.70	0.18	37.88	56.00	18.12	AV
	0.174	36.68	0.19	36.87	54.77	17.90	
	0.230	34.86	0.18	35.04	52.44	17.40	
	0.400	24.86	0.23	25.09	47.86	22.77	
	3.509	20.54	0.69	21.23	46.00	24.77	
	14.672	29.47	1.16	30.63	50.00	19.37	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

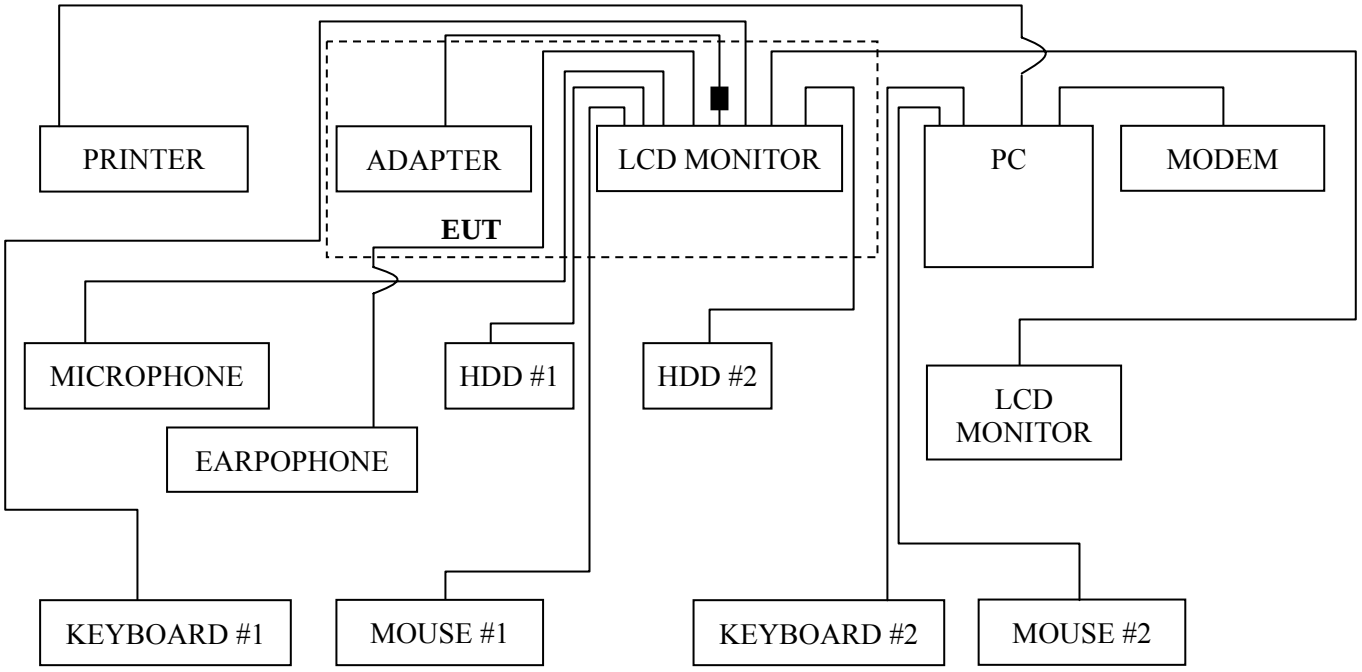
4.1 Test Equipment

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.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
6.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Sep 18, 2011	Mar 18, 2012
7.	Software	Audix	E3	SET00200 9912M295-2	--	--

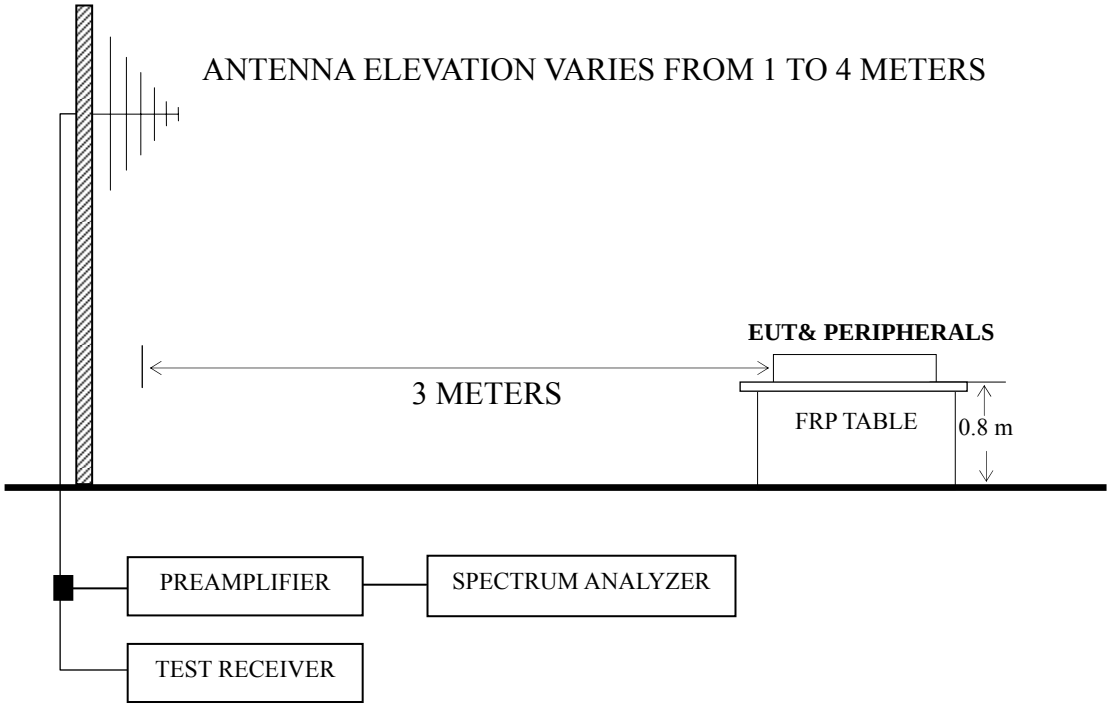
4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals



■ : Ferrite core

4.2.2 Radiated emission test setup



■ : 50 ohm Coaxial Switch

4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)]

Frequency (MHz)	Distance (m)	Field strength limits	
		(μV/m)	dB (μV/m)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)
NOTE 2 - The tighter limit applies at the band edges.
NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz.
NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.

4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2003 requirements during radiated emission test.

The 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	**P23 – P24**
D-Sub 1680*1050@60Hz	P25
D-Sub 1280*1024@60Hz	P26
D-Sub 640*480@60Hz	P27
PCoIP	P28

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 1920*1080@60Hz test mode. The worst emission at horizontal polarization was detected at 72.680 MHz with corrected signal level of 37.07 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 240°. The worst emission at vertical polarization was detected at 82.380 MHz with corrected signal level of 32.42 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 145°.

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	N2311AZ	Humidity :	60%RH
Serial No.	:	E1202213-01/01	Date of Test :	Mar 03, 2012
Test Mode	:	D-Sub 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	**72.680**	**25.52**	**10.08**	**1.47**	--	**37.07**	**40.00**	**2.93**	QP
	193.930	25.17	9.86	2.41	--	37.44	43.50	6.06	
	250.190	26.17	11.99	2.61	--	40.77	46.00	5.23	
	322.940	19.44	14.34	2.82	--	36.60	46.00	9.40	
	415.090	11.11	16.50	3.02	--	30.63	46.00	15.37	
	698.330	9.02	19.47	3.68	--	32.17	46.00	13.83	
	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	

EUT	:	LCD Monitor	Temperature :		22℃
Model No.	:	N2311AZ	Humidity	:	60%RH
Serial No.	:	E1202213-01/01	Date of Test	:	Mar 03, 2012
Test Mode	:	D-Sub 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
Vertical	**82.380**	**20.12**	**10.67**	**1.63**	--	**32.42**	**40.00**	**7.58**	QP
	143.490	18.12	10.54	2.19	--	30.85	43.50	12.65	
	198.780	22.71	9.81	2.42	--	34.94	43.50	8.56	
	250.190	20.73	11.99	2.61	--	35.33	46.00	10.67	
	415.090	13.47	16.50	3.02	--	32.99	46.00	13.01	
	710.940	9.05	19.63	3.70	--	32.38	46.00	13.62	
	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.	:	N2311AZ	Humidity :	60%RH
Serial No.	:	E1202213-01/01	Date of Test :	Mar 03, 2012
Test Mode	:	D-Sub 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	**75.590**	**24.26**	**10.27**	**1.53**	**36.06**	**40.00**	**3.94**
	198.780	25.30	9.81	2.42	37.53	43.50	5.97
	250.190	26.71	11.99	2.61	41.31	46.00	4.69
	322.940	20.73	14.34	2.82	37.89	46.00	8.11
	415.090	15.52	16.50	3.02	35.04	46.00	10.96
	698.330	8.59	19.47	3.68	31.74	46.00	14.26
Vertical	31.940	12.28	17.29	0.82	30.39	40.00	9.61
	82.380	**20.96**	**10.67**	**1.63**	**33.26**	**40.00**	**6.74**
	143.490	16.96	10.54	2.19	29.69	43.50	13.81
	247.280	20.21	11.85	2.60	34.66	46.00	11.34
	415.090	13.61	16.50	3.02	33.13	46.00	12.87
	710.940	8.64	19.63	3.70	31.97	46.00	14.03

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	N2311AZ	Humidity :	60%RH
Serial No.	:	E1202213-01/01	Date of Test :	Mar 03, 2012
Test Mode	:	D-Sub 1280*1024@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	**75.590**	**24.28**	**10.27**	**1.53**	**36.08**	**40.00**	**3.92**
	193.930	24.86	9.86	2.41	37.13	43.50	6.37
	247.280	26.75	11.85	2.60	41.20	46.00	4.80
	322.940	24.84	14.34	2.82	42.00	46.00	4.00
	415.090	14.67	16.50	3.02	34.19	46.00	11.81
	875.840	8.11	20.37	4.75	33.23	46.00	12.77
Vertical	**75.590**	**23.11**	**10.27**	**1.53**	**34.91**	**40.00**	**5.09**
	145.430	17.11	10.50	2.20	29.81	43.50	13.69
	247.280	19.58	11.85	2.60	34.03	46.00	11.97
	322.940	15.65	14.34	2.82	32.81	46.00	13.19
	415.090	13.73	16.50	3.02	33.25	46.00	12.75
	710.940	8.73	19.63	3.70	32.06	46.00	13.94

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	N2311AZ	Humidity :	60%RH
Serial No.	:	E1202213-01/01	Date of Test :	Mar 03, 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	75.590	24.20	10.27	1.53	36.00	40.00	4.00
	193.930	25.21	9.86	2.41	37.48	43.50	6.02
	247.280	27.02	11.85	2.60	41.47	46.00	4.53
	322.940	**25.27**	**14.34**	**2.82**	**42.43**	**46.00**	**3.57**
	415.090	14.56	16.50	3.02	34.08	46.00	11.92
	875.840	8.15	20.37	4.75	33.27	46.00	12.73
Vertical	**77.530**	**23.58**	**10.39**	**1.56**	**35.53**	**40.00**	**4.47**
	145.430	17.68	10.50	2.20	30.38	43.50	13.12
	193.930	19.41	9.86	2.41	31.68	43.50	11.82
	247.280	20.35	11.85	2.60	34.80	46.00	11.20
	322.940	17.76	14.34	2.82	34.92	46.00	11.08
	415.090	13.73	16.50	3.02	33.25	46.00	12.75

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	N2311AZ	Humidity :	60%RH
Serial No.	:	E1202213-01/01	Date of Test :	Mar 03, 2012
Test Mode	:	PCoIP		

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	75.590	23.47	10.27	1.53	35.27	40.00	4.73
	201.690	24.56	9.87	2.43	36.86	43.50	6.64
	322.940	20.40	14.34	2.82	37.56	46.00	8.44
	446.130	18.72	16.92	3.11	38.75	46.00	7.25
	594.540	13.68	18.17	3.45	35.30	46.00	10.70
	741.980	**18.56**	**19.98**	**3.78**	**42.32**	**46.00**	**3.68**
Vertical	**75.590**	**24.28**	**10.27**	**1.53**	**36.08**	**40.00**	**3.92**
	145.430	18.64	10.50	2.20	31.34	43.50	12.16
	193.930	16.28	9.86	2.41	28.55	43.50	14.95
	322.940	12.12	14.34	2.82	29.28	46.00	16.72
	424.790	12.26	16.62	3.06	31.94	46.00	14.06
	594.540	14.33	18.17	3.45	35.95	46.00	10.05

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.