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

LCD Monitor

Model No.: N2210WZT

Serial No.: E11101247-01/01

FCC ID : BEJN2210WZT

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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Shanghai 200233, China

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Report No. : ACI-F11150
Date of Test : Oct 10 – 25, 2011
Date of Report : Oct 28, 2011

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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.	: N2210WZT
	(B) Serial No.	: E11101247-01/01
	(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: N2210WZT; S/N: E11101247-01/01) which was tested in 3m anechoic chamber Oct 10 – 25, 2011 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 : Oct 10 – 25, 2011 Date of Report : Oct 28, 2011

Producer : Yenny Yu.
YENNY YU / Assistant

Review : Dio Yang.
DIO YANG / Assistant Manager

AUDIX® 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

Type of EUT : ☑ Production ☐ Pre-product ☐ Pro-type

Model No. : N2210WZT

Serial No. : E11101247-01/01

Note : The data of N2210WZT at rotate 90 degree condition (only radiated emission) was also tested and recorded in this report. The mode tested was the worst case of N2210WZT in normal condition.

Real Power : 40.30W

AC Adapter : Manufacturer : LITE-ON TECHNOLOGY CORPORATION
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 U.S.A., Inc.
1000 Sylvan Avenue, Englewood Cliffs,
NJ 07632, United States

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

LCD Panel : Manufacturer : LG Display
M/N : LM220WE5 (TL)(C1)

Max Resolution : 1680*1050@60Hz

D-Sub Cable : Shielded, Detachable, 1.50m, with no core on cable

Power Cord : Unshielded, Detachable, 1.80m

Remark:

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

Bottom Ports

(1) One DC In Port
: Connected with AC Adapter

(2) One USB Port
: Connected with Keyboard

(3) One USB Port
: Connected with Mouse

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

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

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

(7) One LAN Port
: Connected with PC

Side Ports

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

(2) One Earphone Port
: Connected with Earphone #1

(3) One Speaker Port
: Connected with Earphone #2

(4) One Microphone Port
: Connected with Microphone

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 Printer

Manufacturer	:	HP
Model Number	:	C3990A
Serial Number	:	JPZX020487
Data Cable	:	Shielded, Detachable, 1.5m
Certificate	:	GS, CE/EMC, C-Tick, FCC DoC

2.2.3 LCD Monitor

Manufacturer	:	BenQ
Model Number	:	FP241W
Serial Number	:	ET61700278CL0
Data Cable	:	Shielded, Detachable, 1.5m
Certificate	:	GS, CE/EMC, C-Tick, FCC DoC

2.2.4 Keyboard #1

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 Keyboard #2

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

2.2.6 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 Earphone #1 / #2

Manufacturer	:	SONY
Model Number	:	MDR-E808

2.2.10 HDD #1

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

2.2.11 HDD #1

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

2.2.12 Microphone

Manufacturer : Microsoft
Serial Number : 001

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 = 3.38 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

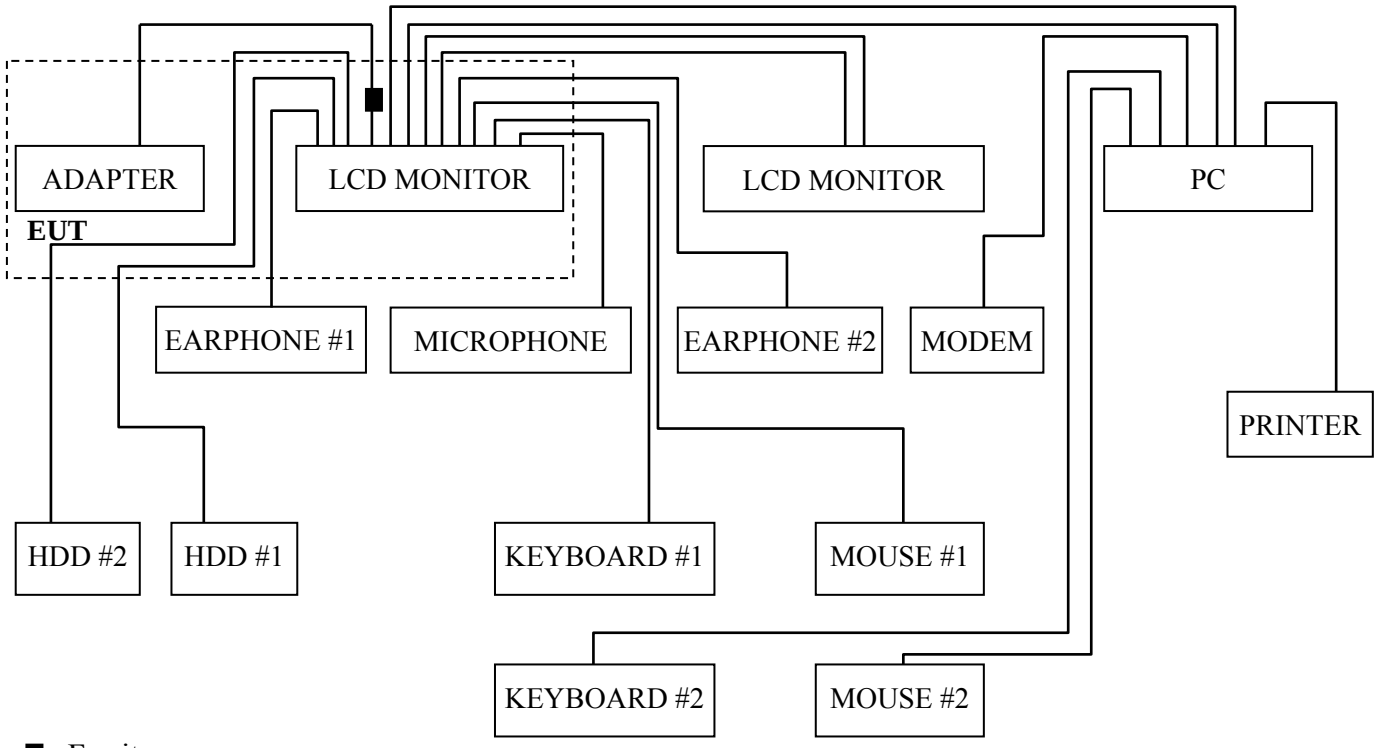
3.1 Test Equipment

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	--	--

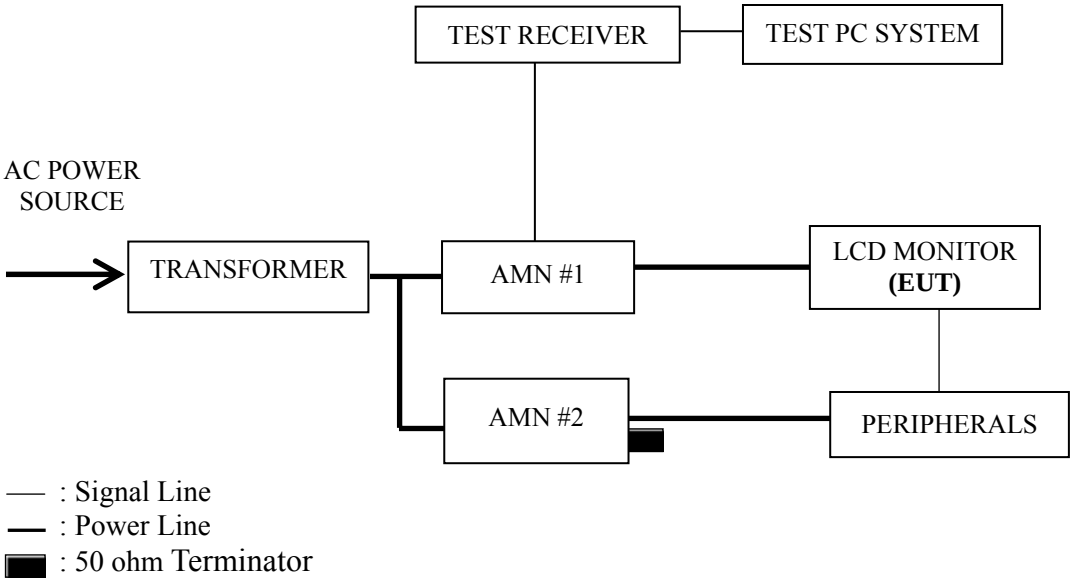
3.2 Block Diagram of Test Setup

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 In PCoIP mode, the PC connected with the EUT through LAN port and transmit video signal. The EUT then display "H" pattern.

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 640*480@60Hz
D-Sub 1280*1024@60Hz
D-Sub 1680*1050@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 640*480@60Hz	P13
D-Sub 1280*1024@60Hz	**P14**
D-Sub 1680*1050@60Hz	P15
PCoIP	P16

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 1280*1024@60Hz test mode. The worst emission is detected at 0.172 MHz (Average Value) with corrected signal level of 44.81 dB (μV) (limit is 54.86 dB (μV)), when the Line of the EUT is connected to AMN.

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	N2210WZT	Humidity	:	48%RH
Serial No.	:	E11101247-01/01	Date of Test	:	Oct 10, 2011
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	**0.174**	**53.76**	**0.23**	**53.99**	**64.77**	**10.78**	QP
	0.197	51.46	0.23	51.69	63.76	12.07	
	0.240	43.93	0.23	44.16	62.08	17.92	
	0.743	31.54	0.40	31.94	56.00	24.06	
	4.407	37.02	0.54	37.56	56.00	18.44	
	13.551	40.21	0.84	41.05	60.00	18.95	
	0.174	43.48	0.23	43.71	54.77	11.06	AV
	0.197	41.75	0.23	41.98	53.76	11.78	
	0.240	33.59	0.23	33.82	52.08	18.26	
	0.743	21.59	0.40	21.99	46.00	24.01	
	4.407	27.40	0.54	27.94	46.00	18.06	
	13.551	30.76	0.84	31.60	50.00	18.40	
Neutral	0.176	52.65	0.19	52.84	64.68	11.84	QP
	0.192	50.90	0.19	51.09	63.93	12.84	
	0.240	43.47	0.18	43.65	62.08	18.43	
	1.858	31.43	0.55	31.98	56.00	24.02	
	4.549	38.49	0.76	39.25	56.00	16.75	
	13.551	39.49	1.14	40.63	60.00	19.37	
	0.176	42.59	0.19	42.78	54.68	11.90	AV
	0.192	40.31	0.19	40.50	53.93	13.43	
	0.240	33.47	0.18	33.65	52.08	18.43	
	1.858	21.46	0.55	22.01	46.00	23.99	
	4.549	28.61	0.76	29.37	46.00	16.63	
	13.551	28.56	1.14	29.70	50.00	20.30	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	N2210WZT	Humidity	:	48%RH
Serial No.	:	E11101247-01/01	Date of Test	:	Oct 10, 2011
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	0.172	54.15	0.23	54.38	64.86	10.48	QP
	0.197	51.47	0.23	51.70	63.76	12.06	
	0.240	44.07	0.23	44.30	62.08	17.78	
	0.743	31.81	0.40	32.21	56.00	23.79	
	4.407	37.11	0.54	37.65	56.00	18.35	
	13.551	40.23	0.84	41.07	60.00	18.93	
	0.172	**44.58**	**0.23**	**44.81**	**54.86**	**10.05**	AV
	0.197	41.70	0.23	41.93	53.76	11.83	
	0.240	34.29	0.23	34.52	52.08	17.56	
	0.743	21.59	0.40	21.99	46.00	24.01	
	4.407	27.64	0.54	28.18	46.00	17.82	
	13.551	30.59	0.84	31.43	50.00	18.57	
Neutral	0.174	52.68	0.19	52.87	64.77	11.90	QP
	0.194	50.64	0.19	50.83	63.84	13.01	
	0.240	43.58	0.18	43.76	62.08	18.32	
	1.839	31.96	0.55	32.51	56.00	23.49	
	4.549	39.34	0.76	40.10	56.00	15.90	
	13.551	40.84	1.14	41.98	60.00	18.02	
	0.174	42.26	0.19	42.45	54.77	12.32	AV
	0.194	40.48	0.19	40.67	53.84	13.17	
	0.240	33.26	0.18	33.44	52.08	18.64	
	1.839	21.04	0.55	21.59	46.00	24.41	
	4.549	29.47	0.76	30.23	46.00	15.77	
	13.551	31.48	1.14	32.62	50.00	17.38	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	N2210WZT	Humidity	:	48%RH
Serial No.	:	E11101247-01/01	Date of Test	:	Oct 10, 2011
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	0.174	54.03	0.23	54.26	64.77	10.51	QP
	0.192	51.46	0.23	51.69	63.93	12.24	
	0.240	43.92	0.23	44.15	62.08	17.93	
	0.735	31.59	0.40	31.99	56.00	24.01	
	4.549	39.25	0.55	39.80	56.00	16.20	
	13.551	40.97	0.84	41.81	60.00	18.19	
	0.174	**44.26**	**0.23**	**44.49**	**54.77**	**10.28**	AV
	0.192	41.35	0.23	41.58	53.93	12.35	
	0.240	33.58	0.23	33.81	52.08	18.27	
	0.735	21.18	0.40	21.58	46.00	24.42	
	4.549	29.48	0.55	30.03	46.00	15.97	
	13.551	30.48	0.84	31.32	50.00	18.68	
Neutral	0.180	52.56	0.19	52.75	64.50	11.75	QP
	0.192	50.68	0.19	50.87	63.93	13.06	
	0.240	43.35	0.18	43.53	62.08	18.55	
	1.734	32.24	0.54	32.78	56.00	23.22	
	4.574	38.92	0.76	39.68	56.00	16.32	
	13.551	40.20	1.14	41.34	60.00	18.66	
	0.180	42.16	0.19	42.35	54.50	12.15	AV
	0.192	40.16	0.19	40.35	53.93	13.58	
	0.240	32.74	0.18	32.92	52.08	19.16	
	1.734	21.59	0.54	22.13	46.00	23.87	
	4.574	28.58	0.76	29.34	46.00	16.66	
	13.551	30.48	1.14	31.62	50.00	18.38	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	N2210WZT	Humidity	:	48%RH
Serial No.	:	E11101247-01/01	Date of Test	:	Oct 10, 2011
Test Mode	:	PCoIP			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.174**	**53.76**	**0.23**	**53.99**	**64.77**	**10.78**	QP
	0.197	51.46	0.23	51.69	63.76	12.07	
	0.240	43.93	0.23	44.16	62.08	17.92	
	0.743	31.54	0.40	31.94	56.00	24.06	
	4.407	37.02	0.54	37.56	56.00	18.44	
	13.551	40.21	0.84	41.05	60.00	18.95	
	0.174	43.26	0.23	43.49	54.77	11.28	AV
	0.197	41.26	0.23	41.49	53.76	12.27	
	0.240	33.48	0.23	33.71	52.08	18.37	
	0.743	21.59	0.40	21.99	46.00	24.01	
	4.407	27.96	0.54	28.50	46.00	17.50	
	13.551	30.47	0.84	31.31	50.00	18.69	
Neutral	0.175	51.52	0.19	51.71	64.72	13.01	QP
	0.192	46.90	0.19	47.09	63.93	16.84	
	0.270	42.91	0.19	43.10	61.12	18.02	
	0.989	32.24	0.44	32.68	56.00	23.32	
	4.549	38.49	0.76	39.25	56.00	16.75	
	13.479	38.59	1.14	39.73	60.00	20.27	
	0.175	41.26	0.19	41.45	54.72	13.27	AV
	0.192	36.48	0.19	36.67	53.93	17.26	
	0.270	32.64	0.19	32.83	51.12	18.29	
	0.989	23.15	0.44	23.59	46.00	22.41	
	4.549	28.63	0.76	29.39	46.00	16.61	
	13.479	28.94	1.14	30.08	50.00	19.92	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

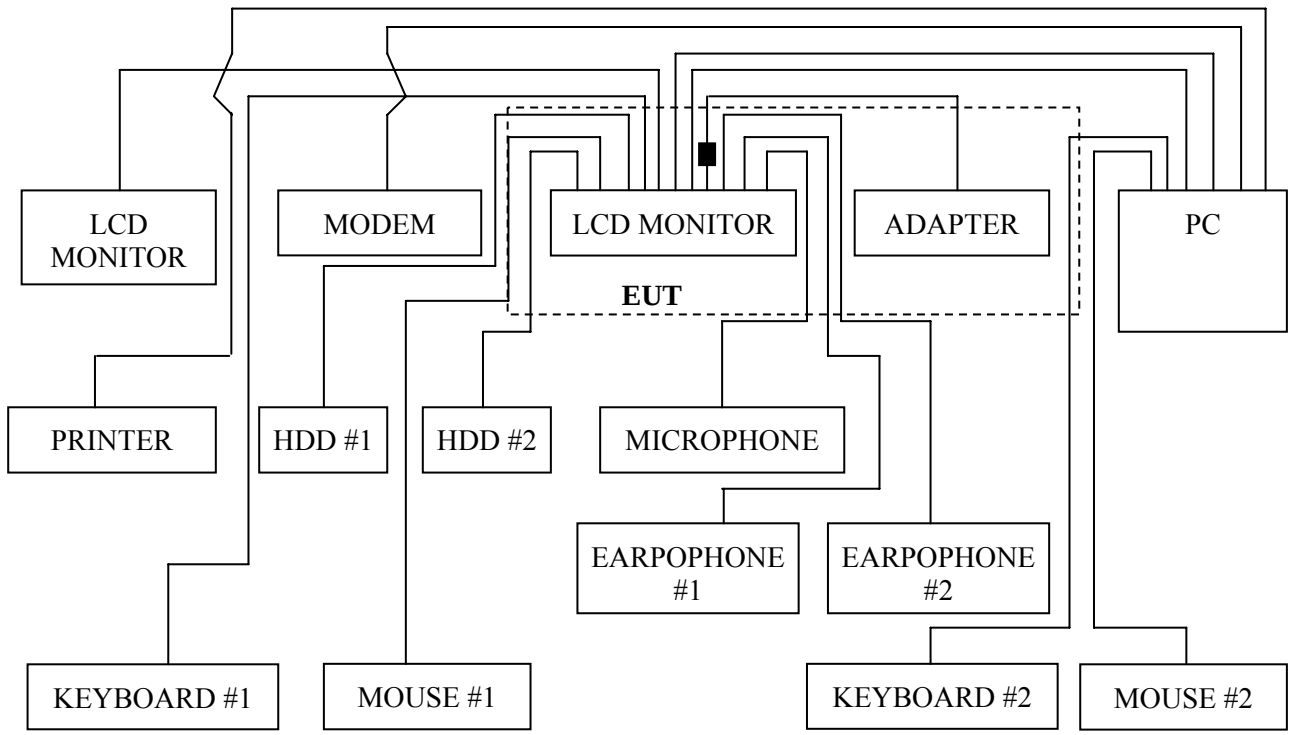
4.1 Test Equipment

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, 2010	Dec 01, 2011
5.	Horn Antenna	EMCO	3115	9607-4878	May 13, 2011	May 13, 2012
6.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
7.	50Ω 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

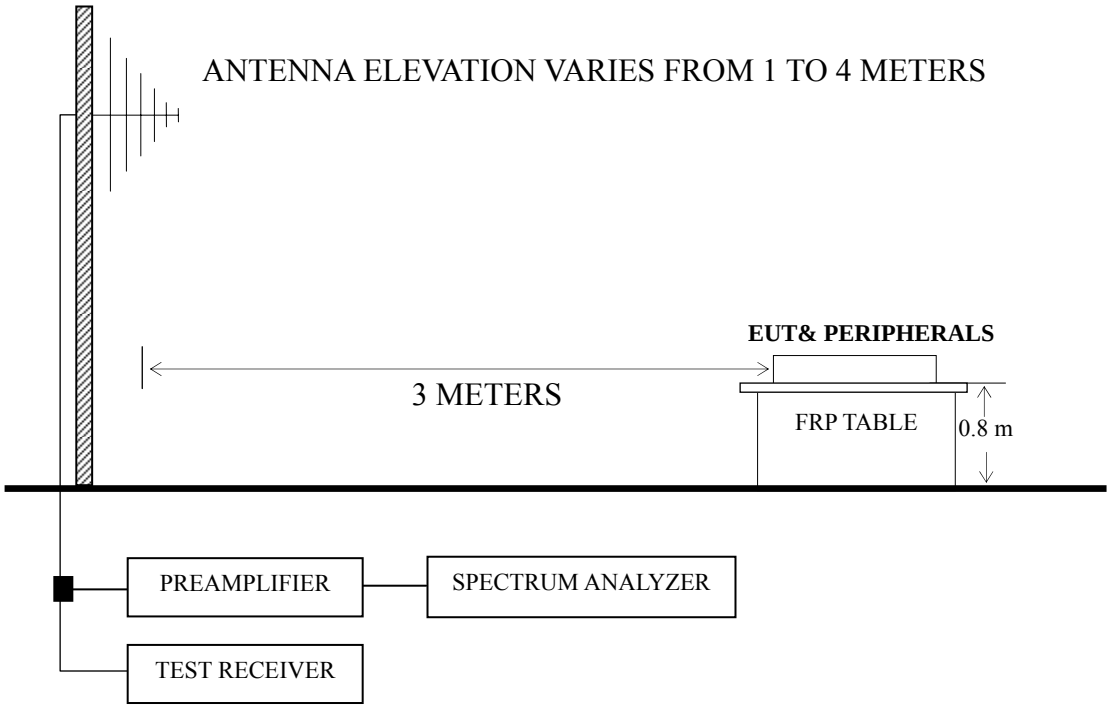
4.2.1 EUT and Peripherals



■ : Ferrite core

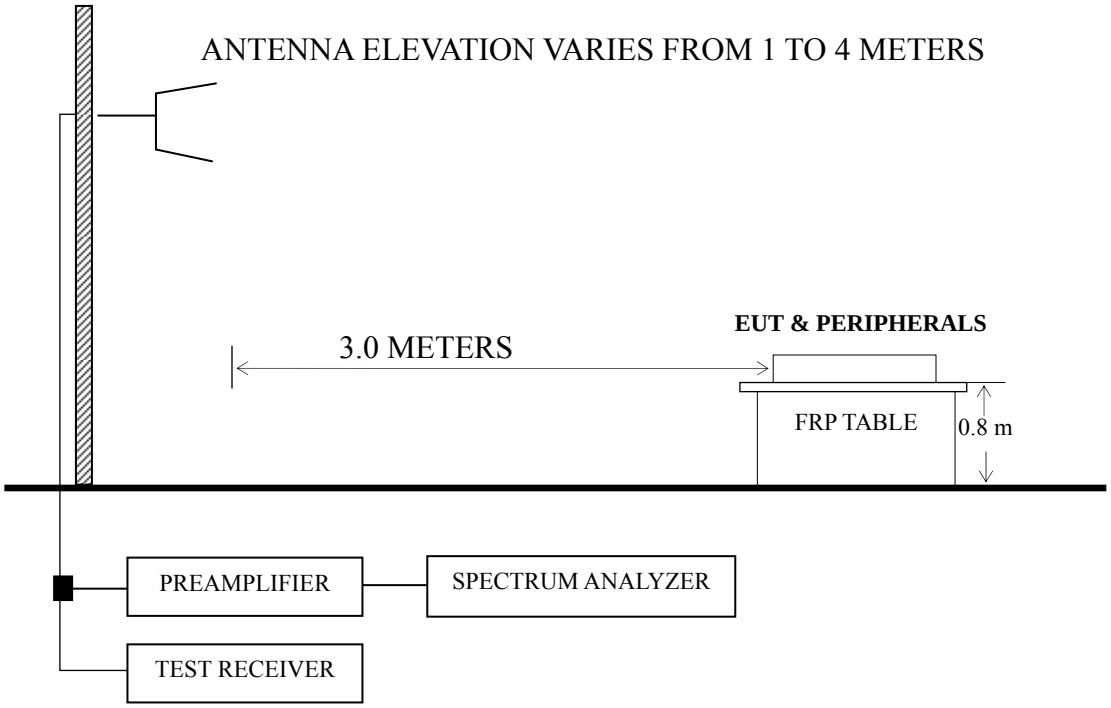
4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



■ : 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 D-Sub 1280*1024@60Hz and 1680*1050@60Hz modes.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Test Mode	Page
D-Sub 640*480@60Hz	**P21**
D-Sub 1280*1024@60Hz	P22 – P23
D-Sub 1680*1050@60Hz	P24 – P25
PCoIP	P26
D-Sub 640*480@60Hz (Rotate 90 degree)	P27

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 640*480@60Hz test mode. The worst emission at horizontal polarization was detected at 182.290 MHz with corrected signal level of 34.43 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 120°. The worst emission at vertical polarization was detected at 951.500 MHz with corrected signal level of 42.67 dB (μV/m) (limit is 47.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 250°.

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	N2210WZT	Humidity :	60%RH
Serial No.	:	E11101247-01/01	Date of Test :	Oct 25, 2011
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	74.620	8.29	10.21	1.51	20.01	40.00	19.99
	144.460	16.62	10.52	2.19	29.33	40.00	10.67
	182.290	**22.10**	**9.97**	**2.36**	**34.43**	**40.00**	**5.57**
	255.040	22.71	12.22	2.63	37.56	47.00	9.44
	321.970	21.35	14.30	2.82	38.47	47.00	8.53
	594.540	16.08	18.17	3.45	37.70	47.00	9.30
Vertical	31.940	16.19	17.29	0.82	34.30	40.00	5.70
	73.650	11.22	10.15	1.49	22.86	40.00	17.14
	115.360	19.61	11.09	1.98	32.68	40.00	7.32
	280.260	14.65	13.13	2.70	30.48	47.00	16.52
	508.210	14.16	17.65	3.28	35.09	47.00	11.91
	951.500	**17.00**	**20.57**	**5.10**	**42.67**	**47.00**	**4.33**

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	N2210WZT	Humidity	:	60%RH
Serial No.	:	E11101247-01/01	Date of Test	:	Oct 25, 2011
Test Mode	:	D-Sub 1280*1024@60Hz			

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	**30.970**	**15.12**	**17.78**	**0.81**	--	**33.71**	**40.00**	**6.29**	QP
	117.300	18.26	11.05	2.00	--	31.31	40.00	8.69	
	144.460	17.70	10.52	2.19	--	30.41	40.00	9.59	
	288.020	15.15	13.39	2.72	--	31.26	47.00	15.74	
	483.960	9.06	17.42	3.23	--	29.71	47.00	17.29	
	534.400	14.59	17.81	3.34	--	35.74	47.00	11.26	
	1075.000	45.83	25.21	5.27	38.04	38.27	74.00	35.73	PK
	1250.000	41.43	26.08	5.42	37.65	35.28	74.00	38.72	
	1365.000	42.64	26.59	5.55	37.33	37.45	74.00	36.55	
	1465.000	38.41	26.90	5.72	37.06	33.97	74.00	40.03	
	1595.000	40.05	27.08	5.93	36.77	36.29	74.00	37.71	
	1760.000	42.91	27.23	6.17	36.49	39.82	74.00	34.18	
	1075.000	36.83	25.21	5.27	38.04	29.27	54.00	24.73	AV
	1250.000	26.43	26.08	5.42	37.65	20.28	54.00	33.72	
	1365.000	29.64	26.59	5.55	37.33	24.45	54.00	29.55	
	1465.000	28.41	26.90	5.72	37.06	23.97	54.00	30.03	
	1595.000	31.05	27.08	5.93	36.77	27.29	54.00	26.71	
	1760.000	29.91	27.23	6.17	36.49	26.82	54.00	27.18	

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	N2210WZT	Humidity	:	60%RH
Serial No.	:	E11101247-01/01	Date of Test	:	Oct 25, 2011
Test Mode	:	D-Sub 1280*1024@60Hz			

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	144.460	17.38	10.52	2.19	--	30.09	40.00	9.91	QP
	184.230	**21.65**	**9.95**	**2.37**	**--**	**33.97**	**40.00**	**6.03**	
	288.020	14.99	13.39	2.72	--	31.10	47.00	15.90	
	321.970	10.49	14.30	2.82	--	27.61	47.00	19.39	
	595.510	12.28	18.19	3.45	--	33.92	47.00	13.08	
	951.500	11.91	20.57	5.10	--	37.58	47.00	9.42	
	1080.000	44.24	25.24	5.27	38.03	36.72	74.00	37.28	PK
	1170.000	43.19	25.66	5.34	37.83	36.36	74.00	37.64	
	1315.000	45.98	26.39	5.51	37.48	40.40	74.00	33.60	
	1465.000	41.47	26.90	5.72	37.06	37.03	74.00	36.97	
	1600.000	44.84	27.08	5.93	36.76	41.09	74.00	32.91	
	1760.000	40.81	27.23	6.17	36.49	37.72	74.00	36.28	
	1080.000	37.24	25.24	5.27	38.03	29.72	54.00	24.28	AV
	1170.000	30.19	25.66	5.34	37.83	23.36	54.00	30.64	
	1315.000	33.98	26.39	5.51	37.48	28.40	54.00	25.60	
	1465.000	28.47	26.90	5.72	37.06	24.03	54.00	29.97	
	1600.000	30.84	27.08	5.93	36.76	27.09	54.00	26.91	
	1760.000	29.81	27.23	6.17	36.49	26.72	54.00	27.28	

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :		22℃
Model No.	:	N2210WZT	Humidity	:	60%RH
Serial No.	:	E11101247-01/01	Date of Test	:	Oct 25, 2011
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	144.460	18.87	10.52	2.19	--	31.58	40.00	8.42	QP
	183.260	**20.98**	**9.96**	**2.37**	**--**	**33.31**	**40.00**	**6.69**	
	237.580	16.86	11.41	2.57	--	30.84	47.00	16.16	
	321.970	11.89	14.30	2.82	--	29.01	47.00	17.99	
	594.540	13.38	18.17	3.45	--	35.00	47.00	12.00	
	644.010	12.21	18.78	3.55	--	34.54	47.00	12.46	
	1020.000	38.57	24.98	5.22	38.16	30.61	74.00	43.39	PK
	1250.000	41.43	26.08	5.42	37.65	35.28	74.00	38.72	
	1365.000	42.64	26.59	5.55	37.33	37.45	74.00	36.55	
	1465.000	38.41	26.90	5.72	37.06	33.97	74.00	40.03	
	1595.000	40.05	27.08	5.93	36.77	36.29	74.00	37.71	
	1760.000	42.91	27.23	6.17	36.49	39.82	74.00	34.18	
	1020.000	30.57	24.98	5.22	38.16	22.61	54.00	31.39	AV
	1250.000	30.43	26.08	5.42	37.65	24.28	54.00	29.72	
	1365.000	29.64	26.59	5.55	37.33	24.45	54.00	29.55	
	1465.000	26.41	26.90	5.72	37.06	21.97	54.00	32.03	
	1595.000	27.05	27.08	5.93	36.77	23.29	54.00	30.71	
	1760.000	31.91	27.23	6.17	36.49	28.82	54.00	25.18	

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	N2210WZT	Humidity :	60%RH
Serial No.	:	E11101247-01/01	Date of Test :	Oct 27, 2011
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	**32.910**	**15.61**	**16.79**	**0.82**	--	**33.22**	**40.00**	**6.78**	QP
	115.360	17.94	11.09	1.98	--	31.01	40.00	8.99	
	144.460	19.64	10.52	2.19	--	32.35	40.00	7.65	
	315.180	16.56	14.12	2.79	--	33.47	47.00	13.53	
	535.370	18.65	17.81	3.34	--	39.80	47.00	7.20	
	952.470	13.97	20.57	5.10	--	39.64	47.00	7.36	
	1080.000	39.24	25.24	5.27	38.03	31.72	74.00	42.28	PK
	1275.000	37.69	26.21	5.47	37.57	31.80	74.00	42.20	
	1315.000	40.98	26.39	5.51	37.48	35.40	74.00	38.60	
	1465.000	36.47	26.90	5.72	37.06	32.03	74.00	41.97	
	1600.000	39.84	27.08	5.93	36.76	36.09	74.00	37.91	
	1760.000	41.81	27.23	6.17	36.49	38.72	74.00	35.28	
	1080.000	31.24	25.24	5.27	38.03	23.72	54.00	30.28	AV
	1275.000	27.69	26.21	5.47	37.57	21.80	54.00	32.20	
	1315.000	26.98	26.39	5.51	37.48	21.40	54.00	32.60	
	1465.000	26.47	26.90	5.72	37.06	22.03	54.00	31.97	
	1600.000	25.84	27.08	5.93	36.76	22.09	54.00	31.91	
	1760.000	27.81	27.23	6.17	36.49	24.72	54.00	29.28	

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	N2210WZT	Humidity :	60%RH
Serial No.	:	E11101247-01/01	Date of Test :	Oct 25, 2011
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	144.460	14.62	10.52	2.19	27.33	40.00	12.67
	182.290	**20.10**	**9.97**	**2.36**	**32.43**	**40.00**	**7.57**
	255.040	20.71	12.22	2.63	35.56	47.00	11.44
	321.970	19.35	14.30	2.82	36.47	47.00	10.53
	594.540	14.08	18.17	3.45	35.70	47.00	11.30
	637.220	10.38	18.70	3.55	32.63	47.00	14.37
Vertical	**31.940**	**12.19**	**17.29**	**0.82**	**30.30**	**40.00**	**9.70**
	115.360	15.61	11.09	1.98	28.68	40.00	11.32
	144.460	15.62	10.52	2.19	28.33	40.00	11.67
	321.970	10.94	14.30	2.82	28.06	47.00	18.94
	508.210	10.16	17.65	3.28	31.09	47.00	15.91
	873.900	11.78	20.37	4.60	36.75	47.00	10.25

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	N2210WZT	Humidity :	60%RH
Serial No.	:	E11101247-01/01	Date of Test :	Oct 25, 2011
Test Mode	:	D-Sub 680*480@60Hz (Rotate 90 degree)		

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	60.070	47.17	9.14	1.19	29.59	40.00	10.41
	77.530	48.99	10.39	1.56	33.04	40.00	6.96
	182.290	**53.89**	**9.97**	**2.36**	**38.89**	**43.50**	**4.61**
	288.990	49.54	13.39	2.72	38.76	46.00	7.24
	454.860	39.41	17.03	3.13	31.69	46.00	14.31
	701.240	36.28	19.50	3.68	31.37	46.00	14.63
Vertical	36.790	46.55	14.57	0.85	33.82	40.00	6.18
	50.370	51.91	8.51	0.93	33.33	40.00	6.67
	79.470	**51.07**	**10.51**	**1.58**	**35.24**	**40.00**	**4.76**
	113.420	51.88	11.12	1.97	37.21	43.50	6.29
	290.930	47.93	13.46	2.74	37.24	46.00	8.76
	881.660	45.43	20.35	4.75	43.00	46.00	3.00

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	Specifications (mm)	Manufacturer	Location
SPONGE	180*10*2	EXPANElactronics SUZHOU Co., Ltd.	See Internal Photos Figure 13
SPONGE	120*10*2	EXPANElactronics SUZHOU Co., Ltd.	See Internal Photos Figure 13
EMI Tape	85*35	EXPANElactronics SUZHOU Co., Ltd.	See Internal Photos Figure 14

Note: We had required the applicant and manufacturer that all electrical and mechanical devices employed for spurious radiation suppression, including any modifications made during certification testing, must be incorporated in each unit marked

TEST ENGINEER: Raven Jin

(RAVEN JIN)