

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

LCD Monitor

Model No.: W1946PW

Serial No.: E2010111501

FCC ID : BEJW1946PW

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

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Date of Test : Nov 16-29, 2010
Date of Report : Dec 07, 2010

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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. : W1946PW
(B) Serial No. : E2010111501
(C) Power Supply : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2009
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.

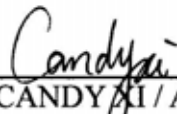
The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: W1946PW; S/N: E2010111501) which was tested in 3m anechoic chamber Nov 16-29, 2010 is technically compliance with the FCC official limits also.

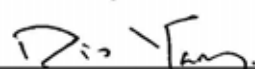
This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report contains data that are not covered by the NVLAP accreditation.

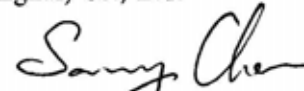
This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Nov 16-29, 2010 Date of Report : Dec 07, 2010

Producer : 
CANDY XI / Assistant

Review : 
DIO YANG / Deputy Assistant Manager

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

Signatory : 
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 2009 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2009 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.	: W1946PW
Serial No.	: E2010111501
Real Power	: 21.8W
Note #1	: The data of W1946PW at Rotate 90 degree condition (only radiated emission) was also tested and recorded in this report. The mode tested was the worst case of W1946PW in normal condition.
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 : LM185WH1 (TL) (D2)
Max Resolution	: 1360*768@60Hz
D-Sub Cable #1	: Shielded, Detachable, 1.85m, with two cores on cable
D-Sub Cable #2	: Shielded, Detachable, 1.85m, with two cores in connector
DVI Cable #1	: Shielded, Detachable, 1.85m, with two cores on cable
DVI Cable #2	: Shielded, Detachable, 1.85m, with two cores in connector
Power Cord	: Unshielded, Detachable, 1.80m
Note #2	: After evaluation, the D-Sub cable#1 and DVI cable#1 were used in the test for they will cause the maximum emission.

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 AC In Port : Connected with Power

2.2 Peripherals

2.2.1 PC

Manufacturer : HP
Model Number : dx7400MT
Serial Number : CNG8130K89
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 Keyboard

Manufacturer : Microsoft
Model Number : KU-0459
Serial Number : 7691402450604
Data Cable : Shielded, Undetachable, 1.8m
Certificate : CE/EMC, FCC DoC, VCCI, MIC,
C-Tick, BSMI

2.2.4 Mouse

Manufacturer : DELL
Model Number : MO56UO
Serial Number : 443048231
Data Cable : Shielded, Undetachable, 1.8m.
Certificate : CE/EMC, FCC DoC, VCCI, MIC,
C-Tick, BSMI

2.2.5 Modem

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

2.3 Description of Test Facility

Site Description (No.3 3m 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 = 1.26 dB
Radiated Emission Expanded Uncertainty :	U = 3.02 dB

3 CONDUCTED EMISSION TEST

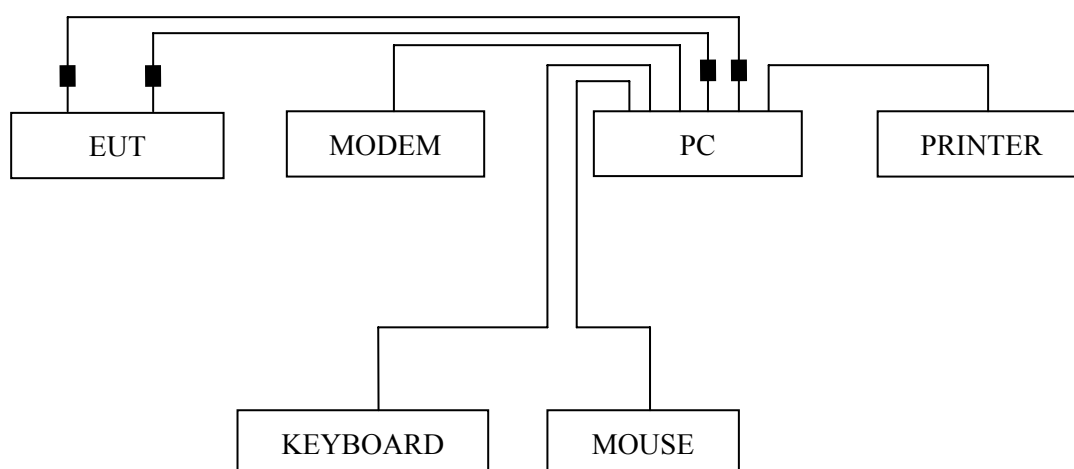
3.1 Test Equipment

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	Oct 15, 2010	Oct 15, 2011
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2010	Apr 02, 2011
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2010	Apr 02, 2011
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 19, 2010	Mar 19, 2011
5.	50 Ω Terminator	Anritsu	BNC	001	Apr 02, 2010	Apr 02, 2011
6.	Software	Audix	E3	SET00200 9804M592	--	--

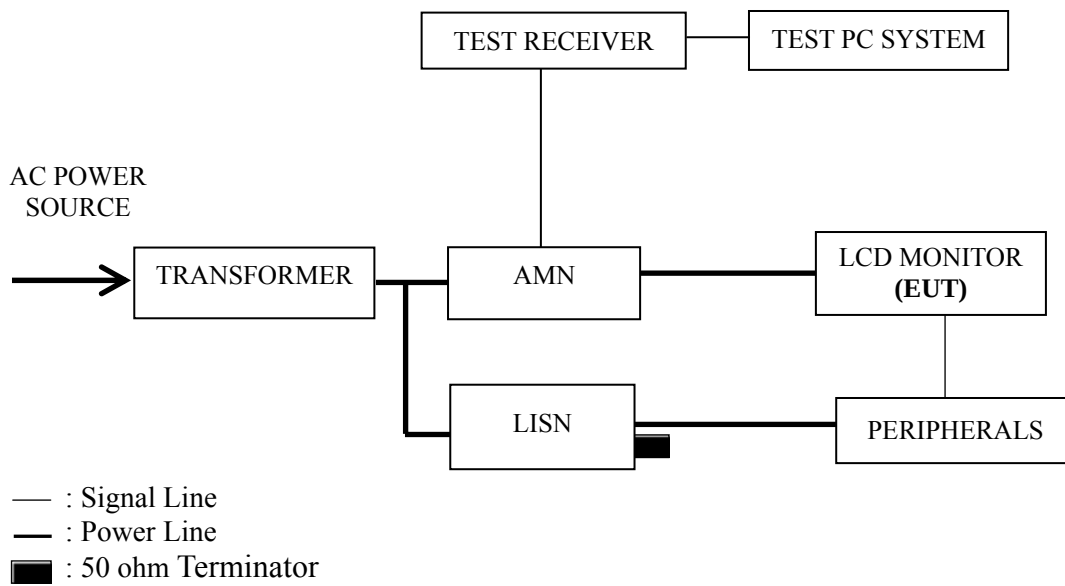
3.2 Block Diagram of Test Setup

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, the EUT’s screen displayed and filled with “H” pattern by its resolution (Via D-Sub & DVI Input).

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

3.5.6 The other peripherals devices were driven and operated during the test.

3.5.7 The test modes are as follows:

Test Mode
D-Sub 640*480@60Hz
D-Sub 1024*768@60Hz
D-Sub 1360*768@60Hz
DVI 640*480@60Hz
DVI 1024*768@60Hz
DVI 1360*768@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 640*480@60Hz	P12
D-Sub 1024*768@60Hz	P13
D-Sub 1360*768@60Hz	P14
DVI 640*480@60Hz	P15
DVI 1024*768@60Hz	P16
DVI 1360*768@60Hz	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 DVI 640*480@60Hz test mode. The worst emission is detected at 3.985 MHz (Average Value) with corrected signal level of 34.01 dB (μV) (limit is 46.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 48%RH

Serial No. : E2010111501 Date of Test : Nov 16, 2010

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	0.183	42.89	0.38	43.27	64.33	21.06	QP
	0.641	43.03	0.52	43.55	56.00	12.45	
	0.743	42.47	0.52	42.99	56.00	13.01	
	1.480	39.58	0.57	40.15	56.00	15.85	
	3.985	43.09	0.75	43.84	56.00	12.16	
	6.627	46.67	0.88	47.55	60.00	12.45	
	0.183	32.65	0.38	33.03	54.33	21.30	AV
	0.641	33.25	0.52	33.77	46.00	12.23	
	0.743	32.16	0.52	32.68	46.00	13.32	
	1.480	28.14	0.57	28.71	46.00	17.29	
	3.985	33.25	0.75	34.00	46.00	12.00	
	6.627	35.57	0.88	36.45	50.00	13.55	
Neutral	0.186	43.95	0.30	44.25	64.20	19.95	QP
	0.641	41.66	0.49	42.15	56.00	13.85	
	0.727	42.23	0.49	42.72	56.00	13.28	
	1.480	38.50	0.54	39.04	56.00	16.96	
	3.985	41.54	0.70	42.24	56.00	13.76	
	6.627	46.07	0.85	46.92	60.00	13.08	
	0.186	33.27	0.30	33.57	54.20	20.63	AV
	0.641	31.25	0.49	31.74	46.00	14.26	
	0.727	31.26	0.49	31.75	46.00	14.25	
	1.480	28.54	0.54	29.08	46.00	16.92	
	3.985	31.26	0.70	31.96	46.00	14.04	
	6.627	35.13	0.85	35.98	50.00	14.02	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 48%RH

Serial No. : E2010111501 Date of Test : Nov 16, 2010

Test Mode : D-Sub 1024*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.180	42.91	0.38	43.29	64.50	21.21	QP
	0.641	41.57	0.52	42.09	56.00	13.91	
	0.775	42.52	0.53	43.05	56.00	12.95	
	1.888	39.08	0.61	39.69	56.00	16.31	
	3.985	42.83	0.75	43.58	56.00	12.42	
	6.627	46.54	0.88	47.42	60.00	12.58	
	0.180	32.15	0.38	32.53	54.50	21.97	AV
	0.641	31.24	0.52	31.76	46.00	14.24	
	0.775	32.15	0.53	32.68	46.00	13.32	
	1.888	28.53	0.61	29.14	46.00	16.86	
	3.985	33.25	0.75	34.00	46.00	12.00	
	6.627	32.15	0.88	33.03	50.00	16.97	
Neutral	0.183	43.42	0.31	43.73	64.33	20.60	QP
	0.641	43.33	0.49	43.82	56.00	12.18	
	0.743	42.19	0.49	42.68	56.00	13.32	
	1.480	39.14	0.54	39.68	56.00	16.32	
	3.472	40.96	0.68	41.64	56.00	14.36	
	6.698	45.81	0.85	46.66	60.00	13.34	
	0.183	33.26	0.31	33.57	54.33	20.76	AV
	0.641	33.26	0.49	33.75	46.00	12.25	
	0.743	33.27	0.49	33.76	46.00	12.24	
	1.480	28.54	0.54	29.08	46.00	16.92	
	3.472	31.24	0.68	31.92	46.00	14.08	
	6.698	25.64	0.85	26.49	50.00	23.51	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 48%RH

Serial No. : E2010111501 Date of Test : Nov 16, 2010

Test Mode : D-Sub 1360*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.183	43.37	0.38	43.75	64.33	20.58	QP
	0.641	41.88	0.52	42.40	56.00	13.60	
	0.751	42.20	0.53	42.73	56.00	13.27	
	1.480	39.13	0.57	39.70	56.00	16.30	
	3.799	41.69	0.74	42.43	56.00	13.57	
	6.627	45.51	0.88	46.39	60.00	13.61	
	0.183	33.26	0.38	33.64	54.33	20.69	AV
	0.641	31.26	0.52	31.78	46.00	14.22	
	0.751	31.25	0.53	31.78	46.00	14.22	
	1.480	25.14	0.57	25.71	46.00	20.29	
	3.799	31.24	0.74	31.98	46.00	14.02	
	6.627	25.64	0.88	26.52	50.00	23.48	
Neutral	0.180	43.30	0.31	43.61	64.50	20.89	QP
	0.641	43.30	0.49	43.79	56.00	12.21	
	0.775	42.25	0.50	42.75	56.00	13.25	
	1.734	38.62	0.56	39.18	56.00	16.82	
	3.985	41.98	0.70	42.68	56.00	13.32	
	6.627	45.82	0.85	46.67	60.00	13.33	
	0.180	33.25	0.31	33.56	54.50	20.94	AV
	0.641	33.26	0.49	33.75	46.00	12.25	
	0.775	31.15	0.50	31.65	46.00	14.35	
	1.734	28.54	0.56	29.10	46.00	16.90	
	3.985	31.26	0.70	31.96	46.00	14.04	
	6.627	35.16	0.85	36.01	50.00	13.99	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 48%RH

Serial No. : E2010111501 Date of Test : Nov 16, 2010

Test Mode : DVI 640*480@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.184	43.14	0.38	43.52	64.28	20.76	QP
	0.641	41.54	0.52	42.06	56.00	13.94	
	0.735	42.37	0.52	42.89	56.00	13.11	
	1.464	39.05	0.57	39.62	56.00	16.38	
	3.985	43.13	0.75	43.88	56.00	12.12	
	6.698	46.47	0.88	47.35	60.00	12.65	
	0.184	33.26	0.38	33.64	54.28	20.64	AV
	0.641	31.26	0.52	31.78	46.00	14.22	
	0.735	32.16	0.52	32.68	46.00	13.32	
	1.464	28.45	0.57	29.02	46.00	16.98	
	3.985	33.26	0.75	34.01	46.00	11.99	
	6.698	36.24	0.88	37.12	50.00	12.88	
Neutral	0.180	43.74	0.31	44.05	64.50	20.45	QP
	0.641	41.84	0.49	42.33	56.00	13.67	
	0.759	42.13	0.50	42.63	56.00	13.37	
	1.480	39.04	0.54	39.58	56.00	16.42	
	3.985	41.81	0.70	42.51	56.00	13.49	
	6.698	45.62	0.85	46.47	60.00	13.53	
	0.180	33.26	0.31	33.57	54.50	20.93	AV
	0.641	31.26	0.49	31.75	46.00	14.25	
	0.759	32.12	0.50	32.62	46.00	13.38	
	1.480	28.45	0.54	28.99	46.00	17.01	
	3.985	31.26	0.70	31.96	46.00	14.04	
	6.698	35.14	0.85	35.99	50.00	14.01	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 48%RH

Serial No. : E2010111501 Date of Test : Nov 16, 2010

Test Mode : DVI 1024*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.184	42.72	0.38	43.10	64.28	21.18	QP
	0.641	42.02	0.52	42.54	56.00	13.46	
	0.743	42.54	0.52	43.06	56.00	12.94	
	1.464	39.15	0.57	39.72	56.00	16.28	
	3.985	43.01	0.75	43.76	56.00	12.24	
	6.698	46.60	0.88	47.48	60.00	12.52	
	0.184	32.25	0.38	32.63	54.28	21.65	AV
	0.641	32.25	0.52	32.77	46.00	13.23	
	0.743	32.15	0.52	32.67	46.00	13.33	
	1.464	26.58	0.57	27.15	46.00	18.85	
	3.985	32.15	0.75	32.90	46.00	13.10	
	6.698	32.15	0.88	33.03	50.00	16.97	
Neutral	0.190	42.74	0.31	43.05	64.02	20.97	QP
	0.641	41.78	0.49	42.27	56.00	13.73	
	0.743	42.49	0.49	42.98	56.00	13.02	
	1.480	39.54	0.54	40.08	56.00	15.92	
	3.985	43.13	0.70	43.83	56.00	12.17	
	6.627	46.52	0.85	47.37	60.00	12.63	
	0.190	32.26	0.31	32.57	54.02	21.45	AV
	0.641	31.26	0.49	31.75	46.00	14.25	
	0.743	32.55	0.49	33.04	46.00	12.96	
	1.480	28.14	0.54	28.68	46.00	17.32	
	3.985	33.21	0.70	33.91	46.00	12.09	
	6.627	34.11	0.85	34.96	50.00	15.04	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 48%RH

Serial No. : E2010111501 Date of Test : Nov 16, 2010

Test Mode : DVI 1360*768@60Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	43.31	0.39	43.70	64.11	20.41	QP
	0.641	41.69	0.52	42.21	56.00	13.79	
	0.720	42.20	0.52	42.72	56.00	13.28	
	1.480	39.00	0.57	39.57	56.00	16.43	
	3.985	41.60	0.75	42.35	56.00	13.65	
	6.769	45.15	0.88	46.03	60.00	13.97	
	0.188	33.20	0.39	33.59	54.11	20.52	AV
	0.641	31.24	0.52	31.76	46.00	14.24	
	0.720	33.27	0.52	33.79	46.00	12.21	
	1.480	29.64	0.57	30.21	46.00	15.79	
	3.985	31.24	0.75	31.99	46.00	14.01	
	6.769	34.26	0.88	35.14	50.00	14.86	
Neutral	0.184	43.08	0.31	43.39	64.28	20.89	QP
	0.641	41.76	0.49	42.25	56.00	13.75	
	0.775	42.53	0.50	43.03	56.00	12.97	
	1.480	39.52	0.54	40.06	56.00	15.94	
	3.985	43.08	0.70	43.78	56.00	12.22	
	6.627	46.63	0.85	47.48	60.00	12.52	
	0.184	33.26	0.31	33.57	54.28	20.71	AV
	0.641	31.26	0.49	31.75	46.00	14.25	
	0.775	32.12	0.50	32.62	46.00	13.38	
	1.480	28.15	0.54	28.69	46.00	17.31	
	3.985	33.26	0.70	33.96	46.00	12.04	
	6.627	36.13	0.85	36.98	50.00	13.02	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

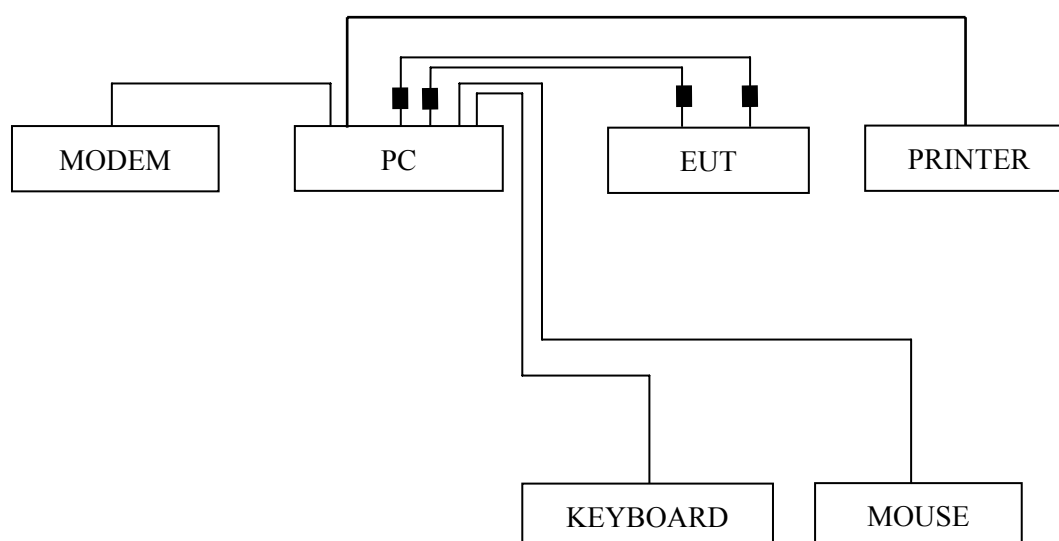
4.1 Test Equipment

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 07, 2010	Mar 07, 2011
2.	Preamplifier	Agilent	8447D	2944A10548	Sep 19, 2010	Mar 19, 2011
3.	Preamplifier	HP	8449B	3008A00864	Apr 29, 2010	Apr 29, 2011
4.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2010	Dec 01, 2011
5.	Spectrum	Agilent	E7405A	MY45106600	May 19, 2010	May 19, 2011
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

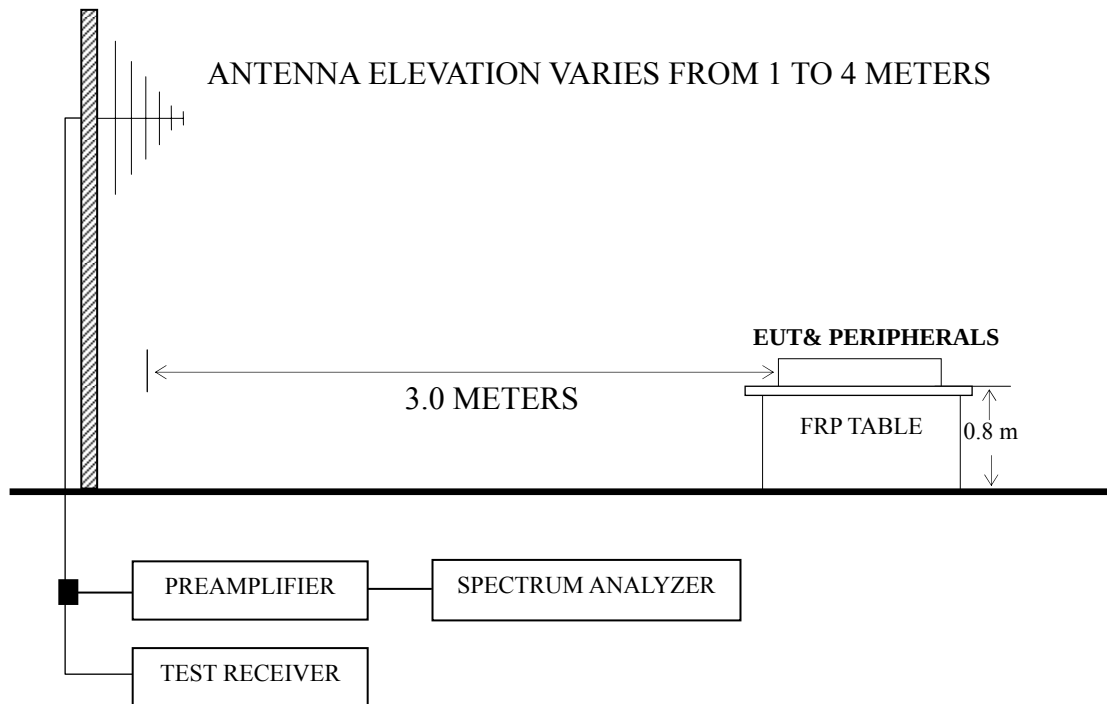
4.2 Block Diagram of Test Setup

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	
		($\mu\text{V/m}$)	dB ($\mu\text{V/m}$)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB ($\mu\text{V/m}$) = 20 log Emission Level ($\mu\text{V/m}$)

NOTE 2 - The tighter limit applies at the band edges.

NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz.

NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.

4.4 Test Configuration

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

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

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

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) 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.

The frequency range from 30 MHz to 1000MHz was checked for all test 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	P22
D-Sub 1024*768@60Hz	P23
D-Sub 1360*768@60Hz	P24
DVI 640*480@60Hz	P25
DVI 1024*768@60Hz	P26
DVI 1360*768@60Hz	P27
DVI 1024*768@60Hz (Rotate 90 degree)	P28

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

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

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

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

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

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

NOTE 7 – The worst case is for DVI 1024*768@60Hz test mode. The worst emission at horizontal polarization was detected at 42.000 MHz with corrected signal level of 36.95 dB ($\mu\text{V/m}$) (limit is 40.00dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 320° . The worst emission at vertical polarization was detected at 207.510 MHz with corrected signal level of 33.62 dB ($\mu\text{V/m}$) (limit is 40.00 dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 260° .

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 60%RH

Serial No. : E2010111501 Date of Test : Nov 29, 2010

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	116.330	18.85	12.78	1.12	32.75	40.00	7.25
	201.690	20.70	10.78	1.45	32.93	40.00	7.07
	264.740	10.14	13.22	1.65	25.01	47.00	21.99
	534.400	6.55	18.36	2.33	27.24	47.00	19.76
	666.320	9.64	19.54	2.61	31.79	47.00	15.21
	876.810	10.67	21.49	3.00	35.16	47.00	11.84
Vertical	41.640	18.79	13.02	0.73	32.54	40.00	7.46
	115.100	21.80	12.68	1.11	35.59	40.00	4.41
	187.000	23.00	10.17	1.40	34.57	40.00	5.43
	248.250	14.05	12.83	1.60	28.48	47.00	18.52
	478.140	11.11	17.62	2.22	30.95	47.00	16.05
	878.750	14.36	21.49	3.00	38.85	47.00	8.15

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 60%RH

Serial No. : E2010111501 Date of Test : Nov 29, 2010

Test Mode : D-Sub 1024*768@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	41.640	17.95	13.02	0.73	31.70	40.00	8.30
	116.000	21.50	12.74	1.11	35.35	40.00	4.65
	186.000	25.10	10.11	1.40	36.61	40.00	3.39
	454.860	12.88	17.29	2.17	32.34	47.00	14.66
	666.320	13.30	19.54	2.61	35.45	47.00	11.55
	878.750	13.35	21.49	3.00	37.84	47.00	9.16
Vertical	115.360	15.82	12.71	1.11	29.64	40.00	10.36
	194.900	20.76	10.51	1.43	32.70	40.00	7.30
	217.210	18.75	11.48	1.51	31.74	40.00	8.26
	324.880	11.04	14.58	1.84	27.46	47.00	19.54
	389.870	8.71	16.30	2.03	27.04	47.00	19.96
	870.990	6.38	21.42	2.98	30.78	47.00	16.22

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 60%RH

Serial No. : E2010111501 Date of Test : Nov 29, 2010

Test Mode : D-Sub 1360*768@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	81.410	15.43	8.02	0.95	24.40	40.00	15.60
	115.360	18.71	12.71	1.11	32.53	40.00	7.47
	188.110	20.38	10.20	1.41	31.99	40.00	8.01
	214.300	19.34	11.35	1.50	32.19	40.00	7.81
	309.360	3.79	14.17	1.80	19.76	47.00	27.24
	770.110	4.28	20.43	2.85	27.56	47.00	19.44
Vertical	42.610	19.76	12.39	0.74	32.89	40.00	7.11
	115.000	22.50	12.68	1.11	36.29	40.00	3.71
	189.000	23.09	10.24	1.41	34.74	40.00	5.26
	342.340	14.24	15.11	1.90	31.25	47.00	15.75
	513.060	10.77	18.06	2.29	31.12	47.00	15.88
	815.700	8.81	20.84	2.92	32.57	47.00	14.43

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 60%RH

Serial No. : E2010111501 Date of Test : Nov 29, 2010

Test Mode : DVI 640*480@60Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	42.610	20.64	12.39	0.74	33.77	40.00	6.23
	115.360	20.60	12.71	1.11	34.42	40.00	5.58
	184.230	22.71	10.05	1.39	34.15	40.00	5.85
	214.300	18.28	11.35	1.50	31.13	40.00	8.87
	279.290	13.62	13.52	1.70	28.84	47.00	18.16
	490.750	9.76	17.78	2.25	29.79	47.00	17.21
Vertical	84.320	16.25	8.48	0.96	25.69	40.00	14.31
	115.000	20.50	12.68	1.11	34.29	40.00	5.71
	186.170	21.03	10.14	1.40	32.57	40.00	7.43
	227.880	19.71	12.02	1.54	33.27	40.00	6.73
	481.050	6.35	17.68	2.22	26.25	47.00	20.75
	817.640	4.45	20.87	2.92	28.24	47.00	18.76

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 60%RH

Serial No. : E2010111501 Date of Test : Nov 29, 2010

Test Mode : DVI 1024*768@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	42.000	23.40	12.82	0.73	36.95	40.00	3.05
	57.160	17.09	7.18	0.83	25.10	40.00	14.90
	115.000	21.80	12.68	1.11	35.59	40.00	4.41
	186.000	22.50	10.11	1.40	34.01	40.00	5.99
	461.650	10.56	17.40	2.20	30.16	47.00	16.84
	763.320	0.50	20.36	2.82	23.68	47.00	23.32
Vertical	87.230	12.64	8.96	0.98	22.58	40.00	17.42
	116.330	18.76	12.78	1.12	32.66	40.00	7.34
	207.510	21.10	11.05	1.47	33.62	40.00	6.38
	246.310	19.02	12.75	1.59	33.36	47.00	13.64
	563.500	0.63	18.75	2.38	21.76	47.00	25.24
	770.110	0.58	20.43	2.85	23.86	47.00	23.14

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 60%RH

Serial No. : E2010111501 Date of Test : Nov 17, 2010

Test Mode : DVI 1360*768@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	79.470	20.27	7.72	0.94	28.93	40.00	11.07
	114.000	21.90	12.61	1.10	35.61	40.00	4.39
	178.410	20.27	9.94	1.37	31.58	40.00	8.42
	205.570	21.38	10.93	1.47	33.78	40.00	6.22
	561.560	2.01	18.75	2.38	23.14	47.00	23.86
	776.900	1.01	20.49	2.85	24.35	47.00	22.65
Vertical	31.940	12.18	18.49	0.65	31.32	40.00	8.68
	44.550	21.33	11.38	0.75	33.46	40.00	6.54
	114.800	21.00	12.68	1.11	34.79	40.00	5.21
	185.200	21.90	10.08	1.40	33.38	40.00	6.62
	590.660	0.46	19.11	2.43	22.00	47.00	25.00
	804.060	2.08	20.73	2.90	25.71	47.00	21.29

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1946PW Humidity : 60%RH

Serial No. : E2010111501 Date of Test : Nov 29, 2010

Test Mode : DVI 1024*768@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	144.460	12.92	11.76	1.22	25.90	43.50	17.60
	194.900	21.55	10.51	1.43	33.49	43.50	10.01
	324.880	17.43	14.58	1.84	33.85	46.00	12.15
	376.290	16.27	15.99	1.99	34.25	46.00	11.75
	649.830	18.17	19.45	2.57	40.19	46.00	5.81
	974.780	17.74	22.24	4.01	43.99	54.00	10.01
Vertical	43.580	17.66	11.88	0.74	30.28	40.00	9.72
	54.250	19.11	7.92	0.81	27.84	40.00	12.16
	194.900	22.10	10.51	1.43	34.04	43.50	9.46
	649.830	19.28	19.45	2.57	41.30	46.00	4.70
	878.750	14.46	21.49	3.00	38.95	46.00	7.05
	974.780	17.18	22.24	4.01	43.43	54.00	10.57

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.