

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

LCD Monitor

Model No.: E1910TW

Serial No.: E2010083003

FCC ID : BEJE1910TW

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

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Report No. : ACI-F10114
Date of Test : Sep 01 – 07, 2010
Date of Report : Sep 09, 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. : E1910TW
(B) Serial No. : E2010083003
(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: E1910TW; S/N: E2010083003) which was tested in 3m anechoic chamber Sep 01 – 07, 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 : Sep 01 – 07, 2010 Date of Report : Sep 08, 2010

Producer : Kathy Wang
KATHY WANG / Assistant

Review : Dio Yang
DIO YANG / Deputy Assistant Manager

AUDIX[®] For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

.....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 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.	: E1910TW
Serial No.	: E2010083003
Real Power	: 24.60W
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 : LM190E09 (TL) (B1)
Max Resolution	: 1280*1024@75Hz
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	: 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 (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 = 1.26 dB
Radiated Emission Expanded Uncertainty : U = 3.02 dB

3 CONDUCTED EMISSION TEST

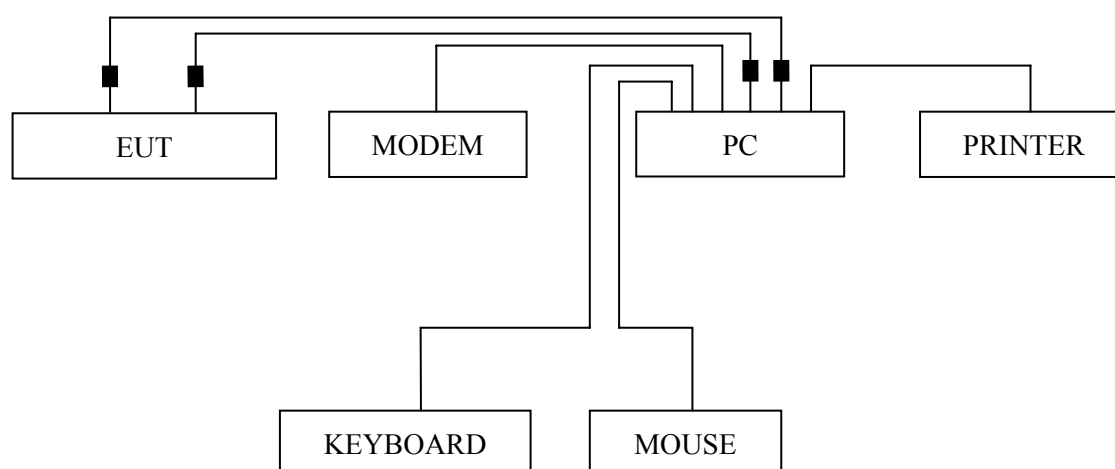
3.1 Test Equipment

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, 2009	Oct 15, 2010
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	Mar 19, 2010	Sep 19, 2010
5.	50 Ω Terminator	Anritsu	BNC	001	Apr 02, 2010	Apr 02, 2011
6.	Software	Audix	E3	SET00200 9804M592	--	--

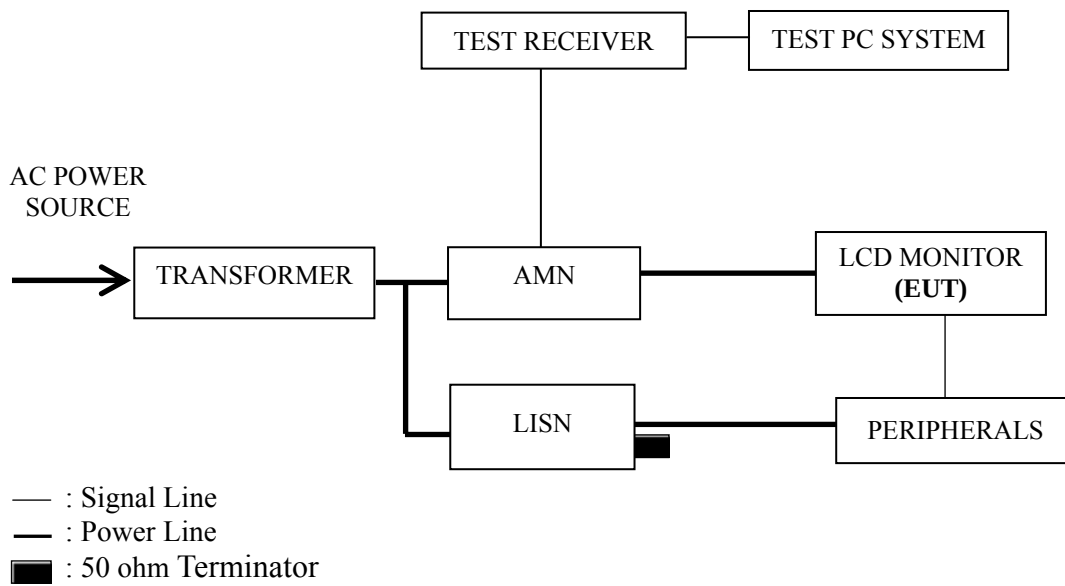
3.2 Block Diagram of Test Setup

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 (μ V)	
	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 1280*1024@75Hz
DVI 640*480@60Hz
DVI 1024*768@60Hz
DVI 1280*1024@75Hz

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 1280*1024@75Hz	P14
DVI 640*480@60Hz	P15
DVI 1024*768@60Hz	P16
DVI 1280*1024@75Hz	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 1024*768@60Hz test mode. The worst emission is detected at 21.600 MHz (Average Value) with corrected signal level of 35.22 dB (μV) (limit is 50.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 48%RH

Serial No. : E2010083003 Date of Test : Sep 01, 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	0.157	42.38	0.37	42.75	65.60	22.85	QP
	0.300	43.44	0.45	43.89	60.24	16.35	
	3.074	35.90	0.70	36.60	56.00	19.40	
	6.488	32.87	0.87	33.74	60.00	26.26	
	10.125	36.17	1.06	37.23	60.00	22.77	
	20.924	41.08	1.66	42.74	60.00	17.26	
	0.157	23.03	0.37	23.40	55.60	32.20	AV
	0.300	29.15	0.45	29.60	50.24	20.64	
	3.074	25.64	0.70	26.34	46.00	19.66	
	6.488	22.16	0.87	23.03	50.00	26.97	
	10.125	23.17	1.06	24.23	50.00	25.77	
	20.924	23.65	1.66	25.31	50.00	24.69	
Neutral	0.164	42.56	0.32	42.88	65.25	22.37	QP
	0.300	42.76	0.39	43.15	60.24	17.09	
	0.604	31.19	0.49	31.68	56.00	24.32	
	3.074	30.87	0.66	31.53	56.00	24.47	
	17.018	34.01	1.59	35.60	60.00	24.40	
	23.140	35.71	1.83	37.54	60.00	22.46	
	0.164	31.26	0.32	31.58	55.25	23.67	AV
	0.300	32.54	0.39	32.93	50.24	17.31	
	0.604	20.45	0.49	20.94	46.00	25.06	
	3.074	20.15	0.66	20.81	46.00	25.19	
	17.018	20.14	1.59	21.73	50.00	28.27	
	23.140	25.16	1.83	26.99	50.00	23.01	

TEST ENGINEER: TED ZHU

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 48%RH

Serial No. : E2010083003 Date of Test : Sep 01, 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	0.166	43.33	0.38	43.71	65.16	21.45	QP
	0.300	42.87	0.45	43.32	60.24	16.92	
	3.041	32.95	0.70	33.65	56.00	22.35	
	6.488	32.09	0.87	32.96	60.00	27.04	
	9.552	35.82	1.04	36.86	60.00	23.14	
	21.600	41.72	1.68	43.40	60.00	16.60	
	0.166	30.26	0.38	30.64	55.16	24.52	AV
	0.300	23.64	0.45	24.09	50.24	26.15	
	3.041	22.34	0.70	23.04	46.00	22.96	
	6.488	23.64	0.87	24.51	50.00	25.49	
	9.552	23.64	1.04	24.68	50.00	25.32	
	21.600	31.02	1.68	32.70	50.00	17.30	
Neutral	0.152	45.45	0.32	45.77	65.91	20.14	QP
	0.300	42.56	0.39	42.95	60.24	17.29	
	3.074	30.83	0.66	31.49	56.00	24.51	
	6.056	29.88	0.81	30.69	60.00	29.31	
	9.107	29.54	0.98	30.52	60.00	29.48	
	22.655	37.10	1.83	38.93	60.00	21.07	
	0.152	23.15	0.32	23.47	55.91	32.44	AV
	0.300	30.26	0.39	30.65	50.24	19.59	
	3.074	20.34	0.66	21.00	46.00	25.00	
	6.056	20.21	0.81	21.02	50.00	28.98	
	9.107	13.26	0.98	14.24	50.00	35.76	
	22.655	23.60	1.83	25.43	50.00	24.57	

TEST ENGINEER: TED ZHU

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 48%RH

Serial No. : E2010083003 Date of Test : Sep 01, 2010

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	0.153	45.51	0.37	45.88	65.82	19.94	QP
	0.300	44.18	0.45	44.63	60.24	15.61	
	3.074	35.06	0.70	35.76	56.00	20.24	
	6.488	32.64	0.87	33.51	60.00	26.49	
	9.966	38.01	1.06	39.07	60.00	20.93	
	21.830	42.89	1.69	44.58	60.00	15.42	
	0.153	32.17	0.37	32.54	55.82	23.28	AV
	0.300	24.51	0.45	24.96	50.24	25.28	
	3.074	26.57	0.70	27.27	46.00	18.73	
	6.488	22.64	0.87	23.51	50.00	26.49	
	9.966	21.57	1.06	22.63	50.00	27.37	
	21.830	32.14	1.69	33.83	50.00	16.17	
Neutral	0.155	46.02	0.32	46.34	65.74	19.40	QP
	0.300	43.58	0.39	43.97	60.24	16.27	
	3.041	29.62	0.66	30.28	56.00	25.72	
	8.916	29.14	0.97	30.11	60.00	29.89	
	17.018	34.60	1.59	36.19	60.00	23.81	
	22.655	37.06	1.83	38.89	60.00	21.11	
	0.155	26.54	0.32	26.86	55.74	28.88	AV
	0.300	23.64	0.39	24.03	50.24	26.21	
	3.041	16.53	0.66	17.19	46.00	28.81	
	8.916	12.45	0.97	13.42	50.00	36.58	
	17.018	23.54	1.59	25.13	50.00	24.87	
	22.655	27.47	1.83	29.30	50.00	20.70	

TEST ENGINEER: TED ZHU

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 48%RH

Serial No. : E2010083003 Date of Test : Sep 01, 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	0.152	44.55	0.37	44.92	65.91	20.99	QP
	0.192	42.64	0.38	43.02	63.93	20.91	
	0.300	43.56	0.45	44.01	60.24	16.23	
	3.074	36.40	0.70	37.10	56.00	18.90	
	9.352	35.77	1.03	36.80	60.00	23.20	
	21.600	42.32	1.68	44.00	60.00	16.00	
	0.152	32.16	0.37	32.53	55.91	23.38	AV
	0.192	32.15	0.38	32.53	53.93	21.40	
	0.300	25.48	0.45	25.93	50.24	24.31	
	3.074	21.45	0.70	22.15	46.00	23.85	
	9.352	25.74	1.03	26.77	50.00	23.23	
	21.600	32.15	1.68	33.83	50.00	16.17	
Neutral	0.152	45.46	0.32	45.78	65.91	20.13	QP
	0.186	44.83	0.30	45.13	64.20	19.07	
	0.300	44.70	0.39	45.09	60.24	15.15	
	2.993	29.75	0.65	30.40	56.00	25.60	
	8.729	29.24	0.96	30.20	60.00	29.80	
	22.535	38.41	1.83	40.24	60.00	19.76	
	0.152	32.16	0.32	32.48	55.91	23.43	AV
	0.186	32.16	0.30	32.46	54.20	21.74	
	0.300	31.47	0.39	31.86	50.24	18.38	
	2.993	18.24	0.65	18.89	46.00	27.11	
	8.729	16.57	0.96	17.53	50.00	32.47	
	22.535	24.56	1.83	26.39	50.00	23.61	

TEST ENGINEER: TED ZHU

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 48%RH

Serial No. : E2010083003 Date of Test : Sep 01, 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	0.164	43.47	0.38	43.85	65.25	21.40	QP
	0.300	42.59	0.45	43.04	60.24	17.20	
	3.140	34.38	0.70	35.08	56.00	20.92	
	6.805	32.22	0.88	33.10	60.00	26.90	
	9.966	37.54	1.06	38.60	60.00	21.40	
	21.600	43.26	1.68	44.94	60.00	15.06	
	0.164	32.15	0.38	32.53	55.25	22.72	AV
	0.300	32.17	0.45	32.62	50.24	17.62	
	3.140	23.57	0.70	24.27	46.00	21.73	
	6.805	22.15	0.88	23.03	50.00	26.97	
	9.966	25.47	1.06	26.53	50.00	23.47	
	21.600	33.54	1.68	35.22	50.00	14.78	
Neutral	0.152	45.91	0.32	46.23	65.91	19.68	QP
	0.192	39.95	0.31	40.26	63.93	23.67	
	0.300	43.58	0.39	43.97	60.24	16.27	
	3.074	29.57	0.66	30.23	56.00	25.77	
	16.486	32.47	1.56	34.03	60.00	25.97	
	21.600	37.82	1.81	39.63	60.00	20.37	
	0.152	32.16	0.32	32.48	55.91	23.43	AV
	0.192	25.48	0.31	25.79	53.93	28.14	
	0.300	23.54	0.39	23.93	50.24	26.31	
	3.074	18.54	0.66	19.20	46.00	26.80	
	16.486	22.65	1.56	24.21	50.00	25.79	
	21.600	27.47	1.81	29.28	50.00	20.72	

TEST ENGINEER: TED ZHU

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 48%RH

Serial No. : E2010083003 Date of Test : Sep 01, 2010

Test Mode : DVI 1280*1024@75Hz

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.152	44.67	0.37	45.04	65.91	20.87	QP
	0.186	42.66	0.38	43.04	64.20	21.16	
	0.300	43.66	0.45	44.11	60.24	16.13	
	3.074	36.08	0.70	36.78	56.00	19.22	
	9.966	38.50	1.06	39.56	60.00	20.44	
	22.298	42.03	1.70	43.73	60.00	16.27	
	0.152	32.66	0.37	33.03	55.91	22.88	AV
	0.186	32.64	0.38	33.02	54.20	21.18	
	0.300	32.54	0.45	32.99	50.24	17.25	
	3.074	24.54	0.70	25.24	46.00	20.76	
	9.966	23.64	1.06	24.70	50.00	25.30	
	22.298	31.48	1.70	33.18	50.00	16.82	
Neutral	0.150	44.11	0.32	44.43	66.00	21.57	QP
	0.194	40.86	0.31	41.17	63.84	22.67	
	0.300	42.35	0.39	42.74	60.24	17.50	
	3.140	30.64	0.66	31.30	56.00	24.70	
	17.383	35.77	1.62	37.39	60.00	22.61	
	22.298	38.02	1.81	39.83	60.00	20.17	
	0.150	32.16	0.32	32.48	56.00	23.52	AV
	0.194	30.14	0.31	30.45	53.84	23.39	
	0.300	31.25	0.39	31.64	50.24	18.60	
	3.140	17.47	0.66	18.13	46.00	27.87	
	17.383	25.14	1.62	26.76	50.00	23.24	
	22.298	28.55	1.81	30.36	50.00	19.64	

TEST ENGINEER: TED ZHU

4 RADIATED EMISSION TEST

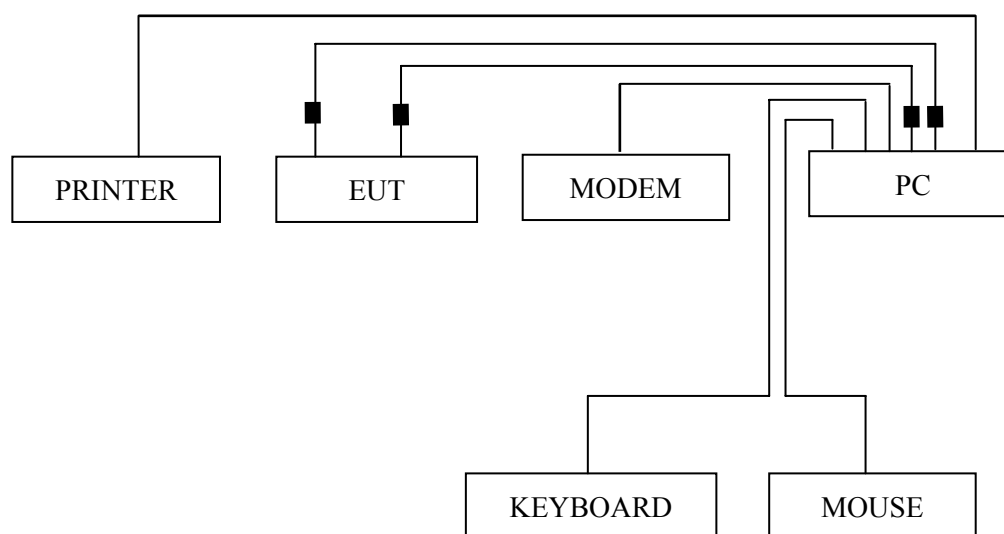
4.1 Test Equipment

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	Mar 19, 2009	Sep 19, 2010
3.	Preamplifier	HP	8449B	3008A00864	Apr 29, 2010	Apr 29, 2011
4.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2009	Dec 01, 2010
5.	Spectrum	Agilent	E7405A	MY45106600	May 19, 2010	May 19, 2011
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

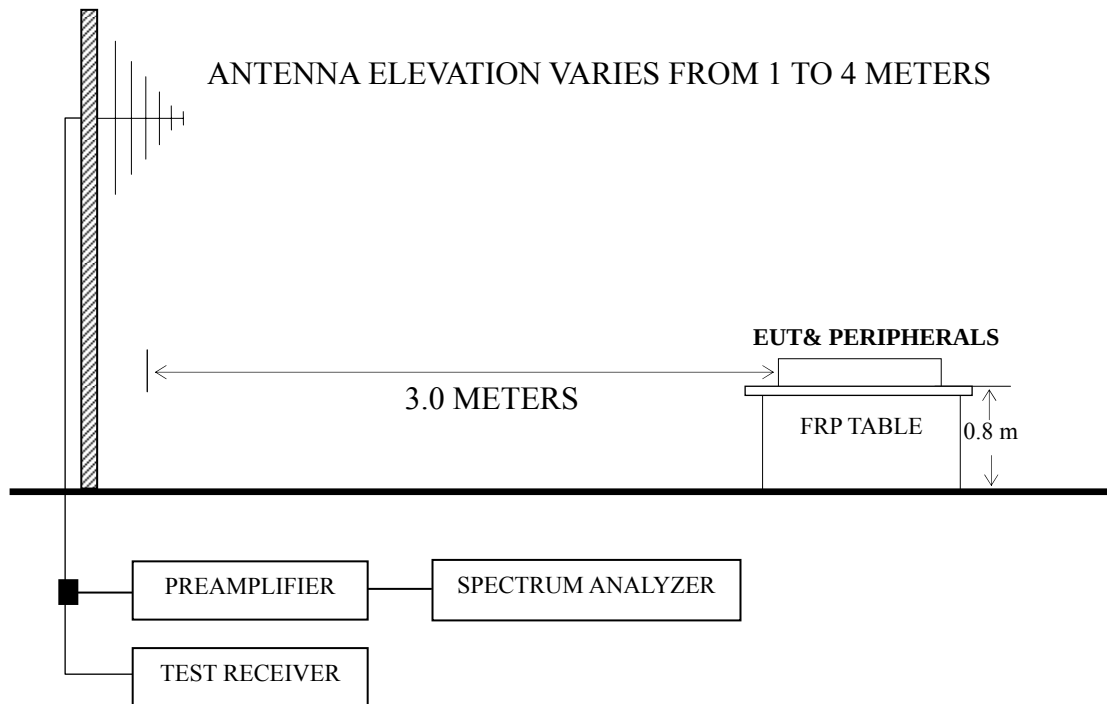
4.2 Block Diagram of Test Setup

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 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/DVI 1280*1024@75Hz mode.

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 1280*1024@75Hz	P24 – P25
DVI 640*480@60Hz	P26
DVI 1024*768@60Hz	P27
DVI 1280*1024@75Hz	P28 – P29

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

NOTE 5 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 6 – The worst case is for DVI 1280*1024@75Hz test mode. The worst emission at horizontal polarization was detected at 644.600 MHz with corrected signal level of 43.99 dB ($\mu\text{V/m}$) (limit is 46.00dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 240° . The worst emission at vertical polarization was detected at 644.600 MHz with corrected signal level of 43.69 dB ($\mu\text{V/m}$) (limit is 46.00 dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 330° .

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 60%RH

Serial No. : E2010083003 Date of Test : Sep 07, 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	43.580	8.38	11.88	0.74	21.00	40.00	19.00
	145.430	18.85	11.66	1.23	31.74	43.50	11.76
	172.590	24.80	10.11	1.35	36.26	43.50	7.24
	223.030	24.51	11.80	1.52	37.83	46.00	8.17
	303.540	19.26	14.00	1.78	35.04	46.00	10.96
	644.980	17.56	19.44	2.57	39.57	46.00	6.43
Vertical	30.970	15.63	19.03	0.64	35.30	40.00	4.70
	43.000	24.81	12.18	0.74	37.73	40.00	2.27
	87.230	26.47	8.96	0.98	36.41	40.00	3.59
	153.190	21.29	11.04	1.25	33.58	43.50	9.92
	216.240	24.55	11.43	1.50	37.48	46.00	8.52
	644.980	16.23	19.44	2.57	38.24	46.00	7.76

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 60%RH

Serial No. : E2010083003 Date of Test : Sep 07, 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	32.400	13.50	18.25	0.65	32.40	40.00	7.60
	53.280	23.82	8.14	0.80	32.76	40.00	7.24
	62.980	25.97	6.57	0.86	33.40	40.00	6.60
	221.090	24.85	11.71	1.52	38.08	46.00	7.92
	353.980	18.60	15.45	1.93	35.98	46.00	10.02
	644.980	17.08	19.44	2.57	39.09	46.00	6.91
Vertical	30.000	2.40	19.60	0.63	22.63	40.00	17.37
	145.430	19.26	11.66	1.23	32.15	43.50	11.35
	218.180	23.32	11.52	1.51	36.35	46.00	9.65
	279.290	20.88	13.52	1.70	36.10	46.00	9.90
	644.980	9.88	19.44	2.57	31.89	46.00	14.11
	800.180	8.44	20.70	2.89	32.03	46.00	13.97

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 60%RH

Serial No. : E2010083003 Date of Test : Sep 01, 2010

Test Mode : D-Sub 1280*1024@75Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	32.200	13.50	18.33	0.65	--	32.48	40.00	7.52	QP
	51.340	23.91	8.61	0.79	--	33.31	40.00	6.69	
	114.390	21.61	12.64	1.10	--	35.35	43.50	8.15	
	223.030	25.49	11.80	1.52	--	38.81	46.00	7.19	
	407.330	21.05	16.59	2.08		39.72	46.00	6.28	
	644.980	15.31	19.44	2.57	--	37.32	46.00	8.68	
	1041.000	50.32	22.69	4.49	37.33	40.17	74.00	33.83	PK
	1201.000	49.87	23.74	4.51	37.00	41.12	74.00	32.88	
	1393.000	49.61	25.16	4.54	36.55	42.76	74.00	31.24	
	1467.000	49.89	25.60	4.55	36.36	43.68	74.00	30.32	
	1600.000	51.16	26.40	4.56	36.10	46.02	74.00	27.98	
	1797.000	46.70	26.90	4.58	35.81	42.37	74.00	31.63	
	1041.000	38.32	22.69	4.49	37.33	28.17	54.00	25.83	AV
	1201.000	35.87	23.74	4.51	37.00	27.12	54.00	26.88	
	1393.000	33.61	25.16	4.54	36.55	26.76	54.00	27.24	
	1467.000	35.89	25.60	4.55	36.36	29.68	54.00	24.32	
	1600.000	33.16	26.40	4.56	36.10	28.02	54.00	25.98	
	1797.000	32.70	26.90	4.58	35.81	28.37	54.00	25.63	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 60%RH

Serial No. : E2010083003 Date of Test : Sep 01, 2010

Test Mode : D-Sub 1280*1024@75Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	58.130	15.69	6.96	0.83	--	23.48	40.00	16.52	QP
	145.430	20.53	11.66	1.23	--	33.42	43.50	10.08	
	223.030	26.44	11.80	1.52	--	39.76	46.00	6.24	
	280.260	16.41	13.55	1.70	--	31.66	46.00	14.34	
	552.830	13.04	18.62	2.36	--	34.02	46.00	11.98	
	870.990	10.58	21.42	2.98	--	34.98	46.00	11.02	
	1125.000	46.35	23.27	4.50	37.16	36.96	74.00	37.04	PK
	1286.000	44.80	24.40	4.53	36.82	36.91	74.00	37.09	
	1498.000	48.44	25.80	4.55	36.30	42.49	74.00	31.51	
	1600.000	47.50	26.40	4.56	36.10	42.36	74.00	31.64	
	1799.000	44.35	26.90	4.58	35.81	40.02	74.00	33.98	
	1840.000	42.75	27.12	4.64	35.77	38.74	74.00	35.26	
	1125.000	35.35	23.27	4.50	37.16	25.96	54.00	28.04	AV
	1286.000	32.80	24.40	4.53	36.82	24.91	54.00	29.09	
	1498.000	30.44	25.80	4.55	36.30	24.49	54.00	29.51	
	1600.000	28.50	26.40	4.56	36.10	23.36	54.00	30.64	
	1799.000	27.35	26.90	4.58	35.81	23.02	54.00	30.98	
	1840.000	30.75	27.12	4.64	35.77	26.74	54.00	27.26	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 60%RH

Serial No. : E2010083003 Date of Test : Sep 01, 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	31.940	15.08	18.49	0.65	34.22	40.00	5.78
	65.890	20.06	6.54	0.87	27.47	40.00	12.53
	126.030	20.93	12.71	1.16	34.80	43.50	8.70
	153.190	22.25	11.04	1.25	34.54	43.50	8.96
	225.940	27.39	11.94	1.53	40.86	46.00	5.14
	509.180	9.24	18.01	2.27	29.52	46.00	16.48
Vertical	145.430	19.32	11.66	1.23	32.21	43.50	11.29
	227.880	27.45	12.02	1.54	41.01	46.00	4.99
	279.290	22.67	13.52	1.70	37.89	46.00	8.11
	644.980	21.20	19.44	2.57	43.21	46.00	2.79
	674.080	15.87	19.58	2.63	38.08	46.00	7.92
	725.490	15.74	19.97	2.75	38.46	46.00	7.54

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 60%RH

Serial No. : E2010083003 Date of Test : Sep 01, 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	148.340	21.80	11.41	1.23	34.44	43.50	9.06
	232.730	24.86	12.24	1.55	38.65	46.00	7.35
	274.440	24.91	13.43	1.69	40.03	46.00	5.97
	324.880	18.86	14.58	1.84	35.28	46.00	10.72
	650.800	19.76	19.47	2.57	41.80	46.00	4.20
	708.030	18.47	19.79	2.70	40.96	46.00	5.04
Vertical	30.970	16.01	19.03	0.64	35.68	40.00	4.32
	61.040	23.35	6.59	0.85	30.79	40.00	9.21
	124.090	19.75	12.81	1.15	33.71	43.50	9.79
	153.190	21.39	11.04	1.25	33.68	43.50	9.82
	227.880	24.65	12.02	1.54	38.21	46.00	7.79
	708.030	17.20	19.79	2.70	39.69	46.00	6.31

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 60%RH

Serial No. : E2010083003 Date of Test : Sep 01, 2010

Test Mode : DVI 1280*1024@75Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	32.200	13.40	18.33	0.65	--	32.38	40.00	7.62	QP
	65.890	21.79	6.54	0.87	--	29.20	40.00	10.80	
	124.090	19.82	12.81	1.15	--	33.78	43.50	9.72	
	155.130	22.12	10.89	1.26	--	34.27	43.50	9.23	
	225.940	27.28	11.94	1.53	--	40.75	46.00	5.25	
	644.600	22.00	19.42	2.57	--	43.99	46.00	2.01	
	1041.000	54.32	22.69	4.49	37.33	44.17	74.00	29.83	PK
	1201.000	53.87	23.74	4.51	37.00	45.12	74.00	28.88	
	1264.000	52.32	24.23	4.52	36.86	44.21	74.00	29.79	
	1467.000	52.89	25.60	4.55	36.36	46.68	74.00	27.32	
	1716.000	51.00	26.71	4.57	35.92	46.36	74.00	27.64	
	1797.000	50.70	26.90	4.58	35.81	46.37	74.00	27.63	
	1041.000	42.32	22.69	4.49	37.33	32.17	54.00	21.83	QP
	1201.000	39.87	23.74	4.51	37.00	31.12	54.00	22.88	
	1264.000	38.32	24.23	4.52	36.86	30.21	54.00	23.79	
	1467.000	35.89	25.60	4.55	36.36	29.68	54.00	24.32	
	1716.000	32.00	26.71	4.57	35.92	27.36	54.00	26.64	
	1797.000	32.70	26.90	4.58	35.81	28.37	54.00	25.63	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E1910TW Humidity : 60%RH

Serial No. : E2010083003 Date of Test : Sep 01, 2010

Test Mode : DVI 1280*1024@75Hz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	87.230	13.00	8.96	0.98	--	22.94	40.00	17.06	QP
	145.430	22.61	11.66	1.23	--	35.50	43.50	8.00	
	235.640	25.09	12.36	1.56	--	39.01	46.00	6.99	
	387.930	14.84	16.24	2.03	--	33.11	46.00	12.89	
	644.600	21.70	19.42	2.57	--	43.69	46.00	2.31	
	681.840	17.37	19.62	2.63	--	39.62	46.00	6.38	
	1125.000	54.35	23.27	4.50	37.16	44.96	74.00	29.04	PK
	1286.000	53.80	24.40	4.53	36.82	45.91	74.00	28.09	
	1333.000	53.06	24.74	4.53	36.71	45.62	74.00	28.38	
	1600.000	53.50	26.40	4.56	36.10	48.36	74.00	25.64	
	1676.000	48.05	26.59	4.57	35.97	43.24	74.00	30.76	
	1799.000	49.35	26.90	4.58	35.81	45.02	74.00	28.98	
	1125.000	43.35	23.27	4.50	37.16	33.96	54.00	20.04	QP
	1286.000	38.80	24.40	4.53	36.82	30.91	54.00	23.09	
	1333.000	37.06	24.74	4.53	36.71	29.62	54.00	24.38	
	1600.000	33.50	26.40	4.56	36.10	28.36	54.00	25.64	
	1676.000	34.05	26.59	4.57	35.97	29.24	54.00	24.76	
	1799.000	33.35	26.90	4.58	35.81	29.02	54.00	24.98	

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.