

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

LCD Monitor

Model No.	W1943SV	W1943CV
Serial No.	E1106591-01/01	--

FCC ID : BEJW1943SV

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

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Report No. : ACI-F09002A1
Date of Test : Jun 09 - 17, 2011
Date of Report : Jun 30, 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	W1943SV	W1943CV
(B) Serial No	E1106591-01/01	--
(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: See Sec. 2.1; S/N: See Sec. 2.1) which was tested in 3m anechoic chamber on Jun 09 - 17, 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 : Jun 09 - 17, 2011 Date of Report : Jun 30, 2011

Producer : Yenny Yu.
YENNY YU / Assistant

Review : Dio Yang.
DIO YANG / Deputy 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. :

W1943SV	W1943CV
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Serial No. :

E1106591-01/01	--
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Note #1 : The different list for all the models are as follows:

Report No.	Model No.	Rev. Summary	Edition No.	Data of Rev.
ACI-F09002	W1943SV W1943CV	Original Report.	0	Jan 12, 2009
ACI-F09002A1	W1943SV W1943CV	To add two new switching adapters.	Rev. A1	Jun 30, 2011

Note #2 : W1943SV and W1943CV are all the same except for different panel with different brightness of screen (The brightness of W1943SV is 300 and the brightness of W1943CV is 200).

Note #3 : The W1943SV model (worst emission model in original report) was selected to be tested and recorded in this report.

Real Power	:	Model Number	Real Power
		W1943SV	22.80W (Adapter #1)
			22.20W (Adapter #2)

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: AU Optronics
(for W1943SV) M/N : M185XW01

Adapter #1 : Manufacturer: HONOR ELECTRONIC CO., LTD.
M/N : ADS-40FSG-19 19025GPG
Input : 100-240V ~ 50/60Hz, 1.0A max
Output : 19V --- 1.3A
Output Cable : Unshielded, Undetachable,
1.80m, with one core

Adapter #2	:	Manufacturer: HONOR ELECTRONIC CO., LTD. M/N : ADS-40SG-19-3 19025G Input : 100-240V ~ 50/60Hz, 1.0A max Output : 19V $\overline{\overline{\text{---}}}$ 1.3A Output Cable : Unshielded, Undetachable, 1.80m
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
Power Cord	:	Unshielded, Detachable, 1.80m
Note #4	:	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:

(1) One D-Sub Port

: Connected with PC

(2) One DC In Port

: Connected with Adapter

2.2 Peripherals

2.2.1 PC

Manufacturer : HP
Model Number : dx7200MT
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 : RT2300
Serial Number : 7668200662248
Data Cable : Shielded, Undetachable, 1.8m
Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.4 Mouse

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

2.2.5 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 : 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)

3 CONDUCTED EMISSION TEST

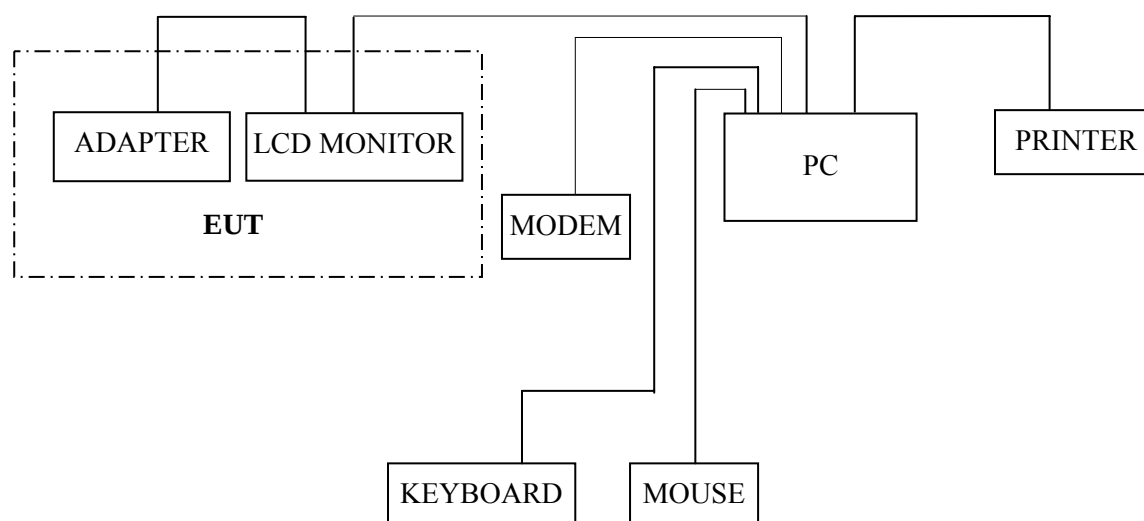
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

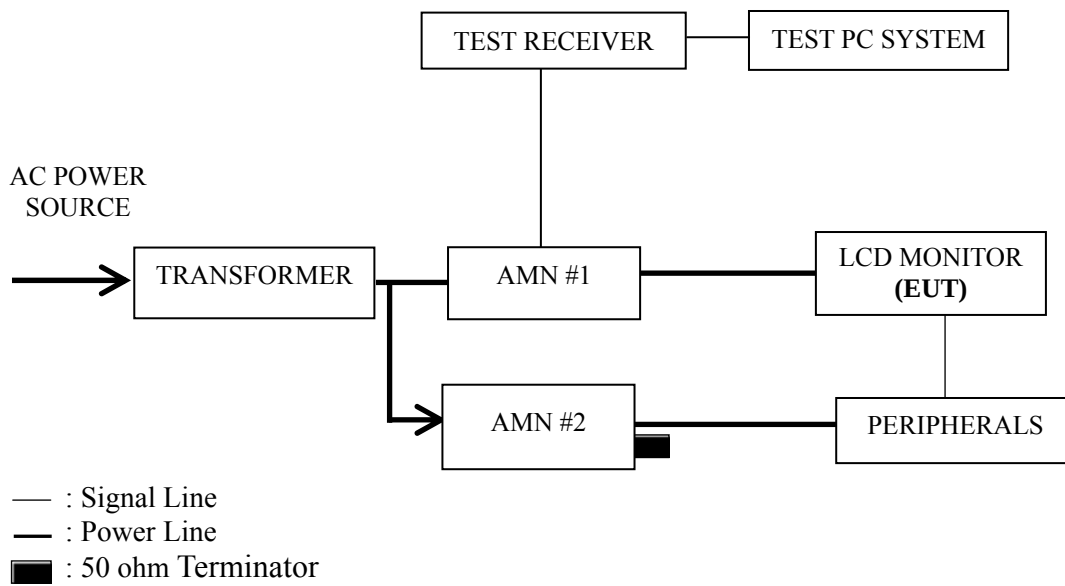
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 22, 2011	Mar 22, 2012
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Mar 22, 2011	Mar 22, 2012
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2011	Mar 22, 2012
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2011	Sep 18, 2011
5.	50 Ω 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



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 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:

Model Number	Adaptor	Test Mode
W1943SV	ADS-40FSG-19	D-Sub 640*480@60Hz
		D-Sub 1024*768@60Hz
		D-Sub 1360*768@60Hz
	ADS-40SG-19-3	D-Sub 640*480@60Hz
		D-Sub 1024*768@60Hz
		D-Sub 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.

Model Number	Adapter	Test Mode	Page
W1943SV	Adapter #1: ADS-40FSG-19 19025GPG	D-Sub 640*480@60Hz	P13
		D-Sub 1024*768@60Hz	P14
		D-Sub 1360*768@60Hz	P15
	Adapter #2: ADS-40SG-19-3 19025G	D-Sub 640*480@60Hz	P16
		D-Sub 1024*768@60Hz	P17
		D-Sub 1360*768@60Hz	P18

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 640*480@60Hz (Adapter #1) test mode. The worst emission is detected at 4.027 MHz (Average Value) with corrected signal level of 39.68 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. : W1943SV Humidity : 48%RH

Serial No. : E1106591-01/01 Date of Test : Jun 09, 2011

Test Mode : D-Sub 640*480@60Hz Adapter : Adapter #1

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.179	53.30	0.23	53.53	64.55	11.02	QP
	0.239	51.32	0.22	51.54	62.13	10.59	
	0.310	48.10	0.25	48.35	59.97	11.62	
	0.541	43.50	0.32	43.82	56.00	12.18	
	4.027	43.52	0.54	44.06	56.00	11.94	
	6.121	41.67	0.61	42.28	60.00	17.72	
	0.179	43.24	0.23	43.47	54.55	11.08	AV
	0.239	42.16	0.22	42.38	52.13	9.75	
	0.310	39.24	0.25	39.49	49.97	10.48	
	0.541	34.25	0.32	34.57	46.00	11.43	
	4.027	39.14	0.54	39.68	46.00	6.32	
	6.121	36.44	0.61	37.05	50.00	12.95	
Neutral	0.178	52.07	0.19	52.26	64.59	12.33	QP
	0.247	48.33	0.18	48.51	61.86	13.35	
	0.313	46.55	0.20	46.75	59.88	13.13	
	0.535	44.15	0.24	44.39	56.00	11.61	
	1.282	43.05	0.47	43.52	56.00	12.48	
	4.952	43.17	0.76	43.93	56.00	12.07	
	0.178	43.69	0.19	43.88	54.59	10.71	AV
	0.247	39.25	0.18	39.43	51.86	12.43	
	0.313	37.99	0.20	38.19	49.88	11.69	
	0.535	36.36	0.24	36.60	46.00	9.40	
	1.282	35.23	0.47	35.70	46.00	10.30	
	4.952	34.21	0.76	34.97	46.00	11.03	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 48%RH

Serial No. : E1106591-01/01 Date of Test : Jun 09, 2011

Test Mode : D-Sub 1024*768@60Hz Adapter : Adapter #1

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.178	53.39	0.23	53.62	64.59	10.97	QP
	0.239	51.32	0.22	51.54	62.13	10.59	
	0.310	48.10	0.25	48.35	59.97	11.62	
	0.541	43.50	0.32	43.82	56.00	12.18	
	4.027	43.52	0.54	44.06	56.00	11.94	
	5.836	43.54	0.59	44.13	60.00	15.87	
	0.178	45.58	0.23	45.81	54.59	8.78	AV
	0.239	42.36	0.22	42.58	52.13	9.55	
	0.310	42.25	0.25	42.50	49.97	7.47	
	0.541	34.25	0.32	34.57	46.00	11.43	
	4.027	35.66	0.54	36.20	46.00	9.80	
	5.836	38.98	0.59	39.57	50.00	10.43	
Neutral	0.181	51.94	0.19	52.13	64.46	12.33	QP
	0.247	49.33	0.18	49.51	61.86	12.35	
	0.313	47.55	0.20	47.75	59.88	12.13	
	0.535	44.15	0.24	44.39	56.00	11.61	
	2.155	47.00	0.55	47.55	56.00	8.45	
	4.952	44.17	0.76	44.93	56.00	11.07	
	0.181	42.87	0.19	43.06	54.46	11.40	AV
	0.247	39.68	0.18	39.86	51.86	12.00	
	0.313	37.57	0.20	37.77	49.88	12.11	
	0.535	37.89	0.24	38.13	46.00	7.87	
	2.155	36.26	0.55	36.81	46.00	9.19	
	4.952	36.88	0.76	37.64	46.00	8.36	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 48%RH

Serial No. : E1106591-01/01 Date of Test : Jun 09, 2011

Test Mode : D-Sub 1360*768@60Hz Adapter : Adapter #1

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.178	54.32	0.23	54.55	64.58	10.03	QP
	0.239	50.32	0.22	50.54	62.13	11.59	
	0.543	44.44	0.32	44.76	56.00	11.24	
	1.210	39.44	0.38	39.82	56.00	16.18	
	2.155	40.31	0.44	40.75	56.00	15.25	
	4.027	42.52	0.54	43.06	56.00	12.94	
	0.178	46.60	0.23	46.83	54.58	7.75	AV
	0.239	43.61	0.22	43.83	52.13	8.30	
	0.543	37.20	0.32	37.52	46.00	8.48	
	1.210	30.60	0.38	30.98	46.00	15.02	
	2.155	32.60	0.44	33.04	46.00	12.96	
	4.027	35.60	0.54	36.14	46.00	9.86	
Neutral	0.178	52.07	0.19	52.26	64.59	12.33	QP
	0.313	45.55	0.20	45.75	59.88	14.13	
	0.536	44.90	0.24	45.14	56.00	10.86	
	0.779	40.86	0.31	41.17	56.00	14.83	
	1.282	41.05	0.47	41.52	56.00	14.48	
	4.672	41.04	0.76	41.80	56.00	14.20	
	0.178	44.30	0.19	44.49	54.59	10.10	AV
	0.313	37.60	0.20	37.80	49.88	12.08	
	0.536	38.10	0.24	38.34	46.00	7.66	
	0.779	32.65	0.31	32.96	46.00	13.04	
	1.282	33.59	0.47	34.06	46.00	11.94	
	4.672	33.59	0.76	34.35	46.00	11.65	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : E1106591-01/01 Date of Test : Jun 09, 2011

Test Mode : D-Sub 640*480@60Hz Adapter : Adapter #2

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.155	54.20	0.22	54.42	65.73	11.31	QP
	0.320	38.21	0.26	38.47	59.71	21.24	
	0.500	37.54	0.31	37.85	56.00	18.15	
	0.880	33.11	0.38	33.49	56.00	22.51	
	1.834	32.13	0.44	32.57	56.00	23.43	
	3.800	33.98	0.53	34.51	56.00	21.49	
	0.155	42.50	0.22	42.72	55.73	13.01	AV
	0.320	27.70	0.26	27.96	49.71	21.75	
	0.500	26.94	0.31	27.25	46.00	18.75	
	0.880	22.59	0.38	22.97	46.00	23.03	
	1.834	21.60	0.44	22.04	46.00	23.96	
	3.800	22.87	0.53	23.40	46.00	22.60	
Neutral	0.160	54.21	0.19	54.40	65.46	11.06	QP
	0.330	37.43	0.21	37.64	59.45	21.81	
	0.440	37.02	0.24	37.26	57.06	19.80	
	0.800	32.55	0.33	32.88	56.00	23.12	
	1.470	31.50	0.51	32.01	56.00	23.99	
	3.890	30.10	0.73	30.83	56.00	25.17	
	0.160	41.80	0.19	41.99	55.46	13.47	AV
	0.330	26.80	0.21	27.01	49.45	22.44	
	0.440	28.70	0.24	28.94	47.06	18.12	
	0.800	22.50	0.33	22.83	46.00	23.17	
	1.470	20.90	0.51	21.41	46.00	24.59	
	3.890	19.60	0.73	20.33	46.00	25.67	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : E1106591-01/01 Date of Test : Jun 09, 2011

Test Mode : D-Sub 1024*768@60Hz Adapter : Adapter #2

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.155	53.10	0.22	53.32	65.73	12.41	QP
	0.322	38.17	0.26	38.43	59.66	21.23	
	0.500	37.13	0.31	37.44	56.00	18.56	
	0.899	34.11	0.38	34.49	56.00	21.51	
	1.839	33.00	0.44	33.44	56.00	22.56	
	3.509	33.86	0.50	34.36	56.00	21.64	
	0.155	42.54	0.22	42.76	55.73	12.97	AV
	0.322	27.51	0.26	27.77	49.66	21.89	
	0.500	26.48	0.31	26.79	46.00	19.21	
	0.899	23.09	0.38	23.47	46.00	22.53	
	1.839	22.43	0.44	22.87	46.00	23.13	
	3.509	22.86	0.50	23.36	46.00	22.64	
Neutral	0.155	54.13	0.19	54.32	65.71	11.39	QP
	0.325	37.32	0.21	37.53	59.57	22.04	
	0.440	35.80	0.24	36.04	57.06	21.02	
	0.813	31.39	0.34	31.73	56.00	24.27	
	1.464	31.16	0.51	31.67	56.00	24.33	
	3.881	31.20	0.73	31.93	56.00	24.07	
	0.155	41.67	0.19	41.86	55.71	13.85	AV
	0.325	26.40	0.21	26.61	49.57	22.96	
	0.440	27.50	0.24	27.74	47.06	19.32	
	0.813	21.44	0.34	21.78	46.00	24.22	
	1.464	20.86	0.51	21.37	46.00	24.63	
	3.881	20.46	0.73	21.19	46.00	24.81	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 48%RH

Serial No. : E1106591-01/01 Date of Test : Jun 09, 2011

Test Mode : D-Sub 1360*768@60Hz Adapter : Adapter #2

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.155	54.43	0.22	54.65	65.73	11.08	QP
	0.322	38.21	0.26	38.47	59.66	21.19	
	0.516	37.54	0.31	37.85	56.00	18.15	
	0.899	34.11	0.38	34.49	56.00	21.51	
	1.839	33.13	0.44	33.57	56.00	22.43	
	3.509	34.01	0.50	34.51	56.00	21.49	
	0.155	42.60	0.22	42.82	55.73	12.91	AV
	0.322	27.70	0.26	27.96	49.66	21.70	
	0.516	26.94	0.31	27.25	46.00	18.75	
	0.899	23.59	0.38	23.97	46.00	22.03	
	1.839	22.60	0.44	23.04	46.00	22.96	
	3.509	22.90	0.50	23.40	46.00	22.60	
Neutral	0.155	54.21	0.19	54.40	65.71	11.31	QP
	0.325	37.43	0.21	37.64	59.57	21.93	
	0.435	37.02	0.24	37.26	57.15	19.89	
	0.813	32.54	0.34	32.88	56.00	23.12	
	1.464	32.50	0.51	33.01	56.00	22.99	
	3.881	31.31	0.73	32.04	56.00	23.96	
	0.155	41.80	0.19	41.99	55.71	13.72	AV
	0.325	26.80	0.21	27.01	49.57	22.56	
	0.435	28.70	0.24	28.94	47.15	18.21	
	0.813	22.49	0.34	22.83	46.00	23.17	
	1.464	21.90	0.51	22.41	46.00	23.59	
	3.881	20.60	0.73	21.33	46.00	24.67	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

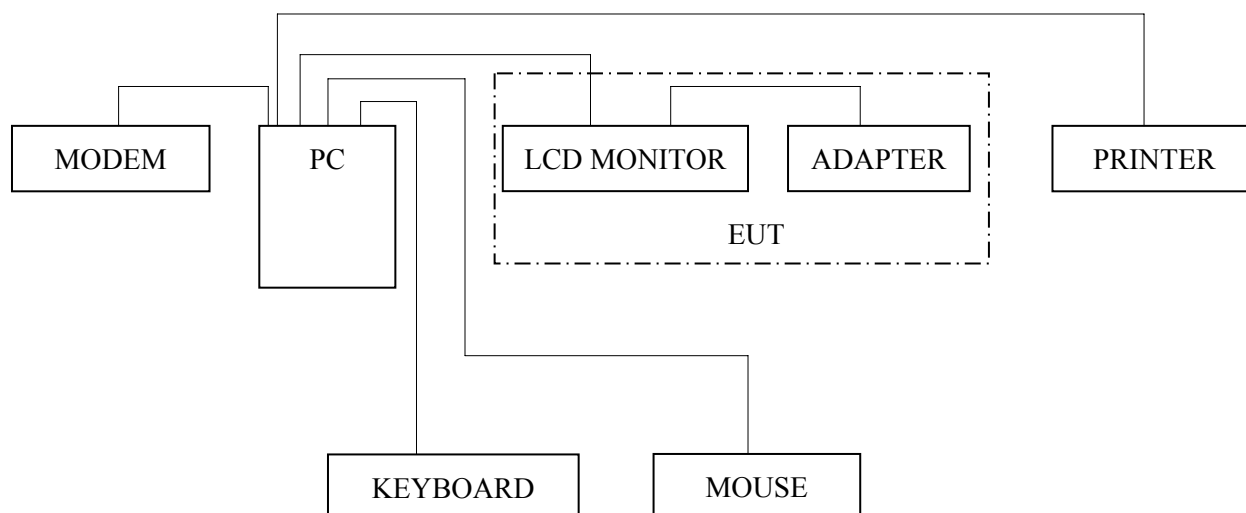
4.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

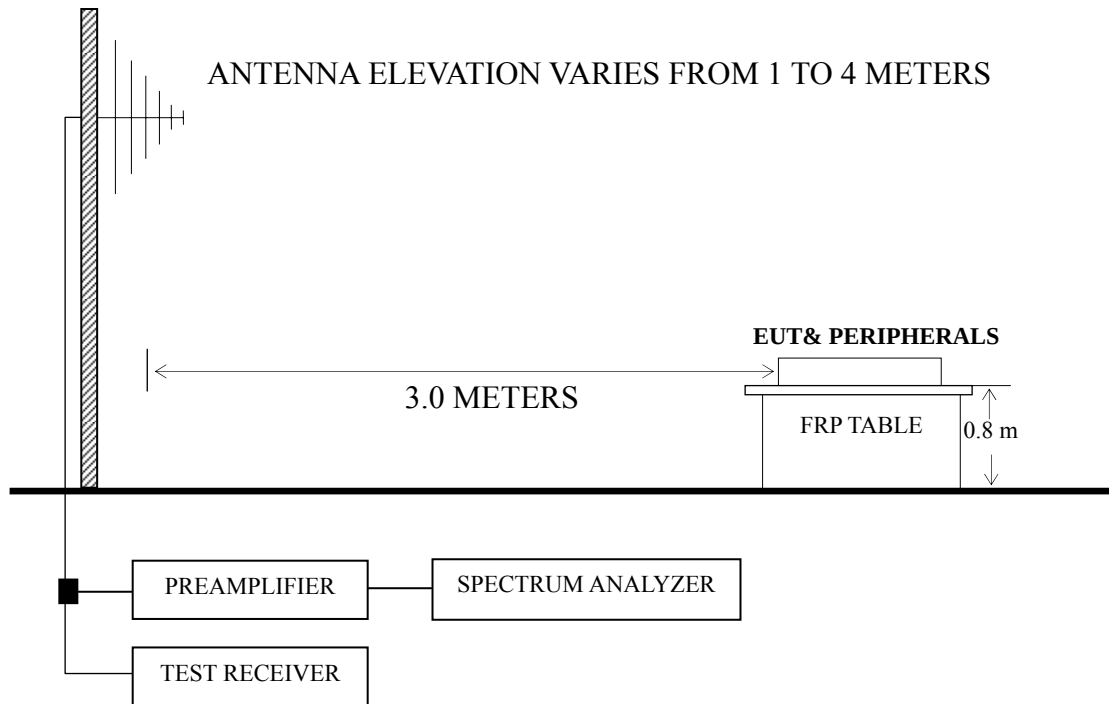
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 22, 2011	Mar 22, 2012
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2011	Sep 18, 2011
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2010	Dec 01, 2011
4.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2011	Mar 22, 2012
5.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2011	Sep 18, 2011
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals



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.

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 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.

Model Number	Adapter	Test Mode	Data Page
W1943SV	Adapter #1: ADS-40FSG-19 19025GPG	D-Sub 640*480@60Hz	P22
		D-Sub 1024*768@60Hz	P23
		D-Sub 1360*768@60Hz	P24
	Adapter #2: ADS-40SG-19-3 19025G	D-Sub 640*480@60Hz	P25
		D-Sub 1024*768@60Hz	P26
		D-Sub 1360*768@60Hz	P27

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.

NOTE 3 – The emission levels that are 20dB below the official limit are not reported.

NOTE 4 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 5 – All reading are Quasi-Peak values.

NOTE 6 – The worst case is for D-Sub 1360*768@60Hz (Adapter #2) test mode. The worst emission at horizontal polarization was detected at 542.160MHz with corrected signal level of 39.52 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 100°. The worst emission at vertical polarization was detected at 541.500 MHz with corrected signal level of 44.71 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 20°.

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : E1106591-01/01 Date of Test : Jun 17, 2011

Test Mode : D-Sub 640*480@60Hz Adapter : Adapter #1

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	30.000	2.16	18.30	0.80	21.26	40.00	18.74
	56.190	17.23	8.88	1.08	27.19	40.00	12.81
	213.330	22.30	10.33	2.47	35.10	43.50	8.40
	321.970	15.90	14.30	2.82	33.02	46.00	12.98
	495.600	13.82	17.56	3.25	34.63	46.00	11.37
	835.100	11.22	20.49	4.22	35.93	46.00	10.07
Vertical	30.970	15.86	19.03	0.81	35.70	40.00	4.30
	53.280	25.60	8.14	1.01	34.75	40.00	5.25
	112.450	19.73	12.51	1.96	34.20	43.50	9.30
	187.140	20.98	10.17	2.38	33.53	43.50	9.97
	494.630	17.91	17.83	3.25	38.99	46.00	7.01
	872.930	15.83	21.46	4.60	41.89	46.00	4.11

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : E1106591-01/01 Date of Test : Jun 17, 2011

Test Mode : D-Sub 1024*768@60Hz Adapter : Adapter #1

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	30.900	17.50	17.84	0.81	36.15	40.00	3.85
	41.640	25.09	11.78	0.88	37.75	40.00	2.25
	89.170	18.32	10.96	1.72	31.00	43.50	12.50
	217.210	21.72	10.48	2.50	34.70	46.00	11.30
	541.190	20.79	17.86	3.34	41.99	46.00	4.01
	872.930	14.09	20.37	4.60	39.06	46.00	6.94
Vertical	30.970	1.89	17.78	0.81	20.48	40.00	19.52
	56.190	14.03	8.88	1.08	23.99	40.00	16.01
	112.450	13.27	11.14	1.96	26.37	43.50	17.13
	346.220	24.18	15.00	2.88	42.06	46.00	3.94
	562.300	19.70	17.99	3.39	41.08	46.00	4.92
	871.960	9.24	20.38	4.60	34.22	46.00	11.78

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : E1106591-01/01 Date of Test : Jun 17, 2011

Test Mode : D-Sub 1360*768@60Hz Adapter : Adapter #1

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	37.500	19.80	14.19	0.85	34.84	40.00	5.16
	94.020	19.73	11.15	1.78	32.66	43.50	10.84
	227.880	23.69	10.97	2.53	37.19	46.00	8.81
	371.440	17.80	15.68	2.93	36.41	46.00	9.59
	541.500	19.79	17.86	3.36	41.01	46.00	4.99
	871.960	14.85	20.38	4.60	39.83	46.00	6.17
Vertical	31.940	1.69	17.29	0.82	19.80	40.00	20.20
	55.220	14.56	8.82	1.06	24.44	40.00	15.56
	109.540	15.68	11.19	1.93	28.80	43.50	14.70
	227.880	22.85	10.97	2.53	36.35	46.00	9.65
	371.440	18.55	15.68	2.93	37.16	46.00	8.84
	541.500	20.79	17.86	3.36	42.01	46.00	3.99

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : E1106591-01/01 Date of Test : Jun 17, 2011

Test Mode : D-Sub 640*480@60Hz Adapter : Adapter #2

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	56.190	21.23	8.88	1.08	31.19	40.00	8.81
	112.450	15.05	11.14	1.96	28.15	43.50	15.35
	207.510	19.70	10.11	2.45	32.26	43.50	11.24
	367.560	16.80	15.61	2.92	35.33	46.00	10.67
	495.600	17.82	17.56	3.25	38.63	46.00	7.37
	699.300	14.62	19.50	3.68	37.80	46.00	8.20
Vertical	30.970	10.60	19.03	0.81	30.44	40.00	9.56
	53.280	21.08	8.14	1.01	30.23	40.00	9.77
	112.450	11.36	12.51	1.96	25.83	43.50	17.67
	159.010	15.18	10.59	2.27	28.04	43.50	15.46
	494.630	13.62	17.83	3.25	34.70	46.00	11.30
	872.930	10.75	21.46	4.60	36.81	46.00	9.19

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : E1106591-01/01 Date of Test : Jun 17, 2011

Test Mode : D-Sub 1024*768@60Hz Adapter : Adapter #2

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	1.18	17.29	0.82	19.29	40.00	20.71
	72.680	19.21	10.08	1.47	30.76	40.00	9.24
	159.010	23.56	10.27	2.27	36.10	43.50	7.40
	346.220	20.27	15.00	2.88	38.15	46.00	7.85
	497.800	20.10	17.58	3.27	40.95	46.00	5.05
	871.960	10.47	20.38	4.60	35.45	46.00	10.55
Vertical	33.880	16.58	16.26	0.83	33.67	40.00	6.33
	56.190	23.50	8.88	1.08	33.46	40.00	6.54
	160.950	21.31	10.24	2.28	33.83	43.50	9.67
	346.220	18.09	15.00	2.88	35.97	46.00	10.03
	494.630	17.88	17.53	3.25	38.66	46.00	7.34
	870.990	13.71	20.38	4.60	38.69	46.00	7.31

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : E1106591-01/01 Date of Test : Jun 17, 2011

Test Mode : D-Sub 1360*768@60Hz Adapter : Adapter #2

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	35.900	16.91	15.10	0.84	32.85	40.00	7.15
	57.160	22.29	8.96	1.12	32.37	40.00	7.63
	88.200	19.06	10.93	1.70	31.69	43.50	11.81
	158.040	20.42	10.28	2.27	32.97	43.50	10.53
	313.500	21.90	14.08	2.79	38.77	46.00	7.23
	542.160	18.30	17.86	3.36	39.52	46.00	6.48
Vertical	35.820	4.56	15.19	0.84	20.59	40.00	19.41
	59.100	13.81	9.07	1.16	24.04	40.00	15.96
	87.230	15.13	10.88	1.70	27.71	40.00	12.29
	158.040	24.65	10.28	2.27	37.20	43.50	6.30
	398.600	24.32	16.27	2.98	43.57	46.00	2.43
	541.500	23.49	17.86	3.36	44.71	46.00	1.29

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

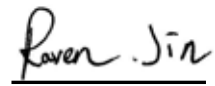
6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Specifications (mm)	Manufacturer	Location
Tape	80PND029	50*60	EXPAN	See Internal Photos 12, 28
Sponge	MCQ57884401	250*9*1	EXPAN	See Internal Photos 13, 30
Sponge	3940TKK036T	45*8*0.5	EXPAN	See Internal Photos 14, 29

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)