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

LCD Monitor

Model No.: E1950SV

Serial No.: 001NDCR8C715

FCC ID : BEJE1950SV

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.
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Report No. : ACI-F10026
Date of Test : Mar 01 – 02, 2010
Date of Report : Mar 10, 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. : E1950SV
		(B) Serial No. : 001NDCR8C715
		(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: E1950SV; S/N: 001NDCR8C715) which was tested in 3m anechoic chamber Mar 01 – 02, 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 : Mar 01 – 02, 2010 Date of Report : Mar 10, 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.

Signatory :
Authorized Signature EMC SAMMY CHEN / Assistant 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.	:	E1950SV
Serial No.	:	001NDCR8C715
Real Power	:	14.00W for Adapter: ADS-24NP-12 1 12024G 14.00W for Adapter: DSA-36W-12 1 24
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 M/N : M185XW01
Adapter #1	:	Switching Adapter Manufacturer: HONOR ELECTRONIC CO., LTD. M/N : ADS-24NP-12-1 12024G Input : 100-240V ~ 50/60Hz, 0.7A Output : 12V ⎓ 2.0A Output Cable: Unshielded, Undetachable, 1.80m, with one core
Adapter #2	:	Switching Adapter Manufacturer: DEE VAN ELECTRONICS (SHENZHEN) CO., LTD. M/N : DSA-36W-12 1 24 Input : 100-240V ~ 50/60Hz, 1.0A Output : +12V ⎓ 2A Output Cable: Unshielded, Undetachable, 1.20m, without core
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	:	After evaluation, the D-Sub cable#1 was 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 DC In Port
: Connected with Adapter

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 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, 1.85m.
Certificate	:	FCC DoC, VCCI, CE/EMC, MIC, GS

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

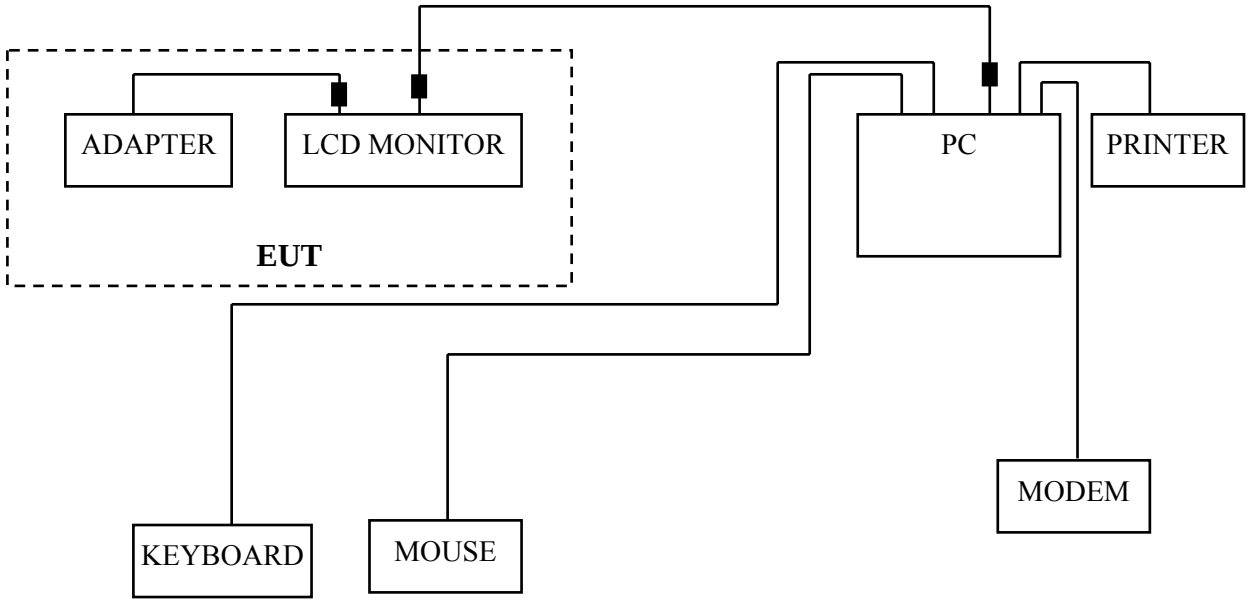
3.1.1 Test Equipment

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, 2009	Apr 02, 2010
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2009	Apr 02, 2010
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 19, 2009	Mar 19, 2010
5.	50Ω Terminator	Anritsu	BNC	001	Apr 02, 2009	Apr 02, 2010
6.	Software	Audix	E3	SET00200 9804M592	--	--

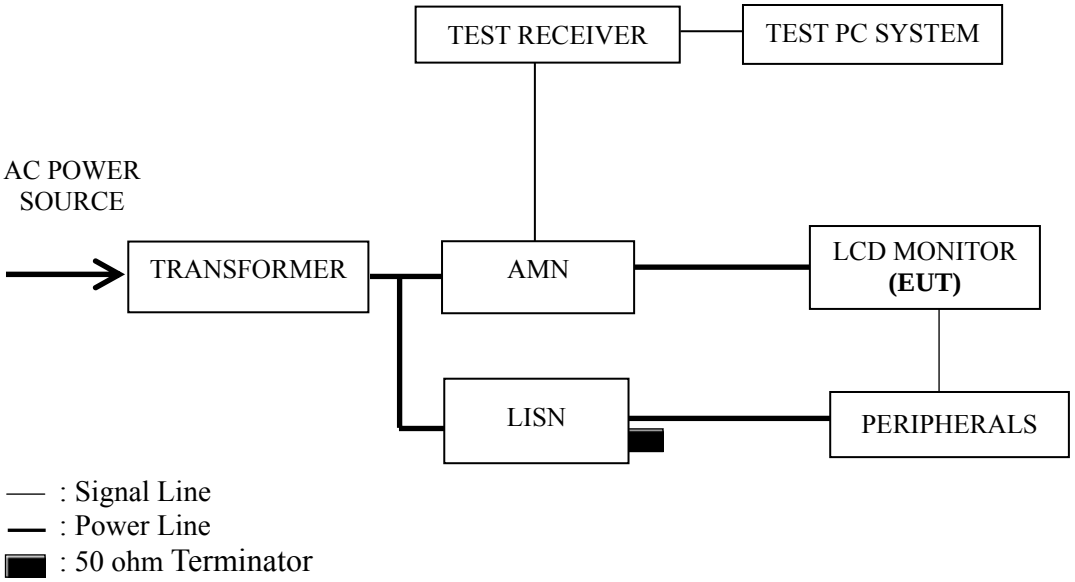
3.2 Block Diagram of Test Setup

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 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:

Adapter	Test Mode
ADS-24NP-12-1 12024G	D-Sub 640*480@60Hz
	D-Sub 1024*768@60Hz
	D-Sub 1360*768@60Hz
DSA-36W-12 1 24	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.

Adapter	Test Mode	Data Page
ADS-24NP-12-1 12024G	D-Sub 640*480@60Hz	P12
	D-Sub 1024*768@60Hz	P13
	D-Sub 1360*768@60Hz	P14
DSA-36W-12 1 24	**D-Sub 640*480@60Hz**	**P15**
	D-Sub 1024*768@60Hz	P16
	D-Sub 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 D-Sub 640*480@60Hz test mode (Adapter: DSA-36W-12 1 24). The worst emission is detected at 0.153 MHz (Quasi-Peak Value) with corrected signal level of 56.05 dB (μV) (limit is 65.82 dB (μV)), when the Line the EUT is connected to AMN.

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	E1950SV	Humidity :	48%RH	
Serial No.	:	001NDCR8C715	Date of Test :	Mar 01, 2010	
Test Mode	:	D-Sub 640*480@60Hz	Adapter :	ADS-24NP-12-1 12024G	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.157**	**53.18**	**0.24**	**53.42**	**65.60**	**12.18**	QP
	0.200	48.89	0.26	49.15	63.62	14.47	
	0.499	29.43	0.47	29.90	56.01	26.11	
	4.874	22.29	0.62	22.91	56.00	33.09	
	8.729	25.52	0.72	26.24	60.00	33.76	
	30.000	31.16	1.18	32.34	60.00	27.66	
	0.157	35.60	0.24	35.84	55.60	19.76	AV
	0.200	28.42	0.26	28.68	53.62	24.94	
	0.499	19.55	0.47	20.02	46.01	25.99	
	4.874	15.73	0.62	16.35	46.00	29.65	
	8.729	19.46	0.72	20.18	50.00	29.82	
	30.000	19.97	1.18	21.15	50.00	28.85	
Neutral	0.156	52.72	0.21	52.93	65.65	12.72	QP
	0.202	48.62	0.24	48.86	63.54	14.68	
	0.510	29.56	0.44	30.00	56.00	26.00	
	4.622	22.79	0.63	23.42	56.00	32.58	
	9.861	25.24	0.75	25.99	60.00	34.01	
	30.000	30.46	1.09	31.55	60.00	28.45	
	0.156	35.02	0.21	35.23	55.65	20.42	AV
	0.202	34.54	0.24	34.78	53.54	18.76	
	0.510	15.94	0.44	16.38	46.00	29.62	
	4.622	15.27	0.63	15.90	46.00	30.10	
	9.861	19.66	0.75	20.41	50.00	29.59	
	30.000	24.42	1.09	25.51	50.00	24.49	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	E1950SV	Humidity	:	48%RH
Serial No.	:	001NDCR8C715	Date of Test	:	Mar 01, 2010
Test Mode	:	D-Sub 1024*768@60Hz	Adapter	:	ADS-24NP-12-1 12024G

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.157**	**52.96**	**0.24**	**53.20**	**65.60**	**12.40**	QP
	0.202	48.84	0.26	49.10	63.54	14.44	
	0.505	29.43	0.47	29.90	56.00	26.10	
	4.874	22.46	0.62	23.08	56.00	32.92	
	9.011	25.30	0.72	26.02	60.00	33.98	
	30.000	31.31	1.18	32.49	60.00	27.51	
	0.157	37.37	0.24	37.61	55.60	17.99	AV
	0.202	36.42	0.26	36.68	53.54	16.86	
	0.505	15.45	0.47	15.92	46.00	30.08	
	4.874	14.36	0.62	14.98	46.00	31.02	
	9.011	19.79	0.72	20.51	50.00	29.49	
	30.000	20.62	1.18	21.80	50.00	28.20	
Neutral	0.156	52.57	0.21	52.78	65.65	12.87	QP
	0.200	48.84	0.24	49.08	63.62	14.54	
	0.505	31.38	0.44	31.82	56.00	24.18	
	4.315	22.99	0.62	23.61	56.00	32.39	
	8.412	25.14	0.72	25.86	60.00	34.14	
	30.000	30.17	1.09	31.26	60.00	28.74	
	0.156	29.16	0.21	29.37	55.65	26.28	AV
	0.200	34.26	0.24	34.50	53.62	19.12	
	0.505	20.78	0.44	21.22	46.00	24.78	
	4.315	14.23	0.62	14.85	46.00	31.15	
	8.412	19.36	0.72	20.08	50.00	29.92	
	30.000	19.89	1.09	20.98	50.00	29.02	

TEST ENGINEER: HUGH HUANG

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1950SV	Humidity	:	48%RH
Serial No.	:	001NDCR8C715	Date of Test	:	Mar 01, 2010
Test Mode	:	D-Sub 1360*768@60Hz	Adapter	:	ADS-24NP-12-1 12024G

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.160**	**54.58**	**0.24**	**54.82**	**65.47**	**10.65**	QP
	0.320	38.71	0.37	39.08	59.71	20.63	
	0.505	29.24	0.47	29.71	56.00	26.29	
	4.721	22.93	0.62	23.55	56.00	32.45	
	9.352	25.45	0.72	26.17	60.00	33.83	
	30.000	30.98	1.18	32.16	60.00	27.84	
	0.160	34.43	0.24	34.67	55.47	20.80	AV
	0.320	22.76	0.37	23.13	49.71	26.58	
	0.505	16.96	0.47	17.43	46.00	28.57	
	4.721	14.80	0.62	15.42	46.00	30.58	
	9.352	19.23	0.72	19.95	50.00	30.05	
	30.000	24.15	1.18	25.33	50.00	24.67	
Neutral	0.157	53.20	0.21	53.41	65.60	12.19	QP
	0.200	48.53	0.24	48.77	63.62	14.85	
	0.510	29.87	0.44	30.31	56.00	25.69	
	4.158	23.19	0.62	23.81	56.00	32.19	
	8.062	25.16	0.71	25.87	60.00	34.13	
	30.000	30.73	1.09	31.82	60.00	28.18	
	0.157	41.43	0.21	41.64	55.60	13.96	AV
	0.200	34.30	0.24	34.54	53.62	19.08	
	0.510	15.49	0.44	15.93	46.00	30.07	
	4.158	15.83	0.62	16.45	46.00	29.55	
	8.062	18.26	0.71	18.97	50.00	31.03	
	30.000	19.90	1.09	20.99	50.00	29.01	

TEST ENGINEER: HUGH HUANG

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E1950SV	Humidity	:	48%RH	
Serial No.	: 001NDCR8C715	Date of Test	:	Mar 01, 2010	
Test Mode	: D-Sub 640*480@60Hz	Adapter	:	DSA-36W-12 1 24	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.153**	**55.81**	**0.24**	**56.05**	**65.82**	**9.77**	QP
	0.200	46.64	0.26	46.90	63.62	16.72	
	0.796	32.97	0.47	33.44	56.00	22.56	
	2.900	32.24	0.57	32.81	56.00	23.19	
	5.476	28.02	0.63	28.65	60.00	31.35	
	29.684	27.33	1.18	28.51	60.00	31.49	
	0.153	43.60	0.24	43.84	55.82	11.98	AV
	0.200	31.90	0.26	32.16	53.62	21.46	
	0.796	22.93	0.47	23.40	46.00	22.60	
	2.900	23.76	0.57	24.33	46.00	21.67	
	5.476	21.38	0.63	22.01	50.00	27.99	
	29.684	20.88	1.18	22.06	50.00	27.94	
Neutral	0.152	55.61	0.21	55.82	65.91	10.09	QP
	0.200	47.39	0.24	47.63	63.62	15.99	
	0.535	34.94	0.44	35.38	56.00	20.62	
	2.285	32.82	0.56	33.38	56.00	22.62	
	5.005	29.43	0.63	30.06	60.00	29.94	
	30.000	31.08	1.09	32.17	60.00	27.83	
	0.152	40.93	0.21	41.14	55.91	14.77	AV
	0.200	34.19	0.24	34.43	53.62	19.19	
	0.535	23.74	0.44	24.18	46.00	21.82	
	2.285	25.58	0.56	26.14	46.00	19.86	
	5.005	23.02	0.63	23.65	50.00	26.35	
	30.000	22.63	1.09	23.72	50.00	26.28	

TEST ENGINEER: HUGH HUANG

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E1950SV	Humidity	:	48%RH	
Serial No.	: 001NDCR8C715	Date of Test	:	Mar 01, 2010	
Test Mode	: D-Sub 1024*768@60Hz	Adapter	:	DSA-36W-12 1 24	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.152**	**54.87**	**0.24**	**55.11**	**65.91**	**10.80**	QP
	0.200	46.39	0.26	46.65	63.62	16.97	
	0.989	32.09	0.48	32.57	56.00	23.43	
	2.237	31.63	0.55	32.18	56.00	23.82	
	5.166	28.11	0.62	28.73	60.00	31.27	
	30.000	31.82	1.18	33.00	60.00	27.00	
	0.152	40.50	0.24	40.74	55.91	15.17	AV
	0.200	32.88	0.26	33.14	53.62	20.48	
	0.989	21.86	0.48	22.34	46.00	23.66	
	2.237	24.66	0.55	25.21	46.00	20.79	
	5.166	21.10	0.62	21.72	50.00	28.28	
	30.000	23.78	1.18	24.96	50.00	25.04	
Neutral	0.152	54.60	0.21	54.81	65.91	11.10	QP
	0.200	46.56	0.24	46.80	63.62	16.82	
	0.573	35.45	0.44	35.89	56.00	20.11	
	2.066	31.38	0.54	31.92	56.00	24.08	
	5.058	29.22	0.63	29.85	60.00	30.15	
	30.000	31.29	1.09	32.38	60.00	27.62	
	0.152	41.19	0.21	41.40	55.91	14.51	AV
	0.200	32.60	0.24	32.84	53.62	20.78	
	0.573	26.17	0.44	26.61	46.00	19.39	
	2.066	23.94	0.54	24.48	46.00	21.52	
	5.058	22.28	0.63	22.91	50.00	27.09	
	30.000	27.00	1.09	28.09	50.00	21.91	

TEST ENGINEER: HUGH HUANG

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E1950SV	Humidity	:	48%RH	
Serial No.	: 001NDCR8C715	Date of Test	:	Mar 01, 2010	
Test Mode	: D-Sub 1360*768@60Hz	Adapter	:	DSA-36W-12 1 24	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.152	54.55	0.24	54.79	65.91	11.12	QP
	0.200	45.87	0.26	46.13	63.62	17.49	
	0.621	35.33	0.46	35.79	56.00	20.21	
	2.527	31.93	0.57	32.50	56.00	23.50	
	5.221	27.97	0.62	28.59	60.00	31.41	
	30.000	32.46	1.18	33.64	60.00	26.36	
	0.152	39.95	0.24	40.19	55.91	15.72	AV
	0.200	32.41	0.26	32.67	53.62	20.95	
	0.621	28.54	0.46	29.00	46.00	17.00	
	2.527	25.13	0.57	25.70	46.00	20.30	
	5.221	20.94	0.62	21.56	50.00	28.44	
	30.000	23.42	1.18	24.60	50.00	25.40	
Neutral	**0.152**	**54.74**	**0.21**	**54.95**	**65.91**	**10.96**	QP
	0.200	46.42	0.24	46.66	63.62	16.96	
	0.573	35.39	0.44	35.83	56.00	20.17	
	2.707	33.48	0.57	34.05	56.00	21.95	
	5.005	28.77	0.63	29.40	60.00	30.60	
	30.000	31.69	1.09	32.78	60.00	27.22	
	0.152	40.67	0.21	40.88	55.91	15.03	AV
	0.200	32.57	0.24	32.81	53.62	20.81	
	0.573	26.77	0.44	27.21	46.00	18.79	
	2.707	26.08	0.57	26.65	46.00	19.35	
	5.005	22.45	0.63	23.08	50.00	26.92	
	30.000	27.38	1.09	28.47	50.00	21.53	

TEST ENGINEER: HUGH HUANG

4 RADIATED EMISSION TEST

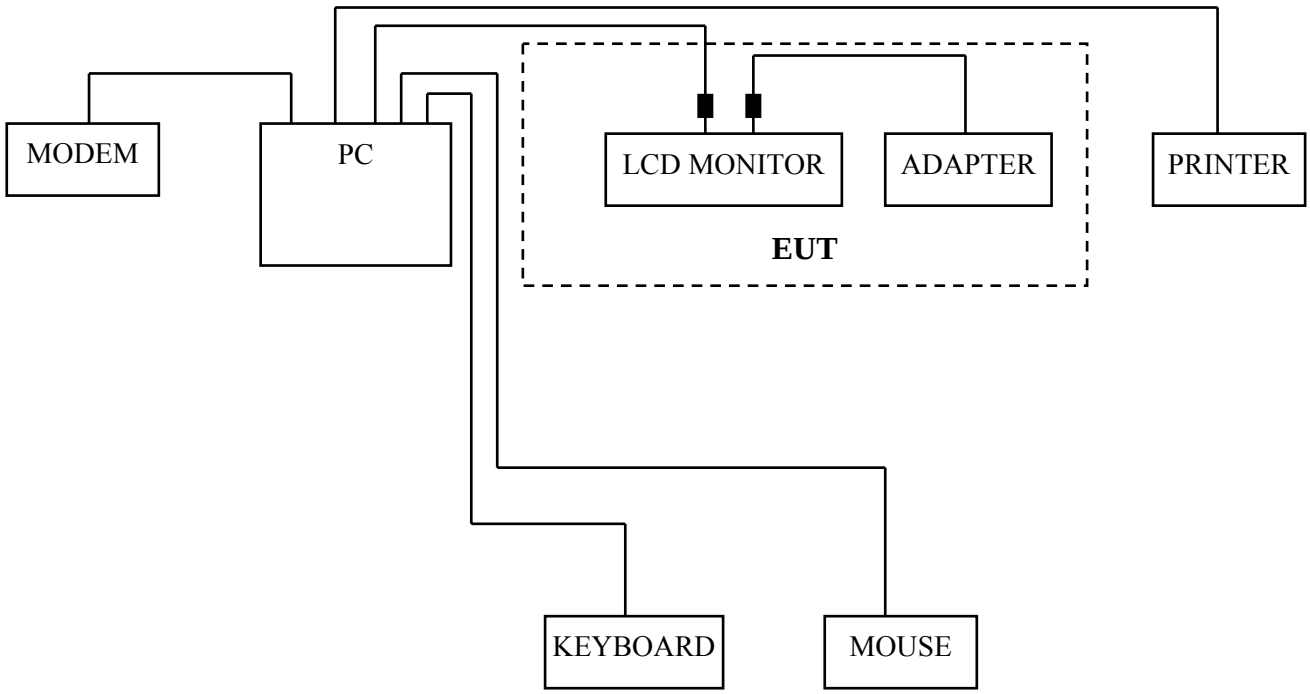
4.1 Test Equipment

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, 2009	Mar 07, 2010
2.	Preamplifier	Agilent	8447D	2944A10548	Sep 19, 2009	Mar 19, 2010
3.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 14, 2008	May 14, 2010
4.	Spectrum	Agilent	E7405A	MY45106600	May 19, 2009	May 19, 2010
5.	Software	Audix	E3	SET00200 9912M295-2	--	--

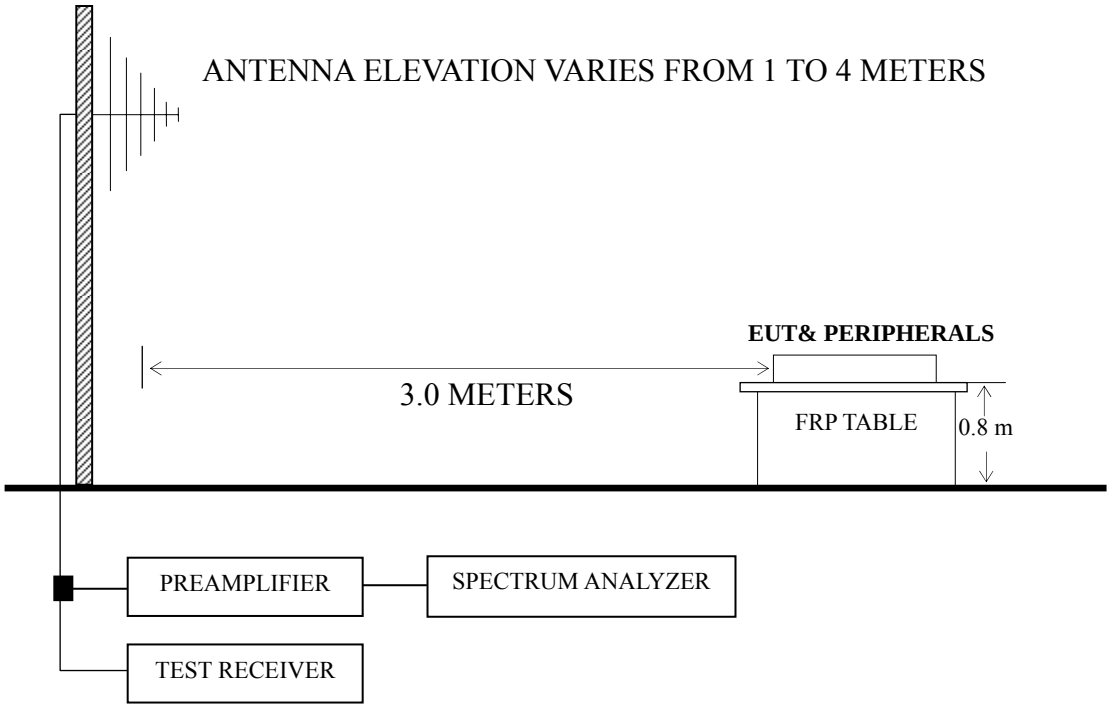
4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals



▌: Ferrite core

4.2.2 Radiated emission test setup



■ : 50 ohm Coaxial Switch

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

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

NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)
NOTE 2 - The tighter limit applies at the band edges.
NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
NOTE 4 - The limits shown are based on Quasi-peak value detector.

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.

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.

Adapter	Test Mode	Data Page
ADS-24NP-12 1 12024G	D-Sub 640*480@60Hz	P22
	D-Sub 1024*768@60Hz	P23
	D-Sub 1360*768@60Hz	P24
DSA-36W-12 1 24	**D-Sub 640*480@60Hz**	**P25**
	D-Sub 1024*768@60Hz	P26
	D-Sub 1360*768@60Hz	P27

NOTE 1 – **The bold test mode** listed above means the worst test mode.
NOTE 2 – 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 – The worst case is for D-Sub 640*480@60Hz test mode (Adapter: DSA-36W-12 1 24). The worst emission at horizontal polarization was detected at 180.350 MHz with corrected signal level of 40.02 dB (μV/m) (limit is 43.50dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 215°. The worst emission at vertical polarization was detected at 35.820 MHz with corrected signal level of 36.72 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 45°.

EUT	:	LCD Monitor	Temperature :		22℃
Model No.	:	E1950SV	Humidity	:	60%RH
Serial No.	:	001NDCR8C715	Date of Test	:	Mar 02, 2010
Test Mode	:	D-Sub 640*480@60Hz	Adapter	:	ADS-24NP-12-1 12024G

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	48.430	5.06	9.62	0.75	15.43	40.00	24.57
	129.910	6.07	12.52	1.13	19.72	43.50	23.78
	216.240	8.40	11.43	1.48	21.31	46.00	24.69
	324.880	2.06	14.58	1.85	18.49	46.00	27.51
	500.450	3.98	17.90	2.27	24.15	46.00	21.85
	871.960	**6.61**	**21.42**	**2.98**	**31.01**	**46.00**	**14.99**
Vertical	**51.340**	**22.55**	**8.61**	**0.76**	**31.92**	**40.00**	**8.08**
	93.050	12.61	10.09	1.01	23.71	43.50	19.79
	127.000	14.28	12.66	1.17	28.11	43.50	15.39
	225.940	13.37	11.94	1.55	26.86	46.00	19.14
	479.110	6.44	17.65	2.20	26.29	46.00	19.71
	667.290	7.11	19.55	2.62	29.28	46.00	16.72

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1950SV	Humidity	:	60%RH
Serial No.	:	001NDCR8C715	Date of Test	:	Mar 02, 2010
Test Mode	:	D-Sub 1024*768@60Hz	Adapter	:	ADS-24NP-12-1 12024G

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	50.370	10.16	8.85	0.76	19.77	40.00	20.23
	129.910	9.04	12.52	1.13	22.69	43.50	20.81
	186.170	12.51	10.14	1.38	24.03	43.50	19.47
	324.880	7.27	14.58	1.85	23.70	46.00	22.30
	500.450	4.97	17.90	2.27	25.14	46.00	20.86
	751.680	**4.00**	**20.23**	**2.80**	**27.03**	**46.00**	**18.97**
Vertical	**30.970**	**16.94**	**19.03**	**0.62**	**36.59**	**40.00**	**3.41**
	50.370	22.41	8.85	0.76	32.02	40.00	7.98
	93.050	16.90	10.09	1.01	28.00	43.50	15.50
	139.610	14.27	12.12	1.23	27.62	43.50	15.88
	225.940	13.33	11.94	1.55	26.82	46.00	19.18
	565.440	5.56	18.78	2.41	26.75	46.00	19.25

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1950SV	Humidity	:	60%RH
Serial No.	:	001NDCR8C715	Date of Test	:	Mar 02, 2010
Test Mode	:	D-Sub 1360*768@60Hz	Adapter	:	ADS-24NP-12-1 12024G

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	50.370	11.08	8.85	0.76	20.69	40.00	19.31
	127.000	9.05	12.66	1.17	22.88	43.50	20.62
	139.610	**11.15**	**12.12**	**1.23**	**24.50**	**43.50**	**19.00**
	232.730	10.50	12.24	1.57	24.31	46.00	21.69
	324.880	9.32	14.58	1.85	25.75	46.00	20.25
	579.020	5.44	18.97	2.42	26.83	46.00	19.17
Vertical	**50.370**	**22.79**	**8.85**	**0.76**	**32.40**	**40.00**	**7.60**
	93.050	16.12	10.09	1.01	27.22	43.50	16.28
	132.820	14.25	12.40	1.20	27.85	43.50	15.65
	225.940	12.44	11.94	1.55	25.93	46.00	20.07
	479.110	6.59	17.65	2.20	26.44	46.00	19.56
	579.020	8.39	18.97	2.42	29.78	46.00	16.22

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1950SV	Humidity	:	60%RH
Serial No.	:	001NDCR8C715	Date of Test	:	Mar 02, 2010
Test Mode	:	D-Sub 640*480@60Hz	Adapter	:	DSA-36W-12 1 24

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	19.56	6.60	0.80	26.96	40.00	13.04
	144.460	25.40	11.76	1.21	38.37	43.50	5.13
	180.350	**28.76**	**9.90**	**1.36**	**40.02**	**43.50**	**3.48**
	252.130	22.22	12.94	1.61	36.77	46.00	9.23
	395.690	13.24	16.40	1.98	31.62	46.00	14.38
	576.110	10.48	18.94	2.42	31.84	46.00	14.16
Vertical	**35.820**	**19.60**	**16.45**	**0.67**	**36.72**	**40.00**	**3.28**
	48.430	21.18	9.62	0.75	31.55	40.00	8.45
	71.710	23.24	6.69	0.90	30.83	40.00	9.17
	131.850	21.22	12.42	1.20	34.84	43.50	8.66
	144.460	27.00	11.76	1.21	39.97	43.50	3.53
	180.350	26.28	9.90	1.36	37.54	43.50	5.96

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1950SV	Humidity	:	60%RH
Serial No.	:	001NDCR8C715	Date of Test	:	Mar 02, 2010
Test Mode	:	D-Sub 1024*768@60Hz	Adapter	:	DSA-36W-12 1 24

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	30.970	5.01	19.03	0.62	24.66	40.00	15.34
	60.070	20.52	6.60	0.80	27.92	40.00	12.08
	144.460	24.82	11.76	1.21	37.79	43.50	5.71
	180.350	**28.34**	**9.90**	**1.36**	**39.60**	**43.50**	**3.90**
	252.130	22.06	12.94	1.61	36.61	46.00	9.39
	395.690	12.97	16.40	1.98	31.35	46.00	14.65
Vertical	**35.820**	**19.49**	**16.45**	**0.67**	**36.61**	**40.00**	**3.39**
	71.710	23.35	6.69	0.90	30.94	40.00	9.06
	120.210	19.00	12.98	1.14	33.12	43.50	10.38
	144.460	26.85	11.76	1.21	39.82	43.50	3.68
	180.350	26.11	9.90	1.36	37.37	43.50	6.13
	191.990	22.92	10.37	1.43	34.72	43.50	8.78

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1950SV	Humidity	:	60%RH
Serial No.	:	001NDCR8C715	Date of Test	:	Mar 02, 2010
Test Mode	:	D-Sub 1360*768@60Hz	Adapter	:	DSA-36W-12 1 24

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	19.74	6.60	0.80	27.14	40.00	12.86
	144.460	24.16	11.76	1.21	37.13	43.50	6.37
	180.350	**28.35**	**9.90**	**1.36**	**39.61**	**43.50**	**3.89**
	252.130	22.11	12.94	1.61	36.66	46.00	9.34
	395.690	13.62	16.40	1.98	32.00	46.00	14.00
	576.110	11.24	18.94	2.42	32.60	46.00	13.40
Vertical	**35.820**	**18.71**	**16.45**	**0.67**	**35.83**	**40.00**	**4.17**
	51.340	20.33	8.61	0.76	29.70	40.00	10.30
	84.320	20.32	8.48	0.98	29.78	40.00	10.22
	120.210	17.20	12.98	1.14	31.32	43.50	12.18
	144.460	25.49	11.76	1.21	38.46	43.50	5.04
	180.350	25.08	9.90	1.36	36.34	43.50	7.16

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
Gasket	MCQ57884403 2EA	102*9*1T	DAEHUNG SUBSIDIARY MATERIALS.	See Internal Figure 10-1, 10-3
Gasket	MCQ57884402	170*9*1T	DAEHUNG SUBSIDIARY MATERIALS.	See Internal Figure 10-2, 10-4
Gasket	3940TKK043D	70*9*2T	DAEHUNG SUBSIDIARY MATERIALS.	See Internal Figure 10-5

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)