

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

LCD Monitor

Model No.	W1943SV	W1943CV
Serial No.	812NDQA5A540	812NDGL5A591

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-F09002
Date of Test : Jan 07-09, 2009
Date of Report : Jan 12, 2009

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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	812NDQA5A540	812NDGL5A591
(C) Power Supply	120V/60Hz	

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2008
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: W1943SV, W1943CV; S/N: 812NDQA5A540, 812NDGL5A591) which was tested in 3m anechoic chamber on Jan 07-09, 2009 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 : Jan 07-09, 2009 Date of Report : Jan 12, 2009

Producer : Zeno Gu
ZENO GU / Assistant

Review : Dio Yang
DIO YANG / Supervisor

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

Signatory : Sammy Chen
Authorized Signature EMCSAMMY 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 2008 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2008 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						
Serial No.	:	812NDQA5A540	812NDGL5A591						
Real Power	:	<table><tr><th>Model Number</th><th>Real Power</th></tr><tr><td>W1943SV</td><td>21.00W</td></tr><tr><td>W1943CV</td><td>23.00W</td></tr></table>		Model Number	Real Power	W1943SV	21.00W	W1943CV	23.00W
Model Number	Real Power								
W1943SV	21.00W								
W1943CV	23.00W								
Note 1	:	W1943SV and W1943CV are all the same except for different panel and brightness of screen.							
Note 2	:	The brightness of W1943SV is 300 and the brightness of W1943CV is 200.							
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 for W1943SV:	:	Manufacturer: AU Optronics M/N : M185XW01							
LCD Panel for W1943CV:	:	Manufacturer: LG Display M/N : LM185WH1 (TL) (E1)							
Adaptor #1	:	Manufacturer: LIEN CHANG M/N : LCAP07F Input : 100-240V, 50~60Hz, 1.0A max Output : 12V 3.0A Output Cable: Unshielded, Undetachable, 1.80m, with one core							
Adaptor #2	:	Manufacturer: HONOR M/N : ADS-24S-12 1224GPCN Input : 100-240V, 50~60Hz, 0.7A max Output : 12V 2.0A Output Cable: Unshielded, Undetachable, 1.80m, with one 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 final test for it 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 Adaptor |

2.2 Peripherals

2.2.1 PC

Manufacturer : HP
Model Number : dx6120MT
Serial Number : CNG53004J2
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 (Semi-Anechoic Chamber) : Sept. 17, 1998 file on
July 26, 2006 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

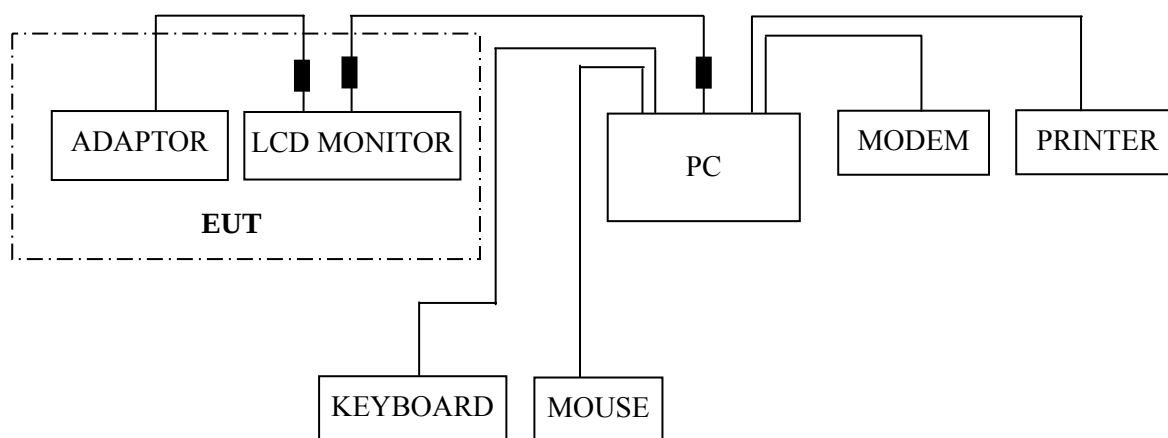
3.1 Test Equipment

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	ESHS10	830223/007	Apr 02, 2008	Apr 02, 2009
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2008	Apr 02, 2009
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2008	Apr 02, 2009
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 19, 2008	Mar 19, 2009
5.	50 Ω Terminator	Anritsu	BNC	001	Apr 02, 2008	Apr 02, 2009
6.	Software	Audix	E3	SET00200 9804M592	--	--

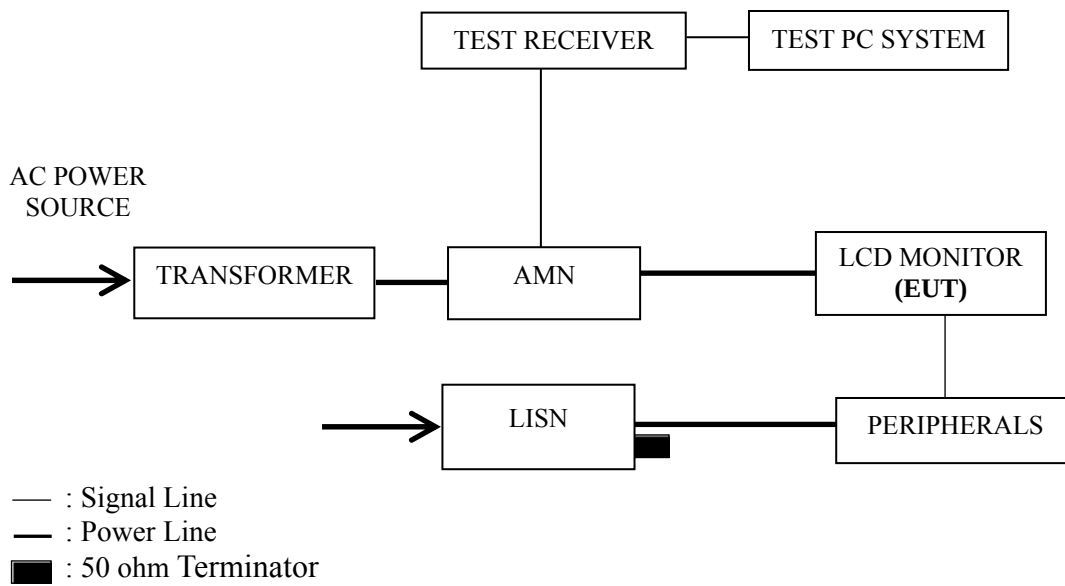
3.2 Block Diagram of Test Setup

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 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	LCAP07F	D-Sub 640*480@60Hz
		D-Sub 1024*768@60Hz
		D-Sub 1360*768@60Hz
	ADS-24S-12 1224GPCN	D-Sub 1360*768@60Hz
W1943CV	ADS-24S-12 1224GPCN	D-Sub 640*480@60Hz
		D-Sub 1024*768@60Hz
		D-Sub 1360*768@60Hz
	LCAP07F	D-Sub 640*480@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 ESHS10 was set at 10 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	Adaptor	Test Mode	Data Page
W1943SV	LCAP07F	D-Sub 640*480@60Hz	P13
		D-Sub 1024*768@60Hz	P14
		D-Sub 1360*768@60Hz	P15
	ADS-24S-12 1224GPCN	D-Sub 1360*768@60Hz	P16
W1943CV	ADS-24S-12 1224GPCN	D-Sub 640*480@60Hz	P17
		D-Sub 1024*768@60Hz	P18
		D-Sub 1360*768@60Hz	P19
	LCAP07F	D-Sub 640*480@60Hz	P20

NOTE 1 – Factor = Cable Loss + AMN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 4 –The worst case is for W1943SV model. (Test Mode: D-Sub 1360*768@60Hz, Adaptor: LCAP07F). The worst emission is detected at 0.180 MHz (Quasi-Peak Value) with corrected signal level of 60.48 dB (μV) (limit is 64.47 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. : 812NDQA5A540 Date of Test : Jan 07, 2009

Test Mode : D-Sub 640*480@60Hz Adaptor : LCAP07F

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.179	58.97	0.21	59.18	64.55	5.37	QP
	0.238	50.48	0.21	50.69	62.17	11.48	
	0.716	39.52	0.23	39.75	56.00	16.25	
	1.819	33.56	0.28	33.84	56.00	22.16	
	4.136	31.63	0.36	31.99	56.00	24.01	
	18.920	40.80	0.72	41.52	60.00	18.48	
	0.179	49.12	0.21	49.33	54.55	5.22	AV
	0.238	40.35	0.21	40.56	52.17	11.61	
	0.716	29.47	0.23	29.70	46.00	16.30	
	1.819	23.14	0.28	23.42	46.00	22.58	
	4.136	21.47	0.36	21.83	46.00	24.17	
	18.920	31.29	0.72	32.01	50.00	17.99	
Neutral	0.183	59.65	0.20	59.85	64.33	4.48	QP
	0.242	51.02	0.21	51.23	62.04	10.81	
	0.716	39.96	0.23	40.19	56.00	15.81	
	1.560	32.97	0.26	33.23	56.00	22.77	
	18.622	40.35	0.56	40.91	60.00	19.09	
	20.594	39.15	0.57	39.72	60.00	20.28	
	0.183	49.78	0.20	49.98	54.33	4.35	AV
	0.242	41.25	0.21	41.46	52.04	10.58	
	0.716	29.47	0.23	29.70	46.00	16.30	
	1.560	22.46	0.26	22.72	46.00	23.28	
	18.622	31.46	0.56	32.02	50.00	17.98	
	20.594	29.18	0.57	29.75	50.00	20.25	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 48%RH

Serial No. : 812NDQA5A540 Date of Test : Jan 07, 2009

Test Mode : D-Sub 1024*768@60Hz Adaptor : LCAP07F

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.183	59.87	0.21	60.08	64.33	4.25	QP
	0.238	52.57	0.21	52.78	62.17	9.39	
	0.716	39.88	0.23	40.11	56.00	15.89	
	1.878	32.65	0.27	32.92	56.00	23.08	
	16.928	38.99	0.71	39.70	60.00	20.30	
	21.147	38.98	0.77	39.75	60.00	20.25	
	0.183	48.91	0.21	49.12	54.33	5.21	AV
	0.238	41.48	0.21	41.69	52.17	10.48	
	0.716	29.48	0.23	29.71	46.00	16.29	
	1.878	22.14	0.27	22.41	46.00	23.59	
	16.928	30.14	0.71	30.85	50.00	19.15	
	21.147	28.73	0.77	29.50	50.00	20.50	
Neutral	0.183	59.51	0.20	59.71	64.33	4.62	QP
	0.238	51.98	0.21	52.19	62.17	9.98	
	0.720	39.96	0.23	40.19	56.00	15.81	
	3.642	31.75	0.32	32.07	56.00	23.93	
	16.928	39.35	0.56	39.91	60.00	20.09	
	21.486	39.82	0.60	40.42	60.00	19.58	
	0.183	49.81	0.20	50.01	54.33	4.32	AV
	0.238	41.25	0.21	41.46	52.17	10.71	
	0.720	29.14	0.23	29.37	46.00	16.63	
	3.642	21.65	0.32	21.97	46.00	24.03	
	16.928	31.48	0.56	32.04	50.00	17.96	
	21.486	31.45	0.60	32.05	50.00	17.95	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 48%RH

Serial No. : 812NDQA5A540 Date of Test : Jan 07, 2009

Test Mode : D-Sub 1360*768@60Hz Adaptor : LCAP07F

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.180	60.27	0.21	60.48	64.47	3.99	QP
	0.238	53.54	0.21	53.75	62.17	8.42	
	0.716	40.27	0.23	40.50	56.00	15.50	
	3.642	31.27	0.35	31.62	56.00	24.38	
	16.928	40.19	0.71	40.90	60.00	19.10	
	21.486	39.00	0.78	39.78	60.00	20.22	
	0.180	49.80	0.21	50.01	54.47	4.46	AV
	0.238	42.18	0.21	42.39	52.17	9.78	
	0.716	31.01	0.23	31.24	46.00	14.76	
	3.642	21.48	0.35	21.83	46.00	24.17	
	16.928	31.26	0.71	31.97	50.00	18.03	
	21.486	29.47	0.78	30.25	50.00	19.75	
Neutral	0.179	59.45	0.20	59.65	64.55	4.90	QP
	0.240	53.86	0.21	54.07	62.08	8.01	
	0.720	39.84	0.23	40.07	56.00	15.93	
	1.908	33.92	0.24	34.16	56.00	21.84	
	3.881	31.31	0.33	31.64	56.00	24.36	
	19.021	39.30	0.56	39.86	60.00	20.14	
	0.179	48.87	0.20	49.07	54.55	5.48	AV
	0.240	43.15	0.21	43.36	52.08	8.72	
	0.720	29.48	0.23	29.71	46.00	16.29	
	1.908	23.50	0.24	23.74	46.00	22.26	
	3.881	21.48	0.33	21.81	46.00	24.19	
	19.021	29.47	0.56	30.03	50.00	19.97	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 48%RH

Serial No. : 812NDQA5A540 Date of Test : Jan 07, 2009

Test Mode : D-Sub 1360*768@60Hz Adaptor : ADS-24S-12
1224GPCN

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.178	53.98	0.21	54.19	64.59	10.40	QP
	0.222	49.83	0.21	50.04	62.74	12.70	
	0.310	42.03	0.22	42.25	59.97	17.72	
	1.049	32.17	0.26	32.43	56.00	23.57	
	2.931	33.62	0.32	33.94	56.00	22.06	
	8.916	30.49	0.60	31.09	60.00	28.91	
	0.178	43.26	0.21	43.47	54.59	11.12	AV
	0.222	39.64	0.21	39.85	52.74	12.89	
	0.310	32.61	0.22	32.83	49.97	17.14	
	1.049	23.61	0.26	23.87	46.00	22.13	
	2.931	23.61	0.32	23.93	46.00	22.07	
	8.916	21.63	0.60	22.23	50.00	27.77	
Neutral	0.173	52.29	0.20	52.49	64.81	12.32	QP
	0.223	47.86	0.21	48.07	62.70	14.63	
	1.744	29.14	0.25	29.39	56.00	26.61	
	3.090	31.61	0.30	31.91	56.00	24.09	
	7.852	29.68	0.54	30.22	60.00	29.78	
	14.063	24.16	0.58	24.74	60.00	35.26	
	0.173	42.31	0.20	42.51	54.81	12.30	AV
	0.223	37.64	0.21	37.85	52.70	14.85	
	1.744	16.52	0.25	16.77	46.00	29.23	
	3.090	21.65	0.30	21.95	46.00	24.05	
	7.852	19.86	0.54	20.40	50.00	29.60	
	14.063	15.63	0.58	16.21	50.00	33.79	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : 812NDQA5A591 Date of Test : Jan 07, 2009

Test Mode : D-Sub 640*480@60Hz Adaptor : ADS-24S-12
1224GPCN

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.179	56.77	0.21	56.98	64.55	7.57	QP
	0.222	51.70	0.21	51.91	62.74	10.83	
	0.305	44.47	0.22	44.69	60.10	15.41	
	3.074	39.06	0.33	39.39	56.00	16.61	
	4.696	40.39	0.37	40.76	56.00	15.24	
	7.935	37.46	0.57	38.03	60.00	21.97	
	0.179	46.28	0.21	46.49	54.55	8.06	AV
	0.222	41.36	0.21	41.57	52.74	11.17	
	0.305	34.16	0.22	34.38	50.10	15.72	
	3.074	29.47	0.33	29.80	46.00	16.20	
	4.696	30.25	0.37	30.62	46.00	15.38	
	7.935	27.49	0.57	28.06	50.00	21.94	
Neutral	0.176	54.40	0.20	54.60	64.68	10.08	QP
	0.222	49.65	0.21	49.86	62.74	12.88	
	1.352	35.10	0.25	35.35	56.00	20.65	
	3.041	38.27	0.30	38.57	56.00	17.43	
	4.696	37.10	0.34	37.44	56.00	18.56	
	7.810	37.49	0.53	38.02	60.00	21.98	
	0.176	44.11	0.20	44.31	54.68	10.37	AV
	0.222	39.46	0.21	39.67	52.74	13.07	
	1.352	25.49	0.25	25.74	46.00	20.26	
	3.041	28.47	0.30	28.77	46.00	17.23	
	4.696	27.49	0.34	27.83	46.00	18.17	
	7.810	27.19	0.53	27.72	50.00	22.28	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : 812NDQA5A591 Date of Test : Jan 07, 2009

Test Mode : D-Sub 1024*768@60Hz Adaptor : ADS-24S-12
1224GPCN

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.176	56.22	0.22	56.44	64.68	8.24	QP
	0.220	51.62	0.21	51.83	62.83	11.00	
	1.216	36.42	0.27	36.69	56.00	19.31	
	3.041	40.49	0.33	40.82	56.00	15.18	
	5.005	40.22	0.38	40.60	60.00	19.40	
	7.935	37.48	0.57	38.05	60.00	21.95	
	0.176	45.47	0.22	45.69	54.68	8.99	AV
	0.220	41.25	0.21	41.46	52.83	11.37	
	1.216	26.18	0.27	26.45	46.00	19.55	
	3.041	30.12	0.33	30.45	46.00	15.55	
	5.005	30.28	0.38	30.66	50.00	19.34	
	7.935	27.19	0.57	27.76	50.00	22.24	
Neutral	0.181	54.16	0.20	54.36	64.46	10.10	QP
	0.220	49.23	0.21	49.44	62.83	13.39	
	1.345	35.56	0.25	35.81	56.00	20.19	
	2.946	38.94	0.30	39.24	56.00	16.76	
	4.797	37.49	0.35	37.84	56.00	18.16	
	6.988	37.62	0.47	38.09	60.00	21.91	
	0.181	44.18	0.20	44.38	54.46	10.08	AV
	0.220	39.57	0.21	39.78	52.83	13.05	
	1.345	25.47	0.25	25.72	46.00	20.28	
	2.946	27.90	0.30	28.20	46.00	17.80	
	4.797	27.46	0.35	27.81	46.00	18.19	
	6.988	27.46	0.47	27.93	50.00	22.07	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : 812NDQA5A591 Date of Test : Jan 07, 2009

Test Mode : D-Sub 1360*768@60Hz Adaptor : ADS-24S-12
1224GPCN

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.176	55.32	0.22	55.54	64.68	9.14	QP
	0.220	51.68	0.21	51.89	62.83	10.94	
	0.348	42.52	0.22	42.74	59.00	16.26	
	3.041	40.04	0.33	40.37	56.00	15.63	
	4.721	40.49	0.38	40.87	56.00	15.13	
	7.566	38.24	0.55	38.79	60.00	21.21	
	0.176	45.18	0.22	45.40	54.68	9.28	AV
	0.220	41.25	0.21	41.46	52.83	11.37	
	0.348	32.18	0.22	32.40	49.00	16.60	
	3.041	30.25	0.33	30.58	46.00	15.42	
	4.721	30.25	0.38	30.63	46.00	15.37	
	7.566	28.49	0.55	29.04	50.00	20.96	
Neutral	0.179	53.88	0.20	54.08	64.55	10.47	QP
	0.220	49.11	0.21	49.32	62.83	13.51	
	1.552	35.53	0.26	35.79	56.00	20.21	
	2.946	38.84	0.30	39.14	56.00	16.86	
	4.926	37.93	0.35	38.28	56.00	17.72	
	7.810	38.49	0.53	39.02	60.00	20.98	
	0.179	43.65	0.20	43.85	54.55	10.70	AV
	0.220	39.16	0.21	39.37	52.83	13.46	
	1.552	25.49	0.26	25.75	46.00	20.25	
	2.946	28.49	0.30	28.79	46.00	17.21	
	4.926	27.98	0.35	28.33	46.00	17.67	
	7.810	28.46	0.53	28.99	50.00	21.01	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : 812NDQA5A591 Date of Test : Jan 07, 2009

Test Mode : D-Sub 640*480@60Hz Adaptor : LCAP07F

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.178	55.44	0.21	55.65	64.59	8.94	QP
	0.220	49.59	0.21	49.80	62.83	13.03	
	3.041	31.82	0.33	32.15	56.00	23.85	
	4.772	31.27	0.38	31.65	56.00	24.35	
	7.810	34.20	0.56	34.76	60.00	25.24	
	17.568	21.06	0.72	21.78	60.00	38.22	
	0.178	43.61	0.21	43.82	54.59	10.77	AV
	0.220	36.54	0.21	36.75	52.83	16.08	
	3.041	23.56	0.33	23.89	46.00	22.11	
	4.772	22.29	0.38	22.67	46.00	23.33	
	7.810	27.35	0.56	27.91	50.00	22.09	
	17.568	15.46	0.72	16.18	50.00	33.82	
Neutral	0.179	54.02	0.20	54.22	64.55	10.33	QP
	0.220	47.83	0.21	48.04	62.83	14.79	
	1.878	32.91	0.24	33.15	56.00	22.85	
	3.074	36.21	0.30	36.51	56.00	19.49	
	7.810	36.26	0.53	36.79	60.00	23.21	
	15.718	22.36	0.56	22.92	60.00	37.08	
	0.179	44.38	0.20	44.58	54.55	9.97	AV
	0.220	37.46	0.21	37.67	52.83	15.16	
	1.878	22.35	0.24	22.59	46.00	23.41	
	3.074	26.67	0.30	26.97	46.00	19.03	
	7.810	26.73	0.53	27.26	50.00	22.74	
	15.718	12.35	0.56	12.91	50.00	37.09	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

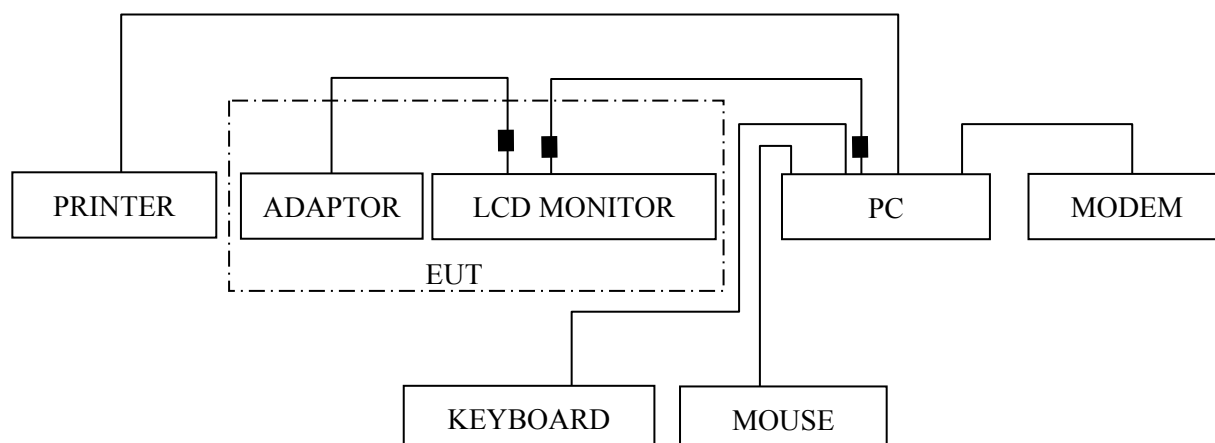
4.1 Test Equipment

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

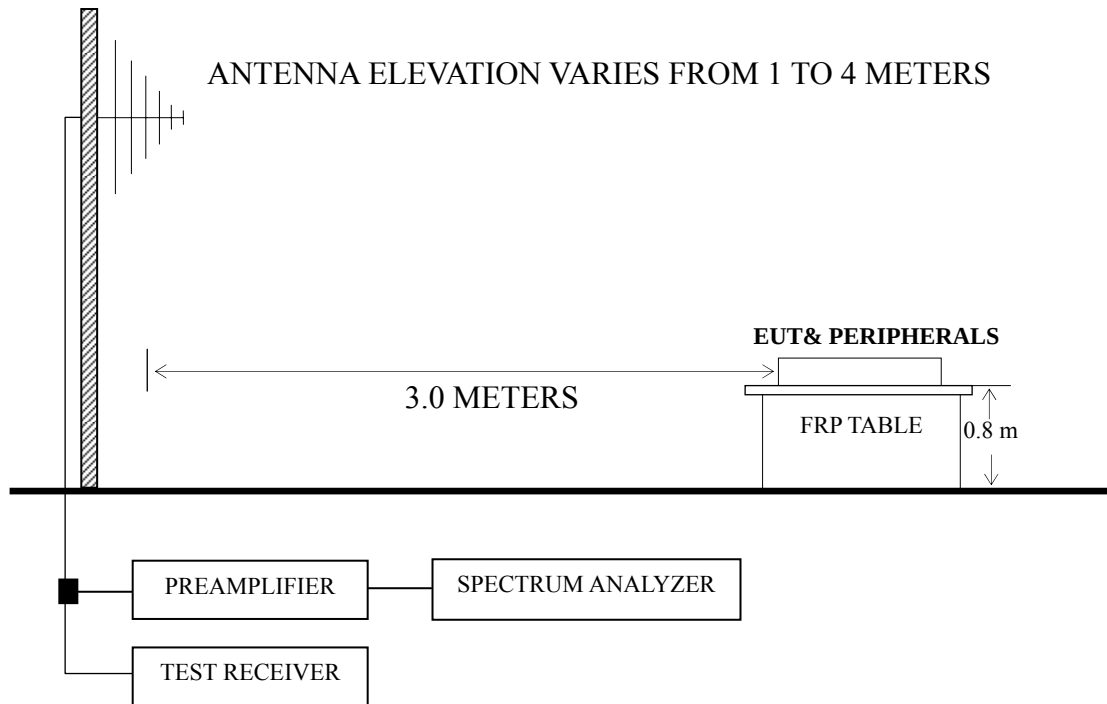
4.2 Block Diagram of Test Setup

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	
		($\mu\text{V/m}$)	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 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.

Model Number	Adaptor	Test Mode	Data Page
W1943SV	LCAP07F	D-Sub 640*480@60Hz	P25
		D-Sub 1024*768@60Hz	P26
		D-Sub 1360*768@60Hz	P27
	ADS-24S-12 1224GPCN	D-Sub 1360*768@60Hz	P28
W1943CV	ADS-24S-12 1224GPCN	D-Sub 640*480@60Hz	P29
		D-Sub 1024*768@60Hz	P30
		D-Sub 1360*768@60Hz	P31
	LCAP07F	D-Sub 1360*768@60Hz	P32

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 W1943SV model. (Test Mode: D-Sub 1360*768@60Hz, Adaptor: LCAP07F). The worst emission at horizontal polarization was detected at 483.960MHz with corrected signal level of 34.53 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.20 m height and the turntable was at 130°. The worst emission at vertical polarization was detected at 55.220 MHz with corrected signal level of 36.90 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.20 m height and the turntable was at 70°.

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : 812NDQA5A540 Date of Test : Jan 09, 2009

Test Mode : D-Sub 640*480@60Hz Adaptor : LCAP07F

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	55.220	14.05	7.69	0.80	22.54	40.00	17.46
	76.560	15.88	7.36	0.87	24.11	40.00	15.89
	140.580	14.94	12.05	0.91	27.90	43.50	15.60
	189.080	14.74	10.24	1.05	26.03	43.50	17.47
	342.340	10.59	15.11	1.77	27.47	46.00	18.53
	483.960	6.43	17.70	2.33	26.46	46.00	19.54
Vertical	34.850	17.36	16.97	0.62	34.95	40.00	5.05
	55.220	27.87	7.69	0.80	36.36	40.00	3.64
	95.960	21.16	10.70	0.85	32.71	43.50	10.79
	127.970	20.23	12.63	0.89	33.75	43.50	9.75
	263.770	11.31	13.20	1.34	25.85	46.00	20.15
	349.130	12.82	15.29	1.80	29.91	46.00	16.09

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : 812NDQA5A540 Date of Test : Jan 09, 2009

Test Mode : D-Sub 1024*768@60Hz Adaptor : LCAP07F

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	55.220	13.06	7.69	0.80	21.55	40.00	18.45
	76.560	14.78	7.36	0.87	23.01	40.00	16.99
	139.610	13.49	12.12	0.91	26.52	43.50	16.98
	175.500	13.84	10.02	1.01	24.87	43.50	18.63
	276.380	9.23	13.47	1.42	24.12	46.00	21.88
	333.610	8.95	14.86	1.71	25.52	46.00	20.48
Vertical	34.850	18.23	16.97	0.62	35.82	40.00	4.18
	39.700	19.99	14.08	0.68	34.75	40.00	5.25
	98.870	22.20	11.27	0.85	34.32	43.50	9.18
	191.020	12.56	10.34	1.06	23.96	43.50	19.54
	372.410	15.56	15.92	1.91	33.39	46.00	12.61
	483.960	16.00	17.70	2.33	36.03	46.00	9.97

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : 812NDQA5A540 Date of Test : Jan 09, 2009

Test Mode : D-Sub 1360*768@60Hz Adaptor : LCAP07F

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	55.220	12.01	7.69	0.80	20.50	40.00	19.50
	76.560	13.67	7.36	0.87	21.90	40.00	18.10
	127.970	12.94	12.63	0.89	26.46	43.50	17.04
	276.380	12.76	13.47	1.42	27.65	46.00	18.35
	351.070	13.48	15.37	1.82	30.67	46.00	15.33
	483.960	14.50	17.70	2.33	34.53	46.00	11.47
Vertical	34.850	18.70	16.97	0.62	36.29	40.00	3.71
	55.220	28.41	7.69	0.80	36.90	40.00	3.10
	96.930	21.13	10.87	0.85	32.85	43.50	10.65
	127.970	21.52	12.63	0.89	35.04	43.50	8.46
	207.510	14.18	11.05	1.11	26.34	43.50	17.16
	347.190	13.10	15.24	1.80	30.14	46.00	15.86

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943SV Humidity : 60%RH

Serial No. : 812NDQA5A540 Date of Test : Jan 09, 2009

Test Mode : D-Sub 1360*768@60Hz Adaptor : ADS-24S-12
1224GPCN

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	138.640	12.92	12.17	0.91	26.00	43.50	17.50
	154.160	12.02	10.94	0.94	23.90	43.50	19.60
	271.530	12.02	13.37	1.38	26.77	46.00	19.23
	354.950	13.01	15.45	1.82	30.28	46.00	15.72
	622.670	1.65	19.31	2.71	23.67	46.00	22.33
	760.410	4.41	20.33	3.22	27.96	46.00	18.04
Vertical	37.760	18.99	15.20	0.66	34.85	40.00	5.15
	71.710	24.59	6.69	0.87	32.15	40.00	7.85
	281.230	13.18	13.57	1.44	28.19	46.00	17.81
	345.250	13.75	15.20	1.77	30.72	46.00	15.28
	484.930	14.84	17.73	2.33	34.90	46.00	11.10
	859.350	5.98	21.31	3.44	30.73	46.00	15.27

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 60%RH

Serial No. : 812NDGL5A591 Date of Test : Jan 09, 2009

Test Mode : D-Sub 640*480@60Hz Adaptor : ADS-24S-12
1224GPCN

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	55.220	8.59	7.69	0.80	17.08	40.00	22.92
	100.810	8.42	11.57	0.85	20.84	43.50	22.66
	141.550	11.81	12.01	0.91	24.73	43.50	18.77
	185.200	14.73	10.08	1.04	25.85	43.50	17.65
	345.250	14.34	15.20	1.77	31.31	46.00	14.69
	483.960	16.11	17.70	2.33	36.14	46.00	9.86
Vertical	34.850	17.24	16.97	0.62	34.83	40.00	5.17
	51.340	25.34	8.61	0.78	34.73	40.00	5.27
	98.870	19.72	11.27	0.85	31.84	43.50	11.66
	128.940	19.56	12.58	0.90	33.04	43.50	10.46
	360.770	11.92	15.61	1.87	29.40	46.00	16.60
	482.990	8.99	17.70	2.33	29.02	46.00	16.98

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 60%RH

Serial No. : 812NDGL5A591 Date of Test : Jan 09, 2009

Test Mode : D-Sub 1024*768@60Hz Adaptor : ADS-24S-12
1224GPCN

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	94.990	13.18	10.45	0.85	24.48	43.50	19.02
	127.000	11.89	12.66	0.89	25.44	43.50	18.06
	183.260	15.40	10.02	1.03	26.45	43.50	17.05
	207.510	15.27	11.05	1.11	27.43	43.50	16.07
	352.040	17.32	15.37	1.82	34.51	46.00	11.49
	483.960	15.28	17.70	2.33	35.31	46.00	10.69
Vertical	34.850	17.00	16.97	0.62	34.59	40.00	5.41
	55.220	22.74	7.69	0.80	31.23	40.00	8.77
	71.710	25.56	6.69	0.87	33.12	40.00	6.88
	95.960	22.95	10.70	0.85	34.50	43.50	9.00
	338.460	10.17	14.98	1.75	26.90	46.00	19.10
	484.930	13.78	17.73	2.33	33.84	46.00	12.16

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 60%RH

Serial No. : 812NDGL5A591 Date of Test : Jan 09, 2009

Test Mode : D-Sub 1360*768@60Hz Adaptor : ADS-24S-12
1224GPCN

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	105.660	8.78	11.95	0.86	21.59	43.50	21.91
	127.000	9.73	12.66	0.89	23.28	43.50	20.22
	179.380	13.60	9.92	1.02	24.54	43.50	18.96
	276.380	16.07	13.47	1.42	30.96	46.00	15.04
	372.410	10.24	15.92	1.91	28.07	46.00	17.93
	483.960	18.85	17.70	2.33	38.88	46.00	7.12
Vertical	39.700	21.47	14.08	0.68	36.23	40.00	3.77
	55.220	24.86	7.69	0.80	33.35	40.00	6.65
	94.990	23.36	10.45	0.85	34.66	43.50	8.84
	281.230	13.72	13.57	1.44	28.73	46.00	17.27
	372.410	10.91	15.92	1.91	28.74	46.00	17.26
	482.990	13.43	17.70	2.33	33.46	46.00	12.54

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 60%RH

Serial No. : 812NDGL5A591 Date of Test : Jan 09, 2009

Test Mode : D-Sub 1360*768@60Hz Adaptor : LCAP07F

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	34.850	0.57	16.97	0.62	18.16	40.00	21.84
	185.200	13.15	10.08	1.04	24.27	43.50	19.23
	206.540	11.42	10.97	1.11	23.50	43.50	20.00
	342.340	10.02	15.11	1.77	26.90	46.00	19.10
	484.930	18.11	17.73	2.33	38.17	46.00	7.83
	688.630	1.96	19.65	3.03	24.64	46.00	21.36
Vertical	38.730	20.55	14.62	0.67	35.84	40.00	4.16
	51.340	22.99	8.61	0.78	32.38	40.00	7.62
	138.640	19.13	12.17	0.91	32.21	43.50	11.29
	207.510	12.33	11.05	1.11	24.49	43.50	19.01
	280.260	11.37	13.55	1.44	26.36	46.00	19.64
	851.590	1.50	21.24	3.42	26.16	46.00	19.84

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 Appendix II Figure 1, 2, 15, 28
Sponge	MCQ57884401	250*9*1	EXPAN	See Appendix II Figure 2, 14, 16, 13
Sponge	3940TKK036T	45*8*0.5	EXPAN	See Appendix II Figure 2, 9, 10, 13, 16, 24, 25, 29