

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

LCD Monitor

Model No.: W1930SV

Serial No.: E2009060401

FCC ID : BEJW1930SV

Prepared For : LG Electronics U.S.A., Inc.
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Date of Test : Jun 08-11, 2009
Date of Report : Jun 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. : W1930SV
(B) Serial No. : E2009060401
(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: W1930SV; S/N: E2009060401) which was tested in 3m anechoic chamber Jun 08-11, 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 : Jun 08-11, 2009 Date of Report : Jun 12, 2009

Producer : Alan He
ALAN HE / Assistant

Review : Byron Wu
BYRON WU / Supervisor

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

Signatory : Dio Yang
Authorized Signature EMC DIO YANG / Supervisor

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.	:	W1930SV
Serial No.	:	E2009060401
Real Power	:	23.00W for Adapter: ADS-24S-12 1224GPG 22.00W for Adapter: ADS-24NP-12-1 12024G 23.00W for Adapter: LCAP07F
Applicant	:	LG Electronics U.S.A., Inc. 1000 Sylvan Avenue, Englewood Cliffs, NJ 07632, United States
Manufacturer	:	LG Electronics Nanjing Display Co., Ltd. No.346, Yao Xin Road, Economic & Technical Development Zone, Nanjing, China
LCD Panel	:	Manufacturer : LG Display M/N : LM185WH1 (TL) (C1)
Adapter #1	:	Manufacturer: HONOR M/N : ADS-24S-12 1224GPG Input : 100-240V AC, 50/60Hz, 0.7A Output : 12V DC 2.0A Output Cable: Unshielded, Undetachable, 1.80m, with one core
Adapter #2	:	Manufacturer: HONOR M/N : ADS-24NP-12-1 12024G Input : 100-240V AC, 50/60Hz, 0.7A Output : 12V DC 2.0A Output Cable: Unshielded, Undetachable, 1.20m, with one core
Adapter #1	:	Manufacturer: LIEN CHANG M/N : LCAP07F Input : 100-240VAC, 50-60Hz, 1.0A Max Output : 12V DC 3.0A Output Cable: Unshielded, Undetachable, 1.20m, 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 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 Adapter

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, 1.85m.
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

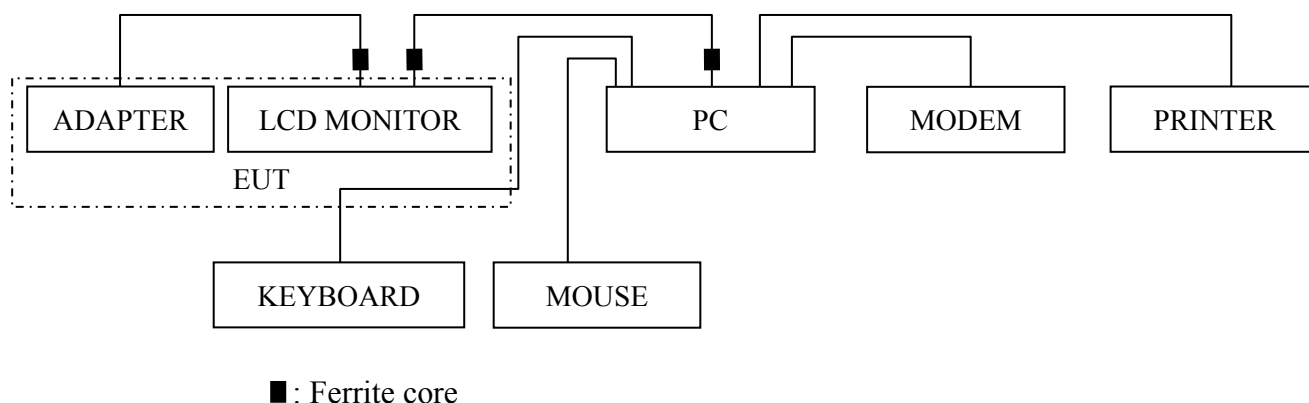
3.1 Test Equipment

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

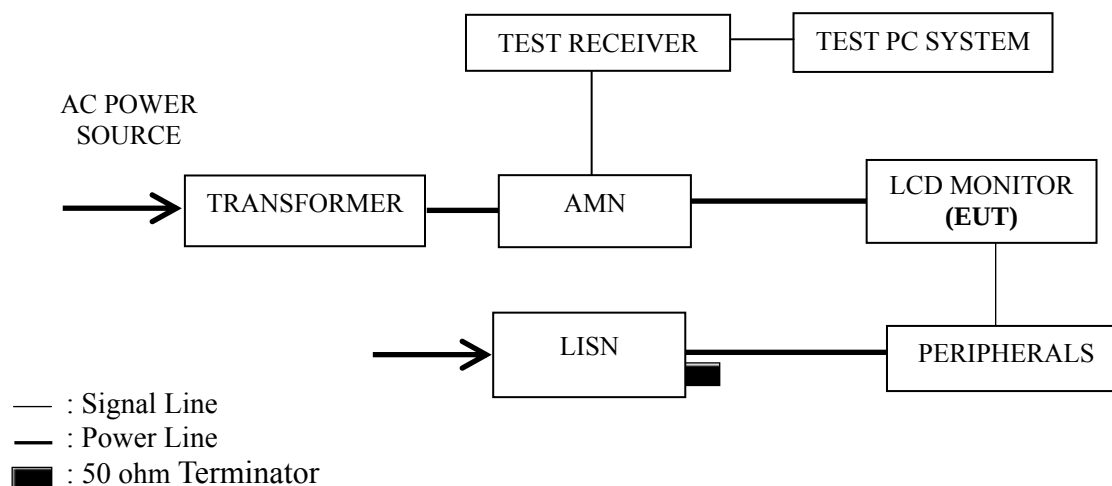
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Nov 21, 2008	Nov 21, 2009
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2009	Apr 02, 2010
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2009	Apr 02, 2010
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 19, 2009	Sep 19, 2009
5.	50 Ω 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



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-24S-12 1224GPG	D-Sub 640*480@60Hz
	D-Sub 1024*768@60Hz
	D-Sub 1360*768@60Hz
ADS-24NP-12-1 12024G	D-Sub 640*480@60Hz
	D-Sub 1024*768@60Hz
	D-Sub 1360*768@60Hz
LCAP07F	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-24S-12 1224GPG	D-Sub 640*480@60Hz	P12
	D-Sub 1024*768@60Hz	P13
	D-Sub 1360*768@60Hz	P14
ADS-24NP-12-1 12024G	D-Sub 640*480@60Hz	P15
	D-Sub 1024*768@60Hz	P16
	D-Sub 1360*768@60Hz	P17
LCAP07F	D-Sub 640*480@60Hz	P18
	D-Sub 1024*768@60Hz	P19
	D-Sub 1360*768@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 D-Sub 1360*768@60Hz test mode (Adapter: ADS-24S-12 1224GPG). The worst emission is detected at 0.172 MHz (Average value) with corrected signal level of 48.66 dB (μV) (limit is 54.86 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 48%RH

Serial No. : E2009060401 Date of Test : Jun 08, 2009

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.180	54.30	0.61	54.91	64.50	9.59	QP
	0.216	49.66	0.64	50.30	62.96	12.66	
	3.364	36.56	0.50	37.06	56.00	18.94	
	4.622	38.34	0.57	38.91	56.00	17.09	
	7.935	32.98	0.58	33.56	60.00	26.44	
	11.438	34.69	0.68	35.37	60.00	24.63	
	0.180	44.22	0.61	44.83	54.50	9.67	AV
	0.216	39.60	0.64	40.24	52.96	12.72	
	3.364	26.59	0.50	27.09	46.00	18.91	
	4.622	29.06	0.57	29.63	46.00	16.37	
	7.935	22.48	0.58	23.06	50.00	26.94	
	11.438	25.16	0.68	25.84	50.00	24.16	
Neutral	0.176	56.36	0.51	56.87	64.68	7.81	QP
	0.216	52.45	0.58	53.03	62.96	9.93	
	0.592	36.58	0.52	37.10	56.00	18.90	
	3.436	36.24	0.45	36.69	56.00	19.31	
	9.552	30.21	0.71	30.92	60.00	29.08	
	10.233	32.80	0.71	33.51	60.00	26.49	
	0.176	46.16	0.51	46.67	54.68	8.01	AV
	0.216	42.35	0.58	42.93	52.96	10.03	
	0.592	26.88	0.52	27.40	46.00	18.60	
	3.436	26.94	0.45	27.39	46.00	18.61	
	9.552	20.46	0.71	21.17	50.00	28.83	
	10.233	22.36	0.71	23.07	50.00	26.93	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 48%RH

Serial No. : E2009060401 Date of Test : Jun 08, 2009

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.174	54.64	0.61	55.25	64.77	9.52	QP
	0.216	49.81	0.64	50.45	62.96	12.51	
	3.472	36.94	0.51	37.45	56.00	18.55	
	4.672	35.36	0.57	35.93	56.00	20.07	
	7.935	32.27	0.58	32.85	60.00	27.15	
	11.438	35.86	0.68	36.54	60.00	23.46	
	0.174	44.29	0.61	44.90	54.77	9.87	AV
	0.216	39.58	0.64	40.22	52.96	12.74	
	3.472	26.80	0.51	27.31	46.00	18.69	
	4.672	25.69	0.57	26.26	46.00	19.74	
	7.935	22.36	0.58	22.94	50.00	27.06	
	11.438	25.49	0.68	26.17	50.00	23.83	
Neutral	0.174	56.38	0.51	56.89	64.77	7.88	QP
	0.216	51.44	0.58	52.02	62.96	10.94	
	0.585	36.72	0.53	37.25	56.00	18.75	
	3.241	35.85	0.45	36.30	56.00	19.70	
	9.352	29.82	0.70	30.52	60.00	29.48	
	9.966	31.59	0.71	32.30	60.00	27.70	
	0.174	46.58	0.51	47.09	54.77	7.68	AV
	0.216	41.26	0.58	41.84	52.96	11.12	
	0.585	26.97	0.53	27.50	46.00	18.50	
	3.241	25.68	0.45	26.13	46.00	19.87	
	9.352	19.68	0.70	20.38	50.00	29.62	
	9.966	21.49	0.71	22.20	50.00	27.80	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 48%RH

Serial No. : E2009060401 Date of Test : Jun 08, 2009

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	54.58	0.60	55.18	64.86	9.68	QP
	0.216	48.52	0.64	49.16	62.96	13.80	
	3.642	36.43	0.53	36.96	56.00	19.04	
	4.622	36.20	0.57	36.77	56.00	19.23	
	7.852	32.43	0.58	33.01	60.00	26.99	
	11.317	35.93	0.68	36.61	60.00	23.39	
	0.172	44.27	0.60	44.87	54.86	9.99	AV
	0.216	38.49	0.64	39.13	52.96	13.83	
	3.642	26.96	0.53	27.49	46.00	18.51	
	4.622	26.57	0.57	27.14	46.00	18.86	
	7.852	22.50	0.58	23.08	50.00	26.92	
	11.317	25.68	0.68	26.36	50.00	23.64	
Neutral	0.172	57.37	0.50	57.87	64.86	6.99	QP
	0.215	52.30	0.58	52.88	63.01	10.13	
	0.579	36.72	0.53	37.25	56.00	18.75	
	3.565	36.59	0.46	37.05	56.00	18.95	
	10.072	31.37	0.71	32.08	60.00	27.92	
	13.267	25.82	0.76	26.58	60.00	33.42	
	0.172	48.16	0.50	48.66	54.86	6.20	AV
	0.215	42.81	0.58	43.39	53.01	9.62	
	0.579	26.68	0.53	27.21	46.00	18.79	
	3.565	26.59	0.46	27.05	46.00	18.95	
	10.072	21.06	0.71	21.77	50.00	28.23	
	13.267	15.50	0.76	16.26	50.00	33.74	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 48%RH

Serial No. : E2009060401 Date of Test : Jun 08, 2009

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	0.176	56.44	0.61	57.05	64.68	7.63	QP
	0.219	51.20	0.64	51.84	62.88	11.04	
	1.568	32.19	0.43	32.62	56.00	23.38	
	3.276	35.19	0.50	35.69	56.00	20.31	
	5.929	34.52	0.57	35.09	60.00	24.91	
	8.323	33.34	0.58	33.92	60.00	26.08	
	0.176	46.25	0.61	46.86	54.68	7.82	AV
	0.219	41.25	0.64	41.89	52.88	10.99	
	1.568	22.54	0.43	22.97	46.00	23.03	
	3.276	25.68	0.50	26.18	46.00	19.82	
	5.929	24.79	0.57	25.36	50.00	24.64	
	8.323	23.50	0.58	24.08	50.00	25.92	
Neutral	0.174	54.82	0.51	55.33	64.77	9.44	QP
	0.219	49.96	0.58	50.54	62.88	12.34	
	1.352	32.40	0.46	32.86	56.00	23.14	
	2.993	33.55	0.45	34.00	56.00	22.00	
	6.252	32.12	0.61	32.73	60.00	27.27	
	8.729	33.94	0.70	34.64	60.00	25.36	
	0.174	45.29	0.51	45.80	54.77	8.97	AV
	0.219	38.94	0.58	39.52	52.88	13.36	
	1.352	22.74	0.46	23.20	46.00	22.80	
	2.993	23.68	0.45	24.13	46.00	21.87	
	6.252	22.68	0.61	23.29	50.00	26.71	
	8.729	23.48	0.70	24.18	50.00	25.82	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : E2009060401 Date of Test : Jun 08, 2009

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	0.174	54.18	0.61	54.79	64.77	9.98	QP
	0.216	50.76	0.64	51.40	62.96	11.56	
	0.890	29.47	0.49	29.96	56.00	26.04	
	3.985	33.84	0.54	34.38	56.00	21.62	
	5.653	32.27	0.58	32.85	60.00	27.15	
	8.916	33.87	0.58	34.45	60.00	25.55	
	0.174	44.26	0.61	44.87	54.77	9.90	AV
	0.216	40.16	0.64	40.80	52.96	12.16	
	0.890	19.68	0.49	20.17	46.00	25.83	
	3.985	23.06	0.54	23.60	46.00	22.40	
	5.653	22.48	0.58	23.06	50.00	26.94	
	8.916	23.47	0.58	24.05	50.00	25.95	
Neutral	0.174	54.64	0.51	55.15	64.77	9.62	QP
	0.219	48.59	0.58	49.17	62.88	13.71	
	0.647	32.16	0.51	32.67	56.00	23.33	
	3.276	33.75	0.45	34.20	56.00	21.80	
	6.285	34.54	0.61	35.15	60.00	24.85	
	9.204	34.40	0.70	35.10	60.00	24.90	
	0.174	44.26	0.51	44.77	54.77	10.00	AV
	0.219	38.78	0.58	39.36	52.88	13.52	
	0.647	22.49	0.51	23.00	46.00	23.00	
	3.276	23.64	0.45	24.09	46.00	21.91	
	6.285	24.87	0.61	25.48	50.00	24.52	
	9.204	24.55	0.70	25.25	50.00	24.75	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : E2009060401 Date of Test : Jun 08, 2009

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	0.176	54.65	0.61	55.26	64.68	9.42	QP
	0.216	49.69	0.64	50.33	62.96	12.63	
	2.334	31.37	0.43	31.80	56.00	24.20	
	3.720	33.40	0.53	33.93	56.00	22.07	
	5.277	31.71	0.58	32.29	60.00	27.71	
	8.501	34.37	0.58	34.95	60.00	25.05	
	0.176	44.25	0.61	44.86	54.68	9.82	AV
	0.216	39.56	0.64	40.20	52.96	12.76	
	2.334	21.47	0.43	21.90	46.00	24.10	
	3.720	23.54	0.53	24.07	46.00	21.93	
	5.277	21.36	0.58	21.94	50.00	28.06	
	8.501	24.56	0.58	25.14	50.00	24.86	
Neutral	0.174	54.49	0.51	55.00	64.77	9.77	QP
	0.219	50.30	0.58	50.88	62.88	12.00	
	0.735	30.34	0.50	30.84	56.00	25.16	
	3.840	33.42	0.46	33.88	56.00	22.12	
	5.867	31.80	0.57	32.37	60.00	27.63	
	9.451	34.64	0.71	35.35	60.00	24.65	
	0.174	44.79	0.51	45.30	54.77	9.47	AV
	0.219	40.12	0.58	40.70	52.88	12.18	
	0.735	20.48	0.50	20.98	46.00	25.02	
	3.840	23.46	0.46	23.92	46.00	22.08	
	5.867	21.13	0.57	21.70	50.00	28.30	
	9.451	24.67	0.71	25.38	50.00	24.62	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 48%RH

Serial No. : E2009060401 Date of Test : Jun 08, 2009

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.183	55.65	0.62	56.27	64.33	8.06	QP
	0.244	47.44	0.63	48.07	61.95	13.88	
	0.672	35.95	0.51	36.46	56.00	19.54	
	4.158	36.56	0.54	37.10	56.00	18.90	
	21.147	41.36	0.81	42.17	60.00	17.83	
	22.655	46.20	0.82	47.02	60.00	12.98	
	0.183	45.26	0.62	45.88	54.33	8.45	AV
	0.244	37.56	0.63	38.19	51.95	13.76	
	0.672	25.68	0.51	26.19	46.00	19.81	
	4.158	26.39	0.54	26.93	46.00	19.07	
	21.147	31.25	0.81	32.06	50.00	17.94	
	22.655	36.48	0.82	37.30	50.00	12.70	
Neutral	0.183	55.34	0.53	55.87	64.33	8.46	QP
	0.247	46.71	0.57	47.28	61.86	14.58	
	0.672	35.86	0.50	36.36	56.00	19.64	
	4.158	37.14	0.45	37.59	56.00	18.41	
	19.326	39.61	0.91	40.52	60.00	19.48	
	22.655	45.89	0.91	46.80	60.00	13.20	
	0.183	45.30	0.53	45.83	54.33	8.50	AV
	0.247	36.59	0.57	37.16	51.86	14.70	
	0.672	25.38	0.50	25.88	46.00	20.12	
	4.158	27.17	0.45	27.62	46.00	18.38	
	19.326	29.97	0.91	30.88	50.00	19.12	
	22.655	35.69	0.91	36.60	50.00	13.40	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : E2009060401 Date of Test : Jun 08, 2009

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.183	56.23	0.62	56.85	64.33	7.48	QP
	0.244	48.18	0.63	48.81	61.95	13.14	
	0.672	35.60	0.51	36.11	56.00	19.89	
	4.721	35.19	0.57	35.76	56.00	20.24	
	16.839	34.89	0.87	35.76	60.00	24.24	
	22.655	47.38	0.82	48.20	60.00	11.80	
	0.183	46.76	0.62	47.38	54.33	6.95	AV
	0.244	38.59	0.63	39.22	51.95	12.73	
	0.672	25.68	0.51	26.19	46.00	19.81	
	4.721	25.67	0.57	26.24	46.00	19.76	
	16.839	24.85	0.87	25.72	50.00	24.28	
	22.655	37.68	0.82	38.50	50.00	11.50	
Neutral	0.183	55.72	0.53	56.25	64.33	8.08	QP
	0.244	47.16	0.57	47.73	61.95	14.22	
	0.679	35.20	0.50	35.70	56.00	20.30	
	4.407	35.98	0.46	36.44	56.00	19.56	
	20.162	40.39	0.92	41.31	60.00	18.69	
	22.655	45.63	0.91	46.54	60.00	13.46	
	0.183	45.27	0.53	45.80	54.33	8.53	AV
	0.244	37.59	0.57	38.16	51.95	13.79	
	0.679	25.67	0.50	26.17	46.00	19.83	
	4.407	25.34	0.46	25.80	46.00	20.20	
	20.162	30.36	0.92	31.28	50.00	18.72	
	22.655	35.37	0.91	36.28	50.00	13.72	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : W1943CV Humidity : 48%RH

Serial No. : E2009060401 Date of Test : Jun 08, 2009

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.183	56.59	0.62	57.21	64.33	7.12	QP
	0.244	48.29	0.63	48.92	61.95	13.03	
	0.672	35.77	0.51	36.28	56.00	19.72	
	4.672	36.33	0.57	36.90	56.00	19.10	
	20.924	41.63	0.81	42.44	60.00	17.56	
	22.655	47.11	0.82	47.93	60.00	12.07	
	0.183	46.87	0.62	47.49	54.33	6.84	AV
	0.244	38.76	0.63	39.39	51.95	12.56	
	0.672	25.98	0.51	26.49	46.00	19.51	
	4.672	26.75	0.57	27.32	46.00	18.68	
	20.924	31.26	0.81	32.07	50.00	17.93	
	22.655	37.46	0.82	38.28	50.00	11.72	
Neutral	0.183	55.10	0.53	55.63	64.33	8.70	QP
	0.244	47.54	0.57	48.11	61.95	13.84	
	0.672	35.69	0.50	36.19	56.00	19.81	
	4.224	37.48	0.45	37.93	56.00	18.07	
	20.924	42.47	0.91	43.38	60.00	16.62	
	22.655	46.85	0.91	47.76	60.00	12.24	
	0.183	45.27	0.53	45.80	54.33	8.53	AV
	0.244	34.16	0.57	34.73	51.95	17.22	
	0.672	25.97	0.50	26.47	46.00	19.53	
	4.224	27.47	0.45	27.92	46.00	18.08	
	20.924	32.57	0.91	33.48	50.00	16.52	
	22.655	36.58	0.91	37.49	50.00	12.51	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

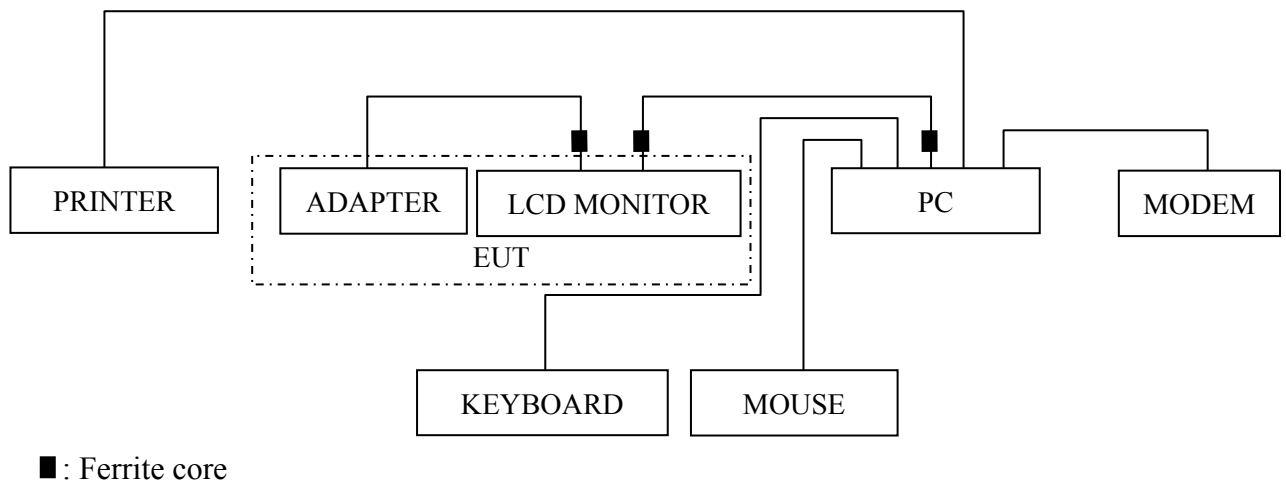
4.1 Test Equipment

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

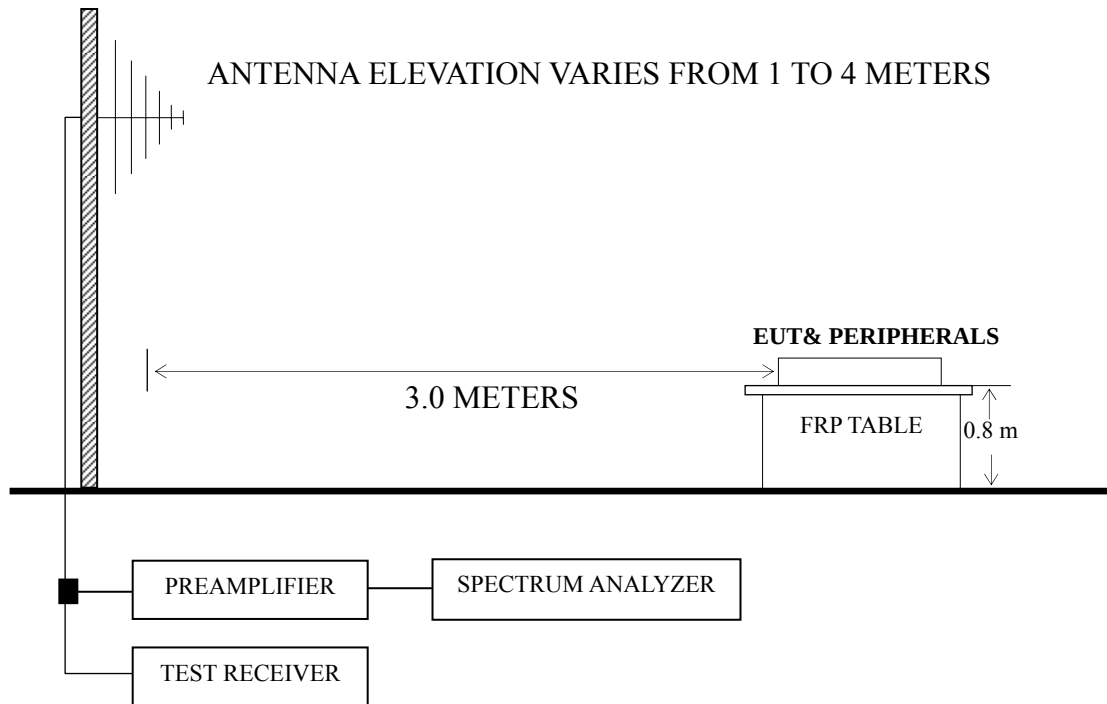
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 07, 2009	Mar 07, 2010
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 19, 2009	Sep 19, 2009
3.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 14, 2008	May 14, 2010
4.	Spectrum	Agilent	E7405A	MY45106600	May 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



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 below 1GHz.

The frequency range from 30 MHz to 1000MHz was checked for all test modes.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Adapter	Test Mode	Data Page
ADS-24S-12 1224GPG	D-Sub 640*480@60Hz	P25
	D-Sub 1024*768@60Hz	P26
	D-Sub 1360*768@60Hz	P27
ADS-24NP-12-1 12024G	D-Sub 640*480@60Hz	P28
	D-Sub 1024*768@60Hz	P29
	D-Sub 1360*768@60Hz	P30
LCAP07F	D-Sub 640*480@60Hz	P31
	D-Sub 1024*768@60Hz	P32
	D-Sub 1360*768@60Hz	P33

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

NOTE 2 – The emission levels that are 20dB below the official limit are not reported.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – All reading are Quasi-Peak values.

NOTE 5 – The worst case is for D-Sub 1024*768@60Hz test mode (Adapter: ADS-24NP-12-1 12024G). The worst emission at horizontal polarization was detected at 217.210 MHz with corrected signal level of 37.65 dB (μV/m) (limit is 46.00dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 220°. The worst emission at vertical polarization was detected at 31.940 MHz with corrected signal level of 36.82 dB (μV/m) (limit is 40.00 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. : W1930SV Humidity : 60%RH

Serial No. : E2009060401 Date of Test : Jun 11, 2009

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

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	146.400	20.99	11.61	1.22	33.82	43.50	9.68
	162.890	23.51	10.42	1.31	35.24	43.50	8.26
	217.210	24.56	11.48	1.60	37.64	46.00	8.36
	282.200	17.43	13.59	1.81	32.83	46.00	13.17
	372.410	13.54	15.92	2.12	31.58	46.00	14.42
	412.180	10.83	16.67	2.23	29.73	46.00	16.27
Vertical	74.620	26.54	7.11	0.90	34.55	40.00	5.45
	116.330	19.82	12.78	1.13	33.73	43.50	9.77
	140.580	19.00	12.05	1.20	32.25	43.50	11.25
	152.220	20.00	11.09	1.25	32.34	43.50	11.16
	217.210	23.03	11.48	1.60	36.11	46.00	9.89
	303.540	16.34	14.00	1.89	32.23	46.00	13.77

TEST ENGINEER: JACKY CHEN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 60%RH

Serial No. : E2009060401 Date of Test : Jun 11, 2009

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

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	82.380	13.90	8.19	0.96	23.05	40.00	16.95
	144.460	19.64	11.76	1.21	32.61	43.50	10.89
	217.210	18.85	11.48	1.60	31.93	46.00	14.07
	303.540	15.97	14.00	1.89	31.86	46.00	14.14
	368.530	15.11	15.81	2.10	33.02	46.00	12.98
	489.780	11.25	17.78	2.41	31.44	46.00	14.56
Vertical	74.620	28.68	7.11	0.90	36.69	40.00	3.31
	87.230	23.98	8.96	1.00	33.94	40.00	6.06
	123.120	19.36	12.86	1.15	33.37	43.50	10.13
	217.210	20.21	11.48	1.60	33.29	46.00	12.71
	238.550	21.55	12.48	1.67	35.70	46.00	10.30
	490.750	18.44	17.78	2.41	38.63	46.00	7.37

TEST ENGINEER: JACKY CHEN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 60%RH

Serial No. : E2009060401 Date of Test : Jun 11, 2009

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

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	161.920	22.85	10.46	1.31	34.62	43.50	8.88
	217.210	23.18	11.48	1.60	36.26	46.00	9.74
	238.550	21.86	12.48	1.67	36.01	46.00	9.99
	282.200	17.58	13.59	1.81	32.98	46.00	13.02
	372.410	15.42	15.92	2.12	33.46	46.00	12.54
	416.060	10.89	16.72	2.24	29.85	46.00	16.15
Vertical	74.620	25.31	7.11	0.90	33.32	40.00	6.68
	87.230	22.59	8.96	1.00	32.55	40.00	7.45
	116.330	19.41	12.78	1.13	33.32	43.50	10.18
	123.120	20.54	12.86	1.15	34.55	43.50	8.95
	246.310	17.76	12.75	1.69	32.20	46.00	13.80
	489.780	16.10	17.78	2.41	36.29	46.00	9.71

TEST ENGINEER: JACKY CHEN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 60%RH

Serial No. : E2009060401 Date of Test : Jun 11, 2009

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	163.860	23.39	10.40	1.31	35.10	43.50	8.40
	217.210	23.25	11.48	1.60	36.33	46.00	9.67
	231.760	22.98	12.20	1.65	36.83	46.00	9.17
	303.540	21.72	14.00	1.89	37.61	46.00	8.39
	372.410	21.19	15.92	2.12	39.23	46.00	6.77
	490.750	10.56	17.78	2.41	30.75	46.00	15.25
Vertical	32.910	17.83	17.95	0.64	36.42	40.00	3.58
	99.840	17.50	11.42	1.07	29.99	43.50	13.51
	108.570	19.79	12.17	1.11	33.07	43.50	10.43
	217.210	18.35	11.48	1.60	31.43	46.00	14.57
	282.200	14.29	13.59	1.81	29.69	46.00	16.31
	491.720	18.96	17.80	2.41	39.17	46.00	6.83

TEST ENGINEER: JACKY CHEN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 60%RH

Serial No. : E2009060401 Date of Test : Jun 11, 2009

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	181.320	19.98	9.93	1.43	31.34	43.50	12.16
	217.210	24.57	11.48	1.60	37.65	46.00	8.35
	238.550	21.44	12.48	1.67	35.59	46.00	10.41
	303.540	17.71	14.00	1.89	33.60	46.00	12.40
	433.520	12.49	16.97	2.28	31.74	46.00	14.26
	490.750	15.55	17.78	2.41	35.74	46.00	10.26
Vertical	31.940	17.69	18.49	0.64	36.82	40.00	3.18
	87.230	22.07	8.96	1.00	32.03	40.00	7.97
	173.560	19.82	10.09	1.38	31.29	43.50	12.21
	217.210	18.78	11.48	1.60	31.86	46.00	14.14
	303.540	15.09	14.00	1.89	30.98	46.00	15.02
	490.750	22.21	17.78	2.41	42.40	46.00	3.60

TEST ENGINEER: JACKY CHEN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 60%RH

Serial No. : E2009060401 Date of Test : Jun 11, 2009

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	116.330	15.57	12.78	1.13	29.48	43.50	14.02
	161.920	22.21	10.46	1.31	33.98	43.50	9.52
	238.550	26.21	12.48	1.67	40.36	46.00	5.64
	282.200	20.47	13.59	1.81	35.87	46.00	10.13
	303.540	21.04	14.00	1.89	36.93	46.00	9.07
	372.410	21.58	15.92	2.12	39.62	46.00	6.38
Vertical	32.910	18.07	17.95	0.64	36.66	40.00	3.34
	43.580	22.40	11.88	0.68	34.96	40.00	5.04
	97.900	20.08	11.11	1.07	32.26	43.50	11.24
	116.330	23.77	12.78	1.13	37.68	43.50	5.82
	217.210	16.79	11.48	1.60	29.87	46.00	16.13
	490.750	14.32	17.78	2.41	34.51	46.00	11.49

TEST ENGINEER: JACKY CHEN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 60%RH

Serial No. : E2009060401 Date of Test : Jun 11, 2009

Test Mode : D-Sub 640*480@60Hz Adapter : 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	161.920	24.32	10.46	1.31	36.09	43.50	7.41
	217.210	25.96	11.48	1.60	39.04	46.00	6.96
	238.550	22.26	12.48	1.67	36.41	46.00	9.59
	303.540	16.71	14.00	1.89	32.60	46.00	13.40
	412.180	14.48	16.67	2.23	33.38	46.00	12.62
	488.810	13.07	17.78	2.41	33.26	46.00	12.74
Vertical	33.880	18.35	17.44	0.64	36.43	40.00	3.57
	71.710	29.08	6.69	0.87	36.64	40.00	3.36
	116.330	21.41	12.78	1.13	35.32	43.50	8.18
	217.210	21.87	11.48	1.60	34.95	46.00	11.05
	489.780	17.36	17.78	2.41	37.55	46.00	8.45
	701.240	5.16	19.70	2.94	27.80	46.00	18.20

TEST ENGINEER: JACKY CHEN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 60%RH

Serial No. : E2009060401 Date of Test : Jun 11, 2009

Test Mode : D-Sub 1024*768@60Hz Adapter : 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	152.220	23.59	11.09	1.25	35.93	43.50	7.57
	160.950	23.78	10.48	1.30	35.56	43.50	7.94
	217.210	24.15	11.48	1.60	37.23	46.00	8.77
	238.550	23.63	12.48	1.67	37.78	46.00	8.22
	373.380	13.27	15.92	2.12	31.31	46.00	14.69
	412.180	11.33	16.67	2.23	30.23	46.00	15.77
Vertical	40.670	21.41	13.62	0.67	35.70	40.00	4.30
	51.340	26.18	8.61	0.71	35.50	40.00	4.50
	74.620	27.04	7.11	0.90	35.05	40.00	4.95
	87.230	25.13	8.96	1.00	35.09	40.00	4.91
	100.810	19.31	11.57	1.08	31.96	43.50	11.54
	231.760	19.69	12.20	1.65	33.54	46.00	12.46

TEST ENGINEER: JACKY CHEN

EUT : LCD Monitor Temperature : 22°C

Model No. : W1930SV Humidity : 60%RH

Serial No. : E2009060401 Date of Test : Jun 11, 2009

Test Mode : D-Sub 1360*768@60Hz Adapter : 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	142.520	19.83	11.91	1.20	32.94	43.50	10.56
	159.010	24.33	10.59	1.28	36.20	43.50	7.30
	217.210	23.16	11.48	1.60	36.24	46.00	9.76
	238.550	24.71	12.48	1.67	38.86	46.00	7.14
	364.650	14.69	15.73	2.10	32.52	46.00	13.48
	759.440	9.07	20.30	3.09	32.46	46.00	13.54
Vertical	58.130	26.14	6.96	0.77	33.87	40.00	6.13
	74.620	28.76	7.11	0.90	36.77	40.00	3.23
	116.330	19.79	12.78	1.13	33.70	43.50	9.80
	217.210	21.98	11.48	1.60	35.06	46.00	10.94
	238.550	22.19	12.48	1.67	36.34	46.00	9.66
	489.780	18.76	17.78	2.41	38.95	46.00	7.05

TEST ENGINEER: JACKY CHEN

5 DEVIATION TO TEST SPECIFICATIONS

None.

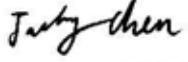
6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Specifications (mm)	Manufacturer	Location
Gasket	MCQ57884403	102*9*1t	EXPAN	See Internal Photo Figure 32

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:


(JACKY CHEN)