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

LCD Monitor

Model No.: E1642CA

Serial No.: E1202156-01/01

FCC ID : BEJE1642SA

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-F12025
Date of Test : Feb 16 – 17, 2012
Date of Report : Feb 23, 2012

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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.	: E1642CA
	(B) Serial No.	: E1202156-01/01
	(C) Power Supply	: 120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2010 AND ANSI C63.4-2003

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B (Class B) and ICES-003, Issue 4 February 2004 (CISPR 22:2002) limits both radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: E1642CA; S/N: E1202156-01/01) which was tested in 3m anechoic chamber Feb 16 – 17, 2012 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 : Feb 16 – 17, 2012 Date of Report : Feb 23, 2012

Producer : Kathy Wang
KATHY WANG / Assistant

Review : Dio Yang
DIO YANG / Assistant Manager

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

Signatory : Sammy Chen
Authorized Signature EMC SAMMY CHEN / Deputy Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2010 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2010 AND ANSI C63.4-2003	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description : LCD Monitor

Type of EUT : ☑ Production ☐ Pre-product ☐ Pro-type

Model No. : E1642CA

Serial No. : E1202156-01/01

Real Power : 6.30W (Adapter #1)
6.30W (Adapter #2)
6.30W (Adapter #3)
6.30W (Adapter #4)

AC Adapter #1 : Manufacturer : LIEN CHANG
Model Number : LCAP26-*
(* can be A, E, I, B, LCAP26-A was selected as the test model.)
Input : 100-240V~, 50-60Hz 1.1A
Output : 19V ⎓ 1.3A
Output Cable : Unshielded, Undetachable, 1.8m

AC Adapter #2 : Manufacturer : LIEN CHANG
Model Number : LCAP21
Input : 100-240V~, 50-60Hz 1.1A
Output : 19V ⎓ 1.3A
Output Cable : Unshielded, Undetachable, 1.8m, with one core

AC Adapter #3 : Manufacturer : HONOR
Model Number : ADS-40SG-19-3 19025G
Input : 100-240V~, 50/60Hz 1.0A
Output : 19V ⎓ 1.3A
Output Cable : Unshielded, Undetachable, 1.8m

AC Adapter #4 : Manufacturer : HONOR
Model Number : ADS-40FSG-19 19025G***-1
(*** can be PG, PBR, PI, PCU, ADS-40FSG-19 19025GPCU-1 was selected as the test model.)
Input : 100-240V~, 50-60Hz 1.0A
Output : 19V ⎓ 1.3A
Output Cable : Unshielded, Undetachable, 1.8m

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 : CHIMEI INNOLUX M/N : N156BGE –L21 Rev.C1
Max Resolution	: 1366*768@60Hz
D-Sub Cable #1	: Shielded, Detachable, 1.50m, with two cores in connector
D-Sub Cable #2	: Shielded, Detachable, 1.85m, with two cores in connector
Power Cord	: Unshielded, Detachable, 1.50m
Note	: The D-Sub cable #2 was selected to be used in the test.

Remark:
The EUT is a LCD Monitor which input/output ports as follows:
(1) One D-Sub Port : Connected with PC
(2) One DC In Port : Connected with Adapter

2.2 Peripherals

2.2.1 PC

Manufacturer	:	HP
Model Number	:	dx7200MT
Serial Number	:	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 Graphics Card (Used in PC)

Manufacturer	:	Asus
Model Number	:	EAH6670
Output port	:	DVI, D-Sub, HDMI

2.2.3 Printer

Manufacturer	:	HP
Model Number	:	C3990A
Serial Number	:	JPZX020487
Data Cable	:	Shielded, Detachable, 1.5m
Certificate	:	GS, CE/EMC, C-Tick, FCC DoC

2.2.4 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

2.2.5 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

2.2.6 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 = 3.38 dB

Radiated Emission Expanded Uncertainty (30-200MHz):

U = 4.58 dB (Horizontal)

U = 4.70 dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):

U = 4.84 dB (Horizontal)

U = 4.70 dB (Vertical)

3 CONDUCTED EMISSION TEST

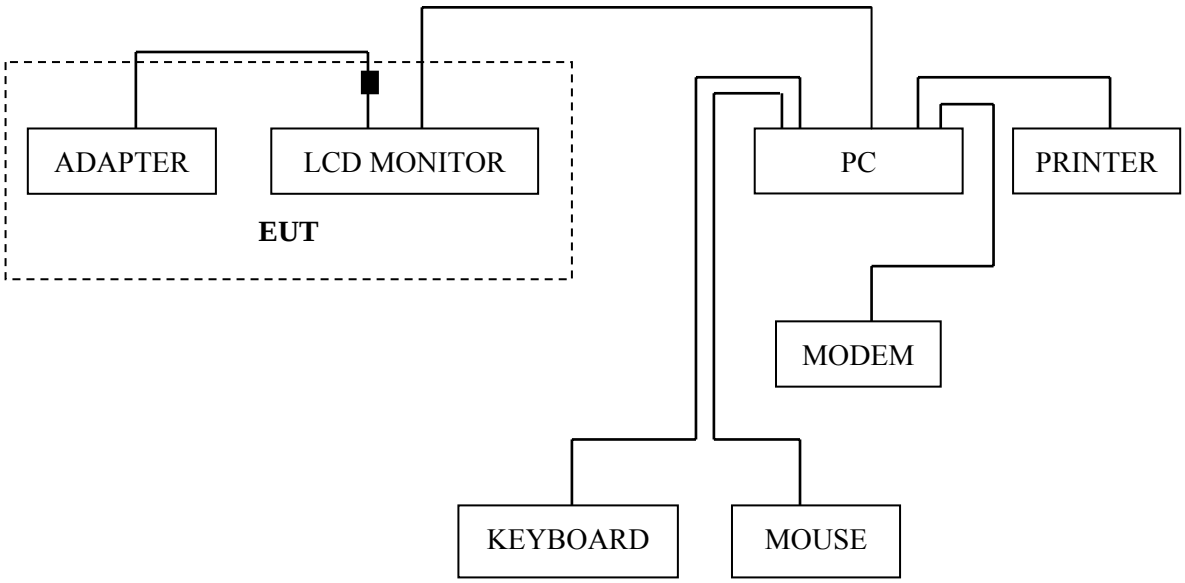
3.1 Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 22, 2011	Mar 22, 2012
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Mar 22, 2011	Mar 22, 2012
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2011	Mar 22, 2012
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 18, 2011	Mar 18, 2012
5.	50Ω Terminator	Anritsu	BNC	001	Mar 22, 2011	Mar 22, 2012
6.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup

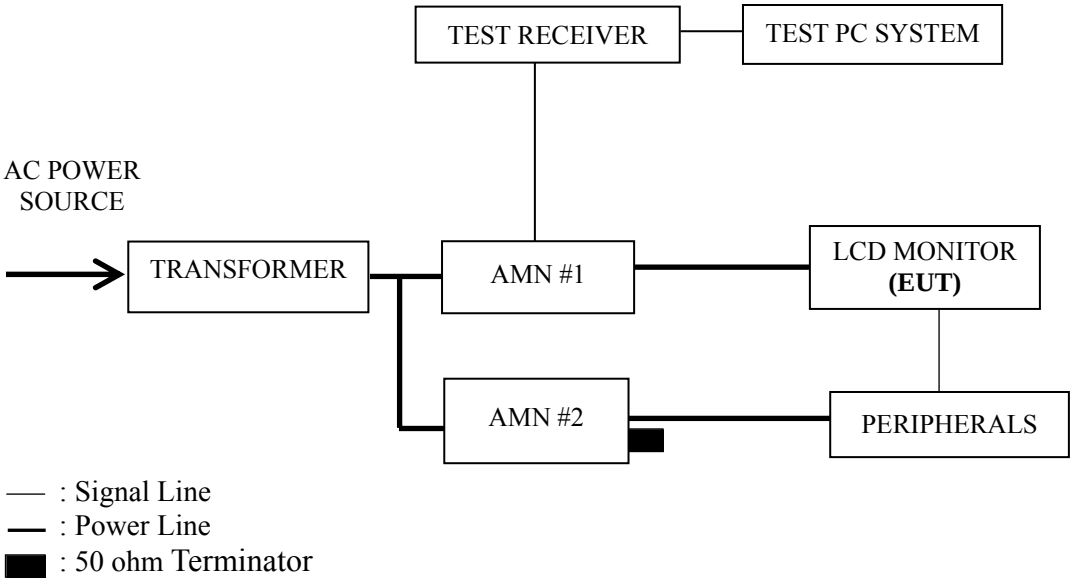
3.2.1 EUT & Peripherals



■ : Ferrite core

Note: Ferrite core only for Adapter #2

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 (we use white letters on a black background to represent all colors), 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
Adapter #1	D-Sub 1366*768@60Hz
	D-Sub 1024*768@75Hz
	D-Sub 640*480@60Hz
Adapter #2	D-Sub 1366*768@60Hz
Adapter #3	D-Sub 1366*768@60Hz
Adapter #4	D-Sub 1366*768@60Hz

NOTE: We tested the EUT with adapter #1 and selected the worst test mode to perform test with adapter #2/#3/#4.

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.

Adaptor	Test Mode	Page
Adapter #1	**D-Sub 1366*768@60Hz**	**P12**
	D-Sub 1024*768@75Hz	P13
	D-Sub 640*480@60Hz	P14
Adapter #2	D-Sub 1366*768@60Hz	P15
Adapter #3	D-Sub 1366*768@60Hz	P16
Adapter #4	D-Sub 1366*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 1366*768@60Hz test mode (Adapter #1). The worst emission is detected at 0.156 MHz (QP Value) with corrected signal level of 57.40 dB (μV) (limit is 65.65 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E1642CA	Humidity	:	48%RH	
Serial No.	: E1202156-01/01	Date of Test	:	Feb 16, 2012	
Test Mode	: D-Sub 1366*768@60Hz	Adapter #1	:	LCAP26-A	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.156	56.77	0.22	56.99	65.65	8.66	QP
	0.194	52.09	0.23	52.32	63.84	11.52	
	0.262	44.88	0.23	45.11	61.38	16.27	
	0.456	34.40	0.31	34.71	56.76	22.05	
	4.772	32.36	0.55	32.91	56.00	23.09	
	17.568	30.36	0.93	31.29	60.00	28.71	
	0.156	44.10	0.22	44.32	55.65	11.33	AV
	0.194	41.30	0.23	41.53	53.84	12.31	
	0.262	34.10	0.23	34.33	51.38	17.05	
	0.456	23.60	0.31	23.91	46.76	22.85	
	4.772	21.70	0.55	22.25	46.00	23.75	
	17.568	20.70	0.93	21.63	50.00	28.37	
Neutral	**0.156**	**57.21**	**0.19**	**57.40**	**65.65**	**8.25**	QP
	0.194	52.16	0.19	52.35	63.84	11.49	
	0.456	34.06	0.24	34.30	56.76	22.46	
	1.878	22.13	0.55	22.68	56.00	33.32	
	4.574	31.41	0.76	32.17	56.00	23.83	
	19.950	32.22	1.18	33.40	60.00	26.60	
	0.156	45.20	0.19	45.39	55.65	10.26	AV
	0.194	41.50	0.19	41.69	53.84	12.15	
	0.456	23.70	0.24	23.94	46.76	22.82	
	1.878	12.40	0.55	12.95	46.00	33.05	
	4.574	22.49	0.76	23.25	46.00	22.75	
	19.950	21.60	1.18	22.78	50.00	27.22	

TEST ENGINEER: WENCY YANG

EUT	: LCD Monitor	Temperature	: 22℃		
Model No.	: E1642CA	Humidity	: 48%RH		
Serial No.	: E1202156-01/01	Date of Test	: Feb 16, 2012		
Test Mode	: D-Sub 1280*768@75Hz	Adapter #1	: LCAP26-A		

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.157**	**56.18**	**0.22**	**56.40**	**65.60**	**9.20**	QP
	0.194	51.44	0.23	51.67	63.84	12.17	
	0.456	34.35	0.31	34.66	56.76	22.10	
	1.487	21.70	0.42	22.12	56.00	33.88	
	4.822	31.92	0.55	32.47	56.00	23.53	
	17.568	31.53	0.93	32.46	60.00	27.54	
	0.157	44.40	0.22	44.62	55.60	10.98	AV
	0.194	41.20	0.23	41.43	53.84	12.41	
	0.456	23.60	0.31	23.91	46.76	22.85	
	1.487	12.80	0.42	13.22	46.00	32.78	
	4.822	21.50	0.55	22.05	46.00	23.95	
	17.568	21.10	0.93	22.03	50.00	27.97	
Neutral	0.167	54.81	0.19	55.00	65.13	10.13	QP
	0.194	52.01	0.19	52.20	63.84	11.64	
	0.461	34.93	0.24	35.17	56.67	21.50	
	1.858	25.52	0.55	26.07	56.00	29.93	
	4.822	32.42	0.76	33.18	56.00	22.82	
	17.383	35.86	1.17	37.03	60.00	22.97	AV
	0.167	41.80	0.19	41.99	55.13	13.14	
	0.194	40.10	0.19	40.29	53.84	13.55	
	0.461	24.20	0.24	24.44	46.67	22.23	
	1.858	15.30	0.55	15.85	46.00	30.15	
	4.822	22.60	0.76	23.36	46.00	22.64	
	17.383	25.20	1.17	26.37	50.00	23.63	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	E1642CA	Humidity	:	48%RH
Serial No.	:	E1202156-01/01	Date of Test	:	Feb 16, 2012
Test Mode	:	D-Sub 640*480@60Hz	Adapter #1	:	LCAP26-A

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.157	56.58	0.22	56.80	65.60	8.80	QP
	0.199	51.23	0.23	51.46	63.67	12.21	
	0.447	34.56	0.31	34.87	56.93	22.06	
	2.133	21.47	0.44	21.91	56.00	34.09	
	4.622	31.46	0.55	32.01	56.00	23.99	
	17.383	30.91	0.93	31.84	60.00	28.16	
	0.157	45.10	0.22	45.32	55.60	10.28	AV
	0.199	41.30	0.23	41.53	53.67	12.14	
	0.447	24.10	0.31	24.41	46.93	22.52	
	2.133	12.30	0.44	12.74	46.00	33.26	
	4.622	21.60	0.55	22.15	46.00	23.85	
	17.383	20.69	0.93	21.62	50.00	28.38	
Neutral	**0.161**	**56.51**	**0.19**	**56.70**	**65.43**	**8.73**	QP
	0.190	52.00	0.19	52.19	64.02	11.83	
	0.456	35.66	0.24	35.90	56.76	20.86	
	1.628	22.41	0.53	22.94	56.00	33.06	
	4.822	30.82	0.76	31.58	56.00	24.42	
	17.568	33.02	1.17	34.19	60.00	25.81	
	0.161	45.30	0.19	45.49	55.43	9.94	AV
	0.190	41.80	0.19	41.99	54.02	12.03	
	0.456	25.50	0.24	25.74	46.76	21.02	
	1.628	12.10	0.53	12.63	46.00	33.37	
	4.822	20.60	0.76	21.36	46.00	24.64	
	17.568	23.10	1.17	24.27	50.00	25.73	

TEST ENGINEER: WENCY YANG

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E1642CA	Humidity	:	48%RH	
Serial No.	: E1202156-01/01	Date of Test	:	Feb 16, 2012	
Test Mode	: D-Sub 1366*768@60Hz	Adapter #2	:	LCAP21	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.159	53.52	0.22	53.74	65.52	11.78	QP
	0.190	49.83	0.23	50.06	64.02	13.96	
	0.461	35.27	0.31	35.58	56.67	21.09	
	2.155	18.59	0.44	19.03	56.00	36.97	
	4.926	31.42	0.55	31.97	56.00	24.03	
	6.698	29.66	0.66	30.32	60.00	29.68	
	0.159	43.10	0.22	43.32	55.52	12.20	AV
	0.190	37.50	0.23	37.73	54.02	16.29	
	0.461	25.30	0.31	25.61	46.67	21.06	
	2.155	10.60	0.44	11.04	46.00	34.96	
	4.926	21.50	0.55	22.05	46.00	23.95	
	6.698	20.10	0.66	20.76	50.00	29.24	
Neutral	**0.156**	**54.04**	**0.19**	**54.23**	**65.65**	**11.42**	QP
	0.197	48.35	0.19	48.54	63.76	15.22	
	0.466	36.88	0.24	37.12	56.58	19.46	
	1.367	21.00	0.48	21.48	56.00	34.52	
	5.058	33.06	0.76	33.82	60.00	26.18	
	18.232	29.02	1.17	30.19	60.00	29.81	
	0.156	43.30	0.19	43.49	55.65	12.16	AV
	0.197	38.60	0.19	38.79	53.76	14.97	
	0.466	26.70	0.24	26.94	46.58	19.64	
	1.367	12.10	0.48	12.58	46.00	33.42	
	5.058	23.70	0.76	24.46	50.00	25.54	
	18.232	20.11	1.17	21.28	50.00	28.72	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1642CA	Humidity	:	48%RH
Serial No.	:	E1202156-01/01	Date of Test	:	Feb 16, 2012
Test Mode	:	D-Sub 1366*768@60Hz	Adapter #3	:	ADS-40SG-19-3 19025G

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.170**	**44.86**	**0.23**	**45.09**	**64.94**	**19.85**	QP
	0.192	40.44	0.23	40.67	63.93	23.26	
	0.444	35.19	0.31	35.50	56.98	21.48	
	0.804	25.56	0.40	25.96	56.00	30.04	
	2.066	26.06	0.44	26.50	56.00	29.50	
	6.056	26.49	0.61	27.10	60.00	32.90	
	0.170	34.19	0.23	34.42	54.94	20.52	AV
	0.192	30.20	0.23	30.43	53.93	23.50	
	0.444	25.90	0.31	26.21	46.98	20.77	
	0.804	15.70	0.40	16.10	46.00	29.90	
	2.066	16.20	0.44	16.64	46.00	29.36	
	6.056	16.30	0.61	16.91	50.00	33.09	
Neutral	0.162	44.80	0.19	44.99	65.34	20.35	QP
	0.192	39.87	0.19	40.06	63.93	23.87	
	0.447	34.28	0.24	34.52	56.93	22.41	
	0.804	24.13	0.33	24.46	56.00	31.54	
	1.698	24.00	0.53	24.53	56.00	31.47	
	6.252	25.05	0.91	25.96	60.00	34.04	
	0.162	34.30	0.19	34.49	55.34	20.85	AV
	0.192	29.60	0.19	29.79	53.93	24.14	
	0.447	24.20	0.24	24.44	46.93	22.49	
	0.804	14.90	0.33	15.23	46.00	30.77	
	1.698	13.10	0.53	13.63	46.00	32.37	
	6.252	15.60	0.91	16.51	50.00	33.49	

TEST ENGINEER: WENCY YANG

EUT	:	LCD Monitor	Temperature :	22℃	
Model No.	:	E1642CA	Humidity	:	48%RH
Serial No.	:	E1202156-01/01	Date of Test	:	Feb 16, 2012
Test Mode	:	D-Sub 1366*768@60Hz	Adapter #4	:	ADS-40SG-19-3 19025GPCU-1

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.156	48.00	0.22	48.22	65.65	17.43	QP
	0.190	42.15	0.23	42.38	64.02	21.64	
	0.444	41.34	0.31	41.65	56.98	15.33	
	0.788	31.44	0.39	31.83	56.00	24.17	
	1.418	31.52	0.40	31.92	56.00	24.08	
	6.488	34.65	0.64	35.29	60.00	24.71	
	0.156	36.70	0.22	36.92	55.65	18.73	AV
	0.190	32.60	0.23	32.83	54.02	21.19	
	0.444	31.60	0.31	31.91	46.98	15.07	
	0.788	21.71	0.39	22.10	46.00	23.90	
	1.418	21.60	0.40	22.00	46.00	24.00	
	6.488	24.29	0.64	24.93	50.00	25.07	
Neutral	0.152	48.75	0.19	48.94	65.91	16.97	QP
	0.190	42.29	0.19	42.48	64.02	21.54	
	0.447	**41.84**	**0.24**	**42.08**	**56.93**	**14.85**	
	0.775	32.52	0.31	32.83	56.00	23.17	
	1.716	32.15	0.53	32.68	56.00	23.32	
	6.698	34.46	0.96	35.42	60.00	24.58	
	0.152	38.10	0.19	38.29	55.91	17.62	AV
	0.190	32.20	0.19	32.39	54.02	21.63	
	0.447	31.70	0.24	31.94	46.93	14.99	
	0.775	22.20	0.31	22.51	46.00	23.49	
	1.716	22.11	0.53	22.64	46.00	23.36	
	6.698	23.90	0.96	24.86	50.00	25.14	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

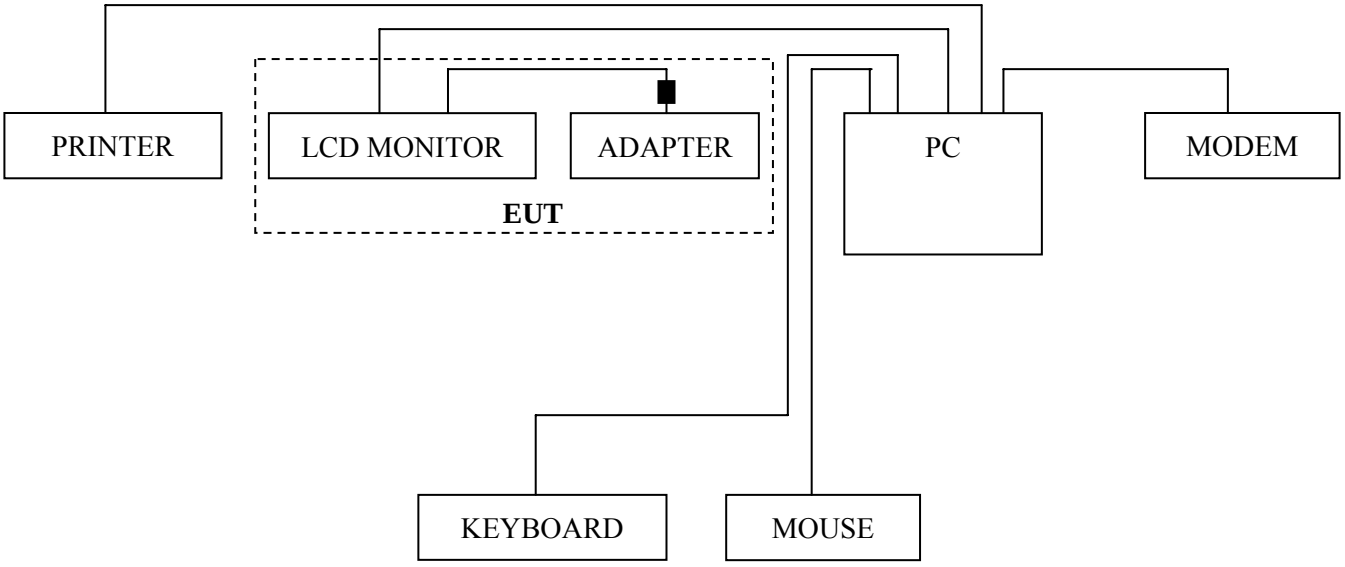
4.1 Test Equipment

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

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

4.2 Block Diagram of Test Setup

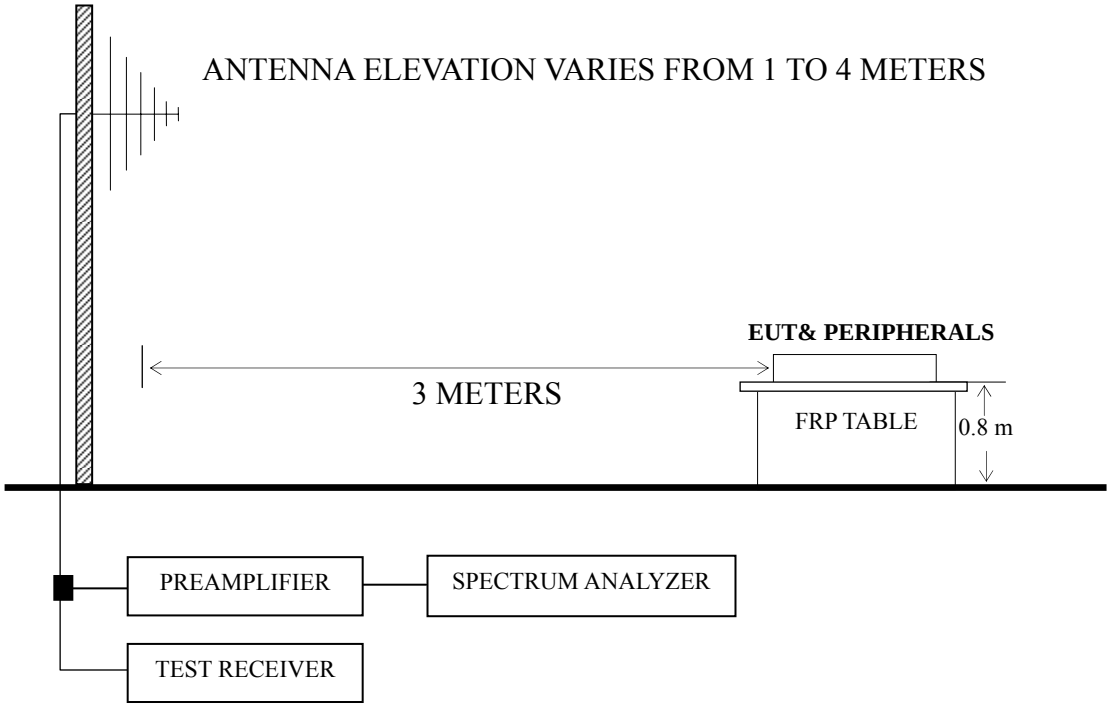
4.2.1 EUT and Peripherals



■ : Ferrite core

Note: Ferrite core only for Adapter #2

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 below or equal to 1GHz and Average value detector above 1GHz.
NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.

4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) or Horn 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	Page
Adapter #1	D-Sub 1366*768@60Hz	P22
	D-Sub 1024*768@75Hz	P23
	D-Sub 640*480@60Hz	P24
Adapter #2	**D-Sub 1366*768@60Hz**	**P25**
Adapter #3	D-Sub 1366*768@60Hz	P26
Adapter #4	D-Sub 1366*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.(< 1GHz)
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 – We tested the EUT with adapter #1 and selected the worst test mode to perform test with adapter #2/#3/#4.
NOTE 6 – The worst case is for D-Sub 1366*768@60Hz test mode (Adapter #2). The worst emission at horizontal polarization was detected at 145.530 MHz with corrected signal level of 29.04 dB (μV/m) (limit is 43.50 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 116°. The worst emission at vertical polarization was detected at 153.190 MHz with corrected signal level of 27.84 dB (μV/m) (limit is 43.50 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 247°.

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1642CA	Humidity	:	60%RH
Serial No.	:	E1202156-01/01	Date of Test	:	Feb 17, 2012
Test Mode	:	D-Sub 1366*768@60Hz	Adapter #1	:	LCAP26-A

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	75.590	24.30	10.27	1.53	12.50	40.00	15.70
	153.190	32.11	10.36	2.24	19.51	43.50	11.39
	225.940	32.27	10.88	2.52	18.87	46.00	13.73
	305.480	**37.61**	**13.87**	**2.77**	**20.97**	**46.00**	**8.39**
	538.280	34.86	17.83	3.34	13.69	46.00	11.14
	870.990	36.50	20.38	4.60	11.52	46.00	9.50
Vertical	31.940	28.10	17.29	0.82	9.99	40.00	11.90
	77.530	28.36	10.39	1.56	16.41	40.00	11.64
	221.090	30.67	10.68	2.51	17.48	46.00	15.33
	305.480	**42.24**	**13.87**	**2.77**	**25.60**	**46.00**	**3.76**
	538.280	37.29	17.83	3.34	16.12	46.00	8.71
	875.840	40.08	20.37	4.75	14.96	46.00	5.92

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1642CA	Humidity	:	60%RH
Serial No.	:	E1202156-01/01	Date of Test	:	Dec 21, 2011
Test Mode	:	D-Sub 1024*768@75Hz	Adapter #1	:	LCAP26-A

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	72.680	24.40	10.08	1.47	12.85	40.00	15.60
	145.430	28.24	10.50	2.20	15.54	43.50	15.26
	196.840	34.00	9.83	2.42	21.75	43.50	9.50
	293.840	36.69	13.53	2.74	20.42	46.00	9.31
	329.730	35.20	14.54	2.83	17.83	46.00	10.80
	837.040	**37.58**	**20.48**	**4.34**	**12.76**	**46.00**	**8.42**
Vertical	33.880	29.25	16.26	0.83	12.16	40.00	10.75
	72.680	27.82	10.08	1.47	16.27	40.00	12.18
	92.080	30.72	11.08	1.75	17.89	43.50	12.78
	196.840	34.51	9.83	2.42	22.26	43.50	8.99
	538.280	37.78	17.83	3.34	16.61	46.00	8.22
	872.930	**40.18**	**20.37**	**4.60**	**15.21**	**46.00**	**5.82**

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :		22℃
Model No.	:	E1642CA	Humidity	:	60%RH
Serial No.	:	E1202156-01/01	Date of Test	:	Feb 17, 2012
Test Mode	:	D-Sub 640*480@60Hz	Adapter #1	:	LCAP26-A

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	72.680	23.70	10.08	1.47	12.15	40.00	16.30
	145.430	33.83	10.50	2.20	21.13	43.50	9.67
	187.140	29.20	9.92	2.38	16.90	43.50	14.30
	290.930	33.42	13.46	2.74	17.22	46.00	12.58
	538.280	33.24	17.83	3.34	12.07	46.00	12.76
	866.140	**36.88**	**20.39**	**4.60**	**11.89**	**46.00**	**9.12**
Vertical	33.880	29.92	16.26	0.83	12.83	40.00	10.08
	70.740	28.99	9.93	1.43	17.63	40.00	11.01
	114.390	31.50	11.10	1.97	18.43	43.50	12.00
	290.930	36.30	13.46	2.74	20.10	46.00	9.70
	538.280	38.18	17.83	3.34	17.01	46.00	7.82
	875.840	**38.71**	**20.37**	**4.75**	**13.59**	**46.00**	**7.29**

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :		22℃
Model No.	:	E1642CA	Humidity	:	60%RH
Serial No.	:	E1202156-01/01	Date of Test	:	Feb 17, 2012
Test Mode	:	D-Sub 1366*768@60Hz	Adapter #2	:	LCAP21

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	72.680	31.81	10.08	1.47	20.26	40.00	8.19
	145.430	**41.74**	**10.50**	**2.20**	**29.04**	**43.50**	**1.76**
	150.280	41.56	10.41	2.23	28.92	43.50	1.94
	305.480	37.31	13.87	2.77	20.67	46.00	8.69
	484.930	35.64	17.44	3.23	14.97	46.00	10.36
	863.230	37.98	20.41	4.60	12.97	46.00	8.02
Vertical	33.880	29.56	16.26	0.83	12.47	40.00	10.44
	72.680	30.84	10.08	1.47	19.29	40.00	9.16
	153.190	**40.44**	**10.36**	**2.24**	**27.84**	**43.50**	**3.06**
	305.480	37.80	13.87	2.77	21.16	46.00	8.20
	536.340	37.10	17.83	3.34	15.93	46.00	8.90
	875.840	40.48	20.37	4.75	15.36	46.00	5.52

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :		22℃
Model No.	:	E1642CA	Humidity	:	60%RH
Serial No.	:	E1202156-01/01	Date of Test	:	Feb 17, 2012
Test Mode	:	D-Sub 1366*768@60Hz	Adapter #3	:	ADS-40SG-19-3 19025G

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	31.940	28.12	17.29	0.82	10.01	40.00	11.88
	72.680	**37.30**	**10.08**	**1.47**	**25.75**	**40.00**	**2.70**
	143.490	30.90	10.54	2.19	18.17	43.50	12.60
	303.540	37.72	13.80	2.77	21.15	46.00	8.28
	536.340	38.34	17.83	3.34	17.17	46.00	7.66
	875.840	38.23	20.37	4.75	13.11	46.00	7.77
Vertical	72.680	25.40	10.08	1.47	13.85	40.00	14.60
	150.280	34.98	10.41	2.23	22.34	43.50	8.52
	177.440	32.33	10.02	2.35	19.96	43.50	11.17
	303.540	39.82	13.80	2.77	23.25	46.00	6.18
	484.930	32.40	17.44	3.23	11.73	46.00	13.60
	861.290	**40.24**	**20.42**	**4.45**	**15.37**	**46.00**	**5.76**

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E1642CA	Humidity	:	60%RH
Serial No.	:	E1202156-01/01	Date of Test	:	Feb 17, 2012
Test Mode	:	D-Sub 1366*768@60Hz	Adapter #4	:	ADS-40FSG-19 19025GPCU-1

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	33.880	27.46	16.26	0.83	10.37	40.00	12.54
	77.530	35.00	10.39	1.56	23.05	40.00	5.00
	111.480	29.82	11.15	1.96	16.71	43.50	13.68
	303.540	**43.46**	**13.80**	**2.77**	**26.89**	**46.00**	**2.54**
	536.340	35.37	17.83	3.34	14.20	46.00	10.63
	875.840	38.14	20.37	4.75	13.02	46.00	7.86
Vertical	56.190	23.18	8.88	1.08	13.22	40.00	16.82
	75.590	25.28	10.27	1.53	13.48	40.00	14.72
	150.280	**38.27**	**10.41**	**2.23**	**25.63**	**43.50**	**5.23**
	305.480	37.40	13.87	2.77	20.76	46.00	8.60
	484.930	31.89	17.44	3.23	11.22	46.00	14.11
	870.990	39.08	20.38	4.60	14.10	46.00	6.92

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.