

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

LCD Monitor

Model No.: E2442TA

Serial No.: E1207871-01/01

FCC ID : BEJE2442TA

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Date of Test : Jul 18 – 19, 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. : E2442TA
(B) Serial No. : E1207871-01/01
(C) Power Supply : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2011
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: E2442TA; S/N: E1207871-01/01) which was tested in 3m anechoic chamber Jul 18 – 19, 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 : Jul 18 – 19, 2012 Date of Report : Jul 25, 2012

Producer :
YENNY YU / Assistant

Review :
DIO YANG / Assistant Manager

Signatory :
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 2011 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2011 AND ANSI C63.4-2003	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	: LCD Monitor
Model No.	: E2442TA
Serial No.	: E1207871-01/01
Real Power	: 26.40W (Adapter #1) 26.20W (Adapter #2)
AC Adapter #1	: Manufacturer : LIEN CHANG Model Number : LCAP21A Input : 100-240V~, 50-60Hz 1.1A Output : 19V  1.7A Output Cable : Unshielded, Undetachable, 1.8m, with one core
AC Adapter #2	: Manufacturer : HONOR Model Number : ADS-40SG-19-3 19032G Input : 100-240V~, 50-60Hz 1.0A Output : 19V  1.7A Output Cable : Unshielded, Undetachable, 1.8m
Applicant	: LG Electronics U.S.A., Inc. No.346, YaoXin Road Economic&Technical Development Zone, Nanjing, China
Manufacturer	: LG Electronics Nanjing Display Co., Ltd. No.346, YaoXin Road Economic&Technical Development Zone, Nanjing, China
LCD Panel	: Manufacturer : AU Optronics M/N : M240HW01
Max Resolution	: 1920*1080@60Hz
D-Sub Cable #1	: Shielded, Detachable, 1.85m, with two cores on cable
D-Sub Cable #2	: Shielded, Detachable, 1.50m, with two cores in connector
DVI Cable #1	: Shielded, Detachable, 1.85m, with two cores on cable
DVI Cable #2	: Shielded, Detachable, 1.50m, with two cores in connector
Power Cord	Unshielded, Detachable, 1.50m
Note	: The D-Sub cable #2 and DVI cable #2 were 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 DVI Port : Connected with PC
- (3) 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 : Sept. 17, 1998 file on
(Semi-Anechoic Chamber) Apr 29, 2009 Renewed
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046, USA

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

FCC registration Number : 91789

NVLAP Lab Code : 200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty: U = 3.42 dB

Radiated Emission Expanded Uncertainty (30-200MHz):
U = 4.14 dB (Horizontal)
U = 4.28 dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):
U = 4.18 dB (Horizontal)
U = 4.26 dB (Vertical)

Radiated Emission Expanded Uncertainty (Above 1GHz):
U= 4.50 dB (Horizontal)
U= 4.16 dB (Vertical)

3 CONDUCTED EMISSION TEST

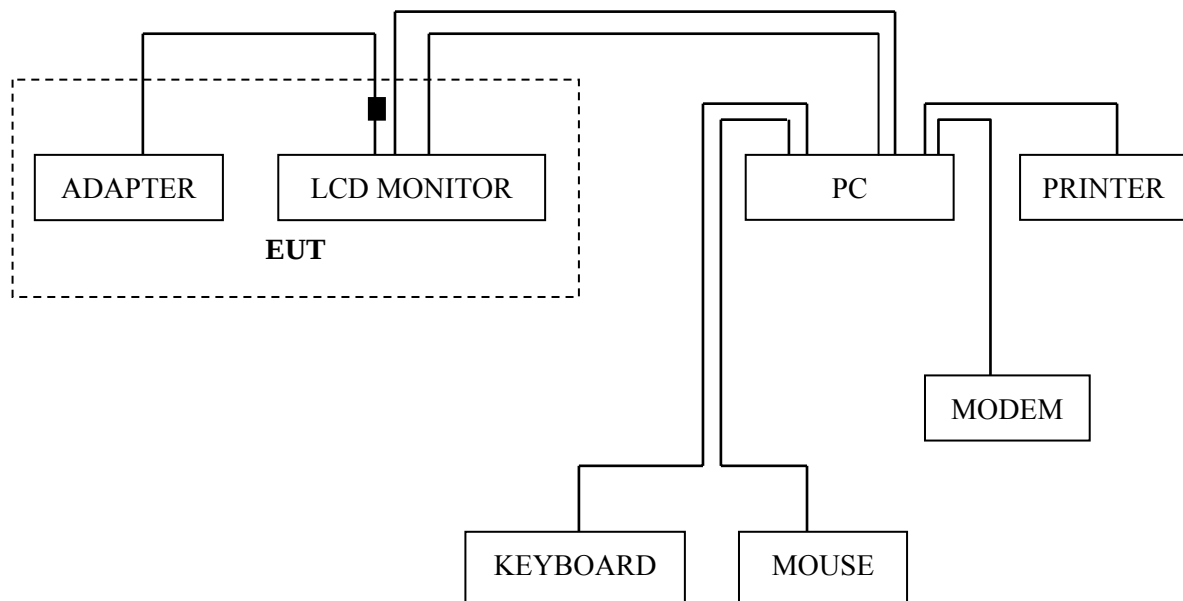
3.1 Test Equipment

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, 2012	Mar 22, 2013
2.	Artificial Mains Network (AMN #1)	R&S	ESH2-Z5	843890/011	Feb 13, 2012	Feb 13, 2013
3.	Artificial Mains Network (AMN #2)	R&S	ENV4200	100125	Mar 22, 2012	Mar 22, 2013
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2012	Sep 18, 2012
5.	50 Ω Terminator	Anritsu	BNC	001	Mar 22, 2012	Mar 22, 2013
6.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup

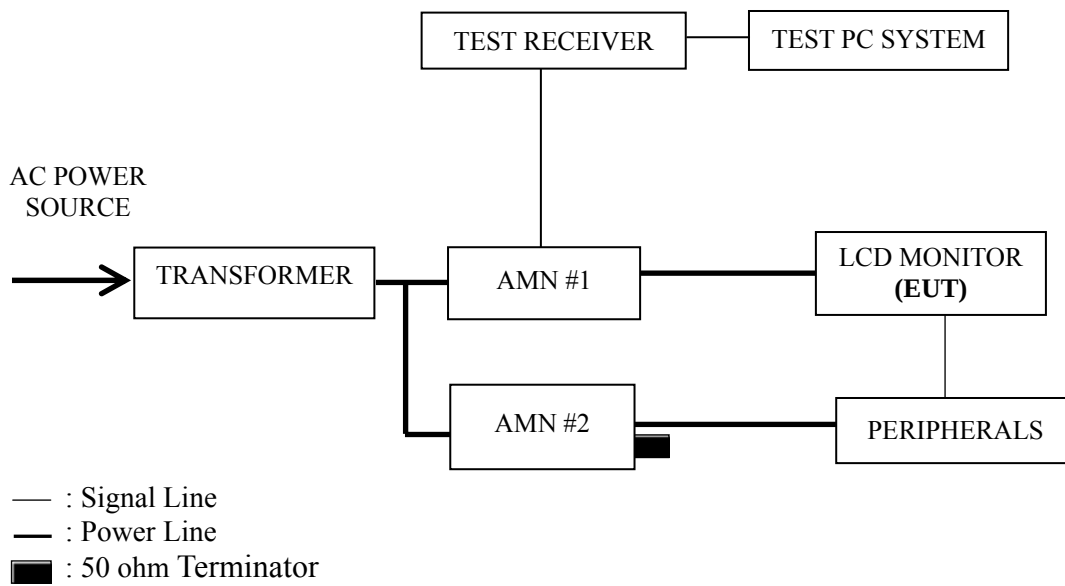
3.2.1 EUT & Peripherals



■ : Ferrite core

Note: Ferrite core only for Adapter #1

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 (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/DVI 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 1920*1080@60Hz
	DVI 1920*1080@60Hz
	DVI 1680*1050@60Hz
	DVI 1280*1024@75Hz
	DVI 640*480@60Hz
Adapter #2	DVI 1280*1024@75Hz

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

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	Page
Adapter #1	D-Sub 1920*1080@60Hz	P12
	DVI 1920*1080@60Hz	P13
	DVI 1680*1050@60Hz	P14
	DVI 1280*1024@75Hz	P15
	DVI 640*480@60Hz	P16
Adapter #2	DVI 1280*1024@75Hz	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 DVI 1280*1024@75Hz test mode (Adapter #1). The worst emission is detected at 4.454 MHz (Average Value) with corrected signal level of 40.69 dB (μV) (limit is 46.00 dB (μV)), when the Line of the EUT is connected to AMN.

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 48%RH

Serial No. : E1207871-01/01 Date of Test : Jul 18, 2012

Test Mode : D-Sub 1920*1080@60Hz Adapter #1 : LCAP21A

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.172	50.60	0.24	50.84	64.86	14.02	QP
	0.408	42.46	0.33	42.79	57.68	14.89	
	0.516	44.93	0.34	45.27	56.00	10.73	
	1.210	43.31	0.33	43.64	56.00	12.36	
	4.721	36.44	0.50	36.94	56.00	19.06	
	13.695	20.88	0.83	21.71	60.00	38.29	
	0.172	40.40	0.24	40.64	54.86	14.22	AV
	0.408	32.11	0.33	32.44	47.68	15.24	
	0.516	34.50	0.34	34.84	46.00	11.16	
	1.210	33.50	0.33	33.83	46.00	12.17	
	4.721	26.20	0.50	26.70	46.00	19.30	
	13.695	12.10	0.83	12.93	50.00	37.07	
Neutral	0.172	51.00	0.12	51.12	64.86	13.74	QP
	0.402	42.95	0.16	43.11	57.81	14.70	
	0.516	44.60	0.17	44.77	56.00	11.23	
	1.236	41.76	0.22	41.98	56.00	14.02	
	4.772	40.94	0.42	41.36	56.00	14.64	
	13.695	21.98	0.70	22.68	60.00	37.32	
	0.172	40.40	0.12	40.52	54.86	14.34	AV
	0.402	32.50	0.16	32.66	47.81	15.15	
	0.516	34.10	0.17	34.27	46.00	11.73	
	1.236	32.10	0.22	32.32	46.00	13.68	
	4.772	30.20	0.42	30.62	46.00	15.38	
	13.695	13.40	0.70	14.10	50.00	35.90	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 48%RH

Serial No. : E1207871-01/01 Date of Test : Jul 18, 2012

Test Mode : DVI 1920*1080@60Hz Adapter #1 : LCAP21A

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.156	55.85	0.24	56.09	65.65	9.56	QP
	0.221	48.23	0.24	48.47	62.79	14.32	
	0.510	36.88	0.35	37.23	56.00	18.77	
	2.110	34.20	0.39	34.59	56.00	21.41	
	4.501	47.36	0.50	47.86	56.00	8.14	
	13.695	31.09	0.83	31.92	60.00	28.08	
	0.156	45.30	0.24	45.54	55.65	10.11	AV
	0.221	38.21	0.24	38.45	52.79	14.34	
	0.510	26.10	0.35	26.45	46.00	19.55	
	2.110	24.40	0.39	24.79	46.00	21.21	
	4.501	37.29	0.50	37.79	46.00	8.21	
	13.695	21.40	0.83	22.23	50.00	27.77	
Neutral	0.159	55.80	0.13	55.93	65.52	9.59	QP
	0.223	49.16	0.11	49.27	62.70	13.43	
	0.510	36.77	0.17	36.94	56.00	19.06	
	1.744	33.88	0.18	34.06	56.00	21.94	
	4.672	47.97	0.42	48.39	56.00	7.61	
	13.695	29.90	0.70	30.60	60.00	29.40	
	0.159	45.30	0.13	45.43	55.52	10.09	AV
	0.223	39.20	0.11	39.31	52.70	13.39	
	0.510	26.20	0.17	26.37	46.00	19.63	
	1.744	23.79	0.18	23.97	46.00	22.03	
	4.672	38.29	0.42	38.71	46.00	7.29	
	13.695	20.50	0.70	21.20	50.00	28.80	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 48%RH

Serial No. : E1207871-01/01 Date of Test : Jul 18, 2012

Test Mode : DVI 1680*1050@60Hz Adapter #1 : LCAP21A

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.156	55.36	0.24	55.60	65.65	10.05	QP
	0.226	48.24	0.24	48.48	62.61	14.13	
	0.510	37.55	0.35	37.90	56.00	18.10	
	2.213	34.37	0.39	34.76	56.00	21.24	
	4.454	47.65	0.50	48.15	56.00	7.85	
	13.695	30.17	0.83	31.00	60.00	29.00	
	0.156	44.90	0.24	45.14	55.65	10.51	AV
	0.226	38.31	0.24	38.55	52.61	14.06	
	0.510	27.60	0.35	27.95	46.00	18.05	
	2.213	25.30	0.39	25.69	46.00	20.31	
	4.454	39.39	0.50	39.89	46.00	6.11	
	13.695	20.20	0.83	21.03	50.00	28.97	
Neutral	0.159	55.16	0.13	55.29	65.52	10.23	QP
	0.223	47.64	0.11	47.75	62.70	14.95	
	0.516	35.76	0.17	35.93	56.00	20.07	
	2.261	34.03	0.19	34.22	56.00	21.78	
	4.549	48.42	0.41	48.83	56.00	7.17	
	13.695	29.40	0.70	30.10	60.00	29.90	
	0.159	43.90	0.13	44.03	55.52	11.49	AV
	0.223	37.40	0.11	37.51	52.70	15.19	
	0.516	25.30	0.17	25.47	46.00	20.53	
	2.261	24.59	0.19	24.78	46.00	21.22	
	4.549	39.10	0.41	39.51	46.00	6.49	
	13.695	20.20	0.70	20.90	50.00	29.10	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 48%RH

Serial No. : E1207871-01/01 Date of Test : Jul 18, 2012

Test Mode : DVI 1280*1024@75Hz Adapter #1 : LCAP21A

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.157	56.40	0.24	56.64	65.60	8.96	QP
	0.223	50.50	0.24	50.74	62.70	11.96	
	0.510	39.81	0.35	40.16	56.00	15.84	
	2.110	36.93	0.39	37.32	56.00	18.68	
	4.454	49.80	0.50	50.30	56.00	5.70	
	13.695	31.66	0.83	32.49	60.00	27.51	
	0.157	45.80	0.24	46.04	55.60	9.56	AV
	0.223	40.21	0.24	40.45	52.70	12.25	
	0.510	29.20	0.35	29.55	46.00	16.45	
	2.110	26.30	0.39	26.69	46.00	19.31	
	4.454	40.19	0.50	40.69	46.00	5.31	
	13.695	21.60	0.83	22.43	50.00	27.57	
Neutral	0.156	55.86	0.13	55.99	65.65	9.66	QP
	0.223	49.41	0.11	49.52	62.70	13.18	
	0.510	37.07	0.17	37.24	56.00	18.76	
	2.110	35.80	0.17	35.97	56.00	20.03	
	4.672	49.11	0.42	49.53	56.00	6.47	
	13.695	30.60	0.70	31.30	60.00	28.70	
	0.156	45.50	0.13	45.63	55.65	10.02	AV
	0.223	39.30	0.11	39.41	52.70	13.29	
	0.510	27.10	0.17	27.27	46.00	18.73	
	2.110	25.50	0.17	25.67	46.00	20.33	
	4.672	39.49	0.42	39.91	46.00	6.09	
	13.695	20.40	0.70	21.10	50.00	28.90	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 48%RH

Serial No. : E1207871-01/01 Date of Test : Jul 18, 2012

Test Mode : DVI 640*480@60Hz Adapter #1 : LCAP21A

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.161	54.75	0.24	54.99	65.43	10.44	QP
	0.223	47.76	0.24	48.00	62.70	14.70	
	0.510	37.71	0.35	38.06	56.00	17.94	
	2.527	33.74	0.40	34.14	56.00	21.86	
	4.672	47.84	0.50	48.34	56.00	7.66	
	13.695	30.23	0.83	31.06	60.00	28.94	
	0.161	44.60	0.24	44.84	55.43	10.59	AV
	0.223	37.51	0.24	37.75	52.70	14.95	
	0.510	27.10	0.35	27.45	46.00	18.55	
	2.527	23.50	0.40	23.90	46.00	22.10	
	4.672	39.30	0.50	39.80	46.00	6.20	
	13.695	20.20	0.83	21.03	50.00	28.97	
Neutral	0.159	55.13	0.13	55.26	65.52	10.26	QP
	0.223	48.67	0.11	48.78	62.70	13.92	
	0.510	36.71	0.17	36.88	56.00	19.12	
	2.110	34.31	0.17	34.48	56.00	21.52	
	4.622	48.80	0.42	49.22	56.00	6.78	
	13.695	29.92	0.70	30.62	60.00	29.38	
	0.159	45.20	0.13	45.33	55.52	10.19	AV
	0.223	38.40	0.11	38.51	52.70	14.19	
	0.510	26.40	0.17	26.57	46.00	19.43	
	2.110	24.30	0.17	24.47	46.00	21.53	
	4.622	38.39	0.42	38.81	46.00	7.19	
	13.695	20.20	0.70	20.90	50.00	29.10	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 48%RH

Serial No. : E1207871-01/01 Date of Test : Jul 18, 2012

Test Mode : DVI 1280*1024@75Hz Adapter #2 : ADS-40SG-19-3
19032G

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.159	54.76	0.24	55.00	65.52	10.52	QP
	0.223	48.18	0.24	48.42	62.70	14.28	
	0.510	36.30	0.35	36.65	56.00	19.35	
	2.474	34.02	0.40	34.42	56.00	21.58	
	2.474	24.30	0.40	24.70	56.00	31.30	
	4.574	47.59	0.50	48.09	56.00	7.91	
	13.695	29.56	0.83	30.39	60.00	29.61	AV
	0.159	44.40	0.24	44.64	55.52	10.88	
	0.223	38.21	0.24	38.45	52.70	14.25	
	0.510	26.40	0.35	26.75	46.00	19.25	
	4.574	39.10	0.50	39.60	46.00	6.40	
	13.695	20.10	0.83	20.93	50.00	29.07	
Neutral	0.159	54.69	0.13	54.82	65.52	10.70	QP
	0.223	48.49	0.11	48.60	62.70	14.10	
	0.516	36.46	0.17	36.63	56.00	19.37	
	2.110	33.36	0.17	33.53	56.00	22.47	
	4.622	48.35	0.42	48.77	56.00	7.23	
	13.695	29.13	0.70	29.83	60.00	30.17	
	0.159	44.20	0.13	44.33	55.52	11.19	AV
	0.223	38.10	0.11	38.21	52.70	14.49	
	0.516	26.30	0.17	26.47	46.00	19.53	
	2.110	23.10	0.17	23.27	46.00	22.73	
	4.622	39.29	0.42	39.71	46.00	6.29	
	13.695	20.10	0.70	20.80	50.00	29.20	

TEST ENGINEER: SAWEN LI

4 RADIATED EMISSION TEST

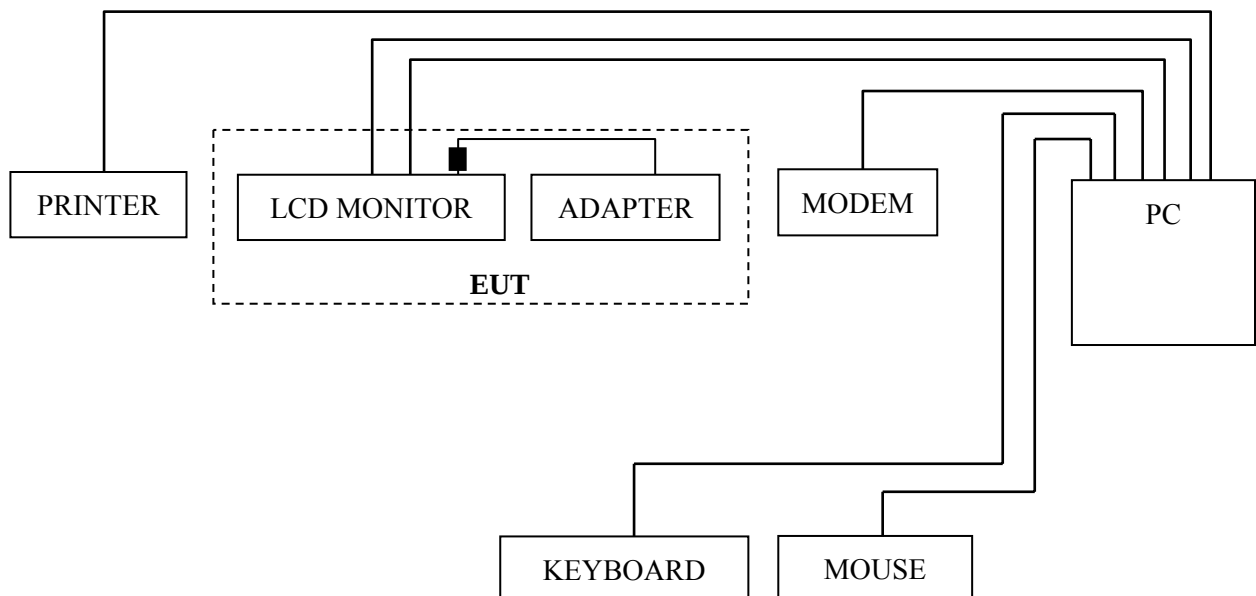
4.1 Test Equipment

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, 2012	Mar 22, 2013
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2012	Sep 18, 2012
3.	Preamplifier	HP	8449B	3008A00864	Mar 22, 2012	Mar 22, 2013
4.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2011	Dec 01, 2012
5.	Horn Antenna	EMCO	3115	9607-4878	May 06, 2012	May 06, 2013
6.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2012	Mar 22, 2013
7.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2012	Sep 18, 2012
8.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals

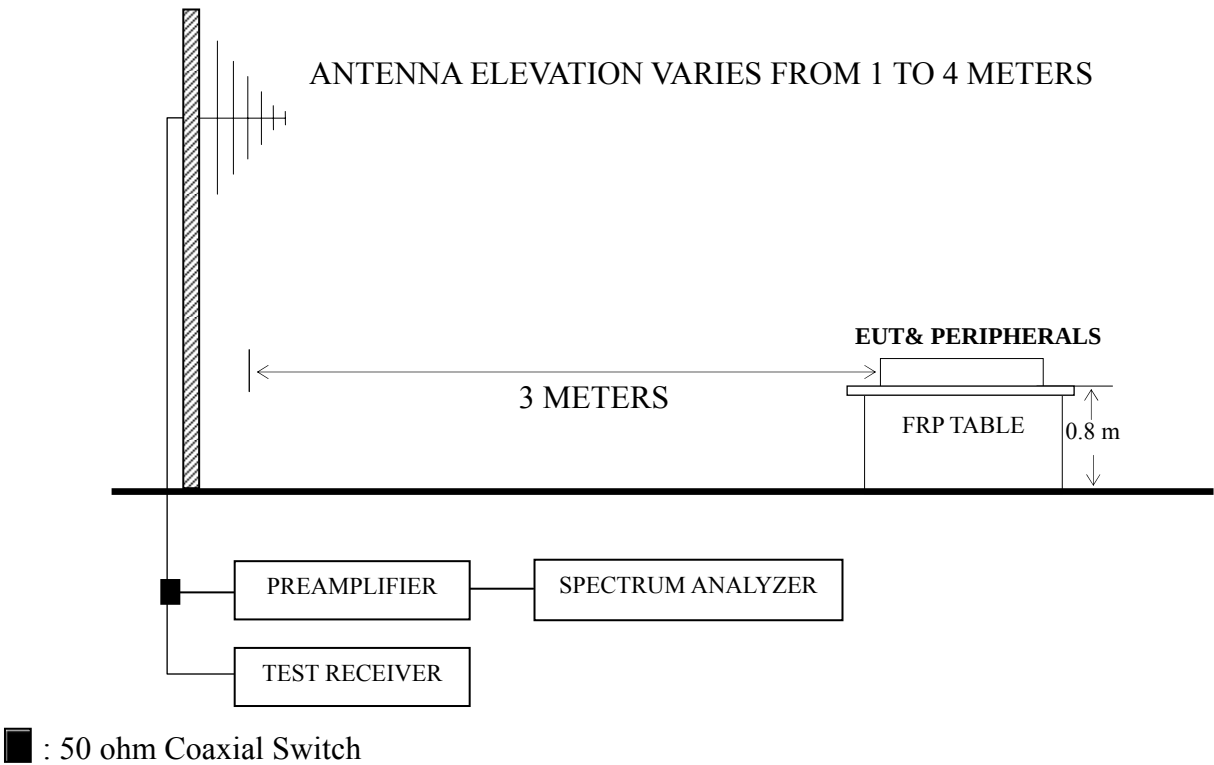


■ : Ferrite core

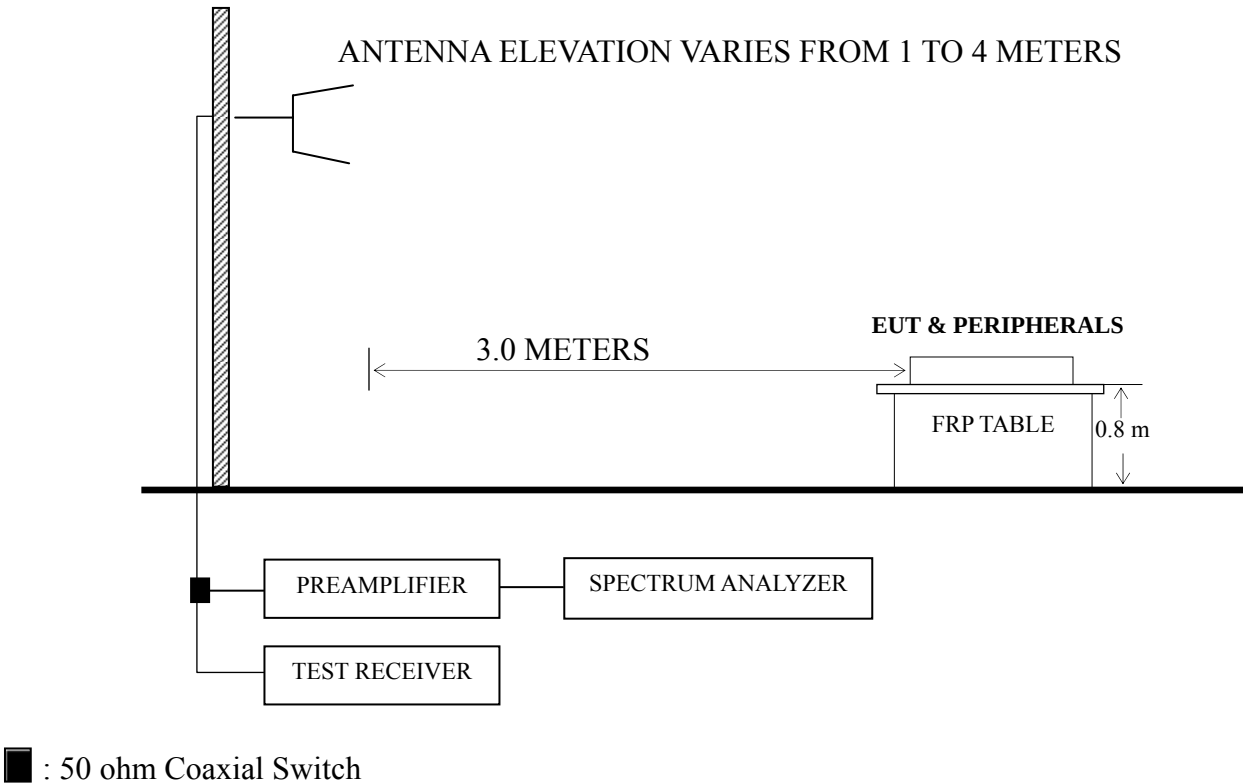
Note: Ferrite core only for Adapter #1

4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



4.2.2.2 Above 1GHz



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 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 below 1GHz and The Spectrum Agilent E7405A was set at 1MHz above 1GHz.

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

The frequency range from 1 GHz to 2 GHz was checked for worst test mode in 30 – 1000 MHz test.

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
Adapter #1	D-Sub 1920*1080@60Hz	P23
	DVI 1920*1080@60Hz	P24 – P25
	DVI 1680*1050@60Hz	P26
	DVI 1280*1024@75Hz	P27
	DVI 640*480@60Hz	P28
Adapter #2	DVI 1920*1080@60Hz	P29

NOTE 1 – **The bold test mode** listed above means the worst test mode.

NOTE 2 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.($< 1\text{GHz}$)

NOTE 3 – Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading.($> 1\text{GHz}$)

NOTE 4 – All readings are Quasi-Peak values below or equal to 1GHz, Peak and average values above 1GHz

NOTE 5 – The emission levels that are 20dB below the official limit are not reported.

NOTE 6 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 7 – We tested the EUT with adapter #1 and selected the worst test mode to perform test with adapter #2.

NOTE 8 – The worst case is for DVI 1920*1080@60Hz test mode (Adapter #1). The worst emission at horizontal polarization was detected at 196.840 MHz with corrected signal level of 40.19 dB ($\mu\text{V/m}$) (limit is 43.50 dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 240° . The worst emission at vertical polarization was detected at 223.030 MHz with corrected signal level of 42.23 dB ($\mu\text{V/m}$) (limit is 46.00 dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 135° .

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 60%RH

Serial No. : E1207871-01/01 Date of Test : Jul 19, 2012

Test Mode : D-Sub 1920*1080@60Hz Adapter #1 : LCAP21A

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	36.790	14.61	14.57	0.85	30.03	40.00	9.97
	61.040	20.98	9.21	1.21	31.40	40.00	8.60
	206.540	19.32	10.04	2.45	31.81	43.50	11.69
	281.230	17.19	13.17	2.70	33.06	46.00	12.94
	395.690	13.68	16.20	2.98	32.86	46.00	13.14
	494.630	13.21	17.53	3.25	33.99	46.00	12.01
Vertical	30.000	1.54	18.30	0.80	20.64	40.00	19.36
	61.040	9.49	9.21	1.21	19.91	40.00	20.09
	94.990	6.71	11.18	1.80	19.69	43.50	23.81
	201.690	14.57	9.87	2.43	26.87	43.50	16.63
	281.230	19.14	13.17	2.70	35.01	46.00	10.99
	395.690	11.10	16.20	2.98	30.28	46.00	15.72

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 60%RH

Serial No. : E1207871-01/01 Date of Test : Jul 19, 2012

Test Mode : DVI 1920*1080@60Hz Adapter #1 : LCAP21A

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	30.000	4.41	18.30	0.80	--	23.51	40.00	16.49	QP
	61.040	10.05	9.21	1.21	--	20.47	40.00	19.53	
	85.290	9.39	10.80	1.66	--	21.85	40.00	18.15	
	150.280	22.48	10.41	2.23	--	35.12	43.50	8.38	
	196.840	27.94	9.83	2.42	--	40.19	43.50	3.31	
	281.230	18.94	13.17	2.70	--	34.81	46.00	11.19	
	1080.000	44.01	25.24	4.50	38.03	35.72	74.00	38.28	PK
	1315.000	45.96	26.39	4.53	37.48	39.40	74.00	34.60	
	1465.000	41.64	26.90	4.55	37.06	36.03	74.00	37.97	
	1590.000	39.99	27.07	4.56	36.78	34.84	74.00	39.16	
	1670.000	43.61	27.14	4.57	36.63	38.69	74.00	35.31	
	1760.000	47.40	27.23	4.58	36.49	42.72	74.00	31.28	
	1080.000	38.01	25.24	4.50	38.03	29.72	54.00	24.28	AV
	1315.000	35.96	26.39	4.53	37.48	29.40	54.00	24.60	
	1465.000	30.64	26.90	4.55	37.06	25.03	54.00	28.97	
	1590.000	29.99	27.07	4.56	36.78	24.84	54.00	29.16	
	1670.000	35.61	27.14	4.57	36.63	30.69	54.00	23.31	
	1760.000	36.40	27.23	4.58	36.49	31.72	54.00	22.28	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 60%RH

Serial No. : E1207871-01/01 Date of Test : Jul 19, 2012

Test Mode : DVI 1920*1080@60Hz Adapter #1 : LCAP21A

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	36.790	15.34	14.57	0.85	--	30.76	40.00	9.24	QP
	61.040	22.60	9.21	1.21	--	33.02	40.00	6.98	
	114.390	11.56	11.10	1.97	--	24.63	43.50	18.87	
	223.030	28.96	10.76	2.51	--	42.23	46.00	3.77	
	298.690	16.84	13.67	2.75	--	33.26	46.00	12.74	
	446.130	15.52	16.92	3.11	--	35.55	46.00	10.45	
	1120.000	45.05	25.42	5.30	37.94	37.83	74.00	36.17	PK
	1315.000	42.05	26.39	5.51	37.48	36.47	74.00	37.53	
	1475.000	44.47	26.93	5.76	37.03	40.13	74.00	33.87	
	1600.000	42.40	27.08	5.93	36.76	38.65	74.00	35.35	
	1675.000	39.92	27.14	6.03	36.62	36.47	74.00	37.53	
	1840.000	39.00	27.29	6.26	36.38	36.17	74.00	37.83	
	1120.000	39.05	25.42	5.30	37.94	31.83	54.00	22.17	AV
	1315.000	32.05	26.39	5.51	37.48	26.47	54.00	27.53	
	1475.000	32.47	26.93	5.76	37.03	28.13	54.00	25.87	
	1600.000	34.40	27.08	5.93	36.76	30.65	54.00	23.35	
	1675.000	30.92	27.14	6.03	36.62	27.47	54.00	26.53	
	1840.000	29.00	27.29	6.26	36.38	26.17	54.00	27.83	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 60%RH

Serial No. : E1207871-01/01 Date of Test : Jul 19, 2012

Test Mode : DVI 1680*1050@60Hz Adapter #1 : LCAP21A

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	30.000	0.41	18.30	0.80	19.51	40.00	20.49
	61.040	11.05	9.21	1.21	21.47	40.00	18.53
	90.140	8.45	11.00	1.73	21.18	43.50	22.32
	138.640	20.66	10.65	2.16	33.47	43.50	10.03
	182.290	17.82	9.97	2.36	30.15	43.50	13.35
	281.230	19.12	13.17	2.70	34.99	46.00	11.01
Vertical	36.790	14.81	14.57	0.85	30.23	40.00	9.77
	61.040	24.27	9.21	1.21	34.69	40.00	5.31
	135.730	15.64	10.71	2.14	28.49	43.50	15.01
	221.090	18.61	10.68	2.51	31.80	46.00	14.20
	281.230	18.84	13.17	2.70	34.71	46.00	11.29
	361.740	13.11	15.45	2.91	31.47	46.00	14.53

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 60%RH

Serial No. : E1207871-01/01 Date of Test : Jul 19, 2012

Test Mode : DVI 1280*1024@75Hz Adapter #1 : LCAP21A

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	36.790	14.47	14.57	0.85	29.89	40.00	10.11
	61.040	23.54	9.21	1.21	33.96	40.00	6.04
	109.540	11.26	11.19	1.93	24.38	43.50	19.12
	174.530	17.26	10.06	2.33	29.65	43.50	13.85
	218.180	20.48	10.52	2.50	33.50	46.00	12.50
	281.230	19.87	13.17	2.70	35.74	46.00	10.26
Vertical	30.000	1.28	18.30	0.80	20.38	40.00	19.62
	61.040	10.10	9.21	1.21	20.52	40.00	19.48
	109.540	13.59	11.19	1.93	26.71	43.50	16.79
	174.530	21.65	10.06	2.33	34.04	43.50	9.46
	218.180	13.95	10.52	2.50	26.97	46.00	19.03
	281.230	20.49	13.17	2.70	36.36	46.00	9.64

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 60%RH

Serial No. : E1207871-01/01 Date of Test : Jul 19, 2012

Test Mode : DVI 640*480@60Hz Adapter #1 : LCAP21A

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	30.000	0.17	18.30	0.80	19.27	40.00	20.73
	61.040	10.89	9.21	1.21	21.31	40.00	18.69
	92.080	8.14	11.08	1.75	20.97	43.50	22.53
	128.940	12.59	10.84	2.10	25.53	43.50	17.97
	177.440	19.86	10.02	2.35	32.23	43.50	11.27
	281.230	20.99	13.17	2.70	36.86	46.00	9.14
Vertical	36.790	14.75	14.57	0.85	30.17	40.00	9.83
	61.040	23.28	9.21	1.21	33.70	40.00	6.30
	82.380	13.53	10.67	1.63	25.83	40.00	14.17
	153.190	12.94	10.36	2.24	25.54	43.50	17.96
	221.090	18.47	10.68	2.51	31.66	46.00	14.34
	281.230	20.03	13.17	2.70	35.90	46.00	10.10

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2442TA Humidity : 60%RH

Serial No. : E1207871-01/01 Date of Test : Jul 19, 2012

Test Mode : DVI 1920*1080@60Hz Adapter #2 : ADS-40SG-19-3
19032G

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	30.000	10.79	18.30	0.80	29.89	40.00	10.11
	38.730	14.05	13.40	0.86	28.31	40.00	11.69
	65.890	23.83	9.55	1.32	34.70	40.00	5.30
	221.090	19.11	10.68	2.51	32.30	46.00	13.70
	281.230	18.84	13.17	2.70	34.71	46.00	11.29
	431.580	16.88	16.72	3.08	36.68	46.00	9.32
Vertical	33.880	4.15	16.26	0.83	21.24	40.00	18.76
	65.890	16.57	9.55	1.32	27.44	40.00	12.56
	109.540	13.17	11.19	1.93	26.29	43.50	17.21
	169.680	18.35	10.11	2.32	30.78	43.50	12.72
	201.690	16.25	9.87	2.43	28.55	43.50	14.95
	281.230	19.30	13.17	2.70	35.17	46.00	10.83

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

APPENDIX I

PHOTOGRAPHS OF TEST

Test Set-Up Photos

1. Conducted Emission Test



FRONT VIEW



BACK VIEW

2. Radiated Electromagnetic Emission Test



FRONT VIEW OF RADIATED EMISSION TEST (BELOW 1GHz)



BACK VIEW OF RADIATED EMISSION TEST (BELOW 1GHz)



FRONT VIEW OF RADIATED EMISSION TEST (ABOVE 1GHz)



BACK VIEW OF RADIATED EMISSION TEST (ABOVE 1GHz)



*SETUP WITH MAXIMUM DETECTED EMISSION AT HORIZONTAL POLARIZATION
(TEST MODE: DVI 1920*1080@60Hz ADAPTER #1)*



*SETUP WITH MAXIMUM DETECTED EMISSION AT VERTICAL POLARIZATION
(TEST MODE: DVI 1920*1080@60Hz Z ADAPTER #1)*

APPENDIX II

PHOTOGRAPHS OF EUT

FIGURE 1
LCD MONITOR (M/N: E2442TA)
GENERAL APPEARANCE (FRONT VIEW)



FIGURE 2
LCD MONITOR (M/N: E2442TA)
GENERAL APPEARANCE (BACK VIEW)



FIGURE 3
LCD MONITOR (M/N: E2442TA)
PORTS



FIGURE 4
LCD MONITOR (M/N: E2442TA)
D-SUB CABLE



FIGURE 5
LCD MONITOR (M/N: E2442TA)
DVI CABLE



FIGURE 6
LCD MONITOR (M/N: E2442TA)
COVER REMOVED



FIGURE 7
LCD MONITOR (M/N: E2442TA)
LABEL ON PANEL



FIGURE 8
LCD MONITOR (M/N: E2442TA)
MAIN BOARD (COMPONENT SIDE)



FIGURE 9
LCD MONITOR (M/N: E2442TA)
MAIN BOARD (SOLDERED SIDE)



FIGURE 10
LCD MONITOR (M/N: E2442TA)
CHIP & CRYSTAL ON MAIN BOARD



FIGURE 11
LCD MONITOR (M/N: E2442TA)
KEY BOARD (COMPONENT SIDE)

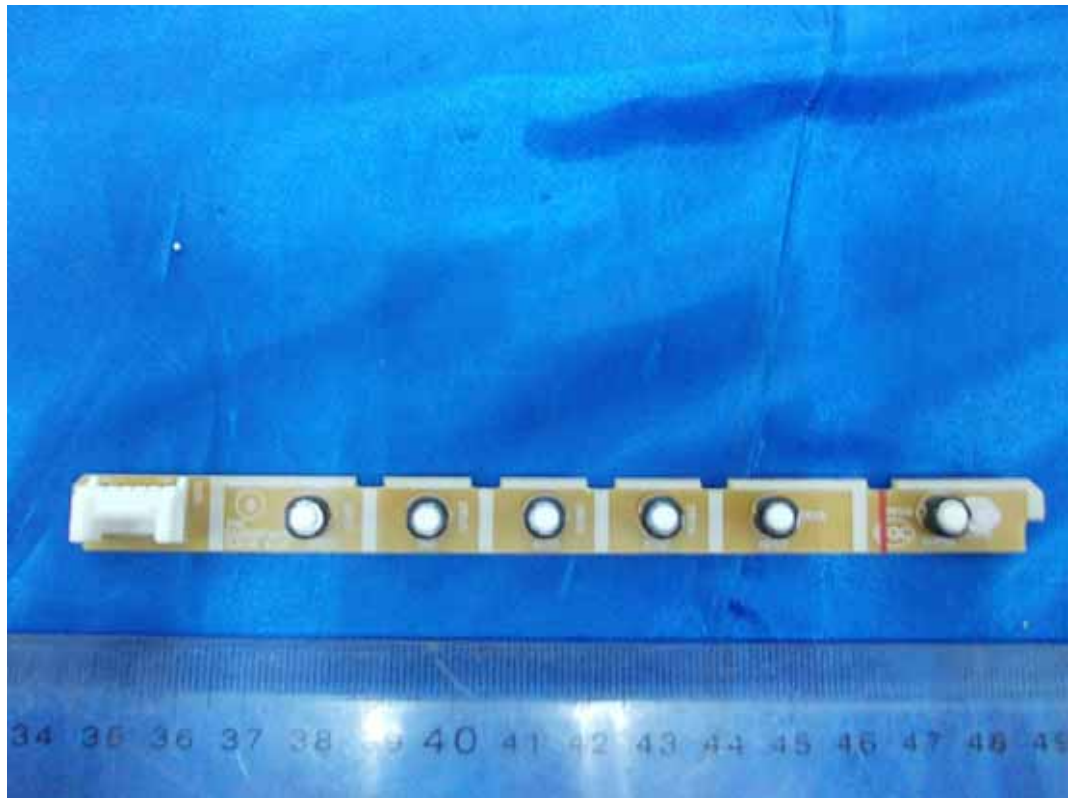


FIGURE 12
LCD MONITOR (M/N: E2442TA)
KEY BOARD (SOLDERED SIDE)



FIGURE 13
LCD MONITOR (M/N: E2442TA)
LCD PANEL BOARD (COMPONENT SIDE)

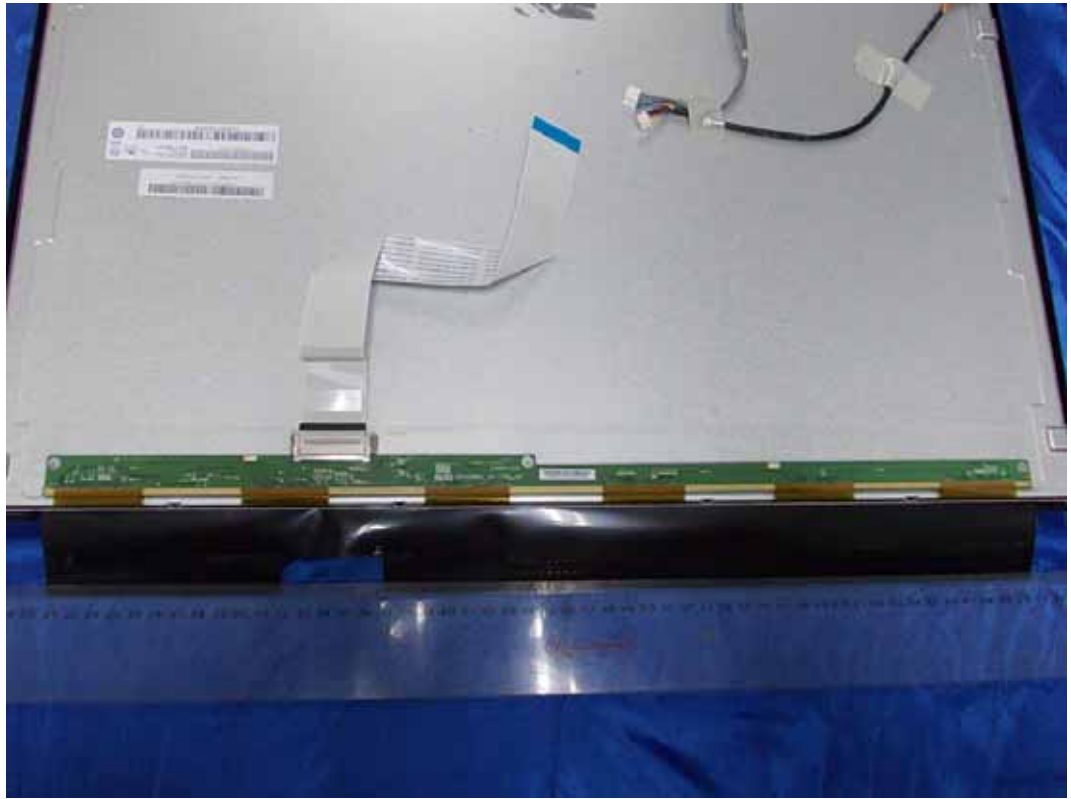


FIGURE 14
LCD MONITOR (M/N: E2442TA)
LCD PANEL BOARD (SOLDERED SIDE)



FIGURE 15
LCD MONITOR (M/N: E2442TA)
ADAPTER #1 (GENERAL APPEARANCE)



FIGURE 16
LCD MONITOR (M/N: E2442TA)
ADAPTER #1 (GENERAL APPEARANCE – AC PORT)



FIGURE 18
LCD MONITOR (M/N: E2442TA)
ADAPTER #2 (GENERAL APPEARANCE)



FIGURE 19
LCD MONITOR (M/N: E2442TA)
ADAPTER #2 (GENERAL APPEARANCE – AC PORT)



FIGURE 20
LCD MONITOR (M/N: E2442TA)
ADAPTER #2 (GENERAL APPEARANCE – LABEL)

