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

LCD Monitor

Model No.: E2342TA

Serial No.: E1207872-01/01

FCC ID : BEJE2342TA

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

Prepared By : Audix Technology (Shanghai) Co., Ltd.
3F and 4F, 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Tel: +86-21-64955500
Fax: +86-21-64955491

Report No. : ACI-F12011A1
Date of Test : Jul 18 – 19, 2012
Date of Report : Jul 25, 2012

TABLE OF CONTENTS

Page

1 SUMMARY OF STANDARDS AND RESULTS 4
1.1 Description of Standards and Results 4
2 GENERAL INFORMATION 5
2.1 Description of Equipment Under Test 5
2.2 Peripherals 6
2.3 Description of Test Facility 7
2.4 Measurement Uncertainty 7
3 CONDUCTED EMISSION TEST 8
3.1 Test Equipment 8
3.2 Block Diagram of Test Setup 8
3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)] 9
3.4 Test Configuration 9
3.5 Operating Condition of EUT 10
3.6 Test Procedures 10
3.7 Test Results 11
4 RADIATED EMISSION TEST 18
4.1 Test Equipment 18
4.2 Block Diagram of Test Setup 18
4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)] 20
4.4 Test Configuration 20
4.5 Operating Condition of EUT 20
4.6 Test Procedures 21
4.7 Test Results 22
5 DEVIATION TO TEST SPECIFICATIONS 30

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.	: E2342TA
	(B) Serial No.	: E1207872-01/01
	(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: E2342TA; S/N: E1207872-01/01) 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.
YENNY YU / 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 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. : E2342TA

Serial No. : E1207872-01/01

Real Power : 25.30W (Adapter #1)
24.20W (Adapter #2)

Note #1 : The different list for all the models are as follows:

Report No.	Model No.	Rev. Summary	Edition No.	Data of Rev.
ACI-F12011	E2342TA	Original Report	0	Jan 18, 2012
ACI-F12011A1	E2342TA	To change the main IC.	Rev. A1	Jul 25, 2012

AC Adapter #1 : 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 #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 : LG Display
M/N : LM230WF5

Max Resolution : 1920*1080@60Hz

D-Sub Cable #1 : Shielded, Detachable, 1.50m, with two cores on cable

D-Sub Cable #2 : Shielded, Detachable, 1.85m, with two cores in connector

DVI Cable #1 : Shielded, Detachable, 1.50m, with two cores on cable

DVI Cable #2	:	Shielded, Detachable, 1.85m, 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 (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
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

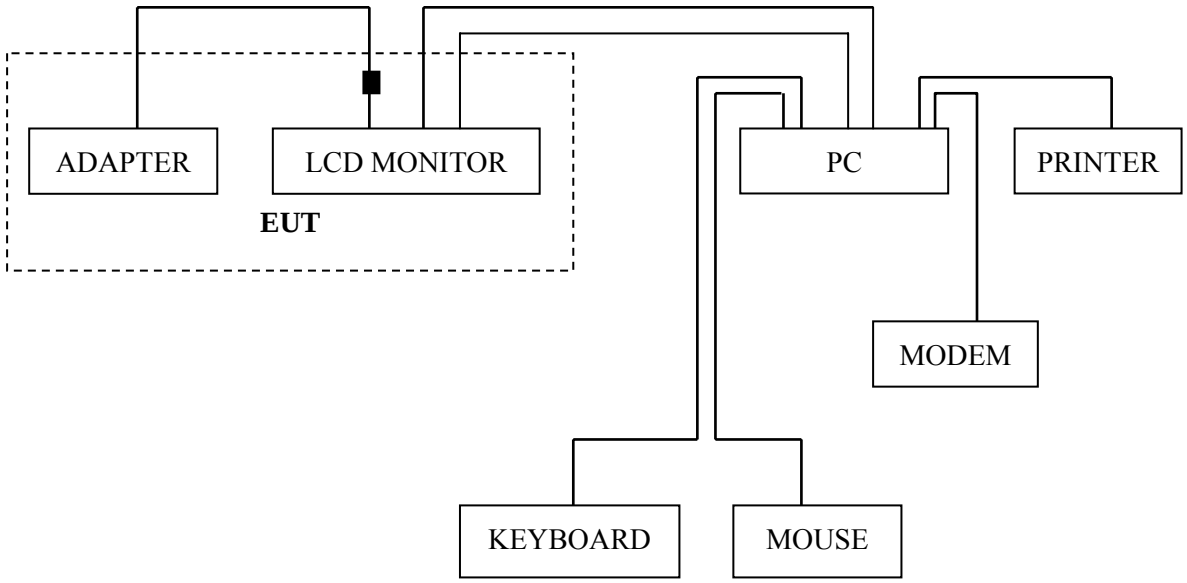
3.1 Test Equipment

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.	50Ω Terminator	Anritsu	BNC	001	Mar 22, 2012	Mar 22, 2013
6.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup

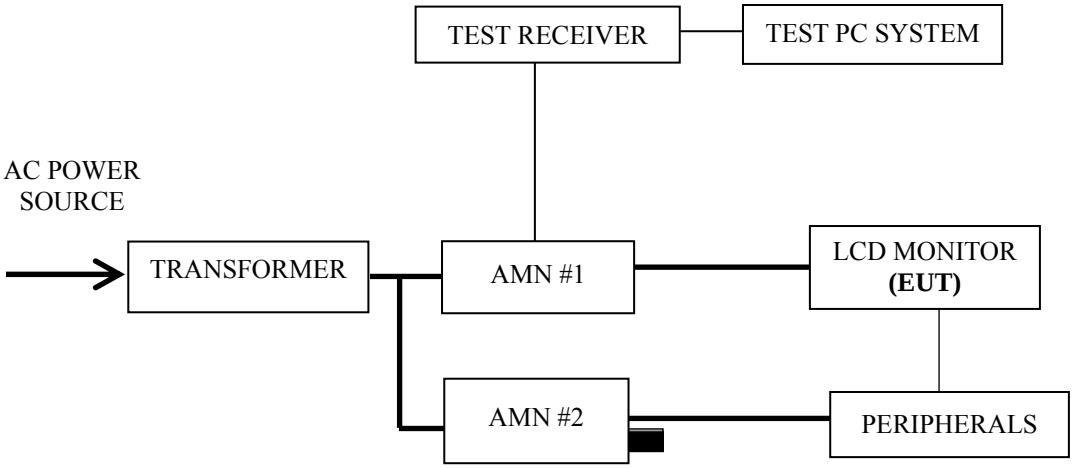
3.2.1 EUT & Peripherals



■ : Ferrite core

Note: Ferrite core only for Adapter #1

3.2.2 Conducted Disturbance Test Setup



—— : Signal Line
▬ : Power Line
▬ : 50 ohm Terminator

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/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
	D-Sub 1680*1050@60Hz
	D-Sub 1280*1024@75Hz
	D-Sub 640*480@60Hz
Adapter #2	D-Sub 1920*1080@60Hz

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
	D-Sub 1680*1050@60Hz	P14
	D-Sub 1280*1024@75Hz	P15
	D-Sub 640*480@60Hz	P16
Adapter #2	**D-Sub 1920*1080@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 1920*1080@60Hz test mode (Adaptor #2). The worst emission is detected at 4.672 MHz (Quasi-Peak Value) with corrected signal level of 48.37 dB (μV) (limit is 56.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E2342TA	Humidity	:	48%RH	
Serial No.	: E1207872-01/01	Date of Test	:	Jul 18, 2012	
Test Mode	: D-Sub 1920*1080@60Hz	Adapter #1	:	LCAP21	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.156	55.16	0.24	55.40	65.65	10.25	QP
	0.252	47.15	0.25	47.40	61.69	14.29	
	0.524	33.12	0.34	33.46	56.00	22.54	
	2.088	31.17	0.39	31.56	56.00	24.44	
	4.501	**46.29**	**0.50**	**46.79**	**56.00**	**9.21**	
	18.820	27.84	0.92	28.76	60.00	31.24	
	0.156	44.90	0.24	45.14	55.65	10.51	AV
	0.252	36.70	0.25	36.95	51.69	14.74	
	0.524	24.20	0.34	24.54	46.00	21.46	
	2.088	21.60	0.39	21.99	46.00	24.01	
	4.501	35.89	0.50	36.39	46.00	9.61	
	18.820	18.79	0.92	19.71	50.00	30.29	
Neutral	0.153	54.39	0.13	54.52	65.82	11.30	QP
	0.244	46.97	0.11	47.08	61.95	14.87	
	0.521	34.91	0.17	35.08	56.00	20.92	
	1.970	31.95	0.17	32.12	56.00	23.88	
	4.361	46.13	0.40	46.53	56.00	9.47	
	16.839	28.99	0.76	29.75	60.00	30.25	
	0.153	43.30	0.13	43.43	55.82	12.39	AV
	0.244	36.30	0.11	36.41	51.95	15.54	
	0.521	24.50	0.17	24.67	46.00	21.33	
	1.970	21.50	0.17	21.67	46.00	24.33	
	4.361	36.11	0.40	36.51	46.00	9.49	
	16.839	18.80	0.76	19.56	50.00	30.44	

TEST ENGINEER: SAWEN LI

EUT	: LCD Monitor	Temperature	: 22℃		
Model No.	: E2342TA	Humidity	: 48%RH		
Serial No.	: E1207872-01/01	Date of Test	: Jul 18, 2012		
Test Mode	: DVI 1920*1080@60Hz	Adapter #1	: LCAP21		

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.157	54.85	0.24	55.09	65.60	10.51	QP
	0.249	47.85	0.25	48.10	61.78	13.68	
	0.494	32.04	0.35	32.39	56.10	23.71	
	1.991	32.18	0.39	32.57	56.00	23.43	
	4.315	**46.22**	**0.49**	**46.71**	**56.00**	**9.29**	
	16.839	29.31	0.86	30.17	60.00	29.83	
	0.157	44.30	0.24	44.54	55.60	11.06	AV
	0.249	37.20	0.25	37.45	51.78	14.33	
	0.494	22.10	0.35	22.45	46.10	23.65	
	1.991	22.50	0.39	22.89	46.00	23.11	
	4.315	36.20	0.49	36.69	46.00	9.31	
	16.839	18.90	0.86	19.76	50.00	30.24	
Neutral	0.155	54.62	0.13	54.75	65.74	10.99	QP
	0.244	47.02	0.11	47.13	61.95	14.82	
	0.524	35.61	0.17	35.78	56.00	20.22	
	1.970	31.52	0.17	31.69	56.00	24.31	
	4.454	46.00	0.41	46.41	56.00	9.59	
	18.039	28.65	0.80	29.45	60.00	30.55	
	0.155	44.20	0.13	44.33	55.74	11.41	AV
	0.244	37.20	0.11	37.31	51.95	14.64	
	0.524	25.10	0.17	25.27	46.00	20.73	
	1.970	21.60	0.17	21.77	46.00	24.23	
	4.454	35.40	0.41	35.81	46.00	10.19	
	18.039	18.60	0.80	19.40	50.00	30.60	

TEST ENGINEER: SAWEN LI

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E2342TA	Humidity	:	48%RH	
Serial No.	: E1207872-01/01	Date of Test	:	Jul 18, 2012	
Test Mode	: D-Sub 1680*1050@60Hz	Adapter #1	:	LCAP21	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.162	54.19	0.24	54.43	65.34	10.91	QP
	0.252	47.46	0.25	47.71	61.69	13.98	
	0.489	34.25	0.35	34.60	56.19	21.59	
	1.602	31.42	0.37	31.79	56.00	24.21	
	4.501	46.11	0.50	46.61	56.00	9.39	
	16.839	29.60	0.86	30.46	60.00	29.54	
	0.162	44.60	0.24	44.84	55.34	10.50	AV
	0.252	37.50	0.25	37.75	51.69	13.94	
	0.489	24.70	0.35	25.05	46.19	21.14	
	1.602	21.80	0.37	22.17	46.00	23.83	
	4.501	**36.19**	**0.50**	**36.69**	**46.00**	**9.31**	
	16.839	19.70	0.86	20.56	50.00	29.44	
Neutral	0.150	54.46	0.13	54.59	66.00	11.41	QP
	0.211	45.30	0.12	45.42	63.18	17.76	
	0.634	33.38	0.19	33.57	56.00	22.43	
	1.781	31.26	0.17	31.43	56.00	24.57	
	4.315	45.99	0.40	46.39	56.00	9.61	
	16.839	28.63	0.76	29.39	60.00	30.61	
	0.150	44.20	0.13	44.33	56.00	11.67	AV
	0.211	35.80	0.12	35.92	53.18	17.26	
	0.634	23.20	0.19	23.39	46.00	22.61	
	1.781	21.70	0.17	21.87	46.00	24.13	
	4.315	35.80	0.40	36.20	46.00	9.80	
	16.839	19.70	0.76	20.46	50.00	29.54	

TEST ENGINEER: SAWEN LI

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E2342TA	Humidity	:	48%RH	
Serial No.	: E1207872-01/01	Date of Test	:	Jul 18, 2012	
Test Mode	: D-Sub 1280*1024@75Hz	Adapter #1	:	LCAP21	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.182	53.81	0.25	54.06	64.42	10.36	QP
	0.244	45.97	0.25	46.22	61.95	15.73	
	0.489	32.92	0.35	33.27	56.19	22.92	
	1.662	30.61	0.37	30.98	56.00	25.02	
	4.574	44.78	0.50	45.28	56.00	10.72	
	16.839	28.87	0.86	29.73	60.00	30.27	
	0.182	43.80	0.25	44.05	54.42	10.37	AV
	0.244	35.30	0.25	35.55	51.95	16.40	
	0.489	22.50	0.35	22.85	46.19	23.34	
	1.662	20.61	0.37	20.98	46.00	25.02	
	4.574	34.10	0.50	34.60	46.00	11.40	
	16.839	19.30	0.86	20.16	50.00	29.84	
Neutral	0.150	54.14	0.13	54.27	66.00	11.73	QP
	0.215	45.18	0.11	45.29	63.01	17.72	
	0.489	35.38	0.17	35.55	56.19	20.64	
	1.991	32.33	0.17	32.50	56.00	23.50	
	4.672	**45.55**	**0.42**	**45.97**	**56.00**	**10.03**	
	16.839	28.44	0.76	29.20	60.00	30.80	
	0.150	44.50	0.13	44.63	56.00	11.37	AV
	0.215	35.31	0.11	35.42	53.01	17.59	
	0.489	25.50	0.17	25.67	46.19	20.52	
	1.991	22.20	0.17	22.37	46.00	23.63	
	4.672	35.29	0.42	35.71	46.00	10.29	
	16.839	19.40	0.76	20.16	50.00	29.84	

TEST ENGINEER: SAWEN LI

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E2342TA	Humidity	:	48%RH	
Serial No.	: E1207872-01/01	Date of Test	:	Jul 18, 2012	
Test Mode	: D-Sub 640*480@60Hz	Adapter #1	:	LCAP21	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.153	54.78	0.23	55.01	65.82	10.81	QP
	0.244	46.18	0.25	46.43	61.95	15.52	
	0.505	34.56	0.35	34.91	56.00	21.09	
	1.991	31.17	0.39	31.56	56.00	24.44	
	4.574	**45.70**	**0.50**	**46.20**	**56.00**	**9.80**	
	15.885	27.87	0.85	28.72	60.00	31.28	
	0.153	44.30	0.23	44.53	55.82	11.29	AV
	0.244	36.30	0.25	36.55	51.95	15.40	
	0.505	24.30	0.35	24.65	46.00	21.35	
	1.991	21.50	0.39	21.89	46.00	24.11	
	4.574	35.40	0.50	35.90	46.00	10.10	
	15.885	18.50	0.85	19.35	50.00	30.65	
Neutral	0.155	55.18	0.13	55.31	65.74	10.43	QP
	0.252	47.54	0.11	47.65	61.69	14.04	
	0.541	33.29	0.17	33.46	56.00	22.54	
	1.991	30.73	0.17	30.90	56.00	25.10	
	4.454	44.93	0.41	45.34	56.00	10.66	
	18.820	29.01	0.81	29.82	60.00	30.18	
	0.155	45.60	0.13	45.73	55.74	10.01	AV
	0.252	37.81	0.11	37.92	51.69	13.77	
	0.541	23.50	0.17	23.67	46.00	22.33	
	1.991	20.30	0.17	20.47	46.00	25.53	
	4.454	34.30	0.41	34.71	46.00	11.29	
	18.820	19.90	0.81	20.71	50.00	29.29	

TEST ENGINEER: SAWEN LI

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342TA	Humidity	:	48%RH
Serial No.	:	E1207872-01/01	Date of Test	:	Jul 18, 2012
Test Mode	:	D-Sub 1920*1080@60Hz	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	0.153	56.54	0.23	56.77	65.82	9.05	QP
	0.244	48.00	0.25	48.25	61.95	13.70	
	0.489	36.46	0.35	36.81	56.19	19.38	
	1.991	32.64	0.39	33.03	56.00	22.97	
	4.454	47.42	0.50	47.92	56.00	8.08	
	18.820	31.16	0.92	32.08	60.00	27.92	
	0.153	46.60	0.23	46.83	55.82	8.99	AV
	0.244	37.80	0.25	38.05	51.95	13.90	
	0.489	26.20	0.35	26.55	46.19	19.64	
	1.991	22.30	0.39	22.69	46.00	23.31	
	4.454	37.19	0.50	37.69	46.00	8.31	
	18.820	21.59	0.92	22.51	50.00	27.49	
Neutral	0.153	57.57	0.13	57.70	65.82	8.12	QP
	0.253	49.46	0.11	49.57	61.64	12.07	
	0.524	36.54	0.17	36.71	56.00	19.29	
	1.781	33.91	0.17	34.08	56.00	21.92	
	4.672	**47.95**	**0.42**	**48.37**	**56.00**	**7.63**	
	18.820	30.72	0.81	31.53	60.00	28.47	
	0.153	47.50	0.13	47.63	55.82	8.19	AV
	0.253	39.81	0.11	39.92	51.64	11.72	
	0.524	26.60	0.17	26.77	46.00	19.23	
	1.781	23.30	0.17	23.47	46.00	22.53	
	4.672	37.69	0.42	38.11	46.00	7.89	
	18.820	20.30	0.81	21.11	50.00	28.89	

TEST ENGINEER: SAWEN LI

4 RADIATED EMISSION TEST

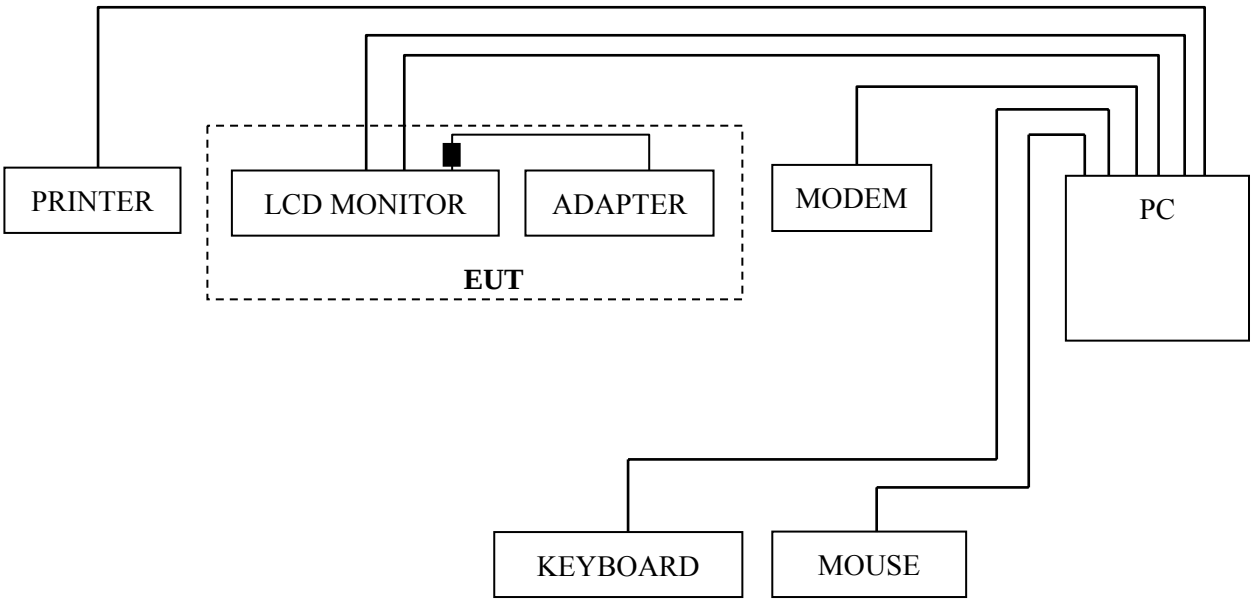
4.1 Test Equipment

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 03, 2012	May 03, 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

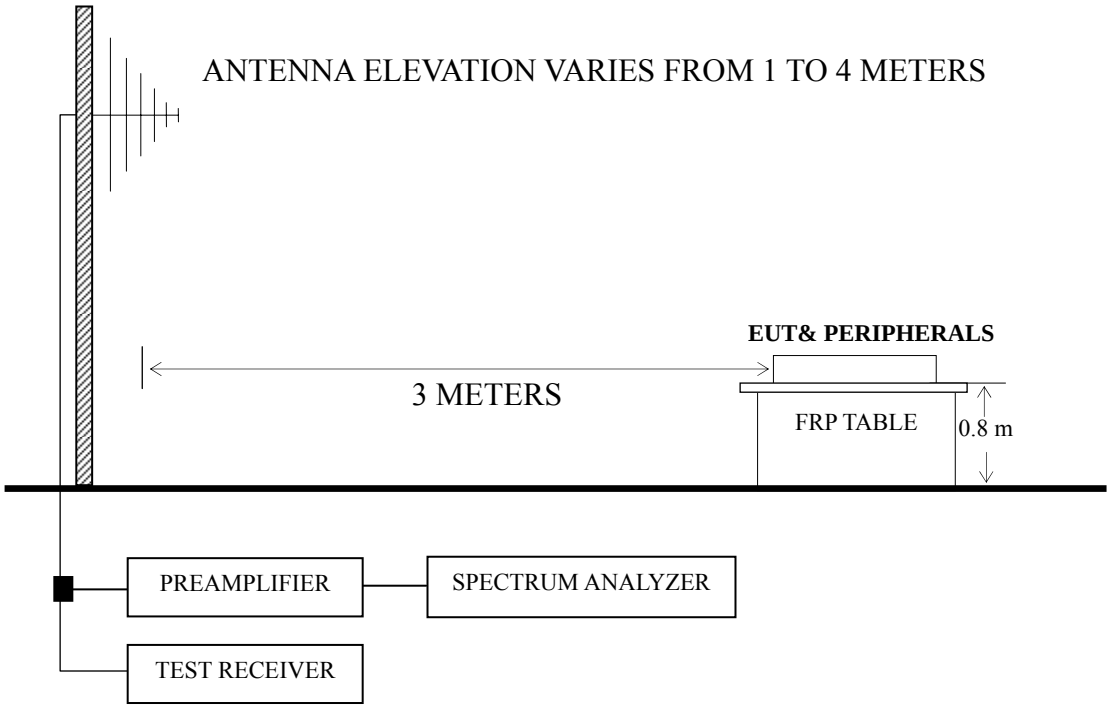


■ : Ferrite core

Note: Ferrite core only for Adapter #1

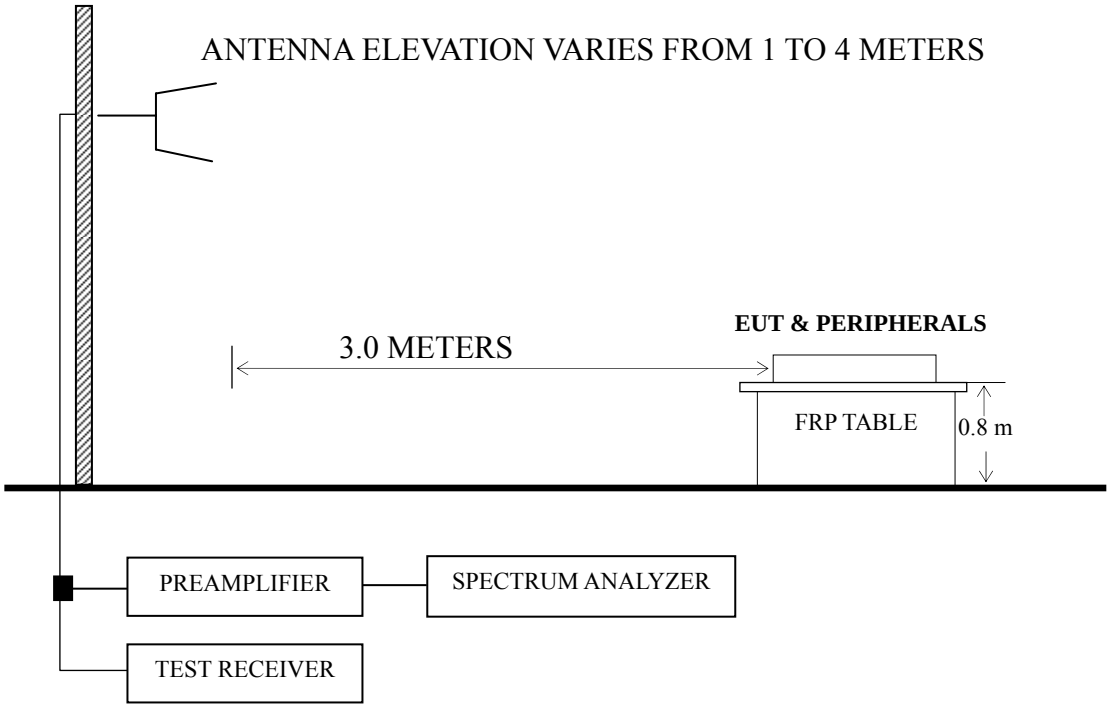
4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



■ : 50 ohm Coaxial Switch

4.2.2.2 Above 1GHz



■ : 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 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.(< 1GHz)
NOTE 3 – Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading.(> 1GHz)
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 167.740 MHz with corrected signal level of 40.92 dB (μV/m) (limit is 43.50 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 250°. The worst emission at vertical polarization was detected at 221.090 MHz with corrected signal level of 42.00 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 145°.

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342TA	Humidity	:	60%RH
Serial No.	:	E1207872-01/01	Date of Test	:	Jul 19, 2012
Test Mode	:	D-Sub 1920*1080@60Hz	Adapter #1	:	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	33.880	6.80	16.26	0.83	23.89	40.00	16.11
	51.340	14.02	8.58	0.95	23.55	40.00	16.45
	67.830	18.65	9.70	1.36	29.71	40.00	10.29
	140.580	11.58	10.60	2.18	24.36	43.50	19.14
	221.090	**29.11**	**10.68**	**2.51**	**42.30**	**46.00**	**3.70**
	281.230	18.96	13.17	2.70	34.83	46.00	11.17
Vertical	30.000	0.33	18.30	0.80	19.43	40.00	20.57
	51.340	6.03	8.58	0.95	15.56	40.00	24.44
	67.830	7.91	9.70	1.36	18.97	40.00	21.03
	101.780	6.24	11.32	1.86	19.42	43.50	24.08
	198.780	**37.05**	**9.81**	**2.42**	**39.28**	**43.50**	**4.22**
	281.230	20.12	13.17	2.70	35.99	46.00	10.01

TEST ENGINEER: RAVEN JIN

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E2342TA	Humidity	:	60%RH	
Serial No.	: E1207872-01/01	Date of Test	:	Jul 19, 2012	
Test Mode	: DVI 1920*1080@60Hz	Adapter #1	:	LCAP21	

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	30.000	0.36	18.30	0.80	--	19.46	40.00	20.54	QP
	33.880	2.17	16.26	0.83	--	19.26	40.00	20.74	
	65.890	8.76	9.55	1.32	--	19.63	40.00	20.37	
	150.280	20.48	10.41	2.23	--	33.12	43.50	10.38	
	167.740	**28.47**	**10.14**	**2.31**	**--**	**40.92**	**43.50**	**2.58**	
	281.230	21.29	13.17	2.70	--	37.16	46.00	8.84	
	1075.000	52.88	22.16	5.27	38.04	42.27	74.00	31.73	PK
	1250.000	47.46	24.05	5.42	37.65	39.28	74.00	34.72	
	1365.000	48.43	24.80	5.55	37.33	41.45	74.00	32.55	
	1465.000	43.20	26.11	5.72	37.06	37.97	74.00	36.03	
	1595.000	44.72	26.41	5.93	36.77	40.29	74.00	33.71	
	1760.000	41.18	26.96	6.17	36.49	37.82	74.00	36.18	
	1075.000	41.88	22.16	5.27	38.04	31.27	54.00	22.73	AV
	1250.000	29.46	24.05	5.42	37.65	21.28	54.00	32.72	
	1365.000	36.43	24.80	5.55	37.33	29.45	54.00	24.55	
	1465.000	30.20	26.11	5.72	37.06	24.97	54.00	29.03	
	1595.000	35.72	26.41	5.93	36.77	31.29	54.00	22.71	
	1760.000	31.18	26.96	6.17	36.49	27.82	54.00	26.18	

TEST ENGINEER: RAVEN JIN

EUT	: LCD Monitor	Temperature	:	22℃	
Model No.	: E2342TA	Humidity	:	60%RH	
Serial No.	: E1207872-01/01	Date of Test	:	Jul 19, 2012	
Test Mode	: DVI 1920*1080@60Hz	Adapter #1	:	LCAP21	

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	30.000	7.65	18.30	0.80	--	26.75	40.00	13.25	QP
	36.790	8.84	14.57	0.85	--	24.26	40.00	15.74	
	61.040	19.04	9.21	1.21	--	29.46	40.00	10.54	
	150.280	17.53	10.41	2.23	--	30.17	43.50	13.33	
	221.090	**28.81**	**10.68**	**2.51**	**--**	**42.00**	**46.00**	**4.00**	
	281.230	20.05	13.17	2.70	--	35.92	46.00	10.08	
	1080.000	49.01	22.24	4.50	38.03	37.72	74.00	36.28	PK
	1275.000	46.59	24.25	4.53	37.57	37.80	74.00	36.20	
	1365.000	46.67	24.80	4.54	37.33	38.68	74.00	35.32	
	1600.000	47.89	26.40	4.56	36.76	42.09	74.00	31.91	
	1760.000	49.67	26.96	4.58	36.49	44.72	74.00	29.28	
	1850.000	43.62	26.52	4.64	36.37	38.41	74.00	35.59	
	1080.000	40.01	22.24	4.50	38.03	28.72	54.00	25.28	AV
	1275.000	31.59	24.25	4.53	37.57	22.80	54.00	31.20	
	1365.000	33.67	24.80	4.54	37.33	25.68	54.00	28.32	
	1600.000	35.89	26.40	4.56	36.76	30.09	54.00	23.91	
	1760.000	36.67	26.96	4.58	36.49	31.72	54.00	22.28	
	1850.000	29.62	26.52	4.64	36.37	24.41	54.00	29.59	

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342TA	Humidity	:	60%RH
Serial No.	:	E1207872-01/01	Date of Test	:	Jul 19, 2012
Test Mode	:	DVI 1680*1050@60Hz	Adapter #1	:	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	30.970	5.25	17.78	0.81	23.84	40.00	16.16
	41.640	11.86	11.78	0.88	24.52	40.00	15.48
	61.040	17.30	9.21	1.21	27.72	40.00	12.28
	135.730	14.61	10.71	2.14	27.46	43.50	16.04
	221.090	18.83	10.68	2.51	32.02	46.00	13.98
	281.230	**18.63**	**13.17**	**2.70**	**34.50**	**46.00**	**11.50**
Vertical	30.970	0.03	17.78	0.81	18.62	40.00	21.38
	62.980	7.92	9.36	1.26	18.54	40.00	21.46
	90.140	5.72	11.00	1.73	18.45	43.50	25.05
	135.730	19.47	10.71	2.14	32.32	43.50	11.18
	198.780	15.89	9.81	2.42	28.12	43.50	15.38
	281.230	**19.44**	**13.17**	**2.70**	**35.31**	**46.00**	**10.69**

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature	:	22℃
Model No.	:	E2342TA	Humidity	:	60%RH
Serial No.	:	E1207872-01/01	Date of Test	:	Jul 19, 2012
Test Mode	:	DVI 1280*1024@75Hz	Adapter #1	:	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	30.000	7.36	18.30	0.80	26.46	40.00	13.54
	33.880	4.85	16.26	0.83	21.94	40.00	18.06
	72.680	8.31	10.08	1.47	19.86	40.00	20.14
	145.430	15.70	10.50	2.20	28.40	43.50	15.10
	198.780	16.84	9.81	2.42	29.07	43.50	14.43
	281.230	**20.35**	**13.17**	**2.70**	**36.22**	**46.00**	**9.78**
Vertical	33.880	6.45	16.26	0.83	23.54	40.00	16.46
	61.040	17.25	9.21	1.21	27.67	40.00	12.33
	143.490	13.31	10.54	2.19	26.04	43.50	17.46
	221.090	**28.78**	**10.68**	**2.51**	**41.97**	**46.00**	**4.03**
	281.230	18.56	13.17	2.70	34.43	46.00	11.57
	431.580	16.74	16.72	3.08	36.54	46.00	9.46

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :		22℃
Model No.	:	E2342TA	Humidity	:	60%RH
Serial No.	:	E1207872-01/01	Date of Test	:	Jul 19, 2012
Test Mode	:	DVI 640*480@60Hz	Adapter #1	:	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	30.000	4.59	18.30	0.80	23.69	40.00	16.31
	61.040	16.62	9.21	1.21	27.04	40.00	12.96
	148.340	14.69	10.44	2.22	27.35	43.50	16.15
	221.090	19.18	10.68	2.51	32.37	46.00	13.63
	281.230	17.35	13.17	2.70	33.22	46.00	12.78
	528.580	**13.88**	**17.77**	**3.33**	**34.98**	**46.00**	**11.02**
Vertical	30.000	0.94	18.30	0.80	20.04	40.00	19.96
	61.040	6.30	9.21	1.21	16.72	40.00	23.28
	75.590	5.62	10.27	1.53	17.42	40.00	22.58
	148.340	14.90	10.44	2.22	27.56	43.50	15.94
	196.840	14.37	9.83	2.42	26.62	43.50	16.88
	281.230	**18.56**	**13.17**	**2.70**	**34.43**	**46.00**	**11.57**

TEST ENGINEER: RAVEN JIN

EUT	:	LCD Monitor	Temperature :	22℃
Model No.	:	E2342TA	Humidity :	60%RH
Serial No.	:	E1207872-01/01	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	0.87	18.30	0.80	19.97	40.00	20.03
	62.980	12.55	9.36	1.26	23.17	40.00	16.83
	135.730	18.01	10.71	2.14	30.86	43.50	12.64
	182.290	**27.08**	**9.97**	**2.36**	**39.41**	**43.50**	**4.09**
	216.240	13.32	10.45	2.49	26.26	46.00	19.74
	281.230	20.49	13.17	2.70	36.36	46.00	9.64
Vertical	36.790	11.67	14.57	0.85	27.09	40.00	12.91
	62.980	23.21	9.36	1.26	33.83	40.00	6.17
	135.730	14.59	10.71	2.14	27.44	43.50	16.06
	223.030	**27.21**	**10.76**	**2.51**	**40.48**	**46.00**	**5.52**
	281.230	19.14	13.17	2.70	35.01	46.00	10.99
	353.980	11.41	15.25	2.89	29.55	46.00	16.45

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

APPENDIX I

PHOTOGRAPHS OF TEST

Test Set-Up Photos

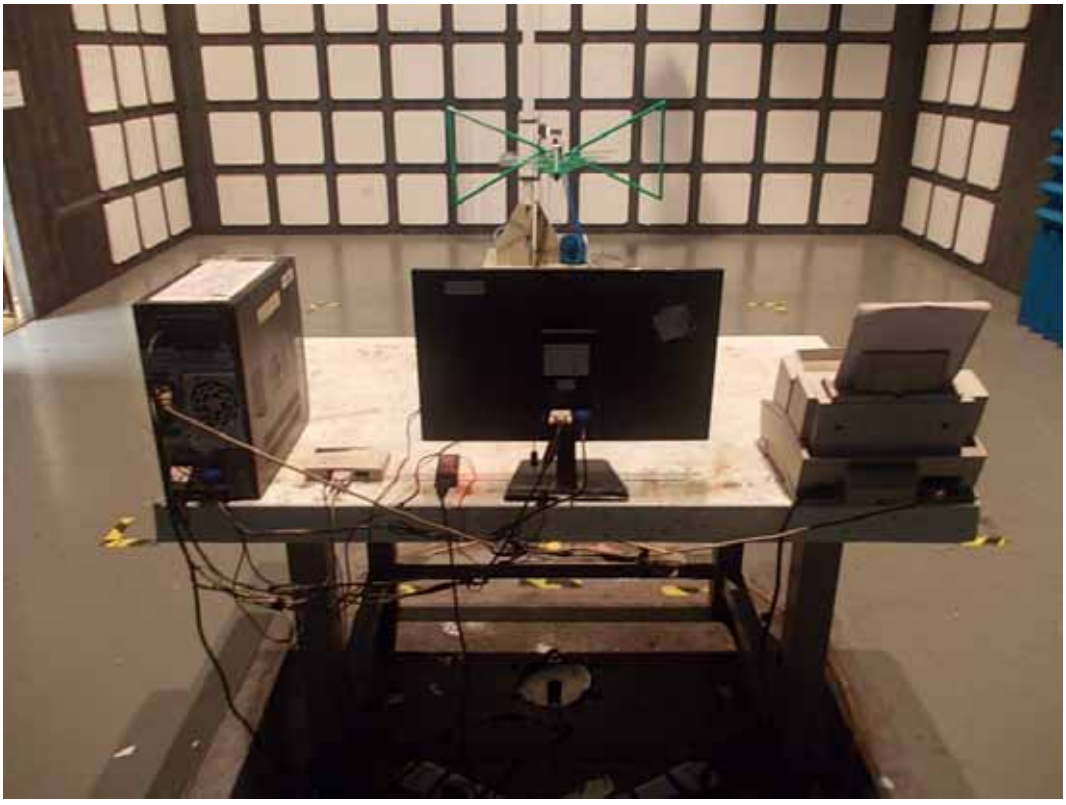
1. Conducted Emission Test

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 Adapter #1)*

APPENDIX II

PHOTOGRAPHS OF EUT

FIGURE 1
LCD MONITOR (M/N: E2342TA)
GENERAL APPEARANCE (FRONT VIEW)

FIGURE 2
LCD MONITOR (M/N: E2342TA)
GENERAL APPEARANCE (BACK VIEW)

FIGURE 3
LCD MONITOR (M/N: E2342TA)
PORTS

FIGURE 4
LCD MONITOR (M/N: E2342TA)
D-SUB CABLE

FIGURE 5
LCD MONITOR (M/N: E2342TA)
DVI CABLE

FIGURE 6
LCD MONITOR (M/N: E2342TA)
COVER REMOVED

FIGURE 7
LCD MONITOR (M/N: E2342TA)
LABEL ON PANEL

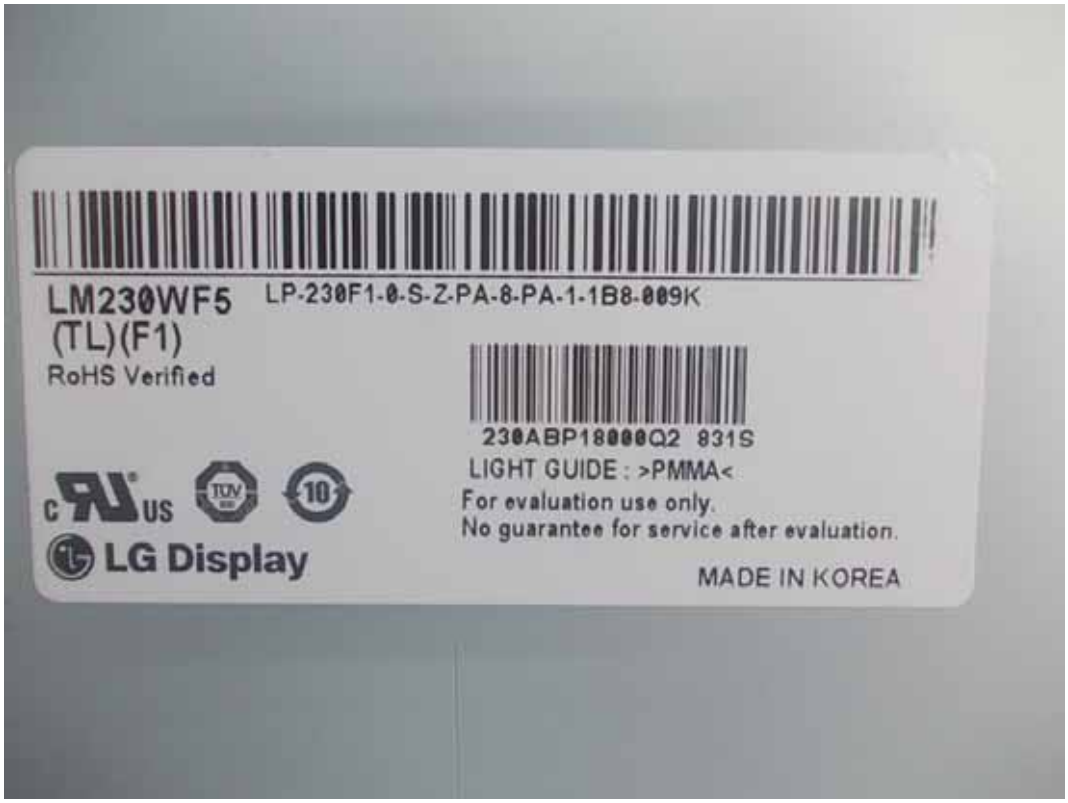


FIGURE 8
LCD MONITOR (M/N: E2342TA)
MAIN BOARD (COMPONENT SIDE)

FIGURE 9
LCD MONITOR (M/N: E2342TA)
MAIN BOARD (SOLDERED SIDE)

FIGURE 10
LCD MONITOR (M/N: E2342TA)
CRYSTAL & CHIP ON MAIN BOARD

FIGURE 11
LCD MONITOR (M/N: E2342TA)
LCD PANEL BOARD (COMPONENT SIDE)

FIGURE 12
LCD MONITOR (M/N: E2342TA)
LCD PANEL BOARD (SOLDERED SIDE)

FIGURE 13
LCD MONITOR (M/N: E2342TA)
KEY BOARD (COMPONENT SIDE)

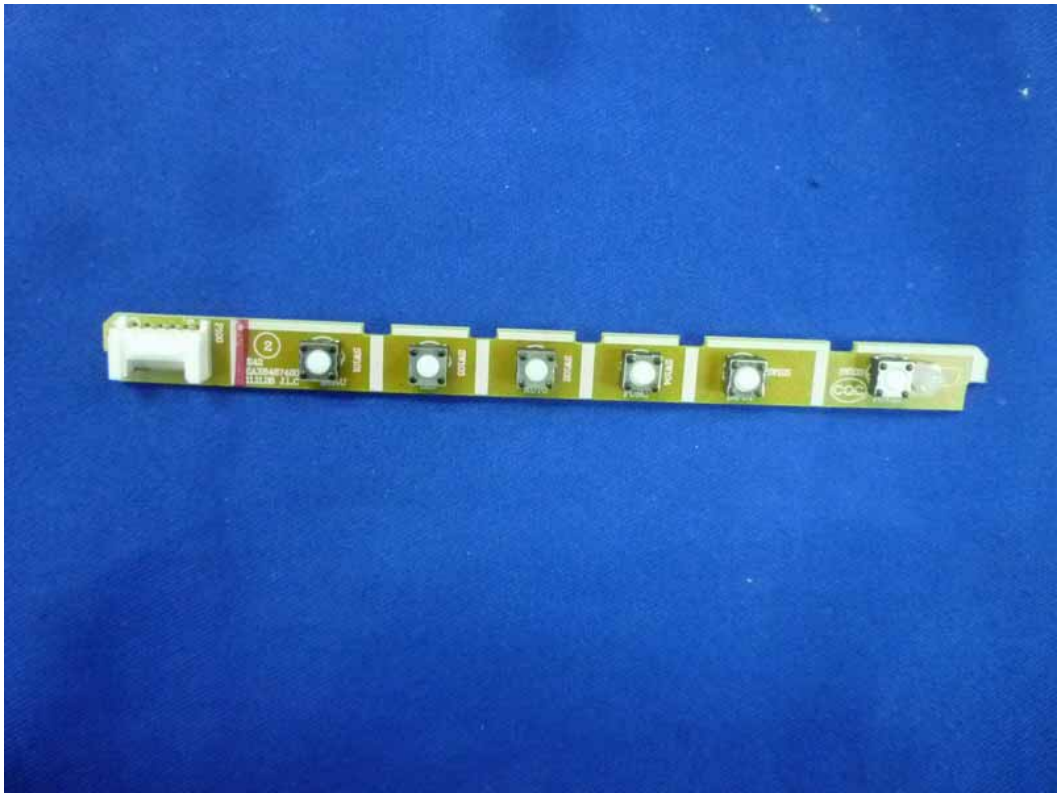


FIGURE 14
LCD MONITOR (M/N: E2342TA)
KEY BOARD (SOLDERED SIDE)

FIGURE 15
LCD MONITOR (M/N: E2342TA)
ADAPTER #1 (GENERAL APPEARANCE)

FIGURE 16
LCD MONITOR (M/N: E2342TA)
ADAPTER #1 (GENERAL APPEARANCE – AC PORT)

FIGURE 17
LCD MONITOR (M/N: E2342TA)
ADAPTER #1 (GENERAL APPEARANCE – LABEL)

FIGURE 18
LCD MONITOR (M/N: E2342TA)
ADAPTER #2 (GENERAL APPEARANCE)

FIGURE 19
LCD MONITOR (M/N: E2342TA)
ADAPTER #2 (GENERAL APPEARANCE – AC PORT)

FIGURE 20
LCD MONITOR (M/N: E2342TA)
ADAPTER #2 (GENERAL APPEARANCE – LABEL)