

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

LCD Monitor

Model No.: E2242TA

Serial No.: E1207870-01/01

FCC ID : BEJE2242TA

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-F12002A5
Date of Test : Jul 18 – 19, 2012
Date of Report : Jul 23, 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.....	7
2.3 Description of Test Facility.....	8
2.4 Measurement Uncertainty.....	8
3 CONDUCTED EMISSION TEST.....	9
3.1 Test Equipment.....	9
3.2 Block Diagram of Test Setup.....	9
3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)].....	10
3.4 Test Configuration.....	10
3.5 Operating Condition of EUT.....	11
3.6 Test Procedures.....	12
3.7 Test Results.....	12
4 RADIATED EMISSION TEST.....	19
4.1 Test Equipment.....	19
4.2 Block Diagram of Test Setup.....	19
4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)].....	21
4.4 Test Configuration.....	21
4.5 Operating Condition of EUT.....	22
4.6 Test Procedures.....	22
4.7 Test Results.....	23
5 DEVIATION TO TEST SPECIFICATIONS.....	31

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. : E2242TA
(B) Serial No. : E1207870-01/01
(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: E2242TA; S/N: E1207870-01/01) 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 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 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

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

Model No. : E2242TA

Serial No. : E1207870-01/01

Real Power : 22.80W (Adapter #1)
23.30W (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-F12002	E2242TA	Original Report	0	Jan 06, 2012
ACI-F12002A1	E2242TA	1.To add two new panels 2.To add a new appearance	Rev. A1	Mar 10, 2012
ACI- F12002A2	E2242TA	To add two new panels	Rev. A2	Mar 26, 2012
ACI- F12002A3	E2242TA	To add a new panel	Rev. A3	May 07, 2012
ACI- F12002A4	E2242TA	To change the PCB of main board	Rev. A4	Jun 11, 2012
ACI- F12002A5	E2242TA	To add a new panel for original main board	Rev. A5	Jul 23, 2012

AC Adapter #1 : Manufacturer : LIEN CHANG
Model Number : LCAP21
Input : 100-240V~, 50-60Hz 1.1A
Output : 19V $\overline{\overline{\text{---}}}$ 1.3A
Output Cable : Unshielded, Undetachable, 1.8m, with one core

AC Adapter #2 : Manufacturer : HONOR
Model Number : ADS-40SG-19-3 19025G
Input : 100-240V~, 50-60Hz 1.0A
Output : 19V $\overline{\overline{\text{---}}}$ 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 : LG Display; M/N : LM215WF4	Manufacturer : AU Optronics M/N : M215HW03
Manufacturer : LG Electronics Inc. M/N : LGM215AB01	Manufacturer : CHIMEI INNOLUX M/N : M215HGE
Manufacturer : LG Electronics Inc. M/N : LGM215AC01	Manufacturer : LG Electronics Inc. M/N : LGM215AP11
Manufacturer : LG Electronics Inc. M/N : LGM215AC01	Manufacturer : LG Electronics Inc. M/N : LGM215AP11
Manufacturer : LG Electronics Inc. M/N : LGM215AL11	--

Note #2 : The new added panel LGM215AL11 was tested
and recorded in this report.

Max Resolution : 1920*1080@60Hz

D-Sub Cable #1 : Shielded, Detachable, 1.85m

D-Sub Cable #2 : Shielded, Detachable, 1.50m

DVI Cable #1 : Shielded, Detachable, 2.00m

DVI Cable #2 : Shielded, Detachable, 1.50m

Power Cord : Unshielded, Detachable, 1.80m

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

NVLAP Lab Code : 200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty: U = 3.43 dB

Radiated Emission Expanded Uncertainty (30-200MHz):
U = 4.67 dB (Horizontal)
U = 4.72 dB (Vertical)

Radiated Emission Expanded Uncertainty (200M-1GHz):
U = 4.81 dB (Horizontal)
U = 4.69 dB (Vertical)

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

3 CONDUCTED EMISSION TEST

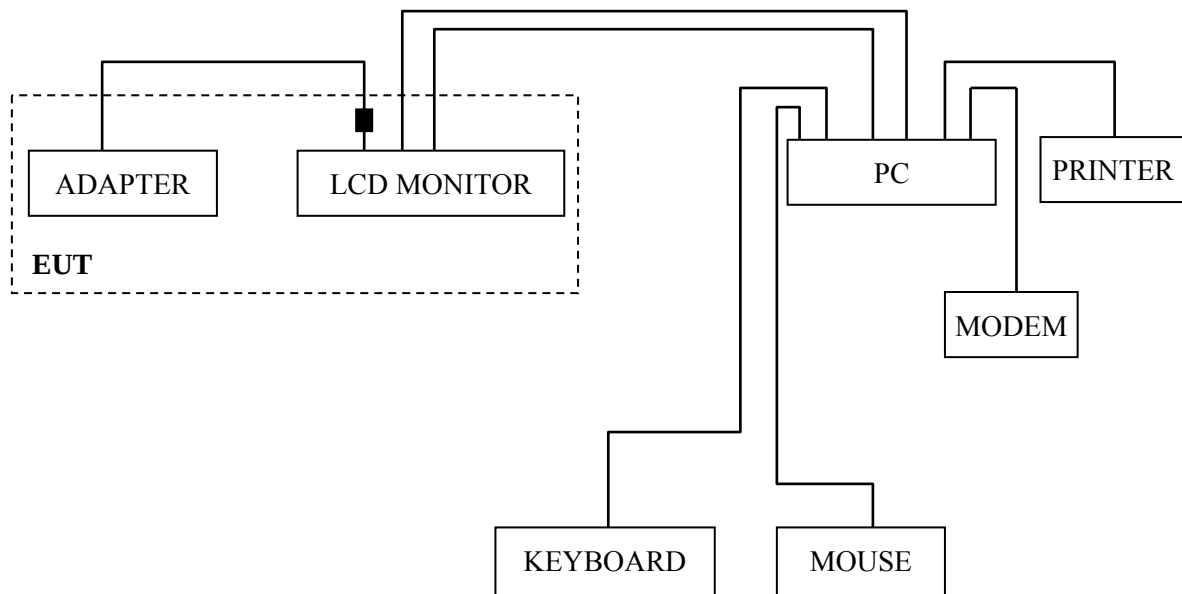
3.1 Test Equipment

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

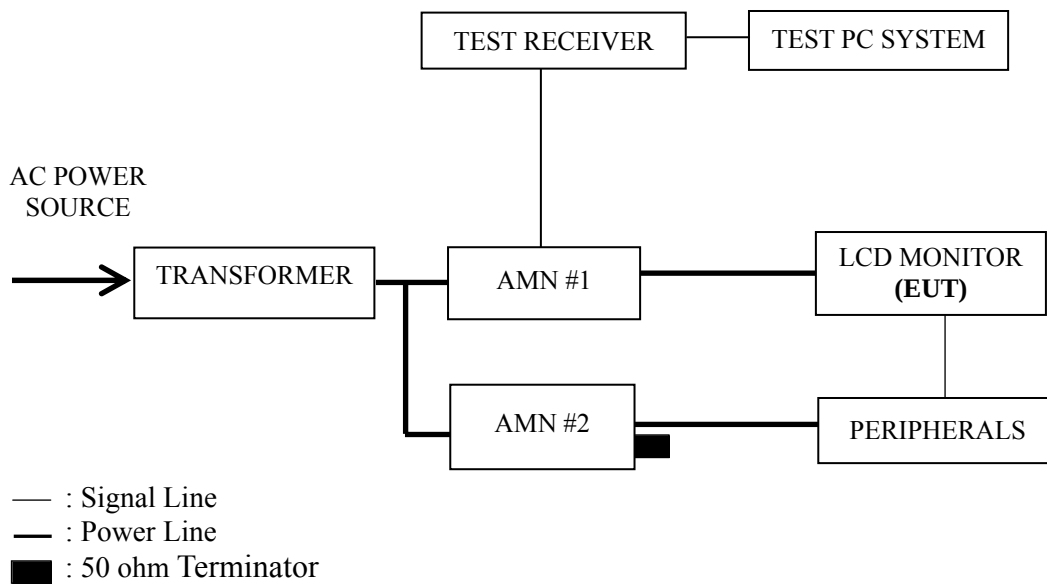
3.2.1 EUT & Peripherals



■ : 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
	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, then selected the worst test mode to perform test with other adapters.

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 1920*1080@60Hz	P13
	DVI 1920*1080@60Hz	P14
	D-Sub 1680*1050@60Hz	P15
	D-Sub 1280*1024@75Hz	P16
	D-Sub 640*480@60Hz	P17
Adapter #2	D-Sub 1920*1080@60Hz	P18

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 (Adapter #2). The worst emission is detected at 4.622 MHz (Average Value) with corrected signal level of 40.31 dB (μV) (limit is 46.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1207870-01/01 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	0.176	55.98	0.12	56.10	64.68	8.58	QP
	0.244	48.33	0.11	48.44	61.95	13.51	
	0.524	35.29	0.17	35.46	56.00	20.54	
	1.734	31.97	0.18	32.15	56.00	23.85	
	4.622	46.25	0.42	46.67	56.00	9.33	
	18.232	32.10	0.80	32.90	60.00	27.10	
	0.176	46.60	0.12	46.72	54.68	7.96	AV
	0.244	39.70	0.11	39.81	51.95	12.14	
	0.524	26.50	0.17	26.67	46.00	19.33	
	1.734	22.39	0.18	22.57	46.00	23.43	
	4.622	38.79	0.42	39.21	46.00	6.79	
	18.232	23.40	0.80	24.20	50.00	25.80	
Neutral	0.178	55.60	0.25	55.85	64.59	8.74	QP
	0.244	47.59	0.25	47.84	61.95	14.11	
	0.535	33.86	0.33	34.19	56.00	21.81	
	1.568	31.23	0.37	31.60	56.00	24.40	
	4.454	46.69	0.50	47.19	56.00	8.81	
	18.232	30.55	0.90	31.45	60.00	28.55	
	0.178	46.09	0.25	46.34	54.59	8.25	AV
	0.244	38.60	0.25	38.85	51.95	13.10	
	0.535	24.20	0.33	24.53	46.00	21.47	
	1.568	22.90	0.37	23.27	46.00	22.73	
	4.454	38.29	0.50	38.79	46.00	7.21	
	18.232	21.71	0.90	22.61	50.00	27.39	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1207870-01/01 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	0.176	56.11	0.24	56.35	64.68	8.33	QP
	0.244	47.47	0.25	47.72	61.95	14.23	
	0.489	32.28	0.35	32.63	56.19	23.56	
	1.970	31.30	0.39	31.69	56.00	24.31	
	4.549	46.71	0.50	47.21	56.00	8.79	
	18.232	28.07	0.90	28.97	60.00	31.03	
	0.176	47.10	0.24	47.34	54.68	7.34	AV
	0.244	38.10	0.25	38.35	51.95	13.60	
	0.489	23.70	0.35	24.05	46.19	22.14	
	1.970	22.20	0.39	22.59	46.00	23.41	
	4.549	38.10	0.50	38.60	46.00	7.40	
	18.232	19.41	0.90	20.31	50.00	29.69	
Neutral	0.178	55.82	0.12	55.94	64.59	8.65	QP
	0.244	47.14	0.11	47.25	61.95	14.70	
	0.535	34.39	0.17	34.56	56.00	21.44	
	2.285	31.16	0.19	31.35	56.00	24.65	
	4.622	46.39	0.42	46.81	56.00	9.19	
	18.232	29.52	0.80	30.32	60.00	29.68	
	0.178	46.10	0.12	46.22	54.59	8.37	AV
	0.244	38.10	0.11	38.21	51.95	13.74	
	0.535	25.50	0.17	25.67	46.00	20.33	
	2.285	22.80	0.19	22.99	46.00	23.01	
	4.622	37.69	0.42	38.11	46.00	7.89	
	18.232	20.10	0.80	20.90	50.00	29.10	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1207870-01/01 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	0.178	55.48	0.25	55.73	64.59	8.86	QP
	0.247	46.69	0.25	46.94	61.86	14.92	
	0.535	33.62	0.33	33.95	56.00	22.05	
	1.734	30.56	0.39	30.95	56.00	25.05	
	4.622	46.23	0.50	46.73	56.00	9.27	
	19.326	29.48	0.92	30.40	60.00	29.60	
	0.178	46.49	0.25	46.74	54.59	7.85	AV
	0.247	37.40	0.25	37.65	51.86	14.21	
	0.535	24.30	0.33	24.63	46.00	21.37	
	1.734	21.79	0.39	22.18	46.00	23.82	
	4.622	37.40	0.50	37.90	46.00	8.10	
	19.326	20.60	0.92	21.52	50.00	28.48	
Neutral	0.180	55.99	0.12	56.11	64.50	8.39	QP
	0.247	47.46	0.11	47.57	61.86	14.29	
	0.529	34.72	0.17	34.89	56.00	21.11	
	1.781	32.50	0.17	32.67	56.00	23.33	
	4.454	46.12	0.41	46.53	56.00	9.47	
	18.232	28.89	0.80	29.69	60.00	30.31	
	0.180	46.50	0.12	46.62	54.50	7.88	AV
	0.247	38.20	0.11	38.31	51.86	13.55	
	0.529	25.80	0.17	25.97	46.00	20.03	
	1.781	23.80	0.17	23.97	46.00	22.03	
	4.454	37.40	0.41	37.81	46.00	8.19	
	18.232	19.90	0.80	20.70	50.00	29.30	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1207870-01/01 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	0.178	55.66	0.25	55.91	64.59	8.68	QP
	0.253	46.33	0.25	46.58	61.64	15.06	
	0.541	33.18	0.33	33.51	56.00	22.49	
	1.970	31.36	0.39	31.75	56.00	24.25	
	4.672	45.60	0.50	46.10	56.00	9.90	
	19.326	28.15	0.92	29.07	60.00	30.93	
	0.178	46.79	0.25	47.04	54.59	7.55	AV
	0.253	37.20	0.25	37.45	51.64	14.19	
	0.541	24.40	0.33	24.73	46.00	21.27	
	1.970	22.90	0.39	23.29	46.00	22.71	
	4.672	36.10	0.50	36.60	46.00	9.40	
	19.326	19.30	0.92	20.22	50.00	29.78	
Neutral	0.182	55.45	0.12	55.57	64.42	8.85	QP
	0.242	47.08	0.11	47.19	62.04	14.85	
	0.529	34.83	0.17	35.00	56.00	21.00	
	1.585	31.36	0.17	31.53	56.00	24.47	
	4.361	46.03	0.40	46.43	56.00	9.57	
	19.532	30.46	0.82	31.28	60.00	28.72	
	0.182	46.50	0.12	46.62	54.42	7.80	AV
	0.242	38.60	0.11	38.71	52.04	13.33	
	0.529	25.90	0.17	26.07	46.00	19.93	
	1.585	22.60	0.17	22.77	46.00	23.23	
	4.361	38.41	0.40	38.81	46.00	7.19	
	19.532	21.40	0.82	22.22	50.00	27.78	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1207870-01/01 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	0.174	55.17	0.24	55.41	64.77	9.36	QP
	0.234	46.24	0.25	46.49	62.30	15.81	
	0.524	33.05	0.34	33.39	56.00	22.61	
	2.309	30.77	0.40	31.17	56.00	24.83	
	4.361	45.37	0.49	45.86	56.00	10.14	
	19.021	29.43	0.92	30.35	60.00	29.65	
	0.174	46.40	0.24	46.64	54.77	8.13	AV
	0.234	36.80	0.25	37.05	52.30	15.25	
	0.524	24.50	0.34	24.84	46.00	21.16	
	2.309	21.10	0.40	21.50	46.00	24.50	
	4.361	36.30	0.49	36.79	46.00	9.21	
	19.021	20.89	0.92	21.81	50.00	28.19	
Neutral	0.176	56.01	0.12	56.13	64.68	8.55	QP
	0.237	47.11	0.11	47.22	62.22	15.00	
	0.489	34.72	0.17	34.89	56.19	21.30	
	1.991	31.57	0.17	31.74	56.00	24.26	
	4.454	45.88	0.41	46.29	56.00	9.71	
	19.532	30.89	0.82	31.71	60.00	28.29	
	0.176	46.60	0.12	46.72	54.68	7.96	AV
	0.237	38.70	0.11	38.81	52.22	13.41	
	0.489	25.90	0.17	26.07	46.19	20.12	
	1.991	22.10	0.17	22.27	46.00	23.73	
	4.454	36.80	0.41	37.21	46.00	8.79	
	19.532	20.20	0.82	21.02	50.00	28.98	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1207870-01/01 Date of Test : Jul 18, 2012

Test Mode : D-Sub 1920*1080@60Hz Adapter #2 : 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	0.178	57.02	0.25	57.27	64.59	7.32	QP
	0.249	47.95	0.25	48.20	61.78	13.58	
	0.535	35.19	0.33	35.52	56.00	20.48	
	1.819	32.78	0.39	33.17	56.00	22.83	
	4.721	47.39	0.50	47.89	56.00	8.11	
	18.232	30.81	0.90	31.71	60.00	28.29	
	0.178	48.09	0.25	48.34	54.59	6.25	AV
	0.249	38.80	0.25	39.05	51.78	12.73	
	0.535	26.10	0.33	26.43	46.00	19.57	
	1.819	24.40	0.39	24.79	46.00	21.21	
	4.721	38.60	0.50	39.10	46.00	6.90	
	18.232	21.81	0.90	22.71	50.00	27.29	
Neutral	0.180	57.29	0.12	57.41	64.50	7.09	QP
	0.242	49.15	0.11	49.26	62.04	12.78	
	0.558	36.55	0.17	36.72	56.00	19.28	
	1.568	32.62	0.17	32.79	56.00	23.21	
	4.622	47.29	0.42	47.71	56.00	8.29	
	19.532	30.47	0.82	31.29	60.00	28.71	
	0.180	47.30	0.12	47.42	54.50	7.08	AV
	0.242	40.20	0.11	40.31	52.04	11.73	
	0.558	26.91	0.17	27.08	46.00	18.92	
	1.568	23.10	0.17	23.27	46.00	22.73	
	4.622	39.89	0.42	40.31	46.00	5.69	
	19.532	21.60	0.82	22.42	50.00	27.58	

TEST ENGINEER: SAWEN LI

4 RADIATED EMISSION TEST

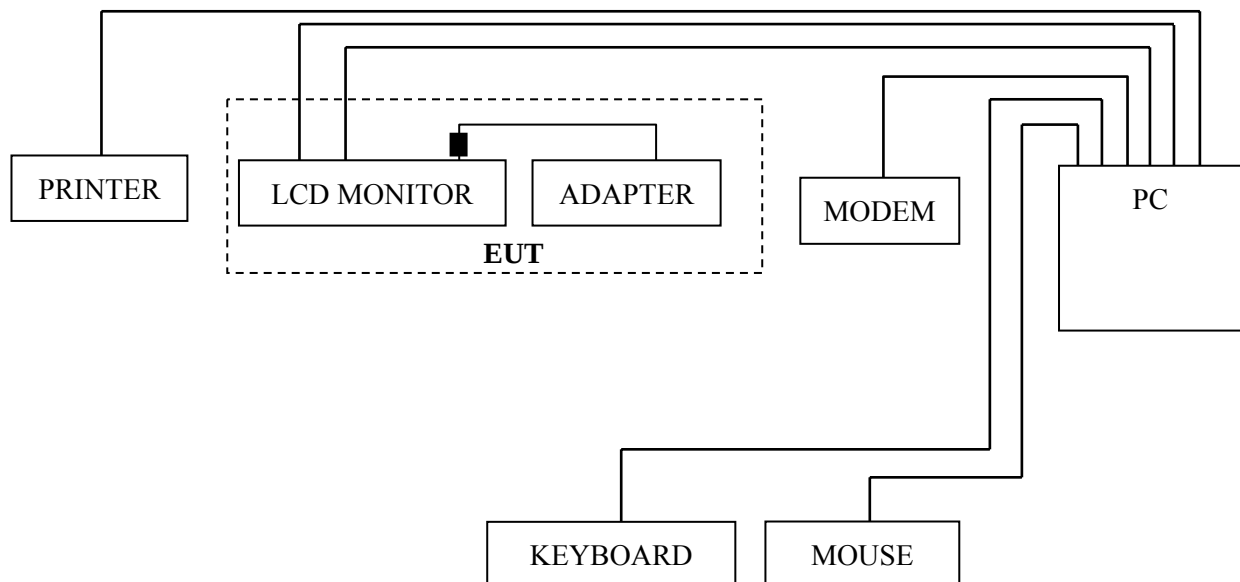
4.1 Test Equipment

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.	50 Ω 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

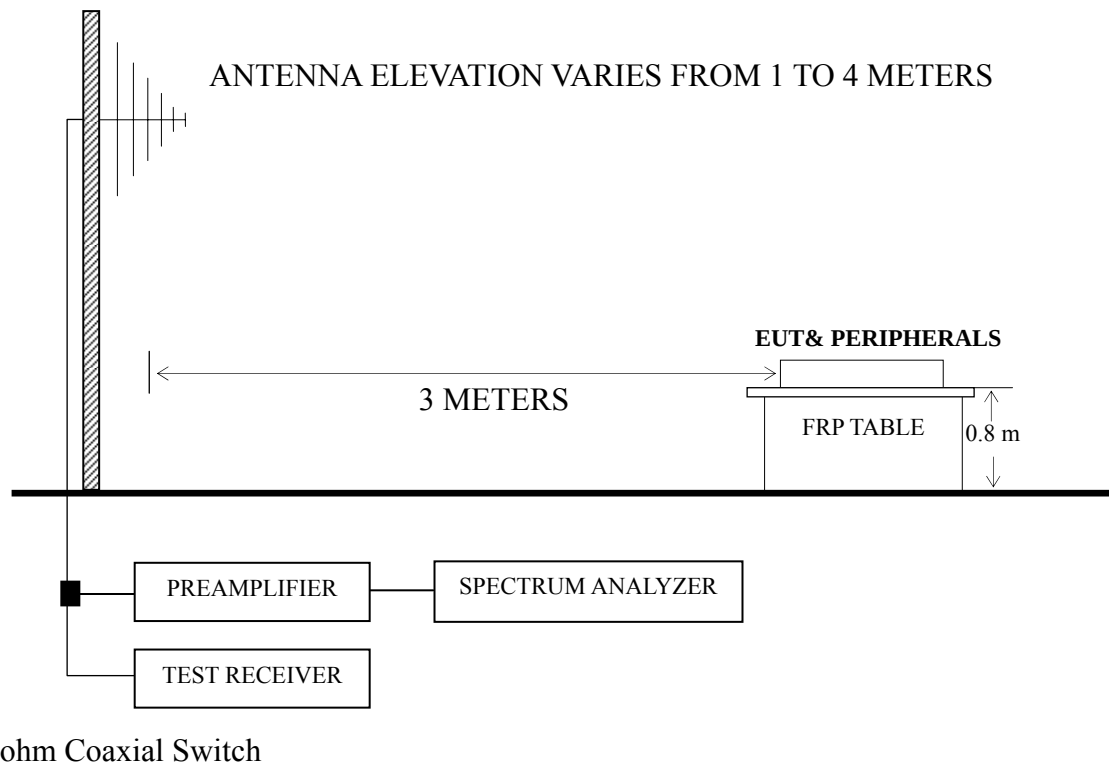


■ : Ferrite core

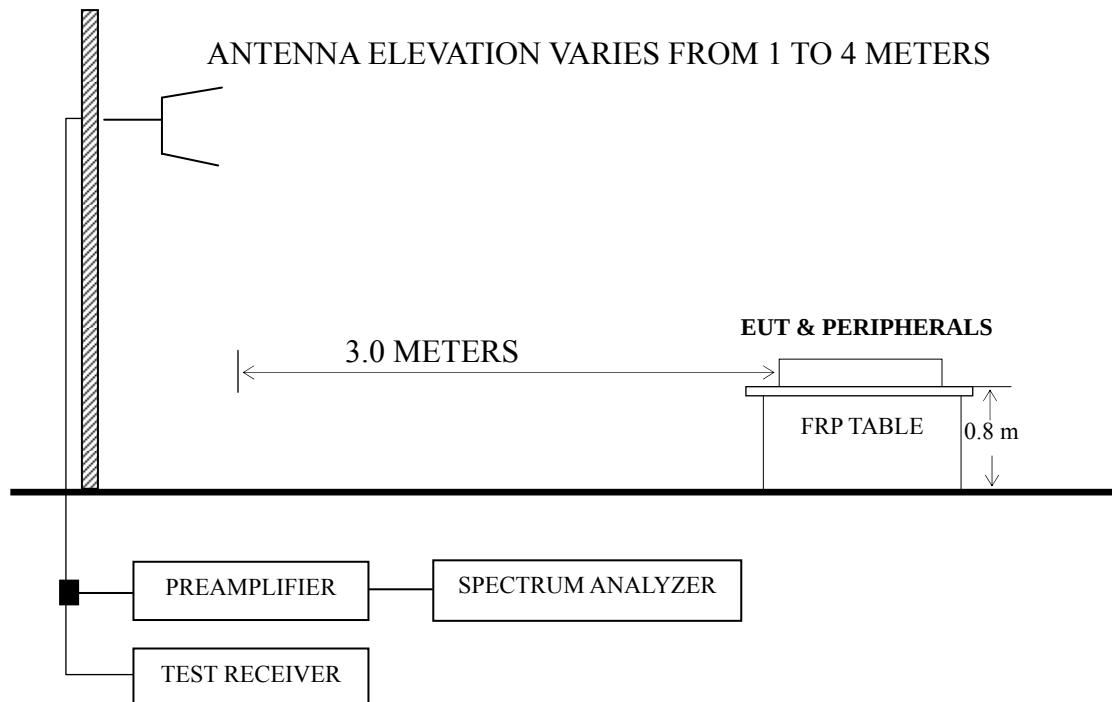
Note: Ferrite core only for Adapter #1

4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



4.2.2.2 Above 1GHz



■ : 50 ohm Coaxial Switch

4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)]

Frequency (MHz)	Distance (m)	Field strength limits	
		($\mu\text{V/m}$)	dB ($\mu\text{V/m}$)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB ($\mu\text{V/m}$) = 20 log Emission Level ($\mu\text{V/m}$)

NOTE 2 - The tighter limit applies at the band edges.

NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz 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	P24
	DVI 1920*1080@60Hz	P25 – P26
	DVI 1680*1050@60Hz	P27
	DVI 1280*1024@75Hz	P28
	DVI 640*480@60Hz	P29
Adapter #2	DVI 640*480@60Hz	P30

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 – The worst case is for DVI 640*480@60Hz test mode (Adapter #2). The worst emission at horizontal polarization was detected at 347.190 MHz with corrected signal level of 40.56 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 230°. The worst emission at vertical polarization was detected at 344.280 MHz with corrected signal level of 35.56 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 150°.

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1207870-01/01 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	30.000	5.70	18.30	0.80	24.80	40.00	15.20
	51.340	6.75	8.58	0.95	16.28	40.00	23.72
	101.780	6.19	11.32	1.86	19.37	43.50	24.13
	208.480	15.89	10.15	2.46	28.50	43.50	15.00
	281.230	19.65	13.17	2.70	35.52	46.00	10.48
	395.690	12.74	16.20	2.98	31.92	46.00	14.08
Vertical	30.000	7.20	18.30	0.80	26.30	40.00	13.70
	51.340	17.53	8.58	0.95	27.06	40.00	12.94
	67.830	17.12	9.70	1.36	28.18	40.00	11.82
	140.580	13.37	10.60	2.18	26.15	43.50	17.35
	221.090	18.88	10.68	2.51	32.07	46.00	13.93
	281.230	19.14	13.17	2.70	35.01	46.00	10.99

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1207870-01/01 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	6.01	18.30	0.80	--	25.11	40.00	14.89	QP
	41.640	12.88	11.78	0.88	--	25.54	40.00	14.46	
	67.830	17.52	9.70	1.36	--	28.58	40.00	11.42	
	140.580	17.14	10.60	2.18	--	29.92	43.50	13.58	
	223.030	18.35	10.76	2.51	--	31.62	46.00	14.38	
	281.230	19.30	13.17	2.70	--	35.17	46.00	10.83	
	1075.000	48.88	22.16	5.27	38.04	38.27	74.00	35.73	PK
	1250.000	43.46	24.05	5.42	37.65	35.28	74.00	38.72	
	1365.000	44.43	24.80	5.55	37.33	37.45	74.00	36.55	
	1465.000	39.20	26.11	5.72	37.06	33.97	74.00	40.03	
	1595.000	40.72	26.41	5.93	36.77	36.29	74.00	37.71	
	1760.000	43.18	26.96	6.17	36.49	39.82	74.00	34.18	
	1075.000	40.88	22.16	5.27	38.04	30.27	54.00	23.73	AV
	1250.000	32.46	24.05	5.42	37.65	24.28	54.00	29.72	
	1365.000	30.43	24.80	5.55	37.33	23.45	54.00	30.55	
	1465.000	26.20	26.11	5.72	37.06	20.97	54.00	33.03	
	1595.000	28.72	26.41	5.93	36.77	24.29	54.00	29.71	
	1760.000	29.18	26.96	6.17	36.49	25.82	54.00	28.18	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1207870-01/01 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	31.940	1.45	17.29	0.82	--	19.56	40.00	20.44	QP
	62.980	7.52	9.36	1.26	--	18.14	40.00	21.86	
	85.290	7.66	10.80	1.66	--	20.12	40.00	19.88	
	150.280	19.49	10.41	2.23	--	32.13	43.50	11.37	
	213.330	17.32	10.33	2.47	--	30.12	43.50	13.38	
	281.230	19.75	13.17	2.70	--	35.62	46.00	10.38	
	1080.000	43.24	22.24	5.27	38.03	32.72	74.00	41.28	PK
	1275.000	40.65	24.25	5.47	37.57	32.80	74.00	41.20	
	1365.000	40.66	24.80	5.55	37.33	33.68	74.00	40.32	
	1465.000	38.26	26.11	5.72	37.06	33.03	74.00	40.97	
	1600.000	41.52	26.40	5.93	36.76	37.09	74.00	36.91	
	1760.000	43.08	26.96	6.17	36.49	39.72	74.00	34.28	
	1080.000	32.24	22.24	5.27	38.03	21.72	54.00	32.28	AV
	1275.000	29.65	24.25	5.47	37.57	21.80	54.00	32.20	
	1365.000	28.66	24.80	5.55	37.33	21.68	54.00	32.32	
	1465.000	22.26	26.11	5.72	37.06	17.03	54.00	36.97	
	1600.000	29.52	26.40	5.93	36.76	25.09	54.00	28.91	
	1760.000	30.08	26.96	6.17	36.49	26.72	54.00	27.28	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1207870-01/01 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	30.000	8.96	18.30	0.80	28.06	40.00	11.94
	70.740	6.45	9.93	1.43	17.81	40.00	22.19
	150.280	15.26	10.41	2.23	27.90	43.50	15.60
	221.090	14.99	10.68	2.51	28.18	46.00	17.82
	281.230	19.74	13.17	2.70	35.61	46.00	10.39
	363.680	7.97	15.49	2.91	26.37	46.00	19.63
Vertical	30.000	7.02	18.30	0.80	26.12	40.00	13.88
	41.640	9.92	11.78	0.88	22.58	40.00	17.42
	67.830	17.54	9.70	1.36	28.60	40.00	11.40
	150.280	14.63	10.41	2.23	27.27	43.50	16.23
	220.120	18.80	10.64	2.50	31.94	46.00	14.06
	281.230	18.49	13.17	2.70	34.36	46.00	11.64

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1207870-01/01 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	8.68	18.30	0.80	27.78	40.00	12.22
	38.730	14.63	13.40	0.86	28.89	40.00	11.11
	67.830	17.42	9.70	1.36	28.48	40.00	11.52
	143.490	18.72	10.54	2.19	31.45	43.50	12.05
	221.090	18.83	10.68	2.51	32.02	46.00	13.98
	347.190	15.56	15.04	2.88	33.48	46.00	12.52
Vertical	30.000	10.93	18.30	0.80	30.03	40.00	9.97
	72.680	7.57	10.08	1.47	19.12	40.00	20.88
	140.580	17.23	10.60	2.18	30.01	43.50	13.49
	211.390	13.25	10.26	2.47	25.98	43.50	17.52
	281.230	19.30	13.17	2.70	35.17	46.00	10.83
	431.580	14.31	16.72	3.08	34.11	46.00	11.89

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1207870-01/01 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	36.790	2.33	14.57	0.85	17.75	40.00	22.25
	65.890	7.26	9.55	1.32	18.13	40.00	21.87
	90.140	6.74	11.00	1.73	19.47	43.50	24.03
	138.640	16.32	10.65	2.16	29.13	43.50	14.37
	174.530	16.88	10.06	2.33	29.27	43.50	14.23
	347.190	16.82	15.04	2.88	34.74	46.00	11.26
Vertical	30.000	7.08	18.30	0.80	26.18	40.00	13.82
	41.640	11.67	11.78	0.88	24.33	40.00	15.67
	67.830	17.95	9.70	1.36	29.01	40.00	10.99
	89.170	12.44	10.96	1.72	25.12	43.50	18.38
	223.030	18.78	10.76	2.51	32.05	46.00	13.95
	353.980	21.32	15.25	2.89	39.46	46.00	6.54

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1207870-01/01 Date of Test : Jul 19, 2012

Test Mode : DVI 640*480@60Hz Adapter #2 : 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	30.000	6.48	18.30	0.80	25.58	40.00	14.42
	61.040	23.14	9.21	1.21	33.56	40.00	6.44
	174.530	18.92	10.06	2.33	31.31	43.50	12.19
	221.090	18.95	10.68	2.51	32.14	46.00	13.86
	347.190	22.64	15.04	2.88	40.56	46.00	5.44
	538.280	18.15	17.83	3.34	39.32	46.00	6.68
Vertical	48.430	6.36	9.02	0.90	16.28	40.00	23.72
	61.040	8.44	9.21	1.21	18.86	40.00	21.14
	138.640	17.10	10.65	2.16	29.91	43.50	13.59
	179.380	20.61	10.00	2.35	32.96	43.50	10.54
	259.890	18.08	12.40	2.64	33.12	46.00	12.88
	344.280	17.74	14.96	2.86	35.56	46.00	10.44

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.