

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

LCD Monitor

Model No.: E2242TA

Serial No.: E1208993-01/01

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-F12002A6
Date of Test : Aug 14 – 16, 2012
Date of Report : Aug 21, 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. : E2242TA
(B) Serial No. : E1208993-01/01
(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: E1208993-01/01) which was tested in 3m anechoic chamber Aug 14 – 16, 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 : Aug 14 – 16, 2012 Date of Report : Aug 21, 2012

Producer : Kathy Wang
KATHY WANG / Assistant

Review : Dio Yang
DIO YANG / Assistant Manager

 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. : E1208993-01/01

Real Power : 22.80W

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
ACI- F12002A6	E2242TA	To add two new adapters and a new panel.	Rev. A6	Aug 21, 2012

AC Adapter #1 : Manufacturer : LG
 Model Number : PSAB-L203A
 Input : 100-240V~, 50-60Hz 1.1A
 Output : 19V $\overline{\text{---}}$ 1.3A
 Output Cable : Unshielded, Undetachable, 1.8m

AC Adapter #2 : Manufacturer : LG
 Model Number : PSAB-L202*
 (* can be A, B, C, D,
 stand for different AC plug type.
 PSAB-L202C was selected as the
 test model.)
 Input : 100-240V~, 50-60Hz 1.1A
 Output : 19V $\overline{\text{---}}$ 1.3A
 Output Cable : Unshielded, Undetachable, 1.8m

Note #2 : The above adapters are all the same except for the different type of AC input.
The Adapter SAB-L202C was selected and recorded in the report.

Adapter :

Original Adapter	New Adapter
Manufacturer : HONOR M/N : ADS-40SG-19-3 19025G	Manufacturer : LG M/N : PSAB-L203A
Manufacturer : LIEN CHANG M/N : LCAP21	Manufacturer : LG M/N : PSAB-L202*
Manufacturer : LIEN CHANG M/N : LCAP26-*	--
Manufacturer : HONOR M/N : ADS-40FSG-19 19025G***-1	--

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	Manufacturer : BoE M/N : HT215F01-100

Note #2 : The new added panel HT215F01-100 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 : 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

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

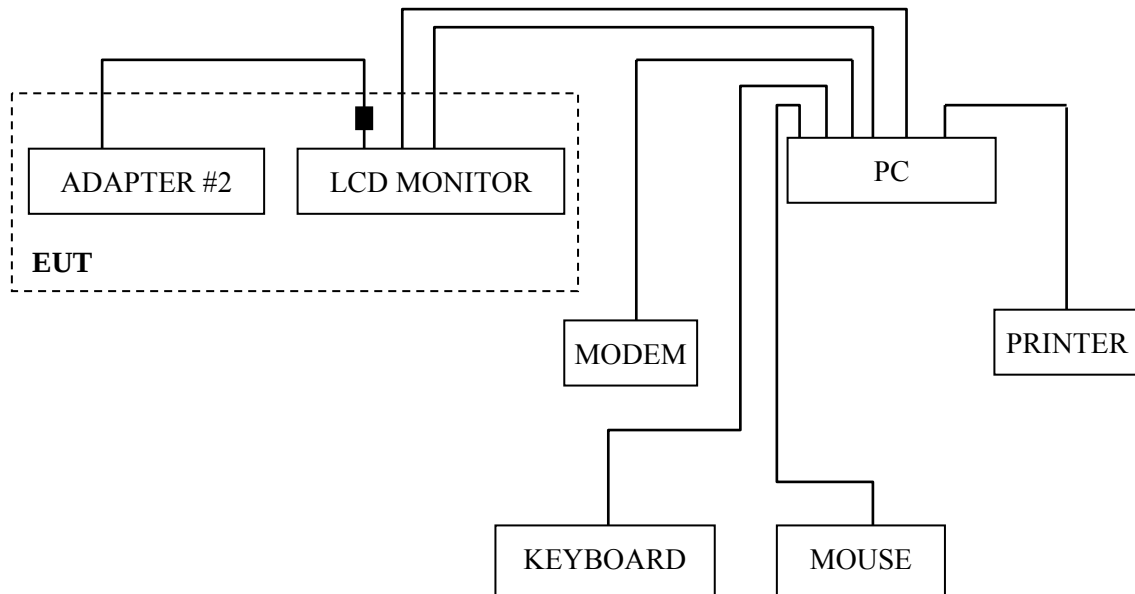
3.1 Test Equipment

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	--	--

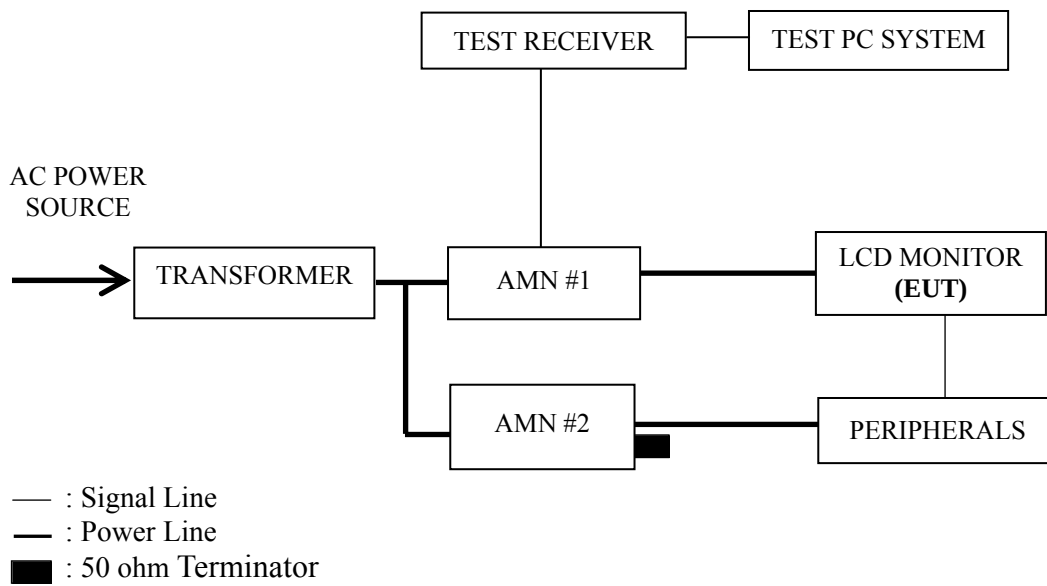
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



■ : Ferrite core

3.2.2 Conducted Disturbance Test Setup



3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)]

Frequency Range (MHz)	Limits dB (μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz		

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the peripherals (listed in Sec 2.2) were installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner that tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipments and the EUT.

3.5.3 Set the contrast & brightness of EUT to maximum.

3.5.4 PC system ran the self-test program "EMC Test" by windows XP and sent "H" characters to EUT through graphic card (we use white letters on a black background to represent all colors), the EUT's screen displayed and filled with "H" pattern by its resolution (Via D-Sub/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:

Test Mode
D-Sub 1920*1080@60Hz
DVI 1920*1080@60Hz
D-Sub 1680*1050@60Hz
D-Sub 1280*1024@75Hz
D-Sub 640*480@60Hz

3.6 Test Procedures

The EUT and peripherals were connected to the power mains through an Artificial Mains Network (AMN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (Line & Neutral) were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to ANSI C63.4:2003 during conducted emission test.

The bandwidth of R&S Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< **PASS** >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

Test Mode	Page
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

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 1920*1080@60Hz test mode. The worst emission is detected at 0.186 MHz (Quasi-Peak Value) with corrected signal level of 51.77 dB (μV) (limit is 64.20 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. : E1208993-01/01 Date of Test : Aug 14, 2012

Test Mode : D-Sub 1920*1080@60Hz Adapter #2 : PSAB-L202C

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.186	48.58	0.25	48.83	64.20	15.37	QP
	0.313	39.88	0.28	40.16	59.88	19.72	
	0.686	34.30	0.19	34.49	56.00	21.51	
	3.840	31.88	0.48	32.36	56.00	23.64	
	10.452	30.50	0.73	31.23	60.00	28.77	
	15.388	40.26	0.84	41.10	60.00	18.90	
	0.186	38.60	0.25	38.85	54.20	15.35	AV
	0.313	29.81	0.28	30.09	49.88	19.79	
	0.686	21.50	0.19	21.69	46.00	24.31	
	3.840	21.80	0.48	22.28	46.00	23.72	
	10.452	20.90	0.73	21.63	50.00	28.37	
	15.388	30.60	0.84	31.44	50.00	18.56	
Neutral	0.186	49.31	0.12	49.43	64.20	14.77	QP
	0.339	40.30	0.14	40.44	59.22	18.78	
	0.686	34.23	0.20	34.43	56.00	21.57	
	3.881	32.14	0.38	32.52	56.00	23.48	
	9.757	31.58	0.48	32.06	60.00	27.94	
	15.388	41.63	0.73	42.36	60.00	17.64	
	0.186	39.50	0.12	39.62	54.20	14.58	AV
	0.339	30.20	0.14	30.34	49.22	18.88	
	0.686	24.60	0.20	24.80	46.00	21.20	
	3.881	22.81	0.38	23.19	46.00	22.81	
	9.757	21.80	0.48	22.28	50.00	27.72	
	15.388	31.80	0.73	32.53	50.00	17.47	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1208993-01/01 Date of Test : Aug 14, 2012

Test Mode : DVI 1920*1080@60Hz Adapter #2 : PSAB-L202C

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.188	50.14	0.25	50.39	64.11	13.72	QP
	0.313	41.05	0.28	41.33	59.88	18.55	
	0.694	35.29	0.19	35.48	56.00	20.52	
	3.840	32.29	0.48	32.77	56.00	23.23	
	9.757	31.79	0.73	32.52	60.00	27.48	
	15.388	40.47	0.84	41.31	60.00	18.69	
	0.188	40.40	0.25	40.65	54.11	13.46	AV
	0.313	29.71	0.28	29.99	49.88	19.89	
	0.694	26.60	0.19	26.79	46.00	19.21	
	3.840	20.60	0.48	21.08	46.00	24.92	
	9.757	20.40	0.73	21.13	50.00	28.87	
	15.388	30.40	0.84	31.24	50.00	18.76	
Neutral	0.186	51.65	0.12	51.77	64.20	12.43	QP
	0.267	41.57	0.12	41.69	61.20	19.51	
	0.694	35.63	0.20	35.83	56.00	20.17	
	3.840	32.65	0.38	33.03	56.00	22.97	
	9.757	31.64	0.48	32.12	60.00	27.88	
	15.146	41.47	0.73	42.20	60.00	17.80	
	0.186	40.80	0.12	40.92	54.20	13.28	AV
	0.267	30.40	0.12	30.52	51.20	20.68	
	0.694	21.20	0.20	21.40	46.00	24.60	
	3.840	20.01	0.38	20.39	46.00	25.61	
	9.757	22.30	0.48	22.78	50.00	27.22	
	15.146	31.20	0.73	31.93	50.00	18.07	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1208993-01/01 Date of Test : Aug 14, 2012

Test Mode : DVI 1680*1050@60Hz Adapter #2 : PSAB-L202C

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.186	48.29	0.25	48.54	64.20	15.66	QP
	0.343	39.99	0.31	40.30	59.13	18.83	
	0.686	34.44	0.19	34.63	56.00	21.37	
	3.881	31.33	0.48	31.81	56.00	24.19	
	9.966	29.90	0.73	30.63	60.00	29.37	
	15.552	41.27	0.84	42.11	60.00	17.89	
	0.186	38.60	0.25	38.85	54.20	15.35	AV
	0.343	28.70	0.31	29.01	49.13	20.12	
	0.686	24.80	0.19	24.99	46.00	21.01	
	3.881	21.60	0.48	22.08	46.00	23.92	
	9.966	18.80	0.73	19.53	50.00	30.47	
	15.552	29.60	0.84	30.44	50.00	19.56	
Neutral	0.186	49.79	0.12	49.91	64.20	14.29	QP
	0.313	40.62	0.13	40.75	59.88	19.13	
	0.686	35.10	0.20	35.30	56.00	20.70	
	3.985	31.20	0.39	31.59	56.00	24.41	
	9.966	30.59	0.48	31.07	60.00	28.93	
	15.388	40.30	0.73	41.03	60.00	18.97	
	0.186	39.50	0.12	39.62	54.20	14.58	AV
	3.985	21.50	0.39	21.89	46.00	24.11	
	9.966	20.41	0.48	20.89	50.00	29.11	
	15.388	30.40	0.73	31.13	50.00	18.87	
	0.186	49.79	0.12	49.91	64.20	14.29	
	0.313	40.62	0.13	40.75	59.88	19.13	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1208993-01/01 Date of Test : Aug 14, 2012

Test Mode : DVI 1280*1024@75Hz Adapter #2 : PSAB-L202C

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.186	49.40	0.25	49.65	64.20	14.55	QP
	0.320	41.53	0.29	41.82	59.71	17.89	
	0.686	34.70	0.19	34.89	56.00	21.11	
	3.881	32.14	0.48	32.62	56.00	23.38	
	9.966	30.19	0.73	30.92	60.00	29.08	
	15.552	40.39	0.84	41.23	60.00	18.77	
	0.186	39.60	0.25	39.85	54.20	14.35	AV
	0.320	31.61	0.29	31.90	49.71	17.81	
	0.686	24.80	0.19	24.99	46.00	21.01	
	3.881	22.20	0.48	22.68	46.00	23.32	
	9.966	20.60	0.73	21.33	50.00	28.67	
	15.552	30.30	0.84	31.14	50.00	18.86	
Neutral	0.186	48.99	0.12	49.11	64.20	15.09	QP
	0.343	40.05	0.14	40.19	59.13	18.94	
	0.686	34.32	0.20	34.52	56.00	21.48	
	3.881	31.47	0.38	31.85	56.00	24.15	
	9.966	29.70	0.48	30.18	60.00	29.82	
	15.388	40.32	0.73	41.05	60.00	18.95	
	0.186	38.40	0.12	38.52	54.20	15.68	AV
	0.343	30.30	0.14	30.44	49.13	18.69	
	0.686	26.20	0.20	26.40	46.00	19.60	
	3.881	21.71	0.38	22.09	46.00	23.91	
	9.966	19.40	0.48	19.88	50.00	30.12	
	15.388	30.90	0.73	31.63	50.00	18.37	

TEST ENGINEER: SAWEN LI

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 48%RH

Serial No. : E1208993-01/01 Date of Test : Aug 14, 2012

Test Mode : DVI 640*480@60Hz Adapter #2 : PSAB-L202C

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.186	49.24	0.25	49.49	64.20	14.71	QP
	0.313	39.99	0.28	40.27	59.88	19.61	
	0.686	34.68	0.19	34.87	56.00	21.13	
	3.901	30.69	0.49	31.18	56.00	24.82	
	9.966	30.16	0.73	30.89	60.00	29.11	
	15.552	39.71	0.84	40.55	60.00	19.45	
	0.186	39.40	0.25	39.65	54.20	14.55	AV
	0.313	28.41	0.28	28.69	49.88	21.19	
	0.686	24.10	0.19	24.29	46.00	21.71	
	3.901	20.79	0.49	21.28	46.00	24.72	
	9.966	20.80	0.73	21.53	50.00	28.47	
	15.552	29.40	0.84	30.24	50.00	19.76	
Neutral	0.188	49.72	0.12	49.84	64.11	14.27	QP
	0.313	40.58	0.13	40.71	59.88	19.17	
	0.694	35.10	0.20	35.30	56.00	20.70	
	3.901	30.74	0.39	31.13	56.00	24.87	
	9.966	29.99	0.48	30.47	60.00	29.53	
	15.552	40.76	0.73	41.49	60.00	18.51	
	0.188	39.40	0.12	39.52	54.11	14.59	AV
	0.313	30.80	0.13	30.93	49.88	18.95	
	0.694	25.40	0.20	25.60	46.00	20.40	
	3.901	20.80	0.39	21.19	46.00	24.81	
	9.966	19.40	0.48	19.88	50.00	30.12	
	15.552	30.50	0.73	31.23	50.00	18.77	

TEST ENGINEER: SAWEN LI

4 RADIATED EMISSION TEST

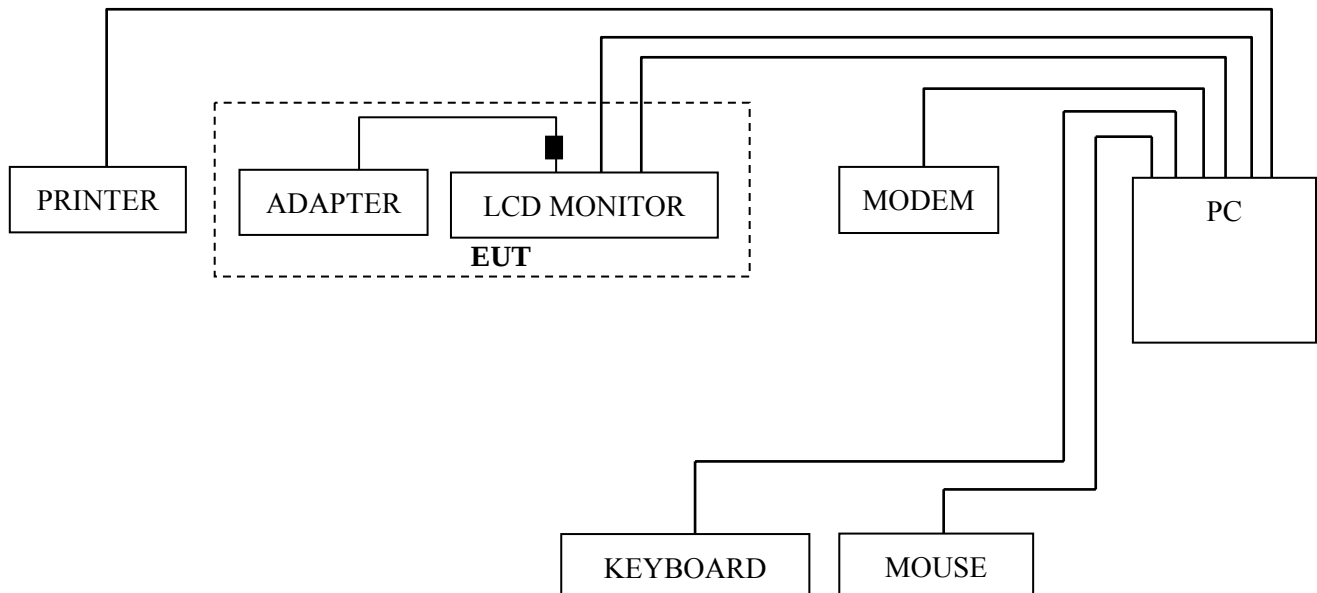
4.1 Test Equipment

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.	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

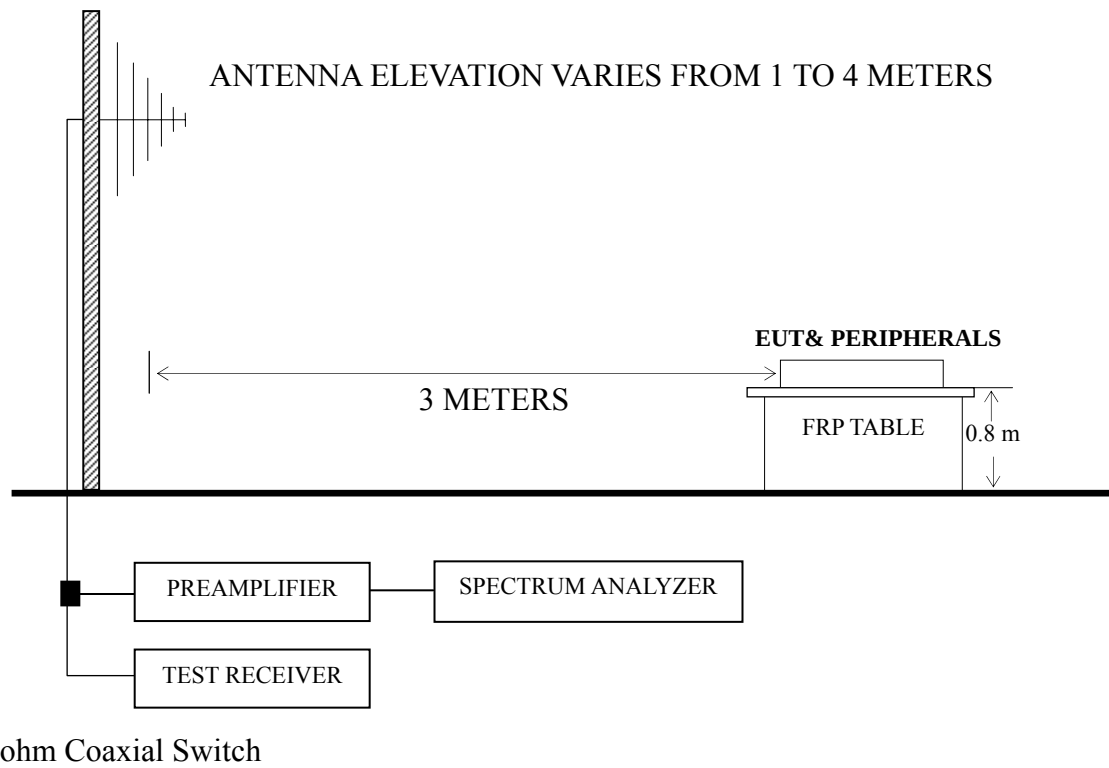
4.2.1 EUT and Peripherals



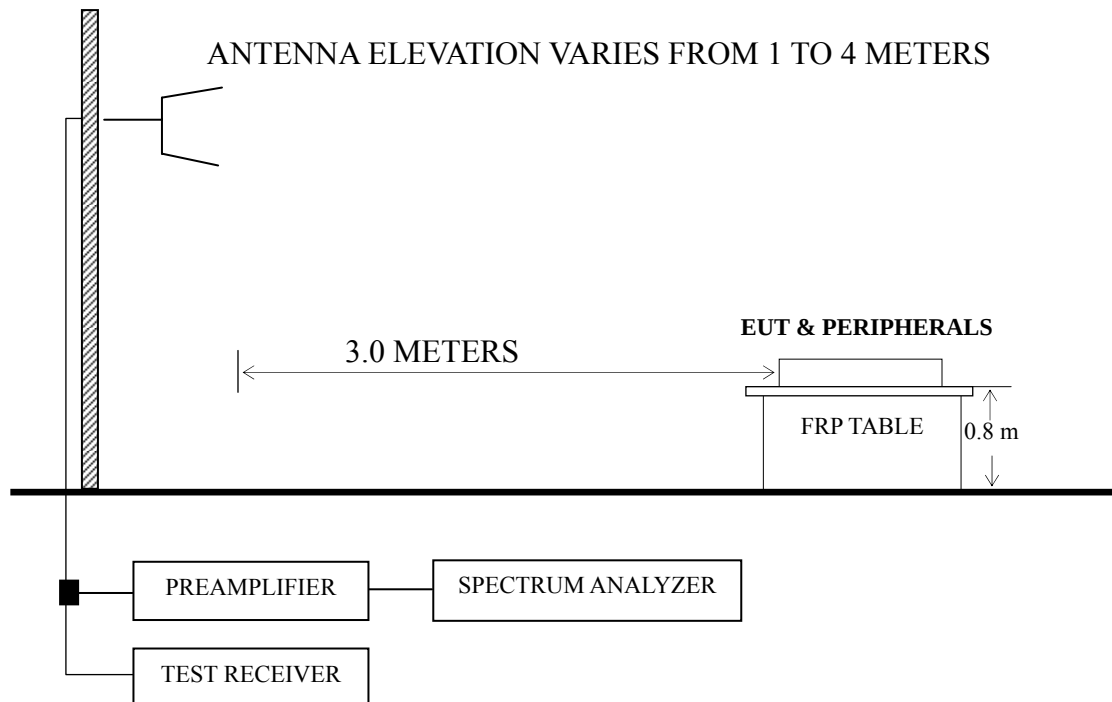
■ : Ferrite core

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.

Test Mode	Data Page
D-Sub 1920*1080@60Hz	P23
DVI 1920*1080@60Hz	P24
D-Sub 1680*1050@60Hz	P25
D-Sub 1280*1024@75Hz	P26 – P27
D-Sub 640*480@60Hz	P28

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 D-Sub 1280*1024@75Hz test mode. The worst emission at horizontal polarization was detected at 907.850 MHz with corrected signal level of 43.90 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.20 m height and the turntable was at 240°. The worst emission at vertical polarization was detected at 224.970 MHz with corrected signal level of 44.02 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.20 m height and the turntable was at 150°.

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1208993-01/01 Date of Test : Aug 16, 2012

Test Mode : D-Sub 1920*1080@60Hz Adapter #2 : PSAB-L202C

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	21.75	14.57	0.85	37.17	40.00	2.83
	98.870	21.86	11.31	1.83	35.00	43.50	8.50
	197.810	29.24	9.82	2.42	41.48	43.50	2.02
	215.270	26.83	10.41	2.49	39.73	43.50	3.77
	395.690	21.55	16.20	2.98	40.73	46.00	5.27
	494.630	19.67	17.53	3.25	40.45	46.00	5.55
Vertical	50.370	16.08	8.51	0.93	25.52	40.00	14.48
	98.870	14.07	11.31	1.83	27.21	43.50	16.29
	131.850	19.09	10.78	2.11	31.98	43.50	11.52
	197.810	26.10	9.82	2.42	38.34	43.50	5.16
	215.270	27.84	10.41	2.49	40.74	43.50	2.76
	395.690	17.64	16.20	2.98	36.82	46.00	9.18

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1208993-01/01 Date of Test : Aug 16, 2012

Test Mode : DVI 1920*1080@60Hz Adapter #2 : PSAB-L202C

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	96.930	16.80	11.24	1.82	29.86	43.50	13.64
	120.210	19.47	11.00	2.03	32.50	43.50	11.00
	219.150	24.30	10.56	2.50	37.36	46.00	8.64
	301.600	19.35	13.77	2.76	35.88	46.00	10.12
	446.130	19.97	16.92	3.11	40.00	46.00	6.00
	742.950	18.29	19.98	3.78	42.05	46.00	3.95
Vertical	35.820	21.38	15.19	0.84	37.41	40.00	2.59
	96.930	20.55	11.24	1.82	33.61	43.50	9.89
	164.830	20.93	10.18	2.30	33.41	43.50	10.09
	593.570	21.84	18.17	3.45	43.46	46.00	2.54
	742.950	15.59	19.98	3.78	39.35	46.00	6.65
	873.900	15.63	20.37	4.60	40.60	46.00	5.40

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1208993-01/01 Date of Test : Aug 16, 2012

Test Mode : D-Sub 1680*1050@60Hz Adapter #2 : PSAB-L202C

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	71.710	15.35	9.99	1.45	26.79	40.00	13.21
	144.460	22.14	10.52	2.19	34.85	43.50	8.65
	221.090	30.01	10.68	2.51	43.20	46.00	2.80
	288.020	19.51	13.39	2.72	35.62	46.00	10.38
	395.690	15.09	16.20	2.98	34.27	46.00	11.73
	504.330	13.59	17.62	3.28	34.49	46.00	11.51
Vertical	35.820	20.87	15.19	0.84	36.90	40.00	3.10
	92.080	21.33	11.08	1.75	34.16	43.50	9.34
	144.460	20.84	10.52	2.19	33.55	43.50	9.95
	216.240	21.02	10.45	2.49	33.96	46.00	12.04
	395.690	16.34	16.20	2.98	35.52	46.00	10.48
	504.330	15.09	17.62	3.28	35.99	46.00	10.01

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1208993-01/01 Date of Test : Aug 16, 2012

Test Mode : D-Sub 1280*1024@75Hz Adapter #2 : PSAB-L202C

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	35.820	21.25	15.19	0.84	--	37.28	40.00	2.72	QP
	89.170	22.62	10.96	1.72	--	35.30	43.50	8.20	
	224.970	28.87	10.84	2.52	--	42.23	46.00	3.77	
	359.800	19.47	15.41	2.90	--	37.78	46.00	8.22	
	540.220	17.11	17.84	3.34	--	38.29	46.00	7.71	
	907.850	18.53	20.34	5.03	--	43.90	46.00	2.10	
	1075.000	52.88	22.16	5.27	38.04	42.27	74.00	31.73	PK
	1180.000	46.35	23.49	5.34	37.81	37.37	74.00	36.63	
	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	47.18	26.96	6.17	36.49	43.82	74.00	30.18	
	1075.000	42.88	22.16	5.27	38.04	32.27	54.00	21.73	AV
	1180.000	32.35	23.49	5.34	37.81	23.37	54.00	30.63	
	1365.000	37.43	24.80	5.55	37.33	30.45	54.00	23.55	
	1465.000	32.20	26.11	5.72	37.06	26.97	54.00	27.03	
	1595.000	36.72	26.41	5.93	36.77	32.29	54.00	21.71	
	1760.000	35.18	26.96	6.17	36.49	31.82	54.00	22.18	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1208993-01/01 Date of Test : Aug 16, 2012

Test Mode : D-Sub 1280*1024@75Hz Adapter #2 : PSAB-L202C

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	44.550	13.16	10.47	0.89	--	24.52	40.00	15.48	QP
	210.420	24.90	10.22	2.46	--	37.58	43.50	5.92	
	224.970	30.66	10.84	2.52	--	44.02	46.00	1.98	
	315.180	18.72	14.12	2.79	--	35.63	46.00	10.37	
	450.010	16.90	16.98	3.13	--	37.01	46.00	8.99	
	540.220	14.36	17.84	3.34	--	35.54	46.00	10.46	
	1080.000	54.01	22.24	4.50	38.03	42.72	74.00	31.28	PK
	1185.000	51.32	23.54	4.51	37.80	41.57	74.00	32.43	
	1315.000	54.85	24.50	4.53	37.48	46.40	74.00	27.60	
	1520.000	47.77	26.55	4.55	36.92	41.95	74.00	32.05	
	1600.000	52.89	26.40	4.56	36.76	47.09	74.00	26.91	
	1850.000	48.62	26.52	4.64	36.37	43.41	74.00	30.59	
	1080.000	43.01	22.24	4.50	38.03	31.72	54.00	22.28	AV
	1185.000	36.32	23.54	4.51	37.80	26.57	54.00	27.43	
	1315.000	42.85	24.50	4.53	37.48	34.40	54.00	19.60	
	1520.000	34.77	26.55	4.55	36.92	28.95	54.00	25.05	
	1600.000	42.89	26.40	4.56	36.76	37.09	54.00	16.91	
	1850.000	34.62	26.52	4.64	36.37	29.41	54.00	24.59	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : E2242TA Humidity : 60%RH

Serial No. : E1208993-01/01 Date of Test : Aug 16, 2012

Test Mode : D-Sub 640*480@60Hz Adapter #2 : PSAB-L202C

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	34.850	21.40	15.70	0.84	37.94	40.00	2.06
	88.200	21.76	10.93	1.70	34.39	43.50	9.11
	149.310	19.35	10.43	2.23	32.01	43.50	11.49
	210.420	20.80	10.22	2.46	33.48	43.50	10.02
	444.190	13.77	16.90	3.11	33.78	46.00	12.22
	518.880	12.65	17.72	3.31	33.68	46.00	12.32
Vertical	75.590	15.73	10.27	1.53	27.53	40.00	12.47
	133.790	15.60	10.74	2.12	28.46	43.50	15.04
	218.180	19.24	10.52	2.50	32.26	46.00	13.74
	303.540	13.32	13.80	2.77	29.89	46.00	16.11
	472.320	11.65	17.27	3.19	32.11	46.00	13.89
	500.450	6.88	17.60	3.27	27.75	46.00	18.25

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.