

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

LCD Monitor

Model No.: IPS226TX

Serial No.:011NDUND1494

FCC ID : BEJIPS226TX

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

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Date of Test : Feb 13 – 17, 2011
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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. : IPS226TX
(B) Serial No. : 011NDUND1494
(C) Power Supply : 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2009
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: IPS226TX; S/N: 011NDUND1494) which was tested in 3m anechoic chamber Feb 13 – 17, 2011 is technically compliance with the FCC official limits also.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report contains data that are not covered by the NVLAP accreditation.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Feb 13 – 17, 2011 Date of Report : Feb 25, 2011

Producer : Kathy Wang
KATHY WANG / Assistant

Review : Dio Yang
DIO YANG / Deputy 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 2009 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2009 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. : IPS226TX

Serial No. : 011NDUND1494

Real Power : 30.30W (Adapter #1)
29.30W (Adapter #2)

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

Adapter #1 : Manufacturer: LITE-ON TECHNOLOGY
CORPORATION
M/N : PA-1650-68
Input : 100-240V~, 50-60Hz 2.0A
Output : 19V --- 3.42A
Output Cable : Undetachable, Unshielded, 1.5m,
with one core

Adapter #2 : Manufacturer: DELTA ELECTRONICS, INC.
M/N : EADP-40LB B
Input : 100-240V~, 1.3A 50-60Hz
Output : 19V --- 2.1A
Output Cable : Undetachable, Unshielded, 1.5m,
without core

LCD Panel : Manufacturer: LG Display
M/N : LM215WF3 (SL) (C1)

Max Resolution : 1920*1080@60Hz

D-Sub Cable #1 : Shielded, Detachable, 1.85m,
with two cores on cable

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

DVI Cable #1 : Shielded, Detachable, 1.85m,
with two cores on cable

DVI Cable #2 : Shielded, Detachable, 1.85m,
with two cores in connector
Power Cord : Unshielded, Detachable, 1.80m
Note : After evaluation, the D-Sub cable#1 and DVI cable#1 were
used in the test for they will cause the maximum emission.

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 : dx7400MT
Serial Number : CNG8130K89
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 Printer

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

2.2.3 Keyboard

Manufacturer : Microsoft
Model Number : KU-0459
Serial Number : 7691402450604
Data Cable : Shielded, Undetachable, 1.8m
Certificate : CE/EMC, FCC DoC, VCCI, MIC,
C-Tick, BSMI

2.2.4 Mouse

Manufacturer : DELL
Model Number : MO56UO
Serial Number : 443048231
Data Cable : Shielded, Undetachable, 1.8m.
Certificate : CE/EMC, FCC DoC, VCCI, MIC,
C-Tick, BSMI

2.2.5 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 = 1.26 dB
Radiated Emission Expanded Uncertainty : U = 3.02 dB

3 CONDUCTED EMISSION TEST

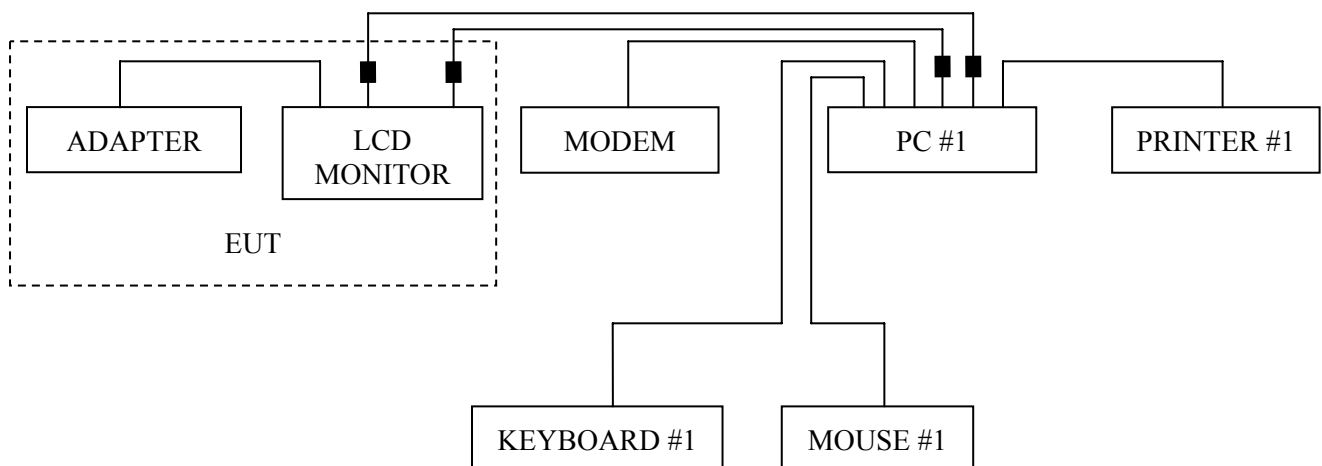
3.1 Test Equipment

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	Oct 15, 2010	Oct 15, 2011
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Apr 02, 2010	Apr 02, 2011
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 02, 2010	Apr 02, 2011
4.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426389	Sep 19, 2010	Mar 19, 2011
5.	50 Ω Terminator	Anritsu	BNC	001	Apr 02, 2010	Apr 02, 2011
6.	Software	Audix	E3	SET00200 9804M592	--	--

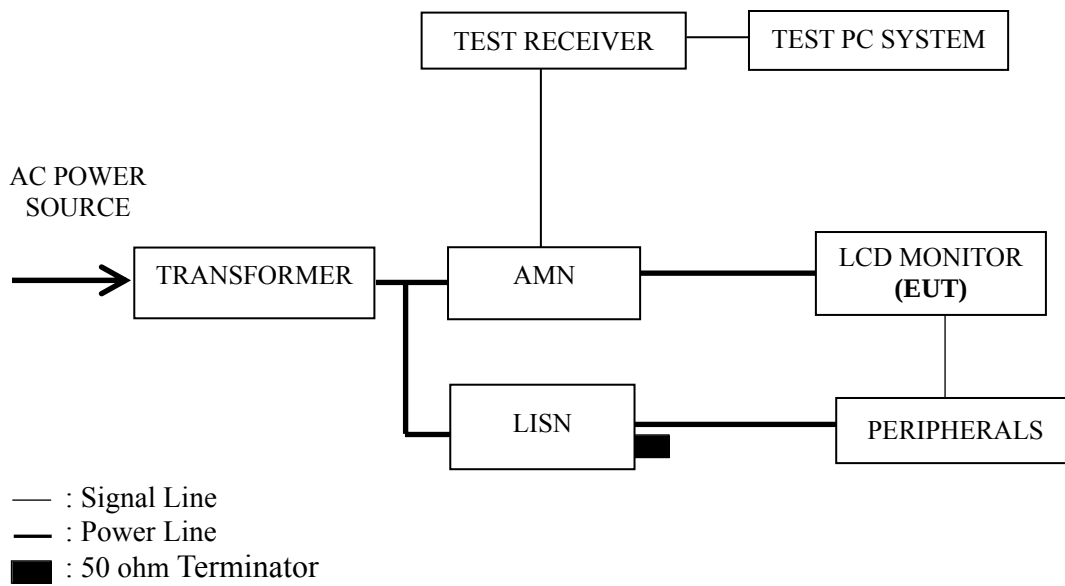
3.2 Block Diagram of Test Setup

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 (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, 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 640*480@60Hz
D-Sub 1280*1024@75Hz
D-Sub 1680*1050@60Hz
D-Sub 1920*1080@60Hz
DVI 640*480@60Hz
DVI 1280*1024@75Hz
DVI 1680*1050@60Hz
DVI 1920*1080@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.

Adapter	Test Mode	Page
Adapter #1: PA-1650-68	D-Sub 640*480@60Hz	P12
	D-Sub 1280*1024@75Hz	P13
	D-Sub 1680*1050@60Hz	P14
	D-Sub 1920*1080@60Hz	P15
	DVI 640*480@60Hz	P16
	DVI 1280*1024@75Hz	P17
	DVI 1680*1050@60Hz	P18
	DVI 1920*1080@60Hz	P19
Adapter #2: EADP-40LB B	D-Sub 640*480@60Hz	P20
	DVI 1280*1024@75Hz	P21

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 Adapter#1 was tested with all modes, and we selected the worst modes (D-Sub and DVI) to test with Adapter#2.

NOTE 6 – The worst case is for D-Sub 640*480@60Hz test mode (Adapter #1: PA-1650-68). The worst emission is detected at 0.150 MHz (Quasi-Peak Value) with corrected signal level of 63.92 dB (μV) (limit is 66.00 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

Test Mode : D-Sub 640*480@60Hz Adapter : Adapter #1

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	62.30	0.37	62.67	66.00	3.33	QP
	0.200	53.10	0.38	53.48	63.61	10.13	
	0.249	44.79	0.42	45.21	61.79	16.58	
	0.368	37.19	0.47	37.66	58.54	20.88	
	4.721	29.30	0.79	30.09	56.00	25.91	
	11.820	31.70	1.14	32.84	60.00	27.16	
	0.150	44.50	0.37	44.87	56.00	11.13	AV
	0.200	33.30	0.38	33.68	53.61	19.93	
	0.249	28.19	0.42	28.61	51.79	23.18	
	0.368	21.20	0.47	21.67	48.54	26.87	
	4.721	22.10	0.79	22.89	46.00	23.11	
	11.820	25.60	1.14	26.74	50.00	23.26	
Neutral	0.150	63.60	0.32	63.92	66.00	2.08	QP
	0.197	53.80	0.30	54.10	63.74	9.64	
	0.274	44.11	0.36	44.47	61.00	16.53	
	0.452	34.60	0.47	35.07	56.85	21.78	
	3.873	28.50	0.69	29.19	56.00	26.81	
	11.700	32.30	1.19	33.49	60.00	26.51	
	0.150	45.40	0.32	45.72	56.00	10.28	AV
	0.197	34.00	0.30	34.30	53.74	19.44	
	0.274	28.71	0.36	29.07	51.00	21.93	
	0.452	21.50	0.47	21.97	46.85	24.88	
	3.873	21.20	0.69	21.89	46.00	24.11	
	11.700	26.00	1.19	27.19	50.00	22.81	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

Test Mode : D-Sub 1280*1024@75Hz Adapter : Adapter #1

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.152	57.36	0.37	57.73	65.91	8.18	QP
	0.208	49.66	0.39	50.05	63.27	13.22	
	0.310	39.58	0.45	40.03	59.97	19.94	
	0.421	34.59	0.49	35.08	57.42	22.34	
	4.721	32.52	0.79	33.31	56.00	22.69	
	11.807	32.72	1.14	33.86	60.00	26.14	
	0.152	44.99	0.37	45.36	55.91	10.55	AV
	0.208	32.58	0.39	32.97	53.27	20.30	
	0.310	27.43	0.45	27.88	49.97	22.09	
	0.421	22.17	0.49	22.66	47.42	24.76	
	4.721	24.70	0.79	25.49	46.00	20.51	
	11.807	23.67	1.14	24.81	50.00	25.19	
Neutral	0.150	57.89	0.32	58.21	66.00	7.79	QP
	0.202	48.99	0.30	49.29	63.54	14.25	
	0.262	43.02	0.35	43.37	61.38	18.01	
	0.360	37.85	0.42	38.27	58.74	20.47	
	4.070	31.94	0.71	32.65	56.00	23.35	
	12.649	32.37	1.28	33.65	60.00	26.35	
	0.150	45.16	0.32	45.48	56.00	10.52	AV
	0.202	31.84	0.30	32.14	53.54	21.40	
	0.262	31.25	0.35	31.60	51.38	19.78	
	0.360	25.67	0.42	26.09	48.74	22.65	
	4.070	23.75	0.71	24.46	46.00	21.54	
	12.649	23.85	1.28	25.13	50.00	24.87	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

Test Mode : D-Sub 1680*1050@60Hz Adapter : Adapter #1

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.156	59.23	0.37	59.60	65.65	6.05	QP
	0.200	49.97	0.38	50.35	63.62	13.27	
	0.303	40.23	0.45	40.68	60.15	19.47	
	0.452	34.74	0.50	35.24	56.85	21.61	
	4.822	33.65	0.79	34.44	56.00	21.56	
	11.683	34.11	1.13	35.24	60.00	24.76	
	0.156	40.51	0.37	40.88	55.65	14.77	AV
	0.200	33.58	0.38	33.96	53.62	19.66	
	0.303	28.72	0.45	29.17	50.15	20.98	
	0.452	22.51	0.50	23.01	46.85	23.84	
	4.822	25.49	0.79	26.28	46.00	19.72	
	11.683	26.48	1.13	27.61	50.00	22.39	
Neutral	0.152	58.80	0.32	59.12	65.91	6.79	QP
	0.202	51.22	0.30	51.52	63.54	12.02	
	0.336	39.66	0.40	40.06	59.31	19.25	
	0.456	34.52	0.47	34.99	56.76	21.77	
	4.158	31.88	0.71	32.59	56.00	23.41	
	11.807	34.43	1.20	35.63	60.00	24.37	
	0.152	42.27	0.32	42.59	55.91	13.32	AV
	0.202	33.71	0.30	34.01	53.54	19.53	
	0.336	27.49	0.40	27.89	49.31	21.42	
	0.456	22.43	0.47	22.90	46.76	23.86	
	4.158	23.94	0.71	24.65	46.00	21.35	
	11.807	25.86	1.20	27.06	50.00	22.94	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.155	57.92	0.37	58.29	65.74	7.45	QP
	0.206	50.18	0.39	50.57	63.36	12.79	
	0.336	39.25	0.45	39.70	59.31	19.61	
	0.444	33.90	0.50	34.40	56.98	22.58	
	4.772	33.20	0.79	33.99	56.00	22.01	
	11.683	32.56	1.13	33.69	60.00	26.31	
	0.155	41.55	0.37	41.92	55.74	13.82	AV
	0.206	33.42	0.39	33.81	53.36	19.55	
	0.336	27.68	0.45	28.13	49.31	21.18	
	0.444	21.75	0.50	22.25	46.98	24.73	
	4.772	24.14	0.79	24.93	46.00	21.07	
	11.683	24.31	1.13	25.44	50.00	24.56	
Neutral	0.150	58.39	0.32	58.71	66.00	7.29	QP
	0.206	49.99	0.31	50.30	63.36	13.06	
	0.322	39.29	0.40	39.69	59.66	19.97	
	0.413	34.28	0.45	34.73	57.59	22.86	
	4.070	32.15	0.71	32.86	56.00	23.14	
	11.683	33.16	1.19	34.35	60.00	25.65	
	0.150	45.21	0.32	45.53	56.00	10.47	AV
	0.206	32.65	0.31	32.96	53.36	20.40	
	0.322	27.46	0.40	27.86	49.66	21.80	
	0.413	22.14	0.45	22.59	47.59	25.00	
	4.070	22.31	0.71	23.02	46.00	22.98	
	11.683	24.40	1.19	25.59	50.00	24.41	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	57.41	0.37	57.78	66.00	8.22	QP
	0.200	49.76	0.38	50.14	63.62	13.48	
	0.300	38.69	0.45	39.14	60.24	21.10	
	0.360	38.07	0.46	38.53	58.74	20.21	
	4.772	30.29	0.79	31.08	56.00	24.92	
	12.784	33.41	1.17	34.58	60.00	25.42	
	0.150	42.82	0.37	43.19	56.00	12.81	AV
	0.200	33.42	0.38	33.80	53.62	19.82	
	0.300	26.42	0.45	26.87	50.24	23.37	
	0.360	26.35	0.46	26.81	48.74	21.93	
	4.772	22.76	0.79	23.55	46.00	22.45	
	12.784	25.18	1.17	26.35	50.00	23.65	
Neutral	0.152	56.84	0.32	57.16	65.91	8.75	QP
	0.200	49.29	0.30	49.59	63.62	14.03	
	0.249	41.35	0.35	41.70	61.78	20.08	
	0.360	37.24	0.42	37.66	58.74	21.08	
	3.943	32.33	0.69	33.02	56.00	22.98	
	12.384	33.25	1.25	34.50	60.00	25.50	
	0.152	44.26	0.32	44.58	55.91	11.33	AV
	0.200	33.16	0.30	33.46	53.62	20.16	
	0.249	30.28	0.35	30.63	51.78	21.15	
	0.360	25.46	0.42	25.88	48.74	22.86	
	3.943	24.08	0.69	24.77	46.00	21.23	
	12.384	25.57	1.25	26.82	50.00	23.18	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.150	57.81	0.37	58.18	66.00	7.82	QP
	0.204	49.18	0.39	49.57	63.45	13.88	
	0.259	41.91	0.42	42.33	61.47	19.14	
	0.371	37.59	0.47	38.06	58.47	20.41	
	4.772	32.77	0.79	33.56	56.00	22.44	
	12.920	33.69	1.18	34.87	60.00	25.13	
	0.150	45.27	0.37	45.64	56.00	10.36	AV
	0.204	33.01	0.39	33.40	53.45	20.05	
	0.259	29.84	0.42	30.26	51.47	21.21	
	0.371	25.46	0.47	25.93	48.47	22.54	
	4.772	23.64	0.79	24.43	46.00	21.57	
	12.920	25.45	1.18	26.63	50.00	23.37	
Neutral	0.150	57.66	0.32	57.98	66.00	8.02	QP
	0.204	49.13	0.31	49.44	63.45	14.01	
	0.249	39.07	0.35	39.42	61.78	22.36	
	0.346	41.51	0.41	41.92	59.05	17.13	
	4.158	32.03	0.71	32.74	56.00	23.26	
	12.784	33.55	1.29	34.84	60.00	25.16	
	0.150	44.92	0.32	45.24	56.00	10.76	AV
	0.204	32.24	0.31	32.55	53.45	20.90	
	0.249	27.16	0.35	27.51	51.78	24.27	
	0.346	29.84	0.41	30.25	49.05	18.80	
	4.158	23.46	0.71	24.17	46.00	21.83	
	12.784	25.63	1.29	26.92	50.00	23.08	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.152	57.21	0.37	57.58	65.91	8.33	QP
	0.200	49.66	0.38	50.04	63.62	13.58	
	0.303	38.47	0.45	38.92	60.15	21.23	
	0.360	37.86	0.46	38.32	58.74	20.42	
	4.672	32.54	0.78	33.32	56.00	22.68	
	11.438	33.50	1.12	34.62	60.00	25.38	
	0.152	44.83	0.37	45.20	55.91	10.71	AV
	0.200	34.15	0.38	34.53	53.62	19.09	
	0.303	26.35	0.45	26.80	50.15	23.35	
	0.360	25.65	0.46	26.11	48.74	22.63	
	4.672	24.47	0.78	25.25	46.00	20.75	
	11.438	26.40	1.12	27.52	50.00	22.48	
Neutral	0.150	57.45	0.32	57.77	66.00	8.23	QP
	0.200	49.74	0.30	50.04	63.62	13.58	
	0.300	38.55	0.39	38.94	60.24	21.30	
	0.360	37.43	0.42	37.85	58.74	20.89	
	3.840	31.37	0.69	32.06	56.00	23.94	
	11.933	34.02	1.21	35.23	60.00	24.77	
	0.150	45.27	0.32	45.59	56.00	10.41	AV
	0.200	33.68	0.30	33.98	53.62	19.64	
	0.300	26.43	0.39	26.82	50.24	23.42	
	0.360	25.61	0.42	26.03	48.74	22.71	
	3.840	23.46	0.69	24.15	46.00	21.85	
	11.933	26.16	1.21	27.37	50.00	22.63	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.152	57.45	0.37	57.82	65.91	8.09	QP
	0.204	49.60	0.39	49.99	63.45	13.46	
	0.253	41.79	0.42	42.21	61.64	19.43	
	0.452	34.16	0.50	34.66	56.85	22.19	
	4.158	31.95	0.76	32.71	56.00	23.29	
	12.516	33.47	1.17	34.64	60.00	25.36	
	0.152	45.29	0.37	45.66	55.91	10.25	AV
	0.204	33.46	0.39	33.85	53.45	19.60	
	0.253	30.16	0.42	30.58	51.64	21.06	
	0.452	22.34	0.50	22.84	46.85	24.01	
	4.158	23.78	0.76	24.54	46.00	21.46	
	12.516	26.63	1.17	27.80	50.00	22.20	
Neutral	0.150	56.70	0.32	57.02	66.00	8.98	QP
	0.213	48.64	0.31	48.95	63.10	14.15	
	0.262	41.96	0.35	42.31	61.38	19.07	
	0.332	37.83	0.40	38.23	59.40	21.17	
	4.114	32.43	0.71	33.14	56.00	22.86	
	12.384	32.90	1.25	34.15	60.00	25.85	
	0.150	44.52	0.32	44.84	56.00	11.16	AV
	0.213	33.52	0.31	33.83	53.10	19.27	
	0.262	30.19	0.35	30.54	51.38	20.84	
	0.332	25.67	0.40	26.07	49.40	23.33	
	4.114	24.35	0.71	25.06	46.00	20.94	
	12.384	24.67	1.25	25.92	50.00	24.08	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.198	49.44	0.38	49.82	63.71	13.89	QP
	0.546	41.75	0.52	42.27	56.00	13.73	
	0.735	42.40	0.52	42.92	56.00	13.08	
	1.781	40.10	0.59	40.69	56.00	15.31	
	4.797	41.89	0.79	42.68	56.00	13.32	
	19.428	41.39	1.58	42.97	60.00	17.03	
	0.198	35.15	0.38	35.53	53.71	18.18	AV
	0.546	31.25	0.52	31.77	46.00	14.23	
	0.735	32.16	0.52	32.68	46.00	13.32	
	1.781	30.26	0.59	30.85	46.00	15.15	
	4.797	30.25	0.79	31.04	46.00	14.96	
	19.428	30.70	1.58	32.28	50.00	17.72	
Neutral	0.189	49.30	0.31	49.61	64.06	14.45	QP
	0.549	42.07	0.49	42.56	56.00	13.44	
	0.943	43.40	0.51	43.91	56.00	12.09	
	3.364	39.62	0.67	40.29	56.00	15.71	
	4.874	41.64	0.74	42.38	56.00	13.62	
	18.920	39.98	1.71	41.69	60.00	18.31	
	0.189	39.25	0.31	39.56	54.06	14.50	AV
	0.549	31.23	0.49	31.72	46.00	14.28	
	0.943	33.26	0.51	33.77	46.00	12.23	
	3.364	28.36	0.67	29.03	46.00	16.97	
	4.874	31.26	0.74	32.00	46.00	14.00	
	18.920	28.54	1.71	30.25	50.00	19.75	

TEST ENGINEER: WENCY YANG

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 48%RH

Serial No. : 011NDUND1494 Date of Test : Feb 13, 2011

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

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.202	49.07	0.38	49.45	63.54	14.09	QP
	0.398	40.55	0.48	41.03	57.90	16.87	
	0.549	42.56	0.52	43.08	56.00	12.92	
	1.178	41.08	0.55	41.63	56.00	14.37	
	2.285	39.24	0.64	39.88	56.00	16.12	
	18.920	42.62	1.55	44.17	60.00	15.83	
	0.202	39.25	0.38	39.63	53.54	13.91	AV
	0.398	30.26	0.48	30.74	47.90	17.16	
	0.549	31.24	0.52	31.76	46.00	14.24	
	1.178	31.28	0.55	31.83	46.00	14.17	
	2.285	26.58	0.64	27.22	46.00	18.78	
	18.920	31.26	1.55	32.81	50.00	17.19	
Neutral	0.192	49.89	0.31	50.20	63.93	13.73	QP
	0.549	42.07	0.49	42.56	56.00	13.44	
	0.953	42.28	0.51	42.79	56.00	13.21	
	3.058	41.54	0.66	42.20	56.00	13.80	
	4.822	42.19	0.74	42.93	56.00	13.07	
	19.021	42.82	1.72	44.54	60.00	15.46	
	0.192	35.15	0.31	35.46	53.93	18.47	AV
	0.549	31.26	0.49	31.75	46.00	14.25	
	0.953	32.54	0.51	33.05	46.00	12.95	
	3.058	31.26	0.66	31.92	46.00	14.08	
	4.822	31.25	0.74	31.99	46.00	14.01	
	19.021	31.27	1.72	32.99	50.00	17.01	

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

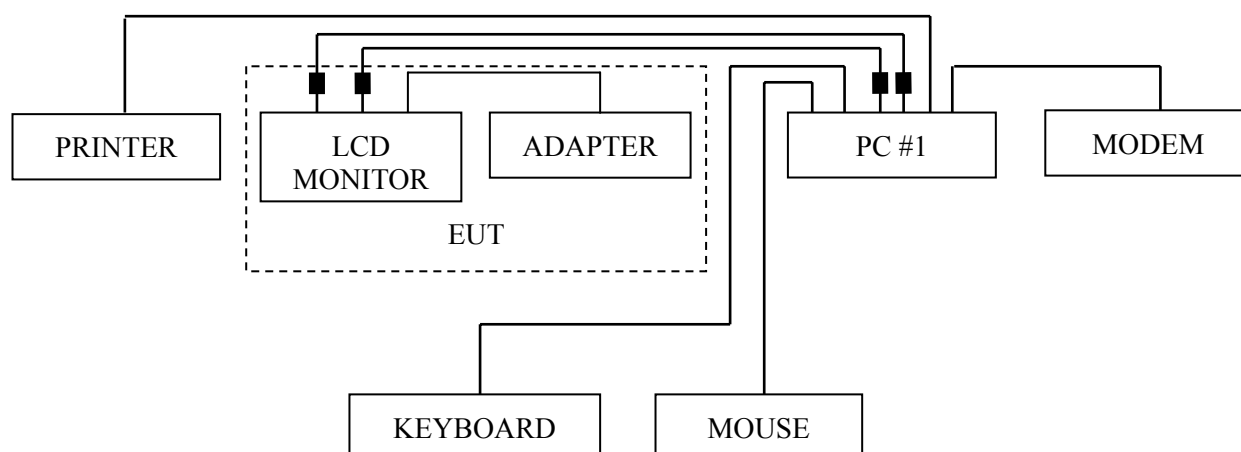
4.1 Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 07, 2010	Mar 07, 2011
2.	Preamplifier	Agilent	8447D	2944A10548	Sep 19, 2010	Mar 19, 2011
3.	Preamplifier	HP	8449B	3008A00864	Apr 29, 2010	Apr 29, 2011
4.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2010	Dec 01, 2011
5.	Spectrum	Agilent	E7405A	MY45106600	May 19, 2010	May 19, 2011
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

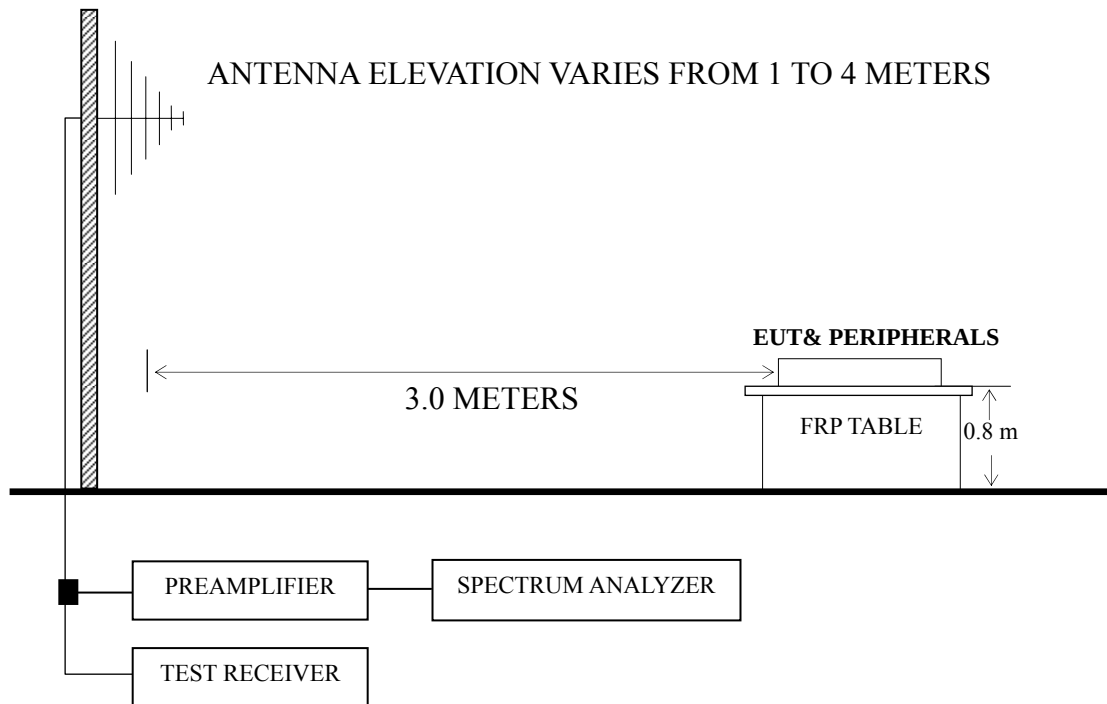
4.2 Block Diagram of Test Setup

4.2.1 EUT and Peripherals



■: Ferrite core

4.2.2 Radiated emission test setup



■ : 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) 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 D-Sub/DVI 1280*1024@75Hz, 1680*1050@60Hz and 1920*1080@60Hz modes.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Adapter	Test Mode	Page
Adapter #1: PA-1650-68	D-Sub 640*480@60Hz	P26
	D-Sub 1280*1024@75Hz	P27-P28
	D-Sub 1680*1050@60Hz	P29-P30
	D-Sub 1920*1080@60Hz	P31-P32
	DVI 640*480@60Hz	P33
	DVI 1280*1024@75Hz	P34-P35
	DVI 1680*1050@60Hz	P36-P37
	DVI 1920*1080@60Hz	P38-P39
Adapter #2: EADP-40LB B	D-Sub 1280*1024@75Hz	P40-P41
	DVI 640*480@60Hz	P42

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

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

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

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

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

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

NOTE 7 – The Adapter#1 was tested with all modes, and we selected the worst modes (D-Sub and DVI) to test with Adapter#2.

NOTE 8 - The worst case is for DVI 640*480@60Hz (Adapter #1: PA-1650-68) test mode. The worst emission at horizontal polarization was detected at 385.990 MHz with corrected signal level of 42.31 dB ($\mu\text{V/m}$) (limit is 43.50dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 70° . The worst emission at vertical polarization was detected at 742.500 MHz with corrected signal level of 42.86 dB ($\mu\text{V/m}$) (limit is 46.00 dB ($\mu\text{V/m}$)), when the antenna was 1.00 m height and the turntable was at 340° .

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

Test Mode : D-Sub 640*480@60Hz Adapter : Adapter #1

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	48.430	24.47	9.02	0.77	34.26	40.00	5.74
	84.320	19.49	10.75	0.96	31.20	40.00	8.80
	163.860	18.23	10.20	1.30	29.73	43.50	13.77
	289.960	21.65	13.42	1.73	36.80	46.00	9.20
	353.010	18.11	15.21	1.93	35.25	46.00	10.75
	635.280	14.58	18.67	2.54	35.79	46.00	10.21
Vertical	48.430	13.60	9.02	0.77	23.39	40.00	16.61
	84.320	15.49	10.75	0.96	27.20	40.00	12.80
	120.210	11.62	11.00	1.13	23.75	43.50	19.75
	212.360	19.09	10.29	1.49	30.87	43.50	12.63
	282.200	21.34	13.21	1.72	36.27	46.00	9.73
	461.650	19.60	17.14	2.20	38.94	46.00	7.06

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

Test Mode : D-Sub 1280*1024@75Hz Adapter : Adapter #1

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	87.230	17.84	10.88	0.98	--	29.70	40.00	10.30	QP
	209.450	21.16	10.18	1.48	--	32.82	43.50	10.68	
	271.530	25.65	12.86	1.68	--	40.19	46.00	5.81	
	349.130	16.15	15.09	1.91	--	33.15	46.00	12.85	
	678.930	15.16	19.26	2.63	--	37.05	46.00	8.95	
	870.990	11.06	20.38	2.98	--	34.42	46.00	11.58	
	1041.000	55.32	22.69	4.49	37.33	45.17	74.00	28.83	PK
	1201.000	54.87	23.74	4.51	37.00	46.12	74.00	27.88	
	1334.000	54.86	24.78	4.53	36.71	47.46	74.00	26.54	
	1467.000	54.89	25.60	4.55	36.36	48.68	74.00	25.32	
	1797.000	53.70	26.90	4.58	35.81	49.37	74.00	24.63	
	1880.000	51.63	27.35	4.67	35.72	47.93	74.00	26.07	
	1041.000	42.32	22.69	4.49	37.33	32.17	54.00	21.83	AV
	1201.000	41.87	23.74	4.51	37.00	33.12	54.00	20.88	
	1334.000	33.86	24.78	4.53	36.71	26.46	54.00	27.54	
	1467.000	43.89	25.60	4.55	36.36	37.68	54.00	16.32	
	1797.000	43.70	26.90	4.58	35.81	39.37	54.00	14.63	
	1880.000	40.63	27.35	4.67	35.72	36.93	54.00	17.07	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

Test Mode : D-Sub 1280*1024@75Hz Adapter : Adapter #1

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	48.430	24.68	9.02	0.77	--	34.47	40.00	5.53	QP
	86.700	23.09	10.87	0.98	--	34.94	40.00	5.06	
	203.630	20.67	9.94	1.46	--	32.07	43.50	11.43	
	279.290	23.59	13.09	1.70	--	38.38	46.00	7.62	
	475.230	16.36	17.32	2.22	--	35.90	46.00	10.10	
	679.900	19.88	19.26	2.63	--	41.77	46.00	4.23	
	1031.000	49.82	22.60	4.49	37.34	39.57	74.00	34.43	PK
	1125.000	49.35	23.27	4.50	37.16	39.96	74.00	34.04	
	1200.000	49.51	23.70	4.51	37.00	40.72	74.00	33.28	
	1333.000	47.06	24.74	4.53	36.71	39.62	74.00	34.38	
	1498.000	51.44	25.80	4.55	36.30	45.49	74.00	28.51	
	1600.000	50.50	26.40	4.56	36.10	45.36	74.00	28.64	
	1031.000	34.82	22.60	4.49	37.34	24.57	54.00	29.43	AV
	1125.000	36.35	23.27	4.50	37.16	26.96	54.00	27.04	
	1200.000	36.51	23.70	4.51	37.00	27.72	54.00	26.28	
	1333.000	35.06	24.74	4.53	36.71	27.62	54.00	26.38	
	1498.000	39.44	25.80	4.55	36.30	33.49	54.00	20.51	
	1600.000	37.50	26.40	4.56	36.10	32.36	54.00	21.64	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

Test Mode : D-Sub 1680*1050@60Hz Adapter : Adapter #1

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	31.940	13.82	17.29	0.65	--	31.76	40.00	8.24	QP
	71.710	19.91	9.99	0.90	--	30.80	40.00	9.20	
	86.700	21.29	10.87	0.98	--	33.14	40.00	6.86	
	279.300	20.31	13.09	1.70	--	35.10	46.00	10.90	
	407.330	16.02	16.39	2.08	--	34.49	46.00	11.51	
	870.990	14.86	20.38	2.98	--	38.22	46.00	7.78	
	1041.000	44.32	22.69	4.49	37.33	34.17	74.00	39.83	PK
	1201.000	43.87	23.74	4.51	37.00	35.12	74.00	38.88	
	1393.000	43.61	25.16	4.54	36.55	36.76	74.00	37.24	
	1500.000	42.44	25.80	4.55	36.30	36.49	74.00	37.51	
	1716.000	43.00	26.71	4.57	35.92	38.36	74.00	35.64	
	1797.000	42.70	26.90	4.58	35.81	38.37	74.00	35.63	
	1041.000	33.32	22.69	4.49	37.33	23.17	54.00	30.83	AV
	1201.000	28.87	23.74	4.51	37.00	20.12	54.00	33.88	
	1393.000	26.61	25.16	4.54	36.55	19.76	54.00	34.24	
	1500.000	29.44	25.80	4.55	36.30	23.49	54.00	30.51	
	1716.000	34.00	26.71	4.57	35.92	29.36	54.00	24.64	
	1797.000	30.70	26.90	4.58	35.81	26.37	54.00	27.63	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

Test Mode : D-Sub 1680*1050@60Hz Adapter : Adapter #1

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	87.230	21.33	10.88	0.98	--	33.19	40.00	6.81	QP
	203.630	22.00	9.94	1.46	--	33.40	43.50	10.10	
	272.000	21.00	12.86	1.68	--	35.54	46.00	10.46	
	347.190	22.30	15.04	1.91	--	39.25	46.00	6.75	
	619.760	17.46	18.46	2.50	--	38.42	46.00	7.58	
	681.840	18.41	19.30	2.63	--	40.34	46.00	5.66	
	1044.000	51.62	22.69	4.49	37.32	41.48	74.00	32.52	PK
	1200.000	51.51	23.70	4.51	37.00	42.72	74.00	31.28	
	1333.000	49.06	24.74	4.53	36.71	41.62	74.00	32.38	
	1600.000	52.50	26.40	4.56	36.10	47.36	74.00	26.64	
	1799.000	49.35	26.90	4.58	35.81	45.02	74.00	28.98	
	1921.000	46.54	27.60	4.72	35.68	43.18	74.00	30.82	
	1044.000	40.62	22.69	4.49	37.32	30.48	54.00	23.52	AV
	1200.000	35.51	23.70	4.51	37.00	26.72	54.00	27.28	
	1333.000	30.06	24.74	4.53	36.71	22.62	54.00	31.38	
	1600.000	33.50	26.40	4.56	36.10	28.36	54.00	25.64	
	1799.000	39.35	26.90	4.58	35.81	35.02	54.00	18.98	
	1921.000	36.54	27.60	4.72	35.68	33.18	54.00	20.82	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	48.430	22.54	9.02	0.77	--	32.33	40.00	7.67	QP
	86.700	23.79	10.87	0.98	--	35.64	40.00	4.36	
	163.860	18.92	10.20	1.30	--	30.42	43.50	13.08	
	279.290	25.03	13.09	1.70	--	39.82	46.00	6.18	
	487.840	15.61	17.46	2.24	--	35.31	46.00	10.69	
	677.960	18.95	19.22	2.63	--	40.80	46.00	5.20	
	1041.000	50.32	22.69	4.49	37.33	40.17	74.00	33.83	PK
	1201.000	49.87	23.74	4.51	37.00	41.12	74.00	32.88	
	1334.000	49.86	24.78	4.53	36.71	42.46	74.00	31.54	
	1467.000	49.89	25.60	4.55	36.36	43.68	74.00	30.32	
	1600.000	51.16	26.40	4.56	36.10	46.02	74.00	27.98	
	1716.000	49.00	26.71	4.57	35.92	44.36	74.00	29.64	
	1041.000	38.32	22.69	4.49	37.33	28.17	54.00	25.83	AV
	1201.000	33.87	23.74	4.51	37.00	25.12	54.00	28.88	
	1334.000	37.86	24.78	4.53	36.71	30.46	54.00	23.54	
	1467.000	37.89	25.60	4.55	36.36	31.68	54.00	22.32	
	1600.000	41.16	26.40	4.56	36.10	36.02	54.00	17.98	
	1716.000	39.00	26.71	4.57	35.92	34.36	54.00	19.64	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	86.700	23.79	10.87	0.98	--	35.64	40.00	4.36	QP
	122.150	23.47	10.97	1.14	--	35.58	43.50	7.92	
	182.290	23.05	9.97	1.38	--	34.40	43.50	9.10	
	270.560	23.38	12.82	1.68	--	37.88	46.00	8.12	
	488.810	15.94	17.49	2.24	--	35.67	46.00	10.33	
	582.900	18.48	18.11	2.43	--	39.02	46.00	6.98	
	1125.000	52.35	23.27	4.50	37.16	42.96	74.00	31.04	PK
	1233.000	50.07	23.98	4.52	36.94	41.63	74.00	32.37	
	1286.000	50.80	24.40	4.53	36.82	42.91	74.00	31.09	
	1396.000	49.57	25.16	4.54	36.55	42.72	74.00	31.28	
	1600.000	53.50	26.40	4.56	36.10	48.36	74.00	25.64	
	1794.000	49.57	26.88	4.58	35.82	45.21	74.00	28.79	
	1125.000	40.35	23.27	4.50	37.16	30.96	54.00	23.04	AV
	1233.000	40.07	23.98	4.52	36.94	31.63	54.00	22.37	
	1286.000	38.80	24.40	4.53	36.82	30.91	54.00	23.09	
	1396.000	38.57	25.16	4.54	36.55	31.72	54.00	22.28	
	1600.000	45.50	26.40	4.56	36.10	40.36	54.00	13.64	
	1794.000	41.57	26.88	4.58	35.82	37.21	54.00	16.79	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	30.000	12.90	18.30	0.63	31.83	40.00	8.17
	59.400	24.10	9.11	0.83	34.04	40.00	5.96
	98.870	26.43	11.31	1.03	38.77	43.50	4.73
	148.500	22.30	10.44	1.23	33.97	43.50	9.53
	324.880	25.45	14.38	1.84	41.67	46.00	4.33
	385.990	24.29	16.00	2.02	42.31	46.00	3.69
Vertical	60.070	21.74	9.14	0.84	31.72	40.00	8.28
	89.170	18.67	10.96	0.99	30.62	43.50	12.88
	149.310	25.01	10.43	1.24	36.68	43.50	6.82
	274.440	22.91	12.94	1.69	37.54	46.00	8.46
	446.130	18.96	16.92	2.16	38.04	46.00	7.96
	742.500	20.10	19.98	2.78	42.86	46.00	3.14

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	59.400	24.10	9.11	0.83	--	34.04	40.00	5.96	QP
	149.310	25.08	10.43	1.24	--	36.75	43.50	6.75	
	268.620	26.29	12.74	1.66	--	40.69	46.00	5.31	
	345.250	24.44	15.00	1.90	--	41.34	46.00	4.66	
	593.570	21.02	18.17	2.44	--	41.63	46.00	4.37	
	742.500	17.40	19.98	2.78	--	40.16	46.00	5.84	
	1075.000	53.81	22.92	4.50	37.26	43.97	74.00	30.03	PK
	1250.000	51.57	24.10	4.52	36.90	43.29	74.00	30.71	
	1365.000	52.94	24.98	4.54	36.62	45.84	74.00	28.16	
	1595.000	49.77	26.36	4.56	36.11	44.58	74.00	29.42	
	1720.000	47.46	26.71	4.57	35.92	42.82	74.00	31.18	
	1850.000	46.84	27.17	4.64	35.75	42.90	74.00	31.10	
	1075.000	47.81	22.92	4.50	37.26	37.97	54.00	16.03	AV
	1250.000	36.57	24.10	4.52	36.90	28.29	54.00	25.71	
	1365.000	36.94	24.98	4.54	36.62	29.84	54.00	24.16	
	1595.000	37.77	26.36	4.56	36.11	32.58	54.00	21.42	
	1720.000	37.46	26.71	4.57	35.92	32.82	54.00	21.18	
	1850.000	36.84	27.17	4.64	35.75	32.90	54.00	21.10	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	60.070	25.57	9.14	0.84	--	35.55	40.00	4.45	QP
	89.170	23.36	10.96	0.99	--	35.31	43.50	8.19	
	149.310	24.83	10.43	1.24	--	36.50	43.50	7.00	
	269.590	23.19	12.78	1.66	--	37.63	46.00	8.37	
	593.570	20.36	18.17	2.44	--	40.97	46.00	5.03	
	742.000	18.00	19.98	2.78	--	40.76	46.00	5.24	
	1080.000	49.22	22.95	4.50	37.25	39.42	74.00	34.58	PK
	1185.000	49.35	23.62	4.51	37.04	40.44	74.00	33.56	
	1315.000	52.22	24.62	4.53	36.75	44.62	74.00	29.38	
	1520.000	43.62	25.96	4.55	36.24	37.89	74.00	36.11	
	1600.000	48.54	26.40	4.56	36.10	43.40	74.00	30.60	
	1760.000	51.78	26.81	4.58	35.86	47.31	74.00	26.69	
	1080.000	45.22	22.95	4.50	37.25	35.42	54.00	18.58	AV
	1185.000	37.35	23.62	4.51	37.04	28.44	54.00	25.56	
	1315.000	39.22	24.62	4.53	36.75	31.62	54.00	22.38	
	1520.000	32.62	25.96	4.55	36.24	26.89	54.00	27.11	
	1600.000	38.54	26.40	4.56	36.10	33.40	54.00	20.60	
	1760.000	39.78	26.81	4.58	35.86	35.31	54.00	18.69	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	30.000	14.60	18.30	0.63	--	33.53	40.00	6.47	QP
	59.300	23.51	9.09	0.83	--	33.43	40.00	6.57	
	148.500	24.90	10.44	1.23	--	36.57	43.50	6.93	
	201.690	23.04	9.87	1.45	--	34.36	43.50	9.14	
	346.220	22.19	15.00	1.91	--	39.10	46.00	6.90	
	594.100	19.51	18.17	2.44	--	40.12	46.00	5.88	
	1075.000	47.81	22.92	4.50	37.26	37.97	74.00	36.03	PK
	1250.000	44.57	24.10	4.52	36.90	36.29	74.00	37.71	
	1365.000	43.94	24.98	4.54	36.62	36.84	74.00	37.16	
	1520.000	35.65	25.96	4.55	36.24	29.92	74.00	44.08	
	1665.000	38.06	26.56	4.57	36.00	33.19	74.00	40.81	
	1760.000	39.87	26.81	4.58	35.86	35.40	74.00	38.60	
	1075.000	41.81	22.92	4.50	37.26	31.97	54.00	22.03	AV
	1250.000	32.57	24.10	4.52	36.90	24.29	54.00	29.71	
	1365.000	27.94	24.98	4.54	36.62	20.84	54.00	33.16	
	1520.000	21.65	25.96	4.55	36.24	15.92	54.00	38.08	
	1665.000	27.06	26.56	4.57	36.00	22.19	54.00	31.81	
	1760.000	29.87	26.81	4.58	35.86	25.40	54.00	28.60	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	89.170	19.84	10.96	0.99	--	31.79	43.50	11.71	QP
	149.310	25.86	10.43	1.24	--	37.53	43.50	5.97	
	268.620	23.99	12.74	1.66	--	38.39	46.00	7.61	
	446.130	20.80	16.92	2.16	--	39.88	46.00	6.12	
	594.000	19.61	18.17	2.44	--	40.22	46.00	5.78	
	742.950	17.85	19.98	2.78	--	40.61	46.00	5.39	
	1080.000	50.22	22.95	4.50	37.25	40.42	74.00	33.58	PK
	1185.000	49.35	23.62	4.51	37.04	40.44	74.00	33.56	
	1315.000	49.22	24.62	4.53	36.75	41.62	74.00	32.38	
	1500.000	45.93	25.80	4.55	36.30	39.98	74.00	34.02	
	1600.000	51.54	26.40	4.56	36.10	46.40	74.00	27.60	
	1760.000	52.78	26.81	4.58	35.86	48.31	74.00	25.69	
	1080.000	40.22	22.95	4.50	37.25	30.42	54.00	23.58	AV
	1185.000	35.35	23.62	4.51	37.04	26.44	54.00	27.56	
	1315.000	37.22	24.62	4.53	36.75	29.62	54.00	24.38	
	1500.000	36.93	25.80	4.55	36.30	30.98	54.00	23.02	
	1600.000	38.54	26.40	4.56	36.10	33.40	54.00	20.60	
	1760.000	44.78	26.81	4.58	35.86	40.31	54.00	13.69	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	89.170	17.65	10.96	0.99	--	29.60	43.50	13.90	QP
	149.310	22.35	10.43	1.24	--	34.02	43.50	9.48	
	207.510	25.20	10.11	1.47	--	36.78	43.50	6.72	
	269.590	26.59	12.78	1.66	--	41.03	46.00	4.97	
	593.570	20.53	18.17	2.44	--	41.14	46.00	4.86	
	742.500	17.50	19.98	2.78	--	40.26	46.00	5.74	
	1075.000	50.81	22.92	4.50	37.26	40.97	74.00	33.03	PK
	1180.000	50.20	23.59	4.51	37.05	41.25	74.00	32.75	
	1365.000	50.94	24.98	4.54	36.62	43.84	74.00	30.16	
	1465.000	45.89	25.60	4.55	36.37	39.67	74.00	34.33	
	1665.000	45.06	26.56	4.57	36.00	40.19	74.00	33.81	
	1760.000	47.87	26.81	4.58	35.86	43.40	74.00	30.60	
	1075.000	45.81	22.92	4.50	37.26	35.97	54.00	18.03	AV
	1180.000	37.20	23.59	4.51	37.05	28.25	54.00	25.75	
	1365.000	37.94	24.98	4.54	36.62	30.84	54.00	23.16	
	1465.000	28.89	25.60	4.55	36.37	22.67	54.00	31.33	
	1665.000	37.06	26.56	4.57	36.00	32.19	54.00	21.81	
	1760.000	36.87	26.81	4.58	35.86	32.40	54.00	21.60	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	66.100	26.00	9.57	0.88	--	36.45	40.00	3.55	QP
	98.870	24.60	11.31	1.03	--	36.94	43.50	6.56	
	149.310	25.14	10.43	1.24	--	36.81	43.50	6.69	
	276.800	19.50	13.02	1.69	--	34.21	46.00	11.79	
	439.340	19.60	16.82	2.14	--	38.56	46.00	7.44	
	672.400	15.10	19.15	2.61	--	36.86	46.00	9.14	
	1080.000	53.22	22.95	4.50	37.25	43.42	74.00	30.58	PK
	1185.000	54.35	23.62	4.51	37.04	45.44	74.00	28.56	
	1315.000	50.22	24.62	4.53	36.75	42.62	74.00	31.38	
	1600.000	48.54	26.40	4.56	36.10	43.40	74.00	30.60	
	1760.000	46.78	26.81	4.58	35.86	42.31	74.00	31.69	
	1985.000	39.32	28.00	4.78	35.62	36.48	74.00	37.52	
	1080.000	47.22	22.95	4.50	37.25	37.42	54.00	16.58	AV
	1185.000	40.35	23.62	4.51	37.04	31.44	54.00	22.56	
	1315.000	33.22	24.62	4.53	36.75	25.62	54.00	28.38	
	1600.000	34.54	26.40	4.56	36.10	29.40	54.00	24.60	
	1760.000	32.78	26.81	4.58	35.86	28.31	54.00	25.69	
	1985.000	30.32	28.00	4.78	35.62	27.48	54.00	26.52	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	48.430	20.97	9.02	0.77	--	30.76	40.00	9.24	QP
	80.440	22.61	10.56	0.95	--	34.12	40.00	5.88	
	87.230	23.84	10.88	0.98	--	35.70	40.00	4.30	
	122.150	20.57	10.97	1.14	--	32.68	43.50	10.82	
	271.530	25.65	12.86	1.68	--	40.19	46.00	5.81	
	349.130	18.15	15.09	1.91	--	35.15	46.00	10.85	
	1041.000	50.32	22.69	4.49	37.33	40.17	70.00	29.83	PK
	1120.000	48.81	23.24	4.50	37.17	39.38	70.00	30.62	
	1264.000	48.32	24.23	4.52	36.86	40.21	70.00	29.79	
	1334.000	49.86	24.78	4.53	36.71	42.46	70.00	27.54	
	1467.000	49.89	25.60	4.55	36.36	43.68	70.00	26.32	
	1600.000	51.16	26.40	4.56	36.10	46.02	70.00	23.98	
	1041.000	37.32	22.69	4.49	37.33	27.17	50.00	22.83	AV
	1120.000	33.81	23.24	4.50	37.17	24.38	50.00	25.62	
	1264.000	34.32	24.23	4.52	36.86	26.21	50.00	23.79	
	1334.000	35.86	24.78	4.53	36.71	28.46	50.00	21.54	
	1467.000	38.89	25.60	4.55	36.36	32.68	50.00	17.32	
	1600.000	41.16	26.40	4.56	36.10	36.02	50.00	13.98	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	48.430	22.68	9.02	0.77	--	32.47	40.00	7.53	QP
	87.230	23.85	10.88	0.98	--	35.71	40.00	4.29	
	279.290	18.59	13.09	1.70	--	33.38	46.00	12.62	
	475.230	16.36	17.32	2.22	--	35.90	46.00	10.10	
	679.900	17.88	19.26	2.63	--	39.77	46.00	6.23	
	872.930	14.22	20.37	2.98	--	37.57	46.00	8.43	
	1031.000	51.82	22.60	4.49	37.34	41.57	70.00	28.43	PK
	1200.000	51.51	23.70	4.51	37.00	42.72	70.00	27.28	
	1286.000	50.80	24.40	4.53	36.82	42.91	70.00	27.09	
	1799.000	50.35	26.90	4.58	35.81	46.02	70.00	23.98	
	1840.000	47.75	27.12	4.64	35.77	43.74	70.00	26.26	
	1997.000	47.35	28.10	4.78	35.61	44.62	70.00	25.38	
	1031.000	41.82	22.60	4.49	37.34	31.57	50.00	18.43	AV
	1200.000	38.51	23.70	4.51	37.00	29.72	50.00	20.28	
	1286.000	37.80	24.40	4.53	36.82	29.91	50.00	20.09	
	1799.000	38.35	26.90	4.58	35.81	34.02	50.00	15.98	
	1840.000	38.75	27.12	4.64	35.77	34.74	50.00	15.26	
	1997.000	37.35	28.10	4.78	35.61	34.62	50.00	15.38	

TEST ENGINEER: RAVEN JIN

EUT : LCD Monitor Temperature : 22°C

Model No. : IPS226TX Humidity : 60%RH

Serial No. : 011NDUND1494 Date of Test : Feb 17, 2011

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

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	65.890	20.66	9.55	0.87	31.08	40.00	8.92
	149.310	22.35	10.43	1.24	34.02	43.50	9.48
	207.510	25.20	10.11	1.47	36.78	43.50	6.72
	269.590	26.59	12.78	1.66	41.03	46.00	4.97
	593.570	16.53	18.17	2.44	37.14	46.00	8.86
	742.950	19.52	19.98	2.78	42.28	46.00	3.72
Vertical	65.890	25.25	9.55	0.87	35.67	40.00	4.33
	149.310	20.14	10.43	1.24	31.81	43.50	11.69
	277.350	21.91	13.05	1.69	36.65	46.00	9.35
	439.340	14.60	16.82	2.14	33.56	46.00	12.44
	672.140	14.72	19.15	2.61	36.48	46.00	9.52
	870.990	12.79	20.38	2.98	36.15	46.00	9.85

TEST ENGINEER: RAVEN JIN

5 DEVIATION TO TEST SPECIFICATIONS

None.

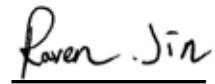
6 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Specifications (mm)	Manufacturer	Location
Gasket	--	36*21*1	EXPAN Electronics SUZHOU Co., Ltd.	See Internal Photos Figure 10
Gasket	--	9*15*15	EXPAN Electronics SUZHOU Co., Ltd.	See Internal Photos Figure 10
Aluminum Tape	T-308	50*30	EXPAN Electronics SUZHOU Co., Ltd.	See Internal Photos Figure 11

Note: We had required the applicant and manufacturer that all electrical and mechanical devices employed for spurious radiation suppression, including any modifications made during certification testing, must be incorporated in each unit marked

TEST ENGINEER:



(RAVEN JIN)