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

LCD Monitor

Model No.: L1719SS
Serial No.: E07010602

FCC ID : BEJL1753SS

Prepared For : LG Electronics U.S.A Inc.
2000 Millbrook Dr.Lincolnshire,
IL 60069 United States

Prepared By : Audix Technology (Shanghai) Co., Ltd.
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Report No. : ACI-F07005
Date of Test : Jan 17, 2007
Date of Report : Jan 23, 2007

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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. : L1719SS
		(B) Serial No. : E07010602
		(C) Power Supply : 120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B 2006.10 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: L1719SS; S/N: E07010602) which was tested in 10m anechoic chamber on Jan 17, 2007 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 : Jan 17, 2007

Prepared By: Kathy Wang 2007.1.30
KATHY WANG / Assistant

Reviewer: Sammy Chen 2007.01.30
SAMMY CHEN / Deputy Assistant Manager

AUDIX®
For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Approved Signatory: 2007.01.30
Authorized Signature(s) BYRON KWO / 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 / Test Item	Test Standard	Results	Meets Limit
EMISSION			
Conducted Disturbance At main terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B 2006.10 AND ANSI C63.4-2003	Pass	15.107(a) Class B
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B 2006.10 AND ANSI C63.4-2003	Pass	15.109(a) Class B

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	LCD Monitor
Type of EUT	:	☑ Production ☐ Pre-product ☐ Pro-type
Model No.	:	L1719SS
Serial No.	:	E07010602
Applicant	:	LG Electronics U.S.A Inc. 2000 Millbrook Dr.Lincolnshire, IL 60069 United States
Manufacturer	:	LG Electronics Nanjing Display Co., Ltd. No.346, YaoXin Road, Economic&Technical Development Zone, Nanjing, China
LCD Panel	:	Manufacturer: LG PHILIPS LCD M/N : 1906CP9727437 G31
D-Sub Cable	:	Shielded, Detachable, 1.8m, with two cores

Remark:

The EUT is a LCD Monitor which input/output ports as follows:

Back View:

(1) One D-Sub Input Port — Connected with PC

(2) One Power Port — Connected with Power

2.2 Supported Simulators

2.2.1 PC

Manufacturer	:	DELL
Model Number	:	DCSM
CPU	:	2KZB22X
Power Cable	:	Unshielded, detachable ,1.8m
Certificate	:	FCC DoC, VCCI, CE/EMC, C-Tick, CCC, NOM, CSA, UL

2.2.2 Keyboard

Manufacturer	:	DELL
Model Number	:	SK-8115
Data Cable	:	Unshielded, detachable ,1.9m
Certificate	:	VCCI, FCC DoC, CE/EMC, GS, C-Tick

2.2.3 Mouse

Manufacturer	:	DELL
Model Number	:	MO55UOA
Serial Number	:	F1800IVY
Data Cable	:	Unshielded ,Undetachable, 1.85m.
Certificate	:	FCC DoC, VCCI, CE/EMC, GS, UL, C-Tick

2.2.4 Printer

Manufacturer	:	HP
Model Number	:	C4245A
Serial Number	:	CN2Q213574
Data Cable	:	Unshielded, detachable, 1.85m
Certificate	:	FCC DoC

2.2.5 Modem

Manufacturer	:	Aceex
Model Number	:	1414
Serial Number	:	980013576
Data Cable	:	Unshielded, Detachable, 1.8m
Certificate	:	FCC ID : IFAXDM1414

2.2.6 VGA Card #1

Manufacturer	:	ASUS
Model Number	:	EN6200TC256/T/64M/TWWOW
Serial Number	:	68COAG111886
Certificate	:	FCC DoC, CE/EMC

2.2.7 VGA Card #2

Manufacturer	:	ASUS
Model Number	:	EN6600SILEMCER/TD/128M/A
Serial Number	:	67COAIC65478
Certificate	:	FCC DoC, CE/EMC

2.3 Description of Test Facility

Site Description (10m Semi-Anechoic Chamber)	:	Sep 13, 2006 file on Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	Audix Technology (Wujiang) Co., Ltd.
Site Location	:	No.1289, Jiangxing East Rd., The EasternPart of Wujiang Economic Development Zone, JiangSu, China 215200
FCC registration Number	:	252588

Audix Technology(Shanghai)Co., Ltd

Accredited by NVLAP, Lab Code : 200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty: U = 1.84dB
Radiated Emission Expanded Uncertainty : U = 2.96dB

3 CONDUCTED EMISSION TEST

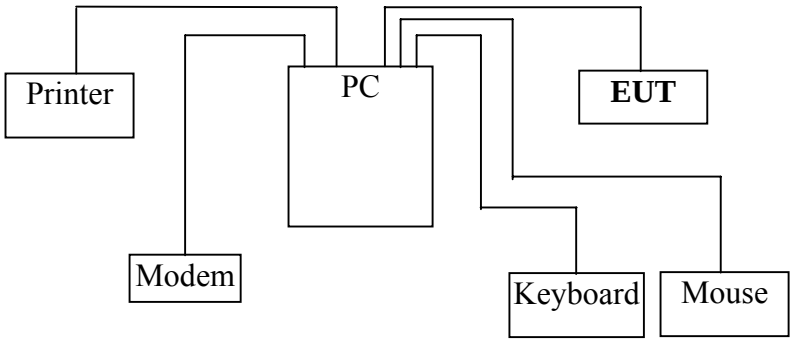
3.1 Test Equipment

The following test equipment are used during the conducted emission test in a shielded room:

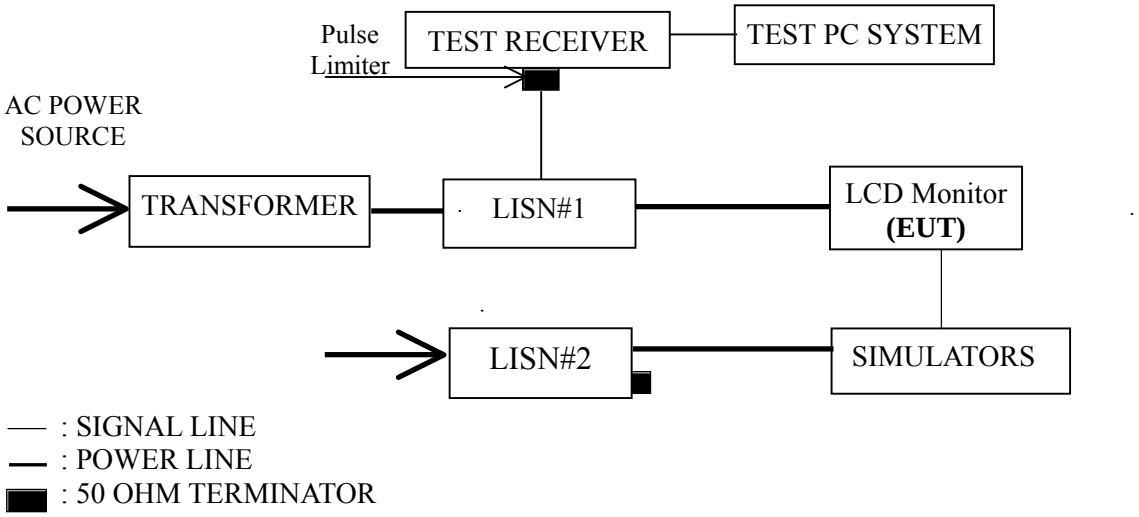
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100352	Mar 29, 2006	Mar 29, 2007
2.	Line Impedance Stabilization Network (LISN #1)	Kyoritsu	KNW-407	8-1793-4	Oct 26, 2006	Oct 26, 2007
3.	Line Impedance Stabilization Network (LISN #2)	Kyoritsu	KNW-407	8-1793-3	Oct 26, 2006	Oct 26, 2007
4.	50Ω Coaxial Switch	ANRITSU	MP59B	6200547934	Aug 20, 2006	Feb 20, 2007
5.	Pulse Limiter	R&S	ESH3-Z2	100605	Aug 20, 2006	Feb 20, 2007
6.	Software	Audix	E3	RK-000323	--	--

3.2 Block Diagram of Test Setup

3.2.1 EUT & Supported Simulators



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
NOTE 3 – If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the simulators (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 simulators as shown in Sec. 3.2.

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

3.5.3 Set the contrast control to maximum.

3.5.4 Set the brightness control to maximum or at raster extinction if raster extinction occurs at less than maximum brightness.

3.5.5 For color monitors, use white letters on a black background to represent all color.

3.5.6 Select the worse case of positive or negative video if both alternatives are available.

3.5.7 Set character size and number of characters per line so that typically the greatest number of characters per screen is displayed.

3.5.8 For monitors with graphics capabilities, a pattern consisting of all scrolling Hs should be displayed. For monitors with text only capability, a pattern consisting of random text shall be displayed. If neither of the above is applied, use a typical display.

3.5.9 Set the EUT on the test modes in turn, and then test it.

3.5.10 The test modes are as follows:

VGA 800*600@75Hz	VGA 1024*768@75Hz	VGA 1280*1024@60Hz

3.6 Test Procedures

The EUT was connected to the power mains through a Line Impedance Stabilization Network (LISN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (VA & VB) 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 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
VGA 800*600@75Hz	P12
VGA 1024*768@75Hz	P13
VGA 1280*1024@60Hz	P14

NOTE 1 – Factor = Cable Loss + LISN Factor.
Cable Loss includes pulse limiter attenuator.
NOTE 2 – Emission Level = Meter Reading + Factor.
NOTE 3 – All readings are QP Values. “QP” means “Quasi-Peak” values.
NOTE 4 – If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.
NOTE 5 – The worst case is for VGA 1024*768@75Hz mode. The worst emission is detected at 0.29 MHz with corrected signal level of 48.308 (μV) (limit is 60.411 dB (μV)), when the VA of the EUT is connected to LISN.

EUT	:	LCD Monitor	Temperature	:	20℃
Model No.	:	L1719SS	Humidity	:	39%
Serial No.	:	E07010602	Date of Test	:	Jan 17, 2007
Test Mode	:	VGA 800*600@75Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.22	34.675	10.402	45.077	62.699	17.622
	0.30	37.008	10.393	47.401	60.323	12.922
	0.38	30.251	10.417	40.668	58.387	17.719
	0.49	27.183	10.447	37.630	56.186	18.556
	0.67	26.344	10.338	36.682	56.000	19.318
	28.15	30.100	10.652	40.752	60.000	19.248
VB	0.22	32.571	10.412	42.983	62.699	19.716
	0.29	**37.627**	**10.387**	**48.014**	**60.411**	**12.397**
	0.37	28.934	10.405	39.339	58.475	19.136
	0.49	27.504	10.437	37.941	56.186	18.245
	2.71	24.831	10.075	34.906	56.000	21.094
	17.47	26.245	10.412	36.657	60.000	23.343

TEST ENGINEER: Dio Yang
(DIO YANG)

EUT	:	LCD Monitor	Temperature	:	20℃
Model No.	:	L1719SS	Humidity	:	39%
Serial No.	:	E07010602	Date of Test	:	Jan 17, 2007
Test Mode	:	VGA 1024*768@75Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.22	34.286	10.402	44.688	62.699	18.011
	0.29	**37.913**	**10.395**	**48.308**	**60.411**	**12.103**
	0.37	31.389	10.415	41.804	58.475	16.671
	0.45	27.790	10.437	38.227	56.891	18.664
	1.94	24.802	9.972	34.774	56.000	21.226
	20.27	26.713	10.500	37.213	60.000	22.787
VB	0.30	37.102	10.385	47.487	60.367	12.880
	0.37	29.782	10.405	40.187	58.475	18.288
	0.49	27.560	10.437	37.997	56.186	18.189
	0.60	22.102	10.342	32.444	56.000	23.556
	1.57	23.166	10.074	33.240	56.000	22.760
	2.84	24.027	10.089	34.116	56.000	21.884

TEST ENGINEER: Dio Yang
(DIO YANG)

EUT	:	LCD Monitor	Temperature	:	20℃
Model No.	:	L1719SS	Humidity	:	39%
Serial No.	:	E07010602	Date of Test	:	Jan 17, 2007
Test Mode	:	VGA 1280*1024@60Hz			

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.30	37.082	10.393	47.475	60.367	12.892
	0.37	31.504	10.415	41.919	58.475	16.556
	0.45	30.623	10.437	41.060	56.935	15.875
	0.67	27.256	10.338	37.594	56.000	18.406
	1.94	26.447	9.972	36.419	56.000	19.581
	22.18	27.249	10.503	37.752	60.000	22.248
VB	**0.29**	**37.477**	**10.387**	**47.864**	**60.411**	**12.547**
	0.37	29.441	10.405	39.846	58.475	18.629
	0.45	28.273	10.427	38.700	56.935	18.235
	0.49	27.378	10.437	37.815	56.186	18.371
	2.84	22.910	10.089	32.999	56.000	23.001
	23.51	27.431	10.519	37.950	60.000	22.050

TEST ENGINEER: Dio Yang
(DIO YANG)

4 RADIATED EMISSION TEST

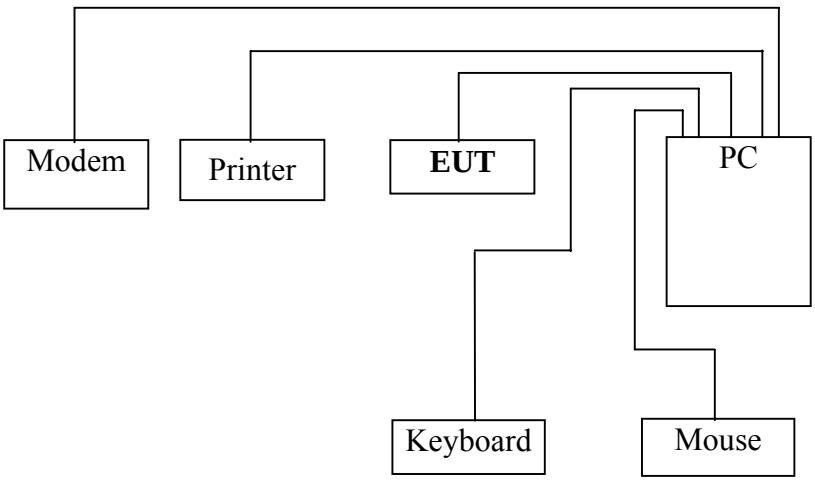
4.1 Test Equipment

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

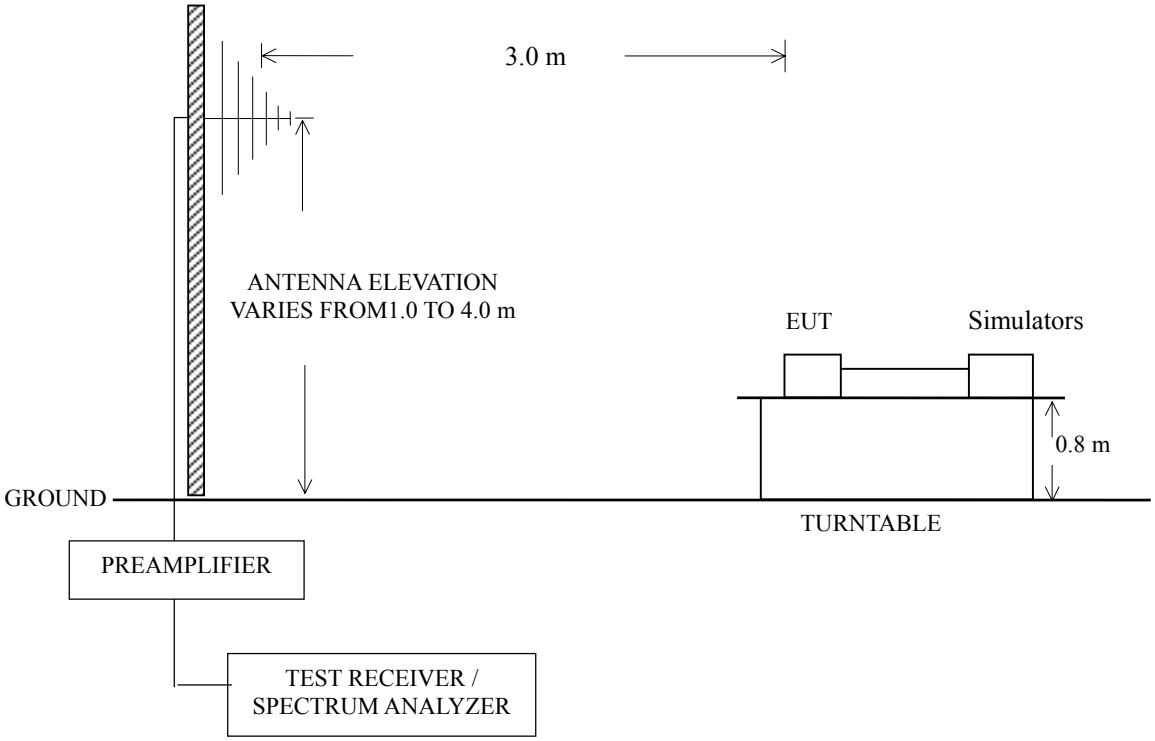
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ECSI	10351	Mar 29, 2006	Mar 29, 2007
2.	Preamplifier	Agilent	8447D	2944A10922	Sep 11, 2006	Mar 11, 2007
3.	Preamplifier	Agilent	8449B	3008A02234	Apr 18, 2006	Apr 18, 2007
4.	Bi-log Antenna	Schaffner	CBL6112D	22252	Apr 09, 2006	Apr 09, 2007
5.	Horn Antenna	EMCO	3115	62959	May 08, 2006	May 08, 2007
6.	Spectrum	Agilent	E7405A	MY45107030	Apr 27, 2006	Apr 27, 2007
7.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup

4.2.1 EUT and simulators



4.2.2 Radiated emission test setup



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

Frequency (MHz)	Distance (m)	Field strength limits	
		(μV/m)	dB (μV/m)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)
NOTE 2 - The tighter limit applies at the band edges.
NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4 Test Configuration

The configuration of the EUT and simulators 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 the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and simulators were placed on a turntable that is 0.8 meter above ground. The 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. The broadband antenna (Calibrated antenna) was used as receiving antenna below 1000MHz. The horn antenna was used as receiving antenna above 1000MHz. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. The broadband antenna (Calibrated Bilog Antenna) or the horn antenna was used as receiving antenna. 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 bandwidth of Test Receiver R&S ESCI was set at 120 kHz below 1GHz and The Spectrum E7405A was set at 1MHz above 1GHz.

The frequency range from 30 MHz to 2000 MHz was checked.

The frequency range from 1 GHz to 2 GHz was checked for VGA 1280*1024@60Hz mode.

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

The test modes are as follows:

VGA 800*600@75Hz	VGA 1024*768@75Hz	VGA 1280*1024@60Hz

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	Page
VGA 800*600@75Hz	P19
VGA 1024*768@75Hz	P20
VGA 1280*1024@60Hz	P21

NOTE 1 – Emission Level = Meter Reading + Factor.
NOTE 2 – Factor = Antenna Factor + Cable Loss.
NOTE 3 – The emission levels that are 20dB below the official limit are not reported.
NOTE 4 – All reading are Quasi-Peak values below 1GHz. and Average values equal or above 1GHz.
NOTE 5 – All the emissions (>1GHz) not reported are too low to be measured. Please refer to section Appendix I – 2 for the photos of testing setup.
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 VGA 800*600@75Hz mode. The worst emission at horizontal polarization was detected at 630.43 MHz with corrected signal level of 41.296dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.25 m height and the turntable was at 230°. The worst emission at vertical polarization was detected at 358.88 MHz with corrected signal level of 42.923 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.32 m height and the turntable was at 60°.

EUT	:	LCD Monitor	Temperature :	20℃
Model No.	:	L1719SS	Humidity :	43%
Serial No.	:	E07010602	Date of Test :	Jan 17, 2007
Test Mode	:	VGA 800*600@75Hz		

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	121.18	17.259	12.144	1.185	30.588	43.500	12.912
	358.83	18.241	15.100	2.123	35.464	46.000	10.536
	565.44	13.733	18.850	2.683	35.266	46.000	10.734
	630.43	**19.035**	**19.430**	**2.831**	**41.296**	**46.000**	**4.704**
	800.18	15.735	20.250	3.256	39.241	46.000	6.759
	853.53	10.512	20.533	3.351	34.396	46.000	11.604
Vertical	77.53	23.378	6.680	0.941	30.999	40.000	9.001
	334.58	19.904	14.324	2.051	36.279	46.000	9.721
	358.88	**25.700**	**15.100**	**2.123**	**42.923**	**46.000**	**3.077**
	395.69	18.758	16.050	2.225	37.033	46.000	8.967
	431.58	15.312	16.730	2.334	34.376	46.000	11.624
	800.18	15.404	20.250	3.256	38.910	46.000	7.090

TEST ENGINEER: Dio Yang
(DIO YANG)

EUT	:	LCD Monitor	Temperature :	20℃
Model No.	:	L1719SS	Humidity :	43%
Serial No.	:	E07010602	Date of Test :	Jan 17, 2007
Test Mode	:	VGA 1024*768@75Hz		

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	334.58	17.541	14.324	2.051	33.916	46.000	12.084
	497.80	16.000	17.860	2.506	36.366	46.000	9.634
	640.13	**17.300**	**19.510**	**2.869**	**39.679**	**46.000**	**6.321**
	807.94	15.412	20.383	3.272	39.067	46.000	6.933
	846.74	14.188	20.577	3.351	38.116	46.000	7.884
	885.54	11.105	20.735	3.423	35.263	46.000	10.737
Vertical	**32.53**	**17.800**	**16.643**	**0.586**	**35.029**	**40.000**	**4.971**
	72.68	26.438	6.074	0.899	33.411	40.000	6.589
	158.04	23.457	9.917	1.352	34.726	43.500	8.774
	373.38	21.178	15.366	2.161	38.705	46.000	7.295
	497.54	17.110	17.860	2.506	37.476	46.000	8.524
	807.94	14.998	20.383	3.272	38.653	46.000	7.347

TEST ENGINEER: Dio Yang
(DIO YANG)

EUT	:	LCD Monitor	Temperature :	20℃
Model No.	:	L1719SS	Humidity :	43%
Serial No.	:	E07010602	Date of Test :	Jan 17, 2007
Test Mode	:	VGA 1280*1024@60Hz		

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	33.88	8.338	15.877	0.601	24.816	40.000	15.184
	145.43	19.112	10.630	1.303	31.045	43.500	12.455
	565.44	14.253	18.850	2.683	35.786	46.000	10.214
	630.43	**18.621**	**19.430**	**2.831**	**40.882**	**46.000**	**5.118**
	640.13	15.091	19.510	2.869	37.470	46.000	8.530
	800.18	14.384	20.250	3.256	37.890	46.000	8.110
Vertical	**77.53**	**22.815**	**6.680**	**0.941**	**30.436**	**40.000**	**9.564**
	193.93	19.892	9.213	1.533	30.638	43.500	12.862
	387.93	13.292	15.727	2.198	31.217	46.000	14.783
	431.58	15.816	16.730	2.334	34.880	46.000	11.120
	630.43	12.168	19.430	2.831	34.429	46.000	11.571
	800.18	11.719	20.250	3.256	35.225	46.000	10.775

TEST ENGINEER: Dio Yang
(DIO YANG)

5 DEVIATION TO TEST SPECIFICATIONS

None

6 DEBUG DESCRIPTION

Name	M/N	Specifications (mm)	Manufacturer	Location
Aluminum foil	T-308	50*30	DAEHUNG SUBSIDIARY MATERIALS.	Reference to internal photos Figure 2, 11, 12