FCC TEST REPORT

According to

47 CFR, Part 2, Part 15 and CISPR PUB. 22

Applicant	:	LG Electronics USA
Address	:	1000 Sylvan Avenue Englewood Cliffs New Jersey United States
Manufacturer	:	LG Electronics Nanjing Display Co., Ltd.
Address	:	No.346,Yaoxin Road Economic & Technical Development Zone Nanjing China
Equipment	:	LCD Monitor
Model No.	:	E1941SX
FCC ID	:	BEJE1941SX
Trade Name	:	LG

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of ***Cerpass Technology Corp.*** the test report shall not be reproduced except in full.
- The test report must not be used by the clients to claim product certification approval by ***NVLAP*** or any agency of the Government.

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Document history

Attachment No.	Date	Description
SEFD1011052	Nov 25, 2010	First edition

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I **HEREBY** CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 – 2003** and the energy emitted by this equipment was ***passed*** **CISPR PUB. 22 and FCC Part 15 in** both radiated and conducted emission class B limits. Testing was carried out on Nov 24, 2010 at ***Cerpass Technology Corp.***

Documented By:

Sophie Li

Sophie Li/ Administration

Approved By:

Clinton Kao

Clinton Kao/ Technical director

1. Summary of Test Procedure and Test Result

Test Item	Normative References	Test Result
Conducted Emission	ANSI C63.4-2003 FCC Part 15 Subpart B	PASS
Radiated Emission	ANSI C63.4-2003 FCC Part 15 Subpart B	PASS

2. Test Configuration of Equipment under Test

2.1. Feature of Equipment under Test

LCD Monitor	Model No:	E1941SX
VGA Cable	Shielded, 1.8m, with two ferrite cores bonded	
VGA Cable	Shielded, 1.8m	
Power Supply cable	Non-Shielded, 1.8m	
Note：The VGA Cable are alternative on selling.		

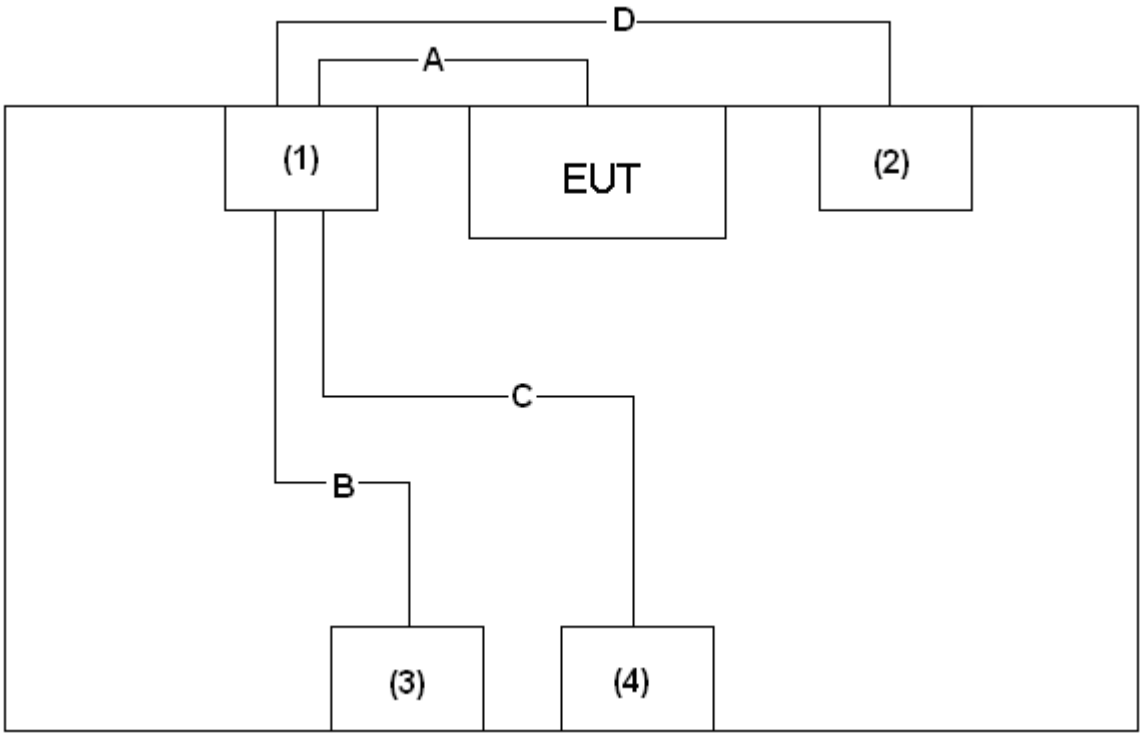
2.2. Test Manner

Test Software	
a	During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
b	The complete test system included the PC, USB Mouse, USB Keyboard, Printer and EUT for EMI test.
c	During the test, setup up the EUT and all system, turn on the power of all Equipments, run the EMC test software “H”, set the contrast control to maximum, set the brightness control to maximum, use white letters on a black background to represent all colors, make the EUT at the test mode and it is normal operation, and then test.
The pre-test modes	
	Test Mode 1: Full system (VGA mode 1366*768@60Hz)
	Test Mode 2: Full system (VGA mode 1024*768@75Hz)
	Test Mode 3: Full system (VGA mode 800*600@60Hz)
Select the worst case of the pre-test modes as the final test mode	
	Test Mode 1: Full system (VGA mode 1366*768@60Hz)

2.3. Description of Test System

No	Device	Manufacturer	Model No.	Description
1	PC	Dell	DCSM	N/A
2	Printer	Epson	EX3	N/A
3	USB Keyboard	DELL	SK-8115	N/A
4	USB Mouse	DELL	G0K02XYK	N/A

2.4. Connection Diagram of Test System



No	Cable	Quantity	Description
A	VGA Cable	1	Shielded, 1.8m
B	USB Cable	1	Shielded, 1.8m, with one ferrite core bonded
C	USB Cable	1	Shielded, 1.5m
D	Parallel Cable	1	Shielded, 1.8m

2.5. General Information of Test

Test Site:	Cerpass Technology Corp.
Performand Location :	No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China
NVLAP LAB Code :	200814-0
FCC Registration Number :	916572, 331395
IC Registration Number :	7290A-1, 7290A-2
VCCI Registration Number :	T-343 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test below 1GHz G-227 for Radiated emission test above 1GHz
Frequency Range Investigated :	Conducted Emission Test: from 150kHz to 30 MHz Radiated Emission Test: from 30 MHz to 1,000 MHz Radiated Emission Test: from 1GHz to 18GHz
Test Distance :	The test distance of radiated emission below 1GHz from antenna to EUT is 3 M. The test distance of radiated emission above 1GHz from antenna to EUT is 3 M.

Laboratory accreditation

NVLAP LAB CODE 200814-0

2.6. Measurement Uncertainty

Conducted Emission		
The measurement uncertainty is evaluated as ± 2.71 dB.		
Radiated Emission		
(30MHz -1000MHz)	Horizontal	The measurement uncertainty is evaluated as ±3.89dB.
	Vertical	The measurement uncertainty is evaluated as ± 3.59 dB.
(1G-18GHz)	Horizontal	The measurement uncertainty is evaluated as ± 2.31 dB.
	Vertical	The measurement uncertainty is evaluated as ± 2.15 dB.

3. Test of Conducted Emission

3.1. Test Limit

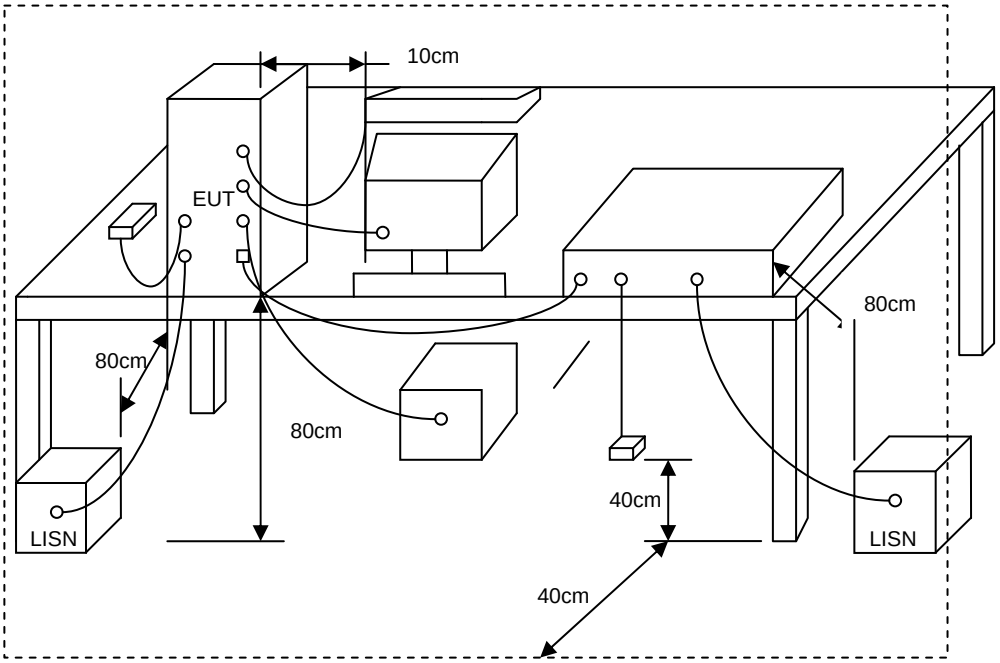
Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

3.2. Test Procedures

a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.
d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched.
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

3.3. Typical test Setup

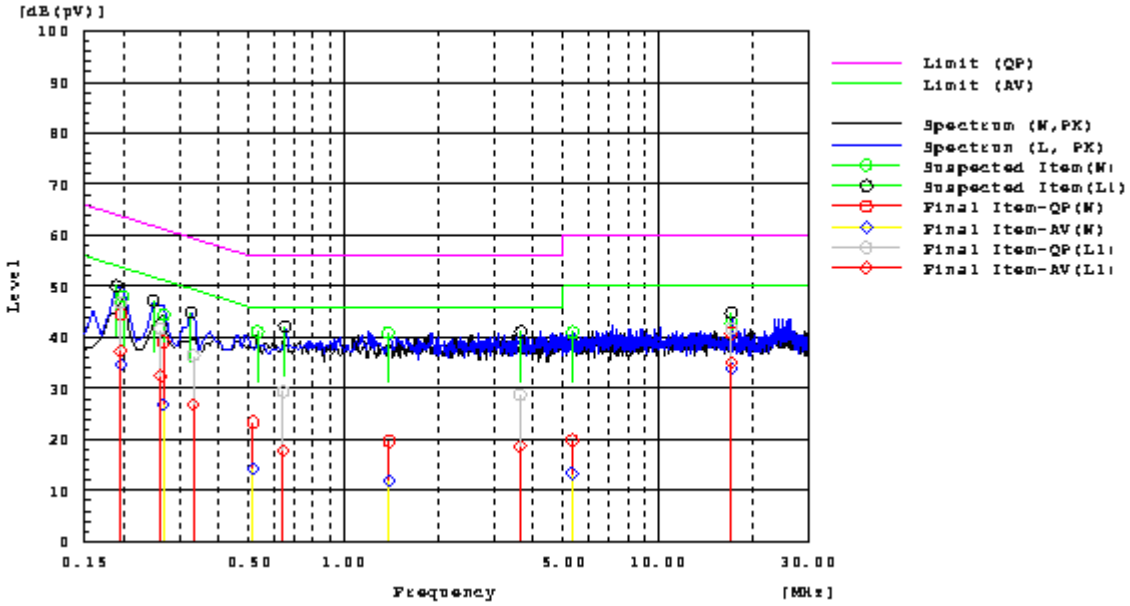


3.4. Measurement equipment

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date
Test Receiver	R&S	ESCI	100565	2010.01.15
AMN	R&S	ESH2-Z5	100182	2010.06.23
Two-Line V-Network	R&S	ENV216	100325	2010.04.18
ISN	FCC	FCC-TLISN-T2-02	20379	2010.06.23
ISN	FCC	FCC-TLISN-T4-02	20380	2010.06.23
ISN	FCC	FCC-TLISN-T8-02	20381	2010.06.23
Current Probe	R&S	EZ-17	100303	2010.06.23
Attenuator	R&S	ESH3-Z2	100529	2010.01.11
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-004	2010.08.14

3.5. Test Result and Data

Test Mode :	Mode 1: Full system (VGA mode 1366*768@60Hz)		
AC Power :	AC 120V/60Hz	Phase :	L&N
EUT :	LCD Monitor	Model No.:	E1941SX
Temperature :	22°C	Humidity :	50%
Pressur(mbar) :	1002	Date :	2010/11/23



Frequency MHz	Line Phase	Reading dB(uV) QP	Reading dB(uV) AV	Factor dB	Level dB(uV) QP	Level dB(uV) AV	Limit dB(uV) QP	Limit dB(uV) AV	Margin dB QP	Margin dB AV	Pass/Fail
0.19491	L1	26.9	17.5	19.9	46.8	37.4	63.8	53.8	17.0	16.4	Pass
0.26097	L1	21.8	12.5	19.9	41.7	32.4	61.4	51.4	19.7	19.0	Pass
0.33197	L1	16.5	6.9	19.9	36.4	26.8	59.4	49.4	23.0	22.6	Pass
0.64208	L1	9.6	-2.0	19.8	29.4	17.8	56.0	46.0	26.6	28.2	Pass
17.0824	L1	22.1	15.3	19.7	41.8	35.0	60.0	50.0	18.2	15.0	Pass
3.63424	L1	9.1	-1.0	19.7	28.8	18.7	56.0	46.0	27.2	27.3	Pass
0.19598	N	25.1	15.3	19.5	44.6	34.8	63.8	53.8	19.2	19.0	Pass
0.26679	N	19.6	7.4	19.5	39.1	26.9	61.2	51.2	22.1	24.3	Pass
0.51521	N	3.9	-5.4	19.5	23.4	14.1	56.0	46.0	32.6	31.9	Pass
5.3343	N	0.2	-6.3	19.7	19.9	13.4	60.0	50.0	40.1	36.6	Pass
17.0796	N	21.0	14.0	19.9	40.9	33.9	60.0	50.0	19.1	16.1	Pass
1.395	N	0.1	-7.6	19.5	19.6	11.9	56.0	46.0	36.4	34.1	Pass

Note: Measurement Level = Reading Level + Correct Factor

Test engineer: cheney yan

4. Test of Radiated Emission

4.1. Test Limit

Radiated emissions from 30 MHz to 1,000 MHz were measured with a bandwidth of 120 kHz according to the methods defines in ANSI C63.4-2003. The EUT was placed on a nonmetallic stand in the open-field site, 0.8 meter above the ground plane, as shown in section 3.2. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (m)	Level (dBuV/m)	Level (dBuV/m)
30 - 88	3	40(QP)	N/A
88 - 216	3	43(QP)	N/A
216-960	3	46(QP)	N/A
960-1000	3	54(QP)	N/A
1000-18000	3	74(PK)	54(AV)

For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the below table.

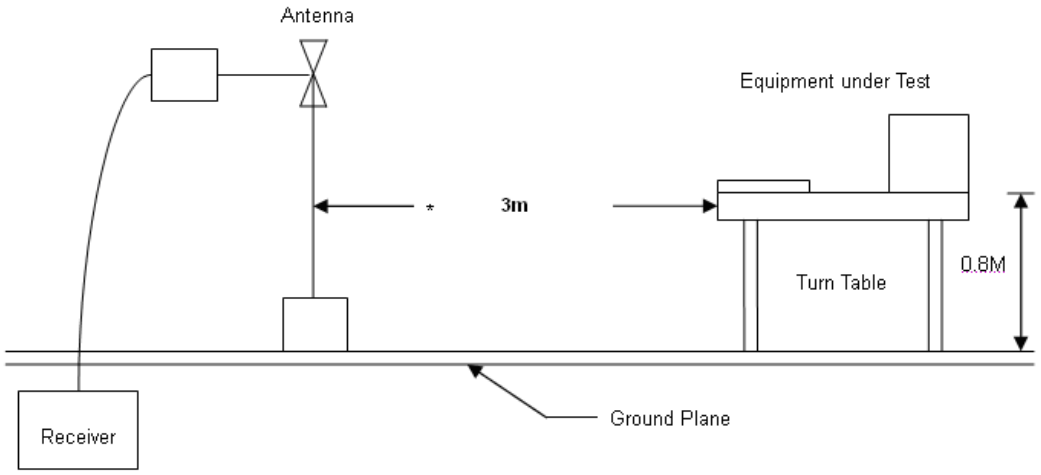
Frequency (MHz)	Distance Meters	Radiated (dB μ V/ M)
30-230	10	30
230-1000	10	37

4.2. Test Procedures

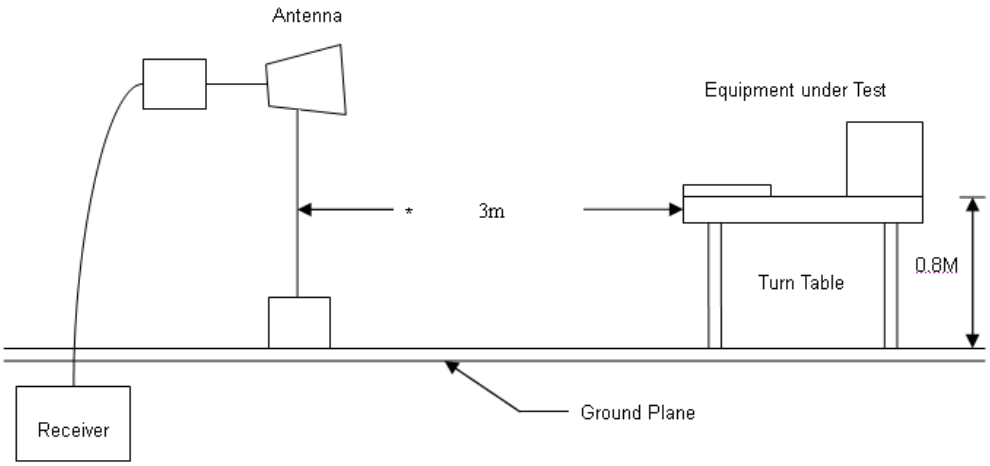
a. The EUT was placed on a Rota table top 0.8 meter above ground.
b. The EUT and its simulators are placed on the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
c. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
d. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.
e. Radiated emissions were invested over the frequency range from 30MHz to1GHz using a receiver bandwidth of 120KHz and the frequency range from 1GHz to 18GHz using a receiver bandwidth of 1MHz.

4.3. Typical test Setup

Below 1GHz Test Setup



Above 1GHz Test Setup



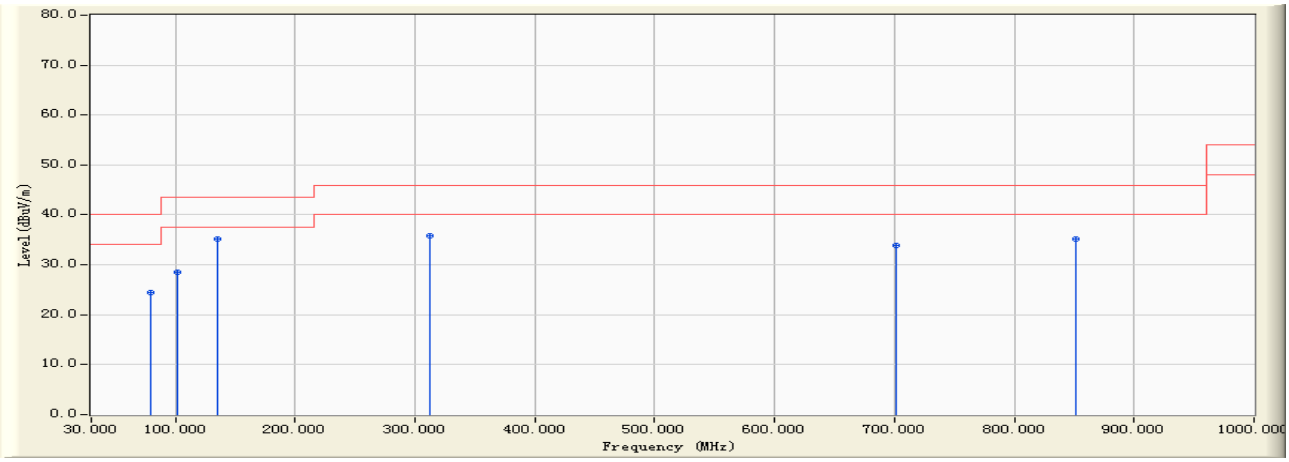
4.4. Measurement equipment

Instrument	Model No.	Manufacturer	Serial No.	Calibration Date
EMI Test Receiver	R&S	ESCI	100563	2010.06.23
H64 Amplifier	HP	8447F	3113A05582	2010.08.14
Preamplifier	Agilent	8449B	3008A02342	2010.02.10
Ultra Broadband Antenna	R&S	HL562	100363	2010.08.14
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2010.08.14
Spectrum Analyzer	R&S	FSP40	100324	2010.08.14
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2010.08.17

4.5. Test Result and Data

Under 1G

Engineer : Seven	
Site : EMC Lab AC 102	**Time : 2010/11/23 - 17:02**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
EUT : LCD Monitor	**Probe : (30-1000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1366*768@60Hz)**

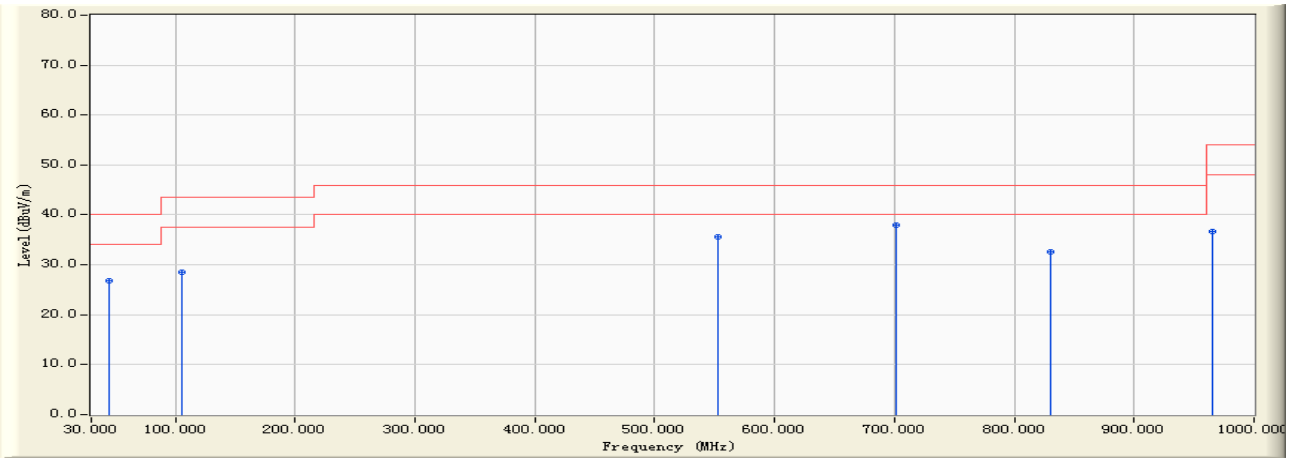


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		78.950	-18.254	42.600	24.346	-15.654	40.000	QUASIPEAK	200.000	136.500
2		102.360	-16.990	45.620	28.630	-14.870	43.500	QUASIPEAK	200.000	51.600
3	*	135.680	-17.274	52.410	35.136	-8.364	43.500	QUASIPEAK	200.000	219.400
4		312.630	-12.897	48.690	35.792	-10.208	46.000	QUASIPEAK	400.000	216.500
5		701.650	-5.258	39.070	33.812	-12.188	46.000	QUASIPEAK	200.000	52.400
6		851.320	-1.981	37.240	35.259	-10.741	46.000	QUASIPEAK	200.000	168.500

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Seven	
Site : EMC Lab AC 102	**Time : 2010/11/23 - 17:04**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
EUT : LCD Monitor	**Probe : (30-1000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1366*768@60Hz)**



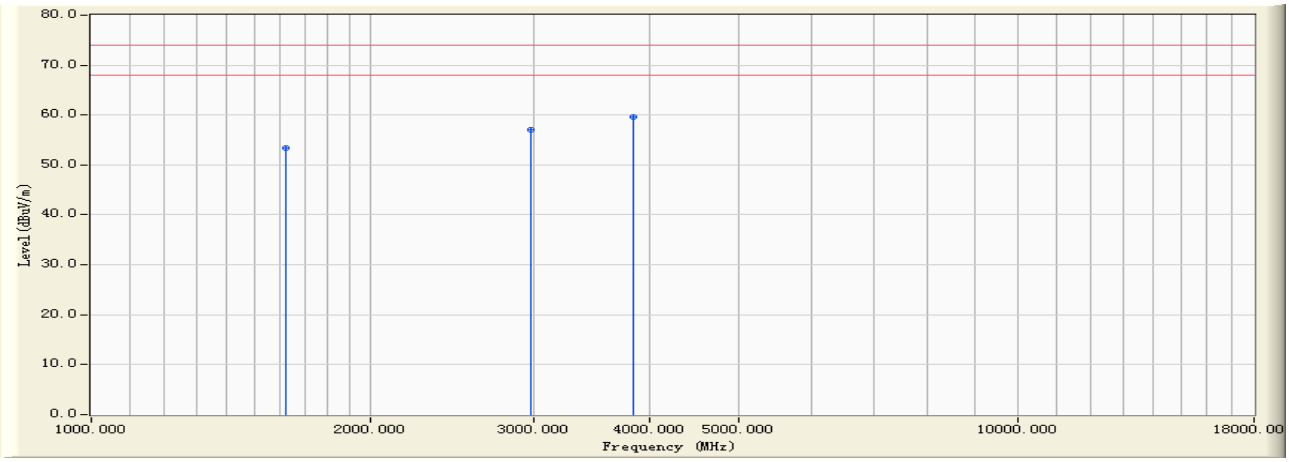
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		44.650	-15.758	42.520	26.762	-13.238	40.000	QUASIPEAK	125.600	251.600
2		105.680	-16.887	45.420	28.534	-14.966	43.500	QUASIPEAK	189.600	254.700
3		553.260	-8.036	43.620	35.584	-10.416	46.000	QUASIPEAK	200.000	12.600
4	*	700.950	-5.252	43.220	37.968	-8.032	46.000	QUASIPEAK	100.000	123.500
5		830.650	-3.113	35.620	32.508	-13.492	46.000	QUASIPEAK	125.600	320.100
6		965.250	-0.903	37.620	36.717	-17.283	54.000	QUASIPEAK	100.000	251.900

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Above 1G

Engineer : Seven	
Site : EMC Lab AC 102	**Time : 2010/11/24 - 09:05**
Limit : FCC_15_03M_PK	**Margin : 6**
EUT : LCD Monitor	**Probe : (1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1366*768@60Hz)**

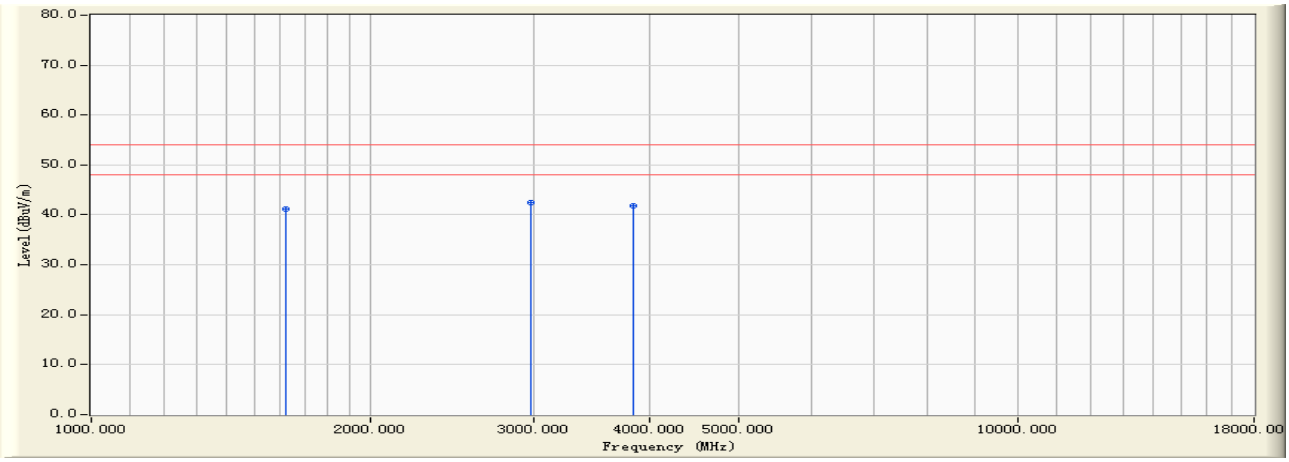


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1623.650	-4.177	57.650	53.473	-20.527	74.000	PEAK	0.000	0.000
2		2984.650	0.560	56.570	57.130	-16.870	74.000	PEAK	0.000	0.000
3	*	3847.650	3.881	55.670	59.552	-14.448	74.000	PEAK	200.000	216.500

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Seven	
Site : EMC Lab AC 102	**Time : 2010/11/24 - 09:08**
Limit : FCC_15_03M_AV	**Margin : 6**
EUT : LCD Monitor	**Probe : (1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1366*768@60Hz)**

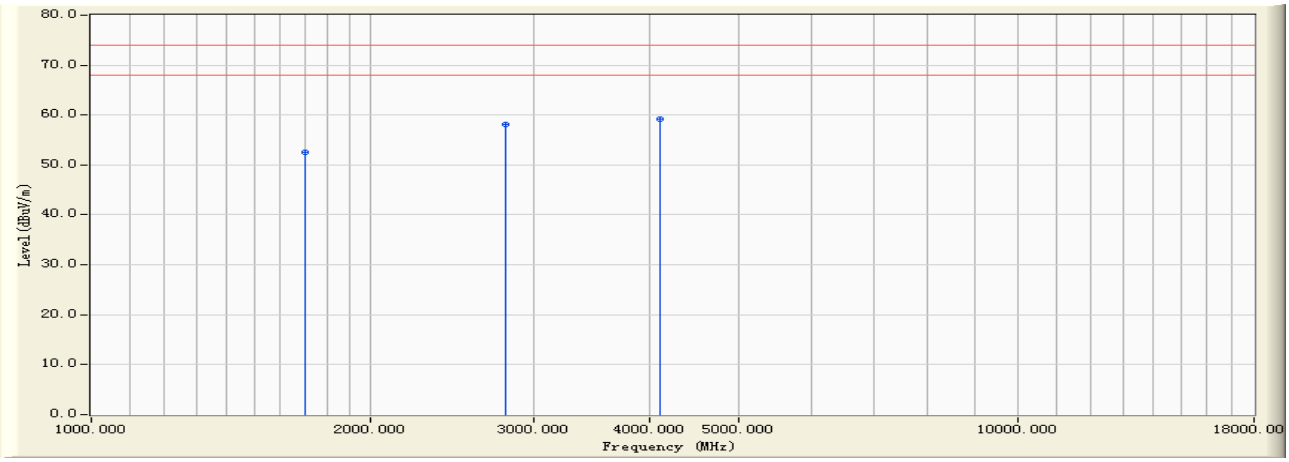


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1623.650	-4.177	45.250	41.073	-12.927	54.000	AVERAGE	0.000	0.000
2	*	2984.650	0.560	41.970	42.530	-11.470	54.000	AVERAGE	0.000	0.000
3		3847.650	3.881	37.980	41.862	-12.138	54.000	AVERAGE	200.000	216.500

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Seven	
Site : EMC Lab AC 102	**Time : 2010/11/24 - 09:18**
Limit : FCC_15_03M_PK	**Margin : 6**
EUT : LCD Monitor	**Probe : (1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1366*768@60Hz)**

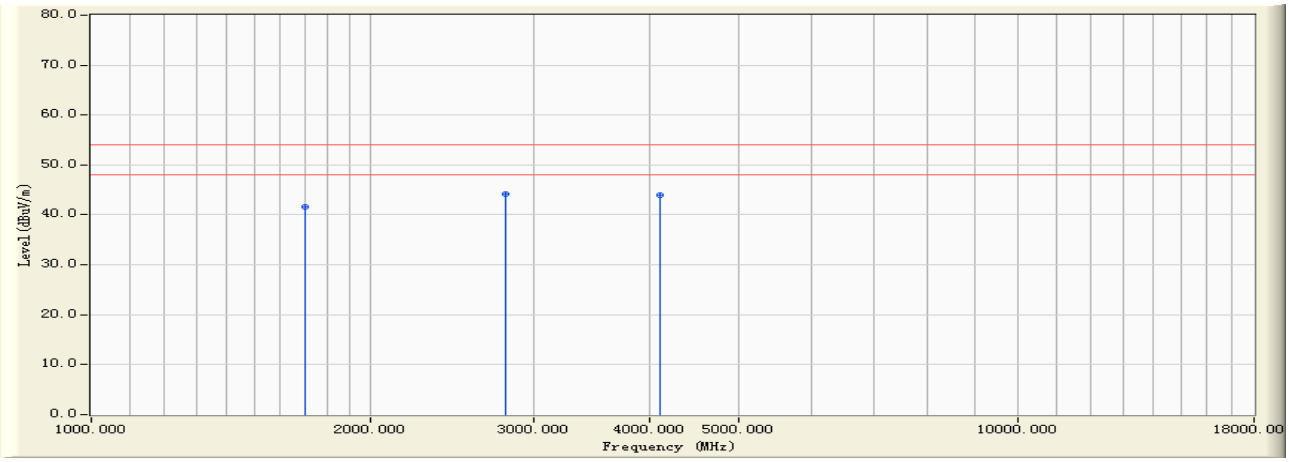


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1698.650	-4.257	56.840	52.583	-21.417	74.000	PEAK	100.000	216.300
2		2798.350	0.567	57.520	58.087	-15.913	74.000	PEAK	100.000	325.400
3	*	4105.680	4.932	54.260	59.192	-14.808	74.000	PEAK	200.000	54.800

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Seven	
Site : EMC Lab AC 102	**Time : 2010/11/24 - 09:21**
Limit : FCC_15_03M_AV	**Margin : 6**
EUT : LCD Monitor	**Probe : (1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1366*768@60Hz)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1698.650	-4.257	45.870	41.613	-12.387	54.000	AVERAGE	100.000	216.300
2	*	2798.350	0.567	43.580	44.147	-9.853	54.000	AVERAGE	100.000	325.400
3		4105.680	4.932	38.980	43.912	-10.088	54.000	AVERAGE	200.000	54.800

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Test engineer: Seven