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.	:	E2041SX
FCC ID	:	BEJE2041SX
Trade Name	:	LG

Table of Contents

Document history

Attachment No.	Date	Description
SEFD1011055	Nov 24, 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: Approved By :

Cathy Chen/Administration

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:	E2041SX
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.		

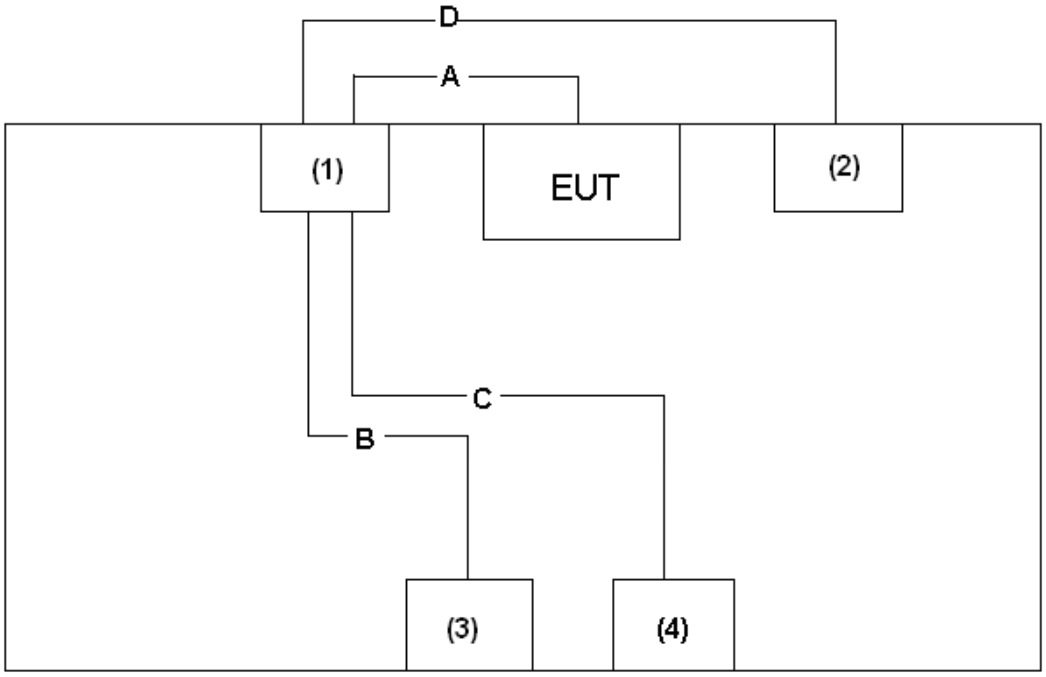
2.2. Test Manner

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 1600*900@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 1600*900@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

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

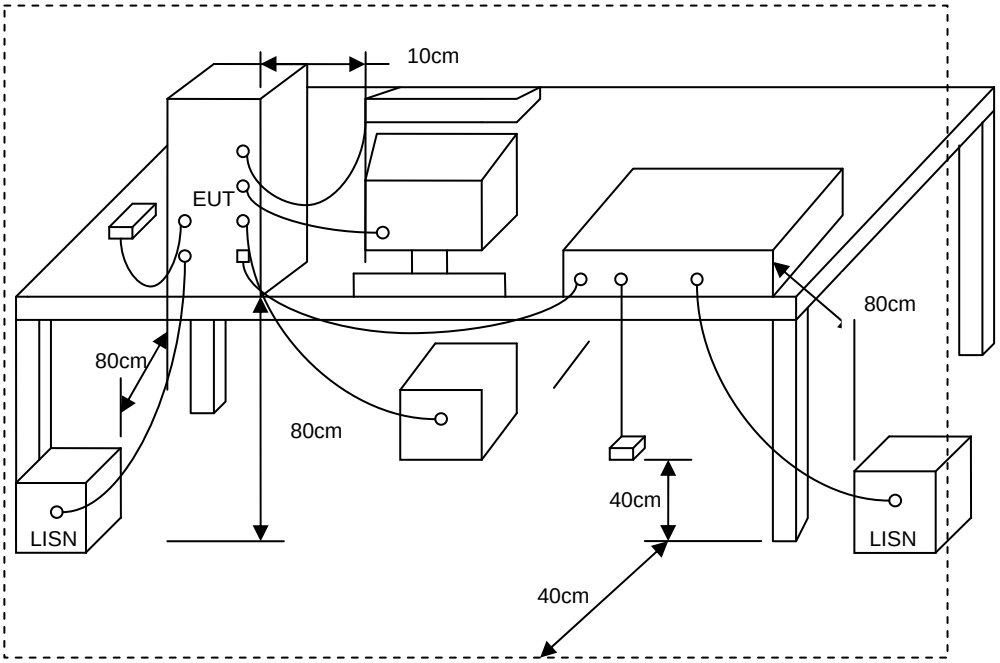
Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown 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

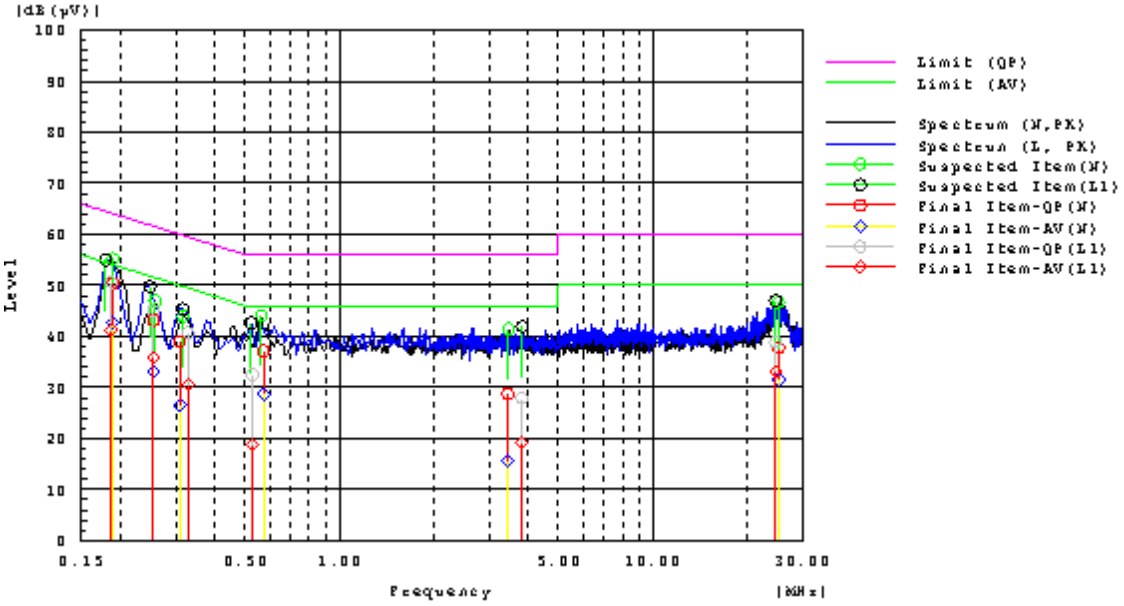


3.4. Measurement equipment

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 1600*900@60Hz)		
AC Power :	AC 120V/60Hz	Phase :	L&N
EUT :	LCD Monitor	Model No.:	E2041SX
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
0.18657	L1	30.7	21.4	19.9	50.6	41.3	64.2	54.2	13.6	12.9	Pass
0.25427	L1	25.0	16.0	19.9	44.9	35.9	61.6	51.6	16.7	15.7	Pass
0.32906	L1	20.8	10.7	19.9	40.7	30.6	59.5	49.5	18.8	18.9	Pass
0.52617	L1	12.7	-0.9	19.8	32.5	18.9	56.0	46.0	23.5	27.1	Pass
24.628	L1	19.3	13.5	19.6	38.9	33.1	60.0	50.0	21.1	16.9	Pass
3.81815	L1	8.2	-0.6	19.7	27.9	19.1	56.0	46.0	28.1	26.9	Pass
0.18909	N	30.9	23.3	19.5	50.4	42.8	64.1	54.1	13.7	11.3	Pass
0.25515	N	23.7	13.5	19.5	43.2	33.0	61.6	51.6	18.4	18.6	Pass
0.57176	N	17.7	9.2	19.5	37.2	28.7	56.0	46.0	18.8	17.3	Pass
25.2304	N	17.9	11.7	19.8	37.7	31.5	60.0	50.0	22.3	18.5	Pass
3.44354	N	9.2	-4.0	19.6	28.8	15.6	56.0	46.0	27.2	30.4	Pass
0.30918	N	19.5	7.0	19.5	39.0	26.5	60.0	50.0	21.0	23.5	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.

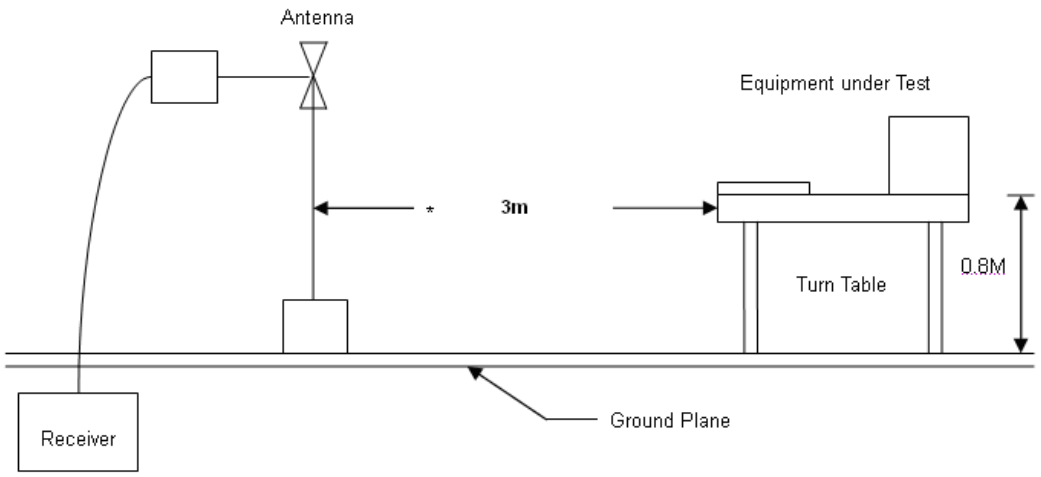
Frequency (MHz)	Distance Meters	Radiated (dB μ V/ M)
30-230	10	30
230-1000	10	37

4.2. Test Procedures

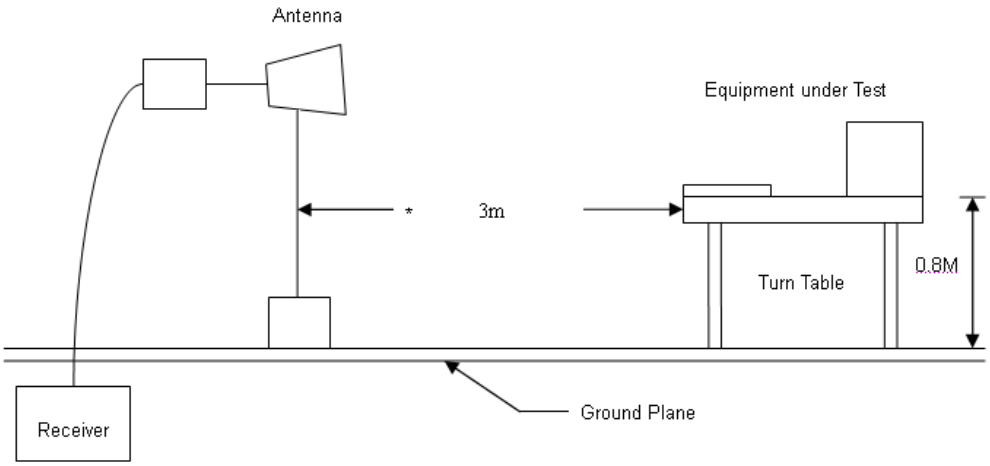
a. The EUT was placed on a Rota table top 0.8 meter above ground.
b. The EUT and its simulators are placed on the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
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



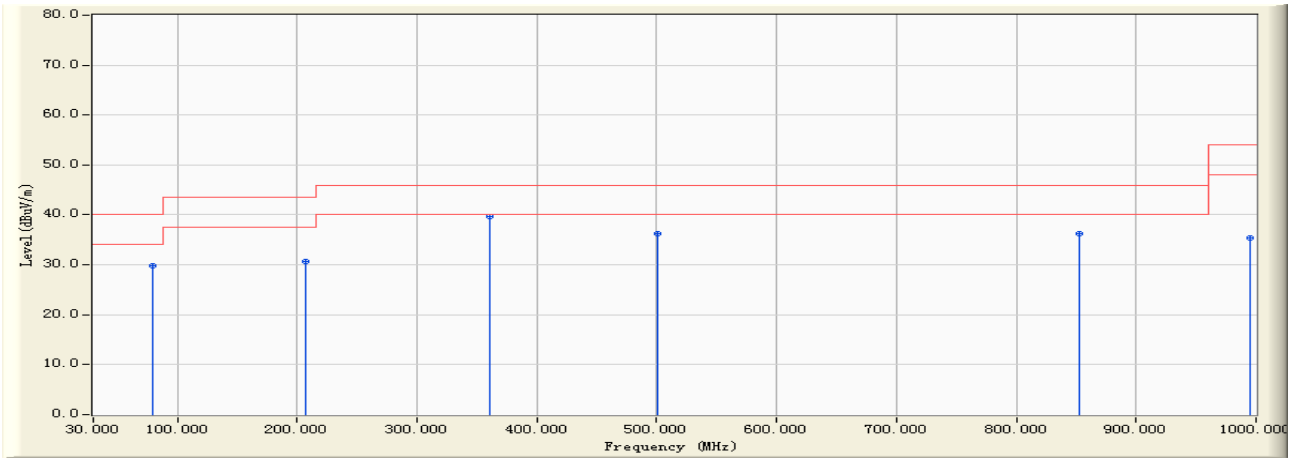
4.4. Measurement equipment

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 - 17:59**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
EUT : LCD Monitor	**Probe : HL562(30-1000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1600*900@60Hz)**

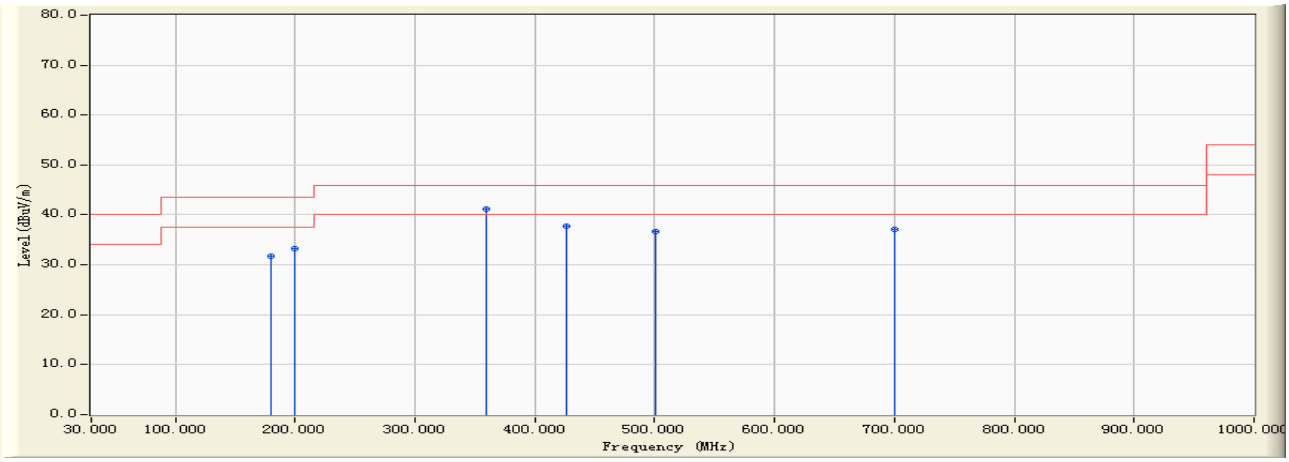


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		78.960	-18.254	48.060	29.806	-10.194	40.000	QUASIPEAK	200.000	124.500
2		207.560	-17.229	47.900	30.670	-12.830	43.500	QUASIPEAK	200.000	251.600
3	*	360.250	-11.457	51.230	39.773	-6.227	46.000	QUASIPEAK	400.000	28.900
4		500.560	-8.861	45.200	36.339	-9.661	46.000	QUASIPEAK	200.000	236.800
5		852.620	-1.939	38.200	36.262	-9.738	46.000	QUASIPEAK	200.000	142.600
6		995.620	-0.111	35.600	35.489	-18.511	54.000	QUASIPEAK	200.000	125.600

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 - 18:22**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
EUT : LCD Monitor	**Probe : HL562(30-1000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1600*900@60Hz)**



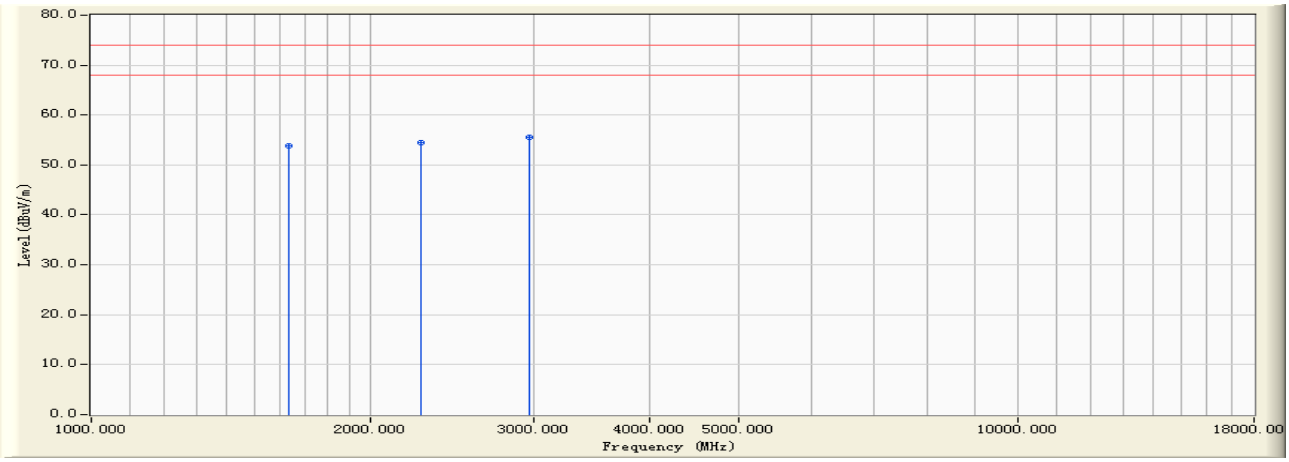
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		180.260	-17.106	48.850	31.744	-11.756	43.500	QUASIPEAK	100.000	258.900
2		200.200	-17.684	51.020	33.336	-10.164	43.500	QUASIPEAK	200.000	158.900
3	*	359.620	-11.449	52.620	41.171	-4.829	46.000	QUASIPEAK	100.000	256.200
4		425.960	-10.139	47.950	37.811	-8.189	46.000	QUASIPEAK	125.000	320.100
5		500.560	-8.861	45.500	36.639	-9.361	46.000	QUASIPEAK	100.000	189.200
6		700.250	-5.232	42.360	37.128	-8.872	46.000	QUASIPEAK	200.000	78.900

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 - 10:26**
Limit : FCC_15_03M_PK	**Margin : 6**
EUT : LCD Monitor	**Probe : BBHA9120D(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1600*900@60Hz)**

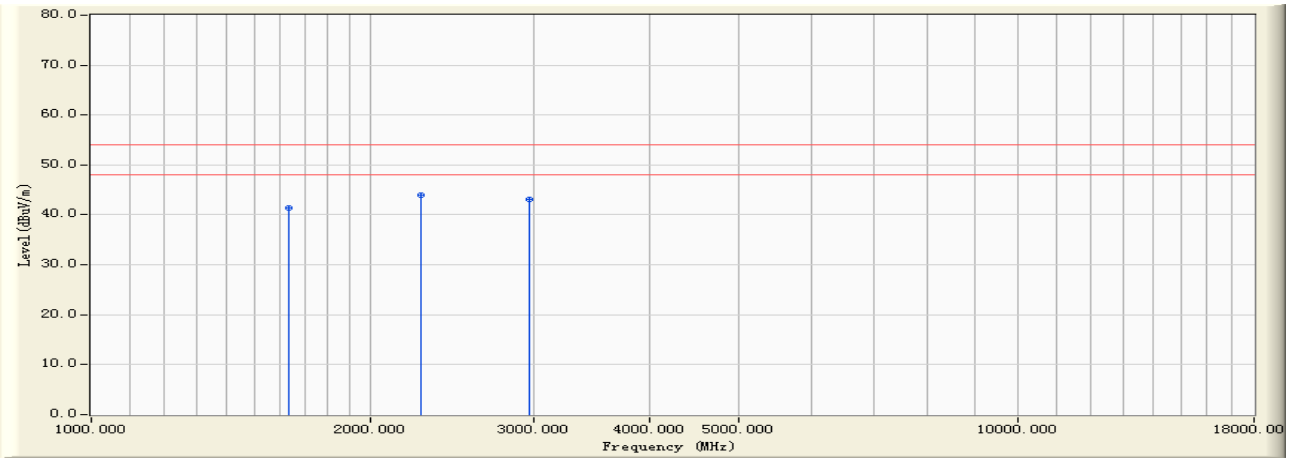


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1636.350	-4.188	58.040	53.851	-20.149	74.000	PEAK	200.000	51.800
2		2268.540	0.055	54.320	54.374	-19.626	74.000	PEAK	200.000	287.900
3	*	2975.620	0.553	54.890	55.443	-18.557	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 - 10:28**
Limit : FCC_15_03M_AV	**Margin : 6**
EUT : LCD Monitor	**Probe : BBHA9120D(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1600*900@60Hz)**

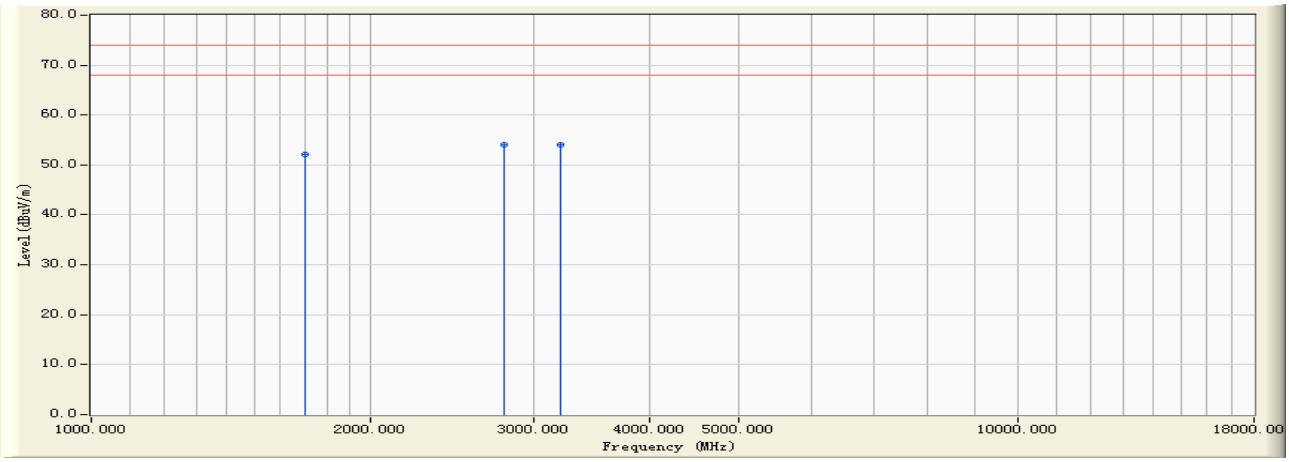


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1636.350	-4.188	45.670	41.481	-12.519	54.000	AVERAGE	200.000	51.800
2	*	2268.540	0.055	43.980	44.034	-9.966	54.000	AVERAGE	200.000	287.900
3		2975.620	0.553	42.570	43.123	-10.877	54.000	AVERAGE	2000.000	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 - 10:42**
Limit : FCC_15_03M_PK	**Margin : 6**
EUT : LCD Monitor	**Probe : BBHA9120D(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1600*900@60Hz)**

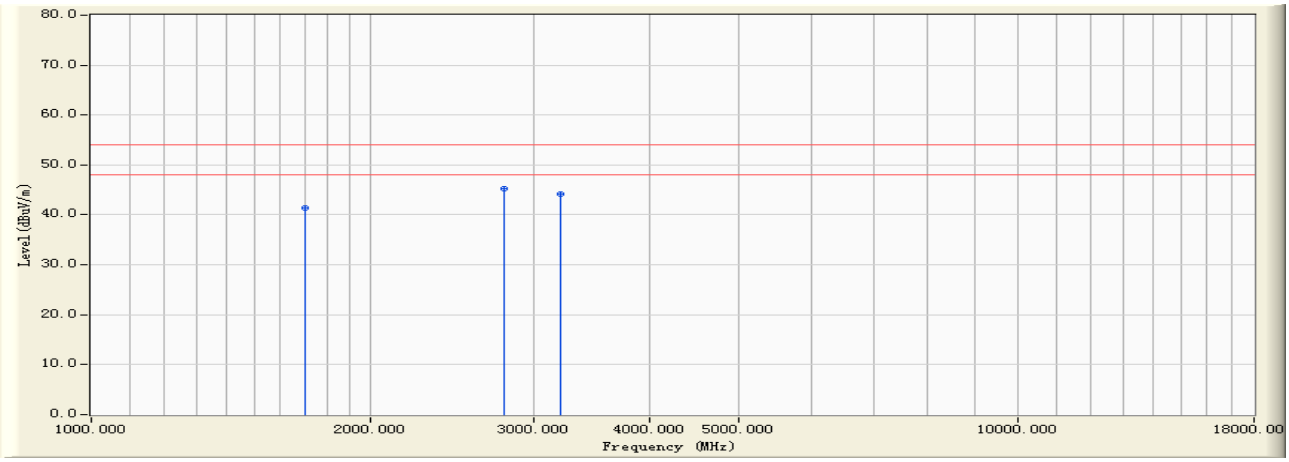


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1699.650	-4.255	56.350	52.095	-21.905	74.000	PEAK	100.000	54.200
2	*	2785.640	0.587	53.540	54.127	-19.873	74.000	PEAK	100.000	213.600
3		3215.680	1.257	52.870	54.127	-19.873	74.000	PEAK	100.000	46.800

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 - 10:46**
Limit : FCC_15_03M_AV	**Margin : 6**
EUT : LCD Monitor	**Probe : BBHA9120D(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 1: Full system (VGA mode 1600*900@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		1699.650	-4.255	45.670	41.415	-12.585	54.000	AVERAGE	100.000	54.200
2	*	2785.640	0.587	44.570	45.157	-8.843	54.000	AVERAGE	100.000	213.600
3		3215.680	1.257	42.870	44.127	-9.873	54.000	AVERAGE	100.000	46.800

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