



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.	: W2242PKT
FCC ID	: BEJW2242PKT
Trade Name	: LG

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- 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

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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 Dec 14, 2009 at **CerpPASS Technology Corp.**

Documented By:

Approved By:

Cathy Chen/ Administration

John Wang/ 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 :	W2242PKT
VGA Cable	Shielded, 1.8m, with two ferrite cores bonded	
VGA Cable	Shielded, 1.8m	
DVI Cable	Shielded, 1.8m, with two ferrite cores bonded	
DVI Cable	Shielded, 1.8m	
Audio Cable	Non-Shielded, 1.5m, with one ferrite core bonded	
Power Supply	Non-Shielded, 1.8m	
Note : The VGA Cable and DVI Cable are alternative on selling.		

2.2. Test Manner

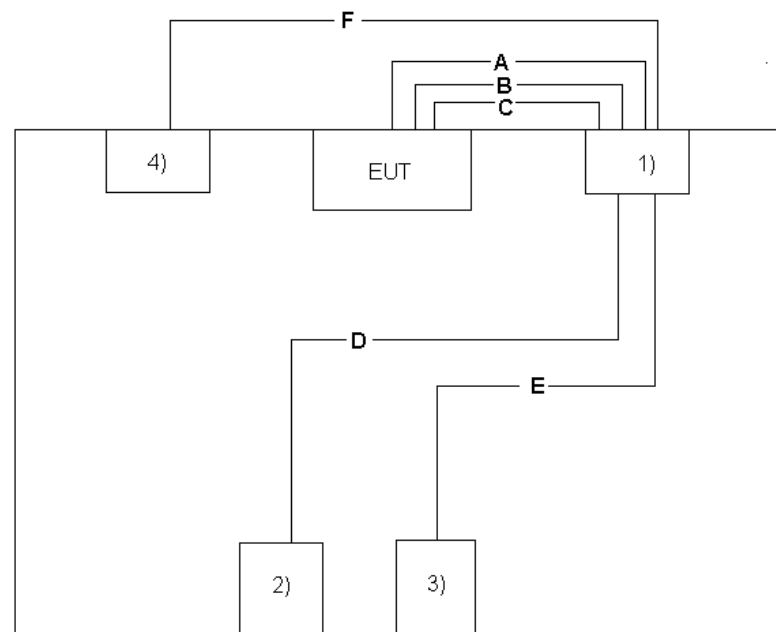
Test Software	
a	During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
b	The complete test system included the PC, USB Keyboard, USB Mouse, Printer and EUT for EMI test.
c	During the test, setup up the EUT and all system, turn on the power of all Equipments, 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 (DVI mode 1680*1050@60Hz)
	Test Mode 2: Full system (DVI mode 1024*768@75Hz)
	Test Mode 3: Full system (DVI mode 720*400@70Hz)
	Test Mode 4: Full system (VGA mode 1680*1050@60Hz)
	Test Mode 5: Full system (VGA mode 1024*768@75Hz)
	Test Mode 6: Full system (VGA mode 720*400@70Hz)
Select the worst case of the pre-test modes as the final test mode	
	Test Mode 1: Full system (DVI mode 1680*1050@60Hz)



2.3. Description of Test System

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

2.4. Connection Diagram of Test System



No	Cable	Quantity	Description
A	VGA Cable	1	Shielded, 1.8m
B	DVI Cable	1	Shielded, 1.8m
C	Audio Cable	1	Non-Shielded, 1.5m, with one ferrite core bonded
D	USB Cable	1	Shielded, 1.8m, with one ferrite core bonded
E	USB Cable	1	Shielded, 1.5m
F	Parallel Cable	1	Shielded, 1.8m



2.5. General Information of Test

Test Site :	CerpPASS Technology Corp.
Performed Location	No.66, Tangzhuang Road, Suzhou Industrial Park, Jiangsu, China
NVLAP LAB Code :	200814-0
FCC Registration Number :	916572
VCCI Registration Number :	T-343 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test
Test in Compliance with:	ANSI C63.4-2003 FCC Part 15 Subpart B
Frequency Range Investigated :	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 1,000 MHz Radiation: 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 ± 3.89 dB.
	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.

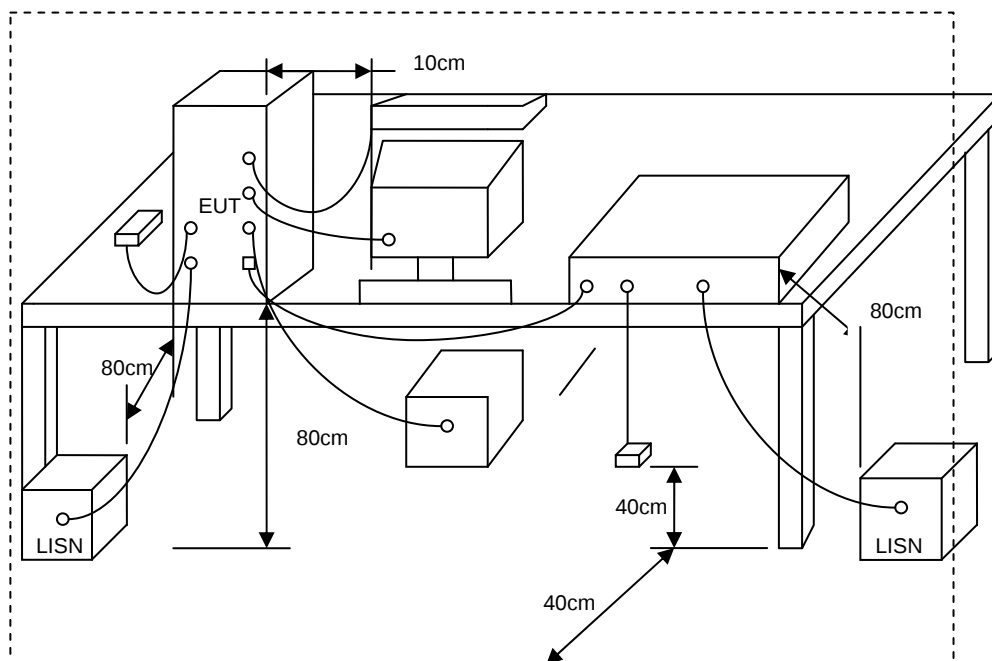
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

3.2. Test Procedures

- 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.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



3.3. Typical test Setup



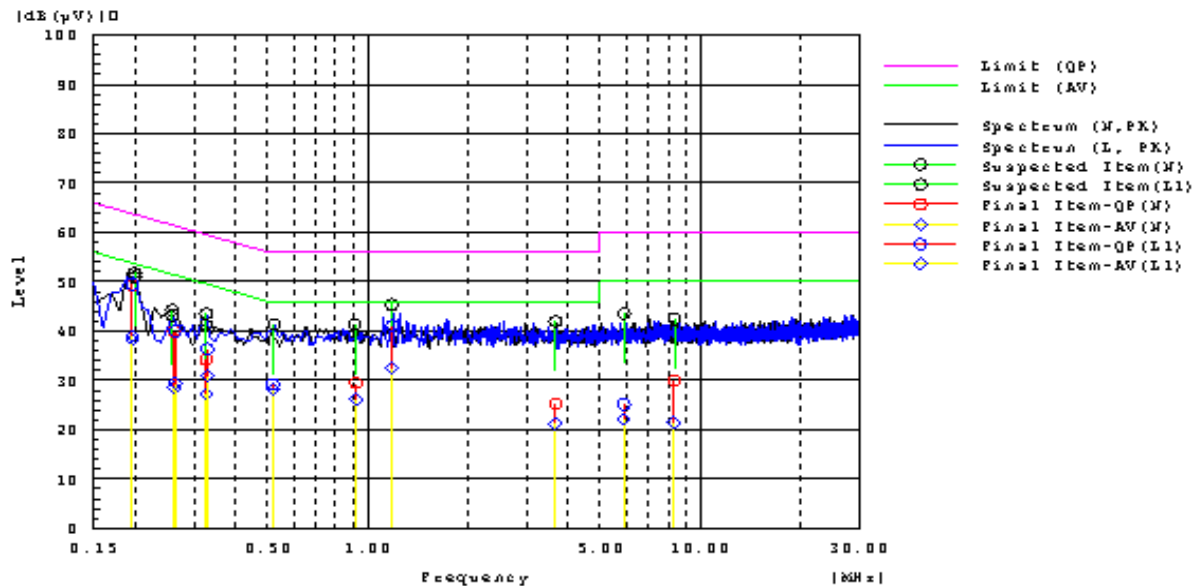
3.4. Measurement equipment

Instrument	Manufacturer	Model No.	Serial No.	Calibration Data
EMC Emission Tester	EMCPARTNER	Harmonics-1000	159	2009.06.23
Test Receiver	R&S	ESCI	100565	2009.06.30
AMN	R&S	ESH2-Z5	100182	2009.06.23
Two-Line V-Network	R&S	ENV216	100325	2009.06.23
ISN	FCC	FCC-TLISN-T2-02	20379	2009.06.23
ISN	FCC	FCC-TLISN-T4-02	20380	2009.06.23
ISN	FCC	FCC-TLISN-T8-02	20381	2009.06.23
Attenuator	R&S	ESH3-Z2	100529	2009.01.12
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-004	2009.10.19



3.5. Test Result and Data

Test Mode :	Mode 1: Full system (DVI mode 1680*1050@60Hz)		
AC Power :	AC 120V/60Hz	Phase :	L&N
EUT :	LCD Monitor	Model No.	W2242PKT
Temperature :	24°C	Humidity	51%
Pressur(mbar) :	1002	Date:	2009/12/11



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
0.19598	L1	30.0	19.3	19.5	49.5	38.8	63.8	53.8	14.3	15.0	Pass
0.26359	L1	20.5	10.0	19.5	40.0	29.5	61.3	51.3	21.3	21.8	Pass
0.32887	L1	16.8	11.3	19.6	36.4	30.9	59.5	49.5	23.1	18.6	Pass
0.51763	L1	9.5	8.5	19.7	29.2	28.2	56.0	46.0	26.8	17.8	Pass
1.1813	L1	21.6	13.1	19.5	41.1	32.6	56.0	46.0	14.9	13.4	Pass
5.8788	L1	5.2	2.2	19.9	25.1	22.1	60.0	50.0	34.9	27.9	Pass
0.19598	N	29.5	18.4	19.8	49.3	38.2	63.8	53.8	14.5	15.6	Pass
0.26174	N	20.1	8.7	19.8	39.9	28.5	61.4	51.4	21.5	22.9	Pass
0.32673	N	14.5	7.4	19.7	34.2	27.1	59.5	49.5	25.3	22.4	Pass
0.92037	N	9.9	6.6	19.5	29.4	26.1	56.0	46.0	26.6	19.9	Pass
3.66955	N	5.6	1.5	19.7	25.3	21.2	56.0	46.0	30.7	24.8	Pass
8.3336	N	9.9	1.5	20.0	29.9	21.5	60.0	50.0	30.1	28.5	Pass

Note: Measurement Level = Reading Level + Correct Factor

Test engineer: 



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

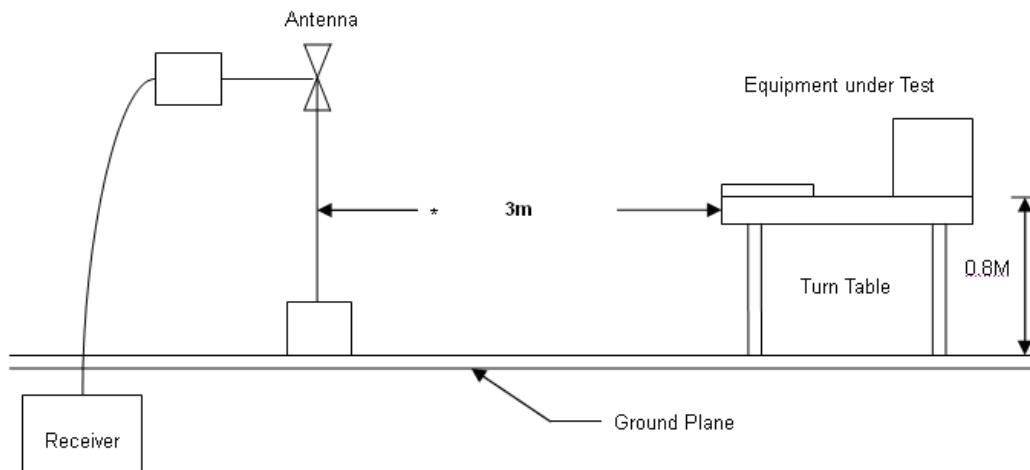


4.2. Test Procedures

- The EUT was placed on a Rota table top 0.8 meter above ground.
- 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 or 1 meter.
- The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
- 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.
- Radiated emissions were investigated over the frequency range from 30MHz to 1GHz using a receiver bandwidth of 120KHz and the frequency range from 1GHz to 18GHz using a receiver bandwidth of 1MHz.

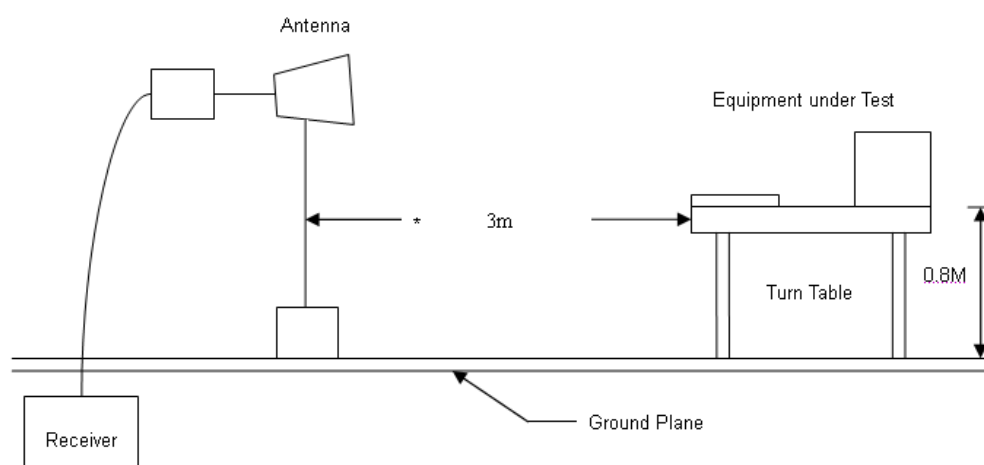
4.3. Typical test Setup

Below 1GHz Test Setup





Above 1GHz Test Setup



4.4. Measurement equipment

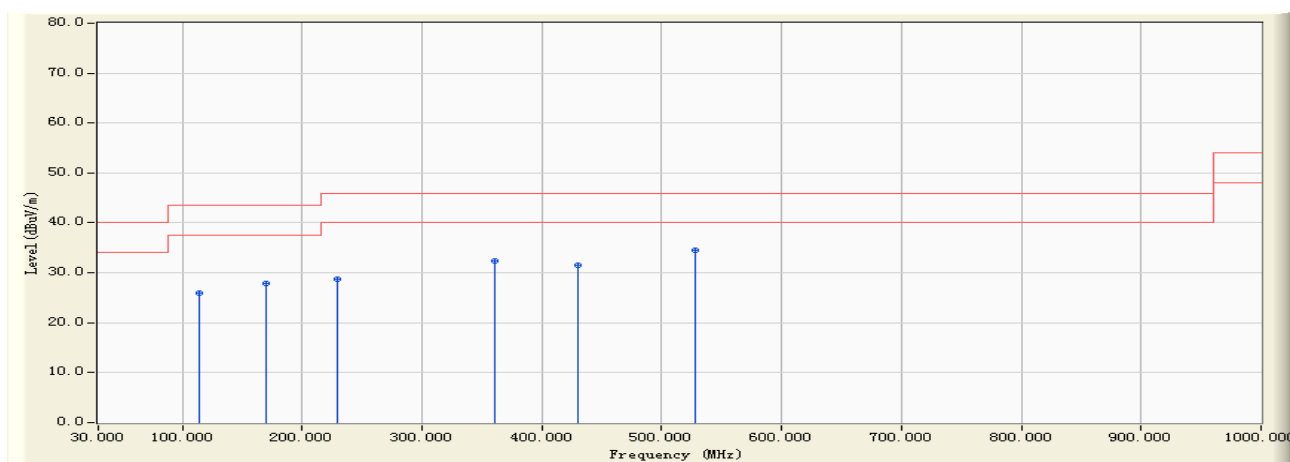
Instrument	Model No.	Manufacturer	Serial No.	Calibration Date
EMI Test Receiver	R&S	ESCI	100564	2009.06.23
Preamplifier	Agilent	87405B	My39500554	2009.11.03
Preamplifier	Agilent	8449B	ED-HE-EMI-077	2009.02.18
Ultra Broadband Antenna	R&S	HL562	100362	2009.11.03
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2009.09.26
Spectrum Analyzer	R&S	FSP40	100324	2009.11.02
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-001	2009.10.19



4.5. Test Result and Data

Under 1G:

Engineer : Fred	
Site : EMC Lab AC 102	Time : 2009/12/14 - 15:07
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : LCD Monitor	Probe : (30-1000MHz) - HORIZONTAL
Power : AC 120/60Hz	Note : Mode 1: Full system (DVI mode 1680*1050@60Hz)



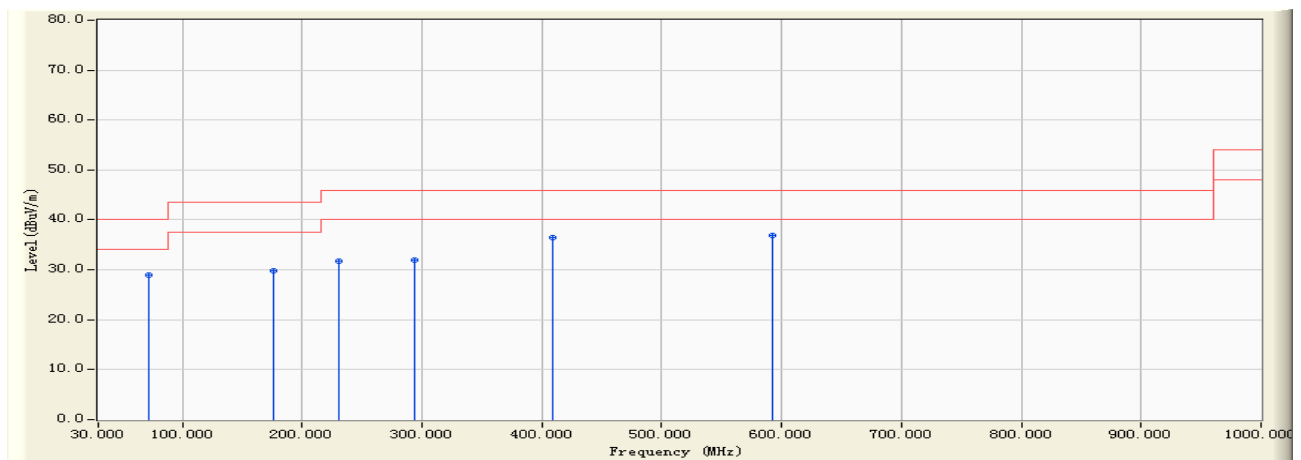
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	114.325	-16.345	42.300	25.956	-17.544	43.500	QUASIPeAK	230.200	321.600
2	169.547	-17.466	45.300	27.834	-15.666	43.500	QUASIPeAK	200.000	254.800
3	229.231	-16.067	44.870	28.803	-17.197	46.000	QUASIPeAK	198.600	158.400
4	360.210	-11.456	43.890	32.434	-13.566	46.000	QUASIPeAK	231.500	21.300
5	429.523	-10.176	41.780	31.605	-14.395	46.000	QUASIPeAK	201.300	230.700
6	* 528.230	-8.525	42.980	34.455	-11.545	46.000	QUASIPeAK	200.000	360.000

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 : Fred	
Site : EMC Lab AC 102	Time : 2009/12/14 - 15:11
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : LCD Monitor	Probe : (30-1000MHz) - VERTICAL
Power : AC 120/60Hz	Note : Mode 1: Full system (DVI mode 1680*1050@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	72.436	-19.346	48.360	29.013	-10.987	40.000	QUASIPeAK	100.000	230.600
2	176.200	-17.118	46.900	29.782	-13.718	43.500	QUASIPeAK	100.000	293.400
3	230.740	-16.032	47.690	31.658	-14.342	46.000	QUASIPeAK	120.300	148.700
4	293.500	-13.424	45.300	31.875	-14.125	46.000	QUASIPeAK	100.000	360.000
5	408.530	-10.551	46.980	36.429	-9.571	46.000	QUASIPeAK	100.000	23.500
6	* 592.700	-6.775	43.580	36.805	-9.195	46.000	QUASIPeAK	100.000	238.900

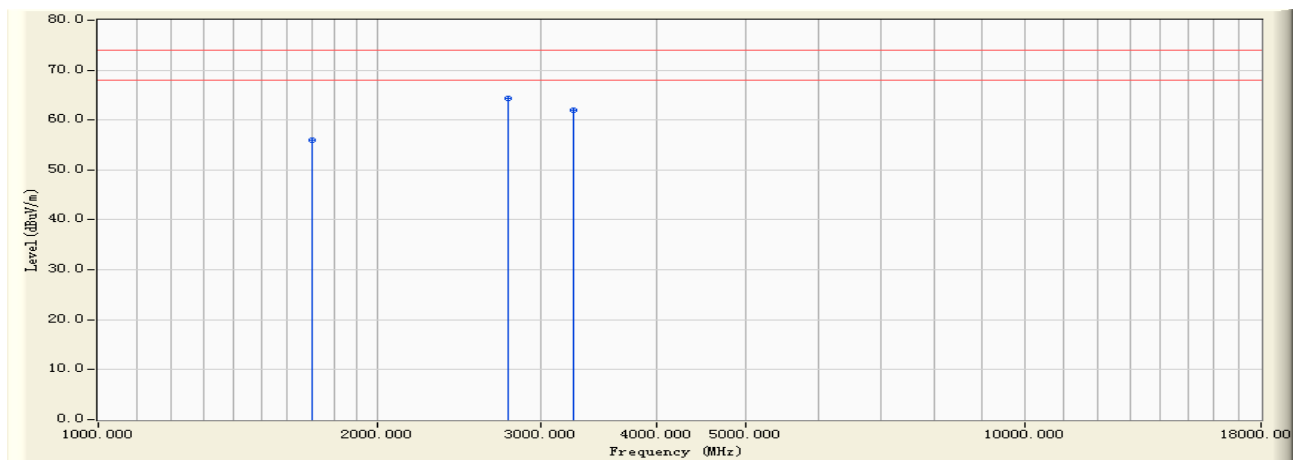
Note:

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3. Measurement Level = Reading Level + Correct Factor



Above 1G:

Engineer : Fred	
Site : EMC Lab AC 102	Time : 2009/12/14 - 09:16
Limit : FCC_15_03M_PK	Margin : 6
EUT : LCD Monitor	Probe : (1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Full system (DVI mode 1680*1050@60Hz)



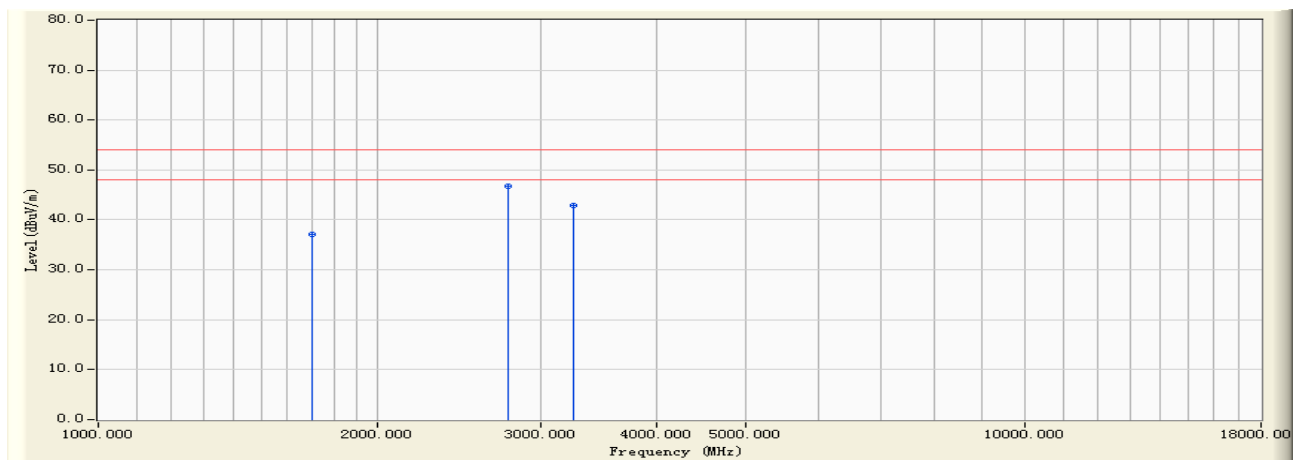
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1783.234	2.852	53.200	56.052	-17.948	74.000	PEAK	153.600	320.500
2	*	2778.316	7.948	56.300	64.248	-9.752	74.000	PEAK	188.300	234.500
3		3258.846	8.639	53.400	62.039	-11.961	74.000	PEAK	236.500	320.500

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 : Fred	
Site : EMC Lab AC 102	Time : 2009/12/14 - 09:21
Limit : FCC_15_03M_AV	Margin : 6
EUT : LCD Monitor	Probe : (1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Full system (DVI mode 1680*1050@60Hz)



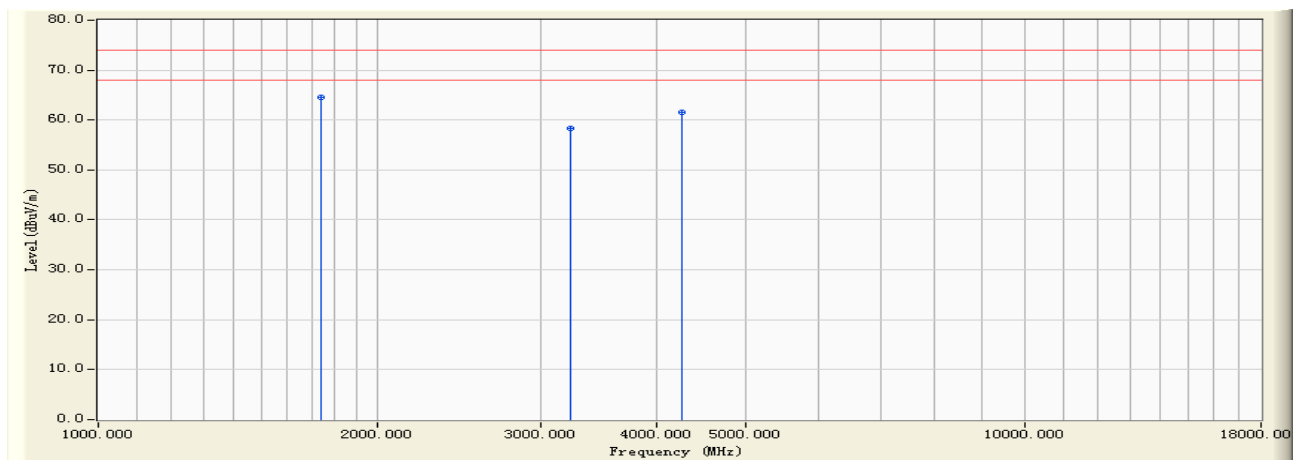
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1783.234	2.852	34.200	37.052	-16.919	54.000	AVERAGE	153.600	320.500
2	*	2778.316	7.948	38.900	46.848	-7.126	54.000	AVERAGE	188.300	234.500
3		3258.846	8.639	34.260	42.899	-11.167	54.000	AVERAGE	236.500	320.500

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 : Fred	
Site : EMC Lab AC 102	Time : 2009/12/14 - 09:28
Limit : FCC_15_03M_PK	Margin : 6
EUT : LCD Monitor	Probe : (1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Full system (DVI mode 1680*1050@60Hz)



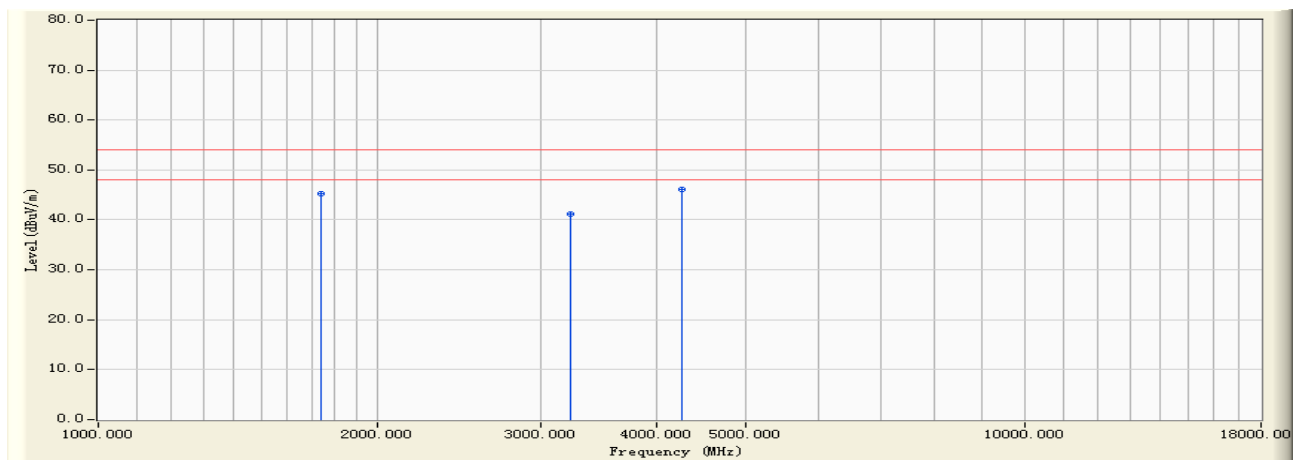
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	1836.513	2.948	61.580	64.528	-9.459	74.000	PEAK	100.000	230.200
2		3134.536	8.646	49.650	58.295	-14.605	74.000	PEAK	136.200	320.500
3		4273.546	12.895	48.700	61.594	-12.491	74.000	PEAK	192.600	283.600

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 : Fred	
Site : EMC Lab AC 102	Time : 2009/12/14 - 09:31
Limit : FCC_15_03M_AV	Margin : 6
EUT : LCD Monitor	Probe : (1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Full system (DVI mode 1680*1050@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		1836.513	2.948	42.300	45.248	-8.652	54.000	AVERAGE	100.000	230.200
2		3134.536	8.646	32.600	41.245	-11.755	54.000	AVERAGE	136.200	320.500
3	*	4273.546	12.895	33.200	46.094	-7.406	54.000	AVERAGE	192.600	283.600

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

Test engineer: Fred Guo