Digital EMC
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FCC Test Report

for

LCD TV Monitor

Applicant : **LG Electronics Inc.**

Model Number : **47LD950C-UA**

Manufacturer : **LG Electronics Inc.**

Test Standard : **ANSI C 63.4:2003**
FCC Part 15 Subpart B
(Type of Device : Class B Computing Device Peripheral (JBP))

Date of Tests : **August 02 ~ 04, 2010**

Date of Issue : **August 04, 2010**

Tested by : M.J.SONG/Manager

Reviewed by : Y.K.SHIN/Manager

This test result only responds to the tested sample.

It is not allowed to copy this report even partly without the allowance of the test laboratory.

CONTENTS

1. General Remarks

This Report describes the emission characteristics of the tested product.

If the product will be used with additional equipment other than those mentioned in this report or if the tested product will be used against the manufacture's specifications, the compliance with the relevant standards for the system has to be ensured.

2. Test Laboratory

Digital EMC Co., Ltd. has been accredited / filed / authorized by the agencies listed in the following table;

Certificate	Nation	Agency	Code	Mark
Accreditation	Korea	KOLAS	393	ISO/IEC 17025
Site Filing	USA	FCC	101842	Test Facility list & NSA Data
	Japan	VCCI	C-1427 R-1364, R-3385 T-1442	Test Facility list & NSA Data
Certification	Korea	KCC	KR0034	Test Facility list & NSA Data
	Germany	TUV	ROK0826C	ISO/IEC 17025

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the “General requirements for the competents of calibration and testing laboratory”.

DIGITAL EMC CO., LTD.

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3. General Information of EUT

3.1 Product Information

Equipment under Test	LCD TV Monitor
Model No.	47LD950C-UA
Serial No	NONE
Type of Sample Tested	Pre-Production
Rating Power Supply	AC100-240V, 50/60Hz
High Frequency	650MHz,1920*1080(HDMI,D sub max resolution)
Supplied Power for Test	AC120V, 60Hz
Applicant	LG Electronics Inc. 19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Korea
Manufacturer	LG Electronics Inc. 19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Korea
Factory	LG Electronics Reynosa, Inc. LG Electronics USA, Inc_Reynosa 9801 South Cage Blvd. Suite 3F Pharr, TX. 78577
Date of Receipt of Sample	2010-07-26

< Product Specifications >

MODELS		47LD950C (47LD950C-UA)
Dimensions (Width x Height x Depth)	With stand	46.2 x 31.14 x 132.8 inches 1173.4 x 791 x 337.3 mm
	Without stand	46.2 x 28.5 x 4.0 inches 1173.4 x 723.4 x 100.8 mm
Weight	With stand Without stand	56.7 lbs/ 25.72 kg 50.3 lbs / 22.8 kg
Power requirement Television System Program Coverage External Antenna Impedance		AC 100-240V ~ 50/60Hz NTSC-M, ATSC, 64 & 256 QAM VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135 75 ohm
Environment condition	Operating Temperature Operating Humidity	32 ~ 104°F (0 ~ 40°C) Less than 80%
	Storage Temperature Storage Humidity	-4 ~ 140°F (-20 ~ 60°C) Less than 85%

4. Test Summary

4.1 Summary of tests

The applied standards to evaluate the compliance of requirements is 47CFR Part 15, Subpart B and the measurement procedures specified in ANSI C63.4 are performed.

Test Items	Applied Standards	Status
Emission		
Conducted Emission	FCC Part 15 Subpart B	C
Radiated Emission	FCC Part 15 Subpart B	C
Note 1: C=Conform NC=Not Conform NT=Not Tested NA=Not Applicable		

5. Test Set-up and operation mode

5.1 Principle of Configuration Selection

Emission : The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

5.2 Test Operation Mode

- DSUB mode : Resolution 1920*1080 MAX, “H” character scroll
- DVI to HDMI mode : Resolution 1920*1080 MAX, “H” character scroll
- USB Divx mode : Divx play
- Side DVI to HDMI mode : Resolution 1920*1080 MAX, ‘H’ character scroll

EUT is the following operational conditions apply:

a) Set the contrast control to maximum.

b) Set the brightness control to maximum or at raster extinction if raster extinction occurs at less thanmaximum brightness.

c) For color monitors, use white letters on a black background to represent all colors.

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

e) Set character size and number of characters per line so that the typical maximum number of charac-ters per screen is displayed.

f) For a monitor that has no graphics capabilities, regardless of the video card used, a pattern consistingof random text shall be displayed. For a monitor with graphics capability, even though another videocard may be needed to accomplish a graphic display, a screen pattern consisting of lines of scrollingH’s should be displayed. For a monitor that has no text capabilities, use a typical display. That pat-tern should be used for the remainder of the tests.

5.3 Support Equipment Used

Unit	Model No.	Serial No.	Manufacturer	CABLE			Backshell	FCC ID
				Connect type	Length (m)	shield		
PC	S30MS	004SHVM019295	LG	Power PS/2 PS/2 USB DSUB DVI Stereo	1.6 1.6 1.6 1.2 1.8 2.0 1.6	Non-shield Non-shield Non-shield Shield Shield Shield Shield	Plastic Plastic Plastic Plastic Plastic Plastic Plastic	DOC
Printer	SRP-770	SRP-770	SRP77008060035	Power USB	1.8 1.2	Non-shield Shield	Plastic Plastic	DOC
Keyboard	SKG-210P	TAKSC12255P	MONITEREY INTERNATIONAL CORP	PS/2	1.6	Non-shield	Plastic	DOC
Mouse	SML-510P	TAKS702011T	MONITEREY INTERNATIONAL CORP	PS/2	1.8	Non-shield	Plastic	DOC
USB Memory Disk(4G)	UM5	N/A	LG	USB HOST	-	-	Plastic	DOC

NOTE

- See “APPENDIX 1 Photographs” for actual system test setup

6. Test Results : Emission

6.1 Conducted Emission

RESULT : COMPLY

6.1.1 Measurement Procedure

In the range of 0.15MHz to 30MHz, the conducted emission was measured and set-up was made accordance with **ANSI C63.4:2003.**

If the EUT is table top equipment, it was placed on a wooden table with a height of 0.8m above the reference ground plane and 0.4m from the conducting wall of the shielded room.

Also if the EUT is floor-standing equipment, it was placed on a non-conducted support with a height up to 0.15m above the reference ground plane.

Connect the EUT's power source lines to the appropriate power mains / peripherals through the LISN. All the other peripherals are connected to the 2nd LISN, if any.

Unused measuring port of the LISN was resistively terminated by 50 ohm terminator.

The measuring port of the LISN for EUT was connected to spectrum analyzer.

Using TOYO conducted emission test software, the emissions were scanned from 150KHz to 30MHz with peak detector mode.

After scanning over the frequency range, suspected emissions were selected to perform final measurement. When performing final measurement, the receiver was used which has Quasi-Peak detector and Average detector.

By varying the configuration of the test sample and the cable routing it was attempted to maximize the emission.

For further description of the configuration refer to the picture of the test set-up.

6.1.2 List of Test and Measurement Instruments

Name of Instrument	Model No.	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
EMI Test Receiver	ESCI	100364	R&S	2010.05.12	2011.05.12
Spectrum Analyzer	8594E	39911A05752	AGILENT	2009.10.06	2010.10.06
LISN	LISN1600	197204	TTI	2010.07.02	2011.07.02
LISN(EUT)	ESH2-Z5	828739/006	R&S	2009.10.01	2010.10.01
50 ohm Terminator	CT-01	N/A	TME	2010.01.12	2011.01.12

6.1.3 Limit for Conducted Emission

(1) Conducted Emission at mains ports of class A

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0.15 to 0.50	79	66
0.50 to 30	73	60
Note The lower limit shall apply at the transition frequencies.		

(2) Conducted Emission at mains ports of class B

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 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 0.15MHz to 0.5MHz.		

6.1.4 Test Result

Test date	August 02, 2010
Ambient Temperature	24 ℃
Relative Humidity	44 % R.H.

Result : For the measurement data, see next page.

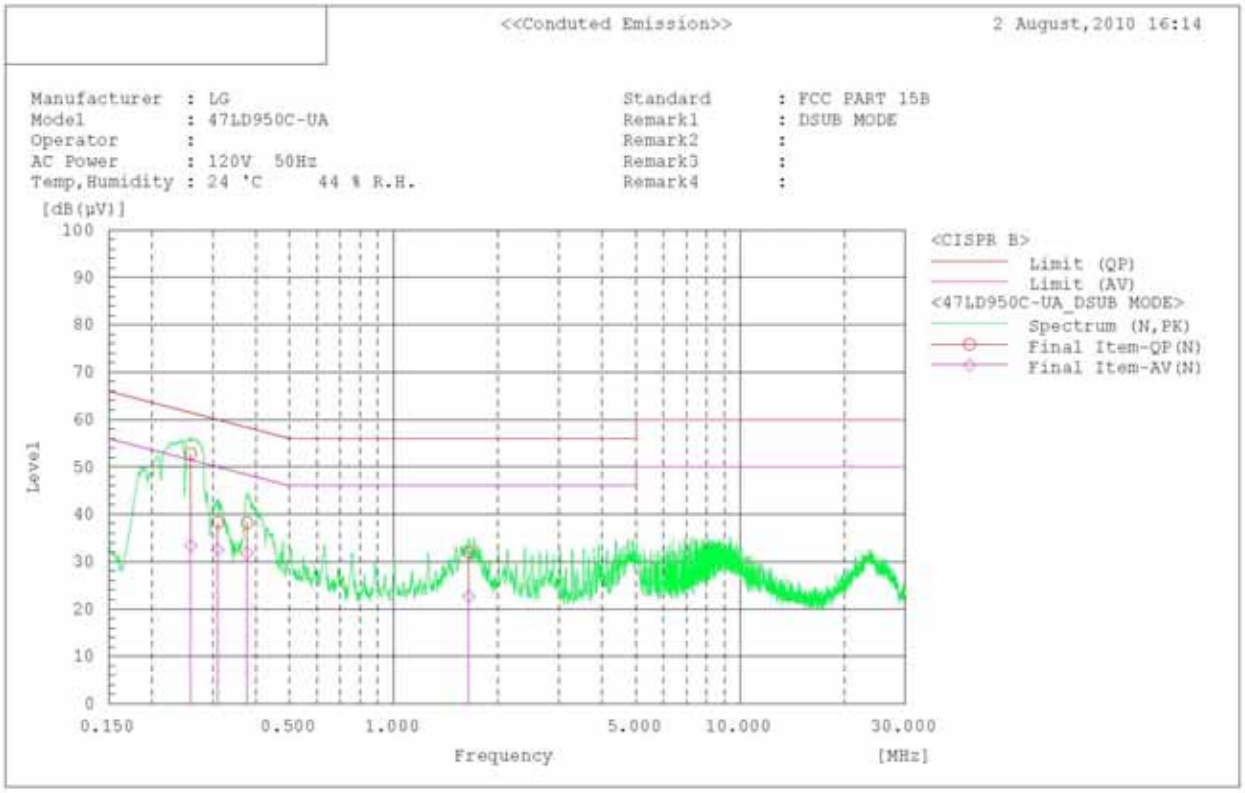
Note) 1. Emission Level = Reading Value + Correction Factor.

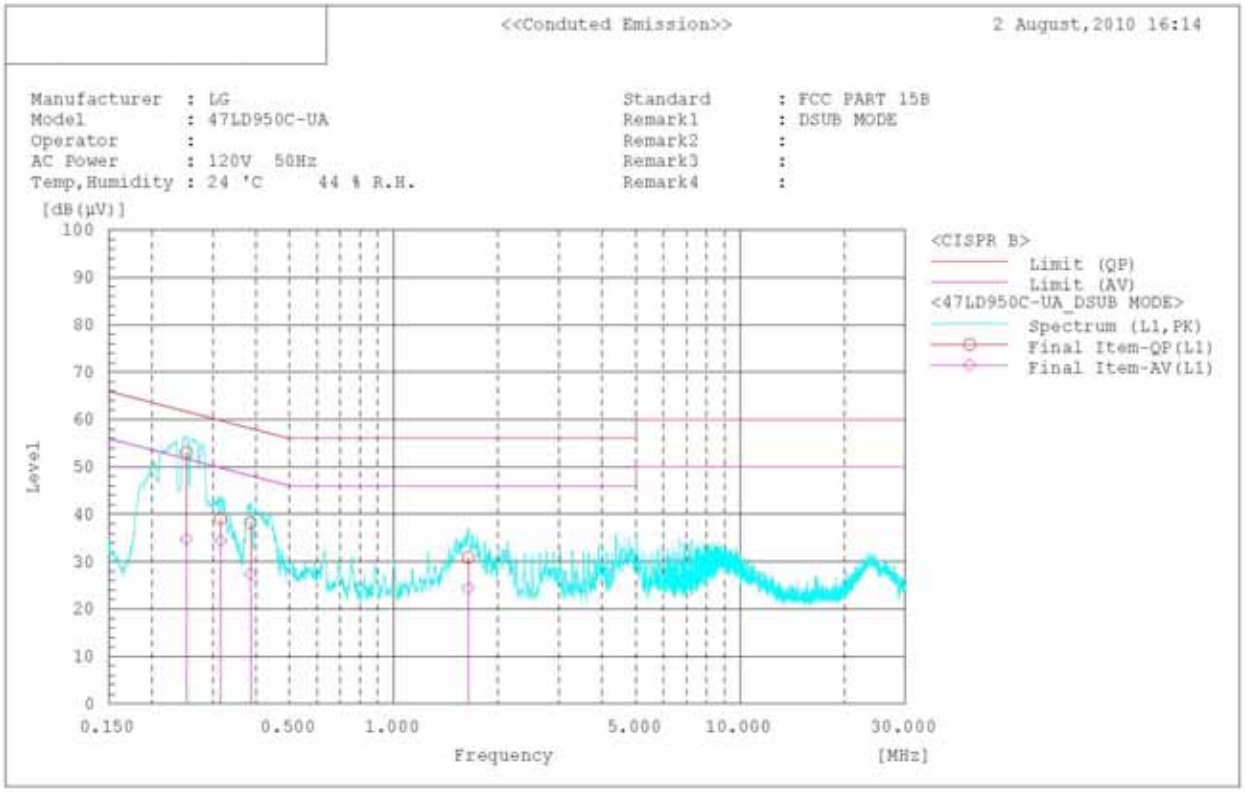
2. Correction Factor = Cable Loss + Insertion Loss of LISN

3. Margin = Limit - Emission level

Test Result

< DSUB MODE >





<<Conduted Emission>>

2 August,2010 16:14

Standard : FCC PART 15B
Manufacturer : LG
Model : 47LD950C-UA
Operator :
AC Power : 120V 50Hz
Temp,Humidity : 24 'C 44 % R.H.
Remark1 : DSUB MODE
Remark2 :
Remark3 :
Remark4 :

Final Result

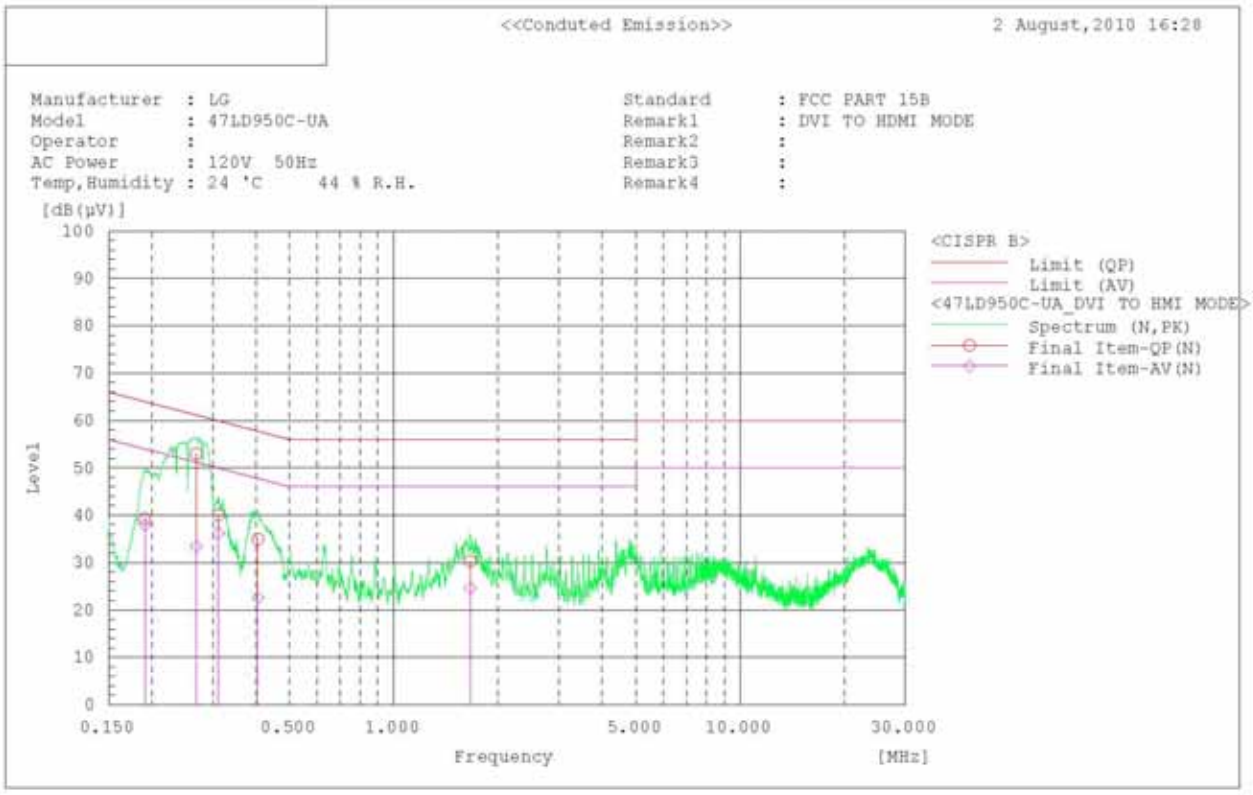
--- N Phase ---

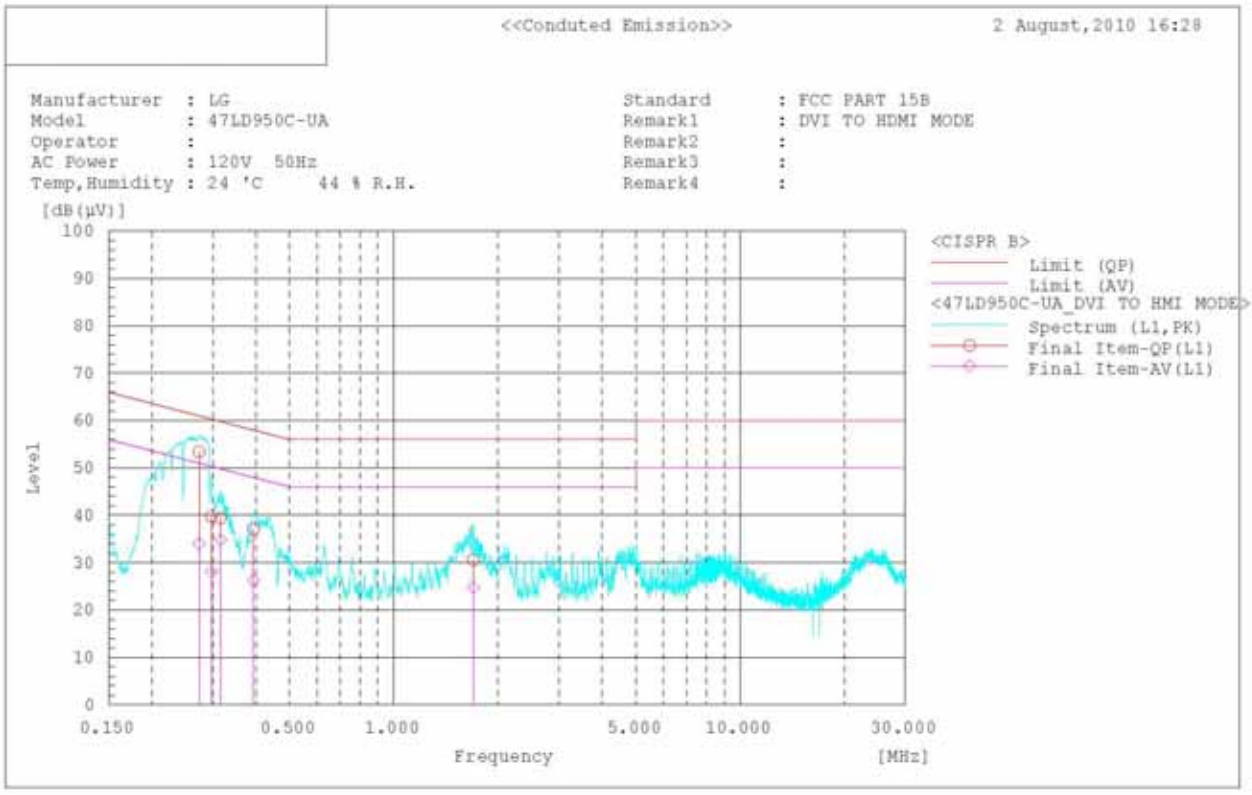
No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.259	52.6	33.2	0.2	52.8	33.4	61.5	51.5	8.7	18.1	
2	0.310	38.1	32.3	0.2	38.3	32.5	60.0	50.0	21.7	17.5	
3	0.377	38.0	31.6	0.2	38.2	31.8	58.3	48.3	20.1	16.5	
4	1.645	31.8	22.5	0.2	32.0	22.7	56.0	46.0	24.0	23.3	

--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.252	52.8	34.6	0.2	53.0	34.8	61.7	51.7	8.7	16.9	
2	0.316	38.9	34.3	0.2	39.1	34.5	59.8	49.8	20.7	15.3	
3	0.386	38.0	27.2	0.2	38.2	27.4	58.1	48.1	19.9	20.7	
4	1.640	30.7	24.2	0.2	30.9	24.4	56.0	46.0	25.1	21.6	

< DVI TO HDMI MODE >





<<Conduted Emission>>

2 August,2010 16:28

Standard : FCC PART 15B
Manufacturer : LG
Model : 47LD950C-UA
Operator :
AC Power : 120V 50Hz
Temp,Humidity : 24 'C 44 % R.H.
Remark1 : DVI TO HDMI MODE
Remark2 :
Remark3 :
Remark4 :

Final Result

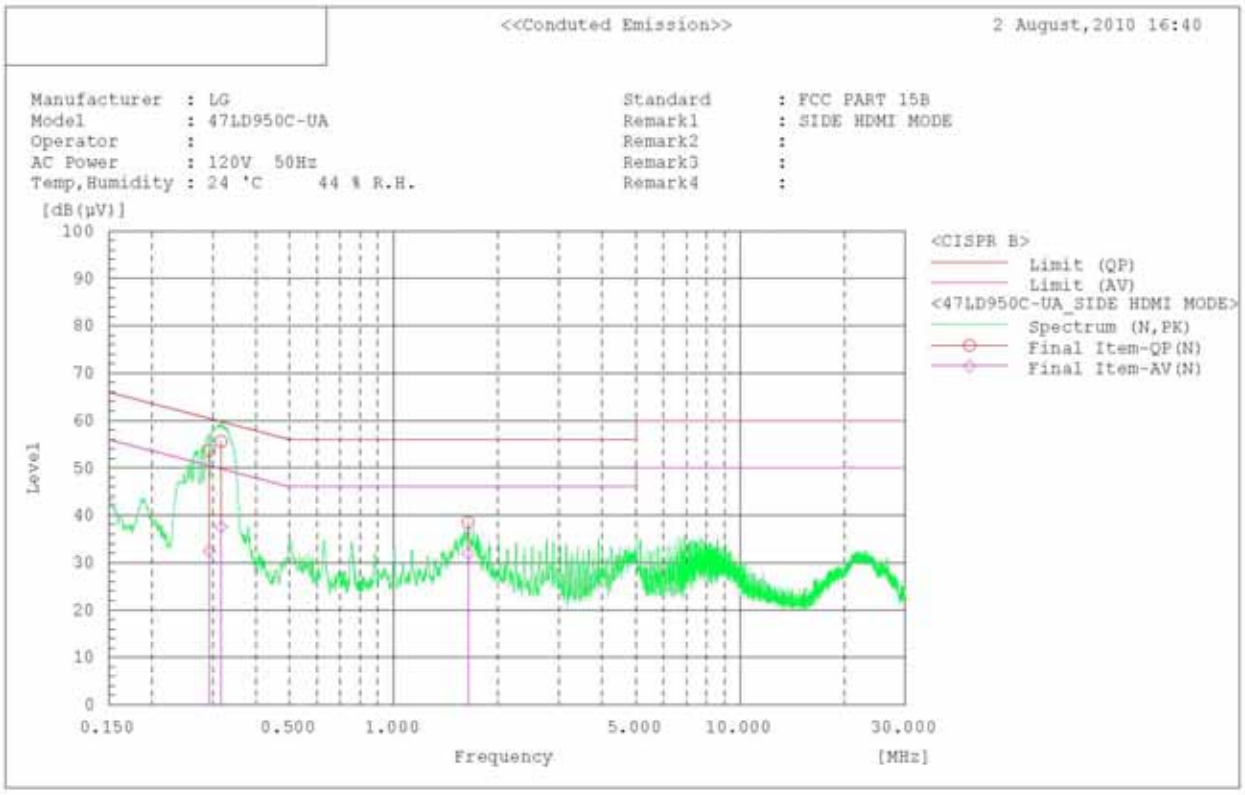
--- N Phase ---

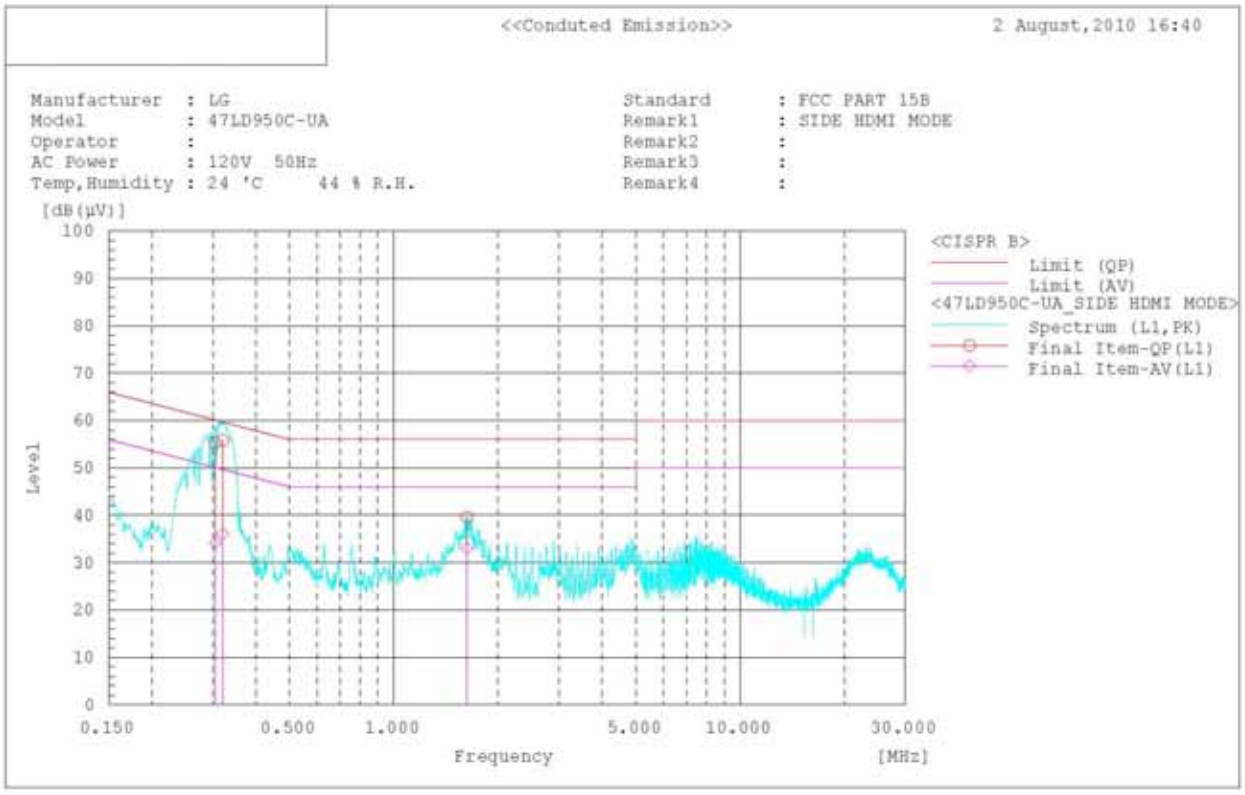
No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]	Remark
1	0.191	39.1	37.8	0.2	39.3	38.0	64.0	54.0	24.7	16.0	
2	0.269	52.8	33.3	0.2	53.0	33.5	61.1	51.1	8.1	17.6	
3	0.312	39.9	36.0	0.2	40.1	36.2	59.9	49.9	19.8	13.7	
4	0.405	34.8	22.4	0.2	35.0	22.6	57.8	47.8	22.8	25.2	
5	1.664	30.1	24.4	0.2	30.3	24.6	56.0	46.0	25.7	21.4	

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]	Remark
1	0.274	53.2	33.8	0.2	53.4	34.0	61.0	51.0	7.6	17.0	
2	0.298	39.6	27.9	0.2	39.8	28.1	60.3	50.3	20.5	22.2	
3	0.316	39.2	34.6	0.2	39.4	34.8	59.8	49.8	20.4	15.0	
4	0.393	36.9	26.0	0.2	37.1	26.2	58.0	48.0	20.9	21.8	
5	1.697	30.4	24.6	0.2	30.6	24.8	56.0	46.0	25.4	21.2	

< SIDE HDMI MODE >





<<Conducted Emission>>

2 August,2010 16:40

Standard : FCC PART 15B
Manufacturer : LG
Model : 47LD950C-UA
Operator :
AC Power : 120V 50Hz
Temp,Humidity : 24 'C 44 % R.H.
Remark1 : SIDE HDMI MODE
Remark2 :
Remark3 :
Remark4 :

Final Result

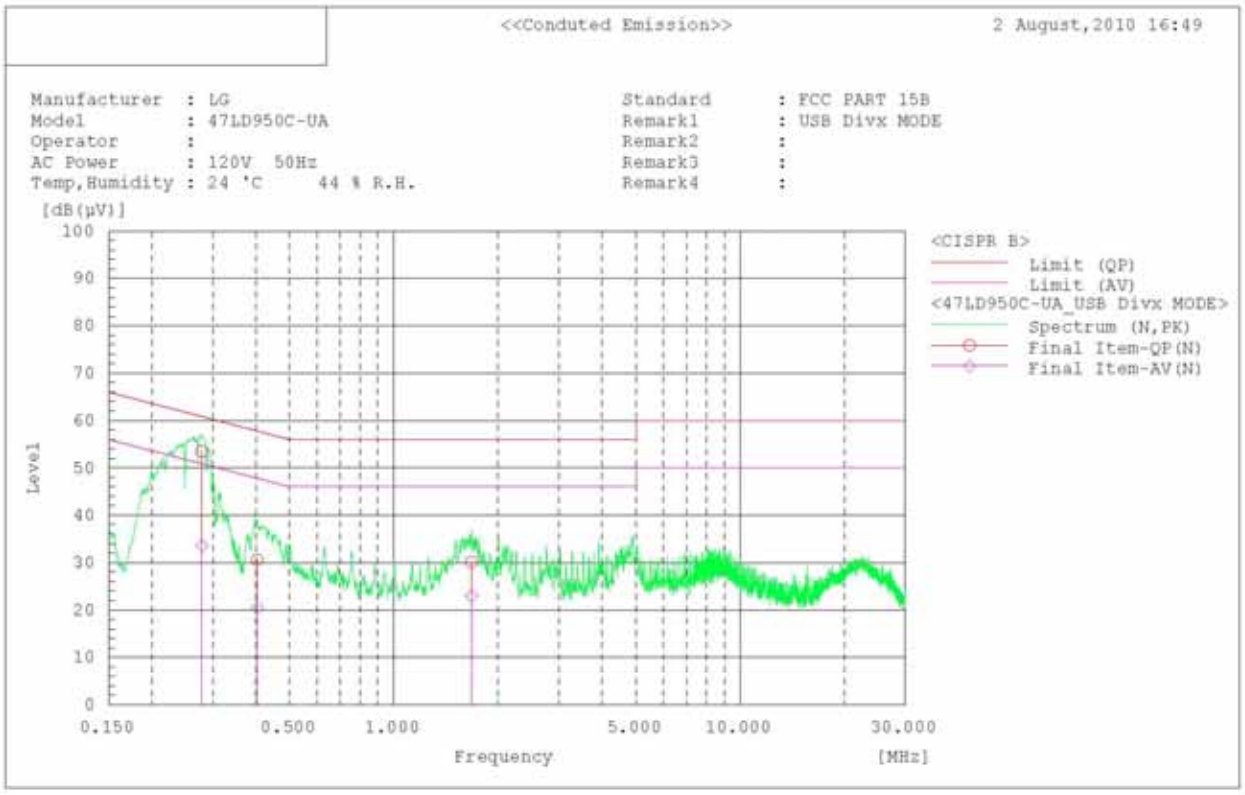
--- N Phase ---

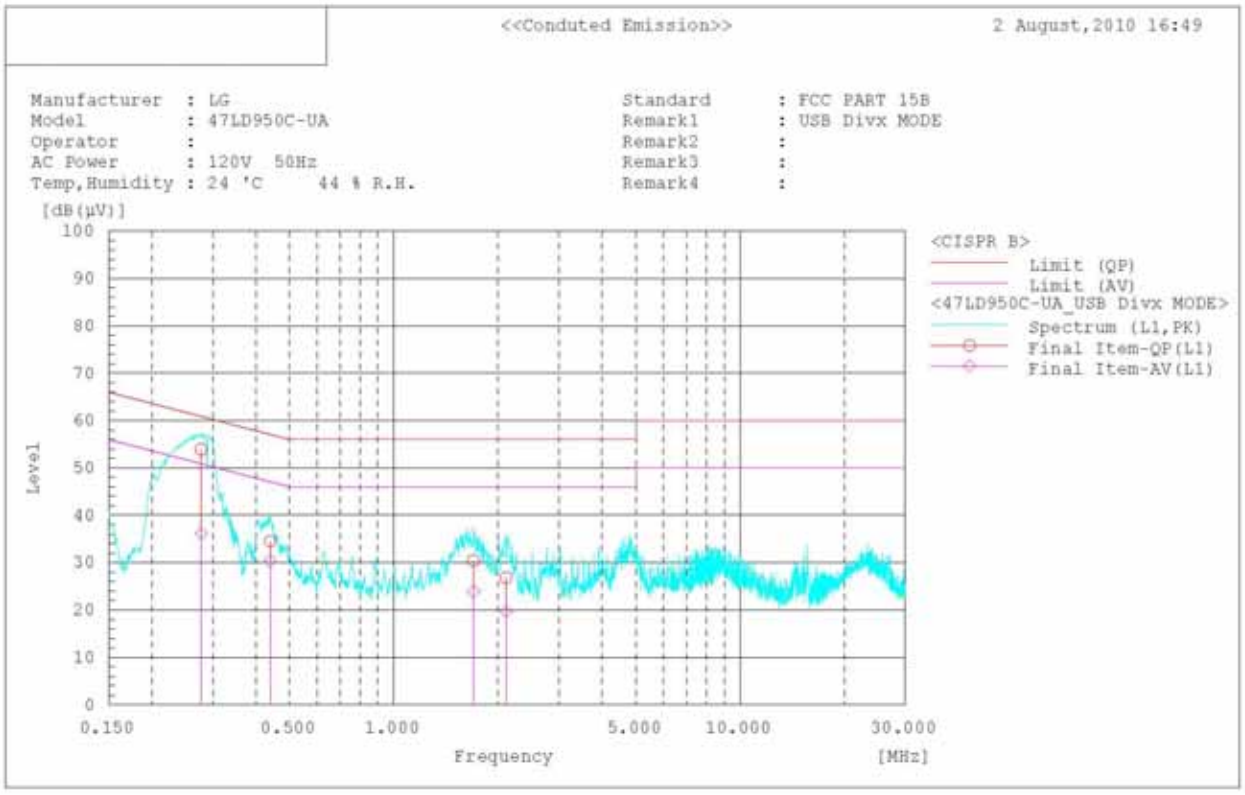
No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.293	53.5	32.3	0.2	53.7	32.5	60.4	50.4	6.7	17.9	
2	0.317	55.4	37.3	0.2	55.6	37.5	59.8	49.8	4.2	12.3	
3	1.640	38.3	31.7	0.2	38.5	31.9	56.0	46.0	17.5	14.1	

--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.305	55.2	34.0	0.2	55.4	34.2	60.1	50.1	4.7	15.9	
2	0.321	55.6	35.9	0.2	55.8	36.1	59.7	49.7	3.9	13.6	
3	1.626	39.4	32.9	0.2	39.6	33.1	56.0	46.0	16.4	12.9	

< USB DIVX MODE >





<<Conducted Emission>>

2 August,2010 16:49

Standard : FCC PART 15B
Manufacturer : LG
Model : 47LD950C-UA
Operator :
AC Power : 120V 50Hz
Temp,Humidity : 24 'C 44 % R.H.
Remark1 : USB Divx MODE
Remark2 :
Remark3 :
Remark4 :

Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]	Remark
1	0.279	53.3	33.4	0.2	53.5	33.6	60.8	50.8	7.3	17.2	
2	0.403	30.4	20.3	0.2	30.6	20.5	57.8	47.8	27.2	27.3	
3	1.676	29.9	22.8	0.2	30.1	23.0	56.0	46.0	25.9	23.0	

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c.f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]	Remark
1	0.278	53.7	36.0	0.2	53.9	36.2	60.9	50.9	7.0	14.7	
2	0.440	34.3	30.2	0.2	34.5	30.4	57.1	47.1	22.6	16.7	
3	1.700	30.2	23.7	0.2	30.4	23.9	56.0	46.0	25.6	22.1	
4	2.110	26.6	19.5	0.2	26.8	19.7	56.0	46.0	29.2	26.3	

6.2 Radiated Emission

RESULT : COMPLY

6.2.1 Measurement Procedure

The radiated emission was measured and set-up was made accordance with **ANSI C63.4:2003.**
If the EUT is tabletop equipment, it was placed on a wooden table with a height of 0.8m above the reference ground plane and 3m away from the interference receiving antenna **10m semi-anechoic chamber.**
Also if the EUT is floor-standing equipment, it was placed on a non-conducted support with a height up to 0.15m above the reference ground plane.
Rotate the EUT from 0° to 360° and position the receiving antenna at heights from 1 to 4m above the reference ground plane continuously to determine associated with higher emission levels and record them.
The measurement was made in both the vertical and horizontal polarization, and the maximum value is presented in the report.
For below 1GHz frequency range, Quasi-Peak detector with 120kHz RBW was used.
Also Peak and Average detector with 1MHz RBW were used for above 1GHz frequency range.
For further description of the configuration refer to the picture of the test set-up.

6.2.2 List of Test and Measurement Instruments

Radiated Emission (10m Chamber)					
Name of Instrument	**Model No.**	**Serial No.**	**Manufacturer**	**Cal. Date**	**Next Cal. Date**
EMI Test Receiver	ESU	100014	R&S	2010.01.29	2011.01.29
Bilog Antenna	CBL6112D	22609	SCHAFFNER	2010.10.28	2011.10.28
Horn Antenna	3115	21097	ETS	2009.09.23	2010.09.23
Amplifier(22dB)	8447E	2945A02865	H/P	2010.01.29	2011.01.29
Low Noise Preamplifier	MLA-00108-B02-36	1518831	TSJ	2010.02.08	2011.02.08
Controller	5905A	N/A	TOKIN	-	-
ANT.master	N/A	N/A	TOKIN	-	-

6.2.3 Limit of Radiated Emission

- The test frequency range of Radiated Emission measurements are listed below.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5^{th} harmonic of the highest frequency or 40GHz, whichever is lower

(1) Limit for Radiated Emission below 1000MHz

Frequency range (MHz)	Class A Equipment (10m distance)	Class B Equipment (3m distance)
	Quasi-peak limits (dBμV/m)	Quasi-peak limits (dBμV/m)
30 to 88	39.1	40
88 to 216	43.5	43.5
216 to 960	46.4	46
960 to 1000	49.5	54
Note 1 The lower limit shall apply at the transition frequency. Note 2 Additional provisions may be required for cases where interference occurs. Note 3 According to 15.109(g), as an alternative to the radiated emission limit shown above, digital devices may be shown to comply with the standards(CISPR), Pub. 22 shown as below.		
30 to 230	40	30
230 to 1000	47	37

(2) Limits for Radiated Emission in the frequency range 1000 - 2000MHz at a measuring distance of 10m

Frequency (GHz)	Class A Equipment		Class B Equipment	
	peak (dBμV/m)	peak (dBμV/m)	peak (dBμV/m)	Average (dBμV/m)
1 to 2	69.5	49.5	63.5	43.5

(3) Limits for Radiated Emission above 1000MHz at a measuring distance of 3m

Frequency (GHz)	Class A Equipment		Class B Equipment	
	peak (dBμV/m)	peak (dBμV/m)	peak (dBμV/m)	Average (dBμV/m)
1 to 40	80	60	74	54

6.2.4 Test Result

Test date	August 04, 2010
Ambient Temperature	21 ℃
Relative Humidity	42 % R.H.

Result : For the measurement data, see next page

Note) 1. Emission Level = Reading Value + Correction Factor.

2. Correction Factor = Cable loss - Amp gain + Antenna Factor

3. Margin = Limit - Emission level

Test Result

< DSUB MODE >

- 30MHz-1GHz

Digital EMC

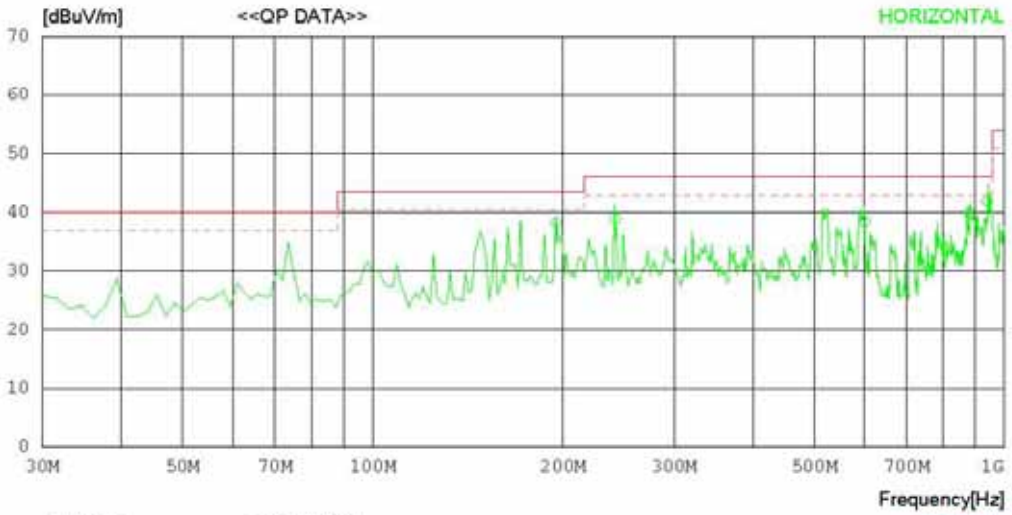
RADIATED EMISSION

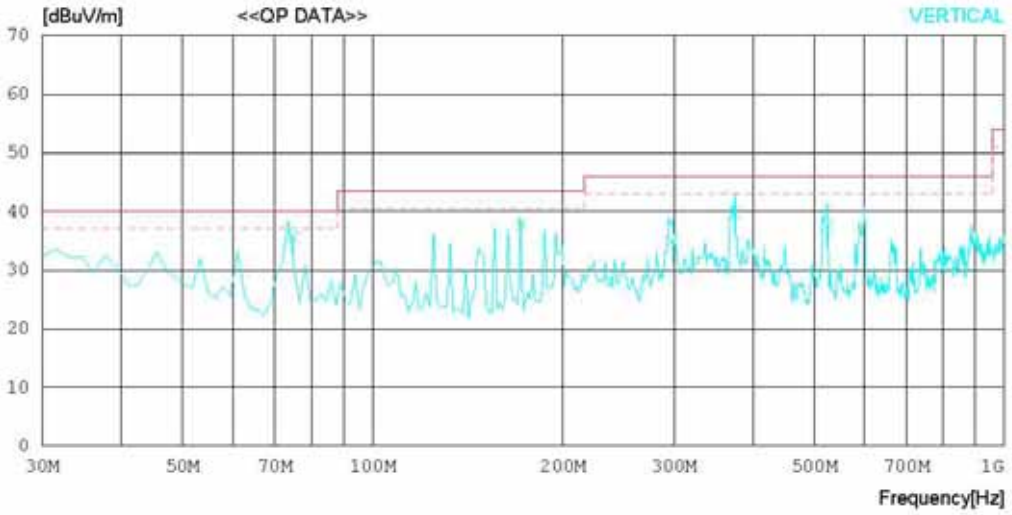
Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21'C 42 % R.H.
Test Condition	:	DSUB MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB





RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21'C 42 % R.H.
Test Condition	:	DSUB MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB

No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	195.417	49.2	10.6	1.7	23.3	38.2	43.5	5.3	100	209
2	242.282	47.7	12.9	1.8	23.5	38.9	46.0	7.1	100	71
3	600.638	41.1	18.8	2.9	24.4	38.4	46.0	7.6	100	1
4	881.676	39.2	20.3	3.6	23.3	39.8	46.0	6.2	100	1
5	940.715	40.2	21.0	3.7	23.0	41.9	46.0	4.1	100	1
----- Vertical ------										
6	74.841	50.7	6.7	1.0	22.7	35.7	40.0	4.3	100	358
7	171.929	49.2	10.2	1.5	23.1	37.8	43.5	5.7	100	169
8	297.731	42.7	13.9	2.0	23.7	34.9	46.0	11.1	100	66
9	374.494	46.1	15.5	2.3	24.2	39.7	46.0	6.3	100	358
10	524.320	41.5	17.9	2.7	24.5	37.6	46.0	8.4	201	0

- 1GHz-3GHz

Digital EMC

RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	DSUB MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Avg)
FCC Part15 Subpart.B Class B (3m) - 8G(Peak)

RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	DSUB MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Avg)
FCC Part15 Subpart.B Class B (3m) - 8G(Peak)

No.	FREQ [MHz]	READING AV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1106.109	48.4	23.9	5.1	41.9	35.5	54.0	18.5	201	112
----- Vertical ------										
2	1028.519	47.0	23.7	4.9	41.9	33.7	54.0	20.3	100	168
3	1147.404	44.0	24.1	5.2	41.9	31.4	54.0	22.6	201	113
4	1371.423	44.5	24.7	5.7	41.9	33.0	54.0	21.0	100	174
5	1573.183	47.7	25.1	6.1	41.9	37.0	54.0	17.0	201	209
6	2079.060	46.3	25.5	7.1	41.9	37.0	54.0	17.0	100	180
7	2622.247	38.9	27.7	8.0	41.5	33.1	54.0	20.9	100	358

Digital EMC

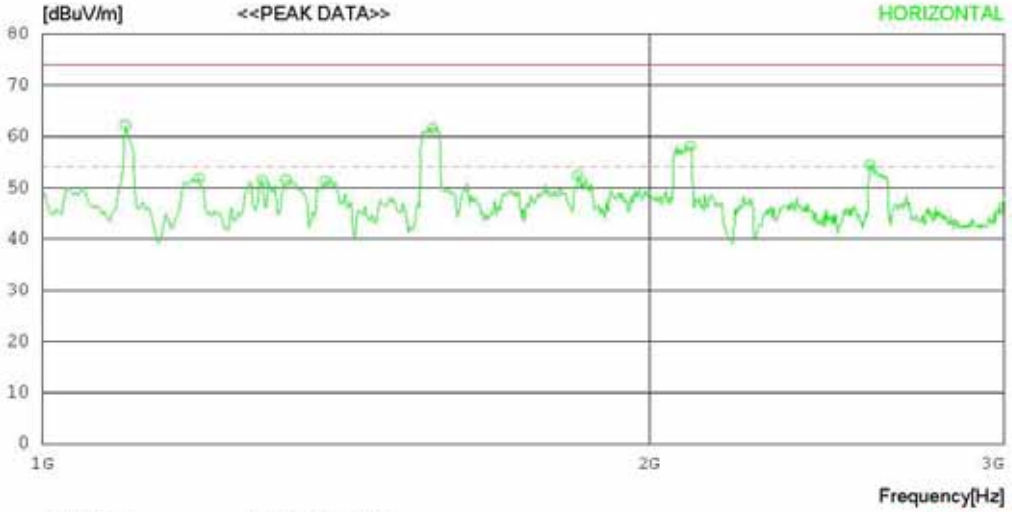
RADIATED EMISSION

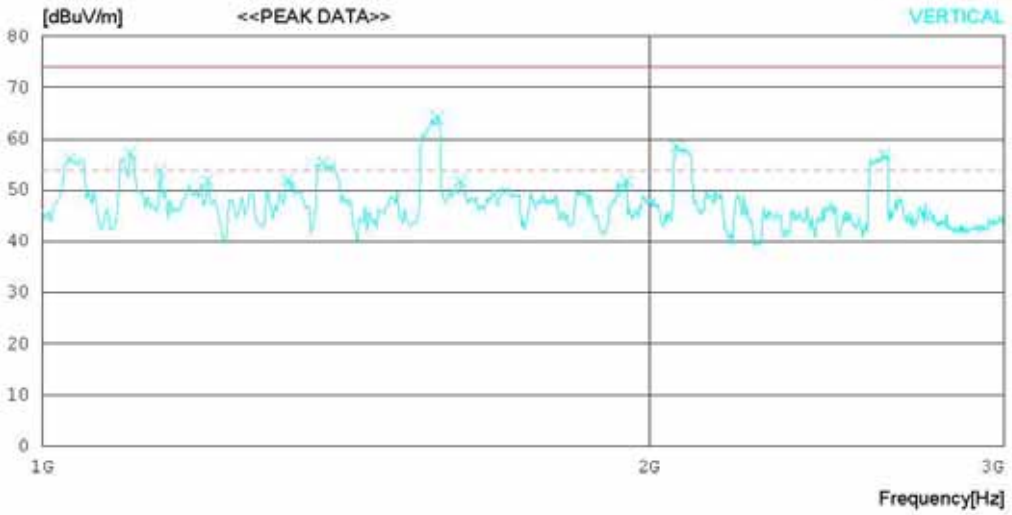
Date : 2010-08-04

Model Name	:	47LD850C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	DSUB MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Peak)
FCC Part15 Subpart.B Class B (3m) - 8G(Avg)





RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	DSUB MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Peak)
FCC Part15 Subpart.B Class B (3m) - 8G(Avg)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1099.358	75.2	23.9	5.0	41.9	62.2	74.0	11.8	201	112
2	1195.510	64.2	24.2	5.3	41.9	51.8	74.0	22.2	100	184
3	1285.252	63.3	24.5	5.5	41.9	51.4	74.0	22.6	100	173
4	1320.508	63.3	24.6	5.5	41.9	51.5	74.0	22.5	100	358
5	1381.405	62.7	24.8	5.7	41.9	51.3	74.0	22.7	100	139
6	1560.889	72.3	25.1	6.1	41.9	61.6	74.0	12.4	100	358
7	1842.936	62.4	25.2	6.7	41.9	52.4	74.0	21.6	100	151
8	2096.137	67.1	25.6	7.2	41.8	58.1	74.0	15.9	100	190
9	2573.694	60.7	27.5	7.9	41.6	54.5	74.0	19.5	100	247
----- Vertical ------										
10	1032.051	69.4	23.7	4.9	41.9	56.1	74.0	17.9	100	168
11	1105.768	70.1	23.9	5.1	41.9	57.2	74.0	16.8	100	139
12	1144.229	66.5	24.1	5.1	41.9	53.8	74.0	20.2	201	113
13	1208.331	64.2	24.3	5.3	41.9	51.9	74.0	22.1	201	152
14	1323.713	63.8	24.6	5.6	41.9	52.1	74.0	21.9	201	211
15	1378.200	66.9	24.8	5.7	41.9	55.5	74.0	18.5	100	174
16	1570.504	74.9	25.1	6.1	41.9	64.2	74.0	9.8	201	209
17	1612.170	62.2	25.2	6.2	41.9	51.7	74.0	22.3	201	205
18	1948.704	61.6	25.2	6.9	41.9	51.8	74.0	22.2	100	184
19	2064.086	67.9	25.5	7.1	41.9	58.6	74.0	15.4	100	180
20	2615.360	62.7	27.7	8.0	41.5	56.9	74.0	17.1	100	358

< DVI TO HDMI MODE >

- 30MHz-1GHz

Digital EMC

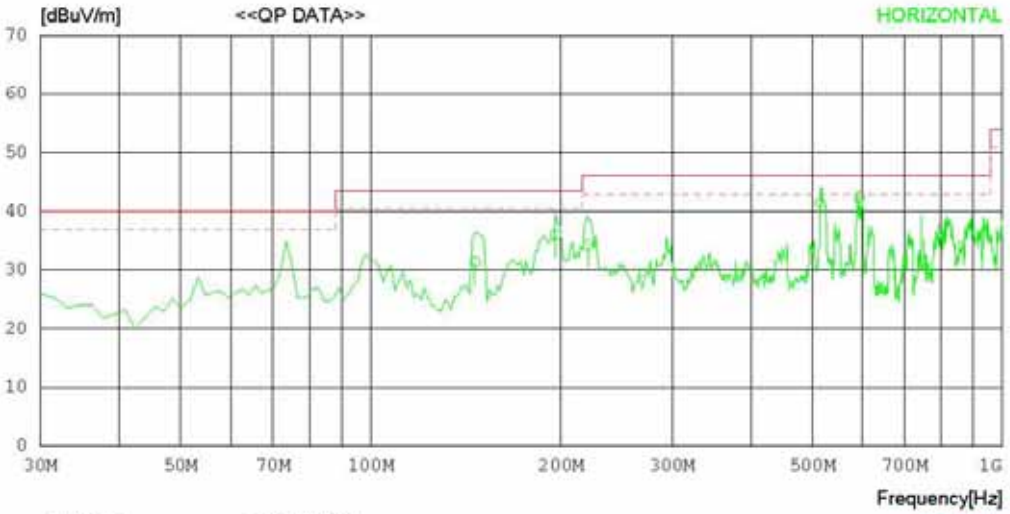
RADIATED EMISSION

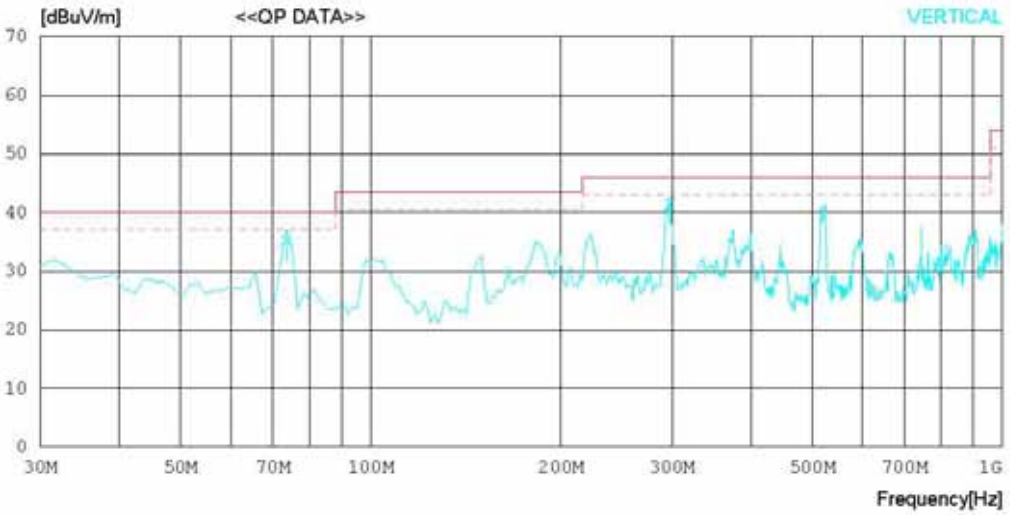
Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21'C 42 % R.H.
Test Condition	:	HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB





RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21'C 42 % R.H.
Test Condition	:	HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB

No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	146.205	42.4	10.5	1.4	23.0	31.3	43.5	12.2	100	120
2	196.038	47.0	10.6	1.7	23.3	36.0	43.5	7.5	140	156
3	220.827	44.2	11.8	1.7	23.4	34.3	46.0	11.7	100	141
4	514.314	45.4	17.8	2.7	24.5	41.4	46.0	4.6	100	1
5	593.968	45.2	18.7	2.9	24.4	42.4	46.0	3.6	120	120
----- Vertical ------										
6	73.558	50.4	6.6	1.0	22.7	35.3	40.0	4.7	100	358
7	297.519	49.2	13.9	2.0	23.7	41.4	46.0	4.6	100	193

- 1GHz-3GHz

Digital EMC

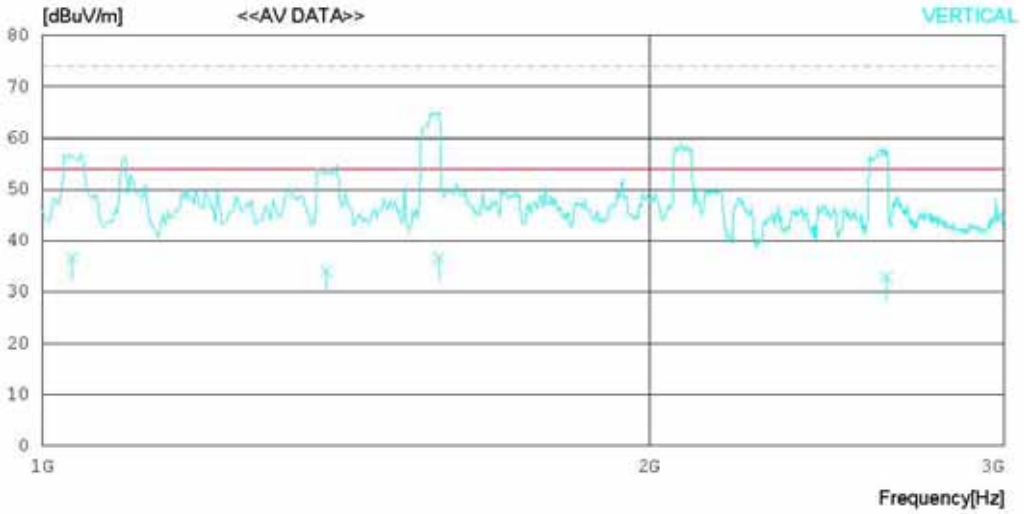
RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Avg)
FCC Part15 Subpart.B Class B (3m) - 8G(Peak)



RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Avg)
FCC Part15 Subpart.B Class B (3m) - 8G(Peak)

No.	FREQ [MHz]	READING AV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1101.644	47.8	23.9	5.0	41.9	34.8	54.0	19.2	100	358
2	1304.564	37.4	24.5	5.5	41.9	25.5	54.0	28.5	100	143
3	1331.276	38.4	24.6	5.6	41.9	26.7	54.0	27.3	100	133
4	2098.198	45.4	25.6	7.2	41.8	36.4	54.0	17.6	100	358
----- Vertical ------										
5	1034.346	50.0	23.7	4.9	41.9	36.7	54.0	17.3	100	358
6	1383.461	45.5	24.8	5.7	41.9	34.1	54.0	19.9	100	358
7	1573.564	47.4	25.1	6.1	41.9	36.7	54.0	17.3	201	1
8	2622.727	38.8	27.7	8.0	41.5	33.0	54.0	21.0	100	188

Digital EMC

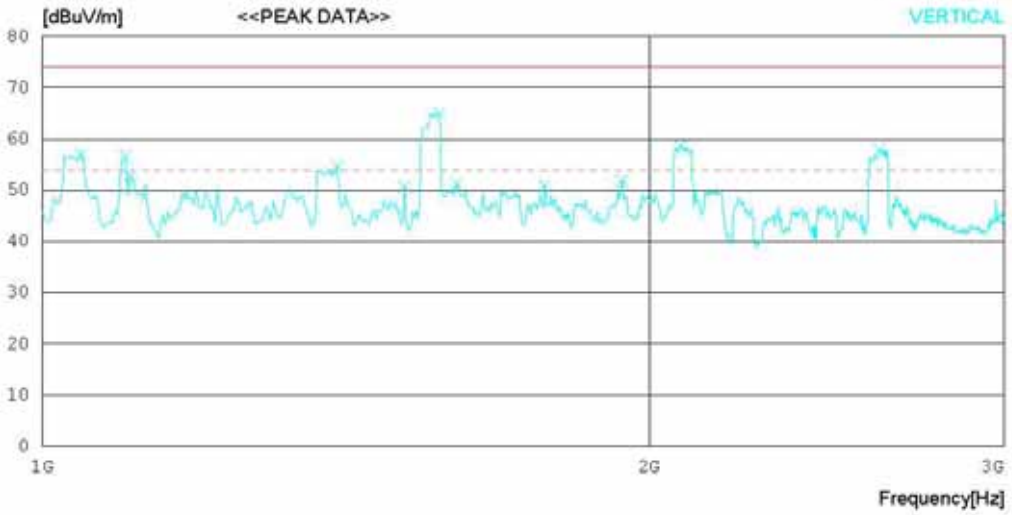
RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Peak)
FCC Part15 Subpart.B Class B (3m) - 8G(Avg)



RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Peak)
FCC Part15 Subpart.B Class B (3m) - 8G(Avg)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1099.358	71.5	23.9	5.0	41.9	58.5	74.0	15.5	201	210
2	1137.819	64.7	24.0	5.1	41.9	51.9	74.0	22.1	100	358
3	1266.022	64.2	24.4	5.4	41.9	52.1	74.0	21.9	100	143
4	1304.483	65.8	24.5	5.5	41.9	53.9	74.0	20.1	100	133
5	1330.124	67.0	24.6	5.6	41.9	55.3	74.0	18.7	100	143
6	1374.995	64.2	24.8	5.7	41.9	52.8	74.0	21.2	100	358
7	1573.709	73.6	25.1	6.1	41.9	62.9	74.0	11.1	100	358
8	2099.342	68.0	25.6	7.2	41.8	59.0	74.0	15	100	358
9	2573.694	62.5	27.5	7.9	41.6	56.3	74.0	17.7	100	245
----- Vertical ------										
10	1044.872	70.2	23.8	4.9	41.9	57.0	74.0	17	100	358
11	1099.358	69.7	23.9	5.0	41.9	56.7	74.0	17.3	100	90
12	1105.768	65.8	23.9	5.1	41.9	52.9	74.0	21.1	201	1
13	1400.635	66.0	24.8	5.7	41.9	54.6	74.0	19.4	100	358
14	1512.813	61.5	25.1	6.0	41.9	50.7	74.0	23.3	100	358
15	1573.709	75.8	25.1	6.1	41.9	65.1	74.0	8.9	201	1
16	1605.760	61.7	25.2	6.2	41.9	51.2	74.0	22.8	201	209
17	1775.629	61.0	25.2	6.5	41.9	50.8	74.0	23.2	201	1
18	1939.088	61.7	25.2	6.9	41.9	51.9	74.0	22.1	100	358
19	2073.702	68.0	25.5	7.1	41.9	58.7	74.0	15.3	100	180
20	2602.540	63.7	27.6	8.0	41.5	57.8	74.0	16.2	100	188

< SIDE HDMI MODE >

- 30MHz-1GHz

Digital EMC

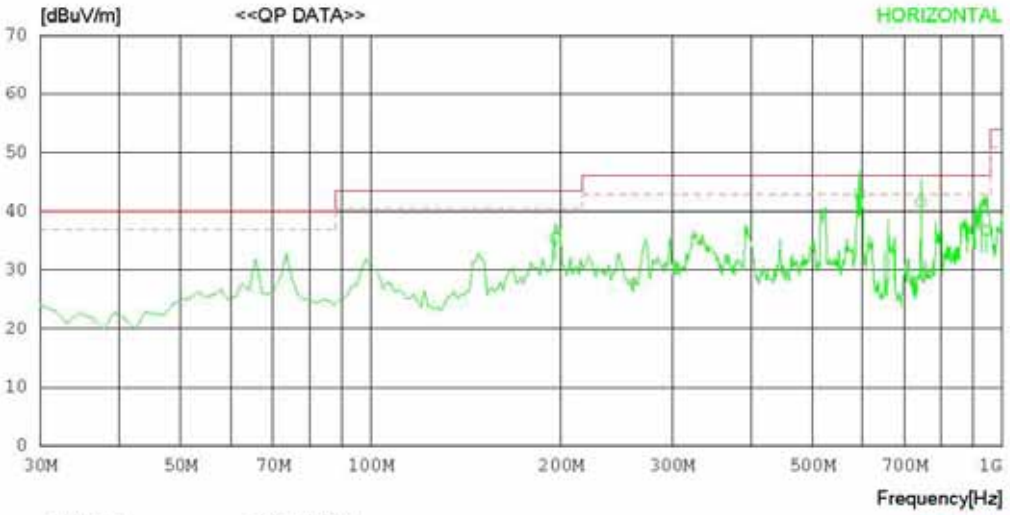
RADIATED EMISSION

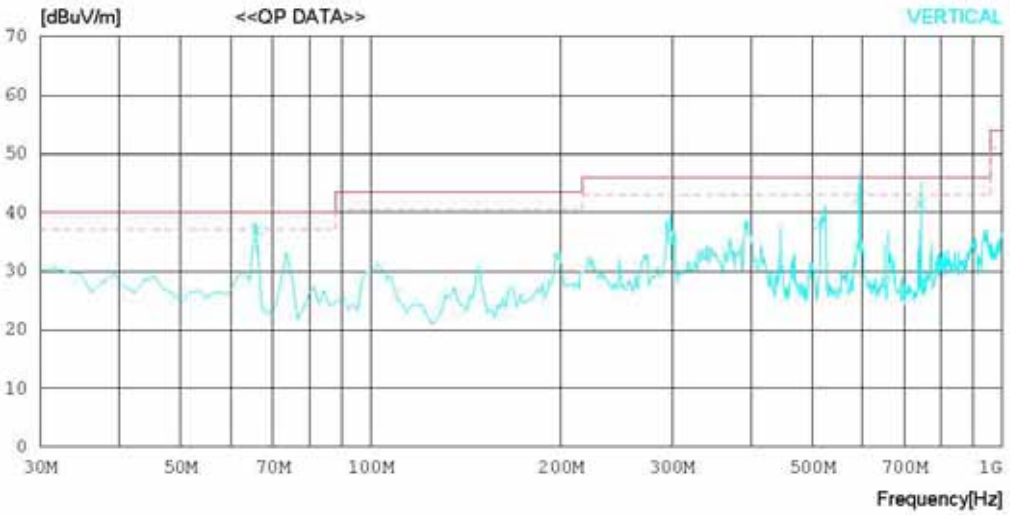
Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21'C 42 % R.H.
Test Condition	:	SIDE HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB





RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21'C 42 % R.H.
Test Condition	:	SIDE HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB

No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	196.038	46.4	10.6	1.7	23.3	35.4	43.5	8.1	100	358
2	594.000	45.7	18.7	2.9	24.4	42.9	46.0	3.1	301	206
3	742.513	43.1	19.2	3.3	24.0	41.6	46.0	4.4	100	358
4	942.833	35.0	21.0	3.7	23.0	36.7	46.0	9.3	100	123
----- Vertical ------										
5	66.000	52.5	6.2	1.0	22.7	37.0	40.0	3.0	100	261
6	299.552	43.4	13.9	2.0	23.7	35.6	46.0	10.4	100	1
7	514.371	42.0	17.8	2.7	24.5	38.0	46.0	8.0	120	180
8	594.000	45.2	18.7	2.9	24.4	42.4	46.0	3.6	100	66
9	742.513	43.0	19.2	3.3	24.0	41.5	46.0	4.5	100	52

- 1GHz-3GHz

Digital EMC

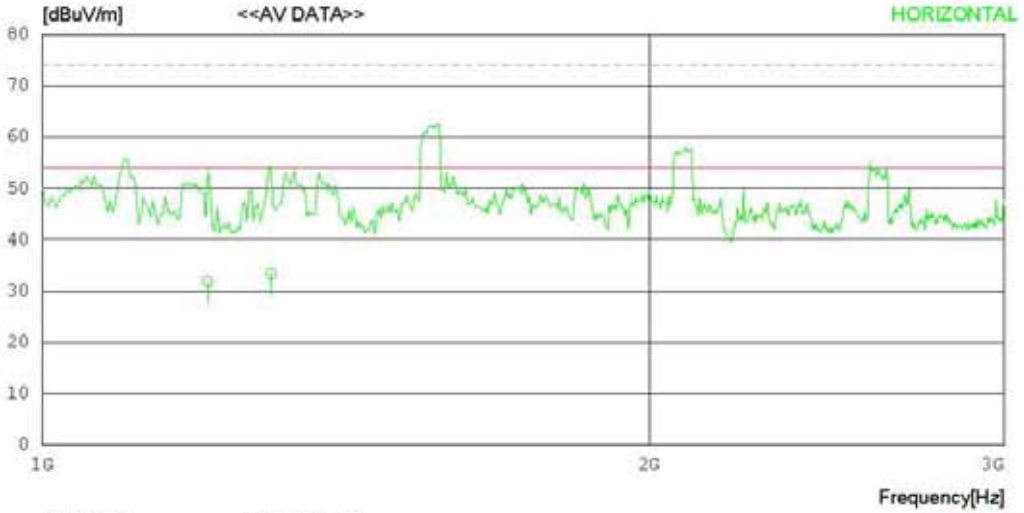
RADIATED EMISSION

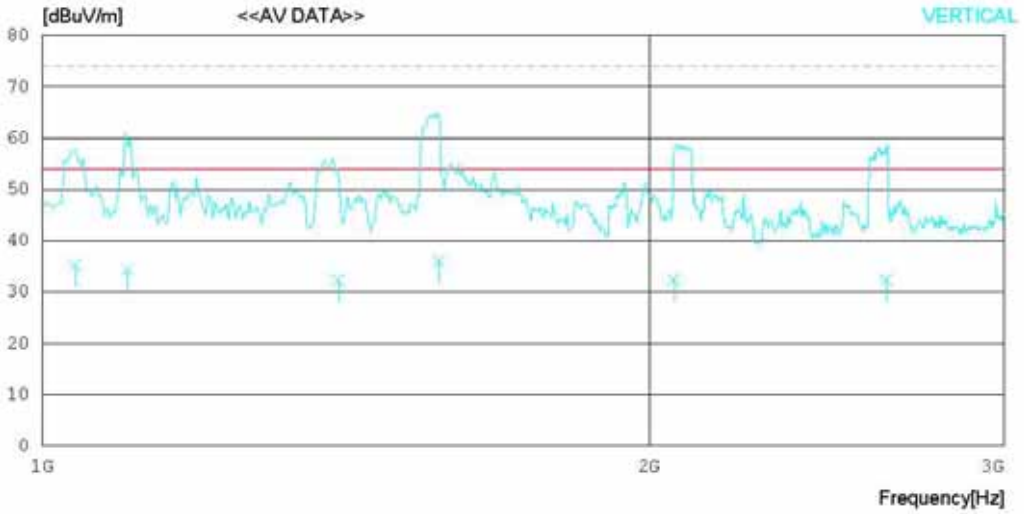
Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	SIDE HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Avg)
FCC Part15 Subpart.B Class B (3m) - 8G(Peak)





RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	SIDE HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Avg)
FCC Part15 Subpart.B Class B (3m) - 8G(Peak)

No.	FREQ [MHz]	READING AV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1207.768	44.2	24.3	5.3	41.9	31.9	54.0	22.1	100	1
2	1298.450	45.2	24.5	5.5	41.9	33.3	54.0	20.7	100	1
----- Vertical ------										
3	1038.067	48.5	23.7	4.9	41.9	35.2	54.0	18.8	100	171
4	1101.980	47.3	23.9	5.1	41.9	34.4	54.0	19.6	100	161
5	1401.811	43.6	24.8	5.7	41.9	32.2	54.0	21.8	100	30
6	1572.766	46.8	25.1	6.1	41.9	36.1	54.0	17.9	140	210
7	2057.102	41.8	25.4	7.1	41.9	32.4	54.0	21.6	100	179
8	2622.160	38.2	27.7	8.0	41.5	32.4	54.0	21.6	100	140

Digital EMC

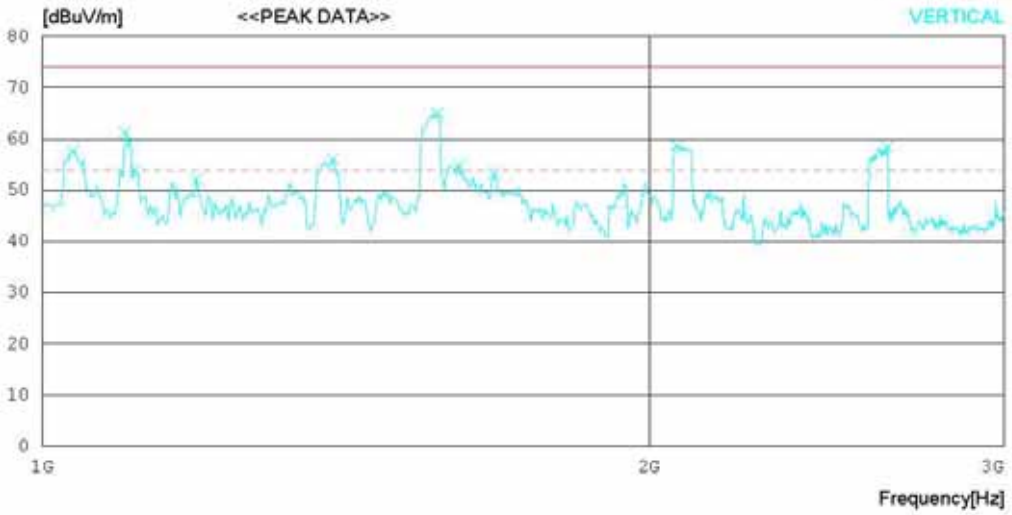
RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD850C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	SIDE HDMI TO DVI MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Peak)
FCC Part15 Subpart.B Class B (3m) - 8G(Avg)



RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	SIDE HDMI TO DVI MODE	Operator	:	

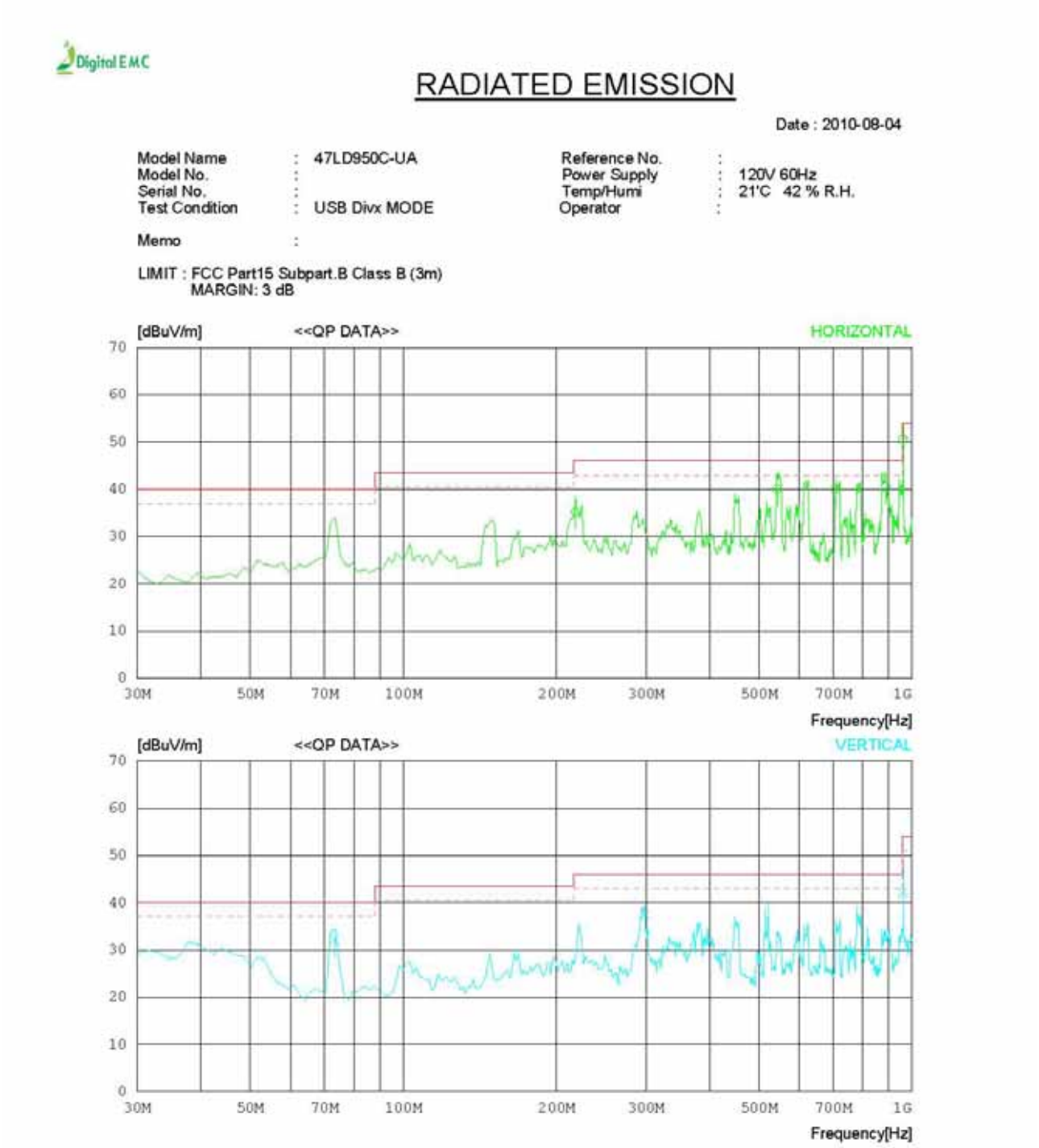
Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Peak)
FCC Part15 Subpart.B Class B (3m) - 8G(Avg)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1060.897	65.4	23.8	5.0	41.9	52.3	74.0	21.7	100	224
2	1099.358	68.9	23.9	5.0	41.9	55.9	74.0	18.1	100	1
3	1208.331	66.0	24.3	5.3	41.9	53.7	74.0	20.3	100	1
4	1298.073	66.2	24.5	5.5	41.9	54.3	74.0	19.7	100	1
5	1333.329	65.3	24.6	5.6	41.9	53.6	74.0	20.4	201	228
6	1371.790	64.4	24.8	5.7	41.9	53.0	74.0	21	100	176
7	1570.504	73.2	25.1	6.1	41.9	62.5	74.0	11.5	100	150
8	1586.530	63.9	25.2	6.1	41.9	53.3	74.0	20.7	100	1
9	2086.522	66.9	25.6	7.1	41.8	57.8	74.0	16.2	100	178
10	2570.489	61.3	27.5	7.9	41.6	55.1	74.0	18.9	100	192
----- Vertical ------										
11	1035.256	70.9	23.7	4.9	41.9	57.6	74.0	16.4	100	171
12	1099.358	74.2	23.9	5.0	41.9	61.2	74.0	12.8	100	161
13	1112.178	66.6	24.0	5.1	41.9	53.8	74.0	20.2	100	1
14	1192.305	64.5	24.2	5.3	41.9	52.1	74.0	21.9	100	235
15	1394.225	67.5	24.8	5.7	41.9	56.1	74.0	17.9	100	1
16	1570.504	75.7	25.1	6.1	41.9	65.0	74.0	9	200	210
17	1608.965	65.4	25.2	6.2	41.9	54.9	74.0	19.1	200	358
18	1676.272	63.6	25.2	6.3	41.9	53.2	74.0	20.8	200	358
19	2064.086	68.0	25.5	7.1	41.9	58.7	74.0	15.3	100	179
20	2624.975	64.3	27.7	8.0	41.5	58.5	74.0	15.5	200	0

< USB DIVX MODE >

- 30MHz-1GHz



RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21'C 42 % R.H.
Test Condition	:	USB Divx MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB

No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	218.032	45.2	11.7	1.7	23.4	35.2	46.0	10.8	100	8
2	542.625	43.7	18.1	2.8	24.5	40.1	46.0	5.9	100	206
3	707.256	42.1	18.9	3.2	24.1	40.1	46.0	5.9	120	207
4	888.407	39.9	20.3	3.6	23.3	40.5	46.0	5.5	100	358
5	960.307	48.7	21.2	3.7	23.0	50.6	54.0	3.4	100	358
----- Vertical ------										
6	73.402	47.4	6.6	1.0	22.7	32.3	40.0	7.7	100	6
7	299.042	45.2	13.9	2.0	23.7	37.4	46.0	8.6	100	1
8	960.307	40.2	21.2	3.7	23.0	42.1	54.0	11.9	100	168

- 1GHz-3GHz

Digital EMC

RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	USB Divx MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Avg)
FCC Part15 Subpart.B Class B (3m) - 8G(Peak)

RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	USB Divx MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Avg)
FCC Part15 Subpart.B Class B (3m) - 8G(Peak)

No.	FREQ [MHz]	READING AV [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1297.250	40.6	24.5	5.5	41.9	28.7	54.0	25.3	201	358
----- Vertical ------										
2	1028.961	46.2	23.7	4.9	41.9	32.9	54.0	21.1	100	161
3	1569.384	44.5	25.1	6.1	41.9	33.8	54.0	20.2	100	213
4	2086.221	40.4	25.6	7.1	41.8	31.3	54.0	22.7	100	189
5	2603.856	35.3	27.6	8.0	41.5	29.4	54.0	24.6	200	0

Digital EMC

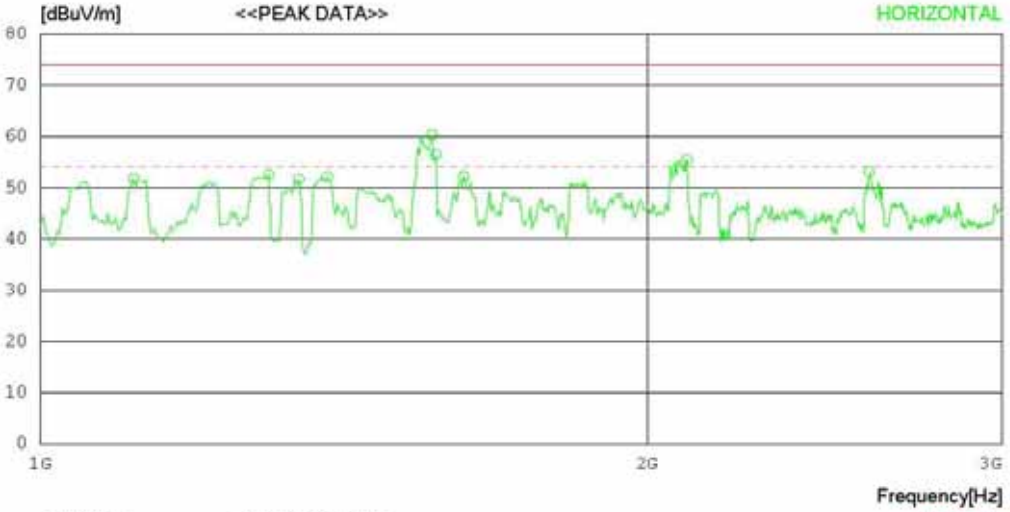
RADIATED EMISSION

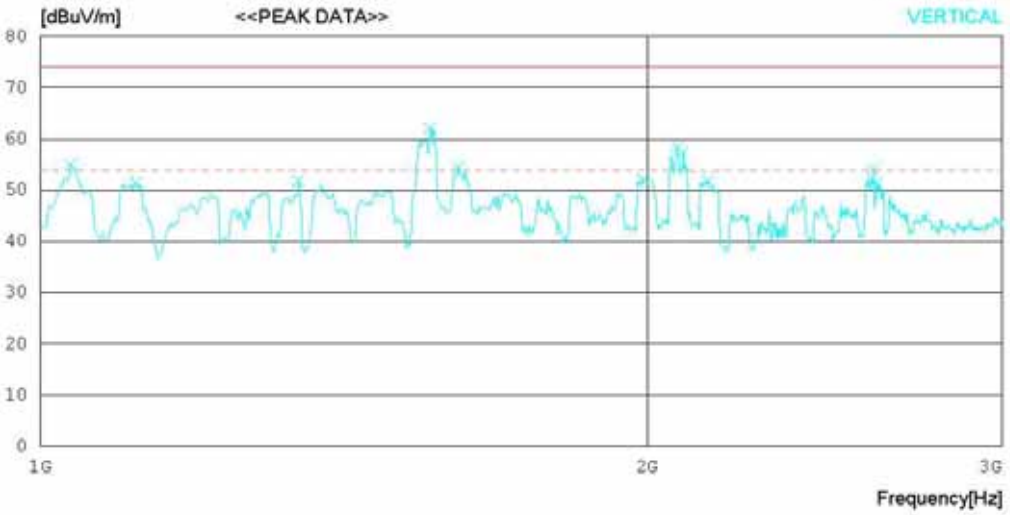
Date : 2010-08-04

Model Name	:	47LD850C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	USB Divx MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Peak)
FCC Part15 Subpart.B Class B (3m) - 8G(Avg)





RADIATED EMISSION

Date : 2010-08-04

Model Name	:	47LD950C-UA	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	21 'C 42 % R.H.
Test Condition	:	USB Divx MODE	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 8G(Peak)
FCC Part15 Subpart.B Class B (3m) - 8G(Avg)

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	1112.178	64.6	24.0	5.1	41.9	51.8	74.0	22.2	100	210
2	1298.073	64.4	24.5	5.5	41.9	52.5	74.0	21.5	201	358
3	1342.944	63.2	24.7	5.6	41.9	51.6	74.0	22.4	201	358
4	1387.815	63.6	24.8	5.7	41.9	52.2	74.0	21.8	100	200
5	1564.094	71.0	25.1	6.1	41.9	60.3	74.0	13.7	100	144
6	1570.504	67.2	25.1	6.1	41.9	56.5	74.0	17.5	100	1
7	1621.786	62.7	25.2	6.2	41.9	52.2	74.0	21.8	100	154
8	2092.932	64.6	25.6	7.1	41.8	55.5	74.0	18.5	100	198
9	2576.899	59.2	27.6	7.9	41.6	53.1	74.0	20.9	100	240
----- Vertical ------										
10	1035.256	68.3	23.7	4.9	41.9	55.0	74.0	19	100	161
11	1115.383	64.1	24.0	5.1	41.9	51.3	74.0	22.7	200	358
12	1342.944	63.4	24.7	5.6	41.9	51.8	74.0	22.2	100	1
13	1560.889	72.8	25.1	6.1	41.9	62.1	74.0	11.9	200	213
14	1612.170	64.8	25.2	6.2	41.9	54.3	74.0	19.7	200	358
15	1990.370	61.8	25.2	7.0	41.9	52.1	74.0	21.9	100	1
16	2070.497	67.7	25.5	7.1	41.9	58.4	74.0	15.6	100	179
17	2083.317	66.6	25.6	7.1	41.9	57.4	74.0	16.6	100	189
18	2144.213	60.5	25.8	7.2	41.8	51.7	74.0	22.3	100	1
19	2589.719	60.0	27.6	7.9	41.5	54.0	74.0	20	200	0
20	2599.334	57.3	27.6	8.0	41.5	51.4	74.0	22.6	200	0