EMC TEST REPORT

Test item	: LED TV Monitor
Model No.	: 60LN5710-UB
Order No.	: DEMC1303-01012
Date of receipt	: 2013-03-15
Test duration	: 2013-03-22 ~ 2013-03-23
Use of report	: FCC CoC Marking
Date of Issue	: 2013-03-27

Applicant : LG Electronics Inc.
19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713, Korea

Test laboratory : Digital EMC Co., Ltd.
683-3, Yubang-Dong, Cheoin-Gu, Yongin-Si, Gyeonggi-Do, 449-080, Korea

Test specification : ANSI C 63.4:2003
FCC Part 15 Subpart B
(Type of Device : Class B Personal Computers and Peripherals (JBP))

Test environment : Temperature : (19 ~ 20) °C,
Humidity : (34 ~ 37) % R.H.

Test result : ☒ Comply ☐ Not Comply

Tested by:

Manager
DaeHwa Eun

Reviewed by:

Technical Manager
ChangHo Lee

PRESIDENT OF DIGITAL EMC CO., LTD.

CONTENTS

1. General Remarks

This report contains the result of tests performed by:

DIGITAL EMC CO., LTD.

Address : 683-3, Yubang-Dong, Cheoin-Gu, Yongin-Si, Gyeonggi-Do, 449-080, Korea

http://www.digitalemc.com

Tel: +82-31-321-2664 Fax: +82-31-321-1664

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 678747	Test Facility list & NSA Data
	Canada	IC	5740A-1 5740A-2	Test Facility list & NSA Data
	Japan	VCCI	C-1427 R-1364, R-3385 T-1442, G-338	Test Facility list & NSA Data
Certification	Korea	KC	KR0034	Test Facility list & NSA Data
	Germany	TUV	ROK1221C	ISO/IEC 17025

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

3. General Information of EUT

Model No.	60LN5710-UB
EUT Type	LED TV Monitor
Serial No	NONE
FCC ID	BEJ60LN5710UB
Type of Sample Tested	Pre-Production
High Frequency	790 MHz
Rating	AC 100-240 V~ 50/60 Hz, 2.0 A
Supplied Power for Test	AC 120 V, 60 Hz
Applicant	LG Electronics Inc. 19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713, Korea
Manufacturer	LG Electronics Inc. 19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713, Korea

RGB (PC), HDMI (PC) supported mode

Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
640 x 480	31.46	59.94
800 x 600	37.87	60.31
1024 x 768	48.36	60.00
1152 x 7864	54.38	60.05
1360 x 768	47.71	60.01
1280 x 1024	63.98	60.02
1920 x 1080	67.50	60.00

4. Test Summary

4.1 Applied standards and test results

Test Items	Applied Standards	Results
Conducted Disturbance	ANSI C63.4:2003	**C**
Radiated Disturbance	ANSI C63.4:2003	**C**
C=Comply N/C=Not Comply N/T=Not Tested N/A=Not Applicable		

The data in this test report are traceable to the national or international standards.

4.2 Test environment and conditions

Test Items	Test date (MM-DD)	Temp (℃)	Humidity (% R.H.)
Conducted Disturbance	03-22	20	34
Radiated Disturbance	03-23	19	37

4.3 Test result Summary

(1) Conducted Emission (USB MODE)

Frequency [MHz]	Phase	Result [dBμV]	Detector	Limit [dBμV]	Margin [dB]
0.79099	**N**	**44.6**	Quasi-Peak	**56.0**	**11.4**

(2) Radiated Emission (HDMI MODE)

Frequency [MHz]	Pol.	Result [dB(μV/m)]	Detector	Limit [dB(μV/m)]	Margin [dB]
928.135	**H**	**42.9**	Quasi-Peak	**46.0**	**3.1**

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

- HDMI MODE : 'H' Pattern mode, 1920x1080 Resolution
- USB MODE : USB recorded file play

5.3 Support Equipment Used

Unit	Model No.	Serial No.	Manufacturer	CABLE				Backshell	FCC ID
				Connect type	Length (m)	ferrite core	shield		
PC	VOSTRO 460	6L7JXBX	DELL INC.	POWER USB USB USB HDMI	1.6 1.7 1.6 1.6 1.8	Not use Not use Not use Not use Not use	Non-shield Non-shield Non-shield Non-shield Shield	Plastic	DOC
KEYBOARD	SKG-3000UB	TAKB601235V	MONITEREY INTERNATIONAL CORP.	USB	1.7	Not use	Non-shield	Plastic	DOC
MOUSE	MS111-L	N/A	DELL	USB	1.6	Not use	Non-shield	Plastic	DOC
CD/DVD PLAYER	DVP-NS92V	2001499	SONY EMCS	POWER AV	1.7 1.8	Not use Not use	Non-shield Non-shield	Plastic	VER
USB MEMORY	SDCZ37-004G	N/A	SANDISK	USB	-	Not use	-	-	DOC
PRINTER	Aculaser M1200	LWTZ181070	EPSON	POWER USB	1.8 2.0	Not use	Non-shield Non-shield	Plastic	DOC
Remote controller	AKB73756542	N/A	HANSUNG ELECTRONIC	-	-	Not use	-	-	-
HEADSET	COV903	NONE	COSY	STEREO	2.0	Not use	Non-shield	Plastic	DOC

6. Test Results : Emission

6.1 Conducted Disturbance

6.1.1 Measurement Procedure

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

If the EUT is table top equipment, it was placed on a wooden table with a height of 0.8 m above the reference ground plane and 0.4 m 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 0.15 m 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 conducted emission test software, the emissions were scanned 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 Limit for Conducted Disturbance

(1) Conducted disturbance at mains ports.

Frequency range (MHz)	Limits dB(μV)			
	Quasi-peak		Average	
	Class A	Class B	Class A	Class B
0.15 to 0.50	79	66 to 56	66	56 to 46
0.50 to 5	73	56	60	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 0.15 MHz to 0.5 MHz.				

Note) 1. Emission Level = Reading Value + Correction Factor.
2. Correction Factor = Cable Loss + Insertion Loss of LISN
3. Margin = Limit - Emission level

Test Result

< HDMI MODE >

Digital EMC

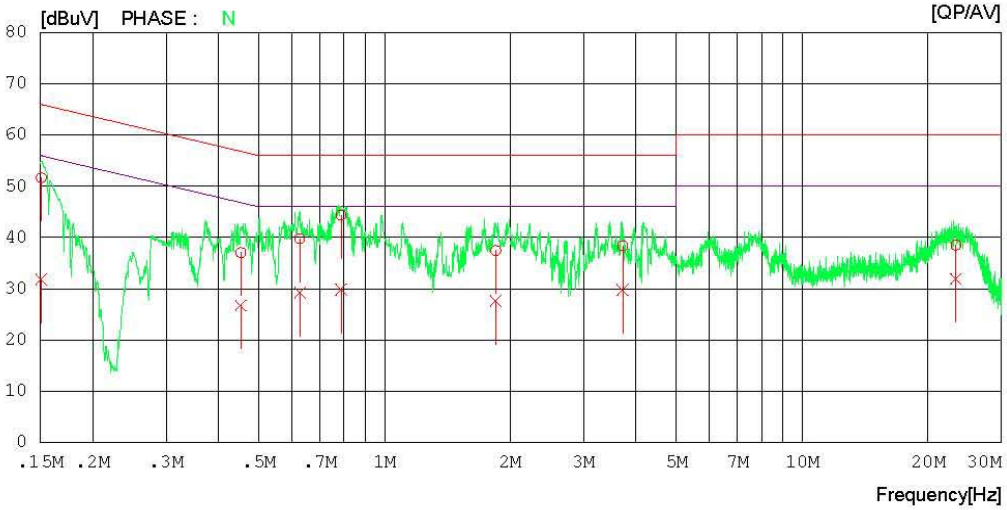
Results of Conducted Emission

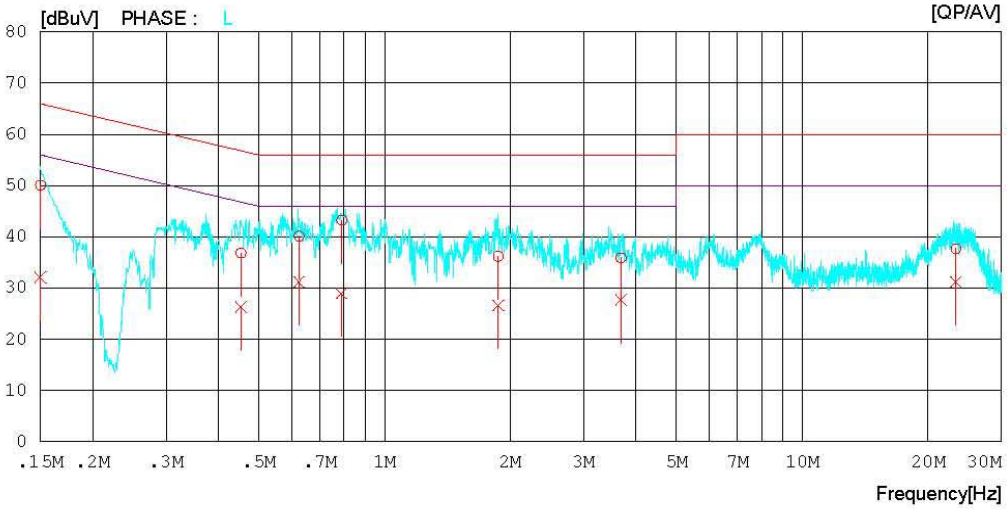
Digital EMC
Date : 2013-03-22

Model No.	:	60LN5710-UB	Referrence No.	:	
Type	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi.	:	20 'C 34 % R.H.
Test Condition	:	HDMI	Operator	:	

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV





Results of Conducted Emission

Digital EMC
Date : 2013-03-22

Model No.	:	60LN5710-UB	Referrence No.	:	
Type	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi.	:	20 'C 34 % R.H.
Test Condition	:	HDMI	Operator	:	

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV

NO	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV	PHASE
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	
1	0.15080	51.5	31.7	0.1	51.6	31.8	66.0	56.0	14.4	24.2	N
2	0.45283	36.9	26.7	0.1	37.0	26.8	56.8	46.8	19.8	20.0	N
3	0.62726	39.7	29.1	0.1	39.8	29.2	56.0	46.0	16.2	16.8	N
4	0.78731	44.3	29.7	0.1	44.4	29.8	56.0	46.0	11.6	16.2	N
5	1.84650	37.3	27.5	0.1	37.4	27.6	56.0	46.0	18.6	18.4	N
6	3.71800	38.3	29.7	0.1	38.4	29.8	56.0	46.0	17.6	16.2	N
7	23.32550	38.0	31.4	0.5	38.5	31.9	60.0	50.0	21.5	18.1	N
8	0.15012	50.0	32.0	0.1	50.1	32.1	66.0	56.0	15.9	23.9	L
9	0.45346	36.7	26.2	0.1	36.8	26.3	56.8	46.8	20.0	20.5	L
10	0.62448	40.0	31.1	0.1	40.1	31.2	56.0	46.0	15.9	14.8	L
11	0.79011	43.1	28.9	0.1	43.2	29.0	56.0	46.0	12.8	17.0	L
12	1.87250	36.1	26.5	0.1	36.2	26.6	56.0	46.0	19.8	19.4	L
13	3.68600	35.8	27.6	0.1	35.9	27.7	56.0	46.0	20.1	18.3	L
14	23.32800	37.2	30.7	0.5	37.7	31.2	60.0	50.0	22.3	18.8	L

< USB MODE >

Digital EMC

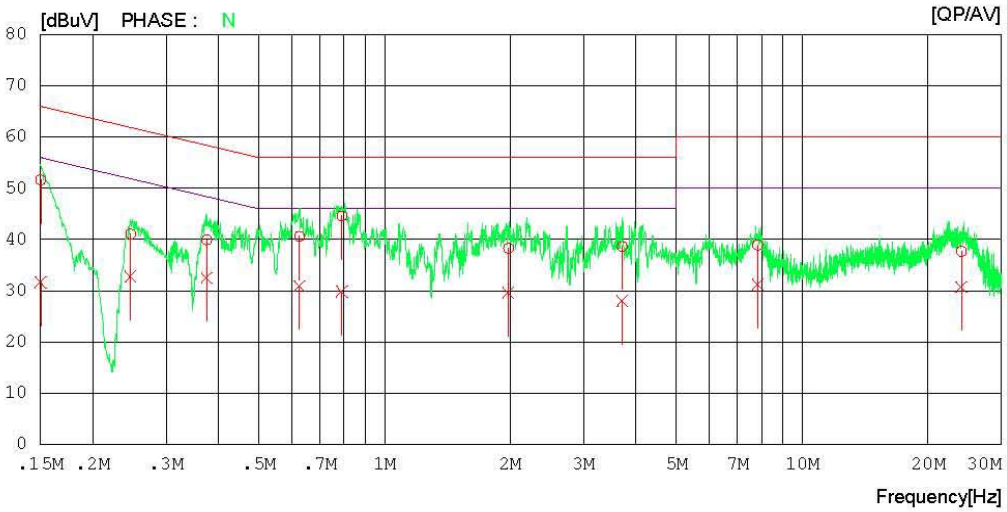
Results of Conducted Emission

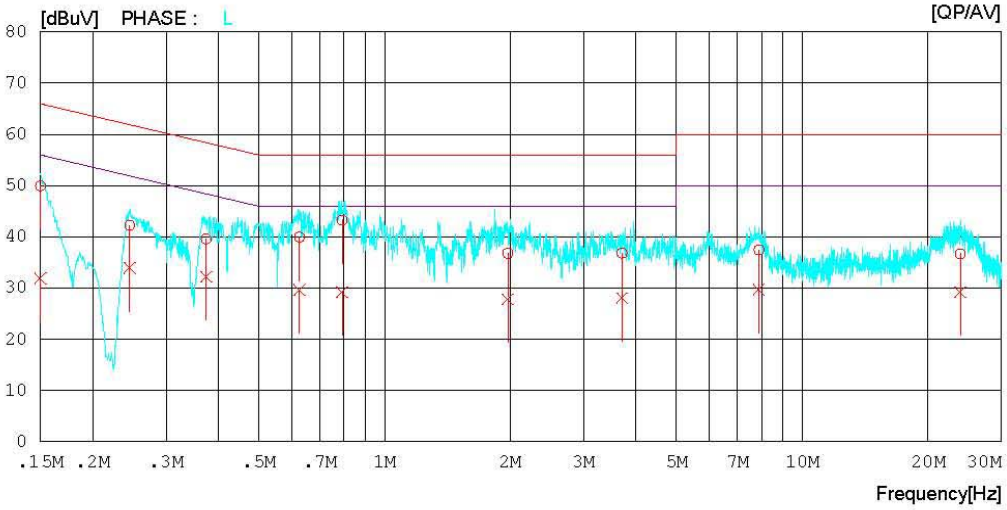
Digital EMC
Date : 2013-03-22

Model No.	:	60LN5710-UB	Referrence No.	:	
Type	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi.	:	20 'C 34 % R.H.
Test Condition	:	USB	Operator	:	

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV





Results of Conducted Emission

Digital EMC
Date : 2013-03-22

Model No.	:	60LN5710-UB	Referrence No.	:	
Type	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi.	:	20 'C 34 % R.H.
Test Condition	:	USB	Operator	:	

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV

NO	FREQ	READING QP	READING AV	C.FACTOR	RESULT QP	RESULT AV	LIMIT QP	LIMIT AV	MARGIN QP	MARGIN AV	PHASE
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	
1	0.15025	51.5	31.5	0.1	51.6	31.6	66.0	56.0	14.4	24.4	N
2	0.24670	41.0	32.7	0.1	41.1	32.8	61.9	51.9	20.8	19.1	N
3	0.37551	39.8	32.4	0.1	39.9	32.5	58.4	48.4	18.5	15.9	N
4	0.62583	40.5	30.8	0.1	40.6	30.9	56.0	46.0	15.4	15.1	N
5	0.79099	44.5	29.7	0.1	44.6	29.8	56.0	46.0	11.4	16.2	N
6	1.98150	38.2	29.5	0.1	38.3	29.6	56.0	46.0	17.7	16.4	N
7	3.70800	38.5	27.9	0.1	38.6	28.0	56.0	46.0	17.4	18.0	N
8	7.82000	38.7	31.0	0.2	38.9	31.2	60.0	50.0	21.1	18.8	N
9	24.05700	37.2	30.2	0.5	37.7	30.7	60.0	50.0	22.3	19.3	N
10	0.15012	49.9	31.8	0.1	50.0	31.9	66.0	56.0	16.0	24.1	L
11	0.24543	42.2	33.8	0.1	42.3	33.9	61.9	51.9	19.6	18.0	L
12	0.37411	39.5	32.1	0.1	39.6	32.2	58.4	48.4	18.8	16.2	L
13	0.62583	39.8	29.6	0.1	39.9	29.7	56.0	46.0	16.1	16.3	L
14	0.79180	43.2	29.1	0.1	43.3	29.2	56.0	46.0	12.7	16.8	L
15	1.97450	36.7	27.7	0.1	36.8	27.8	56.0	46.0	19.2	18.2	L
16	3.70550	36.7	27.9	0.1	36.8	28.0	56.0	46.0	19.2	18.0	L
17	7.87950	37.3	29.5	0.2	37.5	29.7	60.0	50.0	22.5	20.3	L
18	23.90200	36.2	28.7	0.5	36.7	29.2	60.0	50.0	23.3	20.8	L

6.2 Radiated Disturbance

6.2.1 Measurement Procedure

The radiated disturbance was measured and set-up was made accordance with **ANSI C63.4.**
If the EUT is tabletop equipment, it was placed on a wooden table with a height of 0.8 m above the reference ground plane and 3 m or 10 m away from the interference receiving antenna in the **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 0.15 m above the reference ground plane.
Rotate the EUT from (0 - 360)° and position the receiving antenna at heights from (1 - 4) m 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 1 GHz frequency range, Quasi-Peak detector with 120 kHz RBW was used.
Also Peak and Average detector with 1 MHz RBW were used for above 1 GHz frequency range.
For further description of the configuration refer to the picture of the test set-up.

6.2.2 Limit for Radiated Disturbance

- The test frequency range of Radiated Disturbance 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	1 000
108 – 500	2 000
500 – 1 000	5 000
Above 1 000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

(1) Limit for Radiated Emission below 1 000MHz

Frequency range (MHz)	Class A Equipment (10 m distance)	Class B Equipment (3 m distance)
	Quasi-peak (dBμV/m)	Quasi-peak (dBμV/m)
30 to 88	39.1	40
88 to 216	43.5	43.5
216 to 960	46.4	46
960 to 1 000	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.

Frequency range (MHz)	Class A Equipment (10 m distance)	Class B Equipment (10 m distance)
	Quasi-peak (dBμV/m)	Quasi-peak (dBμV/m)
30 to 230	40	30
230 to 1 000	47	37

(2) Limits for Radiated Emission above 1 000MHz at a measuring distance of 3 m

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

Note) 1. Emission Level = Reading Value + Correction Factor.
2. Correction Factor = Cable loss - Amp gain + Antenna Factor
3. Margin = Limit - Emission level

Test Result

< HDMI MODE_30 MHz ~ 1 GHz >

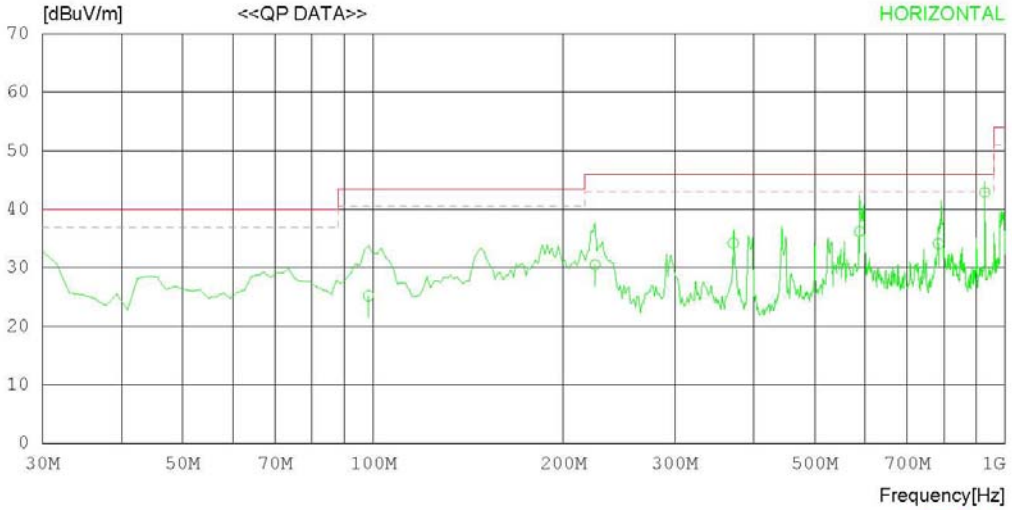
RADIATED EMISSION

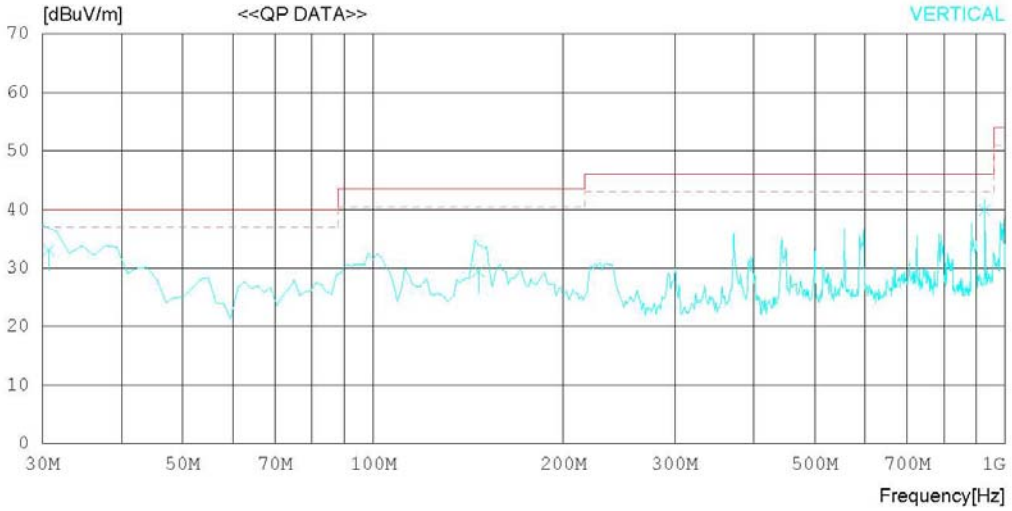
Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	HDMI	Operator	:	

Memo :

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





RADIATED EMISSION

Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	HDMI	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	98.298	37.5	10.4	1.4	24.1	25.2	43.5	18.3	124	175
2	224.496	40.8	11.2	2.4	23.9	30.5	46.0	15.5	100	358
3	371.250	39.0	15.4	3.4	23.6	34.2	46.0	11.8	100	194
4	587.792	37.0	18.5	4.1	23.4	36.2	46.0	9.8	100	205
5	783.949	33.0	19.8	4.8	23.5	34.1	46.0	11.9	100	238
6	928.135	39.4	21.2	5.3	23.0	42.9	46.0	3.1	100	190
----- Vertical ------										
7	30.705	38.5	17.5	0.9	23.8	33.1	40.0	6.9	215	358
8	146.987	41.4	10.6	1.7	24.2	29.5	43.5	14.0	100	1
9	928.134	36.4	21.2	5.3	23.0	39.9	46.0	6.1	100	124

< HDMI MODE _ (1 ~ 6) GHz _ Peak >

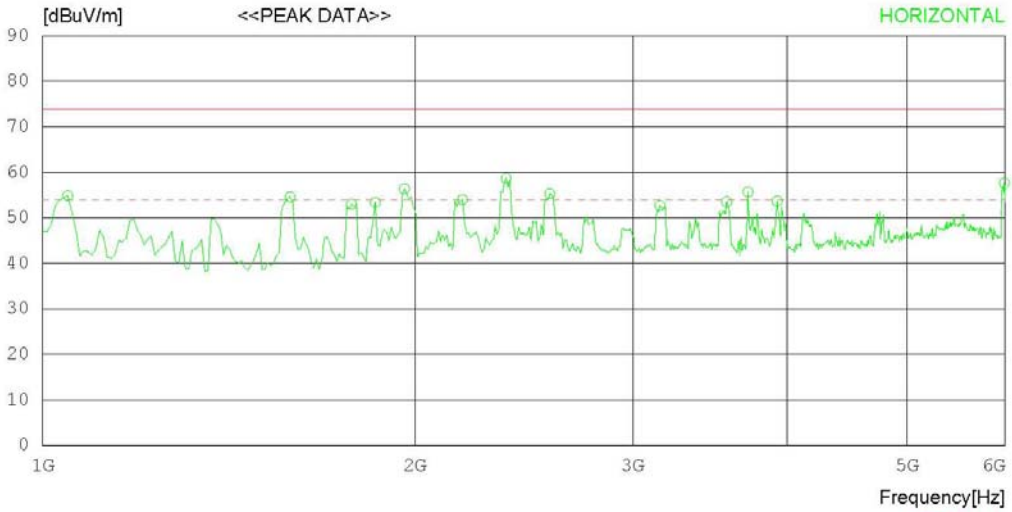
RADIATED EMISSION

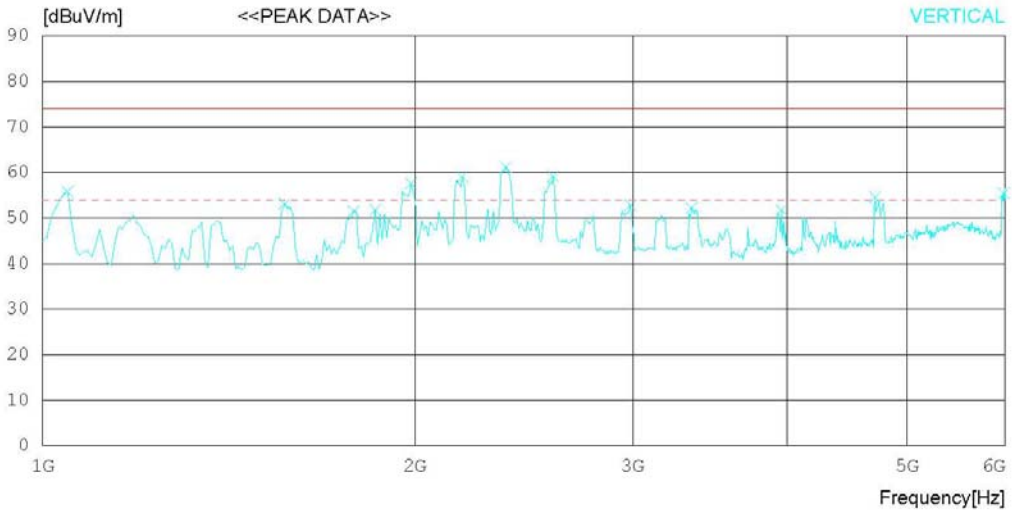
Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	HDMI	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Peak)
FCC Part15 Subpart.B Class B (3m) - 18G(Avg)





RADIATED EMISSION

Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	HDMI	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Peak)
FCC Part15 Subpart.B Class B (3m) - 18G(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	1048.077	68.7	23.9	3.4	41.1	54.9	74.0	19.1	100	141
2	1584.936	65.8	24.6	4.2	40.0	54.6	74.0	19.4	100	205
3	1777.243	63.7	24.6	4.4	39.7	53.0	74.0	21	100	141
4	1857.371	63.9	24.6	4.5	39.6	53.4	74.0	20.6	100	1
5	1961.538	66.6	24.6	4.7	39.5	56.4	74.0	17.6	100	236
6	2185.899	62.9	25.6	4.9	39.4	54.0	74.0	20	100	1
7	2370.197	66.2	26.7	5.1	39.3	58.7	74.0	15.3	100	211
8	2570.520	61.6	27.7	5.3	39.3	55.3	74.0	18.7	100	1
9	3155.465	57.2	28.9	5.8	39.2	52.7	74.0	21.3	100	194
10	3572.138	57.0	29.1	6.3	38.9	53.5	74.0	20.5	100	226
11	3716.371	58.6	29.4	6.4	38.7	55.7	74.0	18.3	100	1
12	3924.707	55.5	30.0	6.6	38.4	53.7	74.0	20.3	100	1
13	5991.988	56.0	31.9	8.4	38.7	57.6	74.0	16.4	100	272
----- Vertical ------										
14	1048.077	69.6	23.9	3.4	41.1	55.8	74.0	18.2	100	358
15	1568.910	64.3	24.6	4.2	40.0	53.1	74.0	20.9	100	163
16	1785.256	62.2	24.6	4.4	39.7	51.5	74.0	22.5	100	212
17	1857.371	62.3	24.6	4.5	39.6	51.8	74.0	22.2	100	358
18	1985.577	67.8	24.6	4.7	39.5	57.6	74.0	16.4	100	358
19	2185.899	68.0	25.6	4.9	39.4	59.1	74.0	14.9	100	358
20	2370.197	68.7	26.7	5.1	39.3	61.2	74.0	12.8	100	165
21	2586.546	65.5	27.7	5.3	39.3	59.2	74.0	14.8	100	358
22	2987.193	57.5	28.9	5.7	39.3	52.8	74.0	21.2	100	358
23	3347.775	56.4	28.9	6.0	39.1	52.2	74.0	21.8	100	358
24	3956.759	53.6	30.0	6.6	38.4	51.8	74.0	22.2	100	358
25	4709.957	54.2	31.6	7.5	38.7	54.6	74.0	19.4	100	218
26	5983.975	53.8	31.9	8.4	38.7	55.4	74.0	18.6	100	154

< HDMI MODE _ (1 ~ 6) GHz _ Average >

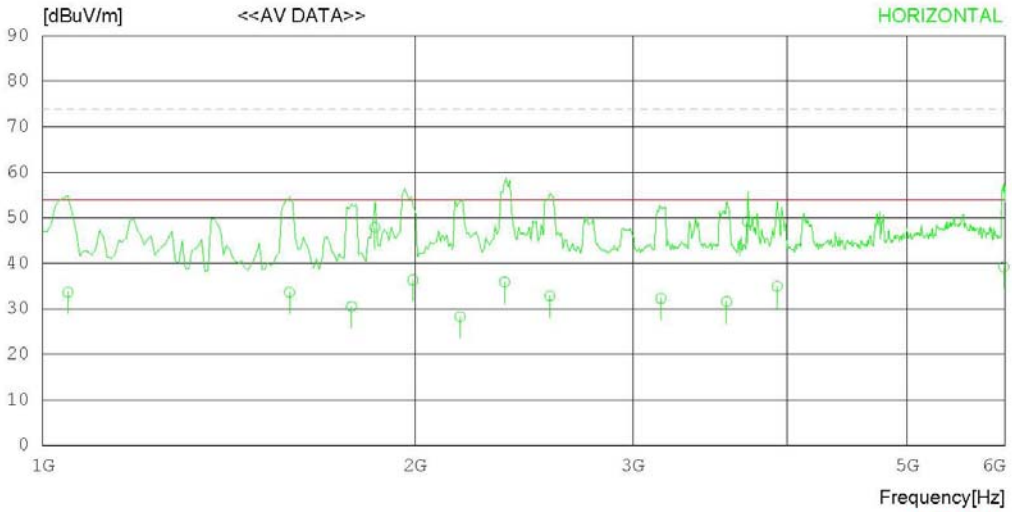
RADIATED EMISSION

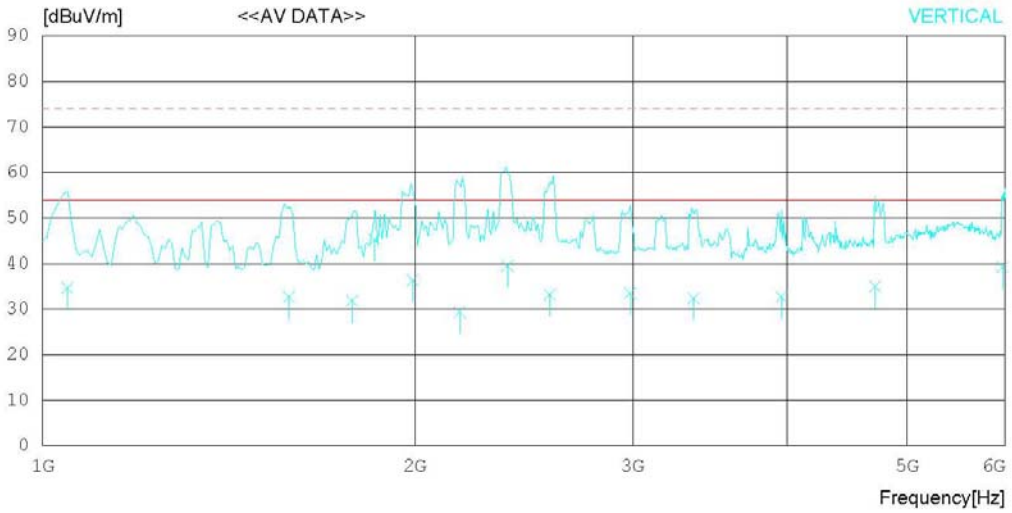
Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	HDMI	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(Peak)





RADIATED EMISSION

Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	HDMI	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	1048.142	47.4	23.9	3.4	41.1	33.6	54.0	20.4	100	224
2	1583.199	44.8	24.6	4.2	40.0	33.6	54.0	20.4	100	141
3	1777.243	41.2	24.6	4.4	39.7	30.5	54.0	23.5	100	141
4	1856.275	58.4	24.6	4.5	39.6	47.9	54.0	6.1	100	46
5	1992.397	46.5	24.6	4.7	39.5	36.3	54.0	17.7	100	269
6	2175.000	37.2	25.6	4.9	39.4	28.3	54.0	25.7	100	1
7	2363.423	43.4	26.7	5.1	39.3	35.9	54.0	18.1	100	211
8	2570.520	39.1	27.7	5.3	39.3	32.8	54.0	21.2	100	179
9	3161.076	36.8	28.9	5.8	39.2	32.3	54.0	21.7	100	194
10	3572.138	35.1	29.1	6.3	38.9	31.6	54.0	22.4	100	226
11	3712.583	52.1	29.4	6.4	38.7	49.2	54.0	4.8	100	180
12	3924.707	36.7	30.0	6.6	38.4	34.9	54.0	19.1	100	127
13	5984.859	37.6	31.9	8.4	38.7	39.2	54.0	14.8	100	272
----- Vertical ------										
14	1047.519	48.5	23.9	3.4	41.1	34.7	54.0	19.3	100	181
15	1581.199	43.9	24.6	4.2	40.0	32.7	54.0	21.3	100	163
16	1778.603	42.5	24.6	4.4	39.7	31.8	54.0	22.2	100	183
17	1856.276	55.7	24.6	4.5	39.6	45.2	54.0	8.8	100	169
18	1992.398	46.5	24.6	4.7	39.5	36.3	54.0	17.7	100	358
19	2175.000	38.3	25.6	4.9	39.4	29.4	54.0	24.6	100	132
20	2377.423	47.0	26.7	5.1	39.3	39.5	54.0	14.5	100	165
21	2569.564	39.5	27.7	5.3	39.3	33.2	54.0	20.8	100	134
22	2987.193	38.2	28.9	5.7	39.3	33.5	54.0	20.5	100	198
23	3361.000	36.5	28.9	6.1	39.1	32.4	54.0	21.6	100	358
24	3956.759	34.5	30.0	6.6	38.4	32.7	54.0	21.3	100	358
25	4709.957	34.6	31.6	7.5	38.7	35.0	54.0	19.0	100	229
26	5973.850	37.6	32.0	8.4	38.7	39.3	54.0	14.7	100	154

< USB MODE_30 MHz ~ 1 GHz >

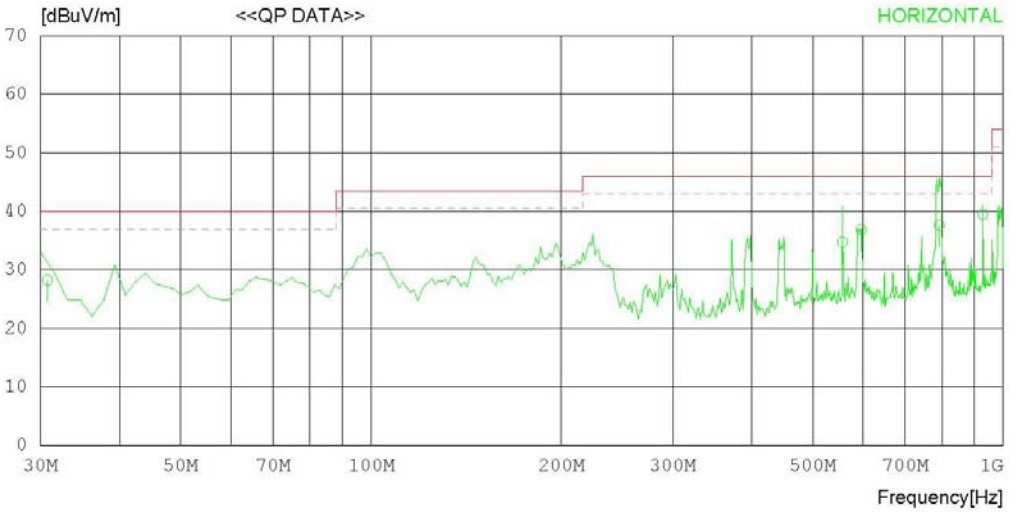
RADIATED EMISSION

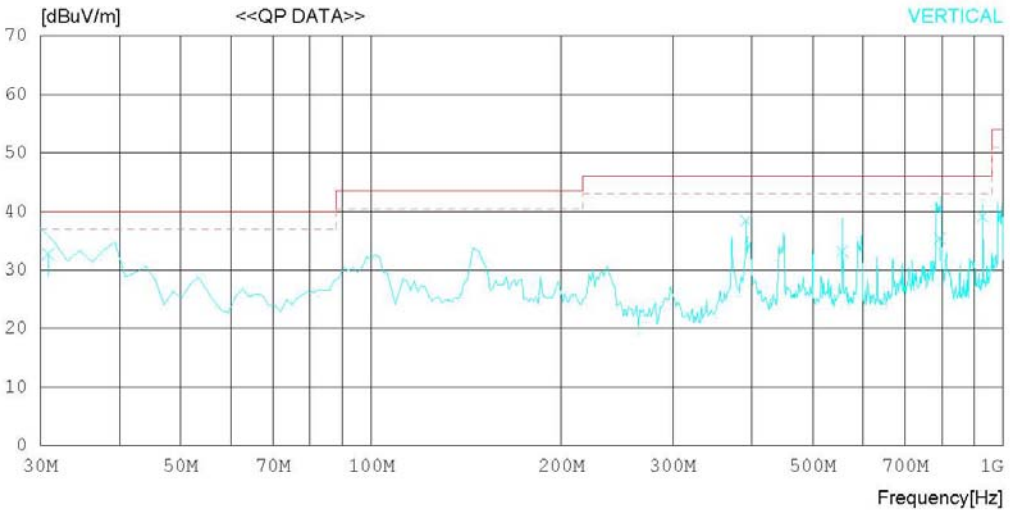
Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	USB	Operator	:	

Memo :

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





RADIATED EMISSION

Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	USB	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	30.752	33.6	17.5	0.9	23.8	28.2	40.0	11.8	198	154
2	556.912	36.0	18.1	3.8	23.2	34.7	46.0	11.3	111	267
3	596.320	37.6	18.6	4.1	23.4	36.9	46.0	9.1	113	183
4	792.381	36.4	19.9	4.8	23.5	37.6	46.0	8.4	169	241
5	928.130	36.0	21.2	5.3	23.0	39.5	46.0	6.5	150	194
----- Vertical ------										
6	30.843	38.2	17.4	0.9	23.8	32.7	40.0	7.3	192	335
7	391.666	42.6	15.8	3.5	23.5	38.4	46.0	7.6	100	200
8	556.882	34.5	18.1	3.8	23.2	33.2	46.0	12.8	319	6
9	794.139	34.2	19.9	4.8	23.5	35.4	46.0	10.6	100	143
10	928.151	35.6	21.2	5.3	23.0	39.1	46.0	6.9	100	129

< USB MODE _ (1 ~ 6) GHz _ Peak >

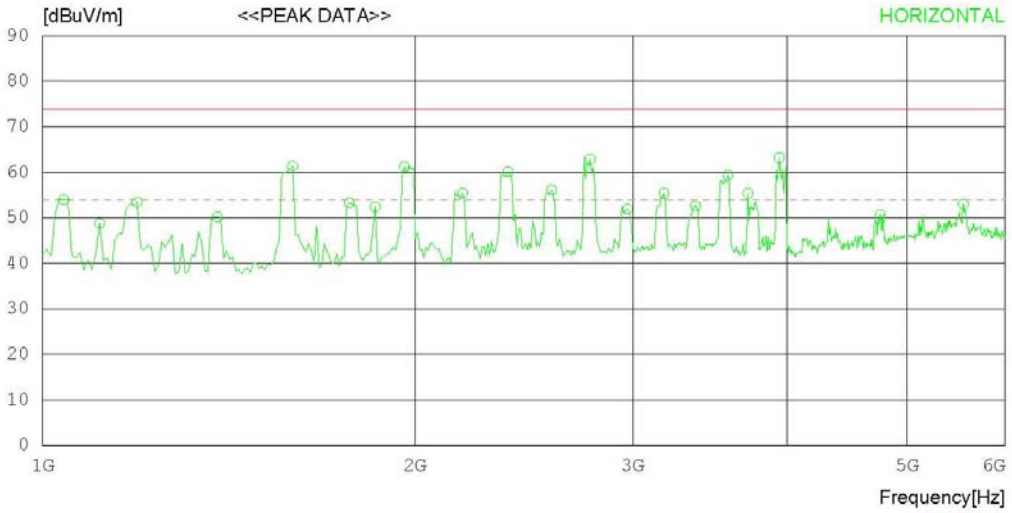
RADIATED EMISSION

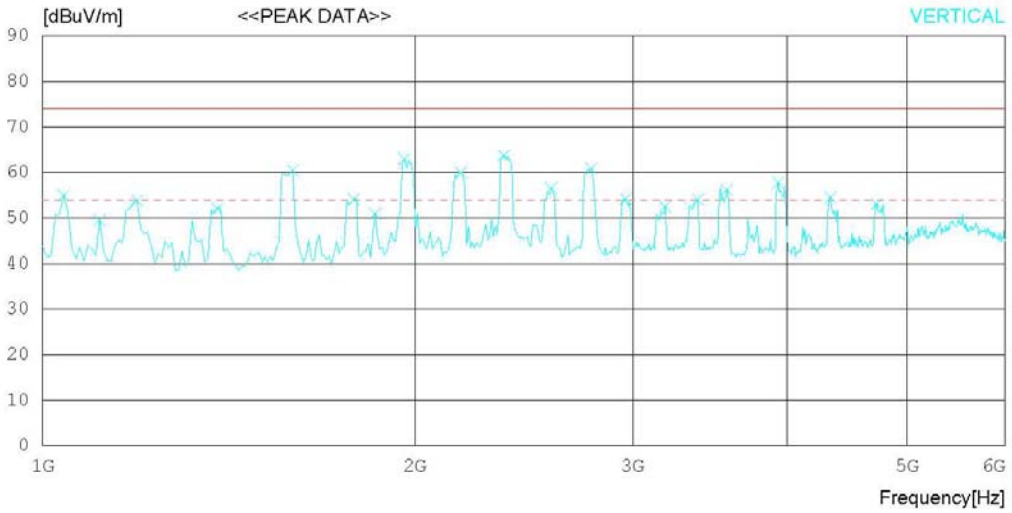
Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	USB	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Peak)
FCC Part15 Subpart.B Class B (3m) - 18G(Avg)





RADIATED EMISSION

Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	USB	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Peak)
FCC Part15 Subpart.B Class B (3m) - 18G(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	1040.064	67.8	23.9	3.4	41.1	54.0	74.0	20	100	204
2	1112.179	62.2	24.0	3.5	40.9	48.8	74.0	25.2	100	171
3	1192.308	66.3	24.2	3.6	40.7	53.4	74.0	20.6	100	1
4	1384.615	62.1	24.5	3.9	40.3	50.2	74.0	23.8	100	1
5	1592.948	72.6	24.6	4.2	40.0	61.4	74.0	12.6	100	1
6	1769.230	64.1	24.6	4.4	39.8	53.3	74.0	20.7	100	234
7	1857.371	62.9	24.6	4.5	39.6	52.4	74.0	21.6	100	1
8	1961.538	71.4	24.6	4.7	39.5	61.2	74.0	12.8	100	234
9	2185.899	64.4	25.6	4.9	39.4	55.5	74.0	18.5	100	186
10	2378.210	67.6	26.7	5.1	39.3	60.1	74.0	13.9	100	193
11	2578.533	62.4	27.7	5.3	39.3	56.1	74.0	17.9	100	200
12	2770.844	68.3	28.3	5.5	39.3	62.8	74.0	11.2	100	1
13	2971.167	56.7	28.9	5.6	39.3	51.9	74.0	22.1	100	176
14	3179.504	59.8	28.9	5.9	39.2	55.4	74.0	18.6	100	1
15	3371.814	56.7	28.9	6.1	39.1	52.6	74.0	21.4	100	215
16	3580.151	62.9	29.1	6.3	38.9	59.4	74.0	14.6	100	1
17	3716.371	58.3	29.4	6.4	38.7	55.4	74.0	18.6	100	1
18	3940.733	65.0	30.0	6.6	38.4	63.2	74.0	10.8	100	1
19	4758.033	50.2	31.7	7.5	38.7	50.7	74.0	23.3	100	1
20	5551.290	48.6	34.7	8.0	38.3	53.0	74.0	21	100	197
----- Vertical ------										
21	1040.064	68.8	23.9	3.4	41.1	55.0	74.0	19	100	160
22	1112.179	62.9	24.0	3.5	40.9	49.5	74.0	24.5	100	358
23	1192.308	66.7	24.2	3.6	40.7	53.8	74.0	20.2	100	358
24	1384.615	64.1	24.5	3.9	40.3	52.2	74.0	21.8	100	358
25	1592.948	71.7	24.6	4.2	40.0	60.5	74.0	13.5	100	147
26	1785.256	64.8	24.6	4.4	39.7	54.1	74.0	19.9	100	202
27	1857.371	61.5	24.6	4.5	39.6	51.0	74.0	23	100	212
28	1961.538	73.1	24.6	4.7	39.5	62.9	74.0	11.1	100	212
29	2177.886	68.9	25.6	4.9	39.4	60.0	74.0	14	100	204
30	2362.184	71.3	26.7	5.1	39.3	63.8	74.0	10.2	100	358
31	2578.533	62.9	27.7	5.3	39.3	56.6	74.0	17.4	100	358
32	2778.857	66.4	28.3	5.5	39.3	60.9	74.0	13.1	100	358
33	2963.154	59.0	28.9	5.6	39.3	54.2	74.0	19.8	100	358
34	3187.517	57.0	28.9	5.9	39.2	52.6	74.0	21.4	100	197
35	3387.840	58.2	28.9	6.1	39.1	54.1	74.0	19.9	100	358
36	3572.138	59.6	29.1	6.3	38.9	56.1	74.0	17.9	100	358
37	3932.720	59.6	30.0	6.6	38.4	57.8	74.0	16.2	100	215
38	4333.360	55.3	30.7	7.0	38.5	54.5	74.0	19.5	100	358
39	4725.982	52.7	31.6	7.5	38.7	53.1	74.0	20.9	100	358

< USB MODE _ (1 ~ 6) GHz _ Average >

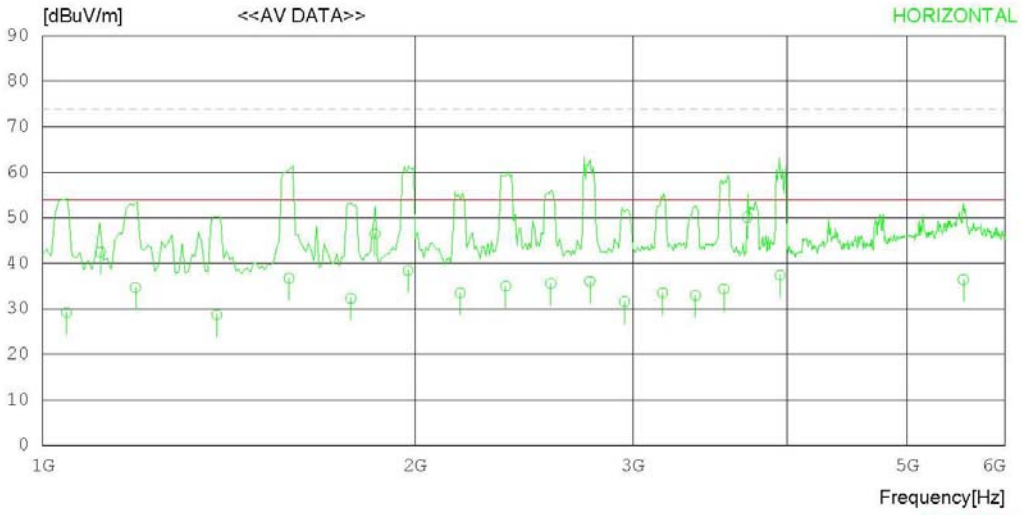
RADIATED EMISSION

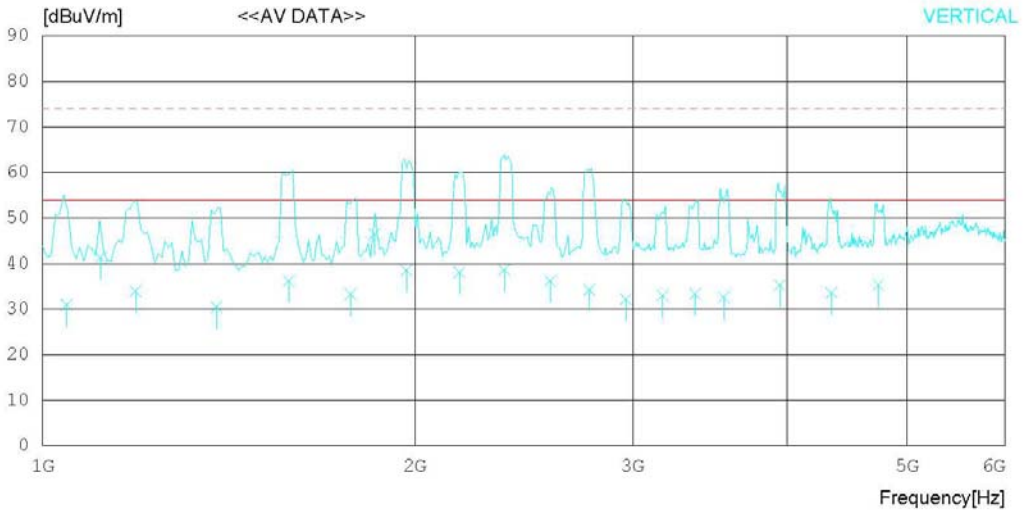
Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	USB	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(Peak)





RADIATED EMISSION

Date : 2013-03-23

Model Name	:	60LN5710-UB	Reference No.	:	
Model No.	:		Power Supply	:	120V 60Hz
Serial No.	:		Temp/Humi	:	19 'C 37 % R.H.
Test Condition	:	USB	Operator	:	

Memo :

LIMIT : FCC Part15 Subpart.B Class B (3m) - 18G(Avg)
FCC Part15 Subpart.B Class B (3m) - 18G(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	1045.600	43.0	23.9	3.4	41.1	29.2	54.0	24.8	100	151
2	1113.718	55.9	24.0	3.5	40.9	42.5	54.0	11.5	100	171
3	1188.635	47.7	24.2	3.6	40.8	34.7	54.0	19.3	100	211
4	1383.000	40.6	24.5	3.9	40.3	28.7	54.0	25.3	100	1
5	1581.750	47.9	24.6	4.2	40.0	36.7	54.0	17.3	100	189
6	1774.692	43.0	24.6	4.4	39.7	32.3	54.0	21.7	100	153
7	1856.288	57.0	24.6	4.5	39.6	46.5	54.0	7.5	100	190
8	1974.128	48.6	24.6	4.7	39.5	38.4	54.0	15.6	100	234
9	2176.270	42.4	25.6	4.9	39.4	33.5	54.0	20.5	100	191
10	2368.000	42.5	26.7	5.1	39.3	35.0	54.0	19.0	100	193
11	2575.857	41.9	27.7	5.3	39.3	35.6	54.0	18.4	100	200
12	2769.327	41.6	28.3	5.5	39.3	36.1	54.0	17.9	100	1
13	2954.126	36.5	28.8	5.6	39.3	31.6	54.0	22.4	100	176
14	3171.474	37.9	28.9	5.9	39.2	33.5	54.0	20.5	100	174
15	3371.814	37.0	28.9	6.1	39.1	32.9	54.0	21.1	100	215
16	3553.769	38.0	29.0	6.3	38.9	34.4	54.0	19.6	100	180
17	3712.314	53.0	29.4	6.4	38.7	50.1	54.0	3.9	100	104
18	3945.724	39.2	30.0	6.6	38.4	37.4	54.0	16.6	100	1
19	5551.290	32.0	34.7	8.0	38.3	36.4	54.0	17.6	100	197
----- Vertical ------										
20	1045.609	44.7	23.9	3.4	41.1	30.9	54.0	23.1	100	160
21	1113.718	54.7	24.0	3.5	40.9	41.3	54.0	12.7	100	259
22	1188.635	47.0	24.2	3.6	40.8	34.0	54.0	20.0	100	201
23	1383.000	42.3	24.5	3.9	40.3	30.4	54.0	23.6	100	358
24	1581.750	47.4	24.6	4.2	40.0	36.2	54.0	17.8	100	147
25	1774.692	44.0	24.6	4.4	39.7	33.3	54.0	20.7	100	202
26	1856.288	57.0	24.6	4.5	39.6	46.5	54.0	7.5	100	212
27	1968.519	48.7	24.6	4.7	39.5	38.5	54.0	15.5	100	212
28	2173.269	47.0	25.6	4.9	39.4	38.1	54.0	15.9	100	204
29	2362.184	46.1	26.7	5.1	39.3	38.6	54.0	15.4	100	180
30	2572.603	42.5	27.7	5.3	39.3	36.2	54.0	17.8	100	69
31	2766.603	39.8	28.3	5.5	39.3	34.3	54.0	19.7	100	199
32	2963.154	37.0	28.9	5.6	39.3	32.2	54.0	21.8	100	232
33	3171.474	37.4	28.9	5.9	39.2	33.0	54.0	21.0	100	197
34	3368.544	37.5	28.9	6.1	39.1	33.4	54.0	20.6	100	358
35	3553.769	36.2	29.0	6.3	38.9	32.6	54.0	21.4	100	232
36	3945.724	37.0	30.0	6.6	38.4	35.2	54.0	18.8	100	215
37	4341.814	34.4	30.7	7.0	38.5	33.6	54.0	20.4	100	189
38	4739.526	34.8	31.7	7.5	38.7	35.3	54.0	18.7	100	289

Appendix 1

List of Test and Measurement Instruments

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment is identified by the Test Laboratory.

1. Conducted Disturbance

Name of Instrument		Model No.	Manufacturer	Serial No.	Cal. Date	Next Cal. Date
☐	SPECTRUM ANALYZER	8591E	H/P	3649A05889	2013.02.28	2014.02.28
☐	RFI/FIELD INTENSITY METER	KNM-2402	KYORITSU	4N-170-3	2012.07.02	2013.07.02
☐	LISN	KNW-407	KYORITSU	8-317-8	2013.01.08	2014.01.08
☐	LISN	PMM L2-16B	NARDA S.T.S. / PMM	000WX20305	2012.07.25	2013.07.25
☐	50 OHM TERMINATOR	CT-01	TME	N/A	2013.01.08	2014.01.08
☒	EMI TEST RECEIVER	ESCI	ROHDE & SCHWARZ	100364	2013.02.27	2014.02.27
☒	LISN	ESH2-Z5	ROHDE & SCHWARZ	828739/006	2012.09.18	2013.09.18
☒	LISN	LISN1600	TTI	197204	2012.07.02	2013.07.02
☒	50 OHM TERMINATOR	CT-01	TME	N/A	2013.01.08	2014.01.08

2. Radiated Disturbance

Name of Instrument		Model No.	Manufacturer	Serial No.	Cal. Date	Next Cal. Date
☒	EMI TEST RECEIVER	ESU	ROHDE & SCHWARZ	100014	2013.01.08	2014.01.08
☒	BILOG ANTENNA	CBL6112B	SCHAFFNER	2737	2012.11.06	2014.11.06
☒	HORN ANTENNA	BBHA9120A	SCHWARZBECK	322	2012.05.15	2014.05.15
☒	AMPLIFIER	8447E	H/P	2945A02865	2013.01.08	2014.01.08
☒	PREAMPLIFIER	8449B	AGILENT	3008A01590	2013.02.27	2014.02.27
☐	SPECTRUM ANALYZER	E4411B	AGILENT	US41062735	2012.07.11	2013.07.11
☐	AMPLIFIER	8447D	AGILENT	2443A03690	2012.07.01	2013.07.01
☐	EMI TEST RECEIVER	ESCI	ROHDE & SCHWARZ	100364	2013.02.27	2014.02.27
☐	BICONICAL ANT.	VHA 9103	SCHWARZBECK	91032789	2012.04.10	2014.04.10
☐	LOG-PERIODIC ANT.	UHALP 9108A	SCHWARZBECK	590	2012.04.10	2014.04.10
☐	BICONICAL ANT.	VHA 9103	SCHWARZBECK	91031946	2012.03.12	2014.03.12
☐	LOG-PERIODIC ANT.	UHALP 9108-A1	SCHWARZBECK	1098	2012.03.12	2014.03.12
☐	AMPLIFIER	MLA-100K01-B01-26	TSJ	1252741	2013.02.28	2014.02.28

Appendix 2

Report Revision History

Revision Date	Description	Revised By	Revision Reviewed By
None	Original	N/A	N/A