

EMC TEST REPORT

Test item : LED TV Monitor
Model No. : 47LN541C-UA
Order No. : DEMC1302-00497
Date of receipt : 2013-02-05
Test duration : 2013-02-16 ~ 2013-02-17
Use of report : FCC CoC Marking
Date of Issue : 2013-02-21

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 : (20 ~ 22) °C,
Humidity : (35 ~ 37) % R.H.

Test result : ☒ Comply ☐ Not Comply

The test results presented in this test report are limited only to the sample supplied by applicant and
the use of this test report is inhibited other than its purpose.

This test report shall not be reproduced except in full, without the written approval of DIGITAL EMC CO., LTD.

Tested by:



Engineer
DongWook Kim

Reviewed by:



General Manager
ChangHo Lee

PRESIDENT OF DIGITAL EMC CO., LTD.

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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.digitalemco.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.	47LN541C-UA
EUT Type	LED TV Monitor
Serial No	NONE
FCC ID	BEJ47LN541CUA
Type of Sample Tested	Pre-Production
High Frequency	Max 800 MHz
Rating	AC 100-240 V~ 50/60 Hz, 1.3 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)
720 x 400	31.46	70.08
640 x 480	31.46	59.94
800 x 600	37.87	60.31
1024 x 768	48.36	60.00
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 (°C)	Humidity (% R.H.)
Conducted Disturbance	02-17	22	35
Radiated Disturbance	02-16	20	37

4.3 Test result Summary

(1) Conducted Emission (USB MODE)

Frequency [MHz]	Phase	Result [dB μ V]	Detector	Limit [dB μ V]	Margin [dB]
16.23050	L	45.2	Average	50.0	4.8

(2) Radiated Emission (USB MODE)

Frequency [MHz]	Pol.	Result [dB(μ V/m)]	Detector	Limit [dB(μ V/m)]	Margin [dB]
999.983	H	46.3	Quasi-Peak	54.0	7.7

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 : 'H' Pattern mode, 1920 x 1080 Resolution (Worst case)
- HDMI MODE : "H" Pattern mode, 1920 x 1080 Resolution (Worst case)
- "H" characters scrolling is displayed on the EUT's screen.
- USB MODE : USB record 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	DC8CMF	G3RZKBX	DELL INC.	POWER	1.8	Not use	Non-shield	Plastic	DOC
				HDMI	2.0	Not use	Shield		
				DSUB	1.8	Not use	Shield		
				LAN	2.2	Not use	Non-shield		
KEY BOARD	SKG-210P	TAKZ129860X	MONITEREY INTERNATIONAL CORP	PS/2	1.8	Not use	Shield	Plastic	DOC
MOUSE	1484	X822087-001	MICROSOFT CORPORATION	USB	1.6	Not use	Non-shield	Plastic	DOC
CD/DVD PLAYER	DVP-NS92V	2000407	SONY EMCS	POWER	1.8	Not use	Non-shield	Plastic	VER
				COMPONENT	1.6	Not use	Shield		
USB MEMORY	Cruze 4G	N/A	SANDISK	USB	-	-	-	Plastic	DOC
PRINTER	EPSON Aculaser M1200	LWTZ183808	EPSON	POWER	2.0	Not use	Non-shield	Plastic	DOC
				USB	1.6	Not use	Shield		
HEADSET	COV903	N/A	COSY	STEREO	2.3	Not use	Non-shield	Plastic	DOC
Remote control	AKB73715608	N/A	OHSUNG ELECTRONIC	-		-	-	-	-

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

< DSUB MODE >



Results of Conducted Emission

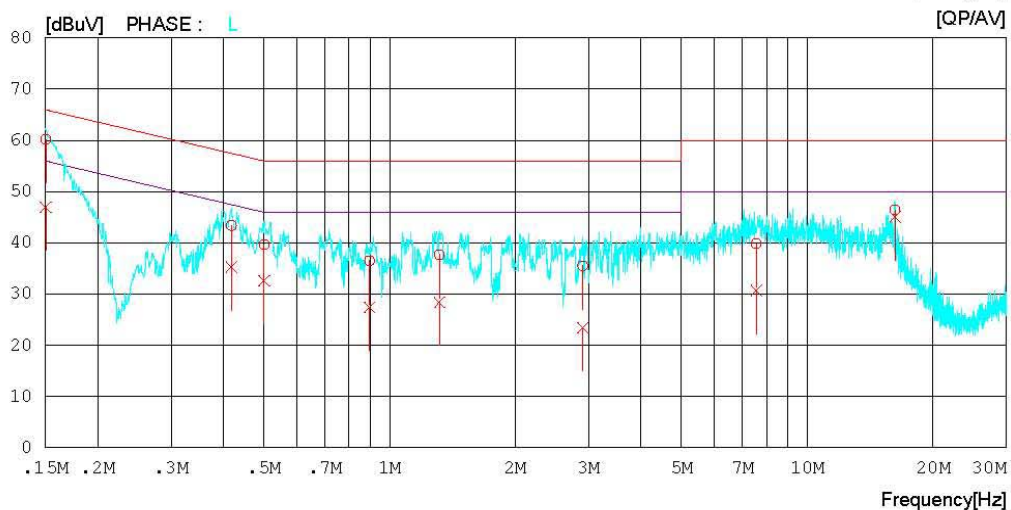
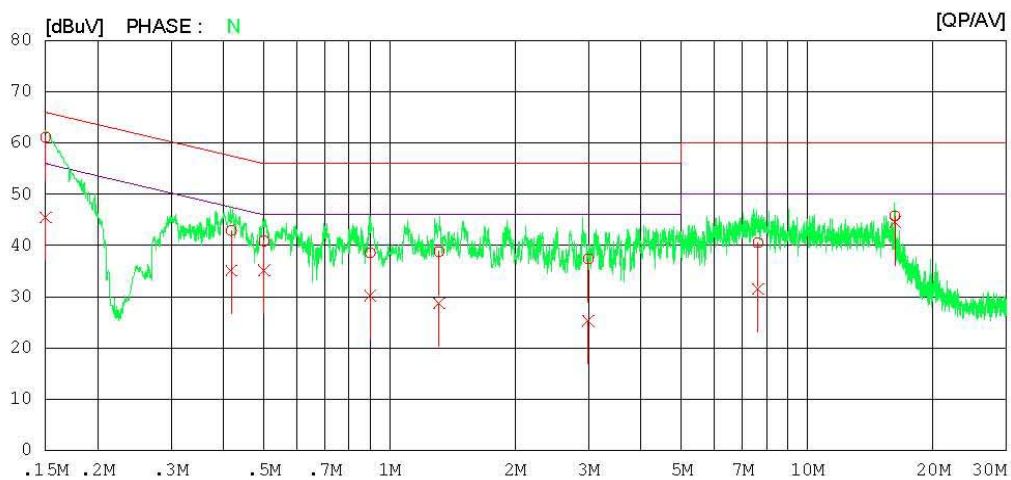
Digital EMC
Date : 2013-02-17

Model No. : 47LN541C-UA
Type :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22 °C 35 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-02-17

Model No. : 47LN541C-UA
Type :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22 °C 35 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15018	60.9	45.2	0.2	61.1	45.4	66.0	56.0	4.9	10.6	N
2	0.41850	42.7	34.9	0.2	42.9	35.1	57.5	47.5	14.6	12.4	N
3	0.50101	40.7	35.0	0.2	40.9	35.2	56.0	46.0	15.1	10.8	N
4	0.90016	38.4	30.0	0.2	38.6	30.2	56.0	46.0	17.4	15.8	N
5	1.31400	38.5	28.4	0.3	38.8	28.7	56.0	46.0	17.2	17.3	N
6	2.99000	37.1	25.0	0.3	37.4	25.3	56.0	46.0	18.6	20.7	N
7	7.62150	40.0	31.0	0.5	40.5	31.5	60.0	50.0	19.5	18.5	N
8	16.22950	44.9	43.8	0.8	45.7	44.6	60.0	50.0	14.3	5.4	N
9	0.15025	60.0	46.7	0.2	60.2	46.9	66.0	56.0	5.8	9.1	L
10	0.41848	43.2	35.1	0.2	43.4	35.3	57.5	47.5	14.1	12.2	L
11	0.50114	39.4	32.4	0.2	39.6	32.6	56.0	46.0	16.4	13.4	L
12	0.89585	36.3	27.2	0.2	36.5	27.4	56.0	46.0	19.5	18.6	L
13	1.31750	37.4	28.1	0.3	37.7	28.4	56.0	46.0	18.3	17.6	L
14	2.90250	35.2	23.1	0.3	35.5	23.4	56.0	46.0	20.5	22.6	L
15	7.55600	39.3	30.2	0.5	39.8	30.7	60.0	50.0	20.2	19.3	L
16	16.23050	45.6	44.3	0.8	46.4	45.1	60.0	50.0	13.6	4.9	L

< HDMI MODE >



Results of Conducted Emission

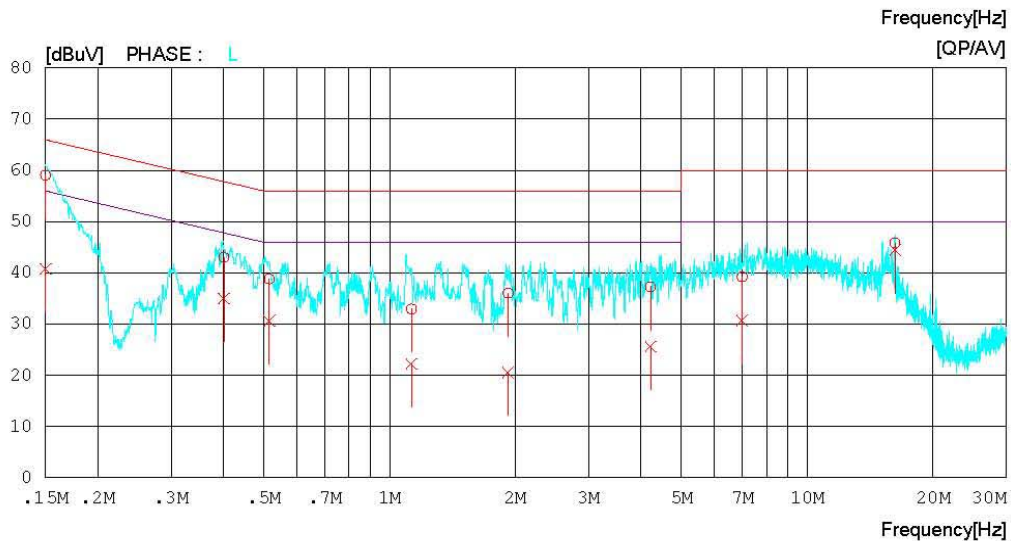
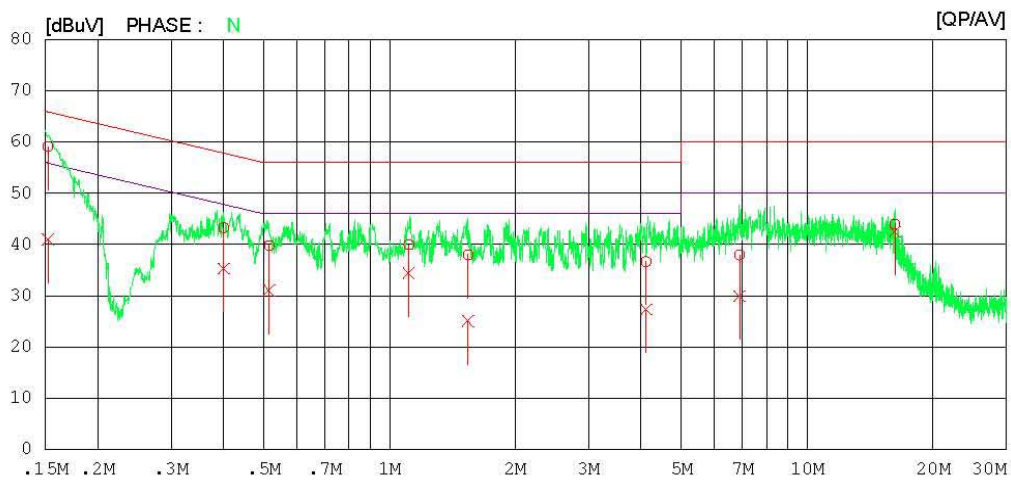
Digital EMC
Date : 2013-02-17

Model No. : 47LN541C-UA
Type :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22°C 35 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-02-17

Model No. : 47LN541C-UA
Type :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22 °C 35 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15215	58.8	40.8	0.2	59.0	41.0	65.9	55.9	6.9	14.9	N
2	0.40086	43.1	35.1	0.2	43.3	35.3	57.8	47.8	14.5	12.5	N
3	0.51521	39.6	30.8	0.2	39.8	31.0	56.0	46.0	16.2	15.0	N
4	1.11200	39.6	34.1	0.3	39.9	34.4	56.0	46.0	16.1	11.6	N
5	1.54200	37.7	24.8	0.3	38.0	25.1	56.0	46.0	18.0	20.9	N
6	4.11500	36.3	27.0	0.3	36.6	27.3	56.0	46.0	19.4	18.7	N
7	6.88500	37.4	29.4	0.5	37.9	29.9	60.0	50.0	22.1	20.1	N
8	16.22750	43.2	41.7	0.8	44.0	42.5	60.0	50.0	16.0	7.5	N
9	0.15012	58.8	40.6	0.2	59.0	40.8	66.0	56.0	7.0	15.2	L
10	0.40139	42.8	34.7	0.2	43.0	34.9	57.8	47.8	14.8	12.9	L
11	0.51528	38.6	30.4	0.2	38.8	30.6	56.0	46.0	17.2	15.4	L
12	1.12900	32.6	22.0	0.3	32.9	22.3	56.0	46.0	23.1	23.7	L
13	1.92350	35.7	20.3	0.3	36.0	20.6	56.0	46.0	20.0	25.4	L
14	4.22100	37.0	25.3	0.3	37.3	25.6	56.0	46.0	18.7	20.4	L
15	6.99100	38.7	30.2	0.5	39.2	30.7	60.0	50.0	20.8	19.3	L
16	16.23150	45.1	43.6	0.8	45.9	44.4	60.0	50.0	14.1	5.6	L

< USB MODE >



Results of Conducted Emission

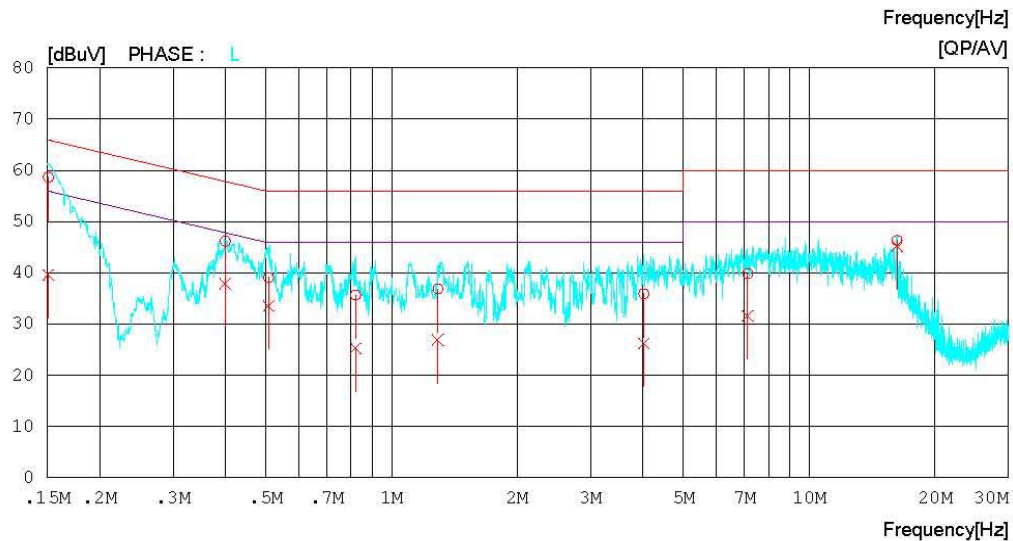
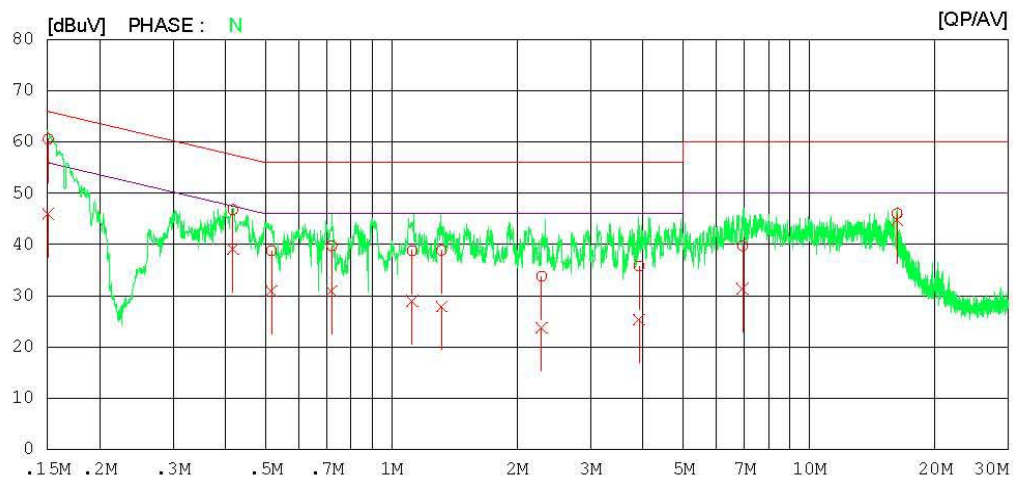
Digital EMC
Date : 2013-02-17

Model No. : 47LN541C-UA
Type :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22°C 35 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-02-17

Model No. : 47LN541C-UA
Type :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 22 °C 35 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15067	60.4	45.7	0.2	60.6	45.9	66.0	56.0	5.4	10.1	N
2	0.41709	46.6	38.9	0.2	46.8	39.1	57.5	47.5	10.7	8.4	N
3	0.51603	38.5	30.7	0.2	38.7	30.9	56.0	46.0	17.3	15.1	N
4	0.71978	39.5	30.7	0.2	39.7	30.9	56.0	46.0	16.3	15.1	N
5	1.12050	38.5	28.7	0.3	38.8	29.0	56.0	46.0	17.2	17.0	N
6	1.31850	38.5	27.6	0.3	38.8	27.9	56.0	46.0	17.2	18.1	N
7	2.28600	33.5	23.4	0.3	33.8	23.7	56.0	46.0	22.2	22.3	N
8	3.91600	35.4	25.1	0.3	35.7	25.4	56.0	46.0	20.3	20.6	N
9	6.92350	39.2	30.8	0.5	39.7	31.3	60.0	50.0	20.3	18.7	N
10	16.23000	45.2	44.0	0.8	46.0	44.8	60.0	50.0	14.0	5.2	N
11	0.15092	58.4	39.4	0.2	58.6	39.6	65.9	55.9	7.3	16.3	L
12	0.40020	46.0	37.6	0.2	46.2	37.8	57.8	47.8	11.6	10.0	L
13	0.50831	38.9	33.4	0.2	39.1	33.6	56.0	46.0	16.9	12.4	L
14	0.82123	35.5	25.0	0.2	35.7	25.2	56.0	46.0	20.3	20.8	L
15	1.29150	36.6	26.6	0.3	36.9	26.9	56.0	46.0	19.1	19.1	L
16	4.01850	35.6	25.9	0.3	35.9	26.2	56.0	46.0	20.1	19.8	L
17	7.12050	39.3	31.1	0.5	39.8	31.6	60.0	50.0	20.2	18.4	L
18	16.23050	45.5	44.4	0.8	46.3	45.2	60.0	50.0	13.7	4.8	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	5 th 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

< DSUB MODE _ 30 MHz ~ 1 GHz >

RADIATED EMISSION

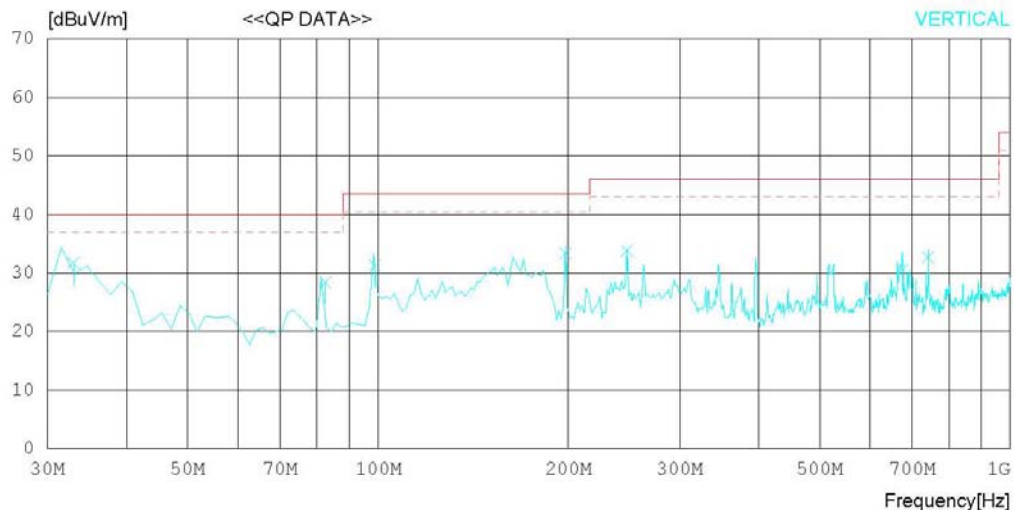
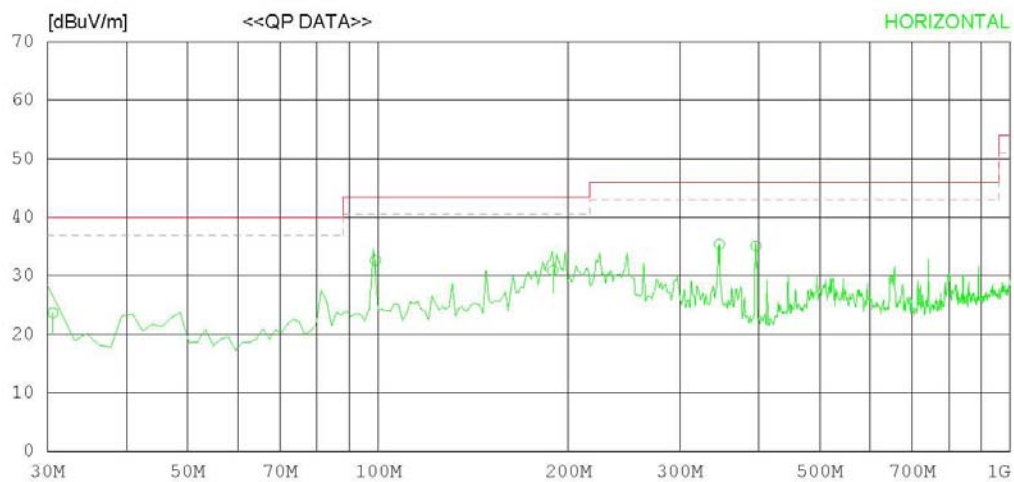
Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
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	30.595	29.0	17.6	0.9	23.8	23.7	40.0	16.3	202	148
2	99.009	44.9	10.5	1.4	24.1	32.7	43.5	10.8	200	169
3	189.009	43.0	9.7	2.2	24.0	30.9	43.5	12.6	100	124
4	346.506	40.9	14.8	3.3	23.6	35.4	46.0	10.6	100	127
5	395.993	39.2	15.9	3.5	23.5	35.1	46.0	10.9	100	328
----- Vertical -----										
6	32.987	38.3	16.3	1.0	23.9	31.7	40.0	8.3	100	318
7	82.498	43.5	7.6	1.6	24.3	28.4	40.0	11.6	100	285
8	98.993	43.5	10.5	1.4	24.1	31.3	43.5	12.2	100	145
9	197.977	45.4	9.7	2.3	24.0	33.4	43.5	10.1	100	163
10	247.496	42.4	12.6	2.6	23.8	33.8	46.0	12.2	100	193
11	675.608	31.3	18.6	4.4	23.7	30.6	46.0	15.4	100	200
12	741.766	32.7	19.1	4.6	23.7	32.7	46.0	13.3	100	176

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

RADIATED EMISSION

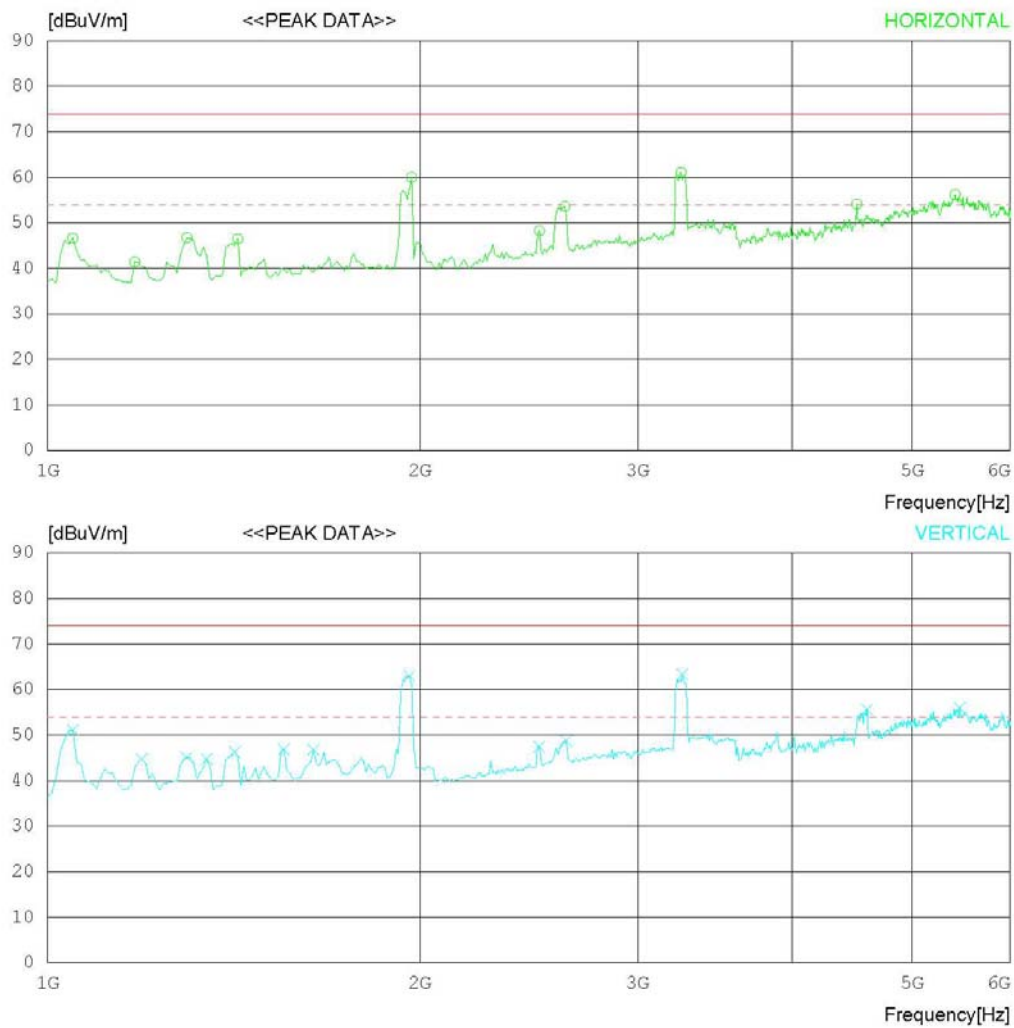
Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
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	45.3	23.9	5.9	28.5	46.6	74.0	27.4	100	358
2	1176.282	39.4	24.1	6.4	28.5	41.4	74.0	32.6	100	115
3	1296.474	44.1	24.3	6.8	28.5	46.7	74.0	27.3	100	223
4	1424.679	43.3	24.5	7.2	28.5	46.5	74.0	27.5	100	231
5	1969.551	55.5	24.6	8.4	28.5	60.0	74.0	14	100	231
6	2498.404	39.9	27.4	9.5	28.5	48.3	74.0	25.7	100	358
7	2618.598	44.4	27.8	9.8	28.4	53.6	74.0	20.4	100	358
8	3251.620	49.5	28.9	11.1	28.4	61.1	74.0	12.9	100	358
9	4509.639	37.9	30.9	13.5	28.2	54.1	74.0	19.9	100	170
10	5415.074	34.8	34.6	14.9	28.1	56.2	74.0	17.8	100	358
----- Vertical -----										
11	1048.077	49.8	23.9	5.9	28.5	51.1	74.0	22.9	100	1
12	1192.308	42.6	24.2	6.4	28.5	44.7	74.0	29.3	100	158
13	1296.474	42.5	24.3	6.8	28.5	45.1	74.0	28.9	100	1
14	1344.551	41.8	24.4	7.0	28.5	44.7	74.0	29.3	100	198
15	1416.667	43.1	24.5	7.2	28.5	46.3	74.0	27.7	100	1
16	1552.884	43.2	24.6	7.6	28.5	46.9	74.0	27.1	100	1
17	1641.025	42.9	24.6	7.8	28.5	46.8	74.0	27.2	100	212
18	1961.538	58.5	24.6	8.4	28.5	63.0	74.0	11	100	205
19	2498.404	39.0	27.4	9.5	28.5	47.4	74.0	26.6	100	156
20	2626.611	39.5	27.8	9.8	28.4	48.7	74.0	25.3	100	218
21	3259.633	51.7	28.9	11.1	28.4	63.3	74.0	10.7	100	1
22	4597.779	38.8	31.2	13.8	28.2	55.6	74.0	18.4	100	199
23	5463.150	34.3	34.9	14.9	28.1	56.0	74.0	18	100	111

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

RADIATED EMISSION

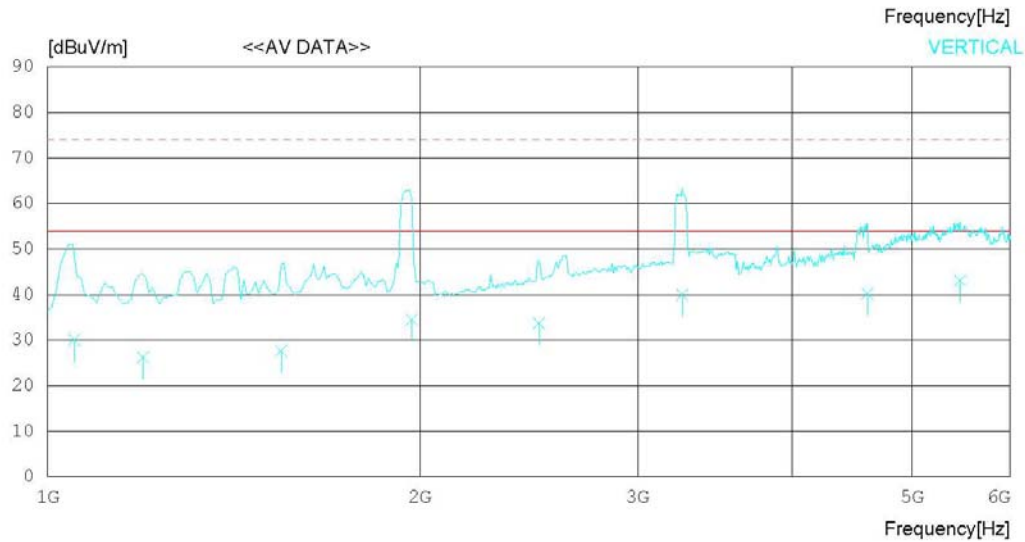
Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-02-16

Model Name : 47LN541C-UA	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 20 °C 37 % R.H.
Test Condition : DSUB	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	1048.523	26.6	23.9	5.9	28.5	27.9	54.0	26.1	100	189
2	1185.759	34.1	24.2	6.4	28.5	36.2	54.0	17.8	100	175
3	1298.723	24.3	24.3	6.8	28.5	26.9	54.0	27.1	100	136
4	1425.110	23.4	24.5	7.2	28.5	26.6	54.0	27.4	100	144
5	1970.455	25.3	24.6	8.4	28.5	29.8	54.0	24.2	100	269
6	2623.540	24.5	27.8	9.8	28.4	33.7	54.0	20.3	100	305
7	4511.520	23.8	30.9	13.5	28.2	40.0	54.0	14.0	100	166
----- Vertical -----										
8	1051.205	28.8	23.9	5.9	28.5	30.1	54.0	23.9	100	223
9	1194.634	24.1	24.2	6.4	28.5	26.2	54.0	27.8	100	269
10	1544.788	24.0	24.6	7.6	28.5	27.7	54.0	26.3	100	255
11	1969.435	30.0	24.6	8.4	28.5	34.5	54.0	19.5	100	268
12	2495.756	25.3	27.4	9.5	28.5	33.7	54.0	20.3	100	247
13	3259.641	28.4	28.9	11.1	28.4	40.0	54.0	14.0	100	230
14	4598.121	23.4	31.2	13.8	28.2	40.2	54.0	13.8	100	216
15	5465.301	21.4	34.9	14.9	28.1	43.1	54.0	10.9	100	259

< HDMI MODE _ 30 MHz ~ 1 GHz >

RADIATED EMISSION

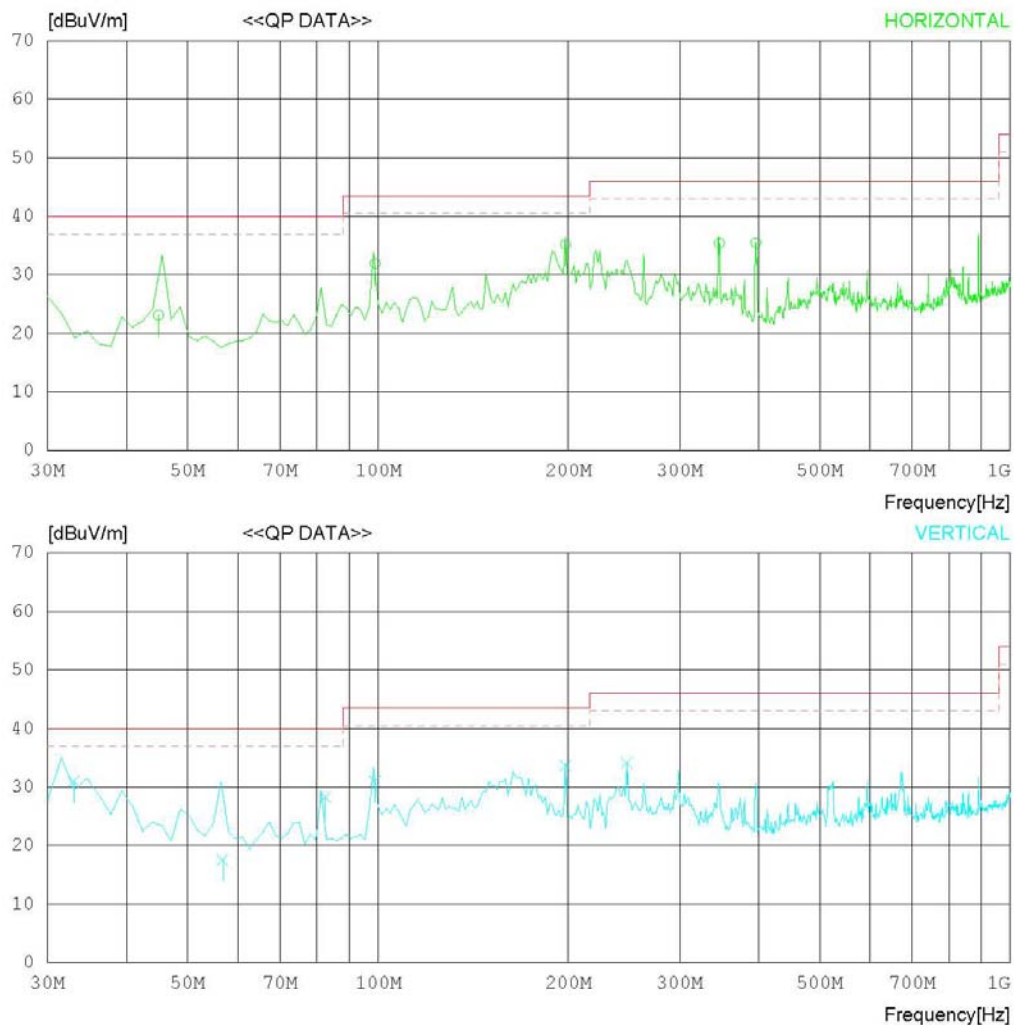
Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
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	44.935	32.4	13.9	1.1	24.3	23.1	40.0	16.9	400	352
2	98.993	44.1	10.5	1.4	24.1	31.9	43.5	11.6	276	255
3	198.025	47.2	9.7	2.3	24.0	35.2	43.5	8.3	136	150
4	346.506	40.9	14.8	3.3	23.6	35.4	46.0	10.6	100	125
5	395.991	39.6	15.9	3.5	23.5	35.5	46.0	10.5	100	143
6	8990.102	33.9	0.0	0.0	0.0	33.9	-----	-----	100	230
----- Vertical -----										
7	32.988	37.6	16.3	1.0	23.9	31.0	40.0	9.0	100	310
8	56.833	34.3	6.3	1.4	24.4	17.6	40.0	22.4	100	260
9	82.506	43.4	7.6	1.6	24.3	28.3	40.0	11.7	100	122
10	98.993	43.2	10.5	1.4	24.1	31.0	43.5	12.5	100	235
11	197.991	45.7	9.7	2.3	24.0	33.7	43.5	9.8	100	184
12	247.512	42.7	12.6	2.6	23.8	34.1	46.0	11.9	100	173

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

RADIATED EMISSION

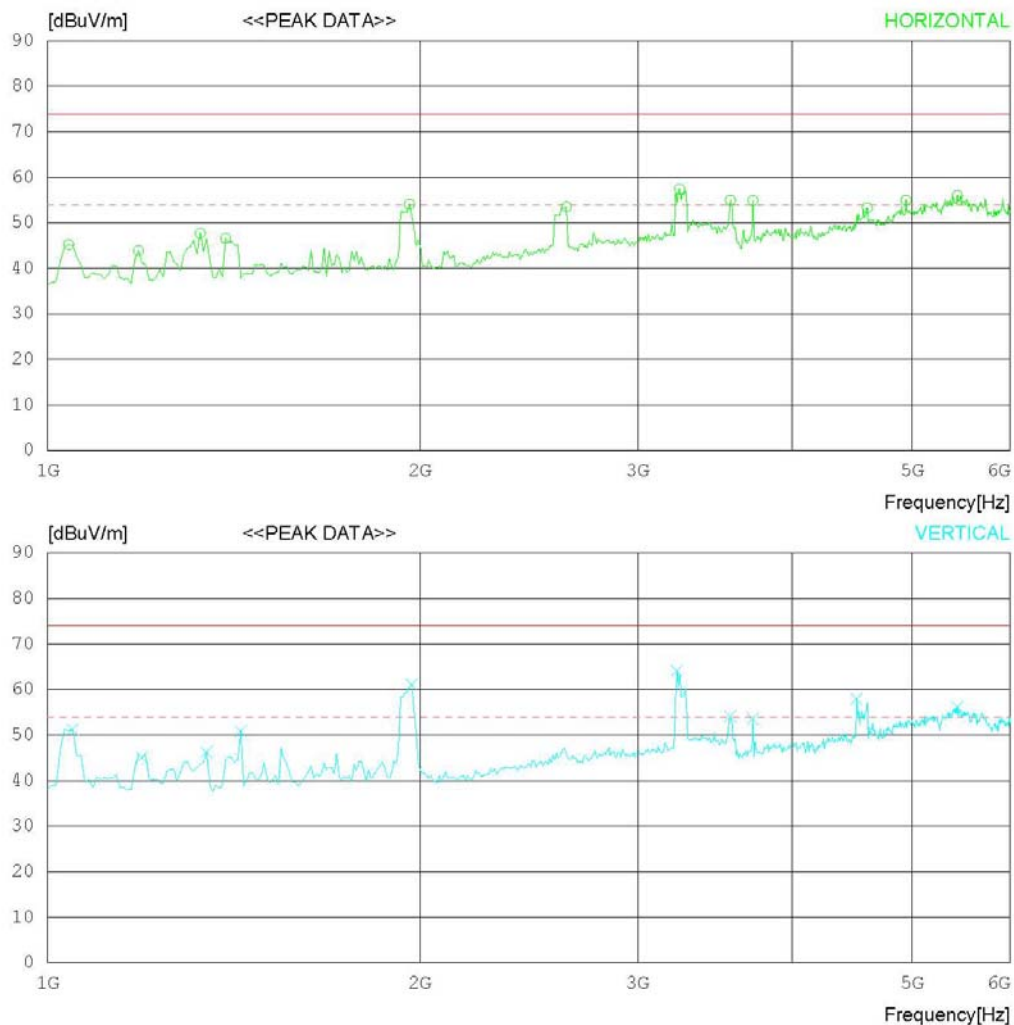
Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-02-16

Model Name : 47LN541C-UA	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 20 °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	1040.064	43.9	23.9	5.9	28.5	45.2	74.0	28.8	100	358
2	1184.295	41.8	24.2	6.4	28.5	43.9	74.0	30.1	100	358
3	1328.526	44.9	24.4	6.9	28.5	47.7	74.0	26.3	100	235
4	1392.628	43.5	24.5	7.1	28.5	46.6	74.0	27.4	100	228
5	1961.538	49.6	24.6	8.4	28.5	54.1	74.0	19.9	100	358
6	2626.611	44.3	27.8	9.8	28.4	53.5	74.0	20.5	100	134
7	3243.607	45.8	28.9	11.1	28.4	57.4	74.0	16.6	100	358
8	3564.125	42.4	29.0	11.9	28.3	55.0	74.0	19	100	358
9	3716.371	41.6	29.4	12.2	28.3	54.9	74.0	19.1	100	358
10	4597.779	36.5	31.2	13.8	28.2	53.3	74.0	20.7	100	358
11	4942.325	35.6	32.3	15.2	28.1	55.0	74.0	19	100	7
12	5439.112	34.4	34.8	14.9	28.1	56.0	74.0	18	100	358
----- Vertical -----										
13	1048.077	49.9	23.9	5.9	28.5	51.2	74.0	22.8	100	198
14	1192.308	43.0	24.2	6.4	28.5	45.1	74.0	28.9	100	165
15	1344.551	43.4	24.4	7.0	28.5	46.3	74.0	27.7	100	156
16	1432.692	47.5	24.5	7.3	28.5	50.8	74.0	23.2	100	1
17	1969.551	56.6	24.6	8.4	28.5	61.1	74.0	12.9	100	1
18	3227.581	52.5	28.9	11.1	28.4	64.1	74.0	9.9	100	1
19	3564.125	41.5	29.0	11.9	28.3	54.1	74.0	19.9	100	1
20	3716.371	40.3	29.4	12.2	28.3	53.6	74.0	20.4	100	1
21	4509.639	41.7	30.9	13.5	28.2	57.9	74.0	16.1	100	1
22	5439.112	34.5	34.8	14.9	28.1	56.1	74.0	17.9	100	141

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

RADIATED EMISSION

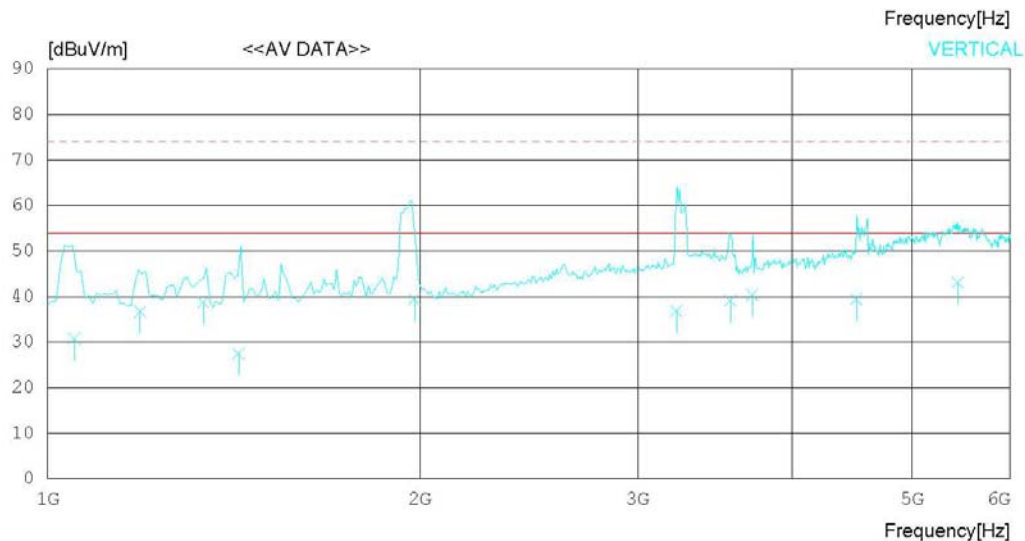
Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-02-16

Model Name : 47LN541C-UA	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 20 °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	1048.333	26.1	23.9	5.9	28.5	27.4	54.0	26.6	100	265
2	1187.846	33.5	24.2	6.4	28.5	35.6	54.0	18.4	100	198
3	1336.333	31.5	24.4	6.9	28.5	34.3	54.0	19.7	100	146
4	1397.871	24.4	24.5	7.1	28.5	27.5	54.0	26.5	100	123
5	1969.323	25.1	24.6	8.4	28.5	29.6	54.0	24.4	100	209
6	2627.205	24.1	27.8	9.8	28.4	33.3	54.0	20.7	100	265
7	3245.564	25.1	28.9	11.1	28.4	36.7	54.0	17.3	100	303
8	3564.801	26.5	29.0	11.9	28.3	39.1	54.0	14.9	100	354
9	3712.794	28.3	29.4	12.2	28.3	41.6	54.0	12.4	100	170
10	5438.692	21.3	34.8	14.9	28.1	42.9	54.0	11.1	100	260
----- Vertical -----										
11	1051.125	29.4	23.9	5.9	28.5	30.7	54.0	23.3	100	309
12	1187.993	34.6	24.2	6.4	28.5	36.7	54.0	17.3	100	258
13	1336.628	36.0	24.4	6.9	28.5	38.8	54.0	15.2	100	144
14	1426.467	24.3	24.5	7.2	28.5	27.5	54.0	26.5	100	295
15	1979.205	34.9	24.6	8.4	28.5	39.4	54.0	14.6	100	323
16	3223.794	25.3	28.9	11.0	28.4	36.8	54.0	17.2	100	310
17	3564.076	26.5	29.0	11.9	28.3	39.1	54.0	14.9	100	302
18	3712.634	27.1	29.4	12.2	28.3	40.4	54.0	13.6	100	150
19	4505.794	23.2	30.9	13.5	28.2	39.4	54.0	14.6	100	141
20	5442.136	21.5	34.8	14.9	28.1	43.1	54.0	10.9	100	263

< USB MODE _ 30 MHz ~ 1 GHz >

RADIATED EMISSION

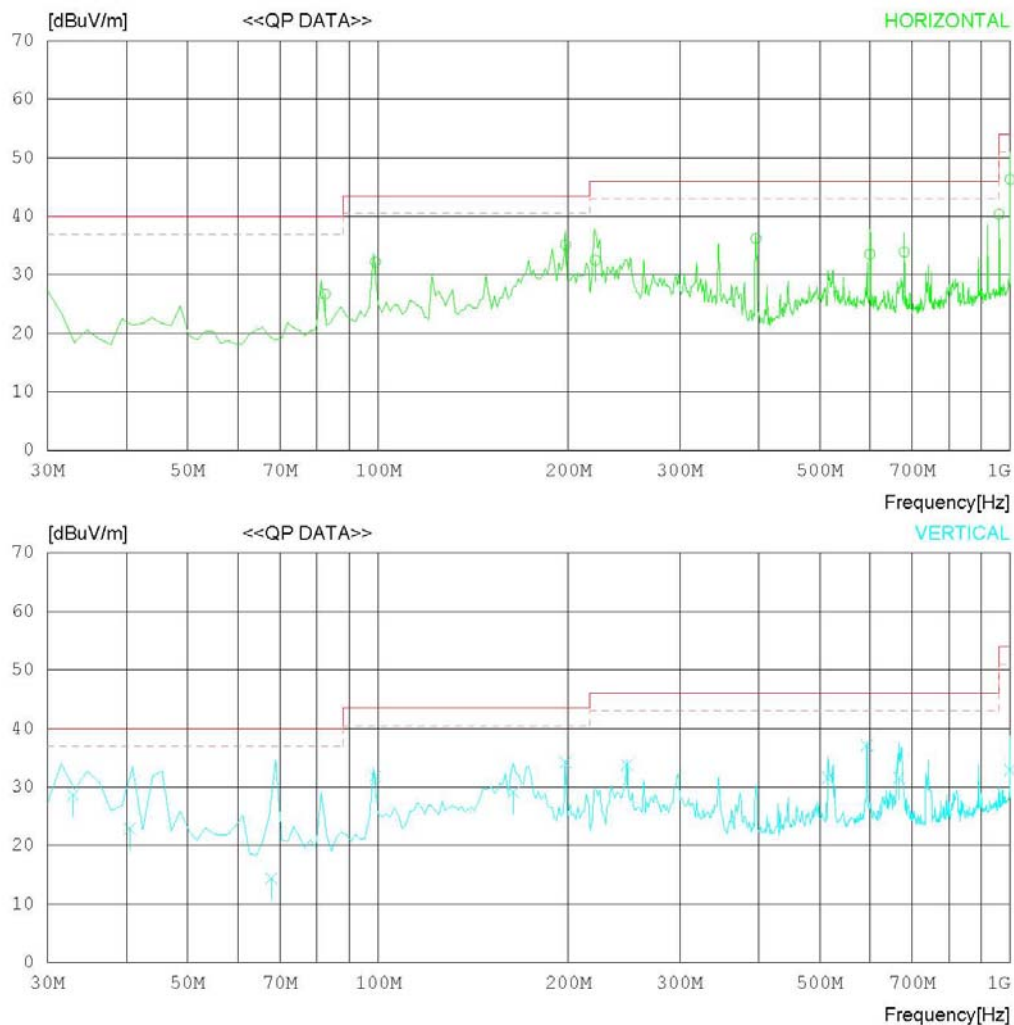
Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
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	82.490	41.8	7.6	1.6	24.3	26.7	40.0	13.3	295	215
2	99.001	44.4	10.5	1.4	24.1	32.2	43.5	11.3	162	111
3	198.016	47.1	9.7	2.3	24.0	35.1	43.5	8.4	100	305
4	220.642	43.1	10.9	2.4	23.9	32.5	46.0	13.5	100	115
5	395.993	40.3	15.9	3.5	23.5	36.2	46.0	9.8	100	145
6	600.014	34.0	18.7	4.2	23.4	33.5	46.0	12.5	100	200
7	680.001	34.5	18.6	4.5	23.7	33.9	46.0	12.1	201	212
8	960.014	36.1	21.7	5.4	22.9	40.3	54.0	13.7	201	245
9	999.983	41.2	22.3	5.5	22.7	46.3	54.0	7.7	100	147
----- Vertical -----										
10	32.964	35.3	16.3	1.0	23.9	28.7	40.0	11.3	100	328
11	40.496	33.0	13.0	1.1	24.2	22.9	40.0	17.1	100	334
12	67.839	31.1	6.1	1.6	24.4	14.4	40.0	25.6	100	332
13	99.017	44.0	10.5	1.4	24.1	31.8	43.5	11.7	100	164
14	163.753	41.2	10.1	1.9	24.1	29.1	43.5	14.4	100	335
15	197.993	46.2	9.7	2.3	24.0	34.2	43.5	9.3	100	215
16	247.528	42.4	12.6	2.6	23.8	33.8	46.0	12.2	100	310
17	514.657	33.3	17.5	3.9	23.1	31.6	46.0	14.4	100	140
18	593.407	37.8	18.6	4.1	23.4	37.1	46.0	8.9	100	188
19	666.361	32.4	18.6	4.3	23.7	31.6	46.0	14.4	100	192
20	999.935	27.8	22.3	5.5	22.7	32.9	54.0	21.1	206	165

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

RADIATED EMISSION

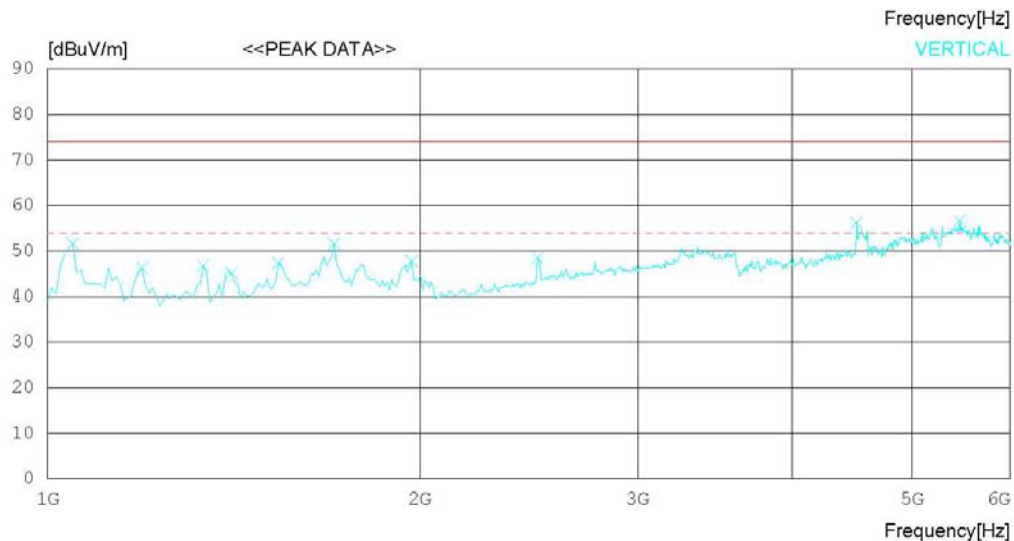
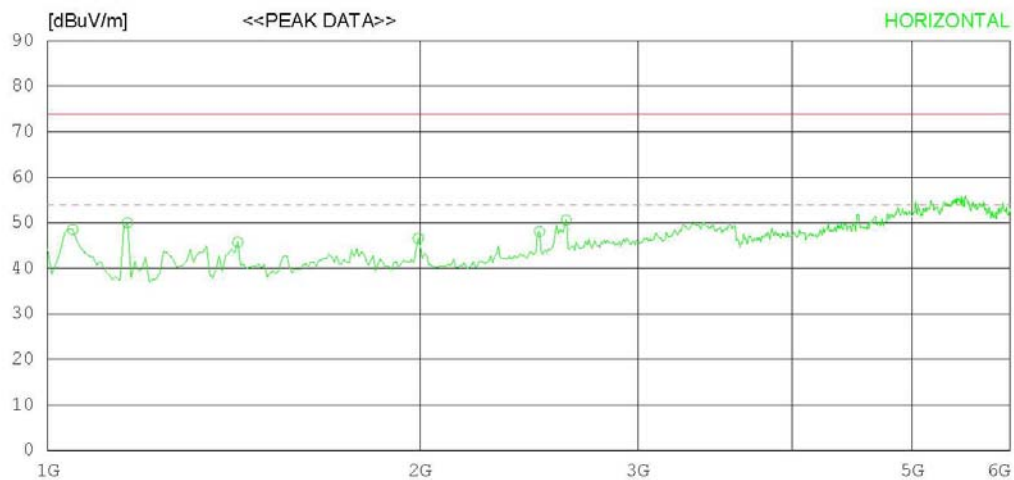
Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-02-16

Model Name : 47LN541C-UA	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 20 °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	1048.077	47.2	23.9	5.9	28.5	48.5	74.0	25.5	100	1
2	1160.256	48.1	24.1	6.3	28.5	50.0	74.0	24	100	164
3	1424.679	42.5	24.5	7.2	28.5	45.7	74.0	28.3	100	1
4	1993.589	42.1	24.6	8.4	28.5	46.6	74.0	27.4	100	1
5	2498.404	39.7	27.4	9.5	28.5	48.1	74.0	25.9	100	153
6	2626.611	41.4	27.8	9.8	28.4	50.6	74.0	23.4	100	127
----- Vertical -----										
7	1048.077	50.3	23.9	5.9	28.5	51.6	74.0	22.4	100	204
8	1192.308	44.2	24.2	6.4	28.5	46.3	74.0	27.7	100	358
9	1336.538	44.0	24.4	6.9	28.5	46.8	74.0	27.2	100	358
10	1408.654	41.9	24.5	7.2	28.5	45.1	74.0	28.9	100	204
11	1536.859	43.6	24.6	7.6	28.5	47.3	74.0	26.7	100	358
12	1705.128	47.6	24.6	7.9	28.5	51.6	74.0	22.4	100	214
13	1969.551	43.3	24.6	8.4	28.5	47.8	74.0	26.2	100	204
14	2490.391	40.1	27.4	9.5	28.5	48.5	74.0	25.5	100	358
15	4509.639	40.0	30.9	13.5	28.2	56.2	74.0	17.8	100	193
16	5463.150	34.9	34.9	14.9	28.1	56.6	74.0	17.4	100	267

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

RADIATED EMISSION

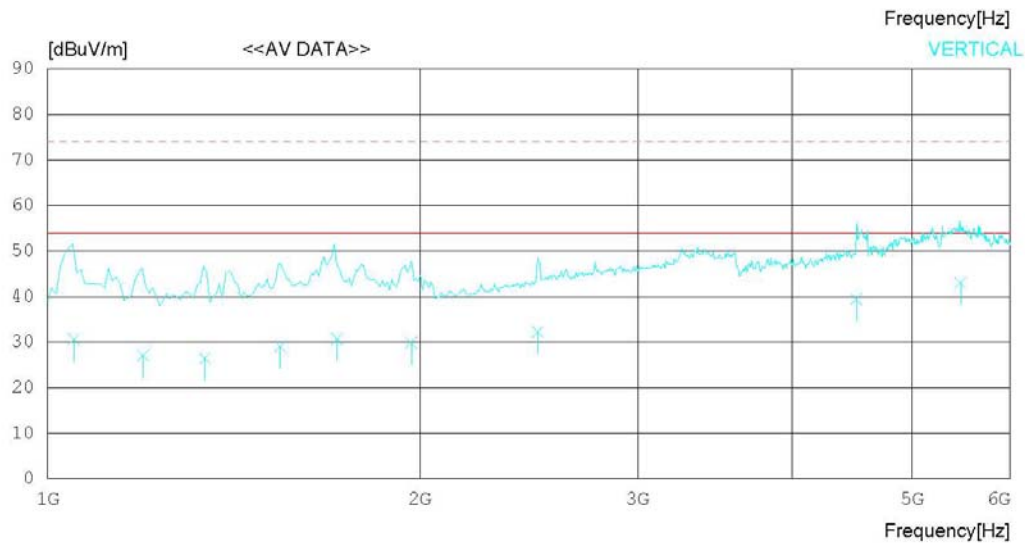
Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-02-16

Model Name : 47LN541C-UA
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 37 % R.H.
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	1051.231	26.9	23.9	5.9	28.5	28.2	54.0	25.8	100	302
2	1160.160	26.8	24.1	6.3	28.5	28.7	54.0	25.3	100	310
3	1425.169	23.5	24.5	7.2	28.5	26.7	54.0	27.3	100	329
4	1996.634	26.6	24.6	8.4	28.5	31.1	54.0	22.9	100	338
5	2628.592	22.1	27.8	9.8	28.4	31.3	54.0	22.7	100	350
----- Vertical -----										
6	1050.403	29.3	23.9	5.9	28.5	30.6	54.0	23.4	100	214
7	1194.634	25.0	24.2	6.4	28.5	27.1	54.0	26.9	100	230
8	1340.467	23.6	24.4	6.9	28.5	26.4	54.0	27.6	100	241
9	1542.391	25.3	24.6	7.6	28.5	29.0	54.0	25.0	100	286
10	1714.006	26.7	24.6	7.9	28.5	30.7	54.0	23.3	100	293
11	1968.198	25.4	24.6	8.4	28.5	29.9	54.0	24.1	100	118
12	2491.263	23.9	27.4	9.5	28.5	32.3	54.0	21.7	100	164
13	4505.794	23.2	30.9	13.5	28.2	39.4	54.0	14.6	100	207
14	5469.870	21.3	34.9	14.9	28.1	43.0	54.0	11.0	100	277

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	2012.03.05	2013.03.05
☐ 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	2012.03.06	2013.03.06
☒ 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
☒ AMPLIFIER	MLA-100M18-B01-25	TSJ	1719458	2012.06.04	2013.06.04
☐ 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	2012.03.06	2013.03.06
☐ 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	2012.03.05	2013.03.05

Appendix 2

Report Revision History

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