

EMC TEST REPORT

Test item : LED TV Monitor
Model No. : 47LP645H-UH
Order No. : DEMC1303-01052
Date of receipt : 2013-03-19
Test duration : 2013-03-22 ~ 2013-03-25
Use of report : FCC CoC Marking
Date of Issue : 2013-03-29

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 : (18 ~ 20) °C,
Humidity : (34 ~ 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:



Manager
DaeHwa Eun

Reviewed by:



Technical Manager
ChangHo Lee

PRESIDENT OF DIGITAL EMC CO., LTD.

CONTENTS

1. General Remarks	3
2. Test Laboratory	3
3. General Information of EUT	4
4. Test Summary	5
4.1 Applied standards and test results	5
4.2 Test environment and conditions	5
4.3 Test result Summary	5
5. Test Set-up and operation mode	6
5.1 Principle of Configuration Selection	6
5.2 Test Operation Mode	6
5.3 Support Equipment Used	6
6. Test Results : Emission	7
6.1 Conducted Disturbance	7
6.2 Radiated Disturbance	14
Appendix 1	34
List of Test and Measurement Instruments	34
Appendix 2	36
Report Revision History	36

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.digitalemcc.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.	47LP645H-UH
EUT Type	LED TV Monitor
Serial No	NONE
FCC ID	BEJ47LP645HUH
Type of Sample Tested	Pre-Production
High Frequency	800 MHz
Rating	AC 100-240 V~ 50/60 Hz, 1.6 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	03-22	20	34
Radiated Disturbance	03-23	19	37
	03-25	18	35

4.3 Test result Summary

(1) Conducted Emission (DSUB, USB MODE)

Frequency [MHz]	Phase	Result [dB μ V]	Detector	Limit [dB μ V]	Margin [dB]
0.15000	L	55.2	Quasi-Peak	66.0	10.8
0.15000	L	55.2	Quasi-Peak	66.0	10.8

(2) Radiated Emission (DSUB MODE)

Frequency [MHz]	Pol.	Result [dB(μ V/m)]	Detector	Limit [dB(μ V/m)]	Margin [dB]
262.727	H	42.2	Quasi-Peak	46.0	3.8

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, 1920x1080 Resolution
- 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	1.6	Not use	Non-shield	Plastic	DOC
				USB	1.7	Not use	Non-shield		
				USB	1.6	Not use	Non-shield		
				USB	1.6	Not use	Non-shield		
				HDMI	1.8	Not use	Shield		
				DSUB	1.7	Not use	Shield		
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	AKB737554 14	N/A	HANSUNG ELECTRONIC	-	-	Not use	-	-	-
HEADSET	COV903	N/A	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

< DSUB MODE >



Results of Conducted Emission

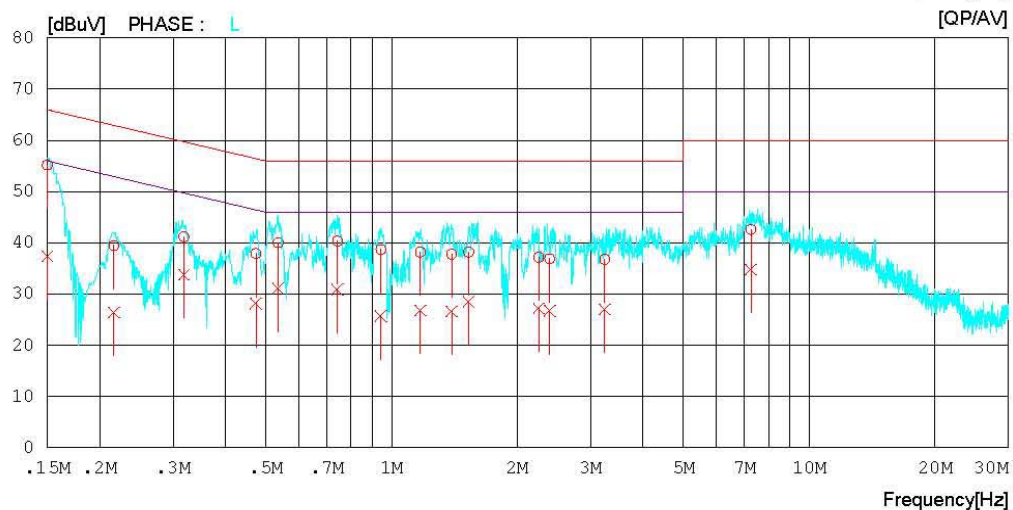
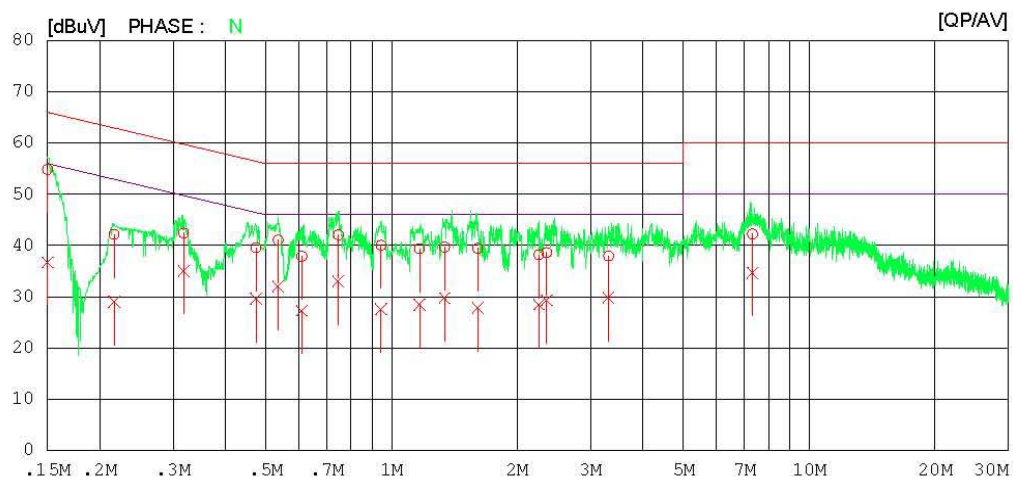
Digital EMC
Date : 2013-03-22

Model No. : 47LP645H-UH
Type :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 20 °C 34 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-03-22

Model No. : 47LP645H-UH
Type :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 20 °C 34 % 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	0.15012	54.7	36.6	0.1	54.8	36.7	66.0	56.0	11.2	19.3	N
2	0.21681	42.1	28.9	0.1	42.2	29.0	62.9	52.9	20.7	23.9	N
3	0.31821	42.3	34.9	0.1	42.4	35.0	59.8	49.8	17.4	14.8	N
4	0.47369	39.4	29.5	0.1	39.5	29.6	56.4	46.4	16.9	16.8	N
5	0.53516	40.9	31.9	0.1	41.0	32.0	56.0	46.0	15.0	14.0	N
6	0.61009	37.7	27.2	0.1	37.8	27.3	56.0	46.0	18.2	18.7	N
7	0.74598	42.0	32.9	0.1	42.1	33.0	56.0	46.0	13.9	13.0	N
8	0.94429	39.9	27.5	0.1	40.0	27.6	56.0	46.0	16.0	18.4	N
9	1.16750	39.3	28.4	0.1	39.4	28.5	56.0	46.0	16.6	17.5	N
10	1.34050	39.6	29.7	0.1	39.7	29.8	56.0	46.0	16.3	16.2	N
11	1.60900	39.3	27.7	0.1	39.4	27.8	56.0	46.0	16.6	18.2	N
12	2.25450	38.1	28.4	0.1	38.2	28.5	56.0	46.0	17.8	17.5	N
13	2.35100	38.5	29.2	0.1	38.6	29.3	56.0	46.0	17.4	16.7	N
14	3.30800	37.8	29.7	0.1	37.9	29.8	56.0	46.0	18.1	16.2	N
15	7.31950	42.0	34.5	0.2	42.2	34.7	60.0	50.0	17.8	15.3	N
16	0.15000	55.1	37.3	0.1	55.2	37.4	66.0	56.0	10.8	18.6	L
17	0.21641	39.4	26.3	0.1	39.5	26.4	63.0	53.0	23.5	26.6	L
18	0.31850	41.1	33.7	0.1	41.2	33.8	59.7	49.7	18.5	15.9	L
19	0.47358	37.8	28.0	0.1	37.9	28.1	56.5	46.5	18.6	18.4	L
20	0.53529	39.9	31.0	0.1	40.0	31.1	56.0	46.0	16.0	14.9	L
21	0.74268	40.2	30.8	0.1	40.3	30.9	56.0	46.0	15.7	15.1	L
22	0.94319	38.6	25.6	0.1	38.7	25.7	56.0	46.0	17.3	20.3	L
23	1.17300	38.1	26.7	0.1	38.2	26.8	56.0	46.0	17.8	19.2	L
24	1.39250	37.7	26.5	0.1	37.8	26.6	56.0	46.0	18.2	19.4	L
25	1.53100	38.1	28.4	0.1	38.2	28.5	56.0	46.0	17.8	17.5	L
26	2.25250	37.1	27.1	0.1	37.2	27.2	56.0	46.0	18.8	18.8	L
27	2.39250	36.8	26.7	0.1	36.9	26.8	56.0	46.0	19.1	19.2	L
28	3.24050	36.7	27.0	0.1	36.8	27.1	56.0	46.0	19.2	18.9	L
29	7.25300	42.4	34.6	0.2	42.6	34.8	60.0	50.0	17.4	15.2	L

< HDMI MODE >



Results of Conducted Emission

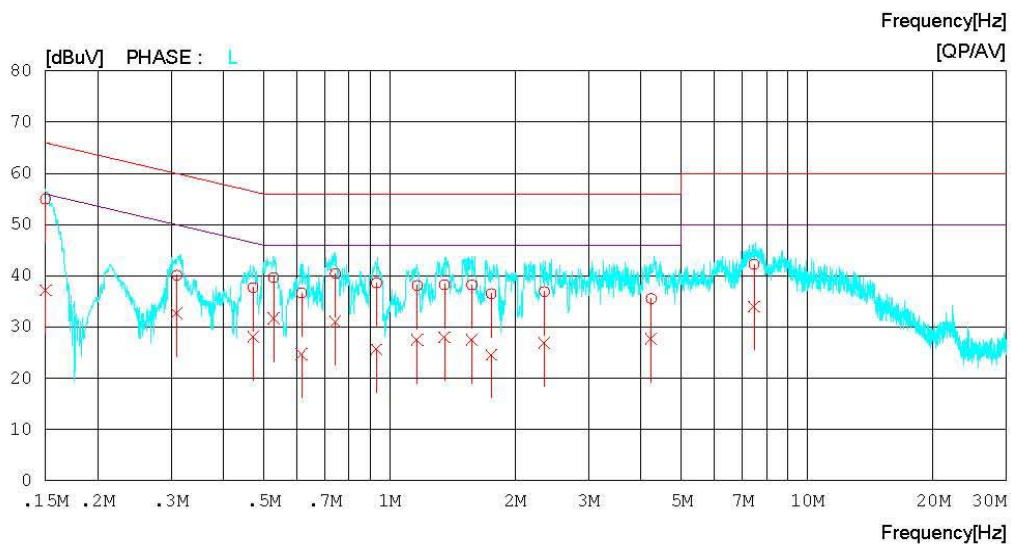
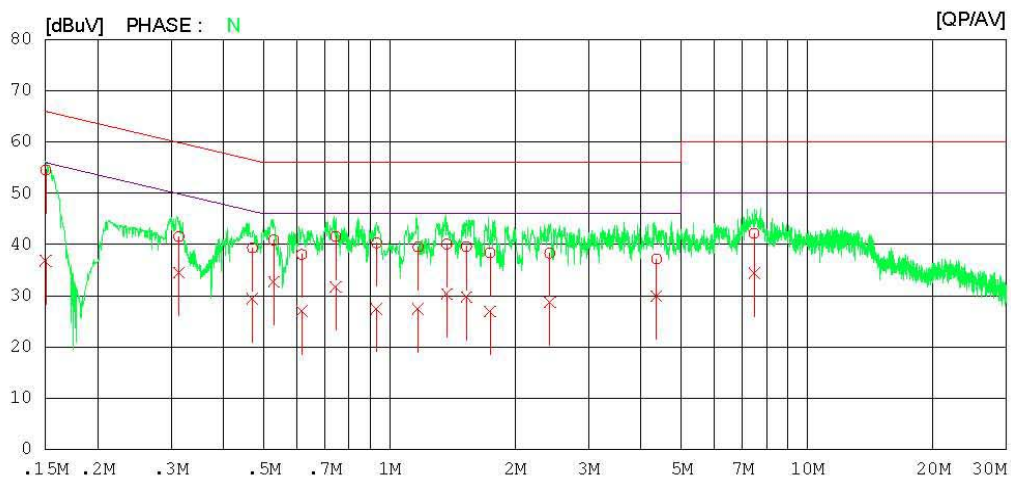
Digital EMC
Date : 2013-03-22

Model No. : 47LP645H-UH
Type :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 20°C 34 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-03-22

Model No. : 47LP645H-UH
Type :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 20 °C 34 % 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	0.15025	54.5	36.7	0.1	54.6	36.8	66.0	56.0	11.4	19.2	N
2	0.31320	41.4	34.4	0.1	41.5	34.5	59.9	49.9	18.4	15.4	N
3	0.46984	39.2	29.3	0.1	39.3	29.4	56.5	46.5	17.2	17.1	N
4	0.52839	40.8	32.6	0.1	40.9	32.7	56.0	46.0	15.1	13.3	N
5	0.61653	37.9	26.9	0.1	38.0	27.0	56.0	46.0	18.0	19.0	N
6	0.74350	41.5	31.6	0.1	41.6	31.7	56.0	46.0	14.4	14.3	N
7	0.93221	40.2	27.3	0.1	40.3	27.4	56.0	46.0	15.7	18.6	N
8	1.17150	39.4	27.3	0.1	39.5	27.4	56.0	46.0	16.5	18.6	N
9	1.37200	40.0	30.2	0.1	40.1	30.3	56.0	46.0	15.9	15.7	N
10	1.52950	39.5	29.6	0.1	39.6	29.7	56.0	46.0	16.4	16.3	N
11	1.73950	38.2	26.8	0.1	38.3	26.9	56.0	46.0	17.7	19.1	N
12	2.41900	38.2	28.6	0.1	38.3	28.7	56.0	46.0	17.7	17.3	N
13	4.35450	37.0	29.8	0.1	37.1	29.9	56.0	46.0	18.9	16.1	N
14	7.46700	42.0	34.2	0.2	42.2	34.4	60.0	50.0	17.8	15.6	N
15	0.15006	54.9	37.1	0.1	55.0	37.2	66.0	56.0	11.0	18.8	L
16	0.30973	40.0	32.6	0.1	40.1	32.7	60.0	50.0	19.9	17.3	L
17	0.47170	37.6	28.0	0.1	37.7	28.1	56.5	46.5	18.8	18.4	L
18	0.52809	39.6	31.6	0.1	39.7	31.7	56.0	46.0	16.3	14.3	L
19	0.61554	36.5	24.6	0.1	36.6	24.7	56.0	46.0	19.4	21.3	L
20	0.74229	40.4	30.9	0.1	40.5	31.0	56.0	46.0	15.5	15.0	L
21	0.93140	38.6	25.6	0.1	38.7	25.7	56.0	46.0	17.3	20.3	L
22	1.16600	38.0	27.4	0.1	38.1	27.5	56.0	46.0	17.9	18.5	L
23	1.35350	38.2	28.0	0.1	38.3	28.1	56.0	46.0	17.7	17.9	L
24	1.57500	38.2	27.4	0.1	38.3	27.5	56.0	46.0	17.7	18.5	L
25	1.75300	36.4	24.5	0.1	36.5	24.6	56.0	46.0	19.5	21.4	L
26	2.35050	36.8	26.8	0.1	36.9	26.9	56.0	46.0	19.1	19.1	L
27	4.23150	35.5	27.6	0.1	35.6	27.7	56.0	46.0	20.4	18.3	L
28	7.46250	42.0	33.9	0.2	42.2	34.1	60.0	50.0	17.8	15.9	L

< USB MODE >



Results of Conducted Emission

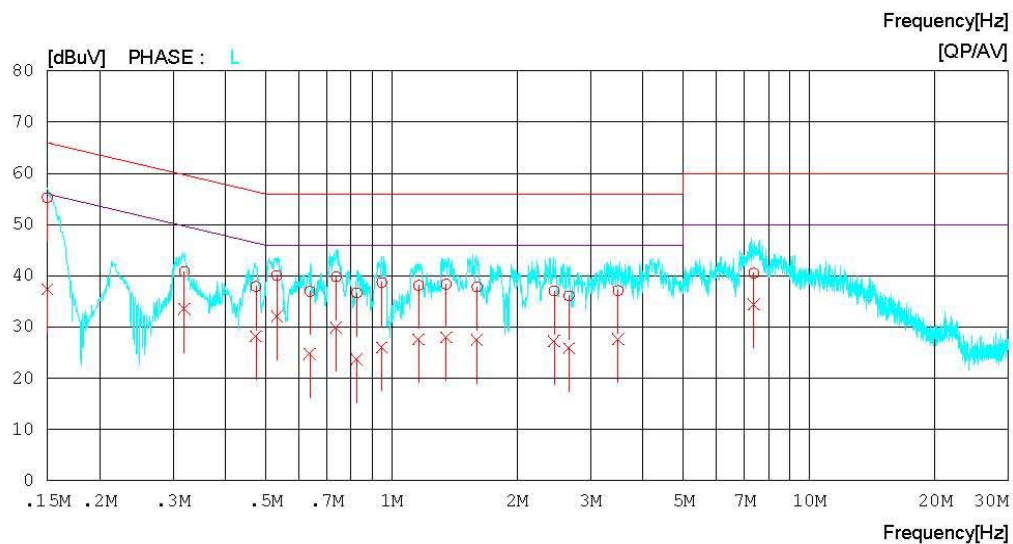
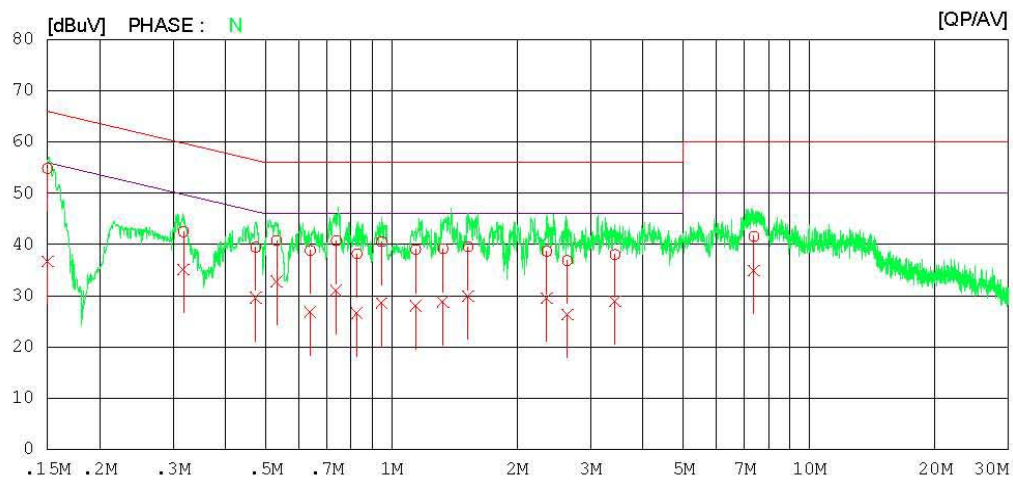
Digital EMC
Date : 2013-03-22

Model No. : 47LP645H-UH
Type :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 20 °C 34 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-03-22

Model No. : 47LP645H-UH
Type :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 20 °C 34 % 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	0.15006	54.7	36.6	0.1	54.8	36.7	66.0	56.0	11.2	19.3	N
2	0.31764	42.4	35.0	0.1	42.5	35.1	59.8	49.8	17.3	14.7	N
3	0.47339	39.4	29.5	0.1	39.5	29.6	56.5	46.5	17.0	16.9	N
4	0.53104	40.7	32.6	0.1	40.8	32.7	56.0	46.0	15.2	13.3	N
5	0.63936	38.7	26.7	0.1	38.8	26.8	56.0	46.0	17.2	19.2	N
6	0.73780	40.6	31.0	0.1	40.7	31.1	56.0	46.0	15.3	14.9	N
7	0.82708	38.1	26.5	0.1	38.2	26.6	56.0	46.0	17.8	19.4	N
8	0.94776	40.4	28.4	0.1	40.5	28.5	56.0	46.0	15.5	17.5	N
9	1.14300	38.9	27.9	0.1	39.0	28.0	56.0	46.0	17.0	18.0	N
10	1.32900	39.1	28.7	0.1	39.2	28.8	56.0	46.0	16.8	17.2	N
11	1.52550	39.4	29.8	0.1	39.5	29.9	56.0	46.0	16.5	16.1	N
12	2.35400	38.6	29.4	0.1	38.7	29.5	56.0	46.0	17.3	16.5	N
13	2.63550	36.7	26.2	0.1	36.8	26.3	56.0	46.0	19.2	19.7	N
14	3.43100	37.9	28.9	0.1	38.0	29.0	56.0	46.0	18.0	17.0	N
15	7.37150	41.4	34.7	0.2	41.6	34.9	60.0	50.0	18.4	15.1	N
16	0.15000	55.1	37.3	0.1	55.2	37.4	66.0	56.0	10.8	18.6	L
17	0.31938	40.7	33.4	0.1	40.8	33.5	59.7	49.7	18.9	16.2	L
18	0.47350	37.8	28.1	0.1	37.9	28.2	56.5	46.5	18.6	18.3	L
19	0.53150	40.0	32.0	0.1	40.1	32.1	56.0	46.0	15.9	13.9	L
20	0.63755	36.9	24.7	0.1	37.0	24.8	56.0	46.0	19.0	21.2	L
21	0.73775	39.7	29.8	0.1	39.8	29.9	56.0	46.0	16.2	16.1	L
22	0.82631	36.6	23.6	0.1	36.7	23.7	56.0	46.0	19.3	22.3	L
23	0.94816	38.6	26.0	0.1	38.7	26.1	56.0	46.0	17.3	19.9	L
24	1.16100	38.1	27.5	0.1	38.2	27.6	56.0	46.0	17.8	18.4	L
25	1.35200	38.3	27.9	0.1	38.4	28.0	56.0	46.0	17.6	18.0	L
26	1.60250	37.7	27.4	0.1	37.8	27.5	56.0	46.0	18.2	18.5	L
27	2.44950	36.9	27.2	0.1	37.0	27.3	56.0	46.0	19.0	18.7	L
28	2.66350	36.0	25.8	0.1	36.1	25.9	56.0	46.0	19.9	20.1	L
29	3.48850	37.0	27.6	0.1	37.1	27.7	56.0	46.0	18.9	18.3	L
30	7.37200	40.3	34.2	0.2	40.5	34.4	60.0	50.0	19.5	15.6	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

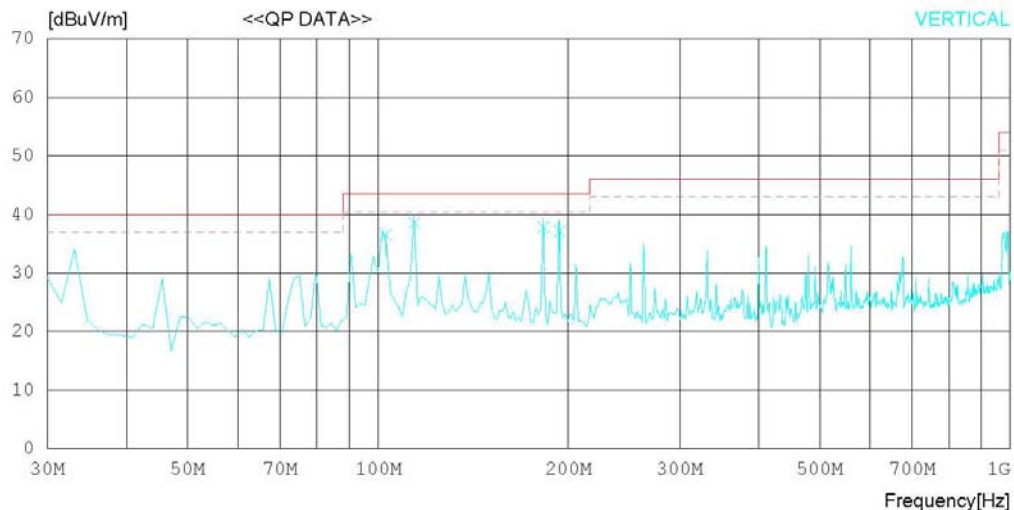
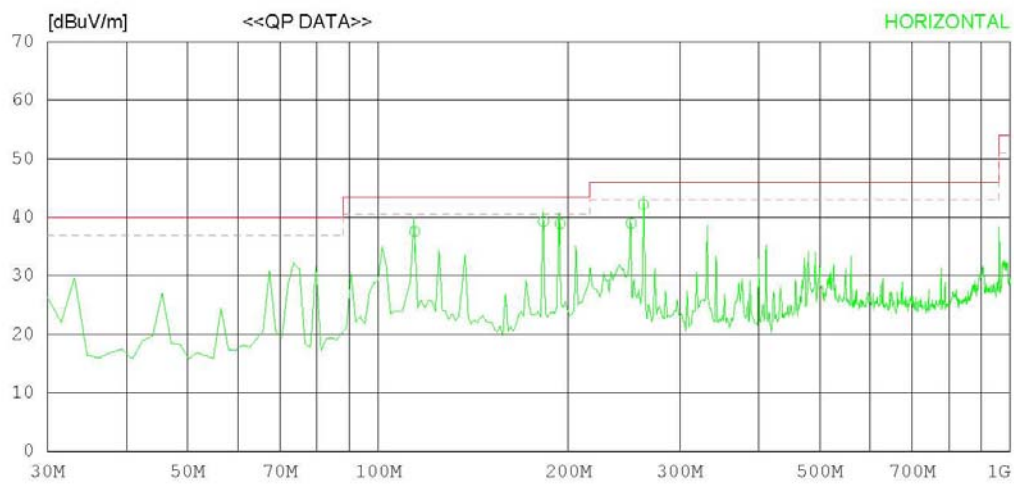
Date : 2013-03-23

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 19 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-03-23

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 19 °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	114.234	48.9	11.3	1.5	24.1	37.6	43.5	5.9	175	101
2	182.753	51.4	9.7	2.2	24.0	39.3	43.5	4.2	199	91
3	194.176	51.0	9.7	2.2	24.0	38.9	43.5	4.6	100	82
4	251.298	47.5	12.7	2.6	23.8	39.0	46.0	7.0	100	1
5	262.727	50.3	13.0	2.6	23.7	42.2	46.0	3.8	100	66
----- Vertical -----										
6	102.817	48.5	10.8	1.4	24.1	36.6	43.5	6.9	100	174
7	114.234	49.9	11.3	1.5	24.1	38.6	43.5	4.9	100	326
8	182.769	49.9	9.7	2.2	24.0	37.8	43.5	5.7	100	358
9	194.192	49.2	9.7	2.2	24.0	37.1	43.5	6.4	100	130

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

RADIATED EMISSION

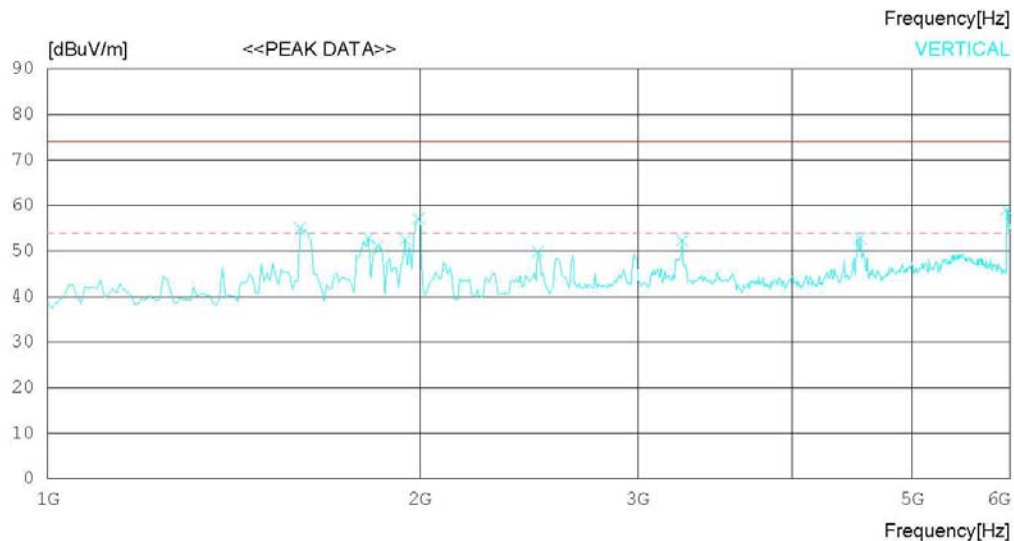
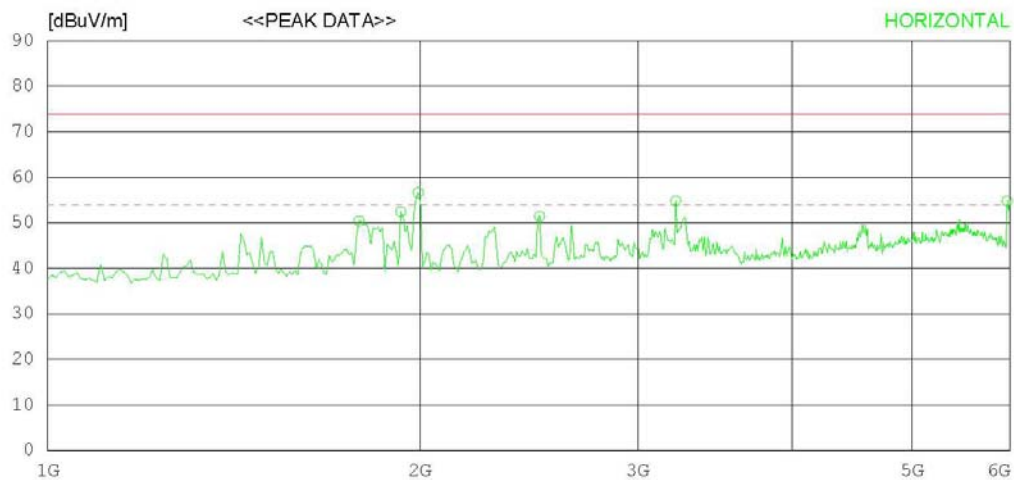
Date : 2013-03-25

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 18 'C 35 % 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 : 2013-03-25

Model Name : 47LP645H-UH	Reference No. :
Model No. :	Power Supply : 120V 60Hz
Serial No. :	Temp/Humi : 18 °C 35 % R.H.
Test Condition : DSUB	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	1785.256	61.1	24.6	4.4	39.7	50.4	74.0	23.6	100	358
2	1929.487	62.8	24.6	4.6	39.6	52.4	74.0	21.6	100	207
3	1993.589	66.8	24.6	4.7	39.5	56.6	74.0	17.4	100	118
4	2498.404	58.1	27.4	5.2	39.3	51.4	74.0	22.6	100	358
5	3219.568	59.2	28.9	5.9	39.2	54.8	74.0	19.2	100	358
6	5967.950	53.1	32.0	8.4	38.7	54.8	74.0	19.2	100	74
----- Vertical -----										
7	1600.961	66.2	24.6	4.2	40.0	55.0	74.0	19	100	220
8	1817.307	63.4	24.6	4.5	39.7	52.8	74.0	21.2	100	1
9	1849.359	61.7	24.6	4.5	39.7	51.1	74.0	22.9	100	1
10	1945.512	62.8	24.6	4.6	39.5	52.5	74.0	21.5	100	1
11	1993.589	67.3	24.6	4.7	39.5	57.1	74.0	16.9	100	1
12	2490.391	56.5	27.4	5.2	39.3	49.8	74.0	24.2	100	1
13	3259.633	56.7	28.9	5.9	39.2	52.3	74.0	21.7	100	192
14	4541.690	53.2	31.0	7.2	38.6	52.8	74.0	21.2	100	200
15	5959.937	57.3	32.1	8.4	38.7	59.1	74.0	14.9	100	143

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

RADIATED EMISSION

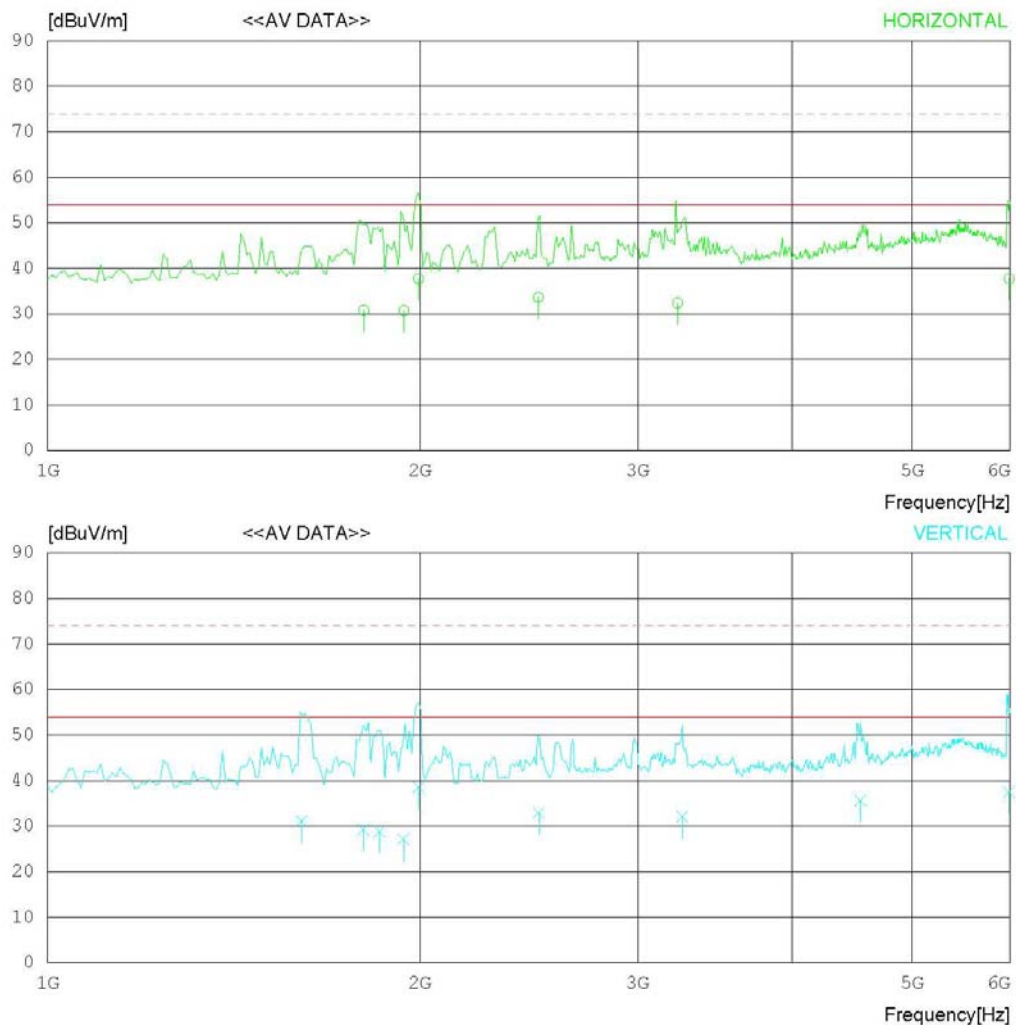
Date : 2013-03-25

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 18 'C 35 % 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 : 2013-03-25

Model Name : 47LP645H-UH	Reference No. :
Model No. :	Power Supply : 120V 60Hz
Serial No. :	Temp/Humi : 18 °C 35 % 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	1801.820	41.4	24.6	4.5	39.7	30.8	54.0	23.2	100	358
2	1940.640	41.1	24.6	4.6	39.6	30.7	54.0	23.3	100	134
3	1995.112	47.9	24.6	4.7	39.5	37.7	54.0	16.3	100	177
4	2493.509	40.3	27.4	5.2	39.3	33.6	54.0	20.4	100	261
5	3231.179	36.8	28.9	5.9	39.2	32.4	54.0	21.6	100	358
6	5988.612	36.1	31.9	8.4	38.7	37.7	54.0	16.3	100	74
----- Vertical -----										
7	1605.208	42.2	24.6	4.2	39.9	31.1	54.0	22.9	100	224
8	1800.321	39.9	24.6	4.5	39.7	29.3	54.0	24.7	100	188
9	1856.134	39.3	24.6	4.5	39.6	28.8	54.0	25.2	100	172
10	1939.711	37.5	24.6	4.6	39.6	27.1	54.0	26.9	100	244
11	1995.593	48.8	24.6	4.7	39.5	38.6	54.0	15.4	100	46
12	2495.112	39.6	27.4	5.2	39.3	32.9	54.0	21.1	100	212
13	3259.633	36.5	28.9	5.9	39.2	32.1	54.0	21.9	100	192
14	4541.690	36.0	31.0	7.2	38.6	35.6	54.0	18.4	100	200
15	5988.612	35.9	31.9	8.4	38.7	37.5	54.0	16.5	100	143

< HDMI MODE_30 MHz ~ 1 GHz >

RADIATED EMISSION

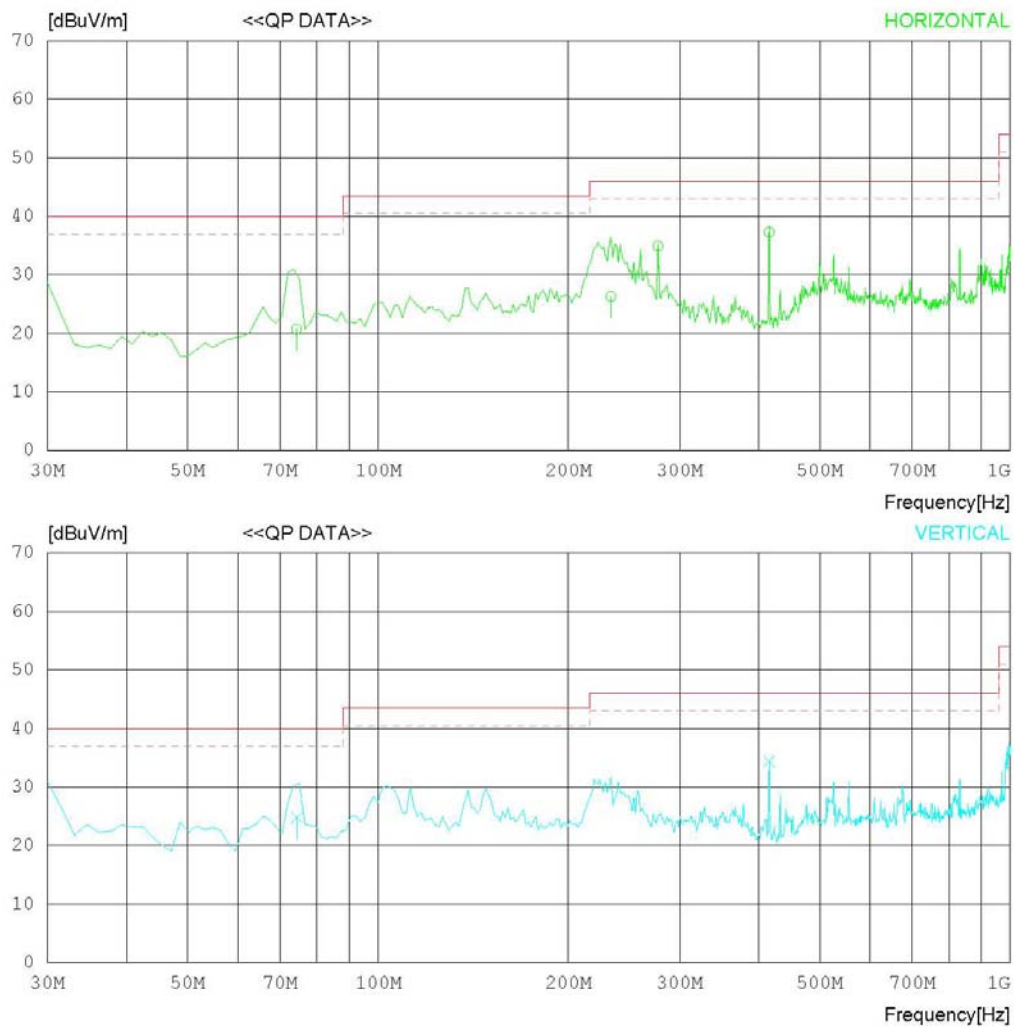
Date : 2013-03-23

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 19°C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-03-23

Model Name : 47LP645H-UH	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	74.298	36.7	6.7	1.6	24.3	20.7	40.0	19.3	400	99
2	233.638	35.9	11.7	2.5	23.8	26.3	46.0	19.7	100	358
3	277.247	42.6	13.3	2.7	23.7	34.9	46.0	11.1	100	301
4	415.881	41.0	16.2	3.5	23.4	37.3	46.0	8.7	227	180
----- Vertical -----										
5	74.458	40.8	6.7	1.6	24.3	24.8	40.0	15.2	100	201
6	415.881	38.1	16.2	3.5	23.4	34.4	46.0	11.6	100	1

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

RADIATED EMISSION

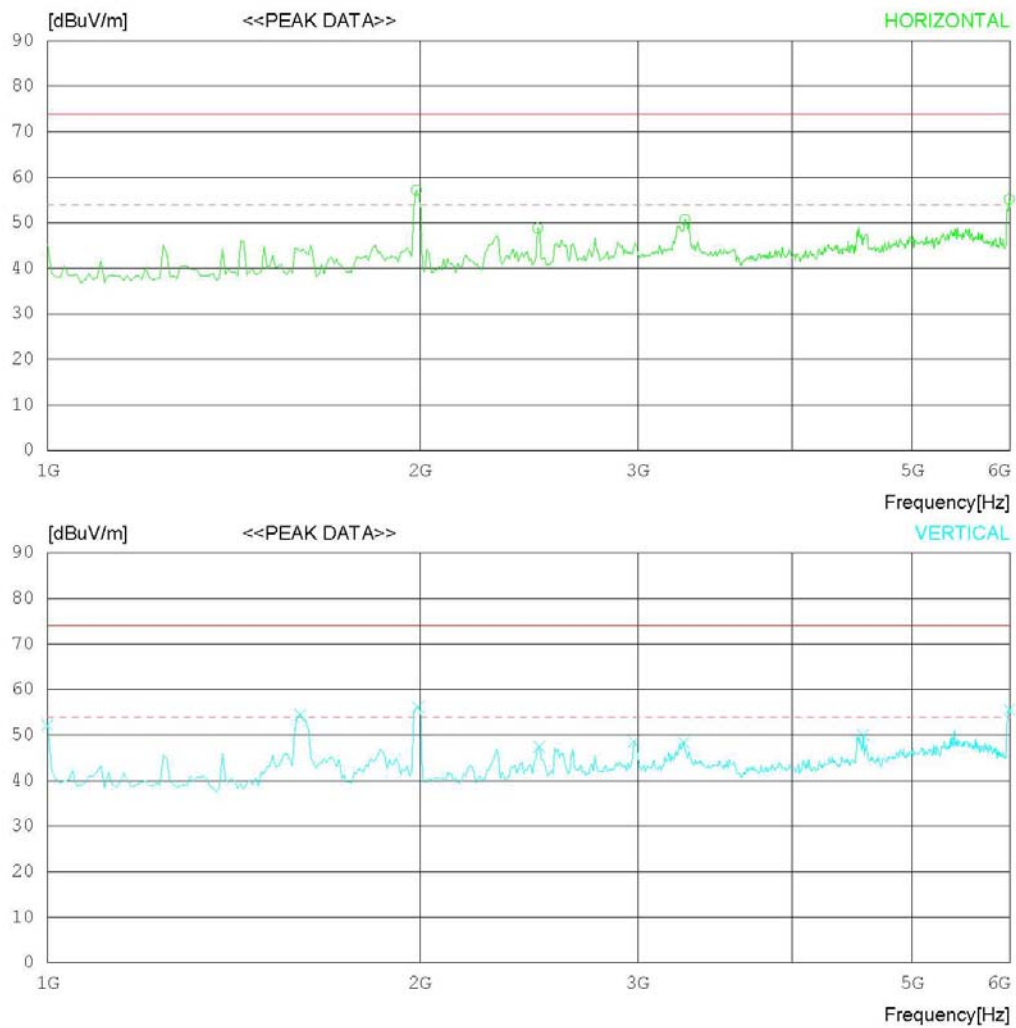
Date : 2013-03-25

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 18 'C 35 % 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 : 2013-03-25

Model Name : 47LP645H-UH	Reference No. :
Model No. :	Power Supply : 120V 60Hz
Serial No. :	Temp/Humi : 18 °C 35 % 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	1985.577	67.4	24.6	4.7	39.5	57.2	74.0	16.8	100	1
2	2490.391	55.6	27.4	5.2	39.3	48.9	74.0	25.1	100	1
3	3275.659	55.0	28.9	6.0	39.2	50.7	74.0	23.3	100	223
4	5991.988	53.6	31.9	8.4	38.7	55.2	74.0	18.8	100	286
----- Vertical -----										
5	1000.000	66.2	23.9	3.3	41.2	52.2	74.0	21.8	100	203
6	1600.961	65.6	24.6	4.2	40.0	54.4	74.0	19.6	100	220
7	1993.589	66.3	24.6	4.7	39.5	56.1	74.0	17.9	100	358
8	2498.404	54.2	27.4	5.2	39.3	47.5	74.0	26.5	100	358
9	2979.180	53.3	28.9	5.7	39.3	48.6	74.0	25.4	100	358
10	3267.646	52.7	28.9	6.0	39.2	48.4	74.0	25.6	100	207
11	4565.728	50.3	31.1	7.2	38.6	50.0	74.0	24	100	209
12	5991.988	54.0	31.9	8.4	38.7	55.6	74.0	18.4	100	137

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

RADIATED EMISSION

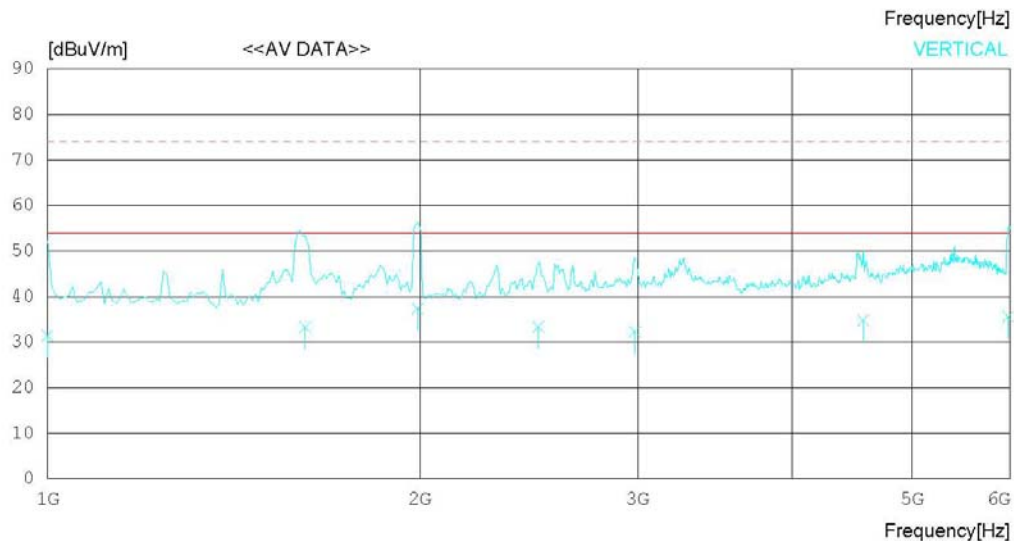
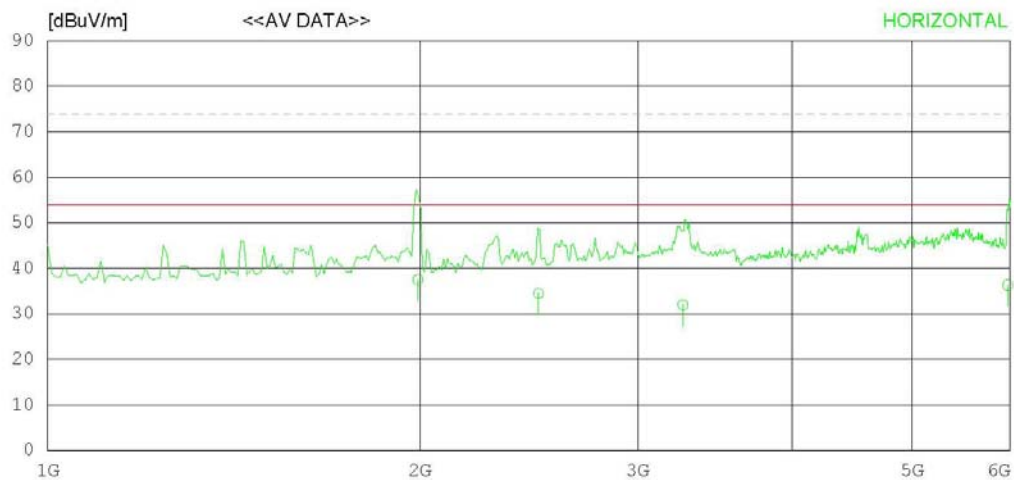
Date : 2013-03-25

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 18 'C 35 % 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 : 2013-03-25

Model Name : 47LP645H-UH	Reference No. :
Model No. :	Power Supply : 120V 60Hz
Serial No. :	Temp/Humi : 18 °C 35 % 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	1992.605	47.7	24.6	4.7	39.5	37.5	54.0	16.5	100	233
2	2494.167	41.2	27.4	5.2	39.3	34.5	54.0	19.5	100	191
3	3262.327	36.4	28.9	5.9	39.2	32.0	54.0	22.0	100	244
4	5971.929	34.6	32.0	8.4	38.7	36.3	54.0	17.7	100	286
----- Vertical -----										
5	1000.000	45.4	23.9	3.3	41.2	31.4	54.0	22.6	100	183
6	1615.109	44.4	24.6	4.2	39.9	33.3	54.0	20.7	100	231
7	1992.603	47.5	24.6	4.7	39.5	37.3	54.0	16.7	100	52
8	2494.167	40.1	27.4	5.2	39.3	33.4	54.0	20.6	100	234
9	2983.634	37.0	28.9	5.7	39.3	32.3	54.0	21.7	100	85
10	4565.728	35.1	31.1	7.2	38.6	34.8	54.0	19.2	100	209
11	5981.640	34.0	31.9	8.4	38.7	35.6	54.0	18.4	100	137

< USB MODE_30 MHz ~ 1 GHz >

RADIATED EMISSION

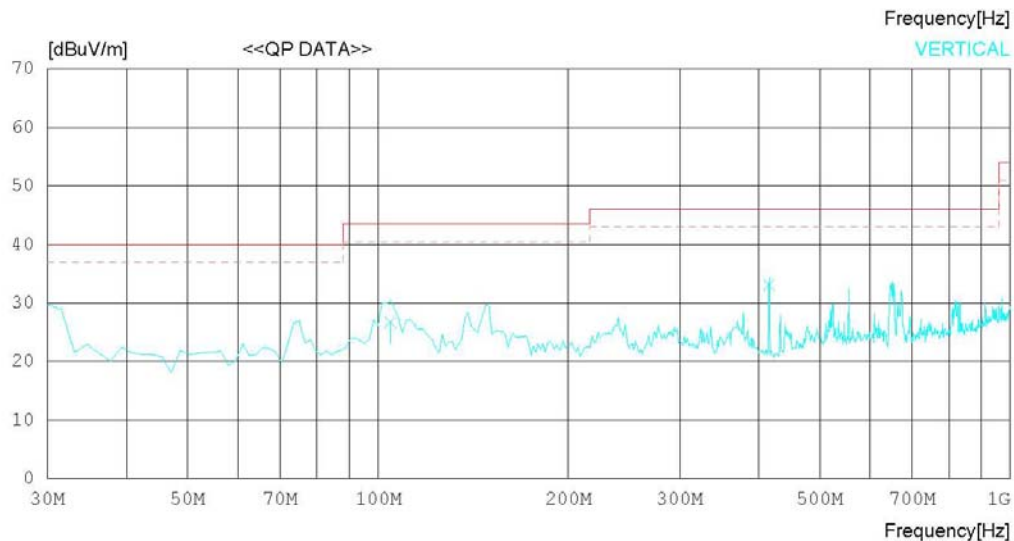
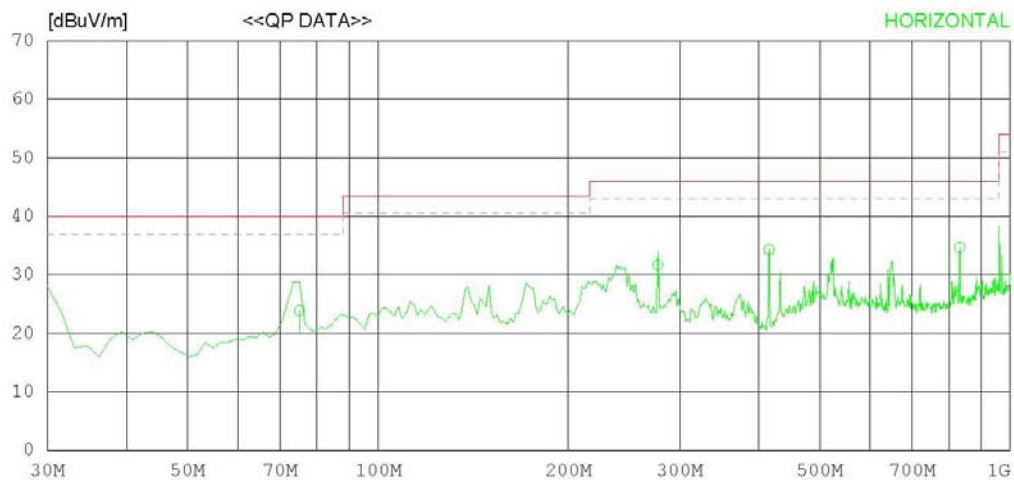
Date : 2013-03-23

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 19 °C 37 % R.H.
Operator :

Memo :

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



RADIATED EMISSION

Date : 2013-03-23

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 19 °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	75.080	39.8	6.8	1.6	24.3	23.9	40.0	16.1	400	358
2	277.164	39.4	13.3	2.7	23.7	31.7	46.0	14.3	100	1
3	415.512	38.0	16.2	3.5	23.4	34.3	46.0	11.7	200	358
4	832.117	33.0	20.2	4.8	23.3	34.7	46.0	11.3	100	235
----- Vertical -----										
5	104.616	38.4	10.9	1.5	24.1	26.7	43.5	16.8	100	114
6	415.512	36.8	16.2	3.5	23.4	33.1	46.0	12.9	100	132

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

RADIATED EMISSION

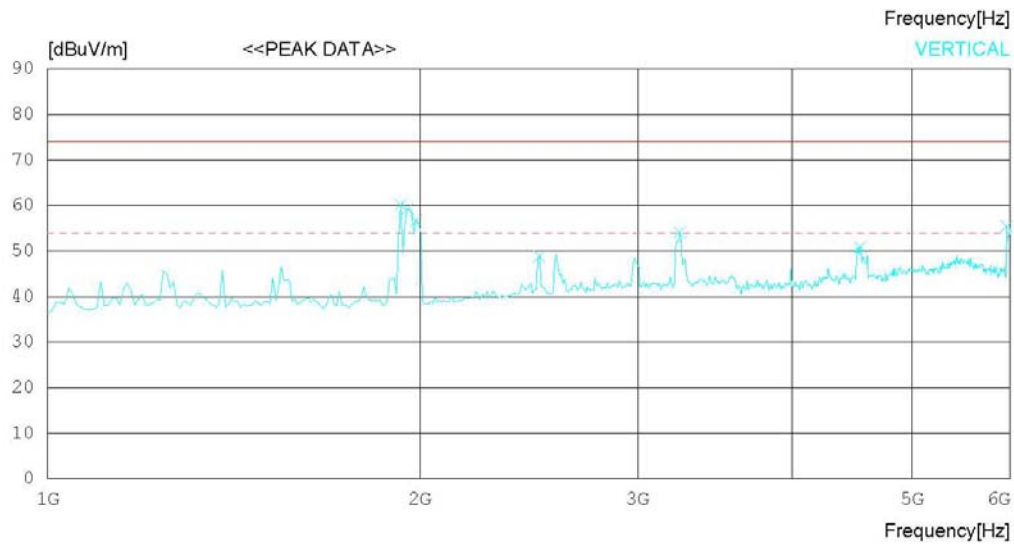
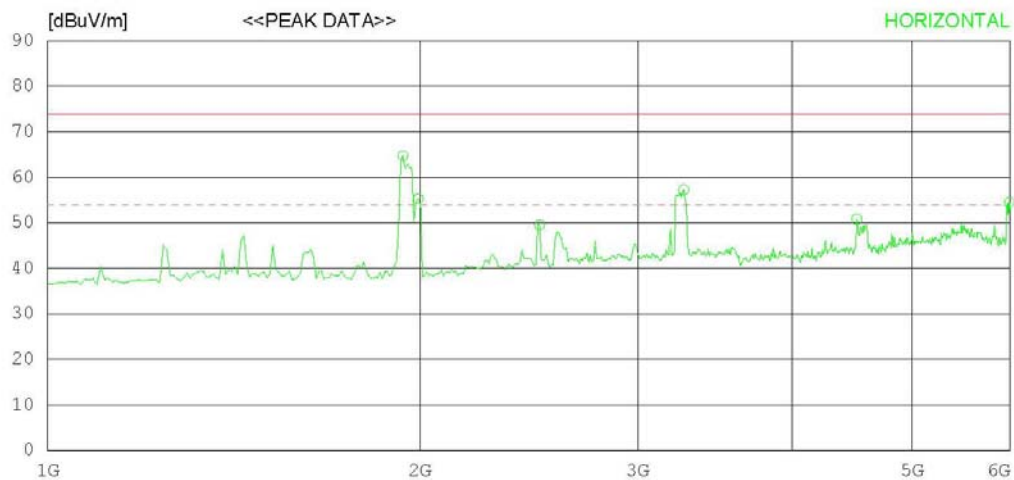
Date : 2013-03-25

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 18 'C 35 % 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 : 2013-03-25

Model Name : 47LP645H-UH	Reference No. :
Model No. :	Power Supply : 120V 60Hz
Serial No. :	Temp/Humi : 18 °C 35 % 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	1937.500	75.1	24.6	4.6	39.6	64.7	74.0	9.3	100	208
2	1993.589	65.5	24.6	4.7	39.5	55.3	74.0	18.7	100	358
3	2498.404	56.2	27.4	5.2	39.3	49.5	74.0	24.5	100	358
4	3267.646	61.6	28.9	6.0	39.2	57.3	74.0	16.7	100	358
5	4509.639	51.4	30.9	7.1	38.6	50.8	74.0	23.2	100	358
6	5991.988	52.9	31.9	8.4	38.7	54.5	74.0	19.5	100	164
----- Vertical -----										
7	1929.487	70.6	24.6	4.6	39.6	60.2	74.0	13.8	100	1
8	1953.525	69.5	24.6	4.7	39.5	59.3	74.0	14.7	100	163
9	1985.577	66.9	24.6	4.7	39.5	56.7	74.0	17.3	100	1
10	2498.404	55.5	27.4	5.2	39.3	48.8	74.0	25.2	100	1
11	3243.607	58.5	28.9	5.9	39.2	54.1	74.0	19.9	100	1
12	4541.690	51.3	31.0	7.2	38.6	50.9	74.0	23.1	100	205
13	5959.937	53.6	32.1	8.4	38.7	55.4	74.0	18.6	100	1

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

RADIATED EMISSION

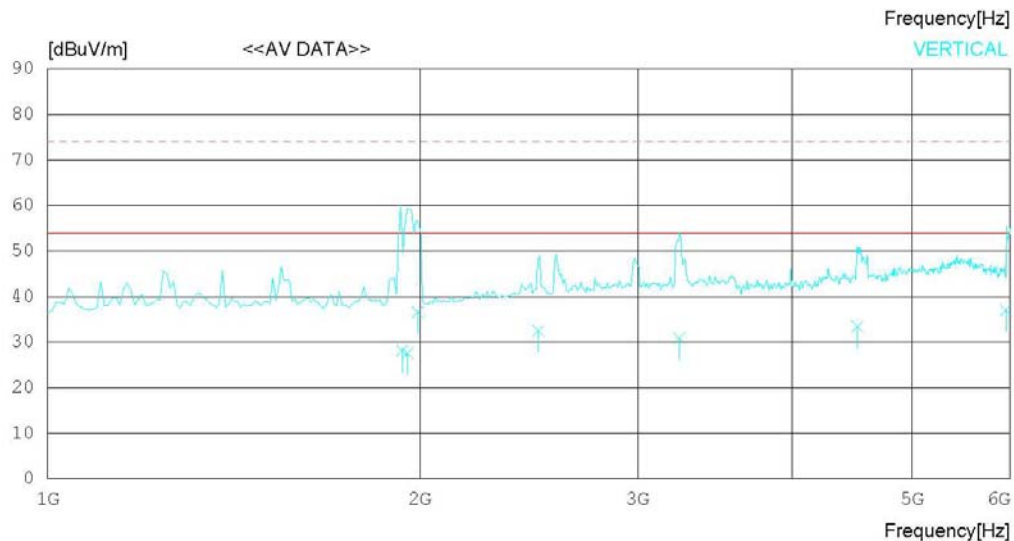
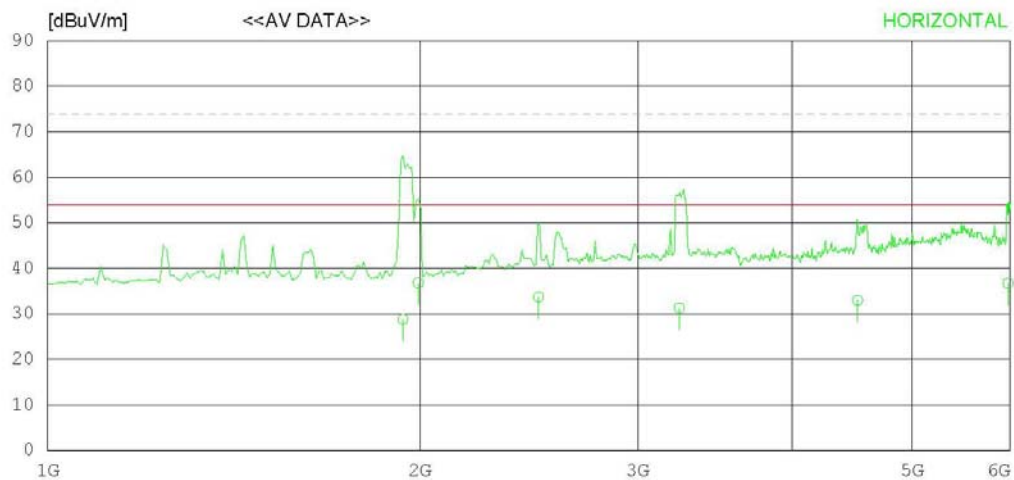
Date : 2013-03-25

Model Name : 47LP645H-UH
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi : 18 °C 35 % 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 : 2013-03-25

Model Name : 47LP645H-UH	Reference No. :
Model No. :	Power Supply : 120V 60Hz
Serial No. :	Temp/Humi : 18 °C 35 % 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	1937.500	39.2	24.6	4.6	39.6	28.8	54.0	25.2	100	208
2	1994.224	47.0	24.6	4.7	39.5	36.8	54.0	17.2	100	358
3	2494.006	40.4	27.4	5.2	39.3	33.7	54.0	20.3	100	358
4	3241.654	35.7	28.9	5.9	39.2	31.3	54.0	22.7	100	221
5	4517.897	33.5	31.0	7.1	38.6	33.0	54.0	21.0	100	188
6	5976.615	35.0	32.0	8.4	38.7	36.7	54.0	17.3	100	132
----- Vertical -----										
7	1933.967	38.5	24.6	4.6	39.6	28.1	54.0	25.9	100	305
8	1954.481	37.8	24.6	4.7	39.5	27.6	54.0	26.4	100	163
9	1990.859	46.8	24.6	4.7	39.5	36.6	54.0	17.4	100	1
10	2494.006	39.2	27.4	5.2	39.3	32.5	54.0	21.5	100	46
11	3241.654	35.2	28.9	5.9	39.2	30.8	54.0	23.2	100	184
12	4517.890	34.0	31.0	7.1	38.6	33.5	54.0	20.5	100	205
13	5954.615	35.2	32.1	8.4	38.7	37.0	54.0	17.0	100	168

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