

EMC TEST REPORT

Test item : LED TV Monitor
Model No. : 39LP645H-UH
Order No. : DEMC1303-00966
Date of receipt : 2013-03-12
Test duration : 2013-03-19 ~ 2013-03-21
Use of report : FCC CoC Marking
Date of Issue : 2013-03-26

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 °C,
Humidity : (37 ~ 40) % 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:



Assistant Manager
HyungJun Kim

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.	39LP645H-UH
EUT Type	LED TV Monitor
Serial No	NONE
FCC ID	BEJ39LP645HUH
Type of Sample Tested	Pre-Production
High Frequency	800 MHz
Rating	AC 100-240 V~ 50/60 Hz, 1.5 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	03-19	19	40
Radiated Disturbance	03-21	19	37

4.3 Test result Summary

(1) Conducted Emission (HDMI MODE)

Frequency [MHz]	Phase	Result [dB μ V]	Detector	Limit [dB μ V]	Margin [dB]
0.16576	L	45.7	Quasi-Peak	65.2	19.5

(2) Radiated Emission (USB MODE)

Frequency [MHz]	Pol.	Result [dB(μ V/m)]	Detector	Limit [dB(μ V/m)]	Margin [dB]
148.504	H	33.8	Quasi-Peak	43.5	9.7

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, 1920x1080 Resolution
- HDMI MODE : 'H' Pattern mode, 1920x1080 Resolution
- USB MODE : USB video 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	VOSTR 0460	H939VBX	DELL INC.	POWER	1.8	Not use	Non-shield	Plastic	DOC
				HDMI	2.0	Not use	Shield		
				DSUB	1.8	Not use	Shield		
				USB	1.8	Not use	Shield		
				USB	1.8	Not use	Shield		
				USB	1.5	Not use	Shield		
KEYBOARD	KB-065	CN111363232	HP	USB	1.8	Not use	Shield	Plastic	DOC
				USB	1.8	Not use	Shield		
				USB	1.8	Not use	Shield		
				USB	1.8	Not use	Shield		
				USB	1.8	Not use	Shield		
				USB	1.8	Not use	Shield		
MOUSE	1484	352700021372	MICROSOFT CORPORATION	USB	1.6	Not use	Shield	Plastic	DOC
				USB	1.6	Not use	Shield		
				USB	1.6	Not use	Shield		
				USB	1.6	Not use	Shield		
				USB	1.6	Not use	Shield		
				USB	1.6	Not use	Shield		
CD/DVD PLAYER	DVP-NS92V	2000407	SONY EMCS	POWER	1.8	Not use	Non-shield	Plastic	DOC
				COMPONENT	1.6	Not use	Non-shield		
				COMPONENT	1.6	Not use	Non-shield		
				COMPONENT	1.6	Not use	Non-shield		
				COMPONENT	1.6	Not use	Non-shield		
				COMPONENT	1.6	Not use	Non-shield		
USB MEMORY	Cruzer 4GB	N/A	SANDISK	USB	-	Not use	-	-	DOC
				USB	-	Not use	-		
				USB	-	Not use	-		
				USB	-	Not use	-		
				USB	-	Not use	-		
				USB	-	Not use	-		
PRINTER	Aculaser M1200	LWTZ181070	EPSON	USB	1.8	Not use	Shield	Plastic	DOC
				POWER	1.5	Not use	Non-shield		
				POWER	1.5	Not use	Non-shield		
				POWER	1.5	Not use	Non-shield		
				POWER	1.5	Not use	Non-shield		
				POWER	1.5	Not use	Non-shield		
HEADSET	COV903	NONE	COSY	HEADPHONE	2.5	Not use	Non-shield	Plastic	DOC
				HEADPHONE	2.5	Not use	Non-shield		
				HEADPHONE	2.5	Not use	Non-shield		
				HEADPHONE	2.5	Not use	Non-shield		
				HEADPHONE	2.5	Not use	Non-shield		
				HEADPHONE	2.5	Not use	Non-shield		
Remote controller	AKB737554 14	N/A	HANSUNG ELECTRONIC	-	-	Not use	-	-	-
				-	-	Not use	-		
				-	-	Not use	-		
				-	-	Not use	-		
				-	-	Not use	-		
				-	-	Not use	-		

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

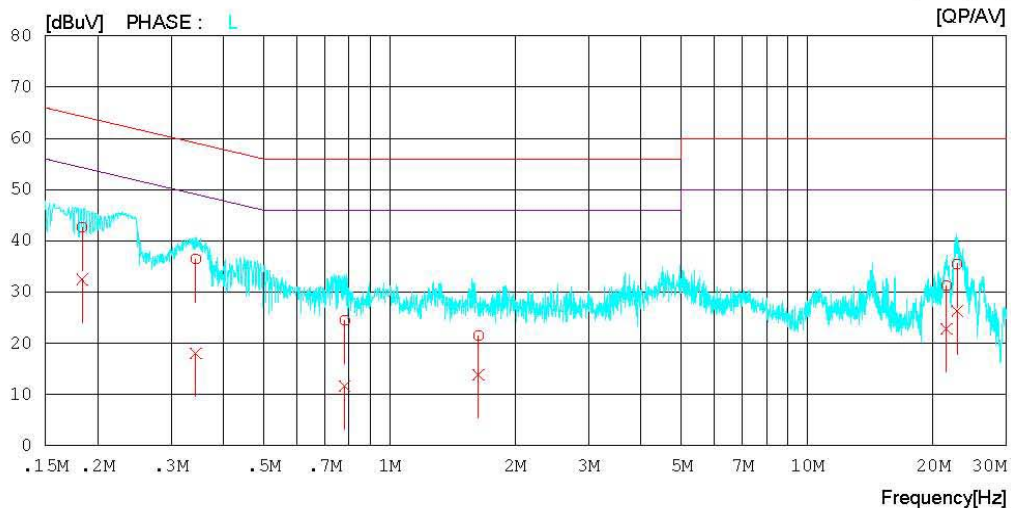
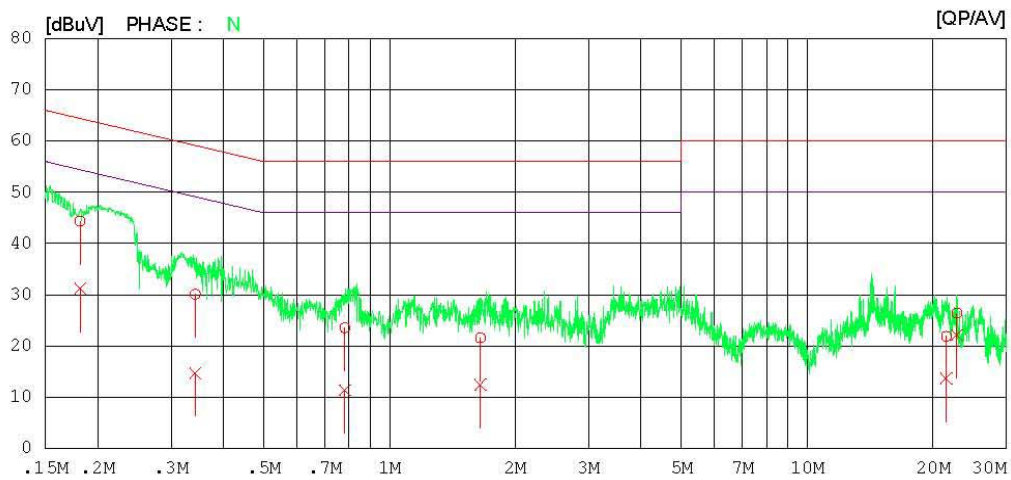
Digital EMC
Date : 2013-03-19

Model No. : 32LP645H-UH
Type :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 19 °C 40 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-03-19

Model No. : 32LP645H-UH
Type :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 19 °C 40 % 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	0.18183	43.0	29.8	1.4	44.4	31.2	64.4	54.4	20.0	23.2	N
2	0.34290	29.2	13.8	0.9	30.1	14.7	59.1	49.1	29.0	34.4	N
3	0.78219	23.0	10.9	0.5	23.5	11.4	56.0	46.0	32.5	34.6	N
4	1.65100	21.2	12.1	0.3	21.5	12.4	56.0	46.0	34.5	33.6	N
5	21.53100	21.4	13.1	0.5	21.9	13.6	60.0	50.0	38.1	36.4	N
6	22.81500	25.9	21.6	0.5	26.4	22.1	60.0	50.0	33.6	27.9	N
7	0.18374	41.2	31.1	1.4	42.6	32.5	64.3	54.3	21.7	21.8	L
8	0.34383	35.5	17.2	0.9	36.4	18.1	59.1	49.1	22.7	31.0	L
9	0.78161	24.0	11.2	0.5	24.5	11.7	56.0	46.0	31.5	34.3	L
10	1.63400	21.2	13.6	0.3	21.5	13.9	56.0	46.0	34.5	32.1	L
11	21.55450	30.7	22.3	0.5	31.2	22.8	60.0	50.0	28.8	27.2	L
12	22.85300	35.0	25.8	0.5	35.5	26.3	60.0	50.0	24.5	23.7	L

< HDMI MODE >



Results of Conducted Emission

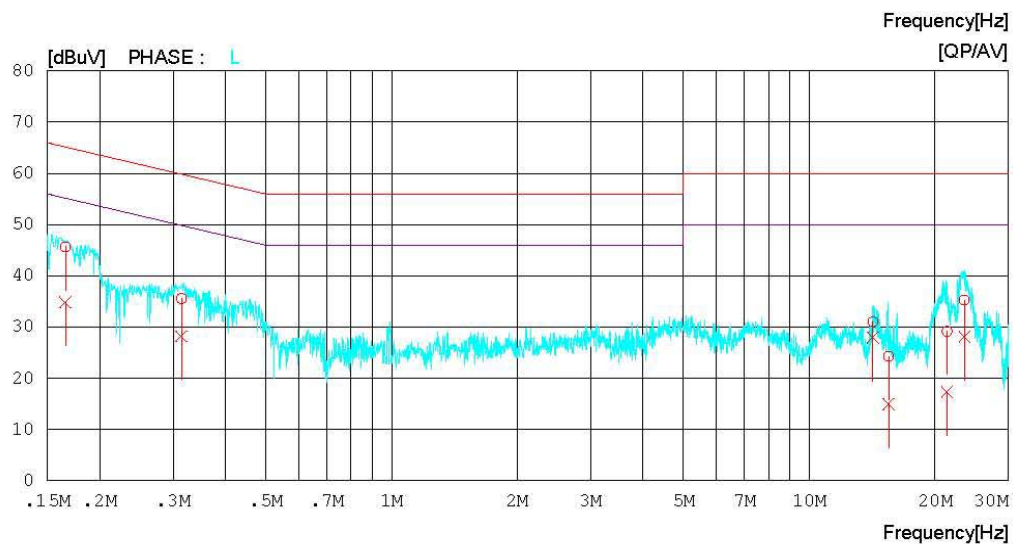
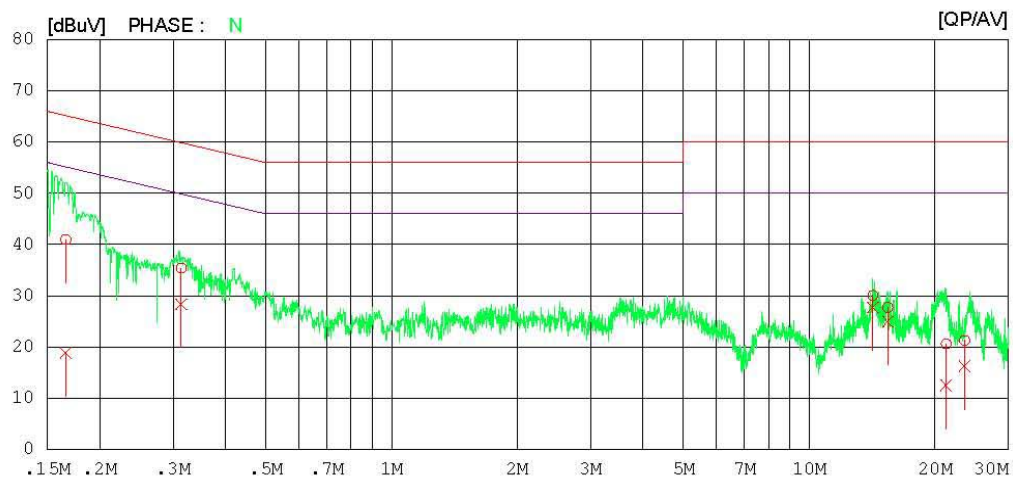
Digital EMC
Date : 2013-03-19

Model No. : 32LP6455H-UH
Type :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 19 °C 40 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-03-19

Model No. : 32LP645H-UH
Type :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 19 °C 40 % 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	0.16606	39.3	17.2	1.6	40.9	18.8	65.2	55.2	24.3	36.4	N
2	0.31389	34.4	27.5	0.9	35.3	28.4	59.9	49.9	24.6	21.5	N
3	14.21500	29.7	27.3	0.4	30.1	27.7	60.0	50.0	29.9	22.3	N
4	15.43500	27.3	24.5	0.4	27.7	24.9	60.0	50.0	32.3	25.1	N
5	21.28100	20.1	12.0	0.5	20.6	12.5	60.0	50.0	39.4	37.5	N
6	23.56650	20.8	15.7	0.5	21.3	16.2	60.0	50.0	38.7	33.8	N
7	0.16576	44.1	33.3	1.6	45.7	34.9	65.2	55.2	19.5	20.3	L
8	0.31435	34.7	27.4	0.9	35.6	28.3	59.9	49.9	24.3	21.6	L
9	14.21400	30.6	27.6	0.4	31.0	28.0	60.0	50.0	29.0	22.0	L
10	15.48550	23.9	14.6	0.4	24.3	15.0	60.0	50.0	35.7	35.0	L
11	21.38750	28.7	16.9	0.5	29.2	17.4	60.0	50.0	30.8	32.6	L
12	23.52600	34.8	27.6	0.5	35.3	28.1	60.0	50.0	24.7	21.9	L

< USB MODE >



Results of Conducted Emission

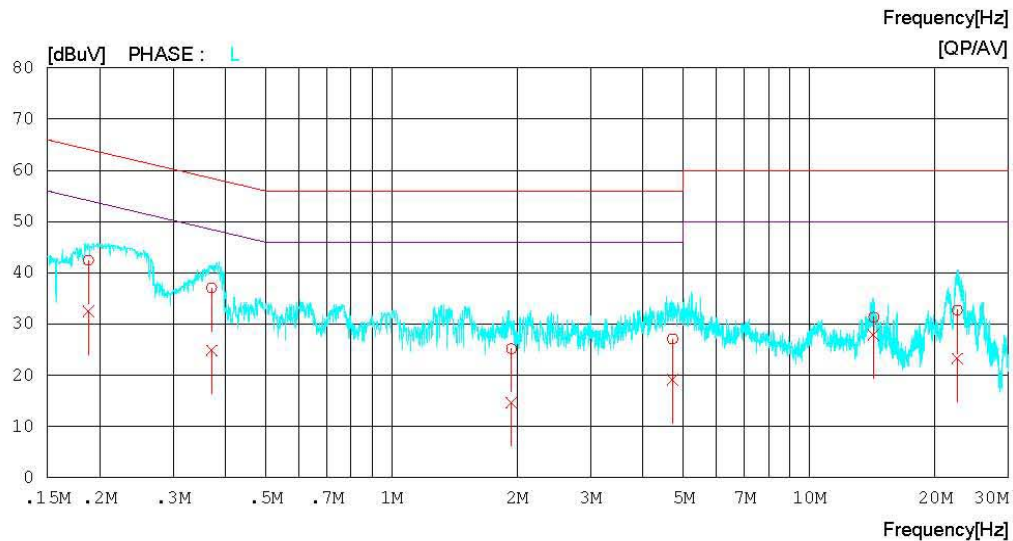
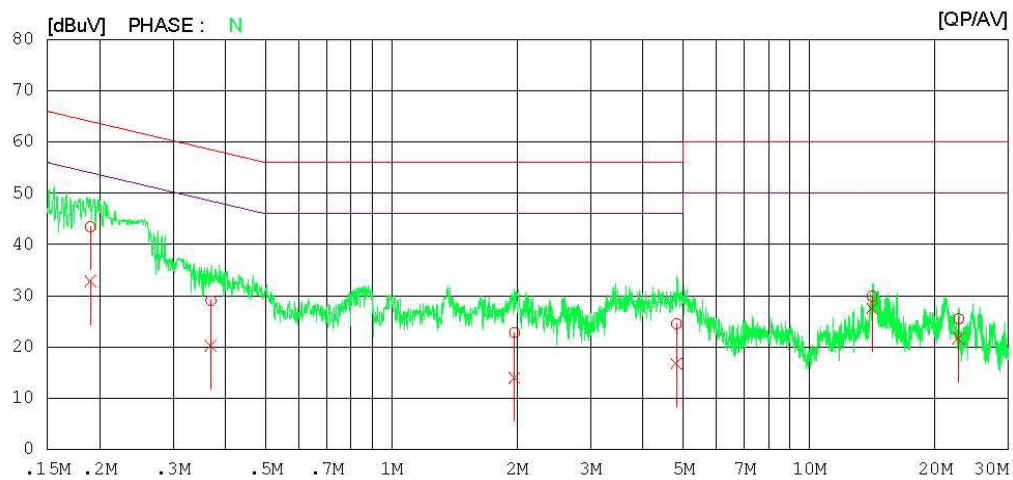
Digital EMC
Date : 2013-03-19

Model No. : 32LP645H-UH
Type :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 19 °C 40 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-03-19

Model No. : 32LP645H-UH
Type :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 19 °C 40 % 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	0.19024	42.2	31.5	1.3	43.5	32.8	64.0	54.0	20.5	21.2	N
2	0.36966	28.3	19.5	0.8	29.1	20.3	58.5	48.5	29.4	28.2	N
3	1.97000	22.5	13.6	0.3	22.8	13.9	56.0	46.0	33.2	32.1	N
4	4.81450	24.3	16.5	0.2	24.5	16.7	56.0	46.0	31.5	29.3	N
5	14.15350	29.5	27.1	0.4	29.9	27.5	60.0	50.0	30.1	22.5	N
6	22.81300	25.0	21.1	0.5	25.5	21.6	60.0	50.0	34.5	28.4	N
7	0.18820	41.1	31.1	1.4	42.5	32.5	64.1	54.1	21.6	21.6	L
8	0.37124	36.3	24.1	0.8	37.1	24.9	58.5	48.5	21.4	23.6	L
9	1.93800	24.9	14.3	0.3	25.2	14.6	56.0	46.0	30.8	31.4	L
10	4.71050	26.9	18.9	0.2	27.1	19.1	56.0	46.0	28.9	26.9	L
11	14.27550	30.9	27.5	0.4	31.3	27.9	60.0	50.0	28.7	22.1	L
12	22.62700	32.3	22.9	0.4	32.7	23.3	60.0	50.0	27.3	26.7	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

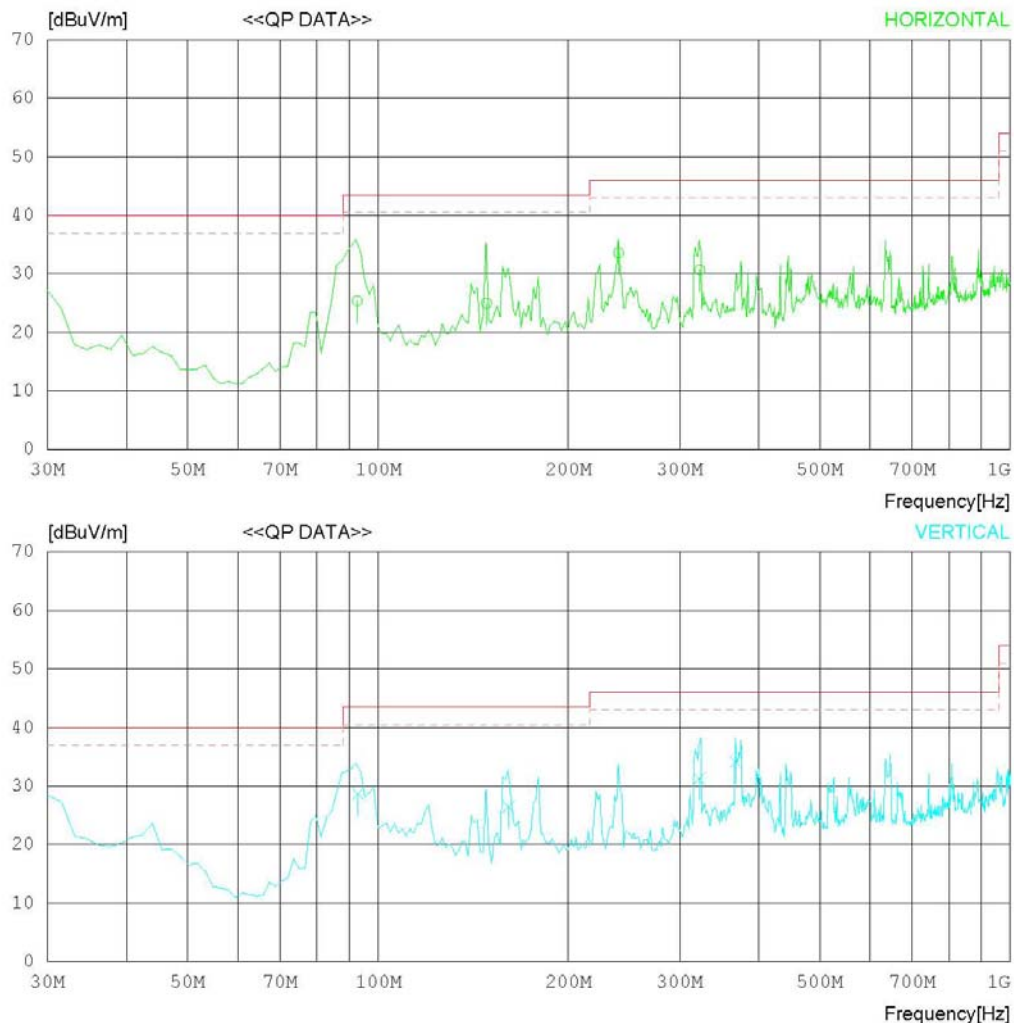
Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : DSUB

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



RADIATED EMISSION

Date : 2013-03-21

Model Name : 39LP645H-UH	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 19 °C 37 % R.H.
Test Condition :	Operator :

Memo : DSUB

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	92.649	38.6	9.5	1.5	24.2	25.4	43.5	18.1	378	213
2	148.480	37.0	10.5	1.7	24.2	25.0	43.5	18.5	113	183
3	239.985	42.8	12.1	2.5	23.8	33.6	46.0	12.4	273	79
4	322.673	36.9	14.3	3.1	23.6	30.7	46.0	15.3	297	234
----- Vertical -----										
5	93.009	41.9	9.5	1.5	24.2	28.7	43.5	14.8	134	194
6	161.033	38.7	10.1	1.9	24.2	26.5	43.5	17.0	174	29
7	322.567	37.5	14.3	3.1	23.6	31.3	46.0	14.7	119	287
8	368.057	39.0	15.3	3.4	23.6	34.1	46.0	11.9	223	308

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

RADIATED EMISSION

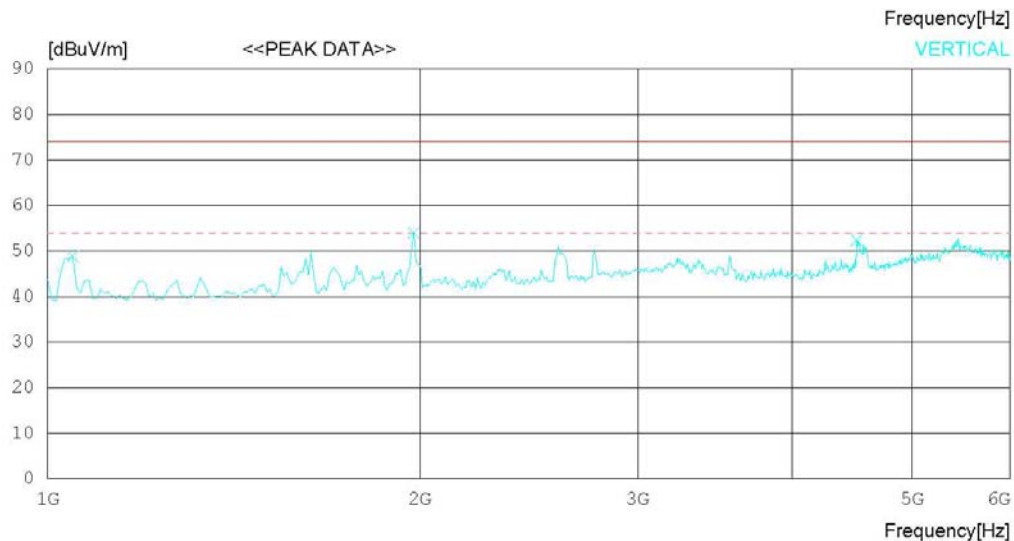
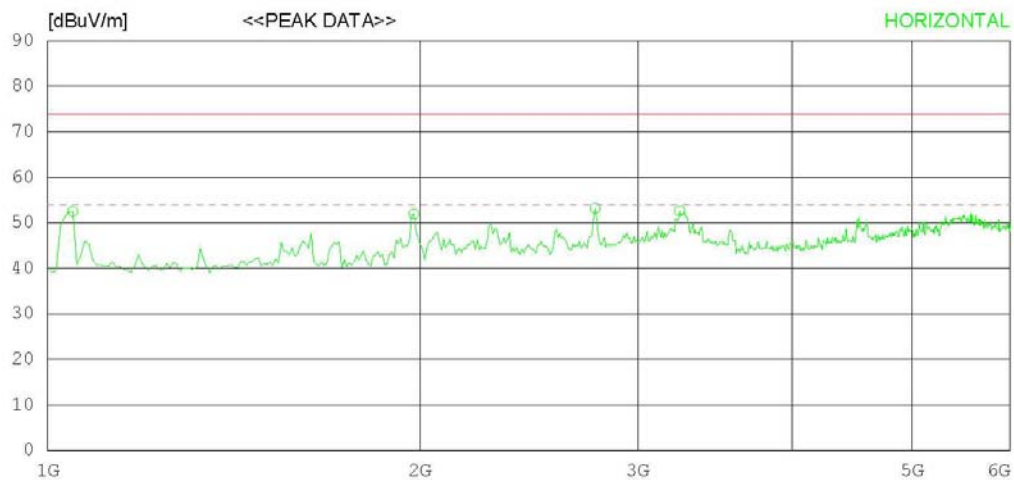
Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : DSUB

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



RADIATED EMISSION

Date : 2013-03-21

Model Name : 39LP645H-UH	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 19 °C 37 %R.H.
Test Condition :	Operator :

Memo : DSUB

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	63.9	23.9	3.4	38.7	52.5	74.0	21.5	100	1
2	1977.564	60.2	24.6	4.7	37.6	51.9	74.0	22.1	100	1
3	2770.844	56.7	28.3	5.5	37.3	53.2	74.0	20.8	100	232
4	3243.607	55.0	28.9	5.9	37.2	52.6	74.0	21.4	100	1
----- Vertical -----										
5	1048.077	60.2	23.9	3.4	38.7	48.8	74.0	25.2	100	180
6	1977.564	62.3	24.6	4.7	37.6	54.0	74.0	20	100	358
7	4509.639	51.0	30.9	7.1	36.6	52.4	74.0	21.6	100	358

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

RADIATED EMISSION

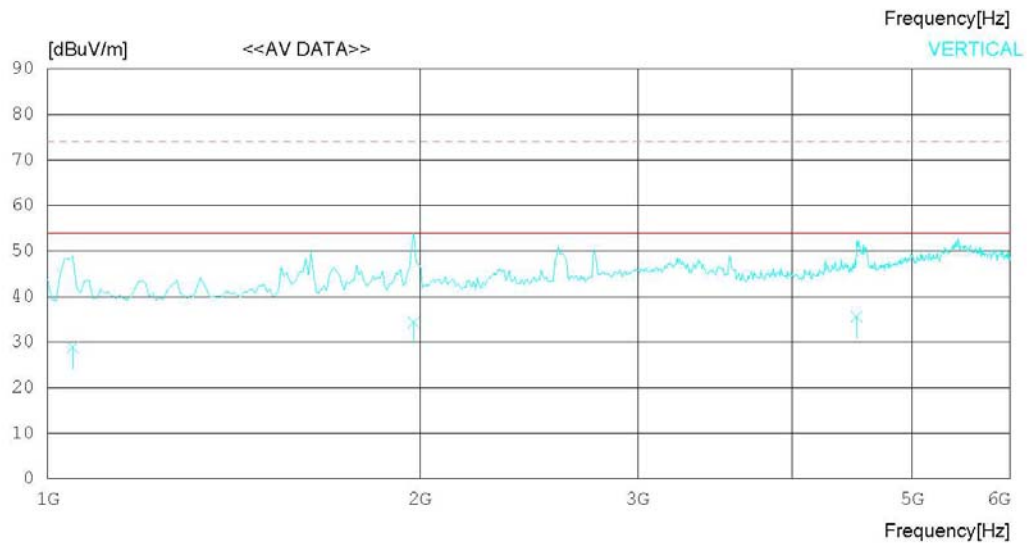
Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : DSUB

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



RADIATED EMISSION

Date : 2013-03-21

Model Name : 39LP645H-UH	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 19 °C 37 %R.H.
Test Condition :	Operator :

Memo : DSUB

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	1048.631	41.2	23.9	3.4	38.7	29.8	54.0	24.2	100	17
2	1977.423	40.2	24.6	4.7	37.6	31.9	54.0	22.1	100	83
3	2770.423	37.6	28.3	5.5	37.3	34.1	54.0	19.9	100	193
4	3243.143	38.5	28.9	5.9	37.2	36.1	54.0	17.9	100	207
----- Vertical -----										
5	1048.243	40.3	23.9	3.4	38.7	28.9	54.0	25.1	100	138
6	1977.631	42.7	24.6	4.7	37.6	34.4	54.0	19.6	100	224
7	4508.341	34.2	30.9	7.1	36.6	35.6	54.0	18.4	100	347

< HDMI MODE_30 MHz ~ 1 GHz >

RADIATED EMISSION

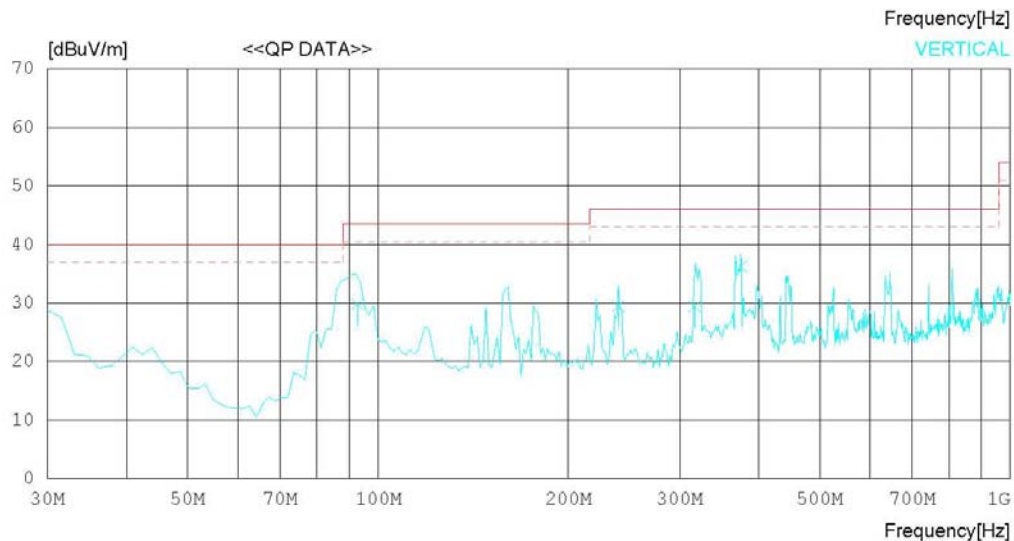
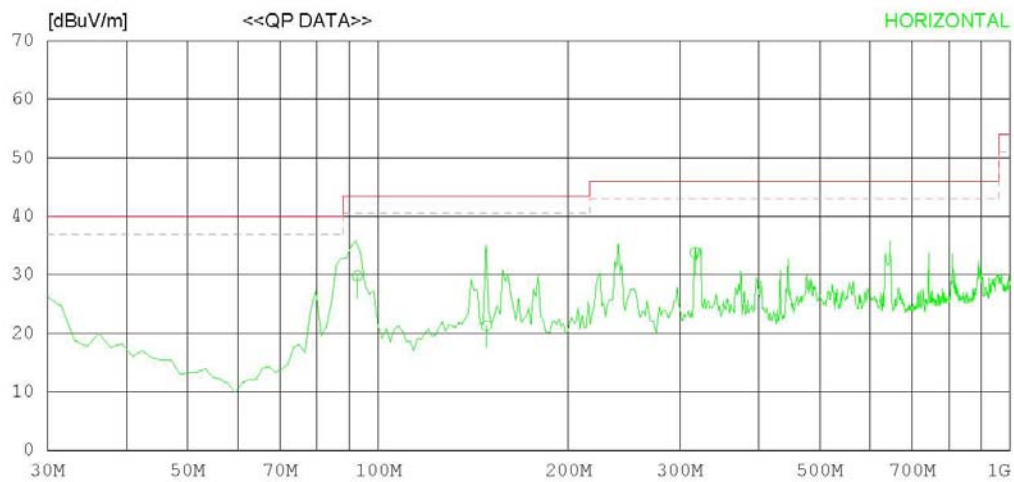
Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : HDMI

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



RADIATED EMISSION

Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : HDMI

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	92.721	43.0	9.5	1.5	24.2	29.8	43.5	13.7	156	310
2	148.504	33.3	10.5	1.7	24.2	21.3	43.5	22.2	378	127
3	317.480	40.3	14.1	3.0	23.6	33.8	46.0	12.2	319	18
----- Vertical -----										
4	92.817	43.1	9.5	1.5	24.2	29.9	43.5	13.6	114	204
5	240.009	38.7	12.1	2.5	23.8	29.5	46.0	16.5	192	315
6	316.831	35.9	14.1	3.0	23.6	29.4	46.0	16.6	230	124
7	375.192	40.9	15.5	3.4	23.6	36.2	46.0	9.8	164	312

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

RADIATED EMISSION

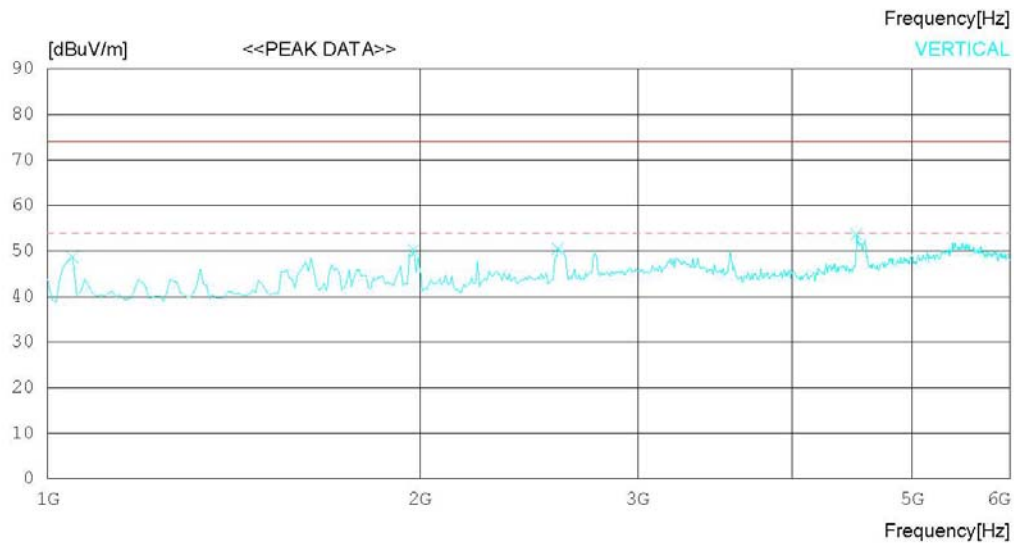
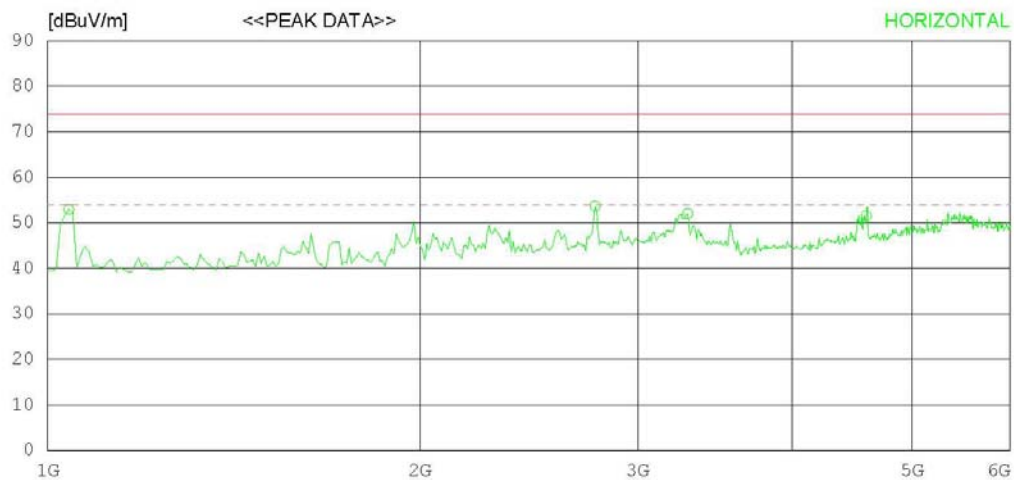
Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : HDMI

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



RADIATED EMISSION

Date : 2013-03-21

Model Name : 39LP645H-UH	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 19 °C 37 %R.H.
Test Condition :	Operator :

Memo : HDMI

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	64.3	23.9	3.4	38.7	52.9	74.0	21.1	100	237
2	2770.844	57.2	28.3	5.5	37.3	53.7	74.0	20.3	100	358
3	3291.685	54.3	28.9	6.0	37.2	52.0	74.0	22	100	200
4	4589.766	49.6	31.2	7.3	36.6	51.5	74.0	22.5	100	161
----- Vertical -----										
5	1048.077	60.0	23.9	3.4	38.7	48.6	74.0	25.4	100	1
6	1977.564	58.6	24.6	4.7	37.6	50.3	74.0	23.7	100	174
7	2586.546	54.8	27.7	5.3	37.3	50.5	74.0	23.5	100	218
8	4509.639	52.3	30.9	7.1	36.6	53.7	74.0	20.3	100	1

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

RADIATED EMISSION

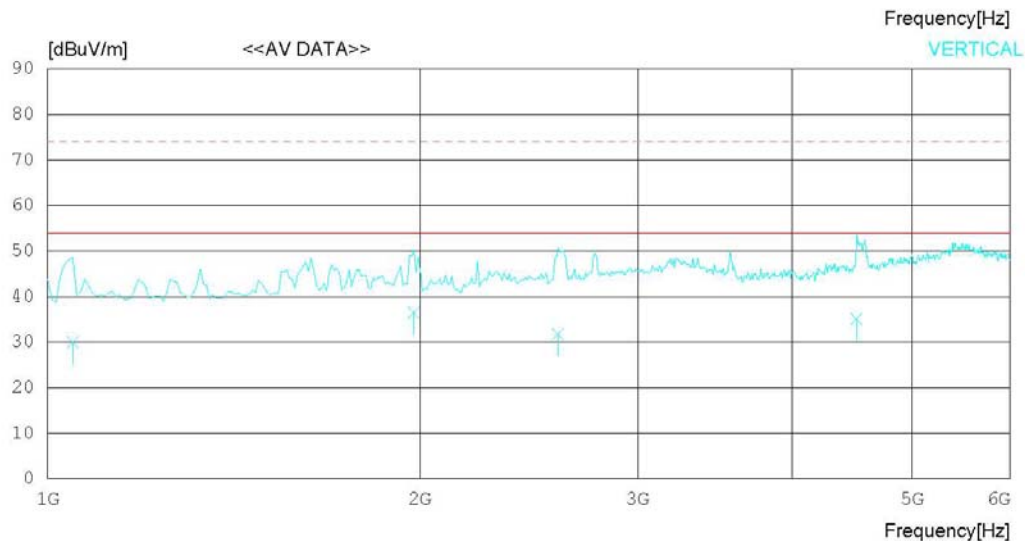
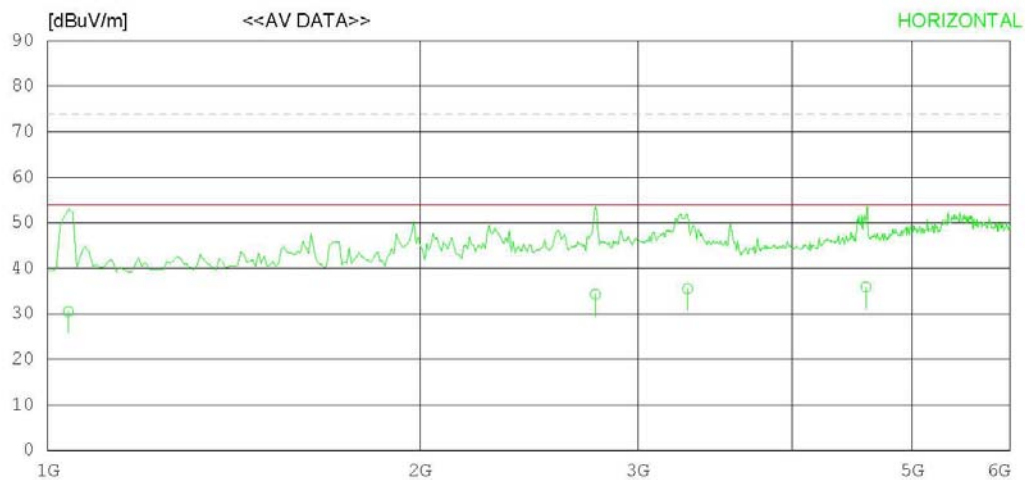
Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : HDMI

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



RADIATED EMISSION

Date : 2013-03-21

Model Name : 39LP645H-UH	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 19 °C 37 %R.H.
Test Condition :	Operator :

Memo : HDMI

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	1039.630	41.9	23.9	3.4	38.7	30.5	54.0	23.5	100	221
2	2771.943	37.8	28.3	5.5	37.3	34.3	54.0	19.7	100	340
3	3290.671	37.8	28.9	6.0	37.2	35.5	54.0	18.5	100	193
4	4588.543	34.0	31.2	7.3	36.6	35.9	54.0	18.1	100	170
----- Vertical -----										
5	1048.412	41.4	23.9	3.4	38.7	30.0	54.0	24.0	100	134
6	1977.641	44.7	24.6	4.7	37.6	36.4	54.0	17.6	100	128
7	2586.649	36.1	27.7	5.3	37.3	31.8	54.0	22.2	100	234
8	4509.240	33.7	30.9	7.1	36.6	35.1	54.0	18.9	100	17

< USB MODE_30 MHz ~ 1 GHz >

RADIATED EMISSION

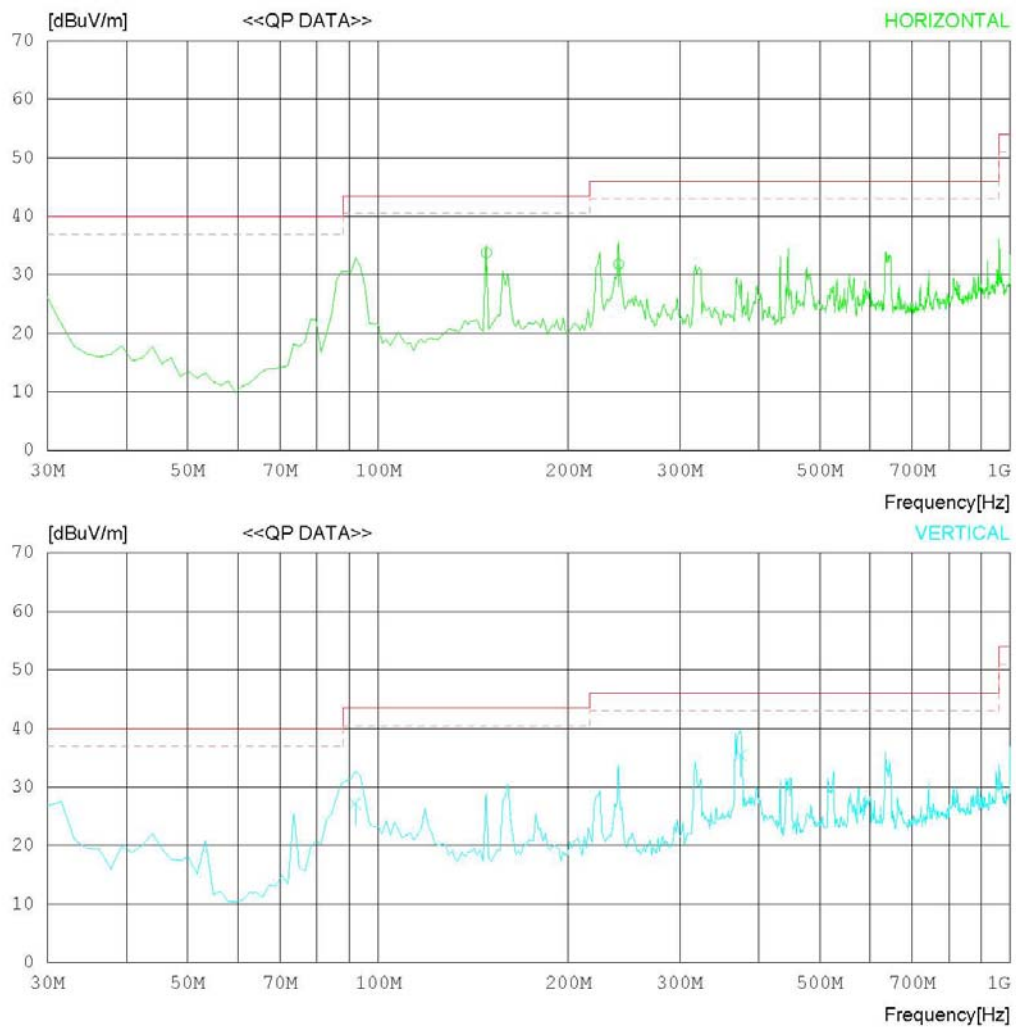
Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : USB

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



RADIATED EMISSION

Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : USB

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	148.504	45.8	10.5	1.7	24.2	33.8	43.5	9.7	201	195
2	239.985	41.0	12.1	2.5	23.8	31.8	46.0	14.2	100	154
----- Vertical -----										
3	92.000	40.5	9.4	1.5	24.2	27.2	43.5	16.3	127	297
4	375.096	40.2	15.5	3.4	23.6	35.5	46.0	10.5	100	358

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

RADIATED EMISSION

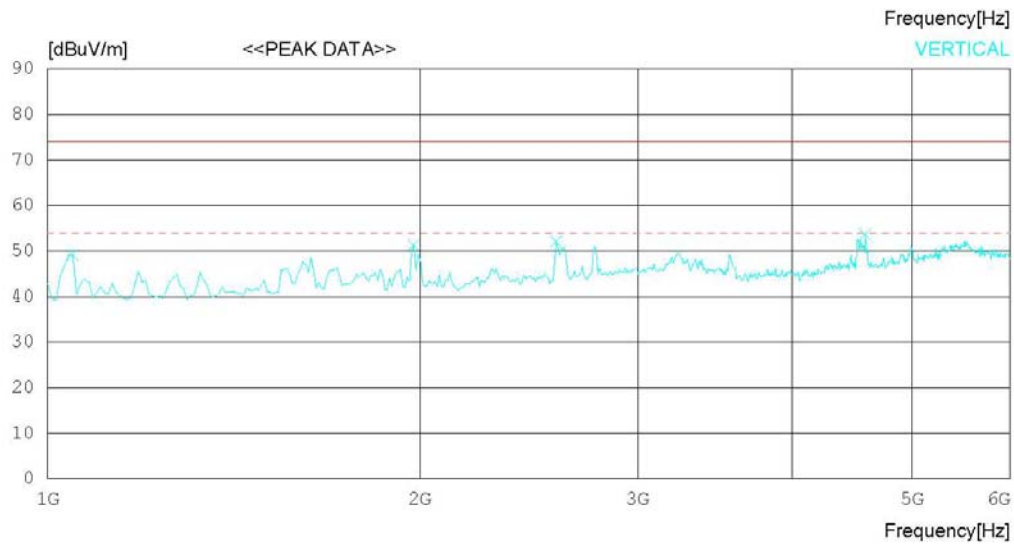
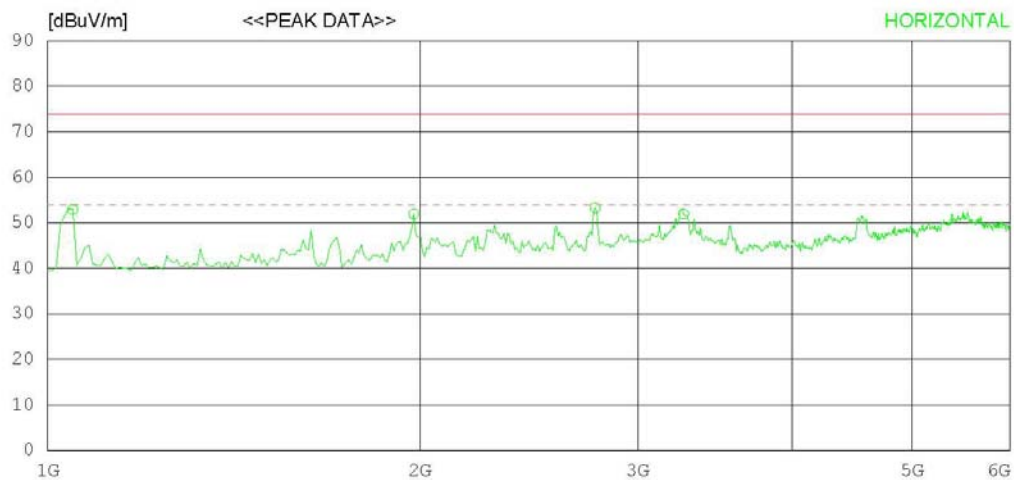
Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : USB

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



RADIATED EMISSION

Date : 2013-03-21

Model Name : 39LP645H-UH	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 19 °C 37 %R.H.
Test Condition :	Operator :

Memo : USB

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	64.3	23.9	3.4	38.7	52.9	74.0	21.1	100	358
2	1977.564	60.2	24.6	4.7	37.6	51.9	74.0	22.1	100	358
3	2770.844	56.8	28.3	5.5	37.3	53.3	74.0	20.7	100	358
4	3267.646	54.2	28.9	6.0	37.2	51.9	74.0	22.1	100	200
----- Vertical -----										
5	1048.077	60.6	23.9	3.4	38.7	49.2	74.0	24.8	100	174
6	1977.564	59.6	24.6	4.7	37.6	51.3	74.0	22.7	100	173
7	2578.533	56.4	27.7	5.3	37.3	52.1	74.0	21.9	100	227
8	4581.753	51.9	31.2	7.2	36.6	53.7	74.0	20.3	100	1

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

RADIATED EMISSION

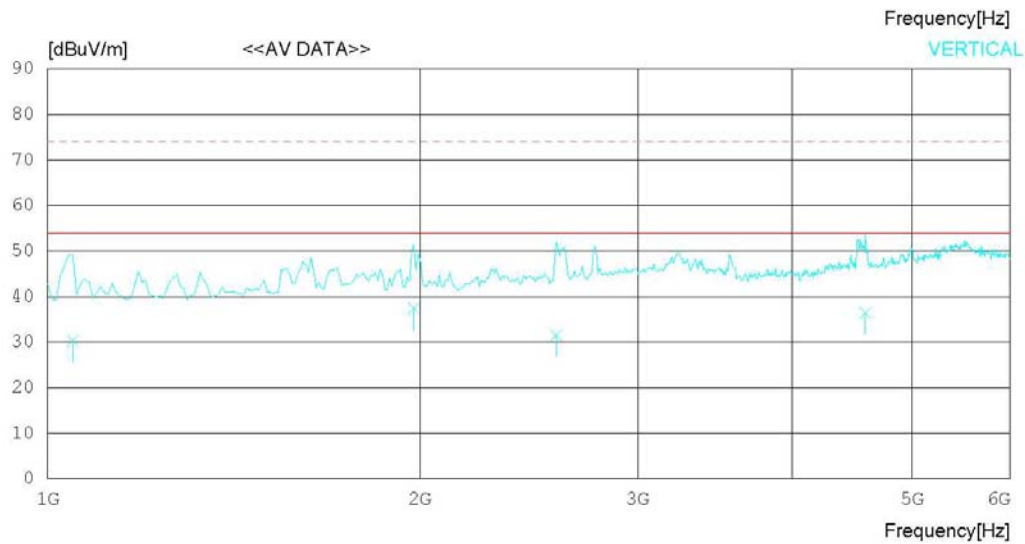
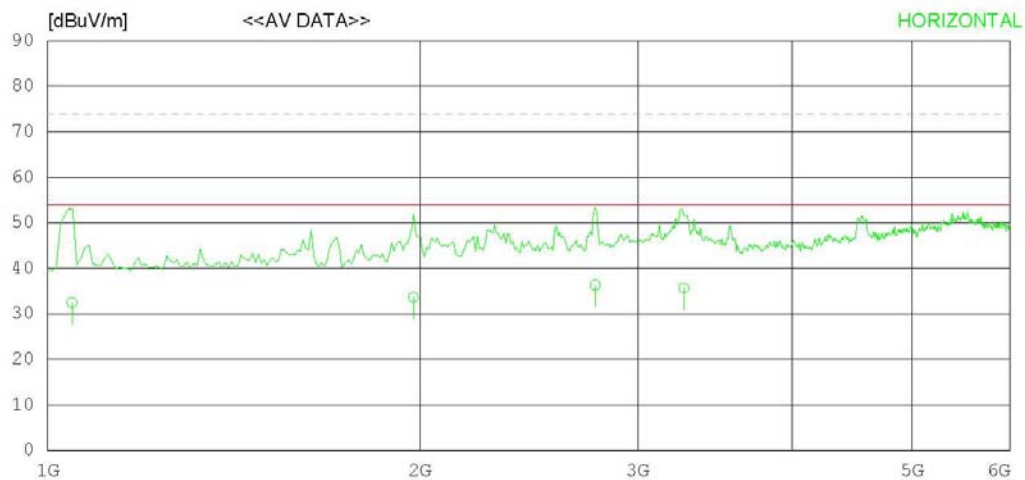
Date : 2013-03-21

Model Name : 39LP645H-UH
Model No. :
Serial No. :
Test Condition :

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

Memo : USB

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



RADIATED EMISSION

Date : 2013-03-21

Model Name : 39LP645H-UH	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 19 °C 37 %R.H.
Test Condition :	Operator :

Memo : USB

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	1046.365	43.9	23.9	3.4	38.7	32.5	54.0	21.5	100	27
2	1976.254	41.9	24.6	4.7	37.6	33.6	54.0	20.4	100	173
3	2770.985	39.8	28.3	5.5	37.3	36.3	54.0	17.7	100	128
4	3267.937	38.0	28.9	6.0	37.2	35.7	54.0	18.3	100	192
----- Vertical -----										
5	1048.144	41.7	23.9	3.4	38.7	30.3	54.0	23.7	100	172
6	1977.769	45.7	24.6	4.7	37.6	37.4	54.0	16.6	100	171
7	2578.168	35.8	27.7	5.3	37.3	31.5	54.0	22.5	100	234
8	4582.586	34.6	31.2	7.2	36.6	36.4	54.0	17.6	100	48

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