

EMC TEST REPORT

Test item : LED LCD TV Monitor
Model No. : 22LQ630H-UA
Order No. : DEMC1302-00863
Date of receipt : 2013-02-28
Test duration : 2013-03-13 ~ 2013-03-14
Use of report : FCC CoC Marking
Date of Issue : 2013-03-15

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 ~ 23) °C,
Humidity : (34 ~ 41) % 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.

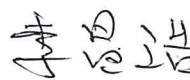
This test report shall not be reproduced except in full, without the written approval of DIGITAL EMC CO., LTD.

Tested by:



Engineer
DongWook Kim

Reviewed by:



General Manager
ChangHo Lee

PRESIDENT OF DIGITAL EMC CO., LTD.

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.	22LQ630H-UA
EUT Type	LED LCD TV Monitor
Serial No	NONE
FCC ID	BEJ22LQ630HUA
Type of Sample Tested	Pre-Production
High Frequency	667 MHz
Rating	AC 100-240 V~ 50/60 Hz, 0.7 A
Supplied Power for Test	AC 120 V, 60 Hz
Applicant	LG Electronics Inc. 19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713, Korea
Manufacturer	LG Electronics Inc. 19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713, Korea

RGB (PC), HDMI (PC) supported mode

Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
640 x 350	31.46	70.09
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
1280 x 768	47.77	59.87
1360 x 768	47.71	60.01

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	03-13	23	41
Radiated Disturbance	03-13	20	34
	03-14	20	34

4.3 Test result Summary

(1) Conducted Emission (USB MODE)

Frequency [MHz]	Phase	Result [dB μ V]	Detector	Limit [dB μ V]	Margin [dB]
0.39745	N	51.5	Quasi-Peak	57.9	6.4

(2) Radiated Emission (HDMI MODE)

Frequency [MHz]	Pol.	Result [dB(μ V/m)]	Detector	Limit [dB(μ V/m)]	Margin [dB]
150.016	V	22.7	Quasi-Peak	30.0	7.3

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, 1360 x 768 Resolution (Worst case)
- HDMI MODE : "H" Pattern mode, 1360 x 768 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	VOSTRO460	6J7JXBX	DELL	POWER	2.3	Not use	Non-shield	Plastic	DOC
				HDMI	2.2	Not use	Shield		
				DSUB	1.7	Not use	Shield		
KEY BOARD	SKG-3000UB	TAKB60 1236L	MONITEREY INTERNATIONAL CORP	USB	1.8	Not use	Non-shield	Plastic	DOC
MOUSE	1484	3527000 21374	MICROSOFT CORP.	USB	1.6	Not use	Non-shield	Plastic	DOC
Pillow Speaker	GEN4	N/A	Curbell Electronics, Inc.	SPEAKER OUT	2.4	Not use	Shield	Plastic	VER
USB MEMORY	CRUZER SLICE	N/A	SANDISK	USB	-	Not use	-	-	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

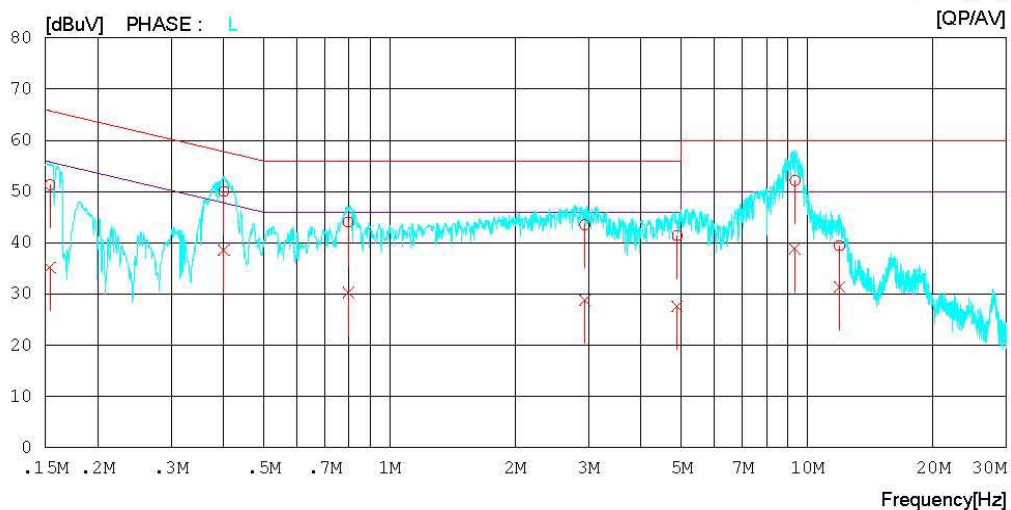
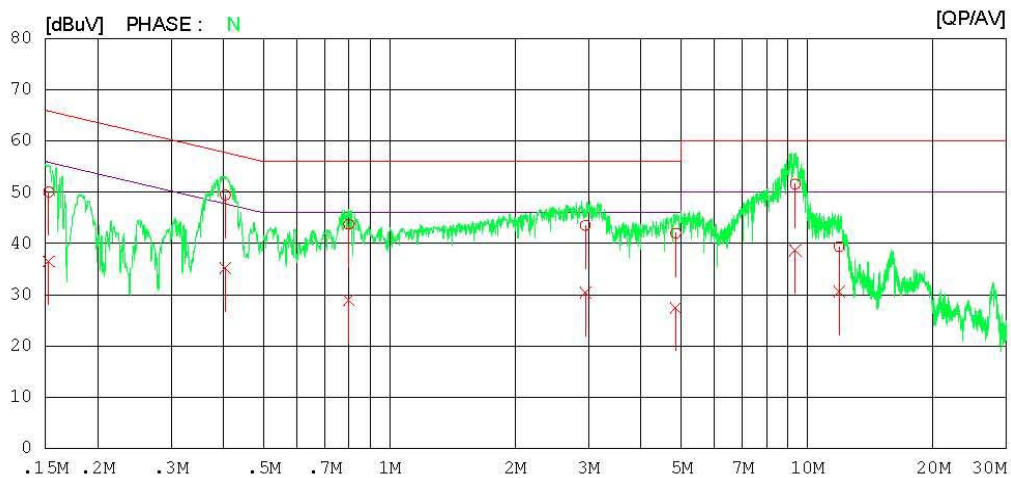
Digital EMC
Date : 2013-03-13

Model No. : 22LQ630H-UA
Type :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 23°C 41 % R. H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-03-13

Model No. : 22LQ630H-UA
Type :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 23°C 41 % 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	0.15283	48.2	34.7	1.8	50.0	36.5	65.8	55.8	15.8	19.3	N
2	0.40463	48.6	34.4	0.8	49.4	35.2	57.8	47.8	8.4	12.6	N
3	0.79883	43.2	28.4	0.5	43.7	28.9	56.0	46.0	12.3	17.1	N
4	2.94400	43.3	30.2	0.2	43.5	30.4	56.0	46.0	12.5	15.6	N
5	4.84650	41.8	27.3	0.2	42.0	27.5	56.0	46.0	14.0	18.5	N
6	9.35950	51.2	38.2	0.4	51.6	38.6	60.0	50.0	8.4	11.4	N
7	11.93200	39.0	30.2	0.4	39.4	30.6	60.0	50.0	20.6	19.4	N
8	0.15399	49.5	33.4	1.8	51.3	35.2	65.8	55.8	14.5	20.6	L
9	0.40085	49.2	37.8	0.8	50.0	38.6	57.8	47.8	7.8	9.2	L
10	0.79708	43.5	29.8	0.5	44.0	30.3	56.0	46.0	12.0	15.7	L
11	2.93500	43.3	28.6	0.2	43.5	28.8	56.0	46.0	12.5	17.2	L
12	4.88200	41.2	27.4	0.2	41.4	27.6	56.0	46.0	14.6	18.4	L
13	9.35100	51.7	38.5	0.4	52.1	38.9	60.0	50.0	7.9	11.1	L
14	11.95150	39.1	31.0	0.4	39.5	31.4	60.0	50.0	20.5	18.6	L

< HDMI MODE >



Results of Conducted Emission

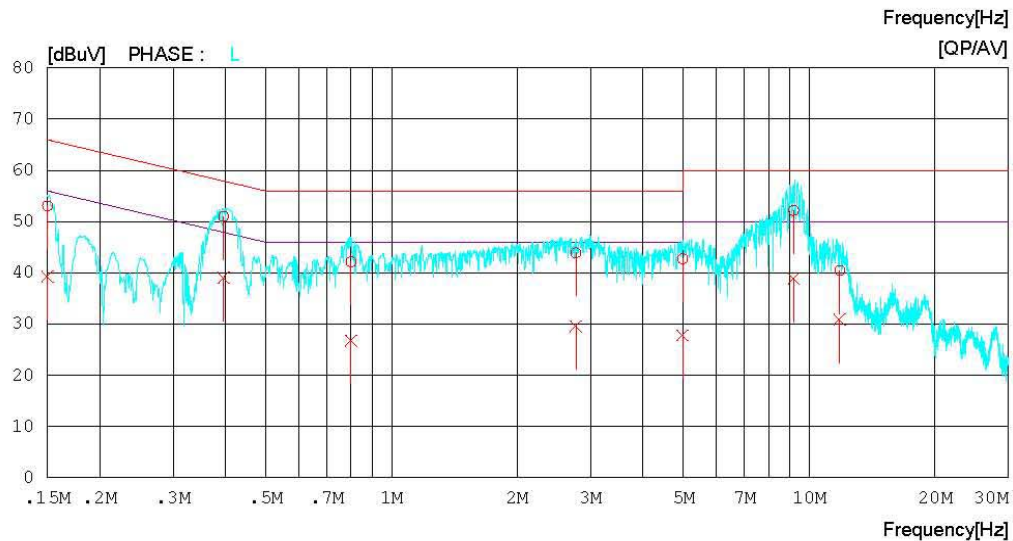
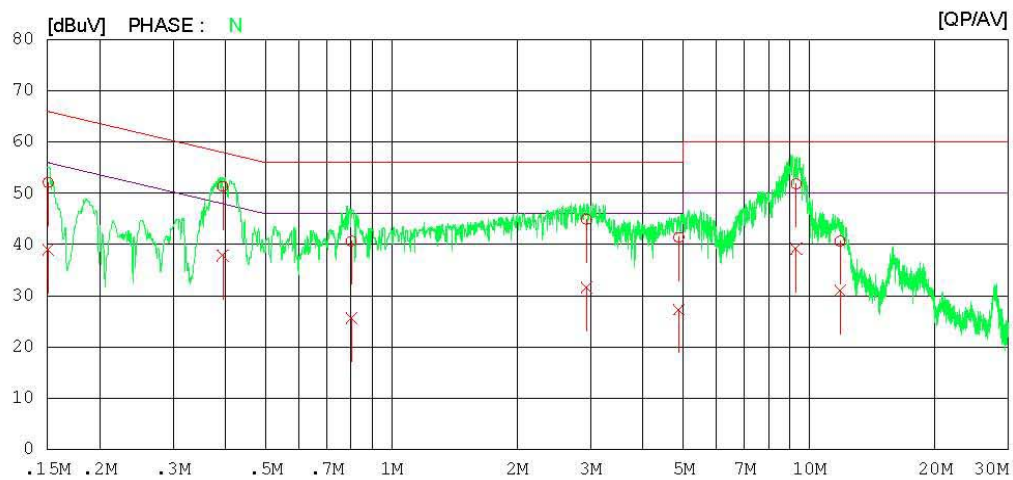
Digital EMC
Date : 2013-03-13

Model No. : 22LQ630H-UA
Type :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 23°C 41 % R. H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-03-13

Model No. : 22LQ630H-UA
Type :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 23°C 41 % 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	50.3	37.2	1.8	52.1	39.0	66.0	56.0	13.9	17.0	N
2	0.39458	50.5	37.0	0.8	51.3	37.8	58.0	48.0	6.7	10.2	N
3	0.80188	40.1	25.1	0.5	40.6	25.6	56.0	46.0	15.4	20.4	N
4	2.93150	44.7	31.4	0.2	44.9	31.6	56.0	46.0	11.1	14.4	N
5	4.87450	41.2	27.1	0.2	41.4	27.3	56.0	46.0	14.6	18.7	N
6	9.31000	51.4	38.7	0.4	51.8	39.1	60.0	50.0	8.2	10.9	N
7	11.86750	40.2	30.6	0.4	40.6	31.0	60.0	50.0	19.4	19.0	N
8	0.15012	51.3	37.4	1.8	53.1	39.2	66.0	56.0	12.9	16.8	L
9	0.39610	50.2	38.2	0.8	51.0	39.0	57.9	47.9	6.9	8.9	L
10	0.80054	41.7	26.3	0.5	42.2	26.8	56.0	46.0	13.8	19.2	L
11	2.76200	43.7	29.4	0.2	43.9	29.6	56.0	46.0	12.1	16.4	L
12	4.98100	42.5	27.6	0.2	42.7	27.8	56.0	46.0	13.3	18.2	L
13	9.17850	51.8	38.5	0.4	52.2	38.9	60.0	50.0	7.8	11.1	L
14	11.83900	40.1	30.5	0.4	40.5	30.9	60.0	50.0	19.5	19.1	L

< USB MODE >



Results of Conducted Emission

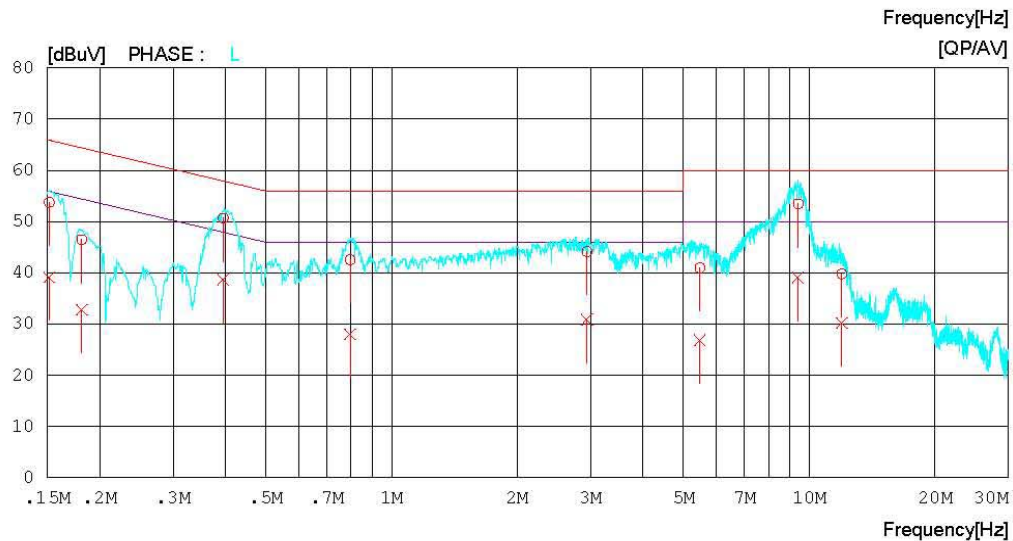
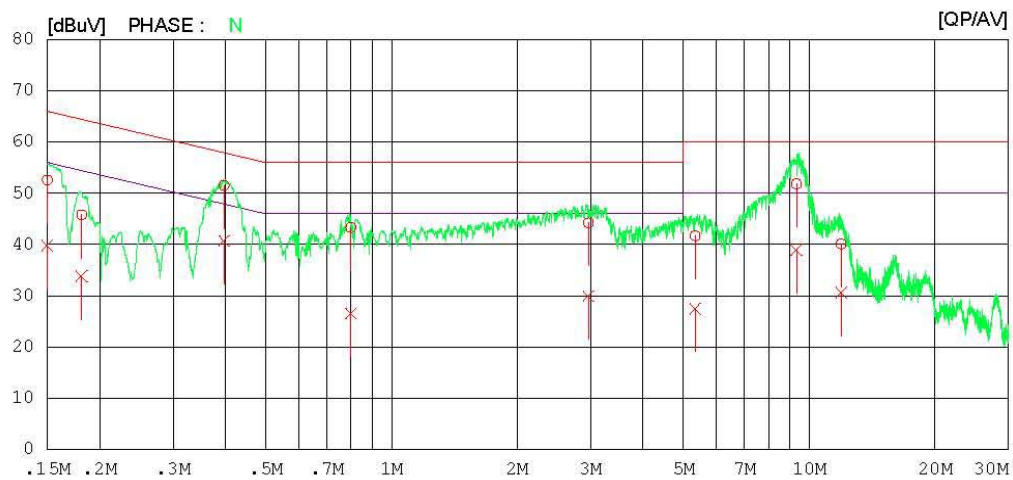
Digital EMC
Date : 2013-03-13

Model No. : 22LQ630H-UA
Type :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 23°C 41 % R. H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2013-03-13

Model No. : 22LQ630H-UA
Type :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 23°C 41 % 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	0.15000	50.8	38.0	1.8	52.6	39.8	66.0	56.0	13.4	16.2	N
2	0.18133	44.4	32.4	1.4	45.8	33.8	64.4	54.4	18.6	20.6	N
3	0.39745	50.7	39.9	0.8	51.5	40.7	57.9	47.9	6.4	7.2	N
4	0.79923	42.8	26.0	0.5	43.3	26.5	56.0	46.0	12.7	19.5	N
5	2.96150	44.0	29.7	0.2	44.2	29.9	56.0	46.0	11.8	16.1	N
6	5.33550	41.5	27.3	0.2	41.7	27.5	60.0	50.0	18.3	22.5	N
7	9.32550	51.4	38.5	0.4	51.8	38.9	60.0	50.0	8.2	11.1	N
8	11.92450	39.7	30.3	0.4	40.1	30.7	60.0	50.0	19.9	19.3	N
9	0.15158	52.0	37.4	1.8	53.8	39.2	65.9	55.9	12.1	16.7	L
10	0.18121	45.1	31.4	1.4	46.5	32.8	64.4	54.4	17.9	21.6	L
11	0.39570	49.9	37.8	0.8	50.7	38.6	57.9	47.9	7.2	9.3	L
12	0.79660	42.1	27.5	0.5	42.6	28.0	56.0	46.0	13.4	18.0	L
13	2.93900	43.9	30.7	0.2	44.1	30.9	56.0	46.0	11.9	15.1	L
14	5.47400	40.7	26.6	0.3	41.0	26.9	60.0	50.0	19.0	23.1	L
15	9.41500	53.0	38.7	0.4	53.4	39.1	60.0	50.0	6.6	10.9	L
16	11.97800	39.4	29.8	0.4	39.8	30.2	60.0	50.0	20.2	19.8	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

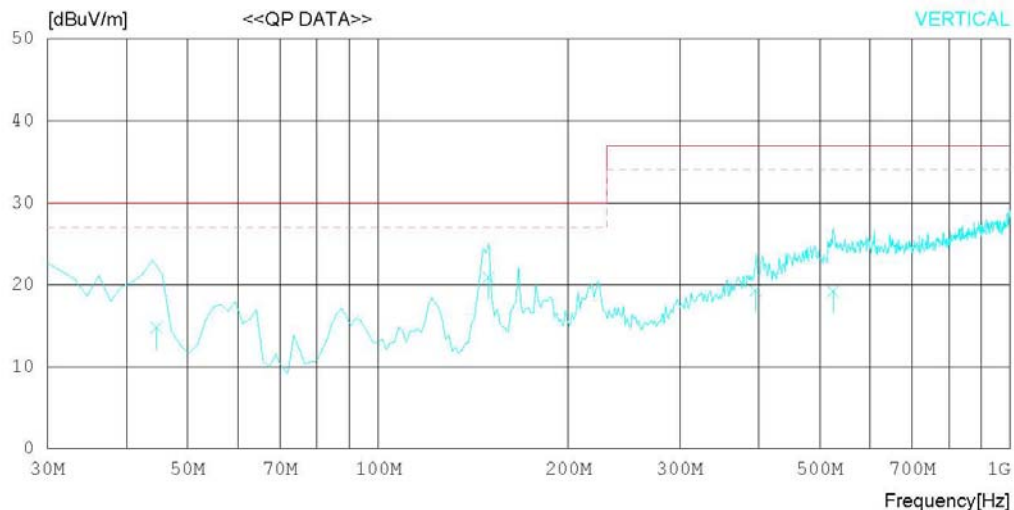
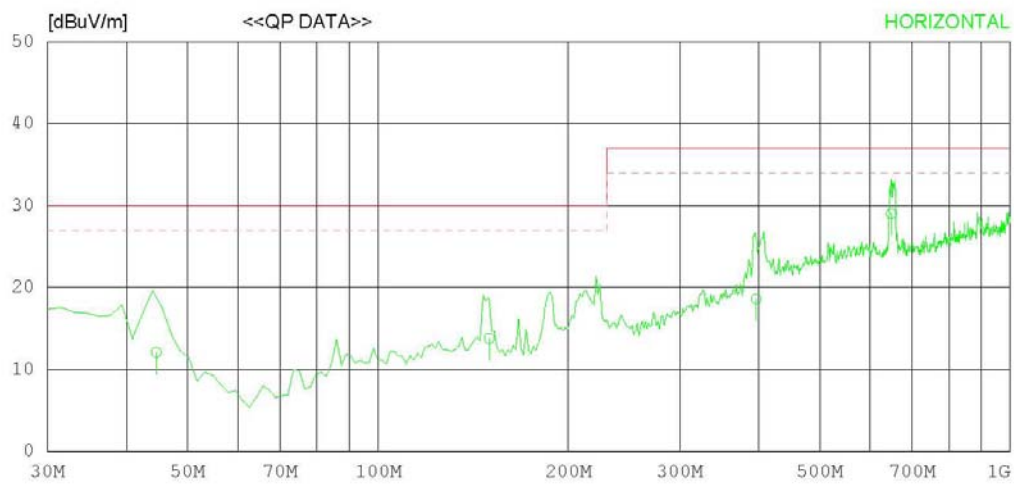
Date : 2013-03-13

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : DSUB

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

Memo :

LIMIT : CISPR Pub.22 Class B (10m)
MARGIN: 3 dB



RADIATED EMISSION

Date : 2013-03-13

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : DSUB

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

Memo :

LIMIT : CISPR Pub.22 Class B (10m)
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	44.582	23.5	11.5	1.3	24.2	12.1	30.0	17.9	400	311
2	149.984	25.4	10.5	2.1	24.2	13.8	30.0	16.2	301	294
3	396.678	22.3	16.1	3.7	23.5	18.6	37.0	18.4	201	308
4	648.686	28.8	19.1	4.7	23.6	29.0	37.0	8.0	201	0
----- Vertical -----										
5	44.598	26.2	11.5	1.3	24.2	14.8	30.0	15.2	400	249
6	149.631	32.4	10.6	2.1	24.2	20.9	30.0	9.1	100	358
7	395.127	23.1	16.1	3.6	23.5	19.3	37.0	17.7	100	315
8	524.325	20.3	17.7	4.3	23.1	19.2	37.0	17.8	199	211

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

RADIATED EMISSION

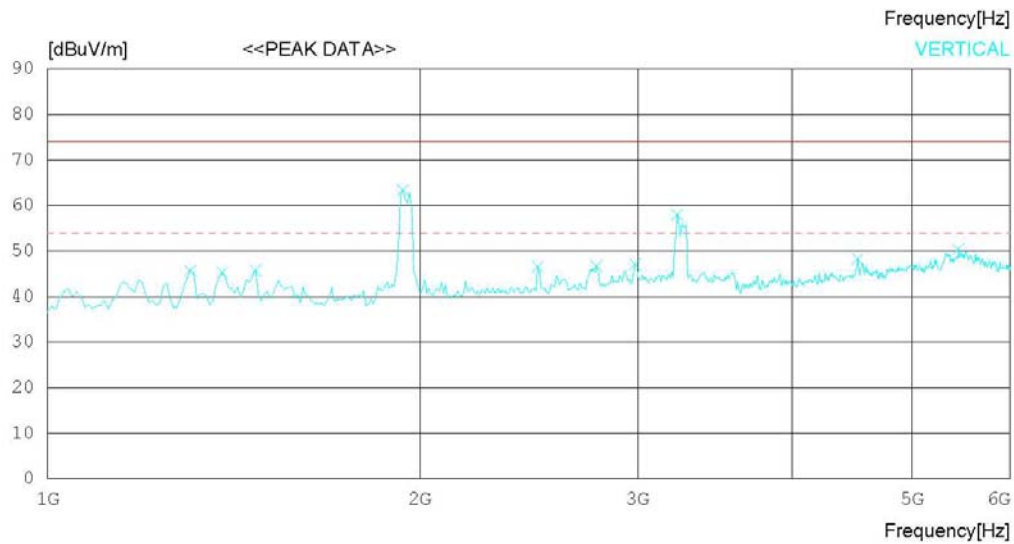
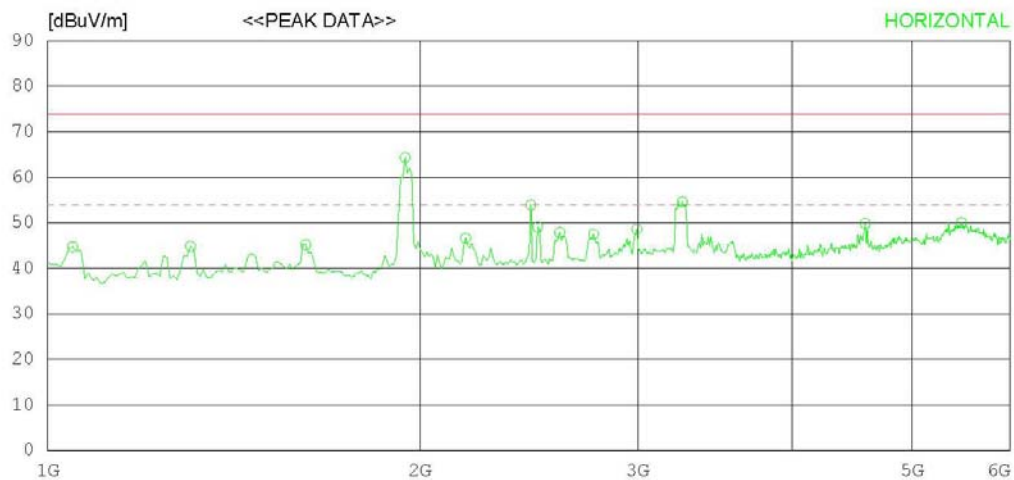
Date : 2013-03-14

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 34 % 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 : 2013-03-14

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 34 % 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	58.5	23.9	3.4	41.1	44.7	74.0	29.3	100	1
2	1304.487	57.2	24.3	3.8	40.5	44.8	74.0	29.2	100	1
3	1616.987	56.3	24.6	4.2	39.9	45.2	74.0	28.8	100	172
4	1945.512	74.6	24.6	4.6	39.5	64.3	74.0	9.7	100	1
5	2177.886	55.5	25.6	4.9	39.4	46.6	74.0	27.4	100	146
6	2458.339	60.8	27.2	5.2	39.3	53.9	74.0	20.1	100	96
7	2490.391	55.8	27.4	5.2	39.3	49.1	74.0	24.9	100	211
8	2594.559	54.2	27.7	5.3	39.3	47.9	74.0	26.1	100	168
9	2762.831	53.0	28.3	5.5	39.3	47.5	74.0	26.5	100	218
10	2995.206	53.2	29.0	5.7	39.3	48.6	74.0	25.4	100	1
11	3259.633	59.0	28.9	5.9	39.2	54.6	74.0	19.4	100	1
12	4581.753	50.0	31.2	7.2	38.6	49.8	74.0	24.2	100	183
13	5479.175	45.4	35.0	7.9	38.3	50.0	74.0	24	100	303
----- Vertical -----										
14	1304.487	58.1	24.3	3.8	40.5	45.7	74.0	28.3	100	358
15	1384.615	57.2	24.5	3.9	40.3	45.3	74.0	28.7	100	173
16	1472.756	57.2	24.6	4.0	40.1	45.7	74.0	28.3	100	358
17	1937.500	73.8	24.6	4.6	39.6	63.4	74.0	10.6	100	358
18	2490.391	53.3	27.4	5.2	39.3	46.6	74.0	27.4	100	198
19	2778.857	52.2	28.3	5.5	39.3	46.7	74.0	27.3	100	358
20	2987.193	51.8	28.9	5.7	39.3	47.1	74.0	26.9	100	200
21	3227.581	62.4	28.9	5.9	39.2	58.0	74.0	16	100	193
22	4517.652	48.8	31.0	7.1	38.6	48.3	74.0	25.7	100	358
23	5447.125	46.0	34.8	7.9	38.3	50.4	74.0	23.6	100	114

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

RADIATED EMISSION

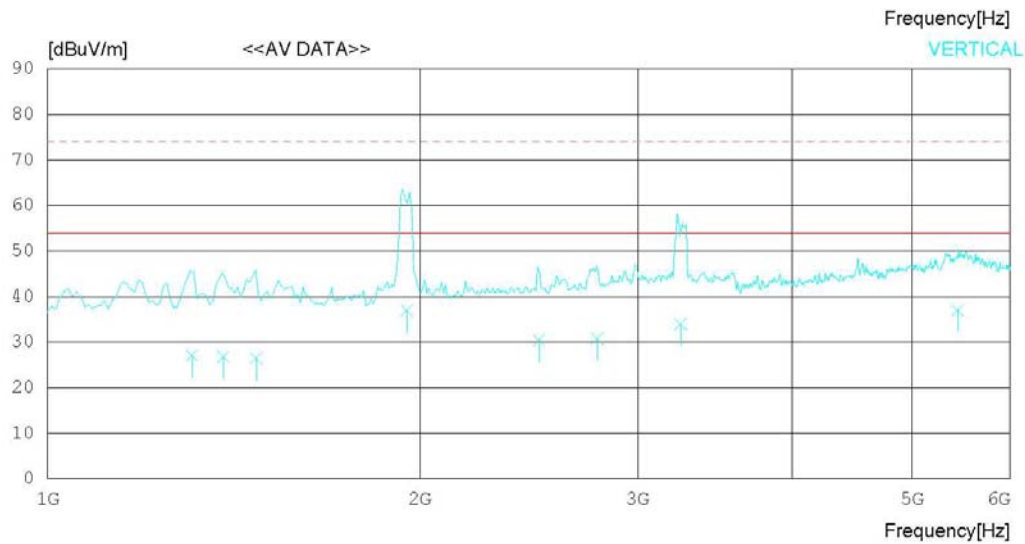
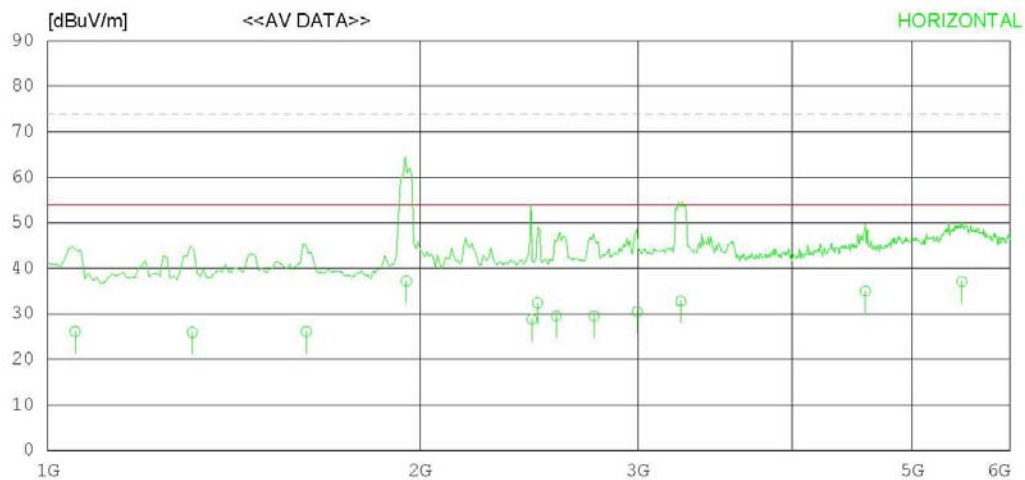
Date : 2013-03-14

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : DSUB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 34 % 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 : 2013-03-14

Model Name : 22LQ630H-UA	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 20 °C 34 % 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	1052.470	39.8	24.0	3.4	41.1	26.1	54.0	27.9	100	115
2	1308.977	38.2	24.4	3.8	40.5	25.9	54.0	28.1	100	205
3	1618.521	37.2	24.6	4.2	39.9	26.1	54.0	27.9	100	268
4	1950.048	47.4	24.6	4.7	39.5	37.2	54.0	16.8	100	312
5	2462.647	35.7	27.2	5.2	39.3	28.8	54.0	25.2	100	194
6	2489.410	39.1	27.4	5.2	39.3	32.4	54.0	21.6	100	266
7	2577.653	35.8	27.7	5.3	39.3	29.5	54.0	24.5	100	298
8	2765.407	35.0	28.3	5.5	39.3	29.5	54.0	24.5	100	147
9	2997.403	35.1	29.0	5.7	39.3	30.5	54.0	23.5	100	332
10	3249.384	37.2	28.9	5.9	39.2	32.8	54.0	21.2	100	345
11	4583.605	35.2	31.2	7.2	38.6	35.0	54.0	19.0	100	224
12	5483.970	32.5	35.0	7.9	38.3	37.1	54.0	16.9	100	250
----- Vertical -----										
13	1308.807	39.4	24.4	3.8	40.5	27.1	54.0	26.9	100	255
14	1387.269	38.7	24.5	3.9	40.3	26.8	54.0	27.2	100	263
15	1475.209	38.0	24.6	4.0	40.1	26.5	54.0	27.5	100	279
16	1951.505	47.1	24.6	4.7	39.5	36.9	54.0	17.1	100	241
17	2496.608	37.1	27.4	5.2	39.3	30.4	54.0	23.6	100	220
18	2781.301	36.2	28.3	5.5	39.3	30.7	54.0	23.3	100	189
19	3248.634	38.4	28.9	5.9	39.2	34.0	54.0	20.0	100	203
20	5443.299	32.6	34.8	7.9	38.3	37.0	54.0	17.0	100	229

< HDMI MODE_30 MHz ~ 1 GHz >

RADIATED EMISSION

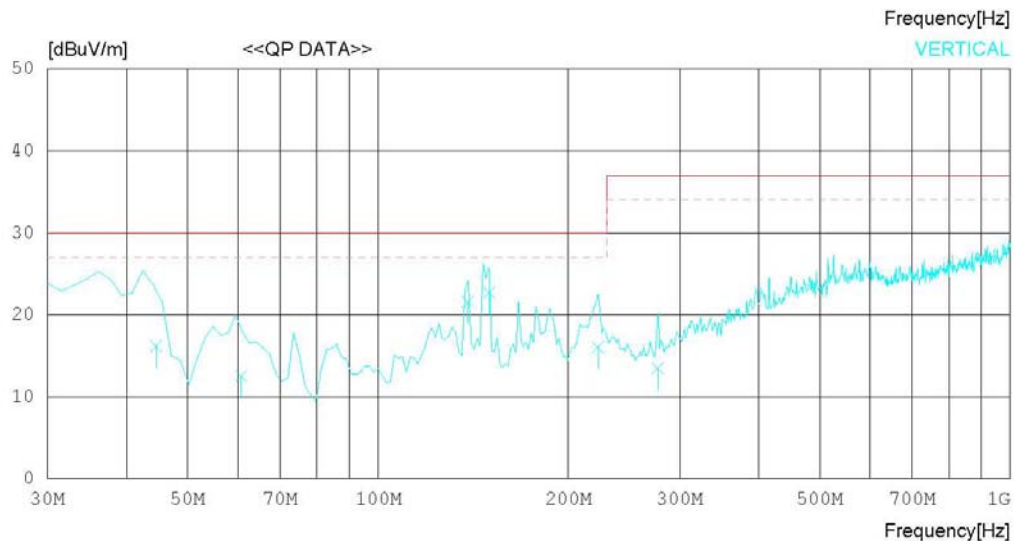
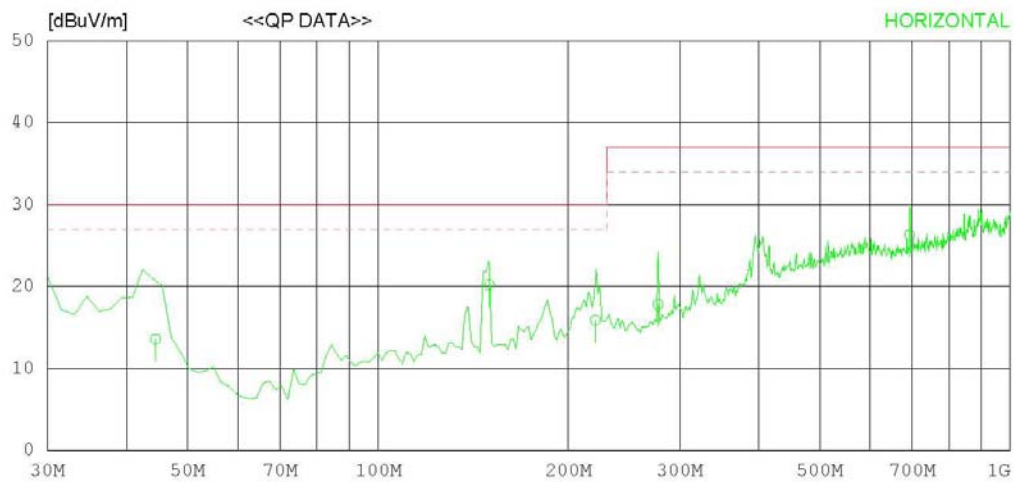
Date : 2013-03-13

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : HDMI

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

Memo :

LIMIT : CISPR Pub.22 Class B (10m)
MARGIN: 3 dB



RADIATED EMISSION

Date : 2013-03-13

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : HDMI

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

Memo :

LIMIT : CISPR Pub.22 Class B (10m)
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	44.455	25.0	11.5	1.3	24.2	13.6	30.0	16.4	400	341
2	149.984	31.8	10.5	2.1	24.2	20.2	30.0	9.8	400	307
3	220.625	27.0	10.1	2.7	23.9	15.9	30.0	14.1	301	284
4	277.260	25.7	12.9	2.9	23.7	17.8	37.0	19.2	400	299
5	693.092	25.7	19.2	5.2	23.8	26.3	37.0	10.7	201	311
----- Vertical -----										
6	44.583	27.6	11.5	1.3	24.2	16.2	30.0	13.8	400	315
7	60.785	29.7	5.2	2.0	24.4	12.5	30.0	17.5	199	299
8	138.653	32.7	11.2	1.9	24.2	21.6	30.0	8.4	100	345
9	150.016	34.3	10.5	2.1	24.2	22.7	30.0	7.3	100	222
10	222.757	27.0	10.2	2.7	23.9	16.0	30.0	14.0	100	298
11	277.164	21.4	12.9	2.9	23.7	13.5	37.0	23.5	100	266

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

RADIATED EMISSION

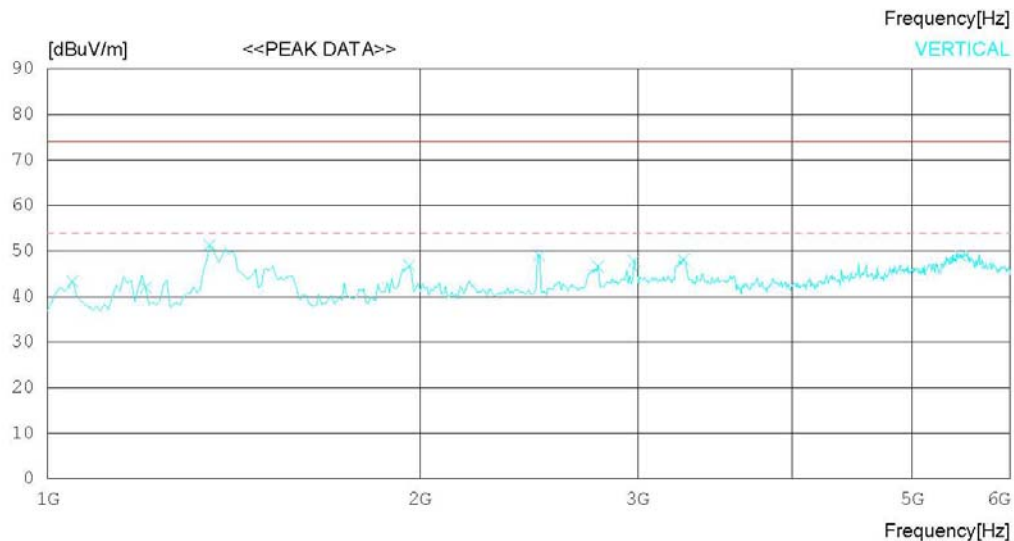
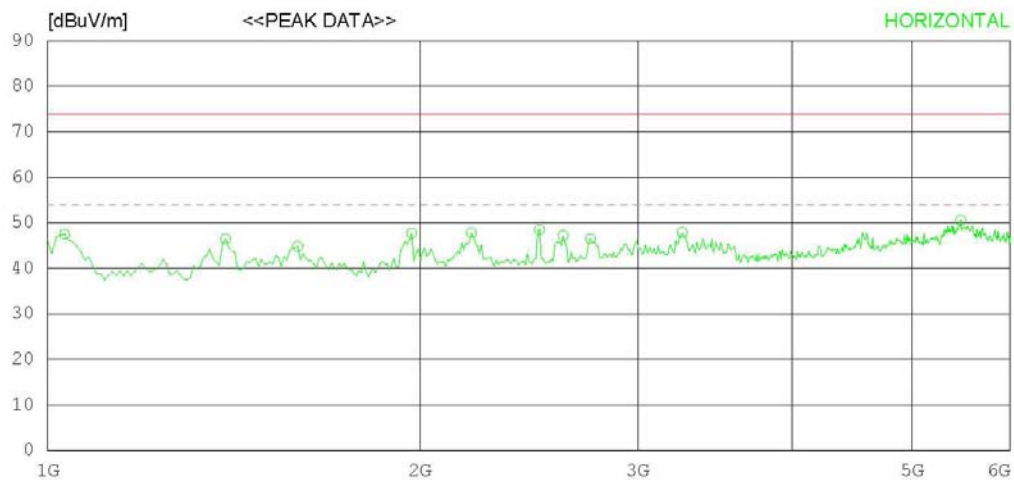
Date : 2013-03-14

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 34 % 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 : 2013-03-14

Model Name : 22LQ630H-UA	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 20 °C 34 % 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	1032.051	61.3	23.9	3.4	41.1	47.5	74.0	26.5	100	220
2	1392.628	58.4	24.5	3.9	40.3	46.5	74.0	27.5	100	1
3	1592.948	56.0	24.6	4.2	40.0	44.8	74.0	29.2	100	1
4	1969.551	57.9	24.6	4.7	39.5	47.7	74.0	26.3	100	170
5	2201.925	56.6	25.7	4.9	39.4	47.8	74.0	26.2	100	154
6	2498.404	55.2	27.4	5.2	39.3	48.5	74.0	25.5	100	225
7	2610.585	53.4	27.8	5.3	39.3	47.2	74.0	26.8	100	1
8	2746.805	52.1	28.2	5.5	39.3	46.5	74.0	27.5	100	1
9	3259.633	52.3	28.9	5.9	39.2	47.9	74.0	26.1	100	134
10	5471.163	46.1	34.9	7.9	38.3	50.6	74.0	23.4	100	1
----- Vertical -----										
11	1048.077	57.2	23.9	3.4	41.1	43.4	74.0	30.6	100	261
12	1200.320	54.9	24.2	3.6	40.7	42.0	74.0	32	100	25
13	1352.564	63.4	24.4	3.9	40.4	51.3	74.0	22.7	100	211
14	1961.538	56.9	24.6	4.7	39.5	46.7	74.0	27.3	100	261
15	2498.404	55.7	27.4	5.2	39.3	49.0	74.0	25	100	173
16	2786.870	52.1	28.3	5.5	39.3	46.6	74.0	27.4	100	261
17	2979.180	52.6	28.9	5.7	39.3	47.9	74.0	26.1	100	261
18	3267.646	52.4	28.9	6.0	39.2	48.1	74.0	25.9	100	261
19	5471.163	44.4	34.9	7.9	38.3	48.9	74.0	25.1	100	261

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

RADIATED EMISSION

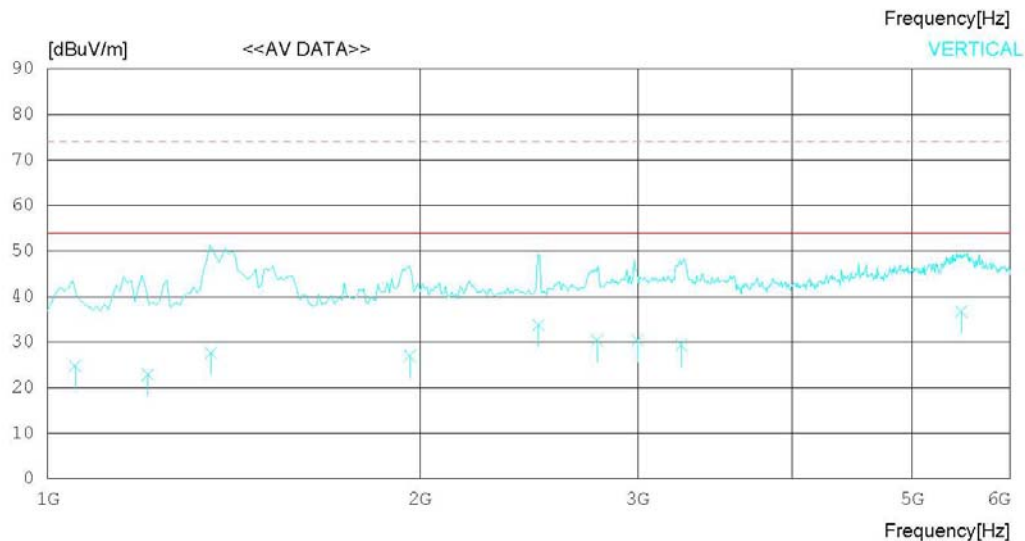
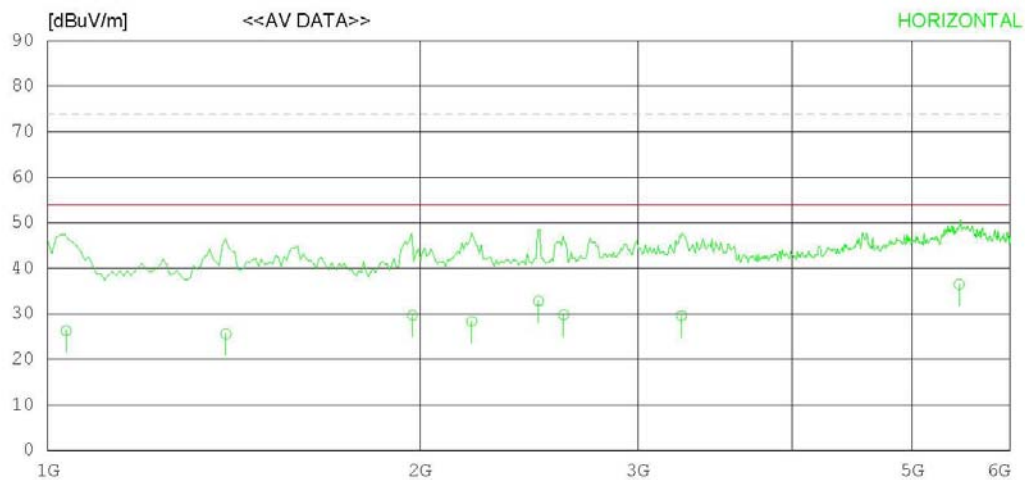
Date : 2013-03-14

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : HDMI

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 34 % 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 : 2013-03-14

Model Name : 22LQ630H-UA	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 20 °C 34 % 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	1035.290	40.1	23.9	3.4	41.1	26.3	54.0	27.7	100	188
2	1393.661	37.5	24.5	3.9	40.3	25.6	54.0	28.4	100	175
3	1972.503	39.9	24.6	4.7	39.5	29.7	54.0	24.3	100	195
4	2202.372	37.2	25.7	4.9	39.4	28.4	54.0	25.6	100	214
5	2494.409	39.5	27.4	5.2	39.3	32.8	54.0	21.2	100	325
6	2613.450	36.0	27.8	5.3	39.3	29.8	54.0	24.2	100	333
7	3254.446	34.0	28.9	5.9	39.2	29.6	54.0	24.4	100	244
8	5455.109	32.1	34.8	7.9	38.3	36.5	54.0	17.5	100	251
----- Vertical -----										
9	1052.557	38.5	24.0	3.4	41.1	24.8	54.0	29.2	100	324
10	1205.294	35.8	24.2	3.6	40.7	22.9	54.0	31.1	100	123
11	1355.901	39.8	24.4	3.9	40.4	27.7	54.0	26.3	100	330
12	1962.543	37.2	24.6	4.7	39.5	27.0	54.0	27.0	100	318
13	2494.512	40.5	27.4	5.2	39.3	33.8	54.0	20.2	100	199
14	2781.780	35.9	28.3	5.5	39.3	30.4	54.0	23.6	100	204
15	2998.771	35.0	29.0	5.7	39.3	30.4	54.0	23.6	100	221
16	3252.900	33.8	28.9	5.9	39.2	29.4	54.0	24.6	100	235
17	5477.945	32.1	35.0	7.9	38.3	36.7	54.0	17.3	100	189

< USB MODE_30 MHz ~ 1 GHz >

RADIATED EMISSION

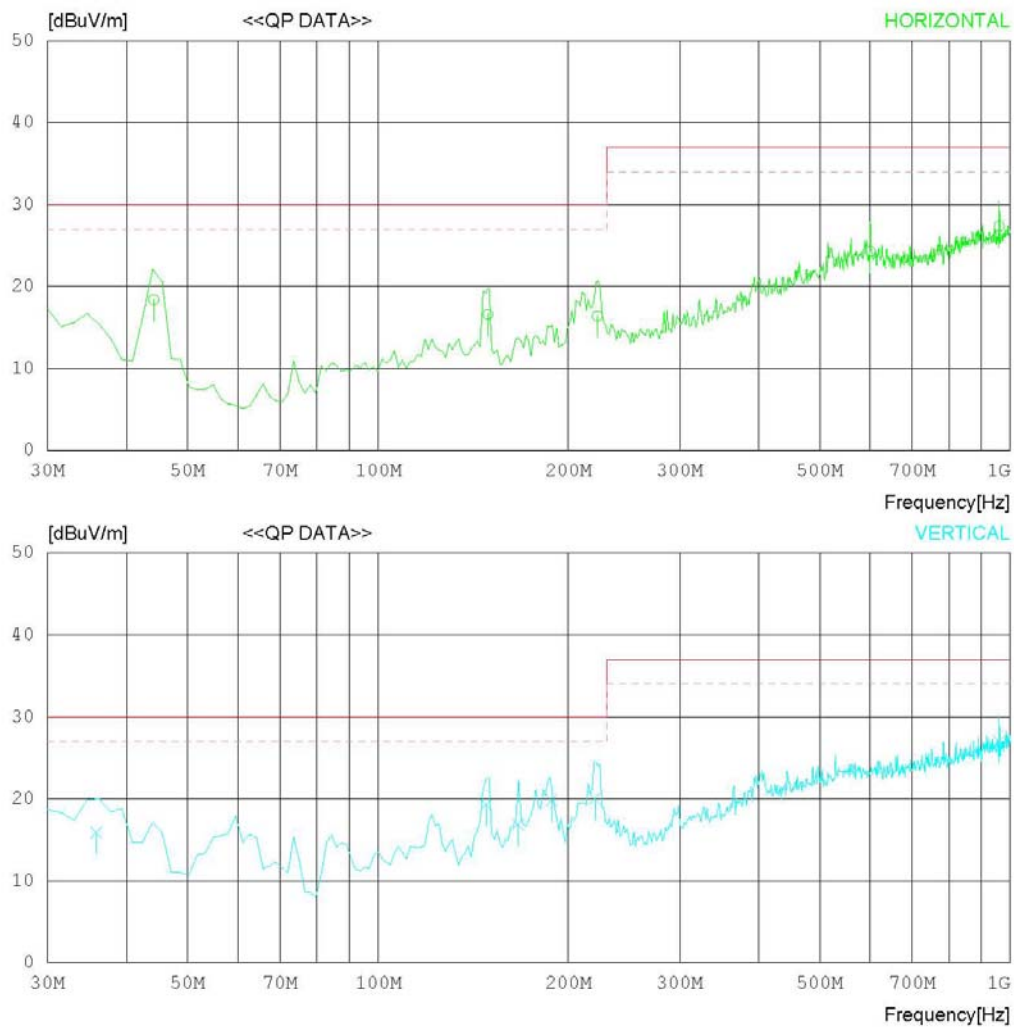
Date : 2013-03-13

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : USB

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

Memo :

LIMIT : CISPR Pub.22 Class B (10m)
MARGIN: 3 dB



RADIATED EMISSION

Date : 2013-03-13

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : USB

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

Memo :

LIMIT : CISPR Pub.22 Class B (10m)
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	44.163	29.8	11.5	1.3	24.2	18.4	30.0	11.6	400	235
2	149.223	28.1	10.6	2.1	24.2	16.6	30.0	13.4	400	330
3	222.113	27.4	10.2	2.7	23.9	16.4	30.0	13.6	400	228
4	600.416	24.3	18.9	4.5	23.4	24.3	37.0	12.7	400	279
5	960.954	23.1	21.2	6.0	22.9	27.4	37.0	9.6	400	211
----- Vertical -----										
6	35.852	21.9	16.7	1.3	24.0	15.9	30.0	14.1	100	358
7	148.195	30.8	10.6	2.1	24.2	19.3	30.0	10.7	100	358
8	166.437	29.2	9.6	2.2	24.1	16.9	30.0	13.1	100	88
9	188.441	32.5	8.7	2.6	24.0	19.8	30.0	10.2	100	358
10	220.268	31.1	10.1	2.7	23.9	20.0	30.0	10.0	100	317
11	960.041	22.7	21.2	6.0	22.9	27.0	37.0	10.0	100	358

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

RADIATED EMISSION

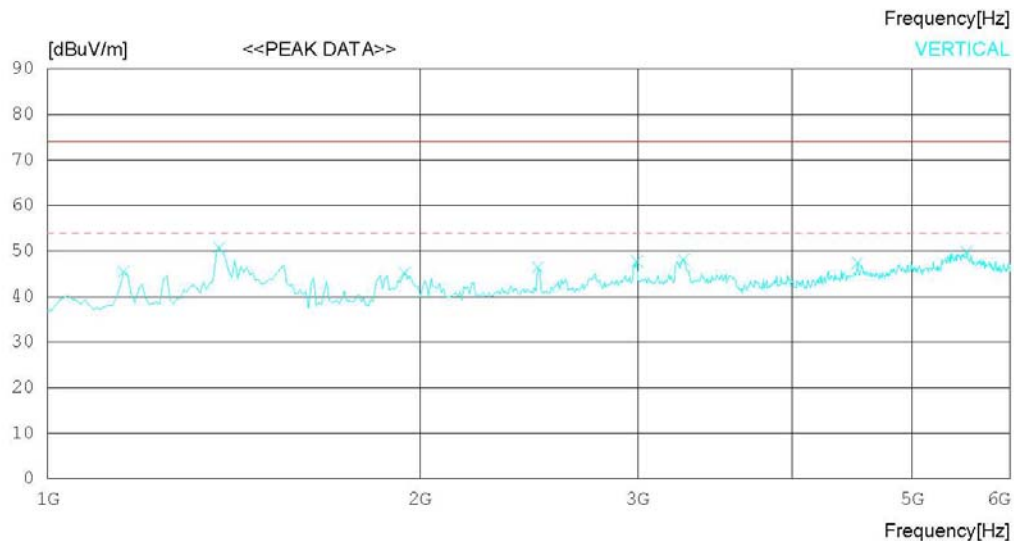
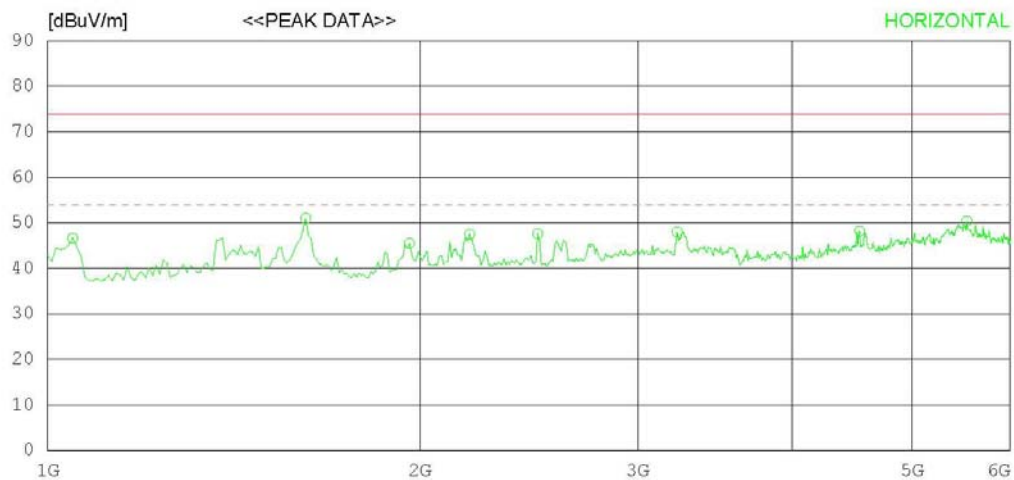
Date : 2013-03-14

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 34 % 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 : 2013-03-14

Model Name : 22LQ630H-UA	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 20 °C 34 % 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	60.4	23.9	3.4	41.1	46.6	74.0	27.4	100	221
2	1616.987	62.1	24.6	4.2	39.9	51.0	74.0	23	100	358
3	1961.538	55.7	24.6	4.7	39.5	45.5	74.0	28.5	100	358
4	2193.912	56.3	25.7	4.9	39.4	47.5	74.0	26.5	100	358
5	2490.391	54.3	27.4	5.2	39.3	47.6	74.0	26.4	100	120
6	3227.581	52.4	28.9	5.9	39.2	48.0	74.0	26	100	177
7	4533.677	48.6	31.0	7.2	38.6	48.2	74.0	25.8	100	210
8	5535.264	45.8	34.9	8.0	38.3	50.4	74.0	23.6	100	227
----- Vertical -----										
9	1152.244	58.6	24.1	3.6	40.8	45.5	74.0	28.5	100	18
10	1376.602	62.7	24.5	3.9	40.3	50.8	74.0	23.2	100	204
11	1945.512	55.5	24.6	4.6	39.5	45.2	74.0	28.8	100	219
12	2490.391	53.1	27.4	5.2	39.3	46.4	74.0	27.6	100	169
13	2995.206	52.3	29.0	5.7	39.3	47.7	74.0	26.3	100	169
14	3267.646	52.4	28.9	6.0	39.2	48.1	74.0	25.9	100	200
15	4517.652	48.0	31.0	7.1	38.6	47.5	74.0	26.5	100	1
16	5535.264	45.3	34.9	8.0	38.3	49.9	74.0	24.1	100	1

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

RADIATED EMISSION

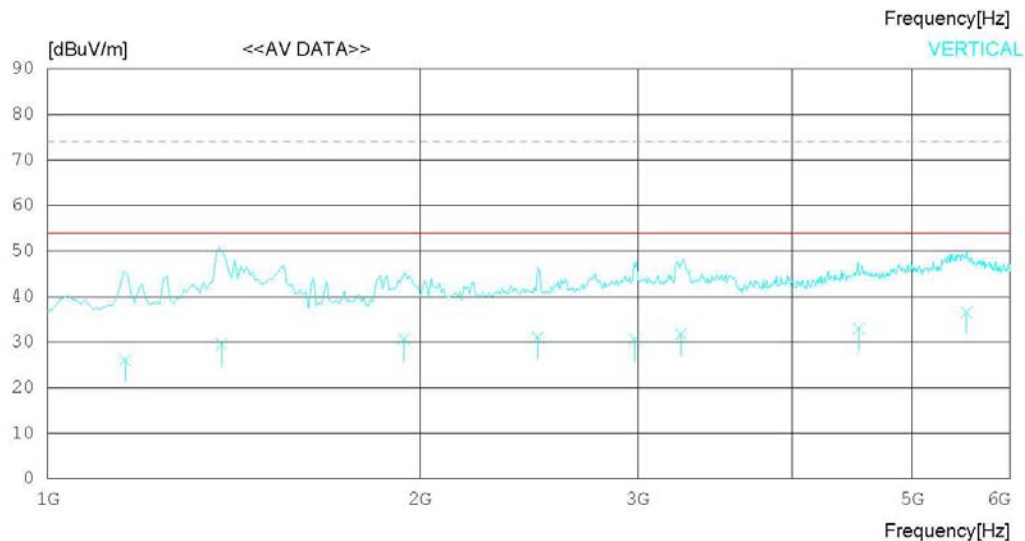
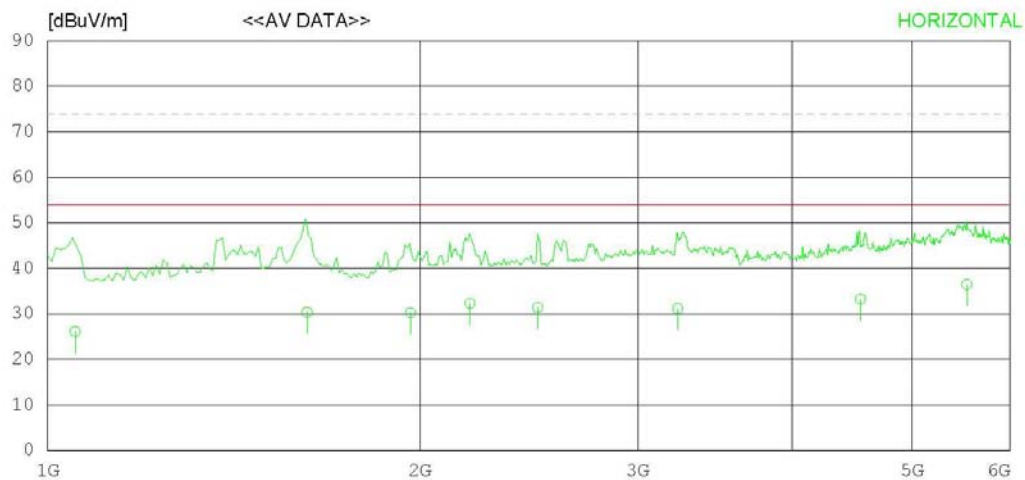
Date : 2013-03-14

Model Name : 22LQ630H-UA
Model No. :
Serial No. :
Test Condition : USB

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi : 20 °C 34 % 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 : 2013-03-14

Model Name : 22LQ630H-UA	Reference No. :
Model No. :	Power Supply : 120 V 60 Hz
Serial No. :	Temp/Humi : 20 °C 34 % 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	1052.481	39.8	24.0	3.4	41.1	26.1	54.0	27.9	100	251
2	1620.807	41.5	24.6	4.2	39.9	30.4	54.0	23.6	100	272
3	1965.708	40.5	24.6	4.7	39.5	30.3	54.0	23.7	100	296
4	2195.687	41.1	25.7	4.9	39.4	32.3	54.0	21.7	100	187
5	2490.230	38.1	27.4	5.2	39.3	31.4	54.0	22.6	100	193
6	3231.251	35.6	28.9	5.9	39.2	31.2	54.0	22.8	100	204
7	4540.195	33.6	31.0	7.2	38.6	33.2	54.0	20.8	100	166
8	5535.295	32.0	34.8	8.0	38.3	36.5	54.0	17.5	100	350
----- Vertical -----										
9	1155.448	39.2	24.1	3.6	40.8	26.1	54.0	27.9	100	299
10	1383.205	41.4	24.5	3.9	40.3	29.5	54.0	24.5	100	303
11	1940.192	41.0	24.6	4.6	39.6	30.6	54.0	23.4	100	277
12	2490.115	37.7	27.4	5.2	39.3	31.0	54.0	23.0	100	250
13	2983.782	35.3	28.9	5.7	39.3	30.6	54.0	23.4	100	284
14	3250.974	36.2	28.9	5.9	39.2	31.8	54.0	22.2	100	295
15	4528.217	33.4	31.0	7.2	38.6	33.0	54.0	21.0	100	301
16	5532.407	32.0	34.9	8.0	38.3	36.6	54.0	17.4	100	110

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