

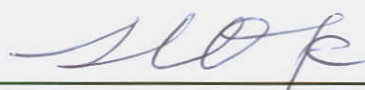
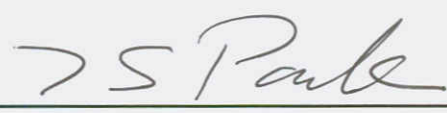
FCC EVALUATION REPORT FOR CERTIFICATION

Applicant : LG Electronics Inc.**19-1, Cheongho-ri, Jinwi-myeon,****Pyeongteak-si, Gyeonggi-do, Korea.****Attn: Mr. Myoung-Kyu Lee, Chief research engineer****Date of Issue : October 8, 2009****Order Number: GETEC-C1-09-207****Test Report Number: GETEC-E3-09-120****Test Site: Gumi College EMC Center****FCC Registration Number: (100749, 443957)****FCC ID.: BEJ37LH260HUA****Applicant: LG Electronics Inc.**

Rule Part(s)	: FCC Part 15 Subpart B
Equipment Class	: Class B computing device peripheral (JBP)
EUT Type	: LCD TV/Monitor
Type of Authority	: Certification
Model Name	: 37LH260H-UA
Trade Name	: LG

This equipment has been shown to be in compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003 / Canadian standard ICES-003

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Tested by,**Reviewed by,**
Hyoung Seop Kim, Associate Engineer
GUMI College EMC center
Tae-Sig Park, Technical Manager
GUMI College EMC center



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Scope: Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and / or unintentional radiators for compliance with technical rules and regulations of the Federal Communications Commission.

1. General Information

Applicant: LG Electronics Inc.

Applicant Address: 19-1, Cheongho-ri, Jinwi-myeon, Pyeongteak-si, Gyeonggi-do, Korea.

Manufacturer: LG Electronics Inc.

Manufacturer Address: 299, Gongdan-dong, Gumi-si, Gyeongbuk, Korea.

Contact Person: Mr. Myoung-Kyu Lee, Chief research engineer

Tel Number: +82-54-460-7314

- **FCC ID.** BEJ37LH260HUA
- **EUT Type** LCD TV/Monitor
- **Model Name** 37LH260H-UA
- **Trade Name** LG
- **Serial Number** Prototype
- **Rule Part(s)** FCC Part 15 Subpart B
- **Type of Authority** Certification
- **Test Procedure(s)** ANSI C63.4 (2003) / Canadian standard ICES-003
- **Dates of Test** October 5 ~ 6, 2009
- **Place of Test** **Gumi College EMC Center** (FCC Registration Number: 100749, 443957)
407, Bugok-dong, Gumi-si, Gyeongbuk, Korea.
- **Test Report Number** GETEC-E3-09-120
- **Dates of Issue** October 8, 2009



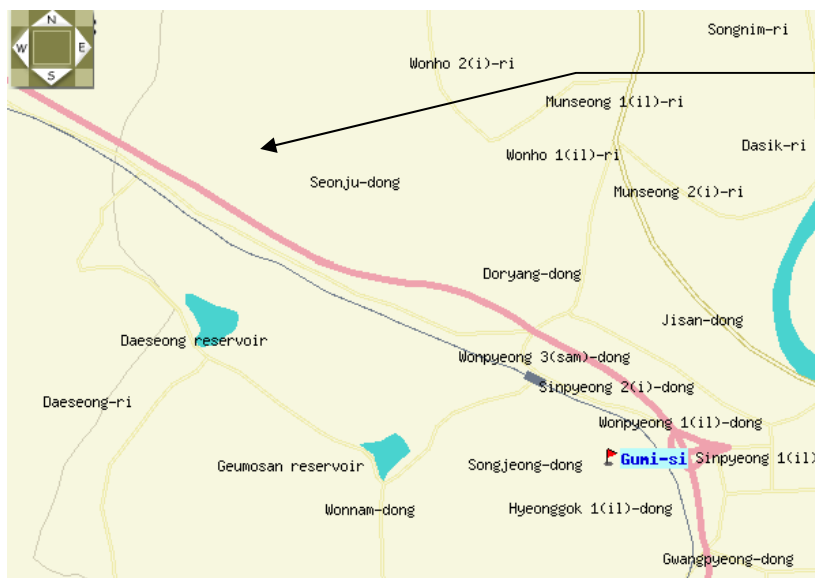
2. Introduction

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Nose Emissions From Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (ASNI C63.4-2003) was used in determining radiated and conducted emissions emanating from **LG Electronics Inc. LCD TV/Monitor (Model Name: 37LH260H-UA)**

These measurement tests were conducted at **Gumi College EMC Center**.

The site address is 407, Bugok-dong, Gumi-si, Gyeongbuk, Korea.

This test site is one of the highest point of Gumi 1 college at about 200 km away from Seoul city and 40 km away from Daegu city. It is located in the valley surrounded by mountains in all directions where ambient radio signal conditions are quiet and a favorable area to measure the radio frequency interference on open field test site for the computing and ISM devices manufactures. The detailed description of the measurement facility was found to be in compliance with the requirements of §2.948 according to ANSI C63.4 on October 19, 1992



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Fig 1. The map above shows the Gumi College in vicinity area.



3. Product Information

3.1 Description of EUT

The Equipment under Test (EUT) is the **LG Electronics Inc. LCD TV/Monitor (Model Name: 37LH260H-UA)**
FCC ID.: BEJ37LH260HUA

MODEL		32LH240H (32LH240H-UA) 32LH250H (32LH250H-UA) 32LH255H (32LH255H-UA)	37LH250H (37LH250H-UA) 37LH255H (37LH255H-UA) 37LH260H (37LH260H-UA)	42LH250H (42LH250H-UA) 42LH255H (42LH255H-UA) 42LH260H (42LH260H-UA)
Dimensions (Width x Height x Depth)	With stand	31.6 x 22.9 x 8.8 inches 805.0 x 583.0 x 223.8 mm	36.2 x 25.9 x 11.6 inches 922.0 x 659.0 x 297.0 mm	40.4 x 28.1 x 11.6 inches 1028.0 x 715.4 x 297.0 mm
	Without stand	31.6 x 20.7 x 4.2 inches 805.0 x 528.2 x 108.9 mm	36.2 x 23.4 x 3.4 inches 922.0 x 595.0 x 88.0 mm	40.4 x 25.7 x 3.4 inches 1028.0 x 655.0 x 88.7 mm
Weight	With stand	27.7 pounds / 12.6 kg	33.0 pounds / 15.0 kg	41.0 pounds / 18.6 kg
	Without stand	25.1 pounds / 11.4 kg	29.1 pounds / 13.2 kg	37.0 pounds / 16.8 kg
Power requirement		AC100-240V ~ 50/60Hz		
Television System		NTSC-M, ATSC, 64 & 256 QAM		
Program Coverage		VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135		
External Antenna Impedance		75 ohm		
Environment condition	Operating Temperature	32 ~ 104°F (0 ~ 40°C)		
	Operating Humidity	Less than 80%		
	Storage Temperature	-4 ~ 140°F (-20 ~ 60°C)		
	Storage Humidity	Less than 85%		

Maximum Frequency range:	400 MHz
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3.2 Support Equipment / Cables used

3.2.1 Used Support Equipment

Description	Manufacturer	Model Name	S/N & FCC ID
PC	Hewlett Packard	D530	S/N: CNG34800PY FCC ID: DoC
Video card	ATI	ARI RV360(9600)	S/N: SN0402017176 FCC ID: DoC
Key-board	COMPAQ	166516-AD6	S/N: B13BBOR391006D FCC ID: AQ6-23K15
PS2 mouse	LOGITECH	M-S69	S/N: 334684-108 FCC ID: JNZ211443
Joystick	Microsoft	X05-92626	S/N: 9262600296169 FCC ID: DoC
DVD player	LG Electronics Inc	LC-954	S/N: 3850R-Z674K FCC ID: DoC
USB memory stick	SM Electronics	UDD-32M	S/N: N/A FCC ID: DoC
Printer	Hewlett Packard	970CXI	S/N: MY9B01F1FG FCC ID: DoC
TV signal generator	FLUKE	54200	S/N: 831011 FCC ID: DoC

See "Appendix D – Test Setup Photographs" for actual system test set-up



3.2.2 Used Cable(s)

Cable Name	Condition	Description
Power cable	Connected to the EUT	1.8 m unshielded
Video(RGB) input cable	Connected to the EUT and PC	1.8 m shielded with two ferrite cores
Video(HDMI/DVI) input cable	Connected to the EUT and PC	2.0 m shielded
PC sound input cable	Connected to the EUT and PC	1.8 m shielded
Remote control out cable	Connected to the EUT and PC	1.8 m shielded with a ferrite core
Component input cable	Connected to the EUT and DVD Player	1.8 m shielded
Component sound input cable	Connected to the EUT and DVD Player	3.0 m shielded
AV input cable	Connected to the EUT and DVD Player	3.0 m shielded
Speaker out cable	Connected to the EUT and PC	1.8 m shielded
Antenna cable	Connected to the EUT and TV signal generator	10.0 m shielded

3.3 Modification Item(s)

- None



4. Description of tests

4.1 Test Condition

The EUT was installed, arranged and operated in a manner that is most representative of equipment as typically used. The measurements were carried out while varying operating modes and cable positions within typically arrangement to determine maximum emission level.

The representative and worst test mode(s) were noted in the test report.

- Test Voltage / Frequency : AC 120 V / 60 Hz
- Test Mode(s)
 - . Monitor mode
 - . Radiated emission: 1 920 * 1 080 / 60 Hz (RGB: Analog), 1 920 * 1 080 / 60 Hz (HDMI/DVI: Digital)
 - . Conducted emission: 1 920 * 1 080 / 60 Hz (RGB: Analog), 1 920 * 1 080 / 60 Hz (HDMI/DVI: Digital)
1 024 * 768 / 60 Hz (RGB: Analog), 640 * 480 / 60 Hz (RGB: Analog),
 - . USB play mode: Continuous play mode of picture file and 1 kHz audio file.
- Operating test pattern
 - . "H" character scrolling mode (Font size: 10)
 - . Black background white character
 - . Brightness and contrast was adjusted as maximum level
 - . 1 kHz sound tone with winamp player

"The verification report for TV/AV mode would be issued by LG Electronics Inc."



4.2 Conducted Emission

The Line conducted emission test facility is inside a 4 m × 8 m × 2.5 m shielded enclosure.

The EUT was placed on a non-conducting 1.0 m by 1.5 m table, which is 0.8 m in height and 0.4 m away from the vertical wall of the shielded enclosure.

The EUT is powered from the Rohde & Schwarz LISN (ESH2-Z5) and the support equipment is powered from the Rohde & Schwarz LISN (ESH3-Z5). Powers to the LISN are filtered by high-current high insertion loss power line filter.

Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

The RF output of the LISN was connected to the EMI test receiver (Rohde & Schwarz, ESCS30).

The EMI test receiver was scanned from 150 kHz to 30 MHz with 20 ms sweep time to determine the frequency producing the maximum EME from the EUT. The frequency producing the maximum level was re-examined using Quasi-Peak mode of the EMI test receiver.

The bandwidth of Quasi-peak mode was set to 9 kHz. Each emission was maximized consistent with typical applications by varying the configuration of the test sample. Interface cables were connected to the available interface ports of the test unit. The effect of varying the position of cables was investigated to find the configuration that produces maximum diagram emission. Excess cable lengths were bundled at center with 30 cm ~ 40 cm.

Each EME reported was calibrated using the R/S signal generator

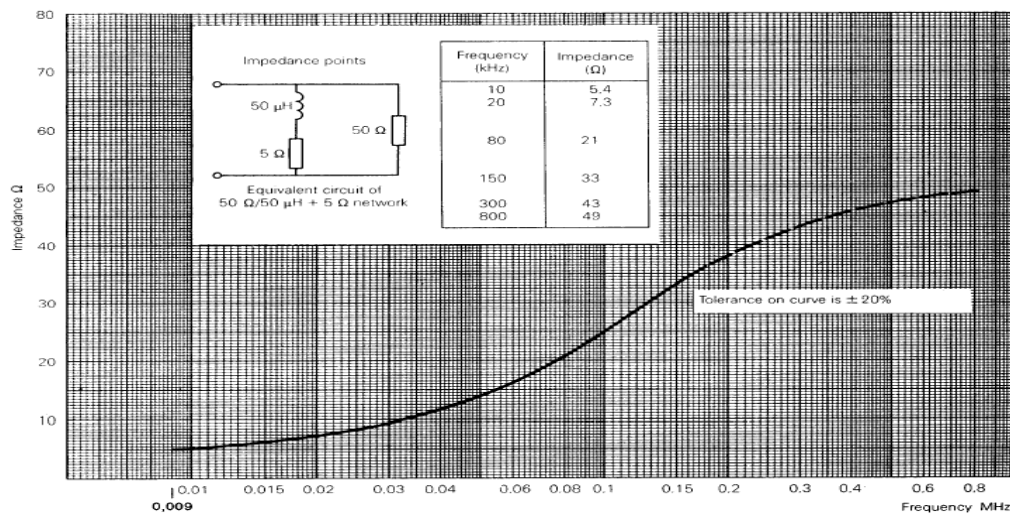


Fig 2. Impedance of LISN



4.3 Radiated Emission

Preliminary measurements were conducted 3 m semi anechoic chamber using broadband antennas to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The technology configuration, mode of operation and turntable azimuth with respect to antenna was note for each frequency found.

The spectrum was scanned from 30 MHz to 1 000 MHz using bicornical log antenna (Schwarzbeck, VULB9160). Above 1 GHz, horn antenna (Schwarzbeck, BBHA9120D) was used.

Final measurements were made outdoors at 3 m /10 m test range.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

Each frequency found during pre-scan measurements was re-examined and investigated using EMI test receiver. The detector function was set to CISPR quasi-peak mode average mode and the bandwidth of the receiver was set to 120 kHz or 1 MHz depending on the frequency or type of signal.

The EUT, support equipment and interconnecting cables were reconfigured to the setup producing the maximum emission for the frequency and were placed on top of a 0.8 m high non-metallic 1.0 m × 1.5 m table.

The turntable containing the test sample was rotated; the antenna height was varied 1 to 4 meter and stopped at the azimuth or height producing the maximum emission.

Each EME reported was calibrated using the R/S signal generator

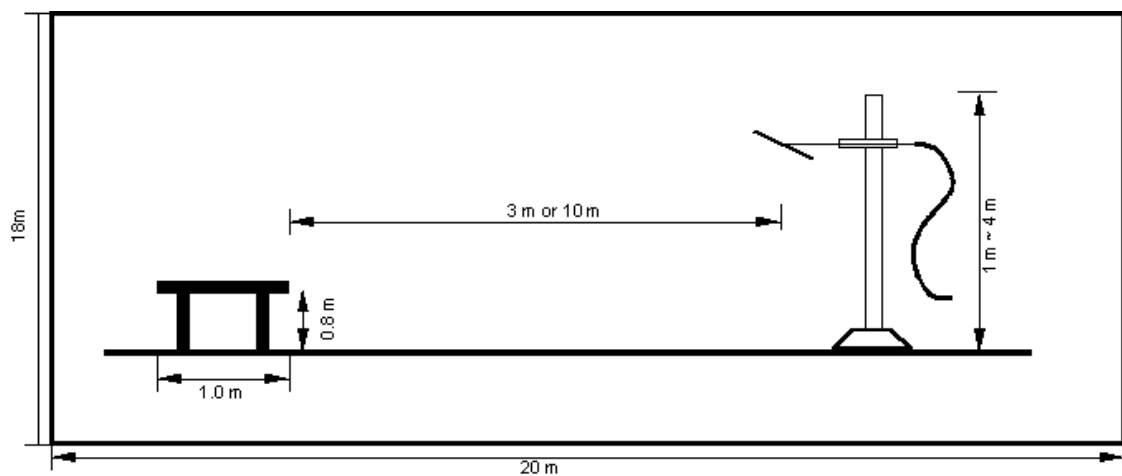


Fig 3. Dimensions of Open Site Test Area



5. Conducted Emission

5.1 Operating Environment

Temperature : 24 °C
Relative Humidity : 49 % R.H.

5.2 Test Set-up

The conducted emission measurements were performed in the shielded room.

The EUT was placed on wooden table, 0.8 m heights above the floor, 0.4 m from the reference ground plane (GRP) wall and 0.8 m from AMN.

AMN is bonded on horizontal reference ground plane.

The ground plane, which was electrically bonded to the shield room, ground system and all power lines entering the shield room, were filtered.

5.3 Measurement Uncertainty

The measurement uncertainty was calculated in accordance with ISO "Guide to the expression of uncertainty in measurement."

The measurement uncertainty was given with a confidence of 95 %.

Test Items	Uncertainty	Remark
Conducted emission (9 kHz ~ 150 kHz)	± 2.97 dB	Confidence levels of 95 % (k=2)
Conducted emission (150 kHz ~ 30 MHz)	± 4.05 dB	Confidence levels of 95 % (k=2)



5.4 Limit

RFI Conducted	FCC Limit(dB) Class B	
Freq. Range	Quasi-Peak	Average
150 kHz ~ 0.5 MHz	66 ~ 56*	56 ~ 46*
0.5 MHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50
*Limits decreases linearly with the logarithm of frequency.		

5.5 Test Equipment used

Model Name	Manufacturer	Description	Serial Number	Due to Calibration
■ - ESCS30	Rohde & Schwarz	EMI test receiver	839809/003	12. 13. 2009
■ - ESH3-Z5	Rohde & Schwarz	LISN	838979/020	12. 12. 2009
■ - ESH2-Z5	Rohde & Schwarz	LISN	829991/009	12. 12. 2009
□ - ISN T8	TESEQ. GmbH	ISN	24568	10. 16. 2009

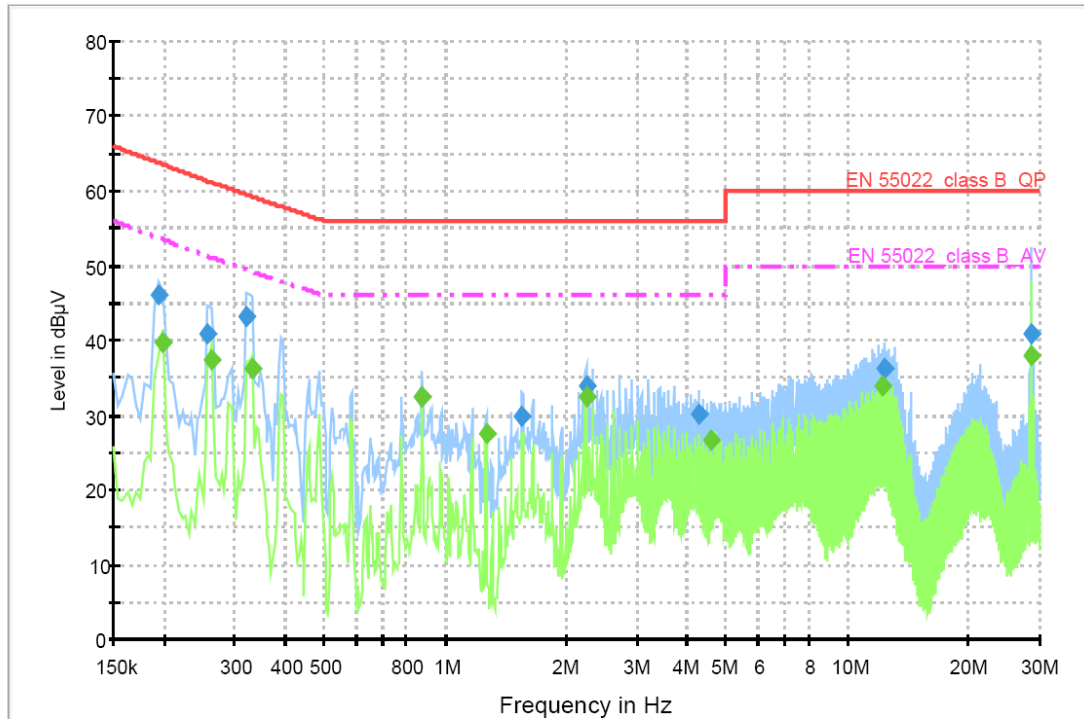
5.6 Test data for Conducted Emission

-. Test Date : October 6, 2009
-. Resolution Bandwidth : 9 kHz
-. Frequency Range : 0.15 MHz ~ 30 MHz



◆ Test resolution: 1 920 * 1 080 / 60 Hz (RGB: Analog mode)

Voltage with 4-Line-LISN_L1



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.194000	46.2	1000.000	9.000	GND	L1	9.9	17.5	63.7	
0.258000	40.8	1000.000	9.000	GND	L1	10.0	20.5	61.3	
0.322000	43.1	1000.000	9.000	GND	L1	10.0	16.4	59.5	
0.878000	32.6	1000.000	9.000	GND	L1	10.0	23.4	56.0	
1.554000	29.9	1000.000	9.000	GND	L1	10.1	26.1	56.0	
2.238000	33.9	1000.000	9.000	GND	L1	10.1	22.1	56.0	
4.282000	30.0	1000.000	9.000	GND	L1	10.2	26.0	56.0	
12.306000	36.3	1000.000	9.000	GND	L1	10.5	23.7	60.0	
28.666000	40.8	1000.000	9.000	GND	L1	11.1	19.2	60.0	

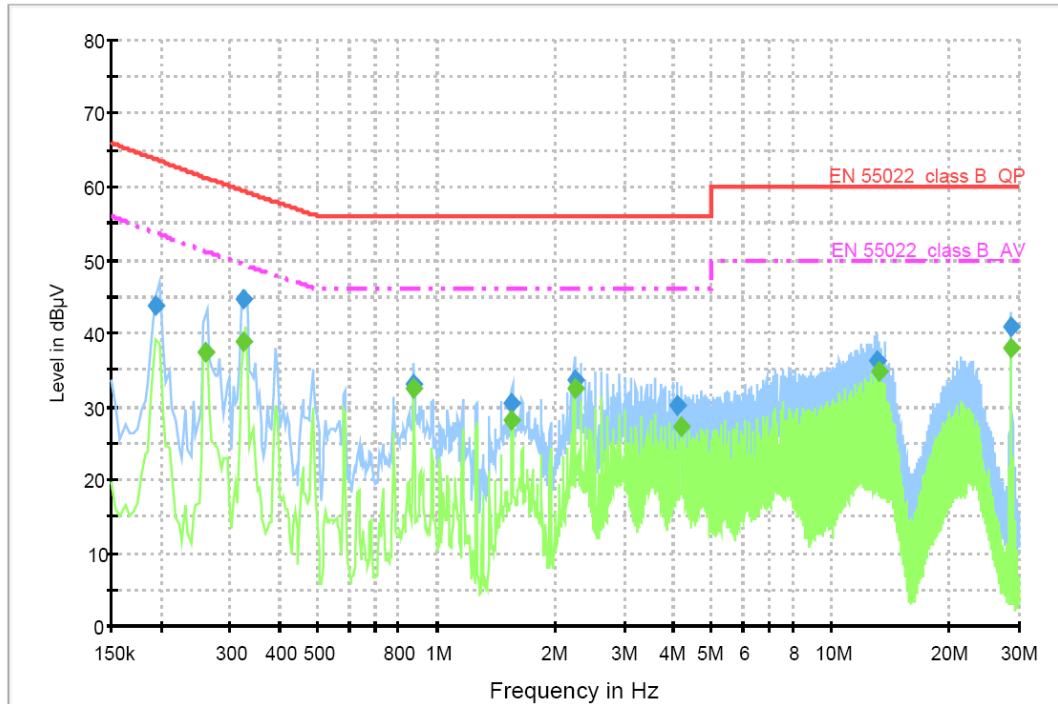
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.198000	39.7	1000.000	9.000	GND	L1	9.9	13.8	53.5	
0.262000	37.2	1000.000	9.000	GND	L1	10.0	13.9	51.1	
0.330000	36.2	1000.000	9.000	GND	L1	10.0	13.0	49.2	
0.874000	32.3	1000.000	9.000	GND	L1	10.0	13.7	46.0	
1.266000	27.5	1000.000	9.000	GND	L1	10.0	18.5	46.0	
2.238000	32.5	1000.000	9.000	GND	L1	10.1	13.5	46.0	
4.570000	26.7	1000.000	9.000	GND	L1	10.2	19.3	46.0	
12.206000	34.0	1000.000	9.000	GND	L1	10.4	16.0	50.0	
28.666000	38.0	1000.000	9.000	GND	L1	11.1	12.0	50.0	

< Fig 4. Conducted emission result (Live line)>



Voltage with 4-Line-LISN_N



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.194000	43.9	1000.000	9.000	GND	N	9.9	19.8	63.7	
0.324000	44.6	1000.000	9.000	GND	N	10.0	14.8	59.4	
0.876000	33.2	1000.000	9.000	GND	N	10.0	22.8	56.0	
1.556000	30.3	1000.000	9.000	GND	N	10.1	25.7	56.0	
2.236000	33.7	1000.000	9.000	GND	N	10.1	22.3	56.0	
4.088000	30.1	1000.000	9.000	GND	N	10.2	25.9	56.0	
13.084000	36.3	1000.000	9.000	GND	N	10.5	23.7	60.0	
28.664000	41.0	1000.000	9.000	GND	N	10.8	19.0	60.0	

Final Measurement Detector 2

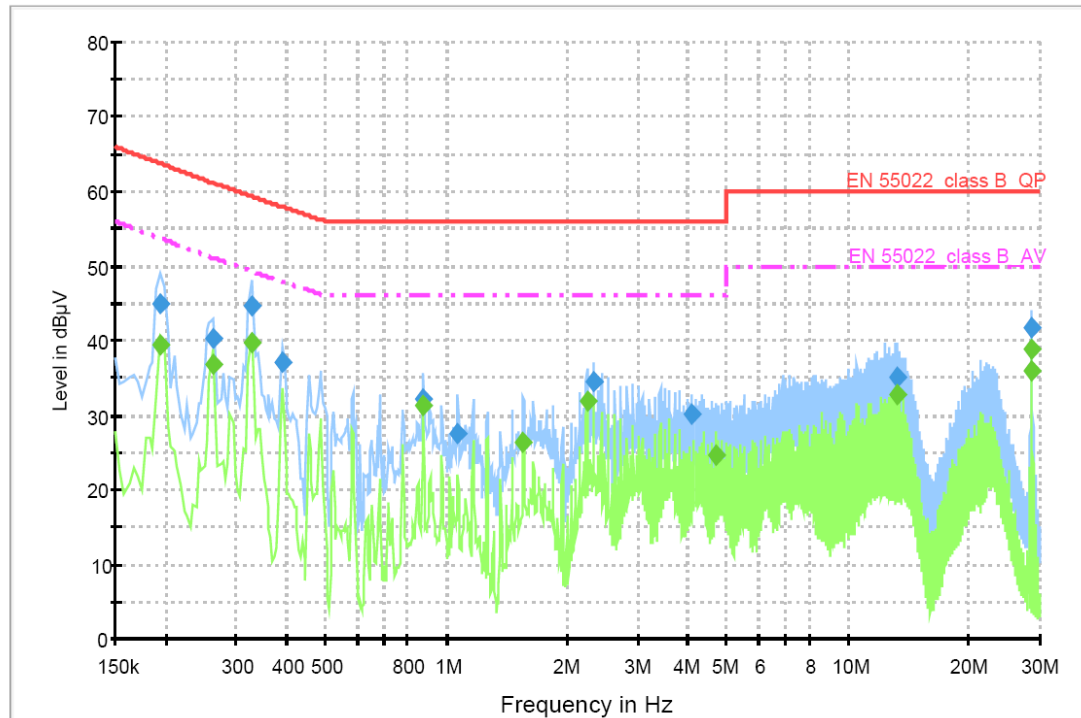
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.260000	37.3	1000.000	9.000	GND	N	10.0	13.9	51.2	
0.324000	38.8	1000.000	9.000	GND	N	10.0	10.6	49.4	
0.876000	32.6	1000.000	9.000	GND	N	10.0	13.4	46.0	
1.556000	28.0	1000.000	9.000	GND	N	10.1	18.0	46.0	
2.236000	32.4	1000.000	9.000	GND	N	10.1	13.6	46.0	
4.184000	27.2	1000.000	9.000	GND	N	10.2	18.8	46.0	
13.280000	34.7	1000.000	9.000	GND	N	10.5	15.3	50.0	
28.664000	38.0	1000.000	9.000	GND	N	10.8	12.0	50.0	

< Fig 5. Conducted emission result (Neutral line)>



◆ Test resolution: 1 920 * 1 080 / 60 Hz (HDMI/DVI: Digital mode)

Voltage with 4-Line-LISN_L1



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.194000	45.0	1000.000	9.000	GND	L1	9.9	18.7	63.7	
0.262000	40.4	1000.000	9.000	GND	L1	10.0	20.8	61.2	
0.326000	44.8	1000.000	9.000	GND	L1	10.0	14.6	59.4	
0.390000	37.2	1000.000	9.000	GND	L1	10.0	20.7	57.9	
0.878000	32.2	1000.000	9.000	GND	L1	10.0	23.8	56.0	
1.070000	27.4	1000.000	9.000	GND	L1	10.0	28.6	56.0	
2.334000	34.5	1000.000	9.000	GND	L1	10.1	21.5	56.0	
4.086000	30.3	1000.000	9.000	GND	L1	10.2	25.7	56.0	
13.282000	35.2	1000.000	9.000	GND	L1	10.5	24.8	60.0	
28.666000	41.9	1000.000	9.000	GND	L1	11.1	18.1	60.0	

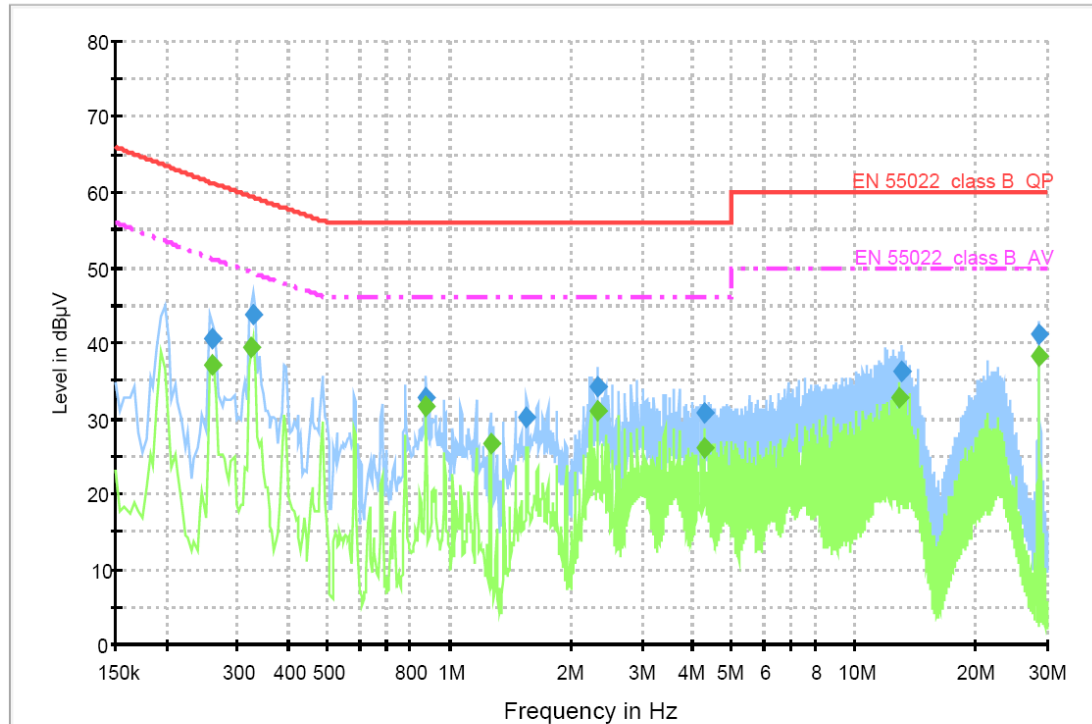
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.194000	39.4	1000.000	9.000	GND	L1	9.9	14.3	53.7	
0.262000	36.7	1000.000	9.000	GND	L1	10.0	14.4	51.1	
0.326000	39.6	1000.000	9.000	GND	L1	10.0	9.7	49.3	
0.874000	31.2	1000.000	9.000	GND	L1	10.0	14.8	46.0	
1.554000	26.3	1000.000	9.000	GND	L1	10.1	19.7	46.0	
2.238000	31.8	1000.000	9.000	GND	L1	10.1	14.2	46.0	
4.670000	24.7	1000.000	9.000	GND	L1	10.2	21.3	46.0	
13.278000	32.8	1000.000	9.000	GND	L1	10.5	17.2	50.0	
28.666000	39.0	1000.000	9.000	GND	L1	11.1	11.0	50.0	
28.734000	35.9	1000.000	9.000	GND	L1	11.1	14.1	50.0	

< Fig 6. Conducted emission result (Live line)>



Voltage with 4-Line-LISN_N



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.260000	40.5	1000.000	9.000	GND	N	10.0	20.7	61.2	
0.328000	43.8	1000.000	9.000	GND	N	10.0	15.5	59.3	
0.876000	32.8	1000.000	9.000	GND	N	10.0	23.2	56.0	
1.556000	30.2	1000.000	9.000	GND	N	10.1	25.8	56.0	
2.336000	34.1	1000.000	9.000	GND	N	10.1	21.9	56.0	
4.280000	30.7	1000.000	9.000	GND	N	10.2	25.3	56.0	
13.084000	36.2	1000.000	9.000	GND	N	10.5	23.8	60.0	
28.664000	41.1	1000.000	9.000	GND	N	10.8	18.9	60.0	

Final Measurement Detector 2

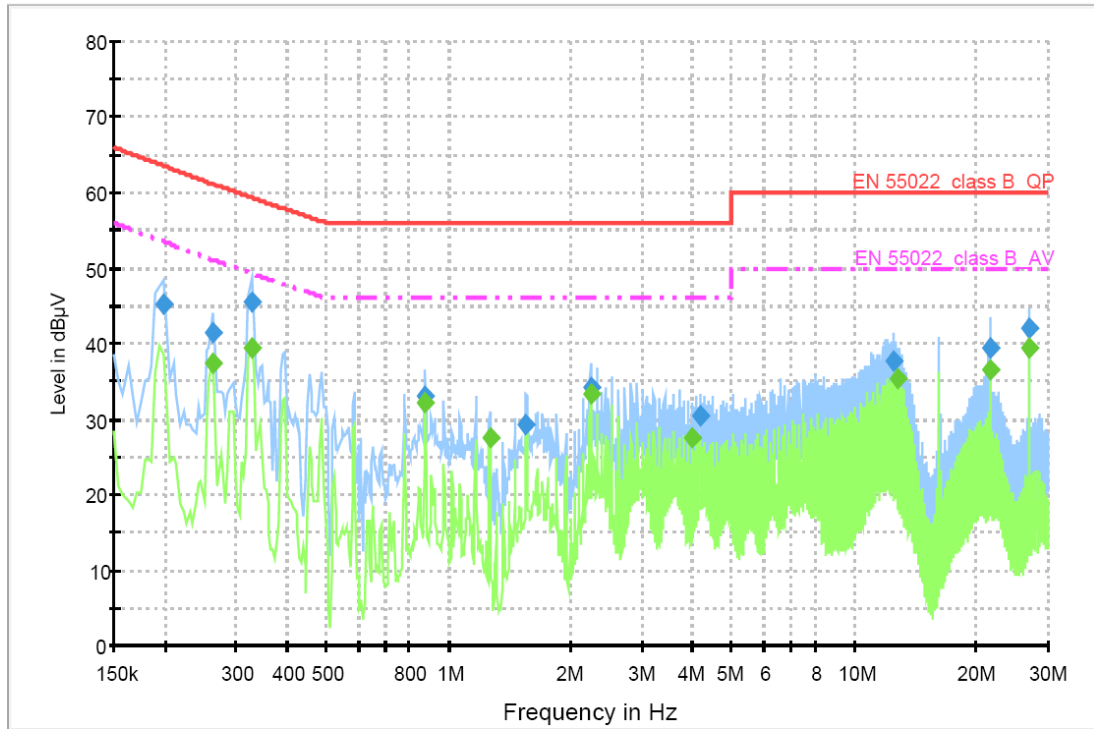
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.260000	37.1	1000.000	9.000	GND	N	10.0	14.1	51.2	
0.324000	39.5	1000.000	9.000	GND	N	10.0	9.9	49.4	
0.876000	31.5	1000.000	9.000	GND	N	10.0	14.5	46.0	
1.264000	26.6	1000.000	9.000	GND	N	10.0	19.4	46.0	
2.336000	30.9	1000.000	9.000	GND	N	10.1	15.1	46.0	
4.280000	26.0	1000.000	9.000	GND	N	10.2	20.0	46.0	
12.984000	32.7	1000.000	9.000	GND	N	10.5	17.3	50.0	
28.664000	38.1	1000.000	9.000	GND	N	10.8	11.9	50.0	

< Fig 7. Conducted emission result (Neutral line)>



◆ Test resolution: 1 024 * 768 / 60 Hz (RGB: Analog mode)

Voltage with 4-Line-LISN_L1



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.198000	45.2	1000.000	9.000	GND	L1	9.9	18.3	63.5	
0.262000	41.4	1000.000	9.000	GND	L1	10.0	19.8	61.2	
0.326000	45.4	1000.000	9.000	GND	L1	10.0	14.0	59.4	
0.874000	32.9	1000.000	9.000	GND	L1	10.0	23.1	56.0	
1.554000	29.4	1000.000	9.000	GND	L1	10.1	26.6	56.0	
2.238000	34.2	1000.000	9.000	GND	L1	10.1	21.8	56.0	
4.186000	30.4	1000.000	9.000	GND	L1	10.2	25.6	56.0	
12.506000	37.6	1000.000	9.000	GND	L1	10.5	22.4	60.0	
21.598000	39.4	1000.000	9.000	GND	L1	10.9	20.6	60.0	
27.002000	42.0	1000.000	9.000	GND	L1	11.0	18.0	60.0	

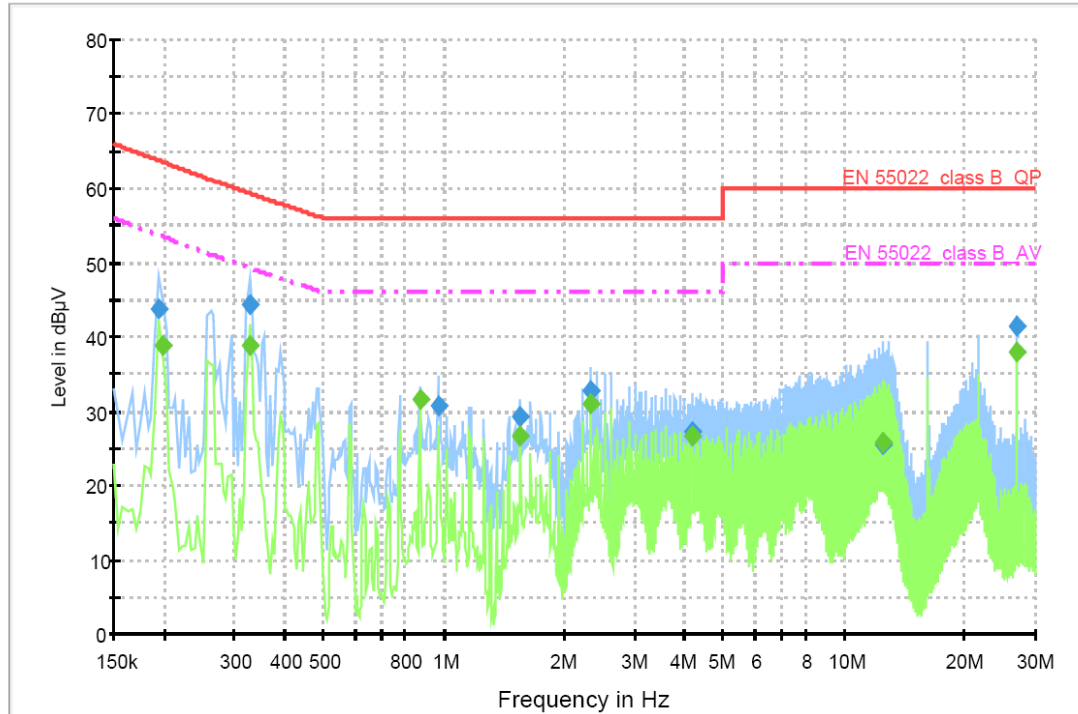
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.262000	37.3	1000.000	9.000	GND	L1	10.0	13.8	51.1	
0.326000	39.4	1000.000	9.000	GND	L1	10.0	9.9	49.3	
0.878000	32.1	1000.000	9.000	GND	L1	10.0	13.9	46.0	
1.266000	27.6	1000.000	9.000	GND	L1	10.0	18.4	46.0	
2.238000	33.4	1000.000	9.000	GND	L1	10.1	12.6	46.0	
3.990000	27.4	1000.000	9.000	GND	L1	10.2	18.6	46.0	
12.798000	35.3	1000.000	9.000	GND	L1	10.5	14.7	50.0	
21.602000	36.6	1000.000	9.000	GND	L1	10.9	13.4	50.0	
26.998000	39.4	1000.000	9.000	GND	L1	11.0	10.6	50.0	

< Fig 8. Conducted emission result (Live line)>



Voltage with 4-Line-LISN_N



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.194000	43.8	1000.000	9.000	GND	N	9.9	19.9	63.7	
0.328000	44.5	1000.000	9.000	GND	N	10.0	14.8	59.3	
0.972000	30.6	1000.000	9.000	GND	N	10.0	25.4	56.0	
1.552000	29.2	1000.000	9.000	GND	N	10.1	26.8	56.0	
2.328000	32.8	1000.000	9.000	GND	N	10.1	23.2	56.0	
4.172000	27.1	1000.000	9.000	GND	N	10.2	28.9	56.0	
12.564000	25.4	1000.000	9.000	GND	N	10.4	34.6	60.0	
27.000000	41.4	1000.000	9.000	GND	N	10.8	18.6	60.0	

Final Measurement Detector 2

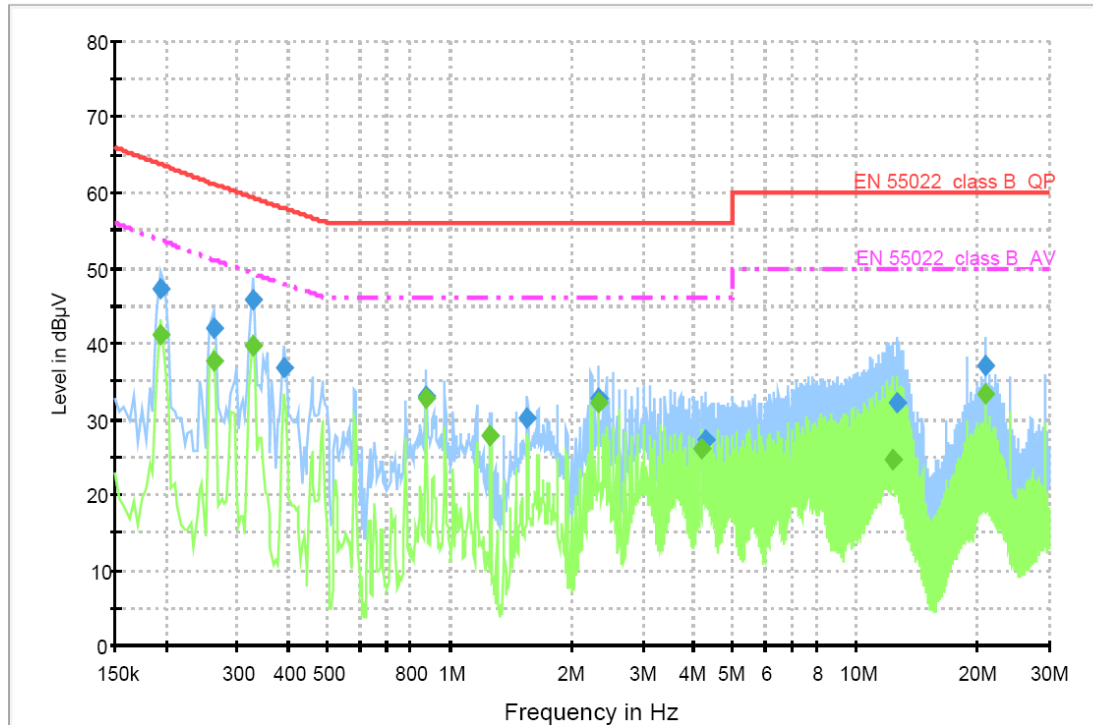
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.198000	38.9	1000.000	9.000	GND	N	9.9	14.6	53.5	
0.328000	38.7	1000.000	9.000	GND	N	10.0	10.6	49.3	
0.872000	31.6	1000.000	9.000	GND	N	10.0	14.4	46.0	
1.552000	26.8	1000.000	9.000	GND	N	10.1	19.2	46.0	
2.328000	31.1	1000.000	9.000	GND	N	10.1	14.9	46.0	
4.176000	26.8	1000.000	9.000	GND	N	10.2	19.2	46.0	
12.572000	25.9	1000.000	9.000	GND	N	10.4	24.1	50.0	
27.000000	37.9	1000.000	9.000	GND	N	10.8	12.1	50.0	

< Fig 9. Conducted emission result (Neutral line)>



◆ Test resolution: 640 * 480 / 60 Hz (RGB: Analog mode)

Voltage with 4-Line-LISN_L1



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.194000	47.2	1000.000	9.000	GND	L1	9.9	16.5	63.7	
0.262000	42.0	1000.000	9.000	GND	L1	10.0	19.2	61.2	
0.326000	45.8	1000.000	9.000	GND	L1	10.0	13.6	59.4	
0.390000	36.8	1000.000	9.000	GND	L1	10.0	21.1	57.9	
0.874000	33.1	1000.000	9.000	GND	L1	10.0	22.9	56.0	
1.554000	30.1	1000.000	9.000	GND	L1	10.1	25.9	56.0	
2.330000	32.7	1000.000	9.000	GND	L1	10.1	23.3	56.0	
4.274000	27.3	1000.000	9.000	GND	L1	10.2	28.7	56.0	
12.586000	32.2	1000.000	9.000	GND	L1	10.5	27.8	60.0	
20.902000	37.2	1000.000	9.000	GND	L1	10.9	22.8	60.0	

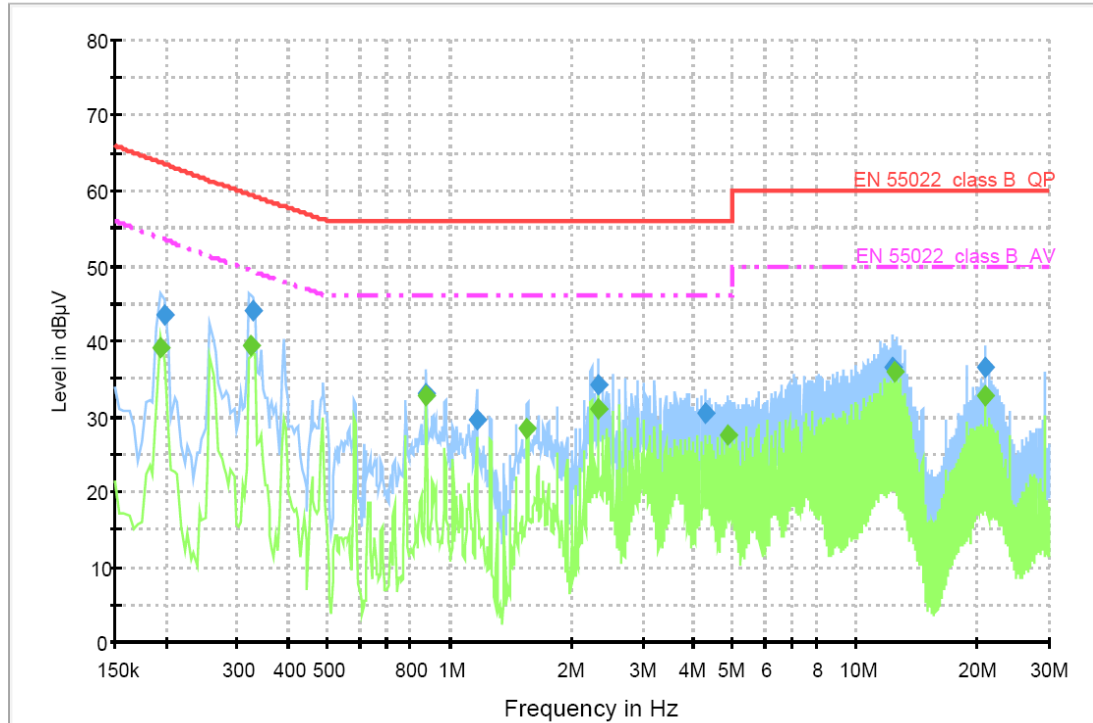
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.194000	41.1	1000.000	9.000	GND	L1	9.9	12.6	53.7	
0.262000	37.7	1000.000	9.000	GND	L1	10.0	13.4	51.1	
0.326000	39.6	1000.000	9.000	GND	L1	10.0	9.7	49.3	
0.874000	32.7	1000.000	9.000	GND	L1	10.0	13.3	46.0	
1.262000	27.8	1000.000	9.000	GND	L1	10.0	18.2	46.0	
2.334000	32.2	1000.000	9.000	GND	L1	10.1	13.8	46.0	
4.178000	26.1	1000.000	9.000	GND	L1	10.2	19.9	46.0	
12.294000	24.7	1000.000	9.000	GND	L1	10.4	25.3	50.0	
20.902000	33.4	1000.000	9.000	GND	L1	10.9	16.6	50.0	

< Fig 10. Conducted emission result (Live line)>



Voltage with 4-Line-LISN_N



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.198000	43.4	1000.000	9.000	GND	N	9.9	20.1	63.5	
0.328000	44.2	1000.000	9.000	GND	N	10.0	15.1	59.3	
0.876000	33.0	1000.000	9.000	GND	N	10.0	23.0	56.0	
1.168000	29.6	1000.000	9.000	GND	N	10.0	26.4	56.0	
2.336000	34.2	1000.000	9.000	GND	N	10.1	21.8	56.0	
4.280000	30.3	1000.000	9.000	GND	N	10.2	25.7	56.0	
12.308000	36.6	1000.000	9.000	GND	N	10.4	23.4	60.0	
20.904000	36.4	1000.000	9.000	GND	N	10.8	23.6	60.0	

Final Measurement Detector 2

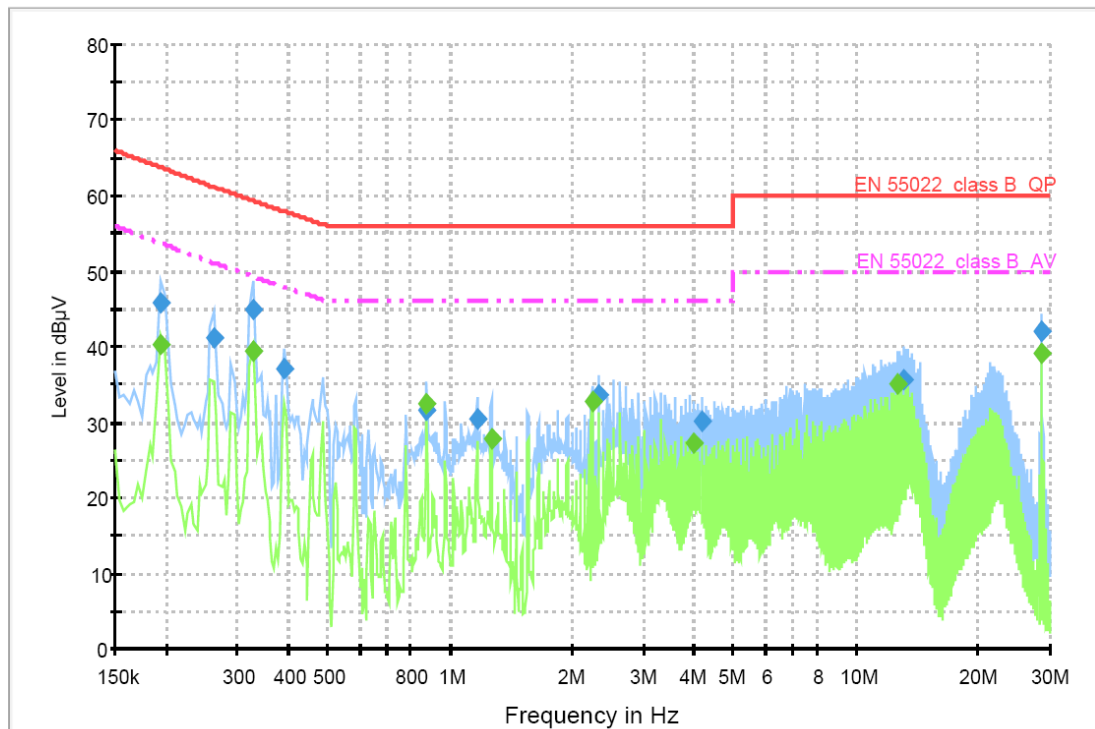
Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.194000	39.0	1000.000	9.000	GND	N	9.9	14.7	53.7	
0.324000	39.3	1000.000	9.000	GND	N	10.0	10.1	49.4	
0.876000	32.7	1000.000	9.000	GND	N	10.0	13.3	46.0	
1.556000	28.4	1000.000	9.000	GND	N	10.1	17.6	46.0	
2.336000	31.1	1000.000	9.000	GND	N	10.1	14.9	46.0	
4.864000	27.4	1000.000	9.000	GND	N	10.2	18.6	46.0	
12.504000	35.9	1000.000	9.000	GND	N	10.4	14.1	50.0	
20.904000	32.7	1000.000	9.000	GND	N	10.8	17.3	50.0	

< Fig 11. Conducted emission result (Neutral line)>



◆ Operating condition: USB play mode

Voltage with 4-Line-LISN_L1



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.194000	45.8	1000.000	9.000	GND	L1	9.9	17.9	63.7	
0.262000	41.1	1000.000	9.000	GND	L1	10.0	20.1	61.2	
0.326000	45.1	1000.000	9.000	GND	L1	10.0	14.3	59.4	
0.390000	37.1	1000.000	9.000	GND	L1	10.0	20.8	57.9	
0.878000	31.6	1000.000	9.000	GND	L1	10.0	24.4	56.0	
1.166000	30.5	1000.000	9.000	GND	L1	10.0	25.5	56.0	
2.334000	33.7	1000.000	9.000	GND	L1	10.1	22.3	56.0	
4.182000	30.2	1000.000	9.000	GND	L1	10.2	25.8	56.0	
13.082000	35.8	1000.000	9.000	GND	L1	10.5	24.2	60.0	
28.666000	42.1	1000.000	9.000	GND	L1	11.1	17.9	60.0	

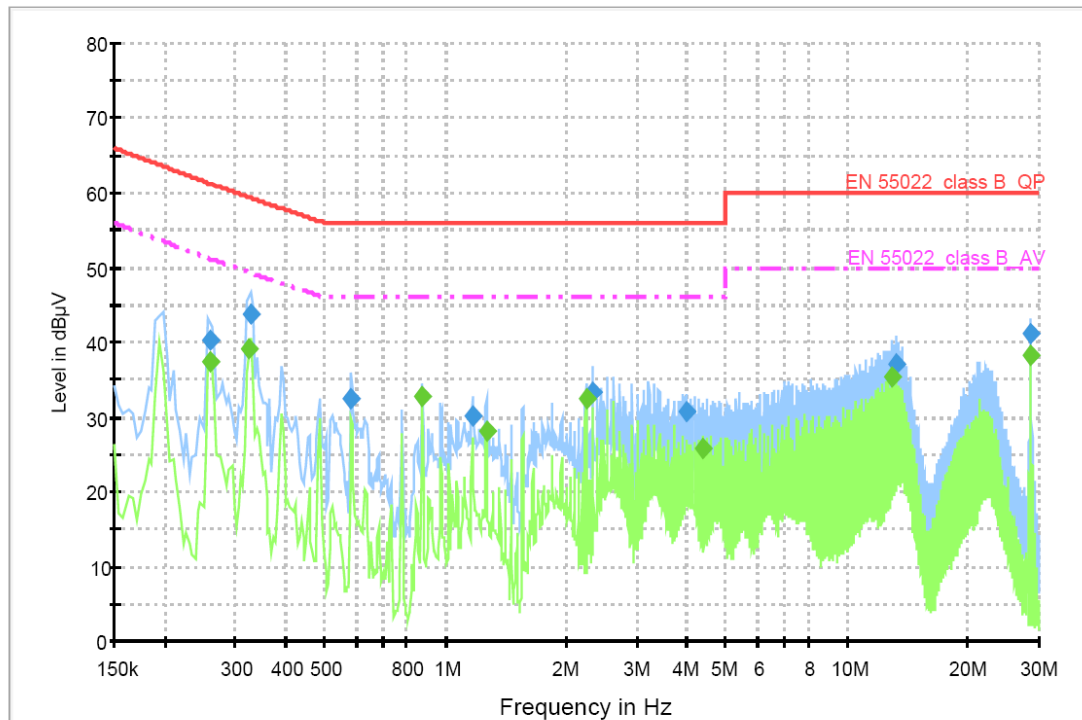
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.194000	40.2	1000.000	9.000	GND	L1	9.9	13.5	53.7	
0.326000	39.3	1000.000	9.000	GND	L1	10.0	10.0	49.3	
0.874000	32.4	1000.000	9.000	GND	L1	10.0	13.6	46.0	
1.266000	27.9	1000.000	9.000	GND	L1	10.0	18.1	46.0	
2.238000	32.6	1000.000	9.000	GND	L1	10.1	13.4	46.0	
3.990000	27.3	1000.000	9.000	GND	L1	10.2	18.7	46.0	
12.598000	34.9	1000.000	9.000	GND	L1	10.5	15.1	50.0	
28.666000	39.3	1000.000	9.000	GND	L1	11.1	10.7	50.0	

< Fig 12. Conducted emission result (Live line)>



Voltage with 4-Line-LISN_N



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.260000	40.4	1000.000	9.000	GND	N	10.0	20.8	61.2	
0.328000	43.9	1000.000	9.000	GND	N	10.0	15.4	59.3	
0.584000	32.4	1000.000	9.000	GND	N	10.0	23.6	56.0	
1.168000	30.2	1000.000	9.000	GND	N	10.0	25.8	56.0	
2.336000	33.5	1000.000	9.000	GND	N	10.1	22.5	56.0	
3.988000	30.7	1000.000	9.000	GND	N	10.2	25.3	56.0	
13.280000	37.2	1000.000	9.000	GND	N	10.5	22.8	60.0	
28.664000	41.1	1000.000	9.000	GND	N	10.8	18.9	60.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.260000	37.3	1000.000	9.000	GND	N	10.0	13.9	51.2	
0.324000	39.2	1000.000	9.000	GND	N	10.0	10.2	49.4	
0.876000	32.7	1000.000	9.000	GND	N	10.0	13.3	46.0	
1.264000	28.0	1000.000	9.000	GND	N	10.0	18.0	46.0	
2.236000	32.4	1000.000	9.000	GND	N	10.1	13.6	46.0	
4.380000	25.7	1000.000	9.000	GND	N	10.2	20.3	46.0	
12.892000	35.5	1000.000	9.000	GND	N	10.5	14.5	50.0	
28.664000	38.1	1000.000	9.000	GND	N	10.8	11.9	50.0	

< Fig 13. Conducted emission result (Neutral line)>



6. Radiated Emission

6.1 Operating Environment

Temperature : 22 °C
Relative Humidity : 46 % R.H.

6.2 Test Set-up

A preliminary scan with peak mode was performed in the semi anechoic chamber and found frequency for open area test site.

The formal radiated emission was measured at 3 m / 10 m distance open area test site.

The EUT was placed on a non-conductive turntable approximately 0.8 m above the ground plane.

The turntable with EUT was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels.

This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

6.3 Measurement Uncertainty

The measurement uncertainty was calculated in accordance with ISO "Guide to the expression of uncertainty in measurement".

The measurement uncertainty was given with a confidence of 95 %.

Test Items	Uncertainty	Remark
Radiated emission (30 MHz ~ 300 MHz, 3 m, Vertical)	± 3.54 dB	Confidence levels of 95 % (k=2)
Radiated emission (30 MHz ~ 300 MHz, 3 m, Horizontal)	± 3.49 dB	Confidence levels of 95 % (k=2)
Radiated emission (300 MHz ~ 1 000 MHz, 3 m, Vertical)	± 3.85 dB	Confidence levels of 95 % (k=2)
Radiated emission (300 MHz ~ 1 000 MHz, 3 m, Horizontal)	± 3.76 dB	Confidence levels of 95 % (k=2)
Radiated emission (30 MHz ~ 300 MHz, 10 m, Vertical)	± 3.21 dB	Confidence levels of 95 % (k=2)
Radiated emission (30 MHz ~ 300 MHz, 10 m, Horizontal)	± 3.32 dB	Confidence levels of 95 % (k=2)
Radiated emission (300 MHz ~ 1 000 MHz, 10 m, Vertical)	± 3.77 dB	Confidence levels of 95 % (k=2)
Radiated emission (300 MHz ~ 1 000 MHz, 10 m, Horizontal)	± 3.84 dB	Confidence levels of 95 % (k=2)



6.4 Limit

Frequency (MHz)	FCC Limit @ 3 m. dB μ V/m	CISPR Limit @ 10 m. dB μ V/m
30 ~ 88	40.0	30.0
88 ~ 216	43.5	30.0
216 ~ 230	46.0	30.0
230 ~ 960	46.0	37.0
960 ~ 1 000	54.0	37.0
> 1 000	54.0	No Specified limit

6.5 Test Equipment used

Model Name	Manufacturer	Description	Serial Number	Due to Calibration
■ - ESI	Rohde & Schwarz	EMI test receiver	830482/010	12. 14. 2009
■ - VULB9160	Schwarzbeck	Broadband Test Antenna	3193	12. 11. 2009
■ - BBHA9120D	Schwarzbeck	Horn ANT	207	12. 26. 2009
■ - MCU066	maturo GmbH	MCU066	1390306	N/A
■ - TT2.5SI	maturo GmbH	Turntable	1390307	N/A
■ - AM 4.0	maturo GmbH	Antenna Mast	1390308	N/A
■ - AFS 44 00101800- 25-10P-44	MITEQ	Preamplifier	1258943	11. 11. 2009

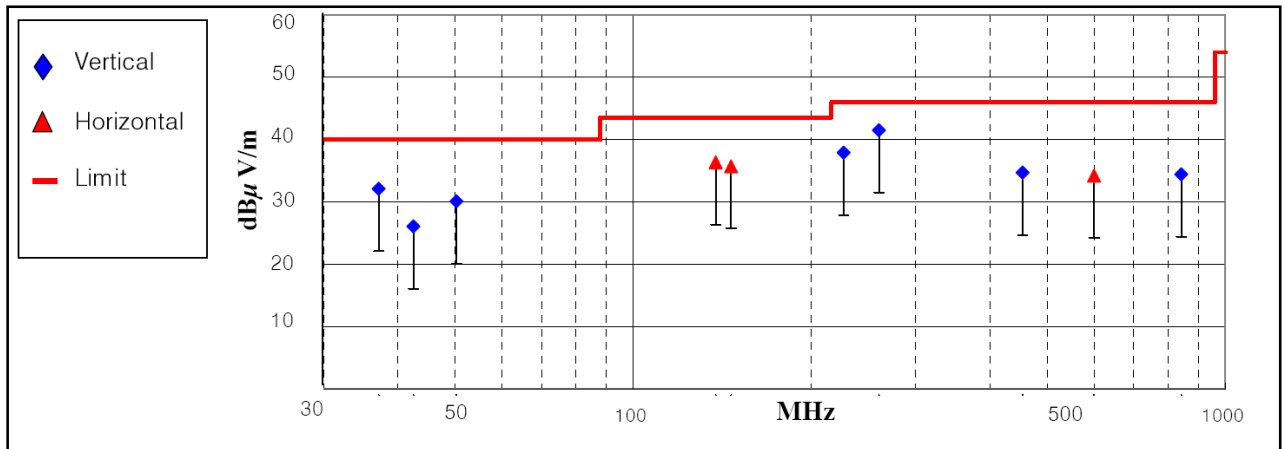


6.6 Test data for Radiated Emission

- Test Date : October 5, 2009
- Resolution Bandwidth : 120 kHz/ 1 MHz
- Frequency Range : 30 MHz ~ 2 000 MHz
- Measurement Distance : 3 m

- ◆ Operating Condition: 1 920 * 1 080 / 60 Hz (RGB: Analog mode)
Detector mode: Quasi- peak detector mode

Frequency (MHz)	Measurement Level				Limit (dBμ V/m)	Margin (dB)	Positioning System		
	Reading	Antenna	Cable	Test Result			Pol.	Height	Angle
	Value(dBμ V)	Factor(dB/m)	Loss(dB)	(dBμ V/m)			(H/V)	(cm)	(°)
37.15	19.81	11.14	1.15	32.10	40.00	7.90	V	100	297
42.54	13.06	11.77	1.25	26.08	40.00	13.92	V	100	102
50.30	16.40	12.32	1.37	30.09	40.00	9.91	V	100	65
137.83	22.01	12.48	1.84	36.33	43.50	7.17	H	200	219
146.34	21.01	12.64	2.04	35.69	43.50	7.81	H	200	206
226.74	24.98	10.32	2.60	37.90	46.00	8.10	V	100	168
259.85	27.22	11.48	2.81	41.51	46.00	4.49	V	195	193
454.65	14.82	16.35	3.52	34.69	46.00	11.31	V	100	180
600.10	10.83	19.23	4.12	34.18	46.00	11.82	H	100	178
842.29	7.12	22.11	5.22	34.45	46.00	11.55	V	106	355



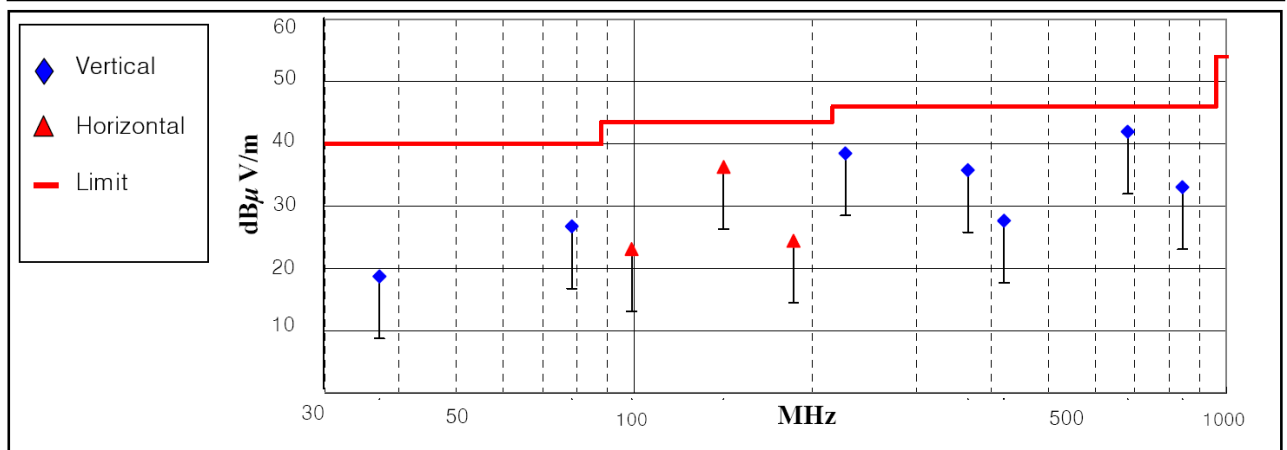
< Fig 14. Radiated emission result (30 MHz ~ 1 000 MHz)>



◆ Operating Condition: 1 920 * 1 080 / 60 Hz (HDMI/DVI: Digital mode)

Detector mode: Quasi- peak detector mode

Frequency (MHz)	Measurement Level				Limit (dBμ V/m)	Margin (dB)	Positioning System		
	Reading	Antenna	Cable	Test Result			Pol.	Height	Angle
	Value(dBμ V)	Factor(dB/m)	Loss(dB)	(dBμ V/m)			(H/V)	(cm)	(°)
37.14	6.42	11.14	1.15	18.71	40.00	21.29	V	100	312
78.44	16.89	8.10	1.75	26.74	40.00	13.26	V	117	91
99.00	12.48	8.92	1.70	23.10	43.50	20.40	H	197	73
141.45	21.76	12.64	1.89	36.29	43.50	7.21	H	210	196
185.69	11.55	10.51	2.37	24.43	43.50	19.07	H	100	219
227.20	25.55	10.34	2.60	38.49	46.00	7.51	V	100	163
365.58	18.47	14.11	3.23	35.81	46.00	10.19	V	105	192
420.78	8.80	15.43	3.43	27.66	46.00	18.34	V	100	180
680.75	17.63	19.77	4.55	41.95	46.00	4.05	V	112	181
841.80	5.75	22.10	5.22	33.07	46.00	12.93	V	124	354

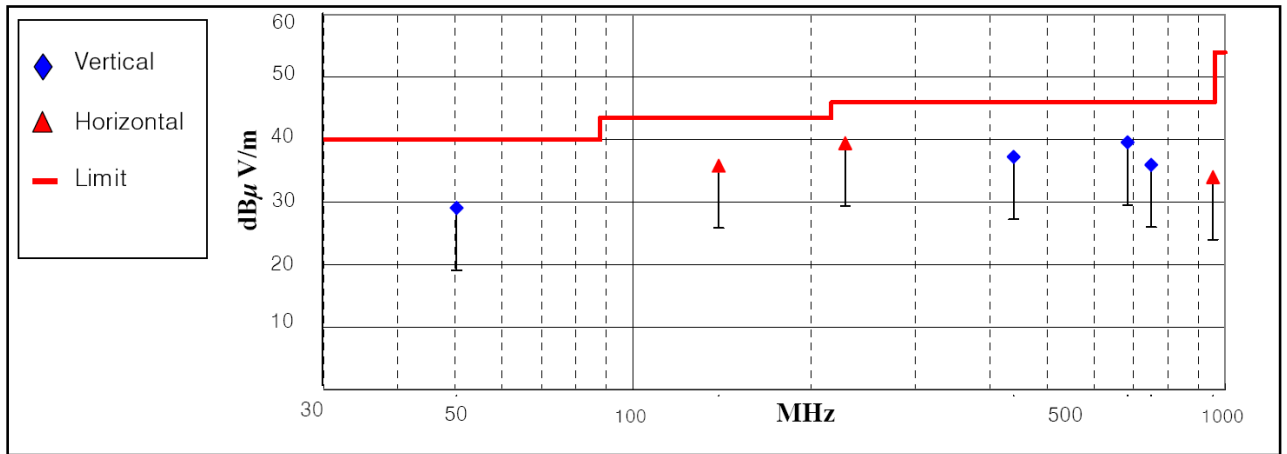


< Fig 15. Radiated emission result (30 MHz ~ 1 000 MHz)>



- ◆ Operating Condition: USB play mode
Detector mode: Quasi- peak detector mode

Frequency (MHz)	Measurement Level				Limit (dBμ V/m)	Margin (dB)	Positioning System		
	Reading	Antenna	Cable	Test Result			Pol.	Height	Angle
	Value(dBμ V)	Factor(dB/m)	Loss(dB)	(dBμ V/m)			(H/V)	(cm)	(°)
50.32	15.40	12.32	1.38	29.10	40.00	10.90	V	100	58
139.43	21.38	12.60	1.85	35.83	43.50	7.67	H	253	197
228.09	26.47	10.37	2.61	39.45	46.00	6.55	H	132	73
439.05	17.82	15.98	3.48	37.28	46.00	8.72	V	186	217
683.80	15.24	19.80	4.57	39.61	46.00	6.39	V	107	241
749.85	9.70	21.44	4.82	35.96	46.00	10.04	V	120	179
953.50	5.13	23.25	5.62	34.00	46.00	12.00	H	106	169

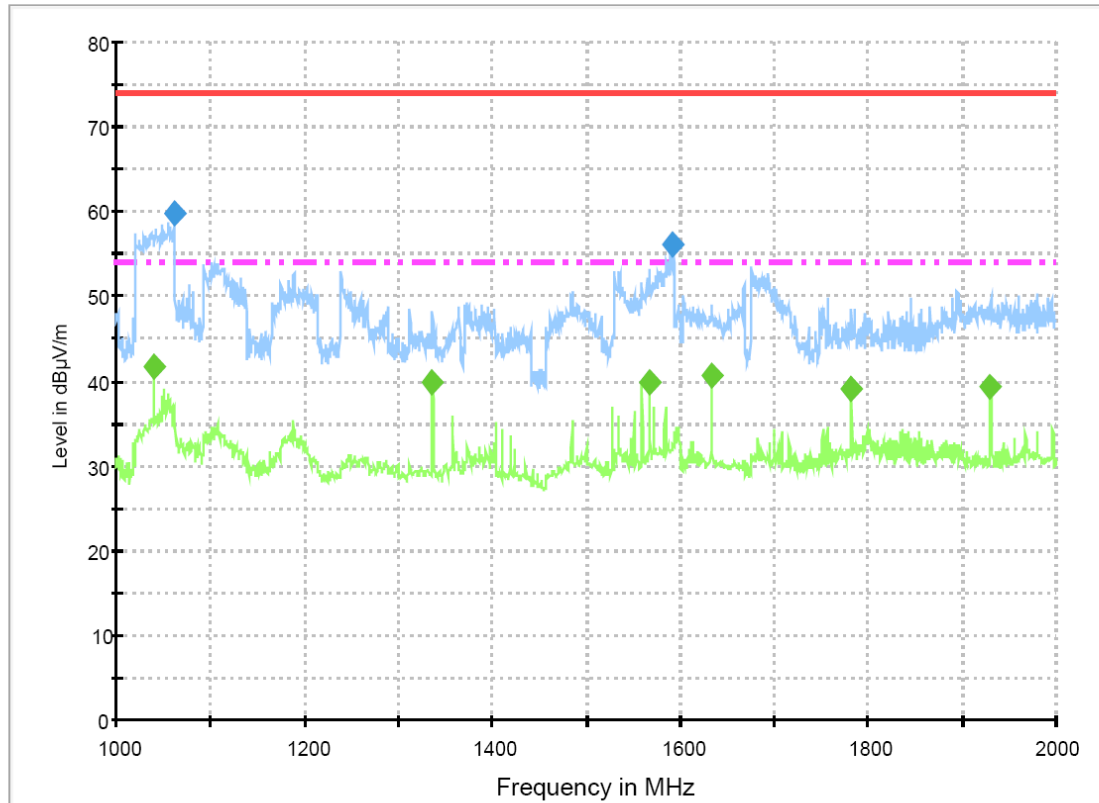


< Fig 16. Radiated emission result (30 MHz ~ 1 000 MHz)>



- ◆ Operating Condition: 1 920 * 1 080 / 60 Hz (RGB: Analog mode)
Detector mode: Peak detector mode / Average detector mode

FCC_ESIB_Preamp_RE with Scans



Final Result 1

Frequency (MHz)	MaxPeak-MaxHold (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
1061.600000	59.7	250.0	V	180.0	-15.6	14.3	74.0	
1592.000000	56.2	100.0	V	180.0	-13.7	17.8	74.0	

Final Result 2

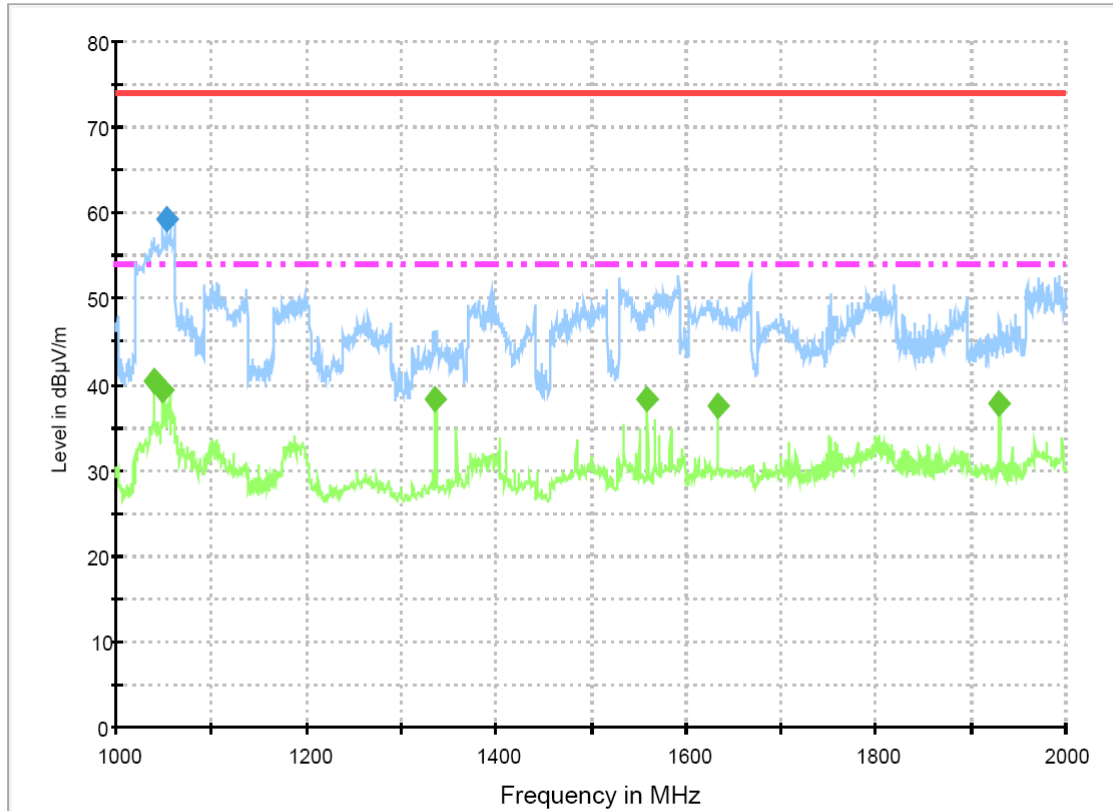
Frequency (MHz)	Average-MaxHold (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
1039.600000	41.8	100.0	V	180.0	-15.7	12.2	54.0	
1336.400000	39.9	100.0	H	180.0	-14.4	14.1	54.0	
1567.600000	39.9	100.0	V	180.0	-13.8	14.1	54.0	
1633.600000	40.6	100.0	H	180.0	-13.6	13.4	54.0	
1782.400000	39.0	150.0	V	180.0	-13.2	15.0	54.0	
1930.400000	39.4	150.0	V	180.0	-12.9	14.6	54.0	

< Fig 17. Radiated emission result (1 000 MHz ~ 2 000 MHz)>



- ◆ Operating Condition: 1 920 * 1 080 / 60 Hz (HDMI/DVI: Digital mode)
Detector mode: Peak detector mode / Average detector mode

FCC_ESIB_Preamplifier with Scans



Final Result 1

Frequency (MHz)	MaxPeak-MaxHold (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
1052.800000	59.2	100.0	V	0.0	-15.7	14.8	74.0	

Final Result 2

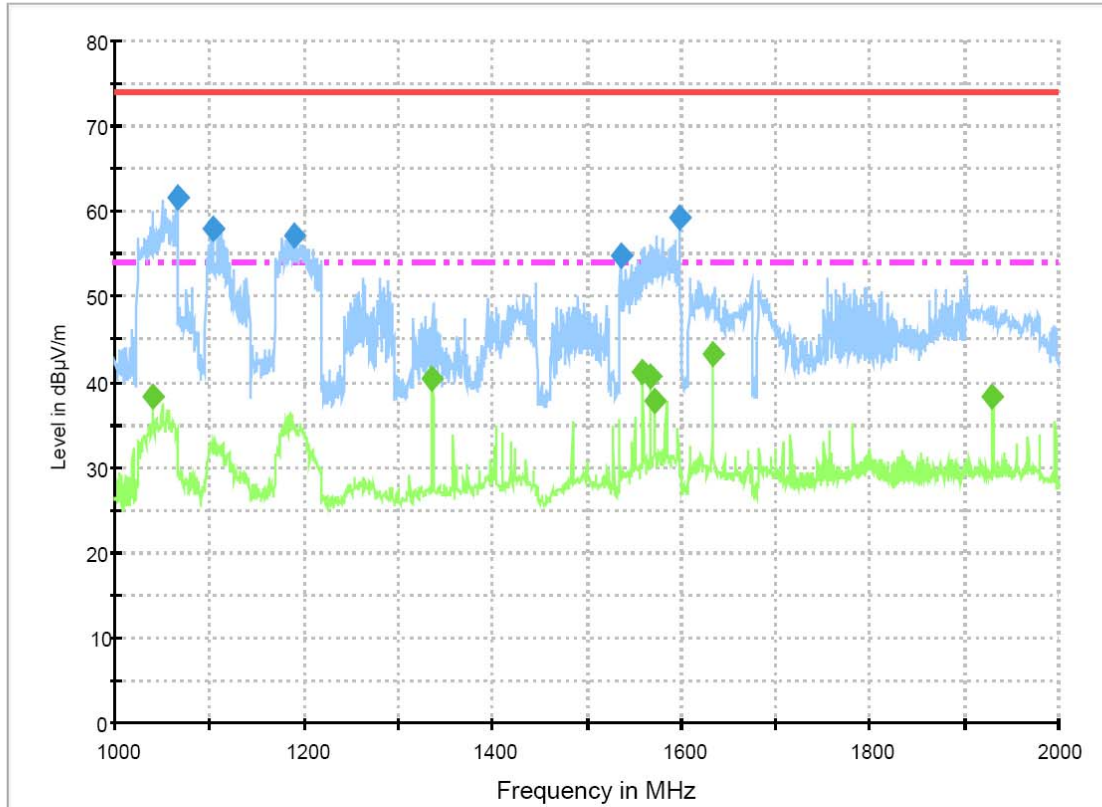
Frequency (MHz)	Average-MaxHold (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
1039.600000	40.4	250.0	V	180.0	-15.7	13.6	54.0	
1049.600000	39.3	100.0	V	180.0	-15.7	14.7	54.0	
1336.400000	38.3	250.0	V	180.0	-14.4	15.7	54.0	
1559.200000	38.2	100.0	V	180.0	-13.9	15.8	54.0	
1633.600000	37.5	100.0	V	180.0	-13.6	16.5	54.0	
1930.400000	37.8	100.0	H	180.0	-12.9	16.2	54.0	

< Fig 18. Radiated emission result (1 000 MHz ~ 2 000 MHz)>



- ◆ Operating Condition: USB play mode
Detector mode: Peak detector mode / Average detector mode

FCC_ESIB_Preamplifier with Scans



Final Result 1

Frequency (MHz)	MaxPeak-MaxHold (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
1065.600000	61.7	100.0	V	180.0	-15.6	12.3	74.0	
1104.400000	58.1	100.0	V	180.0	-15.4	15.9	74.0	
1189.600000	57.2	250.0	V	180.0	-15.2	16.8	74.0	
1535.600000	54.8	200.0	V	180.0	-14.0	19.2	74.0	
1598.400000	59.3	100.0	H	180.0	-13.7	14.7	74.0	

Final Result 2

Frequency (MHz)	Average-MaxHold (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
1039.600000	38.3	250.0	V	270.0	-15.7	15.7	54.0	
1336.400000	40.4	100.0	H	180.0	-14.4	13.6	54.0	
1559.200000	41.2	100.0	V	180.0	-13.9	12.8	54.0	
1567.600000	40.6	100.0	V	180.0	-13.8	13.4	54.0	
1571.600000	37.7	100.0	V	180.0	-13.8	16.3	54.0	
1633.600000	43.2	100.0	V	180.0	-13.6	10.8	54.0	
1930.400000	38.3	100.0	V	180.0	-12.9	15.7	54.0	

< Fig 19. Radiated emission result (1 000 MHz ~ 2 000 MHz)>



7. Sample Calculations

$$\begin{aligned} \text{dB}\mu\text{V} &= 20 \text{ Log}_{10}(\mu\text{V}/\text{m}) \\ \text{dB}\mu\text{V} &= \text{dBm} + 107 \\ \mu\text{V} &= 10^{(\text{dB}\mu\text{V}/20)} \end{aligned}$$

7.1 Example 1 :

■ 20.3 MHz

Class B Limit	= 250 μV = 48 dB μV
Reading	= 39.2 dB μV
$10^{(39.2\text{dB}\mu\text{V}/20)}$	= 91.2 μV
Margin	= 48 dB μV - 39.2 dB μV = 8.8 dB

7.2 Example 2 :

■ 66.7 MHz

Class B Limit	= 100 $\mu\text{V}/\text{m}$ = 40.0 dB $\mu\text{V}/\text{m}$
Reading	= 31.0 dB μV
Antenna Factor + Cable Loss = 5.8 dB	
Total	= 36.8 dB $\mu\text{V}/\text{m}$
Margin	= 40.0 dB $\mu\text{V}/\text{m}$ - 36.8 dB $\mu\text{V}/\text{m}$ = 3.2 dB



8. Recommendation & Conclusion

The data collected shows that the **LG Electronics Inc. LCD TV/Monitor (Model Name: 37LH260H-UA)** was complies with §15.107 and 15.109 of the FCC Rules.