FCC EVALUATION REPORT FOR CERTIFICATION

Applicant : LG Electronics Inc.

19-1, Cheongho-ri, Jinwi-myeon,

Pyeongteak-si, Gyeonggi-do, Korea.

Attn: Mr. Do-Hyung Kim, Chief research engineer

Date of Issue : January 7, 2011

Order Number: GETEC-C1-10-282

Test Report Number: GETEC-E3-10-162

Test Site: Gumi College EMC Center

FCC Registration Number: (100749, 443957)

FCC ID. : BEJ26LK330UB

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	**: 26LK330-UB**
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 vest 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,

Hyoung-Seop Kim, Associate Engineer
GUMI College EMC center

Reviewed by,

Jae-Hoon Jeong, Senior Engineer
GUMI College EMC center

CONTENTS

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

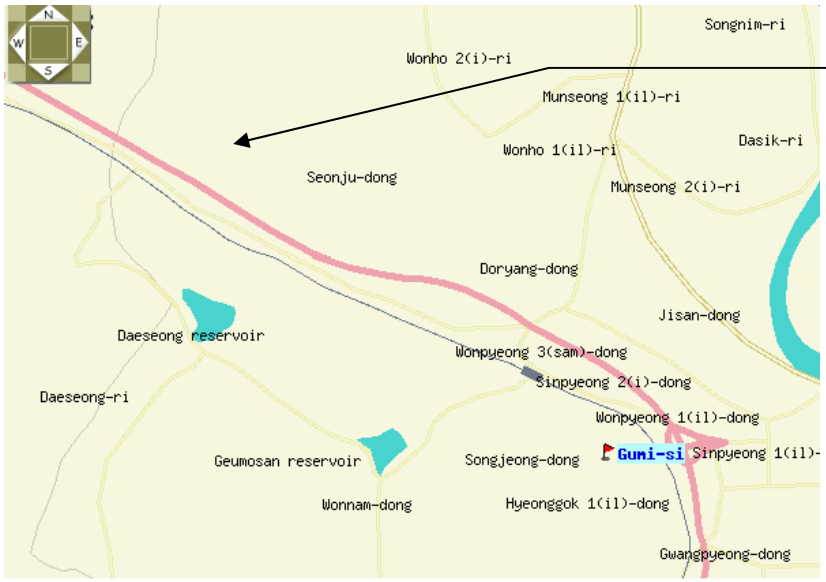
Applicant: LG Electronics Inc.
Applicant Address: 19-1, Cheongho-ri, Jinwi-myeon, Pyeongteak-si, Gyeonggi-do, Korea.
Manufacturer: LG Electronics Inc.
Manufacturer Address: 19-1, Cheongho-ri, Jinwi-myeon, Pyeongteak-si, Gyeonggi-do, Korea.
Contact Person: Mr. Do-Hyung Kim, Chief research engineer
Tel Number: +82-31-610-9623

- **FCC ID.** BEJ26LK330UB
- **EUT Type** LCD TV/Monitor
- **Model Name** 26LK330-UB
- **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** December 29 ~ 31, 2010
- **Place of Test** **Gumi College EMC Center** (FCC Registration Number: 100749, 443957) 407, Bugok-dong, Gumi-si, Gyeongbuk, Korea.
- **Test Report Number** GETEC-E3-10-162
- **Dates of Issue** January 4, 2011

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: 26LK330-UB)**

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 (2003)



GUMI COLLEGE EMC CENTER
407, Bugok-dong, Gumi-si,
Gyeongbuk 730-711, Korea.
Tel: +82-54-440-1195
Fax: +82-54-440-1199

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: 26LK330-UB) FCC ID.: BEJ26LK330UB**

MODELS		22LK330 (22LK330-UA)	26LK330 (26LK330-UA)
Dimensions (W x H x D)	With stand	526.0 mm x 377.0 mm x 164.9 mm (20.7 inch x 14.8 inch x 6.4 inch)	663.0 mm x 484.0 mm x 206.8 mm (26.1 inch x 19.0 inch x 8.1 inch)
	Without stand	526.0 mm x 331.0 mm x 65.0 mm (20.7 inch x 13.0 inch x 2.5 inch)	663.0 mm x 423.0 mm x 79.9 mm (26.1 inch x 16.6 inch x 3.1 inch)
Weight	With stand	4.3 kg (9.4 lbs)	7.3 kg (16.0 lbs)
	Without stand	4.0 kg (8.8 lbs)	6.2 kg (13.6 lbs)
Power requirement		AC100 - 240 V - 50/60 Hz	
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 Ω	
Environment condition	Operating Temperature	0 - 40 °C	
	Operating Humidity	Less than 80 %	
	Storage Temperature	-20 - 60 °C	
	Storage Humidity	Less than 85 %	

-. Maximum Frequency Range : 677 MHz

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	ATI RV360(9600)	S/N: SN0402017176 FCC ID.: DoC
PS2 Key board	COMPAQ	166516-AD6	S/N: B13BBOR391006D FCC ID.: AQ6-23K15
PS2 mouse	LOGITECH	M-S69	S/N: 334684-108 FCC ID.: JNZ211443
Joy stick	MICROSOFT	X05-92626	S/N: 9262600296169 FCC ID.: DoC
DVD player	LG Electronics Inc.	LC-954	S/N: 3850R-Z674K FCC ID.: DoC
Headset	PHILPS	SBC HL140	S/N: N/A FCC ID.: N/A
USB memory stick	LG Electronics Inc.	UM5 2GB	S/N: 003RLRZN37758 FCC ID.: N/A
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 System configuration

Description	Manufacturer	Model Name	S/N & FCC ID.
None	-	-	S/N: - FCC ID.: -

3.2.3 Used Cable(s)

Cable Name	**Condition**	**Description**
Power cable	Connected to the EUT	1.80 m unshielded
RGB (Analog) in cable	Connected to the EUT and PC	1.80 m shielded with two ferrite cores
HDMI/DVI (Digital) in cable	Connected to the EUT and PC	2.00 m shielded
RS-232C (Control & service) in cable	Connected to the EUT and PC	1.80 m shielded
Audio (RGB/DVI) in cable	Connected to the EUT and PC	1.80 m shielded
Headset cable	Connected to the EUT and headset	1.20 m shielded
Component in cable	Connected to the EUT and DVD player	1.80 m shielded
Component sound in cable	Connected to the EUT and DVD player	3.00 m shielded
AV in cable	Connected to the EUT and DVD player	1.80 m shielded
Antenna cable	Connected to the EUT and TV signal generator	10.00 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: 1 360 × 768 / 60 Hz (RGB: Analog, HDMI/DVI: Digital)
Conducted emission: 1 360 × 768 / 60 Hz (RGB: Analog, HDMI/DVI: Digital)
1 024 × 768 / 60 Hz (RGB: Analog), 640 × 480 / 60 Hz (RGB: Analog)

♦ Operating test pattern
-. "H" character scrolling mode (Font size: 10)
-. Black background white character
-. Brightness and contrast was adjusted as maximum level
-. Continuous playback of 1 kHz audio file with winamp player
-. USB memory stick was connected to the USB port

"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. (FCC Registration No.: 100749)
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

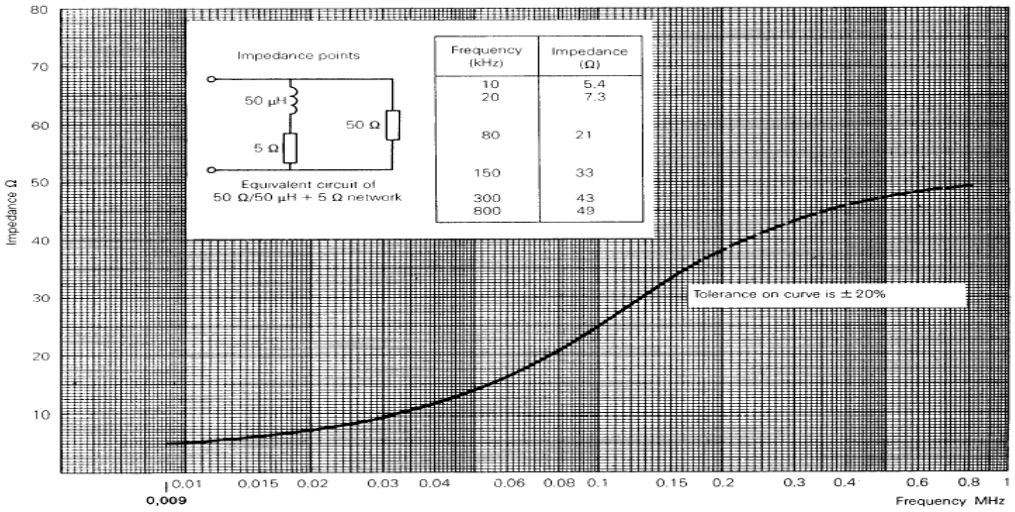


Fig 2. Impedance of LISN

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.

Final measurements were made 3 m chamber (FCC registration No.: 443957) and/or 10 m OATS (FCC registration No.: 100749).

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

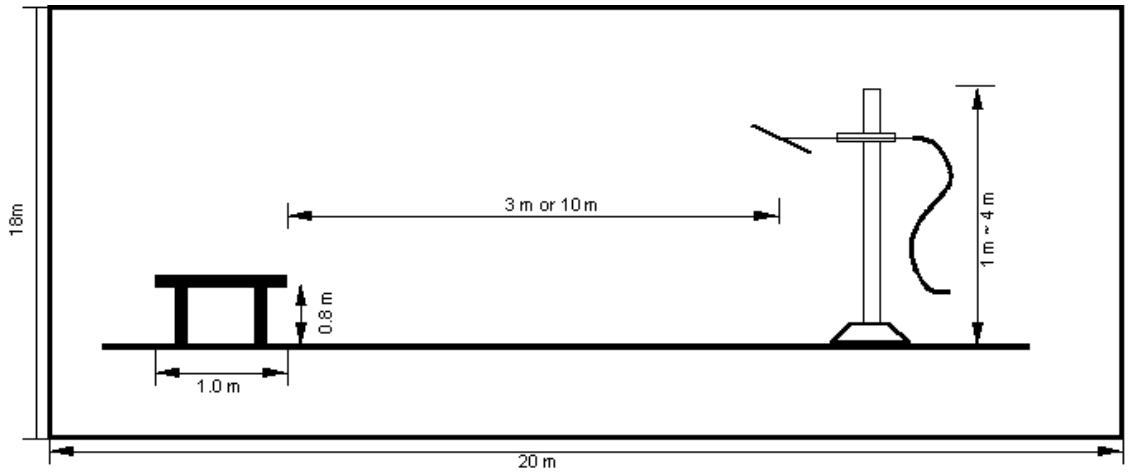


Fig 3. Dimensions of test site.

5. Conducted Emission

5.1 Operating Environment

Temperature : 25 ℃
Relative Humidity : 40 % 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 &ISN.
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)	± 2.71 dB	Confidence levels of 95 % (k = 2)
Conducted emission (150 kHz ~ 30 MHz)	± 3.34 dB	Confidence levels of 95 % (k = 2)

5.4 Limit

RFI Conducted	FCC Limit(dB μV/m) 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

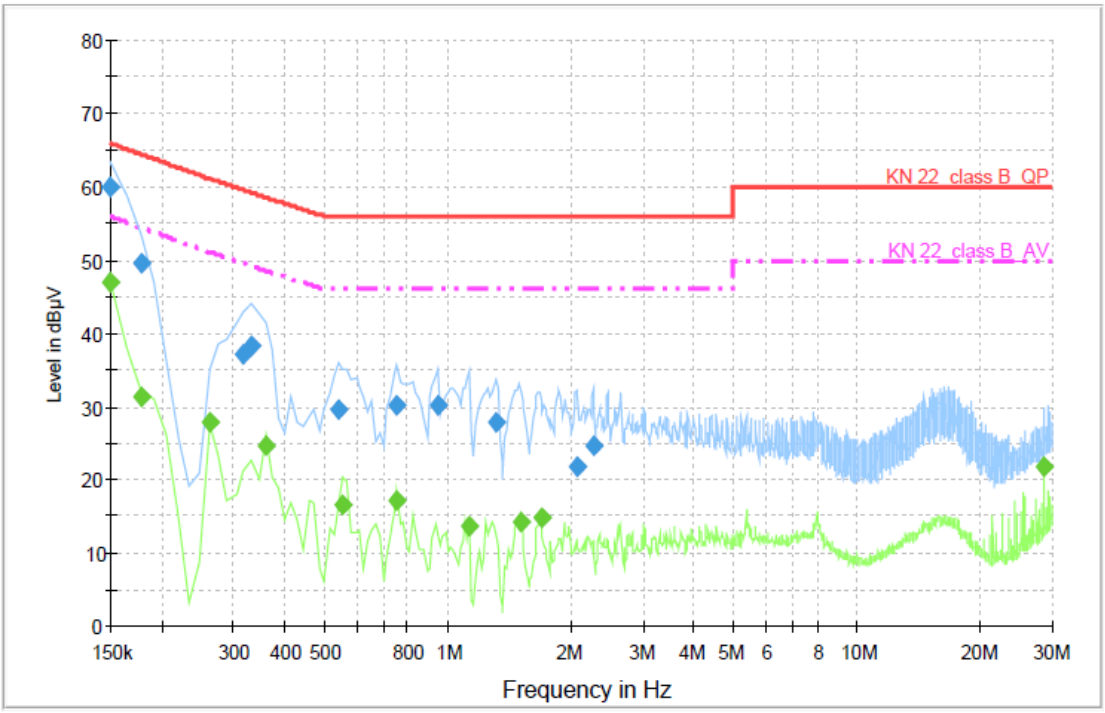
	Model Name	Manufacturer	Description	Serial Number	Due to Calibration
■ -	ESCS30	Rohde & Schwarz	EMI Test Receiver	839809/003	12. 10. 2011
■ -	ESH3-Z5	Rohde & Schwarz	LISN	838979/020	12. 10. 2011
■ -	ESH2-Z5	Rohde & Schwarz	LISN	829991/009	12. 10. 2011
□ -	ISN T8	TESEQ. GmbH	Impedance Network	24568	11. 09. 2011

5.6 Test data for Conducted Emission

-. Test Date : December 31, 2010
-. Resolution Bandwidth : 9 kHz
-. Frequency Range : 0.15 MHz ~ 30 MHz

♦ Operating condition: 1 360 × 768 / 60 Hz (RGB: Analog)

Voltage with 4-Line-LISN_L1



Final Measurement Detector 1

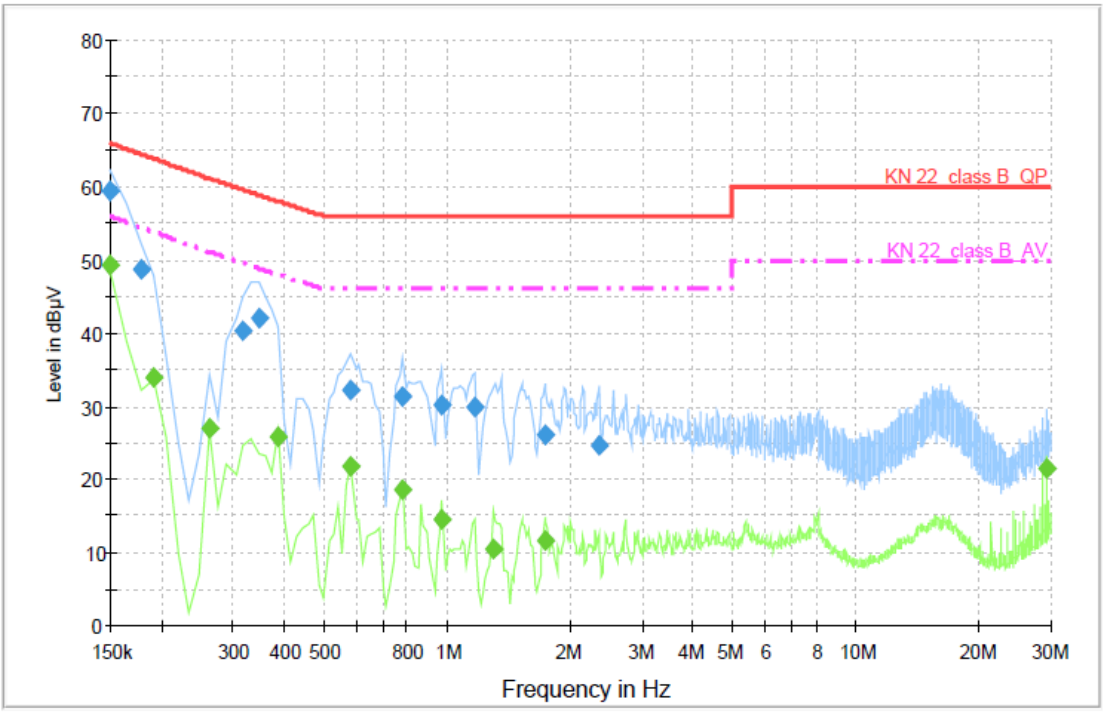
Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	60.0	1000.000	9.000	GND	L1	10.1	6.0	66.0	
0.178000	49.6	1000.000	9.000	GND	L1	10.1	14.9	64.5	
0.318000	37.2	1000.000	9.000	GND	L1	10.1	22.4	59.6	
0.332000	38.2	1000.000	9.000	GND	L1	10.1	21.0	59.2	
0.542000	29.6	1000.000	9.000	GND	L1	10.1	26.4	56.0	
0.752000	30.2	1000.000	9.000	GND	L1	10.1	25.8	56.0	
0.948000	30.1	1000.000	9.000	GND	L1	10.1	25.9	56.0	
1.312000	27.8	1000.000	9.000	GND	L1	10.1	28.2	56.0	
2.068000	21.6	1000.000	9.000	GND	L1	10.2	34.4	56.0	
2.264000	24.7	1000.000	9.000	GND	L1	10.2	31.3	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	47.0	1000.000	9.000	GND	L1	10.1	9.0	56.0	
0.178000	31.4	1000.000	9.000	GND	L1	10.1	23.1	54.5	
0.262000	27.9	1000.000	9.000	GND	L1	10.1	23.2	51.1	
0.360000	24.7	1000.000	9.000	GND	L1	10.1	23.8	48.5	
0.556000	16.5	1000.000	9.000	GND	L1	10.1	29.5	46.0	
0.752000	17.1	1000.000	9.000	GND	L1	10.1	28.9	46.0	
1.130000	13.5	1000.000	9.000	GND	L1	10.1	32.5	46.0	
1.508000	14.1	1000.000	9.000	GND	L1	10.1	31.9	46.0	
1.690000	14.7	1000.000	9.000	GND	L1	10.2	31.3	46.0	
28.486000	21.7	1000.000	9.000	GND	L1	11.3	28.3	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
0.150000	59.5	1000.000	9.000	GND	N	10.1	6.6	66.0	
0.178000	48.8	1000.000	9.000	GND	N	10.1	15.7	64.5	
0.318000	40.2	1000.000	9.000	GND	N	10.1	19.4	59.6	
0.346000	42.1	1000.000	9.000	GND	N	10.1	16.8	58.9	
0.584000	32.2	1000.000	9.000	GND	N	10.1	23.8	56.0	
0.780000	31.4	1000.000	9.000	GND	N	10.1	24.6	56.0	
0.976000	30.2	1000.000	9.000	GND	N	10.1	25.8	56.0	
1.172000	29.7	1000.000	9.000	GND	N	10.1	26.3	56.0	
1.732000	26.1	1000.000	9.000	GND	N	10.2	29.9	56.0	
2.362000	24.6	1000.000	9.000	GND	N	10.2	31.4	56.0	

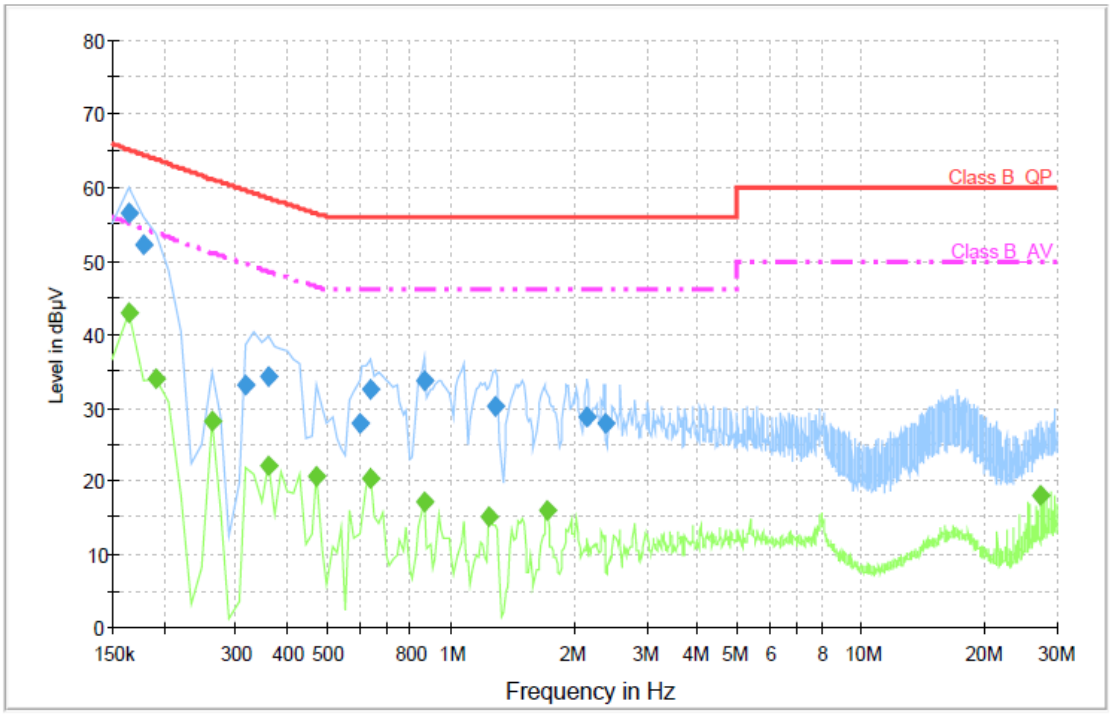
Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	49.2	1000.000	9.000	GND	N	10.1	6.8	56.0	
0.192000	33.8	1000.000	9.000	GND	N	10.1	20.0	53.8	
0.262000	26.9	1000.000	9.000	GND	N	10.1	24.2	51.1	
0.388000	25.8	1000.000	9.000	GND	N	10.1	22.1	47.9	
0.584000	21.9	1000.000	9.000	GND	N	10.1	24.1	46.0	
0.780000	18.5	1000.000	9.000	GND	N	10.1	27.5	46.0	
0.976000	14.4	1000.000	9.000	GND	N	10.1	31.6	46.0	
1.298000	10.4	1000.000	9.000	GND	N	10.1	35.6	46.0	
1.732000	11.6	1000.000	9.000	GND	N	10.2	34.4	46.0	
29.354000	21.3	1000.000	9.000	GND	N	10.7	28.7	50.0	

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

♦ Operating condition: 1 024 × 768 / 60 Hz (RGB: Analog)

Voltage with 4-Line-LISN_L1



Final Measurement Detector 1

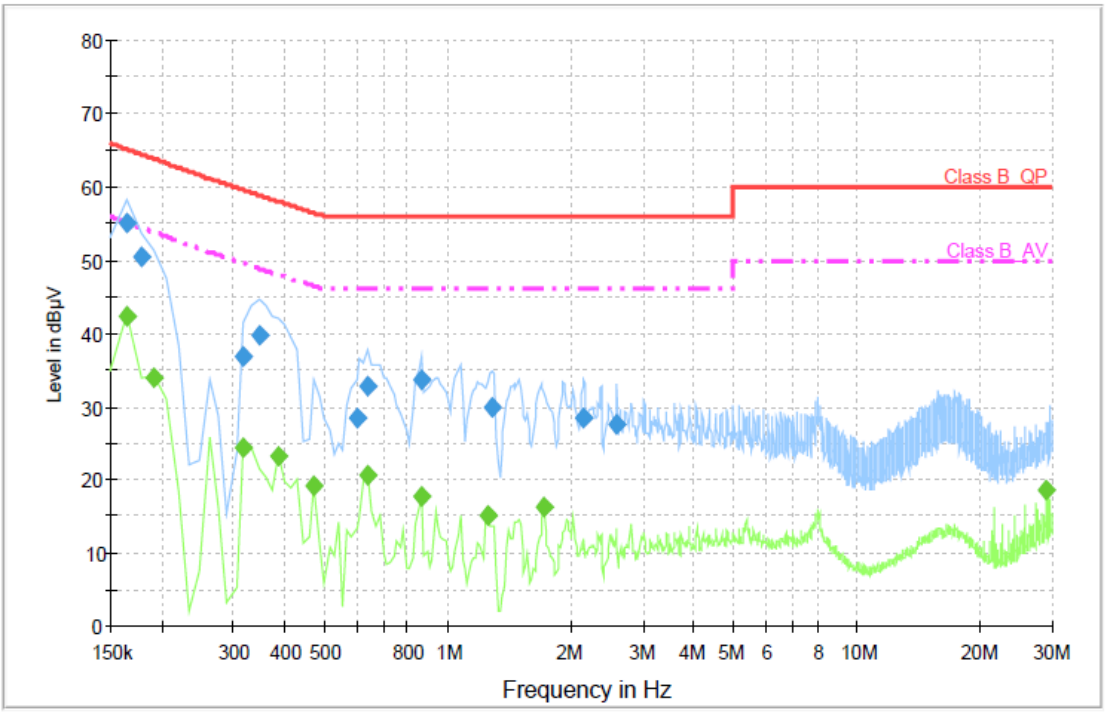
Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.164000	56.6	1000.000	9.000	GND	L1	10.1	8.6	65.2	
0.178000	52.1	1000.000	9.000	GND	L1	10.1	12.4	64.5	
0.318000	33.1	1000.000	9.000	GND	L1	10.1	26.5	59.6	
0.360000	34.1	1000.000	9.000	GND	L1	10.1	24.5	58.6	
0.598000	27.9	1000.000	9.000	GND	L1	10.1	28.1	56.0	
0.640000	32.6	1000.000	9.000	GND	L1	10.1	23.4	56.0	
0.864000	33.8	1000.000	9.000	GND	L1	10.1	22.2	56.0	
1.284000	30.1	1000.000	9.000	GND	L1	10.1	25.9	56.0	
2.152000	28.7	1000.000	9.000	GND	L1	10.2	27.3	56.0	
2.376000	27.7	1000.000	9.000	GND	L1	10.2	28.3	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.164000	42.8	1000.000	9.000	GND	L1	10.1	12.4	55.2	
0.192000	33.9	1000.000	9.000	GND	L1	10.1	19.9	53.8	
0.262000	28.0	1000.000	9.000	GND	L1	10.1	23.1	51.1	
0.360000	22.1	1000.000	9.000	GND	L1	10.1	26.4	48.5	
0.472000	20.5	1000.000	9.000	GND	L1	10.1	25.9	46.4	
0.640000	20.4	1000.000	9.000	GND	L1	10.1	25.6	46.0	
0.864000	17.2	1000.000	9.000	GND	L1	10.1	28.8	46.0	
1.242000	14.9	1000.000	9.000	GND	L1	10.1	31.1	46.0	
1.718000	16.1	1000.000	9.000	GND	L1	10.2	29.9	46.0	
27.422000	18.0	1000.000	9.000	GND	L1	11.3	32.0	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
0.164000	55.1	1000.000	9.000	GND	N	10.1	10.1	65.2	
0.178000	50.3	1000.000	9.000	GND	N	10.1	14.2	64.5	
0.318000	36.9	1000.000	9.000	GND	N	10.1	22.7	59.6	
0.346000	39.8	1000.000	9.000	GND	N	10.1	19.1	58.9	
0.598000	28.4	1000.000	9.000	GND	N	10.1	27.6	56.0	
0.640000	32.9	1000.000	9.000	GND	N	10.1	23.1	56.0	
0.864000	33.8	1000.000	9.000	GND	N	10.1	22.2	56.0	
1.284000	29.9	1000.000	9.000	GND	N	10.1	26.1	56.0	
2.152000	28.3	1000.000	9.000	GND	N	10.2	27.7	56.0	
2.600000	27.7	1000.000	9.000	GND	N	10.2	28.3	56.0	

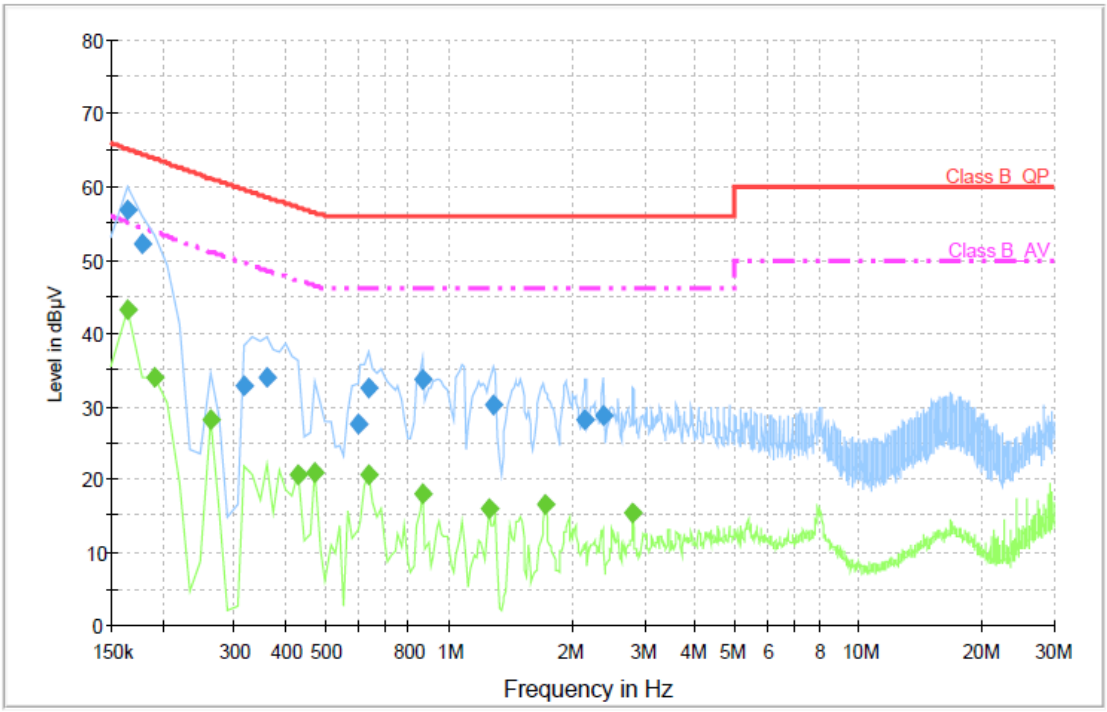
Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.164000	42.4	1000.000	9.000	GND	N	10.1	12.8	55.2	
0.192000	33.9	1000.000	9.000	GND	N	10.1	19.9	53.8	
0.318000	24.4	1000.000	9.000	GND	N	10.1	25.1	49.5	
0.388000	23.3	1000.000	9.000	GND	N	10.1	24.6	47.9	
0.472000	19.1	1000.000	9.000	GND	N	10.1	27.3	46.4	
0.640000	20.6	1000.000	9.000	GND	N	10.1	25.4	46.0	
0.864000	17.5	1000.000	9.000	GND	N	10.1	28.5	46.0	
1.256000	15.0	1000.000	9.000	GND	N	10.1	31.0	46.0	
1.718000	16.1	1000.000	9.000	GND	N	10.2	29.9	46.0	
28.836000	18.6	1000.000	9.000	GND	N	10.7	31.4	50.0	

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

♦ Operating condition: 640 × 480 / 60 Hz (RGB: Analog)

Voltage with 4-Line-LISN_L1



Final Measurement Detector 1

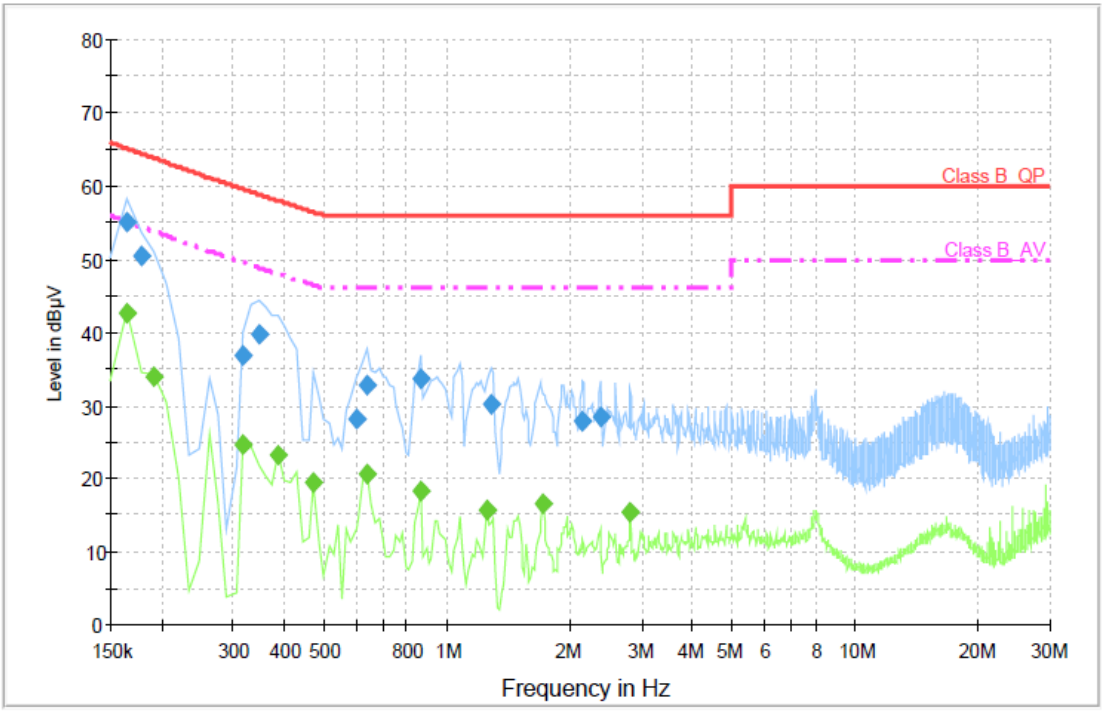
Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.164000	56.7	1000.000	9.000	GND	L1	10.1	8.5	65.2	
0.178000	52.1	1000.000	9.000	GND	L1	10.1	12.4	64.5	
0.318000	32.9	1000.000	9.000	GND	L1	10.1	26.7	59.6	
0.360000	33.9	1000.000	9.000	GND	L1	10.1	24.7	58.6	
0.598000	27.5	1000.000	9.000	GND	L1	10.1	28.5	56.0	
0.640000	32.4	1000.000	9.000	GND	L1	10.1	23.6	56.0	
0.864000	33.7	1000.000	9.000	GND	L1	10.1	22.3	56.0	
1.284000	30.2	1000.000	9.000	GND	L1	10.1	25.8	56.0	
2.152000	28.0	1000.000	9.000	GND	L1	10.2	28.0	56.0	
2.376000	28.7	1000.000	9.000	GND	L1	10.2	27.3	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.164000	43.1	1000.000	9.000	GND	L1	10.1	12.1	55.2	
0.192000	34.0	1000.000	9.000	GND	L1	10.1	19.8	53.8	
0.262000	28.0	1000.000	9.000	GND	L1	10.1	23.1	51.1	
0.430000	20.7	1000.000	9.000	GND	L1	10.1	26.4	47.1	
0.472000	20.8	1000.000	9.000	GND	L1	10.1	25.6	46.4	
0.640000	20.5	1000.000	9.000	GND	L1	10.1	25.5	46.0	
0.864000	18.1	1000.000	9.000	GND	L1	10.1	27.9	46.0	
1.256000	15.9	1000.000	9.000	GND	L1	10.1	30.1	46.0	
1.718000	16.5	1000.000	9.000	GND	L1	10.2	29.5	46.0	
2.810000	15.3	1000.000	9.000	GND	L1	10.2	30.7	46.0	

< 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
0.164000	55.1	1000.000	9.000	GND	N	10.1	10.1	65.2	
0.178000	50.3	1000.000	9.000	GND	N	10.1	14.2	64.5	
0.318000	36.7	1000.000	9.000	GND	N	10.1	22.9	59.6	
0.346000	39.8	1000.000	9.000	GND	N	10.1	19.1	58.9	
0.598000	28.1	1000.000	9.000	GND	N	10.1	27.9	56.0	
0.640000	32.7	1000.000	9.000	GND	N	10.1	23.3	56.0	
0.864000	33.7	1000.000	9.000	GND	N	10.1	22.3	56.0	
1.284000	30.0	1000.000	9.000	GND	N	10.1	26.0	56.0	
2.152000	27.9	1000.000	9.000	GND	N	10.2	28.1	56.0	
2.376000	28.4	1000.000	9.000	GND	N	10.2	27.6	56.0	

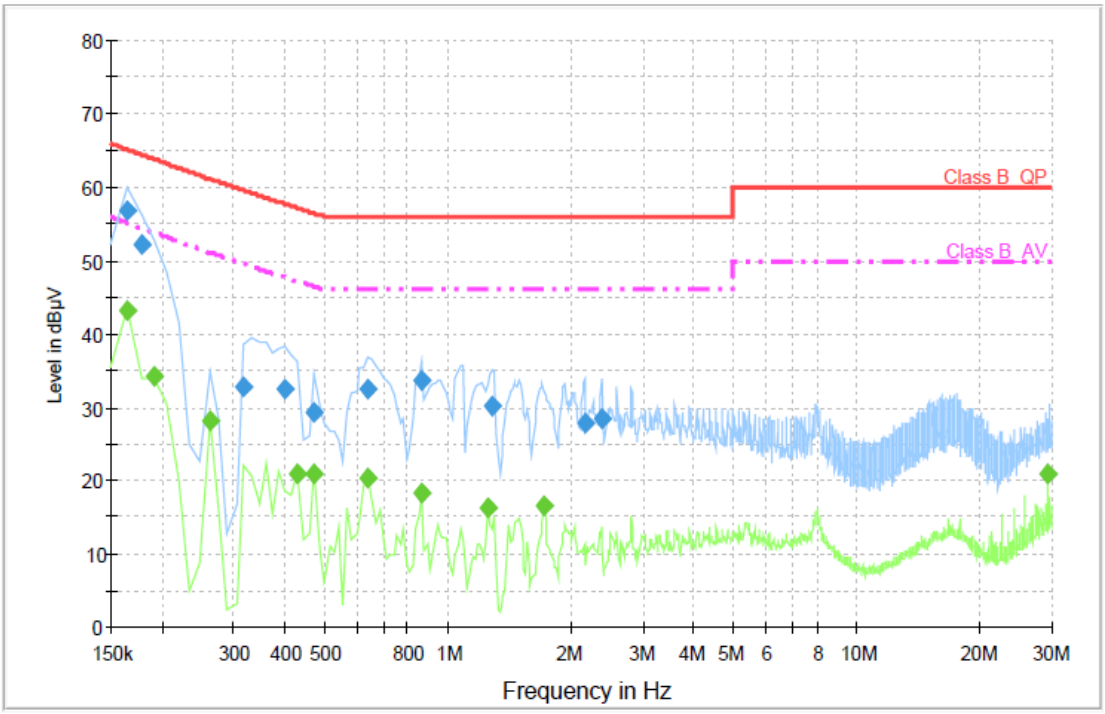
Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.164000	42.6	1000.000	9.000	GND	N	10.1	12.6	55.2	
0.192000	34.0	1000.000	9.000	GND	N	10.1	19.8	53.8	
0.318000	24.7	1000.000	9.000	GND	N	10.1	24.8	49.5	
0.388000	23.2	1000.000	9.000	GND	N	10.1	24.7	47.9	
0.472000	19.3	1000.000	9.000	GND	N	10.1	27.1	46.4	
0.640000	20.5	1000.000	9.000	GND	N	10.1	25.5	46.0	
0.864000	18.3	1000.000	9.000	GND	N	10.1	27.7	46.0	
1.256000	15.7	1000.000	9.000	GND	N	10.1	30.4	46.0	
1.718000	16.4	1000.000	9.000	GND	N	10.2	29.6	46.0	
2.810000	15.3	1000.000	9.000	GND	N	10.2	30.7	46.0	

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

♦ Operating condition: 1 360 × 768 / 60 Hz (HDMI/DVI: Digital)

Voltage with 4-Line-LISN_L1



Final Measurement Detector 1

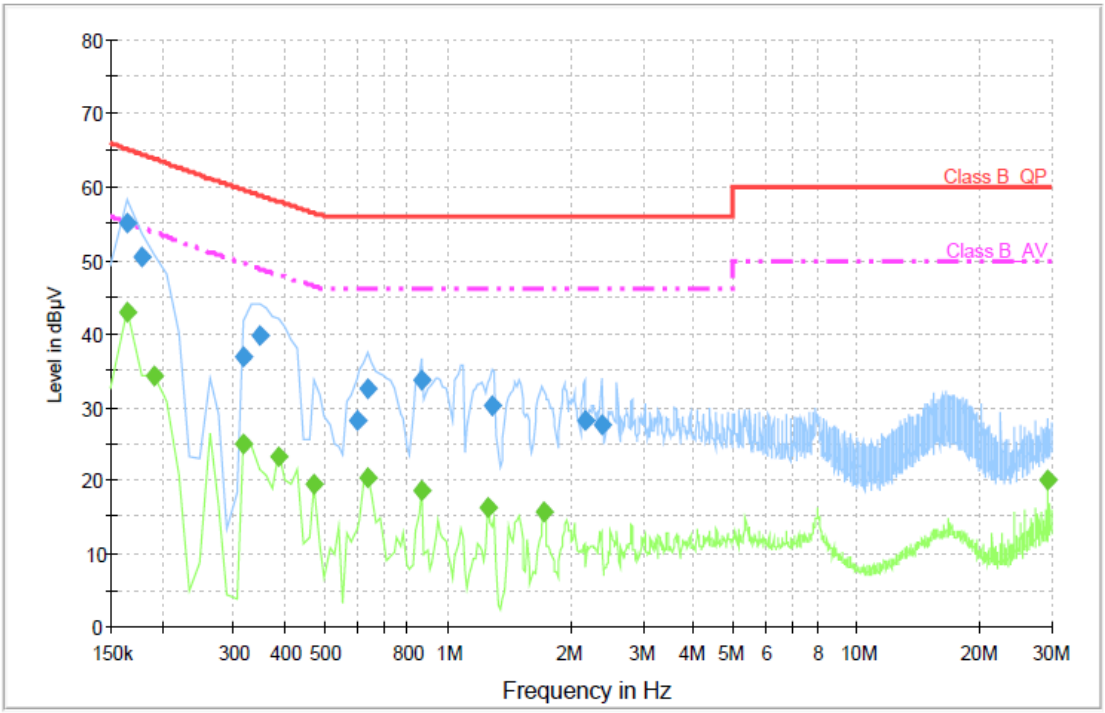
Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.164000	56.7	1000.000	9.000	GND	L1	10.1	8.5	65.2	
0.178000	52.2	1000.000	9.000	GND	L1	10.1	12.3	64.5	
0.318000	32.9	1000.000	9.000	GND	L1	10.1	26.7	59.6	
0.402000	32.6	1000.000	9.000	GND	L1	10.1	25.1	57.7	
0.472000	29.3	1000.000	9.000	GND	L1	10.1	27.1	56.4	
0.640000	32.4	1000.000	9.000	GND	L1	10.1	23.6	56.0	
0.864000	33.7	1000.000	9.000	GND	L1	10.1	22.3	56.0	
1.284000	30.3	1000.000	9.000	GND	L1	10.1	25.7	56.0	
2.166000	27.9	1000.000	9.000	GND	L1	10.2	28.1	56.0	
2.376000	28.3	1000.000	9.000	GND	L1	10.2	27.7	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.164000	43.2	1000.000	9.000	GND	L1	10.1	12.0	55.2	
0.192000	34.1	1000.000	9.000	GND	L1	10.1	19.7	53.8	
0.262000	28.1	1000.000	9.000	GND	L1	10.1	23.0	51.1	
0.430000	20.8	1000.000	9.000	GND	L1	10.1	26.3	47.1	
0.472000	20.9	1000.000	9.000	GND	L1	10.1	25.5	46.4	
0.640000	20.4	1000.000	9.000	GND	L1	10.1	25.6	46.0	
0.864000	18.2	1000.000	9.000	GND	L1	10.1	27.8	46.0	
1.256000	16.1	1000.000	9.000	GND	L1	10.1	29.9	46.0	
1.718000	16.4	1000.000	9.000	GND	L1	10.2	29.6	46.0	
29.354000	20.8	1000.000	9.000	GND	L1	11.4	29.2	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
0.164000	55.2	1000.000	9.000	GND	N	10.1	10.0	65.2	
0.178000	50.4	1000.000	9.000	GND	N	10.1	14.1	64.5	
0.318000	36.7	1000.000	9.000	GND	N	10.1	22.9	59.6	
0.346000	39.7	1000.000	9.000	GND	N	10.1	19.2	58.9	
0.598000	28.1	1000.000	9.000	GND	N	10.1	27.9	56.0	
0.640000	32.6	1000.000	9.000	GND	N	10.1	23.4	56.0	
0.864000	33.6	1000.000	9.000	GND	N	10.1	22.4	56.0	
1.284000	30.0	1000.000	9.000	GND	N	10.1	26.0	56.0	
2.166000	28.1	1000.000	9.000	GND	N	10.2	27.9	56.0	
2.376000	27.4	1000.000	9.000	GND	N	10.2	28.6	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.164000	42.9	1000.000	9.000	GND	N	10.1	12.3	55.2	
0.192000	34.1	1000.000	9.000	GND	N	10.1	19.7	53.8	
0.318000	24.8	1000.000	9.000	GND	N	10.1	24.7	49.5	
0.388000	23.3	1000.000	9.000	GND	N	10.1	24.6	47.9	
0.472000	19.4	1000.000	9.000	GND	N	10.1	27.0	46.4	
0.640000	20.4	1000.000	9.000	GND	N	10.1	25.6	46.0	
0.864000	18.4	1000.000	9.000	GND	N	10.1	27.6	46.0	
1.256000	16.3	1000.000	9.000	GND	N	10.1	29.7	46.0	
1.718000	15.8	1000.000	9.000	GND	N	10.2	30.2	46.0	
29.354000	20.1	1000.000	9.000	GND	N	10.7	29.9	50.0	

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

6. Radiated Emission

6.1 Operating Environment

Temperature : 26 ℃
Relative Humidity : 43 % R.H.

6.2 Test Set-up

A preliminary and final measurement was at 3 m anechoic chamber.
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(Anechoic Chamber)	Uncertainty	Remark
Radiated emission (30 MHz ~ 300 MHz, 3 m, Vertical)	± 4.32 dB	Confidence levels of 95 % (k = 2)
Radiated emission (30 MHz ~ 300 MHz, 3 m, Horizontal)	± 4.21 dB	Confidence levels of 95 % (k = 2)
Radiated emission (300 MHz ~ 1 000 MHz, 3 m, Vertical)	± 3.96 dB	Confidence levels of 95 % (k = 2)
Radiated emission (300 MHz ~ 1 000 MHz, 3 m, Horizontal)	± 3.97 dB	Confidence levels of 95 % (k = 2)

6.4 Limit

Frequency (MHz)	FCC Limit @ 3 m. dB μV/m	CISPR Limit @ 10 m. dB μV/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

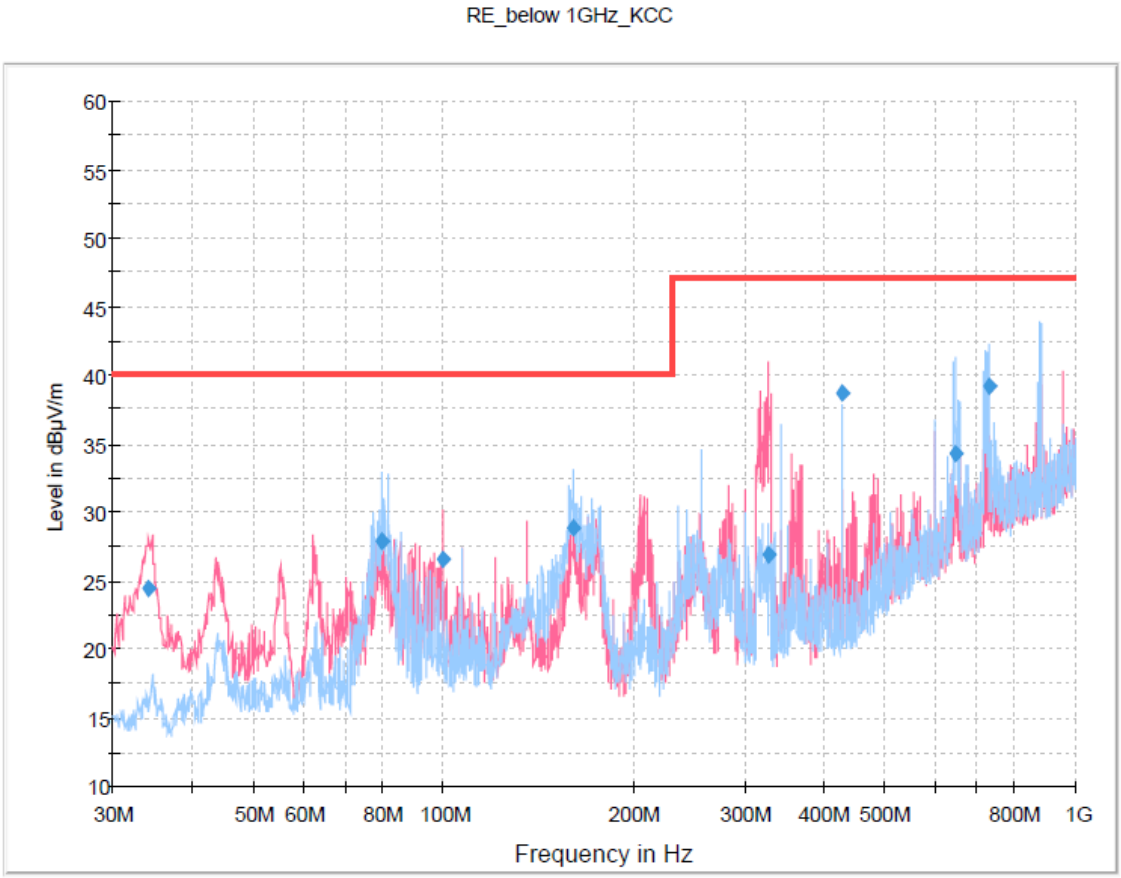
6.5 Test Equipment used

	Model Name	Manufacturer	Description	Serial Number	Due to Calibration
■ -	ESIB26	Rohde & Schwarz	EMI Test Receiver	830482/010	12. 10. 2011
■ -	VULB9160	Schwarzbeck	Broadband Test Antenna	3193	03. 15. 2012
■ -	BBHA9120D	Schwarzbeck	Horn ANT	207	12. 22. 2011
■ -	MCU066	maturo GmbH	Position Controller	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. 12. 2011

6.6 Test data for Radiated Emission

-. Test Date : December 29, 2010
-. Resolution Bandwidth : 120 kHz/1 MHz
-. Frequency Range : 30 MHz ~ 5 000 MHz
-. Measurement Distance : 3 m
-. Note : The highest frequency of the internal source of the EUT is between 500 MHz and 1 000 MHz (677 MHz). The measurement was made up to 5 000 MHz

♦ Operating Condition: 1 360 × 768 / 60 Hz (RGB: Analog)
Red trace: Vertical polarization, Blue trace: Horizontal polarization

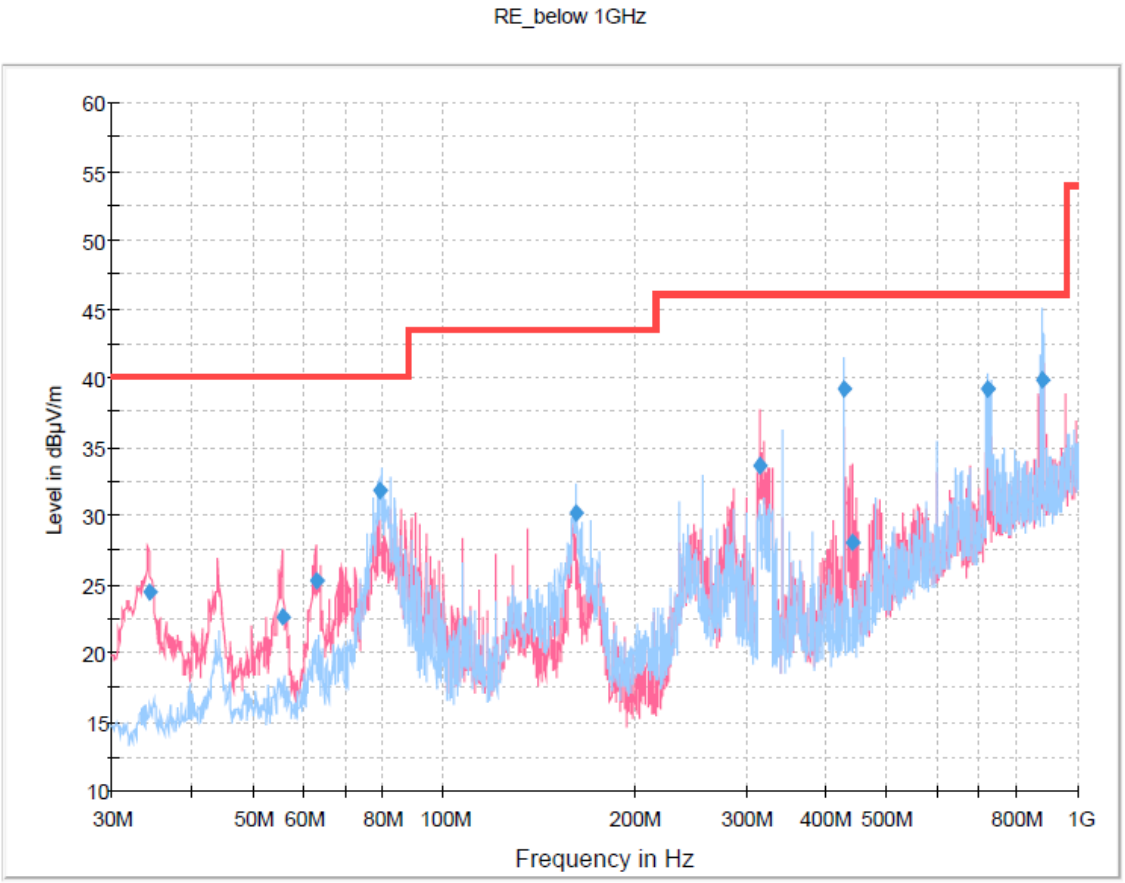


Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
34.227500	24.4	1000.0	120.000	100.0	V	238.0	11.6	15.60	40.00
79.856250	27.9	1000.0	120.000	200.0	H	44.0	9.2	12.10	40.00
99.738750	26.6	1000.0	120.000	100.0	V	50.0	11.3	13.40	40.00
160.841250	28.8	1000.0	120.000	200.0	H	176.0	15.5	11.20	40.00
327.681250	26.8	1000.0	120.000	200.0	V	0.0	17.2	20.20	47.00
427.477500	38.6	1000.0	120.000	100.0	H	170.0	18.9	8.40	47.00
645.522500	34.3	1000.0	120.000	100.0	H	170.0	25.7	12.70	47.00
729.017500	39.1	1000.0	120.000	100.0	H	202.0	27.3	7.90	47.00

< Fig 12. Radiated emission result (30 MHz ~ 1 000 MHz) >

♦ Operating Condition: 1 360 × 768 / 60 Hz (HDMI/DVI: Digital)
Red trace: Vertical polarization, Blue trace: Horizontal polarization

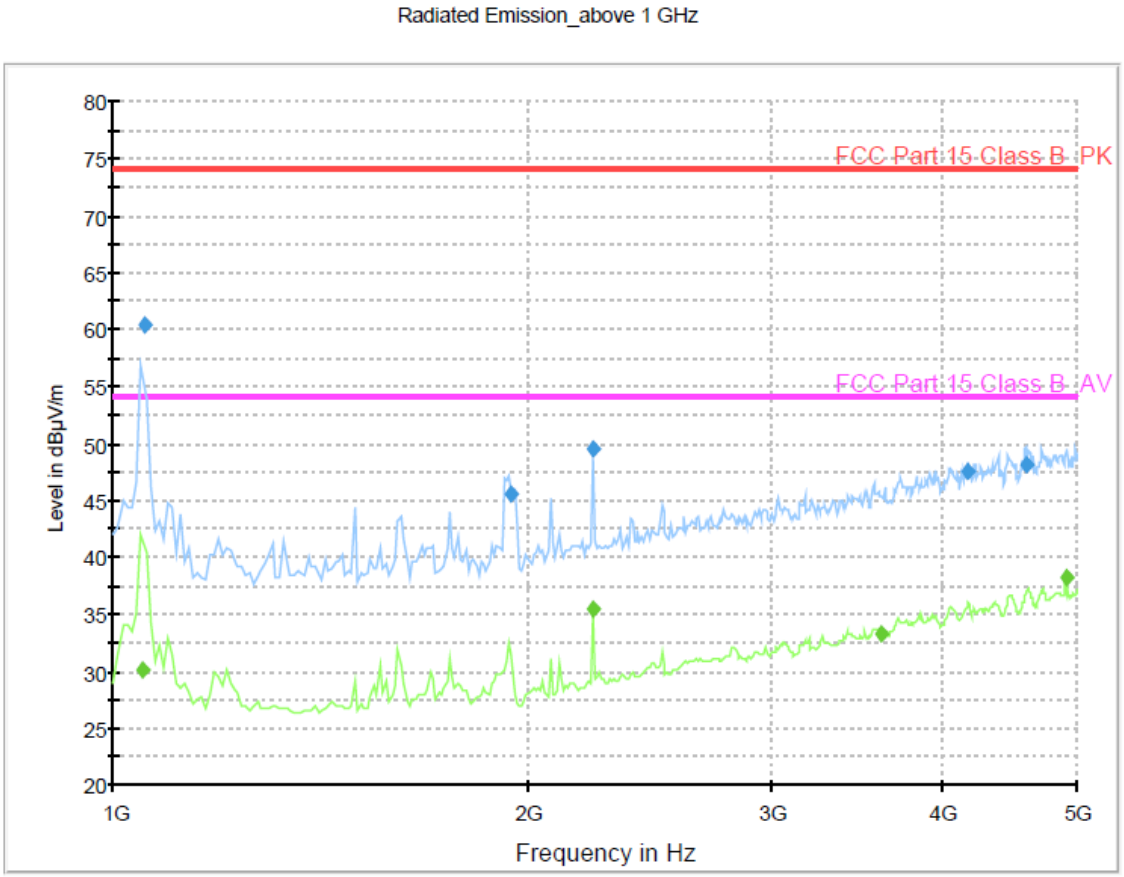


Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
34.303750	24.4	1000.0	120.000	100.0	V	169.0	11.6	15.60	40.00
55.723750	22.6	1000.0	120.000	100.0	V	347.0	13.0	17.40	40.00
63.078750	25.3	1000.0	120.000	100.0	V	83.0	12.3	14.70	40.00
79.173750	31.8	1000.0	120.000	200.0	H	221.0	9.3	8.20	40.00
161.935000	30.1	1000.0	120.000	180.0	H	178.0	15.3	13.40	43.50
314.308750	33.6	1000.0	120.000	163.0	V	67.0	17.1	12.40	46.00
427.477500	39.2	1000.0	120.000	100.0	H	215.0	18.9	6.80	46.00
439.772500	28.0	1000.0	120.000	130.0	V	0.0	19.5	18.00	46.00
716.953750	39.2	1000.0	120.000	100.0	H	203.0	27.0	6.80	46.00
880.428750	39.8	1000.0	120.000	113.0	H	305.0	29.6	6.20	46.00

< Fig 13. Radiated emission result (30 MHz ~ 1 000 MHz) >

♦ Operating Condition: 1 360 × 768 / 60 Hz (RGB: Analog)
Green trace: Average detector, Blue trace: Peak detector



Final Result 1

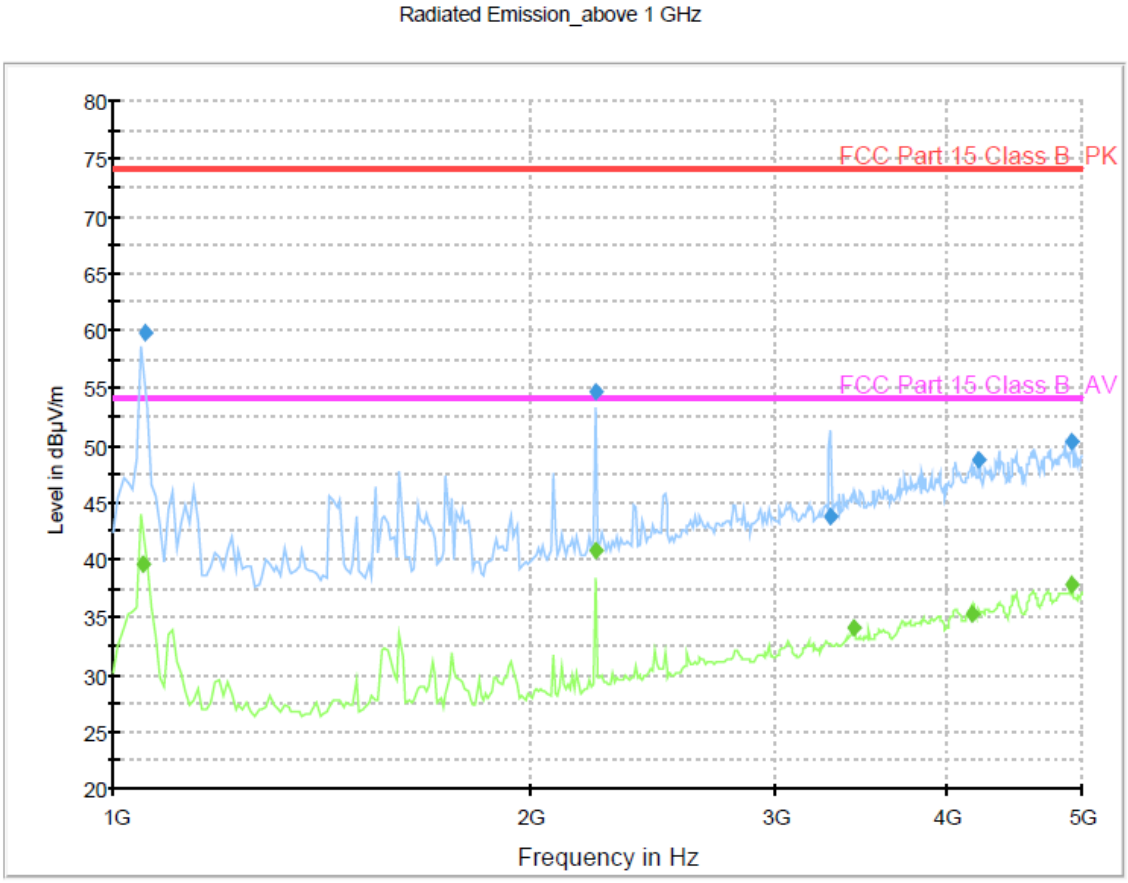
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1052.696192	60.4	100.0	1000.000	100.0	V	0.0	-14.2	13.6	74.0
1942.075752	45.5	100.0	1000.000	100.0	V	192.0	-11.9	28.5	74.0
2227.452906	49.5	100.0	1000.000	139.0	V	27.0	-10.6	24.5	74.0
4163.332665	47.5	100.0	1000.000	344.0	H	7.0	-3.0	26.5	74.0
4588.182365	48.2	100.0	1000.000	370.0	H	54.0	-2.1	25.8	74.0

Final Result 2

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1050.296192	30.2	100.0	1000.000	130.0	V	0.0	-14.2	23.8	54.0
2227.452906	35.5	100.0	1000.000	113.0	V	27.0	-10.6	18.5	54.0
3600.210421	33.2	100.0	1000.000	139.0	H	189.0	-5.0	20.8	54.0
4914.839679	38.3	100.0	1000.000	127.0	H	142.0	-1.3	15.7	54.0

< Fig 14. Radiated emission result (1 000 MHz ~ 5 000 MHz) >

♦ Operating Condition: 1 360 × 768 / 60 Hz (HDMI/DVI: Digital)
Green trace: Average detector, Blue trace: Peak detector



Final Result 1

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1052.696192	59.9	100.0	1000.000	100.0	V	0.0	-14.2	14.1	74.0
2227.452906	54.6	100.0	1000.000	100.0	V	246.0	-10.6	9.4	74.0
3295.185170	43.8	100.0	1000.000	159.0	V	254.0	-6.2	30.2	74.0
4212.228858	48.6	100.0	1000.000	100.0	H	191.0	-2.9	25.4	74.0
4914.839679	50.2	100.0	1000.000	113.0	H	162.0	-1.3	23.8	74.0

Final Result 2

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1049.896192	39.6	100.0	1000.000	139.0	V	0.0	-14.2	14.4	54.0
2227.452906	40.7	100.0	1000.000	139.0	V	246.0	-10.6	13.3	54.0
3415.841683	34.0	100.0	1000.000	100.0	V	172.0	-5.8	20.0	54.0
4169.748697	35.2	100.0	1000.000	265.0	V	340.0	-3.0	18.8	54.0
4914.839679	37.8	100.0	1000.000	100.0	H	162.0	-1.3	16.2	54.0

< Fig 15. Radiated emission result (1 000 MHz ~ 5 000 MHz) >

7. Sample Calculations

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

7.1 Example 1 :

■ **20.3 MHz**

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

7.2 Example 2 :

■ **66.7 MHz**

Class B Limit	**= 100 μV/m = 40.0 dBμV/m**
Reading	**= 31.0 dBμV**
Antenna Factor + Cable Loss = 5.8 dB	
Total	**= 36.8 dBμV/m**
Margin	**= 40.0 dBμV/m – 36.8 dBμV/m**
	= 3.2 dB

8. Recommendation & Conclusion

The data collected shows that the **LG Electronics Inc. LCD TV/Monitor (Model Name: 26LK330-UB)** was complies with §15.107 and 15.109 of the FCC Rules.