

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: December 28, 2011****Order Number: GETEC-C1-11-354****Test Report Number: GETEC-E3-11-155****Test Site: GUMI COLLEGE EMC CENTER****FCC Registration Number: (100749, 443957)****FCC ID. : BEJD2500N****Applicant : LG Electronics Inc.**

Rule Part(s)	: FCC Part 15 Subpart B
Equipment Class	: Class B computing device peripheral (JBP)
EUT Type	: CINEMA 3D GLASSES-FREE MONITOR
Type of Authority	: Certification
Model Name	: D2500N
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,**

**Soon-Hoon Jeong, Associate Engineer
GUMI COLLEGE EMC CENTER**



**Jae-Hoon Jeong, Senior Engineer
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: 19-1, Cheongho-ri, Jinwi-myeon, Pyeongteak-si, Gyeonggi-do, Korea.

Contact Person: Mr. Do-Hyung Kim, Chief research engineer

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- **FCC ID.** BEJD2500N
- **EUT Type** CINEMA 3D GLASSES-FREE MONITOR
- **Model Name** D2500N
- **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 27 ~ 28, 2011
- **Place of Test** **GUMI COLLEGE EMC CENTER** (FCC Registration Number: 100749, 443957)
407, Bugok-dong, Gumi-si, Gyeongsangbuk-do, Korea.
- **Test Report Number** GETEC-E3-11-155
- **Dates of Issue** December 28, 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.**

CINEMA 3D GLASSES-FREE MONITOR (Model Name: D2500N)

These measurement tests were conducted at **GUMI COLLEGE EMC CENTER**

The site address is 407, Bugok-dong, Gumi-si, Gyeongsangbuk-do, 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
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Gyeongsangbuk-do, Korea.
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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.**

CINEMA 3D GLASSES-FREE MONITOR (Model Name: D2500N) FCC ID.: BEJD2500N

Display	Screen Type	63.44 cm (25 inch) Flat Panel Active matrix-TFT LCD Anti-Glare coating Visible diagonal size: 63.44 cm
	Pixel Pitch	0.096 mm x 0.288 mm (Pixel Pitch)
Sync Input	Horizontal Frequency	30 kHz to 83 kHz (Automatic)
	Vertical Frequency	56 Hz to 75 Hz (DVI-D) 56 Hz to 61 Hz (HDMI)
	Input Form	Separate Sync. Digital
Video Input	Signal Input	DVI-D Connector / HDMI Connector
	Input Form	Digital
Resolution	Max	1920 x 1080 @ 60 Hz
	Recommend	1920 x 1080 @ 60 Hz
Plug & Play	DDC 2B(Digital,HDMI)	
Power Consumption	On Mode : 40 W(Typ.) Sleep Mode ≤ 0.5 W Off Mode ≤ 0.5 W	
Power Input	100-240 V~ 50/60 Hz 0.7 A	
Dimensions (Width x Height x Depth)	With Stand	59.4 cm x 44.5 cm x 25.9 cm
	Without Stand	59.4 cm x 43.0 cm x 17.1 cm
Weight	9.23 kg	

-. Maximum Frequency Range : 148 MHz



3.2 Support Equipment / Cables used

3.2.1 Used Support Equipment

Description	Manufacturer	Model Name	S/N & FCC ID.
PC (Main board)	ASLOCK	770iCafe	S/N: 0AM0X3097310 FCC ID.: DoC
Video card	Rextechnology Co., Ltd.	HD4850	S/N: L5H401947 FCC ID.: DoC
PS2 keyboard	COMPAQ	166516-AD6	S/N: B13BBOR391006D FCC ID.: AQ6-23K15
USB mouse	Great Pleasure Electronics Co., Ltd.	GP-M3100UE	S/N: 14036766 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
DVI(Digital) in cable	Connected to the EUT and PC	1.50 m shielded
HDMI(Digital) in cable	Connected to the EUT and PC	2.00 m shielded
USB in cable	Connected to the EUT and PC	1.80 m shielded
Audio out cable	Connected to the EUT and PC	1.50 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)

-. 3D monitor mode

Radiated emission: 1 920 × 1 080 / 60 Hz (DVI: Digital, HDMI: Digital)

Conducted emission: 1 920 × 1 080 / 60 Hz (DVI: Digital, HDMI: Digital),

1 024 × 768 / 60 Hz (DVI: Digital), 640 × 480 / 60 Hz (DVI: Digital)

◆ 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
- Camera preview mode



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

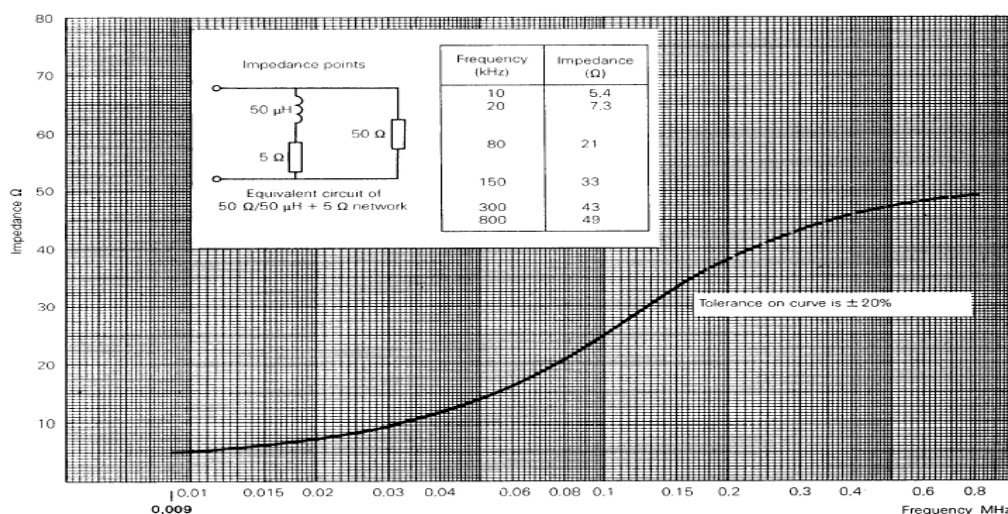


Fig 2. Impedance of LISN



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

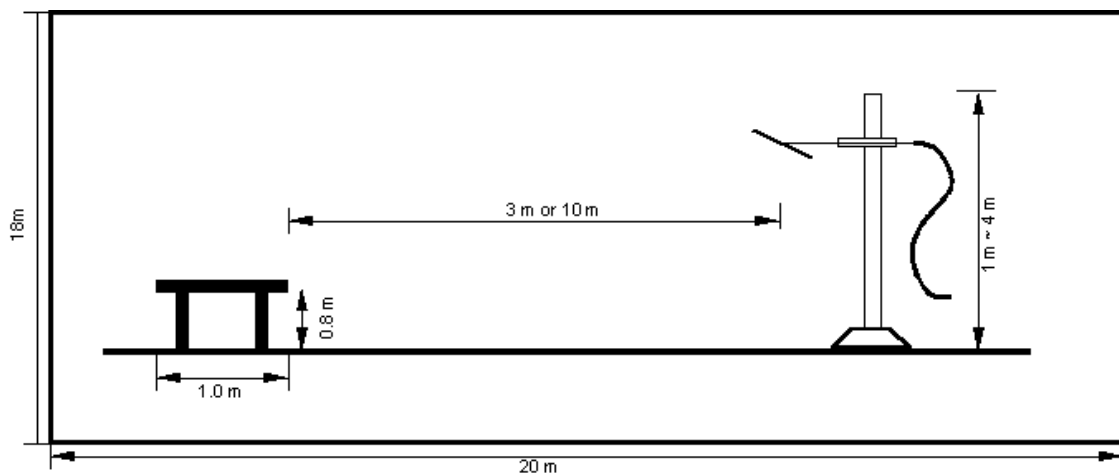


Fig 3. Dimensions of test site



5. Conducted Emission

5.1 Operating Environment

Temperature : 22.0 °C
Relative Humidity : 32.0 % 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 level of approximately 95 % ($k = 2$)
Conducted emission (150 kHz ~ 30 MHz)	± 3.34 dB	Confidence level of approximately 95 % ($k = 2$)



5.4 Limit

RFI Conducted	FCC Limit(dB μ V/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

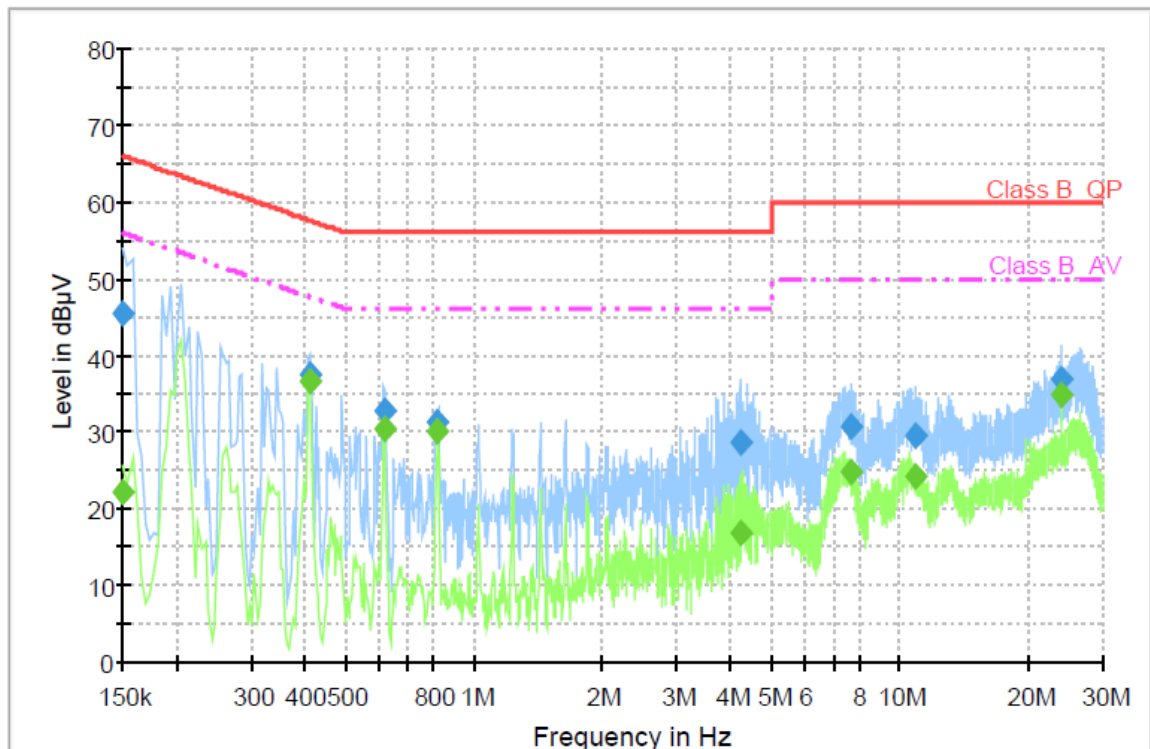
Model Name	Manufacturer	Description	Serial Number	Due to Calibration
■ - ESCS30	Rohde & Schwarz	EMI Test Receiver	839809/003	12. 05. 2012
■ - ESH3-Z5	Rohde & Schwarz	LISN	838979/020	12. 07. 2012
■ - ESH2-Z5	Rohde & Schwarz	LISN	829991/009	12. 07. 2012
□ - ENY81-CA6	Rohde & Schwarz	ISN	101573	10. 19. 2012

5.6 Test data for Conducted Emission

- . Test Date : December 27, 2011
- . Resolution Bandwidth : 9 kHz
- . Frequency Range : 0.15 MHz ~ 30 MHz
- . Line : L1: Live line, N: Neutral line



◆ Operating condition: 1 920 × 1 080 / 60 Hz (DVI: Digital)



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	45.5	1000.0	0.200	GND	N	10.0	20.5	66.0	
0.412000	37.5	1000.0	9.000	GND	L1	10.0	20.1	57.6	
0.620000	32.8	1000.0	9.000	GND	N	10.0	23.2	56.0	
0.824000	31.4	1000.0	9.000	GND	N	10.0	24.6	56.0	
4.228000	28.7	1000.0	9.000	GND	L1	10.2	27.3	56.0	
7.676000	30.7	1000.0	9.000	GND	L1	10.4	29.3	60.0	
10.948000	29.6	1000.0	9.000	GND	L1	10.5	30.4	60.0	
24.036000	36.9	1000.0	9.000	GND	N	10.8	23.1	60.0	

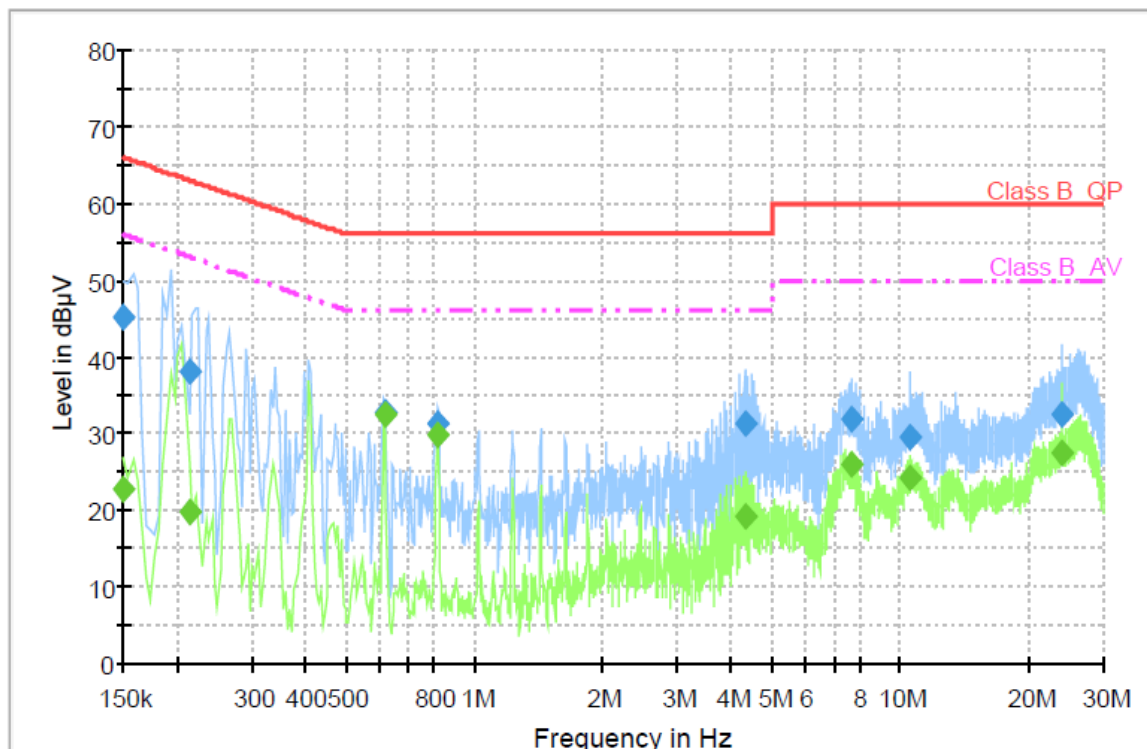
Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	22.2	1000.0	9.000	GND	N	10.0	33.8	56.0	
0.412000	36.7	1000.0	9.000	GND	L1	10.0	10.9	47.6	
0.620000	30.3	1000.0	9.000	GND	N	10.0	15.7	46.0	
0.824000	30.0	1000.0	9.000	GND	N	10.0	16.0	46.0	
4.228000	16.9	1000.0	9.000	GND	L1	10.2	29.1	46.0	
7.676000	24.7	1000.0	9.000	GND	L1	10.4	25.3	50.0	
10.948000	24.1	1000.0	9.000	GND	L1	10.5	25.9	50.0	
24.036000	34.8	1000.0	9.000	GND	N	10.8	15.2	50.0	

< Fig 4. Conducted emission result >



◆ Operating condition: 1 024 × 768 / 60 Hz (DVI: Digital)



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	45.2	1000.0	0.200	GND	N	10.0	20.8	66.0	
0.216000	38.2	1000.0	9.000	GND	N	10.0	24.8	63.0	
0.616000	32.7	1000.0	9.000	GND	N	10.0	23.3	56.0	
0.820000	31.2	1000.0	9.000	GND	N	10.0	24.8	56.0	
4.312000	31.3	1000.0	9.000	GND	L1	10.2	24.7	56.0	
7.672000	32.0	1000.0	9.000	GND	L1	10.3	28.0	60.0	
10.544000	29.5	1000.0	9.000	GND	L1	10.5	30.5	60.0	
24.056000	32.6	1000.0	9.000	GND	L1	11.2	27.4	60.0	

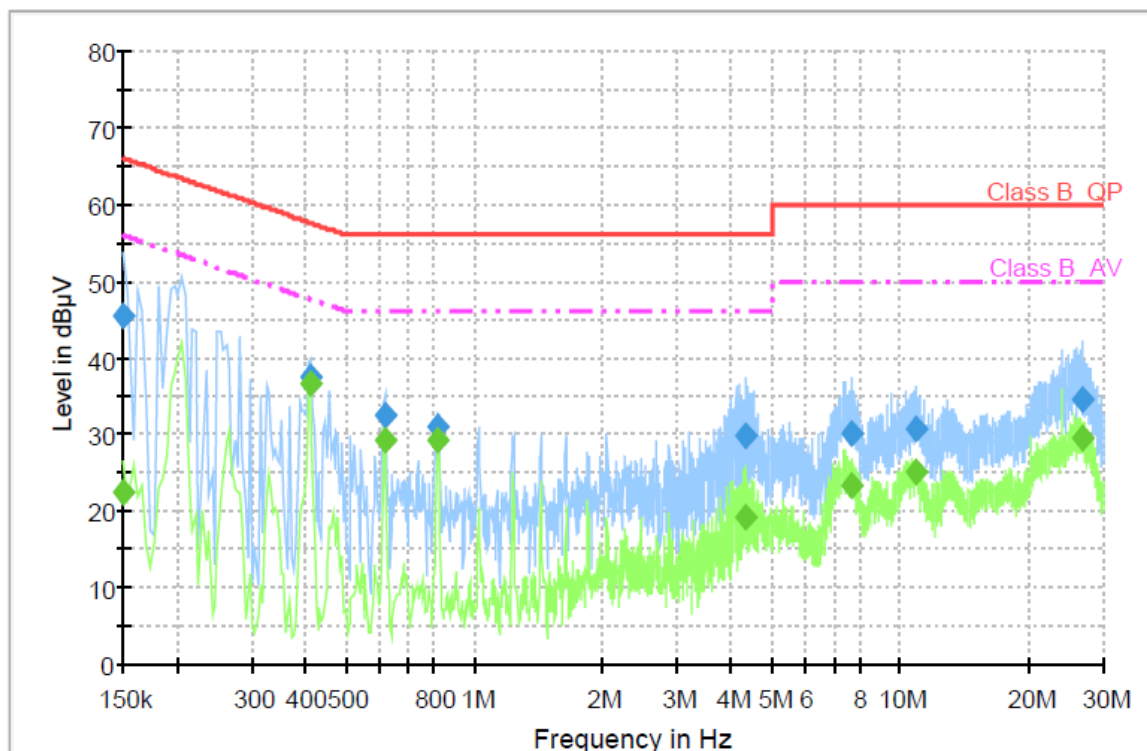
Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	22.8	1000.0	9.000	GND	N	10.0	33.2	56.0	
0.216000	19.8	1000.0	9.000	GND	N	10.0	33.1	53.0	
0.616000	32.3	1000.0	9.000	GND	N	10.0	13.7	46.0	
0.820000	29.7	1000.0	9.000	GND	N	10.0	16.3	46.0	
4.312000	19.2	1000.0	9.000	GND	L1	10.2	26.8	46.0	
7.672000	26.1	1000.0	9.000	GND	L1	10.3	23.9	50.0	
10.544000	24.2	1000.0	9.000	GND	L1	10.5	25.8	50.0	
24.056000	27.5	1000.0	9.000	GND	L1	11.2	22.5	50.0	

< Fig 5. Conducted emission result >



◆ Operating condition: 640 × 480 / 60 Hz (DVI: Digital)



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	45.4	1000.0	0.200	GND	N	10.0	20.6	66.0	
0.412000	37.5	1000.0	9.000	GND	L1	10.0	20.1	57.6	
0.620000	32.5	1000.0	9.000	GND	N	10.0	23.5	56.0	
0.820000	31.1	1000.0	9.000	GND	N	10.0	24.9	56.0	
4.324000	29.8	1000.0	9.000	GND	L1	10.2	26.2	56.0	
7.696000	30.0	1000.0	9.000	GND	L1	10.4	30.0	60.0	
10.936000	30.8	1000.0	9.000	GND	L1	10.5	29.2	60.0	
26.852000	34.6	1000.0	9.000	GND	L1	11.3	25.4	60.0	

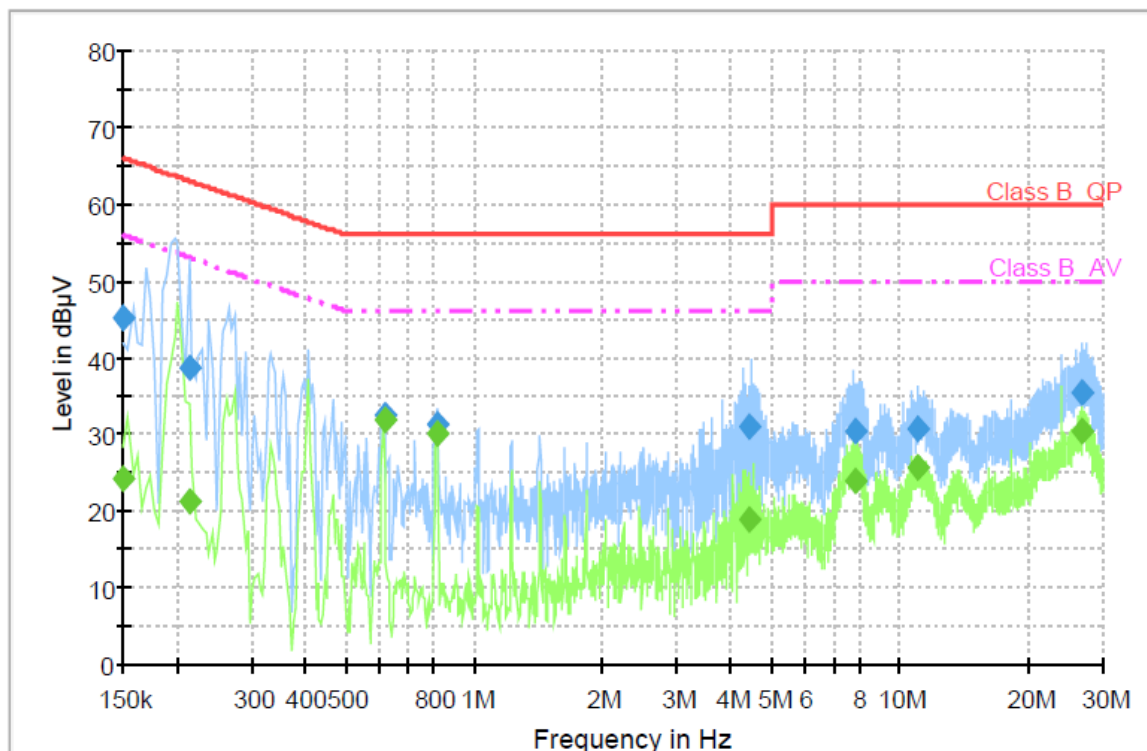
Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	22.4	1000.0	9.000	GND	N	10.0	33.6	56.0	
0.412000	36.7	1000.0	9.000	GND	L1	10.0	10.9	47.6	
0.620000	29.3	1000.0	9.000	GND	N	10.0	16.7	46.0	
0.820000	29.2	1000.0	9.000	GND	N	10.0	16.8	46.0	
4.324000	19.1	1000.0	9.000	GND	L1	10.2	26.9	46.0	
7.696000	23.4	1000.0	9.000	GND	L1	10.4	26.6	50.0	
10.936000	25.0	1000.0	9.000	GND	L1	10.5	25.0	50.0	
26.852000	29.6	1000.0	9.000	GND	L1	11.3	20.4	50.0	

< Fig 6. Conducted emission result >



◆ Operating condition: 1 920 × 1 080 / 60 Hz (HDMI: Digital)



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	45.3	1000.0	0.200	GND	N	10.0	20.7	66.0	
0.216000	38.5	1000.0	9.000	GND	N	10.0	24.4	63.0	
0.616000	32.6	1000.0	9.000	GND	N	10.0	23.4	56.0	
0.820000	31.3	1000.0	9.000	GND	N	10.0	24.7	56.0	
4.452000	31.1	1000.0	9.000	GND	L1	10.2	24.9	56.0	
7.840000	30.4	1000.0	9.000	GND	L1	10.4	29.6	60.0	
11.076000	30.7	1000.0	9.000	GND	L1	10.5	29.3	60.0	
26.856000	35.4	1000.0	9.000	GND	L1	11.3	24.6	60.0	

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	24.2	1000.0	9.000	GND	N	10.0	31.8	56.0	
0.216000	21.2	1000.0	9.000	GND	N	10.0	31.8	53.0	
0.616000	31.9	1000.0	9.000	GND	N	10.0	14.1	46.0	
0.820000	30.1	1000.0	9.000	GND	N	10.0	15.9	46.0	
4.452000	18.8	1000.0	9.000	GND	L1	10.2	27.2	46.0	
7.840000	23.8	1000.0	9.000	GND	L1	10.4	26.2	50.0	
11.076000	25.6	1000.0	9.000	GND	L1	10.5	24.4	50.0	
26.856000	30.5	1000.0	9.000	GND	L1	11.3	19.5	50.0	

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



6. Radiated Emission

6.1 Operating Environment

Temperature : 1.0 °C
Relative Humidity : 31.0 % R.H.

6.2 Test Set-up

A preliminary scan with peak mode was performed in the semi anechoic chamber and found frequency for test site. The formal radiated emission was measured at 10 m distance open area test site and 3 m distance 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(Open area test site)	Uncertainty	Remark
Radiated emission (30 MHz ~ 300 MHz, 10 m, Vertical)	± 4.03 dB	Confidence level of approximately 95 % ($k = 2$)
Radiated emission (30 MHz ~ 300 MHz, 10 m, Horizontal)	± 3.96 dB	Confidence level of approximately 95 % ($k = 2$)
Radiated emission (300 MHz ~ 1 000 MHz, 10 m, Vertical)	± 4.01 dB	Confidence level of approximately 95 % ($k = 2$)
Radiated emission (300 MHz ~ 1 000 MHz, 10 m, Horizontal)	± 3.88 dB	Confidence level of approximately 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
■ - ESCS30	Rohde & Schwarz	EMI Test Receiver	839809/003	12. 05. 2012
■ - HK116	Rohde & Schwarz	Biconical Antenna	832639/007	03. 15. 2012
■ - HL223	Rohde & Schwarz	Log Periodic Antenna	835998/004	03. 15. 2012
■ - HD100	HD GmbH	Position Controller	100/692/01	N/A
■ - DS415S	HD GmbH	Turntable	415/657/01	N/A
■ - MA240	HD GmbH	Antenna Mast	240/565/01	N/A
■ - ESIB26	Rohde & Schwarz	EMI Test Receiver	830482/010	12. 05. 2012
■ - 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. 2012



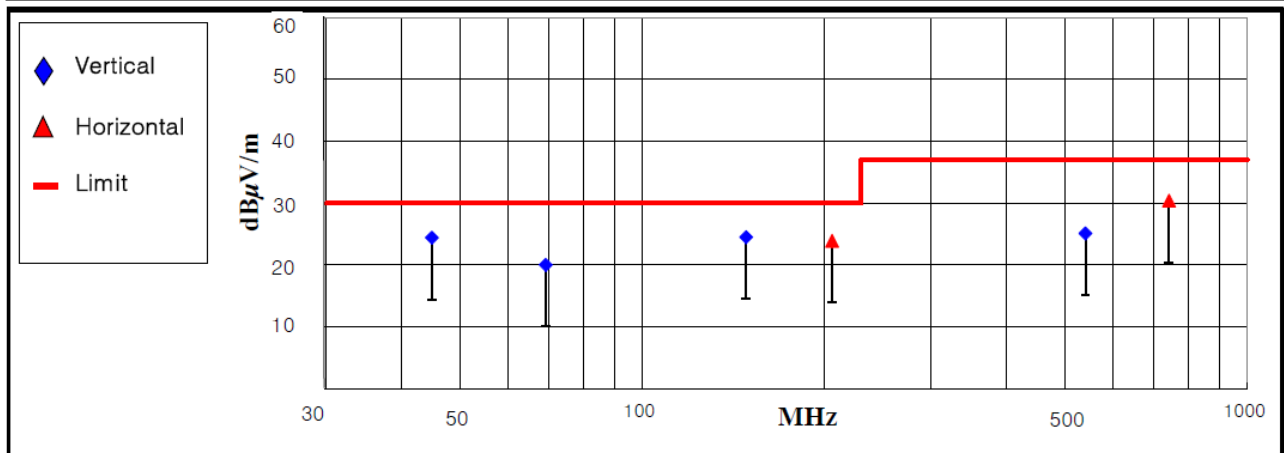
6.6 Test data for Radiated Emission

- . Test Date : December 27 ~ 28, 2011
-. Measurement Distance : 3 m
-. Note : The highest frequency of the internal source of the EUT is between 108 MHz and 500 MHz (148 MHz). The measurement was made up to 2 000 MHz
-. Measurement

Frequency range	30 MHz ~ 1 GHz	Above 1 GHz
Detector type	Quasi peak	Peak / Average
IF bandwidth	120 kHz	1 MHz

◆ Operating Condition: 1 920 × 1 080 / 60 Hz (DVI: Digital)

Frequency (MHz)	Measurement Level				Limit (dBμ V/m)	Margin (dB)	Positioning System		
	Reading Value (dBμ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Test Result (dBμ V/m)			Pol. (H/V)	Height (cm)	Angle (°)
44.91	12.98	10.08	1.34	24.40	30.00	5.60	V	102	113
69.25	9.34	8.66	2.00	20.00	30.00	10.00	V	100	62
148.50	9.41	11.94	3.15	24.50	30.00	5.50	V	100	336
205.94	5.76	14.37	3.77	23.90	30.00	6.10	H	224	159
539.99	0.39	18.12	6.59	25.10	37.00	11.90	V	152	189
742.46	1.83	20.68	7.89	30.40	37.00	6.60	H	115	220

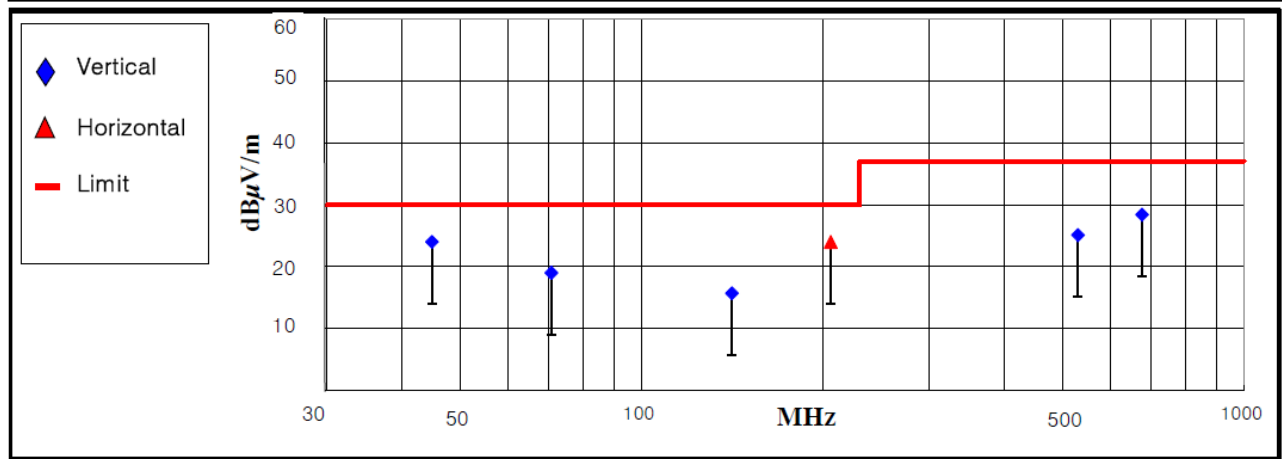


< Fig 8. Radiated emission result (30 MHz ~ 1 000 MHz) >



◆ Operating Condition: 1 920 × 1 080 / 60 Hz (HDMI: Digital)

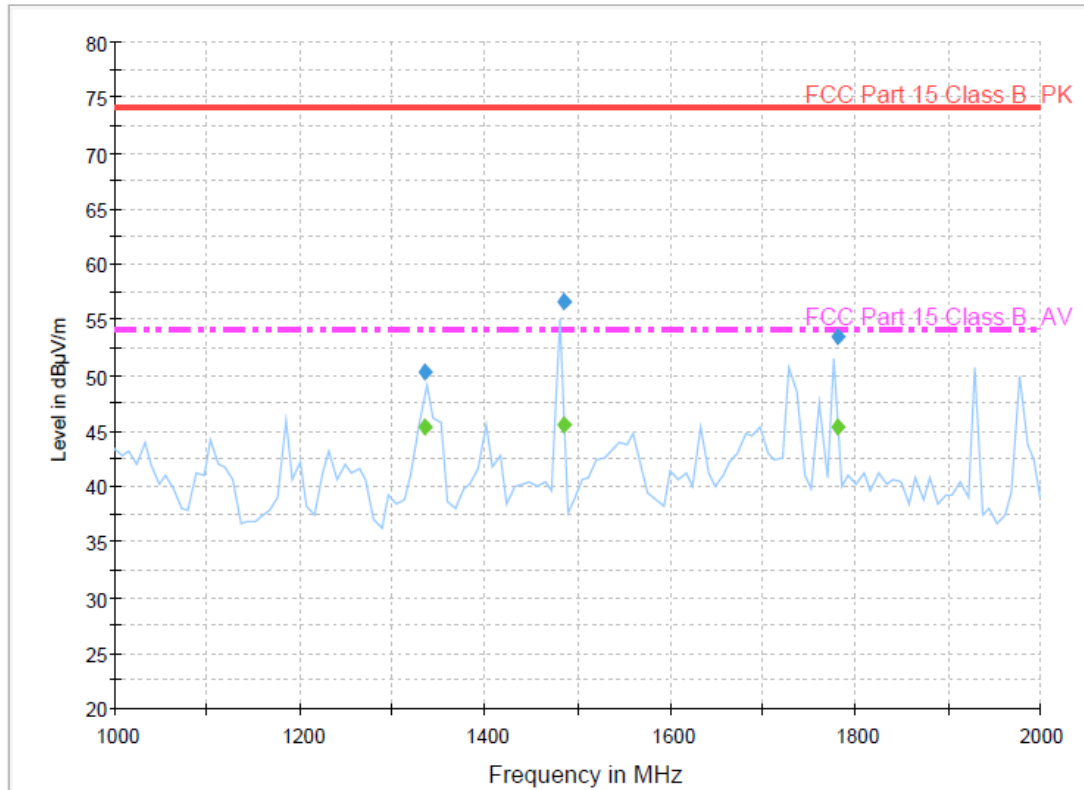
Frequency (MHz)	Measurement Level				Limit (dBμV/m)	Margin (dB)	Positioning System		
	Reading	Antenna	Cable	Test Result			Pol.	Height	Angle
	Value(dBμV)	Factor(dB/m)	Loss(dB)	(dBμV/m)			(H/V)	(cm)	(°)
44.87	12.57	10.09	1.34	24.00	30.00	6.00	V	100	86
70.82	8.28	8.69	2.03	19.00	30.00	11.00	V	100	75
141.18	0.78	11.85	3.07	15.70	30.00	14.30	V	100	81
205.94	5.86	14.37	3.77	24.00	30.00	6.00	H	215	311
529.70	0.61	17.97	6.52	25.10	37.00	11.90	V	195	22
676.56	0.99	19.92	7.49	28.40	37.00	8.60	V	166	201



< Fig 9. Radiated emission result (30 MHz ~ 1 000 MHz) >



- ◆ Operating Condition: 1 920 × 1 080 / 60 Hz (DVI: Digital)
Green marker: Average detector, Blue marker: 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)
1336.473347	50.3	1000.0	1000.000	100.0	H	139.0	-13.4	23.7	74.0
1485.161924	56.7	1000.0	1000.000	100.0	V	188.0	-13.2	17.3	74.0
1782.155110	53.5	1000.0	1000.000	100.0	H	212.0	-12.0	20.5	74.0

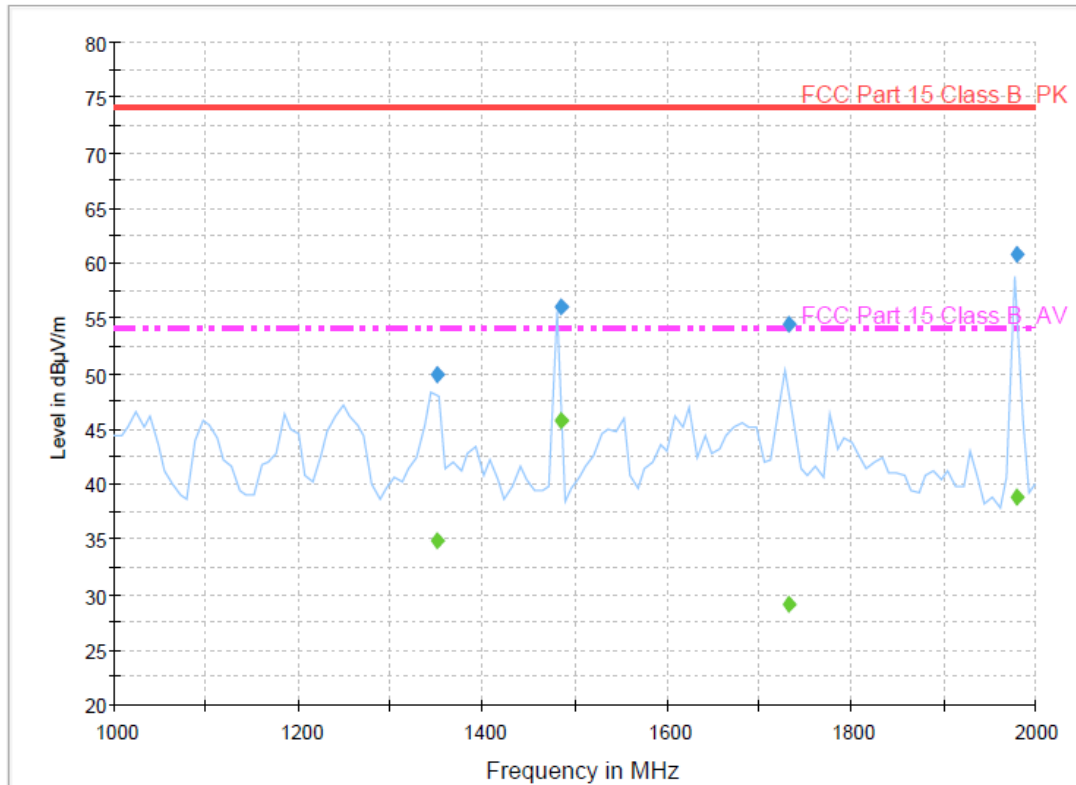
Final Result 2

Frequency (MHz)	CAverage (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1336.473347	45.4	1000.0	1000.000	100.0	H	139.0	-13.4	8.6	54.0
1485.161924	45.5	1000.0	1000.000	100.0	V	188.0	-13.2	8.5	54.0
1782.155110	45.4	1000.0	1000.000	100.0	H	212.0	-12.0	8.6	54.0

< Fig 10. Radiated emission result (1 000 MHz ~ 2 000 MHz) >



- ◆ Operating Condition: 1 920 × 1 080 / 60 Hz (HDMI: Digital)
Green marker: Average detector, Blue marker: 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)
1350.489379	49.9	1000.0	1000.000	100.0	V	223.0	-13.4	24.1	74.0
1484.761924	56.1	1000.0	1000.000	100.0	V	203.0	-13.2	17.9	74.0
1733.658918	54.4	1000.0	1000.000	199.0	V	204.0	-12.3	19.6	74.0
1980.332100	60.7	1000.0	1000.000	100.0	V	144.0	-11.3	13.3	74.0

Final Result 2

Frequency (MHz)	CAverage (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1350.489379	34.9	1000.0	1000.000	100.0	V	223.0	-13.4	19.1	54.0
1484.761924	45.8	1000.0	1000.000	100.0	V	203.0	-13.2	8.2	54.0
1733.658918	29.2	1000.0	1000.000	199.0	V	204.0	-12.3	24.8	54.0
1980.332100	38.8	1000.0	1000.000	100.0	V	144.0	-11.3	15.2	54.0

< Fig 11. 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. CINEMA 3D GLASSES-FREE MONITOR (Model Name: D2500N)** was complies with §15.107 and 15.109 of the FCC Rules.

- The end -