



FCC EVALUATION REPORT FOR CERTIFICATION

Applicant : LG Electronics Inc.

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

Pyeongteak-si, Gyeonggi-do, Korea.

Attn: Mr. Sang-Wook Lee, Chief research engineer

Date of Issue : October 25, 2010

Order Number: GETEC-C1-10-198

Test Report Number: GETEC-E3-10-101

Test Site: Gumi College EMC Center

FCC Registration Number: (100749, 443957)

FCC ID.: BEJ37LK450UB

Applicant: LG Electronics Inc.

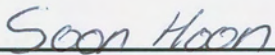
Rule Part(s)	: FCC Part 15 Subpart B
Equipment Class	: Class B computing device peripheral (JBP)
EUT Type	: LCD TV/Monitor
Type of Authority	: Certification
Model Name	: 37LK450-UB
Trade Name	: LG

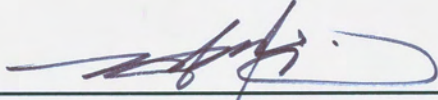
This equipment has been shown to be in compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003 / Canadian standard ICES-003

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 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, 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. Sang-Wook Lee, Chief research engineer

Tel Number: +82-31-610-9623

- **FCC ID.** BEJ37LK450UB
- **EUT Type** LCD TV/Monitor
- **Model Name** 37LK450-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** October 20 ~ 21, 2010
- **Place of Test** **Gumi College EMC Center** (FCC Registration Number: 100749, 443957)
407, Bugok-dong, Gumi-si, Gyeongbuk, Korea.
- **Test Report Number** GETEC-E3-10-101
- **Dates of Issue** October 25, 2010



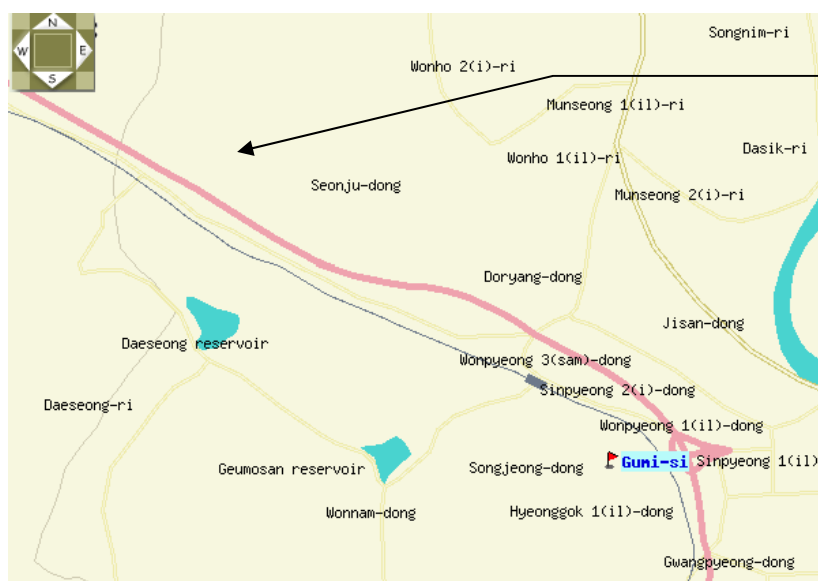
2. Introduction

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: 37LK450-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: 37LK450-UB) FCC ID.: BEJ37LK450UB**

MODELS		32LK450 (32LK450-UB)	37LK450 (37LK450-UB)
Dimensions (W x H x D)	With stand	795.0 x 568.0 x 207.0 mm	913.0 x 639.0 x 265.0 mm
	Without stand	795.0 x 504.0 x 73.5 mm	913.0 x 571.0 x 77.4 mm
Weight	With stand		12.2 kg
	Without stand		10.5 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 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
Printer	Hewlett Packard	970CXI	S/N: MY9B01F1FG 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	2.00 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	3.00 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: 1 920 × 1 080 / 60 Hz (RGB: Analog, HDMI/DVI: Digital)

Conducted emission: 1 920 × 1 080 / 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 play mode

◆ Operating test pattern

- . Continuous playback mode with video files

“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

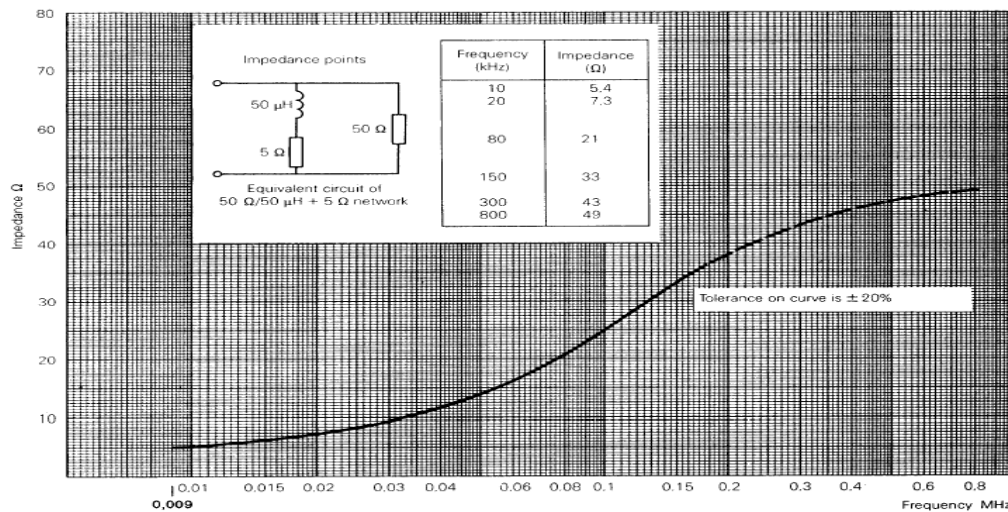


Fig 2. Impedance of LISN



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 $\times$ 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 : 21 °C
Relative Humidity : 48 % 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)	± 2.69 dB	Confidence levels of 95 % ($k = 2$)
Conducted emission (150 kHz ~ 30 MHz)	± 4.16 dB	Confidence levels of 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. 10. 2010
■ - ESH3-Z5	Rohde & Schwarz	LISN	838979/020	12. 10. 2010
■ - ESH2-Z5	Rohde & Schwarz	LISN	829991/009	12. 10. 2010
□ - ISN T8	TESEQ. GmbH	Impedance Network	24568	10. 16. 2010

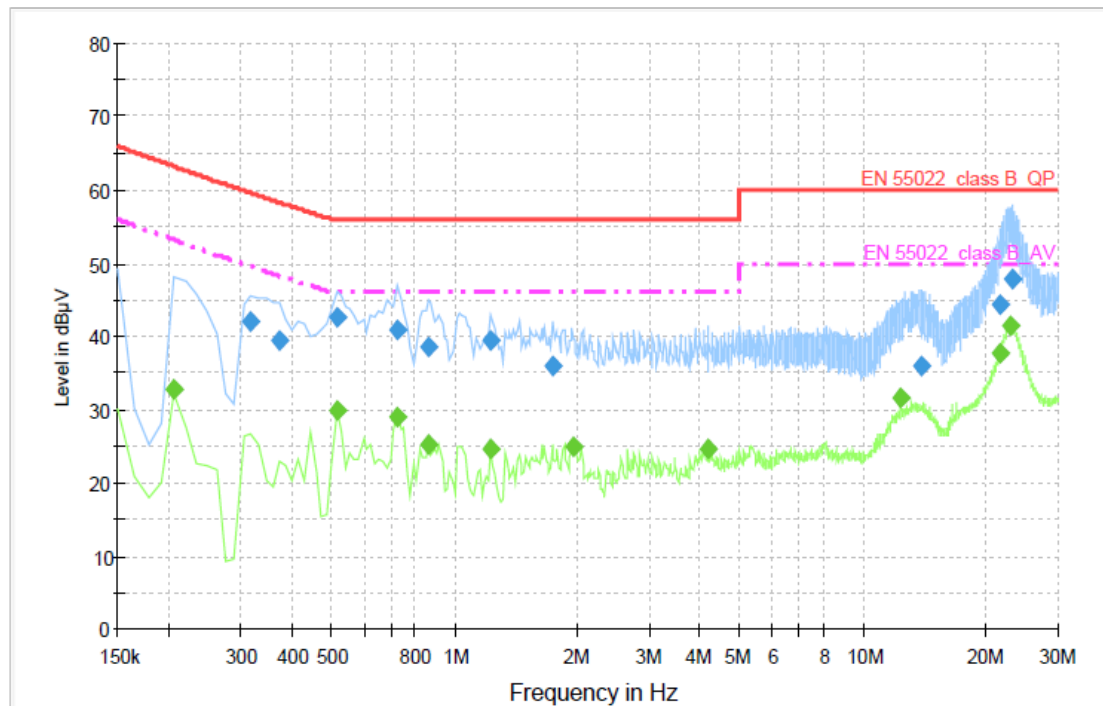
5.6 Test data for Conducted Emission

-. Test Date : October 20, 2010
-. Resolution Bandwidth : 9 kHz
-. Frequency Range : 0.15 MHz ~ 30 MHz



◆ Operating condition: 1 920 × 1 080 / 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
0.318000	42.1	1000.000	9.000	GND	L1	10.0	17.5	59.6	
0.374000	39.4	1000.000	9.000	GND	L1	10.0	18.9	58.3	
0.514000	42.6	1000.000	9.000	GND	L1	10.0	13.4	56.0	
0.724000	40.8	1000.000	9.000	GND	L1	10.0	15.2	56.0	
0.864000	38.6	1000.000	9.000	GND	L1	10.0	17.4	56.0	
1.228000	39.5	1000.000	9.000	GND	L1	10.1	16.5	56.0	
1.732000	36.0	1000.000	9.000	GND	L1	10.1	20.0	56.0	
13.856000	35.9	1000.000	9.000	GND	L1	10.6	24.1	60.0	
21.682000	44.4	1000.000	9.000	GND	L1	11.1	15.6	60.0	
23.222000	47.8	1000.000	9.000	GND	L1	11.2	12.2	60.0	

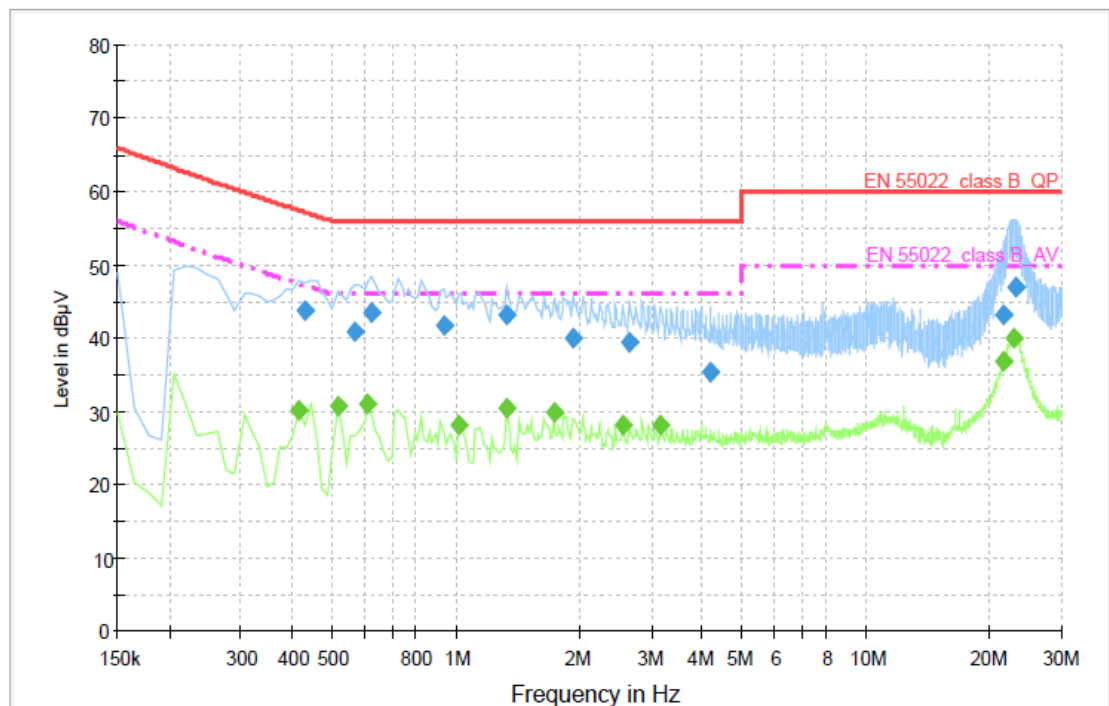
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.206000	32.8	1000.000	9.000	GND	L1	10.0	20.4	53.2	
0.514000	30.0	1000.000	9.000	GND	L1	10.0	16.0	46.0	
0.724000	29.0	1000.000	9.000	GND	L1	10.0	17.0	46.0	
0.864000	25.3	1000.000	9.000	GND	L1	10.0	20.7	46.0	
1.228000	24.8	1000.000	9.000	GND	L1	10.1	21.2	46.0	
1.956000	25.0	1000.000	9.000	GND	L1	10.1	21.0	46.0	
4.182000	24.5	1000.000	9.000	GND	L1	10.2	21.5	46.0	
12.358000	31.7	1000.000	9.000	GND	L1	10.5	18.3	50.0	
21.682000	37.6	1000.000	9.000	GND	L1	11.1	12.4	50.0	
22.956000	41.4	1000.000	9.000	GND	L1	11.2	8.6	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
0.430000	43.9	1000.000	9.000	GND	N	10.0	13.3	57.2	
0.570000	40.8	1000.000	9.000	GND	N	10.0	15.2	56.0	
0.626000	43.5	1000.000	9.000	GND	N	10.0	12.5	56.0	
0.934000	41.6	1000.000	9.000	GND	N	10.0	14.4	56.0	
1.326000	43.1	1000.000	9.000	GND	N	10.1	12.9	56.0	
1.942000	40.1	1000.000	9.000	GND	N	10.1	15.9	56.0	
2.656000	39.4	1000.000	9.000	GND	N	10.1	16.6	56.0	
4.168000	35.3	1000.000	9.000	GND	N	10.2	20.7	56.0	
21.654000	43.2	1000.000	9.000	GND	N	10.8	16.8	60.0	
23.096000	47.0	1000.000	9.000	GND	N	10.8	13.0	60.0	

Final Measurement Detector 2

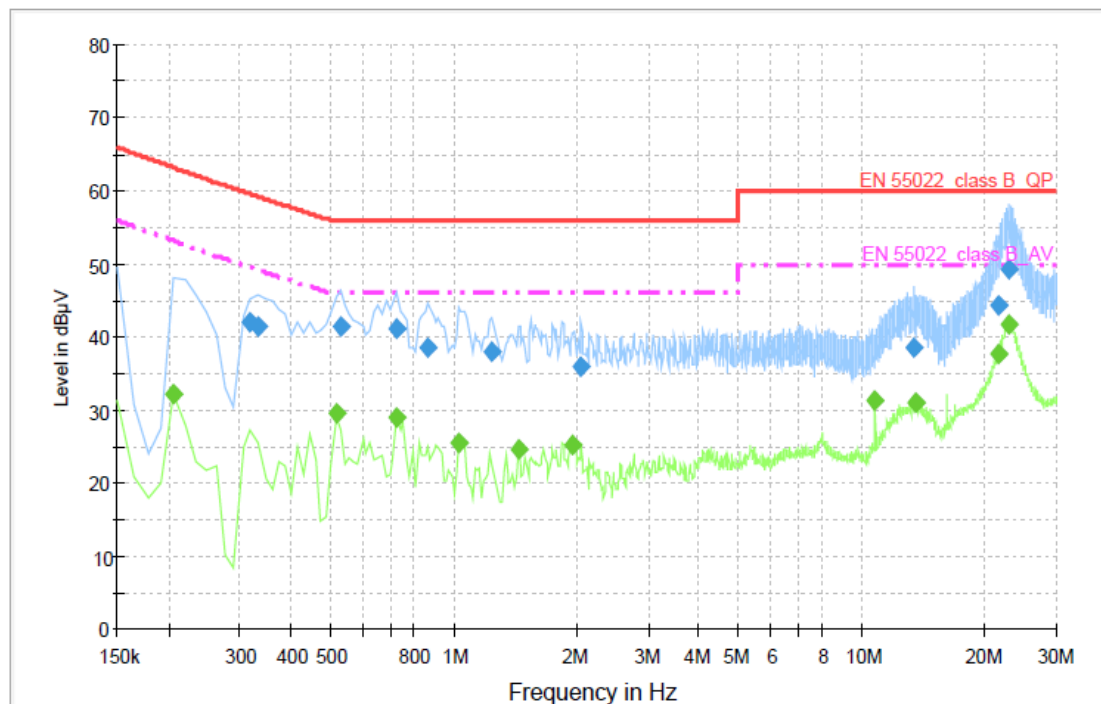
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.416000	30.1	1000.000	9.000	GND	N	10.0	17.3	47.4	
0.514000	30.6	1000.000	9.000	GND	N	10.0	15.4	46.0	
0.612000	31.0	1000.000	9.000	GND	N	10.0	15.0	46.0	
1.018000	28.1	1000.000	9.000	GND	N	10.1	17.9	46.0	
1.326000	30.4	1000.000	9.000	GND	N	10.1	15.6	46.0	
1.732000	29.7	1000.000	9.000	GND	N	10.1	16.3	46.0	
2.544000	28.1	1000.000	9.000	GND	N	10.1	17.9	46.0	
3.160000	28.2	1000.000	9.000	GND	N	10.1	17.8	46.0	
21.682000	36.7	1000.000	9.000	GND	N	10.8	13.3	50.0	
22.998000	40.1	1000.000	9.000	GND	N	10.8	9.9	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
0.318000	42.1	1000.000	9.000	GND	L1	10.0	17.5	59.6	
0.332000	41.6	1000.000	9.000	GND	L1	10.0	17.6	59.2	
0.528000	41.5	1000.000	9.000	GND	L1	10.0	14.5	56.0	
0.724000	41.2	1000.000	9.000	GND	L1	10.0	14.8	56.0	
0.864000	38.6	1000.000	9.000	GND	L1	10.0	17.4	56.0	
1.242000	38.0	1000.000	9.000	GND	L1	10.1	18.0	56.0	
2.054000	36.0	1000.000	9.000	GND	L1	10.1	20.0	56.0	
13.422000	38.6	1000.000	9.000	GND	L1	10.6	21.4	60.0	
21.584000	44.5	1000.000	9.000	GND	L1	11.1	15.5	60.0	
22.928000	49.3	1000.000	9.000	GND	L1	11.2	10.7	60.0	

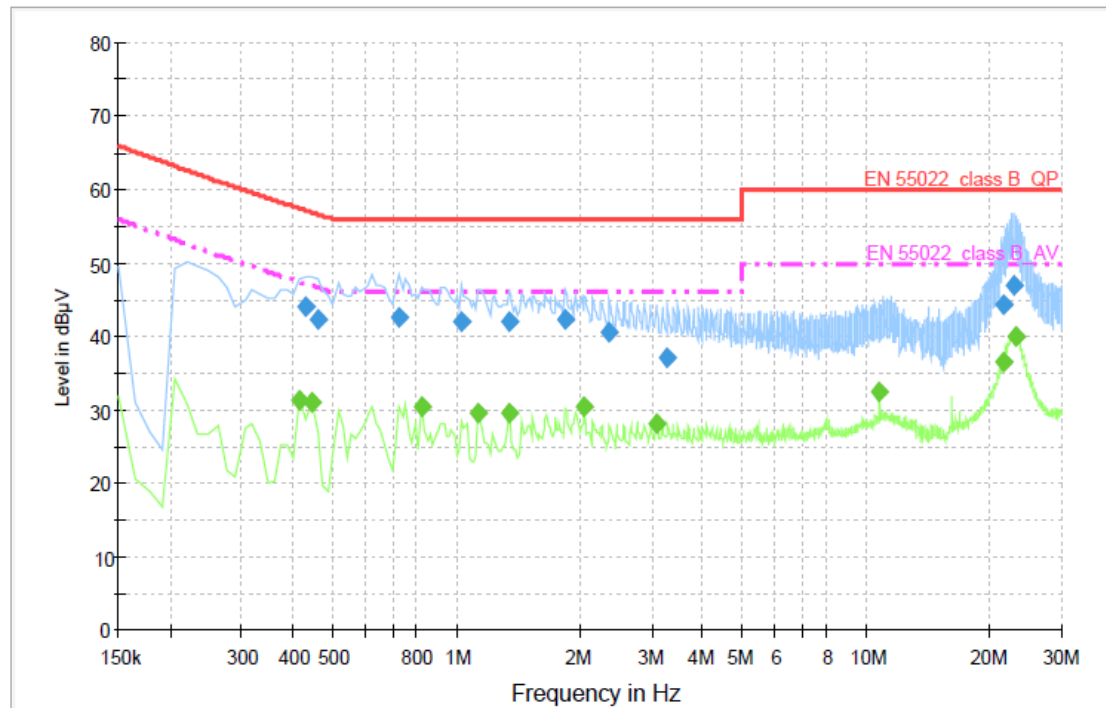
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.206000	32.3	1000.000	9.000	GND	L1	10.0	20.9	53.2	
0.514000	29.6	1000.000	9.000	GND	L1	10.0	16.4	46.0	
0.724000	29.0	1000.000	9.000	GND	L1	10.0	17.0	46.0	
1.032000	25.5	1000.000	9.000	GND	L1	10.0	20.5	46.0	
1.438000	24.8	1000.000	9.000	GND	L1	10.1	21.2	46.0	
1.956000	25.3	1000.000	9.000	GND	L1	10.1	20.7	46.0	
10.804000	31.2	1000.000	9.000	GND	L1	10.4	18.8	50.0	
13.534000	30.9	1000.000	9.000	GND	L1	10.6	19.1	50.0	
21.626000	37.8	1000.000	9.000	GND	L1	11.1	12.2	50.0	
22.956000	41.6	1000.000	9.000	GND	L1	11.2	8.4	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
0.430000	44.1	1000.000	9.000	GND	N	10.0	13.1	57.2	
0.458000	42.2	1000.000	9.000	GND	N	10.0	14.5	56.7	
0.724000	42.6	1000.000	9.000	GND	N	10.0	13.4	56.0	
1.032000	42.1	1000.000	9.000	GND	N	10.1	13.9	56.0	
1.340000	41.9	1000.000	9.000	GND	N	10.1	14.1	56.0	
1.844000	42.2	1000.000	9.000	GND	N	10.1	13.8	56.0	
2.362000	40.6	1000.000	9.000	GND	N	10.1	15.4	56.0	
3.272000	37.2	1000.000	9.000	GND	N	10.1	18.8	56.0	
21.598000	44.3	1000.000	9.000	GND	N	10.8	15.7	60.0	
22.914000	46.9	1000.000	9.000	GND	N	10.8	13.1	60.0	

Final Measurement Detector 2

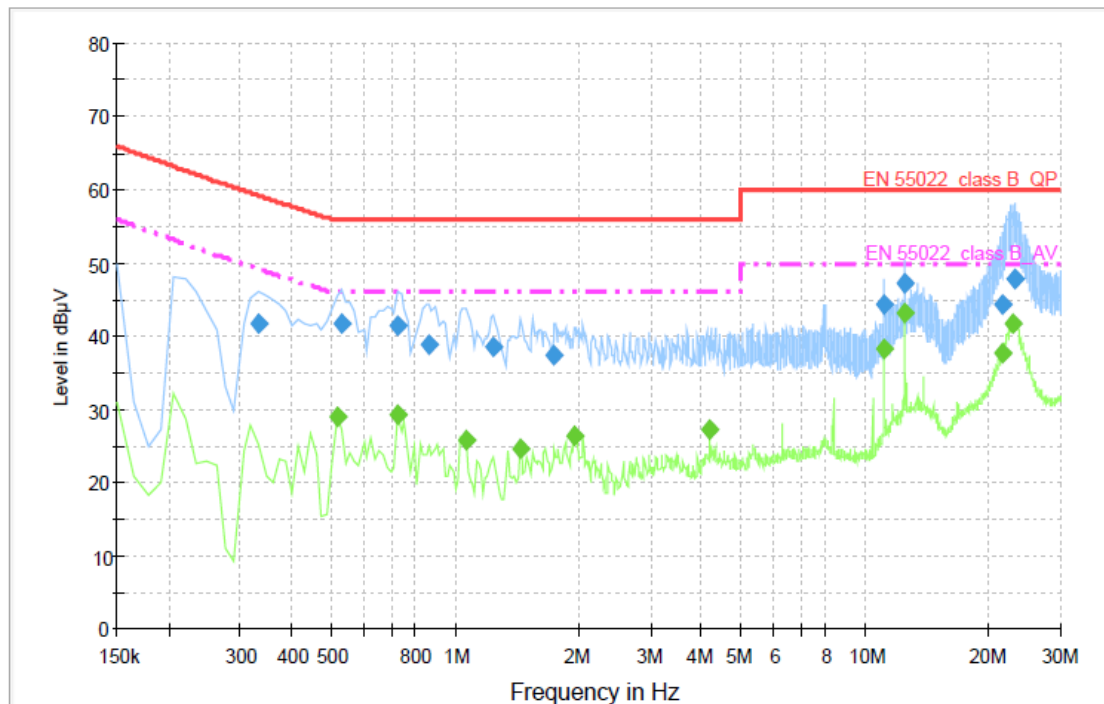
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.416000	31.3	1000.000	9.000	GND	N	10.0	16.1	47.4	
0.444000	30.9	1000.000	9.000	GND	N	10.0	16.0	46.9	
0.822000	30.4	1000.000	9.000	GND	N	10.0	15.6	46.0	
1.130000	29.7	1000.000	9.000	GND	N	10.1	16.3	46.0	
1.340000	29.5	1000.000	9.000	GND	N	10.1	16.5	46.0	
2.054000	30.3	1000.000	9.000	GND	N	10.1	15.7	46.0	
3.076000	28.2	1000.000	9.000	GND	N	10.1	17.8	46.0	
10.804000	32.5	1000.000	9.000	GND	N	10.4	17.5	50.0	
21.626000	36.6	1000.000	9.000	GND	N	10.8	13.4	50.0	
23.124000	39.9	1000.000	9.000	GND	N	10.8	10.1	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
0.332000	41.6	1000.000	9.000	GND	L1	10.0	17.6	59.2	
0.528000	41.8	1000.000	9.000	GND	L1	10.0	14.2	56.0	
0.724000	41.5	1000.000	9.000	GND	L1	10.0	14.5	56.0	
0.864000	38.9	1000.000	9.000	GND	L1	10.0	17.1	56.0	
1.242000	38.4	1000.000	9.000	GND	L1	10.1	17.6	56.0	
1.746000	37.3	1000.000	9.000	GND	L1	10.1	18.7	56.0	
11.154000	44.4	1000.000	9.000	GND	L1	10.5	15.6	60.0	
12.540000	47.1	1000.000	9.000	GND	L1	10.6	12.9	60.0	
21.626000	44.3	1000.000	9.000	GND	L1	11.1	15.7	60.0	
23.152000	47.9	1000.000	9.000	GND	L1	11.2	12.1	60.0	

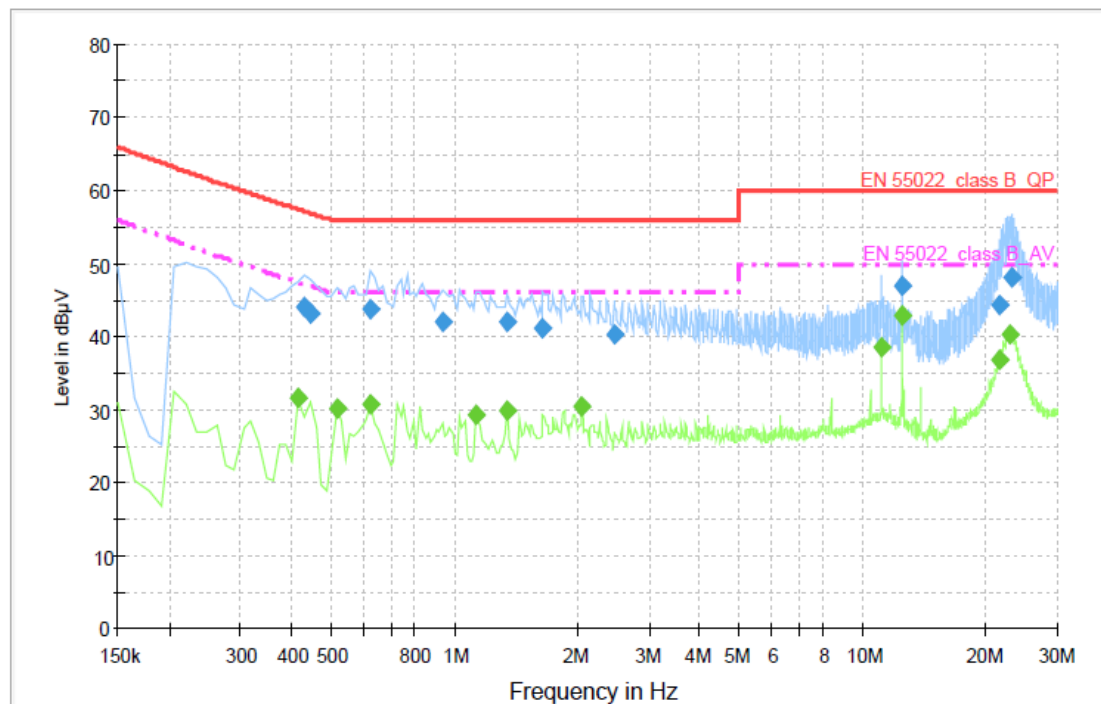
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.514000	29.1	1000.000	9.000	GND	L1	10.0	16.9	46.0	
0.724000	29.3	1000.000	9.000	GND	L1	10.0	16.7	46.0	
1.060000	25.7	1000.000	9.000	GND	L1	10.0	20.3	46.0	
1.438000	24.6	1000.000	9.000	GND	L1	10.1	21.4	46.0	
1.956000	26.4	1000.000	9.000	GND	L1	10.1	19.6	46.0	
4.168000	27.4	1000.000	9.000	GND	L1	10.2	18.6	46.0	
11.154000	38.3	1000.000	9.000	GND	L1	10.5	11.7	50.0	
12.540000	43.1	1000.000	9.000	GND	L1	10.6	6.9	50.0	
21.654000	37.7	1000.000	9.000	GND	L1	11.1	12.3	50.0	
22.998000	41.7	1000.000	9.000	GND	L1	11.2	8.3	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
0.430000	44.2	1000.000	9.000	GND	N	10.0	13.0	57.2	
0.444000	43.2	1000.000	9.000	GND	N	10.0	13.7	56.9	
0.626000	43.9	1000.000	9.000	GND	N	10.0	12.1	56.0	
0.934000	42.1	1000.000	9.000	GND	N	10.0	13.9	56.0	
1.340000	42.2	1000.000	9.000	GND	N	10.1	13.8	56.0	
1.648000	41.2	1000.000	9.000	GND	N	10.1	14.8	56.0	
2.460000	40.2	1000.000	9.000	GND	N	10.1	15.8	56.0	
12.540000	46.9	1000.000	9.000	GND	N	10.5	13.1	60.0	
21.640000	44.3	1000.000	9.000	GND	N	10.8	15.7	60.0	
23.180000	48.2	1000.000	9.000	GND	N	10.8	11.8	60.0	

Final Measurement Detector 2

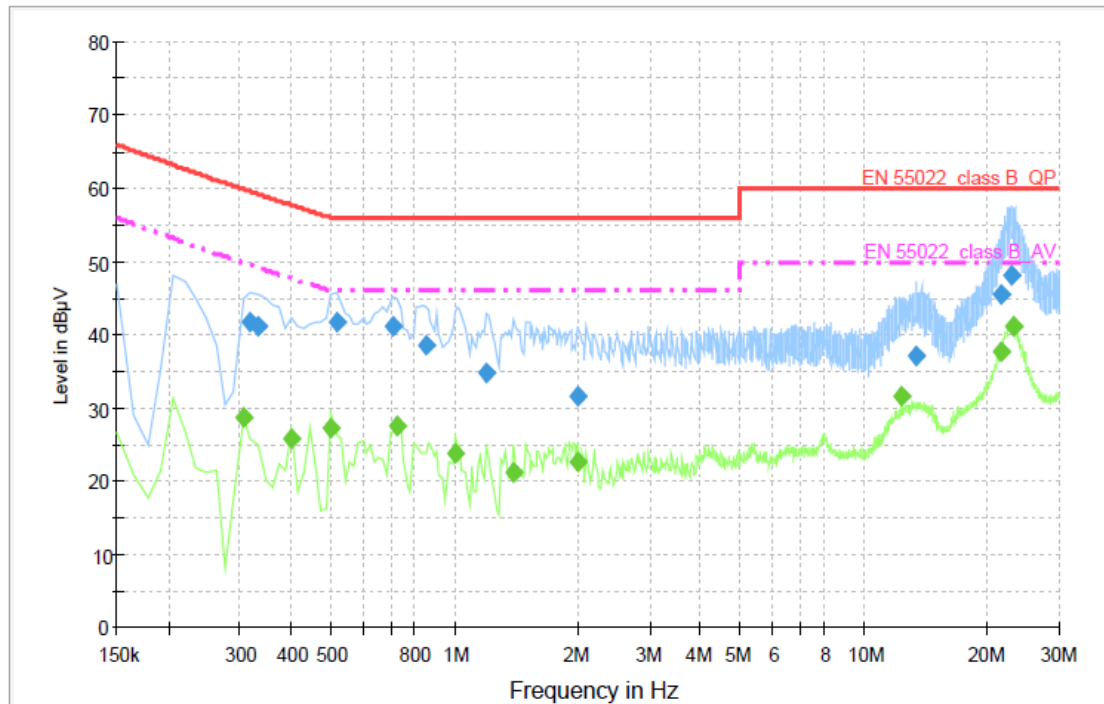
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.416000	31.7	1000.000	9.000	GND	N	10.0	15.7	47.4	
0.514000	30.2	1000.000	9.000	GND	N	10.0	15.8	46.0	
0.626000	30.8	1000.000	9.000	GND	N	10.0	15.2	46.0	
1.130000	29.4	1000.000	9.000	GND	N	10.1	16.6	46.0	
1.340000	29.9	1000.000	9.000	GND	N	10.1	16.1	46.0	
2.054000	30.5	1000.000	9.000	GND	N	10.1	15.5	46.0	
11.154000	38.6	1000.000	9.000	GND	N	10.4	11.4	50.0	
12.540000	42.9	1000.000	9.000	GND	N	10.5	7.1	50.0	
21.654000	36.8	1000.000	9.000	GND	N	10.8	13.2	50.0	
22.970000	40.3	1000.000	9.000	GND	N	10.8	9.7	50.0	

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



◆ Operating condition: 1 920 × 1 080 / 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
0.318000	41.9	1000.000	9.000	GND	L1	10.0	17.7	59.6	
0.332000	41.2	1000.000	9.000	GND	L1	10.0	18.0	59.2	
0.514000	41.8	1000.000	9.000	GND	L1	10.0	14.2	56.0	
0.710000	41.2	1000.000	9.000	GND	L1	10.0	14.8	56.0	
0.850000	38.6	1000.000	9.000	GND	L1	10.0	17.4	56.0	
1.200000	34.7	1000.000	9.000	GND	L1	10.1	21.3	56.0	
1.998000	31.7	1000.000	9.000	GND	L1	10.1	24.3	56.0	
13.422000	37.2	1000.000	9.000	GND	L1	10.6	22.8	60.0	
21.654000	45.4	1000.000	9.000	GND	L1	11.1	14.6	60.0	
22.942000	48.2	1000.000	9.000	GND	L1	11.2	11.8	60.0	

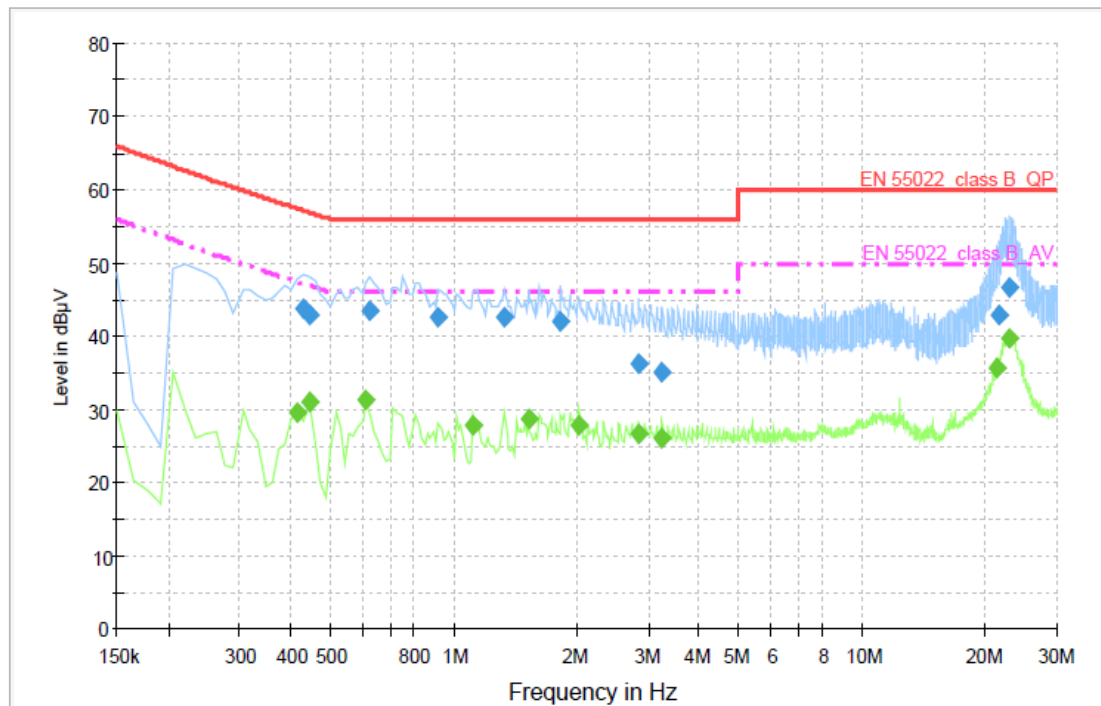
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.304000	28.8	1000.000	9.000	GND	L1	10.0	21.1	49.9	
0.402000	25.9	1000.000	9.000	GND	L1	10.0	21.8	47.7	
0.500000	27.1	1000.000	9.000	GND	L1	10.0	18.9	46.0	
0.724000	27.7	1000.000	9.000	GND	L1	10.0	18.3	46.0	
1.004000	23.9	1000.000	9.000	GND	L1	10.0	22.1	46.0	
1.396000	21.2	1000.000	9.000	GND	L1	10.1	24.8	46.0	
1.998000	22.6	1000.000	9.000	GND	L1	10.1	23.4	46.0	
12.358000	31.6	1000.000	9.000	GND	L1	10.5	18.4	50.0	
21.654000	37.8	1000.000	9.000	GND	L1	11.1	12.2	50.0	
23.152000	41.0	1000.000	9.000	GND	L1	11.2	9.0	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
0.430000	43.8	1000.000	9.000	GND	N	10.0	13.4	57.2	
0.444000	42.8	1000.000	9.000	GND	N	10.0	14.1	56.9	
0.626000	43.4	1000.000	9.000	GND	N	10.0	12.6	56.0	
0.920000	42.6	1000.000	9.000	GND	N	10.0	13.4	56.0	
1.326000	42.6	1000.000	9.000	GND	N	10.1	13.4	56.0	
1.830000	42.0	1000.000	9.000	GND	N	10.1	14.0	56.0	
2.838000	36.1	1000.000	9.000	GND	N	10.1	19.9	56.0	
3.244000	35.2	1000.000	9.000	GND	N	10.1	20.8	56.0	
21.598000	42.9	1000.000	9.000	GND	N	10.8	17.1	60.0	
22.928000	46.6	1000.000	9.000	GND	N	10.8	13.4	60.0	

Final Measurement Detector 2

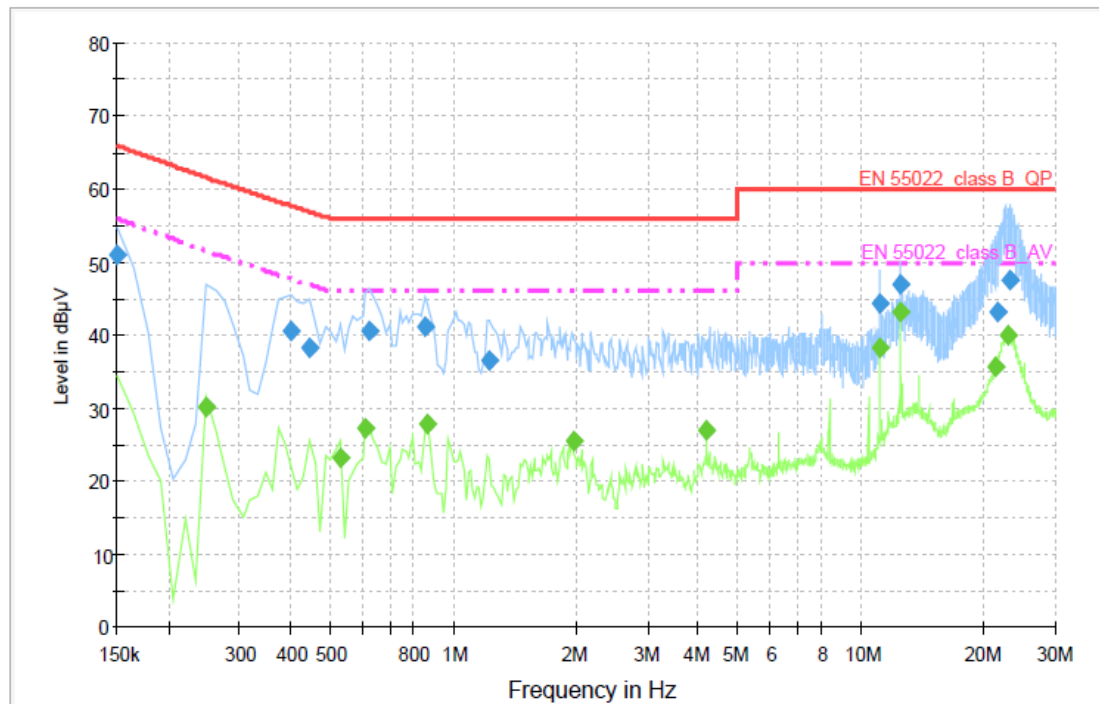
Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.416000	29.7	1000.000	9.000	GND	N	10.0	17.7	47.4	
0.444000	30.9	1000.000	9.000	GND	N	10.0	16.0	46.9	
0.612000	31.4	1000.000	9.000	GND	N	10.0	14.6	46.0	
1.116000	27.9	1000.000	9.000	GND	N	10.1	18.1	46.0	
1.522000	28.8	1000.000	9.000	GND	N	10.1	17.2	46.0	
2.026000	27.8	1000.000	9.000	GND	N	10.1	18.2	46.0	
2.838000	26.6	1000.000	9.000	GND	N	10.1	19.4	46.0	
3.244000	26.0	1000.000	9.000	GND	N	10.1	20.0	46.0	
21.500000	35.8	1000.000	9.000	GND	N	10.8	14.2	50.0	
23.054000	39.8	1000.000	9.000	GND	N	10.8	10.2	50.0	

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



◆ Operating condition: USB memory stick 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
0.150000	51.0	1000.000	9.000	GND	L1	10.0	15.0	66.0	
0.402000	40.5	1000.000	9.000	GND	L1	10.0	17.2	57.7	
0.444000	38.2	1000.000	9.000	GND	L1	10.0	18.7	56.9	
0.626000	40.7	1000.000	9.000	GND	L1	10.0	15.3	56.0	
0.850000	41.1	1000.000	9.000	GND	L1	10.0	14.9	56.0	
1.228000	36.6	1000.000	9.000	GND	L1	10.1	19.4	56.0	
11.154000	44.3	1000.000	9.000	GND	L1	10.5	15.7	60.0	
12.540000	47.0	1000.000	9.000	GND	L1	10.6	13.0	60.0	
21.556000	43.1	1000.000	9.000	GND	L1	11.1	16.9	60.0	
23.208000	47.5	1000.000	9.000	GND	L1	11.2	12.5	60.0	

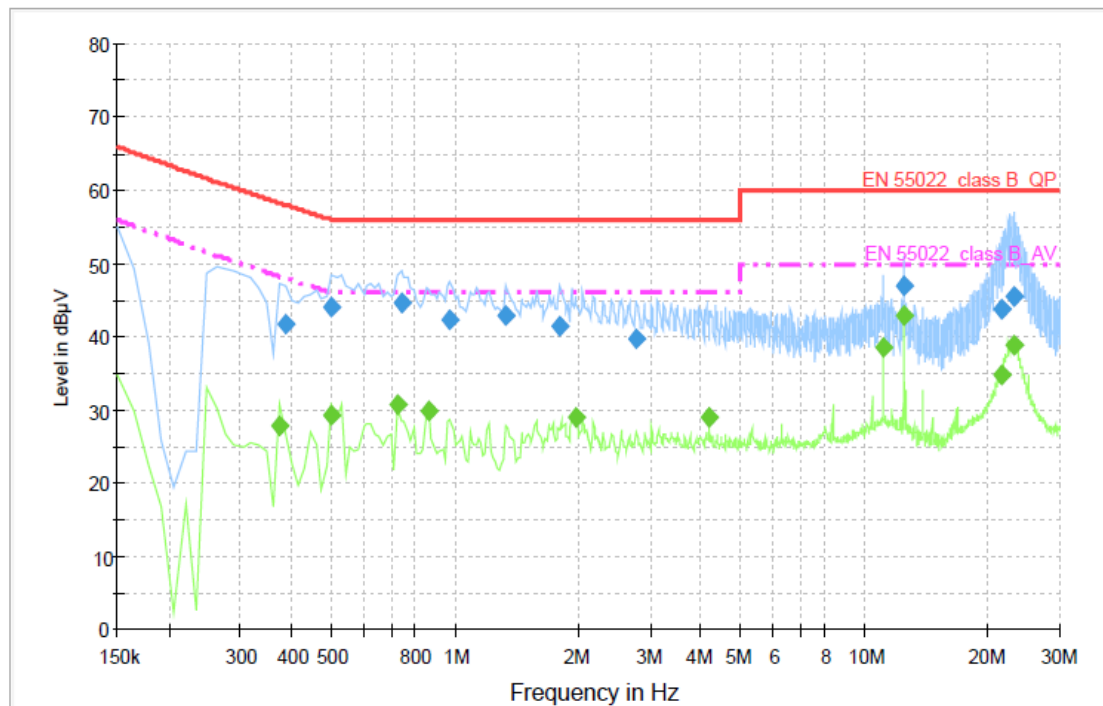
Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.248000	30.2	1000.000	9.000	GND	L1	10.0	21.4	51.6	
0.528000	23.3	1000.000	9.000	GND	L1	10.0	22.7	46.0	
0.612000	27.3	1000.000	9.000	GND	L1	10.0	18.8	46.0	
0.864000	27.8	1000.000	9.000	GND	L1	10.0	18.2	46.0	
1.970000	25.5	1000.000	9.000	GND	L1	10.1	20.5	46.0	
4.168000	27.0	1000.000	9.000	GND	L1	10.2	19.0	46.0	
11.154000	38.1	1000.000	9.000	GND	L1	10.5	11.9	50.0	
12.540000	43.1	1000.000	9.000	GND	L1	10.6	6.9	50.0	
21.472000	35.8	1000.000	9.000	GND	L1	11.1	14.2	50.0	
22.998000	40.0	1000.000	9.000	GND	L1	11.2	10.0	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
0.388000	41.8	1000.000	9.000	GND	N	10.0	16.2	58.0	
0.500000	44.0	1000.000	9.000	GND	N	10.0	12.0	56.0	
0.738000	44.6	1000.000	9.000	GND	N	10.0	11.4	56.0	
0.976000	42.4	1000.000	9.000	GND	N	10.0	13.6	56.0	
1.326000	42.8	1000.000	9.000	GND	N	10.1	13.2	56.0	
1.802000	41.3	1000.000	9.000	GND	N	10.1	14.7	56.0	
2.768000	39.7	1000.000	9.000	GND	N	10.1	16.3	56.0	
12.540000	46.9	1000.000	9.000	GND	N	10.5	13.1	60.0	
21.612000	43.8	1000.000	9.000	GND	N	10.8	16.2	60.0	
23.110000	45.6	1000.000	9.000	GND	N	10.8	14.4	60.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.374000	28.0	1000.000	9.000	GND	N	10.0	20.2	48.2	
0.500000	29.3	1000.000	9.000	GND	N	10.0	16.7	46.0	
0.724000	30.7	1000.000	9.000	GND	N	10.0	15.3	46.0	
0.864000	29.9	1000.000	9.000	GND	N	10.0	16.1	46.0	
1.970000	28.9	1000.000	9.000	GND	N	10.1	17.1	46.0	
4.168000	28.9	1000.000	9.000	GND	N	10.2	17.1	46.0	
11.154000	38.5	1000.000	9.000	GND	N	10.4	11.5	50.0	
12.540000	43.0	1000.000	9.000	GND	N	10.5	7.0	50.0	
21.528000	34.8	1000.000	9.000	GND	N	10.8	15.2	50.0	
23.110000	38.7	1000.000	9.000	GND	N	10.8	11.3	50.0	

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



6. Radiated Emission

6.1 Operating Environment

Temperature : 25 °C
Relative Humidity : 45 % 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 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

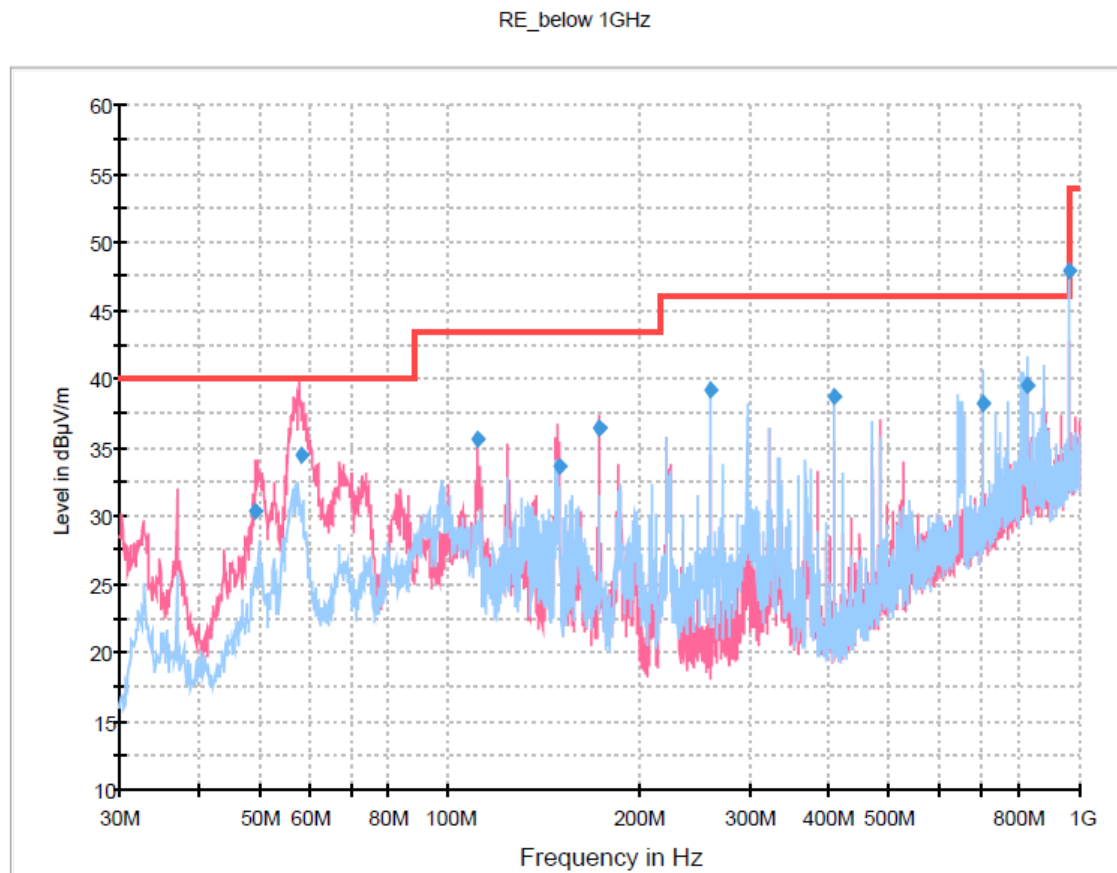
Model Name	Manufacturer	Description	Serial Number	Due to Calibration
■ - ESIB26	Rohde & Schwarz	EMI Test Receiver	830482/010	12. 11. 2010
■ - VULB9160	Schwarzbeck	Broadband Test Antenna	3193	03. 15. 2012
■ - BBHA9120D	Schwarzbeck	Horn ANT	207	12. 22. 2011
■ - MCU066	matur GmbH	Position Controller	1390306	N/A
■ - TT2.5SI	matur GmbH	Turntable	1390307	N/A
■ - AM 4.0	matur GmbH	Antenna Mast	1390308	N/A
■ - AFS 44 00101800-25-10P-44	MITEQ	Preamplifier	1258943	11. 12. 2010

6.6 Test data for Radiated Emission

- Test Date : October 21, 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: 1 920 × 1 080 / 60 Hz (RGB: Analog)
Red trace: Vertical polarization, Blue trace: Horizontal polarization



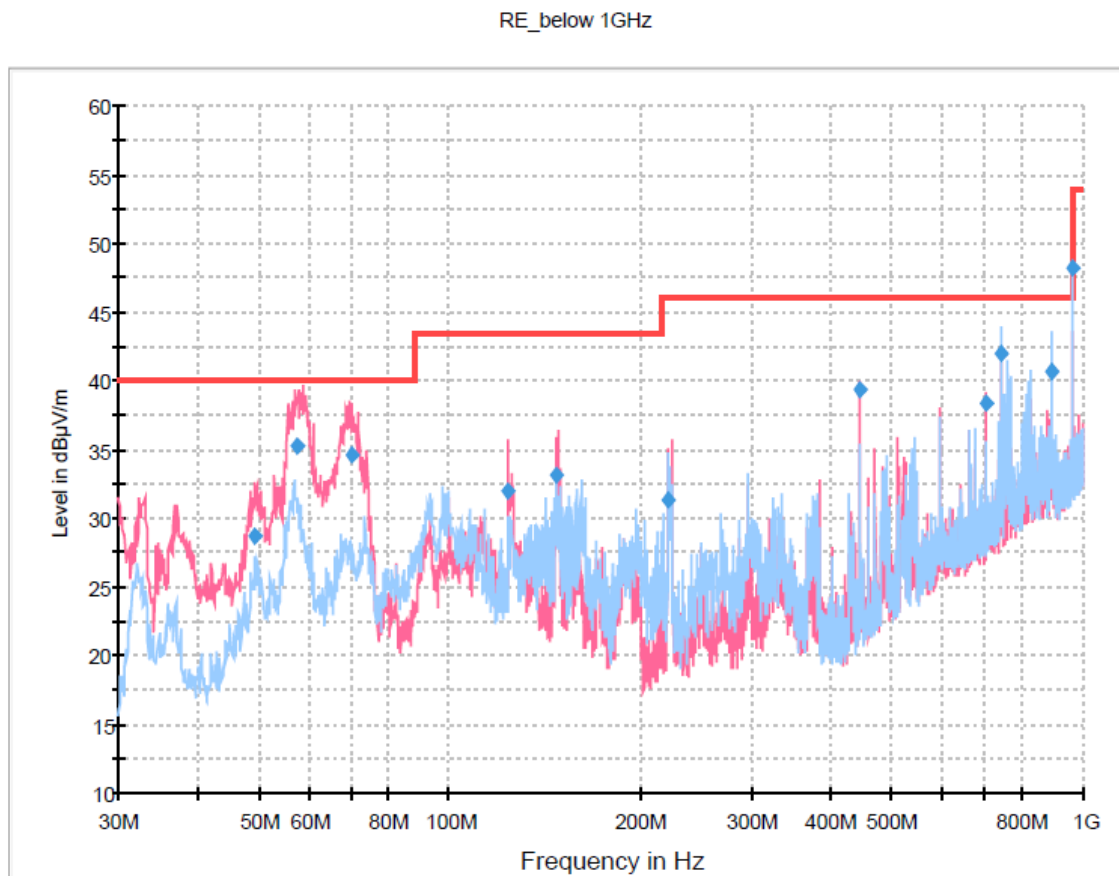
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
49.503750	30.4	1000.0	120.000	100.0	V	136.0	13.2	9.60	40.00
58.507500	34.5	1000.0	120.000	100.0	V	170.0	12.8	5.50	40.00
111.378750	35.6	1000.0	120.000	100.0	V	0.0	12.7	7.90	43.50
150.002500	33.7	1000.0	120.000	100.0	V	19.0	15.0	9.80	43.50
173.256250	36.4	1000.0	120.000	100.0	V	159.0	14.0	7.10	43.50
173.257500	36.4	1000.0	120.000	100.0	V	159.0	14.0	7.10	43.50
259.870000	39.2	1000.0	120.000	100.0	H	58.0	14.9	6.80	46.00
408.361250	38.7	1000.0	120.000	100.0	H	243.0	18.1	7.30	46.00
701.988750	38.3	1000.0	120.000	200.0	H	91.0	26.7	7.70	46.00
824.896250	39.5	1000.0	120.000	100.0	H	196.0	29.1	6.50	46.00
960.048750	47.9	1000.0	120.000	100.0	H	220.0	30.9	6.10	54.00

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



- ◆ Operating Condition: 1 920 × 1 080 / 60 Hz (HDMI/DVI: Digital)
Red trace: Vertical polarization, Blue trace: Horizontal polarization



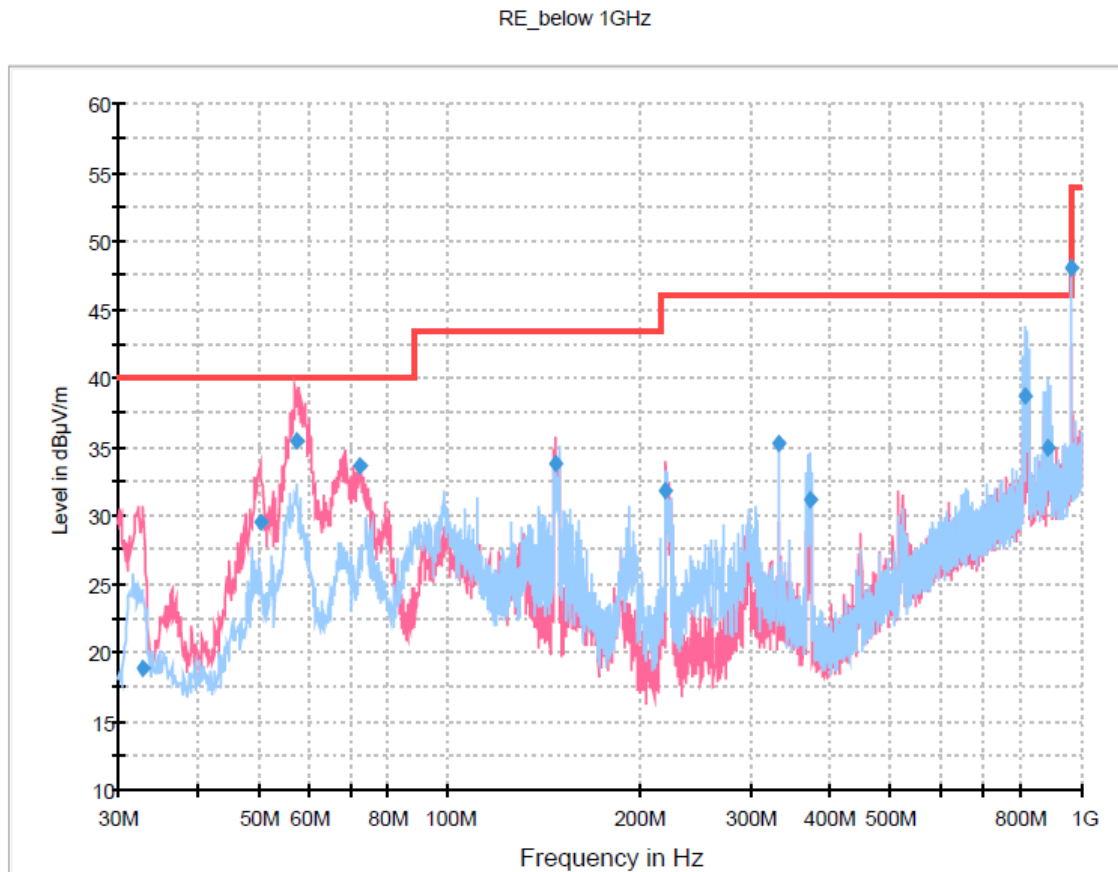
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
49.418750	28.7	1000.0	120.000	100.0	V	174.0	13.2	11.30	40.00
57.477500	35.3	1000.0	120.000	100.0	V	107.0	12.9	4.70	40.00
69.948000	34.5	1000.0	120.000	100.0	V	7.0	11.2	5.50	40.00
123.746250	32.0	1000.0	120.000	100.0	V	96.0	13.8	11.50	43.50
147.321250	33.1	1000.0	120.000	100.0	V	50.0	14.8	10.40	43.50
221.200000	31.3	1000.0	120.000	100.0	V	96.0	13.1	8.70	46.00
445.503750	39.3	1000.0	120.000	200.0	V	198.0	19.7	6.70	46.00
701.988750	38.4	1000.0	120.000	200.0	V	34.0	26.7	7.60	46.00
742.526250	42.0	1000.0	120.000	100.0	H	316.0	27.6	4.00	46.00
891.017500	40.6	1000.0	120.000	200.0	H	210.0	29.6	5.40	46.00
960.048750	48.2	1000.0	120.000	100.0	H	234.0	30.9	5.80	54.00

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



- ◆ Operating Condition: USB memory stick play mode
Red trace: Vertical polarization, Blue trace: Horizontal polarization



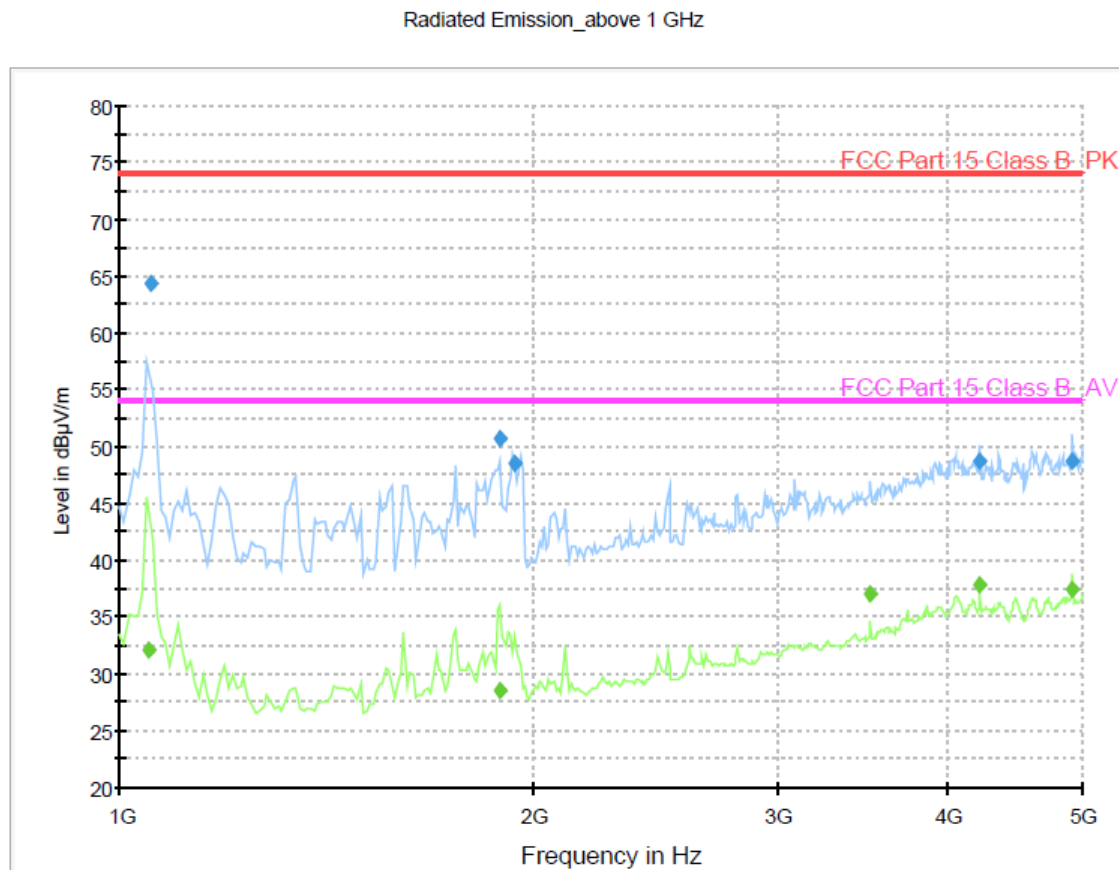
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
32.770000	18.8	1000.0	120.000	100.0	V	61.0	11.4	21.20	40.00
50.470000	29.6	1000.0	120.000	100.0	V	184.0	13.3	10.40	40.00
57.541250	35.5	1000.0	120.000	100.0	V	139.0	12.9	4.50	40.00
72.218750	33.6	1000.0	120.000	100.0	V	317.0	11.0	6.40	40.00
147.228750	33.8	1000.0	120.000	100.0	V	73.0	14.8	9.70	43.50
220.342500	31.9	1000.0	120.000	100.0	V	50.0	12.8	14.10	46.00
332.822500	35.2	1000.0	120.000	100.0	H	218.0	17.3	10.80	46.00
371.577500	31.2	1000.0	120.000	200.0	H	140.0	17.6	14.80	46.00
814.761250	38.7	1000.0	120.000	100.0	H	195.0	29.0	7.30	46.00
884.515000	34.9	1000.0	120.000	100.0	H	206.0	29.6	11.10	46.00
960.048750	48.1	1000.0	120.000	200.0	H	140.0	30.9	5.90	54.00

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



- ◆ Operating Condition: 1 920 × 1 080 / 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)
1053.096192	64.4	100.0	1000.000	216.0	V	1.0	-15.6	9.6	74.0
1889.179559	50.7	100.0	1000.000	149.0	H	218.0	-13.1	23.3	74.0
1934.859720	48.4	100.0	1000.000	122.0	V	209.0	-13.0	25.6	74.0
4211.828858	48.8	100.0	1000.000	100.0	H	0.0	-3.2	25.2	74.0
4916.039679	48.8	100.0	1000.000	149.0	H	188.0	-2.6	25.2	74.0

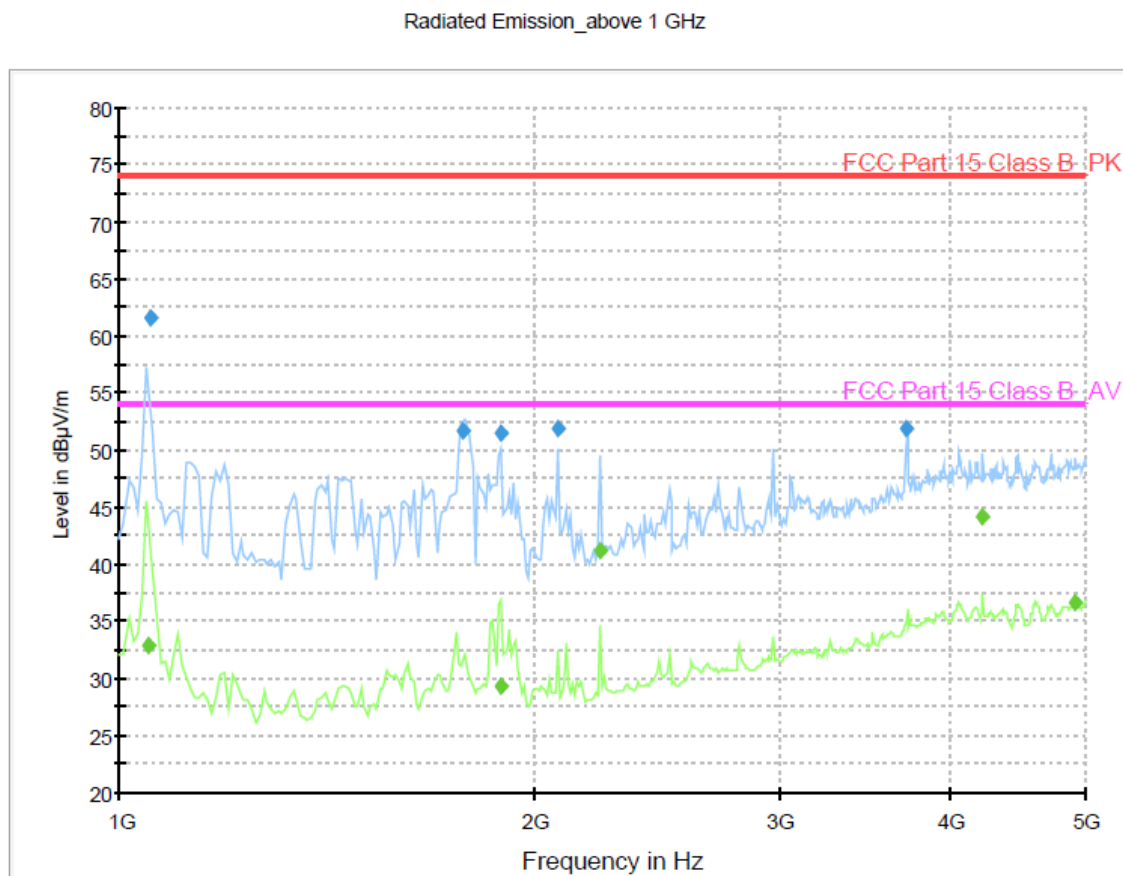
Final Result 2

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1050.296192	32.0	100.0	1000.000	150.0	V	1.0	-15.6	22.0	54.0
1887.979559	28.5	100.0	1000.000	149.0	H	287.0	-13.1	25.5	54.0
3510.018036	37.0	100.0	1000.000	100.0	V	276.0	-6.1	17.0	54.0
4212.228858	37.8	100.0	1000.000	100.0	H	0.0	-3.2	16.2	54.0
4914.839679	37.4	100.0	1000.000	150.0	V	213.0	-2.6	16.6	54.0

< Fig 17. Radiated emission result (1 000 MHz ~ 5 000 MHz) >



- ◆ Operating Condition: 1 920 × 1 080 / 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)
1053.096192	61.6	100.0	1000.000	150.0	V	0.0	-15.6	12.4	74.0
1772.955110	51.7	100.0	1000.000	131.0	H	188.0	-13.2	22.3	74.0
1888.379559	51.4	100.0	1000.000	113.0	H	236.0	-13.1	22.6	74.0
2079.148297	51.8	100.0	1000.000	150.0	H	135.0	-12.3	22.2	74.0
3712.834870	51.8	100.0	1000.000	100.0	V	222.0	-4.8	22.2	74.0

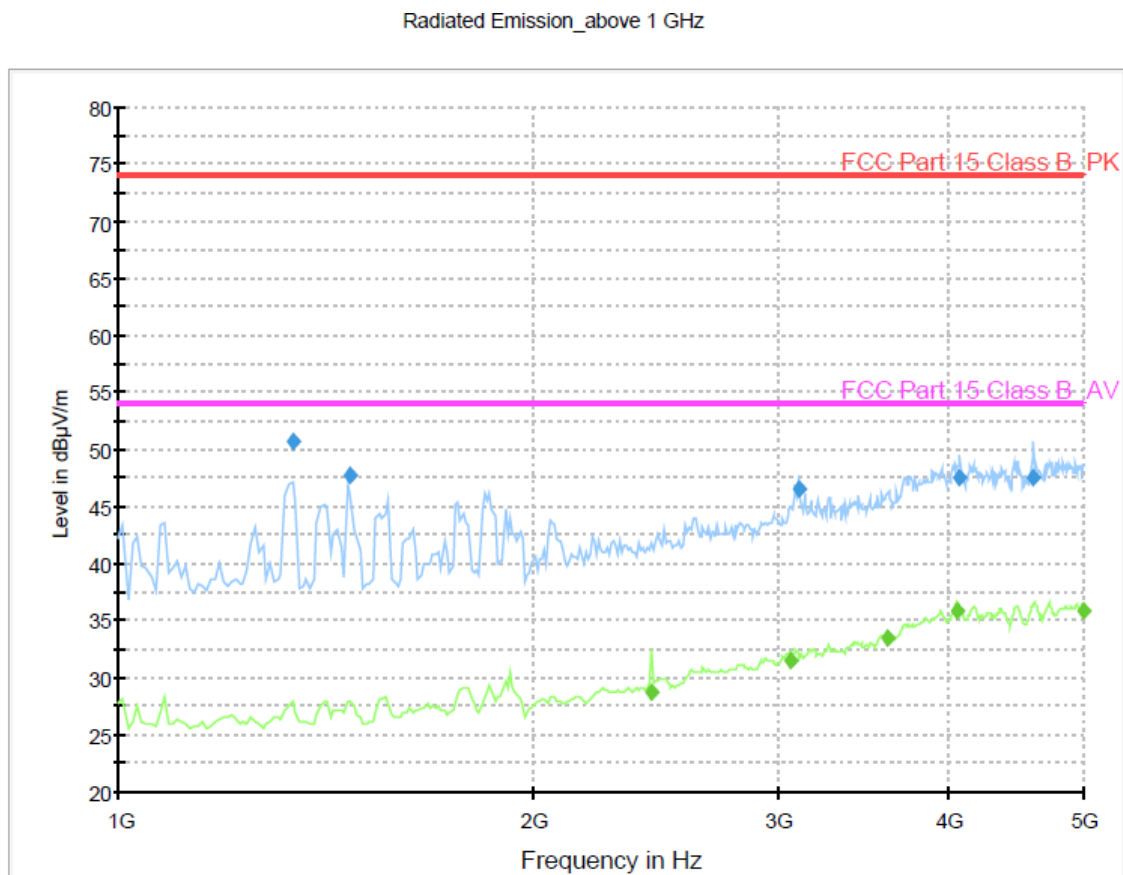
Final Result 2

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1049.896192	32.9	100.0	1000.000	150.0	V	0.0	-15.6	21.1	54.0
1887.579559	29.2	100.0	1000.000	113.0	H	236.0	-13.1	24.8	54.0
2227.452906	41.2	100.0	1000.000	100.0	H	142.0	-11.6	12.8	54.0
4212.228858	44.2	100.0	1000.000	100.0	H	236.0	-3.2	9.8	54.0
4914.839679	36.6	100.0	1000.000	113.0	H	148.0	-2.6	17.4	54.0

< Fig 18. Radiated emission result (1 000 MHz ~ 5 000 MHz) >



- ◆ Operating Condition: USB memory stick play mode
Green trace: Average detector, Blue trace: Peak detector



Final Result 1

Frequency (MHz)	MaxPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
1337.273347	50.8	100.0	1000.000	150.0	H	230.0	-14.4	23.2	74.0
1469.529860	47.8	100.0	1000.000	190.0	V	176.0	-14.3	26.2	74.0
3112.016433	46.4	100.0	1000.000	114.0	H	196.0	-7.8	27.6	74.0
4065.940281	47.5	100.0	1000.000	149.0	H	0.0	-3.1	26.5	74.0
4601.398397	47.6	100.0	1000.000	200.0	V	318.0	-3.2	26.4	74.0

Final Result 2

Frequency (MHz)	Average (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
2437.069740	28.8	100.0	1000.000	150.0	V	324.0	-10.7	25.2	54.0
3071.936273	31.5	100.0	1000.000	150.0	V	189.0	-7.9	22.5	54.0
3610.210421	33.5	100.0	1000.000	100.0	V	189.0	-5.5	20.5	54.0
4049.108216	35.9	100.0	1000.000	163.0	H	181.0	-3.1	18.1	54.0
5000.000000	35.9	100.0	1000.000	350.0	V	96.0	-2.4	18.1	54.0

< Fig 19. Radiated emission result (1 000 MHz ~ 5 000 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: 37LK450-UB)** was complies with §15.107 and 15.109 of the FCC Rules.