

TEST REPORT

Report number : Z071C-10342

Issue date : December 14, 2010

The device, as described herewith, was tested pursuant to applicable test procedure and complies with the requirements of;

EN 55022EN 61000-3-2EN 61000-3-3EN 55024

The test results are traceable to the international or national standards.

Applicant	: NEC Display Solutions, Ltd.
Equipment under test (EUT)	: DLP Projector
Model number	: NP-V300X *Tested NP-V300W *Tested NP-V260 *Tested NP-V260X, NP-V230X, NP-V230, NP-V260W

Date of test : November 15, 17, 18, 26, 29, 30, December 1 - 3, 6, 2010

Test place : ZACTA Technology Corporation Yonezawa Testing Center
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Test results : Complied

The results in this report are applicable only to the equipment tested.

This report shall not be re-produced except in full without the written approval of ZACTA Technology Corporation.

This test report must not be used by client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

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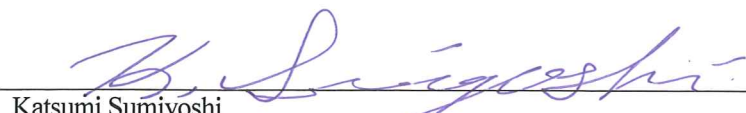

Katsumi Sumiyoshi
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1. Summary of Test

1.1 Purpose of test

It is the original test in order to verify conformance to standards listed in section 1.2.

Measurements in all test modes were performed by NP-V300X.

Measurements of NP-V300W which is the highest performance model tested only the difference from NP-V300X.

As for the EN 55022 of NP-V260, the test results in the worst mode (VIDEO mode) were described in this report.

The worst mode was selected by performing preliminary test.

Regarding the immunity tests and EN 61000-3-2/3-3, it was tested at each model by the standard resolution of DMD.

1.2 Standards

EN 55022:2006 + Amendment 1:2007

EN 61000-3-2:2006

EN 61000-3-3:1995 + Amendment 1:2001 + Amendment 2:2005

EN 55024:1998 + Amendment 1:2001 + Amendment 2:2003

1.2.1 Test Methods

EN 61000-4-2:1995 + Amendment 1:1998 + Amendment 2:2001

EN 61000-4-3:2006

EN 61000-4-4:2004

EN 61000-4-5:2006

EN 61000-4-6:2007

EN 61000-4-8:1993 + Amendment 1:2001

EN 61000-4-11:2004

1.2.2 Deviation from standards

Test methods listed in section 1.2.1 were used instead of those referenced in EN55024.

1.3 List of applied test to the EUT

Test item	Classification of EUT	Test	Result	Note
Conducted emission at mains port	Class B	Applied	PASS	-
Conducted emission at telecommunication port	Class B	Applied	PASS	-
Radiated emission	Class B	Applied	PASS	-

Note: None.

Test item	Classification of EUT	Test	Result	Note
Harmonic current emissions	Class D	Applied	PASS	-

Note: None.

Test item	Test	Result	Note
Voltage changes, voltage fluctuations and flicker measurement	Applied	PASS	-

Note: None.

Port	Test item	Performance criterion	Test	Result	Note
Enclosure	Electrostatic discharge immunity	B	Applied	PASS	-
	Radio-frequency electromagnetic field immunity	A	Applied	PASS	-
	Power frequency magnetic field immunity	A	Applied	PASS	-
AC power	Electrical fast transient/burst immunity	B	Applied	PASS	-
	Surges immunity	B	Applied	PASS	-
	Conducted disturbances, inducted by radio-frequency fields immunity	A	Applied	PASS	-
	Voltage dips immunity	B and C	Applied	PASS	-
	Short interruptions immunity	C	Applied	PASS	-
DC power	Electrical fast transient/burst immunity	B	Not applied	Not applied	1
	Surges immunity	B	Not applied	Not applied	1
	Conducted disturbances, inducted by radio-frequency fields immunity	A	Not applied	Not applied	1
Signal ports and telecommunication ports	Electrical fast transient/burst immunity	B	Applied	PASS	-
	Surges immunity	B	Applied	PASS	-
	Conducted disturbances, inducted by radio-frequency fields immunity	A	Applied	PASS	-

Note 1: Test is not applied because the EUT has no relevant ports.

1.3.1 Test set up

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1.4 Performance Criteria

Performance criterion	Operating condition
A	EUT shall operate with no abnormal operation such as power ON/OFF or mode change. About the noise generated on the screen, the beat noise is permissible. Any other noise such as shortage of displayed screen is permissible if it is extent to which the screen can be recognized. The screen must be displayed by 60% or more as the range which can be recognized.
B	EUT shall be self-recovered to the normal operation after removing the disturbance.
C	Failures which are not self-recovered after removal of the external disturbance, but which can be recovered to normal operation by reset or reboot are permissible.

1.5 Monitoring of EUT

In order to evaluate the performance of equipment during the test, it is confirmed visually whether the EUT operates as intended.

1.6 Test Plan

All the tests in this test report are performed according to Test plan number: Z071Z-10106.

1.6.1 Deviation from the Test Plan

None.

1.7 Modification to the EUT by laboratory

None.

2. Equipment Under Test

2.1 General Description of equipment

The EUT is DLP Projector.

2.2 EUT information

Applicant	: NEC Display Solutions, Ltd. 686-1, Nishioi, Oi-machi, Ashigarakami-gun, Kanagawa 258-8533 Japan Phone: +81-465-85-2384 Fax: +81-465-85-2393
Equipment under test	: DLP Projector
Trade name	: NEC
Model number	: NP-V300X *Tested NP-V300W *Tested NP-V260 *Tested NP-V260X, NP-V230X, NP-V230, NP-V260W
Serial number	: SP#02, SP#11 ES#02 SP#81, SP#80
EUT condition	: Semi Production
Max. frequency	: 1485MHz
Power ratings	: AC100-240V 50/60Hz 3.0-1.4A (NP-V300X, NP-V300W) AC100-240V 50/60Hz 2.6-1.2A (NP-V260X, NP-V230X, NP-V260, NP-V230, NP-V260W)
Size	: 310mm(W)*95mm(H)*247mm(D)(not including protrusions), 2.5kg

2.3 Variation of the family model(s)

NP-V300X *Tested
NP-V300W *Tested
NP-V260 *Tested
NP-V260X, NP-V230X, NP-V230, NP-V260W

Model Name	DMD(Resolution)	Brightness	PS/Ballast	PWB	CLK(LVDS)	AC Input	
NP-V300X	XGA(1,024x768)	3,000lm	225W	Full	320MHz	AC100-240V 3.0-1.4A	* Tested
NP-V260X	XGA(1,024x768)	2,600lm	180W	Full	320MHz	AC100-240V 2.6-1.2A	
NP-V230X	XGA(1,024x768)	2,300lm	180W	Basic	320MHz	AC100-240V 2.6-1.2A	
NP-V260	SVGA(800x600)	2,600lm	180W	Basic	200MHz	AC100-240V 2.6-1.2A	* Tested
NP-V230	SVGA(800x600)	2,300lm	180W	Basic	200MHz	AC100-240V 2.6-1.2A	
NP-V300W	WXGA(1,280x800)	3,000lm	225W	Full	320MHz	AC100-240V 3.0-1.4A	* Tested
NP-V260W	WXGA(1,280x800)	2,600lm	180W	Full	320MHz	AC100-240V 2.6-1.2A	

Differences in PWB

PWB		Full	Basic
MAIN_PWB	Comp1 Input	○	○
	Monitor Out	○	○
	Video Input	○	○
	S-Video Input	○	○
	HDMI Input	○	-
	Comp1 Audio Input	○	○
	Video Audio Input	○	-
	PC Control	○	○
IO_PWB	Comp2 Input	○	-
	Comp2 Audio Input	○	-
	Audio Output	○	-
LAN_PWB	RJ-45	○	-

2.4 Operating mode

NP-V300X

[COMPUTER 1 SXGA 60Hz, COMPUTER 2 UXGA 60Hz, HDMI 1080P 60Hz, COMPUTER 1 XGA 60Hz mode]

- i) “H” characters data are sent to Projector from PC
- ii) Projected “H” characters data
- iii) i) and ii) is repeated

[VIDEO, S-VIDEO*¹ mode]

- i) Color bar data are sent to Projector from Video Cassette Recorder/ DVD Player
- ii) Projected Color bar data
- iii) i) and ii) is repeated

*1: Used it for EN61000-4-4 and EN61000-4-6

NP-V300W

[COMPUTER 1 WXGA 60Hz, HDMI 1080P 60Hz mode]

- i) “H” characters data are sent to Projector from PC
- ii) Projected “H” characters data
- iii) i) and ii) is repeated

NP-V260

[VIDEO mode]

- i) Color bar data are sent to Projector from Video Cassette Recorder/ DVD Player
- ii) Projected Color bar data
- iii) i) and ii) is repeated

[COMPUTER SVGA 60Hz mode]

- i) “H” characters data are sent to Projector from PC
- ii) Projected “H” characters data
- iii) i) and ii) is repeated

3. Configuration of equipment

3.1 Equipment(s) used [EN 55022]

No.	Equipment	Company	Model No.	Serial No.	Comment
1	DLP Projector	NEC	NP-V300X	SP#02	EUT
			NP-V300W	ES#02	
			NP-V260	SP#81	
2	Remote Controller	NEC	RD-448E	N/A	Accessory
3	Personal Computer	HP	dx6120MT	JPA6030BSL	-
4	Keyboard	DELL	SK-8110	N/A	-
5	PS/2 Mouse	Logitech	M-S34	LNA13032232	-
6	Printer	HP	C4555A	US6BC212N	-
7	Personal Computer	DELL	MCM	9WMZ31S	*1
8	Keyboard	DELL	SK-8000	N/A	*1
9	PS/2 Mouse	Logitech	M-S34	LNA10500394	*1
10	Display	DELL	2001FP	CN-0C0649-46633-495-09CL	-
11	AC adapter for Display	DELL	ADP-90FB	CN-0R0423-48661-48P-5POS	-
12	Video Cassette Recorder	Panasonic	NV-SV1	VM0233470	-

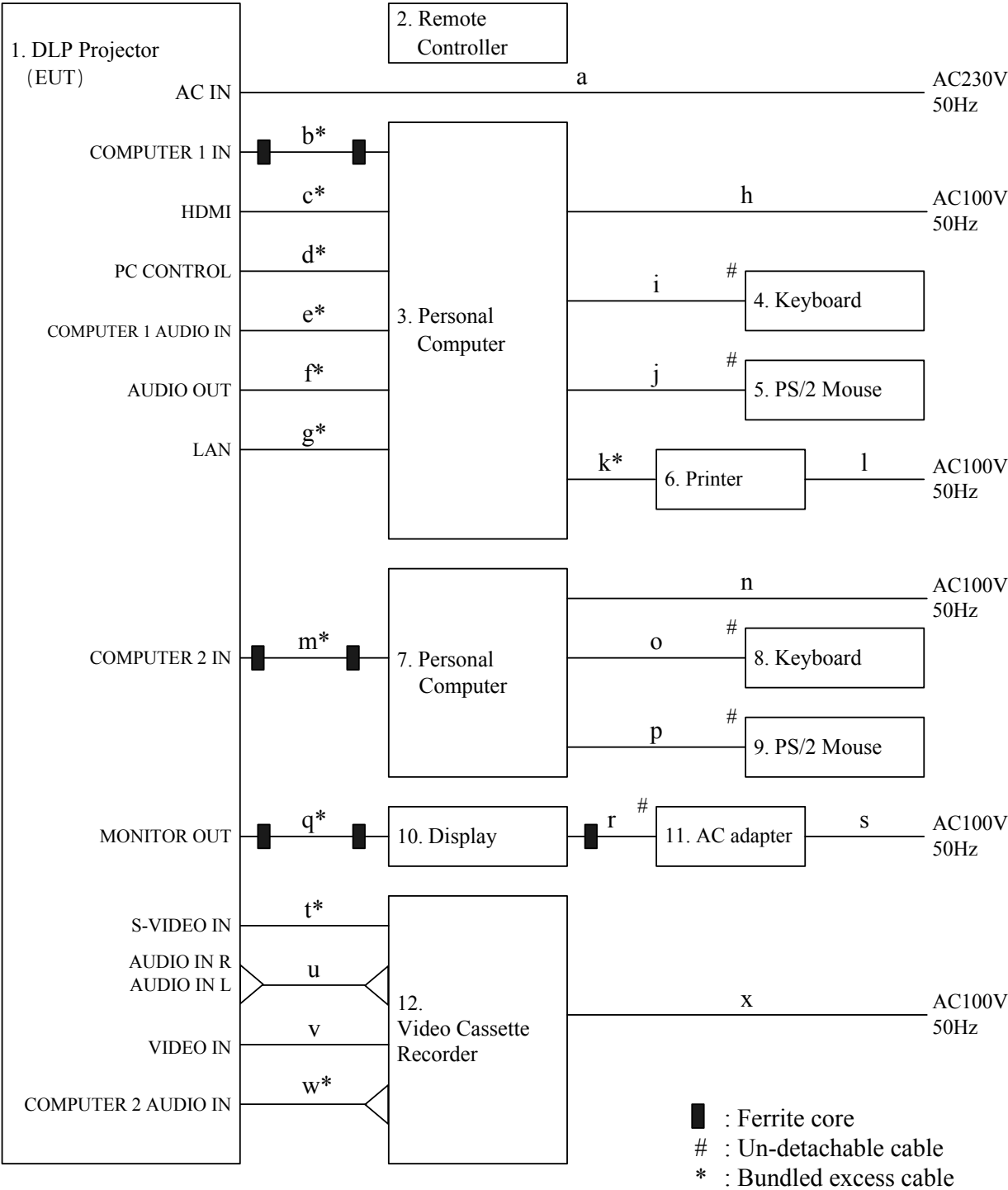
*1: Used it for NP-V300X and NP-V300W

3.2 Cable(s) used [EN 55022]

No.	Cable	Length[m]	Shield	Connector	Comment
a	AC power cord for EUT	1.8	No	Plastic	Accessory
b	RGB cable	1.9	Yes	Metal	Accessory
c	HDMI cable	3.0	Yes	Metal	*1
d	Serial cable	1.5	Yes	Metal	-
e	Audio cable	1.5	No	Metal	-
f	Audio cable	1.5	No	Metal	*1
g	LAN cable	3.0	No	Plastic	*1
h	AC power cord for PC	1.6	No	Plastic	-
i	Keyboard cable	2.0	No	Metal	-
j	Mouse cable	1.8	No	Metal	-
k	Parallel cable	2.1	Yes	Metal	-
l	AC power cord for Printer	2.6	No	Plastic	-
m	RGB cable	2.0	Yes	Metal	*1
n	AC power cord for PC	3.0	No	Plastic	*1
o	Keyboard cable	1.8	No	Metal	*1
p	Mouse cable	1.8	No	Metal	*1
q	RGB cable	1.8	Yes	Metal	-
r	DC cable for Display AC adapter	1.8	No	Plastic	-
s	AC power cord for Display AC adapter	1.7	No	Plastic	-
t	S-VIDEO cable	1.6	Yes	Metal	-
u	Audio cable	1.0	No	Metal	*1
v	Video cable	1.0	No	Metal	-
w	Audio cable	1.0	No	Metal	*1
x	AC power cord for Video Cassette Recorder	1.8	No	Plastic	-

*1: Used it for NP-V300X and NP-V300W

3.3 System configuration [EN 55022: NP-V300X, NP-V300W]



Note1: Numbers assigned to equipment or cables on this diagram correspond to the list in “3.1 Equipment(s) used” and “3.2 Cable(s) used”.

Note2: Two ferrite cores of RGB cable (No.b) are accessory of EUT.

Note3: Two ferrite cores of RGB cable (No.m) are not accessory of EUT.

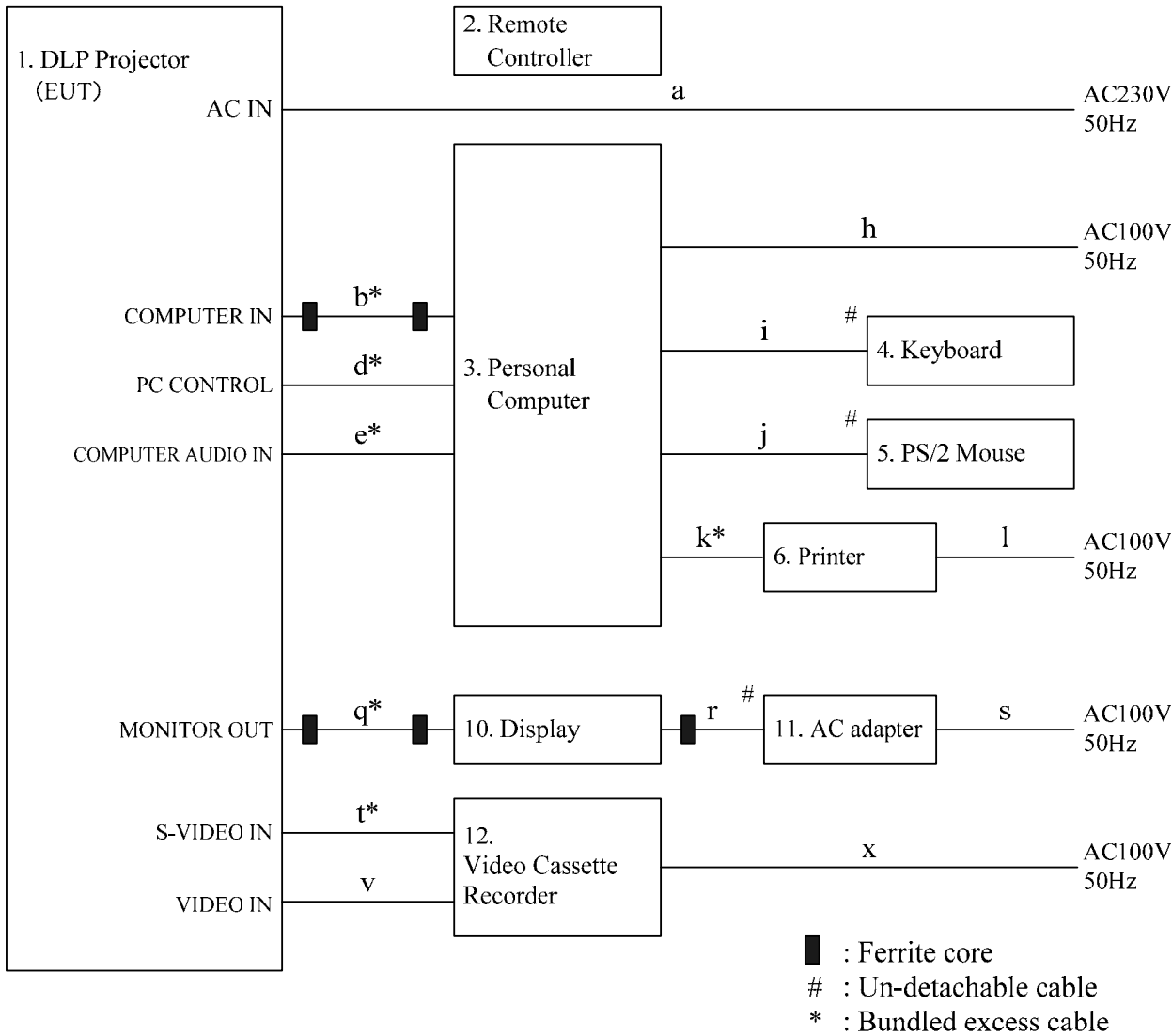
Note4: Two ferrite cores of RGB cable (No.q) are accessory of Display (No.10).

Note5: One ferrite core of DC cable (No.r) is accessory of AC adapter (No.11).

Note6: RGB cable(No.b) is connected to COMPUTER 2 IN port in COMPUTER 2 UXGA 60Hz mode.

Note7: RGB cable(No.m) is connected to COMPUTER 1 IN port in COMPUTER 2 UXGA 60Hz mode.

3.4 System configuration [EN 55022: NP-V260]



Note1: Numbers assigned to equipment or cables on this diagram correspond to the list in “3.1 Equipment(s) used” and “3.2 Cable(s) used”.

Note2: Two ferrite cores of RGB cable (No.b) are accessory of EUT.

Note3: Two ferrite cores of RGB cable (No.q) are accessory of Display (No.10).

Note4: One ferrite core of DC cable (No.r) is accessory of AC adapter (No.11).

3.5 Equipment(s) used [EN 55024/EN 61000-3-2/3-3]

No.	Equipment	Company	Model No.	Serial No.	Comment
1	DLP Projector	NEC	NP-V300X	SP#11	EUT
			NP-V300W	ES#02	
			NP-V260	SP#80	
2	Remote Controller	NEC	RD-448E	N/A	Accessory
3	Personal Computer	DELL	DCMF	JNVBCBX	-
4	Keyboard	Logicool	Y-UR83	820-000512 SY742UK	-
5	USB Mouse	Logitech	M-UV96	HCA54004847	-
6	Personal Computer	DELL	MCM	9LX841S	*1
7	Keyboard	DELL	SK-8000	N/A	*1
8	PS/2 Mouse	Microsoft	Mouse Port Compatible Mouse2.1A	N/A	*1
9	Display	NEC	LCD-EA231WMi	04000080NJ	-
10	DVD Player	SONY	DVP-NS575P	2019560	-
11	DVD Player	PIONEER	DV-343	104557	*1

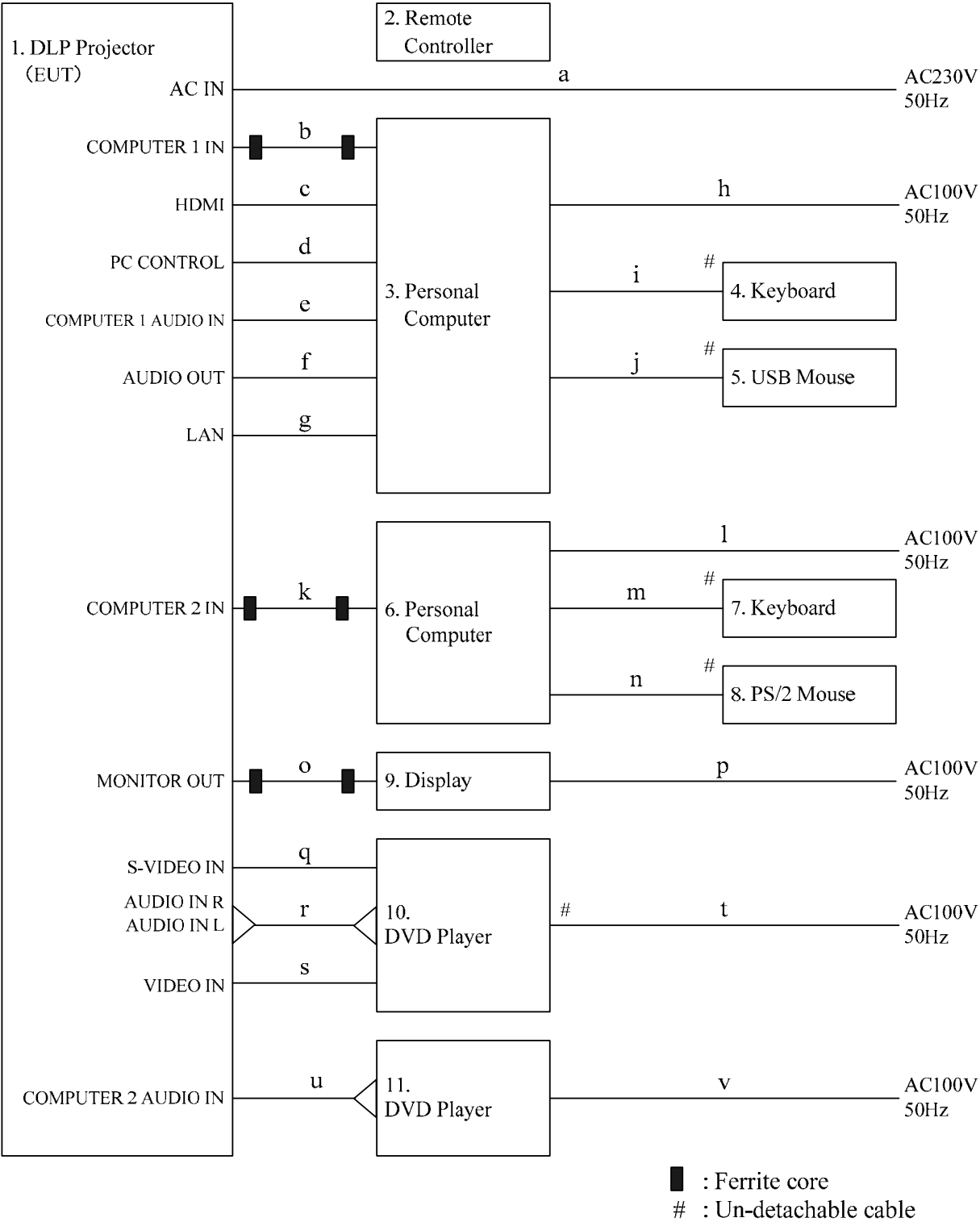
*1: Used it for NP-V300X and NP-V300W

3.6 Cable(s) used [EN 55024/EN 61000-3-2/3-3]

No.	Cable	Length[m]	Shield	Connector	Comment
a	AC power cord for EUT	1.8	No	Plastic	Accessory
b	RGB cable	1.9	Yes	Metal	Accessory
c	HDMI cable	1.8	Yes	Metal	*1
d	Serial cable	1.5	Yes	Metal	-
e	Audio cable	2.0	No	Metal	-
f	Audio cable	1.6	No	Metal	*1
g	LAN cable	3.0	No	Plastic	*1
h	AC power cord for PC	1.8	No	Plastic	-
i	Keyboard cable	1.7	Yes	Metal	-
j	Mouse cable	1.8	Yes	Metal	-
k	RGB cable	1.5	Yes	Metal	*1
l	AC power cord for PC	2.0	No	Plastic	*1
m	Keyboard cable	1.8	No	Metal	*1
n	Mouse cable	1.9	No	Metal	*1
o	RGB cable	3.0	Yes	Metal	-
p	AC power cord for Display	1.8	No	Plastic	-
q	S-VIDEO cable	1.5	Yes	Metal	-
r	Audio cable	2.0	No	Metal	*1
s	Video cable	1.5	No	Metal	-
t	AC power cord for DVD Player	1.5	No	Plastic	-
u	Audio cable	2.0	No	Metal	*1
v	AC power cord for DVD Player	2.0	No	Plastic	*1

*1: Used it for NP-V300X and NP-V300W

3.7 System configuration [EN 55024/EN 61000-3-2/3-3: NP-V300X, NP-V300W]



Note1: Numbers assigned to equipment or cables on this diagram correspond to the list in “3.5 Equipment(s) used” and “3.6 Cable(s) used”.

Note2: Two ferrite cores of RGB cable (No.b) are accessory of EUT.

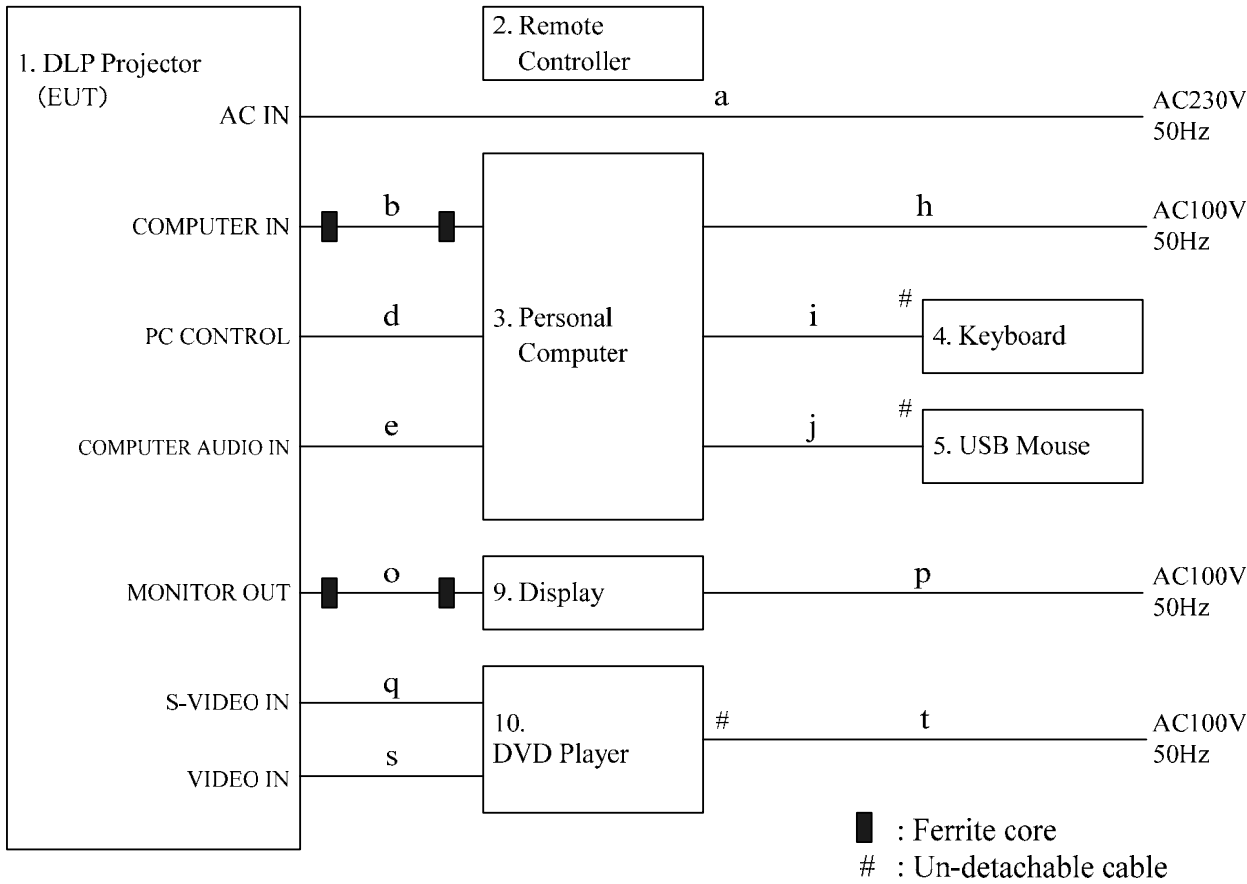
Note3: Two ferrite cores of RGB cable (No.k) are not accessory of EUT.

Note4: Two ferrite cores of RGB cable (No.o) are accessory of Display (No.9).

Note5: RGB cable(No.b) is connected to COMPUTER 2 IN port in COMPUTER 2 UXGA 60Hz mode.

Note6: RGB cable(No.k) is connected to COMPUTER 1 IN port in COMPUTER 2 UXGA 60Hz mode.

3.8 System configuration [EN 55024/EN 61000-3-2/3-3: NP-V260]



Note1: Numbers assigned to equipment or cables on this diagram correspond to the list in “3.5 Equipment(s) used” and “3.6 Cable(s) used”.

Note2: Two ferrite cores of RGB cable (No.b) are accessory of EUT.

Note3: Two ferrite cores of RGB cable (No.o) are accessory of Display (No.9).

4. Conducted emission at mains port test information

4.1 Measurement procedure

Test was applied by following conditions.

Test method:	EN 55022
Frequency range:	0.15MHz to 30MHz
Test place:	Open area test site
EUT was placed on:	Wooden table / 2.3m(W) × 1.0m(D) × 0.8m(H)
Vertical Metal Reference Plane:	2.4m (W) × 2.7m (H) 0.4m away from EUT
Horizontal Metal Reference Plane:	40.0m x 7.8m

Test receiver setting

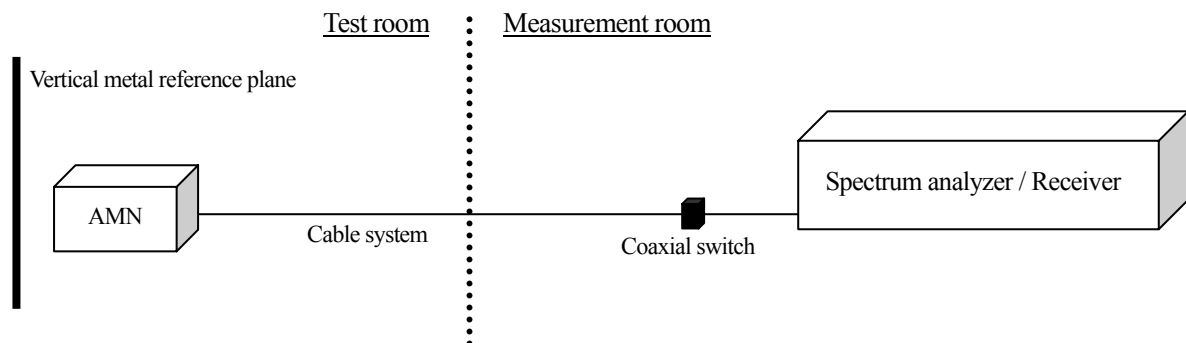
- Detector: Quasi-peak, Average
- Bandwidth: 9 kHz

EUT and peripherals are connected to 50Ω/50μH Artificial Mains Network (AMN) which are connected to reference ground plane, and are placed 80cm away from EUT. Excess of AC power cable is bundled in center.

AMN for peripheral is terminated in 50Ω.

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Maximum emission configuration is determined by manipulating the EUT, peripherals, interconnecting cables. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits.

- Test configuration



4.2 Calculation method

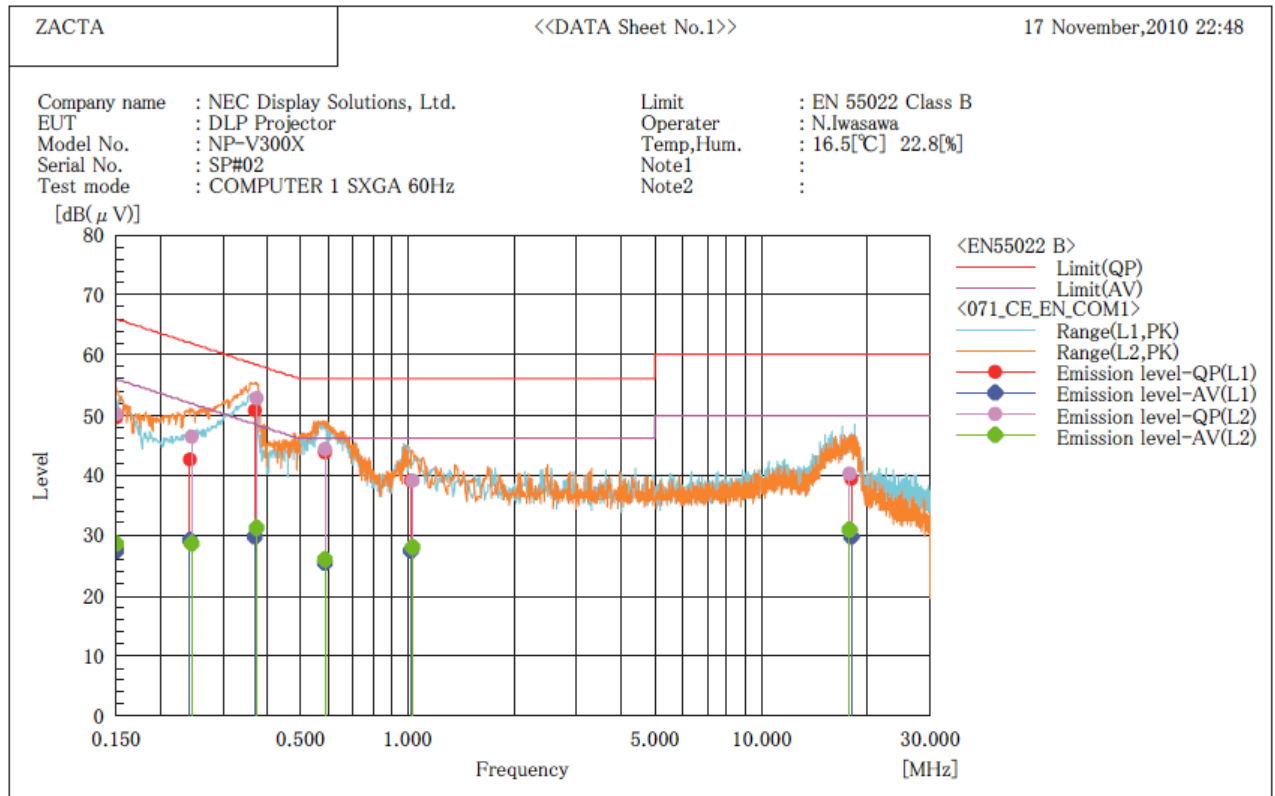
Emission level = Reading + (AMN. factor + Cable system loss)

Margin = Limit – Emission level

4.3 Test data

[NP-V300X]

***** CONDUCTED EMISSION at MAINS PORT *****
 << Test site 3 >>



Final Result

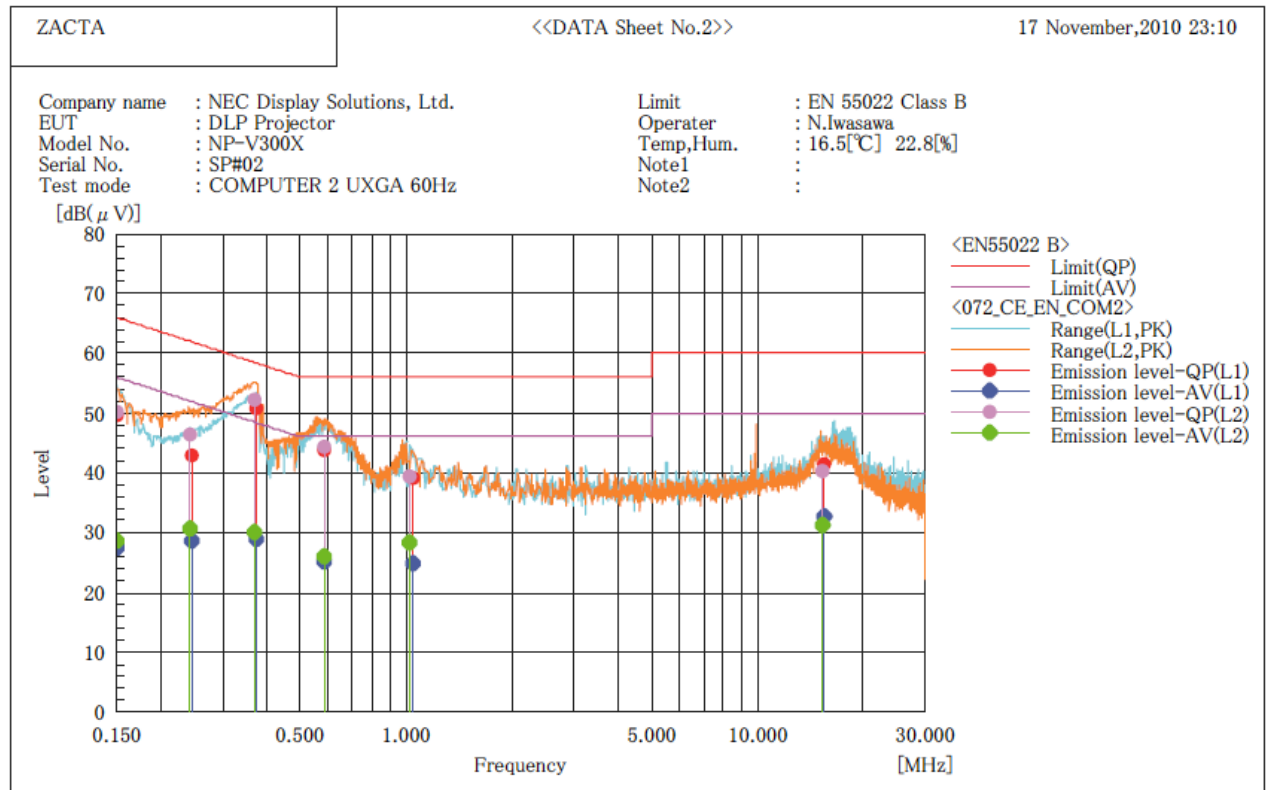
--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.150	39.4	17.3	10.1	49.5	27.4	66.0	56.0	16.5	28.6
2	0.242	32.6	19.2	10.1	42.7	29.3	62.0	52.0	19.3	22.7
3	0.370	40.7	19.8	10.1	50.8	29.9	58.5	48.5	7.7	18.6
4	0.587	33.8	15.4	10.1	43.9	25.5	56.0	46.0	12.1	20.5
5	1.027	29.1	17.4	10.1	39.2	27.5	56.0	46.0	16.8	18.5
6	17.882	28.5	18.9	11.0	39.5	29.9	60.0	50.0	20.5	20.1

--- L2 Phase ---

No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.150	40.0	18.5	10.1	50.1	28.6	66.0	56.0	15.9	27.4
2	0.245	36.3	18.6	10.1	46.4	28.7	61.9	51.9	15.5	23.2
3	0.373	42.9	21.2	10.0	52.9	31.2	58.4	48.4	5.5	17.2
4	0.585	34.4	15.9	10.1	44.5	26.0	56.0	46.0	11.5	20.0
5	1.029	29.0	17.9	10.1	39.1	28.0	56.0	46.0	16.9	18.0
6	17.758	29.4	20.2	10.8	40.2	31.0	60.0	50.0	19.8	19.0

***** CONDUCTED EMISSION at MAINS PORT *****
 << Test site 3 >>



Final Result

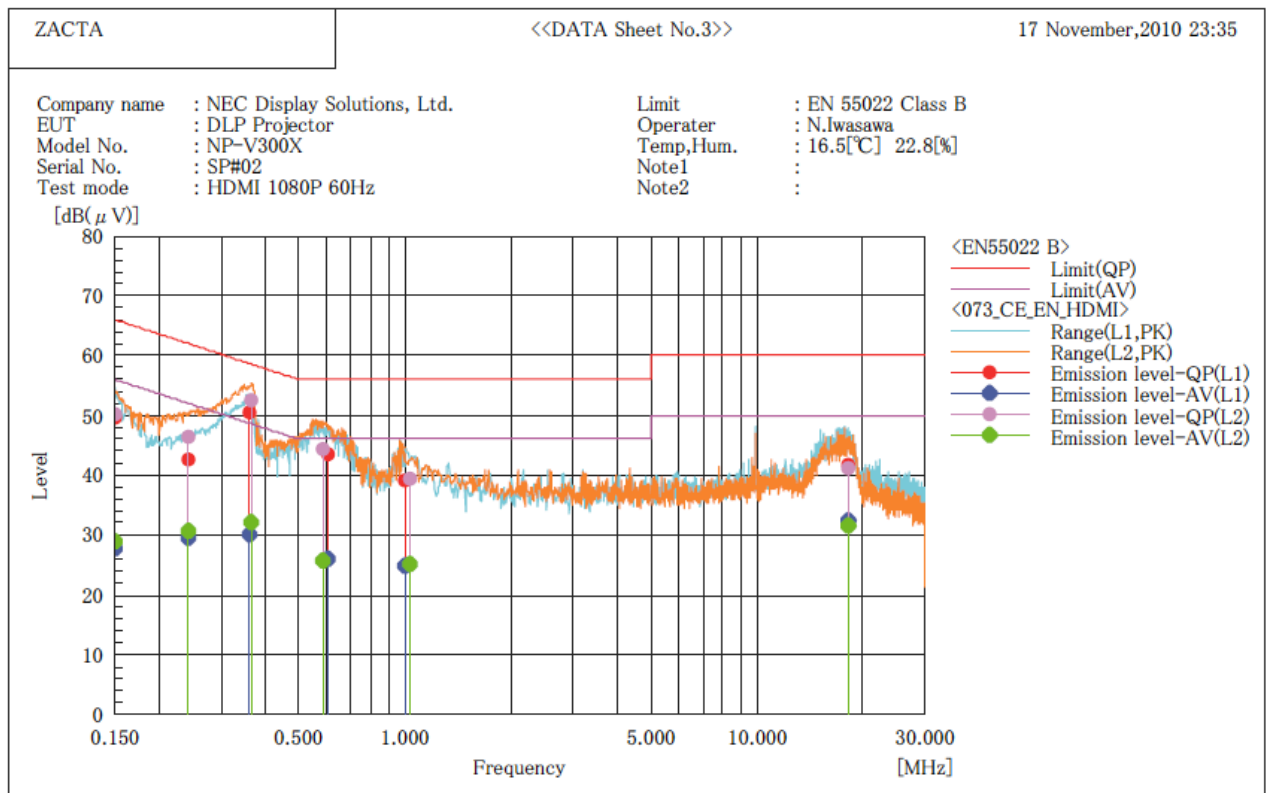
--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.150	39.4	17.3	10.1	49.5	27.4	66.0	56.0	16.5	28.6
2	0.244	32.7	18.5	10.1	42.8	28.6	62.0	52.0	19.2	23.4
3	0.372	40.8	18.7	10.1	50.9	28.8	58.5	48.5	7.6	19.7
4	0.582	33.7	15.1	10.1	43.8	25.2	56.0	46.0	12.2	20.8
5	1.043	29.1	14.6	10.1	39.2	24.7	56.0	46.0	16.8	21.3
6	15.396	30.6	21.8	10.8	41.4	32.6	60.0	50.0	18.6	17.4

--- L2 Phase ---

No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.150	40.0	18.6	10.1	50.1	28.7	66.0	56.0	15.9	27.3
2	0.243	36.3	20.5	10.1	46.4	30.6	62.0	52.0	15.6	21.4
3	0.371	42.3	20.0	10.0	52.3	30.0	58.5	48.5	6.2	18.5
4	0.581	34.4	15.8	10.1	44.5	25.9	56.0	46.0	11.5	20.1
5	1.026	29.2	18.1	10.1	39.3	28.2	56.0	46.0	16.7	17.8
6	15.356	29.8	20.6	10.6	40.4	31.2	60.0	50.0	19.6	18.8

***** CONDUCTED EMISSION at MAINS PORT *****
 << Test site 3 >>



Final Result

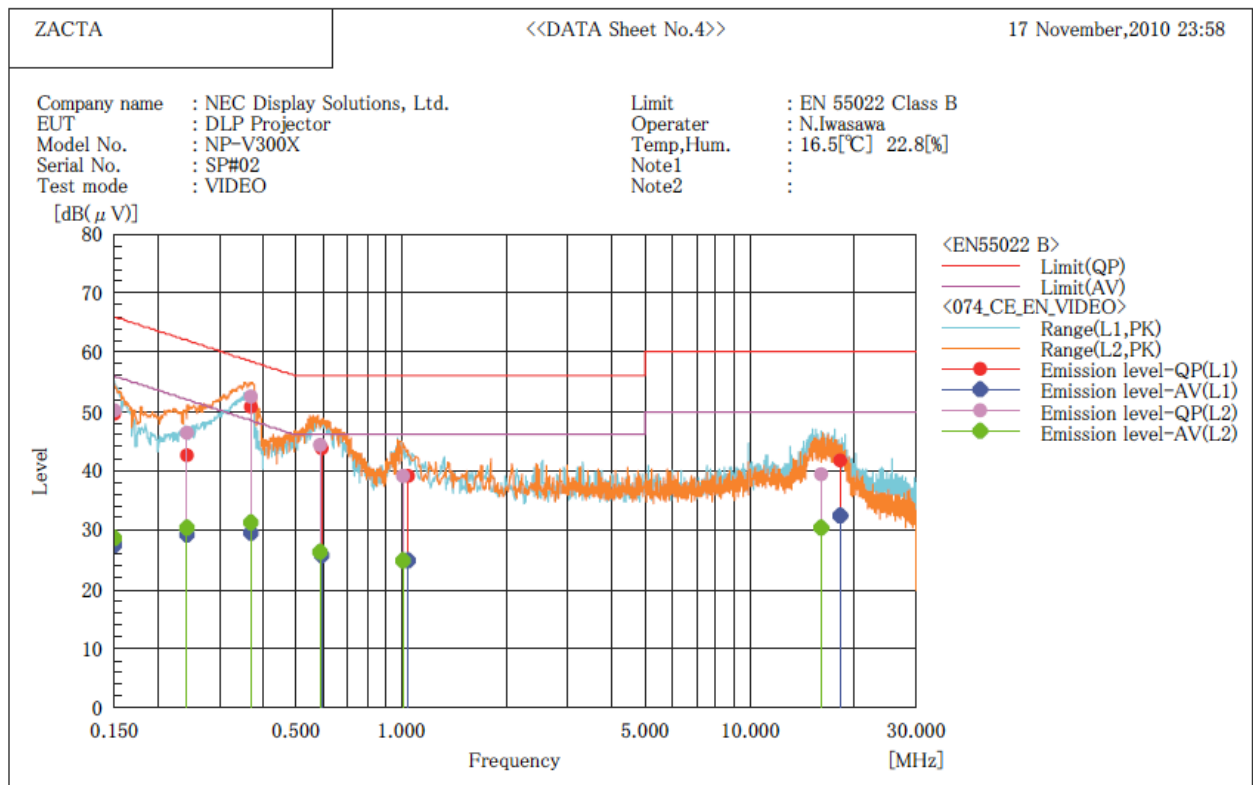
--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.150	39.4	17.6	10.1	49.5	27.7	66.0	56.0	16.5	28.3
2	0.242	32.6	19.4	10.1	42.7	29.5	62.0	52.0	19.3	22.5
3	0.363	40.4	20.0	10.1	50.5	30.1	58.7	48.7	8.2	18.6
4	0.603	33.3	16.0	10.1	43.4	26.1	56.0	46.0	12.6	19.9
5	0.997	29.0	14.6	10.1	39.1	24.7	56.0	46.0	16.9	21.3
6	18.066	30.8	21.4	11.0	41.8	32.4	60.0	50.0	18.2	17.6

--- L2 Phase ---

No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.150	40.0	18.7	10.1	50.1	28.8	66.0	56.0	15.9	27.2
2	0.242	36.2	20.6	10.1	46.3	30.7	62.0	52.0	15.7	21.3
3	0.365	42.6	22.1	10.0	52.6	32.1	58.6	48.6	6.0	16.5
4	0.587	34.3	15.7	10.1	44.4	25.8	56.0	46.0	11.6	20.2
5	1.034	29.2	14.9	10.1	39.3	25.0	56.0	46.0	16.7	21.0
6	18.090	30.3	20.8	10.8	41.1	31.6	60.0	50.0	18.9	18.4

***** CONDUCTED EMISSION at MAINS PORT *****
 << Test site 3 >>



Final Result

--- L1 Phase ---

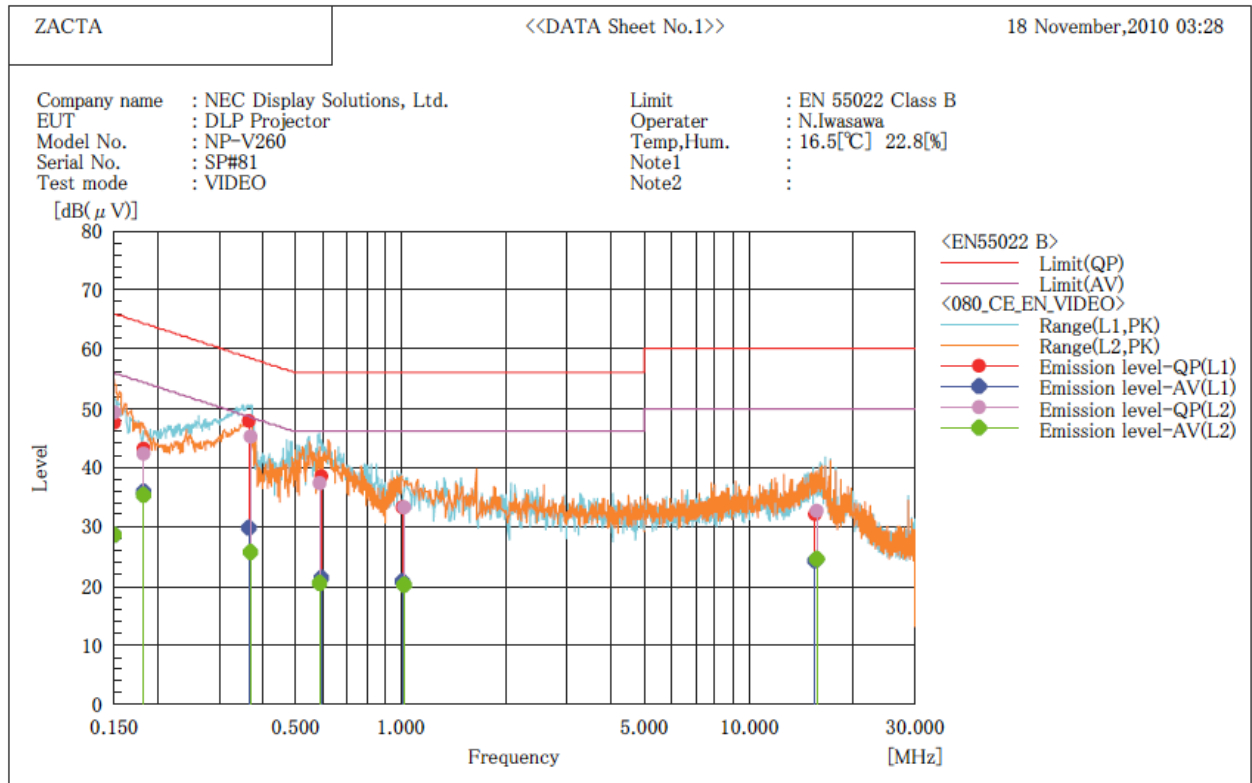
No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.150	39.4	17.3	10.1	49.5	27.4	66.0	56.0	16.5	28.6
2	0.241	32.5	19.1	10.1	42.6	29.2	62.1	52.1	19.5	22.9
3	0.371	40.8	19.3	10.1	50.9	29.4	58.5	48.5	7.6	19.1
4	0.590	33.7	15.5	10.1	43.8	25.6	56.0	46.0	12.2	20.4
5	1.042	29.1	14.8	10.1	39.2	24.9	56.0	46.0	16.8	21.1
6	18.054	30.7	21.3	11.0	41.7	32.3	60.0	50.0	18.3	17.7

--- L2 Phase ---

No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.150	40.0	18.5	10.1	50.1	28.6	66.0	56.0	15.9	27.4
2	0.242	36.3	20.4	10.1	46.4	30.5	62.0	52.0	15.6	21.5
3	0.370	42.6	21.3	10.0	52.6	31.3	58.5	48.5	5.9	17.2
4	0.586	34.4	16.1	10.1	44.5	26.2	56.0	46.0	11.5	19.8
5	1.009	29.0	14.8	10.1	39.1	24.9	56.0	46.0	16.9	21.1
6	16.054	28.8	19.8	10.7	39.5	30.5	60.0	50.0	20.5	19.5

[NP-V260]

***** CONDUCTED EMISSION at MAINS PORT *****
 << Test site 3 >>



Final Result

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c. f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
1	0.150	37.5	18.6	10.1	47.6	28.7	66.0	56.0	18.4	27.3
2	0.182	33.1	25.7	10.1	43.2	35.8	64.4	54.4	21.2	18.6
3	0.364	37.7	19.6	10.1	47.8	29.7	58.6	48.6	10.8	18.9
4	0.591	28.5	11.3	10.1	38.6	21.4	56.0	46.0	17.4	24.6
5	1.010	23.2	10.6	10.1	33.3	20.7	56.0	46.0	22.7	25.3
6	15.550	21.3	13.4	10.8	32.1	24.2	60.0	50.0	27.9	25.8

--- L2 Phase ---

No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading AV [dB(μV)]	c. f [dB]	Result QP [dB(μV)]	Result AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
1	0.150	39.1	18.5	10.1	49.2	28.6	66.0	56.0	16.8	27.4
2	0.182	32.2	25.2	10.1	42.3	35.3	64.4	54.4	22.1	19.1
3	0.369	35.2	15.7	10.0	45.2	25.7	58.5	48.5	13.3	22.8
4	0.587	27.4	10.3	10.1	37.5	20.4	56.0	46.0	18.5	25.6
5	1.016	23.1	10.1	10.1	33.2	20.2	56.0	46.0	22.8	25.8
6	15.560	22.2	14.0	10.6	32.8	24.6	60.0	50.0	27.2	25.4

5. Conducted emission at telecommunication port test information

5.1 Measurement procedure

Test was applied by following conditions.

Test method:	EN 55022
Frequency range:	0.15MHz to 30MHz
Test place:	Open area test site
EUT was placed on:	Wooden table / 2.3m(W) × 1.0m(D) × 0.8m(H)
Vertical Metal Reference Plane:	2.4m (W) × 2.7m (H) 0.4m away from EUT
Horizontal Metal Reference Plane:	40.0m x 7.8m

Test receiver setting

- Detector:	Quasi-peak, Average
- Bandwidth:	9 kHz

EUT is connected to Impedance Stabilization Network (ISN) with characteristics;
Common mode termination impedance: $150\Omega \pm 20\Omega$,

☐ Category 6

$LCL(dB) = 75 - 10\log_{10}[1 + (f/5)^2]$ dB
($\pm 3dB$ for $f < 2MHz$, $-3dB/+6dB$ for f between 2MHz and 30MHz)

☒ Category 5

$LCL(dB) = 65 - 10\log_{10}[1 + (f/5)^2]$ dB
($\pm 3dB$ for $f < 2MHz$, $-3dB/+4.5dB$ for f between 2MHz and 30MHz)

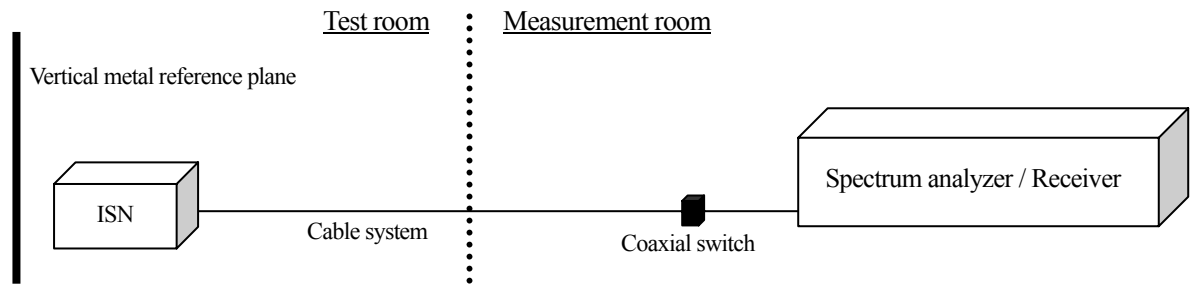
☐ Category 3

$LCL(dB) = 55 - 10\log_{10}[1 + (f/5)^2]$ dB ($\pm 3dB$)

EUT and peripherals are connected to $50\Omega/50\mu H$ Artificial Mains Network (AMN) which are connected to reference ground plane, and is placed 80cm away from EUT. AMN for peripheral is terminated in 50Ω . Excess of AC power cable is bundled in center.

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Maximum emission configuration is determined by manipulating the EUT, peripherals, interconnecting cables. Then, emission measurements are performed with test receiver in above setting to each phase of the mains port. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits.

-Test configuration



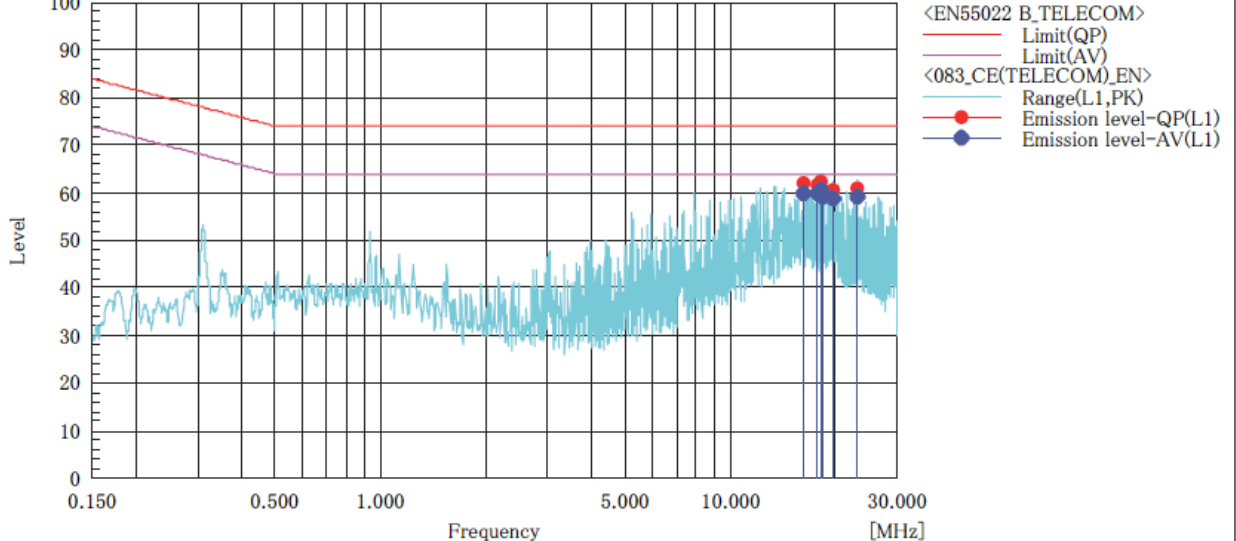
5.2 Calculation method

Emission level = Reading + (ISN factor + Cable system loss)

Margin = Limit – Emission level

[NP-V300X]

« Test site 3 »



Final Result

--- L1 Phase ---										
No.	Frequency	Reading QP	Reading AV	c. f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μ V)]	[dB(μ V)]	[dB]	[dB(μ V)]	[dB(μ V)]	[dB(μ V)]	[dB(μ V)]	[dB]	[dB]
1	16.228	51.8	49.7	10.1	61.9	59.8	74.0	64.0	12.1	4.2
2	17.694	51.4	49.6	10.2	61.6	59.8	74.0	64.0	12.4	4.2
3	18.243	52.1	50.5	10.2	62.3	60.7	74.0	64.0	11.7	3.3
4	18.305	50.5	48.8	10.2	60.7	59.0	74.0	64.0	13.3	5.0
5	19.709	50.4	48.5	10.2	60.6	58.7	74.0	64.0	13.4	5.3
6	23.129	50.5	49.0	10.3	60.8	59.3	74.0	64.0	13.2	4.7

6. Radiated emission test information (Below 1GHz)

6.1 Measurement procedure

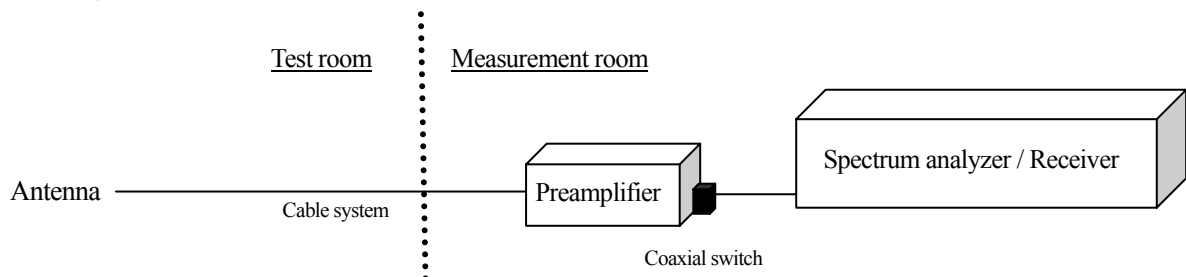
Test was applied by following conditions.

Test method:	EN 55022
Frequency range:	30MHz to 1000MHz
Test place:	Open area test site
EUT was placed on:	Wooden table / 2.3m(W) × 1.0m(D) × 0.8m(H)
Antenna distance:	10m

Test receiver setting	
- Detector:	Quasi-peak
- Bandwidth:	120kHz

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Then, emission measurements are performed with test receiver in above setting. In order to find the maximum emissions, antenna is adjusted between 1m to 4m in height and varied its polarization (horizontal and vertical), and EUT azimuth is also varied by rotating turntable 0 to 360 degrees. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition.

- Test configuration



6.2 Calculation method

Emission level = Reading + (Ant. factor + Cable system loss – Amp. Gain)
Margin = Limit – Emission level

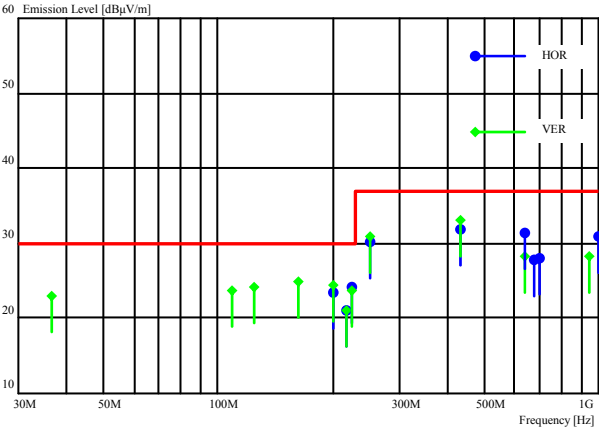
6.3 Test data

[NP-V300X]

***** RADIATED EMISSION *****

Sheet number : 1

Standard : EN 55022
Class : B
Distance [m] : 10
Date of test : 2010/11/15
Test site : 3
Temperature [] : 15.2
Humidity [%] : 24.8
Operator : N.Iwasawa
Company name : NEC Display Solutions, Ltd.
EUT : DLP Projector
Model number : NP-V300X
Serial number : SP#02
Test mode : COMPUTER 1 SXGA 60Hz
Comment :



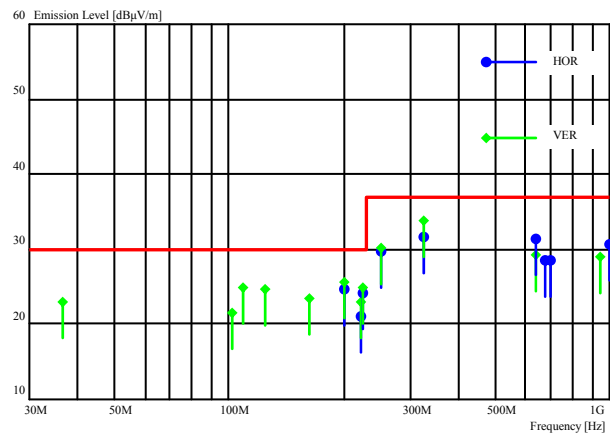
Antenna		Table	Reading		Factor	Emission	Limit	Margin	Comment
Pol.	Height	Radian	Frequency	Level		Level			
HOR/VER	[m]	[Deg.]	[MHz]	[dBuV]	[dB/m]	[dBuV/m]	[dBuV/m]	[dB]	
VER	1.0	330	36.46	33.5	-10.5	23.0	30.0	7.0	
VER	1.0	135	108.80	38.0	-14.2	23.8	30.0	6.2	
VER	1.0	115	125.00	36.2	-11.9	24.3	30.0	5.7	
VER	1.0	340	162.00	34.6	-9.6	25.0	30.0	5.0	
HOR	4.0	140	200.00	31.7	-8.3	23.4	30.0	6.6	
VER	1.0	350	200.00	32.7	-8.3	24.4	30.0	5.6	
HOR	4.0	5	216.00	29.0	-8.0	21.0	30.0	9.0	
VER	1.0	100	216.00	29.0	-8.0	21.0	30.0	9.0	
HOR	3.7	60	225.00	32.2	-7.9	24.3	30.0	5.7	
VER	1.0	5	225.00	31.5	-7.9	23.6	30.0	6.4	
HOR	3.7	50	250.00	37.5	-7.3	30.2	37.0	6.8	
VER	1.0	180	250.00	38.3	-7.3	31.0	37.0	6.0	
HOR	2.0	140	432.00	38.7	-6.9	31.8	37.0	5.2	
VER	1.0	140	432.00	39.8	-6.9	32.9	37.0	4.1	*
VER	2.8	45	643.50	31.0	-2.8	28.2	37.0	8.8	
HOR	1.3	25	643.51	34.3	-2.8	31.5	37.0	5.5	
HOR	2.3	210	672.98	30.0	-2.1	27.9	37.0	9.1	
HOR	1.9	155	701.61	29.6	-1.5	28.1	37.0	8.9	
VER	3.0	355	945.56	26.0	2.3	28.3	37.0	8.7	
HOR	1.0	155	1000.00	26.7	4.2	30.9	37.0	6.1	

* : The worst emission. Factor : Antenna Factor + Attenuator + Cable Loss - Amp Gain Ver.2.81 F3#043

***** RADIATED EMISSION *****

Sheet number : 2

Standard : EN 55022
Class : B
Distance [m] : 10
Date of test : 2010/11/15
Test site : 3
Temperature [] : 15.2
Humidity [%] : 24.8
Operator : N.Iwasawa
Company name : NEC Display Solutions, Ltd.
EUT : DLP Projector
Model number : NP-V300X
Serial number : SP#02
Test mode : COMPUTER 2 UXGA 60Hz
Comment :



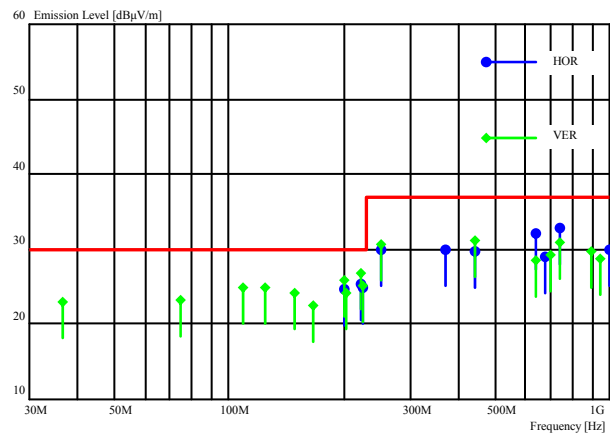
Antenna		Table	Reading		Factor	Emission	Limit	Margin	Comment
Pol.	Height	Radian	Frequency	Level		Level			
HOR/VER	[m]	[Deg.]	[MHz]	[dBμV]	[dB/m]	[dBμV/m]	[dBμV/m]	[dB]	
VER	1.0	335	36.46	33.4	-10.5	22.9	30.0	7.1	
VER	1.3	115	101.25	37.0	-15.4	21.6	30.0	8.4	
VER	1.0	155	108.80	39.0	-14.2	24.8	30.0	5.2	
VER	1.0	100	125.00	36.5	-11.9	24.6	30.0	5.4	
VER	1.0	125	162.01	33.0	-9.6	23.4	30.0	6.6	
HOR	4.0	60	200.00	33.0	-8.3	24.7	30.0	5.3	
VER	1.0	0	200.00	34.0	-8.3	25.7	30.0	4.3	
HOR	3.2	195	222.75	29.0	-7.9	21.1	30.0	8.9	
VER	1.0	125	222.75	31.0	-7.9	23.1	30.0	6.9	
HOR	4.0	65	225.00	32.0	-7.9	24.1	30.0	5.9	
VER	1.0	25	225.00	32.7	-7.9	24.8	30.0	5.2	
HOR	3.8	255	250.00	37.0	-7.3	29.7	37.0	7.3	
VER	1.0	200	250.00	37.5	-7.3	30.2	37.0	6.8	
HOR	2.3	50	324.00	41.5	-9.8	31.7	37.0	5.3	
VER	1.0	10	324.00	43.5	-9.8	33.7	37.0	3.3	*
VER	2.7	55	643.50	32.0	-2.8	29.2	37.0	7.8	
HOR	1.2	35	643.51	34.3	-2.8	31.5	37.0	5.5	
HOR	2.4	210	672.98	30.5	-2.1	28.4	37.0	8.6	
HOR	1.9	195	701.61	30.0	-1.5	28.5	37.0	8.5	
VER	3.0	0	945.56	26.8	2.3	29.1	37.0	7.9	
HOR	1.0	155	1000.00	26.5	4.2	30.7	37.0	6.3	

* : The worst emission. Factor : Antenna Factor + Attenuator + Cable Loss - Amp Gain Ver.2.81 F3#043

***** RADIATED EMISSION *****

Sheet number : 3

Standard : EN 55022
Class : B
Distance [m] : 10
Date of test : 2010/11/15
Test site : 3
Temperature [] : 15.2
Humidity [%] : 24.8
Operator : N.Iwasawa
Company name : NEC Display Solutions, Ltd.
EUT : DLP Projector
Model number : NP-V300X
Serial number : SP#02
Test mode : HDMI 1080P 60Hz
Comment :



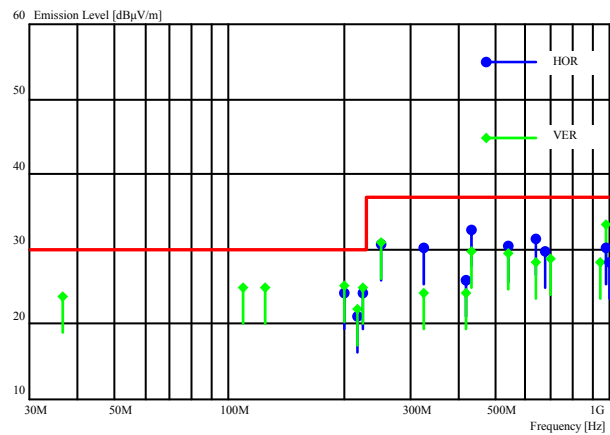
Antenna		Table	Reading		Factor	Emission	Limit	Margin	Comment
Pol.	Height	Radian	Frequency	Level		Level			
HOR/VER	[m]	[Deg.]	[MHz]	[dBμV]	[dB/m]	[dBμV/m]	[dBμV/m]	[dB]	
VER	1.0	0	36.46	33.6	-10.5	23.1	30.0	6.9	
VER	1.4	155	74.25	42.5	-19.3	23.2	30.0	6.8	
VER	1.0	125	108.80	39.0	-14.2	24.8	30.0	5.2	
VER	1.0	100	125.00	36.8	-11.9	24.9	30.0	5.1	
VER	1.0	155	148.50	34.5	-10.3	24.2	30.0	5.8	
VER	1.0	160	167.07	32.0	-9.5	22.5	30.0	7.5	
HOR	3.9	75	200.00	33.0	-8.3	24.7	30.0	5.3	
VER	1.0	35	200.00	34.1	-8.3	25.8	30.0	4.2	
VER	1.0	200	204.20	32.5	-8.2	24.3	30.0	5.7	
HOR	3.9	55	222.75	33.2	-7.9	25.3	30.0	4.7	
VER	1.0	85	222.75	34.8	-7.9	26.9	30.0	3.1	*
HOR	3.4	75	225.00	32.9	-7.9	25.0	30.0	5.0	
VER	1.0	335	225.00	33.1	-7.9	25.2	30.0	4.8	
HOR	3.7	300	250.00	37.3	-7.3	30.0	37.0	7.0	
VER	1.0	225	250.00	38.0	-7.3	30.7	37.0	6.3	
HOR	1.5	80	371.26	38.0	-8.0	30.0	37.0	7.0	
HOR	2.0	55	445.50	36.2	-6.6	29.6	37.0	7.4	
VER	3.2	250	445.50	37.7	-6.6	31.1	37.0	5.9	
HOR	1.3	15	643.50	35.0	-2.8	32.2	37.0	4.8	
VER	2.8	45	643.50	31.2	-2.8	28.4	37.0	8.6	
HOR	2.9	65	672.97	31.0	-2.1	28.9	37.0	8.1	
VER	3.0	200	701.63	30.8	-1.5	29.3	37.0	7.7	
HOR	1.2	80	742.50	34.0	-1.1	32.9	37.0	4.1	
VER	2.1	85	742.50	32.1	-1.1	31.0	37.0	6.0	
VER	1.7	125	891.00	28.1	1.5	29.6	37.0	7.4	
VER	2.9	30	945.56	26.4	2.3	28.7	37.0	8.3	
HOR	1.0	175	1000.00	25.8	4.2	30.0	37.0	7.0	

* : The worst emission. Factor : Antenna Factor + Attenuator + Cable Loss - Amp Gain Ver.2.81 F3#043

***** RADIATED EMISSION *****

Sheet number : 4

Standard : EN 55022
Class : B
Distance [m] : 10
Date of test : 2010/11/15
Test site : 3
Temperature [] : 15.2
Humidity [%] : 24.8
Operator : N.Iwasawa
Company name : NEC Display Solutions, Ltd.
EUT : DLP Projector
Model number : NP-V300X
Serial number : SP#02
Test mode : VIDEO
Comment :



Antenna		Table	Reading		Factor	Emission	Limit	Margin	Comment
Pol.	Height	Radian	Frequency	Level		Level			
HOR/VER	[m]	[Deg.]	[MHz]	[dBμV]	[dB/m]	[dBμV/m]	[dBμV/m]	[dB]	
VER	1.0	355	36.50	34.1	-10.5	23.6	30.0	6.4	
VER	1.0	150	108.81	39.0	-14.2	24.8	30.0	5.2	
VER	1.0	125	125.00	36.8	-11.9	24.9	30.0	5.1	
HOR	3.9	150	200.00	32.6	-8.3	24.3	30.0	5.7	
VER	1.0	135	200.00	33.5	-8.3	25.2	30.0	4.8	
HOR	3.7	40	216.03	29.0	-8.0	21.0	30.0	9.0	
VER	1.0	50	216.03	30.0	-8.0	22.0	30.0	8.0	
HOR	3.7	80	225.00	32.0	-7.9	24.1	30.0	5.9	
VER	1.0	100	225.00	32.8	-7.9	24.9	30.0	5.1	
HOR	3.8	275	250.00	38.0	-7.3	30.7	37.0	6.3	
VER	1.0	230	250.00	38.3	-7.3	31.0	37.0	6.0	
HOR	2.4	155	324.08	39.9	-9.8	30.1	37.0	6.9	
VER	1.0	90	324.18	33.9	-9.8	24.1	37.0	12.9	
HOR	2.5	85	418.85	33.5	-7.7	25.8	37.0	11.2	
VER	1.0	160	418.85	32.0	-7.7	24.3	37.0	12.7	
HOR	1.7	35	432.22	39.4	-6.9	32.5	37.0	4.5	
VER	1.0	55	432.22	36.7	-6.9	29.8	37.0	7.2	
HOR	1.7	180	540.03	35.0	-4.5	30.5	37.0	6.5	
VER	1.1	220	540.10	34.0	-4.5	29.5	37.0	7.5	
HOR	1.3	35	643.50	34.1	-2.8	31.3	37.0	5.7	
VER	3.0	60	643.50	31.0	-2.8	28.2	37.0	8.8	
HOR	3.0	70	672.97	31.8	-2.1	29.7	37.0	7.3	
VER	2.1	210	701.61	30.2	-1.5	28.7	37.0	8.3	
VER	3.1	35	945.59	26.0	2.3	28.3	37.0	8.7	
VER	1.5	125	972.34	30.1	3.2	33.3	37.0	3.7	*
HOR	1.2	260	972.45	26.9	3.2	30.1	37.0	6.9	
HOR	1.0	255	1000.00	24.1	4.2	28.3	37.0	8.7	

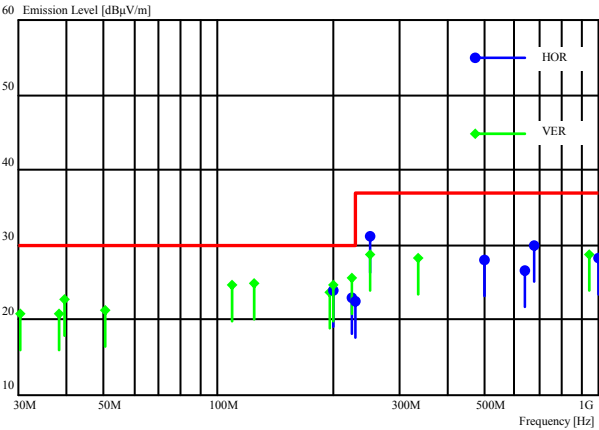
* : The worst emission. Factor : Antenna Factor + Attenuator + Cable Loss - Amp Gain Ver.2.81 F3#043

[NP-V300W]

***** RADIATED EMISSION *****

Sheet number : 1

Standard : EN 55022
Class : B
Distance [m] : 10
Date of test : 2010/11/18
Test site : 3
Temperature [] : 15.1
Humidity [%] : 23.8
Operator : N.Iwasawa
Company name : NEC Display Solutions, Ltd.
EUT : DLP Projector
Model number : NP-V300W
Serial number : ES#02
Test mode : COMPUTER 1 WXGA 60Hz
Comment :



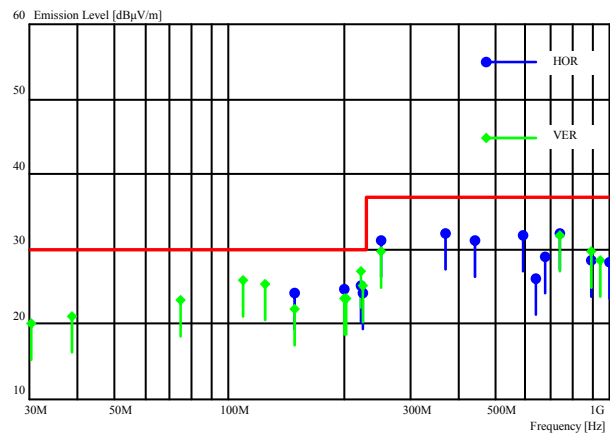
Antenna		Table	Reading		Factor	Emission	Limit	Margin	Comment
Pol.	Height	Radian	Frequency	Level		Level			
HOR/VER	[m]	[Deg.]	[MHz]	[dBμV]	[dB/m]	[dBμV/m]	[dBμV/m]	[dB]	
VER	1.0	265	30.29	29.3	-8.4	20.9	30.0	9.1	
VER	1.0	175	38.36	32.0	-11.3	20.7	30.0	9.3	
VER	1.0	220	39.32	34.3	-11.5	22.8	30.0	7.2	
VER	1.0	100	50.34	36.8	-15.4	21.4	30.0	8.6	
VER	1.0	110	108.80	38.9	-14.2	24.7	30.0	5.3	
VER	1.0	110	125.00	36.8	-11.9	24.9	30.0	5.1	
VER	1.0	5	196.62	32.0	-8.4	23.6	30.0	6.4	
HOR	3.1	35	200.00	32.2	-8.3	23.9	30.0	6.1	
VER	1.0	0	200.00	33.0	-8.3	24.7	30.0	5.3	
HOR	3.3	230	225.00	31.0	-7.9	23.1	30.0	6.9	
VER	1.0	325	225.00	33.5	-7.9	25.6	30.0	4.4	*
HOR	3.3	265	229.11	30.3	-7.9	22.4	30.0	7.6	
HOR	3.8	240	250.00	38.5	-7.3	31.2	37.0	5.8	
VER	1.0	80	250.00	36.0	-7.3	28.7	37.0	8.3	
VER	1.0	205	333.84	37.8	-9.6	28.2	37.0	8.8	
HOR	1.8	135	500.00	33.3	-5.3	28.0	37.0	9.0	
HOR	1.6	0	643.50	29.5	-2.8	26.7	37.0	10.4	
HOR	3.4	25	672.97	32.0	-2.1	29.9	37.0	7.1	
VER	3.0	355	945.56	26.5	2.3	28.8	37.0	8.2	
HOR	1.0	150	1000.00	24.0	4.2	28.2	37.0	8.8	

* : The worst emission. Factor : Antenna Factor + Attenuator + Cable Loss - Amp Gain Ver.2.81 F3#043

***** RADIATED EMISSION *****

Sheet number : 2

Standard : EN 55022
Class : B
Distance [m] : 10
Date of test : 2010/11/18
Test site : 3
Temperature [] : 15.1
Humidity [%] : 23.8
Operator : N.Iwasawa
Company name : NEC Display Solutions, Ltd.
EUT : DLP Projector
Model number : NP-V300W
Serial number : ES#02
Test mode : HDMI 1080P 60Hz
Comment :



Antenna	Table	Reading	Factor	Emission	Limit	Margin	
Pol.	Height	Radian	Frequency	Level	Level		Comment
HOR/VER	[m]	[Deg.]	[MHz]	[dBμV]	[dB/m]	[dBμV/m]	[dB]
VER	1.0	235	30.11	28.5	-8.4	20.1	30.0 9.9
VER	1.0	175	38.83	32.3	-11.3	21.0	30.0 9.0
VER	1.8	100	74.28	42.5	-19.3	23.2	30.0 6.8
VER	1.0	130	108.80	40.0	-14.2	25.8	30.0 4.2
VER	1.0	150	125.00	37.2	-11.9	25.3	30.0 4.7
HOR	4.0	80	148.50	34.5	-10.3	24.2	30.0 5.8
VER	1.0	180	148.50	32.4	-10.3	22.1	30.0 7.9
HOR	3.1	35	200.00	33.0	-8.3	24.7	30.0 5.3
VER	1.0	340	200.00	31.8	-8.3	23.5	30.0 6.5
VER	1.0	340	204.20	31.6	-8.2	23.4	30.0 6.6
HOR	3.6	40	222.75	33.0	-7.9	25.1	30.0 4.9
VER	1.0	40	222.75	34.9	-7.9	27.0	30.0 3.0 *
HOR	3.4	230	225.00	32.2	-7.9	24.3	30.0 5.7
VER	1.0	325	225.00	33.0	-7.9	25.1	30.0 4.9
HOR	3.6	245	250.00	38.4	-7.3	31.1	37.0 5.9
VER	1.0	185	250.00	36.9	-7.3	29.6	37.0 7.4
HOR	2.2	85	371.25	40.0	-8.0	32.0	37.0 5.0
HOR	1.5	175	445.50	37.8	-6.6	31.2	37.0 5.8
HOR	1.4	0	594.00	35.4	-3.5	31.9	37.0 5.1
HOR	1.6	0	643.50	29.0	-2.8	26.2	37.0 10.8
HOR	3.5	25	672.98	31.0	-2.1	28.9	37.0 8.1
HOR	1.5	125	742.50	33.2	-1.1	32.1	37.0 4.9
VER	2.0	145	742.50	33.0	-1.1	31.9	37.0 5.1
HOR	1.3	55	891.00	27.0	1.5	28.5	37.0 8.5
VER	1.6	170	891.00	28.2	1.5	29.7	37.0 7.3
VER	3.0	250	945.55	26.3	2.3	28.6	37.0 8.4
HOR	1.0	145	1000.00	24.0	4.2	28.2	37.0 8.8

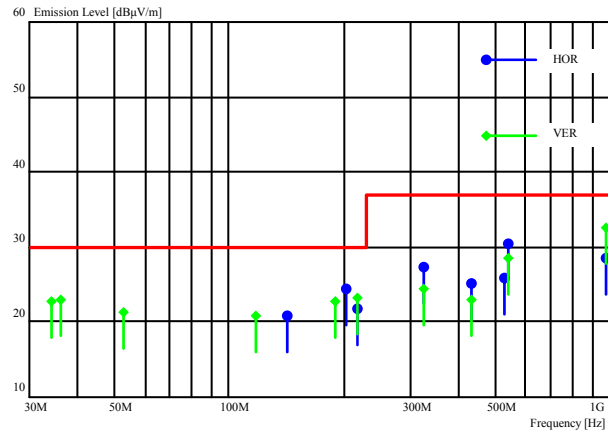
* : The worst emission. Factor : Antenna Factor + Attenuator + Cable Loss - Amp Gain Ver.2.81 F3#043

[NP-V260]

***** RADIATED EMISSION *****

Sheet number : 1

Standard : EN 55022
Class : B
Distance [m] : 10
Date of test : 2010/11/15
Test site : 3
Temperature [] : 15.2
Humidity [%] : 24.8
Operator : N.Iwasawa
Company name : NEC Display Solutions, Ltd.
EUT : DLP Projector
Model number : NP-V260
Serial number : SP#81
Test mode : VIDEO
Comment :



Antenna Pol.	Height	Table Radian	Reading Frequency	Level	Factor	Emission Level	Limit	Margin	Comment
HOR/VER	[m]	[Deg.]	[MHz]	[dBμV]	[dB/m]	[dBμV/m]	[dBμV/m]	[dB]	
VER	1.0	60	34.30	32.5	-9.8	22.7	30.0	7.3	
VER	1.0	25	36.30	33.5	-10.5	23.0	30.0	7.0	
VER	1.0	90	52.71	37.2	-16.0	21.2	30.0	8.8	
VER	1.0	155	118.11	33.5	-12.6	20.9	30.0	9.1	
HOR	4.0	70	142.47	31.4	-10.6	20.8	30.0	9.2	
VER	1.0	340	189.29	31.3	-8.5	22.8	30.0	7.2	
HOR	4.0	15	202.58	32.8	-8.3	24.5	30.0	5.5	
HOR	3.5	260	216.05	29.8	-8.0	21.8	30.0	8.2	
VER	1.0	60	216.06	31.2	-8.0	23.2	30.0	6.8	
HOR	2.2	60	324.21	37.0	-9.8	27.2	37.0	9.8	
VER	1.0	75	324.21	34.3	-9.8	24.5	37.0	12.5	
HOR	2.1	215	432.22	32.0	-6.9	25.1	37.0	11.9	
VER	1.0	195	432.22	30.0	-6.9	23.1	37.0	13.9	
HOR	1.7	20	527.52	30.8	-4.9	25.9	37.0	11.1	
HOR	1.6	45	540.09	35.0	-4.5	30.5	37.0	6.5	
VER	1.0	355	540.21	33.0	-4.5	28.5	37.0	8.5	
HOR	1.0	50	972.47	25.2	3.2	28.4	37.0	8.6	
VER	1.4	80	972.47	29.5	3.2	32.7	37.0	4.3	*

* : The worst emission. Factor : Antenna Factor + Attenuator + Cable Loss - Amp Gain Ver.2.81 F3#043

7. Radiated emission test information (Above 1GHz)

7.1 Measurement procedure

Test was applied by following conditions.

Test method:	EN 55022
Frequency range:	1000MHz to 6000MHz
Test place:	10m Semi-anechoic chamber
EUT was placed on:	Styrene foam table/ 2.0m(W) × 1.0m(D) × 0.8m(H)
Antenna distance:	Refer to Note in datasheet for measurements
Test receiver setting	
- Detector:	Peak, Average
- Bandwidth:	1MHz
w : The dimension of the line tangent to EUT formed by θ_{3dB} at the measurement distance d	$w = 2 \times d \times \tan(0.5 \times \theta_{3dB})$ $w = 1.83$ $\theta_{3dB} = 34^\circ$

Test setups and operation conditions of the EUT are performed the same as those used below 1GHz.

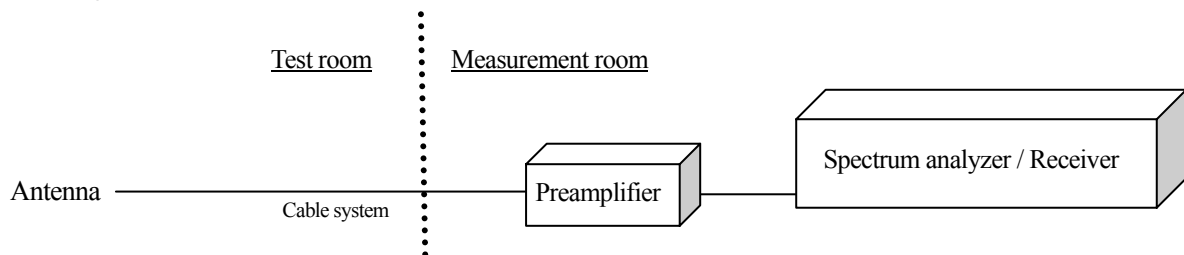
Distance from antenna to EUT is adjusted by test volume. Measurement data in actual measurement distance is adjusted to the value in 3m distance. Refer to 7.2 Calculation method.

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Then, emission measurements are performed with test receiver in above setting.

Absorbers with 0.3m height are placed on a ground plane between EUT and antenna. Refer to Configuration photographs for location of absorbers.

In order to find the maximum emissions, antenna is adjusted by the height (scan or fixed) calculated from the relation between size and “w” of EUT and varied its polarization (horizontal and vertical) for measurements above 1GHz. Refer to Note in datasheet for height of antenna for measurements above 1GHz, and EUT azimuth is also varied by rotating turntable 0 to 360 degrees. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition.

- Test configuration



7.2 Calculation method

$$\text{Emission level} = \text{Reading} + \text{Conversion factor to distance} + (\text{Ant. factor} + \text{Cable system loss} - \text{Amp. Gain})$$

$$\text{Margin} = \text{Limit} - \text{Emission level}$$

[NP-V300X, NP-V300W]

$$\begin{aligned} \text{Conversion factor to distance [dB(}\mu\text{V)/m]} &= 20 \log (\text{Measurement distance [m]} / 3\text{m}) \\ &= 20 \log (3.3 / 3) \\ &= 0.8 \end{aligned}$$

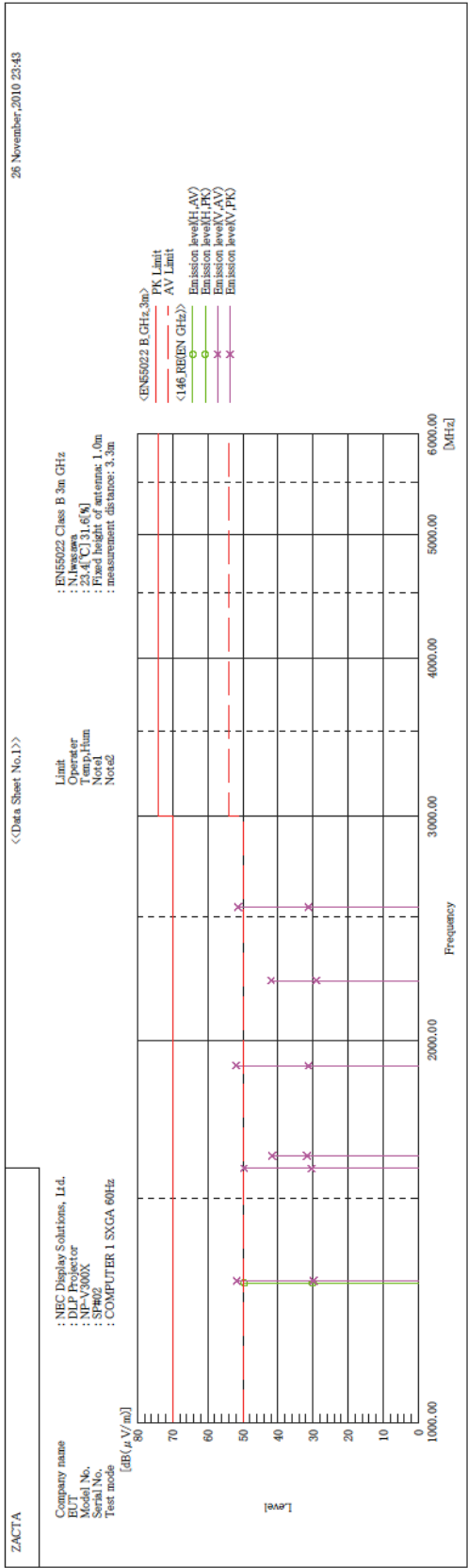
[NP-V260]

$$\begin{aligned} \text{Conversion factor to distance [dB(}\mu\text{V)/m]} &= 20 \log (\text{Measurement distance [m]} / 3\text{m}) \\ &= 20 \log (3.4 / 3) \\ &= 1.1 \end{aligned}$$

7.3 Test data

[NP-V300X]

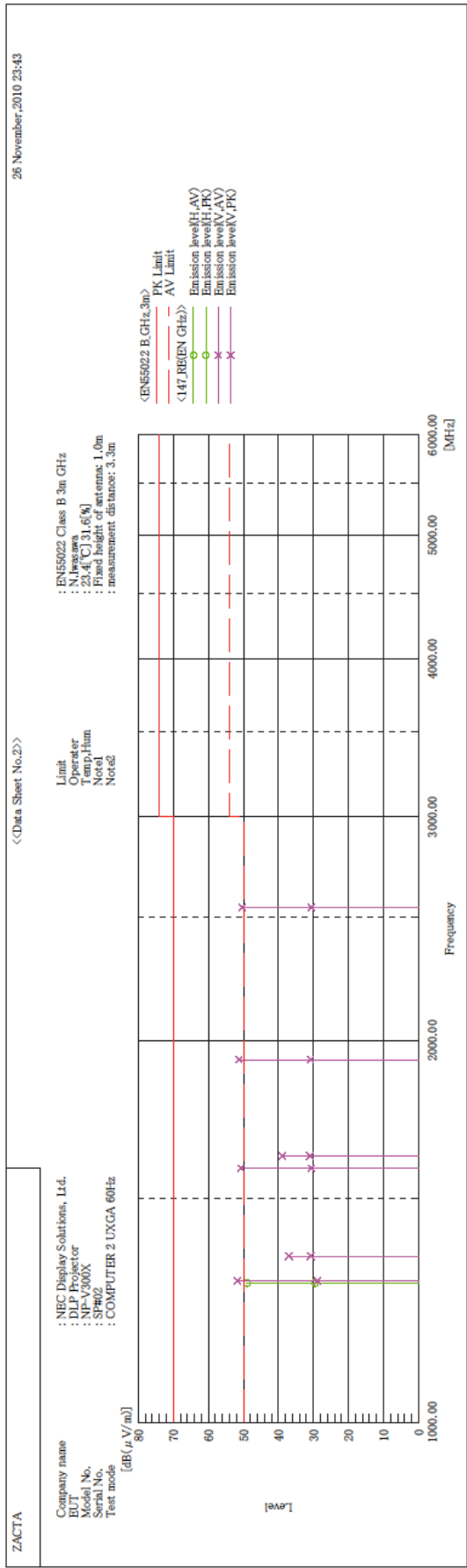
***** RADIATED EMISSION *****
[10m Semi-anechoic chamber]



Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c. f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1	1287.200	H	37.1	56.6	-7.0	30.1	49.6	70.0	19.9	20.4	100.0	165.0
2	1287.200	H	37.1	56.6	-7.0	30.1	49.6	70.0	19.9	20.4	100.0	165.0
3	1292.400	V	36.7	58.7	-6.9	29.8	51.8	70.0	20.2	18.2	100.0	149.0
4	1292.400	V	36.7	58.7	-6.9	29.8	51.8	70.0	20.2	18.2	100.0	149.0
5	1584.660	V	36.5	55.7	-6.1	30.4	49.6	70.0	19.6	20.4	100.0	107.0
6	1584.660	V	36.5	55.7	-6.1	30.4	49.6	70.0	19.6	20.4	100.0	107.0
7	1621.090	V	37.7	47.5	-5.9	31.8	41.6	70.0	18.2	28.4	100.0	0.0
8	1621.090	V	37.7	47.5	-5.9	31.8	41.6	70.0	18.2	28.4	100.0	0.0
9	1908.940	V	34.5	55.1	-3.2	31.3	51.9	70.0	18.7	18.1	100.0	164.0
10	1908.940	V	34.5	55.1	-3.2	31.3	51.9	70.0	18.7	18.1	100.0	164.0
11	2227.130	V	31.3	44.3	-2.3	29.0	42.0	70.0	21.0	28.0	100.0	326.0
12	2227.130	V	31.3	44.3	-2.3	29.0	42.0	70.0	21.0	28.0	100.0	326.0
13	2545.329	V	32.3	52.2	-0.9	31.4	51.3	70.0	18.6	18.7	100.0	23.0
14	2545.329	V	32.3	52.2	-0.9	31.4	51.3	70.0	18.6	18.7	100.0	23.0

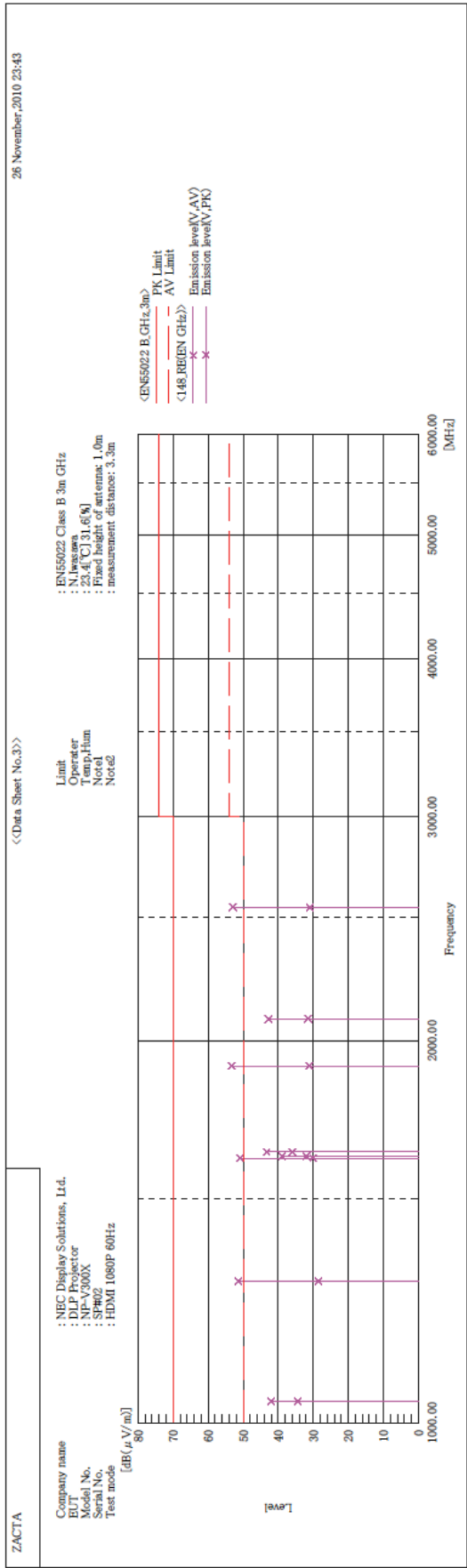
***** RADIATED EMISSION *****
[10m Semi-anechoic chamber]



Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c. f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1	1287.114	H	36.5	56.0	-7.0	29.5	49.0	70.0	20.5	21.0	100.0	166.0
2	1287.114	H	36.5	56.0	-7.0	29.5	49.0	70.0	20.5	21.0	100.0	166.0
3	1292.457	V	35.8	58.6	-6.9	28.9	51.7	70.0	18.3	18.3	100.0	142.0
4	1292.457	V	35.8	58.6	-6.9	28.9	51.7	70.0	21.1	18.3	100.0	142.0
5	1350.936	V	38.0	44.3	-7.2	30.8	37.1	70.0	19.2	32.9	100.0	17.0
6	1350.936	V	38.0	44.3	-7.2	30.8	37.1	70.0	19.2	32.9	100.0	17.0
7	1584.743	V	36.7	56.8	-6.1	30.6	50.7	70.0	19.4	19.3	100.0	110.0
8	1584.743	V	36.7	56.8	-6.1	30.6	50.7	70.0	19.4	19.3	100.0	110.0
9	1621.092	V	37.0	44.9	-5.9	31.1	39.0	70.0	18.9	31.0	100.0	0.0
10	1621.092	V	37.0	44.9	-5.9	31.1	39.0	70.0	18.9	31.0	100.0	0.0
11	1930.657	V	34.0	54.5	-3.1	30.9	51.4	70.0	19.1	18.6	100.0	78.0
12	1930.657	V	34.0	54.5	-3.1	30.9	51.4	70.0	19.1	18.6	100.0	78.0
13	2545.100	V	31.6	51.3	-0.9	30.7	50.4	70.0	19.3	19.6	100.0	22.0
14	2545.100	V	31.6	51.3	-0.9	30.7	50.4	70.0	19.3	19.6	100.0	22.0

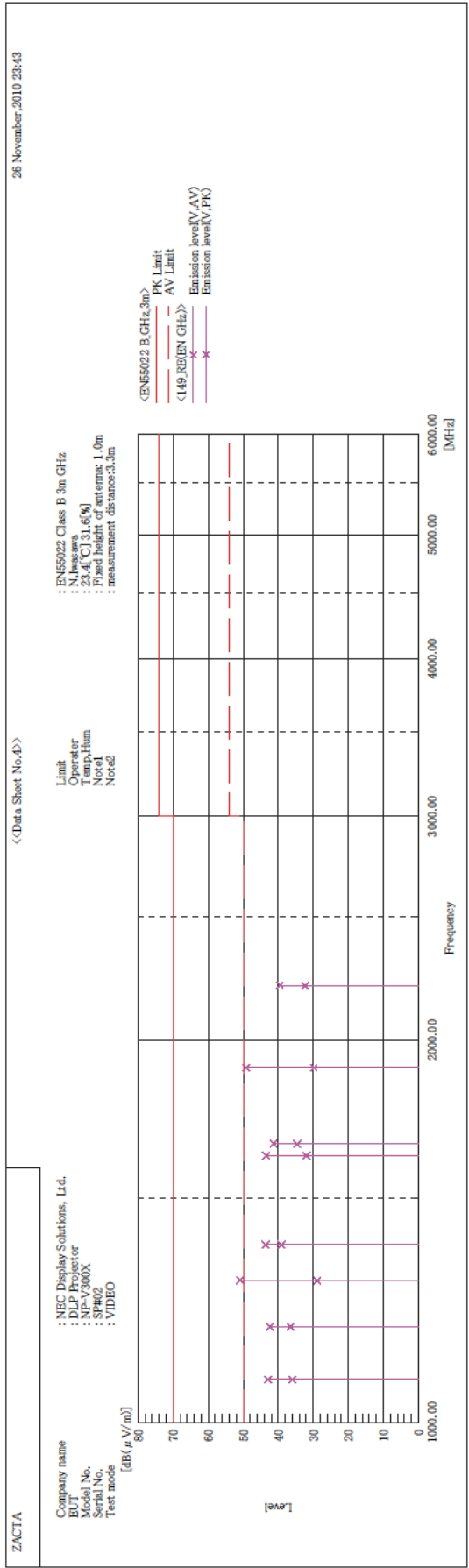
***** RADIATED EMISSION *****
[10m Semi-anechoic chamber]



Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c. f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1	1039.571	V	43.6	51.1	-9.1	34.5	42.0	70.0	15.5	28.0	100.0	80.0
2	1039.571	V	43.6	58.3	-9.1	34.5	51.4	50.0	15.5	18.6	100.0	80.0
3	1292.571	V	35.5	57.0	-6.9	28.6	51.0	50.0	21.4	19.0	100.0	143.0
4	1292.571	V	35.5	57.0	-6.0	30.0	51.0	70.0	20.0	19.0	100.0	143.0
5	1615.586	V	36.0	44.9	-6.0	30.0	39.0	50.0	20.0	31.0	100.0	93.0
6	1615.586	V	36.0	44.9	-5.9	31.9	43.4	50.0	18.1	26.6	100.0	29.0
7	1621.000	V	37.8	49.3	-5.9	36.1	53.3	70.0	13.9	16.7	100.0	86.0
8	1621.000	V	37.8	49.3	-5.9	31.1	42.9	50.0	18.9	27.1	100.0	167.0
9	1633.524	V	42.0	56.5	-3.2	31.1	53.0	70.0	18.5	17.0	100.0	16.0
10	1633.524	V	42.0	56.5	-3.2	31.1	53.0	50.0	18.5	17.0	100.0	42.0
11	1908.950	V	34.3	45.6	-2.7	31.5	53.0	70.0	19.0	19.0	100.0	42.0
12	1908.950	V	34.3	45.6	-2.7	31.5	53.0	70.0	19.0	19.0	100.0	42.0
13	2078.986	V	34.2	53.9	-0.9	31.0	53.0	50.0	19.0	19.0	100.0	42.0
14	2078.986	V	34.2	53.9	-0.9	31.0	53.0	50.0	19.0	19.0	100.0	42.0
15	2545.243	V	31.9	53.9	-0.9	31.0	53.0	50.0	19.0	19.0	100.0	42.0
16	2545.243	V	31.9	53.9	-0.9	31.0	53.0	50.0	19.0	19.0	100.0	42.0

***** RADIATED EMISSION *****
[10m Semi-anechoic chamber]

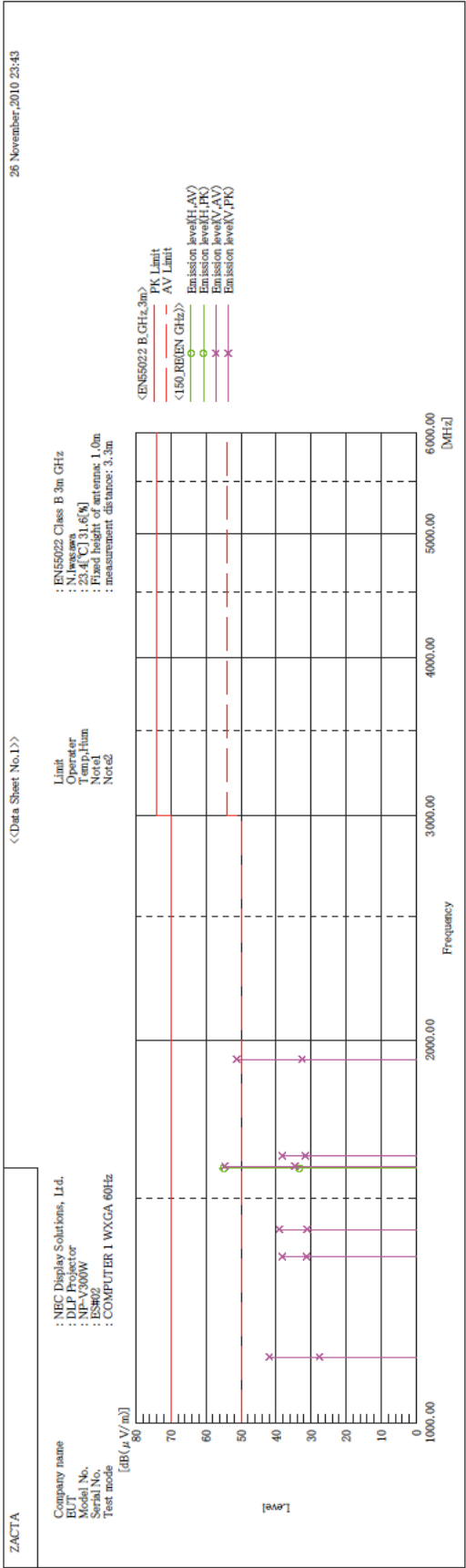


Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c. f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1	1080.307	V	44.8	51.7	-8.7	36.1	43.0	70.0	13.9	27.0	100.0	89.0
2	1080.307	V	44.8	50.3	-8.7	36.1	42.4	50.0	13.9	27.6	100.0	89.0
3	1188.478	V	44.4	57.8	-7.9	36.5	50.9	70.0	13.5	19.1	100.0	79.0
4	1188.478	V	44.4	57.8	-6.9	28.9	43.6	70.0	21.1	26.4	100.0	145.0
5	1292.493	V	35.8	50.5	-6.9	39.1	43.6	70.0	10.9	26.4	100.0	127.0
6	1292.493	V	35.8	49.5	-5.9	31.9	41.4	70.0	18.1	28.6	100.0	150.0
7	1380.001	V	46.0	47.2	-5.8	34.7	49.1	70.0	15.3	20.9	100.0	163.0
8	1380.001	V	46.0	42.2	-3.3	29.9	39.6	70.0	20.1	30.4	100.0	146.0
9	1620.948	V	37.8	42.2	-2.6	32.4	---	50.0	17.6	---	100.0	146.0
10	1620.948	V	37.8	---	---	---	---	50.0	---	---	---	---
11	1655.965	V	40.5	---	---	---	---	50.0	---	---	---	---
12	1655.965	V	40.5	---	---	---	---	50.0	---	---	---	---
13	1901.657	V	33.2	---	---	---	---	50.0	---	---	---	---
14	1901.657	V	33.2	---	---	---	---	50.0	---	---	---	---
15	2207.943	V	35.0	---	---	---	---	50.0	---	---	---	---
16	2207.943	V	35.0	---	---	---	---	50.0	---	---	---	---

[NP-V300W]

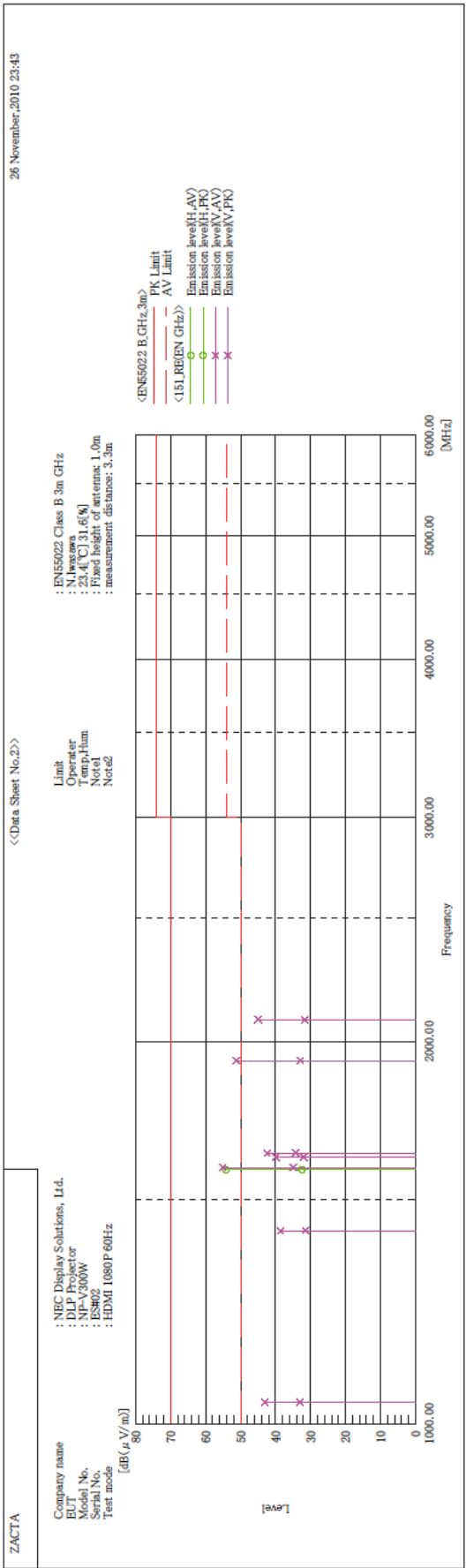
***** RADIATED EMISSION *****
[10m Semi-anechoic chamber]



Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c. f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1	1126.100	V	35.9	50.3	-8.3	27.6	42.0	70.0	22.4	28.0	100.0	139.0
2	1126.100	V	35.9	50.3	-8.3	27.6	42.0	70.0	22.4	28.0	100.0	139.0
3	1350.943	V	38.5	45.5	-7.2	31.3	38.3	70.0	18.7	31.7	100.0	19.0
4	1350.943	V	38.5	45.5	-7.2	31.3	38.3	70.0	18.7	31.7	100.0	19.0
5	1418.350	V	37.9	45.8	-6.8	31.1	39.0	70.0	18.9	31.0	100.0	14.0
6	1418.350	V	37.9	45.8	-6.8	31.1	39.0	70.0	18.9	31.0	100.0	14.0
7	1584.800	H	39.4	61.1	-6.1	33.3	55.0	70.0	16.7	15.0	100.0	147.0
8	1584.800	H	39.4	61.1	-6.1	33.3	55.0	70.0	16.7	15.0	100.0	147.0
9	1590.875	V	40.7	60.6	-6.0	34.7	54.6	70.0	15.3	15.4	100.0	206.0
10	1590.875	V	40.7	60.6	-6.0	34.7	54.6	70.0	15.3	15.4	100.0	206.0
11	1621.100	V	37.6	44.2	-5.9	31.7	38.3	70.0	18.3	31.7	100.0	47.0
12	1621.100	V	37.6	44.2	-5.9	31.7	38.3	70.0	18.3	31.7	100.0	47.0
13	1930.791	V	35.8	54.3	-3.1	32.7	51.2	70.0	17.3	18.8	100.0	82.0
14	1930.791	V	35.8	54.3	-3.1	32.7	51.2	70.0	17.3	18.8	100.0	82.0

***** RADIATED EMISSION *****
[10m Semi-anechoic chamber]

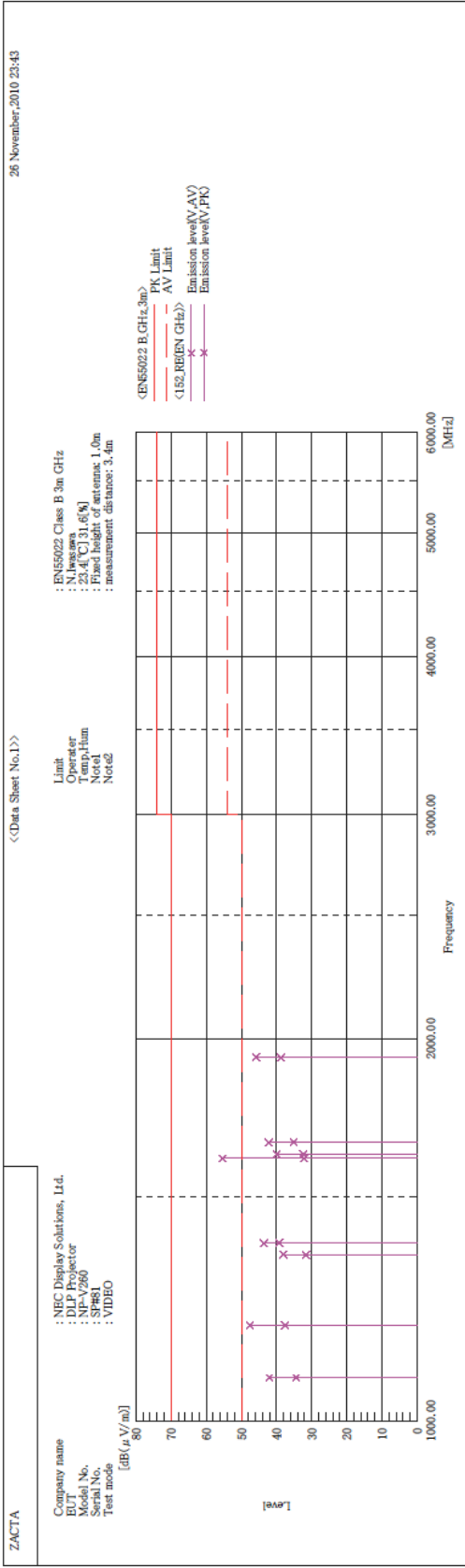


Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c. f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1	1039.471	V	42.1	52.2	-9.1	33.0	43.1	70.0	17.0	26.9	100.0	10.0
2	1039.471	V	42.1	52.2	-9.1	33.0	43.1	50.0	17.0	26.9	100.0	10.0
3	1418.350	V	38.2	45.4	-6.8	31.4	38.6	50.0	18.6	31.4	100.0	8.0
4	1418.350	V	38.2	45.4	-6.8	31.4	38.6	50.0	18.6	31.4	100.0	8.0
5	1584.729	H	38.6	60.4	-6.1	32.5	54.3	70.0	17.5	15.7	100.0	150.0
6	1584.729	H	38.6	60.4	-6.1	32.5	54.3	50.0	17.5	15.7	100.0	150.0
7	1590.729	V	41.0	61.2	-6.0	35.0	55.2	70.0	15.0	14.8	100.0	206.0
8	1590.729	V	41.0	61.2	-6.0	35.0	55.2	50.0	15.0	14.8	100.0	206.0
9	1621.057	V	37.8	45.8	-5.9	31.9	39.9	70.0	18.1	30.1	100.0	0.0
10	1621.057	V	37.8	45.8	-5.9	31.9	39.9	50.0	18.1	30.1	100.0	0.0
11	1633.496	V	40.2	48.3	-5.9	34.3	42.4	70.0	15.7	27.6	100.0	93.0
12	1633.496	V	40.2	48.3	-5.9	34.3	42.4	50.0	15.7	27.6	100.0	93.0
13	1930.779	V	36.1	54.3	-3.1	33.0	51.2	70.0	17.0	18.8	100.0	80.0
14	1930.779	V	36.1	54.3	-3.1	33.0	51.2	50.0	17.0	18.8	100.0	80.0
15	2078.975	V	34.4	47.7	-2.7	31.7	45.0	70.0	18.3	25.0	100.0	15.0
16	2078.975	V	34.4	47.7	-2.7	31.7	45.0	50.0	18.3	25.0	100.0	15.0

[NP-V260]

***** RADIATED EMISSION *****
[10m Semi-anechoic chamber]



Final Result

No.	Frequency [MHz]	(P)	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c. f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1	1080.414	V	43.1	50.8	-8.7	34.4	42.1	70.0	15.6	27.9	100.0	87.0
2	1080.414	V	43.1	50.8	-8.7	34.4	42.1	70.0	15.6	27.9	100.0	87.0
3	1188.579	V	45.6	55.5	-7.9	37.7	47.6	70.0	12.3	22.4	100.0	87.0
4	1188.579	V	45.6	55.5	-7.9	37.7	47.6	70.0	12.3	22.4	100.0	87.0
5	1350.902	V	38.8	45.3	-7.2	31.6	38.1	70.0	18.4	31.9	100.0	0.0
6	1350.902	V	38.8	45.3	-7.2	31.6	38.1	70.0	18.4	31.9	100.0	0.0
7	1380.014	V	46.1	50.5	-6.9	39.2	43.6	70.0	10.8	26.4	100.0	134.0
8	1380.014	V	46.1	50.5	-6.9	39.2	43.6	70.0	10.8	26.4	100.0	134.0
9	1609.233	V	38.1	61.4	-6.0	32.1	55.4	70.0	17.9	14.6	100.0	104.0
10	1609.233	V	38.1	61.4	-6.0	32.1	55.4	70.0	17.9	14.6	100.0	104.0
11	1621.001	V	38.4	45.9	-5.9	32.5	40.0	70.0	17.5	30.0	100.0	32.0
12	1621.001	V	38.4	45.9	-5.9	32.5	40.0	70.0	17.5	30.0	100.0	32.0
13	1656.016	V	40.9	48.1	-5.8	35.1	42.3	70.0	14.9	27.7	100.0	157.0
14	1656.016	V	40.9	48.1	-5.8	35.1	42.3	70.0	14.9	27.7	100.0	157.0
15	1932.071	V	41.9	48.9	-3.1	38.8	45.8	70.0	11.2	24.2	100.0	150.0
16	1932.071	V	41.9	48.9	-3.1	38.8	45.8	70.0	11.2	24.2	100.0	150.0

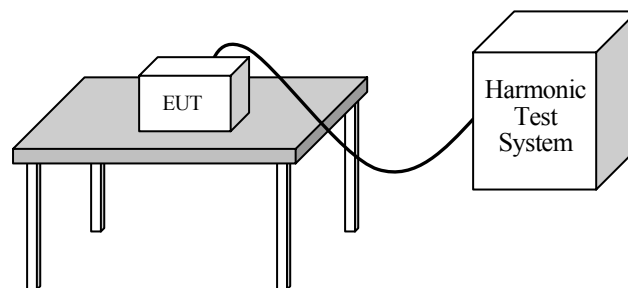
8. Harmonic current emissions

8.1 Applied test condition

Test was applied by following conditions.

Items	Description
Test method	EN 61000-3-2
Repeatability	5 %
POHC Limit	150%
Classification of equipment	D

8.2 Sample test set up



8.3 Test data

[NP-V300X]

Operating mode : COMPUTER 1 XGA 60Hz
Date of test : November 29, 2010
Test Place : Shielded room No.1
Climatic condition : 22.9°C 50.0% 983hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Harmonics Current Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V300X		
Type		Type of Test	EN61000-3-2(2006)
Serial No.			*IEC61000-3-2:Ed3.0(2005)
Operating Mode	COMPUTER 1 XGA 60Hz		EN61000-4-7(2002)
Date of Test	2010/11/29 19:24:58		*IEC61000-4-7(2002)
Climatic Condition		Classification	Class D
Memo		Power Analyzer	KHA1000 Ver1.50
		Supply Source	230V 50Hz
		Reference Impedance	

Test Data of Current Harmonics

Final Test Result	Pass	Tobs	Short cyclic
Voltage	230.02 V	THC	0.5813 A
Current	1.3537 A	POHC/Limit	0.0148 A / 0.1136 A *3
Power	264.64 W	Nominal	230 V / 50 Hz
Power Factor	0.8499	Fundamental Current	1.2226 A
Apparent Power	311.4 VA	Measuring Period	150 s
		Margin	100 %

Order	Limit1(A rms)	Limit2(A rms)	Ave(A rms)	Max(A rms)	Judge
1	----	----	1.2221	1.2226	N/A
2	----	----	0.0047	0.0063	N/A
3	0.8998	1.3497	0.5751	0.5754	Pass
4	----	----	0.0087	0.0093	N/A
5	0.5028	0.7542	0.0696	0.0697	Pass
6	----	----	0.0087	0.0089	N/A
7	0.2646	0.3970	0.0236	0.0237	Pass
8	----	----	0.0025	0.0026	N/A
9	0.1323	0.1985	0.0211	0.0212	Pass
10	----	----	0.0009	0.0010	N/A
11	0.0926	0.1389	0.0106	0.0108	Pass
12	----	----	0.0007	0.0009	N/A
13	0.0784	0.1176	0.0143	0.0145	Pass
14	----	----	0.0006	0.0008	N/A
15	0.0679	0.1019	0.0136	0.0136	Pass
16	----	----	0.0002	0.0003	N/A
17	0.0599	0.0899	0.0052	0.0053	Pass
18	----	----	0.0004	0.0005	N/A
19	0.0536	0.0804	0.0086	0.0087	Pass
20	----	----	0.0004	0.0005	N/A
21	0.0728	0.0728	0.0069	0.0070	Pass
22	----	----	0.0005	0.0006	N/A
23	0.0664	0.0664	0.0057	0.0058	Pass
24	----	----	0.0003	0.0004	N/A
25	0.0611	0.0611	0.0052	0.0053	Pass
26	----	----	0.0004	0.0005	N/A
27	0.0566	0.0566	0.0048	0.0049	Pass
28	----	----	0.0003	0.0004	N/A
29	0.0527	0.0527	0.0050	0.0051	Pass
30	----	----	0.0005	0.0006	N/A
31	0.0493	0.0493	0.0033	0.0034	Pass
32	----	----	0.0003	0.0004	N/A
33	0.0463	0.0463	0.0040	0.0040	Pass
34	----	----	0.0004	0.0005	N/A
35	0.0437	0.0437	0.0032	0.0033	Pass
36	----	----	0.0004	0.0004	N/A
37	0.0413	0.0413	0.0037	0.0038	Pass
38	----	----	0.0005	0.0005	N/A
39	0.0392	0.0392	0.0032	0.0032	Pass
40	----	----	0.0004	0.0006	N/A

N/A : Not Apply

*3 When the POHC value does not exceed the POHC Limit, 150% of the Limit1 value is applied to each Limit1 value.

Operating mode : COMPUTER 2 UXGA 60Hz
Date of test : November 29, 2010
Test Place : Shielded room No.1
Climatic condition : 22.9°C 50.0% 983hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Harmonics Current Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V300X		
Type			
Serial No.		Type of Test	EN61000-3-2(2006) *IEC61000-3-2:Ed3.0(2005)
Operating Mode	COMPUTER 2 UXGA 60Hz		EN61000-4-7(2002) *IEC61000-4-7(2002)
Date of Test	2010/11/29 19:39:09		
Climatic Condition		Classification	Class D
Memo		Power Analyzer	KHA1000 Ver1.50
		Supply Source	230V 50Hz
		Reference Impedance	

Test Data of Current Harmonics

Final Test Result	Pass		Tobs	Short cyclic
Voltage	230.02 V		THC	0.5896 A
Current	1.3707 A		POHC/Limit	0.0148 A / 0.1150 A *3
Power	267.77 W		Nominal	230 V / 50 Hz
Power Factor	0.8493		Fundamental Current	1.2372 A
Apparent Power	315.3 VA		Measuring Period	150 s
			Margin	100 %

Order	Limit1(A rms)	Limit2(A rms)	Ave(A rms)	Max(A rms)	Judge
1	----	----	1.2365	1.2372	N/A
2	----	----	0.0047	0.0068	N/A
3	0.9104	1.3656	0.5831	0.5835	Pass
4	----	----	0.0089	0.0099	N/A
5	0.5088	0.7631	0.0716	0.0717	Pass
6	----	----	0.0093	0.0094	N/A
7	0.2678	0.4017	0.0240	0.0241	Pass
8	----	----	0.0029	0.0030	N/A
9	0.1339	0.2008	0.0212	0.0214	Pass
10	----	----	0.0011	0.0012	N/A
11	0.0937	0.1406	0.0103	0.0104	Pass
12	----	----	0.0008	0.0010	N/A
13	0.0793	0.1190	0.0146	0.0148	Pass
14	----	----	0.0007	0.0009	N/A
15	0.0687	0.1031	0.0137	0.0137	Pass
16	----	----	0.0003	0.0004	N/A
17	0.0606	0.0910	0.0054	0.0055	Pass
18	----	----	0.0005	0.0007	N/A
19	0.0543	0.0814	0.0087	0.0087	Pass
20	----	----	0.0005	0.0007	N/A
21	0.0736	0.0736	0.0067	0.0068	Pass
22	----	----	0.0005	0.0006	N/A
23	0.0672	0.0672	0.0060	0.0061	Pass
24	----	----	0.0005	0.0006	N/A
25	0.0619	0.0619	0.0051	0.0052	Pass
26	----	----	0.0006	0.0008	N/A
27	0.0573	0.0573	0.0048	0.0049	Pass
28	----	----	0.0004	0.0005	N/A
29	0.0533	0.0533	0.0051	0.0052	Pass
30	----	----	0.0008	0.0010	N/A
31	0.0499	0.0499	0.0034	0.0034	Pass
32	----	----	0.0004	0.0005	N/A
33	0.0469	0.0469	0.0041	0.0042	Pass
34	----	----	0.0005	0.0007	N/A
35	0.0442	0.0442	0.0032	0.0033	Pass
36	----	----	0.0005	0.0007	N/A
37	0.0418	0.0418	0.0037	0.0038	Pass
38	----	----	0.0006	0.0007	N/A
39	0.0397	0.0397	0.0032	0.0033	Pass
40	----	----	0.0006	0.0008	N/A

N/A : Not Apply

*3 When the POHC value does not exceed the POHC Limit, 150% of the Limit1 value is applied to each Limit1 value.

[Repeatability]

Ref/Meas	File	Curr Range	Worst [%]	Judge
Meas	NP-V300X_EN_HM_COM2_3.hr	2A	-0.7	Pass
Ref	NP-V300X_EN_HM_COM2_1.hr	2A	----	----
	NP-V300X_EN_HM_COM2_2.hr	2A	-0.6	Pass

Order	Ref [A rms]	Meas [A rms]	Per [%]	Judge
1	1.2365	1.2381	0.1	Pass
2	0.0047	0.0050	----	----
3	0.5831	0.5832	0.0	Pass
4	0.0089	0.0087	----	----
5	0.0716	0.0711	-0.7	Pass
6	0.0093	0.0086	----	----
7	0.0240	0.0237	----	----
8	0.0029	0.0024	----	----
9	0.0212	0.0214	----	----
10	0.0011	0.0009	----	----
11	0.0103	0.0102	----	----
12	0.0008	0.0007	----	----
13	0.0146	0.0146	----	----
14	0.0007	0.0006	----	----
15	0.0137	0.0137	----	----
16	0.0003	0.0002	----	----
17	0.0054	0.0053	----	----
18	0.0005	0.0003	----	----
19	0.0087	0.0085	----	----
20	0.0005	0.0004	----	----
21	0.0067	0.0067	----	----
22	0.0005	0.0005	----	----
23	0.0060	0.0060	----	----
24	0.0005	0.0004	----	----
25	0.0051	0.0051	----	----
26	0.0006	0.0004	----	----
27	0.0048	0.0050	----	----
28	0.0004	0.0004	----	----
29	0.0051	0.0051	----	----
30	0.0008	0.0006	----	----
31	0.0034	0.0034	----	----
32	0.0004	0.0003	----	----
33	0.0041	0.0040	----	----
34	0.0005	0.0004	----	----
35	0.0032	0.0031	----	----
36	0.0005	0.0004	----	----
37	0.0037	0.0037	----	----
38	0.0006	0.0005	----	----
39	0.0032	0.0033	----	----
40	0.0006	0.0004	----	----

Meas : Comprison file to be close-up.

Operating mode : HDMI 1080P 60Hz
Date of test : November 29, 2010
Test Place : Shielded room No.1
Climatic condition : 22.9°C 50.0% 983hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Harmonics Current Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V300X		
Type			
Serial No.		Type of Test	EN61000-3-2(2006) *IEC61000-3-2:Ed3.0(2005)
Operating Mode	HDMI 1080P 60Hz		EN61000-4-7(2002) *IEC61000-4-7(2002)
Date of Test	2010/11/29 19:03:43		
Climatic Condition		Classification	Class D
Memo		Power Analyzer	KHA1000 Ver1.50
		Supply Source	230V 50Hz
		Reference Impedance	

Test Data of Current Harmonics

Final Test Result	Pass	Tobs	Short cyclic
Voltage	229.98 V	THC	0.5040 A
Current	1.1790 A	POHC/Limit	0.0141 A / 0.0987 A *3
Power	229.90 W	Nominal	230 V / 50 Hz
Power Factor	0.8477	Fundamental Current	1.0657 A
Apparent Power	271.2 VA	Measuring Period	150 s
		Margin	100 %

Order	Limit1(A rms)	Limit2(A rms)	Ave(A rms)	Max(A rms)	Judge
1	----	----	1.0639	1.0657	N/A
2	----	----	0.0047	0.0056	N/A
3	0.7817	1.1725	0.4979	0.4989	Pass
4	----	----	0.0079	0.0085	N/A
5	0.4368	0.6552	0.0565	0.0567	Pass
6	----	----	0.0076	0.0078	N/A
7	0.2299	0.3449	0.0242	0.0244	Pass
8	----	----	0.0027	0.0027	N/A
9	0.1150	0.1724	0.0186	0.0187	Pass
10	----	----	0.0010	0.0012	N/A
11	0.0805	0.1207	0.0148	0.0149	Pass
12	----	----	0.0008	0.0010	N/A
13	0.0681	0.1021	0.0119	0.0120	Pass
14	----	----	0.0005	0.0007	N/A
15	0.0590	0.0885	0.0113	0.0114	Pass
16	----	----	0.0007	0.0009	N/A
17	0.0521	0.0781	0.0070	0.0071	Pass
18	----	----	0.0007	0.0009	N/A
19	0.0466	0.0699	0.0092	0.0094	Pass
20	----	----	0.0008	0.0010	N/A
21	0.0632	0.0632	0.0062	0.0063	Pass
22	----	----	0.0008	0.0009	N/A
23	0.0577	0.0577	0.0047	0.0048	Pass
24	----	----	0.0006	0.0007	N/A
25	0.0531	0.0531	0.0061	0.0063	Pass
26	----	----	0.0005	0.0006	N/A
27	0.0492	0.0492	0.0038	0.0039	Pass
28	----	----	0.0007	0.0008	N/A
29	0.0458	0.0458	0.0051	0.0052	Pass
30	----	----	0.0008	0.0009	N/A
31	0.0428	0.0428	0.0033	0.0035	Pass
32	----	----	0.0009	0.0011	N/A
33	0.0402	0.0402	0.0038	0.0039	Pass
34	----	----	0.0008	0.0009	N/A
35	0.0379	0.0379	0.0040	0.0041	Pass
36	----	----	0.0005	0.0006	N/A
37	0.0359	0.0359	0.0027	0.0028	Pass
38	----	----	0.0008	0.0010	N/A
39	0.0340	0.0340	0.0031	0.0033	Pass
40	----	----	0.0009	0.0011	N/A

N/A : Not Apply

*3 When the POHC value does not exceed the POHC Limit, 150% of the Limit1 value is applied to each Limit1 value.

Operating mode : VIDEO
Date of test : November 29, 2010
Test Place : Shielded room No.1
Climatic condition : 22.9°C 50.0% 983hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Harmonics Current Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V300X		
Type			
Serial No.		Type of Test	EN61000-3-2(2006) *IEC61000-3-2:Ed3.0(2005)
Operating Mode	VIDEO		EN61000-4-7(2002) *IEC61000-4-7(2002)
Date of Test	2010/11/29 19:10:17		
Climatic Condition		Classification	Class D
Memo		Power Analyzer	KHA1000 Ver1.50
		Supply Source	230V 50Hz
		Reference Impedance	

Test Data of Current Harmonics

Final Test Result	Pass	Tobs	Short cyclic
Voltage	230.00 V	THC	0.5852 A
Current	1.3633 A	POHC/Limit	0.0148 A / 0.1144 A *3
Power	266.54 W	Nominal	230 V / 50 Hz
Power Factor	0.8502	Fundamental Current	1.2313 A
Apparent Power	313.6 VA	Measuring Period	150 s
		Margin	100 %

Order	Limit1(A rms)	Limit2(A rms)	Ave(A rms)	Max(A rms)	Judge
1	----	----	1.2290	1.2313	N/A
2	----	----	0.0049	0.0055	N/A
3	0.9062	1.3594	0.5783	0.5792	Pass
4	----	----	0.0089	0.0093	N/A
5	0.5064	0.7596	0.0702	0.0705	Pass
6	----	----	0.0092	0.0093	N/A
7	0.2665	0.3998	0.0237	0.0238	Pass
8	----	----	0.0028	0.0029	N/A
9	0.1333	0.1999	0.0212	0.0212	Pass
10	----	----	0.0011	0.0012	N/A
11	0.0933	0.1399	0.0106	0.0107	Pass
12	----	----	0.0008	0.0009	N/A
13	0.0789	0.1184	0.0145	0.0145	Pass
14	----	----	0.0007	0.0008	N/A
15	0.0684	0.1026	0.0136	0.0136	Pass
16	----	----	0.0003	0.0004	N/A
17	0.0604	0.0905	0.0054	0.0055	Pass
18	----	----	0.0005	0.0005	N/A
19	0.0540	0.0810	0.0087	0.0087	Pass
20	----	----	0.0005	0.0006	N/A
21	0.0733	0.0733	0.0068	0.0068	Pass
22	----	----	0.0005	0.0006	N/A
23	0.0669	0.0669	0.0059	0.0060	Pass
24	----	----	0.0004	0.0005	N/A
25	0.0616	0.0616	0.0051	0.0051	Pass
26	----	----	0.0007	0.0007	N/A
27	0.0570	0.0570	0.0048	0.0048	Pass
28	----	----	0.0004	0.0004	N/A
29	0.0531	0.0531	0.0051	0.0051	Pass
30	----	----	0.0008	0.0009	N/A
31	0.0497	0.0497	0.0034	0.0034	Pass
32	----	----	0.0004	0.0004	N/A
33	0.0466	0.0466	0.0040	0.0041	Pass
34	----	----	0.0005	0.0006	N/A
35	0.0440	0.0440	0.0033	0.0033	Pass
36	----	----	0.0005	0.0006	N/A
37	0.0416	0.0416	0.0037	0.0037	Pass
38	----	----	0.0005	0.0006	N/A
39	0.0395	0.0395	0.0032	0.0032	Pass
40	----	----	0.0006	0.0007	N/A

N/A : Not Apply

*3 When the POHC value does not exceed the POHC Limit, 150% of the Limit1 value is applied to each Limit1 value.

[NP-V260]

Operating mode : COMPUTER SVGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 23.0°C 41.8% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Harmonics Current Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V260		
Type	Serial No.	Type of Test	EN61000-3-2(2006)
			*IEC61000-3-2:Ed3.0(2005)
Operating Mode	COMPUTER SVGA 60Hz		EN61000-4-7(2002)
Date of Test	2010/11/30 17:03:40		*IEC61000-4-7(2002)
Climatic Condition		Classification	Class D
Memo		Power Analyzer	KHA1000 Ver1.50
		Supply Source	230V 50Hz
		Reference Impedance	

Test Data of Current Harmonics

Final Test Result	Pass	Tobs	Short cyclic
Voltage	230.12 V	THC	0.5085 A
Current	1.1500 A	POHC/Limit	0.0168 A / 0.0955 A *3
Power	222.93 W	Nominal	230 V / 50 Hz
Power Factor	0.8427	Fundamental Current	1.0312 A
Apparent Power	264.6 VA	Measuring Period	150 s
		Margin	100 %

Order	Limit1(A rms)	Limit2(A rms)	Ave(A rms)	Max(A rms)	Judge
1	----	----	1.0301	1.0312	N/A
2	----	----	0.0067	0.0082	N/A
3	0.7580	1.1369	0.5018	0.5025	Pass
4	----	----	0.0068	0.0071	N/A
5	0.4236	0.6353	0.0639	0.0643	Pass
6	----	----	0.0055	0.0057	N/A
7	0.2229	0.3344	0.0278	0.0280	Pass
8	----	----	0.0020	0.0022	N/A
9	0.1115	0.1672	0.0156	0.0158	Pass
10	----	----	0.0018	0.0020	N/A
11	0.0780	0.1170	0.0081	0.0084	Pass
12	----	----	0.0015	0.0016	N/A
13	0.0660	0.0990	0.0141	0.0144	Pass
14	----	----	0.0016	0.0018	N/A
15	0.0572	0.0858	0.0107	0.0110	Pass
16	----	----	0.0015	0.0017	N/A
17	0.0505	0.0757	0.0065	0.0068	Pass
18	----	----	0.0014	0.0016	N/A
19	0.0452	0.0678	0.0075	0.0077	Pass
20	----	----	0.0016	0.0019	N/A
21	0.0613	0.0613	0.0089	0.0090	Pass
22	----	----	0.0017	0.0021	N/A
23	0.0560	0.0560	0.0053	0.0055	Pass
24	----	----	0.0016	0.0017	N/A
25	0.0515	0.0515	0.0061	0.0063	Pass
26	----	----	0.0014	0.0016	N/A
27	0.0477	0.0477	0.0044	0.0046	Pass
28	----	----	0.0015	0.0017	N/A
29	0.0444	0.0444	0.0049	0.0052	Pass
30	----	----	0.0015	0.0017	N/A
31	0.0415	0.0415	0.0056	0.0059	Pass
32	----	----	0.0014	0.0016	N/A
33	0.0390	0.0390	0.0031	0.0034	Pass
34	----	----	0.0014	0.0016	N/A
35	0.0368	0.0368	0.0045	0.0047	Pass
36	----	----	0.0014	0.0016	N/A
37	0.0348	0.0348	0.0033	0.0035	Pass
38	----	----	0.0015	0.0017	N/A
39	0.0330	0.0330	0.0035	0.0037	Pass
40	----	----	0.0014	0.0017	N/A

N/A : Not Apply

*3 When the POHC value does not exceed the POHC Limit, 150% of the Limit1 value is applied to each Limit1 value.

[Repeatability]

Ref/Meas	File	Curr Range	Worst [%]	Judge
Meas	NP-V260_EN_HM_COM_3.hr	2A	1.3	Pass
Ref	NP-V260_EN_HM_COM_1.hr	2A	----	----
	NP-V260_EN_HM_COM_2.hr	2A	-0.5	Pass

Order	Ref [A rms]	Meas [A rms]	Per [%]	Judge
1	1.0301	1.0272	-0.3	Pass
2	0.0067	0.0067	----	----
3	0.5018	0.5015	-0.1	Pass
4	0.0068	0.0068	----	----
5	0.0639	0.0647	1.3	Pass
6	0.0055	0.0056	----	----
7	0.0278	0.0279	----	----
8	0.0020	0.0020	----	----
9	0.0156	0.0154	----	----
10	0.0018	0.0018	----	----
11	0.0081	0.0082	----	----
12	0.0015	0.0015	----	----
13	0.0141	0.0142	----	----
14	0.0016	0.0016	----	----
15	0.0107	0.0107	----	----
16	0.0015	0.0015	----	----
17	0.0065	0.0065	----	----
18	0.0014	0.0014	----	----
19	0.0075	0.0075	----	----
20	0.0016	0.0015	----	----
21	0.0089	0.0089	----	----
22	0.0017	0.0016	----	----
23	0.0053	0.0054	----	----
24	0.0016	0.0015	----	----
25	0.0061	0.0061	----	----
26	0.0014	0.0014	----	----
27	0.0044	0.0047	----	----
28	0.0015	0.0015	----	----
29	0.0049	0.0047	----	----
30	0.0015	0.0016	----	----
31	0.0056	0.0055	----	----
32	0.0014	0.0015	----	----
33	0.0031	0.0034	----	----
34	0.0014	0.0014	----	----
35	0.0045	0.0043	----	----
36	0.0014	0.0014	----	----
37	0.0033	0.0033	----	----
38	0.0015	0.0014	----	----
39	0.0035	0.0037	----	----
40	0.0014	0.0014	----	----

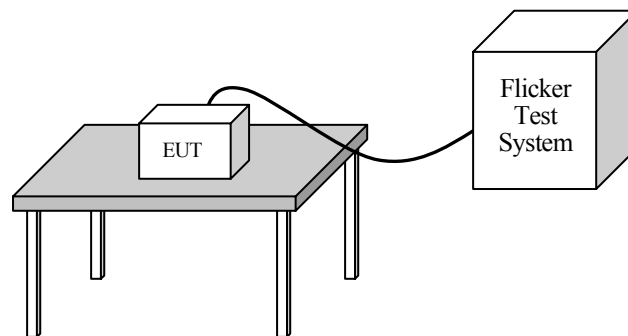
Meas : Comprison file to be close-up.

9. Voltage Change, voltage fluctuation and flicker

9.1 Applied test condition

Items	Description
Test method	EN 61000-3-3
Observation period	10 min. 1 min. x 24 times (Switched manually)

9.2 Sample test set up



9.3 Test data

[NP-V300X]

Operating mode : COMPUTER 1 XGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 21.7°C 34.5% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Voltage Fluctuation and Flicker Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V300X		
Type			
Serial No.	Type of Test	EN61000-3-3(1995)/A2(2005) *IEC61000-3-3:Ed1.2(2005)	
Operating Mode	COMPUTER 1 XGA 60Hz	EN61000-4-15(1998)/A1(2003) *IEC61000-4-15:Ed1.1(2003)	
Date of Test	2010/11/30 08:44:52		
Climatic Condition			
Memo	Power Analyzer	KHA1000 Ver1.50	
	Supply Source	230V 50Hz	
	Reference Impedance		

Test Data of Voltage Fluctuation and Flicker

Final Test Result **Pass**
Nominal Voltage 230 V
Nominal Frequency 50 Hz
Plt Test Duration 600 s
Flicker Margin 100 %
d Measurement Margin 100 %

Segment	Pst	dmax(%)	dc(%)	d(t)>3.3%(ms)	Judge
Limit	1.000	4.000	3.300	500	
Seg. 1	0.007	0.035	0.004	0	Pass

Plt	Value	Judge
Limit	0.650	
Measurement	0.003	Pass

Voltage Change Caused by Manual Switching Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V300X		
Type			
Serial No.		Type of Test	EN61000-3-3(1995)/A2(2005) *IEC61000-3-3:Ed1.2(2005)
Operating Mode	COMPUTER 1 XGA 60Hz		EN61000-4-15(1998)/A1(2003) *IEC61000-4-15:Ed1.1(2003)
Date of Test	2010/11/30 11:28:08		
Climatic Condition			
Memo		Power Analyzer	KHA1000 Ver1.50
		Supply Source	230V 50Hz
		Reference Impedance	

Test Data of Voltage Fluctuation and Flicker

Final Test Result **Pass**
Nominal Voltage 230 V
Nominal Frequency 50 Hz
Plt Test Duration 1440 s

d Measurement Margin 100 %

Segment	dmax(%)	dc(%)	d(t)>3.3%(ms)
Seg. 1	0.296	0.061	0
Seg. 2	0.430	0.009	0
Seg. 3	0.222	0.004	0
Seg. 4	0.483	0.004	0
Seg. 5	0.530	0.048	0
Seg. 6	0.343	0.004	0
Seg. 7	0.265	0.004	0
Seg. 8	0.487	0.004	0
Seg. 9	0.287	0.004	0
Seg.10	0.274	0.000	0
Seg.11	0.309	0.004	0
Seg.12	0.339	0.000	0
Seg.13	0.265	0.004	0
Seg.14	0.317	0.000	0
Seg.15	0.322	0.004	0
Seg.16	0.439	0.004	0
Seg.17	0.274	0.004	0
Seg.18	0.491	0.009	0
Seg.19	0.470	0.004	0
Seg.20	0.526	0.004	0
Seg.21	0.370	0.004	0
Seg.22	0.365	0.004	0
Seg.23	0.274	0.004	0
Seg.24	0.248	0.004	0

Total	dmax(%)	dc(%)	d(t)>3.3%(ms)
Limit	6.000	3.300	500
Average	0.358		
Maximum	0.530	0.061	0

Operating mode : COMPUTER 2 UXGA 60Hz
 Date of test : November 29, 2010
 Test Place : Shielded room No.1
 Climatic condition : 22.7°C 38.9% 983hPa
 Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Voltage Fluctuation and Flicker Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V300X		
Type			
Serial No.	Type of Test	EN61000-3-3(1995)/A2(2005) *IEC61000-3-3:Ed1.2(2005)	
Operating Mode	COMPUTER 2 UXGA 60Hz	EN61000-4-15(1998)/A1(2003) *IEC61000-4-15:Ed1.1(2003)	
Date of Test	2010/11/29 20:03:59		
Climatic Condition			
Memo	Power Analyzer	KHA1000 Ver1.50	
	Supply Source	230V 50Hz	
	Reference Impedance		

Test Data of Voltage Fluctuation and Flicker

Final Test Result **Pass**
 Nominal Voltage 230 V
 Nominal Frequency 50 Hz
 Plt Test Duration 600 s
 Flicker Margin 100 %
 d Measurement Margin 100 %

Segment	Pst	dmax(%)	dc(%)	d(t)>3.3%(ms)	Judge
Limit	1.000	4.000	3.300	500	
Seg. 1	0.009	0.039	0.004	0	Pass

Plt	Value	Judge
Limit	0.650	
Measurement	0.004	Pass

Operating mode : HDMI 1080P 60Hz
Date of test : November 29, 2010
Test Place : Shielded room No.1
Climatic condition : 22.9°C 50.0% 983hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Voltage Fluctuation and Flicker Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V300X		
Type			
Serial No.	Type of Test	EN61000-3-3(1995)/A2(2005) *IEC61000-3-3:Ed1.2(2005)	
Operating Mode	HDMI 1080P 60Hz	EN61000-4-15(1998)/A1(2003) *IEC61000-4-15:Ed1.1(2003)	
Date of Test	2010/11/29 20:17:39		
Climatic Condition			
Memo	Power Analyzer	KHA1000 Ver1.50	
	Supply Source	230V 50Hz	
	Reference Impedance		

Test Data of Voltage Fluctuation and Flicker

Final Test Result **Pass**
Nominal Voltage 230 V
Nominal Frequency 50 Hz
Plt Test Duration 600 s
Flicker Margin 100 %
d Measurement Margin 100 %

Segment	Pst	dmax(%)	dc(%)	d(t)>3.3%(ms)	Judge
Limit	1.000	4.000	3.300	500	
Seg. 1	0.011	0.035	0.004	0	Pass

Plt	Value	Judge
Limit	0.650	
Measurement	0.005	Pass

Operating mode : VIDEO
Date of test : November 29, 2010
Test Place : Shielded room No.1
Climatic condition : 22.9°C 50.0% 983hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Voltage Fluctuation and Flicker Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V300X		
Type			
Serial No.		Type of Test	EN61000-3-3(1995)/A2(2005) *IEC61000-3-3:Ed1.2(2005)
Operating Mode	VIDEO		EN61000-4-15(1998)/A1(2003) *IEC61000-4-15:Ed1.1(2003)
Date of Test	2010/11/29 20:30:02		
Climatic Condition			
Memo		Power Analyzer	KHA1000 Ver1.50
		Supply Source	230V 50Hz
		Reference Impedance	

Test Data of Voltage Fluctuation and Flicker

Final Test Result **Pass**
Nominal Voltage 230 V
Nominal Frequency 50 Hz
Plt Test Duration 600 s
Flicker Margin 100 %
d Measurement Margin 100 %

Segment	Pst	dmax(%)	dc(%)	d(t)>3.3%(ms)	Judge
Limit	1.000	4.000	3.300	500	
Seg. 1	0.008	0.039	0.004	0	Pass

Plt	Value	Judge
Limit	0.650	
Measurement	0.003	Pass

[NP-V260]

Operating mode : COMPUTER SVGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 23.6°C 37.1% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Voltage Fluctuation and Flicker Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V260		
Type			
Serial No.	Type of Test	EN61000-3-3(1995)/A2(2005) *IEC61000-3-3:Ed1.2(2005)	
Operating Mode	COMPUTER SVGA 60Hz	EN61000-4-15(1998)/A1(2003) *IEC61000-4-15:Ed1.1(2003)	
Date of Test	2010/11/30 17:25:37		
Climatic Condition			
Memo	Power Analyzer	KHA1000 Ver1.50	
	Supply Source	230V 50Hz	
	Reference Impedance		

Test Data of Voltage Fluctuation and Flicker

Final Test Result **Pass**
Nominal Voltage 230 V
Nominal Frequency 50 Hz
Plt Test Duration 600 s
Flicker Margin 100 %
d Measurement Margin 100 %

Segment	Pst	dmax(%)	dc(%)	d(t)>3.3%(ms)	Judge
Limit	1.000	4.000	3.300	500	
Seg. 1	0.007	0.035	0.004	0	Pass

Plt	Value	Judge
Limit	0.650	
Measurement	0.003	Pass

Voltage Change Caused by Manual Switching Test Report

Company	NEC Display Solutions, Ltd.		
Model Name	NP-V260		
Type			
Serial No.		Type of Test	EN61000-3-3(1995)/A2(2005) *IEC61000-3-3:Ed1.2(2005)
Operating Mode	COMPUTER SVGA 60Hz		EN61000-4-15(1998)/A1(2003) *IEC61000-4-15:Ed1.1(2003)
Date of Test	2010/11/30 18:24:09		
Climatic Condition			
Memo		Power Analyzer	KHA1000 Ver1.50
		Supply Source	230V 50Hz
		Reference Impedance	

Test Data of Voltage Fluctuation and Flicker

Final Test Result **Pass**
 Nominal Voltage 230 V
 Nominal Frequency 50 Hz
 PIt Test Duration 1440 s

d Measurement Margin 100 %

Segment	dmax(%)	dc(%)	d(t)>3.3%(ms)
Seg. 1	0.196	0.004	0
Seg. 2	0.230	0.026	0
Seg. 3	0.283	0.004	0
Seg. 4	0.152	0.004	0
Seg. 5	0.148	0.004	0
Seg. 6	0.161	0.004	0
Seg. 7	0.200	0.004	0
Seg. 8	0.204	0.004	0
Seg. 9	0.200	0.004	0
Seg.10	0.274	0.004	0
Seg.11	0.178	0.004	0
Seg.12	0.196	0.004	0
Seg.13	0.183	0.004	0
Seg.14	0.213	0.004	0
Seg.15	0.196	0.004	0
Seg.16	0.274	0.004	0
Seg.17	0.304	0.004	0
Seg.18	0.204	0.004	0
Seg.19	0.496	0.004	0
Seg.20	0.365	0.004	0
Seg.21	0.309	0.009	0
Seg.22	0.204	0.004	0
Seg.23	0.343	0.004	0
Seg.24	0.470	0.004	0

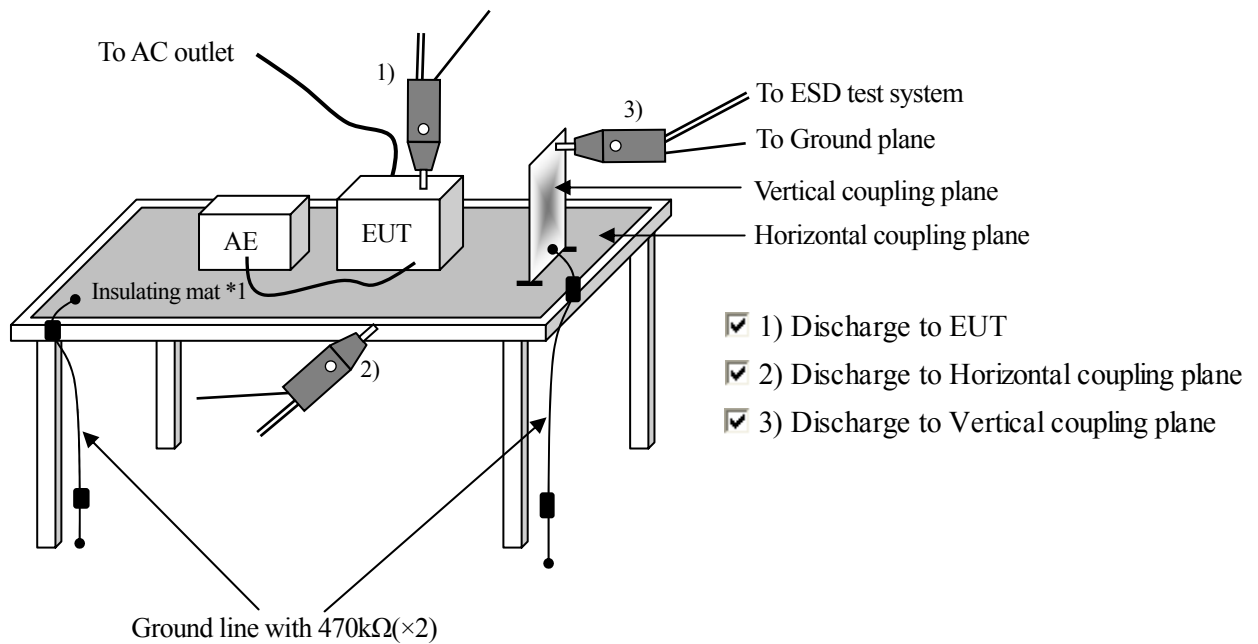
Total	dmax(%)	dc(%)	d(t)>3.3%(ms)
Limit	6.000	3.300	500
Average	0.243		
Maximum	0.496	0.026	0

10. Electrostatic discharge immunity

10.1 Applied test condition

Items	Description
Test method	EN 61000-4-2
Performance criterion	B
Test level	Contact discharge : $\pm 2\text{kV}$, $\pm 4\text{kV}$ Air discharge : $\pm 2\text{kV}$, $\pm 4\text{kV}$, $\pm 8\text{kV}$
Number of discharge	Contact discharge : 25 discharges Air discharge : 10 single discharges
Time interval	1 sec.
Table size	Wooden table / $2.0\text{m(W)} \times 1.0\text{m(D)} \times 0.8\text{m(H)}$
Horizontal coupling plane size	$1.6\text{m} \times 0.8\text{m}$
Vertical coupling plane size	$0.5\text{m} \times 0.5\text{m}$

10.2 Sample test set up



*1: Used it for EUT Installation / Table-top only

10.3 Test data

[NP-V300X]

Operating mode : COMPUTER 1 XGA 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.3°C 38.8% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Contact discharge to conductive part

Discharge Point (Refer to discharge locations)	Result of performance criterion				Test result
	Test voltage 2kV		Test voltage 4kV		
	+	-	+	-	
Contact discharge (○)	A	A	A	A	PASS
Horizontal Coupling Plane (Indirect) Center of the Front edge	A	A	A	A	PASS
Vertical Coupling Plane (Indirect) Front, Right, Back, Left side (Remote controller only)	A	A	A	A	PASS

Air discharge to insulating surface

Discharge Point (Refer to discharge locations)	Result of performance criterion						Test result
	Test voltage 2kV		Test voltage 4kV		Test voltage 8kV		
	+	-	+	-	+	-	
Air discharge (□)	A	A	A	A	A	A	PASS

Operating mode : COMPUTER 2 UXGA 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.2°C 37.1% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Contact discharge to conductive part

Discharge Point (Refer to discharge locations)	Result of performance criterion				Test result
	Test voltage 2kV		Test voltage 4kV		
	+	-	+	-	
Contact discharge (○)	A	A	A	A	PASS
Horizontal Coupling Plane (Indirect) Center of the Front edge	A	A	A	A	PASS
Vertical Coupling Plane (Indirect) Front, Right, Back, Left side (Remote controller only)	A	A	A	A	PASS

Air discharge to insulating surface

Discharge Point (Refer to discharge locations)	Result of performance criterion						Test result
	Test voltage 2kV		Test voltage 4kV		Test voltage 8kV		
	+	-	+	-	+	-	
Air discharge (□)	A	A	A	A	A	A	PASS

Operating mode : HDMI 1080P 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 23.9°C 40.2% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Contact discharge to conductive part

Discharge Point (Refer to discharge locations)	Result of performance criterion				Test result
	Test voltage 2kV		Test voltage 4kV		
	+	-	+	-	
Contact discharge (○)	A	A	A	A	PASS
Horizontal Coupling Plane (Indirect) Center of the Front edge	A	A	A	A	PASS
Vertical Coupling Plane (Indirect) Front, Right, Back, Left side (Remote controller only)	A	A	A	A	PASS

Air discharge to insulating surface

Discharge Point (Refer to discharge locations)	Result of performance criterion						Test result
	Test voltage 2kV		Test voltage 4kV		Test voltage 8kV		
	+	-	+	-	+	-	
Air discharge (□)	A	A	A	A	A	A	PASS

Operating mode : VIDEO
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.5C 42.7% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Contact discharge to conductive part

Discharge Point (Refer to discharge locations)	Result of performance criterion				Test result
	Test voltage 2kV		Test voltage 4kV		
	+	-	+	-	
Contact discharge (○)	A	A	A	A	PASS
Horizontal Coupling Plane (Indirect) Center of the Front edge	A	A	A	A	PASS
Vertical Coupling Plane (Indirect) Front, Right, Back, Left side (Remote controller only)	A	A	A	A	PASS

Air discharge to insulating surface

Discharge Point (Refer to discharge locations)	Result of performance criterion						Test result
	Test voltage 2kV		Test voltage 4kV		Test voltage 8kV		
	+	-	+	-	+	-	
Air discharge (□)	A	A	A	A	A	A	PASS

[NP-V300W]

Operating mode : COMPUTER 1 WXGA 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 23.9°C 35.6% 994hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Contact discharge to conductive part

Discharge Point (Refer to discharge locations)	Result of performance criterion				Test result
	Test voltage 2kV		Test voltage 4kV		
	+	-	+	-	
Contact discharge ()	A	A	A	A	PASS
Horizontal Coupling Plane (Indirect) Center of the Front edge	A	A	A	A	PASS
Vertical Coupling Plane (Indirect) Front, Right, Back, Left side (Remote controller only)	A	A	A	A	PASS

Air discharge to insulating surface

Discharge Point (Refer to discharge locations)	Result of performance criterion						Test result
	Test voltage 2kV		Test voltage 4kV		Test voltage 8kV		
	+	-	+	-	+	-	
Air discharge (□)	A	A	A	A	A	A	PASS

[NP-V260]

Operating mode : COMPUTER SVGA 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.1°C 33.3% 994hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Contact discharge to conductive part

Discharge Point (Refer to discharge locations)	Result of performance criterion				Test result
	Test voltage 2kV		Test voltage 4kV		
	+	-	+	-	
Contact discharge (○)	A	A	A	A	PASS
Horizontal Coupling Plane (Indirect) Center of the Front edge	A	A	A	A	PASS
Vertical Coupling Plane (Indirect) Front, Right, Back, Left side (Remote controller only)	A	A	A	A	PASS

Air discharge to insulating surface

Discharge Point (Refer to discharge locations)	Result of performance criterion						Test result
	Test voltage 2kV		Test voltage 4kV		Test voltage 8kV		
	+	-	+	-	+	-	
Air discharge (□)	A	A	A	A	A	A	PASS

10.4 Discharge locations

Discharge point, ○ : Contact discharge, □ : Air discharge
Number: Point where degradation of performance appeared.
【NP-V300X】



Figure1



Figure2



Figure3



Figure4



Figure5



Figure6



Figure7

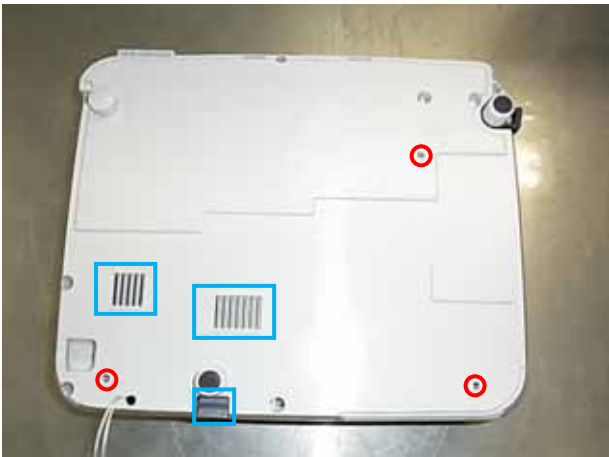


Figure8



Figure9



Figure10



Figure11

[NP-V300W]



Figure12



Figure13



Figure14



Figure15



Figure16



Figure17



Figure18



Figure19

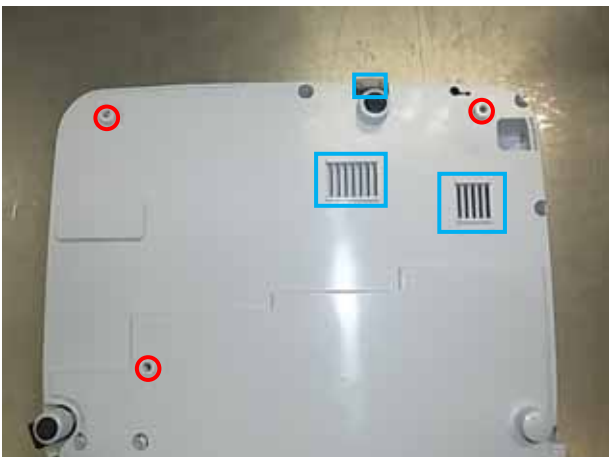


Figure20

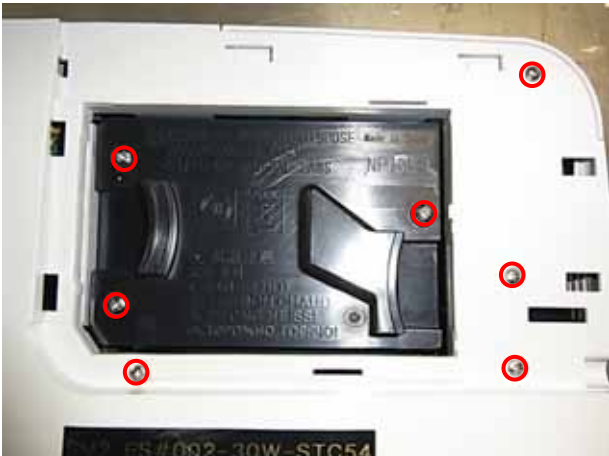


Figure21



Figure22



Figure23

[NP-V260]



Figure24



Figure25



Figure26



Figure27

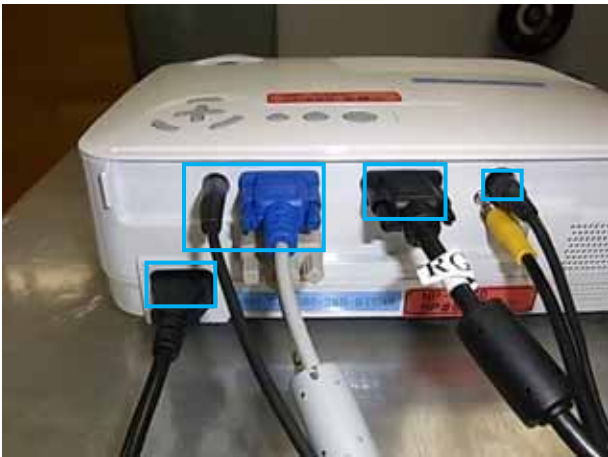


Figure28



Figure29

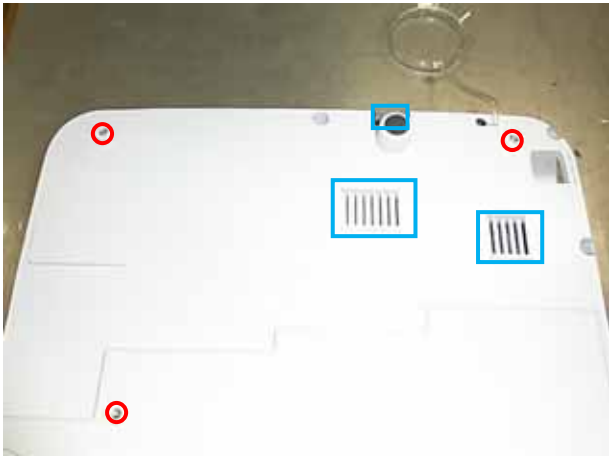


Figure30

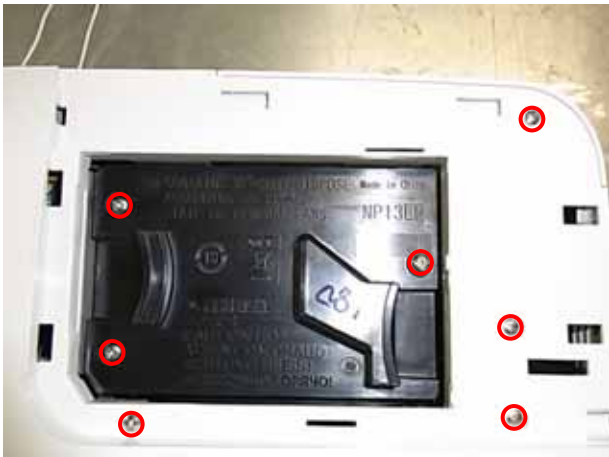


Figure31



Figure32



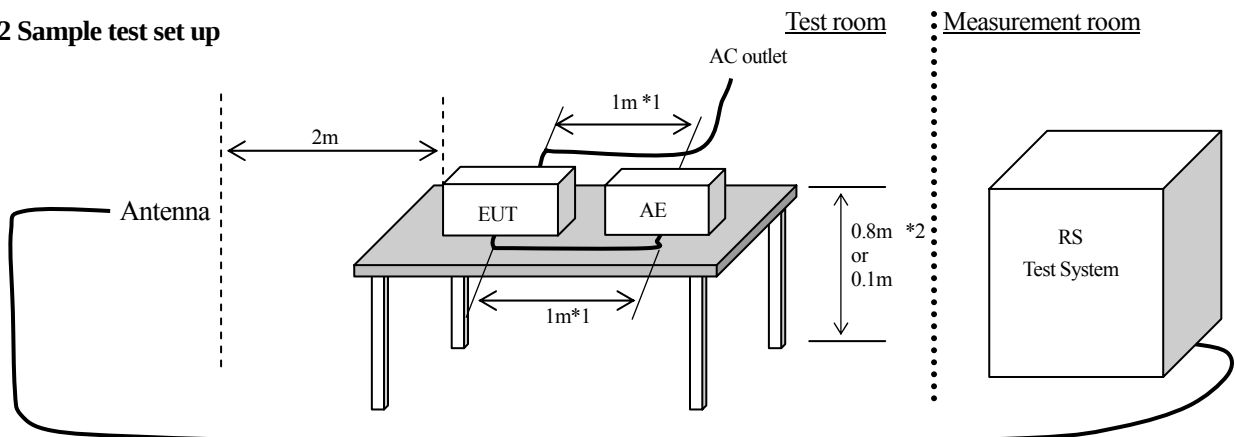
Figure33

11. Radio-frequency electromagnetic field immunity

11.1 Applied test condition

Items	Description
Test method	EN 61000-4-3
Performance criterion	A
Test level	3V/m
Frequency range	80MHz to 1000MHz
Frequency step	1%
Dwell time	2.9 sec.
Modulation	AM 80% 1kHz
EUT direction	Front, Right, Back, Left
Antenna polarity	Horizontal and Vertical
Test distance	2m
Antenna height	1.75m
Antenna type	Logbicon antenna

11.2 Sample test set up



*1 : Wiring is left exposed to the electromagnetic field for a distance of 1m from the EUT.

Wire is arranged parallel to the uniform area of the field.

*2: EUT Installation / Table-top: 0.8m

EUT Installation / Floor-Standing: 0.1m

11.3 Test data

[NP-V300X]

Operating mode : COMPUTER 1 XGA 60Hz
Date of test : December 2, 2010
Test Place : Small anechoic chamber
Climatic condition : 23.2°C 39.1% 989hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

EUT direction	Test level (V/m)	Antenna polarity	Result of performance criterion	Test result
Front (0°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Right (90°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Back (180°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Left (270°)	3	Horizontal	A	PASS
		Vertical	A	PASS

Operating mode : COMPUTER 2 UXGA 60Hz
Date of test : December 2, 2010
Test Place : Small anechoic chamber
Climatic condition : 23.2°C 39.1% 989hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

EUT direction	Test level (V/m)	Antenna polarity	Result of performance criterion	Test result
Front (0°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Right (90°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Back (180°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Left (270°)	3	Horizontal	A	PASS
		Vertical	A	PASS

Operating mode : HDMI 1080P 60Hz
Date of test : December 2, 2010
Test Place : Small anechoic chamber
Climatic condition : 23.2°C 39.1% 989hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

EUT direction	Test level (V/m)	Antenna polarity	Result of performance criterion	Test result
Front (0°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Right (90°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Back (180°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Left (270°)	3	Horizontal	A	PASS
		Vertical	A	PASS

Operating mode : VIDEO
Date of test : December 2, 2010
Test Place : Small anechoic chamber
Climatic condition : 23.2°C 39.1% 989hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

EUT direction	Test level (V/m)	Antenna polarity	Result of performance criterion	Test result
Front (0°)	3	Horizontal	A*	PASS
		Vertical	A*	PASS
Right (90°)	3	Horizontal	A*	PASS
		Vertical	A*	PASS
Back (180°)	3	Horizontal	A*	PASS
		Vertical	A*	PASS
Left (270°)	3	Horizontal	A*	PASS
		Vertical	A*	PASS

A*: Displayed image waved within the manufacturer's allowable range when applying disturbance.
EUT is self-recoverable to normal operation after removal of the disturbance.

[NP-V300W]

Operating mode : COMPUTER 1 WXGA 60Hz
Date of test : December 2, 2010
Test Place : Small anechoic chamber
Climatic condition : 24.7°C 34.6% 989hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

EUT direction	Test level (V/m)	Antenna polarity	Result of performance criterion	Test result
Front (0°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Right (90°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Back (180°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Left (270°)	3	Horizontal	A	PASS
		Vertical	A	PASS

[NP-V260]

Operating mode : COMPUTER SVGA 60Hz
Date of test : December 2, 2010
Test Place : Small anechoic chamber
Climatic condition : 20.3°C 38.2% 990hPa
Test engineer : Yoshiyuki Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

EUT direction	Test level (V/m)	Antenna polarity	Result of performance criterion	Test result
Front (0°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Right (90°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Back (180°)	3	Horizontal	A	PASS
		Vertical	A	PASS
Left (270°)	3	Horizontal	A	PASS
		Vertical	A	PASS

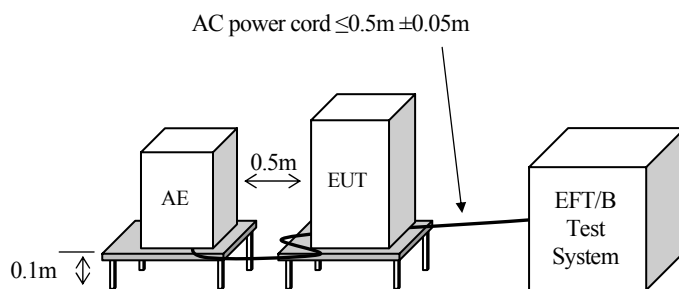
12. Electrical fast transient/burst immunity

12.1 Applied test condition

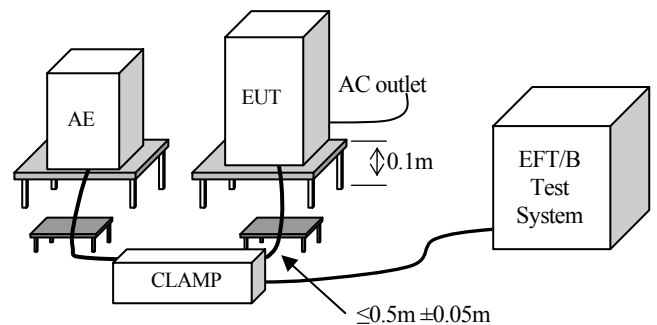
Items	Description
Test method	EN 61000-4-4
Performance criterion	B
Test level	☒ AC power port : $\pm 1.0\text{KV}$
	☒ Signal port : $\pm 0.5\text{KV}$
	☐ DC power port : $\pm 0.5\text{KV}$
Spec. of wave form	
Rise time of one pulse	5ns
Impulse duration	50ns
Repetition frequency	5kHz
Burst duration	15ms
Burst period	300ms
Duration	60 sec.

12.2 Sample test set up

AC power port



Signal port



12.3 Test data

[NP-V300X]

Operating mode : COMPUTER 1 XGA 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.1°C 34.3% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Coupling	Injection method	Test voltage (kV)	Polarity (+/-)	Result of performance criterion	Test result
AC power port Line	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Neutral	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Ground	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Line + Neutral + Ground	CDN	1.0	+	A	PASS
			-	A	PASS
Signal port COMPUTER 1	Clamp	0.5	+	A	PASS
			-	A	PASS
Signal port COMPUTER 1 AUDIO IN	Clamp	0.5	+	A	PASS
			-	A	PASS
Signal port MONITOR OUT	Clamp	0.5	+	A	PASS
			-	A	PASS
Signal port AUDIO OUT	Clamp	0.5	+	A	PASS
			-	A	PASS
Signal port PC CONTROL	Clamp	0.5	+	A	PASS
			-	A	PASS
Signal port LAN	Clamp	0.5	+	A	PASS
			-	A	PASS

Operating mode : COMPUTER 2 UXGA 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.1°C 34.3% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Coupling	Injection method	Test voltage (kV)	Polarity (+/-)	Result of performance criterion	Test result
AC power port Line	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Neutral	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Ground	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Line + Neutral + Ground	CDN	1.0	+	A	PASS
			-	A	PASS
Signal port COMPUTER 2	Clamp	0.5	+	A	PASS
			-	A	PASS
Signal port COMPUTER 2 AUDIO IN	Clamp	0.5	+	A	PASS
			-	A	PASS

Operating mode : HDMI 1080P 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.1°C 34.3% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Coupling	Injection method	Test voltage (kV)	Polarity (+/-)	Result of performance criterion	Test result
AC power port Line	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Neutral	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Ground	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Line + Neutral + Ground	CDN	1.0	+	A	PASS
			-	A	PASS
Signal port HDMI	Clamp	0.5	+	A	PASS
			-	A	PASS

Operating mode : VIDEO
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.1°C 34.3% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Coupling	Injection method	Test voltage (kV)	Polarity (+/-)	Result of performance criterion	Test result
AC power port Line	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Neutral	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Ground	CDN	1.0	+	B*	PASS
			-	B*	PASS
AC power port Line + Neutral + Ground	CDN	1.0	+	B*	PASS
			-	B*	PASS
Signal port VIDEO	Clamp	0.5	+	B*	PASS
			-	B*	PASS
Signal port AUDIO L+AUDIO R	Clamp	0.5	+	A	PASS
			-	A	PASS

B*: Displayed image flickered when applying disturbance. EUT was self-recoverable to normal operation after the test.

Operating mode : S-VIDEO
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.1°C 34.3% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Coupling	Injection method	Test voltage (kV)	Polarity (+/-)	Result of performance criterion	Test result
Signal port S-VIDEO	Clamp	0.5	+	B*	PASS
			-	B*	PASS

B*: Displayed image flickered when applying disturbance. EUT was self-recoverable to normal operation after the test.

[NP-V300W]

Operating mode : COMPUTER 1 WXGA 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.0°C 32.8% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Coupling	Injection method	Test voltage (kV)	Polarity (+/-)	Result of performance criterion	Test result
AC power port Line	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Neutral	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Ground	CDN	1.0	+	B*	PASS
			-	A	PASS
AC power port Line + Neutral + Ground	CDN	1.0	+	B*	PASS
			-	A	PASS
Signal port COMPUTER 1	Clamp	0.5	+	A	PASS
			-	A	PASS

B*: Displayed image sometimes flickered when applying disturbance. EUT was self-recoverable to normal operation after the test.

[NP-V260]

Operating mode : COMPUTER SVGA 60Hz
Date of test : December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 24.0°C 32.8% 992hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Coupling	Injection method	Test voltage (kV)	Polarity (+/-)	Result of performance criterion	Test result
AC power port Line	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Neutral	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Ground	CDN	1.0	+	A	PASS
			-	A	PASS
AC power port Line + Neutral + Ground	CDN	1.0	+	A	PASS
			-	A	PASS
Signal port COMPUTER	Clamp	0.5	+	A	PASS
			-	A	PASS

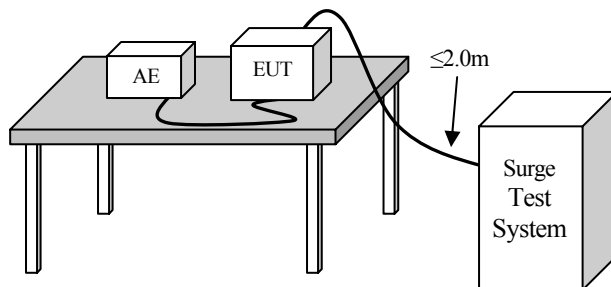
13. Surges immunity

13.1 Applied test condition

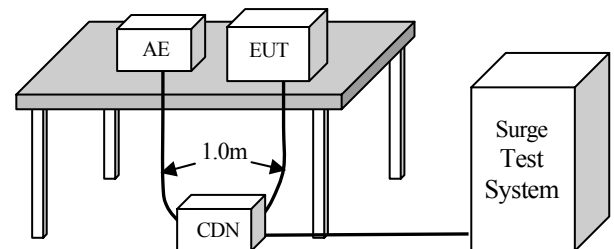
Items	Description
Test method	EN 61000-4-5
Performance criterion	B
Test level	☒ AC power port : Line - Line: $\pm 1.0\text{kV}$: Line - Ground: $\pm 2.0\text{kV}$
	☒ Signal port : Line - Ground: $\pm 1.0\text{kV}$
	☐ DC port : Line - Ground: $\pm 0.5\text{kV}$
Spec. of wave form Open-circuit voltage Front time/ Time to half value Short-circuit current Front time/ Time to half value	1.2 μs / 50 μs 8 μs / 20 μs
Phase angle	AC power port : 0°, 90°, 180°, 270°
	Signal port : -
	DC power port : Asynchronous
Number of test	5 times
Repetition rate	1 min.

13.2 Sample test set up

AC power port



Signal port



13.3 Test data

[NP-V300X]

Operating mode : COMPUTER 1 XGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 25.1°C 38.4% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Coupling	Test voltage (kV)	Phase angle	Polarity (+/-)	Result of performance criterion	Test result
AC power port Line - Neutral	1	0	+	A	PASS
			-	A	PASS
	1	90	+	A	PASS
			-	A	PASS
	1	180	+	A	PASS
			-	A	PASS
	1	270	+	A	PASS
			-	A	PASS
AC power port Line – Ground	2	0	+	A	PASS
			-	A	PASS
	2	90	+	A	PASS
			-	A	PASS
	2	180	+	A	PASS
			-	A	PASS
	2	270	+	A	PASS
			-	A	PASS
AC power port Neutral - Ground	2	0	+	A	PASS
			-	A	PASS
	2	90	+	A	PASS
			-	A	PASS
	2	180	+	A	PASS
			-	A	PASS
	2	270	+	A	PASS
			-	A	PASS
Signal port LAN	1	-	+	A	PASS
			-	A	PASS

[NP-V260]

Operating mode : COMPUTER SVGA 60Hz
Date of test : November 30, 2010
December 1, 2010
Test Place : Shielded room No.1
Climatic condition : 23.6°C 36.8% 995hPa
21.9°C 39.2% 993hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Coupling	Test voltage (kV)	Phase angle	Polarity (+/-)	Result of performance criterion	Test result
AC power port Line - Neutral	1	0	+	A	PASS
			-	A	PASS
	1	90	+	A	PASS
			-	A	PASS
	1	180	+	A	PASS
			-	A	PASS
	1	270	+	A	PASS
			-	A	PASS
AC power port Line – Ground	2	0	+	A	PASS
			-	A	PASS
	2	90	+	A	PASS
			-	A	PASS
	2	180	+	A	PASS
			-	A	PASS
	2	270	+	A	PASS
			-	A	PASS
AC power port Neutral - Ground	2	0	+	A	PASS
			-	A	PASS
	2	90	+	A	PASS
			-	A	PASS
	2	180	+	A	PASS
			-	A	PASS
	2	270	+	A	PASS
-			A	PASS	

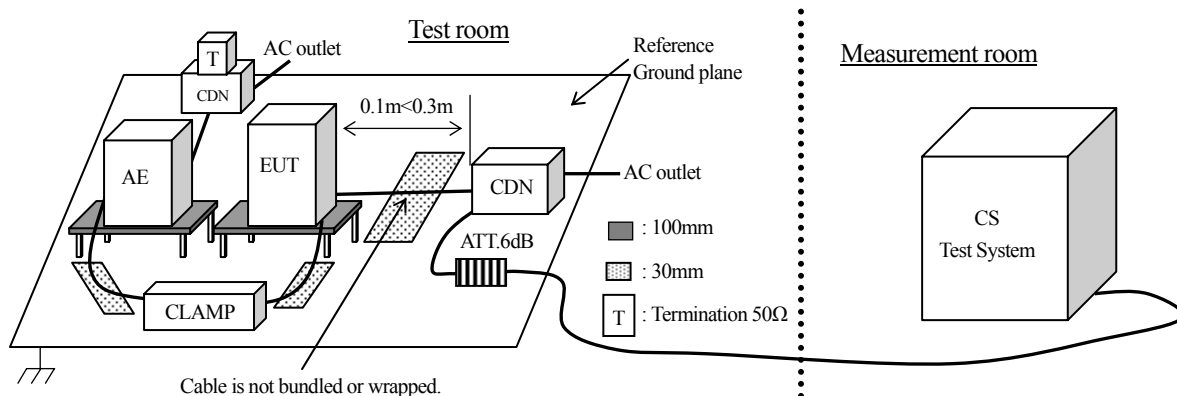
14. Conducted disturbances, induced by radio-frequency fields immunity

14.1 Applied test condition

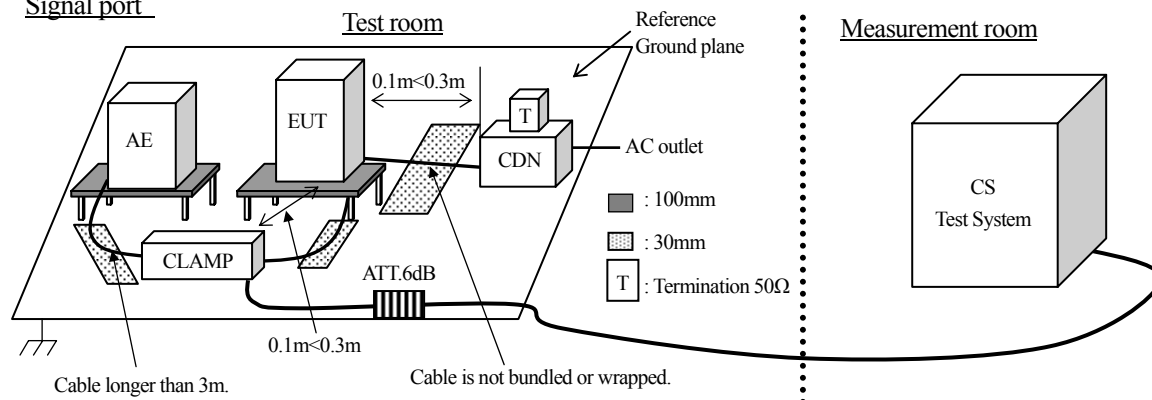
Items	Requirement
Test method	EN 61000-4-6
Performance criterion	A
Test level	☒ AC power port : 3V
	☒ Signal port : 3V
	☐ DC power port : 3V
Frequency range	0.15MHz to 80MHz
Frequency step	1%
Dwell time	2.9 sec.
Modulation	AM 80% 1kHz
Coupling & decoupling device	CDN-M3 (AC power port) : For EUT(Internal cable length of CDN : 200mm) CDN-M3, M2 (AC power port) : For Peripheral EM clamp (Signal port)

14.2 Sample test set up

AC power port



Signal port



14.3 Test data

[NP-V300X]

Operating mode : COMPUTER 1 XGA 60Hz
Date of test : December 3, 2010
Test Place : Small anechoic chamber
Climatic condition : 23.9°C 40.9% 970hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test port	Test level (V)	Injection method	Result of performance criterion	Test result
AC power port	3	CDN-M3	A	PASS
Signal port COMPUTER 1	3	EM clamp	A	PASS
Signal port COMPUTER 1 AUDIO IN	3	EM clamp	A	PASS
Signal port MONITOR OUT	3	EM clamp	A	PASS
Signal port AUDIO OUT	3	EM clamp	A	PASS
Signal port PC CONTROL	3	EM clamp	A	PASS
Signal port LAN	3	EM clamp	A	PASS

Operating mode : COMPUTER 2 UXGA 60Hz
Date of test : December 3, 2010
Test Place : Small anechoic chamber
Climatic condition : 23.7°C 37.1% 970hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test port	Test level (V)	Injection method	Result of performance criterion	Test result
AC power port	3	CDN-M3	A	PASS
Signal port COMPUTER 2	3	EM clamp	A	PASS
Signal port COMPUTER 2 AUDIO IN	3	EM clamp	A	PASS

Operating mode : HDMI 1080P 60Hz
Date of test : December 3, 2010
Test Place : Small anechoic chamber
Climatic condition : 23.4°C 38.5% 970hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test port	Test level (V)	Injection method	Result of performance criterion	Test result
AC power port	3	CDN-M3	A	PASS
Signal port HDMI	3	EM clamp	A	PASS

Operating mode : VIDEO
Date of test : December 6, 2010
Test Place : Small anechoic chamber
Climatic condition : 20.0°C 32.9% 981hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test port	Test level (V)	Injection method	Result of performance criterion	Test result
AC power port	3	CDN-M3	A	PASS
Signal port VIDEO	3	EM clamp	A	PASS
Signal port AUDIO L+AUDIO R	3	EM clamp	A	PASS

Operating mode : S-VIDEO
Date of test : December 6, 2010
Test Place : Small anechoic chamber
Climatic condition : 21.9°C 34.8% 981hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test port	Test level (V)	Injection method	Result of performance criterion	Test result
Signal port S-VIDEO	3	EM clamp	A	PASS

[NP-V300W]

Operating mode : COMPUTER 1 WXGA 60Hz
Date of test : December 2, 2010
Test Place : Small anechoic chamber
Climatic condition : 22.9°C 36.2% 981hPa
Test engineer : Yoshiyuki Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test port	Test level (V)	Injection method	Result of performance criterion	Test result
AC power port	3	CDN-M3	A	PASS
Signal port COMPUTER 1	3	EM clamp	A	PASS

[NP-V260]

Operating mode : COMPUTER SVGA 60Hz
Date of test : December 2, 2010
Test Place : Small anechoic chamber
Climatic condition : 22.7°C 34.0% 981hPa
Test engineer : Yoshiyuki Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

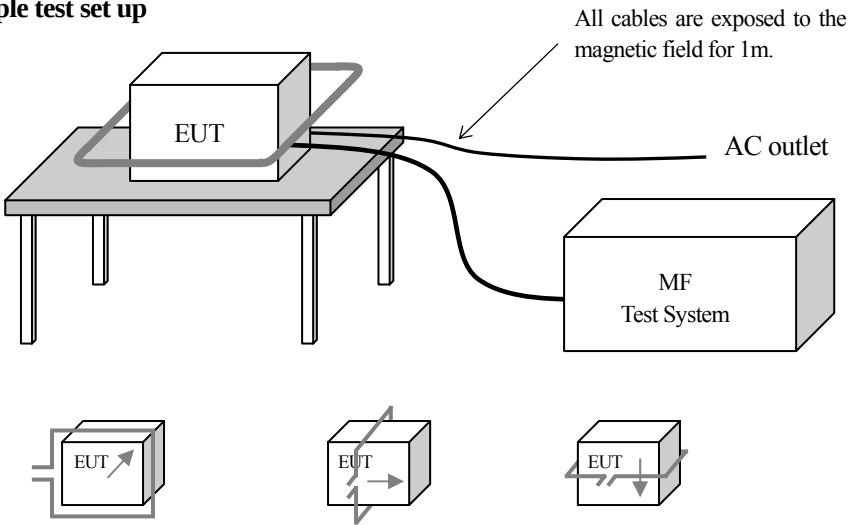
Test port	Test level (V)	Injection method	Result of performance criterion	Test result
AC power port	3	CDN-M3	A	PASS
Signal port COMPUTER	3	EM clamp	A	PASS

15. Power-frequency magnetic field immunity

15.1 Applied test condition

Items	Description
Test method	EN 61000-4-8
Performance criterion	A
Test level	1 A/m
Power frequency	50 Hz
Test duration	1min.
Induction coil	1m × 1m Square coil

15.2 Sample test set up



15.3 Test data

[NP-V300X]

Operating mode : COMPUTER 1 XGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 24.7°C 33.9% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test axis	Test level (A/m)	Result of performance criterion	Test result
X axis	1	A	PASS
Y axis	1	A	PASS
Z axis	1	A	PASS

Operating mode : COMPUTER 2 UXGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 24.7°C 33.9% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test axis	Test level (A/m)	Result of performance criterion	Test result
X axis	1	A	PASS
Y axis	1	A	PASS
Z axis	1	A	PASS

Operating mode : HDMI 1080P 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 24.7°C 33.9% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test axis	Test level (A/m)	Result of performance criterion	Test result
X axis	1	A	PASS
Y axis	1	A	PASS
Z axis	1	A	PASS

Operating mode : VIDEO
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 24.7°C 33.9% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test axis	Test level (A/m)	Result of performance criterion	Test result
X axis	1	A	PASS
Y axis	1	A	PASS
Z axis	1	A	PASS

[NP-V300W]

Operating mode : COMPUTER 1 WXGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 22.1°C 39.3% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Test axis	Test level (A/m)	Result of performance criterion	Test result
X axis	1	A	PASS
Y axis	1	A	PASS
Z axis	1	A	PASS

[NP-V260]

Operating mode : COMPUTER SVGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 23.9°C 38.4% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

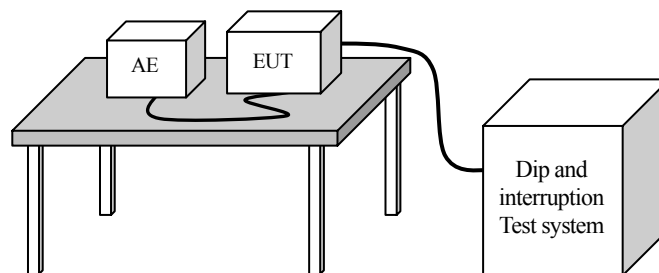
Test axis	Test level (A/m)	Result of performance criterion	Test result
X axis	1	A	PASS
Y axis	1	A	PASS
Z axis	1	A	PASS

16. Voltage dips, short interruption and voltage variations immunity

16.1 Applied test condition

Items	Description	
	Voltage dips	Voltage interruptions
Test method	EN 61000-4-11	EN 61000-4-11
Performance criterion	B / >95% Reduction, 0.5 cycle C / 30% Reduction, 25 cycle	C / >95% Reduction, 250 cycle
Nominal voltage	AC 100V 50Hz AC 240V 50Hz	AC 100V 50Hz AC 240V 50Hz
Test level	>95% Reduction, 0.5 cycle 30% Reduction, 25 cycle	>95% Reduction, 250 cycle
Repeat time	3 times (Interval time of 10 sec.)	3 times (Interval time of 10 sec.)
Phase angle	0°, 180°(180° for 0.5 cycle only)	0°

16.2 Sample test set up



16.3 Test data

[NP-V300X]

Operating mode : COMPUTER 1 XGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 25.1°C 35.1% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Voltage dips

Nominal voltage (V)	Reduction (%)	Output voltage (V)	Cycle	Phase angle	Result of performance criterion	Test result
100	>95	0	0.5	0	A	PASS
	>95	0	0.5	180	A	PASS
	30	70	25	0	A	PASS
240	>95	0	0.5	0	A	PASS
	>95	0	0.5	180	A	PASS
	30	168	25	0	A	PASS

Voltage interruptions

Nominal voltage (V)	Reduction (%)	Output voltage (V)	Cycle	Phase angle	Result of performance criterion	Test result
100	>95	0	250	0	C*	PASS
240	>95	0	250	0	C*	PASS

C*: Power of the EUT was turned off. EUT starts the program by pressing the power button after voltage was recovered.
After the program started, EUT was recoverable to normal operation by selecting a "COMPUTER 1" mode.

[NP-V260]

Operating mode : COMPUTER SVGA 60Hz
Date of test : November 30, 2010
Test Place : Shielded room No.1
Climatic condition : 24.2°C 38.3% 995hPa
Test engineer : Toshihiko Takahashi

Note: As a result of test performed based on Test plan, EUT passed the test.

Voltage dips

Nominal voltage (V)	Reduction (%)	Output voltage (V)	Cycle	Phase angle	Result of performance criterion	Test result
100	>95	0	0.5	0	A	PASS
	>95	0	0.5	180	A	PASS
	30	70	25	0	A	PASS
240	>95	0	0.5	0	A	PASS
	>95	0	0.5	180	A	PASS
	30	168	25	0	A	PASS

Voltage interruptions

Nominal voltage (V)	Reduction (%)	Output voltage (V)	Cycle	Phase angle	Result of performance criterion	Test result
100	>95	0	250	0	C*	PASS
240	>95	0	250	0	C*	PASS

C*: Power of the EUT was turned off. EUT was recoverable to normal operation by pressing the power button after voltage was recovered

17. Uncertainty of measurement

Expanded uncertainties stated are calculated with a coverage Factor $k=2$.

Please note that these results are not taken into account when determining compliance or non-compliance with test result.

Test item	Measurement uncertainty
Conducted emission at mains port	$\pm 3.0\text{dB}$
Conducted emission at telecom port	$+2.5\text{dB}, -3.1\text{dB}$
Radiated emission (30MHz - 1000MHz)	$\pm 4.5\text{dB}$
Radiated emission (1GHz - 26GHz)	$\pm 3.9\text{dB}$
Harmonic current emissions	$\pm 2.8\%$
Voltage change, voltage fluctuation and flicker	$\pm 2.8\%$
Electrostatic discharge immunity	$\pm 2.8\%$
Radio-frequency electromagnetic field immunity (below 1000MHz)	$\pm 3.1\text{dB}$
Radio-frequency electromagnetic field immunity (above 1000MHz)	$\pm 3.2\text{dB}$
Electrical fast transient/burst immunity	$\pm 2.7\%$
Surges immunity	$\pm 2.7\%$
Conducted disturbances, inducted by radio-frequency fields immunity	$\pm 2.7\text{dB}$
Power frequency magnetic field immunity	$\pm 2.8\%$
Voltage dips, short interruptions and voltage variations immunity	$\pm 2.3\%$

18. Laboratory description

1. Location: ZACTA Technology Corporation Yonezawa Testing Center

4149-7 Hachimanpara 5-chome Yonezawa-shi Yamagata 992-1128 Japan

Phone: +81-238-28-2880 Fax: +81-238-28-2888

2. Facility filing information:

1) NVLAP accreditation: NVLAP Lab. code: 200306-0

2) FCC filing:

Site name	Registration Number	Expiry Date
Site 2, Site3	91065	November 19, 2011
3m Semi-anechoic chamber 10m Semi-anechoic chamber Shielded room No.1	540072	February 16, 2013

3) Industry Canada Oats site filing:

Site name	Sites on file: Oats 3m/10m	Expiry Date
Site 2	4224A-2	February 16, 2012
Site 3	4224A-3	February 16, 2012
3m Semi-anechoic chamber	4224A-4	February 16, 2012
10m Semi-anechoic chamber	4224A-5	February 16, 2012

4) VCCI site filing:

Site name	Radiated emission	Conducted emission for mains port	Expiry Date	Conducted emission for telecom port	Expiry Date
Site 2	R-137	C-133	Nov. 16, 2011	T-1477	Oct. 8, 2011
Site 3	R-138	C-134	Nov. 16, 2011	T-1478	Oct. 8, 2011
10m Semi-anechoic chamber	R-2480	C-2722	Jul. 3, 2011	T-1474	Oct. 8, 2011
3m Semi-anechoic chamber	R-2481	C-2723	Jul. 3, 2011	T-1475	Oct. 8, 2011
Shielded room No.1	-	C-2724	Jul. 3, 2011	T-1476	Oct. 8, 2011

5) Intertek authorization:

Authorized as an EMC test laboratory.

6) TUV Rheinland authorization:

Authorized as an EMC test laboratory.

7) BUREAU VERITAS certification:

Certified as an EMC test laboratory

Appendix A: Test equipment

Conducted emission at mains port

Conducted emission at telecommunication port

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. Date
EMI Receiver	ROHDE&SCHWARZ	ESCI	100764	Jun. 2011	Jun. 14, 2010
Impedance Stabilization Network	Fischer custom communications inc.	FCC-TLISN-T4-02	20384	May. 2011	May. 21, 2009
Artificial mains network for EUT	Kyoritsu Electrical Works, Ltd.	KNW-242C	8-1094-5	Mar. 2011	Mar. 12, 2010
Artificial mains network for peripheral	Kyoritsu Electrical Works, Ltd.	KNW-407	8-693-20	Mar. 2011	Mar. 12, 2010
Attenuator	TYC	BA-PJ-10	N/A (S348)	Apr. 2011	Apr. 26, 2010
Coaxial cable	FUJIKURA	8D-2W/15m	OATS#3C	May. 2011	May. 28, 2010
Coaxial cable	FUJIKURA	5D-2W/1m	OATS#3RC-001	May. 2011	May. 28, 2010
Coaxial cable	FUJIKURA	5D-2W/1m	OATS#3RC-002	May. 2011	May. 28, 2010
Coaxial switch	ANRITSU	MP59B	6200611581	May. 2011	May. 25, 2010
LCL adapter	Fischer custom communications inc.	T4ALCL-1	20384.03	May. 2011	May. 21, 2009
50Ω terminator	HRS	UG-88/U	N/A (S065)	Mar. 2011	Mar. 5, 2010
50Ω terminator	HRS	UG-88/U	N/A (S066)	Mar. 2011	Mar. 5, 2010
PC	IBM	6892-44J	97-43012	N/A	N/A
Software	TOYO Corporation	EP5/CE-AJ	0611193/V3.3	N/A	N/A

Radiated emission (Below 1GHz)

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. date
Spectrum analyzer	Agilent Technologies	8568B	2732A03847	Sep. 2011	Sep. 21, 2010
		85662A	3026A19352		
Test receiver	ROHDE&SCHWARZ	ESVS10	849231/010	Jan. 2011	Jan. 19, 2010
Biconical antenna	Schwarzbeck	VHA9103/BBA9106	2322	Jun. 2011	Jun. 12, 2010
Log periodic antenna	Schwarzbeck	UHALP9108A	0398	Jun. 2011	Jun. 12, 2010
Attenuator	TDC	TAT-43B-03	N/A (S204)	Jun. 2011	Jun. 12, 2010
Attenuator	TDC	TAT-43B-03	N/A (S206)	Jun. 2011	Jun. 12, 2010
Coaxial cable	FUJIKURA	8D-SFA/15m	OATS#3R-001	May. 2011	May. 28, 2010
Coaxial cable	FUJIKURA	8D-SFA/15m	OATS#3R-002	May. 2011	May. 28, 2010
Coaxial cable	FUJIKURA	8D-2W/8m	OATS#3R-003	May. 2011	May. 28, 2010
Coaxial cable	FUJIKURA	5D-2W/1m	OATS#3RC-001	May. 2011	May. 28, 2010
Coaxial cable	FUJIKURA	5D-2W/1m	OATS#3RC-002	May. 2011	May. 28, 2010
Preamplifier	ANRITSU	MH648A	M96157	May. 2011	May. 28, 2010
Coaxial switch	ANRITSU	MP59B	6200611581	May. 2011	May. 25, 2010
Normalized Site Attenuation	ZACTA Technology Corp.	N/A	OATS#3	Jul. 2011	Jul. 3, 2010
PC	IBM	6892-44J	97-43012	N/A	N/A
Software	ZACTA	EMI Data Sheet	Ver.2.81	N/A	N/A

Radiated emission (Above 1GHz)

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. date
Spectrum analyzer	ADVANTEST	R3271A	65050042	Jul. 2011	Jul. 23, 2010
Preamplifier	Agilent Technologies	8449B	3008A01008	Dec. 2010	Dec. 11, 2009
Double ridged guide antenna	EMCO	3115	4328	Dec. 2010	Dec. 10, 2008
Microwave cable	SUHNER	SUCOFLEX104/9m	322082/4	Sep. 2011	Sep. 14, 2010
Microwave cable	SUHNER	SUCOFLEX104/1m	322085/4	Sep. 2011	Sep. 14, 2010
Microwave cable	SUHNER	SUCOFLEX104/1.5m	317222/4	Sep. 2011	Sep. 14, 2010
Microwave cable	SUHNER	SUCOFLEX106/12m	41624/6	Sep. 2011	Sep. 14, 2010
10m Semi an-echoic Chamber	TOKIN	N/A	N/A (9001-SVSWR)	Apr. 2011	Apr. 4, 2010
PC	DELL	DIMENSION E521	85465BX	N/A	N/A
Software	TOYO Corporation	EP5/RE-AJ	0611193/V3.4	N/A	N/A
Absorber	RIKEN	PFP30	N/A	N/A	N/A

Harmonic current emissions/Voltage Change, voltage fluctuation and flicker

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. Date
Power Analyzer	KIKUSUI	KHA1000	MC004192	May. 2011	May. 24, 2010
Software	KIKUSUI	SD005-KHA	Ver 3.31	N/A	N/A
Reference impedance network	NF ELECTRONIC INSTRUMENTS	SEN35239	809289	Aug. 2011	Aug. 3, 2010
Signal-phase master	NF ELECTRONIC INSTRUMENTS	4420	300116	Aug. 2011	Aug. 3, 2010
Booster	NF ELECTRONIC INSTRUMENTS	4421	349301	Aug. 2011	Aug. 3, 2010
Booster	NF ELECTRONIC INSTRUMENTS	4421	192041	Aug. 2011	Aug. 3, 2010
Booster	NF ELECTRONIC INSTRUMENTS	4421	307873	Aug. 2011	Aug. 3, 2010
Booster	NF ELECTRONIC INSTRUMENTS	4421	337969	Aug. 2011	Aug. 3, 2010
Booster	NF ELECTRONIC INSTRUMENTS	4421	337975	Aug. 2011	Aug. 3, 2010
Interface	NF ELECTRONIC INSTRUMENTS	4471	N/A (1350)	N/A	N/A

Electrostatic discharge immunity

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. date
ESD simulator	NoiseKen	ESS-2002	ESS0493502	Jun. 2011	Jun. 22, 2010
Horizontal coupling plane	Zacta	N/A	N/A	N/A	N/A
Vertical coupling plane	Matsushita Techno Trading	N/A	N/A	N/A	N/A

Radio-frequency electromagnetic field immunity

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. Date
Signal generator	Agilent Technologies	8648D	3836U00338	Oct. 2011	Oct. 5, 2010
Logbicon Super Broadband test Antenna	Schwarzbeck	VULB9167	5011	Jan. 2011	Jan. 15, 2010
Millivolt meter	ROHDE&SCHWARZ	URV5	841771/030	May. 2011	May. 21, 2010
Power sensor	ROHDE&SCHWARZ	NRV-Z5	100140	May. 2011	May. 21, 2010
Power sensor	ROHDE&SCHWARZ	NRV-Z5	100149	May. 2011	May. 21, 2010
High power directional coupler	WERLATONE	C6021	13004	Oct. 2011	Oct. 5, 2010
Electric field monitor	Amplifier Research	FM7004	0327186	Jan. 2011	Jan. 5, 2010
Lasar Probe Interface	Amplifier Research	FL7000	0326201	Jan. 2011	Jan. 5, 2010
Electric field probe	Amplifier Research	FL7006	0326694	Jan. 2011	Jan. 5, 2010
RF power amplifier	Amplifier Research	150W1000	320348	Jul. 2011	Jul. 27, 2010
Small anechoic Chamber	TOKIN	N/A	N/A (9003)	Feb. 2011	Feb. 3, 2010
Software	TSJ	TEPTO-RS/ANT	Ver.4.8.139	N/A	N/A

Electrical fast transient/burst immunity

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. Date
TRANSIENT TEST SYSTEM	EMC-PARTNER	TRA2000IN4	871	Apr. 2011	Apr. 6, 2010
Capacitive coupling clamp	EM TEST	HFK	N/A (0652)	N/A	N/A

Surges immunity

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. Date
TRANSIENT TEST SYSTEM	EMC-PARTNER	TRA2000IN4	871	Apr. 2011	Apr. 6, 2010
CDN	EMC-PARTNER	CDN-UTP	043	Apr. 2011	Apr. 7, 2010

Conducted disturbances, induced by radio-frequency fields immunity

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. Date
Signal generator	Agilent Technologies	8648D	3836U00338	Oct. 2011	Oct. 5, 2010
Millivolt meter	ROHDE&SCHWARZ	URV5	841771/030	May. 2011	May. 21, 2010
Power sensor	ROHDE&SCHWARZ	NRV-Z5	100140	May. 2011	May. 21, 2010
Power sensor	ROHDE&SCHWARZ	NRV-Z5	100149	May. 2011	May. 21, 2010
High power directional coupler	WERLATONE	C6021	13004	Oct. 2011	Oct. 5, 2010
RF power amplifier	Amplifier Research	250A250A	312909	Jul. 2011	Jul. 27, 2010
Attenuator	Weinschel	45-6-33	MW936	Jul. 2011	Jul. 2, 2010
CDN-M2	Kyoritsu Electrical Works, Ltd.	KSI-8002	8-1283-1	Mar. 2011	Mar. 5, 2010
CDN-M3	Kyoritsu Electrical Works, Ltd.	KSI-8003	8-1230-7	Mar. 2011	Mar. 5, 2010
CDN-M3	Kyoritsu Electrical Works, Ltd.	KSI-8003	8-1230-8	Mar. 2011	Mar. 5, 2010
EM clamp	Kyoritsu Electrical Works, Ltd.	KT-30	8-1199-5	Jul. 2011	Jul. 2, 2010
Decoupling clamp	Kyoritsu Electrical Works, Ltd.	KT-20	8-1201-5	Jul. 2011	Jul. 2, 2010
Decoupling clamp	Kyoritsu Electrical Works, Ltd.	KT-20	8-689-4	Jul. 2011	Jul. 2, 2010
50Ω terminator	TDC	TDL-21A	N/A (S019)	Mar. 2011	Mar. 5, 2010
50Ω terminator	TDC	TDL-21A	N/A (S020)	Mar. 2011	Mar. 5, 2010
50Ω terminator	TDC	TDL-21A	N/A (S021)	Mar. 2011	Mar. 5, 2010
Artificial hand	ZACTA	N/A	N/A	N/A	N/A
Software	TSJ	TEPTO-S6V32	Ver.3.0.0006	N/A	N/A

Power-frequency magnetic field immunity

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. Date
Magnetic field coil	EM TEST	MS100	N/A (1495)	N/A	N/A
Current transformer	EM TEST	MC2630	0905-08	N/A	N/A
EMF Probe and Level Tester	Narda S.T.S	ELT-400	H-0005	Aug. 2011	Aug. 25, 2009
AC power supply	NF ELECTRONIC INSTRUMENTS	EPO2000S	445936	N/A	N/A

Voltage dips, short interruption and voltage variations immunity

Equipment	Company	Model No.	Serial No.	Cal. due	Cal. Date
4-quadrant amplifier	Spitzenberger + Spies	E5000/PAS	A175201/00796	Dec. 2010	Dec. 3, 2009
inrush current source	Spitzenberger + Spies	PAS5000/19-5	A175608/00696	Dec. 2010	Dec. 3, 2009
Power amplifier	Spitzenberger + Spies	UT1000/MFS	A175603/00636	N/A	N/A
Power supply	Spitzenberger + Spies	NT5000	A175602/00696	N/A	N/A
Software	Spitzenberger+Spies	EMC basic system EN61000-4-11	Ver.2.9a	N/A	N/A

Appendix B: Configuration photographs

Conducted emission at mains port [NP-V300X: except COMPUTER 2 UXGA 60Hz]



The photographs show maximized emission configuration.

Conducted emission at telecommunication port [NP-V300X: COMPUTER 1 SXGA 60Hz]



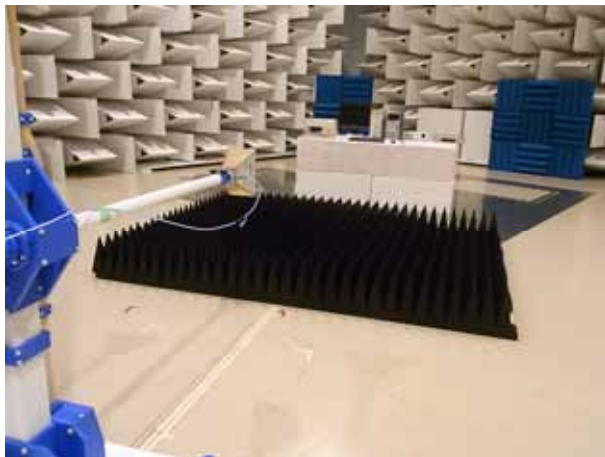
The photographs show maximized emission configuration.

Radiated emission [NP-V300X: below 1GHz: except COMPUTER 2 UXGA 60Hz]



The photographs show maximized emission configuration.

Radiated emission [NP-V300X: above 1GHz: except COMPUTER 2 UXGA 60Hz]



The photographs show maximized emission configuration.

Conducted emission at mains port [NP-V300X: COMPUTER 2 UXGA 60Hz]



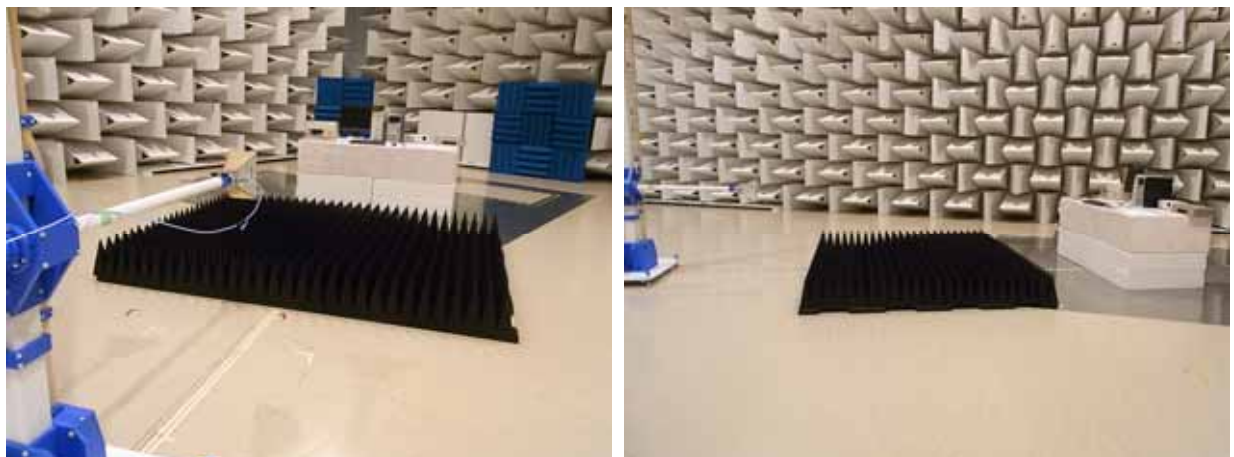
The photographs show maximized emission configuration.

Radiated emission [NP-V300X: below 1GHz: COMPUTER 2 UXGA 60Hz]



The photographs show maximized emission configuration.

Radiated emission [NP-V300X: above 1GHz: COMPUTER 2 UXGA 60Hz]



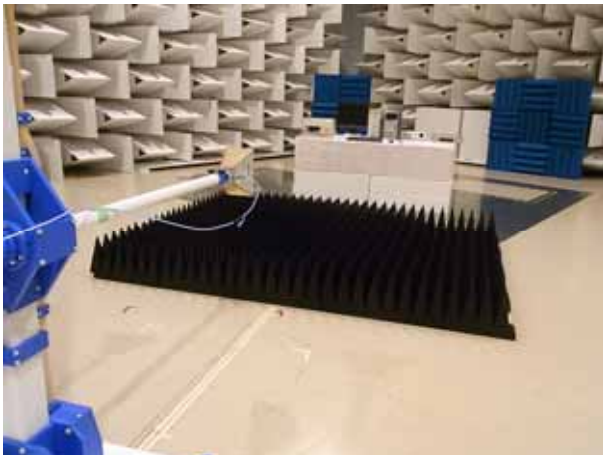
The photographs show maximized emission configuration.

Radiated emission [NP-V300W: below 1GHz]



The photographs show maximized emission configuration.

Radiated emission [NP-V300W: above 1GHz]



The photographs show maximized emission configuration.

Conducted emission at mains port [NP-V260]



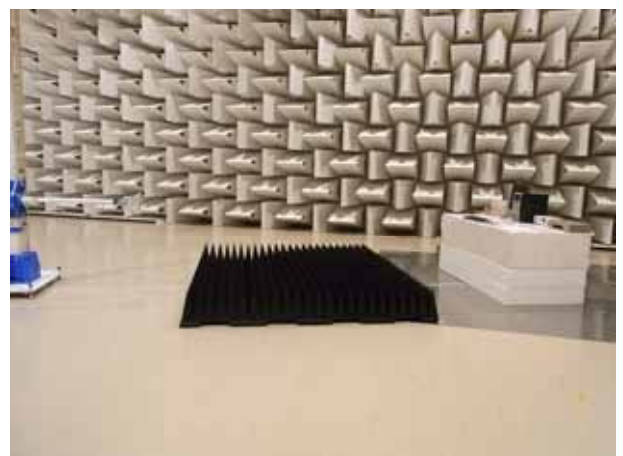
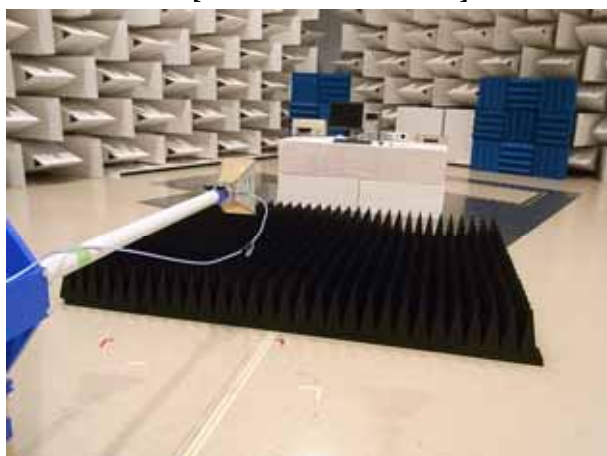
The photographs show maximized emission configuration.

Radiated emission [NP-V260: below 1GHz]



The photographs show maximized emission configuration.

Radiated emission [NP-V260: above 1GHz]



The photographs show maximized emission configuration.

Harmonic current emissions
Voltage change, Voltage fluctuation and flicker
[NP-V300X]



[except COMPUTER 2 UXGA 60Hz]



[COMPUTER 2 UXGA 60Hz]

[NP-V260]



[COMPUTER SVGA 60Hz]

Electrostatic discharge immunity

[NP-V300X]

Contact discharge



Air discharge



[NP-V300W]

Contact discharge



Air discharge



[NP-V260]

Contact discharge



Air discharge



Radio-frequency electromagnetic field immunity

[NP-V300X]



[except COMPUTER 2 UXGA 60Hz]



[COMPUTER 2 UXGA 60Hz]

[NP-V300W]



[COMPUTER 1 WXGA 60Hz]

[NP-V260]



[COMPUTER SVGA 60Hz]

Electrical fast transient/burst immunity (AC power port)

[NP-V300X]

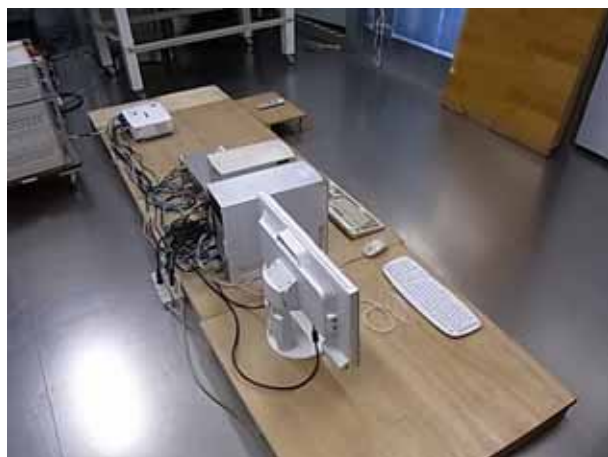


[except COMPUTER 2 UXGA 60Hz]



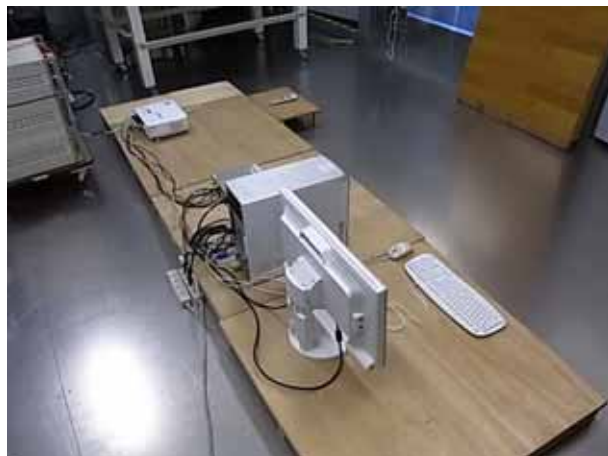
【COMPUTER 2 UXGA 60Hz】

【NP-V300W】



【COMPUTER 1 WXGA 60Hz】

【NP-V260】

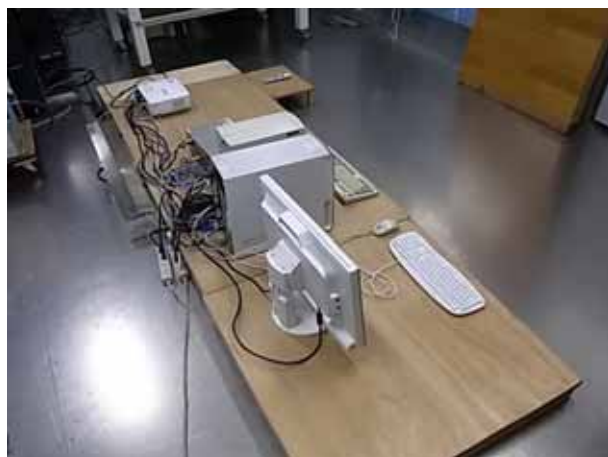


【COMPUTER SVGA 60Hz】

Electrical fast transient/burst immunity (Signal port)
[NP-V300X]



[except COMPUTER 2 UXGA 60Hz]



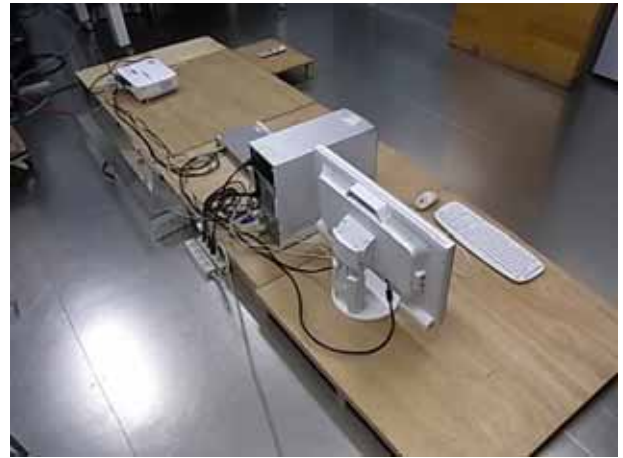
[COMPUTER 2 UXGA 60Hz]

[NP-V300W]



[COMPUTER 1 WXGA 60Hz]

[NP-V260]



[COMPUTER SVGA 60Hz]

Surge immunity (AC power port)

[NP-V300X]



[COMPUTER 1 XGA 60Hz]

[NP-V260]



[COMPUTER SVGA 60Hz]

Surge immunity (Signal port)

[NP-V300X]



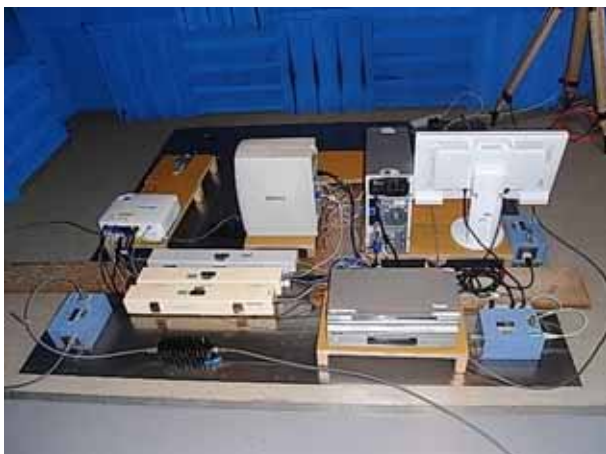
[COMPUTER 1 XGA 60Hz]

Conducted disturbances, induced by radio-frequency fields immunity (AC power port)

[NP-V300X]

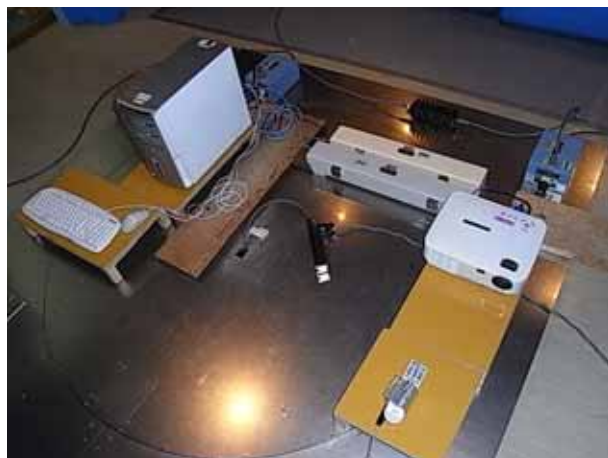


[except COMPUTER 2 UXGA 60Hz]



[COMPUTER 2 UXGA 60Hz]

[NP-V300W]



[COMPUTER 1 WXGA 60Hz]

[NP-V260]



[COMPUTER SVGA 60Hz]

Conducted disturbances, induced by radio-frequency fields immunity (Signal port)

[NP-V300X]



[except COMPUTER 2 UXGA 60Hz]



【COMPUTER 2 UXGA 60Hz】



【NP-V300W】



【COMPUTER 1 WXGA 60Hz】



【NP-V260】



【COMPUTER SVGA 60Hz】



Power-frequency magnetic field immunity
[NP-V300X]



[except COMPUTER 2 UXGA 60Hz]



[COMPUTER 2 UXGA 60Hz]

[NP-V300W]



[COMPUTER 1 WXGA 60Hz]

[NP-V260]



[COMPUTER SVGA 60Hz]

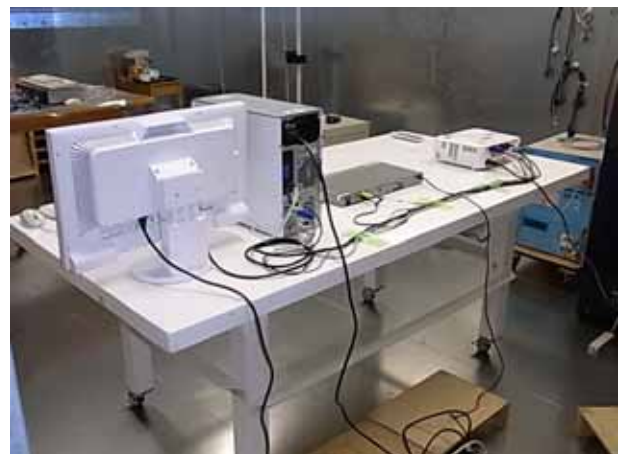
Voltage dips, short interruption and voltage variations immunity

[NP-V300X]



[COMPUTER 1 XGA 60Hz]

[NP-V260]



[COMPUTER SVGA 60Hz]