EMC Test Report

According to FCC Part 15 Subpart B

Project No.		**LBE052532**
Equipment under Test		
	Address	416 Maetan3-Dong,Yeongtong-Gu,Suwon- Si, Gyeonggi-Do,Korea,443-742
	Product Name	**Projector**
	Model Name	**SP-P300M**
	Manufacturer	Samsung Electronics Co., Ltd.
	Brand Name	SAMSUNG
	Variant Model	See Page 3
	FCC ID	**A3LSPP300M**
Date of Test		September 14 ~ 21, 2005
Issued Date		November 3, 2005

	Name/Position	Signature
Tested by	Hyun Jeong, Jang Test Engineer	
Reviewed by	No Cheon, Park Manager of EMC Lab.	
Authorized by	Seung Kyu, Cha Chief of EMC Lab.	

1. This test reports does not constitute an endorsement by NIST/NVLAP or U.S Government.
2. This test report is to certify that the tested device properly complies with the requirements of FCC Rules and Regulations Part 15 Subpart B Unintentional Radiators.
   All tests necessary to show compliance to the requirements were and these results met the specifications requirement.

This laboratory is registered by the NIST/NVLAP, U.S.A.
The test reported herein have been performed in accordance with its terms of registration.

NVLAP LAB CODE 200623-0

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1. General Information

1.1 Basic Information related Product

Applicant	Samsung Electronics Co., Ltd.
Model name	SP-P300M
Applicant Address	416 Maetan3-Dong,Yeongtong-Gu,Suwon- Si, Gyeonggi-Do,Korea,443-742
Contact Person	Chang Seub, Eum
Kind of product	Projector
Valiant list	None
Manufacturer	Samsung Electronics Co., Ltd.

1.2 Detail Information related Product

Specification

Voltage	AC 100 ~ 240 V, 50/60 Hz
Power Consumption	18 W
Resolution	800×600
Size	0.6Inch

1.3 Operating Mode and Condition

The system was configured for testing in typical fashion use. Cables were attached to each of the available I/O Ports. Where applicable, peripherals were attached to the I/O cables. The mode of operation utilized for testing was selected to best simulate typical EUT use.

- D-Sub Cable

1.4 Equipment Modifications

No equipment modifications were required.

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1.5 Test Configuration

Used EUT and Peripherals

Seq	Device	Model Name	Serial No.	Maker	Note
A	Projector	SP-P300M	-	SAMSUNG	EUT
B	PC	M6320	E-A011-004072(B)	SAMSUNG	
C	Printer	LQ-580H	CG2Y016889	EPSON	
D	USB Keyboard	TKB-3000	C0412158564	TRUTION	
E	PS/2 Mouse	CCM-202	E-C011-03-0032(B)	COSY	

Port Description

No	Connect Cable	Length [m]	Shielded [Y/N]	Remark
1	Power	1.8	No	EUT
2	Power	1.8	No	PC
3	Power	1.8	No	Printer
4	D-SUB Cable	1.7	Yes	-
5	Parallel (Printer)	1.8	Yes	-
6	USB (Keyboard) Cable	1.5	No	-
7	PS/2(Mouse) Cable	1.5	No	-

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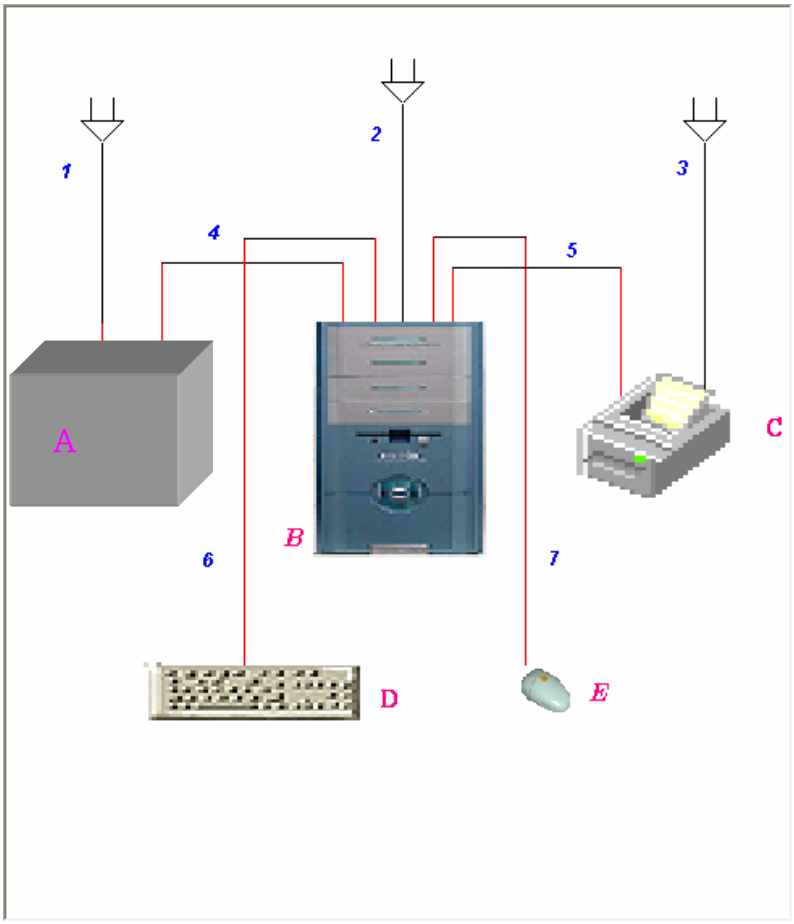
Block Diagram



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1.6 Applied Standards

List

Applied Standards	Test Procedure
FCC Part15 Subpart B	ANSI C63.4 : 2003

1.7 Test Facility

General Information

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1, 16-2.

This EMC Testing Lab. is accredited by Korea Laboratory Accreditation Scheme(KOLAS) which signed the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the above test item(s) and test method(s).

This Lab. is operated as testing laboratory in accordance with the requirements of ISO/IEC 17025:1998.

Accreditation and Listing

Uncertainty (According to NAMAS Pub.NIS81)

Test Item	Expanded Uncertainty
Conducted Emission	±3.3
Radiated Emission	(Hor) ±4.0 (Ver) ±4.4

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2. Summary of Test Results

Result : PASS

The equipment under test(EUT) has been found to comply with the applied standards.

Test Name		Applied Standard	Result
Electromagnetic Emission Test			
3.1	Conducted Emission	FCC Part15 Subpart B	Complied
3.2	Radiated Emission	FCC Part15 Subpart B	Complied

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3. Description of Individual Tests

3.1 Conducted Emission

Test Information		
	Test Engineer	Hyun Jeong, Jang
	Test Date	September 21, 2005
	Climate Condition	Ambient Temperature : 23℃ Relative Humidity : 52%
	Test Place	Shield Room #5

Test Equipments

Equipment	Modal Name	Manufacturer	Serial No.	Calibration	
				Next Date	Interval
L.I.S.N	ESH3-Z5	R&S	100261	2006-07-13	12
Test Software	EP5CE	TOYO	None	N/A	N/A
Field strength meter	ESS-30	R&S	844861/005	2006-01-11	12
RF Relais Matrix	PSU	R&S	861206/024	N/A	N/A
EMI Test Receiver	ESI	R&S	8326921/002	2006-02-26	12

EUT Test Setup

The EUT was set up as per normal use on a wooden table 0.4m from a vertical ground reference plane, at least 0.8m from other conduction surfaces and 0.8m from the LISN.
See photo.

Test Result

Measurement Results	Pass The measured emissions of the EUT have found to be below the specified limits.

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Test Data

■ Operating Mode : D-Sub

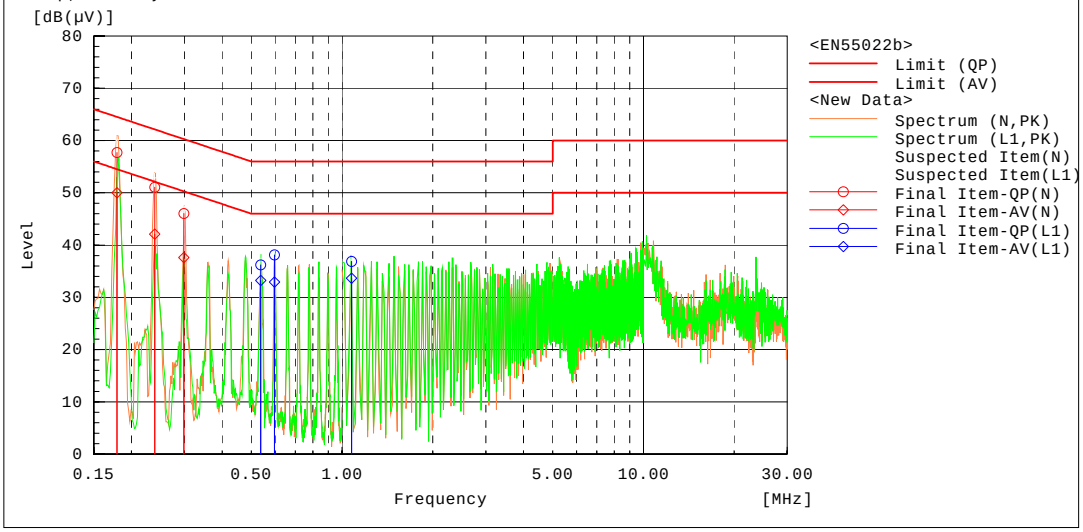
[Graph and Data]

Samsung
- EMC Site -

<<Conducted Emission>> 21 September,2005 10:29

Model : SP-P300M
Projecte Num :
Operator : JHJ
OP Mode :
Temp,Humidity:

Standard : EN 55022 (ITE) Class B
Remark1 :
Remark2 :
Remark3 :
Remark4 :



Final Result

--- N 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	0.17931	57.7	50.0	0.0	57.7	50.0	64.5	54.5	6.8	4.5
2	0.23906	51.1	42.1	0.0	51.1	42.1	62.1	52.1	11.0	10.0
3	0.29875	46.1	37.6	0.0	46.1	37.6	60.3	50.3	14.3	12.7

--- 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	0.5374	36.2	33.2	0.0	36.2	33.2	56.0	46.0	19.8	12.8
2	0.59731	38.0	32.8	0.1	38.1	32.9	56.0	46.0	17.9	13.1
3	1.07584	36.8	33.5	0.1	36.9	33.6	56.0	46.0	19.1	12.4

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3.2 Radiated Emission

Test Information		
	Test Engineer	Hyun Jeong, Jang
	Test Date	September 14, 2005
	Climate Condition	Ambient Temperature : 24℃ Relative Humidity : 55%
	Test Place	10m Semi Anechoic chamber

Test Equipments

Equipment	Modal Name	Manufacturer	Serial No.	Calibration	
				Next Date	Interval
RF Selector	NS4900	TOYO	0303-015	N/A	N/A
Biconilog Antenna	6112B	SCHAFFNER	2767	2006-06-04	12
Mast Controller	HD100	HD	100/374	N/A	N/A
Mast Controller	HD2000	HD	HD20000902027	N/A	N/A
Test Software	EP5RE	TOYO	None	N/A	N/A
Signal Generator	SMG	R&S	860288036	2005-11-06	12
AMPLIFIER	310N	SONOMA	185861	2005-10-08	12
Spectrum Analyzer	E7405A	Agilent	US41110272	2006-01-20	12
EMI Test Receiver	ESCS30	R&S	839809/002	2006-05-04	12

EUT Test Setup

EUT is positioned at 10m from antenna at the center of the table in the semi-anechoic chamber.

All unused ports were terminated into characteristic loads.

Test Result

Measurement Results	Pass The measured emissions of the EUT have found to be below the specified limits.

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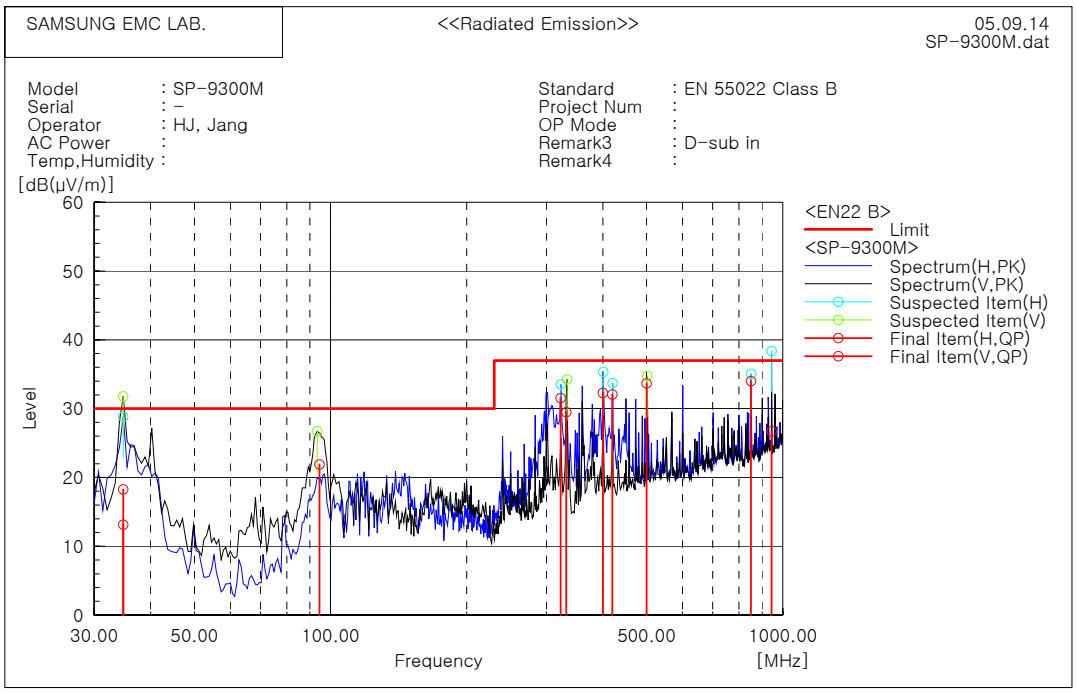
Test Data

■ Operating Mode: D-Sub

[Graph and Data]



Final Result

--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Remark
1	34.772	34.5	-16.2	18.3	30.0	11.7	
2	944.928	30.8	-4.1	26.7	37.0	10.3	
3	322.838	47.0	-15.5	31.5	37.0	5.5	
4	419.998	44.3	-12.2	32.1	37.0	5.0	
5	850.445	40.5	-6.5	34.0	37.0	3.0	
6	400.013	45.2	-12.9	32.3	37.0	4.7	

--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Remark
1	34.779	29.3	-16.2	13.1	30.0	16.9	
2	94.490	43.3	-21.4	21.9	30.0	8.1	
3	332.200	44.8	-15.3	29.5	37.0	7.5	
4	500.008	43.8	-10.1	33.7	37.0	3.3	

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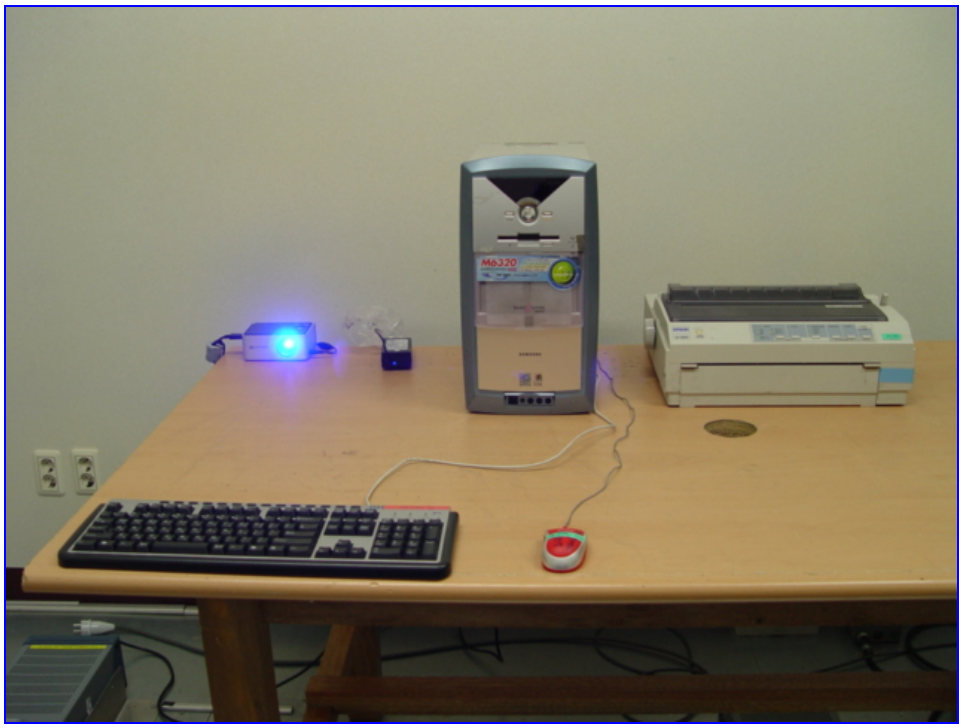
4. Appendix A

4.1 Test Photography



Picture 1. Conducted Emission

Picture 2. Radiated Emission (front view)

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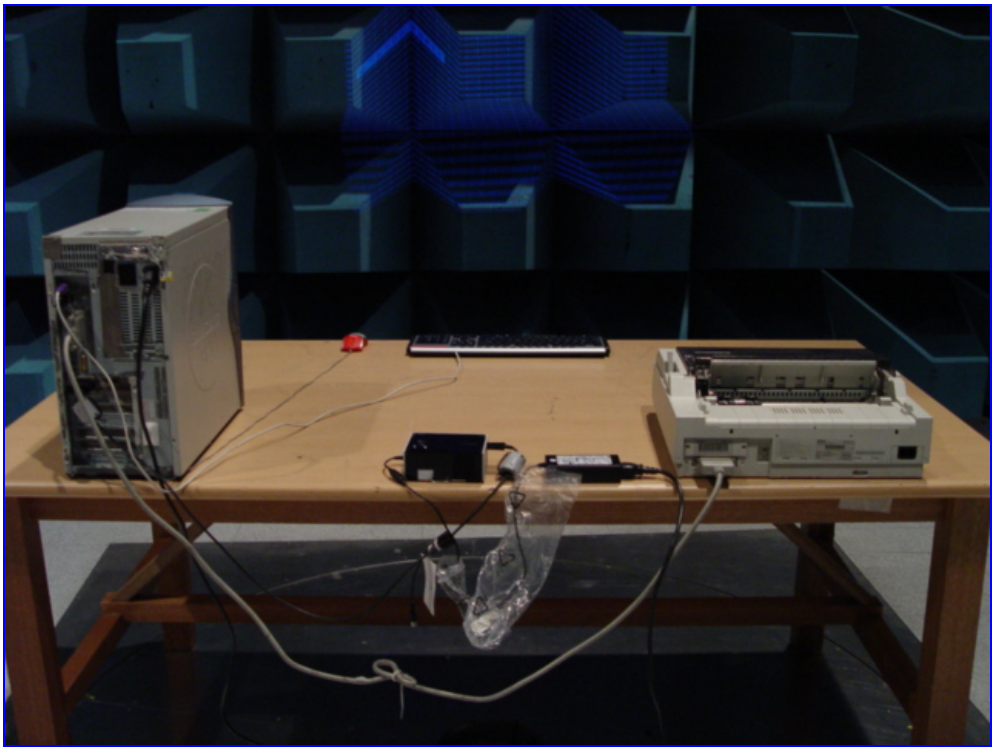

Picture 3. Radiated Emission (rear view)

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4.2 EUT Photography

Picture 4. EUT (front view)

Picture 5. EUT (rear view)

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