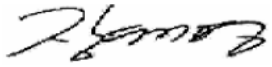
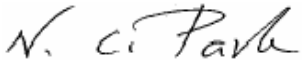
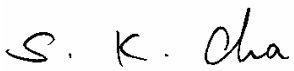
EMC Test Report

According to FCC Part 15 Subpart B

Project No.		**LBE051014**
Equipment under Test		
	Address	416 Maetan3-Dong,Yeongtong-Gu,Suwon-Si,Gyeonggi-Do, Korea,443-742
	Product Name	**DLP Projection Monitor**
	Model Name	**AT42L6**
	Manufacturer	Samsung Electronics Co., Ltd
	Brand Name	SAMSUNG
	Variant Model	See Page 3
	FCC ID	A3LAT42L6R
Date of Test		May 4 ~ 6, 2005
Issued Date		May 12, 2005

	Name/Position	Signature
Tested by	Tae Young, 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

Table of Contents

1. General Information

1.1 Basic Information related Product

Applicant	Samsung Electronics Co.,Ltd
Model name	AT42L6
Applicant Address	416 Maetan3- Dong, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, Korea, 443-742
Contact Person	Chang Young, Choi
Kind of product	DLP Projection Monitor
Valiant list	None
Manufacturer	Samsung Electronics Co., Ltd

1.2 Detail Information related Product

Specification

Mode	Resolution	Horizontal Frequency [KHz]	Vertical Frequency [Hz]	Pixel Clock [MHz]	Sync Polarity (H/V)
VGA	640 x 350	31.47	70.00	25.175	+/-
	720 x 400	31.47	70.00	28.322	-/-
	640 x 480	31.47	60.00	25.175	-/+
		35.00	66.70	30.24	-/-
		37.86	72.80	31.50	-/-
		37.50	75.00	31.50	-/-
SVGA	800 x 600	35.16	56.30	36.00	-+/-
		37.88	60.30	40.00	+/+-
		48.08	72.20	50.00	+/+
		46.87	75.00	49.50	+/+
		53.67	85.10	56.25	+/+
XGA	1024 x 768	48.36	60.00	65.00	-/-
		56.40	70.10	75.00	-/-
		60.02	75.00	78.75	+/-
DTV	1920 x 1080i	33.75	60	74.25	X
	1280 x 720p	45.00	60	74.25	X
	720 x 483p	31.47	60	27	X

Item(s)	Description
Power Supply	AC 110 ~ 120V, 60Hz
Maximum Resolution	1024 X 768

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.

- PC Analog In
- DVI In

1.4 Equipment Modifications

No equipment modifications were required.

1.5 Test Configuration

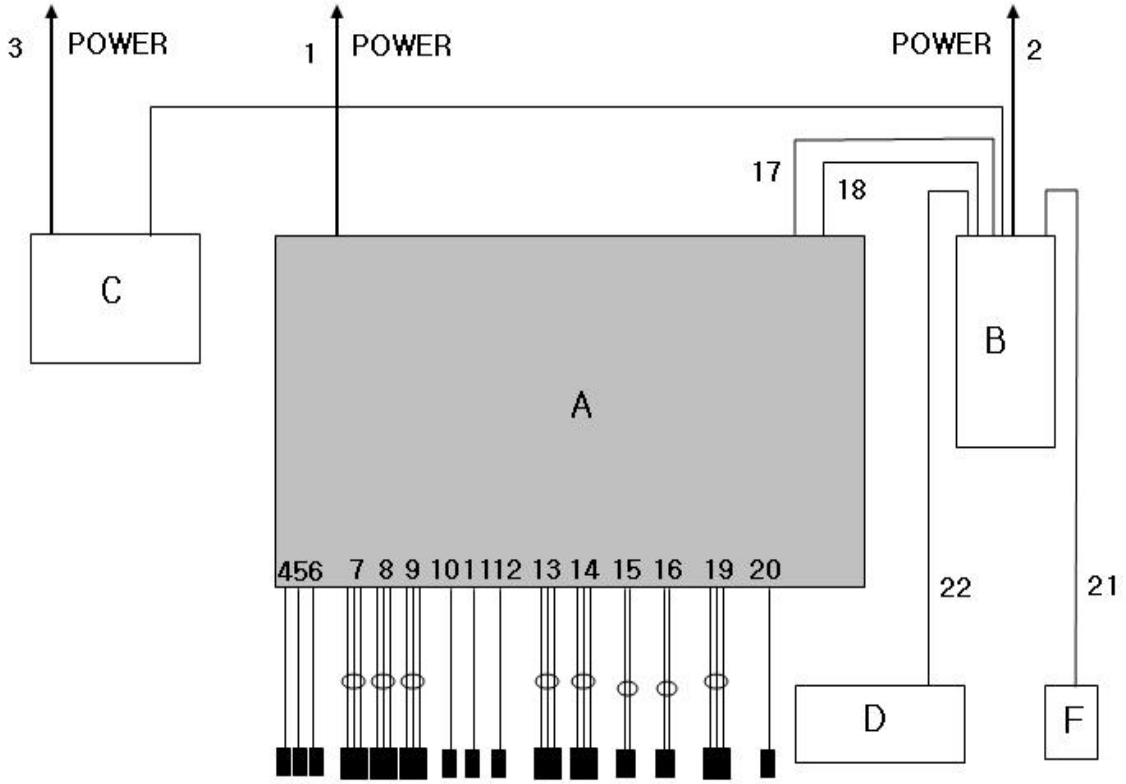
Used EUT and Peripherals

Seq	Device	Model Name	Serial #	Maker	FCC ID
A	DLP Projection TV	AT42L6	-	SAMSUNG	A3LAT42L6R
B	Personal Computer	MP11	A24692GT300039	SAMSUNG	DoC
C	Printer	ML-1520P	BKBX822977N	SAMSUNG	DoC
D	PS/2 Keyboard	SEM-DT35	51026640	SAMSUNG	DoC
E	PS/2 Mouse	Wheel Mouse 3.0 PS/2 Compatible	-	Microsoft	DoC

Port Description

	Connect Cable	Length [m]	Shielded [Y/N]	Remark
1	Power	1.5	No	to the Mains
2	Power(For PC)	1.5	No	to the Mains
3	Power(For Printer)	1.5	No	to the Mains
4	Ant 1 in	1.5	Yes	Termination
5	Ant 2 in	1.5	Yes	Termination
6	RF out	1.5	Yes	Termination
7	Composite 1 in	1.5	No	Termination
8	Composite 2 in	1.5	No	Termination
9	Composite 3 in	1.5	No	Termination
10	S-video 1 in	1.5	No	Termination
11	S-video 2 in	1.5	No	Termination
12	S-video 3 in	1.5	No	Termination
13	Component 1 in	1.5	No	Termination
14	Component 2 in	1.5	No	Termination
15	PC audio in	1.5	No	Termination
16	DVI audio in	1.5	No	Termination
17	PC Analog in	1.5	Yes	To the PC
18	PC DVI in	1.5	Yes	To the PC
19	Composite out	1.5	No	Termination
20	HDMI	1.5	Yes	Termination
21	PS/2 Cable	1.2	No	To the PC
22	USB Cable	1.2	No	To the PC

Block Diagram



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
Radiated Emission	±5.09
Conducted Emission	±1.64

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

3. Description of Individual Tests

3.1 Conducted Emission

Test Information		
	Test Engineer	Tae Young, Jang
	Test Date	May 6, 2005
	Climate Condition	Ambient Temperature : 22℃ Relative Humidity : 37%
	Test Place	Shield Room #5

Test Equipments

Equipment	Modal Name	Manufacturer	Serial No.	Calibration	
				Next Date	Interval
Test Software	EP5CE	TOYO	None	N/A	N/A
RF Relais Matrix	PSU	R&S	861206/024	N/A	N/A
EMC Analyzer	E7405A	AGILENT	US41110272	2006-01-20	12
TV Signal Generator	PM5418-TDSI	PHILIPS	LO612437	2005-09-23	12
Field strength meter	ESS	R&S	844661/005	2006-01-11	12
L.I.S.N	ESH3-Z5	R&S	100261	2005-07-23	12
L.I.S.N	ESH3-Z5	R&S	847265/028	2005-09-12	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.

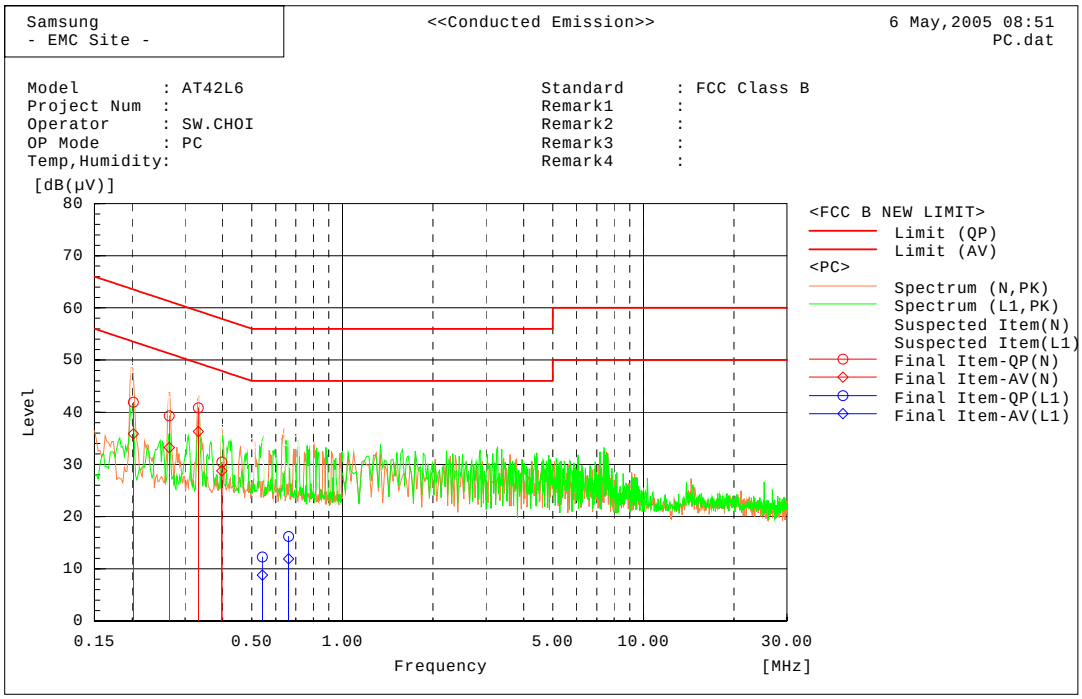
Test Result

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

Test Data

■ Operating Mode : PC Analog in

[Graph and Data]



Final Result

--- N Phase ---

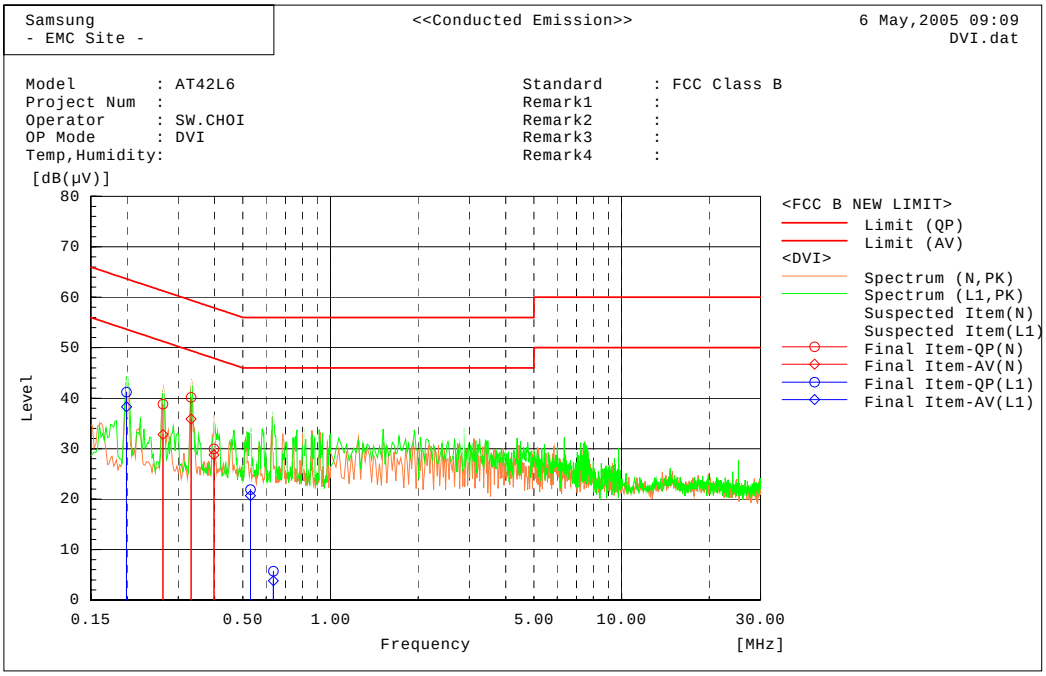
No.	Frequency [MHz]	Reading QP [dB(µV)]	Reading AV [dB(µV)]	c.f [dB]	Result QP [dB(µV)]	Result AV [dB(µV)]	Limit QP [dB(µV)]	Limit AV [dB(µV)]	Margin QP [dB]	Margin AV [dB]
1	0.20174	41.8	35.8	0.1	41.9	35.9	63.5	53.5	21.6	17.7
2	0.26556	39.2	33.1	0.1	39.3	33.2	61.3	51.3	22.0	18.1
3	0.33203	40.7	36.1	0.2	40.9	36.3	59.4	49.4	18.5	13.1
4	0.3972	30.3	28.6	0.2	30.5	28.8	57.9	47.9	27.4	19.1
5	0.51029	-3.3	-8.2	0.2	-3.1	-8.0	56.0	46.0	59.1	54.0

--- 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	0.54151	12.0	8.6	0.2	12.2	8.8	56.0	46.0	43.8	37.2
2	0.66187	16.0	11.7	0.2	16.2	11.9	56.0	46.0	39.8	34.1

■ Operating Mode : DVI in

[Graph and Data]



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	0.26583	38.7	32.7	0.1	38.8	32.8	61.2	51.2	22.4	18.4
2	0.33181	39.9	35.7	0.2	40.1	35.9	59.4	49.4	19.3	13.5
3	0.39803	29.7	28.6	0.2	29.9	28.8	57.9	47.9	28.0	19.1

--- 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	0.19926	41.1	38.2	0.1	41.2	38.3	63.6	53.6	22.4	15.3
2	0.53118	21.7	20.5	0.2	21.9	20.7	56.0	46.0	34.1	25.3
3	0.6358	5.5	3.6	0.2	5.7	3.8	56.0	46.0	50.3	42.2

3.2 Radiated Emission

Test Information		
	Test Engineer	Tae Young, Jang
	Test Date	May 4, 2005
	Climate Condition	Ambient Temperature : 26.5℃ Relative Humidity : 21%
	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	2766	2005-07-06	12
Mast Controller	HD2000	HD	HD20000902027	N/A	N/A
Test Software	EP5RET	TOYO	None	N/A	N/A
Test Software	EP5RE	TOYO	None	N/A	N/A
TV Signal Generator	PM5418-TDSI	PHILIPS	LO612437	2005-09-23	12
EMC Analyzer	E7405A	Agilent	MY42000052	2005-08-26	12
Field strength meter	ESCS30	R&S	100104	2005-05-25	12
RF Amplifier	8447D	Agilent	2944A10430	2005-07-20	12
Mast Controller	HD 100	HD	100/374	N/A	N/A

EUT Test Setup

EUT is positioned at 3m from antenna at the center of the table in the semi-anechoic chamber.

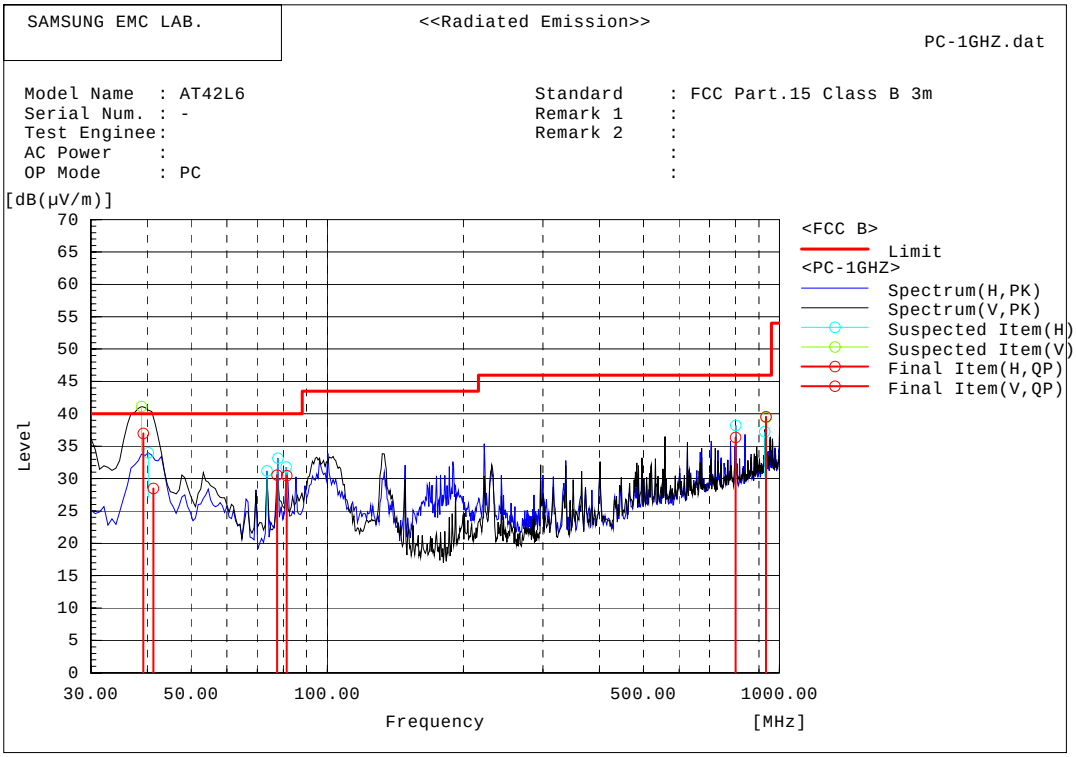
All unused ports were terminated into characteristic loads.

Test Result

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

Test Data (Other Frequency)

■ Operating Mode : PC video in (30MHz ~ 1GHz)



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	41.246	42.6	-14.1	28.5	40.0	11.5	
2	77.452	49.4	-18.8	30.6	40.0	9.5	
3	800.010	34.8	1.6	36.4	46.0	9.6	
4	81.320	48.6	-18.1	30.5	40.0	9.5	

--- 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	39.180	50.0	-13.0	37.0	40.0	3.0	
2	933.343	35.4	4.2	39.6	46.0	6.5	

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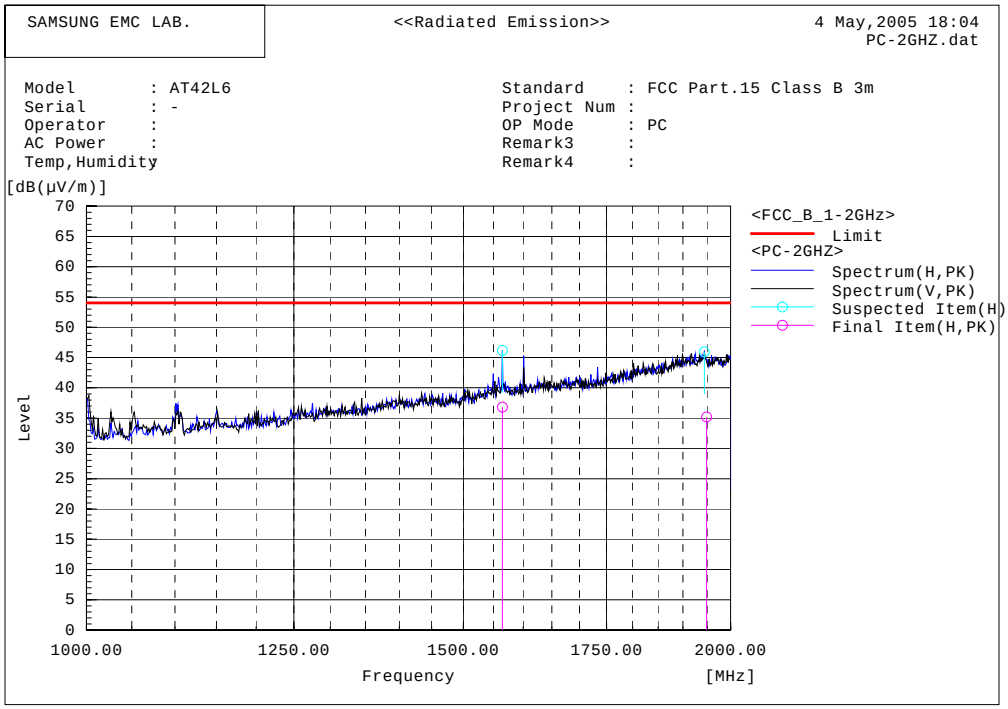
■ Operating Mode : PC video in (1GHz ~ 2GHz)

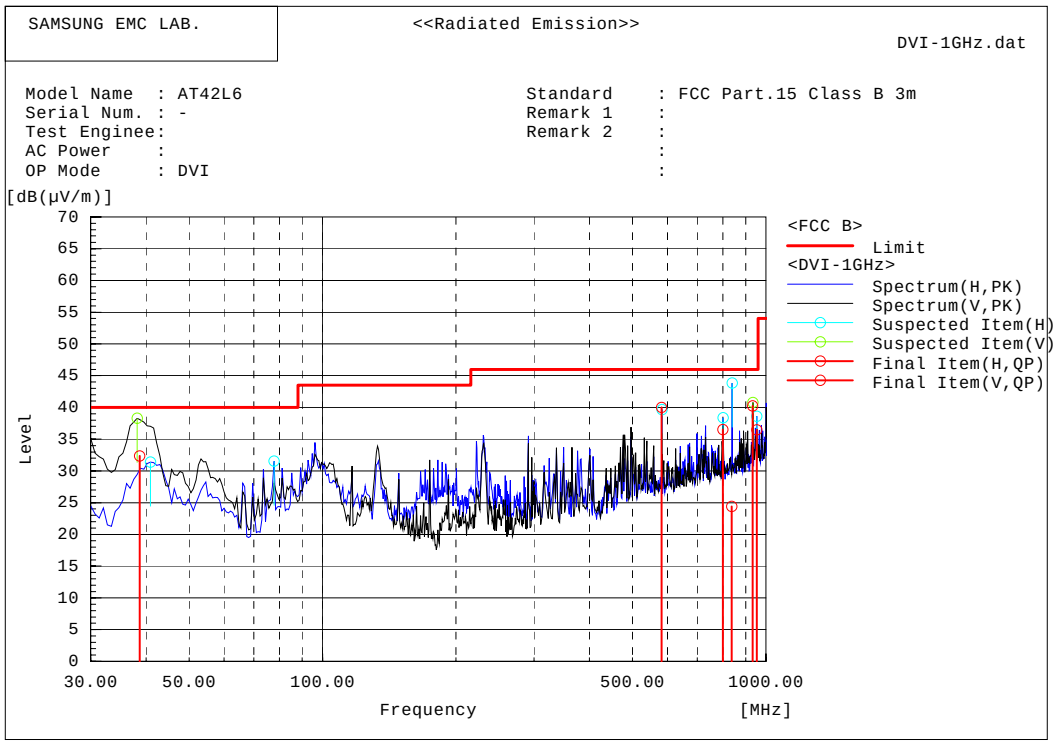


Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Remark
1	1564.253	21.3	15.5	36.8	54.0	17.2	
2	1948.863	13.3	21.9	35.2	54.0	18.8	

■ Operating Mode : DVI in (30MHz ~ 1GHz)



Final Result

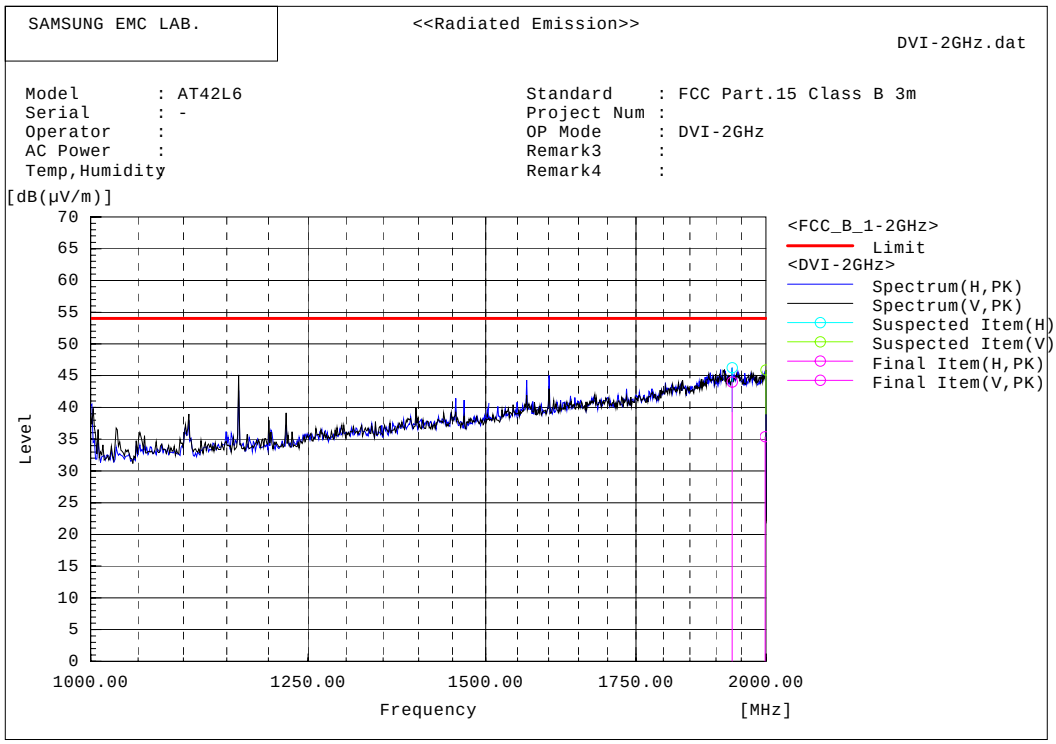
--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Remark
1	837.513	22.5	1.9	24.4	46.0	21.6	
2	581.645	41.6	-1.6	40.0	46.0	6.0	
3	953.608	31.8	4.7	36.5	46.0	9.5	
4	800.010	34.9	1.6	36.5	46.0	9.5	

--- 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	38.674	45.2	-12.8	32.4	40.0	7.7	
2	933.343	36.0	4.2	40.2	46.0	5.8	

■ Operating Mode : DVI in (1GHz ~ 2GHz)



Final Result

--- Horizontal Polarization (PK)---

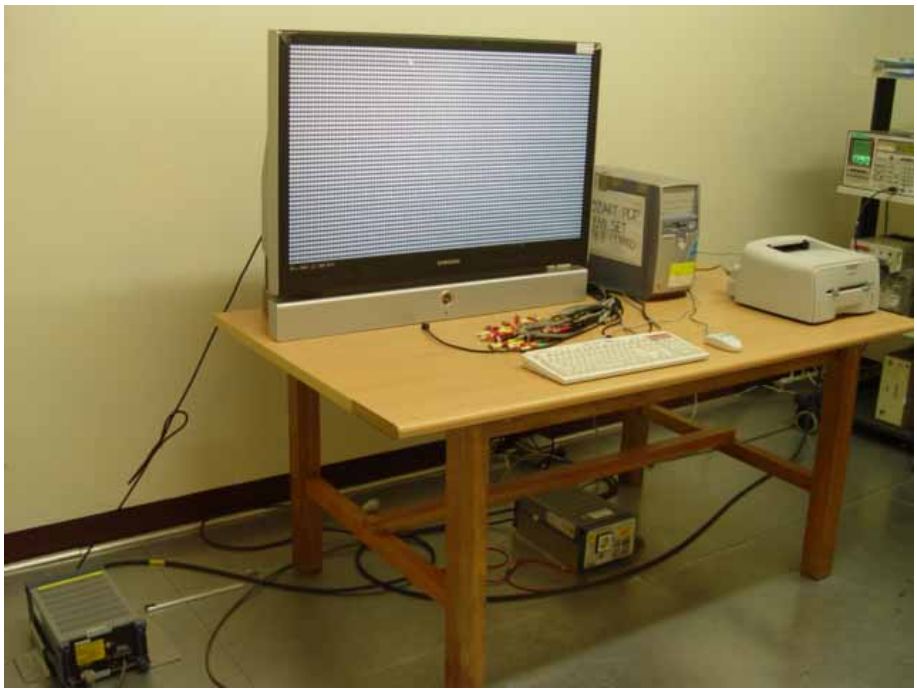
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Remark
1	1931.775	22.1	21.9	44.0	54.0	10.0	

--- Vertical Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Remark
1	1998.426	12.9	22.5	35.4	54.0	18.6	

4. Appendix A

4.1 Test Photography



Picture 1. Conducted Emission

Picture 2. Radiated Emission (front view)

Picture 3. Radiated Emission (rear view)

4.2 EUT Photography

Picture 4. EUT (front view)

Picture 5. EUT (rear view)