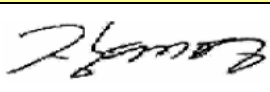
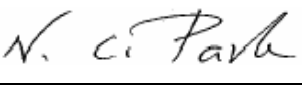


EMC Test Report

According to FCC Part 15 Subpart B

Project No.	LBE050291
Equipment under Test	
Address	416 Maetan3-Dong, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, Korea, 443-742
Product Name	DLP Projection Monitor
Model Name	AT50L6
Manufacturer	SAMSUNG
Brand Name	SAMSUNG
Variant Model	See Page 3
FCC ID	A3LAT50L6R
Date of Test	February 8 ~ 16, 2005
Issued Date	February 22, 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

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1. General Information

1.1 Basic Information related Product

Applicant	Samsung Electronics Co. Ltd
Model name	AT50L6
Applicant Address	Samsung Electronics Co. Ltd 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
New / Alternative / Permissive change Information	This report is original report #

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 video in
- PC DVI in

1.4 Equipment Modifications

No equipment modifications were required.

1.5 Test Configuration

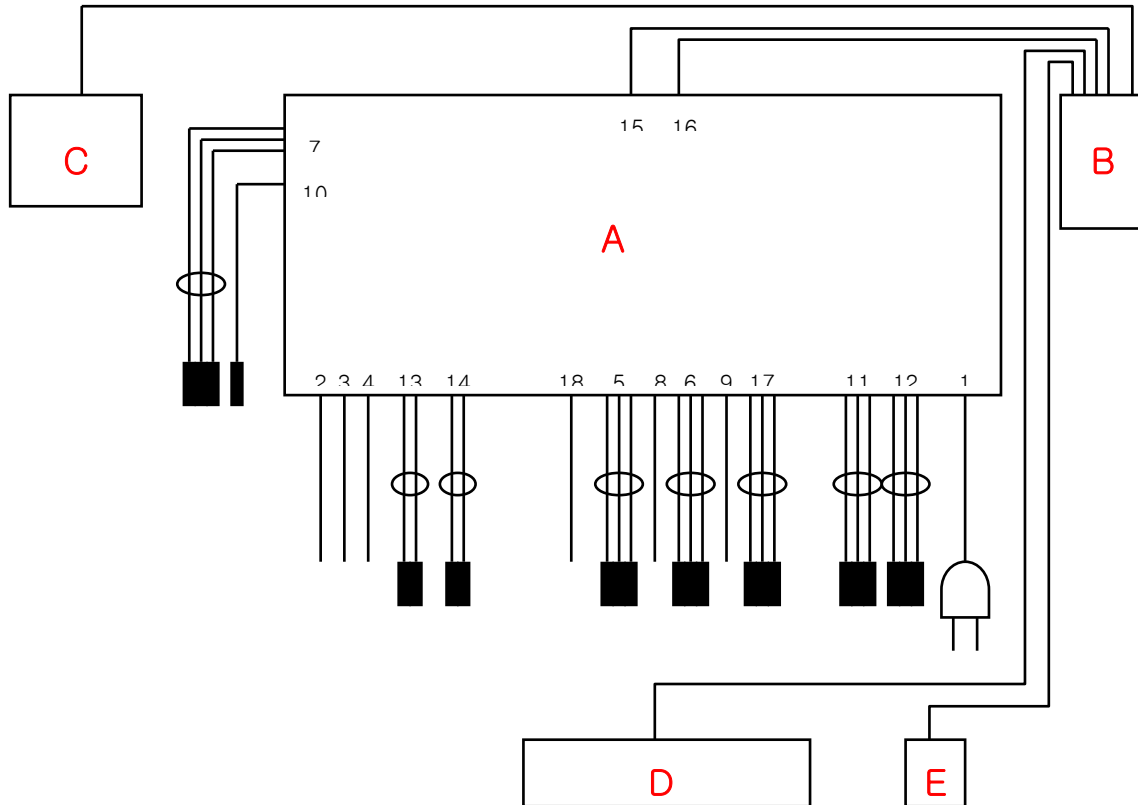
Used EUT and Peripherals

Seq	Device	Model Name	Serial #	Maker	FCC ID
A	DLP Projection TV	AT50L6	-	SAMSUNG	A3LAT50L6R
B	Personal Computer	M6050	812092FRCO2822	SAMSUNG	DoC
C	Printer	ML-1750	BABX822977N	SAMSUNG	A3LML-1750
D	PS/2 Keyboard	5900	K15103278	SAMSUNG	DoC
E	PS/2 Mouse	M-S48a	LZA95254368	SAMSUNG	DoC

Port Description

	Connect Cable	Length [m]	Shielded [Y/N]	Remark
1	Power	1.5	No	to the Mains
2	Ant 1 in	1.5	Yes	To the SG
3	Ant 2 in	1.5	Yes	To the SG
4	RF out	1.5	Yes	Termination
5	Composite 1 in	1.5	No	Termination
6	Composite 2 in	1.5	No	Termination
7	Composite 3 in	1.5	No	Termination
8	S-video 1 in	1.5	No	Termination
9	S-video 2 in	1.5	No	Termination
10	S-video 3 in	1.5	No	Termination
11	Component 1 in	1.5	No	Termination
12	Component 2 in	1.5	No	Termination
13	PC audio in	1.5	No	Termination
14	DVI audio in	1.5	No	Termination
15	PC video in	1.5	Yes	To the SG
16	PC DVI in	1.5	Yes	To the SG
17	Composite out	1.5	No	Termination
18	HDMI	1.5	Yes	Termination

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	February 16, 2005
	Climate Condition	Ambient Temperature : 20.5℃ Relative Humidity : 48%
	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	2005-07-23	12
Test Software	EP5CE	TOYO	None	N/A	N/A
Spectrum Analyzer	E7405A	Agilent	US4110272	2005-08-26	12
TV Signal Generator	PM5418-TDSI	PHILIPS	LO612437	2005-09-23	12
Field strength meter	ESS-30	R&S	844661/005	2006-01-11	12
RF Relais Matrix	PSU	R&S	861206/024	N/A	N/A

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.

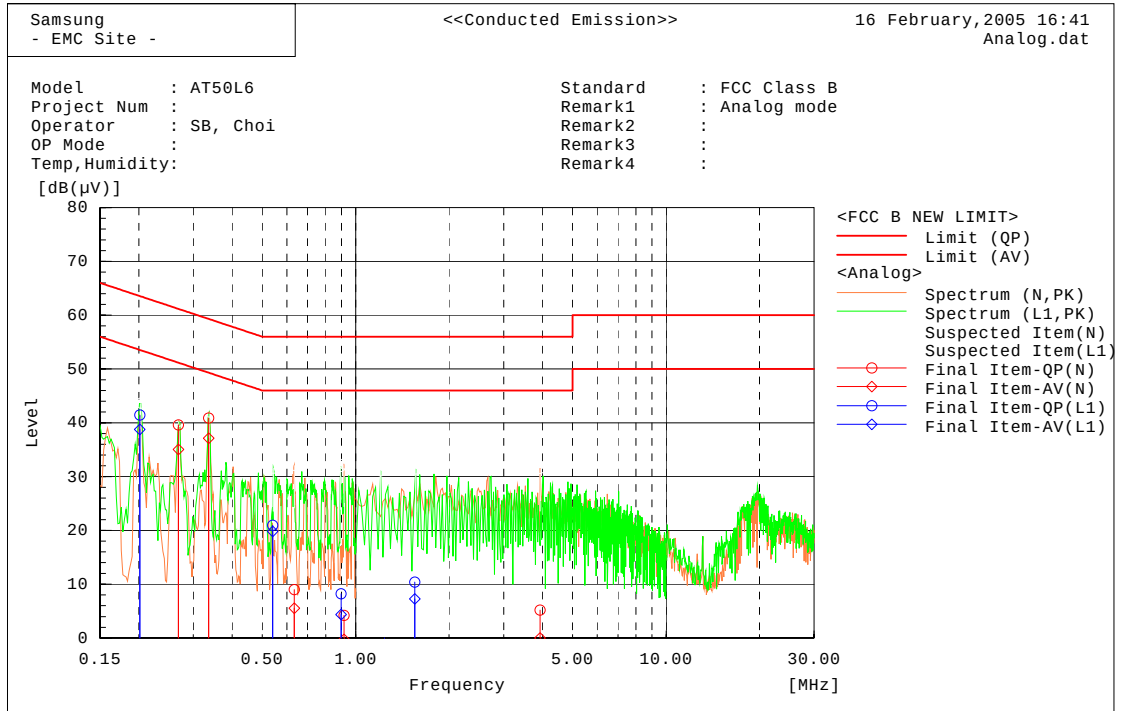
Test Result

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

Test Data

■ Operating Mode : PC video in

[Graph and Data]



Final Result

--- N Phase ---

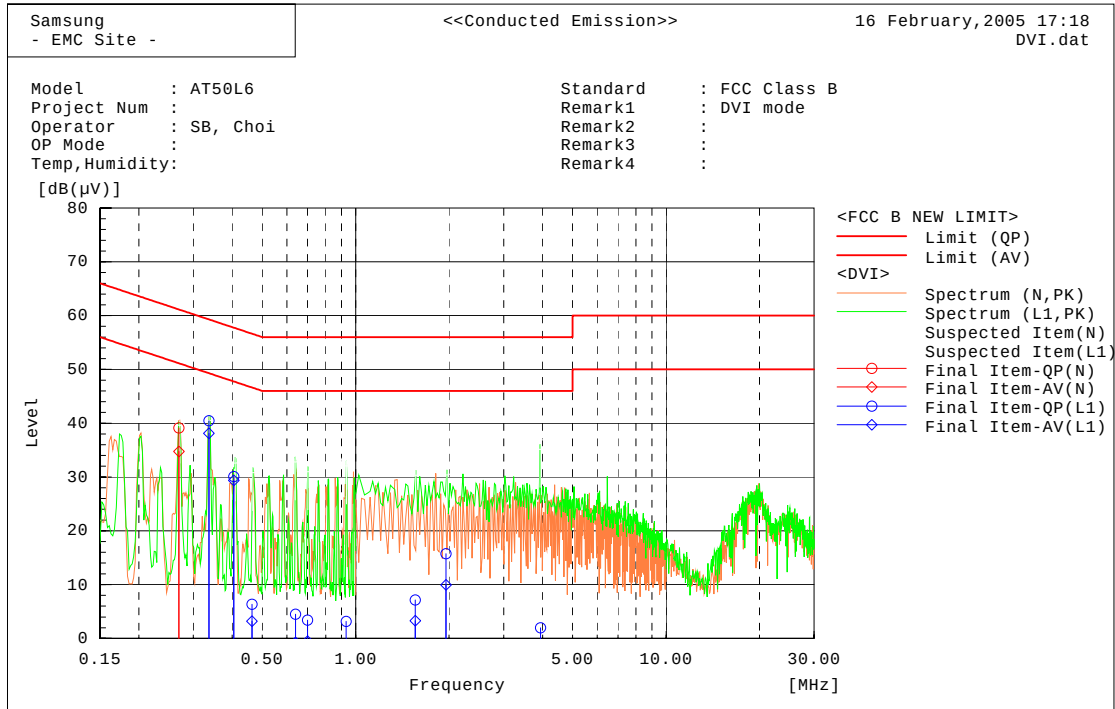
No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.26821	39.5	35.0	0.1	39.6	35.1	61.2	51.2	21.6	16.2
2	0.33619	40.7	36.9	0.2	40.9	37.1	59.3	49.3	18.4	12.2
3	0.63357	8.8	5.3	0.2	9.0	5.5	56.0	46.0	47.0	40.5
4	0.91791	4.0	-0.5	0.2	4.2	-0.3	56.0	46.0	51.8	46.3
5	3.9273	5.1	-0.1	0.1	5.2	0.0	56.0	46.0	50.8	46.0

--- 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	0.20168	41.4	38.7	0.1	41.5	38.8	63.5	53.5	22.1	14.8
2	0.54026	20.7	19.6	0.2	20.9	19.8	56.0	46.0	35.1	26.2
3	0.89651	8.0	4.2	0.2	8.2	4.4	56.0	46.0	47.8	41.7
4	1.2354	-3.2	-6.1	0.2	-3.0	-5.9	56.0	46.0	59.0	51.9
5	1.5513	10.2	7.1	0.2	10.4	7.3	56.0	46.0	45.6	38.7

■ Operating Mode : DVI in

[Graph and Data]



Final Result

--- N 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	0.26923	39.0	34.7	0.1	39.1	34.8	61.1	51.1	22.0	16.3

--- 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	0.33636	40.3	37.9	0.2	40.5	38.1	59.3	49.3	18.8	11.2
2	0.405	29.9	29.2	0.2	30.1	29.4	57.8	47.8	27.7	18.4
3	0.46278	6.2	3.0	0.2	6.4	3.2	56.6	46.6	50.2	43.4
4	0.64097	4.3	-0.9	0.2	4.5	-0.7	56.0	46.0	51.5	46.7
5	0.69957	3.2	-0.7	0.2	3.4	-0.5	56.0	46.0	52.6	46.5
6	0.93247	2.9	-1.6	0.2	3.1	-1.4	56.0	46.0	52.9	47.4
7	1.5553	6.9	3.1	0.2	7.1	3.3	56.0	46.0	48.9	42.7
8	1.9538	15.6	9.7	0.2	15.8	9.9	56.0	46.0	40.2	36.1
9	3.9412	1.9	-3.1	0.1	2.0	-3.0	56.0	46.0	54.0	49.0

3.2 Radiated Emission

Test Information		
	Test Engineer	Tae Young, Jang
	Test Date	February 8, 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	LO627116	2006-01-28	12
Spectrum Analyzer	E7405A	Agilent	MY42000052	2005-08-26	12
EMI Test Receiver	ESCS30	R&S	839809/002	2005-04-28	12

EUT Test Setup

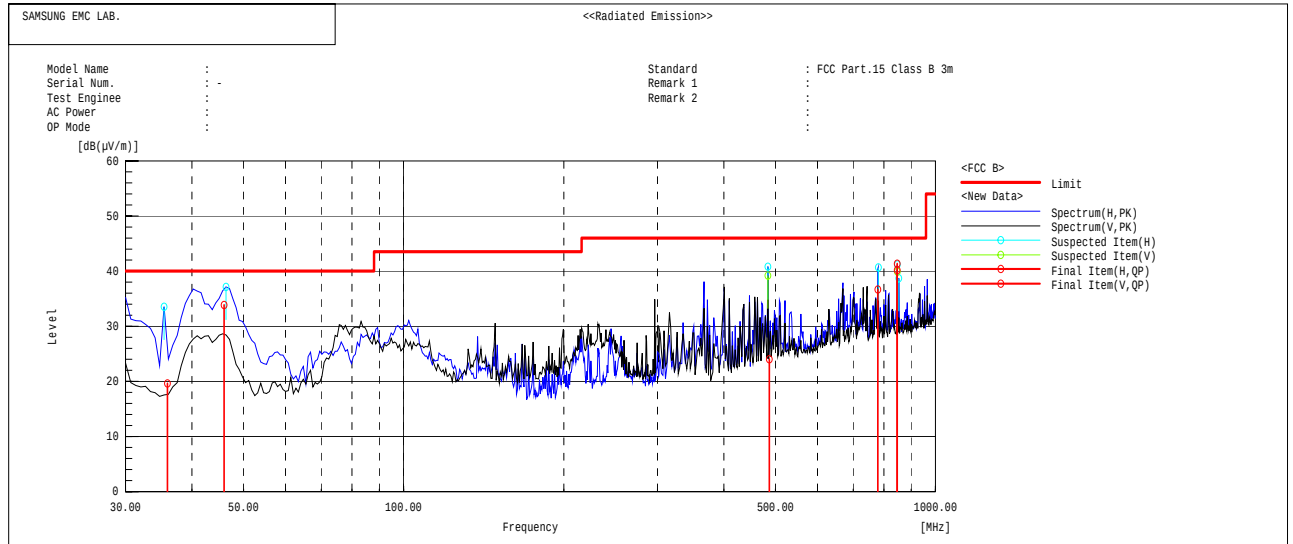
EUT is positioned at 3m from antenna at the center of the table in the semi-anechoic chamber.
All unused ports were terminated into characteristic loads.

Test Result

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

Test Data (Local Oscillator)

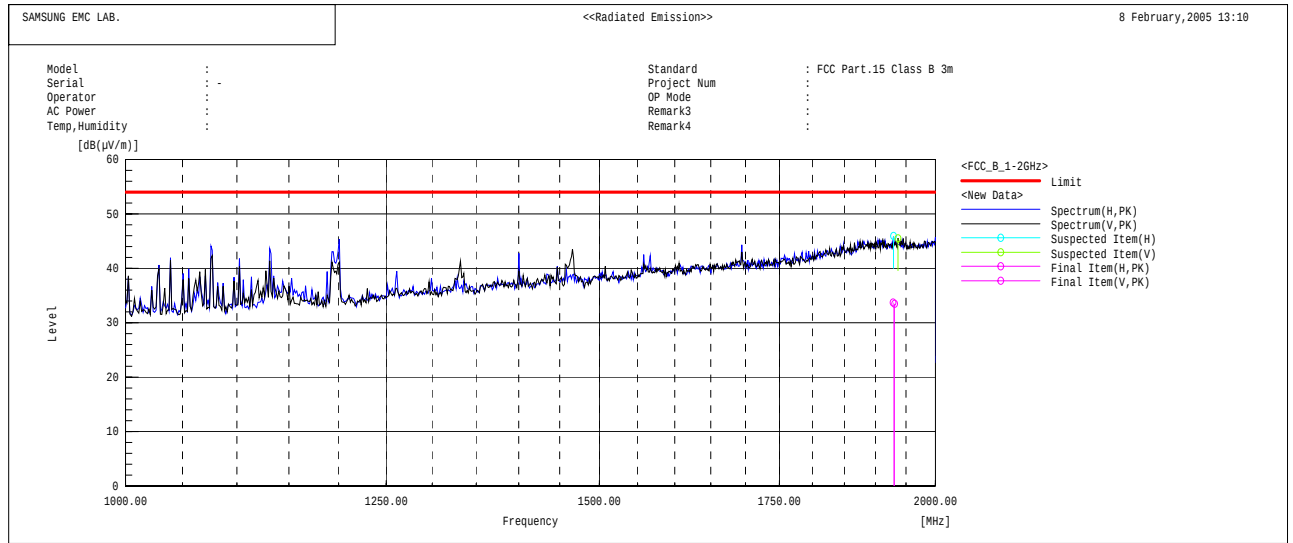
■ Operating Mode : PC video in (30MHz ~ 1GHz)



Final Result

No.	Frequency [MHz]	(P)	S.C	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]	Remark
1	45.984	H	S	50.0	-16.1	33.9	40.0	6.2	102.0	308.0	
2	847.030	H	S	39.2	2.1	41.3	46.0	4.7	202.0	328.0	
3	486.730	H	S	27.1	-3.1	24.0	46.0	22.0	102.0	1.0	
4	778.990	H	S	35.3	1.4	36.7	46.0	9.3	108.0	316.0	
5	847.030	V	S	38.1	2.1	40.2	46.0	5.8	149.0	294.0	
6	35.974	H	S	30.8	-11.2	19.6	40.0	20.4	103.0	75.0	

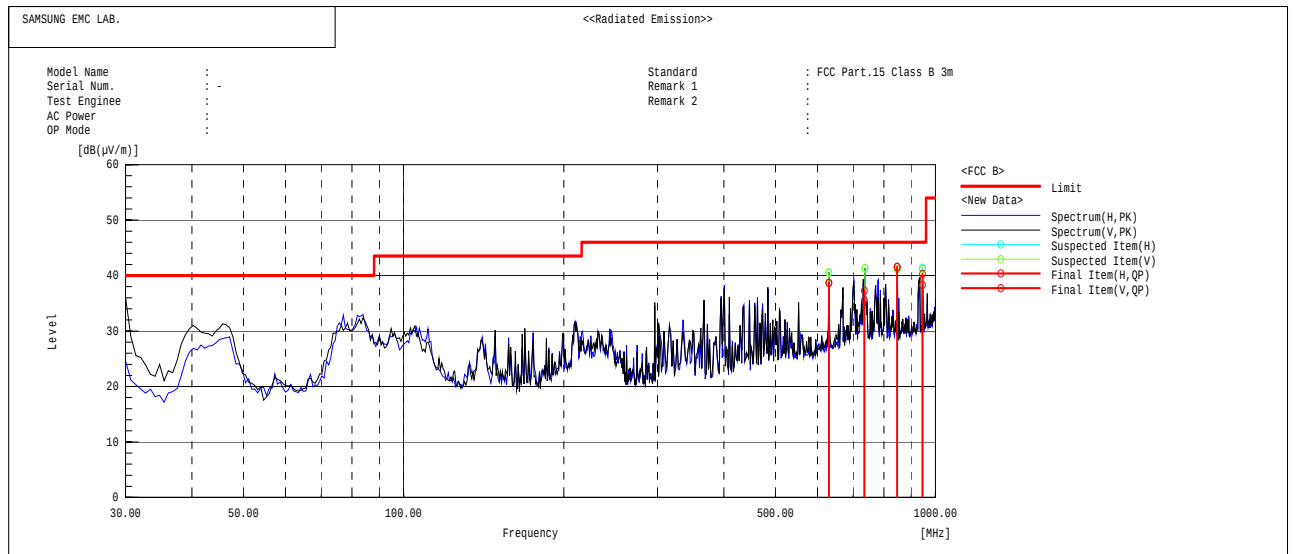
■ Operating Mode : PC video in (1GHz ~ 2GHz)



Final Result

No.	Frequency [MHz]	(P)	S.C	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit [dB(μV/m)]	Margin PK [dB]	Height [cm]	Angle [°]	Remark
1	1928.660	H	S	12.2	21.5	33.7	54.0	20.3	254.0	241.0	
2	1931.150	V	S	12.0	21.5	33.5	54.0	20.5	202.0	104.0	

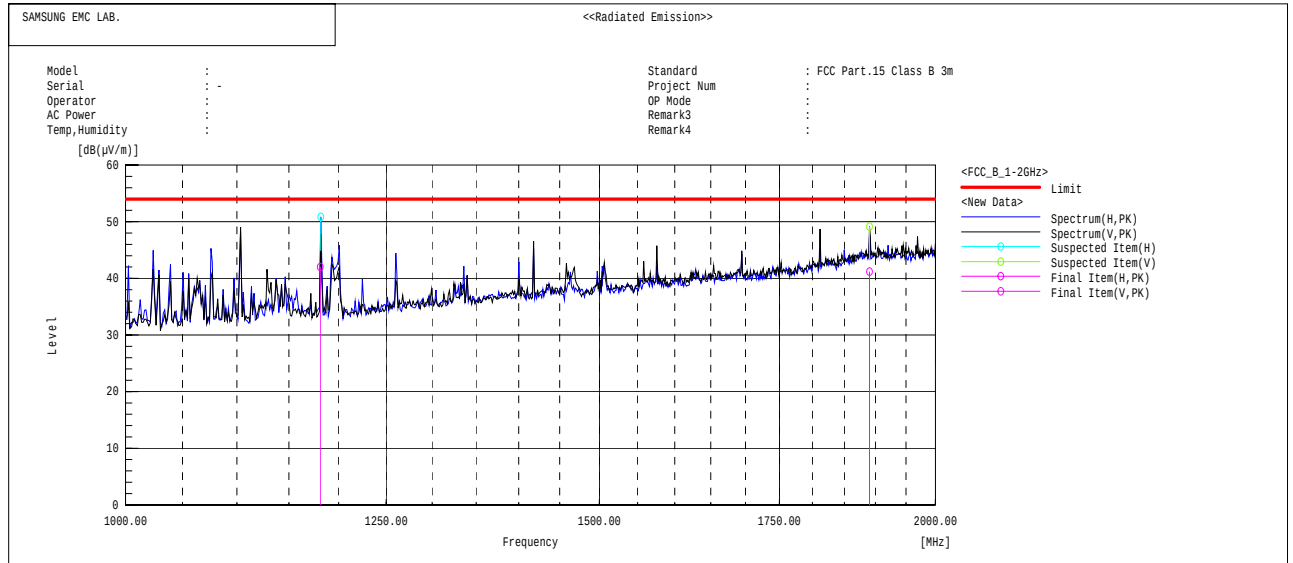
■ Operating Mode : DVI in (30MHz ~ 1GHz)



Final Result

No.	Frequency [MHz]	(P)	S.C	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]	Remark
1	629.980	H	S	39.4	-0.7	38.7	46.0	7.3	102.0	204.0	
2	630.000	V	S	39.4	-0.7	38.7	46.0	7.4	102.0	238.0	
3	847.030	V	S	39.4	2.1	41.5	46.0	4.5	159.0	305.0	
4	945.000	V	S	36.4	3.9	40.3	46.0	5.7	212.0	182.0	
5	847.030	H	S	39.5	2.1	41.6	46.0	4.4	138.0	318.0	
6	735.000	H	S	34.5	1.0	35.5	46.0	10.5	126.0	201.0	
7	734.740	V	S	36.3	1.0	37.3	46.0	8.7	226.0	213.0	
8	945.000	H	S	34.4	3.9	38.3	46.0	7.7	102.0	358.0	

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

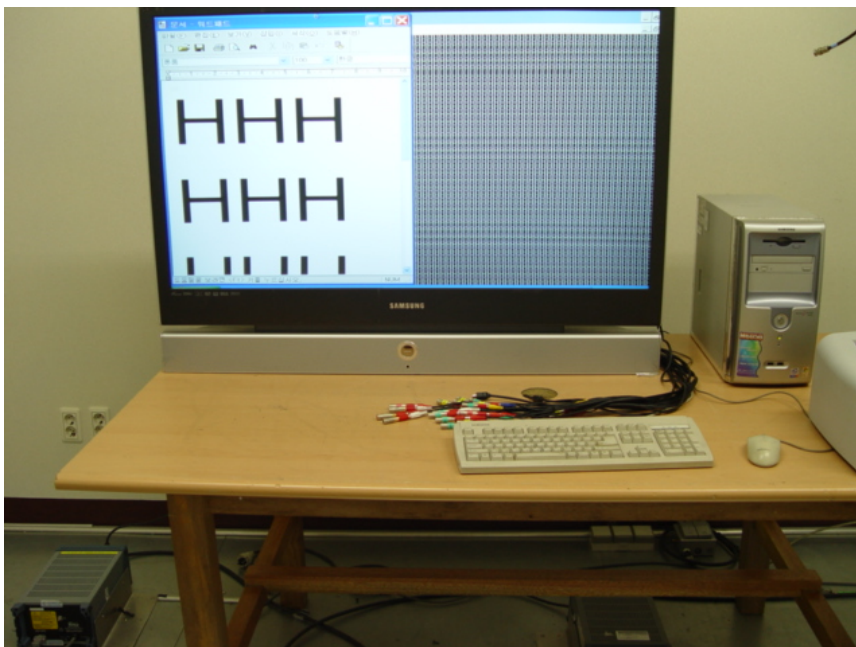


Final Result

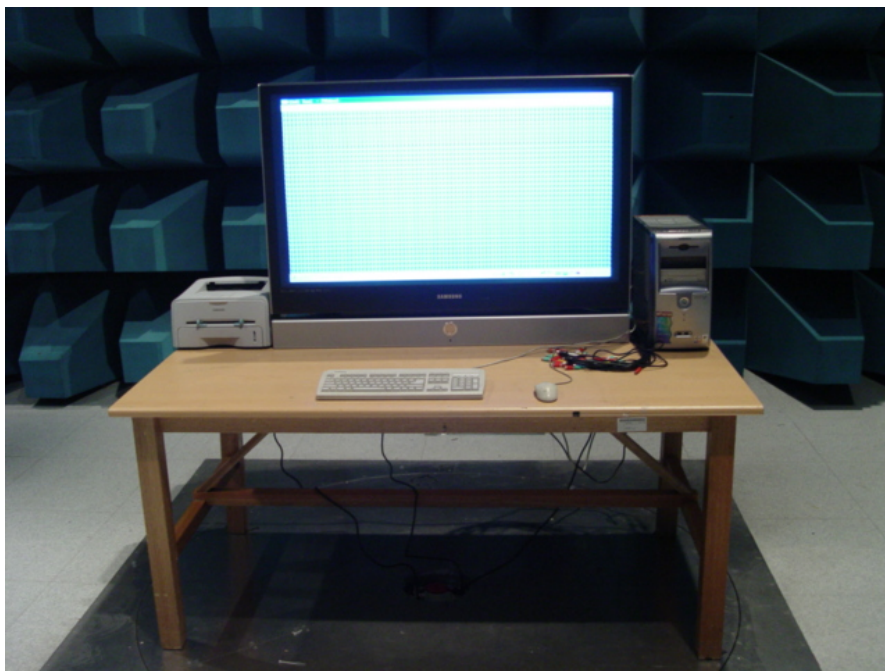
No.	Frequency [MHz]	(P)	S.C	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit [dB(μV/m)]	Margin PK [dB]	Height [cm]	Angle [°]	Remark
1	1181.300	H	S	34.3	7.7	42.0	54.0	12.0	106.0	216.0	
2	1890.080	V	S	20.0	21.2	41.2	54.0	12.8	109.0	186.0	

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)