EMC Test Report

According to FCC Part 15 Subpart B

Project No.		**LBE050678**
Equipment under Test		
	Address	416 Maetan3-Dong,Yeongtong-Gu,Suwon-Si,Gyeonggi-Do, Korea,443-742
	Product Name	**DLP TV Monitor**
	Model Name	**AT46L6**
	Manufacturer	SAMSUNG
	Brand Name	SAMSUNG
	Variant Model	See Page 3
	FCC ID	A3LAT46L6D
Date of Test		March 24 ~ 25, 2005
Issued Date		March 31, 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	AT46L6
Applicant Address	416 Maetan3- Dong, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, Korea, 443-742
Contact Person	Chang Young, Choi
Kind of product	DLP TV Monitor
Valiant list	None
Manufacturer	Samsung Electronics Co. Ltd

1.2 Detail Information related Product

Specification

Item(s)	Description
Power Supply	AC 110 ~ 120V, 60Hz
Maximum Resolution	1024 X 768
Horizontal Frequency	60.023KHz
Vertical Frequency	75.029Hz

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

1.4 Equipment Modifications

No equipment modifications were required.

1.5 Test Configuration

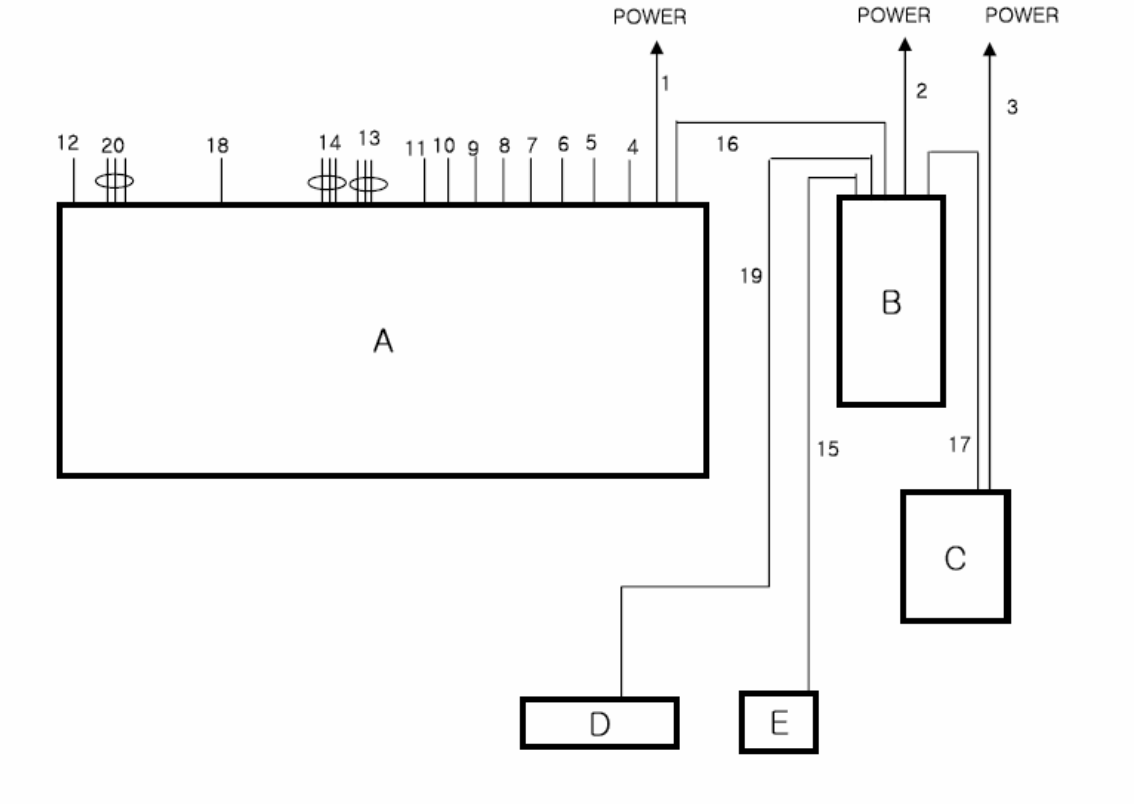
Used EUT and Peripherals

Seq	Device	Model Name	Serial #	Maker	FCC ID
A	DLP TV Monitor	AT46L6	-	SAMSUNG	A3LAT46L6D
B	Personal Computer	M6050	812092FRCO2822	SAMSUNG	DoC
C	Printer	ML-1520P	BABX822977N	SAMSUNG	DoC
D	PS/2 Keyboard	SK-1688	C0111096101	SAMSUNG	GYUR84K
E	USB Mouse	P801	03024123	COMPAQ	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	USB Cable	1.5	No	Termination
16	PC Analog in	1.5	Yes	To the PC
17	Printer Cable	1.5	No	Termination
18	HDMI	1.5	Yes	Termination
19	PS/2 Cable	1.2	No	To the PC
20	LINE IN	1.5	No	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	March 25, 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.

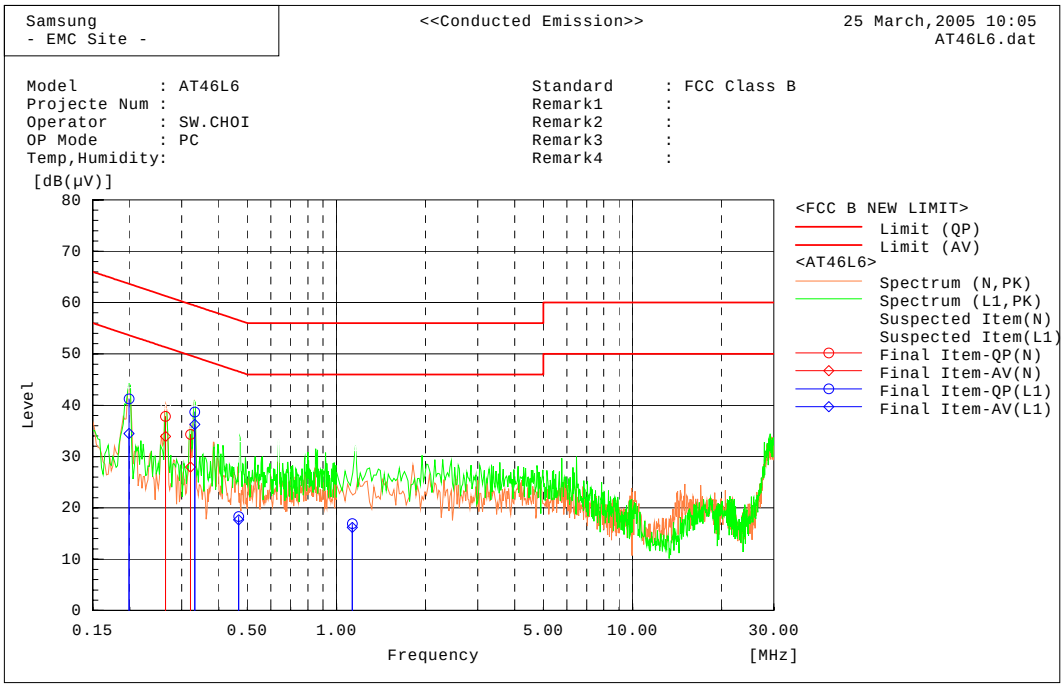
Test Result

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	0.26422	37.7	33.8	0.1	37.8	33.9	61.3	51.3	23.5	17.4
2	0.32123	34.1	27.7	0.2	34.3	27.9	59.7	49.7	25.4	21.8

--- 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	0.19896	41.1	34.4	0.1	41.2	34.5	63.7	53.7	22.5	19.2
2	0.3316	38.5	36.1	0.2	38.7	36.3	59.4	49.4	20.7	13.2
3	0.46697	18.1	17.4	0.2	18.3	17.6	56.6	46.6	38.3	29.0
4	1.1307	16.7	16.0	0.2	16.9	16.2	56.0	46.0	39.1	29.8

3.2 Radiated Emission

Test Information		
	Test Engineer	Tae Young, Jang
	Test Date	March 24, 2005
	Climate Condition	Ambient Temperature : 23.5℃ Relative Humidity : 31%
	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	2005-04-29	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	839809/002	2005-04-28	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.

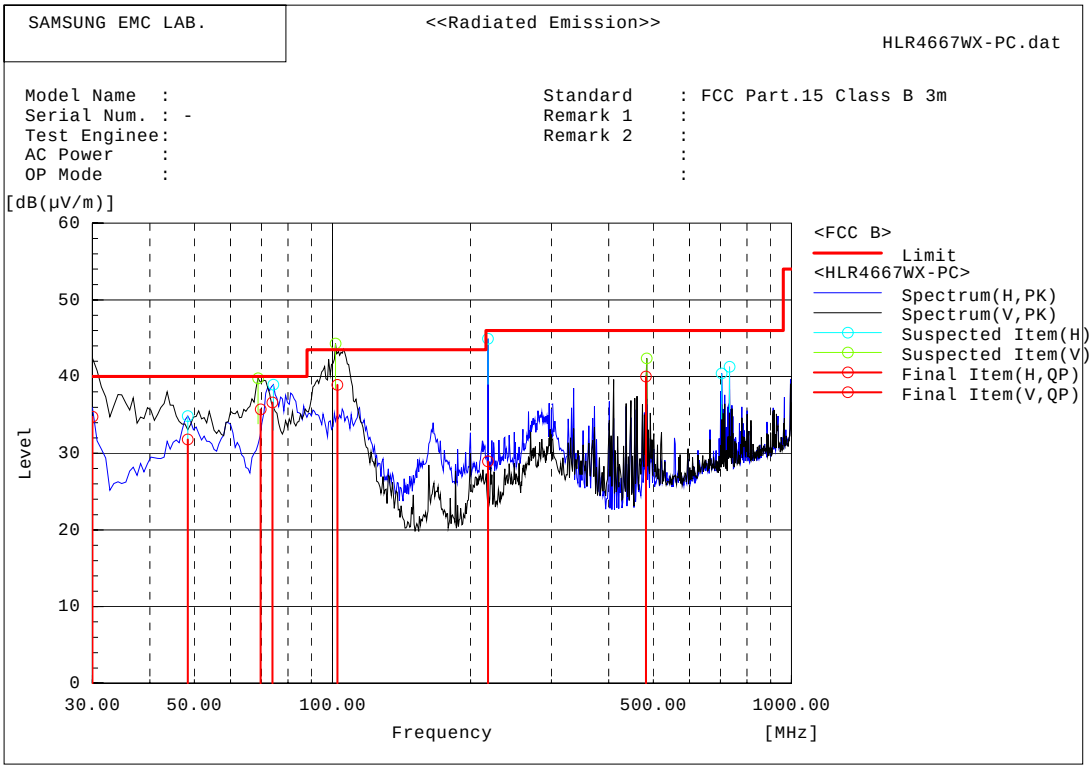
All unused ports were terminated into characteristic loads.

Test Result

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

Test Data (Local Oscillator)

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



Final Result

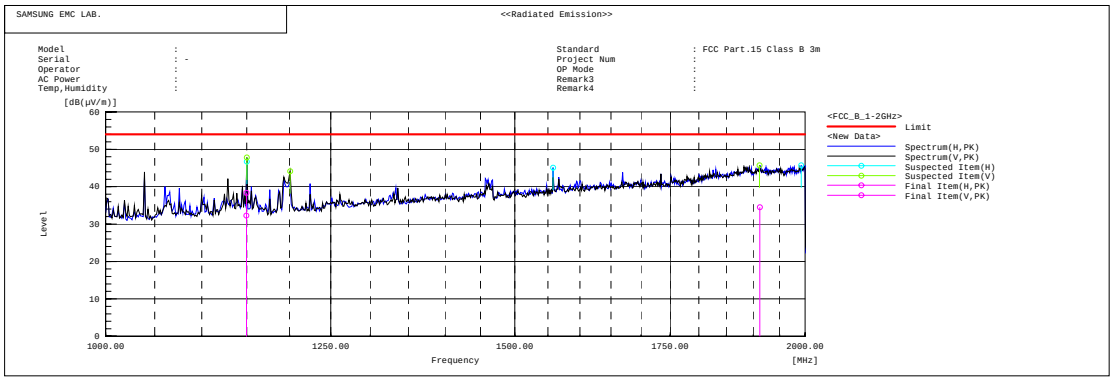
--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Remark
1	48.421	48.9	-17.1	31.8	40.0	8.2	
2	73.949	56.0	-19.4	36.6	40.0	3.4	
3	218.116	42.4	-13.5	28.9	46.0	17.1	

--- 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	69.710	55.8	-20.1	35.7	40.0	4.3	
2	102.461	52.6	-13.7	38.9	43.5	4.6	
3	482.105	43.2	-3.2	40.0	46.0	6.0	
4	30.000	42.8	-8.0	34.8	40.0	5.3	

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

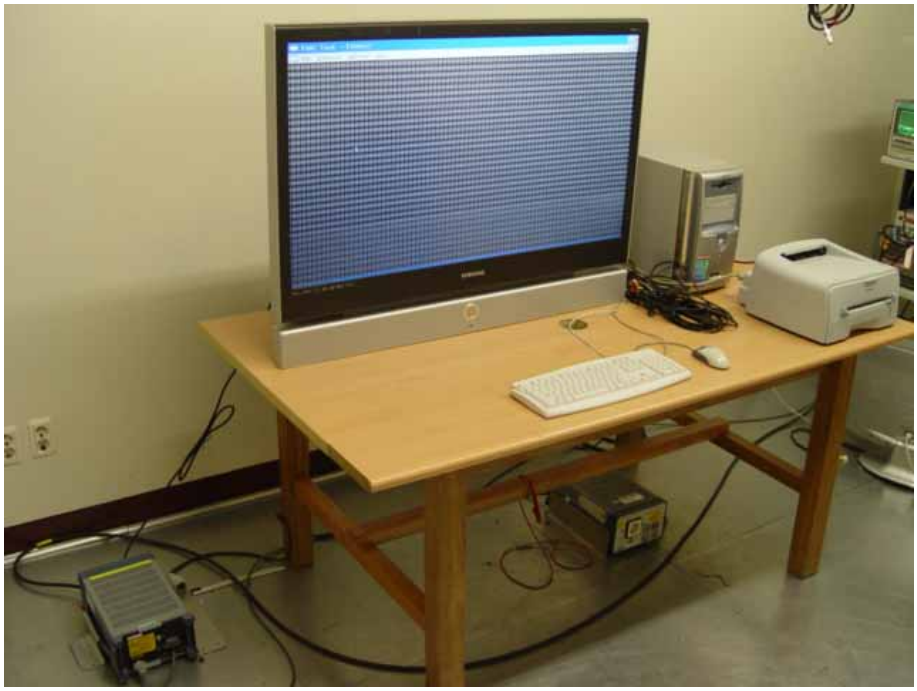


Final Result

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	1149.676	V	S	24.8	7.5	32.3	54.0	21.7	102.0	143.0	
2	1149.764	H	S	30.9	7.5	38.4	54.0	15.6	239.0	153.0	
3	1912.315	V	S	13.0	21.5	34.5	54.0	19.5	121.0	156.0	

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)