EMC Test Report

Project No.		**LBE040517**
Equipment under Test		
	Applicant	Samsung Electronics Co.Ltd 416 Maetan-3 Dong, Yeongtong-Ku, Suwon City, Gyeonggi-Do, Korea, 443-742
	Product Name	**LCD TV Monitor**
	Model Name	**VN32UO**
	Manufacturer	Samsung Electronics Co. Ltd
	Brand Name	SAMSUNG
	Variant Model	See Page 2
Issued Date		25-Mar-04

Applied Standards	**FCC Part 15 Subpart B**
Result	**Passed** The equipment under test has found to be compliant with the applied standards.

	Name/Position	**Signature**
Tested by	Tae Young, Jang Test Engineer	
Reviewed by	No Cheon, Park Manager of EMC Lab.	N. C. Park
Authorized by	Kyu Baek, Chung Chief of EMC Lab.	K. B. Chung

Samsung EMC Testing and Certification Laboratory	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

	Address	416 Maetan-3 Dong, Yeongtong-Ku, Suwon City, Gyeonggi-Do,Korea, 443-742
	Telephone No.	82-31-200-2135
	Fax No.	82-31-200-2189

This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

1. General Information

1.1 Basic Information related Product

Applicant	Samsung Electronics Co. Ltd
Product name	LCD TV Monitor
Model name	VN32UO
Brand Name	SAMSUNG
Manufacturer	Samsung Electronics Co. Ltd
Variant Models	-

1.2 Power Input Ports

Description	Voltage(V)	Frequency(Hz)	No. of phases
Mains Cable	120V	60Hz	1

1.3 EUT & Support Equipment

Used EUT and Peripherals

Mark	Item	Model No.	Serial No.	Manufacturer	Remark
A	LCD TV Monitor	VN32UO	-	SAMSUNG	EUT
B	Personal Computer	GX270	6Q4Q81S	DELL	-
C	Printer	LQ-580H	CG2Y014504	Epson	-
D	PS/2 Keyboard	SK-8110	MY-04N729-71619-3AT-0137	DELL	-
E	PS/2 Mouse	M-S69	LZB33503033	DELL	-

This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

Used Cable Description

No.	Item	Length[m]	Shielded	Remark
1	PS/2 Mouse Cable	1.8	N	
2	USB Keyboard Cable	1.6	N	
3	Video Cable	1.5	Y	
4	AC Power Cable(Monitor)	1.2	N	
5	AC Power Cable(PC)	1.8	N	
6	Printer Cable	1.6	Y	
7	AC Power Cable(Printer)	1.8	N	

This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

1.4 Operating Mode and Conditions

The system was configured for testing in typical fashion use.
The mode of operation utilized for testing was selected to best simulate typical EUT use.

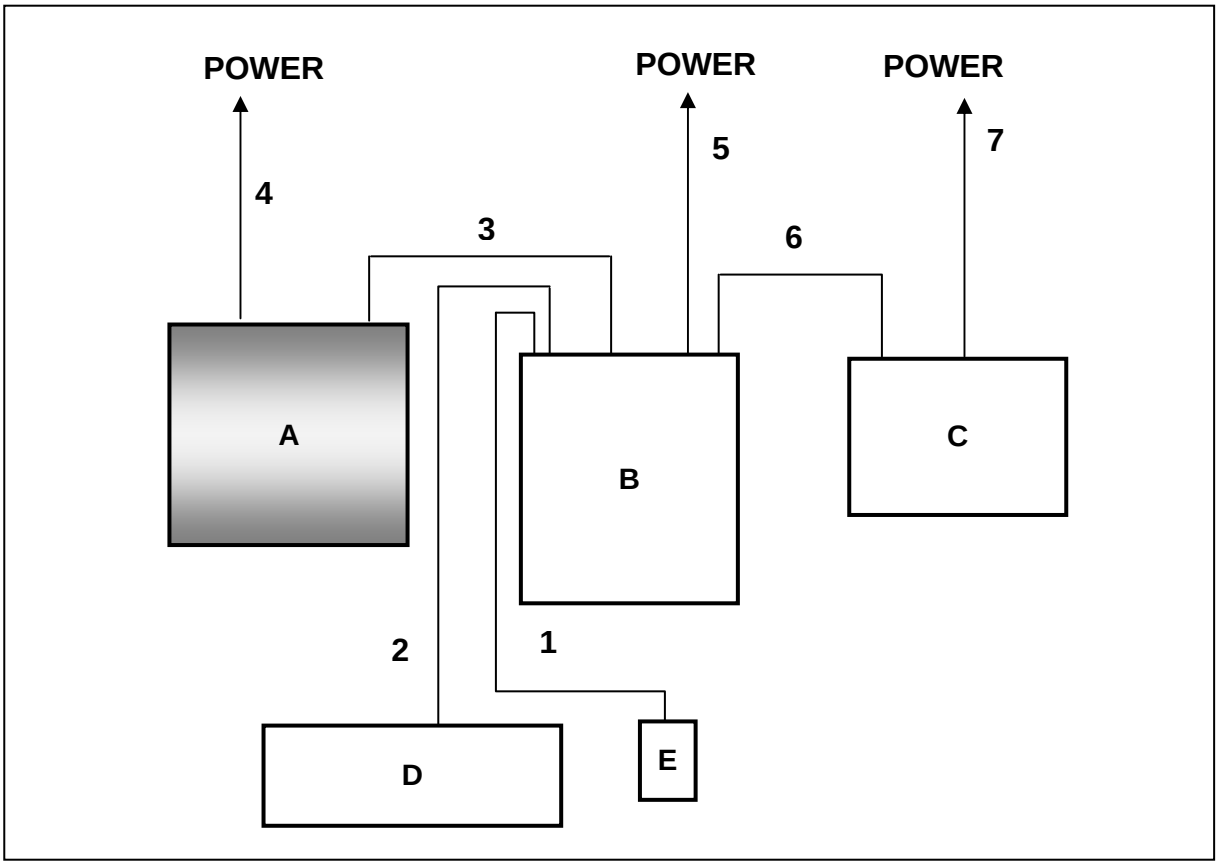
- PC Video Input

Operating Condition

Operating Condition	Resolutions	Refresh Rates	Colors
"H" Pattern Display	1280 * 768	Horizontal Freq. : 30 ~ 61kHz	24 bits
		Vertical Freq. : 56 ~ 75Hz	

The EUT Exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to typical use.

1.5 Block Diagram



1.6 Test Facility

General Information

The EMI/EMS measurement facilities used to collect the tested data are located at 416 Maetan 3 Dong, Yeongtong-Ku, Suwon City, Gyeonggi-Do, Korea.

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

SAMSUNG Electronics Co.,Ltd is accredited by Korea Laboratory Accreditation scheme(KOLAS) which . signed the International Laboratory Accreditation Cooperation(ILAC) Mutual Recognition Arrangement (M for the above test item(s) and test method(S)

Accreditation and Listing

Reg. No. 124	Reg. No. KR0004	No.195	App. No.001
LAB CODE 200623-0	Reg. No.98856	R-1221,C-1095	H9354285

1.7 Applied Standards

List

FCC Rule Part(s)	Test Procedure(s)
FCC Part 15 Subpart B	ANSI C63.4-2001
	-
	-

This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

2. Summary of Test Results

Result : Pass

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

Test Method	Applied Standard	Result
Conducted Emission	FCC Part 15 Subpart B	Complied
Radiated Emission	FCC Part 15 Subpart B	Complied

*** N/A : Test not applicable**

This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

3. Description of Individual Tests

3.1 Disturbance voltage at the mains terminals

Test Information	
Test Engineer	Tae Young, Jang
Test Date	16-Mar-04
Climate Condition	Ambient Temperature : 23.5℃ , Relative Humidity : 49%
Test Place	Shield Room #5

Test Equipments

Equipment	Model Name	Manufacturer	Serial No.	Next Calibration Date
TEST RECEIVER	ESI26	R & S	839809/002	27/06/2004
LISN	ESH3-Z5	R & S	847265/028	16/07/2004
LISN	ESH3-Z5	R & S	100261	16/07/2004
Test Software	EP5/CE	TOYO	Version : 2.0.860	N/A

Test Setup

EUT was placed on a platform of nominal size, raised 80cm above the conducting ground plane. The rear of table top was located 40cm to the vertical conducting plane. The rear of EUT was aligned and flushed with rear of tabletop. All other surfaces of tabletop was at least 80cm from any other grounded conducting surface. All unused 50 ohm connectors of the LISN were resistively terminated in 50 ohm when not connected to the measuring equipment
See photo.

Test Result

Measurement Results	Passed
	The Measured emissions of the EUT have found to be below the specified limits.

This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

Test Data

LISN Mode : Live & Neutral

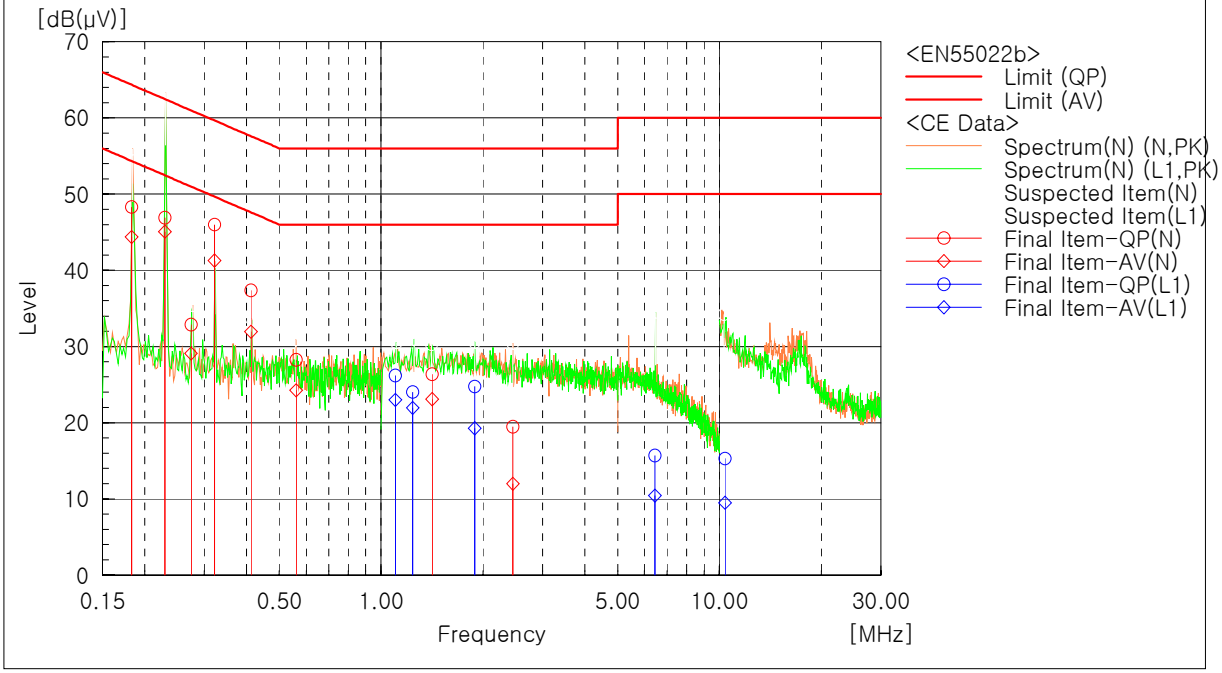
Samsung
- EMC Site -

<<Conducted Emission>>

16 March,2004 18:30
CE Data.dat

Model : VN32**
Projecte Num :
Operator : T Y JANG
OP Mode : ANALOG
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	0.18279	48.2	44.3	0.1	48.3	44.4	64.4	54.4	16.1	10.0
2	0.22939	46.8	45.0	0.1	46.9	45.1	62.5	52.5	15.6	7.4
3	0.27385	32.8	29.0	0.1	32.9	29.1	61.0	51.0	28.1	21.9
4	0.32162	45.9	41.2	0.1	46.0	41.3	59.7	49.7	13.7	8.4
5	0.41259	37.3	31.8	0.1	37.4	31.9	57.6	47.6	20.2	15.7
6	0.56072	28.1	24.2	0.1	28.2	24.3	56.0	46.0	27.8	21.8
7	1.4136	26.3	23.0	0.1	26.4	23.1	56.0	46.0	29.6	22.9
8	2.4524	19.4	11.9	0.1	19.5	12.0	56.0	46.0	36.5	34.0

--- 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	1.1009	26.1	22.9	0.1	26.2	23.0	56.0	46.0	29.8	23.0
2	1.2393	23.9	21.9	0.1	24.0	22.0	56.0	46.0	32.0	24.1
3	1.8881	24.6	19.2	0.1	24.7	19.3	56.0	46.0	31.3	26.7
4	6.4438	15.7	10.4	0.0	15.7	10.4	60.0	50.0	44.3	39.6
5	10.384	15.1	9.3	0.2	15.3	9.5	60.0	50.0	44.7	40.5

This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

3.2 Radiated Disturbances

Test Information	
Test Engineer	Tae Young, Jang
Test Date	11-Mar-04
Climate Condition	Ambient Temperature : 22℃, Relative Humidity : 51%
Test Place	Shield Room #1

Test Equipments

Equipment	Model Name	Manufacturer	Serial No.	Next Calibration Date
Test Receiver	ESCS30	R & S	100104	17/01/2004
Secetrum Analyzer	E7405A	AGILENT	US41110272	14/06/2004
RF Selector	NS4900	TOYO	0303-015	N/A
Mast Controller	HD2000	HD	HD20000902027	N/A
Bi-Log Antenna	CBL6112B	SCHAFFNER	2766	20/06/2004
Preamp	8447D	Agilent	2944A10430	25/07/2004
Test Software	EP5/RE	TOYO	Version : 2.0.860	N/A
Antenna Mast	MA240	HD	240/620	N/A
Turn Table	DS412	HD	-	N/A

Test Setup

EUT was placed on a platform of nominal size and raised 80cm above the conducting ground plane.
The rear of EUT was aligned and flushed with rear of tabletop.
Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.
The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.
See photo.

Test Result

Measurement Results	Passed
	The Measured emissions of the EUT have found to be below the specified limits.

This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

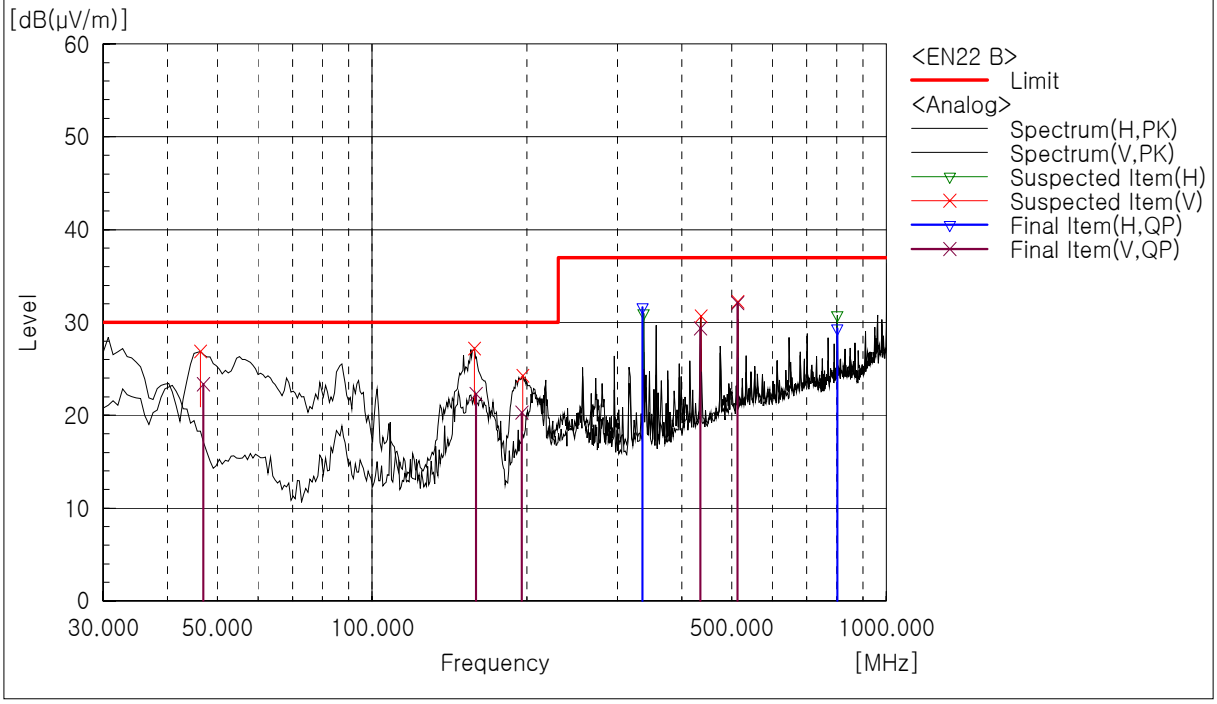
Test Graph & Data

SAMSUNG EMC LAB.

<<Radiated Emission>>

Analog.dat

Model	: VN32**	Standard	: EN 55022 Class B
Serial	: -	Project Num	:
Operator	: T Y JANG	OP Mode	: H Pattern Scroll
AC Power	:	Remark3	: Analog
Temp,Humidity	:	Remark4	:



Final Result

--- Horizontal Polarization (QP)---

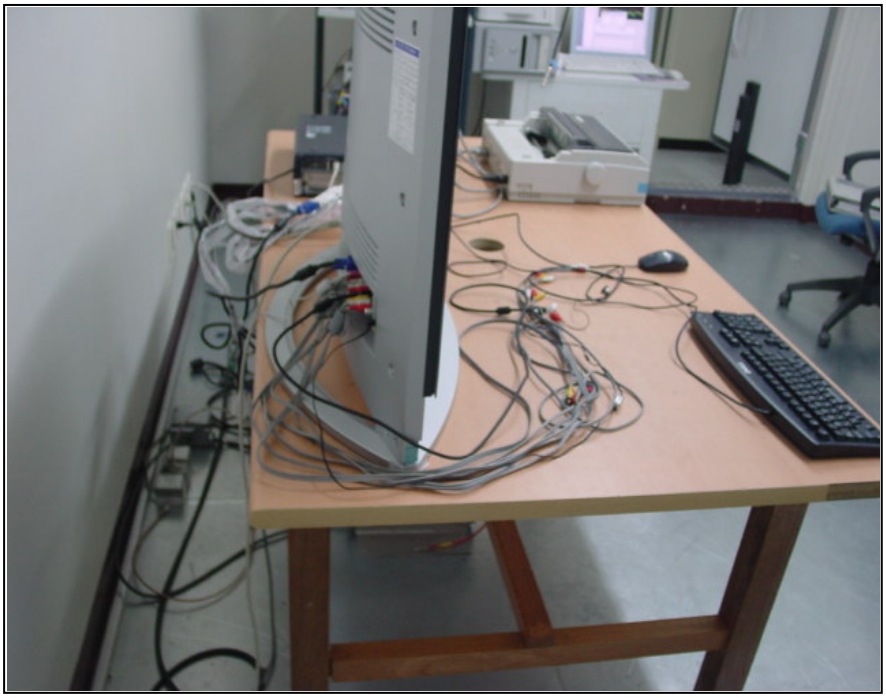
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Remark
1	335.630	42.2	-10.6	31.6	37.0	5.4	
2	801.830	33.0	-3.6	29.4	37.0	7.7	

--- Vertical Polarization (QP)---

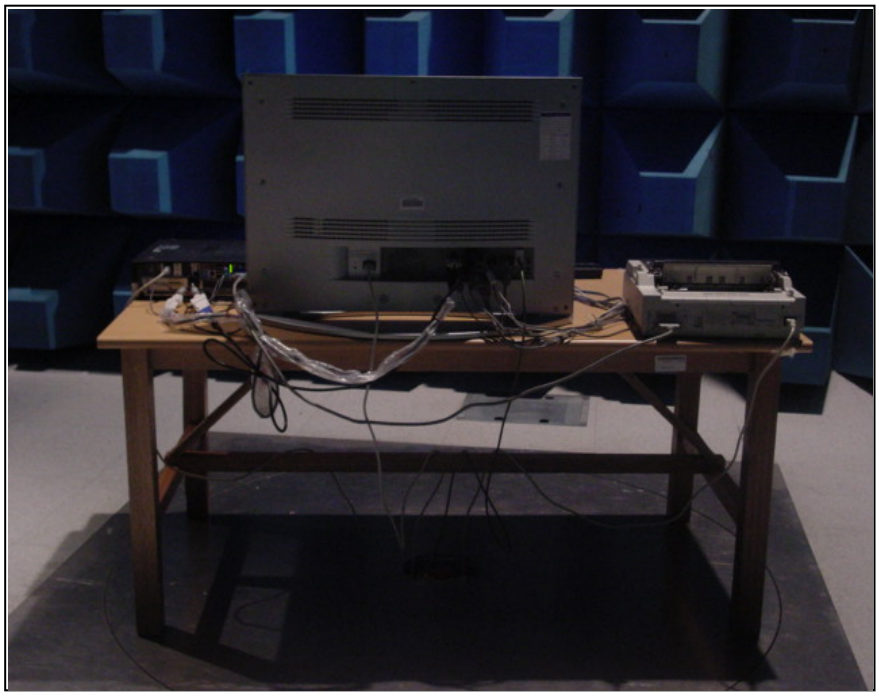
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Remark
1	46.929	41.5	-18.1	23.4	30.0	6.6	
2	159.236	39.2	-16.9	22.3	30.0	7.7	
3	195.544	37.2	-16.9	20.3	30.0	9.7	
4	434.330	37.9	-8.5	29.4	37.0	7.6	
5	513.310	38.8	-6.7	32.1	37.0	4.9	

This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

* Test Set up Photographs



This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

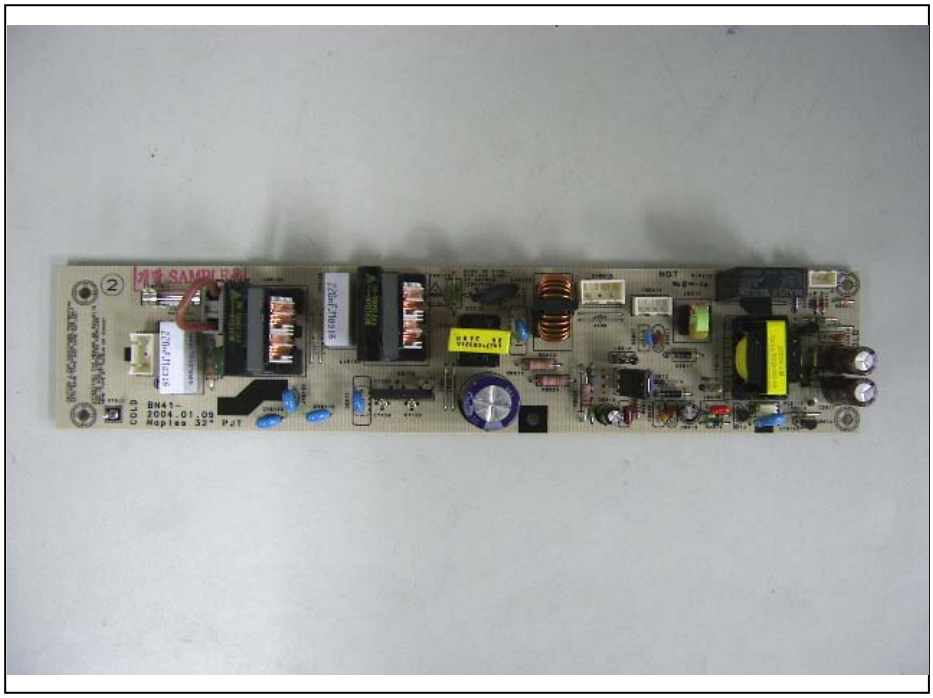


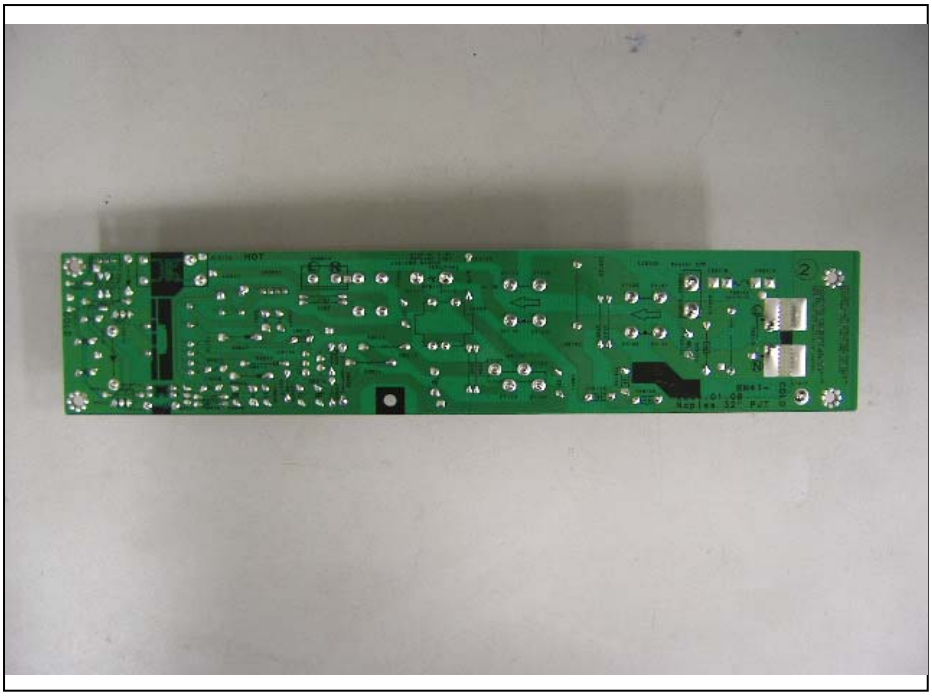
This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

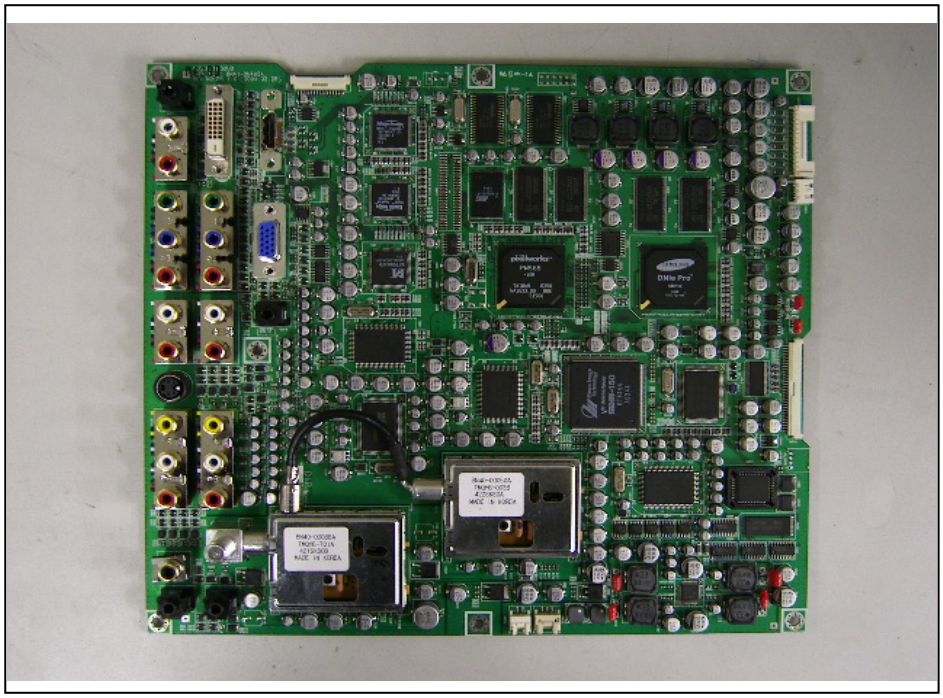
* External Photographs

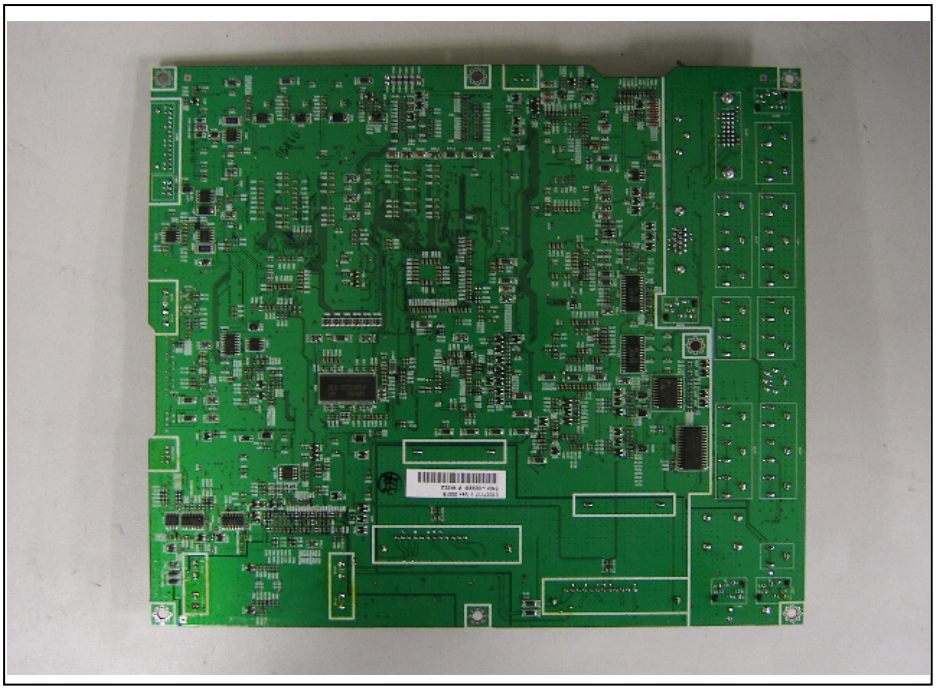
This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

* Internal Photographs





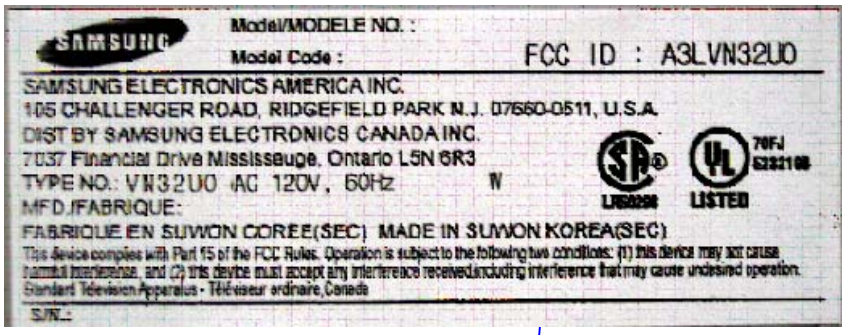
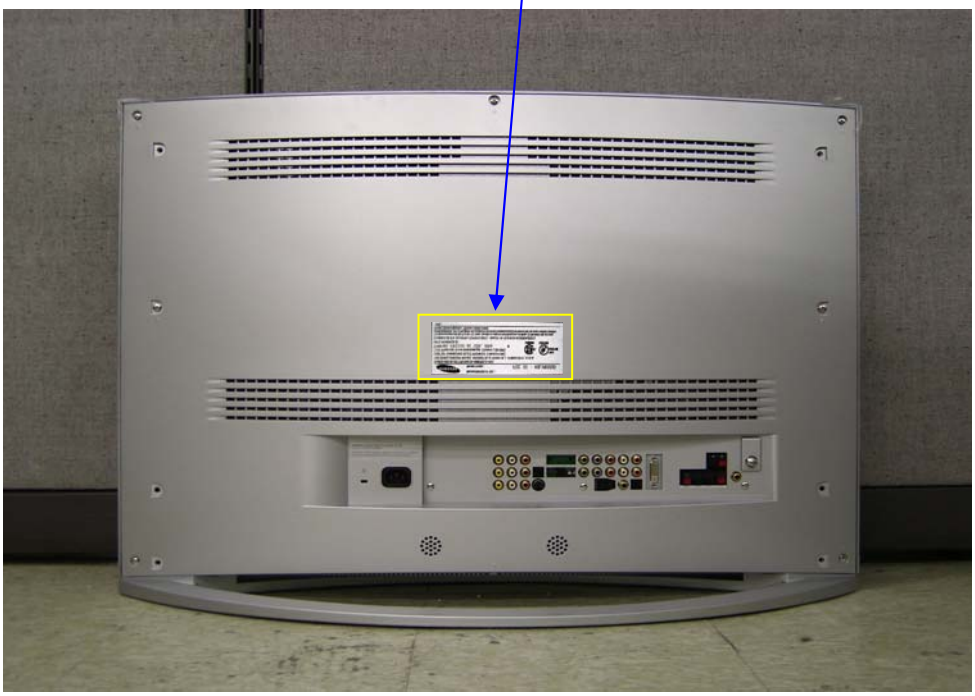




This report shall not be reproduced except in full, without the written approval of SEC EMC Testing laboratory

* Label and Label Location

- Label



- Label Location