EMC Test Report

According to FCC Part 15 Subpart B

Project No.		**LBE041911**
Equipment under Test		
	Address	416 Maetan3-Dong,Yeongtong-Gu,Suwon-City,Gyeonggi-Do, Korea,443-742
	Product Name	**TFT LCD TV**
	Model Name	**RE40UO**
	Manufacturer	SAMSUNG
	Brand Name	SAMSUNG
	FCC ID	A3LRE40UO
	Variant Model	See Page 3
Date of Test		September 23 ~ October 4 , 2004
Issued Date		October 11, 2004

	Name/Position	Signature
Tested by	Sung Wook Choi Test Engineer	S.W.Choi
Reviewed by	No Cheon, Park Manager of EMC Lab.	N. C. Park
Authorized by	Kyu Baek, Chung Chief of EMC Lab.	K. B. Chung

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	RE40UO
Applicant Address	Samsung Electronics Co. Ltd; 416 Maetan3- Dong, Yeongtong-Gu, Suwon-City, Gyeonggi-Do, Korea, 443-742
Contact Person	SEUNGCHEOL LEE
Kind of product	**TFT LCD TV**
Valiant list	None
Manufacturer	Samsung Electronics Co.Ltd;

1.2 Detail Information related Product

Specification

Resolution	1360 * 768
Horizontal Frequency	61kHz
Vertical Frequency	75Hz

Operating Frequency

1.3 Operating Mode and Condition

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

1.4 Equipment Modifications

No equipment modifications were required.

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1.5 Test Configuration

Used EUT and Peripherals

Mark	Item	Model No.	Serial No.	Manufacturer	FCC ID
A	TFT LCD TV	RE40UO	-	Samsung	A3LRE40UO
B	Personal Computer	M6050	812092FRC02028	SAMSUNG	DOC
C	Printer	ML-1750	PR1750-12V-018	SAMSUNG	A3LML-1750
D	PS/2 Keyboard	SK-81101	MY-04N729-71619-439-6033	DELL	DOC
E	PS/2 Mouse	M071KC	402008157	DELL	DOC

Used Cable Description

No.	Item	Length[m]	Shielded	Remark
1	PS/2 Mouse Cable	1.8	N	-
2	PS/2 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	S-Video Cable	1.5	N	-
8	PC Cable	1.5	N	-
9	RCA Cable	1.5	N	-
10	Line-in Cable	1.5	N	-

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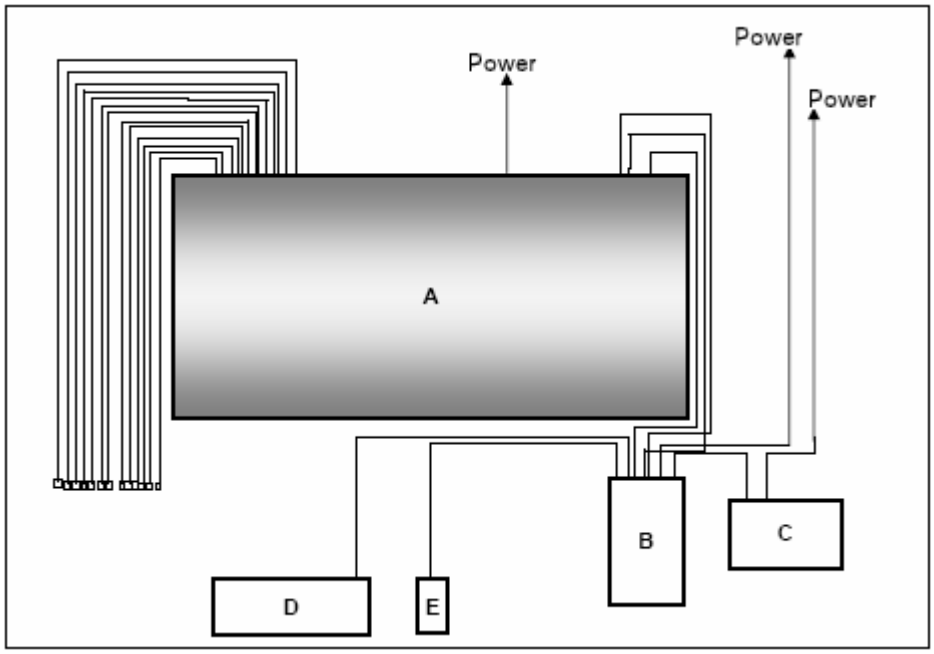
Block Diagram



1.6 Applied Standards

List

Product or Generic Standards	Basic Standards
FCC Part15 Subpart B	ANSI 63.4 : 2000

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1.7 Test Facility

General Information

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR 22, 16-1, 16-2, 11.

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 Disturbance	5.09
Disturbance voltage at the mains terminals	1.64
Disturbance Power	2.46

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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	Sung Wook Choi
	Test Date	September 24, 2004
	Climate Condition	Ambient Temperature : 23℃ Relative Humidity : 47%
	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	100262	2005-02-11	12
Test Software	EP5CE	TOYO	None	N/A	N/A
Field strength meter	ESS	R&S	844661/005	2005-01-05	12
RF Relais Matrix	PSU	R&S	861206/024	N/A	N/A
Spectrum Analyzer	ESI	R&S	100067	2005-01-09	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 No Operation errors were detected during or after the applied test.

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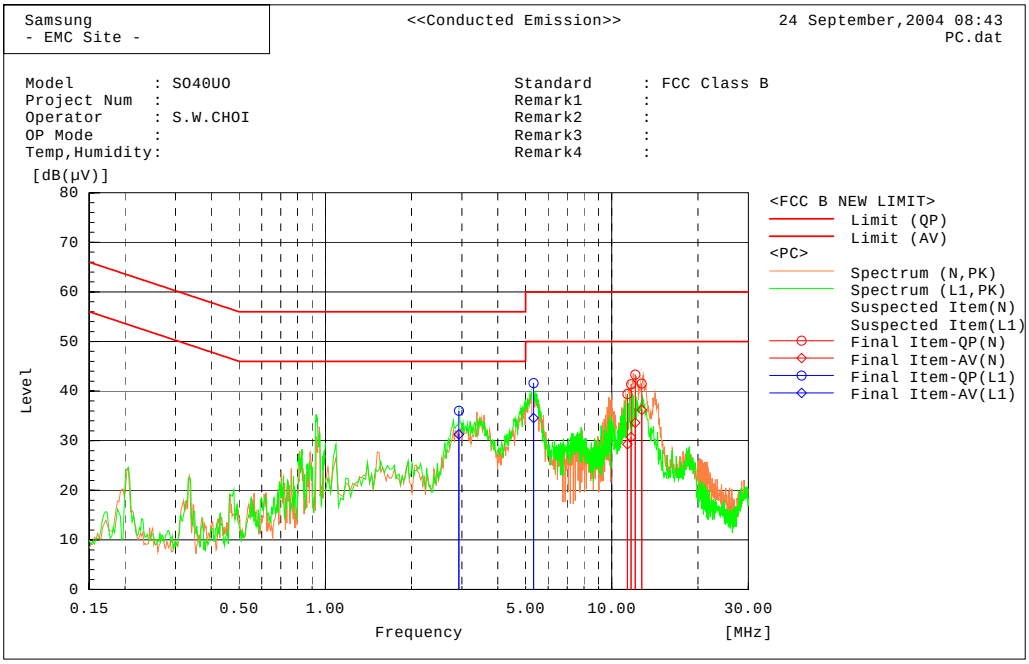
Test Data

■ Operating Mode : Analog

[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	11.3385	39.2	29.1	0.2	39.4	29.3	60.0	50.0	20.6	20.7
2	11.6925	41.1	30.4	0.3	41.4	30.7	60.0	50.0	18.6	19.3
3	12.072	43.0	33.3	0.3	43.3	33.6	60.0	50.0	16.7	16.4
4	12.7375	41.1	35.8	0.4	41.5	36.2	60.0	50.0	18.5	13.8

--- 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	2.9278	35.9	31.2	0.1	36.0	31.3	56.0	46.0	20.0	14.7
2	5.3351	41.6	34.6	0.0	41.6	34.6	60.0	50.0	18.4	15.4

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3.2 Radiated Emission

Test Information		
	Test Engineer	Sung Wook Choi
	Test Date	September 23 ~ October 4 2004
	Climate Condition	Ambient Temperature : 23℃ Relative Humidity : 46%
	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	2005-05-22	12
Mast Controller	HD2000	HD	HD20000902027	N/A	N/A
Test Software	EP5RE	TOYO	None	N/A	N/A
AMPLIFIER	310N	SONOMA	185861	2005-09-20	12
Spectrum Analyzer	E7405A	Agilent	MY42000109	2004-11-27	12
Field strength meter	ESCS30	R&S	839809/002	2005-04-28	12

EUT Test Setup

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

All ports terminated into characteristic loads.

Test Result

Measurement Results	Pass No Operation errors were detected during or after the applied test.

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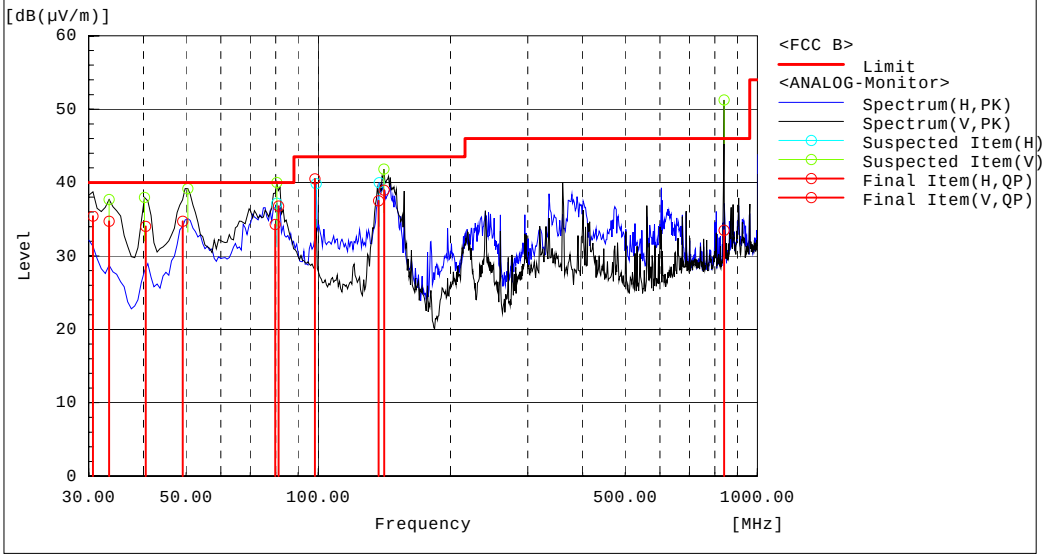
Test Data (Other Frequency)

■ Operating Mode : Analog

SAMSUNG EMC LAB. <<Radiated Emission>> ANALOG-Monitor.dat

Model Name :
Serial Num. : -
Test Enginee:
AC Power :
OP Mode :

Standard : FCC Part.15 Class B 3m
Remark 1 :
Remark 2 :



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	79.754	52.3	-18.0	34.3	40.0	5.7	
2	137.251	50.8	-13.3	37.5	43.5	6.0	
3	98.303	54.8	-14.3	40.5	43.5	3.0	

--- 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	839.190	31.5	2.0	33.5	46.0	12.5	
2	81.253	54.6	-17.8	36.8	40.0	3.2	
3	49.150	52.1	-17.4	34.7	40.0	5.3	
4	141.314	52.4	-13.4	39.0	43.5	4.6	
5	40.449	47.5	-13.5	34.0	40.0	6.0	
6	30.682	43.8	-8.4	35.4	40.0	4.6	
7	33.409	44.5	-9.8	34.7	40.0	5.3	

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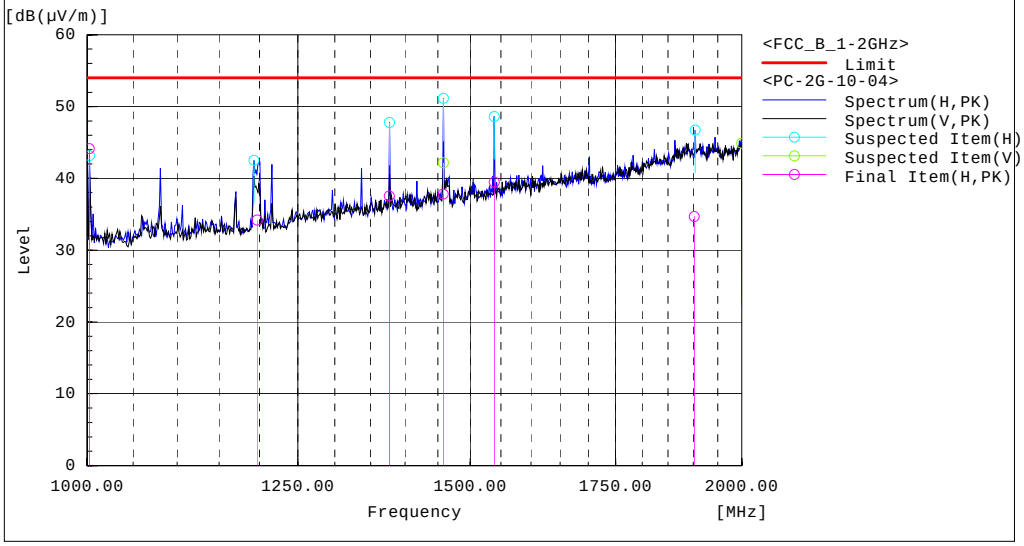
■ Operating Mode : Analog (1GHz ~ 2GHz)

SAMSUNG EMC LAB.

<<Radiated Emission>>

PC-2G-10-04.dat

Model	: SO40UO	Standard	: FCC Part.15 Class B 3m
Serial	: -	Project Num	:
Operator	: S.W.CHOI	OP Mode	:
AC Power	:	Remark3	:
Temp,Humidity		Remark4	:



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	1457.950	25.2	12.6	37.8	54.0	16.2	
2	1538.950	25.2	14.3	39.5	54.0	14.5	
3	1376.950	26.1	11.4	37.5	54.0	16.5	
4	1901.870	13.3	21.4	34.7	54.0	19.3	
5	1002.320	38.9	5.2	44.1	54.0	9.9	
6	1197.110	26.4	7.8	34.2	54.0	19.8	

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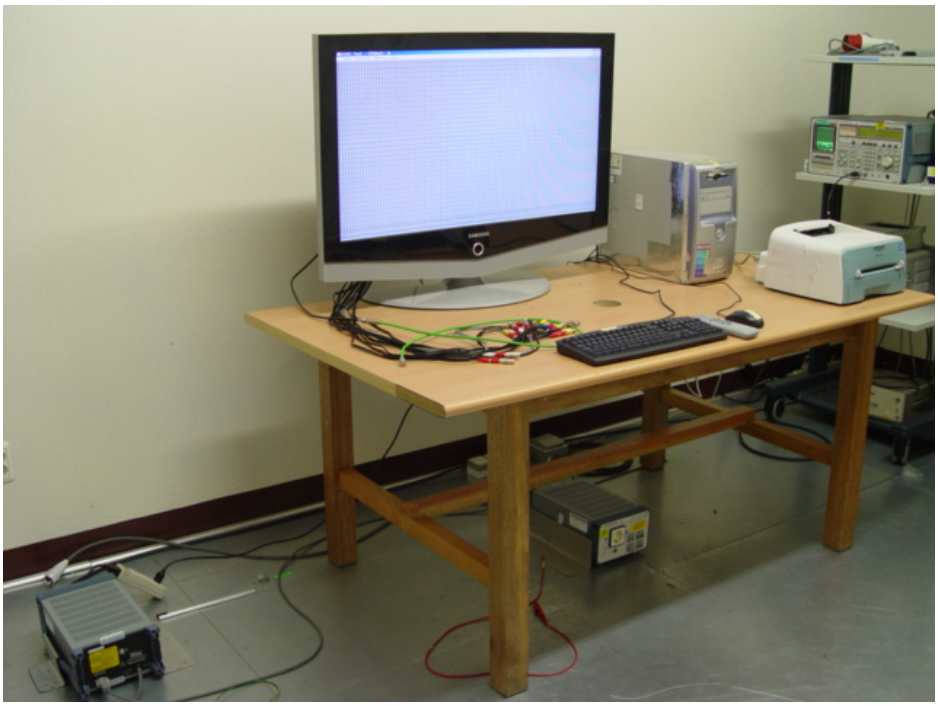
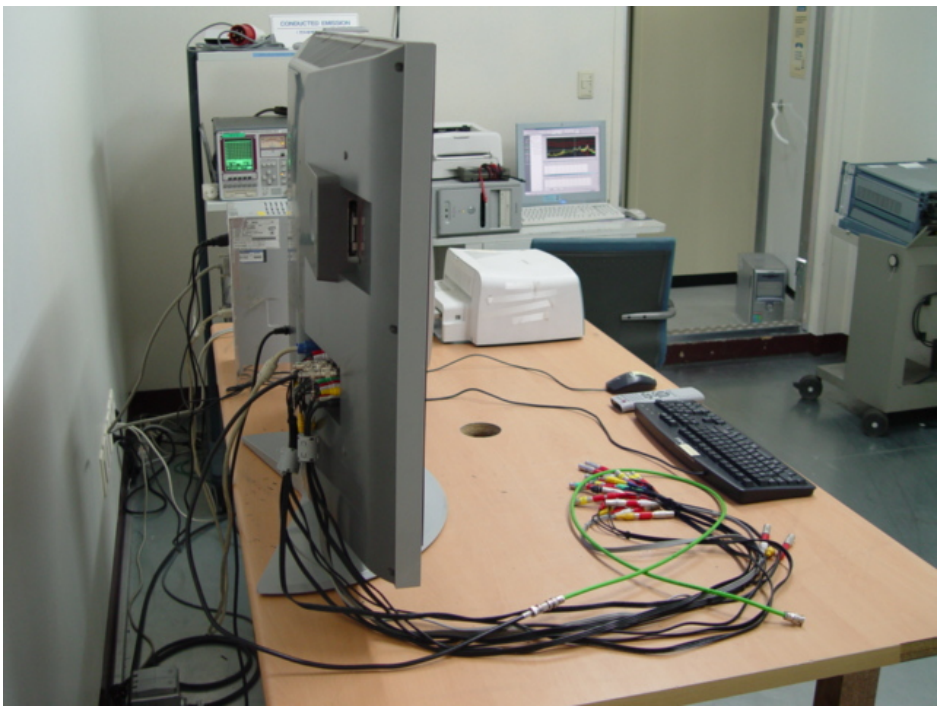
4. Appendix A

4.1 Test Photography



Picture 1. Conducted Emission (Front)



Picture 2. Conducted Emission (Rear)

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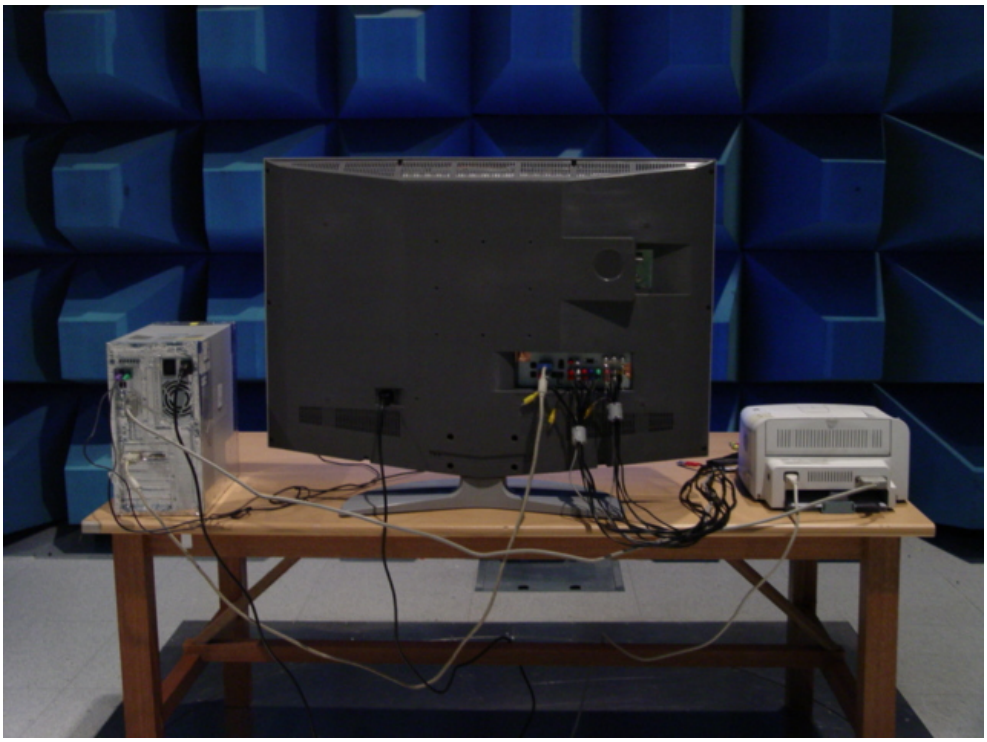
Picture 3. Radiated Emission (Front)



Picture 4. Radiated Emission (Rear)

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4.2 EUT Photography

Picture 5. EUT (Front)

Picture 6. EUT (Rear)

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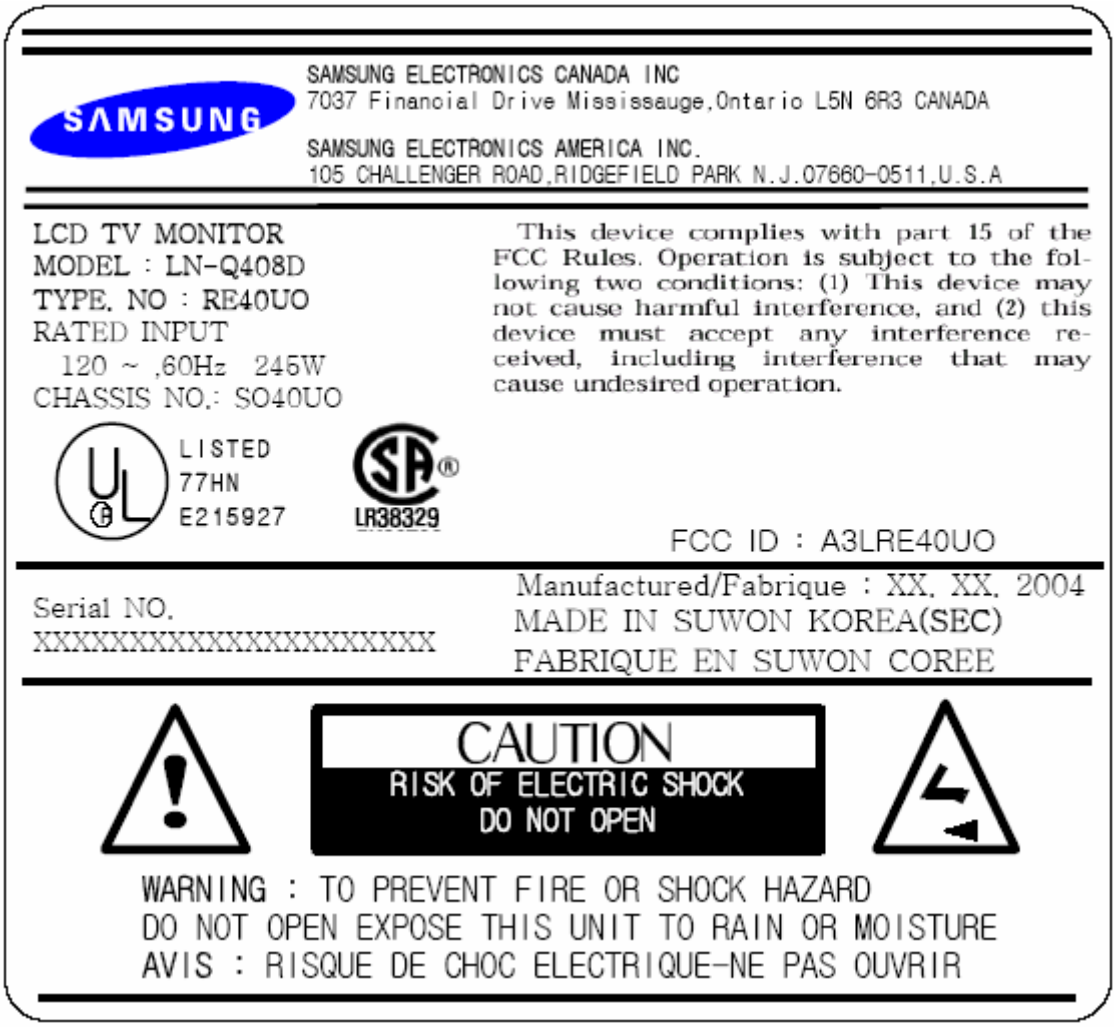

Pic. 7 EUT (Label)

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