

EMC TEST REPORT

Project No. : LBE040881

Product : **PDP Monitor**

Model No. : **NT63P3**

Date of test : April 20 ~ 21, 2004

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Tested by:

S. W. Choi

Sung Wook, Choi / Test Engineer

Reviewed by:

N. C. Park

No Cheon, PARK / Manager of EMC Lab.

Authorized by:

K. B. Chung

Kyu Baek, CHUNG / Chief of EMC Lab.

SAMSUNG ELECTRONICS Co., Ltd.
EMC Test Laboratory

416 Maetan-3 Dong, Yeongtong-Gu, Suwon-Si, Kyeonggi-Do, Korea, 443-742

Tel. : 82-31-200-2185 Fax. : 82-31-200-2189

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1. Introduction & Summary

1.1 Description of the EUT

Applicant	SAMSUNG ELECTRONICS Co., Ltd.
Project Number	LBE040881
Equipment Under Test	PDP Monitor
Trade Name	SAMSUNG
Model Number	NT63P3
Variant Model	-
Operating Frequency	60Hz
FCC ID Number	A3LPPM63H3Q
Mains input	120V

1.2 Test facility

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

The 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 (MRA) for the above test item(s) and test method(s).

Measured in Semi-anechoic chamber #1 that is FCC Registration Number 98856.

1.3 Test equipment

Description	Model	Manufacturer	Serial No.	Applied
TEST RECEIVER	ESS	R & S	844861/005	o
RF RELAIS MATRIX	PSU	R & S	861206/024	o
LISN	ESH3-Z5	R & S	847265/028	o
TEST SOFTWARE	EP5CE	TOYO	-	o
TEST RECEIVER	ESCS30	R & S	100104	o
SPECTRUM ANALYZER	E7405A	Agilent	US41110272	o
BI-LOG ANTENNA	CBL6112B	SCHAFFNER	2766	o
RF SELECTOR	NS4900	TOYO	0303-015	o
MAST CONTROLLER	HD2000	HD	HD2000090202 7	o
TEST SOFTWARE	EP5RE	TOYO	-	o
Turn Table	DS412	HD	-	N/A
Antenna Mast	MA240	HD	240/620	N/A
Preamplifier	310	SONOMA Instrument	185821	o

2. Test Set-up

2.1 Test mode

The EUT was tested in the following operating modes for the tests mention in this report:

Description of Testing operating mode & Tested Resolution

Operating Mode	Resolutions	Refresh rates	Colors
"H" Pattern display	1366x768	Horizontal F.: 48.2kHz Vertical F. : 60Hz	32bits

Measured each about 2 input(PC VIDEO INPUT mode & Digital Video Interface)of EUT. Further details of cabling and configuration are shown in the test system configuration. 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.

2.2 Justification

The system was configured for testing in typical fashion use. Cable were attached to each of the available I/O Ports.

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

2.3 Test equipment setup

The explanation of measuring equipment setup when respective function is used in any frequency band is as following:

Frequency Band [MHz]	Equipment	Detector function	Resolution Bandwidth	Video Bandwidth
0.15 to 30	EMI Test receiver	Quasi-Peak	9kHz	-
30 to 1000	Spectrum analyzer	Peak	100kHz	1MHz
	EMI Test receiver	Quasi-Peak	120kHz	-

2.4 Tested System Details

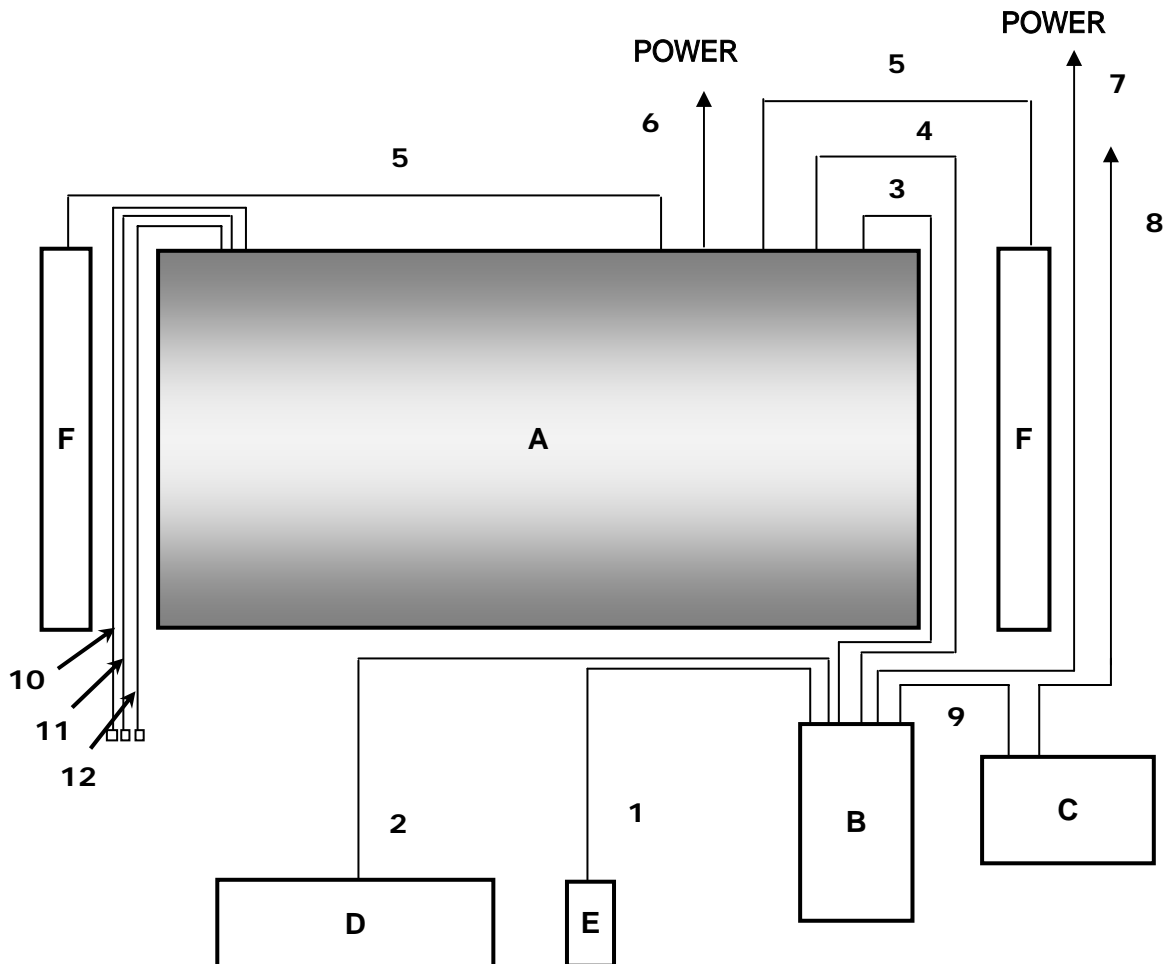
1) Configuration of EUT and peripherals

Mark	Item	Model No.	Serial No.	Manufacturer	Remark
A	PDP Monitor	NT63P3	-	Samsung	EUT
B	Personal Computer	MP22	D66892KTA00010	Samsung	-
C	Printer	LQ-580H	CG2Y014504	Epson	-
D	PS/2 Keyboard	SEM-PT35	9907SPXAA	Samsung	-
E	USB Mouse	P801	1038598	Samsung	-
F	Speaker	-	-	Samsung	-

2) Used Cable Description

No.	Item	Length[m]	Shielded(Y/N)	Remark
1	PS/2 Mouse Cable	1.8	N	
2	PS/2 Keyboard Cable	1.6	N	
3	Video Cable(Analog)	1.5	Y	
4	Video Cable(Digital)	1.5	Y	
5	Speaker Cable	1.2	N	
6	AC Power Cable(Monitor)	1.8	N	
7	AC Power Cable(PC)	1.8	N	
8	AC Power Cable(Printer)	1.8	N	
9	Printer Cable	1.5	Y	
10	A/V In Cable	1.2	N	
11	S-Video In Cable	1.2	N	
12	Component Cable	1.2	N	

2.5 System Block Diagram of Test Configuration



2.6 Test rule and Procedure

FCC Rule Part 15, Subpart B : Unintentional Radiators

Test Procedure : ANSI C63.4-1992

2.7 Test Summary

Test item	Test Procedure	Result
AC POWERLINE CONDUCTED EMISSION	ANSI C63.4-1992	Pass
RADIATED EMISSION	ANSI C63.4-1992	Pass

* N/A : Test not applicable

3. Test Results

3.1 AC POWERLINE CONDUCTED EMISSION MEASUREMENT

3.1.1 Test Procedure

Configure the EUT System in accordance with ANSI C63.4-1992 section 7 and 12.2.

Connect the EUT's AC line cord to the EUT port of LISN.

All input terminals are terminated in the proper impedance.

The output ports are connected to the cable provided with the device and the ending port are terminated in the proper impedance.

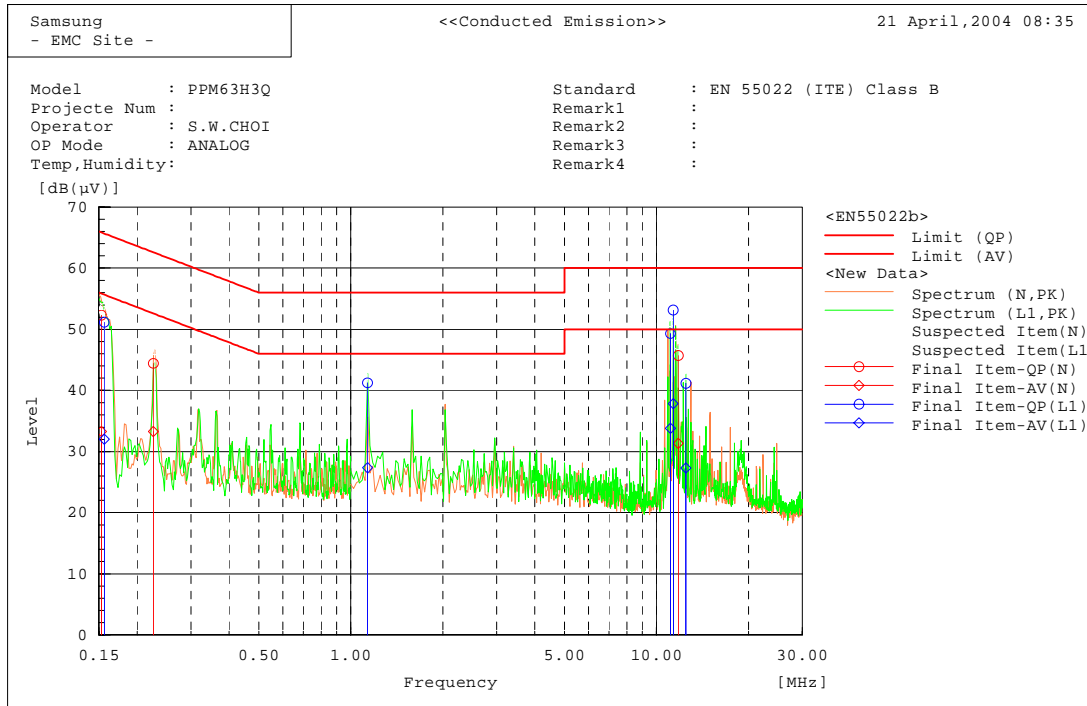
Using a calibrated coaxial cable, the TEST RECEIVER is connected to the measuring port of the LISN for EUT. To find out an EUT condition procedure the maximum emission, the position of cables, EUT operations mode are checked under normal usage of EUT.

Then, the emission are scanned from 0.15MHz to 30MHz relative to the limit are recorded.

3.1.2 Test Results

*** Operating Mode : PC Video Input**

LISN Mode : Live & Neutral



Final Result

--- N Phase ---

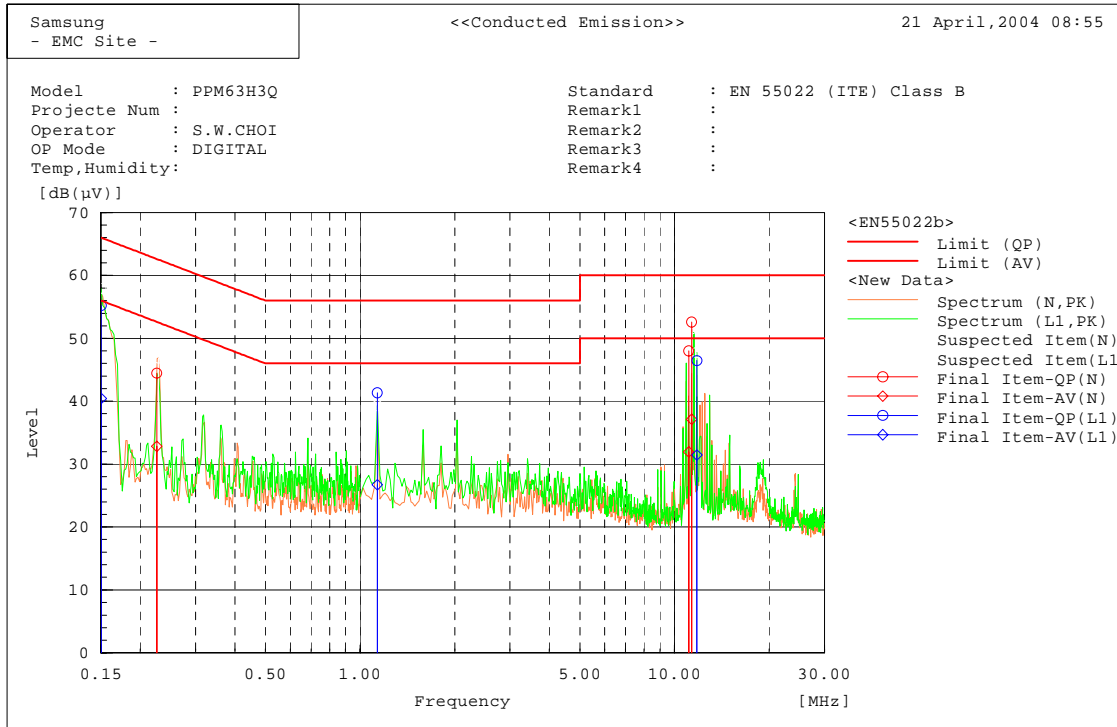
No.	Frequency [MHz]	Reading		c.f [dB]	Result		Limit		Margin	
		QP [dB(μV)]	AV [dB(μV)]		QP [dB(μV)]	AV [dB(μV)]	QP [dB(μV)]	AV [dB(μV)]	QP [dB]	AV [dB]
1	0.15285	52.2	33.2	0.1	52.3	33.3	65.8	55.8	13.5	22.5
2	11.799	45.4	31.0	0.3	45.7	31.3	60.0	50.0	14.3	18.7
3	0.22616	44.3	33.2	0.1	44.4	33.3	62.6	52.6	18.2	19.3

--- L1 Phase ---

No.	Frequency [MHz]	Reading		c.f [dB]	Result		Limit		Margin	
		QP [dB(μV)]	AV [dB(μV)]		QP [dB(μV)]	AV [dB(μV)]	QP [dB(μV)]	AV [dB(μV)]	QP [dB]	AV [dB]
1	11.345	52.8	37.5	0.3	53.1	37.8	60.0	50.0	6.9	12.2
2	11.118	49.0	33.5	0.3	49.3	33.8	60.0	50.0	10.7	16.2
3	0.15612	51.0	31.9	0.1	51.1	32.0	65.7	55.7	14.6	23.7
4	1.1352	41.2	27.2	0.1	41.3	27.3	56.0	46.0	14.8	18.7
5	12.4795	40.6	26.7	0.6	41.2	27.3	60.0	50.0	18.9	22.7

* Operating Mode : Digital Video Interface

LISN Mode : Live & Neutral



Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin
		QP [dB(µV)]	AV [dB(µV)]		QP [dB]	AV [dB(µV)]	QP [dB(µV)]	AV [dB(µV)]		QP [dB]
1	0.22574	44.4	32.7	0.1	44.5	32.8	62.6	52.6	18.1	19.8
2	11.1185	47.8	31.8	0.2	48.0	32.0	60.0	50.0	12.0	18.1
3	11.346	52.3	36.9	0.3	52.6	37.2	60.0	50.0	7.4	12.9

--- L1 Phase ---

No.	Frequency [MHz]	Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin
		QP [dB(µV)]	AV [dB(µV)]		QP [dB]	AV [dB(µV)]	QP [dB(µV)]	AV [dB(µV)]		QP [dB]
1	0.15038	55.1	40.4	0.1	55.2	40.5	66.0	56.0	10.8	15.6
2	1.1337	41.3	26.6	0.1	41.4	26.7	56.0	46.0	14.6	19.3
3	11.799	46.1	31.1	0.4	46.5	31.5	60.0	50.0	13.5	18.6

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 Test Procedure

Configure the EUT System in accordance with ANSI C63.4-1992 section 8 and 12.2.

Power cords for the EUT System are connected to the receptacle on the ground plane.

The output ports are connected to the cable provided with the device and the ending port of the cable are terminated in the proper impedance.

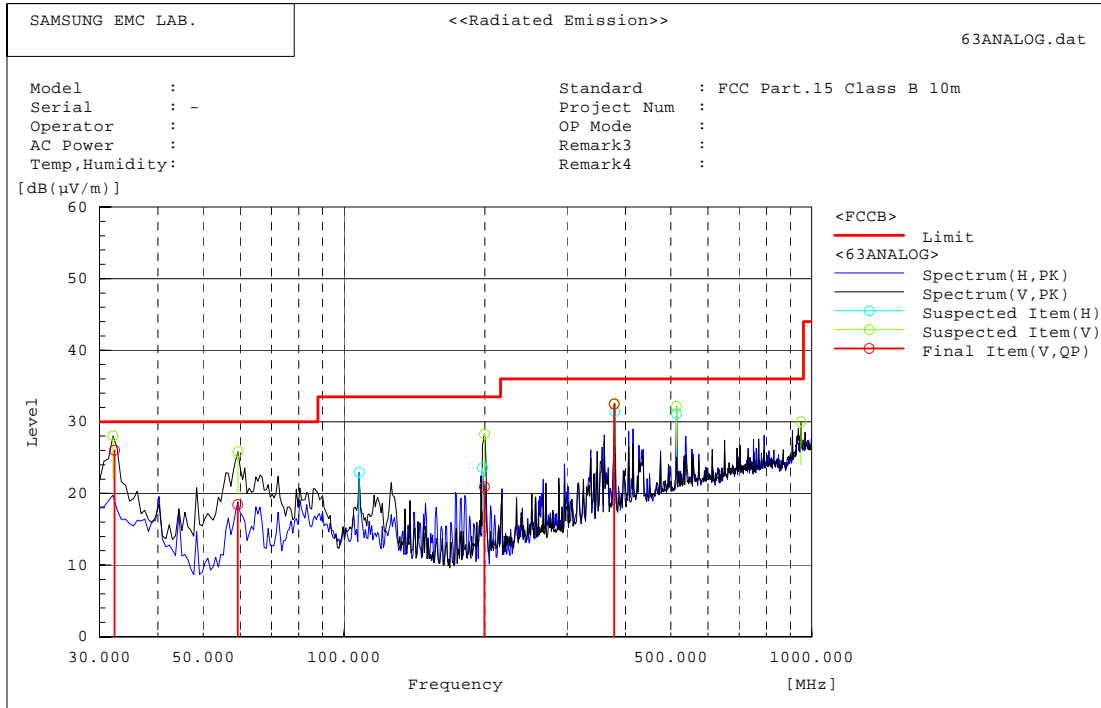
To find out the maximum emission, change the position of the cable, and the EUT operation mode under normal usage of the EUT.

The spectrum analyzer is scanned from 30MHz to 1,000MHz.

And, detecting wave mode is peak mode, Graph's result in worst arrangement state of EUT. Spectrum analyzer result did horizontal and vertical polarization maxhold.

3.2.2 Test Results

*** Operating Mode : PC Video Input**

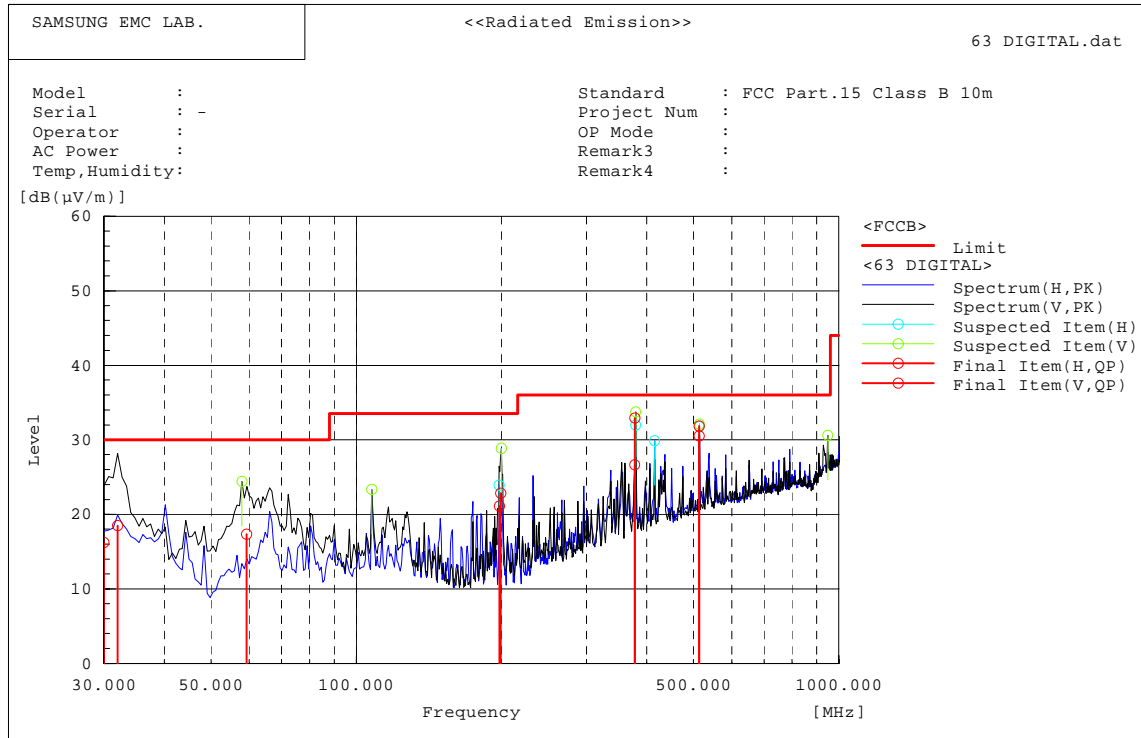


Final Result

--- 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	199.506	37.8	-16.9	20.9	33.5	12.6	
2	32.288	36.5	-10.5	26.0	30.0	4.0	
3	59.234	40.2	-21.7	18.5	30.0	11.5	
4	378.000	42.1	-9.6	32.5	36.0	3.5	

*** Operating Mode : Digital Video Interface**



Final Result

--- Horizontal Polarization (QP)---

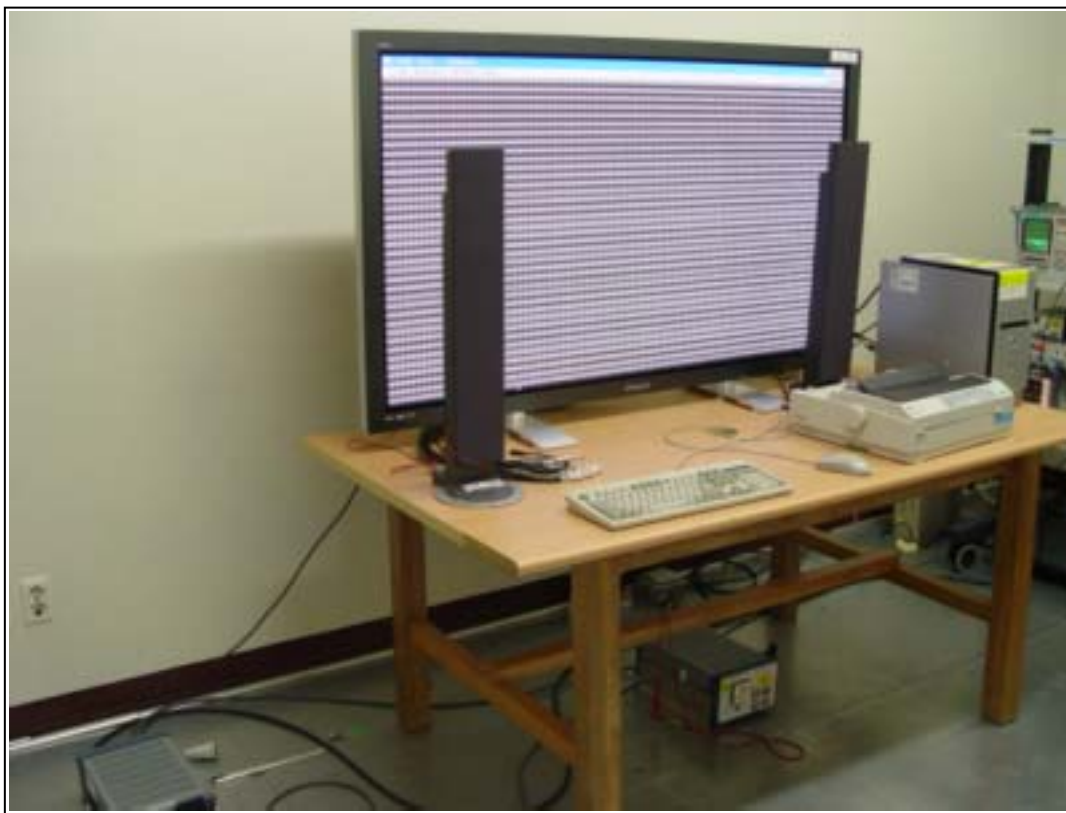
No.	Frequency [MHz]	Reading [dB(µV)]	c.f [dB(1/m)]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]	Remark
1	377.460	36.3	-9.6	26.7	36.0	9.3	
2	513.400	37.2	-6.7	30.5	36.0	5.5	
3	198.001	38.0	-16.9	21.1	33.5	12.4	

--- 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	199.351	39.8	-16.9	22.9	33.5	10.7	
2	378.020	42.5	-9.6	32.9	36.0	3.1	
3	513.410	38.6	-6.7	31.9	36.0	4.1	
4	59.234	39.0	-21.7	17.3	30.0	12.7	
5	30.000	25.4	-9.2	16.2	30.0	13.8	
6	32.045	28.9	-10.4	18.5	30.0	11.5	

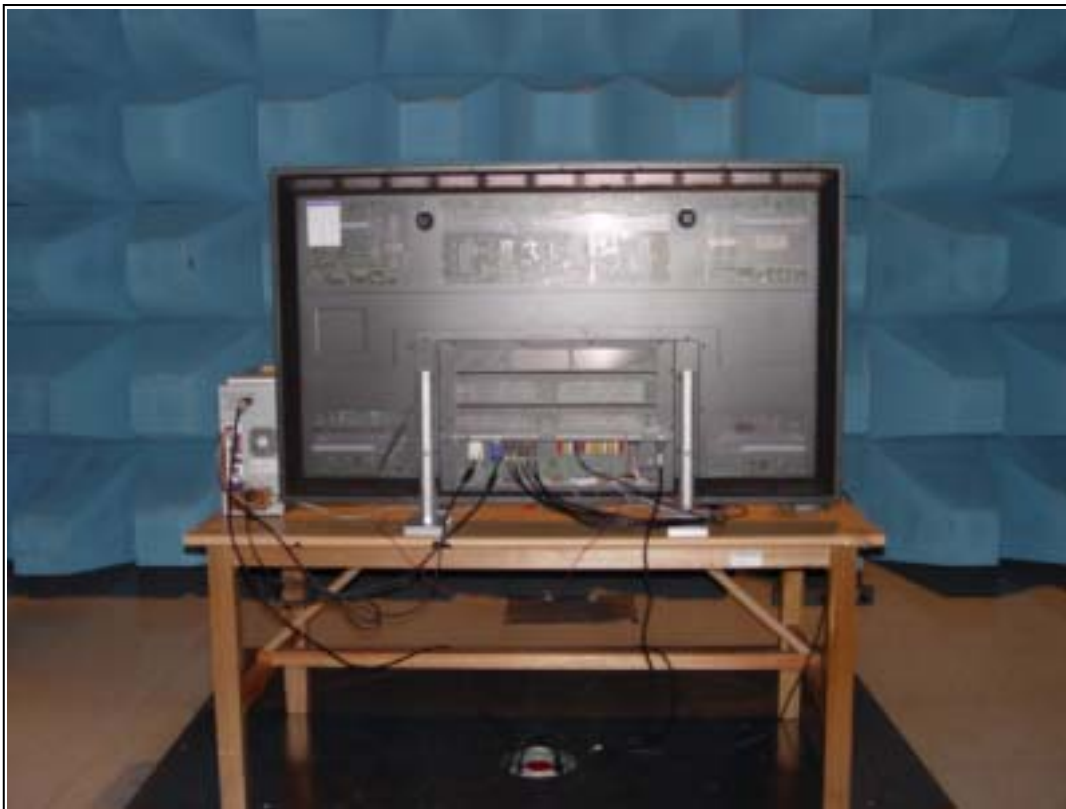
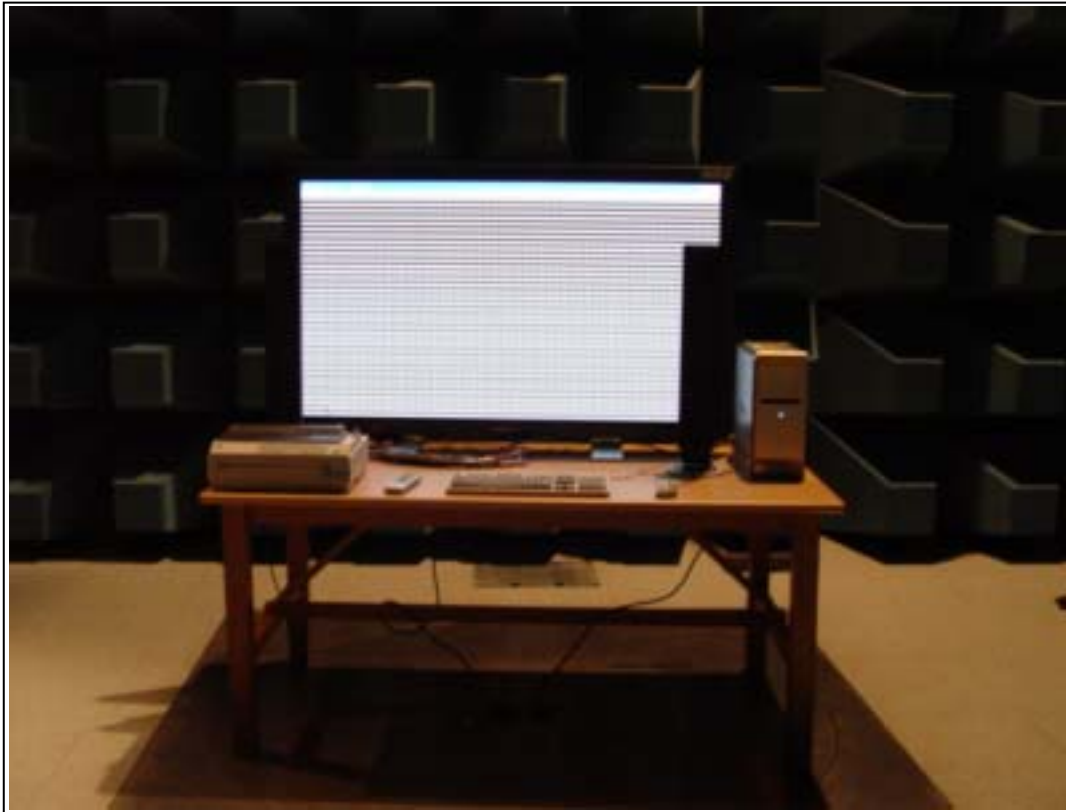
Test Set up Photographs

[AC POWERLINE CONDUCTED EMISSION MEASUREMENT]




Test Set up Photographs

[RADIATED EMISSION MEASUREMENT]



EUT Photographs


[Label]


 SAMSUNG ELECTRONICS CANADA INC
7037 Financial Drive Mississauga, Ontario L5N 6R3 CANADA

SAMSUNG ELECTRONICS AMERICA INC.
105 CHALLENGER ROAD, RIDGEFIELD PARK N.J. 07860-0511, U.S.A

PLASMA DISPLAY PANEL
MODEL : PPM63H3Q
TYPE. NO : NT63P3
RATED INPUT
AC120 ~ ,60Hz 630W
CHASSIS NO.: D63B

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



 LISTED
77HM
E215927

 SA®
LR98329

FCC ID : A3LPPM63H3Q

Serial NO. XXXXXXXXXXXXXXXXXXXX

Manufactured/Fabrique : XX. XX. 2004
MADE IN SUWON KOREA(SBC)
FABRIQUE EN SUWON COREE

 **CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN 

WARNING : TO PREVENT FIRE OR SHOCK HAZARD
DO NOT OPEN EXPOSE THIS UNIT TO RAIN OR MOISTURE
AVIS : RISQUE DE CHOC ELECTRIQUE-NE PAS OUVRIR

EUT Photographs

