

EMC TEST REPORT

Project No. : LBE030086

Product : **PDP TV MONITOR**

Model No. : **AX63****

Date of test: February 08 - 13, 2003

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Table of Contents

1. Introduction & Summary

- 1.1 Description of the EUT
- 1.2 Test facility
- 1.3 Test equipment

2. Test Set-up

- 2.1 Test mode
- 2.2 Justification
- 2.3 Test equipment setup
- 2.4 Tested System Details
- 2.5 System Block Diagram of Test Configuration
- 2.6 Test rule and Procedure
- 2.7 Test Summary

3. Test Results

- 3.1 AC POWERLINE CONDUCTED EMISSION MEASUREMENT
- 3.2 RADIATED EMISSION MEASUREMENT

1. Introduction & Summary

1.1 Description of the EUT

Applicant	SAMSUNG ELECTRONICS Co., Ltd.
Project Number	LBE030086
Equipment Under Test	PDP TV MONITOR
Trade Name	SAMSUNG ELECTRONICS Co., Ltd.
Model Number	AX63**
FCC ID Number	A3LHPN6339
Mains input	120V 60Hz 590W

1.2 Test facility

The EMI/EMS measurement facilities used to collect the tested data are located at 416 Maetan 3 Dong, Paldal-Ku, Suwon City, Kyungki 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

Equipment	Model No.	Serial No.	Makers	Last calibration and Interval
Spectrum analyzer	8566B	3340A21744	H.P	02/04/18, 12Months
	Firmware versions : Rev.29.9.86			
Quasi-peak adapter	85650A	2521A00687	H.P	02/10/09, 12Months
RF Preselector	85685A	2602A00224	H.P	02/10/09, 12Months
Field strength meter	ESCS30	839809/002	R & S	02/06/27, 12Months
	Firmware versions : Main 1.08, OTP 02.01, GRA 02.03			
Field strength meter	ESI 26	832692/002	R & S	02/12/22, 12Months
	Firmware versions : BIOS 3.3, Analyzer 2.09.2			
Field strength meter	ESVP	860688/015	R & S	02/02/28, 12Months
L.I.S.N	ESH3-Z5	847265/028	R & S	02/10/09, 12Months
Pattern Generator	PM5418-TDSI	LO627116	PHILIPS	02/12/07, 12Months
Pattern Generator	408NPS	1110117	LEADER	02/02/18, 12Months
Matching PAD	RAM	-	R & S	-
Double Ridged Guide Antenna	3115	9505-4441	EMCO	02/11/13, 12Months
Bi-Log Antenna	CBL6112B	2767	SCHAFFNER	02/04/26, 12Months

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	1280 * 1024	Horizontal F.: 63.981kHz Vertical F. : 60.020Hz	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
0.45 to 30	EMI Test receiver	Quasi-Peak	9kHz	-
30 to 1000	Spectrum analyzer	Peak	100kHz	1MHz
	EMI Test receiver	Quasi-Peak	120kHz	-
Above 1000	EMI Test receiver	Peak	1MHz	1MHz

2.4 Tested System Details

1) Configuration of EUT and peripherals

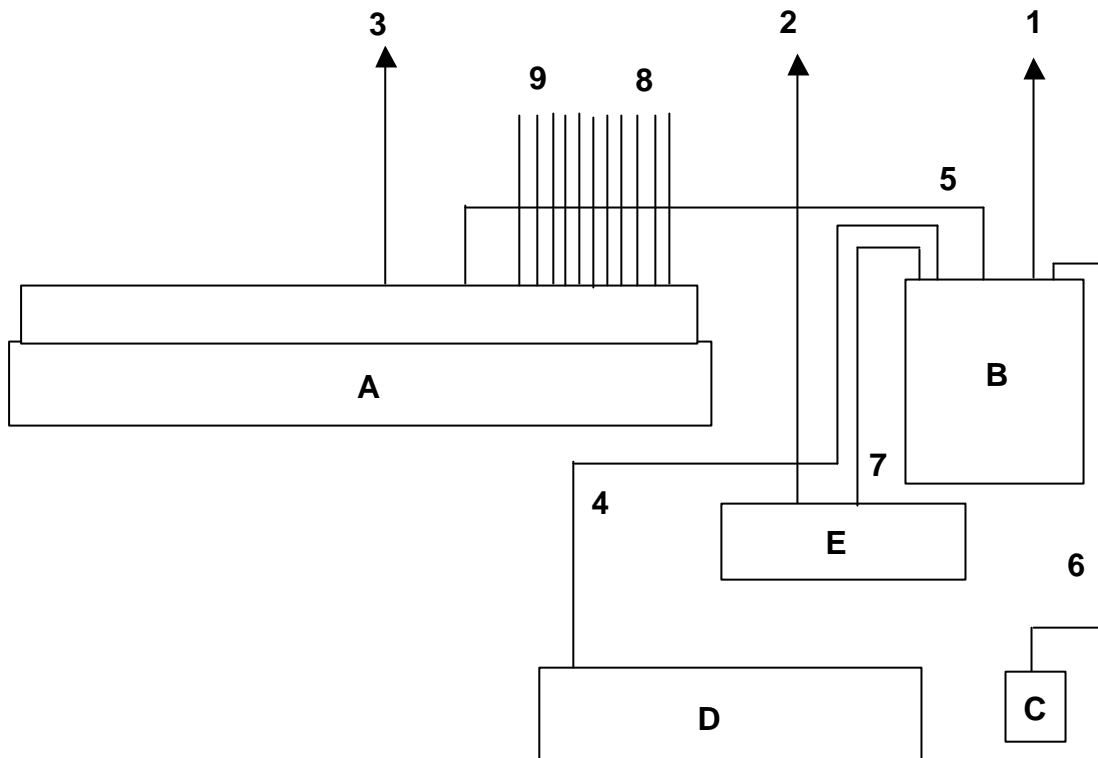
Mark	Item	Model No.	Serial No.	Manufacturer	FCC ID
A	PDP TV MONITOR	AX63**	-	Samsung	
B	Personal Computer	M6050	812092FRC02822	Samsung	
C	PS/2 Mouse	MUS9J	3872A177	Samsung	
D	PS/2 Keyboard	SEM-A17K	04MW-0007140	Samsung	
E	Inkjet Printer	LQ-580H	CG2Y014537	EPSON	

* DOC : FCC Declaration of Conformity

2) Used Cable Description

No.	Item	Length[m]	Shielded(Y/N)	Remark
1	AC Power cable	1.9	N	
2	AC Power cable	1.9	N	
3	AC Power cable	1.5	N	
4	Keyboard Cable	1.45	N	
5	Monitor cable	2	Y	Analog & Digital
6	Mouse Cable	1.8	N	
7	Printer Cable	1.5	Y	From Printer to PC LPT1
8	S-Video1,2 Cable	2	Y	
9	Audio/Video Cable	2	Y	RCA Cable

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.

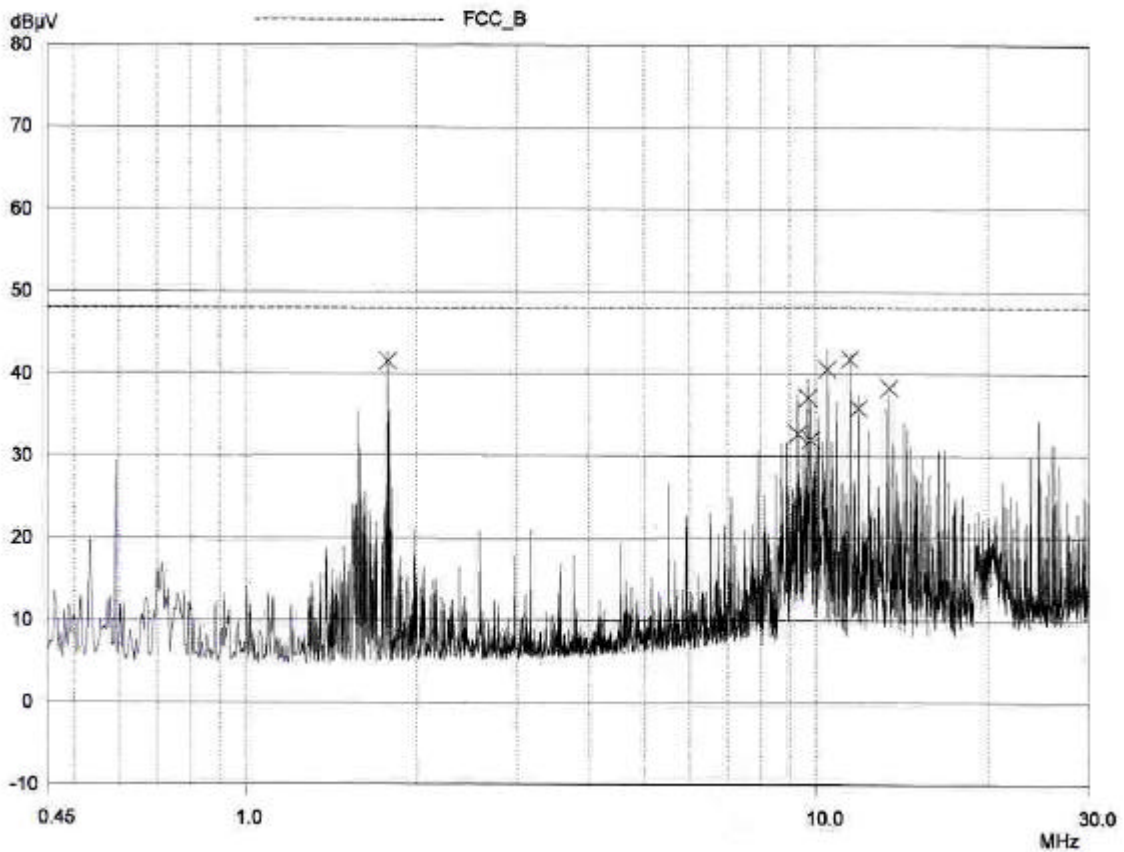
Then, the emission are scanned from 0.45MHz to 30MHz relative to the limit are recorded.

3.1.2 Test Results

EUT Mode : PC VIDEO INPUT mode

Scan Settings		(1 Range)			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
450kHz	30MHz	3.9063kHz	9kHz	PK	50µsec	10 dB	OFF	60dB

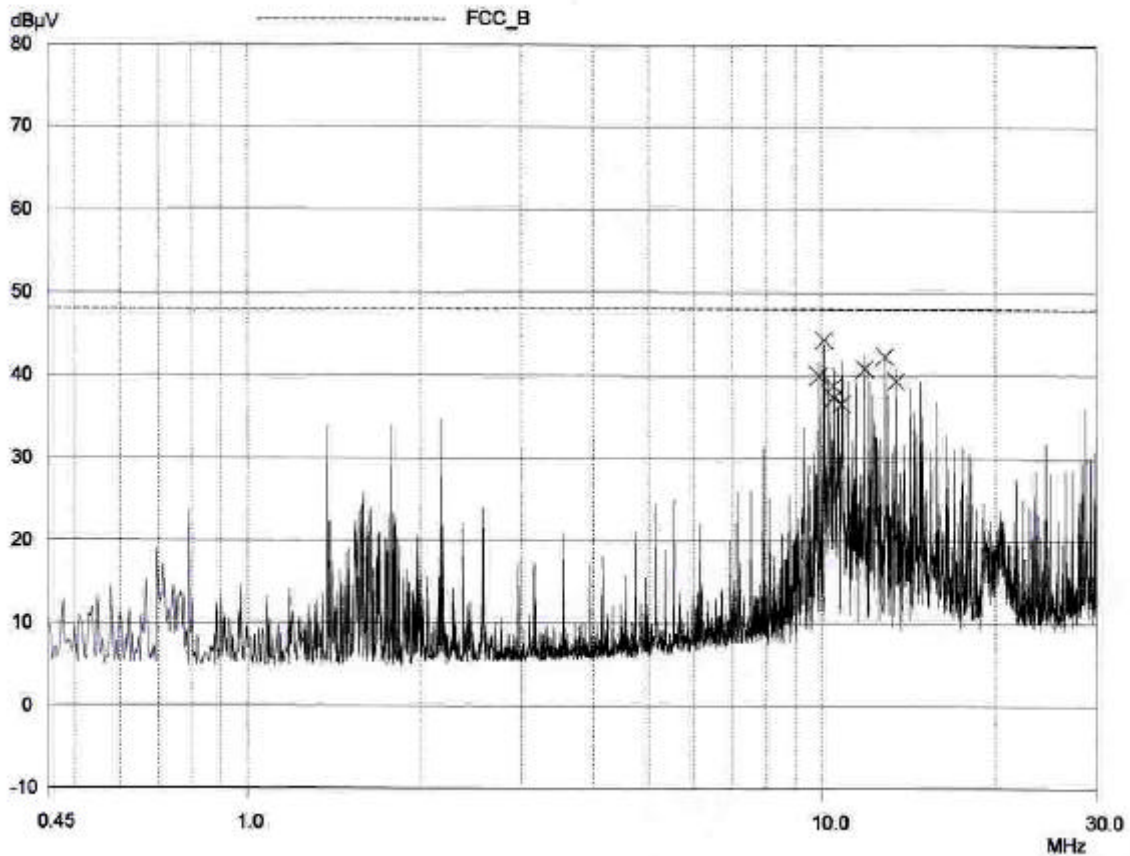
Final Measurement:	Detector:	X QP
	Meas Time:	500msec
	Peaks:	8
	Acc Margin:	30 dB



EUT Mode : PC VIDEO INPUT mode

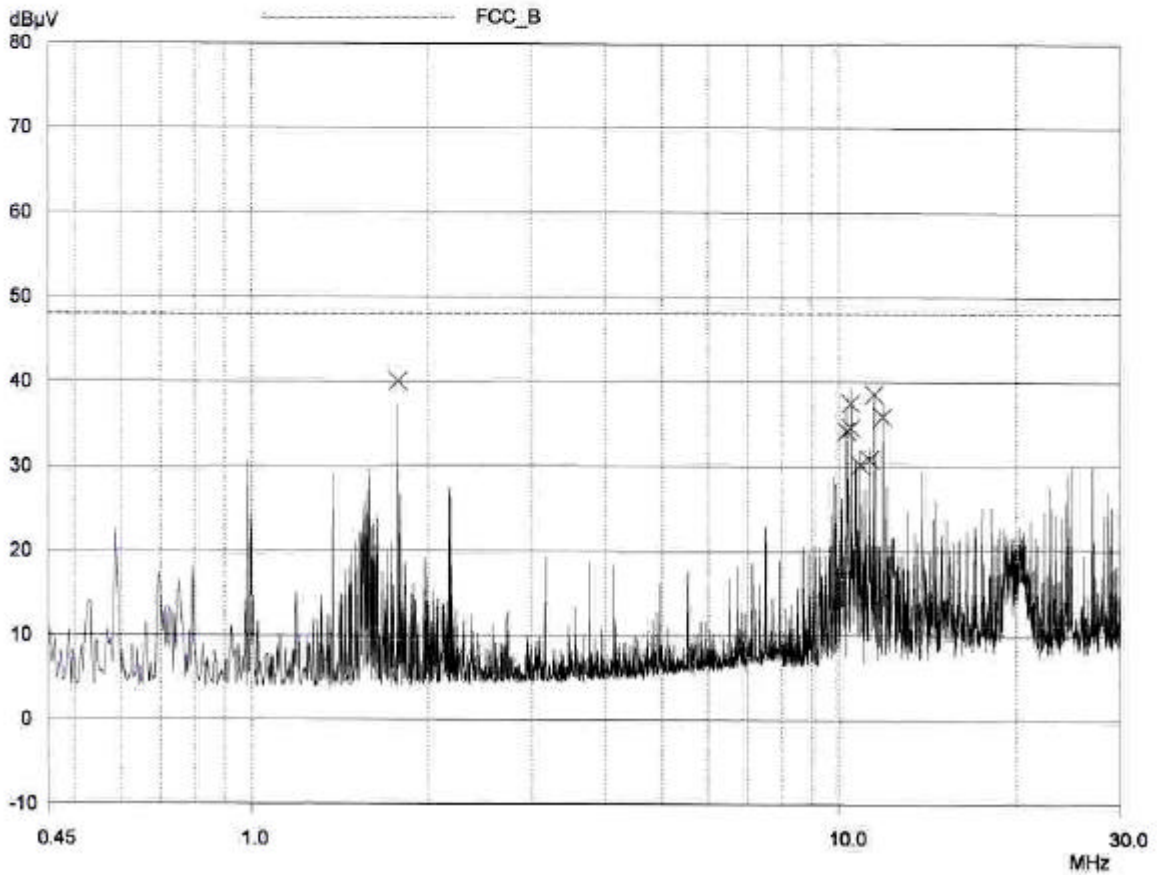
Scan Settings		(1 Range) Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
450kHz	30MHz	3.9063kHz	9kHz	PK	50µsec	10 dB	OFF	60dB

Final Measurement:	Detector:	X QP
	Meas Time:	500msec
	Peaks:	8
	Acc Margin:	30 dB



EUT Mode : DVI (Digital Video Interface) mode

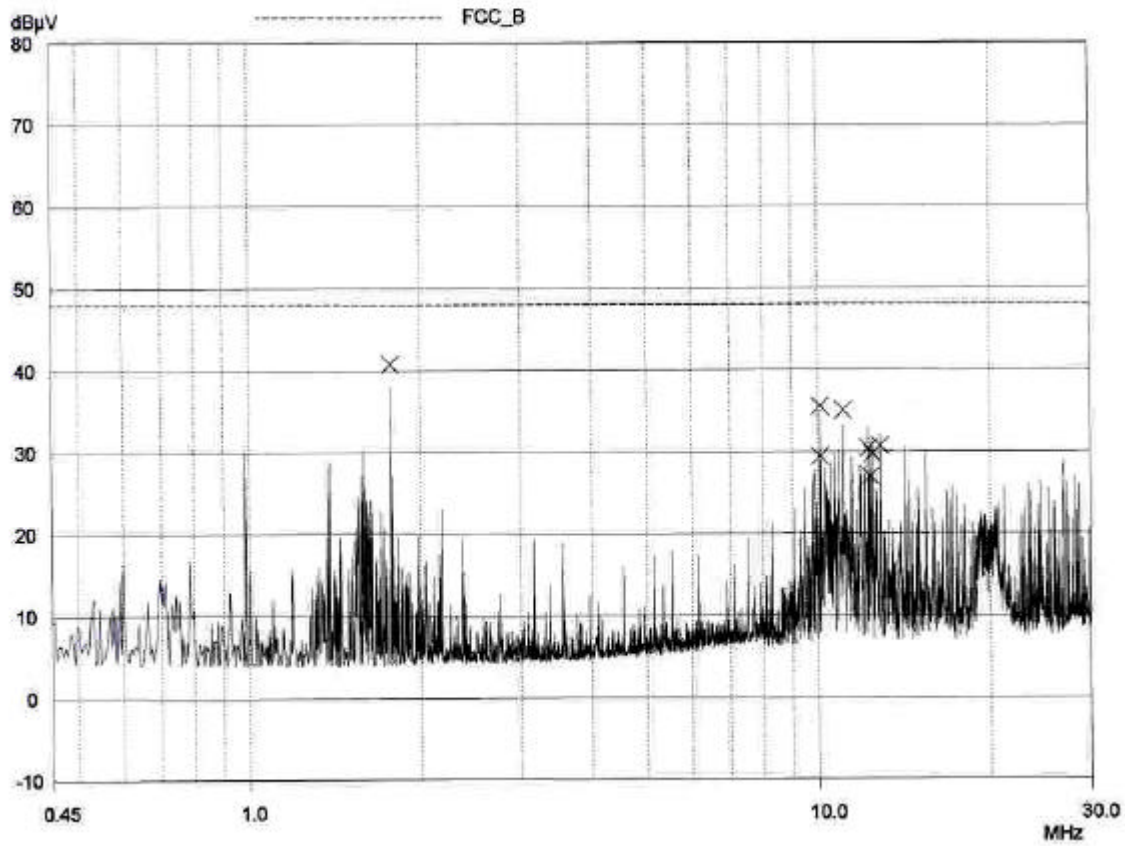
Scan Settings		(1 Range) Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
450kHz	30MHz	3,9063kHz	9kHz	PK	50µsec	10 dB	OFF	60dB
Final Measurement:		Detector:	X QP					
		Meas Time:	500msec					
		Peaks:	8					
		Acc Margin:	30 dB					



EUT Mode : DVI (Digital Video Interface) mode

Scan Settings		(1 Range)			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
450kHz	30MHz	3.9063kHz	9kHz	PK	50µsec	10 dB	OFF	60dB

Final Measurement:	Detector:	X QP
	Meas Time:	500msec
	Peaks:	8
	Acc Margin:	30 dB



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.

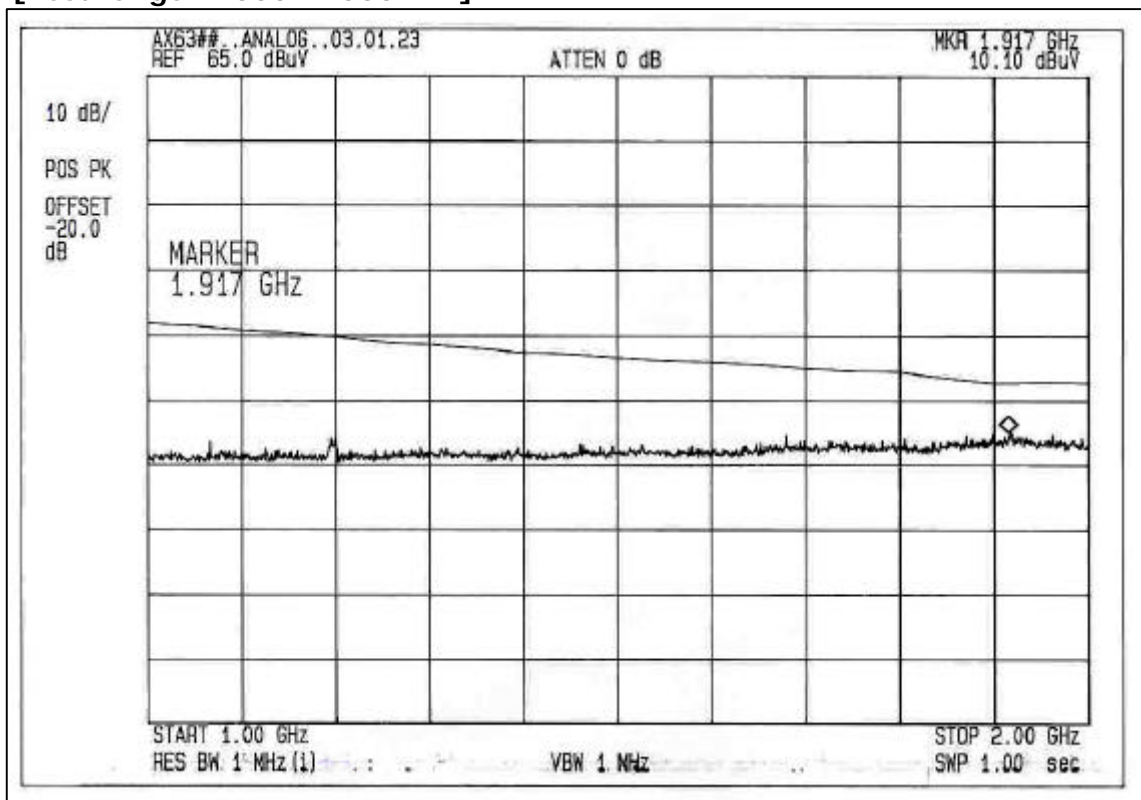
The spectrum analyzer is scanned from 30MHz to 2,000MHz.

And, detecting waves 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

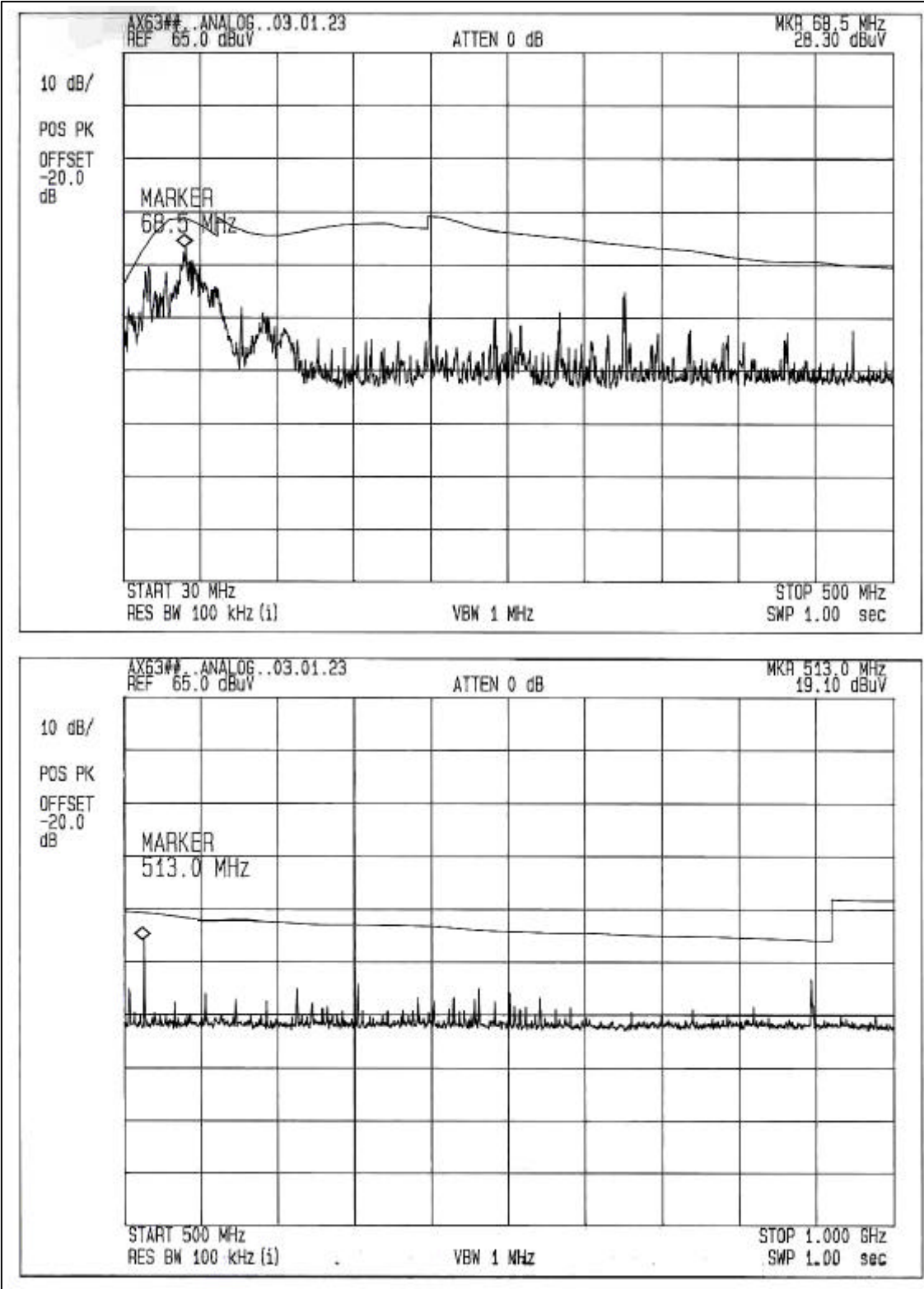
EUT Mode : PC VIDEO INPUT mode

[Test range : 1000 - 2000MHz]



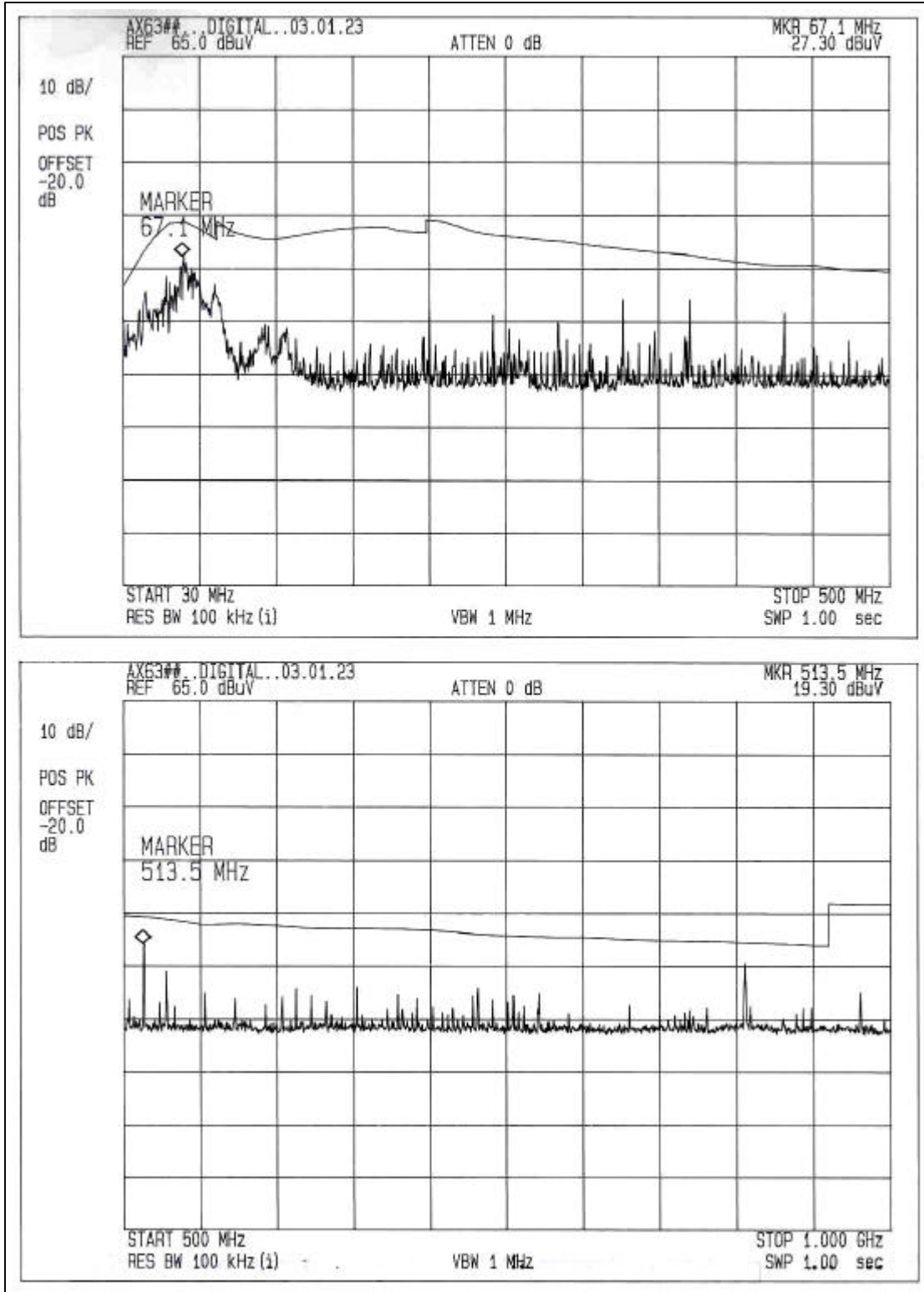
EUT Mode : PC VIDEO INPUT mode

[Test range : 30 - 1000MHz]



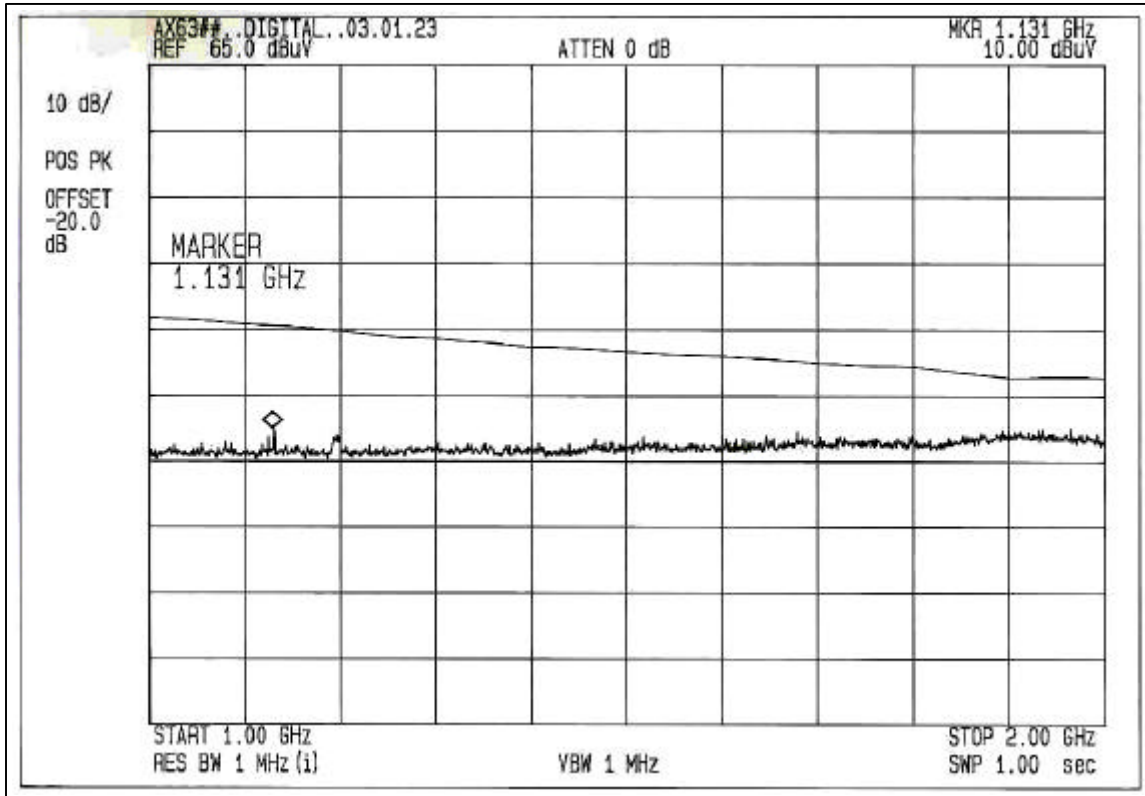
EUT Mode : DVI (Digital Video Interface) mode

[Test range : 30 - 1000MHz]



EUT Mode : DVI (Digital Video Interface) mode

[Test range : 1000 - 2000MHz]



Test Set up Photographs

[AC POWERLINE CONDUCTED EMISSION MEASUREMENT]







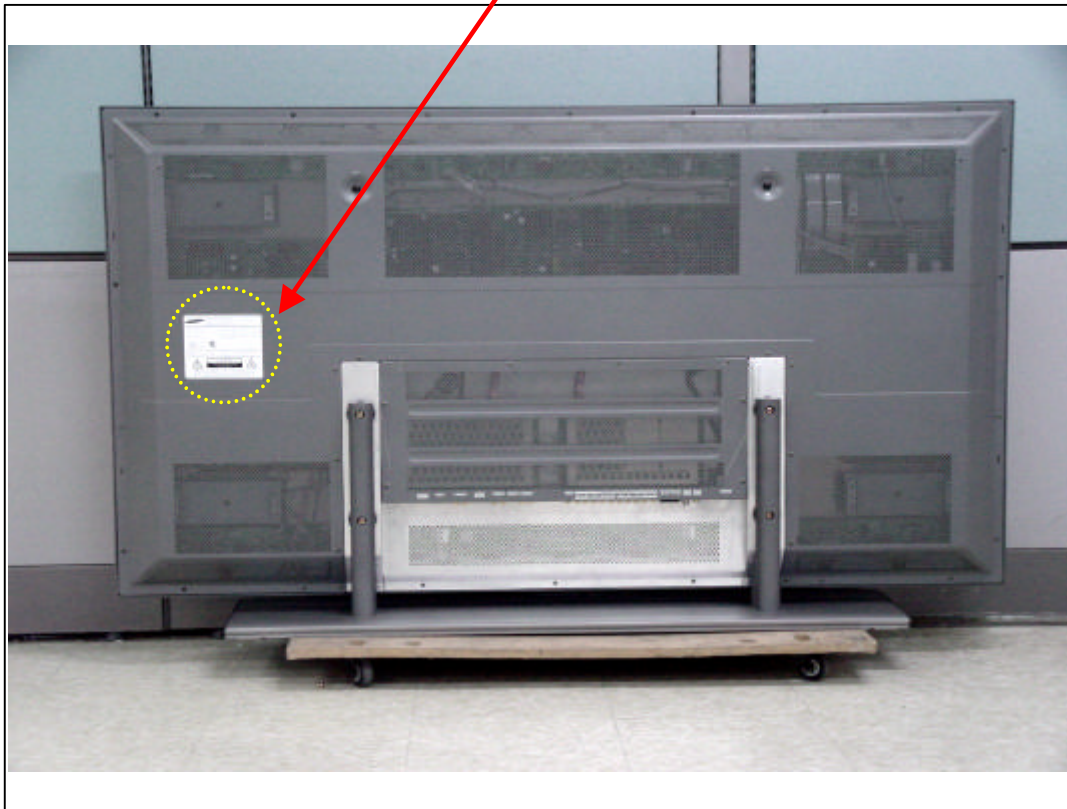
[RADIATED EMISSION MEASUREMENT]



EUT Photographs

[Label and Label position]

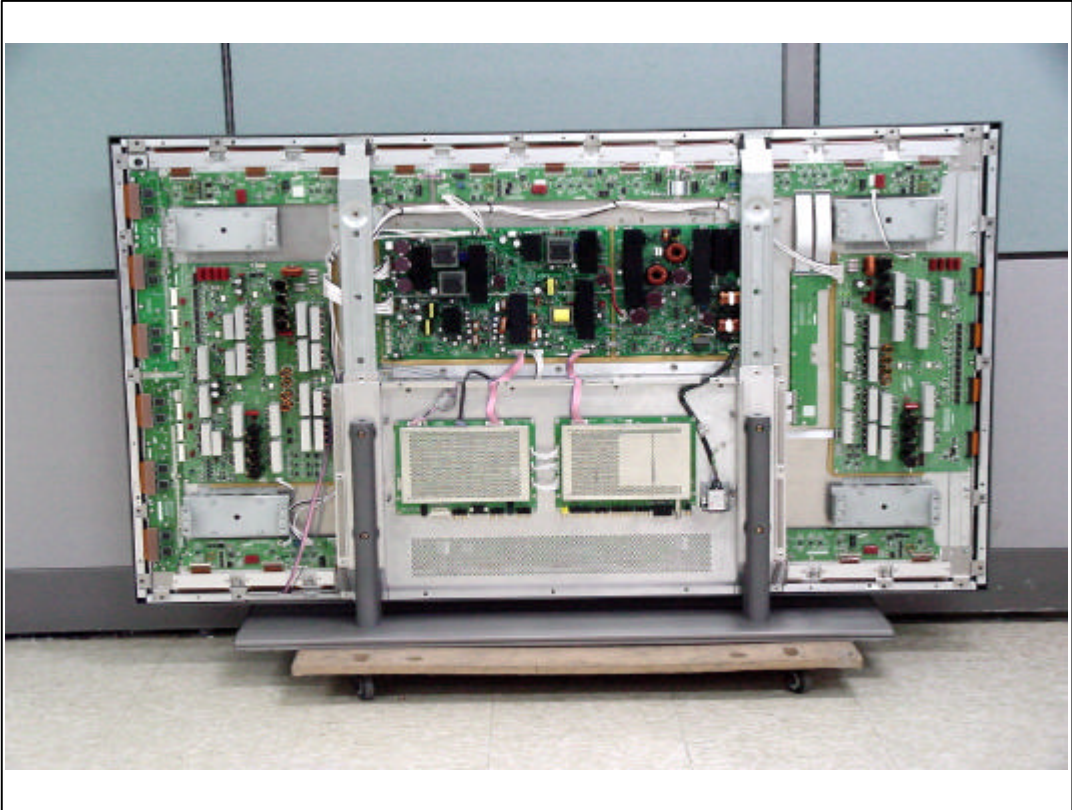
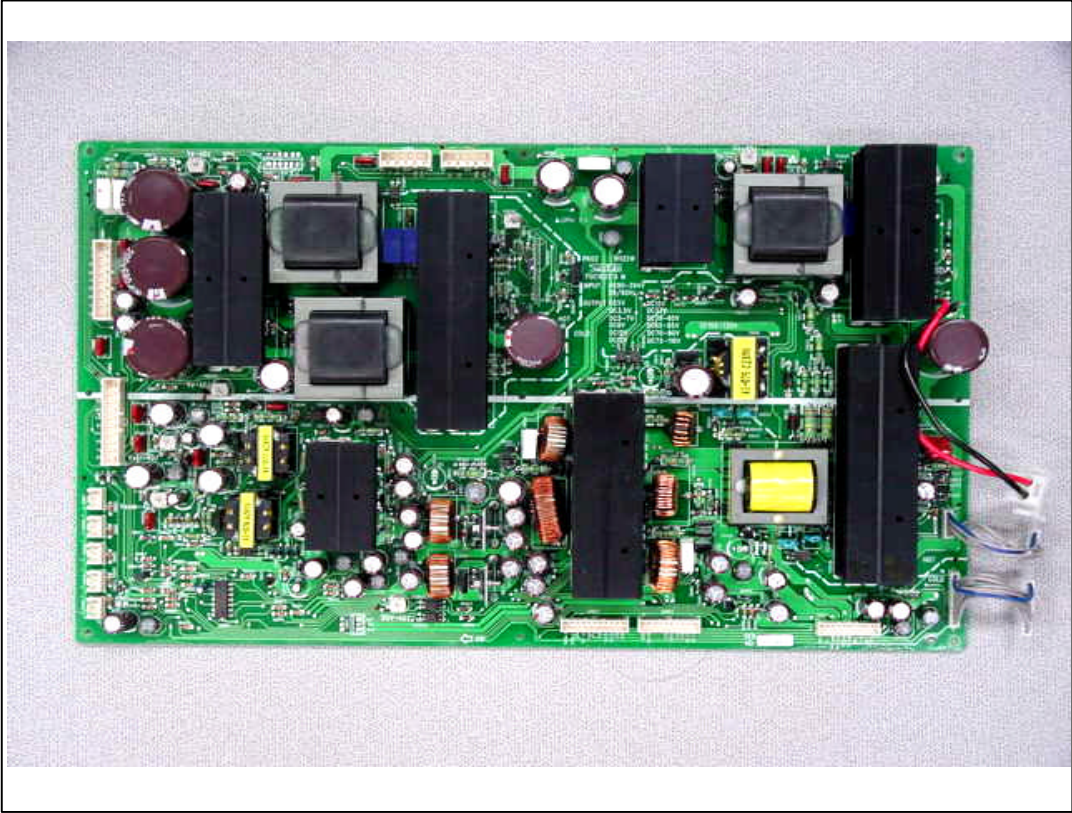
		SAMSUNG ELECTRONICS CANADA INC 7037 Financial Drive Mississauga, Ontario L5N 6R3 CANADA
		SAMSUNG ELECTRONICS AMERICA INC. 105 CHALLENGER ROAD, RIDGEFIELD PARK N. J. 07660-0511, U. S. A
Plasma DISPLAY MODEL : HPN6339 TYPE. NO : AX63P3 RATED INPUT 120 ~ ,60Hz 590W CHASSIS NO.: D57A		This device complies 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 77HN E215927	 LR38329	FCC ID : A3LHPN6339
Serial NO. XXXXXXXXXXXXXXXXXXXX	Manufactured/Fabrique : XX. XX. 2003 MADE IN SUWON KOREA(SEC) 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



EUT Photographs



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