

# EMC TEST REPORT

Project No. : LBE030678

**Product** : **PDP Monitor**

**Model No.** : **AX42S3**

**Date of test** : April. 11, 2003 ~ April. 12, 2003

**Issued Date** : April. 15, 2003

**Tested by:**

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## 1. Introduction & Summary

### 1.1 Description of the EUT

Applicant	SAMSUNG ELECTRONICS Co., Ltd.
Project Number	LBE030678
Equipment Under Test	PDP Monitor
Trade Name	SAMSUNG
Model Number	AX42S3
Variant Model	-
Operating Frequency	60Hz
FCC ID Number	A3LPPM42S3
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, 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
	<b>Firmware versions : Rev.29.9.86</b>			
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	839809/022	R & S	02/06/27, 12Months
	<b>Firmware versions : Main 1.08, OTP 02.01, GRA 02.03</b>			
Field strength meter	ESVP	880726/042	R & S	02/09/10, 12Months
L.I.S.N	ESH3-Z5	847265/028	R & S	02/10/09, 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	1024x768	Horizontal F. : 60kHz Vertical F. : 75Hz	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

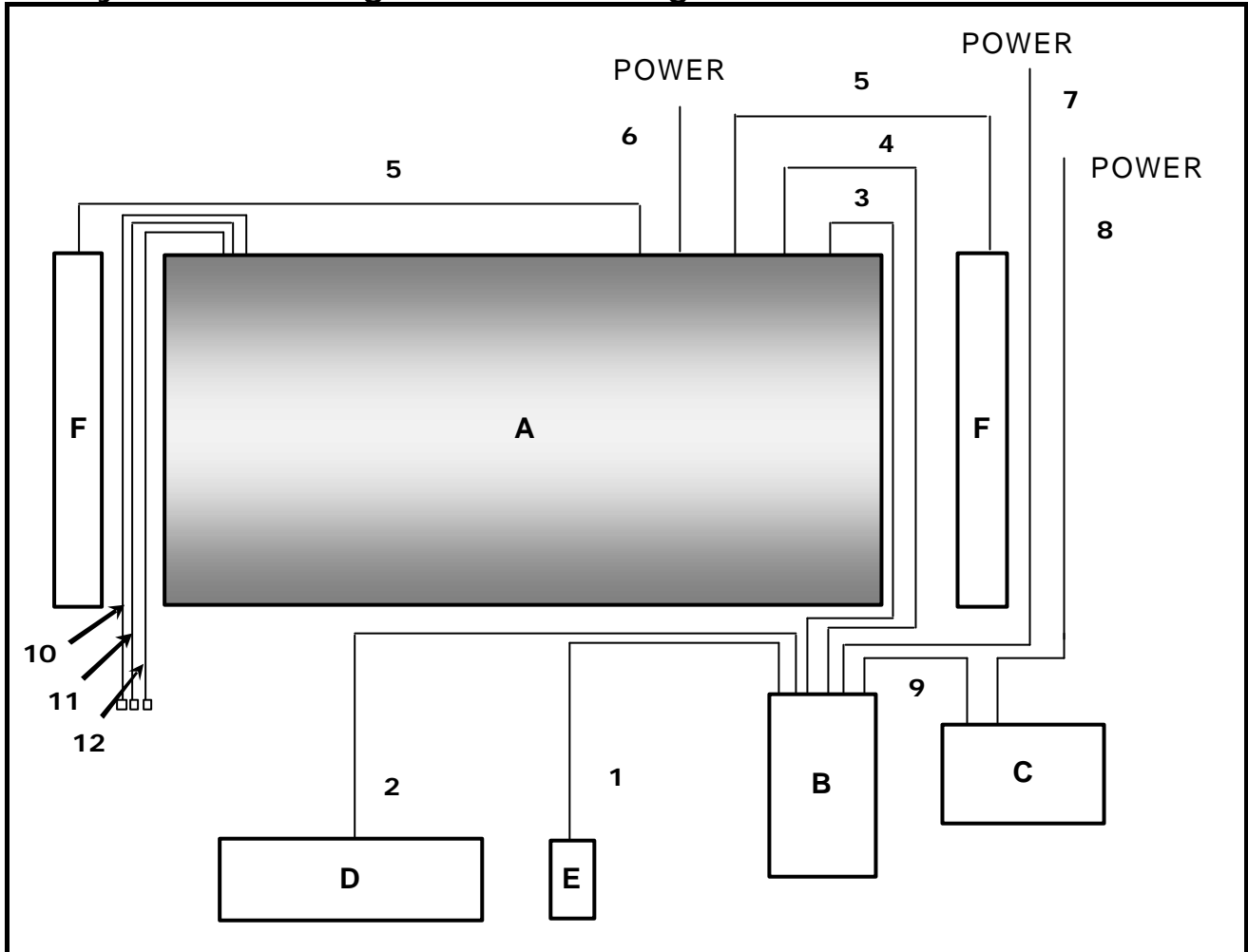
Mark	Item	Model No.	Serial No.	Manufacturer	FCC ID
A	PDP Monitor	AX42S3	-	Samsung	-
B	Personal Computer	M6050	812092FRC00328	Samsung	
C	Printer	LQ-580H	CG2Y014537	EPSON	Doc
D	PS/2 Keyboard	7800	K1C111343	BTC	Doc
E	PS/2 Mouse	Scroll Mouse P801	1205148	Key Systems	Doc
F	Speaker	-	-	Samsung	-

\* DOC : FCC Declaration of Conformity

### 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	BNC 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 150kHz to 30MHz relative to the limit are recorded.

### 3.1.2 Test Results

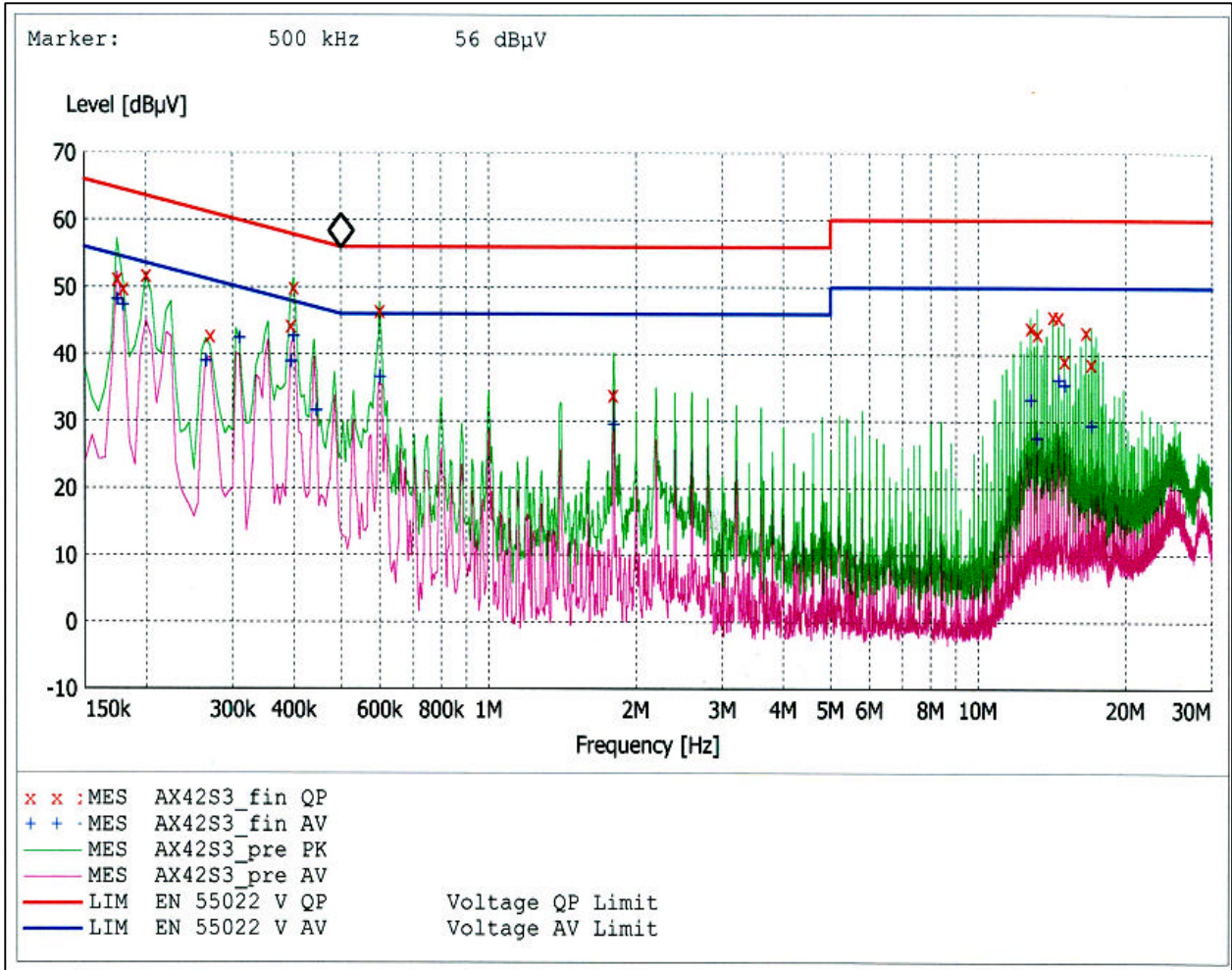
#### Test Data Sheet

Frequency	LISN Pol.	Meter reading (a)		Total Loss (b)	Results (a) + (b)		Limit		Margin (Limits-Result)	
		QP	AV		QP	AV	QP	AV	QP	AV
[MHz]	[L,N]	[dBuV]		[dB]	[dBuV]		[dBuV]		[dB]	
0.175	L	51.4	48.4	0.2	51.6	48.6	<b>64.7</b>	<b>54.7</b>	13.1	6.1
0.180	L	50.0	47.6	0.2	50.2	47.8	<b>64.5</b>	<b>54.5</b>	14.3	6.7
0.395	L	44.5	39.2	0.1	44.6	39.3	<b>58.0</b>	<b>48.0</b>	13.4	8.7
0.400	L	50.1	43.0	0.1	50.2	43.1	<b>57.9</b>	<b>47.9</b>	7.7	4.8
0.600	N	46.7	36.9	0.2	46.9	37.1	<b>56.0</b>	<b>46.0</b>	9.1	8.9
1.795	L	34.2	29.8	0.2	34.4	30.0	<b>56.0</b>	<b>46.0</b>	21.6	16.0
12.800	L	44.3	33.6	0.8	45.1	34.4	<b>60.0</b>	<b>50.0</b>	14.9	15.6
14.600	L	45.9	36.5	1.1	47.0	37.6	<b>60.0</b>	<b>50.0</b>	13.0	12.4
14.995	L	39.4	35.8	1.2	40.6	37.0	<b>60.0</b>	<b>50.0</b>	19.4	13.0
16.995	N	38.9	29.7	1.2	40.1	30.9	<b>60.0</b>	<b>50.0</b>	19.9	19.1

**\* FCC Part 15, Subpart B, section 15.107**

"If the level of the emission measured using the quasi-peak instrumentation is 6 dB, or more, higher than the level of the same emission measured with instrumentation having an average detector and a 9kHz minimum bandwidth, that emission is considered broadband and the level obtained with the quasi-peak detector may be reduced by 13dB for comparison to the limits."

**Graph (LISN Mode : Live & Neutral)**



## 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.

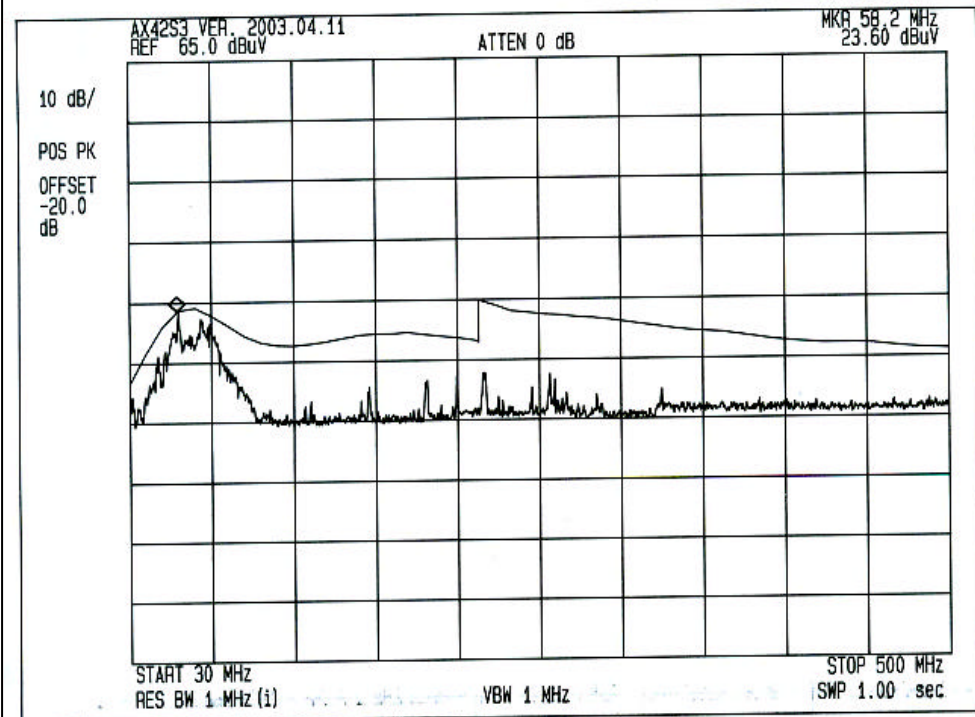
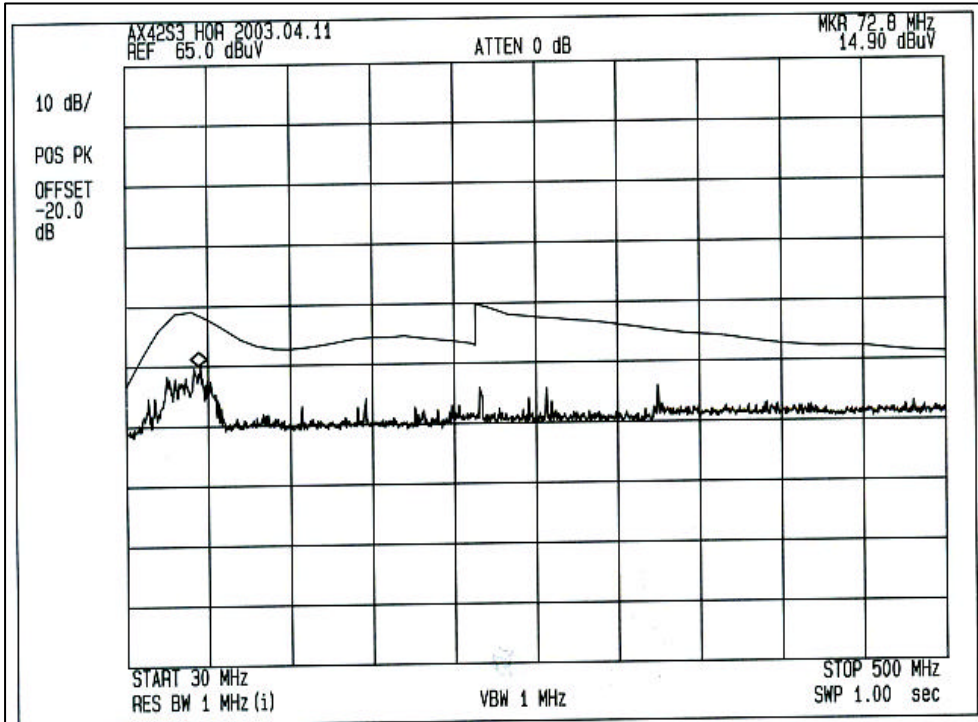
To find out the maximum emission, change the position of the cable, and the EUT operation mode under normal usage of the EUT.

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

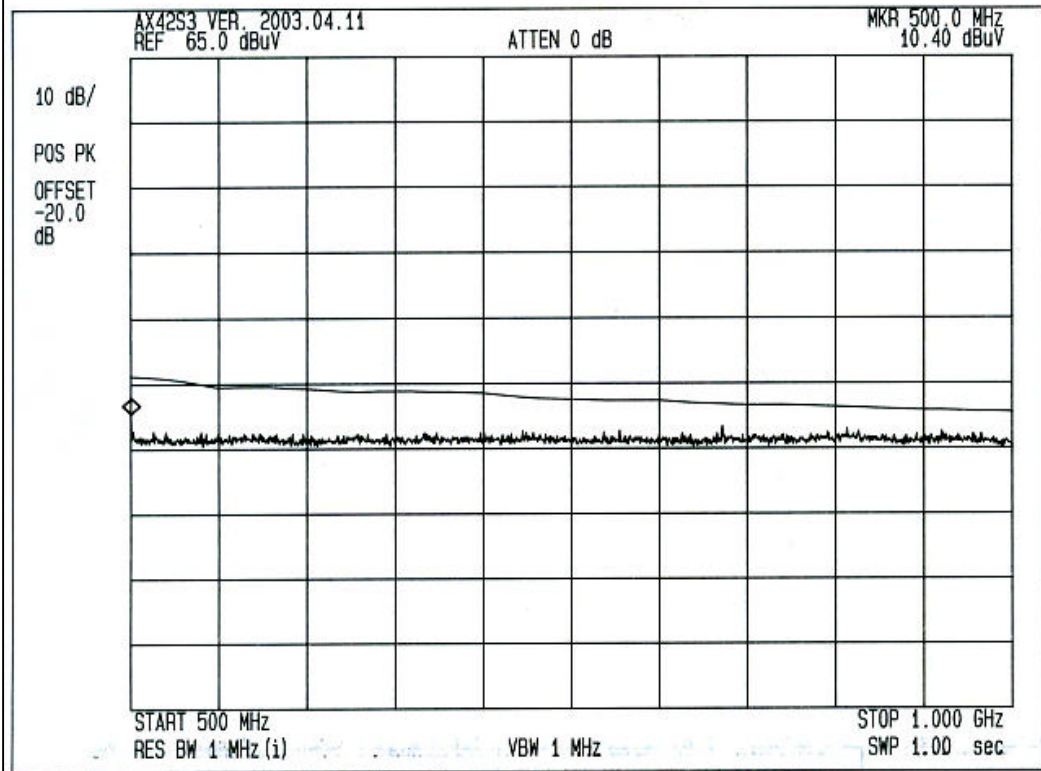
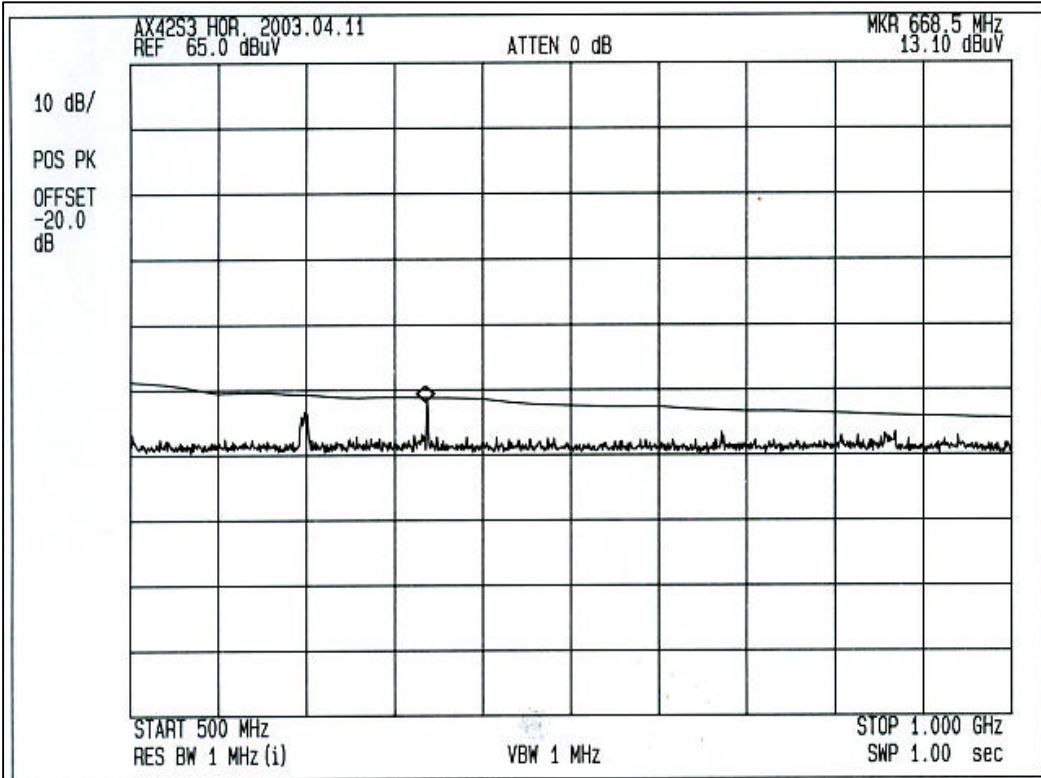
And, the detecting wave mode is peak mode, Graph's result in the worst arrangement state of EUT. Spectrum analyzer result did horizontal and vertical polarization max hold.

### 3.2.2 Test Results

[Test range : 30 - 500MHz]



[Test range : 500 - 1000MHz]

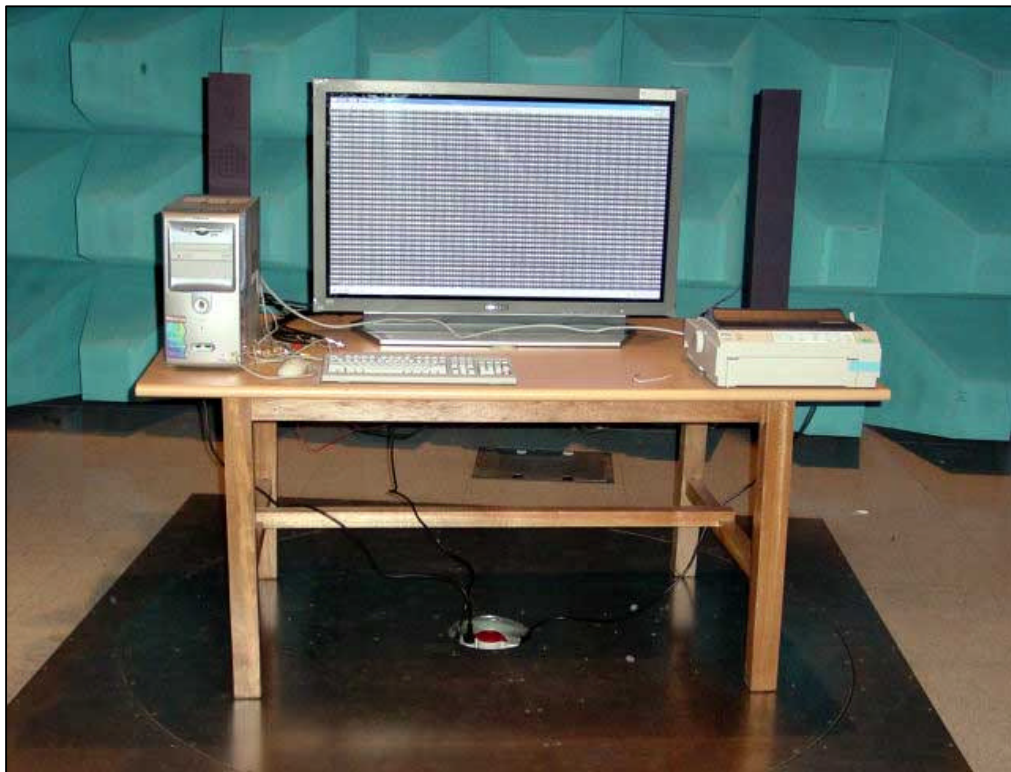


## Test Set up Photographs

[AC POWERLINE CONDUCTED EMISSION MEASUREMENT]








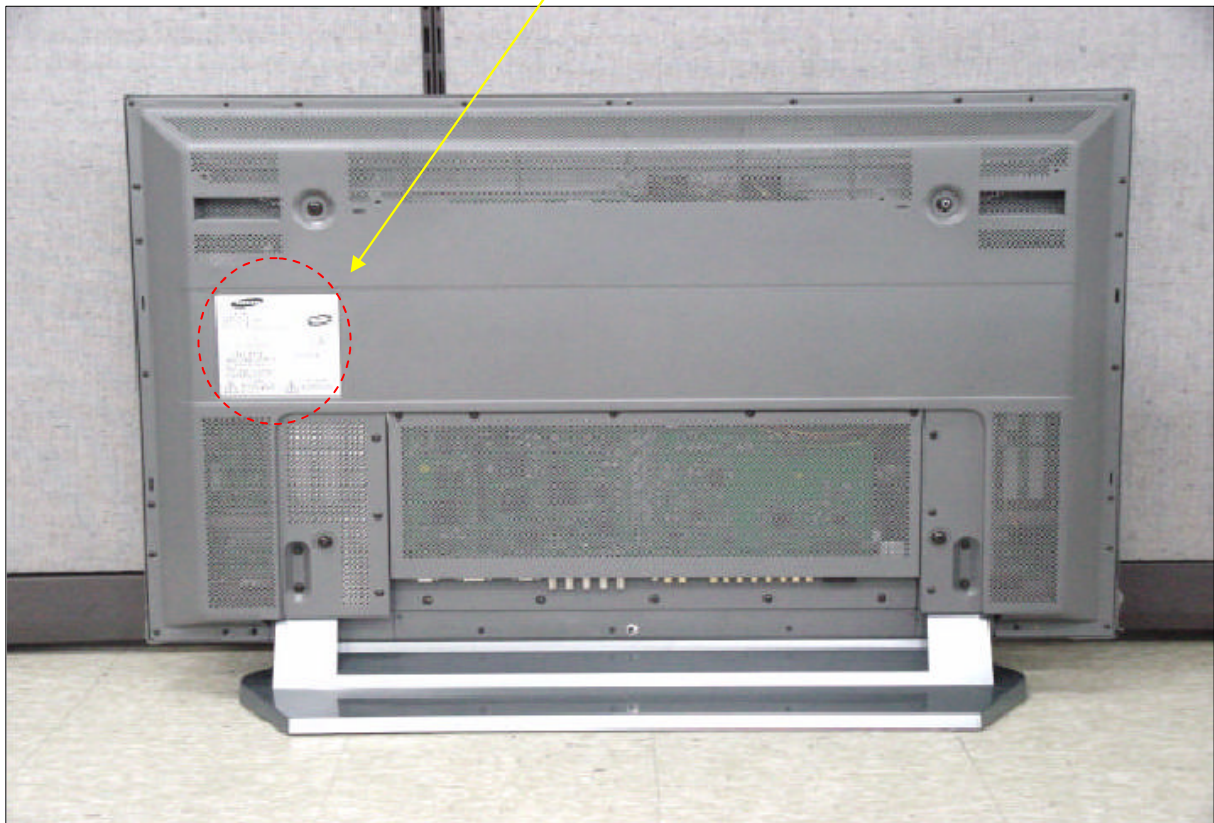
[RADIATED EMISSION MEASUREMENT]



# EUT Photographs

[Label and Label position]

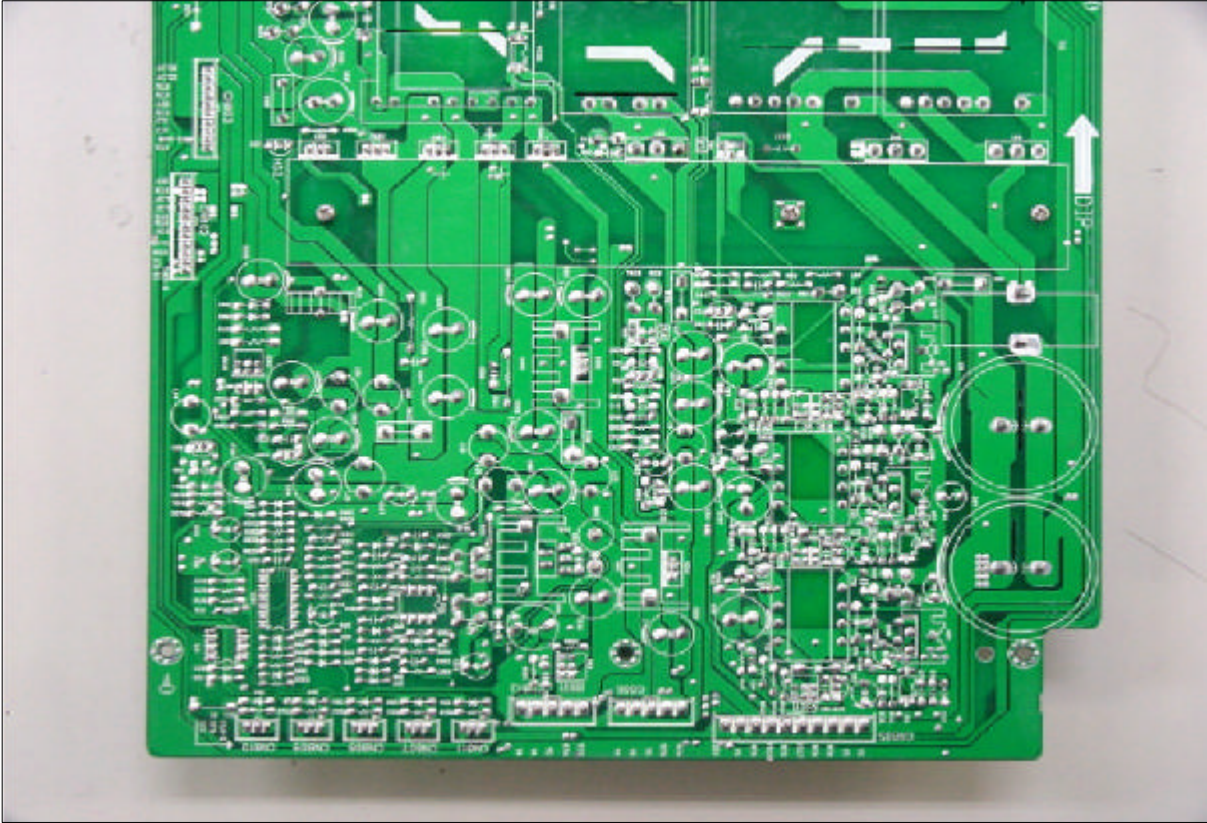
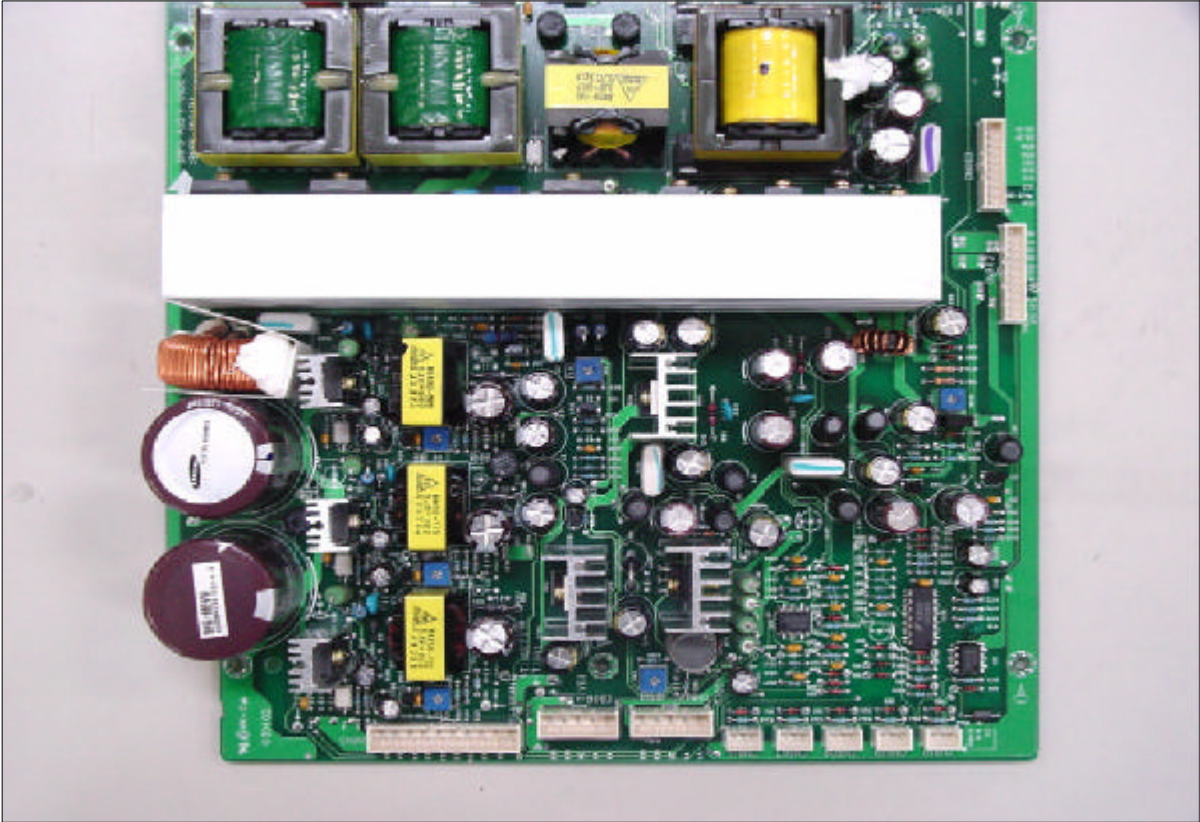
		SAMSUNG ELECTRONICS CANADA INC 7037 Financial Drive Mississauga, Ontario L5N 6R3 CANADA	
		SAMSUNG ELECTRONICS AMERICA INC. 105 CHALLENGER ROAD, RIDGEFIELD PARK N. J. 07660-0511, U.S.A	
PLASMA DISPLAY PANEL MODEL : PPM42S3 TYPE. NO : AX42S3 RATED INPUT AC120 ~ ,60Hz 330W CHASSIS NO.: D61A	This device 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 : A3LPPM42S3	
Serial NO. XXXXXXXXXXXXXXXXXXXX	Manufactured/Fabrique : XX. XX. 2003 MADE IN SUWON KOREA(SEC) FABRIQUE EN SUWON COREE		
 <table border="1" style="margin: auto;"><tr><td style="text-align: center;"><b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN</td></tr></table> 			<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN
<b>CAUTION</b> 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			



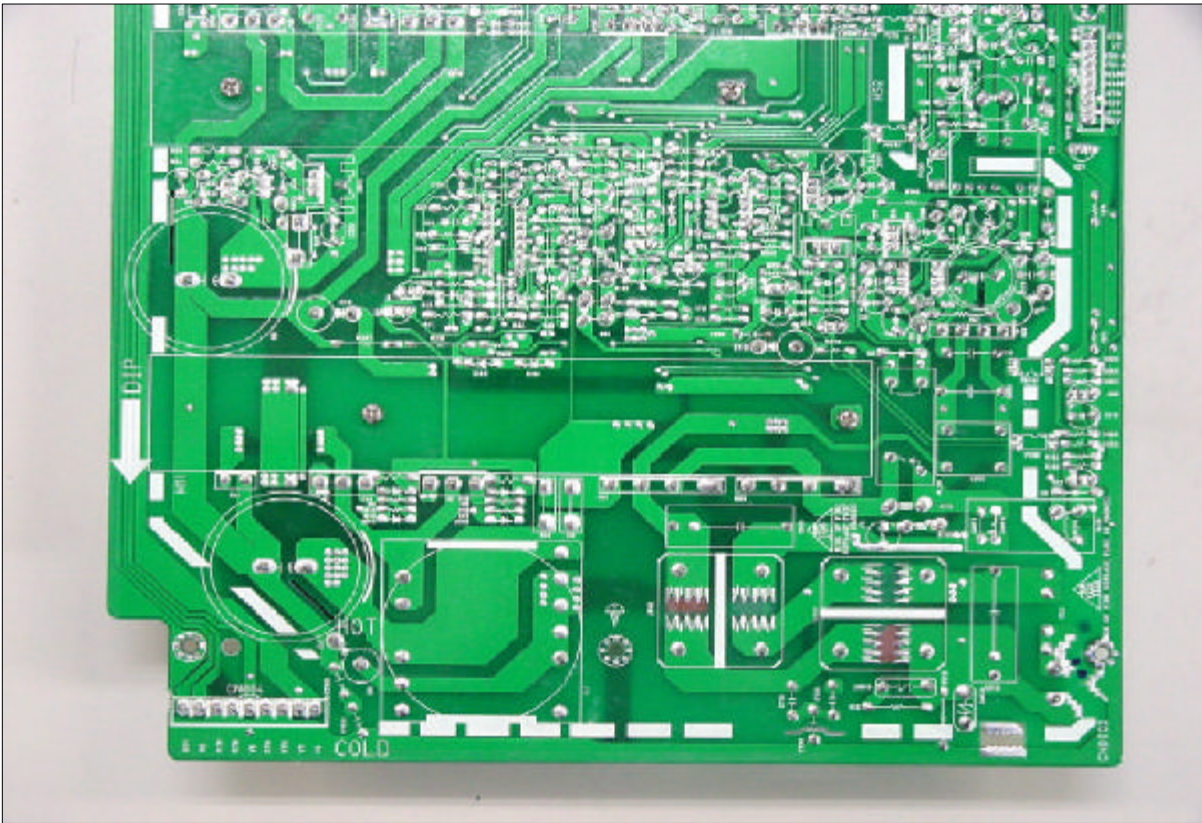
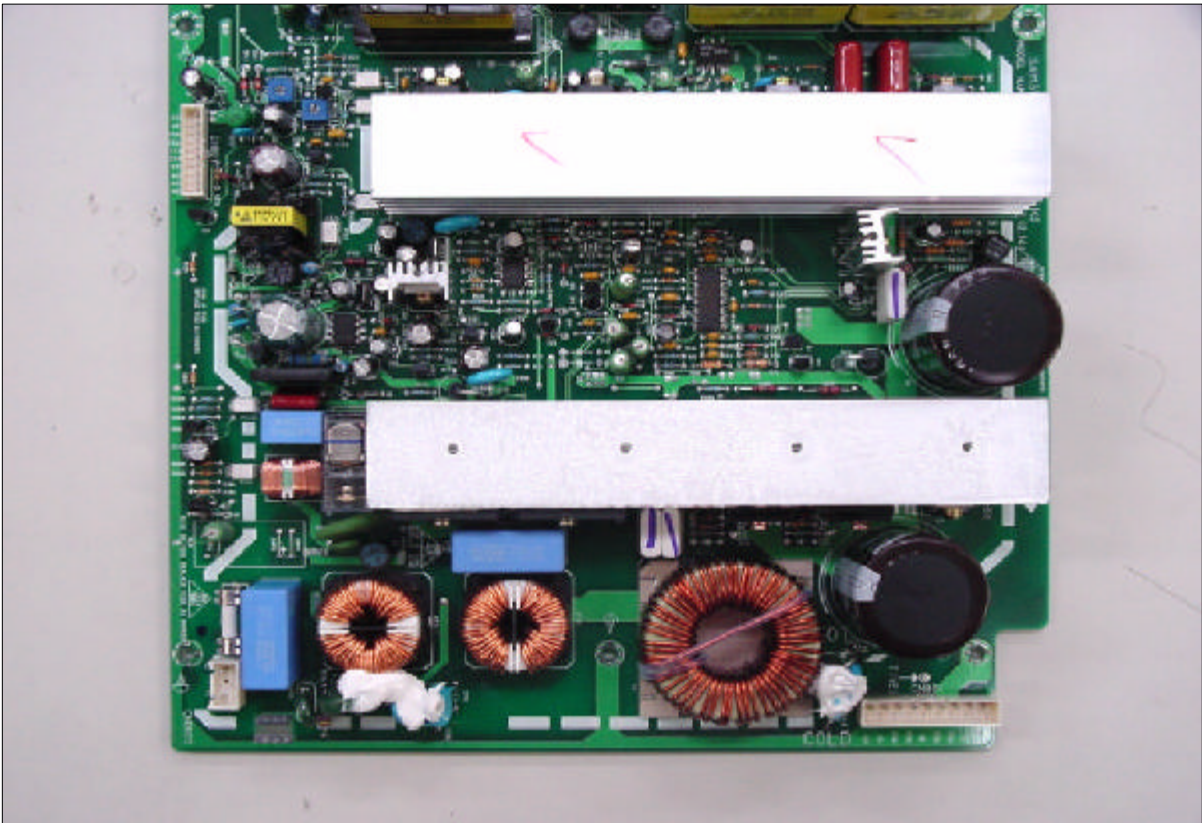
# EUT Photographs



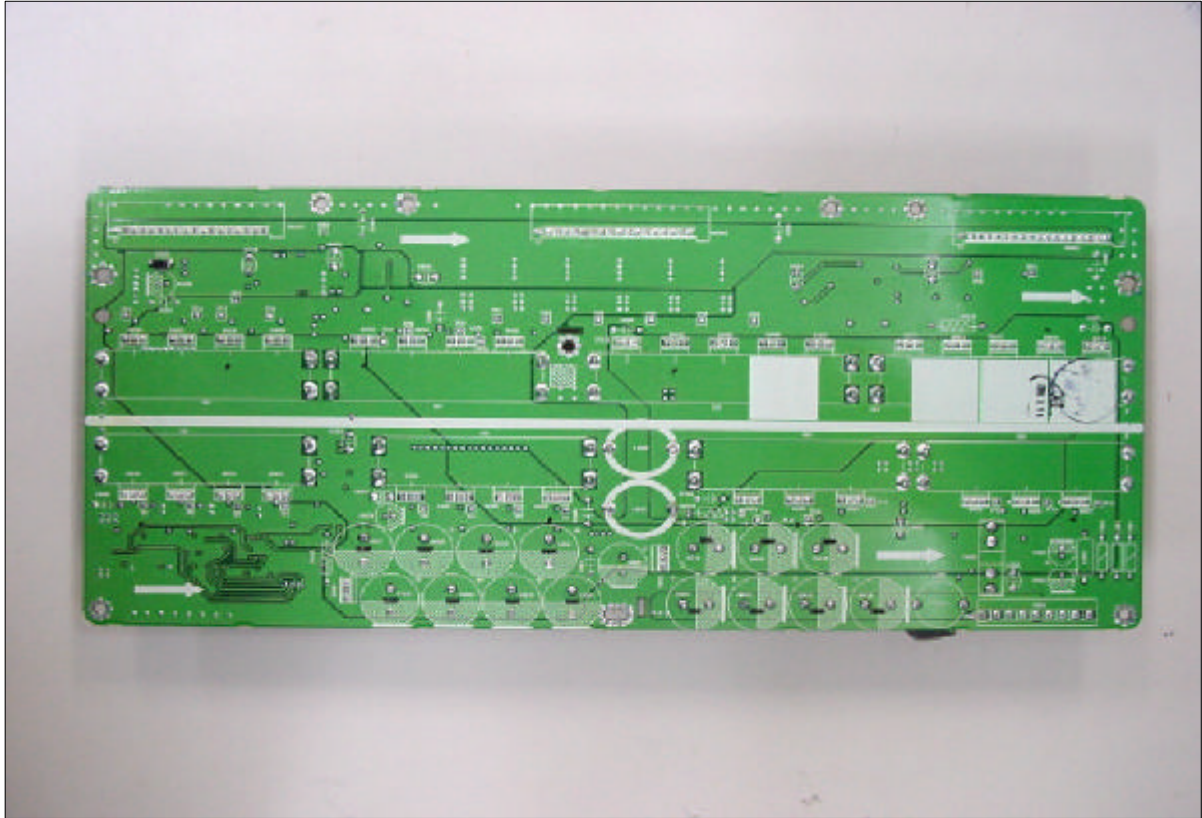
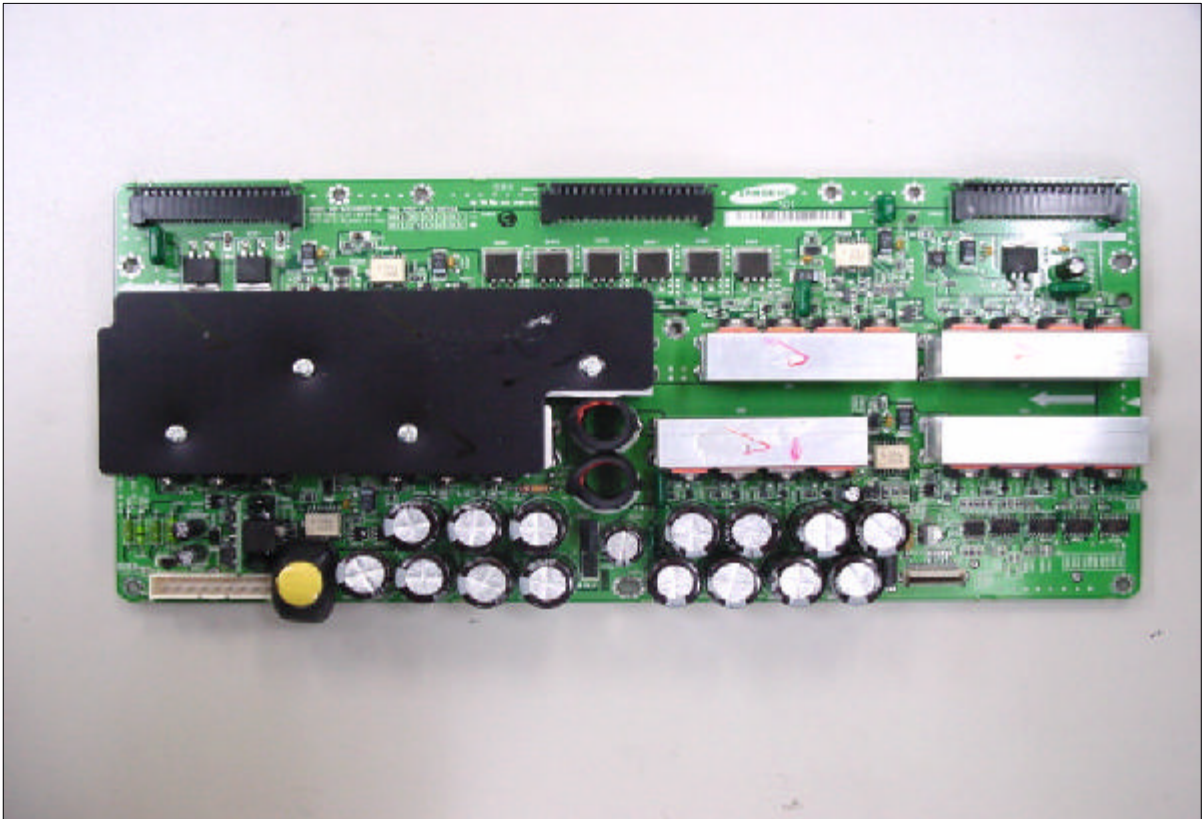
# EUT Photographs



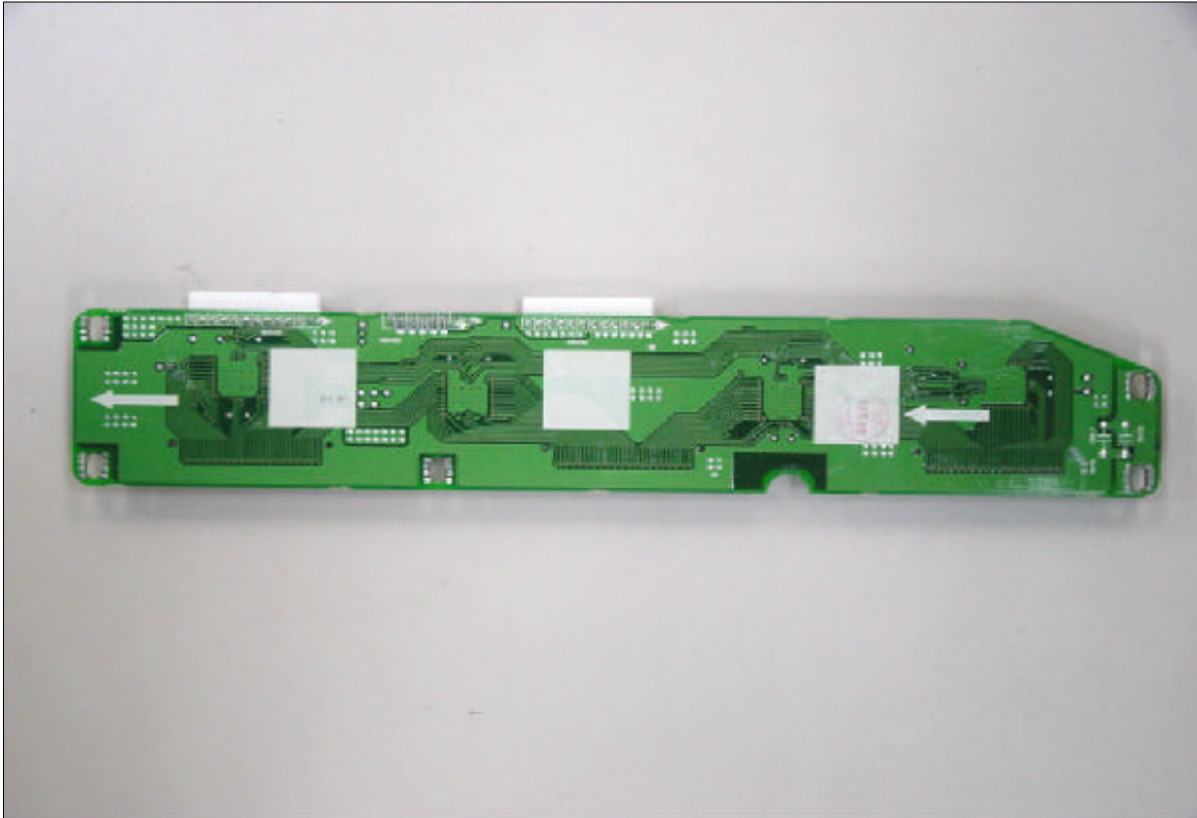
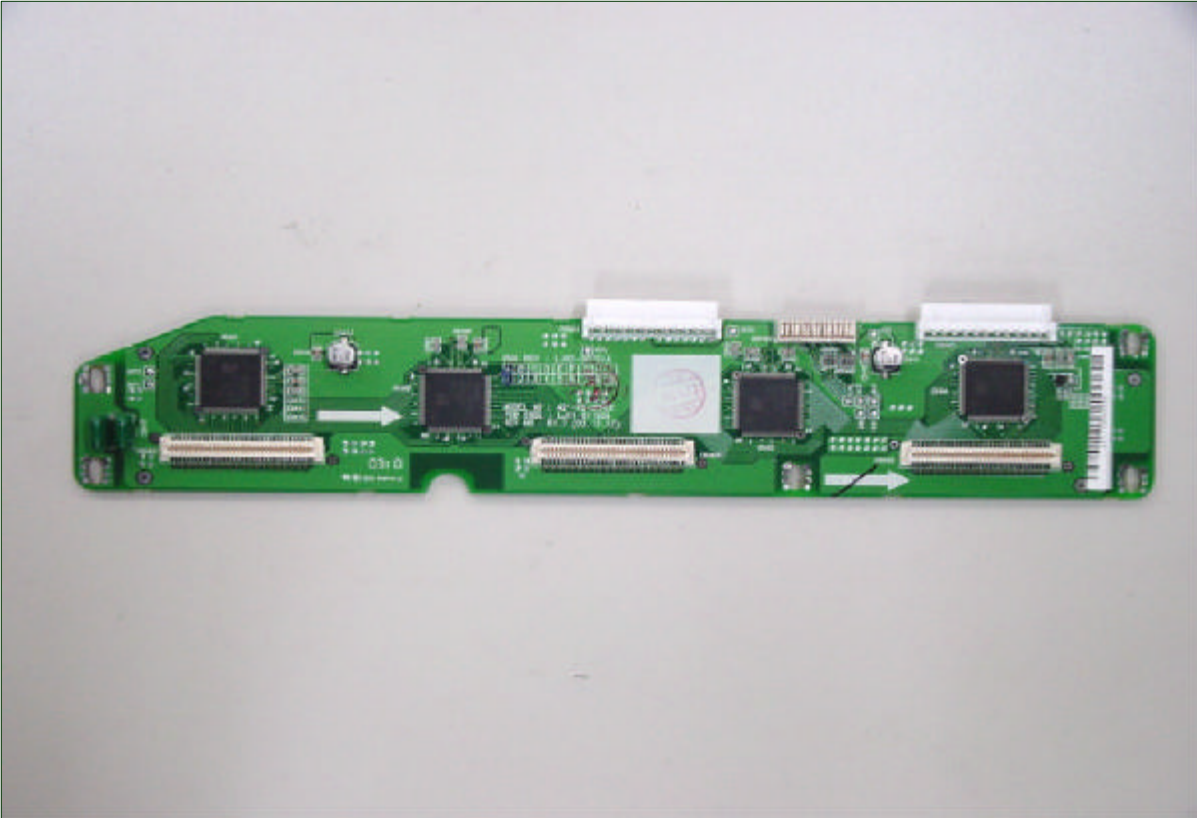
# EUT Photographs



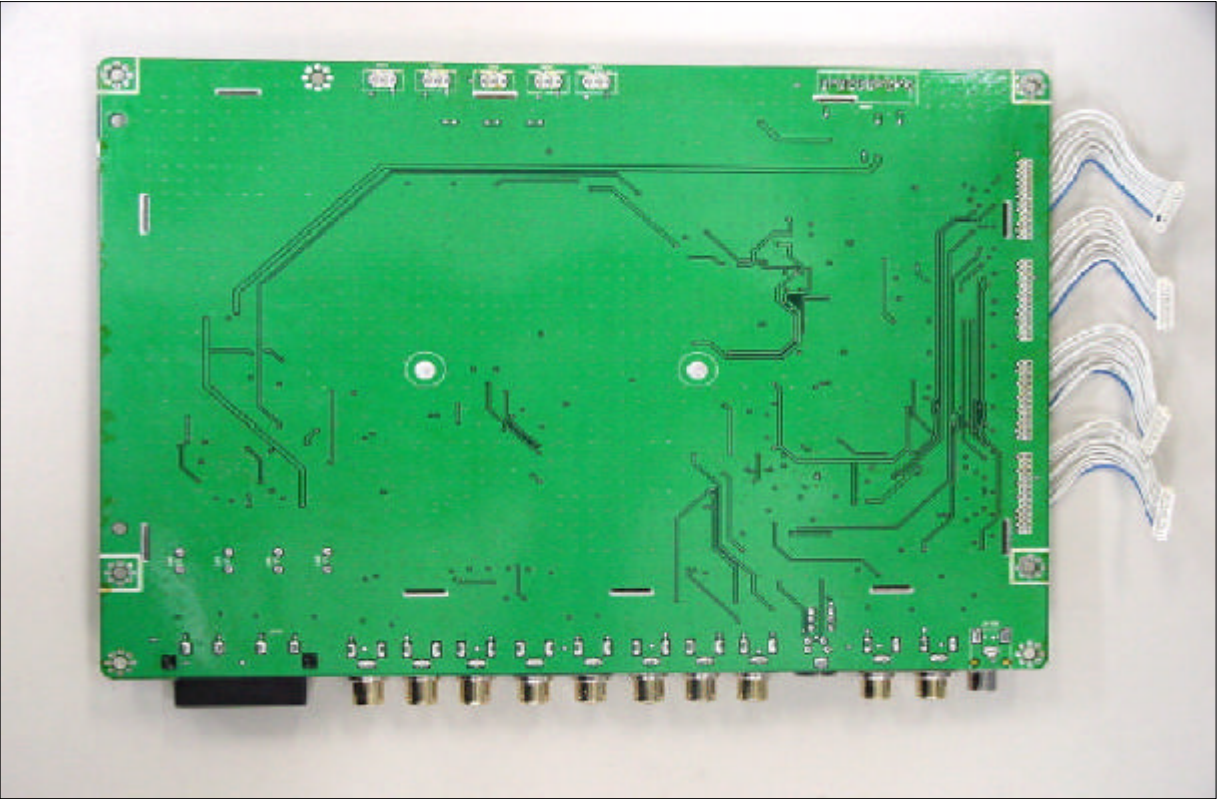
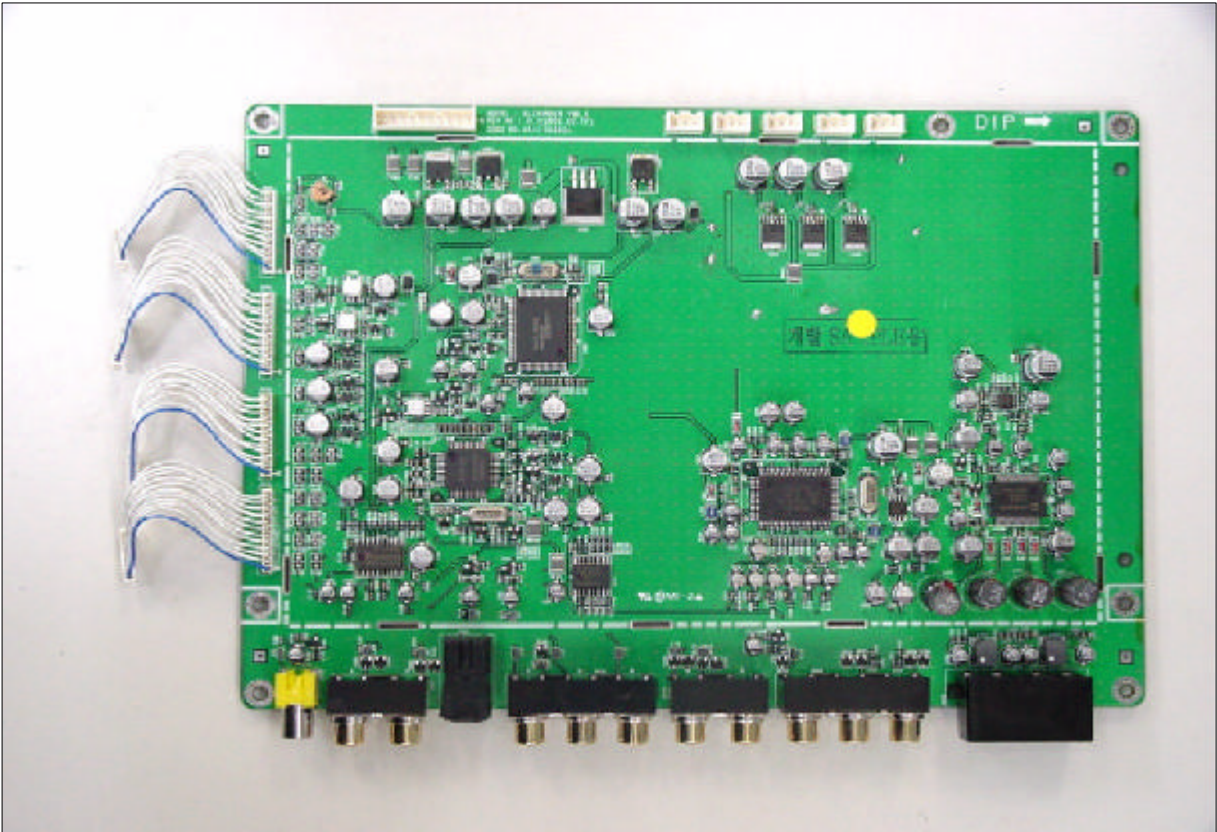
# EUT Photographs



**EUT Photographs**



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