





## TEST SUMMARY

The data collected shows that the **SAMSUNG ELECTRONICS CO., LTD**  
**(Model NO.: HPL6315)** PDP complies with § 15.107 and § 15.109 of the FCC Rules.

The highest emission observed, with a minimum margin to the specifications, was at 0.502MHz for conducted emissions with a margin of 8.4dB, and at 214.300MHz for radiated emissions (Pol.: Horizontal, EUT Angle : 108degree , ANT. Height : 400cm)with a margin of 3.2dB.

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report accdg. to NIS 81 / 5 1994.".

### 5.1 MAINS TERMINAL CONTINUOUS DISTURBANCE VOLTAGE

**RESULT : Pass**

### 5.2 ELECTROMAGNETIC RADIATION DISTURBANCE

**RESULT : Pass**



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## 1. General Remarks

This Report describes the emission characteristics of the tested product.

If the product will be used with additional equipment other than those mentioned in this report or if the tested product will be used against the manufacture's specifications, the compliance with the relevant standards for the system has to be ensured.

## 2. Test Facility

### 2.1 Test Laboratory

Quality control in the testing laboratory is implemented as per ISO/IEC 17025, which is the "General requirements for the competents of calibration and testing laboratory".

This laboratory is accredited by NVLAP for NVLAP Lab. Code : 200559-0.

DIGITAL EMC CO., LTD.

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### 2.2 Measurement Instruments

Refer to each item.

## 3. General Product Information

FCC ID: A3LHPL6315

Kind of Equipment	: PDP (Plasma Display Panel)
FCC ID	: <b>A3LHPL6315</b>
Model Number	: HPL6315
Type Number	: D52A63** (**:Mechanical Design)
Serial No.	: None
Rated Voltage	: 120V~, 60Hz
Power Consumption	: 725 Watts
Dimension	: Display : 1566(W) X 89(D) X 912.5(H)mm 61.65(W)X 3.5(D) X 35.93(H)inches Remote Control: 54(W) x31.5(D)X220(H)mm 2.13(W) X 1.24(D)X 8.66(H) inches
Screen Size	: 1393(H) X 783(V) : 54.86 X 30.84
RGB input	: RGB1 : MINI D-SUB 15P RGB2 : BNC(R/G/B H(CS)/V) VIDEO : ANALOG 0.714Vpp/75 (Terminated) SYNC(H.V)
VIDEO input	: VIDEO : 1.0Vpp/75 (BNC) S-VIDEO: Y -> 1.0Vpp/75 C -> 0.28Vpp /75 COMPONENT(Y/Pb/P): Y -> 1.0Vpp/75 Pb -> 0.7Vpp/75 P -> 0.7Vpp/75
Tested Power Supply	: 1 phase 120Vac 60Hz
Applicant	: SAMSUNG ELECTRONICS CO., LTD
Manufacturer	: SAMSUNG SDI CO., LTD
Date of Receipt of Sample	: 2002-7-9

## 4. Test Set-up and operation modes

### 4.1 Principle of Configuration Selection

**Emission** : The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

### 4.2 Test Operation modes

The measurement is maximized and made by; varying the mode of operation or resolution; scrolling H pattern(PC mode) or color bar(VIDEO & S-VIDEO mode) to the EUT.

### 4.3 Support Equipment Used

TYPE	MANU.	MODEL NO.(FCC ID)	SERIAL NO.	Cable
Power supply	Samsung	PST-180DAS (DoC)	N/A	1.8m power cable(non-shield)
CD-ROM	Samsung	SC-148(DoC)	63CT358134	-
VGA Card	Jacotech	JC9983(DoC)	N/A	1.8m D-SUB cable(shield) 1.8m RGB cable(shield)
Main Board	Jacotech	JM2039(DoC)	N/A	-
SVR	TECHMATE	TM6000D(DoC)	N/A	1.8m power cable(non-shield) 1.2m AV cable(non-shield) 1.2m S-Video cable(shield)
Speaker	Samsung	SPK-420	S42K000001	1.5m line cable(non-shield)
Keyboard	Samsung	SDM-4700UL(DoC)	N/A	1.8m I/F cable(shield)
Mouse	KYE SYSTEMS	(FSUGMZFT)	02167741	1.8m I/F cable(shield)

**NOTE**

- See "photographs" for actual system test setup



## 5. Test Results EMISSION

### 5.1 Conducted Emissions

RESULT : Pass

#### 5.1.1 Measurement Procedure

In the range of 0.45MHz to 30MHz the Conducted Emission was measured in accordance with ANSI C 63.4:1992. The test set-up was made according to ANSI C 63.4:1992. A 1m. x 1.5m. wooden table 80cm. high is placed 40cm. away from the vertical wall and 1.5m away from the side wall of the shielded room. Kyoritsu Model KNW-407 and KNW-242(10kHz-30MHz) 50 /50uH Line-Impedance Stabilization Networks(LISNs) are bonded to the shielded room. The EUT is powered from the KNW-242 LISN and the support equipment is powered from the KNW-407 LISN. By varying the configuration of the test sample and the cable routing it was attempted to maximize the emission. For further description of the configuration refer to the picture of the test set-up.

#### 5.1.2 List of Test and Measurement Instruments

Conducted Emission				
Name of Instrument	Model No	Serial No	Manufacturer	Next Cal. Date
Spectrum Analyzer	E4411B	US41062735	Agilent Technologies	2003.04
RFI/Field intensity Meter	KNW-2402	4N-170-3	Kyoritsu Electrical Works	2003.06
LISN	KNW-407	8-317-8	Kyoritsu Electrical Works	2003.07
LISN	KNW-242	8-654-15	Kyoritsu Electrical Works	2003.07



5.1.3 Conducted Test Data

1) Measurement uncertainty (95%,Confidence level, k=2) : +2.2dB / -2.21dB

2) Result (See Data under Appendix 1)

Test Data: July 9, 2002 Humidity: 49 %
Temperature: 24 Barometric: 992 mbar

RGB2(640\*480)

Table with 7 columns: Frequency (MHz), LISN Pol., Q.P. Result [dBµV], A.V Result [dBµV], Q.P. Limit [dBµV], A.V Limit [dBµV], Margin [dB]. Rows include frequencies like 0.457, 0.529, 0.582, 0.681, 0.700, 15.813, 0.455, 0.526, 0.592, 0.687, 0.708, 15.812.

Table 1: Conducted Test Data

NOTES:

- 1. All modes of operation were investigated and the worst-case emissions are reported.
2. L1 = Phase; N = Neutral
3. See "APPENDIX 1 Conducted measurement Graph"
4. Refer to "Photographs" for actual system test setup
5. Margin = Q.P. Limit - Q.P. Result
6. Result = Cable loss + insertion loss + Reading value
7. Measurement Data's kept in DIGITAL EMC.



Test Data: July 9, 2002 Humidity: 49 %  
 Temperature: 24 Barometric: 992 mbar

RGB2(800\*600)

Frequency (MHz)	LISN Pol.	Q.P. Result [dBμV]	A.V Result [dBμV]	Q.P. Limit [dBμV]	A.V Limit [dBμV]	Margin [dB]
0.534	N	26.2	-	48	-	21.8
0.545	N	34.2	-	48	-	13.8
0.590	N	33.8	-	48	-	14.2
0.705	N	33.1	-	48	-	14.9
<b>1.580</b>	<b>N</b>	<b>39.3</b>	-	<b>48</b>	-	<b>8.7</b>
0.451	L1	37.9	-	48	-	10.1
0.538	L1	34.6	-	48	-	13.4
0.552	L1	34.0	-	48	-	14.0
0.593	L1	35.2	-	48	-	12.8
0.706	L1	26.2	-	48	-	21.8

Table 2: Conducted Test Data

NOTES:

1. All modes of operation were investigated and the worst-case emissions are reported.
2. L1 = Phase; N = Neutral
3. See "APPENDIX 1 Conducted measurement Graph"
4. Refer to "Photographs" for actual system test setup
5. Margin = Q.P. Limit - Q.P. Result
6. Result = Cable loss + insertion loss + Reading value
7. Measurement Data's kept in DIGITAL EMC.



Test Data:	July 9, 2002	Humidity:	49 %
	Temperature: 24	Barometric:	992 mbar

**RGB1(640\*480)**

Frequency (MHz)	LISN Pol.	Q.P. Result [dBμV]	A.V Result [dBμV]	Q.P. Limit [dBμV]	A.V Limit [dBμV]	Margin [dB]
0.150	N	36.1	-	48	-	11.9
0.496	N	36.3	-	48	-	11.7
0.637	N	31.7	-	48	-	16.3
0.684	N	29.8	-	48	-	18.2
0.829	N	23.0	-	48	-	25.0
15.813	N	28.0	-	48	-	20.0
0.458	L1	34.3	-	48	-	13.7
<b>0.498</b>	<b>L1</b>	<b>37.9</b>	-	<b>48</b>	-	<b>10.1</b>
0.640	L1	31.2	-	48	-	16.8
0.683	L1	28.3	-	48	-	19.7
0.828	L1	20.6	-	48	-	27.4
15.814	L1	32.0	-	48	-	16.0

Table 3: Conducted Test Data

**NOTES:**

1. All modes of operation were investigated and the worst-case emissions are reported.
2. L1 = Phase; N = Neutral
3. See "APPENDIX 1 Conducted measurement Graph"
4. Refer to "Photographs" for actual system test setup
5. Margin = Q.P. Limit - Q.P. Result
6. Result = Cable loss + insertion loss + Reading value
7. Measurement Data's kept in DIGITAL EMC.



Test Data:	July 31, 2002	Humidity:	53 %
	Temperature: 25	Barometric:	995 mbar

### S-VIDEO(800\*600)

Frequency (MHz)	LISN Pol.	Q.P. Result [dB $\mu$ V]	A.V Result [dB $\mu$ V]	Q.P. Limit [dB $\mu$ V]	A.V Limit [dB $\mu$ V]	Margin [dB]
0.451	N	35.0	-	48	-	13.0
0.505	N	30.9	-	48	-	17.1
0.593	N	33.6	-	48	-	14.4
15.813	N	33.1	-	48	-	14.9
16.209	N	32.1	-	48	-	15.9
0.450	L1	34.5	-	48	-	13.5
0.507	L1	32.5	-	48	-	15.5
0.592	L1	32.1	-	48	-	15.9
0.654	L1	23.8	-	48	-	24.2
<b>15.813</b>	<b>L1</b>	<b>36.3</b>	-	<b>48</b>	-	<b>11.7</b>
16.208	L1	32.4	-	48	-	15.6

Table 4: Conducted Test Data

#### NOTES:

1. All modes of operation were investigated and the worst-case emissions are reported.
2. L1 = Phase; N = Neutral
3. See "APPENDIX 1 Conducted measurement Graph"
4. Refer to "Photographs" for actual system test setup
5. Margin = Q.P. Limit - Q.P. Result
6. Result = Cable loss + insertion loss + Reading value
7. Measurement Data's kept in DIGITAL EMC.



Test Data:	July 31, 2002	Humidity:	53 %
	Temperature: 25	Barometric:	995 mbar

### VIDEO IN(800\*600)

Frequency (MHz)	LISN Pol.	Q.P. Result [dB $\mu$ V]	A.V Result [dB $\mu$ V]	Q.P. Limit [dB $\mu$ V]	A.V Limit [dB $\mu$ V]	Margin [dB]
<b>0.450</b>	<b>N</b>	<b>34.5</b>	-	<b>48</b>	-	<b>13.5</b>
0.516	N	30.8	-	48	-	17.2
0.593	N	34.2	-	48	-	13.8
0.639	N	27.0	-	48	-	21.0
0.708	N	28.8	-	48	-	19.2
15.813	N	32.3	-	48	-	15.7
0.450	L1	33.1	-	48	-	14.9
0.516	L1	31.5	-	48	-	16.5
0.635	L1	25.8	-	48	-	22.2
0.707	L1	22.3	-	48	-	25.7
1.859	L1	30.5	-	48	-	17.5
15.813	L1	36.5	-	48	-	11.5

Table 5: Conducted Test Data

#### NOTES:

1. All modes of operation were investigated and the worst-case emissions are reported.
2. L1 = Phase; N = Neutral
3. See "APPENDIX 1 Conducted measurement Graph"
4. Refer to "Photographs" for actual system test setup
5. Margin = Q.P. Limit - Q.P. Result
6. Result = Cable loss + insertion loss + Reading value
7. Measurement Data's kept in DIGITAL EMC.



## 5.2 Electromagnetic Radiation Disturbance

RESULT :

Pass

### 5.2.1 Measurement Procedure

In the range of 30MHz to 1GHz the Electric Field strength was measured in accordance with ANSI C 63.4:1992. The test set-up was made according to ANSI C 63.4:1992.

On open test site, which allows a 3m-distance measurement. The EUT was placed in the center of a wooden turntable. The height of this table was 0.8m. The measurement was conducted with both horizontal and vertical antenna polarization (high: 1-4m).

The turntable has been fully rotated. The highest radiation of the equipment has been recorded. By varying the configuration of the test sample and the cable routing it was attempted to maximize the emission. For further description of the configuration refer to the picture of the test set-up.

### 5.2.2 List of Test and Measurement Instruments

Radiated Emission (OATS)				
Name of Instrument	Model No	Serial No	Manufacturer	Next Cal. Date
RFI/Field intensity Meter	KNM-504D	4N-161-4	Kyoritsu Electrical Work	2002.07
Frequency Converter	KCV-604C	4-230-3	Kyoritsu Electrical Work	2002.07
Spectrum Analyzer	8563E	3720A07025	Hewlett Packard	2002.08
BICONICAL ANT.	VHA9103	VHA91031946	SCHWARZBECK	2003.06
LOG-PERIODIC ANT.	UHALP9108-A1	1098	SCHWARZBECK	2003.06
Amplifier	8447D	2944A10144	Agilent	2003.04
Position Controller	5902T2	14173	TOKIN	N/A
DRIVER	5902T2	14174	TOKIN	N/A
SWITCH	MP59B	6100097292	ANRITSU	N/A
Radiated Emission (ANECHOIC CHAMBER-PRE TESTING)				
Spectrum Analyzer	E4404B	US41061134	Agilent	2003.04
Amplifier (25dB)	8447D	2443A03690	Agilent	2003.04
BICONICAL ANT.	VHA9103	VHA91031946	SCHWARZBECK	2003.06
LOG-PERIODIC ANT.	UHALP9108-A1	1098	SCHWARZBECK	2003.06
CONTROLLER	5900	N/A	TOKIN	N/A



5.2.3 Radiated Test Data

2) Measurement uncertainty(95%, Confidence level, k=2) : +5.3dB / -4.74dB

3) Result ;

Test Data: July 10, 2002 Humidity: 55 %
Temperature: 24 Barometric: 987 mbar

RGB2(1024\*768)

Table with 7 columns: Frequency [MHz], ANT Pol., Reading [dBμV], T.F [dB(1/m)], Results [dBμV/m], Limits [dBμV/m], Margin [dB]. Contains 15 rows of test data.

Table 7 : Radiation Test Data

NOTES:

- 1. All modes of operation were investigated and the worst-case emissions are reported.
2. H = Horizontal; V = Vertical
3. Margin = Limit - Result
4. Refer to "Photographs" for actual system test setup.
5. Measurement Data's kept in DIGITAL EMC
6. T.F. : Correction Factors(Cable loss + Antenna factor) - AMP Gain
7. Sample calculation ;

At Frequency : 835.100MHz

Result = Reading + T.F.=40.09+(1.31)=41.4[dBμV/m]



Test Data:	July 10, 2002	Humidity:	55 %
	Temperature: 24	Barometric:	987 mbar

### RGB2(640\*480)

Frequency [MHz]	ANT Pol.	Reading [dBμV]	T.F [dB(1/m)]	Results [dBμV/m]	Limits [dBμV/m]	Margin [dB]
224.000	H	39.46	-6.66	32.8	46	13.2
342.825	H	48.61	-7.81	40.8	46	5.2
723.550	H	38.78	-0.88	37.9	46	8.1
837.525	H	39.64	1.36	41.0	46	5.0
854.500	H	35.10	1.70	36.8	46	9.2
934.525	H	35.09	3.21	38.3	46	7.7
970.900	H	35.29	4.01	39.3	54	14.7
224.000	V	37.16	-6.66	30.5	46	15.5
342.825	V	45.51	-7.81	37.7	46	8.3
<b>386.475</b>	<b>V</b>	<b>47.50</b>	<b>-6.40</b>	<b>41.1</b>	<b>46</b>	<b>4.9</b>
403.450	V	45.22	-5.92	39.3	46	6.7
667.775	V	41.38	-1.68	39.7	46	6.3
934.525	V	33.79	3.21	37.0	46	9.0

Table 8 : Radiation Test Data

#### NOTES:

- All modes of operation were investigated and the worst-case emissions are reported.
- H = Horizontal; V = Vertical
- Margin = Limit - Result
- Refer to "Photographs" for actual system test setup.
- Measurement Data's kept in DIGITAL EMC
- T.F. : Correction Factors(Cable loss + Antenna factor) - AMP Gain
- Sample calculation ;

At Frequency : 386.475MHz

$$\text{Result} = \text{Reading} + \text{T.F.} = 47.50 + (-6.40) = 41.1 [\text{dB}\mu\text{V}/\text{m}]$$



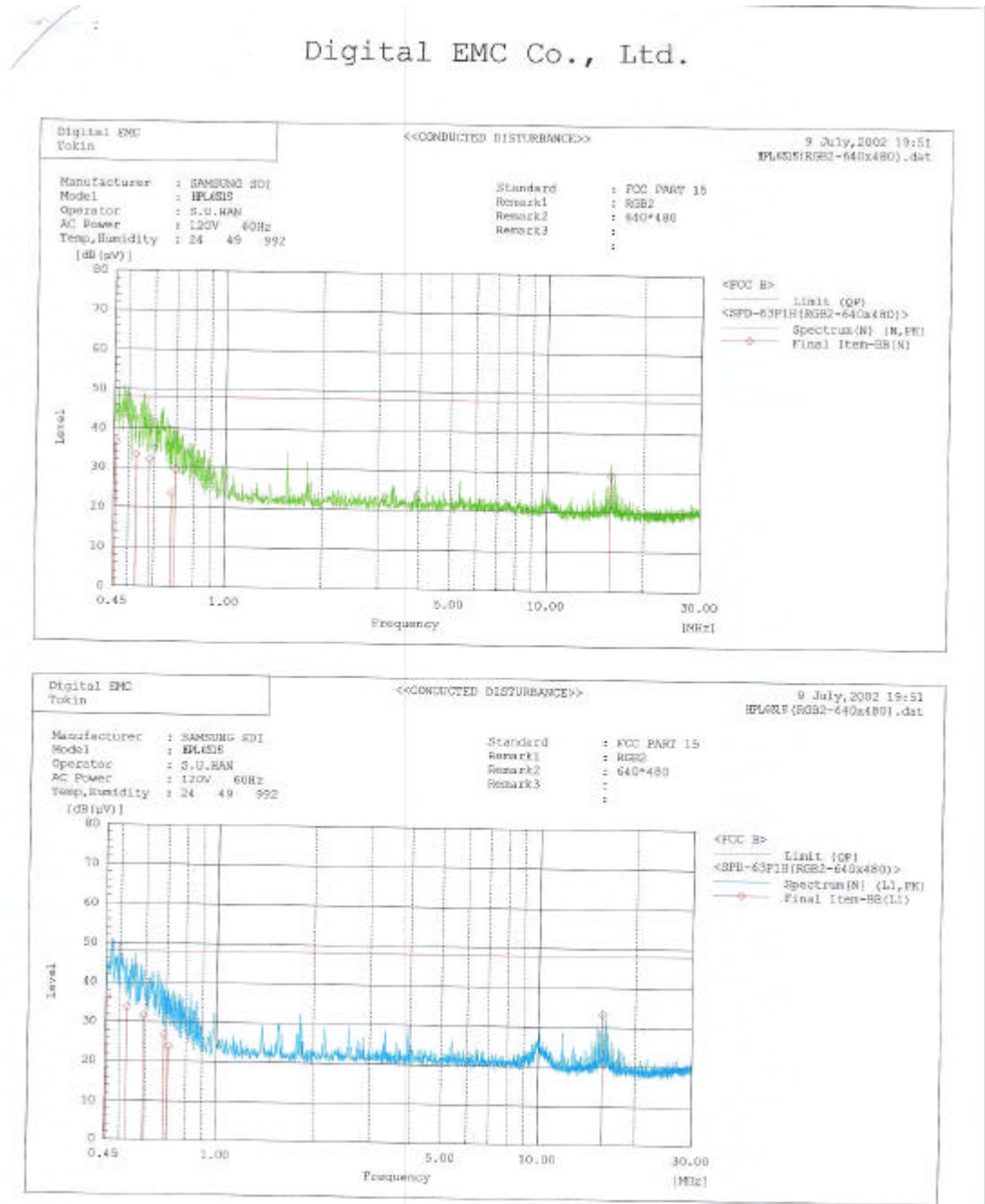






## APPENDIX 1 CONDUCTED MEASUREMENT GRAPH

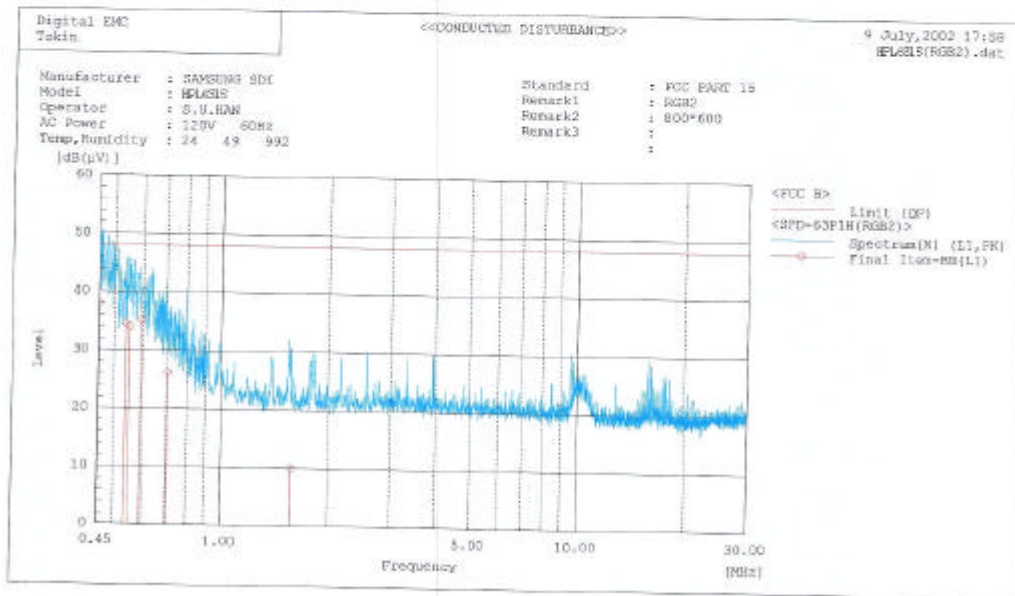
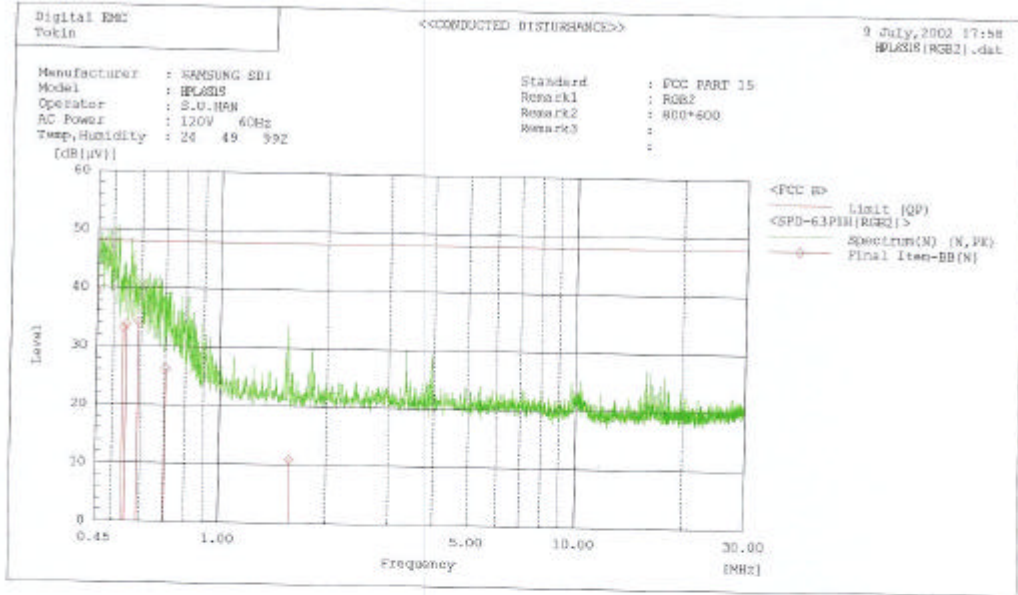
RGB2(640\*480)





RGB2(800\*600)

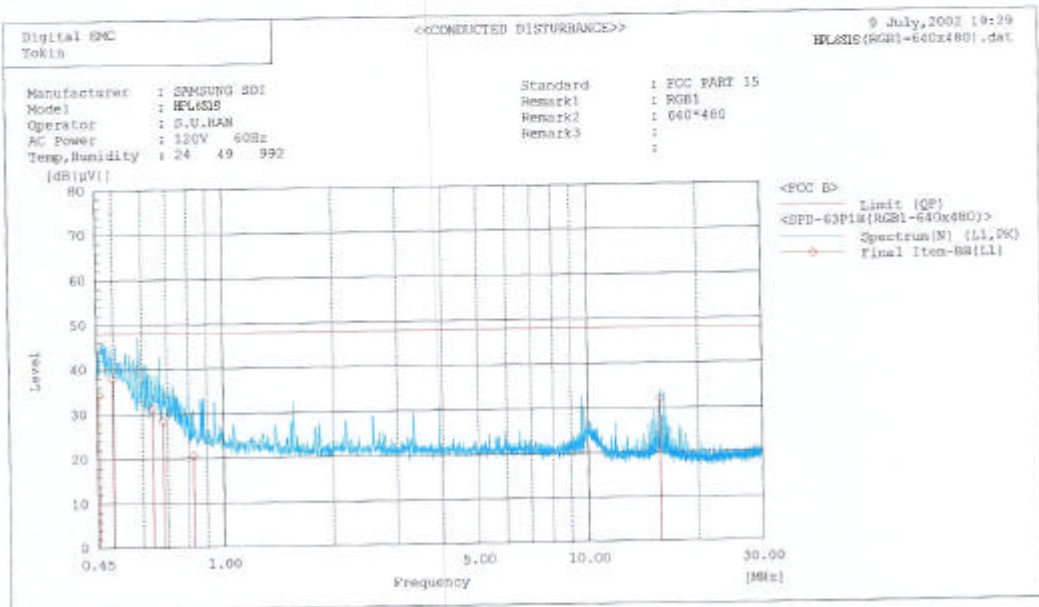
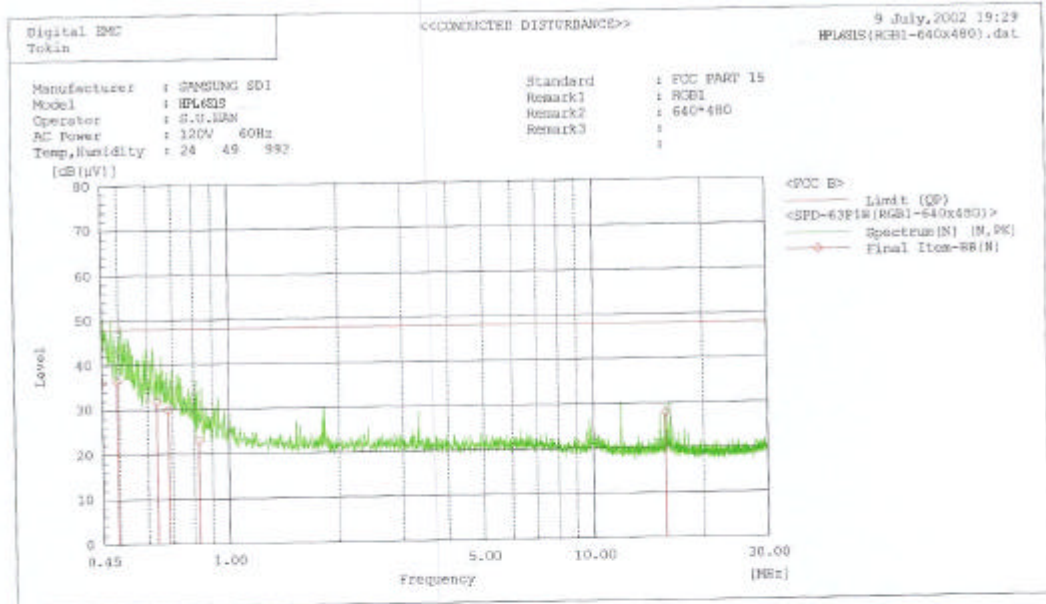
Digital EMC Co., Ltd.





RGB1(640\*480)

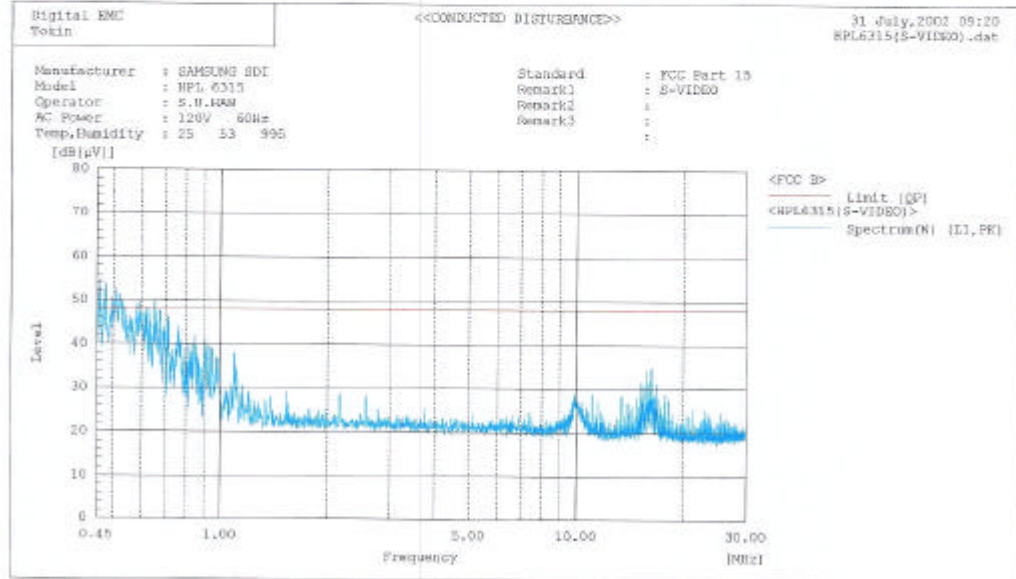
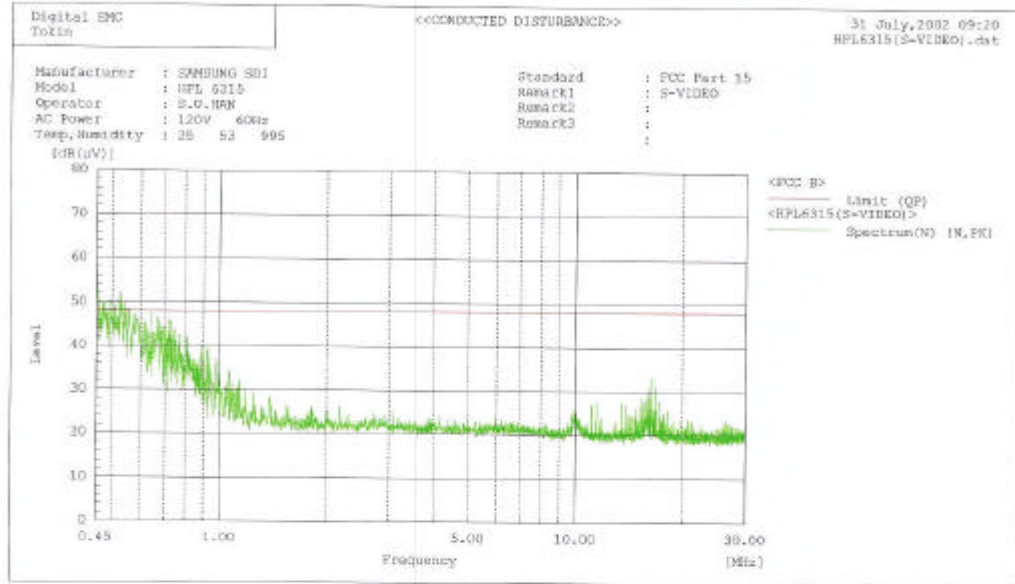
Digital EMC Co., Ltd.





## S-VIDEO(800\*600)

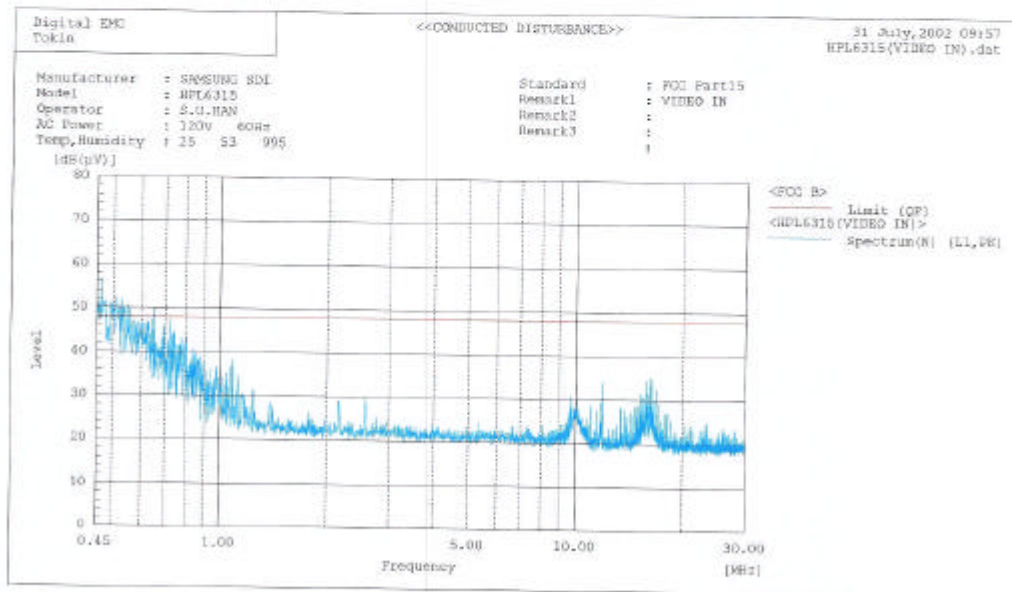
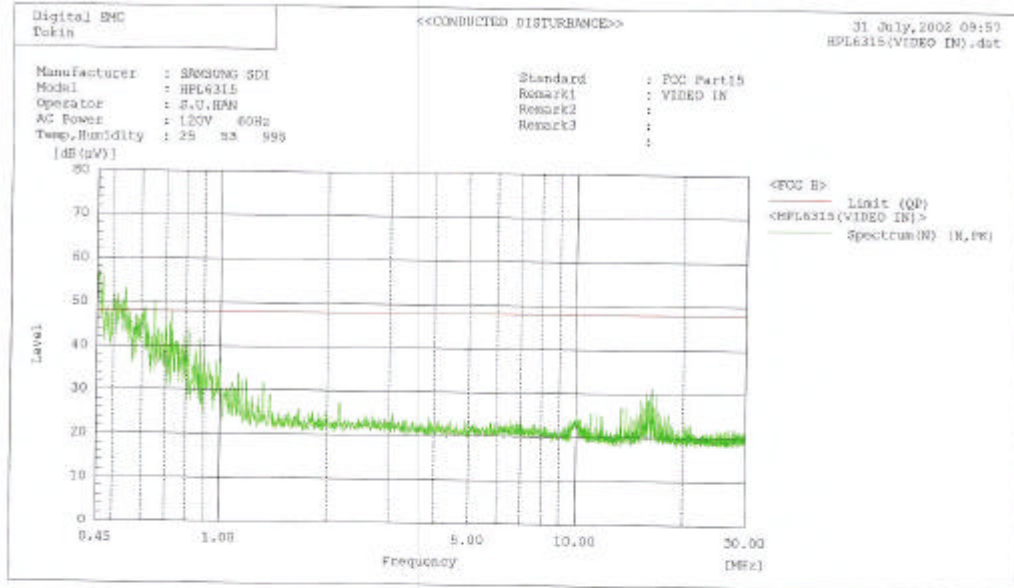
Digital EMC Co., Ltd.





## VIDEO IN(800\*600)

Digital EMC Co., Ltd.





## RGB1(800\*600)

Digital EMC Co., Ltd.

