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EMC TEST REPORT For FCC



Test Report No. : 2004120017

Date of Issue : December 28, 2004

FCC ID : NLMDIGIMAXV700

Model/Type No. : Digimax V700

Kind of Product : Digital Camera

Applicant : Samsung Techwin Co., Ltd.

Applicant Address : 145-3, Sangdaewon 1-Dong, Jungwon-Gu, Sungnam-City,

Kyungki-Do, Korea

Manufacturer : Samsung Techwin Co., Ltd.

Manufacturer Address : 42, Sungju-dong, Changwon City, Kyungnam, Korea

Contact Person : Mr. LEE BYOUNG KYU/Research Engineer

Telephone : +82-31-740-8469

Received Date : December 16, 2004

Test period : Start : December 17, 2004 End : December 17, 2004

The test results presented in this report relate only to the object tested.

CERTITEK Standards Laboratory 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).

Tested by

Reviewed by

Young-Joon, Park EMC Test Engineer

Date: December 28, 2004

James Hong

EMC Technical Manager Date: December 28, 2004

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REPORT REVISION HISTORY

Date	Revision	Page No
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1.0 General Product Description

1.0.1 Tested Equipment

	 ☑ Unless otherwise indicated, all tests were conducted on Model Digimax V700. ☐ Tests performed on Model were considered to be representative of Model(s) 						
1.0.2	Equipment	Size, Mobility and Identification					
	Dimensions: Mobility:	105(W) by 56.5(H) by 30.2(D) ⊠ mm ☐ in ⊠ Hand-held ⊠ Table-top ☐ Built-in ☐ Traveling ☐ Floor-standing					
	Serial No.:						
1.0.3	Electrical R	atings					
	Adapter						
	Input: Output:	AC 100-250V, 50/60Hz,0.3A DC 3.3V, 2.0A					
	•						

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Voltage: 120Vac Frequency: 60Hz

1.0.5 Clock & Other Frequencies Utilized

12MHz, 15.4MHz, 67.5MHz, 108MHz

1.1 Model Differences

Not applicable

1.2 Device Modifications

The following modifications were necessary for compliance:

Not applicable

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1.3 EUT Configuration(s)

See Appendix A for individual test set-up configuration(s). The following peripheral devices and/or interface cables were connected during the measurement:

Peripheral Devices

Device	Manufacturer	Model No.	Serial No.	FCC ID or DoC	
Adapter (1)	AULT KOREA Corp.	PW137KA0300N52	-	=	
Personal Computer	sonal Computer Hewlett-Packard Company		-	DoC	
LCD Monitor SAMSUNG		GH17US	N372HVEX225526	DoC	
Adapter (2) Anam Instruments (Shen Zhen) Co., Ltd.		AP04214-UV	0312103885AC	-	
Printer	SEIKO EPSON CORP.	Stylus Color 460	BWCE136524	DoC	
Keyboard	CHCONY ELECTRONICS (MAINLAND CHINA) CO. LTD	KB-0133	B55680FGAO 958M	DoC	
Mouse (PS/2 type)	SUZHOU LOGITECH ELECTRONICS CO., LTD	M-S69	F466B0MN 30517VN	DoC	
Serial Mouse	Microsoft	BASM1	4476266-20000	DoC	

#	Description	Ferrite Core	Length (m)	Other Details
1	AC power cable, Unshielded	No	1.8	Connect to AC power
2	AC power cable, Unshielded	No	1.8	Connect to AC power
3	AC power cable, Unshielded	No	1.8	Connect to AC power
4	AC power cable, Unshielded	No	1.8	Connect to AC power
5	DC output cable, Unshielded	No	1.5	Between the LCD Monitor and Adapter (2)
6	DC output cable, Unshielded	Yes	1.5	Between the EUT and Adapter (1)
7	USB cable, Shielded	Yes	1.5	Between the EUT and PC
8	Monitor cable, Shielded	No	1.8	Between the PC and LCD Monitor
9	Printer cable, Shielded	No	2.0	Between the PC and Printer
10	Keyboard cable, Shielded	No	1.5	PS/2 type
11	Mouse cable, Shielded	No	1.5	PS/2 type
12	Mouse cable, Shielded	No	1.5	Serial type

1.4 **Test Software** EMC Test V 1.0 Display Test Patterns - V1.5 Ping.exe Not applicable 1.5 **EUT Operating Mode(s)** Equipment under test was operated during the measurement under the following conditions: Standby Scrolling 'H' Display circles pattern Read / Write ☑ Practice operation – [PC mode] Charging and USB downloading mode [CCTV mode] Charging and AV output monitoring mode

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1.6 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.7 Test Facility

The measurement facility is located at 386-1, Ho-Dong, Yongin-City, Kyungki-Do, Korea 449-100. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.8 Measurement Procedure

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested. Final AC power line conducted emissions test was performed shielded room. (location is same as Preliminary test)

Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3 m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.

Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

* Measurement procedures was In accordance with ANSI C63.4-2001 7.2.3, 7.2.4, 8.3.1.1, 8.3.1.2

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Laboratory Accreditations and Listings 1.9

Country	Agency	Scope of Accreditation	Logo	
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	FC 93250	
JAPAN	JAPAN VCCI 10 meter Open Area Test Site and one conducted site.			
KOREA	MIC	EMI (10 meter Open Area Test Site and two conducted sites) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	No. 51, KR0025	
International	KOLAS	EMC	KOL45	
Europe	GLAS	EMC EN 55011, EN 55022, EN 61000-6-3, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 50130-4, EN 55024, EN 61204-3, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	TÜV No.13000796-02	

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2.0 Emissions Test Regulations

The emissions tests were performed according	to following regulations	s:
☐ EN 50081-1:1992 ☐ EN 61000-6-3:2001	☐ Class A ☐ Class A	☐ Class B ☐ Class B
☐ EN 50081-2:1993 ☐ EN 61000-6-4:2001	☐ Class A ☐ Class A	☐ Class B ☐ Class B
☐ EN 50083-2:2001		
☐ EN 55011:1998 +A1:1999	☐ Group 1 ☐ Class A	Group 2 Class B
☐ EN 55013:1990 +A12:1994 +A13:1996 +A ☐ EN 55013:2001	A14:1999	
☐ EN 55014-1:2000 ☐ EN 55014-1:2000 +A1:2001		
☐ EN 55015:2000 ☐ EN 55015:2000 +A1:2001		
☐ EN 55022:1994 +A1:1995 +A2:1997 ☐ EN 55022:1998 ☐ EN 55022:1998 +A1:2000	☐ Class A ☐ Class A ☐ Class A	☐ Class B ☐ Class B ☐ Class B
☐ EN 61000-3-2:1995 +A1:1998 +A2:1998 ☐ EN 61000-3-2:2000	+A14:2000	
☐ EN 61000-3-3:1995 ☐ EN 61000-3-3:1995 +A1:2001		
☐ VCCI V-3/2003.04	☐ Class A	☐ Class B
☐ AS/NZS 3548:1995 +A1:1997 +A2:1997	☐ Class A	☐ Class B
	☐ Class A	⊠ Class B
☐ CISPR 22:1997 The unit was tested to CISPR 22 and complied FCC under paragraphs 15.107 and 15.109.	☐ Class A with the alternate meth	☐ Class B nods allowed by
☐ CISPR 22:1997 +A1:2000	☐ Class A	☐ Class B

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2.1 Conducted Voltage Emissions

Test Date

December 17, 2004

Test Location

Shielded Room

Test Equipment

	Name of Equipment Manufacturer		Model No.	Serial No.	Due Date
\boxtimes	⊠ Field Strength Meter Rohde & Schwarz E		ESHS30	828144/002	2005-02-07
\boxtimes	LISN	EMCO	3825/2	9607-2574	2005-09-03
\boxtimes	LISN	EMCO	3825/2	9409-2246	2005-09-03
	Field Strength Meter	Rohde & Schwarz	ESHS30	862024/001	2005-02-24
	LISN	Rohde & Schwarz	ESH3-Z5	100207	2005-12-15
	LISN	EMCO	3825/2	9206-1971	2005-12-15

Frequency Range of Measurement

150 kHz to 30 MHz

Test Results

The requirements are:

Frequency (MHz)	Measured Data (dBuV)	Margin (dB)	Remark
3.73	42.8	3.2	Average
□ NOT MET			
Frequency (MHz)	Measured Data (dBuV)	Margin (dB)	Remark

■ NOT APPLICABLE

Remarks

See Appendix A for test data.

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2.2 Radiated Electric Field Emissions

Test Date

December 17, 2004

Test Location

☐ Testing was performed at a test distance of 3 meter Open Area Test Site

Test Equipment

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
\boxtimes	Field Strength Meter	Rohde & Schwarz	ESVS30	826638/008	2005-04-08
\boxtimes	ULTRA Broadband Antenna	Rohde & Schwarz	HL562	361324/014	2005-05-21
	Biconical Antenna	EMCO	3110	9202-1510	2005-04-09
	Log-periodic Antenna	EMCO	3146	9607-4567	2005-04-06

Frequency Range of Measurement

30 MHz to 2 GHz

Test Results

⊠ MET

The requirements are:

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
433.01	42.8	3.2	Quasi-Peak
☐ NOT MET			
Frequency	Measured Data	Margin (dB)	Remark

■ NOT APPLICABLE

Remarks

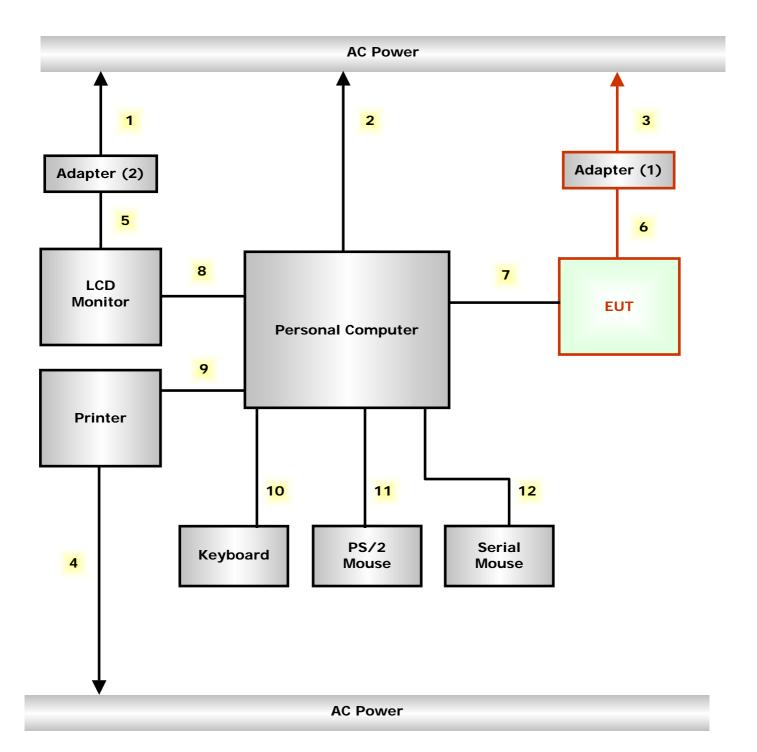
See Appendix A for test data

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Configuration



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APPENDIX A - TEST DATA

Conducted Voltage Emissions (Quasi-Peak reading)

Frequency	Correction				Quasi	-peak			Ave	rage	
. ,	Fac	ctor	Line	Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
[MHz]	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
2.42	0.1	0.2	L	56.0	39.5	39.8	16.2	46.0	34.0	34.3	11.7
3.23	0.1	0.2	N	56.0	41.6	41.9	14.1	46.0	34.9	35.2	10.8
3.73	0.1	0.2	L	56.0	46.6	46.9	9.1	46.0	42.5	42.8	3.2
3.78	0.1	0.2	L	56.0	45.2	45.5	10.5	46.0	22.3	22.6	23.4
3.83	0.1	0.2	N	56.0	44.9	45.2	10.8	46.0	40.4	40.7	5.3
10.99	0.1	0.2	N	60.0	44.3	44.6	15.4	50.0	38.7	39.0	11.1

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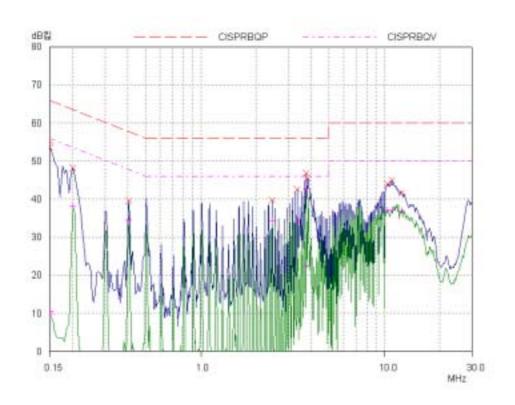
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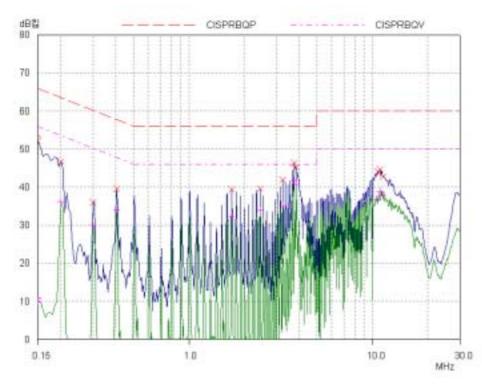
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Radiated Electric Field Emissions (Quasi-Peak reading)

Frequency	Reading	Pol.	Height	Correction Factor		Limits	Result	Margin
[MHz]	[dBuV/m]		[m]	Antenna	Cable	[dBuV/m]	[dBuV/m]	[dB]
36.08	15.7	V	1.8	17.20	0.50	40.0	33.4	6.6
108.30	25.3	V	1.0	9.50	1.10	43.5	35.9	7.6
216.31	29.9	Н	4.0	7.95	1.80	46.0	39.6	6.4
433.01	25.8	Н	4.0	14.10	2.90	46.0	42.8	3.2
539.75	22.6	Н	2.3	16.10	3.50	46.0	42.2	3.8
648.25	20.4	V	2.0	17.80	3.70	46.0	41.9	4.1
1081.50	22.8	Н	1.0	21.40	5.00	54.0	49.2	4.8
1188.75	18.1	V	2.5	21.40	5.00	54.0	44.5	9.5
1194.25	13.2	V	1.3	23.20	5.55	54.0	41.9	12.1
1601.25	10.3	V	1.5	24.50	5.83	54.0	40.6	13.4

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