Test Report

(TR-0910-009-02)

Applicant	:	VIGORHOOD PHOTOELECTRIC SHENZHEN CO., LTD.
Address	:	Building F, Hongfa Technology Industrial Park, Songbai Rd., Shiyan Town, Baoan District, Shenzhen, P.R.China
Manufacturer	:	VIGORHOOD PHOTOELECTRIC SHENZHEN CO., LTD.
Address	:	Building F, Hongfa Technology Industrial Park, Songbai Rd., Shiyan Town, Baoan District, Shenzhen, P.R.China
Product Name	:	Film & Photo Digital Scanner
Trademark	:	None
Model(s)	:	PS970
Standard(s)	:	FCC Part15 B : 2008
Test Result	:	Pass
Date of Test	:	Oct 26, 2009 to Nov 09, 2009
Report issued Dated	:	Nov 09, 2009

The results in this report apply only to the sample(s) tested. The production units are required to conform to the initial sample as received when the units are placed in the market.

Responsible Engineer	:		Approved by	:	
Engineer		Phenix Zhang	Technical manager		Chan King-Chui
Date	:	Nov 09, 2009	Date	:	Nov 09, 2009

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Description **Page**

1. Description of the Test Site

1.1 Test Site Location:

Laboratory	:	TDK South China EMC Center SAE Technologies Development (Dongguan) Co., Ltd. Changan Branch
Address	:	Zhenan Hi-tech Industrial Park, Dongguang City, Guangdong Province, China
Phone no.	:	(86)-769-8564-4678
Fax no.	:	(86)-769-8564-4499
Email	:	emc@cn.tdk.com

1.2 Site Registration

VCCI (September, 2008)	:	Reg. No. R-2205, C-2392
FCC site registration (July, 2008)	:	Reg. No. 732901
IC registration	:	Reg. No. 7993
EMCC (September, 2008)	:	Reg. No. NAR/tl-060330

1.3 Test Scope

EMC testing according to national / international standards

2. Description of the Tested Samples

2.1 Customer Information

Customer	:	VIGORHOOD PHOTOELECTRIC SHENZHEN CO., LTD.
Address	:	Building F, Hongfa Technology Industrial Park, Songbai Rd., Shiyan Town, Baoan District, Shenzhen, P.R.China
Phone no.	:	+86-755-61286945
Fax no.	:	+86-755-27637332

2.2 Identification of EUT

Trademark	:	None
Model(s) No.	:	PS970
Serial No.	:	None

2.3 Power Source(s)

Adapter:

Model Name	:	RS18-SP0501000
Input	:	AC100-240V / 350mA MAX
Output	:	DC5.0V / 1.0A
Frequency	:	50-60Hz

2.4 Test Standards List

FCC Part 15 B (2008)

American national standard for methods of measurement of radio noise emissions from low-voltage electrical and electronic equipment in the range of 9KHz to 40GHz.

3. Test Specifications

3.1 Standard(s) Used

TEST ITEM		Standard
Conducted emission	:	FCC Part 15 B: 2008
Radiated emission	:	FCC Part 15 B: 2008

3.2 Deviations from the Test Specification

N/A

4. Test Result

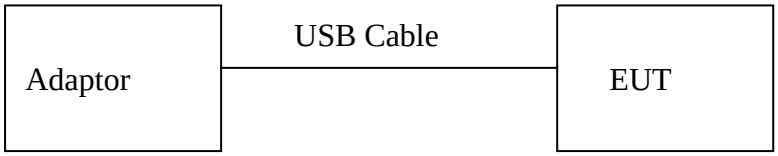
4.1 Radiated Emission

4.1.1 Test Summary

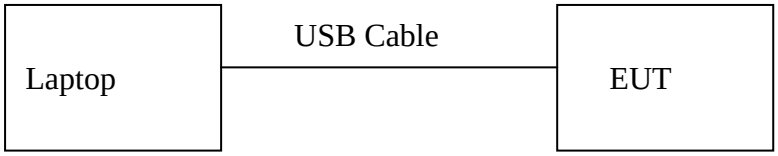
Test Room	:	Chamber
Power Source	:	AC 120V / 60Hz
Standards:	:	FCC Part 15 B: 2008
EUT Type	:	Table Top
EUT configuration	:	EUT's highest possible emission level

4.1.2 Block diagram of test setup

SD Read mode:



USB+SD mode:



4.1.3 Measurement method

Radiated emissions from 30 MHz to 1000 MHz were measured according to the methods defines in FCC Part 15 B and ANSI C63.4:2003. The EUT was placed on a nonmetallic stand in the open-field site, 0.8 meter above the ground plane. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

4.1.4. Result

PASS

2009-11-06 08:22:39

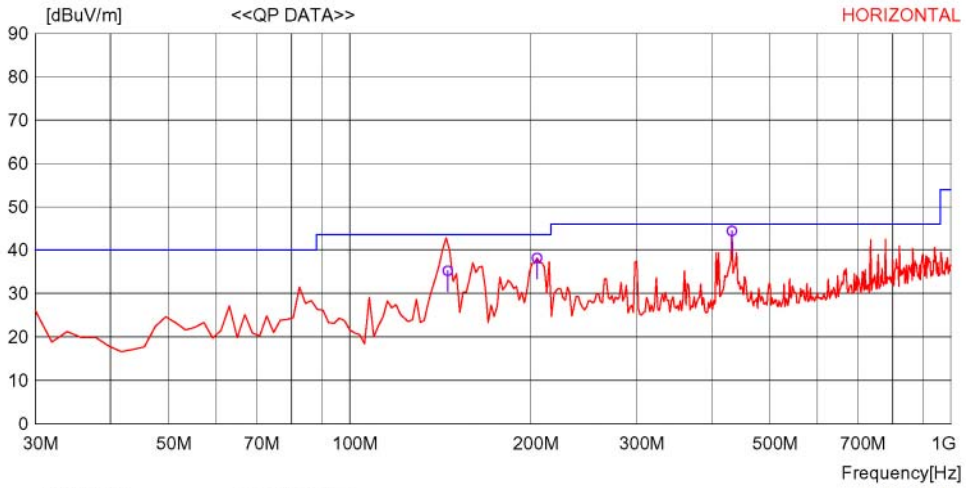
RADIATED EMISSION

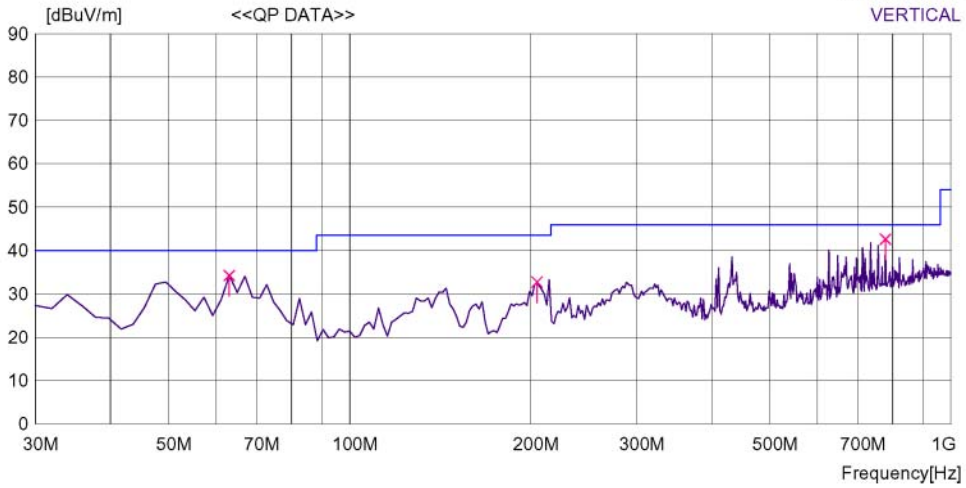
Date : 2009-11-06 08:22:26

Trade Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC 120V/60Hz
Product Name	:	Film & Photo Digital Scanner	Temp/Humi	:	27/55RH%
Test Condition	:	SD Read MODE	Operator	:	Phenix Zhang

Memo :

LIMIT : FCC Part15 Class B(3m)/USA





2009-11-06 08:22:39

RADIATED EMISSION

Date : 2009-11-06 08:22:26

Trade Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC 120V/60Hz
Product Name	:	Film & Photo Digital Scanner	Temp/Humi	:	27/55RH%
Test Condition	:	SD Read MODE	Operator	:	Phenix Zhang

Memo :

LIMIT : FCC Part15 Class B(3m)/USA

No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT QP [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [deg]
----- Horizontal ------										
1	145.565	47.5	11.5	7.7	31.5	35.2	43.5	8.3	255	178
2	204.950	48.3	13.3	8.0	31.5	38.1	43.5	5.4	100	232
3	432.384	49.3	17.1	9.2	31.3	44.3	46.0	1.7	100	236
----- Vertical ------										
4	63.046	48.4	10.6	7.0	31.7	34.3	40.0	5.7	100	249
5	204.950	43.0	13.3	8.0	31.5	32.8	43.5	10.7	300	117
6	778.399	41.3	22.3	10.3	31.3	42.6	46.0	3.4	100	175

2009-11-06 08:25:54

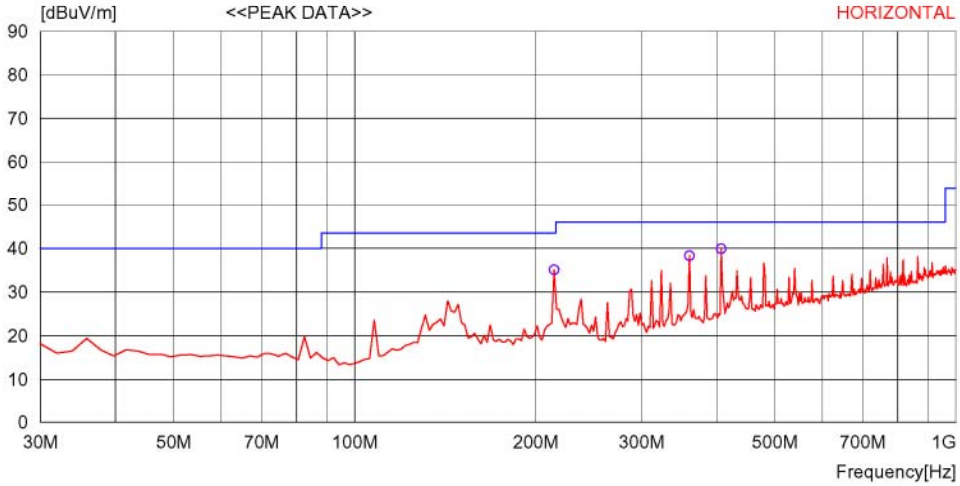
RADIATED EMISSION

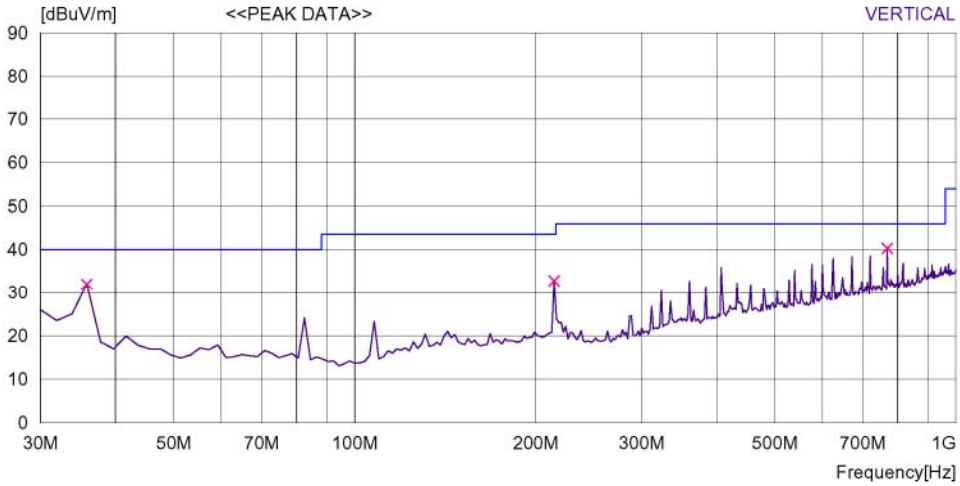
Date : 2009-11-06 08:25:34

Trade Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC 120V/60Hz
Product Name	:	Film & Photo Digital Scanner	Temp/Humi	:	27/55RH%
Test Condition	:	Senser On	Operator	:	Phenix

Memo :

LIMIT : FCC Part15 Class B(3m)/USA





2009-11-06 08:25:54

RADIATED EMISSION

Date : 2009-11-06 08:25:34

Trade Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC 120V/60Hz
Product Name	:	Film & Photo Digital Scanner	Temp/Humi	:	27/55RH%
Test Condition	:	Senser On	Operator	:	Phenix

Memo :

LIMIT : FCC Part15 Class B(3m)/USA

No.	FREQ	READING PEAK	ANT FACTOR	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal ------										
1	214.670	45.5	13.0	8.1	31.5	35.1	43.5	8.4	200	270
2	360.461	44.6	16.0	9.0	31.3	38.3	46	7.7	100	339
3	407.114	45.5	16.5	9.2	31.3	39.9	46	6.1	100	26
----- Vertical ------										
4	35.832	45.5	11.3	6.9	31.7	32.0	40	8.0	100	47
5	214.670	43.2	13.0	8.1	31.5	32.8	43.5	10.7	200	242
6	768.679	39.2	22.2	10.2	31.3	40.3	46	5.7	100	354

2009-11-06 08:29:02

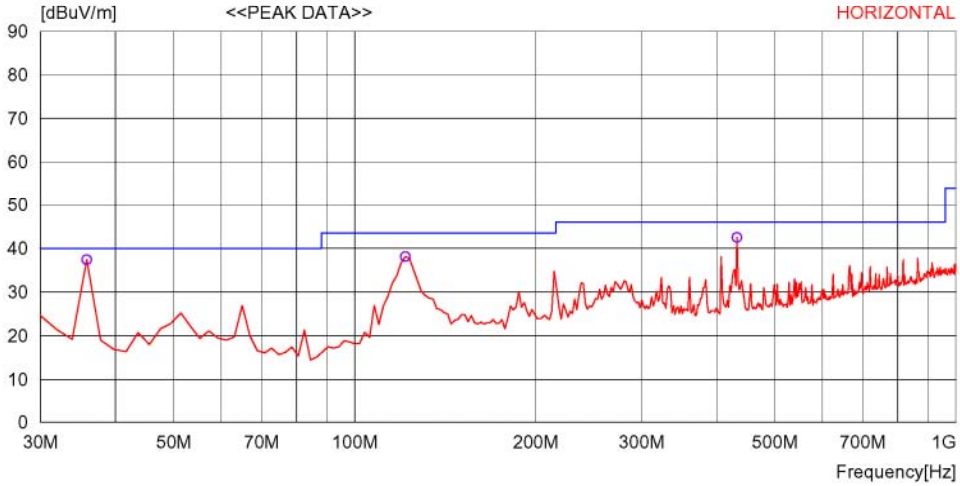
RADIATED EMISSION

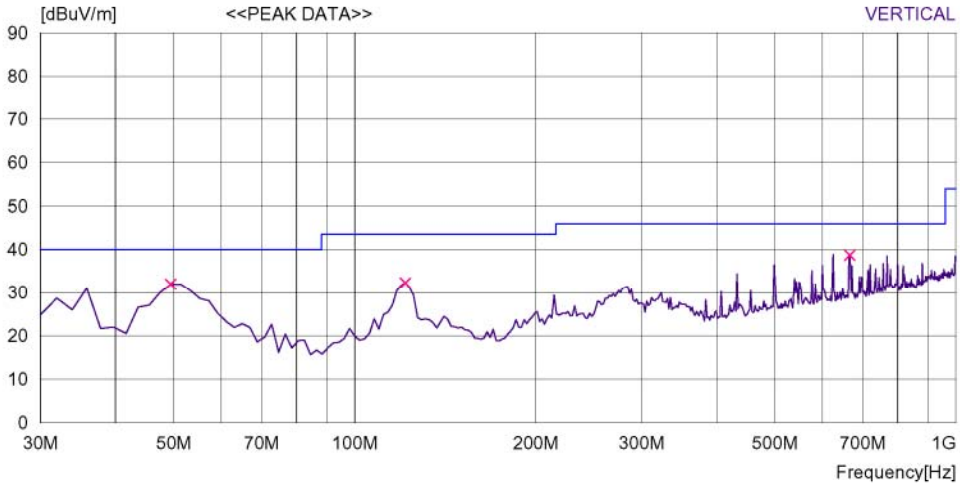
Date : 2009-11-06 08:28:52

Trade Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC 120V/60Hz
Product Name	:	Film & Photo Digital Scanner	Temp/Humi	:	27/55RH%
Test Condition	:	USB+SD MODE	Operator	:	Phenix

Memo :

LIMIT : FCC Part15 Class B(3m)/USA





2009-11-06 08:29:02

RADIATED EMISSION

Date : 2009-11-06 08:28:52

Trade Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC 120V/60Hz
Product Name	:	Film & Photo Digital Scanner	Temp/Humi	:	27/55RH%
Test Condition	:	USB+SD MODE	Operator	:	Phenix

Memo :

LIMIT : FCC Part15 Class B(3m)/USA

No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	35.832	50.9	11.3	6.9	31.7	37.4	40	2.6	300	283
2	121.363	51.3	10.8	7.6	31.6	38.1	43.5	5.4	300	332
3	432.384	47.5	17.1	9.2	31.3	42.5	46	3.5	100	204
----- Vertical ------										
4	49.439	45.9	10.9	6.9	31.7	32.0	40	8.0	100	68
5	121.363	45.5	10.8	7.6	31.6	32.3	43.5	11.2	100	10
6	665.652	39.4	20.6	10.1	31.4	38.7	46	7.3	100	89

4.2 Conducted Emission (mains)

4.2.1 Test Summary

Test Room	:	Shielded Room
Power Source	:	AC 120V / 60Hz
Standards	:	FCC Part 15 B: 2008
EUT Type	:	Table Top
EUT configuration	:	EUT's highest possible emission level

4.2.2 Block diagram of test setup

SD Read mode:

USB+SD mode:

4.2.3 Measurement method

The EUT along with its peripherals were placed on a 1.0m (W) x 1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4m space from a vertical reference plane. The EUT was connected to power mains through a Artificial Mains Network(AMN), which provided 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.

The excess power cable between the EUT and the AMN was bundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

4.2.4. Result

PASS

2009-11-09 16:43:49

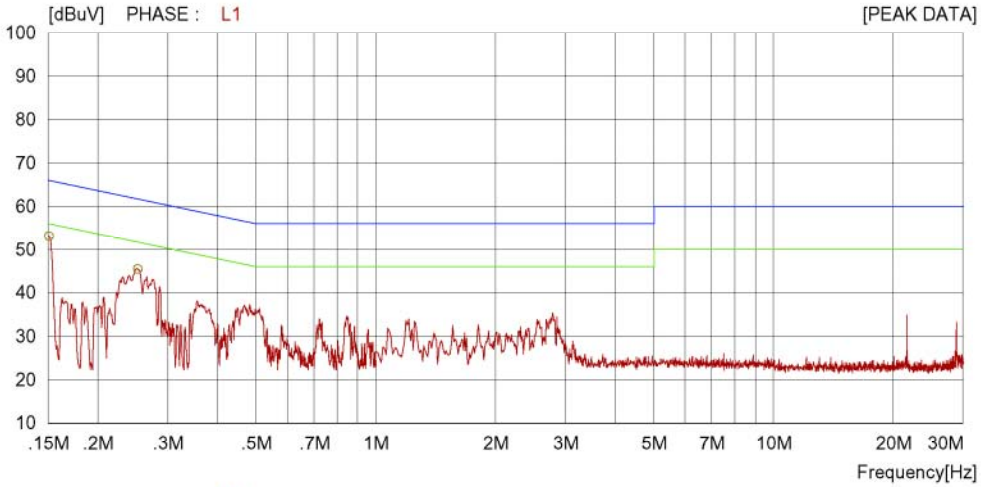
Conducted Emission

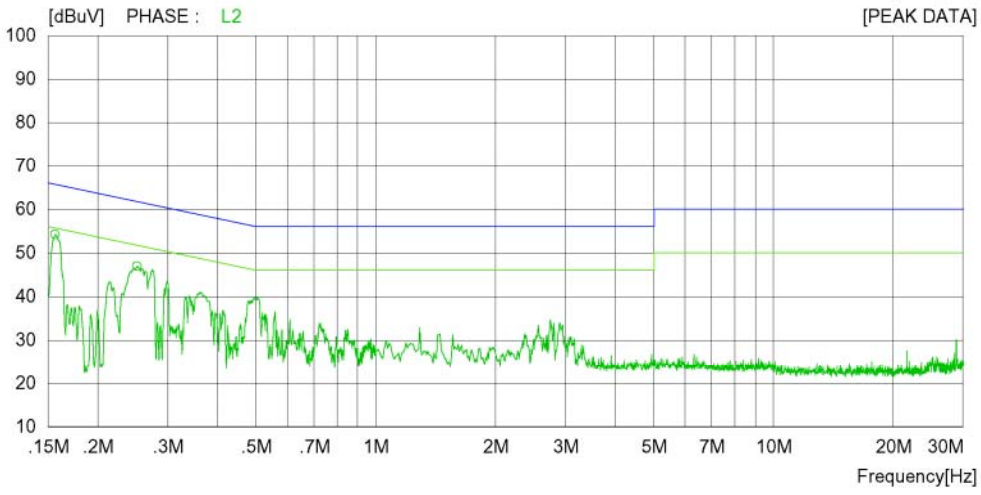
TDK South China EMC Centre
Date : 2009-11-09 16:43:44

Company Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC120V/60Hz
Product Name	:	Film & Photo Digital Scanner	Temp/Humi	:	25deg / 52%RH
Test condition	:	SD Read MODE	Operator	:	YongSheng Pang

Memo :

LIMIT : FCC Part 15 B QP
FCC Part 15 B AV





TDK South China EMC Centre Tell:0769-8564-4678 Fax:0769-8564-4499

2009-11-09 16:43:50

Conducted Emission

TDK South China EMC Centre
Date : 2009-11-09 16:43:44

Company Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC120V/60Hz
Product Name	:	Film & Photo Digital Scanner	Temp/Humi	:	25deg / 52%RH
Test condition	:	SD Read MODE	Operator	:	YongSheng Pang

Memo :

LIMIT : FCC Part 15 B QP
FCC Part 15 B AV

NO	FREQ	READING(PK)	C.F	RESULT	LIMIT		MARGIN		PHASE
					QP	AV	QP	AV	
	[MHz]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
1	0.15100	43.3	9.8	53.1	65.9	55.9	12.8	2.8	L1
2	0.25200	35.8	9.7	45.5	61.7	51.7	16.2	6.2	L1
3	0.15600	44.4	9.8	54.2	65.7	55.7	11.5	1.5	L2
4	0.25100	37.2	9.7	46.9	61.7	51.7	14.8	4.8	L2

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2009-11-09 16:56:19

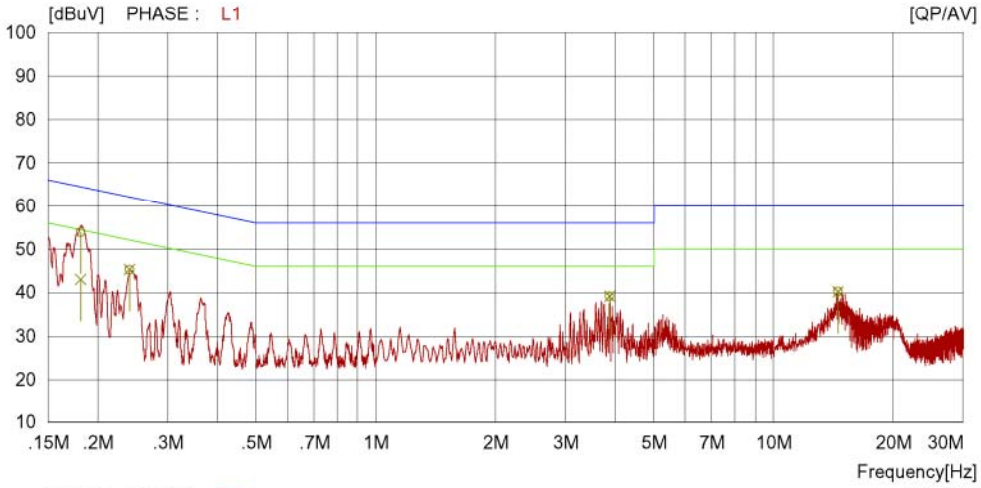
Conducted Emission

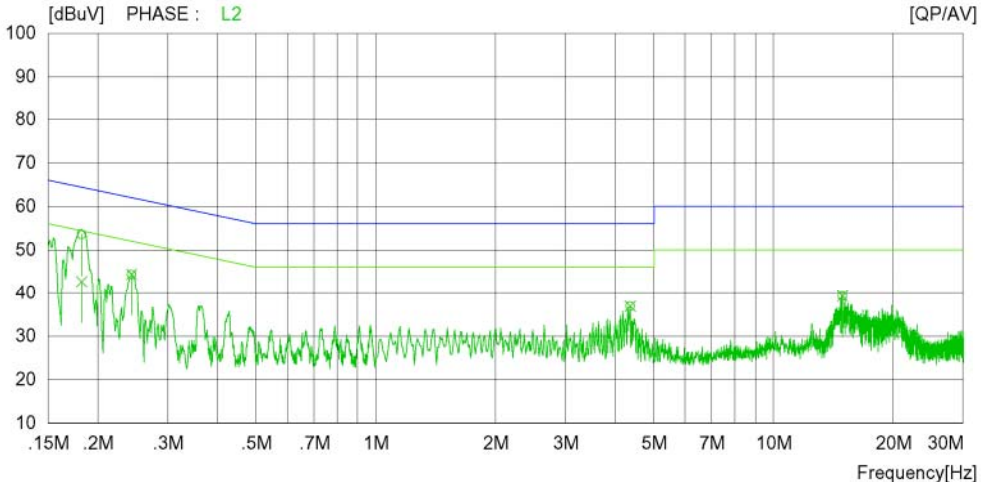
TDK South China EMC Centre
Date : 2009-11-09 16:56:15

Company Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC120V/60Hz
Product Name	:	Film&Photo Digital Scanner	Temp/Humi	:	25deg / 52%RH
Test condition	:	USB+SD MODE	Operator	:	Phenix

Memo :

LIMIT : FCC Part 15 B QP
FCC Part 15 B AV





TDK South China EMC Centre Tell:0769-8564-4678 Fax:0769-8564-4499

2009-11-09 16:56:19

Conducted Emission

TDK South China EMC Centre
Date : 2009-11-09 16:56:15

Company Name	:	VIGORHOOD	Document No.	:	
Model Name	:	PS970	Power Supply	:	AC120V/60Hz
Product Name	:	Film&Photo Digital Scanner	Temp/Humi	:	25deg / 52%RH
Test condition	:	USB+SD MODE	Operator	:	Phenix

Memo :

LIMIT : FCC Part 15 B QP
FCC Part 15 B AV

NO	FREQ	READING		C.FACTOR	RESULT		LIMIT		MARGIN		PHASE
		QP	AV		QP	AV	QP	AV	QP	AV	
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	
1	0.18100	44.1	33.2	9.8	53.9	43.0	64.4	54.4	10.5	11.4	L1
2	0.24000	35.6	35.6	9.7	45.3	45.3	62.1	52.1	16.8	6.8	L1
3	3.87000	29.5	29.5	9.6	39.1	39.1	56.0	46.0	16.9	6.9	L1
4	14.52500	30.7	30.7	9.5	40.2	40.2	60.0	50.0	19.8	9.8	L1
5	0.18200	43.7	32.8	9.8	53.5	42.6	64.4	54.4	10.9	11.8	L2
6	0.24300	34.6	34.6	9.7	44.3	44.3	62.0	52.0	17.7	7.7	L2
7	4.36000	27.2	27.2	9.6	36.8	36.8	56.0	46.0	19.2	9.2	L2
8	14.90000	29.7	29.7	9.5	39.2	39.2	60.0	50.0	20.8	10.8	L2

TDK South China EMC Centre Tell:0769-8564-4678 Fax:0769-8564-4499

5. Test Setup

5.1 Ancillary and accessory equipment used (Laboratory provided)

No.	Description	Manufacturer	Model Name	Series Number
1.	Laptop	DELL	VOSTOR 1400	11800572585
2.	SD Card	Panasonic	RP-SDM04G	BK7JA186842

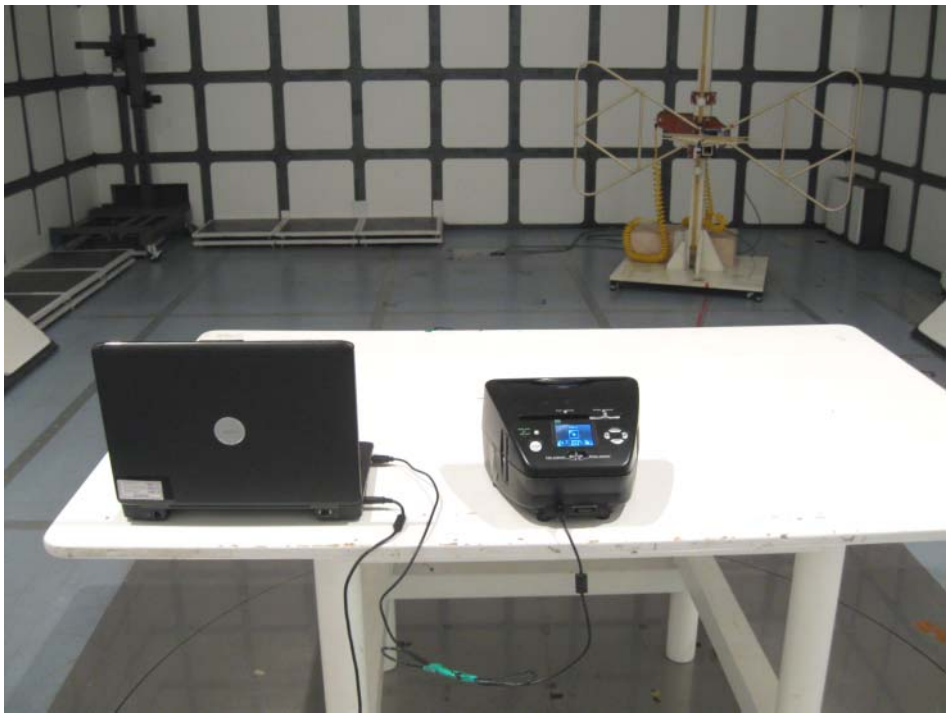
5.2 Ancillary and accessory equipment used (Customer provided)

No.	Name	Description
C1.	USB cable	1.5m non-shielded cable with 1 core

5.3 Photographs of the Test Configuration

5.3.1 Radiated emission

USB+SD mode:



SD Read mode and Sensor ON mode:

5.2.2 Conducted emission

SD Read mode:

USB+SD mode:

5.4 Photographs of the EUT

Enclosure of EUT

Enclosure of EUT

Adapter

Cable

6. Equipment List

No.	Equipment	Manufacturer	Model	Serial No.	Calibration Date
1	Precision Biconical Antenna	TDK Co.	PBA-2030	090500	2009-09-18
2	Precision Log Periodic Antenna	TDK Co.	PLP-3003	061001	2009-09-18
3	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130174	2009-09-18
4	Horn antenna	TDK	HRN-0118	130186	2009-04-07
5	Attenuator 6 dB	Agilent	8491B	MY39260147	2009-09-18
6	Preamplifier	TDK Sonoma	310	242803	2009-04-07
7	Preamplifier	ELENA	EAU-3718 GXA	A070701	2009-04-07
8	EMI Receiver	Rohde & Schwarz	ESIB26	100234	2009-04-07
9	EMI Receiver	Rohde & Schwarz	ESCS30	100350	2009-04-07
10	Spectrum Analyzer	Agilent	E4403B	MY44210199	2009-04-07
11	Art. Mains Network	EMCO	3816/2	00044921	2009-04-07
12	Transient Limiter(10 dB)	Agilent	11947A	3107A03736	2009-04-07
13	Personal Computer	HP	DX2000MT	MXD4250FZM	N/A
14	Personal Computer	HP	DX2000MT	MXD4130B2N	N/A
15	Semi-Anechoic Chamber	TDK Co.	N/A	N/A	2009-04-07
16	Shielded Room	TDK Co.	N/A	N/A	N/A

7. Test Uncertainty

Test	Confidence Level	CISPR Uncertainty	Our Uncertainty
Conducted Emission (Mains) 0.15- 30MHz	95%	3.6dB	3.3dB
Radiated emission (3m) 30-1000MHz	95%	5.2dB	4.3dB

8. Appendix

8.1 Confirmation of Compliance within the Limits

8.1.1 Method of calculating measurement result

Radiated Emission

For example the point of 63.046MHz, Vertical, Page 8.

	Reading	+	Antenna factor	+	Cable loss	-	Gain	=	Result
Example	48.4	+	10.6	+	7.0	-	31.7	=	34.3

Conducted Emission

For example the point of 0.151MHz, QP, L1, Page 15.

	Reading	+	C. FACTOR	=	Result
Example	43.3	+	9.8	=	53.1