



VERIFICATION OF COMPLIANCE

This Verification of Compliance is hereby issued to the below named company. The test results of this report relate only to the tested sample identified in this report.

**Technical Standard: EMC DIRECTIVE 89/336/EEC
(EN 55022 / EN 55024)**

General Information

Applicant: AVISION INC.
No. 20, Creation Rd. I, Science-Based Industrial Park,
Hsinchu, Taiwan, R.O.C.

Product Description

EUT Description: Scanner
Model Number: XEROX DocuMate 515

Measurement Standard

EN 55022:1998 + A1:2000 + A2:2003
EN 61000-3-2:2000
EN 61000-3-3:1995 + A1:2001
EN 55024:1998 + A1:2001 + A2:2003
IEC 61000-4-2:1995 + A1:1998 + A2:2000 ; IEC 61000-4-3:2002 + A1:2002 ;
IEC 61000-4-4:1995 + A1:2000 + A2:2001 ; IEC 61000-4-5:1995 + A1:2000 ;
IEC 61000-4-6:1996 + A1:2000 ; IEC 61000-4-11:1994 + A1:2000

Measurement Facilities

Laboratory Name: **Compliance Certification Services Inc. (Hsin-Chu Lab).**
*Rm. 258, Bldg. 17, NO.195, Sec.4 Chung Hsing Rd.,
ChuTung Chen, Hsinchu, Taiwan 310, R.O.C
Tel: +886-3-5910068 / Fax: +886-3-5825720*

This device has been shown to be in compliance with and was tested in accordance with the measurement procedures specified in the Standards & Specifications listed above and as indicated in the measurement report number: 70409306-E

S. B. Lu
S.B. Lu / Assistant Manager



Date: April 17, 2007



EC-Declaration of Conformity

For the following equipment:

Scanner

(Product Name)

XEROX DocuMate 515

(Model Designation / Trade Name)

AVISION INC.

(Company Name)

No. 20, Creation Rd. I, Science-Based Industrial Park, Hsinchu, Taiwan, R.O.C.

(Company Address)

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive (89/336/EEC, Amended by 92/31/EEC, 93/68/EEC & 98/13/EC), For the evaluation regarding the Electromagnetic Compatibility (89/336/EEC, Amended by 92/31/EEC, 93/68/EEC & 98/13/EC), the following standards are applied:

EN 55022:1998 + A1:2000 + A2:2003

EN 61000-3-2:2000

EN 61000-3-3:1995 + A1:2001

EN 55024:1998 + A1:2001 + A2:2003

IEC 61000-4-2:1995 + A1:1998 + A2:2000 ; IEC 61000-4-3:2002 + A1:2002 ;

IEC 61000-4-4:1995 + A1:2000 + A2:2001 ; IEC 61000-4-5:1995 + A1:2000 ;

IEC 61000-4-6:1996 + A1:2000 ; IEC 61000-4-11:1994 + A1:2000

The following manufacturer / importer or authorized representative established within the EUT is responsible for this declaration:

(Company Name)

(Company Address)

Person responsible for making this declaration:

(Name, Surname)

(Position / Title)

(Place)

(Date)

(Legal Signature)



CE EMC

TEST REPORT

For

Scanner

Model : XEROX DocuMate 515

Issued for

AVISION INC.

NO. 20, Creation Rd. I, Science-Based Industrial Park,

Hsinchu, Taiwan 300, R.O.C.

Issued by

Compliance Certification Services Inc.

Hsinchu Lab.

Rm. 258, Bldg. 17, NO.195, Sec.4 Chung Hsing Rd.,

ChuTung Chen, Hsinchu, Taiwan 310, R.O.C

TEL: (03) 591-0068

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1. TEST REPORT CERTIFICATION

Applicant : AVISION INC.
Address : NO. 20, Creation Rd. I, Science-Based Industrial Park,
Hsinchu, Taiwan 300, R.O.C.
Equipment Under Test : Scanner
Model : XEROX DocuMate 515
Tested Date : January 02 ~ February 01, 2007 ; April 10 ~17 , 2007

APPLICABLE STANDARD	
Emission Standard	Test Result
EN 55022:1998 + A1:2000 + A2:2003	No non-compliance noted
EN 61000-3-2:2000	No non-compliance noted
EN 61000-3-3:1995 + A1:2001	No non-compliance noted
Immunity Standard EN 55024:1998 + A1:2001 + A2:2003	Test Result
IEC 61000-4-2:1995 + A1:1998 + A2:2000	No non-compliance noted
IEC 61000-4-3:2002 + A1:2002	No non-compliance noted
IEC 61000-4-4:1995 + A1:2000 + A2:2001	No non-compliance noted
IEC 61000-4-5:1995 + A1:2000	No non-compliance noted
IEC 61000-4-6:1996 + A1:2000	No non-compliance noted
IEC 61000-4-11:1994 + A1:2000	No non-compliance noted

Approved by:

Reviewed by:

S. B. Lu



Y. J. Jeng

S.B. Lu

Assistant Manager of Hsinchu Laboratory
Compliance Certification Services Inc.

Y.J. Jeng

Test Engineer of Hsinchu Laboratory
Compliance Certification Services Inc.

WE HEREBY CERTIFY THAT: The measurements shown in the attachment were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable. We assume full responsibility for the accuracy and completeness of these measurements and vouch for the qualifications of all persons taking them.



2. EUT DESCRIPTION

2.1 DESCRIPTION OF EUT & POWER

Product Name	Scanner
Model Number	XEROX DocuMate 515
Power Source	24VDC (From Power Adapter)
Power Cable	Unshielded cable, 1.8m with ferrite core
Signal Cable	Shielded USB cable, 1.8m with ferrite core
I/O Port	USB Port × 1、 ADF Port × 1

Power Adapter

No.	Manufacturer	Model No.	Power Input	Power Output
1	HiTRON	HEG42-240100-7L	100-240V, 50-60Hz , 0.8~0.4A	24V, 1A
2	SINO-AMERICAN	SA148A-24V	100-240V, 50-60Hz, 1.2A	24V, 2A, 48W

Remark : 1. This report is modified from 70102303-D.

2. For more details, please refer to the User's manual of the EUT.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with EN 55022:1998 + A1:2000 + A2:2003, EN 61000-3-2:2000, EN 61000-3-3:1995 + A1:2001, EN 55024:1998 + A1:2001 + A2:2003.



4. FACILITIES AND ACCREDITATION

4.1 FACILITIES

All measurement facilities used to collect the measurement data are located at Rm.258, Bldg.17, NO.195 , Sec. 4, Chung Hsing Rd., Chu-Tung Chen. Hsin-Chu, Taiwan 310 R.O.C.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

4.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with preselectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.







Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

4.3 LABORATORY ACCREDITATIONS LISTINGS

The test facilities used to perform radiated and conducted emissions tests are accredited by National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code: 200118-0 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government. In addition, the test facilities are listed with Federal Communications Commission (registration no: 90585 and 90584).

4.4 LABORATORY ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	NVLAP	EN 55014-1, AS/NZS 1044, CNS 13783-1, IEC/CISPR 14-1, IEC/CISPR 22, EN 55022, EN 61000-3-2, EN 61000-3-3, ANSI C63.4, AS/NZS CISPR 22, AS/NZS 3548, IEC 61000-4-2/3/4/5/6/8/11	 200118-0
USA	FCC	3/10 meter Open Area Test Sites to perform FCC Part 15/18 measurements	 90585, 90584
Japan	VCCI	3/10 meter Open Area Test Sites to perform conducted/radiated measurements	 R-1229/1189 C-1250/1294
Taiwan	TAF	FCC Method-47 CFR Part 15 Subpart C,D,E CISPR 11, FCC METHOD-47 CFR Part 18, EN 55011, CNS 13803, CISPR 13, CNS 13439, FCC Method-47 CFR Part 15 Subpart B, CISPR 14-1, EN 55014-1, CNS 13783-1, EN 55015, CNS 14115, CISPR 22, EN 55022, VCCI CNS 13438, EN 61000-4-2/3/4/5/6/8/11	 Testing Laboratory 0240
Taiwan	BSMI	CNS 13803, CNS 13438, CNS 13439, CNS 13783-1, CNS 14115	 SL2-IS-E-0002 SL2-IN-E-0002 SL2-A1-E-0002 SL2-R1-E-0002 SL2-R2-E-0002 SL2-L1-E-0002
Canada	Industry Canada	RSS212, Issue 1	 IC 4417-1

* No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government.



5. CALIBRATION AND UNCERTAINTY

5.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

5.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 1000 MHz	+/- 3.2 dB
Radiated Emission, 1 to 26.5 GHz	+/- 3.2 dB
Power Line Conducted Emission	+/- 2.1 dB

Uncertainty figures are valid to a confidence level of 95%



6. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

No.	Product	Manufacturer	Model No.	Serial No.	FCC ID
1	PC	DELL	DC8M	7WY2J1S	DoC
2	Monitor	ViewSonic	VS10623	PS053800627	DoC
3	Keyboard	Genuine	K288	206628621	DoC
4	Mouse	HP	M-S34	LZE95050431	DZL211029
5	Printer	HP	C6431D	CN19T6S011	DoC
6	Modem	ZYXEL	Omni 56K	S1Z4107729	1880MN156K

SETUP DIAGRAM FOR TESTS

EUT & peripherals setup diagram is shown in appendix setup photos.

EUT OPERATING CONDITION

1. Setup whole system for test as shown on setup diagram.
2. Power on all equipments.
3. PC run "windows XP" operating system.
4. PC run "AVcapturet.exe" program.
5. Begin the test.



7. EMISSION TEST

7.1 RADIATED EMISSIONS

LIMITS

All emanation from a class B computing device or system , including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below :

Frequency (MHz)	Distance (METERS)	Field Strengths(dBµV/m)	
		CLASS A	CLASS B
30—230	10	40	30
230—1000	10	47	37

Note :

- (1) The tighten limit shall apply at the edge between two frequency bands.
- (2) Distance refers to the distance in meters between the measuring instrument antenna and the closest point of any part of the device or system.

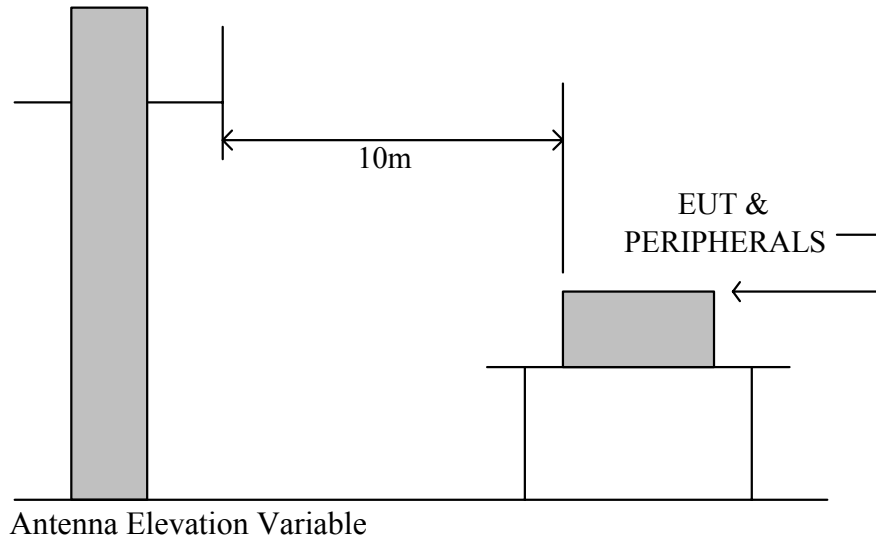
TEST EQUIPMENTS

The following test equipments are utilized in making the measurements contained in this report.

Manufacturer or Type	Model No.	Serial No.	Date of Calibration	Calibration Period	Remark
CHASE BI-LOG ANTENNA	CBL6112B	2696	March 28, 2006	1 Year	FINAL
R/S TEST RECEIVER	ESCS 30	826547/004	June 13, 2006	1 Year	FINAL
OPEN SITE	-----	No.1	May 06, 2006	1 Year	FINAL
N TYPE COAXIAL CABLE	9913-30M	-----	July 28, 2006	1 Year	FINAL

TEST SETUP

The diagram below shows the test setup which is utilized to make these measurements.



TEST PROCEDURE

The devices under test were placed on a rotatable table top 0.8 meter above ground. The table was rotated 360 degrees to determine the position of the highest radiation. EUT is set 10 meters from the interference receiving antenna which is mounted on the top of a variable height mast. The antenna height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement. The bandwidth setting on the E.M.I. meter (R/S TEST RECEIVER) is 120 KHz.

The levels are quasi peak value readings. The frequency spectrum from 30MHz to 1000MHz was investigated.

TEST RESULTS

No non-compliance noted



Product Name	Scanner	Test Date	2007/01/23
Model	XEROX DocuMate 515	Test By	YJ. Jeng
Test Mode	Normal operating	TEMP & Humidity	22.5°C, 72%

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading at 10m(dBμV)		Limits (dBμV/m)	Emission Level at 10m(dBμV/m)	
			Horizontal	Vertical		Horizontal	Vertical
169.23	9.68	1.67	10.80	11.60	30.00	22.14	22.94
189.96	9.35	1.78	12.80	10.80	30.00	23.93	21.93
195.31	9.38	1.83	13.40	12.20	30.00	24.61	23.41
200.00	9.40	1.87	15.70	17.30	30.00	26.97	28.57
209.26	10.03	1.91	13.00	11.40	30.00	24.94	23.34
215.39	10.45	1.93	15.70	15.40	30.00	28.08	27.78

Remark: Emission level (dBμV/m) =Antenna Factor (dB/m) + Cable loss (dB) + Meter Reading (dBμV).



7.2 POWERLINE CONDUCTED EMISSIONS

LIMITS

Frequency (MHz)	Maximum Rf Line Voltage (dB μ V)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

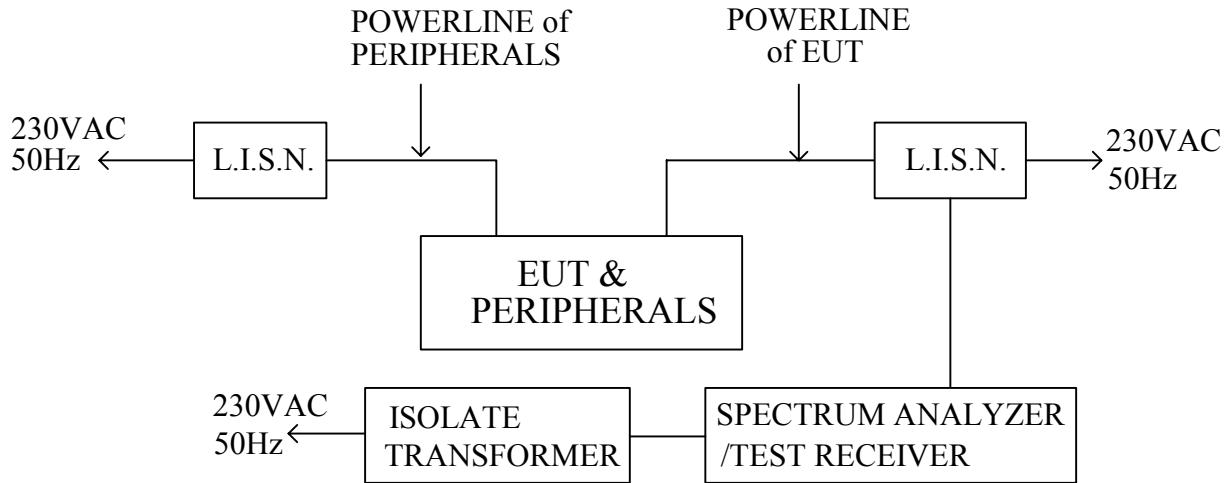
* Decreasing linearly with the logarithm of the frequency

TEST EQUIPMENTS

The following test equipments are used during the conducted powerline tests :

Manufacturer or Type	Model No.	Serial No.	Date of Calibration	Calibration Period	Remark
EMCO L.I.S.N.	3850/2	9311-1025	January 16, 2007	1 Year	FINAL
CHASE L.I.S.N	NNLK 8129	8129118	January 16, 2007	1 Year	FINAL
R & S TEST RECEIVER	ESHS30	838550/003	February 27, 2006	1 Year	FINAL
KEENE SHIELDED ROOM	5983	No.1	N/A	N/A	FINAL
R & S PULSE LIMIT	EHS3Z2	357.8810.52	July 10, 2006	1 Year	FINAL
N TYPE COAXIAL CABLE	-----	-----	August 21, 2006	1 Year	FINAL
50 Ω TERMINATOR	-----	-----	July 10, 2006	1 Year	FINAL

TEST SETUP



TEST PROCEDURE

The test procedure is performed in a 12ft×12ft×8ft(L×W×H) shielded room.

The EUT along with its peripherals were placed on a 1.0m(W)× 1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

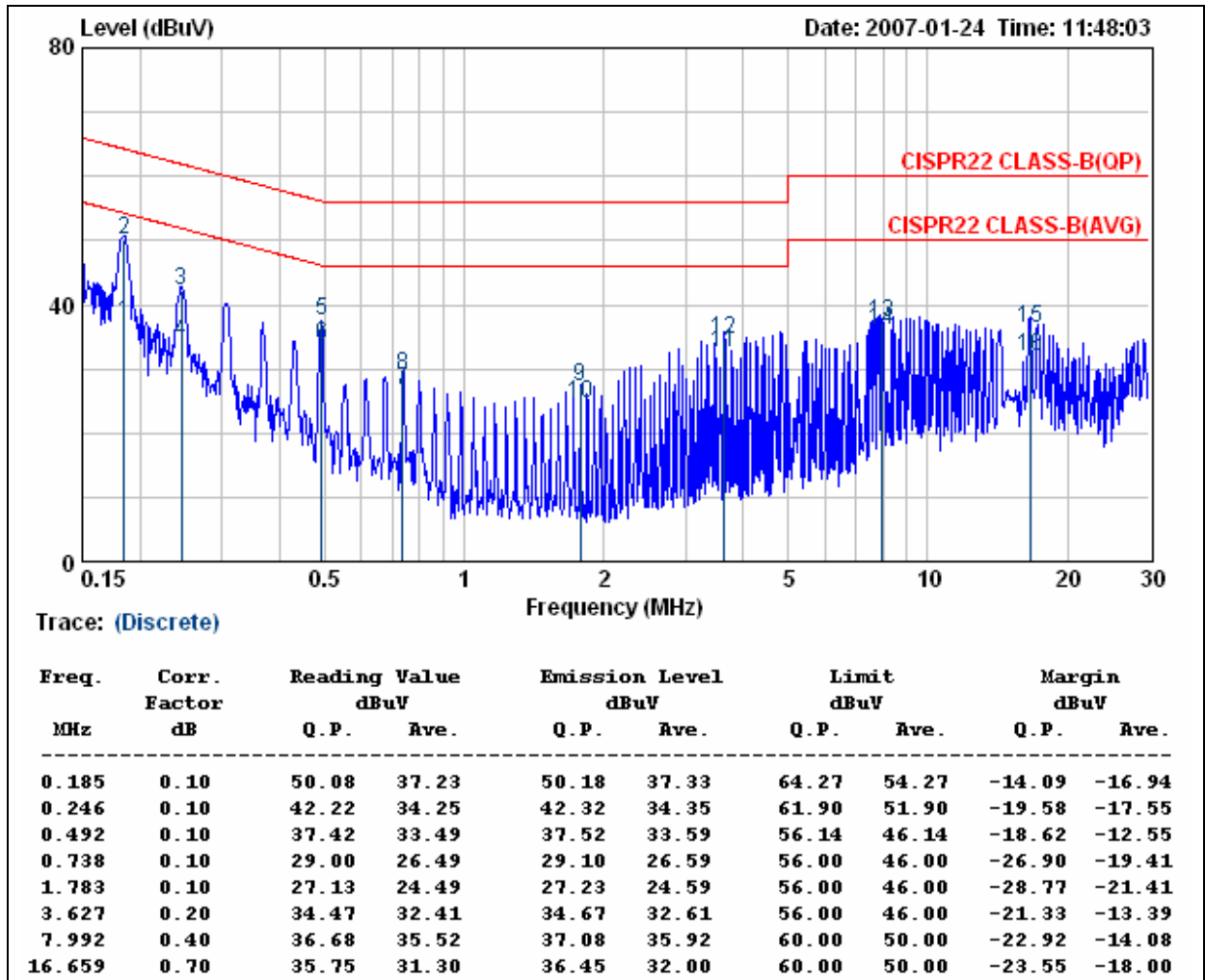
TEST RESULTS

No non-compliance noted



Product Name	Scanner	Test Date	2007/01/24
Model	XEROX DocuMate 515	Test By	YJ. Jeng
Test Mode	Normal operating / Adapter (1)	TEMP & Humidity	24.2°C, 71%

LINE



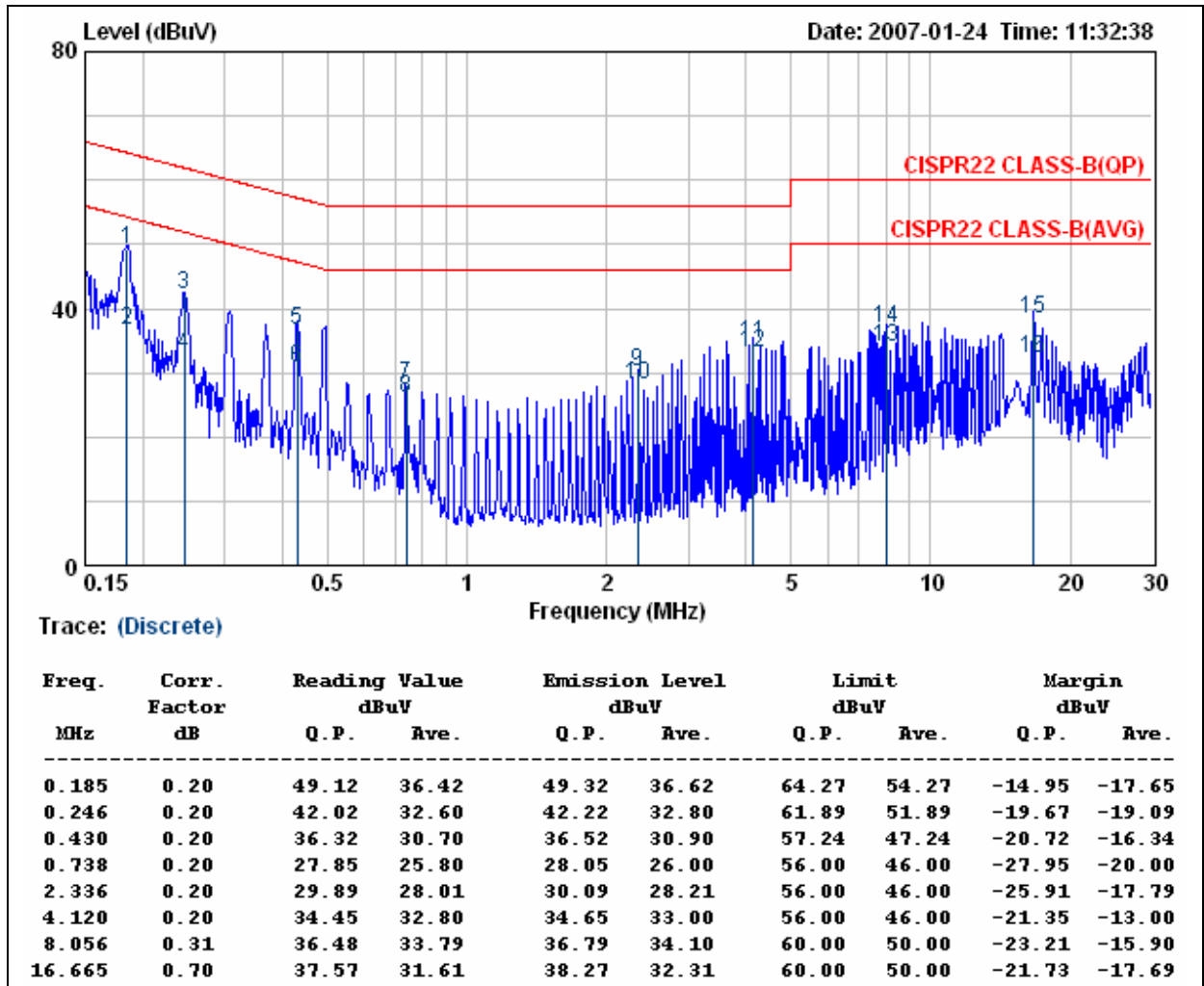
Remark:

1. Correction Factor = Insertion loss + cable loss
2. Margin value = Emission level – Limit value



Product Name	Scanner	Test Date	2007/01/24
Model	XEROX DocuMate 515	Test By	YJ. Jeng
Test Mode	Normal operating / Adapter (1)	TEMP & Humidity	24.2°C, 71%

NEUTRAL



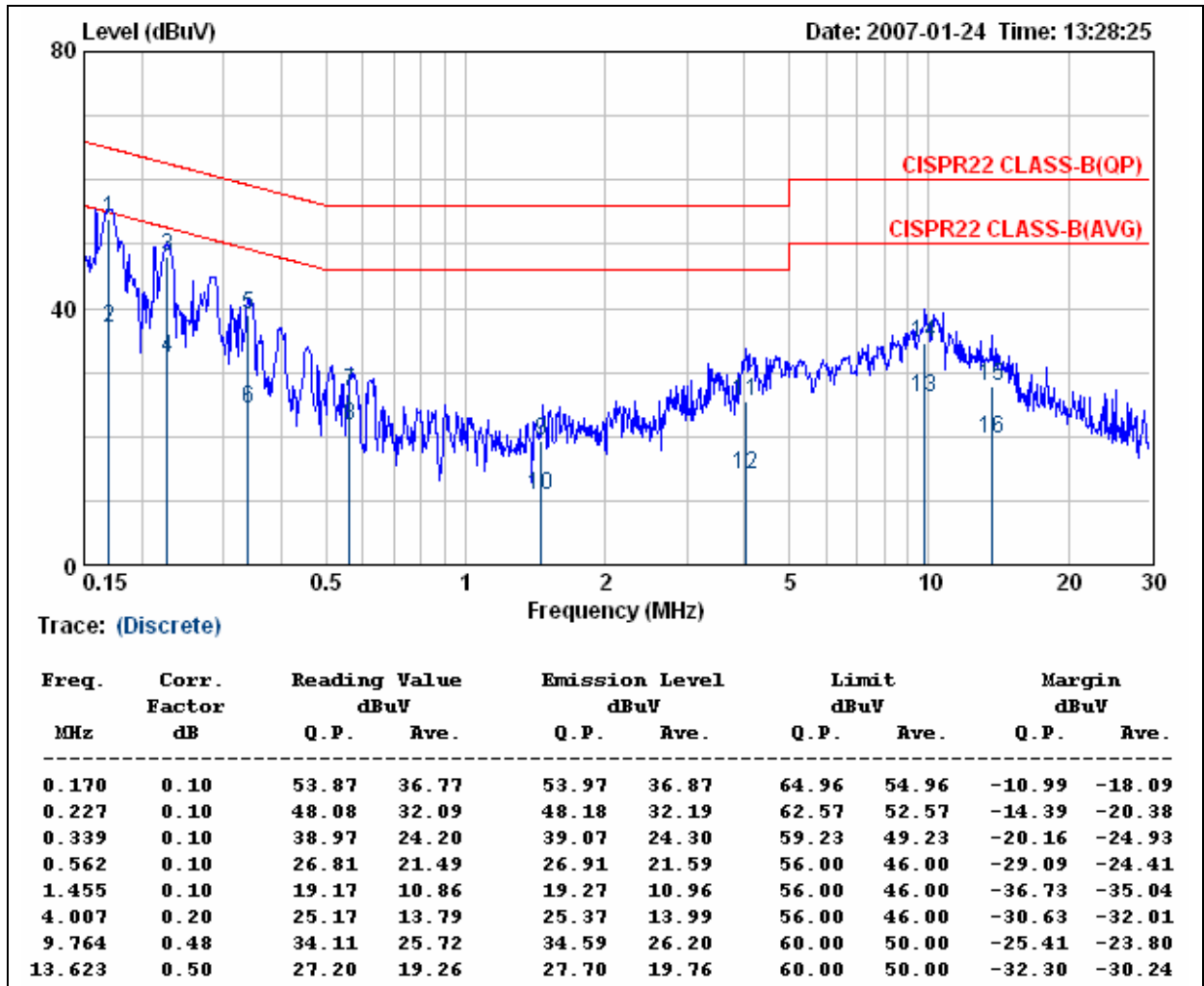
Remark:

1. Correction Factor = Insertion loss + cable loss
2. Margin value = Emission level - Limit value



Product Name	Scanner	Test Date	2007/01/24
Model	XEROX DocuMate 515	Test By	YJ. Jeng
Test Mode	Normal operating / Adapter (2)	TEMP & Humidity	24.2°C, 71%

LINE



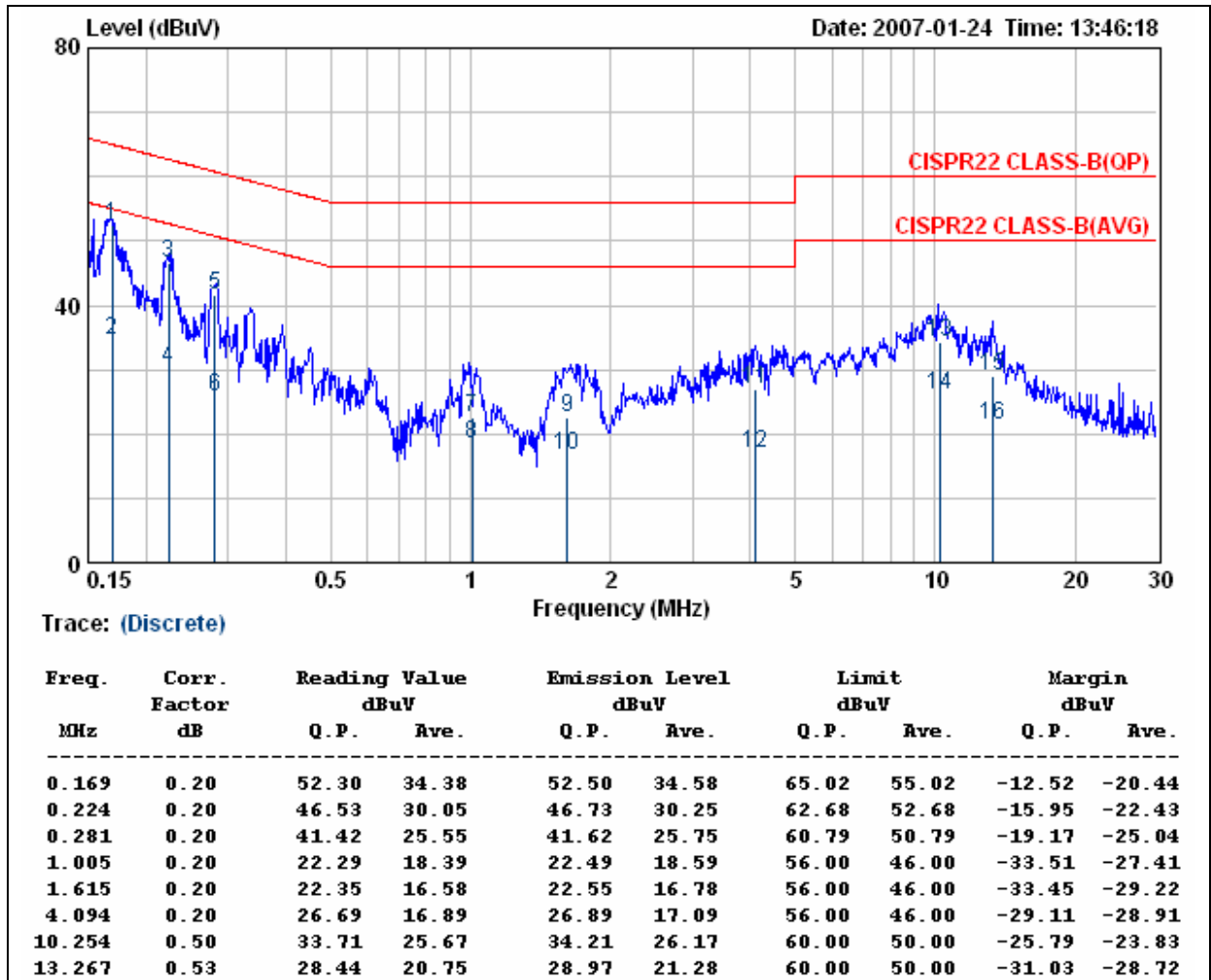
Remark:

1. Correction Factor = Insertion loss + cable loss
2. Margin value = Emission level - Limit value



Product Name	Scanner	Test Date	2007/01/24
Model	XEROX DocuMate 515	Test By	YJ. Jeng
Test Mode	Normal operating / Adapter (2)	TEMP & Humidity	24.2°C, 71%

NEUTRAL



Remark:

1. Correction Factor = Insertion loss + cable loss
2. Margin value = Emission level – Limit value



7.3 CURRENT HARMONIC TEST

TEST EQUIPMENTS

Manufacturer or Type	Model No.	Serial No.	Date of Calibration	Calibration Period
EMC PARTNER	HARMONIC-1000	071	November 10, 2006	1 Year

TEST REQUIREMENT AND PROCEDURE

The test standard was based on EN 61000-3-2:2000

MEASUREMENT UNCERTAINTY OF CURRENT HARMONIC TEST

Total harmonic distortion : $\pm 5.9\%$

**SUMMARY OF TEST****For Adapter (1)**

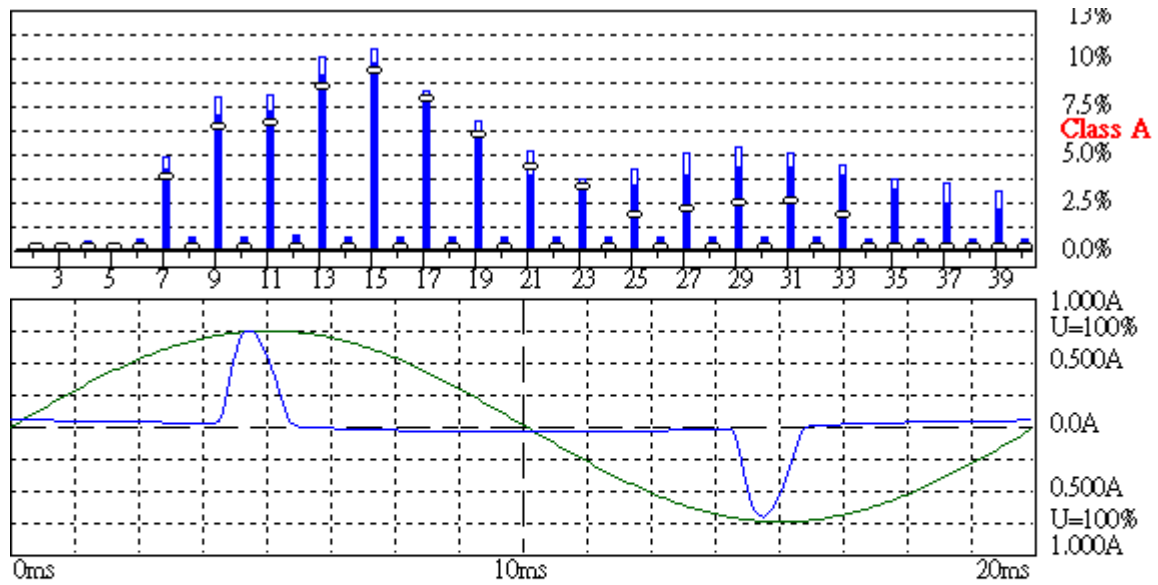
Date : 2007/1/29 AM 11:02:1 V4.14

Urms = 230.1V Freq = 49.987 Range: 1 A
 Irms = 0.191A Ipk = 0.753A cf = 3.946
 P = 20.22W S = 43.93VA pf = 0.460
 THDi = 86.7 % THDu = 0.10 % Class A

Test - Time : 5min (100 %)

Test completed, Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Iavg%L [%]	Imax [A]	Imax%L [%]	Limit [A]	Status
1	50	0.0784		0.0975			
2	100	0	0	0.003	0.2769	1.08	
3	150	0.0651	2.83	0.0847	3.6833	2.3	
4	200	0	0	0.0029	0.6671	0.43	
5	250	0.0617	5.4094	0.0795	6.9709	1.14	
6	300	0	0	0.0026	0.8748	0.3	
7	350	0.0566	7.3547	0.0719	9.3376	0.77	
8	400	0	0	0.0024	1.0349	0.23	
9	450	0.0503	12.565	0.0626	15.656	0.4	
10	500	0	0	0.0021	1.1278	0.184	
11	550	0.043	13.04	0.0523	15.851	0.33	
12	600	0	0	0.0018	1.1544	0.1533	
13	650	0.0353	16.832	0.0416	19.793	0.21	
14	700	0	0	0.0015	1.1146	0.1314	
15	750	0.0277	18.437	0.031	20.671	0.15	
16	800	0	0	0.0012	1.0615	0.115	
17	850	0.0204	15.411	0.0217	16.417	0.1324	
18	900	0	0	0.001	1.015	0.1022	
19	950	0.014	11.805	0.0155	13.091	0.1184	
20	1000	0	0	0.0009	0.9951	0.092	
21	1050	0.0089	8.3451	0.0109	10.14	0.1071	
22	1100	0	0	0.0009	1.0217	0.0836	
23	1150	0.0061	6.1874	0.0069	7.0502	0.0978	
24	1200	0	0	0.0008	1.0349	0.0767	
25	1250	0.003	3.3232	0.0073	8.0702	0.09	
26	1300	0	0	0.0007	1.0349	0.0708	
27	1350	0.0034	4.0366	0.0081	9.7412	0.0833	
28	1400	0	0	0.0007	1.0217	0.0657	
29	1450	0.0036	4.6614	0.0081	10.384	0.0776	
30	1500	0	0	0.0006	0.9951	0.0613	
31	1550	0.0034	4.707	0.0072	9.923	0.0726	
32	1600	0	0	0.0005	0.9553	0.0575	
33	1650	0.0023	3.4362	0.0059	8.5938	0.0682	
34	1700	0	0	0.0005	0.9023	0.0541	
35	1750	0	0	0.0046	7.1208	0.0643	
36	1800	0	0	0.0004	0.8359	0.0511	
37	1850	0	0	0.0041	6.7247	0.0608	
38	1900	0	0	0.0004	0.8824	0.0484	
39	1950	0	0	0.0034	5.8187	0.0577	
40	2000	0	0	0.0004	0.9288	0.046	



Harmonic Emission - IEC 61000-3-2 , EN 61000-3-2 , (EN60555-2) 2007/1/29 AM 11:02:1

U_{rms} = 230.1 V P = 20.22 W THC = 0.145 A Range: 1 A
I_{rms} = 0.191 A pf = 0.460 V-nom: 230 V TestTime: 5 min (100%)

Test completed, Result: PASSED

**For Adapter (2)**

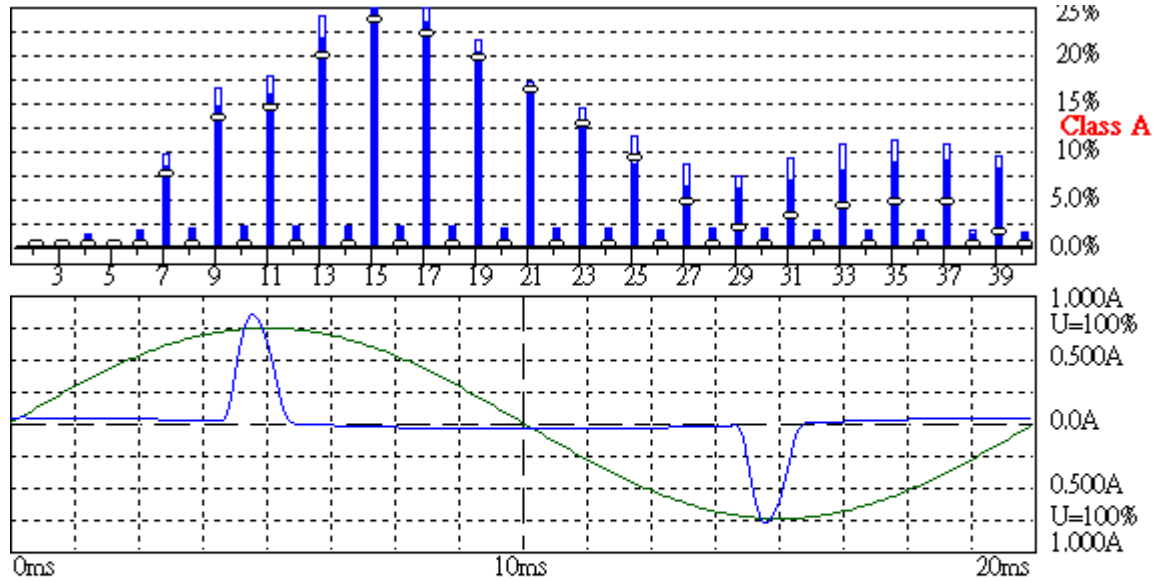
Date : 2007/1/29 AM 11:25:0 V4.14

Urms = 230.1V Freq = 49.987 Range: 1 A
 Irms = 0.195A Ipk = 0.859A cf = 4.400
 P = 19.14W S = 44.94VA pf = 0.426
 THDi = 88.9 % THDu = 0.10 % Class A

Test - Time : 5min (100 %)

Test completed, Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Iavg%L [%]	Imax [A]	Imax%L [%]	Limit [A]	Status
1	50	0.0758		0.8628			
2	100	0	0	0.0045	0.4182	1.08	
3	150	0.0625	2.7189	0.0803	3.4896	2.3	
4	200	0	0	0.0045	1.0362	0.43	
5	250	0.0603	5.2856	0.0768	6.7406	1.14	
6	300	0	0	0.0042	1.4038	0.3	
7	350	0.0568	7.3796	0.0719	9.3376	0.77	
8	400	0	0	0.0038	1.6718	0.23	
9	450	0.0524	13.089	0.0656	16.388	0.4	
10	500	0	0	0.0035	1.8908	0.184	
11	550	0.0471	14.276	0.0582	17.626	0.33	
12	600	0	0	0.003	1.9505	0.1533	
13	650	0.0413	19.66	0.05	23.833	0.21	
14	700	0	0	0.0026	1.9505	0.1314	
15	750	0.0352	23.441	0.0416	27.751	0.15	
16	800	0	0	0.0022	1.9107	0.115	
17	850	0.029	21.877	0.0332	25.087	0.1324	
18	900	0	0	0.0018	1.7912	0.1022	
19	950	0.0229	19.372	0.0252	21.286	0.1184	
20	1000	0	0	0.0015	1.6586	0.092	
21	1050	0.0173	16.158	0.0182	17.033	0.1071	
22	1100	0	0	0.0013	1.6055	0.0836	
23	1150	0.0123	12.583	0.0139	14.225	0.0978	
24	1200	0	0	0.0012	1.5922	0.0767	
25	1250	0.0082	9.0987	0.0102	11.325	0.09	
26	1300	0	0	0.0011	1.5524	0.0708	
27	1350	0.0036	4.3354	0.0069	8.2764	0.0833	
28	1400	0	0	0.001	1.579	0.0657	
29	1450	0.0012	1.5511	0.0055	7.0801	0.0776	
30	1500	0	0	0.001	1.5922	0.0613	
31	1550	0.0022	2.9745	0.0066	9.082	0.0726	
32	1600	0	0	0.0009	1.4861	0.0575	
33	1650	0.0027	3.9658	0.0071	10.384	0.0682	
34	1700	0	0	0.0008	1.4662	0.0541	
35	1750	0.0029	4.4943	0.007	10.824	0.0643	
36	1800	0	0	0.0007	1.433	0.0511	
37	1850	0.0026	4.2845	0.0063	10.438	0.0608	
38	1900	0	0	0.0007	1.3866	0.0484	
39	1950	0.0008	1.3026	0.0052	9.0983	0.0577	
40	2000	0	0	0.0006	1.3269	0.046	



Harmonic Emission - IEC 61000-3-2 , EN 61000-3-2 , (EN60555-2) 2007/1/29 AM 11:25:0

U_{rms} = 230.1 V P = 19.14 W THC = 0.154 A
I_{rms} = 0.195 A pf = 0.426

Range: 1 A
V-nom: 230 V
TestTime: 5 min (100%)

Test completed, Result: PASSED



7.4 VOLTAGE FLUCTUATION AND FLICKER TEST

TEST EQUIPMENTS

Manufacturer or Type	Model No.	Serial No.	Date of Calibration	Calibration Period
EMC PARTNER	HARMONIC-1000	071	November 10, 2006	1 Year

TESTING REQUIREMENT AND PROCEDURE

The test standard was based on EN 61000-3-3:1995+A1:2001

MEASUREMENT UNCERTAINTY OF VOLTAGE FLUCTUATION AND FLICKER TEST

Pst : $\pm 5.9\%$



SUMMARY OF TEST

For Adapter (1)

Date : 2007/1/29 AM 11:16:4 V4.14

Urms = 230.1V	Freq = 49.987	Range: 1 A
Irms = 0.126A	Ipk = 0.548A	cf = 4.353
P = 12.03W	S = 28.99VA	pf = 0.415

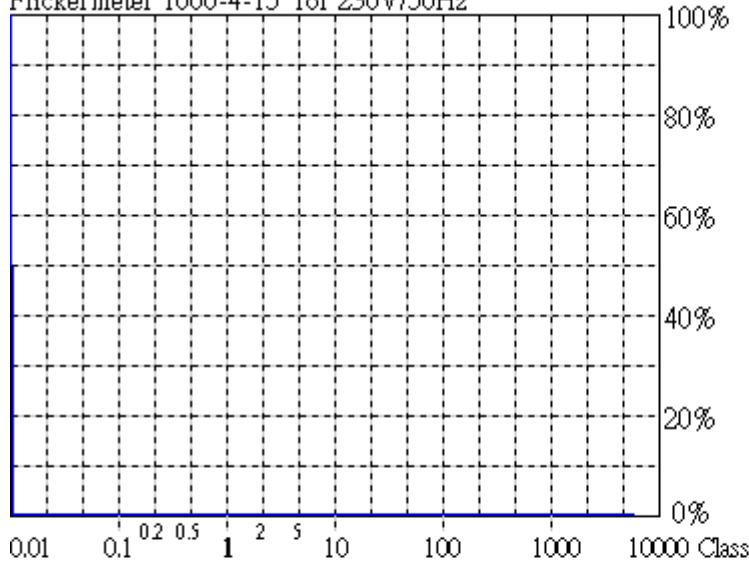
Test - Time : 1 x 10min = 10min (100 %)

LIN (Line Impedance Network) : SLIN 0.24ohm +j0.15ohm N:0.16ohm +j0.10ohm

Limits :	Plt :	0.65	Pst :	1.00
	dmax :	4.00 %	dc :	3.30 %
	dtLim:	3.30 %	dt>Lim:	500ms

Test completed, Result: PASSED

Flickermeter 1000-4-15 for 230V/50Hz



Actual Flicker (Fli): 0.00
Short-term Flicker (Ps): 0.07
 Limit (Pst): 1.00
Long-term Flicker (Plt): 0.07
 Limit (Plt): 0.65
Maximum Relative Volt. Change (dmax): 0.00%
 Limit (dmax): 4.00%
Relative Steady-state Voltage Change (dc): 0.04%
 Limit (dc): 3.30%
Maximum Interval exceeding 3.30% (dt): 0.00ms
 Limit (dt>Lim): 500ms

Flicker Emission - IEC 61000-3-3 , EN 61000-3-3 , (EN60555-3)

2007/1/29 AM 11:16:4

Urms = 230.1 V	P = 12.03 W
Irms = 0.126 A	pf = 0.415

Range: 1 A
V-nom: 230 V
TestTime: 10 min (100%)

Test completed, Result: PASSED



For Adapter (2)

Date : 2007/1/29 AM 11:36:5 V4.14

Urms = 230.1V	Freq = 49.974	Range: 1 A
Irms = 0.131A	Ipk = 0.638A	cf = 4.877
P = 11.68W	S = 30.11VA	pf = 0.388

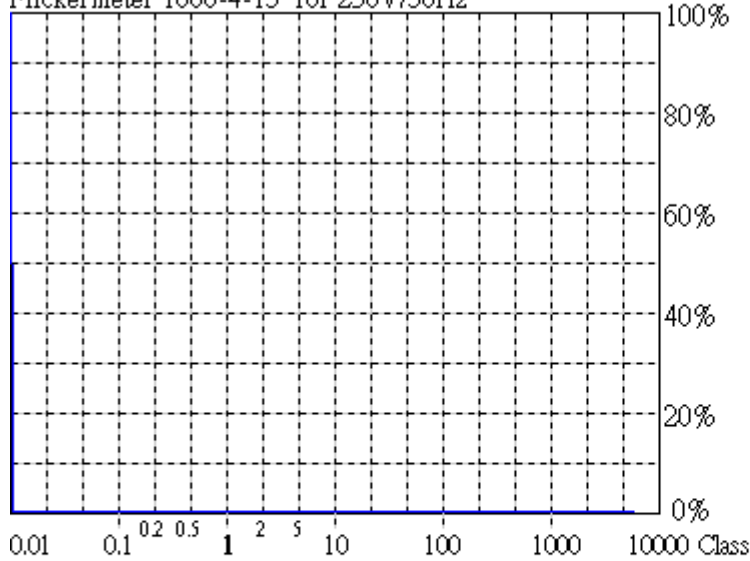
Test - Time : 1 x 10min = 10min (100 %)

LIN (Line Impedance Network) : SLIN 0.24ohm +j0.15ohm N:0.16ohm +j0.10ohm

Limits :	Plt :	0.65	Pst :	1.00
	dmax :	4.00 %	dc :	3.30 %
	dtLim:	3.30 %	dt>Lim:	500ms

Test completed, Result: PASSED

Flickermeter 1000-4-15 for 230V/50Hz



Actual Flicker (Fli): 0.00
Short-term Flicker (Ps): 0.07
 Limit (Pst): 1.00
Long-term Flicker (Plt): 0.07
 Limit (Plt): 0.65
Maximum Relative Volt. Change (dmax): 0.00%
 Limit (dmax): 4.00%
Relative Steady-state Voltage Change (dc): 0.05%
 Limit (dc): 3.30%
Maximum Interval exceeding 3.30% (dt): 0.00ms
 Limit (dt>Lim): 500ms

Flicker Emission - IEC 61000-3-3 , EN 61000-3-3 , (EN60555-3)

2007/1/29 AM 11:36:5

Urms = 230.1 V	P = 11.68 W
Irms = 0.131 A	pf = 0.388

Range: 1 A
V-nom: 230 V
TestTime: 10 min (100%)

Test completed, Result: PASSED



8. IMMUNITY TEST

TEST EQUIPMENT

Manufacturer or Type	Model No.	Date of Calibration
HP VEI8 PIII	DPTC-17	N/A
HP VGA Monitor	D1193A	N/A
HP Keyboard	C1405B #ABO	N/A
HP VE 4/66 Computer	VE 4/66	N/A
IBM VGA Monitor	2248-002	N/A
HP Keyboard	C1405B#ABO	N/A
KeyTek Control Center	E-CLASS SERIES-100	N/A
Pacific Programmable Controller	ERI3	June 05, 2006
Pacific AC Power Source	EP74	June 05, 2006
KeyTek Control Center	E-CLASS SERIES-100	N/A
KeyTek EFT/B Source	E421	September 07, 2006
KeyTek Surge Network	E510, E503, E502	March 27, 2006
KeyTek EFT/B & Surge Coupler/Decoupler	E4552	March 27, 2006
KeyTek Swell/Dip Interrupt Source	EP62	November 27, 2006
Noise Lightning Surge Simulator	LSS-712SM	March 27, 2006
Noiseken	FNS-105L-50	June 05, 2006
Noise Impulse Noise Simulator	INS-410	July 12, 2006
NoiseKen ESD Simulator	ESS-2000	March 15, 2006
KeyTek Surge Network	E506, E510A, E4554	June 05, 2006
KeyTek Surge Network	E505A	November 27, 2006
SCHWARZBGCK Bilog Antenna	VULB 9163	July 20, 2006
R&S Signal Generator Freq. Range : 9KHz ~ 2.08GHz	SMY02	December 12, 2006
Boonton RF Voltmeter	9200B	December 15, 2006
HOLADAY FIELD PROBE	JI-4422	November 01, 2006
SCHAFFNER Coupling Decoupling Network Freq. range : 150KHz ~ 230MHz	CDN-M325S	August 09, 2006
SCHAFFNER Coupling Decoupling Network Freq. range : 150KHz ~ 230MHz	CDN-M225S	November 28, 2006
AR Amplifier Freq. Range : 10KHz ~ 220MHz	200W/150L	N/A
AR Amplifier Freq. Range : 25MHz ~ 1000MHz	100W1000M1A	N/A
DANA TORINO-ITALY Power Frequenty Magnetic Field	DAS-G60 DAS 1S 1000	September 22, 2006
SCHAFFNER EM CLAMP	KEMZ 801	November 12, 2006
MILMEGA LINEAR AMPLIFIER Freq. range : 0.8 ~ 2.5 GHz	AS0825-35	N/A
FRANKONIA Conducted Immunity Test System	CIT-10/75	March 03, 2006

**PERFORMANCE CRITERIA DESCRIPTION**

Criterion A	The equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer.
Criterion B	After the test the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed after the application of the phenomena below a performance level specified by the manufacturer. During the test, degradation of performance is allowed however. No change of actual operating state or stored data is allowed.
Criterion C	Loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls by the user in accordance with the manufacturers instructions.

DESCRIPTION OF PERIPHERALS

Description of peripherals is shown in section 6

EUT & PERIPHERALS SETUP DIAGRAM

EUT & peripherals setup diagram is shown in appendix setup photos.

EUT OPERATING CONDITION

The EUT operating condition is shown in section 6



8.1 ELECTROSTATIC DISCHARGE TEST

CLIMATIC CONDITIONS

Ambient temperature : 24 °C ~ 26 °C

Relative humidity : 55 % ~ 60 % RH

Atmospheric pressure : 99.2 kpa

TEST REQUIREMENT AND PROCEDURE

The test standard was based on EN 55024:1998 + A1:2001 + A2:2003 and IEC 61000-4-2:1995 + A1:1998 + A2:2000

TEST CONDITIONS

Source voltage / frequency : 230VAC/50Hz, Single phase

R-C network : 330 Ω, 150 PF.

Test Level :

Air Discharge : 2 , 4 , 8 KV

Contact Discharge : 2 , 4 KV

HCP Discharge : 2 , 4 KV

VCP Discharge : 2 , 4 KV

Polarity : Positive / Negative

Number of test :

10 Discharges / Sensitive Polarity for Air Discharge.

25 Discharges / Sensitive Polarity for Contact, HCP and VCP Discharge.

Time between test : 1 Sec.

MEASUREMENT UNCERTAINTY OF ELECTROSTATIC DISCHARGE TEST

The uncertainty of output voltage indication was ± 13.4%

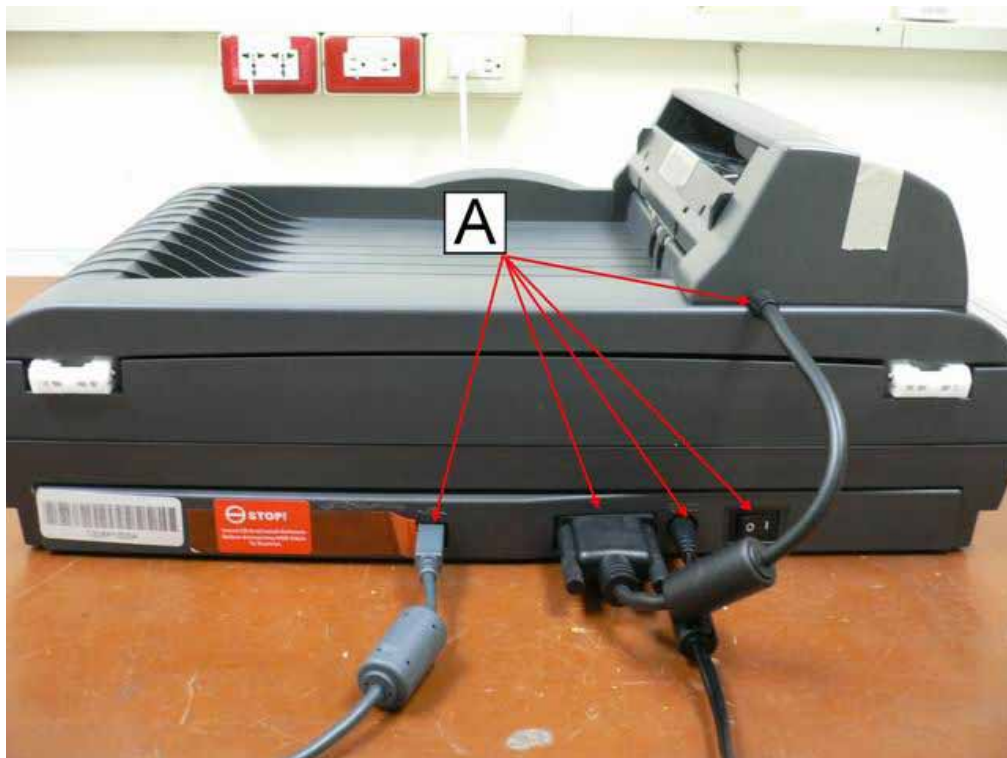
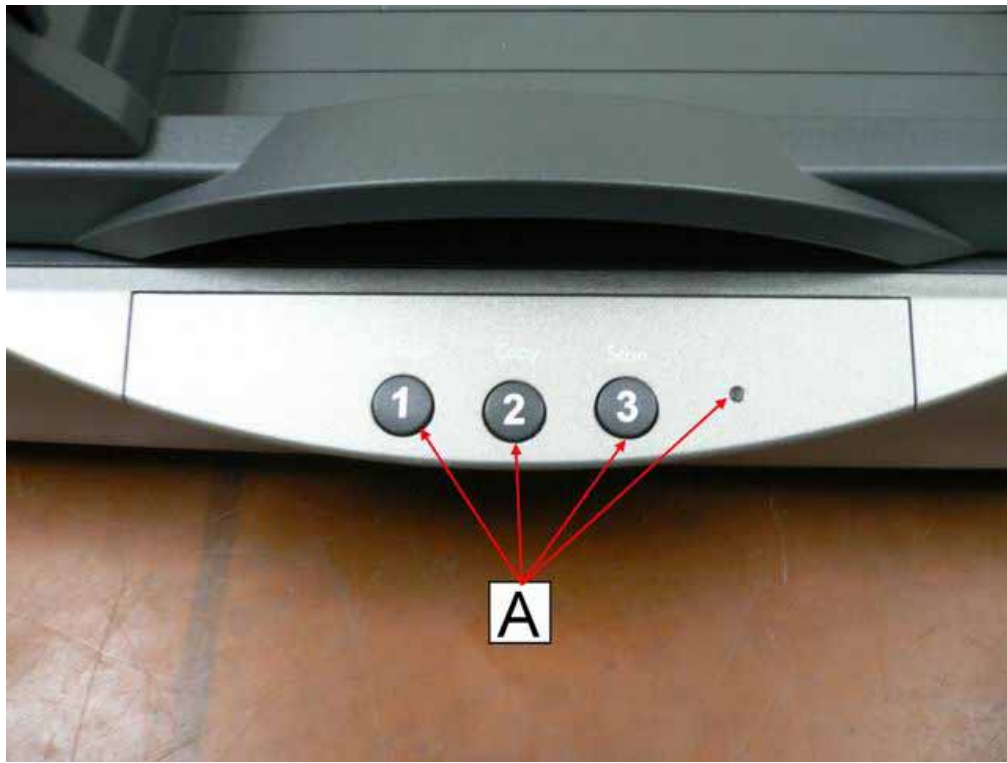
TEST RESULTS

For Adapter (1) ; Adapter (2)

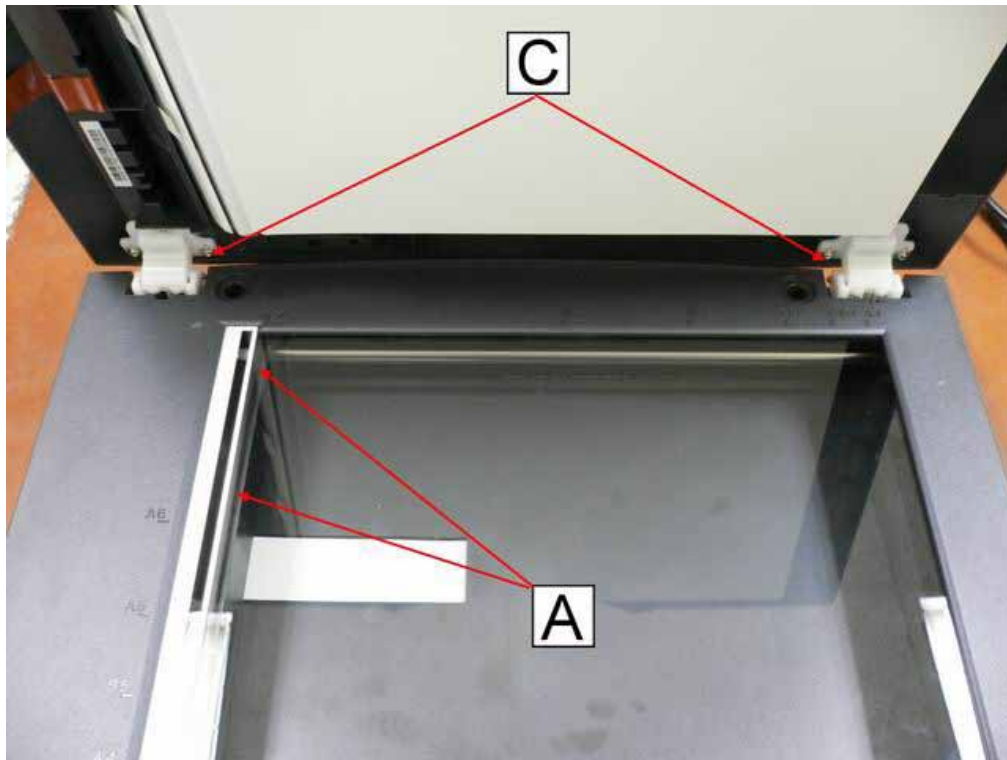
Severity Level	Test Requirement Polarity	EN 55024:1998 + A1:2001 + A2:2003 requirement				Performance verification (criteria)				Test results
		Air discharge	Contact discharge	HCP discharge	VCP discharge	Air discharge	Contact discharge	HCP discharge	VCP discharge	
2 KV	+	B	B	B	B	A	A	A	A	PASS
	-	B	B	B	B	A	A	A	A	PASS
4 KV	+	B	B	B	B	A	A	A	A	PASS
	-	B	B	B	B	A	A	A	A	PASS
8 KV	+	B	NR	NR	NR	A	NR	NR	NR	PASS
	-	B	NR	NR	NR	A	NR	NR	NR	PASS

Note : NR means there is no requirement.

THE TESTED POINTS OF EUT



A : Air Discharge



A : Air Discharge ; C : Contact Discharge



8.2 RADIATED SUSCEPTIBILITY TEST

CLIMATIC CONDITIONS

Ambient temperature : 24 °C ~ 26 °C

Relative humidity : 55 % ~ 65 % RH

Atmospheric pressure : 99.0 kpa

TEST REQUIREMENT AND PROCEDURE

The test standard was based on EN 55024:1998 + A1:2001 + A2:2003 and IEC 61000-4-3:2002 + A1:2002

TEST CONDITIONS

Source voltage / frequency : 230VAC/50Hz, Single phase

Sweeping frequency : 80 MHz ~ 1 GHz.

Test Level : 3V/m.

Measuring distance : 3 meters

The four sides of EUT are tested (Front, Rear, Left, Right).

Antenna Polarization : Horizontal and Vertical polarizations.

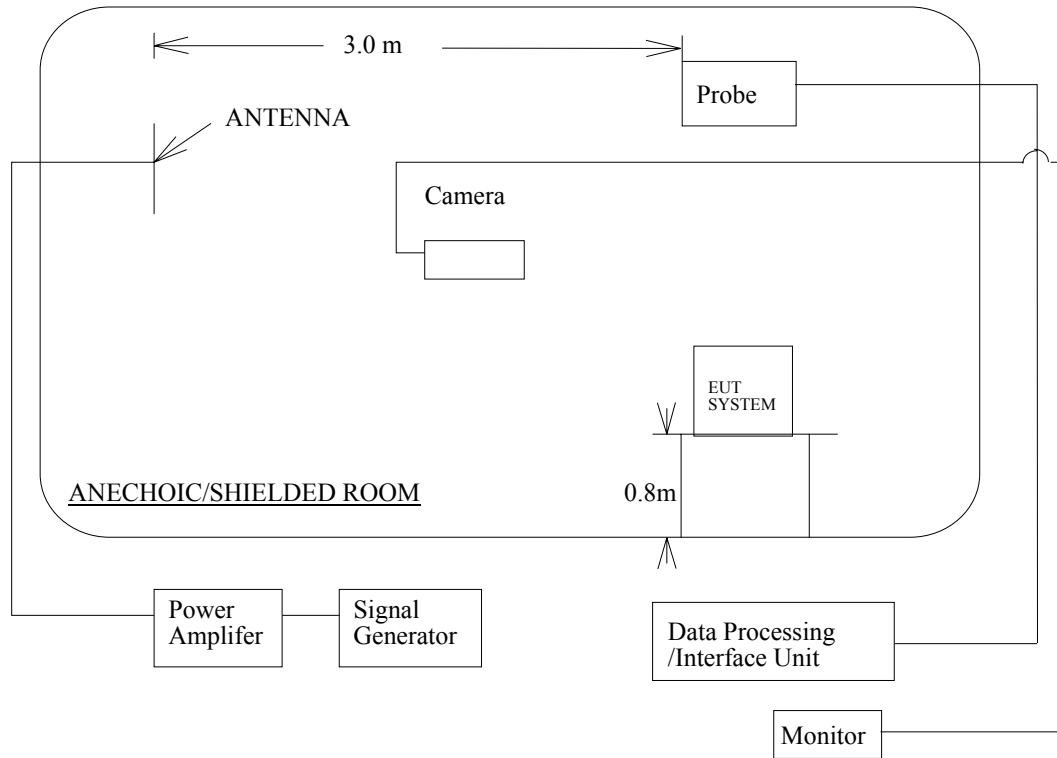
The generated signal amplitude was 80% AM (1KHz) amplitude modulated, the step size was 1% and test duration time was 1000ms.

MEASUREMENT UNCERTAINTY OF RADIATED SUSCEPTIBILITY TEST

The uncertainty of radiated susceptibility was ± 4.3 dB

STRUCTURE OF THE TEST

Setup configuration



TEST RESULT

Frequency range : 80MHz ~ 1GHz

For Adapter (1) ; Adapter (2)

Severity level (V/m)	EN 55024:1998 + A1:2001 + A2:2003 requirement	Performance Verification (criteria)	Test results
3	A	A	PASS



8.3 ELECTRICAL FAST TRANSIENT/BURST TEST

CLIMATIC CONDITIONS

Ambient temperature : 24 °C ~ 26 °C

Relative humidity : 55 % ~ 65 % RH

Atmospheric pressure : 99.0 kpa

TEST REQUIREMENT AND PROCEDURE

The test standard was based on EN 55024:1998 + A1:2001 + A2:2003 and IEC 61000-4-4:1995 + A1:2000 + A2: 2001

TEST CONDITIONS

Source voltage / frequency : 230VAC/50Hz, Single phase

Pulse risetime / duration : 5 ns / 50 ns.

Pulse repetition : 5 KHz.

Polarity : Positive and Negative, 1 times / each condition.

Burst duration / period : 15ms / 300ms.

Test duration : 1 min.

Time between test : 10 sec.

Severity levels : 0.5 , 1 KV for AC line

Coupling of ac line : L , N , L + N

MEASUREMENT UNCERTAINTY OF ELECTRICAL FAST TRANSIENT/BURST TEST

The uncertainty of open circuit output voltage was $\pm 12.2\%$

TEST RESULTS

For Adapter (1) ; Adapter (2)

Severity Level	Polarity	Test Requirement	EN 55024:1998 + A1:2001 + A2:2003 requirement	Performance verification (criteria)	Test results
			AC Line	AC Line	
0.5 KV	+		B	A	PASS
	-		B	A	PASS
1 KV	+		B	A	PASS
	-		B	A	PASS



8.4 SURGE TEST

CLIMATIC CONDITION

Ambient temperature : 24 °C ~ 26 °C

Relative humidity : 55 % ~ 65 % RH

Atmospheric pressure : 99.0 kpa

TEST REQUIREMENT AND PROCEDURE

The test standard was based on EN 55024:1998 + A1:2001 + A2:2003 and IEC 61000-4-5:1995 + A1:2000

TEST CONDITIONS

Source voltage / frequency : 230VAC/50Hz, Single phase

Waveform of surge :

Combination wave (1.2/50µs, 8/20µs)

Output impedance : 12Ω for common mode.

Polarity : Positive and Negative, ± 5 times / each condition.

Phase angle : 0, 90, 270 degrees

Pulse repetition rate : 30 sec

Coupling mode : L → GND, N → GND, L + N → GND for common mode

Severity levels step : 1 , 2 KV for common mode

MEASUREMENT UNCERTAINTY OF SURGE TEST

The uncertainty of open circuit output voltage ± 42.1%

TEST RESULTS

For Adapter (1) ; Adapter (2)

Severity Level	Test Requirement Polarity	EN 55024:1998 + A1:2001 + A2:2003 requirement	Performance verification (criteria)	Test results
		Common mode	Common mode	
1 KV	+	B	A	PASS
	-	B	A	PASS
2 KV	+	B	A	PASS
	-	B	A	PASS

Note : NR means there is no requirement.

8.5 CONDUCTED SUSCEPTIBILITY TEST

CLIMATIC CONDITIONS

Ambient temperature : 24 °C ~ 26 °C

Relative humidity : 55 % ~ 65 % RH

Atmospheric pressure : 99.0 kpa

TEST REQUIREMENT AND PROCEDURE

The test standard was based on EN 55024:1998 + A1:2001 + A2:2003 and IEC 61000-4-6:1996 +A1:2000

TEST CONDITIONS

Source voltage / frequency : 230VAC/50Hz, Single phase

Sweeping frequency : 150 KHz ~ 80 MHz.

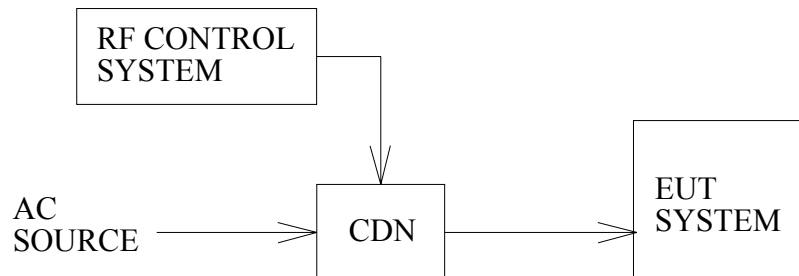
Test Level : 3Vrms.

The generated signal amplitude was 80% AM (1KHz) amplitude modulated, the step size was 1% and test duration time was 1000ms.

MEASUREMENT UNCERTAINTY OF C.S.

The uncertainty of C.S was ± 4.1 dB

STRUCTURE OF THE TEST



TEST RESULT

Sweeping frequency range : 150KHz ~ 80MHz

For Adapter (1) ; Adapter (2)

Severity level (Vrms)	EN 55024:1998 + A1:2001 + A2:2003 requirement	Performance verification (criteria)	Test results
3	A	A	PASS



8.6 VOLTAGE DIP AND INTERRUPTION TEST

CLIMATIC CONDITIONS

Ambient temperature : 24 °C ~ 26 °C

Relative humidity : 55 % ~ 65 % RH

Atmospheric pressure : 99.0 kpa

TEST REQUIREMENT AND PROCEDURE

The test standard was based on EN 55024:1998 + A1:2001 + A2:2003 and IEC 61000-4-11:1994 + A1:2000

TEST CONDITIONS

Source voltage / frequency : 230VAC/50Hz, Single phase

Phase angles : 0, 45, 90, 135, 180, 225, 270, 315 degrees.

Time of interval : 10 sec.

Number of test : Sequence of 3 dips/interrupts

Voltage rise (and fall) time : 1 ~ 5µs.

Test severity :

Voltage dip and Interrupt reduction (%)	Test Duration (ms)
30	500
100	10
100	5000

MEASUREMENT UNCERTAINTY OF VOLTAGE DIP AND INTERRUPTION TEST

The uncertainty of open circuit output voltage $\pm 6.27\%$

TEST RESULTS

For Adapter (1) ; Adapter (2)

Voltage dip and Interrupt reduction (%)	Test duration (ms)	EN 55024:1998 + A1: 2001 + A2:2003 requirement	Performance verification (criteria)	Test results
30	500	C	A	PASS
100	10	B	A	PASS
100	5000	C	C	PASS

APPENDIX SETUP PHOTOS

RADIATED EMISSION MEASUREMENT SETUP





POWERLINE CONDUCTED EMISSION MEASUREMENT SETUP



CURRENT HARMONIC SETUP



VOLTAGE FLUCTUATION AND FLICKER SETUP



ELECTROSTATIC DISCHARGE SETUP





RADIATED ELECTROMAGNETIC FIELD SETUP



ELECTRICAL FAST TRANSIENT/BURST SETUP



SURGE SETUP



CONDUCTED SUSCEPTIBILITY SETUP



VOLTAGE DIP AND INTERRUPTION SETUP



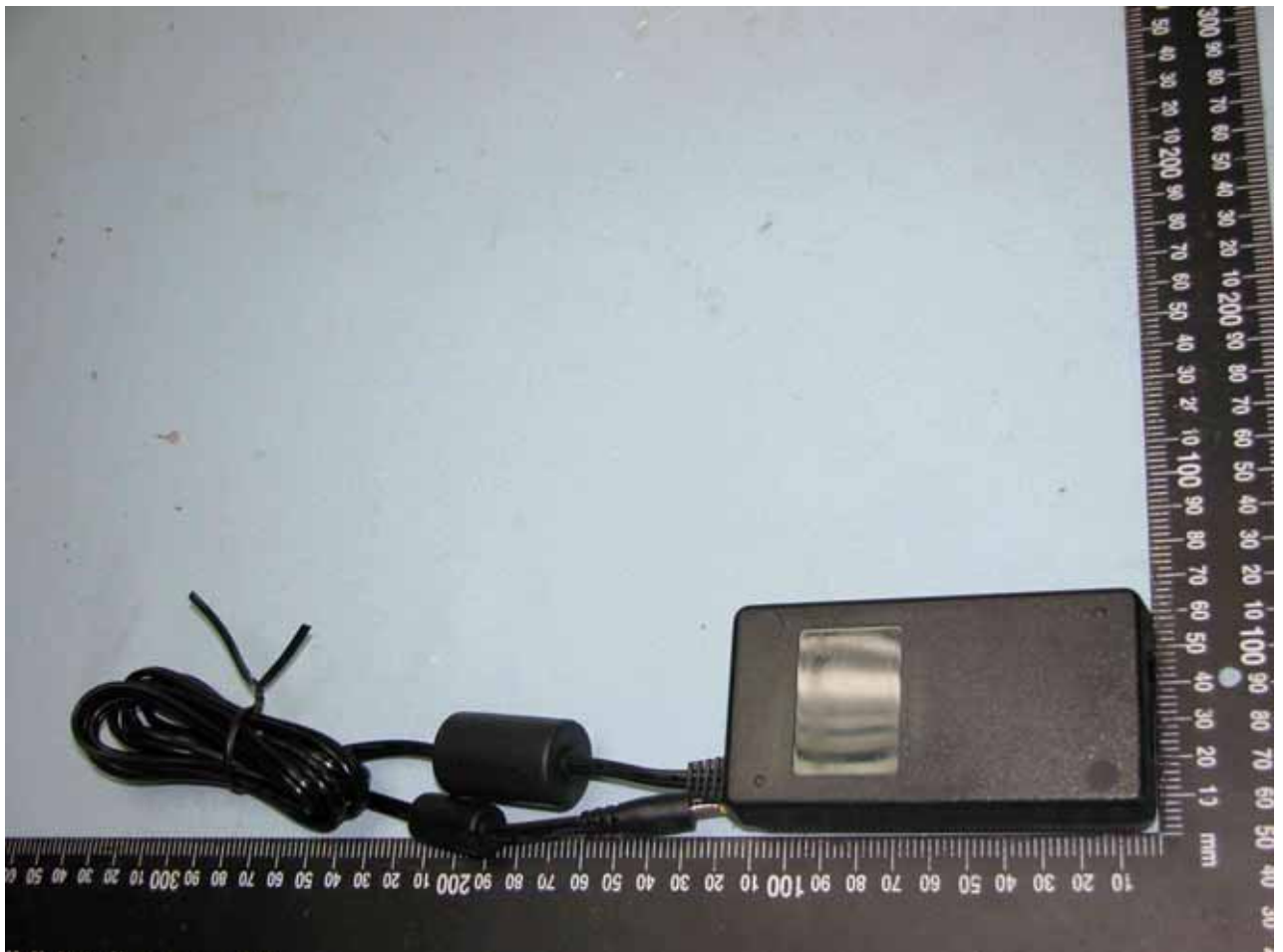
External Photo







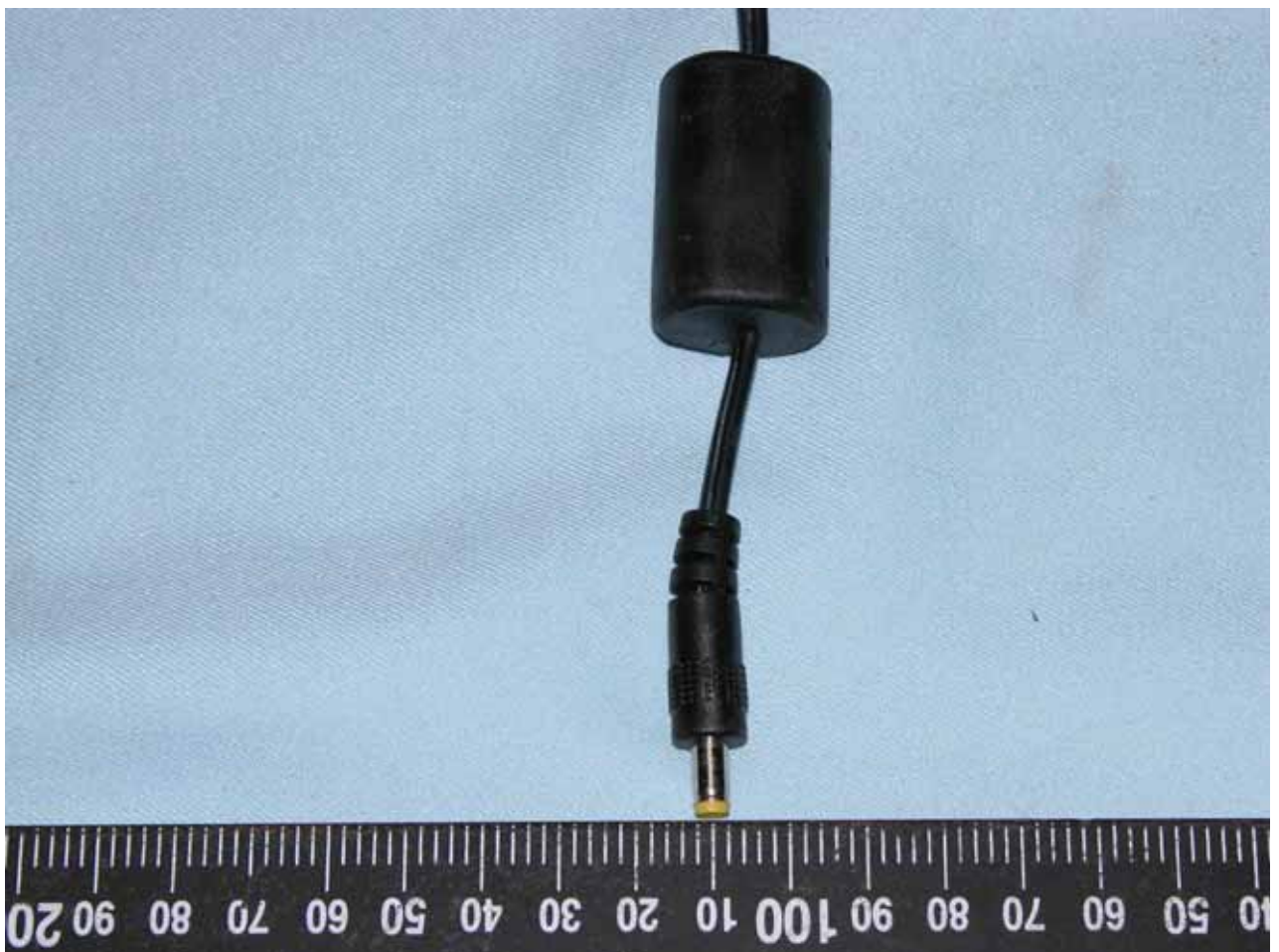
Power Adapter Photo (Model : HEG42-240100-7L)





Power Adapter Photo (Model : SA148A-24V)





Power Cable Photo



USB Cable Photo

