



SPORTON LAB.

Certificate No: C9D3008

CERTIFICATE

EQUIPMENT : IPC

MODEL NO. : PCA-6551VE

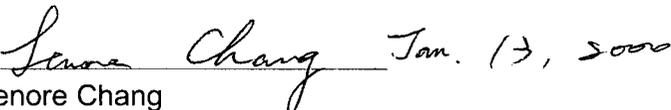
APPLICANT : Advantech Co., Ltd.

Fl. 4, No. 108-3, Ming-Chuan Road,
Shing-Tien City, Taipei, Taiwan, R.O.C.



CERTIFY THAT:

THE MEASUREMENTS SHOWN IN THIS TEST REPORT WERE MADE IN ACCORDANCE WITH THE PROCEDURES GIVEN IN **EUROPEAN COUNCIL DIRECTIVE 89/336/EEC**. THE EQUIPMENT WAS **PASSED** THE TEST PERFORMED ACCORDING TO **EUROPEAN STANDARD EN 55022:1994/A1:1995/A2:1997 Class A, EN61000-3-2:1995, EN 61000-3-3:1995 and EN 50 082-2:1995 (EN 61 000-4-2:1995, EN 61 000-4-3:1996, EN 61 000-4-4:1995)**. THE TEST WAS CARRIED OUT ON **Dec. 15, 1999** AT **SPORTON INTERNATIONAL INC. LAB.**


Lenore Chang
President

CE TEST REPORT

according to

**European Standard EN 55022:1994/A1:1995/A2:1997 Class A
EN61000-3-2:1995, EN 61000-3-3:1995
and EN 50 082-2:1995
EN 61 000-4-2:1995, EN 61 000-4-3:1996, EN 61 000-4-4:1995**

Equipment : IPC

Model No. : PCA-6551VE

Applicant : **Advantech Co., Ltd.**
Fl. 4, No. 108-3, Ming-Chuan Road,
Shing-Tien City, Taipei, Taiwan, R.O.C.

- The test result refers exclusively to the test presented test model / sample.
- Without the written authorization of the test lab., the Test Report may not be copied.

SPORTON International Inc.

6F, No. 106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

Table of Contents

CERTIFICATE OF COMPLIANCE	4
1. General Description of Equipment under Test	5
1.1. Applicant.....	5
1.2. Manufacturer.....	5
1.3. Basic Description of Equipment under Test.....	5
1.4. Feature of Equipment under Test.....	5
2. Test Configuration of Equipment under Test.....	6
2.1. Test Manner.....	6
2.2. Description of Test System	6
3. Test Software.....	9
4. General Information of Test	10
4.1. Test Facility.....	10
4.2. Standard for Methods of Measurement	10
4.3. Test in Compliance with	10
4.4. Frequency Range Investigated	10
4.5. Test Distance.....	10
5. Test of Conducted Powerline.....	11
5.1. Description of Major Test Instruments	11
5.2. Test Procedures.....	12
5.3. Typical Test Setup Layout of Conducted Powerline	13
5.4. Test Result of AC Powerline Conducted Emission	14
5.5. Photographs of Couducted Powerline Test Configuration.....	18
6. Test of Radiated Emission	20
6.1. Description of Major Test Instruments	20
6.2. Test Procedures.....	21
6.3. Typical Test Setup Layout of Radiated Emission.....	22
6.4. Test Result of Radiated Emission	23
6.5. Photographs of Radiated Emission Test Configuration.....	27
7. HARMONICS TEST	29
7.1. STANDARD	29
7.2. TEST PROCEDURE.....	29
7.3. TEST EQUIPMENT SETTINGS :	29
7.4. TEST SETUP.....	29
7.5. CURRENT HARMONICS TEST.....	30
8. VOLTAGE FLUCTUATIONS TEST.....	32
8.1. STANDARD	32
8.2. TEST PROCEDURE.....	32
8.3. TEST EQUIPMENT SETTINGS :	32
8.4. TEST SETUP.....	32
8.5. TEST RESULT OF VOLTAGE FLUCTUATION AND FLICKER TEST	33
8.6. PHOTOGRAPHS OF HARMONICS TEST, VOLTAGE FLUCTUATION AND FLICKER TEST.....	35
9. Electrostatic Discharge Immunity Test (ESD).....	36
9.1. Test setup.....	36
9.2. Test Setup for Tests Performed in Laboratory.....	37
9.3. ESD Test Procedure	38
9.4. Test Severity Levels.....	39

9.5. Test Points40
9.6. Photographs of Electrostatic Discharge Immunity Test.....42
10. Radio Frequency Electromagnetic Field Immunity Test (RS) 43
10.1. Test setup43
10.2. Test Procedure44
10.3. Test Severity Levels.....44
10.4. Photographs of Radio Frequency Electromagnetic Field Immunity Test45
11. Electrical Fast Transient/Burst Immunity Test (EFT/BURST)..... 46
11.1. Test setup46
11.2. Test on Power Line47
11.3. Test on Communication Lines47
11.4. Test Procedure47
11.5. Test Severity Levels.....48
11.6. Photographs of Electrical Fast Transient/BURST Immunity Test49
12. Antenna Factor & Cable Loss 51
13. List of Measuring Equipment Used 52
14. Notice for Class A Product..... 54
15. Declaration of Conformity and the CE Mark..... 54
Appendix A. Photographs of EUT.....A1 ~ A3



CERTIFICATE OF COMPLIANCE

according to

**European Standard EN 55022:1994/A1:1995/A2:1997 Class A
EN61000-3-2:1995, EN 61000-3-3:1995
and EN 50 082-2:1995
EN 61 000-4-2:1995, EN 61 000-4-3:1996, EN 61 000-4-4:1995**

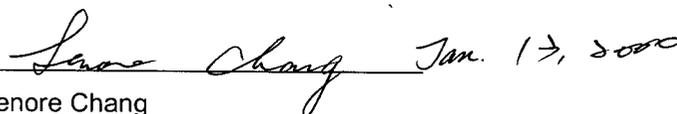
Equipment : IPC

Model No. : PCA-6551VE

Applicant : **Advantech Co., Ltd.**
Fl. 4, No. 108-3, Ming-Chuan Road,
Shing-Tien City, Taipei, Taiwan, R.O.C.

HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **EUROPEAN COUNCIL DIRECTIVE 89/336/EEC**. The equipment was *passed* the test performed according to **European Standard EN 55022:1994/A1:1995/A2:1997 Class A and EN61000-3-2:1995, EN 61000-3-3:1995 and EN 50 082-2:1995 (EN 61 000-4-2:1995, EN 61 000-4-3:1996, EN 61 000-4-4:1995)**. The test was carried out on Dec. 15, 1999 at **SPORTON International Inc. LAB.** in Lin Kou.


Lenore Chang

President

SPORTON International Inc.

6F, No. 106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1. General Description of Equipment under Test

1.1. Applicant

Advantech Co., Ltd.
Fl. 4, No. 108-3, Ming-Chuan Road,
Shing-Tien City, Taipei, Taiwan, R.O.C.

1.2. Manufacturer

Same as 1.1.

1.3. Basic Description of Equipment under Test

Equipment : IPC
Model No. : PCA-6551VE
Trade Name : Advantech
Data Cable : Shielded
PS/2 Cable : Braided-Shielded, 10cm
Power Supply Type : Switching
Power Cord : Non-Shielded, 1.7m, 3 pin

1.4. Feature of Equipment under Test

- CPU: Pentium III 600M/100M, CELERON 500M/66M
- Cache Memory: 128KB/256KB Level 2 cache (pipeline burst SRAM) on die
- Main Memory: 168pin DIMM socket x 2
- BIOS: Award System BIOS support
- Chipsets: Intel 82440BX PCI set
- VGA: C&T 69000 VGA controller (Mini VGA package) 1024*768
- LAN:
 - RTL 8139B Ethernet Controller
 - 10 Base T/100 Base TX support, full Duplex
 - RJ45x1
- On Board I/O:
 - Winbond 83977-TF Super I/O on board
 - SIOx2, with 2x16C550 UARTs
 - PIOx1, Bi-directional, EPP/ECP support, 26 pin x 1
 - On board 5 pin header x 1 for keyboard
- I/O connectors:
 - VGA port
 - LAN RJ45 connector (change to PS/2 mouse port if LAN is not required)
 - COM 1 DB9 connector
 - PS/2 keyboard connector (PS/2 connector for both mouse and keyboard if LAN connector is required)

2. Test Configuration of Equipment under Test

2.1. Test Manner

- a. During testing, the interface cables and equipment positions were varied according to european Standard EN 55022.
- b. The remote workstation, HITACHI Monitor, DELL PS/2 Keyboard, PRIMAX PS/2 Mouse, HP Printer and ACEEX Modem were connected to the EUT for EMI test.
- c. The remote workstation,HP Monitor, DELL PS/2 Keyboard, PRIMAX PS/2 Mouse, HP Printer and ACEEX Modem were connected to the EUT for EMS test.
- d. Frequency range investigated: conduction 150 KHz to 30 MHz, radiation 30 MHz to 1000MHz.

2.2. Description of Test System

< EMI >

Support Unit 1. -- Monitor (HITACHI)

FCC ID : N/A
Model No. : CM753ET
Power Supply Type : Switching
Power Cord : Non-Shielded
Serial No. : SP0176
Data Cable : Shielded, 360 degree via metal backshells, 1.15m
Remark : This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

Support Unit 2. -- PS/2 Keyboard (DELL)

FCC ID : GYUM92SK
Model No. : AT101(DE8M)
Serial No. : SP0054
Data Cable : Shielded, 360 degree via metal backshells, 1.9m

Support Unit 3. -- PS/2 Mouse (PRIMAX)

FCC ID : EMJMUSJQ
Model No. : MUS9J
Serial No. : SP0045
Data Cable : Shielded, 360 degree via metal backshells, 1.7m

Support Unit 4. -- Printer (HP)

FCC ID : B94C2642X
Model No. : DeskJet 400
Power Supply Type : Linear
Power Cord : Non-Shielded
Serial No. : SP0048
Data Cable : Braided-Shielded, 360 degree via metal backshells, 1.35m

Support Unit 5. -- Modem (ACEEX)

FCC ID : IFAXDM1414
Model No. : DM1414
Power Supply Type : Linear
Power Cord : Non-Shielded
Serial No. : SP0015
Data Cable : Shielded, 360 degree via metal backshells, 1.15m

< EMS >

Support Unit 1. -- Monitor (HP)

FCC ID : ACJ93312116
Model No. : D2807A
Power Supply Type : Switching
Power Cord : Non-Shielded
Serial No. : SP0053
Data Cable : Shielded, 1.7m

Support Unit 2. -- PS/2 Keyboard (DELL)

FCC ID : GYUM92SK
Model No. : AT101(DE8M)
Serial No. : SP0054
Data Cable : Shielded, 1.9m

Support Unit 3. -- PS/2 Mouse (PRIMAX)

FCC ID : EMJMUSJQ
Model No. : MUS9J
Serial No. : SP0045
Data Cable : Shielded, 1.7m

Support Unit 4. -- Printer (HP)

FCC ID : B94C2642X
Model No. : DeskJet 400
Power Supply Type : Linear
Power Cord : Non-Shielded
Serial No. : SP0048
Data Cable : Braided-Shielded, 1.35m

Support Unit 5. -- Modem (ACEEX)

FCC ID : IFAXDM1414
Model No. : DM1414
Power Supply Type : Linear
Power Cord : Non-Shielded
Serial No. : SP0015
Data Cable : Shielded, 1.15m

3. Test Software

< EMI >

Two executive programs, WINFCC.EXE and EMITEST.EXE under WIN 98, which generate a complete line of continuously repeating " H" pattern were used as the test software.

The programs were executed as follows :

- a. Turn on the power of all equipment.
- b. The PC reads the test program from the floppy disk drive and runs it.
- c. The PC sends " H" messages to the monitor, and the monitor displays " H" patterns on the screen.
- d. The PC sends " H" messages to the printer, then the printer prints them on the paper.
- e. The PC sends " H" messages to the modem.
- f. The PC sends " H" messages to the internal Hard Disk, and the Hard Disk reads and writes the message.
- g. Repeat the steps from b to f.

At the same time, an executive program, RSET8139.EXE under DOS, was executed during testing.

< EMS >

Two executive programs, EMITEST.EXE & WINFCC.EXE under WIN 98, which generate a complete line of continuously repeating " H " pattern were used as the test software.

The programs were executed as follows :

- a. Turn on the power of all equipment.
- b. The PC reads the test program from the floppy disk drive and runs it.
- c. The PC sends " H" messages to the monitor, and the monitor displays " H " patterns on the screen.
- d. The PC sends " H " messages to the printer, then the printer prints them on the paper.
- e. The PC sends " H " messages to the modem.
- f. The PC sends " H " messages to the internal Hard Disk, and the Hard Disk reads and writes the message.
- g. Repeat the steps from b to f.

At the same time, an program, Network Neighborhood under WIN 95, was executed during testing.

- a. Turn on the power of all equipment.
- b. The remote workstation started in WIN 95 program.
- c. Setup the Network Setting.
- d. The remote workstation kept sending and receiving messages to the remote workstations through EUT.

4. General Information of Test

4.1. Test Facility

This test was carried out by SPORTON International Inc.

Test Site Location : No. 30-2, Lin 6, Diing-Fwu Tsuen, Lin-Kou-Hsiang,
Taipei Hsien, Taiwan, R.O.C.
TEL : 886-2-2601-1640
FAX : 886-2-2601-1695

4.2. Standard for Methods of Measurement

EMI Test (conduction and radiation) : European Standard EN 55 022 Class A.
Harmonics Test : European Standard EN 61000-3-2.
Voltage Fluctuations Test : European Standard EN 61000-3-3.
EMS Test (ESD, RS and EFT) : EN 50 082-2:1995
EN 61 000-4-2:1995, EN 61 000-4-3:1996, EN 61 000-4-4:1995

4.3. Test in Compliance with

EMI Test (conduction and radiation) : European Standard EN 55022 Class A
Harmonics Test : European Standard EN 61000-3-2.
Voltage Fluctuations Test : European Standard EN 61000-3-3.
EMS Test (ESD, RS and EFT) : EN 50 082-2:1995
EN 61 000-4-2:1995, EN 61 000-4-3:1996, EN 61 000-4-4:1995

4.4. Frequency Range Investigated

- a. Conducted emission test: from 150 kHz to 30 MHz
- b. Radiated emission test: from 30 MHz to 1,000 MHz
- c. Radio frequency electromagnetic field immunity test : 80-1000 MHz.

4.5. Test Distance

The test distance of radiated emission test from antenna to EUT is 10 M.

The test distance of radio frequency electromagnetic field immunity test from antenna to EUT is 3 M.

5. Test of Conducted Powerline

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz on the 230V AC power and return leads of the EUT according to the methods defined in European Standard EN 55022 Clause 9. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 5.3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position producing maximum conducted emissions.

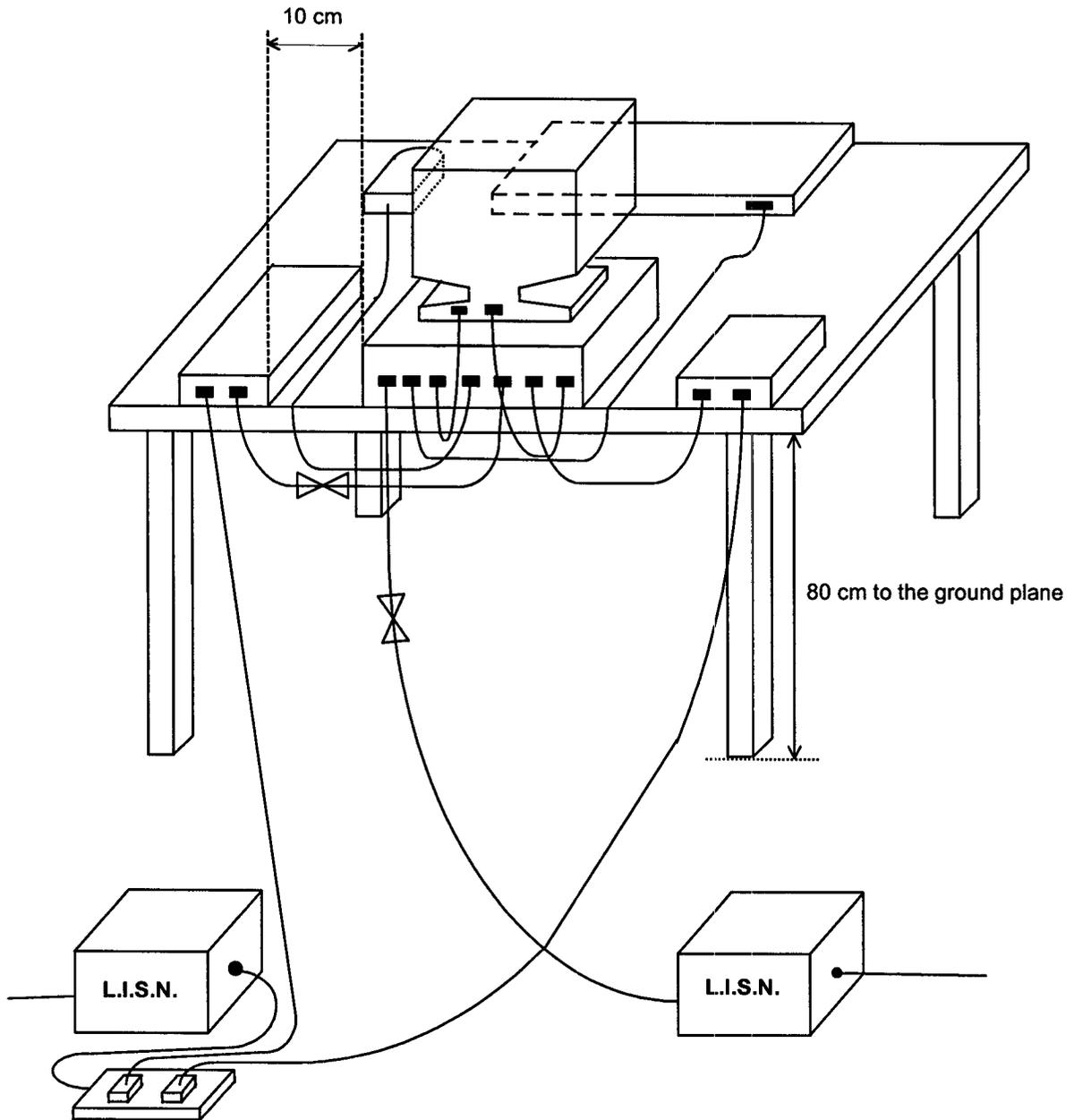
5.1. Description of Major Test Instruments

Test Receiver	HP 8591EM
Attenuation	0 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
Step MHz	0.007 MHz
IF Bandwidth	9 kHz

5.2. Test Procedures

- a. The EUT was placed on a desk 0.8 meters height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The CISPR states that a 50 ohm , 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- i. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 6 dB margin will be retested one by one using the quasi-peak method and/or average methods and reported.

5.3. Typical Test Setup Layout of Conducted Powerline



5.4. Test Result of AC Powerline Conducted Emission

5.4.1. Test mode : Pentium III 600M/100M 1280*1024 60Hz/64K

- Frequency Range of Test : from 150 kHz to 30 MHz
- Temperature : 22°C
- Relative Humidity : 64 %
- Test Date : Dec. 14, 1999

The Conducted Emission test was passed at minimum margin LINE 0.156 MHz / 49.90 dBuV.

Freq. (MHz)	Line or Neutral	Meter Reading				Limits				Margin	
		Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dB)	A.V. (dB)
0.156	L	55.60	49.90	602.56	312.61	79.00	66.00	8912.51	1995.26	-23.4	-16.1
10.831	L	30.50	21.40	33.50	11.75	73.00	60.00	4466.84	1000.00	-42.5	-38.6
21.649	L	35.70	20.20	60.95	10.23	73.00	60.00	4466.84	1000.00	-37.3	-39.8
0.152	N	46.80	32.40	218.78	41.69	79.00	66.00	8912.51	1995.26	-32.2	-33.6
0.898	N	24.60	20.00	16.98	10.00	73.00	60.00	4466.84	1000.00	-48.4	-40.0
27.070	N	32.00	28.10	39.81	25.41	73.00	60.00	4466.84	1000.00	-41.0	-31.9

Test Engineer : *Kenny Chuang*
 KENNY CHUANG



5.4.2. Test mode : CELERON 500M/66M 1280*1024 60Hz/64K

- Frequency Range of Test : from 150 kHz to 30 MHz
- Temperature : 22°C
- Relative Humidity : 64 %
- Test Date : Dec. 15, 1999

The Conducted Emission test was passed at minimum margin LINE 0.157 MHz / 51.40 dBuV.

Freq. (MHz)	Line or Neutral	Meter Reading				Limits				Margin	
		Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dB)	A.V. (dB)
0.157	L	56.90	51.40	699.84	371.54	79.00	66.00	8912.51	1995.26	-22.1	-14.6
0.898	L	24.60	20.00	16.98	10.00	73.00	60.00	4466.84	1000.00	-48.4	-40.0
21.673	L	36.00	20.50	63.10	10.59	73.00	60.00	4466.84	1000.00	-37.0	-39.5
0.153	N	45.10	33.50	179.89	47.32	79.00	66.00	8912.51	1995.26	-33.9	-32.5
0.898	N	24.60	20.00	16.98	10.00	73.00	60.00	4466.84	1000.00	-48.4	-40.0
9.378	N	26.50	18.80	21.13	8.71	73.00	60.00	4466.84	1000.00	-46.5	-41.2

Test Engineer : Kenny Chuang
KENNY CHUANG

5.4.3. Test mode : CELERON 500M/66M LAN MODE 100M UTP

- Frequency Range of Test : from 150 kHz to 30 MHz
- Temperature : 22°C
- Relative Humidity : 64 %
- Test Date : Dec. 15, 1999

The Conducted Emission test was passed at minimum margin NEUTRAL 0.157 MHz / 51.10 dBuV.

Freq. (MHz)	Line or Neutral	Meter Reading				Limits				Margin	
		Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dB)	A.V. (dB)
0.153	L	45.10	33.70	179.89	48.42	79.00	66.00	8912.51	1995.26	-33.9	-32.3
7.923	L	34.60	31.10	53.70	35.89	73.00	60.00	4466.84	1000.00	-38.4	-28.9
11.587	L	29.20	24.90	28.84	17.58	73.00	60.00	4466.84	1000.00	-43.8	-35.1
0.157	N	56.70	51.10	683.91	358.92	79.00	66.00	8912.51	1995.26	-22.3	-14.9
9.235	N	28.30	22.90	26.00	13.96	73.00	60.00	4466.84	1000.00	-44.7	-37.1
11.465	N	29.30	24.90	29.17	17.58	73.00	60.00	4466.84	1000.00	-43.7	-35.1

Test Engineer : *Kenny Chuang*
KENNY CHUANG



5.4.4. Test mode : CELERON 500M/66M LAN MODE 10M UTP

- Frequency Range of Test : from 150 kHz to 30 MHz
- Temperature : 22°C
- Relative Humidity : 64 %
- Test Date : Dec. 15, 1999

The Conducted Emission test was passed at minimum margin NEUTRAL 0.160 MHz / 51.30 dBuV.

Freq. (MHz)	Line or Neutral	Meter Reading				Limits				Margin	
		Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dBuV)	A.V. (dBuV)	Q.P. (uV)	A.V. (uV)	Q.P. (dB)	A.V. (dB)
6.250	L	46.70	35.00	216.27	56.23	73.00	60.00	4466.84	1000.00	-26.3	-25.0
8.750	L	48.70	38.70	272.27	86.10	73.00	60.00	4466.84	1000.00	-24.3	-21.3
11.250	L	43.70	33.00	153.11	44.67	73.00	60.00	4466.84	1000.00	-29.3	-27.0
0.160	N	56.80	51.30	691.83	367.28	79.00	66.00	8912.51	1995.26	-22.2	-14.7
6.250	N	44.30	32.80	164.06	43.65	73.00	60.00	4466.84	1000.00	-28.7	-27.2
8.750	N	47.30	36.80	231.74	69.18	73.00	60.00	4466.84	1000.00	-25.7	-23.2

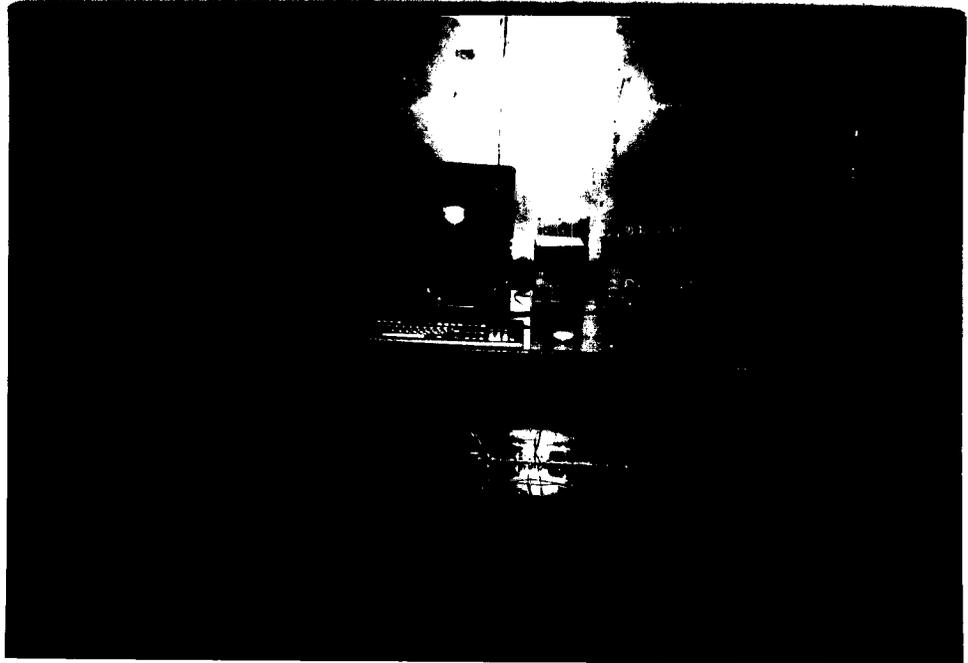
Test Engineer : Kenny Chuang
KENNY CHUANG

5.5. Photographs of Couducted Powerline Test Configuration

- The photographs show the configuration that generates the maximum emission.

Test Mode: VGA

FRONT VIEW



REAR VIEW



Test Mode: LAN

FRONT VIEW



REAR VIEW



6. Test of Radiated Emission

Radiated emissions from 30 MHz to 1000 MHz were measured with a bandwidth of 120 kHz according to the methods defines in European Standard EN 55022, Clause 10. The EUT was placed on a nonmetallic stand in the open-field site, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

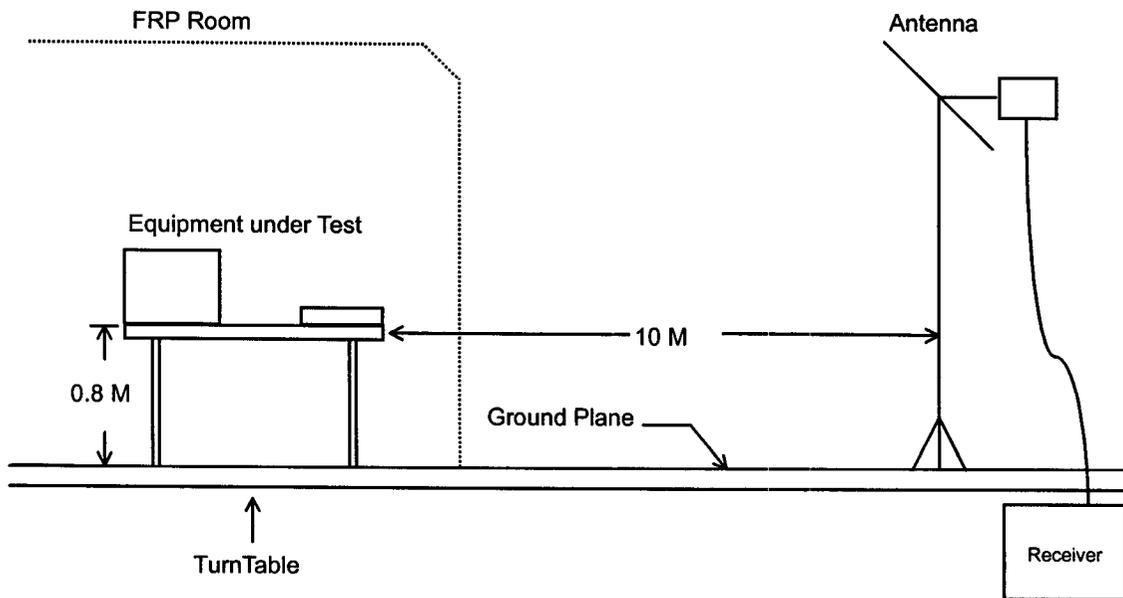
6.1. Description of Major Test Instruments

Amplifier	(HP 8447D)
Attenuation	0 dB
RF Gain	25 dB
Signal Input	100 KHz to 1.3 GHz
Spectrum Analyzer	(ADVANTEST R3261A)
Attenuation	0 dB
Start Frequency	30 MHz
Stop Frequency	1,000 MHz
Resolution Bandwidth	1 MHz
Video Bandwidth	1 MHz
Signal Input	9 KHz to 2.6 GHz

6.2. Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its 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.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 6 dB margin will be repeated one by one using the quasi-peak method and reported.

6.3. Typical Test Setup Layout of Radiated Emission



6.4. Test Result of Radiated Emission

6.4.1. Test mode : Pentium III 600M/100M 1280*1024 60Hz/64K

- Frequency Range of Test : from 30 MHz to 1000 MHz
- Test Distance : 10 M
- Temperature : 20°C
- Relative Humidity : 59 %
- Test Date : Dec. 14, 1999
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Antenna Factor + Cable Loss + Reading = Emission

The Radiated Emission test was passed at minimum margin:

HORIZONTAL 81.200 MHz / 35.77 dBuV Antenna Height 4 Meter , Turntable Degree 110 °.

Frequency (MHz)	Polarity	Antenna Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Limits		Emission (dBuV)	Level (uV)	Margin (dB)
					(dBuV)	(uV)			
81.200	H	7.40	1.22	27.15	40.00	100.00	35.77	61.45	-4.23
189.300	H	9.09	1.80	23.02	40.00	100.00	33.91	49.60	-6.09
294.400	H	14.25	2.34	24.51	47.00	223.87	41.10	113.50	-5.90
81.000	V	7.40	1.22	26.35	40.00	100.00	34.97	56.04	-5.03
189.100	V	9.09	1.80	22.42	40.00	100.00	33.31	46.29	-6.69
456.800	V	16.76	3.02	20.01	47.00	223.87	39.79	97.61	-7.21

Test Engineer : Mark Chen
MARK CHEN



6.4.2. Test mode : CELERON 500M/66M 1280*1024 60Hz/64K

- Frequency Range of Test : from 30 MHz to 1000 MHz
- Test Distance : 10 M
- Temperature : 20°C
- Relative Humidity : 59 %
- Test Date : Dec. 10, 1999
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Antenna Factor + Cable Loss + Reading = Emission

The Radiated Emission test was passed at minimum margin:

VERTICAL 135.400 MHz / 33.42 dBuV Antenna Height 1 Meter , Turntable Degree 108 °.

Frequency (MHz)	Polarity	Antenna Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Limits		Emission (dBuV)	Level (uV)	Margin (dB)
					(dBuV)	(uV)			
67.900	H	6.45	1.16	21.54	40.00	100.00	29.15	28.67	-10.85
67.700	V	6.45	1.16	25.34	40.00	100.00	32.95	44.41	-7.05
81.000	V	7.40	1.22	20.15	40.00	100.00	28.77	27.45	-11.23
135.400	V	11.75	1.54	20.13	40.00	100.00	33.42	46.88	-6.58
189.300	V	9.09	1.80	19.82	40.00	100.00	30.71	34.32	-9.29
227.200	V	11.05	2.02	14.54	40.00	100.00	27.61	24.02	-12.39

Test Engineer : Mark Chen
MARK CHEN

6.4.3. Test mode : CELERON 500M/66M LAN MODE 100M UTP

- Frequency Range of Test : from 30 MHz to 1000 MHz
- Test Distance : 10 M
- Temperature : 20°C
- Relative Humidity : 59 %
- Test Date : Dec. 10, 1999
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Antenna Factor + Cable Loss + Reading = Emission

The Radiated Emission test was passed at minimum margin:

VERTICAL 69.300 MHz / 29.17 dBuV Antenna Height 1 Meter , Turntable Degree 112 °.

Frequency (MHz)	Polarity	Antenna Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Limits		Emission (dBuV)	Level (uV)	Margin (dB)
					(dBuV)	(uV)			
69.300	H	6.45	1.17	17.75	40.00	100.00	25.37	18.56	-14.63
356.800	H	14.80	2.57	16.07	47.00	223.87	33.44	46.99	-13.56
421.600	H	16.19	2.78	11.64	47.00	223.87	30.61	33.92	-16.39
69.300	V	6.45	1.17	21.55	40.00	100.00	29.17	28.74	-10.83
149.500	V	10.77	1.65	10.78	40.00	100.00	23.20	14.45	-16.80
213.600	V	10.06	1.94	14.30	40.00	100.00	26.30	20.65	-13.70

Test Engineer : Mark chen
MARK CHEN

6.4.4. Test mode : CELERON 500M/66M LAN MODE 10M UTP

- Frequency Range of Test : from 30 MHz to 1000 MHz
- Test Distance : 10 M
- Temperature : 20°C
- Relative Humidity : 59 %
- Test Date : Dec. 10, 1999
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Antenna Factor + Cable Loss + Reading = Emission

The Radiated Emission test was passed at minimum margin:

VERTICAL 69.300 MHz / 28.77 dBuV Antenna Height 1 Meter , Turntable Degree 103 °.

Frequency (MHz)	Polarity	Antenna Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Limits		Emission (dBuV)	Level (uV)	Margin (dB)
					(dBuV)	(uV)			
69.100	H	6.45	1.17	19.55	40.00	100.00	27.17	22.83	-12.83
213.600	H	10.06	1.94	10.90	40.00	100.00	22.90	13.96	-17.10
356.000	H	14.77	2.57	15.88	47.00	223.87	33.22	45.81	-13.78
69.300	V	6.45	1.17	21.15	40.00	100.00	28.77	27.45	-11.23
167.900	V	9.15	1.70	14.19	40.00	100.00	25.04	17.86	-14.96
213.600	V	10.06	1.94	14.30	40.00	100.00	26.30	20.65	-13.70

Test Engineer : Mark Chen
MARK CHEN

6.5. Photographs of Radiated Emission Test Configuration

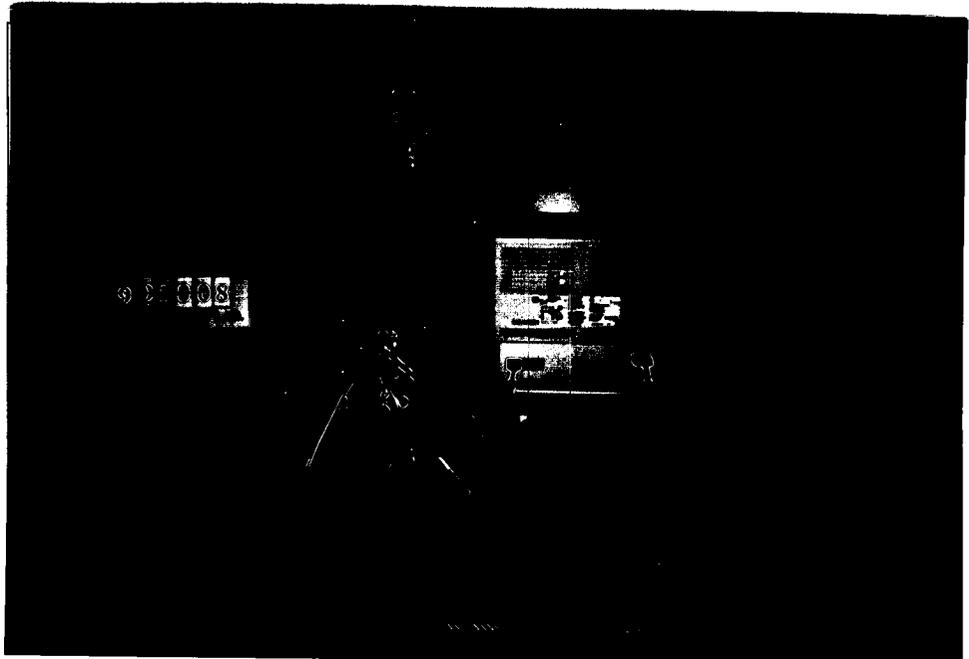
- The photographs show the configuration that generates the maximum emission.

Test Mode: VGA

FRONT VIEW

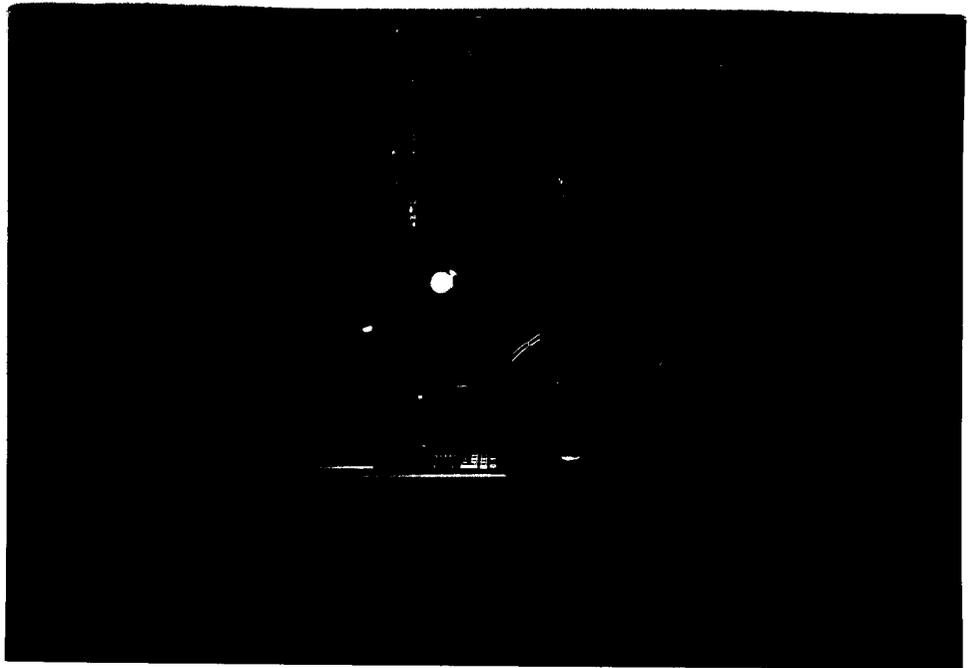


REAR VIEW



Test Mode: LAN

FRONT VIEW



REAR VIEW



7. HARMONICS TEST

7.1. STANDARD

- Product Standard : EN 61000-3-2 (1995)

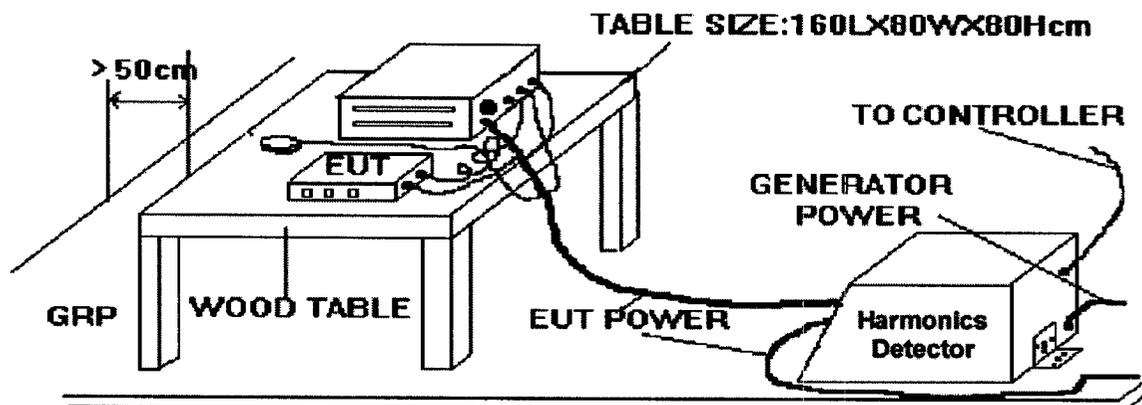
7.2. TEST PROCEDURE

The measured values of the harmonics components of the input current, including line current and neutral current, shall be compared with the limits given in Clause 4.

7.3. TEST EQUIPMENT SETTINGS :

- Line Voltage : 230 V
- Line Frequency : 50 Hz
- Device Class : A
- Current Measurement Range : High
- Measurement Delay : 10.0 seconds
- Test Duration : 2.00 minutes
- Class determination Pre-test Duration : 10.00 seconds

7.4. TEST SETUP



7.5. CURRENT HARMONICS TEST

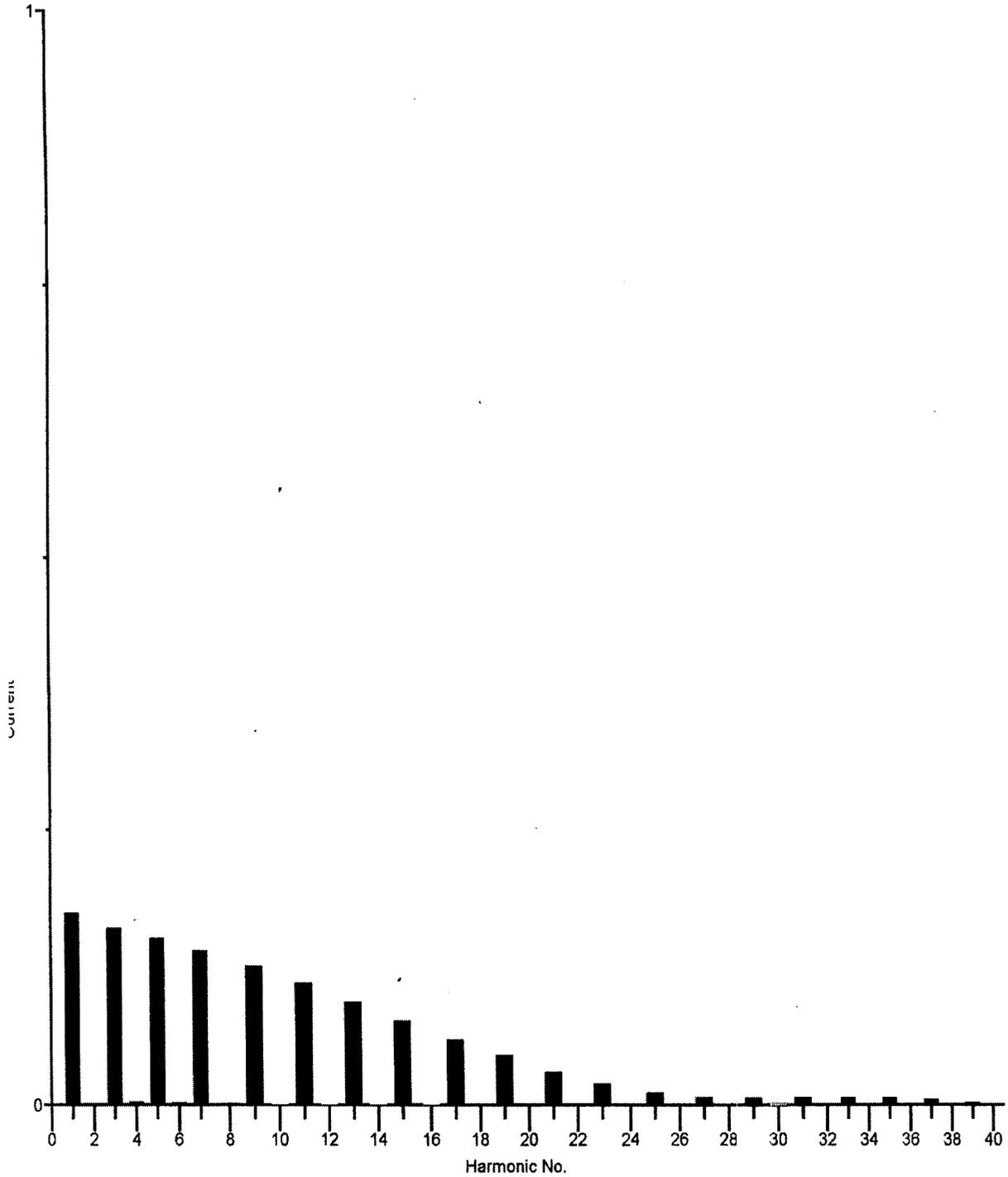
7.5.1. TEST DATA OF CURRENT HARMONICS

- FINAL TEST RESULT : **PASS**
- Fundamental Current : 0.174 A
- Real Power : 38.9 W
- Power Factor : 0.438
- Percent in Envelope : 100.0 %
- Temperature : 21 °C
- Relative Humidity : 58% RH
- Test Date : Dec. 15, 1999

Harmonic Number	Standard Limit (A rms)	Max. Span Values (A rms)	Harmonic Number	Standard Limit (A rms)	Max. Span Values (A rms)
1	Fund	0.1836	21	0.1070	0.0316
2	1.0800	0.0042	22	0.0840	0.0009
3	2.3000	0.1694	23	0.0980	0.0207
4	0.4300	0.0032	24	0.0770	0.0009
5	1.1400	0.1595	25	0.0900	0.0124
6	0.3000	0.0026	26	0.0710	0.0007
7	0.7700	0.1470	27	0.0830	0.0089
8	0.2300	0.0018	28	0.0660	0.0007
9	0.4000	0.1323	29	0.0780	0.0086
10	0.1840	0.0018	30	0.0610	0.0006
11	0.3300	0.1155	31	0.0730	0.0089
12	0.1530	0.0015	32	0.0580	0.0005
13	0.2100	0.0970	33	0.0680	0.0083
14	0.1310	0.0015	34	0.0540	0.0005
15	0.1500	0.0786	35	0.0640	0.0071
16	0.1150	0.0013	36	0.0510	0.0004
17	0.1320	0.0610	37	0.0610	0.0054
18	0.1020	0.0010	38	0.0480	0.0003
19	0.1180	0.0450	39	0.0580	0.0037
20	0.0920	0.0009	40	0.0460	0.0002

Test Engineer : Bruce Huang
Bruce Huang

7.5.2. TEST GRAPH OF HARMONICS



8. VOLTAGE FLUCTUATIONS TEST

8.1. STANDARD

- Product Standard : EN 61000-3-3 (1995)

8.2. TEST PROCEDURE

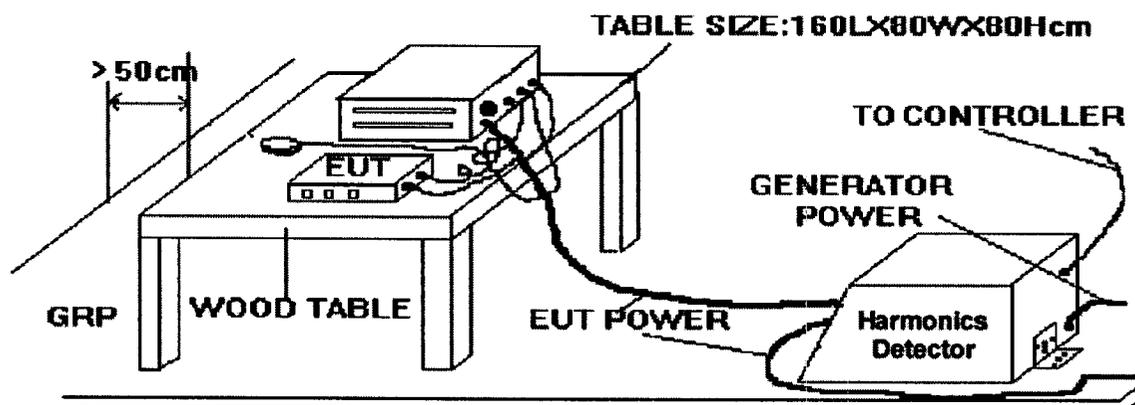
The equipment shall be tested under the conditions of **Clause 5**.

The total impedance of the test circuit, excluding the appliance under test, but including the internal impedance of the supply source, shall be equal to the reference impedance. The stability and tolerance of the reference impedance shall be adequate to ensure that the overall accuracy of $\pm 8\%$ is achieved during the whole assessment procedure.

8.3. TEST EQUIPMENT SETTINGS :

- Line Voltage : 230 V
- Line Frequency : 50 Hz
- Measurement Delay : 10.0 seconds
- Pst Integration Time : 10 minutes
- Pst Integration Periods : 1
- Test Duration : 00:10:00 minutes

8.4. TEST SETUP



8.5. TEST RESULT OF VOLTAGE FLUCTUATION AND FLICKER TEST

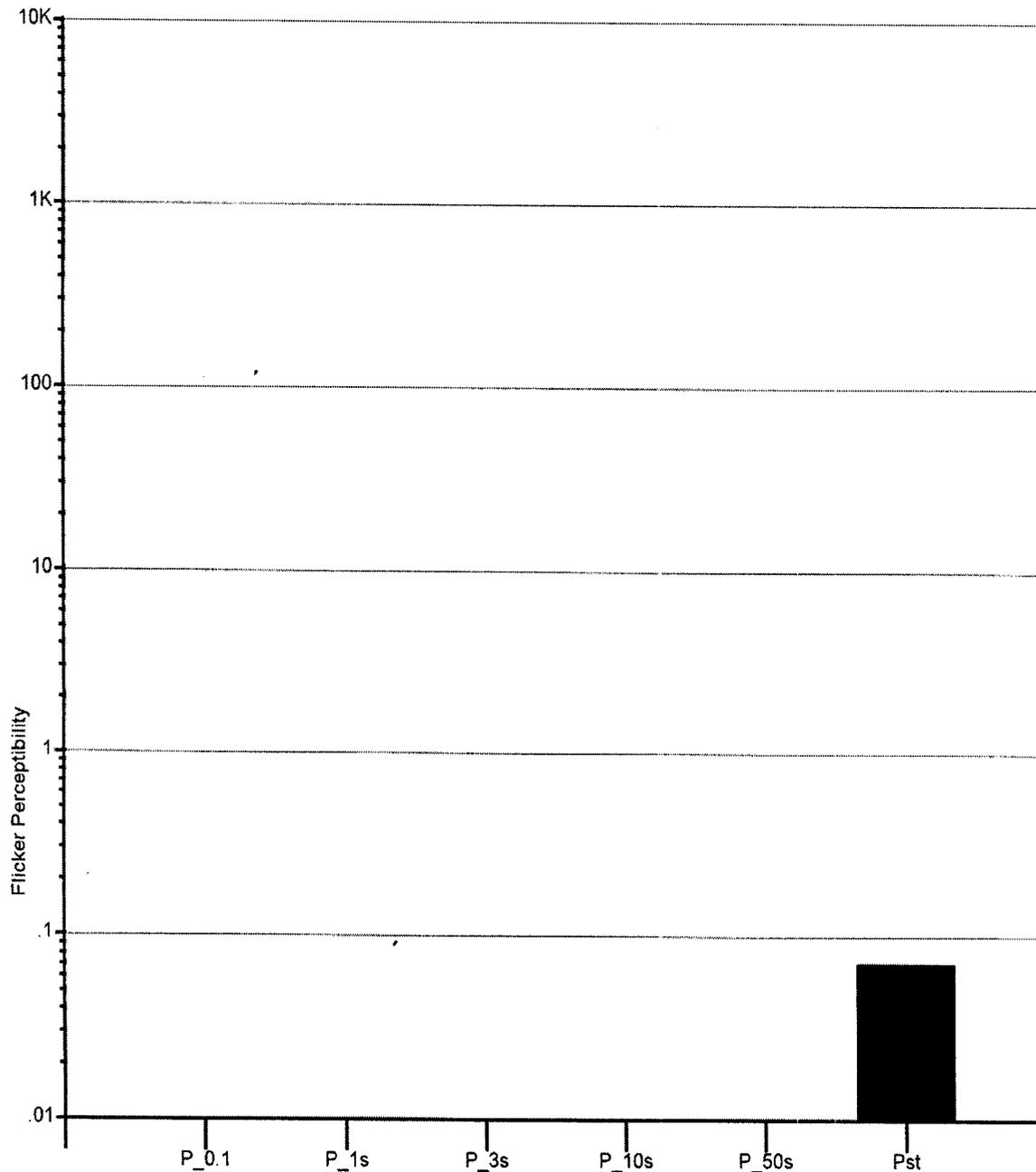
8.5.1. TEST DATA OF VOLTAGE FLUCTUATION AND FLICKER

- FINAL TEST RESULT : **PASS**
- Temperature : 21 °C
- Relative Humidity : 58% RH
- Test Date : Dec. 15, 1999

	Pst	Ptt	Dc (%)	Dmax (%)	Dt (%)
Reading	0.070	0.00	0.00	0.00	0.00
Limit	0.65	1.0	3.0	4.0	3.0

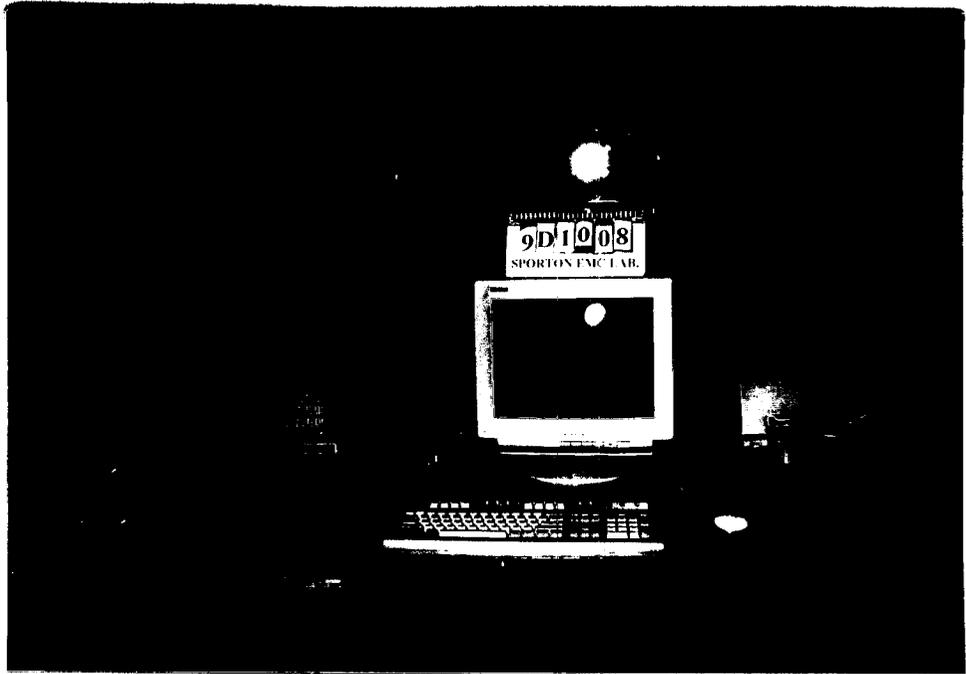
Test Engineer : Bruce Huang
Bruce Huang

8.5.2. TEST GRAPH OF VOLTAGE FLUCTUATION AND FLICKER



8.6. PHOTOGRAPHS OF HARMONICS TEST, VOLTAGE FLUCTUATION AND FLICKER TEST

FRONT VIEW



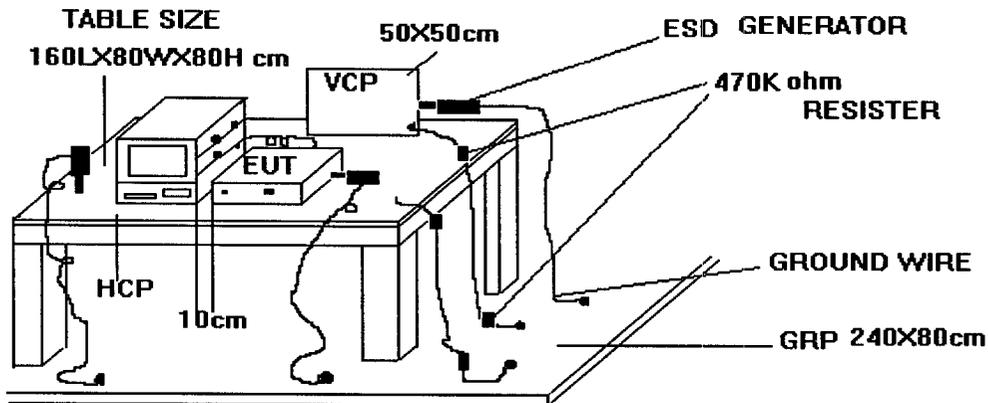
REAR VIEW



9. Electrostatic Discharge Immunity Test (ESD)

- Pass Performance Criteria : B
- Remark : During testing, the cursor of mouse paused for seconds.
- Basic Standard : EN 61 000-4-2:1995
- Generic Standard : EN 50 082-2:1995
- Level : 3 for air discharge,
: 2 for contact discharge
- Tested voltage : $\pm 2 / \pm 4 / \pm 8$ KV for air discharge,
: $\pm 2 / \pm 4$ KV for contact discharge
- Temperature : 21 °C
- Relative Humidity : 54 %
- Test Date : Dec. 15, 1999

9.1. Test setup



The test setup consists of the test generator, EUT and auxiliary instrumentation necessary to perform DIRECT and INDIRECT application of discharges to the EUT as applicable, in the follow manner :

- a. CONTACT DISCHARGE to the conductive surfaces and to coupling plane;
- b. AIR DISCHARGE at insulating surfaces.

The preferred test method is that of type tests performed in laboratories and the only accepted method of demonstrating conformance with this standard. The EUT was arranged as closely as possible to arrangement in final installed conditions.

9.2. Test Setup for Tests Performed in Laboratory

A ground reference plane was provided on the floor of the test site. It was a metallic sheet (copper or aluminum) of 0.25 mm, minimum thickness; other metallic may be used but they shall have at least 0.65 mm thickness. In the SPORTON EMC LAB., we provided 1 mm thickness aluminum ground reference plane or 1 mm thickness stainless steel ground reference plane. The minimum size of the ground reference plane is 1 m x 1 m, the exact size depending on the dimensions of the EUT. It was connected to the protective grounding system.

The EUT was arranged and connected according to its functional requirements. A distance of 1m minimum was provided between the EUT and the wall of the lab. and any other metallic structure. In cases where this length exceeds the length necessary to apply the discharges to the selected points, the excess length shall, where possible, be placed non-inductively off the ground reference plane and shall not come closer than 0.2m to other conductive parts in the test setup.

Where the EUT is installed on a metal table, the table was connected to the reference plane via a cable with a 470k ohm resistor located at each end, to prevent a build-up of charge. The test setup was consist a wooden table, 0.8m high, standing on the ground reference plane. A HCP, 1.6 m x 0.8 m, was placed on the table. The EUT and cables was isolated from the HCP by an insulating support 0.5 mm thick. The VCP size, 0.5 m x 0.5 m.

9.3. ESD Test Procedure

- a. In the case of air discharge testing the climatic conditions shall be within the following ranges:
 - ambient temperature: 15°C to 35°C;
 - relative humidity : 30% to 60%;
 - atmospheric pressure : 68 KPa (680 mbar) to 106 KPa (1060 mbar).
- b. Test programs and software shall be chosen so as to exercise all normal modes of operation of the EUT. The use of special exercising software is encouraged, but permitted only where it can be shown that the EUT is being comprehensively exercised.
- c. The test voltage shall be increased from the minimum to the selected test severity level, in order to determine any threshold of failure. The final severity level should not exceed the product specification value in order to avoid damage to the equipment.
- d. The test shall be performed with single discharges. On preselected points at least ten single discharges (in the most sensitive polarity) shall be applied.
- e. For the time interval between successive single discharges an initial value of one second is recommended. Longer intervals may be necessary to determine whether a system failure has occurred.
- f. In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.
- g. In the case of painted surface covering a conducting substrate, the following procedure shall be adopted :
 - If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate.
 - Coating declared as insulating by the manufacturer shall only be submitted to the air discharge.
 - The contact discharge test shall not be applied to such surfaces.
- h. In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT . After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test, the discharge switch, which is used for contact discharge, shall be closed.

9.4. Test Severity Levels

9.4.1. Contact Discharge

Level	Test Voltage (KV) of Contact discharge
1	±2
2	±4
3	±6
4	±8
X	Specified

Remark : "X" is an open level.

9.4.2. Air Discharge

Level	Test Voltage (KV) of Air Discharge
1	±2
2	±4
3	±8
4	±15
X	Specified

Remark : "X" is an open level.

9.5. Test Points

9.5.1. Test Result of Air Discharge

Test Point	Voltage	Tested No.	Observation	Result
Case	$\pm 2 / \pm 4 / \pm 8$ KV	BY 10	NORMAL	PASS
Screw	$\pm 2 / \pm 4 / \pm 8$ KV	BY 10	NORMAL	PASS
COM1 port	$\pm 2 / \pm 4 / \pm 8$ KV	BY 10	NORMAL	PASS
LED	$\pm 2 / \pm 4 / \pm 8$ KV	BY 10	NORMAL	PASS
LINE IN	$\pm 2 / \pm 4 / \pm 8$ KV	BY 10	NORMAL	PASS
Printer port	$\pm 2 / \pm 4 / \pm 8$ KV	BY 10	NORMAL	PASS

9.5.2. Test Result of Contact Discharge

Polarity	Voltage	Tested No.	Observation	Result
Horizontal(At Front)	$\pm 2 / \pm 4$ KV	BY 10	NORMAL	PASS
Horizontal (At Left)	$\pm 2 / \pm 4$ KV	BY 10	NORMAL	PASS
Horizontal (At Right)	$\pm 2 / \pm 4$ KV	BY 10	NORMAL	PASS
Horizontal (At Rear)	$\pm 2 / \pm 4$ KV	BY 10	NORMAL	PASS
Vertical (At Front)	$\pm 2 / \pm 4$ KV	BY 10	NORMAL	PASS
Vertical (At Left)	$\pm 2 / \pm 4$ KV	BY 10	NORMAL	PASS
Vertical (At Right)	$\pm 2 / \pm 4$ KV	BY 10	NORMAL	PASS
Vertical (At Rear)	$\pm 2 / \pm 4$ KV	BY 10	NORMAL	PASS
Screw	$\pm 2 / \pm 4$ KV	BY 10	NORMAL	PASS

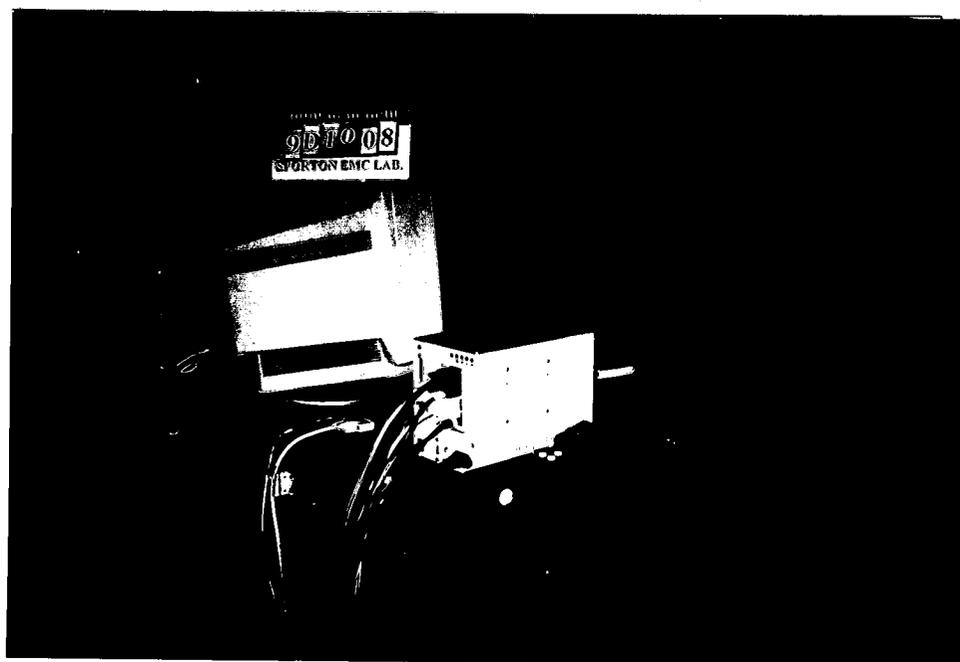
Test Engineer : Bruce Huang
 BRUCE HUANG

9.6. Photographs of Electrostatic Discharge Immunity Test

FRONT VIEW



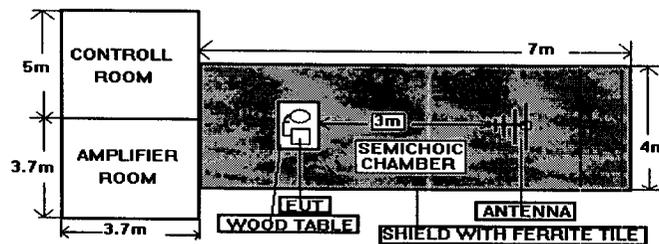
REAR VIEW



10. Radio Frequency Electromagnetic Field Immunity Test (RS)

- Pass Performance Criteria : A
- Basic Standard : EN 61 000-4-3:1996
- Generic Standard : EN 50 082-2:1995
- Level : 3
- Frequency Range : 80-1000 MHz
- Field Strength : 10 V/m (Modulated 80% AM)
- Temperature : 22 °C
- Relative Humidity : 60 %
- Test Date : Dec. 15, 1999

10.1. Test setup



NOTE : The SPORTON 7m x 4m x 4m semichoic chamber is compliance with the sixteen points uniform field requirement as stated in IEC 1000-4-3 Section 6.2.

The procedure defined in this part requires the generation of electromagnetic fields within which the test sample is placed and its operation observed. To generate fields that are useful for simulation of actual (field) conditions may require significant antenna drive power and the resultant high field strength levels. To comply with local regulations and to prevent biological hazards to the testing personnel, it is recommended that these tests be carried out in a shielded enclosure or semichoic chamber.

10.2. Test Procedure

- a. The equipment to be tested is placed in the center of the enclosure on a wooden table. The equipment is then connected to power and signal leads according to pertinent installation instructions.
- b. The bilog antenna which is enabling the complete frequency range of 80-1000 MHz is placed 3m away from the equipment. The required field strength is determined by placing the field strength meter(s) on top of or directly alongside the equipment under test and monitoring the field strength meter via a remote field strength indicator outside the enclosure while adjusting the continuous-wave to the applicable antennae.
- c. The test is normally performed with the antenna facing the most sensitive side of the EUT. The polarization of the field generated by the biconical antenna necessitates testing each position twice, once with the antenna positioned vertically and again with the antenna positioned horizontally. The circular polarization of the field from the log-spiral antenna makes a change of position of the antenna unnecessary.
- d. At each of the above conditions, the frequency range is swept 80-1000 MHz, pausing to adjust the R.F. signal level or to switch oscillators and antenna. The rate of sweep is in the order of $1.5 \cdot 10^{-3}$ decades/s. The sensitive frequencies or frequencies of dominant interest may be discretely analyzed.

10.3. Test Severity Levels

Frequency Band : 80-1000 MHz

Level	Test field strength (V/m)
1	1
2	3
3	10
X	Specified

Remark : "X" is an open class.

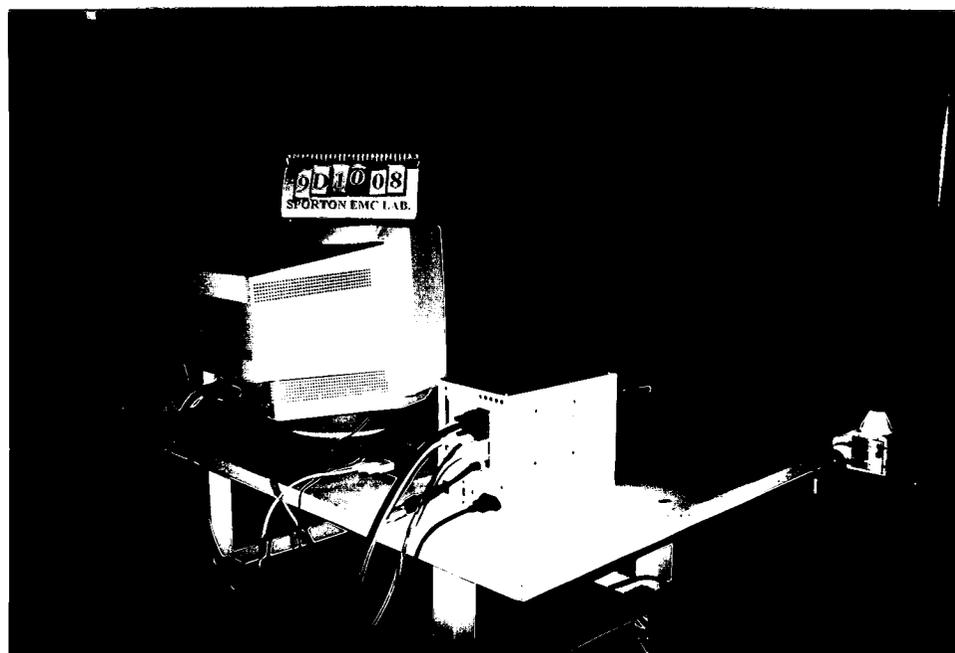
Test Engineer : Bruce Huang
 BRUCE HUANG

10.4. Photographs of Radio Frequency Electromagnetic Field Immunity Test

FRONT VIEW



REAR VIEW



0.5 m. The length of the signal and power lines between the coupling device and the EUT was 1m or less.

11.2. Test on Power Line

- a. The EFT/B-generator was located on the GRP.. The length from the EFT/B-generator to the EUT as not exceed 1 m.
- b. The EFT/B-generator provides the ability to apply the test voltage in a non-symmetrical condition to the power supply input terminals of the EUT.

11.3. Test on Communication Lines

- a. The coupling clamp is composed of a clamp unit for housing the cable (length more than 3 m), and was placed on the GRP..
- b. The coupling clamp provides the ability of coupling the fast transient/bursts to the cable under test.

11.4. Test Procedure

- a. In order to minimize the effect of environmental parameters on test results, the climatic conditions when test is carrying out shall comply with the following requirements:
 - ambient temperature: 15°C to 35°C;
 - relative humidity : 45% to 75%;
 - atmospheric pressure : 68 Kpa (680 mbar) to 106 Kpa (1060 mbar).
- b. In order to minimize the effect of environmental parameters on test results, the electromagnetic environment of the laboratory shall not influence the test results.
- c. The variety and diversity of equipment and systems to be tested make it difficult to establish general criteria for the evaluation of the effects of fast transients/bursts on equipment and systems.
- d. The test results may be classified on the basic of the operating conditions and the functional specification of the equipment under test, according to the following performance criteria :
 - Normal performance within the specification limits.
 - Temporary degradation or loss of function or performance which is self-recoverable.
 - Temporary degradation or loss of function or performance which requires operator intervention or system reset.
 - Degradation or loss of function which is not recoverable due to damage of equipment (components).

11.5. Test Severity Levels

The following test severity levels are recommended for the fast transient/burst test :

Open circuit output test voltage $\pm 10\%$		
Level	On Power Supply	On I/O signal, data and control line
1	0.5 KV	0.25 KV
2	1.0 KV	0.50 KV
3	2.0 KV	1.00 KV
4	4.0 KV	2.00 KV
X	Specified	Specified

Remark : " X " is an open level. The level is subject to negotiation between the user and the manufacturer or is specified by the manufacturer.

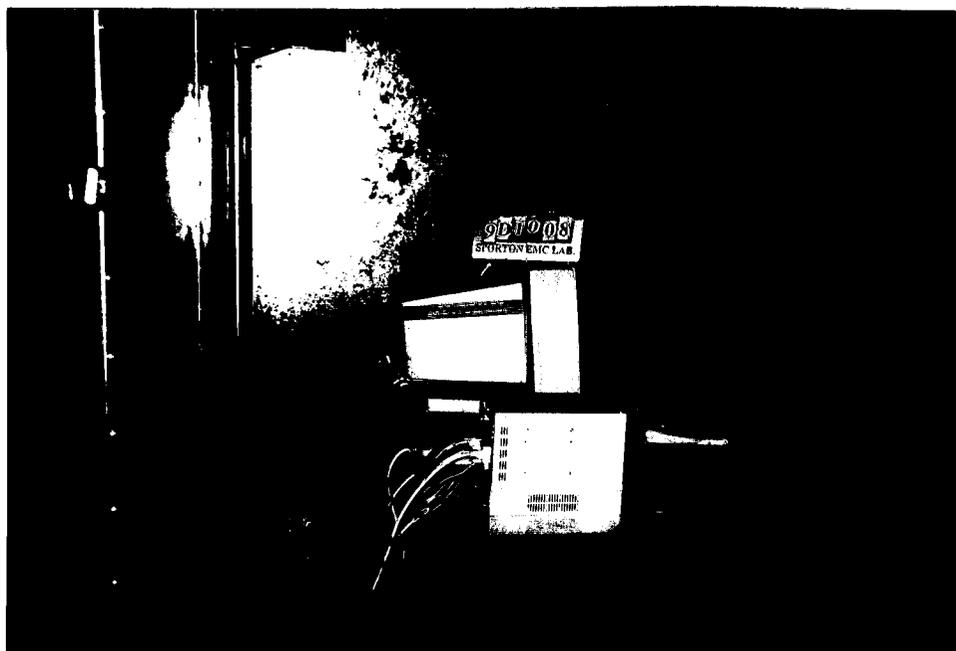
Test Engineer : Bruce Huang
 BRUCE HUANG

11.6. Photographs of Electrical Fast Transient/BURST Immunity Test

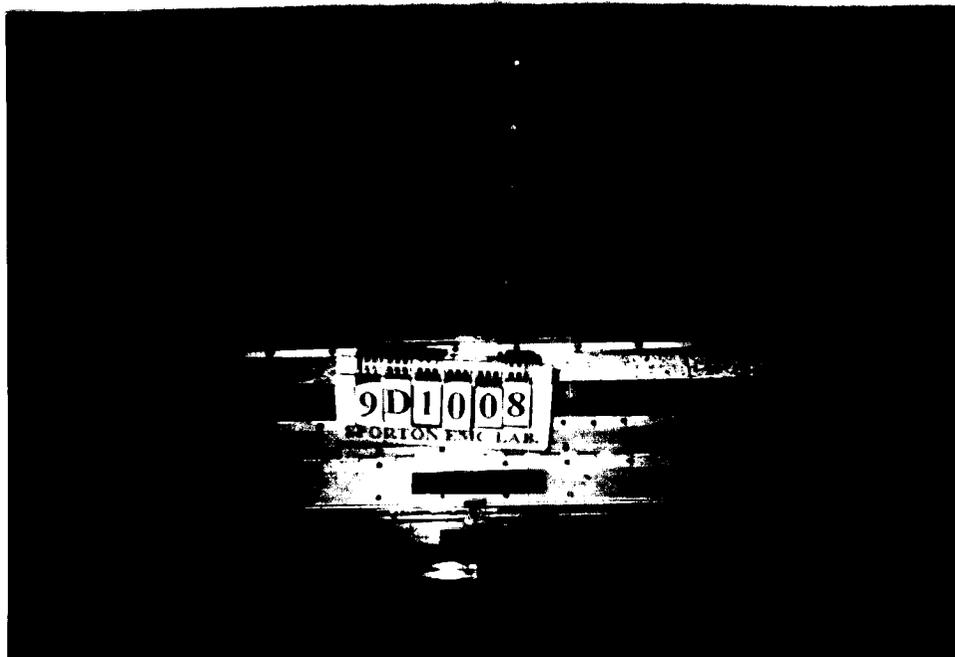
FRONT VIEW



REAR VIEW



CLAMP



12. Antenna Factor & Cable Loss

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30	18.1	0.8
35	16.2	0.8
40	14.0	0.8
45	10.9	0.9
50	8.5	0.9
55	7.4	1.1
60	6.4	1.1
65	6.4	1.2
70	6.5	1.2
75	6.8	1.2
80	7.2	1.2
85	8.0	1.2
90	8.9	1.3
95	10.1	1.3
100	11.3	1.3
110	12.0	1.4
120	12.6	1.5
130	12.0	1.5
140	11.6	1.6
150	10.7	1.7
160	9.7	1.7
170	8.9	1.7
180	9.1	1.8
190	9.1	1.8
200	9.1	1.8
220	10.6	2.0
240	12.0	2.1
260	13.1	2.1
280	13.8	2.3
300	14.4	2.4
320	14.5	2.4
340	14.6	2.5
360	14.9	2.6
380	15.4	2.6
400	15.9	2.6
450	16.6	3.0
500	17.6	3.2
550	19.0	3.3
600	19.6	3.4
650	19.3	3.6
700	18.3	3.8
750	18.7	4.0
800	19.5	4.1
850	19.9	4.4
900	21.6	4.7
950	21.1	4.7
1000	20.9	4.8

13. List of Measuring Equipment Used

[CE-EMI]

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver (site 2)	HP	8591EM	3710A01187	9 KHz – 1.8 GHz	Sep. 06, 1999	Conduction
LISN (EUT) (site 2)	Telemeter	NNB-2/16Z	98009	50 ohm / 50 uH	Jan. 26, 1999	Conduction
LISN (Support Unit) (site 2)	Telemeter	NNB-2/16Z	98089	50 ohm / 50 uH	Nov. 30, 1999	Conduction
Spectrum Analyzer (site 7)	ADVANTEST	R3261C	71720606	9KHz – 2.6GHz	Jan. 12, 1999	Radiation
Amplifier (Site 7)	HP	8447D	2944A08292	100KHz – 1.3GHz	Jun. 24, 1999	Radiation
Bilog Antenna (Site 7)	CHASE	CBL6112A	2446	30MHz -2GHz	Jun. 25, 1999	Radiation
Half-wave dipole antenna (Site 7)	EMCO	3121C	9705-1285	28 M - 1GHz	May 18, 1999	Radiation
Antenna Mast (site 7)	EMCO	2075-2	9804-2147	1MHz – 4MHz	N/A	Radiation
Turn Table (site 7)	EMCO	2080-1.21	9806-2070	0° ~ 360°	N/A	Radiation
Controller (site 7)	EMCO	2090	9804-1328	N/A	N/A	Radiation

[CE-EMS]

Instrument	Manufacturer	Model No.	Characteristics	Calibration Date	Remark
ESD Simulator	KEYTEK	MZ-15/EC	0 KV - 15 KV	Apr. 16, 1999	ESD
OMNI-Tip	KEYTEK	TPC-2	0 KV - 15 KV	Jul. 23, 1999	ESD
Amplifier	AR	100W 1000M3	80 MHz - 1 GHz	N/A	RS
Isotropic Field Probe	AR	FP3000A	10 KHz - 1 GHz	Jun. 19, 1999	RS
IEEE-488 Interface	AR	CP3000	N/A	N/A	RS
System Interface	EMC Automation	200	HP-IB INTERFACE	N/A	RS
Power Meter	EMC Automation	438A	100 KHz - 4.2 GHz	N/A	RS
Video Camera controller	EMC Automation	VCC-01	N/A	N/A	RS
Signal Generator	HP	8648A	100 KHz - 1 GHz	Sep. 10, 1999	RS
Signal Generator	R&S	SMX	100 KHz - 1 GHz	Nov. 07, 1999	RS
Antenna	CHASE	CBL6121A	26 MHz - 1 GHz	Jun. 12, 1999	RS
Amplifier	AR	75W 75A220	25MHz - 300MHz	Jun. 14, 1999	RS
EFT Generator	KEYTEK	CE-40	0 KV - 4.4 KV	Jul. 09, 1999	EFT
Capacitive Clamp	KEYTEK	CE-40-CCL	0 KV - 2 KV	Jun. 23, 1999	EFT
Harmonic/Flicker Test System	HP	6843A	4800VA 90A / 48A PEAK	Nov. 14, 1999	Harmonics, Flicker

14. Notice for Class A Product

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

15. Declaration of Conformity and the CE Mark

There are three possible procedures pertaining to the declaration of conformity :

15.1. Conformity Testing and Declaration of Conformity by the Manufacturer or His Authorized Representative Established within the Community or by an Importer.

- Article 10 (1) of the EMC Directive,
- § 3 (1) no. 2a of the EMC Act.

15.2. Declaration of Conformity Issued by the Manufacturer or His Authorized Representative Established within the Community or by an Importer Following Testing of the Product and Issued of an EC certificate of conformity by a competent body.

- Article 10 (2) of the EMC Directive,
- § 3 (1) no. 2b of the EMC Act.

15.3. Declaration of Conformity Issued by the Manufacturer or His Authorized Representative Established within the Community or by an Importer Following Testing and Certification of the Product by a Notified Body.

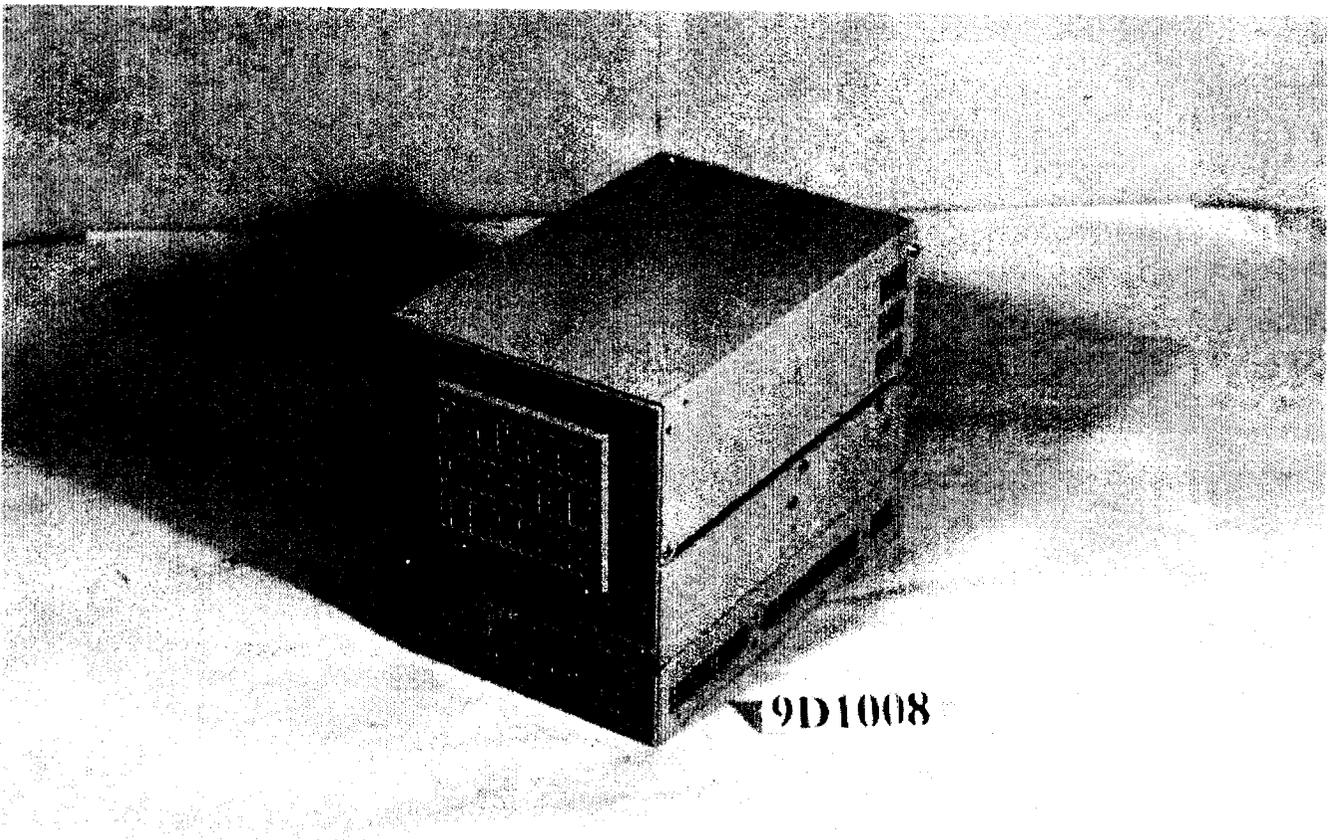
- Article 10 (5) of the EMC Directive,
- § 3 (1) no. 2b of the EMC Act (radio transmitting installations).

15.4. Specimen For The CE Marking Of Electrical / Electronical Equipment

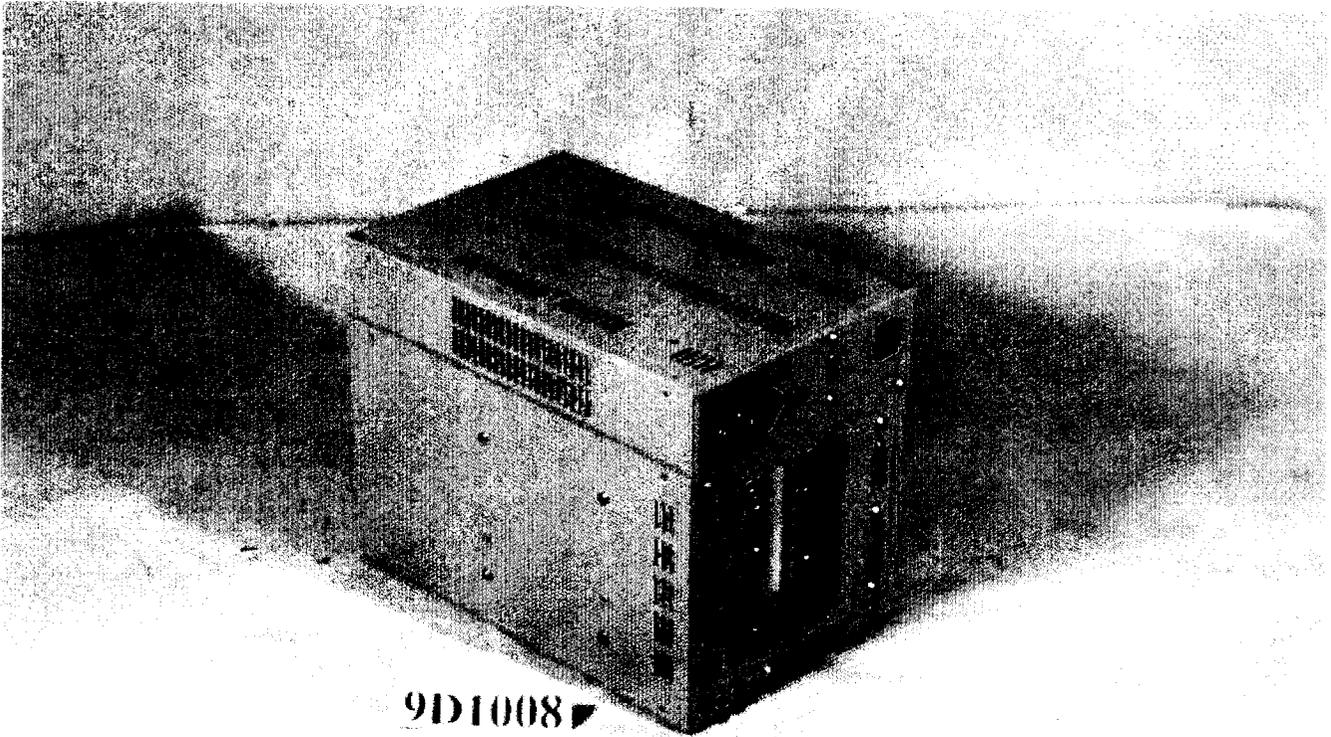
The components of the CE marking shall have substantially the same vertical dimension, which may not be less than 5 mm.



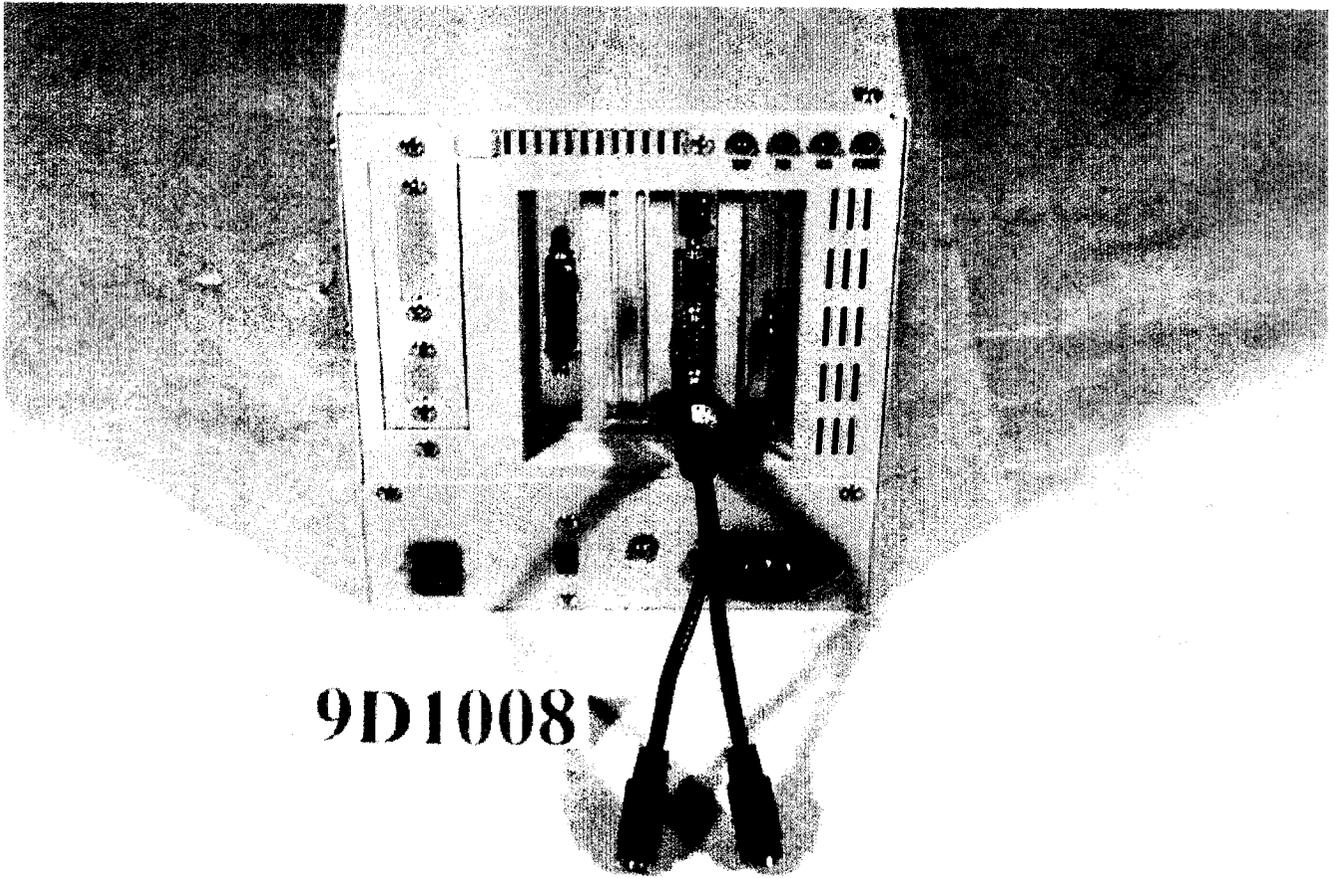
APPENDIX A. Photographs of EUT



9D1008-01CF.jpg



9D1008-02CF.jpg



9D1008-03CF.jpg