



# Test Report

Product Name : PC System

Model No. : Pundit AB-P2600, Pundit, AB-P2600

Applicant	:	ASUSTeK COMPUTER INC.
Address	:	4Fl., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

Date of Receipt	:	Nov. 26 , 2002
Date of Test	:	Dec. 20, 2002
Report No.	:	02BL042E

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of Quietek Corporation.



# Declaration of Conformity

The following products 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). The listed standard as below were applied:

The following Equipment:

Product : PC System  
Trade Name : ASUS  
Model Number : Pundit AB-P2600, Pundit, AB-P2600

This product 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). For the evaluation regarding EMC, the following standards were applied:

## RFI Emission:

EN 55022:1997 Class B : Product family standard  
EN 61000-3-2:1995 Class D : Limits for harmonic current emission  
Amendment 1:1998  
Amendment 2:1998  
Amendment 14:2000  
EN 61000-3-3:1995 : Limitation of voltage fluctuation and flicker in low-voltage supply system

## Immunity :

EN 55024:1998 Product family standard

The following importer/manufacturer is responsible for this declaration:

Company Name : \_\_\_\_\_  
Company Address : \_\_\_\_\_  
Telephone : \_\_\_\_\_ Facsimile : \_\_\_\_\_

Person is responsible for marking this declaration:

\_\_\_\_\_  
Name (Full Name)

\_\_\_\_\_  
Position/ Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Legal Signature



**Quietek** Corporation

EMC/Safety Test Laboratory  
Accredited by DNV, TUV, Nemko and NVLAP

Date: Dec. 20, 2002  
QTK No.: 0BL042E



## Statement of Conformity

The certifies that the following designated product

Product : PC System  
 Trade Name : ASUS  
 Model Number : Pundit AB-P2600, Pundit, AB-P2600  
 Company Name : ASUSTeK COMPUTER INC.

This product 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). For the evaluation regarding EMC, the following standards were applied:

**RFI Emission:**

EN 55022:1997 Class B : Product family standard  
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 Amendment 2:1998  
 Amendment 14:2000  
 EN 61000-3-3:1995 : Limitation of voltage fluctuation and flicker in low-voltage supply system

**Immunity :**

EN 55024:1998 Product family standard



TEST LABORATORY

*Gene Chang*  
Gene Chang/ Manager

The verification is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. Logn.

# Test Report Certification

Test Date : Dec. 20, 2002

Report No. : 02BL042E



Accredited by TUV, DNV, Nemko and NIST (NVLAP)

Product Name : PC System  
Applicant : ASUSTeK COMPUTER INC.  
Address : 4Fl., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.  
Manufacturer : ASUSTeK COMPUTER INC.  
Model No. : Pundit AB-P2600, Pundit, AB-P2600  
Rated Voltage : AC 230V/50Hz  
Trade Name : ASUS  
Measurement Standard : EN 55022:1997 Class B  
EN 61000-3-2:1995, Amendment 1:1998, Amendment 2:1998  
Amendment 14:2000, EN 61000-3-3:1995, EN 55024:1998  
Measurement Procedure : EN 55022:1997, EN 61000-3-2:1995, EN 61000-3-3:1995,  
IEC 61000-4-2:1995, IEC 61000-4-3:1995, IEC 61000-4-4:1995,  
IEC 61000-4-5:1995, IEC 61000-4-6:1996, IEC 61000-4-8:1993,  
IEC 61000-4-11:1994  
Test Result : Complied

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of Quietek Corporation.

Documented By : Caroline Lin  
( Caroline Lin )

Tested By : Lloyd Tsai  
( Lloyd Tsai )

Approved By : Gene Chang  
( Gene Chang )



# Test Report Certification

Test Date: Dec. 20, 2002

Report No. : 02BL042E



Accredited by NIST (NVLAP)  
NVLAP Lab Code: 200533-0

Product Name : PC System

Applicant : ASUSTeK COMPUTER INC.

Address : 4Fl., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

Manufacturer : ASUSTeK COMPUTER INC.

Address : 4Fl., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

Model No. : Pundit AB-P2600, Pundit, AB-P2600

Rated Voltage : AC 240V/50Hz

Trade Name : ASUS

Measurement Standard : AS/NZS 3548: 1995

Measurement Procedure : AS/NZS 3548: 1995

Classification : Class B

Test Result : Complied



The test results relate only to the samples tested.  
 The test report shall not be reproduced except in full without the written approval of Quietek Corporation.  
 This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : Caroline Lin  
( Caroline Lin )

Tested By : Lloyd Tsai  
( Lloyd Tsai )

Approved By : Gene Chang  
( Gene Chang )

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ATTACHMENT 1: EUT TEST PHOTOGRAPHS

ATTACHMENT 2: EUT DETAILED PHOTOGRAPHS

REFERENCE : LABORATORY OF LICENSE

## 1. General Information

### 1.1. EUT Description

Product Name	PC System
Trade Name	ASUS
Model No.	Pundit AB-P2600, Pundit, AB-P2600
Mother Board	ASUS, M/N: P4S8L
CPU	(1) Intel, P4 3.06GHz; 133MHz (2) Intel, P4 2.66GHz; 100MHz
HDD	Maxtor, M/N: R209
CD-ROM	ASUS, M/N: CD-S520/A; Max transmission: 52X
DVD	ASUS, M/N: DVD-E616; Max transmission: 16X
DDRRAM	KINGMAX, M/N: MPMB62D-68KX3, PC2700
Modem Card	ASKEY, M/N: 1456VQH61A(INT)
VGA Card	On Board
Sound Card	On Board
Lan Card	On Board
SPS	(1) DELTA, M/N: DPS-200PR138C (2) HIPRO, M/N: HP-F2007F3P
Power Cord	Non-shielded, 1.8m
RF Module	CC&C, M/N: BT-0220

Note:

- 1.. QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

EMI Test	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD+HIPRO power supply
	Mode 2: D-SUB only 1600*1200/85Hz CPU: 2.6GHZ/100MHZ+SD Card+CD-ROM+DELTA power supply
	Mode 3: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHZ+SD Card+CD-ROM+DELTA power supply
EMS Test	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD
	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHZ+SD Card+CD-ROM+DELTA power supply



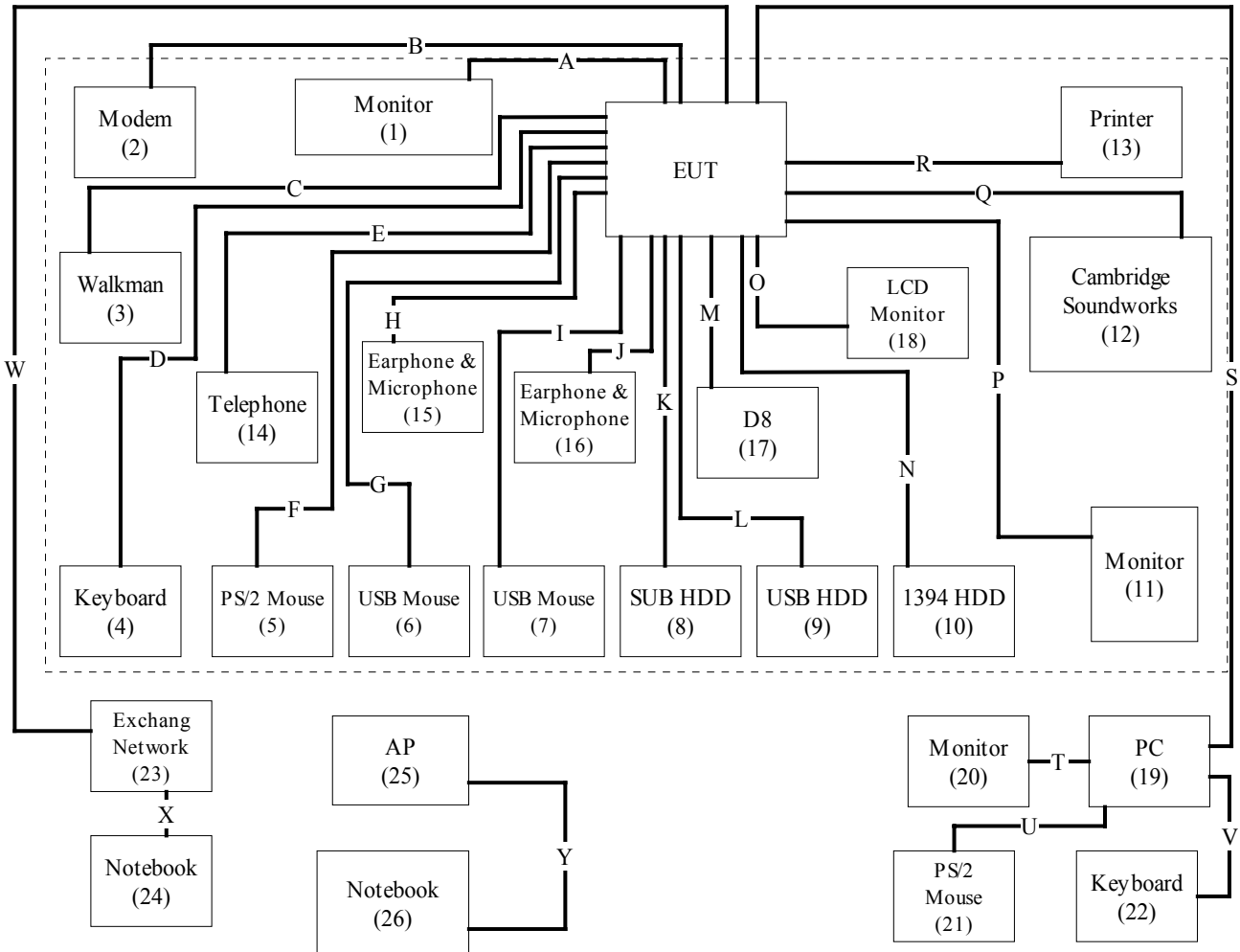
## 1.2. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards ) are:

	Product	Manufacturer	Model Number	Serial No.	Power Core
(1)	Monitor	SONY	CPD-G500	2737939	Non-shielded, 1.8m
(2)	Modem	ACEEX	DM-1414	0102027537	Shielded, 1.5m
(3)	Walkman	AIWA	HS-TA164	N/A	N/A
(4)	Keyboard	HP	SK-2506	C00083358	N/A
(5)	Mouse	IBM	M-SAU-IBM6	23-022671	N/A
(6)	USB Mouse	Logitech	M-BE58	LZE11405011	N/A
(7)	USB Mouse	Logitech	M-BE58	LZE20806612	N/A
(8)	External HDD	NEW MOTION	USB/FIREWIR E	N/A	N/A
(9)	External HDD	Topdisk	ME-910	N/A	N/A
(10)	External HDD	TeraSys	F12-UF	N/A	N/A
(11)	Monitor	SONY	PVM-14M2U	2105939	Non-shielded, 1.8m
(12)	Cambridge Soundworks	EAX	DTT3500	N/A	Non-shielded, 2.0m
(13)	Printer	EPSON	Color 680	015999	Non-shielded, 1.9m
(14)	Telephone	Pier Cardin	Pc-28	N/A	N/A
(15)	Microphone & Earphone	TOKTO	SX-MI	N/A	N/A
(16)	Microphone & Earphone	TOKTO	SX-MI	N/A	N/A
(17)	Digital 8 (D8)	SONY	DCR-TRV5250	1081754	Non-shielded, 1.8m
(18)	LCD Monitor	ViewSonic	VG171	A0T02170465	Non-shielded, 1.5m
(19)	PC	IBM	2187-16W	BNL676Z	Non-shielded, 1.8m
(20)	Monitor	ADI	CM703	038054T10203 882	Non-shielded, 1.8m
(21)	Mouse	IBM	M-SAU-IBM6	23-022699	N/A
(22)	Keyboard	HP	SK-2506	C00083358	N/A
(23)	Exchange Network	SunMoon Star	PX-4	N/A	Non-shielded, 1m
(24)	Notebook PC	DELL	PP01L	N/A	Non-shielded 1.8m
(25)	AP	ASUS	AL300	Adapter: PHIHDNG, M/N: PSC10A-050 Cable Output: Non-shielded, 1.8m	
(26)	Notebook PC	DELL	PP01L	N/A	Non-shielded, 1.8m

Signal Cable Type		Signal cable Description
A.	Monitor Cable (D-SUB)	Shielded, 1.8m. Two ferrite cores bonded.
B.	Modem Cable	Shielded, 1.5m
C.	Walkman Cable	Non-shielded, 1.5m
D.	Keyboard Cable	Shielded, 1.8m
E.	Telephone Cable	Non-shielded, 1.5m
F.	Mouse Cable	Shielded, 1.8m
G.	USB Mouse Cable	Shielded, 1.5m
H.	Microphone & Earphone Cable	Non-shielded, 1.8m
I.	USB Mouse Cable	Shielded, 1.5m
J.	Microphone & Earphone Cable	Non-shielded, 1.8m
K.	USB Cable	Shielded, 1.5m
L.	USB Cable	Shielded, 1.5m
M.	IEEE 1394 Cable	Shielded, 1.2m
N.	IEEE 1394 Cable	Shielded, 1.2m
O.	DVI Cable	Shielded, 1.8m. Two ferrite cores bonded.
P.	S-Video Cable	Shielded, 1.2m
Q.	Fiber Cable*2	Non-shielded, 1.2m
R.	Printer Cable	Shielded, 1.5m
S.	LAN Cable	Non-shielded, 7m
T.	Monitor Cable (D-SUB)	Shielded, 1.8m
U.	Mouse Cable	Shielded, 1.8m
V.	Keyboard Cable	Shielded, 1.8m
W.	Telephone Cable	Non-shielded, 1.2m
X.	Telephone Cable	Non-shielded, 1m
Y.	LAN Cable	Non-shielded, 3m

### 1.3. Configuration of tested System



#### 1.4. EUT Exercise Software

- (1) Setup the EUT and simulators as shown on 1.3.
- (2) Turn on the power of all equipment.
- (3) Personal Computer (EUT) reads data from disk.
- (4) EUT will sends “H” pattern to monitor, the monitor will show “H” pattern on the screen.
- (5) EUT sends “H” pattern to printer, the printer will print “H” pattern on paper.
- (6) EUT reads and writes data into and from modem.
- (7) EUT will read data from floppy disk and then writes the data into floppy disk, same operation for hard disk.
- (8) EUT Connect another simulation PC through LAN port and carry out Read/Write work each other.
- (9) Repeat the above procedure (3) to (7).
- (10) The CD ROM of EUT play the audio signal and video picture during the test.

**1.5. Test Facility**

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	IEC 61000-4-2	15-35	20-35
Humidity (%RH)		30-60	50-65
Barometric pressure (mbar)		860-1060	950-1000
Temperature (°C)	IEC 61000-4-5	15-35	20-35
Humidity (%RH)		10-75	50-65
Barometric pressure (mbar)		860-1060	950-1000
Temperature (°C)	IEC 61000-4-4	15-35	20-35
Humidity (%RH)	IEC 61000-4-8	25-75	50-65
Barometric pressure (mbar)	IEC 61000-4-11	860-1060	950-1000

Site Description:

June 30, 2002 Accreditation on NVLAP  
 NVLAP Lab Code: 200533-0



June 11, 2001 Accreditation on DNV  
 Statement No. : 413-99-LAB11



May 03, 2001 Accreditation on TÜV Rheinland  
 Certificate No.: 19865712-9901



April 24, 2001 Accreditation on Nemko  
 Certificate No.: ELA 165  
 Certificate No.: ELA 162



Site Name: Quietek Corporation  
 Site Address: No. 5, Ruei-Shu Valley, Ruei-Ping Tsuen,  
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 E-Mail : [service@quietek.com](mailto:service@quietek.com)

## 2. Conducted Emission

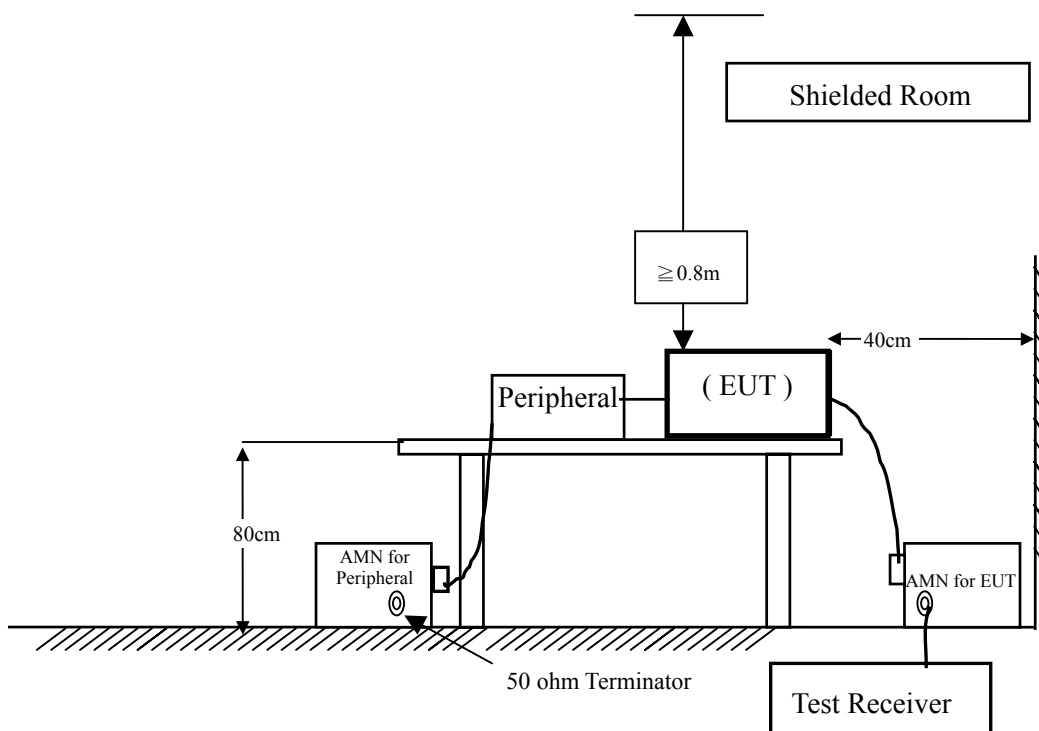
### 2.1. Test Equipment List

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal..	Remark
1	Test Receiver	R & S	ESCS 30/838251/0001	May, 2002	
2	L.I.S.N.	R & S	ESH3-Z5/836679/0023	May, 2002	EUT
3	L.I.S.N.	R & S	ENV 4200/833209/0023	May, 2002	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2002	
5	N0.4 Shielded Room			N/A	

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

### 2.2. Test Setup



**2.3. Limits**

<b>EN 55022 Limits (dBuV)</b>				
Frequency MHz	Class A		Class B	
	QP	AV	QP	AV
0.15 - 0.50	79	66	66-56	56-46
0.50-5.0	73	60	56	46
5.0 - 30	73	60	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

**2.4. Test Procedure**

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to EN 55022:1997 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

**2.5. Test Specification**

According to EN 55022:1997

**2.6. Test Result**

The emission from the EUT was below the specified limits. The worst-case emissions are shown in [section 13](#). The acceptance criterion was met and the EUT passed the test.

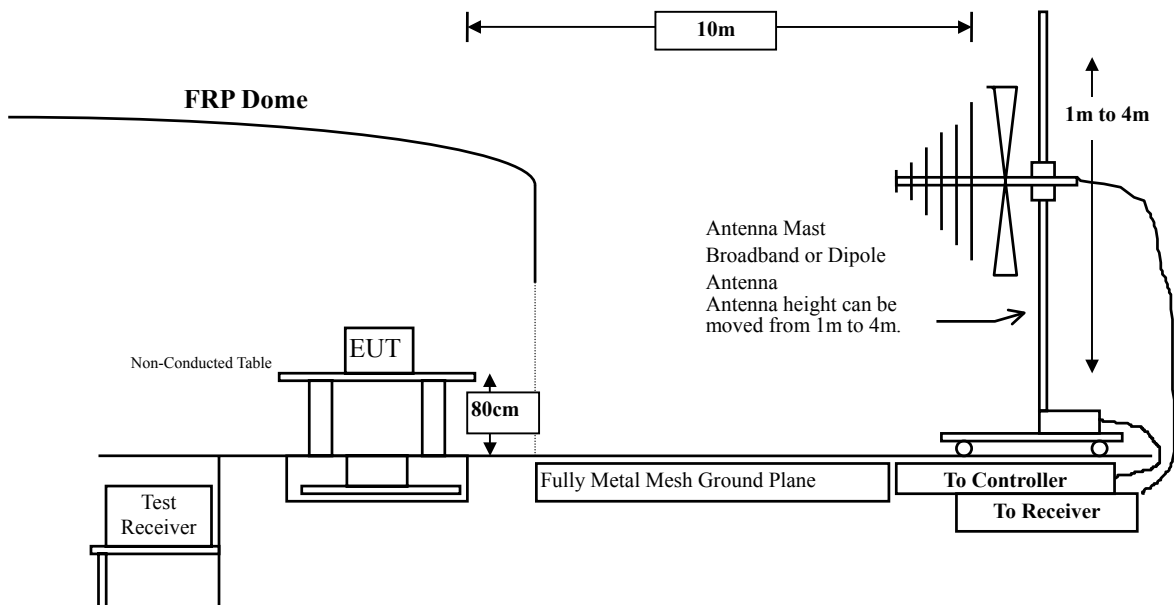
### 3. Radiated Emission

#### 3.1. Test Equipment

The following test equipment are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
<input type="checkbox"/> Site # 1	Test Receiver	R & S	ESVS 10 / 834468/003	July, 2002
	Spectrum Analyzer	Advantest	R3162/ 00803480	May, 2002
	Pre-Amplifier	Advantest	BB525C/ 3307A01812	May, 2002
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	Nov., 2002
<input type="checkbox"/> Site # 2	Test Receiver	R & S	ESCS 30 / 836858 / 022	Nov., 2002
	Spectrum Analyzer	Advantest	3162 / 100803466	May, 2002
	Pre-Amplifier	Advantest	BB525C/3307A01814	May, 2002
	Bilog Antenna	SCHAFFNER	CBL6112B / 2705	Oct., 2002
<input checked="" type="checkbox"/> Site # 3	Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2002
	Spectrum Analyzer	Advantest	3162 / 100803480	May, 2002
	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2002
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2002
	Horn Antenna	ETS	3115 / 0005-6160	July, 2002
	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2002

#### 3.2. Test Setup





### 3.3. Limits

EN 55022 Limits (dBuV)				
Frequency MHz	Class A		Class B	
	Distance (m)	dBuV/m	Distance (m)	dBuV/m
30 – 230	10	40	10	30
230 – 1000	10	47	10	37

### 3.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 10 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to EN55022:1998 on radiated measurement.

Radiated emissions were investigated over the frequency range from 30MHz to 1GHz using a receiver bandwidth of 120kHz. Radiated was performed at an antenna to EUT distance of 10 meters.

### 3.5. Test Specification

According to EN 55022:1997

### 3.6. Test Result

The emission from the EUT was below the specified limits. The worst-case emissions are shown in section 13. The acceptance criterion was met and the EUT passed the test.

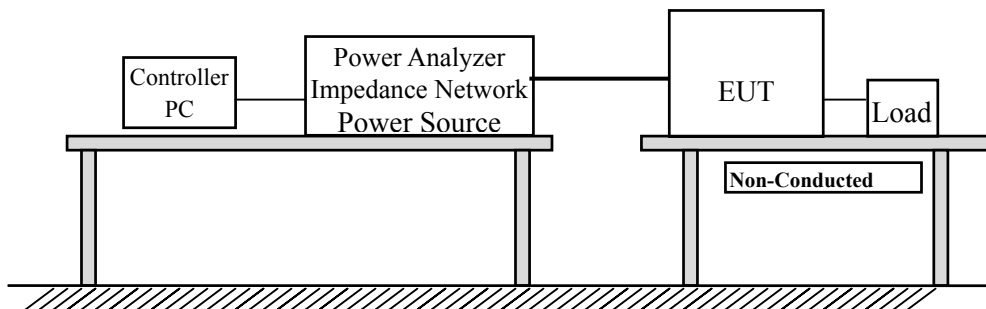
#### 4. Power Harmonics and Voltage Fluctuation

##### 4.1. Power Harmonics and Voltage Fluctuation Test Equipment List

Item	Instrument	Manufacturer	Type No/Serial No.	Last Calibration
1	Power Harmonics Tester	SCHAFFNER	Proflin 2105-400 S/N: HK54148	Jun., 2002
2	Analyzer	SCHAFFNER	CCN 1000-1/X71887	Jun., 2002
3	No.3 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

##### 4.2. Test Setup



##### 4.3. Limits

➤Limits of Class A Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current A	Harmonics Order n	Maximum Permissible harmonic current A
Odd harmonics		Even harmonics	
3	2.30	2	1.08
5	1.14	4	0.43
7	0.77	6	0.30
9	0.40	8 ≤ n ≤ 40	0.23 * 8/n
11	0.33		
13	0.21		
15 ≤ n ≤ 39	0.15 * 15/n		

➤Limits of Class B Harmonics Currents

Foe Class B equipment, the harmonic of the input current shall not exceed the maximum permissible

values given in table which is the limit of Class A multiplied by a factor of 1.5.

➤Limits of Class C Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current Expressed as a percentage of the input current at the fundamental frequency %
2	2
3	$30 \cdot \lambda^*$
5	10
7	7
9	5
$11 \leq n \leq 39$ (odd harmonics only)	3

\*  $\lambda$  is the circuit power factor

➤Limits of Class D Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current per watt mA/W	Maximum Permissible harmonic current A
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
$11 \leq n \leq 39$ (odd harmonics only)	$3.85/n$	See limit of Class A

#### 4.4. Test Procedure

The EUT is supplied in series with power analyzer from a power source having the same normal voltage and frequency as the rated supply voltage and the equipment under test. And the rated voltage at the supply voltage of EUT of 0.94 times and 1.06 times shall be performed.

#### 4.5. Test Specification

According to EN 61000-3-2:1995, , Amendment 1:1998, Amendment 2:1998  
and EN 61000-3-3:1995

#### 4.6. Test Result

The measurement of the power harmonics, which test at the extremes of EUT's supply range, was investigated and test result was shown in section 13. The acceptance criterion was met and the EUT passed the test.

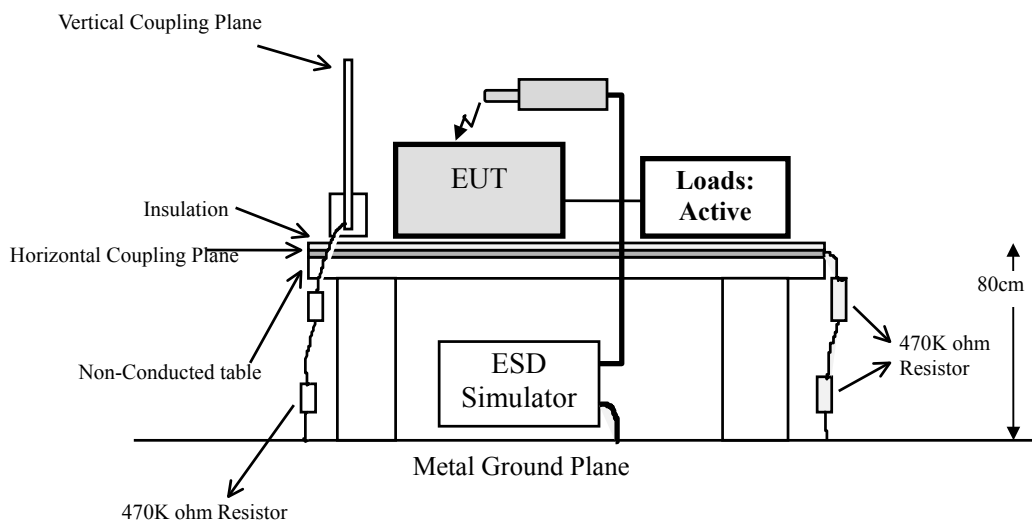
## 5. Electrostatic Discharge (ESD)

### 5.1. Test Equipment

Item	Instrument	Manufacturer	Type No/Serial No.	Last Calibration
1	ESD Simulator System	SCHAFFNER	NSG 438/167	Jan., 2003
2	Horizontal Coupling Plane(HCP)	Quietek	HCP AL50	N/A
3	Vertical Coupling Plane(VCP)	Quietek	VCP AL50	N/A
4	No.3 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

### 5.2. Test Setup



### 5.3. Test Level

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
<b>Enclosure Port</b>				
	Electrostatic Discharge	kV(Charge Voltage)	±8 Air Discharge ±4 Contact Discharge	B

Remark:

The Contact discharges were applied – at least total 200 discharges at a minimum of four test points.

#### **5.4. Test Procedure**

Direct application of discharges to the EUT:

Contact discharge was applied only to conductive surfaces of the EUT.

Air discharges were applied only to non-conductive surfaces of the EUT.

During the test, it was performed with single discharges. For the single discharge time between successive single discharges will be keep longer 1 second. It was at least ten single discharges with positive and negative at the same selected point.

The selected point, which was performed with electrostatic discharge, was marked on the red label of the EUT.

Indirect application of discharges to the EUT:

Vertical Coupling Plane (VCP):

The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

#### **5.5. Test Specification**

According to IEC 61000-4-2:1995

#### **5.6. Test Result**

The measurement of the electrostatic discharge was investigated and test result was shown in section 13. The acceptance criterion was met and the EUT passed the test.

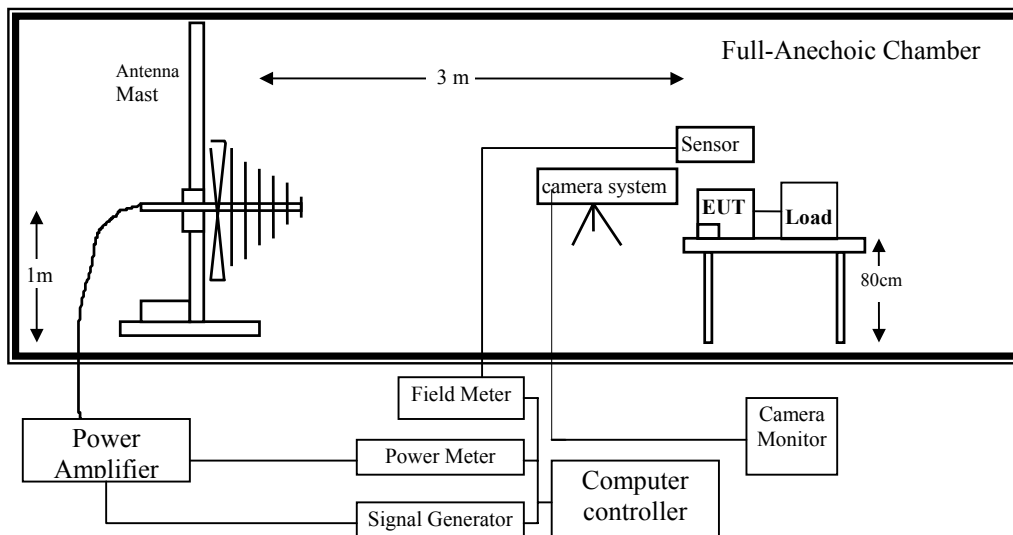
## 6. Radiated Susceptibility (RS)

### 6.1. Test Equipment

Item	Instrument	Manufacturer	Type No/Serial No.	Last Calibration
1	Signal Generator	IFR	2023B / 202302/581	May, 2002
2	Power Amplifier	A & R	500A100AM3 /29369	Aug., 2002
3	Power Amplifier	SCHAFFNER	CBA9413B / 0006	June, 2002
4	Field Strength Sensor	SCHAFFNER	EMC 20 / Y-0028/ Z-0003	June, 2002
5	Power Antenna	SCHWARZBECK	VULB 9166 / 1073	Sep., 2002
6	Power Meter	BOONTON	4232A / 42201	May, 2002
7	No.2 EMC Fully Chamber			July, 2002

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

### 6.2. Test Setup



### 6.3. Test Level

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Radio-Frequency	MHz	80-1000	
	Electromagnetic Field	V/m(Un-modulated, rms)	3	A
	Amplitude Modulated	% AM (1kHz)	80	

#### 6.4. Test Procedure

The EUT and load, which are placed on a table that is 0.8 meter above ground, are placed with one coincident with the calibration plane such that the distance from antenna to the EUT was 3 meters.

Both horizontal and vertical polarization of the antenna and four sides of the EUT are set on measurement.

In order to judge the EUT performance, a CCD camera is used to monitor EUT screen.

All the scanning conditions are as follows:

Condition of Test	Remarks
EN 55024:1998	
1. Field Strength	3 V/M Level 2
2. Radiated Signal	AM 80% Modulated with 1kHz
3. Scanning Frequency	80MHz - 1000MHz
4 Dwell Time	3 Seconds
5. Frequency step size $\Delta f$ :	1%
6. The rate of Swept of Frequency	$1.5 \times 10^{-3}$ decades/s

#### 6.5. Test Specification

According to IEC 61000-4-3:1995

#### 6.6. Test Result

The measurement of the radiated susceptibility was investigated and test result was shown in section 13. The acceptance criterion was met and the EUT passed the test.

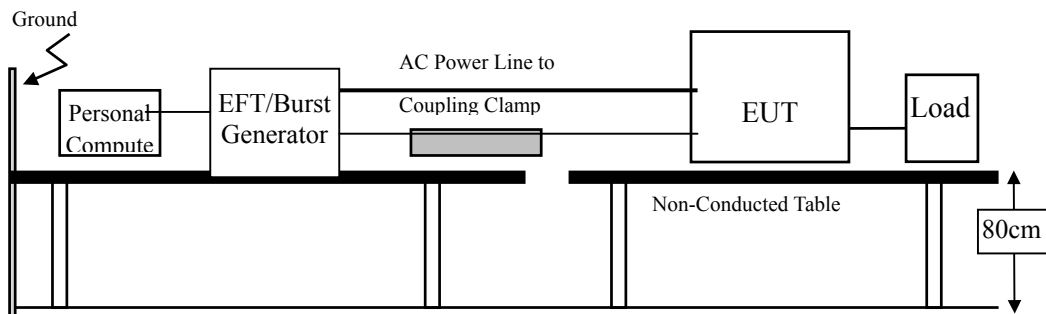
**7. Electrical Fast Transient/Burst (EFT/B)**

**7.1. Test Equipment**

Item	Instrument	Manufacturer	Type No/Serial No.	Last Calibration
1	Fast Transient/Burst Generator	SCHAFFNER	NSG 2050 S/N: 200124-031AR	Jun., 2002
2	No.3 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

**7.2. Test Setup**



**7.3. Test Level**

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
<b>Signal Ports and Telecommunication Ports</b>				
	Fast Transients Common Mode	kV (Peak)	±0.5	B
		Tr/Ts ns	5/50	
		Rep. Frequency kHz	5	
<b>Input DC Power Ports</b>				
	Fast Transients Common Mode	kV (Peak)	±0.5	B
		Tr/Ts ns	5/50	
		Rep. Frequency kHz	5	
<b>Input AC Power Ports</b>				
	Fast Transients Common Mode	kV (Peak)	±1	B
		Tr/Ts ns	5/50	
		Rep. Frequency kHz	5	



#### **7.4. Test Procedure**

The EUT and load are placed on a table that is 0.8 meter above a metal ground plane measured 1m\*1m min. and 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides.

For Signal Ports and Telecommunication Ports:

The EFT interference signal is through a coupling clamp device couples to the signal and control lines of the EUT with burst noise for 1min.

For Input DC and AC Power Ports:

The EUT is connected to the power mains through a coupling device that directly couples the EFT interference signal.

Each of the Line and Neutral conductors is impressed with burst noise for 1 min.

The length of power cord between the coupling device and the EUT shall be 1m.

#### **7.5. Test Specification**

According to IEC 61000-4-4:1995

#### **7.6. Test Result**

The measurement of the Electrical Fast Transient/Burst was investigated and test result was shown in section 13. The acceptance criterion was met and the EUT passed the test.

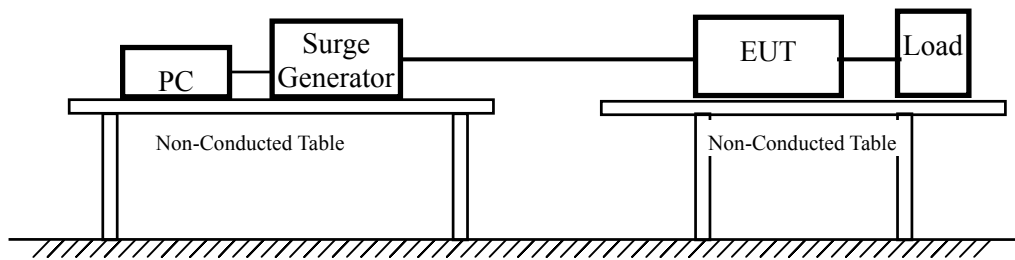
**8. Surge**

**8.1. Test Equipment**

Item	Instrument	Manufacturer	Type No/Serial No.	Last Calibration
1	Surge Generator	SCHAFFNER	NSG 2050 S/NI 200124-031AR	Jun., 2002
2	No.3 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

**8.2. Test Setup**



**8.3. Test Level**

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
<b>Signal Ports and Telecommunication Ports</b>				
	Surges	Tr/Ts uS	1.2/50 (8/20)	
	Line to Ground	KV	± 1	B
<b>Input DC Power Ports</b>				
	Surges	Tr/Ts uS	1.2/50 (8/20)	
	Line to Ground	kV	± 0.5	B
<b>AC Input and AC Output Power Ports</b>				
	Surges	Tr/Ts uS	1.2/50 (8/20)	
	Line to Line	kV	± 1	B
	Line to Ground	kV	± 2	

Notes:

- 1) Applicable only to ports which according to the manufacturer's may directly to outdoor cables.
- 2) Where normal functioning cannot be achieved because of the impact of the CDN on the EUT, no test shall be required.

#### **8.4. Test Procedure**

The EUT and its load are placed on a table that is 0.8 meter above a metal ground plane measured 1m\*1m min. and 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides. The length of power cord between the coupling device and the EUT shall be 2m or less.

For Input and Output AC Power or DC Input and DC Output Power Ports:

The EUT is connected to the power mains through a coupling device that directly couples the Surge interference signal.

The surge noise shall be applied synchronized to the voltage phase at  $0^{\circ}$ ,  $90^{\circ}$ ,  $180^{\circ}$ ,  $270^{\circ}$  and the peak value of the a.c. voltage wave. (Positive and negative)

Each of Line-Earth and Line-Line is impressed with a sequence of five surge voltages with interval of 1 min.

#### **8.5. Test Specification**

According to IEC 61000-4-5:1995

#### **8.6. Test Result**

The measurement of the Surge was investigated and test result was shown in section 13. The acceptance criterion was met and the EUT passed the test.

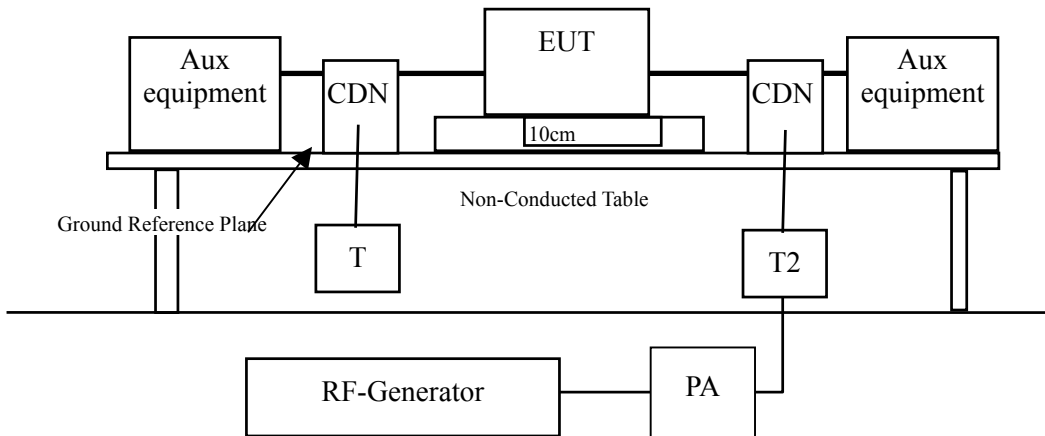
**9. Conducted Susceptibility (CS)**

**9.1. Test Equipment**

Item	Instrument	Manufacturer	Type No/Serial No.	Last Calibration
1	Signal Generator	IFR	2023B / 202302/581	May, 2002
2	Power Amplifier	A & R	500A100AM3 /29369	Aug., 2002
3	Power Amplifier	SCHAFFNER	CBA9413B / 0006	June, 2002
4	CDN 1	Schwarzbeck	L801 M2/3 / 1549	Jun, 2002
5	CDN 2	Schwarzbeck	L801 S1 / 1574	Jun, 2002
6	CDN 3	Schwarzbeck	L801 AF4 / 1064	Jun, 2002
7	CDN 4	Schwarzbeck	L801 AF8 / 1070	Jun, 2002
8	CDN 5	FCC	FCC-801-S9 / 9837	Jun, 2002
9	CDN 6	FCC	FCC-801-S15 / 9838	Jun, 2002
10	CDN 7	FCC	FCC-801-S25 / 9839	Jun, 2002
11	50 ohm Terminator	RES-NET	RCX6BM	Jun, 2002
12	6dB Attenuator	BIRD	RFA250NFF10	Jun, 2002
13	EM Clamp	Schwarzbeck	KEMZ 801 / 15928	Jun, 2002
14	No.2 EMC Fully Chamber			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

**9.2. Test Setup**



### 9.3. Test Level

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
<b>Signal Ports and Telecommunication Ports</b>				
	Radio-Frequency	MHz	0.15-80	
	Continuous Conducted	V (rms, Un-modulated)	3	A
		% AM (1kHz)	80	
<b>Input DC Power Ports</b>				
	Radio-Frequency	MHz	0.15-80	
	Continuous Conducted	V (rms, Un-modulated)	3	A
		% AM (1kHz)	80	
<b>Input AC Power Ports</b>				
	Radio-Frequency	MHz	0.15-80	
	Continuous Conducted	V (rms, Un-modulated)	3	A
		% AM (1kHz)	80	

### 9.4. Test Procedure

The EUT are placed on a table that is 0.8 meter height, and a Ground reference plane on the table, EUT are placed upon table and use a 10cm insulation between the EUT and Ground reference plane.

For Signal Ports and Telecommunication Ports

The disturbance signal is through a coupling and decoupling networks (CDN) or EM-clamp device couples to the signal and Telecommunication lines of the EUT.

For Input DC and AC Power Ports

The EUT is connected to the power mains through a coupling and decoupling networks for power supply lines. And directly couples the disturbances signal into EUT.

Used CDN-M2 for two wires or CDN-M3 for three wires.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	130dBuV(3V) Level 2
2. Radiated Signal	AM 80% Modulated with 1kHz
3. Scanning Frequency	0.15MHz – 80MHz
4 Dwell Time	3 Seconds
5. Frequency step size $\Delta f$ :	1%
6. The rate of Swept of Frequency	$1.5 \times 10^{-3}$ decades/s

### 9.5. Test Specification

According to IEC 61000-4-6:1995

### 9.6. Test Result

The measurement of the Conducted Susceptibility was investigated and test result was shown in section 13. The acceptance criterion was met and the EUT passed the test.

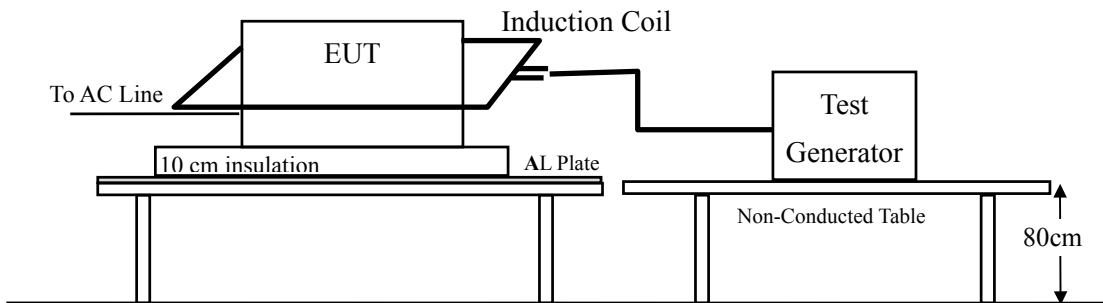
**10. Power Frequency Magnetic Field**

**10.1. Test Equipment**

Item	Instrument	Manufacturer	Type No/Serial No.	Last Calibration
1	Voltage Dips Generator	SCHAFFNER	INA 2141 S/N: 6002	Jun., 2002
2	Gauss Meter	F.W.BELL	4090	Jun., 2002
3	No.3 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

**10.2. Test Setup**



**10.3. Test Level**

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Power-Frequency Magnetic Field	50 1	Hz A/m (r.m.s.)	A

#### **10.4. Test Procedure**

The EUT and its load are placed on a table which is 0.8 meter above a metal ground plane measured at least 1m\*1m min. The test magnetic field shall be placed at central of the induction coil.

The test magnetic Field shall be applied 10minutes by the immersion method to the EUT. And the induction coil shall be rotated by 90° in order to expose the EUT to the test field with different orientation (X, Y, Z Orientations).

#### **10.5. Test Specification**

According to IEC 61000-4-8:1993

#### **10.6. Test Result**

The measurement of the Power Frequency Magnetic Field was investigated and test result was shown in section 13. The acceptance criterion was met and the EUT passed the test.

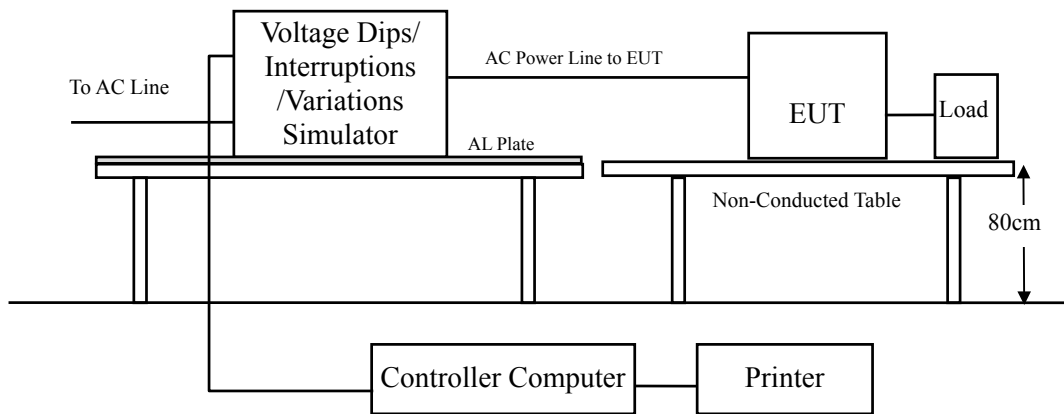
## 11. Voltage Dips and Interruption Measurement

### 11.1. Test Equipment

Item	Instrument	Manufacturer	Type No/Serial No.	Last Calibration
1	Voltage Dips Generator	SCHAFFNER	NSG 2050 S/N: 200124-031AR	Jun., 2002
2	No.3 Shielded Room			N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

### 11.2. Test Setup



### 11.3. Test Level

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Input AC Power Ports				
Voltage Dips		>95	% Reduction	B
		0.5	Period	
		30	% Reduction	C
	25	Periods		
Voltage Interruptions		> 95	% Reduction	C
		250	Periods	



#### **11.4. Test Procedure**

The EUT and its load are placed on a table which is 0.8 meter above a metal ground plane measured 1m\*1m min. And 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides. The power cord shall be used the shortest power cord as specified by the manufacturer.

For Voltage Dips/ Interruptions test:

The selection of test voltage is based on the rated power range. If the operation range is large than 20% of lower power range, both end of specified voltage shall be tested. Otherwise, the typical voltage specification is selected as test voltage.

The EUT is connected to the power mains through a coupling device that directly couples to the Voltage Dips and Interruption Generator.

The EUT shall be tested for 30% voltage dip of supplied voltage and duration 10ms, for 60% voltage dip of supplied voltage and duration 100ms with a sequence of three voltage dips with intervals of 10 seconds, and for 95% voltage interruption of supplied voltage and duration 5000ms with a sequence of three voltage interruptions with intervals of 10 seconds. Voltage phase shifting are shall occur at  $0^{\circ}$ ,  $45^{\circ}$ ,  $90^{\circ}$ ,  $135^{\circ}$ ,  $180^{\circ}$ ,  $225^{\circ}$ ,  $270^{\circ}$ ,  $315^{\circ}$  of the voltage.

#### **11.5. Test Specification**

According to IEC 61000-4-8:1993

#### **11.6. Test Result**

The measurement of the Voltage Dips and Interruption was investigated and test result was shown in section 13. The acceptance criterion was met and the EUT passed the test.

## 12. EMC Reduction Method During Compliance Testing

No modification was made during testing.

**13. Test Result**

The test results in the emission and the immunity were performed according to the requirements of measurement standard and process. Quietek Corporation is assumed full responsibility for the accuracy and completeness of these measurements. The test data of the emission is listed as below.

All the tests were carried out with the EUT in normal operation, which was defined as:

EMI Test	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHz+SM Card+DVD+HIPRO power supply
	Mode 2: D-SUB only 1600*1200/85Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply
	Mode 3: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply
EMS Test	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHz+SM Card+DVD
	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply

Note :

- No Deviation from standard procedure
- Deviations from standard procedure

### 13.1. Test Data of Conducted Emission

Date of Test	Dec. 20, 2002	Test Room	No.4 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHz+SM Card+DVD	Product	PC System
Test Condition	Line1 & Line2	Test Range	0.15MHz – 30MHz

Frequency MHz	Measurement Level (dBuV)				Limits (dBuV)	
	Line1 QP	Line1 AV	Line2 QP	Line2 AV	QP	AV
0.189	54.78	50.41	--	--	64.08	54.08
0.189	--	--	50.60	49.91	64.08	54.08
0.314	--	--	40.42	39.41	59.86	49.86
0.315	51.10	45.41	--	--	59.83	49.83
0.377	49.25	45.61	--	--	58.35	48.35
0.443	45.05	40.91	--	--	57.01	47.01
0.947	--	--	37.85	36.56	56.00	46.00
1.451	--	--	38.17	37.28	56.00	46.00
5.173	--	--	43.43	41.26	60.00	50.00
9.831	48.85	46.43	--	--	60.00	50.00
22.340	--	--	46.78	41.75	60.00	50.00
22.373	47.28	43.05	--	--	60.00	50.00

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. Measurement Level = Reading Level + LISN Factor + Cable loss.
3. "--", means the average measurement was not performed when the Quasi-Peak measured data under the limit of average detection.

Date of Test	Dec. 20, 2002	Test Room	No.4 Shielded Room
Test Mode	Mode 2: D-SUB only 1600*1200/85Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Line1 & Line2	Test Range	0.15MHz – 30MHz

Frequency MHz	Measurement Level (dBuV)				Limits (dBuV)	
	Line1 QP	Line1 AV	Line2 QP	Line2 AV	QP	AV
0.173	44.05	42.90	--	--	64.79	54.79
0.213	--	--	47.77	47.20	63.11	53.11
0.353	--	--	37.27	35.90	58.89	48.89
0.439	38.51	36.70	--	--	57.08	47.08
0.529	--	--	41.17	37.30	56.00	46.00
0.822	42.35	41.70	--	--	56.00	46.00
0.826	--	--	44.77	44.10	56.00	46.00
1.742	27.81	20.72	--	--	56.00	46.00
2.611	--	--	35.97	32.24	56.00	46.00
2.886	36.30	32.35	--	--	56.00	46.00
9.611	--	--	34.67	29.30	60.00	50.00
12.805	32.06	18.19	--	--	60.00	50.00

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. Measurement Level = Reading Level + LISN Factor + Cable loss.
3. "--", means the average measurement was not performed when the Quasi-Peak measured data under the limit of average detection.

Date of Test	Dec. 20, 2002	Test Room	No.4 Shielded Room
Test Mode	Mode 3: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Line1 & Line2	Test Range	0.15MHz – 30MHz

Frequency MHz	Measurement Level (dBuV)				Limits (dBuV)	
	Line1 QP	Line1 AV	Line2 QP	Line2 AV	QP	AV
0.167	44.24	43.72	--	--	65.11	55.11
0.167	--	--	46.01	45.52	65.11	55.11
0.213	42.10	40.65	--	--	63.09	53.09
0.214	--	--	47.50	46.75	63.06	53.06
0.321	--	--	37.19	36.01	59.69	49.69
0.332	37.31	35.82	--	--	59.39	49.39
0.417	38.86	37.25	--	--	57.51	47.51
0.425	--	--	38.69	33.75	57.36	47.36
6.844	--	--	40.94	34.60	60.00	50.00
9.301	42.41	40.76	--	--	60.00	50.00
9.302	--	--	45.89	40.76	60.00	50.00
11.656	40.98	29.21	--	--	60.00	50.00

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. Measurement Level = Reading Level + LISN Factor + Cable loss.
3. "--", means the average measurement was not performed when the Quasi-Peak measured data under the limit of average detection.

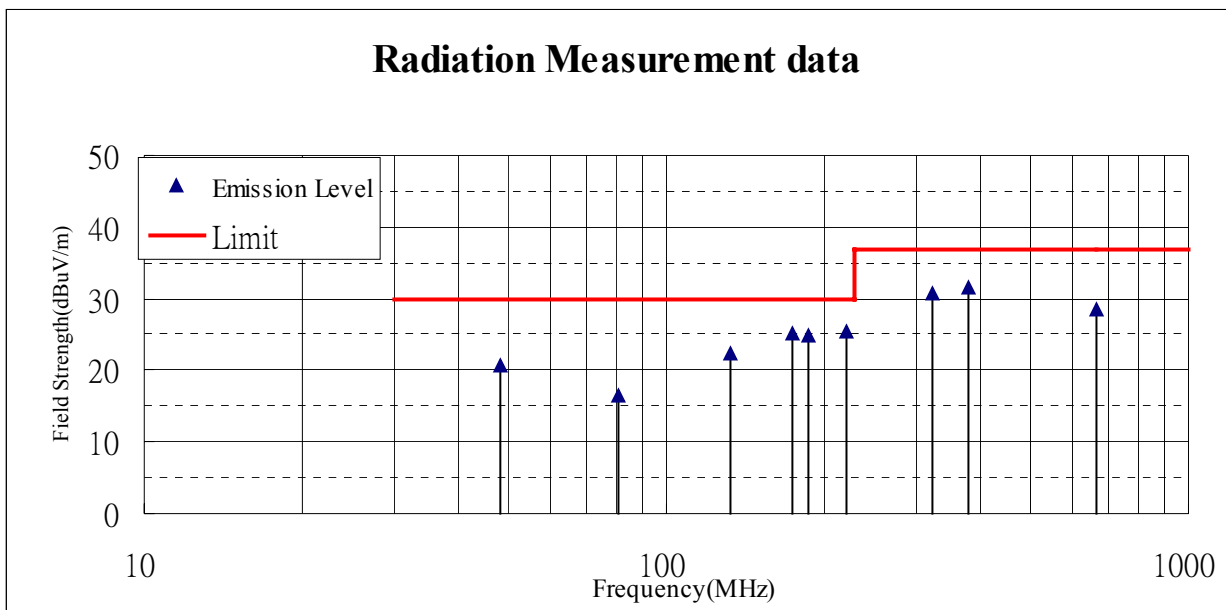
**13.2. Test Data of Radiated Emission**

Date of Test	Dec. 20, 2002	Test Site	No.3 OATS
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHz+SM Card+DVD	Product	PC System
Test Condition	10m & Horizontal	Test Range	30MHz – 1GHz

Frequency MHz	Cable Loss (dB)	Probe Factor (dB/m)	Pre-Amp Factor (dB)	Reading Level (dBuV/m)	Emission Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)
48.243	0.96	8.36	0.00	11.36	20.68	-9.32	30
80.830	1.13	7.99	0.00	7.23	16.35	-13.65	30
132.951	1.4	11.49	0.00	9.34	22.23	-7.77	30
174.880	1.62	8.56	0.00	14.98	25.16	-4.84	30
186.538	1.67	8.04	0.00	15.29	25.00	-5.00	30
221.174	1.85	8.63	0.00	14.95	25.43	-4.57	30
323.993	2.39	12.24	0.00	16.04	30.67	-6.33	37
377.993	2.66	13.95	0.00	14.88	31.49	-5.51	37
666.127	4.14	18.34	0.00	5.99	28.47	-8.53	37

Note:

1. All Reading Levels below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Probe Factor + Cable loss – Preamp.
3. Margin = Limit - Emission Level

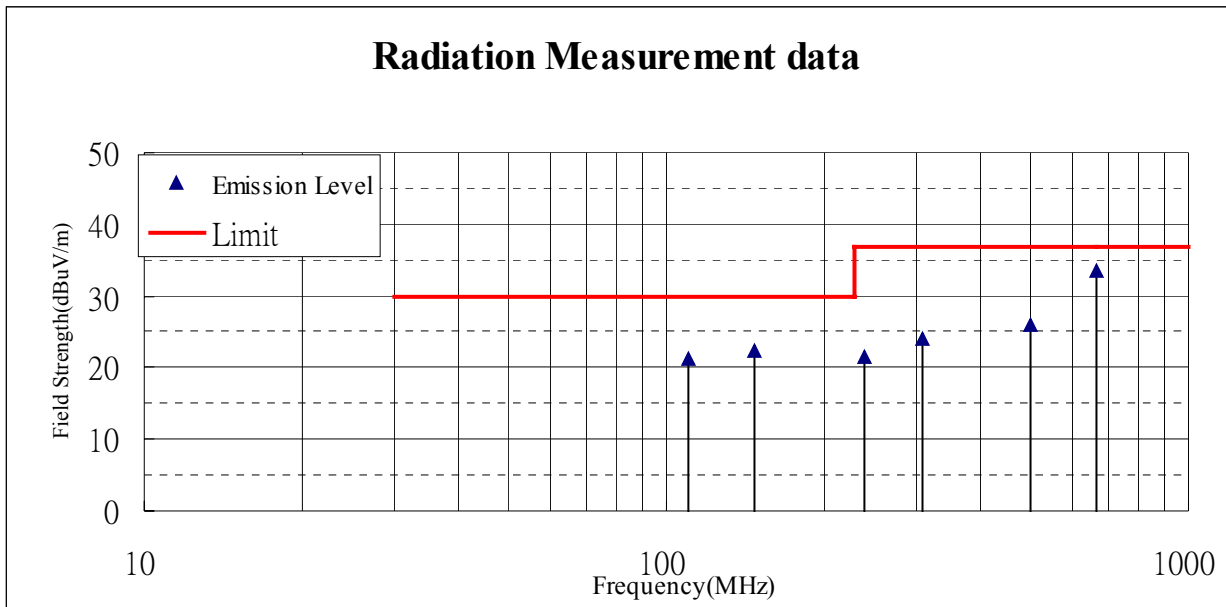


Date of Test	Dec. 20, 2002	Test Site	No.3 OATS
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHz+SM Card+DVD	Product	PC System
Test Condition	10m & Vertical	Test Range	30MHz – 1GHz

Frequency MHz	Cable Loss (dB)	Probe Factor (dB/m)	Pre-Amp Factor (dB)	Reading Level (dBuV/m)	Emission Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)
110.200	1.28	11.12	0.00	8.74	21.14	-8.86	30
147.471	1.47	9.62	0.00	11.35	22.44	-7.56	30
239.993	1.95	10.82	0.00	8.62	21.39	-15.61	37
310.496	2.31	12.20	0.00	9.63	24.14	-12.86	37
498.170	3.28	16.30	0.00	6.39	25.97	-11.03	37
664.170	4.13	17.70	0.00	11.56	33.39	-3.61	37

Note:

1. All Reading Levels below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Probe Factor + Cable loss – Preamp.
3. Margin = Limit - Emission Level



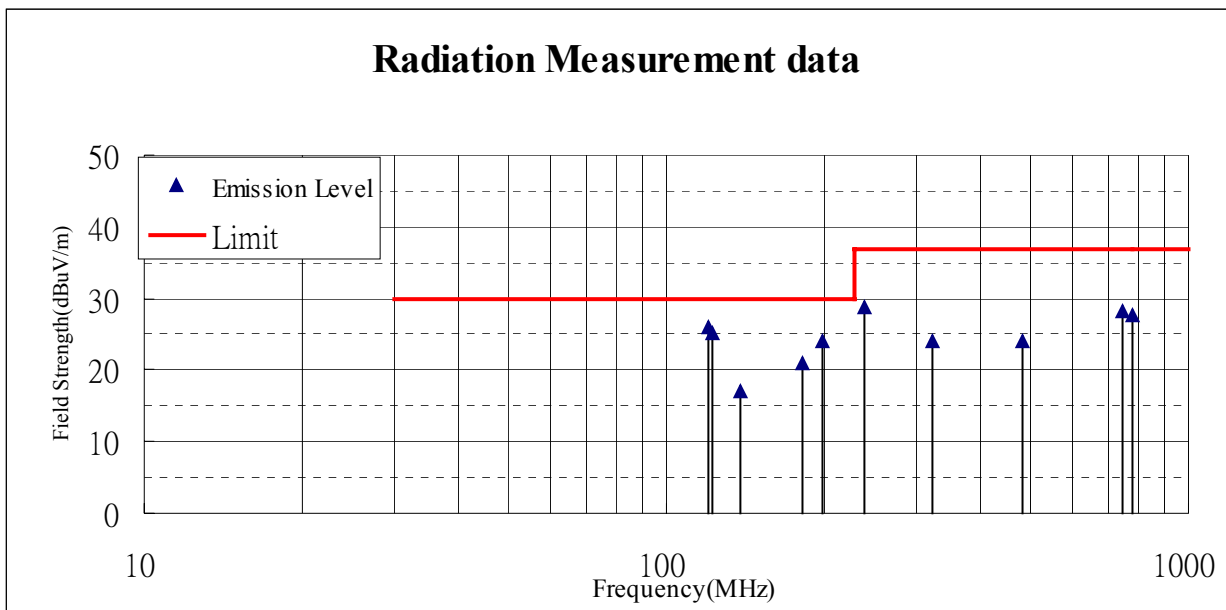


Date of Test	Dec. 20, 2002	Test Site	No.3 OATS
Test Mode	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	10m & Horizontal	Test Range	30MHz – 1GHz

Frequency MHz	Cable Loss (dB)	Probe Factor (dB/m)	Pre-Amp Factor (dB)	Reading Level (dBuV/m)	Emission Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)
120.001	1.33	11.84	0.00	12.80	25.97	-4.03	30
122.892	1.35	11.73	0.00	12.11	25.19	-4.81	30
138.669	1.43	11.29	0.00	4.18	16.90	-13.10	30
182.247	1.65	8.17	0.00	11.05	20.87	-9.13	30
198.963	1.74	8.40	0.00	13.82	23.96	-6.04	30
240.036	1.96	10.42	0.00	16.32	28.70	-8.30	37
323.995	2.39	12.24	0.00	9.51	24.14	-12.86	37
480.053	3.19	16.70	0.00	4.07	23.96	-13.04	37
749.828	4.58	18.49	0.00	5.22	28.29	-8.71	37
779.908	4.74	19.03	0.00	3.96	27.73	-9.27	37

Note:

1. All Reading Levels below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Probe Factor + Cable loss – Preamp.
3. Margin = Limit - Emission Level

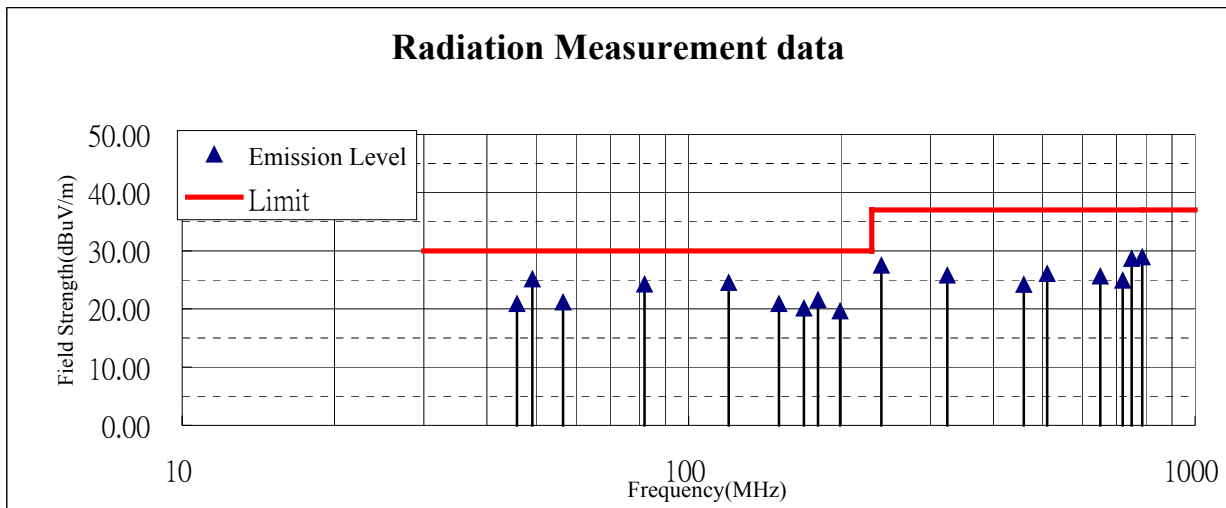


Date of Test	Dec. 20, 2002	Test Site	No.3 OATS
Test Mode	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHZ+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	10m & Vertical	Test Range	30MHz – 1GHz

Frequency MHz	Cable Loss (dB)	Probe Factor (dB/m)	Pre-Amp Factor (dB)	Reading Level (dBuV/m)	Emission Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)
45.821	0.95	8.26	0.00	11.64	20.85	-9.15	30
49.158	0.96	6.90	0.00	17.25	25.11	-4.89	30
56.486	1.00	5.60	0.00	14.50	21.10	-8.90	30
81.753	1.14	7.63	0.00	15.45	24.22	-5.78	30
120.004	1.33	10.36	0.00	12.76	24.45	-5.55	30
150.730	1.49	9.13	0.00	10.21	20.83	-9.17	30
168.751	1.59	8.52	0.00	9.97	20.08	-9.92	30
180.023	1.64	8.41	0.00	11.44	21.49	-8.51	30
198.964	1.74	8.40	0.00	9.42	19.56	-10.44	30
240.036	1.96	10.82	0.00	14.69	27.47	-9.53	37
323.996	2.39	12.59	0.00	10.74	25.72	-11.28	37
458.995	3.08	16.42	0.00	4.62	24.12	-12.88	37
510.484	3.35	16.66	0.00	5.99	26.00	-11.00	37
649.984	4.06	17.89	0.00	3.63	25.58	-11.42	37
720.088	4.42	19.52	0.00	0.93	24.87	-12.13	37
749.823	4.58	20.64	0.00	3.39	28.61	-8.39	37
786.772	4.78	19.66	0.00	4.45	28.89	-8.11	37

Note:

1. All Reading Levels below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Probe Factor + Cable loss – Preamp.
3. Margin = Limit - Emission Level



**13.3. Test Data of Power Harmonics**

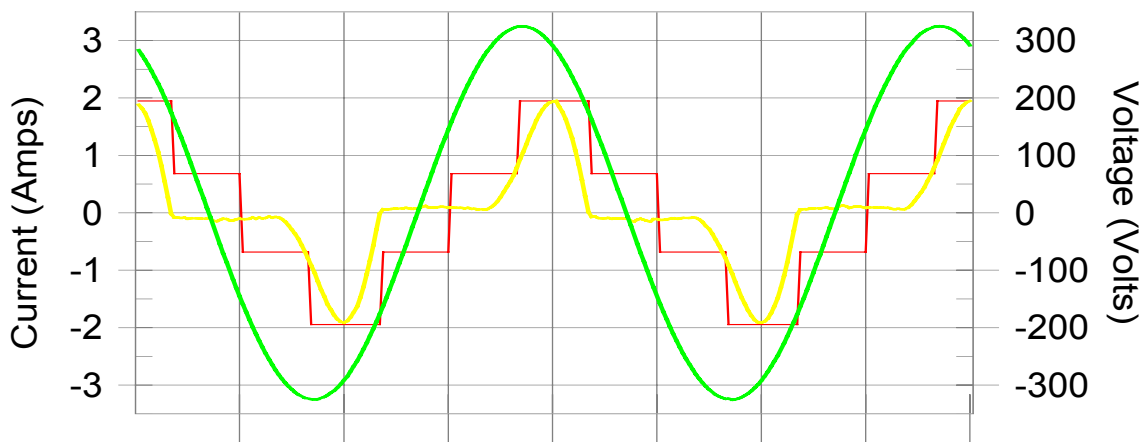
Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD+HIPRO power supply	Product	PC System
Test Condition	Power Harmonics (Classification : Class D)		

**Test Result: Pass**

**Source qualification: Normal**

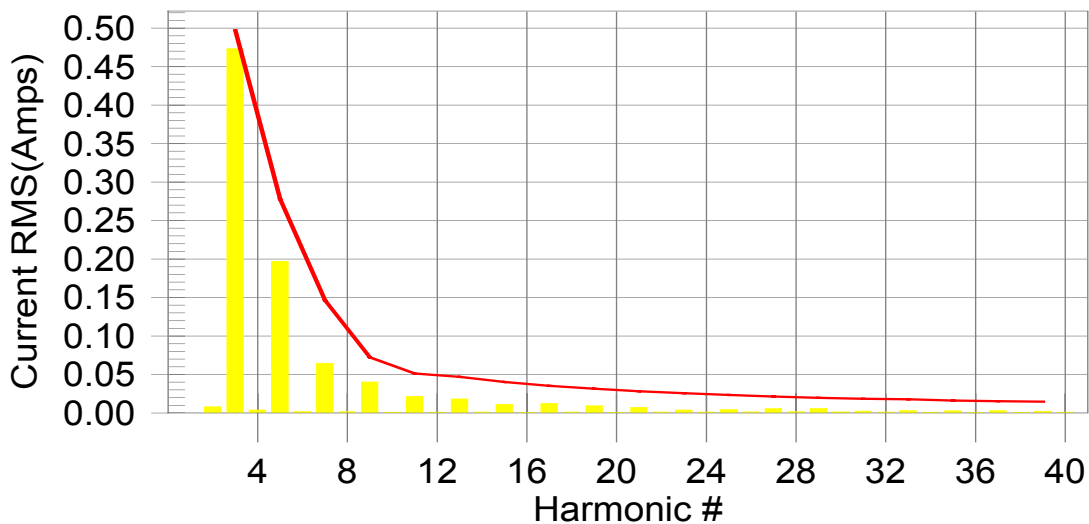
Current & voltage waveforms

It is 1.6% outside Class-D envelope



Harmonics and Class D limit line

European Limits



Test result: Pass

Worst harmonic was #3 with 95.11 % of the limit.

### Current Test Result Summary (Run time)

Test Result: Pass                      Source qualification: Normal  
 Highest parameter values during test:

V_RMS (Volts):	229.85	
I_Peak (Amps):	1.946	I_RMS (Amps): 0.823
I_Fund (Amps):	0.691	Crest Factor: 2.383
Power (Watts):	148	Power Factor: 0.781

Harm#	Harmonics	Limit	% of Limit	Status
2	0.008			
3	0.473	0.497	95.11	Pass
4	0.004			
5	0.197	0.278	70.91	Pass
6	0.002			
7	0.065	0.146	44.18	Pass
8	0.002			
9	0.040	0.072	55.78	Pass
10	0.001			
11	0.022	0.051	42.23	Pass
12	0.001			
13	0.018	0.047	39.15	Pass
14	0.001			
15	0.011	0.040	27.60	Pass
16	0.001			
17	0.012	0.035	35.41	Pass
18	0.001			
19	0.009	0.032	29.78	Pass
20	0.001			
21	0.007	0.028	25.92	Pass
22	0.001			
23	0.004	0.026	0.00	Pass
24	0.001			
25	0.004	0.023	0.00	Pass
26	0.001			
27	0.006	0.021	26.62	Pass
28	0.002			
29	0.006	0.020	28.99	Pass
30	0.001			
31	0.003	0.019	0.00	Pass
32	0.001			
33	0.003	0.018	0.00	Pass
34	0.001			
35	0.003	0.016	0.00	Pass
36	0.001			
37	0.003	0.015	0.00	Pass
38	0.001			
39	0.002	0.015	0.00	Pass
40	0.001			

Note :

1. Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.
2. According to EN61000-3-2 paragraph 7.4 the limits given in table 3 are valid for all applications having an active input power >75W.
3. " -- " mean the limit is not applicable.

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHz+SM Card+DVD	Product	PC System
Test Condition	Voltage Fluctuations and Flicker		

Test Result: Pass

Status: Test Completed

Pst<sub>i</sub> and limit line

European Limits



Time is too short for Plt plot

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.84
Highest dt (%):	0.00
Highest dc (%):	0.00
Highest dmax (%):	0.00
Highest Pst (10 min. period):	0.001
Highest Plt (2 hr. period):	0.001

Test limit (%):	4.00
Test limit (%):	3.30
Test limit (%):	4.00
Test limit:	1.000
Test limit:	0.650

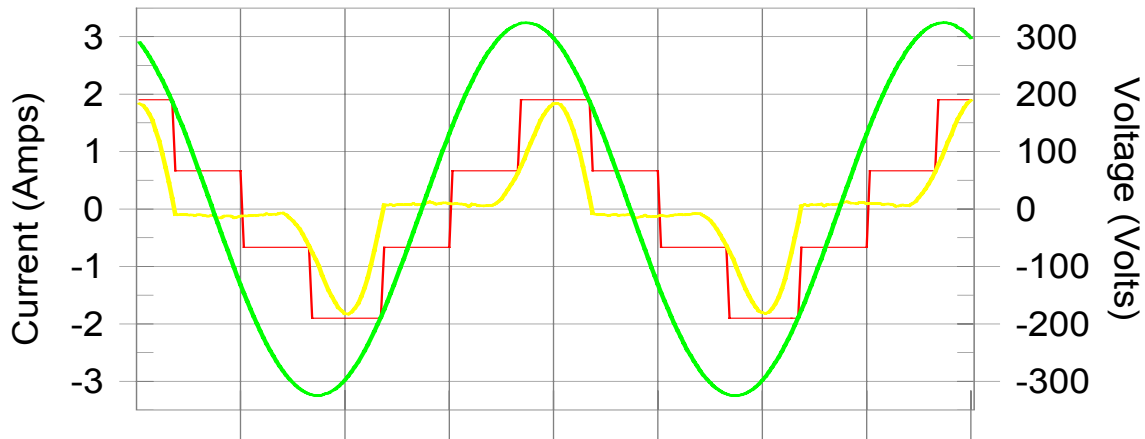
Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 2: D-SUB only 1600*1200/85Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Power Harmonics (Classification : Class D)		

**Test Result: Pass**

**Source qualification: Normal**

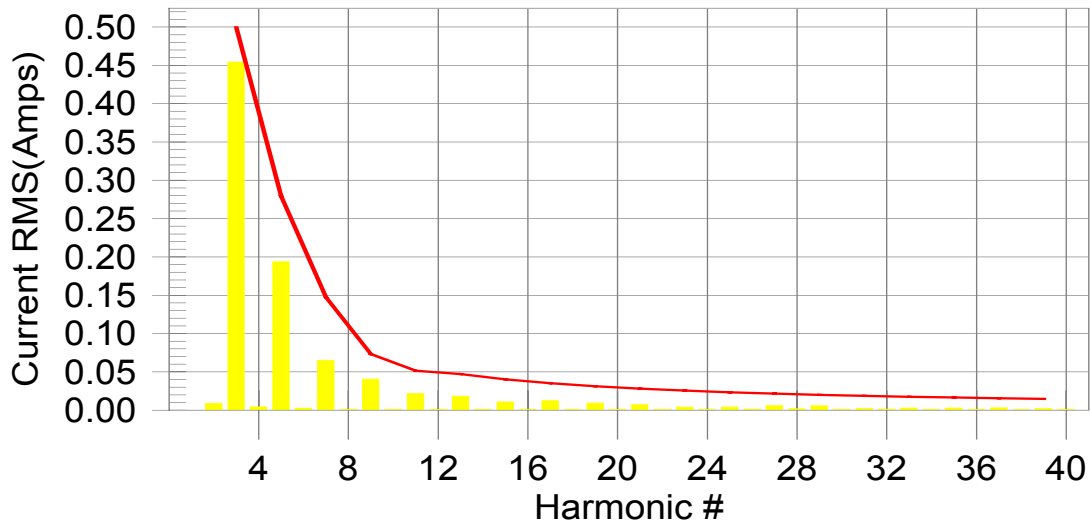
Current & voltage waveforms

It is 0.0% outside Class-D envelope



Harmonics and Class D limit line

European Limits



**Test result: Pass**

**Worst harmonic was #3 with 91.02 % of the limit.**

### Current Test Result Summary (Run time)

Test Result: Pass                      Source qualification: Normal  
 Highest parameter values during test:

V_RMS (Volts):	229.83	
I_Peak (Amps):	1.902	I_RMS (Amps): 0.822
I_Fund (Amps):	0.656	Crest Factor: 2.316
Power (Watts):	147	Power Factor: 0.780

Harm#	Harmonics	Limit	% of Limit	Status
2	0.009			
3	0.454	0.500	90.95	Pass
4	0.004			
5	0.194	0.279	69.34	Pass
6	0.003			
7	0.065	0.147	44.05	Pass
8	0.001			
9	0.041	0.073	55.58	Pass
10	0.001			
11	0.022	0.051	42.38	Pass
12	0.001			
13	0.018	0.047	38.86	Pass
14	0.001			
15	0.011	0.040	26.55	Pass
16	0.001			
17	0.013	0.035	35.50	Pass
18	0.001			
19	0.009	0.031	29.83	Pass
20	0.001			
21	0.007	0.028	25.98	Pass
22	0.001			
23	0.004	0.026	0.00	Pass
24	0.001			
25	0.004	0.023	0.00	Pass
26	0.001			
27	0.006	0.022	27.84	Pass
28	0.002			
29	0.006	0.020	28.52	Pass
30	0.001			
31	0.003	0.019	0.00	Pass
32	0.001			
33	0.003	0.017	0.00	Pass
34	0.001			
35	0.003	0.017	0.00	Pass
36	0.001			
37	0.003	0.016	0.00	Pass
38	0.001			
39	0.002	0.015	0.00	Pass
40	0.001			

Note :

1. Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.
2. According to EN61000-3-2 paragraph 7.4 the limits given in table 3 are valid for all applications having an active input power >75W.
3. " -- " mean the limit is not applicable.

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 2: D-SUB only 1600*1200/85Hz CPU: 2.6GHZ/100MHZ+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Voltage Fluctuations and Flicker		

Test Result: Pass

Status: Test Completed

Pst<sub>t</sub> and limit line

European Limits



Time is too short for Plt plot

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.62		
Highest dt (%):	0.00	Test limit (%):	4.00
Highest dc (%):	0.00	Test limit (%):	3.30
Highest dmax (%):	0.00	Test limit (%):	4.00
Highest Pst (10 min. period):	0.001	Test limit:	1.000
Highest Plt (2 hr. period):	0.001	Test limit:	0.650



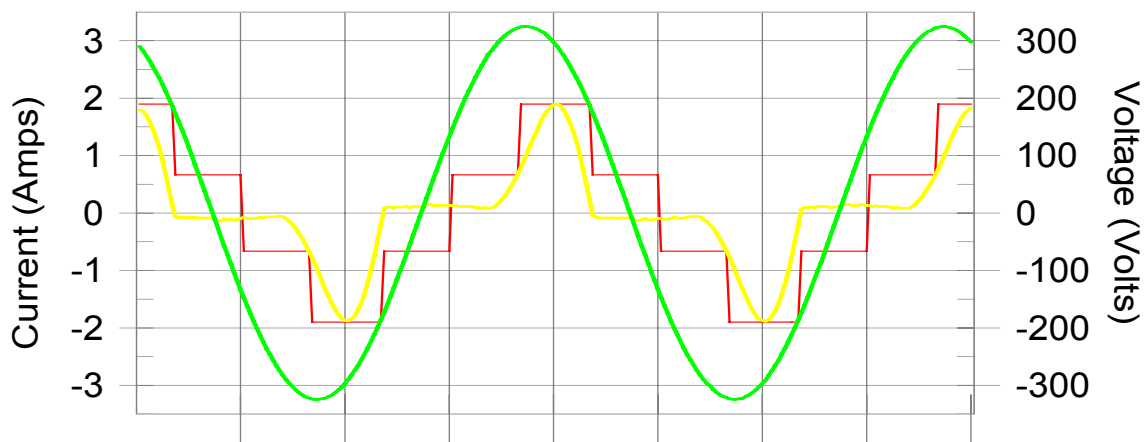
Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 3: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHZ+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Power Harmonics (Classification : Class D)		

**Test Result: Pass**

**Source qualification: Normal**

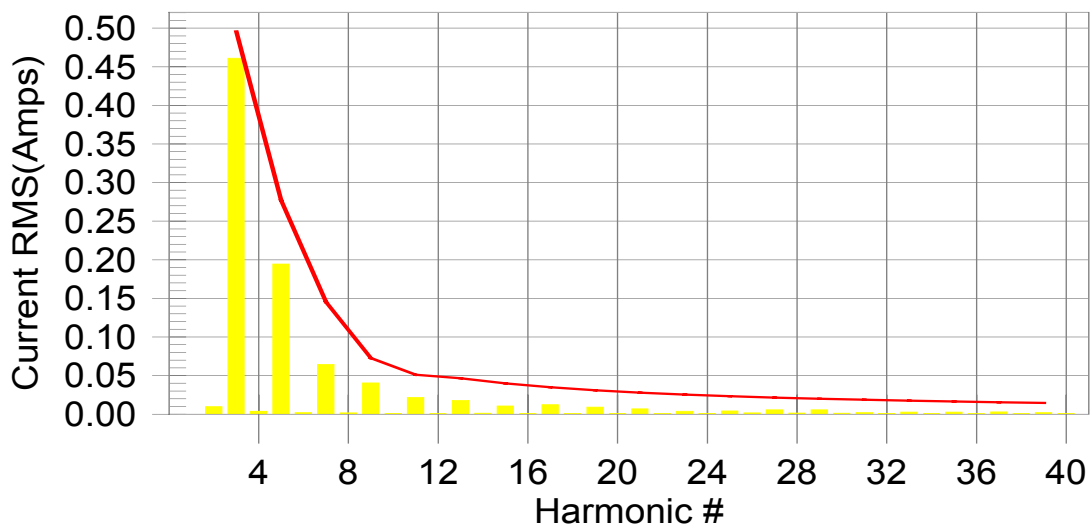
Current & voltage waveforms

It is 0.8% outside Class-D envelope



Harmonics and Class D limit line

European Limits



**Test result: Pass**

**Worst harmonic was #3 with 93.02 % of the limit.**

### Current Test Result Summary (Run time)

Test Result: Pass                      Source qualification: Normal  
 Highest parameter values during test:

V_RMS (Volts):	229.72	
I_Peak (Amps):	1.898	I_RMS (Amps): 0.816
I_Fund (Amps):	0.667	Crest Factor: 2.326
Power (Watts):	146	Power Factor: 0.779

Harm#	Harmonics	Limit	% of Limit	Status
2	0.010			
3	0.461	0.496	93.02	Pass
4	0.004			
5	0.195	0.277	70.25	Pass
6	0.002			
7	0.065	0.145	44.54	Pass
8	0.002			
9	0.040	0.073	55.66	Pass
10	0.001			
11	0.022	0.051	43.02	Pass
12	0.001			
13	0.018	0.047	38.65	Pass
14	0.001			
15	0.011	0.040	26.93	Pass
16	0.001			
17	0.012	0.035	35.36	Pass
18	0.001			
19	0.009	0.031	30.08	Pass
20	0.001			
21	0.007	0.028	25.48	Pass
22	0.001			
23	0.004	0.025	0.00	Pass
24	0.001			
25	0.004	0.023	0.00	Pass
26	0.002			
27	0.006	0.022	26.77	Pass
28	0.002			
29	0.006	0.020	29.05	Pass
30	0.001			
31	0.002	0.019	0.00	Pass
32	0.001			
33	0.003	0.017	0.00	Pass
34	0.001			
35	0.003	0.016	0.00	Pass
36	0.001			
37	0.003	0.016	0.00	Pass
38	0.001			
39	0.002	0.015	0.00	Pass
40	0.001			

**Note :**

1. Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.
2. According to EN61000-3-2 paragraph 7.4 the limits given in table 3 are valid for all applications having an active input power >75W.
3. " -- " mean the limit is not applicable.

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 3: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Voltage Fluctuations and Flicker		

Test Result: Pass

Status: Test Completed

Pst<sub>i</sub> and limit line

European Limits



Time is too short for Plt plot

Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.05
Highest dt (%):	0.00
Highest dc (%):	0.00
Highest dmax (%):	0.00
Highest Pst (10 min. period):	0.001
Highest Plt (2 hr. period):	0.001

Test limit (%):	4.00
Test limit (%):	3.30
Test limit (%):	4.00
Test limit:	1.000
Test limit:	0.650

### 13.4. Test Data of Electrostatic Discharge

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD	Product	PC System
Test Condition	Electrostatic Discharge (Performance Criteria: B)		

Test point	Polarity	Number of Discharges	Complied To Criteria (A,B,C)	Result
Seams	+/-8kV Air	10	A	<b>PASS</b>
Switch	+/-8kV Air	10	A	<b>PASS</b>
Knobs	+/-4kV Con	50	A	<b>PASS</b>
Metal Plate	+/-4kV Con	50	A	<b>PASS</b>
Screws	+/-4kV Con	50	A	<b>PASS</b>
H.C.P.	+/-4kV	50	A	<b>PASS</b>
V.C.P.	+/-4kV	50	A	<b>PASS</b>

#### Criteria judgment of Test result:

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Electrostatic Discharge (Performance Criteria: B)		

Test point	Polarity	Number of Discharges	Complied To Criteria (A,B,C)	Result
Seams	+/-8kV Air	10	A	<b>PASS</b>
Switch	+/-8kV Air	10	A	<b>PASS</b>
Knobs	+/-4kV Con	50	A	<b>PASS</b>
Metal Plate	+/-4kV Con	50	A	<b>PASS</b>
Screws	+/-4kV Con	50	A	<b>PASS</b>
H.C.P.	+/-4kV	50	A	<b>PASS</b>
V.C.P.	+/-4kV	50	A	<b>PASS</b>

#### Criteria judgment of Test result:

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

**13.5. Test Data of Radiated Susceptibility**

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD	Product	PC System
Test Condition	Radiated Susceptibility (Performance Criteria: A)		

Frequency (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Complied To Criteria (A,B,C)	Results
80-1000	0	H	3	A	<b>Pass</b>
80-1000	0	V	3	A	<b>Pass</b>
80-1000	90	H	3	A	<b>Pass</b>
80-1000	90	V	3	A	<b>Pass</b>
80-1000	180	H	3	A	<b>Pass</b>
80-1000	180	V	3	A	<b>Pass</b>
80-1000	270	H	3	A	<b>Pass</b>
80-1000	270	V	3	A	<b>Pass</b>

Criteria judgment of Test result:

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Radiated Susceptibility (Performance Criteria: A)		

Frequency (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Complied To Criteria (A,B,C)	Results
80-1000	0	H	3	A	Pass
80-1000	0	V	3	A	Pass
80-1000	90	H	3	A	Pass
80-1000	90	V	3	A	Pass
80-1000	180	H	3	A	Pass
80-1000	180	V	3	A	Pass
80-1000	270	H	3	A	Pass
80-1000	270	V	3	A	Pass

#### Criteria judgment of Test result:

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

**13.6. Test Data of Electrical Fast Transient**

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD	Product	PC System
Test Condition	Electrical Fast Transient (Performance Criteria: A)		

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Complied To Criteria (A,B,C)	Result
L	±	1kV	60	Direct	B	Pass
N	±	1kV	60	Direct	B	Pass
PE	±	1kV	60	Direct	B	Pass
L+N	±	1kV	60	Direct	B	Pass
L+PE	±	1kV	60	Direct	B	Pass
N+PE	±	1kV	60	Direct	B	Pass
L+N+PE	±	1kV	60	Direct	B	Pass
LAN	±	0.5kV	60	Clamp	B	Pass
Telephone	±	0.5kV	60	Clamp	B	Pass

**Criteria judgment of Test result:**

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.



Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Electrical Fast Transient (Performance Criteria: A)		

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Complied To Criteria (A,B,C)	Result
L	±	1kV	60	Direct	B	Pass
N	±	1kV	60	Direct	B	Pass
PE	±	1kV	60	Direct	B	Pass
L+N	±	1kV	60	Direct	B	Pass
L+PE	±	1kV	60	Direct	B	Pass
N+PE	±	1kV	60	Direct	B	Pass
L+N+PE	±	1kV	60	Direct	B	Pass
LAN	±	0.5kV	60	Clamp	B	Pass
Telephone	±	0.5kV	60	Clamp	B	Pass

Criteria judgment of Test result:

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

**13.7. Test Data of Surge**

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD	Product	PC System
Test Condition	Surge (Performance Criteria: A)		

Inject Line	Polarity	Angle	Voltage kV	Time Interval (Second)	Inject Method	Complied To Criteria (A,B,C)	Result
L-N	±	0	1kV	60	Direct	A	<b>Pass</b>
L-N	±	90	1kV	60	Direct	A	<b>Pass</b>
L-N	±	180	1kV	60	Direct	A	<b>Pass</b>
L-N	±	270	1kV	60	Direct	A	<b>Pass</b>
L-PE	±	0	2kV	60	Direct	A	<b>Pass</b>
L-PE	±	90	2kV	60	Direct	A	<b>Pass</b>
L-PE	±	180	2kV	60	Direct	A	<b>Pass</b>
L-PE	±	270	2kV	60	Direct	A	<b>Pass</b>
N-PE	±	0	2kV	60	Direct	A	<b>Pass</b>
N-PE	±	90	2kV	60	Direct	A	<b>Pass</b>
N-PE	±	180	2kV	60	Direct	A	<b>Pass</b>
N-PE	±	270	2kV	60	Direct	A	<b>Pass</b>

**Criteria judgment of Test result:**

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Surge (Performance Criteria: A)		

Inject Line	Polarity	Angle	Voltage kV	Time Interval (Second)	Inject Method	Complied To Criteria (A,B,C)	Result
L-N	±	0	1kV	60	Direct	A	Pass
L-N	±	90	1kV	60	Direct	A	Pass
L-N	±	180	1kV	60	Direct	A	Pass
L-N	±	270	1kV	60	Direct	A	Pass
L-PE	±	0	2kV	60	Direct	A	Pass
L-PE	±	90	2kV	60	Direct	A	Pass
L-PE	±	180	2kV	60	Direct	A	Pass
L-PE	±	270	2kV	60	Direct	A	Pass
N-PE	±	0	2kV	60	Direct	A	Pass
N-PE	±	90	2kV	60	Direct	A	Pass
N-PE	±	180	2kV	60	Direct	A	Pass
N-PE	±	270	2kV	60	Direct	A	Pass

Criteria judgment of Test result:

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

**13.8. Test Data of Conducted Susceptibility**

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD	Product	PC System
Test Condition	Conducted Susceptibility (Performance Criteria: A)		

Frequency Range (MHz)	Voltage Applied dBuV(V)	Inject Method	Tested Port of EUT	Complied To Criteria (A,B,C)	Result
0.15 ~ 80	130(3V)	CDN 1	AC IN	A	<b>PASS</b>
0.15 ~ 80	130(3V)	Clamp	LAN	A	<b>PASS</b>
0.15 ~ 80	130(3V)	Clamp	Telephone	A	<b>PASS</b>

**Criteria judgment of Test result:**

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Conducted Susceptibility (Performance Criteria: A)		

Frequency Range (MHz)	Voltage Applied dBuV(V)	Inject Method	Tested Port of EUT	Complied To Criteria (A,B,C)	Result
0.15 ~ 80	130(3V)	CDN 1	AC IN	A	<b>PASS</b>
0.15 ~ 80	130(3V)	Clamp	LAN	A	<b>PASS</b>
0.15 ~ 80	130(3V)	Clamp	Telephone	A	<b>PASS</b>

**Criteria judgment of Test result:**

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

**13.9. Test Data of Power Frequency Magnetic Field**

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD	Product	PC System
Test Condition	Power Frequency Magnetic Field (Performance criteria: A)		

Polarization	Frequency (Hz)	Magnetic Strength (A/m)	Complied To Criteria (A,B,C)	Test Result
X Orientation	50	1	A	<b>PASS</b>
Y Orientation	50	1	A	<b>PASS</b>
Z Orientation	50	1	A	<b>PASS</b>

**Criteria judgment of Test result:**

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Power Frequency Magnetic Field (Performance criteria: A)		

Polarization	Frequency (Hz)	Magnetic Strength (A/m)	Complied To Criteria (A,B,C)	Test Result
X Orientation	50	1	A	<b>PASS</b>
Y Orientation	50	1	A	<b>PASS</b>
Z Orientation	50	1	A	<b>PASS</b>

#### Criteria judgment of Test result:

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - No false alarms or other malfunctions were observed during or after the test.

### 13.10. Test Data of Voltage Dips and Interruption

Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 1: D-Sub only 1920*1440/75Hz CPU: P4 3.06GHZ/133MHZ+SM Card+DVD	Product	PC System
Test Condition	Voltage Dips and Interruption		

Voltage Dips and Interruption Reduction(%)	Angle	Test Duration (Periods)	Required Performance Criteria	Complied To Criteria (A,B,C)	Test Result
>95(0V)	0	0.5	B	A	PASS
>95(0V)	45	0.5	B	A	PASS
>95(0V)	90	0.5	B	A	PASS
>95(0V)	135	0.5	B	A	PASS
>95(0V)	180	0.5	B	A	PASS
>95(0V)	225	0.5	B	A	PASS
>95(0V)	270	0.5	B	A	PASS
>95(0V)	315	0.5	B	A	PASS
30(161V)	0	25	C	A	PASS
30(161V)	45	25	C	A	PASS
30(161V)	90	25	C	A	PASS
30(161V)	135	25	C	A	PASS
30(161V)	180	25	C	A	PASS
30(161V)	225	25	C	A	PASS
30(161V)	270	25	C	A	PASS
30(161V)	315	25	C	A	PASS
>95(0V)	0	250	C	C	PASS
>95(0V)	45	250	C	C	PASS
>95(0V)	90	250	C	C	PASS
>95(0V)	135	250	C	C	PASS
>95(0V)	180	250	C	C	PASS
>95(0V)	225	250	C	C	PASS
>95(0V)	270	250	C	C	PASS
>95(0V)	315	250	C	C	PASS

Criteria judgment of Test result:

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could be reset by operator.
  - No false alarms or other malfunctions were observed during or after the test.



Date of Test	Dec. 20, 2002	Test Room	No.3 Shielded Room
Test Mode	Mode 2: D-SUB 1024*768/60Hz+DVI 1024*768/75Hz CPU: 2.6GHZ/100MHz+SD Card+CD-ROM+DELTA power supply	Product	PC System
Test Condition	Voltage Dips and Interruption		

Voltage Dips and Interruption Reduction(%)	Angle	Test Duration (Periods)	Required Performance Criteria	Complied To Criteria (A,B,C)	Test Result
>95(0V)	0	0.5	B	A	PASS
>95(0V)	45	0.5	B	A	PASS
>95(0V)	90	0.5	B	A	PASS
>95(0V)	135	0.5	B	A	PASS
>95(0V)	180	0.5	B	A	PASS
>95(0V)	225	0.5	B	A	PASS
>95(0V)	270	0.5	B	A	PASS
>95(0V)	315	0.5	B	A	PASS
30(161V)	0	25	C	A	PASS
30(161V)	45	25	C	A	PASS
30(161V)	90	25	C	A	PASS
30(161V)	135	25	C	A	PASS
30(161V)	180	25	C	A	PASS
30(161V)	225	25	C	A	PASS
30(161V)	270	25	C	A	PASS
30(161V)	315	25	C	A	PASS
>95(0V)	0	250	C	C	PASS
>95(0V)	45	250	C	C	PASS
>95(0V)	90	250	C	C	PASS
>95(0V)	135	250	C	C	PASS
>95(0V)	180	250	C	C	PASS
>95(0V)	225	250	C	C	PASS
>95(0V)	270	250	C	C	PASS
>95(0V)	315	250	C	C	PASS

**Criteria judgment of Test result:**

- Meet criteria A: No abnormalities were observed during and directly after the test.
- Meet criteria B: Operate as intended after the test
- Meet criteria C: Loss/Error of function
- Additional Information
  - EUT stopped operation and could be reset by operator.
  - No false alarms or other malfunctions were observed during or after the test.

Attachment 1 : EUT Test Photographs

**Attachment 1: EUT Test Setup Photographs**

Front View of Conducted Test (Mode 1)



Back View of Conducted Test (Mode 1)



Front View of Conducted Test (Mode 2)



Back View of Conducted Test (Mode 2)



Front View of Conducted Test (Mode 3)



Back View of Conducted Test (Mode 3)





Front View of Radiated Test (Mode 1)



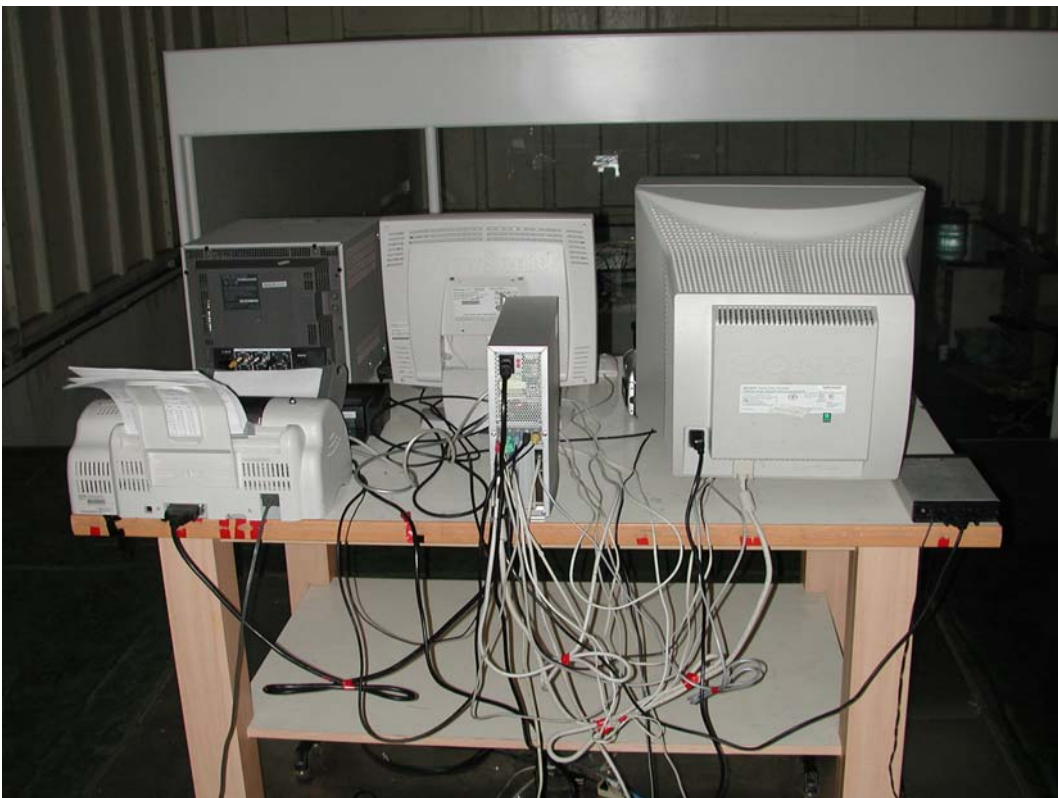
Back View of Radiated Test (Mode 1)



Front View of Radiated Test (Mode 2)



Back View of Radiated Test (Mode 2)



Front View of Radiated Test (Mode 3)



Back View of Radiated Test (Mode 3)





Power Harmonics Test Setup (Mode 1)



Power Harmonics Test Setup (Mode 2)



ESD Test Setup (Mode 1)



ESD Test Setup (Mode 2)





Radiated Susceptibility Test Setup (Mode 1)



Radiated Susceptibility Test Setup (Mode 2)



EFT/B Test Setup (Mode 1)



EFT/B Test Setup (Mode 1) CLAMP



EFT/B Test Setup (Mode 2)



EFT/B Test Setup (Mode 2) CLAMP





SURGE Test Setup (Mode 1)



SURGE Test Setup (Mode 2)



Conducted Susceptibility Test Setup (Mode 1)



Conducted Susceptibility Test Setup (Mode 1) CLAMP LAN



Conducted Susceptibility Test Setup (Mode 1) CLAMP TELEPHONE



Conducted Susceptibility Test Setup (Mode 2)





Conducted Susceptibility Test Setup (Mode 2) CLAMP LAN



Conducted Susceptibility Test Setup (Mode 2) CLAMP TELEPHONE



Power Frequency Magnetic Field Test Setup (Mode 1)



Power Frequency Magnetic Field Test Setup (Mode 2)





Voltage Dips Test Setup (Mode 1)



Voltage Dips Test Setup (Mode 2)



## Attachment 2 : EUT Detailed Photographs

**Attachment 2 : EUT Detailed Photographs**

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



(4) EUT Photo

