

CE MARK TECHNICAL FILE

AUSTRALIA EMC CONSTRUCTION FILE

of

Notebook Personal Computer

Model/ Type/ Machine Type

MS2102

Contains:

1. Declaration of Conformity
2. EN55022/CISPR 22, AS/NZS 3548 Class B EMI test report
3. EN55024, AS/NZS 4252.1, EN61000-3-2, and EN61000-3-3
test report
4. Certificate of EN60950
5. Block Diagram and Schematics
6. User`s manual



Date: 2001/08/01

ISL-01A062E



Acer Incorporated
7 Hsin Ann Road
Science-Based Industrial Park
Hsinchu 300, Taiwan
R.O.C.

Telephone: (03) 577-0707
Facsimile: (03) 577-8500

Declaration of Conformity

Name of Manufacturer: Acer Inc.
Address of Manufacturer: 7 Hsin Ann Rd., Science-Based Industrial Park
Hsinchu 30077
Taiwan, R. O. C.
Declares that product: Notebook Personal Computer
Model/ Type/ Machine Type: MS2102
Assembled by: Same as above
Address: Same as above

Conforms to the EMC Directive 89/336/EEC as attested by conformity with the following harmonized standards:

EN55022:1994 /A1:1995 /A2: 1997: Limits and Methods of Measurement of Radio Interference characteristics of Information Technology Equipment

EN55024: 1998: Information technology equipment--Immunity characteristics --Limits and methods of measurement

EN61000-3-2: 1995: A1:1998/A2:1998: Limits for harmonics current emissions

EN61000-3-3: 1995: Limits for voltage fluctuations and flicker in low-voltage supply systems

Conforms to the Low Voltage Directive 73/23/EEC as attested by conformity with the following harmonized standard:

EN60950:1992 /A1:1993, A2:1993 /A3:1995 /A4:1997 /A11:1997: Safety of Information Technology Equipment Including electrical business equipment

Conforms to the C-Tick Mark requirement as attested by conformity with the following standards:

AS/NZS 3548: 1995 /A1:1997 /A2:1997: Information technology equipment
AS/NZS 4252.1:1994: Generic Immunity

Angus Hsieh / Sr. Director
Acer Inc.

2001/08/02

Date

ISL-01A062E

EN55024 / AS/NZS 4252.1 / IMMUNITY
EN61000-3-2 / HARMONICS
EN61000-3-3 / VOLTAGE FLUCTUATIONS

TEST REPORT

of

Notebook Personal Computer

Model/ Type/ Machine Type

MS2102

Applied by:

Acer Inc.
7 Hsin Ann Rd., Science-Based Industrial Park
Hsinchu 30077
Taiwan, R. O. C.

Test Performed by:

(NVLAP Lab. Code: 200234-0)
International Standards Laboratory
No. 21, Alley 37, Lane 122, Sec. 2
Hsiwan Rd. Hsichih
Taipei Hsien 22117
Taiwan, R.O.C.

Tel:(02)2646-2550
Fax:(02)2646-4641

Contents of Report

<u>1.</u>	<u>General</u>	1
<u>2.</u>	<u>Summary</u>	2
<u>3.</u>	<u>Electrostatic discharge (ESD) immunity</u>	9
<u>4.</u>	<u>Radio-Frequency, Electromagnetic Field immunity</u>	10
<u>5.</u>	<u>Electrical Fast transients/burst immunity</u>	11
<u>6.</u>	<u>Surge Immunity</u>	14
<u>7.</u>	<u>Immunity to Conductive Disturbance</u>	15
<u>8.</u>	<u>Power Frequency Magnetic Field immunity</u>	16
<u>9.</u>	<u>Voltage Dips, Short Interruption and Voltage Variation immunity</u>	17
<u>10.</u>	<u>Harmonics</u>	18
<u>11.</u>	<u>Voltage Fluctuations</u>	20
<u>12.</u>	<u>Test Equipment List</u>	21
<u>13.</u>	<u>Photographs</u>	23

1. General

1.1 Certification of Accuracy of Test Data

The immunity tests which this report describes were conducted by an independent electromagnetic compatibility consultant, International Standards Laboratory in accordance with the EN55024:1998 / AS/NZS 4252.1:1994 which include EN61000-4 series regulations, Harmonic Current Emissions EN61000-3-2: 1995: A1:1998/A2:1998, and Voltage Fluctuations EN61000-3-3: 1995.

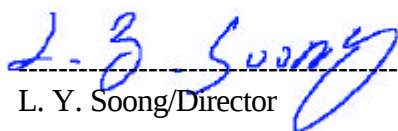
Equipment Tested: Notebook Personal Computer
Model/ Type/ Machine Type: MS2102
Applied by Acer Inc.

Date of test: 2001/08/01

Test Engineer: Chance Chan

Standard	Comment	Test Results
EN61000-3-2: 1995 A1:1998/A2:1998	Harmonic Current Emissions	Complies
EN61000-3-3: 1995	Voltage Fluctuations	Complies
EN61000-4-2: 1995	Electrostatic Discharge	Complies
EN61000-4-3: 1996	Radio-Frequency, Electromagnetic Field	Complies
EN61000-4-4: 1995	Electrical Fast Transient/Burst	Complies
EN61000-4-5: 1995	Surge	Complies
EN61000-4-6: 1996	Conductive Disturbance	Complies
EN61000-4-8: 1993	Power Frequency Magnetic Field	Complies
EN61000-4-11: 1994	Voltage Dips / Short Interruption and Voltage Variation	Complies

Approve & Signature


L. Y. Soong/Director

This test report accurately contains the test results of the above standards at the time of the test.

The results in this report apply only to the sample(s) tested.

This test report shall not be reproduced except in full, without the written approval of International Standards Laboratory.

2. Summary

2.1.1 Applicant Information

Applicant: Acer Inc.
7 Hsin Ann Rd., Science-Based Industrial Park
Hsinchu 30077
Taiwan, R. O. C.

2.1.2 Operation Environment

Power supply : 230 Vac / 50 Hz

2.2 Description of Equipment Under Test

2.2.1 Description of Support Equipment

Support Unit 1.

Description:	Acer USB Mouse
Model Number:	MUSXT
Serial Number:	81130159
Power Supply Type:	N/A
Power Cord:	N/A
FCC ID:	(comply with FCC DOC)

Support Unit 2.

Description:	Acer USB Keyboard
Model Number:	6511-P
Serial Number:	9152P0701183I31025S00000
Power Supply Type:	N/A
Power Cord:	N/A
FCC ID:	JVP6511-P

Support Unit 3.

Description:	KOKA Microphone
Model Number:	DM-510
Serial Number:	N/A
Power Supply Type:	N/A
Power Cord:	N/A
FCC ID:	N/A

Support Unit 4.

Description:	Acer Speaker
Model Number:	PS033761
Serial Number:	970701496
Power Supply Type:	N/A
Power Cord:	N/A
FCC ID:	N/A

Support Unit 5.

Description:	SONY radio cassette player
Model Number:	WM-FX50
Serial Number:	N/A
Power Supply Type:	N/A
Power Cord:	N/A

Support Unit 6.

Description:	HP Printer (for parallel interface port)
Model Number:	2225C
Serial Number:	N/A
Power Supply Type:	Switching (AC to AC Xfmr, Wall Mounted Type)
Power Cord:	Nonshielded, Detachable With Grounding Pin
FCC ID:	DSI6XU2225

Support Unit 7.

Description:	Logitech Mouse
Model Number:	M-SAH
Serial Number:	LZB81251703
Power Supply Type:	N/A
Power Cord:	N/A
FCC ID:	DZL211029

Support Unit 8.

Description:	Aceex Modem (for serial interface port)
Model Number:	DM1414
Serial Number:	960063771
Power Supply Type:	Linear, Power Adapter (AC to AC Xfmr, Wall Mounted Type)
Power Cord:	Nonshielded, Without Grounding Pin
FCC ID:	IFAXDM1414

Support Unit 9.

Description:	Acer Monitor
Model:	7377xe
Serial Number:	999027100501700055P644E1 P
Power Supply Type:	Switching
Power Cord:	Nonshielded, Detachable
FCC ID:	(Comply with FCC DOC)

Support Unit 10.

Description:	Personal Computer
Model:	IBM 2170
Serial No.:	N/A
Power Supply Type :	Switching
	Delta (Model: DPS-145PB-80A)
Hard Disk Drive:	Maxtor (Model: 91303D6) 13.3GB
Floppy Driver:	Panasonic (Model: JU256A276P)
CD-ROM Drive:	AOpen (Model: CD-940E/TKU PRO)
ZIP Driver:	Iomega (Model:Z100ATAPI)
LAN Card	Accton (Model: EN1207D-TX1)
FDD/HDD Controller and	
VGA port/ Parallel/	
Serial port:	Built on Motherboard
VGA port:	one 15-pin
Parallel Port:	one 25-pin
Serial Port:	one 9-pin
Keyboard Connector:	6-pin
Mouse Connector:	6-pin
USB Connector:	two 4-pin
Game Port:	one 15-pin
Speaker Port:	one
Microphone Port:	one
Line In Port:	one
Power Cord:	Nonshielded, Detachable
FCC ID:	N/A (comply with FCC DOC)

2.2.2 Software for Controlling Support Unit

A test program which generates a complete line of continuously repeating "H" pattern is used as the software test program. The program was executed as follows:

- A. Read and write to the disk drives.
- B. Receive audio signal from the microphone.
- C. Send audio signal to the speaker.
- D. Receive audio signal from walkman.
- E. Send H pattern to the parallel port device (Printer).
- F. Send H pattern to the serial port device (Modem).
- G. Send H pattern to the video port device (Monitor).
- H. Send signal form EUT to server through LAN port.
- A. Send signal form EUT to server through Telephone port.
- I. Repeat the above steps.

	Filename	Issued Date
LAN	EMC.exe	11/22/1996
Monitor	HH.bat	8/20/1991
Modem 1	Hm.bat	8/20/1991
Printer1	Wordpad.exe	11/11/1999
Telephone	Hypertm.exe	06/08/200

2.2.3 I/O Cable Condition of EUT and Support Units

Description	Path	Cable Length	Cable Type	Connector Type
AC Power Cord	110V (~240V) to AC Power Cord Inlet (3-pin)	1.8M	Nonshielded, Detachable	Plastic Head Plastic Hood
Server Data Cable	Server to EUT LAN port	33 feet	Nonshielded, Detachable	RJ-45, with Metal Head, Metal Hood
Monitor Data Cable	Monitor to PC VGA port	1.6M	Shielded, Detachable	Metal Head Plastic Hood
Modem Data Cable	Modem to PC COM 1 port	1.5M	Shielded, Detachable	Metal Head Metal Hood
Mouse Data Cable	Mouse to PC Mouse port	1.8M	Shielded, Undetachable	Metal Head without Hood
Printer Data Cable	Printer to PC Parallel port	1.5M	Shielded, Detachable	Metal Head Plastic Hood
Audio-in Data Cable	Walkman to PC Audio-In Port	1.5M	Nonshielded, Detachable to PC	Metal Head Plastic Hood
Speaker Data Cable	Speaker to PC Line out port	1.5M	Nonshielded, Detachable	Metal Head without Hood
Microphone Data Cable	Microphone to Mic Jack of PC	1.5M	Nonshielded, Undetachable	Metal Head Plastic Hood
USB Keyboard Data Cable	Keyboard to PC USB port	1.8M	Shielded, Undetachable	Metal Head Plastic Hood
USB Mouse Data Cable	Mouse to PC USB port	1.8M	Shielded, Undetachable	Metal Head without Hood
Telephone Line	with 600 .dummy load	1.2M	Nonshielded, Detachable to PC	Plastic Head Plastic Hood

2.3 Description of Equipment Under Test

EUT

Description:	Notebook Personal Computer	
Condition:	Pre-Production	
Model:	MS2102	
Serial Number:	N/A	
Power Supply Type :	Switching	
	Delta	(Model: ADP60DB BB) 3 pins
	Delta	(Model: ADP60DH BN) 3 pins
	LiteOn	(Model: PA-1600-02AE) 3 pins
CPU Type :	Pentium III Tualatin 1.133G	
	Pentium III Tualatin 1.066G	
Hard Disk Driver:	IBM (Model: IC25N030ATDA04) 30GB	
	IBM (Model: IC25N020ATDA04) 20GB	
SDRAM:	Infineon (Model: HYS64V16220GDL-7.5-C) 128MB	
	FDD Driver: Mitsuni (Model: D353G)	
DVD/CD-RW Combo Driver:	KME (Model: UJDA710)	
DVD-ROM Driver:	MKE (Model: SR-8175)	
	MKE (Model: SR-8176)	
Modem Card:	Ambit (Model: T60M283)	
Docking	Acer (Model: ADSV)	
FDD/HDD Controller and		
Parallel/Serial ports:	Built on Motherboard	
Parallel Port:	one 25-pin	
Serial Port:	one 9-pin	
Docking Connector	one 203-pin	
PS-2 Connector:	one 6-pin	
USB Connector:	two 4-pin	
LAN Connector:	one 8-pin	
Speaker Port:	one	
Microphone Port:	one	
Line In Port:	one	
Power Cord:	Shielded, Detachable	
LCD	Hitachi 15" SXGA+ TFT (Model: TX38D95VC1CAM)	
Maximum display Resolution:	1280X1024 Noninterlaced	

Speed & CPU

Speed	CPU	Docking
133 MHz	Tualatin 1.133G	No
133MHz	Tualatin 1.066G	Yes

All types of CPU & LCD have been tested, only shown the worst data using CPU: PIII 1.133G, LCD: Hitachi 15.0" TFT (Model: TX38D95VC1CAM), LCD & CRT Resolution at 1280x1024 Noninterlaced, SPS: Delta (Model: ADP60DB BB) 3 pins, HDD: IBM 30GB (Model: IC25N9030ATDA04), DVD/CD-RW: KME (Model: UJDA710), SDRAM: Infineon (Model: HYS64V16220GDL-7.5-C) 128MB in this test report.

EMI Noise Source:

Crystal: X-14.318MHz(X1), XTAL-27MHz(X2), X-24.576MHz(X3), XTAL-25MHz(X4)

RESON-8MHz(X5), X4P-32.768K(X6)

Clock Generator: One Clock Generator U8 (Model: IMI C9827)

EMI Solution:

1. Added one gasket on the GND bar of LCD coaxial cable near LCD connector to contact the LCD panel.
2. Added one gasket on the Connector of LCD coaxial cable near Main Board connector to contact the keyboard.
3. Added one gasket on USB port to contact upper case.
4. Added one gasket on FAN to contact VGA heat sink.
5. Added one gasket on PCMCIA socket to contact VGA heat sink.
6. Added one gasket on lower case to contact USB port.
7. Added three gaskets on the heat sink of Charger board to contact with upper case.
8. Added one gasket on upper case to contact HDD bracket.
9. Added two gaskets on upper case to contact heat sink of Charger board.
10. Added four gaskets on upper case to contact the I/O bracket.

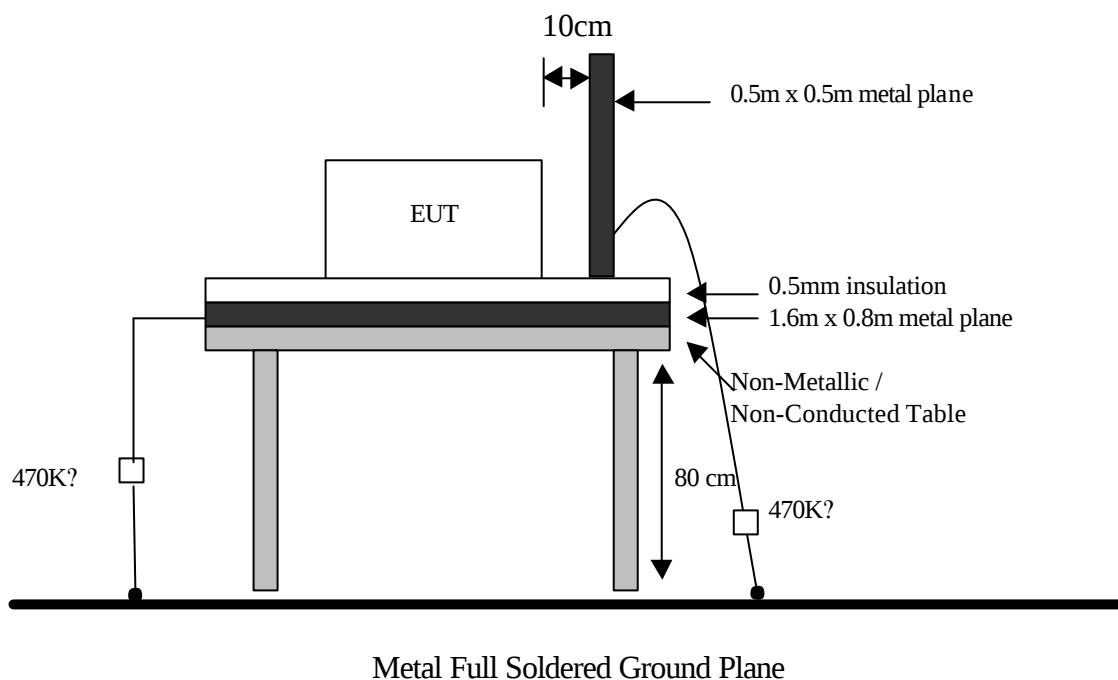
3. Electrostatic discharge (ESD) immunity

3.1 Electrostatic discharge (ESD) immunity test

Port:	Enclosure
Basic Standard:	EN61000-4-2
Requirements:	Air +/- 8 kV
	Contact +/- 4 kV
Criteria:	B
Temperature:	25 degree C
Humidity:	59%

Test Setup

EUT is 1m from the wall and other metallic structure.



Test Result

Performance of EUT complies with the given specification.

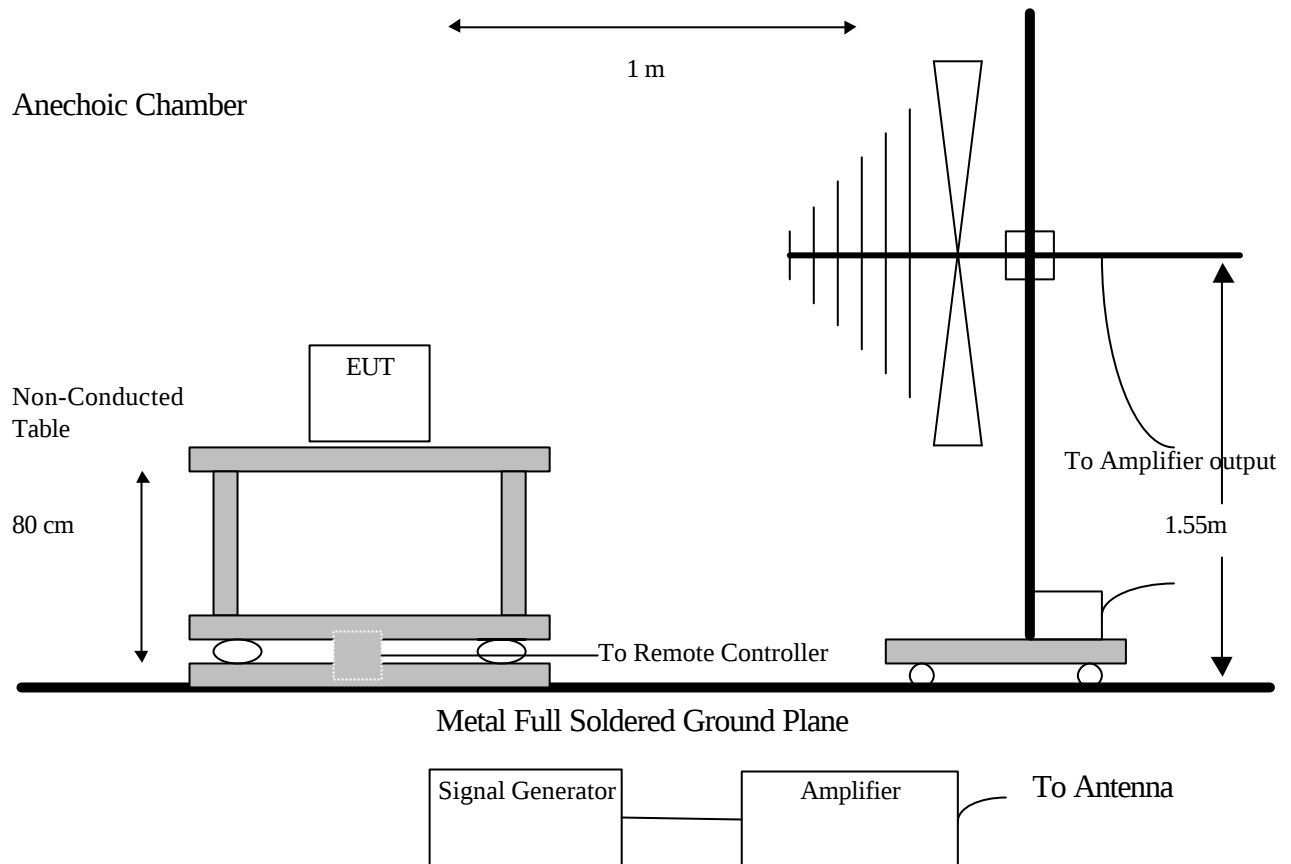
4. Radio-Frequency, Electromagnetic Field immunity

4.1 Radio-Frequency, Electromagnetic Field immunity test

Port:	Enclosure
Basic Standard:	EN61000-4-3
Modulation	AM 1KHz 80%
Requirements:	3 V/m
Frequency range:	80 MHz~1 GHz
Step:	1% of last step frequency
Step time:	800 ms
Polarization:	Vertical and Horizontal
Criteria:	A
Temperature:	26 degree C
Humidity:	46%

Test Setup

The field sensor is placed at one calibration grid point to check the intensity of the established fields on both polarizations. EUT is adjust to have each side of EUT face coincident with the calibration plane. A CCD camera is used to monitor the condition of EUT for the performance judgment.



Test Result

Performance of EUT complies with the given specification.

5. Electrical Fast transients/burst immunity

5.1 Electrical Fast transient/burst immunity test

Port:	AC mains
Basic Standard:	EN61000-4-4
Requirements:	1 KV
Criteria:	B
Rise Time:	5ns
Hold Time:	50ns
Repetition Frequency:	5KHz
Temperature:	25 degree C
Humidity:	59%

Test Procedure

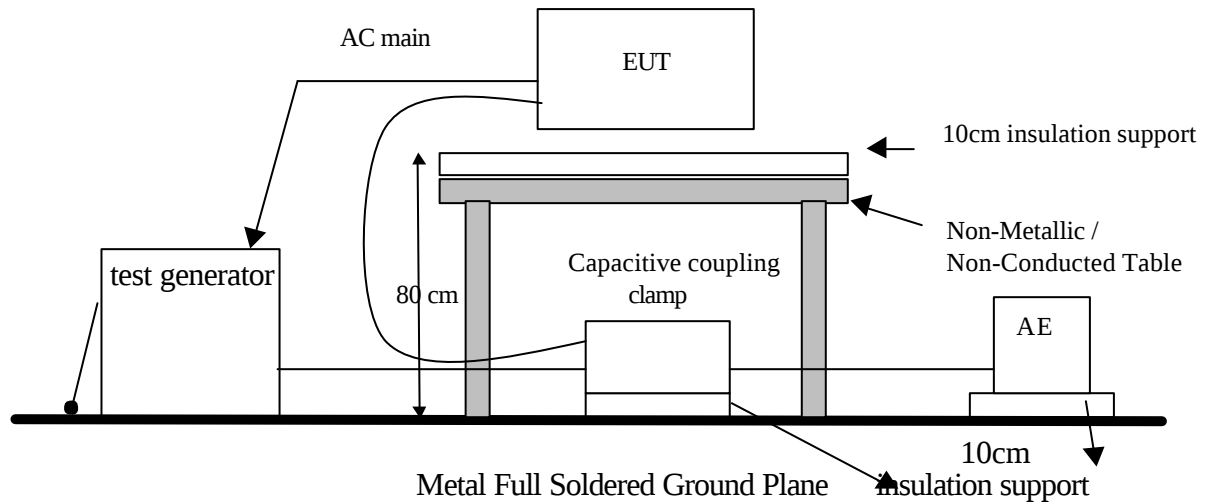
The EUT was setup on a nonconductive table 0.8 m above a reference ground plane.

Voltage		1 KV	
Test Points	Polarity	Result	Comment
Line	+	N	60 sec
	-	N	60 sec
Neutral	+	N	60 sec
	-	N	60 sec
Ground	+	N	60 sec
	-	N	60 sec
Line to Neutral	+	N	60 sec
	-	N	60 sec
Line to Ground	+	N	60 sec
	-	N	60 sec
Neutral to Ground	+	N	60 sec
	-	N	60 sec
Line to Neutral to Ground	+	N	60 sec
	-	N	60 sec

Note: 'N' means normal, the EUT function is correct during the test.

Test Setup

EUT is at least 50cm from the conductive structure .



Test Result

Performance of EUT complies with the given specification.

5.2 Electrical Fast transient/burst immunity test for I/O cable

Port:	phone, twisted pairs LAN port
Basic Standard:	EN61000-4-4
Requirements:	0.5 kV
Criteria:	B
Rise Time:	5ns
Hold Time:	50ns
Repetition Frequency:	5KHz
Temperature:	25 degree C
Humidity:	59%

Test Result

Performance of EUT complies with the given specification.

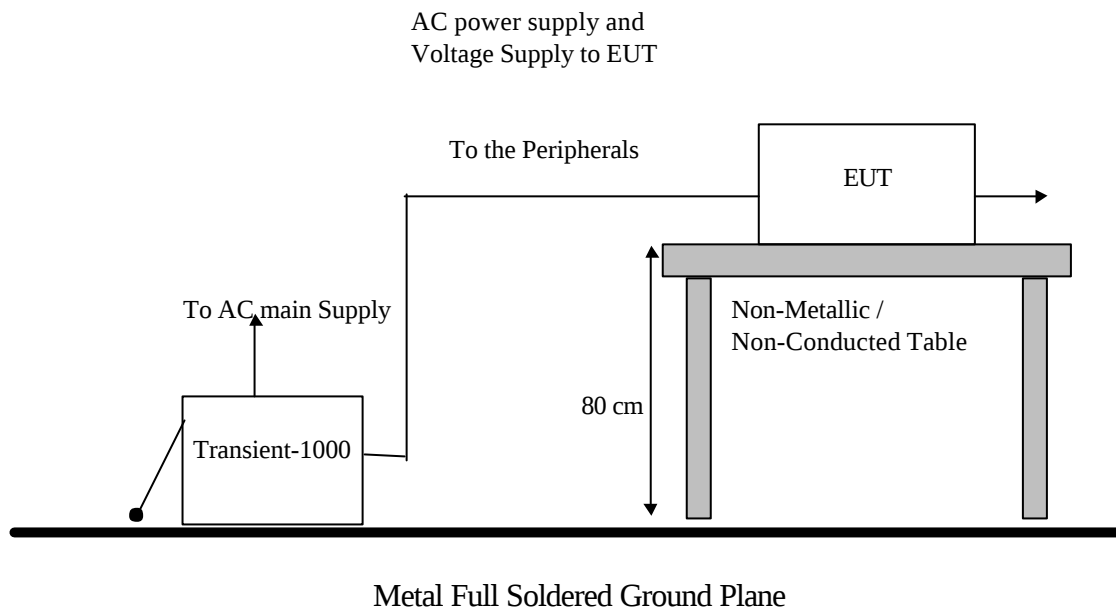
6. Surge Immunity

6.1 Surge immunity test

Port: AC mains and Telephone Line
Basic Standard: EN61000-4-5
Criteria: B
Rise Time: 1.2us
Hold Time: 50us
Temperature: 25 degree C
Humidity: 59%
Test Level: AC Power Port: 1 kV (line to line), 2kV (line to earth)
Telephone Line: 1kV (line to ground)

Repetition Rate: 30 second
Angle: 0?
90?
270?
Polarity: positive negative?

Test Setup



Test Result

Performance of EUT complies with the given specification.

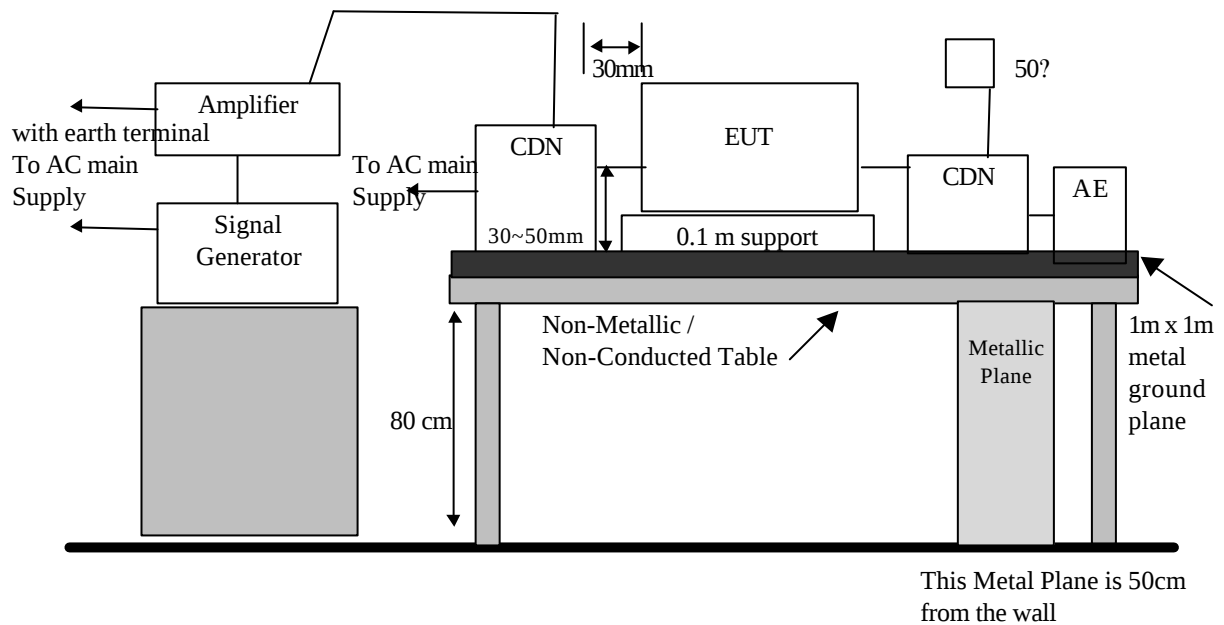
7. Immunity to Conductive Disturbance

7.1 Immunity to Conductive Disturbance

Port: AC mains & Telephone ports & LAN port
Basic Standard: EN61000-4-6
Test Level: 3 V
Modulation: AM 1KHz 80%
Criteria: A

Frequency range: 0.15 MHz - 80MHz
Step: 1% of last Frequency
Step time: 1000 mS
Temperature: 25 degree C
Humidity: 59%

Test Setup



Metal Full Soldered Ground Plane

Test Result

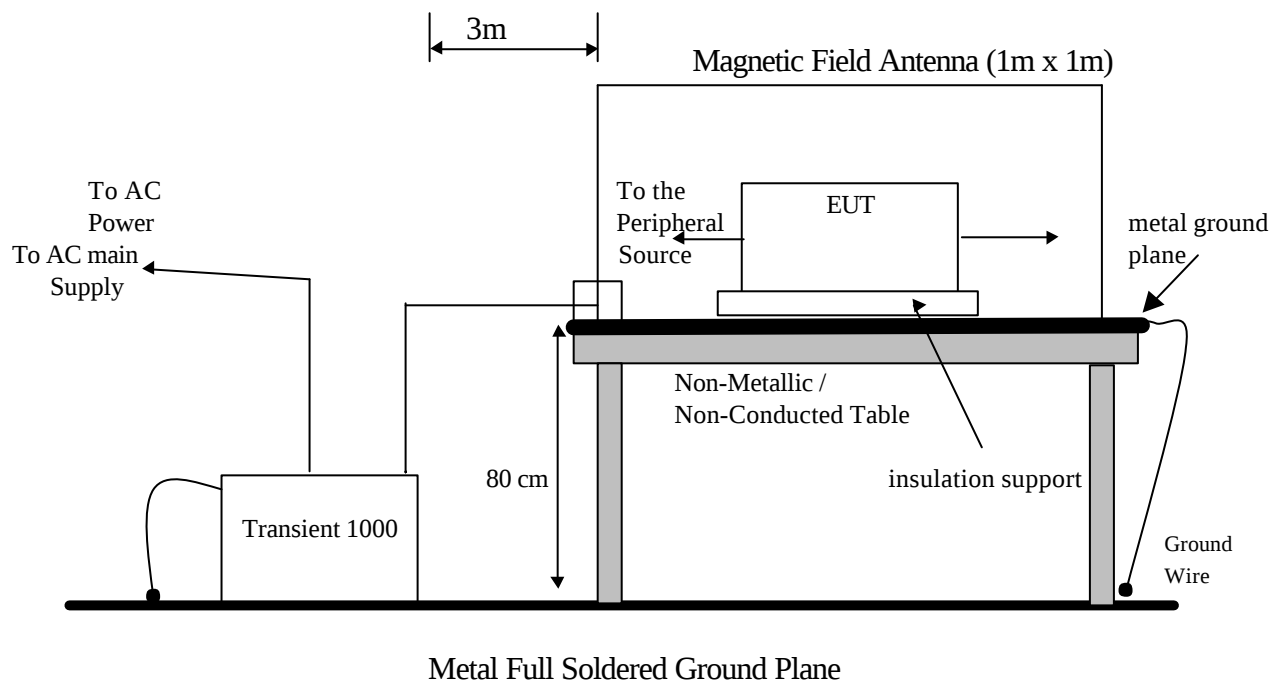
Performance of EUT complies with the given specification.

8. Power Frequency Magnetic Field immunity

8.1 Power Frequency Magnetic field immunity test

Port:	Enclosure
Basic Standard:	EN61000-4-8
Requirements:	1 A/m
Criteria:	A
Orientation:	X, Y, Z
Temperature:	25 degree C
Humidity:	59%

Test Setup



Test Result

Performance of EUT complies with the given specification.

9. Voltage Dips, Short Interruption and Voltage Variation immunity

9.1 Voltage Dips, Short Interruption and Voltage Variation immunity test

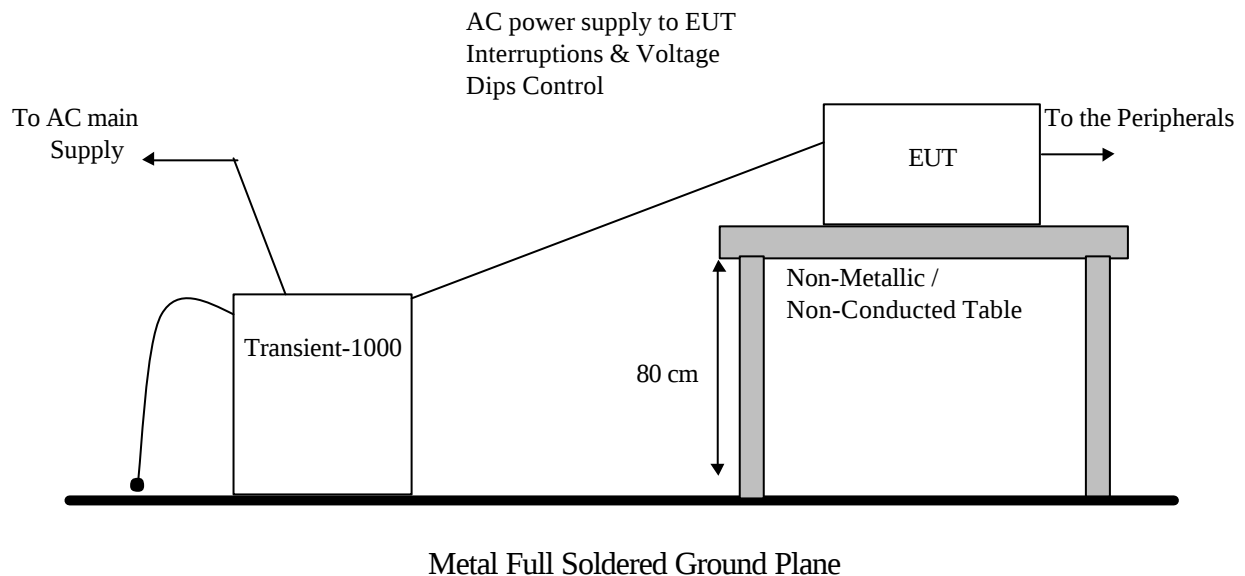
Port: AC mains
Basic Standard: EN61000-4-11
Phase: 0?
Test intervals: 3 times with 10s each

Voltage Dips: >95% in 0.5 period
Criteria: B

Voltage Dips: 30% in 25 period
Criteria: C

Voltage Interruption: >95% in 250 period
Criteria: C

Test Setup



Test Result

Performance of EUT complies with the given specification.

10. Harmonics

10.1 Harmonics test

Port:	AC mains
Active Input Power:	$\leq 75\text{W}$
Basic Standard:	EN61000-3-2
Test Duration:	3min.
Class:	A

Test Procedure

The EUT is supplied in series with shunts or current transformers from a source having the same nominal voltage and frequency as the rated supply voltage and frequency of the EUT. The EUT is configured to its rated current with additional resistive load when the testing is performed.

Equipment having more than one rated voltage shall be tested at the rated voltage producing the highest harmonics as compared with the limits.

Result

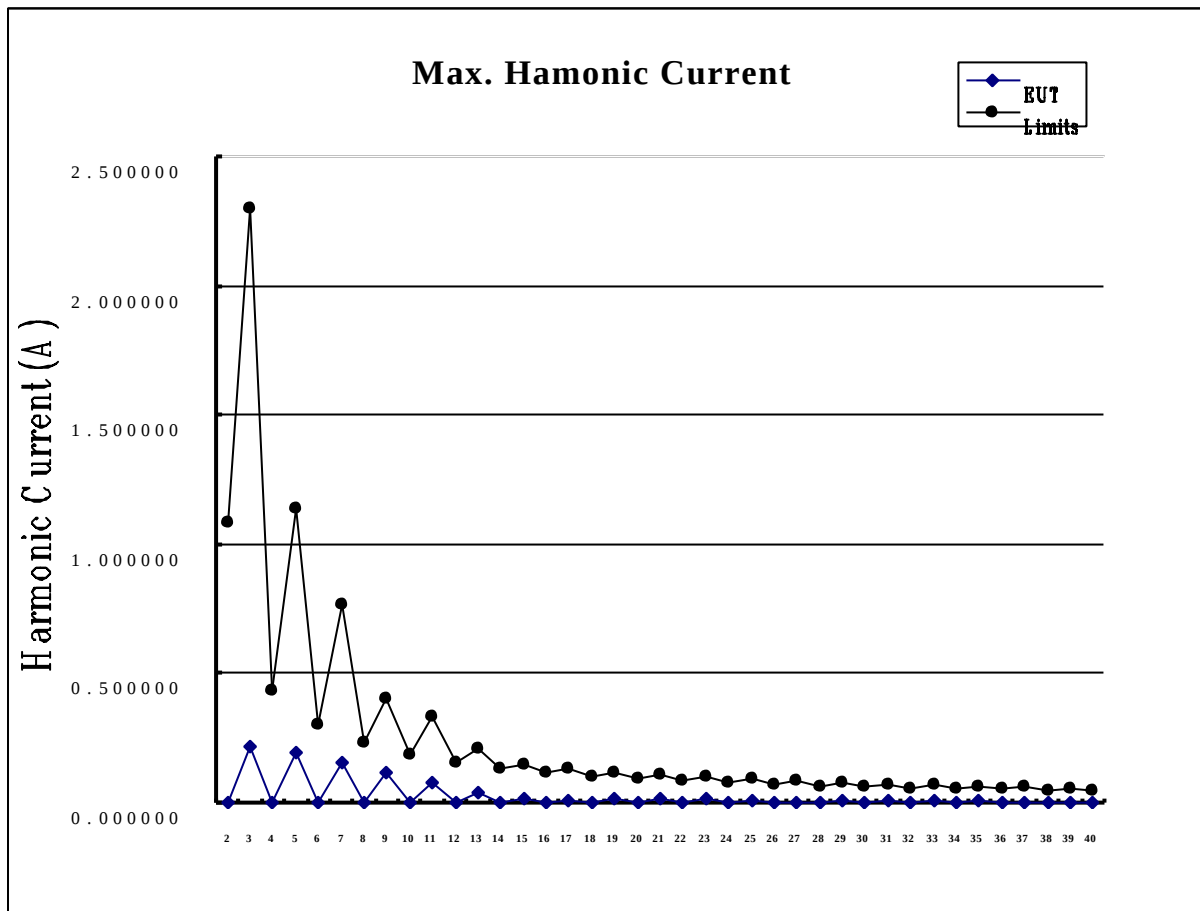
Performance of EUT complies with the given specification.

Test Data

Power (W)	Power Factor	Power Voltage	Power Current
53.08	0.902	230.149	0.236

Maximum permissible harmonic current (A)

Order	Data	Order	Data	Order	Data
1	.	16	0.0003	31	0.0067
2	0.0026	17	0.0065	32	0.0003
3	0.2182	18	0.0005	33	0.0065
4	0.0026	19	0.0152	34	0.0003
5	0.1907	20	0.0005	35	0.0045
6	0.0021	21	0.0168	36	0.0002
7	0.1545	22	0.0012	37	0.0018
8	0.0017	23	0.0131	38	0.0002
9	0.1148	24	0.0003	39	0.0012
10	0.0012	25	0.0070	40	0.0002
11	0.0750	26	0.0002	41	.
12	0.0006	27	0.0011	42	.
13	0.0401	28	0.0002	43	.
14	0.0003	29	0.0045	44	.
15	0.0129	30	0.0003	45	.



11. Voltage Fluctuations

11.1 Voltage Fluctuations test

Port:	AC mains
Basic Standard:	EN61000-3-3
Observation period:	For Pst 10min For Plt 2 hours

Test Procedure

The EUT is supplied in series with reference impedance from a power source with the voltage and frequency as the nominal supply voltage and frequency of the EUT.

Result

Performance of EUT complies with the given specification.

12. Test Equipment List

Use For	Equipment	Brand	Model	Start Service Date	Last Cal. Date	Next Cal. Date
R	EMI Receiver	R&S	ESMI; rev. 02.80 S/N: 849182/003	Nov. 09, 1999	May. 24, 2001	May. 24, 2002
R	BILOG Antenna	Chase	CBL6112B S/N: 2487	Nov. 23, 1998	Nov. 03, 2000	Nov. 02, 2001
R	Horn Antenna	EMCO	3115 S/N: 9504-4462	Nov. 06, 1999	Dec. 02, 2000	Dec.01, 2001
R	Pre Amplifier	R&S	ESMI-Z7	Nov. 09, 1999	May. 08, 2001	May. 08, 2002
R	Coaxial Cables	RICHTEC	TWB4001 S/N: 3F-10M	Aug. 31, 1995	Jul. 24, 2000	Jul. 24, 2001
R	Coaxial Cables	RICHTEC	9913 S/N: 3F-3M	Dec. 20, 1998	Jan. 18, 2001	Jan. 18, 2002
R	Thermo-Hygro Meter	CRECER	HD-30 S/N: ISL-C-001	Nov. 26, 1999	Nov. 28, 2000	Nov. 27, 2001
C	EMI Receiver	HP	8546A; S/N: 3520A00236	Sep. 08, 1997	Dec. 13, 2000	Dec. 13, 2001
C	LISN 1	R & S	ESH2-Z5 S/N: 890485/013	Dec. 15, 1988	May. 07, 2001	May. 07, 2002
C	LISN 2	EMCO	3825/2 S/N: 1407	Oct. 20, 1990	May. 07, 2001	May. 07, 2002
C	Terminator	RICHTEC	S/N: ISL-T-001	Oct. 19, 1999	May. 07, 2001	May. 07, 2002
C	Terminator	RICHTEC	S/N: ISL-T-002	Oct. 19, 1999	May. 07, 2001	May. 07, 2002
C	Terminator	RICHTEC	S/N: ISL-T-003	Mar. 13, 2001	May. 07, 2001	May. 07, 2002
C	ISN	Schaffner	ISN T400	Mar. 13, 2001	Sep. 11, 2000	Sep. 11, 2001
C	Coaxial Cables	RICHTEC	RG400 S/N: 1F-C1	Aug. 31, 1995	Jun. 01, 2001	Jun. 01, 2002
C	Coaxial Cables	RICHTEC	RG400 S/N: 1F-C2	Aug. 31, 1995	Jun. 01, 2001	Jun. 01, 2002
C	Digital Thermo-Hygro Meter	MICROLIFE	S/N: ISL-C-002	Nov. 26, 1999	Nov. 28, 2000	Nov. 27, 2001

Note: ***: The equipment is sent for calibration.

Location Remark List:

2: EN61000-4-2 3: EN61000-4-3 4: EN61000-4-4 5: EN61000-4-5
6: EN61000-4-6 8: EN61000-4-8 11: EN61000-4-11
*2: EN61000-3-2 *3: EN61000-3-3

12.1 Software for Controlling Spectrum/Receiver and Calculating Test Data

Radiation/Conduction	Filename	Version
EN61000-3-2	IEC1000.EXE	1.0F
EN61000-3-3	IEC1000.EXE	1.0F
EN61000-4-3	Tile.Exe	1.12.E
EN61000-4-6	Tile.Exe	1.11.J
EN61000-4-2	Tracs.Exe	2.0
EN61000-4-4	Tracs.Exe	2.0
EN61000-4-5	Tracs.Exe	2.0
EN61000-4-8	Tracs.Exe	2.0
EN61000-4-11	Tracs.Exe	2.0

13. Photographs

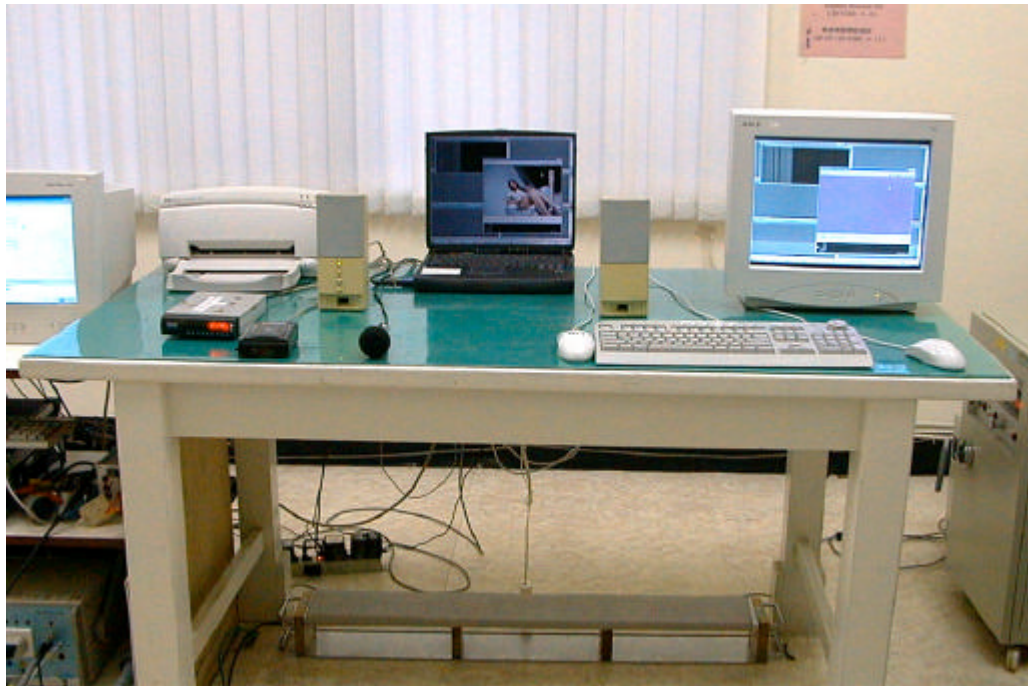
13.1 Photos of ESD measurement



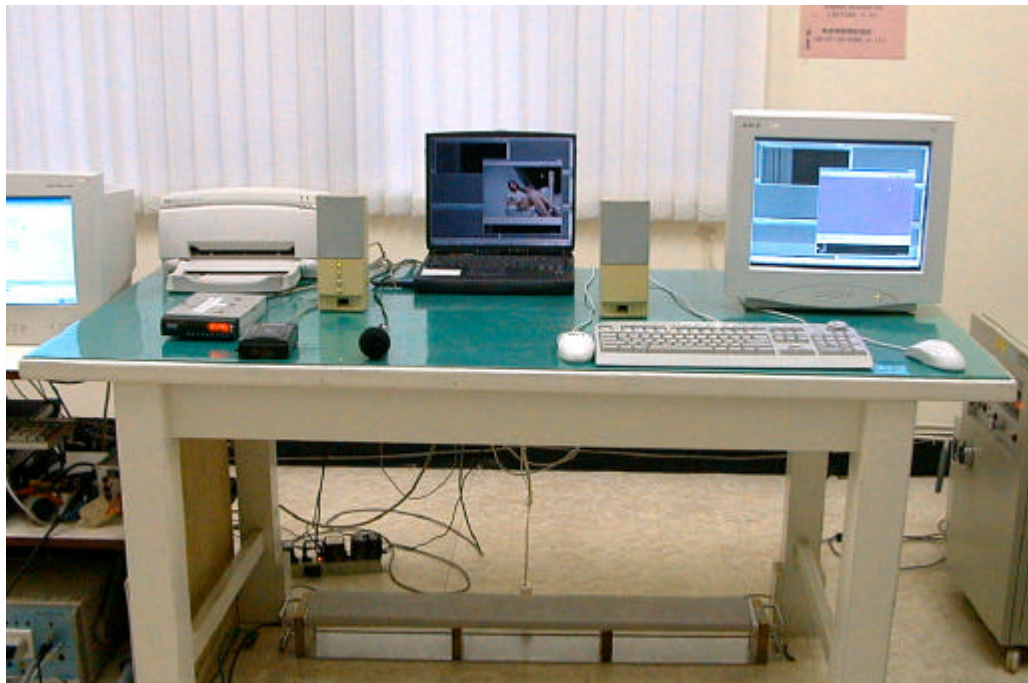
13.2 Photos of RF Field Strength Susceptibility Measurement



13.3 Photos of Electrical Fast Transient/Burst measurement



13.4 Photos of Surge measurement



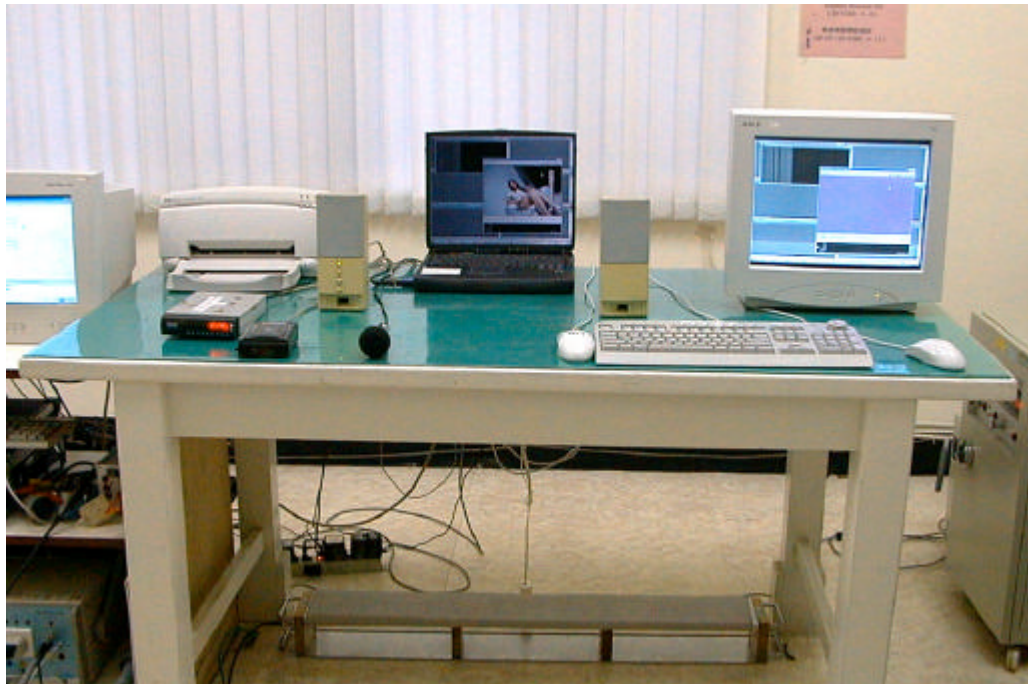
13.5 Photo of Conductive Measurement



13.6 Photo of Magnetic field measurement



13.7 Photos of Voltage Dips measurement



13.8 Photos of Harmonics and Voltage Fluctuations



13.9 Appendix: Photographs of EUT

Please find this appendix in the File of **ISL-01A062P**