

CE MARK TECHNICAL FILE

of

WLAN a+b+g mini-PCI Module

Model

CM9

Contains:

1. Declaration of Conformity
2. ETSI EN300 328 or/& ETSI EN301 893 test report
3. ETSI EN301 489-1 and ETSI EN301 489-17
4. EN61000-3-2/AS/NZS 61000.3.2 test report
5. EN61000-3-3/AS/NZS 61000.3.3 test report
6. Block Diagram and Schematics
7. User`s manual

Declaration of Conformity

Name of Manufacturer: Wistron NeWeb Corporation
 Address of Manufacturer: No. 10-1, Li-Hsin Road I,
 Science-based Industrial Park Hsinchu 300,
 Taiwan, R. O. C.
 Declares that product: WLAN a+b+g mini-PCI Module
 Model: CM9
 Assembled by: Same as above
 Address: Same as above

Conformed to the EMC Directive 99/5/EC as attested by conformity with the following harmonized standards:

ETSI EN300 328-2 V1.2.1: ERM; wideband transmission systems; data transmission equipment operating in the 2.4Ghz ISM band and using spread spectrum modulation techniques.

ETSI EN301 893 V1.2.1: BRAN; 5Ghz high performance RLAN.

ETSI EN301 489-1 V1.2.1 and ETSI EN301 489-17 V1.2.1: ERM; EMC standard for radio equipment and service; specific conditions for wideband data and HIPERLAN equipment.

Standard	Description	Results	Criteria
EN61000-4-2: 1995/A1: 1998/A2: 2001 AS/NZS 61000.4.2: 2002	Electrostatic Discharge	Pass	B
EN61000-4-3: 1996/A1: 1998/A2: 2001 AS/NZS 61000.4.3: 1999	Radio-Frequency, Electromagnetic Field	Pass	A
EN61000-4-4: 1995/A1: 2001/A2: 2001 AS/NZS 61000.4.4: 1999	Electrical Fast Transient/Burst	Pass	B
EN61000-4-5: 1995/A1: 2001 AS/NZS 61000.4.5: 1999	Surge	Pass	B
EN61000-4-6: 1996/A1: 2001 AS/NZS 61000.4.6: 1999	Conductive Disturbance	Pass	A
EN61000-4-8: 1993/A1: 2001 AS/NZS 61000.4.8: 2002	Power Frequency Magnetic Field	N/A	A
EN61000-4-11: 1994/A1: 2001 AS/NZS 61000.4.11: 1999	Voltage Dips / Short Interruption and Voltage Variation		
	30% in 10ms	Pass	B
	60% in 100ms	Pass	C
	>95% in 5000ms	Pass	C

Standard	Description	Results
EN61000-3-2: 2000 AS/NZS 61000.3.2: 2003	Limits for harmonics current emissions	Pass
EN61000-3-3: 1995 A1: 2001/ AS/NZS 61000.3.3: 1998	Limits for voltage fluctuations and flicker in low-voltage supply systems .	Pass

We, Wistron NeWeb Corporation, hereby declare that the equipment bearing the trade name and model number specified above was tested conforming to the applicable Rules under the most accurate measurement standards possible, and that all the necessary steps have been taken and are in force to assure that production units of the same equipment will continue to comply with the requirements.



Edward Yeh/ Engineer
Wistron NeWeb Corporation

Date: 2004/06/04



No. 65, Ku Dai Keng St., Hsichih, Taipei 221, R.O. C. Tel: 886-2-2646-2550 FAX: 886-2-26464641

No. 120, Lane 180, San Ho Tsuen, Hsin Ho Rd. Lung-Tan Hsiang,

Tao Yuan County 325, Taiwan, R.O.C.

Tel: 886-3-407-1718 FAX:886-3-407-1738

Certificate

Product Name: WLAN a+b+g mini-PCI Module Issue Date: 2004/06/04
 Model Number(s): CM9 Test Report No.: 04LR018E489
 Responsible Party: Wistron Neweb Corporation
 Address: No. 10-1, Li-hsin Road 1,
 Science-based Industrial Park,Hsinchu 300, Taiwan, R. O. C.
 Contact Person: Edward Yeh

We, **International Standards Laboratory**, hereby certify that:

The device bearing the trade name and model specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in EMC Directive 99/5/EC. The device was passed the test performed according to :

ETSI EN300 328-2 V1.2.1: ERM; wideband transmission systems; data transmission equipment operating in the 2.4Ghz ISM band and using spread spectrum modulation techniques.

ETSI EN301 893 V1.2.1: BRAN; 5Ghz high performance RLAN.

ETSI EN301 489-1 V1.2.1 and ETSI EN301 489-17 V1.2.1: ERM; EMC standard for radio equipment and service; specific conditions for wideband data and HIPERLAN equipment.

EN61000-4-2: 1995/A1: 1998/A2: 2001 AS/NZS 61000.4.2: 2002	EN61000-4-6: 1996/A1: 2001 AS/NZS 61000.4.6: 1999
EN61000-4-3: 1996/A1: 1998/A2: 2001 AS/NZS 61000.4.3: 1999	EN61000-4-8: 1993/A1: 2001 AS/NZS 61000.4.8: 2002
EN61000-4-4: 1995/A1: 2001/A2: 2001 AS/NZS 61000.4.4: 1999	EN61000-4-11: 1994/A1: 2001 AS/NZS 61000.4.11: 1999
EN61000-4-5: 1995/A1: 2001 AS/NZS 61000.4.5: 1999	

EN61000-3-2: 2000/AS/NZS 61000.3.2: 2003: Limits for harmonics current emissions.

EN61000-3-3: 1995/A1: 2001/ AS/NZS 61000.3.3: 1998: Limits for voltage fluctuations and flicker in low-voltage supply systems.

I attest to the accuracy of data and all measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Eddy Hsiung/Director
International Standards Laboratory

**EN55024 / AS/NZS CISPR 24 / IMMUNITY
ETSI EN 301 489-1 & ETSI EN 301 489-17
EN61000-3-2 / HARMONICS
EN61000-3-3 / VOLTAGE FLUCTUATIONS**

TEST REPORT

of

WLAN a+b+g mini-PCI Module

Model

CM9

(Brand: Wistron NeWeb)

Applied by:

Wistron NeWeb Corporation
No. 10-1, Li-Hsin Road I,
Science-based Industrial Park Hsinchu 300,
Taiwan, R. O. C.

Test Performed by:

(NVLAP Lab. Code: 200234-0)
International Standards Laboratory
No. 120, Lane 180, San Ho Tsuen, Hsin Ho Rd.
Lung-Tan Hsiang, Tao Yuan County 325
Taiwan, R.O.C.
Tel:(03)407-1718 Fax:(03)407-1738

Report Number: ISL-04LR018E489

Test Date: 2004/06/04

HC LAB:NVLAP:200234-0;VCCI: R-341,C-354;NEMKO:ELA 113a,113c;BSMI:SL2-IN-E-0037;SL2-R1-E-0037;CNLA:1178

LT LAB:NVLAP:200234-0;VCCI: R-1435,C-1440;NEMKO:ELA 113b,113d;BSMI:SL2-IN-E-0013;CNLA:0997

T10-R1-10

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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/A1:2001 / ETSI EN301 489-1 (2001-09), ETSI EN301 489-17 (2001-09) / AS/NZS CISPR 24: 1997 which include EN61000-4 series regulations, Harmonic Current Emissions EN61000-3-2: 2000 / AS/NZS 61000.3.2: 2003, and Voltage Fluctuations EN61000-3-3: 1995/A1: 2001 / AS/NZS 61000.3.3: 1998.

Equipment Tested: WLAN a+b+g mini-PCI Module
Model: CM9
Applied by Wistron NeWeb Corporation

Date of test: 2004/06/03

Test Site: LT Test Site

Test Engineer: Jerry Chiou

Approve & Signature



Eddy Hsiung/Director

<p>Test results given in this report apply only to the specific sample(s) tested under stated test conditions. This report shall not be reproduced other than in full without the explicit written consent of ISL. This report totally contains 31 pages, including 1 cover page, 1 contents page, and 29 pages for the test description. This report must not be used to claim product endorsement by NVLA, NIST, any agency of the federal government.</p>
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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 Applicant Information

Applicant: Wistron NeWeb Corporation
 No. 10-1, Li-Hsin Road I,
 Science-based Industrial Park Hsinchu 300,
 Taiwan, R. O. C.

2.2 Test Standards

ETSI EN301 489-1 V1.2.1 and ETSI EN301 489-17 V1.2.1: ERM; EMC standard for radio equipment and service; specific conditions for wideband data and HIPERLAN equipment.

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EN61000-4-4: 1995/A1: 2001/A2: 2001 AS/NZS 61000.4.4: 1999	Electrical Fast Transient/Burst	Pass	B
EN61000-4-5: 1995/A1: 2001 AS/NZS 61000.4.5: 1999	Surge	Pass	B
EN61000-4-6: 1996/A1: 2001 AS/NZS 61000.4.6: 1999	Conductive Disturbance	Pass	A
EN61000-4-8: 1993/A1: 2001 AS/NZS 61000.4.8: 2002	Power Frequency Magnetic Field	N/A	A
EN61000-4-11: 1994/A1: 2001 AS/NZS 61000.4.11: 1999	Voltage Dips / Short Interruption and Voltage Variation		
	30% in 10ms	Pass	B
	60% in 100ms	Pass	C
	>95% in 5000ms	Pass	C

Standard	Description	Results
EN61000-3-2: 2000 AS/NZS 61000.3.2: 2003	Limits for harmonics current emissions	Pass
EN61000-3-3: 1995 A1: 2001/ AS/NZS 61000.3.3: 1998	Limits for voltage fluctuations and flicker in low-voltage supply systems .	Pass

2.3 Operation Environment

Power supply : AC 230 V / 50 Hz

2.4 Description of Support Equipment

Support Unit 1.

Description:	Acer USB Keyboard
Model Number:	6511-UV
Serial Number:	N/A
Power Supply Type:	N/A
Power Cord:	N/A
FCC ID:	N/A (comply with FCC DOC)

Support Unit 2.

Description:	DELL USB Mouse
Model Number:	M-UR69
Serial Number:	LNA24412741
Power Supply Type:	N/A
Power Cord:	N/A
FCC ID:	N/A (Comply with FCC DOC)

Support Unit 3.

Description:	Acer Monitor
Model:	G781
Serial Number:	999007101214400445T7AA31T
Power Cord:	Non-shielded, Detachable
FCC ID:	(Comply with FCC Standards)

Support Unit 4.

Description:	HP Printer (for parallel interface port)
Model Number:	C2642A
Serial Number:	TH84T1N3J3
Power Supply Type:	AC Adaptor (HP Model: C2175A)
Power Cord:	Non-shielded, Detachable
Data Cable:	Shielded, Detachable, With Metal Hood
FCC ID:	B94C2642X

Support Unit 5.

Description:	Notebook Personal Computer
Model No.:	Aspire1510,ZP2,ZP2A
Brand:	acer
AC Power Adapter Manufacturer:	LSE(Model:ADP-90FB REV:F)
HDD:	HGST (Model: IC25N030ATMR04-0)
Modem Card:	Ambit (Model: T60M283.10)
FDD:	Panasonic (Model:UJ-266A343FC)
SDRAM:	Infineon (Model:HYS64D32020GDL-6-B)
1394 C0nnecto:r:	one 4 Pins
USB Connector:	four 4 Pins
RJ11 Connector:	one 2 Pins
RJ45 Connector:	one 8 Pins
VGA Connector:	one 15 Pins
PCMCIA Slot	one
Line out Port:	one
Line-in Port:	one
Parallel Port	one 25pins
DC IN Port:	one
Battery:	Li-ION DC14.8V 4400mAh
LCD:	QSI (Model:QD150XL06-01)
CPU	AMD Athlon 64 2800+

2.4.1 Software for Controlling Support Unit

Test programs exercising various part of EUT were used. The programs were executed as follows:

- A. Read and write to the disk drives.
- B. Send H pattern to the video port device (Monitor).
- C. Send H pattern to the parallel port device (Printer).
- D. Repeat the above steps.

	Filename	Issued Date
Printer1	Wordpad.exe	11/11/1999
Monitor	HH.bat	8/20/1991

2.4.2 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
Printer Data Cable	Printer to PC Parallel port	1.5M	Shielded, Detachable	Metal Head
Monitor Data Cable	Monitor to PC VGA port	1.6M	Shielded, Un-detachable	Metal Head
Mouse Data Cable	Mouse to PC Mouse port	1.8M	Shielded, Un-detachable	Metal Head
USB Keyboard Data Cable	USB Keyboard to PC USB port	1.8M	Shielded, Undetachable	Metal Head

2.5 Description of Equipment Under Test (EUT)

Description:	WLAN a+b+g Mini- PCI module
Model No.:	CM9
FCC ID:	NKRCM9
Brand:	Wistron NeWeb
Frequency Range 802.11a:	5150~5350 MHz, 5470~5725 MHz
Frequency Range 802.11b/g:	2400~2483.5 MHz
Support channel:	
802.11a	19 Channels
802.11b/g	13 Channels
Modulation Skill:	
802.11a Normal mode	OFDM (6 Mbps – 54 Mbps)
802.11b	DBPSK(1Mbps), DQPSK(2Mbps), CCK(5.5/11Mbps)
802.11g	OFDM (6M - 54Mbps)
Antennas Type:	
Antenna 1: PIFA	(DMA , made by Wistron NeWeb)
Antenna 2: Dipole	(GA30038- YMSE , made by GigaAnt Co.)
Antenna 3: Dipole	(FCF-004 , made by Long-Chu Co.)
Antenna 4: Dipole	(DBA-IPEX-01 , made by Long-Chu Co.)
Antenna 5: Dipole	(SRSM5150MRA;SRSM2400MRA , made by CUSLICRAFT)
Antenna 6: Dipole	(DBA-BSMA-01 , made by Long-Chu Co.)
Antenna 7: Dipole	(DBA-SSMA-01, made by Long-Chu Co.)
Antenna 8: Dipole	(DBA-IPEX-02 , made by Long-Chu Co.)
Antenna Connected:	The antenna is connected to the RF connector of the WLAN adapter.
Antenna peak Gain:	
Antenna 1:	2.68 dBi (11b/g) ,4.87 dBi(11a)
Antenna 2:	2.40 dBi (11b/g) ,5.90 dBi(11a)
Antenna 3:	4.00 dBi (11b/g) ,3.50 dBi(11a)
Antenna 4:	1.89 dBi (11b/g) ,3.11 dBi(11a)
Antenna 5:	2.00 dBi (11b/g) ,2.00 dBi(11a)
Antenna 6:	1.34 dBi (11b/g) ,1.65 dBi(11a)
Antenna 7:	1.29 dBi (11b/g) ,2.06 dBi(11a)
Antenna 8:	2.91 dBi (11b/g) ,3.19 dBi(11a)
WLAN Power Type :	3.3V DC from the EUT

The channel and the operation frequency of 802.11b and 802.11g is listed below:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437	12	2467
		13	2472

The channel and the operation frequency of 802.11a Normal Mode is listed below:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	5180	11	5540
02	5200	12	5560
03	5220	13	5580
04	5240	14	5600
05	5260	15	5620
06	5280	16	5640
07	5300	17	5660
08	5320	18	5680
09	5500	19	5700
10	5520		

During the test, the EUT was tested as a modular device of a notebook PC using a PCMCIA extender board to extend the EUT outside the notebook PC enclosure. There are eight antennas in the EUT:

Antenna 1 is PIFA type.

Antenna 2 is Dipole in printed type.

Antenna 3, 5,6,7 are Dipole type in reverse SMA connector.

Antenna 4,8 are Dipole type in Hirose connector.

All antennas have been tested. The worse data of each type are shown, so, four sets of radiated data are listed in the test report.

3. Electrostatic discharge (ESD) immunity

3.1 Electrostatic discharge (ESD) immunity test

Port:	Enclosure
Basic Standard:	EN61000-4-2/ AS/NZS 61000.4.2 (details referred to Sec 2.2)
Test Level:	Air +/- 2 kV, +/- 4 kV, +/- 8 kV Contact +/- 1kV, +/- 2 kV, +/- 4 kV
Criteria:	B
Test Procedure	refer to ISL QA T04-S03
Temperature:	21 degree C
Humidity:	51%

Selected Test Point

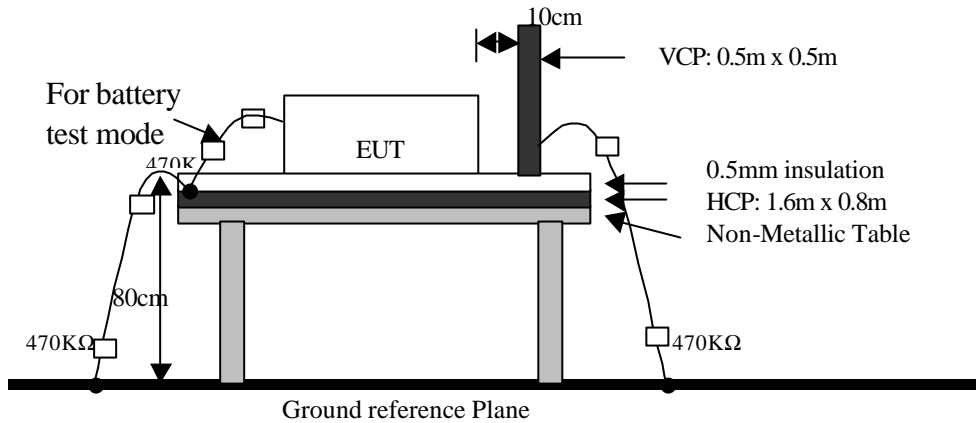
Air: discharges were applied to slots, aperture or insulating surfaces. 10 single air discharges were applied to each selected points.

Contact: Total 200 point minimum were to the selected contact points.

Indirect Contact Points: 25 discharges were applied to center of each edge of VCP and each EUT side of HCP with 10 cm away from EUT.

Test Setup

EUT is 1m from the wall and other metallic structure. When Battery test mode is needed, a cable with one 470K Ω resistor at two rare ends is connected from metallic part of EUT and screwed to HCP.



Test Result

Performance of EUT complies with the given specification.

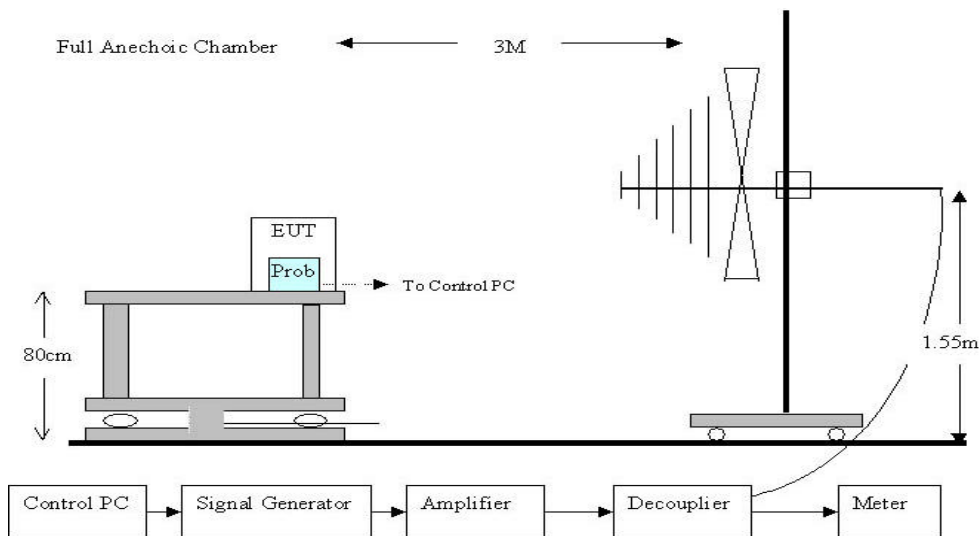
4. Radio-Frequency, Electromagnetic Field immunity

4.1 Radio-Frequency, Electromagnetic Field immunity test

Port:	Enclosure
Basic Standard:	EN61000-4-3/ AS/NZS 61000.4.3 (details referred to Sec 2.2)
Test Level::	3 V/m
Modulation:	AM 1KHz 80%
Frequency range:	80 MHz~1 GHz 1400MHz~ 2000MHz
Frequency Step:	1% of last step frequency
Step time:	800 ms
Polarization:	Vertical and Horizontal
EUT Azimuth Angle	<input checked="" type="checkbox"/> 0° <input checked="" type="checkbox"/> 90° <input checked="" type="checkbox"/> 180° <input checked="" type="checkbox"/> 270°
Criteria:	A
Test Procedure	refer to ISL QA T04-S017
Temperature:	21 degree C
Humidity:	44%

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 adjusted to have each side of EUT face coincident with the calibration plane. A CCD camera and speakers are used to monitor the condition of EUT for the performance judgment.



Test Result

Performance of EUT complies with the given specification.

International Standards Laboratory

Report Number: ISL-04LR018E489

HC LAB: NVLAP:200234-0; VCCI: R-341, C-354; NEMKO: ELA 113a, 113c; BSMI: SL2-IN-E-0037; SL2-R1-E-0037; CNLA: 1178

LT LAB: NVLAP:200234-0; VCCI: R-1435, C-1440; NEMKO: ELA 113b, 113d; BSMI: SL2-IN-E-0013; CNLA: 0997

5. Electrical Fast transients/burst immunity

5.1 Electrical Fast transient/burst immunity test

Port:	AC mains; Twisted Pair LAN Port
Basic Standard:	EN61000-4-4/ AS/NZS 61000.4.4 (details referred to Sec 2.2)
Test Level:	AC Power Port: +/- 1 kV Twisted Pair LAN Port: +/- 0.5 kV
Rise Time:	5ns
Hold Time:	50ns
Repetition Frequency:	5KHz
Criteria:	B
Test Procedure	refer to ISL QA T04-S05
Temperature:	21 degree C
Humidity:	51%

Test Procedure

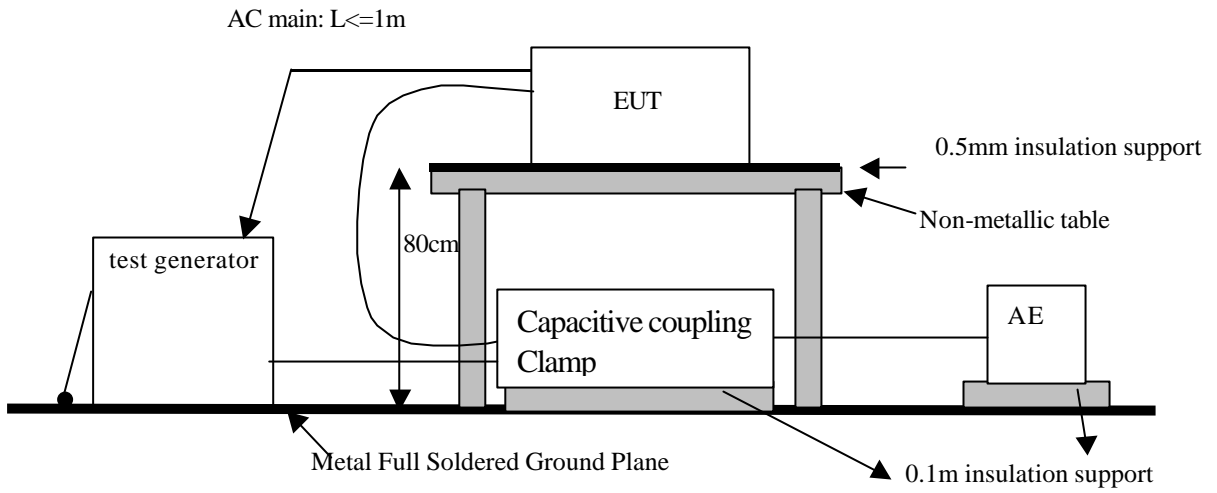
The EUT was setup on a nonconductive table 0.8 m above a reference ground plane.

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

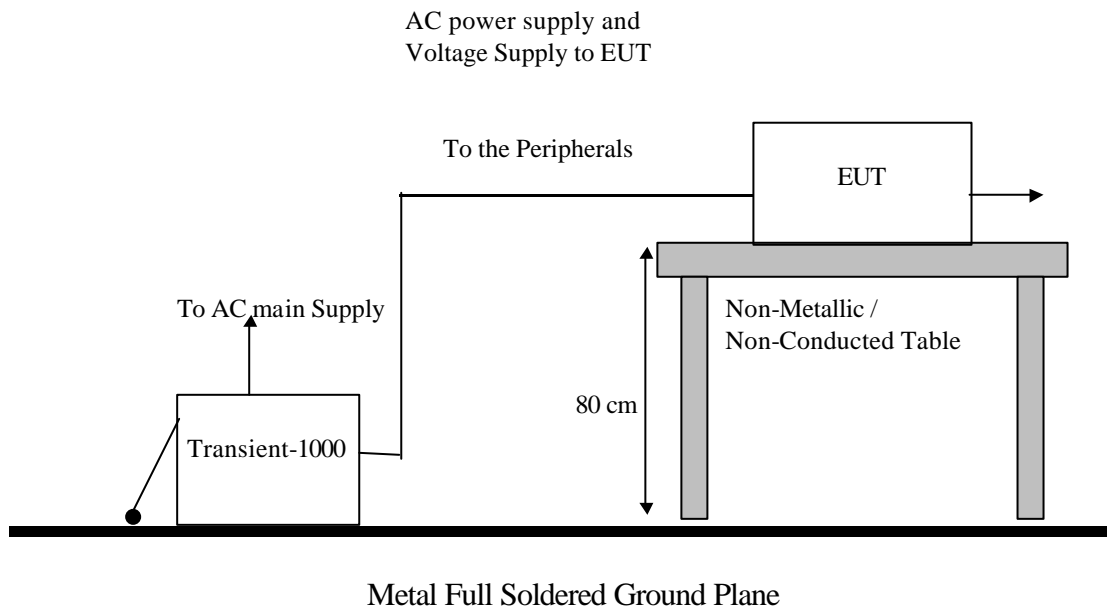
Performance of EUT complies with the given specification.

6. Surge Immunity

6.1 Surge immunity test

Port:	AC mains; Twisted Pair LAN Port
Basic Standard:	EN61000-4-5/ AS/NZS 61000.4.5 (details referred to Sec 2.2)
Test Level:	AC Power Port Line to Line: +/- 0.5 kV Line to Earth: +/- 0.5 kV, +/- 1 kV Twisted Pair LAN Port Line to Ground: +/- 0.5 kV
Rise Time:	1.2us
Hold Time:	50us
Repetition Rate:	30 second
Angle:	<input checked="" type="checkbox"/> 0° <input checked="" type="checkbox"/> 90° <input checked="" type="checkbox"/> 270°
Criteria:	B
Test Procedure	refer to ISL QA T04-S04
Temperature:	21 degree C
Humidity:	51%

Test Setup



Test Result

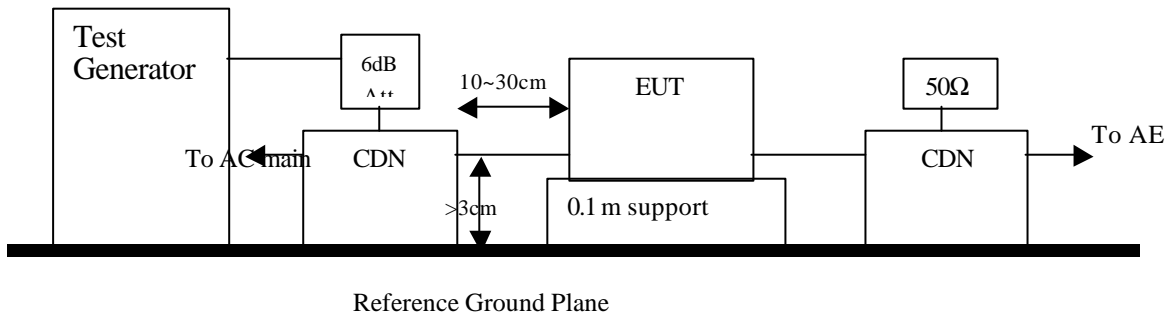
Performance of EUT complies with the given specification.

7. Immunity to Conductive Disturbance

7.1 Immunity to Conductive Disturbance

Port:	AC mains; Twisted Pair LAN Port
Basic Standard:	EN61000-4-6/ AS/NZS 61000.4.6 (details referred to Sec 2.2)
Test Level::	3 V
Modulation:	AM 1KHz 80%
Frequency range:	0.15 MHz - 80MHz
Frequency Step:	1% of last Frequency
Step time:	1000 ms
Criteria:	A
Test Procedure	refer to ISL QA T04-S08
Temperature:	21 degree C
Humidity:	51%

Test Setup



Test Result

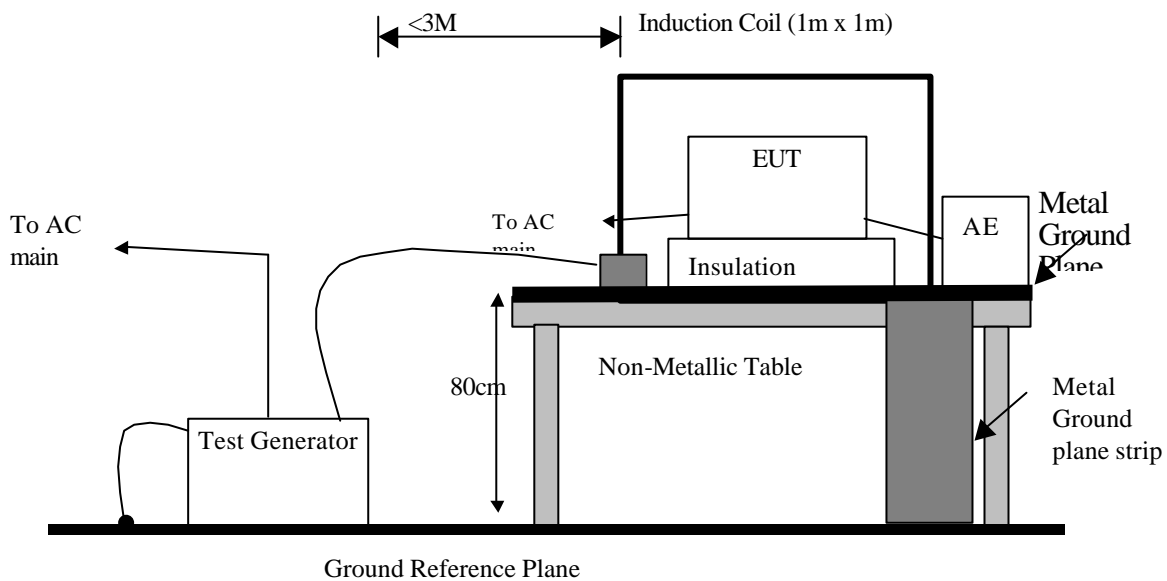
Performance of EUT complies with the given specification.

8. Power Frequency Magnetic Field immunity

8.1 Power Frequency Magnetic field immunity test

Port:	Enclosure
Basic Standard:	EN61000-4-8/ AS/NZS 61000.4.8 (details referred to Sec 2.2)
Test Level:	1A/m
Polarization:	X, Y, Z
Criteria:	A
Test Procedure	refer to ISL QA T04-S02
Temperature:	21 degree C
Humidity:	51%

Test Setup



Test Result

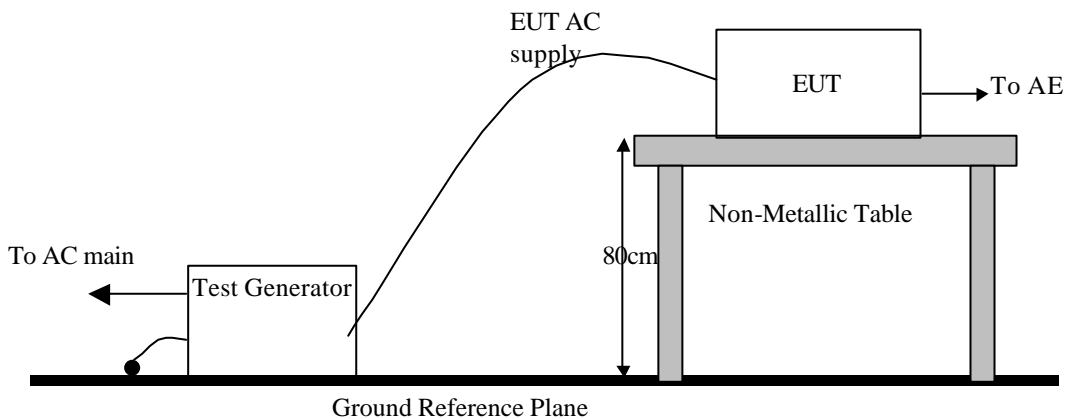
NA

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/ AS/NZS 61000.4.11 (details referred to Sec 2.2)
Test Level: Criteria:	30% for 10ms B
Test Level: Criteria:	60% for 100ms C
Test Level: Criteria:	>95% for 5000ms C
Phase:	0°; 180°
Test intervals:	3 times with 10s each
Temperature:	21 degree C
Humidity:	51%

Test Setup



Test Result

Performance of EUT complies with the given specification.

10. Harmonics

10.1 Harmonics test

Port:	AC mains
Active Input Power:	<75W
Basic Standard:	EN61000-3-2: 2000 AS/NZS 61000.3.2: 2003
Test Procedure	refer to ISL QA T04-S43
Test Duration:	2.5min
Class:	D

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

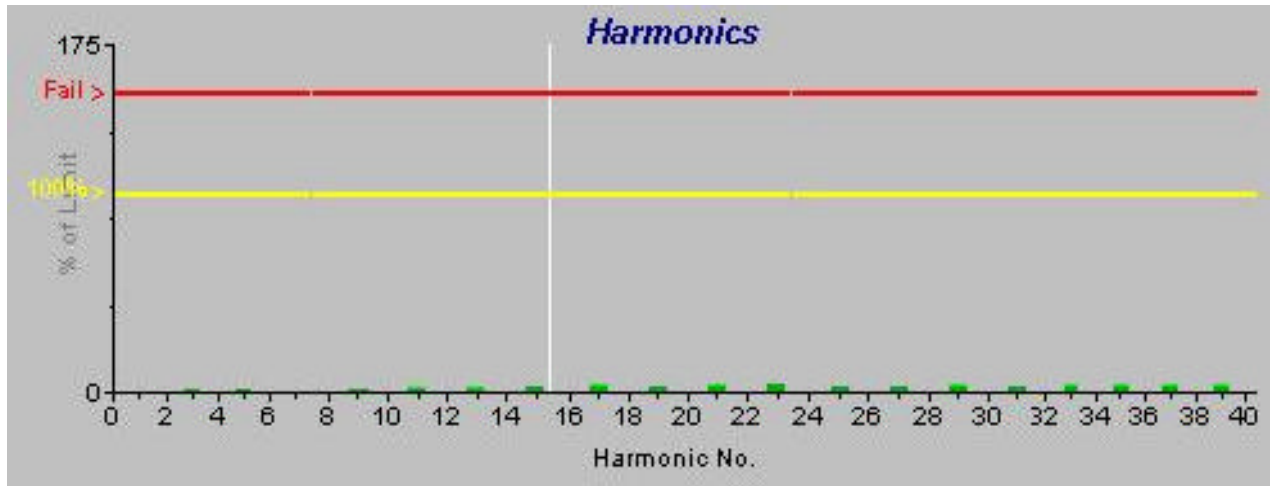
Active input power under 75W, no limit apply, declare compliance

Test Data

Test Results:

Test Results Limit Parameters within +/-10 percent: Yes
 Maximum Power : 40.3 W
 Fundamental Current : 0.205 A
 Power Factor : 0.812
 Partial Odd Harmonic Current from Limits : 0.25
 Measured Partial Odd Harmonic Current : 0.01

Harmonic Number	Standard Limit (A rms)	Maximum Value (A rms)	Maximum Value (% Limit)	Mean Value (A rms)	Mean Value (% Limit)	Standard Deviation (A rms)	Standard Deviation (% Limit)	Pass (P) or Fail (F)
Fund.		0.2046		0.1989		0.0020		
2		0.0132		0.0041		0.0027		
3	2.3000	0.0531	2.3	0.0474	2.1	0.0027	0.1	P
4		0.0054		0.0017		0.0009		
5	1.1400	0.0242	2.1	0.0195	1.7	0.0023	0.2	P
6		0.0032		0.0009		0.0005		
7	0.7700	0.0101	1.3	0.0085	1.1	0.0006	0.1	P
8		0.0025		0.0007		0.0004		
9	0.4000	0.0095	2.4	0.0074	1.9	0.0006	0.1	P
10		0.0017		0.0006		0.0003		
11	0.3300	0.0093	2.8	0.0083	2.5	0.0003	0.1	P
12		0.0012		0.0005		0.0002		
13	0.2100	0.0056	2.7	0.0047	2.2	0.0002	0.1	P
14		0.0011		0.0004		0.0002		
15	0.1500	0.0052	3.5	0.0044	2.9	0.0002	0.2	P
16		0.0009		0.0004		0.0002		
17	0.1324	0.0056	4.2	0.0051	3.9	0.0002	0.1	P
18		0.0008		0.0003		0.0001		
19	0.1184	0.0037	3.1	0.0033	2.8	0.0002	0.1	P
20		0.0008		0.0003		0.0001		
21	0.1071	0.0039	3.6	0.0033	3.1	0.0002	0.2	P
22		0.0007		0.0003		0.0001		
23	0.0978	0.0041	4.2	0.0036	3.7	0.0001	0.1	P
24		0.0006		0.0003		0.0001		
25	0.0900	0.0030	3.3	0.0027	3.0	0.0001	0.1	P
26		0.0006		0.0003		0.0001		
27	0.0833	0.0028	3.3	0.0024	2.9	0.0001	0.2	P
28		0.0006		0.0003		0.0001		
29	0.0776	0.0033	4.3	0.0029	3.7	0.0002	0.2	P
30		0.0006		0.0003		0.0001		
31	0.0726	0.0025	3.5	0.0022	3.0	0.0001	0.1	P
32		0.0007		0.0003		0.0001		
33	0.0682	0.0025	3.7	0.0022	3.2	0.0001	0.2	P
34		0.0006		0.0003		0.0001		
35	0.0643	0.0024	3.7	0.0021	3.3	0.0001	0.2	P
36		0.0006		0.0003		0.0001		
37	0.0608	0.0023	3.8	0.0019	3.1	0.0001	0.2	P
38		0.0005		0.0002		0.0001		
39	0.0577	0.0021	3.7	0.0018	3.0	0.0001	0.2	P
40		0.0007		0.0002		0.0001		



11. Voltage Fluctuations

11.1 Voltage Fluctuations test

Port:	AC mains
Basic Standard:	EN61000-3-3: 1995 A1: 2001/ AS/NZS 61000.3.3: 1998
Test Procedure	refer to ISL QA T04-S44
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.

Test Data

Observation period: short time (10 min)

Final Test Summary:

Dmax: 0.0	Pst: 0.07	P_0.1: 0.01
Dc: 0.0	Plt: 0.07	P_1s: 0.01
Dt: 0.00	Plt Threshold: 0.65	P_3s: 0.01
		P_10s: 0.01
		P_50s: 0.01

Observation period: long time (2 hours)

Final Test Summary:

Dmax: 0.0	Pst: 0.07	P_0.1: 0.01
Dc: 0.0	Plt: 0.07	P_1s: 0.01
Dt: 0.00	Plt Threshold: 0.65	P_3s: 0.01
		P_10s: 0.01
		P_50s: 0.01

12. Test Equipment List

Location	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
EN61K-3-2/3	DC Burn-In Load -3	D-RAM	DBS-2100	2100-9002	N/A	N/A
EN61K-3-2/3	Harmonic/Flicker Test System	HP	6842A	3531A00133	12/16/2003	12/16/2004
EN61K-4-11	Voltage Dip Simulator	NoiseKen	VDS-220B	5079D00005	10/24/2003	10/24/2004
EN61K-4-2	Digital Hygro-Thermometer 4-2 02	MicroLife	HT-2126G	4-2 02	12/04/2002	12/04/2004
EN61K-4-2	EMT-ESD 30C(Power Supply and Con	EM TEST	EMT-ESD 30C	1101-20	N/A	N/A
EN61K-4-2	EMT-P30C(Discharge unitp30C with	EM TEST	EMT-P30C	1101-20	04/01/2004	04/01/2005
EN61K-4-2	EMT-RFCI-P30C(DISCH .UNIT P30C Spe	EM TEST	EMT-RFCI-P30 C	1101-201	04/01/2004	04/01/2005
EN61K-4-2	ESD Gun	Schaffner	NSG 435	5193	11/24/2003	11/24/2004
EN61K-4-3	Amplifier 800Mhz~2Ghz	SCD	ALP589	P000164-001	N/A	N/A
EN61K-4-3	Amplifier 80M~1Ghz	AR	100W1000M1	15387	N/A	N/A
EN61K-4-3	Broadband coupler 10K~220Mhz	Amplifier Research	DC2500	19810	N/A	N/A
EN61K-4-3	Broadband Coupler 80M~1GHZ	Amplifier Research	DC6180	20364	N/A	N/A
EN61K-4-3	Broadband Couplier 1~4GHz	Werlatone	C5291	6516	N/A	N/A
EN61K-4-3	Coaxial Cable Chmb 04-3M-2	Belden	RG-8/U	Chmb 04-3M-2	N/A	N/A
EN61K-4-3	Signal Generator 02	HP	8648B	3642U01040	04/04/2003	04/04/2005
EN61K-4-4	EFT Simulator	NoiseKen	FNS-103L	5079H00006	10/24/2003	10/24/2004
EN61K-4-5	CDN Surge Kit 02	EMC-PARTNER R	CDNKIT1000T; DN-T1; DN-T2; CN-T1; CN-T2	CDNKIT1000-18	10/24/2003	10/24/2005
EN61K-4-5	Transient-1000 02	EMC Partner	Transient-1000	TRA1000-179	10/24/2003	10/24/2004
EN61K-4-6	150-50-CDN ADAPTER KIT 01	FCC Inc.	FCC-801-150-50 -CDN	02109&02110	N/A	N/A
EN61K-4-6	150-50-CDN ADAPTER KIT 02	FCC Inc.	FCC-801-150-50 -CDN	02111&02112	N/A	N/A
EN61K-4-6	CDN M2+M3 02	Frankonia	M2+M3	A2011024	07/01/2003	07/01/2004
EN61K-4-6	CDN T2 02	Frankonia	T2	A3010004	07/01/2003	07/01/2004
EN61K-4-6	CDN T2 04	FCC Inc.	FCC-801-T2	02067	01/07/2004	01/07/2005
EN61K-4-6	CDN T4 03	FCC Inc.	FCC-801-T4	02068	07/01/2003	07/01/2004
EN61K-4-6	Coaxial Cable 4-6 02-1			4-6 02-1	N/A	N/A
EN61K-4-6	Coaxial Cable 4-6 02-2			4-6 02-2	N/A	N/A
EN61K-4-6	Conducted Immunity Test System	Frankonia	CIT-10/75	102C3119	12/05/2003	12/05/2004
EN61K-4-6	EM-Clamp	Schaffner	KEMZ-801	19215	N/A	N/A
EN61K-4-6	Universal CDN KAL Kit 02	Frankonia	KAL	n/a	N/A	N/A
EN61K-4-8	Clamp Meter 4-8 02	Prova	11	01340731	03/19/2004	03/19/2005
EN61K-4-8	Magnetic Field Immunity Loop	FCC	F-1000-4-8-L-1 M	01037	N/A	N/A
EN61K-4-8	Magnetic Field Test Generator	FCC	F-1000-4-8-G-12 5A	01038	N/A	N/A

12.1 Software for Controlling Spectrum/Receiver and Calculating Test Data

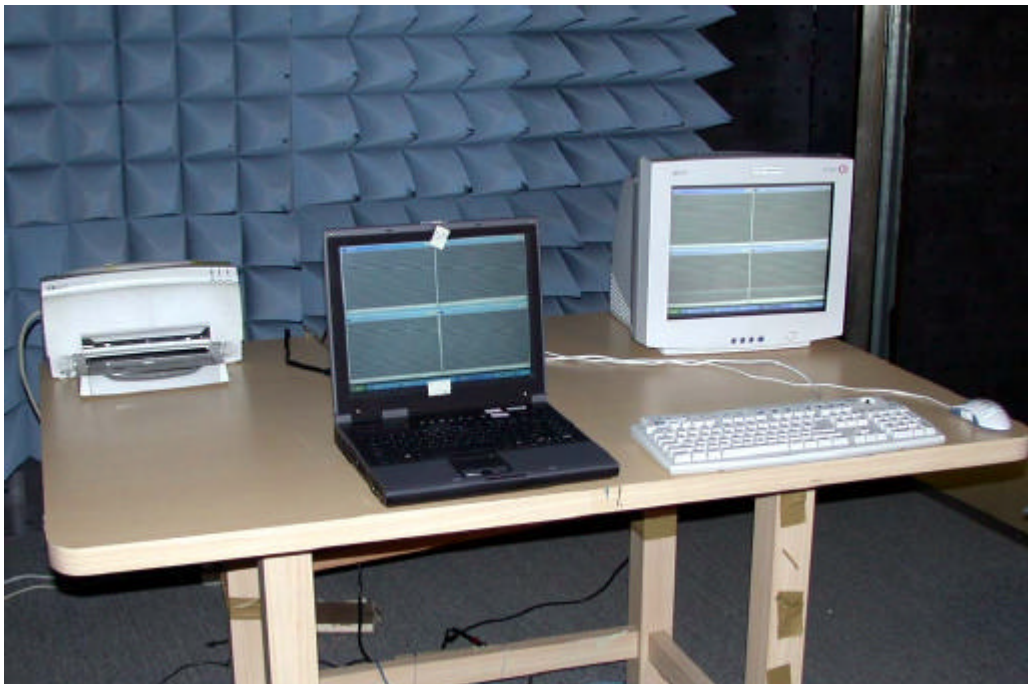
Radiation/Conduction	Filename	Version
EN61000-3-2	IEC1000.EXE	1.0F
EN61000-3-3	IEC1000.EXE	1.0F
EN61000-4-3	Tile.Exe	2.0.P
EN61000-4-6	EN61000-4-6 Application Software	1.13.e
EN61000-4-2	N/A	2.0
EN61000-4-4	N/A	2.0
EN61000-4-5	Tracs.Exe	2.0
EN61000-4-8	N/A	
EN61000-4-11	N/A	

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



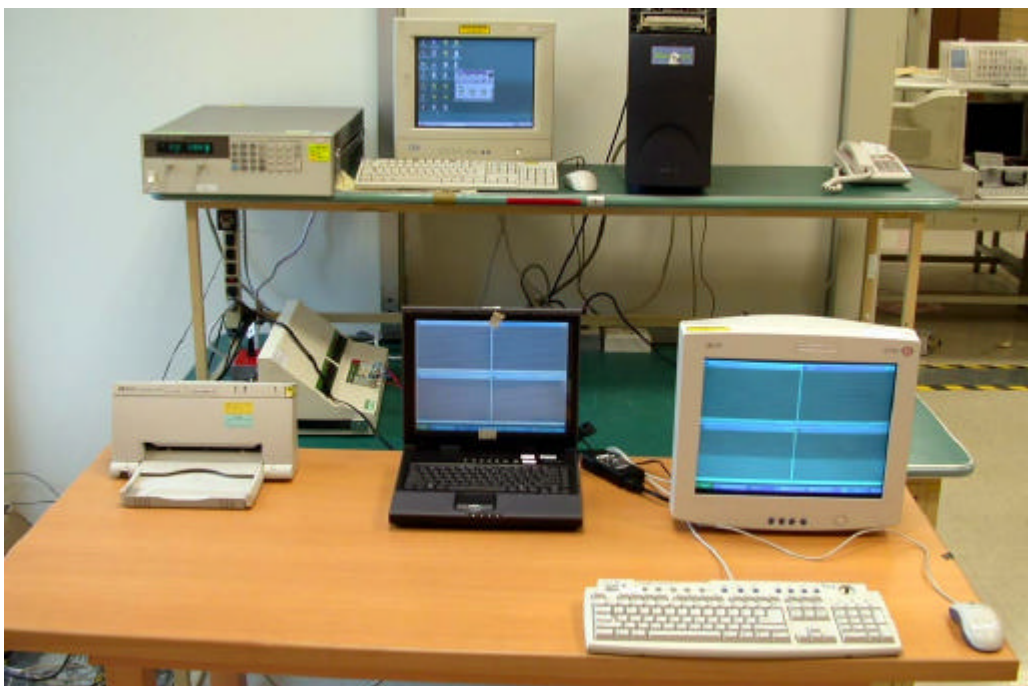
13.6 Photo of Magnetic field measurement



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-04LR018P**