CE MARK TECHNICAL FILE

AUSTRALIA EMC CONSTRUCTION FILE

of

LCD Personal Computer

Model/ Type/ Machine Type

VTFP2

Contains:

1. Declaration of Conformity
2. EN55022/CISPR 22, AS/NZS 3548 Class B EMI test report
3. Test report of EN50082-1, AS/NZS 4252.1, EN60555-2, and EN60555-3
4. Certificate of EN60950
5. Block Diagram and Schematics
6. User`s manual

Date: Aug. 21, 2000

ISL-00A136E

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

Telephone: (035) 770-707
Facsimile: (035) 778-500

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:	LCD Personal Computer
Model/ Type/ Machine Type:	VTFP2
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 Class B: 1994/A1:1995/A2:1997: Limits and Methods of Measurement of Radio Interference characteristics of Information Technology Equipment,

EN50082-1: 1992: Generic Immunity Standard -Part 1: Domestic Commercial and Light Industry,

EN60555-2: 1987: Disturbances in supply systems caused by household appliances and similar electrical equipment- Part 2: Harmonics,

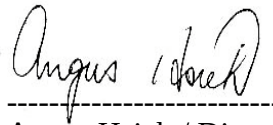
EN60555-3: 1987: Disturbances in supply systems caused by household appliances and similar electrical equipment- Part 3: Voltage Fluctuations.

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.



Aug. 21, 2000

Angus Hsieh / Director
Acer Inc.

Date

ISL-00A136E

EN50082-1 / AS/NZS 4252.1 / IMMUNITY
EN60555-2 / HARMONICS
EN60555-3 / VOLTAGE FLUCTUATIONS

TEST REPORT

of

LCD Personal Computer

Model/ Type/ Machine Type

VTFP2

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 Chen
Taipei Hsien 22117
Taiwan, R.O.C.

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

Report Number: ISL-00A136E **Test Date: Aug. 21, 2000**

NVLAP Lab. Code: 200234-0; VCCI: R-341, C-354; NEMKO Aut. No: ELA 113; BSMI Lab. Code: SL2-IN-E-0013

Contents of Report

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 Generic Immunity Standards EN50082-1:1992 / AS/NZS 4252.1:1994 which include IEC 801 series regulations, Harmonic Current Emissions EN60555-2: 1987, and Voltage Fluctuations EN60555-3: 1987.

Equipment Tested: LCD Personal Computer
Model/ Type/ Machine Type: VTFP2
Applied by Acer Inc.

Date of test: Aug. 9, 2000

Test Engineer: Chance Chen

Standard	Comment	Test Results
IEC 801-2, 1984	ElectroStatic Discharge	Complies
IEC 801-3, 1984	Radiated Electromagnetic Field	Complies
IEC 801-4, 1988	Fast Transient/Burst	Complies
EN60555-2, 1987	Harmonic Current Emissions	Complies
EN60555-3, 1987	Voltage Fluctuations	Complies

Approve & Signature

Jammy Chen/Manager

This test report accurately contains the test results of Electrostatic discharge, Radiation Electromagnetic Field, Fast Transient/Burst Test, Harmonic current Emissions of the sample equipment tested, and Voltage Fluctuations 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 Aplicant 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:	Koka Headphone
Model Number:	ST-8
Serial Number:	N/A
Power Supply Type:	N/A
Power Cord:	N/A
FCC ID:	N/A

Support Unit 2.

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 3.

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

Support Unit 4.

Description:	HP Printer (for parallel interface port)
Model Number:	C2642E
Serial Number:	N/A
Power Supply Type:	AC Adaptor (HP,Model: C2175A)
Power Cord:	Nonshielded, Detachable
Data Cable:	Shielded, Detachable, With Metal Hood
FCC ID:	(Comply with FCC DOC)

Support Unit 5.

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 6.

Description:	IBM Monitor
Model:	2237-00N
Serial Number:	23-KV210
Power Supply Type:	Switching
Power Cord:	Nonshielded, Detachable
FCC ID :	A3KM071

Support Unit 7.

Description:	Speaker
Model Number:	J-2106
Serial Number:	N/A
Power Supply Type:	From PC USB Port
Power Cord:	N/A
Data Cable:	Nonshielded, Undetachable
FCC ID:	N/A

Support Unit 8.

Description:	Acer USB Mouse
Model Number:	MOSXUB
Serial Number:	N/A
Power Supply Type:	From PC USB Port
Power Cord:	N/A
Data Cable:	Shielded, Undetachable
BCIQ ID:	3872F105

Support Unit 9.

Description:	Acer USB Mouse
Model Number:	M-U48A
Serial Number:	N/A
Power Supply Type:	From PC USB Port
Power Cord:	N/A
Data Cable:	Shielded, Undetachable
BCIQ ID:	4882A177

Support Unit 10.

Description:	Acer USB Keyboard
Model Number:	6514-UV
Serial Number:	N/A
Power Supply Type:	From PC USB Port
Power Cord:	N/A
Data Cable:	Shielded, Undetachable
FCC ID:	N/A

Support Unit 11.

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 witch 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. Send audio signal to the headphone.
C. Receive audio signal from the microphone.
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 audio signal to the speaker.
I. Send H pattern to server and receive H pattern from server.
J. 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

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
Telephone Line	Modem card Phone jack to open	1.2M	Nonshielded, Detachable to PC	Plastic Head Plastic Hood
Server Data Cable	Server to EUT LAN port	33 feet	Shielded, 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
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
Microphone Data Cable	Microphone to Mic Jack of PC	1.5M	Nonshielded, Undetachable	Metal Head without Hood
Headphone Data Cable	Headphone to Line-out jack of PC	1.5M	Nonshielded, Undetachable	Metal Head without Hood
USB speaker Data Cable	Speaker to PC USB port	1.6M	Shielded, Detachable	Metal Head Plastic Hood
USB speaker Audio Data Cable	Speaker to PC Line out port	1.4M	Nonshielded, Detachable	Metal Head Plastic Hood
USB Mouse Data Cable	Mouse to PC USB port	0.8M	Shielded, Undetachable	Metal Head Plastic Hood
USB Mouse Data Cable	Mouse to PC USB port	1.6M	Shielded, Undetachable	Metal Head Plastic Hood
USB Keyboard Data Cable	Keyboard to PC USB port	1.9M	Shielded, Undetachable	Metal Head Plastic Hood

2.3 Description of Equipment Under Test

EUT

Description:	LCD Personal Computer
Model:	VTFP2
Serial Number:	N/A
Power Supply Type:	Switching API (Model: API-OPC03) 120W or High Power (Model: SFX-120M1) 120W
Hard Disk Driver:	Seagate (Model: ST320420A) 20.4 GB
Floppy Driver:	Panasonic (Model: JU-226A212FC)
CD-ROM Driver:	Panasonic (Model: CR-176-B)
Modem	Ambit (Model: T62M154)
LCD Panel:	Fujitsu 15 inch TFT (Model: FLC38XGC6V-05)
Parallel Port:	one 25-pins
Serial Port:	one 9-pins
USB Connector:	four 4-pins
LAN Connector:	8-pins
Speaker Port:	one
Microphone Port:	one
Line In Port:	one
Line Out Port:	one
VGA Port:	one 15-pins
LCD port:	one 26-pins
Power Jack	one 2-pins
Power Cord:	Nonshielded, Detachable
Display:	CRT & LCD
Maximum Resolution:	1024 X 768 V: 60Hz

Speed & CPU

Speed	CPU
100MHz	Pentium III 850, 800, 750, 700, 650, 600
133Mhz	Pentium III 1000, 933, 866, 800, 733, 667, 600

All types of CPU have been tested, only shown the worst data using CPU Pentium III-933, CRT and LCD resolution (1204X768), SPS SFX-120M1 120W in this test report.

EMI Noise Source:

1. Crystal: 32.768KHz (X1), 25MHz (X2), 14.318MHz (X3).
2. Clock Generator: U26

EMI Solution:

1. Add two springs (4.3cm X 1.8cm X 0.5cm) on the upper and lower side of tray holder of the chassis.
2. Add two springs for add-on cards.
3. Add eight springs (9cm X 1.2cm X 0.9cm) to contact with LCD chassis and LCD panel. Add one gasket (3cm X 1.5cm X 1cm) to contact with FPC cable (RGB signal from I/F board to LCD panel) and LCD chassis.

3. Electrostatic discharge (ESD) immunity

3.1 Electrostatic discharge (ESD) immunity test

Port:	Enclosure
Basic Standard:	IEC 801-2
Requirements:	8 kV (level 3)
Criteria:	B
Temperature:	27 degree C
Humidity:	55%

Test Procedure

The electronic discharges were applied as follows:
The EUT was set up on a nonconductive table, 1mm above a reference ground plane.
±8kV to all accessible parts of cabinet from outside.

Performance

No fatal operation errors were detected during or after the discharges.

Test equipment used

EMC-Partner Transient 1000-216.

Result

Performance of EUT complies with the given specification.

4. Radiated electromagnetic field immunity

4.1 Radiated electromagnetic field immunity test

Port:	Enclosure
Basic Standard:	IEC 801-3
Requirements:	3 V/m
Criteria:	A

Test Procedure

EUT was exposed to specified field:

Field:	3 V/m ~ 3.3 V/m (modulated)
Frequency range:	26 MHz - 1 GHz
Step:	1% of last Frequency
Step time:	800 msec

The field sensor is placed on the position of EUT to calibrate the filled strength as required before EUT was setup on the table. The EUT was setup on a nonconductive table 0.8m above at a full-anechoic chamber.

The EUT is 3 m away from the transmitting antenna mounted on the antenna tower and turns 90 centigrade each time to have each sides of EUT face the antenna during each circle of test. The antenna is fixed 1.1 m above ground. Both vertical and horizontal polarization of antenna are set during the measurement . A CCD camera is used to monitor the condition of EUT for the performance judgement.

Performance

No fatal operation errors were detected during or after the exposure.

Test equipment used

Signal Generator:	HP	8656B
Field Strength Meter	Amplifier Research	FM2000
Field Strength Sensor	Amplifier Research	FP2000
Power Amplifier	Amplifier Research	100W1000M1
Power Antenna	EMCO	3143

Result

Performance of EUT complies with the given specification at 3 V/m.

5. Electrical Fast transients/burst immunity

5.1 Fast transients/burst immunity test

Port: AC mains
Basic Standard: IEC 801-4
Requirements: 1 kV
Criteria: B

Test Procedure

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

Test Point: Power Line
AC Power Source: 230VAC, 50Hz

Voltage		1 KV	
Test Points	**Polarity**	**Result**	**Comment**
Line	+	N	90 sec
	-	N	90 sec.
Neutral	+	N	90 sec
	-	N	90 sec.
Ground	+	N	90 sec
	-	N	90 sec.

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

Performance

No fatal errors were detected after the transient/burst firing.

Test equipment used

EMC-Partner Transient 1000-216.

Result

Performance of EUT complies with the given specification.

5.2 Fast transients/burst immunity test for I/O cable

Port:	phone, twisted pairs LAN port
Basic Standard:	IEC 801-4
Requirements:	0.5 kV
Criteria:	B

Test Procedure

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

Performance

No fatal errors were detected after the transient/burst firing.

Test equipment used

EMC-Partner Transient 1000-216.

Result

Performance of EUT complies with the given specification.

6. Harmonics

6.1 Harmonics test

Port:	AC mains
Basic Standard:	EN60555-2

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.

If the current harmonics vary more than proportionately with the supply voltage, tests at supply voltages of 0.94 times and 1.06 times the rated voltage shall be performed.

Equipment having more than one rated voltage shall be tested at the rated voltage producing the highest harmonics as compared with the limits. For equipment marked with a rated voltage range, the measurements shall be made at the extremes of that supply range.

Test equipment used

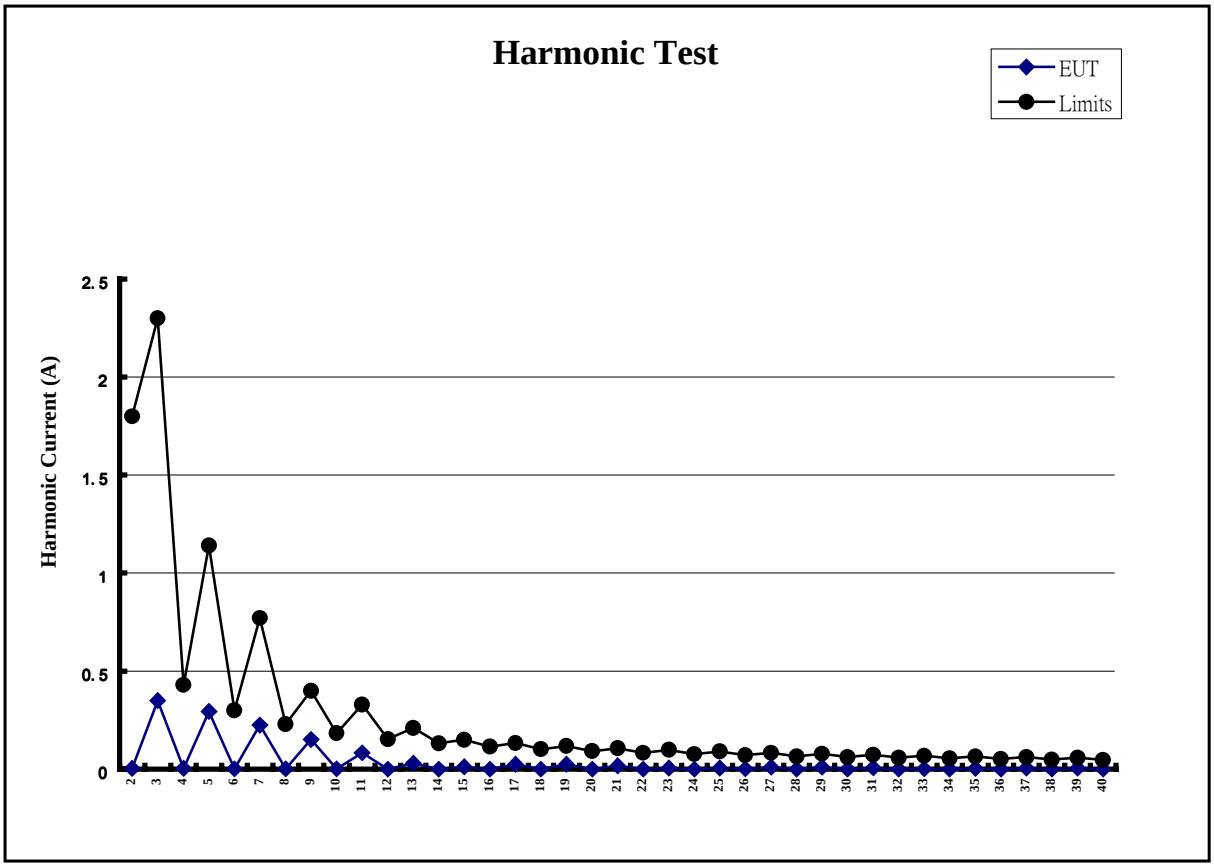
Standard Impedance	Xitron Technologies	2520
3-Channel Power Analysis System	Xitron Technologies	2503AH
Frequency Converter	Extech Electronics	CFC-110

Result

Performance of EUT complies with the given specification.

Test Data

Class A		PASS	
Power (W)	Power Factor	Power Voltage	Power Current
86.018	0.565	228.993	0.383



7. Voltage Fluctuations

7.1 Voltage Fluctuations test

Port: AC mains
Basic Standard: EN60555-3

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.

The EUT was tested for 10 minutes under the condition producing the highest voltage fluctuation.

Test equipment used

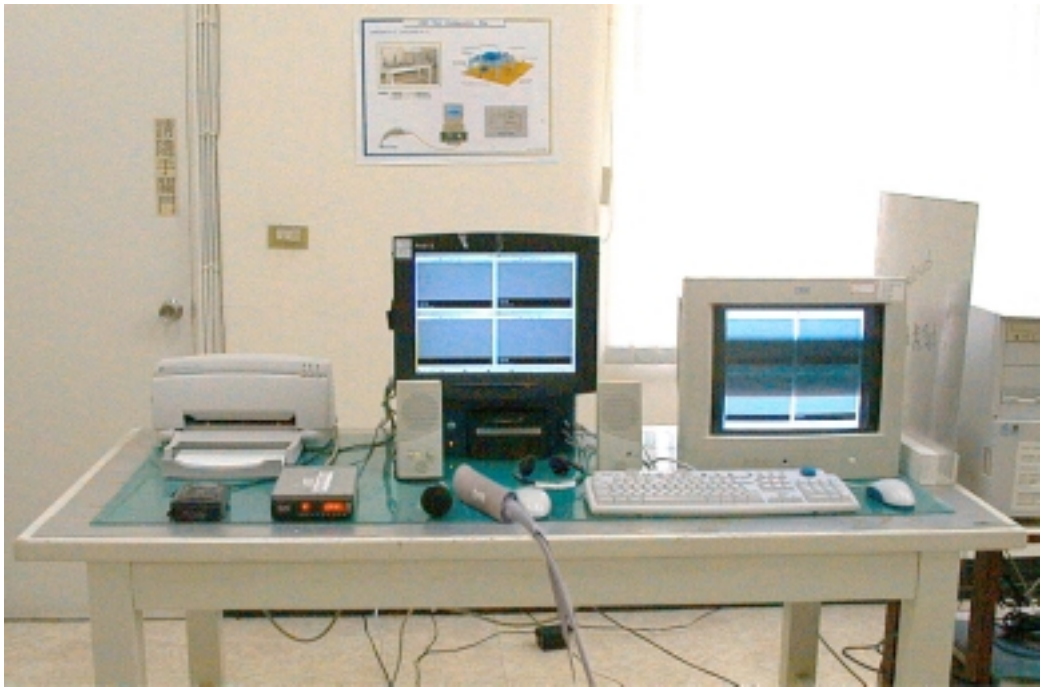
Standard Impedance	Xitron Technologies	2520
3-Channel Power Analysis System	Xitron Technologies	2503AH
Frequency Converter	Extech Electronics	CFC-110

Result

Performance of EUT complies with the given specification.

8. Photographs

8.1 Photos of ESD measurement



8.2 Photos of RF Field Strength Susceptibility Measurement

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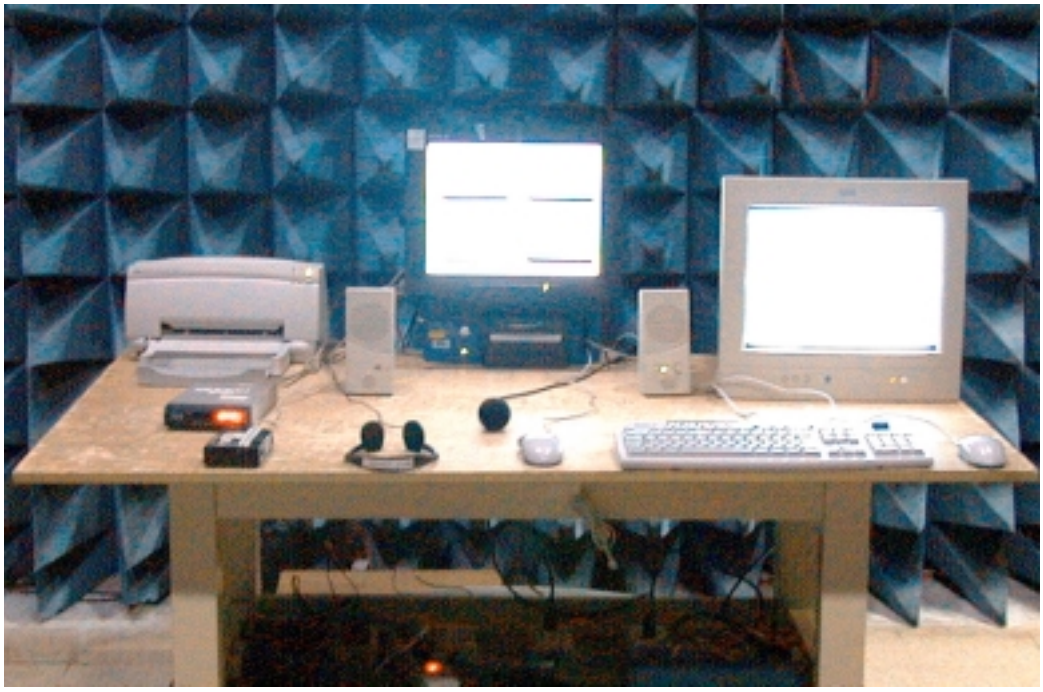
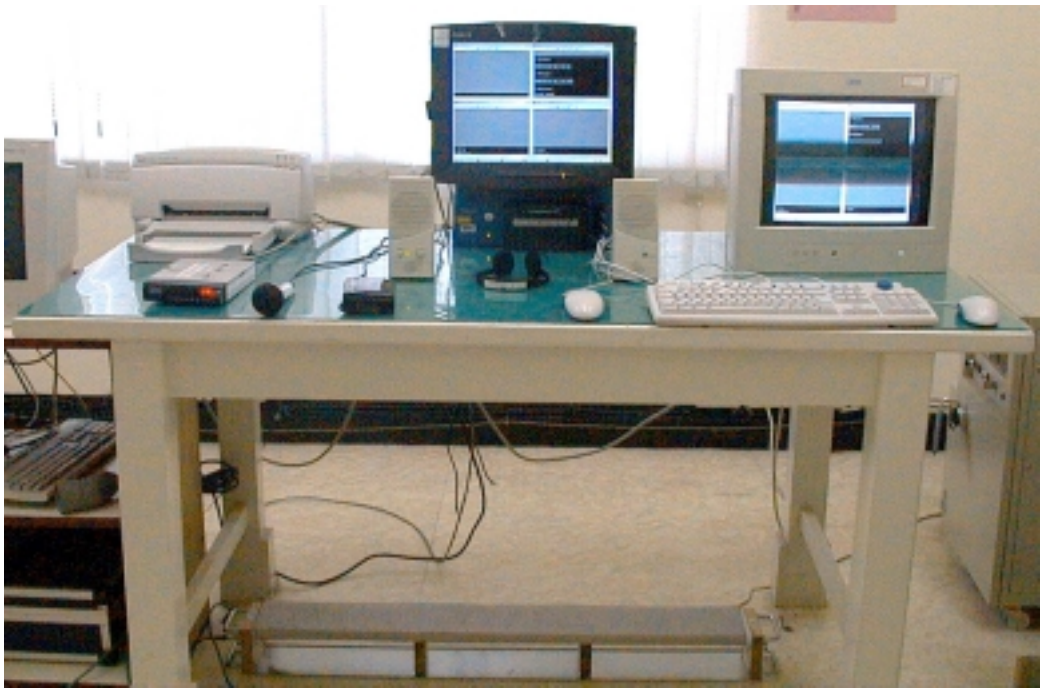
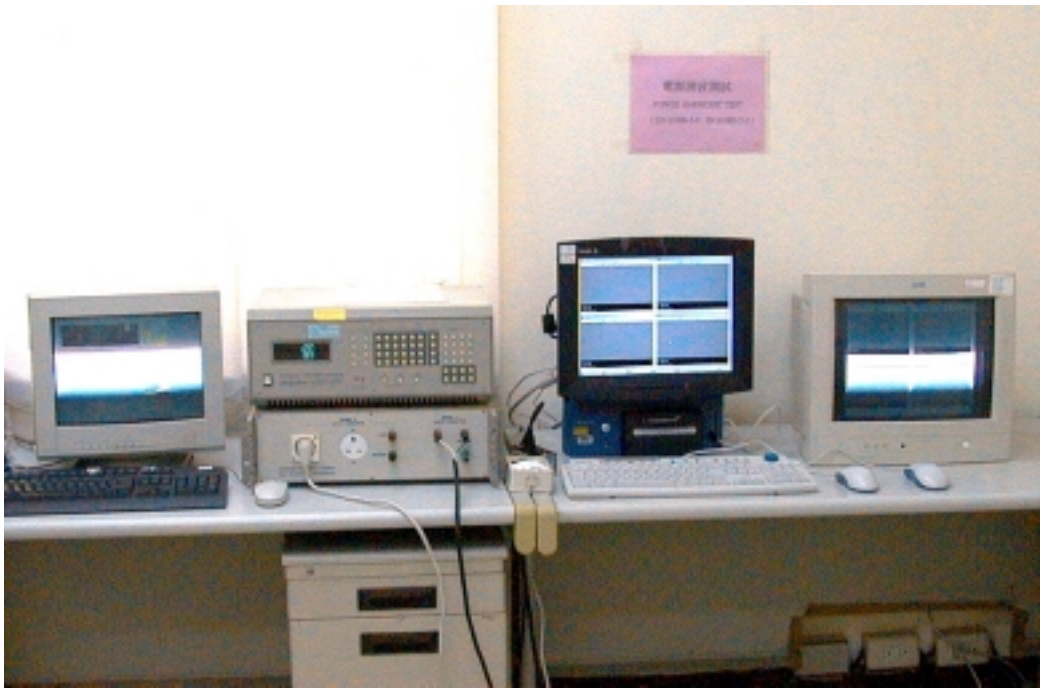


8.3 Photos of Electrical Fast Transient/Burst measurement



8.4 Photos of Harmonics and Voltage Fluctuations



8.5 Appendix: Photographs of EUT

Please find this appendix in the File of **ISL-00A136P**

Acer Incorporated — Release Notice

❑ Product System(PS) ❑ Other(X)

Subject:	LCD Personal Computer VTFP2 CE Mark Technical File Release	Part No.: Doc. No.:	Rev:
Project Code:	91.37H01.001	Release Date:	Page of
Model No.:	VTFP2		Revision status

Description: Release VTFP2 (S511P-1 in H56) CE Mark Technical File
It has passed the CE Mark Limits

Reason For Released:

Item	Contents	Q`ty	Unit
1	CE Mark Technical File Cover Page	1	Page
2	CE Mark Declaration of Conformity Letter	1	
3	CISPR Class B Test Report	23	
4	EMS Test Report	18	
5	Appendix: Photos of EUT (refer to BSMI report)	28	

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Copy (Cover Sheet): MDP1

Approved By/	Reviewed By/ QA	Prepared By/