

# Statement of Conformity

## Best Laboratory Co., Ltd.

No. 336, Ba Lian RD., Sec. 1, Hsi Chih City, Taipei Hsien, Taiwan, R.O.C.  
Telephone: 886-2-2646-2899 Facsimile: 886-2-2646-2870

## EMC Certificate

**Applicant :** Advantech Co., Ltd.

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

**Equipment :** Industrial Computer

**Model :** IPC-610BP-25ZH; IPC-610BP-30ZH; IPC-610P4-25ZH;  
IPC-610P4-30ZH; ACP-4000; IPC-610P4H-ACN;  
ACP-4000BP-30Z

Has fully complied with the requirements set out in the council directive on  
the approximation of the law of the members states relating to Electromagnetic  
Compatibility Directive (89/336/EEC). For the evaluation regarding EMC, the  
following standards were applied:

EMI: EN61000-6-3:2001->EN55022:1998, EN 61000-3-2:2000, EN 61000-3-3:1995

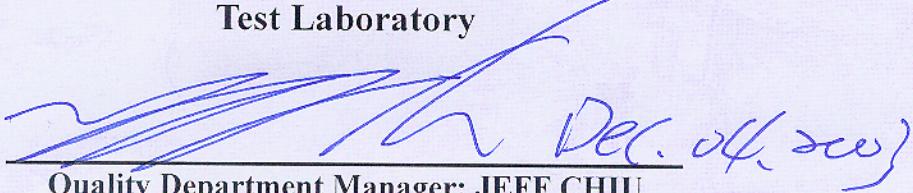
EMS: EN 55024:1998 -> EN 61000-4-2:1998, EN 61000-4-3:1998,  
EN 61000-4-4:1995, EN 61000-4-5:1995,  
EN 61000-4-6:1996, EN 61000-4-8:1993,  
EN 61000-4-11:1994,

**The date of the measurement:** Nov. 28, 2003

**The date of the certification signed:** Dec. 04, 2003

**The number of EMC Certificate:** CER-A01-CE-92491

Test Laboratory



Dec. 04, 2003

Quality Department Manager: JEFF CHIU

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This verification is based on a single evaluation of one sample of above-mentioned products. It does not imply any assessment of the whole production and does not permit the use of the logo of the test laboratory.

# EMC TEST REPORT

Applicant : Advantech Co., Ltd.

Equipment: Industrial Computer

Model : IPC-610BP-25ZH; IPC-610BP-30ZH;  
IPC-610P4-25ZH; IPC-610P4-30ZH;  
ACP-4000; IPC-610P4H-ACN;  
ACP-4000BP-30Z

# Test Report Certification

## Best Laboratory Co., Ltd.

No. 336, Ba Lian Rd., Sec. 1, Hsi Chih City, Taipei Hsien, Taiwan, R.O.C.  
Tel: 886-2-2646-2899 Fax: 886-2-2646-2870

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Equipment : Industrial Computer

Model : IPC-610BP-25ZH; IPC-610BP-30ZH; IPC-610P4-25ZH;  
IPC-610P4-30ZH; ACP-4000; IPC-610P4H-ACN;  
ACP-4000BP-30Z

Device's Class : Class A Device

Measurement Standard : EN 61000-6-3/2001, EN 55024/1998

Measurement Procedure : EN 55022/1998, EN 61000-3-2/2000, EN 61000-3-3/1995  
EN 61000-4-2/1998, EN 61000-4-3/1998, EN 61000-4-4/1995,  
EN 61000-4-5/1995, EN 61000-4-6/1996, EN 61000-4-8/1993  
EN 61000-4-11/1994

Operating Voltage : 230VAC, 50Hz

Test Result : **Compliance** (Detail showed in the test report)

Sample Received : Oct. 23, 2003

Test Date : Nov. 28, 2003

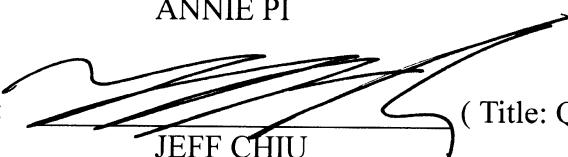
Report Number : RE-A01-CE-92491

Test Firm : No. 336, Ba Lian Rd., Sec. 1,  
Hsi Chih City, Taipei Hsien, Taiwan, R.O.C.

Remark:

- (1) The test report is only relating to the sample tested
- (2) The test report shall not be reproduced except in full, without the written approval of Best Laboratory Co., Ltd.
- (3) The test result of this report are traceable to the national or international standards.

Prepared : Annie Pi  
ANNIE PI

Approved :   
( Title: Quality Department Manager )  
JEFF CHIU

Date Issued : Dec. 04, 2003

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## 1. General Information

### 1.1 EUT Description

Applicant : Advantech Co., Ltd.

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

Equipment : Industrial Computer

Model : IPC-610BP-25ZH; IPC-610BP-30ZH; IPC-610P4-25ZH;  
IPC-610P4-30ZH; ACP-4000; IPC-610P4H-ACN;  
ACP-4000BP-30Z

Device's Class : Class A Device

Operating Voltage : 230VAC, 50Hz

Output Ports :

#### Front Part:

USB Port: : The two USB ports are each connected with one USB mouse which data cable is 120 cm long, shielded, no ferrite bead.

PS/2 Port : Connected with one PS/2 keyboard which length is 120 cm long, non-shielded, no ferrite bead

#### Rear Part:

Power Port : via a 180 cm long, non-shielded, with ferrite bead, power cable to the AC power source.

VGA Port : Connected with one monitor which data cable is 1.8 meters long, shielded, with ferrite bead.

## 1.2 Test System Detail

<b>Monitor</b>	<b>: Viewsonic</b>
Model No	: VCDT321496-1D
Serial No.	: HR94500066
FCC ID	: DoC Approval
BSMI	: 3882A702
Power Type	: 100-240VAC, 50/60Hz, 1.5A, Switching
Power Cord	: 180cm long, non-shielded, no ferrite bead.
Data Cable	: 120cm long, shielded, with ferrite bead
Backshell	: Metal
Connected Port	: VGA Port
 <b>Keyboard</b>	 <b>: HP (Pavilion)</b>
Model No.	: SK-2506
Serial No.	: C0006002889
FCC ID	: DoC Approval
BSMI	: 3882A375
Power Type	: By PC
Data Cable	: 180cm long, shielded, no ferrite bead
Backshell	: Metal
Connected Port	: PS/2 Keyboard Port
 <b>Mouse</b>	 <b>: Compaq</b>
Model No	: 6511-VA
Serial No.	: 99P0781RSC23816551S00000
FCC ID	: N/A
BSMI	: 4882A001
Power Type	: By PC
Data Cable	: 120cm long, non-shielded, no ferrite bead
Backshell	: Metal
Connected Port	: PS/2 Mouse Port
 <b>USB Mouse</b>	 <b>: HP (Pavilion)</b>
Model No.	: MO19UCA
Serial No.	: 020445280 ; 020515571
FCC ID	: DoC Approval
BSMI	: 3912A332
Power Type	: By PC
Data Cable	: 120cm long, shielded, no ferrite bead

**Modem** : ACEEX  
Model No. : XDM-9624  
Serial No. : 0017884  
FCC ID : IFAXDM-9624  
Power Type : 230VAC, 50Hz / 9VAC, 1A  
Power Core : 1.9meters long, non-shielded, no ferrite bead  
Data Cable : RS-232, shielded, 1.2meters long, no ferrite bead  
              RJ11C x 2, 7' long, non-shielded, no ferrite bead  
Backshell : Metal  
Connected Port : Serial Port

## 1.3 EUT Configuration

### Front :

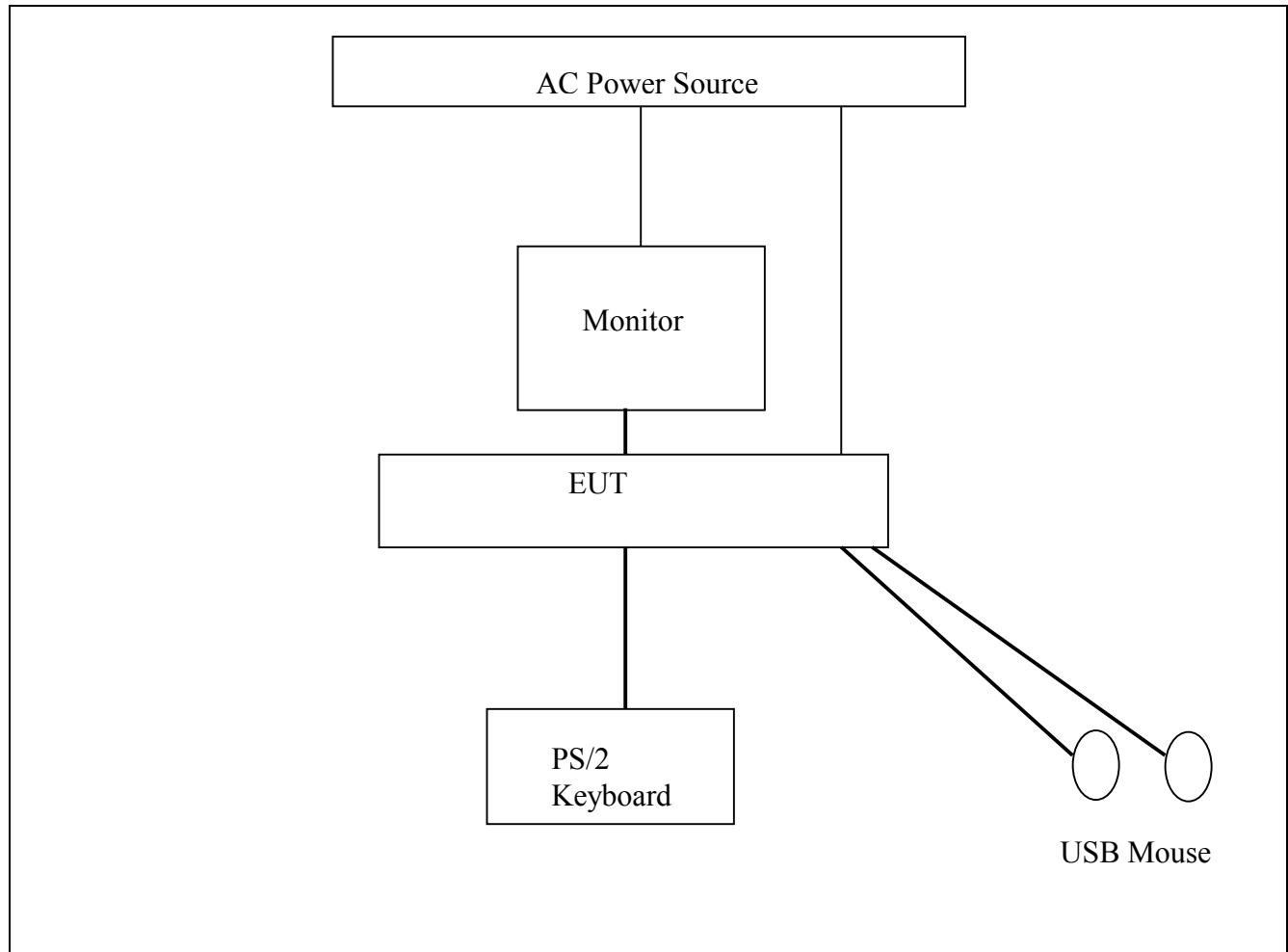
- (1) The two USB ports of EUT are each connected with one USB mouse.
- (2) The PS/2 keyboard port of EUT is connected with one PS/2 keyboard.

### Rear :

- (1) The power port of EUT is connected with the AC power source via one power cable.
- (2) The VGA port of EUT is connected with one monitor.

(\*\*\*PS: Please refers to the Photograph\*\*\*)

### Drawing of Configuration



## 1.4 EUT Exercise Software

The testing software is provided by the applicant.

It is designed to exercise the EUT in a manner similar to a typical use. The software will send an “H” pattern to the monitor and the “H” pattern will be shown on the monitor. The HDD will continuously working sequence in the “Write-Read-Delete” mode. At the same time, the mouse and keyboard will be in continuously self-test mode and responded to the EUT. The software will enable all functions of EUT.

## 1.5 Test Performed

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver which bandwidth is set at 9KHz.

Radiated emissions were invested over the frequency range from 30MHz to 1000MHz using a receiver which bandwidth is set at 120KHz. Radiated measurement was performed at distance that from an antenna to EUT is 10 meters.

The testing result of pretest was shown out that the “Transmitting/Receiving” mode is worse than the “Standby” mode. So, the final measurement was made on the “Transmitting/Receiving” mode.

The testing modes are as following: “640 x 480; LAN=10MHz”, “640 x 480; LAN=100MHz”, “800 x 600; LAN=10MHz”, “800 x 600; LAN=100MHz”, “1024 x 768; LAN=10MHz”, “1024 x 768; LAN=100MHz”,

The testing result of pretest was shown out that the “1024 x 768; LAN=100MHz” mode is worse than other two video resolution testing mode. So, the final measurement was made on the “Video resolution: “1024 x 768; LAN=100MHz”.

There are two switching power supplies suitable for the EUT. Both of them were tested when the tests and measurements were taken:

- (1) Power Adapter #1 : ( Brand : FSP ; Model : FSP250-60ATV(PF) )
- (2) Power Adapter #2 : ( Brand : FSP ; Model : FPS300-60PLN )

The testing set-up and the testing item are fully according to the requirement from the applicant.

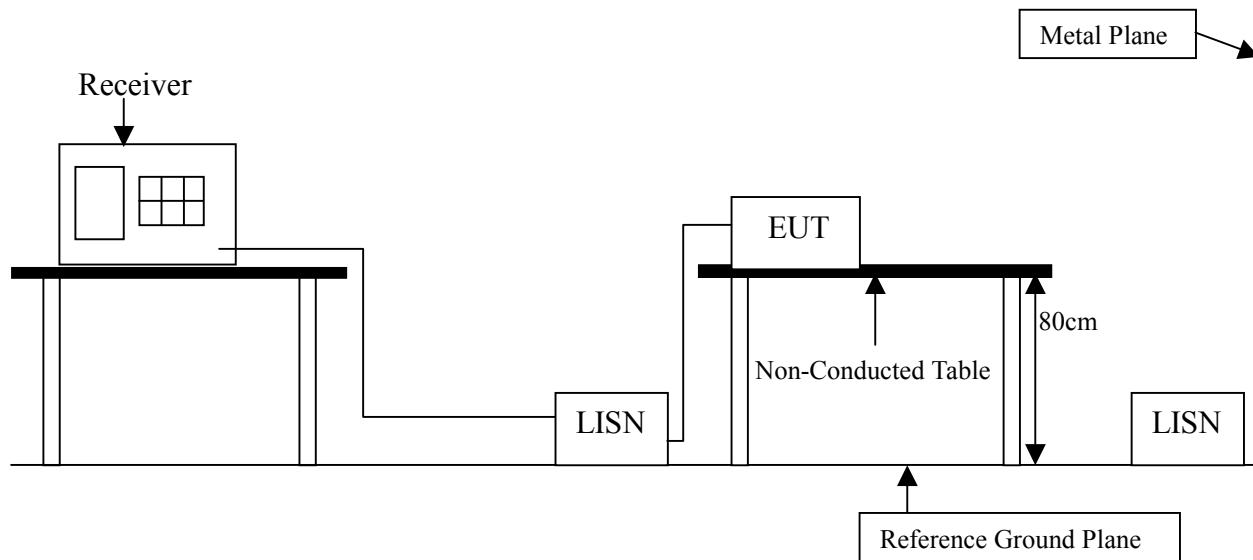
## 2 Conducted Emission Measurement

### 2.1 Test Equipment

No.	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	LISN (EUT)	Rolf Heine	NNB-2/16Z	99084	May 14, 2003
2.	LISN (AXE)	Rolf Heine	NNB-2/16Z	99086	May 14, 2003
3.	EMI Receiver	Rohde & Schwarz	ESI 7	830154/001	June 27, 2003
4.	50Ω Terminator	Amphenol	46650-51	N/A	Dec. 10, 2002
5.	RF Cable	Belden	M17/158	MIL-C-17	Jan. 20, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one year.

### 2.2 Test Set-Up



### 2.3 Limit

Frequency (MHz)	Limit (dB $\mu$ V)			
	Class A		Class B	
	Quasi Peak	Average	Quasi Peak	Average
0.15 ~ 0.50	79	66	66 ~ 56	56 ~ 46
0.50 ~ 5.0	73	60	56	46
5.0 ~ 30.0	73	60	60	50

Remark: 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 (LISN). It provides a 50 ohm / 50 µH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm / 50 µH coupling impedance with 50 ohm termination. (Please refers to the block diagram of the test setup and photograph.)

Both sides of AC line are checked for the maximum conducted emission interference. In order to find the maximum emissions, the relating positions of equipment and all of the interference cables must be changed according to EN 55022/1998 regulation: Information Technology Equipment – Radio Disturbance characteristics - Limit and methods of measurement..

The resolution bandwidth of the receiver is set at 9KHz.

## 2.5 Test Specification

According to the EN 55022/1998

## 2.6 Test Result

The emissions that come from the EUT were below the specified limits. The worst case of conducted emissions measurement are shown in the appendix A. The acceptance criterion was met and the EUT has pass the measurement.

## 2.7 Deviation from the Test Method

No Deviation.

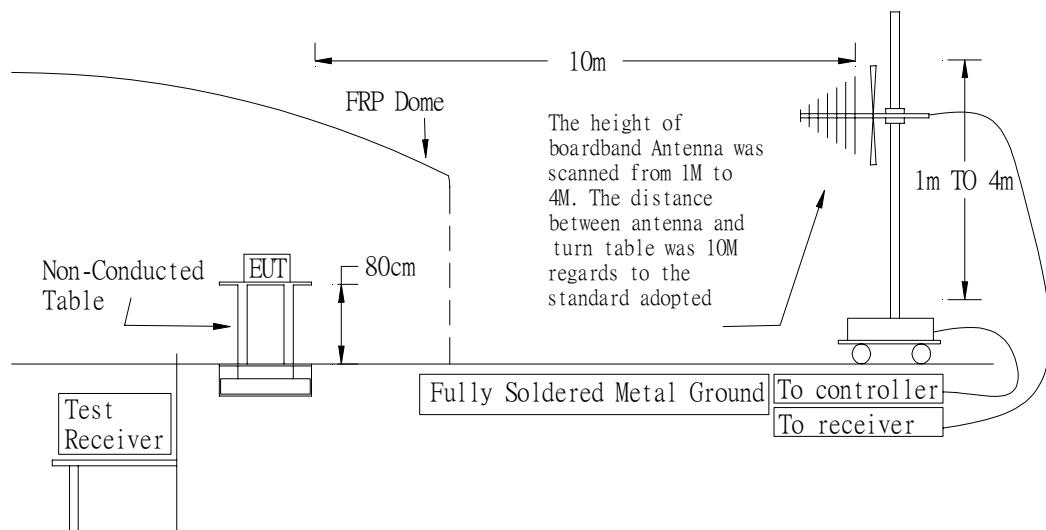
### 3. Radiated Emission Measurement

#### 3.1 Test Equipment List

No.	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	Antenna	Mess-Elektronik	VULB 9160	9160-3078	Jan. 19, 2003
2.	EMI Receiver	Rohde & Schwarz	ESI 7	830154/001	June 27, 2003
3.	RF Cable	Adventest	AD-N-CA-01	2000-0220	Jan. 20, 2003
4.	OATS	Bestlab	N/A	OATS#1	May 28, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one year.

#### 3.2 Test Setup



### 3.3 Limit

Frequency (MHz)	Class A		Class B	
	Distance (Meter)	Limit (dB $\mu$ V/m)	Distance (Meter)	Limit (dB $\mu$ V/m)
30 ~ 230	10	40	10	30
230 ~ 1000	10	47	10	37

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

### 3.4 Test Procedure

The EUT and its simulators are placed on turn table, non-ducted and wooden, which is 0.8 meter above ground. The turn table rotates 360 degree to determine the position of the maximum emission level. The EUT was positioned such that distance from antenna to the EUT is 10 meters.

The antenna is moved up and down between 1 meter to 4 meter to receive 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 interference cables must be manipulated according to EN 55022/1998 regulation: Information Technology Equipment – Radio Disturbance characteristics - Limit and methods of measurement.

The bandwidth set on the field strength is 120KHz when the frequency range is below 1GHz

### 3.5 Test Specification

According to EN 55022/1998

### 3.6 Test Result

The emissions that come from the EUT was below the specified limits. The worst case of radiated emissions measurement are shown in the appendix A. The acceptance criterion was met and the EUT has pass the measurement.

### 3.7 Deviation from the Test Method

No Deviation.

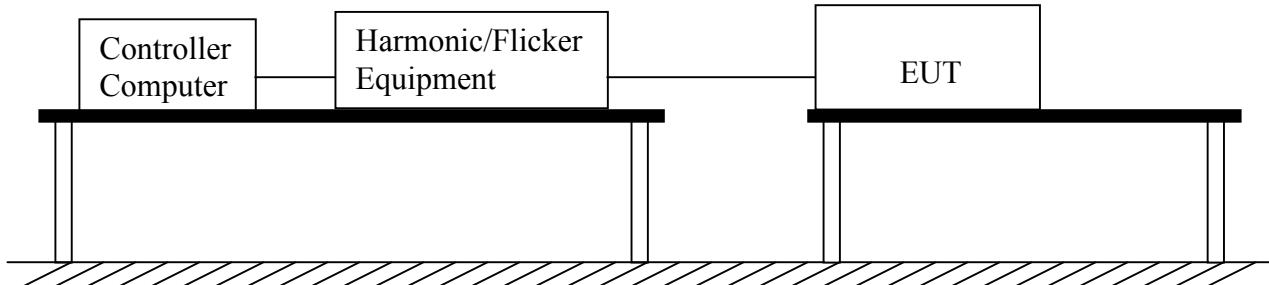
## 4. Power Harmonic and Voltage Fluctuation Measurement

### 4.1 Power Harmonic and Voltage Fluctuation Test Equipment List

No.	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	H/F Test System	EMC Partner	Harmonic-1000	325807	May 10, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one year.

### 4.2 Test Setup



### 4.3 Limit of Harmonic Current

Limit of Harmonic Currents

Harmonic Order	Maximum Permissible Harmonic Current (Ampere)	Harmonic Order	Maximum Permissible Harmonic Current (Ampere)
Odd Harmonic		Even Harmonic	
3	2.30	2	1.08
5	1.14	4	0.43
7	0.77	6	0.30
9	0.40	$8 \leq n \geq 40$	$0.23 \times 8/n$
11	0.33		
13	0.21		
$15 \leq n \geq 39$	$0.15 \times 15/n$		

#### 4.4 Test Procedure

The EUT is supplied in series with power analyzer from a power source has the same normal voltage and frequency as the rated supply voltage and the equipment under test. 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 61000-3-2/2000, 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 the test result was shown on the Appendix A. The acceptance criterion was met and the EUT has pass the measurement.

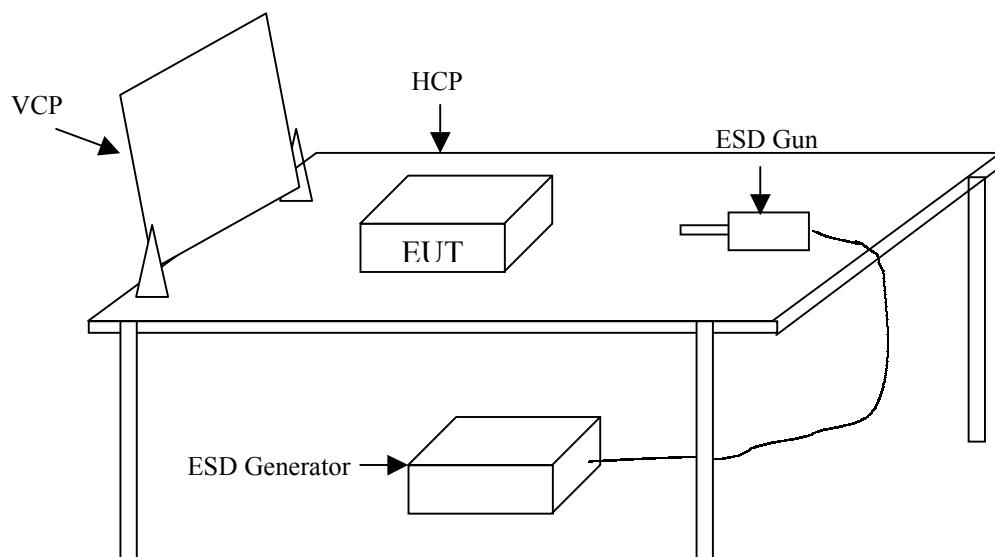
## 5. Electrostatic Discharge (ESD)

### 5.1 Test Equipment List

No.	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	ESD Emulator	Noiseken	ESS-100L	0199C02380	Sep. 05, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one year.

### 5.2 Test Setup



### 5.3 Test Level

Item	Environment	Unit	Test Specification	Performance Criteria
Enclosure Room	Electrostatic Discharge	KV(Charge Voltage)	8 (Air Discharge) 4 (Contact Discharge)	B

## 5.4 Test Procedure

Direct applicant of discharge to the EUT:

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

Air discharge was applied only to the non-conductive surfaces of the EUT.

When the measurement was taken, The ESD discharger was performed in single discharge. For the single discharge time between successive single discharges will keep on one second. It was at least ten single discharges with positive and negative at the same selected pointed. The selected pointed, which was performed with electrostatic discharge, was marked on the red label on the EUT.

Indirect applicant of discharge 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 the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the discharge electrode touching the coupling.

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 pointed.

## 5.5 Test Specification

According to EN 61000-4-2/1998

## 5.6 Test Result

The measurement of the electrostatic discharge was investigated and the test result was shown on the Appendix A. The acceptance criterion was met and the EUT has passed the measurement.

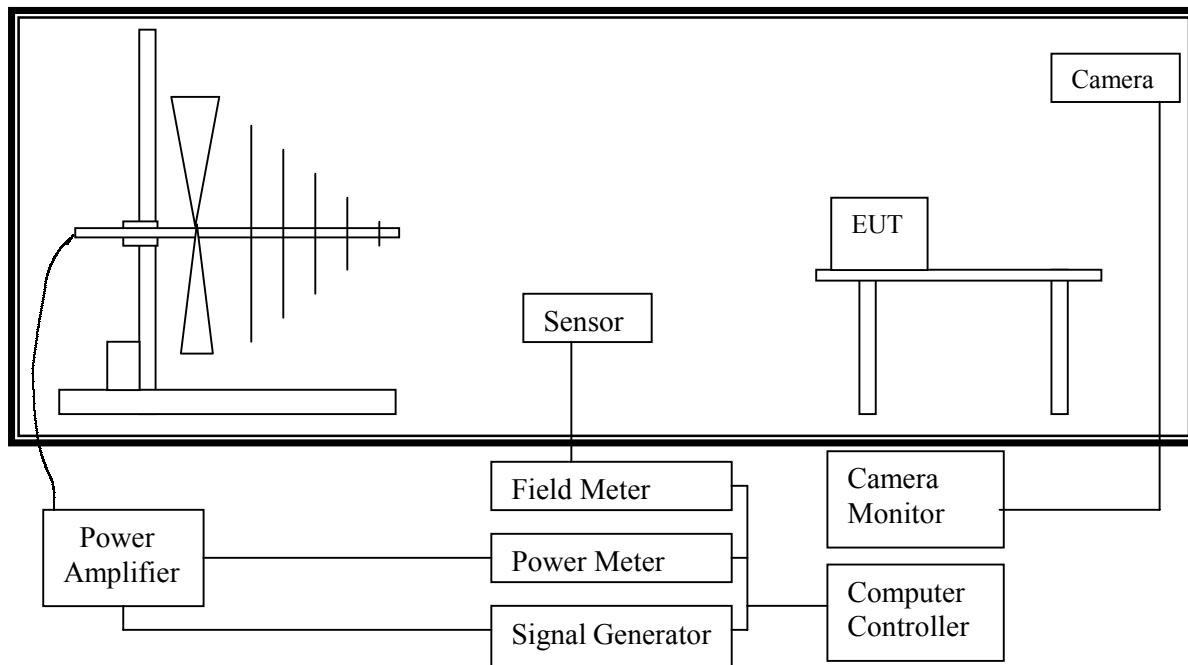
## 6. Radiated Susceptibility (RS)

### 6.1 Test Equipment List

No.	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	Signal Generator	HP	8648C	3623A03457	Jan. 17, 2003
2.	Amplifier	IFI	CMX50	D019-0200	Mar. 13, 2003
3.	Field Monitor	Amplifier Research	FM 2000	20391	Mar 03, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one and half year.

### 6.2 Test Setup



### 6.3 Test Level

Item	Environment	Unit	Test Specification	Performance Criteria
Enclosure Room	Radio – Frequency	MHz	80 ~ 1000	
	Electromagnetic Field	V/m (unmodulated, rms)	3	A
	Amplitude Modulated	%AM (1KHz)	80	

## 6.4 Test Procedure

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

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

In order to judge the EUT performance, a CCD camera is used to monitor the situation of EUT. All the scanning conditions are as follows:

Condition of Test	Remarks
EN 61000-4-3/1998	
1. Field Strength	3V/M; Level 2
2. Radiated Signal	AM 80% modulated with 1KHz
3. Scanning Frequencies	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 Specification

According to EN 61000-4-3/1998

## 6.6 Test Result

The measurement of the radiated susceptibility was investigated and the test result was shown on the appendix A. The acceptance criterion was met and the EUT has passed the measurement.

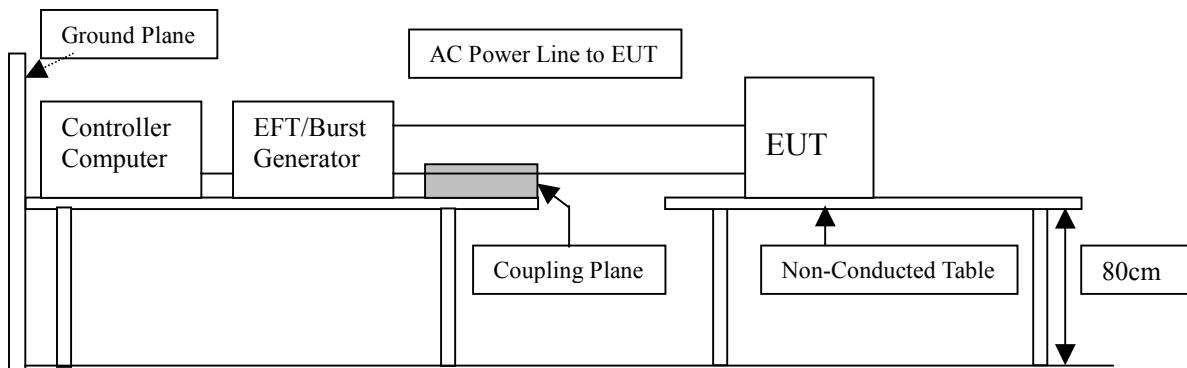
## 7 Electrical Fast Transient/Burst (EFT/B)

### 7.1 Test Equipment List

No.	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	EMC Test System	EMC Partner	Transient-1000	TR1000-341	Sep. 04, 2003
2.	Absorbing Clamp	EMC Partner	Transient-1000	CNEFT1000-176	Sep. 04, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one year.

### 7.2 Test Setup



### 7.3 Test Level

Item	Environment	Unit	Test Specification	Performance Criteria
Ports for signal Lines and Control Lines				B
Fast Transients Common Mode	KV (Peak) Tr/Ts (ns) Rep. Frequency (KHz)	0.5 5/50 5		
DC Input and DC Output Power Ports				B
Fast Transients Common Mode	KV (Peak) Tr/Ts (ns) Rep. Frequency (KHz)	0.5 5/50 5		
Input and Output AC Power Ports				B
Fast Transients Common Mode	KV (Peak) Tr/Ts (ns) Rep. Frequency (KHz)	1 5/50 5		
Functional Earth Ports				B
Fast Transients Common Mode	KV (Peak) Tr/Ts (ns) Rep. Frequency (KHz)	0.5 5/50 5		

## 7.4 Test Procedure

The EUT and load are placed on a wooden table that is 0.8meter height above a metal ground plane dimension is 1m x 1m and thickness is at least 0.2mm. It also projected beyond the EUT by at lease 0.1meter on all sides.

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

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

Each of the line and nature conductors is impressed with burst noise for 1 minute.

For Functional Earth Port:

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

The protective earth line (PE) is impressed with burst noise for 1 minute.

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

For signal Lines and Control Lines Test:

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

## 7.5 Test Specification

According to EN 61000-4-4/1995

## 7.6 Test Result

The measurement of the Electrical Fast Transient/Burst was investigated and test result was shown on the appendix A. The acceptance criterion was met and the EUT has passed the measurement.

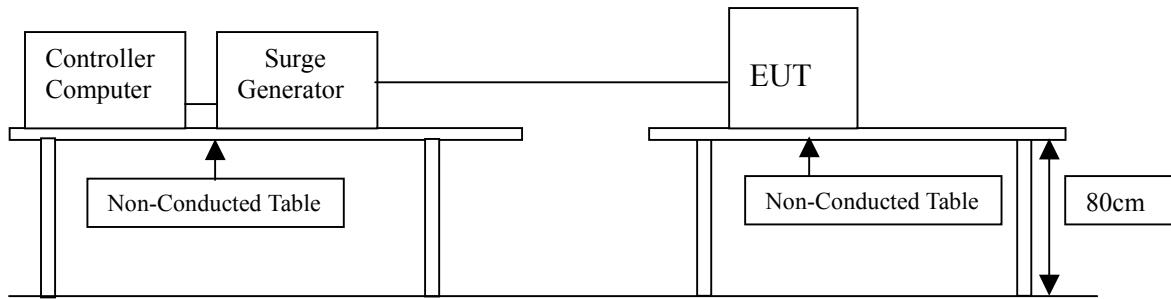
## 8. Surge

### 8.1 Test Equipment List

No	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	EMC Test System	EMC Partner	Transient-1000	TR1000-341	Sep. 04, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one year.

### 8.2 Test Setup



### 8.3 Test Level

Item	Environment	Unit	Test Specification	Performance Criteria
Dc Input and DC Output Power Ports	Surge	Tr/Ts (μs)	1.2/50(8/20)	B
	Line to Ground	KV	±0.5	
	Line to Line	KV	±0.5	
AC Input and Ac Output Power Ports	Surge	Tr/Ts (μs)	1.2/50(8/20)	B
	Line to Ground	KV	±2	
	Line to Line	KV	±1	

## 8.4 Test Procedure

The EUT and its load are placed on a table which is 0.8 meter height above a metal ground plane dimension is 1 meter x 1 meter and the thickness is 0.5 mm. It's also projected beyond the EUT at least 0.1 meter on all sides. The length of power cord between the coupling device and the EUT shall be 2meter 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°, 90°, 180°, 270° and the peak value of the AC 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 minute.

## 8.5 Test Specification

According to EN 61000-4-5/1995

## 8.6 Test Result

The Measurement of the Surge was investigated and the test result was shown on the appendix A. The acceptance criterion was met and the EUT has passed the test.

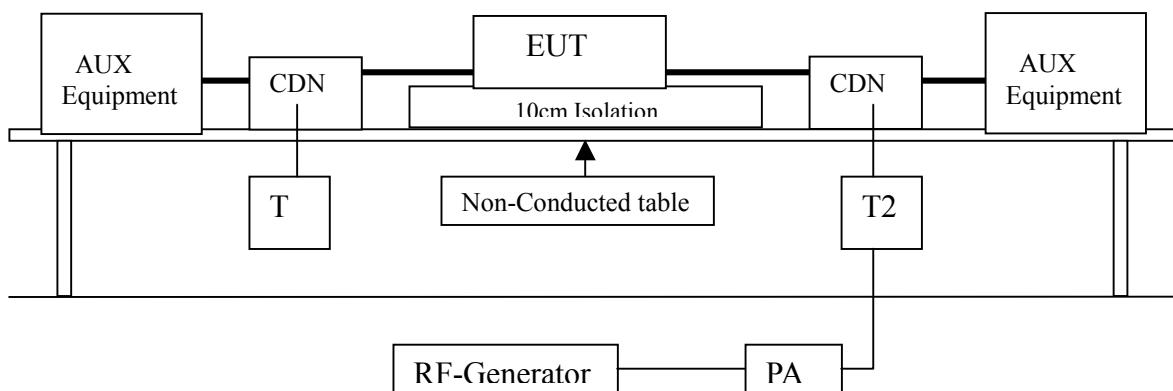
## 9. Conducted Susceptibility

### 9.1 Test Equipment List

No.	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	CLAMP	FCC	F-203I-23mm	337	Jan. 21, 2003
2.	CDN	FCC	FCC-801-M3-32A	20116	Jan. 21, 2003
3.	CDN	FCC	FCC-801-M3-32A	2019	Jan. 21, 2003
4.	Signal Generator	HP	8648C	3623A03457	Jan. 17, 2003
5.	Amplifier	IFI	CMX50	D019-0200	Mar. 13, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one year.

### 9.2 Test Setup



### 9.3 Test Level

Item	Environment	Unit	Test Specification	Performance Criteria
Ports for Signal Lines and Data Buses, not involved in process control, etc.				
Radio-Frequency	MHz		0.15 ~ 80	A
Common Mode	V (rms, Unmodulated)		3	
Amplitude Modulated	%AM (1KHz)		80	
	Source Impedance		150	
Ac Input and AC Output and DC Input and DC output Ports and Functional Earth Ports				
Radio-Frequency	MHz		0.15 ~ 80	A
Common Mode	V (rms, Unmodulated)		3	
Amplitude Modulated	%AM (1KHz)		80	
	Source Impedance		150	

## 9.4 Test Procedure

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

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

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

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

For Signal Lines and Control Lines Test:

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

All scanning frequencies conditions are as following:

Condition of Test

1. Field Strength
2. Radiated Signal
3. Scanning frequencies
4. Dwell Time
5. Frequency step size  $\Delta f$
6. The rate of Swept of Frequency

Remarks:

- 130dB $\mu$ V (3V), Level 2  
AM 80% modulated with 1KHz  
0.15MHz ~ 80MHz  
3 seconds  
1%  
 $1.5 \times 10^{-3}$  decades/s

## 9.5 Test Specification

According to EN 61000-4-6/1996

## 9.6 Test Result

According the applicant request, the data line of RJ-45 cable was not test.

The Measurement of the Conducted Susceptibility was investigated and the test result was shown on the appendix A. The acceptance criterion was met and the EUT has passed the test.

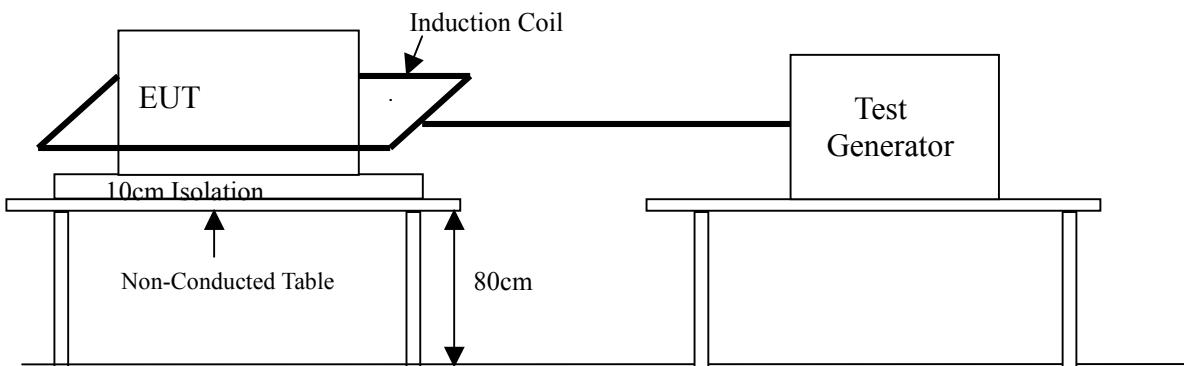
## 10 Power Frequency Magnetic Field

### 10.1 Test Equipment List

No.	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	EMC Test System	EMC Partner	Transient-1000	TR1000-341	Sep. 04, 2003
2.	Magnetic Coil	EMC Partner	MF-1000	MF1000-1-51	Sep. 04, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one year.

### 10.2 Test Setup



### 10.3 Test Level

Item	Environment	Unit	Test Specification	Performance Criteria
Enclosure Room Power-Frequency Magnetic Field		50 1	Hz A/M	A

## 10.4 Test Procedure

The EUT and its load are placed on a table that is 0.8 meter above the metal ground plane dimension is at least 1 meter x 1 meter. The test magnetic field shall be placed at least than 3 meters distance from the induction coil.

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

## 10.5 Test Specification

According to EN 61000-4-8/1993

## 10.6 Test Result

The Measurement of the Power Frequency Magnetic Field was investigated and the test result was shown on the appendix A. The acceptance criterion was met and the EUT has passed the test.

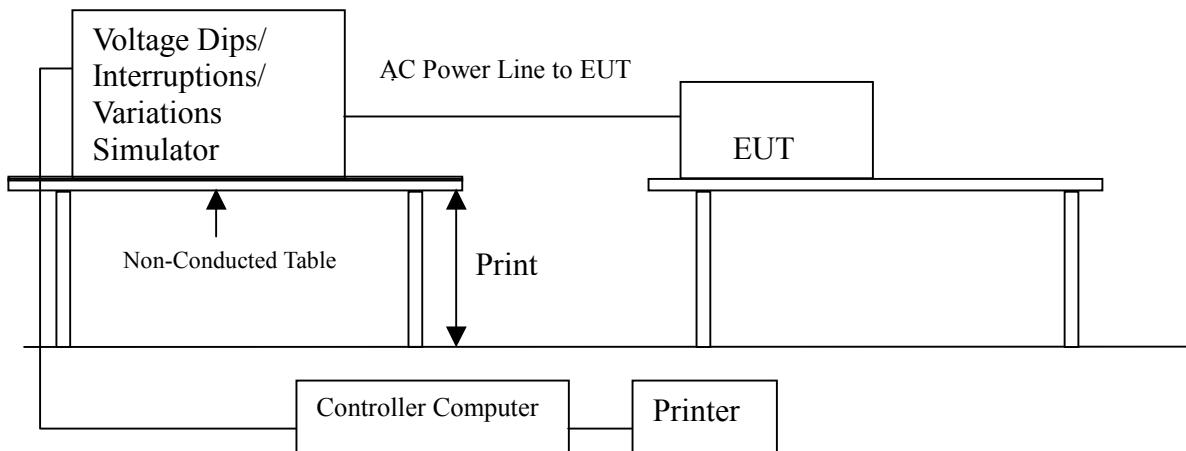
## 11. Voltage Dips and Interruption Measurement

### 11.1 Test Equipment List

No.	Instrument	Manufacture	Model	Serial No.	Last Calibrate
1.	EMC Test System	EMC Partner	Transient-1000	TR1000-341	Sep. 04, 2003

Remark: All equipment upon which need to calibrated are with calibration period of one year.

### 11.2 Test setup



### 11.3 Test Level

Item	Environment	Unit	Test Specification	Performance Criteria
Ac Input and AC Output Power Ports				
Voltage Dips			30% Reduction 500ms	C
			>95% Reduction 10ms	B
Voltage Interruption			>95% Reduction 5000ms	C

## 11.4 Test Procedure

The EUT and its load are placed on a wooden table which is 0.8 meter above a metal ground plane which dimension is 1 meter x 1 meter, the thickness is 0.65mm. It projected beyond the EUT by at least 0.1 meter on all sides. The power cord shall be used the shortest power cord as specified by the manufacturer.

For Voltage Dips / Interruption Test:

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 dips of supplied voltage and duration time is 500ms, for 95% voltage dips of supplied voltage and duration time is 10ms with a sequence of three voltage dips with intervals of 10 seconds, and for 95% voltage interruption of supplied voltage and the duration time is 5000ms with a sequence of three voltage interruptions with intervals of 10 seconds.

Voltage phase shifting are shall occur at 0°, 45°, 90°, 135, 180°, 225°, 270°, 315° of the voltage.

## 11.5 Test Specification

According to EN 61000-4-11/1994

## 11.6 Test Result

The Measurement of the Voltage Dips and Interruption was investigated and the test result was shown on the appendix A. The acceptance criterion was met and the EUT has passed the test.

## **12 Modification List for EMC Complying Test**

The modification is solely made by the applicant

## **13 Appendix**

Appendix A: Summary of Test Result

Appendix B: The test photograph of EUT

Appendix C: The Detail Photograph of EUT

## Appendix A: Summary of Test Result

The test result in the emission and immunity were performed according to the requirement of measurement standard and procedures. Best Laboratory is assumed full responsibility for the accuracy and completeness of these measurements. The Test data of the emissions and immunity are listed as the appendix data.

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

**\*\*\*\*\* EMC Test Result: The EUT has been passed the all measurements. \*\*\*\*\***

The uncertainty is calculated in accordance with NAMAS NIS 81, the total uncertainty for this test is as follows:

⇒ Emission Test

- |  |         |
|--|---------|
| * Uncertainty in the Conducted Emission Measurement: | <±2.0dB |
| * Uncertainty in the Radiated Emission Measurement:  | <±4.0dB |

## Conducted Emission Test

Test Date	: Nov. 26, 2003
EUT	: Industrial Computer
Testing Mode	: 640*480 ; LAN=10MHz ; FSP250-60ATV(PF)
Temperature	: 24°C
Humidity	: 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
198.4500	38.84	* **	* **	79.00	66.00	* **	-27.16
297.0500	37.23	* **	* **	79.00	66.00	* **	-28.77
594.5500	36.01	* **	* **	73.00	60.00	* **	-23.99
624.3000	36.66	* **	* **	73.00	60.00	* **	-23.34
936.2500	33.15	* **	* **	73.00	60.00	* **	-26.85
1545.0000	30.45	* **	* **	73.00	60.00	* **	-29.55
9752.0000	43.07	* **	* **	73.00	60.00	* **	-16.93
14064.0000	42.18	* **	* **	73.00	60.00	* **	-17.82
16168.0000	44.74	* **	* **	73.00	60.00	* **	-15.26
17288.0000	44.65	* **	* **	73.00	60.00	* **	-15.35

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
166.1500	40.08	* **	* **	79.00	66.00	* **	-25.92
199.3000	35.90	* **	* **	79.00	66.00	* **	-30.10
626.0000	36.85	* **	* **	73.00	60.00	* **	-23.15
756.0500	34.45	* **	* **	73.00	60.00	* **	-25.55
886.9500	33.70	* **	* **	73.00	60.00	* **	-26.30
1240.0000	29.95	* **	* **	73.00	60.00	* **	-30.05
2170.0000	28.59	* **	* **	73.00	60.00	* **	-31.41
9448.0000	43.02	* **	* **	73.00	60.00	* **	-16.98
16200.0000	44.94	* **	* **	73.00	60.00	* **	-15.06
18080.0000	45.74	* **	* **	73.00	60.00	* **	-14.26

### Remark:

1. The above Emission Level are all under the Average Limit.
2. The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
3. The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
4. The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 26, 2003  
 EUT : Industrial Computer  
 Testing Mode : 800\*600 ; LAN=10MHz ; FSP250-60ATV(PF)  
 Temperature : 24°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
198.4500	39.55	* **	* **	79.00	66.00	* **	-26.45
298.7500	36.62	* **	* **	79.00	66.00	* **	-29.38
593.7000	36.37	* **	* **	73.00	60.00	* **	-23.63
887.8000	34.16	* **	* **	73.00	60.00	* **	-25.84
1215.0000	33.41	* **	* **	73.00	60.00	* **	-26.59
2100.0000	28.94	* **	* **	73.00	60.00	* **	-31.06
9008.0000	44.09	* **	* **	73.00	60.00	* **	-15.91
9544.0000	45.12	* **	* **	73.00	60.00	* **	-14.88
15728.0000	48.52	* **	* **	73.00	60.00	* **	-11.48
18192.0000	46.64	* **	* **	73.00	60.00	* **	-13.36

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
163.6000	40.69	* **	* **	79.00	66.00	* **	-25.31
195.0500	38.90	* **	* **	79.00	66.00	* **	-27.10
331.0500	30.98	* **	* **	79.00	66.00	* **	-35.02
592.8500	36.70	* **	* **	73.00	60.00	* **	-23.30
887.8000	32.91	* **	* **	73.00	60.00	* **	-27.09
1200.0000	29.46	* **	* **	73.00	60.00	* **	-30.54
9608.0000	45.94	* **	* **	73.00	60.00	* **	-14.06
10688.0000	43.07	* **	* **	73.00	60.00	* **	-16.93
15728.0000	48.76	* **	* **	73.00	60.00	* **	-11.24
17112.0000	47.80	* **	* **	73.00	60.00	* **	-12.20

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 26, 2003  
 EUT : Industrial Computer  
 Testing Mode : 1024\*768 ; LAN=10MHz ; FSP250-60ATV(PF)  
 Temperature : 24°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
199.3000	38.57	* **	* **	79.00	66.00	* **	-27.43
298.7500	36.33	* **	* **	79.00	66.00	* **	-29.67
598.8000	35.42	* **	* **	73.00	60.00	* **	-24.58
824.9000	33.28	* **	* **	73.00	60.00	* **	-26.72
886.9500	35.44	* **	* **	73.00	60.00	* **	-24.56
1215.0000	31.58	* **	* **	73.00	60.00	* **	-28.42
7400.0000	41.51	* **	* **	73.00	60.00	* **	-18.49
9664.0000	52.95	* **	* **	73.00	60.00	* **	-7.05
15792.0000	48.63	* **	* **	73.00	60.00	* **	-11.37
17168.0000	46.86	* **	* **	73.00	60.00	* **	-13.14

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
158.5000	41.73	* **	* **	79.00	66.00	* **	-24.27
198.4500	39.37	* **	* **	79.00	66.00	* **	-26.63
592.8500	36.70	* **	* **	73.00	60.00	* **	-23.30
922.6500	32.94	* **	* **	73.00	60.00	* **	-27.06
2100.0000	30.18	* **	* **	73.00	60.00	* **	-29.82
9600.0000	45.46	* **	* **	73.00	60.00	* **	-14.54
10144.0000	45.16	* **	* **	73.00	60.00	* **	-14.84
15728.0000	49.41	* **	* **	73.00	60.00	* **	-10.59
17168.0000	48.40	* **	* **	73.00	60.00	* **	-11.60
20000.0000	47.98	* **	* **	73.00	60.00	* **	-12.02

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 26, 2003  
 EUT : Industrial Computer  
 Testing Mode : 640\*480 ; LAN=100MHz ; FSP250-60ATV(PF)  
 Temperature : 24°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
199.3000	38.85	* **	* **	79.00	66.00	* **	-27.15
298.7500	36.12	* **	* **	79.00	66.00	* **	-29.88
592.8500	37.33	* **	* **	73.00	60.00	* **	-22.67
883.5500	34.30	* **	* **	73.00	60.00	* **	-25.70
1220.0000	32.26	* **	* **	73.00	60.00	* **	-27.74
2470.0000	28.37	* **	* **	73.00	60.00	* **	-31.63
4050.0000	29.18	* **	* **	73.00	60.00	* **	-30.82
9752.0000	43.13	* **	* **	73.00	60.00	* **	-16.87
14024.0000	43.05	* **	* **	73.00	60.00	* **	-16.95
16504.0000	44.28	* **	* **	73.00	60.00	* **	-15.72

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
161.9000	39.36	* **	* **	79.00	66.00	* **	-26.64
199.3000	38.32	* **	* **	79.00	66.00	* **	-27.68
330.2000	30.17	* **	* **	79.00	66.00	* **	-35.83
590.3000	38.01	* **	* **	73.00	60.00	* **	-21.99
921.8000	32.94	* **	* **	73.00	60.00	* **	-27.06
1240.0000	29.86	* **	* **	73.00	60.00	* **	-30.14
9448.0000	44.04	* **	* **	73.00	60.00	* **	-15.96
10728.0000	41.86	* **	* **	73.00	60.00	* **	-18.14
16200.0000	44.84	* **	* **	73.00	60.00	* **	-15.16
17024.0000	45.30	* **	* **	73.00	60.00	* **	-14.70

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 26, 2003  
 EUT : Industrial Computer  
 Testing Mode : 800\*600 ; LAN=100MHz ; FSP250-60ATV(PF)  
 Temperature : 24°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
155.9500	34.42	* **	* **	79.00	66.00	* **	-31.58
199.3000	38.69	* **	* **	79.00	66.00	* **	-27.31
297.9000	36.66	* **	* **	79.00	66.00	* **	-29.34
594.5500	36.91	* **	* **	73.00	60.00	* **	-23.09
626.8500	37.23	* **	* **	73.00	60.00	* **	-22.77
933.7000	33.31	* **	* **	73.00	60.00	* **	-26.69
2140.0000	32.09	* **	* **	73.00	60.00	* **	-27.91
9448.0000	43.55	* **	* **	73.00	60.00	* **	-16.45
15112.0000	44.31	* **	* **	73.00	60.00	* **	-15.69
16168.0000	44.64	* **	* **	73.00	60.00	* **	-15.36

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
201.0000	38.00	* **	* **	79.00	66.00	* **	-28.00
298.7500	30.32	* **	* **	79.00	66.00	* **	-35.68
592.8500	37.66	* **	* **	73.00	60.00	* **	-22.34
756.9000	33.72	* **	* **	73.00	60.00	* **	-26.28
921.8000	33.27	* **	* **	73.00	60.00	* **	-26.73
1215.0000	30.43	* **	* **	73.00	60.00	* **	-29.57
2170.0000	29.08	* **	* **	73.00	60.00	* **	-30.92
9192.0000	43.14	* **	* **	73.00	60.00	* **	-16.86
15416.0000	44.50	* **	* **	73.00	60.00	* **	-15.50
17288.0000	44.43	* **	* **	73.00	60.00	* **	-15.57

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 26, 2003  
 EUT : Industrial Computer  
 Testing Mode : 1024\*768 ; LAN=100MHz ; FSP250-60ATV(PF)  
 Temperature : 24°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
199.3000	38.82	* **	* **	79.00	66.00	* **	-27.18
298.7500	36.35	* **	* **	79.00	66.00	* **	-29.65
592.0000	37.79	* **	* **	79.00	66.00	* **	-22.21
887.8000	36.09	* **	* **	73.00	60.00	* **	-23.91
1150.0000	34.11	* **	* **	73.00	60.00	* **	-25.89
2065.0000	30.37	* **	* **	73.00	60.00	* **	-29.63
8704.0000	43.78	* **	* **	73.00	60.00	* **	-16.22
14288.0000	45.87	* **	* **	73.00	60.00	* **	-14.13
16208.0000	47.72	* **	* **	73.00	60.00	* **	-12.28
18192.0000	46.43	* **	* **	73.00	60.00	* **	-13.57

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
197.6000	39.44	* **	* **	79.00	66.00	* **	-26.56
297.0500	31.66	* **	* **	79.00	66.00	* **	-34.34
592.8500	38.12	* **	* **	73.00	60.00	* **	-21.88
920.1000	33.45	* **	* **	73.00	60.00	* **	-26.55
1180.0000	30.36	* **	* **	73.00	60.00	* **	-29.64
2085.0000	28.68	* **	* **	73.00	60.00	* **	-31.32
8160.0000	42.41	* **	* **	73.00	60.00	* **	-17.59
9544.0000	45.91	* **	* **	73.00	60.00	* **	-14.09
16272.0000	48.64	* **	* **	73.00	60.00	* **	-11.36
18248.0000	46.62	* **	* **	73.00	60.00	* **	-13.38

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 640\*480 ; LAN=10MHz ; FPS300-60PLN  
 Temperature : 22°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
207.8000	45.62	* **	* **	79.00	66.00	* **	-20.38
416.9000	42.91	* **	* **	79.00	66.00	* **	-23.09
691.4500	39.20	* **	* **	73.00	60.00	* **	-20.80
967.7000	37.98	* **	* **	73.00	60.00	* **	-22.02
1315.0000	38.99	* **	* **	73.00	60.00	* **	-21.01
1520.0000	36.10	* **	* **	73.00	60.00	* **	-23.90
7872.0000	46.46	* **	* **	73.00	60.00	* **	-13.54
9224.0000	48.58	* **	* **	73.00	60.00	* **	-11.42
14848.0000	47.18	* **	* **	73.00	60.00	* **	-12.82
16464.0000	45.65	* **	* **	73.00	60.00	* **	-14.35

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
207.8000	46.61	* **	* **	79.00	66.00	* **	-19.39
414.3500	41.93	* **	* **	79.00	66.00	* **	-24.07
692.3000	39.32	* **	* **	73.00	60.00	* **	-20.68
967.7000	38.48	* **	* **	73.00	60.00	* **	-21.52
1315.0000	37.14	* **	* **	73.00	60.00	* **	-22.86
9224.0000	48.91	* **	* **	73.00	60.00	* **	-11.09
10008.0000	50.30	* **	* **	73.00	60.00	* **	-9.70
10424.0000	53.12	* **	* **	73.00	60.00	* **	-6.88
14816.0000	46.40	* **	* **	73.00	60.00	* **	-13.60
16240.0000	46.45	* **	* **	73.00	60.00	* **	-13.55

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level" is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 800\*600 ; LAN=10MHz ; FPS300-60PLN  
 Temperature : 22°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
210.3500	46.40	* **	* **	79.00	66.00	* **	-19.60
416.0500	42.57	* **	* **	79.00	66.00	* **	-23.43
691.4500	38.79	* **	* **	73.00	60.00	* **	-21.21
969.4000	39.22	* **	* **	73.00	60.00	* **	-20.78
1310.0000	39.75	* **	* **	73.00	60.00	* **	-20.25
7320.0000	46.54	* **	* **	73.00	60.00	* **	-13.46
8224.0000	49.11	* **	* **	73.00	60.00	* **	-10.89
9544.0000	50.28	* **	* **	73.00	60.00	* **	-9.72
13264.0000	48.45	* **	* **	73.00	60.00	* **	-11.55
15728.0000	51.59	* **	* **	73.00	60.00	* **	-8.41

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
207.8000	45.99	* **	* **	79.00	66.00	* **	-20.01
415.2000	42.33	* **	* **	79.00	66.00	* **	-23.67
691.4500	38.45	* **	* **	73.00	60.00	* **	-21.55
968.5500	38.52	* **	* **	73.00	60.00	* **	-21.48
1315.0000	38.80	* **	* **	73.00	60.00	* **	-21.20
7320.0000	46.20	* **	* **	73.00	60.00	* **	-13.80
8704.0000	49.50	* **	* **	73.00	60.00	* **	-10.50
9544.0000	50.77	* **	* **	73.00	60.00	* **	-9.23
13208.0000	49.13	* **	* **	73.00	60.00	* **	-10.87
15784.0000	51.51	* **	* **	73.00	60.00	* **	-8.49

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 1024\*768 ; LAN=10MHz ; FPS300-60PLN  
 Temperature : 22°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
207.8000	46.25	* **	* **	79.00	66.00	* **	-19.75
416.9000	42.54	* **	* **	79.00	66.00	* **	-23.46
484.0500	38.48	* **	* **	79.00	66.00	* **	-27.52
693.1500	38.81	* **	* **	73.00	60.00	* **	-21.19
1315.0000	38.82	* **	* **	73.00	60.00	* **	-21.18
5285.0000	38.55	* **	* **	73.00	60.00	* **	-21.45
8168.0000	47.84	* **	* **	73.00	60.00	* **	-12.16
9664.0000	50.73	* **	* **	73.00	60.00	* **	-9.27
12968.0000	47.77	* **	* **	73.00	60.00	* **	-12.23
15792.0000	52.45	* **	* **	73.00	60.00	* **	-7.55

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
209.5000	46.02	* **	* **	79.00	66.00	* **	-19.98
347.2000	40.12	* **	* **	79.00	66.00	* **	-25.88
415.2000	42.30	* **	* **	79.00	66.00	* **	-23.70
692.3000	38.47	* **	* **	73.00	60.00	* **	-21.53
968.5500	38.09	* **	* **	73.00	60.00	* **	-21.91
1315.0000	38.79	* **	* **	73.00	60.00	* **	-21.21
8224.0000	49.15	* **	* **	73.00	60.00	* **	-10.85
9600.0000	50.36	* **	* **	73.00	60.00	* **	-9.64
13024.0000	48.12	* **	* **	73.00	60.00	* **	-11.88
15792.0000	51.97	* **	* **	73.00	60.00	* **	-8.03

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 640\*480 ; LAN=100MHz ; FPS300-60PLN  
 Temperature : 22°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
206.9500	45.98	* **	* **	79.00	66.00	* **	-20.02
415.2000	43.17	* **	* **	79.00	66.00	* **	-22.83
484.9000	38.45	* **	* **	79.00	66.00	* **	-27.55
968.5500	39.23	* **	* **	73.00	60.00	* **	-20.77
1315.0000	39.30	* **	* **	73.00	60.00	* **	-20.70
9224.0000	48.93	* **	* **	73.00	60.00	* **	-11.07
10352.0000	46.90	* **	* **	73.00	60.00	* **	-13.10
13048.0000	45.47	* **	* **	73.00	60.00	* **	-14.53
15112.0000	47.01	* **	* **	73.00	60.00	* **	-12.99
17064.0000	44.37	* **	* **	73.00	60.00	* **	-15.63

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
209.5000	45.73	* **	* **	79.00	66.00	* **	-20.27
278.3500	40.98	* **	* **	79.00	66.00	* **	-25.02
347.2000	40.52	* **	* **	79.00	66.00	* **	-25.48
416.0500	43.01	* **	* **	79.00	66.00	* **	-22.99
692.3000	37.99	* **	* **	73.00	60.00	* **	-22.01
1315.0000	38.35	* **	* **	73.00	60.00	* **	-21.65
8360.0000	47.09	* **	* **	73.00	60.00	* **	-12.91
9792.0000	47.80	* **	* **	73.00	60.00	* **	-12.20
14928.0000	46.48	* **	* **	73.00	60.00	* **	-13.52
16240.0000	46.54	* **	* **	73.00	60.00	* **	-13.46

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 800\*600 ; LAN=100MHz ; FPS300-60PLN  
 Temperature : 22°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
207.8000	46.11	* **	* **	79.00	66.00	* **	-19.89
415.2000	43.17	* **	* **	79.00	66.00	* **	-23.36
692.3000	39.00	* **	* **	73.00	60.00	* **	-21.00
1035.0000	38.70	* **	* **	73.00	60.00	* **	-21.30
1315.0000	39.60	* **	* **	73.00	60.00	* **	-20.40
7880.0000	47.25	* **	* **	73.00	60.00	* **	-12.75
9232.0000	49.66	* **	* **	73.00	60.00	* **	-10.34
12984.0000	46.42	* **	* **	73.00	60.00	* **	-13.58
14856.0000	48.97	* **	* **	73.00	60.00	* **	-11.03
16832.0000	45.65	* **	* **	73.00	60.00	* **	-14.35

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
209.5000	46.13	* **	* **	79.00	66.00	* **	-19.87
346.3500	40.34	* **	* **	79.00	66.00	* **	-25.66
416.9000	42.52	* **	* **	79.00	66.00	* **	-23.48
621.7500	38.41	* **	* **	73.00	60.00	* **	-21.59
968.5500	38.45	* **	* **	73.00	60.00	* **	-21.55
1315.0000	38.24	* **	* **	73.00	60.00	* **	-21.76
8672.0000	48.15	* **	* **	73.00	60.00	* **	-11.85
9232.0000	49.11	* **	* **	73.00	60.00	* **	-10.89
13600.0000	46.88	* **	* **	73.00	60.00	* **	-13.12
14864.0000	49.30	* **	* **	73.00	60.00	* **	-10.70

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Conducted Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 1024\*768 ; LAN=100MHz ; FPS300-60PLN  
 Temperature : 22°C  
 Humidity : 68%RH

### Line:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
209.5000	46.53	* **	* **	79.00	66.00	* **	-19.47
415.2000	42.59	* **	* **	79.00	66.00	* **	-23.41
967.7000	38.88	* **	* **	73.00	60.00	* **	-21.12
1310.0000	39.26	* **	* **	73.00	60.00	* **	-20.74
1520.0000	37.27	* **	* **	73.00	60.00	* **	-22.73
3660.0000	35.87	* **	* **	73.00	60.00	* **	-24.13
8704.0000	50.24	* **	* **	73.00	60.00	* **	-9.76
9544.0000	50.93	* **	* **	73.00	60.00	* **	-9.07
14288.0000	50.25	* **	* **	73.00	60.00	* **	-9.75
15728.0000	51.34	* **	* **	73.00	60.00	* **	-8.66

### Nature:

Frequency (KHz)	Emission Level (dB $\mu$ V)			Limit (dB $\mu$ V)		Margin (dB)	
	Peak	QP	Avg.	QP	Avg.	QP	Avg.
207.8000	46.16	* **	* **	79.00	66.00	* **	-19.84
416.0500	41.93	* **	* **	79.00	66.00	* **	-24.07
693.1500	38.79	* **	* **	73.00	60.00	* **	-21.21
1315.0000	39.14	* **	* **	73.00	60.00	* **	-20.86
1565.0000	38.74	* **	* **	73.00	60.00	* **	-21.26
5885.0000	42.17	* **	* **	73.00	60.00	* **	-17.83
8160.0000	49.12	* **	* **	73.00	60.00	* **	-10.88
9544.0000	50.35	* **	* **	73.00	60.00	* **	-9.65
14288.0000	49.95	* **	* **	73.00	60.00	* **	-10.05
15728.0000	51.32	* **	* **	73.00	60.00	* **	-8.68

### Remark:

- The above Emission Level are all under the Average Limit.
- The " Correction Factor " contains: Insertion Loss of LISN, cable loss.
- The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB) = Emission Level (dB $\mu$ V).
- The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V) - Limit (dB $\mu$ V) = Margin (dB).

## Radiated Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 1024\*768 ; LAN=100MHz ; FSP250-60ATV(PF)  
 Polarity : Vertical  
 Temperature : 26°C  
 Humidity : 54%RH

Frequency (MHz)	Reading Amplitude (dB $\mu$ V)	Table Degree (°)	Antenna Height (Meter)	Correction Factor (dB/m)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
50.002	26.32	219	1.00	7.85	34.17	40.00	-5.83
129.168	12.66	157	1.00	12.41	25.07	40.00	-14.93
150.002	27.55	119	1.00	11.34	38.89	40.00	-1.11
166.142	19.38	213	1.00	10.54	29.92	40.00	-10.08
200.002	21.66	199	1.00	10.15	31.81	40.00	-8.19
250.002	29.19	180	1.00	13.57	42.76	47.00	-4.24
300.002	21.47	180	1.00	14.46	35.93	47.00	-11.07
499.997	8.90	168	1.00	18.79	27.69	47.00	-19.31
***							

### Remark:

1. The " Correction Factor " contains antenna factor, cable loss.

2. The formula of "Emission Level " is as follow:

$$\text{Reading Amplitude (dB}\mu\text{v)} + \text{Correction Factor (dB/m)} = \text{Emission Level (dB}\mu\text{V/m)}.$$

3. The formula of " Margin " is as follow:

$$\text{Emission Level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)} = \text{Margin (dB)}.$$

## Radiated Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 1024\*768 ; LAN=100MHz ; FSP250-60ATV(PF)  
 Polarity : Horizontal  
 Temperature : 24°C  
 Humidity : 69%RH

Frequency (MHz)	Reading Amplitude (dB $\mu$ V)	Table Degree (°)	Antenna Height (Meter)	Correction Factor (dB/m)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
50.006	21.51	137	4.00	7.85	29.36	40.00	-10.64
166.142	24.48	297	4.00	10.54	35.02	40.00	-4.98
250.002	22.39	57	3.63	13.57	35.96	47.00	-11.04
598.104	18.87	149	1.59	19.80	38.67	47.00	-8.33
664.563	10.70	0	1.17	20.75	31.45	47.00	-15.55
787.690	10.12	64	1.00	21.80	31.92	47.00	-15.08
***							

### Remark:

1. The " Correction Factor " contains antenna factor, cable loss.
2. The formula of "Emission Level " is as follow:  
Reading Amplitude (dB $\mu$ V) + Correction Factor (dB/m) = Emission Level (dB $\mu$ V/m).
3. The formula of " Margin " is as follow:  
Emission Level (dB $\mu$ V/m) – Limit (dB $\mu$ V/m) = Margin (dB).

## Radiated Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 1024\*768 ; LAN=100MHz ; FPS300-60PLN  
 Polarity : Vertical  
 Temperature : 26°C  
 Humidity : 78%RH

Frequency (MHz)	Reading Amplitude (dB $\mu$ V)	Table Degree (°)	Antenna Height (Meter)	Correction Factor (dB/m)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
50.010	24.31	239	1.00	7.85	32.16	40.00	-7.84
150.018	25.55	98	1.00	11.34	36.89	40.00	-3.11
166.158	20.08	243	1.00	10.54	30.62	40.00	-9.38
250.022	29.34	180	1.00	13.57	42.91	47.00	-4.09
300.018	19.56	180	1.00	14.46	34.02	47.00	-12.98
400.014	22.02	360	1.00	17.16	39.18	47.00	-7.82
***							

### Remark:

1. The " Correction Factor " contains antenna factor, cable loss.

2. The formula of "Emission Level " is as follow:

$$\text{Reading Amplitude (dB}\mu\text{v)} + \text{Correction Factor (dB/m)} = \text{Emission Level (dB}\mu\text{V/m)}.$$

3. The formula of " Margin " is as follow:

$$\text{Emission Level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)} = \text{Margin (dB)}.$$

## Radiated Emission Test

Test Date : Nov. 28, 2003  
 EUT : Industrial Computer  
 Testing Mode : 1024\*768 ; LAN=100MHz ; FPS300-60PLN  
 Polarity : Horizontal  
 Temperature : 26°C  
 Humidity : 70%RH

Frequency (MHz)	Reading Amplitude (dB $\mu$ V)	Table Degree (°)	Antenna Height (Meter)	Correction Factor (dB/m)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
50.006	11.34	314	4.00	7.85	29.19	40.00	-10.81
66.470	23.86	87	4.00	6.48	30.34	40.00	-9.66
150.006	21.37	212	4.00	11.34	32.71	40.00	-7.29
250.006	25.60	361	3.00	13.57	39.17	47.00	-7.83
399.997	16.20	302	2.00	17.16	33.36	47.00	-13.64
598.104	22.03	224	2.00	19.80	41.83	47.00	-5.17
787.689	13.28	44	1.00	21.80	35.08	47.00	-11.92
***							

### Remark:

1. The " Correction Factor " contains antenna factor, cable loss.

2. The formula of "Emission Level " is as follow:

$$\text{Reading Amplitude (dB}\mu\text{v)} + \text{Correction Factor (dB/m)} = \text{Emission Level (dB}\mu\text{V/m)}.$$

3. The formula of " Margin " is as follow:

$$\text{Emission Level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)} = \text{Margin (dB)}.$$

## Power Harmonic / Fluctuation Test

### Power Harmonic:

Operating Environment:

Temperature : 26°C  
Humidity : 68%RH  
Atmosp

## Power Harmonic / Fluctuation Test

### Power Harmonic:

Operating Environment:

Temperature : 26°C  
Humidity : 68%RH  
Atmosphere : 1010mBar

Test Condition:

EUT Position : Table Top

Result:

Summary of the test result: Pass

### Fluctuation Test:

Test Frequency : 50Hz  
Test Time : 10 min.

Test Voltage : 230VAC  
Tshort : 5.0 min

EUT	Data	Limit	Result	Test Enable
Pst	0.001	1.00	Pass	True
Plt	0.001	0.65	Pass	True
dc %	0.00	3.00	Pass	True
dmax %	0.00	4.00	Pass	True
d(t) sec	0.00	0.20	Pass	True

### Power Source Data

Source Pst max	0.022	0.400	Pass	True
% THD	0.02	3.00	Pass	True

## Electrostatic Discharge Test

Item	Amount of Discharge	Voltage	Required Criteria	Complied to Criteria	Results
Air Discharge	10	+2KV	B	B	Pass
	10	-2KV	B	B	Pass
	10	+4KV	B	B	Pass
	10	-4KV	B	B	Pass
	10	+8KV	B	B	Pass
	10	-8KV	B	B	Pass
	25	+2KV	B	B	Pass
Contact Discharge	25	-2KV	B	B	Pass
	25	+4KV	B	B	Pass
	25	-4KV	B	B	Pass
	25	+2KV	B	B	Pass
Indirect Discharge	25	-2KV	B	B	Pass
	25	+4KV	B	B	Pass
	25	-4KV	B	B	Pass
	25	+2KV	B	B	Pass

### Remark:

- ( ) Criteria A: Operation as intended during and after the measurement
- ( X ) Criteria B: Operation as Intended after the test
- ( ) Criteria C: Malfunction during and after, need manual reset
- ( ) Criteria D: The sample is damaged

## Radiated Susceptibility

Frequency (MHz)	Position (Angle)	Polarity (H or V)	Voltage (V/m)	Required Criteria	Complied Criteria	Result
80 ~ 1000	0	H	3	A	A	Pass
80 ~ 1000	0	V	3	A	A	Pass
80 ~ 1000	90	H	3	A	A	Pass
80 ~ 1000	90	V	3	A	A	Pass
80 ~ 1000	180	H	3	A	A	Pass
80 ~ 1000	180	V	3	A	A	Pass
80 ~ 1000	270	H	3	A	A	Pass
80 ~ 1000	270	V	3	A	A	Pass

### Remark:

- Criteria A: Operation as intended during and after the measurement
- Criteria B: Operation as Intended after the test
- Criteria C: Malfunction during and after, need manual reset
- Criteria D: The sample is damaged

## Electrical Fast Transient / Burst

Inject Line	Polarity	Voltage (KV)	Inject Time (Second)	Inject Method	Required Criteria	Complied Criteria	Result
L	±	1.0KV	60	Direct	B	B	Pass
N	±	1.0KV	60	Direct	B	B	Pass
PE	±	1.0KV	60	Direct	B	B	Pass
L+N	±	1.0KV	60	Direct	B	B	Pass
L+PE	±	1.0KV	60	Direct	B	B	Pass
N+PE	±	1.0KV	60	Direct	B	B	Pass
L+N+PE	±	1.0KV	60	Direct	B	B	Pass

### Remark:

- ( ) Criteria A: Operation as intended during and after the measurement
- ( X ) Criteria B: Operation as Intended after the test
- ( ) Criteria C: Malfunction during and after, need manual reset
- ( ) Criteria D: The sample is damaged

## Surge Test

Inject Line	Polarity	Angle	Voltage (KV)	Inject Time (Second)	Inject Method	Required Criteria	Complied Criteria	Result
L+N	±	0	0.5KV	60	Direct	B	B	Pass
L+N	±	90	0.5KV	60	Direct	B	B	Pass
L+N	±	180	0.5KV	60	Direct	B	B	Pass
L+N	±	270	0.5KV	60	Direct	B	B	Pass
L+N	±	0	1.0KV	60	Direct	B	B	Pass
L+N	±	90	1.0KV	60	Direct	B	B	Pass
L+N	±	180	1.0KV	60	Direct	B	B	Pass
L+N	±	270	1.0KV	60	Direct	B	B	Pass
L+PE	±	0	0.5KV	60	Direct	B	B	Pass
L+PE	±	90	0.5KV	60	Direct	B	B	Pass
L+PE	±	180	0.5KV	60	Direct	B	B	Pass
L+PE	±	270	0.5KV	60	Direct	B	B	Pass
L+PE	±	0	1.0KV	60	Direct	B	B	Pass
L+PE	±	90	1.0KV	60	Direct	B	B	Pass
L+PE	±	180	1.0KV	60	Direct	B	B	Pass
L+PE	±	270	1.0KV	60	Direct	B	B	Pass
L+PE	±	0	2.0KV	60	Direct	B	B	Pass
L+PE	±	90	2.0KV	60	Direct	B	B	Pass
L+PE	±	180	2.0KV	60	Direct	B	B	Pass
L+PE	±	270	2.0KV	60	Direct	B	B	Pass
N+PE	±	0	0.5KV	60	Direct	B	B	Pass
N+PE	±	90	0.5KV	60	Direct	B	B	Pass
N+PE	±	180	0.5KV	60	Direct	B	B	Pass
N+PE	±	270	0.5KV	60	Direct	B	B	Pass
N+PE	±	0	1.0KV	60	Direct	B	B	Pass
N+PE	±	90	1.0KV	60	Direct	B	B	Pass
N+PE	±	180	1.0KV	60	Direct	B	B	Pass
N+PE	±	270	1.0KV	60	Direct	B	B	Pass
N+PE	±	0	2.0KV	60	Direct	B	B	Pass
N+PE	±	90	2.0KV	60	Direct	B	B	Pass
N+PE	±	180	2.0KV	60	Direct	B	B	Pass
N+PE	±	270	2.0KV	60	Direct	B	B	Pass

Remark:

- ( ) Criteria A: Operation as intended during and after the measurement
- ( X ) Criteria B: Operation as Intended after the test
- ( ) Criteria C: Malfunction during and after, need manual reset
- ( ) Criteria D: The sample is damaged

## Conducted Susceptibility

Inject Line	Field Strength dB $\mu$ V (V)	Inject Method	Required Criteria	Complied Criteria	Result
AC Line	130(3V)	CDN	A	A	Pass

### Remark:

- ( X ) Criteria A: Operation as intended during and after the measurement
- (   ) Criteria B: Operation as Intended after the test
- (   ) Criteria C: Malfunction during and after, need manual reset
- (   ) Criteria D: The sample is damaged

## Power Frequency Magnetic Field Test

Polarization	Frequency (Hz)	Magnetic Strength (A/M)	Required Criteria	Complied Criteria	Result
X Orientation	50	1	A	A	Pass
Y Orientation	50	1	A	A	Pass
Z Orientation	50	1	A	A	Pass

### Remark:

- ( X ) Criteria A: Operation as intended during and after the measurement
- (   ) Criteria B: Operation as Intended after the test
- (   ) Criteria C: Malfunction during and after, need manual reset
- (   ) Criteria D: The sample is damaged

## Voltage Dips and Interruption Test

Voltage Dips and Interruption Reduction (%)	Angle (Degree)	Test Duration (ms)	Required Criteria	Complied Criteria	Result
<b>DIP</b>					
30	0	500	C	C	Pass
30	45	500	C	C	Pass
30	90	500	C	C	Pass
30	135	500	C	C	Pass
30	180	500	C	C	Pass
30	225	500	C	C	Pass
30	270	500	C	C	Pass
30	315	500	C	C	Pass
>95	0	10	B	B	Pass
>95	45	10	B	B	Pass
>95	90	10	B	B	Pass
>95	135	10	B	B	Pass
>95	180	10	B	B	Pass
>95	225	10	B	B	Pass
>95	270	10	B	B	Pass
>95	315	10	B	B	Pass
<b>Interruption</b>					
>95	0	5000	C	C	Pass
>95	45	5000	C	C	Pass
>95	90	5000	C	C	Pass
>95	135	5000	C	C	Pass
>95	180	5000	C	C	Pass
>95	225	5000	C	C	Pass
>95	270	5000	C	C	Pass
>95	315	5000	C	C	Pass

### Remark:

- ( ) Criteria A: Operation as intended during and after the measurement
- ( X ) Criteria B: Operation as Intended after the test
- ( X ) Criteria C: Malfunction during and after, need manual reset
- ( ) Criteria D: The sample is damaged

## Appendix B: The Test Photograph of EUT

The Photograph of Conducted Emission Test



The Photograph of Radiated Emission Test



The Photograph of Radiation Susceptibility Test



The Photograph of Electrical Fast Transient/Burst Test



The Photograph of Electrostatic Discharge Test



The Photograph of Surge Test



The Photograph of Conducted Susceptibility Test



The Photograph of Power Frequency Magnetic Field Test

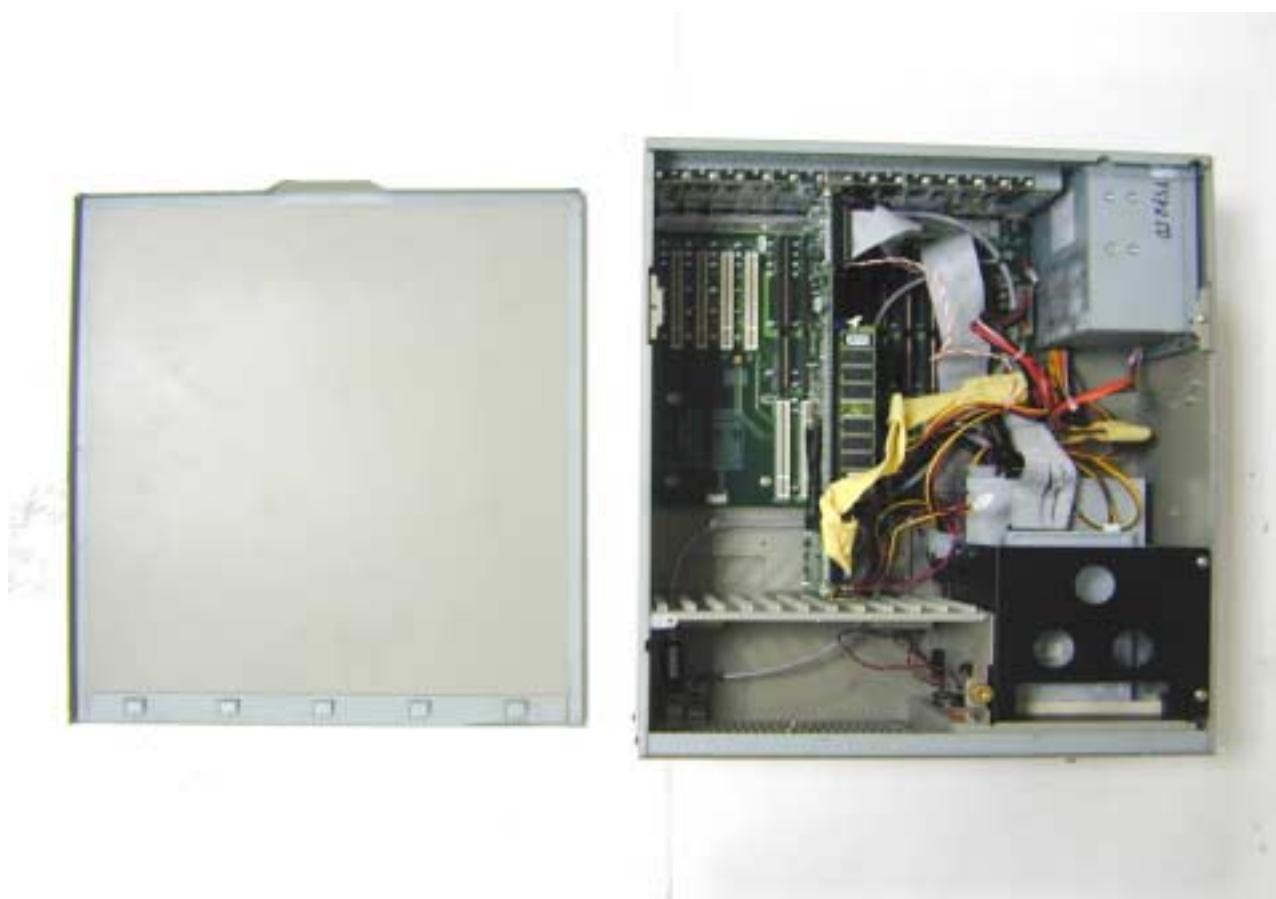


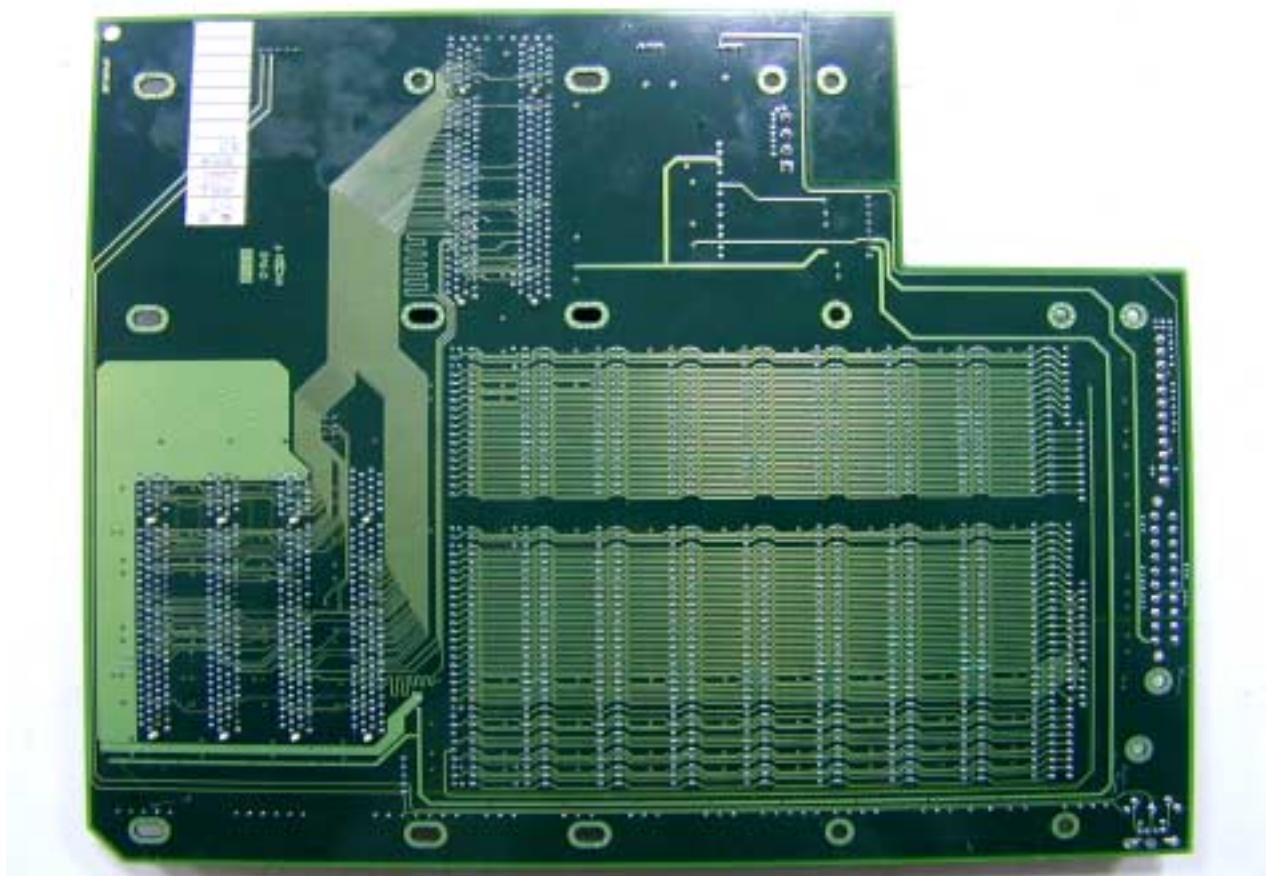
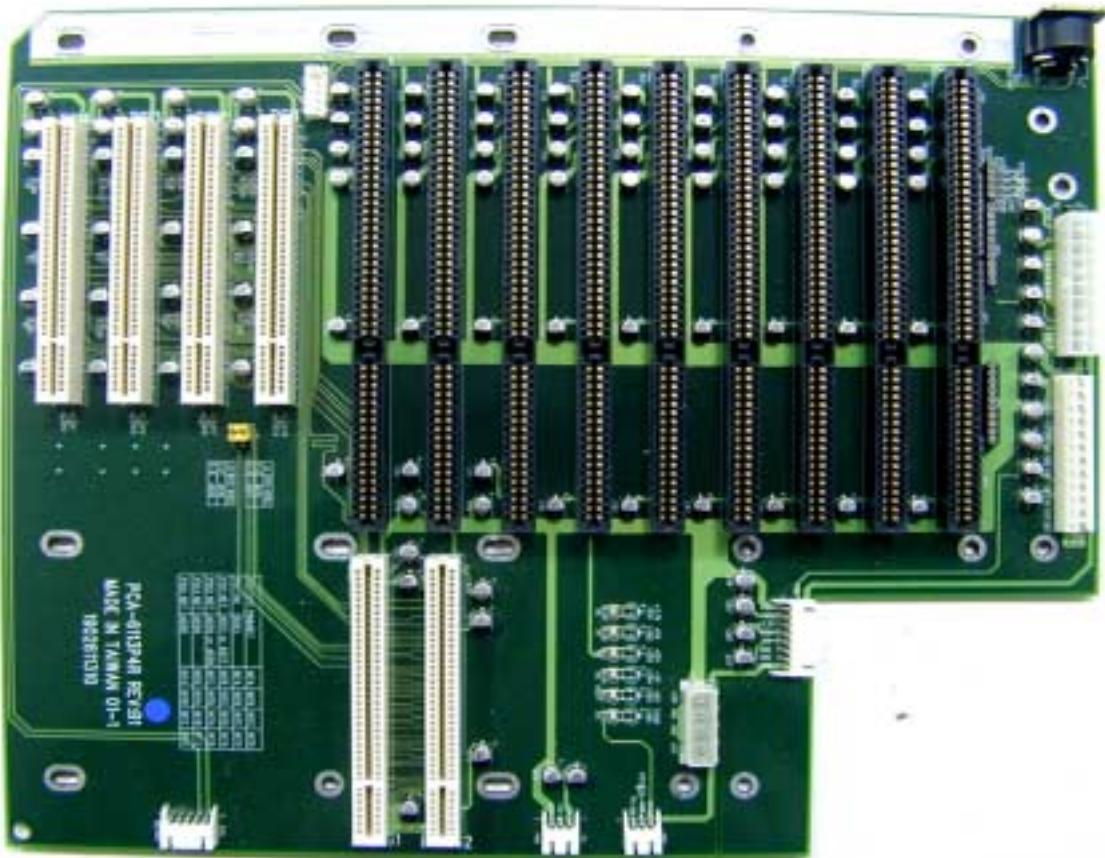
The Photograph of Voltage Dips and Interruption Test



## Appendix C: The Detail Photograph of EUT





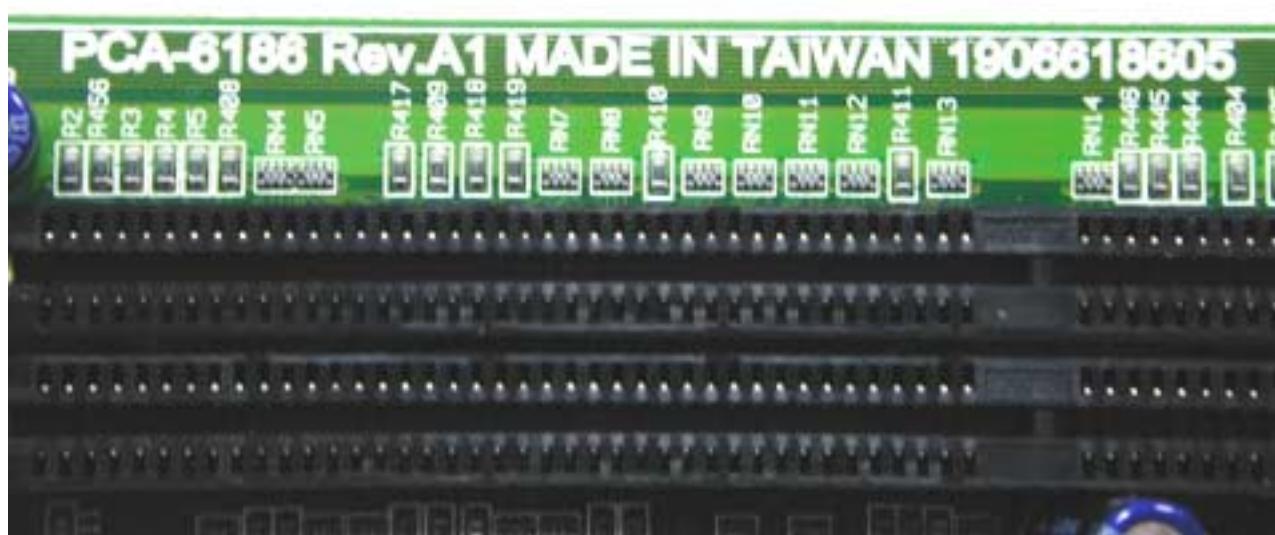






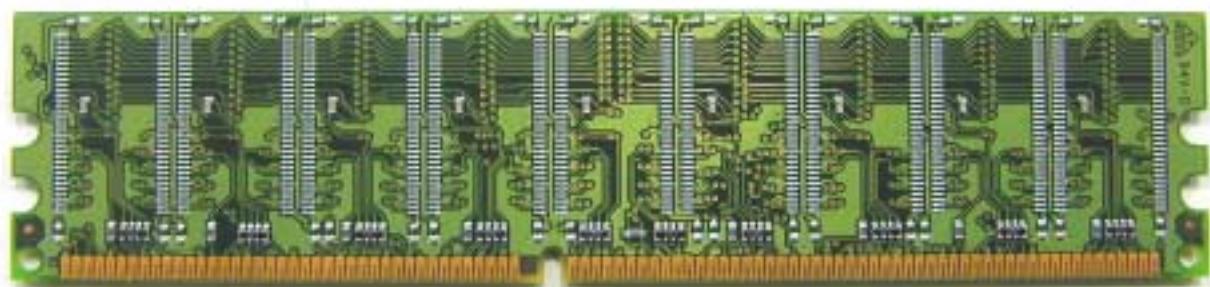




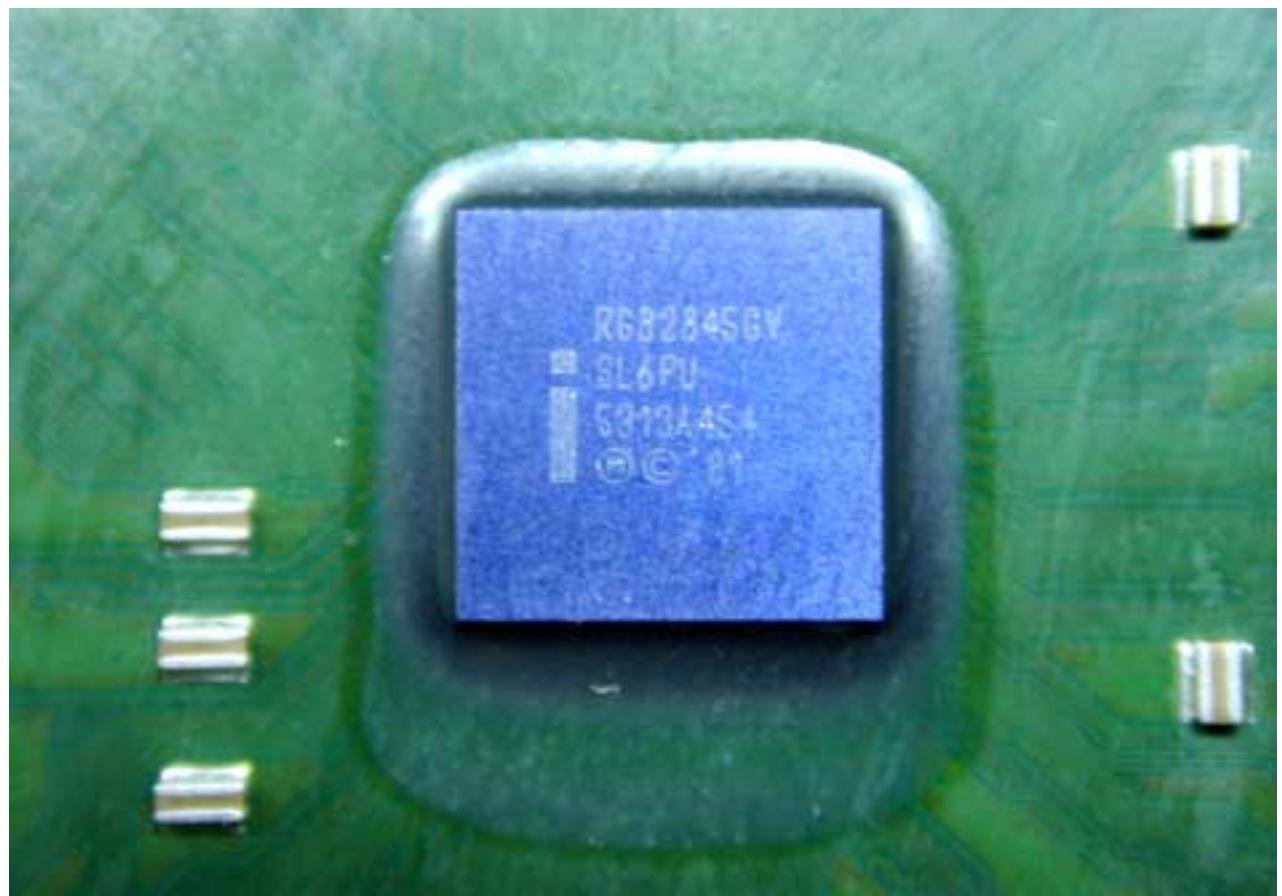


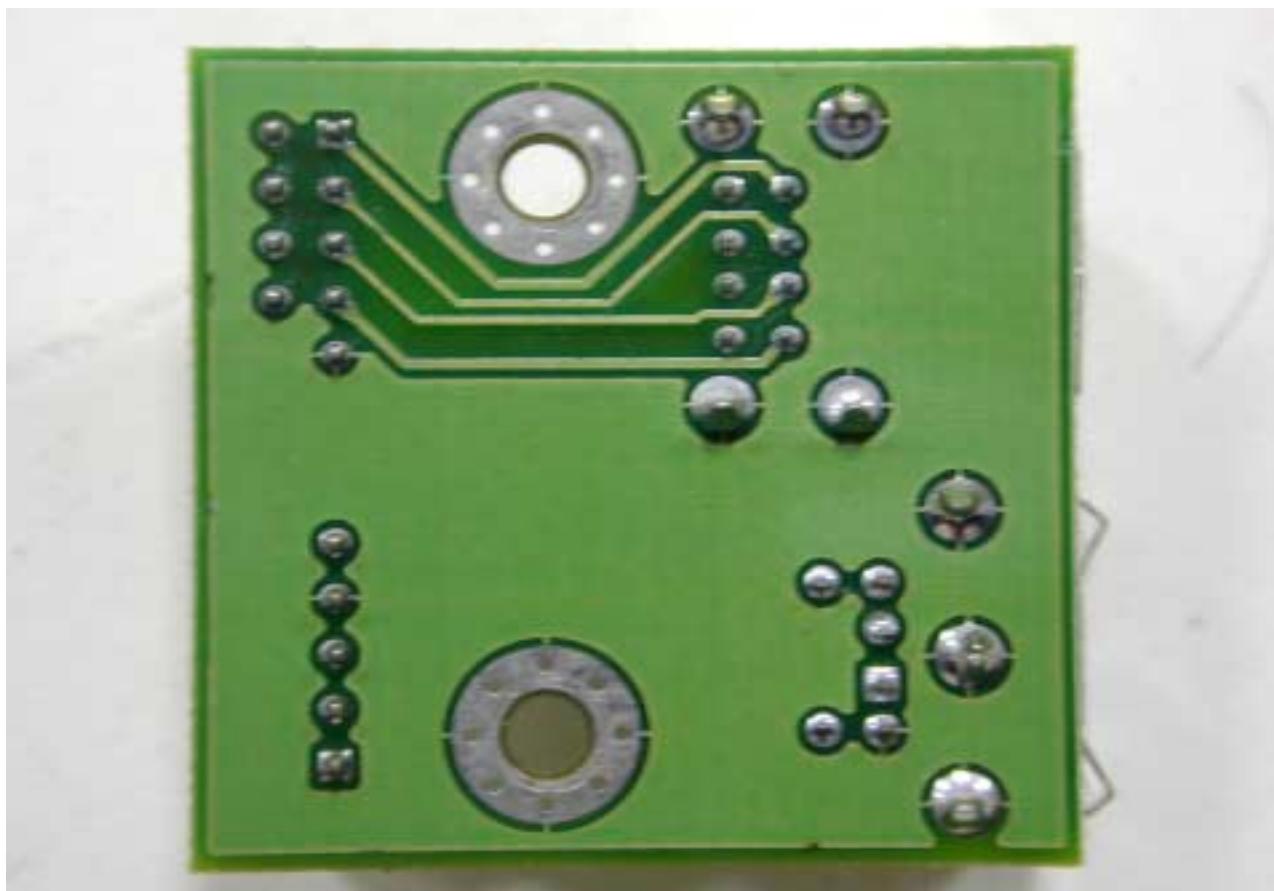
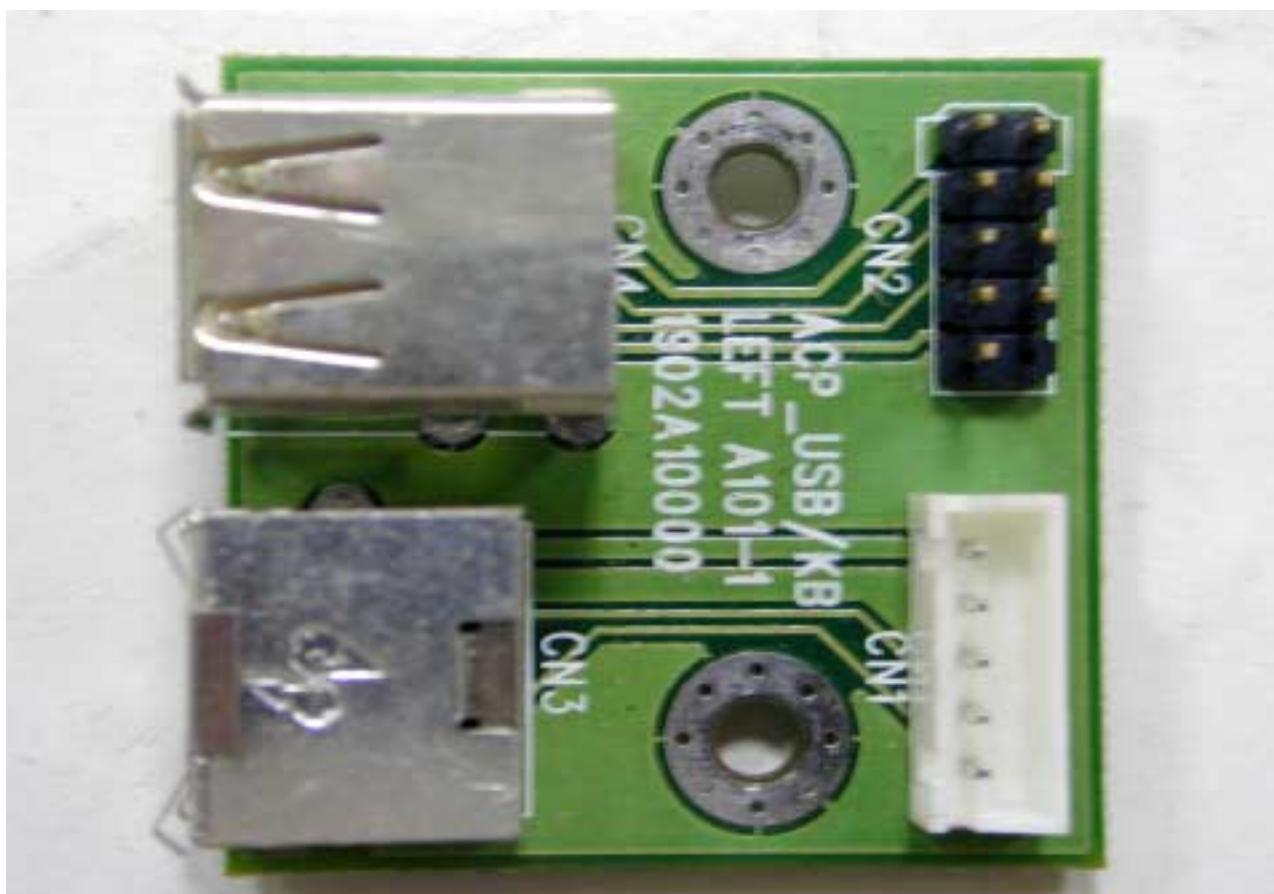












Power Adapter#1: Brand: FSP; Model: FSP250-60ATV (PF)





**FSP GROUP INC.**



**CB CE**



**MODEL NO: FSP250-60ATV (PF)**

AC INPUT: 115/230V~, 10/5A, 60/50Hz

DC OUTPUT: 250W

+3.3V—20.0A(ORG), +5V—27.0A(RED), +12V—13.0A(YEL)

+5Vsb—2.0A(PURP), -5V—0.3A(WHITE), -12V—0.8A(BLUE)

P.G. SIGNAL (GRAY), GROUND (BLACK)

FUSE RATING: 6.3A, 250V~ (+3.3V & +5V = 175W Max)

**CAUTION! HAZARDOUS AREA**

SAFETY INSTRUCTIONS:

DO NOT REMOVE THE COVER

NO SERVICEABLE COMPONENTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**WARNUNG! GEFAHRENZONE**

SICHERHEITSHINWEISE:

VOR DEM ÖFFNEN DES GERÄTES NETZSTECKER ZIEHEN.

KEINE SERVICERELEVANTEN BAUTEILE ENTHALTEN.

SERVICEARBEITEN SOLLTEN NUR VON AUTORIZIERTEM

FACHPERSONAL DURCHGEFÜHRT WERDEN.



Tested to Comply  
With FCC Standards  
FOR HOME OR OFFICE USE



6LL0145102 CC

Power Adapter#2: Brand: FSP; Model: FSP300-60PLN





FSP GROUP INC.



E190414



R50011617



P02100609

CB CE

**MODEL NO: FSP300-60PLN**

AC INPUT:100-240V~,10A,50-60Hz

MAX. OUTPUT POWER: 300W (+3.3V & +5V=180W Max)

DC OUTPUT: +3.3V=28.0A(ORG),+5V=30.0A(RED),+12V=15.0A(YEL)

+5Vsb=2.0A(PURP),-5V=0.3A(WHITE),-12V=0.8A(BLUE)

P.G. SIGNAL(GRAY),GROUND(BLACK)

**CAUTION! HAZARDOUS AREA**

SAFETY INSTRUCTIONS:

DO NOT REMOVE THE COVER

NO SERVICEABLE COMPONENTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**WARNING! GEFAHRENZONE**

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Tested to Comply  
With FCC Standards



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