



IEI Technology Corp.



MODEL:  
**RPC-6022GW**

**12.1" TFT LCD 5U 14-slot Rackmount LCD Workstation**

# User Manual

Rev.1.0 December 2006



# Revision

<b>MODEL</b>	<b>RPC-6022GW Rackmount LCD Workstation</b>	
Revision Number	Description	Date of Issue
1.0	Initial release	December 2006

# Copyright

---

## **COPYRIGHT NOTICE**

The information in this document is subject to change without prior notice in order to improve reliability, design and function and does not represent a commitment on the part of the manufacturer.

In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

## **TRADEMARKS**

IBM PC is a registered trademark of International Business Machines Corporation. INTEL is a registered trademark of INTEL Corporation. Other product names mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective owners.

# Packing List

**NOTE:**

If any of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the IEI reseller or vendor you purchased the RPC-6022GW Rackmount LCD Workstation from or contact an IEI sales representative directly. To contact an IEI sales representative, please send an email to [sales@iei.com.tw](mailto:sales@iei.com.tw).

The items listed below should all be included in the RPC-6022GW Rackmount LCD Workstation package.

- 1 x RPC-6022GW Rackmount LCD Workstation
- 1 x Backplane to SBC connector cable
- 2 x Door keys
- 2 x Handles
- 2 x Handle brackets
- 1 x Mini-DIN 6 PS/2 connector cable
- 1 x Power cable (EU)
- 1 x Screw kit
- 7 x Short card clamps
- 1 x 4-pin USB cable
- 1 x VGA cable

**For Touch Panel (T-R) Models only:**

- 1 x RS-232 cable
- 1 x TouchKit Driver CD
- 1 x Touch Pen

Images of the above items are shown in **Section 4.2.3**.

# Table of Contents

<b>1</b>	<b>INTRODUCTION.....</b>	<b>11</b>
1.1	RPC-6022GW OVERVIEW.....	12
1.2	RPC-6022GW FEATURES.....	12
1.3	MODEL VARIATIONS.....	12
1.4	CERTIFICATION.....	13
<b>2</b>	<b>MECHANICAL OVERVIEW.....</b>	<b>15</b>
2.1	EXTERNAL OVERVIEW.....	16
2.1.1	<i>Front Panel.....</i>	<i>16</i>
2.1.2	<i>14-Slot Rear Panel.....</i>	<i>18</i>
2.1.3	<i>Motherboard Rear Panel.....</i>	<i>19</i>
2.1.4	<i>Top Panel.....</i>	<i>20</i>
2.1.5	<i>Left Side Panel.....</i>	<i>21</i>
2.2	INTERNAL OVERVIEW.....	22
2.3	PHYSICAL DIMENSIONS.....	23
2.3.1	<i>General Physical Dimensions.....</i>	<i>23</i>
2.3.2	<i>RPC-6022GW Physical Dimensions.....</i>	<i>24</i>
<b>3</b>	<b>DETAILED SPECIFICATIONS.....</b>	<b>25</b>
3.1	RPC-6022GW SPECIFICATIONS.....	26
3.2	LCD SPECIFICATIONS.....	27
3.3	ACE-832AP PSU SPECIFICATIONS.....	28
3.4	RECOMMENDED IEI BACKPLANES, MOTHERBOARDS AND PSUs.....	29
<b>4</b>	<b>INSTALLATION.....</b>	<b>31</b>
4.1	INSTALLATION CONSIDERATIONS.....	32
4.1.1	<i>Installation Precautions.....</i>	<i>32</i>
4.1.2	<i>Installation Prerequisites.....</i>	<i>32</i>
4.2	UNPACKING.....	33
4.2.1	<i>Packaging.....</i>	<i>33</i>
4.2.2	<i>Unpacking Procedure.....</i>	<i>33</i>

4.2.3 Packing List .....	34
4.3 PRE-INSTALLATION PREPARATION .....	37
4.3.1 System Planning.....	37
4.3.2 Tools .....	38
4.4 INSTALLATION PROCEDURES .....	38
4.4.1 Preinstalled Components .....	38
4.4.2 User Installed Components.....	38
4.4.3 Installation Steps.....	39
4.5 INSTALLING COMPONENTS INTO THE RPC-6022GW .....	39
4.5.1 Remove the Top Cover .....	40
4.5.2 Remove the CPU Card Clamp .....	41
4.5.3 Remove the Drive Bracket .....	43
4.5.4 Remove the Drive Slot Blank Plate.....	44
4.5.5 Install Drives.....	45
4.5.5.1 3.5” Disk Drive in a 5.25” Slot.....	46
4.5.6 Reinstall the Drive Brackets .....	47
4.5.7 Install the Backplane.....	48
4.5.8 Install the CPU Card .....	50
4.5.9 Install the PCI/ISA Expansion Card .....	53
4.5.11 Connect the Cables.....	54
4.5.12 Close the Top Cover .....	55
4.6 MOUNTING THE RPC-6022GW RACKMOUNT WORKSTATION .....	56
<b>5 MAINTENANCE .....</b>	<b>63</b>
5.1 MAINTENANCE OVERVIEW.....	64
5.2 CPU CARD REPLACEMENT .....	65
5.3 PCI/ISA EXPANSION CARD REPLACEMENT .....	66
5.4 BACKPLANE REPLACEMENT.....	67
5.5 PSU REPLACEMENT.....	68
5.6 SYSTEM FAN REPLACEMENT .....	70
5.7 COOLING FAN REPLACEMENT .....	71
5.8 DISK DRIVE REPLACEMENT .....	74
5.8.1 3.5” or 5.25” Disk Drive.....	74
5.8.2 3.5” Disk Drive on a 5.25” Drive Adapter Bracket .....	75
<b>6 ON SCREEN DISPLAY (OSD) CONTROLS.....</b>	<b>77</b>

## RPC-6022GW Rackmount LCD Workstation

6.1 USER MODE OSD STRUCTURE .....	78
6.1.1 OSD Buttons.....	78
6.1.2 OSD Menu Structure .....	79
6.2 USING THE OSD.....	80
6.2.1 Main Display Features.....	80
6.2.2 Color .....	82
6.2.3 Language.....	83
6.2.4 OSD Configurations.....	84
6.2.5 Signal .....	85
6.2.6 Backlight .....	86
<b>7 SOFTWARE DRIVER .....</b>	<b>87</b>
7.1 TOUCH SCREEN DRIVER.....	88
7.2 DRIVER INSTALLATION.....	89
7.3 TOUCH PANEL DRIVER CONFIGURATION .....	97
<b>A CERTIFICATION .....</b>	<b>99</b>
A.1 ROHS COMPLIANT.....	100
<b>B RECOMMENDED IEI BACKPLANES AND PSUS .....</b>	<b>101</b>
B.1 RPC-6022GW BACKPLANE OPTIONS .....	102
B.2 POWER SUPPLY OPTIONS .....	103
<b>INDEX.....</b>	<b>105</b>

# List of Figures

---

Figure 2-1: RPC-6022GW Front Panel (External) .....	16
Figure 2-2: RPC-6022GW Front Panel (Internal) .....	17
Figure 2-3: RPC-6022GW 14-Slot Rear Panel .....	18
Figure 2-4: RPC-6022GW Motherboard Rear Panel .....	19
Figure 2-5: RPC-6022GW Top Panel.....	20
Figure 2-6: RPC-6022GW Left Side Panel .....	21
Figure 2-7: RPC-6022GW Internal Overview.....	22
Figure 2-8: RPC-6022GW Physical Dimensions (millimeters) .....	24
Figure 4-1: Top Cover Retention Screws.....	40
Figure 4-2: Remove the Top Cover from the Chassis .....	41
Figure 4-3: CPU Card Clamp Retention Screws.....	42
Figure 4-4: Detach the System Fan Power Cable .....	42
Figure 4-5: Unhook the CPU Card Clamp .....	43
Figure 4-6: Drive Bracket Retention Screws .....	44
Figure 4-7: Drive Slot Blank Plate Retention Screws .....	44
Figure 4-8: 5.25" Disk Drive Retention Screws .....	45
Figure 4-9: 3.5" to 5.25" Drive Adapter Bracket Retention Screws .....	47
Figure 4-10: Install Copper Pillars and White Spacers.....	48
Figure 4-11: Backplane Retention Screws .....	49
Figure 4-12: Slot Cover Retention Screw and Card Bracket Screws.....	51
Figure 4-13: Install the CPU Card .....	52
Figure 4-14: Installing a Short Card .....	54
Figure 4-15: Rack Handle Bracket Assembly and Installation .....	57
Figure 4-16: Remove Rack Slide.....	58
Figure 4-17: Workstation Slide Installation (Other Side Similar) .....	59
Figure 4-18: Rack Slide Bracket Assembly .....	60
Figure 4-19: Rack Slide Bracket Installation .....	61

## RPC-6022GW Rackmount LCD Workstation

Figure 4-20: Install Workstation into Rack .....	62
Figure 5-1: PSU External Retention Screws.....	68
Figure 5-2: PSU Internal Retention Screws .....	69
Figure 5-3: System Fan Retention Screws .....	70
Figure 5-4: Disconnect the Cooling Fan .....	71
Figure 5-5: Cooling Fan Bracket Retention Screw (Left) .....	72
Figure 5-6: Cooling Fan Bracket Retention Screw (Right).....	72
Figure 5-7: Push the Fan Bracket Toward the Rear Panel.....	73
Figure 5-8: Cooling Fan Screws .....	73

# List of Tables

---

Table 1-1: RPC-6022GW Model Options .....	13
Table 2-1: General Physical Dimensions .....	23
Table 3-1: RPC-6022GW Specifications .....	26
Table 3-2: LCD Specifications.....	27
Table 3-3: ACE-832AP PSU Specifications.....	28
Table 4-1: Packing List .....	37
Table 6-1: OSD Control Buttons .....	78
Table 6-2: OSD Menus .....	80
Table 6-3: Main Display Features .....	80
Table 6-4: Color Options .....	82
Table 6-5: Language Menu .....	83
Table 6-6: OSD Configurations Menu.....	84
Table 6-7: Signal Menu .....	85
Table 6-8: Backlight Menu.....	86
Table 7-1: Driver CD Pop Up Screen .....	89
Table 7-2: Install Shield Wizard Preparation .....	90
Table 7-3: Welcome Screen.....	90
Table 7-4: Install PS/2 Interface Driver.....	91
Table 7-5: Install PS/2 Interface Driver.....	92
Table 7-6: Touch Monitor/USB Touch Controller Confirmation .....	93
Table 7-7: Controller Installation Directory .....	93
Table 7-8: Controller Installation Directory .....	94
Table 7-9: Program Icon Directory .....	95
Table 7-10: Installing.....	96
Table 7-11: Installation Complete .....	97

Chapter

1

# Introduction

---

## 1.1 RPC-6022GW Overview

The RPC-6022GW is a PC/AT compatible computer designed for industrial applications. It has a rugged steel chassis specially designed to work under harsh environmental conditions while also being highly reliable. The RPC-6022GW features 14-slot passive backplanes and a full line of dependable AC/DC power supplies. Models supporting ATX motherboards feature seven expansion slots. The RPC-6022GW can withstand shock, vibration, dust and a wide range of temperatures in industrial environments. A lockable door protects drive bays and switches from unauthorized misuse and dust. The RPC-6022GW also has two removable cooling-fans installed in the front panel for optimum system cooling.

## 1.2 RPC-6022GW Features

Some of the standard features of the RPC-6022GW include:

- 12.1" TFT LCD
- Analog VGA input
- Heavy duty steel front panel
- 1 x Front-accessible 3.5" drive bay
- 1 x Front-accessible 5.25" drive bay
- 2 x Internal 3.5" drive bays
- 2 x USB ports on the front panel
- RoHS compliant

## 1.3 Model Variations

There are a variety of additional options available for the RPC-6022GW as identified by specific product codes. The product code options for the RPC-6022GW are:

- T-R – specifies a touch panel model
- ATX – specifies that the model supports an ATX / microATX motherboard
- ACE-xxxxxx – specifies the power supply model included

## RPC-6022GW Rackmount LCD Workstation

Table 1-1 shows the available options.

Model	Touch Screen	SBC Form Factor	Expansion Slots
<b>ACE-832AP-RS (ATX) Power Supply</b>			
RPC-6022GW/ACE-832AP	No	Full-size CPU card	14
RPC-6022GW/ACE-832AP/T-R	Yes	Full-size CPU card	14
RPC-6022GWATX/ACE-832AP	No	ATX / microATX	7
RPC-6022GWATX/ACE-832AP/T-R	Yes	ATX / microATX	7
<b>ACE-R4140AP Redundant Power Supply</b>			
RPC-6022GWR/ACE-R4140AP	No	Full-size CPU card	14
RPC-6022GWR/ACE-R4140AP/T-R	Yes	Full-size CPU card	14
RPC-6022GWATXR/ACE-R4140AP	No	ATX / microATX	7
RPC-602GWATXR/ACE-R4140AP/T-R	Yes	ATX / microATX	7

Table 1-1: RPC-6022GW Model Options

## 1.4 Certification

All RPC-6022GW Rackmount LCD Workstations comply with the following international standards:

- RoHS

For a more detailed description of this standard, please refer to **Appendix A**.



**THIS PAGE IS INTENTIONALLY LEFT BLANK**

Chapter

2

# Mechanical Overview

---

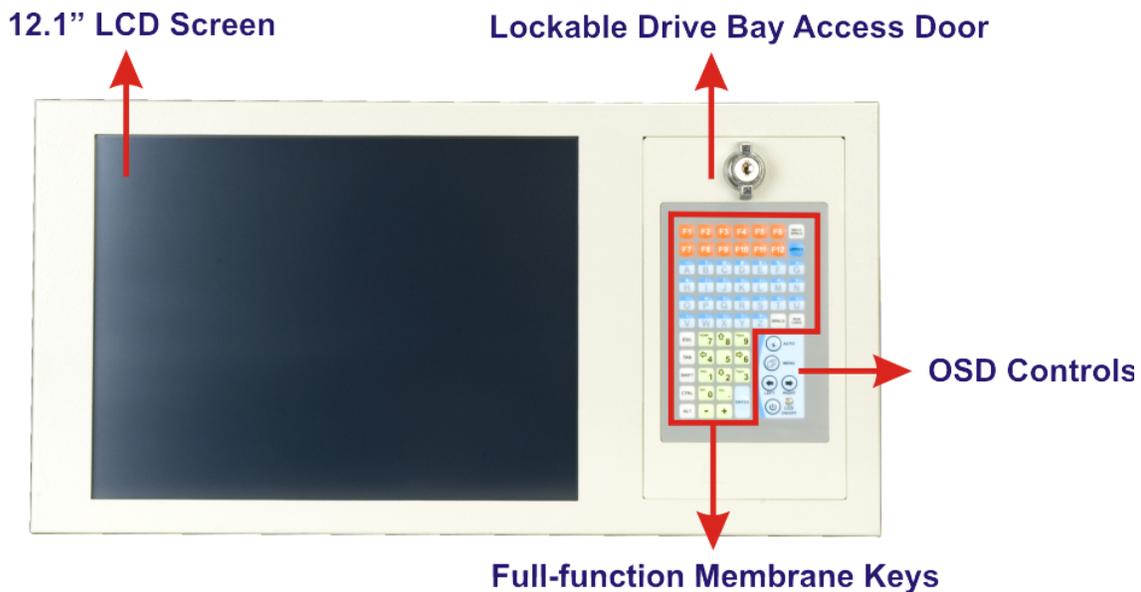
## 2.1 External Overview

The following sections describe the physical layout of the RPC-6022GW Rackmount LCD Workstation.

### 2.1.1 Front Panel

The RPC-6022GW Rackmount LCD Workstation has the following front panel items:

- Heavy duty steel front panel
- 12.1" Flat panel TFT LCD screen
- Full-function membrane keys
- OSD controller
- Lockable drive bay access door conceals
  - One 5.25" drive bay
  - One 3.5" drive bay
  - Power switch
  - 2 x USB ports
  - Power, HDD, and reset LEDs



**Figure 2-1: RPC-6022GW Front Panel (External)**

# RPC-6022GW Rackmount LCD Workstation

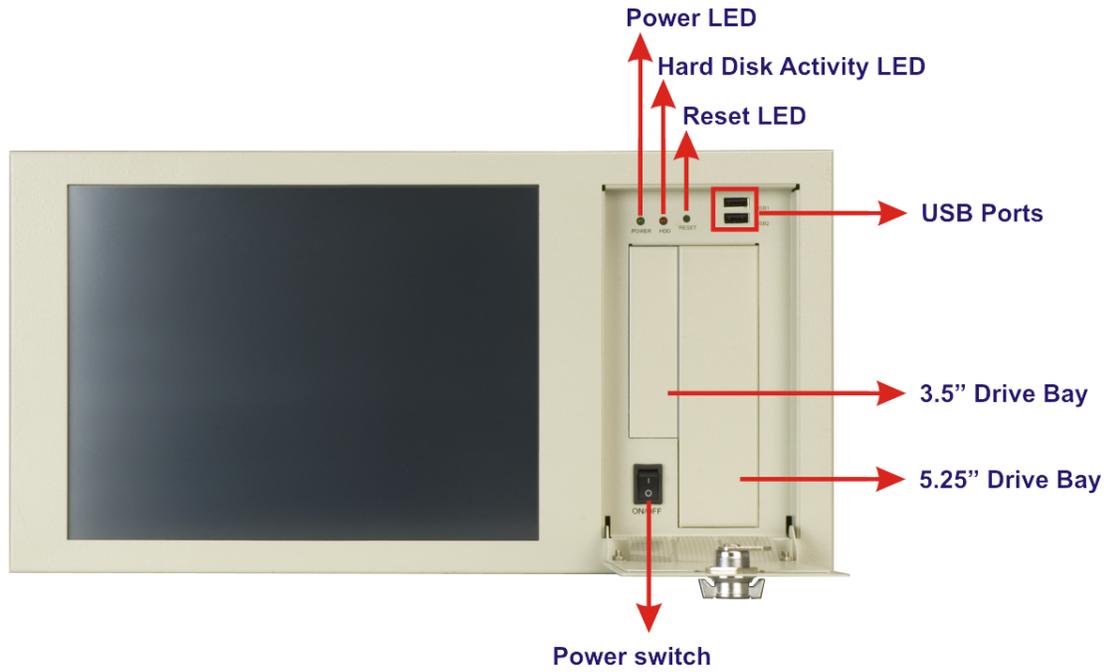
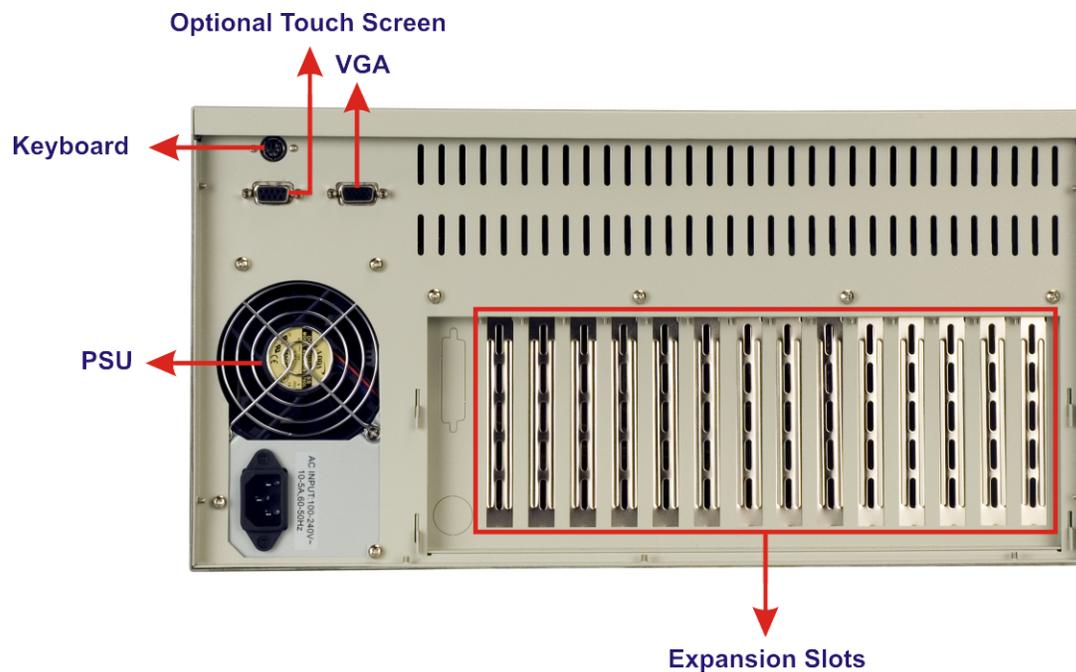


Figure 2-2: RPC-6022GW Front Panel (Internal)

### 2.1.2 14-Slot Rear Panel

The RPC-6022GW Rackmount LCD Workstation has the following rear panel items:

- Internal PSU
- 14 expansion slots
- VGA connector
- Keyboard connector
- Optional RS-232 touch screen connector



**Figure 2-3: RPC-6022GW 14-Slot Rear Panel**

## RPC-6022GW Rackmount LCD Workstation

### 2.1.3 Motherboard Rear Panel

The RPC-6022GW Rackmount LCD Workstation also has an optional motherboard rear panel with the following items:

- Internal PSU
- Seven expansion slots
- VGA connector
- Keyboard connector
- Optional Touch Screen connector
- ATX Motherboard connector area

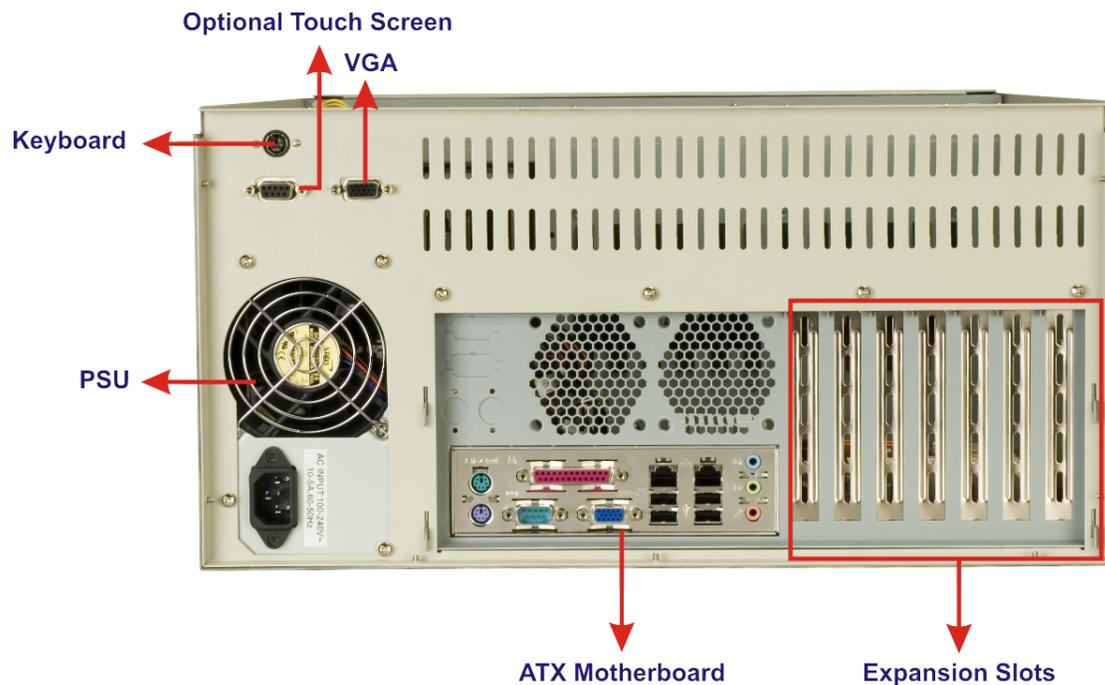
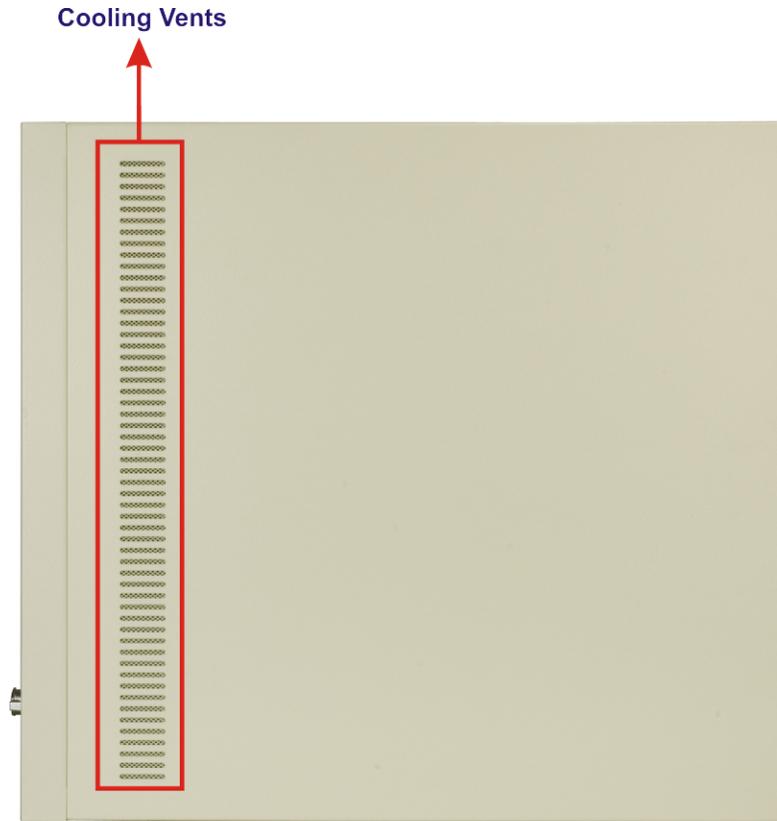


Figure 2-4: RPC-6022GW Motherboard Rear Panel

### 2.1.4 Top Panel

The RPC-6022GW Rackmount LCD Workstation has the following top panel items:

- Cooling vents



**Figure 2-5: RPC-6022GW Top Panel**

## RPC-6022GW Rackmount LCD Workstation

### 2.1.5 Left Side Panel

The RPC-6022GW Rackmount LCD Workstation has the following left side panel items:

- Cooling vents
- Rack mount kit screws

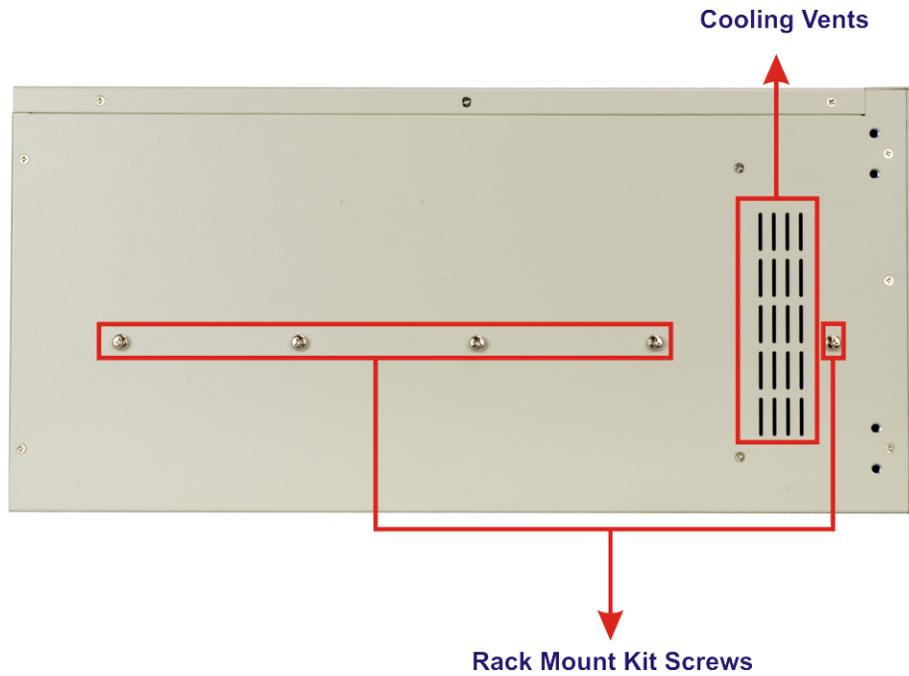
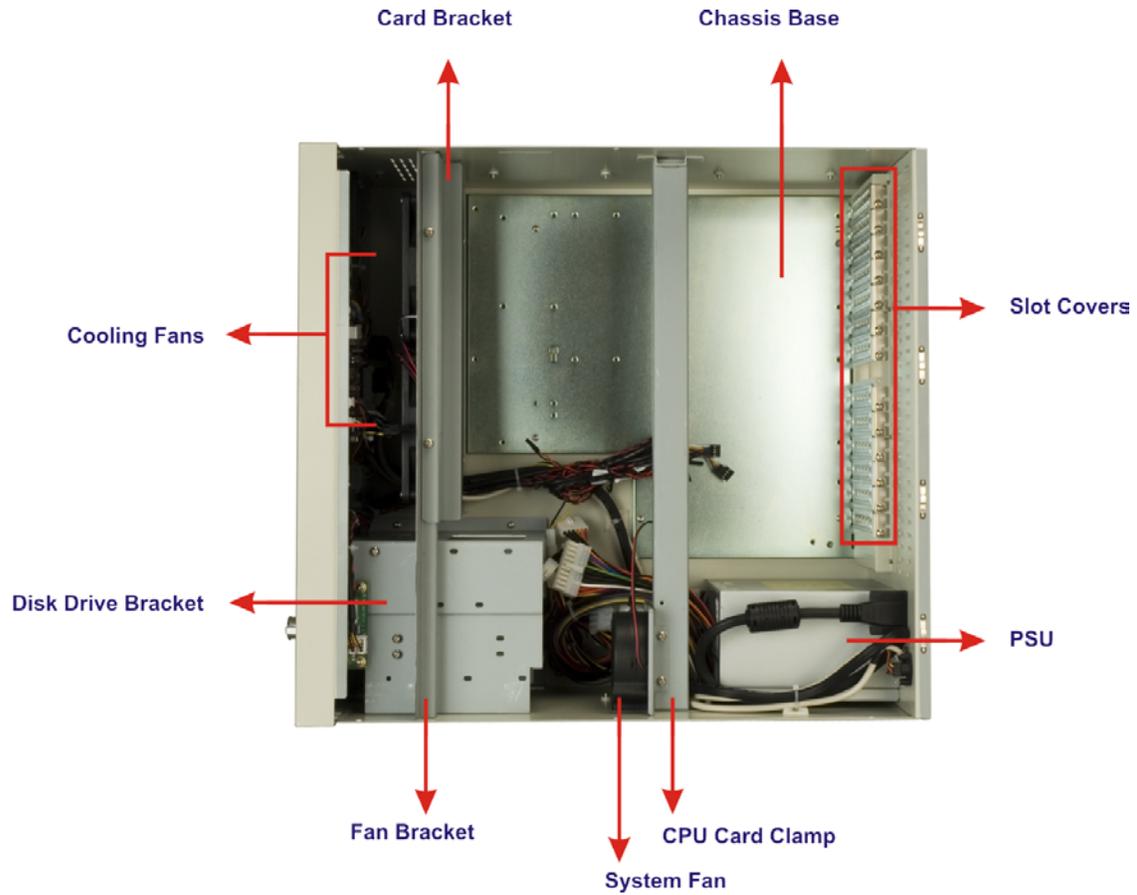


Figure 2-6: RPC-6022GW Left Side Panel

## 2.2 Internal overview

Figure 2-7 shows the internal components of the RPC-6022GW LCD workstation.



**Figure 2-7: RPC-6022GW Internal Overview**

## 2.3 Physical Dimensions

The following sections describe the physical dimensions of the RPC-6022GW.

### 2.3.1 General Physical Dimensions

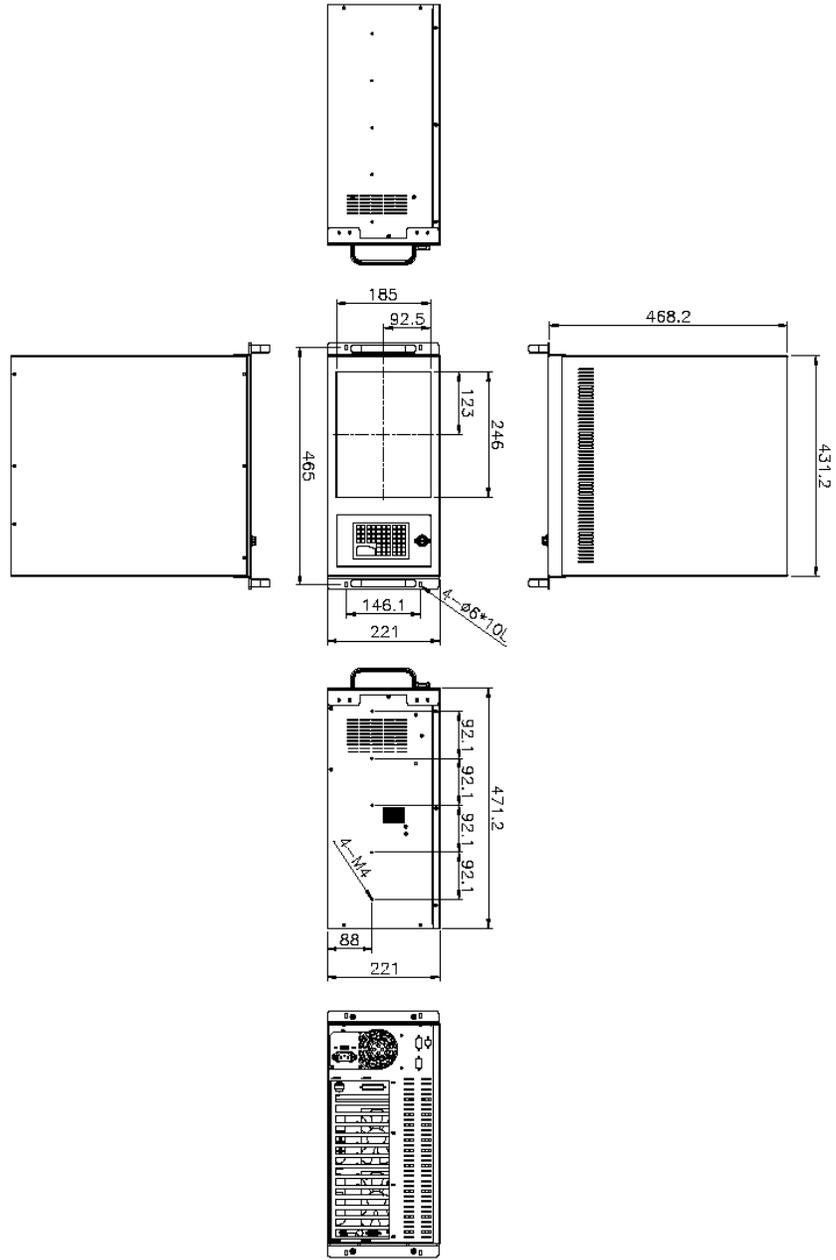
General physical dimensions for the RPC-6022GW are shown in Table 2-1.

Width (mm)	Height (mm)	Depth (mm)
431	220	470

**Table 2-1: General Physical Dimensions**

**2.3.2 RPC-6022GW Physical Dimensions**

The physical dimensions of the RPC-6022GW are shown in **Figure 2-8**.



**Figure 2-8: RPC-6022GW Physical Dimensions (millimeters)**

Chapter

3

# Detailed Specifications

---

### 3.1 RPC-6022GW Specifications

Table 3-1 shows the RPC-6022GW specifications.

<b>LCD Type</b>	<b>12.1" TFT</b>
<b>Input Interface</b>	<b>VGA</b>
<b>Max. Resolution</b>	<b>800 x 600</b>
<b>Backlight MTBF</b>	<b>50,000 Hrs</b>
<b>Pixel Pitch (mm)</b>	<b>0.3075</b>
<b>Chassis</b>	<b>Heavy-duty steel</b>
<b>Contrast</b>	<b>500:1</b>
<b>LCD Color</b>	<b>262K</b>
<b>Brightness (cd/m2)</b>	<b>400</b>
<b>View Angle (H / V)</b>	<b>140 / 110</b>
<b>OSD function</b>	<b>Yes</b>
<b>Key panel</b>	<b>Full-function membrane keys</b>
<b>Mounting</b>	<b>19" Rack Mount</b>
<b>Rack Height</b>	<b>5U</b>
<b>Touch Panel (optional)</b>	<b>Resistive type with RS-232 interface.</b>
<b>Dimensions (WxHxD) (mm)</b>	<b>431 x 220 x 470</b>
<b>Weight (Gross/Net)</b>	<b>18Kg / 15Kg</b>
<b>Color</b>	<b>White</b>
<b>Vibration</b>	<b>5 ~ 17 Hz, 0.1" double amplitude displacement 17 ~ 640 Hz, 1.5G acceleration peak to peak</b>
<b>Shock</b>	<b>10G acceleration peak to peak (11ms)</b>
<b>Humidity</b>	<b>5 ~ 95%, relative</b>
<b>Operation Temperature</b>	<b>0 ~ 50°C</b>

Table 3-1: RPC-6022GW Specifications

### 3.2 LCD Specifications

Table 3-2 lists the RPC-6022GW LCD specifications.

<b>Size</b>	<b>12.1"</b>
<b>MFR/Model</b>	<b>AU Optronics/G121SN01</b>
<b>Resolution</b>	<b>SVGA (800 x 600)</b>
<b>Active Area (mm)</b>	<b>246.0(H) x 184.5(V)</b>
<b>Pixel Pitch (mm)</b>	<b>0.3075(H) x 0.3075(V)</b>
<b>Pixel Arrangement</b>	<b>R.G.B. Vertical Stripe</b>
<b>Display Mode</b>	<b>Normally White</b>
<b>Typical White Luminance (cd/m2)</b>	<b>400</b>
<b>Contrast Ratio</b>	<b>500:1</b>
<b>Optical Rise Time/Fall Time (msec)</b>	<b>10/25</b>
<b>Nominal Input Voltage (V)</b>	<b>3.3</b>
<b>Typical Power Consumption (W)</b>	<b>7.8</b>
<b>Number of Colors</b>	<b>262K</b>
<b>View Angle</b>	<b>140/110</b>
<b>Response Time (ms)</b> <b>(at Room Temperature)</b>	<b>25 (Typical)</b> <b>30 (Maximum)</b>
<b>Interface</b>	<b>Single-channel LVDS</b>
<b>Lamp Life (hrs)</b>	<b>50,000</b>

Table 3-2: LCD Specifications

### 3.3 ACE-832AP PSU Specifications

Table 3-3 lists the ACE-832AP power supply specifications.

<b>INPUT</b>	<b>Voltage</b>	<b>90 ~ 264Vrms Full Range</b>		
	<b>Frequency</b>	<b>50 ~ 60Hz</b>		
	<b>Input Current</b>	<b>6A(RMS)@115VAC 3A(RMS)@230VAC</b>		
	<b>Inrush Current</b>	<b>60A Max for 115VAC 90A Max for 230VAC</b>		
<b>OUTPUT</b>	<b>Voltage</b>	<b>Min. Load</b>	<b>Max. Load</b>	<b>Ripple/Noise</b>
	<b>+3.3V</b>	<b>0.3A</b>	<b>28A</b>	<b>50mV</b>
	<b>+5V</b>	<b>0.1A</b>	<b>30A</b>	<b>50mV</b>
	<b>+12V</b>	<b>0A</b>	<b>15A</b>	<b>120mV</b>
	<b>-5V</b>	<b>0A</b>	<b>0.3A</b>	<b>100mV</b>
	<b>-12V</b>	<b>0A</b>	<b>0.8A</b>	<b>120mV</b>
	<b>+5Vsb</b>	<b>0A</b>	<b>2A</b>	<b>100mV</b>
	<b>Total Current of +3.3V &amp; +5V &amp; +12V ≤280W Total Current of +3.3V &amp; +5V ≤180W</b>			
<b>GENERAL</b>	<b>Power</b>	<b>300W</b>		
	<b>PFC</b>	<b>Active</b>		
	<b>Hold-up Time</b>	<b>17ms minimum</b>		
	<b>Efficiency</b>	<b>65%</b>		
	<b>MTBF</b>	<b>50,000hrs</b>		
	<b>Temperature</b>	<b>0 ~ 50°C (Operating)</b>		
		<b>-20 ~ 80°C (Storage)</b>		
<b>Dimensions</b>	<b>140 x 150 x 86mm</b>			

Table 3-3: ACE-832AP PSU Specifications

### **3.4 Recommended IEI Backplanes, Motherboards and PSUs**

Refer to **Appendix B** for recommended IEI backplanes and power supply units for the RPC-6022GW rackmount workstation.



**THIS PAGE IS INTENTIONALLY LEFT BLANK**

Chapter

4

# Installation

---

## 4.1 Installation Considerations

### 4.1.1 Installation Precautions

When installing the RPC-6022GW, please follow the precautions listed below:

- **Read the user manual:** The user manual provides a complete description of the RPC-6022GW Rackmount LCD Workstation, installation instructions and configuration options.
- **Turn Off Power:** When installing the RPC-6022GW Rackmount LCD Workstation, make sure the power is off. Failing to turn off the power may cause severe injury to the user and/or damage the system.
- **Certified Engineers:** Only certified engineers and technicians should install and modify the RPC-6022GW Rackmount LCD Workstation. Non-certified engineers or technicians should not attempt to install the RPC-6022GW Rackmount LCD Workstation.
- **Mounting:** The RPC-6022GW Rackmount LCD Workstations are heavy devices. When rack mounting the RPC-6022GW Rackmount LCD Workstation, please ensure that at least two people are assisting with the procedure.
- **Anti-static Discharge:** Electronic components like CPU cards and backplanes must be installed into the RPC-6022GW Rackmount LCD Workstation. Follow proper grounding procedures before installing these components.

### 4.1.2 Installation Prerequisites

Prepare the following before installing the RPC-6022GW Rackmount LCD Workstation:

- **Completely installed CPU card:** The RPC-6022GW Rackmount LCD Workstation CPU card is separately purchased. Before installing the RPC-6022GW Rackmount LCD Workstation, a CPU card should be properly installed. The following components may also have to be installed (refer to the user manual that came with the CPU card):
  - CPU
  - Heatsink and cooling fan

## RPC-6022GW Rackmount LCD Workstation

- Memory modules (DIMMs)
- CompactFlash® disks
- **Backplane/Motherboard:** The backplane or motherboard installed in the RPC-6022GW Rackmount LCD Workstation is separately purchased.
- **Disk Drives:** Disk drives installed into the RPC-6022GW Rackmount LCD Workstation are separately purchased. Disk drive support is CPU card dependent. Before purchasing a CPU card or disk drives, please check the CPU card disk drive support.

## 4.2 Unpacking

### 4.2.1 Packaging

When shipped, the RPC-6022GW Rackmount LCD Workstation is wrapped in a plastic bag. Two polystyrene ends are placed on either side of the RPC-6022GW Rackmount LCD Workstation. The workstation is then placed into a first (internal) cardboard box. This box is then sealed and placed into a second (external) cardboard box. The second box is also sealed. A small box containing accessory items is placed within the internal (first) box.

### 4.2.2 Unpacking Procedure

To unpack the RPC-6022GW Rackmount LCD Workstation, follow the steps below:



#### NOTE:

The front side LCD screen has a protective plastic cover stuck to the screen. Remove the plastic cover only after the RPC-6022GW Rackmount LCD Workstation has been properly installed. This ensures the screen is protected during the installation process.

---

- Step 1:** Use box cutters, a knife or a sharp pair of scissors to open the top of the external (second) box.
- Step 2:** Open the external (second) box.
- Step 3:** Use box cutters, a knife or a sharp pair of scissors to open the top of the internal (first) box.
- Step 4:** Lift the workstation out of the boxes.
- Step 5:** Remove both polystyrene ends from each side.
- Step 6:** Pull the plastic cover off the workstation.
- Step 7:** Make sure all the components listed in the packing list are present.

#### 4.2.3 Packing List

---



#### **NOTE:**

If some of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the IEI reseller or vendor you purchased the RPC-6022GW from or contact an IEI sales representative directly. To contact an IEI sales representative, please send an email to [sales@iei.com.tw](mailto:sales@iei.com.tw).

---

When the RPC-6022GW Rackmount LCD Workstation is received, make sure all the components listed below are present.

## RPC-6022GW Rackmount LCD Workstation

Quantity	Description	Image
1	Backplane to SBC connector cable	
2	Door key	
2	Handle	
2	Handle bracket	
1	Mini-DIN 6 PS/2 connector cable	
1	Power cable	

Quantity	Description	Image
1	Screw kit	
7	Short card clamp	
1	VGA cable	
1	4-pin USB wire cable	
<b>For Touch Panel (T-R) Models only</b>		
1	RS-232 cable	
1	TouchKit Driver CD	

## RPC-6022GW Rackmount LCD Workstation

Quantity	Description	Image
1	Touch pen	

**Table 4-1: Packing List**

## 4.3 Pre-installation Preparation

### 4.3.1 System Planning

User supplied CPU cards and backplanes or motherboards need to be installed in the system before installing the RPC-6022GW Rackmount LCD Workstation.

The backplane determines the following system parameters:

- CPU card type
- Expandability

The CPU card determines the following system parameters:

- CPU
- Embedded graphics
- System memory
- HDD, FDD and optical drive connectivity and capacity
- Speed

It is therefore proper to correctly specify the system before the system is installed. This ensures that prudent selections can be made when the system is being developed.

### 4.3.2 Tools

Before installing the RPC-6022GW Rackmount LCD Workstation, make sure the following tools are on hand:

- **Phillips (crosshead) screwdriver:** All the retention screws on the system are Phillips screws.
- **Soft working mat:** When installing the RPC-6022GW Rackmount LCD Workstation, the screen should be placed face down on a soft working mat.

## 4.4 Installation Procedures

### 4.4.1 Preinstalled Components

The following components are preinstalled in the RPC-6022GW Rackmount LCD Workstation.

- Power supply unit (PSU)
- Cooling fan modules
- Drive brackets
- LCD screen

### 4.4.2 User Installed Components

The following user supplied components need to be installed into the RPC-6022GW Rackmount LCD Workstation:

- Disk drives
- Backplane and CPU card, or motherboard
- PCI or ISA expansion cards (optional)

### 4.4.3 Installation Steps

Complete the following steps to properly install the workstation:

- Step 1:** Open the top cover.
- Step 2:** Remove the CPU card clamp.
- Step 3:** Remove the disk drive brackets.
- Step 4:** Install the disk drives.
- Step 5:** Reinstall the disk drive bracket with the installed disk drives.
- Step 6:** Install the backplane.
- Step 7:** Install the CPU card.
- Step 8:** Install the PCI or ISA expansion cards (optional).
- Step 9:** Connect all required cables.
- Step 10:** Reinstall the CPU card clamp.
- Step 11:** Close the top cover.
- Step 12:** Mount the workstation.

## 4.5 Installing Components into the RPC-6022GW



### NOTE:

This section gives a generic description of the component installation process for the RPC-6022GW Rackmount LCD Workstation.

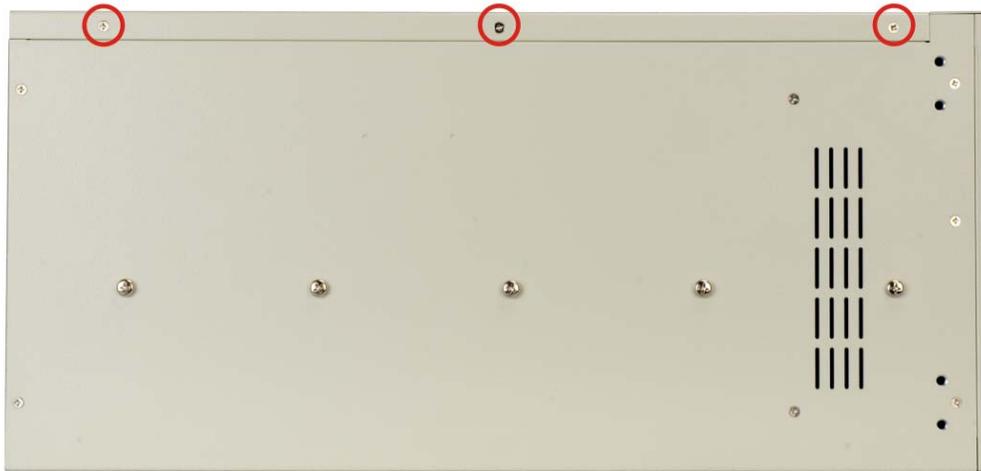
**WARNING:**

Failure to follow the installation procedures outlined in this section may cause severe damage to the RPC-6022GW Rackmount LCD Workstation. Please follow the installation instructions carefully.

**4.5.1 Remove the Top Cover**

The top cover is secured to the RPC-6022GW Rackmount LCD Workstation with six screws (three each on the left and right panels). To remove the top cover, please follow the steps below.

**Step 1:** Remove the six top cover retention screws (three each on the left and right panels). (See **Figure 4-1**)



**Figure 4-1: Top Cover Retention Screws**

## RPC-6022GW Rackmount LCD Workstation

**Step 2:** Slide the top cover toward the rear panel to remove (Figure 4-2).



**Figure 4-2: Remove the Top Cover from the Chassis**

### 4.5.2 Remove the CPU Card Clamp

The CPU card clamp is secured to the RPC-6022GW Rackmount LCD Workstation with two retention screws on the right side of the chassis. To remove the CPU card clamp, please follow the steps below.

**Step 1:** Remove two retention screws that secure the CPU card clamp to the chassis (Figure 4-3).



Figure 4-3: CPU Card Clamp Retention Screws

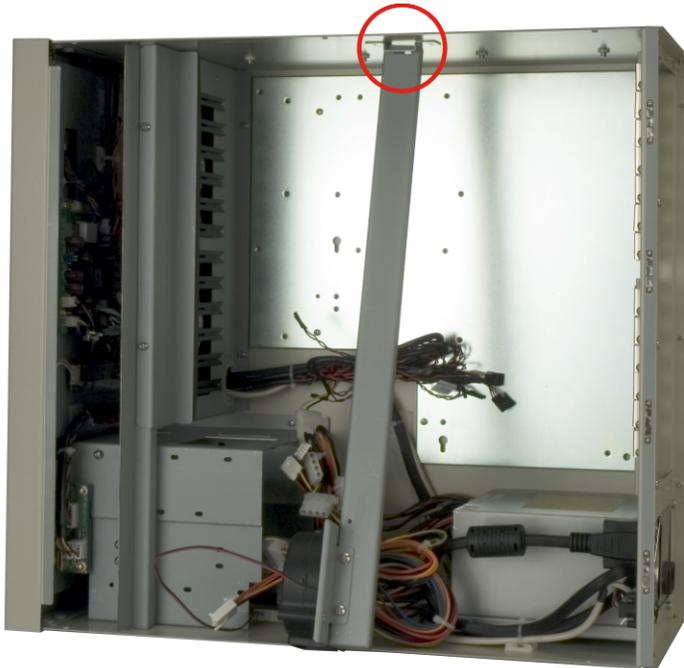
**Step 2:** Detach the power cable that connects the system fan to the power supply unit (Figure 4-4).



Figure 4-4: Detach the System Fan Power Cable

## RPC-6022GW Rackmount LCD Workstation

**Step 3:** Carefully lift the loose end of the CPU card clamp, and then unhook the other end (Figure 4-5).



**Figure 4-5: Unhook the CPU Card Clamp**

**Step 4:** Remove the CPU card clamp from the chassis.

### 4.5.3 Remove the Drive Bracket

The drive bracket is secured to the RPC-6022GW Rackmount LCD Workstation with two retention screws inside the chassis and four outside the chassis. To remove the drive bracket, please follow the steps below.

**Step 1:** Remove four retention screws that secure the drive bracket to the chassis (Figure 4-6)



**Internal Screws**



**External Screws**

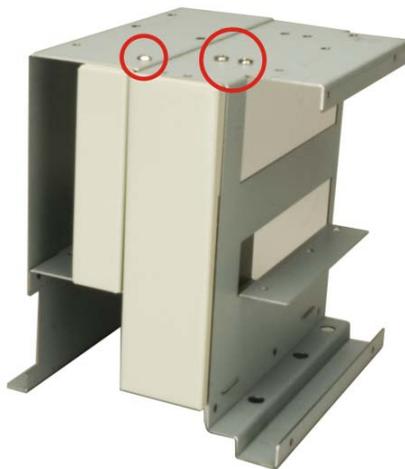
**Figure 4-6: Drive Bracket Retention Screws**

**Step 2:** Remove the drive bracket from the chassis.

#### **4.5.4 Remove the Drive Slot Blank Plate**

The drive bracket has one 5.25" and one 3.5" drive slot blank plates. To remove the drive slot blank plates, please follow the steps below.

**Step 1:** Remove the retention screws that secure the drive slot blank plate to the drive bracket (**Figure 4-7**).



**Figure 4-7: Drive Slot Blank Plate Retention Screws**

## RPC-6022GW Rackmount LCD Workstation

**Step 2:** Remove the drive slot blank plate from the drive bracket.

### 4.5.5 Install Drives

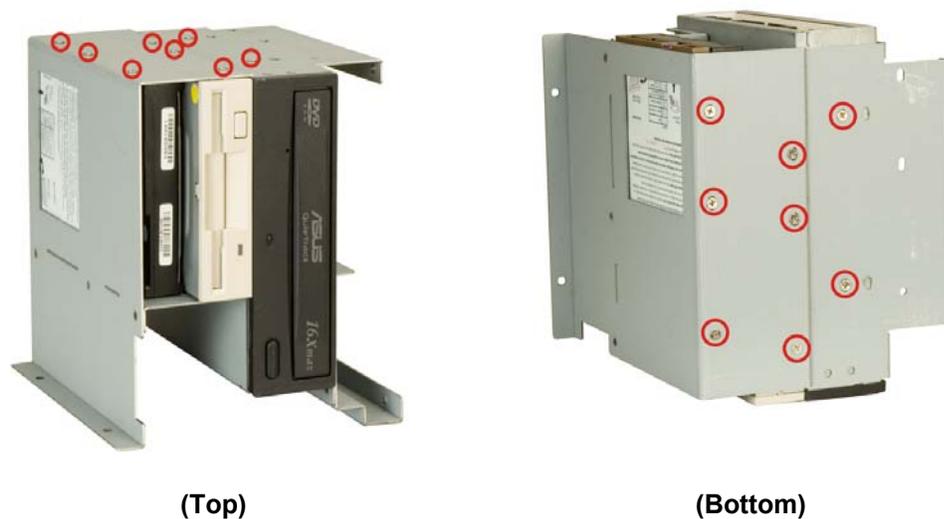
The drive bracket supports one 5.25" and three 3.5" disk drives. To install disk drives, follow the instructions below.

**Step 1:** Remove the drive bracket from the RPC-6022GW Rackmount LCD Workstation (see **Section 4.5.3**).

**Step 2:** Remove the appropriate drive slot blank plate (see **Section 4.5.4**).

**Step 3:** Slide the disk drive into the drive bracket. Make sure the signal connectors and the power connector of the drive are facing the rear of the bracket.

**Step 4:** Insert the appropriate number of retention screws into each side of the disk drive through the drive bracket (**Figure 4-8**).



**Figure 4-8: 5.25" Disk Drive Retention Screws**

#### **4.5.5.1 3.5" Disk Drive in a 5.25" Slot**

With the use of IEI's 3.5" to 5.25" drive adapter bracket, a standard 3.5" disk drive can be installed into a 5.25" drive bay slot. To install a 3.5" hard disk drive into a 5.25" slot of the drive bracket, follow the instructions below.

- Step 1:** Slide a 3.5" disk drive into a 3.5" to 5.25" drive adapter bracket. Make sure the IDE/SATA connector and the power connectors of the drive are facing the rear of the rack.
- Step 2:** Insert the appropriate number of retention screws into each side of the 3.5" disk drive through the 3.5" to 5.25" drive adapter bracket (**Figure 4-9**).
- Step 3:** Remove the drive bracket from the RPC-6022GW Rackmount LCD Workstation (see **Section 4.5.3**).
- Step 4:** Remove the appropriate drive slot blank plate (see **Section 4.5.4**).
- Step 5:** Slide the 3.5" disk drive into 3.5" to 5.25" drive adapter bracket. Make sure the IDE/SATA connector and the power connector of the drive are facing the rear of the bracket.
- Step 6:** Insert the appropriate number of retention screws into each side of the 3.5" to 5.25" drive adapter bracket through the drive bracket (**Figure 4-9**).
- Step 7:** Insert the 3.5" to 5.25" drive adapter bracket with the attached 3.5" disk drive into the drive bracket. Secure the drive adapter bracket with the required number of screws.
- Step 8:** Reinstall the drive bracket into the chassis (**Section 4.5.6**).

## RPC-6022GW Rackmount LCD Workstation



Figure 4-9: 3.5" to 5.25" Drive Adapter Bracket Retention Screws

### 4.5.6 Reinstall the Drive Brackets

After the drives have been installed, reinstall the drive brackets into the chassis.



#### NOTE:

It might be easier to connect the disk drive IDE/SATA connectors to the ribbon cables and the disk drive power connectors to the PSU before the drive brackets are reinstalled into the chassis.

- 
- Step 1:** Remount the drive brackets in the original position they were removed from.
  - Step 2:** Make sure all drive bracket retention screw holes are properly aligned with the corresponding retention screw holes in the workstation.
  - Step 3:** Reinsert all drive bracket retention screws.

### 4.5.7 Install the Backplane

To install a backplane, follow the instructions below.

**Step 1:** Install the correct amount of copper pillars (red circles in **Figure 4-10** into the base of the chassis. Depending on the backplane design, the white spacers (blue circles in **Figure 4-10**) may also have to be installed.



#### NOTE:

The backplane shown in **Figure 4-10** is an example for reference only. The location and number of copper pillars depends on the backplane being used.

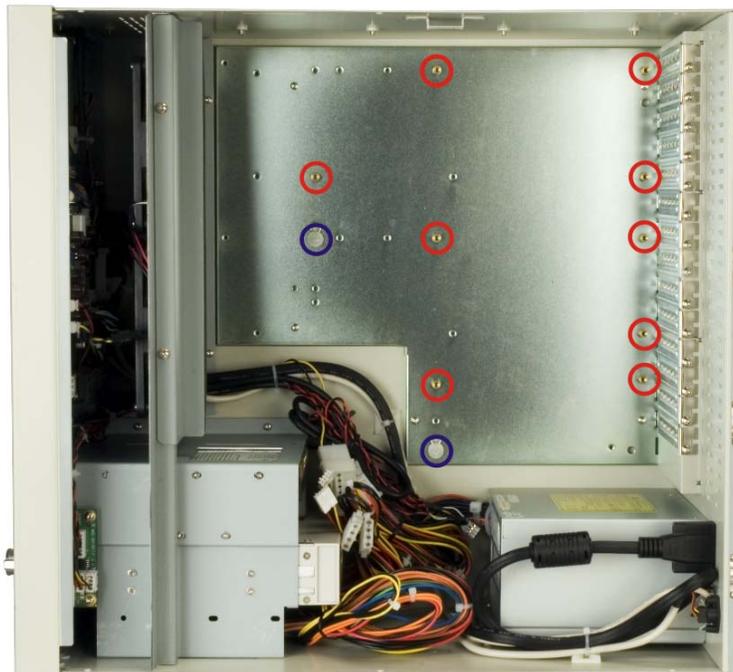


Figure 4-10: Install Copper Pillars and White Spacers

## RPC-6022GW Rackmount LCD Workstation

- Step 2:** Mount the backplane into the chassis. Make sure the backplane is positioned so that when the CPU card and PCI/ISA expansion cards are installed, both the CPU card and the PCI/ISA card I/O connectors face the I/O brackets on the rear panel.
- Step 3:** Align the retention screw holes in the backplane with the copper pillars installed in **Step 1**.
- Step 4:** Insert retention screws to secure the backplane to the chassis (**Figure 4-11**).

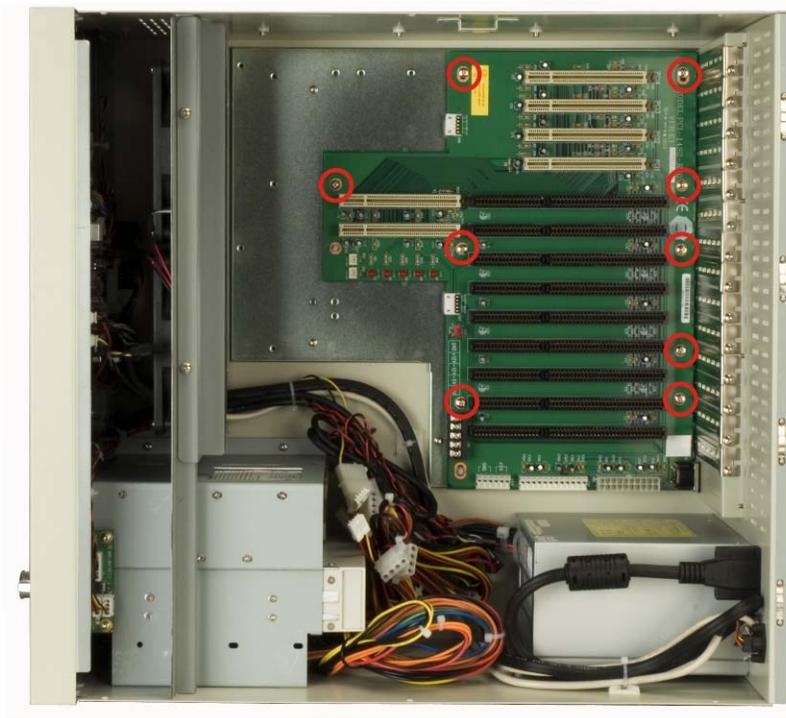


Figure 4-11: Backplane Retention Screws

#### 4.5.8 Install the CPU Card

---



##### **CAUTION:**

Before a CPU card is inserted into the backplane, make sure the CPU card has been correctly prepared and that all the CPU card jumper settings are configured correctly. For CPU card component installation procedures, please refer to the user manual that came with the CPU card.

---

---



##### **CAUTION:**

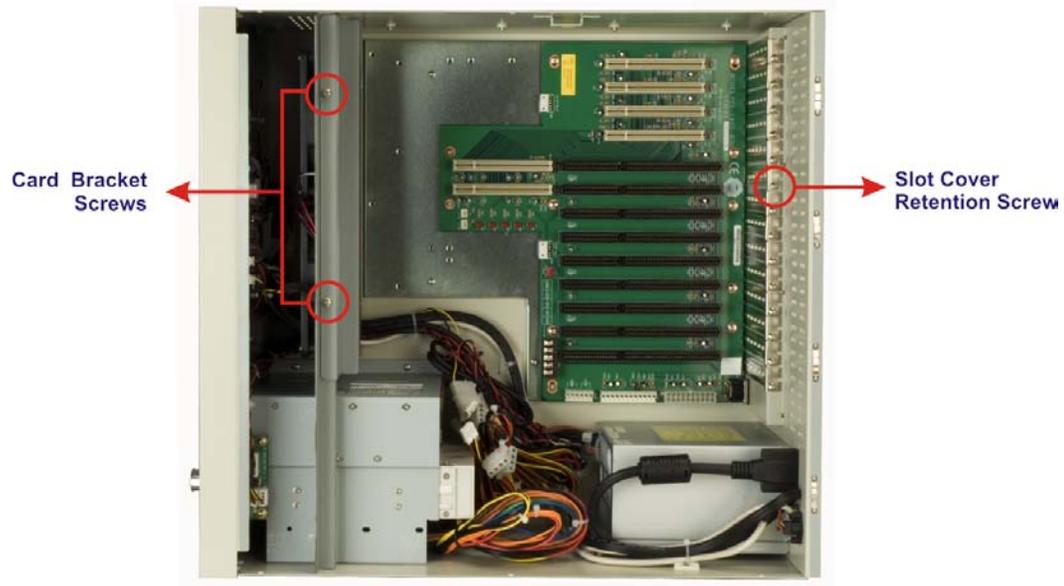
Depending on the location of the CPU card, the disk drive ribbon cable connectors and other peripheral device cable connectors may have to be connected to the CPU card before it can be installed.

---

To install a CPU card onto the backplane, follow the instructions below:

- Step 1:** Remove the slot cover retention screw to remove the slot bracket from the chassis rear panel (**Figure 4-12**).
- Step 2:** Remove two card bracket screws to remove the card bracket from the fan bracket (**Figure 4-12**).

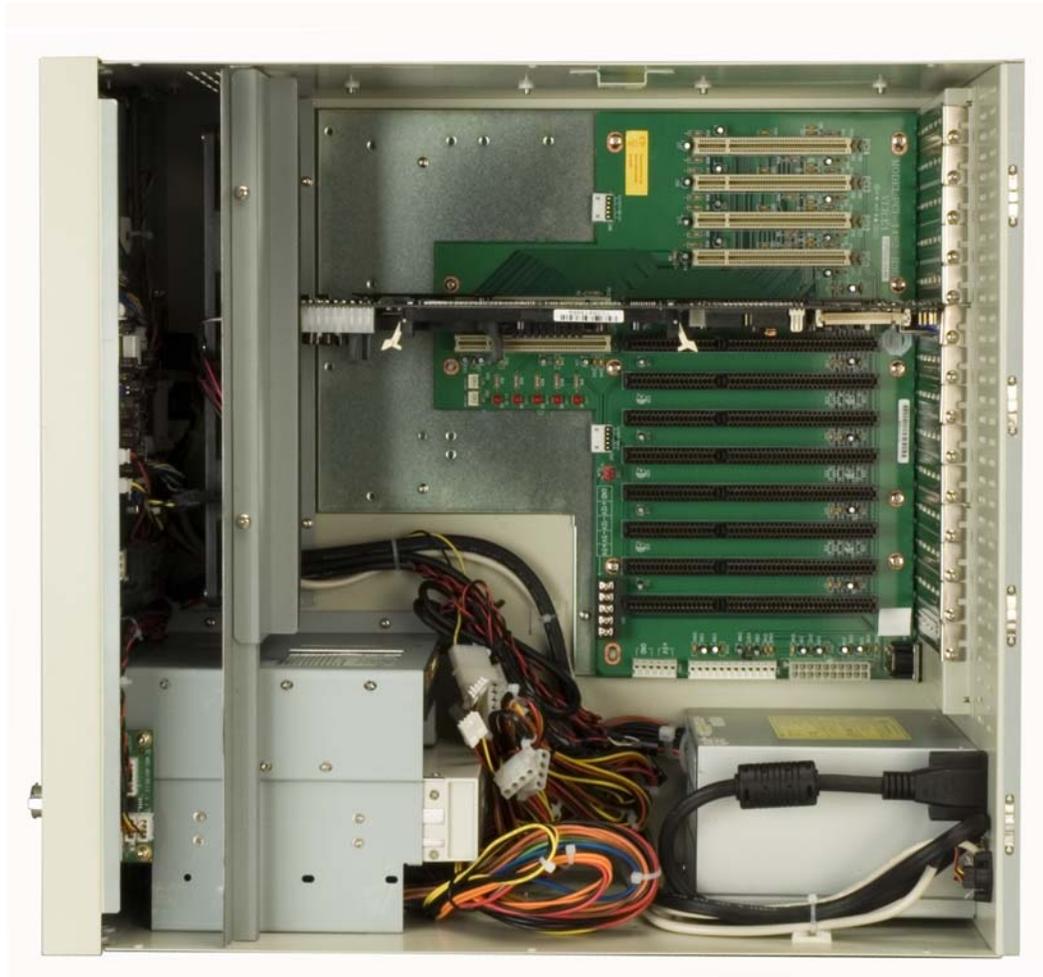
## RPC-6022GW Rackmount LCD Workstation



**Figure 4-12: Slot Cover Retention Screw and Card Bracket Screws**

**Step 3:** Remove the CPU card clamp. (See **Section 4.5.2**)

**Step 4:** Slide the CPU card into the reserved PCI/ISA socket on the backplane. (**Figure 4-13**)



**Figure 4-13: Install the CPU Card**

**Step 5:** To secure the CPU card, reinsert the previously removed slot cover retention screw.

**Step 6:** If a PCI/ISA expansion card is not being installed, reinstall the card bracket. Make sure the back edge of the CPU card slides into the guide rails of the card bracket. If a PCI/ISA expansion card is being installed, proceed to the next section.

### 4.5.9 Install the PCI/ISA Expansion Card

To install a PCI expansion card or an ISA expansion card please follow the instructions below.

- Step 1:** Remove the slot cover retention screw to remove the slot bracket from the chassis rear panel (**Figure 4-12**).
- Step 2:** Remove two card bracket screws to remove the card bracket from the fan bracket (**Figure 4-12**).
- Step 3:** If necessary, remove the CPU card clamp. (See **Section 4.5.2**)
- Step 4:** Slide the PCI/ISA expansion card into the reserved PCI/ISA socket on the backplane.
- Step 5:** To secure the PCI/ISA expansion card, reinsert the previously removed slot cover retention screw and reinstall the card bracket.

### 4.5.10 Installing Short Cards

When installed, some cards may still fall short below the CPU card bracket. To better secure the CPU card or expansion cards, use the short card clamps that came with the package.

- Step 1:** Locate the screw hole on the CPU card bracket closest to the target card.
- Step 2:** Adjust the short card clamp in a vertical direction until the rubber shock absorber part of the clamp secures the expansion card.
- Step 3:** Fasten a screw to secure the card clamp.

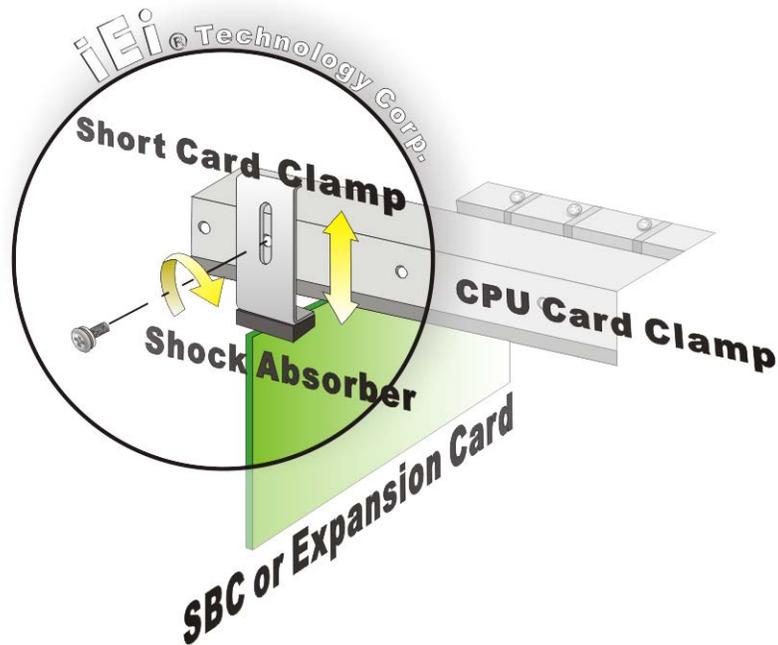


Figure 4-14: Installing a Short Card

#### 4.5.11 Connect the Cables

The following cables may have to be connected depending on the CPU board and the backplane installed in the system:

- PSU cables must be connected to the following components (if installed):
  - CPU card
  - Backplane
  - FDD
  - HDD
  - Optical drive
- Disk drive ribbon cables must be connected to the corresponding CPU card disk drive connectors.

Other connections may have to be made; please refer to the documentation that came with the CPU card.

### 4.5.12 Close the Top Cover

Before closing the top cover, make sure the following items have been completed:

- The backplane is properly installed
- The CPU card is properly installed
- The PCI/ISA expansion cards are properly installed
- The disk drives are properly installed into the drive brackets
- The drive brackets are properly reinstalled into the workstation
- All cables are properly connected

If all of the above listed items have been properly installed, close the top cover and reinsert the previously removed retention screws.

## 4.6 Mounting the RPC-6022GW Rackmount Workstation

The RPC-6022GW workstation can be mounted to the posts of a standard 19" rack cabinet. Adequate rails, rack tray, or side brackets should also be available for supporting the weight of the workstation. Make sure that all cabling is correctly attached and carefully routed when installing the workstation.



### **NOTE:**

At least two people are required to mount the workstation. The rack or cabinet into which the workstation is installed should provide adequate and sufficient ventilation, grounding, power source, and stability features.



### **NOTE:**

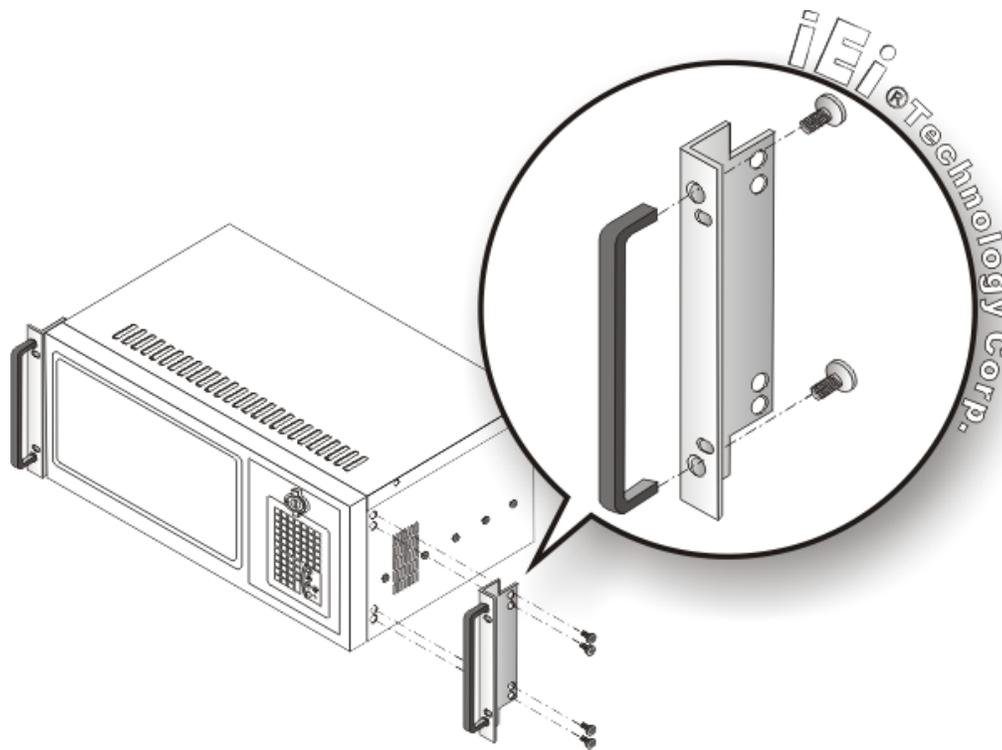
This section gives a generic description of the rack mounting process for the RPC-6022GW rackmount workstation. Alternate rack mounting systems may require different mounting procedures. Be sure to follow the manufacturer's instructions when mounting the workstation.

---

## RPC-6022GW Rackmount LCD Workstation

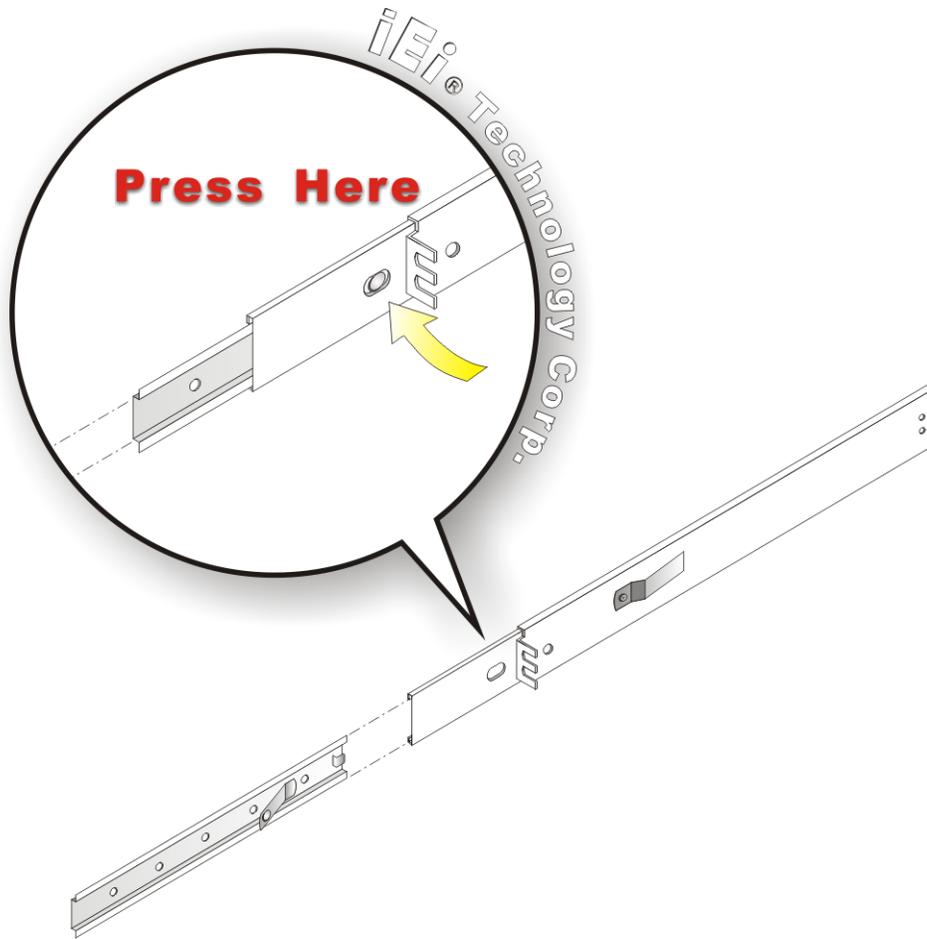
To rack mount the workstation, please follow the steps below.

**Step 1:** The left and right side panels of the workstation each have four screw holes for rack handle bracket installation. Assemble the rack handle brackets and secure them to the workstation. (See **Figure 4-15**)



**Figure 4-15: Rack Handle Bracket Assembly and Installation**

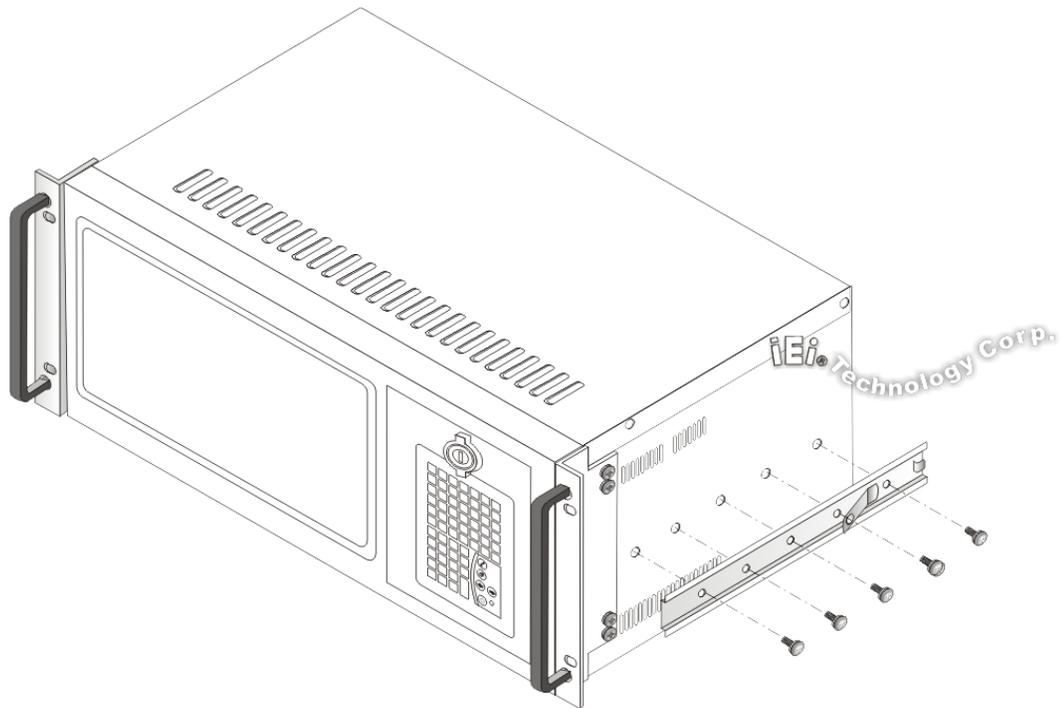
**Step 2:** Remove the rack slides from the rack slide brackets. (See **Figure 4-16**)



**Figure 4-16: Remove Rack Slide**

## RPC-6022GW Rackmount LCD Workstation

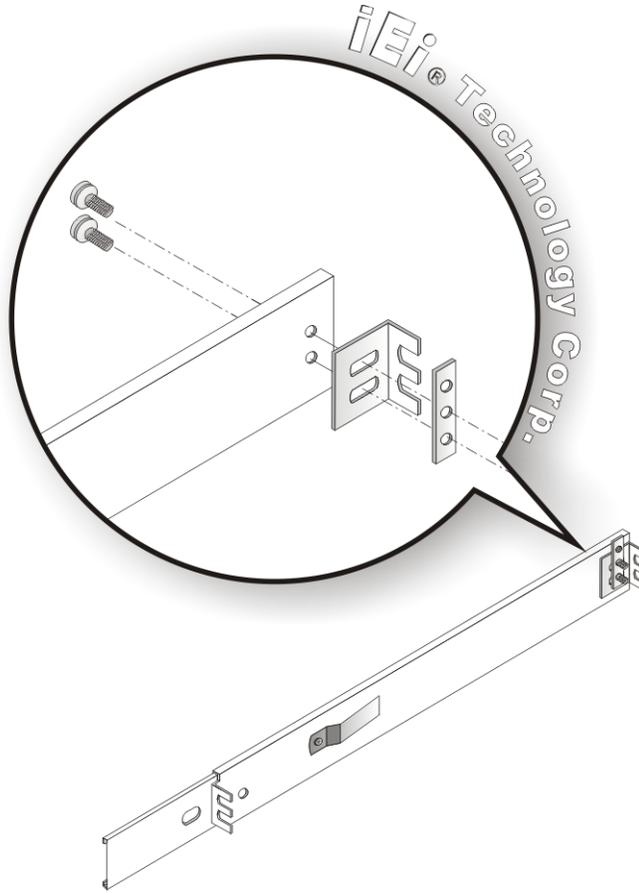
**Step 3:** The left and right side panels of the workstation each have five screw holes for rack slides. Attach one slide section each to the left and right side panel of the workstation. (See **Figure 4-17**)



**Figure 4-17: Workstation Slide Installation (Other Side Similar)**

**Step 4:** Assemble the slide brackets per the manufacturer's instructions.

(See **Figure 4-18**)

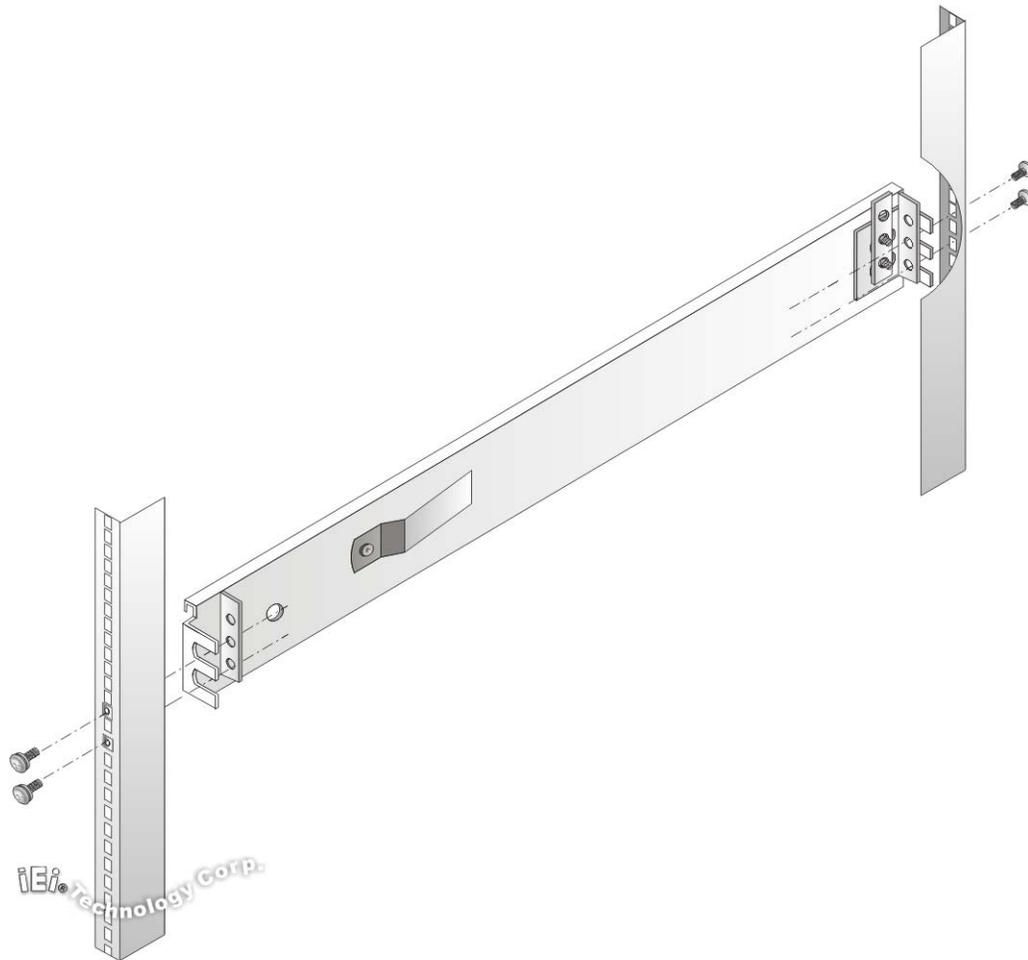


**Figure 4-18: Rack Slide Bracket Assembly**

## RPC-6022GW Rackmount LCD Workstation

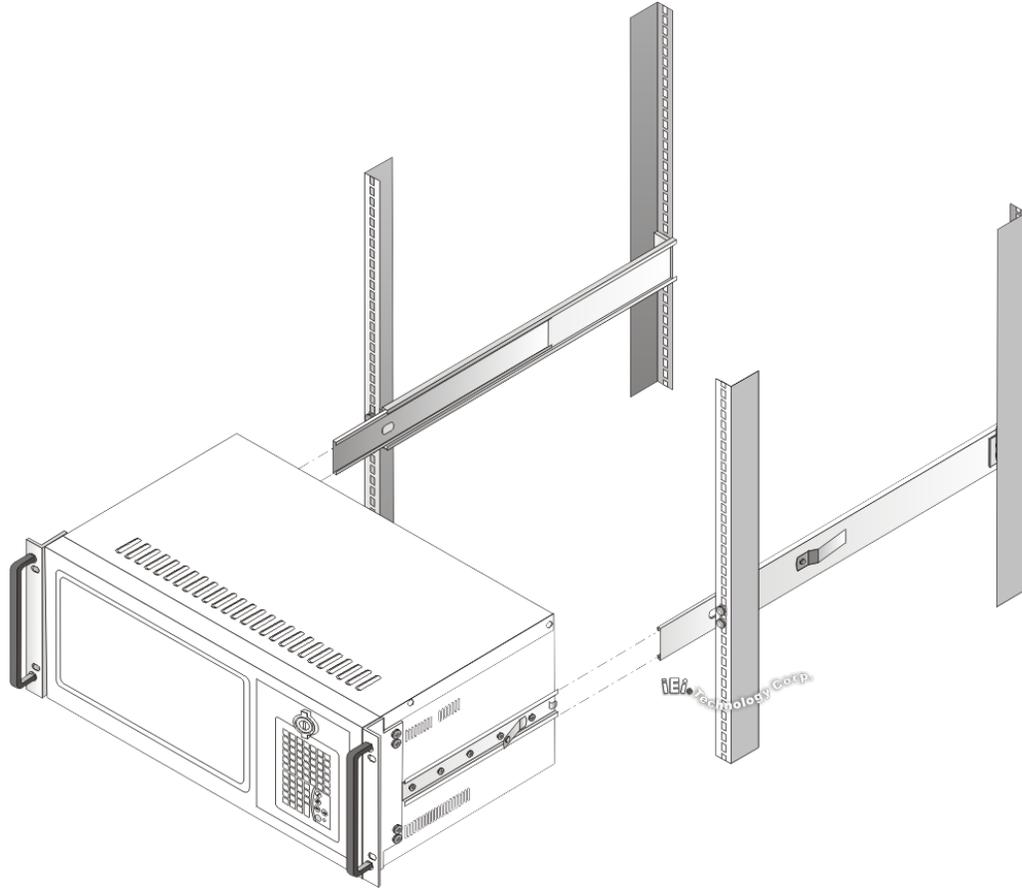
**Step 5:** Attach the slide brackets to the rack per the manufacturer's instructions.

(See **Figure 4-19**)



**Figure 4-19: Rack Slide Bracket Installation**

**Step 6:** Insert the workstation with the attached slides into the rack slide brackets until the handle brackets are flush against the rack. (See **Figure 4-20**)



**Figure 4-20: Install Workstation into Rack**

**Step 7:** If necessary, secure the workstation handle brackets to the rack with the fasteners that came with the workstation.

Chapter

5

# Maintenance

---

## 5.1 Maintenance Overview

Maintaining the RPC-6022GW Rackmount LCD Workstation is essential for the smooth operation of system applications. Maintaining the system might mean replacing failed components during the lifetime of the workstation. The following RPC-6022GW components can be replaced.

- CPU card
- PCI/ISA expansion card
- Backplane
- Power supply unit (PSU)
- Cooling fans
- Disk drives
  - 3.5"
  - 5.25"



### **WARNING:**

Never attempt to remove the external panels or access any internal components of the workstation while it is connected to a power source. Always be sure to turn off and disconnect the workstation from all power sources before attempting to access the internal components. Failure to do so may seriously injure the user or cause irreparable damage the internal components of the workstation.

---

### 5.2 CPU Card Replacement

To replace a CPU card, please follow the instructions below.

- Step 1:** Turn off and disconnect the workstation from all power sources.
- Step 2:** Remove the workstation from the rack in which it is installed.
- Step 3:** Open the top cover of the RPC-6022GW Rackmount LCD Workstation. (See **Section 4.5.1**)
- Step 4:** Disconnect all internal and external peripheral device connections from the CPU card.
- Step 5:** Remove the CPU card clamp. (See **Section 4.5.2**)
- Step 6:** Remove the retention screw that secures the CPU card to the slot on the rear panel.
- Step 7:** Remove the card bracket from the fan bracket by removing two retention screws.
- Step 8:** Slide the CPU card out of the workstation.
- Step 9:** Install a new CPU card. (See **Section 4.5.8**)
- Step 10:** Insert the slot retention screw that was removed earlier.
- Step 11:** Reinstall the CPU card clamp.
- Step 12:** Reinstall the card bracket and secure it with two screws removed earlier. Make sure the back edge of the CPU card slides into the guide rails of the card bracket.
- Step 13:** Reinstall the top cover of the workstation. (See **Section 4.5.12**)
- Step 14:** Reinstall the workstation into the rack. Refer to **Section 4.6** for complete mounting instructions.

### 5.3 PCI/ISA Expansion Card Replacement

To replace a PCI/ISA expansion card, please follow the instructions below.

- Step 1:** Turn off and disconnect the workstation from all power sources.
- Step 2:** Remove the workstation from the rack in which it is installed.
- Step 3:** Open the top cover of the RPC-6022GW Rackmount LCD Workstation. (See **Section 4.5.1**)
- Step 4:** Disconnect all internal and external peripheral device connections from the PCI/ISA expansion card.
- Step 5:** Remove the CPU card clamp. (See **Section 4.5.2**)
- Step 6:** Remove the retention screw that secures the CPU card to the slot on the rear panel.
- Step 7:** Slide the expansion card out of the workstation.
- Step 8:** Install a new expansion card. (See **Section 4.5.9**)
- Step 9:** Insert the slot retention screw that was removed earlier.
- Step 10:** Reinstall the CPU card clamp.
- Step 11:** Reinstall the top cover of the workstation. (See **Section 4.5.12**)
- Step 12:** Reinstall the workstation into the rack. Refer to **Section 4.6** for complete mounting instructions.

### 5.4 Backplane Replacement

To replace a backplane, please follow the instructions below.

- Step 1:** Turn off and disconnect the workstation from all power sources.
- Step 2:** Remove the workstation from the rack in which it is installed.
- Step 3:** Open the top cover of the RPC-6022GW Rackmount LCD Workstation. (See **Section 4.5.1**)
- Step 4:** Remove the CPU card clamp. (See **Section 4.5.2**)
- Step 5:** Disconnect and remove all CPU cards (see **Section 5.2**) and PCI/ISA expansion cards (see **Section 4.5.9**).
- Step 6:** Remove the retention screws that secure the backplane to the workstation (see **Section 4.5.7**).
- Step 7:** Remove the backplane from the chassis
- Step 8:** Install a new backplane into the chassis.
- Step 9:** Reinstall and reconnect all CPU cards (see **Section 4.5.8**) and PCI/ISA expansion cards (see **Section 4.5.9**).
- Step 10:** Close the back cover of the workstation and reinstall the workstation into the cabinet or rack in which it was previously installed. Refer to **Section 4.6** for complete mounting instructions.

## 5.5 PSU Replacement

To replace a PSU, please follow the instructions below.

- Step 1:** Turn off and disconnect the workstation from all power sources.
- Step 2:** Remove the workstation from the rack in which it is installed.
- Step 3:** Open the top cover of the RPC-6022GW Rackmount LCD Workstation. (See **Section 4.5.1**)
- Step 4:** Disconnect all the PSU cables from their devices.
- Step 5:** Remove the four external retention screws that secure the PSU assembly to the rear panel of the workstation (**Figure 5-1**).



**Figure 5-1: PSU External Retention Screws**

## RPC-6022GW Rackmount LCD Workstation

**Step 6:** Remove the two internal retention screws that secure the PSU assembly to the right side panel of the workstation (**Figure 5-2**).



**Figure 5-2: PSU Internal Retention Screws**

- Step 7:** Install the new PSU into the workstation making sure the PSU power connector and PSU cooling fan are facing out of the workstation.
- Step 8:** Reinsert the two previously removed internal retention screws that secure the PSU assembly to the right side panel of the workstation.
- Step 9:** Reinsert the four previously removed external retention screws that secure the PSU assembly to the rear panel of the workstation.
- Step 10:** Close the back cover of the workstation and reinstall the workstation into the cabinet or rack in which it was previously installed. Refer to **Section 4.6** for complete mounting instructions.

## 5.6 System Fan Replacement

To replace the system fan, please follow the instructions below.



### CAUTION:

Carefully note the direction and orientation of the existing system fan prior to replacement.

---

- Step 1:** Turn off and disconnect the workstation from all power sources.
- Step 2:** Remove the workstation from the rack in which it is installed.
- Step 3:** Open the top cover of the RPC-6022GW Rackmount LCD Workstation.  
(See **Section 4.5.1**)
- Step 4:** Disconnect the system fan from the PSU.
- Step 5:** Remove the CPU card clamp (See **Section 4.5.2**).
- Step 6:** Remove the defective cooling fan by removing two screws that secure the fan to the CPU card clamp (**Figure 5-3**).



**Figure 5-3: System Fan Retention Screws**

- Step 7:** Install the new system fan. Secure the fan with retention screws.
- Step 8:** Connect the new system fan to the PSU.

## RPC-6022GW Rackmount LCD Workstation

- Step 9:** Reinstall the CPU card clamp.
- Step 10:** Close the top cover of the workstation and reinstall the workstation into the cabinet or rack in which it was previously installed. Refer to **Section 4.6** for complete mounting instructions.

### 5.7 Cooling Fan Replacement

To replace a cooling fan, please follow the instructions below.



#### CAUTION:

Carefully note the direction and orientation of the existing cooling fan prior to replacement.

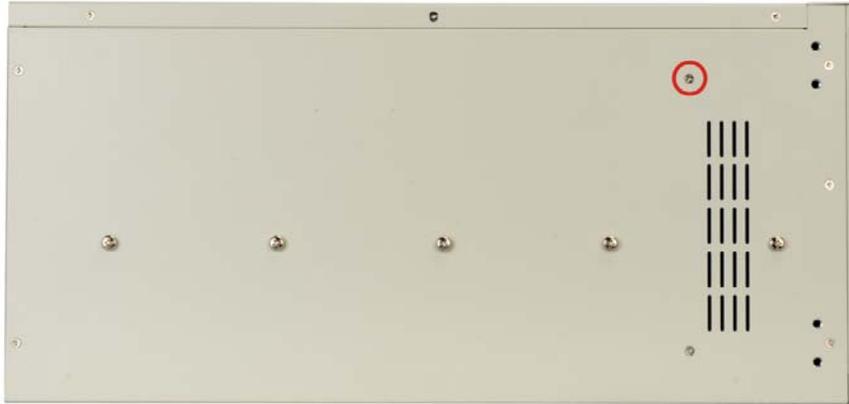
---

- Step 1:** Turn off and disconnect the workstation from all power sources.
- Step 2:** Remove the workstation from the rack in which it is installed.
- Step 3:** Open the top cover of the RPC-6022GW Rackmount LCD Workstation.  
(See **Section 4.5.1**)
- Step 4:** Disconnect the cooling fan from the PSU (**Figure 5-4**).



**Figure 5-4: Disconnect the Cooling Fan**

**Step 5:** Remove a fan bracket retention screw on each side of the chassis (**Figure 5-5** and **Figure 5-6**).



**Figure 5-5: Cooling Fan Bracket Retention Screw (Left)**



**Figure 5-6: Cooling Fan Bracket Retention Screw (Right)**

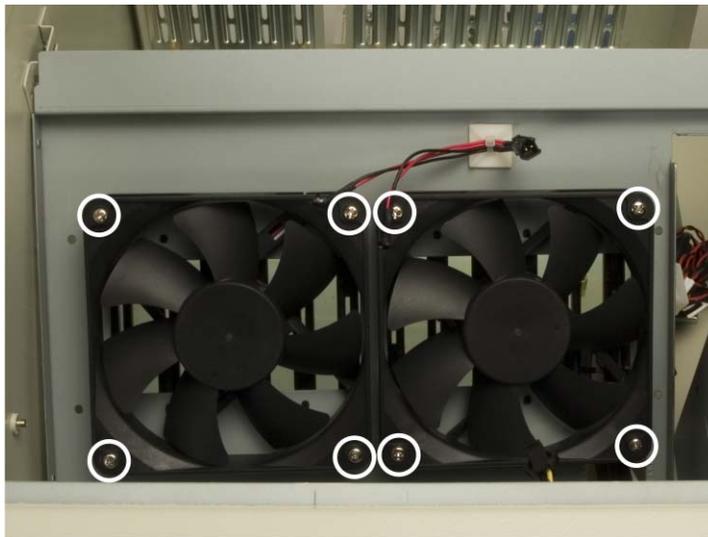
**Step 6:** Carefully push the fan bracket toward the rear panel (**Figure 5-7**).

## RPC-6022GW Rackmount LCD Workstation



**Figure 5-7: Push the Fan Bracket Toward the Rear Panel**

**Step 7:** Remove the screws that secure the cooling fan to the fan bracket (**Figure 5-8**).



**Figure 5-8: Cooling Fan Screws**

- Step 8:** Remove the defective cooling fan.
- Step 9:** Install the new cooling fan to the fan bracket. Secure the fan with retention screws.
- Step 10:** Pull the fan bracket toward the front panel.
- Step 11:** Connect the new cooling fan to the PSU.
- Step 12:** Secure the fan bracket with screws removed earlier.
- Step 13:** Close the top cover of the workstation and reinstall the workstation into the cabinet or rack in which it was previously installed. Refer to **Section 4.6** for complete mounting instructions.

## 5.8 Disk Drive Replacement

### 5.8.1 3.5" or 5.25" Disk Drive

To replace a disk drive, please follow the instructions below.

- Step 1:** Turn off and disconnect the workstation from all power sources.
- Step 2:** Remove the workstation from the rack in which it is installed.
- Step 3:** Open the top cover of the RPC-6022GW Rackmount LCD Workstation.  
(See **Section 4.5.1**)
- Step 4:** Disconnect all cabling from every hard drive.
- Step 5:** Remove the drive bracket (see **Section 4.5.3**).
- Step 6:** Remove the retention screws that secure the disk drive to the drive bracket and slide the drive out of the bracket.
- Step 7:** Install the new disk drive. (See **Section 4.5.5**)
- Step 8:** Reinstall the drive bracket to the workstation. (See **Section 4.5.6**)

## RPC-6022GW Rackmount LCD Workstation

- Step 9:** Reconnect all disk drive cabling.
- Step 10:** Close the top cover of the workstation and reinstall the workstation into the cabinet or rack in which it was previously installed. Refer to **Section 4.6** for complete mounting instructions.

### 5.8.2 3.5" Disk Drive on a 5.25" Drive Adapter Bracket

To replace a 3.5" disk drive on a 5.25" drive adapter bracket, please follow the instructions below.



#### NOTE:

Refer to Section **4.5.5.1** for instructions on installing a 3.5" disk drive into a 5.25" drive bay slot.

---

- Step 1:** Turn off and disconnect the workstation from all power sources.
- Step 2:** Remove the workstation from the rack in which it is installed.
- Step 3:** Open the top cover of the RPC-6022GW Rackmount LCD Workstation.  
(See **Section 4.5.1**)
- Step 4:** Disconnect all cabling from every hard drive.
- Step 5:** Remove the drive bracket (See **Section 4.5.3**).
- Step 6:** Remove the 3.5" to 5.25" drive adapter bracket.
- Step 7:** Remove the retention screws that secure the 3.5" disk drive to the drive adapter bracket and slide the drive out of the bracket.
- Step 8:** Install the new 3.5" disk drive. (See **Section 4.5.5.1**)
- Step 9:** Reinstall the 3.5" to 5.25" drive adapter bracket to the drive bracket.
- Step 10:** Reinstall the drive bracket to the workstation. (See **Section 4.5.6**)



**Step 11:** Reconnect all disk drive cabling.

**Step 12:** Close the top cover of the workstation and reinstall the workstation into the cabinet or rack in which it was previously installed. Refer to **Section 4.6** for complete mounting instructions.

Chapter

6

# On Screen Display (OSD) Controls

---

## 6.1 User Mode OSD Structure

### 6.1.1 OSD Buttons

There are several on-screen-display (OSD) control buttons on the front panel of the workstation. **Table 6-1** shows a typical arrangement of OSD controls.



**Table 6-1: OSD Control Buttons**



#### **NOTE:**

Pressing the direction keys (LEFT or RIGHT) can bring out a simple menu that adjusts the LCD screen brightness and contrast values.

## RPC-6022GW Rackmount LCD Workstation

### 6.1.2 OSD Menu Structure

Table 6-2 shows the OSD menu structure.

Level 0	Level 1	Value
Main Display Features Menu	Brightness	0 to 100
	Contrast	0 to 100
	Horizontal Size	0 to 100
	Phase	0 to 100
	H. Position	0 to 100
	V. Position	0 to 100
	Sharpness	1 to 5
Speaker	Volume	This menu is currently disabled, and will be implemented with models equipped with speakers.
	Mute	
Color Menu	9300	- Preset NTSC value
	7500	- Preset NTSC value
	User	RGB values from 0 to 100
Language Menu	English	Select
	French	
	German	
	Spanish	
	Italian	
	Japanese	
	Russian	
	Traditional Chinese	
Simplified Chinese		
OSD Menu	OSD Time Out	0 to 60 sec
	OSD Position	1 to 5
	OSD Transparency	0 to 100
	Auto Setting	On or Off
	Recall	No or Yes
	Aspect Ratio	4:3 or 5:4

Level 0	Level 1	Value
<b>Signal Menu</b>	<b>Digital</b>	<b>Select</b>
	<b>Analog</b>	
<b>Backlight Menu</b>	<b>Light Enable</b>	<b>On or Off</b>
	<b>Light Contrast</b>	<b>0 to 100</b>
	<b>Light Brightness</b>	<b>0 to 100</b>
	<b>Light H Start</b>	<b>0 to 100</b>
	<b>Light H Width</b>	<b>0 to 100</b>
	<b>Light V Start</b>	<b>0 to 100</b>
	<b>Light V Height</b>	<b>0 to 100</b>

**Table 6-2: OSD Menus**

## 6.2 Using the OSD

OSD menu options are described below.

### 6.2.1 Main Display Features

Main display features are shown in **Table 6-3**.


**Table 6-3: Main Display Features**

## RPC-6022GW Rackmount LCD Workstation

- **Brightness:**

The brightness option adjusts the brightness of screen. This function adjusts the offset value of ADC. Setting this value too high or too low will affect the quality of image.
- **Contrast:**

This function adjusts the gain value of ADC. Adjusting this value too high or too low will worsen the quality of image.
- **Horizontal Size:**

This item adjusts the screen size in the horizontal direction.
- **Phase:**

This option adjusts the input signal and dot clock position (Analog only).
- **H. Position:**

Adjusts the horizontal position of the display screen.
- **V. Position:**

Adjusts the vertical position of the display screen.
- **Sharpness:**

Adjusts the sharpness level to one of the 5 preset values. This option may help reduce the softening edges around displayed objects.

## 6.2.2 Color

Color options are shown in **Table 6-4**.



**Table 6-4: Color Options**

The Color menu fine-tunes the palette of color hues for the LCD.

- **9300:**  
NTSC standard Kelvin
- **7500:**  
NTSC standard Kelvin
- **6500:**  
NTSC standard Kelvin
- **User:**  
This item allows fine-tuning the balance among Red, Green, and Blue color hues if images look garish or unrealistic.

## RPC-6022GW Rackmount LCD Workstation

### 6.2.3 Language

The Languages are shown in **Table 6-5**.



**Table 6-5: Language Menu**

This menu provides options for selecting ODS screen legends in a preferred language.

## 6.2.4 OSD Configurations

The OSD configurations are shown in **Table 6-6**.



**Table 6-6: OSD Configurations Menu**

OSD Configurations are described below.

- **OSD Time Out:**  
 Determines how many seconds the OSD screen stays on screen before it disappears when OSD is left unattended.
- **OSD Position:**  
 Adjusts the OSD position on the screen. Position 1 is in the upper left of the screen, position 2 in the upper right and position 3 in the center.
- **OSD Transparency**  
 Determines the opacity of OSD background.
- **Auto Setting**  
 This function automatically adjusts the LCD screen position in situations such as connecting the LCD to a different host computer.
- **Recall**  
 Restores the default OSD settings. Note that this will restore all default display settings.

## RPC-6022GW Rackmount LCD Workstation

- **Aspect Ratio**

Adjusts the display ratio referring to the width of the screen and then to the height of the screen.

### 6.2.5 Signal

The Signal menu in **Table 6-7** enables manual selection of the type of graphic source input, i.e., analog (15-pin VGA) or digital (DVI-D).



**Table 6-7: Signal Menu**

## 6.2.6 Backlight

The Backlight menu in **Table 6-8** enables users to configure the LCD backlight.



**Table 6-8: Backlight Menu**

Backlight Menu options are described below.

- **Light Enabled:**  
 Turns backlight on or off.
- **Light Contrast:**  
 Adjusts the backlight contrast.
- **Light Brightness:**  
 Adjusts the backlight brightness.
- **Light H Start:**  
 Adjusts the backlight projection area in the horizontal direction.
- **Light H Width:**  
 Adjusts the width of the backlight projection area.
- **Light V Start:**  
 Adjusts the backlight projection area in the vertical direction.
- **Light V Height:**  
 Adjusts the height of the backlight projection area.

Chapter

7

# Software Driver

---

**NOTE:**

The following information is provided for workstations with touch screens.

## 7.1 Touch Screen Driver

The touch screen controller enables analog resistive touch screens for four-wire, five-wire & eight-wire models. The controller directly communicates with the PC system through the touch screen communications interface. The controller design is superior in sensitivity, accuracy, and friendly operation. The touch screen driver emulates the left mouse button and the right mouse button functions.

The touch screen driver supports the following operating systems:

- Microsoft Windows versions:
  - Microsoft Windows 95
  - Microsoft Windows 98
  - Microsoft Windows ME
  - Microsoft Windows 2000
  - Microsoft Windows NT
  - Microsoft Windows XP
  - Microsoft Windows XP Tablet PC Edition
- Microsoft Windows CE versions:
  - Microsoft Windows CE 2.12
  - Microsoft Windows CE 3.0
  - Microsoft Windows CE. NET
- Linux
- IMac
- DOS.

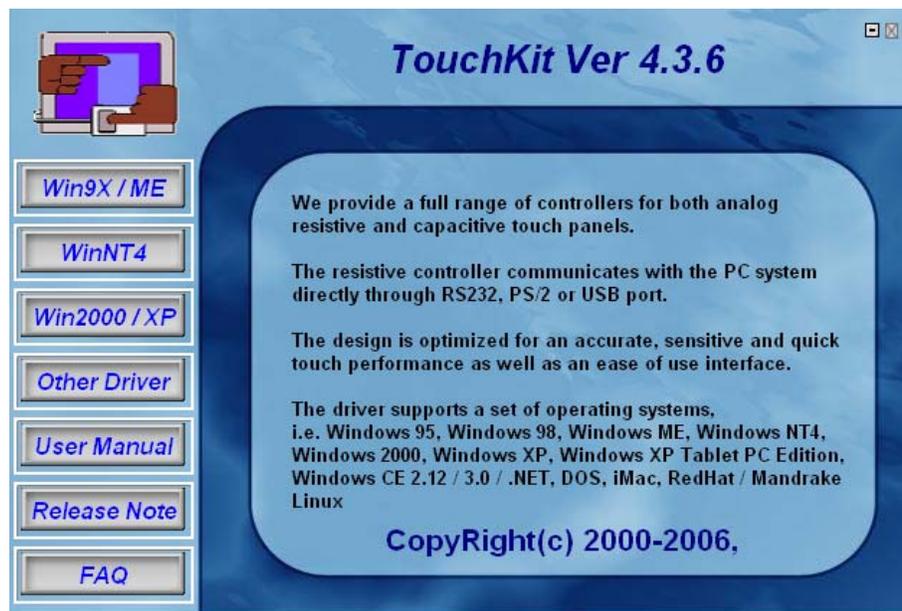
Driver installation is described below.

## 7.2 Driver Installation

To install the touch screen software driver, please follow the steps below.

**Step 1:** Insert the TouchKit driver CD that came with the RPC-6022GW rackmount workstation into the CD drive.

**Step 2:** Once the CD drive is installed, the screen in **Figure 7-1** appears.



**Table 7-1: Driver CD Pop Up Screen**

**Step 3:** Select the operating system installed on the system from the menu on the left side of the screen.



**NOTE:**

The following description is for driver installation using a Windows 2000 OS. If a different OS is installed, please refer to the driver user manual for the relevant OS. The driver user manuals can be accessed by selecting “**User Manual**” from the menu on the left side of the “**Driver CD Pop Up Screen**”.

**Step 4:** Once the OS system is selected, the touch kit setup will prepare the install shield wizard (**Table 7-2**).



**Table 7-2: Install Shield Wizard Preparation**

**Step 5:** After the Install Shield Wizard is ready, a welcome screen appears (**Table 7-3**).

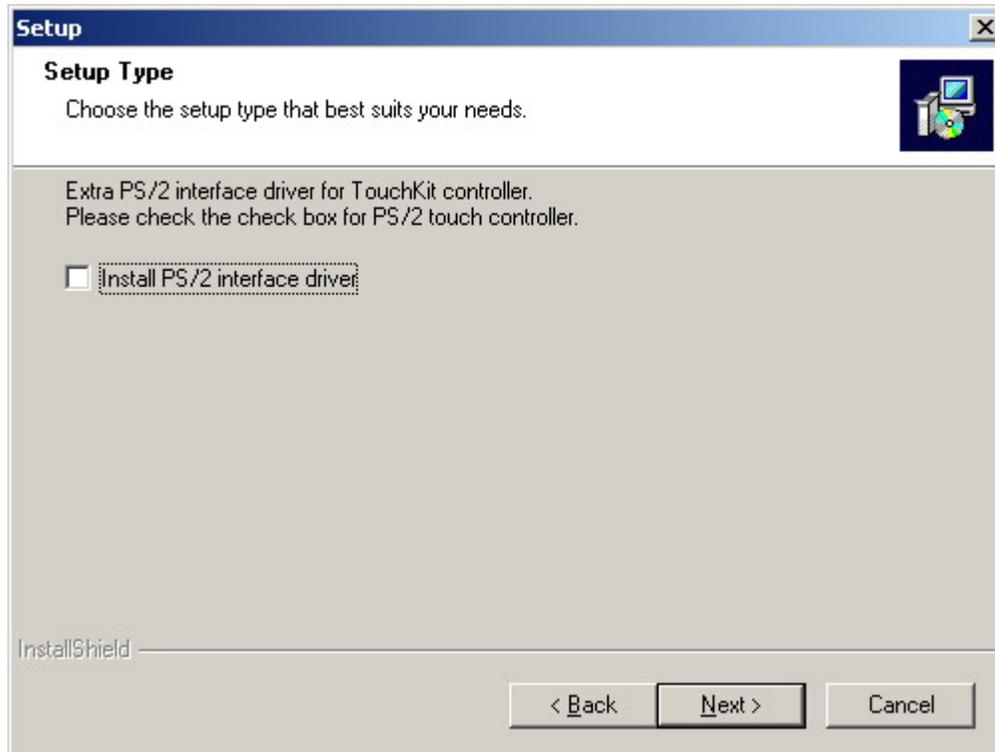


**Table 7-3: Welcome Screen**

**Step 6:** To continue the installation process click **NEXT**.

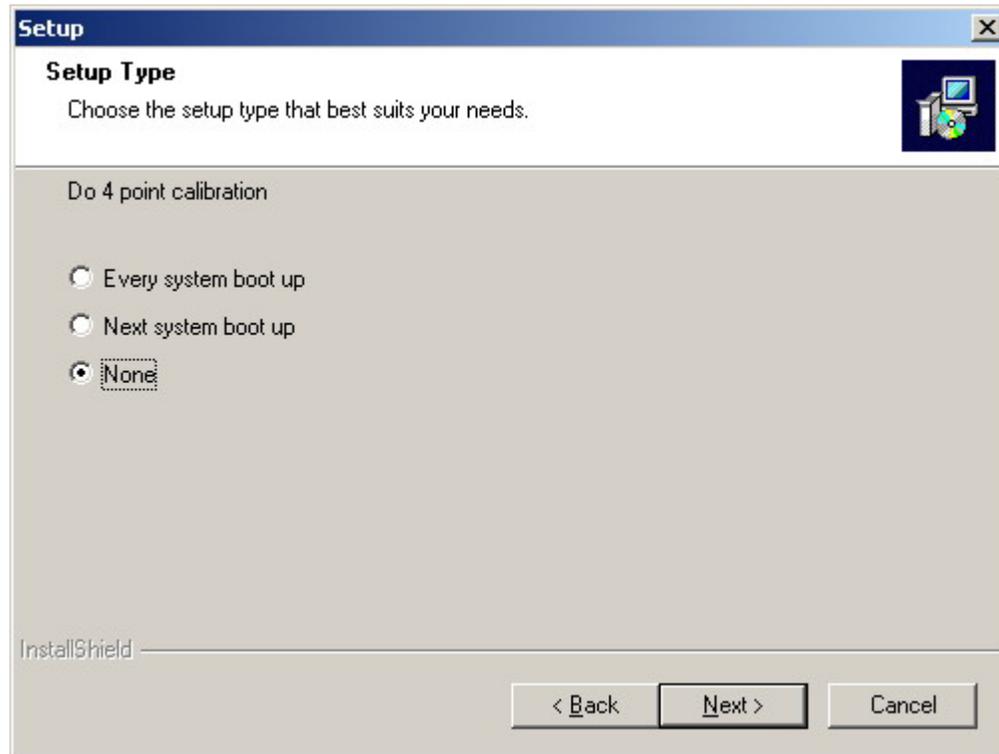
## RPC-6022GW Rackmount LCD Workstation

**Step 7:** An Install PS/2 interface driver screen appears (Table 7-4). It is not necessary to install the PS/2 interface driver. To continue click **NEXT**.



**Table 7-4: Install PS/2 Interface Driver**

**Step 8:** Four point calibration options are then selected (**Figure 7-5**). Four point calibrations can be done every time a user boots up, during the next time the system boots or never. Select if and when a four-point calibration should be done. Click **NEXT** to continue.



**Table 7-5: Install PS/2 Interface Driver**

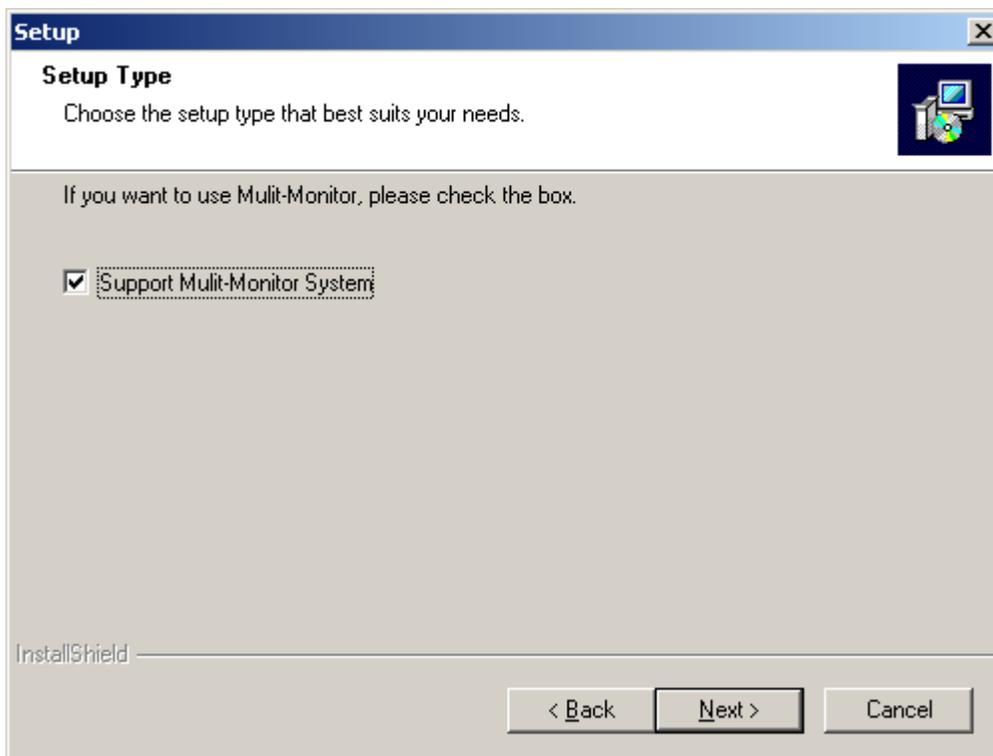
## RPC-6022GW Rackmount LCD Workstation

**Step 9:** The user is then prompted to ensure the touch monitor or the USB for the touch controller is plugged into the system (**Table 7-6**). Once the touch controller is plugged into the system, click **“OK.”**



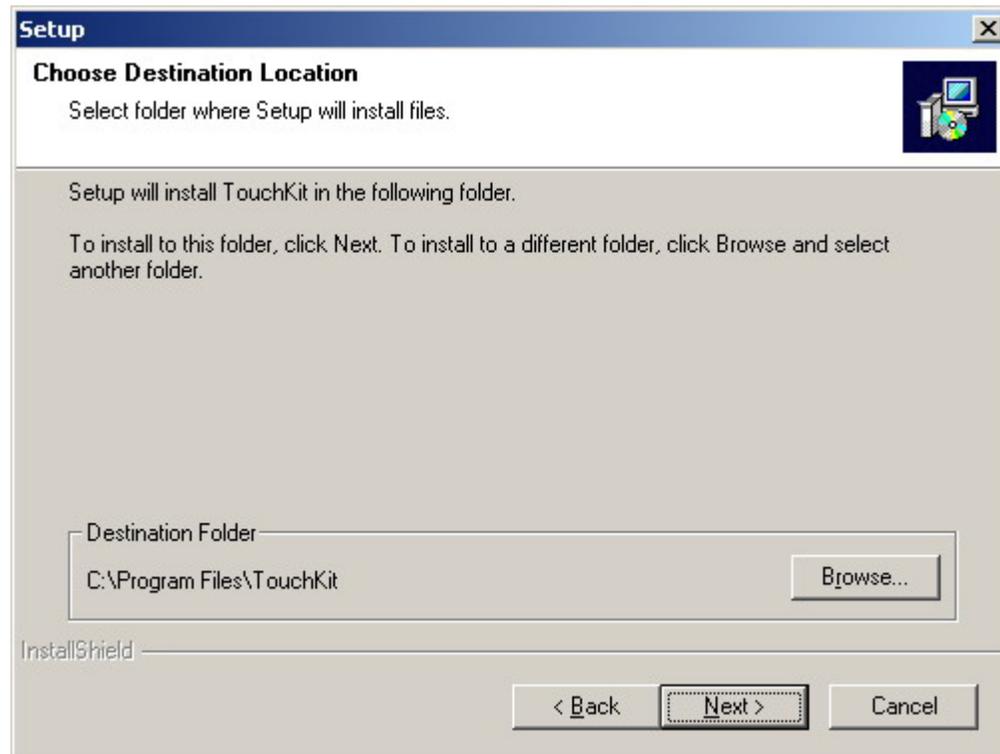
**Table 7-6: Touch Monitor/USB Touch Controller Confirmation**

**Step 10:** The user is then prompted to select multi-monitor system support (**Figure 6-7**). Make the appropriate selection and click **NEXT** to continue.



**Table 7-7: Controller Installation Directory**

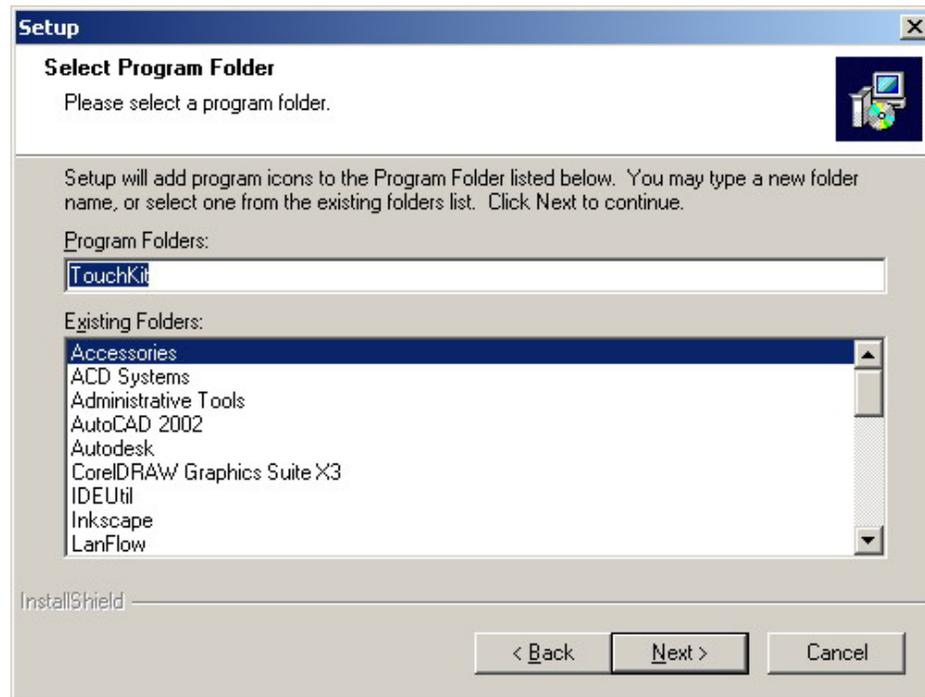
**Step 11:** The user is then prompted to select a file directory in which the touch kit controller is installed (**Table 7-8**). The default directory is “C:\Program Files\TouchKit.” If a different folder must be used, select browse and then select the folder. Once the folder is selected, click **NEXT** to continue.



**Table 7-8: Controller Installation Directory**

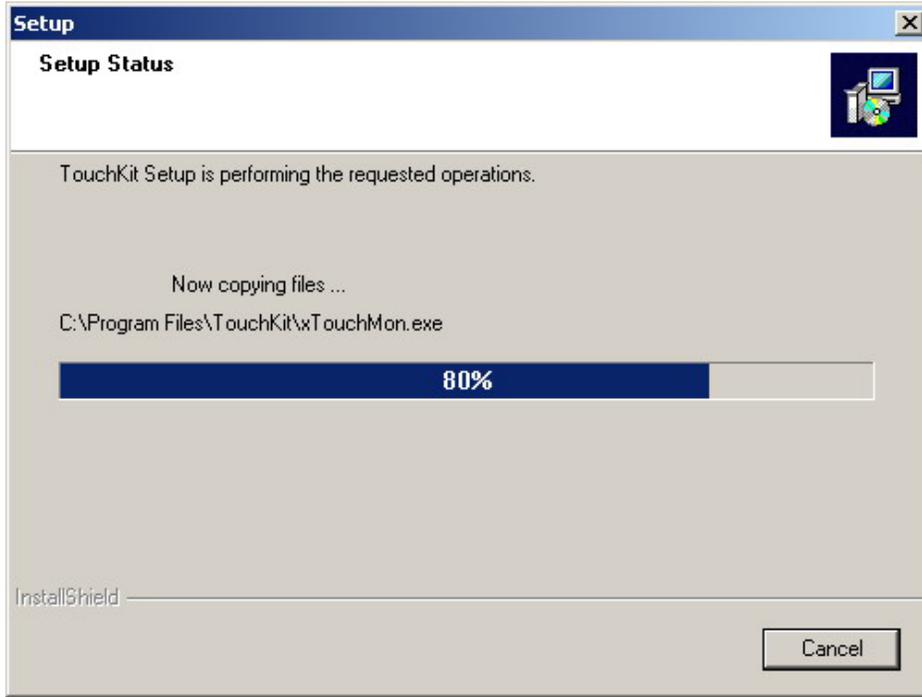
## RPC-6022GW Rackmount LCD Workstation

**Step 12:** The user is then prompted to select a file directory in which the program icons are saved (**Table 7-9**). The default folder is “TouchKit.” If a different folder must be used, select a folder from the list shown. Once the folder is selected, click **NEXT** to continue.



**Table 7-9: Program Icon Directory**

**Step 13:** The program then starts installing (Table 7-10).



**Table 7-10: Installing**

## RPC-6022GW Rackmount LCD Workstation

**Step 14:** Once the program is finished installing, the user is prompted to restart the computer now or to restart the computer later (**Table 7-11**). Select when the computer should be restarted and click “**FINISH**” to complete the driver installation procedure.



**Table 7-11: Installation Complete**

### 7.3 Touch Panel Driver Configuration

To configure the touch screen driver options, refer to the TouchKit user manual located on the driver installation CD.



**THIS PAGE IS INTENTIONALLY LEFT BLANK**

Appendix

A

# Certification

---



## A.1 RoHS Compliant

All RPC-6022GW rackmount workstations comply with the Restriction of Hazardous Materials (RoHS) Directive. This means that all components used to build the industrial workstations and the workstation itself are RoHS compliant.

The RoHS Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

Appendix

**B**

# Recommended IEI Backplanes and PSUs

---

The following IEI backplanes and power supply options are recommended for the RPC-6022GW Rackmount LCD Workstation. For more information about these backplanes and power supply units, please contact an IEI sales representative or visit the IEI website ([www.ieiworld.com](http://www.ieiworld.com)).

### B.1 RPC-6022GW Backplane Options

Table B-1 shows the backplane options for RPC-6022GW.

Model No.	SBC Type	PCI	ISA	PCIe			PSU Connector
				x 1	x 4	x 16	
PCI-13SD-RS-R30	PICMG 1.0	3+4	3+3	0	0	0	AT/ATX
PCI-14S2-RS-E30	PICMG 1.0	4	8	0	0	0	AT/ATX
PCI-14S3-RS-R30	PICMG 1.0	4	9	0	0	0	AT/ATX
PX-14S3-RS-R30	PICMG 1.0	12	2	0	0	0	AT/ATX
PX-14S5-RS-R30	PICMG 1.0	7	6	0	0	0	AT/ATX
BP-14S-RS-R30	ISA	0	14	0	0	0	AT
PXAGP-13S3-RS-R30	PIAGP	11	0	0	0	0	AT/ATX
PE-13SD	PICMG 1.3	4	0	5	0	2	ATX
PXE-13S	PICMG 1.3	8	0	3	0	1	ATX
PXE-13S2	PICMG 1.3	4	0	7	0	1	ATX
PXE-13S3	PICMG 1.3	3	0	0	8	1	ATX

**Table B-1: Backplane Options**

## B.2 Power Supply Options

Table B-2 shows the power supply options for RPC-6022GW.

Type	Model No.	Watt
AT	ACE-935AL-RS	300W
	ACE-940AP-RS	390W
ATX	ACE-832AP-RS	250W
	ACE-841AP-RS	480W
	ACE-850AP-RS	500W
Redundant ATX	ACE-R4130AP-RS	300W
	ACE-R4140AP-RS	400W

Table B-2: Power Supply Options



**THIS PAGE IS INTENTIONALLY LEFT BLANK**

# Index

---

**3**

3.5" to 5.25" drive adapter bracket .....46

**A**

Analog VGA .....12

**B**

Backplane Options.....102

Backplane Replacement.....67

**C**

card bracket .....50, 52, 53, 65

Certification

    RoHS .....13

Cooling Fan Replacement .....71

copper pillars .....48

CPU Card Replacement .....65

**D**

Disk Drive Replacement .....74

Drive Bracket .....45

Drive Installation .....45

**E**

External Overview

    14-Slot Rear Panel .....18

    Front Panel .....16

    Left Side Panel .....21

    Motherboard Rear Panel .....19

    Top Panel .....20

**F**

fan bracket ..... 50, 53, 65, 72, 73, 74

**I**

Install the Backplane.....48

Install the CPU Card .....50

Install the PCI/ISA Expansion Card .....53

Installation Considerations.....32

Internal overview.....22

**L**

LCD Specifications

    Active Area .....27

    Contrast Ratio.....27

    Display Mode.....27

    Interface.....27

    Lamp Life .....27

    Model.....27

    Nominal Input Voltage .....27

    Number of Colors .....27

    Optical Rise Time/Fall Time.....27

    Pixel Arrangement .....27

    Pixel Pitch .....27

    Power Consumption .....27

    Resolution.....27

    Response Time.....27

    Size.....27

    Typical White Luminance .....27

    View Angle.....27

## RPC-6022GW Rackmount LCD Workstation

### O

#### OSD

Backlight.....	86
Color.....	82
Language .....	83
Main Display Features.....	80
OSD Buttons .....	78
OSD Configurations .....	84
OSD Menu Structure .....	79
Signal.....	85
OSD Control .....	77

### P

Packing List .....	4, 34
PCI/ISA Expansion Card Replacement .....	66
Physical Dimensions.....	23, 24
Power Supply Options .....	103
Pre-installation Preparation .....	37
PSU Replacement.....	68

### R

Recommended Backplanes and PSUs ...	101
Reinstall the Drive Brackets.....	47
Remove the CPU Card Clamp .....	41
Remove the Drive Bracket.....	43

Remove the Top Cover .....	40
Replacing a 3.5" Disk Drive on a 5.25" Drive Adapter Bracket.....	75

### S

short card clamp .....	53
Short Cards.....	53
slot cover retention screw .....	50, 52, 53
Specifications	
LCD Specifications .....	27
RPC-6022GW Specifications .....	26
System Fan Replacement .....	70

### T

TFT LCD .....	12
Top Cover.....	55
Touch Panel Driver Configuration.....	97
Touch Screen Driver .....	88
TouchKit .....	89, 97

### U

Unpacking.....	33
----------------	----

### W

white spacers .....	48
---------------------	----