This page intentionally left blank.
Copyright and Trademark Information

This document contains proprietary information that is protected by copyright. All rights reserved. No part of this document may be photocopied, reproduced, or translated into another language without express prior written consent of Raritan Computer, Inc.

© Copyright 2006 Raritan, CompuSwitch, Paragon, MasterConsole, and the Raritan company logo are trademarks or registered trademarks of Raritan Computer, Inc. All rights reserved. Java is a registered trademark of Sun Microsystems, Inc. Internet Explorer is a registered trademark of Microsoft Corporation. Netscape and Netscape Navigator are registered trademarks of Netscape Communication Corporation. PS/2, PC/AT, RS/6000, and PC/AT are registered trademarks of International Business Machines Corporation. All other marks are the property of their respective owners.

FCC Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential environment may cause harmful interference.

Japanese Approvals

Raritan is not responsible for damage to this product resulting from accident, disaster, misuse, abuse, non-Raritan modification of the product, or other events outside of Raritan’s reasonable control or not arising under normal operating conditions.

For assistance in the North or South America, please contact the Raritan Technical Support Team by telephone (732) 764-8886, by fax (732) 764-8887, or by e-mail tech@raritan.com

Ask for Technical Support – Monday through Friday, 8:00 a.m. to 8:00 p.m., Eastern.

For assistance around the world, please see the back cover of this guide for regional Raritan contact information.
Safety Guidelines

To avoid potentially fatal shock hazard and possible damage to Raritan equipment:

- Do not use a 2-wire power cord in any product configuration.
- Test AC outlets at your computer and monitor for proper polarity and grounding.
- Use only with grounded outlets at both the computer and monitor. When using a backup UPS, power the computer, monitor and appliance off the supply.

Rack Mount Safety Guidelines

In Raritan products which require Rack Mounting, please follow these precautions:

- Operation temperature in a closed rack environment may be greater than room temperature. Do not exceed the rated maximum ambient temperature of the appliances (see Appendix A: Specifications).
- Ensure sufficient airflow through the rack environment.
- Mount equipment in the rack carefully to avoid uneven mechanical loading.
- Connect equipment to the supply circuit carefully to avoid overloading circuits.
- Ground all equipment properly, especially supply connections, such as power strips (other than direct connections), to the branch circuit.
Contents

Chapter 1: Introduction ................................................................. 1
  Product Overview ........................................................................ 1
  Product Photos ........................................................................... 1
  Product Features ......................................................................... 2
  Package Contents ........................................................................ 2

Chapter 2: Installation ................................................................. 3
  Initial Configuration ................................................................. 3
  Installation Notes ....................................................................... 4

Chapter 3: Operation ................................................................... 5
  Overview ..................................................................................... 5
  Front Panels .............................................................................. 5
  Front Panel Operation ............................................................. 6
    Select a Channel ...................................................................... 6
    Scan Channels ........................................................................ 6
    Set Scan Rate ......................................................................... 6
    Skip ....................................................................................... 6

Appendix A: Specifications ....................................................... 7
  Desktop Models ......................................................................... 7
  Power ...................................................................................... 7
  Cables ..................................................................................... 8
  Accessories ............................................................................. 8
  Important Information for CompuSwitch Installation .................. 8

Appendix B: Troubleshooting .................................................... 9

Appendix C: Cable Support Bracket Kits .................................. 11
  RCS24 to CS-PENT 2/CS-PENT 4 ............................................ 11
  RCS8 to CS-PENT 8 ................................................................. 12
Figures

Figure 1 CS-PENT 2 Unit............................................................................................................................. 1
Figure 2 CS-PENT 4 Unit............................................................................................................................. 1
Figure 3 CS-PENT 8 Unit............................................................................................................................. 1
Figure 4 Rear Panel of CS-PENT 2 Unit...................................................................................................... 3
Figure 5 Rear Panel of CS-PENT 4 Unit...................................................................................................... 3
Figure 6 Rear Panel of CS-PENT 8 Unit...................................................................................................... 3
Figure 7 Cabling Details............................................................................................................................... 4
Figure 8 Front panel of CS-PENT 2 Unit...................................................................................................... 5
Figure 9 Front Panel of CS-PENT 4 Unit .................................................................................................... 5
Figure 10 Exploded View of Scan Rates from the CS-PENT 4 Front Panel ............................................... 5
Figure 11 Front Panel of CS-PENT 8 Unit.................................................................................................. 5
Figure 12. RCS24 to CS-PENT 2/CS-PENT 4 Installation ...................................................................... 11
Figure 13. RCS8 to CS-PENT 8 Installation ............................................................................................ 12
Chapter 1: Introduction

Product Overview

Congratulations on your purchase of Raritan’s CompuSwitch-PENT, which enables efficient control of multiple computers, any combination of PC/ATs, and PS/2s, from only one keyboard, monitor, and mouse. The 8-channel model connects and controls up to 8 computers, the 4-channel model connects and controls up to 4 computers, and the 2-channel model connects and controls 2 computers.

CompuSwitch-PENT is built with Raritan’s unique intelligent emulation technology, which dedicates and individual processor to each connected computer so that each computer always sees its own keyboard and mouse. This prevents keyboard and mouse lockups and ensures flawless bootup and operation of any mix of computers running any operating system.

Product Photos

Figure 1 CS-PENT 2 Unit

Figure 2 CS-PENT 4 Unit

Figure 3 CS-PENT 8 Unit
Product Features

- Dedicated keyboard and mouse emulators to ensure automatic booting and proper operation of each computer
- VGA, SVGA, and XGA high resolution video support
- Simple operation either from the CompuSwitch-PENT front panel
- SCAN function to automatically cycle through all channels at a selectable scan rate from 1 to 16 seconds by using push buttons on the front panel
- SKIP function to automatically bypass channels without a powered computer connected
- Easy-to-manage, tangle-proof, high-resolution PC cables

Package Contents

(1) CompuSwitch-PENT unit
Chapter 2: Installation

Initial Configuration

Begin by connecting one computer, and once proper operation is confirmed, proceed to connecting any additional computers.

**Important:** Make certain all computers are powered OFF before starting installation.

1. Plug the monitor, keyboard, and PS/2 mouse into the ports marked **VGA MONITOR**, **PS/2 or AT KEYBOARD**, and **PS/2 MOUSE** on the CompuSwitch-PENT rear panel.

![Figure 4 Rear Panel of CS-PENT 2 Unit](image)

![Figure 5 Rear Panel of CS-PENT 4 Unit](image)

![Figure 6 Rear Panel of CS-PENT 8 Unit](image)

2. Using the appropriate CompuSwitch cable, connect one PC’s 25-pin connector to any channel on the CompuSwitch rear panel.

3. Plug the cable’s video, keyboard, and mouse connectors into the computer ports.
4. Power ON the connected computer. On the CS-PENT front panel, the light above the [SKIP] button will be ON, and the light above the connected channel button number will also be ON, indicating that CS-PENT is powered ON.

Note: CS-PENT is automatically powered ON as soon as at least one connected computer is manually powered ON.

5. The video from the connected computer will be displayed on the monitor. When boot-up is complete, check keyboard and mouse operation. Operate the keyboard and mouse as if they were connected directly to the computer.

6. After you have verified operation of one computer, connect the remaining PCs following steps 2–4. You may now begin using the CS-PENT unit.

![Figure 7 Cabling Details](image)

**Installation Notes**

1. Connections are provided for either a 6-pin PS/2-style or a 5-pin Extended AT-style keyboard. Do not connect both keyboards simultaneously.

2. You may simultaneously connect PS/2 and AT computers to CS-PENT with the appropriate cables. However, only a PS/2 mouse can be used with CS-PENT to operate the computers.
Chapter 3: Operation

Overview
You can operate CS-PENT using the buttons on its front panel. The lights on the front panel of the unit indicate the status of operation.

Note: Numbered channel buttons have two functions. When the Scan light is OFF, the buttons are used to select channels. When the Scan light is ON, the buttons are used to set scan rate.

Front Panels
On the front panels of the different CS-PENT units, you will find that CS-PENT 2 has buttons marked 1 and 2, and a button marked [SCAN]. CS-PENT 4 has buttons marked 1 through 4, and buttons marked [SCAN] and [SKIP]. CS-PENT 8 has buttons marked 1 through 8, and buttons marked [SCAN] and [SKIP].
Front Panel Operation

Select a Channel

To select a specific computer for viewing and operation:
1. Be sure the light above the [SCAN] button is OFF (toggle on/off).
2. Press the button (1, 2, …8) corresponding to the desired channel. The light above the button will be ON, and the video from the computer connected to that channel will be displayed.
3. Operate the selected computer using the keyboard and mouse.

Scan Channels

CompuSwitch automatically cycles through the channels at a preset scan rate. The default scan rate is three seconds per channel. To display each computer’s video:
1. Activate the scan function by pressing the [SCAN] button (toggle on/off).
2. The light above the [SCAN] button will illuminate, and the unit will begin scanning.

Set Scan Rate

To adjust the scan rate interval:
1. Activate the Scan function by pressing the [SCAN] button (the light above [SCAN] will illuminate).
2. Press the channel button that corresponds to the number for your Scan rate. The light above the button will blink twice to acknowledge the setting, and scanning will continue at the new interval.

Skip

To restrict scanning to display only active channels, that is, channels connected to computers powered ON:
1. Press the [SKIP] button (toggle on/off).
2. The light above the button will be ON, and only active channels will be selected.
Appendix A: Specifications

Desktop Models

CS-PENT 2
2-Channel Model
10.55” (W) x 7.87” (D) x 1.75” (H)
268mm (W) x 200mm (D) x 44mm (H)
3.6 lbs. (1.62kg)

CS-PENT 4
4-Channel Model
10.55” (W) x 7.87” (D) x 1.75” (H)
268mm (W) x 200mm (D) x 44mm (H)
3.6 lbs. (1.62kg)

CS-PENT 8
8-Channel Model
15.40” (W) x 7.87” (D) x 1.75” (H)
390mm (W) x 200mm (D) x 44mm (H)
4.9 lbs. (2.24kg)

Power

Powered by connected computer through the keyboard port:
DC Power Input = 6V/1.4 amp. Adapter (optional)
Operating Temperature = 0–50°C (32–122°F)
Cables

For each PS/2 Computer (VGA Video, PS/2 K/B, PS/2 Mouse)

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>LENGTH</th>
<th>CONNECTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCP20</td>
<td>2M/6.5ft</td>
<td>DB25(M) to HD15(M), 2 x mini-DIN6(M)</td>
</tr>
<tr>
<td>CCP40</td>
<td>4M/13ft</td>
<td>DB25(M) to HD15(M), 2 x mini-DIN6(M)</td>
</tr>
<tr>
<td>CCP60</td>
<td>6M/20ft</td>
<td>DB25(M) to HD15(M), 2 x mini-DIN6(M)</td>
</tr>
<tr>
<td>CCP90</td>
<td>9M/30ft</td>
<td>DB25(M) to HD15(M), 2 x mini-DIN6(M)</td>
</tr>
</tbody>
</table>

For each AT Computer (VGA Video, AT K/B, Serial Mouse)

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>LENGTH</th>
<th>CONNECTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCA20</td>
<td>2M/6.5ft</td>
<td>DB25(M) to HD15(M), DIN5(M), DB9(F)</td>
</tr>
<tr>
<td>CCA40</td>
<td>4M/13ft</td>
<td>DB25(M) to HD15(M), DIN5(M), DB9(F)</td>
</tr>
<tr>
<td>CCA60</td>
<td>6M/20ft</td>
<td>DB25(M) to HD15(M), DIN5(M), DB9(F)</td>
</tr>
<tr>
<td>CCA90</td>
<td>9M/30ft</td>
<td>DB25(M) to HD15(M), DIN5(M), DB9(F)</td>
</tr>
</tbody>
</table>

Accessories

DC Adapter 6V/1.4 amp. Adapter
A10D1-06MP X= U(USA), K(United Kingdom), G(Germany, France & Netherlands), A(Australia), J(Japan)

Rack Mount Kits
RCS24 19” rack mount kit for 2/4-channel unit
RCS8 19” rack mount kit for 8-channel unit

Important Information for CompuSwitch Installation

You will operate all computers connected to CompuSwitch using one keyboard and mouse plugged into CompuSwitch. There are many brands of keyboards and mice on the market, and there can be slight variations in their manufacture and operation. While most of these devices will operated satisfactorily, if you do experience any problem with either the keyboard or mouse operation, please replace it with one of the devices listed below and test again. If necessary, please contact Raritan Technical Support (732) 764-8886, M-F, 8:00-8:00 EST. We maintain a list of devices and their operational characteristics with CompuSwitch, and can make recommendations.

The following devices have been tested and operate with CompuSwitch:
Keyboard – Compaq, Gateway 2000, IBM
Mini Keyboard with Trackball – IBM Trackpoint, IBM M5-1, Microsoft IntelliMouse
Mouse – Compaq, IBM PS/2, Logitech, Microsoft V2.0A and V2.1A
# Appendix B: Troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Probable Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No front panel lights</td>
<td>Bad connection.</td>
<td>Check cable connection.</td>
</tr>
<tr>
<td>Computer not powered ON</td>
<td></td>
<td>Power ON the computer.</td>
</tr>
<tr>
<td>Notebook computer or Guardian device</td>
<td></td>
<td>Use an external 6V 6V/1.4 amp. power adapter to power CompuSwitch. Refer to Page 11.</td>
</tr>
</tbody>
</table>
| Channel light flashes continuously | Computer not powered ON for that channel | Power ON the computer.  
                             |                             | Activate Skip function.                                                 |
| No video display for one or all computers | Loose video connection(s) | Check and reconnect cables.                                              |
|                                  | Monitor problems            | Turn off power to the computers. Connect the suspect monitor directly to the computer, and check for proper display. If no display, the problem is with the computer or the monitor. If display is correct, contact dealer for service. |
| Keyboard error on one machine    | Keyboard connection         | Check K/B cable connection of the computer not operating properly.       |
| Unable to select Channel         | Scan function is active     | Toggle the Scan button so that the light above the button is OFF.        |
| Keyboard does not function, or mouse locks up | Keyboard or mouse connection loose | Check keyboard or mouse connection. Power down the problem computer first. Connect the keyboard or mouse directly to the computer to determine if the problem is with the computer keyboard or mouse port. Then connect the problem computer to a different channel, and restart the computers. If problems persist, contact dealer. |
Appendix C: Cable Support Bracket Kits

**RCS24 to CS-PENT 2/CS-PENT 4**

CS-PENT 2 or CS-PENT 4
- Side Frame (RCS24)  2 pieces
- Round head screw, M3x8mm  4 pieces
- Cable Support Bracket  2 pieces
- Round head screw, M3x6mm  4 pieces

*Figure 12. RCS24 to CS-PENT 2/CS-PENT 4 Installation*
RCS8 to CS-PENT 8

CS-PENT 8

- Side Frame (RCS8)  2 pieces
- Round head screw, M3x8mm  4 pieces
- Cable Support Bracket  2 pieces
- Round head screw, M3x6mm  4 pieces

Figure 13. RCS8 to CS-PENT 8 Installation
World Headquarters
Raritan Computer, Inc.
400 Cottontail Lane
Somerset, NJ 08873
USA
Tel. (732) 764-8886
Fax (732) 764-8887
Email: sales@raritan.com
www.raritan.com

Raritan OEM Division
Peppercon USA, Inc.
111 E. Wacker Dr, Suite 2626
Chicago, IL 60601
Tel. (847) 466-1392
Fax (312) 720-1376
Email: info@peppercon.com
www.peppercon.com

Asia Pacific Headquarters
Raritan Computer Taiwan, Inc.
5F, 121, Lane 235, Pao-Chiao Road
Hsin Tien Taipei
Taiwan, ROC
Tel. (886) 2 8919-1333
Fax (86) 2 8919-1338
Email: sales.asia@raritan.com
http://www.rct.com.tw

Raritan China Offices
Shanghai Representative Office of Raritan Computer, Inc.
Rm 17E Cross Region Plaza
899 Lingling Rd., Shanghai
China 200030
Tel. (86) 21 5425-2499
Fax (86) 21 5425-3992
Email: sales.china@raritan.com
http://www.raritan.china.cn

Guangzhou Representative Office of Raritan Computer, Inc.
1205/F, Metro Plaza
183 Tian He Bei Road
Guangzhou
China 510075
Tel. (86-20)8755 5581
Fax (86-20)8755 5571
Email: sales.china@raritan.com
http://www.raritan.com.cn

Beijing Representative Office of Raritan Computer, Inc.
Unit 1310, Air China Plaza
No.36 XiaoYun Road, Chaoyang District
Beijing
China 100027
Tel. (86) 10 8447-5706
Fax (86) 10 8447-5700
Email: sales.china@raritan.com
http://www.raritan.com.cn

Raritan Korea
Raritan Computer Korea Inc.
#3602, Trade Tower, World Trade Center
Samsung-dong, Kangnam-gu
Seoul, Korea
Tel. (82) 2 557-8730
Fax (82) 2 557-8733
Email: sales.korea@raritan.com
http://www.raritan.co.kr

Raritan Computer Japan, Inc.
4th Floor, Shinkawa NS Building
1-25-2 Shinkawa, Chuo-ku
Tokyo, Japan 104-0033
Tel. (81) 03-3523-5991
Fax (81) 03-3523-5992
Email: sales@raritan.co.jp
http://www.raritan.co.jp

Raritan Computer Japan Osaka Office
Honmachi Phoenix Bldg 8F
1-15-8 Nishihonmachi Nishi-ku
Osaka, Japan 550-0005
Tel. (81) (6) 4391-7752
Fax (81) (6) 4391-7761
Email: sales@raritan.co.jp
http://www.raritan.co.jp

Raritan Australia
Level 2, 448 St Kilda Road
Melbourne, VIC 3004
Australia
Tel. (61) 3 9866-6887
Fax (61) 3 9866-7706
Email: sales.au@raritan.com
http://www.raritan.com

Raritan Computer Taiwan Inc India Liaison Office
210 2nd Floor Orchid Square
Sushant Lok 1, Block B, Mehrauli
Gurgaon Rd, Gurgaon 122 002
Haryana
India
Tel. (91) 124 510 7881
Fax (91) 124 510 7880
Email: sales.india@raritan.com
http://www.raritan.com

European Headquarters
Raritan Computer Europe, B.V.
Eglantierbaan 16
2908 LV Capelle aan den IJssel
The Netherlands
Tel. (31) 10-284-4040
Fax (31) 10-284-4049
Email: sales.europe@raritan.com
http://www.raritan.com

Raritan Computer France
120 Rue Jean Jaures
92300 Levallois-Perret
France
Tel. (33) 14-756-2039
Fax (33) 14-756-2061
Email: sales.france@raritan.com
http://www.raritan.fr

Raritan Computer Deutschland GmbH
Lichtstrasse 2
D-45127 Essen
Germany
Tel. (49) 201-747-98-0
Fax (49) 201-747-98-50
Email: sales.germany@raritan.com
http://www.raritan.de

Raritan Computer Italia
Via dei Piatti 4
20123 Milan
Italy
Tel. (39) 02-454-76813
Fax (39) 02-861-749
Email: sales.italy@raritan.com
http://www.raritan.com

Raritan Canada
Raritan Computer Inc.
2085 Hurontario St., Suite 300
Mississauga, Ontario Canada
L5A4G1
Tel. (905) 949-3650
Fax (905) 949-3651
Email: sales.canada@raritan.com
http://www.raritan.com

Raritan Computer U.K. Limited
36 Great St. Helen's
London EC3A 6AP
United Kingdom
Tel. (44) 20-7614-7700
Fax (44) 20-7614-7701
Email: sales.uk@raritan.com
http://www.raritan.com