# serialUp™ for CompactPCI

## Installation and User's Guide


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CompactPCI®

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

WARNING: 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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Changes or modifications not expressly approved by Continuous Computing Corporation could void the user’s authority to operate the equipment.

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# 1 Introduction

Welcome to the *serialUp™ for CompactPCI Installation and User's Guide.* This guide contains information about the installation and use of the Continuous Computing Serial card for CompactPCI.

This guide includes the following information related to serialUp:

- Unpacking, installing, and starting up
- Software installation
- Troubleshooting
- Connector usage, jumpers, pinouts, and specifications

## Description

serialUp provides eight ports (six accessible with standard transition card) of serial connectivity on a 6U hot-swap CompactPCI board. serialUp's transition card options allow you to select the type and quantity of connectors. RS232 or RS423 signaling is jumper-selectable in banks of two ports for maximum flexibility.

serialUp features intelligent UARTs with 64-byte FIFOs for maximum throughput with minimum system load. Its programming interface is `STREAMS/termios` compatible and functions exactly like a Sun serial port under Solaris 2.6 and Solaris 7. With the release of Hot Swap support in Solaris 8, serialUp will be fully Hot Swap functional as well. Drivers for alternative operating systems such as VxWorks and ChorOS can be provided.

Features of serialUp include:

- **High-performance UARTs**
  serialUp uses the same UARTs found on many Sun motherboards, enhancing compatibility and performance. 64-byte FIFOs reduce the number of interrupts required to service continuous and intermittent data streams. Intelligent hardware and software flow control in the UART improves the data integrity while reducing overhead.

- **Flexible I/O**
  The same front card can be used with any of several rear I/O transition cards, allowing you to choose the most appropriate connector for your application, including DB-9, DB-25, RJ-45, or a high-density connector.

- **Multi-protocol support**
  The hardware drivers can be set to RS232 for compatibility with existing equipment or RS423 for reduced emissions. The software drivers support asynchronous mode with 7 or 8 data bits and the usual combinations of parity and stop bits, up to 115200 bits/second.

- **Hot Swap CompactPCI**
  Designed to fit the most popular form factor for modern Central Office equipment, serialUp can be inserted into and removed from a system without risk of damage to the hardware. In addition, serialUp is built with support for Full Hot Swap at the operating system level.

- **Full-featured device driver**
  serialUp's Solaris device driver uses `STREAMS` to provide an interface that is fully compatible with the `termios`() manual page. This ensures compatibility with existing software and future applications.

serialUp for CompactPCI is a Full Hot Swap device, meaning that the power circuitry is controlled so that inserting into or extracting from a live system will not cause any electrical damage. In conjunction with an operating system that supports Full Hot Swap, serialUp can be removed from and inserted into a running system without interrupting system operation.

# Using This Guide

This guide is written for computer technicians and hardware and software engineers.

It is assumed that the user of serialUp is:

- Familiar with the handling of ESD-sensitive electronic equipment
- Familiar with the Solaris operating system

# Definitions of Terms

| | |
|---|---|
| *serialUp* | Refers to the larger card installed in the front of the system. serialUp also refers to both the front and transition cards as a unit. |
| *Transition Card* | Refers to the smaller card installed at the back of the system. |
| *Basic Hot Swap* | The board is powered and enabled for access by the PCI bus in configuration space only upon insertion. The board's configuration space is not yet initialized. You must initiate software connection at the system console. |
| *Full Hot Swap* | Adds to Basic Hot Swap by connecting the hardware and then the software automatically. The hardware connection layer asserts ENUM# (the signal that drives service requests to the system host) and the system software responds by configuring the system software. |

### *Transition card options*

| Option | Description |
|---|---|
| *Transition Card A* | Ports 0-5 are accessed via DB-9 connectors on the rear panel. These ports can only be run in Async mode.<br>To use all 8 ports (0-7), order the DB-25 expander bracket from Continuous Computing Corporation (part number 0-04788). The expander bracket enables ports 6/4 and 7/5 (accessed via headers on the printed circuit board) to run in any combination of Async or Sync. |
| *Transition Card B* | Ports 0-7 (all Async) are accessed via RJ-45 connectors on the rear panel. |
| *Transition Card C* | This card is identical to Transition Card B, but includes a modem. |

**Table 1 Transition card options**

**Note:** For transition card illustrations, see Table 5.

# Typographic Conventions

A summary of the typographic conventions used in this guide is listed in Table 2.

| Typeface/Symbol | Meaning | Example |
|---|---|---|
| `AaBbCc123` | The names of commands, files and directories; on-screen computer output | Edit your `.login` file.<br>At the `ok` prompt…. |
| **`AaBbCc123`** | What you type, contrasted with on-screen computer output | To turn the unit on, type **`on`** at the `ccpu>` prompt. i.e., `ccpu>`**`:on`** |
| <***`AaBbCc123`***> | Command-line placeholder or token to be replaced with a real name or value (do not type brackets) | To delete a file, type **`rm`** <***`filename`***>. |
| [**`AaBbCc123`**] | Optional argument (do not type brackets) | [**`help`**]<br>**`dir`** [<***`filename`***>] |
| {<**`a`**> <**`b`**>} | Required argument (do not type brackets) | {<***`na`***> <***`cmd`***>}<br>**`grade`** {**`a`**, **`b`**, **`c`**, **`d`**, **`f`**} |
| *AaBbCc123* | Book titles, new words or terms, or words to be emphasized | • This manual is used in conjunction with the *SPARCengine CP1500 User's Manual.*<br>• You *must* be grounded to avoid ESD damage to the equipment. |
| ABC | Acronyms | Locate the On / Off toggle switch on the CCN front panel. |
| **`Ctrl`** | Keystroke press | Send a break using **`Ctrl-]`**. (**Note:** Hold down the **`Ctrl`** key and then press **`]`**. *Do not include the hyphen*). |
|  | Caution | Failure to heed the instructions that follow the Caution symbol may result in damage to the equipment. |

**Table 2 Typographic conventions**

# System Block Diagram

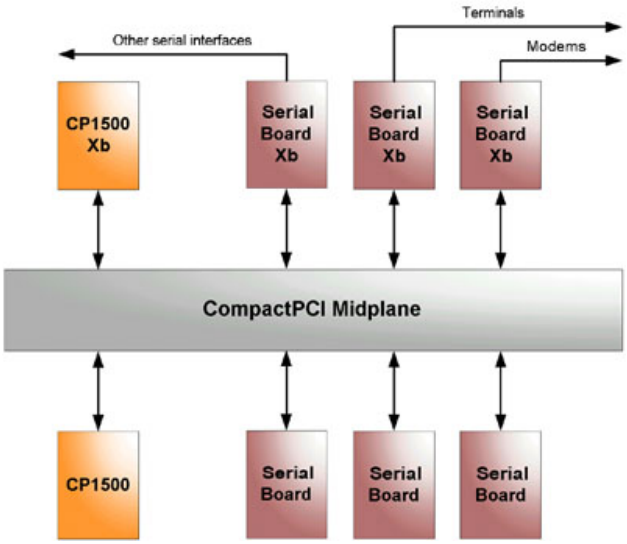



**Figure 1 System block diagram**

# Photo

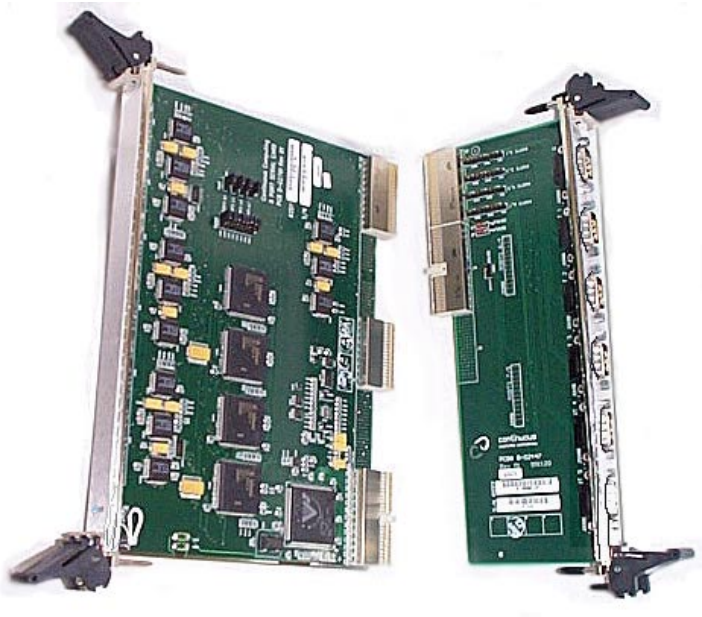


**Figure 2 serialUp's front card (left) and transition card A (right)**

**Note:** See Table 5 for an illustration of transition cards B and C.

# 2 Unpacking, Installing, and Starting Up

## Electrostatic Discharge (ESD)

**⚠ Caution – serialUp contains electronic components that are extremely sensitive to static electricity. Ordinary amounts of static from clothing and the surrounding environment may destroy components.**

### *What to do*

- Use an antistatic mat.
- Use an antistatic wrist or foot strap.

## Storage

- If serialUp is to be stored before unpacking, see Table 17 for environmental storage specifications.

## Unpacking

**⚠ Caution – Always maintain an ESD-safe environment when handling serialUp. It contains many components that can be destroyed by ESD.**

- Inspect the shipping container for any in-transit damage and report it to the shipping agent if necessary.
- Carefully unpack serialUp from its shipping container.

## Powering Down

1. Ensure that the system's OS has been shut down. In Solaris, do this using the **`halt`** command. You should then see the `ok` prompt.
2. Power down the system.

# Installing serialUp

**⚠ Caution – You cannot install an I/O card in the slot designated for a CPU card, or vice-versa.**

1. Verify the jumper settings and change them if desired. Refer to Section 5, "Connector Usage, Jumpers, Pinouts, and Specifications," for detailed information regarding the jumpers and their settings.
2. Slide the card into its slot in the system chassis. As the card's ejector latches engage the chassis, apply forward pressure while pushing the ejector latch handles toward each other. This procedure applies to both serialUp's front and transition cards. See Figure 3 for an illustration of card installation and removal.

**⚠ Caution – If you are installing the transition card in a system with an H.110 midplane or other midplane without J4 on the rear, then you must carefully align the transition card visually. This is *critical*; bent pins *will* result if you do not visually align the transition card in an H.110 midplane.**

**Note**: J4 is used for alignment purposes only. It is not required for electrical connections.

3. When properly installed, the connectors of each card will be fully engaged with the chassis' midplane. serialUp's front panel will sit flush with the front panels of the other cards.
4. Install and tighten the captive screws supplied with serialUp on each ejector latch handle to secure each card to the system chassis.

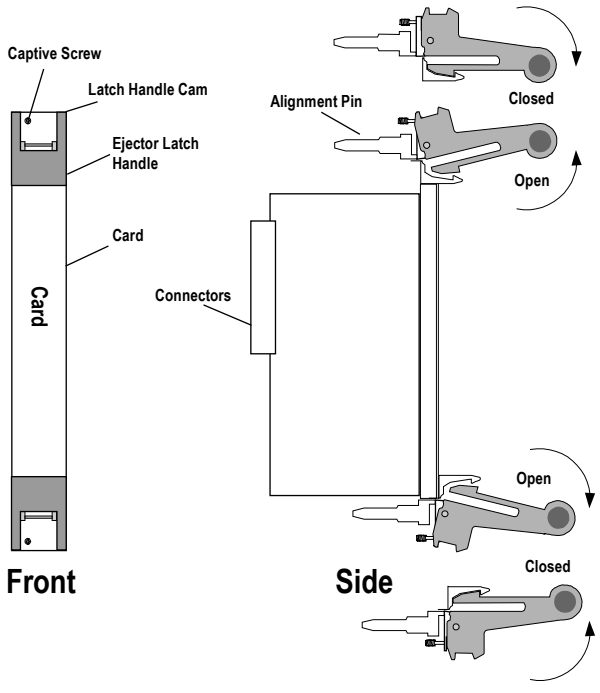



**Figure 3 Card installation and removal**

# Powering Up

After you have installed serialUp:

1. Power on the system.
2. Connect to the CP1500.
3. Start the OS with a reconfiguration boot (at the `ok` prompt **`boot -r`**) (at the Solaris # prompt **`reboot -- -r`**). This may take a few minutes.
4. Log in to the system.

# 3 Software

## Installing

### *Packages*

serialUp requires additional device drivers to operate in the Solaris environment. These drivers are supplied by CCPU in one of the following forms:

- Web site download (http://www.ccpu.com)
- CD-ROM supplied with serialUp
- Email from CCPU Technical Support

The device drivers are supplied in Sun package format, compatible with the **`pkgadd`** command. serialUp's driver package name is `CCPUcse`, "CCPU 8-Port Async/Sync Serial Driver, 32-bit and 64-bit."
**Note:** There are three transition card options for serialUp: DB-9, RJ-45 with modem, and RJ-45 without modem. These differences do not affect device driver installation or operation. For more information about the transition cards, see Section 5, "Connector Usage, Jumpers, Pinouts, and Specifications."

### *Installing* `CCPUcse`

Packages are supplied in two forms: package datastream and directory form.

- If the package file is named `CCPUcsexxx.tar.Z`, then use:

```
uncompress CCPUcsexxx.tar
tar xf CCPUcsexxx.tar
pkgadd -d . CCPUcse
```

- If the package is contained in a directory, then use:

```
pkgadd -d . CCPUcse
```

- If the package file is named `CCPUcsexxx`, then use:

```
pkgadd -d CCPUcsexxx
```

Using any of the above methods, the final output will look similar to the following:

```
# pkgadd -d CCPUcse.1.0.25a
The following packages are available:
  1  CCPUcse     CCPU 8-Port Async/Sync Serial Driver, 32-bit and 64-bit
                 (sparc) CCPUcse_1_0_25a

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]: Press Enter

Processing package instance <CCPUcse> from </home/user/CCPUcse.1.0.25a>

CCPU 8-Port Async/Sync Serial Driver, 32-bit and 64-bit
(sparc) CCPUcse_1_0_25a
```

```
[. . .]

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <CCPUcse> [y,n,?] y

Installing CCPU 8-Port Async/Sync Serial Driver, 32-bit and 64-bit as
<CCPUcse>

## Installing part 1 of 1.
/opt/CCPUcse/bin/autoser
/opt/CCPUcse/bin/cseeprog
/opt/CCPUcse/lib/eerev.02
/opt/CCPUcse/lib/eerev.03
/opt/CCPUcse/lib/eerev.04
[ verifying class <none> ]
Modifying /etc/devlink.tab
[ verifying class <sed> ]
/kernel/drv/cse
/kernel/drv/sparcv9/cse
[ verifying class <drv> ]
## Executing postinstall script.
Dec 19 15:26:28 rnd cse: NOTICE: cse0: working revision 1.25a
Dec 19 15:26:28 rnd cse: NOTICE: pci6333,73380: a55a => 16-bit card

Installation of <CCPUcse> was successful.
```

# Configuring the Driver

After installation, the serial port devices will exist as `/dev/term/0-7` and `/dev/cua/0-7` for the first card installed, and `8-15`, `16-23`, etc., for subsequent cards. These serial devices are fully compatible with `termios ioctls` and typical Sun commands such as **`tip`**, **`ttymon`**, and **`admintool`**. See the Sun Answerbook for more information on using these commands.

### *Configuring the ports for use with terminals*

If you want to configure the ports for use with terminals, the ldterm and ttcompat modules need to be "autopushed". For more information, see the manual pages for `autopush` and the file `/etc/iu.ap`.

### *Configuring the ports for login*

If you want to configure the ports for login, see the manual pages for the service access controller system (`sacadm`). In addition, see the manual pages `pmadm` and `admintool` and the file `/etc/saf/*`.

### *Force loading the driver*

Normally, the device driver will be loaded automatically by Solaris the first time a serial port is accessed. In some cases, you may wish to force the driver to load immediately during boot rather than waiting.

- To force the driver to load immediately upon boot, edit `/etc/default/system` by adding the following to the end of the file:

  **`forceload cse`**

  **Note:** `"Warning: forceload of drv/cse failed"` can be caused by multiple force load entries in the `/etc/default/system` file or by a missing or faulty card.

- To check if the driver is loaded, use:

  ```
  modinfo | grep "cse "
  ```

- To see if serialUp is in the device tree, use:

  ```
  prtconf -v | grep 6333
  ```

  Your output should look similar to the following:

  ```
  pci6333,7338, instance #0
  ```

To verify serial port operation, refer to "Serial Port Verification" in Section 4.

# 4 Troubleshooting

This section describes techniques for analyzing any problems you may have installing or configuring serialUp.

## Package or Driver Fails to Load

1. The most straightforward way to verify that the motherboard can communicate with serialUp is to halt the system and verify through OpenBoot that serialUp is being detected on the PCI bus. Verify communication by using the following:

```
yoursys# halt
syncing file systems… done
ok cd /pci/pci/pci
ok ls
pci6333,7338
ok
```

   The "pci6333,7338" entry is serialUp. This output verifies that the Sun is communicating with serialUp through the PCI bus.

2. If the serialUp entry is not seen, try powering off the system and reseating the CPU and serialUp. If there are any other CompactPCI cards on the bus, try removing them to narrow down which card is interfering with the bus operation.

3. Once OpenBoot is recognizing the card, use **boot -r** to perform a reconfiguration boot. Once Solaris is booted, run the following:

```
yoursys# prtconf -v | more

System Configuration:  Sun Microsystems  sun4u
Memory size: 512 Megabytes
System Peripherals (Software Nodes):

SUNW,UltraSPARC-IIi-cEngine
    System properties:

[...]

pci6333,7338, instance #0
```

   **Note:** If there is no serialUp entry (pci6333,7338), serialUp or the CPU is not correctly communicating on the PCI bus.

4. Manually ensure that the device driver is loaded using: **drvconfig -i cse**. You should see the following output:

```
yoursys# drvconfig -i cse
Jun 18 13:22:05 lep-254 cse: NOTICE: cse0: working revision 1.26
Jun 18 13:22:05 lep-254 cse: NOTICE: pci6333,73380: a55a => 16-bit card
```

5. Verify the load with: **modinfo | grep cse**. You should see the following output:

```
yoursys# modinfo | grep cse
210 1029ae4e   7823 213   1  cse (CCPU serial 82532 ESCC2 v1.26)
```

6. If the driver is loaded, the serial ports are ready for use. If the **modinfo** command does not list a `cse` entry, then re-run the **pkgadd** command.

# Serial Port Verification

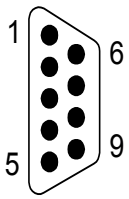
To verify serial port operation, a loopback plug or cable can be used. Construction details are given in Table 3 for each transition card option. The simplest way to use this plug is to insert it into one of the serial ports on the rear panel of the transition card (for example, port 2) and use the **tip** command:

```
yoursys# tip -9600 /dev/cua/2
Connected.
woifjeoeaifjoisjfahewfj    (e.g., everything you type is echoed back to you)
```

If the port fails to connect or gives an error such as "`no such device`," then refer to the previous section to debug the port. If the port connects but no data is echoed, ensure that the loopback plug is connected to the correct port and that the transition card is fully seated in the correct slot.

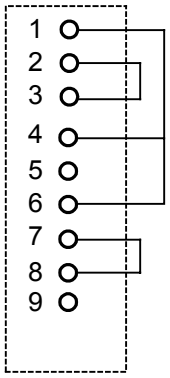
### *Loopback construction*

**Transition Card A**



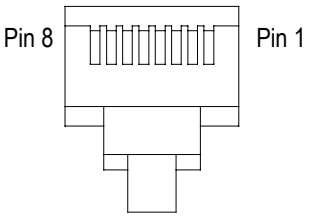

view looking into female connector

*Female DB-9 connector for Transition Card A*



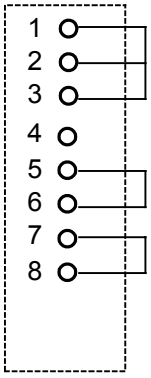

| Pin | Signal |
|---|---|
| 1 | DCD |
| 2 | TXD |
| 3 | RXD |
| 4 | DTR |
| 5 | GND |
| 6 | DSR |
| 7 | CTS |
| 8 | RTS |
| 9 | Not available |

**Transition Cards B and C -- Standard**



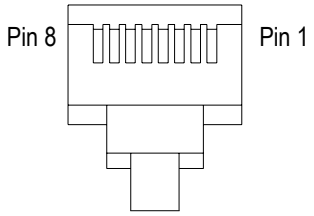

view looking into male connector

*Male RJ-45 connector for Transition Cards B and C*

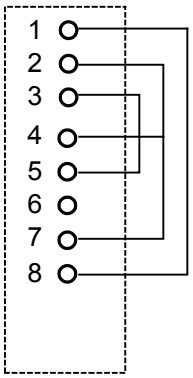



| Standard RJ-45 | |
|---|---|
| **Pin** | **Signal** |
| 1 | DSR |
| 2 | DCD |
| 3 | DTR |
| 4 | GND |
| 5 | RXD |
| 6 | TXD |
| 7 | CTS |
| 8 | RTS |

**Transition Cards B and C -- Custom**




*Male RJ-45 connector for Transition Cards B and C*




| Custom RJ-45 | |
|---|---|
| **Pin** | **Signal** |
| 1 | RTS |
| 2 | DTR |
| 3 | TXD |
| 4 | DCD |
| 5 | RXD |
| 6 | GND |
| 7 | DSR |
| 8 | CTS |

**Table 3 Loopback construction**

# All of the Above Fail

If all of the above troubleshooting methods fail, try swapping the suspect serialUp with one that is known to work. Follow the procedures below for removing serialUp.

### *Removing serialUp's front card*

To remove serialUp's front card:

1. Halt the operating system.
2. Remove power (if desired).
3. Remove the front card.
4. If you are replacing serialUp with a new one, use **`boot -r`** on your next boot to ensure the new configuration is recognized.

### *Removing serialUp's transition card*

To remove serialUp's transition card:

1. Halt the operating system.
2. Remove power (if desired).
3. Disconnect any external cables and remove the transition card.
4. If you are replacing the card with a new one, use **`boot -r`** on your next boot to ensure the new configuration is recognized.

# Contact Technical Support

If you continue to experience problems with serialUp, contact the Technical Support team at Continuous Computing. See Section 6 for contact information.

# 5 Connector Usage, Jumpers, Pinouts, and Specifications

## Connector Usage

| Connector | Front Card | Transition Card |
|---|---|---|
| J1 | PCI | Not installed |
| J2 | Not used/Not installed | Not installed |
| J3 | Mechanical alignment only | Not installed |
| J4 | Not installed | Mechanical alignment only |
| J5 | Serial port connections | Serial port connections |

**Table 4 Connector usage**

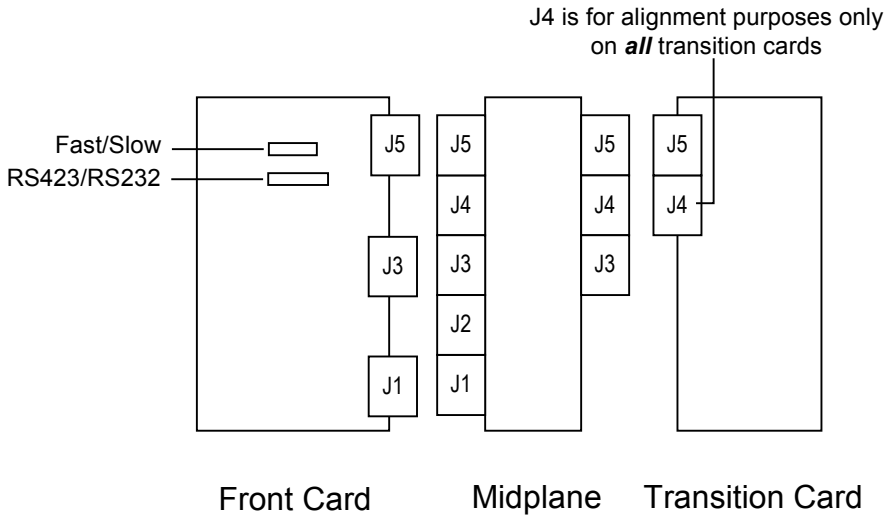



**Figure 4 Connectors**

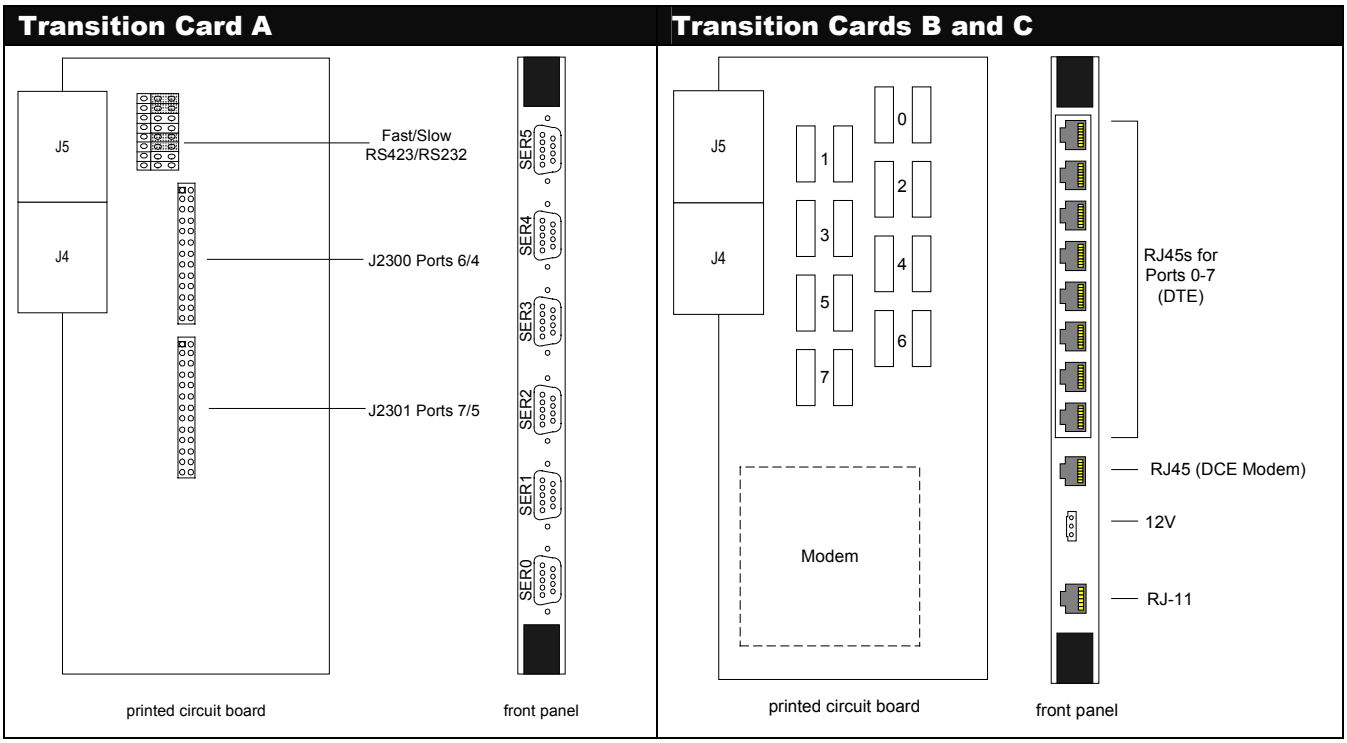



**Table 5 Transition cards**

**Note:** There is no modem on transition card B.
**Note:** The front panels of transition cards B and C are physically identical. However, the modem RJ-45 (DCE), the 3-pin Molex connector, and the RJ-11 are not electronically connected to anything on transition card B.

# Jumpers

### *Transition Card A*

See Table 5 for transition card illustrations.

**Fast/Slow**

The Fast/Slow header is located on both the front and transition cards. Refer to Figure 4 and Table 5 for location details.

Fast mode enables the output signals to transition more rapidly, thus supporting baud rates above 38400.

Slow mode artificially slows down these edges, providing reduced emissions. Do not use slow mode above 38400 baud.

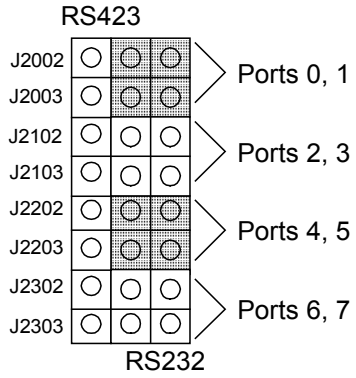
**RS423/RS232**

RS423/RS232 appears on both the front and transition cards. (Refer to Figure 4 and Table 5 for location details). Therefore, jumpers can be placed on either the front card or the transition card. Placing jumpers on the transition card enables you to replace the front card without losing the settings on the transition card. Placing the jumpers on the front card enables you to more easily replace them. *To avoid conflicting settings, do not place jumpers on both the front and transition cards.*

**Output signals**

| Jumper | High | Low | Note |
|---|---|---|---|
| RS232 | +12V | -12V | Compatible with all RS232 parts. |
| RS423 | +5V | -5V | Works with most RS232 driver/receiver chips; however, reduces emissions due to lower voltage swing. |

**Table 6 RS232/423 output signals**



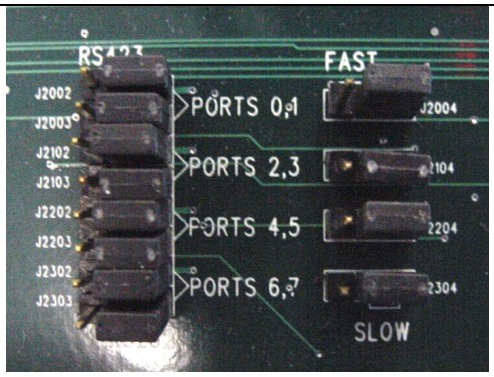




**Figure 5 RS423/RS232 diagrams***

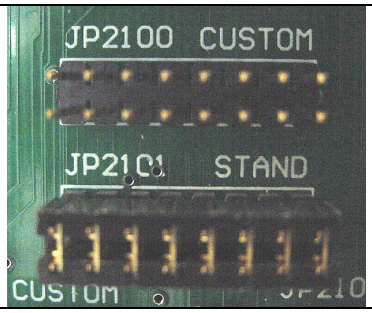
***Note:** RS423 applies to the two pins on the left; RS232 applies to the two pins on right.
***Note:** The RS423/RS232 jumpers *must be* set in blocks of two as suggested by the shading in the illustration above. The factory default is to place jumpers on the *front card* in the positions shown in the photograph above.

### *Transition Cards B and C*

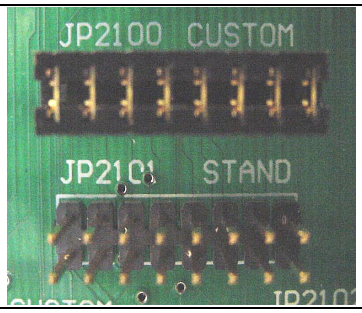
See Table 5 for transition card illustrations.

**Standard and Custom Pinout Options**

Each port (0-7) has a header on the printed circuit board of the transition card that correspond to the RJ-45 connector located on the rear panel (see Table 5 for location details). Jumpers must be placed on *all* pins of the Standard header to bring out the Standard ANSI configuration or on the Custom header to bring out the Custom configuration. For the pinouts, see "Pinouts."
**Note:** You must place a jumper block on *all* of *either* the Standard or the Custom headers, *but not both*.




*Jumper block covering **all** pins of the Standard header*




*Jumper block covering **all** pins of the Custom header*

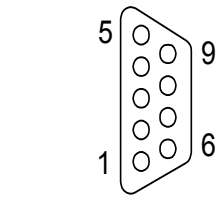
**Table 7 Jumper block settings**

# Pinouts

### *Transition Card A*

See Table 5 for transition card illustrations.

**DB-9 male pinout for ports 0-5**

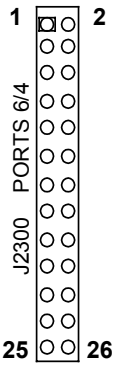



view looking into male connector

| Pin | Signal | Direction |
|---|---|---|
| 1 | DCD | In |
| 2 | RXD | In |
| 3 | TXD | Out |
| 4 | DTR | Out |
| 5 | GND | --- |
| 6 | DSR | In |
| 7 | RTS | Out |
| 8 | CTS | In |
| 9 | Not available | --- |

**Table 8 DB-9 male pinout**

**J2300 pinout for ports 6/4**

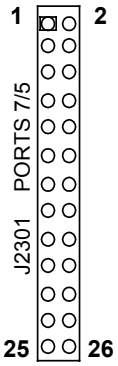



| Pin | Signal | Direction | Pin | Signal | Direction |
|---|---|---|---|---|---|
| 1 | No Connect | --- | 2 | TXD 4 | Out |
| 3 | TXD 6 | Out | 4 | TRXC 6 | In |
| 5 | RXD 6 | In | 6 | RXD 4 | In |
| 7 | RTS 6 | Out | 8 | RXC 6 | In |
| 9 | CTS 6 | In | 10 | TRXC 4 | In |
| 11 | DSR 6 | In | 12 | RTS 4 | Out |
| 13 | Ground | --- | 14 | DTR 6 | Out |
| 15 | DCD 6 | In | 16 | No Connect | --- |
| 17 | DSR 4 | In | 18 | No Connect | --- |
| 19 | RXC 4 | In | 20 | No Connect | --- |
| 21 | DTR 4 | Out | 22 | TXC 6 | Out |
| 23 | DCD 4 | In | 24 | TXC 4 | Out |
| 25 | CTS 4 | In | 26 | No Connect | --- |

**Table 9 J2300 pinout**

## *Transition Card A (continued)*

**J2301 pinout for ports 7/5**

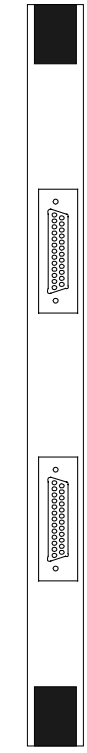



| Pin | Signal | Direction | Pin | Signal | Direction |
|---|---|---|---|---|---|
| 1 | No Connect | --- | 2 | TXD 5 | Out |
| 3 | TXD 7 | Out | 4 | TRXC 7 | In |
| 5 | RXD 7 | In | 6 | RXD 5 | In |
| 7 | RTS 7 | Out | 8 | RXC 7 | In |
| 9 | CTS 7 | In | 10 | TRXC 5 | In |
| 11 | DSR 7 | In | 12 | RTS 5 | Out |
| 13 | Ground | --- | 14 | DTR 7 | Out |
| 15 | DCD 7 | In | 16 | No Connect | --- |
| 17 | DSR 5 | In | 18 | No Connect | --- |
| 19 | RXC 5 | In | 20 | No Connect | --- |
| 21 | DTR 5 | Out | 22 | TXC 7 | Out |
| 23 | DCD 5 | In | 24 | TXC 5 | Out |
| 25 | CTS 5 | In | 26 | No Connect | --- |

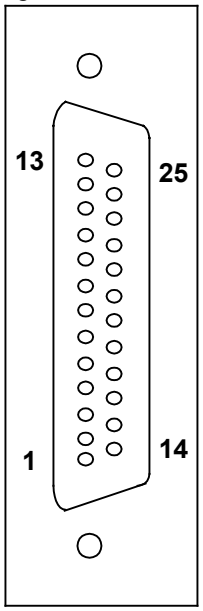
**Table 10 J2301 pinout**

**DB-25 male adapter cable pinout for expander bracket**

To use all 8 ports (0-7) with transition card A, order the DB-25 expander bracket from Continuous Computing Corporation (part number 0-04788). (See Section 1, "Transition card options") for a brief description of the expander bracket's capabilities). Refer to Table 5 for the location of the headers for ports 6/4 and 7/5 on the printed circuit board of transition card A. Connect the top DB-25 to ports 6/4 and the bottom DB-25 to ports 7/5.



expander bracket



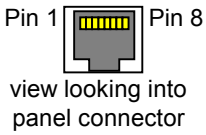

| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | No Connect | 14 | TXD B |
| 2 | TXD A | 15 | TRXC A |
| 3 | RXD A | 16 | RXD B |
| 4 | RTS A | 17 | RXC A |
| 5 | CTS A | 18 | TRXC B |
| 6 | DSR A | 19 | RTS B |
| 7 | Ground | 20 | DTR A |
| 8 | DCD A | 21 | No Connect |
| 9 | DSR B | 22 | No Connect |
| 10 | RXC B | 23 | No Connect |
| 11 | DTR B | 24 | TXC A |
| 12 | DCD B | 25 | TXC B |
| 13 | CTS B | | |

**Table 11 DB-25 male adapter cable pinout**

### *Transition Cards B and C*

See Table 5 for transition card illustrations.

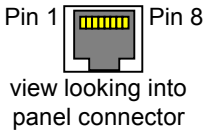
**Standard RJ-45 pinout (for the 8 serial ports--DTE)**




| Pin | Signal | Direction |
|---|---|---|
| 1 | DSR | In |
| 2 | DCD | In |
| 3 | DTR | Out |
| 4 | GND | --- |
| 5 | RXD | In |
| 6 | TXD | Out |
| 7 | CTS | In |
| 8 | RTS | Out |

**Table 12 Standard RJ-45 pinout**

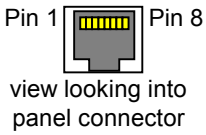
**Custom RJ-45 pinout (custom 8 serial ports--DTE)**




| Pin | Signal | Direction |
|---|---|---|
| 1 | RTS | Out |
| 2 | DTR | Out |
| 3 | TXD | Out |
| 4 | DCD | In |
| 5 | RXD | In |
| 6 | GND | --- |
| 7 | DSR | In |
| 8 | CTS | In |

**Table 13 Custom RJ-45 pinout**

**RJ45 modem (transition card C only--DCE)**

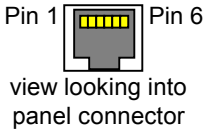



| Pin | Signal | Direction |
|---|---|---|
| 1 | DSR | Out |
| 2 | DCD | Out |
| 3 | DTR | In |
| 4 | GND | --- |
| 5 | RXD | Out |
| 6 | TXD | In |
| 7 | CTS | Out |
| 8 | RTS | In |

**Table 14 RJ-45 - DCE modem**

**Note:** The front panels of transition cards B and C are physically identical. However, the modem RJ-45 (DCE), the 3-pin Molex connector, and the RJ-11 are not electronically connected to anything on transition card B.

**RJ-11 pinout (transition card C only)**

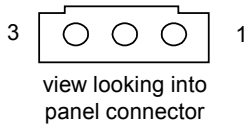



| Pin | Signal |
|---|---|
| 1 | No Connect |
| 2 | No Connect |
| 3 | TIP |
| 4 | RING |
| 5 | No Connect |
| 6 | No Connect |

**Table 15 RJ-11 pinout**

**Note:** The front panels of transition cards B and C are physically identical. However, the modem RJ-45 (DCE), the 3-pin Molex connector, and the RJ-11 are not electronically connected to anything on transition card B.

**Standard right-angle 3-pin pinout (transition card C only)**




| Pin | Signal | Direction |
|---|---|---|
| 1 | 12VDC | In |
| 2 | GND | --- |
| 3 | 12VDC | In |

**Table 16 Standard right-angle 3-pin pinout**

**Note:** The front panels of transition cards B and C are physically identical. However, the modem RJ-45 (DCE), the 3-pin Molex connector, and the RJ-11 are not electronically connected to anything on transition card B.

# Specifications

| Protocols | |
|---|---|
| Async Mode | Standard Solaris bit rates<br>(300, 1200, 2400, 4800, 9600, 19,200, 38,400)<br>Extended bit rates to 460.8 kbps<br>Data bits: 7 or 8<br>Parity: none, even, odd, mark, or space<br>Stop bits: 1, 1.5, or 2 |
| Signaling | RS232 or RS423<br>Fast or slow edge rates<br>Jumper selectable on I/O card or transition card |
| Signals Supported | TXD, RXD Data<br>CTS, RTS Hardware flow control<br>DTR, DSR, DCD Line Status<br>TXC Clock outputs<br>RXC, TRXC Clock inputs |
| **Hardware** | |
| UART | Siemens 82532 |
| FIFO | 64 bytes per direction and channel |
| PCI Interface | 33MHz, 32-bit, 5V I/O<br>Hot Swap compliant power and signaling |
| Connectors | Rear I/O through selectable transition cards<br>Standard configuration: 6 DB9M DTE (Async)<br>Optional add-on transition module: 2 DB-25M DTE (2 Sync ports each)<br>Custom connector configurations available |
| Front Panel | Hot Swap LED<br>Hot Swap ejector handle<br>Optional 6 DB9M DTE Front I/O |
| **Software** | |
| Device Driver | Solaris 2.6, Solaris 7, and Solaris 8 available<br>Supports /dev/term and /dev/cua interfaces<br>Hot Swap available with Solaris 8 |
| **Operating Mechanical and Environmental** | |
| Power | 12W max power dissipation<br>5.0V: 100mA typ 150mA max<br>3.3V: 30mA typ 50mA max<br>+12V: 300mA typ 500mA max<br>-12V: 300mA typ 500mA max |
| Mechanical | CompactPCI 6U, 1 slot (4HP)<br>160mm x 233mm x 20mm |
| Temperature | -5°C to 55°C (Operating) |
| Humidity | 5% to 90% relative humidity, noncondensing |
| Altitude | 3000m |

| Storage/Transit Environmental | |
|---|---|
| Temperature<br>Humidity<br>Altitude | -40°C to 70°C<br>10% to 95% relative humidity, noncondensing<br>10000m |
| **Safety Compliance** | |
| UL/cUL 1950 3rd Edition Recognized Component (expected)<br>Transition Card C only: CSA C22.2 No. 950 Canadian Safety | |
| **Electromagnetic Compatibility (EMC)** | |
| FCC Class A (expected)<br>Transition Card C only:<br>FCC Part 15 & 68<br>Industry Canada CS-03 | |
| **Telco Compliance** | |
| Designed for Telcordia NEBS GR-63-CORE Level 3<br>Designed for Telcordia NEBS GR-1089-CORE Level 3 | |
| **Marks** | |
| UL, cUL, CE (expected) | |

**Table 17 Specifications**

# 6 Technical Support

Before contacting the Technical Support team at Continuous Computing, be sure you have read Section 4, "Troubleshooting," of this guide.

If you continue to experience problems with serialUp, please contact the Technical Support team at Continuous Computing by any of the methods listed below.

**Note:** Please be sure to include the serial numbers for each affected module, system and/or part. In addition, we will need to know what version of Solaris (or other operating system) you are running, as well as the patch level, and any other significant software packages that are installed.

## Contacting Technical Support

To contact the Technical Support team at Continuous Computing, do one of the following:

- Email us at support@ccpu.com
- Visit our support web site at http://support.ccpu.com
  (This site features our automatic technical support system. Create a new user profile. Then submit a new ticket at the "Welcome to SupportWizard" page. This process ensures that our team delivers a timely solution to any technical problem you have.)
- Call us at (858) 882-8911, 9:00 a.m. – 5:00 p.m. (PST)

**Note:** If you have a Gold or Platinum service contract, follow the contact instructions provided with your contract.