

## Multiport Serial Board Guidebook

### PCI Express Introduction

A single PCI Express serial link is a dual-simplex connection using two pairs of wires (one pair for transmit and one pair for receive) to transmit only one bit per cycle. Although this sounds limiting,

it can transmit at the extremely high speed of 2.5 Gbps, which equates to a burst mode of 320 Mbps (Mega-bytes/sec) on a single connection. These two pairs of wires is called a lane.

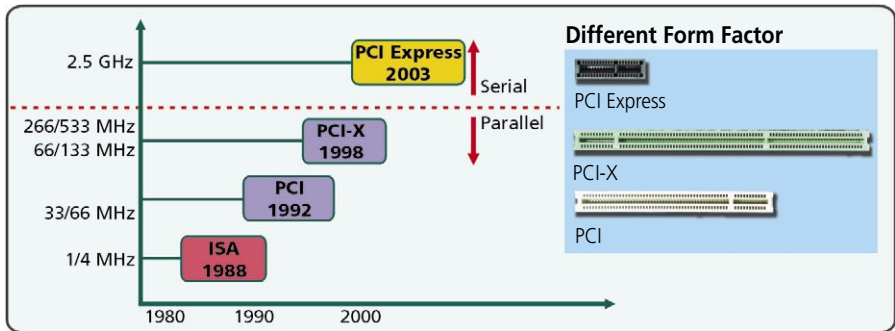
### What's the difference between PCI and PCI Express

PCI Express uses a serial interface and allows for point-to-point interconnections between devices using directly wired interfaces between these connect-

tion points. This differs from previous PCI bus architectures that used a shared, parallel bus architecture.

#### Bus Trend

• ISA → PCI → PCI-X → PCI Express



### Moxa Multiport Serial Board Slot Type Selection Guide

Interface	2P RS-232	4P RS-232	8P RS-232	2P RS-485	4P RS-485	8P RS-485
ISA	√	√	√	√	√	
PC/104		√		√		
PCI	√	√	√	√	√	
PCI-X	√	√	√	√	√	√
PCI Express*		√	√			√

\* For detailed information about all products, please visit Moxa's website or contact our distributors.

\* PCI Express boards will be available before the end of October, 2005.

### PCI Replacement

PCI Express is the industry's attempt to unify all of the current different types of I/O bus into a single "future proof" standard. Over the past ten years, PCI has handled the large and varying uses it has been given, most of which were never foreseen when the speci-

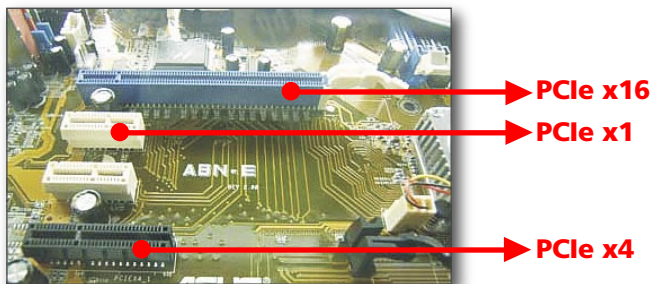
fication was created. Current PCI specifications are based on a multi-drop, parallel bus implementation that is coming very close to its performance limits, which cannot be stretched without spending a large amount of money for very little gain.

## Multiport Serial Board Guidebook

# PCI Express Specifications

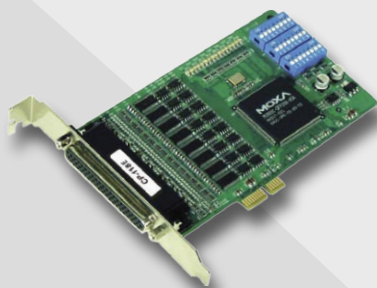
Multiple lanes are combined to create a PCI Express link. In this case, the number of lanes is used to label the connection. E.g., x1, x2, x4, x12, x16, or x32. Based on the meaning of "lane," PCI Express x1 uses 4 wires to create the connection, but a x16 configuration requires 64 wires. It makes sense then, that

different sized connections use different sized slots. In the figure below, you can see slots for PCI Express x1, PCI Express x4, and PCI Express x16. A PCI Express connector can be installed in a larger slot, but not a smaller one. This means that you can install Moxa's PCI Express x1 Board into any PCI Express slot.



## 8-Port RS-232/422/485 PCI Express Smart Board

### CP-118E



- PCI Express x 1 compliant
- Serial communication speed of up to 921.6 Kbps
- 128-byte FIFO and on-chip H/W, S/W flow control
- Universal PCI compatible with 3.3/5V PCI and PCI-X
- Various connection cables/boxes for RS-232/422/485
- Windows 2003/XP/2000/98/ME, Linux, Unix driver support
- Easy maintenance with on-board LED display and management software
- Single 5 VDC power requirement
- On-board 15 KV ESD protection

Win98 WinNT Win2K

WinXP Win2003 Linux 2.6

SCO Open Server 5 SCO Unixware 2.1 SCO Unixware 7



### Ordering Information

**CP-118E**

8-port RS-232/422/485 PCI Express BUS, 921.6 Kbps, 15 KV Surge Protection

\* All items include: MOXA Software CD

## 8-Port RS-232/422/485 PCI Express Smart Board

CP-168E

\* Available Nov. 2005



Win98 WinNT Win2K  
WinXP Win2003 Linux 2.6  
SCO Open Server 5 SCO Unixware 2.1 SCO Unixware 7

- PCI Express x 1 compliant
- 50 bps to 921.6 Kbps
- Data flow LED display on-board
- 3.3V and 5V Universal PCI support
- High performance 128-byte FIFO driver
- Embedded 15 KV ESD Surge Protection
- Flexible RS-232/422/485 interface options



Moxa's CP-168 PCI Express board meets the new slot standard for expansion boards that is being rapidly adopted by PC server manufacturers. In addition, CP-168 Universal PCI boards work with both 3.3V and 5V server

slots, allowing the boards to be used in virtually any available PC server. The CP-168U offers 8 independent RS-232 serial ports for connecting data acquisition equipment and many other serial devices to the PC.

### Ordering Information

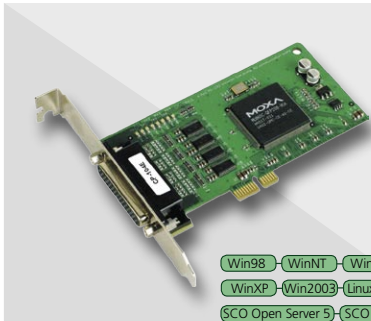
CP-168E

8-port RS-232 board, PCI Express BUS, 921.6 Kbps, 15 KV Surge Protection

\* All items include: MOXA Software CD

## 4-Port RS-232 PCI Express Smart Board

CP-104E



Win98 WinNT Win2K  
WinXP Win2003 Linux 2.6  
SCO Open Server 5 SCO Unixware 2.1 SCO Unixware 7

- PCI Express x 1 compliant
- Serial communication speed of up to 921.6 Kbps
- 128-byte FIFO and on-chip H/W, S/W flow control
- Universal PCI compatible, with 3.3/5V PCI and PCI-X
- Easy maintenance with on-board LED display and management software
- Single 5 VDC power requirement



### Ordering Information

CP-104E

4-port RS-232 board, PCI Express BUS, 921.6 Kbps, 15 KV Surge Protection (cable included—choose CBL-M44M25x4-50 or CBL-M44M9x4-50)

\* All items include: MOXA Software CD, Standard & Low profile brackets