Industrial Multi-port Serial Cards
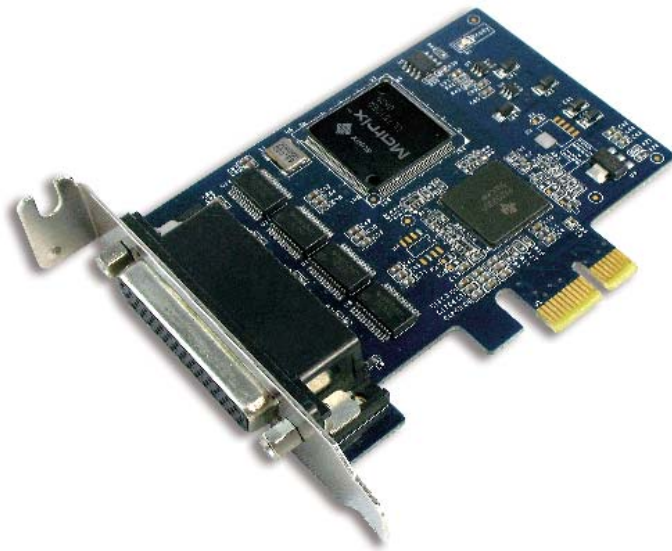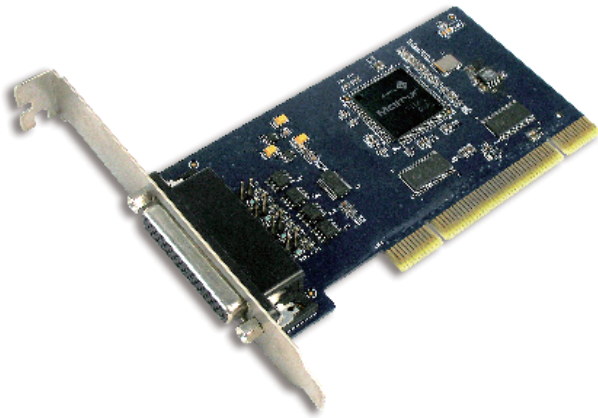
- Multi-port Serial Cards Introduction & Features

- **Universal PCI Cards - Lite**

  RS-422/485 Interface Cards

  RS-232/422/485 Interface Cards

- **PCI Express Cards - Lite**

  RS-422/485 Interface Cards

  RS-232/422/485 Interface Cards

- **PCI / 104 Cards - Lite**

  RS-422/485 Interface Cards

Multiport Serial Cards *Extending the Serial Networks*

Introduction

SUNIX Serial Communication Boards family provides an array of PCI Express, PCI, PCI/104 and PC/104 interfaces to meet your serial port expansion needs. Multi-port Serial Communication Board comes in the selection of 2/4/8/16 ports in choice of RS-232, RS-422/485 or 3-in-1 combo with DB9 or DB25 serial connectors and compatible with all major operating systems for industrial applications. The Serial Boards series is best suited for applications where the CPU is able to devote some of its resources to handling computations or to real time applications that require short latency intervals.

SUNIX boards offers "Auto Detect and Switching RS-422/485" technology, which can automatically detects the state of RS-422 full duplex or RS-485 half duplex and control the data transmitter and receiver wires at the same port without any jumper setting. This design gives users the convenience and hassle free option to change the communication mode settings. SUNIX has also developed a hardware technology called Auto Hardware Direction Control/Carrier Sense (AHDC/CS™), which is to control the direction of signals (ON or OFF) automatically in 2-wire RS-485 mode. This can precisely control the transmitting signals during the start and end of data transmission.

Features

- **Supports 16/8/4/2 independent RS-232, RS-422 or RS-485 serial ports**
- **Supports, Universal PCI, PCI Express, PCI / 104 bus types**
- **Serial communication speeds up to 921.6Kbps**
- **SUNIX AHDC / CS™technology for RS-485 2-wire signal direction control**
- **RS-422 and RS-485 Auto Detect and Switching technology**
- **Built-in 64 byte hardware FIFO and reliable communications**
- **Easy to install - no DIP switches or jumpers to set**
- **Surge and Isolation protection for SI version**
- **Supports DOS, Linux, Microsoft Windows 2000, XP, 2003, Vista, Linux 2.4x, 2.6x and Unix**
- **Ready for the Intel®and AMD®32 / 64-bit CPU and operation system**

Application

HEALTH CARE

Centralized and distributed medical data of patients over Ethernet in a hospital
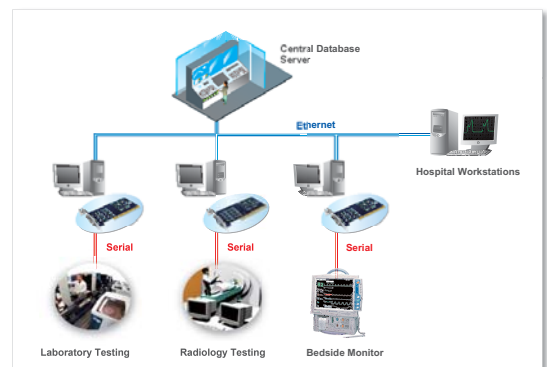
SUNIX Tech Forum

Single Chipset Solution

SUNIX serial cards are based on the single ASIC with built-in UART controllers developed by its own. Its remarkable achievement and this single chipset solution can support up to 16 serial ports, thus becoming the first in the World to have 16-port serial cards utilizing single chip technology. Adapting this technique, means improve the system performance by eliminating the need to use CPU resources. At the serial side, it will boost the communication with faster response cycle. The ultimate performance solution for your serial networks.

UART Controllers

Martix with UART Controllers

Chip with separate UART

Single Chip Solution
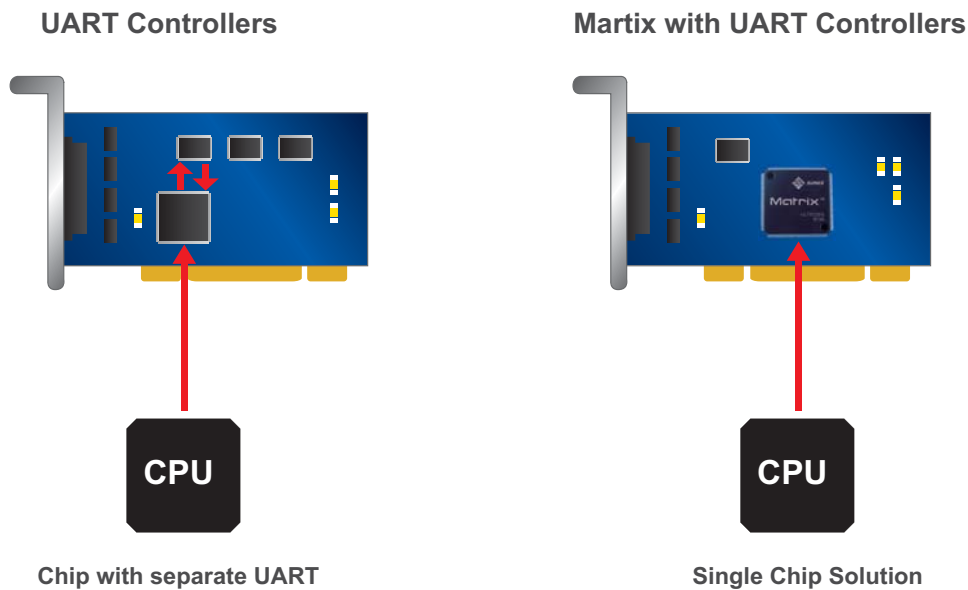
RS-232 Application

Because of the limitation in number of COM ports on PC-based POS (Point-Of-Sale) system; users can architecture SUNIX serial communication board to satisfy numerous RS-232 peripheral requirements in your existing devices or applications, such as Invoice printer, Weighing Scale, Pole Display, and Credit Reader.

SUNIX Serial Universal PCI Card
(RS-232 / 422 / 485)

Cash Drawer   CC Reader   Printer   Barcode Reader
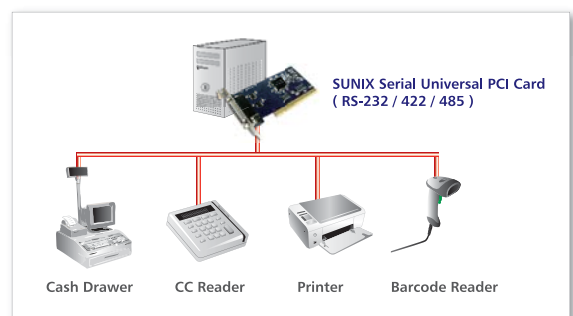
RS-422/485 Application

SUNIX RS-422/485 universal PCI card enables your laptop or workstation with the ability to communicate with RS-422/485 serial peripherals. It supports 2/4-wire RS-485 multi-drop and 4-wire RS-422 point-to-point operation mode through PCI Bus. SUNIX RS-422/485 universal PCI card provides a quick, simple and cost-effective way to bring the advantages of data accessibility and mobile solution for configuring field instruments.
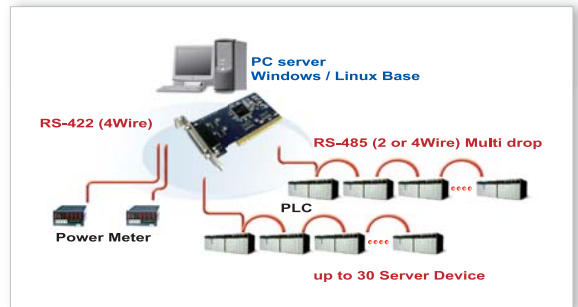
RS-232   RS-422/485 pin assignment
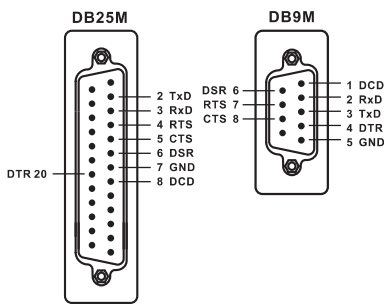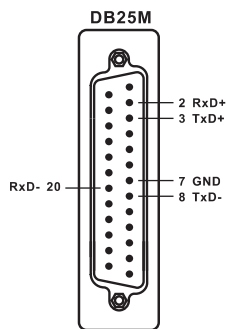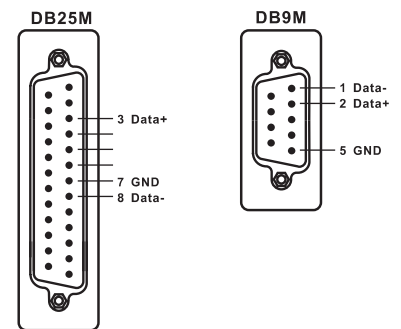
Optical Isolation Protection

The ground loop is a common problem in many industrial environments, especially when ground voltage levels differ between connected devices by a longer transmission line in critical or harsh factory environments. Communication devices connected by long cables may be damaged by the mismatch between ground voltage levels at the two ends of the wire. Optical isolation uses photo cells at both ends of the line to isolate the devices' sensitive components from this type of electrical damage. SUNIX provides 2.5KV optical isolation for power and signals to eliminate this kind of problem.

Surge Protection

Surges are high amplitude electrical pulses lasting only several millionths of a second in duration. They can be caused by heavy-duty equipment, power lines, short circuits, or large motors. A surge suppressor has the ability to effectively absorb the high energy in an extremely short period of time, preventing the connected devices from damage. To eliminate this problem, we provide the embedded 600W surge protection for all signals, and it meets IEC61000-4-5 standards.

RS-422/485 Auto Detect & Switching Technology

SUNIX developed a unique technology "Auto Detect and Switching RS-422/485", which can automatically detect the state of RS-422 full duplex or RS-485 half duplex and control the data transmitting and receiving wires at the same port without any jumper settings. This design gives users the convenience to change the communication mode setting without any system shut downs.

Low Power Consumption

Low power consumption is always a large part of the needs expressed by customers. Recently, low power consumption has become essential not only for system development but also for environmental reasons, and in fact low power consumption has become an ever larger part of the needs expressed by customers. SUNIX has pursued this issue via various approaches, as it seeks to provide special cell-bases ASICs that meet today's challenging needs for lower power consumption during active and standby modes.

AHDC/CS™Technology

Since RS-485 is bidirectional which means the driver is turned on only when it needs to transmit some data, otherwise it is floating. SUNIX developed a new design to control the direction of driver (On or off) automatically which is called Auto Hardware Direction Control/Carrier Sense. AHDC/CS™ works on the same principle and only turns on the driver when UART needs to transmits some data; but the advantage is that AHDC/CS™ will check to see if the bus is idle or not before it starts transmission. If the bus is not idle (some data flows in the bus), then it will postpone the transmission of UART until the bus is idle. This is for the CS (carrier sense) part.

User-friendly LED display

The Ready LED for prompt status information about the chip; if it is ready to run.

Universal PCI Cards

Serial Interface		RS-422/485		
Model		**IPC-P2002**	**IPC-P2004**	**IPC-P2008**
Product				
Description		Industrial 2-port RS-422/485 PCI Serial Card	Industrial 4-port RS-422/485 PCI Serial Card	Industrial 8-port RS-422/485 PCI Serial Card
Serial Communication	Interface	PCI Ver 3.0 / 2.3 / 2.2		
	No. of Port	2 ports	4 ports	8 ports
	Max No. of System	Unlimited (only limitation is availability of PCI slots on the system)		
	BUS	64/32bit 3.3V/5V PCI and PCI-X 33 MHz / 66 MHz		
	Connector Type	DB44 Female		
	IRQ	Assigned by System		
	IO Address	Assigned by System		
	FIFO	64byte (Hardware), 16C750 Compatible		
	Signal	RS-422: TxD+, TxD-, RxD+, RxD-, GND 4 Wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2 Wire RS-485: Data+, Data-, GND		
	Baud rate	75bps to 921.6Kbps		
	Data bit	5,6,7,8		
	Stop bit	1,1.5,2		
	Parity	None, Even,Odd, Space,Mark		
	Flow Control	XON/XOFF(Software)		
	ESD Protection	Embedded 15KV ESD Protection		
	RS-485 Directional	SUNIX AHDC/CS™ Technology		
	Select RS-422/485	RS-422/485 Auto Detect and Switch		
Driver Support		Linux 2.4 / 2.6, SCO OpenServer 5.06 / 5.07, Windows 2000 / XP (32-64bit) / 2003 (32-64bit) / Vista (32bit) , DOS		
Regulatory Approvals		CE, FCC class B		
Environment	Operation Temperature	0℃ to 70℃		
	Operation Humidity	5% to 95%RH		
	Storage Temperature	- 40℃ to 85℃		
Connection Cable		DB44 Male to DB9/DB25 Male (2/4/8 ports) 40/100cm		
Dimensions		63.5 x 120 mm (Low Profile & Standard)		63.5 x 120 mm (Standard)
WARRANTY		5 years		

Serial Interface		RS-422/485		
Model		**IPC-P2002SI**	**IPC-P2004SI**	**IPC-P2008SI**
Product				
Description		Industrial 2-port RS-422/485 PCI Serial Card with Surge & Isolation	Industrial 4-port RS-422/485 PCI Serial Card with Surge & Isolation	Industrial 8-port RS-422/485 PCI Serial Card with Surge & Isolation
Serial Communication	Interface	PCI Ver 3.0 / 2.3 / 2.2		
	No. of Port	2 ports	4 ports	8 ports
	Max No. of System	Unlimited (only limitation is availability of PCI slots on the system)		
	BUS	64/32bit 3.3V/5V PCI and PCI-X 33 MHz / 66 MHz		
	Connector Type	DB44 Female		
	IRQ	Assigned by System		
	IO Address	Assigned by System		
	FIFO	64byte (Hardware), 16C750 Compatible		
	Signal	RS-422: TxD+, TxD-, RxD+, RxD-, GND 4 Wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2 Wire RS-485: Data+, Data-, GND		
	Baud rate	75bps to 921.6Kbps		
	Data bit	5,6,7,8		
	Stop bit	1,1.5,2		
	Parity	None, Even, Odd, Space, Mark		
	Flow Control	XON/XOFF(Software)		
	ESD Protection	Embedded 15KV ESD Protection		
	Surge Protection	Circuit Damage Protection of 600W Peak Per IEC 61000-4-5		
	Isolation	2.5 KV Isolation Protection for all signal and power		
	RS-485 Directional	SUNIX AHDC/CS™ Technology		
	Select RS-422/485	RS-422/485 Auto Detect and Switch		
Driver Support		Linux 2.4 / 2.6, SCO OpenServer 5.06 / 5.07, Windows 2000 / XP (32-64bit) / 2003 (32-64bit) / Vista (32bit) , DOS		
Regulatory Approvals		CE, FCC class B		
Environment	Operation Temperature	0℃ to 70℃		
	Operation Humidity	5% to 95%RH		
	Storage Temperature	- 40℃ to 85℃		
Connection Cable		DB44 Male to DB9/DB25 Male (2/4/8 ports) 40/100cm		
Dimensions		63.5 x 120mm (Low Profile & Standard)		103.5 x 125 mm(Standard)
WARRANTY		5 years		

Universal PCI Cards

Serial Interface		RS-232/422/485	
Model		**IPC-P3004**	**IPC-P3008**
Product			
Description		Industrial 4-port RS-232/422/485 (3 in 1) PCI Serial Card	Industrial 8-port RS-232/422/485 (3 in 1) PCI Serial Card
Serial Communication	Interface	PCI Ver 3.0 / 2.3 / 2.2	
	No. of Port	4 ports	8 ports
	Max No. of System	Unlimited (only limitation is availability of PCI slots on the system)	
	BUS	64/32bit 3.3V/5V PCI and PCI-X 33 MHz / 66 MHz	
	Connector Type	DB44 Female	Mini SCSI 68pin
	IRQ	Assigned by System	
	IO Address	Assigned by System	
	FIFO	64byte (Hardware), 16C750 Compatible	
	Signal	RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND RS-422: TxD+, TxD-, RxD+, RxD-, GND 4 Wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2 Wire RS-485: Data+, Data-, GND	
	Baud rate	75bps to 921.6Kbps	
	Data bit	5,6,7,8	
	Stop bit	1,1.5,2	
	Parity	None, Even,Odd, Space,Mark	
	Flow Control	XON/XOFF(Software)	
	ESD Protection	Embedded 15KV ESD Protection	
	RS-485 Directional	SUNIX AHDC/CS™ Technology	
	Select RS-422/485	RS-422/485 Auto Detect and Switch	
Driver Support		Linux 2.4 / 2.6, SCO OpenServer 5.06 / 5.07, Windows 2000 / XP (32-64bit) / 2003 (32-64bit) / Vista (32bit) , DOS	
Regulatory Approvals		CE, FCC class B	
Environment	Operation Temperature	0℃ to 70℃	
	Operation Humidity	5% to 95%RH	
	Storage Temperature	- 40℃ to 85℃	
Connection Cable		DB44 Male to DB9/DB25 Male (4 ports) 40/100cm	Mini SCSI 68pin to DB9 Male (8 ports) 40/100cm
Dimensions		63.5 x 120 mm (Low Profile & Standard)	
WARRANTY		5 years	

PCI Express Cards

Serial Interface		RS-422/485	
Model		**IPC-E2002**	**IPC-E2004**
Product			
Description		Industrial 2-port RS-422/485 PCI-Express Serial Card	Industrial 4-port RS-422/485 PCI-Express Serial Card
Serial Communication	Interface	PCI Express Bus Spec. Revision 1.0a	
	No. of Port	2 ports	4 ports
	Max No. of System	Unlimited (only limitation is availability of PCI-E slots on the system)	
	BUS	1-Lane PCI Express	
	Connector Type	DB44 Female	
	IRQ	Assigned by System	
	IO Address	Assigned by System	
	FIFO	64byte (Hardware), 16C750 Compatible	
	Signal	RS-422: TxD+, TxD-, RxD+, RxD-, GND 4 Wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2 Wire RS-485: Data+, Data-, GND	
	Baud rate	75bps to 921.6Kbps	
	Data bit	5,6,7,8	
	Stop bit	1,1.5,2	
	Parity	None, Even, Odd, Space, Mark	
	Flow Control	XON/XOFF(Software)	
	ESD Protection	Embedded 15KV ESD Protection	
	RS-485 Directional	SUNIX AHDC/CS™ Technology	
	Select RS-422/485	RS-422/485 Auto Detect and Switch	
Driver Support		Linux 2.4 / 2.6, SCO OpenServer 5.06 / 5.07, Windows 2000 / XP (32-64bit) / 2003 (32-64bit) / Vista (32bit) , DOS	
Regulatory Approvals		CE, FCC class B	
Environment	Operation Temperature	0°C to 70°C	
	Operation Humidity	5% to 95%RH	
	Storage Temperature	- 40°C to 85°C	
Connection Cable		DB44 Male to DB9/DB25 Male (2/4 ports) 40/100cm	
Dimensions		64 x 90 mm (Low Profile & Standard)	64 x 105 mm (Low Profile & Standard)
WARRANTY		5 years	

PCI Express Cards

Serial Interface		RS-422/485		
Model		**IPC-E2002SI**	**IPC-E2004SI**	**IPC-E2008SI**
Product				
Description		Industrial 2-port RS-422/485 PCI-Express Serial Card with Surge & Isolation	Industrial 4-port RS-422/485 PCI-Express Serial Card with Surge & Isolation	Industrial 8-port RS-422/485 PCI-Express Serial Card with Surge & Isolation
Serial Communication	Interface	PCI Express Bus Spec. Revision 1.0a		
	No. of Port	2 ports	4 ports	8 ports
	Max No. of System	Unlimited (only limitation is availability of PCI-E slots on the system)		
	BUS	1-Lane PCI Express		
	Connector Type	DB44 Female		
	IRQ	Assigned by System		
	IO Address	Assigned by System		
	FIFO	64byte, 16C750 Compatible		
	Signal	RS-422: TxD+, TxD-, RxD+, RxD-, GND 4 Wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2 Wire RS-485: Data+, Data-, GND		
	Baud rate	75bps to 921.6Kbps		
	Data bit	5,6,7,8		
	Stop bit	1,1.5,2		
	Parity	None, Even,Odd, Space,Mark		
	Flow Control	XON/XOFF(Software)		
	ESD Protection	Embedded 15KV ESD Protection		
	Surge Protection	Circuit Damage Protection of 600W Peak Per IEC 61000-4-5		
	Isolation	2.5 KV Isolation Protection for all signal and power		
	RS-485 Direction	SUNIX AHDC/CS™ Technology		
	Select RS-422/485	RS-422/485 Auto Detect and Switch		
Driver Support		Linux 2.4 / 2.6, SCO OpenServer 5.06 / 5.07, Windows 2000 / XP (32-64bit) / 2003 (32-64bit) / Vista (32bit) , DOS		
Regulatory Approvals		CE, FCC class B		
Environment	Operation Temperature	0°C to 70°C		
	Operation Humidity	5% to 95%RH		
	Storage Temperature	- 40°C to 85°C		
Connection Cable		DB44 Male to DB9/DB25 Male (2/4/8 ports) 40/100cm		
Dimensions		68.5 x 110 mm (Low Profile & Standard)	68.5 x 123 mm (Low Profile & Standard)	95.5 x 119.62 mm (Standard)
WARRANTY		5 years		

PCI Express Cards

Serial Interface	RS-232/422/485
Model	**IPC-E3004**

Product	
Description	Industrial 4-port RS-232/422/485 (3-in-1) PCI-E Serial Card

Serial Communication	Interface	PCI Express Bus Spec. Revision 1.0a
	No. of Port	4 ports
	Max No. of System	Unlimited (only limitation is availability of PCI-E slots on the system)
	BUS	1-Lane PCI Express Bus
	Connector Type	DB44 Female
	IRQ	Assigned by System
	IO Address	Assigned by System
	FIFO	64byte (Hardware), 16C750 Compatible
	Signal	RS-232: TxD,RxD,RTS,CTS,DTR,DSR,DCD,GND RS-422: TxD+, TxD-, RxD+, RxD-, GND 4 Wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2 Wire RS-485: Data+, Data-, GND
	Baud rate	75bps to 921.6Kbps
	Data bit	5,6,7,8
	Stop bit	1,1.5,2
	Parity	None, Even, Odd, Space, Mark
	Flow Control	RTS/CTS(Hardware) XON/XOFF(Software)
	ESD Protection	Embedded 15KV ESD Protection
	RS-485 Direction	SUNIX AHDC/CS™ Technology
	Select RS-422/485	RS-422/485 Auto Detect and Switch
Driver Support		Linux 2.4 / 2.6, SCO OpenServer 5.06 / 5.07, Windows 2000 / XP (32-64bit) / 2003 (32-64bit) / Vista (32bit) , DOS
Regulatory Approvals		CE, FCC class B
Environment	Operation Temperature	0°C to 70°C
	Operation Humidity	5% to 95%RH
	Storage Temperature	- 40°C to 85°C
Connection Cable		DB44 Male to DB9/DB25 Male (2/4 ports) 40/100cm
Dimensions		68.5 x 110 mm (Low Profile & Standard)
WARRANTY		5 years

PCI / 104 Cards

Serial Interface		RS-422/485	
Model		**IPC-B2002**	**IPC-B2004**
Product			
Description		Industrial 2-port RS-422/485 PCI / 104 Card	Industrial 4-port RS-422/485 PCI / 104 Card
Serial Communication	Interface	PCI / 104	
	No. of Port	2 ports	4 ports
	Max No. of System	4 pcs	
	BUS	32-bit PCI / 104	
	Connector Type	Pin Header	
	IRQ	Assigned by System	
	IO Address	Assigned by System	
	FIFO	64byte (Hardware), 16C750 Compatible	
	Signal	RS-422: TxD+, TxD-, RxD+, RxD-, GND 4 Wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2 Wire RS-485: Data+, Data-, GND	
	Baud rate	75bps to 921.6Kbps	
	Data bit	5,6,7,8	
	Stop bit	1,1.5,2	
	Parity	None, Even, Odd, Space, Mark	
	Flow Control	XON/XOFF (Software)	
	ESD Protection	Embedded 15KV ESD Protection	
	RS-485 Directional	SUNIX AHDC/CS™ Technology	
	Select RS-422/485	RS-422/485 Auto Detect and Switch	
Driver Support		Linux 2.4 / 2.6, SCO Open Server 5.06 / 5.07, Windows 2000 / XP (32-64bit) / 2003 (32-64bit) / Vista (32bit) , DOS	
Regulatory Approvals		CE, FCC class B	
Environment	Operation Temperature	0 °C to 70 °C	
	Operation Humidity	5 % to 95 % RH	
	Storage Temperature	- 40 °C to 85 °C	
Connection Cable		5 x 2 Pin Header to DB9 Male (30cm)	
Dimensions		90.17 x 95.89 mm	
WARRANTY		5 years	

PCI / 104 Cards

Serial Interface		RS-422/485	
Model		**IPC-B2002SI**	**IPC-B2004SI**
Product			
Description		Industrial 2-port RS-422/485 PCI / 104 Card with Surge & Isolation	Industrial 4-port RS-422/485 PCI / 104 Card with Surge & Isolation
Serial Communication	Interface	PCI / 104	
	No. of Port	2 ports	4 ports
	Max No. of System	4 pcs	
	BUS	32-bit PCI / 104	
	Connector Type	Pin Header	
	IRQ	Assigned by System	
	IO Address	Assigned by System	
	FIFO	64byte (Hardware), 16C750 Compatible	
	Signal	RS-422: TxD+, TxD-, RxD+, RxD-, GND 4 Wire RS-485: TxD+, TxD-, RxD+, RxD-, GND 2 Wire RS-485: Data+, Data-, GND	
	Baud rate	75bps to 921.6Kbps	
	Data bit	5, 6, 7, 8	
	Stop bit	1,1.5, 2	
	Parity	None, Even, Odd, Space, Mark	
	Flow Control	XON/XOFF (Software)	
	ESD Protection	Embedded 15KV ESD Protection	
	Surge Protection	Circuit Damage Protection of 600W Peak Per IEC 61000-4-5	
	Isolation	2.5 KV Isolation Protection for all signal and power	
	RS-485 Directional	SUNIX AHDC/CS™ Technology	
	Select RS-422/485	RS-422/485 Auto Detect and Switch	
Driver Support		Linux 2.4 / 2.6, SCO OpenServer 5.06 / 5.07, Windows 2000 / XP (32-64bit) / 2003 (32-64bit) / Vista (32bit) , DOS	
Regulatory Approvals		CE, FCC class B	
Environment	Operation Temperature	0 °C to 70 °C	
	Operation Humidity	5 % to 95 % RH	
	Storage Temperature	- 40 °C to 85 °C	
Connection Cable		5 x 2 Pin Header to DB9 Male (30cm)	
Dimensions		90.17 x 95.89 mm (W x D)	
WARRANTY		5 years	