



RS-232/422/485 PCI-104 Module

● Introduction

PCI-104 is a PCI-only architecture PCI 32-bit bus running 33MHz that accommodates the advances of high-speed PCI devices in a small rugged form factor for embedded applications. With the publication of the PCI-104 standard in 2003, this bus architecture was available on a small, rugged form factor which has since become an industry standard.

This Multi-port PCI-104 serial module equips with 2 or 4 ports high speed RS-232 or RS-422/485 standard serial ports which accessed through DB-9 or DB-25 male connectors. Each serial port has built-in 32byte hardware FIFO, and provides data transfer speed up to 921Kb/Sec with industry standard 16C650 asynchronous communication chip.

PCI-104 modules use as smart stacking bus design, they avoid the costs and bulk associated with backplanes or card cage. Its work with PC/104 -plus CPU boards that accept the PCI-104 expansion interface, and comes with DB9 or DB25 connection cables are available as options to meet users' varied connection requirements.

● Features

- 2 / 4 independent RS-232 or RS-422/485 serial ports
- Single chip SUN1889 (16C650 compatible) hardware flow control
- Each serial port has built-in 64 byte hardware FIFO & 128K byte software FIFO under Windows 2000, XP, and 2003 operation system.
- Data transmission speeds up to 921.6Kbps
- Ideal for PC/104 embedded systems
- Certified by Microsoft WHQL, CE, FCC approval
- Auto Detect and Switch RS-422 and RS-485 without jumper settings
- RS-485 Auto RTS Signal Control (ARSC™) technology
- RTS/CTS± Handshaking Communication mode for RS-422/485
- Built-in termination resistors to avoid cross-talking
- Support DOS, Linux, Microsoft WinCE.NET, 3.x, 9x, Me, NT, 2000, XP, and 2003

● Package List

Please check if the following items are present and in good condition upon opening your package. Contact your vendor if any item is damaged or missing.

- Multi-port PCI-104 Serial Board
- Serial Cable
 - 2 ports PCI-104 series: 2x5 IDC socket to DB9 or DB25 Male x 2
 - 4 ports PCI-104 series: 2x5 IDC socket to DB9 or DB25 Male x 4
- CD Driver
- Quick Installation Guide (this document)
- User Manual

● RS-232 Specification

■ Function

Model	PCI-104 RS-232 Module
Mode of Operation	HandShaking
BUS Transceivers	RS-232 Full-Duplex
Drivers per Line	RS-232 1 Driver
Receivers per Line	RS-232 1 Receiver

■ Hardware

IC	SUN1889
Controller	16C650 Compatible UART
Bus Interface	PCI-104
Number of Ports	2 or 4 DB9 or DB25 Male ports
Connector	Box Header
Dimension (WxD)	95.9 x 90.2 (mm)

■ Communication

Interrupt	INT A, B, C, D by jumper setting
IO Address	Assigned by BIOS
Clock	CLK 0, 1, 2, 3 by jumper setting
ID Select	ID 0, 1, 2, 3 by jumper setting
FIFO	32 byte hardware FIFO & 128K byte software FIFO
Baud Rate	75 ~ 921,600bps
Data bit	5, 6, 7, 8
Stop bit	1, 1.5, 2
Parity	Even, Odd, None, Mark, Space
Flow Control	None, Xon/Xoff, HardWare
RS-232 Signal	TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND

■ Driver Support

Microsoft Windows	Windows CE.NET / 3.1 / 95 / 98 / Me /2000 / XP / 2003
Linux, DOS	Linux 2.2.x, 2.4.x, 2.6.x

■ Regulatory Approvals

Hardware / Software	CE, FCC / Microsoft WHQL
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■ Operation Environment

Operation Temperature	0°C ~ 60°C
Operation Humidity	5 ~ 95 % RH
Storage Temperature	-20°C ~ 85°C

● RS-422/485 Specification

■ Function

Model	PCI-104 RS-422/485 Module
Mode of Operation	Differential
BUS Transceivers	RS-422 Full-Duplex / RS-485 Half-Duplex
Drivers per Line	RS-232 1 Driver / RS-485 10 Drivers
Receivers per Line	RS-422 10 Receivers / RS-485 32 Receivers

■ Hardware

IC	SUN1889
Controller	16650 Compatible UART
Bus Interface	PCI-104
Number of Ports	2 or 4 DB9 or DB25 Male ports
Connector	Box Header
Dimension (WxD)	95.9 x 90.2 (mm)

■ Communication

Interrupt	INT A, B, C, D by jumper setting
IO Address	Assigned by BIOS
Clock	CLK 0, 1, 2, 3 by jumper setting
ID Select	ID 0, 1, 2, 3 by jumper setting
FIFO	32 byte hardware FIFO & 128K byte software FIFO
Baud Rate	75 ~ 921,600bps
Data bit	5, 6, 7, 8
Stop bit	1, 1.5, 2
Parity	Even, Odd, None, Mark, Space
Flow Control	None, Xon/Xoff, HardWare
RS-422 Signal	TxD+/-, RxD+/-, RTS+/-, CTS+/-, GND
RS-485 Signal	Data+/-, RTS+/-, CTS+/-, GND

■ Driver Support

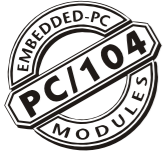
Microsoft Windows	Windows CE.NET / 3.1 / 95 / 98 / Me /2000 / XP / 2003
Linux, DOS	Linux 2.2.x, 2.4.x., 2.6.x

■ Regulatory Approvals

Hardware / Software	CE, FCC / Microsoft WHQL
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■ Operation Environment

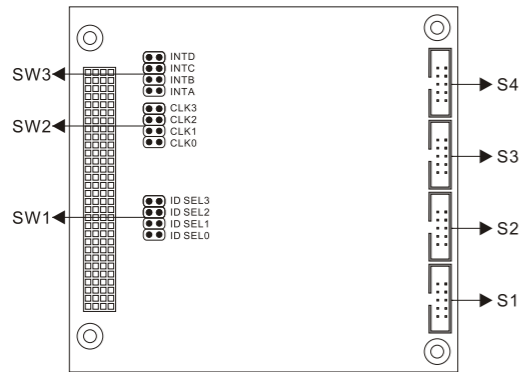
Operation Temperature	0°C ~ 60°C
Operation Humidity	5 ~ 95 % RH
Storage Temperature	-20°C ~ 85°C



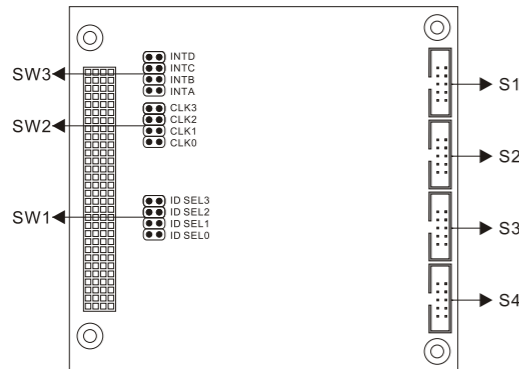
RS-232/422/485 PCI-104 Module

Mechanical Drawing & Jumper Settings

RS-232



RS-422/485

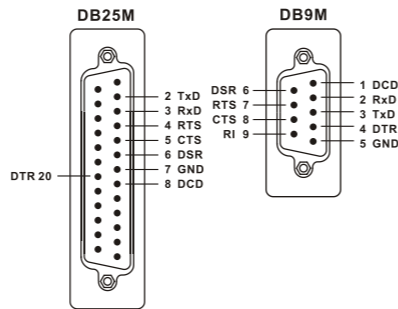


Connectors		Jumpers	
Label	Function	Label	Function
S1	RS-232 or RS-422/485 Port 1	SW1	PCI Interrupt Select
S2	RS-232 or RS-422/485 Port 2	SW2	PCI Clock Select
S3	RS-232 or RS-422/485 Port 3	SW3	PCI ID Select
S4	RS-232 or RS-422/485 Port 4		

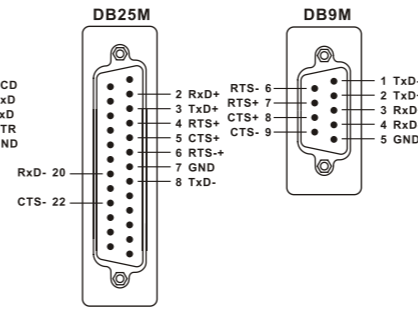
Module Slot	ID Select	Clock Select	Interrupt Select
1	IDSEL0	CLK0	INTA
2	IDSEL1	CLK1	INTB
3	IDSEL2	CLK2	INTC
4	IDSEL3	CLK3	INTD

Pin Assignment

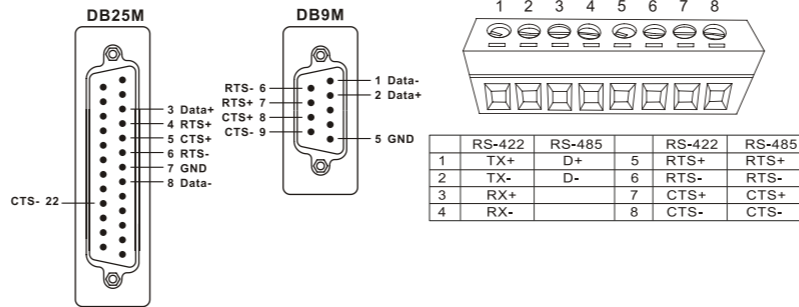
RS-232



RS-422



RS-485



Driver Installation

In order to ensure proper operation of your PC/104 serial board, the driver will be in the CD bound with your product. You can specify the location (folder) as below:

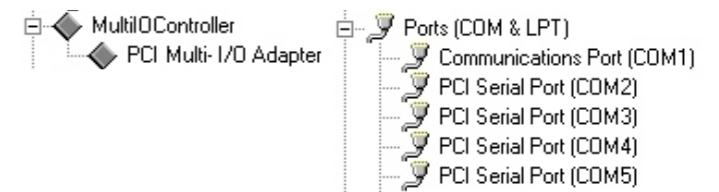
Operation System	Driver Location
Windows 2000 / XP / 2003	:\\IO\PCI IO\Win2K & XP & 2003\Setup.exe
Windows 2000 / XP / 2003	:\\IO\PCI IO\WHQL_Win2K & XP & 2003\
Windows XP / 2003 (64-bit)	:\\IO\PCI IO\WinXP and 2003_64 bit\
Windows 95 / 98 / Me	:\\IO\PCI IO\Win9x\
Windows NT4.0	:\\IO\PCI IO\WinNT\
Windows 3.1	:\\IO\PCI IO\DOS\PCIDOS.exe
Windows CE.NET	:\\IO\PCI IO\WinCE\
DOS	:\\IO\PCI IO\DOS\PCIDOS.exe
Linux 2.2.x, 2.4.x, 2.6.x	:\\IO\PCI IO\Linux\
User Manual	:\\IO\PCI IO\Manual\PCI104.pdf

※ You can find the detail of the installation steps in the user manual.

Hardware Verity

Please launch the "Device Manager" to verify hardware installation correctly.

Start > Controller Panel > System > Device Manager

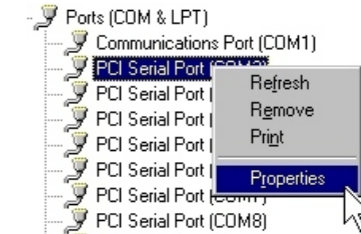


※The number of COM ports will depend on what products you bought

Port Setting

After installing PCI-104 serial board successfully, you can modify the setting for each serial port in device manager.

1. Right click your mouse on the COM port, and select "Properties".



2. Select "Port Setting" page to modify COM port setting.

3. Select "Advanced" icon, you can modify COM port number and FIFO.

