

RS-422A/485 1ch
Isolated Serial I/O Card for CardBus

COM-1PD(CB)H



* Specifications, color and design of the products are subject to change without notice.

Features

Max. 921,600bps RS-422A/485 Serial Communication

This product has one channel RS-422A/485-standard serial ports. Baud rates from 2 to 921,600bps can be set. When using the bundled "Standard COM Driver Software" and "Driver library API-PAC(W32)", baud rates from 15 to 921,600bps can be set.

Possibly used as Windows, Linux-standard COM ports, using the bundled driver library

Comes with a driver software that allows the boards to be used under Windows / Linux in the same way as COM ports on the PC. Under Windows, the product supports the OS-standard Win32 API communication function as well as Visual Basic MSComm. Under Linux, OS-standard tty driver's standard-function can be used. In addition, supplies a diagnostic program to confirm hardware operation and to perform a communication test with equipment.

Isolation between channels and between PCs

Electric isolation is provided between channels and between PCs. This prevents electric noise between PCs and external circuits.

Max. 2 cards can be installed as configured in the range COM1 - COM256.

When the bundled standard COM driver is used, up to two cards can be installed to a single PC. (For Windows 8, 7, Server 2008, Vista, XP, Server 2003 and 2000) COM1 - COM256 can be set using the device manager.

Each channel is equipped with separate 128-byte FIFO buffers for transmit and receive.

Employed a buffer memory 128-byte dedicated to transmission and 128-byte for each channel.

These are FIFO format, useful for high speed communications and to reduce the load to the CPU when transmitting/receiving. As the device manager can be used to enable/disable the use of FIFO and set the FIFO trigger size, you can build an optimum system according to your use.

To suit your application, cables and connectors are available as optional

Straight cables (1.8m), cross cables (1.8m) and 9-pin D-SUB connectors (male or female type) for your own cables are available as optional.

This product is a CardBus-supported PC card designed for extending RS-422A/485 compatible serial communication functionality on your PC.

Each converter has one channel RS-422A/485-standard serial port. Higher noise-resistant models with isolation between a PC and bus line as well as a surge protection circuit for communication ports. With a 128byte built-in FIFO buffer for transmission and reception of each channel, the product supports a baud rate of up to 921,600bps. It also comes with a Windows/Linux driver, which allows boards to be used as OS-standard COM ports.

This product supports CONTEC-defined driver library "API-PAC(W32)" that provide local routines.

The control line for RS-422A/485 can be controlled and monitored by software.

The control lines for RTS+, RTS-, CTS+ and CTS- can be controlled and monitored using software.

Driver library API-PAC(W32) is supported.

API-PAC(W32) is library software based on Win32 API routines (DLL), which provides local routines specific to CONTEC. You can create high-speed application software taking advantage of the CONTEC hardware using various programming languages that support Win32 API functions, such as Visual Basic and Visual C++.

Specification

Item	Specification
Number of channels	1ch
I/O specification	RS-422A/485
Isolated specification	Bus isolation
Dielectric strength	300VDC
Transfer method	Asynchronous serial transfer (Full / Half duplex)
Baud rate	2 - 921,600bps *1 *2
Data length	5, 6, 7, 8bits 1, 1.5, 2 stop bits *1
Parity check	Even, Odd, Non-parity *1
Loading LSI	162850 or equivalent (The FIFO buffers are a 128-byte transmit buffer and a 128-byte receive buffer.)
Connecting distance	1200m(Max.) *3
Interrupt requests	One channel used
I/O address	32 port boundary
Power consumption	3.3VDC Terminator OFF:300mA(Max.) / Terminator ON:500mA(Max.)
Operating condition	0 - 50°C, 10 - 90%RH(No condensation)
Length of supplied cable	250mm
Card slot specifications	PC Card Standard-compliant CardBus
Card size	TYPE II
Weight	30g(80g including cable)

- *1 These items can be set by software.
Baud rate is 15 - 921,600bps in "Standard COM driver software COM Setup Disk" or "driver library API-SIO within API-PAC(W32)" of the bundled CD-ROM.
- *2 Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.
- *3 Relationship between the communication distance and baud rate is as follows.

Communication distance	Baud rate
300m	115,200bps
600m	57,600bps
900m	19,200bps
1200m	9,600bps

Communication cable: 28 AWG, Double shielded cable. The positive and negative conductors for each signal are a twisted pair.
The interrupt signals from all channels are connected as a single interrupt signal on the CardBus.

Support Software

Standard COM Driver Software COM Setup Disk (Bundled)

The purpose of this software is to allow the CONTEC serial communication boards (cards) to be used under Windows or Linux in the same way as the standard COM ports on the PC. By installing additional boards (cards), you can use COM ports in the range COM1 - COM256.

The boards can be used for all types of serial communications such as for remote access service (RAS) and uninterruptible power supply (UPS) applications.

Under Windows, the serial ports can be accessed using the standard Win32 API communication routines (CreateFile(), WriteFile(), ReadFile(), and SetCommState(), etc.) The serial ports are also compatible with the Visual Basic communication control (MSComm). Supports the communication class of .NET Framework 2.0 (SerialPort class). Under Linux, the serial ports are compatible with the operating system's standard tty driver. The standard routines including open(), close(), read(), write() are supported.

< Operating environment >

OS Windows 8, 7, Vista, XP, NT, Me, 98, Linux etc.

You can download the updated version from the CONTEC's Web site (<http://www.contec.com/comdrv/>). For more details on the supported OS, applicable language and new information, please visit the CONTEC's Web site.

⚠ CAUTION

You can use up to two CardBus products for Windows 8, 7, Server 2008, Vista, XP, Server 2003, 2000).

Driver Library API-PAC(W32) (Available for downloading (free of charge) from the CONTEC web site.)

API-PAC(W32) is the library software that provides the commands for CONTEC hardware products in the form of Windows standard Win32 API functions (DLL). It makes it easy to create high-speed application software taking advantage of the CONTEC hardware using various programming languages that support Win32 API functions, such as Visual Basic and Visual C++.

It can also be used by the installed diagnosis program to check hardware operations.

See <http://www.contec.com/apipac/> for details and download of API-PAC(W32).

< Operating environment >

OS Windows 7, Vista, XP, Server 2003 etc.
Adaptation language Visual C++ .NET, Visual C# .NET, Visual Basic .NET, Visual C++, Visual Basic, Delphi, C++Builder, etc.

⚠ CAUTION

This library provides local routines that are specific to CONTEC (SioOpen(), SioWrite(), SioRead(), SioStatus(), etc.). These are not compatible with the standard Win32 API communication routines (CreateFile() and WriteFile(), etc.).

You can use only one CardBus product.

Connector

Connector (Option)

D-SUB9P (Female) Connector Set (5 Pieces) : CN5-D9F
D-SUB9P (Male) Connector Set (5 Pieces) : CN5-D9M

* Check the CONTEC's Web site for more information on these options.

Packing List

- PC Card [COM-1PD(CB)H] ...1
- Connection Cable [PCE32/9P1PDS] ...1
- PC Card attachment [CARD-AT1] ...1set
- First step guide ...1
- COM Setup Disk *1 (CD-ROM) ...1

*1 The CD-ROM contains the driver software and User's Guide (this guide)

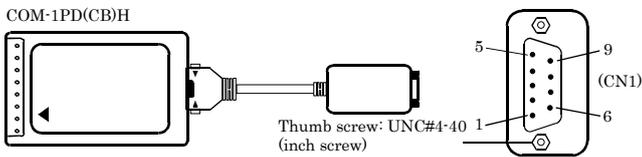
External Connection

This chapter describes the interface connectors on the PC Card. Check the information available here when connecting an external device.

Interface connector

Use the interface connectors on the connection cable to connect to the external devices.

Make your own cable by using the optional connector (CN5-D9F) and connect it.



- Connector used
DELC-J9PAF-20L9 or equivalence to it
[mfd. by JAE, Male]
- Applicable connectors
17JE-13090-02(D8C) (mfd. by DDK, Female)
CN5-D9F(connector 5 sets) [CONTEC, Female]

Pin Assignment

Transmit Data-	TxD-	5	9	RxD-	Receive Data-
Transmit Data+	TxD+	4	8	RxD+	Receive Data+
Request to Send-	RTS-	3	7	CTS+	Clear to Send+
Request to Send+	RTS+	2	6	CTS-	Clear to Send-
Signal Ground	SG	1			

Connector (Option)

D-SUB9P Female Connector Set (5 Pieces) : CN5-D9F

⚠ CAUTION

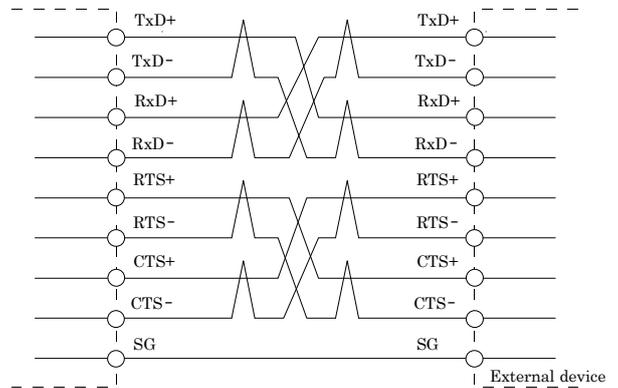
For TxD, RxD, and RTS, pin assignment has even-numbered pins for positive and odd-numbered ones for negative. For CTS, however, even-numbered and odd-numbered pins are assigned for negative and positive, respectively, in contrast with other signals. This is not a description error.

Types of Cable and Example Connections

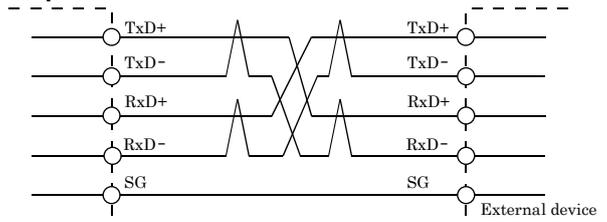
The following diagrams show sample cable connections of the PC Card.

The RS-422A/485 interface provides a differential method of transmission, in which relative potential differences between two conductors (positive and negative) are meaningful as signals. For the PC Card, a twisted-pair cable (balanced line) should be used as possible to improve noise immunity.

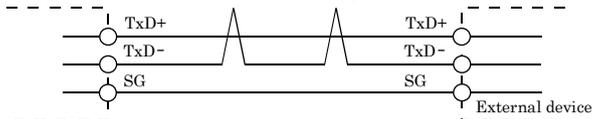
Example of connection with RTS and CTS connected to external device in full-duplex mode



Example of connection with RTS and CTS self-looping in full-duplex mode



Example of connection in half-duplex mode



⚠ CAUTION

Connecting the PC Card by incorrect wiring can cause a fault in the PC Card and/or the device connected.