RS-232C Isolated Serial I/O Board
for PCI Express 2ch

# COM-2PC-PE



This product is a PCI Express bus-supported board designed for extending RS-232C compatible serial communication functionality on your PC.
The < COM-2PC-PE > has two RS-232C-standard serial ports. Higher noise-resistant models with isolation between channels and between 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.

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

## Features

**Max. 921,600bps RS-232C Serial Communication**

The < COM-2PC-PE > has two RS-232C-standard serial ports. Baud rates from 2 to 921,600bps can be set for each port. 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 software**

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, surge protection for all signal lines**

The channels are electrically isolated from each other and from the PC.
As isolation is provided between channels as well as isolation of the bus, this prevents electrical noise between channels as well as between the PC and external circuits. As surge protection is provided on all signal lines, you can safely use the boards in environments where you are concerned about surges causing incorrect operation or damage to the PC.

**Max. 16 boards can be installed as configured in the range COM1 - COM256.**

Up to 16 boards can be mounted on a single PC.
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, this permits operation to be adjusted to achiere optinal performance for your system.

**The boards use the same easy-to-use 9-pin D-SUB connectors as are used on a PC.**

Using the most versatile general-purpose 9-pin D-SUB connector for RS-232C, the product allows you to use commercial cables which support the RS-232C standard.

**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 creating your own cables are available as optional.

**The control line for RS-232C can be controlled and monitored by software.**

The control lines for RTS, CTS, DTR and DSR can be controlled and monitored using software.

**Driver library API-PAC(W32) is supported.**

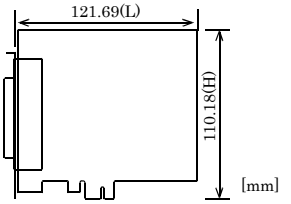
API-PAC(W32) is library software based on Win32 API routines (DLL), which provides local routines specific to CONTEC. You can create high-speed application software taking advantage of the CONTEC hardware using various programming languages that support Win32 API functions, such as Visual Basic and Visual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

## Specification

| Item | Specification |
|---|---|
| Number of channels | 2ch |
| Interface type | RS-232C |
| Isolation | Channel Isolation/Bus Isolation |
| Isolation voltage | Channel Isolation: 1000VDC, Bus Isolation: 1000VDC |
| Transfer method | Asynchronous serial transfer |
| Baud rate | 2 - 921,600bps *1 *2 |
| Data length | 5, 6, 7, 8 bits<br>1, 1.5, 2 stop bits *1 |
| Parity check | Even, Odd, Non-parity *1 |
| Controller chip | 162850 or equivalent<br>(Each channel has 128-byte receive and 128-byte transmit FIFO buffers.) |
| Connecting distance | 15m(Typ.) |
| Interrupt requests | 1 level use *3 |
| I/O address | Any 32-byte boundary |
| Power consumption | 3.3VDC 950mA (Max.) |
| Operating temperature | 0 - 50°C, 10 - 90%RH(No condensation) |
| Bus specification | PCI Express Base Specification Rev. 1.0a x1 |
| Dimension (mm) | 121.69(L) x 110.18(H) |
| Interface connector | 9-pin D-SUB connector, DELC-J9PAF-20L9E (mfd. by JAE, Male) equivalent |
| Weight | 90g |
| Certification | RoHS,VCCI |

*1 These items can be set by software.
For the "Driver Library API-PAC(W32)" and the "Standard COM Driver Software COM Setup Disk" on the supplied CD-ROM, the range is 15 - 921,600 bps.
*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 The interrupt signals from all channels are connected as a single interrupt signal on the PCI Express bus.

Board Dimensions




The standard outside dimension (L) is the distance from the end of the board to the outer surface of the slot cover.

## Support Software

### Standard COM Driver Software COM Setup Disk (Bundled)

The purpose of this software is to allow the CONTEC serial communication boards to be used under Windows or Linux in the same way as the standard COM ports on the PC. By installing additional boards, 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).
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 Vista, XP, Server 2003 , 2000, Linux

⚠ CAUTION
The maximum number of COM ports able to be used depends on the configuration of your OS.

### 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/C++.

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

CONTEC provides download services (at http://www.contec.com/apipac/) to supply the updated drivers and differential files.

For details, visit the CONTEC's Web site.

< Operating environment >

| | |
|---|---|
| OS | Windows Vista, XP, Server 2003, 2000 |
| 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.).

## Cable & Connector

### Cable (Option)

RS-232C Straight Cable with D-SUB9P (1.8m) : RSS-9M/F
RS-232C Cross Cable with D-SUB9P (1.8m) : RSC-9F
RS-232C Connection Conversion Straight Cable (25M→9F, 1.8m) : RSS-25M/9F
RS-232C Connection Conversion Cross Cable (25F→9F, 1.8m) : RSC-25F/9F

### Connector (Option)

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

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

## Packing List

Board [COM-2PC-PE] …1
First step guide … 1
COM Setup Disk *1 (CD-ROM) …1

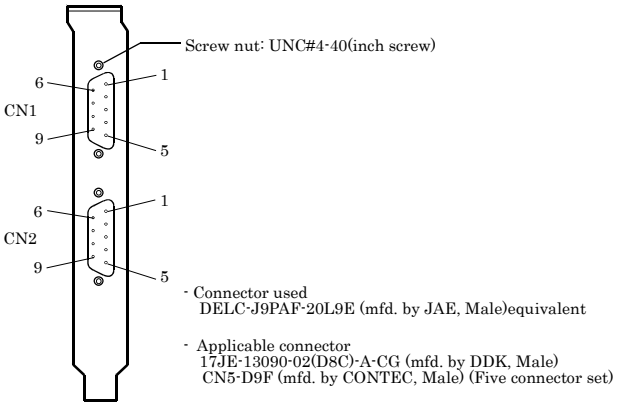
*1 The CD-ROM contains the driver software and User's Guide.

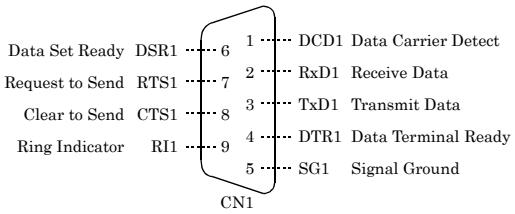
## External Connection

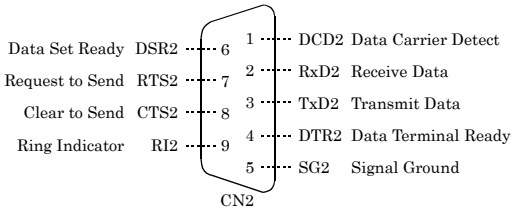
### Connecting directly to the port connector

When connecting directly from the connector on the board to the external device, use the appropriate cable which can be purchased separately. If making your own cable, use a CN5-D9F or similar connector which can be purchased separately.

< Pin Assignment >



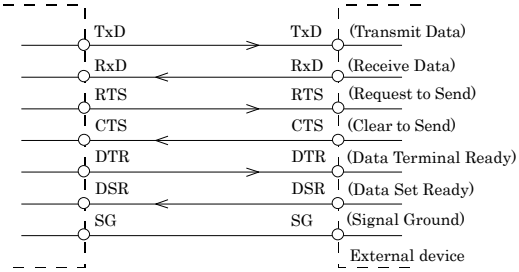

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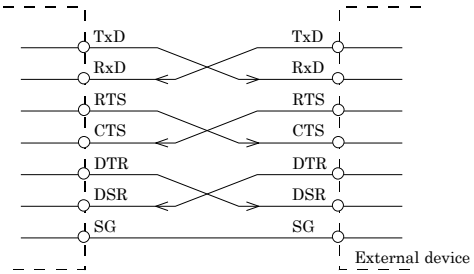
## Types of Cable and Example Connections

When using an RS-232C interface, different cables are required depending on the type of device to which you are connecting (computer or modem, etc.). Check the requirements of the external device and select either a straight-through or crossed (null modem) cable as appropriate. If special treatment of the signal lines in the connector is required, ensure that this is done in accordance with the specifications.

### Example Connection to a Modem (Straight cable)




### Example Connection to a PC (Cross cable)




### Example Connection to a Device

