

RS-232C Serial I/O Board  
for PCI Express 4ch

**COM-4C-PE**



This product is a PCI Express bus-supported board designed for extending RS-232C compatible serial communication functionality on your PC.

The < COM-4C-PE > has four RS-232C-standard serial 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. Up to 16 boards can be mounted on a single PC and the range COM1 - COM256 can be set. 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-4C-PE > has four 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 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.

**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 achieve optional performance for your system.

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

Distribution cable for 4channels (PCE37/9PS, PCE37/25PS) and 37-pin D-SUB connectors (male or female type) for 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 an application. The lines can be controlled or monitored by software from the application.

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

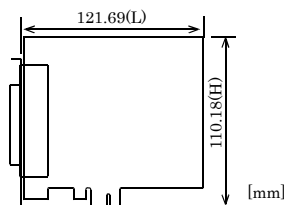
API-PAC(W32) is library software based on Win32 API routines (DLL), which provides local routines specific to CONTEC. You can create high-speed application software taking advantage of the CONTEC hardware using various programming languages that support Win32 API functions, such as Visual Basic and Visual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

## Specification

Item	Specification
Number of channels	4ch
Interface type	RS-232C
Transfer method	Asynchronous serial transfer
Baud rate	2 - 921,600bps *1 *2
Data length	5, 6, 7, 8 bits 1, 1.5, 2 stop bits *1
Parity check	Even, Odd, Non-parity *1
Controller chip	162850 or equivalent (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 (Max.)	3.3VDC 500mA(Max.)
Operating condition	0 - 50°C, 10 - 90%RH (No condensation)
Bus specification	PCI Express Base Specification Rev. 1.0a x 1
Dimension (mm)	121.69(L) x 110.18(H)
Interface connector	37-pin D-SUB, female connector DCLC-J37SAF-20L9E (mfd.by JAE) equivalent
Weight	90g

- \*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 (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).

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++.

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 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(Optional)

Connection Conversion Cable (37M→9M x 4, 250mm)  
: PCE37/9PS  
Connection Conversion Cable (37M→25M x 4, 250mm)  
: PCE37/25PS  
COM-4ch Board Optional Cable for CCU-78F/25M (2m)  
: RSS-78M/37M

### Connector(Optional)

Set of five 37-pin D-SUB (male) connectors : CN5-D37M

## Accessories

### Accessories (Option)

Connection Conversion Unit for RS-232C(78P→25P x 8)  
: CCU-78F/25M \*1

\*1 The option cable RSS-78M or RSS-78M/37M is needed.

## Packing List

Board [COM-4C-PE] ...1  
First step guide ... 1  
CD-ROM \*1 [COM Setup Disk] ...1  
Warranty Certificate ...1  
Serial number label ...1

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

## External Connection

In addition to connecting directly to the connector on the board, you can also connect external devices via a distribution cable or distribution unit.

- Connecting directly to the port connector.
- Using a distribution cable
- Using a distribution unit

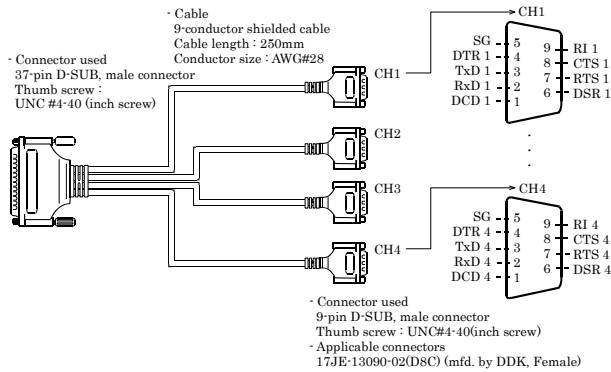
When using a COM-4C-PE, an alternative to connecting an external device directly to the connector on the board is to use a connection conversion cable or connection conversion unit.

### Converting the Interface Connector to 9-pin D-SUB, Male Connectors

Use a PCE37/9PS connection conversion cable (purchased separately) to connect to external devices after dividing into four 9-pin D-SUB male connector channels.

Use separately purchased 9-pin D-SUB or equivalent cables to connect from the four individual connectors.

#### < Specification of "PCE37/9PS" >



#### < Connection conversion cable (Option) >

Connection Conversion Cable (37M→9M x 4, 250mm)  
: PCE37/9PS

#### < Connection cable (Option) >

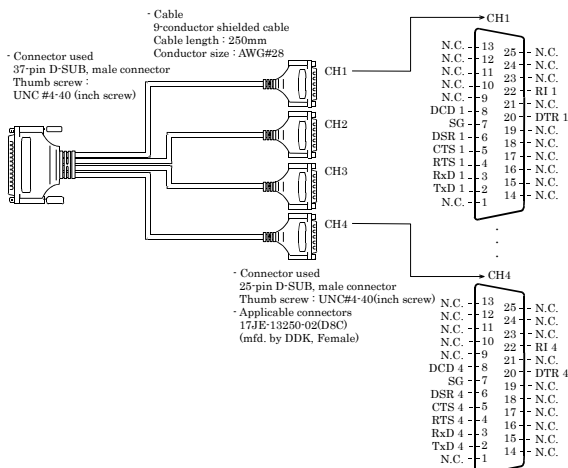
RS-232C Straight Cable with D-SUB9P (1.8m) : RSS-9M/F  
RS-232C Cross Cable with D-SUB9P (1.8m) : RSC-9F

### Converting the Interface Connector to 25-pin D-SUB, Male Connectors

Use a PCE37/25PS connection conversion cable (purchased separately) to connect to external devices after dividing into four 25-pin D-SUB male connector channels.

Use separately purchased 25-pin D-SUB or equivalent cables to connect from the four individual connectors.

#### < Specification of "PCE37/25PS" >



#### < Connection conversion cable (Option) >

Connection Conversion Cable (37M→25M x 4, 250mm)  
PCE37/25PS

#### < Connection cable (Option) >

RS-232C Straight Cable with D-SUB25P (1.8m) : RSS-25M/F  
RS-232C Cross Cable with D-SUB25P (1.8m) : RSC-25F  
RS-232C Connection  
Conversion Straight Cable (25M→9F, 1.8m) : RSS-25M/9F  
RS-232C Connection  
Conversion Straight Cable (25F→9M, 1.8m) : RSS-25F/9M  
RS-232C Connection  
Conversion Cross Cable (25F→9F, 1.8m) : RSC-25F/9F

### When using the CCU-78F/25M connection conversion unit

Use a CCU-78F/25M connection conversion unit (purchased separately) to connect to external devices after dividing into four 25-pin D-SUB male connector channels.

This method has the following features.

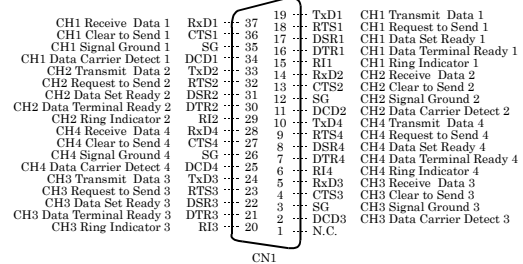
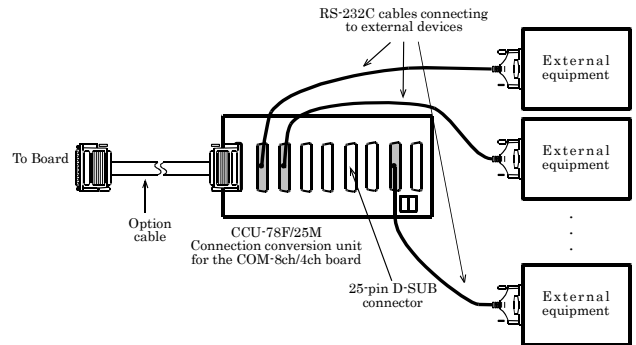
The unit can be fitted to a DIN rail using a separately purchased ADP-1 DIN rail adapter.

The unit can be fitted to a wall or similar using screws.

By connecting an external power supply, the unit can output a power supply from the 25-pin D-SUB connector.

Use a separately purchased 25-pin D-SUB connector cable to connect from the four individual connectors.

#### < Connection Procedure >



#### < Connection conversion cable & connection conversion unit(Option) >

Connection Conversion Unit for RS-232C(78P→25P x 8)  
: CCU-78F/25M  
COM-4ch Board Optional Cable for CCU-78F/25M (2m)  
: RSS-78M/37M

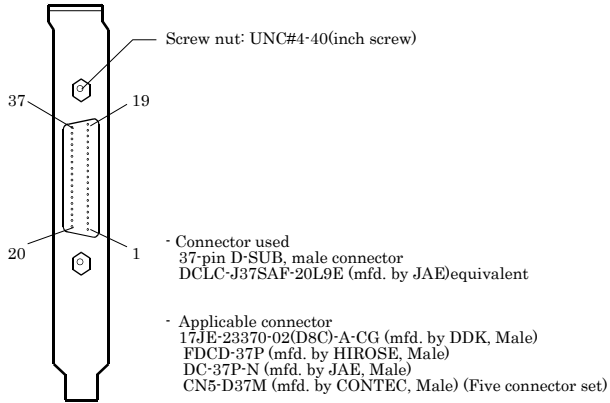
#### < Connection cable (Option) >

RS-232C Straight Cable with D-SUB25P (1.8m): RSS-25M/F  
RS-232C Cross Cable with D-SUB25P (1.8m) : RSC-25F  
RS-232C Connection Conversion Straight Cable (25M→9F, 1.8m) : RSS-25M/9F  
RS-232C Connection Conversion Straight Cable (25F→9M, 1.8m) : RSS-25F/9M  
RS-232C Connection Conversion Cross Cable (25F→9F, 1.8m) : RSC-25F/9F

### Connecting directly to the port connector

If connecting an external device directly from the connector on the board, use a CN5-D37M or equivalent connector.

#### < Pin Assignment >

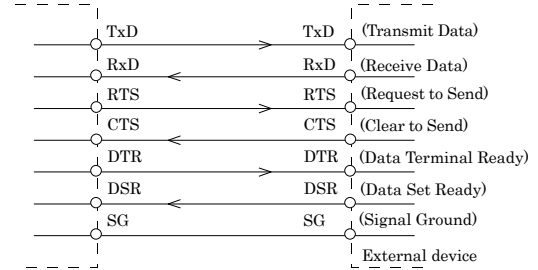


CH1 Receive Data 1	RxD1	37	19	TxD1	CH1 Transmit Data 1
CH1 Clear to Send 1	CTS1	36	18	RTS1	CH1 Request to Send 1
CH1 Signal Ground 1	SG1	35	17	DSR1	CH1 Data Set Ready 1
CH1 Data Carrier Detect 1	DCD1	34	16	DTR1	CH1 Data Terminal Ready 1
CH2 Transmit Data 2	TxD2	33	15	RI1	CH1 Ring Indicator 1
CH2 Request to Send 2	RTS2	32	14	RxD2	CH2 Receive Data 2
CH2 Data Set Ready 2	DSR2	31	13	CTS2	CH2 Clear to Send 2
CH2 Data Terminal Ready 2	DTR2	30	12	SG2	CH2 Signal Ground 2
CH2 Ring Indicator 2	RI2	29	11	DCD2	CH2 Data Carrier Detect 2
CH4 Receive Data 4	RxD4	28	10	TxD4	CH4 Transmit Data 4
CH4 Clear to Send 4	CTS4	27	9	RTS4	CH4 Request to Send 4
CH4 Signal Ground 4	SG4	26	8	DSR4	CH4 Data Set Ready 4
CH4 Data Carrier Detect 4	DCD4	25	7	DTR4	CH4 Data Terminal Ready 4
CH3 Transmit Data 3	TxD3	24	6	RI4	CH4 Ring Indicator 4
CH3 Request to Send 3	RTS3	23	5	RxD3	CH3 Receive Data 3
CH3 Data Set Ready 3	DSR3	22	4	CTS3	CH3 Clear to Send 3
CH3 Data Terminal Ready 3	DTR3	21	3	SG3	CH3 Signal Ground 3
CH3 Ring Indicator 3	RI3	20	2	DCD3	CH3 Data Carrier Detect 3
			1	N.C.	

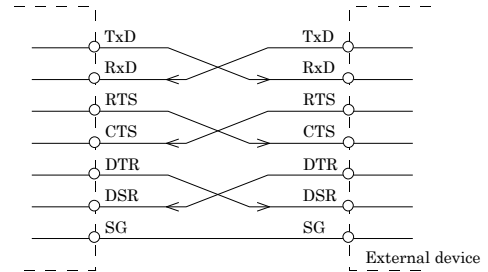
### Types of Cable and Example Connections

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

