RS-232C Serial I/O Board for PCI 8-ch
COM-8(PCI)H

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

COM-8(PCI)H has eight RS-232C 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.

Windows/Linux device driver is supported with this product.

* The contents in this document are subject to change without notice.
* Visit the CONTEC website to check the latest details in the document.
* The information in the data sheets is as of April, 2024.

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

Features

Max. 921,600bps RS-232C Serial Communication
The COM ports of this product support up to 921,600 bps.

COM-8(PCI)H has eight RS-232C-standard serial ports.

Possibly used as Windows, Linux-standard COM ports
Combining the product with our device driver COM-DRV makes it possible to use the product in the same manner as the COM ports of a PC.

This product supports communication using DCB structures in the Win32 API and Linux-standard system calls.

In addition, supplies a diagnostic program to confirm hardware operation and to perform a communication test with equipment.

Up to 16 boards can be installed
Up to 16 boards of the same model can be mounted on a single PC.

Each channel is equipped with separate 128-byte FIFO buffers for transmit and receive
Equipped with a buffer memory for transmitting 128 bytes and receiving 128 bytes for each channel. These are FIFO format, useful for high speed communications and to reduce the load to the CPU when transmitting/receiving.
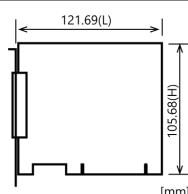
The control line for RS-232C can be controlled and monitored by software
The control lines for RTS, CTS, DTR and DSR can be controlled and monitored using software.

Included Items

Product [COM-8(PCI)H] ...1
Please read the following ... 1

Physical Dimensions

121.69(L)

105.68(H)

[mm]

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

Specifications

Function specification

Item	Specifications
Number of channels	8ch
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	8 bits x 64 ports boundary
Power consumption	3.3VDC 180mA (Max.) (JP1 pins 1 and 2 connected) *4 5VDC 180mA (Max.) (JP1 pins 2 and 3 connected) *4
PCI Bus specification	32-bit, 33MHz, Universal key shapes supported *4
Dimension (mm)	121.69(L) x 105.68(H) *4
Weight	140g

*1   These items can be set by software.
     In our device driver COM-DRV(WDM) 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 individual channels are arranged into a single interrupt signal and connected to the PCI bus.

*4   Product with different board numbers are different in these specifications. See "Differences by Board Number" at the end of this document.

Installation Environment Requirements

Item	Specifications
Operating ambient temperature	0 - 50°C
Operating ambient humidity	10 - 90%RH (No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None
Standard	VCCI Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA

Support Software

Name	Contents	How to get
Windows Version Serial communication driver COM-DRV(WDM)	Software that makes it possible to use the product in the same manner as the COM ports of a PC running Windows. This software supports communication using DCB structures in the standard OS Win32 API, and the SerialPort class in the .NET Framework and the pySerial module in Python. Various sample programs such as C# and Visual Basic .NET , Visual C++, Python etc. and diagnostic program useful for checking operation is provided.	Download from the CONTEC website *1
Linux Version Serial communication driver COM-DRV(LNX)	Software that makes it possible to use the product in the same manner as the COM ports of a PC running Linux. This software conforms to Linux-standard tty drivers, and the pySerial module in Python. The software includes various sample programs such as gcc (C, C++) and Python programs.	Download from the CONTEC website *1

*1 Download the files from the following URL.

https://www.contec.com/download/

Optional Products

Product Name	Model type	Description
Divider Cable for RS-232C 8ch (78P→9P×8)	PCE78/9PS	1m
Connection Conversion Cable for RS-232C (78P→25P×8)	PCE78/25PS	1m
COM-8ch Board Optional Cable for CCU-78F/25M	RSS-78M	2m
Connection Conversion Unit for RS-232C (78p→25p×8)	CCU-78F/25M	*1

*1   RSS-78M or RSS-78M/37M optional cable is required separately.

Visit the CONTEC website for the latest optional products.

Connecting to an External Device
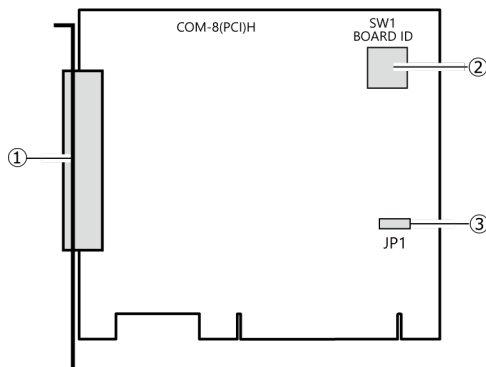
| No.	Name	No.	Name
1	Interface Connector (CN1)	3	PCI bus slot power voltage setting jumper (JP1)
2	Board ID Setting Switch (SW1)		

Connecting to an External Device

When using a COM-8(PCI)H, 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.

Using the 9-pin D-SUB Connector Conversion Cables

Use a PCE78/9PS connection conversion cable (purchased separately) to connect to external devices after dividing into eight 9-pin D-SUB male connector channels.

Use separately purchased 9-pin D-SUB or equivalent cables to connect from the eight individual connectors.
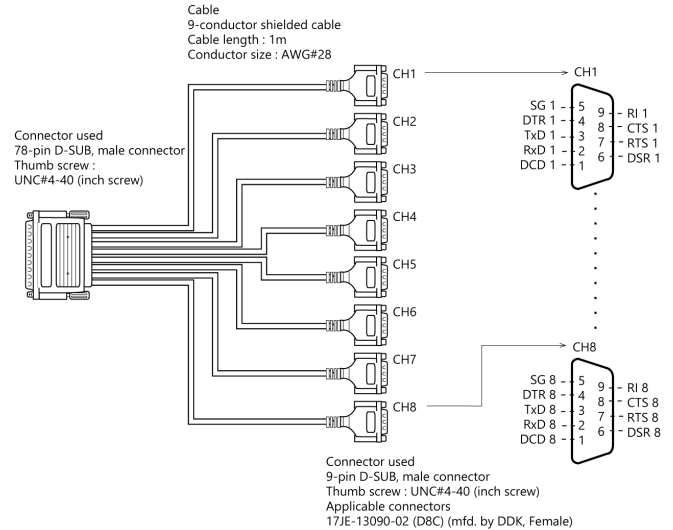
Connection conversion cable (Option)
Divider Cable for RS-232C 8ch (78P→9P x 8, 1m)   PCE78/9PS

Using the 25-pin D-SUB Connector Conversion Cables

Use a PCE78/25PS connection conversion cable (purchased separately) to connect to external devices after dividing into eight 25-pin D-SUB male connector channels.

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

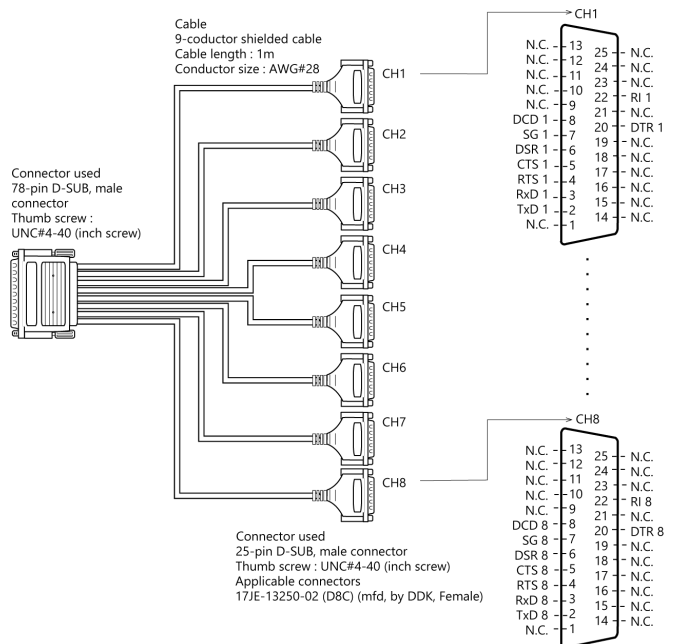**Connection conversion cable (Option)**
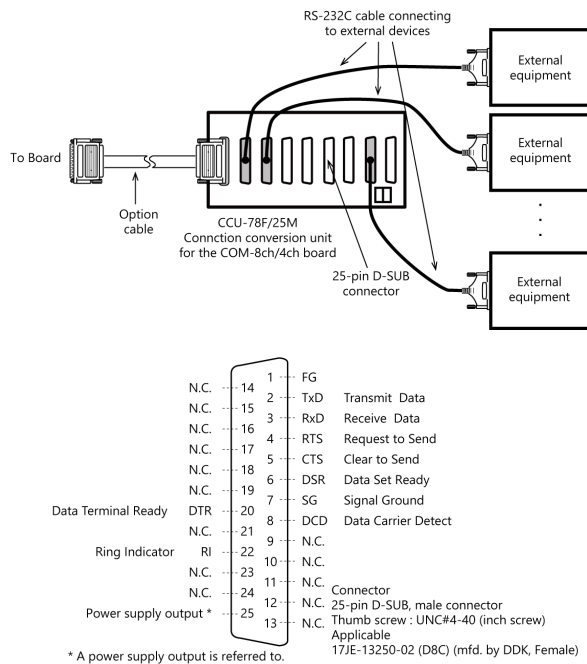Connection Conversion Cable for RS-232C (78P→25P x 8, 1m)   PCE78/25PS

Using the 25-pin D-SUB Connector Conversion Units

Use a CCU-78F/25M connection conversion unit (purchased separately) to connect to external devices after dividing into eight 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 eight individual connectors.

RS-232C cable connecting to external devices

External equipment

To Board

Option cable

CCU-78F/25M
Connction conversion unit
for the COM-8ch/4ch board

25-pin D-SUB connector

External equipment

External equipment

	1	FG	
N.C.	14		
N.C.	15	2	TxD	Transmit Data
N.C.	16	3	RxD	Receive Data
N.C.	17	4	RTS	Request to Send
N.C.	18	5	CTS	Clear to Send
N.C.	19	6	DSR	Data Set Ready
Data Terminal Ready	DTR	20	7	SG	Signal Ground
N.C.	21	8	DCD	Data Carrier Detect
Ring Indicator	RI	22	9	N.C.	
N.C.	23	10	N.C.	
N.C.	24	11	N.C.	
Power supply output *	25	12	N.C.	
		13	N.C.	

Connector
25-pin D-SUB, male connector
Thumb screw : UNC#4-40 (inch screw)
Applicable
17JE-13250-02 (D8C) (mfd. by DDK, Female)

* A power supply output is referred to.

Connection conversion cable & connection conversion unit (Option)

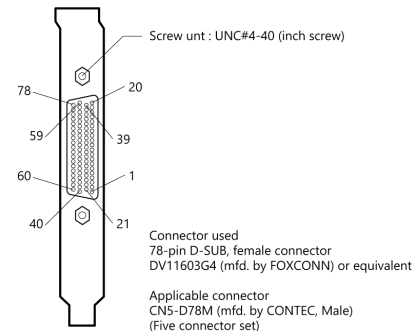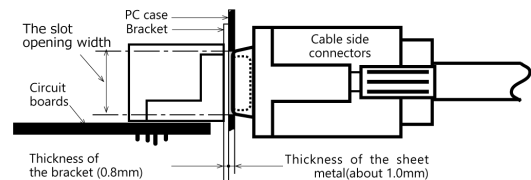|	
Connection Conversion Unit for RS-232C (78p→25p x 8)	CCU-78F/25M
COM-8ch Board Optional Cable for CCU-78F/25M (2m)	RSS-78M

Connecting it directly from the on-board connector

If connecting an external device directly from the connector on the board, make your own cable and connect it.

Pin Assignment

Screw unt : UNC#4-40 (inch screw)

78 20
59 39
60 1
40 21

Connector used
78-pin D-SUB, female connector
DV11603G4 (mfd. by FOXCONN) or equivalent

Applicable connector
CN5-D78M (mfd. by CONTEC, Male)
(Five connector set)

Pin No.	Signal name	Pin No.	Signal name		Pin No.	Signal name	Pin No.	Signal name
78	N.C.	59	DSR 1		39	RTS 1	20	TxD 1
77	SG 1	58	DCD 1		38	CTS 1	19	RxD 1
76	N.C.	57	RI 1		37	DSR 2	18	DTR 1
75	SG 2	56	DCD 2		36	RTS 2	17	TxD 2
74	RI 2	55	DTR 2		35	CTS 2	16	RxD 2
73	N.C.	54	DSR 3		34	RTS 3	15	TxD 3
72	SG 3	53	DCD 3		33	CTS 3	14	RxD 3
71	DSR 4	52	RI 3		32	RTS 4	13	DTR 3
70	SG 4	51	DCD 4		31	CTS 4	12	TxD 4
69	RI 4	50	DTR 4		30	DSR 5	11	RxD 4
68	SG 5	49	DCD 5		29	RTS 5	10	TxD 5
67	RI 5	48	DTR 5		28	CTS 5	9	RxD 5
66	N.C.	47	DSR 6		27	RTS 6	8	TxD 6
65	SG 6	46	DCD 6		26	CTS 6	7	RxD 6
64	N.C.	45	RI 6		25	DSR 7	6	DTR 6
63	SG 7	44	DCD7		24	RTS 7	5	TxD 7
62	RI 7	43	DTR 7		23	CTS 7	4	RxD 7
61	N.C.	42	DSR 8		22	RTS 8	3	TxD 8
60	SG 8	41	DCD 8		21	CTS 8	2	RxD 8
		40	RI 8				1	DTR 8

78 59 39 20
60 40 21 1
CN1

PC case
Bracket

The slot opening width

Cable side connectors

Circuit boards

Thickness of the bracket (0.8mm)

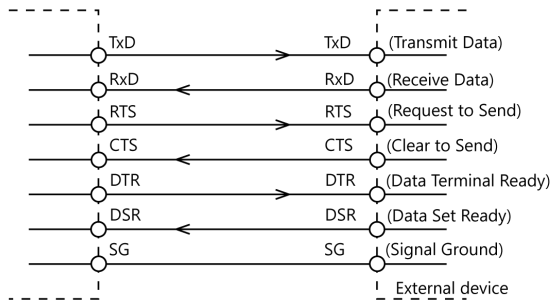Thickness of the sheet metal(about 1.0mm)

The connector used for COM8-(PCI)H has a wide interpin space and is highly reliable. In the case of a PC with a narrow slot opening, a gap might be created as wide as the thickness of the sheet metal of the PC when an external cable is connected, preventing the connector from being fitted properly. If the thickness of the sheet metal is less than1.5mm (typically about 1.0mm), simply tighten the adjusting screw located on the side of the connector to install it properly. The connector should function without a problem.
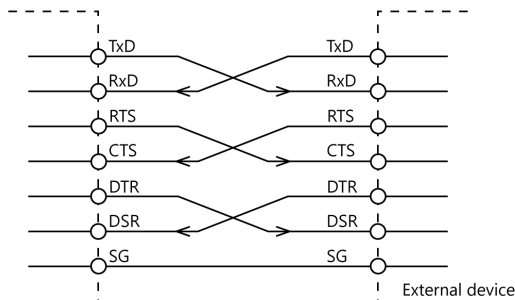
Types of Cable and Example Connections

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.
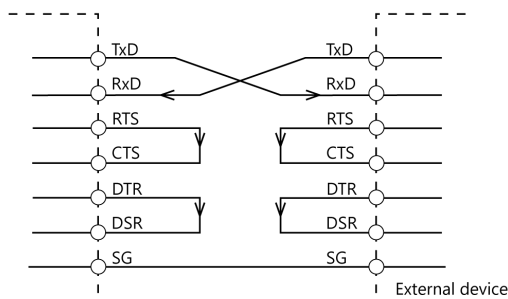
Example Connection to a Modem (Straight cable)

TxD	TxD	(Transmit Data)
RxD	RxD	(Receive Data)
RTS	RTS	(Request to Send)
CTS	CTS	(Clear to Send)
DTR	DTR	(Data Terminal Ready)
DSR	DSR	(Data Set Ready)
SG	SG	(Signal Ground)
	External device	

Example Connection to a PC (Cross cable)

TxD	TxD
RxD	RxD
RTS	RTS
CTS	CTS
DTR	DTR
DSR	DSR
SG	SG
	External device

Example Connection to a Device

TxD	TxD
RxD	RxD
RTS	RTS
CTS	CTS
DTR	DTR
DSR	DSR
SG	SG
	External device

Differences by Board Number

The COM-8(PCI)H is different in specifications, depending on the board number as listed below.

Board No.	No.7191A	No.7191B	No.7191C	No.7191D
PCI bus specification	32bit, 33MHz, 5V	32bit, 33MHz	32bit, 33MHz	32bit, 33MHz
Universal key shapes supported	Absent	Present *1	Present *2	Present *2
Power voltage setting jumper (JP1)	Absent	Absent	Present	Present
Power consumption	5VDC 600mA (Max.)	5VDC 600mA (Max.)	5VDC 250mA (Max.) 3.3VDC 250mA (Max.)	5VDC 180mA (Max.) 3.3VDC 180mA (Max.)
External dimension	121.69(L) x 106.68(H)	121.69(L) x 105.68(H)	121.69(L) x 105.68(H)	121.69(L) x 105.68(H)

*1   5V is supplied to the 5V pin.

*2   Power voltage is set by jumper.