PCM-3614I

4-port RS-232/422/485 Module

Introduction

The PCM-3614I is a PCI-104 compatible module with 4 individually configurable RS-232/422/485 ports. The PCM-3614I also features high transmission speeds, independent/shared IRQ's, a high-performance 16C550 UART communication chip with 16-byte FIFO to reduce CPU load, and more. These function settings include Standard/ Enhance, Independent/Shared IRQ & Speed modes.

Initial Inspection

We carefully inspected the PCM-3614I both mechanically and electrically before we shipped it. It should be free of marks and scratches and in perfect electrical order on receipt.

Handle the board only by its edges. The static charge on your body may damage its integrated circuits. Keep the card in its anti-static package whenever it is not installed. You can use this package to return the card if it should need repair.

Features

• 4 Independent RS-232/422/485 serial ports
• Automatic RS-485 data flow control
• Transmission speeds up to 921.6 Kbps
• Shared IRQ settings for each port
• Built-in terminal resistors
• LED indicators: TX, RX

Notes

For more information on this and other Advantech products, please visit our websites at:

http://www.advantech.com

http://www.advantech.com/eAutomation

For technical support and service:

http://www.advantech.com/support/

This startup manual is for PCM-3614I.

Specifications

• Bus interface: PCI-104
• Number of ports: 4
• UART: 16C550
• IRQ: 3, 4, 5, 6, 7, 9, 10, 11, 12, 15
• Data bits: 5, 6, 7, 8
• Stop bits: 1, 1.5, 2
• Parity: none, even, odd
• Speed (bps): 50 ~ 921.6K
• Connectors: DB-9 male
• Signal:
   RS-422: TxD+, TxD-, RxD+, RxD-, GND
   RS-485: DATA-, DATA+, GND
   RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
• Operating Temperature: -40~85°C (-40~185°F)
• Storage Temperature: -40~85°C (-40~185°F)
• Operation Humidity: 0% ~ 90%
   |Relative Humidity, non-condensing

Card Configuration

The max configuration for the PCI bus of PCI-104 modules is FOUR plus the host board. If you stack more than one PCI-104 module to a host board be sure to set the modules to different PCI numbers through SW2.

SW1 Settings

RS-232	RS-422	RS-485
N/A	1,2,3,4,ON: Master 5,6,7,8 OFF 1 2 3 4 5 6 7 8 1,2,3,4,OFF: Slave (Auto) 1 2 3 4 5 6 7 8	1,2,3,4,OFF 5,6,7,8 ON 1 2 3 4 5 6 7 8

1. Use pin 5 ~ 8 on SW1 to determine mode of port 0 to port 3 as RS-422 or RS-485. The pin number and port number are mapping directly.

•   "ON" is RS-485 mode. "OFF" is RS-422 mode.

•   For example, pin 5 is mapping to port 0. So if you set pin 5 to "ON", it means port 0 is RS-485 mode.

•   If you set pin 5 to "OFF", it means port 0 becomes RS-422 mode.

2. When you set selected port as RS-422 mode, use pin 1 ~ 4 on SW1 to determine port 0 to port 3 as Master or Auto mode.

- (Auto mode means corresponding port will automatically configure itself as master or slave). The pin number and port number are mapping directly.
- "ON" is Master mode. "OFF" is Auto mode.
- For example, when port 0 is set as RS-422 mode. pin 1 is mapping to port 0. So if you set pin 1 to "ON", it means port 0 is Master mode.
- If you set pin 1 to "OFF", it means port 0 becomes Auto mode.

SW2 Settings
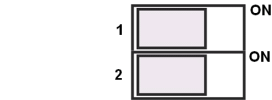
1	2	PCI Number
OF	OFF	0
ON	OFF	1
OFF	ON	2
ON	ON	3

Hardware Installation

Warning! *Turn off PC whenever you install, remove connect or disconnect cables to PCM-3614I*

Installing the Module on a CPU Card:

1. Turn the PC power off. Turn the power off to any peripheral devices such as printers and monitors.
2. Disconnect the power cord and any other cables from the back of the computer.
3. Remove the system unit cover
4. Remove the CPU card from the chassis (if necessary) to gain access to the card's PCI-104 connector.
5. Screw the brass spacer (included with the module) into the threaded hole on the CPU card. Do not tighten too much, or the threads may be damaged.
6. Carefully align the pins of the PCM-3614I with the PCI-104 connector. Slide the module into the connector, do not push too hard.
7. Secure the module to the CPU card to the threaded hole in the CPU card using the included screw.
8. Attach any accessories to the PCM-3614I.
9. Reinstall the CPU card and replace the system unit cover. Reconnect the cables you removed in step 2.
10. Turn the power on.

Connecting to Another PCI-104 Module:

1. Insert the pins of connector CN15 into the piggyback connector on the other PCI-104 module.
2. Screw the PCM-3614I to the brass spacer. This completes the hardware installation

Pin Assignments and Jumper Settings

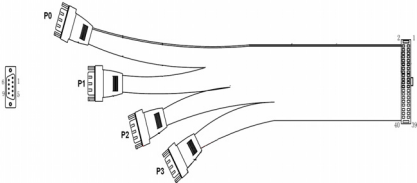The function of PCM-3614I is adjustable by the following jumpers.

Jumper Settings of CN1~CN10
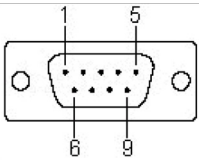
CN and COM Port Mapping

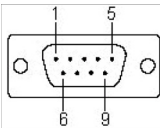| CN Number	COM Port Number
1	0
3	1
2	2
4	3

The following table and figure shows pin assignments for the DB9 connector.

Pin Assignments of RS-232 DB9 Connector

Pin	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

Pin Assignments of RS-422/485 DB9 Connector

Pin	RS-422/485
1	TX-(DATA-)
2	TX+(DATA+)
3	RX+
4	RX-
5	GND
6	RTS-
7	RTS+
8	CTS+
9	CTS-

Pin Assignments of RS-422/485 Configuration

		Pin	Description	Pin	Description
	Data-	1	TX-	2	RTS-
	Data+	3	TX+	4	RTS+
Port 0		5	RX+	6	CTS+
		7	RX-	8	CTS-
		9	GND	10	NC
	Data-	11	TX-	12	RTS-
	Data+	13	TX+	14	RTS+
Port 1		15	RX+	16	CTS+
		17	RX-	18	CTS-
		19	GND	20	NC
	Data-	21	TX-	22	RTS-
	Data+	23	TX+	24	RTS+
Port 2		25	RX+	26	CTS+
		27	RX-	28	CTS-
		29	GND	30	NC
	Data-	31	TX-	32	RTS-
	Data+	33	TX+	34	RTS+
Port 3		35	RX+	36	CTS+
		37	RX-	38	CTS-
		39	GND	40	NC