

MEC-COM-M334

Mini PCI-e 4-port RS-232/422/485 serial board with power input

User's Manual

Revision 1.1, May 2017

Mini PCI-e Serial Card

User's Manual

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Introduction

Overview

MEC-COM-M334 is a serial communication card for embedded PC. The card follows the Mini PCI-e standard which is compliant with PCI Express x 1 classification and small form factor (30.00 x 50.95 mm). This board fits in any host computer that has Mini PCI-e card slots.

Features

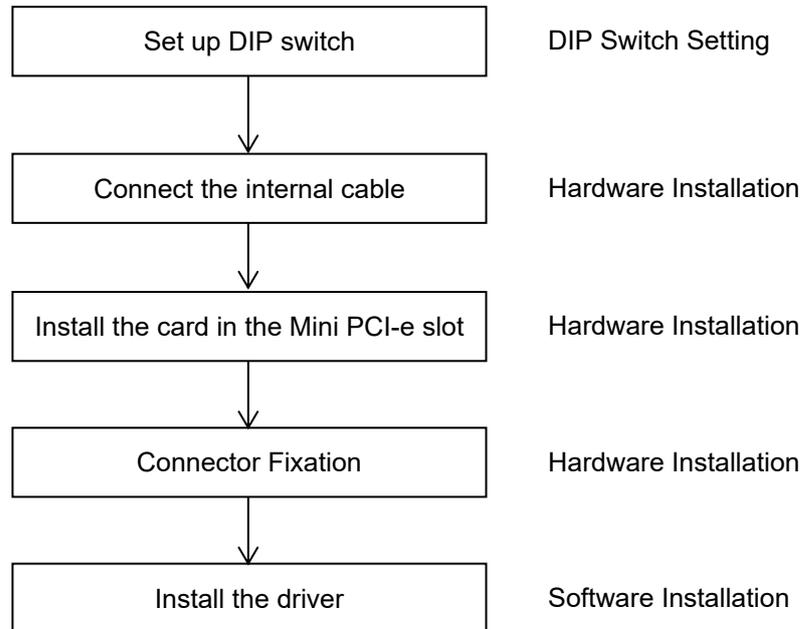
The PCI Express boards have the following outstanding features:

- Single-Lane (x1) PCI-Express with throughput up to 5.0 / 2.5Gbps
- Fully compliant with PCI-Express Base Specification Rev 2.0
- Top serial transmission performance up to 921.6 Kbps baud rate
- FIFO 256 Bytes, 15 KV ESD protections on board
- H/W, S/W automate flow control supported
- RS-232/422/485 mode selectable by DIP switch setting
- Each port supports 5V or 12V power output by DIP switch setting

Installation Flowchart

Installation Flowchart of MEC-COM-M334

The following flowchart provides a brief summary of the procedure you should follow to install the Mini PCI-e card:



Package Checklist

The following items are included in the Mini PCI Express board Package:

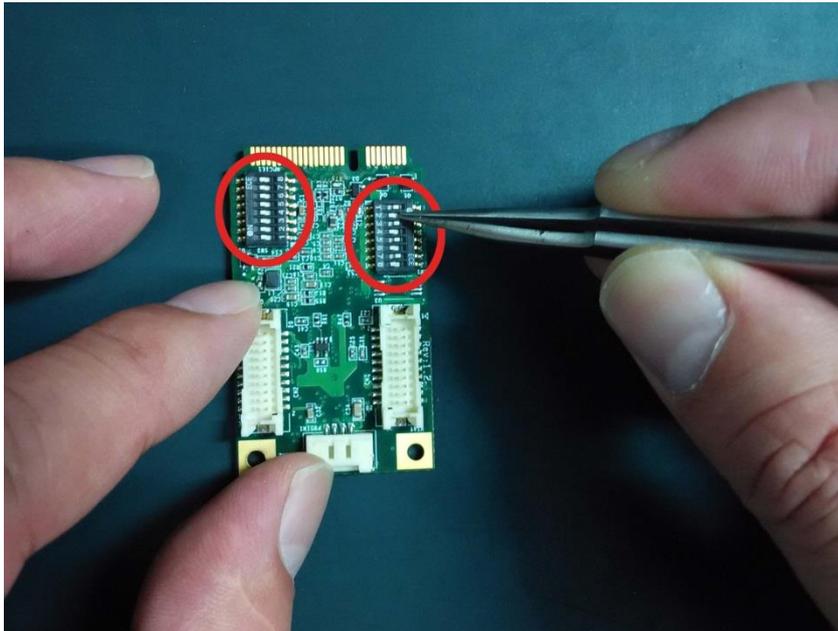
- Mini PCI-e Card x 1
- Bracket x 2
- 20Pin Internal Cable w/ two DB9 Male Connectors (30cm) x 2
- 4Pin Power Input Cable (30cm) x 1
- Quick Installation Guide (Printed) x 1
- Driver CD x 1

Note: Notify your sales representative if any of the above items are missing or damaged.

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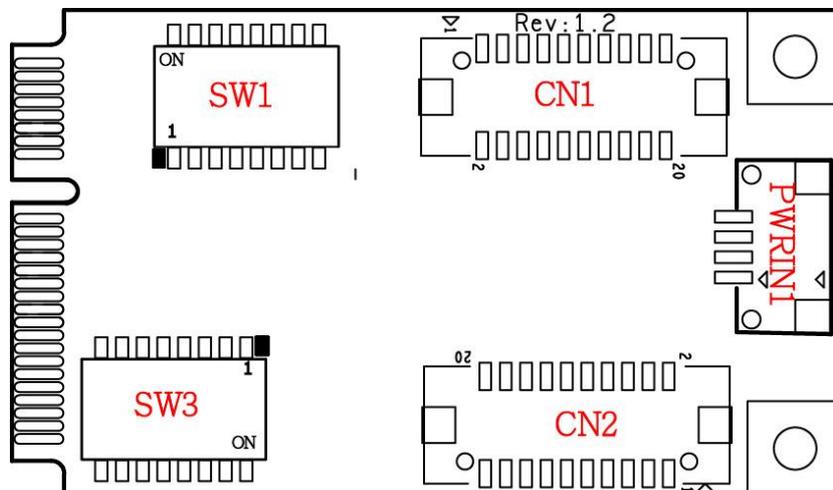
DIP Switch Setting

Set up the DIP switch



Make sure you set up the correct DIP switch before hardware installation

DIP Switch Define



Mode Select

CN1			
Pin	Description	Pin	Description
1	DCD_1	2	DCD_2
3	DSR_1	4	DSR_2
5	RXD_1	6	RXD_2
7	RTS_1	8	RTS_2
9	TXD_1	10	TXD_2
11	CTS_1	12	CTS_2
13	DTR_1	14	DTR_2
15	RI_1	16	RI_2
17	NC	18	NC
19	GND	20	GND

SW3				
	0V	0V	5V	12V
Switch1	ON	OFF	ON	OFF
Switch2	ON	ON	OFF	OFF
Switch3	ON	OFF	ON	OFF
Switch4	ON	ON	OFF	OFF
Switch5	ON	OFF	ON	OFF
Switch6	ON	ON	OFF	OFF
Switch7	ON	OFF	ON	OFF
Switch8	ON	ON	OFF	OFF

PWRIN1	
Pin	Description
1	+5V
2	GND
3	GND
4	+12V

CN2			
Pin	Description	Pin	Description
1	DCD_3	2	DCD_4
3	DSR_3	4	DSR_4
5	RXD_3	6	RXD_4
7	RTS_3	8	RTS_4
9	TXD_3	10	TXD_4
11	CTS_3	12	CTS_4
13	DTR_3	14	DTR_4
15	RI_3	16	RI_4
17	NC	18	NC
19	GND	20	GND

SW1			
	RS232	RS422	RS485
Switch1	ON	ON	OFF
Switch2	OFF	ON	ON
Switch3	ON	ON	OFF
Switch4	OFF	ON	ON
Switch5	ON	ON	OFF
Switch6	OFF	ON	ON
Switch7	ON	ON	OFF
Switch8	OFF	ON	ON



Make sure you set up the correct DIP switch before hardware installation

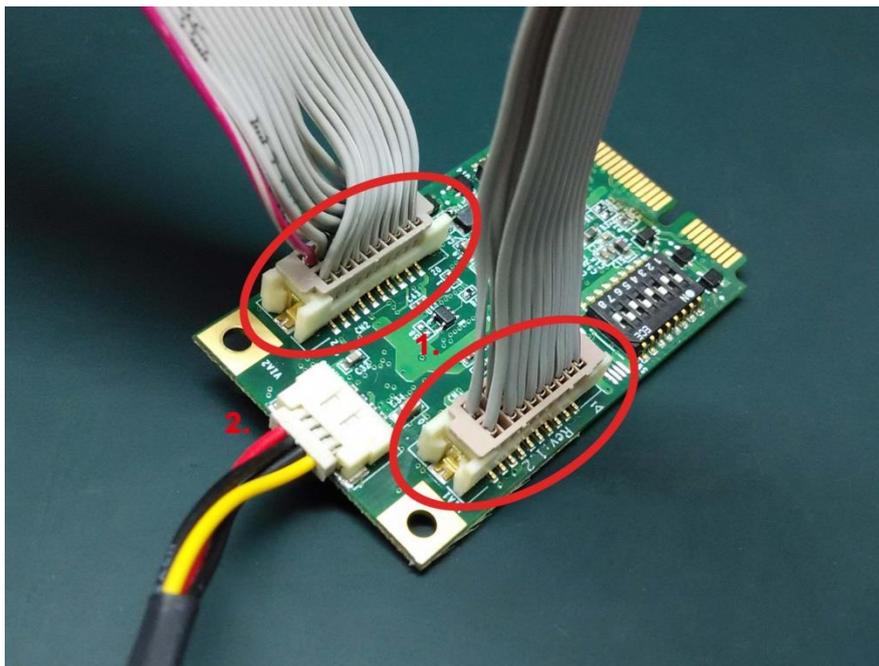
3

Hardware Installation

This chapter describes the PCI Express Series hardware installation procedure. Since the BIOS automatically assigns the PCI Express board's IRQ number and I/O addresses, you must plug in the board before installing the driver.

Step 1 **Connect the internal cable to the card**

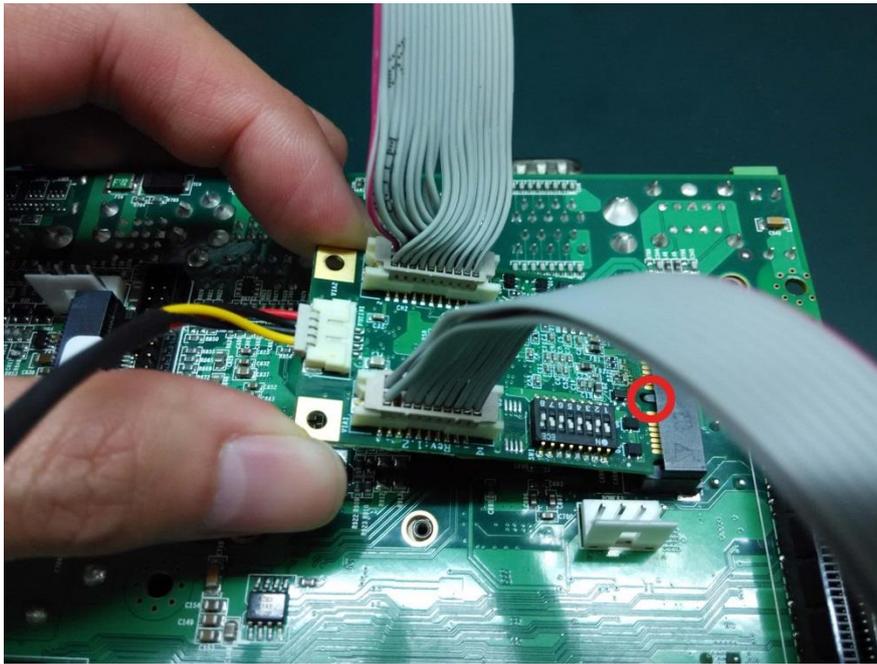
1. Connect the internal cable to the card
2. Connect the power cable to the card

**Note**

The power cable will be needed if you wish to have the COM ports powered.
(Please refer to the user manual appendix for the power select jumper setting)

Step 2

Install the card to the Mini PCI-e slot

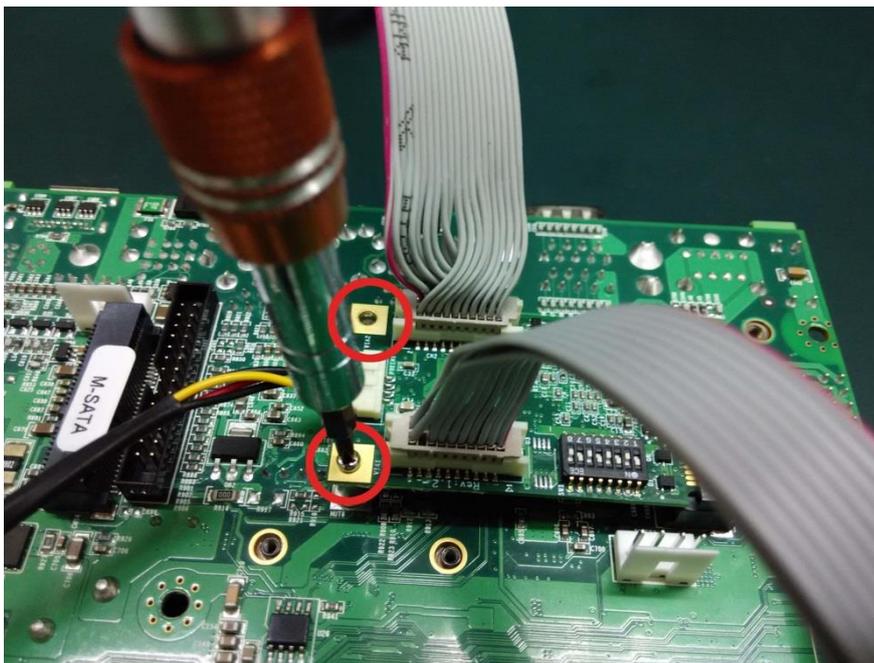


Make sure you install the card in the right position (fool-proof design)

Step 3

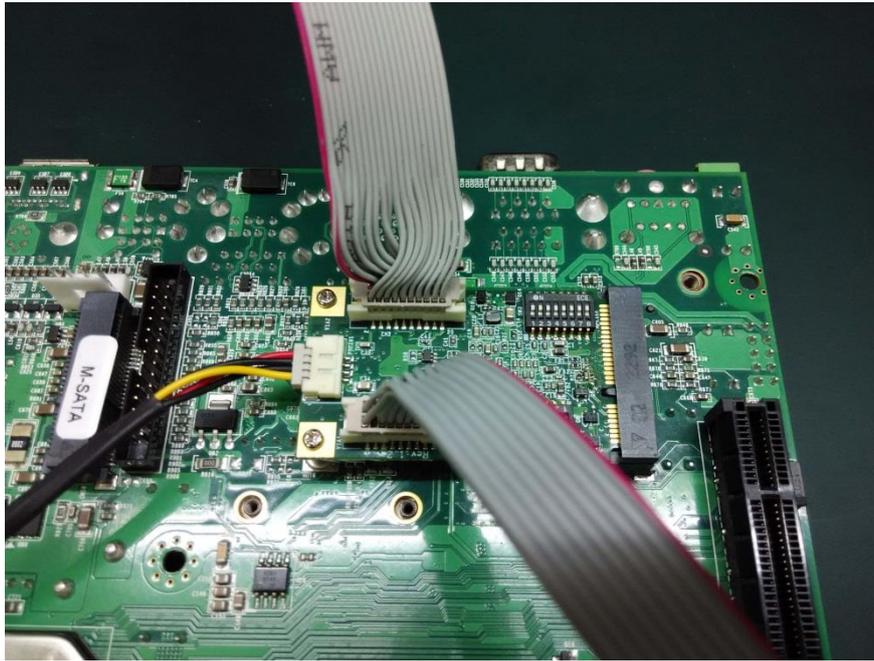
Fix the card on the motherboard

Make sure you tighten the screws to fix the card



Step 4

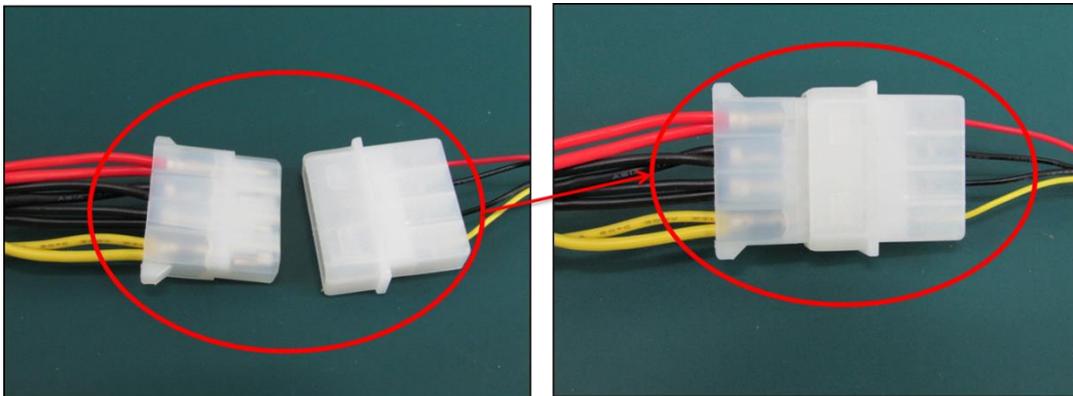
Card installation completed



Step 5

Connect the power cable to the 4PIN power connector

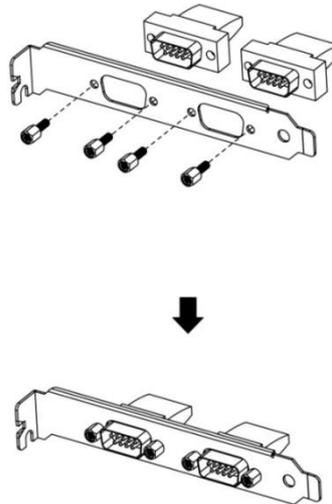
Connect the power cable to the big 4PIN power connector from the power supply



Connector Fixation

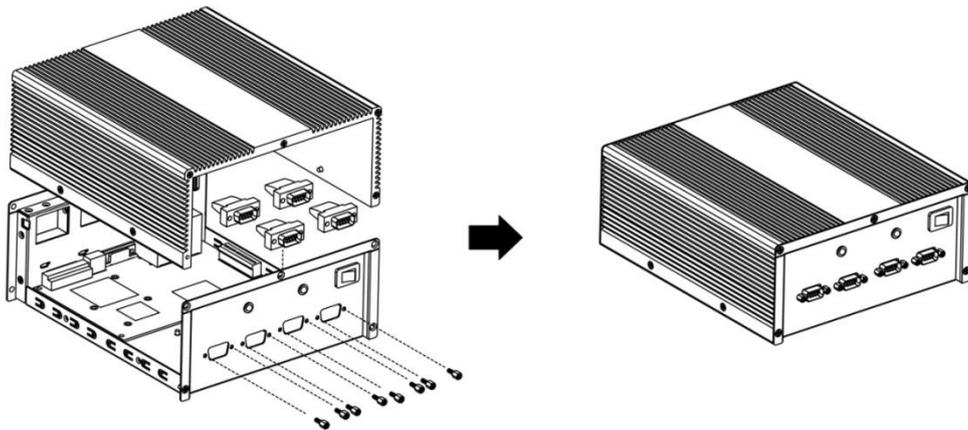
1. Standard PCI/PCIe Bracket

PCI / PCIe IO Bracket

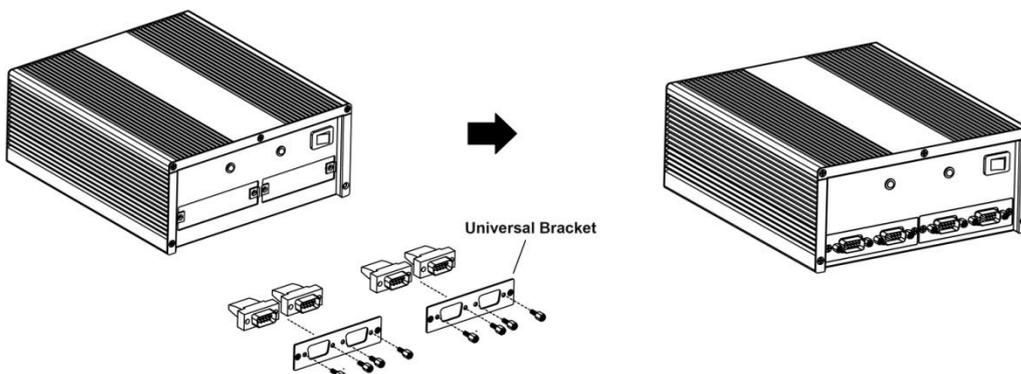


2. Customized Front / Rear Plate

Front / Rear I/O Plate



Universal Bracket



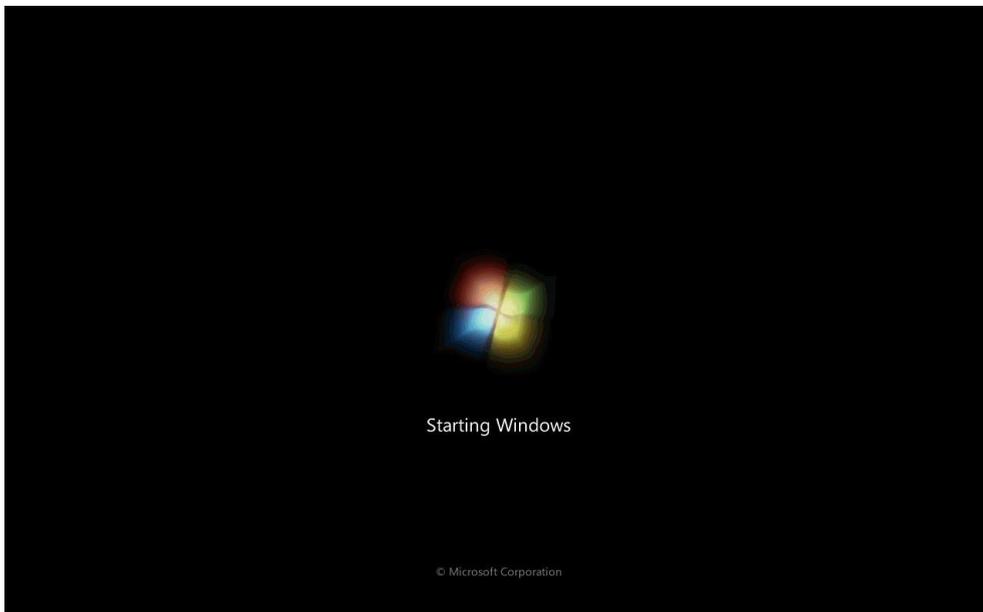
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Driver Installation

This chapter describes the procedures of installation, configuration and update/removal the driver of M334 on Windows 2000, XP, Vista, 7, 8 and 10.

Step 1 Turn on PC and start Windows

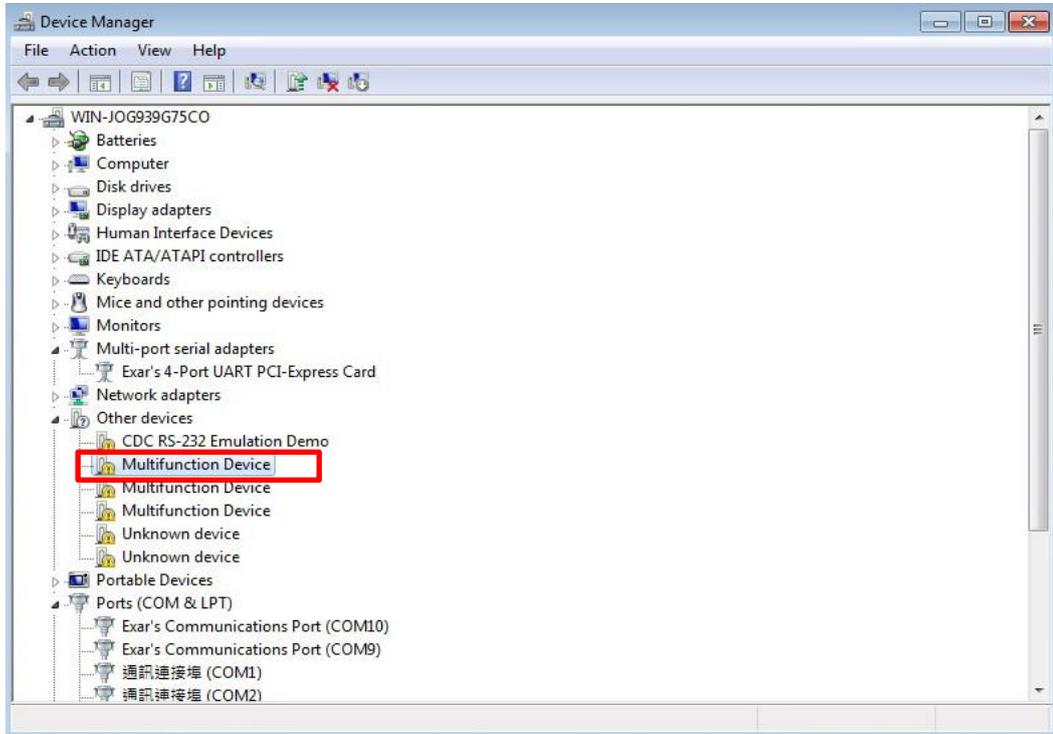
1. To ensure the installation of hardware device.



Note Win 7 OS as example

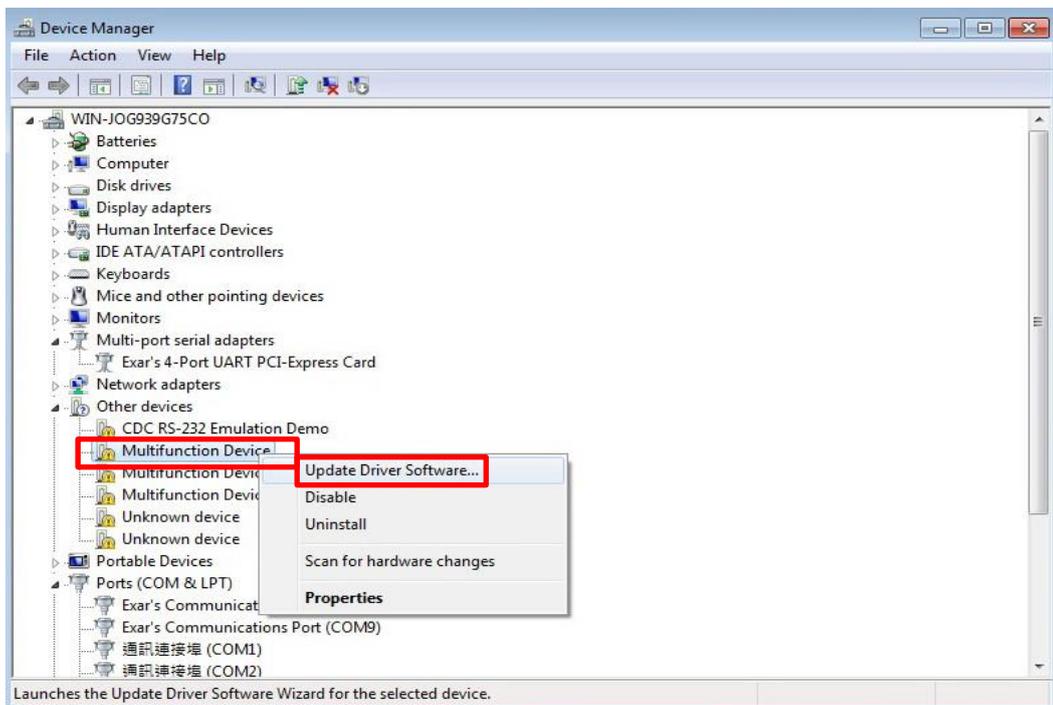
Step 2 Windows automatically detects the new device

1. Go to start > control panel and click systems.
2. Go to the hardware tab and click device manager.
3. Look for the Multifunction Device.



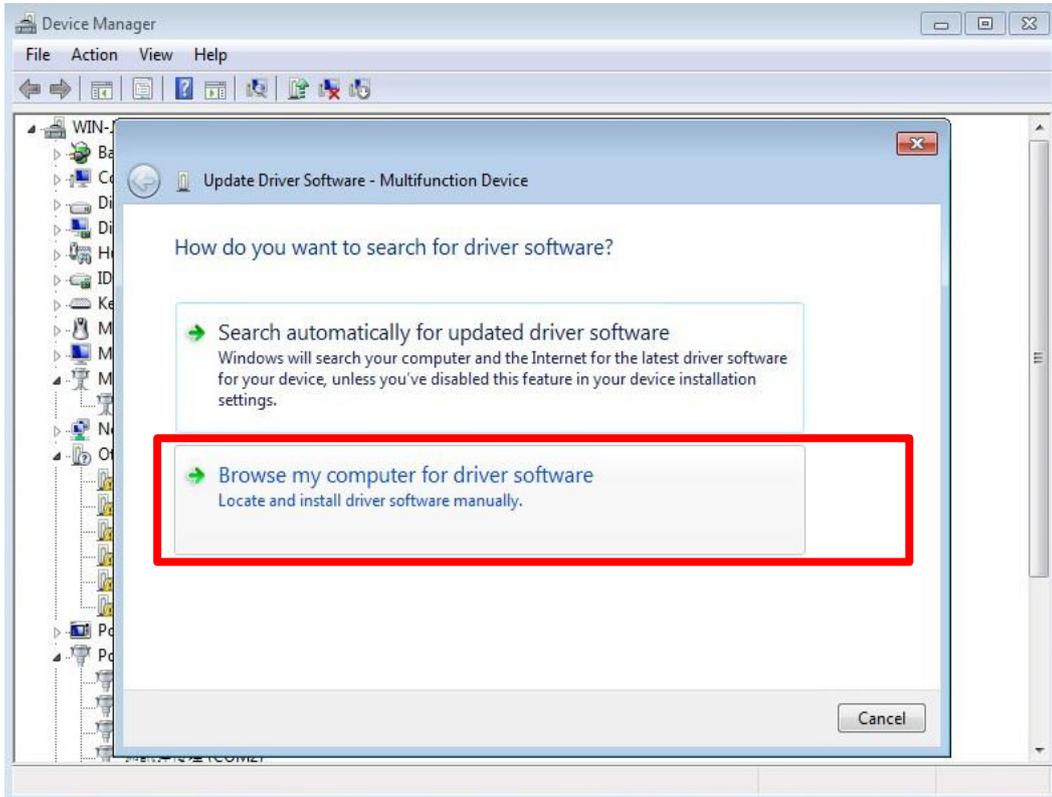
Step 3 Update Driver Software

1. Right click on "Multifunction Device" and click "Update Driver Software"



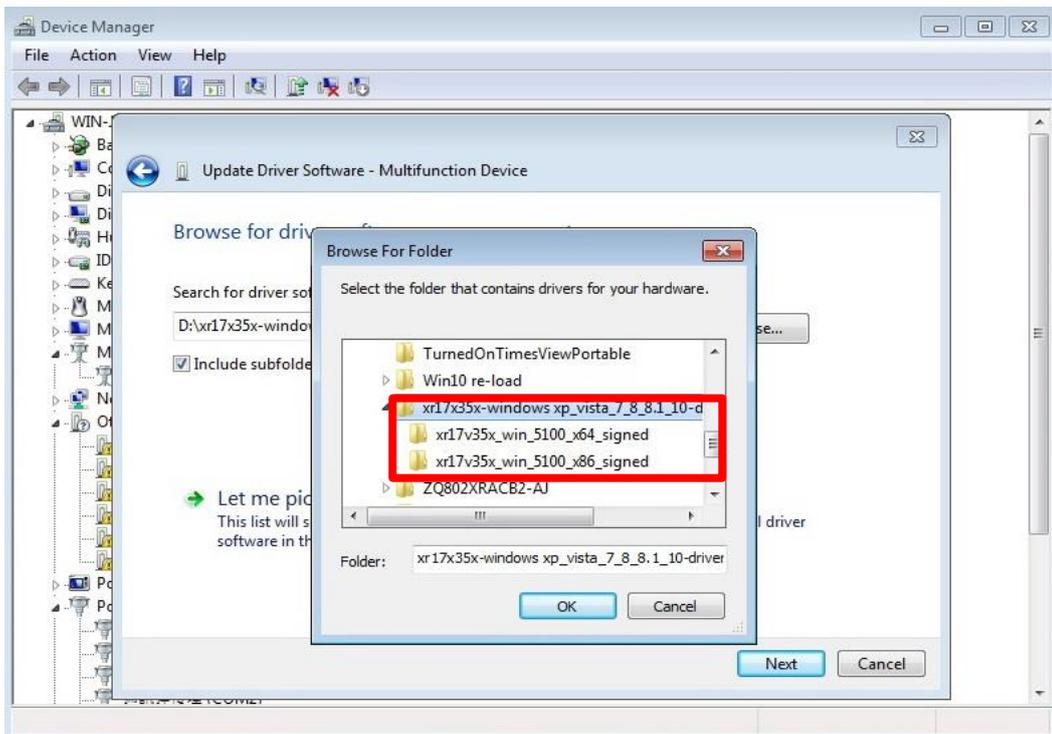
Step 4 Insert CD

1. Insert driver CD
2. Select “Browse my computer for driver software”



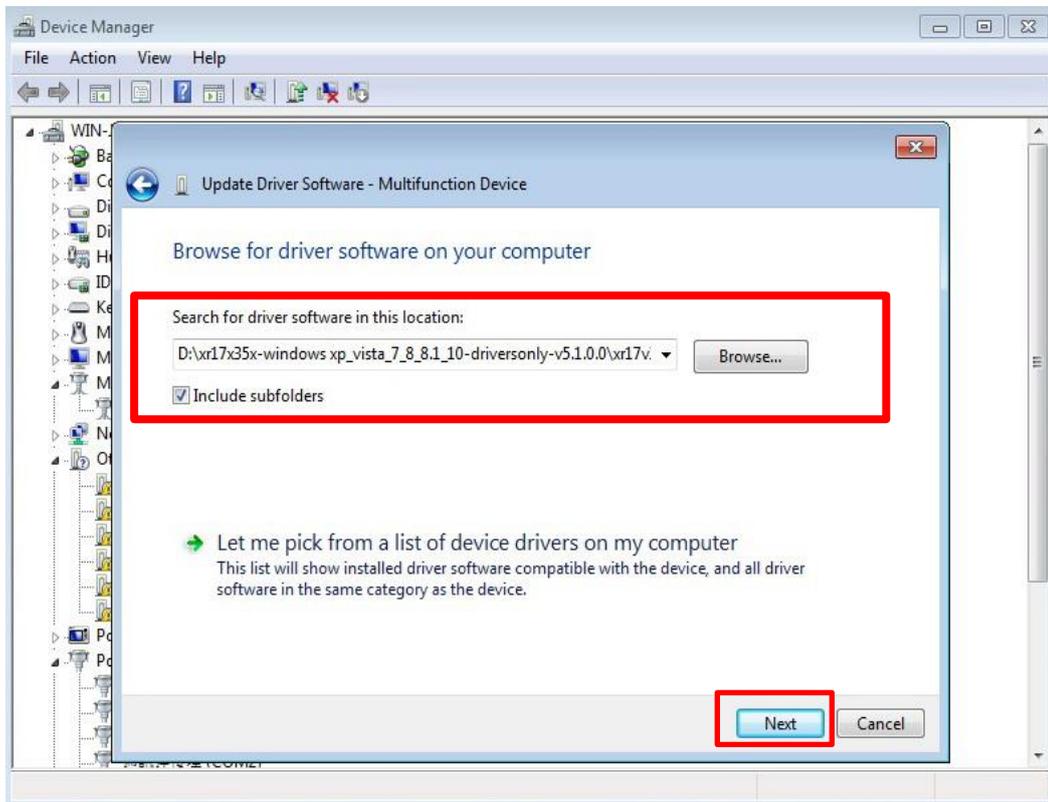
Step 5 Browse for folder

1. Click “Browse” and locate your driver (base on your system).



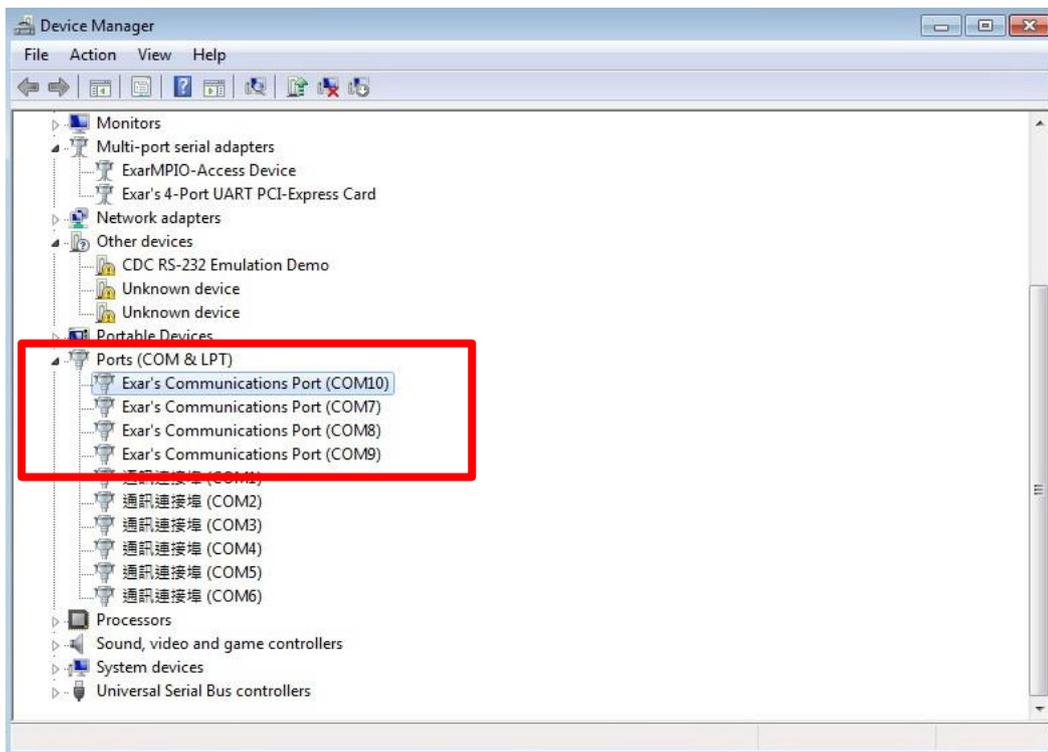
Step 6 Confirm driver folder

1. It will then open a window driver shown below.
2. Click “Next” and it will attempt to install the driver.



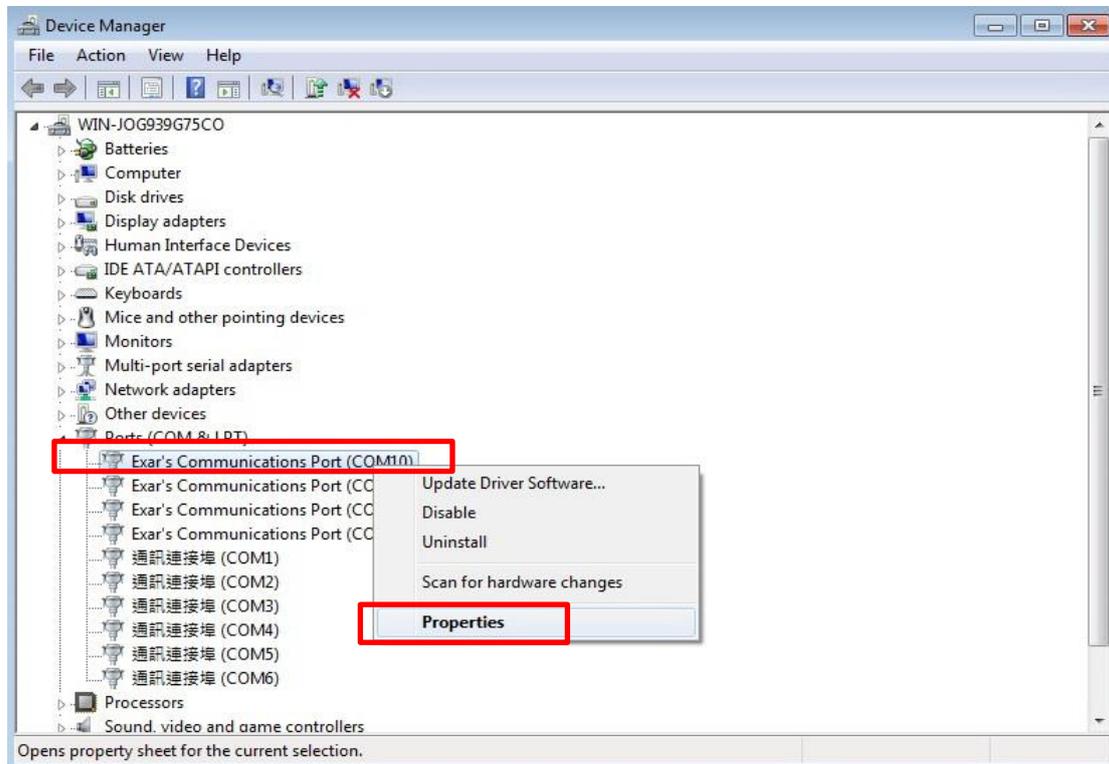
Step 7 Driver installation completed

You will see the COM ports listed on the device manager if the installation is success.



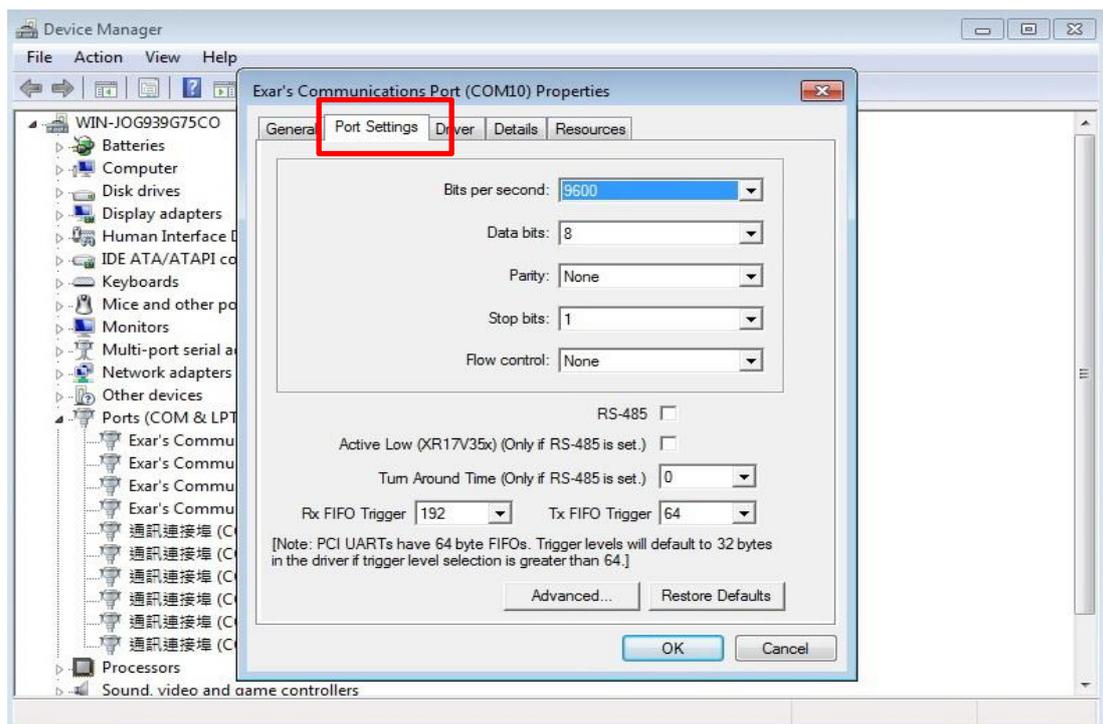
Step 8 Set up the COM ports

1. Select the COM port and right click
2. Select "Properties"



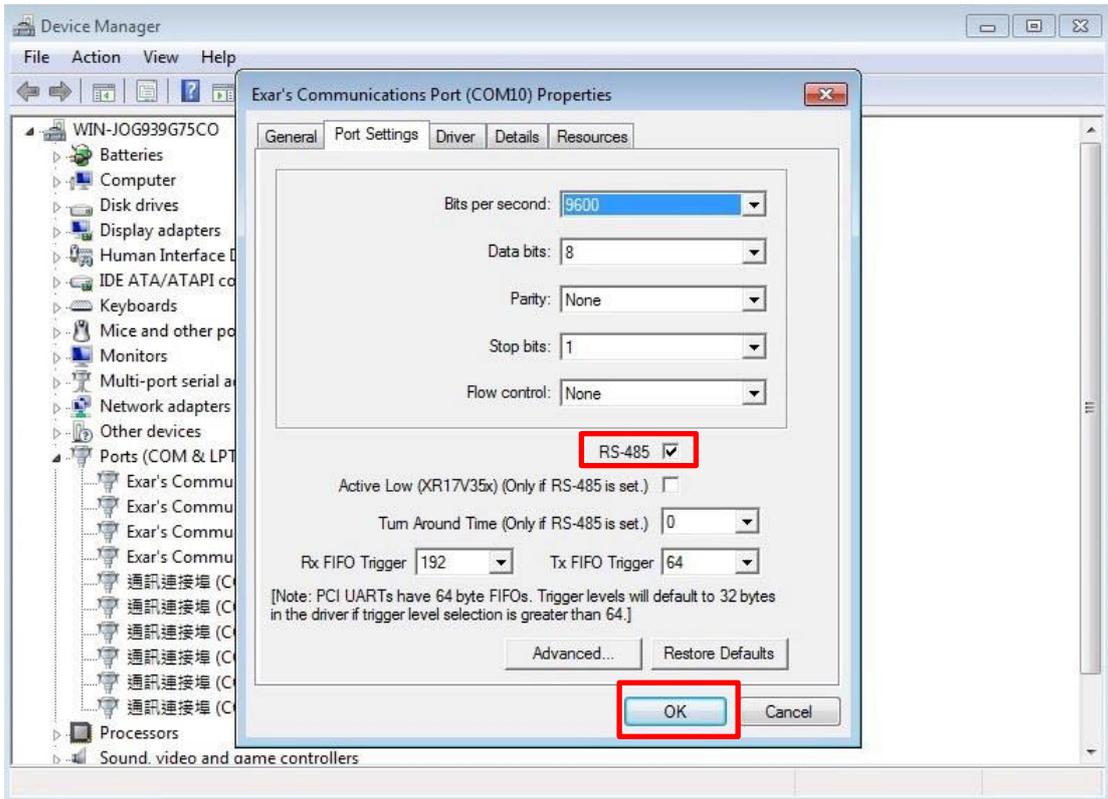
Step 9 COM ports properties settings

1. Properties settings window would pop out
2. Select the "Port Settings" page



Step 10 Select COM ports hardware configuration

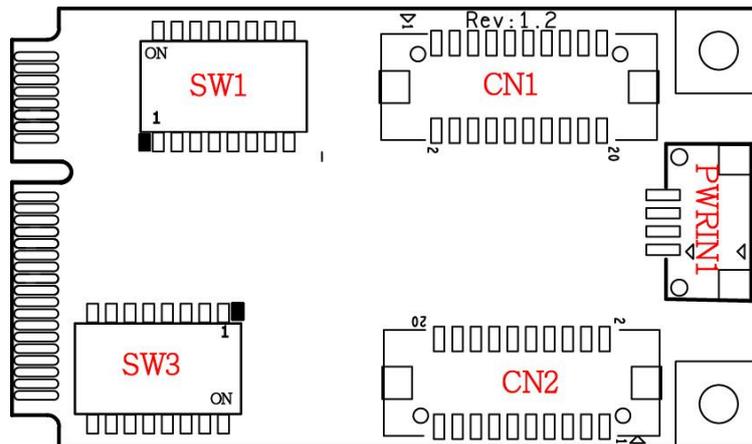
1. Click "RS-485" to select the hardware configuration for your COM port (RS422/485)



Note Default setting of the COM port is RS232

Appendix

□ Pin Assignments



Board Side Pin Assignments

Wire to Board Connector (CN1)

Pin	Description	Pin	Description
1	DCD_1	2	DCD_2
3	DSR_1	4	DSR_2
5	RXD_1	6	RXD_2
7	RTS_1	8	RTS_2
9	TXD_1	10	TXD_2
11	CTS_1	12	CTS_2
13	DTR_1	14	DTR_2
15	RI_1	16	RI_2
17	NC	18	NC
19	GND	20	GND

Wire to Board Connector (CN2)

Pin	Description	Pin	Description
1	DCD_3	2	DCD_4
3	DSR_3	4	DSR_4
5	RXD_3	6	RXD_4
7	RTS_3	8	RTS_4
9	TXD_3	10	TXD_4
11	CTS_3	12	CTS_4
13	DTR_3	14	DTR_4
15	RI_3	16	RI_4
17	NC	18	NC
19	GND	20	GND

Power Input Connector (PWRIN1)

Pin	Description
1	+5V
2	GND
3	GND
4	+12V

RS232/422/485 Mode Select Switch (SW1)

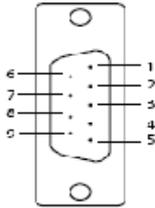
SW1			
	RS232	RS422	RS485
Switch1	ON	ON	OFF
Switch2	OFF	ON	ON
Switch3	ON	ON	OFF
Switch4	OFF	ON	ON
Switch5	ON	ON	OFF
Switch6	OFF	ON	ON
Switch7	ON	ON	OFF
Switch8	OFF	ON	ON

DB9 Male Connector- With Power Select (SW3)

SW3				
	0V	0V	5V	12V
Switch1	ON	OFF	ON	OFF
Switch2	ON	ON	OFF	OFF
Switch3	ON	OFF	ON	OFF
Switch4	ON	ON	OFF	OFF
Switch5	ON	OFF	ON	OFF
Switch6	ON	ON	OFF	OFF
Switch7	ON	OFF	ON	OFF
Switch8	ON	ON	OFF	OFF

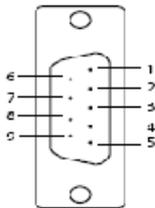
Device Side Pin Assignments

RS232/422/485 Port DB9 Male Connector-1



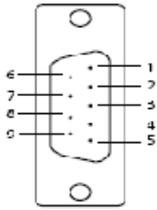
Pin	RS232 Description	RS-422/485 FULL DUPLEX Description	RS-485 HALF DUPLEX Description
1	DCD_1	TX_1-	DATA_1-
2	RxD_1	TX_1+	DATA_1+
3	TxD_1	RX_1+	
4	DTR_1	RX_1-	
5	GND		
6	DSR_1		
7	RTS_1		
8	CTS_1		
9	RI_1		

RS232/422/485 Port DB9 Male Connector-2



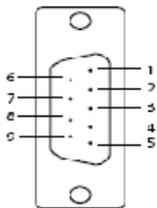
Pin	RS232 Description	RS-422/485 FULL DUPLEX Description	RS-485 HALF DUPLEX Description
1	DCD_2	TX_2-	DATA_2-
2	RxD_2	TX_2+	DATA_2+
3	TxD_2	RX_2+	
4	DTR_2	RX_2-	
5	GND		
6	DSR_2		
7	RTS_2		
8	CTS_2		
9	RI_2		

RS232/422/485 Port DB9 Male Connector-3



Pin	RS232 Description	RS-422/485 FULL DUPLEX Description	RS-485 HALF DUPLEX Description
1	DCD_3	TX_3-	DATA_3-
2	RxD_3	TX_3+	DATA_3+
3	TxD_3	RX_3+	
4	DTR_3	RX_3-	
5	GND		
6	DSR_3		
7	RTS_3		
8	CTS_3		
9	RI_3		

RS232/422/485 Port DB9 Male Connector-4



Pin	RS232 Description	RS-422/485 FULL DUPLEX Description	RS-485 HALF DUPLEX Description
1	DCD_4	TX_4-	DATA_4-
2	RxD_4	TX_4+	DATA_4+
3	TxD_4	RX_4+	
4	DTR_4	RX_4-	
5	GND		
6	DSR_4		
7	RTS_4		
8	CTS_4		
9	RI_4		

□ Technical Reference

MEC-COM-M334 Specifications

General

PCI-Express Revision	PCI-Express Base Specification Rev 2.0
PCI-Express Electromechanical Revision	PCI-Express Mini Card Electromechanical Rev. 2.0

Hardware

Controllers	XR17V354 (16C550C compatible)
Bus	Single-Lane (x1) PCI-Express with throughput up to 5.0 / 2.5Gbps

Interface (Connector)

RS-232 / 422 / 485	4 (DB9 male)
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Serial Line Protection

ESD Protection	15 KV on board
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Serial Port Power

Voltage Select	5V or 12V
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Performance

Baud Rate	Asynchronous baud rates up to 921.6 Kbps
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Serial Communication Parameters

Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	No Parity bit Odd Parity bit Even Parity bit Parity bit forced to 1 Parity bit forced to 0
Flow Control	RTS/CTS, XON/XOFF

Serial Signals

RS-232	TXD, RXD, RTS, CTS, DTR, DSR, DCD, GND
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Parallel Signals

SPP / EPP / ECP	STROBE, DATA0~DATA7, ACK, BUSY, PE, SEL, AUTOFL, ERROR, INIT, SELIN, GND
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Driver Support

Operating Systems	Win 2000, Win XP, Win Vista, Win 7, Win 8, Win 10
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Power Requirement

Power Consumption	645mA@3.3V
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Dimensions

Width x Length (mm)	30.00 x 50.95
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Environmental Limits

Operating Temperature	-40°C ~ 85°C
Storage Temperature	-40°C ~ 85°C
Humidity	5% ~ 95%

Regulatory Approvals

EMC	CE, FCC
EMI	EN 55022, EN61000-3-2, EN61000-3-3, FCC Part 15 Subpart B Class B
EMS	En 55024, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11

Reliability

MTBF	1,631,268 hr
Warranty	3 years

MEC-COM-M334 Dimensions

