MEC-COM-M334

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

User's Manual

First Edition, July 2016

CERVOZ

Mini PCI-e Serial Card

User's Manual

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Table of Contents

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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 complaint 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.
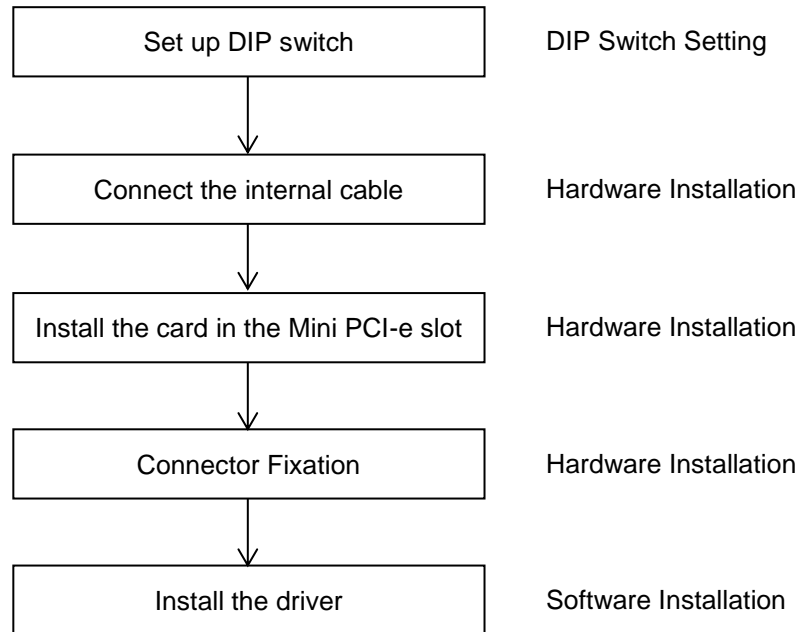
Features

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:

Set up DIP switch	DIP Switch Setting
Connect the internal cable	Hardware Installation
Install the card in the Mini PCI-e slot	Hardware Installation
Connector Fixation	Hardware Installation
Install the driver	Software Installation

Package Checklist

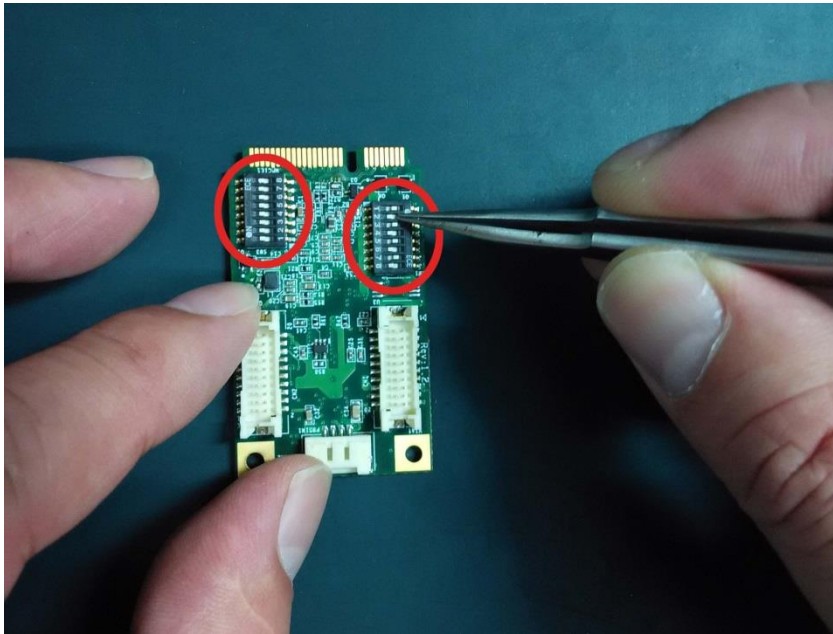The following items are included in the Mini PCI Express board Package:

- 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.*
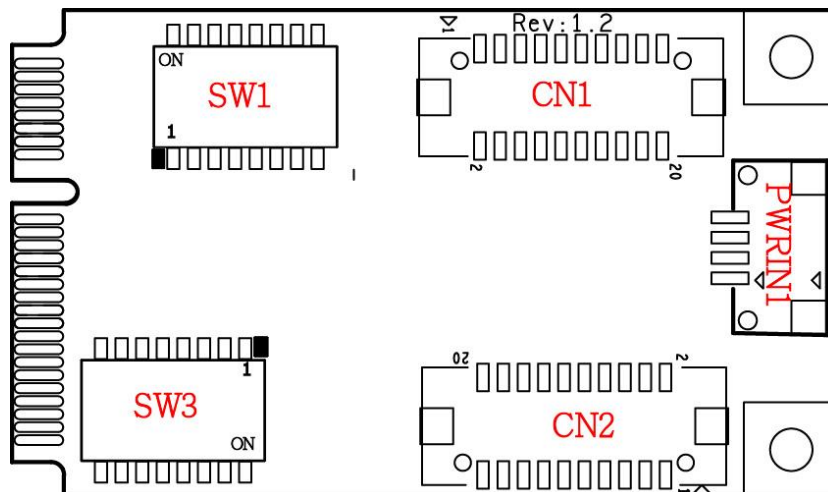
2

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 assign the PCI Express board's IRQ number and I/O addresses, you must plug in the board before installing the driver.

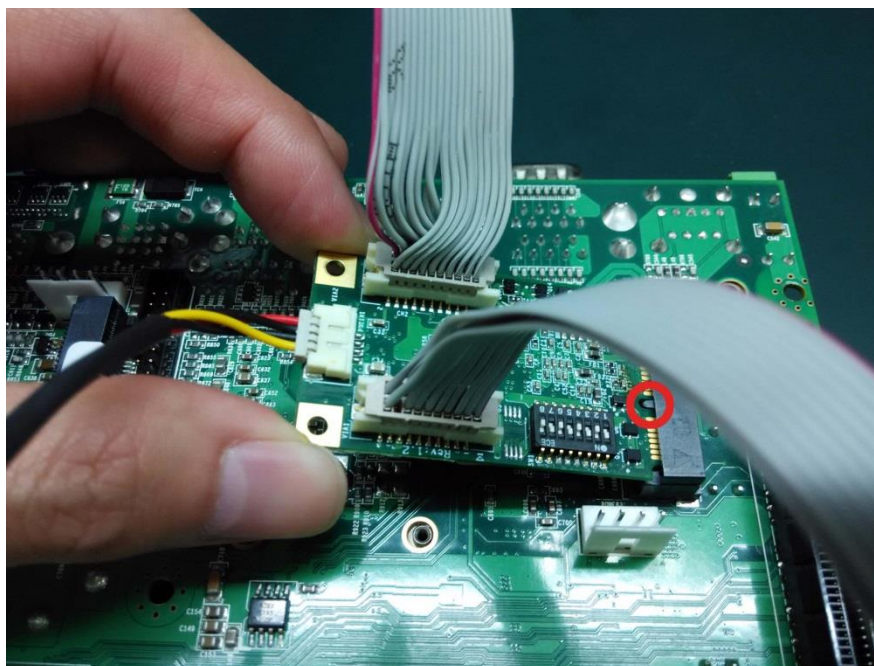| *Step 1*	Connect the internal cable to the card

1. Connect the internal cable to the card
2. Connect the power cable to the card
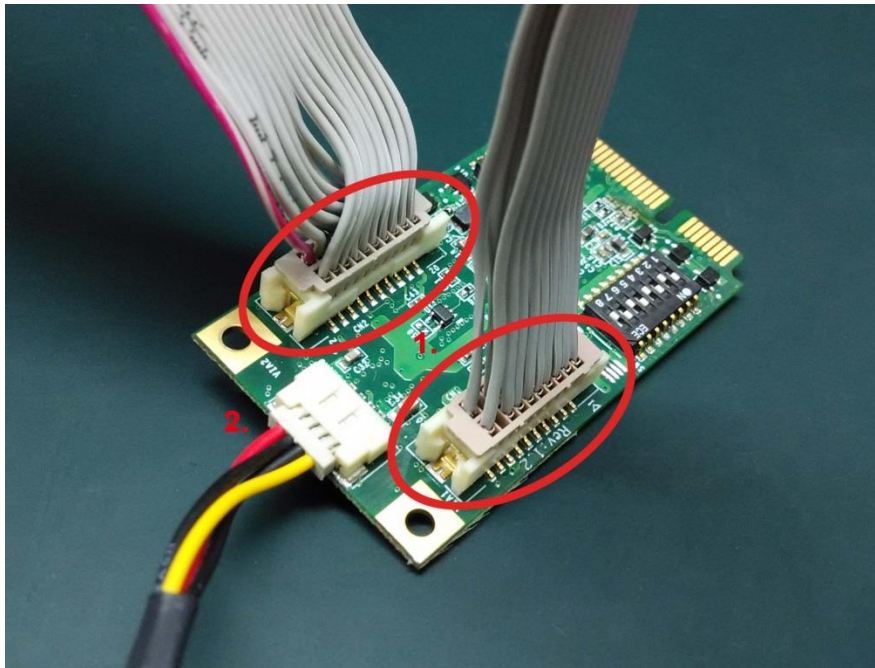
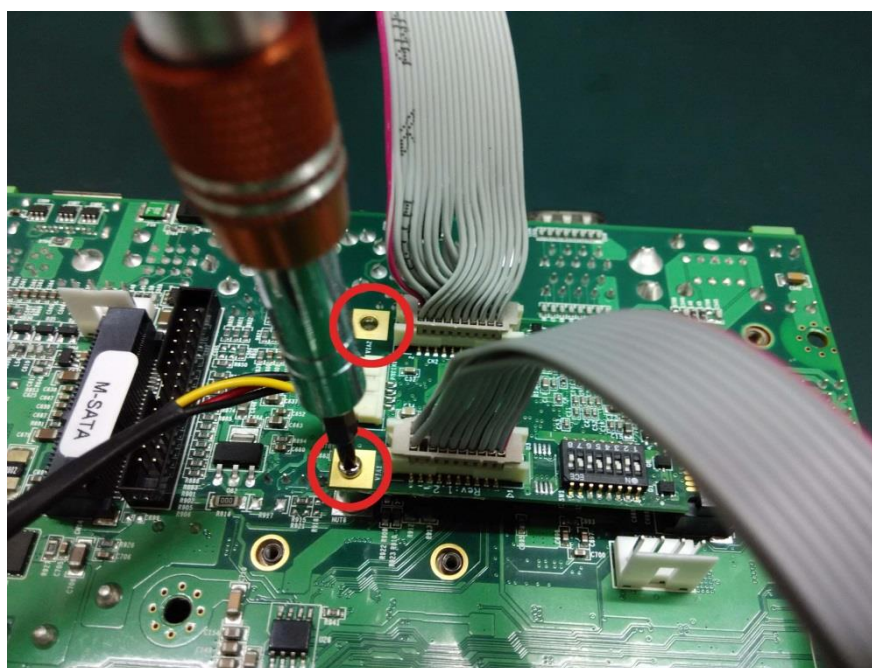| **Note**	The power cable will be needed if you wish to have the COM ports powered. (Please refer to the user manual appendix for the power select jumper setting)

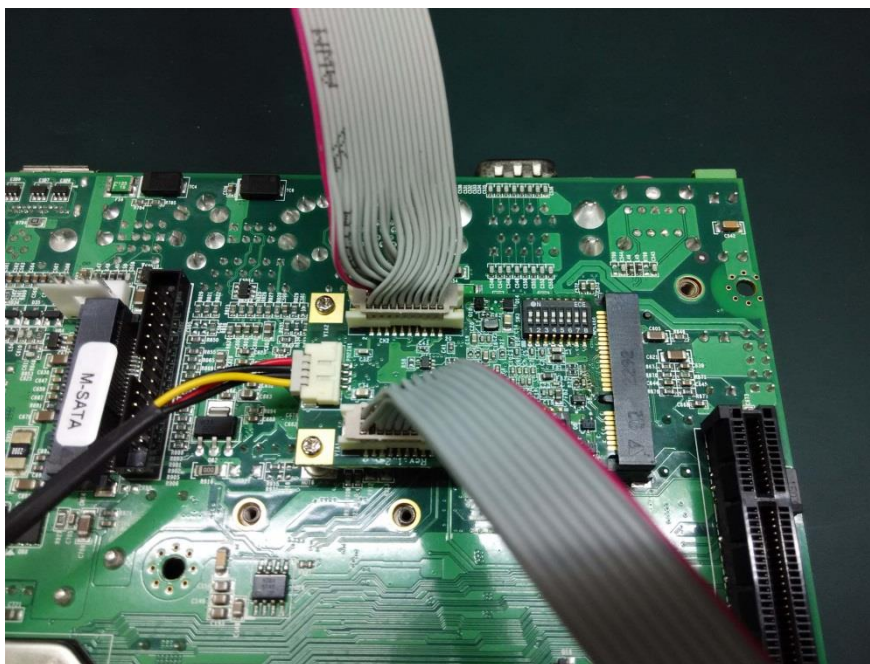| *Step 2*	**Install the card to the Mini PCI-e slot**

⚠	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 up the screws to fix the card

Step 4	Card installation completed

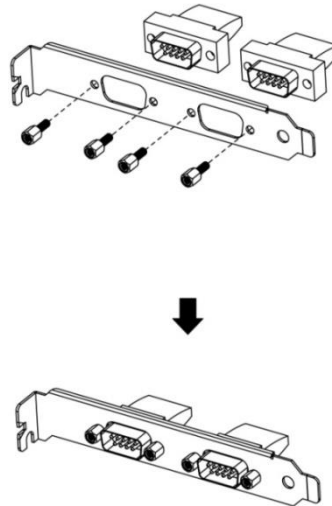| *Step 5*	Connect the power cable to the 4PIN power connector

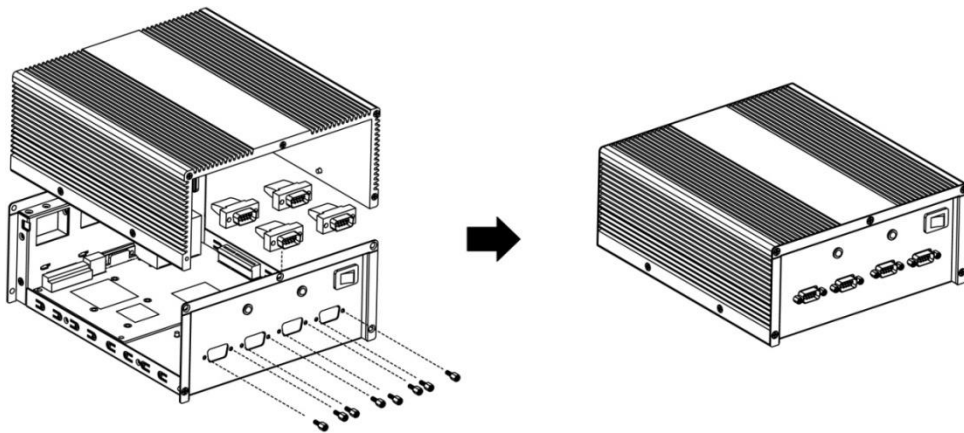Connect the power cable to the big 4PIN power connector from the power supply
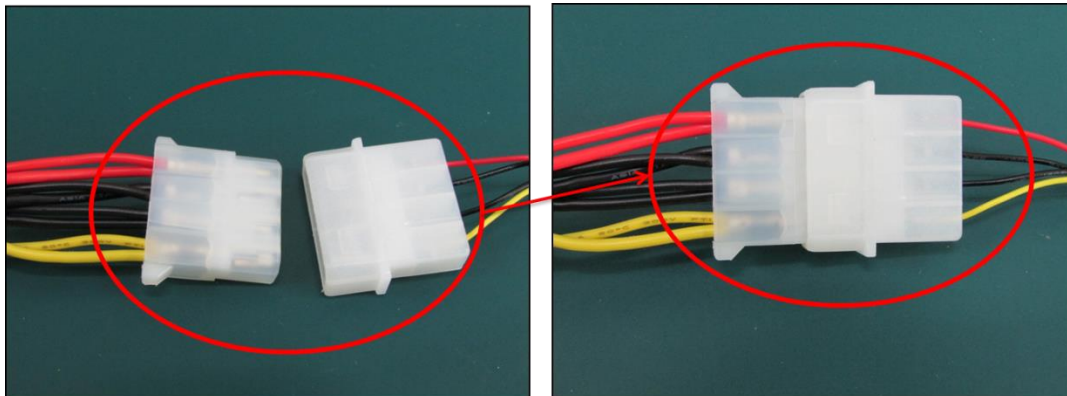
Connector Fixation
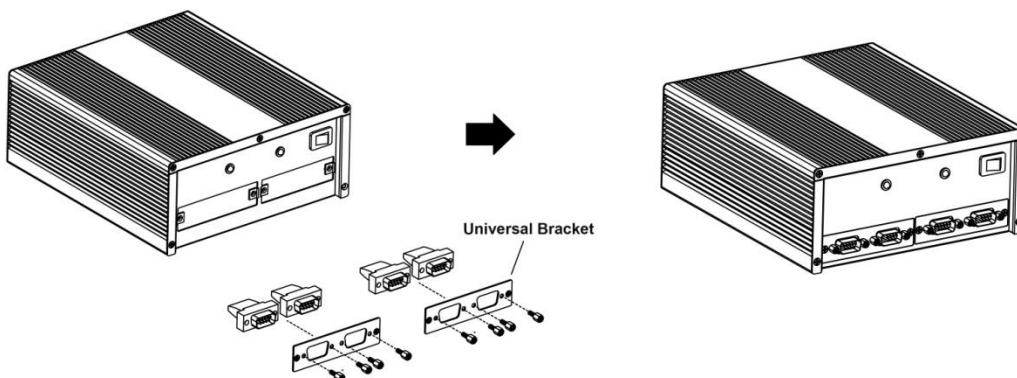
1. Standard PCI/PCIe Bracket

PCI / PCIe IO Bracket

2. Customized Front / Rear Plate

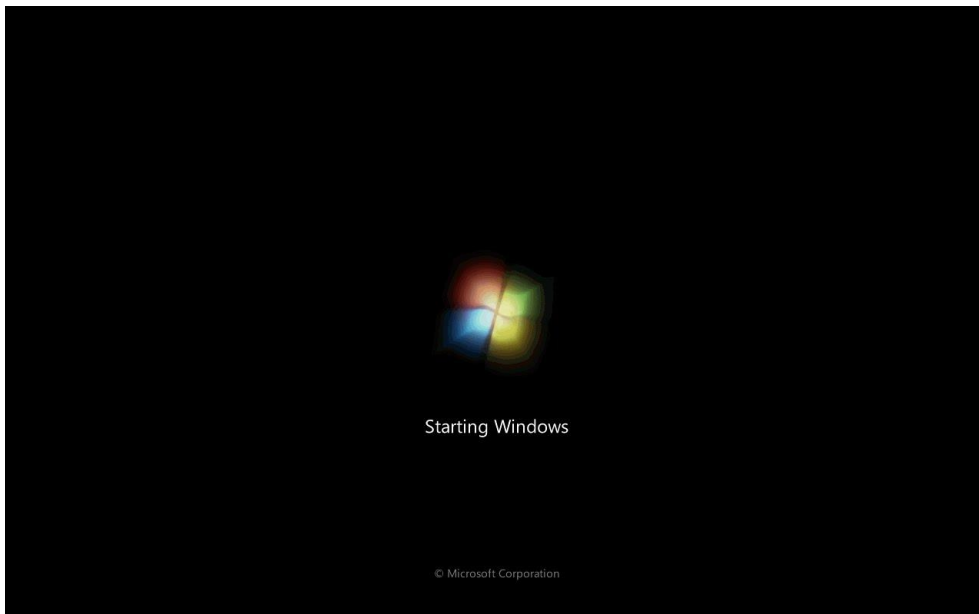**Front / Rear I/O Plate**

Universal Bracket

Universal Bracket

4

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.

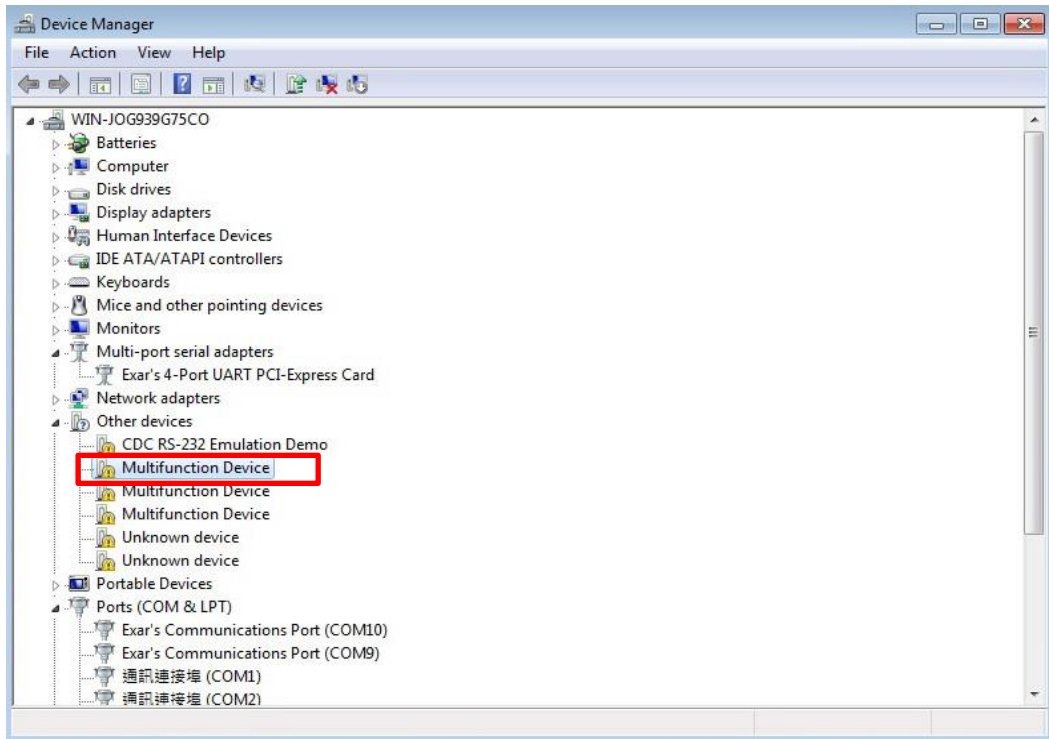| *Step 1*	**Turn on PC and start Windows**

1. To ensure the installation of hardware device.

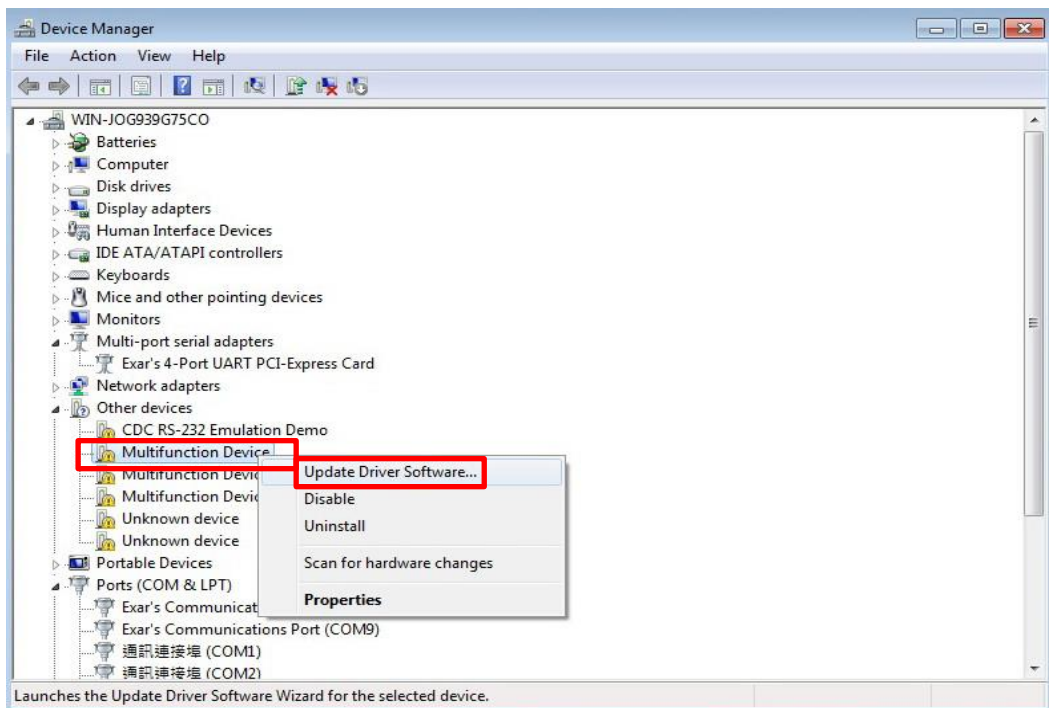| **Note**	Win 7 OS as example

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.
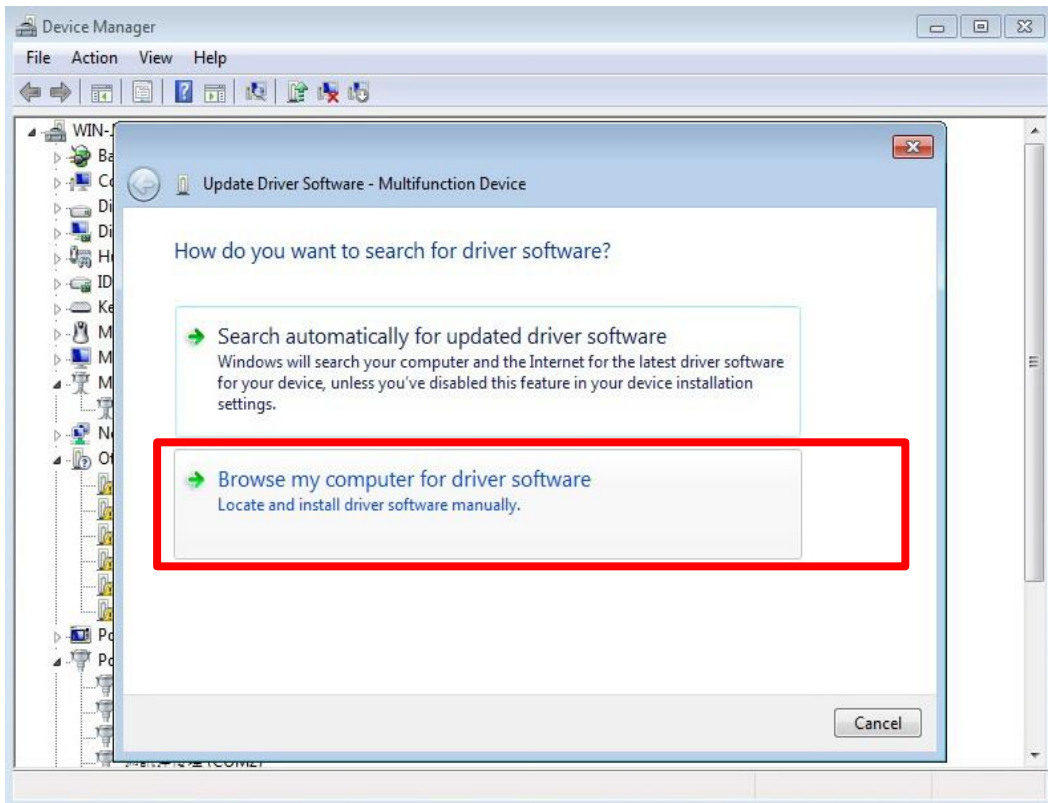

Step 3   Update Driver Software

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).
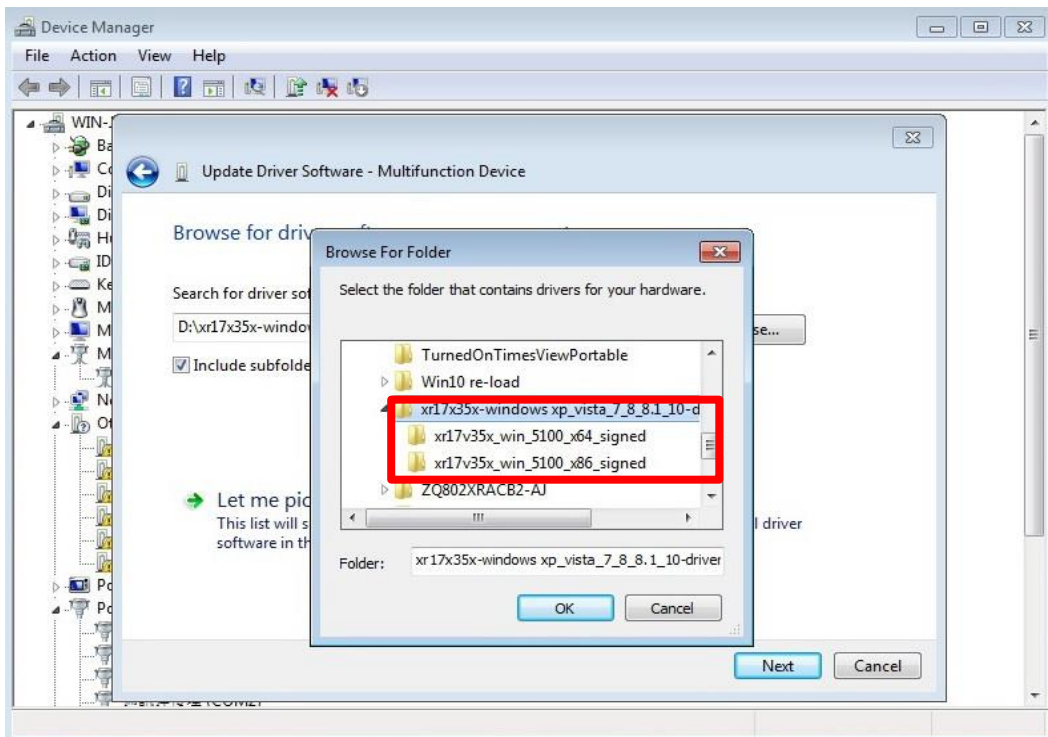
| **Step 6** | **Confirm driver folder** |

1. It will then open a window driver shown below.
2. Click "Next" and it will attempt to install the driver.
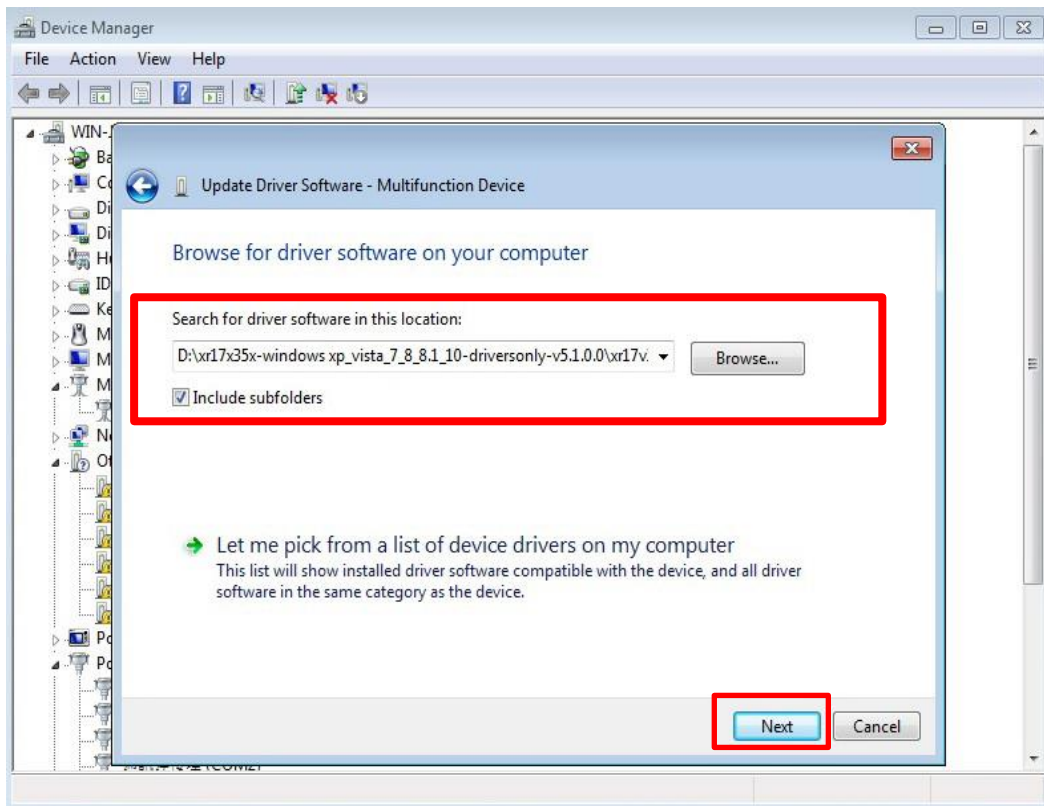
| **Step 7** | **Driver installation completed** |

You will see the COM ports listed on the device manager if the installation is success.
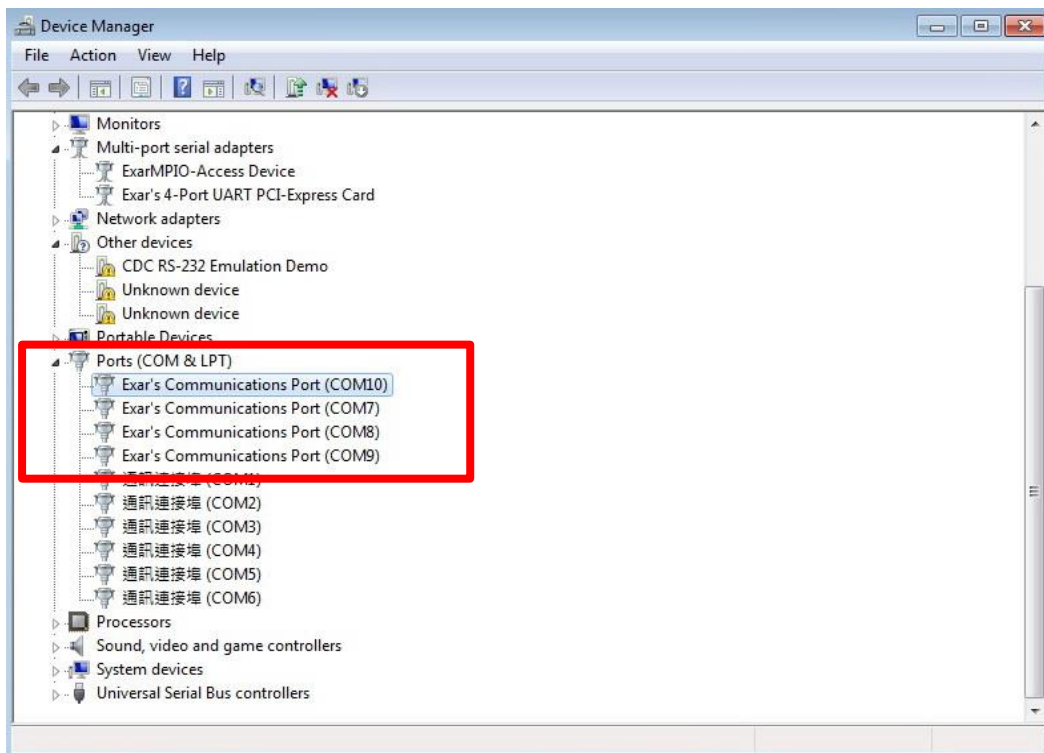
Step 8   Set up the COM ports

1.   Select the COM port and right click

2.   Select "Properties"
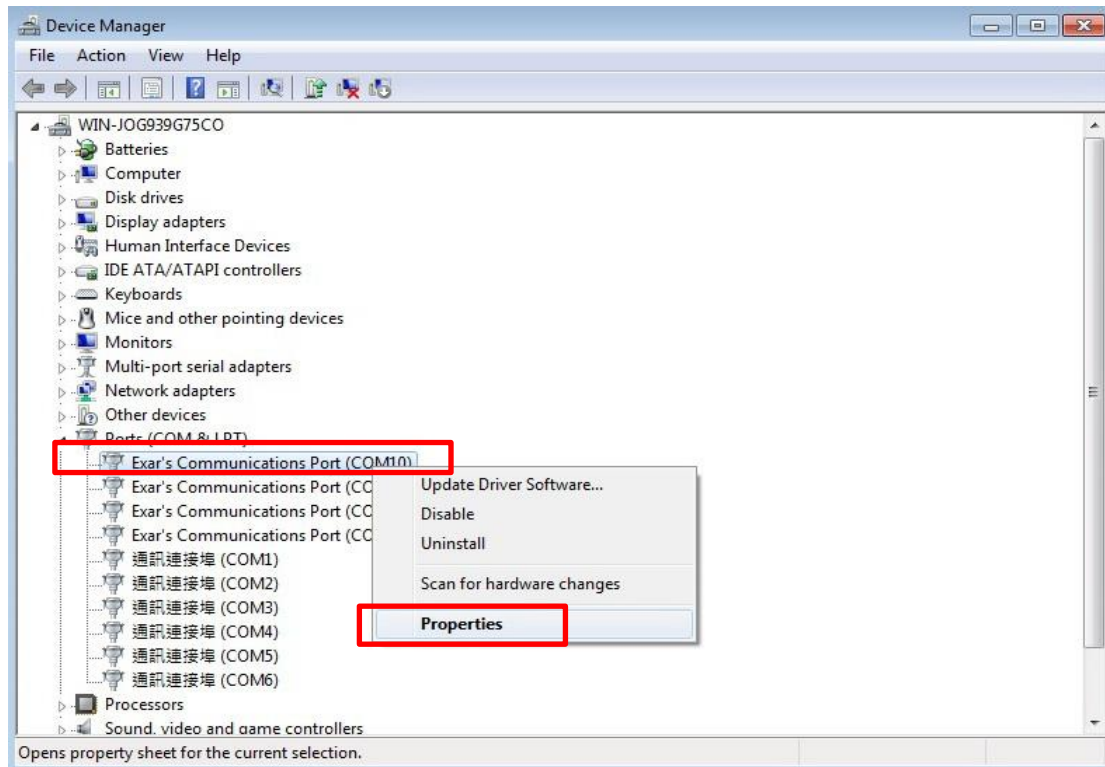
Step 9   COM ports properties settings

1.   Properties settings window would pop out

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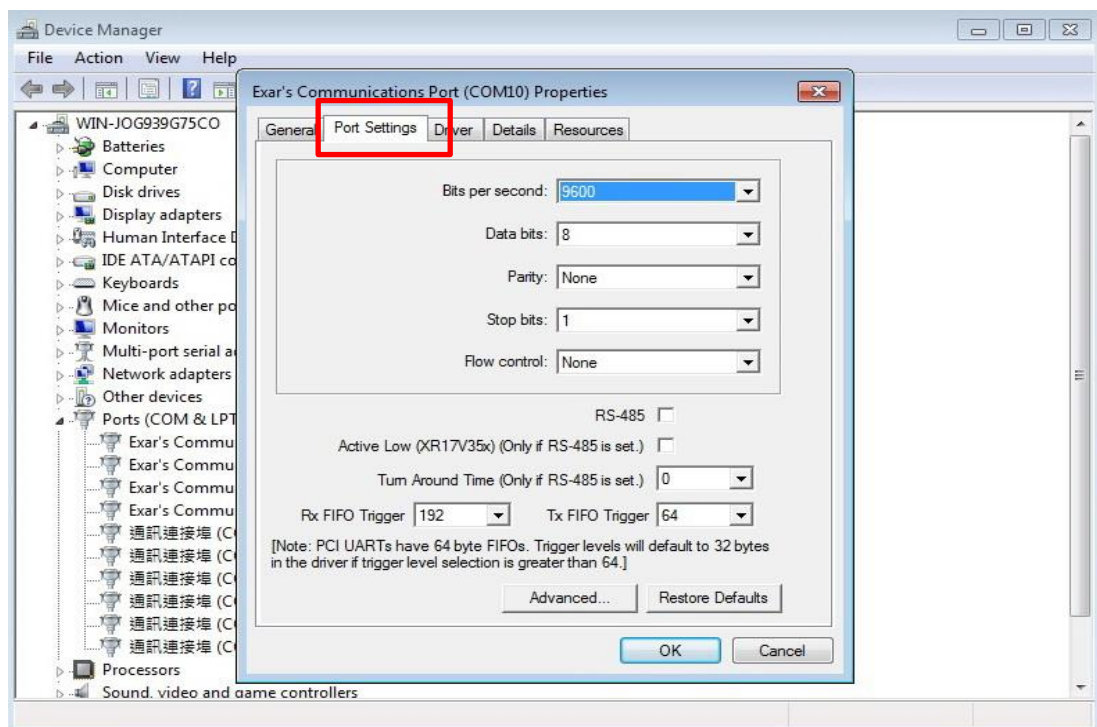
1.   Click "RS-485" to select the hardware configuration for your COM port (RS422/485)

2.   Click "Active Low (XR17V35x)(Only if RS-485 is set)"
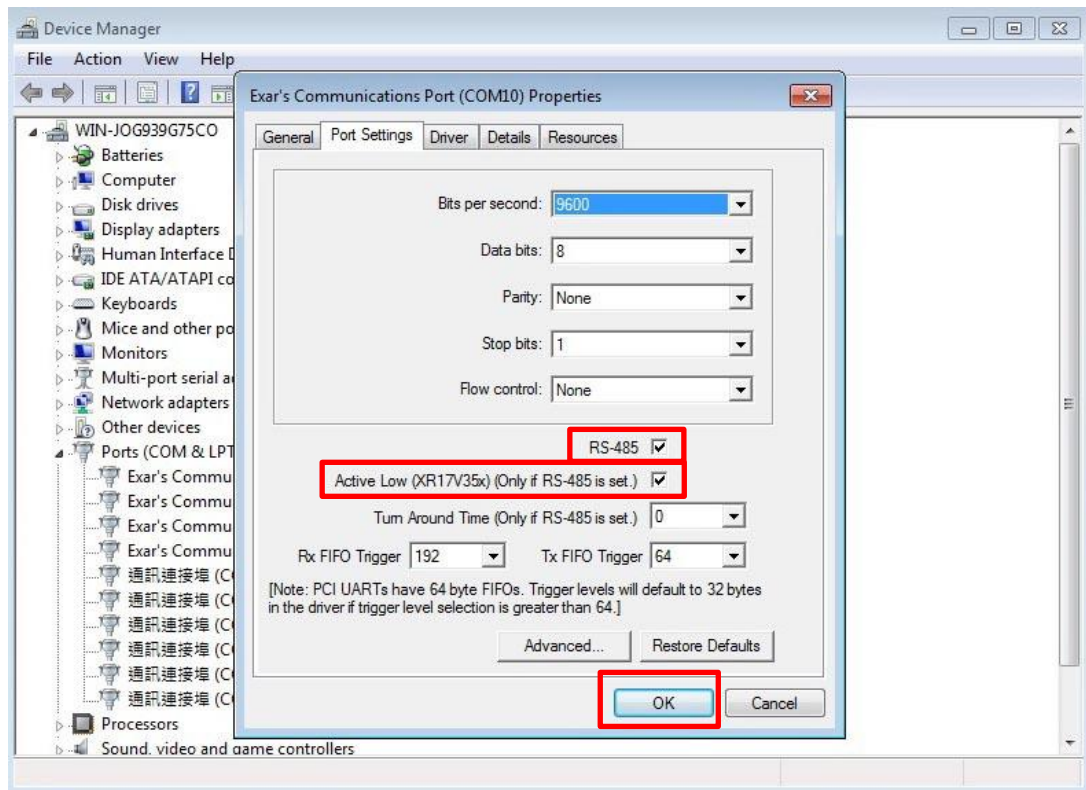
Note	Default setting of the COM port is RS232

Appendix

❑ Pin Assignments
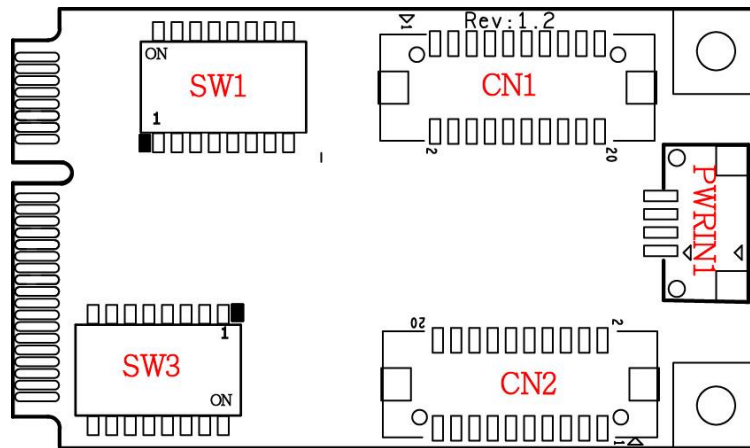
Board Side Pin Assignments

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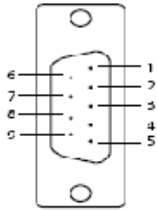
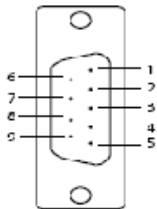| Pin	RS232 Description	RS-422/485 FULL DUPLEX Description	RS-485 HALF DUPLEX Description
1	DCD_1	TX_1-	DATA_1-
2	RxD_1	TX_1+	DATA_1+
3	TxD_1	RX_1+	
4	DTR_1	RX_1-	
5	GND		
6	DSR_1		
7	RTS_1		
8	CTS_1		
9	RI_1		

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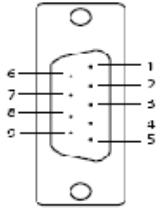
Pin	RS232 Description	RS-422/485 FULL DUPLEX Description	RS-485 HALF DUPLEX Description
1	DCD_3	TX_3-	DATA_3-
2	RxD_3	TX_3+	DATA_3+
3	TxD_3	RX_3+	
4	DTR_3	RX_3-	
5	GND		
6	DSR_3		
7	RTS_3		
8	CTS_3		
9	RI_3		

RS232/422/485 Port DB9 Male Connector-4
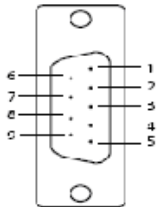
Pin	RS232 Description	RS-422/485 FULL DUPLEX Description	RS-485 HALF DUPLEX Description
1	DCD_4	TX_4-	DATA_4-
2	RxD_4	TX_4+	DATA_4+
3	TxD_4	RX_4+	
4	DTR_4	RX_4-	
5	GND		
6	DSR_4		
7	RTS_4		
8	CTS_4		
9	RI_4		

❑ 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)
Serial Line Protection	
ESD Protection	15 KV on board
Serial Port Power	
Voltage Select	5V or 12V
Performance	
Baud Rate	Asynchronous baud rates up to 921.6 Kbps
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
Parallel Signals	
SPP / EPP / ECP	STROBE, DATA0~DATA7, ACK, BUSY, PE, SEL, AUTOF, ERROR, INIT, SELIN, GND
Driver Support	
Operating Systems	Win 2000, Win XP, Win Vista, Win 7, Win 8, Win 10
Power Requirement	
Power Consumption	645mA@3.3V
Dimensions	
Width x Length (mm)	30.00 x 50.95
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

| MTBF | 1,631,268 hr |
| Warranty | 3 years |

MEC-COM-M334 Dimensions
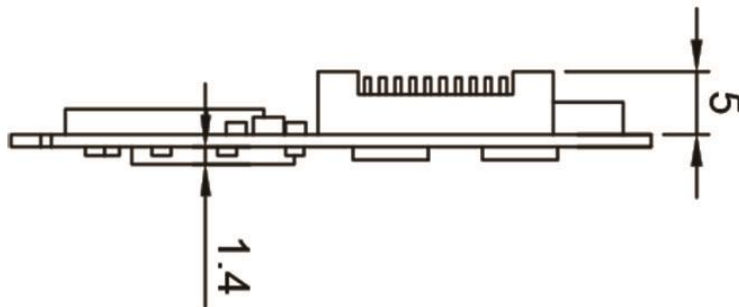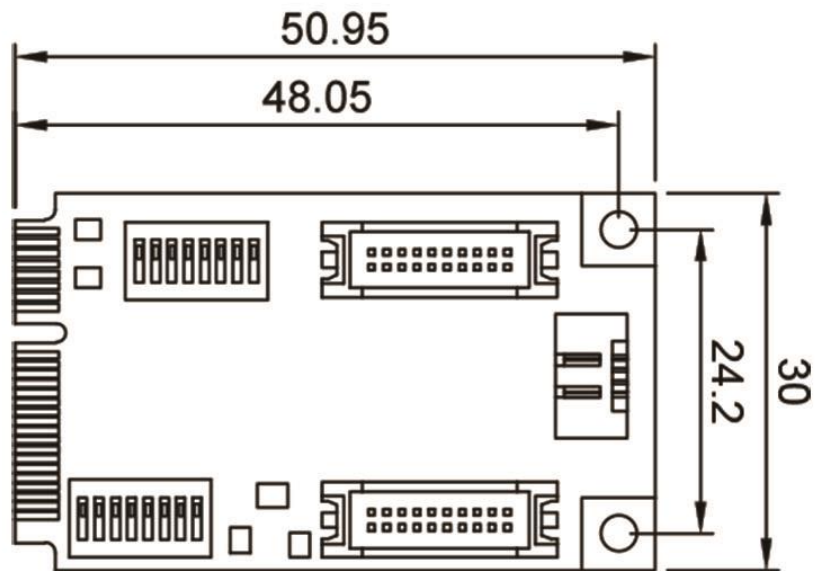
❑ Product Warranty Statement

Cervoz products are warranted to be free from manufacturing defects in materials and workmanship starting from the date of delivery. The actual warranty period of Cervoz products vary with product categories. Complete details can be found here:

http://www.cervoz.com/warranty.php

During the warranty period, we shall, at our option, either repair or replace any product that proves to be defective under normal operation.

Defects, malfunctions, or failures of the warranted product caused by damage resulting from natural disasters (such as by lightening, flood, earthquake, etc.), environmental and atmospheric disturbances, other external forces such as power line disturbances, plugging the board in under power, or incorrect cabling, and damage caused by misuse, abuse, and unauthorized alteration or repair, and the product in question is either software, or an expendable item (such as a fuse, battery, etc.), are not warranted.

RMA Instruction

- Customers must fill in Cervoz Return Merchandise Authorization (RMA) Request Form and obtain a RMA number prior to returning a defective product to Cervoz for service.
- Customers must collect all the information about the problems encountered and note anything abnormal and describe the problems on the "Cervoz Service Form" for the RMA number application process.
- Charges may be incurred for certain repairs. Cervoz will charge for repairs to products whose warranty period has expired. Cervoz will also charge for repairs to products if the damage resulted from acts of God, environmental or atmospheric disturbances, or other external forces through misuse, abuse, or unauthorized alteration or repair. If charges will be incurred for a repair, Cervoz lists all charges, and will wait for customer's approval before performing the repair.
- Customers agree to insure the product or assume the risk of loss or damage during transit, to prepay shipping charges, and to use the original shipping container or equivalent.
- Customers can send back faulty products with or without accessories (manuals, cable, etc.) and any components from the card. If the components were suspected as part of the problems, please note clearly. Otherwise, Cervoz is not responsible for the devices/parts.
- Repaired items will be shipped along with a "Repair Report" detailing the findings and actions taken.

Limitation of Liability

Cervoz' liability arising out of the manufacture, sale, or supplying of the product and its use, whether based on warranty, contract, negligence, product liability, or otherwise, shall not exceed the original selling price of the product. The remedies provided herein are the customer's sole and exclusive remedies. In no event shall Cervoz be liable for direct, indirect, special or consequential damages whether based on contract of any other legal theory.