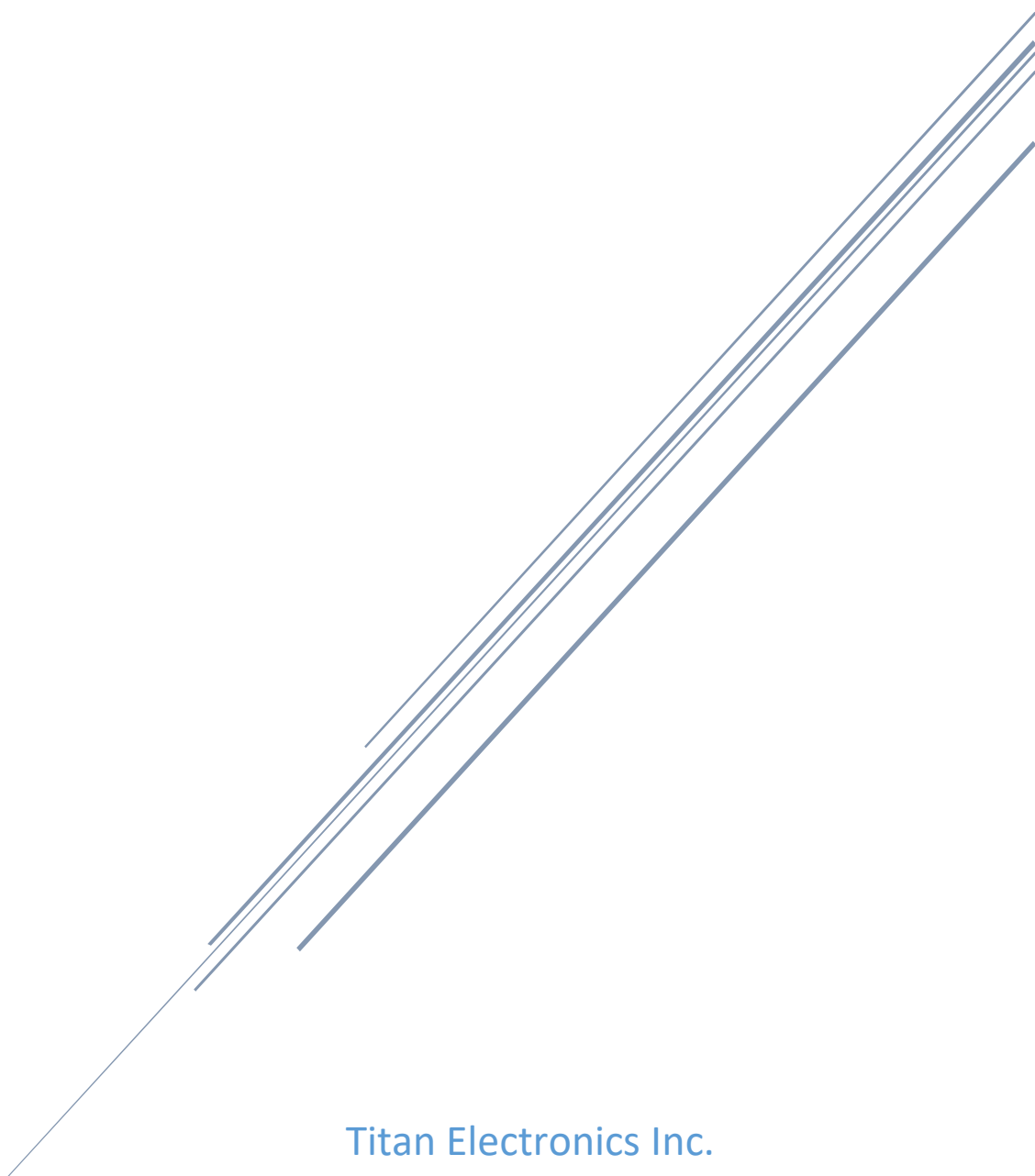


PCIe-400 USER'S MANUAL

2017 May Edition



Titan Electronics Inc.
Web: www.titan.tw

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INTRODUCTION

The PCIe-400 and PCIe-400LP PCI Express 4-port serial I/O cards are plug and play high-speed serial I/O expansion cards for the PCI Express bus. Connecting to a PCI Express bus on your computer, the PCI Express 4-port serial I/O card instantly adds four RS-232 serial I/O communication ports to your system. The PCI Express 4-port serial I/O cards are designed to utilize the Exar XR17V354 PCI Express to UART chip. The PCIe-400 & PCIe-400LP support high-speed data rate up to 921.6kbps. Each serial port is fully compatible with 16C550 UART, with enhanced feature of 256 bytes TX and RX FIFO buffer for higher performance.

The PCI Express 4-port serial I/O card is an advanced and high efficient solution for serial data communication and industrial automation applications.

FEATURES

- PCI Express 2.0 Gen 1 compliant
- PCI Express 1 Lane compliant
- 16C550 compatibility
- 256 bytes receive FIFO buffer
- 256 bytes transmit FIFO buffer
- Automatic RTS/CTS or DTR/DSR hardware flow control with programmable hysteresis
- Automatic Xon/Xoff software flow control
- Drivers provided for Windows and Linux OS
- Wide ambient temperature operation 0°C to 60°C (32°F to 140°F)
- CE, FCC approval
- Supports four high speed RS-232 serial ports with data transfer rate up to 921.6kbps
- Provides 15KV ESD protection for all serial signals
- Four DB9 male connectors for serial data communication
- RS-232 data signals: DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS, RI
- Includes one adapter cable converting a DB44 female connector to four DB9 male connectors. Cable length: 30cm
- PCIe-400 with standard profile bracket
- PCIe-400LP with low profile bracket for slim case

SPECIFICATIONS

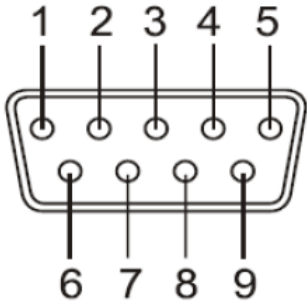
General	
Bus	PCI Express; Single-Lane (×1)
Chipset	EXAR XR17V354
Interface	RS-232
Plug & Play	Supported
IQR & IO Address	Assigned by system BIOS
Mechanical	PCIe-400 with standard bracket PCIe-400LP with low profile bracket for slim case

Serial Port	
No. of Ports	Four
Connectors & Cables	One DB44 male connector on card One DB44 female to four DB9 male adapter cable included
RS-232 Signals	DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS, RI
Max. Bitrates	921.6kbps
Serial Configuration	Data bits: 5, 6, 7, 8 Parity: None, Odd, Even, Mark, Space Stop bits: 1, 1.5, 2
UART FIFO Buffer Size	Each port with 256 bytes FIFO for transmit & receive

Environment	
Operating Temperature	0°C to 60°C
Storage Temperature	-40°C to 85°C
Humidity	0 to 80% RH. Noncondensing
Safety Approvals	CE, FCC

PIN-OUT INFORMATION

The following are the connector pin-out for PCIe-400 & PCIe-400LP PCI Express serial I/O card.



DB9 Male connector pin numbers

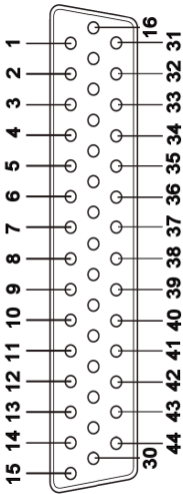
RS-232 Pin-out for DB9 Connector

Pin Number	Pin Type	Description
1	<i>Input</i>	DCD: Data Carrier Detect
2	<i>Input</i>	RxD: Receive Data
3	<i>Output</i>	TxD: Transmit Data
4	<i>Output</i>	DTR: Data Terminal Ready
5	<i>Ground</i>	GND: Signal Ground
6	<i>Input</i>	DSR: Data Set Ready
7	<i>Output</i>	RTS: Request to Send
8	<i>Input</i>	CTS: Clear to Send
9	<i>Input</i>	RI: Ring Indicator

Pin-out of DB44 Female Connector for Four RS-232 Ports

Pin	RS 232	Pin	RS 232	Pin	RS 232
1	CTS (4)	16	DTR (4)	31	GND
2	RTS (4)	17	TxD (4)	32	GND
3	DSR (4)	18	RxD (4)	33	RI (4)
4	RI (3)	19	DCD (4)	34	GND
5	CTS (3)	20	DTR (3)	35	GND
6	RTS (3)	21	TxD (3)	36	GND
7	DSR (3)	22	RxD (3)	37	GND
8	RI (2)	23	DCD (3)	38	GND
9	CTS (2)	24	DTR (2)	39	GND
10	RTS (2)	25	TxD (2)	40	GND
11	DSR (2)	26	RxD (2)	41	GND
12	DTR (1)	27	DCD (2)	42	RI (1)
13	TxD (1)	28	CTS (1)	43	GND
14	RxD (1)	29	RTS (1)	44	GND
15	DCD (1)	30	DSR (1)		

DB-44 female connector pin-out



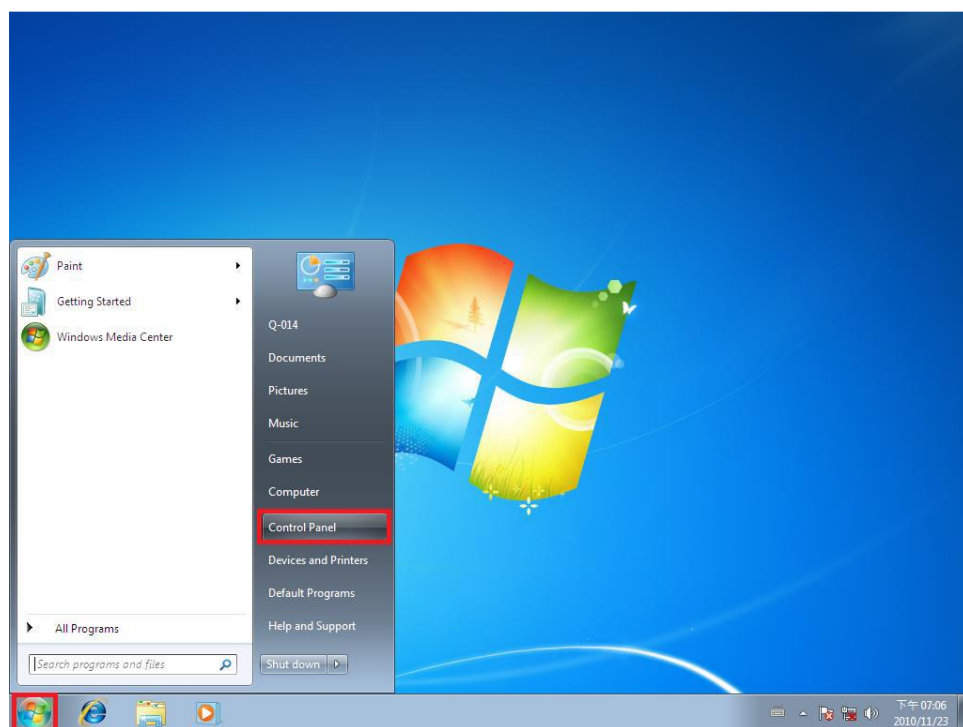
DB-44 female connector

INSTALLATION

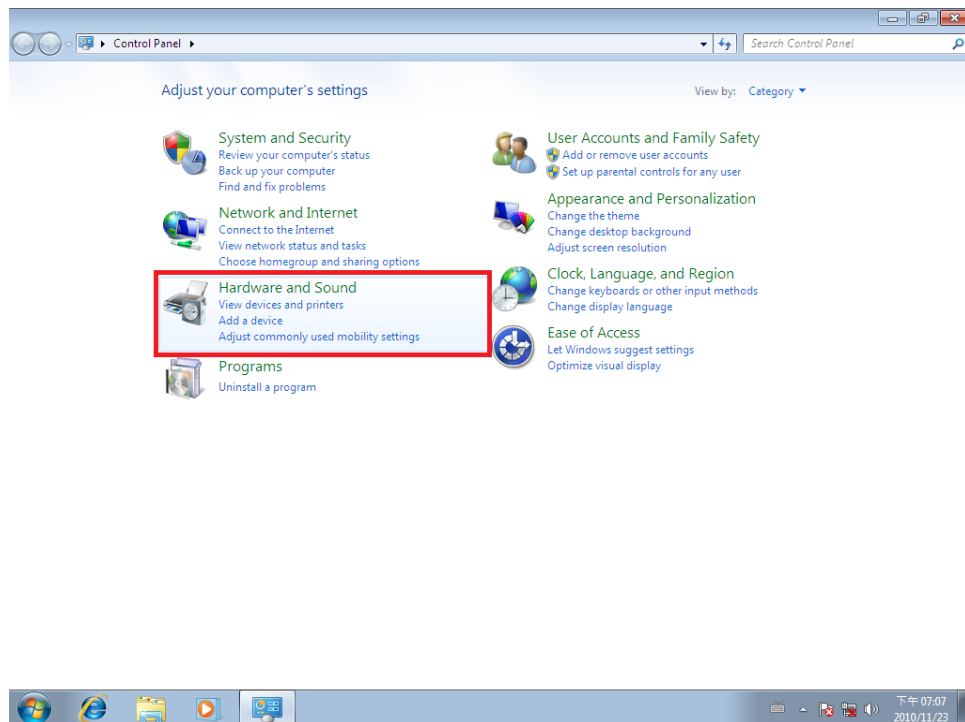
Windows 8.1/8/7 32-bit & 64-bit Drivers Installation

To install the Windows driver from Device Manager for PCI Express 4-port industrial serial I/O card, please follow the steps below:

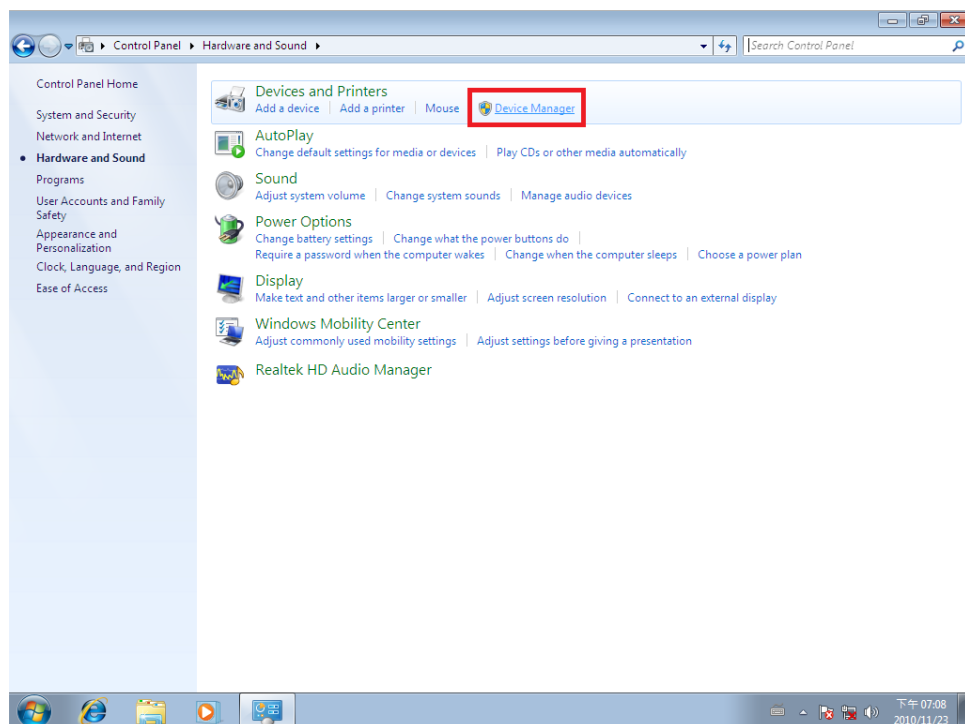
1. Switch off the computer.
2. Insert PCI Express industrial serial I/O card into a free PCI Express Bus slot.
3. Switch on the computer and start Windows OS.
4. Windows OS will automatically detect the PCI Express I/O Card.
5. Press “START” button and select “Control Panel”.



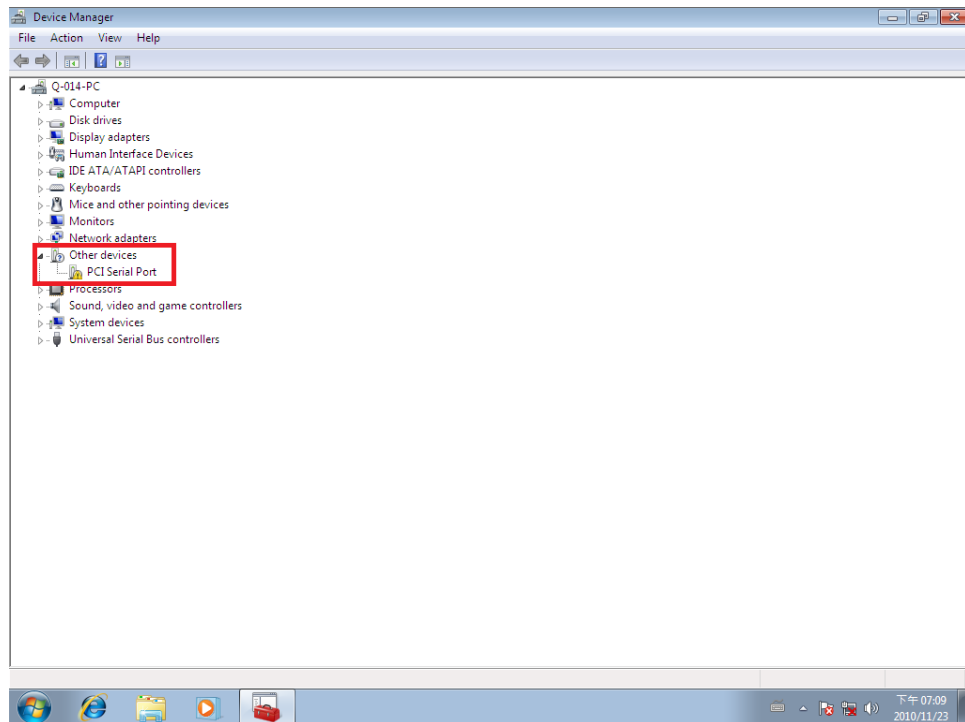
6. Select “Hardware and Sound”.



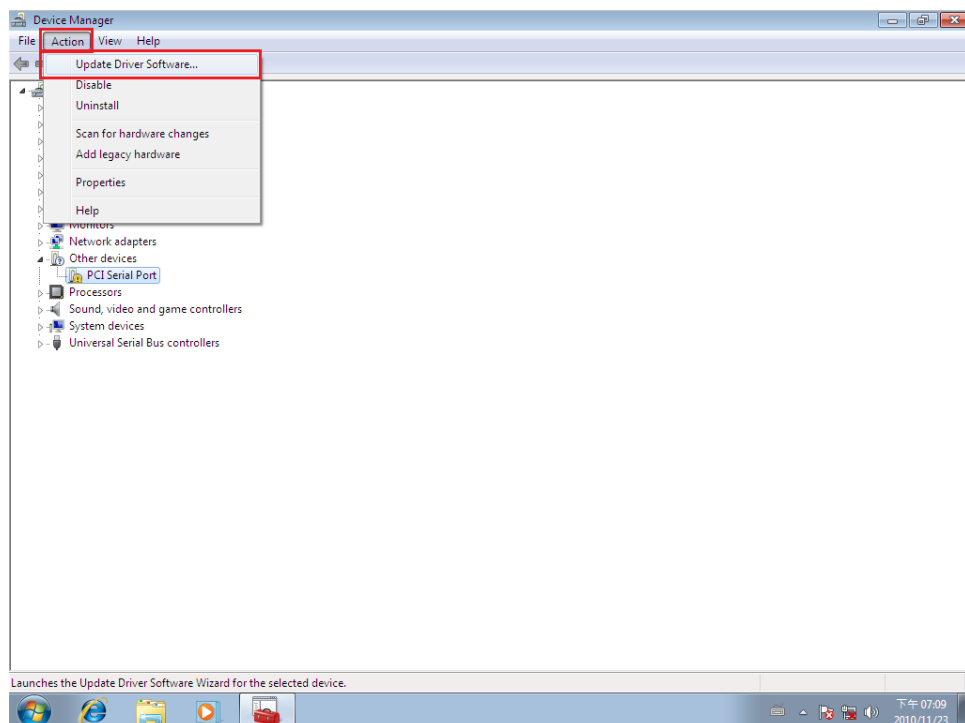
7. Select “Device Manager”.



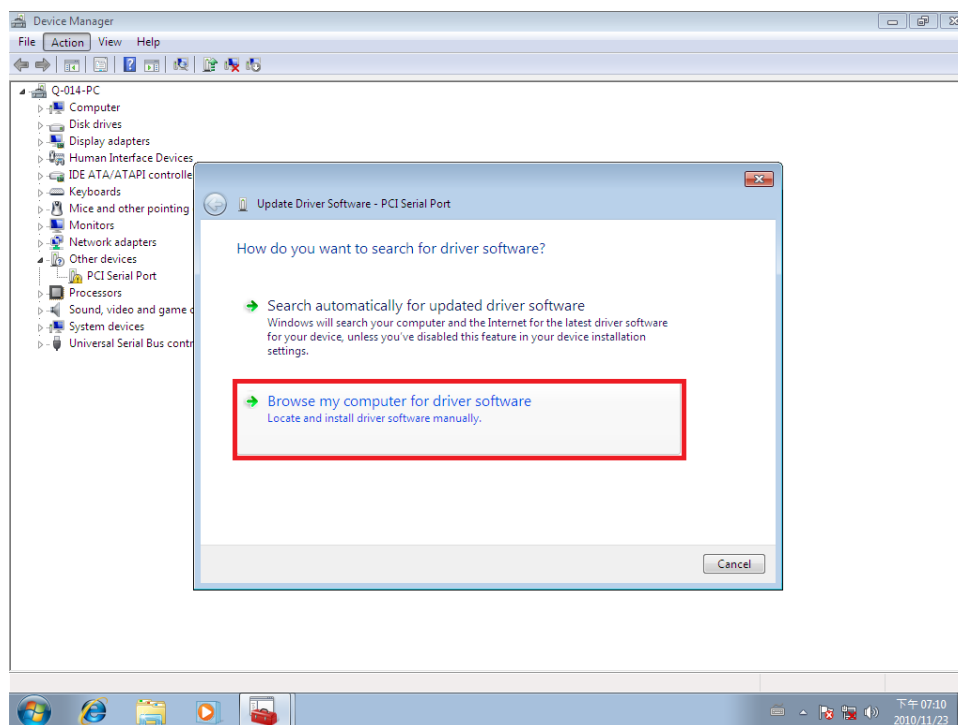
8. Under “Device Manager” of the system properties, you can find “PCI Serial Port” attached to “Other devices”. Select “PCI Serial Port”.



9. Select “Action” and execute “Update Driver Software”.

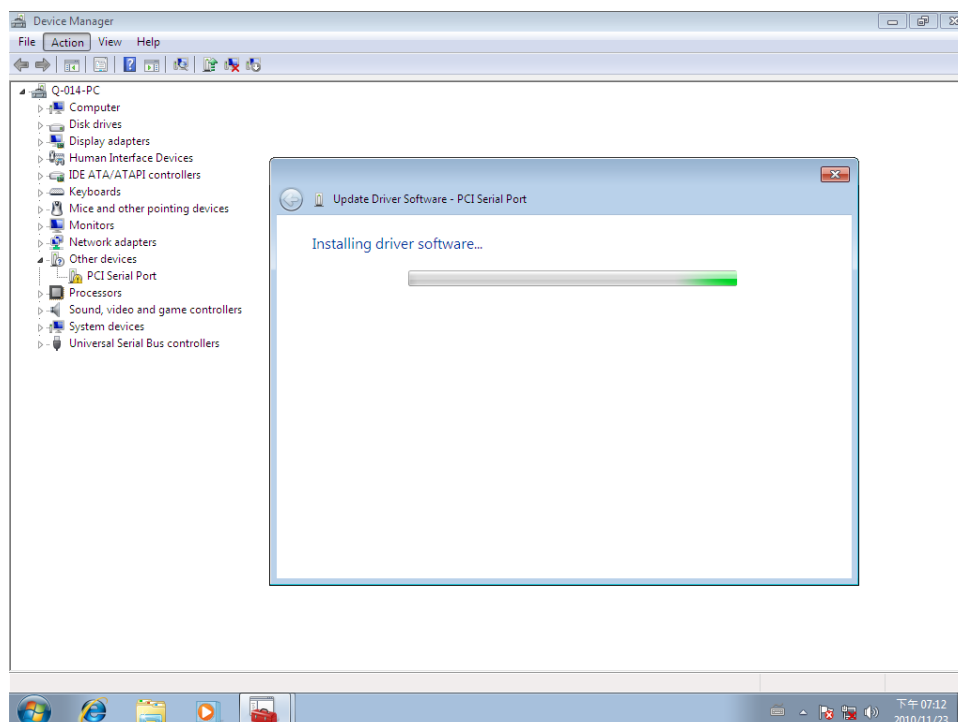


10. Click “Browse my computer for driver software”.

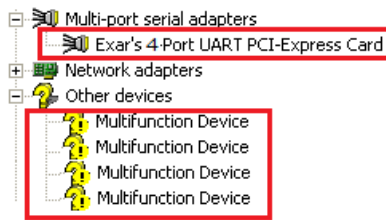


11. Insert the driver CD into the CD-ROM or DVD-ROM drive.

12. Select the directory “\PCIe Drivers\x86” for 32 bits Windows OS (“\PCIe Drivers\x64 for 64 bits Windows OS”) as the target. Click on “OK”, and on “Next” to install driver.



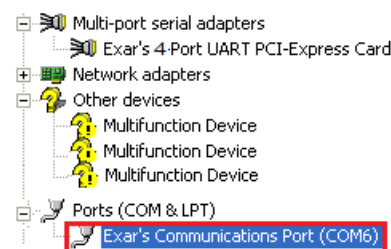
13. After driver installation is done successfully, you will find “Exar’s 4-Port UART PCI-Express Card” and four instances of “Multifunction Device” under Device Manager.



14. Select the first “Multifunction Device”.

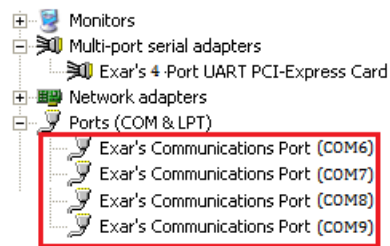


15. Select “Action” and execute “Update Driver Software”.
16. Click “Browse my computer for driver software” again.
17. Select the directory “\PCIe Drivers\x86” for 32 bits Windows OS (“\PCIe Drivers\x64 for 64 bits Windows OS”) as the target. Click on “OK”, and on “Next” to install COM port driver.
18. After COM port driver installation is done successfully, you can find the first “Exar’s Communications Port (COMx)” under “Ports (COM & LPT)” in Device Manager.



19. Select the next “Multifunction Device” and repeat steps 15~17 to install all of the COM port drivers.

20. After all COM port driver installations are done successfully, you will find four “Exar’s Communications Port (COMx)” under “Ports (COM & LPT)” in Device Manager.

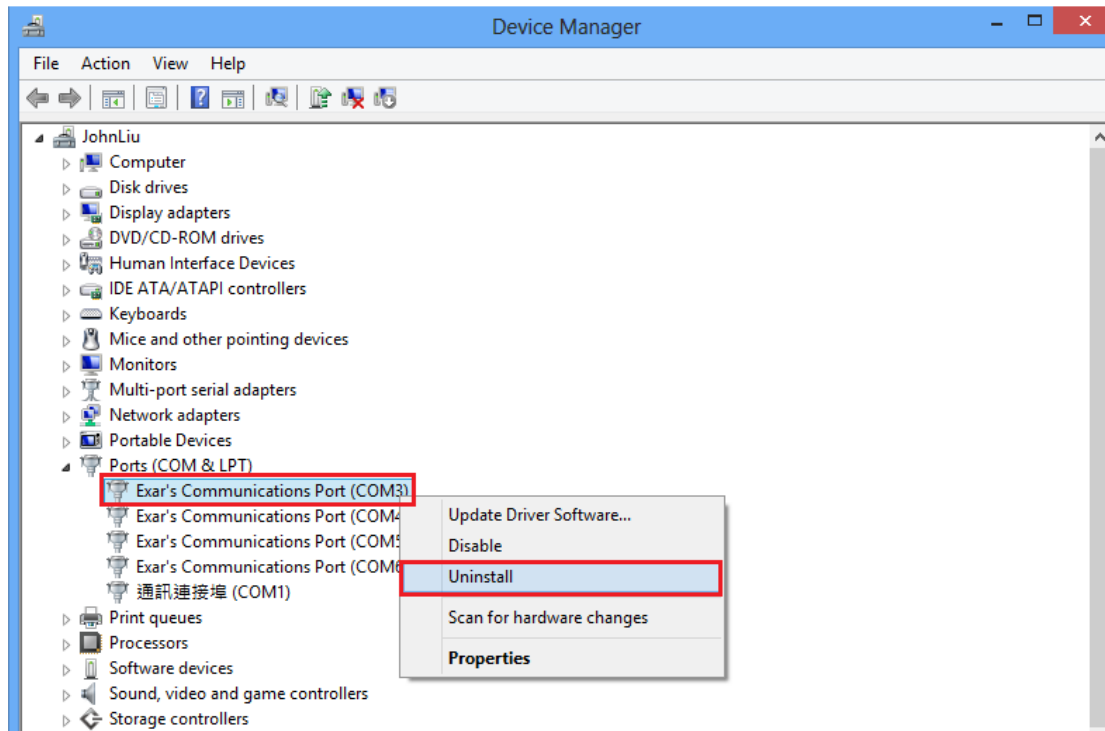


21. Restart computer to complete installation.

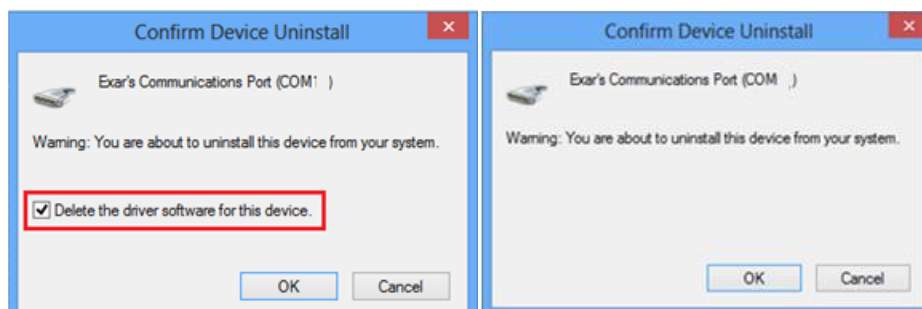
UNINSTALLING WINDOWS DRIVERS

To uninstall the Windows driver from Device Manager for PCI Express 4-port serial I/O card, please follow the steps below:

1. Right click on “Exar’s Communications Port (COMx)” under Device Manager and select “Uninstall” to start Exar’s Communications Port (COMx) driver uninstall.

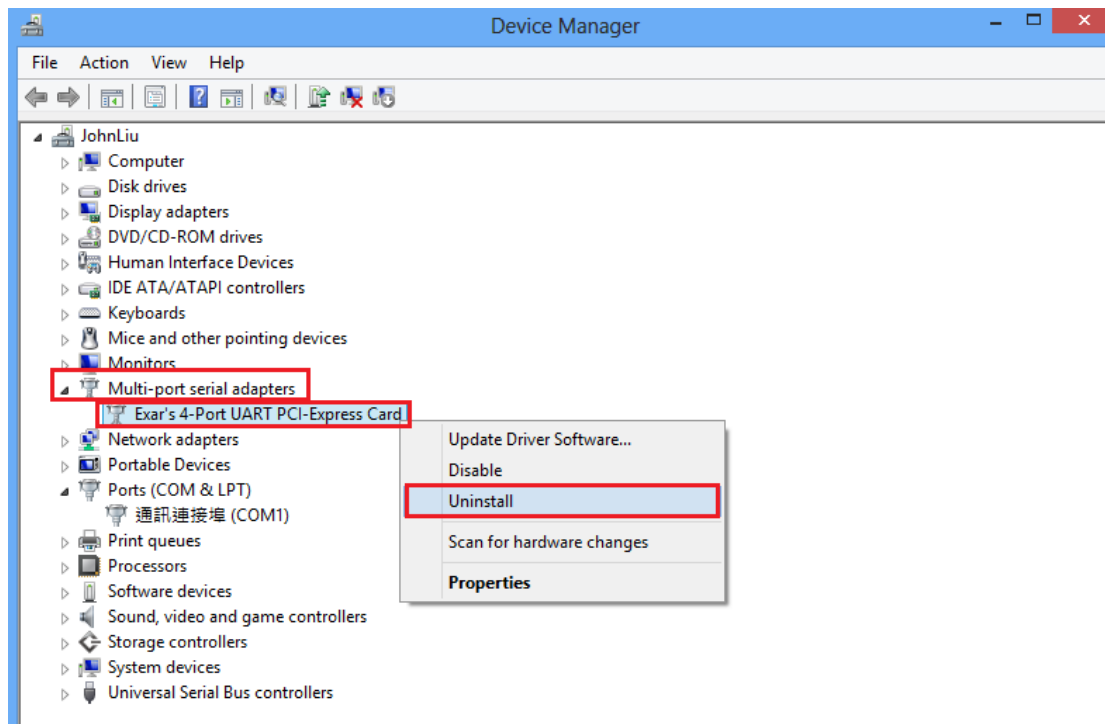


2. Under the “Confirm Device Uninstall” window, check “Delete the driver software for this device.” Click “OK” to uninstall the software driver. If there is no “Delete the driver software for this device” checkbox, just click “OK” to uninstall the software driver.

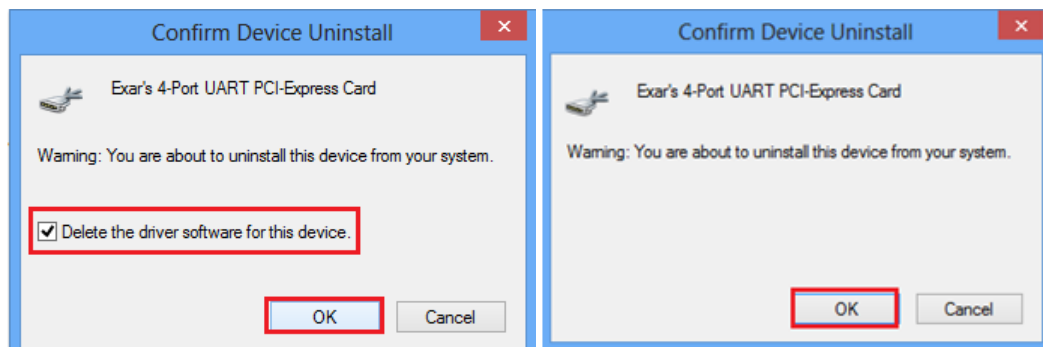


3. Right click on the remaining “Exar’s Communications Port (COMx)” drivers and repeat steps 1 and 2 to uninstall all Exar’s Communications Port drivers.

4. Right click on “Exar’s 4-Port UART PCI-Express Card” under Device Manager to and select “Uninstall” to start uninstalling “Exar’s 4-Port UART PCI-Express Card” software driver.



5. Under the “Confirm Device Uninstall” window, check “Delete the driver software for this device.” Click “OK” to uninstall the software driver. If there is no “Delete the driver software for this device.” message, just click “OK” to uninstall the software driver.



6. If you installed more than one PCI Express 4-port serial I/O cards in your system, please right click on the other “Exar’s 4-Port UART PCI-Express Card” drivers and repeat steps 4~5 to uninstall all PCI Express 4-port serial I/O cards software drivers.