USER'S MANUAL

PH232Ux2

#2 RS-232 Over USB ISOLATED MULTIPORT

Doc No: PH232Ux2-UM-001

IPEX

(IP Electronix)

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1. INTRODUCTION

IPEX PH232Ux2 is a USB Adapter Multiport that provides #2 Serial COM Ports via its USB connection and is compatible with RS-232 standard devices RXD, TXD, RTS, CTS, DTR, DSR and GND signals. **PH232Ux2** is fully Plug & Play a and enables your laptop or workstation with the ability to communicate between a USB port and up to #2 RS-232 serial peripherals with baud-rate from 300bps to 230400bps simultaneously. **PH232Ux2** is Full-Duplex converter and supports Point-to-Point connection.

PH232Ux2 supports a wide range power supply and is working with DC voltage between 8V to 48V. Protection against Surge, ESD and EMI is considered in its design and also has 3kV insulation between USB and RS-232 sides. Furthermore, all the ports are insulated from each other too.

PH232Ux2 is designed for industrial usage and is useful for Industrial Automation, Telecommunications, SCADA Systems and DCS Systems …

PH232Ux2 comes complete with drivers for Microsoft Windows. Drivers are also available for Linux, Mac OS and Android.

2. SPECIFICATIONS

- **USB to RS-232** Bi-Directional Converter;
- **Number of Ports:** #2 RS-232 Serial Port, #1 USB Port;
- **Serial Standard:** Meets or Exceeds the Requirements of TIA/EIA-232-F and ITU v.28 Standards;
- **RS-232 Signal (Full Handshake Support):** TxD, RxD, DTR, RTS, DSR, DCD, GND;
- **RS-232 Parity:** Even, Odd, None, Mark and Space; Selectable;
- **Hi-speed USB 2.0** supported (up to 480 Mbps);
- Fully **Plug & Play;**
- **Bus Powered** (No External Power Supply Required);
- **Serial Transmission Speed** up to 230.4 kbps;
- **Driver Supported:** Microsoft Windows, Linux, Mac OS and Android (32 & 64 Bits) Operating Systems;
- **Power (Green)** LED Indicator;
- **Transmit (Blue)** and **Receive (Yellow)** LED Indicator for All Ports;
- **ESD Protection:** RS-232 Bus-Pin ESD Protection Exceeds ±15 kV Using Human-Body Model (HBM);
- **Dimensions:** 145mm x 118mm x 27mm (5.70in x 4.65in x 1.06in);
- **Operating Temperature:** -10°C to +70°C (+14°F to +158°F);
- **1 Year Guarantee** and **5 Years Support.**

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3. PACKAGE CHECKLIST

Before installing the PH232Ux2, verify that the package contains the following items:

1) #1 PH232Ux2 Multiport

2) #1 USB Cable

3) #1 Document and Driver CD-ROM

4) #2 DB9 Female Connector

5) #1 220V AC to 12V DC Adaptor

6) #2 Din Rail Brackets with the corresponding screws

NOTE: Notify your sales representative if any of the above items is missing or damaged.

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4. TOP VIEW

5. BOTTOM VIEW

6. FRONT VIEW

7. BACK VIEW

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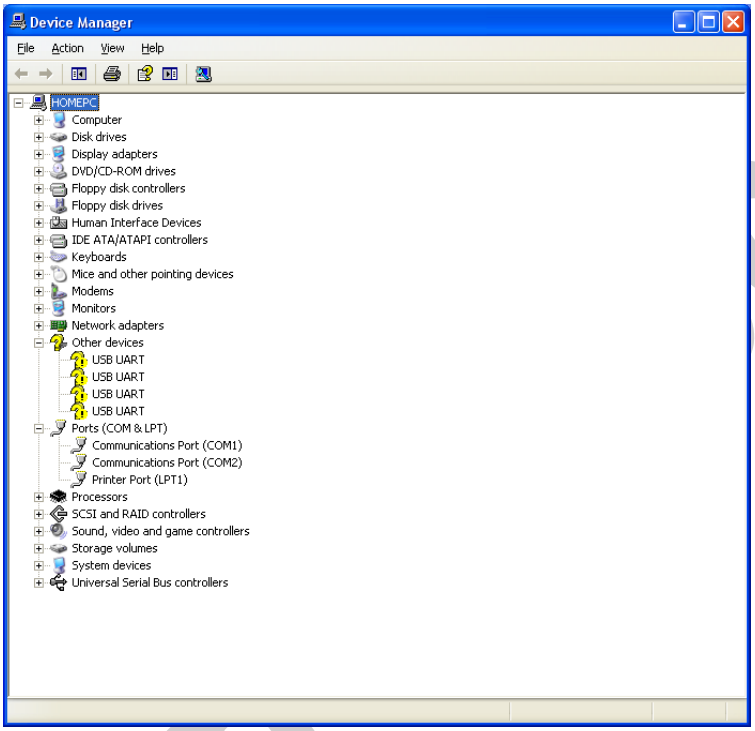
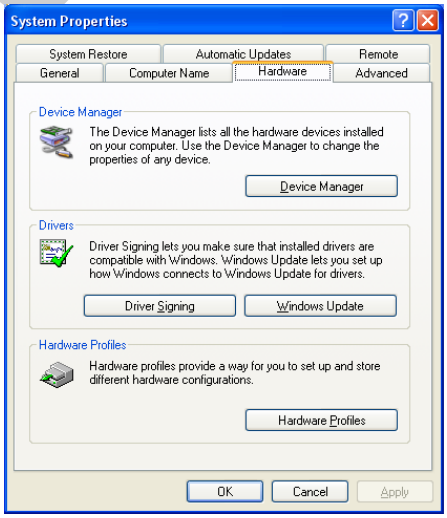
8. INSTALLATION ON WINDOWS

After you plug PH232Ux2 to USB port, you can see new devices in the Device Manager window as below:



(To run Device Manager, right click on My Computer, select Properties and then select Hardware tab, finally click on Device Manager button like following picture or simply use "WIN-KEY + R" and then type DEVMGMT and press Enter)



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However, installation progress will be start automatically, and following window will be seen,

Select option "No, not this time" and then click "Next",

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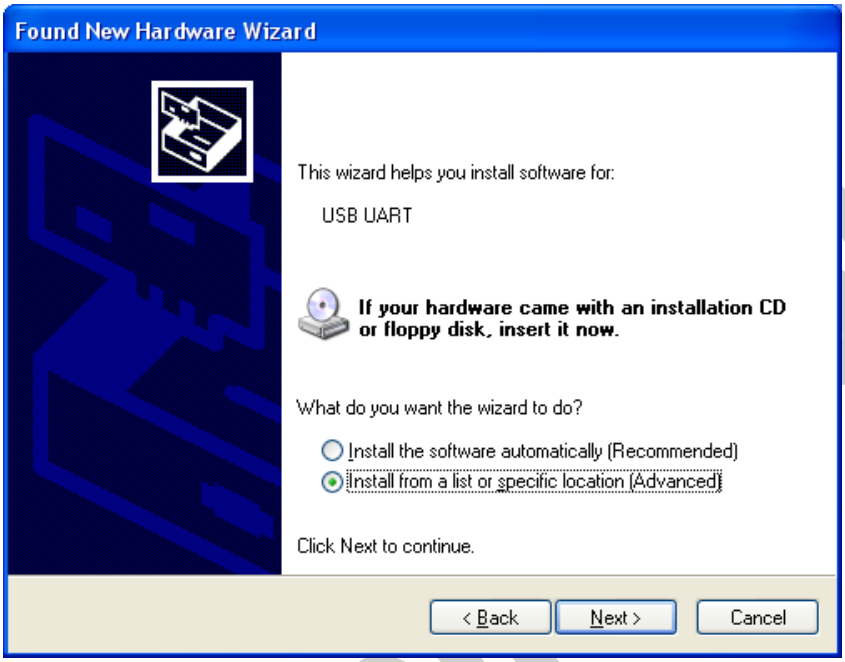
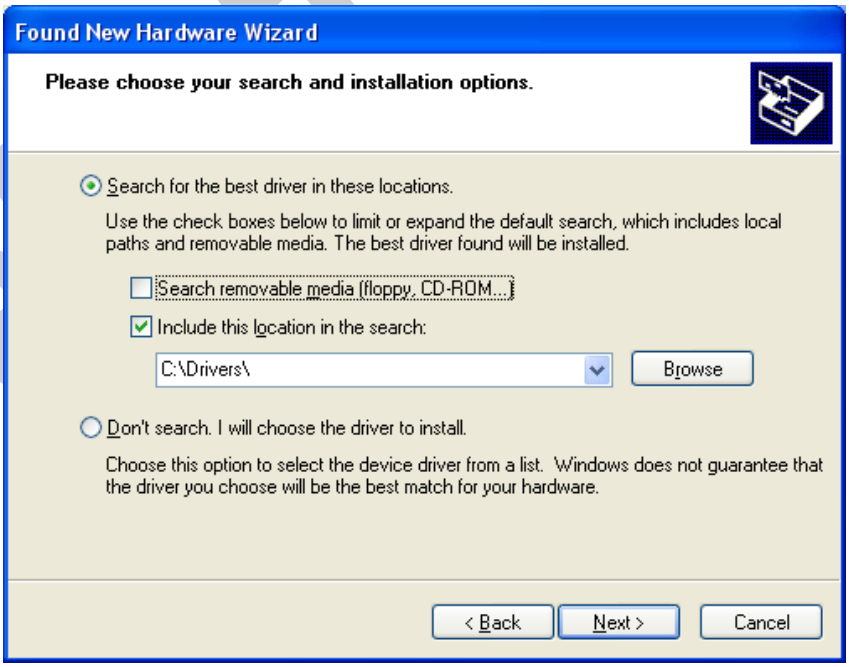
Select "Install from a list or specific location (Advanced)" and click "Next",



Select "Include this location in the search:" and click on "Browse",



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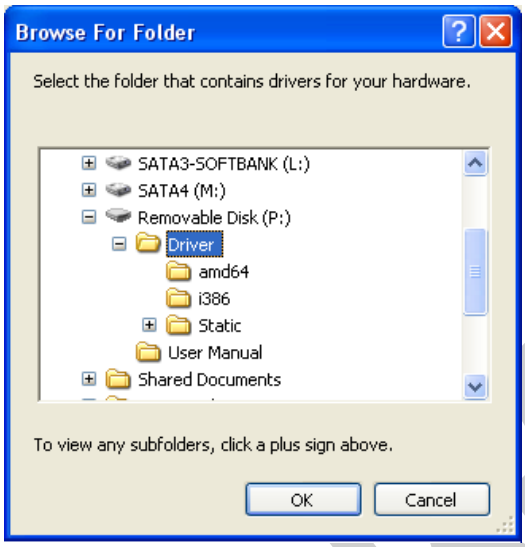
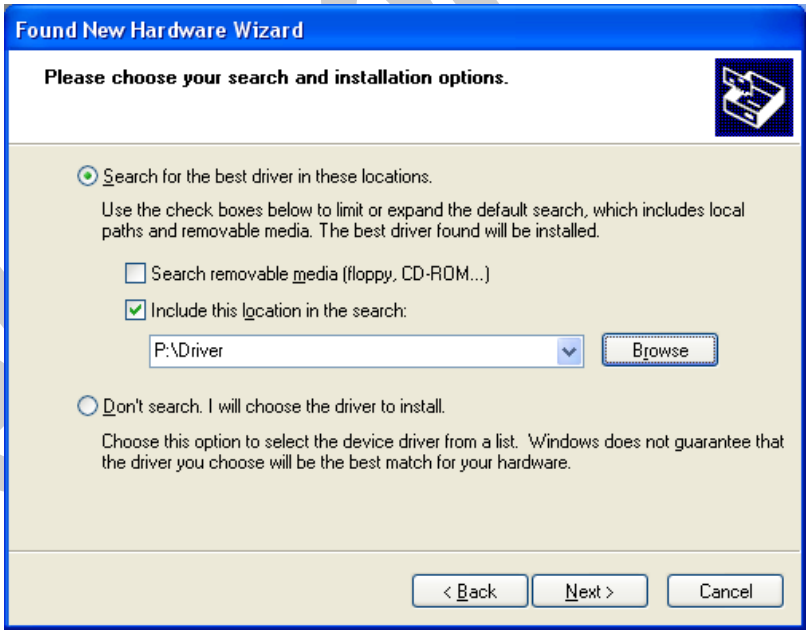
Select "Driver Folder" on the Installation CD and click OK.



Now, click on "Next",



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The driver will be installed,

Now, click "Finish",

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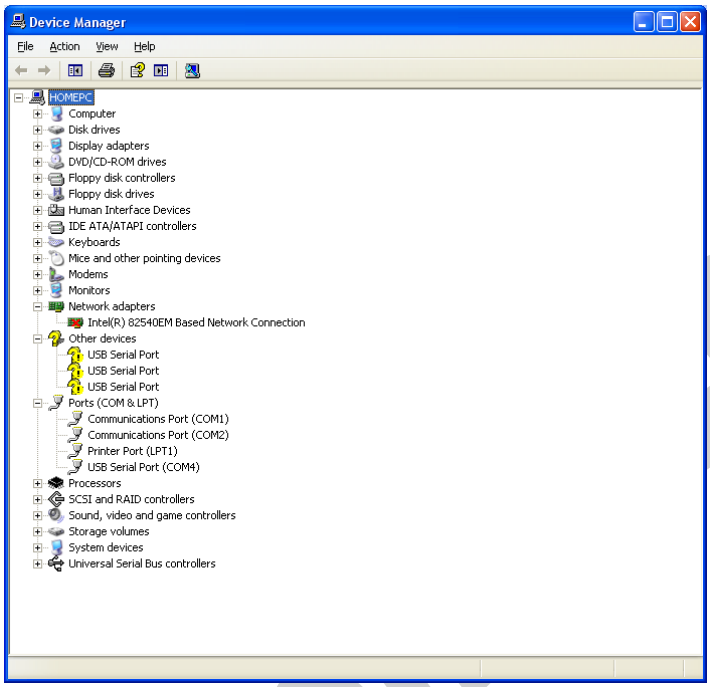
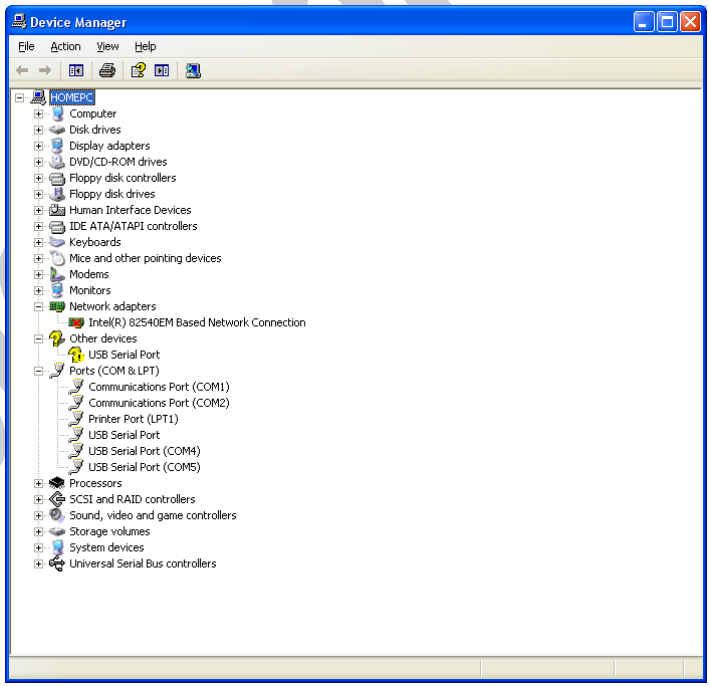
You should repeat these steps till all the ports will be installed.





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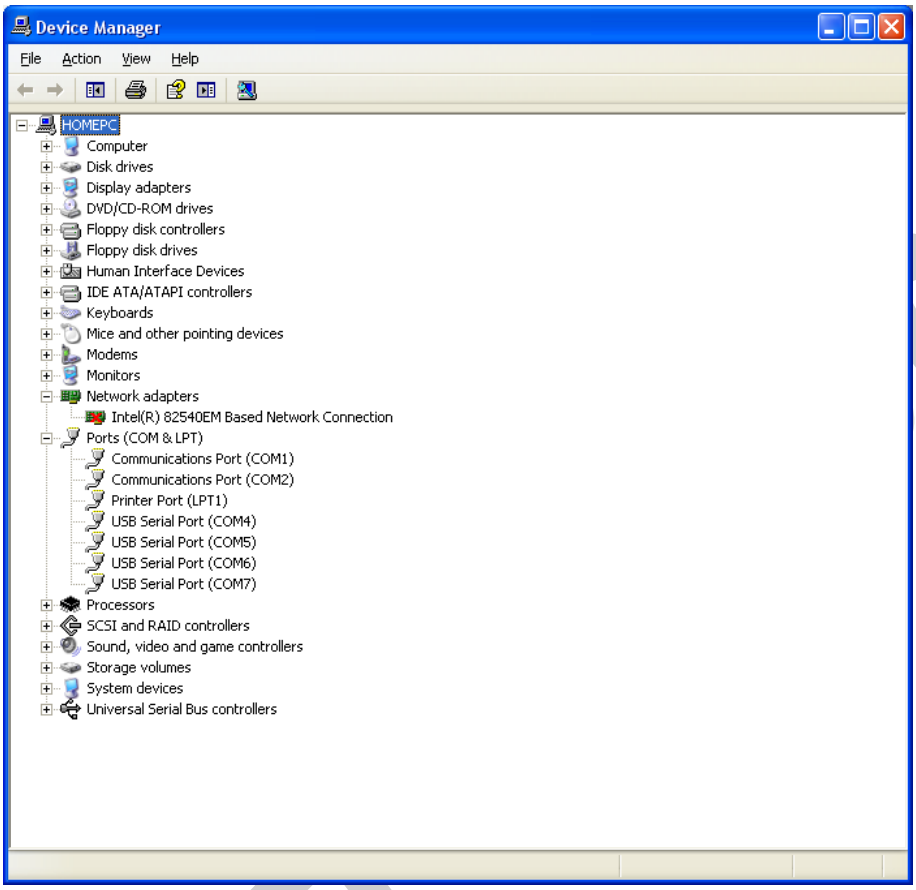

After finishing installation, you should see "USB Serial Port" in "Ports (COM&LPT)" section of Device Manager.

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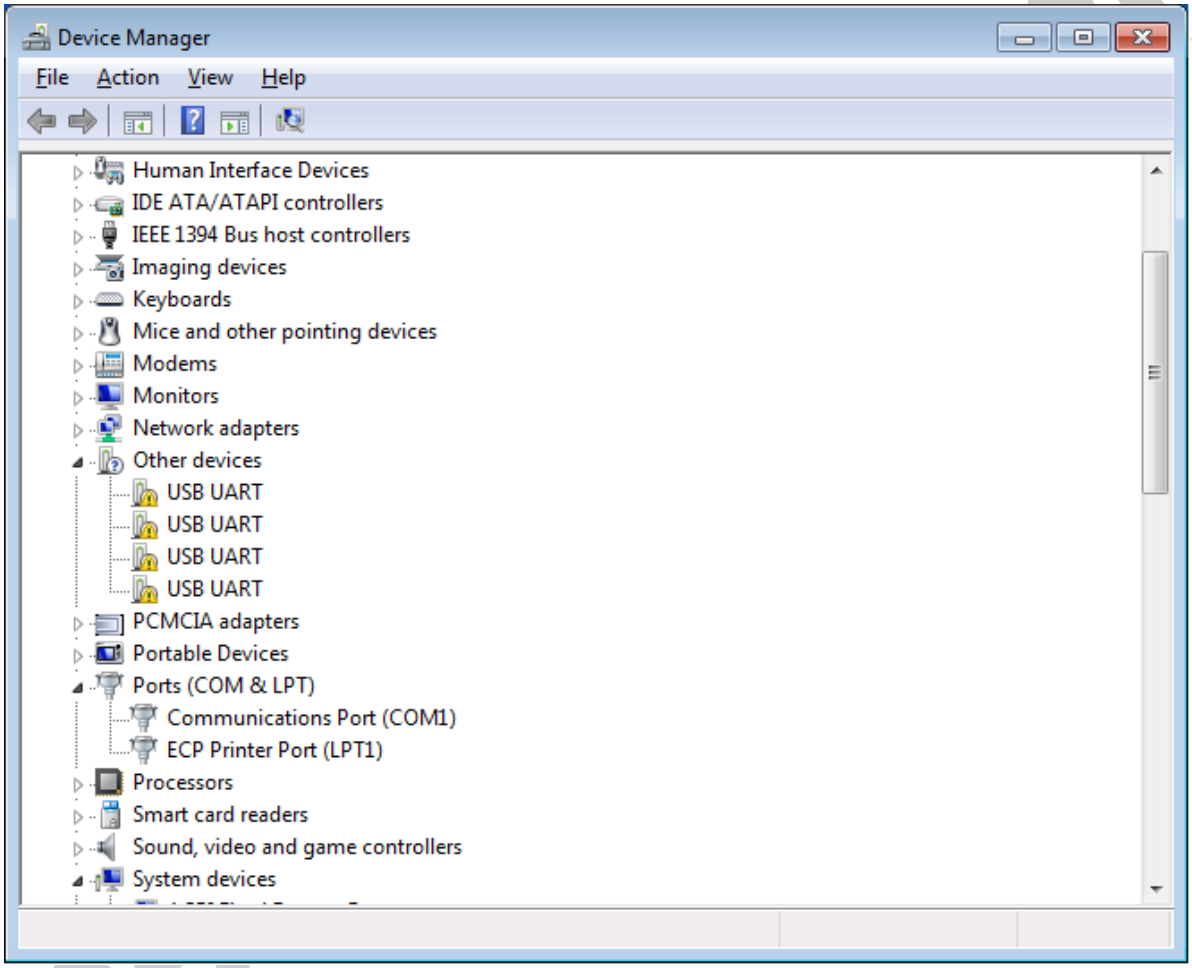
9. MANUAL INSTALLATION ON WINDOWS

If the installation procedure is not started after you plug the device to your computer you can install the driver manually as follow:



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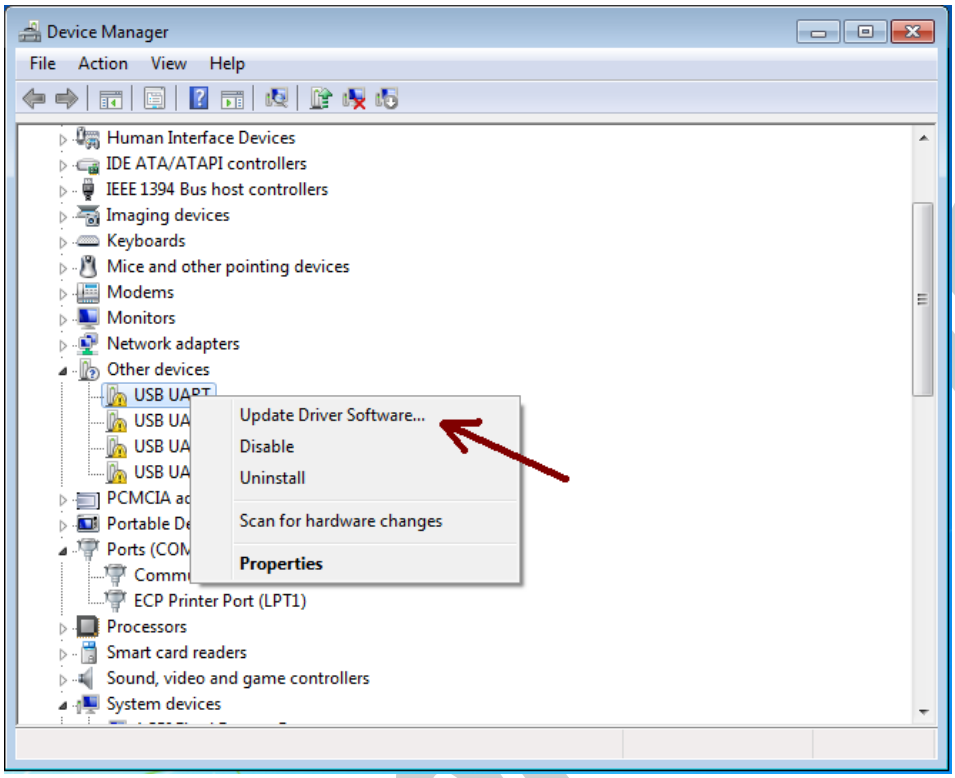

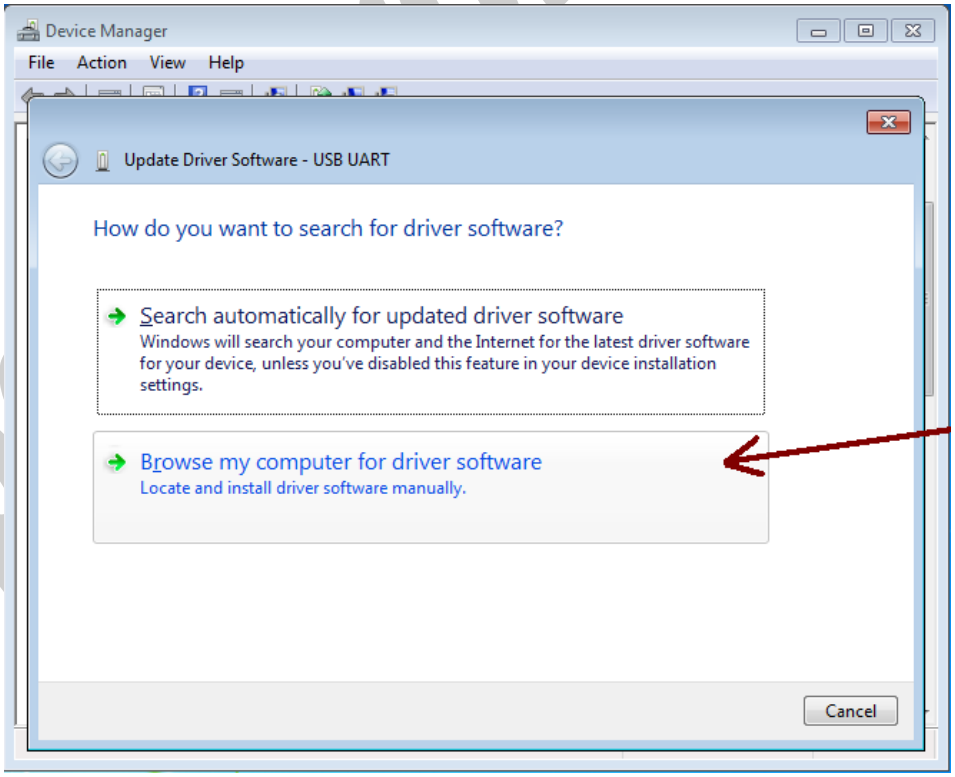

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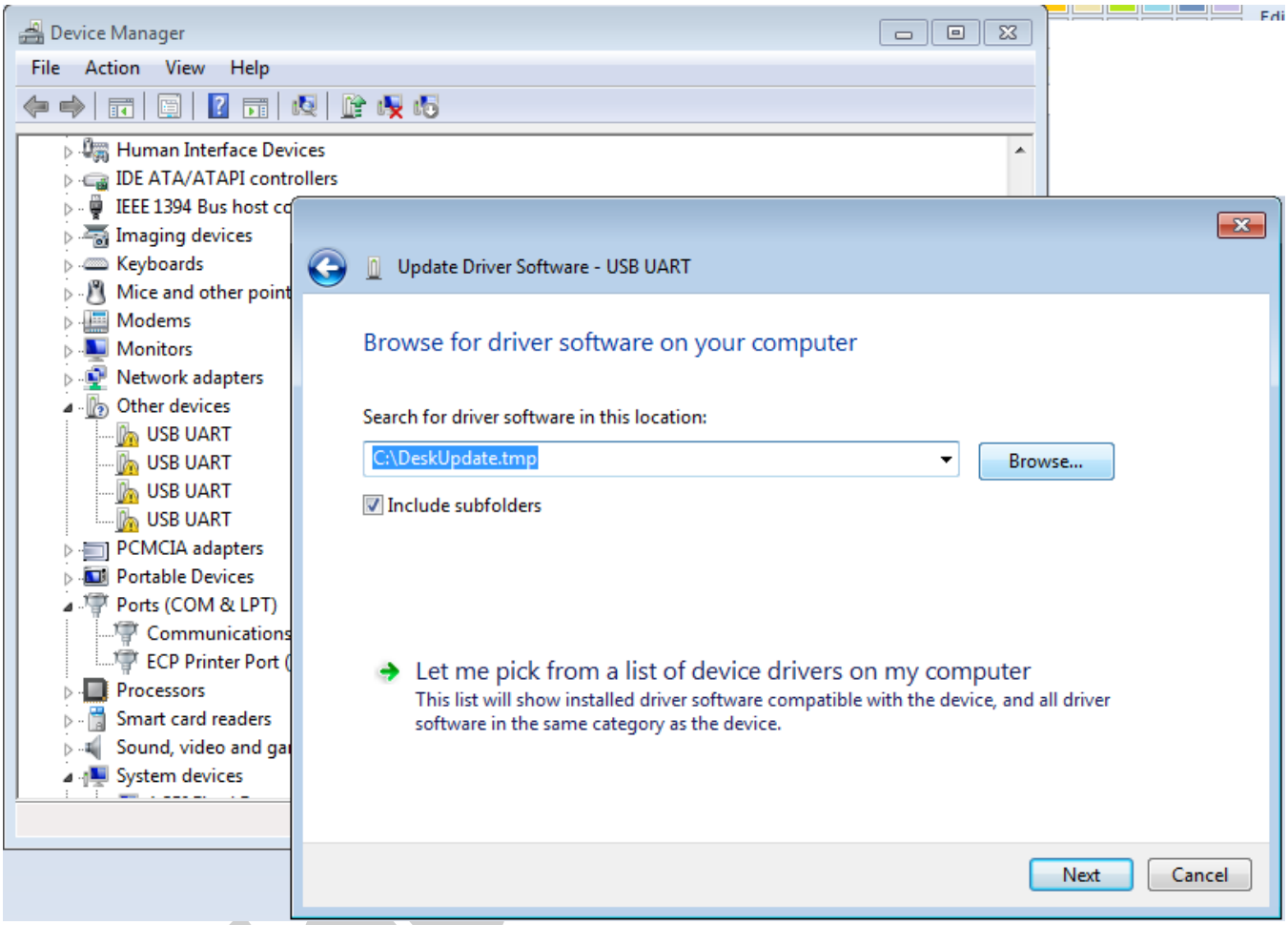

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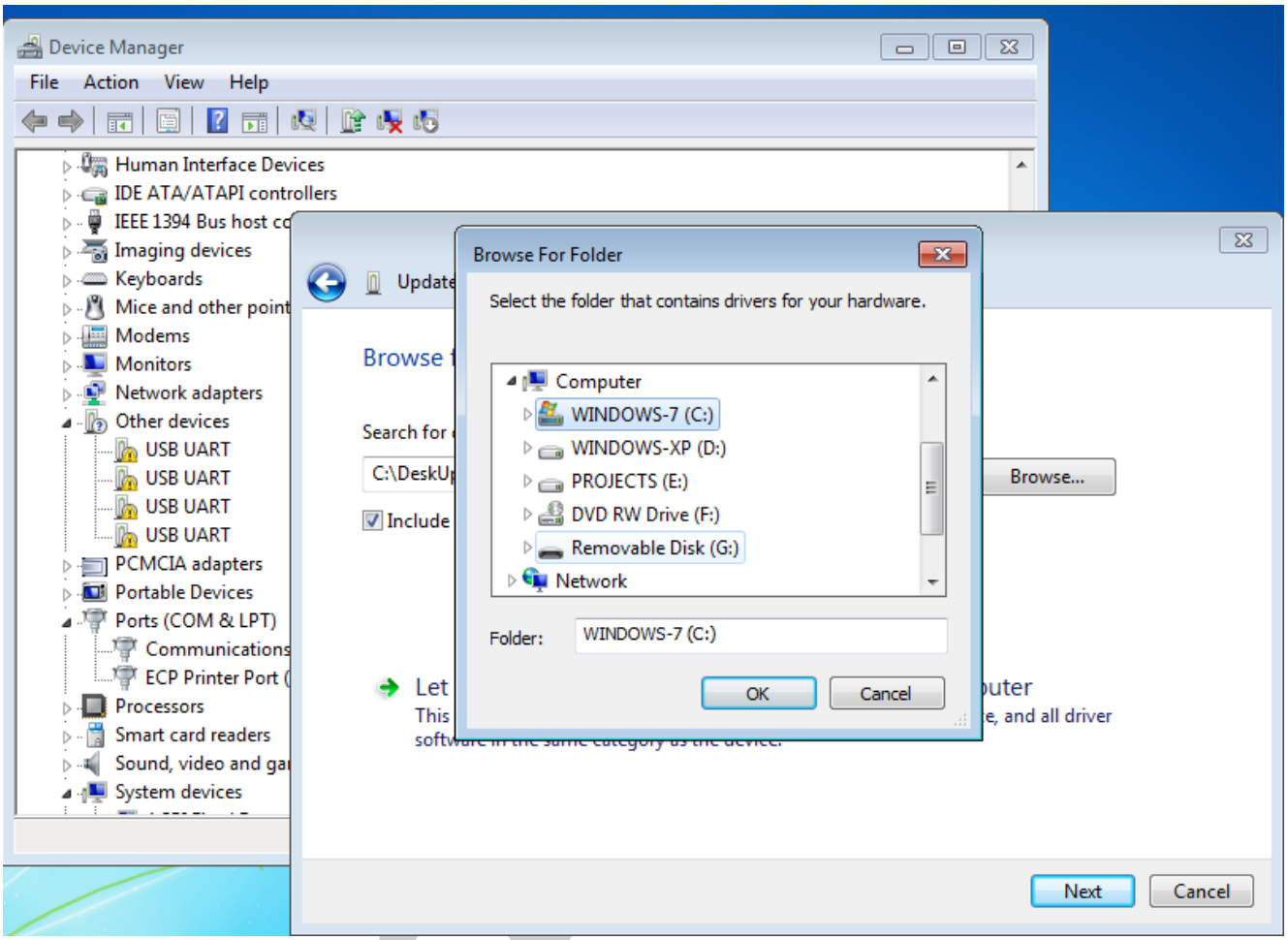

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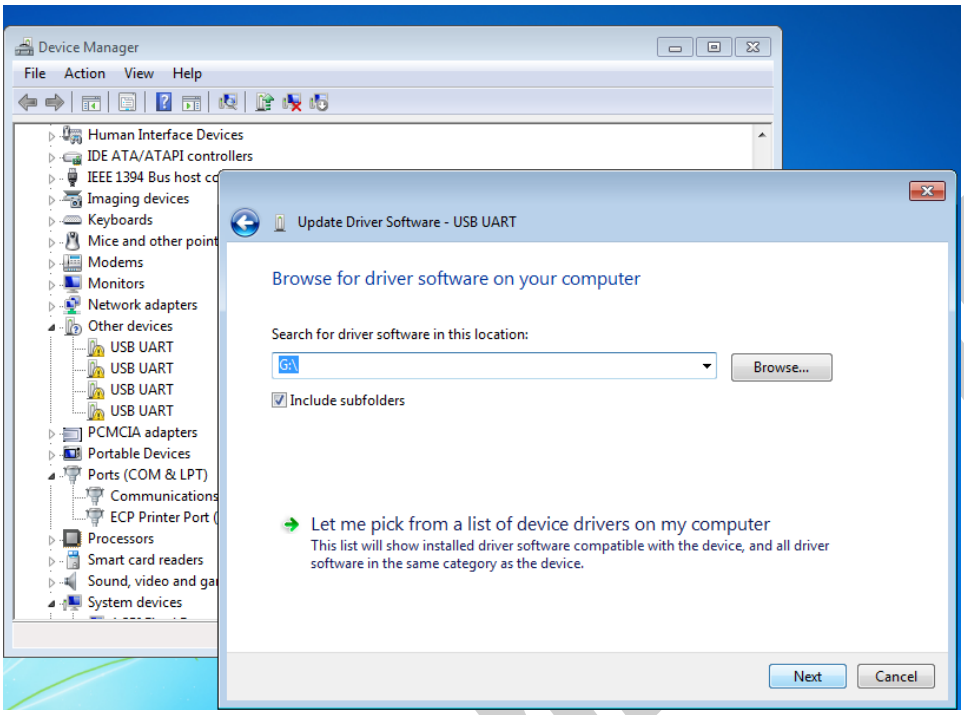

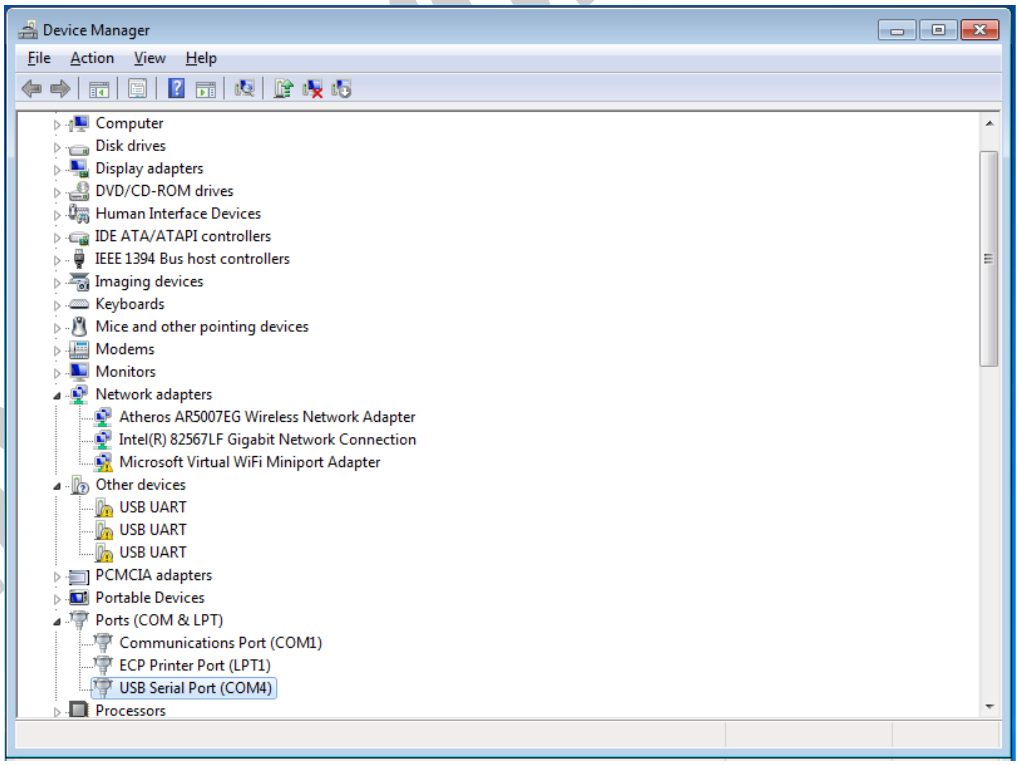

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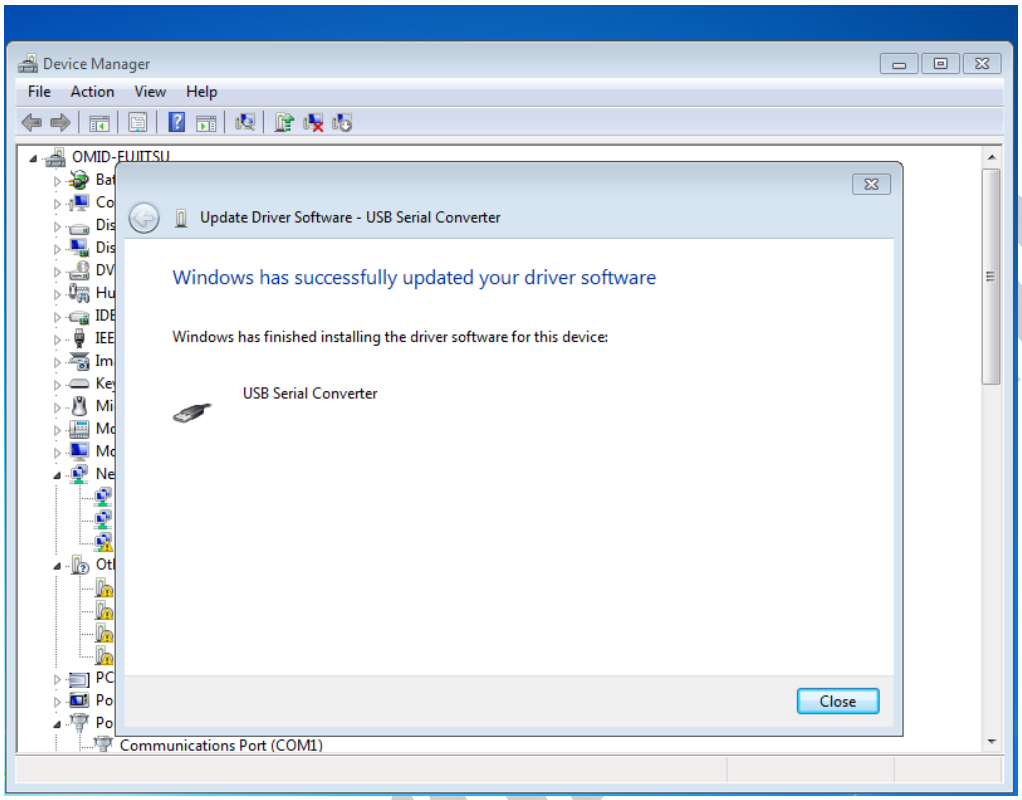

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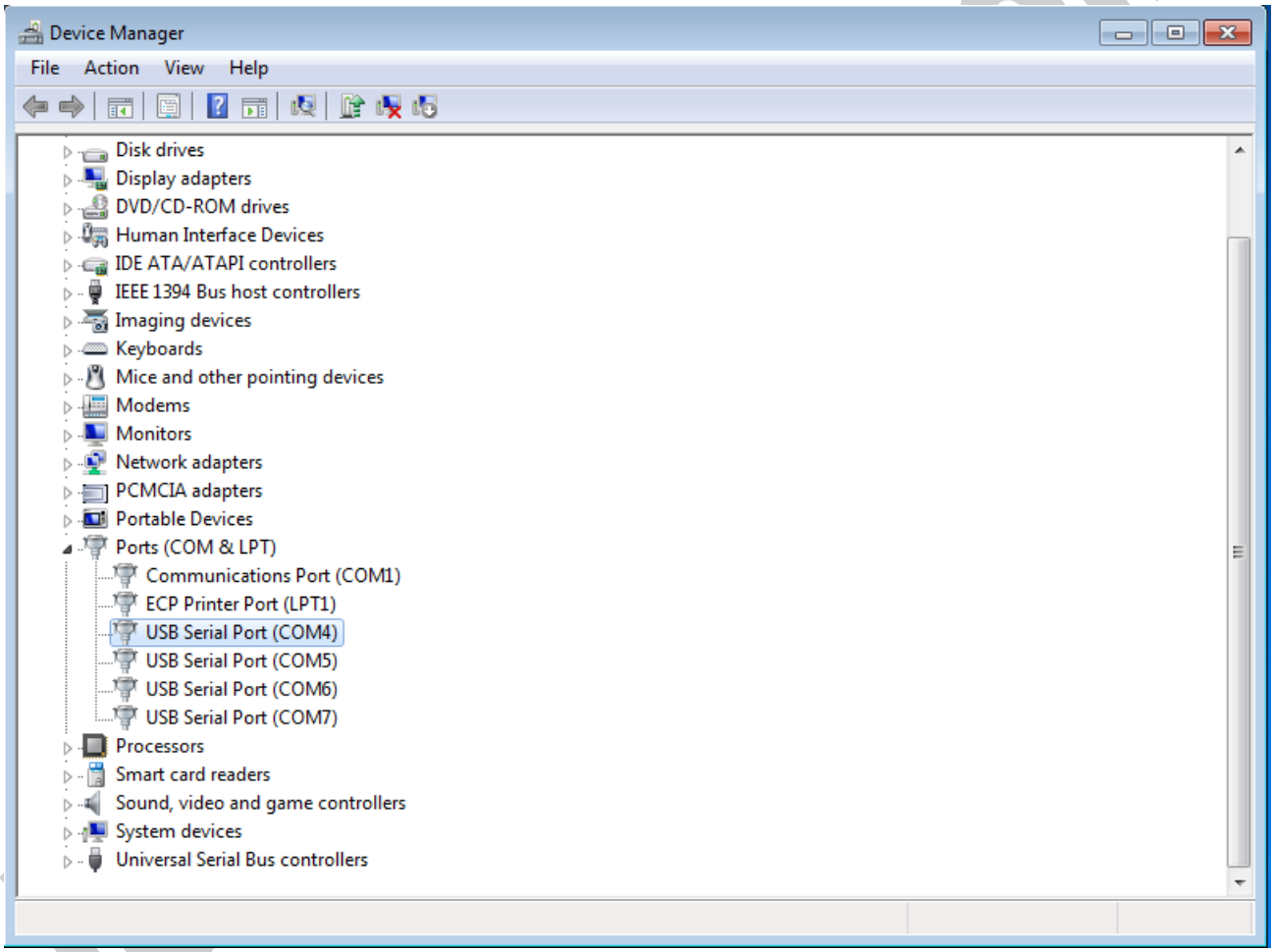
10. CHANGING COM PORT NUMBER

To change COM Port Number, right click on the USB COM Port on Device Manager and select properties,



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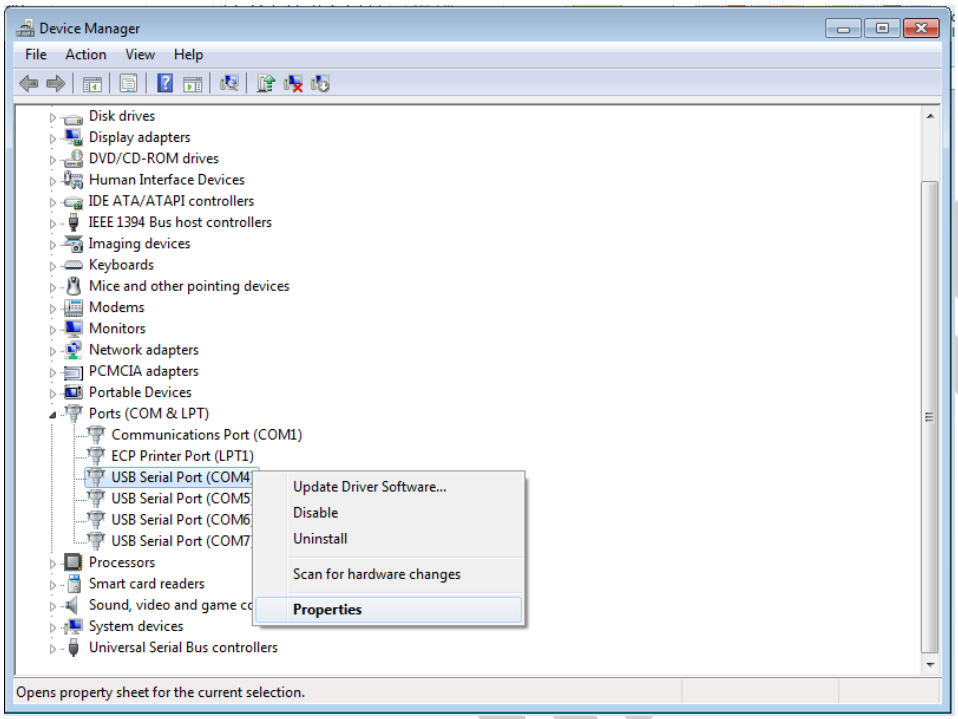
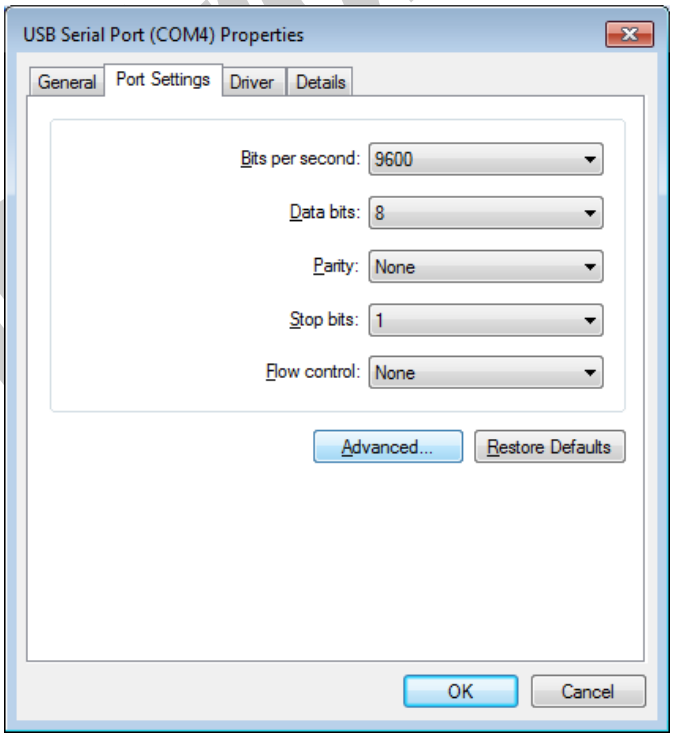


Select port setting:



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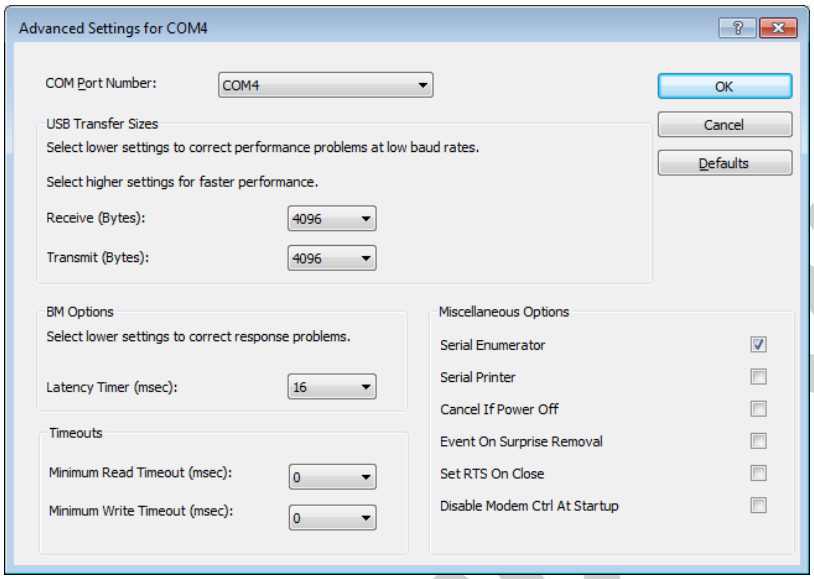
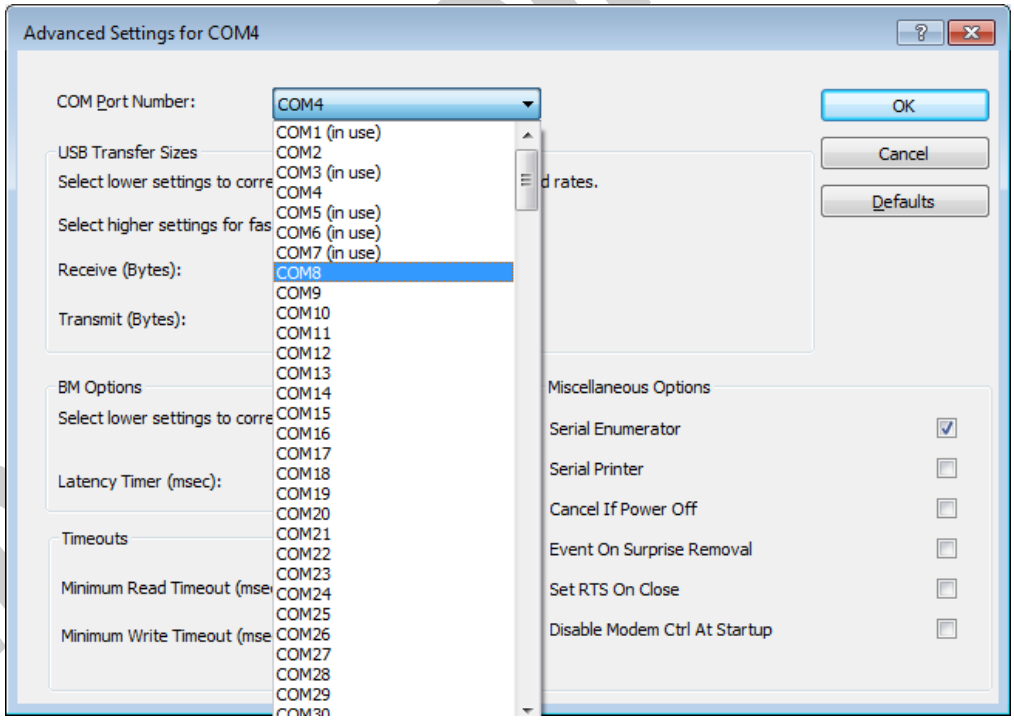
And then click on "advanced…",



Now, you can choose a number from COM Port Number section and finally click ok.



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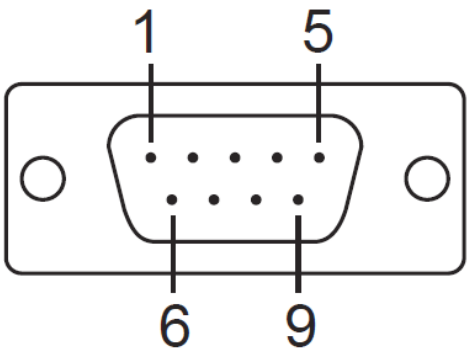
11. IDENTIFYING DEVICE PORTS COM NUMBER

To identify which COM Port belongs to which PH485Ux4 Port, you can use a terminal utility software like "HYPER TERMINAL" which is exist in the Utility Folder on Installation CD. After running "HYPER TERMINAL", select a COM port and type some characters to transmit them, now you can find port by watching TX LED (Blue LED) of the corresponding port that is blinking on the top panel of the device.

12. RS-232 SERIAL PORTS PIN CONFIGURATION

Male DB9



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

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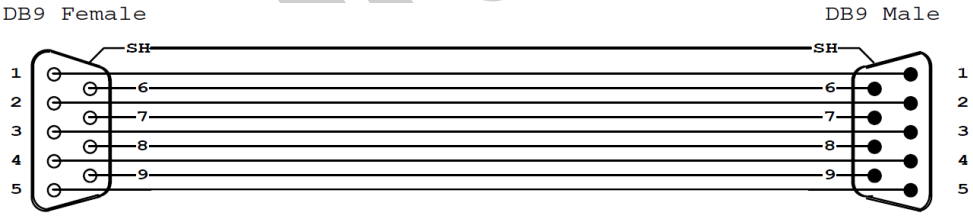
13. RS-232 CONNECTING METHODS

- Modem Connection (to a Modem, any DCE devices)

PH232Ux2 Port as DTE DB9-Male Pin Number		Modem or other DCE devices DB9-Female Pin Number	
Pin 1: DCD	(Input)	Pin 1: DCD	(Output)
Pin 2: RxD	(Input)	Pin 2: RxD	(Output)
Pin 3: TxD	(Output)	Pin 3: TxD	(Input)
Pin 4: DTR	(Output)	Pin 4: DTR	(Input)
Pin 5: GND	(Ground)	Pin 5: GND	(Ground)
Pin 6: DSR	(Input)	Pin 6: DSR	(Output)
Pin 7: RTS	(Output)	Pin 7: RTS	(Input)
Pin 8: CTS	(Input)	Pin 8: CTS	(Output)
Pin 9: RI	(Input)	Pin 9: RI	(Output)



(Modem Cable)

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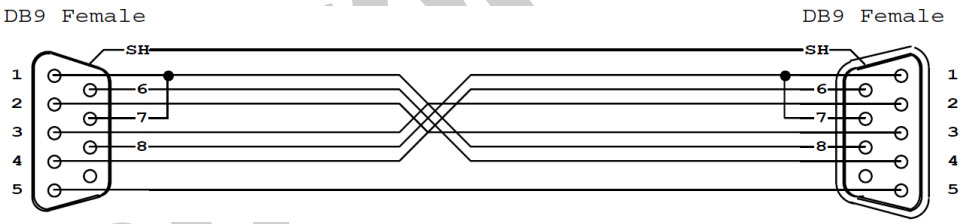
- **Null Modem Connection (to PC, PLC, RTU or any other DTE devices)**

PH232Ux2 Port as DTE DB9-Male Pin Number		PC,PLC or other DTE devices DB9-Male Pin Number	
Pin 1: DCD	(Input)	Pin 7: RTS	(Output)
Pin 2: RxD	(Input)	Pin 3: TxD	(Output)
Pin 3: TxD	(Output)	Pin 2: RxD	(Input)
Pin 4: DTR	(Output)	Pin 6: DSR	(Input)
Pin 5: GND	(Ground)	Pin 5: GND	(Ground)
Pin 6: DSR	(Input)	Pin 4: DTR	(Output)
Pin 7: RTS	(Output)	Pin 8: CTS	(Input)
Pin 8: CTS	(Input)	Pin 7: RTS	(Output)
Pin 7: RTS	(Output)	Pin 1: DCD	(Input)



(Null Modem Cable)

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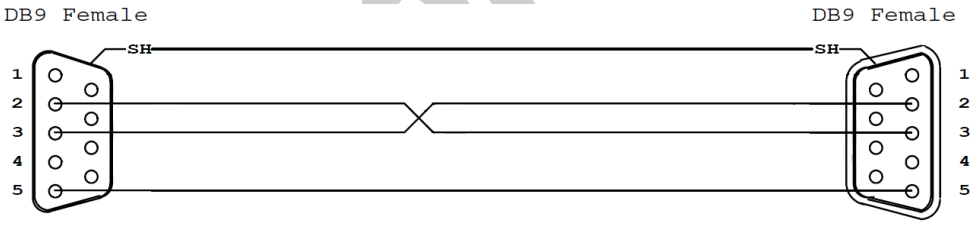
- Simple Null Modem Connection (to PC, PLC... Without Hardware Flow control)

PH232Ux2 Port as DTE DB9-Male Pin Number		PC,PLC or other DTE devices DB9-Male Pin Number	
Pin 2: RxD	(Input)	Pin 3: TxD	(Output)
Pin 3: TxD	(Output)	Pin 2: RxD	(Input)
Pin 5: GND	(Ground)	Pin 5: GND	(Ground)



(Simple Null Modem Cable (Without Hardware Handshaking))

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14. GUARANTEE

All products manufactured by **IPEX** are under warranty regarding defective materials for a period of one year from the date of delivery to the original purchaser.

15. TECHNICAL SUPPORT

If you have any technical question or need any technical support, please contact us using this Email address: support@ipelectronix.com.

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