USER'S MANUAL

PH232Ux2

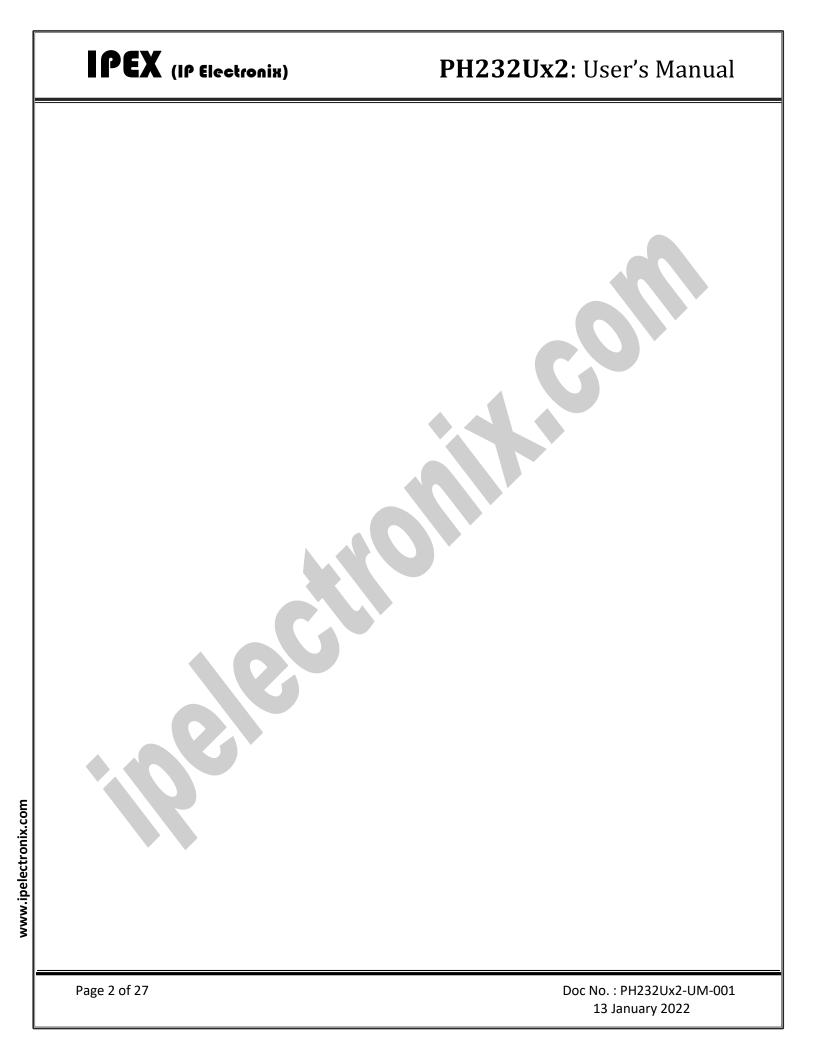
#2 RS-232 Over USB ISOLATED MULTIPORT

Electroni



(IP Electronix)

13 January 2022



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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.

3. PACKAGE CHECKLIST

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



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4. TOP VIEW



5. BOTTOM VIEW



6. FRONT VIEW



7. BACK VIEW



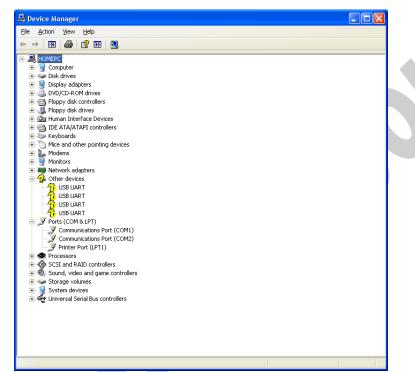
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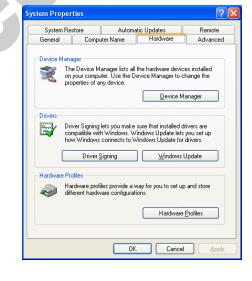
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8. INSTALLATION ON WINDOWS

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,



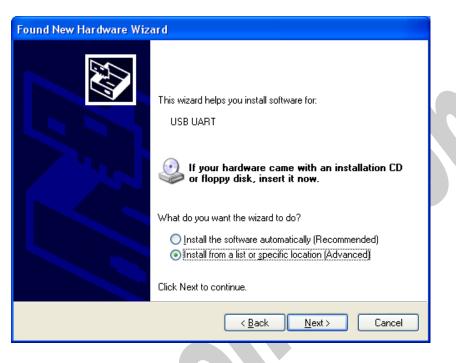
Select option "No, not this time" and then click "Next",



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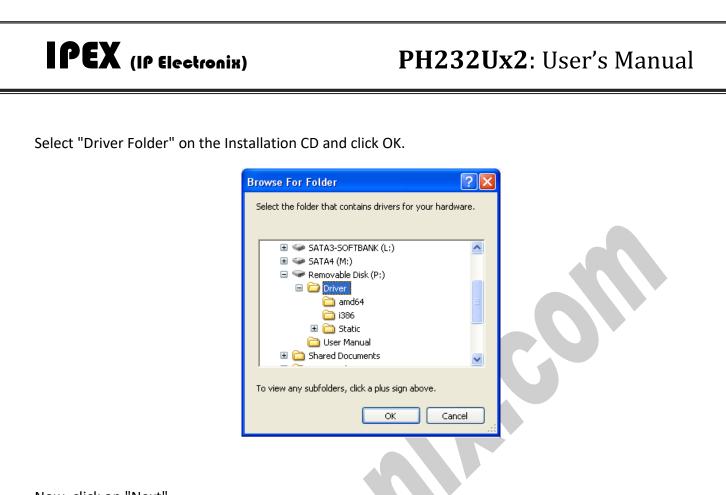
Select "Install from a list or specific location (Advanced)" and click "Next",

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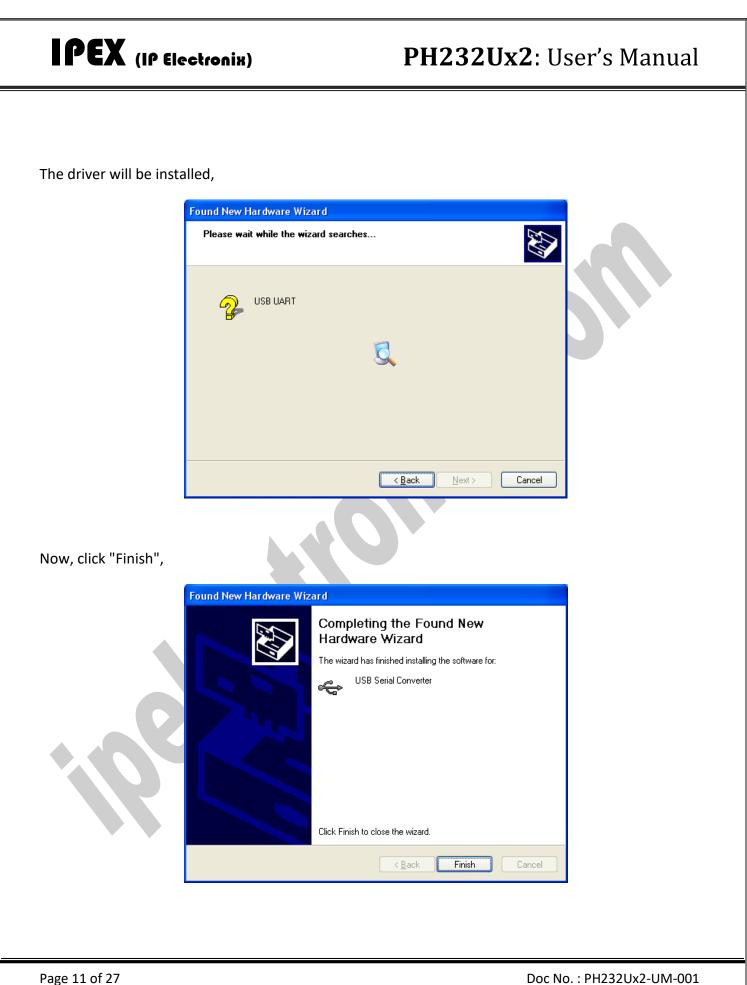
Select "Include this location in the search:" and click on "Browse",

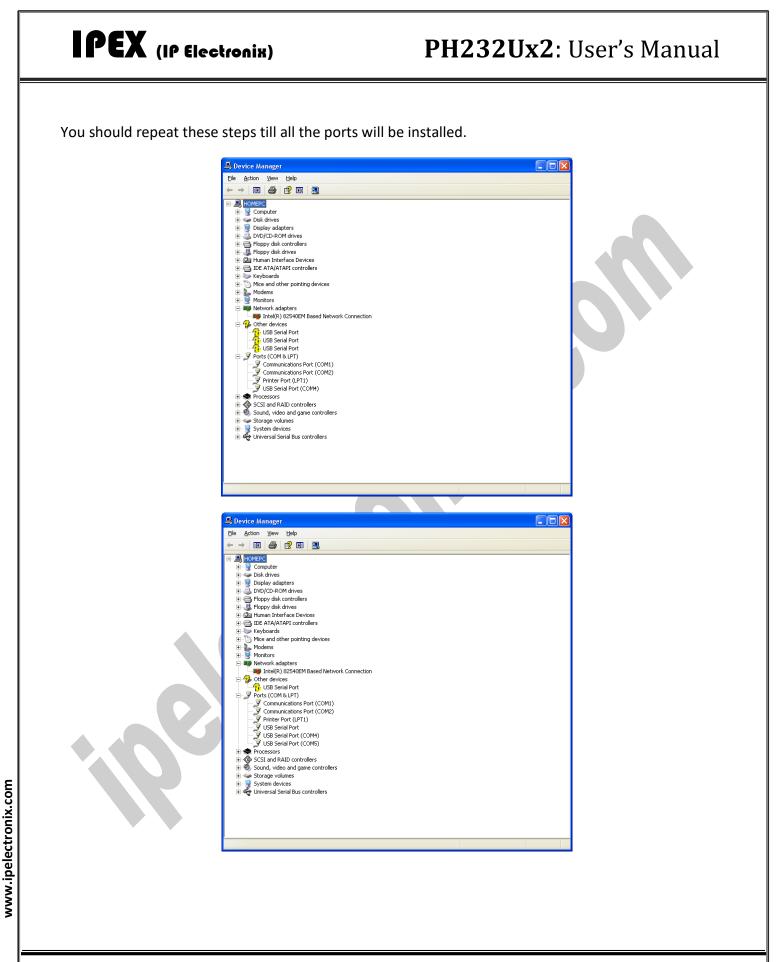
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM)
✓ Include this location in the search:
C:\Drivers\
O Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee the driver you choose will be the best match for your hardware.
< <u>B</u> ack <u>N</u> ext > Cance



Now,	click	on	"Next"	,
------	-------	----	--------	---

Found Ne	ew Hardware Wizard			
Please	choose your search and installation options.			
0	Search for the best driver in these locations.			
	Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.			
	Search removable media (floppy, CD-ROM)			
	✓ Include this location in the search:			
	P:\Driver Scowse			
O Don't search. I will choose the driver to install.				
Ŭ	Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.			
	< <u>B</u> ack <u>N</u> ext > Cancel			





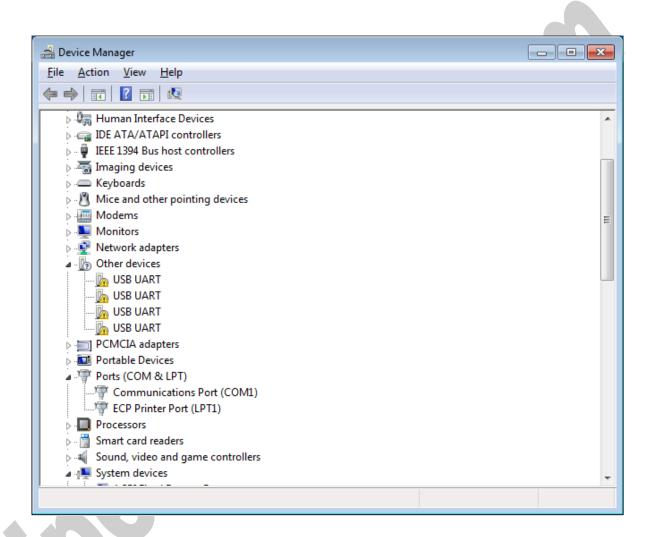
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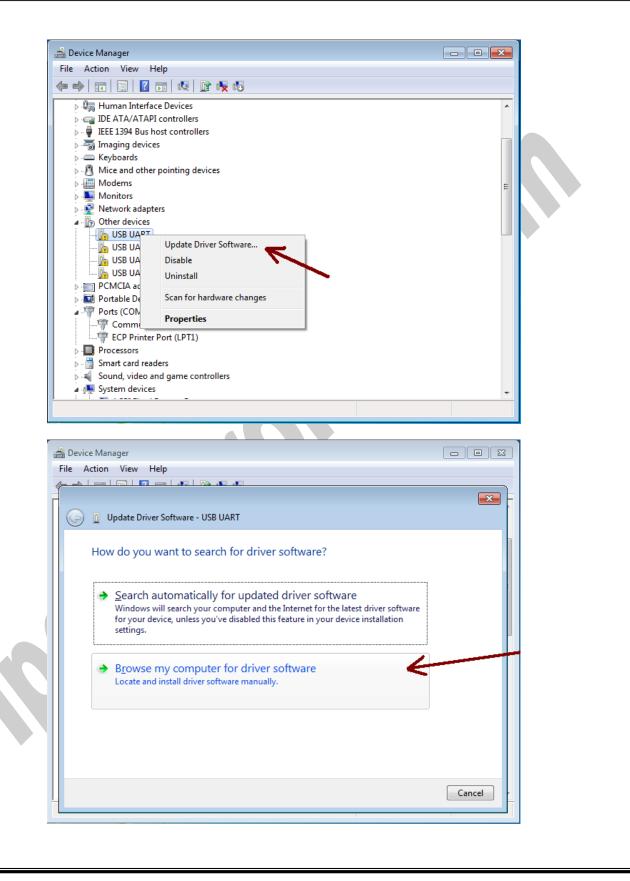
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After finishing installation, you should see "USB Serial Port" in "Ports (COM&LPT)" section of Device Manager.

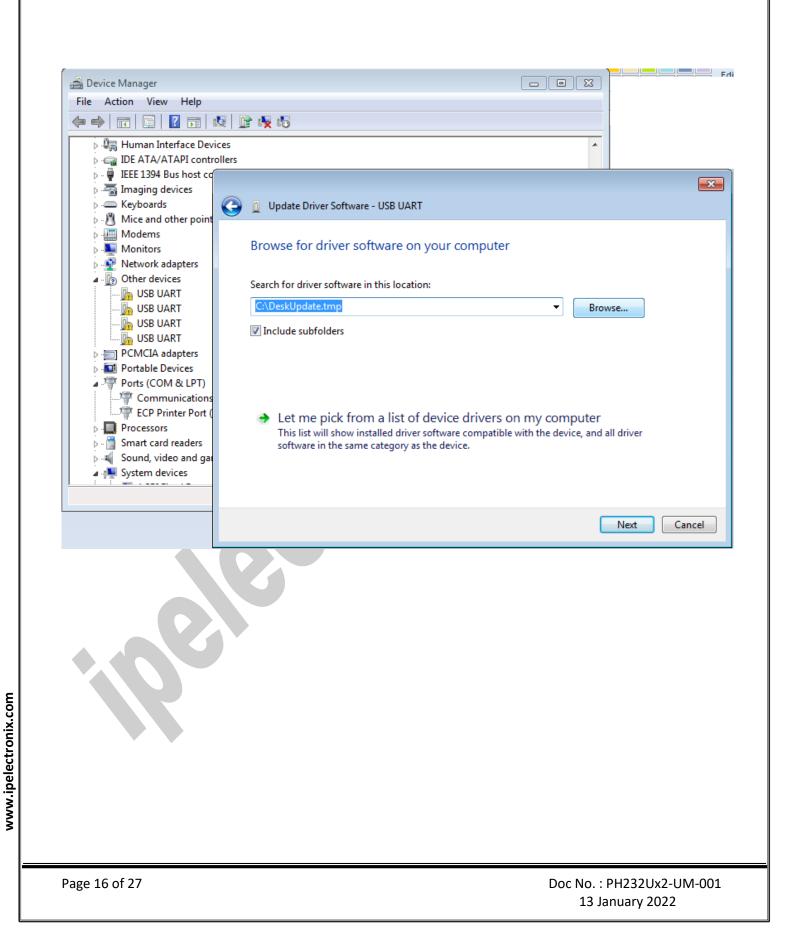
9. MANUAL INSTALLATION ON WINDOWS

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

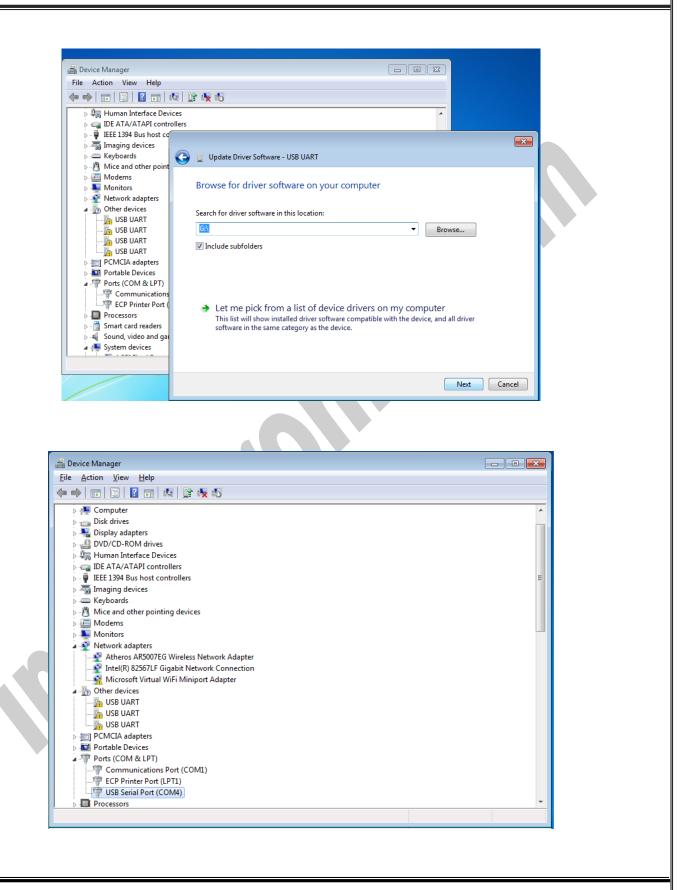




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Bevice Manager File Action View Help		
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B Human Interface Devi G IDE ATA/ATAPI contre		
 IEEE 1394 Bus host co Imaging devices Keyboards Mice and other point Monitors Monitors Network adapters Other devices Other devices USB UART USB UART USB UART USB UART PCMCIA adapters Portable Devices Ports (COM & LPT) Communications ECP Printer Port (Processors Smart card readers Sound, video and gat System devices 	O Update Sele Browse 1 Search for C:\DeskUg Include Fold Fold This	rdware. Browse Browse Cancel e, and all driver
		Next Cancel
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File Action Vi			
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	ISU		
▶ - 🥪 Bat ▶ - 🚛 Co ▶ - 👝 Dis	🔋 🗕 Update Driver Software - USB Serial Converter		
>	Windows has successfully updated your driver soft	ware E	
⊳ - 🙀 IDE ⊳ - 🟺 IEE ⊳ - 🐺 Im	Windows has finished installing the driver software for this device:		
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Con	imunications Port (COM1)	· · · · · · · · · · · · · · · · · · ·	
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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,

Device Manager	
le Action View Help	
• 🔿 📰 🔛 🔣 🗊 👰 🔛 🎼 🎼	
🦻 👝 Disk drives	
🖕 📲 Display adapters	
DVD/CD-ROM drives	
b 🕼 Human Interface Devices	
IDE ATA/ATAPI controllers	
🔉 📲 IEEE 1394 Bus host controllers	
Imaging devices	
> - Keyboards	
🖁 - 🕅 Mice and other pointing devices	
> 🛄 Modems	
Monitors	
Network adapters	
PCMCIA adapters	
Portable Devices	
A Ports (COM & LPT)	
ECP Printer Port (LPT1)	
🖙 USB Serial Port (COM4)	
USB Serial Port (COM7)	
Processors	
⊳ - 📋 Smart card readers	
Sound, video and game controllers	
Image: A state of the state	
🔈 📲 Universal Serial Bus controllers	

IPEX (IP Electronix) PH232Ux2: User's Manual - • • 🚔 Device Manager File Action View Help 🗢 🔶 📰 🔄 🛛 🖬 🛤 🔛 🞼 🍕 🖏 Disk drives Display adapters DVD/CD-ROM drives 🛛 🖏 Human Interface Devices DE ATA/ATAPI controllers 🖟 🐺 IEEE 1394 Bus host controllers Imaging devices Keyboards Mice and other pointing devices b I Modems Monitors Network adapters PCMCIA adapters Portable Devices

Update Driver Software...

Scan for hardware changes

Disable

Uninstall

Properties

Select port setting:

Ports (COM & LPT)

Processors

Smart card readers
 Sound, video and game cc

System devices

Communications Port (COM1) ECP Printer Port (LPT1)

USB Serial Port (COM5

USB Serial Port (COM6 USB Serial Port (COM7

Driversal Serial Bus controllers
 Opens property sheet for the current selection.

USB Serial Port (COM4) Properties
Parity: None Stop bits: 1 <u>F</u> low control: None Advanced Restore Defaults
OK Cancel

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And then click on "advanced...",

COM Port Number: COM4	•	ОК	
USB Transfer Sizes Select lower settings to correct performance problems at lo Select higher settings for faster performance.	w baud rates.	Cancel Defaults	
Receive (Bytes): 4096 ▼ Transmit (Bytes): 4096 ▼			
BM Options	Miscellaneous Options		
Select lower settings to correct response problems.	Serial Enumerator		
Latency Timer (msec):	Serial Printer		
	Cancel If Power Off		
Timeouts	Event On Surprise Removal		
Minimum Read Timeout (msec):	Set RTS On Close		
	Disable Modem Ctrl At Startup		

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

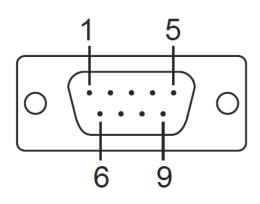
Advanced Settings for COM4				? 💌
COM Port Number:	COM4	-		ОК
USB Transfer Sizes Select lower settings to corre	COM1 (in use) COM2 COM3 (in use)	-	d rates.	Cancel
Colort bishes astrings for far	COM5 (in use) COM6 (in use)		urates.	Defaults
	COM7 (in use) COM8 COM9			
	COM10 COM11			
	COM12 COM13 COM14		Miscellaneous Options	
Select lower settings to corre	COM15 COM16 COM17		Serial Enumerator	
Latency Timer (msec):	COM18 COM19		Serial Printer	
Timeouts	COM20 COM21 COM22		Cancel If Power Off Event On Surprise Removal	
Minimum Read Timeout (mse	COM02		Set RTS On Close	
Minimum Write Timeout (mse	COM25 COM26 COM27		Disable Modem Ctrl At Startup	
	COM27 COM28 COM29			
	COM30	Ŧ		

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

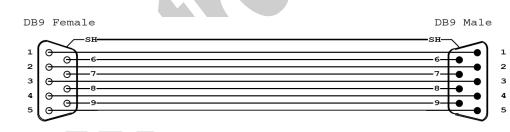


Pin	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

13. RS-232 CONNECTING METHODS

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

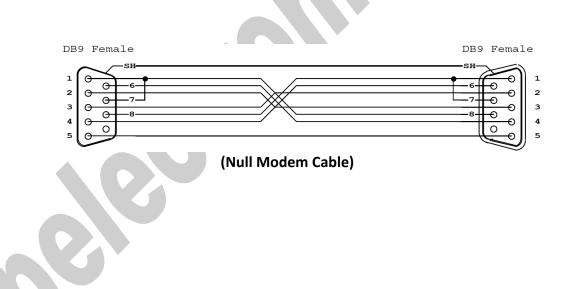
PH232Ux2 Port as DTE DB9-Male Pin Number		Modem or o	Modem or other DCE devices DB9-Female Pin Number	
		DB9-Fema		
Pin 1: DCD	(Input)	Pin 1: DCD	(Output)	
Pin 2: RxD	(Input)	Pin 2: RxD	(Output)	
Pin 3: TxD	(Output)	Pin 3: TxD	(Input)	
Pin 4: DTR	(Output)	Pin 4: DTR	(Input)	
Pin 5: GND	(Ground)	Pin 5: 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)	

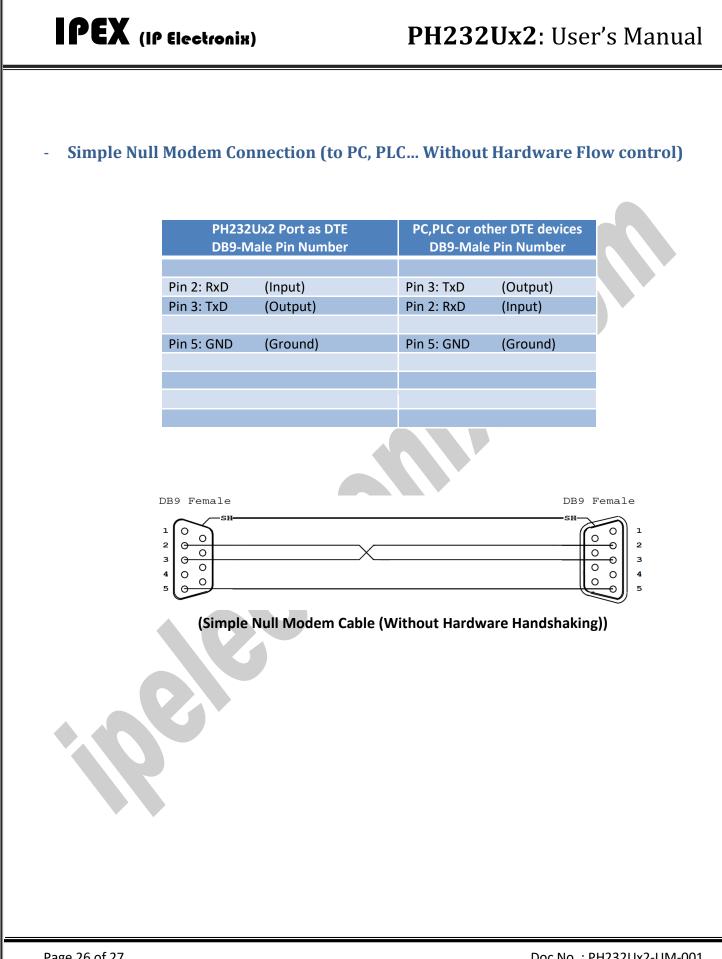


(Modem Cable)

- 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)	





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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.