# USER'S MANUAL



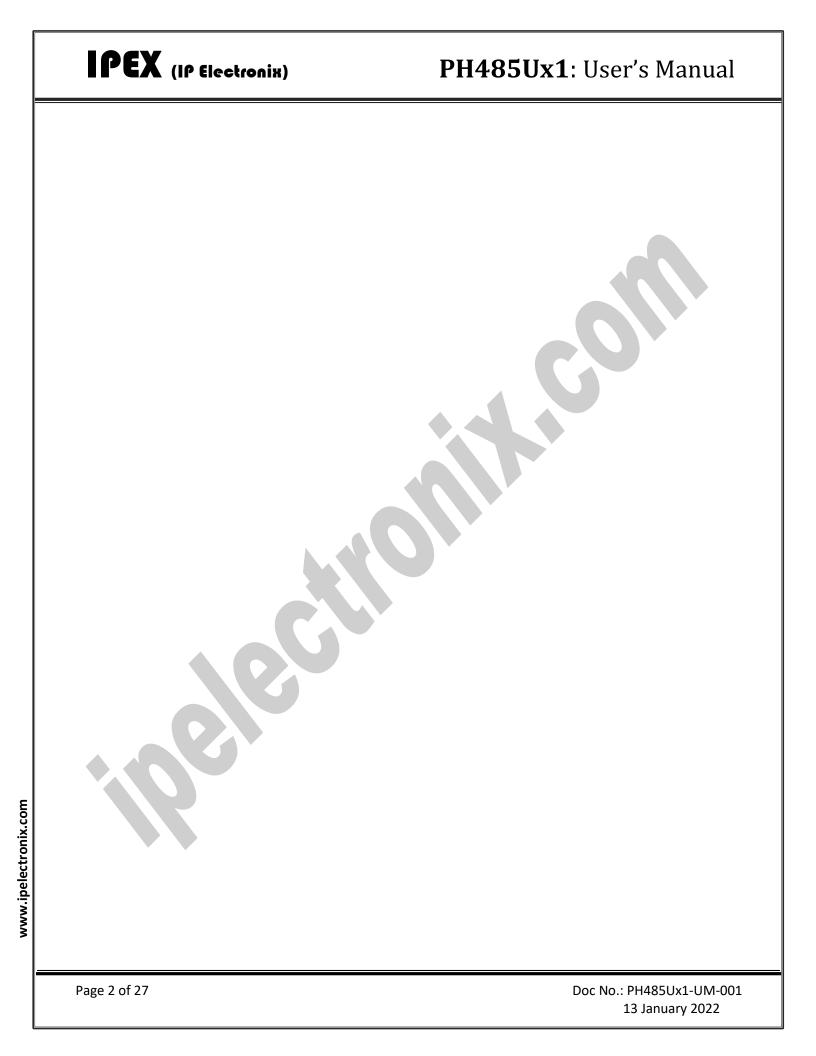
# PH485Ux1

**RS-485/RS-422 ISOLATED USB ADAPTER** 



(IP Electronix)

13 January 2022



### CONTENTS

1.	INTRODUCTION
2.	SPECIFICATIONS
3.	PACKAGE CHECKLIST6
4.	TOP VIEW
5.	BOTTOM VIEW
6.	FRONT VIEW
7.	BACK VIEW
8.	INSTALLATION ON WINDOWS
9.	MANUAL INSTALLATION ON WINDOWS15
10	CHANGING COM PORT NUMBER 21
11	IDENTIFYING DEVICE PORTS COM NUMBER
12	RS-485/RS422 SERIAL PORT PIN CONFIGURATION
13	RS-485 CONNECTING METHODS
14	RS-422 CONNECTING METHODS
15	GUARANTEE
16	TECHNICAL SUPPORT

#### **1. INTRODUCTION**

**IPEX** PH485Ux1 is a USB Adapter that provides a Serial COM Port via its USB connection and is compatible with RS-485 standard devices differential (Data+ & Data-); and RS-422 standard devices differential (TX+, TX- & RX+, RX-) signals. **PH485Ux1** is fully Plug & Play a and enables your laptop or workstation with the ability to communicate between a USB port and a RS-485/422 serial peripheral with baud-rate from 300bps to 230400bps.

**PH485Ux1** supports Point-to-Point and Point-to-Multi Point Party Line network topologies. Since RS-485 is a Half-Duplex standard, switching between Transmit and Receive is doing automatically and no further signal (such as RTS) is required.

Any external power supply is not required, as **PH485Ux1** takes its power from the USB Bus.

Protection against Surge, ESD and EMI is considered in its design and also has 3kV insulation between USB and RS-485/422 sides.

**PH485Ux1** is designed for industrial usage and is useful for Industrial Automation, Telecommunications, SCADA Systems and DCS Systems ...

**PH485Ux1** comes complete with drivers for Microsoft Windows. Drivers are also available for Linux, Mac OS and Android.

#### **2. SPECIFICATIONS**

- USB to RS-485 and RS-422 Bidirectional Converter;
- Hi-Speed USB 2.0 supported (up to 480 Mbps);
- Number of Ports: #1 RS-485/RS422 Serial Port, #1 USB Port;
- Adds #1 COM Port to the PC;
- Fully Plug & Play;
- RS-485 Signal: Data+, Data-, GND;
- **RS-422 Signal:** TX+, TX-, RX+, RX-, GND;
- Maximum Communication Distance: 1200m (4000 feet);
- Loading: RS-485 and RS-422 Side up to 32 Nodes are supported;
- Bus-Powered (No External Power Supply Required);
- Serial Transmission Speed Up to 230.4 kbps;
- Insulation Protection: 3kV Instantaneous, 500V DC continuous;
- Serial Standard: Meets or Exceeds the Requirements of RS-485/RS-422 Standards;
- RS-485/422 Parity: Even, Odd, None, Mark and Space; Selectable;
- Driver Supported: Microsoft Windows, Linux, Mac OS and Android (32 & 64 Bits) Operating Systems;
- USB (Green) LED Indicator;
- Transmit (Blue) and Receive (Yellow) LED Indicator;
- ESD Protection: RS-232 Bus-Pin ESD Protection Exceeds ±15 kV Using Human-Body Model (HBM);
- Dimensions: 26mm x 71.6mm x 122 mm (1.03in x 2.8in x 4.82in);
- 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 PH485Ux1, verify that the package contains the following items:



### PH485Ux1: User's Manual

#### 4. TOP VIEW



#### 5. BOTTOM VIEW



#### 6. FRONT VIEW



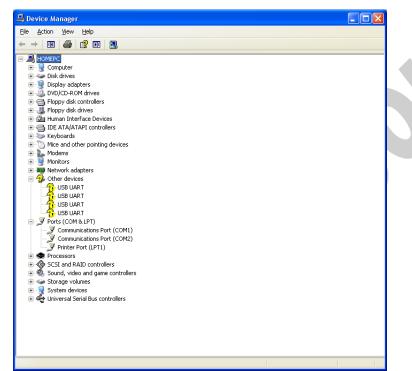
### 7. BACK VIEW



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#### 8. INSTALLATION ON WINDOWS

After you plug PH485Ux1 to USB port, you can see new device 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)

6 I B		A 1	2 11 13	
System Re		11	atic Updates	Remote
General	Compu	uter Name	Hardware	Advanced
Device Manager The Device Manager lists all the hardware devices instal On your computer. Use the Device Manager to change th properties of any device. Device Manager				hange the
Driver Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers.           Driver Signing         Windows Update				
	mpatible wit w Windows Driver §	h Windows. V connects to V	/indows Update lets //indows Update for	you set up drivers.
Hardware Pr	mpatible wit w Windows Driver <u>s</u> ofiles ardware prof	h Windows. V connects to \ <u>S</u> igning	√indows Update lets √indows Update for <u>W</u> indows I way for you to set up	you set up drivers. Jpdate
Hardware Pr	mpatible wit w Windows Driver <u>s</u> ofiles ardware prof	h Windows. V connects to V Eigning iles provide a	√indows Update lets √indows Update for <u>W</u> indows I way for you to set up	you set up drivers. Jpdate

### PH485Ux1: User's Manual

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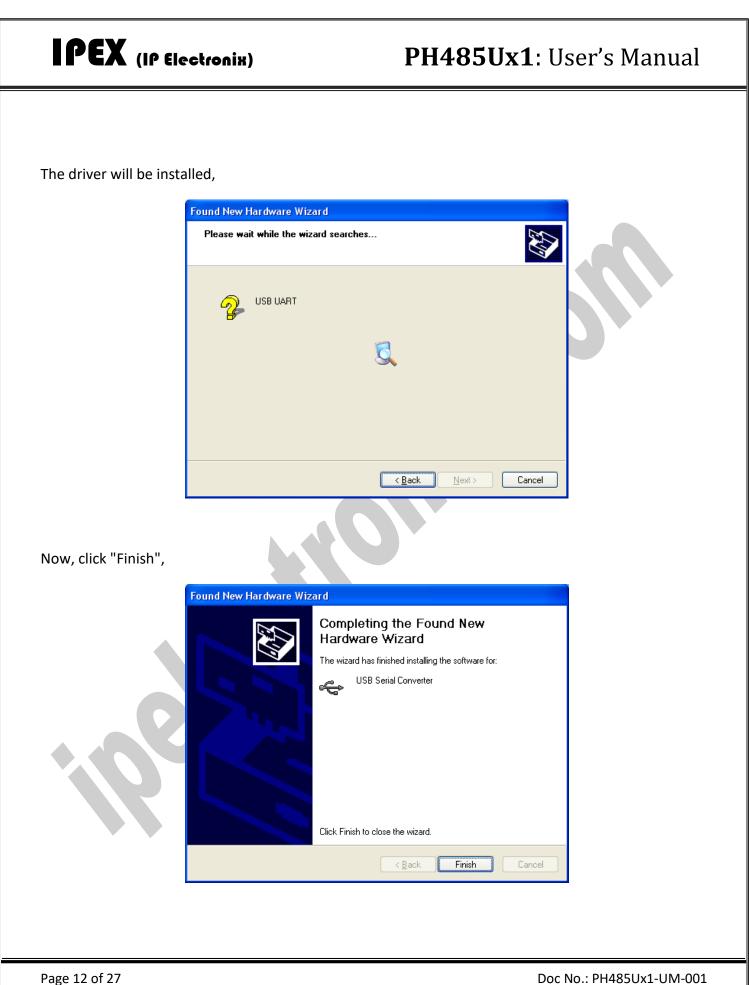
Select "Include this location in the search:" and click on "Browse",

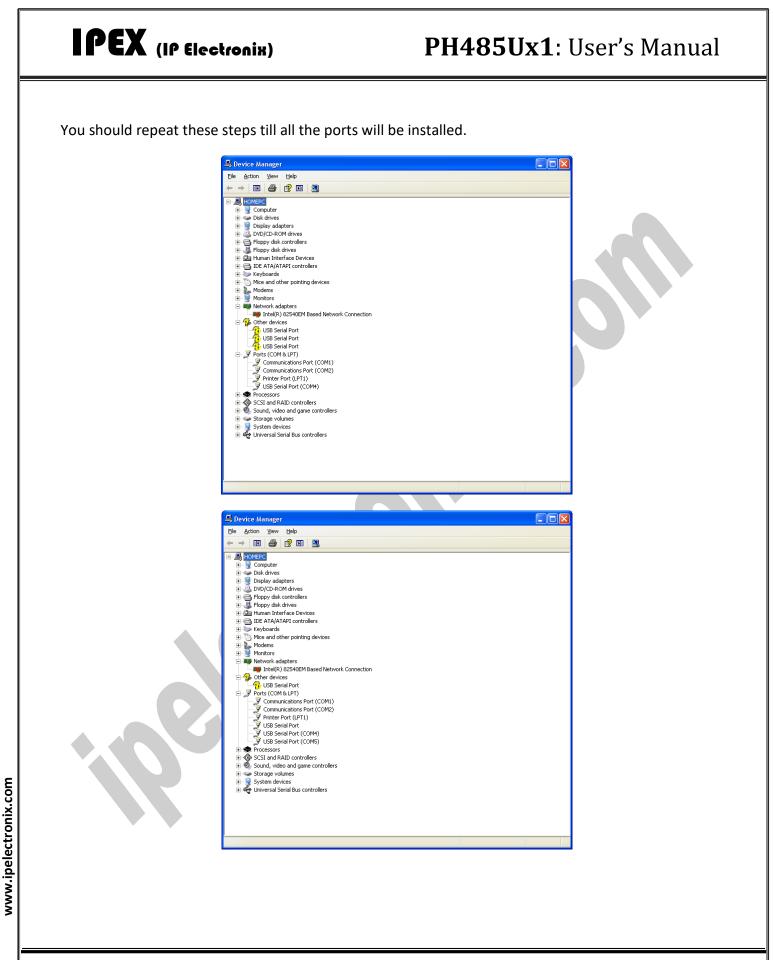
	Please choose your search and installation options.
ſ	Search for the best driver in these locations.
	Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
	Search removable media (floppy, CD-ROM)
	✓ Include this location in the search:
	C:\Drivers\ Srowse
	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 tha 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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Select "Driver Folder" on the Installation CD and click OK.

	Browse For Folder
Now, click on "Next",	Select the folder that contains drivers for your hardware.     Image: SatA3-SOFTBANK (L:)   Image: SatA4 (M:)   Image: SatA4 (M:) <t< th=""></t<>
From d Mar	
	v Hardware Wizard choose your search and installation options.
	earch for the best driver in these locations.
U	se the check boxes below to limit or expand the default search, which includes local aths and removable media. The best driver found will be installed.  Search removable media (floppy, CD-ROM)  Include this location in the search:  P:\Driver  Browse Browse
	on't search. I will choose the driver to install.
<b>F</b>	hoose this option to select the device driver from a list. Windows does not guarantee that ie driver you choose will be the best match for your hardware.
	< <u>B</u> ack <u>N</u> ext > Cancel
Page 11 of 27	Doc No.: PH485Ux1-UM-001





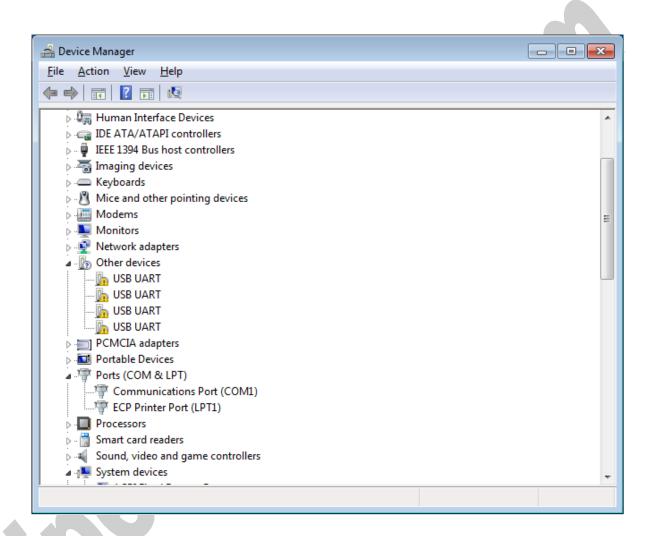
### PH485Ux1: User's Manual

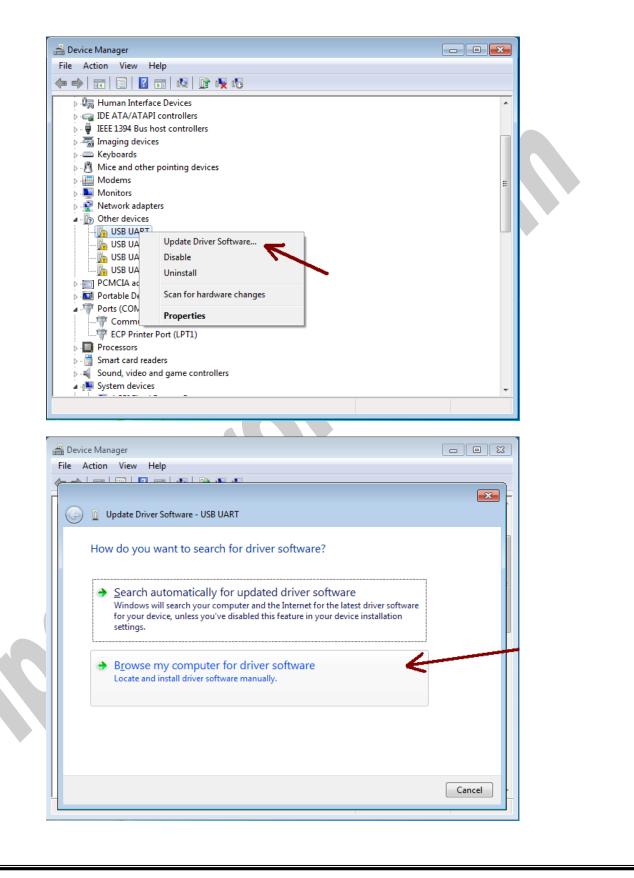
File A
$\leftrightarrow$

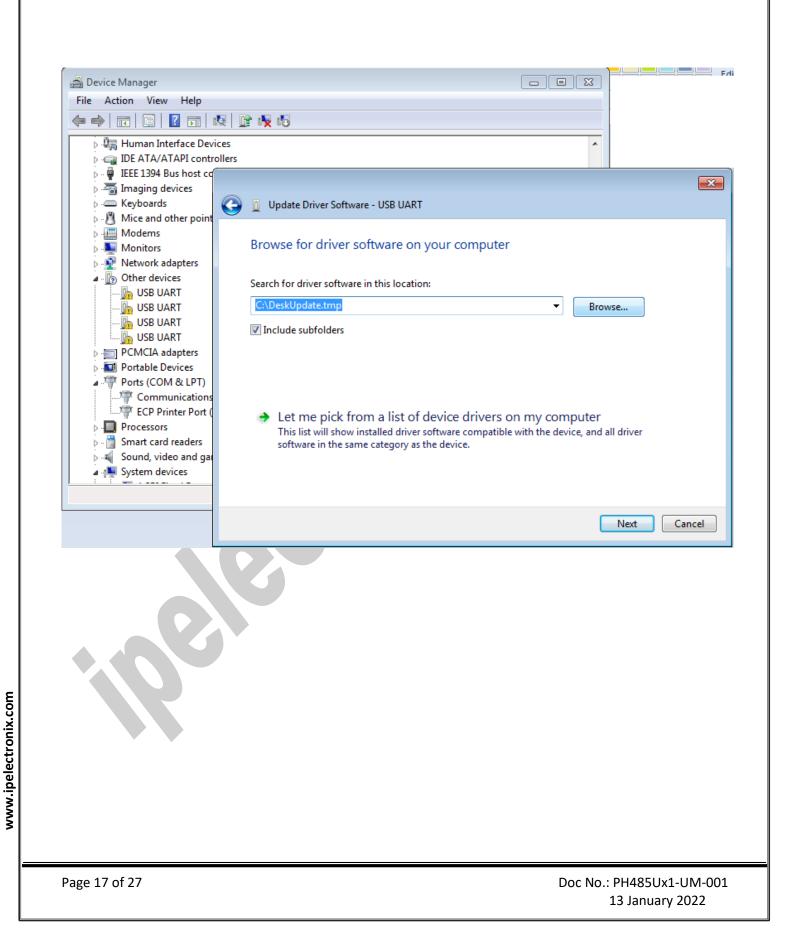
After finishing installation, you should see "USB Serial Port" in "Ports (COM&LPT)" section of Device Manager.

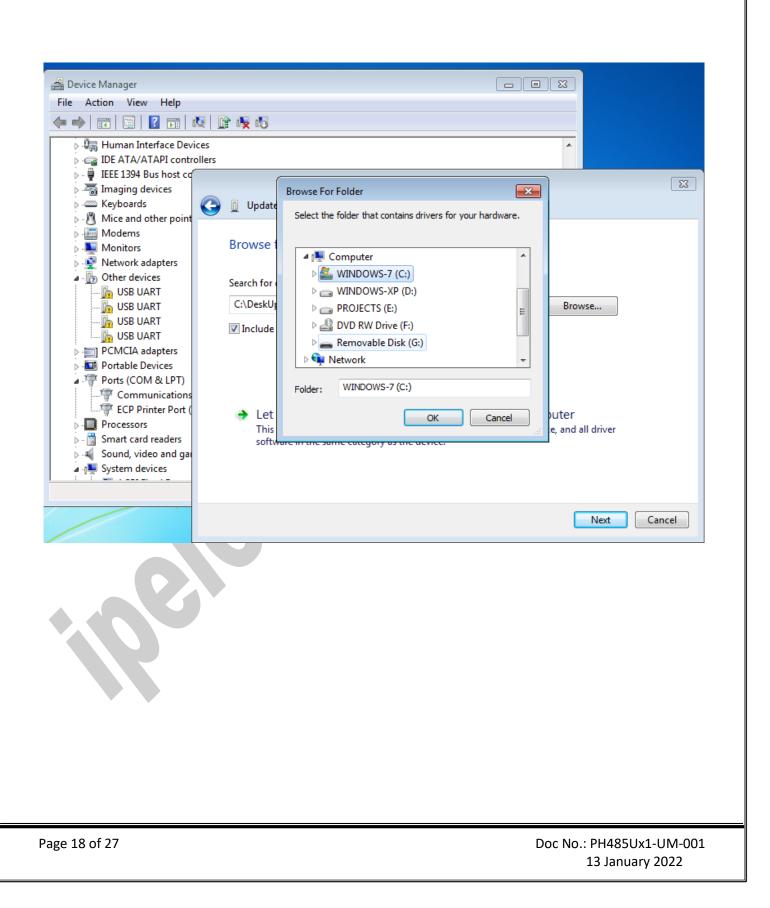
#### 9. MANUAL INSTALLATION ON WINDOWS

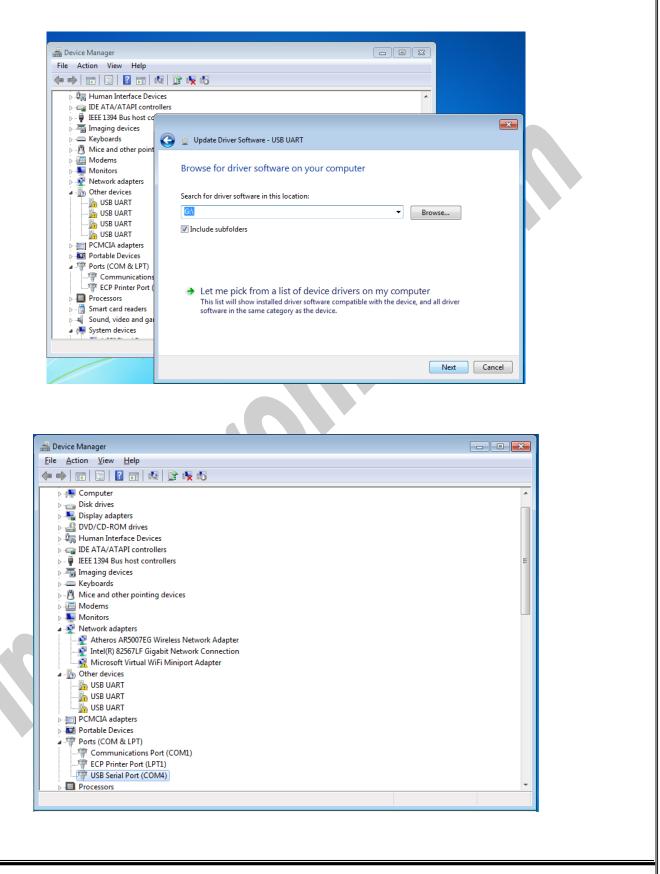
If the installation procedure is not started after you plug the device to your computer you can install the driver manually as follow:











🝰 Device Manager	
File Action View Help	
Dis Dis Dis Dis Dis Dis Dis Dis Dis Dis	ur driver software
· IDE IEE Windows has finished installing the driver softwar 	e for this device:
P ← Kep USB Serial Converter Mc Ne Ne P ← Mc Ne P ← Mc Ne	
P → PC → ■ Po → ■ Po → ■ Po → ■ Communications Port (COM1)	Close
27	Doc No.: PH485Ux1-UM-001 13 January 2022

### **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	
e Action View Help	
🔿   🖬   📴   🔽 📷   🖳 🎼 🐙 🎼	
⊳ Disk drives	
🖟 🖳 Display adapters	
▷ 🍰 DVD/CD-ROM drives	
🖂 🕼 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	
Ports (COM & LPT)	
USB Serial Port (COM4)	
USB Serial Port (COM5)	
USB Serial Port (COM7)	
Processors	
> - 🗍 Smart card readers	
Sound, video and game controllers	
⊳ 🖳 System devices	
▶ 🚽 Universal Serial Bus controllers	

# IPEX (IP Electronix) PH485Ux1: User's Manual

🚔 Device Manager		
File Action View		
Disk drives Display adapt Disk drives Display adapt Disk drives Display adapt Disk drives Display adapt Disk drives Disk dri Disk drives Disk drives Disk drives D	ers A drives ace Devices PI controllers host controllers ces er pointing devices ters ters ces k LPT) ications Port (COM1) ar Port (COM4 Port (COM5 Port (COM7 aders	
> - sound, video > - sum device		
🗟 🟺 Universal Seria	al Bus controllers	-
Opens property sheet for	the current selection.	
Select port setting:		
	JSB Serial Port (COM4) Properties	
	<u>B</u> its per second: 9600 ▼	
	<u>D</u> ata bits: <u>8</u>	
	Stop bits: 1	
	<u>A</u> dvanced <u>R</u> estore Defaults	
	OK Cancel	
Page 22 of 27		Doc No.: PH485Ux1-UM-001

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.	Cancel Defaults		
Receive (Bytes):         4096 •           Transmit (Bytes):         4096 •			
BM Options	Miscellaneous Options		
Select lower settings to correct response problems.	Serial Enumerator	V	
Latency Timer (msec):	Serial Printer		
	Cancel If Power Off		
Timeouts	Event On Surprise Removal		
Minimum Read Timeout (msec):	Set RTS On Close		
Minimum Write Timeout (msec):	Disable Modem Ctrl At Startup		

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

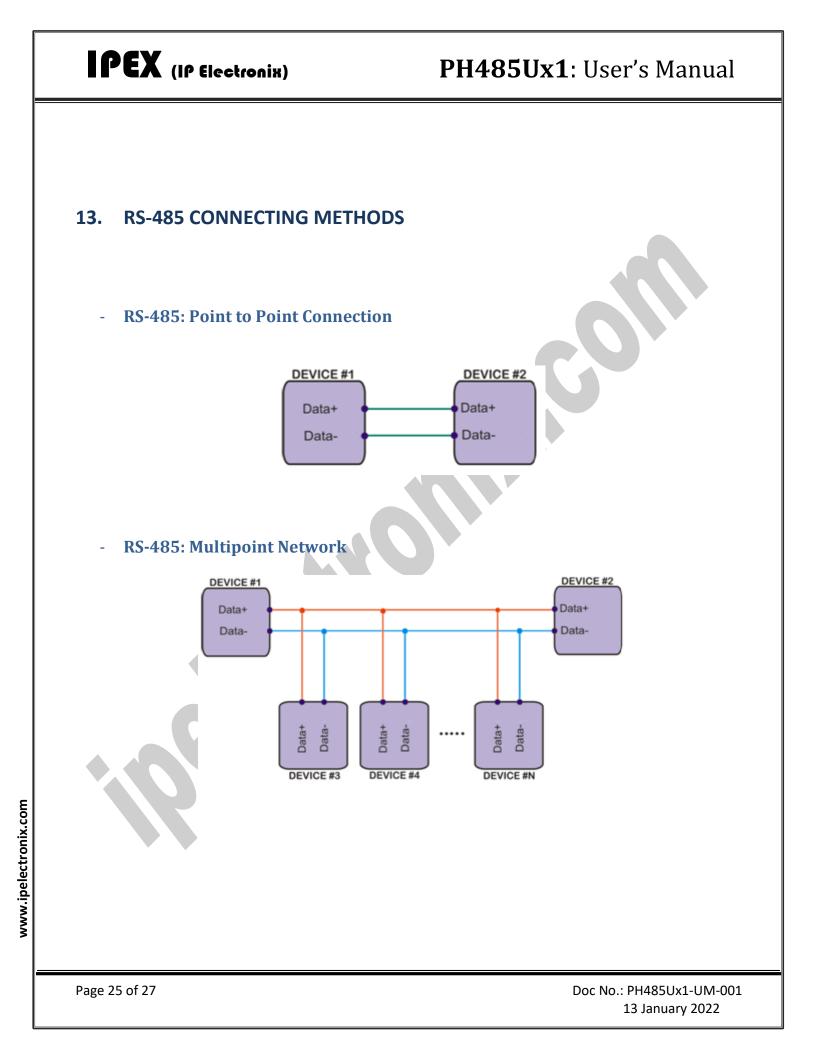
Ivanced Settings for COM4				?
COM Port Number:	00111			
COM For Chamber:	COM4	_		OK
	COM1 (in use)			
USB Transfer Sizes	COM2			Cancel
Select lower settings to corre	COM3 (in use)		d rates.	
beleet lotter betangs to corre	COM4			Defaults
Select higher settings for fas	COM5 (in use)			
beleet higher betangs for fab	COM6 (in use)			
Deseive (Butes)	COM7 (in use)			
Receive (Bytes):	COM8			
	COM9			
Transmit (Bytes):	COM10			
	COM11			
	COM12			
BM Options	COM13 COM14		Miscellaneous Options	
Select lower settings to corre	COM15 COM16		Serial Enumerator	<b>V</b>
	COM16 COM17			
	COM17 COM18		Serial Printer	
Latency Timer (msec):	COM18 COM19			
	COM19 COM20		Cancel If Power Off	
	COM20			
Timeouts	COM21 COM22		Event On Surprise Removal	
	COM22			
Minimum Read Timeout (mse	COM24		Set RTS On Close	
-	COM25			
Minimum Write Timeout (mse			Disable Modem Ctrl At Startup	
Minimum write himeout (inse	COM27			
	COM28			
	COM29			
	COM30	-		

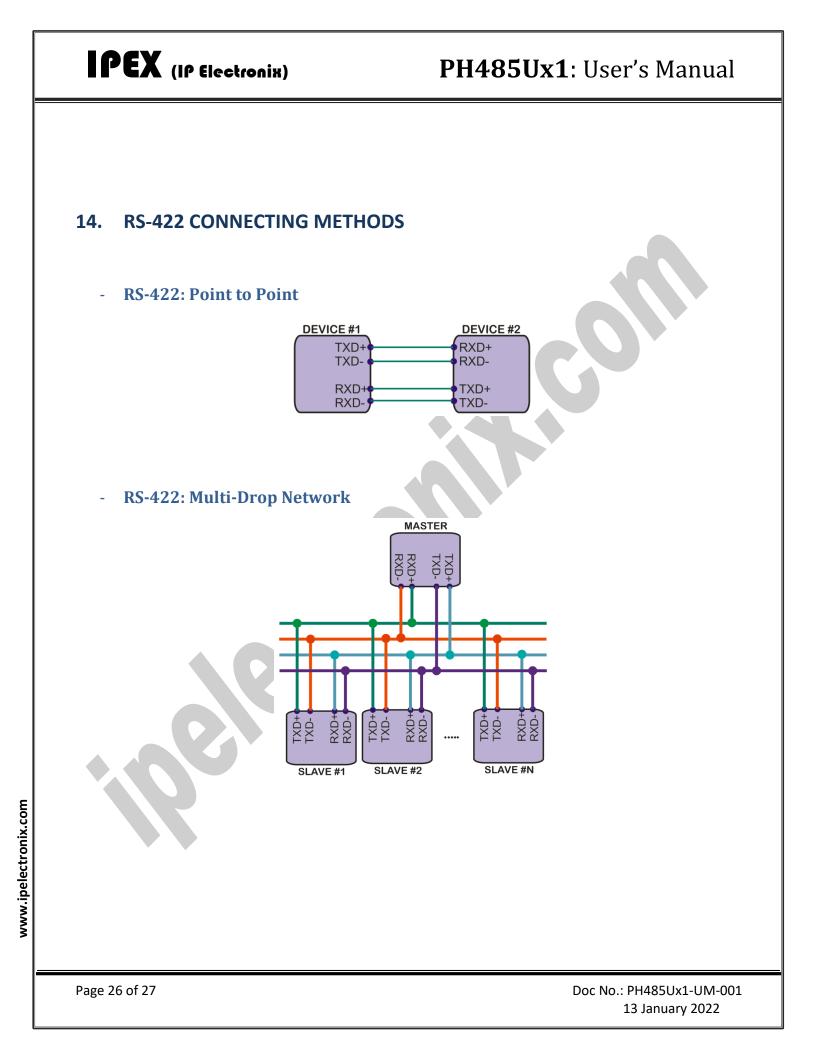
#### 11. IDENTIFYING DEVICE PORTS COM NUMBER

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-485/RS422 SERIAL PORT PIN CONFIGURATION







#### **15. 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.

#### **16. TECHNICAL SUPPORT**

If you have any technical question or need any technical support, please contact us using this Email address: <a href="mailto:support@ipelectronix.com">support@ipelectronix.com</a>.