

# A-TRACK - Your DCC Buddy

## Installing USB-to-Serial Adapter Drivers for Use with A-Track

Version 4.3

A-Track can be connected to an NCE Power Cab or Smart Booster system by using the NCE USB Interface unit, or can be connected to an NCE Power Pro system either directly from a standard Serial (RS232) port, if your PC is equipped with one, or by using any standard USB-to-Serial interface adapter.

A-Track has been tested with a variety of USB-to-Serial adapters from a number of manufacturers, and will work with devices based on chipsets from Prolific, FTDI, Silicon Labs, Keyspan, and Microchip. Connection of A-Track to an NCE Power Pro Command Station directly from a standard PC Serial Port does not require any additional software to be installed.

**Important** : If you are planning to use a USB adapter of some kind, then in almost all cases you will need to **install driver software before** you plug the device into your computer and connect to the NCE equipment.

Your USB adapter will either have been supplied with suitable driver software on a CD-ROM disk, or it will come with details of how to download the required driver software from an Internet website (usually that of the manufacturer of the particular chip or chipset incorporated within the USB adapter).

The driver software may or may not come with instructions (or they may either be posted on, or be downloadable from, the same website). While driver installations follow a fairly standard set of steps, the details can vary a lot between manufacturers. It is very important, therefore, that you read any instructions before doing anything, and then follow them exactly in the course of installation – most failed installations result from skipping a vital step, or doing things in the wrong order.

Before starting to install driver software, ensure that the active User has administrative rights (this is the normal status when the operating system is either Windows XP Home or Media Edition, and in both Windows Vista and Windows 7 Starter or Home Editions, but you may need to log on as an Administrator when using Windows XP Professional Edition, Windows Vista and Windows 7 Business, Professional, or Ultimate Editions, or Windows 8 Professional or Enterprise Edition).

As an illustration of how to proceed, three examples are given below – one for the NCE USB Interface unit, another for a Keyspan USB-to-Serial interface adapter, and finally advice on how to deal with the cheaper type of adapters which employ chipsets made by Prolific.

However, be aware that all driver software and their installation programs tend to be updated frequently, so the installation steps to be followed for the version you obtain for your adapter may not be exactly as shown in the following paragraphs.

## NCE USB Interface Unit

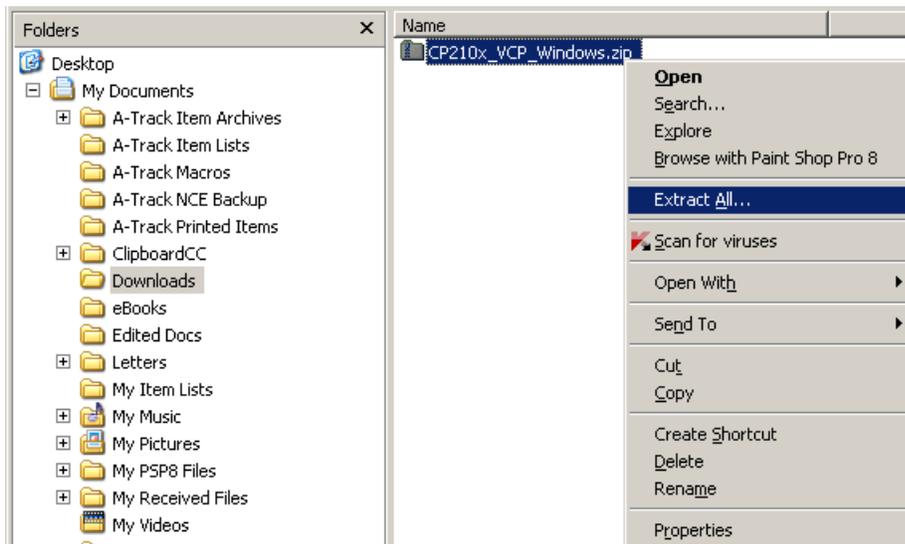
The NCE USB Interface unit is not supplied with any software, but there is a link to the required driver software from the relevant page of the NCE website at –

[http://www.ncedcc.com/component/virtuemart/?page=shop.product\\_details&flypage=flypage.tpl&product\\_id=73&category\\_id=1](http://www.ncedcc.com/component/virtuemart/?page=shop.product_details&flypage=flypage.tpl&product_id=73&category_id=1)

Clicking on the link there takes you to a Silicon Labs webpage where you should download a copy of the CP210x USB to UART Bridge VCP Driver for Windows XP/Server 2003/Vista/7/8 (v6.6.1) by clicking this time on the link labelled '[Download VCP \(3.49 MB\)](#)' in the Windows section of the page (**not** Windows 2K).

At the download prompt, click **Save** to transfer the installation file (**CP210x\_VCP\_Windows.zip**) to a suitable location on your computer. Do **not** try to Run the driver installation file directly from the Internet.

When download is complete, locate the folder into which you downloaded the installation file. The file is in a compressed or “zipped” form, so the next step is to right-click on the filename, and then click on **Extract All ...** on the pop-up menu (unless you have a third-party utility, such as WinZip, installed on your computer, in which case follow the appropriate procedure).



In the window which opens, simply follow the prompts to “unzip” the executable installation files (**CP210xVCPInstaller\_x86.exe** for 32-bit Windows systems, and **CP210xVCPInstaller\_x64.exe** for 64-bit Windows systems) into a folder (**CP210x\_VCP\_Windows** by default).

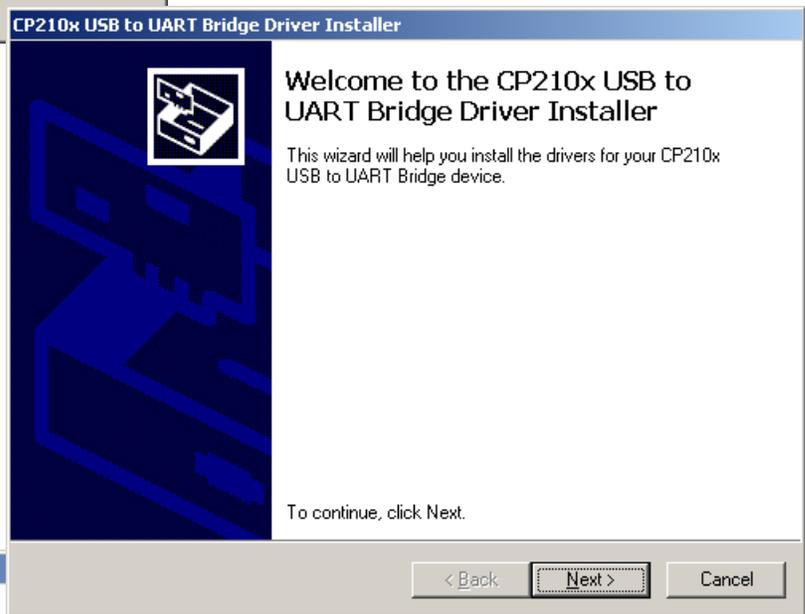
This driver is reasonably straightforward to install, and no specific installation instructions are provided. Installation follows the same steps regardless of the version of Windows running on your computer, so the following example will show the process under Windows XP.

The first step is to locate the folder into which you “unzipped” the downloaded file, open the folder, and then **double-click** on the file appropriate to your version of Windows. If you are unsure, click on Control Panel from the Start Menu, and open the System topic which will tell you whether your system is 32-bit or 64-bit. Otherwise, if you double-click on the wrong file, the installer will tell you to use the other one.

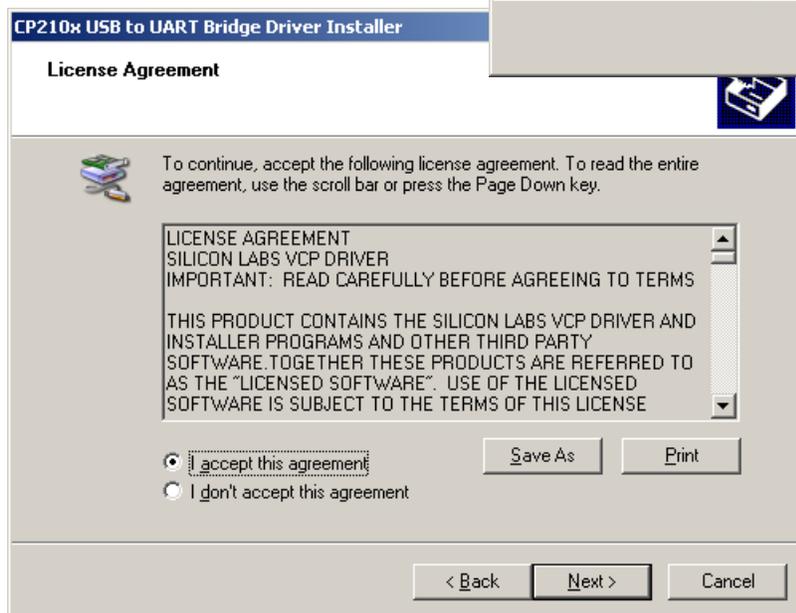
As soon as the process begins, you should ensure that all other open windows (including Windows Explorer) are closed. A warning notice may appear (depending on your security settings), requesting permission to continue –



Click **Run** to start the installation setup –



Click **Next**, and then click again to select the option accepting the terms of the licence agreement –



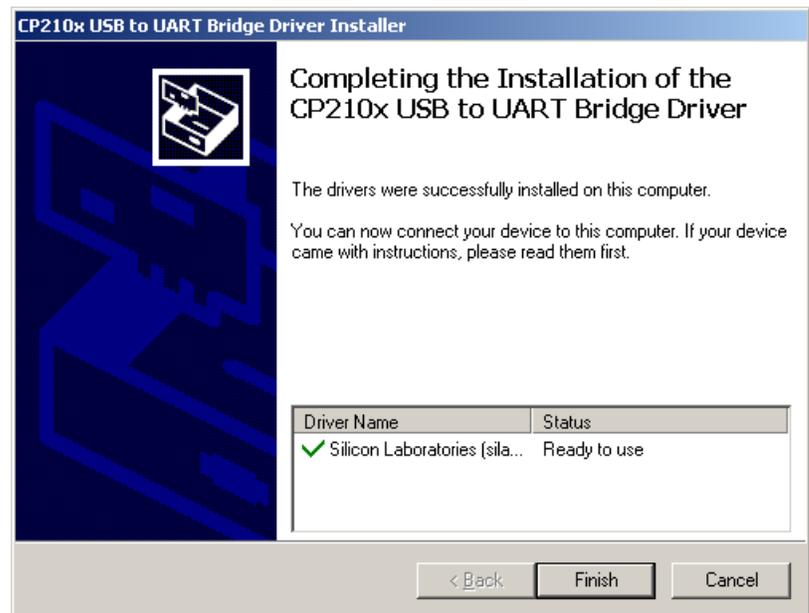
- and click **Next** again to start the installation of the driver and its support files –



Wait until the installer indicates that file transfer is complete –

- then click **Finish** to complete the initial software installation and remove the window from the screen.

You can now connect the NCE USB Interface unit to any available USB port on your computer, using a standard USB A-B cable, when you should see a set of small notices appear in the bottom right corner of the screen –



Wait until the final notice appears, indicating that the connected NCE USB Interface is ready for general use –



You can now use the NCE USB Interface unit to connect A-Track to an NCE Power Cab or Smart Booster System. A-Track does not require any detailed knowledge of how the driver software has set up communications for the NCE USB Interface, but will simply search all available communications ports for a connection to an NCE System.

Note that if, on some future occasion, you choose to connect the NCE USB Interface to a different USB port on your computer, you will see the 'Found New Hardware' notices appear again as the driver software is linked to the new USB port. After the process completes, A-Track will automatically handle any consequent changes to communications port allocations.

## **Keyspan USA-19HS USB-to-Serial Adapter**

Depending on where you obtain your Keyspan USA-19HS USB-to-Serial Adapter, it may be supplied with a CD-ROM containing the driver software documentation, or you may be directed to download the driver software from the Internet.

If you have the CD-ROM, then it is simply a matter of inserting the disk into a suitable drive on your computer, waiting for the installation program to run automatically, and then following the on-screen prompts.

Alternatively, you can download the required driver software from the **Support** page on the website of Tripp Lite, the current owners of the Keyspan range of products, at –

<http://www.tripplite.com/en/products/model.cfm?txtModelID=3914>

- then click on the Support tab.

There are links to two versions of Windows driver software on the page, one for Windows XP and Vista (Driver for USA-19HS (Windows 2000, XP, 2003 Server & Vista)) and the other for Windows 7 and Windows 8 (Driver for USA-19HS (Windows 2008 Server R2, 7 and 8)). Make sure that you click on the correct link for your computer's operating system to start the download of the driver software.

At the download prompt, click **Save** to transfer the installation file (either **Keyspan Driver for USA-19HS\_v3.7S (Windows 2000, XP, 2003 Server, Vista).zip** or **Driver-for-USA-19HS-v4-Windows-2008-Server-R2-7-and-8.zip**) to a suitable location on your computer. Do **not** Run either driver installation file directly from the Internet.

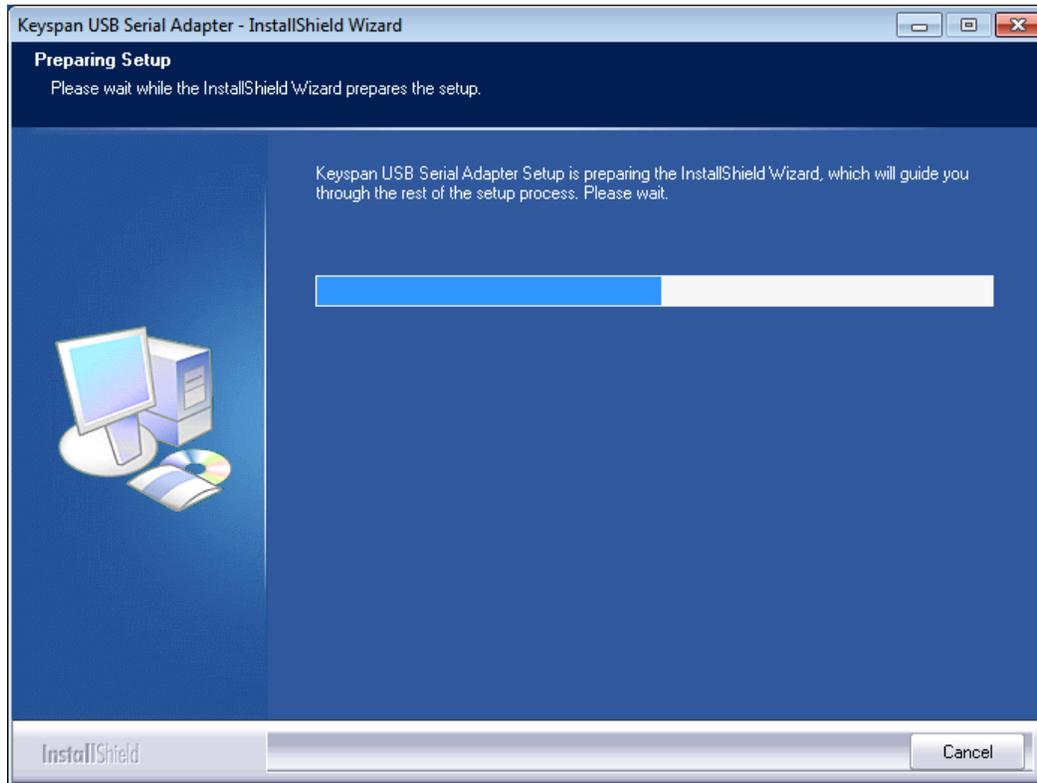
Both drivers are reasonably straightforward to install, and no specific installation instructions are provided. However, you can download a User Manual for the Adapter (which contains a paragraph on installation) by clicking on the link labelled 'Owner's Manual for USA-19HS Windows v3.7S 933021', but this document is not required for normal use of the device.

When download is complete, locate the folder into which you downloaded the installation file. The file is in a compressed or "zipped" form, so the next step is to right-click on the filename, and then click on **Extract All ...** on the pop-up menu (unless you have a third-party utility, such as WinZip, installed on your computer, in which case follow the appropriate procedure). In the window which opens, simply click on **Extract** which will "unzip" the executable installation file into the same folder (either **Windows (2000, XP, 2003 Server, Vista)\_v3.7S.exe** or **Windows 2008 Server R2, 7 and 8\_v4.exe**).

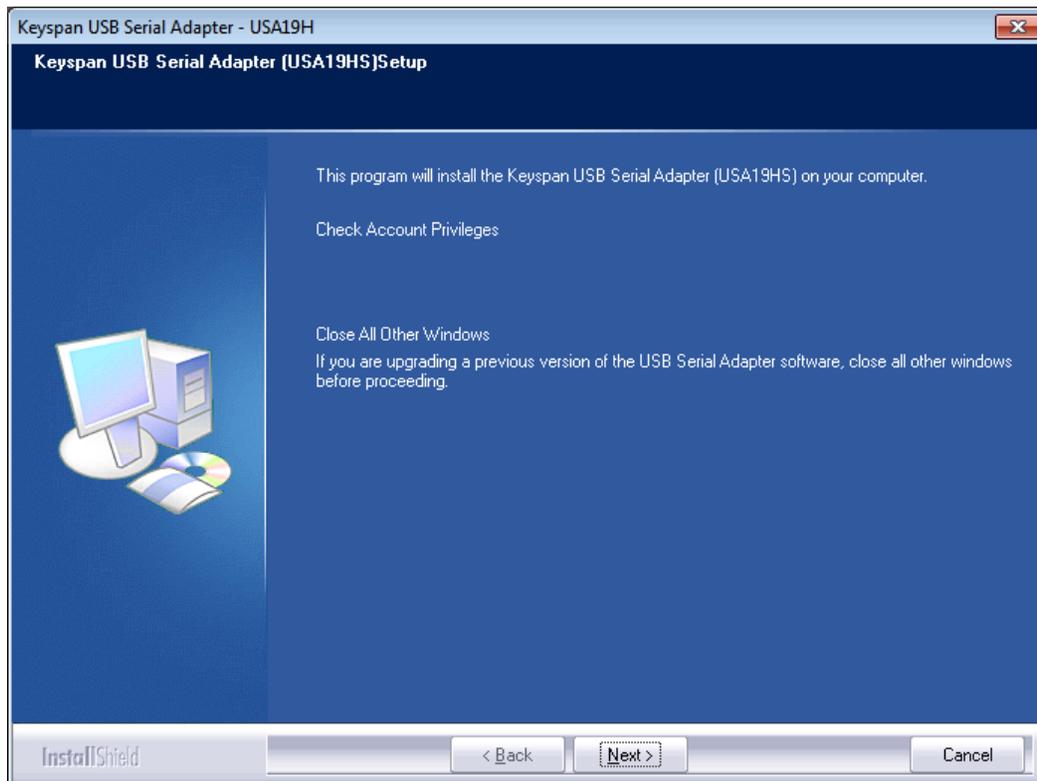
Installation follows the same steps regardless of the version of Windows running on your computer, so the following example will show the process under Windows 7.

**Double-click** on the unzipped file to start installing the driver. As soon as the process begins, you should ensure that all other open windows (including Windows Explorer) are closed. The normal

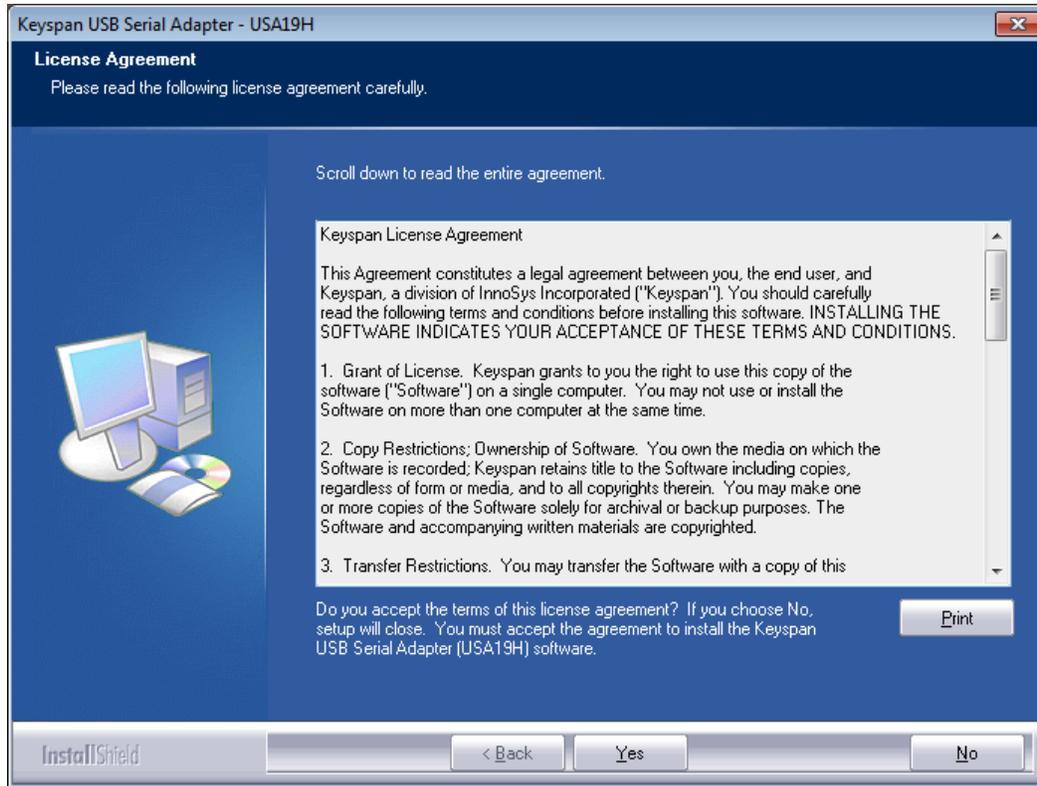
Windows 7 warning notices will appear (depending on your security settings), requesting permission to run the installation file – click **Yes** to continue and allow the installer to begin –



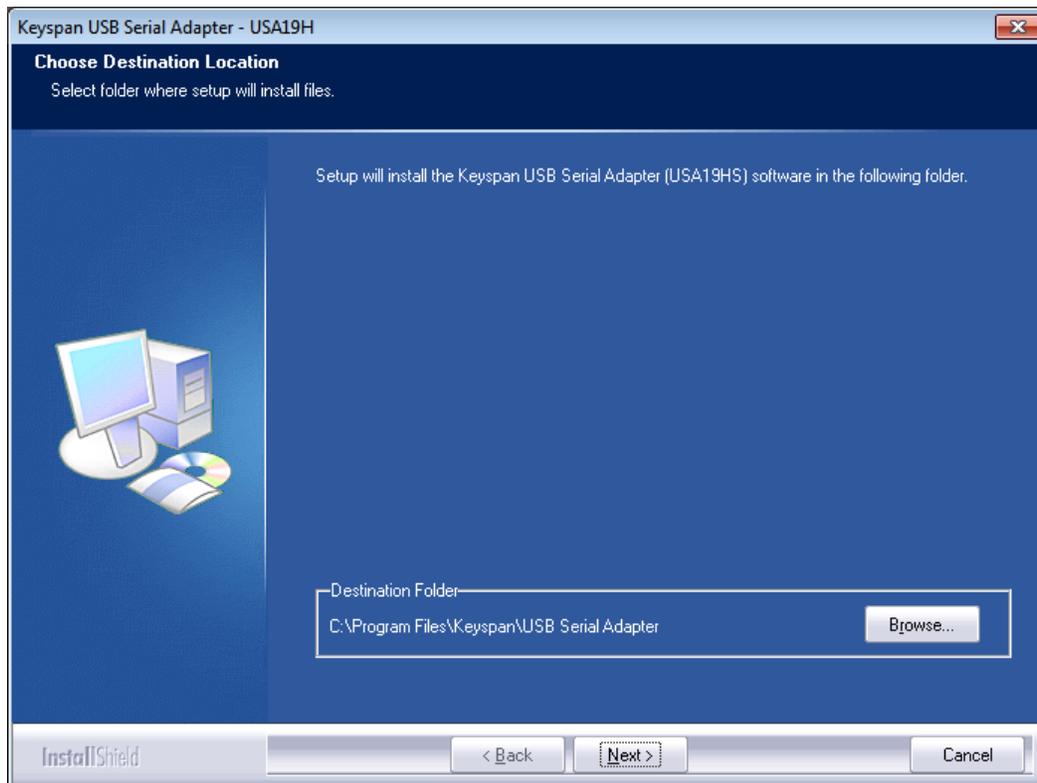
Once initial setup is complete, there is a warning to close all other windows –



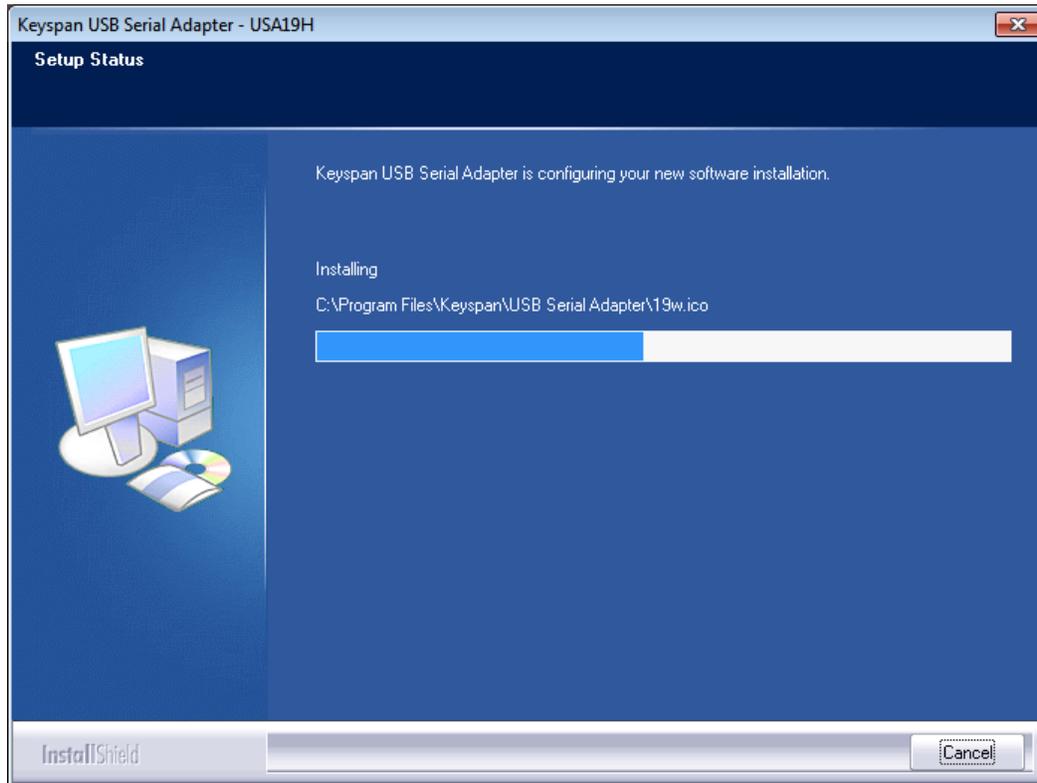
After doing so (if not done already), click **Next** to continue, and view the licence agreement –



Click **Yes** to agree to the terms of the software licence and continue –



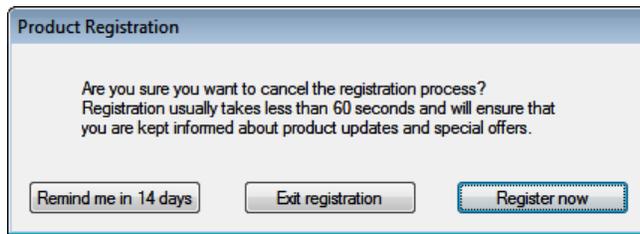
Click **Next** to accept the selected destination folder, after which the installation of the driver files will proceed. You are strongly recommended **not** to change the destination folder since you may prevent Windows finding and running the correct driver when the Keyspan USB-to-Serial Adapter is eventually connected to the PC.



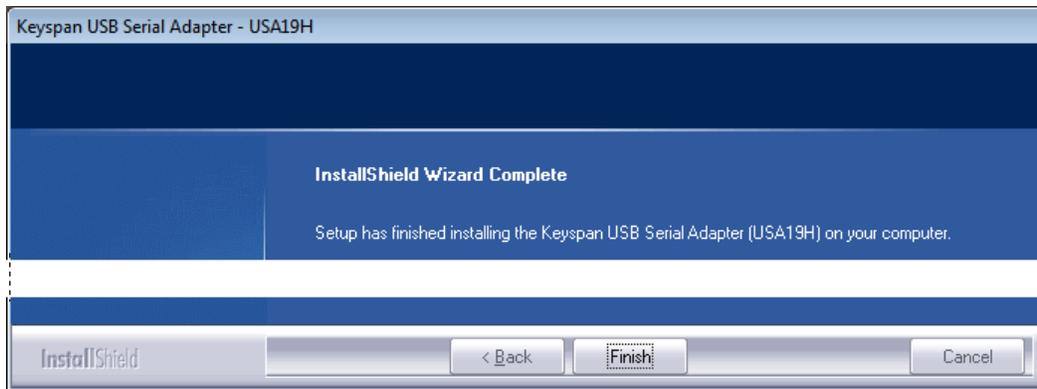
When installation is complete, you will be offered the opportunity to register your copy of the driver. Registration is unnecessary for proper operation of the driver and adapter, so it is your own choice whether to agree or not –



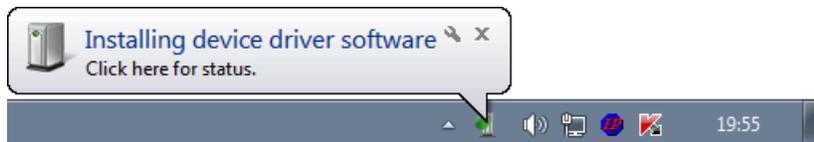
If you choose to click **Cancel**, then you will be given a further set of options, and again you can follow your own preferences –



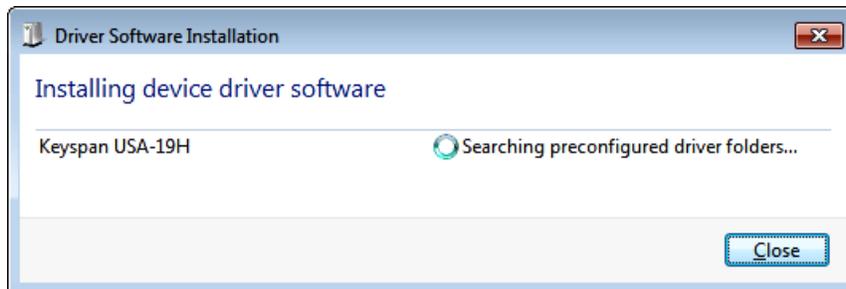
Once registration is accepted or disposed of, there is a final window displayed where you simply click **Finish** to complete the driver software installation –



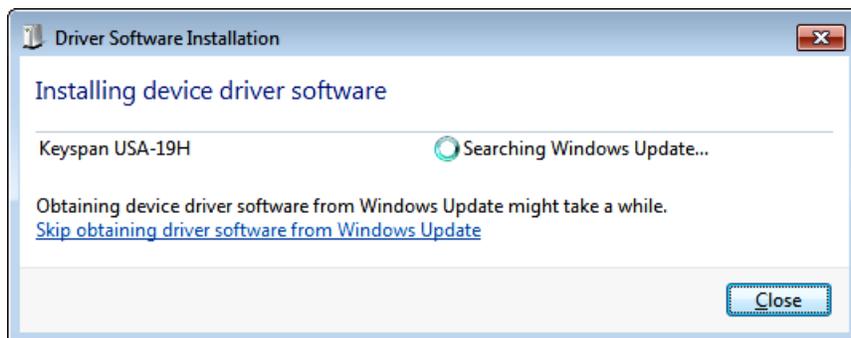
You can now connect the Keyspan USB-to-Serial Adapter to any available USB port on your computer, using a standard USB A-B cable, when you should see a small notice appear in the bottom right corner of the screen –



With Windows 7 you have the choice of simply doing nothing, and waiting for final driver installation to complete in its own time, or you can speed the process up a little by clicking on the notice to show the current installation status –



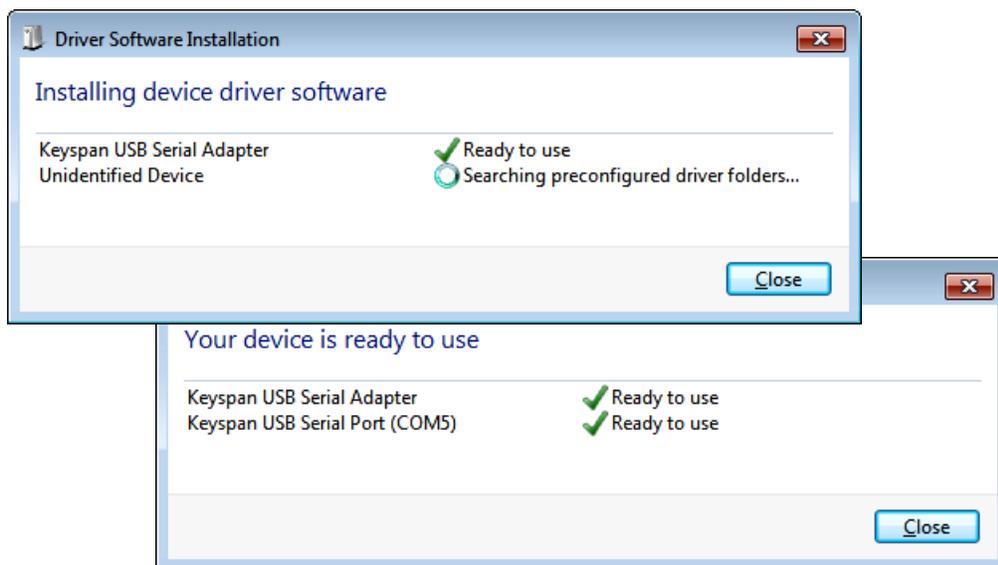
After a short time, you should see a message indicating that Windows Update is being accessed –



If you have downloaded the latest version of the Keyspan driver software, then this step is unnecessary, so click the link to '**Skip obtaining driver . . .**', then confirm this in the window which appears, by clicking **Yes** -



Wait patiently while Windows returns to searching the preconfigured driver folders, and completes the installation of both parts of the driver software -



Click **Close** to finish the installation and remove all windows from the screen.

You can now use the Keyspan USB-to-Serial Adapter to connect A-Track to the RS232 Serial Computer Interface (Serial Port) of an NCE Power Pro Command Station. A-Track does not require any detailed knowledge of how the driver software has set up communications for the Keyspan

USB-to-Serial Adapter, but will simply search all available communications ports for a connection to an NCE System.

Note that if, on some future occasion, you choose to connect the Keyspan USB-to-Serial Adapter to a different USB port on your computer, you may see the 'Installing device driver software' notice appear again as the driver software is linked to the new USB port. After the process completes, A-Track will automatically handle any consequent changes to communications port allocations.

## USB-to-Serial Adapters using Prolific Chipsets

Many of the cheaper USB-to-Serial adapters on the market are based around chipsets manufactured by Prolific, and users often encounter problems when attempting to install and use such adapters.

When this happens to users who are taking their first steps into the software world, in order to get their PC connected to their railroad control equipment, they tend to pin the blame on the adapter, although this is not always justified.

In most cases the problem is software related - either the driver package is poorly put together (a particular problem with many of the very cheap adapters), or the embedded drivers are incomplete or out-of-date, or fail to load from the supplied installation program, or the drivers are not installed **before** plugging in the adapter.

Problems can also arise in the cheapest adapters from the incorporation of counterfeit chipsets which will fail to operate even when the latest genuine Prolific driver software is installed. In this case, the only solution is to scrap the defective hardware and invest in a better-quality adapter.

Assuming that you are having problems, but do have an adapter with a genuine chipset from Prolific, then you should be able to get it operating properly by following the steps outlined below.

Your first action should be to obtain an up-to-date copy of the Prolific driver installation package from a reliable source such as -

<http://plugable.com/drivers/prolific/>

Here, the currently-available file, **PL2303 Prolific DriverInstaller v1.8.19.zip**, contains both the driver installer and documentation

Alternatively, if you want to check that this is the most up-to-date version of the driver (or one which will run on older PC systems), you can visit the Prolific download webpage itself at -

<http://www.prolific.com.tw/US/CustomerLogin.aspx>

- where you need to log in using 'GUEST' (**not** your e-mail address) as both user name and password, then click the link labelled 'PL2303 USB to Serial Drivers' to access a list of available driver software, including the latest versions for all Windows systems.

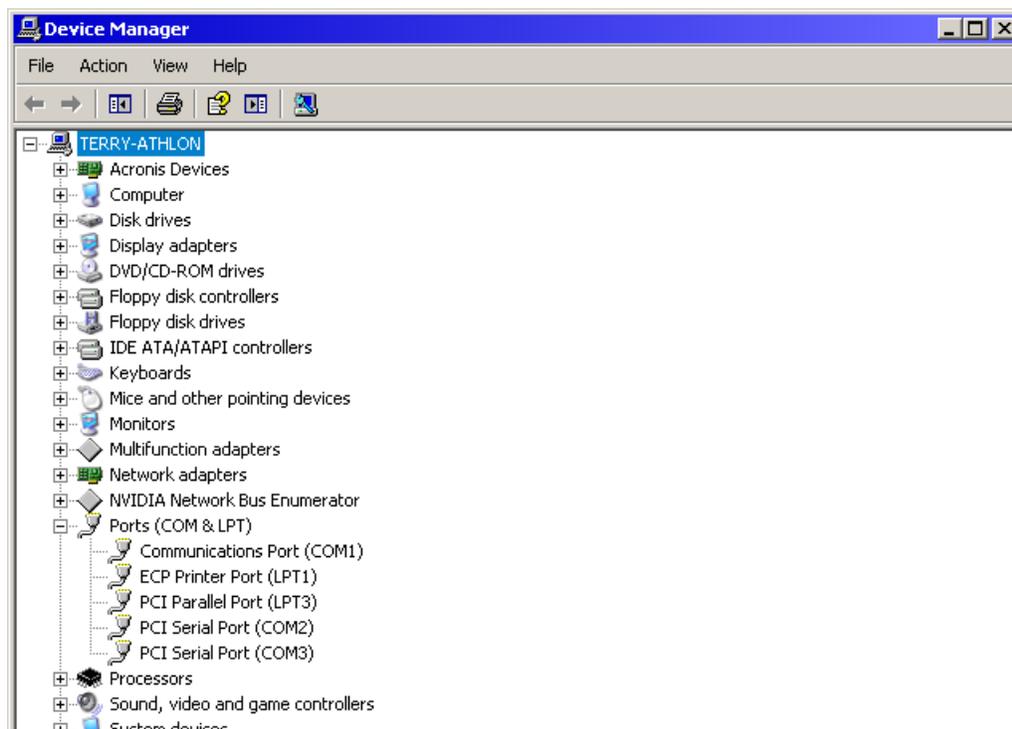
However, **before** attempting to run your newly-downloaded, and saved, driver installer (and certainly do **not** attempt to Run any driver installation file directly from the Internet), you need to get rid of any current installation which is not working properly, since this is likely to prevent installation of the correct driver.

Ensure that the active User has administrative rights (this is the normal status when the operating system is either Windows XP Home or Media Edition, and in Windows Vista or Windows 7 Starter or Home Editions, and Windows 8 Standard Edition, but you may need to log on as an

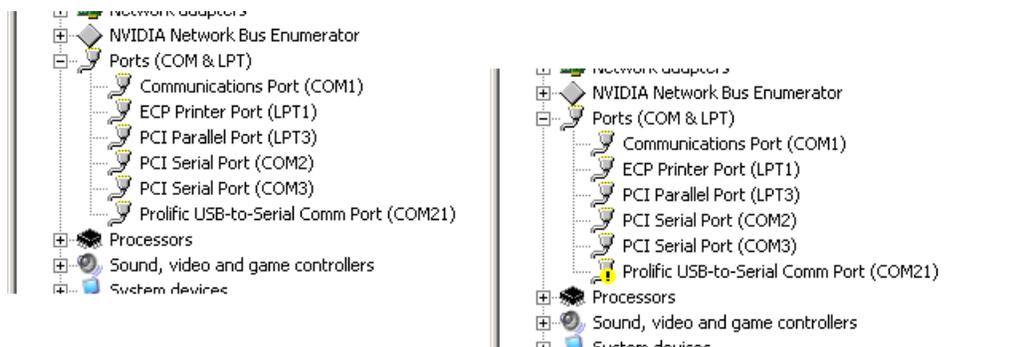
Administrator when using Windows XP Professional Edition, or Windows Vista and Windows 7 Business, Professional, or Ultimate Editions, or Windows 8 Professional Edition).

Also make sure that the USB-to-Serial adapter which is giving trouble is **unplugged** from your computer at this point. Now open **Device Manager**, by going to Control Panel from the Start Menu or Start Screen and double-clicking on System. Alternatively, for all systems except Windows 8, **right-click** on Computer on the Start Menu, then click on Properties. In Windows 8, from the Start Screen or Desktop, **right-click** in the bottom, lefthand corner of the screen and then click on Device Manager on the pop-up menu.

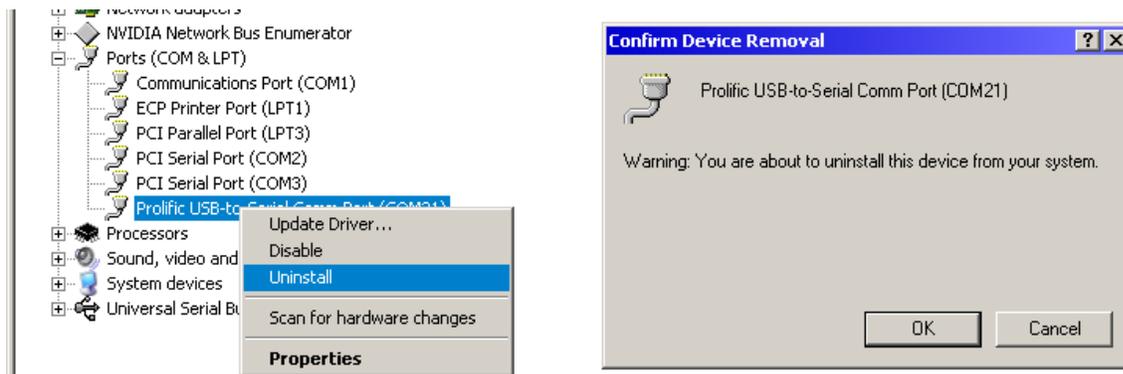
If you have opened System in Windows Vista, 7, or 8, you should then double-click on Device Manager in the top-left corner of the window. In Windows XP you first need to click on the Hardware tab, and then on the Device Manager button. In all cases, a window showing all installed devices should open, where you can **double-click** on **Ports (COM & LPT)** to view the installed serial ports, as shown below –



Now **plug** your problem adapter into the USB port on your computer that you normally use. The Device Manager display will update itself automatically, and you should see an additional serial port, with or without a yellow 'fault' flag, as shown below –



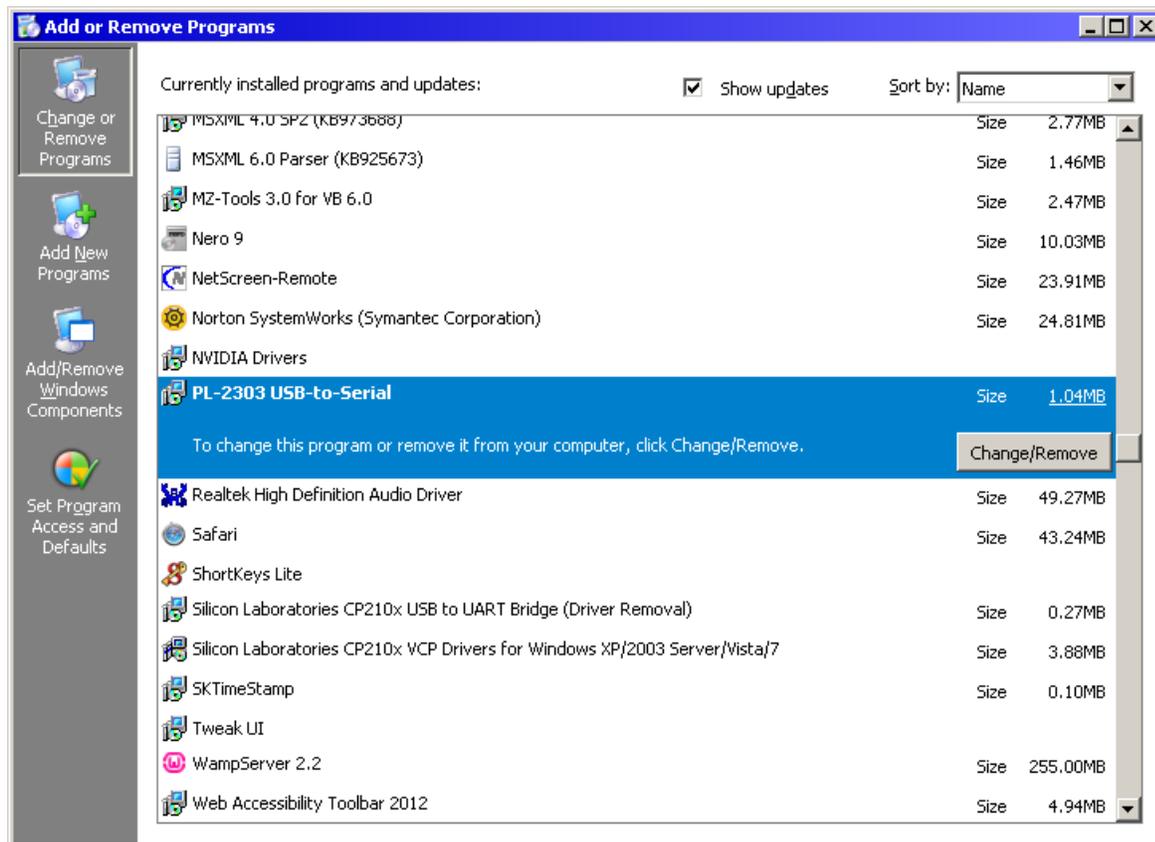
Assuming that the adapter shows up as above (and with 'Prolific' in the name), **right-click** on its entry in the list, and then click on **Uninstall** on the pop-up menu which appears, followed by **OK** on the Confirm Device Removal notice –



When the entry in the port list disappears, **unplug** the Prolific USB-to-Serial adapter and set it aside.

The next step is to remove any installed, but non-operational, driver software by opening Control Panel again and then double-clicking on Programs and Features (or Add or Remove Programs in Windows XP). Wait patiently while the list of installed software is constructed, then scroll down to locate the driver software that you originally installed for your Prolific adapter.

Click on the appropriate list entry, and then click either Change/Remove, as shown for Windows XP below, or Uninstall at the top of the window for the other varieties of Windows –



Follow any displayed prompts to complete the uninstallation procedure, including a restart of your computer if necessary.

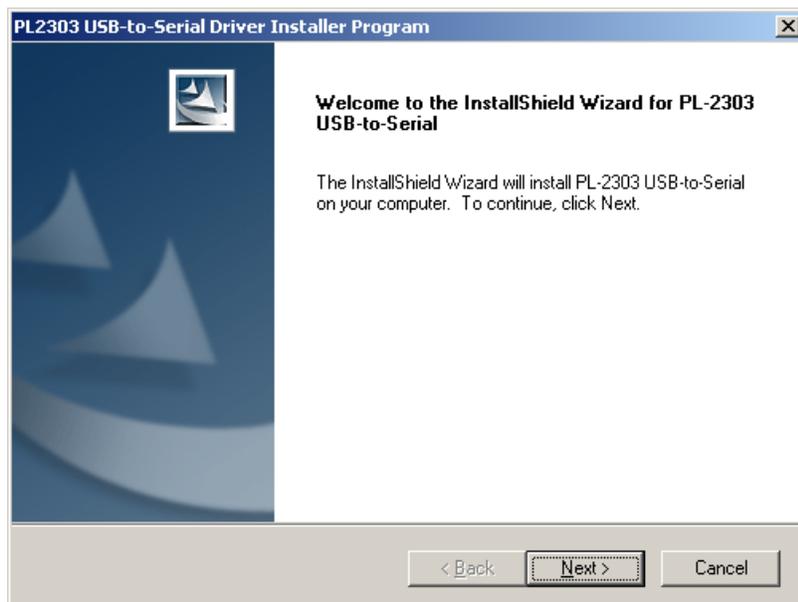
Now, locate the Prolific driver installation file which you downloaded previously, preferably into its own separate folder. The files contained in the recommended download need to be “unzipped” on your PC before installation, by a right-click on the filename, and then a click on **Extract All ...** on the pop-up menu (unless you have a third-party utility, such as WinZip, installed on your computer, in which case follow the appropriate procedure). In the window which opens, simply click on **Extract** which will “unzip” the executable installation files into the same folder as the original downloaded file.

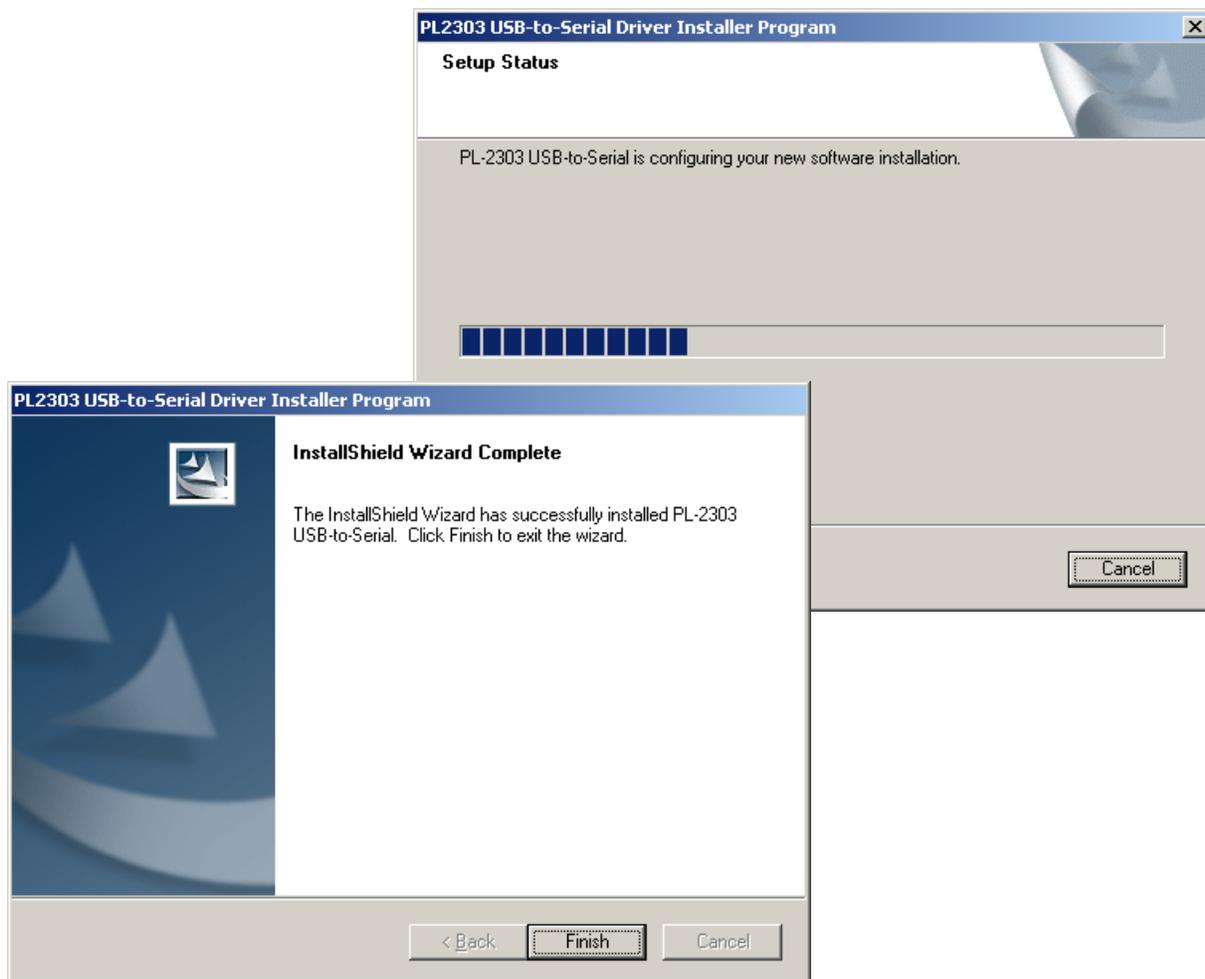
Prolific include useful documentation (PL2303 Windows Driver User Manual v1.8.0.pdf) with the driver software, covering installation instructions for various versions of Windows together with some notes on problems which can arise. However, installation is very straightforward, and you can proceed without needing to refer to the documentation.

Double-click to run the installer file, **PL2303\_Prolific\_DriverInstaller\_v1.8.19.exe**, ensuring that all other open windows are closed. A warning notice, such as that shown below, may appear (depending on your security settings), requesting permission to continue –



Click **Run**, then follow the displayed prompts up to **Finish**, to complete the driver installation –





You can now plug the Prolific USB-to-Serial back into whichever USB port on your computer you wish to use, when you should see one or two small notices appear in the bottom right corner of the screen, with a final notice indicating that the connected adapter is ready for general use –



If you wish, you can open Device Manager again and check that the Prolific adapter appears correctly in the list of serial ports. With the serial end of the adapter connected to your NCE Power Pro Command Station, A-Track will automatically identify the correct COM port and establish communication. However, if you are using a JMRI software application, then you will need to take note of the COM port number corresponding to the Prolific adapter (as shown by Device Manager) and select the correct port in the JMRI setup window.

Note that if, on some future occasion, you choose to connect the Prolific USB-to-Serial adapter to a different USB port on your computer, you will see the 'Found New Hardware' notices appear again as the driver software is linked to the new USB port. After the process completes, A-Track will automatically handle any consequent changes to communications port allocations (although you will again have to change any JMRI settings manually).

## Links to USB-to-Serial Interface Vendors

The webpage links given in this section represent the best available information, at the time these Notes were written, for those adapter manufacturers whose devices are known to work with A-Track. However, like all information posted on the Internet, the locations of these webpages are subject to change without notice.

If any link no longer appears to function, and you are unable to find the data you require, then please contact the A-Train Systems Support webpage at <http://www.a-train-systems.co.uk/support.php>, or by e-mail to [support@a-train-systems.co.uk](mailto:support@a-train-systems.co.uk), and I will make every effort to assist.

The same advice applies if you are experiencing any difficulties in using A-Track with a USB-to-Serial adapter which uses a chipset from a manufacturer other than those listed below. Although A-Track ought to work with any adapter which sets up a Virtual Communications Port (**VCP**) in your computer, it is, unfortunately, impossible to guarantee that this will always be the case.

### **Silicon Labs** (for NCE USB Interface)

Driver and documentation available from –

<http://www.silabs.com/products/mcu/pages/usbtouartbridgevcpdrivers.aspx>

Required files are from the 'Download for Windows XP/Server 2003/Vista/7/8 (v6.6.1)' section of the page. The download contains drivers for both 32- and 64-bit systems, but needs to be 'unzipped', as explained earlier in these Notes.

### **Keyspan**

Driver and documentation available from –

<http://www.tripplite.com/en/products/model.cfm?txtModelID=3914>

Ensure that you select the files which match the correct version of Windows for your computer – one version is for Windows XP and Vista, another for Windows 7 and 8.

### **Prolific** (chipset often found in cheaper adapters)

Driver and documentation available from –

<http://plugable.com/drivers/prolific/>

The required file, **PL2303 Prolific DriverInstaller v1.8.19.zip**, contains both the driver and documentation, but needs to be 'unzipped', as explained earlier in these Notes.

If you encounter any difficulties with this version of the driver (with older PC systems), you can visit the Prolific download webpage itself at –

<http://www.prolific.com.tw/US/CustomerLogin.aspx>

- where you need to log in using 'GUEST' as both user name and password, then click the link labelled 'PL2303 USB to Serial Drivers' to access a list of available driver software.

## FTDI

Driver and documentation available from –

<http://www.ftdichip.com/Drivers/VCP.htm>

Ignore the links in the table of available drivers which just list version numbers. Locate the link labelled '**setup executable**', shown under Comments at the end of the Windows row in the table, then click on the link to download the driver installer file, **CDM20830\_Setup.exe**.

Click the link to 'Installation Guides' (near the top of the webpage), which will take you to –

<http://www.ftdichip.com/Support/Documents/InstallGuides.htm>

- from where you can download the document appropriate to your version of Windows.

Note that it is not strictly necessary to follow the rather complicated installation procedure detailed in the FTDI Installation Guides. You can simply run the downloaded **CDM20824\_Setup.exe** file **before** plugging the adapter into a USB port. This should open a couple of Command Prompt windows and install the driver, similarly to the processes described for other drivers earlier in these Notes. You can then plug the adapter into a PC USB port and wait briefly while the driver is linked to the port.

## Microchip (MCP2200)

This device differs from other adapters in that it uses the drivers already built into the Windows operating system rather than requiring custom software to be loaded. All that is required is a driver information file which is available from –

<http://www.microchip.com/wwwproducts/Devices.aspx?dDocName=en546923>

Scroll down to the Documentation and Software section, open it, and click on the [MCP2200 Windows Driver & Installer](#) link to initiate download of the file **MCP2200 Windows Driver 2013-02-21.zip** which needs to be "unzipped", as explained earlier in these Notes. When you have extracted the contents of the downloaded 'zip' file, locate the required information file, **mchpcdc.inf**.

Next, plug the adapter into one of the computer's USB ports, and wait for it to be recognised.

In Windows XP, the Add new Hardware wizard should open automatically. Decline the invitations to let Windows search the Internet for a driver, or install a driver automatically, and proceed to the stage where you can browse for the required driver. Locate the folder containing the **mchpcdc.inf** file and click **Next** to complete the process.

A different approach is required in Windows Vista, 7 and 8. Plug the adapter into a USB port and wait for the driver installation to fail. Close the failure notice then access Control Panel from the Start Menu. Open Device Manager and wait for the list of devices to appear. Open the Ports entry and right-click on the MCP2200 entry (marked with a yellow exclamation icon). Click on 'Update driver software' from the pop-up menu then, in the window which opens, select 'Browse my computer for driver software'. Browse to the folder containing the **mchpcdc.inf** file and click **Next** to complete the process.

**Note** : Microchip have recently provided executable driver installation files for both 32-bit and 64-bit Windows systems as part of the downloaded 'zip' file, and you can simply run the correct one of these to install the correct Windows drivers, rather than the manual method described above.