TROUBLESHOOTING GUIDE FOR USB TO SERIAL PORT ADAPTERS

Purpose of this document:

This document is provided to assist partners and installers with the configuration of the Irisys range of products which require a serial connection for communications. A serial port, or COM port, is sometimes required to facilitate the installation and configuration of Irisys counters and Thermal Imagers. Unfortunately, many laptops, sensibly expected to be utilized for this task, do not come with standard COM ports these days - instead, USB ports are prevalent. A USB to Serial port adapter is therefore a convenient, and often cheap, way of bridging the gap. Many of these adapters will work 'out of the box', with no problems, but some will not, and it is for these adapters that this document is intended to assist with.

Terminology used in this document:

RS232 Serial Port – This is a type of communication characterised by the 9 pin D-type connector found on many devices. Not to be confused with the larger VGA monitor connectors (15pins) or parallel printer port connectors (25pins).

USB port – Increasingly popular connection type intended to replace many varieties of serial and parallel (printer) ports. Universal Serial Bus.

Counters – In this case, we are referring to the Irisys range of counters which are mounted on the ceiling and are typically configured using a serial RS232 connection (although IP connection is also an option on some models).

USB to Serial Adapter – Typically a short cable, with a USB plug at one end and a serial 9 pin D-type connector at the other, used to convert serial cable connections into USB connections for when native serial ports are not available.

Device Driver – A small piece of software which provides the interface between the operating system and the hardware

Using a USB to Serial Port Adapter for the First Time:

Most USB to serial adapters will require a Windows driver in order to function correctly. Without the driver installed it will not operate at all.

Some USB adapters will be recognised automatically by Windows and the driver will be installed from the Windows built in drivers, but some will come with a CD containing the driver which must be loaded before connecting the USB adapter to the laptop. Always check the USB adapter documentation to confirm the driver installation routine. If Windows installs a generic driver then you should try to locate a specific driver from the manufacturer if available, as these will be written specifically for the adapter you have, and therefore should be more reliable.

You should also test the USB adapter before requiring it for real on a customer site. Depending on what you are trying to configure some will utilize the serial handshaking protocol and some will not. The Irisys range of people counters, for example, do not utilise this protocol and can be considered streaming serial devices. Usually you will need to optimise the USB driver for devices which do not utilize the handshaking protocol, see problems below.

Irisys supplied USB to Serial Adapters

If ordering the IWC3062 or IWC3052 an FTDI manufactured USB to serial adapter will also be supplied. This is known to work correctly with Irisys serial adapters and is always the recommended USB adapter. Always ensure that you are using the latest drivers available from the Irisys Partner Portal – currently v2.08.24.

Possible Problem – Poor Performance or No Connection:

When configuring an Irisys people counter using the Irisys Setup Tools, the laptop is reading in the streamed data from the counters array output. Depending on the buffer settings of some USB adapters, this may appear slow or jumpy. Occasionally the array view and/or the setup software functions can appear to 'hang' or freeze momentarily.

In the most extreme cases, the software won't connect at all. You should; check the connections, verify that the driver has been installed correctly, and then check the recommendations below.

Depending on the model of adapter, you may be able to change a setting for the device in order to fix these problems. The default settings for the internal buffer of the USB adapter can be set too high which causes the intermittent operation and can prevent the connection from being established.

To fix these problems you must modify the device settings for the serial to USB adapter, by lowering the buffer setting value. To do this:

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1. Firstly, make sure that the USB to serial adapter is connected to your laptop and is powered (if required).
2. Now, go into the Windows 'Control Panel' and select the 'System' icon (Start menu -> Control panel -> System).
3. Now select the 'Device Manager' option as shown in Figure 1. This may look slightly different, depending on your version of Windows. On Windows XP, Device Manager is found on the Hardware tab. (Note: on Windows 7 you can also access the Device Manager directly from the Control panel).

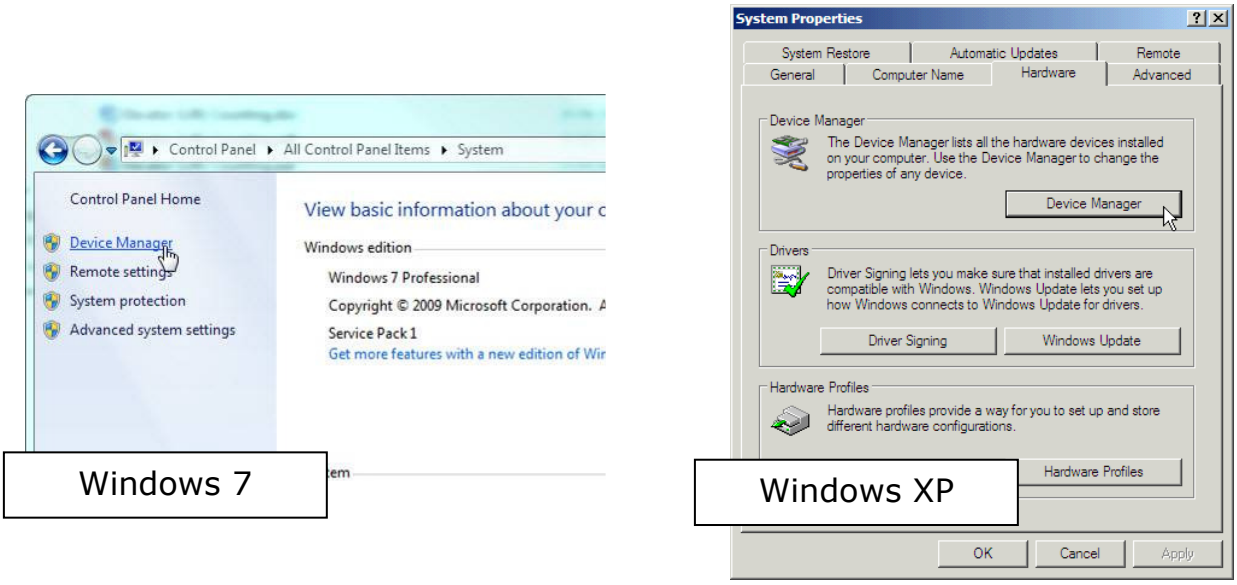

Figure 1

4. Once the 'Device Manager' window has opened, navigate through all the devices to locate the relevant USB serial port; this will be under 'Ports (COM & LPT)' as shown in Figure 3. If you do not see an entry for a USB Serial Port under the Ports sub heading, you should check to make sure that the drivers are installed properly. Under 'Universal Serial Bus controllers' there should also be an entry for a USB Serial Converter. If there are any devices listed with exclamation marks on them (Figure 2) then the driver is NOT installed correctly and in these cases you must correct the issue before you can continue.

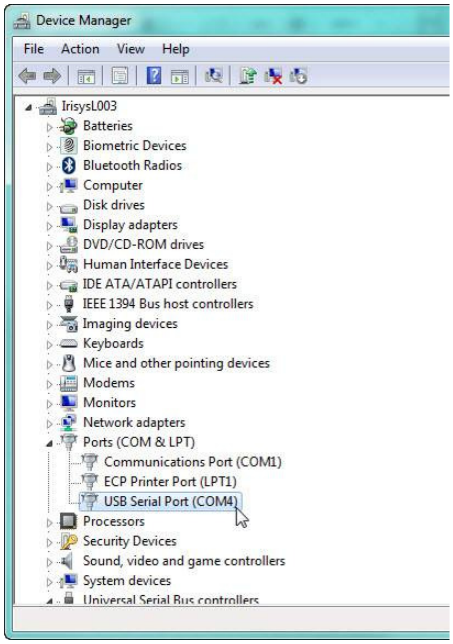

Figure 3

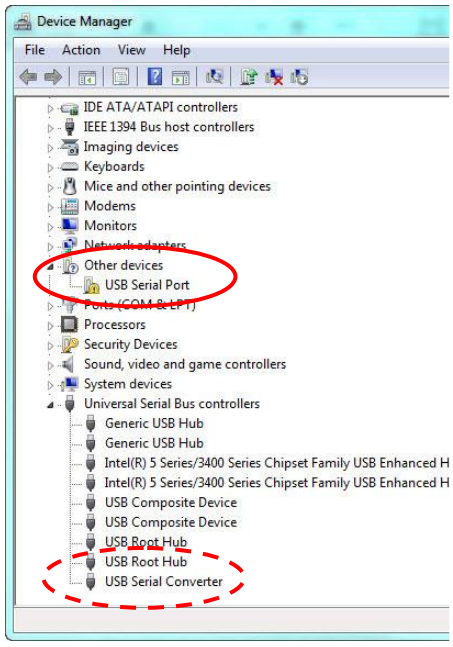

Figure 2

5. Double click the 'USB Serial Port' entry and the Properties window for that device will open (Figure 4). If you have multiple USB Serial Port entries, and you do not know which one has the problem, then you may need to follow the instructions below for every entry in turn, until you find the problem device.

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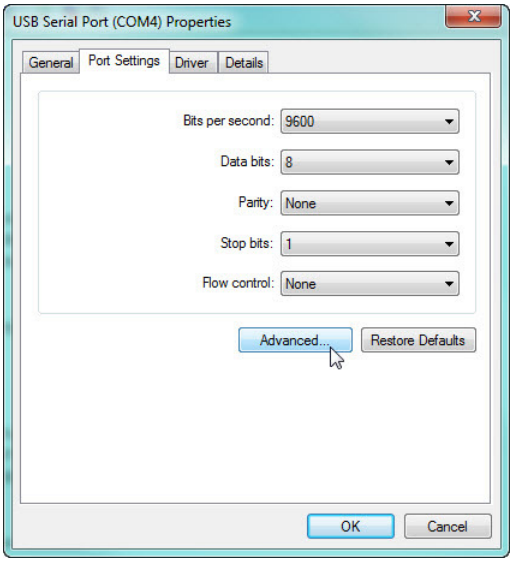

Figure 4

6. Now click the 'Advanced' button to open the Advanced Settings window as shown below in Figure 5. If you do not have an advanced button then this particular adapter cannot be made to work in this case.

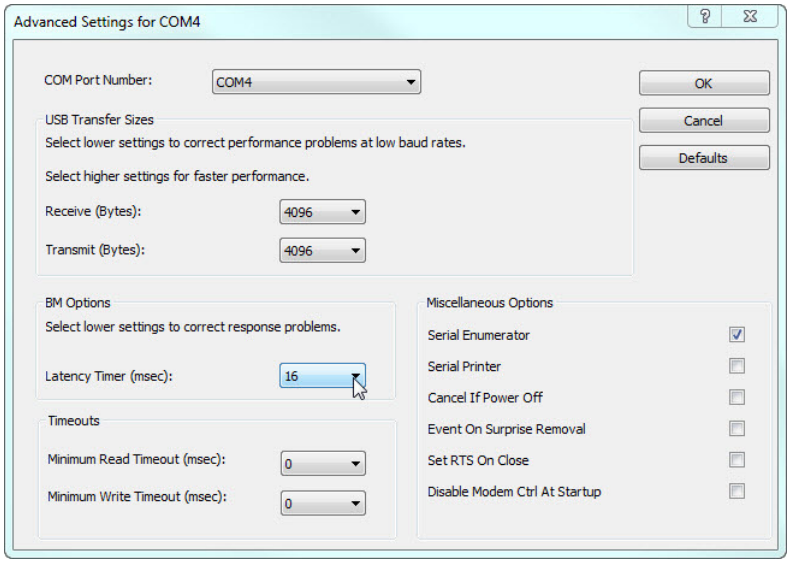

Figure 5

7. Look for the Latency Timer setting, and lower this to 1 (or the lowest selectable value) and then click 'OK'.

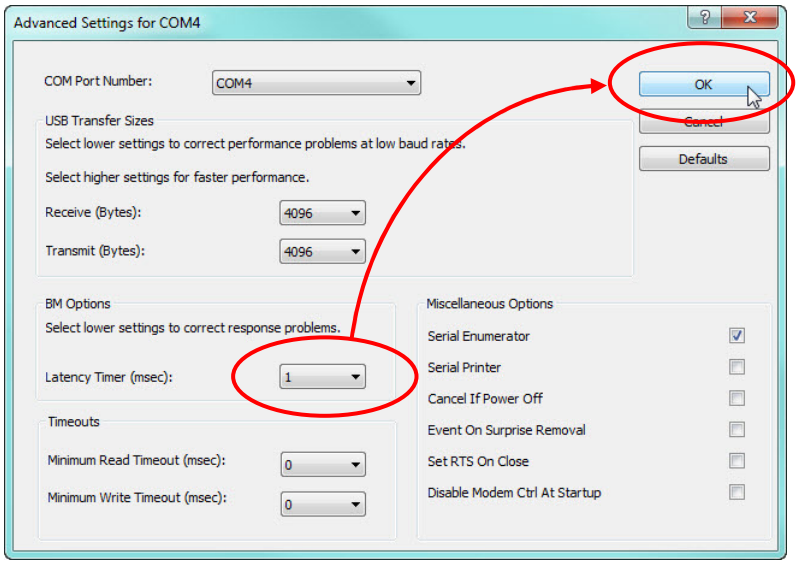

Figure 6

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Note: If your particular USB adapter does not have a Latency Timer setting; it may be called something else such as 'Buffer timing' or 'Buffer size', for example. Some USB adapters do not have this setting at all and are preset internally to a value which cannot be changed. With these types, you will not be able to fix this particular issue, although you may be able to download a more recent driver from the manufacturer's website, which does allow you to change the setting. Alternatively, you could try a USB adapter from another manufacturer, or a different type of serial adapter as described below.

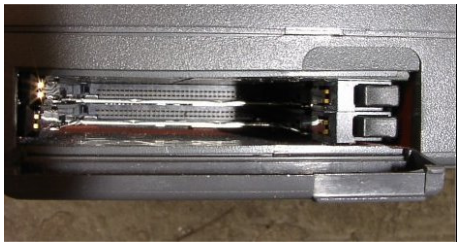
Alternative Types of Serial Adapters:

If you are having trouble with a particular USB to serial adapter, then one from a different manufacturer may be better. Alternatively, you could try a PCMCIA card (PC Card) serial adapter as these seem to be very reliable, although slightly higher in price.

Dual RS232 serial adapter PCMCIA cards are also available for connection to two devices at once.

To use these types of adapter, your laptop must have a PCMCIA card slot. This is quite a large slot but could be hidden by a fold down cover or be protected with a blanking plate inserted in it to. Most, larger, laptops will have this kind of slot but smaller, "net", laptops, may not.

Some laptops may even have two slots; one above the other.



Installing PCMCIA Drivers:

PCMCIA cards of any type usually require a number of different drivers. Firstly, the operating system itself needs a driver to recognise the PCMCIA Card slot. Sometimes this particular driver will be automatically installed by Windows but sometimes you must manually install the drivers yourself – refer to your laptops manual for guidance. As long as the slot is correctly identified by Windows, you can then install the specific drivers for the card itself. As with USB adapters, PCMCIA cards may use Windows built in generic drivers, but it is always recommended to use manufacturer specific drivers for your card, if available. Search the manufacturer's website to see if any newer drivers for your card are available for download. Once everything is installed there is very little configuration required to get the card working with your particular device. Refer to your PCMCIA card manual if you are having connection issues.

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