

## Technical Note 11

# Connecting to Win-Situ with a USB-to-Serial Adapter Cable

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### Introduction:

In-Situ's instruments connect to computers through a 9-pin serial port. However, many new laptops and notebooks only have USB ports. In such cases, a third-party USB-to-Serial adapter cable may be used. There are many manufacturers of USB-to-Serial adapter cables and they all work in a similar way. The USB-to-Serial adapter cable will have a CD or a disk that contains the necessary Driver to be installed to the computer. The Driver creates a virtual COM Port, which can be used by other software.

There are a few steps required in order for the USB-to-Serial adapter cable to work correctly. The correct Driver, dictated by the computer's operating system, must be installed **first**, and then the correct COM Port setting must be selected in Win-Situ software.

Be aware that Win-Situ 4 software, for use with miniTROLL, TROLL 9000 and TROLL 9500, does not have the ability to communicate via USB-to-Serial adapter cables. Win-Situ 4 users who wish to create a virtual COM Port on a laptop with no serial port are advised to use a Serial Card. A Tech Note describing how to use the Serial Card is available at [www.in-situ.com](http://www.in-situ.com).

The following sections contain the basic steps to set up the USB-to-Serial adapter cable correctly. Also included is an explanation of how to use the new COM Port to connect to an In-Situ instrument via Win-Situ software.

### Installation:

1. Upon inserting the USB-to-Serial adapter cable into a USB port, the "Found New Hardware Wizard" appears.
2. If the Wizard asks: "Can Windows connect to Windows Update to search for software?" then proceed to Step #3. If not, then proceed to Step #4.
3. Select "No, not this time", and click "Next"
4. The Wizard will ask: "What do you want the wizard to do?"
5. Select "Search for a suitable driver for my device (recommended)".
6. The Wizard states: "Optional search location" and lists a series of elective boxes. Select any of the appropriate check boxes. If using a disk, select disk, or if using a CD, select CD-ROM Drive. If the Driver is saved in a folder, select Specify Location.
7. Click "Next", and the computer will locate the appropriate driver.
8. Once the Driver is installed, proceed to the Usage with Win-Situ section.

## Verify Installation and Port Assignment:

If any doubt exists to whether the driver is installed correctly, or if the “Found New Hardware Wizard” doesn’t appear upon first inserting the USB-to-Serial adapter cable into the USB port, the user can check the COM Port settings or update the USB-to-Serial adapter cable Driver through the Device Manager. It is necessary to know the COM Port assignment for the USB-to-Serial adapter cable because this Port number is needed when connecting via Win-Situ.

Follow these steps:

1. Navigate to the Control Panel.
2. Select “System”.
3. For Windows NT, 2000, and XP, select the “Hardware” Tab and click on “Device Manager”. For Windows 95 and 98, select to the “Device Manager” Tab.
4. Expand out the “Ports” by selecting “+”.
5. If the Driver was installed properly, there will be a COM port setting stating “...USB to Serial Cable”. If this message is present, stop and proceed to Usage with Win-Situ section. If this message is not there, proceed to the next step.
6. If under Ports or in Other Devices there is “?USB Device” or “!USB Device”, then the user will have to Update the Driver. Proceed to the next step.
7. Highlight the unknown USB Device, and right-click to “Properties”.
8. Select the Driver Tab, and click on “Update Driver...”
9. Then click “Next”.
10. It will state: “What do you want Windows to do?”
11. To install the driver, proceed to step 5 in the Installation section above. The user may choose the more advanced option, however, the user will need to Browse to the exact folder and choose the correct driver to install manually. The explanation of installing the driver through this advanced method can be

complicated and is beyond the scope of this note. Consult with the manufacturer of the USB-to-Serial adapter cable for additional assistance to install the Driver through the advanced option.

## Connect Via Win-Situ 5:

Once the appropriate Driver is installed, the COM port settings need to be changed in Win-Situ 5.

Follow these steps:

1. Open Win-Situ 5.
2. Edit the existing connection strategy by clicking on the “Preferences” Menu and selecting “Comm Settings”.
3. Use the pull-down menu to select the appropriate COM Port Number. See Verify Installation and Port Assignment section if the COM Port assignment is unknown.
4. Use the pull-down menu to select the desired baud rate. A baud rate of 19200 is typical.
5. Close the Communication Settings Window.
6. Click on the gold-colored socket icon in the lower-right corner to connect to the device. A connection may also be initiated by Clicking the “File” menu and selecting “Connect”.

## Connect Via Win-Situ 2000:

Once the appropriate Driver is installed, the COM port settings need to be changed in Win-Situ 2000.

Follow these steps:

1. Open Win-Situ 2000.
2. A new connection setting can be added by highlighting “Home” and clicking “Add”, or the existing connection can be edited by highlighting the “Com ...” line and clicking “Edit”.
3. Select a “Direct” connection with “One” device and Click “Next”.

4. Select the appropriate COM Port in the pull-down menu. Typically it is COM 4, COM 5, or COM 7. See Verify Installation and Port Assignment section if the COM Port assignment is unknown. Then Click "Next".
5. Change the baud rate if needed. A baud rate of 19200 is typical. Otherwise select "Next".
6. Change the connection name if needed. Click to insert a check in the elective box that states: "Connect and find devices on Finish". Then select "Finish".
7. Win-Situ will now attempt to connect to the instrument.
6. Select the "Port Settings" tab.
7. Click on "Advanced..."
8. "COM Port Number" will be listed. Select a COM Port from 1 to 4. COM 4 is recommended. If COM Ports 1 through 4 are already assigned to another device, then consult with an IT professional to reassign the COM Port settings.
9. Proceed to Step 3 in the Connect Via Win-Situ 2000 section above.

### Summary:

A USB-to-Serial adapter cable can be used to create a virtual COM Port on any computer that has a USB port.

Unfortunately, Win-Situ 4 software does not have the ability to communicate via USB-to-Serial adapter cables. Win-Situ 4 users who wish to create a virtual COM Port on a laptop without a serial port are advised to use a Serial Card. A Tech Note describing how to use the Serial Card is available at [www.in-situ.com](http://www.in-situ.com).

The two most common mistakes are not installing the Driver properly to the computer and not editing the connection settings in Win-Situ. Once the above steps are completed, the USB-to-Serial adapter cable will be able to connect to In-Situ instruments that use Win-Situ 2000 and Win-Situ 5 software.

### Exception for Win-Situ 2000:

Win-Situ 2000 can use a USB-to-Serial adapter cable, but the software only uses COM 1 through COM 4 Ports. As stated earlier, most USB-to-Serial adapter cables will register as COM 4 or higher once the Driver is installed. Instruments such as the Troll 4000 and Hermit 3000 must connect via Win-Situ 2000 software; there is no forward-compatibility with newer versions of Win-Situ software. A USB-to-Serial adapter cable that registers a COM Port 5 or higher can have the COM Port settings edited in the Device Manager under the Port Settings Tab.

The following directions apply only for Windows 2000 and Windows XP:

1. Install the Driver for the USB-to-Serial adapter cable, as directed above in either the Installation section or the Verify Installation and Port Assignment section above.
2. Navigate to the Device Manager, as explained above in the Port Assignment section above.
3. In the Device Manager, expand the Ports branch by clicking on the "+" .
4. The Port list will include "...USB to Serial Cable".
5. Highlight "USB to Serial Cable". Right click on this line, and select "Properties"

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