

# **SERIALTEST<sup>™</sup> ASYNC**

## **THE PC-BASED SERIALTEST ANALYZER**

### **QUICK START GUIDE**

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## **INSTRUCTIONS CONTAINED IN THE QUICK START GUIDE**

In addition to Software Installation instructions, this Quick Start Guide contains hardware setup information for various serial communications analyzer products. After installing the software, go to the section for the hardware mode you want to use. The software for all modes is identical in many respects so there is just one set of instructions on how to use the software.

## MINIMUM SYSTEM REQUIREMENTS

- PC with Windows XP (Service Pack 2 or higher, 32-bit only), or Windows 7 (32-bit or 64-bit)
- Intel Core 2 Duo 2.2 GHz Processor or Higher
- RAM Requirements: 1GB minimum, 2GB recommended
- 50 MB free Hard Disk Space
- One USB 2.0 Port

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## INTRODUCTION

Welcome to Frontline's Serialtest™ Async analyzer. Frontline's protocol analysis products let you analyze communication protocols using your personal computer. The protocol analyzer interface is easy to use without training, but we recommend you read the online Help to take maximum advantage of all the features.

We designed the online Help System with complete explanations and easy to use systematic instructions. Access the online Help by choosing Help Topics from the Help menu, or by pressing the F1 key on any window.

To access the PDF version of this Quick Start Guide from your Windows operating system, click *Start | Programs | [product name] | Quick Start Guide*.

## INSTALLATION INSTRUCTIONS

### Software Installation

When we say "Software Installation" we are really talking about two distinct operations. These are:

- Installing drivers for the RS-232 ComProbe II and/or the RS-422/485 ComProbe
- Installing the Serialtest Async software

Once those items are done then we can get to the fun stuff like connecting devices, changing configuration settings, analyzing data, etc. Let's get started with installing ComProbe drivers.

### COMPROBE DRIVER INSTALLATION

Before you can install the Serialtest Async software, you must install the drivers for the RS-232 ComProbe II and/or the RS-422/485 ComProbe. In the rest of this document, 'ComProbe' refers to either of those two devices. Follow the steps below to install the driver.

There are two install procedures for the ComProbe: one for **Windows XP** and one for **Windows 7**. Let's start with XP.

#### ComProbe Installation on Windows XP

1. Insert the product CD into the PC.
2. Plug the *ComProbe* into a USB port.

Note: If you have already installed a ComProbe on your system you might not get the *Found New Hardware Wizard*. You may, however, get this dialog in the future if you plug the ComProbe into a USB port that is different from one you have used previously.

The *Found New Hardware Wizard* dialogue box appears.



Figure 1 Install Wizard Welcome

3. Choose *No, not this time*
4. Click *Next*.



Figure 2 Found New Hardware Wizard Dialog

5. Choose *Install from a list or specific location*
6. Click *Next*.

Now you have to locate the ComProbe driver.





Figure 3- Browse

7. Select 'Search for the best driver in these locations.' radio button.
8. Select the Search removable media (floppy, CD-ROM...) check box.
9. Click Next.

Windows will find the correct drivers on the CD and automatically install the drivers.

Once the installation is complete, the final installation dialog appears.



Figure 4 - Finished Installation

10. Click the *Finish* button to close the wizard.

The installation of the ComProbe driver is now complete.

Your computer will remember this USB application. The next time you insert the ComProbe , it will automatically find the appropriate interface driver.

## ComProbe Driver Installation on Windows 7

The procedure for installing the ComProbe driver is different on Windows 7 than it is for XP. Follow the steps below.

1. Insert the *product CD* into the PC.
2. Plug the *ComProbe into a USB* port.

Note: Depending on how your PC is set up, you will either see a message indicating that the driver software was not installed, or that it was installed successfully. Whatever the case:

3. Close the dialog.
4. Go to the Control Panel and open the *Device Manager*.

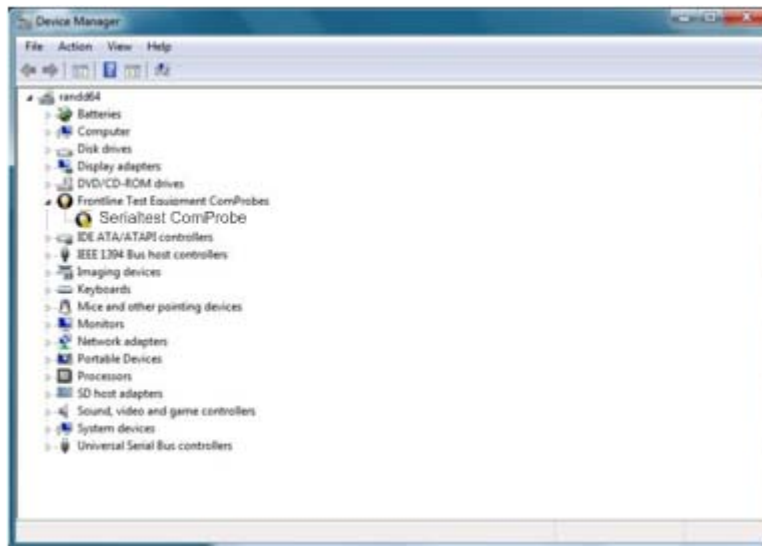


Figure 5 - Device Manager

5. Right click on *ComProbe* under Frontline Test Equipment ComProbes and select *Update Driver Software*.

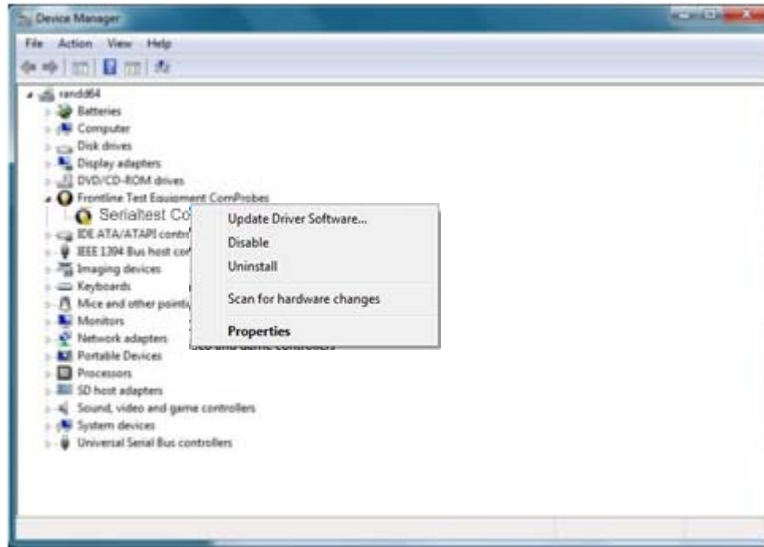


Figure 6 - Update Driver Software

The next step is to choose the driver location.

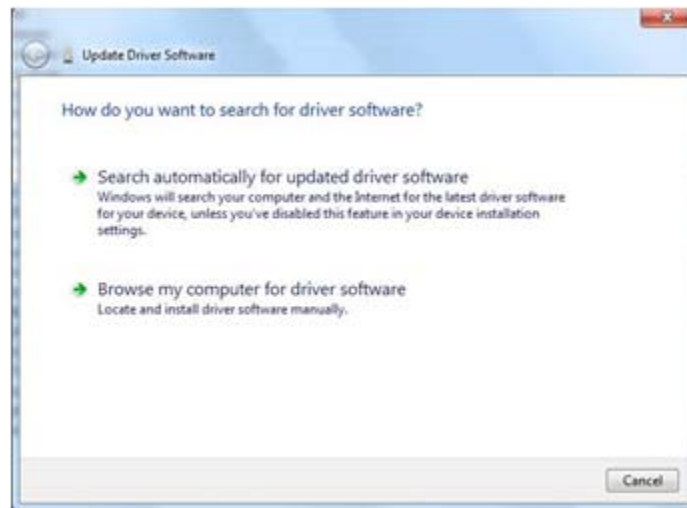


Figure 7 - Browse my computer...

6. Select *Browse my computer for driver software*.



Figure 8- Let me pick...

7. On this dialog, select *Let me pick from a list of device drivers on my computer*.

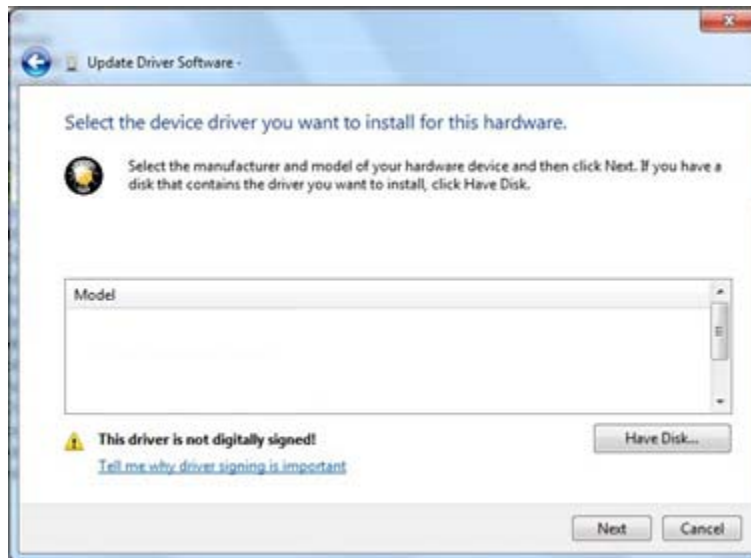


Figure 9 - Have Disk

8. Select *Have Disk*.

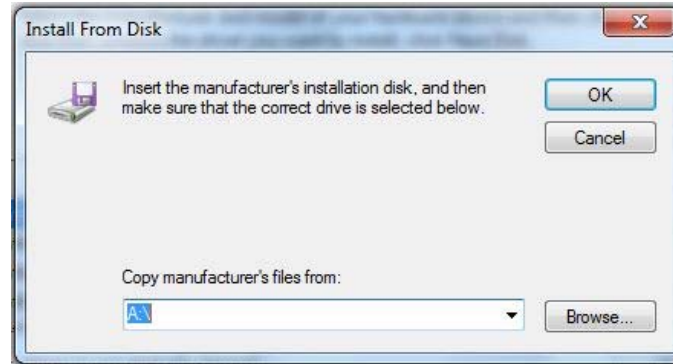


Figure 10 - Install From Disk

9. On the **Install From Disk** dialog select *Browse*.

The driver is located on your product CD at: **Serialtest\Drivers\Serial ComProbe**. This directory contains the Windows driver information file needed to install the driver.

10. Open the *Serial ComProbes* folder

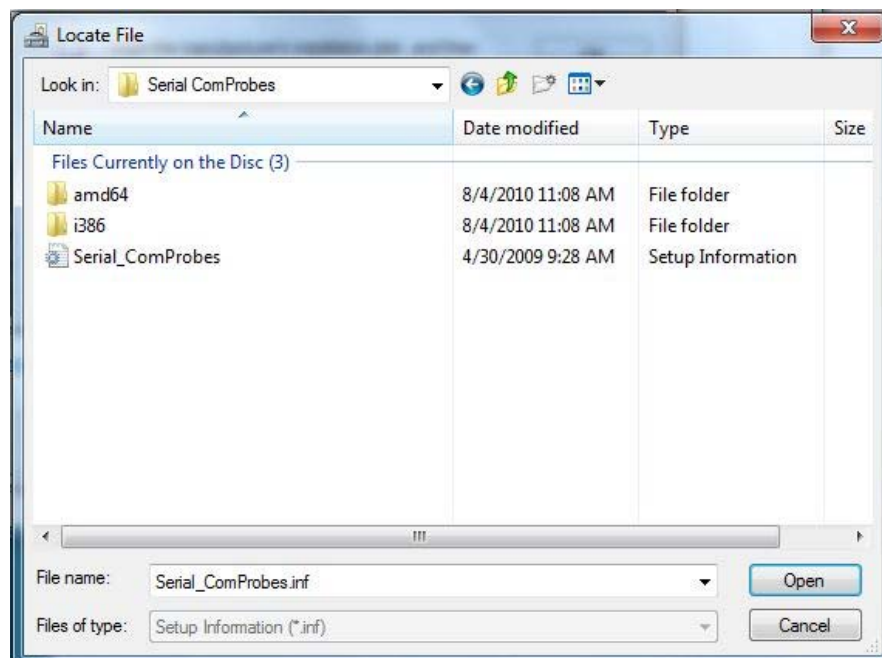


Figure 11 - Serial ComProbe Folder

11. Click on the *Serial\_ComProbes* file
12. Select *Open*.

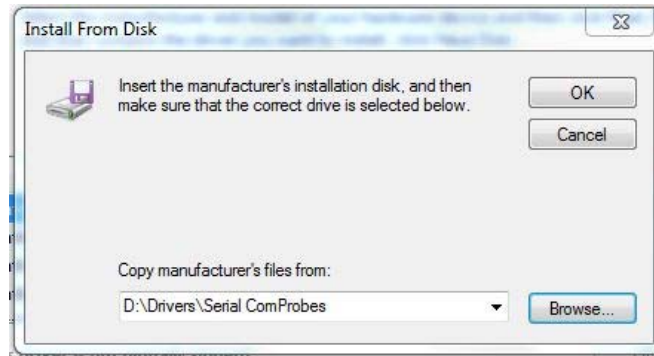


Figure 12 - Install From Disk

13. On the **Install From Disk** dialog select *OK*.

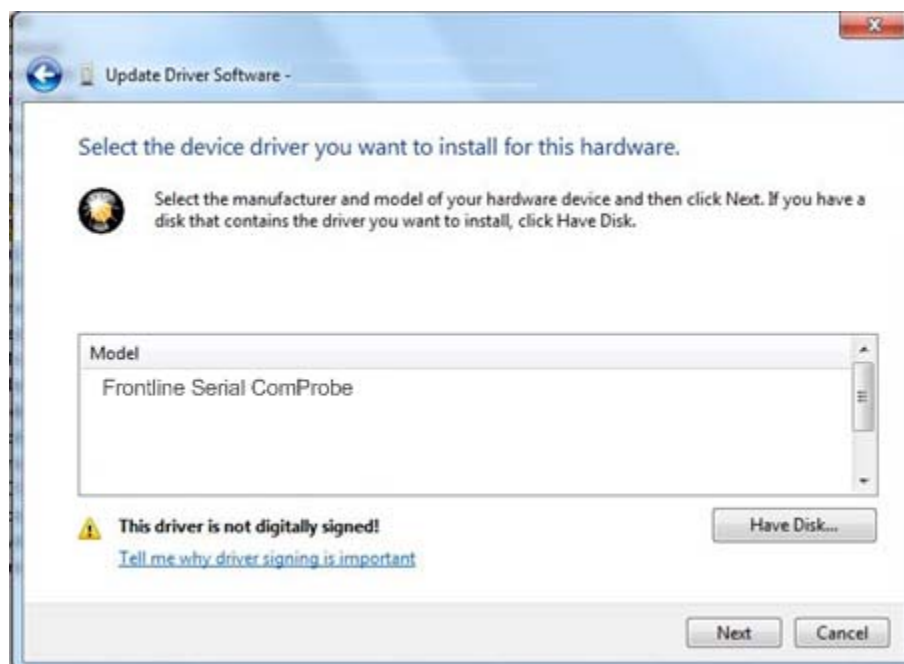


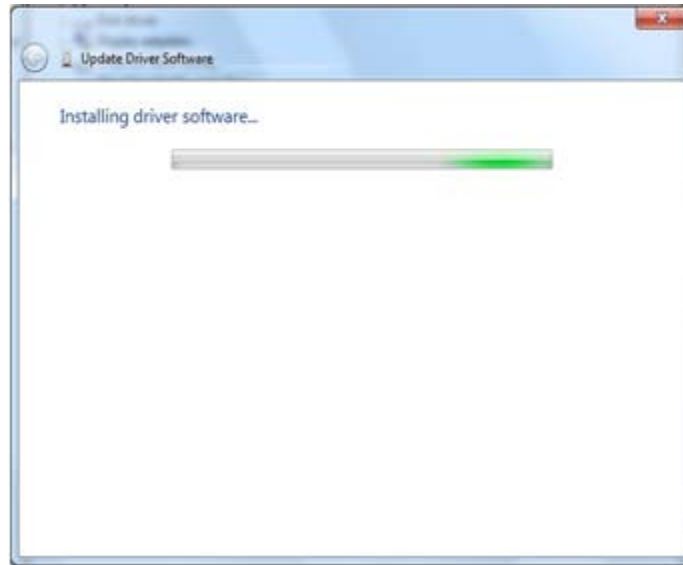
Figure 13 - Select Model

14. Select *Frontline Serial ComProbe* under **Model**.

**Note:** If *Frontline Serial ComProbe* is the only device listed, you do not have to select a model. If other devices are listed, you must select the model before selecting *Next*.

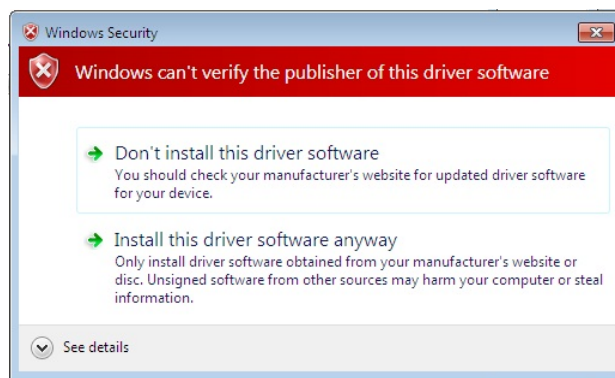
15. Then select *Next*.

Once the driver starts to load,



**Figure 14 - Software Loading - Win7**

you may get a Windows Security warning.



**Figure 15- Windows Security Warning**

16. You can ignore this warning by selecting **Install this driver software anyway**.

Your computer will now install the ComProbe driver from the directory you selected; you will get a dialog box saying that the installation is finished.

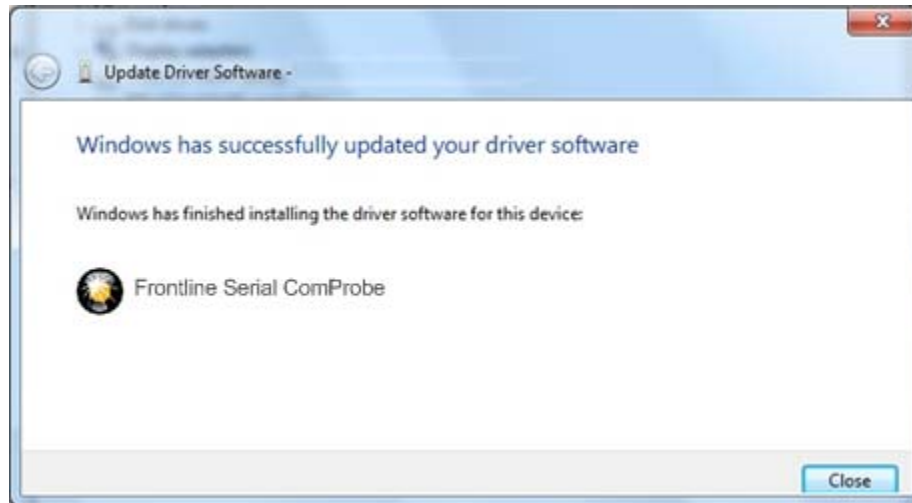


Figure 16 - Installation Complete

17. Click the *Close* button to close the wizard.

## SOFTWARE INSTALLATION

The following steps identify how to install Serialtest Async for the first time *after the drivers for a ComProbe* has been installed.

1. Insert the Installation Disk or Log in to the Frontline web site ([www.fte.com](http://www.fte.com)) and select the download version.

The first install screen advises that you close all Windows applications.



Figure 17 - Close Applications

2. **Close** all other applications
3. Select **OK**.

**Note:** Here is where you will see a ComProbe Error dialog **if you do not have a ComProbe installed.**

The next dialog requires you to select the type of product to install.



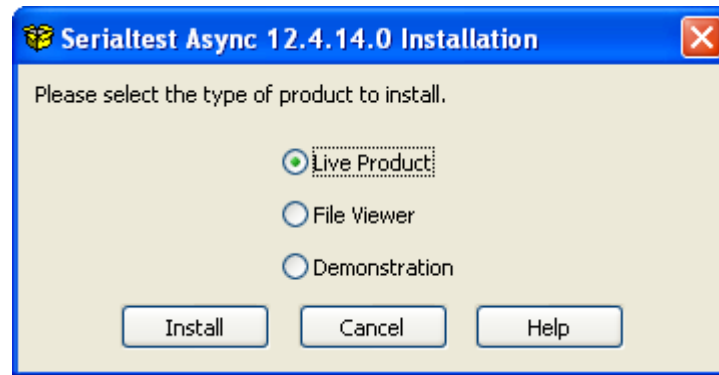


Figure 18 - Select Product

- Live Product installs the entire application. This is the default option.
  - File Viewer installs an application that allows you to only view captured data in a .cfa file as a static file.
  - Demonstration installs an application that allows you to play a .cfa file that simulates live capture. Some products will not have a Demonstration option.
4. Select **Live Product**, **File Viewer**, or **Demonstration**.
  5. Select **Install**

The first *InstallShield Wizard* screen appears.

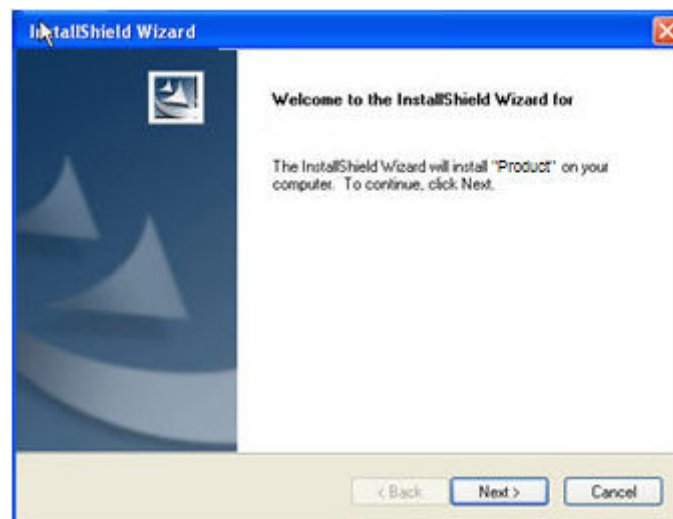


Figure 19 - InstallShield Welcome

6. Select **Next** to continue.

The *License Agreement* screen appears.



Figure 20 - License Agreement

7. Select the **I accept the terms of the license agreement** radio button.
8. Select **Next**

The *Choose Destination Location* screen appears.

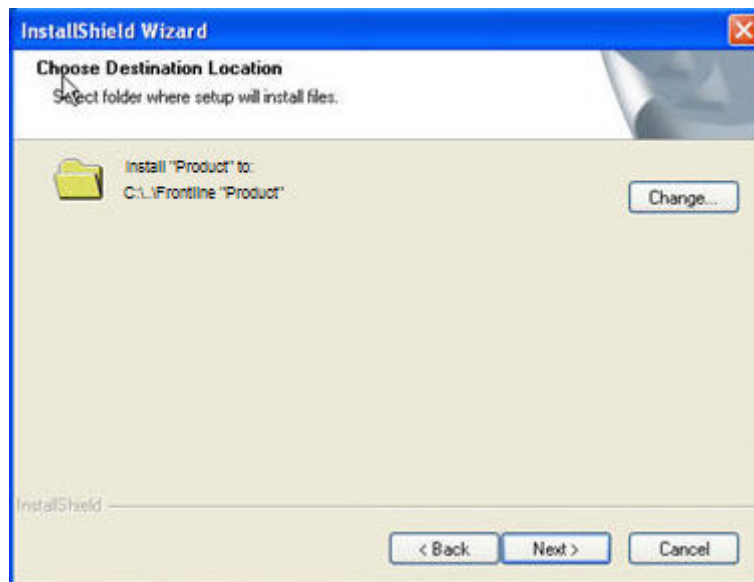


Figure 21 - Choose Destination

You can either install the software to the default location or click Change to choose a different location. Generally the default location will be fine.

9. Once you have decided on the installation location choose **Next**.

The *Ready to Install the Program* screen appears.

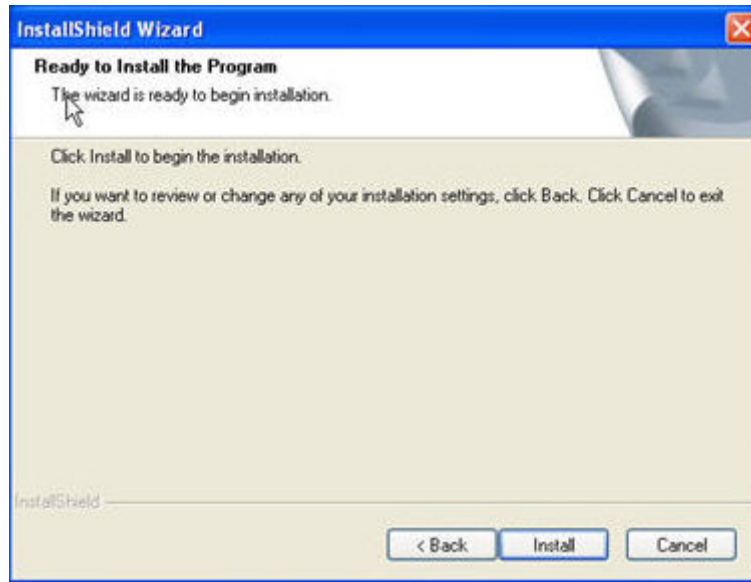


Figure 22 - Ready to Install

You can review your installation choices by selecting the Back button.

10. Once you are satisfied with your choices, select **Install**.

The installation process continues.

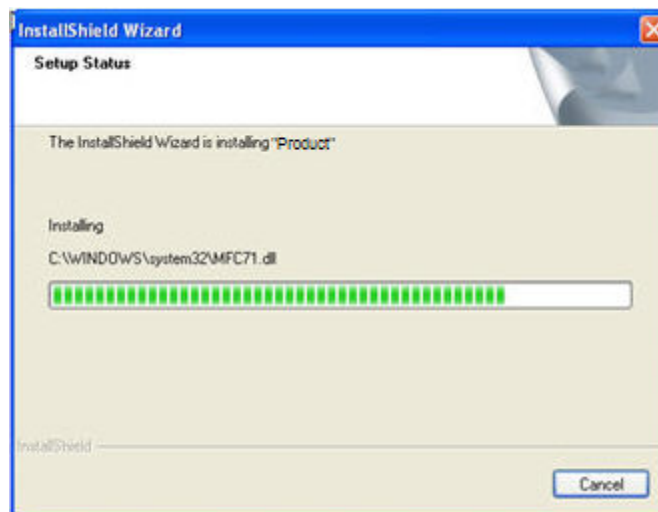


Figure 23 - Setup Status

Once the installation is complete, the *InstallShield Wizard Complete* screen appears.

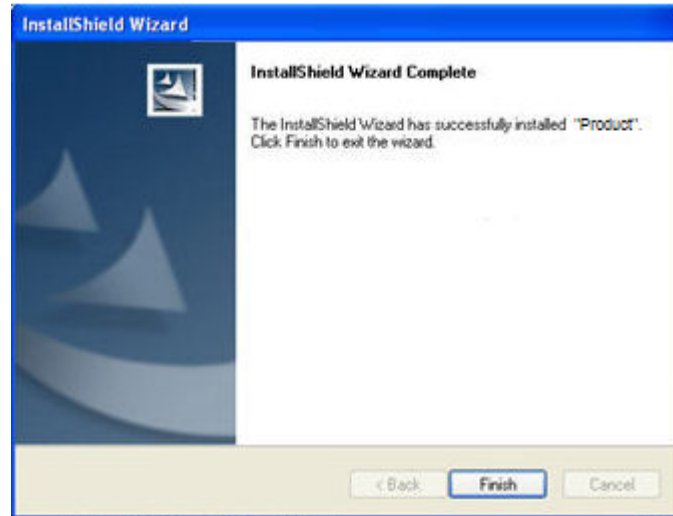


Figure 24 - Installation Complete

*Note: Some products may require that you reboot the computer to complete the installation.*

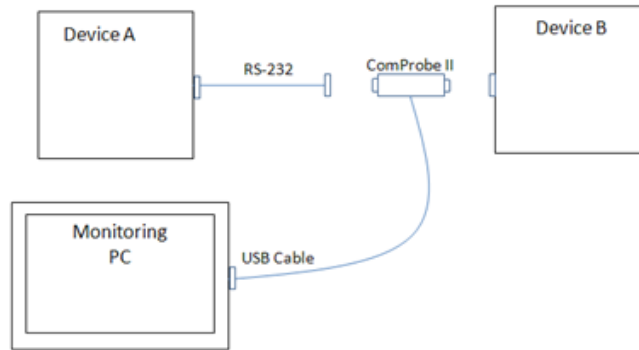
11. Click **Finish** to complete the installation.

## HARDWARE SETUP AND CONFIGURATION

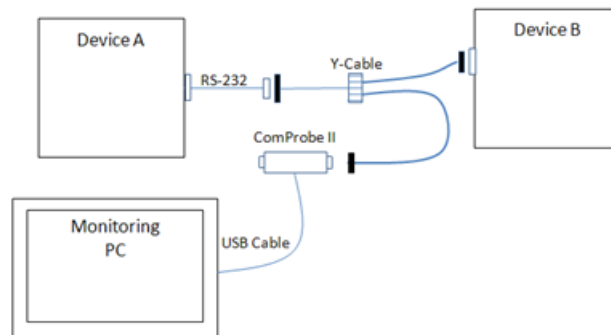
Once you have the Serialtest Async software installed correctly, the next step is to setup the hardware.

To assist customers in tapping into Async RS-232 bus configurations, Frontline is providing customers with a lot of flexibility to address different monitoring situations. The RS-232 ComProbe II can be used directly in-line, or connected via a combination of a provided Y-cable and/or the 6 foot RS-232 extension cable. Some monitoring situations may require a pair of 25-pin to 9-pin adapters, which are included.

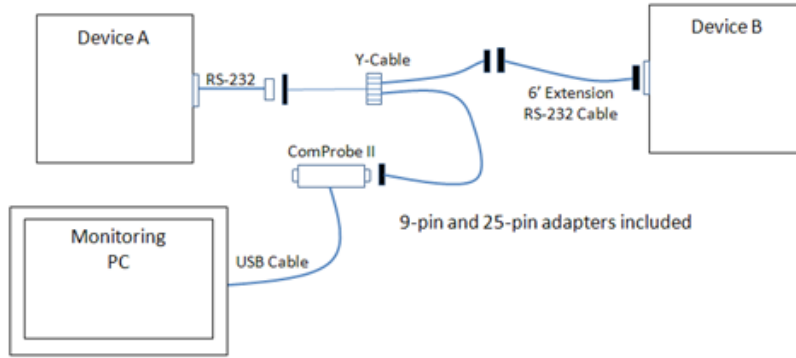
The monitoring connection options are displayed below. You can use the setup that matches your configuration.



**Figure 25 - ComProbe II Only**



**Figure 26 - ComProbe II with Y-Cable**



**Figure 27 - ComProbe II with Y-Cable and Extension**

## STARTING SERIALTEST ASYNC

On product installation, the installer creates a folder on the windows desktop labeled **Frontline Serialtest Async**.

1. Double-click the **Frontline Serialtest Async** desktop folder.

This opens a standard Windows file folder window.

Name	Size	Type	Date Modified
Optional Components		File Folder	1/15/2009 11:05 AM
Setup		File Folder	1/15/2009 11:05 AM
Capture File Viewer	3 KB	Shortcut	1/15/2009 11:05 AM
Quick-Start Guide	1 KB	Shortcut	1/15/2009 11:05 AM
Serialtest Async	2 KB	Shortcut	1/15/2009 11:05 AM

2. Double-click on *Serialtest Async* and the application opens.

**Note: You can also access this dialog by selecting Start → All Programs → Frontline Serialtest Async (Version #) → Serialtest Async.**

The first time you run Serialtest Async, the Hardware Settings window appears. Hardware Settings instructions for Serialtest Async are listed below.

You can always change any setting by choosing Options | Hardware Settings from the Serialtest Async Control window.


## USING SERIALTEST ASYNC - THE TOUR


OK, you have the ComProbe drivers installed, the software installed, and the hardware connected and ready to go. You are now ready to collect and analyze some data.


The first window to open is the Control window. The Control window is the small rectangular window at the top, and Serialtest Async is organized around this window. From the Control window, you control data capture and have access to the other windows used to view data.

## How to Capture Data

Serialtest Async can capture data to a memory buffer or to a file on disk. Data capture can be initiated from the Control window, the Event Display, the Frame Display or the Protocol Navigator, though you do not need any window other than the Control window open to capture data. For ease in reading, the word "buffer" below will refer to either data in memory or in a capture file.

To capture to a file, click the *Start Capture* icon .

To stop capture to a file, click the *Stop* icon . Stopping capture means no new data will be added to the capture file until capture is resumed by clicking the *Start Capture* icon.

- To clear capture, click the *Clear* icon .

If you select *Clear* after selecting Stop, a dialog appears asking whether you want to save the data.

- You can click *Save File* and enter a file name when prompted.
- If you choose *Do Not Save*, all data will be cleared.
- If you choose Cancel, the dialog closes with no changes.

If you select the Clear icon **while a capture is occurring**:


- The capture stops.
- A dialog appears asking if you want to save the capture
- You can select Yes and save the capture or select No and close the dialog. In either case, the existing capture file is cleared and a new capture file is started.
- If you choose Cancel, the dialog closes with no changes.

Clearing the file removes data from memory. If you want to save the data, click *Save File* and enter a file name when prompted. If you choose *Do Not Save*, all data will be cleared.

If the buffer becomes full, data capture will begin to wrap, which means the oldest data will be overwritten by new data. You can tell how full the buffer is by checking the bar graphic next to Capture Status on the status bar of the Control window. If you do not want the buffer to wrap, choose *System Settings* from the Options menu on the Control window and uncheck the "Wrap Buffer" box.

## Looking At Frames

### Frame Display

Click the *Frame Display* icon  on the Control window toolbar to open the Frame Display. This display allows you to have bit level visibility on your protocol.

#### Panes


The Frame Display is divided into panes, where each pane shows a different view of the data. The Summary pane stretches across the top of the display. Each line in the Summary Pane represents one frame/message. The Decode pane contains a detailed decode of the frame selected in the Summary pane, and is located on the left side of the Frame Display window. The three smaller panes on the bottom right of the Frame Display show the logical data in hex, binary and ASCII. Select any field in the Decode pane and the corresponding bit(s) or byte(s) will be selected in the logical data panes.

#### Frame Errors

A frame number in red indicates an error in the frame. Select the frame, and look at the top of the Decode pane to determine the type of error.



### Scrolling versus Static View


Click the *Lock/Resume* icon  to have the Summary pane scroll to always show the latest frames captured. Click the *Lock/Resume* icon again to stop the Summary pane from scrolling.

### Protocol Tabs

The frame display has a series of Protocol Tabs that allow you to filter on a specific protocol quickly and easily. For more advanced filtering option please consult the online *Help*.

## Looking At Data Bytes


### Event Display

Click the *Event Display* icon  on the Control window toolbar to open the Event Display. The Event Display window is the main view of byte-level data.

### How Data Is Displayed

Data is displayed in hex on the left and ASCII on the right. You can restrict the display to only show Hex or ASCII using the buttons at the top of the window. The Event Display can also display data in decimal, binary, EBCDIC, and other character and number formats. Choose the format you would like from the Data menu, or right-click on the Hex/ASCII labels in the headers and select a different format.

Click on a byte in the display. The three status lines at the bottom of the window will update to show a variety of information about the byte, including its value in different radices and any errors associated with the byte. Use the mouse to select several bytes. The status lines change to show the data rate over the range of the selection, the delta time between the first and the last bytes in the selection, and


the CRC. To change the algorithm used to calculate the CRC, click the *CRC* icon .

Bytes with errors are shown in red. Click on the byte to see what the error is.

Serialtest Async displays data other than bytes in the Event Display. Control signal changes are indicated with an up-and-down arrow. Flags are used as start-of-frame and end-of-frame markers. These special symbols in conjunction with the data bytes are called events.

### Scrolling versus Static View

By default, the Event Display scrolls as data is captured so that it always shows the latest data. To


prevent the Event Display from scrolling, click the *Lock* icon . Click the *Lock* icon again to resume scrolling.

## Common Features

### Display Synchronization

The Frame Display is synchronized with the Event Display and other dialogs. Select a frame in the Frame Display and the other windows will automatically update to highlight the bytes in the frame. Select a byte in the Event Display and the Frame Display will update to show the frame containing the byte.

## Duplicate Displays

The *Duplicate* icon  creates a second window of the same type, identical to the first. The advantage of additional Displays is that you can look at two different groups of data at the same time. For example, you can look at the start of an interaction in one Frame Display and the end of that same interaction in the other and compare the two.

## Filtering

Filtering can be accomplished from both the Protocol Navigator and the Frame Display. Regardless of where the filter is applied, it affects the data in both. In the Protocol Navigator, the filter displays the data that meets the condition defined in the filter. In the Frame Display, the system creates a tab that displays the filter name.

The quickest and easiest method for filtering data is to hover your cursor over the desired information in the summary display or the decode pane on the Frame Display and select from the right click popup menu.


You can filter on one or more protocol layers by using the *Filtered In* pane at the top left of the Protocol Navigator display. Check the boxes next to the names of the protocols you want to filter in. The filter is inclusive, which means that filtering on a protocol displays only frames that contain that protocol. Frames that do not contain the protocol will not appear. You can filter on one or more protocols.

The system provides a means to create and save your own filters. Please consult the online Help under *Filtering* for instructions.


## Bookmarks

Bookmarks let you mark frames of interest so they can be easily found later. Bookmarked frames appear with a magenta triangle icon next to them except in the Event Display where they appear as a dashed line around the start of frame marker. You can navigate between bookmarks using the Find feature or by pressing F2 to go to the next bookmark. To make a new bookmark, right-click on the frame and choose *Add Bookmark* from the menu.

## Searching


You can search for strings or patterns in your data or in the frame decode, for errors, control signal changes, bookmarks, special events, and time. Click the Find  icon to open the Find window. Click the *Help* button for more information on the different types of searches.

## Statistics

Click the *Statistics* icon  on the Control window toolbar to open the Statistics window.

The Statistics window provides a statistical overview of all the data on the circuit. Serialtest Async is always monitoring the circuit and gathering statistics, even when not capturing data.

There are three tabs on the Statistics window: Session, Resettable and Buffer. The Session tab shows statistics from the time Serialtest Async was started. The Resettable tab can be reset to show statistics from the time the Reset icon was last pressed. The Buffer tab shows statistics on the data in the capture buffer. If data capture has not been started or if the buffer has wrapped, most of the statistics on the Buffer tab will be n/a.


Some tables on the Statistics window can display data in graphic form. Click the *Graph* icon  on any header that has one for a chart of that table.

## Monitoring Control Signals

*(Serial Analysis Only)*


The Breakout Box monitors control signals in real-time. The Signal Display is an overview of all signal changes in the capture buffer.

### Breakout Box


Click the *Breakout Box* icon  on the Control window toolbar to open the Breakout Box window.


The Breakout Box monitors the six main control signals on an RS-232 circuit. It displays a count of how many times each signal has changed since the Breakout Box was opened, and shows the state of the signal using green and red symbols and line charts.

### Signal Display

Click the *Signal Display* icon  on the Control window toolbar to open the Signal Display.

The Signal Display shows the state of the control signals in the capture buffer over time. With the Snap

To  feature on, click on any control signal line and Serialtest Async will jump to the nearest signal change. The Signal Display is synchronized with the Event Display. Click on any signal change in the Signal Display and the corresponding event will be automatically selected in the Event Display.

Click the *Find* icon  to search for signal changes. If you are capturing data, you can update the Signal

Display by clicking the *New Snapshot* icon 

## TECHNICAL SUPPORT

Technical support is available in several ways. The online help system provides answers to many user related questions. Frontline's website has documentation on common problems, as well as software upgrades and utilities to use with our products.

Web: <http://www.fte.com>, click on 'Support → Tech Support'

Email: [tech\\_support@fte.com](mailto:tech_support@fte.com)

If you need to talk to a technical support representative, support is available between 9am and 5pm, U.S. Eastern time, Monday through Friday. Technical support is not available on U.S. national holidays.

Phone: +1 (434) 984-4500

Fax: +1 (434) 984-4505

## COMPROBE ERROR DIALOG

To install Serialtest Async software, you must have a Frontline RS-232 ComProbe<sup>®</sup> II or a RS-422/485 ComProbe. Early in the installation process if the installer fails to detect a ComProbe attached to the PC, it will show an error message.

If you try to install a Serialtest Async without a ComProbe, you will see the following dialog:

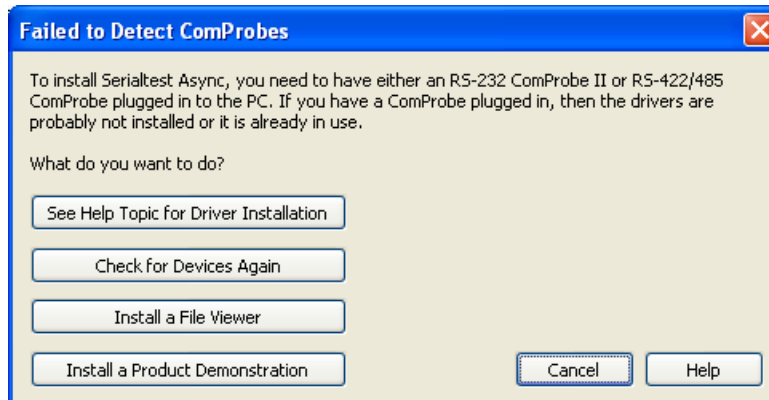


Figure 28 - Failed to detect ComProbes

There are several reasons this dialog would appear.

- You have a ComProbe, but you forgot to plug it in to the PC. Insert the ComProbe and select **Check for Devices Again**.
- You have a ComProbe plugged in to the PC, but you have not installed the drivers. Install the drivers and select '**Check for Devices Again**'.
- You don't have a ComProbe. Contact Technical Support to secure a ComProbe.  
 Web: <http://www.fte.com>, click on Technical Support.  
 Email: [tech\\_support@fte.com](mailto:tech_support@fte.com)  
 Phone: +1 (434) 984-4500

*If you select **See Help Topic for Driver Installation**, Frontline will display information on how to install a ComProbe.*

*If you select **Check for Devices Again**, Frontline will check again if the ComProbe is plugged in to the PC. If a ComProbe is detected, the install process will continue. If the ComProbe is not detected, the dialog remains active.*

*If you select **Install a File Viewer**, Frontline immediately takes you to the install procedure for installing a File Viewer. A File Viewer allows you to use Frontline software to open and analyze captured data in the form of .cfa files. You cannot, however, capture raw data with the File Viewer.*

*If you select **Install a Product Demonstration** (not available for all products), Frontline installs an application that allows you to play a .cfa file that simulates live capture.*