Eksigent® Software Drivers

Analyst® Software 1.5.1, 1.5.2, 1.6, TF 1.5.1

HyStar® 3.2

Xcalibur® 1.3, 1.4, 2.0, 2.1, 2.2

Installation Guide

eksigent®
part of AB SCIEX

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Contents


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Software Installation

This section describes the procedures required to install the Eksigent® control software on the host computer. The computer should already have the Analyst® software installed and configured for use.

Tip! If you intend to move an installed Eksigent LC device to a new computer, follow the steps in Appendix A to transfer the instrument configuration, calibration, and method settings to the new computer before installation.

Tip! If your operating system is Windows XP SP1 or SP2, refer to Appendix A before starting the Analyst software.

1. Insert the Eksigent software installation CD or download the software installation files from www.Eksigent.com/setup.

   Tip! Any existing versions of the software do not need to be removed.

Figure 1-1 Eksigent Setup dialog

   Note: If the Setup Wizard dialog does not appear, run the file: **setup.exe** from the CD.

2. Click **Next** to continue through the installation process.

Tip! It is recommend to use the default directory and settings specified in the installation dialog when prompted.

Driver configuration

After the Eksigent software is configured for instrument type and proper operation is verified, configure the Analyst software drivers:

1. Select **Start > Programs > Eksigent > Driver Configuration**, see Figure 1-2).

   The Driver configuration utility will automatically detect the version of the Analyst software installed on your computer.

   Note: Analyst software versions 1.4.1 or earlier are not supported.

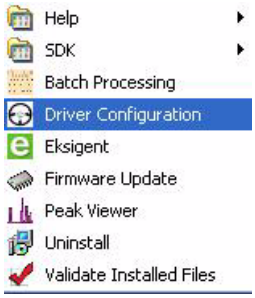

Figure 1-2 Driver Configuration menu shortcut

2. Check **Driver** and the **AS1/AS2 Autosampler** options under the **Analyst** group, see Figure 1-3.
3. Click **Apply**.

   If successful, the status next to the check box will change from **Not Registered** to **Registered**.

4. Click **OK**.

Tip! If necessary, you can later remove the driver from the Analyst software by using this utility, checking the relevant boxes, and clicking **Apply**.

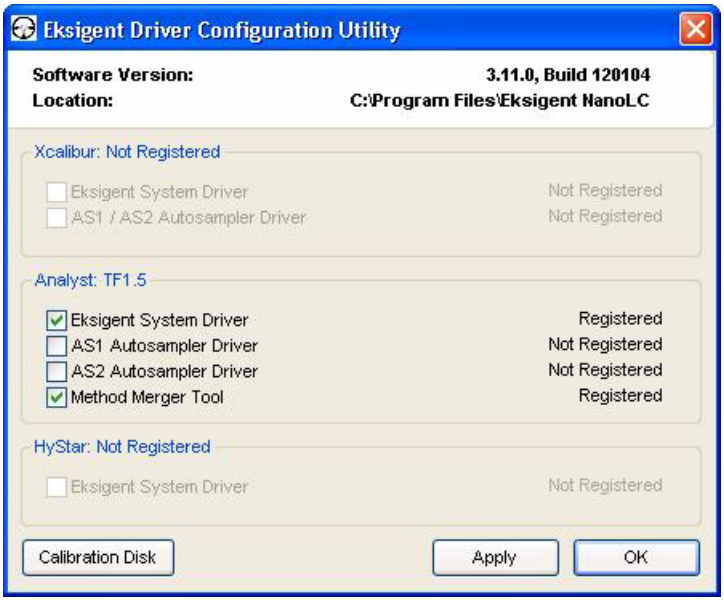

Figure 1-3 Eksigent Driver Configuration Utility

Configure the LC system

Refer to the *Eksigent Software User Guide* for setting up and calibrating your mass spectrometer. The mass spectrometer must be configured properly prior to attempting to establish control within the Analyst software.

Create hardware profiles using the Analyst Software

Caution: If you are using Windows XP, you must follow the directions in Appendix B prior to continuing. Failure to do so will prevent the software and hareware from functioning properly.

If the drivers were installed correctly, the Eksigent devices will be shown in the Companion Software area of the Analyst software Navigation Bar.

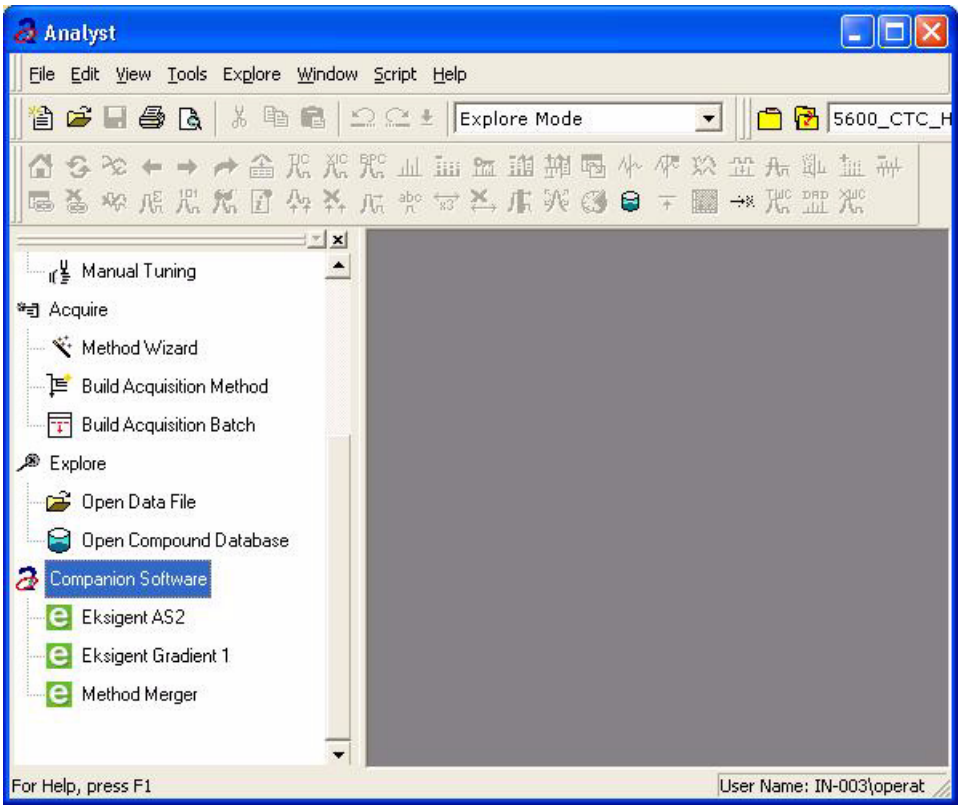

Figure 1-4 The Analyst software navigation bar with software devices

1. Start the Analyst software.
2. Double-click the **Hardware Configuration** icon in the Navigation Bar.

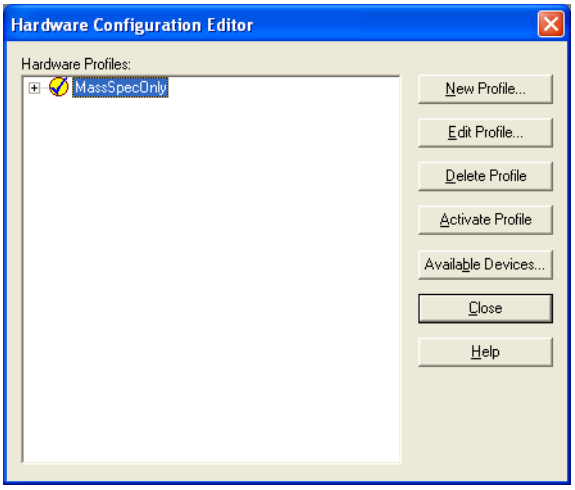

Figure 1-5 The Analyst Software Hardware Configuration Editor

3. Choose the current hardware profile and either deactivate it or create a new one.
4. Click **Edit Profile**
5. Click **Add Device**
6. Select the device type **Software Application** and then click **OK**.

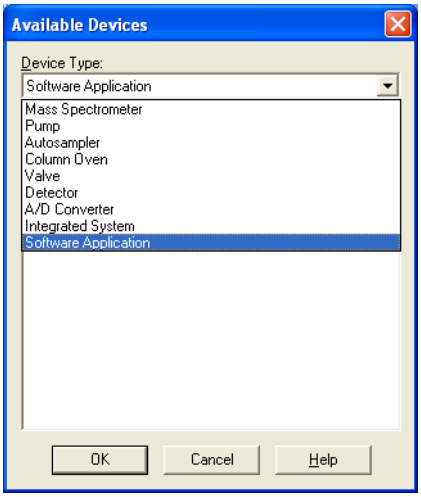

Figure 1-6 The Analyst Software Available Devices dialog

7. The software device will now be listed as part of the profile. Select the device and then click **Setup Device**
8. Select the device type from the list.

Tip! Use **Eksigent Device CH1** for the LC system or **AS1 Autosampler** for the autosampler.

9. Give it a name and click **OK**.

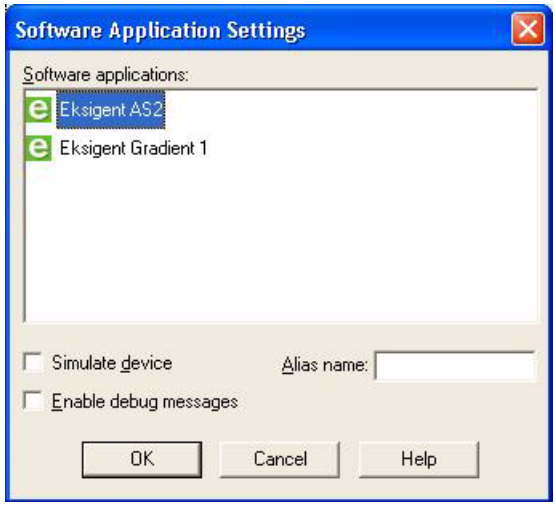

Figure 1-7 The Analyst software devices list

10. Repeat step 7 to step 9 to add as many devices as required.

Tip! For NanoLC-2D systems, add both **Eksigent Device CH1** and **Eksigent Device CH 2**. For a NanoLC-1D, add **AS1 autosampler.** For QTRAP®, select all three devices in the hardware profile.

11. Click **Activate Profile**, see Figure 1-8.

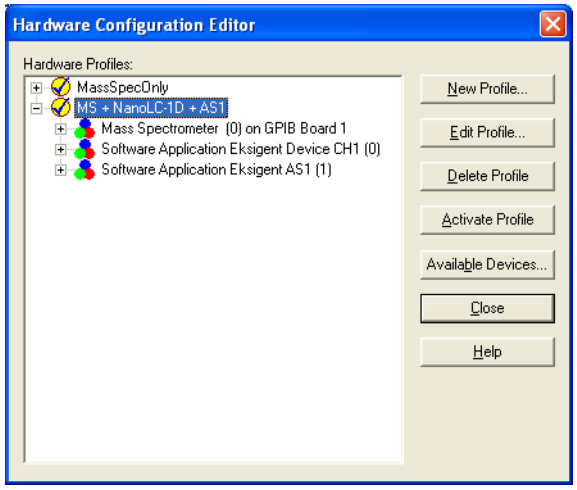

Figure 1-8 The Analyst software activated hardware profile

The Eksigent Control software will start and, if configured, a utility dialog for the AS1 autosampler opens. These dialogs will be visible during your experiments and will allow you to monitor the devices and edit methods.

12. Click **Close**.

Tip! Verify that the instruments are being controlled through the Analyst software by checking the hardware status, see View instrument status on page 12.

Note: For Eksigent Express-100 systems, you may also want to add a **PAL autosampler** or a **NI 6032E PCI A/D converter**. Refer to the *Analyst Software User Guide* for more information about these devices.

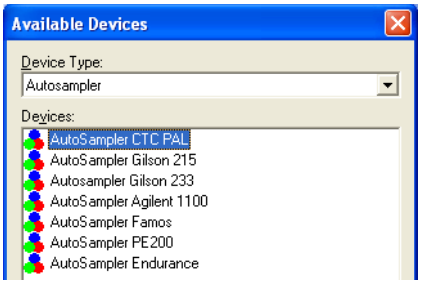

Figure 1-9 The Analyst Software Autosampler Devices

View instrument status

To verify the status of each instrument controlled by the Analyst software, click the window icon in the task bar at the lower right corner of the Analyst software dialog.

Figure 1-10 The Analyst software task bar

The **Software Application Status Dialog** indicates the current state of the installed instruments and additional instrument specific information, such as mobile phase flow rates, column pressures, and temperatures.

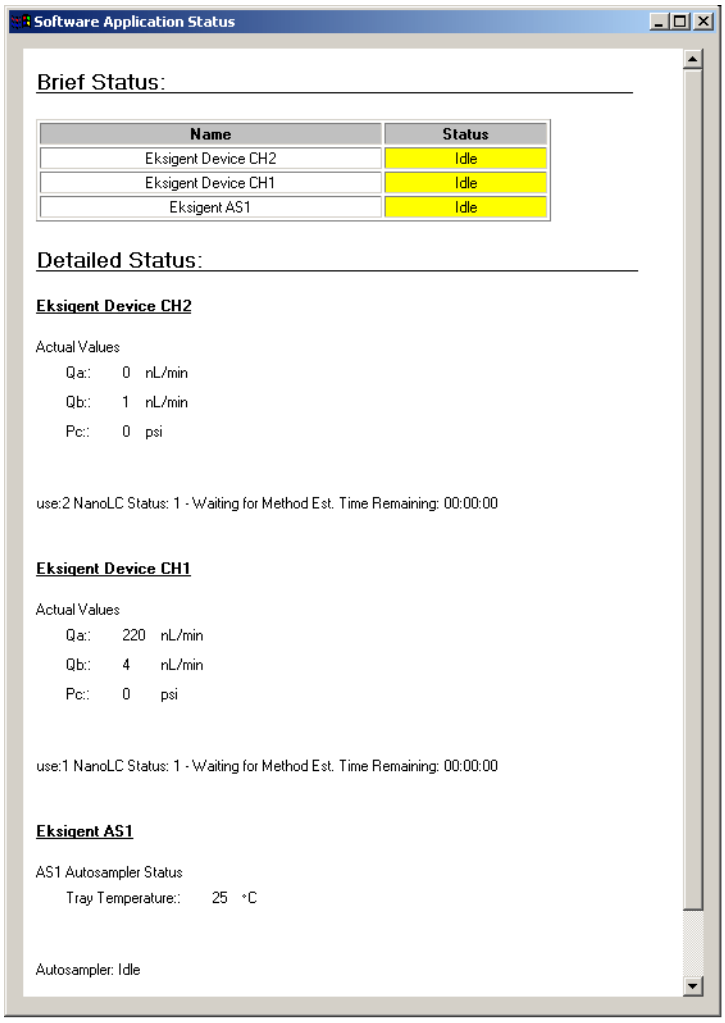

Figure 1-11 The Analyst Software Application Status Dialog

Build acquisition methods

An acquisition method in the Analyst software combines the methods of each individual device.

1. Open a new acquisition method by clicking the **Build Acquisition Method** icon on the Analyst Software Navigation Bar. All configured devices are present.

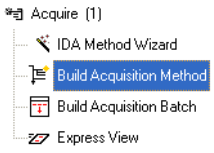

Figure 1-12 The Analyst Software Navigation Bar

2. Select the Eksigent device to assign a method and then select an existing method on disk using the **…** button.

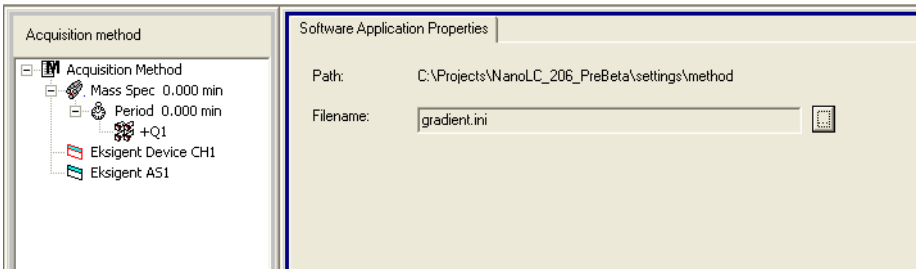

Figure 1-13 The Analyst software: acquisition method editor

Eksigent device methods for LC systems can be created and edited using the **LC Method** button in the Eksigent software dialog. See the *Eksigent Software User Manual* for more information on creating methods.

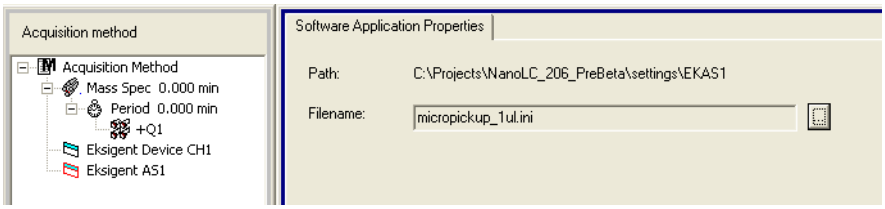

Figure 1-14 The Analyst software: acquisition method editor

Eksigent AS1 autosampler methods can be created and edited using the **Autosampler Method** button in the AS1 utility dialog. See the *Eksigent Software User Manual* for more information on creating methods.

Peak parking

Peak Parking is a method that extends the analysis time of MS/MS interrogation for peaks of interest eluting from the LC column. The LC column flow rate is immediately reduced to a predetermined rate when the initial portion of the peak (fraction) enters the MS.

The Analyst software can control the built-in peak parking feature of the Eksigent LC devices. This feature is controlled within the Analyst software MS method by the Information Dependent Acquisition (IDA) criteria.

1. Right Click the **Period** icon to add IDA criteria.

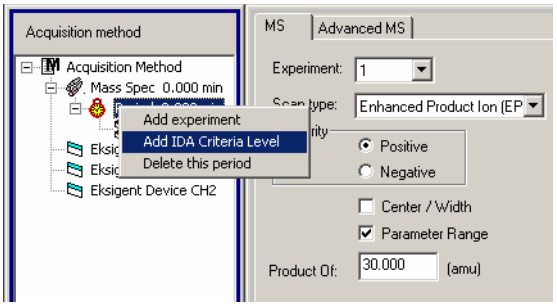

Figure 1-15 The Analyst Software: MS Acquisition Method Editor

2. Select the **Peak Parking** tab within the IDA criteria dialog and then select the **Enable** box. The LC flow rate and other parameters can be defined in this dialog.

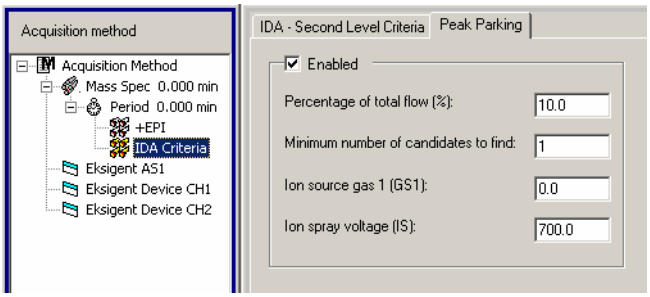

Figure 1-16 The Analyst Software: MS Acquisition Method Editor

Note: If the Peak Parking criteria are set too low in the IDA method the analysis may never end and will require manual termination.

During the sample sequence, the **Analyst Software Application Status Dialog** indicates the current state of the LC device when peak-parking is in progress.

The Eksigent software acquisition dialog also shows all relevant device information when peak parking is in progress.

Software Installation

This section describes the procedures required to install the Eksigent® control software on the host computer. The computer should already have HyStar 3.2 installed and configured for use.

Tip! If you intend to move an installed Eksigent LC device to a new computer, follow the steps in Appendix A to transfer the instrument configuration, calibration, and method settings to the new computer before installation.

1. Insert the Eksigent software installation CD or download the software installation files from www.Eksigent.com/setup.

   Tip! Any existing versions of the software do not need to be removed.

Figure 2-1 Eksigent Setup dialog

Note: If the Setup Wizard dialog does not appear, run the file: **setup.exe** from the CD.

2. Click **Next** to continue through the installation process.

   Tip! It is recommend to use the default directory specified in the installation dialog when prompted.

Driver configuration

After the Eksigent software is configured for the instrument type and proper operation is verified, configure the HyStar software drivers:

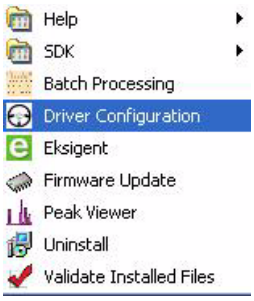

Figure 2-2 Eksigent programs menu

1. Select **Start > Programs > Eksigent > Driver Configuration**, see Figure 2-2).

   The Driver configuration utility will automatically detect the version of the HyStar software installed on your computer.

2. Check **Eksigent System driver** option under the **HyStar** group, see Figure 2-3.
3. Click **Apply**.

   If successful, the status next to the check box will change from **Not Registered** to **Registered**.

4. Click **OK**.

Tip! If necessary, you can later remove the driver from the Hystar software by using this utility, checking the relevant boxes, and clicking **Apply**.

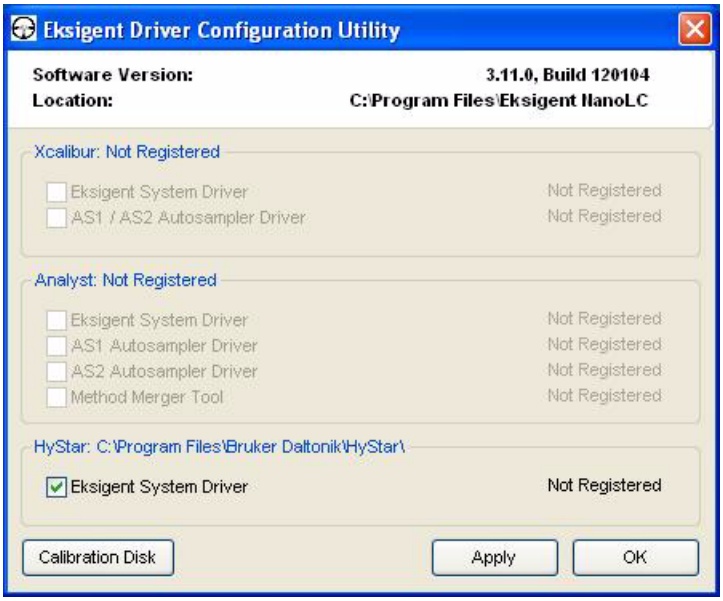

Figure 2-3 Eksigent Driver Configuration Utility

Configure the LC system

Refer to the *Eksigent Software User Guide* for setting up and calibrating your mass spectrometer. The mass spectrometer must be configured properly prior to attempting to establish control within the HyStar software.

Mass Spectrometer Configuration using the HyStar Software

1. Start HyStar.

Figure 2-4 Main dialog

2. Click **Hardware Setup** and select an existing configuration file or type in a name for a new configuration.

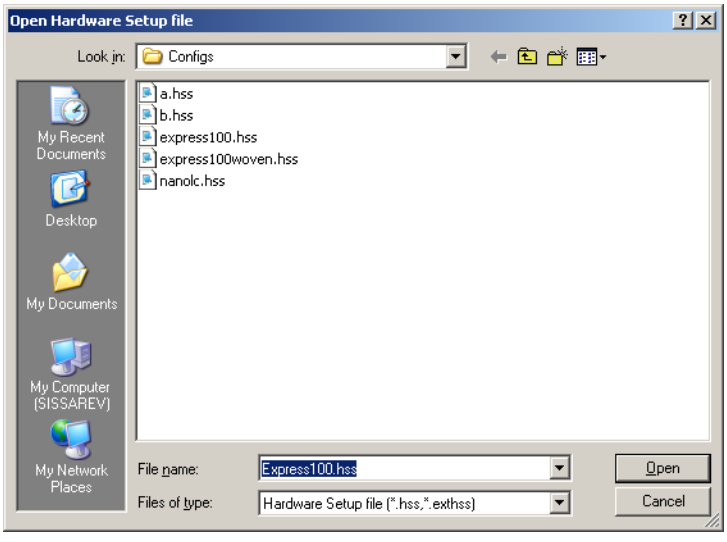

Figure 2-5 Open Harware Setup File Dialog

3. Scroll down to **LC System** and select the box next to it.
4. In the box in the lower part of the dialog select **Eksigent LC System.**
5. Click **Settings** from the **LC System Setup group**.
6. Configure Eksigent.

Tip! Depending on the selected configuration, several HyStar selections may become disabled (that is, if the Eksigent system is equipped with a column heater, the Oven item will become disabled and set to Controlled by System).

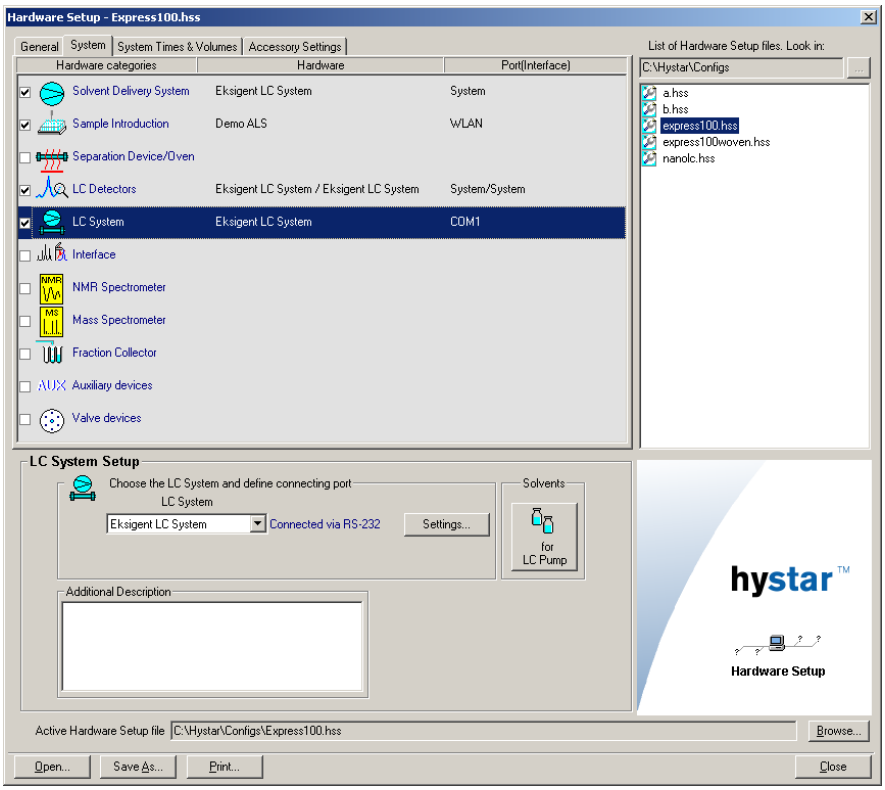

Figure 2-6 Hardware Setup Dialog

7. Select **Solvent Delivery System**. In the lower part of the dialog select **LC Pump 2** and choose **Eksigent Pump 2** (The Eksigent LC System selected earlier will be the channel 1 in this configuration).

8. Select the device in the **Eksigent Device** drop-down list (i.e. NanoLC-2D Parallel, Express-100, etc.) from the **System Configuration** group.

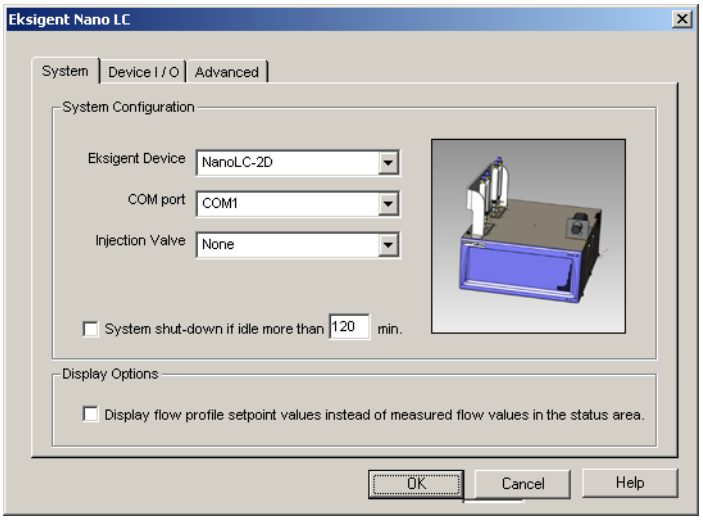

Figure 2-7 Eksigent Device Configuration

9. Set any other desired device configuration parameters.
10. Click **OK**.
11. After configuring the Eksigent devices, click **Close** from the **HyStar Hardware Setup** dialog to save the configured device values to a configuration file.

    The HyStar software is now configured to control the installed devices.

Device status

The status of all installed devices can be viewed at any time in the top section of the **Acquisition** dialog in the HyStar software.

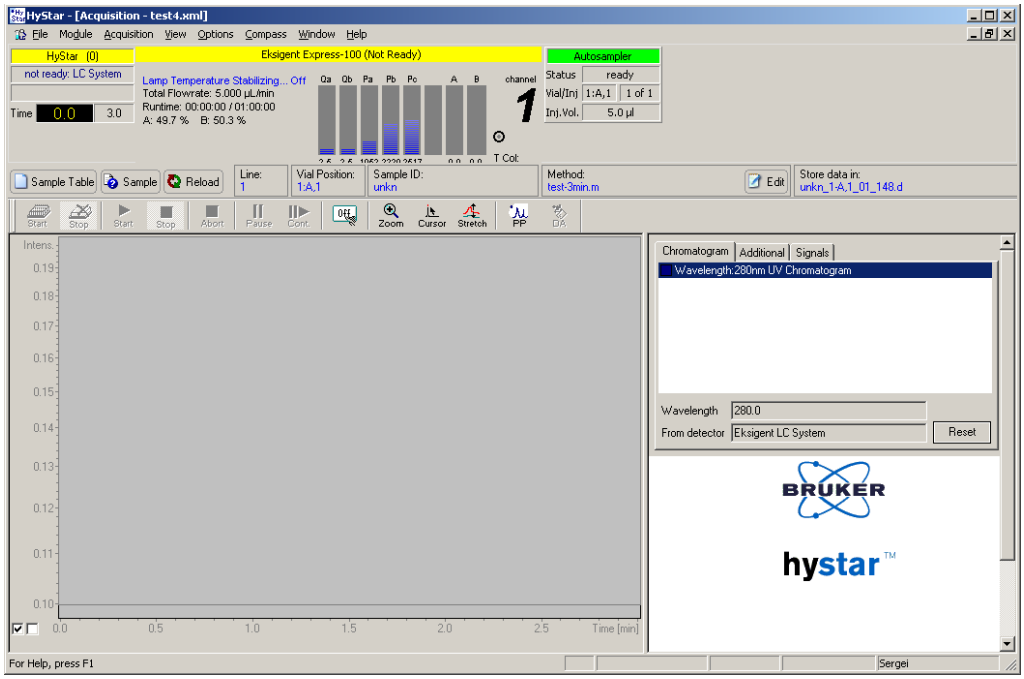

Figure 2-8 Eksigent Device Status dialog

The **Eksigent Device Status** dialog will indicate the current state of the installed instruments and additional instrument specific information, such as mobile phase flow rates, column pressures, and temperatures.

Note: For multi-channel devices the status information is specific to the selected channel and are displayed side by side.

Note: If there is a problem with the device an error condition will be indicated in the status window.

Device method editors

Methods for each device are created within the HyStar software method editor through the **Advanced Parameters** button.

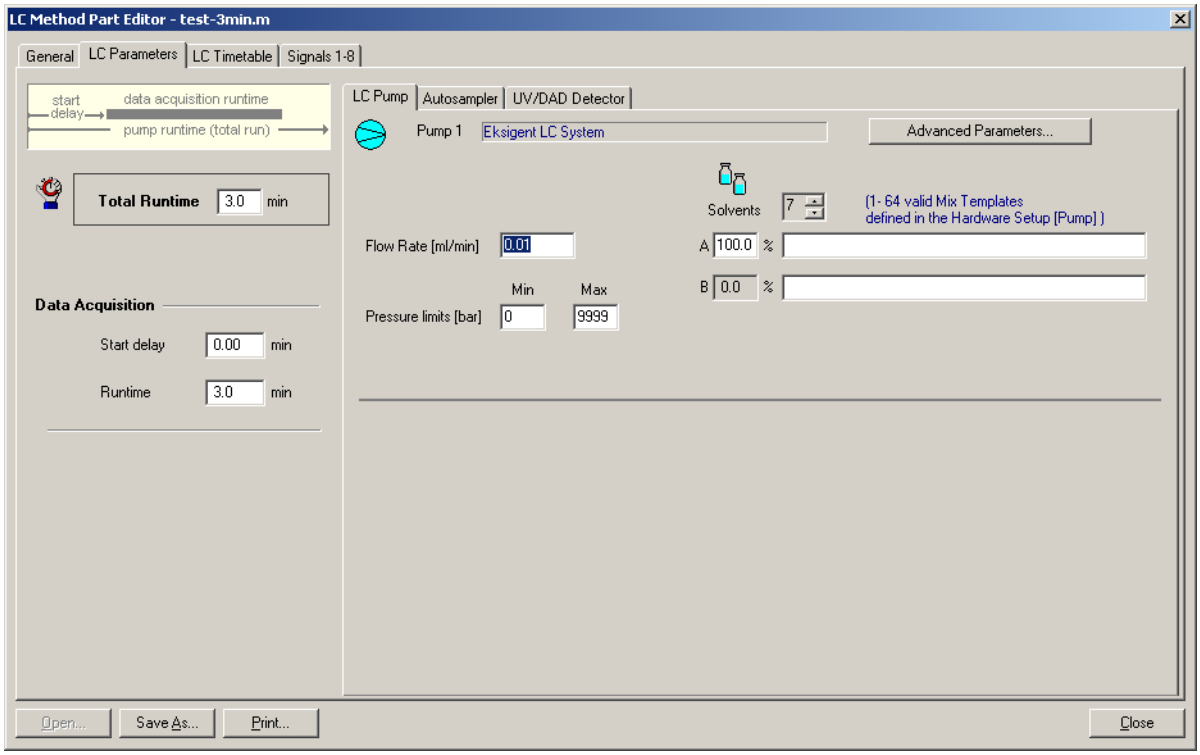

Figure 2-9 Starting the Eksigent LC Device Method Editor

Tip! All LC method parameters must be set using the **Additional Parameters** field and not by using the **HyStar Method Editor** fields.

1. To create or access a set of device methods, select **Methods** from the main HyStar dialog or **Edit Method** from within the sample table or the **Acquisition** dialog.

Tip! Care must be taken to synchronize the runtime specified in the **Eksigent Method Editor** and the general **Total Runtime** and **Acquisition Runtime** on the main **Method Editor** dialog. The same applies to the **UV wavelength** and **PDA range**. See Figure 2-9.

2. Click **Advanced Parameters** button on the main **HyStar Method Editor** dialog. See the *Eksigent Software User Manual* for more information about editing method parameters for each Eksigent device.

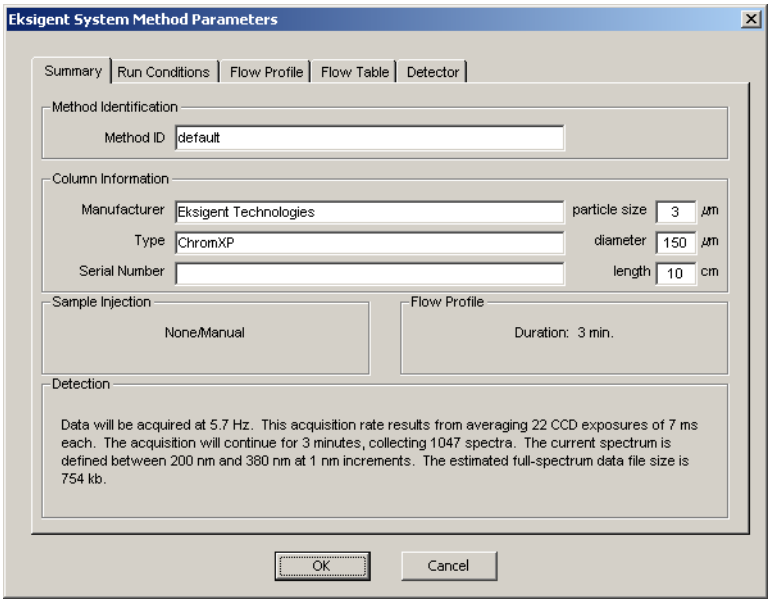

Figure 2-10 Eksigent LC Device Method Editor

Note: For multi-channel instruments, each channel is considered an independent device.

Additional instrument dialogs

Access to some of the primary Eksigent instrument control software functionality is provided through the drop-down list located in the status box from the main **Acquisition** dialog in the HyStar software. **Diagnostics** and **Direct Control** are also provided on this main dialog.

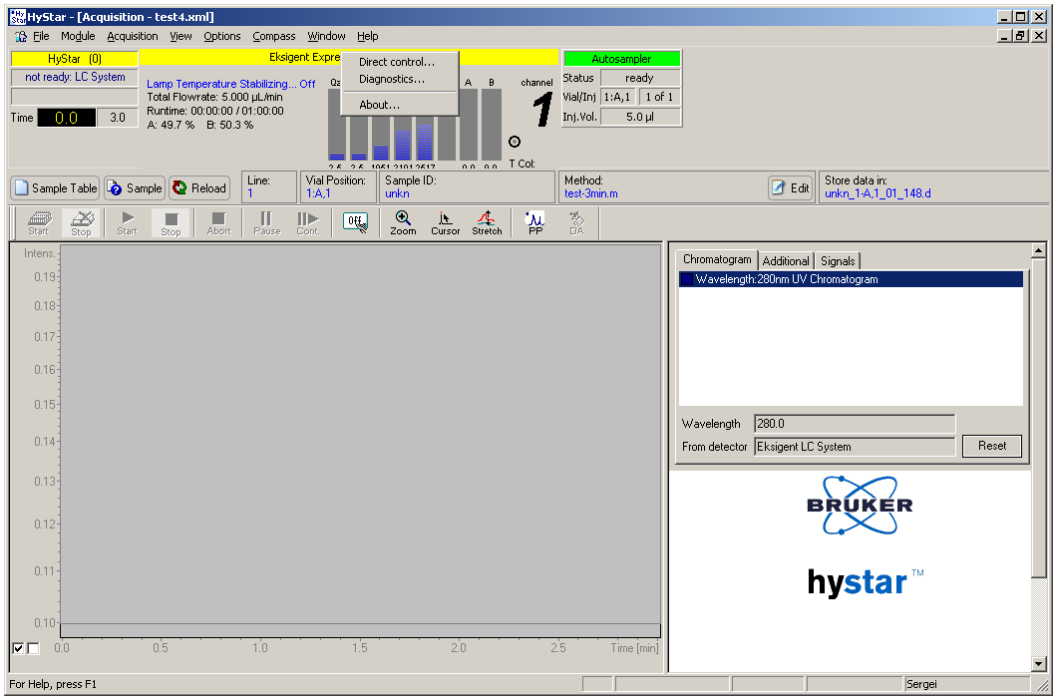

Figure 2-11 Eksigent LC Device Control Dialogs

Data acquisition

No special steps are needed to configure Eksigent data acquisition in the HyStar software. Every time the driver runs, all available data is sent to the HyStar software for real-time display and storage. Stored data files can be further processed in the **Post Processing** area of the HyStar software.

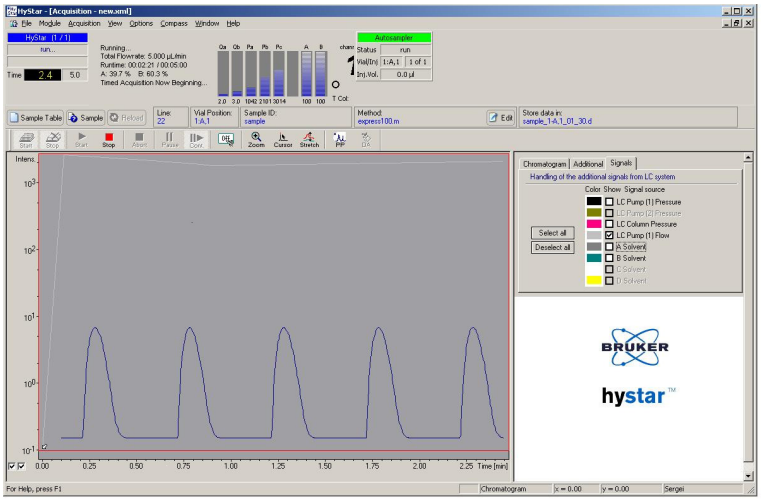

Figure 2-12 Eksigent data displayed on HyStar real-time page and being stored in HyStar data file.

All Eksigent systems provide four auxiliary data channels to the HyStar software. Flow A (Qa), flow B (Qb), the raw A/D signal, and Pressure at column (Pc). Flow units are nl/min. Pressure is in psi, and the A/D signal is volts.

Eksigent systems equipped with UV and PDA detectors will provide both the chromatogram and the spectral data to HyStar. The units are AU (Absorbance units).

Software Installation

This section describes the procedures required to install the Eksigent® control software on the host computer. The computer should already have the Xcalibur software installed and configured for use.

Tip! If you intend to move an installed Eksigent LC device to a new computer, follow the steps outlined in Appendix A to transfer the instrument configuration, calibration, and method settings to the new computer before installation.

1. Insert the eksigent software installation CD or download the software installation files from www.eksigent.com/setup.

   Tip! Any existing versions of the software do not need to be removed.

Figure 3-1 Installation screen

Note: If the Setup Wizard dialog does not appear, run the file: **setup.exe** from the CD.

2. Click **Next** to continue through the installation process.

Tip! It is recommend to use the default directory specified in the installation dialog when prompted.

Driver configuration

After the Eksigent software is configured for the instrument type and proper operation is verified, configure the Xcalibur software drivers:

1. Select **Start > Programs > Eksigent > Driver Configuration**, see Figure 3-2).

   The Driver configuration utility will automatically detect the version of Xcalibur software is installed on your computer.

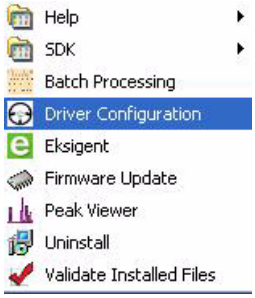

Figure 3-2 Eksigent programs menu

2. Check **Eksigent System driver** and the **AS1 Autosampler** options under the **Xcalibur** group, see Figure 3-3.
3. Click **Apply**.

   If successful, the status next to the check box will change from **Not Registered** to **Registered**.

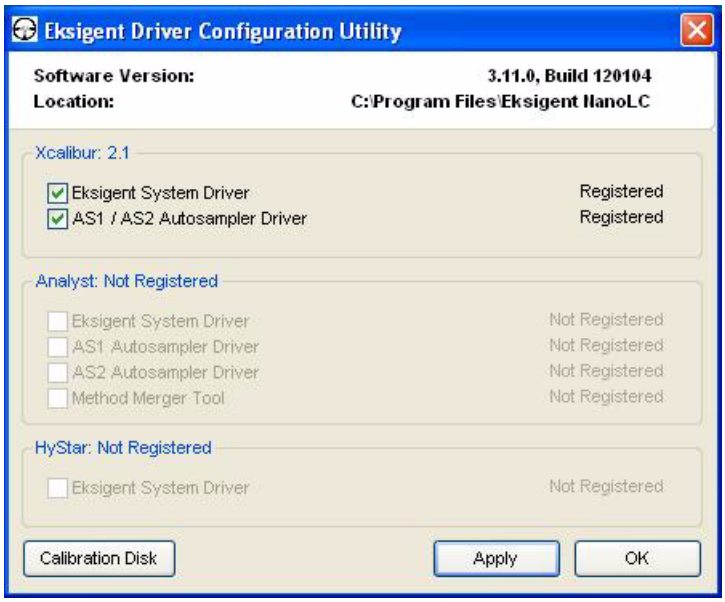

Figure 3-3 Eksigent driver configuration utility

4. Click **OK**.

Tip! If necessary, you can later remove the driver from the Xcalibur software by using this utility, checking the relevant boxes, and clicking **Apply**.

Configure the LC system

See the *Eksigent Software User Guide* for setting up and calibrating your mass spectrometer. The mass spectrometer must be configured properly prior to attempting to establish control within the Xcalibur software.

Mass Spectrometer configuration using the Xcalibur software

1. Start the Xcalibur software **Instrument Configuration**.

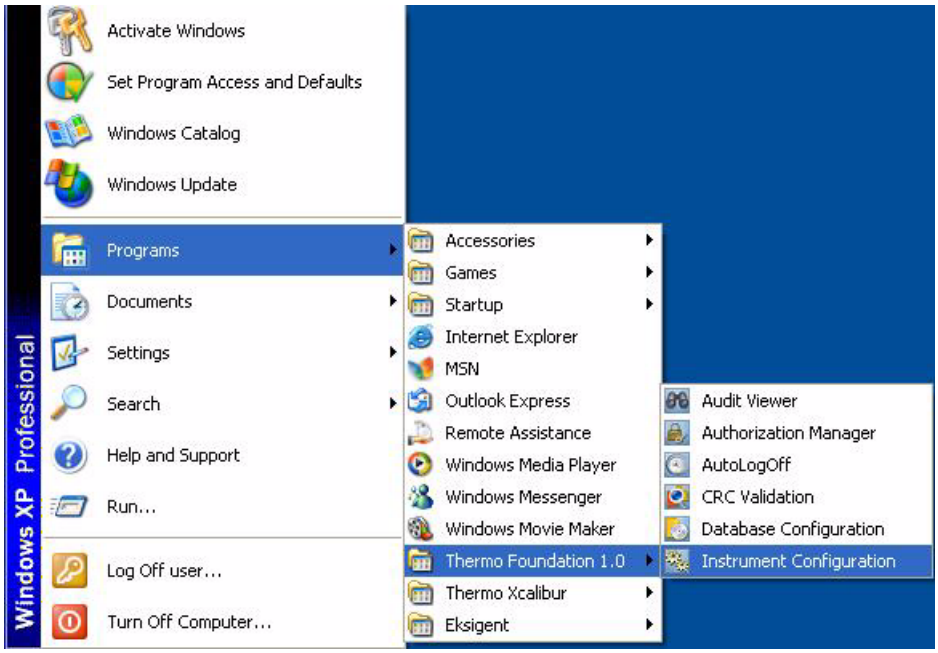

Figure 3-4 Instrument configuration shortcut

2. From the **Available Devices** group, click the **Eksigent LC Channel 1** and then click **Add>>** to add it to the **Configured Devices** group list.

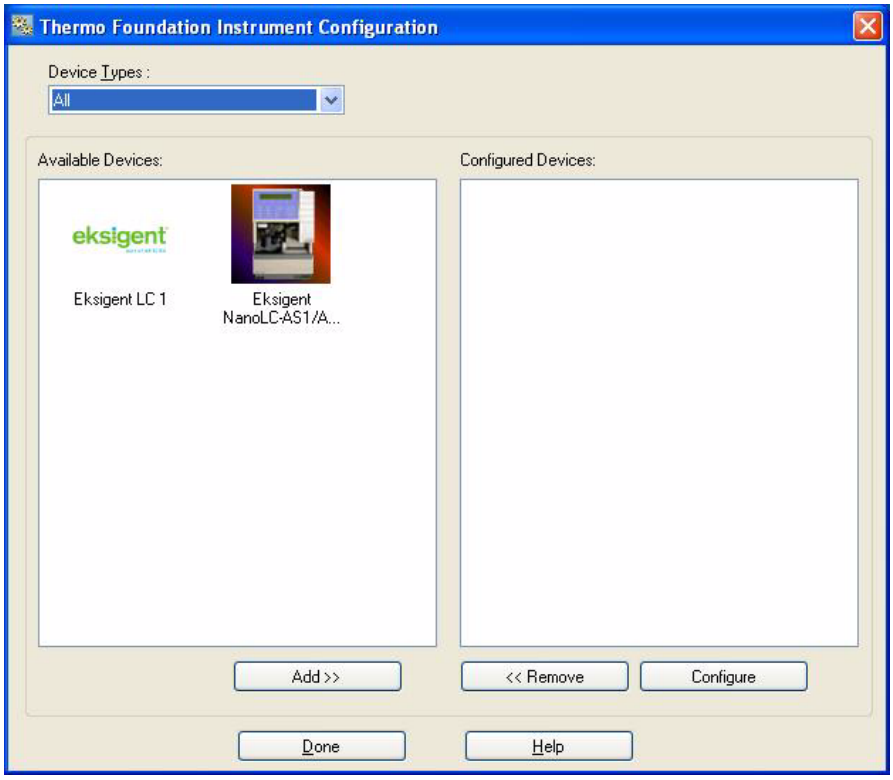

Figure 3-5 Instrument Configuration

3. If you are configuring a NanoLC-1D+ or NanoLC-2D system, from the **Available Devices** group, click the **Eksigent LC Channel 2** device and select **Add>>** to add it to the **Configured Devices** group list.
4. If you are using the Eksigent AS1 autosampler, from the **Available Devices** group, click on the **Eksigent AS1 Autosampler** and select **Add>>** to add it to the **Configured Devices** group list.
5. Click the **Eksigent LC Channel 1** configured device to select it.
6. Click the **Configure** button.

   The **Device Configuration** dialog appears.
7. Select the correct device from the drop-down list from the **Device Configuration** dialog.

8. Set other desired **Device Configuration** parameters.

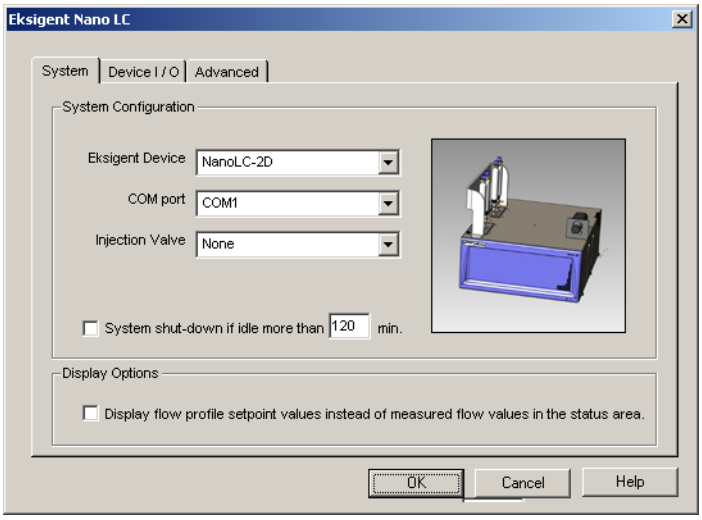

Figure 3-6 Eksigent Device Configuration

9. Click **OK**.
10. If it is configured, click **Eksigent AS1 Autosampler**.
11. Click **Configure** to open the **Eksigent AS1 Autosampler Configuration** dialog.

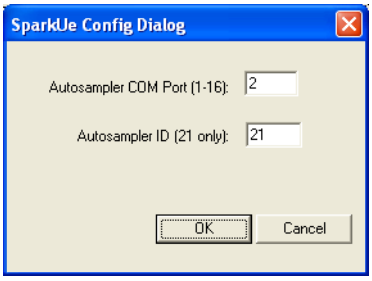

Figure 3-7 Eksigent NanoLC-AS1 Autosampler Configuration

12. Set the COM port and then click **OK** to save the settings.
13. After configuring the Eksigent devices, click **Done** in the **Xcalibur Instrument Configuration** dialog to save the configured device values.

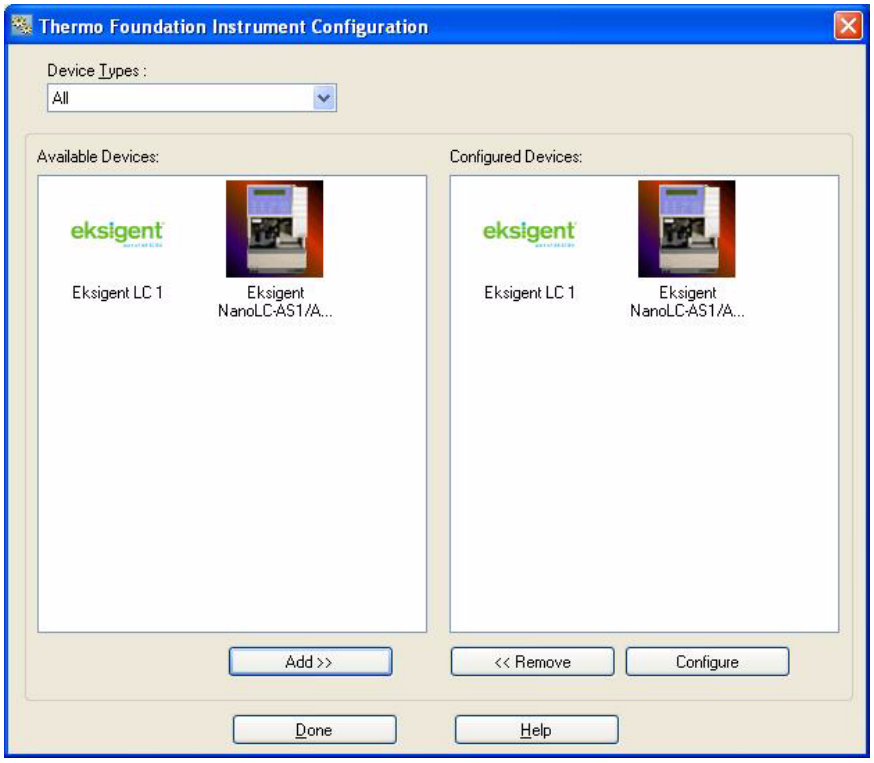

Figure 3-8 Instrument Configuration

The Xcalibur software is now configured to control the installed devices.

Device status

The status of all installed devices can be viewed at any time by selecting the device from the **Status** tab in the **Main Xcalibur Roadmap** dialog.

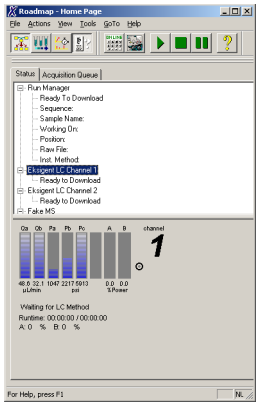

Figure 3-9 Channel 1 status

The **Device Status Window** will indicate the current state of the installed instruments and additional instrument specific information, such as mobile phase flow rates, column pressures, and temperatures.

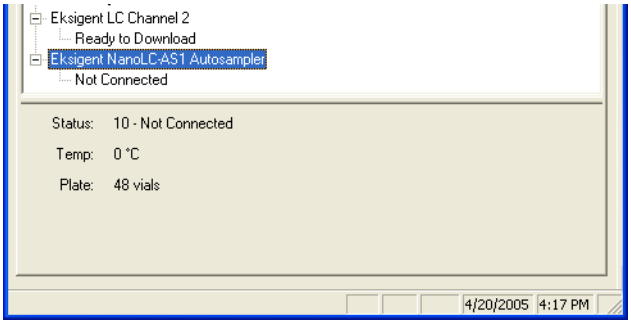

Figure 3-10 NanoLC-AS1 Autosampler status

Note: For multi-channel devices, the status information is specific to the selected channel.

Note: If there is a problem with the device, an error condition will be indicated in the status window.

Device method editors

Methods for each device created within the Xcalibur software is similar to other instruments controlled by the Xcalibur software.

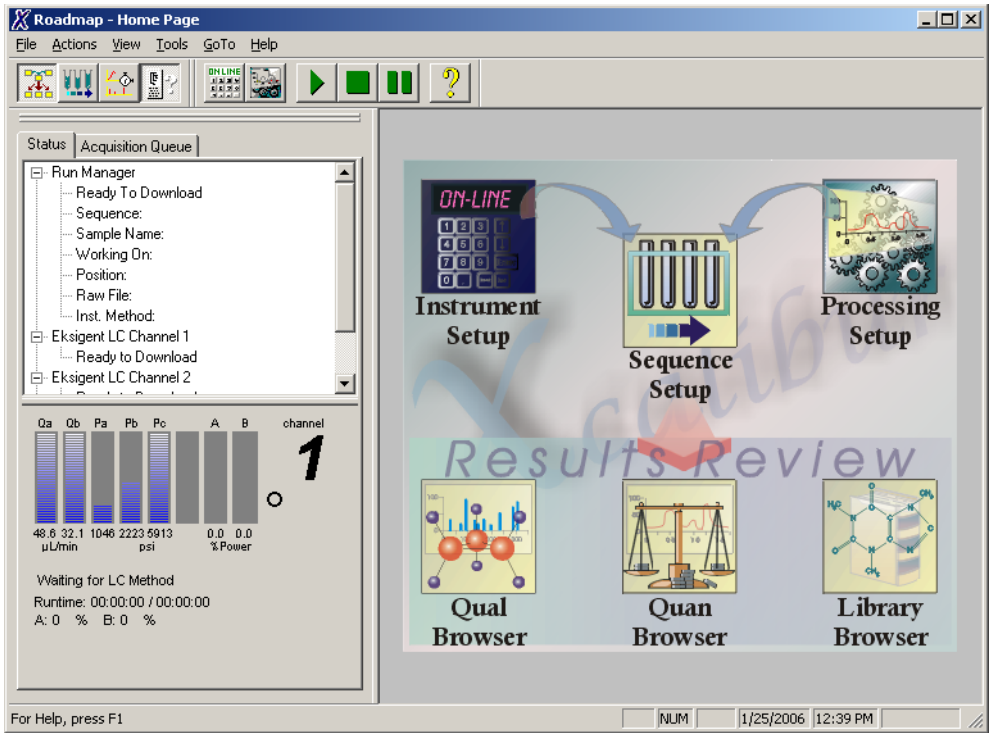

Figure 3-11 Starting the Eksigent LC Device Method Editor

To create or access a set of device methods, select **Instrument Setup** in the **Main Xcalibur Roadmap** dialog.

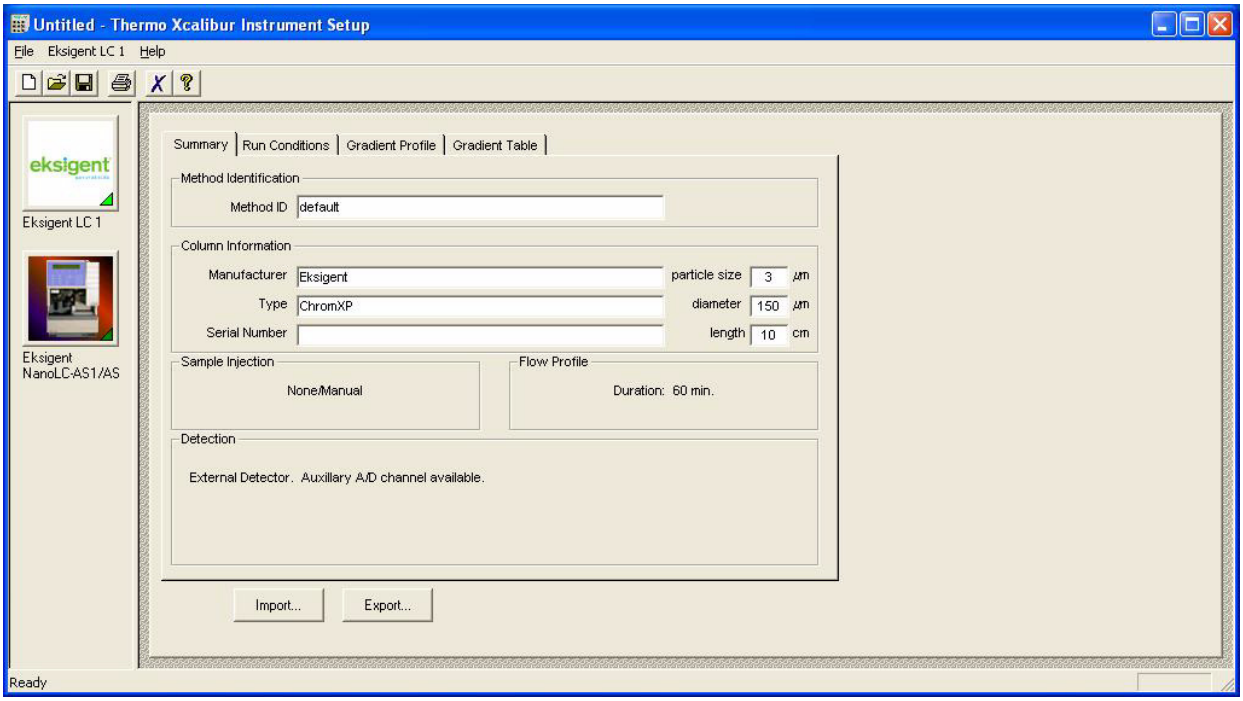

Figure 3-12 Eksigent LC Device Method Editor

Select the device icon in the left side pane to edit the method for each device. Refer to the *Eksigent Software User Guide* for more information about editing method parameters for each device.

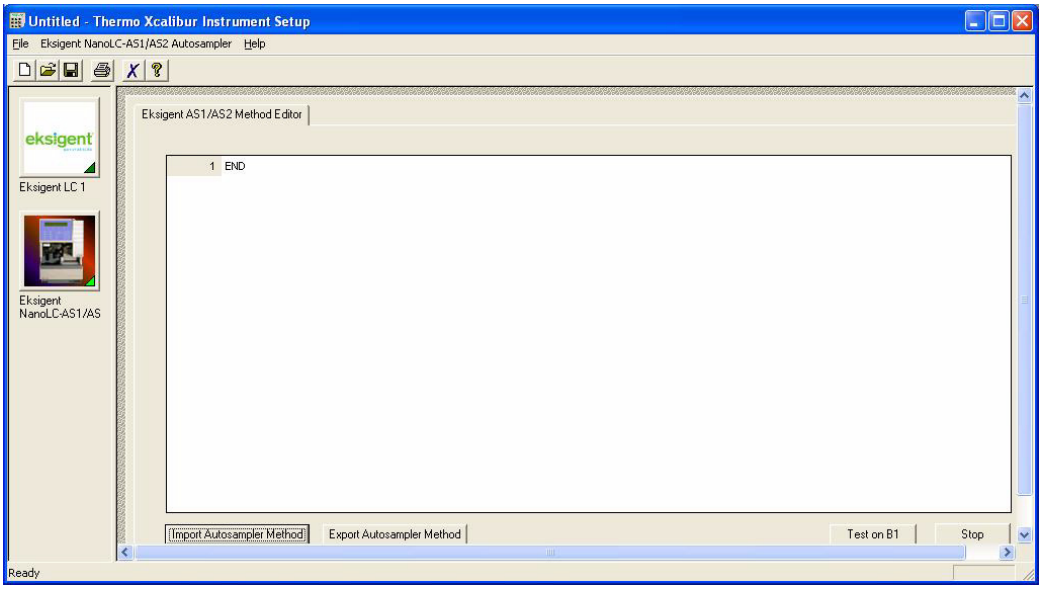

Figure 3-13 Autosampler Method Editor

Note: For multi-channel instruments, each channel is considered an independent device.

Additional instrument dialogs

Access to the primary Eksigent Control software is provided through the drop-down menu within the **Instrument Setup** dialog.

The main LC acquisition window as well as individual toolboxes, diagnostics, and control dialogs can be viewed here.

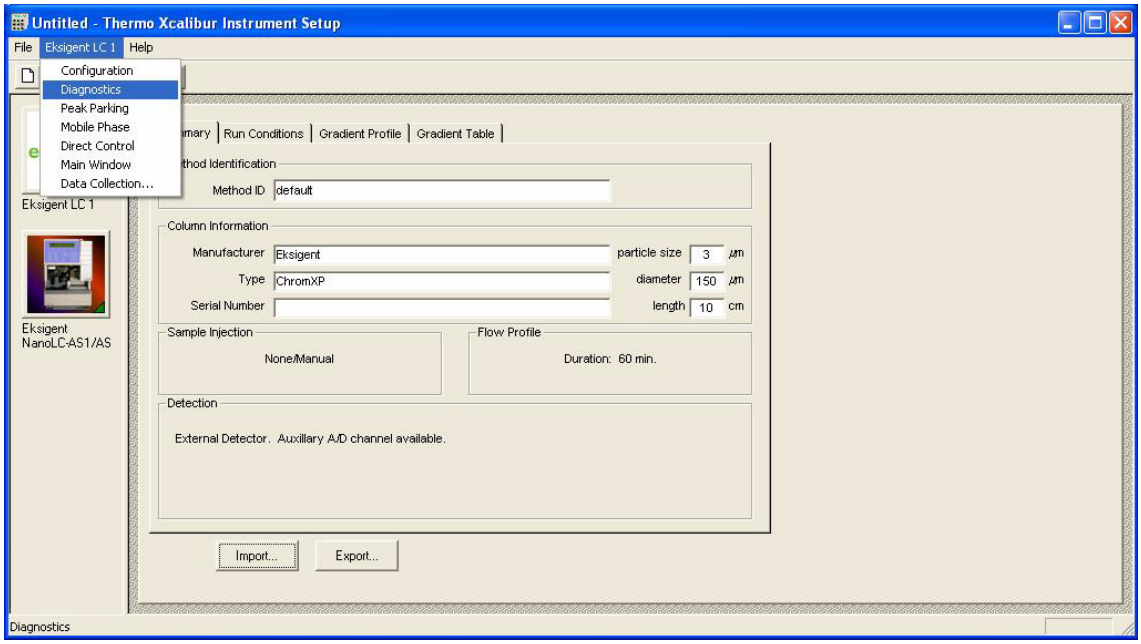

Figure 3-14 Eksigent LC Device Control Dialogs

Peak parking

Peak Parking is a method that extends the analysis time of MS/MS interrogation for peaks of interest eluting from the LC column. The LC column flow rate is immediately reduced to a predetermined rate when the initial portion of the peak (fraction) enters the MS.

The Xcalibur software can control the built-in peak parking feature of Eksigent LC devices. This feature is controlled within the Xcalibur software MS method by custom Data Dependence criteria. See the *The Xcalibur Software Reference Guide* for more information about these parameters and their meanings.

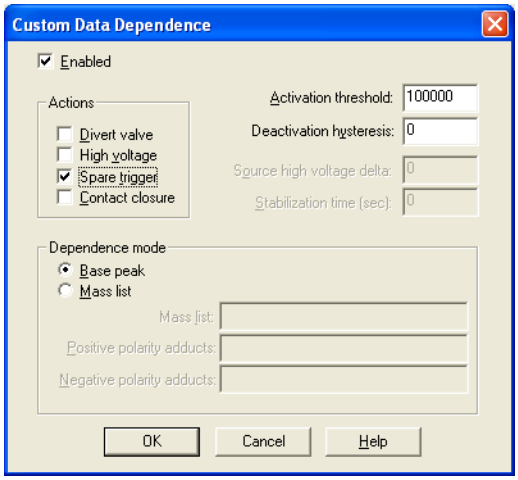

Figure 3-15 MS acquisition data dependence settings

During sample acquisition, the **Eksigent Device Status** window will indicate the current state of the LC device when peak-parking is in progress.

The **Eksigent Software Acquisition** window will also display all relevant device information when peak parking is in progress.

Note: Peak parking is controlled via external trigger. The instruments must be connected together correctly for the mass spectrometer to trigger the LC device peak-parking mode.

Note: If Peak Parking criteria are set too low in the MS method the analysis may never end and will require manual termination.

The Eksigent LC peak-park parameters are configured within the **Peak-Park Toolbox**. These options determine what action the Eksigent device performs when activated by external trigger. See the *Eksigent Software User Guide* for more information on these settings.

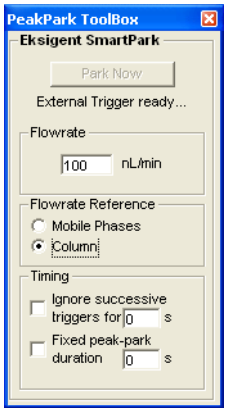

Figure 3-16 Eksigent Peak-park Toolbox

Data acquisition

Eksigent device data can be passed to the Xcalibur software for real-time display and storage in .raw data files for further processing in Quan and Qual Browsers.

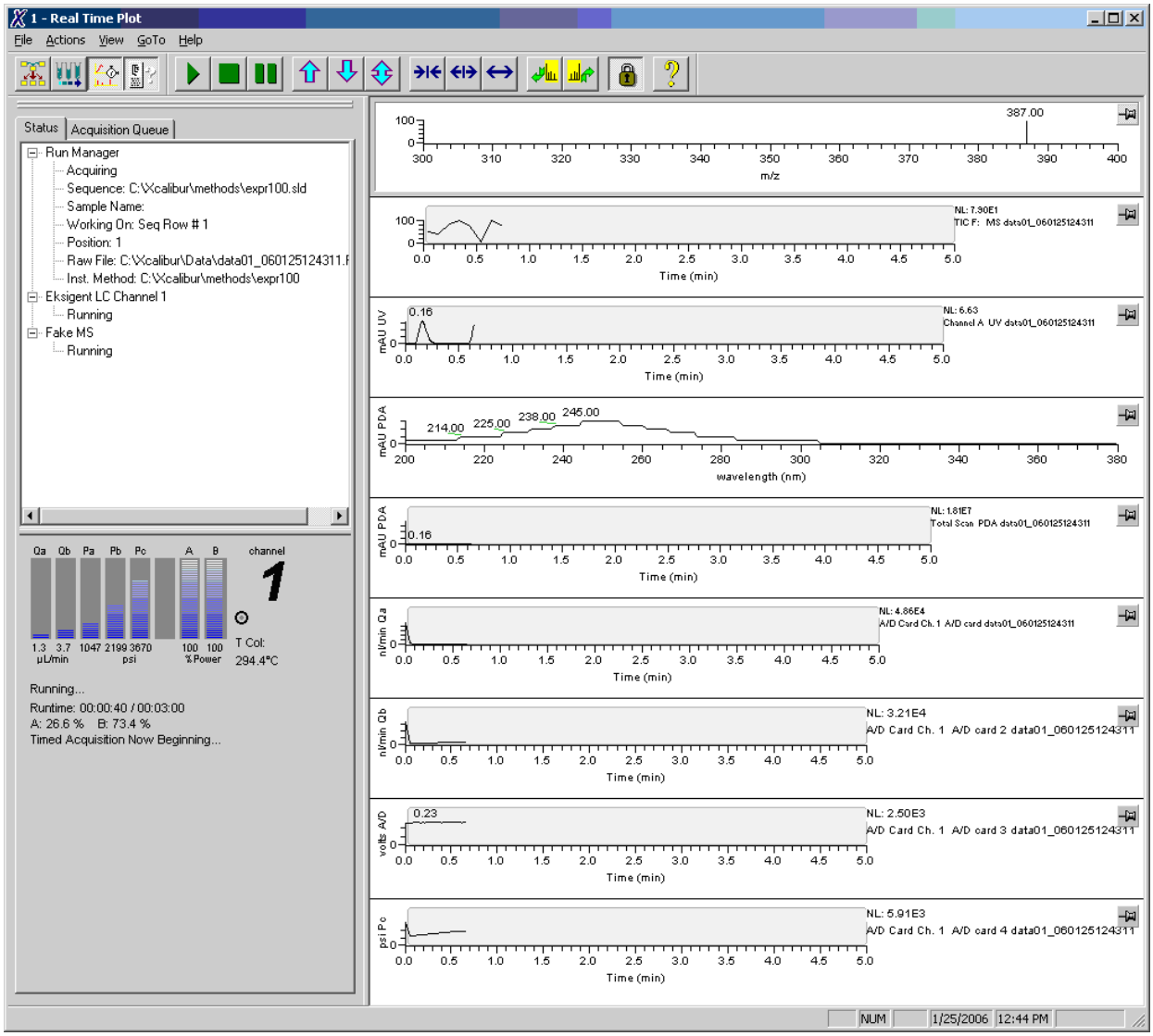

Figure 3-17 Eksigent data displayed on Xcalibur real-time page and being stored in Xcalibur Raw data file.

All Eksigent systems provide four auxiliary data channels to the Xcalibur software. Flow A (Qa), flow B (Qb), the raw A/D signal and Pressure at column (Pc). Flow units are nl/min. Pressure is in psi, and the A/D signal is volts. These signals are labeled by the Xcalibur software A/D card 1, ch. 1, A/D card 2, ch. 1, A/D card 3, ch. 1, A/D card 4, ch. 1 respectively.

Eksigent systems equipped with UV and PDA detectors can provide both the chromatogram and the spectral data to the Xcalibur software. The units are Absorbance Units (AU).

The data passed to the Xcalibur software can be optionally enabled/disabled (to save both display and storage space) by selecting **Instrument Setup > Eksigent LC Channel 1 (or 2) Menu > Data Collection**. This affects both real-time display and storage in a .raw file. A restart of

the Xcalibur software is required. These settings are per channel (for 2-D systems) and are stored as a user preference.

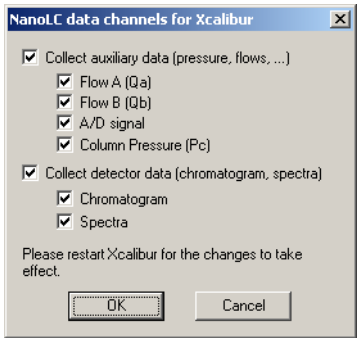

Figure 3-18 Configure desired amount of data collection.

Configuration files

After moving an installed Eksigent LC device to a new computer, to transfer the configuration, calibration, and method information to the new computer before attempting to use the device in its new location follow these steps:

1. On your old computer, run the Eksigent® software, access the Service Configuration dialog, double-click the status bar graphic and enter password: **techno**.
2. Click **Export Settings**.
3. Close the software.
4. Copy the entire **C:\Program Files\EksigentNanoLC\Settings** directory to a transfer disk.
5. Copy the entire directory contents into the same folder location on the new computer (create the **C:\Program Files\EksigentNanoLC\settings directory**).
6. Open the file: **C:\Program Files\EksigentNanoLC\settings\EKsettings.reg**.

   You will be prompted to copy the settings into the Windows registry.
7. Click **OK**.
8. Install the Eksigent software on the new computer.


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The Analyst® Software

A significant issue has been identified for users using the Analyst® software on Windows XP. This issue prevents external device control on SP1 and causes the system to stop responding on SP2. Below are steps required to correct the issues using Analyst software and software drivers on systems running Windows XP. An Analyst software hot fix is forthcoming – please contact your AB SCIEX representative if you have further questions concerning this issue.

Users with Windows 2000 or NT do not need this fix.

Systems with Windows XP SP1

Users with Windows XP SP1 must not run in Integrated Security Mode. It can be changed by:

1. Start the Analyst software.
2. Open the **Security Configuration** tab.
3. Select **More**.
4. Click the **Security** tab.
5. Click **Single user**.
6. Click **Apply**.
7. Click **OK**.
8. Restart Analyst software.

After configuring the hardware profile, if the instrument control is still not functioning, or if you require the use of other security modes, upgrade to Windows XP SP2 and follow the directions for SP2. The upgrade is free and available at: http://windowsupdate.microsoft.com.

Systems with Windows XP SP2

1. Click **Start > Control Panel > Administrative Tools > Services**.
2. In the **Services** dialog, locate AnalystService and then click **Stop**.

Tip! Do not close the **Services** dialog.

3. Click **Start > All Programs > Accessories > Windows Explorer** to browse to the Analyst software **bin** directory. This is most likely installed on **C:\Program Files\Analyst\bin**. Locate and delete **msvcrt.dll**.
4. Return to **Services**, select AnalystService and then click **Play.**

   Return to install the Eksigent software drivers.

The HyStar Software

There is a known issue in the HyStar software that occurs when the CTC PAL autosampler encounters a hardware error such as a missing sample vial or misalignment. There are two paths for recovery depending on whether data acquisition has begun.

1. Before data acquisition begins.

   The HyStar software will not allow data acquisition to be terminated because the system is not yet in a run state. The **HyStar** button remains blue.

   - Right-click the red autosampler button located in the **HyStar Acquisition** dialog.
   - Select **Abort Injection** and confirm the selection.
   - The **HyStar** button will change from blue to yellow or green.
   - Right-click the red autosampler button again.
   - Select **Reset Communication** and confirm selection.
   - The autosampler communication will reset and the autosampler button will turn yellow and then green.
   - Once the hardware error condition is corrected, the sample table can be reloaded and the analysis restarted.

2. After data acquisition begins

   The HyStar software will not hang-up however, the autosampler communication will need to be reset by doing the following:

   - Right-click the red autosampler button in the HyStar
   - In the **Acquisition** dialog, select **Reset Communication** and **Confirm Selection**.
   - The autosampler communication will reset and the autosampler button will turn yellow and then green.
   - Once the hardware error condition is corrected, the sample table can be reloaded and the analysis restarted.