

ExionLC 2.0 System

Software User Guide



This document is provided to customers who have purchased SCIEX equipment to use in the operation of such SCIEX equipment. This document is copyright protected and any reproduction of this document or any part of this document is strictly prohibited, except as SCIEX may authorize in writing.

Software that may be described in this document is furnished under a license agreement. It is against the law to copy, modify, or distribute the software on any medium, except as specifically allowed in the license agreement. Furthermore, the license agreement may prohibit the software from being disassembled, reverse engineered, or decompiled for any purpose. Warranties are as stated therein.

Portions of this document may make reference to other manufacturers and/or their products, which may contain parts whose names are registered as trademarks and/or function as trademarks of their respective owners. Any such use is intended only to designate those manufacturers' products as supplied by SCIEX for incorporation into its equipment and does not imply any right and/or license to use or permit others to use such manufacturers' and/or their product names as trademarks.

SCIEX warranties are limited to those express warranties provided at the time of sale or license of its products and are the sole and exclusive representations, warranties, and obligations of SCIEX. SCIEX makes no other warranty of any kind whatsoever, expressed or implied, including without limitation, warranties of merchantability or fitness for a particular purpose, whether arising from a statute or otherwise in law or from a course of dealing or usage of trade, all of which are expressly disclaimed, and assumes no responsibility or contingent liability, including indirect or consequential damages, for any use by the purchaser or for any adverse circumstances arising therefrom.

(GEN-IDV-09-10816-D)

For Research Use Only. Not for use in Diagnostic Procedures.

Trademarks and/or registered trademarks mentioned herein, including associated logos, are the property of AB Sciex Pte. Ltd., or their respective owners, in the United States and/or certain other countries (see sciex.com/trademarks).

AB Sciex™ is being used under license.

© 2022 DH Tech. Dev. Pte. Ltd.



AB Sciex Pte. Ltd.
Blk33, #04-06 Marsiling Industrial Estate Road 3
Woodlands Central Industrial Estate, Singapore 739256

Contents

1 Introduction to the System	4
2 SCIEX OS Software	5
Add and Activate the ExionLC 2.0 System Using the SCIEX OS Software.....	5
Direct Device Control.....	11
View System Status.....	16
View System-Related Information in the Sample Information Pane.....	17
3 Analyst Software	20
Hardware Profile Creation.....	20
Add and Activate the ExionLC 2.0 System with the Analyst Software.....	20
View System Status.....	27
View System-Related Information in the File Info Panel.....	31
4 Configure the Wash System	35
5 Batch Creation, Data Acquisition, and Data Processing	36
Create an LC Method.....	36
6 Troubleshooting	46
Configuration Issues.....	46
Operation Issues.....	47
Contact Us	50
Customer Training.....	50
Online Learning Center.....	50
SCIEX Support.....	50
CyberSecurity.....	50
Documentation.....	50

Introduction to the System

1

The ExionLC 2.0 system is an LC system provided by SCIEX specifically to work with SCIEX mass spectrometers. The LC system provides speed, sensitivity, resolution, and reliability for routine or complex LC-MS/MS analysis.

This user guide describes how to perform tasks in either the SCIEX OS software or the Analyst software.

Use the software to do the following:

- Configure devices.
- Directly control the ExionLC 2.0 system.
- Create methods. Refer to the section: [Create an LC Method](#).
- View the status of modules comprising an ExionLC 2.0 system in the Device Details dialog.
- View information related to the modules in the Sample Information pane.

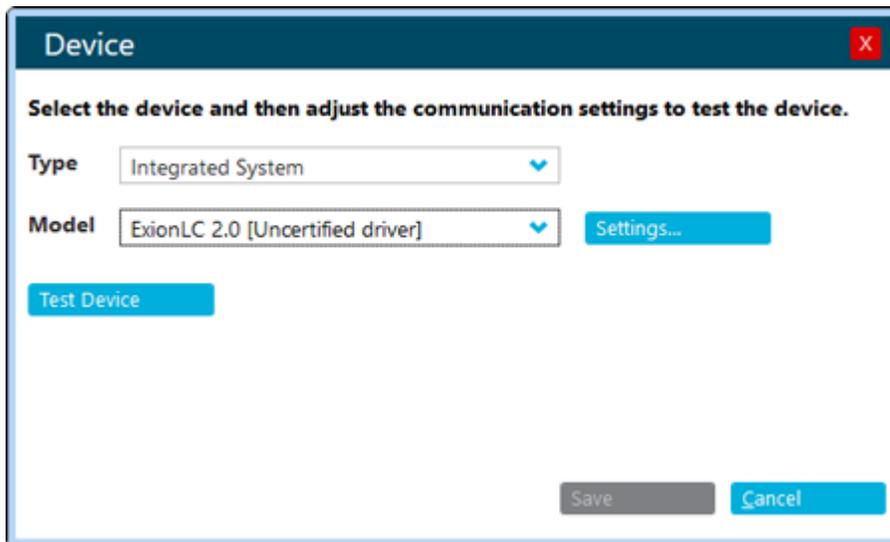
Note: For information about the fields in the different dialogs, press F1 for help.

Add and Activate the ExionLC 2.0 System Using the SCIEX OS Software

Note: To avoid any activation issues, always add the mass spectrometer before adding any other devices.

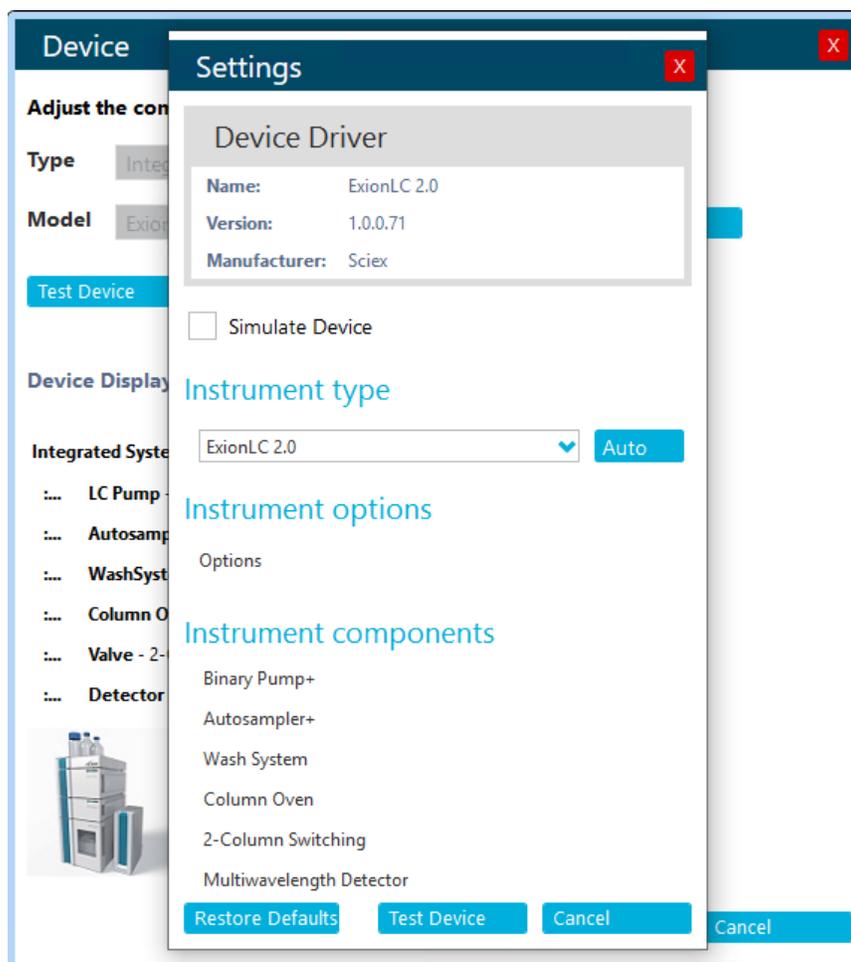
1. Open the SCIEX OS software.
2. Open the Configuration workspace.
3. Click **Devices**.
4. If any devices are active, then click **Deactivate**.
5. Click **Add**.
The Device dialog opens.
6. In the **Type** list, select **Integrated System**.
7. In the **Model** list, select **ExionLC 2.0**.

Figure 2-1 Device Configuration



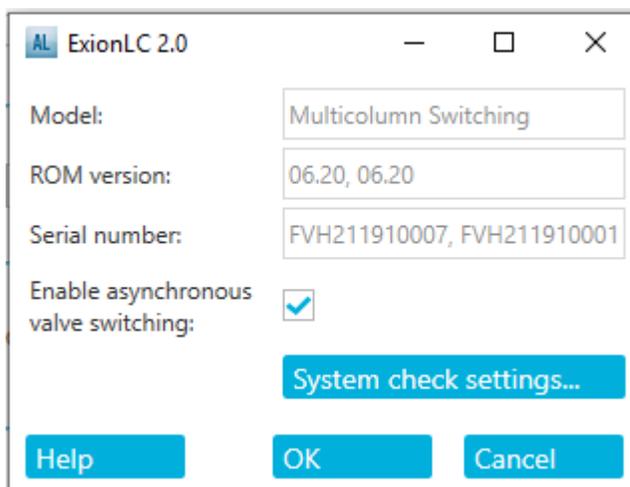
8. Click **Settings**.
9. Click **Auto** to automatically detect and configure the LC modules.

Figure 2-2 Settings Dialog



10. If multicolumn switching is configured, then under Instrument components, click **Multicolumn Switching**, and then select the **Enable asynchronous valve switching** check box to enable individual valve control.

Figure 2-3 Multicolumn Switching Activation

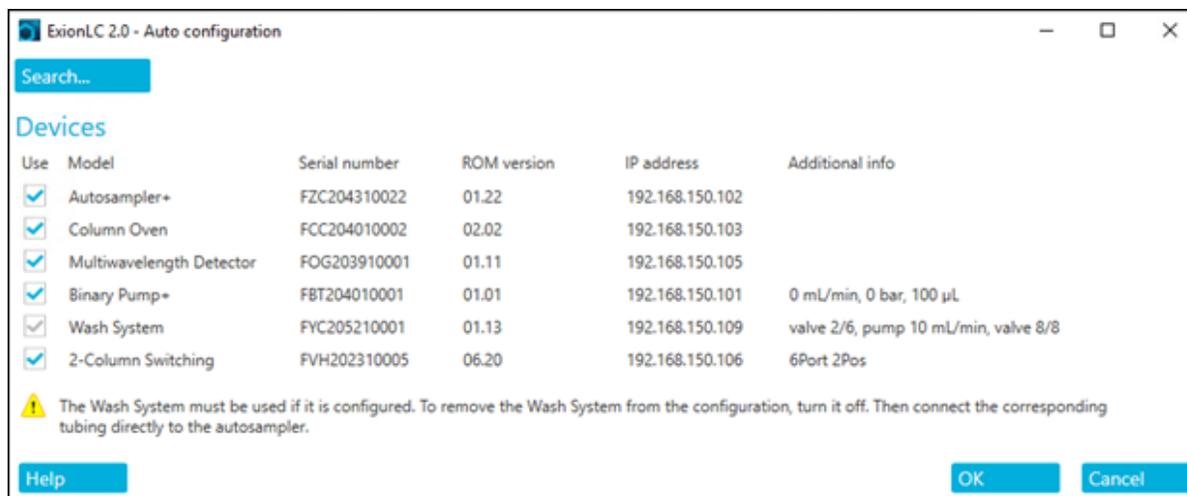


11. To exclude a device from the configuration, clear the check box for that device.

Note: The wash system must be used if it is configured. To remove the wash system from the configuration, turn it off. Then connect the corresponding tubing directly to the autosampler.

Note: SCIEX OS does not support data acquisition from both a diode array detector (DAD) and a multiwavelength detector (MWD) at the same time. If a DAD and MWD are detected, clear one check box, and then click **OK**.

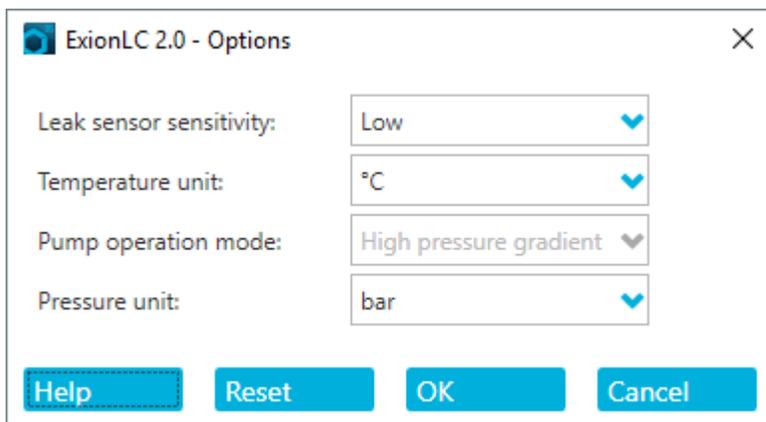
Figure 2-4 Auto Configuration



12. Click **OK**.

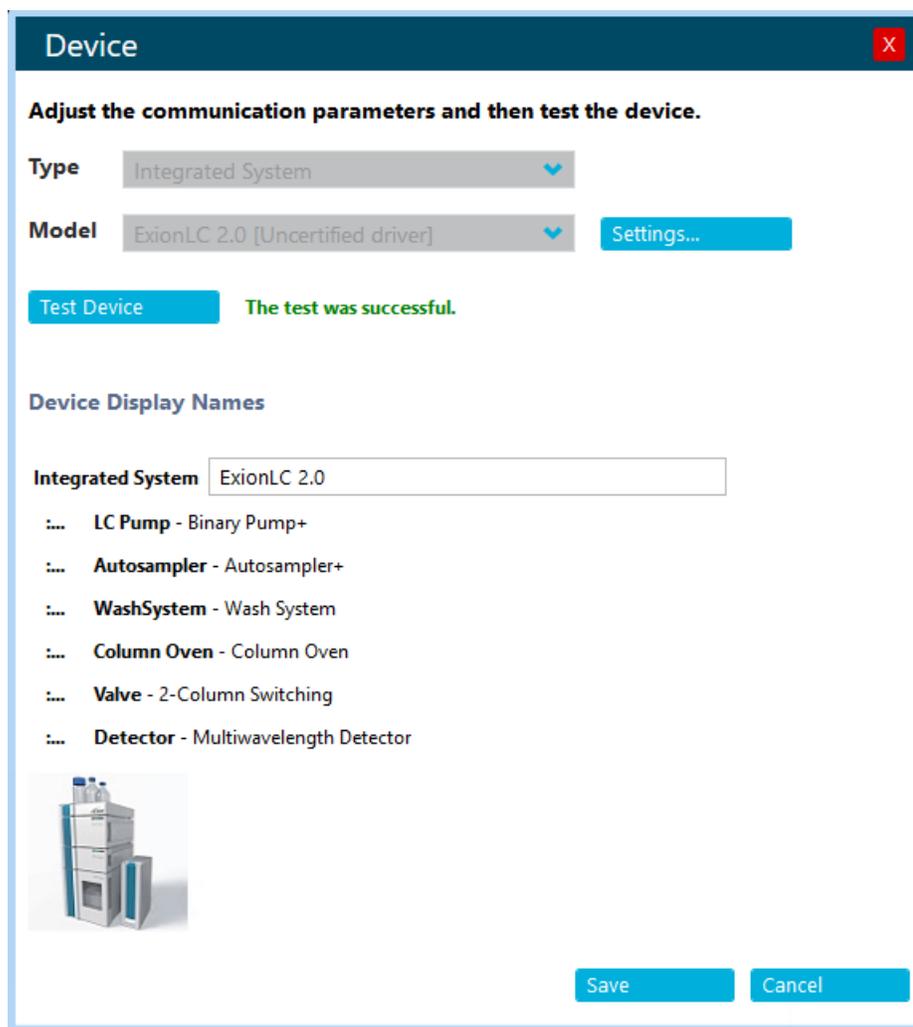
13. Under Instrument options, click **Options** and then select the options as required. For field descriptions, press **F1** for help.

Figure 2-5 Options



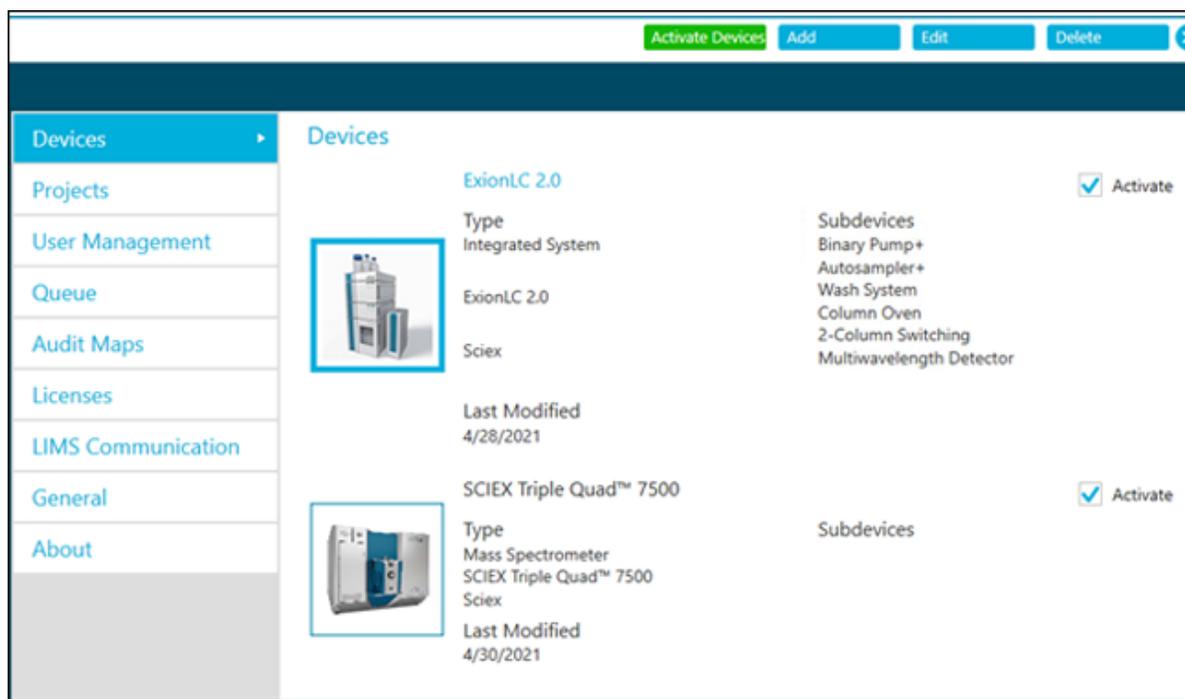
14. Click **OK**.
15. Under Instrument components, click each module and then select the options as required. For field descriptions, press **F1** for help.
16. Click **Test Device** to make sure that the device is configured correctly and available for use.

Figure 2-6 Device Dialog



17. Click **Save**.
18. Select the **Activate** check box beside each device to be activated, and then click **Activate Devices**.

Figure 2-7 Devices Workspace



All of the selected devices are activated.

Tip! To edit or delete devices, and for field descriptions, press **F1** for help.

Note: After the devices are activated, verify the status of each module in the Device Details.

Direct Device Control

The modules in the system can be controlled in real time in the Device Control dialog.

Note: If a detector is included in the configuration, then make sure that the lamp is on. If the lamp is off, then use Direct Control to turn it on.

1. On the status panel, click **Direct device control** () to open the Device Control dialog.

Note: If the system name has been changed, then the new name is shown in the status panel.

Figure 2-8 Devices in the Status Panel



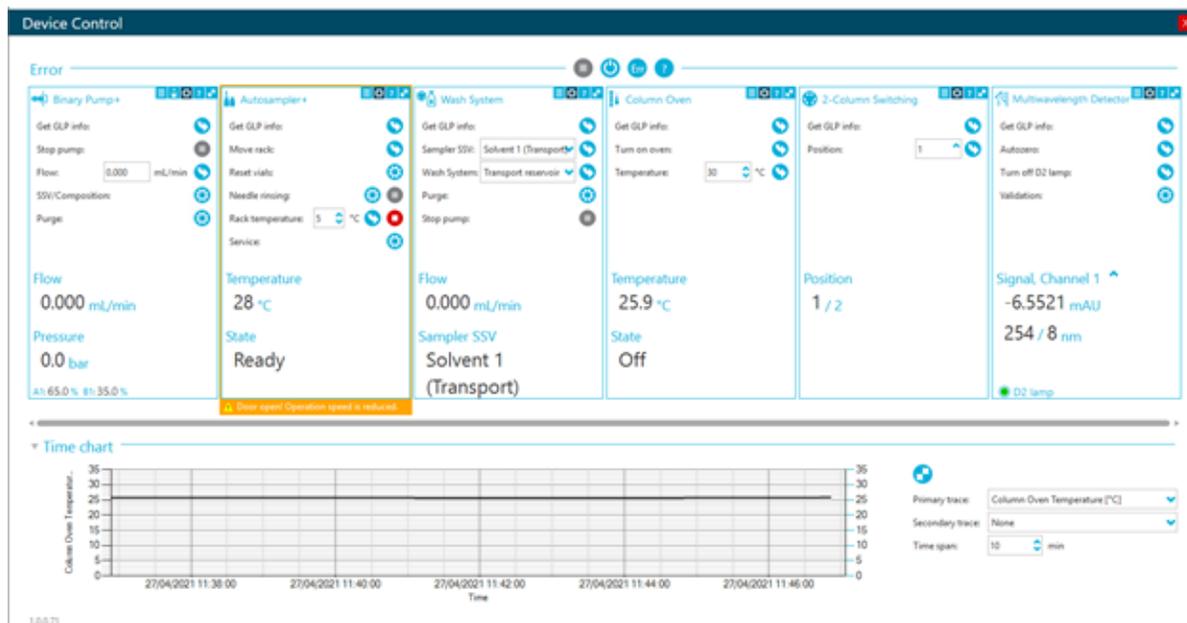
The Device Control dialog opens. It shows the real-time status of the devices in the ExionLC 2.0 system. Press **F1** for help.

Figure 2-9 Device Control Dialog



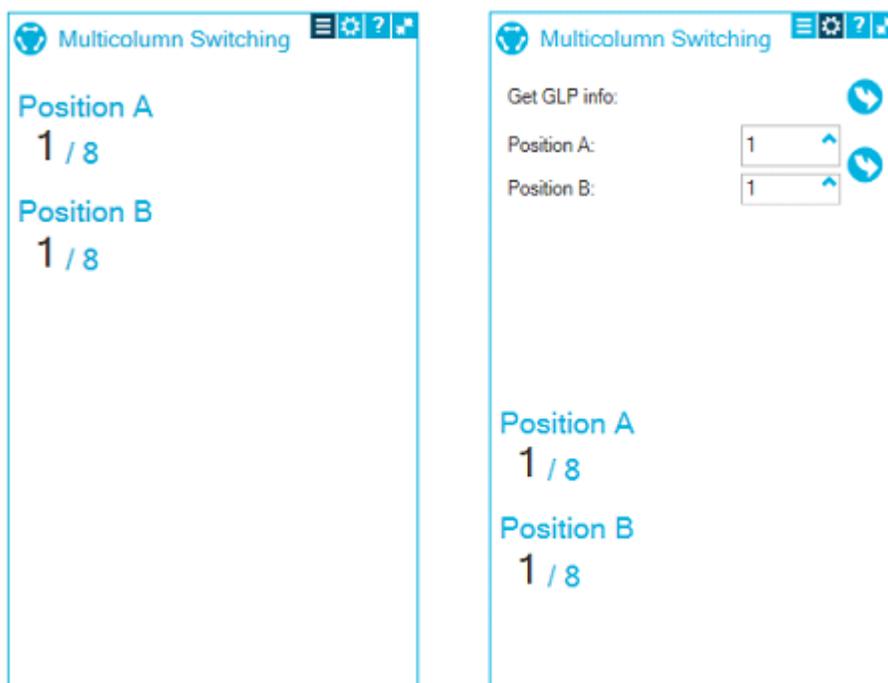
2. Click **Direct control panel** (⚙️) in the top right of each section to access the maintenance and configuration options.

Figure 2-10 Device Control Maintenance and Configuration Options



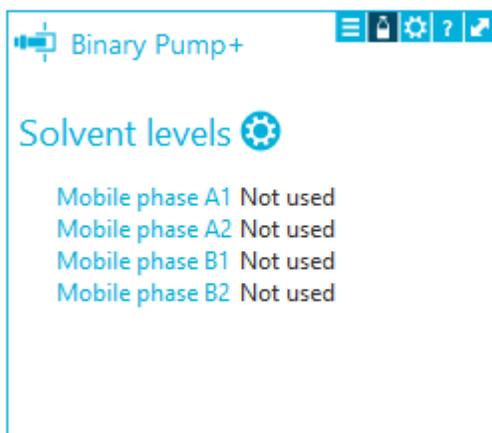
If multicolumn switching with asynchronous valve switching is enabled, then refer to the following figure for information about the valve component.

Figure 2-11 Device Control: Multicolumn Switching



3. (Optional) In the pump pane, click **Solvent levels panel** (🔒) to view and adjust the solvent levels. Refer to the section: [View System Status](#).
4. (Optional) View and adjust the solvent levels:
 - a. In the pump pane, click **Solvent levels panel** (🔒).

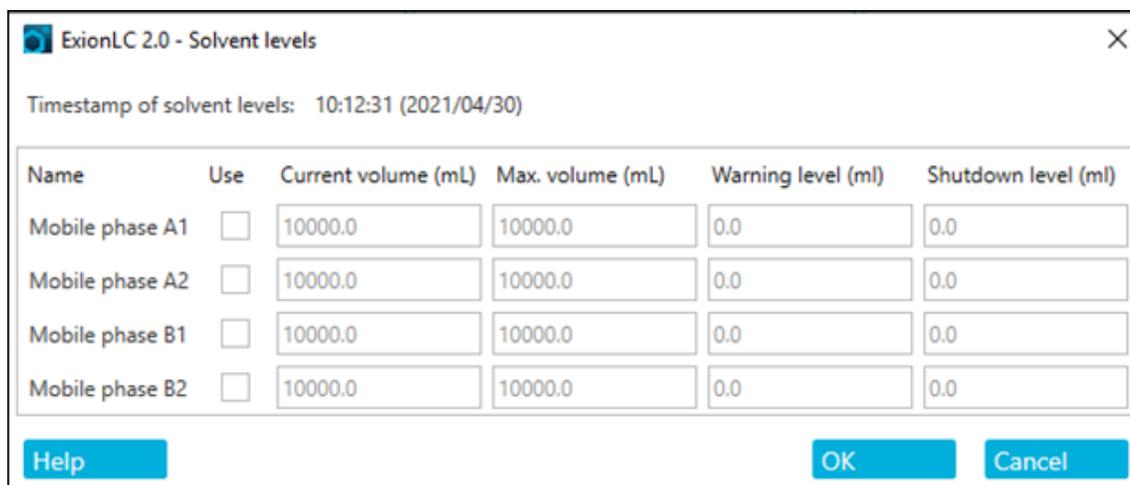
Figure 2-12 Solvent levels Panel



Note: The solvent levels are not automatically detected. If the bottle is filled, then the Current volume field must be updated.

- b. Click **Open solvent levels dialog** () beside **Solvent levels**.

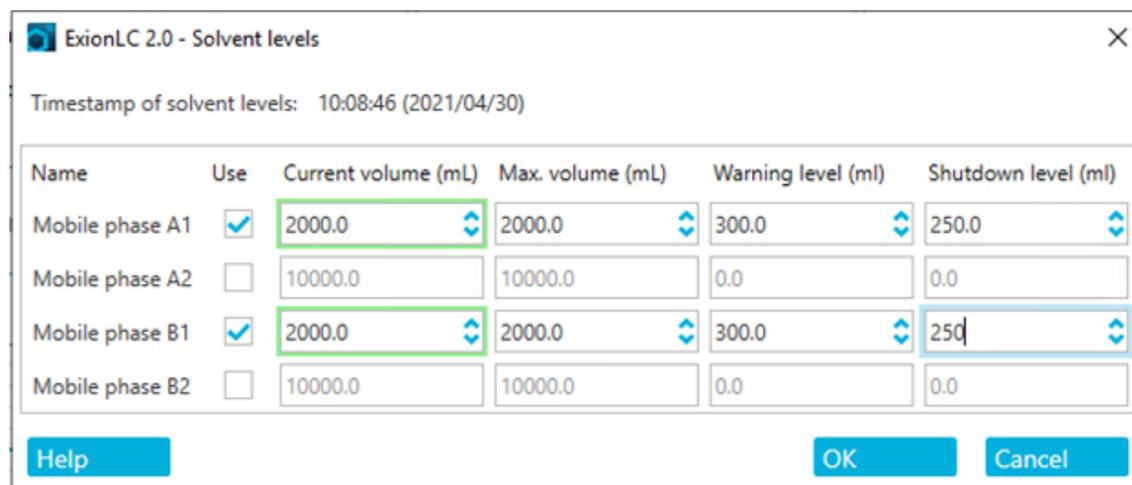
Figure 2-13 ExionLC 2.0 - Solvent levels Dialog



- c. Type values for the parameters, as required, and then click **OK**.

Note: During equilibration and acquisition, only the **Current volume** values can be changed.

Figure 2-14 ExionLC 2.0 - Solvent levels Dialog, Edited



The statuses of the solvent levels update within 5 seconds.

View System Status

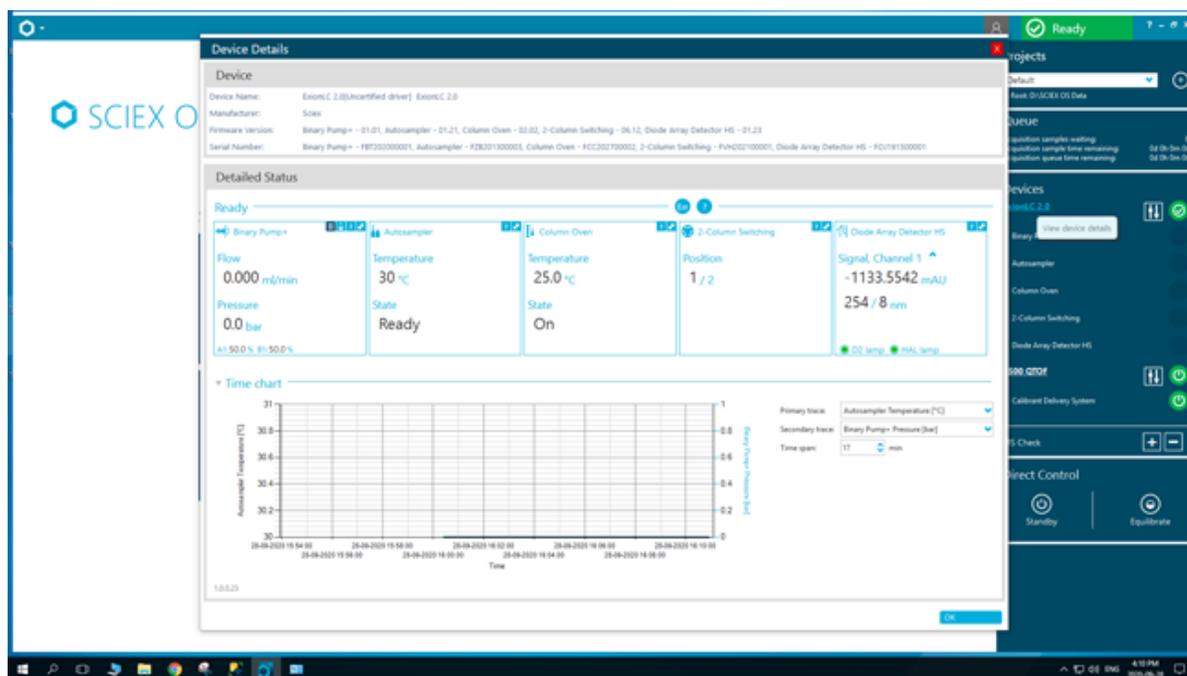
The modules in the system can be viewed in real time in the Device Details dialog.

Note: When the system is running or equilibrating, **Direct device control** is unavailable. To update the Current Volume (when the mobile phase is being topped up to prevent a batch from stopping when the current volume drops to the Shutdown level), use the Solvent levels panel on the Detailed Status dialog for the pump.

1. On the status panel, click the system name to open the Device Details dialog.

Note: If the system name has been changed, then the new name is shown in the status panel.

Figure 2-15 Device Details Dialog



The Device Details dialog shows the real-time status of the devices in the ExionLC 2.0 system. Press **F1** for help.

2. (Optional) View and adjust the solvent levels. Refer to the section: [Direct Device Control](#).

Note: During equilibration and acquisition, only the **Current volume** values can be changed.

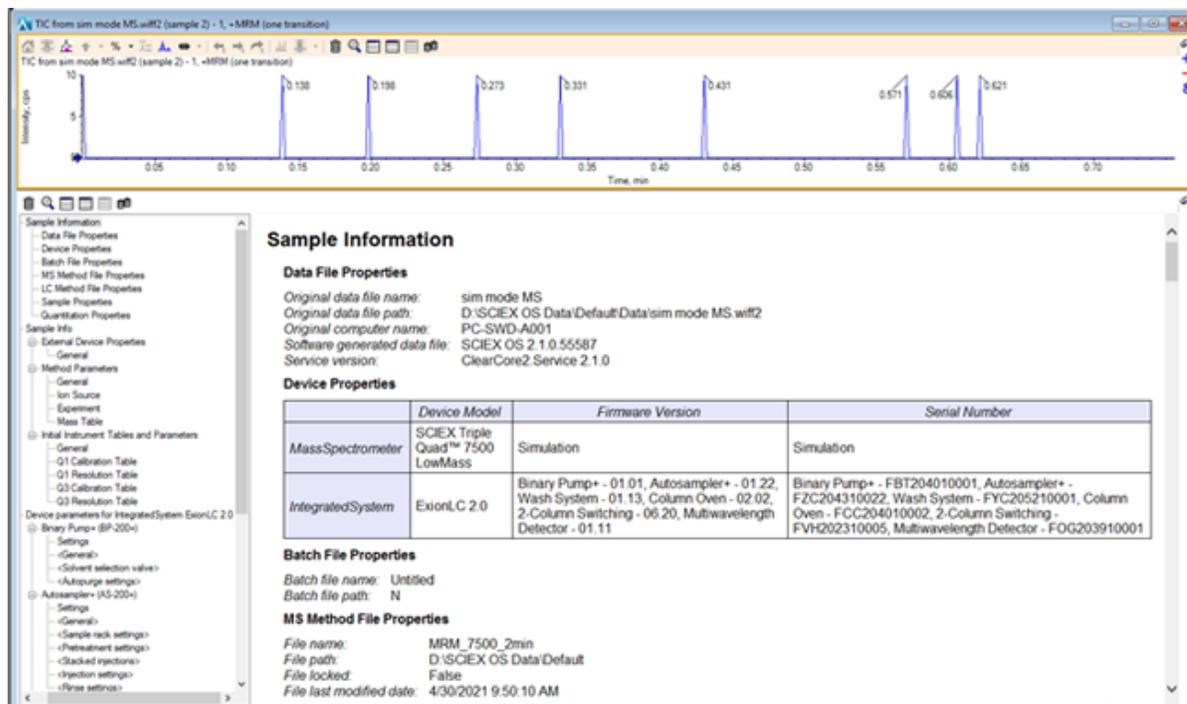
View System-Related Information in the Sample Information Pane

When a sample is acquired, information about the LC system can be viewed in the Sample Information pane for the data file.

1. Open the Explorer workspace.
2. Click **File > Open Sample** or **File > Open Multiple Samples**.
3. In the **Source** field, make sure that the correct project is selected.
4. Select the data file to be opened, select one or more samples, as appropriate, and then click **OK**.
The data file opens and the chromatogram for the selected samples is shown.
5. Click **Show > Sample Information**.

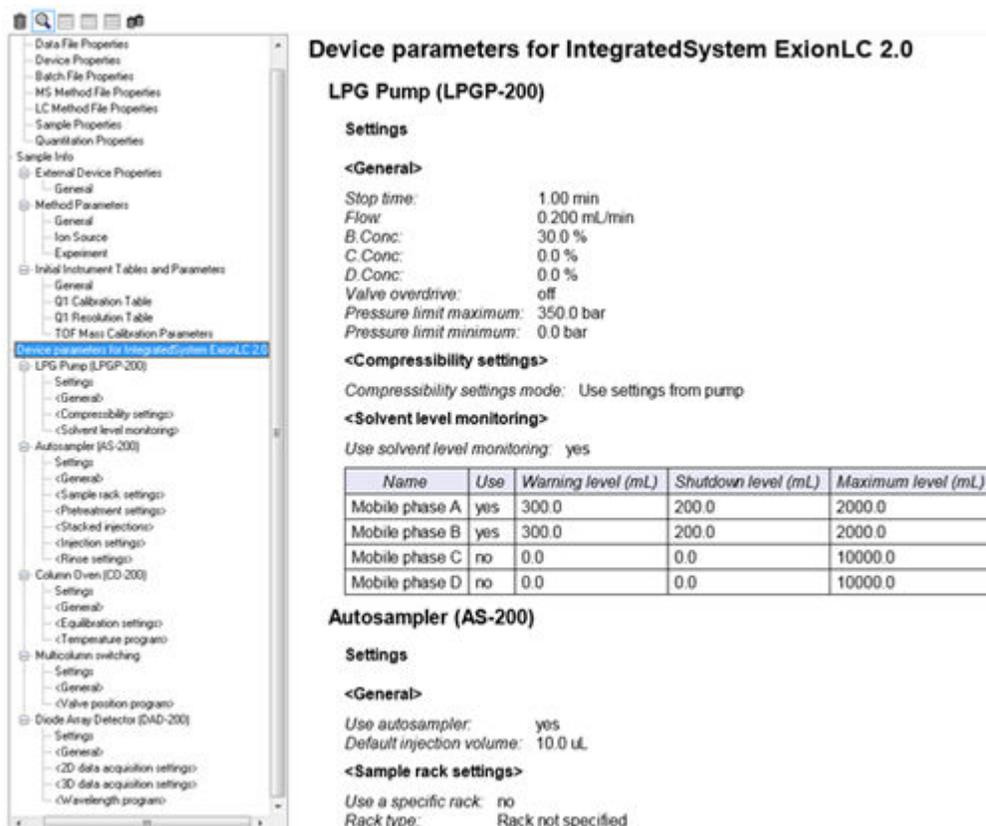
The Sample Information pane opens below the chromatogram.

Figure 2-16 TIC for a Sample wiff File and the Related Sample Information Pane



- In the left pane of the Sample Information panel, click + to expand a section, and then select the information to be viewed. The selected information is shown in the right pane. Scroll up or down in the right pane to view the information.

Figure 2-17 Sample Information Pane



Device parameters for IntegratedSystem ExionLC 2.0

LPG Pump (LPGP-200)

Settings

<General>

Stop time: 1.00 min
 Flow: 0.200 mL/min
 B. Conc: 30.0 %
 C. Conc: 0.0 %
 D. Conc: 0.0 %
 Valve overdrive: off
 Pressure limit maximum: 350.0 bar
 Pressure limit minimum: 0.0 bar

<Compressibility settings>

Compressibility settings mode: Use settings from pump

<Solvent level monitoring>

Use solvent level monitoring: yes

Name	Use	Warning level (mL)	Shutdown level (mL)	Maximum level (mL)
Mobile phase A	yes	300.0	200.0	2000.0
Mobile phase B	yes	300.0	200.0	2000.0
Mobile phase C	no	0.0	0.0	10000.0
Mobile phase D	no	0.0	0.0	10000.0

Autosampler (AS-200)

Settings

<General>

Use autosampler: yes
 Default injection volume: 10.0 uL

<Sample rack settings>

Use a specific rack: no
 Rack type: Rack not specified

Use the software to do the following:

- Create a hardware profile.
- Create methods. Refer to the section: [Create an LC Method](#).
- View the status of modules comprising an ExionLC 2.0 system in the LC Integrated System Detailed Status dialog, or control them directly.
- View information related to the modules in the File Info panel.

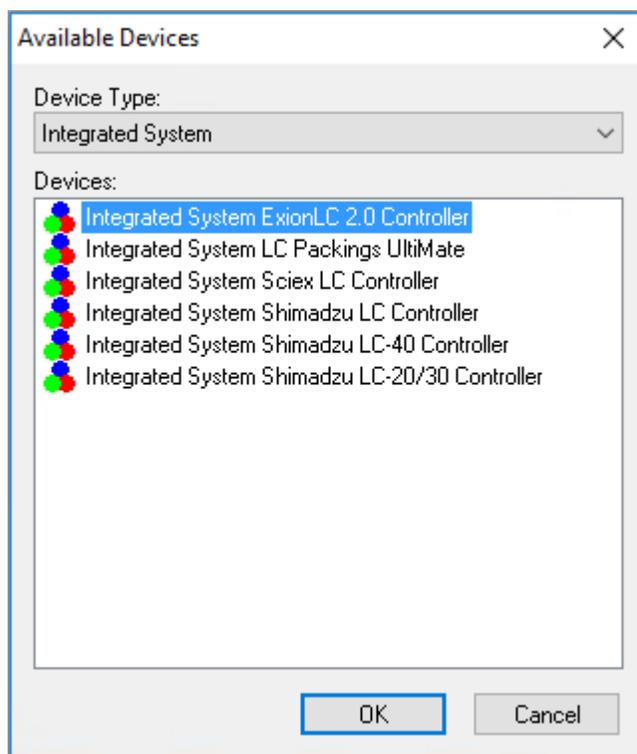
Note: For information about the fields in the different dialogs, press **F1** for help.

Hardware Profile Creation

A hardware profile tells the software which devices to use, and how the devices are configured and connected to the computer. For more information, refer to hardware profile sections in the *System User Guide* for the mass spectrometer or the *Advanced User Guide* for the Analyst software.

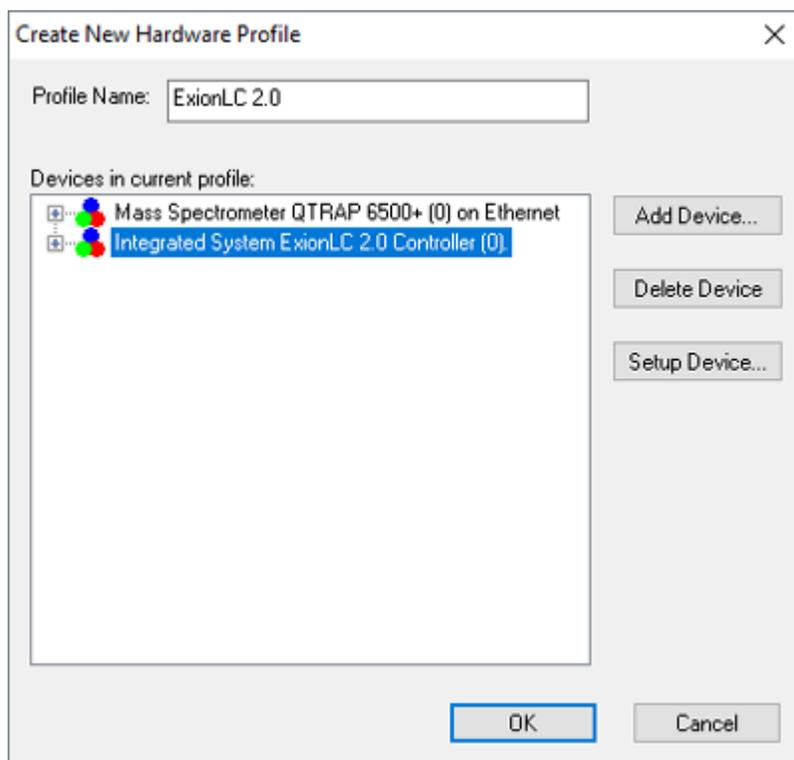
Add and Activate the ExionLC 2.0 System with the Analyst Software

1. Open the Analyst software.
2. On the Navigation bar, double-click **Hardware Configuration**.
The Hardware Configuration Editor opens.
3. Click **New Profile**.
The Create New Hardware Profile dialog opens.
4. Type a name in the **Profile Name** field and then click **Add Device**.
The Available Devices dialog opens. The **Device Type** field is set to **Mass Spectrometer**.
5. Select a SCIEX mass spectrometer from the **Devices** list and then click **OK**.
6. (If required) To configure the mass spectrometer, select it in the **Devices in current profile** list and then click **Setup Device**. Refer to the document: *System User Guide* for the mass spectrometer.
7. On the Create New Hardware Profile dialog, click **Add Device** and then set the **Device Type** to **Integrated System**.

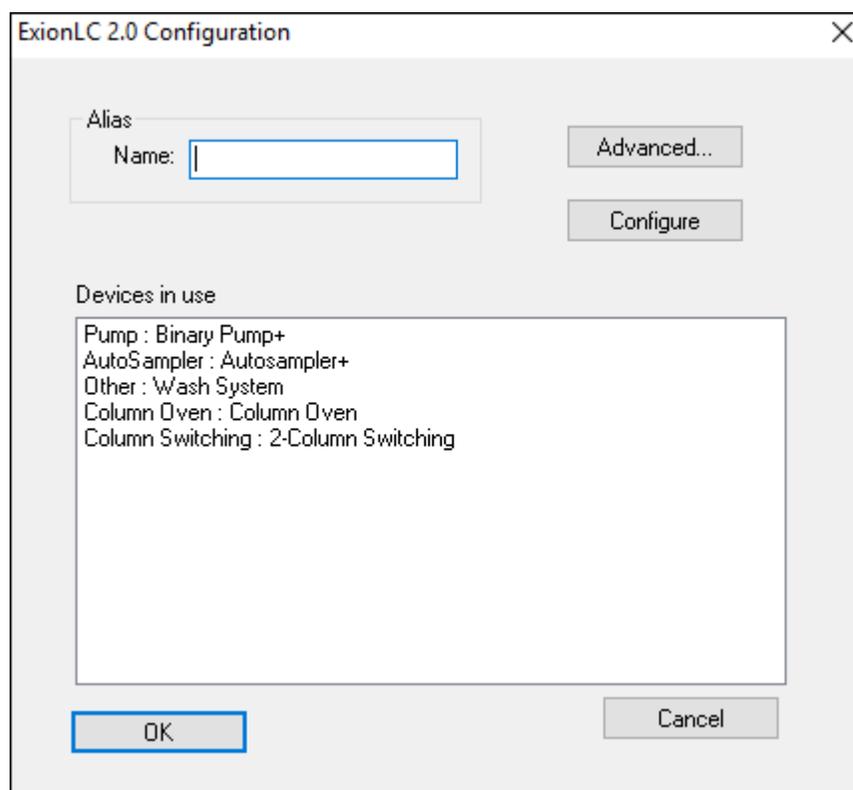
Figure 3-1 Available Devices Dialog

8. Select **Integrated System ExionLC 2.0 Controller** and then click **OK**.

Figure 3-2 Create New Hardware Profile Dialog

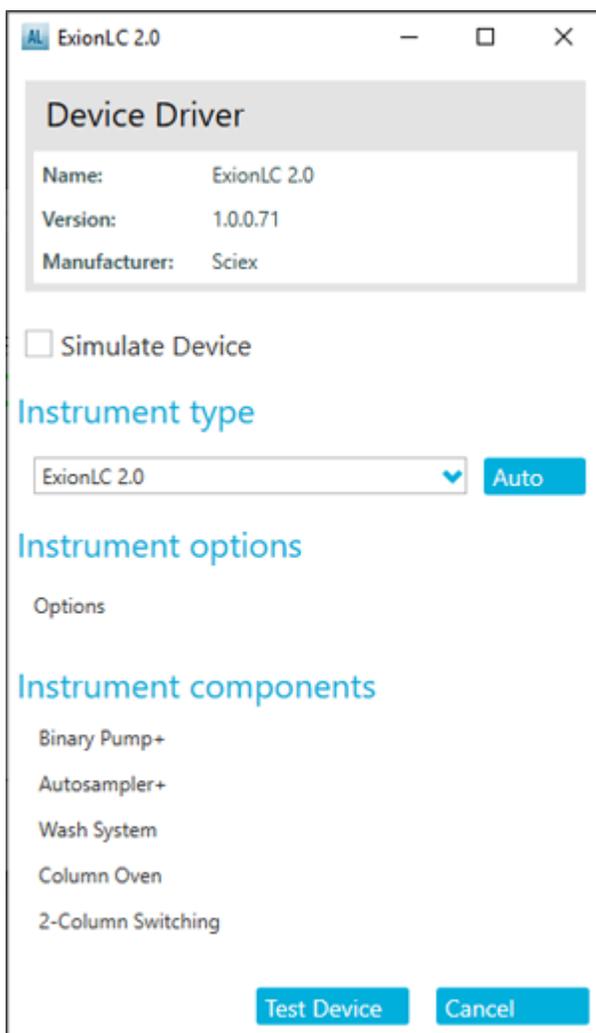


9. Select **Integrated System ExionLC 2.0 Controller** and then click **Setup Device**.

Figure 3-3 ExionLC 2.0 Configuration Dialog

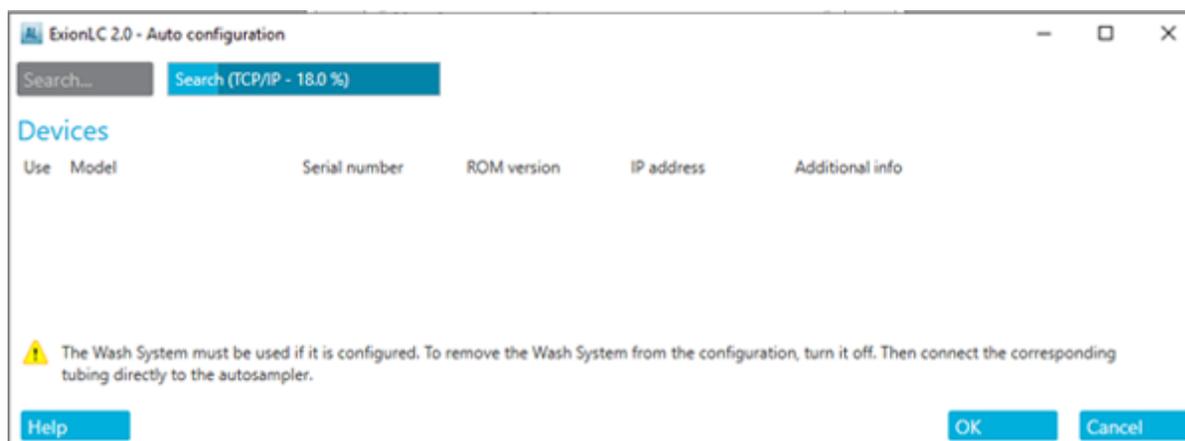
10. Type a name in the **Alias Name** field, if required, and then click **Configure**.

Figure 3-4 Device Driver Configuration Dialog



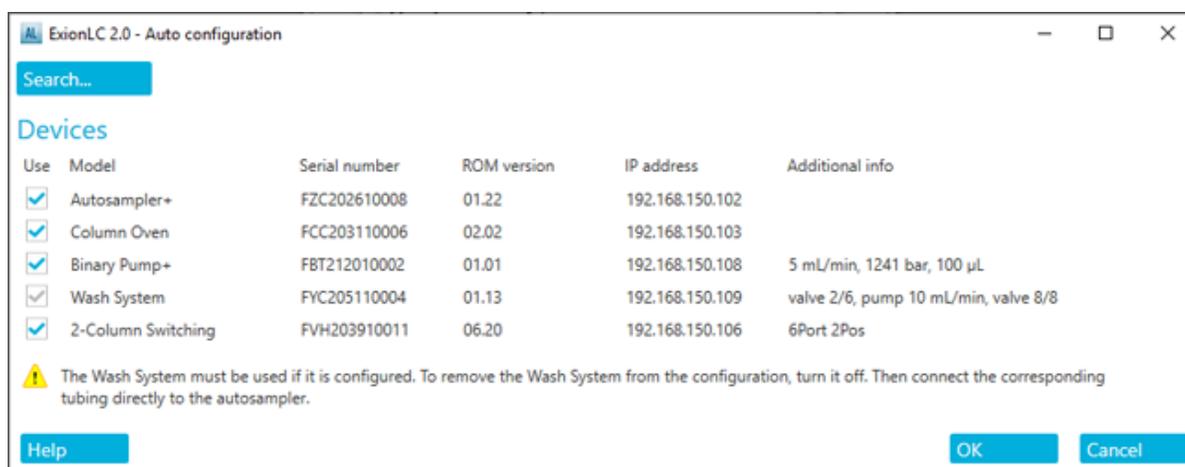
11. Click **Auto**.

Figure 3-5 Auto Configuration



When the software finishes searching, the following dialog opens.

Figure 3-6 Auto Configuration Completed

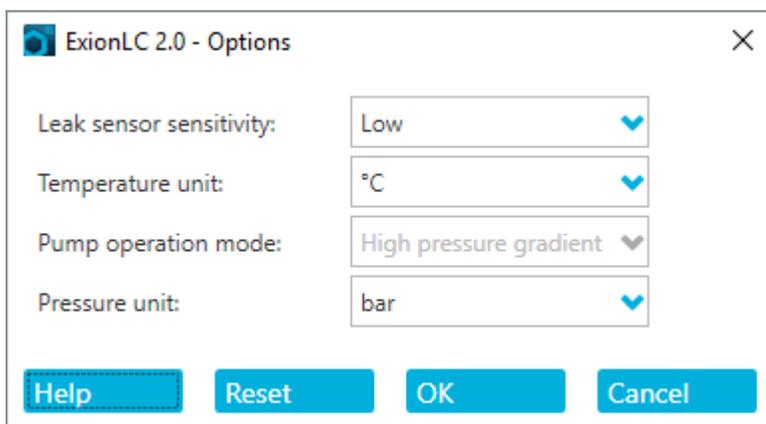


12. To exclude a device from the configuration, clear the check box for that device.

Note: The wash system must be used if it is configured. To remove the wash system from the configuration, turn it off. Then connect the corresponding tubing directly to the autosampler.

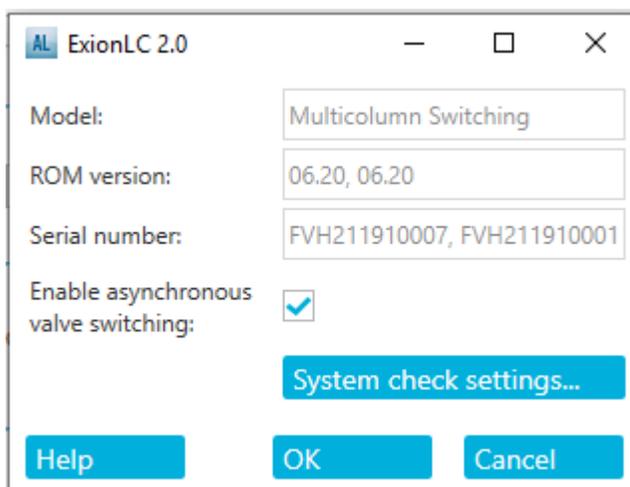
13. Click **OK**.
14. Under Instrument options, click **Options** and then select the options as required. For field descriptions, press **F1** for help.

Figure 3-7 Options



15. Click **OK**.
16. Under Instrument components, click each module and then select the options as required. For field descriptions, press **F1** for help.
17. If multicolumn switching is configured, under Instrument components, click **Multicolumn Switching**, and then select the **Enable asynchronous valve switching** check box to enable individual valve control.

Figure 3-8 Multicolumn Switching Activation



18. Click **Test Device**.
19. Click **Close** and then click **OK**.
20. Click **OK** in the Create New Hardware Profile dialog. The hardware profile for the system is created.
21. Click **Activate Profile**.

The hardware profile for the system is activated.

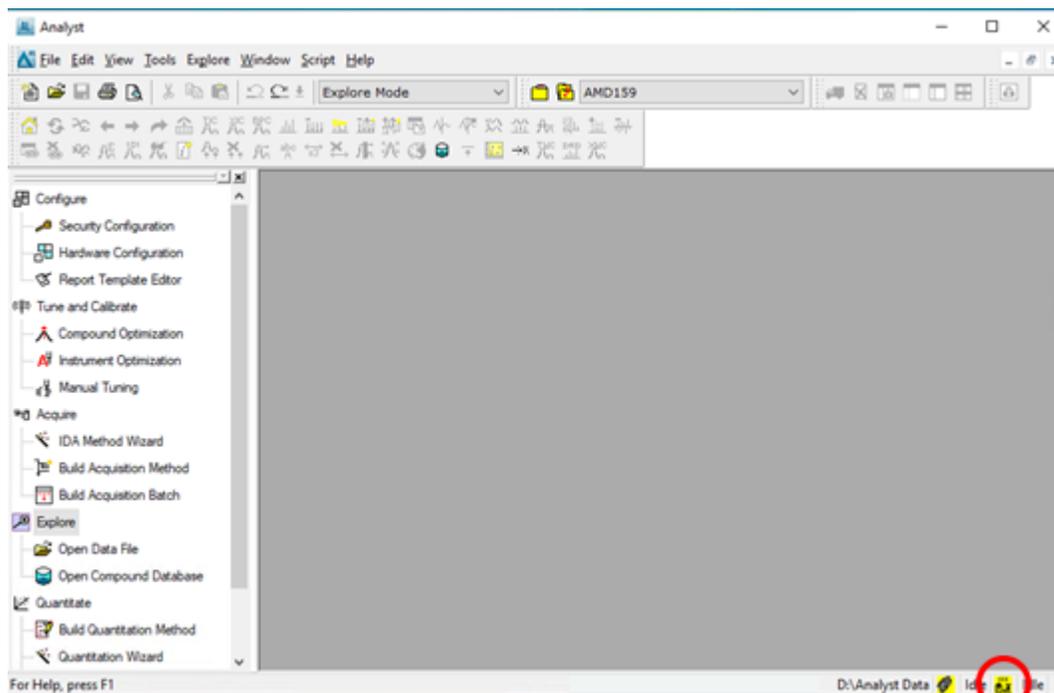
View System Status

The modules configured in the hardware profile can be viewed or controlled in real time in the LC Integrated System Detailed Status dialog in the Analyst software.

Note: After the devices are activated, verify the status of each module in the LC Integrated System Detailed Status dialog. If a detector is included in the configuration, then make sure that the lamp is on. If the lamp is off, then use Direct Control to turn it on.

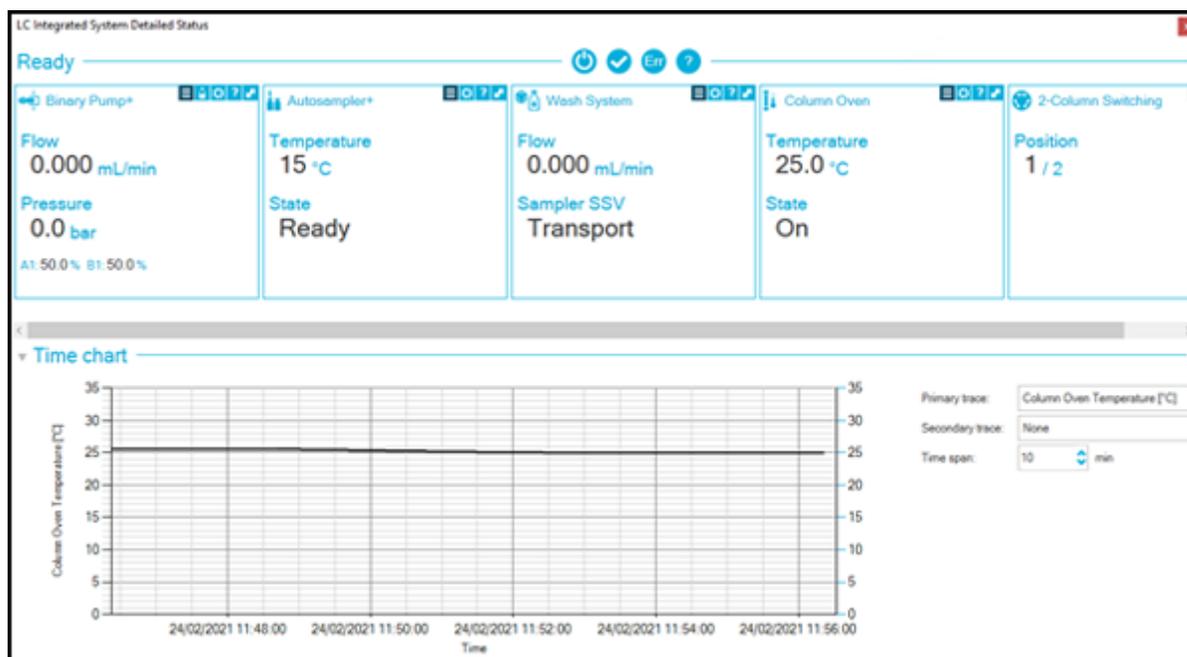
1. In the Analyst software window, on the Status bar, double-click  to open the LC Integrated System Detailed Status dialog.

Figure 3-9 LC System Status Icon in the Analyst Software



The LC Integrated System Detailed Status dialog opens. The real-time status of the devices in the ExionLC 2.0 system is shown. To open the *Help*, click the ?.

Figure 3-10 LC Integrated System Detailed Status Dialog



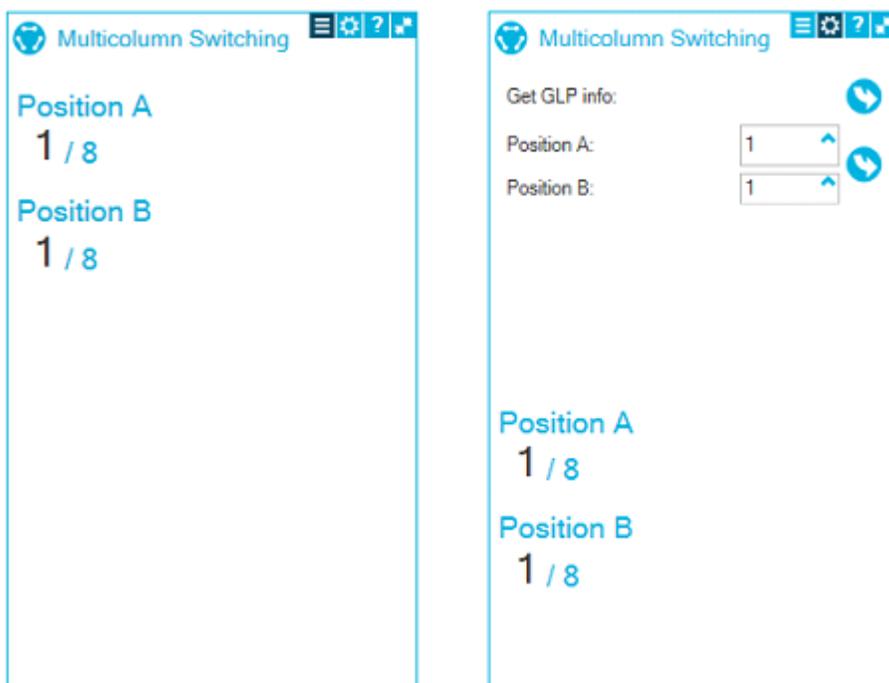
2. Click **Direct control panel** () in the top right of each section to access the maintenance and configuration options.

Figure 3-11 LC Integrated System Maintenance and Configuration Options



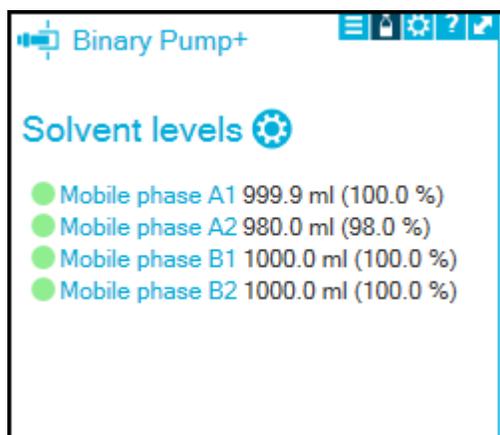
If multicolumn switching with asynchronous valve switching is enabled, then refer to the following figure for information about the valve component.

Figure 3-12 Device Control: Multicolumn Switching



3. (Optional) View and adjust the solvent levels:
 - a. In the pump pane, click **Solvent levels panel** (🔒).

Figure 3-13 Solvent levels Panel



- b. Click **Open solvent levels dialog** (⚙️) beside **Solvent levels**. The ExionLC 2.0 - Solvent levels dialog opens.
 - c. Type values for the parameters, as required, and then click **OK**.

Note: During equilibration and acquisition, only the **Current volume** values can be changed.

Note: The solvent levels are not automatically detected. If the bottle is filled, then the Current volume field must be updated.

Figure 3-14 ExionLC 2.0 - Solvent levels Dialog

Name	Use	Current volume (ml)	Max. volume (ml)	Warning level (ml)	Shutdown level (ml)
Mobile phase A	<input checked="" type="checkbox"/>	1000.0	2000.0	300.0	200.0
Mobile phase B	<input checked="" type="checkbox"/>	998.7	1000.0	200.0	100.0
Mobile phase C	<input checked="" type="checkbox"/>	1000.0	1000.0	200.0	100.0
Mobile phase D	<input checked="" type="checkbox"/>	1000.0	1000.0	200.0	100.0

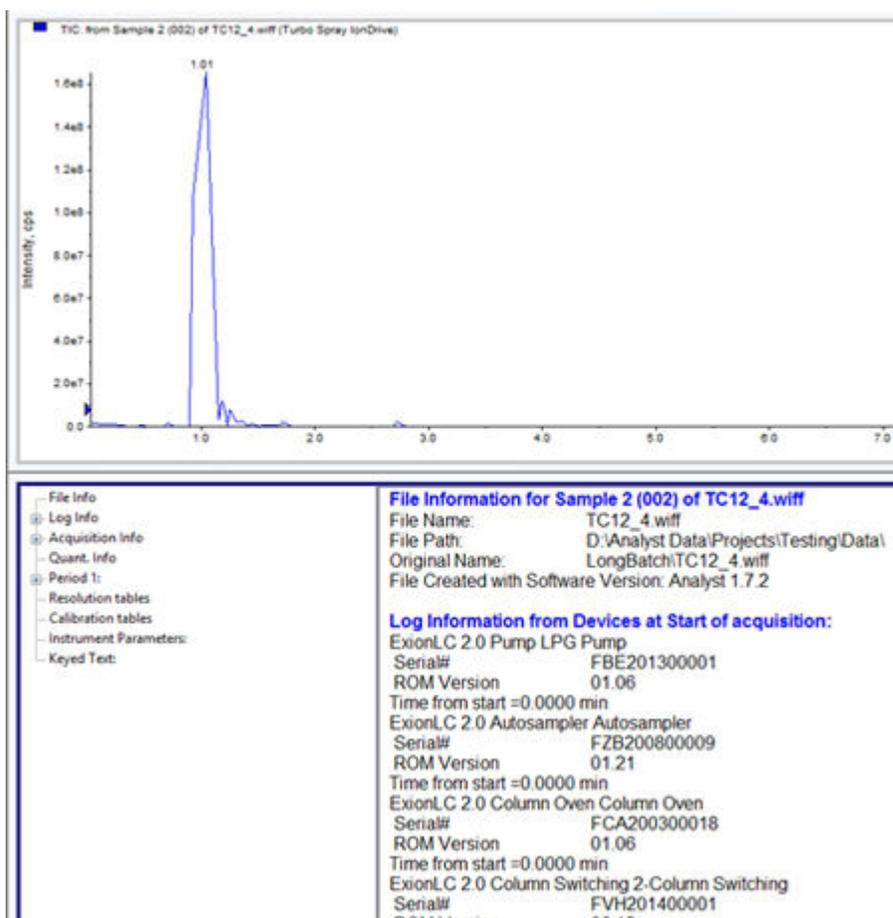
The statuses of the solvent levels update within 5 seconds.

View System-Related Information in the File Info Panel

When a sample is acquired, information about the LC system can be viewed in the File Info panel of the wiff file.

1. In the Analyst software, on the Navigation bar, under **Explore**, double-click **Open Data File**. The Select Sample dialog opens.
2. Select the wiff file to be opened, then select a sample, and then Click **OK**. The wiff file opens and the chromatogram for the selected sample is shown.
3. Click  on the toolbar in the Analyst software window. The File Info panel opens under the chromatogram.

Figure 3-15 TIC for a Sample wiff File and the Related File Info



4. In the left pane of the File Info panel, click  beside **Log Info** to expand it. Scroll up or down in the right pane to view the information.

Figure 3-16 System-Related Information in the Log Info Section of File Info

The screenshot shows the File Info panel with the Log Info section expanded. The left pane lists various components, and the right pane displays log information for each component at the start of acquisition.

Component	Serial#	ROM Version	Time from start
ExionLC 2.0 Pump LPG Pump	FBE201300001	01.06	=0.0000 min
ExionLC 2.0 Autosampler Autosampler	FZB200800009	01.21	=0.0000 min
ExionLC 2.0 Column Oven Column Oven	FCA200300018	01.06	=0.0000 min
ExionLC 2.0 Column Switching 2-Column Switching	FVH201400001	06.12	=0.0000 min

Additional information shown at the bottom of the right pane:

- Time from start =0.0000 min
- Injection Volume used: 5.00 µl

- In the left pane of the File Info panel, click  beside **Acquisition Info** to expand it. LC method-related information is shown in the right pane of the File Info panel. Scroll up or down in the right pane to view the information.

Figure 3-17 LC Method-Related Information in Acquisition Info Section of File Info

- File Info
- Log Info
 - ExionLC 2.0 Pump LPG Pump
 - ExionLC 2.0 Autosampler Autosampler
 - ExionLC 2.0 Column Oven Column Oven
 - ExionLC 2.0 Column Switching 2-Column Switching
 - Injection Volume used
 - Mass Spectrometer
 - Mass Spectrometer
 - Mass Spectrometer
 - Mass Spectrometer
 - Mass Spectrometer
- Acquisition Info
 - LC Method Properties**
 - Quant. Info
 - Period 1:
 - Resolution tables
 - Calibration tables
 - Instrument Parameters:
 - Keyed Text:

LC Method Properties

LC system Equilibration time = 0.00 min
 LC system Injection Volume = 5.00 ul

Exion LC 2.0 stop time: 15.00 min

Quaternary Gradient
 =====

Model: LPG Pump (LPGP-200)

<General>
 Stop time: 15.00 min
 Valve overdrive: off
 Pressure limits maximum: 413.7 bar
 Pressure limits minimum: 0.0 bar

<Gradient>

Time	Flow	B.Conc	C.Conc	D.Conc	Events	Comments
min	ml/min	%	%	%		
0.00	0.250	0.0	0.0	0.0	000000000	
2.00	0.250	0.0	0.0	0.0	000000000	
3.00	0.250	10.0	0.0	0.0	000000000	
5.00	0.250	30.0	0.0	0.0	000000000	
7.00	0.250	50.0	0.0	0.0	000000000	
8.00	0.250	80.0	0.0	0.0	000000000	
11.00	0.250	80.0	0.0	0.0	000000000	
12.00	0.250	20.0	0.0	0.0	000000000	
13.00	0.250	0.0	0.0	0.0	000000000	
15.00	0.250	0.0	0.0	0.0	000000000	

Use Equilibration: no

<Compressibility settings>
 Compressibility settings mode: Use settings from pump

<Solvent level monitoring>
 Use solvent level monitoring: yes

Name	Use	Warning level	Shutdown level	Maximum level
		ml	ml	ml
Mobile phase A	yes	250.0	100.0	2000.0
Mobile phase B	yes	200.0	100.0	1000.0
Mobile phase C	no	0.0	0.0	10000.0
Mobile phase D	no	0.0	0.0	10000.0

Configure the Wash System

4

If the wash system is physically configured with the ExionLC 2.0 system and the corresponding tubing is connected to the wash system, then the wash system must be included in the device configuration in the software.

After the wash system is configured with the system, purge the wash system and rinse the autosampler needle to flush all of the corresponding tubing. Refer to the document: *Hardware User Guide*.

If the advanced wash is performed using the autosampler, then only the transport and wash 1 solvent (SSV positions 1 and 2) can be used.

Note: To remove the wash system from the configuration, turn it off. Then connect the corresponding tubing directly to the autosampler and perform an auto-configuration again before activating the modules.

Batch Creation, Data Acquisition, and Data Processing

5

CAUTION: Potential System Damage. Make sure to set the solvent level monitoring parameters in the Device Control or the LC Integrated System Detailed Status dialog, as applicable, before running the system. If the mobile phase levels approach the warning levels during a run, then make sure to update the Current volume after topping up the mobile phase. If solvent level monitoring is not used correctly, then the system might stop prematurely or run out of solvent.

CAUTION: Potential Data Loss. Make sure to monitor the solvent level in the transport solvent bottle if Microliter Pickup Plus mode is used. Running out of transport liquid will result in a poor signal.

CAUTION: Potential System Damage. Make sure to load the autosampler according to the rack or plate selected in the batch. Failure to do so might cause needle damage or incorrect sample injection.

Note: If the diverter valve on the mass spectrometer is in use, do not manually change its position during sample acquisition.

After activating the device or hardware profile and after the mass spectrometer goes to Standby state, make sure to equilibrate the system before acquiring data. Use the LC method that will be used for acquisition. If a detector is included in the configuration, then make sure to warm up the lamps for 30 minutes before data acquisition.

Use the methods created in the section: [Create an LC Method](#) to create batches, submit samples for acquisition, and process data. Refer to the document: *Software User Guide* for the SCIEX OS or the Analyst software.

Create an LC Method

CAUTION: Possible Wrong Result. Verify that the LC System Total Runtime is correct. It is automatically updated based on the module with the longest stop time. If column switching and detector modules are used, then after setting the Stop time on the Pump page, make sure that values are specified for the Time fields in the Valve position program on the Column Switching page and the Wavelength program on the Detector page.

Note: Make sure that the correct project name is selected in the status panel.

For SCIEX OS, if the diverter valve is activated in the Devices workspace, then make sure that the relevant parameters are set in the LC method. For field descriptions, refer to the document: *Help*.

1. Access the LC Method parameters in one of the following ways:
 - In SCIEX OS, open the LC Method workspace and then click **New**.
 - In the Analyst software, on the Navigation bar under **Acquire**, double-click **Build Acquisition Method** and then click **LC System**.
-

Note: Make sure to set up the mass spectrometer method before creating the LC method.

2. Click the **Pump** tab and then configure the pump and valve settings.
-

CAUTION: Potential System Damage. (Binary Pump+) If the method used for acquisition has mobile phase selected in the Autopurge settings for the pump, then make sure to use this method only for the first sample in the batch, not for the whole batch. The Autopurge settings are executed for every sample that uses this method for acquisition, not just at the beginning of the batch.

Note: The **Pressure maximum** can be set both in the device configuration and in the LC method. In the LC method, **Pressure maximum** defaults to the value in the device configuration. Make sure to set **Pressure minimum** and **Pressure maximum** to the appropriate values for the method. An error will be shown if the pump pressure is outside the range specified in the method. To open the Help, click the ?.

Figure 5-1 Pump Settings

The screenshot displays the 'Binary Pump+' settings window. At the top, navigation tabs include 'Binary Pump+', 'Autosampler+', 'Wash System', 'Column Oven', '2-Column Switching', and 'Multiwavelength Detector'. The 'Flow program' section features a graph showing the percentage of mobile phases A and B over a 10-minute period. To the right of the graph are radio buttons for 'Default' (selected), 'Simple', and 'Program', along with input fields for 'Stop time: 10.00 minutes', 'Flow: 0.000 mL/min', 'Concentration A: 100.0 %', and 'Concentration B: 0.0 %'. The 'General settings' section includes 'Pressure minimum: 0 bar', 'Pressure maximum: 0 bar', 'Position of SSV A: A1', and 'Position of SSV B: B1'. The 'Autopurge settings' section has a table for purge times:

Purge order	Mobile phase name	Purge time
1st:	None	5 min
2nd:	None	5 min
Init conc-replacement:	<input type="checkbox"/>	5 min

A vertical sidebar on the left indicates 'LC System Total Runtime: 10.00 minutes'.

Tip! (LPG pump only) Select the **Allow valve overdrive** check box to reduce baseline noise. Some combinations of mobile phases or flow rates might result in inadequate mixing of the solvents, which causes the detector baseline to be noisier than expected. The **Allow valve overdrive** feature increases the switching frequency of the pump gradient valves. As a result, smaller amounts of solvents are delivered to the pump, resulting in a more thorough mixing of the solvents. Do not use this feature if any gradient component is less than 5%. When the gradient percentage is small, gradient accuracy and precision might not meet product specifications.

Figure 5-2 LPG Pump: Allow valve overdrive Check Box

This close-up shows the 'General settings' section. It includes 'Pressure minimum: 0 bar' and 'Pressure maximum: 350 bar'. The 'Allow valve overdrive:' checkbox is checked and highlighted with a red circle. Below this is the 'Compressibility settings' section with radio buttons for 'Use settings from the pump' (selected) and 'Define custom settings'.

Note: For LPG pumps, custom compressibility is not supported. Do not select the **Define custom settings** option in the **Compressibility settings**.

Note: Autopurge settings are available only for the Binary Pump+ and can be set in the LC method. A fixed flow rate of 4 mL/min is always used for the autopurge function.

3. Click the **Autosampler** tab and then configure the autosampler settings. Make sure that the following parameters are configured.

Table 5-1 Autosampler Settings

Parameter	Description
Injection volume	Type the injection volume unless the full loop injection method is used. The allowable range for the Injection volume is injection method dependent. The injection method can be changed in the Advanced settings in the Autosampler tab.

Table 5-1 Autosampler Settings (continued)

Parameter	Description
<p>Use pretreatment and Use stacked injections</p>	<p>If the Use a specific rack check box is selected, then the Use pretreatment option and Use stacked injections options are available. If the Use pretreatment check box is selected, then the plate layout is shown. For more information, refer to the document: <i>Hardware User Guide</i>.</p> <hr/> <p>Note: If a batch contains an LC method with the pretreatment option set to Use first destination vial, then before the batch is run again or the same LC method is used in another batch, the first destination vial position must be reset. It is automatically reset when the system state changes to Standby and when the hardware profile or device is deactivated and activated. The user can also reset the first destination vial position in the following ways:</p> <ul style="list-style-type: none"> • Click Reset vials () in the Autosampler pane of the Device Control dialog (SCIEX OS) or the LC Integrated System Detailed Status window (the Analyst software). Then select Reset destination vials. <p>Figure 5-3 Reset Vials</p>  <ul style="list-style-type: none"> • Submit a batch containing a single sample and an LC method that uses a different first destination vial position.

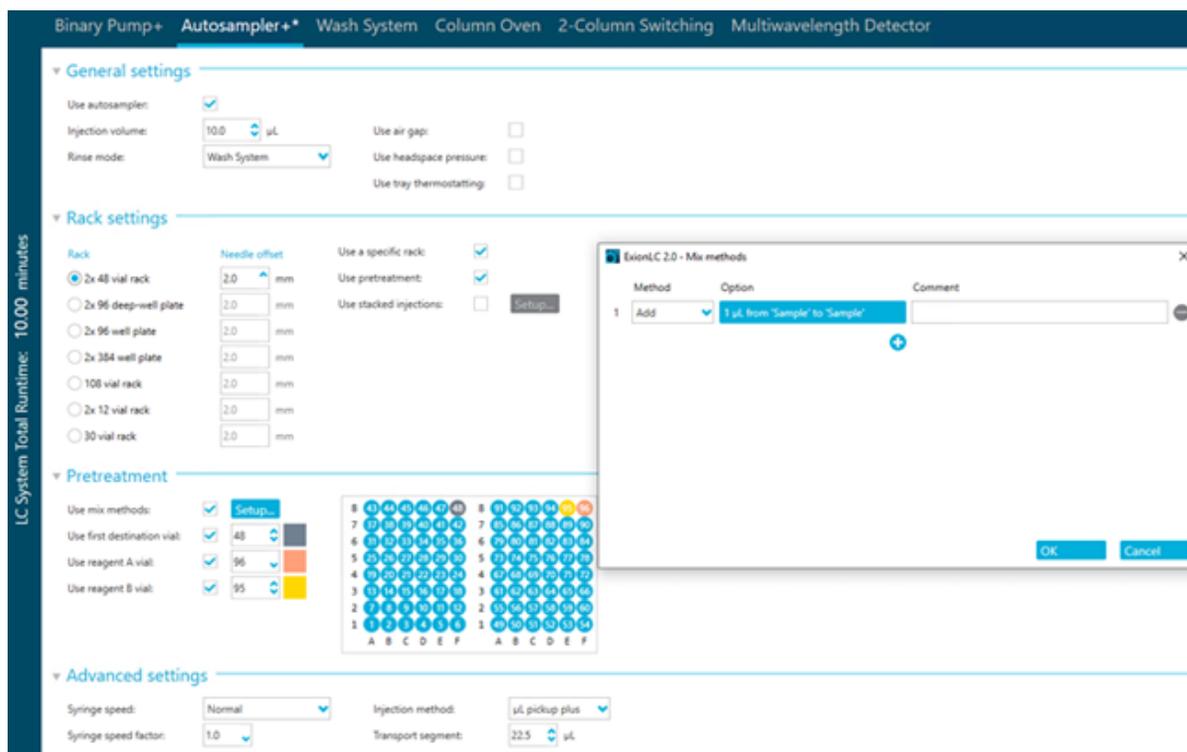
CAUTION: Potential Data Loss. If Use first destination vial (FDV) is selected for pretreatment, then make sure that the last destination vial position (LDV) is valid for the rack type selected and the number of samples (*n*) to be included in the batch. Otherwise, batch acquisition will stop on the sample with an invalid destination vial number. The destination vial position is always equal to the destination vial position of the preceding sample, plus 1.

For samples 1, 2, 3, and 4, respectively, the destination vial positions are FDV, FDV+1, FDV+2, and FDV+3, regardless of whether the vial positions are consecutive in the batch. If the number of samples to be included in the batch is 30, with vial positions 11 to 40, and FDV is 51 on a 2 × 48 vial rack, then the LDV = FDV + *n* – 1 = 51 + 30 – 1 = 80.

Note: Make sure a vial is present in every projected destination vial position.

Note: If the ExionLC 2.0 Wash system is not configured, then the default **Rinse mode** is **Advanced** for the default **Injection method**, Microliter Pickup Plus (µL pickup plus).

Figure 5-4 Autosampler Tab: Pretreatment



Batch Creation, Data Acquisition, and Data Processing

- Click the **Wash System** tab if the wash system is part of the system configuration, and then configure the settings.

To open the Help, click the ?.

Figure 5-5 Wash System Tab

The screenshot shows the 'Wash System' configuration tab. At the top, there are navigation tabs: Binary Pump+, Autosampler+*, Wash System* (selected), Column Oven, 2-Column Switching, and Multiwavelength Detector. Below the tabs, there are three main sections: Settings, Wash solvents, and Wash program.

Settings: Includes a checkbox for 'Valve wash with mobile phase' (checked), 'Wash start time' set to 0.0 min, and 'Expected wash time' of 1.4 min. 'Valve wash cycles' is set to 1.

Wash solvents: A grid of input fields for Solvent 1 through Solvent 8. Solvent 1 (Transport) is set to 'Transport', and Solvent 5 through Solvent 8 are set to 'Solvent 5' through 'Solvent 8' respectively.

Wash program: A table with columns: Wash segment, Position, Volume (µL), Flow (mL/min), and Comment. It contains 4 rows of data. Each row has a minus button on the right. A plus button is located below the table.

Vertical Sidebar: On the left, a vertical bar indicates 'LC System Total Runtime: 10.00 minutes'.

Wash segment	Position	Volume (µL)	Flow (mL/min)	Comment
1 Needle tubing	Solvent 2	1000	3.000	
2 Transport reservoir	Solvent 2	1000	3.000	
3 Needle tubing	Transport	1000	3.000	
4 Transport reservoir	Transport	1000	3.000	

Tip! To insert a row between two rows in the program table, move the cursor between the rows, after the buttons, and then click the button.

Figure 5-6 Example of a Program Table

The screenshot shows the 'Wash program' section with a table containing 5 rows. Each row has a minus button on the right. A plus button is located below the table.

Wash segment	Position	Volume (µL)	Flow (mL/min)	Comment
1 Needle tubing	Solvent 2	1000	3.000	
2 Transport reservoir	Solvent 2	1000	3.000	
3 Transport reservoir	Solvent 2	1000	3.000	
4 Needle tubing	Transport	1000	3.000	
5 Transport reservoir	Transport	1000	3.000	

- Click the Column Oven tab and then configure the column oven settings.

Figure 5-7 Column Oven Tab

Binary Pump+ Autosampler+* Wash System* **Column Oven*** 2-Column Switching Multiwavelength Detector

▼ General settings

Temperature: 30 °C Lower safety limit: 5 °C
 Use temperature program: Upper safety limit: 85 °C

▼ Equilibration settings

Wait before injection: Wait with a tolerance (±): 1 °C
 Wait time: 0.00 minutes

▼ Temperature program

Time (min)	Temperature (°C)	Comment
1 0.00	30	
2 10.00	30	

LC System Total Runtime: 10.00 minutes

- Click the Column Switching (2-Column Switching or Multicolumn Switching) tab and then configure the position settings.

Figure 5-8 2-Column Switching Tab

Binary Pump+ Autosampler+* Wash System* Column Oven* **2-Column Switching*** Multiwavelength Detector

▼ General settings

Use equilibration:

▼ Valve position equilibration program

Time (min)	Position	Comment
0 0.00	1	

▼ Valve position program

Time (min)	Position	Comment
1 0.00	1	
2 10.00	1	

LC System Total Runtime: 10.00 minutes

Batch Creation, Data Acquisition, and Data Processing

The valve module stop time is the time specified in the last row of the **Valve position program**, even if there is no valve position change for the run time. A longer stop time for the valve than for the pumps results in a longer LC system total run time.

Note: If asynchronous valve switching is enabled in the device configuration, then by default the method will use asynchronous valve switching unless the **Use synchronous valve switching** check box is selected.

Figure 5-9 Use synchronous valve switching Check Box

The screenshot shows the 'Multicolumn Switching*' configuration window. The 'General settings' section has two checkboxes: 'Use equilibration:' (unchecked) and 'Use synchronous valve switching:' (unchecked). The 'Valve position program' section contains a table with the following data:

	Time (min)	Position A	Position B	Comment
1	0.00	1	1	
2	10.00	1	1	

There are up and down arrows next to the time and position values, and a plus sign button below the table. A vertical 'minutes' label is on the left side of the table.

7. If a DAD or MWD detector is configured, then the stop time is the time entered in the last row of the **Wavelength program**. If the wavelengths to be acquired change within the run time, then make sure that the wavelength values for a given channel are the same for the last two rows in the **Wavelength program**.

Note: When creating an LC method for a system containing a DAD, make sure that the wavelength for 2D data channels is within the wavelength range specified for the 3D data mode, even if the 3D data mode is not selected.

Note: When creating an LC method for a system with a detector, make sure to select the optimum sampling rate for the application.

In the Analyst software, both detectors can be included in the configuration for data acquisition.

Figure 5-10 Wavelength Program

Binary Pump+ Autosampler+* Wash System* Column Oven* 2-Column Switching* **Multiwavelength Detector**

LC System Total Runtime: 10.00 minutes

▼ General settings

Sampling rate: 1.00 Hz ms Autozero: Use fixed integration time:
 Time constant: 1.00 seconds Polarity: + Use extended linear range:
 Use analog outputs:

▼ Acquisition settings

2D data

Ch. #	Use	WL (nm)	BW (nm)	Use Ref.	WL Ref (nm)	BW Ref (nm)
1:	<input checked="" type="checkbox"/>	254	8	<input type="checkbox"/>	360	30
2:	<input type="checkbox"/>	254	8	<input type="checkbox"/>	360	30
3:	<input type="checkbox"/>	254	8	<input type="checkbox"/>	360	30
4:	<input type="checkbox"/>	254	8	<input type="checkbox"/>	360	30
5:	<input type="checkbox"/>	254	8	<input type="checkbox"/>	360	30
6:	<input type="checkbox"/>	254	8	<input type="checkbox"/>	360	30
7:	<input type="checkbox"/>	254	8	<input type="checkbox"/>	360	30
8:	<input type="checkbox"/>	254	8	<input type="checkbox"/>	360	30

▼ Wavelength program

Time (min)	Channel 1 WL (nm)	Event	Comment
1 0.00	254	000	
2 10.00	254	000	

8. Save the LC method.

Configuration Issues

During device configuration, if the modules are detected during automatic configuration, but fail the Test Device step, then one of the parameters in the system check settings for one of the modules might be out of range. If the Test Device step indicates that the system failed during configuration, then follow these steps:

1. After the automatic configuration is complete, make sure that the modules have the IP addresses listed in the following table. If the IP addresses do not match the ones in the table, then contact the local SCIEX representative.

Table 6-1 ExionLC 2.0 Modules and IP Addresses

Device	Model	IP Address
Pump	LPGP-200	192.168.150.101
Pump	BP-200	192.168.150.101
Pump	BP-200+	192.168.150.101
Second pump	BP-200, BP-200+ or LPGP-200	192.168.150.107
Wash System	WS-200	192.168.150.109
Autosampler	AS-200	192.168.150.102
Autosampler	AS-200+	192.168.150.102
Valve drive	DR-200	192.168.150.106
Second valve drive	DR-200	192.168.150.108
Column oven	CO-200	192.168.150.103
Detector	MWD-200	192.168.150.105
Diode Array Detector	DAD-200 or DADHS-200	192.168.150.104

2. Make sure that the Ethernet port configured for the ExionLC 2.0 system on the acquisition computer has the following settings:
 - **IP address:** 192.168.150.100
 - **Subnet Mask:** 255.255.255.0
3. On the Device dialog, click **Settings**.

4. Under Instrument components, click a module and then click **System check settings**.
5. Verify each module. If the system includes a diode array detector (DAD) or multiwavelength detector (MWD), then the lamps might need to be replaced.

Operation Issues

Issues	Possible Solutions
The column oven does not heat to the target temperature or stops heating with an error.	Make sure that the column oven door is closed.
The pump pressure is below the reasonable pressure for the flow rate and an analytical column is used.	<ul style="list-style-type: none"> • Inspect all of the modules in the system for leaks. • Replace the check valve.
The pressure fluctuates constantly.	<ul style="list-style-type: none"> • Inspect all of the modules in the system for leaks. • Replace the check valve.
The data acquired is poor with only noise or just the mobile phase background signal.	<ul style="list-style-type: none"> • Inspect all of the modules in the system for leaks. • If the Microliter Pickup Plus injection method is used, then refill the transport solvent bottle or the wash solvent bottle, whichever was used for sample injections.
A leak is observed but the leak sensor is not reporting a leak.	Make sure that the leak does not originate from a module stacked above the module where the leak is observed.
The system is running longer than the stop time for the pump.	<ul style="list-style-type: none"> • Verify the stop time for each module included in the configuration, including the column switching valve, DAD (or DAD-HS), and multiwavelength detector. • Verify if the time program is used in other modules with a longer stop time.

Troubleshooting

Issues	Possible Solutions
The modules have communication issues.	<ol style="list-style-type: none">1. The computer was shut down while the devices (SCIEX OS) or the hardware profile (the Analyst software) were still active, or an Ethernet cable to or from an LC module was disconnected. Follow these steps:<ol style="list-style-type: none">a. Shut down the computer.b. Turn off all of the modules of the ExionLC 2.0 system.c. Make sure that all of the Ethernet cables between the modules, the switch, and the computer are connected.d. Turn on the computer.e. Turn on all of the modules configured on the ExionLC 2.0 system.f. Activate the devices or the hardware profile.2. Processes are blocked by firewall or anti-virus software. Add the following process names to the exclusion list for the Windows Defender and other anti-virus software, if used:<ul style="list-style-type: none">• SxASController• SxDADController• SxOvenController• SxPumpController• SxPumpPController• SxSVController

Issues	Possible Solutions
<p>The system is reporting errors.</p>	<ol style="list-style-type: none"> 1. Click Err and view the error log to identify the module that reported the error. If a hardware issue occurred, then fix it before proceeding. 2. Inspect for leaks. If a leak is found, then fix it. 3. Clear the error: <ol style="list-style-type: none"> a. Click Standby on the Device Control dialog (SCIEX OS) or the LC Integrated System Detailed Status dialog (Analyst software) to turn the modules off. b. Click Standby again to turn the modules on. c. Deactivate the devices or hardware profile. d. Activate the devices (SCIEX OS) or the hardware profile (the Analyst software).
<p>The autosampler is reporting over pressure errors.</p>	<p>If the wash system is turned off and it is still physically configured, then make sure that the corresponding tubing is connected to the autosampler and not the wash system.</p>

Contact Us

Customer Training

- In North America: NA.CustomerTraining@sciex.com
- In Europe: Europe.CustomerTraining@sciex.com
- Outside the EU and North America, visit sciex.com/education for contact information.

Online Learning Center

- [SCIEX Now Learning Hub](#)

SCIEX Support

SCIEX and its representatives maintain a staff of fully-trained service and technical specialists located throughout the world. They can answer questions about the system or any technical issues that might arise. For more information, visit the SCIEX website at sciex.com or contact us in one of the following ways:

- sciex.com/contact-us
- sciex.com/request-support

CyberSecurity

For the latest guidance on cybersecurity for SCIEX products, visit sciex.com/productsecurity.

Documentation

This version of the document supersedes all previous versions of this document.

To view this document electronically, Adobe Acrobat Reader is required. To download the latest version, go to <https://get.adobe.com/reader>.

To find software product documentation, refer to the release notes or software installation guide that comes with the software.

To find hardware product documentation, refer to the documentation DVD for the system or component.

The latest versions of the documentation are available on the SCIEX website, at sciex.com/customer-documents.

Note: To request a free, printed version of this document, contact sciex.com/contact-us.
