DataApex
Clarity™
CHROMATOGRAPHY SOFTWARE

AXCEND FOCUS LC

Clarity Control Module ENG

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Contents

To facilitate the orientation in the **Axcend Focus LC** manual and **Clarity** chromatography station, different fonts are used throughout the manual. Meanings of these fonts are:

Open File (italics) describes the commands and names of fields in **Clarity**, parameters that can be entered into them or a window or dialog name.
WORK1 (capitals) indicates the name of the file and/or directory.
ACTIVE (capital italics) marks the state of the station or its part.
Chromatogram (blue underlined) marks clickable links referring to related chapters.

The bold text is sometimes also used for important parts of the text and the name of the **Clarity** station. Moreover, some sections are written in format other than normal text. These sections are formatted as follows:

Note: Notifies the reader of relevant information.

Caution: Warns the user of possibly dangerous or very important information.

Marks the problem statement or trouble question.

Description: Presents more detailed information on the problem, describes its causes, etc.

Solution: Marks the response to the question, presents a procedure how to remove it.

1 Axcend Focus LC

This manual describes the use of the **Focus LC**, a portable HPLC device, with the **Clarity** software ver. **8.8 and later**.

Fig. 1: Axcend Focus LC System

The control module enables direct control of the instrument over Local Area Network (LAN). Direct control means that the instrument can be completely controlled from the Clarity environment. The Instrument method controlling the analysis conditions will be saved in the measured chromatograms.

2 Requirements

2.1 Software requirements

Clarity (p/n C50) installation with **LC control** module (p/n A24).

Agilent ICF and **Axcend Focus LC** require **Microsoft .NET version 4.8** or higher for correct installation and operation. This version is already installed on majority of PCs. Nonetheless you will be notified during the installation if your PC is missing any version of **Microsoft .NET** - then follow the instructions there. For complete list of .NET requirements, see the .NET Framework System Requirements on Microsoft web page.

Supported operating systems:

- **Windows 10 (64 bit)**
- **Windows 11 (64 bit)**

Note: Before installing **Clarity**, it is recommended that your **Windows** is updated to the latest version.

2.2 Hardware requirements

- Version of firmware must be compatible with the **Agilent ICF** installed with **Clarity**.
- LAN interface installed on PC is required.

3 Installation procedure

Axcend Focus LC is not part of the **Clarity** *Typical* installation. To install it, select the *Full* installation or *Custom* installation with **Axcend Focus LC** option selected.

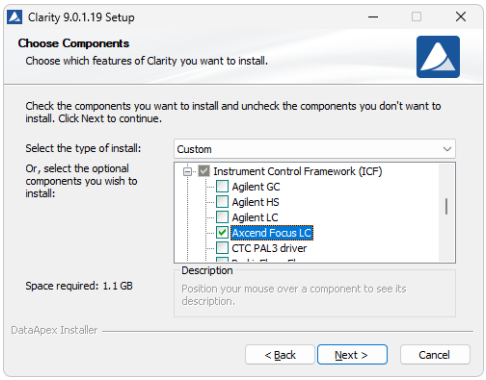


Fig. 2: Custom installation of Clarity

3.1 Installing Correct Version of Agilent ICF

Clarity expects a specific version of Agilent ICF. Because other programs may also be using Agilent ICF, it is possible they've installed a different version than is supported by Clarity. In that case in the installation you will be prompted to reinstall it in order to install correct version. Going forward with this step is crucial for correct functionality of Clarity and Agilent ICF.

This situation may also occur during Clarity update when the new version contains updated ICF version.

Note: This reinstallation of Agilent ICF may cause that other programs using it, may not function properly.

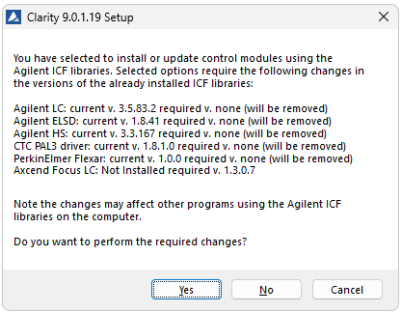


Fig. 3: Installing correct version of Agilent ICF

3.2 Network connections

The instruments supported by **Agilent ICF** has to be connected to a site network by LAN. It is recommended to attach the hardware directly to the PC avoiding hubs, switches etc. When using a switch or a hub, multiple hardware can be connected to one PC. Always contact your local LAN administrator who can make the appropriate settings.

Caution: **Cross LAN** cable is primarily used for the direct connection of the instrument and the PC. This cable can also be used for the connection of the device to the switch or network socket, but with older switches, the **straight LAN** cable might be necessary.

LAN Settings

PC: LAN card, TCP/IP protocol.

Both PC and **Axcend Focus LC** hardware should be configured on the same IP range.

Firewall

Ensure that the firewall does not block communication from the **Axcend Focus LC** hardware.

3.3 Clarity Configuration

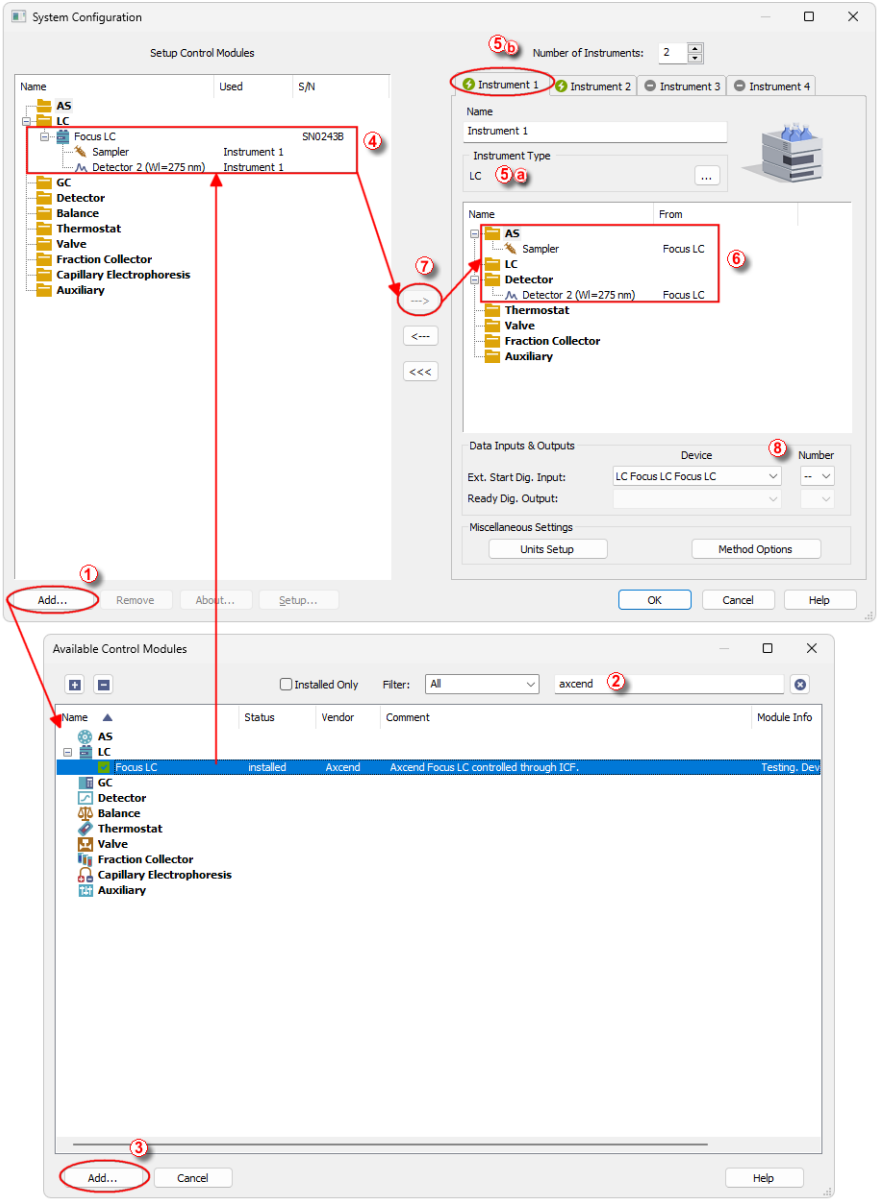


Fig. 4: System Configuration

Caution: Before you start **Clarity**, ensure there is not any other application active and controlling the instruments.

- Start the **Clarity** station by clicking on the icon on the desktop.
- Invoke the *System Configuration* dialog accessible from the *Clarity* window using the *System - Configuration...* command.
- Press the *Add* button ① (See **Fig. 4** on pg. **5**.) to invoke the *Available Control Modules* dialog.
- You can specify the searching filter ② to simplify the finding of the driver.
- Select the **Focus LC** item from the **LC** section and press the *Add* ③ button.

The *ICF Setup* dialog will appear.

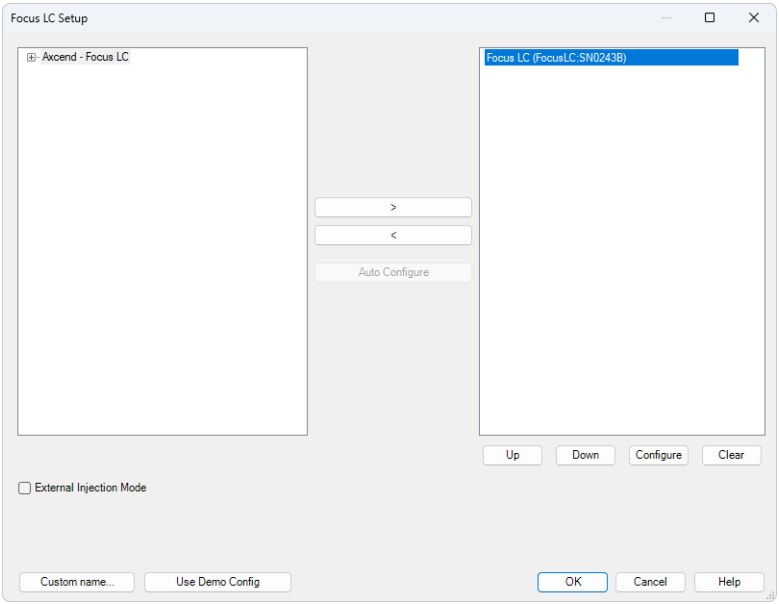


Fig. 5: ICF Setup for Focus LC

Note: Press the *F1* key to display the **ICF** help with detailed description of the dialog.

- *External Injection Mode* must only be enabled when using external autosampler. It means that Clarity will not continue with equilibration and injection, but waits for external trigger (from *Device Monitor* or external input).

Note: This setup is incompatible with a controlled autosampler, as only one autosampler can be assigned to an instrument. The external device triggering the run must thus operate in an uncontrolled mode and be synchronized with Clarity through a hardware cable.

- Click on the *Configure* button in the *ICF Setup* dialog and the *Configure Focus LC* dialog is displayed for entering the connection parameters.

Note: The *Custom name...* button can be used to change the name of the module in the *System Configuration* window.

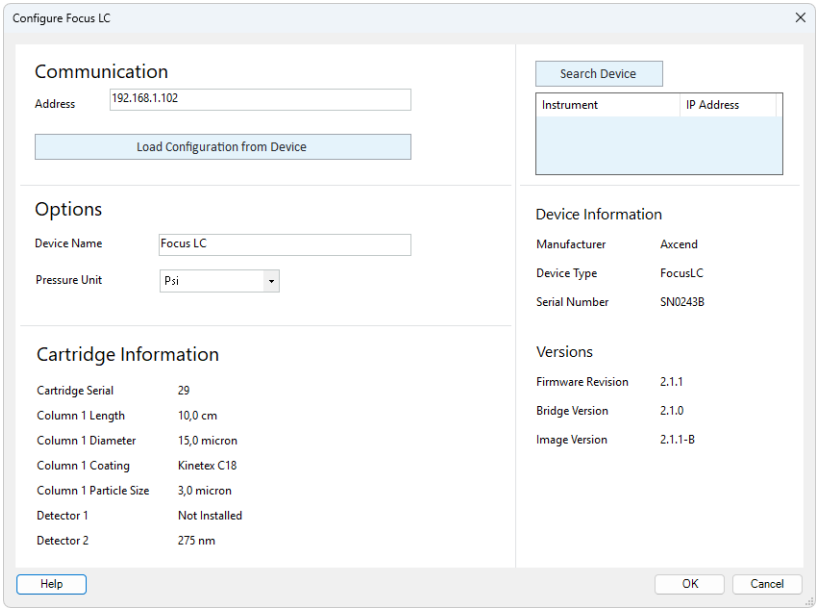


Fig. 6: Configure Focus LC dialog

- Fill in the *IP address* and click *Load Configuration from Device* button to retrieve parameters from the device then click *OK* button.

Note: Press the *F1* key to display the **Axcend Focus LC** help with detailed description of the dialog.

- The **Focus LC system** will appear in the *Setup Control Modules* list ④ of the *System Configuration* dialog.
- Change the *Instrument Type* ⑤ ⓐ on the desired *Instrument* tab ⑤ ⓑ to LC and drag the **Focus LC** item from the *Setup Control Modules* list on the left ④ to the *Instrument* tab on the right ⑥ , or use the ---> button ⑦ .
- Set the *Ext. Start Dig. Input* ⑧ to *"--"* - -- ⑧ to assure correctly synchronized start of the analysis. This applies to both situations; with and without an external autosampler.

Note: The configuration dialog of the **Focus LC System** can be displayed any time by double-clicking on its icon or using the *Setup* button.

3.4 Installation Qualification of Agilent ICF

Agilent ICF is an external program developed by Agilent and for that reason it must be validated using their utility. If you have installed Clarity with Agilent ICF, **the IQ is valid only if successful validation of ICF is attached**.

The validation of ICF can be performed directly from the *IQ Report*.

Caution: If Clarity expects ICF installation then **IQ** also. And if for some reason the ICF installation is not found, the *Installation Qualification Test* is automatically *FAILED*. To resolve this situation, it is necessary to re-install **Agilent ICF** during Clarity installation.

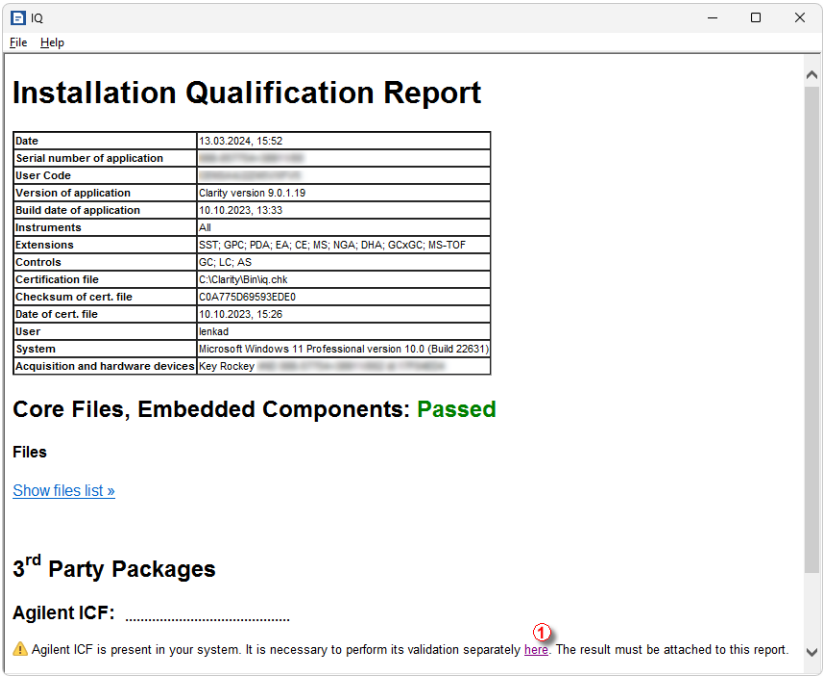


Fig. 7: IQ Report with ICF installation present

Press the link *"here"* ① and confirm opening of SFVTool.exe (up to 2 times). *Agilent Software Verification Tool* window will be opened.

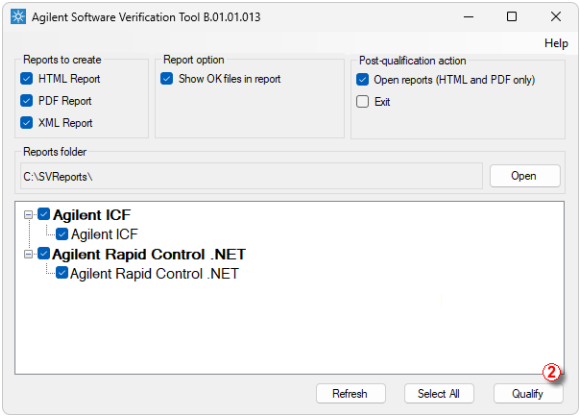


Fig. 8: Agilent Software Verification Tool

Select in which format reports should be generated and whether they should automatically open once IQ is completed. Click *Qualify* ② button to start the ICF IQ. Installed drivers and their versions are listed at the end of the report.
Address field of the generated report displays the location of the actual report.

Fig. 9: ICF Report - PASS

4 Using Axcend Focus LC

There are multiple places for setting the parameters of the **Axcend Focus LC** in the **Clarity**:

- the Device Monitor
- the Method Setup

Caution: Before opening the *Instrument* window with configured **ICF** devices, ensure there is not any other PC connected to the device. Otherwise error will occur during the connection.

4.1 Device Monitor

The *Device Monitor* window can be invoked by the *Analysis - Device Monitor* command from the *Instrument* window or using the **Device Monitor** icon.

Clicking the ? button ① will invoke the **Axcend Focus LC** help dialog.

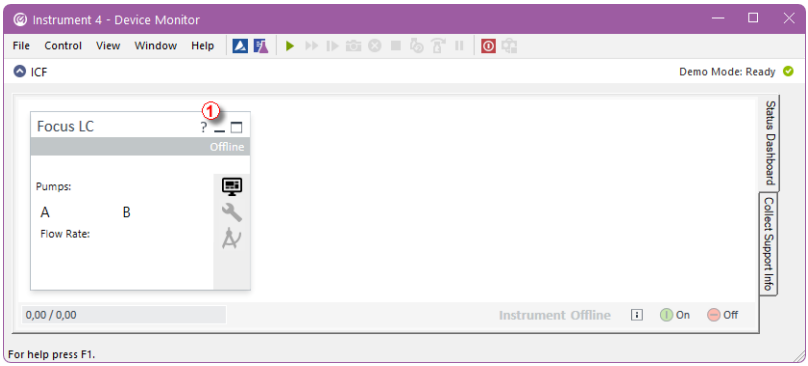


Fig. 10: Device Monitor

4.2 Method Setup - AS

The *Method Setup - AS* tab serves for setting of *Sample Port* for *Injector*. It is also possible to set *Multi Injection* mode here by checking the checkbox and setting *Injector 2 Sample Port*.

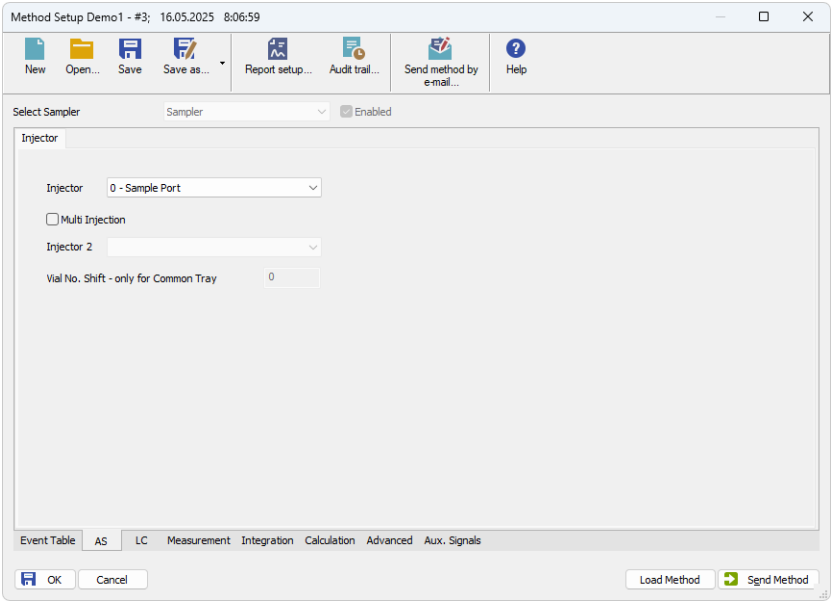


Fig. 11: Method Setup - AS

4.3 Method Setup - Acquisition

The *Method Setup - Acquisition* tab serves for setting of majority of the parameters for **Axcend Focus LC**, including flow, pressure, composition, and selecting detectors.

Press *F1* key to display detailed help for **Axcend Focus LC**.

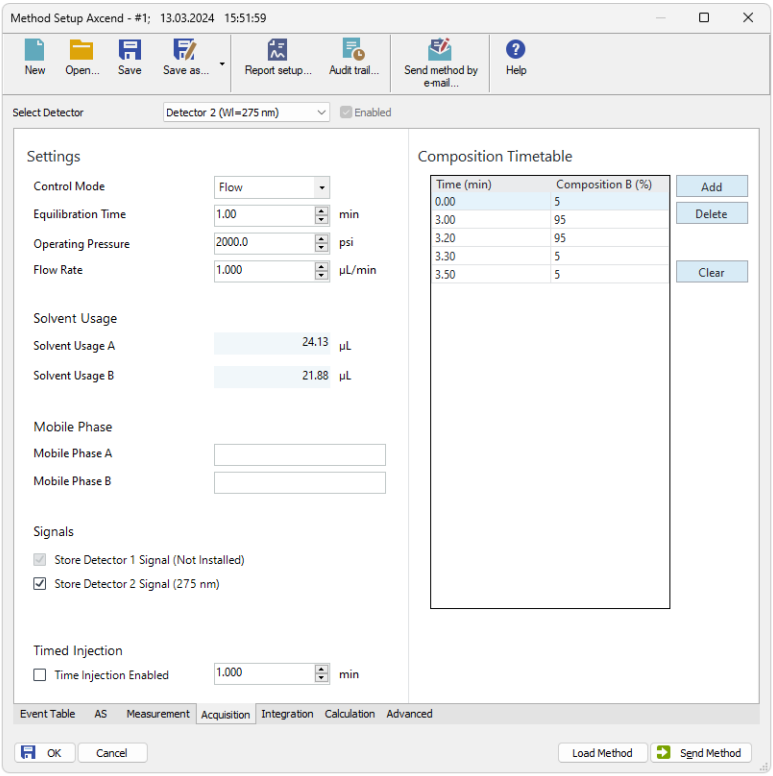


Fig. 12: Method Setup - Acquisition

4.4 Method Setup - Aux. Signals

The *Method Setup - Aux. Signals* tab serves for setting the usage of auxiliary signals of the **Axcend Focus LC** device.

The list of available auxiliary signals is shown in the table. By checking the checkbox in the *Store* column for the particular row, the given auxiliary signal will be stored into the measured chromatogram.

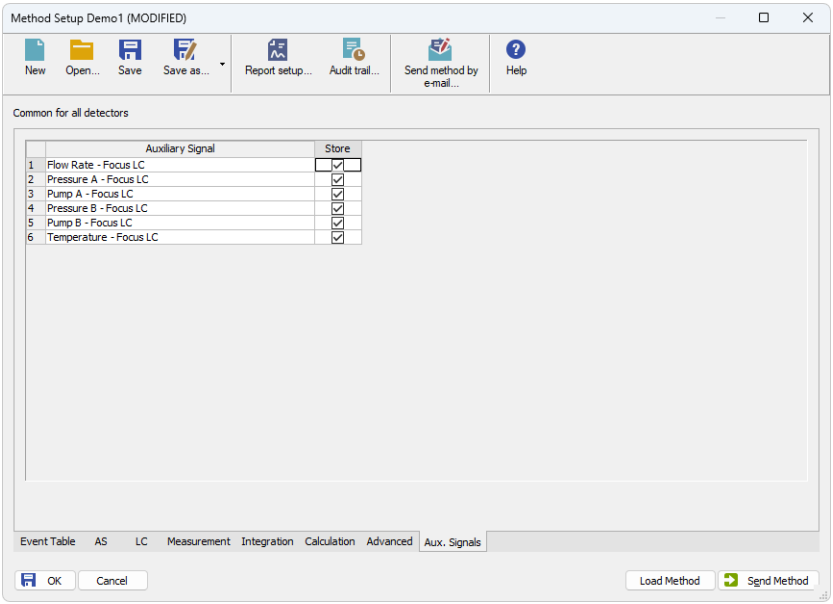


Fig. 13: Method Setup - Aux. Signals

5 Troubleshooting

When the remedy for some problem cannot be discovered easily, the recording of communication between **Clarity** and **Axcend Foxus LC System** control module can significantly help the **DataApex** support to discover the cause of the problem. The recordings can be found in C:\CLARITY\CFG\DEBUG_LOGS\PGMLOG.

In case you cannot establish communication with Agilent ICF controlled instruments, please review the following issues:

Check the network connection using the Ping command

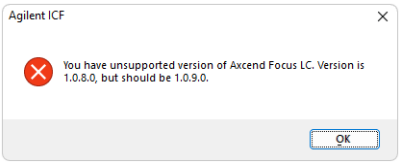
The problem in communication between **Clarity** and Axcend instrument may be caused by wrong network configuration, firewall preventing the connection, etc. Run the command line in Windows (for example by pressing the **Windows key** together with the **R** key, in the displayed *Run* window type *cmd* and press *Enter*).

In the command line type ping <ip-adress-of-instrument> or <hostname> and press *Enter*. The *IP Adress* (*hostname*) is the same you entered in the ICF;Setup dialog.

5.1 Specific Problems

Clarity can't be run and it displays "Agilent ICF is not installed correctly." message.

Cause: The cause of the problem is that the Agilent ICF has a different version than expected by Clarity. It can typically happen when other software also using Agilent ICF decides to reinstall it. Thus next time Clarity expects different version than is installed.



Solution: Solution is to reinstall Agilent ICF and Axcend Focus LC during Clarity installation. Follow steps described in the chapter **"Installation procedure"** on pg. **3**.