Keysight x1149
Boundary Scan Analyzer

KEYSIGHT

INSTALLATION GUIDE

Notices

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WARNING

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KEYSIGHT

Keysight x1149 Hardware

The x1149 controller supports up to four TAP I/O ports and an optional Cover-Extend module.

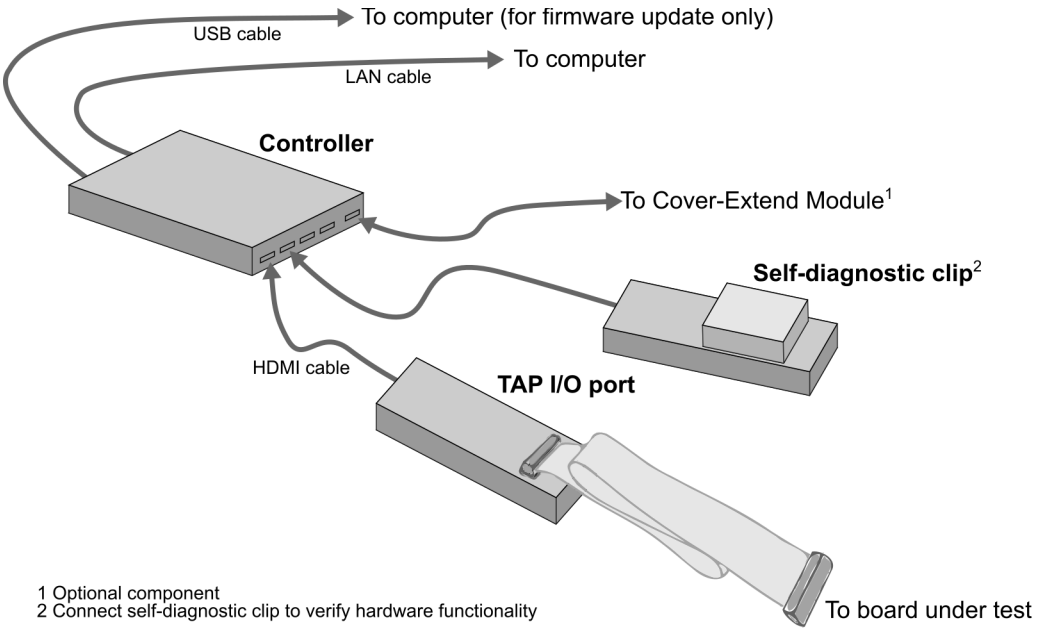
Figure 1 Keysight x1149 Boundary Scan Analyzer

Table 1

Item	Quantity
Keysight x1149 4-TAP Boundary Scan Controller	1
Power Adapter	1
Keysight x1149 Boundary Scan TAP/IO Ports[1]	4
Keysight x1149 Self-Diagnostic Clip	1
LAN Cable	1
USB Cable	1
HDMI Cables[2]	5
20-pin Ribbon Cables	4

1. When available, a 2-TAP bundle will include 2 TAP/IO ports with 3 HDMI cables and 2 ribbon cables.
2. An extra HDMI cable is included for use with the optional Cover-Extend module.

Figure 2 Hardware connections



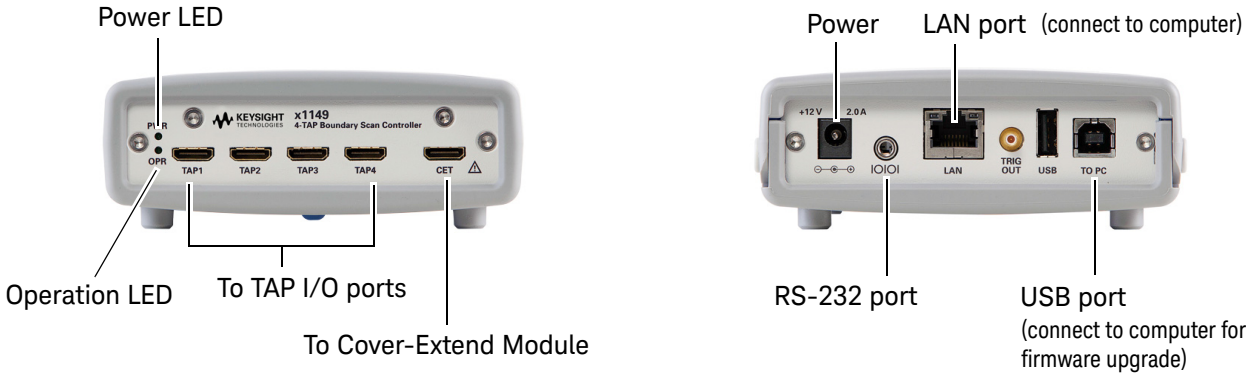
- Connect the controller to the computer running the Keysight x1149 software. To connect to the controller, the Keysight x1149 software must know its IP address. The default static IP address for the controller is 192.168.1.2.
- The controller and computer may also be connected to the local area network. In this case, allow the network to assign the IP addresses automatically.

  For information on the controller and network setup, refer to Connecting and Configuring the Controller.

Other connections:

- The self-diagnostic clip plugs into the TAP I/O to verify hardware functionality when needed.
- The USB cable is used to connect to the computer for controller firmware updates only.

Figure 3 x1149 controller ports



The Keysight x1149 controller is ready when both LEDs are lit.

Installing the Keysight x1149 Software

System Requirements

To install the Keysight x1149 software, the computer must meet the following requirements.

Table 2 System requirements

	Specifications
Processor	4-core Intel x86-64 or AMD64
Operating System	Windows 10 (64-bit) Windows 11 Ensure that all Windows updates are installed.
Memory	8 GB minimum
Available Disk Space	▪ 10 GB minimum on the installation drive (can be any drive) ▪ 1 GB on C: drive.
Display Properties	▪ Screen resolution: at least 1024 x 768 pixels ▪ Color quality: at least 16-bit
Language Setting	Must be **English (United States)**.

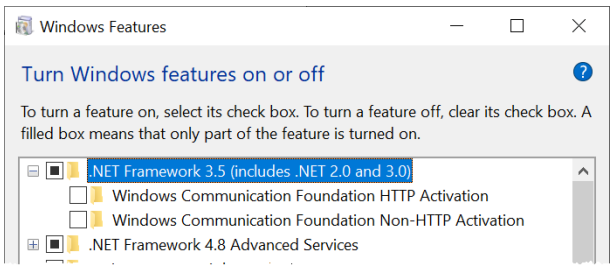
Enable .NET Framework 3.5

Before installing the Keysight x1149 software, you must enable the .NET Framework 3.5. This requires an Internet connection.

1 Select **Start** , type `Windows Features`, and press **Enter**.

2 In the Windows Features dialog box, select **.NET Framework 3.5 (includes .NET 2.0 and 3.0)** and click **OK**.

You do not need to select the child items for Windows Communication Foundation (WCF) HTTP activation unless you are a developer who requires WCF script and handler mapping functionality.



3 Reboot your computer if prompted.

Installation Procedure

Be sure to uninstall any previous versions of the x1149 software before installing version 2.3.0.

1 Run the x1149 software installer.

2 If the **User Account Control** dialog box appears, click **Yes** to allow the installation to continue.

3 Follow the instructions on the screen to complete the installation of the x1149 software.

When installation is completed, install the IO Libraries Suite[1]. If the computer already has an older version of the software installed, this step is not needed.

1 Run the IO Libraries Suite installer.

2 Follow the instructions on the screen to complete the installation of IO Libraries Suite.

1. The IO libraries suite is used for firmware update, power supply (N6700) and external instrument (34980) integration.

Installing the x1149 Licenses

The Keysight x1149 software requires a license to run. Obtain the license file following the instructions provided when you purchased the system.

NOTE **Be sure to keep a backup copy of your license file in a safe place.**

Installing Node-locked or Transportable Licenses

Follow EITHER (A) or (B) to install the license(s).

A. Using PathWave License Manager

1 Launch PathWave License Manager.

2 Click **Add a License File**.

3 Browse to the location where you saved your license file. Select the license file (`.lic`) and click **Add Now**.

The license is now installed.

B. Drag-n-Drop

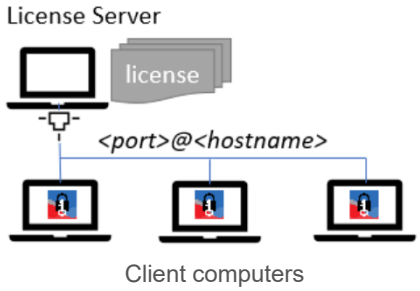
Drag and drop the license file into the licensing folder
`C:\ProgramData\Keysight\Licensing\Licenses\Other`

The license is now installed.

Refer to Default User IDs for the default user names and passwords you can use to log in to the x1149 software.

Installing Floating Licenses

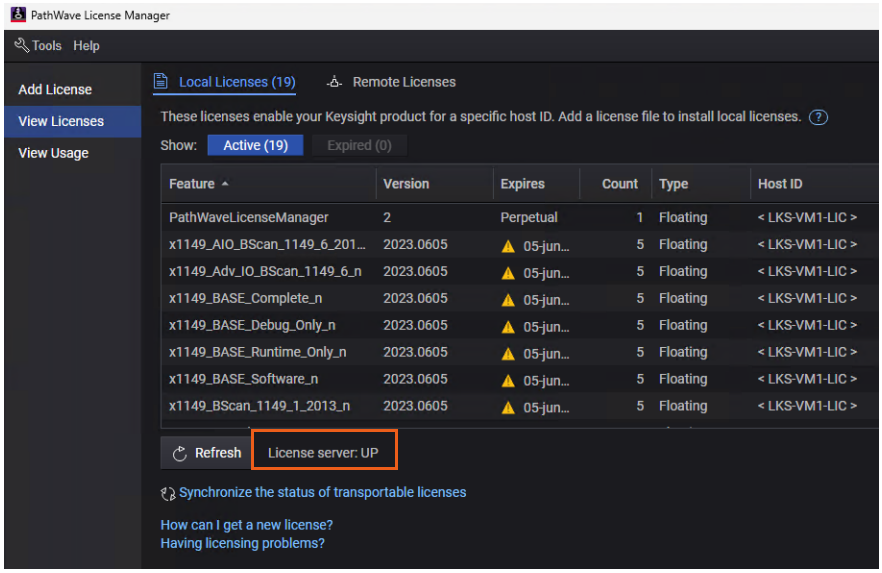
Floating licenses reside on a license server (a separate computer) and are checked out for use on individual client computers, then returned when no longer needed so that they can be used on another computer.



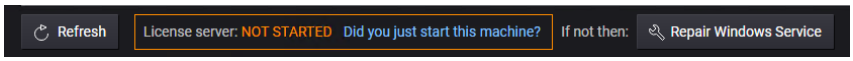
Install floating licenses on license server

1 Follow the same procedure in Installing Node-locked or Transportable Licenses to install the licenses on the license server.

2 In PathWave License Manager, click **View Licenses** to check that the floating licenses have been installed. Ensure the license server status shows **UP**.



If the status is **NOT STARTED**, click **Repair Windows Service** and check the status again. Restart the server if the problem persists.



NOTE Make sure the license server status is UP, otherwise the client computers will not be able to retrieve the floating licenses.

Set up client computers to use floating licenses

On the client computers running the Keysight x1149 software, follow these steps to access the licences on the license server.

1 Launch PathWave License Manager.

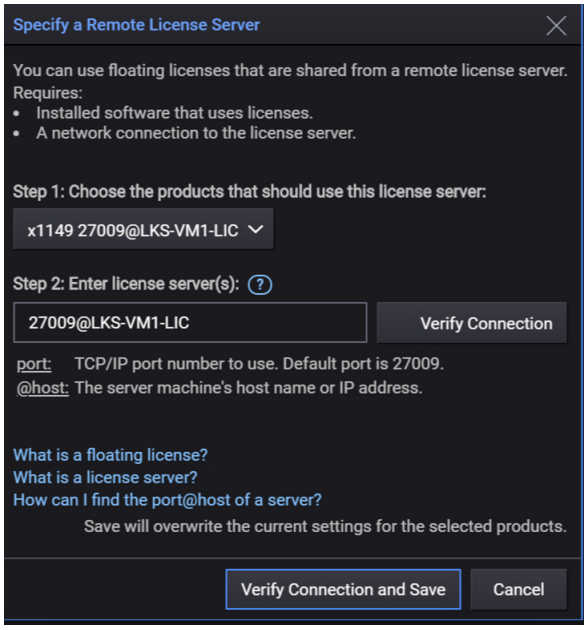
2 Click **Specify a Remote License Server**.

   a If prompted to choose a product, choose **x1149**.

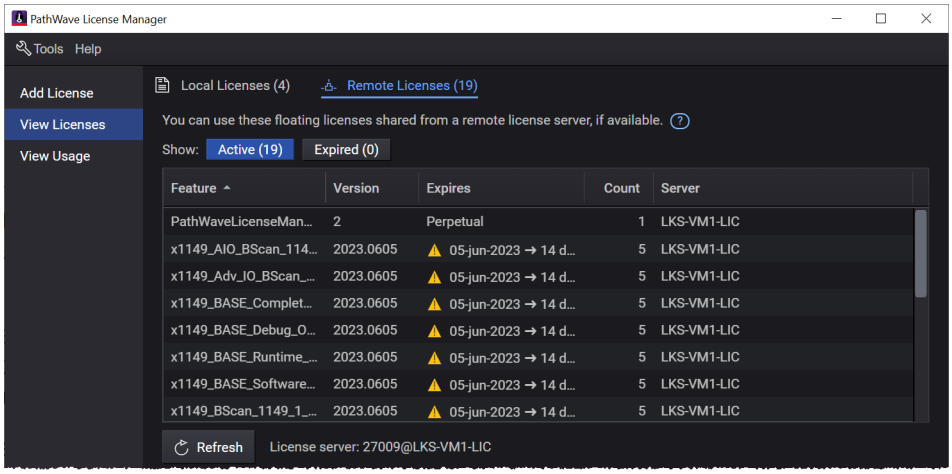
   b Specify the server machine from which to get your license. The format is: `port_number@host_name`

   NOTE For triple redundancy setup, specify all three servers (separate them using spaces). For example: `port_number@host_name1 port_number@host_name2 port_number@host_name3`

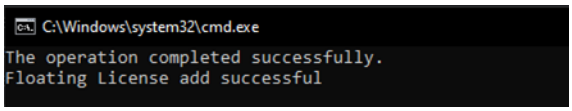
   c Click **Verify Connection and Save**, then click **Done** to complete the setup.



3 Click **View Licenses** to check that the floating licenses are available in the **Remote Licenses** tab.



4 In a Command Prompt window, go to `C:\Program Files\Keysight\x1149` and run `LicenseSearchPathReg.bat` in administrator mode.



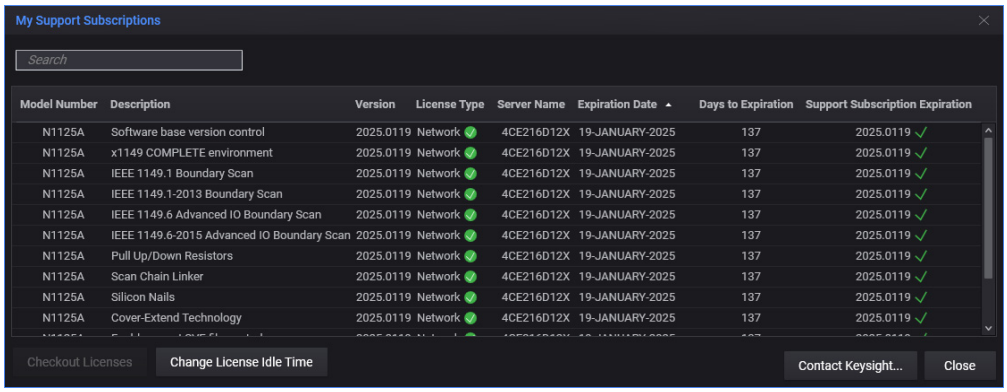
The x1149 software can now be run using the floating licenses. You can use the default user IDs to log in.

Adjusting idle timeout for floating licenses

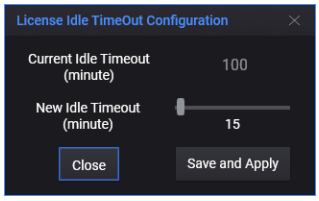
After floating licenses are installed, the idle timeout may be adjusted if needed.

1 Launch the x1149 application.

2 Click **Help** > **Technical Support** > **My Support Subscriptions**.
Check that **Network** is displayed in the License Type column,



3 Click **Change License Idle Time**.



4 Use the slider to set the new timeout value (from 15 to 120 minutes). Click **Save and Apply**.

The timeout value is saved in the following file:
`C:\Program Files\Keysight\x1149\licensetimeout.value`
You can also edit the value in the file instead of changing it in the x1149 application.

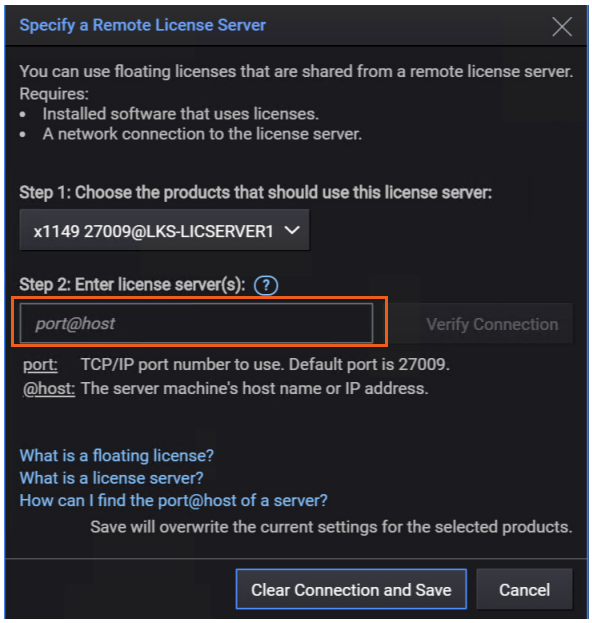
Removing floating licenses

1 Launch PathWave License Manager.

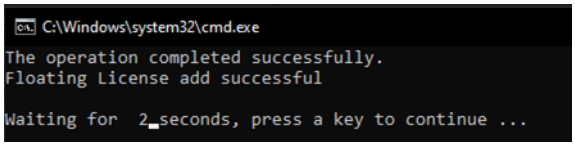
2 Click **Specify a Remote License Server**.

   a Delete the port and license server name under **Step 2: Enter license server(s)**.

   b Click **Clear connection and Save**.



3 In a Command Prompt window, go to `C:\Program Files\Keysight\x1149` and run `LicenseSearchPathReg.bat` in administrator mode.



`The operation completed successfully` message indicates the removal was sucessful.

Default User IDs

The default user IDs for accessing the Keysight x1149 software are given below. They provide access to different functionality in the software.

Table 3 Default User IDs

User ID	Group/Function	Password
Admin	Admin/user administration tasks	x1149BSA1
Engineer	Engineer/test development and debug	x1149BSA1
Operator	Operator/board testing	x1149BSA1

Connecting and Configuring the Controller

You can connect and configure the controller using the Keysight x1149 software as described in Connect and Configure Controller Using x1149 Software below.

Alternatively, follow the one of these procedures to configure the controller (depending on your system setup):
– Connect Controller to Host Computer
– Connect Controller and Host Computer to Local Area Network

Connect and Configure Controller Using x1149 Software

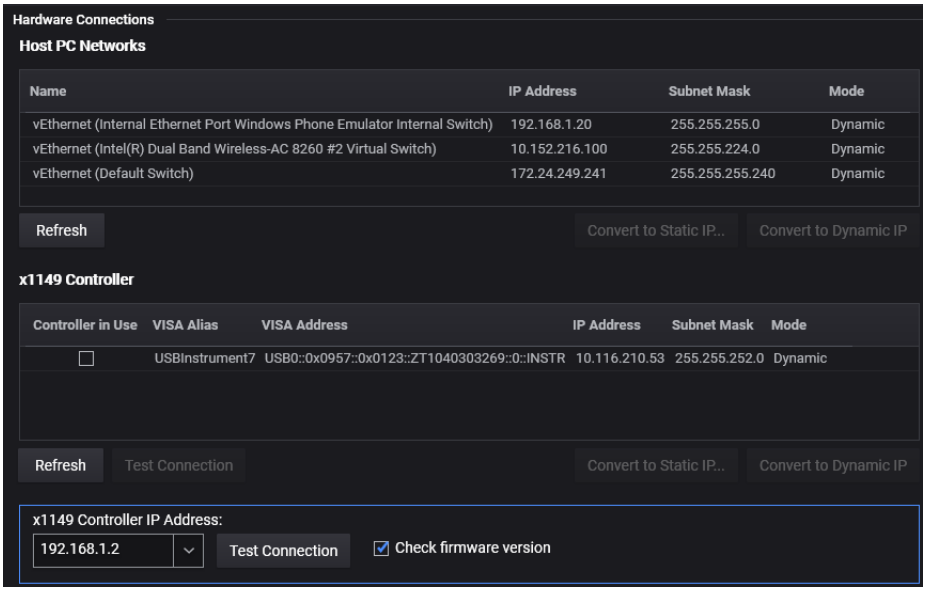
1 Connect the LAN cable to the controller and the computer running the Keysight x1149 software (Figure 2).

2 From the Keysight x1149 software, select **Tools** > **Preferences** > **Hardware Connections** tab.

The Hardware Connections tab (Figure 4) will show any controllers detected and the available networks from the host computer.

3 Continue with the configuration for your desired network connection:
– Controller connected to host computer, or
– Controller and host computer connected to local area network

Figure 4 Network connections



Controller connected to host computer

1 Set a static IP address for the host computer:
   a Select the host computer and click **Convert to Static IP**.
   b Enter the IP address and click **OK**.

NOTE The default IP address for the controller is 192.168.1.2. To communicate, the host computer's IP address must also be set in the 192.168.1.x range.

2 Select the x1149 Controller and click the **Test Connection** button to test the connection.

3 Click the **Controller In Use** checkbox for the controller and click **OK**.

If you wish to change the IP address of the controller, simply enter the new IP address under **x1149 Controller IP Address** (see Figure 4), then use the **Test Connection** button to test the connection.

IP addresses that have previously been set for the controller are saved and can be selected from the drop-down list.

Controller and host computer connected to local area network

To connect the controller and computer to the local area network, continue with the following steps:

1 Set a dynamic IP address for the controller:
   a Select the controller and click **Convert to Dynamic IP**.
   b Click **Yes** to confirm.

   The controller will be restarted and its IP address updated.

2 Select the x1149 Controller and click the **Test Connection** button to test the connection.

3 Click the **Controller In Use** checkbox for the controller and click **OK**.

Connect Controller to Host Computer

NOTE The default IP address for the controller is 192.168.1.2. To communicate, the host computer's IP address must also be set in the 192.168.1.x range.

1 Connect the LAN cable to the controller and the computer running the Keysight x1149 software.

2 Set the IP address of the host computer as follows:

   a Go to **Control Panel** > **Network and Sharing Center**.

   b Click **Local Area Connection** and click **Properties**.

   c Under **This connection uses the following items**, select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.

   d On the **General** tab, select **Use the following IP address**.
   Set the IP address of the computer in the `192.168.1.x` range with subnet mask `255.255.255.0`. Then click **OK**.

This completes the setup.

If you wish to change the IP address for the controller

If you should need to change the controller's IP address to something other than the default (192.168.1.2), follow these steps:

1 Connect the LAN cable to the controller and computer.

2 Set the computer's IP address in the range `192.168.1.x` with subnet mask `255.255.255.0` as described above.

3 Launch a web browser and enter the controller's default IP address, `192.168.1.2`.

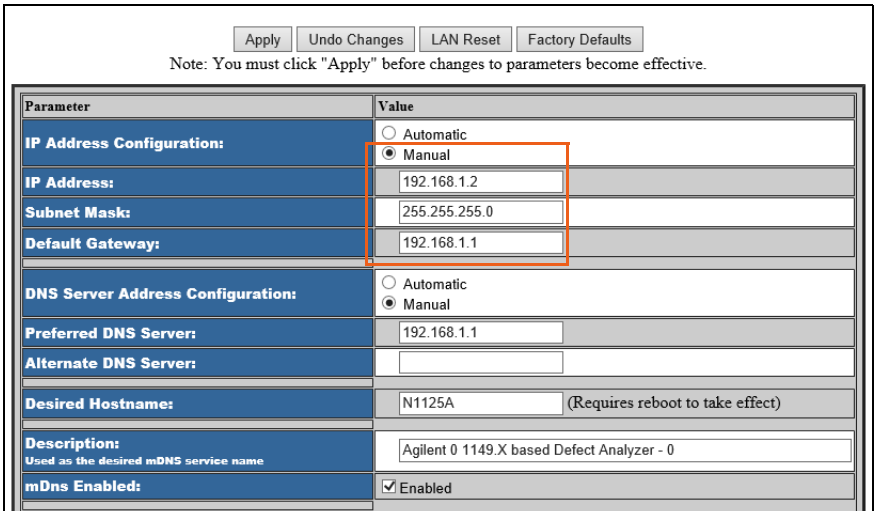
4 Click **View & Modify Configuration** > **Modify Configuration**. At the prompt, enter the password `agilent`.

5 Enter the preferred IP address for the controller and click **Apply** (Figure 5).

6 Turn the controller off and on again.

7 Update the computer's IP address to the same subnet of the controller.

Figure 5 Manual IP address configuration



In the Keysight x1149 software, select **Tools** > **Preferences** > **Hardware Connections** tab to enter the controller's new IP address.

Connect Controller and Host Computer to Local Area Network

To connect the controller and computer to the local area network, do the following:

- Set dynamic IP addresses
- Find out IP address assigned to controller
- Update controller's IP address in Keysight x1149 software

Set dynamic IP addresses

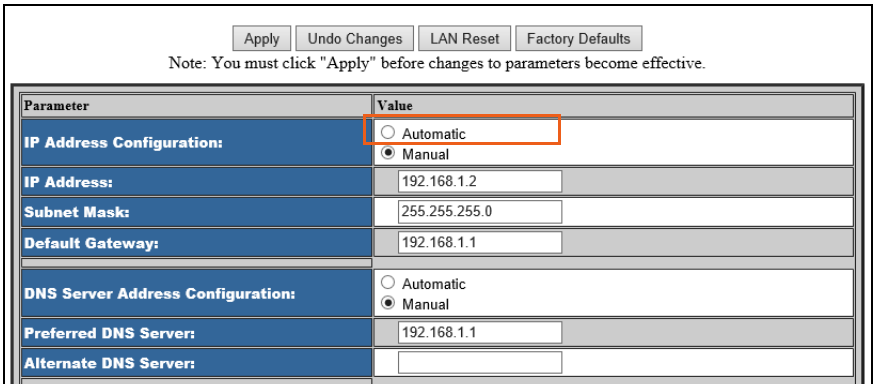
1 Connect the LAN cable to the controller and the computer running the Keysight x1149 software.

2 Set the computer's IP address in the range `192.168.1.x` with subnet mask `255.255.255.0`.

3 Launch a web browser and enter the controller's default IP address, `192.168.1.2`.

4 Click **View & Modify Configuration** > **Modify Configuration**. At the prompt, enter the password `agilent`.

5 Set the IP address configuration to **Automatic** and click **Apply**.



6 Turn the controller off and on again.

7 Connect the controller and computer to the local area network.

8 Specify dynamic addressing as follows:

a Go to **Control Panel** > **Network and Sharing Center**.

b Click **Local Area Connection** and click **Properties**.

c Under **This connection uses the following items**, select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.

d On the **General** tab, select **Obtain an IP address automatically**.

e Click **OK**.

Find out IP address assigned to controller

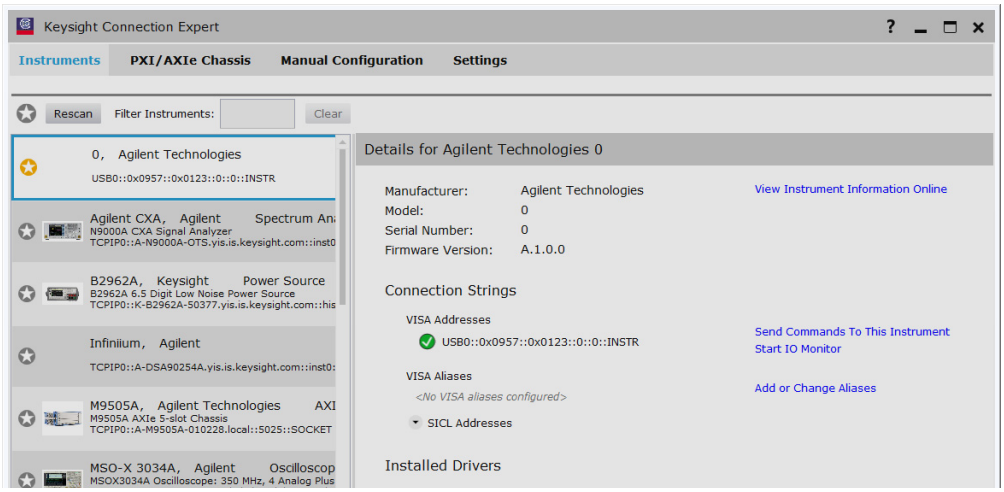
To find out what IP address was assigned to the controller:

1 Keep the connections to the local area network.

2 Connect the USB cable to the controller (port labeled **TO PC** on the rear panel) and to the computer.

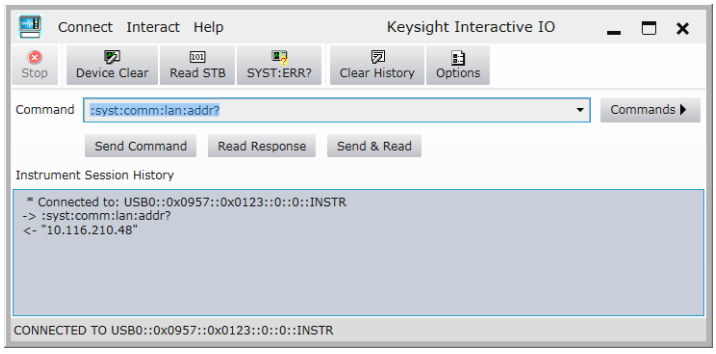
3 In the Windows taskbar, click (Keysight IO Libraries Suite) and select **Connection Expert**.

4 In the Instruments list, select **0, Agilent Technologies**, then click **Send Commands to This Instrument** in the Details pane on the right.



5 Enter the following command:
`:syst:comm:lan:addr?`

This displays the controller's IP address.



Update controller's IP address in Keysight x1149 software

To connect to the controller, the Keysight x1149 software must know its IP address. Select **Tools** > **Preferences** > **Hardware Connections** tab, under **x1149 Controller IP Address**, enter the controller's IP address obtained in step 5 above.

This completes the setup.

If you wish to change the IP address from dynamic to static setting

If the controller has been set up with dynamic IP address and you need to change it back to static, you can do so using the controller webpage as described earlier.

If you are unable to access the webpage, set the static IP address as follows:

1 Launch **Keysight IO Libraries Suite** and select **Connection Expert**.

2 In the Instruments list, select **0, Agilent Technologies**, then click **Send Commands to This Instrument** in the Details pane on the right.

3 Send the following commands to the controller:

```
:syst:comm:lan:dhcp off
:syst:comm:lan:addr "192.168.1.2"
:syst:comm:lan:upd
```

4 Turn the controller off and on again.

This sets the controller's static IP address to the default 192.168.1.2.

Uninstalling the Keysight x1149 Software

1 Right-click **Start** > **Apps and Features**.

2 Find **Keysight Boundary Scan Analyzer**, click **Options** (⋮) button, and click **Modify**.

3 Click **OK** to stop any associated service and proceed with the uninstallation.

System Backup and Recovery

It is the responsibility of the customer to create a full backup of the files on their test systems so that the system and data can be recovered in case of a disaster such as a disk crash. It is recommended that you set up a backup schedule and procedure to create regular backups.

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Keysight Technical Support

You can access support information at www.keysight.com/find/x1149. Technical Support provides links to application notes, articles and case studies to help you use your Keysight x1149 Boundary Scan Analyzer more effectively.

To contact Keysight technical support, go to www.keysight.com/find/contactus for support details.

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