

Support Note

Keysight N1014A

SFF-8431

Compliance and Debug Application for  
DCA-X & DCA-M Oscilloscopes

## Connecting to a PNA or ENA for S-Parameter Measurements

N1014A Version 1.14 Support Note

## Introduction

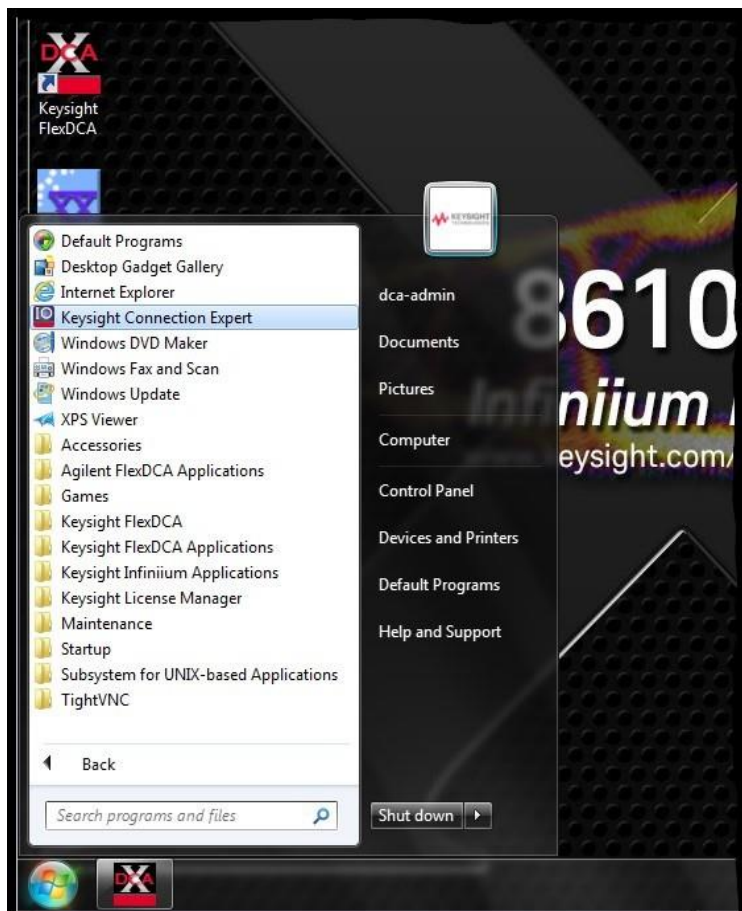
Most of the measurements in the N1014A SFF-8431 Compliance Test Application use an 86100D DCA-X or a supported DCA-M (N1092C/E, N1094A, N1094B) sampling oscilloscope. However, for S-Parameter measurements, a network analyzer is required. If properly configured, the compliance application can communicate with a network analyzer for making the measurements, and then include the S-parameter results in the test application report.

Previous versions of the N1014A compliance app required *Instrument* protocol connections to the LAN for ENAs and *Socket* connections for PNAs. However, version 1.11 and higher require *Socket* connections for ENAs as well as PNAs. The following are the steps.

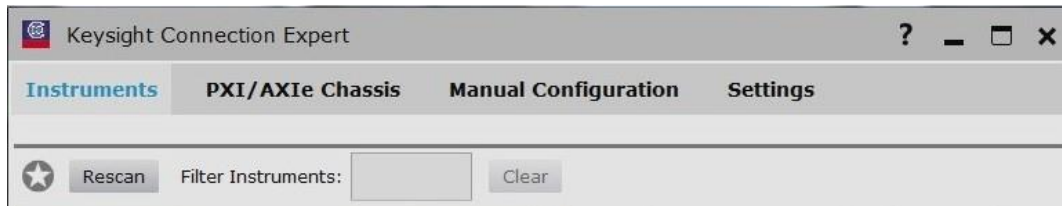
These instructions assume that version 17.2 (or later) of Keysight I/O Library Suite has been installed. The user interface for Keysight Connection Expert 2017 (Version 18.0) is slightly different from its previous versions, such as Version 17.2.

## Connection using Keysight Connection Expert v17.2

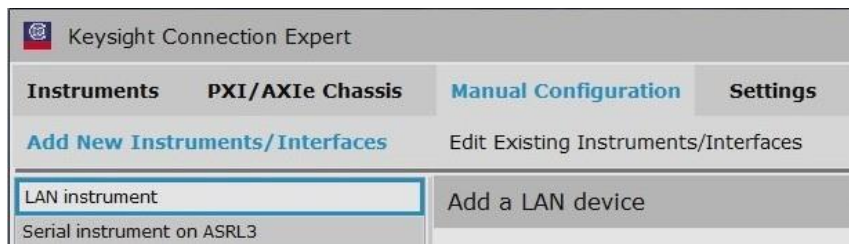
- 1 Locate and record the ENA/PNA instrument's Hostname (Full Computer Name). Refer to the respective network analyzer's documentation for locating this information.
- 2 From the Windows **Start** menu, click **All Programs>Keysight Connection Expert** to launch Connection Expert.



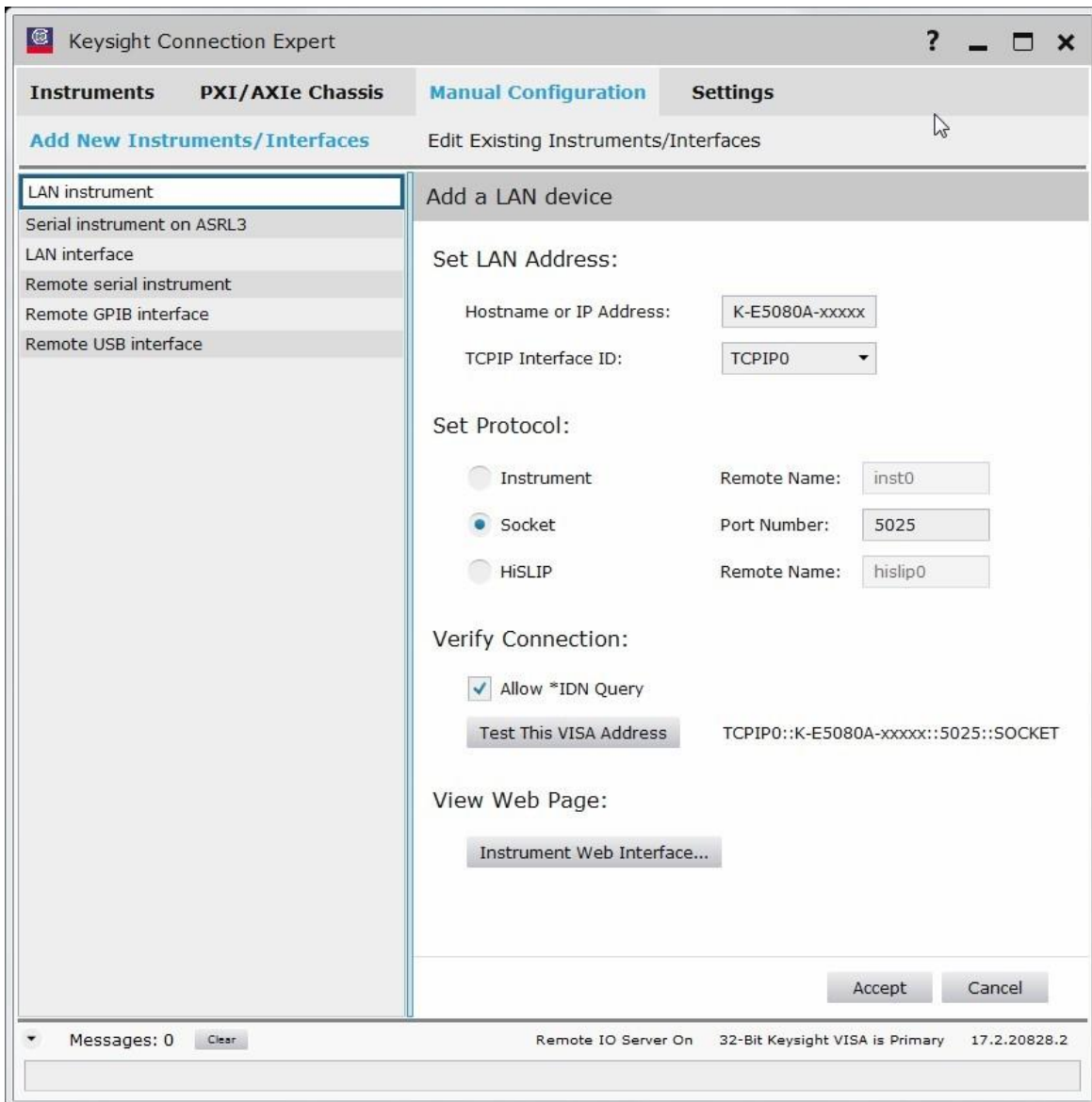
- 3 In Keysight Connection Expert, click the **Manual Configuration** tab.



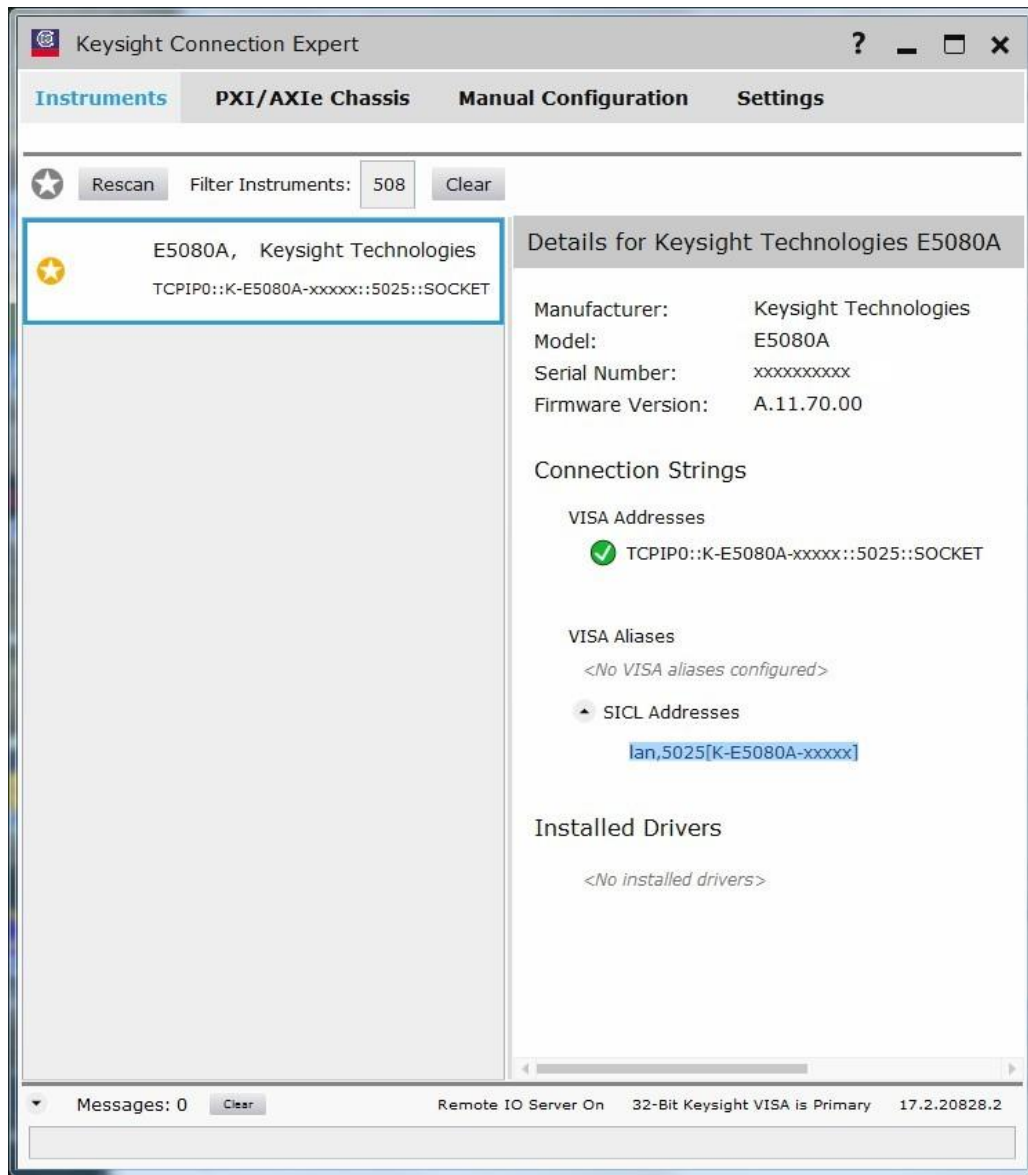
- 4 Under **Add New Instruments / Interfaces**, select **LAN instrument**.



- 5 In the **Add a LAN device** pane,
  - a Under **Set LAN Address:**, enter the Hostname (recorded in step 1) in the **Hostname or IP Address:** field. Note that your Hostname entry will be different from what is shown in the image.
  - b Under **Set Protocol:**, select **Socket** and enter the port number.
  - c Under **Verify Connection:**, click **Test This VISA Address** to verify the connection.

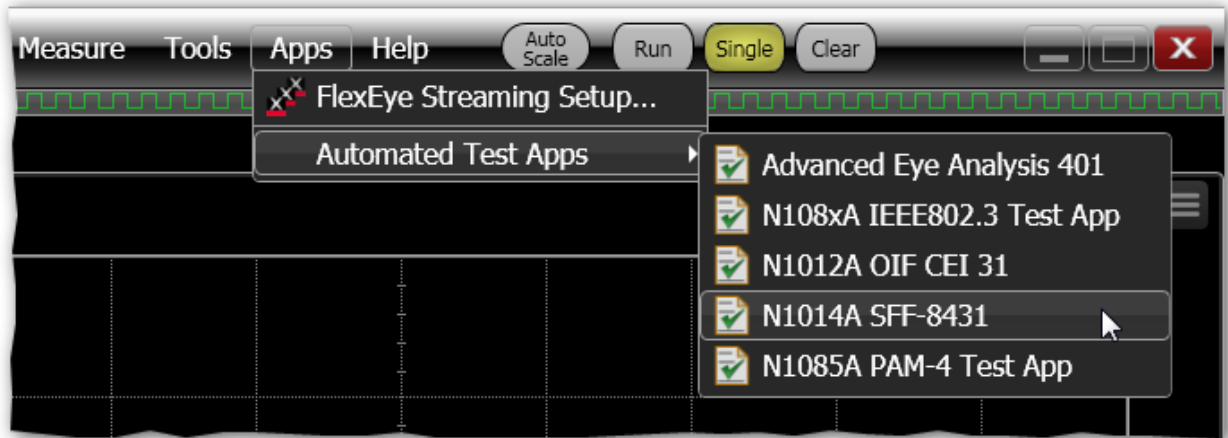


- 6 Once you verify the entered data, click **Accept** to complete the process.
- 7 Copy Network Analyzer SICL Address to the Clipboard:
  - a Click the **Instruments** tab of the Keysight Connection Expert.
  - b Click the ENA/VNA listing on the left pane, and copy the SICL address using *Ctrl + C* keys. Note that the address on your end will be different from what is shown in the image.

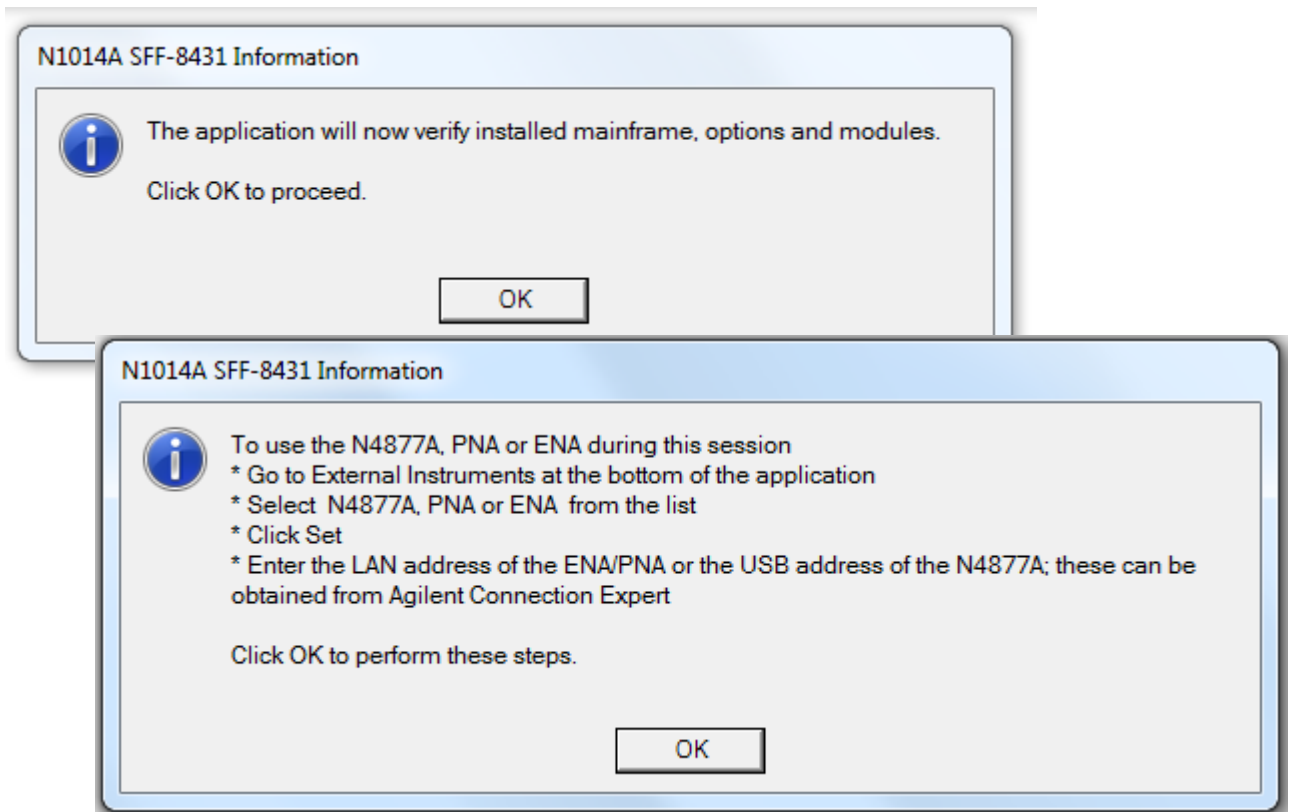


8 Start the N1014A SFF-8431 Compliance Test Application.

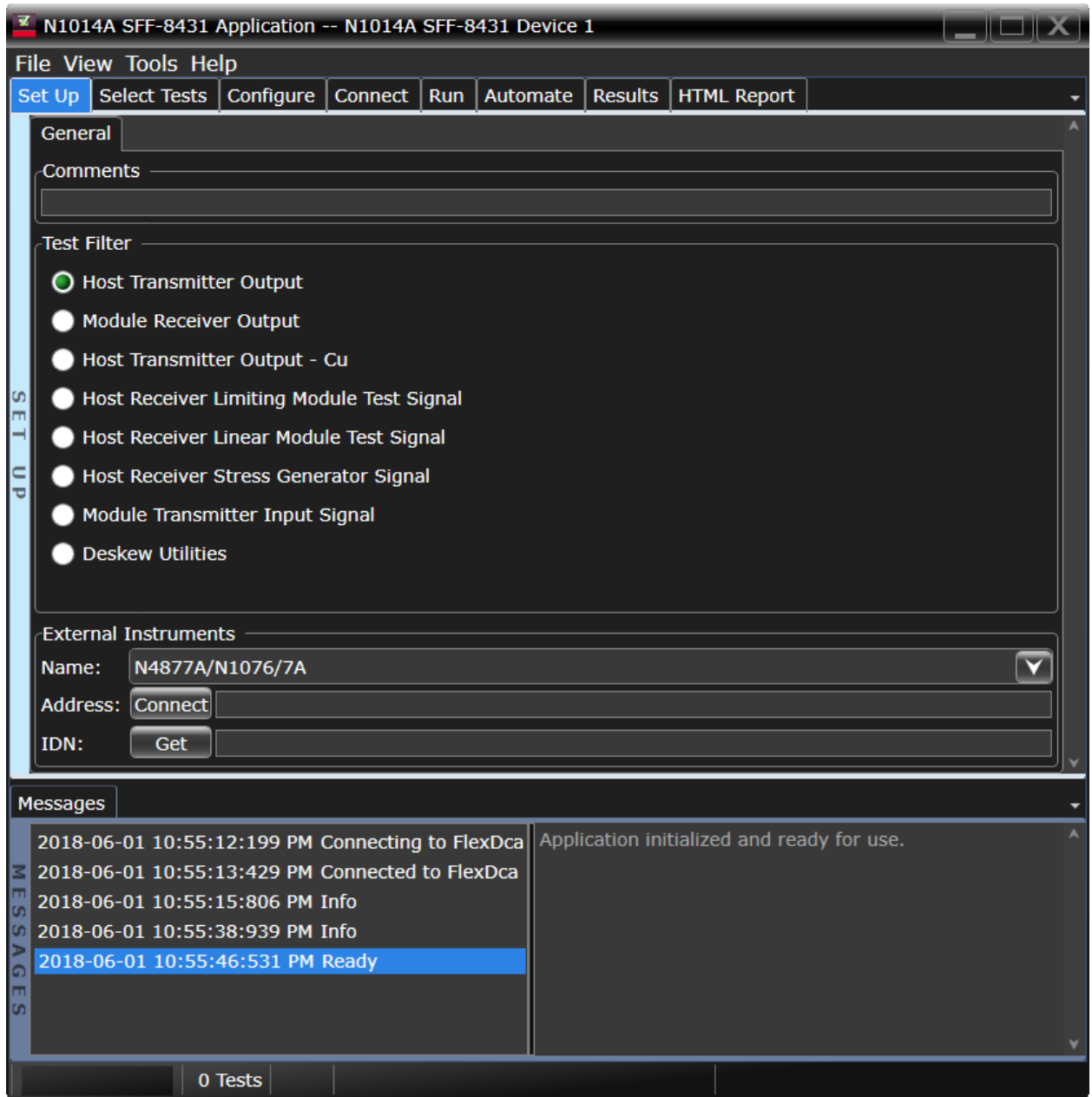
- a. From FlexDCA, click **Apps > Automated Test Apps > N1014A SFF-8431** to start the compliance application.



- b. Informational dialog boxes can be dismissed by clicking **OK**.



- c. The application starts with the **Set Up** tab active.



- 9 Connect to the Network Analyzer:

- a In the **Name:** field of the **External Instruments** area at the bottom of the N1014A SFF-8431 application's main window, select **VNA** or **ENA** from the drop-down list, depending on your network analyzer. In the example below, **ENA** is selected.



b Click **Connect**. The **Connect to ENA** window appears.



c In the **Enter/Select VISA address/alias (or SICL address)** field, paste the SICL address using *Ctrl + V* keys.

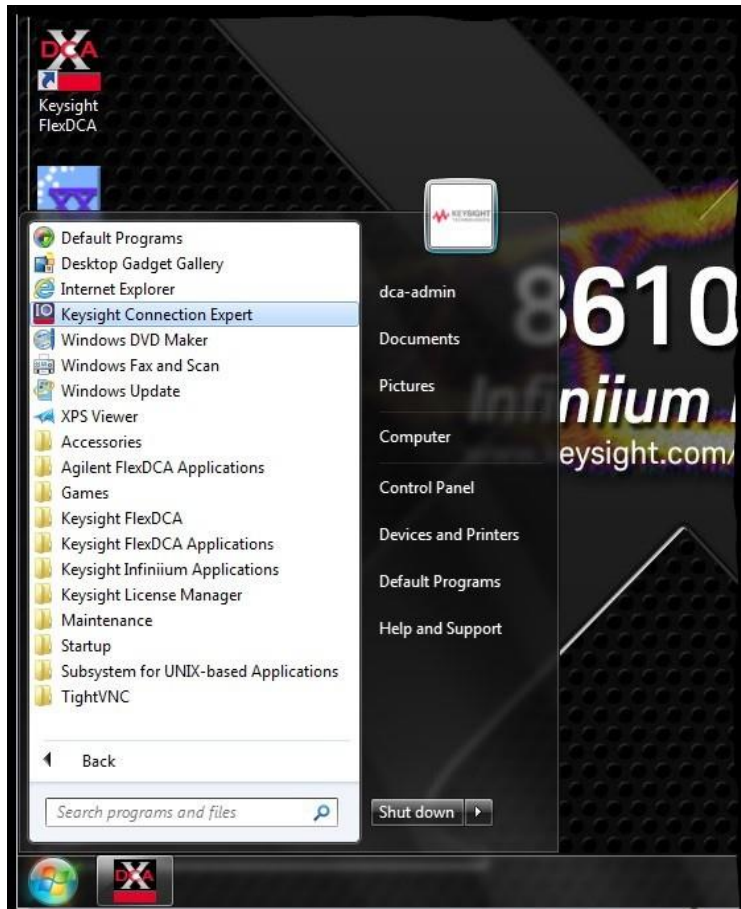
d Click **Get** to confirm the connection.

e Click **OK** to close the dialog box.

f The **External Instruments** field displays the relevant information once the connection to the selected network analyzer is established.

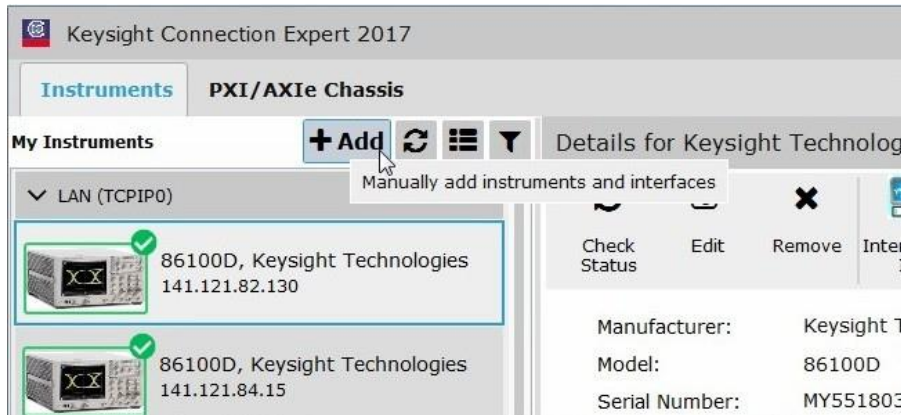
## Connection using Keysight Connection Expert 2017 (v18.0)

- 1 Locate and record the ENA/PNA instrument's Hostname (Full Computer Name). Refer to the respective network analyzer's documentation for locating this information.
- 2 From the Windows **Start** menu, click **All Programs>Keysight Connection Expert** to launch Connection Expert 2017.





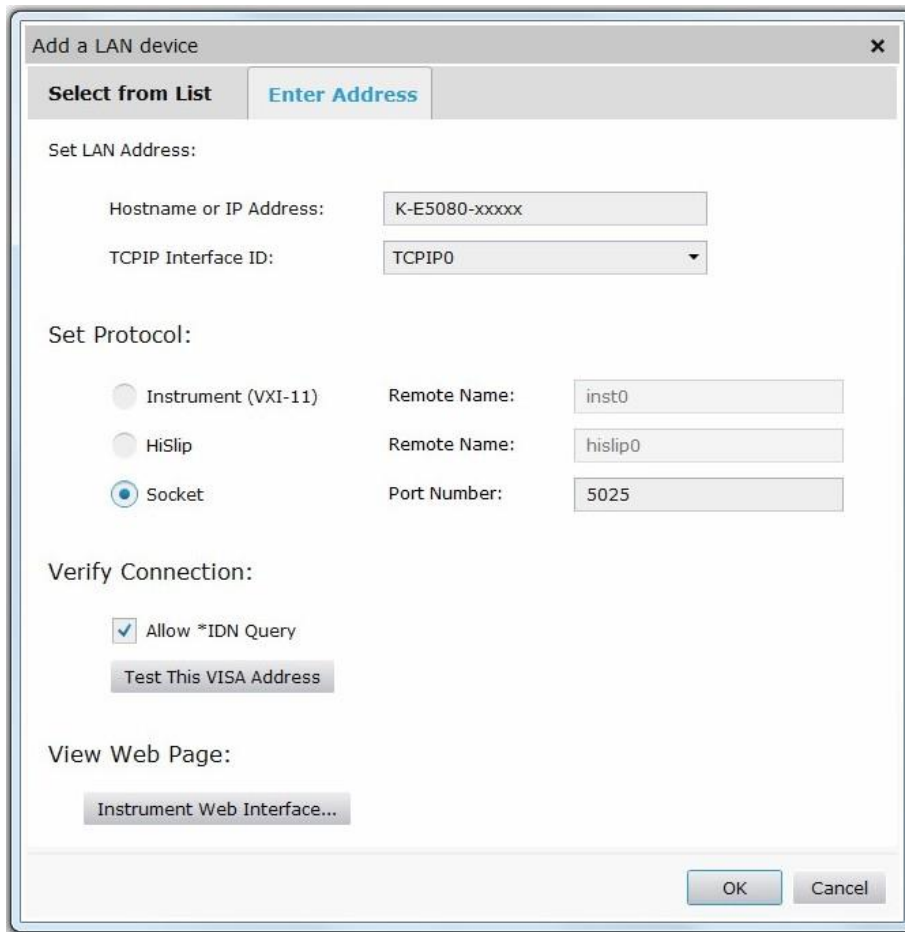
- 3 In Keysight Connection Expert 2017, click the **+ Add** button to manually add instruments and interfaces.



- 4 From the drop-down list that appears, select **LAN instrument**.



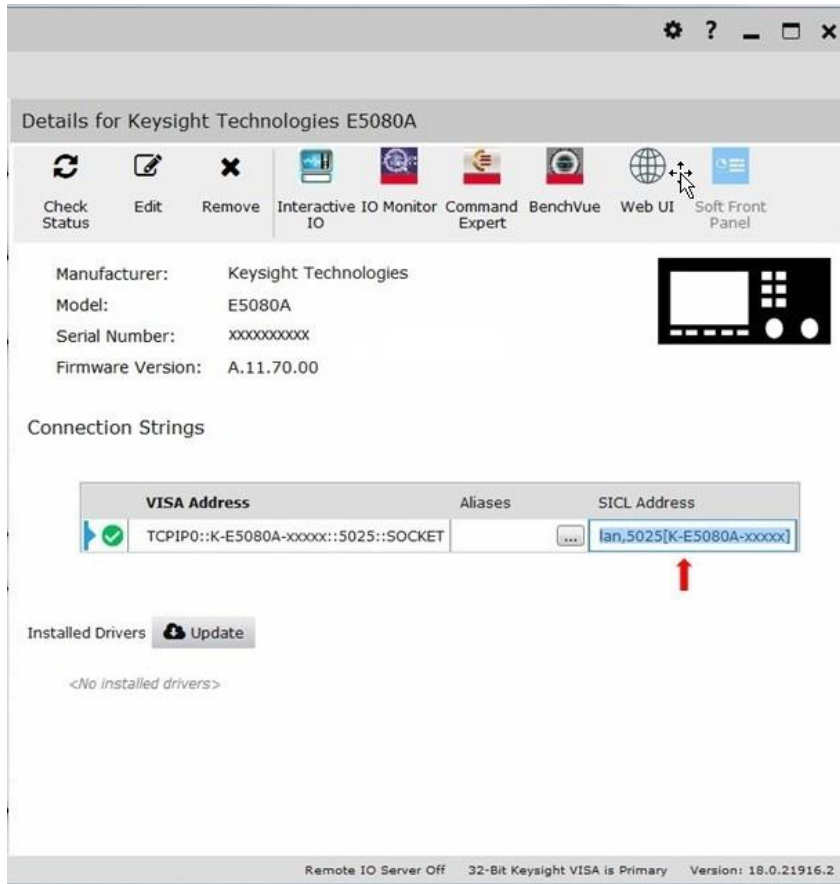
- 5 In the **Add a LAN device** window,
  - a Select the **Enter Address** tab.
  - b Under **Set LAN Address**, enter the Hostname (recorded in step 1) in the **Hostname or IP Address**: field. Note that your Hostname entry will be different from what is shown in the image.
  - c Under **Set Protocol**, select **Socket** and enter the port number.
  - d Under **Verify Connection**, click **Test This VISA Address** to verify the connection.



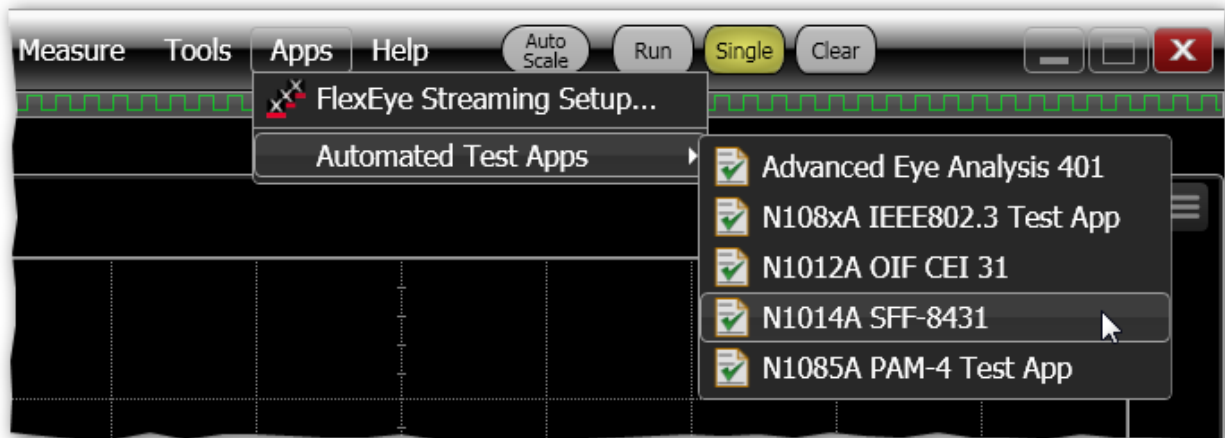
- 6 Once you verify the entered data, click **OK** to complete the process.
- 7 Copy Network Analyzer SICL Address to the Clipboard:
  - a Click the **Instruments** tab of the Keysight Connection Expert 2017.



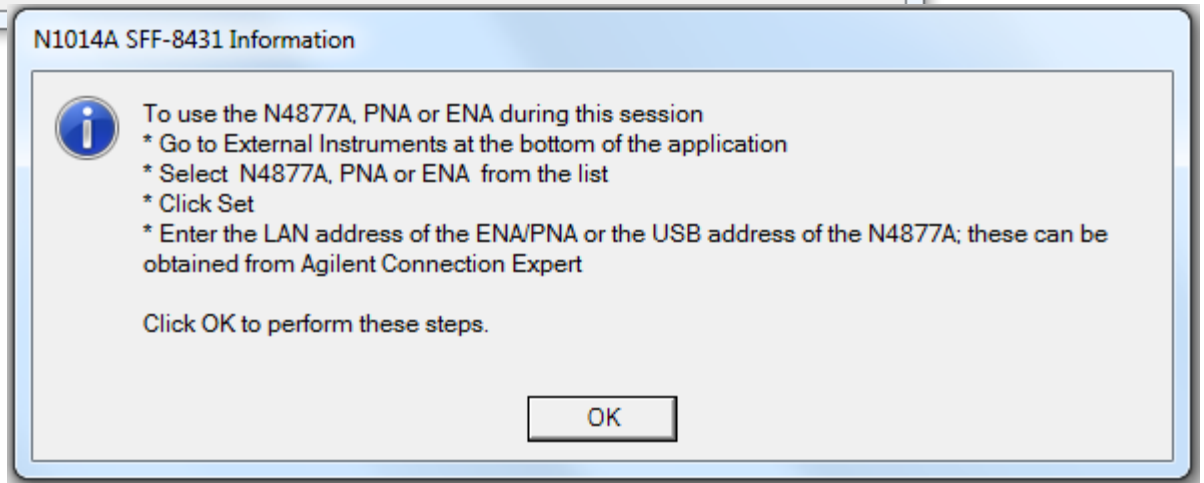
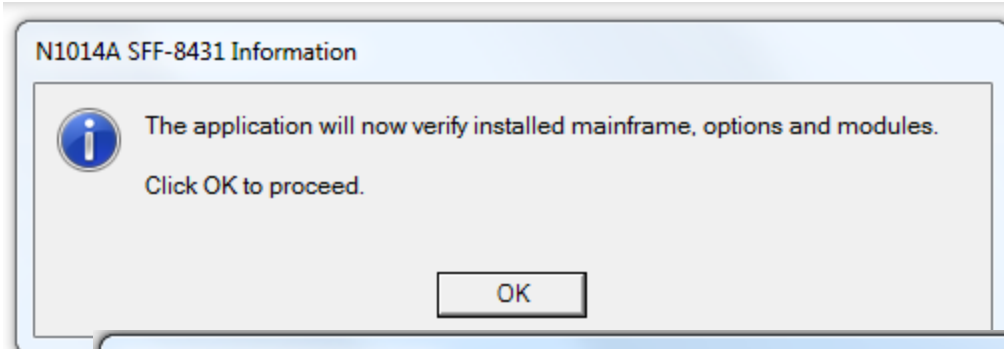
- a Click the ENA/VNA listing on the left pane, and copy the SICL address using Ctrl + C keys. Note that the address on your end will be different from what is shown in the image.



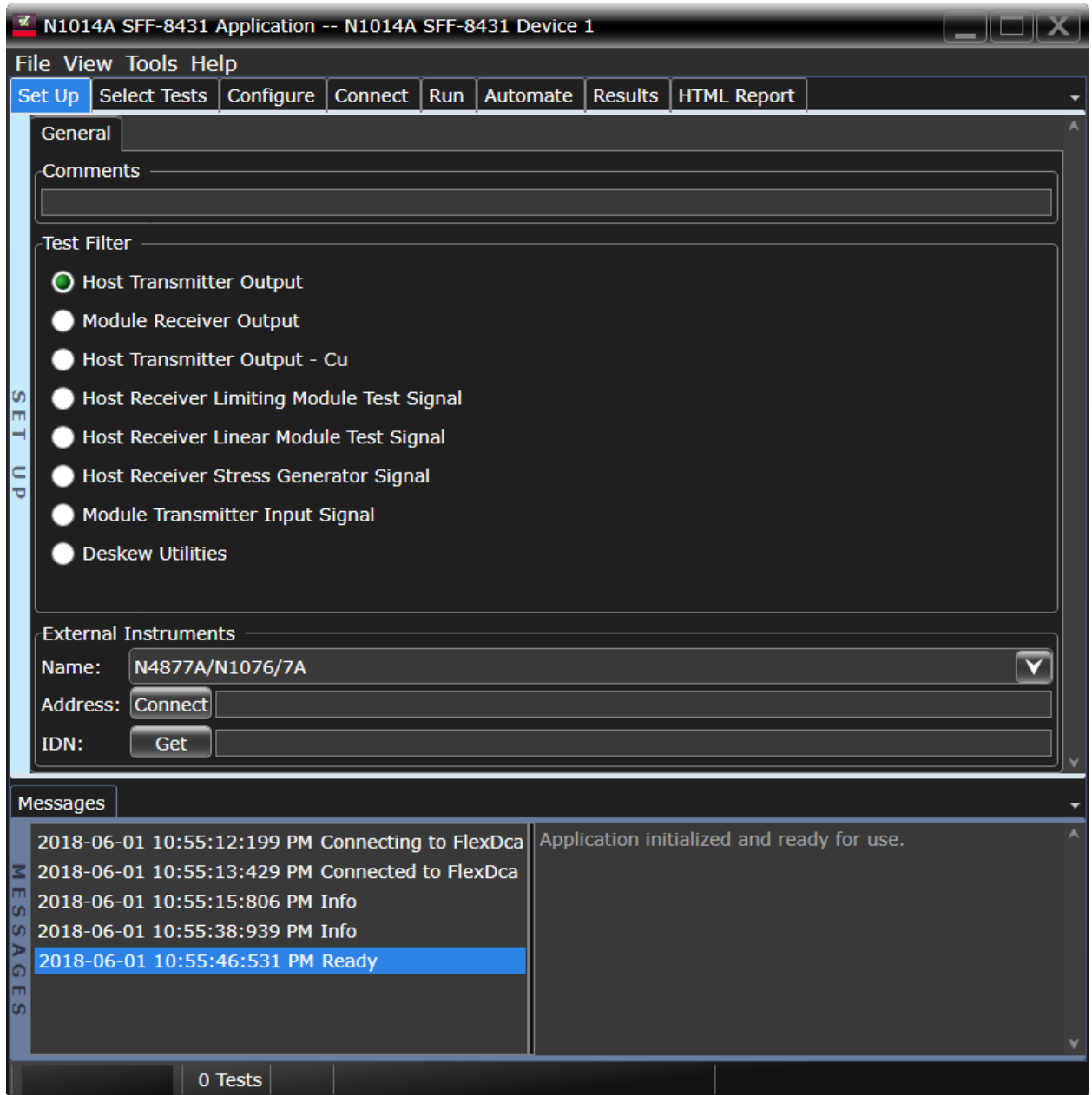
- 8 Start the N1014A SFF-8431 Compliance Test Application.
  - a From FlexDCA, click **Apps > Automated Test Apps > N1014A SFF-8431** to start the compliance application.



- b Informational dialog boxes can be dismissed by clicking **OK**.

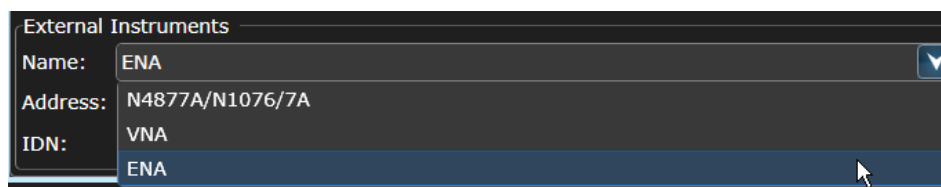


- c. The application starts with the **Set Up** tab active.

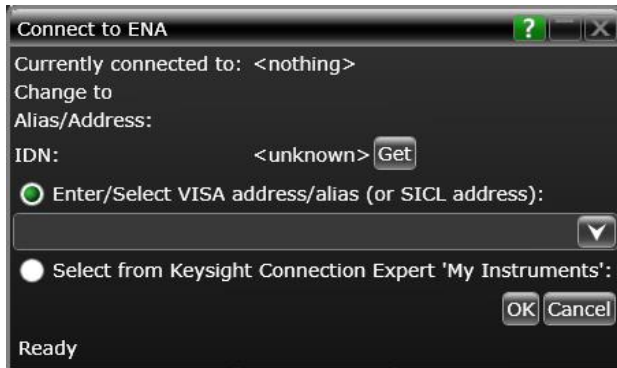


9 Connect to the Network Analyzer:

- a. In the **Name:** field of the **External Instruments** area at the bottom of the N1014A SFF-8431 application's main window, select either **VNA** or **ENA** from the drop-down list, depending on your network analyzer. In the example below, **ENA** is selected.



- b Click **Connect**. The **Connect to ENA** window appears.



- c In the **Enter/Select VISA address/alias (or SICL address)** field, paste the SICL address using *Ctrl + V* keys.
- d Click **Get** to confirm the connection.
- e Click **OK** to close the dialog box.
- f The **External Instruments** field displays relevant information once the connection to the selected network analyzer is established.