Connecting to a PNA or ENA for S-Parameter Measurements

N109310CA SFF-8431 - Version 1.20.3.0
(Compliance and Debug Application for
DCA-X & DCA-M Oscilloscopes)
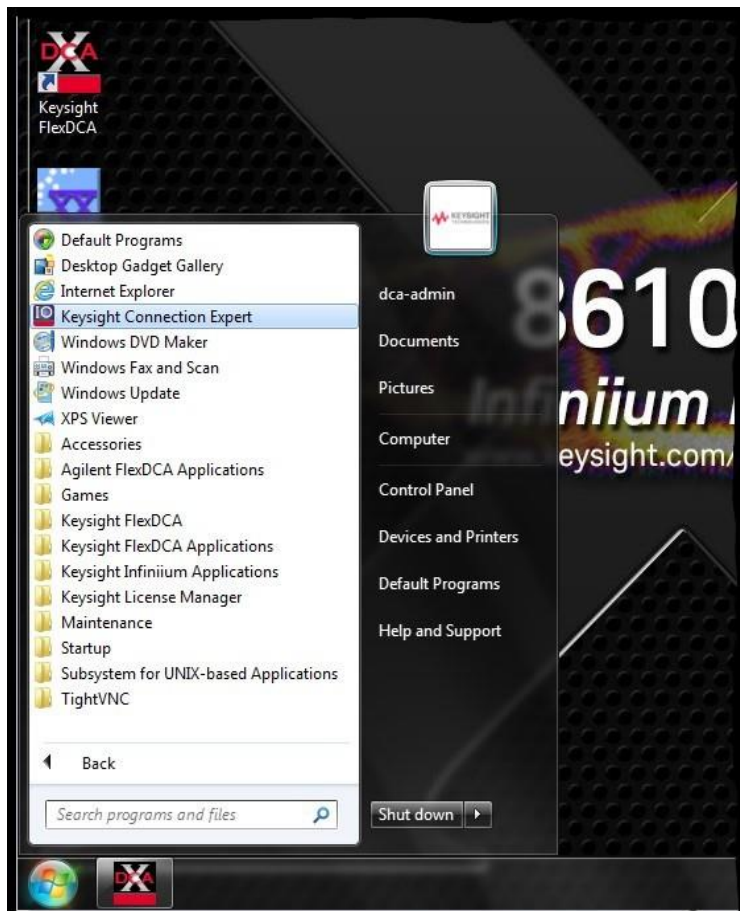
Introduction

Most of the measurements in the N109310CA 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 N109310CA 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.
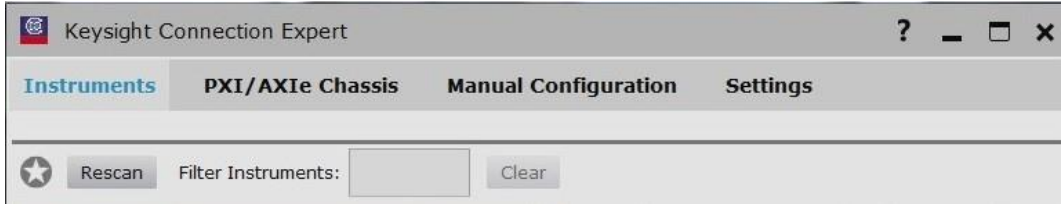
These instructions assume that version 17.2 (or later) of Keysight I/O Library Suite has been installed. The user interface for Keysight Connection Expert 2017 (Version 18.0) is slightly different from its previous versions, such as Version 17.2.

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.
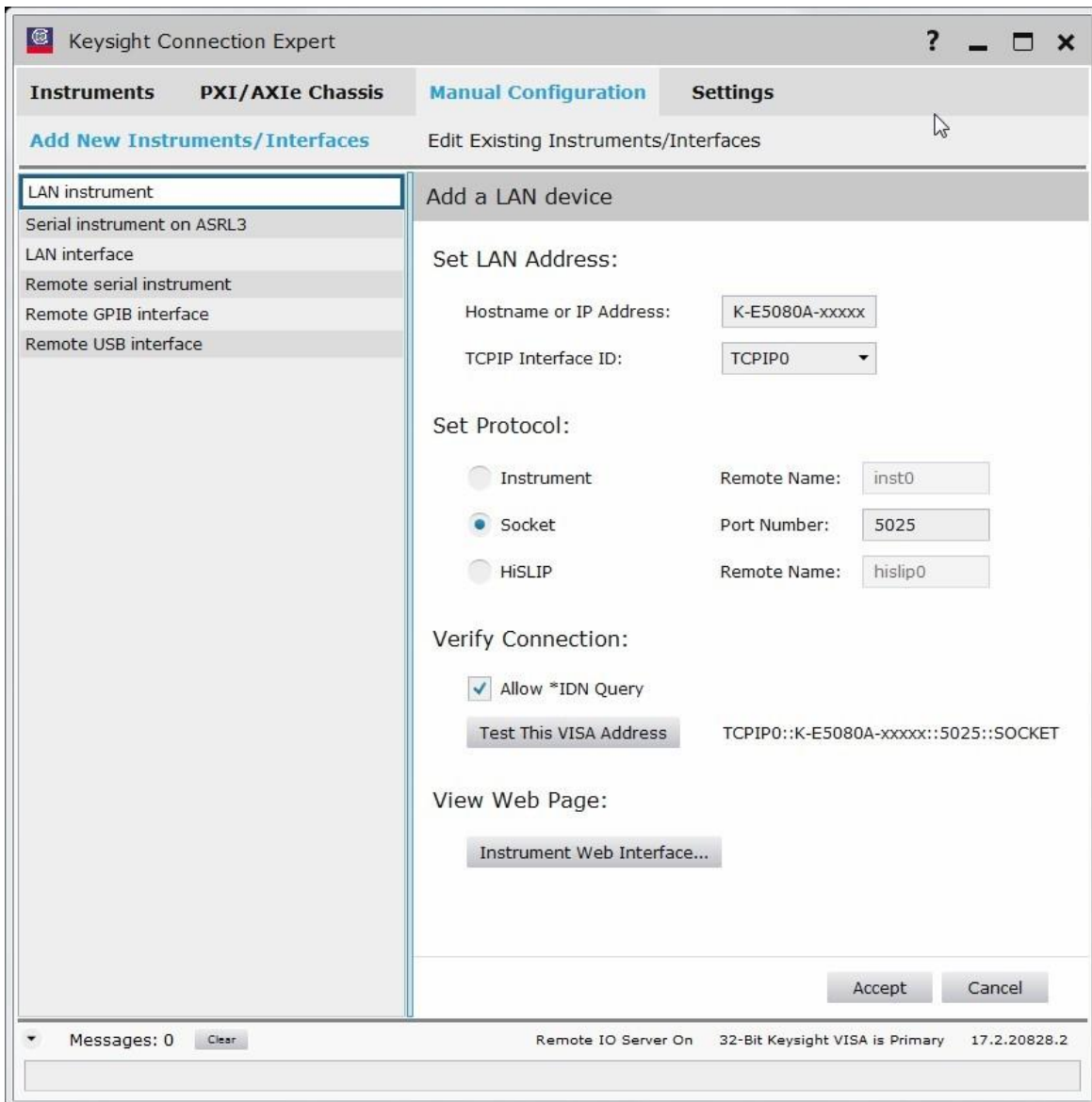2   From the Windows **Start** menu, click **All Programs>Keysight Connection Expert** to launch Connection Expert.

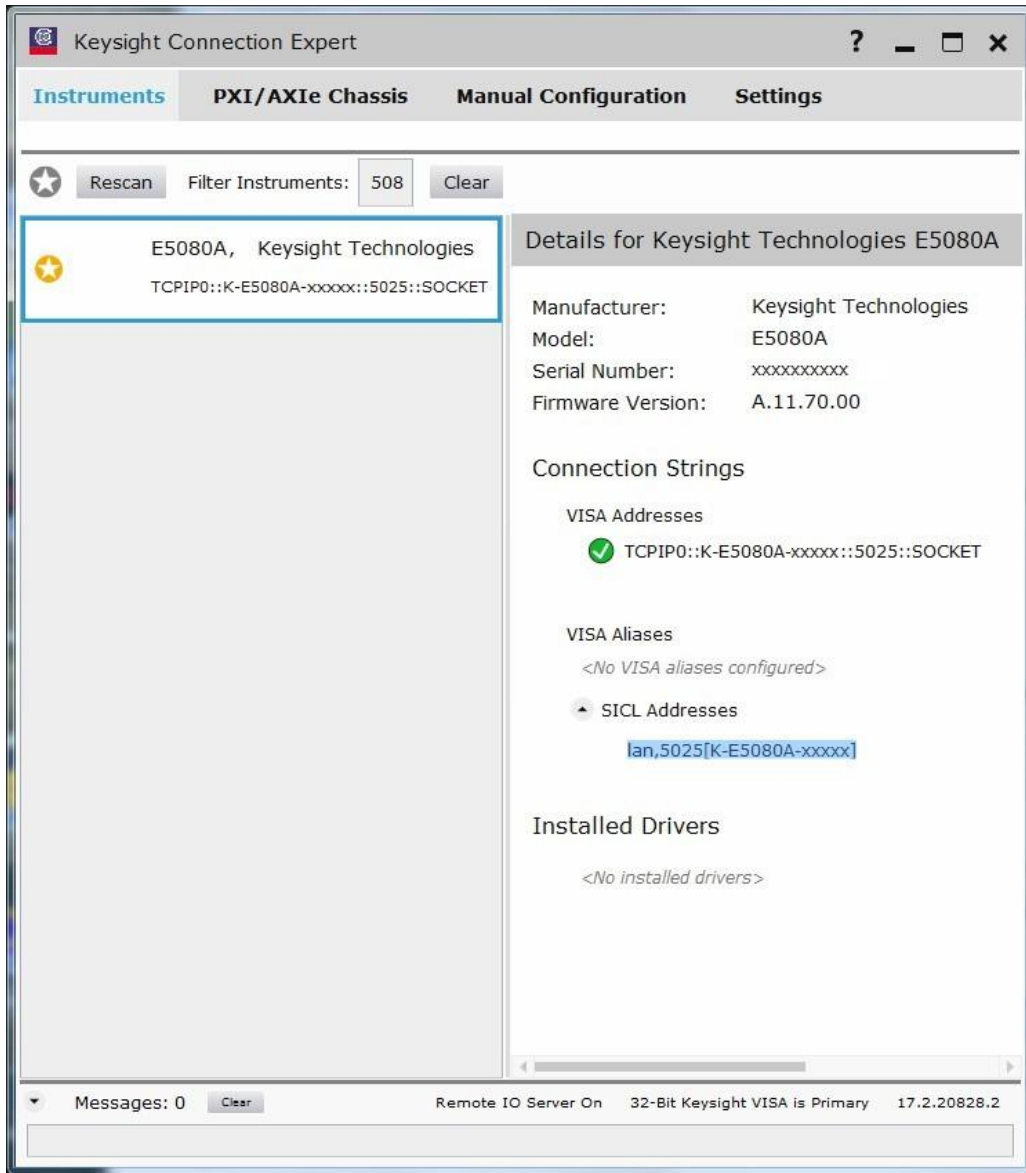3   In Keysight Connection Expert, click the **Manual Configuration** tab.

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.

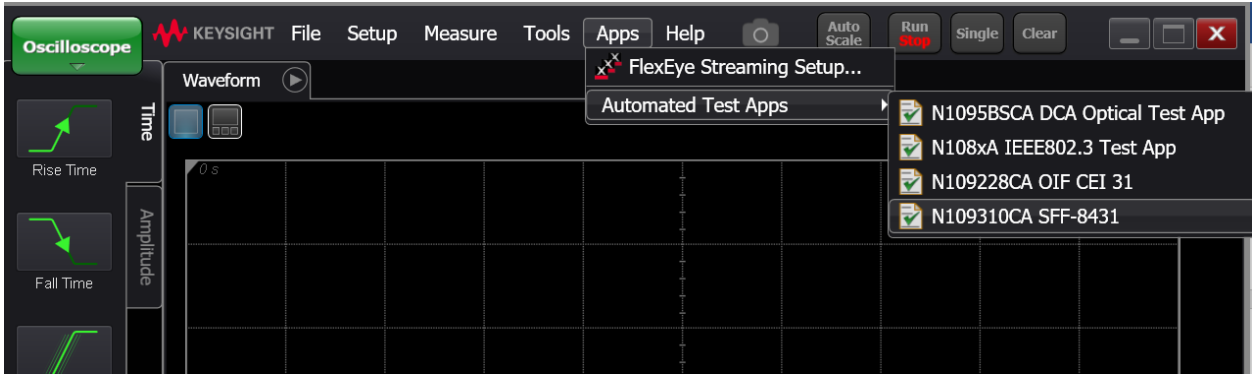   c   Under **Verify Connection:**, click **Test This VISA Address** to verify the connection.

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.
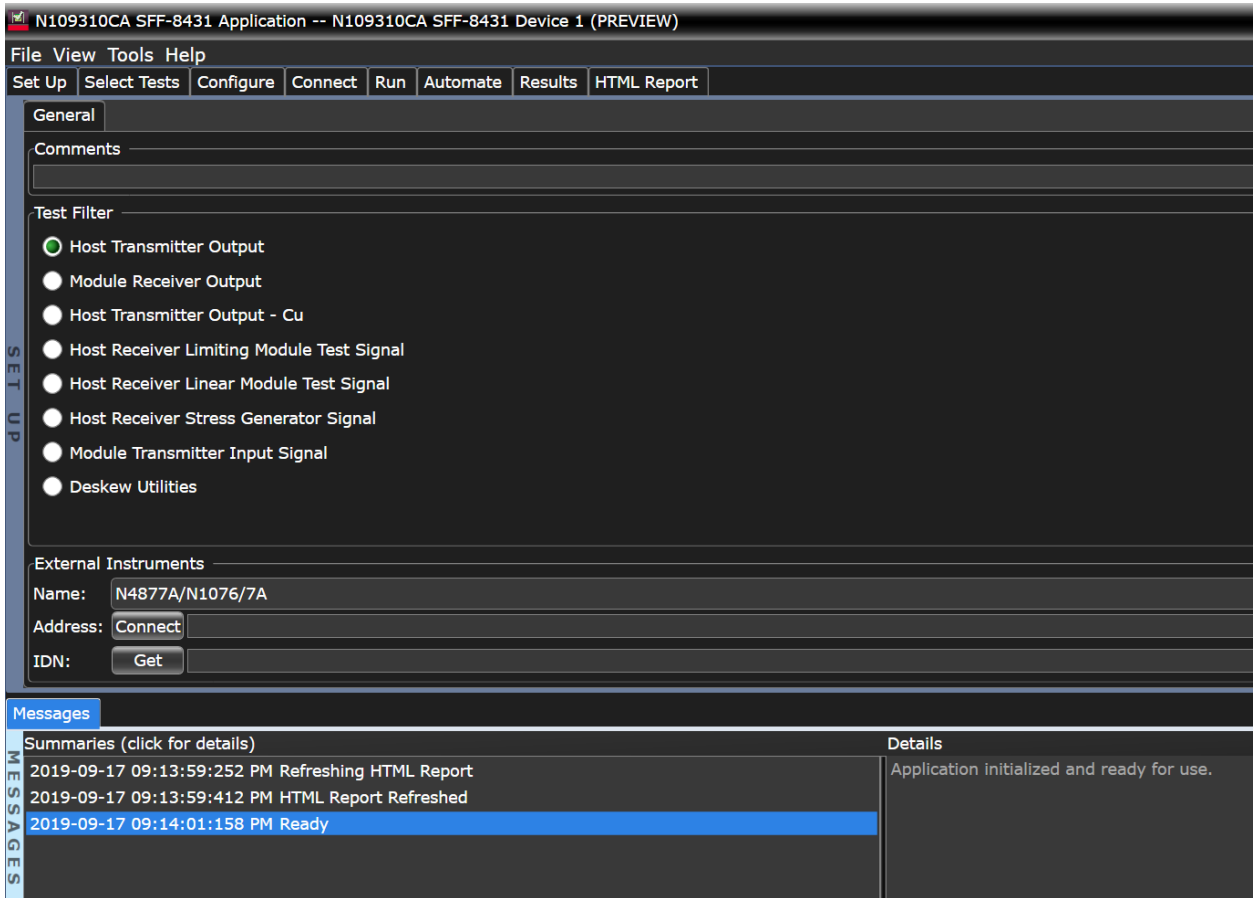
8   Start the N109310CA SFF–8431 Compliance Test Application.

a. From FlexDCA, click **Apps > Automated Test Apps > N109310CA SFF-8431** to start the compliance application.
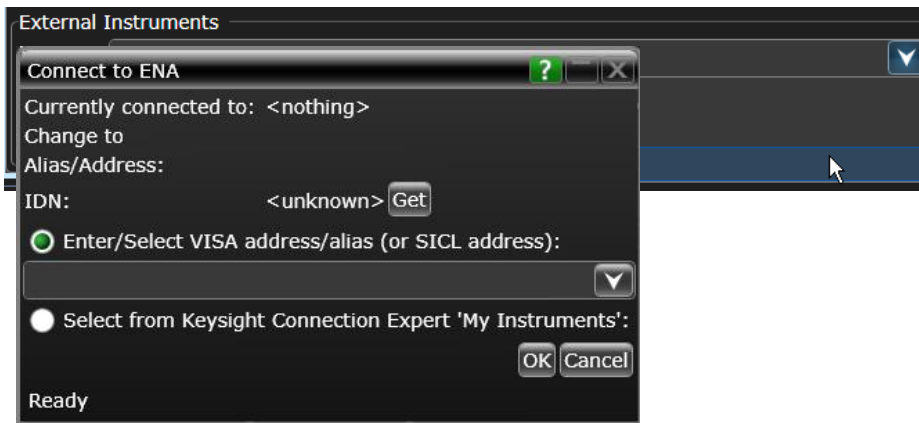

b. The application starts with the **Set Up** tab active.

9   Connect to the Network Analyzer:

a In the **Name:** field of the **External Instruments** area at the bottom of the N109310A 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.
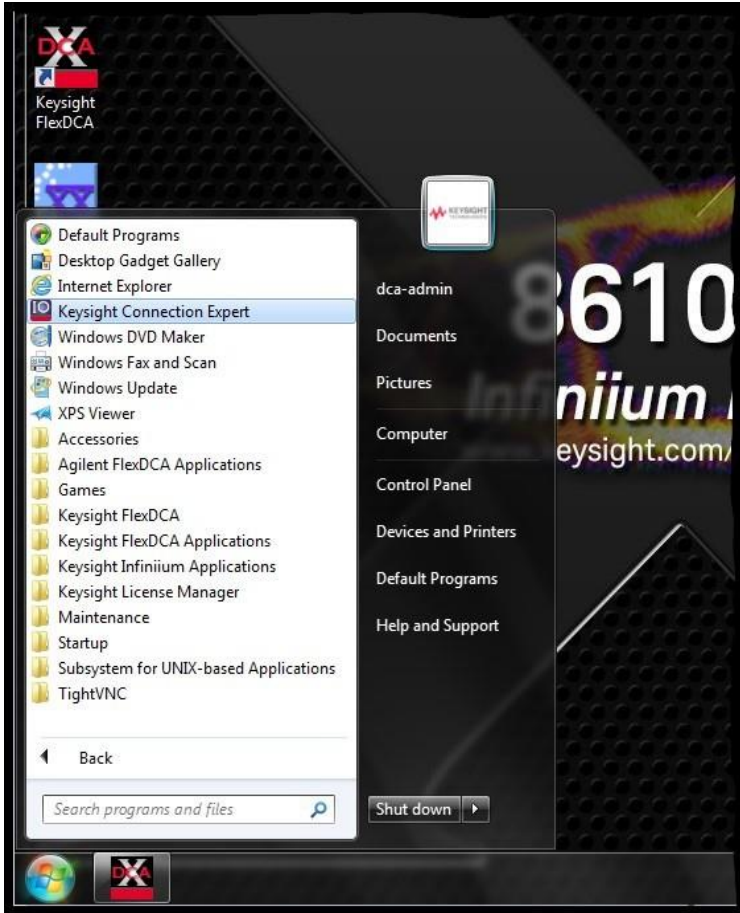
b Click **Connect**. The **Connect to ENA** window appears.

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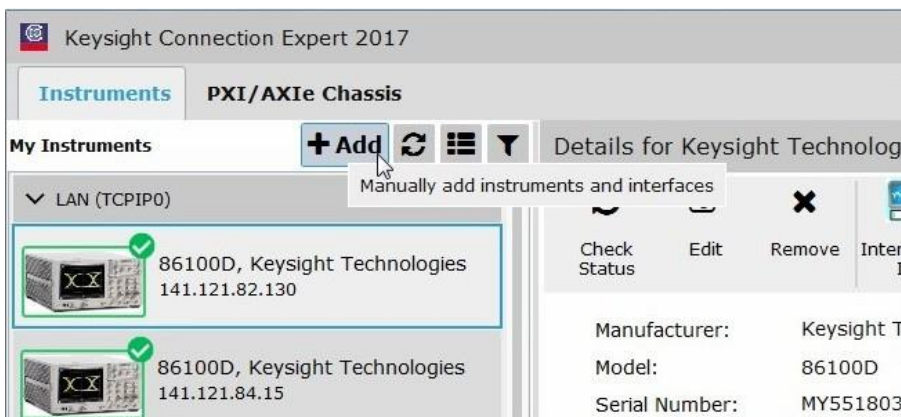
Connection using Keysight Connection Expert 2017 (v18.0)

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.
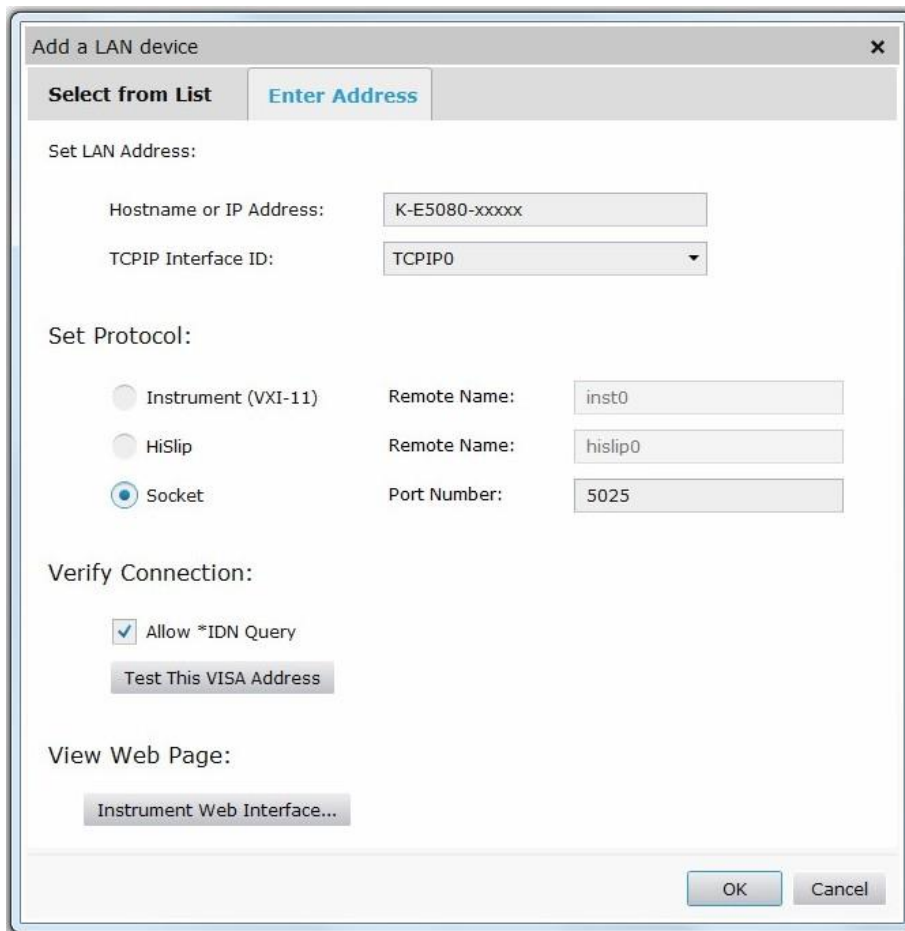

3   In Keysight Connection Expert 2017, click the **+ Add** button to manually add instruments and interfaces.

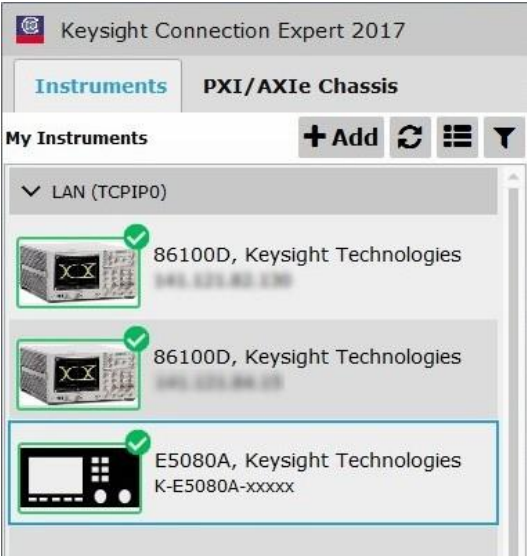4   From the drop-down list that appears, select **LAN instrument**.

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.

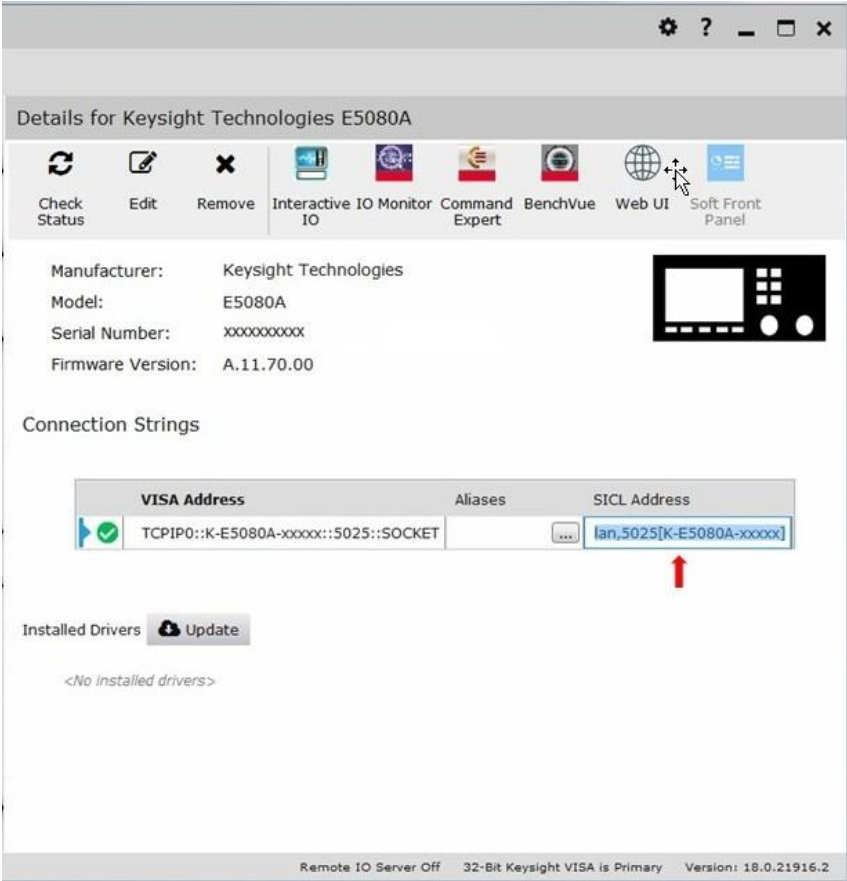   *d* Under **Verify Connection:**, click **Test This VISA Address** to verify the connection.

6   Once you verify the entered data, click **OK** to complete the process.

7   Copy Network Analyzer SICL Address to the Clipboard:
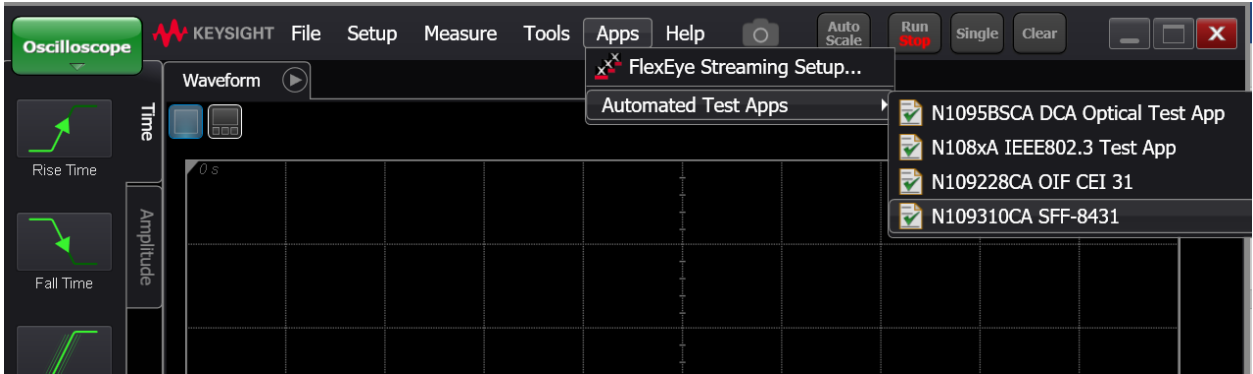   a   Click the **Instruments** tab of the Keysight Connection Expert 2017.

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.
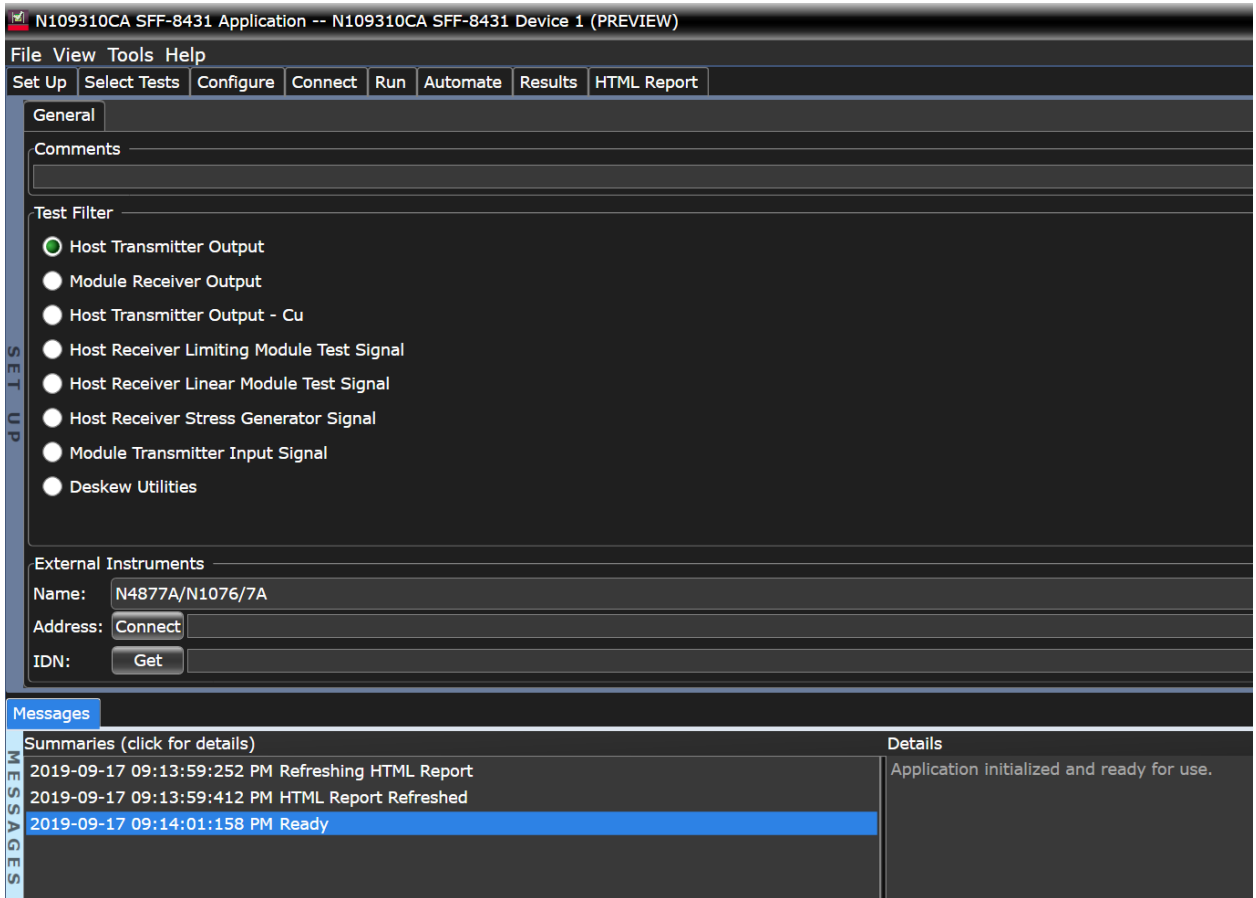

8   Start the N109310A SFF-8431 Compliance Test Application.

a.   From FlexDCA, click **Apps > Automated Test Apps > N109310A SFF-8431** to start the compliance application.
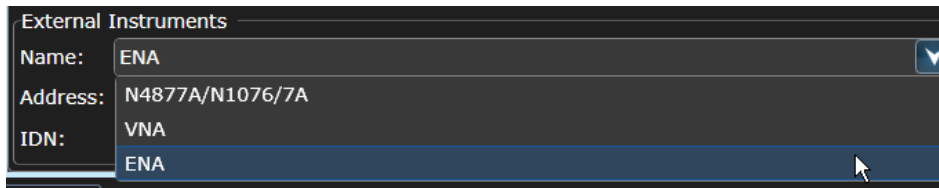

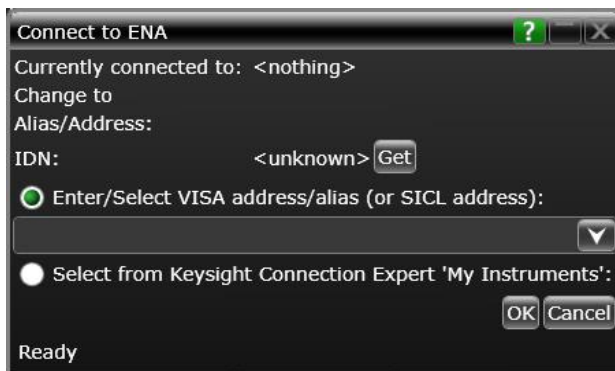b.   The application starts with the **Set Up** tab active.

9   Connect to the Network Analyzer:

a   In the **Name:** field of the **External Instruments** area at the bottom of the N109310CA 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.