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.

Keysight Connection Expert						×
Instruments	PXI/AXIe Chassis	Manual Configuration	Settings			
Rescan	Filter Instruments:	Clear				

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

Keysight Co	onnection Expert		
Instruments	PXI/AXIe Chassis	Manual Configuration	Settings
Add New Instr	uments/Interfaces	Edit Existing Instruments/	'Interfaces
LAN instrument		Add a LAN device	
Serial instrument o	on ASRL3		

- 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.

Keysight Connection Expert			? _ 🗆 ×			
Instruments PXI/AXIe Chassis	Manual Configuration	Settings				
Add New Instruments/Interfaces	Edit Existing Instruments/In	Edit Existing Instruments/Interfaces				
LAN instrument	Add a LAN device					
Serial instrument on ASRL3 LAN interface Remote serial instrument Remote GPIB interface Remote USB interface	Set LAN Address: Hostname or IP Address: TCPIP Interface ID: Set Protocol: Instrument Socket HiSLIP Verify Connection: Allow *IDN Query Test This VISA Address View Web Page: Instrument Web Interface	K-E5080A-xxxx TCPIP0 Remote Name: Port Number: Remote Name: TCPIP0::K-E5080	x inst0 5025 hislip0 0A-xxxxx::5025::SOCKET			
		,	Accept Cancel			
Messages: 0 Clear	Remote IO Server O	0n 32-Bit Keysight VIS	A is Primary 17.2.20828.2			

- 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.

Instruments PXI/AXIe Chassis Man Image: Comparison of the system of the sys	ual Configuration Settings Details for Keysight Technologies E5080A
Rescan Filter Instruments: 508 Clear Clear E5080A, Keysight Technologies Compare the second s	Details for Keysight Technologies E5080A
	Manufacturer: Keysight Technologies Model: E5080A Serial Number: XXXXXXXXX Firmware Version: A.11.70.00 Connection Strings VISA Addresses VISA Addresses VISA Addresses
 Messages: 0 Clear Remote 	 SICL Addresses Ian,5025[K-E5080A-xxxxx] Installed Drivers No installed drivers> I0 Server On 32-Bit Keysight VISA is Primary 17.2.20828.2

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.

Measure Tools	Apps Help Auto Scale Run Image: Apps FlexEye Streaming Setup	
	Automated Test Apps 🔶	Note: The second state of
		🔁 N108xA IEEE802.3 Test App 📃
		N1012A OIF CEI 31
		🛃 N1014A SFF-8431
		🛃 N1085A PAM-4 Test App

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

N1014	4A SFF-8431 Information
	The application will now verify installed mainframe, options and modules.
	Click OK to proceed.
	OK
	N1014A SFF-8431 Information
	To use the N4877A, PNA or ENA during this session * Go to External Instruments at the bottom of the application * Select N4877A, PNA or ENA from the list * Click Set * Enter the LAN address of the ENA/PNA or the USB address of the N4877A; these can be obtained from Agilent Connection Expert
	Click OK to perform these steps.
	ОК

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.

External Instruments					
Name:	ENA				
Address:	N4877A/N1076/7A				
IDN:	VNA				
<u></u>	ENA	k			

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.

Keysight Connection Expert 2017		
Instruments PXI/AXIe Chassis		
My Instruments + Add 😂 📰 🕇	Details for Keysig	ht Technolog
✓ LAN (TCPIPO)	ruments and interfaces	×
86100D, Keysight Technologies 141.121.82.130	Check Edit Status	Remove Inte
86100D, Keysight Technologies 141.121.84.15	Manufacturer: Model: Serial Number:	Keysight 7 86100D MY551803

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

Keysight Connection E	xpert 2017				
Instruments PXI/AX	Ie Chassis				
My Instruments	+Add C II Y Details for Ke				
V LAN (TCPIP0)	LAN instrument Serial instrument on ASRL3				
86100D, Keys 141.121.82.130	LAN interface Remote serial instrument Remote GPIB interface				

- 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.

elect from List Enter A	ddress	
Set LAN Address:		
Hostname or IP Address:	K-E5080-xxxxx	
TCPIP Interface ID:	TCPIP0	•
Set Protocol:		
Instrument (VXI-11)	Remote Name:	inst0
HiSlip	Remote Name:	hislip0
Socket	Port Number:	5025
Verify Connection:		
✓ Allow *IDN Query		
Test This VISA Address		
View Web Page:		
Instrument Web Interface		

- 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.

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Measure Tools	Apps Help Auto Scale Run Image: Apps Help Run Image: Apps FlexEye Streaming Setup	
	Automated Test Apps	🛃 Advanced Eye Analysis 401 🛛 🔤
		🛃 N108xA IEEE802.3 Test App 📃
		N1012A OIF CEI 31
		🛃 N1014A SFF-8431
	-	🛃 N1085A PAM-4 Test App

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

N1014A SFF-843	pplication will now verify installed mainframe, options and modules.
	ОК
N1014A	SFF-8431 Information To use the N4877A, PNA or ENA during this session * Go to External Instruments at the bottom of the application * Select N4877A, PNA or ENA from the list * Click Set * Enter the LAN address of the ENA/PNA or the USB address of the N4877A; these can be obtained from Agilent Connection Expert Click OK to perform these steps. OK

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



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	External 1	nal Instruments			
	Name:	ENA	(¥	
	Address:	N4877A/N1076/7A			
Į	IDN:	VNA			
		ENA	k		

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.