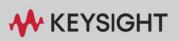
Connecting to a PNA or ENA for S-Parameter Measurements

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



SUPPORT NOTE

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.

Keysight C	?	-	×			
Instruments	PXI/AXIe Chassis	Manual Configuration	Settings	ngs		
Rescan	Filter Instruments:	Clear				

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

Keysight C	onnection Expert					
Instruments	PXI/AXIe Chassis	Manual Configuration	Settings			
Add New Inst	ruments/Interfaces	Edit Existing Instruments/Interfaces				
LAN instrument		Add a LAN device				
Serial instrument (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	/Interfaces	<i>₽</i>
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 Inter	TCPIP0 Remote Name: Port Number: Remote Name: s TCPIP0::K-E508	x inst0 5025 hislip0 0A-xxxxx::5025::SOCKET
			Accept Cancel
 Messages: 0 Clear 	Remote IO Serve	er On 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.

Keysight	Connection Expert	? _ 🗆 ×
Instruments	PXI/AXIe Chassis Mar	ual Configuration Settings
Rescan	Filter Instruments: 508 Clear	Details for Keysight Technologies E5080A
63	5080A, Keysight Technologies CPIP0::K-E5080A-xxxxx::5025::SOCKET	Manufacturer: Keysight Technologies Model: E5080A Serial Number: xxxxxxxxx Firmware Version: A.11.70.00 Connection Strings VISA Addresses Image: Colspan="2">Connection Strings VISA Aliases Image: Colspan="2">Connection Strings VISA Aliases Image: Colspan="2">Connection Strings VISA Aliases Image: Colspan="2">Image: Colspan="2">Colspan="2">Connection Strings VISA Aliases Image: Colspan="2">Image: Colspan="2">Colspan="2" VISA Aliases Image: Colspan="2">Colspan="2" Image: Colspan="2">Colspan="2" Image: Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colsp
 Messages: 	0 Clear Remote	IO Server On 32-Bit Keysight VISA is Primary 17.2.20828.2

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.

Oscilloscope ~	Waveform	File Setup	Measure Tools	Apps Help Auto Scale	Run Single Clear
	Time			Automated Test Apps	N1095BSCA DCA Optical Test App
Rise Time					 № N108xA IEEE802.3 Test App № N109228CA OIF CEI 31
	Amplitude				N109310CA SFF-8431
Fall Time	tude				

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

1	🗹 N109310CA SFF-8431 Application N109310CA SFF-8431 Device 1 (PREVIEW)														
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ſ	Gen	eral				·			<u></u>						
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	Module Receiver Output														
		Host T	ransmitt	er Output -	Cu										
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Ξ	•	Host R	eceiver l	Linear Modu	le Test Sig	nal									
⊂	•	Host R	eceiver s	Stress Gene	rator Signa	al									
Р	•	Module	e Transm	litter Input S	Signal										
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	Exte		strumen												
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	Add	ress: (Connect												
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3			<u> </u>	details)								Details			
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0,1				59:412 PM 01:158 PM		ort Ref	resned								
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ES															

- 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.

1	External Instruments	
	Connect to ENA	
	Currently connected to: <nothing> Change to</nothing>	
Į	Alias/Address:	▶
	IDN: <unknown>Get</unknown>	v
	O Enter/Select VISA address/alias (or SICL address):	
	Select from Keysight Connection Expert 'My Instruments':	
	OK Cancel	
	Ready	

- 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.

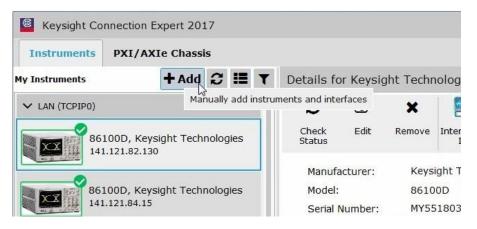
Connection using Keysight Connection Expert 2017 (v18.0)

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.

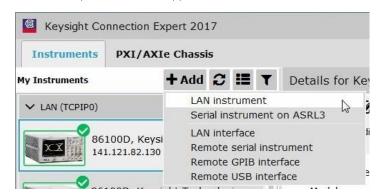
2 From the Windows Start menu, click All Programs>Keysight Connection Expert to launch Connection Expert 2017.



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.

Add a LAN device				×				
Select from List	Enter Ad	ldress						
Set LAN Address:								
Hostname or IF	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 Connectior	1:							
✓ Allow *IDN	Query							
Test This VIS/	A Address							
View Web Page:								
Instrument Web	Interface							
			ОК	Cancel				

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.

[
Instruments	PXI/AXIe Chassis							
My Instruments		+ Add	C	≔	T			
✓ LAN (TCPIP0)					ľ			
86	100D, Key	sight Tech	nolog	jies				
86	100D, Key	sight Tech	nolog	jies				
	080A, Key		nolog	jies				

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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tails for k	Keysigl	ht Techn	ologies B	5080A						
C	đ	×		•	(j=	۲	∰+ †		2	
Check Status	Edit	Remove	Interactive IO	IO Monitor	Command Expert	BenchVue	Web UI	Soft F Par		
Manufactu	urer:	Keysi	ght Techn	ologies						
Model:		E508	0A	5.0					Ħ	
Serial Nur	mber:	200000	xxxxxx						- 0	
Firmware	Version	: A.11.	70.00							
	VISA	Address			Aliases	9	ICL Addres	s		
		D::K-E5080	A-xxxxx::50	25::SOCKE	т		an,5025[K-I	50804	-xxxxx	1
0		0::K-E5080	A-xxxxx::50	025::SOCKE	т		an,5025[K-I	50804	4-xxxxxx	1
0	TCPIP		A-xxxxx::50)25::SOCKE	т		an,5025[K-I	50804	1-xxxxx	1
stalled Drive	TCPIP		A-xxxx::50	025::SOCKE	т	1	an,5025[K-E	50804	4-xxxxxx	1
stalled Drive	TCPIP(Update	A-xxxx::50	025::SOCKE	т	1	an,5025[K-I	50804	A-XXXXX	1
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	TCPIP(Update	A-xxxxx::50	025::SOCKE	Τ		an,5025[K-I	250804	A-300000	1
	TCPIP(Update	A-xxxx::50	025::SOCKE	τ		an,5025[K-t	50804	A-XXXXXXX	1
stalled Drive	TCPIP(Update	A-xxxx::56	025::SOCKE	T		an,5025[K-t	50804	A-XXXXXXXX	1

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.

Oscilloscope	Waveform	File Setup	Measure Tools	Apps Help Auto Scale	Run Single Clear
				Automated Test Apps	🖞 🛃 N1095BSCA DCA Optical Test App
					🛃 N108xA IEEE802.3 Test App
Rise Time					🛃 N109228CA OIF CEI 31
	Am				🛃 N109310CA SFF-8431
₹	Amplitude				
Fall Time	de				

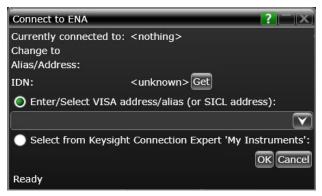
b. The application starts with the **Set Up** tab active.

1	N10	9310C	A SFF-84	31 Applicat	ion N10	93100	A SFF-8431	Device 1	(PREVIEW)				
	_		ools He										
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s		Host R	leceiver l	Limiting Mod	dule Test S	ignal							
Ξ		Host R	leceiver l	Linear Modu	le Test Sig	nal							
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Р		Modul	e Transm	itter Input S	Signal								
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	Add	ress:	Connect										
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-	Sumr	naries	(click for	details)								Details	
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SS				59:412 PM		ort Ref	reshed						
Þ	2019	9-09-1	7 09:14:	01:158 PM	Ready								
GE													
S													

- 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.

f External Instruments		
Name:	ENA	
Address:	N4877A/N1076/7A	
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.