

IO Libraries Suite 2025

The screenshot displays the Keysight Connection Expert 2025 software interface. The main window is titled "Keysight Connection Expert 2025" and features a sidebar on the left labeled "My Instruments" and a main panel on the right titled "Details for Keysight 33622A".

My Instruments:

- LAN (TCP/IP0):**
 - 33622A, Keysight 10.15.102.173
 - 33622A, Keysight 10.15.102.141 (selected)
 - DSOS054A Infiniium, Keysight Te... 10.15.103.243
- USB (USB0):**
 - No Instruments Found

Details for Keysight 33622A:

Manufacturer: Keysight
Model: 33622A
Serial Number: MY53803051
Firmware Version: A.01.12-2.25-03-64-02
Web Information: [Product Page](#)

Connection Strings:

VISA Address	Aliases	SICL Address
TCP/IP0::10.15.102.141::inst0::INSTR		lan[10.15.102.141]:inst0

Installed IVI Drivers: [Update](#)

<No installed drivers>

Remote IO Server Off 32-Bit Keysight VISA is Primary Version: 21.1.209.0

Accelerate Instrument Connection and Control with IO Libraries

- Automatically detects instruments connected to your PC and configures the interfaces.
- Enables instrument communication for a variety of development environments (Mathworks MATLAB, Python, NI LabVIEW, Microsoft Visual Studio, and more).
- Compatible with the most common instruments.
- The Windows product includes support for AXIe, PXI, GPIB, USB, Ethernet/LAN, RS-232, and VXI test instruments from a variety of vendors.
- Windows users can also download popular Keysight software, such as BenchVue and Command Expert, to work with IO Libraries.
- The Linux product includes support for GPIB, USB, Ethernet/LAN, and RS-232.
- IO Libraries Suite 2024 and later support secure, encrypted, anonymous communication on a Socket connection.

IO Libraries Suite 2025

IO Libraries Suite 2025 added support for the latest versions of Shared Components:

- IVI Shared Components 3.0.3
- IVI.NET Shared Components 2.0.1
- VISA Shared Components 8.0.0
- VISA.NET Shared Components 8.0.1
- .NET 6+ VISA.NET support

IO Libraries Suite 2025 adds support for .NET Framework 4.x for VISA.NET applications. If your application targets an older version of .NET, you must either rebuild it or update the application configuration file by setting the <supportedRuntime> to "v4.0".

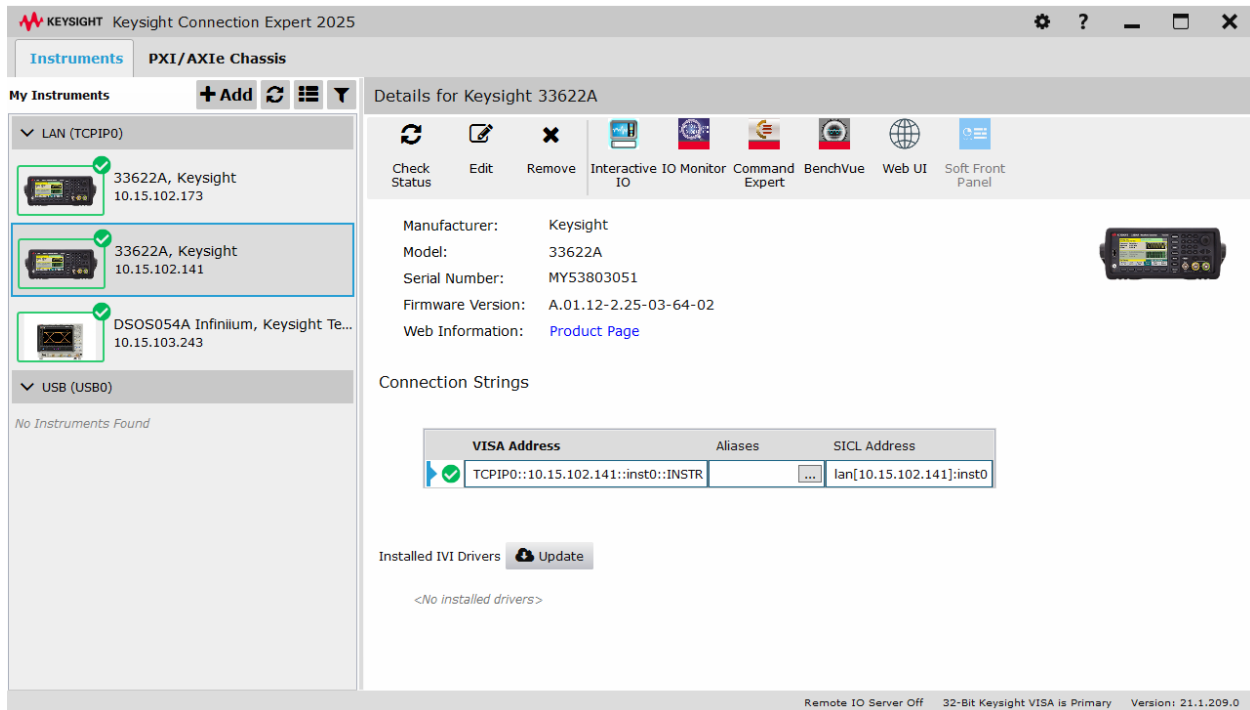
Getting Started is Easy!

1. Install Keysight IO Libraries Suite software on your PC.
2. Connect the interface cables between your chassis and/or instruments and your PC.
3. Detect interfaces, chassis, and instruments and configure them using Keysight Connection Expert.
4. In just minutes you have an error-free connection that simply works.



Fast and Easy Access to your Test and Measurement Equipment from your PC

Connection Expert is an easy-to-use software for discovering and connecting instruments on Windows, Windows-on-ARM, or Linux PC. You can quickly add a new Instrument or I/O Interface and access their Web UI.



Connection Expert allows you to discover and verify instruments. Additionally, you can update IVI instrument drivers and soft front panels from the instrument properties in Windows. As a result, you save time and ensure your application uses the latest driver.

IO Libraries Suite software updates can be found at www.keysight.com/find/iosuite, or from the option available in Connection Expert. Windows users can also enable automatic updates.

Save time with the bundled tools IO Monitor and Interactive IO, which can be launched from within Connection Expert.

IO Monitor, Interactive IO, and Included APIs

- IO Monitor lets you monitor and trace instrument I/O traffic, greatly simplifying and speeding up the debugging process. With IO Libraries Suite 2025, you can export the messages to a CSV file.

The screenshot shows the Keysight IO Monitor application. The top menu bar includes File, View, Capture, Tools, and Help. Below the menu is a toolbar with buttons for Stop Capturing Messages, Save Messages..., Open Message File..., Print, Clear Messages, Settings..., and Instrument Filter... The main window displays a table of captured messages:

Time Stamp	Program	Address	Source	Method Call	IO Data	Return Value	Time(ms)
14:52:29.264	InteractiveIO.exe	TCPIP0::10.15.10	Keysight VISA	VISA::viWrite	*IDN?\n	VI_SUCCESS	4.4546
14:52:30.862	InteractiveIO.exe	TCPIP0::10.15.10	Keysight VISA	VISA::viWrite	*IDN?\n	VI_SUCCESS	2.4452
14:52:30.992	InteractiveIO.exe	TCPIP0::10.15.10	Keysight VISA	VISA::viRead	Agilent Technologi	VI_SUCCESS	2.8179
14:52:32.481	InteractiveIO.exe	TCPIP0::10.15.10	Keysight VISA	VISA::viWrite	*IDN?\n	VI_SUCCESS	2.65
14:52:32.629	InteractiveIO.exe	TCPIP0::10.15.10	Keysight VISA	VISA::viRead	Agilent Technologi	VI_SUCCESS	2.4168

Below the table, the selected message (VISA::viRead) is expanded, showing parameters and output:

VISA::viRead-Process ID 17448;Thread ID 18472

Parameters:

Name	Type	Value
Buffer buf	out: uint8[]	Agilent Technologies,33622
cnt	in: uint32	1024
retCnt	out: uint32	61
status	ret: int32	0
vi	in: uint32	1

Output:

Offset	Hexadecimal	ASCII
00000000	41 67 69 6c 65 6e 74	Agilent
00000008	54 65 63 68 6e 6f 6c	Technolo
00000016	67 69 65 73 2c 33 33	gies,336
00000024	32 32 41 2c 4d 59 35	22A,MY53
00000032	38 30 33 30 35 31 2c	803051,A
00000040	2e 30 31 2e 31 32 2d	.01.12-2
00000048	2e 32 35 2d 30 33 2d	.25-03-6
00000056	34 2d 30 32 0a	4-02\n

Monitoring On, Logging Disabled

- Interactive IO lets you quickly send commands to instruments and read responses.
- Use the Keysight IO Libraries APIs to control your instruments or other devices from your custom automation software. APIs are available to support a wide variety of programming languages, hardware interface types, and industry-standard I/O library layers.
- Get up to 5x faster data transfers with the HiSLIP protocol for LAN-based instruments – HiSLIP speed is faster than any other current interface, and for some instruments can approach the theoretical limit of Gigabit LAN for TCP/IP connections. Easily convert an existing VXI-11 program to HiSLIP by simply changing the address string.

Quick Access to Test and Measurement Equipment from your PC

Support for modular instruments (Windows-only) - Keysight VISA and Connection Expert support modular instruments such as PXI (PCI eXtensions for Instrumentation), AXIe (ATCA eXtensions for Instrumentation), and PCIe® (PCI EXPRESS®) devices. The PXI Resource Manager will discover and display both chassis and modules.



Specifications: Version 2025 and Later

Interfaces	Operating System	Supported interfaces
GPIB	Windows / Linux	Standard IEEE 488.1, 488.2, PCI-GPIB, GPIB-VXI
USB	Windows / Linux / Windows on ARM	USBTMC-USB488, USB-GPIB
Serial	Windows / Linux	RS232 (ASRL)
LAN / Ethernet:	Windows / Linux / Windows on ARM	Standard LAN (with HiSLIP, LXI, VXI-11, SICL-LAN, and Sockets)
	Windows / Linux	Remote GPIB, Remote Serial, Remote USB
PXI	Windows (only)	PXI, AXIe, PXIe, and PCIe devices
VXI	Windows (only)	FireWire (Windows 10(32/64-bit))

Supported development environments and supported I/O software

(Windows)	.NET languages (VB.NET, C#): VISA.COM, VISA, Keysight 488, VISA.NET
	C/C++/CLI: VISA.COM, VISA, Keysight 488
	EXCEL VBA: VISA COM, VISA, SICL, Keysight 488
	MATLAB: VISA
	Python: PyVISA
	LabVIEW: VISA, Keysight 488
(Linux)	C/C++: VISA, SICL
(Windows on ARM)	C/C++: VISA, SICL
	Python: PyVISA

I/O utilities

Connection Expert	Automatically scans and configures your instrument I/O, helps you get connected quickly and easily, and displays the status of your interfaces and instruments
Interactive IO	Lets you quickly send commands to instruments and read responses
IO Monitor	Lets you monitor and debug I/O calls made on any of Keysight's supported buses
	(Windows: SICL, VISA, VISA COM, or Keysight IVI instrument drivers)
	(Linux: SICL or VISA)
IO Control	Provides easy access to the IO Libraries Suite utilities and documentation from the system tray
viFind32	Windows and Windows on ARM debug utility that uses VISA functions to find resources and 32-bit VISA implementations, listing them in a console window
viFind64	Debug utility that uses VISA functions to find resources and 64-bit VISA implementations, listing them in a console window

1. See the latest information on supported interfaces and operating systems for the IO Libraries Suite 2025 from the [Keysight website](#).

System Requirements: Keysight IO Libraries Suite

Windows on ARM PC software: Operating system

- Windows 11 on ARM (64-bit x86 emulated applications or ARM64EC applications)
- Windows 10 on ARM (64-bit x86 emulated applications)

Windows PC software: Operating system

- Windows 11 (64-bit), Home, Pro, Enterprise
- Windows 10 (64-bit), Home, Pro, Enterprise
- Windows Server 2022 (64-bit, Standard)
- Windows Server 2019 (64-bit, Standard)
- Windows Server 2016 (64-bit, Standard)
- Windows Server 2012 (64-bit, Standard)

Linux PC software: Operating system

- 64-Bit Red Hat Enterprise Linux Desktop Workstation 8.1 to 9.4
- 64-Bit CentOS Desktop Workstation 8.1 to 9.4
- 64-Bit Ubuntu Desktop 18.04.x to 22.04

PC hardware (Windows on ARM)

- Processor: 2.40 GHz, 8 Core (e.g. Qualcomm Snapdragon 7c)
- RAM: 4 GB minimum
- Hard disk space required: 2.5 GB (2 GB for Microsoft .NET Framework 4.6, 100 MB for Keysight IO Libraries Suite)
- Display: 1024 x 768 96 or 120 DPI
- Web connection for Internet download

PC hardware (Windows and Linux)

- Processor: 1 GHz, no support for Itanium64
- RAM: 1 GB minimum
- Hard disk space required: 2 GB
- Display: 1024 x 768 96 or 120 DPI
- Web connection for Internet download

Download Information

Keysight IO Libraries Suite 2024 and later includes two components- **Prerequisites Installer** and **Main Installer**.

- To download or upgrade to the latest version, visit the [Keysight IO Libraries](#) download page. Here, you will get the following options:
- Select your operating system—Windows, Windows on ARM, or Linux
- Navigate to the **Current Version** or **Previous Versions** tab to access the appropriate installers.
- Review the **Release Notes** and **Readme** online or download them. The Readme contains complete installation instructions.
- Access online Keysight [IO Libraries Suite help](#) for additional guidance and documentation.

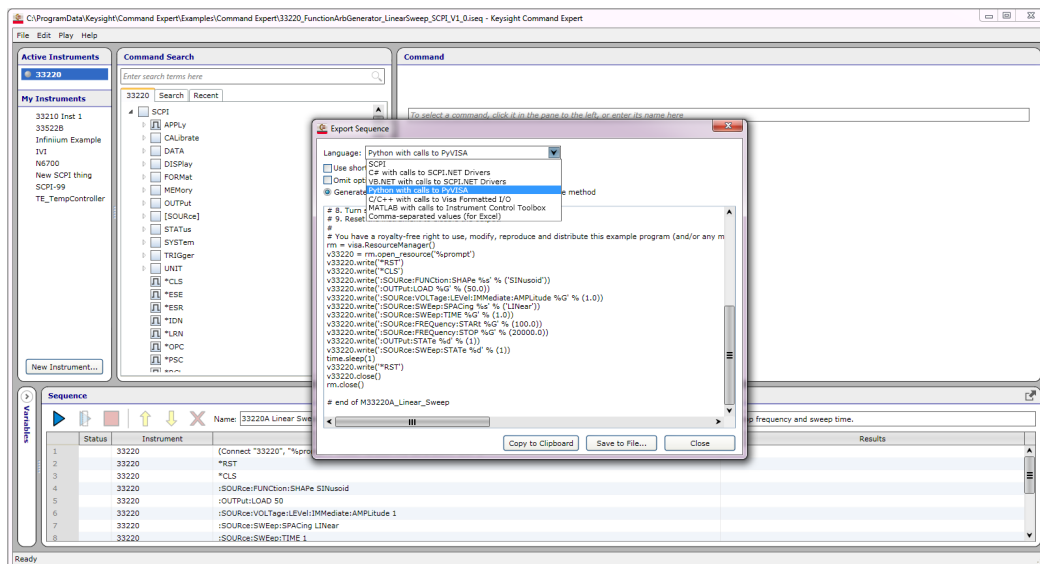
Additional Windows Utilities that Work with IO Libraries

Windows IO Libraries users can also download other I/O utilities from the [Keysight](https://www.keysight.com) website.

For example, BenchVue software enables instrument control and simplified automation – no programming required. Download it at www.keysight.com/find/BenchVue



Command Expert is a no-cost software application that provides fast and easy instrument control in many PC application environments. Download it from: www.keysight.com/find/commandexpert



For more information on Keysight Technologies' products, applications, or services, please visit: www.keysight.com



This information is subject to change without notice. © Keysight Technologies, 2012 - 2025, Published in USA, May 10, 2025, 5990-6770EN