Keysight Technologies
# IO Libraries Suite 16

Data Sheet
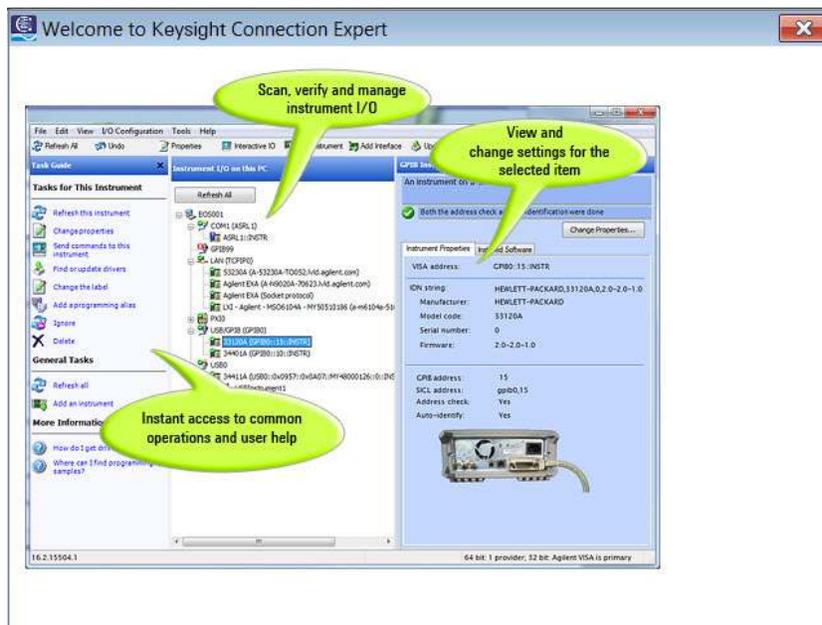
Accelerate Instrument Connection and Control with IO Libraries.

- Automatically detects instruments connected to your PC and configures the interfaces.

- Compatible with the most common instruments including AXIe, PXI, GPIB, USB, Ethernet/LAN, RS-232, and VXI test instruments from a variety of vendors.

- Enables instrument communication for a variety of development environments (Mathworks MATLAB, Keysight Technologies, Inc. VEE Pro, NI LabVIEW, Microsoft Visual Studio and more).

- Includes access to Command Expert a new software tool for easy instrument control.

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.

In just minutes you have an error-free connection that simply works.

With More Features and Capabilities, You have More Choices than Ever Before

New in Keysight IO Libraries Suite 16...

Support for modular instruments - Keysight VISA and Connection Expert now support modular instruments such as PXI (PCI eXtensions for Instrumentation), PXIe (PCI eXpress eXtensions for Instrumentation), and PCIe® (PCI EXPRESS®) devices. The PXI Resource manager will discover and display chassis and modules. Since a single platform isn't the right answer for every test scenario, Keysight IO Libraries Suite continues to add new interfaces and new capabilities to the connectivity software.

Command Expert is a new FREE software application that provides fast and easy instrument control in many PC application environments. Command Expert can be launched from the Connection Expert Tools menu. If this menu choice is grayed out, you need to install Command Expert. You can install Command Expert from the Automation-Ready CD or you can download Command Expert from: www.keysight.com/find/commandexpert
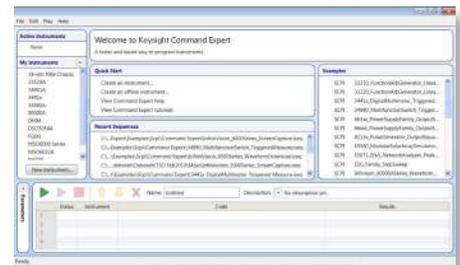
Support for the HiSLIP protocol for LAN-based instruments – HiSLIP speed is faster than any other current interface, and for some instruments can approach the theoretical limit of Gigabit LAN for TCPIP connections. This allows up to five times faster query/response transactions and bulk data transfers while still supporting the instrument-like capabilities of conventional test and measurement protocols like VXI-11. You can easily convert an existing VXI-11 program to HiSLIP by simply changing the address string. In addition, support for Internet Protocol Version 6 (IPv6) has been added for instrument addressing for HiSLIP and Raw Sockets LAN-based instruments.

Easier ways to find and update instrument and soft front panel drivers – Connection Expert now allows you to search for, verify, and update IVI instrument and soft front panel drivers from the instrument properties view. This will save you time and ensure that the most up to date driver is being used in your application.
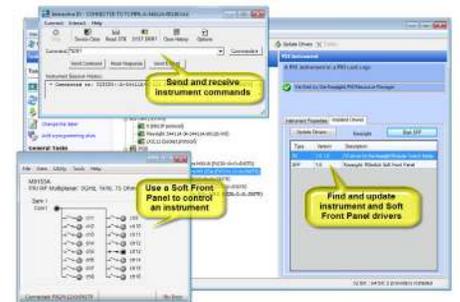

Easier to debug programs – IO Monitor lets you monitor and debug calls through new Keysight IVI instrument drivers released after September 18, 2010. This ability to trace instrument I/O traffic can greatly simplify and speed up the debug process.

Automatic notification of updates to the IO Libraries Suite software - When enabled, you can choose to be notified when a newer release of the Keysight IO Libraries Suite is available. As features are added, you will be alerted and can download the software when it is convenient.

IVI USBTMC driver – This driver replaces the Keysight driver that was installed in previous versions of the IO Libraries. This new IVI driver is signed and authenticated by Microsoft and is compatible with VISA libraries from multiple vendors. It's another way of simplifying installation and setup of your system.

Specifications

Supported interfaces*
GPIB: standard IEEE 488.1
USB: USB 3.0 or lower (with USBTMC-USB488, USBTMC, and Composite protocol)
LAN/Ethernet: standard LAN (with HiSLIP, LXI, VXI-11, SICL-LAN and sockets)
RS-232/Serial
PXI: AXIe, PXI, PXIe, PCI and PCIe devices
VXI: FireWire and GPIB-VXI (32/64-bit, not supported on Windows 8)

Supported development environments and supported I/O software
VB6: VISA COM, VISA, SICL, Keysight 488, Excel VBA
C/C++, Managed C++: VISA COM, VISA, Keysight 488
.NET languages (VB.NET, C#): VISA COM, VISA, Keysight 488
LabVIEW: VISA, Keysight 488
MATLAB: VISA

Note: Keysight IO Libraries Suite supports VEE Pro program development with drivers and/or Direct IO.

I/O utilities	
Connection Expert	Automatically scans and configures your instrument IO, 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.
Interactive LXI	Allows you to send and receive LXI events, monitor, and manage LXI instrument precision clocks.
IO Monitor	Lets you monitor and debug I/O calls made on any of Keysight's supported buses using Keysight SICL, VISA, VISA COM, or Keysight IVI instrument drivers (released after September 18, 2010)
IO control	Provides easy access to the IO Libraries Suite from the Windows system tray.
VXI resource manager	Provides configuration of the IEEE 1394 connection from PC to VXI.
viFind32	Debug utility uses VISA functions to find resources and lists them in a console window.

* See the latest information on supported interfaces and operating systems for IO Libraries Suite 16 at www.keysight.com/find/iolib_revmatrix. To identify which versions of IO Libraries support particular operating system and interface combinations, go to www.keysight.com/find/iolib_osmatrix.

System Requirements: Keysight IO Libraries Suite 16

PC software: Operating system

- Windows 8 32-bit and 64-bit (Windows 8, Windows 8 Pro, and Windows 8 Enterprise)
- Windows 7 SP1 32-bit and 64-bit (Starter, Home Basic, Home Premium, Professional, Ultimate, Enterprise)
- Windows Vista SP1 and SP2 32-bit and 64-bit (Home Basic, Home Premium, Business, Ultimate, Enterprise Editions)
- Windows XP SP3 32-bit (Professional and Home)
- Windows Server 2012 64-bit (Standard)
- Windows Server 2008 R2 SP1, 64-bit (Standard and Enterprise)

PC hardware

- Processor: 600 MHz class *(800 MHz or greater recommended)*
- RAM: Windows XP: 256 MB minimum *(1 GB or greater recommended)* Windows Vista or Windows 7: 1 GB minimum
- Hard disk space required: 1.5 GB
- Display: 1024 x 768 96 or 120 DPI
- Input device: Microsoft mouse or compatible pointing device
- Device for installation: CD-ROM
- Web connection for installation, upgrades and drivers

I/O software compatibility

With multiple vendor I/O software installed, you get the best solution with Keysight's open IO Libraries Suite. For instance, during installation the IO Libraries Suite automatically detects NI's software and safely installs the Suite in a side by side mode. This allows the existing I/O software and the Keysight software to work together.

Ordering Information

The Keysight IO Libraries Suite is delivered to you on the Automation-Ready CD.

If you would like to upgrade to the latest version of IO Libraries Suite, download the free software at:

www.keysight.com/find/iosuite

Automation-Ready CD contents

- IO Libraries Suite
  - I/O libraries: VISA, VISA COM, SICL, Keysight 488, Keysight LXI Event and Precision Time Protocol (PTP) Managers .NET API and C API.
  - Connection Expert
  - I/O utilities
  - Quick Start Guide, Connectivity Guide and full online help for all I/O Libraries
- Keysight Command Expert installation
- Version 2.2.1 of the IVI Shared Components *(see www.ivifoundation.org/)*
  - Microsoft .NET Framework 2.0 SP2
  - Microsoft .NET Framework 4.0

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www.axiestandard.org

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www.lxistandard.org

LAN eXtensions for Instruments puts the power of Ethernet and the Web inside your test systems. Keysight is a founding member of the LXI consortium.

www.pxisa.org

PCI eXtensions for Instrumentation (PXI) modular instrumentation delivers a rugged, PC-based high-performance measurement and automation system.

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