

# Free Bundled Software

## For Plug-In Data Acquisition Modules and Boards

Keithley data acquisition (DAQ) modules and plug-in boards come fully equipped with a suite of free software tools that run under Windows® 2000/XP/Vista. This array of free software is designed to help users get applications "Up and Running" quickly and easily. For example, the start-up software utilities make it possible to interact with a new module or board in a matter of minutes. The 32-bit supplied device drivers make it faster to define new applications by offering both DLL and ActiveX interfaces.



### Minimum System Requirements

Each of the software packages described here requires a minimum of:

- PC with Pentium 466MHz processor minimum
- 512MB memory or higher
- Windows 2000/XP/Vista

- **32-bit device drivers for programming in Visual Basic, C/C++, .Net, and Delphi**
- **Windows® 2000/XP/Vista support**
- **LabVIEW® VIs (virtual instruments)**
- **Start-up test panel software**

### Open Layers™ Device Drivers

Keithley's 32-bit Open Layers drivers is a set of open standards for developing integrated, modular software under Microsoft Windows for the KUSB-3100 Series of USB-based data acquisition modules. Because it is modular and uses Windows DLLs, Open Layers is easily expanded to support new, more powerful KUSB hardware devices without re-linking or rebuilding applications. Therefore, you do not need to rewrite your code when adding new data acquisition USB modules that have Open Layers compliant device drivers.

Open Layers defines an open standard set of APIs (Application Programming Interfaces). APIs are function calls that applications can use to interface with function libraries. A consistent interface is enforced so that functions that perform operations, such as sampling input voltages or analyzing data, are invoked identically on different USB modules, even when the modules require different instructions to perform these operations. To incorporate technological advances, APIs are easily expandable.

### DataAcq SDK

The DataAcq SDK is a programmer's DLL (Dynamic Linked Library) that supports Keithley's KUSB-3100 Series data acquisition modules under Windows 2000, XP, and Vista. The DataAcq SDK functions are fully compatible with Open Layers. Because Open Layers is modular and uses Windows DLLs, you can add support for a new KUSB-3100 Series data acquisition device at any time. Just add the new Open Layers device driver, modify your code to incorporate the features of the new device, and then recompile the code. All calls to DataAcq SDK functions currently in your application program can remain untouched. The DataAcq SDK consists of the necessary header files, libraries, example programs, and documentation to develop your own Open Layers data acquisition and control applications.

### Open Layers™ Device Drivers

- **For use with KUSB-3100 Series USB data acquisition modules**
- **32-bit driver set for Windows 2000, XP, and Vista**
- **Open standard set of APIs (Applications Programming Interfaces)**
- **.NET class libraries and display control**
- **ActiveX and Windows DLLs**
- **Takes full advantage of the modular message passing built into Windows**
- **Structural integration lets you add software functions simply by adding a function library**

### DataAcq SDK

- **For use with KUSB-3100 Series USB DAQ modules**
- **Programmers DLL (Dynamic Linked Library)**
- **Extension to Microsoft Windows SDK**
- **Windows 2000, XP, and Vista**
- **Complete set of functions to query and set all possible device capabilities**
- **Hardware independent—supports multiple KUSB-3100 Series modules**

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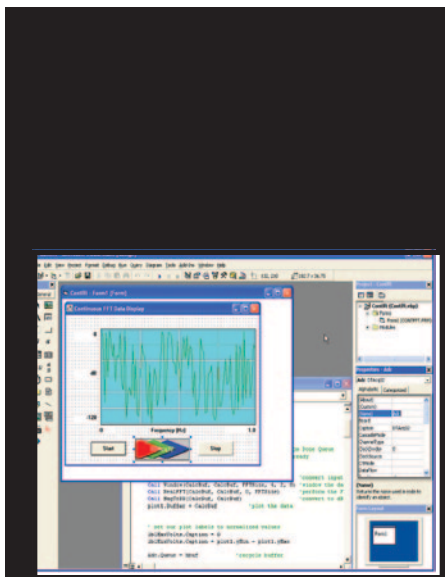
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### DTx-EZ

- For use with KUSB-3100 Series USB DAQ modules
- Visual programming tool for Visual Basic 6.0, Visual C++ 6.0
- .NET compliant for Visual Basic.NET, Visual C++.NET, and Visual C#.NET
- Enables fast applications development
- Simplifies data acquisition and control
- Plots data in real time
- Manages and analyzes your data
- Requires Windows® 2000 (Service Pack 4), XP (Service Pack 1; Service Pack 2 recommended), or Vista

### DTx-EZ™ ActiveX Controls

DTx-EZ is a set of 32-bit ActiveX controls that facilitate rapid data acquisition application development in Visual Basic, Visual C++, and .NET environments. With DTx-EZ, you can quickly develop applications to measure and control analog and digital I/O, counter/timer signals, plot data in real time, perform data management, and analyze data with a built-in FFT analysis library.

Each copy of the Data Acquisition Custom Control operates on a single subsystem of the supported KUSB-3100 Series module at a time. However, Visual Basic and Visual C++ lets you operate multiple copies of this control simultaneously, controlling different subsystems on the same module or on different modules. DTx-EZ determines the capabilities of each subsystem for your data acquisition module. The module's supported capabilities are listed in the custom control's Properties window. You can control the subsystem's operation by manipulating the subsystem's properties. You can change the properties at design time in the Properties window or at run time using simple Visual Basic or Visual C++ code.

DTx-EZ provides visual programming tools for Visual Basic, Visual C++, Visual Basic.NET, Visual C++.NET, and Visual C#.NET that enable quick and easy development of test and measurement applications.

### DT-LV Link™

DT-LV Link provides a collection of Virtual Instruments (VIs) that allow LabVIEW programmers to create powerful test and measurement applications using Keithley's KUSB-3100 Series USB data acquisition modules. DT-LV Link offers three levels of VIs, allowing full access to the analog I/O, digital I/O, and counter/timer signals on the KUSB-3100 Series Open Layers compliant modules. A number of VIs allow you to acquire data and stream it to disk at full speed.

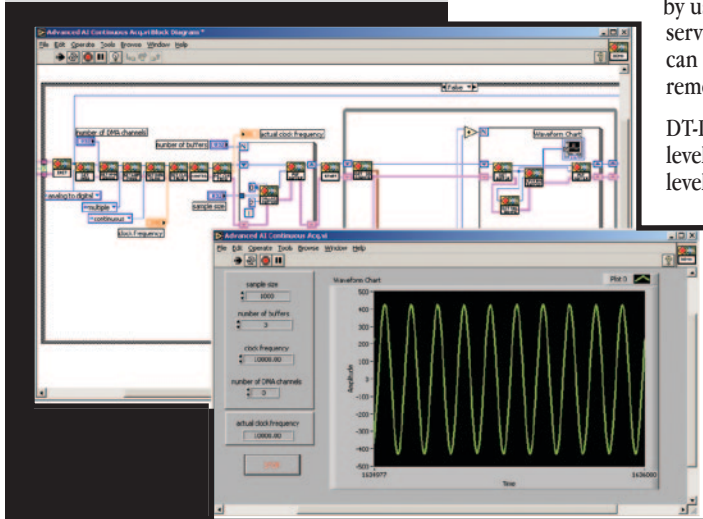
To get up and running quickly, numerous application examples are provided. Since the source code is also provided, you can easily modify the examples to speed your development time. By using DT-LV Link, you can integrate all your Keithley hardware in the same application. And, by using LabVIEW's client/server functionality, you can monitor your hardware remotely over the Internet.

DT-LV Link provides three levels of VIs. The highest level, called easy VIs, are built on low-level

VIs and provide the simplest way to access the I/O features of the KUSB-3100 Series hardware. If you need more flexibility than the easy VIs provide, use the intermediate and utility VIs or the low-level advanced VIs to achieve the results you desire. All the VIs are multi-threaded, allowing you to perform multiple subsystem operations simultaneously.

### DT-LV Link

- For use with KUSB-3100 Series USB DAQ modules
- Creates test and measurement applications with the KUSB-3100 Series USB DAQ modules in LabVIEW 8.0 or higher
- Uses VIs to measure and control analog I/O, digital I/O, and counter/timer signals
- Offers three levels of VIs: easy VIs, intermediate VIs, and advanced VIs
- Provides a complete group of examples to quickly get up and running
- Requires Windows 2000 (Service Pack 4), XP (Service Pack 1 or higher; Service Pack 2 recommended), or Vista



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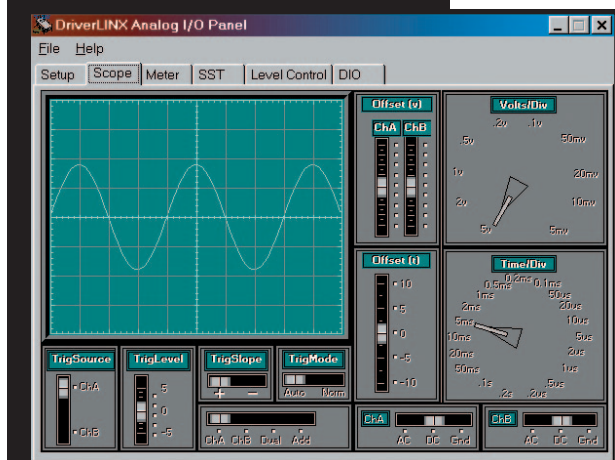
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Free software to get "up & running" quickly

DATA ACQUISITION PRODUCTS

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## For Plug-In Data Acquisition Modules and Boards



### DriverLINX

- For Keithley's KPCI-bus boards
- High-performance 32-bit drivers
- ActiveX and DLL interfaces
- Visual Basic, C/C++, Delphi support
- Hardware-independent application programming interface (API)
- Multitasking and multi-user drivers
- Configuration and testing utilities
- Online help and documentation
- Windows 2000/XP/Vista support

### DriverLINX® Data Acquisition Drivers

DriverLINX drivers are an advanced set of 32-bit application development device drivers for custom data acquisition under Windows. These drivers have years of field proven experience in demanding data-acquisition applications. They are robust, fast, multitasking, and flexible. They provide the ability to control multiple boards or to share one board with multiple applications or threads.

Keithley's family of DriverLINX software drivers provides a common Application Programming Interface (API) to Keithley's extensive family of PCI-bus plug-in data acquisition boards, making these drivers ideal for custom applications development under Windows. The API also allows you to migrate existing applications to different boards. Although DriverLINX emphasizes hardware-independence, it still supports complete access to all the unique features of each board.

The API also provides developers a standardized interface to more than 100 services. These services create foreground and background tasks to perform analog I/O, digital I/O, time and frequency measurements, event counting, pulse output, and period measurement. In addition to basic I/O support, the DriverLINX

API provides sophisticated built-in capabilities to handle memory and data buffer management; a rich selection of starting and stopping trigger events, including pre-, mid-point, and post-triggering protocols; extensive error checking and reporting capabilities; and a context sensitive online help system.

The DriverLINX 32-bit architecture supports Visual Basic, Visual Studio.Net, C/C++, and Delphi programming environments, and includes a complete library of example programs. DriverLINX is also fully ActiveX compliant, providing context-sensitive help. These features make it easy to use other ActiveX controls with DriverLINX, simplifying system development.

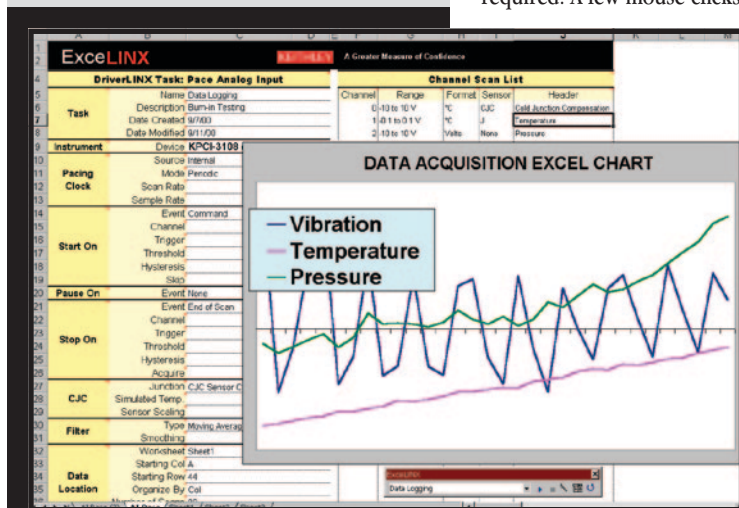
### ExcelINX™ Excel Add-In

ExcelINX is an easy-to-use Excel add-in. Anyone who has used Excel will be able to acquire data directly from a data acquisition board and use any of Excel's graphics, charting, and analysis capabilities within minutes of installing ExcelINX. With ExcelINX, no programming is required. A few mouse clicks are all it takes to configure and run ExcelINX.

### ExcelINX

- For Keithley's KPCI-bus boards
- No programming required
- Get data using just a few mouse clicks
- Standard Excel add-in
- Analog and digital I/O supported
- Simultaneous analog input and output supported
- Uses all of Excel's features – including graphing and analysis

As soon as ExcelINX receives data, it immediately sends the data directly to the Excel spreadsheet. At the same time that ExcelINX is acquiring data and sending it to the Excel spreadsheet, Excel is processing the data. For example, Excel could be performing calculations and displaying the results on a graph as it receives the data. The user can see the graph being updated while data is being collected.



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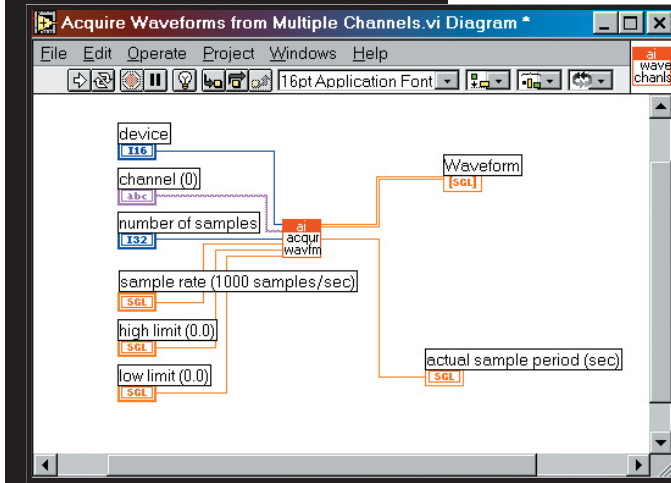
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## For Plug-In Data Acquisition Modules and Boards



### LabVIEW Palette of VIs

- For Keithley's KPCI-bus boards (not for KUSB-3100 Series modules)
- LabVIEW 7.0 and higher support
- Compatible with palette of VIs from National Instruments
- More than 50 examples provided

### LabVIEW® Palette of VIs

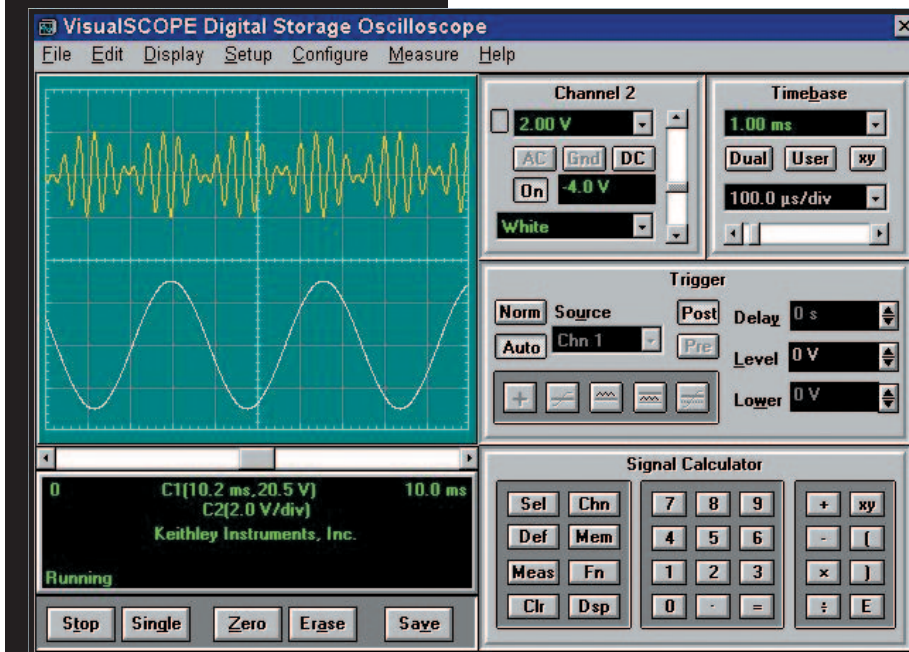
Keithley's palette of DriverLINX based VIs (virtual instruments) supports LabVIEW 7.0 and above. Keithley supplies 69 easy, intermediate, and advanced VIs that interface your LabVIEW software applications to Keithley's data acquisition boards. Keithley's VIs fully conform to the LabVIEW data acquisition model.

Each of Keithley's VIs directly corresponds to a VI from National Instruments for AI, AO, and DIO, providing the same "form and feel." No new learning curve is required. An application can use VIs from both Keithley and National Instruments, so the application can use both companies' hardware.

Keithley's VIs are divided into groups and they form a hierarchy—easy, intermediate, and advanced. Easy VIs provide a quick solution to common data acquisition tasks and include built-in error handling. Intermediate VIs provide more control over the hardware and the error handling to create custom solutions. Advanced VIs provide full control over creating a data acquisition task.

### VisualSCOPE™ Digital Storage Oscilloscope for Windows

VisualSCOPE, a DriverLINX supported application, is an intuitive software package that captures, analyzes, and plots waveforms and can also transfer data and graphic images to other Windows applications without programming. Its displays are just like those of a standard benchtop oscilloscope, minimizing the amount of training required. It supports 14 automatic real-time waveform measurements and comes with a signal calculator for waveform math. Cursors are used to directly and precisely measure the time, amplitude, and frequency values of signals. VisualSCOPE displays one or two live channels and up to two previously saved or calculated channels. With just three mouse clicks, a user can begin acquiring, analyzing, and archiving analog data.



### VisualSCOPE

- For Keithley's KPCI-bus boards (not for KUSB-3100 Series modules)
- No programming required
- 1 or 2 channel input; 1, 2, or 4 channel display
- Transfers data and graphics easily to other Windows applications
- Stores to disk and recalls waveform files and instrument setups
- Simultaneously displays live and previously stored waveforms
- Offers advanced triggering on +/- edge and level, internal or external

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