

DAQPilot

ADLINK Task-oriented DAQ Driver and SDK for Windows



Features

- DAQ driver with graphical interface assistance for programmers
- Program via three approaches: DAQPilot API, DAQPilot ActiveX controls, and .NET assembly
- Supports Express VI for LabVIEW
- Supports Polymorphic VIs for LabVIEW
- Supports 32-/64-bit editions of Windows Vista/Server 2003/XP and legacy Windows 98/NT/2000
- Supports a complete line of ADLINK DAQ cards and compatible with all ADLINK DAQ hardware functions
- Supports various application development environments including Microsoft Visual C# .NET, Microsoft Visual Basic .NET, Microsoft Visual Basic, Microsoft Visual C++, Borland Delphi, and Borland C++ Builder
- Task-oriented approach creates your DAQ application in 3 minutes
- One interface to hundreds of ADLINK data acquisition Cards

Develop a DAQ Application in 3 Minutes!

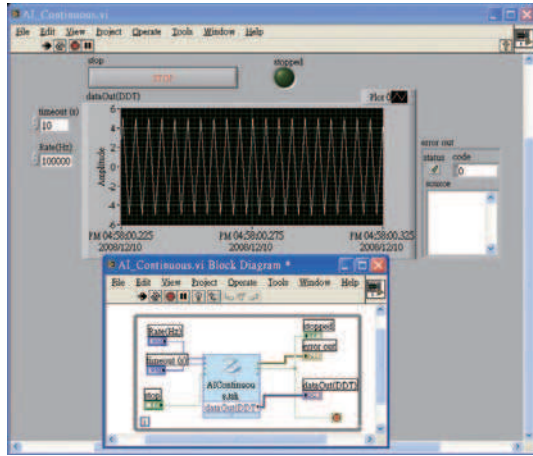


DAQ in an Instant!

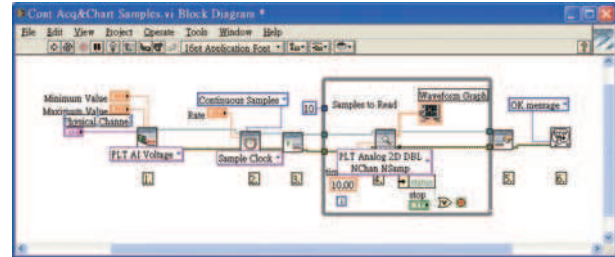
Days of confusing parameters, rigid programming procedures, and tons of functions to program data acquisition cards are over! Welcome DAQPilot — a revolutionary task-oriented DAQ driver that empowers you to create your DAQ tasks in minutes. Designed to streamline simple to complex DAQ applications, DAQPilot lets you focus on specific tasks via a user-friendly, step-by-step wizard. Driven by an intuitive graphical user interface, DAQPilot offers superior convenience, compatibility, and ease-of-use. Equipped with helpful built-in components such as an instant test panel and automatic reference code generation, DAQPilot lets you land in a variety of DAQ programming environment with your best foot forward.

Introduction

DAQPilot comes as ADLINK's commitment to provide full support to its comprehensive line of data acquisition products. DAQPilot is a driver and SDK with a graphics-driven interface for various ADE, such as Microsoft Visual C# .NET, Microsoft Visual Basic .NET, Microsoft Visual Basic, Microsoft Visual C++, Borland Delphi, and Borland C++ Builder programmers. The interface assists you in completing the most simple to the most complex parts of DAQ programming. You can use DAQPilot API, activeX controls or .NET Assembly to develop your own DAQ applications in your choice programming environment. DAQPilot ActiveX controls and .NET assembly are designed to replace the original properties setting page to make configuration more effectively. For LabVIEW users, DAQPilot provides Express VI and Polymorphic VI libraries to guides you in developing LabVIEW applications without the need for the complex configuration of ADLINK DAQ cards. DAQPilot is designed for the novice to the most experienced programmer. Beside, because DAQPilot can finish a DAQ task in minutes, it is suitable for programmers aiming to immediately program their premium ADLINK DAQ modules and integrate the tasks to their own DAQ applications. DAQPilot supports a complete line of PCI/PCI Express®, CompactPCI, and PXI data acquisition modules and is ready to support future DAQ offerings. Actually, DAQPilot's strength lies on the fact that programming methods stay the same no matter what DAQ card/module you use. Therefore, you could easily program ADLINK DAQ devices using DAQPilot API, ActiveX controls or .NET assembly. Then just combine the task codes generated by DAQPilot with the corresponding hardware driver with other vendor's program to build an integrated DAQ application.



DAQPilot Express VI Sample for Continuous AI



Polymorphic VI Sample for Continuous AI



DAQPilot Polymorphic VI Window



Overview

ADLINK's DAQPilot provides task-oriented SDK for API, ActiveX controls, and .NET .NET assembly. For LabVIEW users, ADLINK introduced DAQPilot Express VI and Polymorphic VI libraries in DAQPilot beginning in version 2. Programmers can interactively configure ADLINK DAQ products through DAQPilot Express VI and Polymorphic VI libraries. DAQPilot Express VI and Polymorphic VI libraries allow you to transfer your LabVIEW software knowledge and expertise to whom may be extremely knowledgeable of that specific applications, but not so familiar with LabVIEW.

Previously, LabVIEW™ introduced an Easy I/O and Intermediate I/O layer to traditional library to simplify common DAQ tasks. ADLINK thus provided DAQ-LVIEW PnP VI Library as a plug and play library based on its architecture. Now, with the new Express VI concept, ADLINK provides DAQPilot Express VI to assist and simplify application development when using ADLINK DAQ products.

Compatibility with LabVIEW™

The DAQPilot Express VI has been tested for compatibility under different versions of LabVIEW™:

- LabVIEW™ 8.0
- LabVIEW™ 8.2
- LabVIEW™ 8.5
- LabVIEW™ 8.6

What is Express VI?

Express VI is designed by interactive configuration dialog boxes. Benefits include reduced wiring, and a dramatically reduced learning curve. Express VI is composed of an Express Source VI and an Express Configuration Dialog Box VI. In fact, Express VI encapsulate the functionality of related standard VIs, providing developers with easy access to powerful measurement technologies through point-and-click interfaces, whereby such interactive VIs simply require little or no programming to configure. Express VI provides an easy-to-use interface for developers who possess in-depth understanding of the application or concepts, but lack in programming experience. With Standard VIs, VIs are modularized via wiring. With Express VI, complicated wiring is already integrated as a single interface. The DAQPilot Express VI is completely compatible with various LabVIEW™ functions and with ADLINK DAQ Products.

What is a Polymorphic VI?

A Polymorphic VI is a collection of VIs with the same connector pane patterns. Each VI in the collection is an instance of the Polymorphic VI which provides the polymorphism ability of a node to adjust automatically to data of different representation, type, or structure. For most polymorphic VIs, the data types you wire to the inputs of the Polymorphic VI determine the instance to use. DAQPilot Polymorphic VIs thus provide a better way to perform the same operation on different data types.

Features

- DAQPilot Express VI enables replacement of large portions of a complex DAQ application with a simple configuration dialog.
- DAQPilot Polymorphic VIs support more flexible function VIs which provide polymorphism ability for integrating different data types as an instance.
- DAQPilot Express VI is easier to add new features and parameters to DAQ APIs than ADLINK's DAQ-LVIEW PnP, which was developed based on traditional DASK APIs. DAQPilot Express VI provides task-oriented approach to development with configuration dialog.
- DAQPilot Express VI is easier to add new devices. DAQPilot uses a componential plug-in design that facilitates adding new devices. DAQ applications can use DAQPilot as a kernel to handle all detailed hardware configuration for further application development. For example, ADLINK DAQMaster, AD-Logger, Express VI are all powered by DAQPilot.

DAQPilot provides Express VI for LabVIEW™ help developers easily integrate ADLINK DAQ products into their LabVIEW™ program. Simply leave the complexities to DAQPilot so that more focus can be placed on advancing knowledge of an application.

* National Instruments and LabVIEW are trademarks of National Instrument, Inc.

Benefits of DAQPilot

- Rapid DAQ development and integration
 - No hours spent on understanding functions, parameters, and confusing driver API calls
 - Eliminates the time-consuming trial-and-error approach in DAQ development
 - Creates tasks which can be used across multiple DAQ devices
 - Supports mainstream programming environments

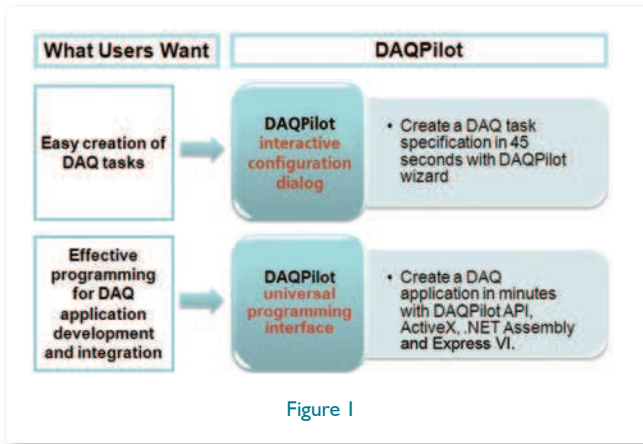


Figure 1

Intuitive Wizard

- Smart and easy to navigate user interface
- Step-by-step DAQ parameter setting
- Automatic DAQ device detection
- Dynamically corrects wrong/unsupported settings
- Provides an instant test panel function for task validation Robust Task Manager

Robust Task Manager (provided in DAQMaster)

- Manages predefined and newly-created DAQ tasks
- Generates the reference code for C/C++ programming languages
- Integrated test panel function immediately validates selected task(s)

.NET Support with Managed Component

- DAQPilot .NET assembly provides many benefits to users, including:
 - .NET self-register mechanism, AUTO exception handling, AUTO garbage memory processing, AUTO type safety, etc.
- Provides complete C# .NET and Visual Basic .NET examples

Bridge to DAQMaster

- DAQMaster provides the connectivity between DAQMaster and DAQPilot, user can use DAQMaster to configure ADLINK DAQ products and define the DAQ Task.
- Easily to allocate memory and find the sample programs

High-performance Runtime Engine

- Efficiently parses tasks and performs corresponding hardware operations
- Guarantees flawless execution of all DAQ task types across all ADLINK DAQ modules

New-generation ActiveX Controls

- Supports component-based DAQ applications
- Replace traditional properties setting page, embedded DAQPilot Wizard offers faster integration with your programming environment
- Equipped with four basic functions (read, write, start, and stop) to execute any type of DAQ task
- Strongly recommended for Visual Basic programmers

Task Gallery

■ DAQPilot supports five task categories which comprise 19 task items.

Analog Input		Single channel or multi-channel voltage polling
		Single-shot analog waveform acquisition
		Continuous analog waveform acquisition
Analog Output		Single channel or multi-channel voltage output
		Single channel or multi-channel current output
		Single-shot analog waveform generation
		Continuous analog waveform generation
		Sine/square/triangle/sawtooth function generation
Digital Input		Digital line input
		Digital port input
		Single-shot digital pattern acquisition
		Continuous digital pattern acquisition
Digital Output		Digital line output
		Digital port output
		Single-shot digital pattern generation
		Continuous digital pattern generation
Timer/Counter		Simple event counter
		Timer interrupt operation
		Complete 8254 mode operations

Supported Hardware

- **ADLINK PCI/PCIe/cPCI Series DAQ Cards**
6202, 6208, 6216, 6308, 7200, 7224, 7230, 7233, 7234, 7248, 7250, 7252, 7256, 7258, 7260, 7296, 7300, 7348, 7350, 7360, 7396, 7432, 7433, 7434, 7442, 7443, 7444, 7452, 8554, 9111, 9112, 9113, 9114, 9118, 9221, 9222, 9223, 9524
- **ADLINK DAQ/DAQe/PXI-2000 Series DAQ Cards**
2005, 2006, 2010, 2016, 2204, 2205, 2206, 2208, 2213, 2214, 2501, 2502
- **ADLINK PCI/PXI Digitizers**
9810, 9812, 9816, 9820, 9826, 9846

Free Download!!

Please visit <http://www.adlinktech.com/MAPS/DAQPilot.html> for more information

- **DAQPilot**
Task-oriented DAQ Driver and SDK
- **DAQMaster**
Configuration-based System Manager to Manage DAQPilot Task