DAQMaster

Configuration-based Device Manager for
ADLINK DAQ Devices

User's Manual

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Using this manual

Audience and scope

This manual guides you when using the DAQMaster to configure ADLINK DAQ devices. This manual also describes how to install and use the DAQMaster for managing and controlling your DAQ devices.

How this manual is organized

This manual is organized as follows:

Chapter 1 Introduction: This chapter introduces the DAQMaster application including its main features and highlights.

Chapter 2 Installation: This chapter provides information on DAQMaster system requirements, installation, and user interface.

Chapter 3 Getting to know DAQMaster: The chapter describes the DAQMaster's main functions including the device, software, and task managers.

Chapter 4 Device Manager: The chapter describes all the functions of the DAQMaster Device Manager for configuring DAQ modules and devices. This part also includes information on the memory allocation tool, test panel, and device calibration.

Chapter 5 Software Manager: The chapter lists all the DAQMaster Software Manager functions including information on how to update installed ADLINK applications using the Update Wizard and how to use integrated tools such as Code Creator and DAQ Conversion utilities.

Chapter 6 Task Manager: The chapter describes the DAQMaster Task Manager function that is integrated with the DAQPilot Task Manager.

Appendix: The Appendix comes with supplementary information including the DAQMaster file distribution and .DAT file format.

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Conventions

Take note of the following conventions used throughout the manual to make sure that you perform certain tasks and instructions properly.

NOTE	Additional information, aids, and tips that help you perform particular tasks.
IMPORTANT	Critical information and instructions that you MUST perform to complete a task.
WARNING	Information that prevents physical injury, data loss, module damage, program corruption etc. when trying to complete a particular task.

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Table of Contents

1 Introduction 1
1.1 Features 2
1.2 Highlights 2

2 Installation 3
2.1 Where to Get 3
2.2 Before You Proceed 3
System Requirements 3
2.3 Installing DAQMaster 4
2.4 Checking the DAQ Card Drivers 5
2.5 Launching the DAQMaster 5

3 Getting to Know DAQMaster 7
3.1 Main Menu 7
File Menu 7
Options Menu 7
View Menu 8
Help Menu 8
3.2 DAQMaster Functions 9
Main Function Panel 10
Management Panel 11
Sub-function Panel 12

4 Device Manager 13
4.1 Views 13
4.2 Database Functions 14
4.3 Sub-functions 18
Configuration 18
Test Panel 20
Calibration 25

5 Software Manager 27
5.1 Views 29
5.2 Database Functions 29
Software Product Overview 29
Hardware Support List 30
Refresh 30
5.3 Sub-functions 31

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Update Wizard 31
Code Creator 33
Data Conversion Tool 34
Sample Program Directory 34

6 Task Manager 35

Appendix 37
A DAQMaster Distribution 37
Required Files 37
B .DAT File Format 38
Header 38
Data Block 40

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1 Introduction

The ADLINK DAQMaster is a smart device manager that opens up access to ADLINK data acquisition and test and measurement products. DAQMaster enables you to:

- configure and manage DAQ hardware and software in an integrated interface
- dynamically detect and view devices and instruments connected to your system
- easily update installed test and measurement software applications
- execute system diagnostics and perform basic function test.

In addition to these standard functions, DAQMaster also comes with item-specific tools that you can use to configure, diagnose, or test your system. DAQMaster offers a powerful, user-friendly, and easy-to-navigate Windows-based configuration utility that simplifies your DAQ card configuration.

The built-in test utility in DAQMaster allows you to verify basic hardware operations including analog input/output, digital input/output, and counter/timer function. In addition, the product page and sub-function content changes dynamically—depending on the installed ADLINK card—to show related function and supported features.

DAQMaster delivers an all-in-one configuration, user can get a full support matrix to well configure ADLINK Test and Measurement products.

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1.1 Features

- ▷ Supports Windows 98/NT/2000 and 32-/64-bit editions of Windows XP/Server 2003/Vista
- ▷ Windows-based utility offers convenient hardware configuration and diagnosis
- ▷ Simple yet versatile programming examples to speed up your application development
- ▷ Supports a comprehensive line of I/O functions including AI, AO, DI, DO, timer/counter, and event
- ▷ Online manual offers programming guides during design time

1.2 Highlights

Device management

The DAQMaster Device Manager offers an efficient management of installed DAQ and test and measurement devices.

NOTE If you need help installing your device, refer to the installation guide of related software packages included with your ADLINK Test and Measurement hardware. DAQMaster also allows you to retrieve the pin map for all supported ADLINK test and measurement devices.

Application management

The DAQMaster also comes with a Software Manager that enables you to manage installed DAQ and test and measurement software applications.

Task manager connectivity

The Task Manager delivers connectivity with the DAQPilot, a revolutionary task-oriented DAQ driver and wizard, allowing full DAQPilot task control.

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2 Installation

This chapter provides information on DAQMaster system requirements, installation, and user interface information.

2.1 Where to Get

DAQMaster is available from the All-in-One CD that came with your DAQ card package. You may also download a copy from the ADLINK Test and Measurement website at http://www.adlink-tech.com/TM.

2.2 Before You Proceed

System Requirements

Make sure your system meets the following requirements before you install DAQMaster.

- Windows 98/NT/2000 or 32-/64-bit editions of Windows XP/Server 2003/Vista operating system
- PC with Intel Pentium-class CPU or higher
- VGA display or higher
- Minimum 64 MB of memory
- Minimum 40 MB of free hard disk space
- Mouse

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2.3 Installing DAQMaster

This section provides instructions on how to install DAQMaster in your system. Prepare the ADLINK All-In-One CD that comes with the card package.

To install DAQMaster:

1. Place the ADLINK All-in-One CD to the computer's optical drive.
2. When the installation window appears, click on the DAQMaster installation button.

NOTE If Autorun is not enabled in your computer, explore the CD, then double-click on the SETUP.EXE to display the installation window.

3. When installation is completed, the application launches automatically.



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2.4 Checking the DAQ Card Drivers

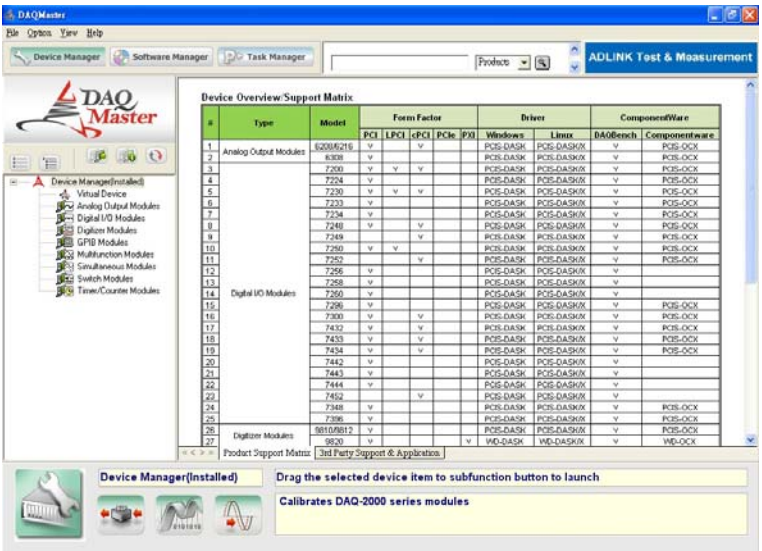
To check if the DAQ card(s) is properly installed and detected by the system:

1. Launch the Windows Device Manager.
2. Expand the **NuDAQ Boards** item, then double-click on the listed DAQ device(s).
3. Click the **Resources** tab and check if the device I/O port and IRQ resources are allocated correctly.

NOTE The necessary DASK libraries are installed during the DAQMaster installation. These libraries hold the PCIS-DASK, D2K-DASK, and WD-DASK system files. For more information on these DASK libraries, install the corresponding software packages.

2.5 Launching the DAQMaster

To launch DAQMaster from the Windows Start menu, click **Start** > **ADLINK** > **DAQMaster**. The main window appears.



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3 Getting to Know DAQMaster

3.1 Main Menu



Menu	Function
File	System commands
Options	Configuration options (i.e. configuring the DAQPilot task output directory)
View	View commands
Help	Launches the online help and other support information

File Menu

The File menu provides the following options:

Report Reports the current configuration. This item initiates the DAQMaster report function to create a simple printable report of system configuration.

Exit Closes the DAQMaster application.

Options Menu

The Options menu offers the following options:

Task Directory Configures the default output path of the Task Manager.

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View Menu

The View menu provides the following options:

Device Manager	Changes the function mode, displays related data to, and enables all corresponding functions for the Device Manager.
Software Manager	Changes the function mode, displays related data to, and enables all corresponding functions for the Software Manager.
Task Manager	Changes the function mode, displays related data to, and enables all corresponding functions for the DAQPilot Task Manager. An interface connects the DAQMaster with the DAQPilot.

Help Menu

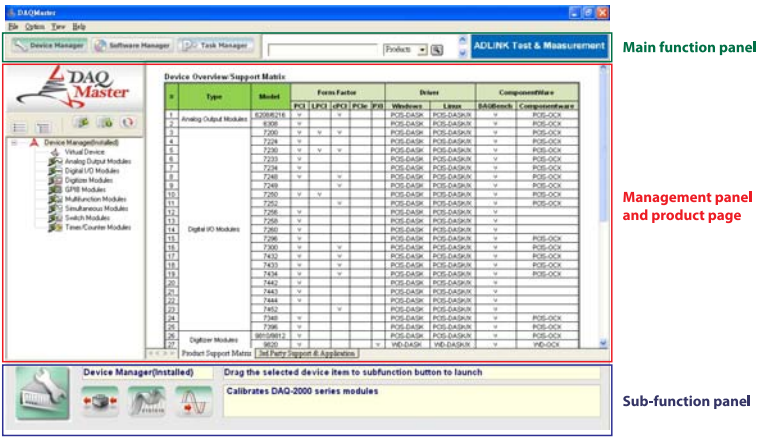
The Help menu provides the following options:

DAQMaster Help	Launches the DAQMaster online help. You may also press <F1> to open the online help file.
ADLINK on the Web	Opens an Internet browser to the ADLINK website (www.adlinktech.com).
Technical Support	Displays information on DAQMaster technical support links and resources.
Ask a Question	Opens a sales query form for easy sending of inquiries related to the product.
System Information	Displays the system information such as the operating system version, processor, memory, and installed ADLINK applications.
System Device Manager	Launches the Windows device manager for related hardware information.
About	Shows the ADLINK DAQMaster version and copyright statement.

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3.2 DAQMaster Functions

The DAQMaster comes with three major function blocks that dynamically changes depending on the selected device or software application. Refer to the illustration below.



Panel	Description
Main function panel	Includes the Device Manager, Software Manager, and Task Manager buttons.
Management panel and product page	Displays the management tree and product page. Each main function has three view modes and four corresponding view functions (minimum).
Sub-function panel	Displays all available sub-functions depending on the selected main function.

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Main Function Panel

The main function panel includes three major functions — Device Manager, Software Manager, and Task Manager. Depending on the selected main function, the device manager and software manager provide three view modes for detailed product information and enable all corresponding functions for device/interface products and/or software application from the sub-function panel.



Device Manager

The DAQMaster Device Manager comes with item-specific tools which you can use to configure, diagnose, or test your system. As you navigate through the DAQMaster, the contents of the product page and sub-functions change according to the selected main function. The Device Manager simplifies configuration of plug-in I/O devices via a Windows-based configuration utility. It also comes with a test utility that allows you to verify hardware operations including analog input/output, digital input/output, and counter/timer function. Refer to **Chapter 4** for more information.

Software Manager

The DAQMaster Software Manager comes with an update tool and utilities for your ADLINK test and measurement applications. Featuring ease of use and access, the Software Manager enables you to update the software, find example programs, generate a reference code for future programming, and convert captured raw data into scaled information. Refer to **Chapter 5** for more information.

The software support matrix displays four related functions on the sub-function panel, including:

- Update Wizard
- Samples
- Code Creator
- Data Conversion

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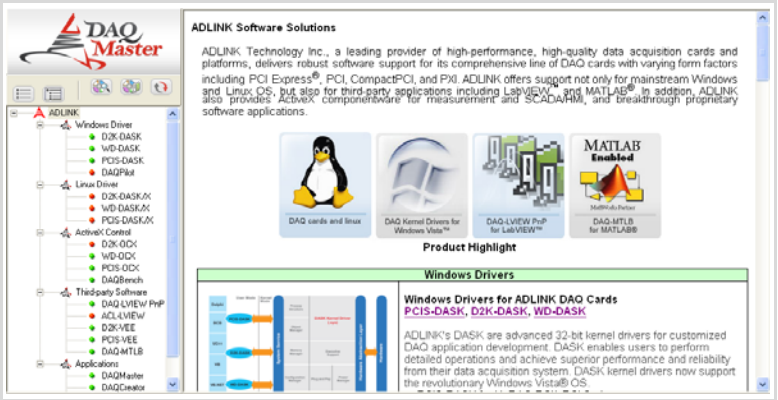
Task Manager

The Task Manager function bridges the DAQMaster with the DAQPilot task-oriented DAQ driver and wizard. With DAQPilot Task Manager you may easily develop DAQ tasks from predefined run-time specifications. Refer to **Chapter 6** for more information.

Management Panel

Management Function Panel

The management function panel includes a tree view browser that changes depending on the view mode. When in software manager function, this panel displays the software support matrix and detailed software/driver support. This panel also shows the device pin map and illustration for all supported test and measurement devices.



Product Page

NOTE This feature requires Internet access.

The embedded web client provides hyperlinks to sites with related information for your device and/or software application.

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Sub-function Panel

The sub-function panel shows all related device and/or software manager functions.



4 Device Manager

The DAQMaster Device Manager is a powerful tool for configuring an ADLINK device. This utility detects and lists all installed analog output, digital I/O, digitizer, GPIB, multifunction, simultaneous, and time/counter modules for configuration and control. To launch, click on the Device Manager icon from the main function panel.

NOTE When an installed device is not displayed, it may be because you have not refreshed the configuration tree, the device is not PnP-compatible, or DAQMaster does not support the device's driver version.

The device manager enables convenient configuration and retrieval of product information. For information on supported devices, refer to the table on page 15-16.

4.1 Views

Item	Description
Collapse	Collapses the product tree
Expand	Expands the product tree

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4.2 Database Functions

The Device Manager offers several view modes to display related product information. A list of installed and detected modules with eight major product classifications are listed below.

Device
Analog output modules (i.e. 6208)
Digital I/O modules (i.e. 7432, 7300)
Digitizer modules (i.e. 9820)
GPIB modules (i.e. 3488)
Multifunction DAQ modules (i.e. 2205)
Simultaneous DAQ modules (i.e. 2010)
Switch modules (i.e. 7901)
Timer/Counter modules (i.e. 8554)

From the tree, you may click on the integrated pin map/definition database to display the pin information of installed modules. It also comes with a refresh button and a link to the supported devices table. Refer to the function table below.

Item	Function
All Hardware Devices	Shows all supported devices
Installed Devices	Shows all installed devices
Refresh	Refreshes the database

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Device Overview

The table below shows all modules which are currently supported by DAQMaster.

Type	Model	PCI	LPCI	cPCI	PCIe	PXI	Description
Analog Output Modules	6208/16	X		X			8/16-CH 16-Bit Analog Output
	6308	X					8-CH 12-Bit Isolated Analog Output
Digital I/O Modules	7200	X	X	X			12 MB/s High-Speed 32-CH DI & 32-CH DO
	7230	X	X	X			32-CH Isolated Digital I/O
	7224	X					24-CH Opto-22 Compatible Digital I/O
	7233	X					32-CH Isolated DI
	7234	X					32-CH Isolated DO
	7248	X		X			48-CH Opto-22 Compatible Digital I/O
	7249			X			48-CH Opto-22 Compatible Digital I/O
	7250	X	X				8-CH Relay Outputs & 8-CH Isolated DI
	7252			X			8-CH Relay Output & 16-CH Isolated DI
	7256	X					16-CH Latching Relay Outputs & 16-CH Isolated DI
	7258	X					32-CH PhotoMos Relay Outputs & 2-CH Isolated DI
	7260	X					8-CH High-Power Relay Outputs & 8-CH Isolated DI
	7300	X		X			80 MB/s High-Speed 32-CH Digital I/O
	7432	X		X			64-CH Isolated Digital I/O
	7433	X		X			64-CH Isolated DI
	7434	X		X			64-CH Isolated DO
	7442	X					High-density 128-CH Isolated Digital I/O
	7443	X					High-density 128-CH Isolated DI
	7444	X					High-density 128-CH Isolated DO
	7452			X			128-CH Isolated Outputs & 128-CH Isolated DI
	7296	X					96-CH Opto-22 Compatible Digital I/O
	7348	X					High Driving Capability 48-CH Digital I/O
	7396	X					High Driving Capability 96-CH Digital I/O
Digitizer Modules	9812	X					4-CH 10/12-bit 20 MS/s Simultaneous-Sampling Analog Input
	9820	X				X	2-CH 14-Bit 65 MS/s Digitizer with 512 MB Memory

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Type	Model	PCI	LPCI	cPCI	PCIe	PXI	Description
Multifunction Modules	2204	X			X	X	64-CH 12-Bit 3 MS/s Multi-Function DAQ
	2205	X			X	X	64-CH 16-Bit 500 kS/s Multi-Function DAQ
	2206	X			X	X	64-CH 16-Bit 250 kS/s Multi-Function DAQ
	2208	X			X	X	96-CH 12-bit 3 MS/s Ultra High-Density Analog Input Multi-Function DAQ
	2213	X			X	X	16-CH 16-Bit 250 kS/s Low-Cost Multi-Function DAQ w/o Analog Output
	2214	X			X	X	16-CH 16-Bit 250 kS/s Low-Cost Multi-Function DAQ
	2501	X			X	X	4-CH 12-Bit 1 MS/s Analog Output Multi-Function DAQ
	2502	X			X	X	8-CH 12-Bit 1 MS/s Analog Output Multi-Function DAQ
	9118	X					16-CH 12/16 Bit Up to 333 kS/s Analog Input Card
	9116					X	64-CH 16-Bit 250 kS/s Multi-Function DAQ Module
	9114	X					32-CH 16-Bit 250 kS/s Multi-Function DAQ Card
	9113	X					32-CH 12-Bit 100 kS/s Isolated Analog Input Card
	9112	X	X	X			16-CH 12-Bit 250 kS/s Multi-Function DAQ Module
	9111	X					16-CH 12/16-Bit 100 kS/s Low-Cost Multi-Function DAQ Cards
Simultaneous Modules	2005	X			X	X	4-CH 16-Bit 500 kS/s Simultaneous-Sampling Multi-Function DAQ
	2006	X			X	X	4-CH 16-Bit 250 kS/s Simultaneous-Sampling Multi-Function DAQ
	2010	X			X	X	4-CH 14-Bit 2 MS/s Simultaneous-Sampling Multi-Function DAQ
	2016	X			X	X	4-CH 16-Bit 800 kS/s Simultaneous-Sampling Multi-Function DAQ
Timer/Counter Modules	8554	X		X			10/12-CH General-Purpose Timers/Counters & 8-CH Digital I/O
GPIB Modules	3488	X	X			X	High-Performance IEEE488 GPIB Interface
Switch Modules	7901					X	16-CH General-Purpose SPDT Relay
	7921					X	24-CH 2-Wire Multiplexer
	7931					X	4x8 2-Wire Matrix
Extension	8570	X				X	PCI-to-PXI, PXI-to-PXI Extension

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DAQMaster also allows you to view an installed device's pin map and/or illustration.

NOTE When a device's pin map and/or illustration is not available, refer to the product documentation.

Refresh

Refreshes the tree view and the corresponding product page.

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4.3 Sub-functions

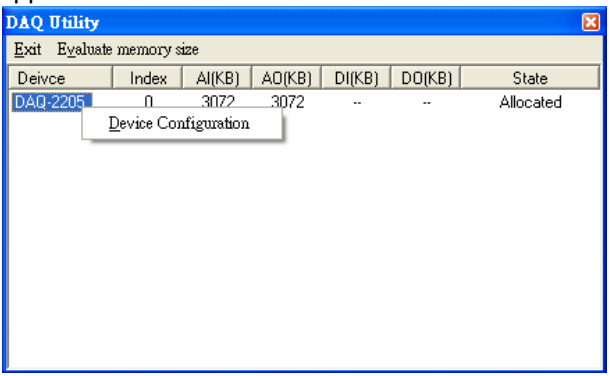
The table below lists all Device Manager sub-functions.

Sub-function	Description
Configuration	Adjusts the memory configuration for modules performing continuous AI, DI, and DO operations
Test Panel	Provides a basic test function for task diagnosis
Calibration	Calibrates DAQ-2000 series modules

Configuration

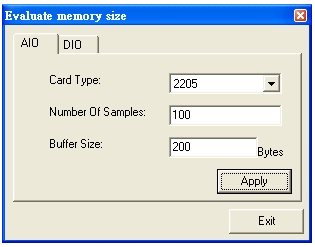
The Configuration function allows you to adjust memory allocation for continuous analog input/output and digital input/output operations. To open the configuration window:

1. Click on the Configuration button. A DAQ Utility window appears with a list of installed devices.
2. Right-click on a device, then select Device Configuration from the pop-up menu. A Device Configuration window appears.

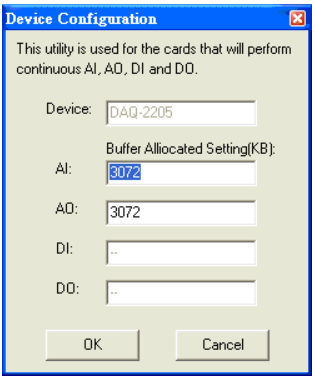


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You may use the memory evaluator to calculate the required size.



3. Adjust the allocated memory buffer, then click OK.



4. Restart the system to apply the changes.

NOTE If you do not restart the system, the **State** field of the selected device from the DAQ Utility window shows **Unallocated**.

Test Panel

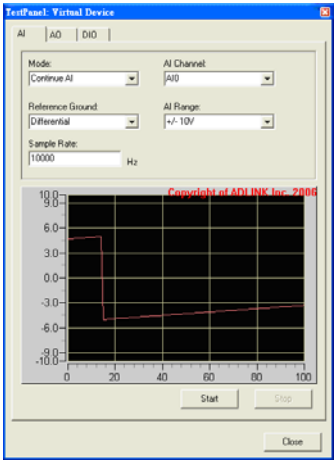
The DAQMaster integrates a basic test function to analyze test and measurement tasks and operations supported by the installed module. To access, click on the test panel button from the sub-function panel. The test panel interface changes according to the selected module and its supported operation. Refer to the following sections.

Analog Input

When launching the test panel for ADLINK DAQ-2000 Series and 9000 Series modules, click on the AI tab sheet to adjust the following parameters:

- Mode: Select continuous or polling mode
- AI Channel: Select the AI channel
- Reference Ground: Select the reference ground
- AI Range: Select the AI range
- Sample Rate: Set the AI sampling rate

Click on **Start** to test the operation or click **Stop** to abort.



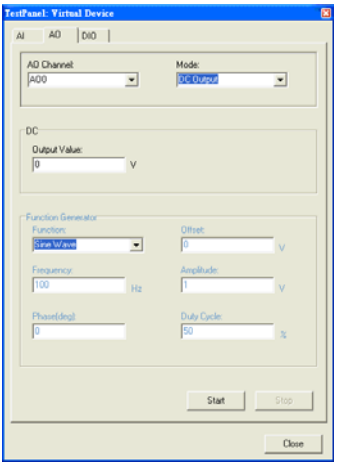
Analog Output

When using the test panel for ADLINK DAQ-2000 Series and 6000 Series modules, click on the AO tab sheet to adjust the following parameters:

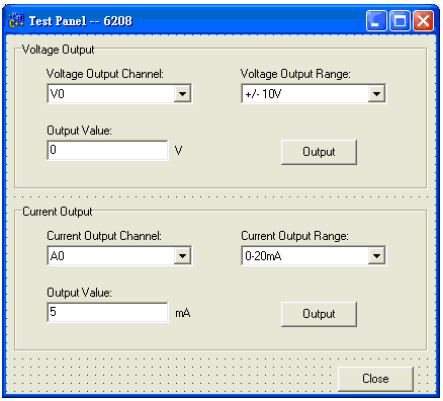
- Mode: Select DC Output or Function Generator
- AO Channel: Select the channel for analog output
- Function: Select the output function such as Sine, Square, Triangle, or Sawtooth Wave
- Offset: Set the function offset
- Frequency: Set the function frequency
- Amplitude: Set the function amplitude
- Phase: Set the phase value
- Duty Cycle: Set the duty cycle

For advanced operations, DAQMaster provides a basic function generator that you may use to set the offset, frequency, amplitude, phase, and duty cycle.

Click on **Start** to test the operation or click **Stop** to abort.

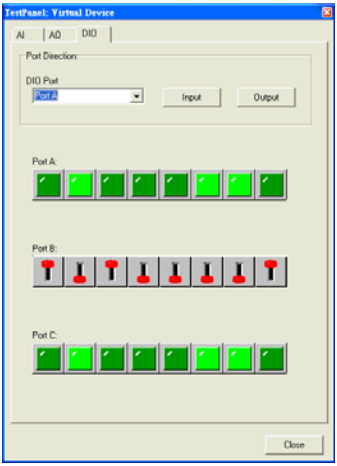


For 6000 Series modules, you may conveniently adjust the related parameters such as AO channel number, output range, and output value.



Digital Input/Output

To use the test panel for ADLINK DAQ-2000/7000/9000 Series modules, click on the DIO tab and adjust the DIO port number and mode accordingly.

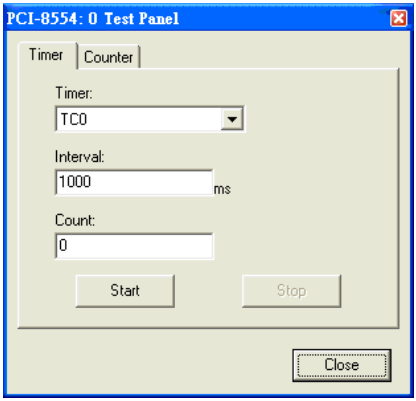


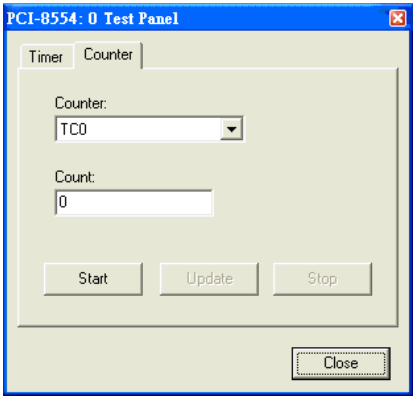
When you set the port direction to input, the digital input value is displayed with the corresponding LED component. When you set the port direction to output, the utility controls the digital output value with the corresponding switches.



Timer/Counter

For ADLINK 8554 timer/counter module, you may test the basic function after selecting the counter number and adjusting the interval. Refer to the screens below.





Calibration

The Device Manager integrates a calibration tool for DAQ/PXI-2000 Series modules. Calibration brings accurate measurements for A/D and D/A operations.

To start the calibration process for selected DAQ modules, click on the **Calibration** button, then follow screen instructions to proceed.

Refer to the card's user manual for more information on calibration.

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5 Software Manager

The Software Manager detects and displays installed ADLINK test and measurement software applications, and features online software updating.

NOTE DAQMaster currently does not support Linux.

The Software Manager supports the following test and measurement applications, drivers, ActiveX controls, and third-party applications/components:

Type	Product Name	Description
Windows WDM Driver	PCIS-DASK	ADLINK PCI/PCI Express®/cPCI Series DAQ Card Drivers for Windows
	D2K-DASK	ADLINK DAQ/DAQe/PXI-2000 Series DAQ Card Drivers for Windows
	WD-DASK	ADLINK PCI/PXI-9820 High-Speed Digitizer Drivers for Windows
	DAQPilot	Revolutionary Task-oriented DAQ Driver and Wizard
ActiveX Control Set	DAQBench	ActiveX Controls for Measurement and SCADA/HMI
	PCIS-OCX	ActiveX Controls for ADLINK PCI/PCI Express®/cPCI Series DAQ Cards
	D2K-OCX	ActiveX Controls for ADLINK DAQ/DAQe/ PXI-2000 Series DAQ Cards
	WD-OCX	ActiveX Controls for ADLINK PCI/PXI-9820 Digitizer
Third-Party Software Support	DAQ-LVIEW PnP	LabVIEW™ Drivers for ADLINK PCI/PCI Express®/cPCI Series DAQ Cards
	DAQ-MTLB for MATLAB®	MATLAB DAQ Toolbox for ADLINK DAQ Cards
	D2K-VEE	VEE™ Drivers for ADLINK DAQ/DAQe/ PXI-2000 Series DAQ Cards
	PCIS-VEE	VEE™ Drivers for ADLINK PCI/cPCI Series DAQ Cards

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Type	Product Name	Description
Proprietary Application	DAQCreator	Data Acquisition System Creator
	DAQMaster	Configuration-based Device Manager for ADLINK DAQ Cards
	PCIS-OPC	OPC 2.0-Compliant Servers for ADLINK Devices

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5.1 Views

Item	Description
 Collapse	Collapses the product tree
 Expand	Expands the product tree

5.2 Database Functions

Item	Description
 Software Product Overview	Displays an overview of ADLINK test and measurement software applications
 Hardware Support List	Displays a hardware list classified by supported software products
 Refresh	Refresh the tree view and product page

Software Product Overview

The software product page provides a matrix of ADLINK test and measurement applications divided into five major product classes:

- Windows drivers
- Linux drivers (inquiries only)
- Third-party software support
- ActiveX Control (componentware)
- Proprietary applications

To deliver robust support for ADLINK devices, these applications are regularly updated, particularly the Windows and Linux drivers. The Software Manager can help you update these test and measurement applications.

ADLINK has also released the latest versions of DAQ card drivers including DASK and DAQPilot to support Windows Vista™. You may visit http://www.adlinktech.com/TM/software-product.html for detailed information.

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Hardware Support List

The Hardware Support List displays all devices that support a particular ADLINK software application. Below are some applications and the devices which support them.

PCIS-DASK: ADLINK PCI/PCIe/cPCI Series DAQ Card Drivers for Windows

6208, 6216, 6308, 7200, 7224, 7230, 7233, 7234, 7248, 7250, 7258, 7260, 7296, 7300, 7348, 7396, 7432, 7433, 7434, 7442, 7443, 7444, 7452, 8554, 9111, 9112, 9113, 9114, 9118, 9221, 9810, 9812

D2K-DASK: ADLINK DAQ-/DAQe-/PXI-2000 Series DAQ Card Drivers for Windows

2005, 2006, 2010, 2016, 2204, 2205, 2206, 2208, 2213, 2214, 2501, 2502

WD-DASK: ADLINK PCI/PXI-9820 Digitizer Driver for Windows

9820

Refresh

Refreshes the tree view and the corresponding product page.

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5.3 Sub-functions

The sub-function panel comes with four functions:

Item	Description
 Update Wizard	Displays a version table for software updating
 Code Creator	Launches the Code Creator utility that guides a user in setting the correct DAQ task parameters for C code generation and program DAQ with DASK library
 Data Conversion Tool	Launches the data conversion tool that enables a user to load a captured data file and export it to various file formats including scaled or raw
 Sample Directory	Redirects the user to the sample program directory depending on the selected software application

Update Wizard

NOTE This function requires Internet connection.

For hardware drivers or application software updates, the Update Wizard redirects you to the ADLINK website that features an online version table. The website lets you check for newer product versions and/or updates. Use the Update Wizard to update your measurement applications quickly and easily.

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To use the Update Wizard:

1. Launch DAQMaster, then click on **Software Manager**.
2. Click the **Update Wizard** button from the sub-function panel. An Internet browser appears and displays the update site.



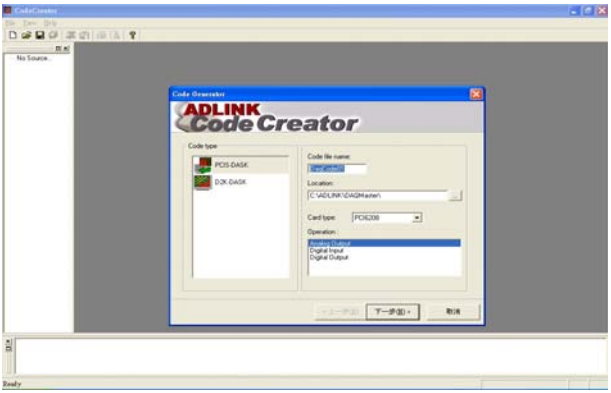
Software Product	Your Software	Recommended Update	Release Note
Windows WDM Driver			
PCIS-DASK	Not installed	4.13.1	
D2K-DASK	1.25	1.75	Note.txt
WD-DASK	Not installed	1.27	
ActiveX Control Set			
PCIS-OCX	2.44	2.41	
D2K-OCX	Not installed	1.01	
WD-OCX	Not installed	1.0	
DAQBench	Not installed	2.42	
Third-Party Software Support			
DAQ-LVIEW PnP	Not installed	1.25	
DAQ-MTLB for MATLAB®	Not installed	1.01	
D2K-VEE	Not installed	1.12	
PCIS-VEE	Not installed	3.21	
Application			
DAQCreator	Not installed	1.0	
OPC Server			
PCIS-OPC	Not installed	2.1	

The update site comes with four columns that tell you all available software applications, the software application(s) installed in your system, the recommended update, and the update's release note. It is recommended that you check the release note before downloading the update to avoid system conflicts and other related issues.

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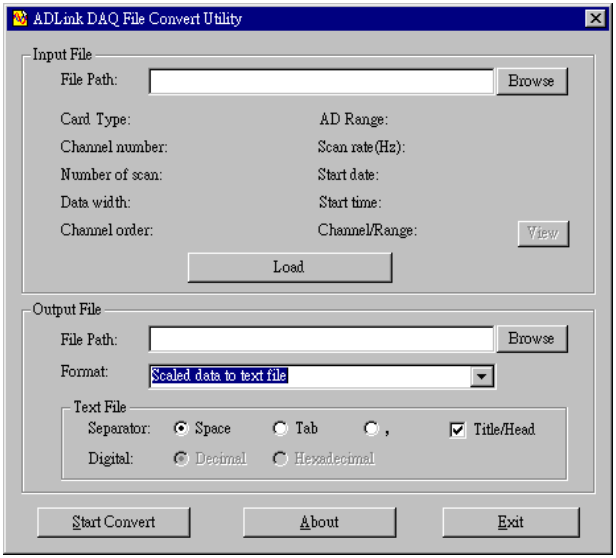
Code Creator

Code Creator is an easy-to-use code generator that works with ADLINK DAQ devices. It provides an intuitive user interface that reduces system development time. You simply select the devices, configure the data acquisition parameters and the viewing windows, then generate the corresponding C source code for further programming. DAQMaster provides a function button that you can use to launch Code Creator.



Data Conversion Tool

Data files generated by DAQ functions that perform continuous data acquisition is written in binary format. Since raw binary files are difficult to interpret, the DAQCvt tool converts these files into a readable format for text editors or spreadsheet processing. For more information on DAQCvt, refer to the documentation that came with your device or module.



Sample Program Directory

Redirects you to the sample program directory depending on your selected software application.

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6 Task Manager

The DAQMaster Task Manager is an interface bridge to the DAQPilot Task Manager. This function allows you to manage created DAQ tasks with simple editing functions such as adding/creating, deleting, modifying, copying, and renaming tasks.

Below are the task manager commands:

Item	Description
 Add/Create a Task	Adds or creates a new DAQ task
 Delete	Deletes the selected task
 Modify	Launches the DAQPilot Wizard to reconfigure the task specification
 Rename	Renames the selected task
 Launch Instant Panel	Launches the DAQPilot's instant test panel depending on the selected task
 Generate C Code	Generates a C reference code depending on the selected task. The generated code may be used for further programming with DAQPilot API.

NOTE For more information on DAQPilot, refer to the DAQPilot user's manual.

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Appendix

A DAQMaster Distribution

Below is the DAQMaster installed directory architecture.

Level 1	Level 2	Note
—	Help	DAQMaster.chm
—	Content	Pin maps, HTML files
—	Manual	
—	Utility	Memory allocation tools
DAQMaster.exe	—	Main application
RelNote.txt	—	DAQMaster release note
Readme.txt	—	

Required Files

When installing DAQMaster, necessary merge module for DASK and DAQPilot libraries are automatically installed. These are the system files for PCIS-DASK, D2K-DASK, WD-DASK, and DAQPilot runtime module. Install the corresponding software packages to learn more about sample programs for DASK libraries and DAQPilot.

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B .DAT File Format

This section describes the file format of .DAT files logged through the file system. The data file has two parts: Header and Data Block. The file structure is shown below:

Header
DAQ data

Header

The header part records information related to the stored data with total length of 60 bytes. The data structure of the file header is enumerated below:

Header (Total length: 60 bytes)			
Elements	**Type**	**Size (b)**	**Comments**
`ID`	char	10	File ID, such as ADLINKDAQ1
`card_type`	short	2	Card type. • PCI-9111DG: 20 • PCI-9111HR: 21 • PCI-9112: 22 • PCI-9113: 23 • PCI-9114DG: 24 • PCI-9114HG: 25 • PCI-9118DG: 26 • PCI-9118HG: 27 • PCI-9118HR: 28 • PCI-9810: 29 • PCI-9812: 30 • cPCI-9116: 32
`num_of_channels`	short	2	Total number of scanned channels (1, 2)
`channel_no`	unsigned char	1	Channel number where data was read from. Available only for single channel cards. (0, 1)
`num_of_scan`	long	4	Number of data for each channel.
`data_width`	short	2	Data width • 0: 8 bits • 1: 16 bits • 2: 32 bits

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Header (Total length: 60 bytes)			
Elements	**Type**	**Size (b)**	**Comments**
`channel_order`	short	2	Channel scanned sequence 0: normal (0-1-2-3)
`ad_range`	short	2	AI range code • 1: +/-10V • 2: +/-5V • 3: +/-2.5V • 4: +/-1.25V • 5: +/-0.625V • 6: +/-0.3125V • 7: +/-0.5V • 8: +/-0.05V • 9: +/-0.005V • 10: +/-1V • 11: +/-0.1V • 12: +/-0.01V • 13: +/-0.001V • 14: 0-20V • 15: 0-10V • 16: 0-5V • 17: 0-2.5V • 18: 0-1.25V • 19: 0-1V • 20: 0-0.1V • 21: 0-0.01V • 22: 0-0.001V
`scan_rate`	double	8	Sampling rate for each channel
`num_of_channel_range`	short	2	Not used
`start_date`	char	8	Starting date of DAQ (12/31/99)
`start_time`	char	8	Starting time of DAQ (18:30:25)
`start_millisec`	char	3	Starting millisecond of DAQ (360)
`reserved`	char	6	Not used

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Data Block

The data block forms the second part of the .DAT file. The data is written to file in a 16-bit binary format with the lower byte first (little endian). For example, the value 0x1234 is written to disk with 34 first followed by 12. The total length of the data block depends on the data width and the total data count.

Card Type	Data Format	Value calculation*
PCI-9111DG	Every 16-bit signed integer data: **D11 D10 D9...D1 D0** **C3 C2 C1 C0** Where D11, D10...D0 is the A/D data and C3, C2, C1, C0 is the channel numbers.	`CH# = OD & 0x0F ND = OD >>4 or ND = OD/16`
PCI-9111HR	Every 16-bit signed integer data: **D15 D14 D13...D1 D0** Where D15, D14...D0 is the A/D data.	`ND = OD`
PCI-9112 cPCI9112	Every 16-bit unsigned integer data: **D11 D10 D9...D1 D0 C3 C2 C1 C0** Where D11, D10...D0 is the A/D data, and C3, C2, C1, C0 is the channel number.	`CH# = OD & 0x0F ND = OD >>4 or ND = OD/16`
PCI-9113	Every 32-bit unsigned integer data (including 12-bit unsigned A/D data): **B31...B21 C4...C0 B15...B12 D11 D10... D0** Where D11, D10...D0 is the A/D data, C4, C3, C2, C1, C0 is the channel number, and B31 to B21 & B15 to B12 is unused.	`CH# = (OD >>16) & 0x1F ND = OD & 0x0FFF`

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Card Type	Data Format	Value calculation*
PCI-9114DG PCI-9114HG	Every 32-bit unsigned integer data (including 16-bit signed A/D data) **B31...B21 C4 C3 C2 C1 C0 D15 D14...D1 D0** Where D15, D14...D0 is the A/D data, C4, C3, C2, C1, C0 is the channel number, and B31 to B21is unused.	`CH# = (OD >>16) & 0x1F ND = OD & 0xFFFF`
cPCI-9116	Every 16-bit signed integer data: **D15 D14 D13...D1 D0** Where D15, D14...D0 is the A/D data.	`ND = OD`
PCI-9118HR	Every 16-bit signed integer data: **D15 D14 D13...D1 D0** Where D15, D14...D0 is the A/D data.	`ND = OD`
PCI-9118DG PCI-9118HG	Every 16-bit unsigned integer data: **D11 D10 D9...D1 D0 C3 C2 C1 C0** Where D11, D10...D0 is the A/D data, and C3, C2, C1, C0 is the channel number.	`CH# = OD & 0x0F ND = OD >>4 or ND = OD/16`
PCI-9812	Every 16-bit signed integer data: **D11 D10 D9...D1 D0 b3 b2 b1 b0** Where D11, D10...D0 is the A/D data, b2, b1, b0 is the digital input data, and b3 is the trigger detection flag.	`ND = OD >>4 or ND = OD/16`

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Card Type	Data Format	Value calculation*
PCI-9810	Every 16-bit signed integer data: **D9 D8 D7...D1 D0 b5 b4 b3 b2 b1 b0** Where D9, D8...D0 is the A/D data, b2, b1, b0 is the digital input data, and b3 is the trigger detection flag.	`ND = OD >>6 or ND = OD/64`

* channel no. (CH#) * A/D converted data (ND) * Value stored in the file (OD)

The file is written in binary format and may not be supported by normal text editors. You may use the DAQ Conversion Tool to view or get the file information and data value. DAQCreator can load the data file as a data source and may export the data to Microsoft Excel or CSV file format.

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