Advantech Industrial Measurement and Analysis Solutions

AMC

ADVANTECH íAutomation
Premier Partner

DAQNavi

PCIE-1800 Series
Instrumental DAQ

ADVANTECH

Enabling an Intelligent Planet

Vertrieb durch **AMC**

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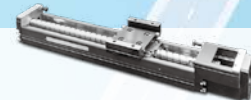## TABLE OF CONTENTS

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Key Components

Wind Turbine Blade

Linear Guides

Cooler

Valve

Vacuum Pump

surement and Analysis Solutions Overview

ADVANTECH WISE-PaaS
AIoT Solutions & Marketplace

DAQNavi

Embedded DAQ Platform	Software for all DAQ Devices	PCI/PCIE DAQ, IO and COMM Card	USB 2.0/3.0 DAQ and I/O USB Module

Semiconductor Machines

Robotic Arm

Steel Mill

Machine Tool

Wind Turbine

Motors

Pump

Bearings

Gears

Turbine

Chip Cleaning Device

AMC

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Simplify Your Test and Measurement

Get started with Advantech data acquisition solutions

PC-based test and measurement systems are now widely used in industrial equipment manufacturing applications such as device control, data acquisition, automated testing, and machine learning predictive maintenance. A reliable test and measurement solution offers optimal matching of transducers, data acquisition systems, and data analysis.

How to accurately acquire signals from machines, especially analog signal, such as vibration, sound, and strain gauges is a primary requirement to obtain effective results for data analysis and visualization.

Advantech offers a complete range of DAQ devices with data acquisition, signal conditioning, transducers, and actuators for measuring a wide variety of physical phenomenon. Moreover, Advantech's easy-to-use DAQNavi/SDK driver package and DAQNavi/MCM data acquisition and analysis software allow SI and users to easily integrate these DAQ solutions into their system and realize every task in test and measurement.

Solution Advantages

Various Form Factors

Our hardware solution has a complete range of DAQ devices in different form factors including PCI, PCIE cards, USB modules, modular DAQ system and DAQ computers for users.

Free and Easy-to-Use SDK

We provide an user-friendly software development kit for application development with APIs to configure and control DAQ devices. The SDK also provides supporting documents and utilities for developers to test and debug.

Data Acquisition and Analysis Software

DAQNavi/MCM provides a graphical interface to easily set up acquisition parameters. Customers can quickly build the test and measurement application. DAQNavi/MCM also provides an analysis module for the customer to better analyze data.
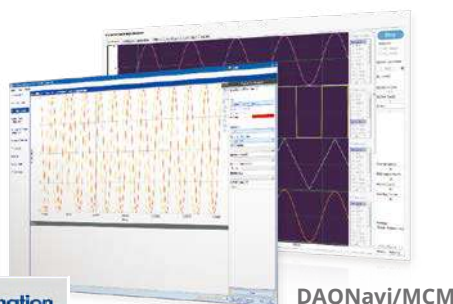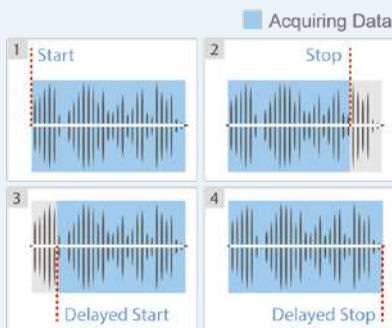
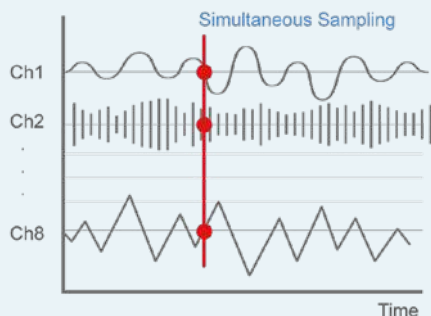DAQNavi/MCM

Technology Highlights

Flexible Trigger Options for Precise Acquisition

In high speed data acquisition, a trigger is a significant function to avoid acquiring useless data. Advantech DAQ modules provide flexible digital and analog trigger functions for precise acquisition. Users can set levels, edge or delay parameters to start/stop the sampling function.

Dynamic Signal Generation

In test and measurements applications, users may need different analog output signals to trigger or control the device. Our products have arbitrary waveform generators to produce various waveforms or user-defined waveforms to meet different analog outputs requirements.
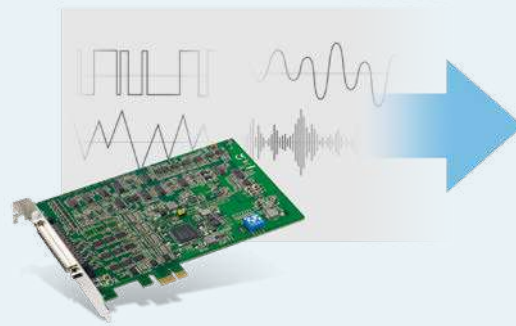
Multichannel Simultaneous Measurement

Simultaneous sampling devices have an ADC for each analog input channel and can sample from all channels at the same time. This feature is important for applications, which will do further analysis such as for vibration, sound and strain measurement. Take a vibration measurement for example, the sensor signal of X, Y and Z axis must be sampled at the same time to perform the vibration analysis.

Direct Sensor Connection for Signal Processing

In sound, vibration and strain measurement scenarios, signal interfaces like the IEPE current, bridge, or even DC power is necessary. Advantech designs several models with IEPE and bridge functions so that users do not need to connect extra signal interface modules to adapt a sensor with DAQ devices. Sensors can be directly connected with DAQ cards.
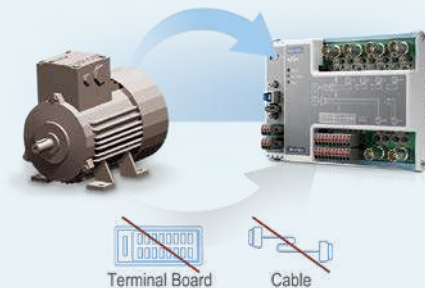
Selection Guide

Measure Type	Model	Form Factor	Channels	Resolution (Bits)	Sampling Rates(S/s)
Voltage: Multiplexed	PCI-1716	PCI Card	16	16	250 k
	PCIE-1816	PCIe Card	16	16	1 M
	USB-4716	USB Module	16	16	200 k
	MIC-1816	DAQ Computer	16	16	1 M
	iDAQ-817	Modular DAQ System	8	16	200 k
Voltage: Simultaneous	PCIE-1812	PCIe Card	8	16	250 k
	iDAQ-841	Modular DAQ System	8	16	1 M
	PCIE-1805	PCIe Card	32	16	1 M
Current	USB-5817	USB Module	8	16	200 k
	iDAQ-817	Modular DAQ System	8	16	200 k
Sound and Vibration	PCIE-1803	PCIe Card	8	24	128 kh
	iDAQ-801	Modular DAQ System	4	24	256 k
	USB-5801	USB Module	4	24	192 k
	MIC-1816R	DAQ Computer	12	16	1 M
Position and Displacement	PCI-1784U	PCI Card	4	-	-
	PCIE-1884	PCIe Card	4	-	-
	PCIE-1813	PCIe Card	4	26	38.4 k
Strain, Pressure, and Force	PCIE-1812	PCIe Card	8	16	250 k
	PCIE-1813	PCIe Card	4	26	38.4 k

# Advantech IC Test Handler Machine Automation Solution

Wafer testing is a crucial step performed during semiconductor device fabrication. It is performed by a piece of testing equipment called a wafer prober. The process of wafer testing can be referred to in several ways: Wafer Final Test (WFT), Electronic Die Sort (EDS) and Circuit Probe (CP) are all common. This project demanded advanced data acquisition devices to activate wafers and measure their electronic characteristics. Advantech's solution included high sampling rate analog input cards, and a convenient software development kit that satisfied technical requirements. This comprehensive solution effectively controlled costs and shortened development time for IC wafer testing machines.

Requirements

- 8-ch analog inputs with a simultaneous 250KS/s sampling rate.
- Analog outputs with 16-bit resolution to activate wafers.
- High-density DIO card satisfies precise position requirements.

Diagram
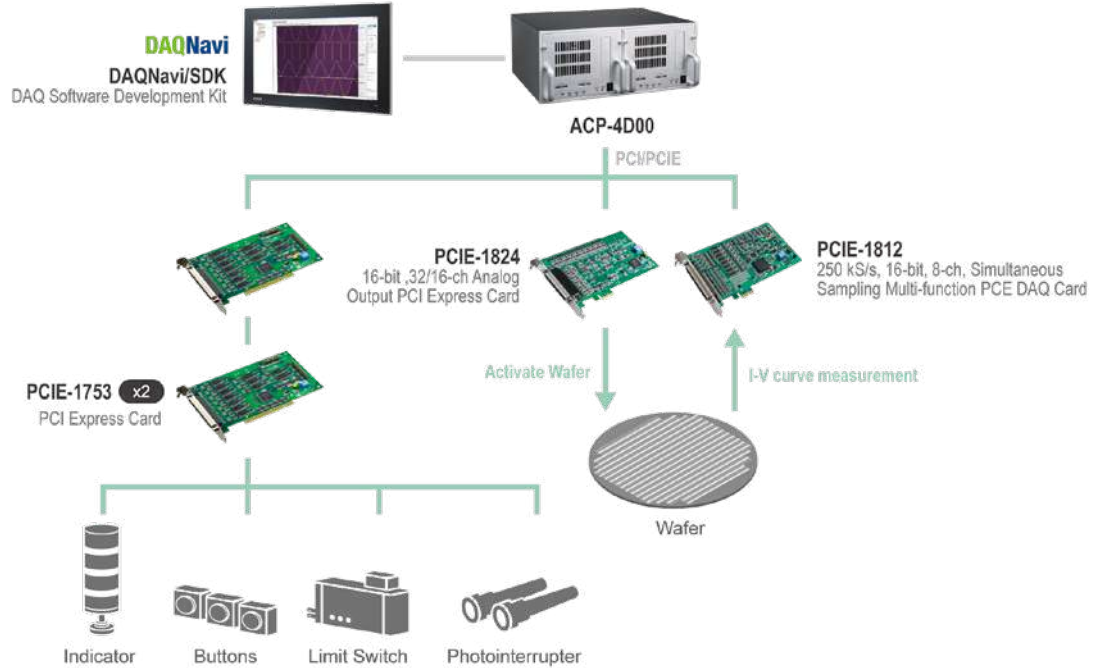
Benefits

- High-performance AI and AO precisely execute wafer activation and measurement.
- All digital input channels support interrupts to realize real time control.
- Advantech solution guarantees system compatibility, with easy-to-use SDK for application development.

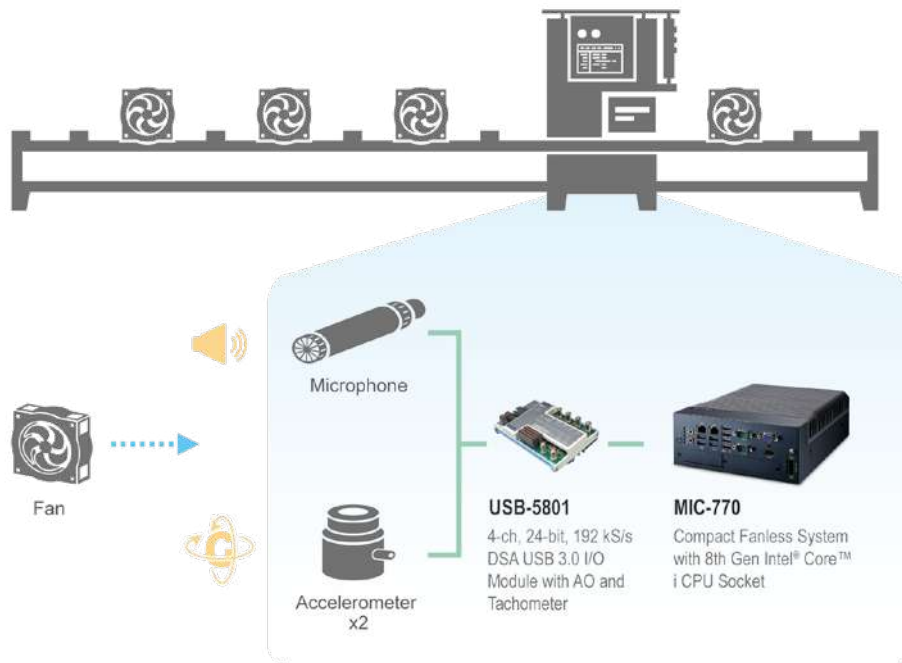# Vibration and Noise Testing Solution for Fan Maker

In product manufacturing, quality testing is crucial for ensuring that the final product received by customers meets the required standards. When building cooling fans for electronic products, after assembly, high-precision fans must be assessed not only for normal operation, but also to measure the vibration and noise caused by the bearing turning the fan blades in order to evaluate the overall product quality. Therefore, sensors, an accelerometer, and a microphone are necessary for collecting vibration and noise data to conduct fan quality testing. Previously, quality testing of multiple production lines in fan production plants necessitated the installation of data acquisition cards into box PCs via PCIe bus. However, this solution is not only expensive, but also requires a comparatively larger computer, which overcrowds the already limited space of production lines. Additionally, the connection between the acquisition card and the port can be unstable, and interruptions in connection will impact data transmissions.

Requirements

- A compact hardware platform capable of supporting numerous production line test points.
- IEPE signal conditioning and BNC adapters for the accelerometer and microphone.
- Able to collect signals from multiple sensors through multichannel and high-resolution analog inputs.

Diagram

Microphone

Fan

Accelerometer x2

USB-5801
4-ch, 24-bit, 192 kS/s DSA USB 3.0 I/O Module with AO and Tachometer

MIC-770
Compact Fanless System with 8th Gen Intel® Core™ i CPU Socket

Benefits

- Box PC combined with USB-5801 make it ideal for limited-space installations.
- USB-5801 24-bit resolution meets the requirements for IEPE type accelerometers and microphones.
- The Box PC network port is then used to transmit quality test reports to the backend system for integrated management.

Foresee Problems and React Quickly

Fix Failures Before They Happen

Through anomaly detection of vibration, mechanical device performance can be identified to decline. That is the reason why vibration sensing is essential for predictive maintenance. Advantech provides comprehensive products for vibration sensing, including wireless sensor nodes, vibration gateways, USB modules, PCI/PCIE cards and all-in-one integrated DAQ platforms. DAQNavi/MCM is an analysis software that provides a perfect match for these devices. It provides a time/ frequency (FFT) domain waveform viewer, data logger, and communication functions. Advantech vibration solution makes vibration sensing and analysis quick and easy.

Solution Advantages

Various Form Factors

Our hardware solution has a complete range of DAQ devices in different form factors including PCI, PCIE cards, USB modules, modular DAQ system and DAQ computers.

Integrated Machine Condition Monitoring Software

DAQNavi/MCM is an integrated application software that provides easy sensor signal acquisition, signal analysis, feature extraction, data management and interpretation, and alerts notification.

Engineers or system integrators can configure settings for different applications. The software also provides remote management function for users to easily manage the whole system from commissioning, configuration to monitoring.

DAQNavi/MCM: Machine Condition Monitoring Software

Technology Highlights

Flexible Trigger Options for Precise Acquisition

Simultaneous sampling devices have an ADC for each analog input channel and can sample from all channels at the same time. This feature is important for applications, which will do further analysis such as vibration, sound, and strain measurements. Take vibration measurement for example, the sensor signal of X, Y and Z axis must be sampled at the same time to make the vibration analysis.
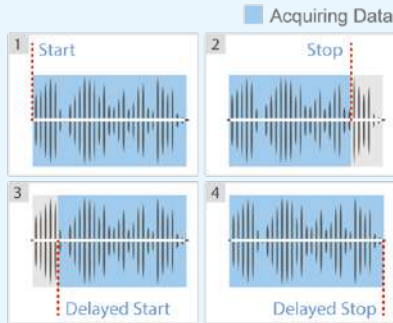
Direct Sensor Connection for Signal Processing

In sound, vibration, and strain measurement scenarios, signal interface like IEPE, bridge, or even DC current is necessary. Advantech designs several models with IEPE and bridge functions so that users don't need to connect extra signal interface modules to adapt the sensor with DAQ devices. Users simply set and connect the sensor directly with the DAQ card.

High Dynamic Range

In order to accurately acquire all strong and weak signals, high dynamic ranges are needed. Our products provide fast acquisition rates of up to 125MS/s and 24-bit A/D conversion, as well as the best linearity of the signal conditioning, which offers the highest dynamic performance across the whole input range for all your dynamic applications.
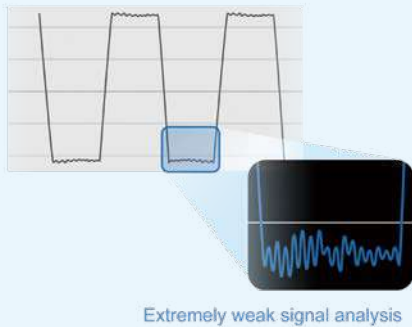
Synchronization

The synchronization function synchronizes all the clock and triggers together for all the DAQ cards in the system. This function ensures every single sampling of different DAQ devices happens at the same time, so that the users could align them onto the same time line.

Selection Guide

Measure Type	Model	Form Factor	Channels	Resolution (Bits)	Sampling Rates(S/s)
IEPE	USB-5801	USB Module	4	24	192k
IEPE	PCIE-1803	PCIE Card	8	24	128k
IEPE	MIC-1816R	DAQ Computer	4	16	1M
MEMS	USB-5817	USB Module	8	16	200k
MEMS	PCIE-1816	PCIE Card	16	16	1M
MEMS	WISE-750	DAQ Module	4	16	200k
Voltage & Current	PCIE-1805	PCIE Card	32	16	1M
Voltage & Current	MIC-1810	DAQ Computer	16	12	600k
Voltage & Current	MIC-1816	DAQ Computer	16	16	1M

# Prognostic Health management System for China Steel

Develop a smart, problem-oriented analysis system that uses the Internet of Things (IoT) to remotely monitor a facility in real time, and quickly convert large amounts of data into useful information for facility management, as well as anomaly detection. The system must also improve overall facility efficiency, save energy, reduce carbon emissions, and enhance work place safety.

Requirements

- Acquire vibration signals as a key indicator for information such as wear, imbalance, misalignment, impact loading and bearing faults.
- Fully compatibilty with NI Labview.

- Simulteneous channel and multi-board synchronization are needed.

Diagram
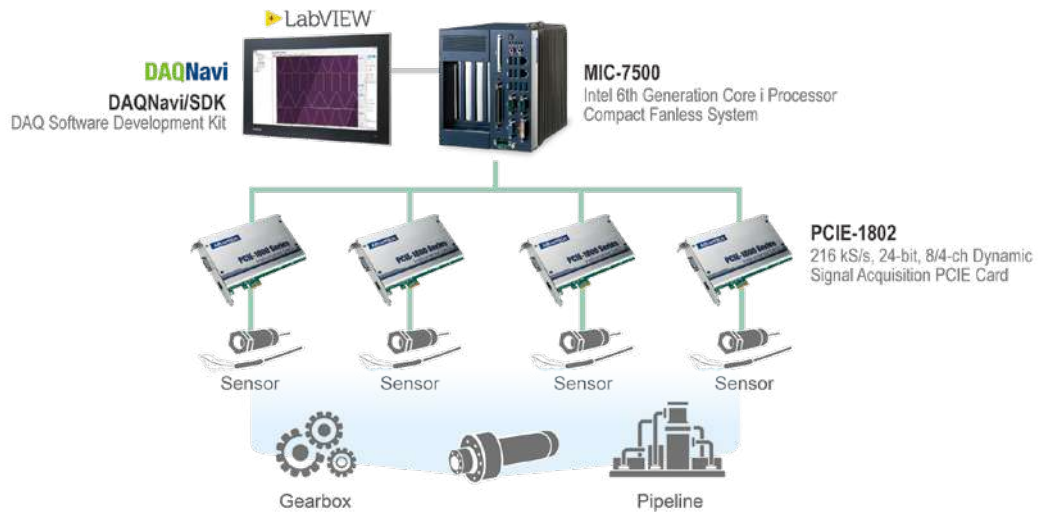
1. Steel Making
- Electric arc furnace
- Basic oxygen furnace
- Continuous casting machine
- Breakdown mill

2. Rolling
- Hot rolling mill
- Rolling mill
- Stainless production mill

3. Cold Rolling
- Cold rolling mill

4. Finish Steel Products
- Stainless sheet
- Structural steel
- Cold rolled coil and sheet

Benefits

- PCIE-1802 24-bit resolution with outstanding noise depression meets the requirements for IEPE type accelerometers
- Visualizes potential failures on critical equipment.
- Guaranteed system compatibility with easy-to-use SDK for quick development.

High Price-Performance Ratio Solution for Plant Steppers

The panel manufacturer's stepper parameter monitoring function always had time difference issues. The main reason was that the signal-measuring instrument provided by the stepper was costly, so the plant merely installed a single measuring device for its multiple stepper devices. The staff only adjust and monitor parameters when changing the production line for different products.
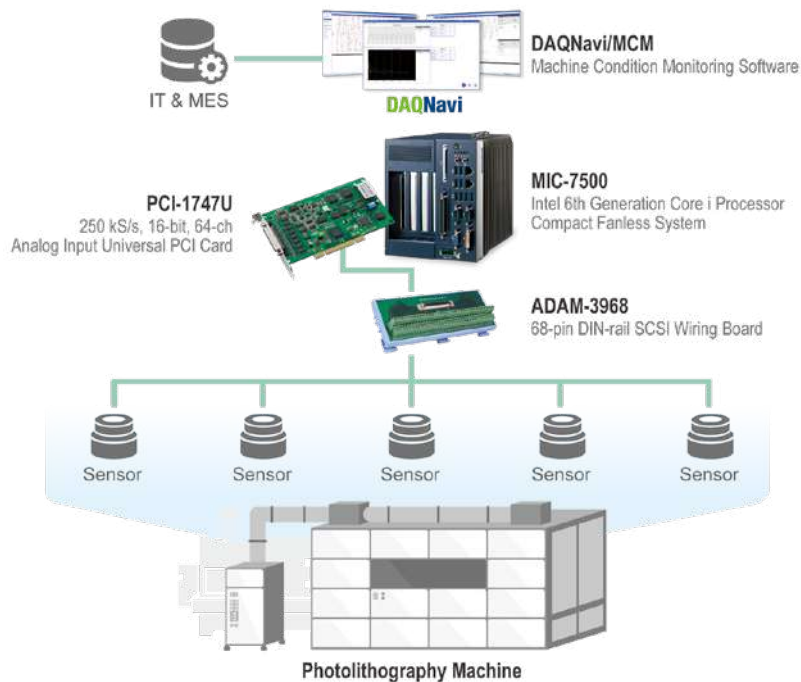
Considering the high price of the measuring instruments, the panel manufacturer decided to purchase software and hardware to build a real-time monitoring system by itself to reduce costs. The system captures key parameters that affect the process through the stepper sensors, and they learn parameter variation issues by constant monitoring.

Requirements

- Simple data visualization software supports workload development.
- Displays captured data as waveform images, along with all channel data.
- Offers threshold alarm setups and functions to inform of any anomalies.

- Uploads daily data for analysis by higher IT systems to improve manufacturing processes.
- Multi-channel data capture card for collecting multiple signals from each stepper.

Diagram

DAQNavi/MCM
Machine Condition Monitoring Software

IT & MES

DAQNavi

PCI-1747U
250 kS/s, 16-bit, 64-ch
Analog Input Universal PCI Card

MIC-7500
Intel 6th Generation Core i Processor
Compact Fanless System

ADAM-3968
68-pin DIN-rail SCSI Wiring Board

Sensor   Sensor   Sensor   Sensor   Sensor

Photolithography Machine

Benefits

- Comprehensive solution with all the necessary software and hardware.
- Short setup time with easily implemented DAQNavi/MCM.

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Advantech Data Acquisition Solutions Overview

As a leading supplier of data acquisition products worldwide, Advantech offers a wide range of I/O devices with various interface and solutions from signal conditioning modules, plug-in PCI/PCIE cards, portable USB modules, DAQ-embedded computers, and modular DAQ systems as well as DAQNavi/SDK software development package and DAQNavi/MCM machine condition monitoring software. Advantech's industrial I/O products are designed for all kinds of industrial automation applications from machine automation control, test measurement, to machine condition monitoring.

Selection Guide

Conditioned Signal — **Data Acquisition Hardware**

DAQ-embedded Computer

MIC-1800 series units are standalone embedded computers with integrated data acquisition modules and signal conditioning to provide digital I/O, analog I/O, and counter functions. The palm-sized design with built-in terminals is suitable for space-limited applications.
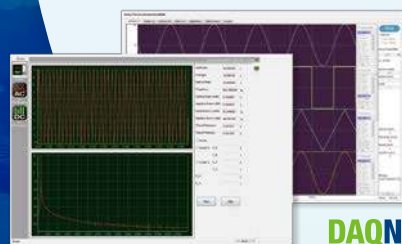
* All-in-one anti-vibration solution

DAQ Cards

Advantech offers dedicated products for USB, PCI, PCI Express, ISA, CompactPCI, PC/104 or PCI-104 interfaces. So regardless if the platform is an IPC, embedded PC, desktop computer or laptop, customer requirements are covered.

* For high channel count measurement

Digital Data — **Data Acquisition Software**

Software Development Package

DAQNavi/SDK, Advantech's driver package, delivers higher performance, compatibility, and reliability through a brand new driver and SDK.

* For a flexible system development

DAQNavi

Signal Conditioning

Analog Signal

Signal Sensing

Physical Properties

Signal Conditioners

Advantech signal conditioners provide sensor and signal conditioning on a per-module basis for various types of sensors signals.

* For noise filtering

Equipment

Sensor

DAQ-embedded Modules

PHM solution-ready, WISE-750 built-in DAQ and AI-based modeling can diagnose any vibrated-equipment without programming.

* Predictive maintenance solution-ready package

USB DAQ Modules

Advantech's USB DAQ modules are famous for user-friendly design and ability to replace traditional serial and parallel devices as they eliminate the need for external power and allow hot swapping.

* For portable and plug-and-play application

Modular DAQ System

iDAQ is a modularized chasssis design that is fast-to-install and easy-to-expand. Modular DAQ systems seamlessly integrate into your equipment.

* Modular and plug-and-play design for flexible expansion, installation, maintainance and suitable for mixed-measurement type application

Application Software

DAQNavi/MCM is an integrated application software based on DAQNavi/SDK. It provides easy sensor signal acquisition, signal analysis, feature extraction, data management and interpretation, and sends alerts. Engineers or system integrators can configure settings to meet the needs of different applications.

* Solution-ready software for various test and measurment, and machine condiction monitoring applications
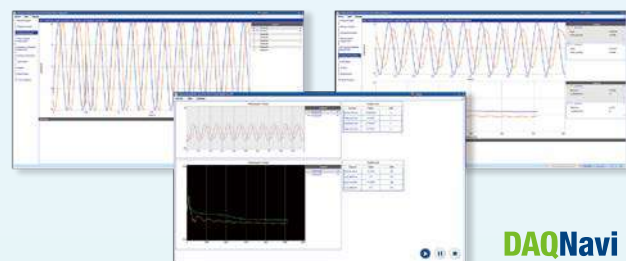
DAQNavi

DAQNavi/SDK Greatly Shortens Your Development Time

DAQNavi

Software development kit for application development with APIs to help configure and control DAQ devices. The SDK also provides supporting documents and utilities for testing.

Features

Reliable Multi-Thread Programming

DAQNavi's thread-safe programming technology prevents problems occurring in multi-thread programming like system crashes or data errors.

LabVIEW Programming Support

LabVIEW lets programmers visually build DAQ applications with DAQNavi Assistant and Polymorphic VI using a simple graphical programming approach.

Easy-to-Use Utility

DAQNavi provides Advantech Navigator, an integrated utility where programmers can perform hardware configuration and functionality testing without programming. Everything necessary for DAQ programming is provided in this utility including hardware manual and software library documentation.

Latest Operating System Support

DAQNavi adheres to the latest Windows (32-bit and 64-bit) and Linux operating system requirements. In addition, DAQNavi software design helps programmers easily migrate their DAQ applications between OS, without spending lots of time solving compatibility issues.

Supports Multiple Programming Languages

For DAQ application development, DAQNavi supports multiple popular programming languages including C/C++, Visual Basic, C#, VB.NET, Python, Delphi, Qt, Borland C++ Builder (BCB), Java, MATLAB and LabVIEW.

Component-based Programming

The API style follows the hardware design with methods, properties and events for each function. DAQNavi API is designed for programmers to shorten development time.

DAQNavi/MCM Enables Easy Machine Condition Monitoring

DAQNavi

Condition Monitoring

Intelligent Inspection

Oscilloscope

DAQNavi/MCM is an integrated application software based on DAQNavi/SDK. It provides easy sensor signal acquisition, signal analysis, data management, and alerts. Engineers or system integrators can configure settings to meet the needs of a multitude of different applications.

Features

Real-time Online Condition Monitoring
- Acquires and analyzes massive quantities of dynamic signals
- Data interpretation and alarm function
- Provides data management such as storage, search, comparison, and playback

Reduce Maintenance Cost; Increase Machine Uptime
- Keeps abreast of machine condition to reduce downtime
- Monitors key components instead of replacing parts based on a calendar or routine system
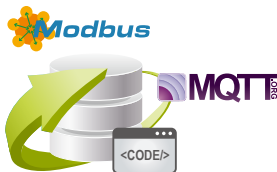
Save Development Time and Human Resources
- Easy setup without programming
- Provides plenty of algorithms for data analysis

Remote Monitoring and Management
- Provides remote management interface for monitoring, project management, and configuration
- Account management according to different user identities

Data Accessability
- Provides communication protocols for data upload/inquiry: Modbus/MQTT
- Data accessable through a client library for external programs to integrate DAQNavi/MCM data with existing systems

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Expand Test Coverage and Applications with Flexible and Modular DAQ System - iDAQ series


Scalable and Synchronized

iDAQ is a flexible data acquisition system with a compact and rugged design. It consists of a iDAQ Chassis and iDAQ I/O modules. iDAQ systems are constructed from cast aluminum to withstand operating temperatures from -20 °C to 60 °C and up to 30 g of shock. They are offered with a wide variety of iDAQ modules that support different measurement types including voltage, current, temperature , vibration, and sound.

Features

Compact Size

This chassis is 100 x 178 x 71 mm, which is compact enough to be placed in many space limited places like machine cabinets.
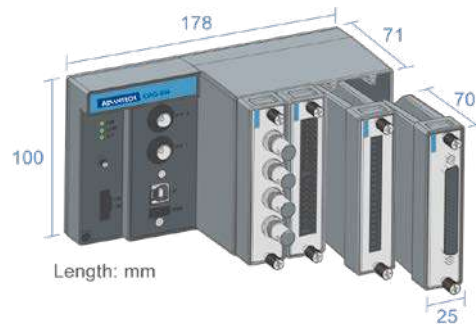

Safety

The iDAQ system uses aluminum alloy for the enclosure, which provides significant EMI immunity. This ensures modules won't be effected by external disturbance coming from radiation. All the modules feature surge and ESD protection, which protects the device from possible damage from the environment.

Anti-Vibration

DB15 connectors are used to connect the module and chassis tightly, which ensures the iDAQ system is super reliable, even in high vibration environments.

Portable and
Plug-and-Play
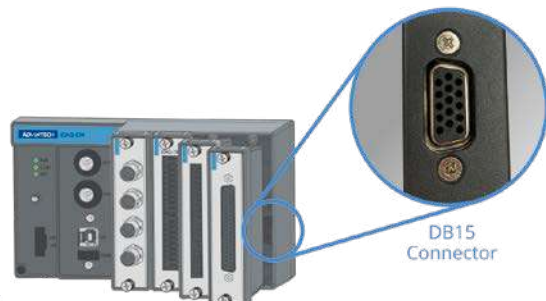
Modular for Mixed
Sensor Measurements

Features

Flexibility

With iDAQ chassis and a wide variety of iDAQ modules, you can customize your DAQ system for different application requirements. This is especially suitable for mixed-measurement type applications.

Synchronization

All I/O modules can be synchronized to the clock in the backplane of the chassis. With this design, you can sample all of channels simultaneously. Besides, iDAQ chassis provides two timing engines allowing users to run different I/O modules simultaneously with independent rates.

Expandability

Supports daisy chaining of up to five chassis, which eliminates the need for additional USB hubs to expand the I/O.

# Plug-and-Play
USB DAQ Modules

USB-4700 Series

USB-5800 Series

Advantech's USB-5800/4700 series USB DAQ modules are suitable for diverse industrial applications that require easy-to-install portable I/O capabilities. With plug-and-play USB interface, users can easily extend or upgrade their system's I/O functionality, especially ideal for systems without PCI/PCIe slots.

Features

Ease of Use

- Detachable screw terminal with on-module pin assignment index
- The front-facing LED indicators, ID switch, and terminal blocks provide convenient access for easy installation and maintenance (USB-5800 series only)
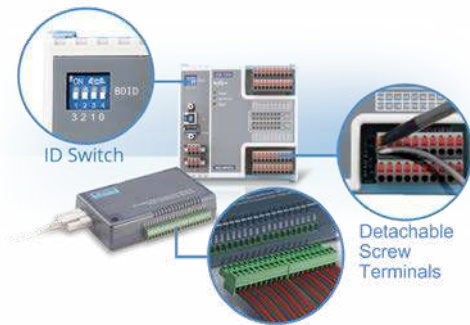
Safety and Reliability

- Advantech provides lockable USB cables to prevent them from being unplugged accidentally.
- Equipped with Level 3 electrostatic discharge and surge protection. (USB-5800 series only)
- Features advanced functionalities, such as auto recovery, output-locker, and link reconnection, to ensure zero failures. (USB-5800 series only)

Expandability

Supports daisy chaining of up to five modules, which eliminates the need to adopt a USB hub to expand the system I/O. (USB-5800 series only)

Predictive Maintenance Made Easy with Intelligent Vibration Sensing Gateway

More and more industries realize the importance of implementing predictive maintenance solutions, but many companies or owners of assets lack the capability to set something up by themselves. Advantech provides a total solution from high-accuracy accelerometer for sensing and collecting vibration, and WISE-750 intelligent machine-learning vibration gateway for edge computing and data acquisition, to an integrated AI utility for users to build machine learning models without expertise or complex customization.

Features

One-Stop Solution for Predictive Maintenance

From sensor (accelerometer), data acquisition (ADC), edge computing (inference firmware) to AI utility (machine learning software), Advantech offers trouble-free and well-integrated solutions for customers to easily deploy a PM system.
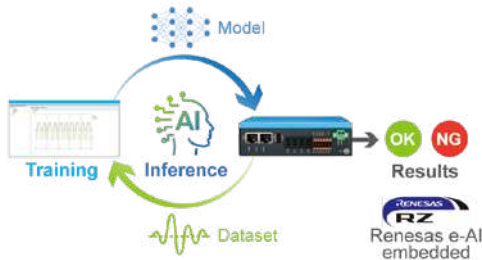

1. Vibration Signal Detection — Vibration Measurement — Accelerometer PCL-M10

2. Data Acquisition + Edge Computing — Intelligent Vibration Sensing Gateway WISE-750

3. Machine Learning Software for Building Models — Machine Learning Software AI Utility

Easily Deploy Machine Learning Models

AI utility for users to easily build machine learning models for a variety of vibration measurement applications. Users can build custom machine learning models without machine learning expertise.

Cost-performance Compatible Solution

A vibration sensor designed to provide a cost-performance compatible solution, so no more endless searching for suitable and cost-effective sensors.

Industry First Embedded Data Acquisition Computer

Advantech MIC-1810 and MIC-1816 are the industry's first embedded data acquisition computers with signal conditioning and processing transducers integrated into a PC-based control platform. The MIC-1800 series come in a palm-sized footprint for easy in-cabinet placement with a fanless design, which is ideal for space-limited applications. The series also supports Advantech's WebAccess/MCM and DAQNavi software for easy system setup without programming.
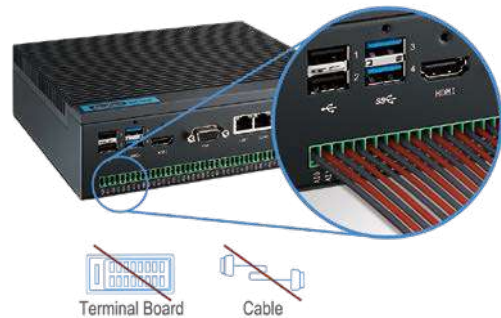
Features

Palm-Sized

The MIC-1800 is a palm-sized, fanless DAQ embedded system that occupies only 200 x 156 x 56 mm, for easy in-cabinet placement.
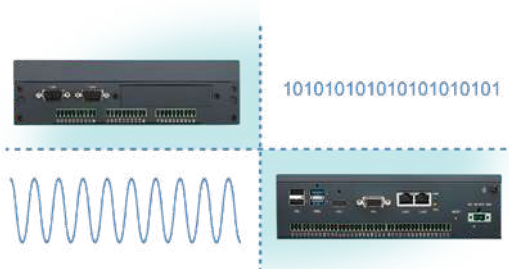

Easy Wiring

The detachable wiring terminals facilitate installation without special cables or terminal boards.


Terminal Board   Cable

Multifunction I/O

All the analog input, analog output, digital input, and digital output functions are integrated into the MIC-1800 series. One module delivers multiple functions.

Software Support

Advantech provides a free software development kit (DAQNavi) and machine condition monitoring software (DAQNavi/MCM) to help customers develop applications easily.

DAQNavi
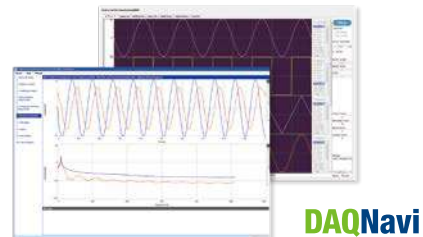
# Increase Test Speed and Reliability with High-Performance DAQ Cards

PC-based testing and measurement systems are widely used in IEM applications such as monitoring, control, data acquisition, and automated testing. Dependable results require optimal matching of transducers, data acquisition systems, and software. Advantech provides various PCIe cards to cover different applications such as voltage, current, and vibration measurement. DAQNavi is a next-generation software and driver package that helps programmers develop their own application programs. Advantech delivers comprehensive hardware plus software solutions to fully addresses customer needs.

Features

Full Spectrum of DAQ Cards with Best-in-Class Performance

- High-speed: sampling rates up to 125 MS/S
- High-accuracy: resolution up to 26 bits
- High-density: Up to 64-ch in one card
- Synchronization: simultaneous acquisition
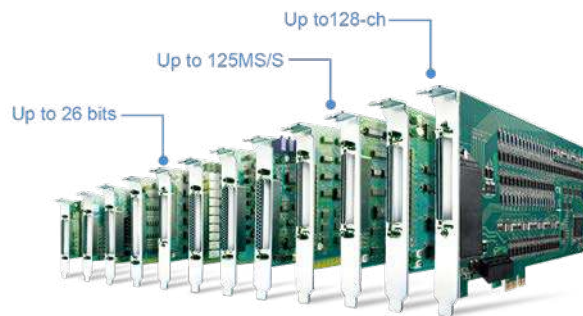
Domain-Focused Applications

- Sound and vibration – built-in IEPE function
- Strain, pressure, and force – supports bridge input
- Position, surface, and round measurement – encoder synchronized with analog input

Free DAQ SDK Tool to Shorten Development Times

- Latest operating system support: Win7, Win10, and Linux
- Supports multiple programming languages: C/C++, Visual Basic, C#, VB.NET, Python and LabVIEW
- Guaranteed reliable execution for multi-thread programming

# The Broadest Range of Digital I/O Cards

Machine automation applications typically require high-performance digital input, digital output, and relay output cards for integrating and managing peripheral devices. Advantech provides a whole series of digital I/O cards with a variety of functions to meet all the digital I/O needs of your test and control applications, including automotive design, industrial factory automation, and machine control.

Features

Advanced Functions Overcome Harsh Environments

- Digital filters eliminate environmental noise, such as chattering from input signals.
- 2500 VDC isolation voltage protection
- Provides an interrupt function for a faster and more flexible response
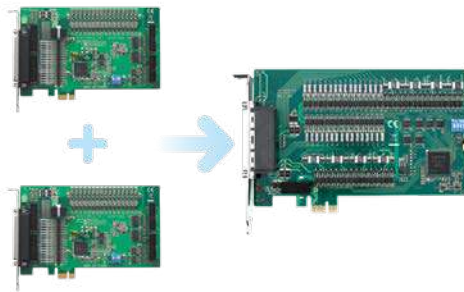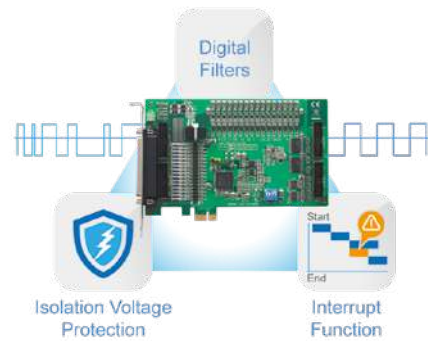
Cost-optimized Solution with High Density I/O

High density design with dedicated 128-ch isolated digital I/O on a single board, helping save space for more efficient installation.

Free DAQ SDK Tool to Shorten Development Times

- Latest operating system support: Win7, Win10, and Linux
- Supports multiple programming languages: C/C++, Visual Basic, C#, VB. NET, Python and LabVIEW
- Guaranteed reliable execution for multi-thread programming

DIN-rail Mountable Signal Conditioning Modules

The ADAM-3000 Series consists of the most cost-efficient, field configurable, isolation-based, signal conditioners on the market today. The modules are easily installed to protect your instruments and process signals from the harmful effects of ground loops, motor noise, and other electrical interference.

Features

Three-way Signal Isolation

Three-way (input/output/power) 1,000 VDC isolation.

Easy Daisy Chain Power Wiring

Power can be connected conveniently from adjacent modules.

Field Configurable I/O Range

The I/O range can be configured on-site with switches inside the module.

Small Dimensions & DIN-rail Mounting

Saves space and can be easily mounted on a DIN-rail.