

# Alliance Partner Network

## Vibration Monitoring System for Rotating Machinery

“I’ve been using a vibDaq four-channel vibration analyzer in my practice since January 2010. With the support from Cal-Bay, I’ve been able to log and analyze torsional and linear vibration signatures simultaneously for a thorough look at the vibrations present in diesel engine and electric motor systems.”

– Paul Zubritsky, President,  
Advanced Vibration Solutions

Vibration monitoring can be applied to a wide variety of machinery across industries. These types of machines need to be tested during design, assembly, and normal operation. Additionally, vibration monitoring tools can be used to measure environmental vibrations in sensitive applications like semiconductor manufacturing or in cases of potential disturbances to surrounding facilities, such as building construction.

### vibDaq Transient Solution

vibDaq Transient, designed by Cal-Bay Systems, is a vibration monitoring solution for the easy data collection and reporting of rotating machinery activity during transient events. The hardware connects to the PC via USB, making this system easy to use with a laptop computer. Inputs are available for proximity sensors, accelerometers (IEPE compatible), and tachometers. The tachometer input can be used to measure phase and angular displacement.

## Cal-Bay Systems and the vibDaq Platform

Cal-Bay Systems has been providing vibration solutions to large multinational organizations as well as small companies and consultants for over 10 years. With a focus on vibration systems that are based on LabVIEW and use National Instruments hardware, Cal-Bay Systems has developed a wide range of vibration monitoring solutions for the vibDaq platform. View all vibDaq solutions at [calbay.com](http://calbay.com).



Purchase and download vibDaq Transient software on the LabVIEW Tools Network at [ni.com/labviewtools](http://ni.com/labviewtools).

## Hardware Features

Both the portable and professional vibDaq Transient series use commercial off-the-shelf National Instruments hardware for performance, reliability, low cost, and expandability. This system's main hardware features include the following:



Parameter Name	Portable Series (NI 9234/9233/9215A)	Professional Series (NI PXI-4472B)
Channel Count	4 to 32	8 to 56
Acquisition Rate	Up to 51.2 kHz per channel	Up to 102.4 kHz per channel
Acquisition Method	Simultaneous	Simultaneous
Analog-to-Digital Resolution	24 bits	24 bits
Input Ranges	±5 V	±10 V or ±31.6 V
Input Coupling	AC or DC	AC or DC
IEPE Power	Software selectable per channel	Software selectable per channel
Antialiasing Filter	Yes	Yes
Sensor Connections	BNC	SMB (SMB to BNC Cables Provided)

## Software Features

Based on NI LabVIEW software, vibDaq Transient software uses the newest signal processing and order tracking algorithms. It analyzes vibration data using even-angle resampling to provide the most accurate angular resolution possible. With floating windows, users can view a wide variety of plots (time domain, tabular, FFT, orbit, Bode, polar, waterfall, cascade, shaft centerline, trend, and so on) through either live or logged data. They can log data based on criteria they define and play it back for later analysis. Other software features include the following:

- Startup and coastdown recording, order tracking, and overall and gap voltage measurements
- Stream-to-disk digital waveform recording
- Easy data presentation; common plots such as FFT/order, Bode, polar, shaft centerline, and waterfall
- Support for proximity probes, accelerometers, velocity probes, and optical tachometers among others



The NI Alliance Partner Network includes more than 600 companies worldwide who provide solutions based on the NI approach to graphical system design. As a Platinum Alliance Partner, **Cal-Bay Systems**, holds the most distinguished membership level, requiring extensive expertise in meeting a wide range of application challenges.

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