



# Chameleon Data Acquisition Solution

## A Software Solution That Simplifies Complex Structural Test Systems and Data

Chameleon's unique architecture provides incredible power and flexibility with an easy-to-use interface. Other data logging solutions can be overly complex and inflexible, but Chameleon provides the same intuitive interface, whether you're configuring low-channel count (10–100) systems, high-channel count (1,000+) systems, or anything in between.

Chameleon offers compatibility with a wide variety of NI controllers and data acquisition modules so you can configure a system to meet your specific application requirements. Have your system up and running in minutes, acquiring static and dynamic signals at multiple sample rates from a variety of sensor types.

PVI Systems, the makers of Chameleon, also offers the ability to customize and modify this software to meet your needs. PVI Systems has worked with numerous test groups to add sensor types, data export formats, and custom display options to ensure Chameleon works for you.

### Key Applications

#### Products Tested

- Aircraft engine assemblies and components
- Spacecraft/satellites
- Naval vehicles
- Infrastructure/civil engineering

#### Test Types

- Design validation
- Structural test—static, fatigue, and dynamic
- System health monitoring

#### Sensors

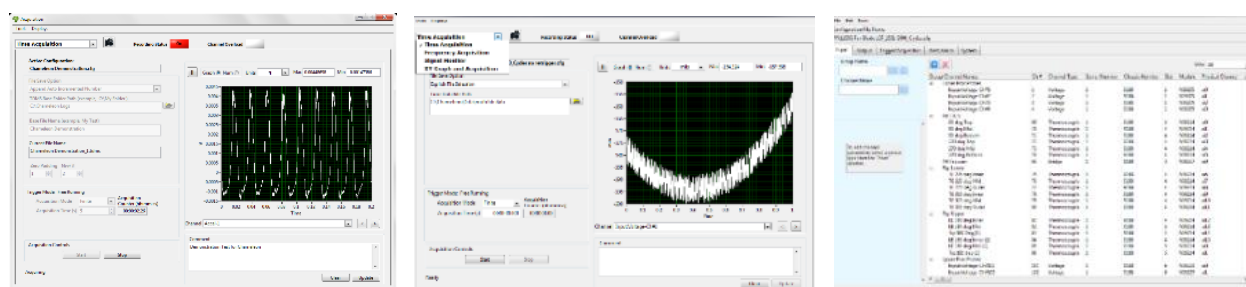
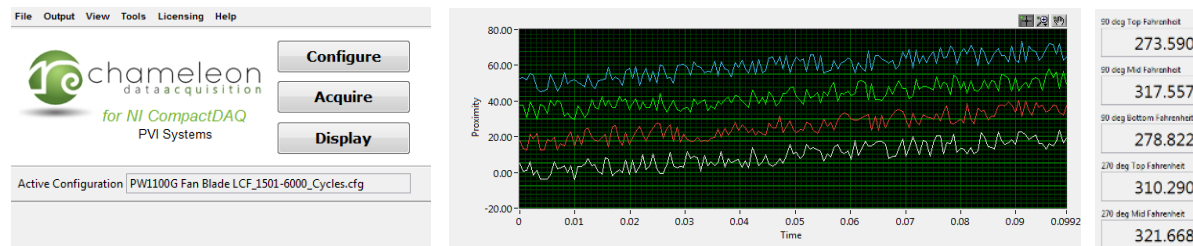
- Strain, load, and pressure
- Voltage and position
- Temperature
- Accelerometers
- And many more

### Key Features

- Single or multiple node configurations using MXI, USB, or Ethernet with cross-chassis time synchronization
- Simple, intuitive, out-of-the-box setup and operation
- Long-term continuous data recording into multiple files with no loss of data
- Data visualization tools that include multiple traces and graphs built with live or prerecorded data
- Data export for post-test analysis—CSV, DIAdem Technical Data Management Streaming (TDMS), MathWorks MATLAB® software, and tab delineated text
- Mixed configurations: microphones, accelerometers, bridge sensors such as load and strain, LVDTs, current, and thermocouples
- Calculated virtual channels and equation builder with editable on-the-fly while recording
- Channel alarms with visual, audible, or digital output indicators
- Analog output with predefined or arbitrary waveforms
- Automatic re-triggering for repeated measurements with incremental data file naming

## CHAMELEON SOFTWARE PANELS

Chameleon includes packaged software panels for configuring input/output channels, data acquisition, display, processing, export, and more.



SPECIFICATIONS		
System Configuration		
Scalability to 1,000+ channels	Multiple control head and chassis configurations with distributed controllers or MXI interface	NI PXI and PXI Express, NI CompactDAQ, and NI FieldDAQ™ hardware platforms
Measurements		
Measurement recipe management	Strain and bridge sensor calibration (offset and gain adjustment)	Voltage, IEPE, strain, bridge-based, thermocouples, RTDs, current, resistance signal types
AC or DC coupling	Strain features designed specifically for structural testing, including null offset, shunt calibration, and more	A/D, D/A conversion up to 24-bit with 118 dB dynamic range
Timing		
Multiple-chassis time synchronization	Synchronization with inter-channel skew as low as 5 ns	Sampling rates from less than 1 S/s up to 2MS/s
	Mixed sample rates across modules with variable data-logging rates that update on the fly	External timing source GPS, IEEE 1588, IRIG-B

"We have been using Chameleon for over seven years for our large channel count structural testing system. A high-quality, stable turnkey data acquisition software, it provided the features we needed to support our testing applications. Over time, as our needs evolved, PVI Systems supplied exceptional assistance, furnishing our Chameleon test system with additional features."

Structural Test Department, a national research university

## System Integration on Your Terms

PVI Systems is a Gold NI Systems Integration Partner providing customized engineering solutions in data acquisition, test and measurement, machine vision, and process and motion control. From software architecture to system-level hardware design, PVI Systems focuses on developing the most effective solutions, resulting in critical benefits for our customers. We implement the highest standards in every project through “Engineered Excellence”—a process that starts from a fundamental understanding of the problem to determine the best and most innovative path to the solution and continues through project completion and delivery. We believe constant communication and interaction between our engineers and our customers are crucial to the success of each project and key to building valuable and trustworthy relationships.

To learn how you can decrease program risk and shorten test timelines, contact PVI Systems at (860) 739-8044 or [info@pvisys.com](mailto:info@pvisys.com). Or connect with your NI account manager at (888) 280-7645 or [info@ni.com](mailto:info@ni.com).

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