

# Testing Anti-Ram Barrier Protection Systems

## The Challenge

The Larson Institute at Penn State needed a turnkey data acquisition system for acquiring timestamped strain, acceleration, and temperature data from anti-ram barrier crash testing.

## The Solution

The Larson Institute's Crash Safety Research Team has conducted full-scale testing of anti-ram barrier protection system for the U.S. Department of State. These tests involved many different types of structural systems for protecting DoS interests worldwide. In these tests, 50 plus channels of dynamic strain, acceleration, and temperature were monitored using a Chameleon data acquisition system. The system timestamped input events for synchronizing with high speed motion analysis.

### The Chameleon System

48 Strain Channels  
16 DSA Channels  
32 Thermocouple Channels

- PXIe-1075 18-Slot Chassis
- PXIe-8133 Controller
- PXI-4498 Dynamic Signal
- PXIe-4353 Thermocouple
- PXIe-4331 High Speed Strain
- PXI-6682H Synchronization Module



Anti-Ram Barrier Testing to Balance Protection and Aesthetics

For more information about the use of Chameleon with the anti-ram barrier testing see the following presentation on the PVI website

**“Testing Anti-Ram Barrier Protection Systems”**

<http://www.pivsys.com/daq/casestudies/>

## Why Chameleon

- |                                |                              |
|--------------------------------|------------------------------|
| • Turnkey                      | • Data Export to .mat or CSV |
| • Diverse Applications         | • Easily Re-Configured       |
| • Time & Frequency Acquisition | • Time Synchronizaiton       |
| • Live Signal Monitoring       | • Pre-Triggered Acquisition  |
| • Data Display and Processing  | • Rugged and Reliable        |