



# Artisan Scientific

QUALITY INSTRUMENTATION ... GUARANTEED

## Looking for more information?

Visit us on the web at <http://www.artisan-scientific.com> for more information:

- Price Quotations
- Drivers
- Technical Specifications, Manuals and Documentation

## Artisan Scientific is Your Source for Quality New and Certified-Used/Pre-owned Equipment

- Tens of Thousands of In-Stock Items
- Hundreds of Manufacturers Supported
- Fast Shipping and Delivery
- Leasing / Monthly Rentals
- Equipment Demos
- Consignment

### Service Center Repairs

Experienced Engineers and Technicians on staff in our State-of-the-art Full-Service In-House Service Center Facility

### InstraView™ Remote Inspection

Remotely inspect equipment before purchasing with our Innovative InstraView™ website at <http://www.instraview.com>

### We buy used equipment! We also offer credit for Buy-Backs and Trade-Ins

Sell your excess, underutilized, and idle used equipment. Contact one of our Customer Service Representatives today!

Talk to a live person: 888-88-SOURCE (888-887-6872) | Contact us by email: [sales@artisan-scientific.com](mailto:sales@artisan-scientific.com) | Visit our website: <http://www.artisan-scientific.com>

# Integrated Tools for University Laboratories

## NI Educational Laboratory Virtual Instrumentation Suite (NI ELVIS)

- Offers integrated, multi-instrument functionality
- Combines instrumentation, data acquisition and prototyping station
- Virtual Instrument Suite
  - Oscilloscope, DMM, Function Generator, Variable Power Supply, Bode Analyzer, Arbitrary Waveform Generator, DSA, Voltage/Current Analyzer
  - LabVIEW source code provided
  - Completely open and customizable in the LabVIEW environment
  - Data storage in Excel or HTML

### Workstation

- Short-circuit and high-voltage protection
- Variable power supplies
  - Manual or programmatic control
- Function generator
  - Manual or programmatic control
- $\pm 15$  and  $+5$  V supply available
- BNC inputs for DMM and scope
- Detachable, customizable prototyping board
  - Affordable for student ownership
  - Designed to fit in a 2 or 3-ring binder



## Overview

The National Instruments Educational Laboratory Virtual Instrumentation Suite (NI ELVIS) is a LabVIEW-based design and prototyping environment for university science and engineering laboratories. NI ELVIS consists of LabVIEW-based virtual instruments, a multifunction data acquisition device and a custom-designed benchtop workstation and prototyping board. This combination provides a ready-to-use suite of instruments found in all educational laboratories. Because it is based on LabVIEW and provides complete data acquisition and prototyping capabilities, the system is ideal for academic coursework from lower-division classes to advanced project-based curriculum.

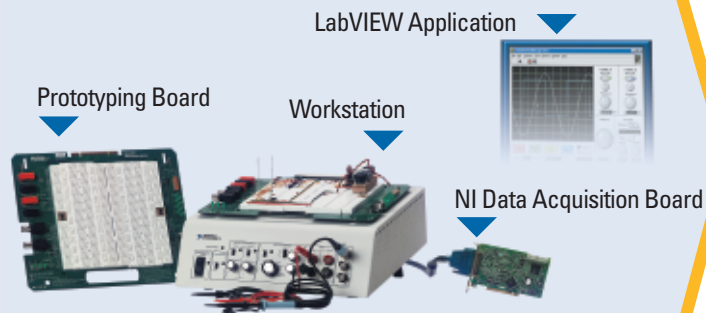
## Applications

- Circuit design and analysis for learning analog and digital electronics
- Measurements in mechanical, electrical, biomedical, and physics laboratories
- Teaching data acquisition and signal conditioning
- Live demonstration of concepts in a lecture hall
- Communications and control applications for Electrical and Mechanical Engineering
- Hands-on LabVIEW training

## NI Educational Laboratory Virtual Instrumentation Suite (NI ELVIS)

### LabVIEW VIs

- Oscilloscope
- DMM
- Function Generator
- Arbitrary Waveform Generator
- Bode Analyzer
- Dynamic Signal Analyzer
- Power Supply



## Curriculum Applications

- Instrumentation
- Circuit Design
- Signal Processing
- Communication
- Controls
- Mechatronics



# Integrated Tools for University Laboratories

## Ordering Information

### For Desktop Computers

NI ELVIS/PCI-6251 Bundle .....778748-02  
 Qty 1-4: \$1995 each  
 Qty 5+: \$1495 each

### For Laptop Computers

NI ELVIS/DAQCard-6062E Bundle .....779064-01  
 Qty 1-4: \$2260 each  
 Qty 5+: \$1695 each

Includes NI ELVIS workstation, DAQ device, cable, and LabVIEW drivers. For individual unit pricing please visit [ni.com/academic](http://ni.com/academic).

## BUY NOW!

For complete product specifications, pricing, and accessory information, call (800) 813-3693 (U.S. only) or go to [ni.com/academic](http://ni.com/academic).

## Specifications

### Analyzers

#### Oscilloscope

Two channels  
 Data storage, cursors, auto scaling  
 Max input bandwidth ..... 50 kHz<sup>1</sup>  
 Max sampling rate ..... 500 kHz / channel<sup>1</sup>  
 Range .....  $\pm 10$  V  
 Input resolution ..... 12 or 16 bits

<sup>1</sup>Specification depends on Data Acquisition device functionality.

#### Bode Analyzer

Frequency and phase plots  
 Frequency range and step control  
 Logarithmic or linear frequency spacing  
 Data storage, cursors, auto scaling  
 Frequency range ..... 5 Hz to 35 kHz<sup>1</sup>

<sup>1</sup>Specification depends on Data Acquisition device functionality.

#### Dynamic Signal Analyzer

Input range .....  $\pm 10$  V  
 Input resolution ..... 12 or 16 bits

#### Impedance Analyzer

Measurement frequency range ..... 5 Hz to 35 kHz

#### 2-Wire Current Voltage Analyzer

Voltage range .....  $\pm 10$  V  
 Current range .....  $\pm 10$  mA

#### 3-Wire Current Voltage Analyzer

NPN BJT transistor only  
 Data storage, cursors, auto scaling  
 Maximum Collector Voltage ..... 10 V  
 Minimum base increment ..... 15  $\mu$ A

### Digital Multimeter

#### Resistance

Accuracy ..... 1%  
 Range ..... 5  $\Omega$  to 3 M $\Omega$

#### DC Voltage

Accuracy ..... 0.3%  
 Range .....  $\pm 20$  V  
 Input impedance ..... 1M $\Omega$

#### AC Voltage

Accuracy ..... 0.3%  
 Range .....  $\pm 14 V_{rms}$

#### Current

DC accuracy ..... 0.25%  $\pm 3$  mA<sup>1</sup>  
 AC accuracy ..... 0.25%  $\pm 3$  mA<sup>1</sup>  
 Range .....  $\pm 250$  mA  
 Shunt resistance ..... 0.5  $\Omega$   
 Maximum common mode voltage .....  $\pm 20$  V  
 Common mode rejection ..... 70 dB

<sup>1</sup>Proper null correction at the common mode voltage can reduce  $\pm 3$  mA error to 200  $\mu$ A noise.

#### Capacitance

Accuracy ..... 2%  
 Range ..... 50 pF to 500  $\mu$ F  
 Test voltage range ..... 1V<sub>pp</sub>

#### Continuity

Resistance threshold ..... 15  $\Omega$  max

#### Inductance

Accuracy ..... 1%  
 Range ..... 100  $\mu$ H to 100 mH  
 Test frequency ..... 950 Hz  
 Test frequency voltage ..... 1 V<sub>pp</sub>

#### Digital I/O

Digital input resolution ..... 8 bits  
 Digital output resolution ..... 8 bits  
 Digital addressing ..... 4 bits

### Source

#### Function Generator

Manual or software control  
 Sine, triangle, square waveforms  
 Frequency sweep  
 TTL sync pulse out  
 AM, FM modulation  
 Frequency range ..... 5 Hz to 250 kHz  
 Frequency accuracy ..... 3%  
 Output amplitude .....  $\pm 2.5$  V  
 Software amplitude resolution ..... 8 bits  
 Offset range .....  $\pm 5$  V  
 AM voltage ..... 10 V max  
 Amplitude modulation ..... Up to 100%  
 FM Voltage ..... 10 V max  
 Amplitude flatness  
     To 50 kHz ..... 0.5 dB  
     To 250 kHz ..... 3 dB

#### Arbitrary Waveform Generator

Two channels  
 One-shot or continuous generation  
 Waveform editor  
 Amplitude .....  $\pm 10$  V  
 Frequency range ..... DC to 100 kHz<sup>1</sup>  
 Output drive current ..... 25 mA max  
 Output impedance ..... 1  $\Omega$   
 Slew rate ..... 1.5 V/ $\mu$ s

<sup>1</sup>Specification depends on Data Acquisition device functionality.

### Power Supplies

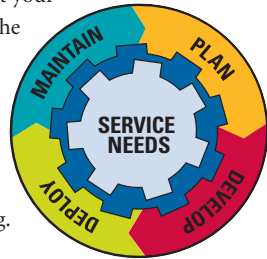
$\pm 15$  V Supply  
 Output current ..... Fused at 500 mA  
 Ripple and noise ..... 1%  
 Line regulation ..... 0.5% max

5 V Supply  
 Output current ..... Fused at 2 A  
 Ripple and noise ..... 1%  
 Line regulation ..... 0.5% max

Variable power supplies  
 0 to +12 V and -12 V  
 Ripple and noise ..... 0.25%  
 Software resolution ..... 7 bits  
 Current limiting ..... 0.5 V at 130 mA, 5 V at 275 mA, 12 V at 450 mA

# NI Services and Support

NI has the services and support to meet your needs around the globe and through the application life cycle – from planning and development through deployment and ongoing maintenance. We offer services and service levels to meet customer requirements in research, design, validation, and manufacturing. Visit [ni.com/services](http://ni.com/services).



## Training and Certification

NI training is the fastest, most certain route to productivity with our products. NI training can shorten your learning curve, save development time, and reduce maintenance costs over the application life cycle. We schedule instructor-led courses in cities worldwide, or we can hold a course at your facility. We also offer a professional certification program that identifies individuals who have high levels of skill and knowledge on using NI products. Visit [ni.com/training](http://ni.com/training).

## Professional Services

Our Professional Services Team is comprised of NI applications engineers, NI Consulting Services, and a worldwide NI Alliance Partner Program of more than 600 independent consultants and integrators. Services range from start-up assistance to turnkey system integration. Visit [ni.com/alliance](http://ni.com/alliance).



## OEM Support

We offer design-in consulting and product integration assistance if you want to use our products for OEM applications. For information about special pricing and services for OEM customers, visit [ni.com/oem](http://ni.com/oem).

## Local Sales and Technical Support

In offices worldwide, our staff is local to the country, giving you access to engineers who speak your language. NI delivers industry-leading technical support through online knowledge bases, our applications engineers, and access to 14,000 measurement and automation professionals within NI Developer Exchange forums. Find immediate answers to your questions at [ni.com/support](http://ni.com/support).

We also offer service programs that provide automatic upgrades to your application development environment and higher levels of technical support. Visit [ni.com/ssp](http://ni.com/ssp).

## Hardware Services

### NI Factory Installation Services

NI Factory Installation Services (FIS) is the fastest and easiest way to use your PXI or PXI/SCXI combination systems right out of the box. Trained NI technicians install the software and hardware and configure the system to your specifications. NI extends the standard warranty by one year on hardware components (controllers, chassis, modules) purchased with FIS. To use FIS, simply configure your system online with [ni.com/pxiadvisor](http://ni.com/pxiadvisor).

## Calibration Services

NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. We provide manual calibration procedures, services to recalibrate your products, and automated calibration software specifically designed for use by metrology laboratories. Visit [ni.com/calibration](http://ni.com/calibration).

## Repair and Extended Warranty

NI provides complete repair services for our products. Express repair and advance replacement services are also available. We offer extended warranties to help you meet project life-cycle requirements. Visit [ni.com/services](http://ni.com/services).



[ni.com](http://ni.com) • (800) 433-3488

National Instruments • Tel: (512) 683-0100 • [info@ni.com](mailto:info@ni.com)

© 2005 National Instruments Corporation. All rights reserved. LabVIEW, National Instruments Alliance Partner, NI, ni.com, and SCXI are trademarks of National Instruments. Other product and company names listed are trademarks or trade names of their respective companies.

A National Instruments Alliance Partner is a business entity independent from NI and has no agency, partnership, or joint-venture relationship with NI.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | [www.artisan-scientific.com](http://www.artisan-scientific.com)



# Artisan Scientific

QUALITY INSTRUMENTATION ... GUARANTEED

## Looking for more information?

Visit us on the web at <http://www.artisan-scientific.com> for more information:

- Price Quotations
- Drivers
- Technical Specifications, Manuals and Documentation

## Artisan Scientific is Your Source for Quality New and Certified-Used/Pre-owned Equipment

- Tens of Thousands of In-Stock Items
- Hundreds of Manufacturers Supported
- Fast Shipping and Delivery
- Leasing / Monthly Rentals
- Equipment Demos
- Consignment

### Service Center Repairs

Experienced Engineers and Technicians on staff in our State-of-the-art Full-Service In-House Service Center Facility

### InstraView™ Remote Inspection

Remotely inspect equipment before purchasing with our Innovative InstraView™ website at <http://www.instraview.com>

### We buy used equipment! We also offer credit for Buy-Backs and Trade-Ins

Sell your excess, underutilized, and idle used equipment. Contact one of our Customer Service Representatives today!

Talk to a live person: 888-88-SOURCE (888-887-6872) | Contact us by email: [sales@artisan-scientific.com](mailto:sales@artisan-scientific.com) | Visit our website: <http://www.artisan-scientific.com>