

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
- ± 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.

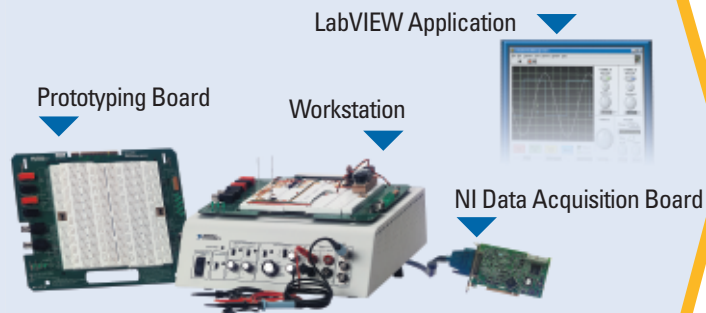
Applications

- 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 Bundle778748-02

Qty 1-4: \$1995 each

Qty 5+: \$1495 each

For Laptop Computers

NI ELVIS/DAQCard-6062E Bundle779064-01

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.

BUY NOW!

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

Specifications

Analyzers

Oscilloscope

Two channels

Data storage, cursors, auto scaling

Max input bandwidth 50 kHz¹

Max sampling rate 500 kHz / channel¹

Range ± 10 V

Input resolution 12 or 16 bits

¹Specification 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 kHz¹

¹Specification depends on Data Acquisition device functionality.

Dynamic Signal Analyzer

Input range ± 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 ± 10 V

Current range ± 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 μ A

Digital Multimeter

Resistance

Accuracy 1%

Range 5 Ω to 3 M Ω

DC Voltage

Accuracy 0.3%

Range ± 20 V

Input impedance 1 M Ω

AC Voltage

Accuracy 0.3%

Range $\pm 14 V_{rms}$

Current

DC accuracy 0.25% ± 3 mA¹

AC accuracy 0.25% ± 3 mA¹

Range ± 250 mA

Shunt resistance 0.5 Ω

Maximum common mode voltage ± 20 V

Common mode rejection 70 dB

¹Proper null correction at the common mode voltage can reduce ± 3 mA error to 200 μ A noise.

Capacitance

Accuracy 2%

Range 50 pF to 500 μ F

Test voltage range 1 V_{pp}

Continuity

Resistance threshold 15 Ω max

Inductance

Accuracy 1%

Range 100 μ H to 100 mH

Test frequency 950 Hz

Test frequency voltage 1 V_{pp}

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 ± 2.5 V

Software amplitude resolution 8 bits

Offset range ± 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 ± 10 V

Frequency range DC to 100 kHz¹

Output drive current 25 mA max

Output impedance 1 Ω

Slew rate 1.5 V/ μ s

¹Specification depends on Data Acquisition device functionality.

Power Supplies

± 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

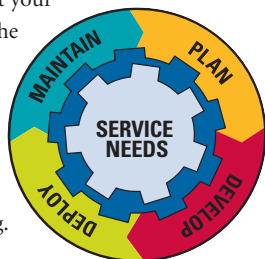
Ripple and noise 0.25%

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.



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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.

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.

Repair and Extended Warranty

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