Modular Instruments Dynamic Signal Acquisition Course (Online)

Overview

The instructor-led, online Modular Instruments Dynamic Signal Acquisition (DSA) course from National Instruments covers fundamental DSA concepts and prepares you to set up the hardware, configure the device, and program your application using NI LabVIEW software. The course also introduces advanced synchronization methods to help you expand your system and extend your application functionality.

The online course combines interactive learning technology through the Internet with live instructor-led lectures and hands-on exercises to deliver many of the benefits of an instructor-led classroom course while reducing the cost of training and development.

Duration

Four (4) Hours

Audience

- New users and developers of NI DSA products
- Users and managers evaluating NI DSA products in purchasing decisions

Prerequisites

- LabVIEW Basics courses or equivalent experience
- LabVIEW DAQ and Signal Conditioning course or equivalent NI-DAQmx experience
- Familiarity with AC signals (phase, amplitude, frequency)
- Exposure to basic AC analysis techniques (fast Fourier transform, filtering)
- Basic circuits theory (voltage, current, resistance)

NI Products Used in Course

- LabVIEW Professional Development System Version 8.5
- NI dynamic signal acquisition device
- NI-DAQmx

After attending this course, you will be able to:

- Configure and operate your NI DSA device
- Understand DSA specifications (IEPE, aliasing, dynamic range, accuracy)
- Understand the difference between data acquisition and DSA
- Learn important considerations for sensor selection
- Understand the method of measurement for NI DSA
- Use LabVIEW to program DSA applications
- Use the functions on the NI-DAQmx function palette
- Synchronize multiple NI DSA products
- Synchronize NI DSA with NI data acquisition products
- Use the Soft Front Panel of the device

Registration

Register online at ni.com/training or call (800) 433-3488, fax (512) 683-9300, or e-mail info@ni.com.

Outside North America, contact your local NI office. For worldwide contact information, visit ni.com/global.

Part Number

910774-69

System Requirements for Online Courses

- Windows XP/2000/98/NT
- Broadband Internet connection
- Internet Explorer 6.0 or greater
- Speakers or headphones
- Microphone

Suggested Next Courses

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Modular Instruments Dynamic Signal Acquisition Course (Online)

- LabVIEW Intermediate I: Successful Development Practices
- LabVIEW Intermediate II: Performance and Connectivity

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Common Applications and Equipment

Learn which applications benefit from using DSA and cover specific considerations for choosing the right sensors to use with NI DSA products.

- Channel-count considerations
- Choosing the correct sensor
- IEPE excitation and its applications

Why DSA?

Explore dynamic signals and how to analyze them. Also discuss the most important specifications and the significance of each.

- Important aspects of AC signals
- Reasons to use DSA
- Dynamic range, decibels, and distortion
- Accuracy calculations

NI DSA Product Features and Programming

Examine the most important features of NI DSA devices, including how to connect different signal sources and how to select the best driver and development environment for your application. Cover Basic LabVIEW programming in this lesson as well.

- Input coupling
- Grounding considerations
- DSA software overview
- Basic LabVIEW programming

High-Channel-Count DSA

Discover how to successfully implement a high-channel-count architecture with NI DSA products.

- Architecture considerations
- Cross-module synchronization
- DSA synchronization programming flow

Using DSA with Non-DSA Devices

Learn how to synchronize NI DSA devices with other NI hardware such as multifunction data acquisition.

- Using timing I/O with DSA for order analysis
- Using multifunction I/O with DSA for additional analog input or output
- Considerations when using different analog-to-digital converter types

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