

Extension of LabVIEW Frequently Asked Questions

What is National Instruments LabVIEW SignalExpress?

NI LabVIEW SignalExpress, the newest addition to the National Instruments LabVIEW family, is interactive measurement software for acquiring, analyzing, and presenting data without programming. The software provides a fast, simple way to configure data-logging applications for tasks such as data visualization, analysis, and alarming in addition to the acquisition and logging of data. Users also can generate LabVIEW graphical programming code with a single mouse click to create original user interfaces or add custom logic for more advanced, customizable data-logging applications.

How is LabVIEW SignalExpress software an extension of LabVIEW?

LabVIEW SignalExpress extends the acquisition, analysis, and presentation capabilities of LabVIEW to applications that do not require programming. The software takes advantage of the LabVIEW 7 Express technology introduced in 2003, which simplified LabVIEW graphical programming by grouping common tasks into higher-level Express VIs and interactive assistants that were wired together in a program. LabVIEW SignalExpress takes this simplification one step further by removing the wiring completely.

Engineers and scientists can make measurements in LabVIEW SignalExpress and easily convert their projects to LabVIEW graphical programming code to create custom logic and user interfaces and other advanced, user-defined applications.

Why is it important that LabVIEW SignalExpress is scalable?

All configuration-based data-logging tools have limited functionality. When using this type of software, there is always a risk that it may not include a specific feature that a user needs now or will need in the future. This is why scalability with LabVIEW graphical code is one of the most important features of LabVIEW SignalExpress. When engineers and scientists need more advanced analysis and processing capabilities, they can extend their LabVIEW SignalExpress projects by automatically converting them to LabVIEW graphical code. For example, engineers can use LabVIEW to add database and Internet connectivity, custom user interfaces, or automation functionality if their applications go beyond simple data logging.

How is LabVIEW SignalExpress used in design?

LabVIEW SignalExpress is a valuable tool in circuit design. The interactive measurement software is tightly integrated with SPICE simulation tools, including National Instruments Multisim, to help designers merge the design and test phases of circuit design. Users can import SPICE simulations from NI Multisim and Berkeley SPICE packages into LabVIEW SignalExpress. From there, they can compare simulation results with live results to verify circuit types. With advanced measurement capabilities, users

can also automate circuit characterization tests such as stimulus response, parameter sweeping, and frequency response.

This merger of design and test helps engineers significantly decrease their development time.

How does LabVIEW SignalExpress fit into the NI vision of graphical system design?

Graphical system design addresses the need for tighter integration between the different design phases by providing a common software platform.

As part of the LabVIEW development platform, LabVIEW SignalExpress provides a way to create basic measurement applications that users can implement throughout the design process. Users can share their setups with programming, design, or test colleagues. They also can connect and control their instruments, share their work, and extend the measurement capabilities of their applications when necessary, all in a single graphical environment.

What role does LabVIEW SignalExpress play in academia?

Limited time and resources make it difficult for engineering professors to teach their students engineering theory in the classroom as well as experimentation in the lab. Using LabVIEW SignalExpress, engineering professors can give their students the hands-on practice of acquiring and analyzing measurement data in the classroom or the lab without having to teach them programming concepts.

In addition, with the tight integration of LabVIEW SignalExpress and Multisim, engineering professors can tie the theory of circuit design and simulation to the practical world of the lab.

How does LabVIEW SignalExpress enhance the NI CompactDAQ platform?

National Instruments designed NI CompactDAQ to be portable and easy to use. The data acquisition system provides a simple, complete, and powerful data-logging solution. In addition to using LabVIEW graphical code, LabVIEW SignalExpress LE – which is now shipped free with every NI CompactDAQ chassis – offers a new option for interacting with NI CompactDAQ. Anyone, from a student to a technician to a senior engineer, can begin data logging out of the box. Users can quickly connect the NI CompactDAQ chassis to their PCs or laptops, select a module, and within seconds view data acquisition live in LabVIEW SignalExpress. They can then easily export data by dragging and dropping it into a spreadsheet or other third-party application.

What is LabVIEW SignalExpress LE?

LabVIEW SignalExpress LE provides a limited subset of the functionality offered with LabVIEW SignalExpress for free. LabVIEW SignalExpress LE is shipped with all new NI data acquisition devices that work with NI-DAQmx driver and measurement services software.

Customers who already own a device compatible with NI-DAQmx can download LabVIEW SignalExpress LE for free. By integrating with NI-DAQmx driver software, LabVIEW SignalExpress LE helps engineers and scientists accomplish the most basic aspects of data logging, including acquiring, logging, exporting, and viewing historical data. LabVIEW SignalExpress LE does not provide the analysis functions, operational statements, alarming, or events that are often necessary in data-logging applications. By upgrading to a paid version of LabVIEW SignalExpress, users can obtain the full functionality provided in the interactive measurement software.