

DMC Battery Validation Lab Tester using PAtools

The need for comprehensive, scalable, safe, and flexible battery validation testing has never been greater. Given the impact on quality, profits, and time-to-market, holding your battery lab captive to traditional inflexible solutions and bottlenecks has become unacceptable. Flexible test software, that works well with the variety of hardware found in most battery labs, is the key to productive and efficient battery pack testing. DMC's battery test systems and services directly address these challenges by leveraging NI's modular, open, and scalable test platforms to support the battery validation needs of today's modern battery test laboratories.

Application Challenges

- Flexibility — balancing test capacity with evolving product designs and testing requirements.
- Data management — testing requires traceability, data analytics, and compliance across multiple stations.
- Closed systems — avoiding proprietary, walled-off systems that will limit future flexibility and scalability.
- Complexity — integration of various test equipment: DAQ, cyclers, chambers, chillers, safety systems, etc.
- Safety — requires critical planning for every battery test lab.

The NI + Partner Solution

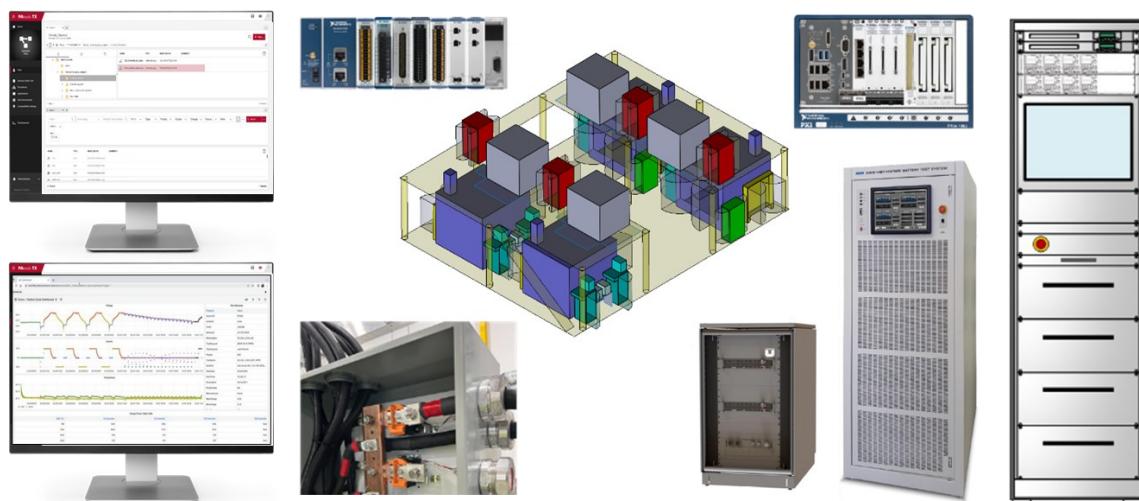
- Leverages NI's **PAtools software** for battery testing:
 - Software framework and real-time test executive, designed for safety-critical testing.
 - Seamless integration with the NI PXI platform for dense, high-speed data acquisition.
 - Uses NI cDAQ-based systems for modular, distributed, and flexible I/O.
 - Real-time sequencer provides flexibility and client ownership of the testing process.
 - Compatibility with 3rd-party battery cyclers, chambers, chillers, power supplies, etc.
- Centralized Test Data and Asset Management using NI's **SystemLink platform**:
 - Real-time monitoring, analytics, and visualization across test systems & facilities.
 - Automated test data storage and retrieval, reducing manual data handling.
 - Test traceability and reporting, ensuring compliance with safety & regulatory standards.
 - Web-based test scheduling and control for lab efficiency.
 - Integration with building fire detection and other safety systems.

Partner Solution Advantage

DMC brings expertise in these specific NI platforms together with decades of experience in battery testing and full-scale lab integration to work directly alongside your test engineers, facility team, and contractors. DMC streamlines the entire lab integration process, from initial requirements to implementation & ongoing support.

- DMC can provide complete **turn-key battery test systems** compatible with NI's PAtools platform:
 - Modular hardware solutions quickly tailored to any budget, timeline, and test requirements.
 - High-power multiplexing (MUX) solutions for efficient use of capital-intensive battery cyclers.
 - Hardware selection based on test requirements -- use the best equipment for your lab.
 - Designs & final installation reviewed by a dedicated team of Certified Machine Safety Experts.
- DMC can provide **Battery Lab Integration Services** for complete battery test lab deployment:
 - Consulting and feasibility analysis for equipment selection, positioning, and test lab floor layout.
 - Specification & procurement of some, or all, of the lab equipment required.
 - Electrical, mechanical, safety systems, and facility infrastructure planning.
 - Solutions can include design and procurement of test fixtures, interconnects, cables, and more.

- Complete project management, facilitating successful timelines and supplier management.



Why Work With DMC?

DMC is a leading systems integrator specializing in battery test and validation solutions. DMC offers a consultative approach to battery test software and battery test lab integration.

- Proven expertise in battery validation, automation, software, and test system integration, including a large team with decades of battery test experience led by industry veterans.
- A nationwide presence with the ability to support installations anywhere in the U.S.
- Long-term service and support, ensuring continuous system performance and scalability.

“We are thrilled to partner with DMC. This collaboration will not only enhance our testing capabilities but also ensure that we continue to deliver high-quality and reliable testing and evaluation services to our customers.”

- Les Alexander
CEO of Battery Innovation Center (BIC)

Key Specifications

Industries	Automotive, Commercial Vehicle, Marine, Aerospace & Defense, Energy Storage
DUT Types	Battery Cells, Modules, Strings, Bricks, Packs
Battery Cycler Compatibility	NI NHR, NI-ERS-BIC, Elektro-Automatik (EA) PSB/PSU series, & others can be requested through customization.
Test Chamber Compatibility	Associated Environmental Systems (AES), Weiss, Espec, & other chambers and chillers can be requested through customization.
DAQ System Compatibility	NI cSeries, NI FieldDAQ, NI PXI & others can be requested through customization.
CAN/LIN Coms	CAN/LIN compatible using NI XNET modules. UDS, J1939, and XCP/CCP options available.

For more information on the solution, click the contact partner link below.

CONTACT PARTNER