Solution Brief

Battery Cell Quality Test

NI's new solution for Battery Cell Test offers high precision, a small form factor, and development expertise that moves as fast as you do. Track data to quickly determine defects and their source, minimize product quality issues, and quickly adapt to new changes.

The Emphasis on Battery Test

With the expansion of wireless devices and mobile hospital equipment, a new emphasis is being put on battery test for accuracy and demand. NI is releasing a solution that can not only offer the high level of specifications needed but also a small form factor that integrates seamlessly to software development.
NI's new Battery Cell Test Solution provides high-accuracy, modular architecture, and intuitive data to pinpoint potential inaccuracies at their source. Using LabVIEW, TestStand, and SystemLink, you can reliably develop, deploy, and manage test sequences to ensure cells meet specifications.

Featured Battery Cell Quality Measurements:

- Open Circuit Voltage (OCV)
- AC Internal Resistance (AC-IR)
- Capacity
- Electrochemical Impedance Spectroscopy (EIS)
- Leakage

Our Battery Test Offering is ideal for:

- Faster test times that need to meet production volume without compromising compliance and end quality
- Changing requirements that must adapt to various battery models, specifications, and features
- Precise measurements that prioritize pinpointing early battery degradation and expected battery lifetime
- Operations that require data to drive analysis and insight on equipment health and output efficiency

The NI Advantage

SPECIFICATIONS

Our specialized DMM and SMU come with current sourcing up to 2A, frequency up to 1kHz, and cycling times up to 10 cells/second. The PXI chassis is specially designed to minimize noise and interference.

BENEFITS

Cost-effective, compact, and high throughput PXI configurations allow for a wide range of measurement and flexibility within a small space. Compared to box equipment, the PXI SMUs can limit space by up to 2x.

PARTNERS AND SERVICES

Communicate with Battery Test Experts on most effective ways to utilize and boost performance of the architecture. NI's services and partners can help support and fast-track test development and maintenance.

Battery Cell Test Offering

NI Part	Features
PXIe Chassis, Controller	10-slot chassis, high-performance controller, noise mitigation
Digital Multimeter	Performs fast and precise voltage measurement test
Source Measurement Unit	Repeatable and precise measurement and current sourcing for AC-IR/EIS, capacity, and leakage tests. Source up to 2A for long cabling environments
LCR Meter	Capable of high-frequency EIS up to 2MHz
Multiplexer Switch	Effectively scale the system to 32 or 64 channels for maximum coverage in a small footprint
LabVIEW	Quickly develop and synthesize test functions with a graphical interface that can use a variety of programming languages and interfaces
TestStand	Intuitive test sequencing that allows users to quickly change configurations, parameters, and debug code
SystemLink	Provides a central infrastructure of asset and data management to efficiently determine performance and health of equipment

Highlighted Features

- Reduced form factor that includes channel-dense hardware and one chassis for all measurement types
- Take accurate solutions faster and include self-calibration and less overhead with comprehensive modules
- Quickly analyze data to determine trends and communicate them across organizations with software
- Flexible test creating and sequencing leads to faster development and adaptable strategies

Contact Us

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Configure a system at: ni.com/Advisor