

Keysight ESD Automation & Integration Interface

REST API Subscription for Battery Test System
Integration and Automation

Accelerate Battery Test Automation

The Keysight Energy Storage Discover (ESD) Automation interface enables integration of Keysight battery test systems into enterprise automation, laboratory, and manufacturing environments through a secure Application Programming Interface (API) and data access. The REST API and event-driven interfaces enable external systems to control test execution, access measurement data, monitor system status, and integrate battery testing into custom workflows.

Key Benefits

- Automate battery test workflows through a standards-based REST API
- Execute, monitor, and manage tests remotely
- Receive real-time measurements and event notifications
- Integrate with MES, analytics platforms, laboratory systems, and custom software
- Leverage existing ESD reporting and data infrastructure
- Reduce development effort through a fully documented interface
- Secure access with role-based permissions
- Scale standardized automation across laboratories and production facilities
- Built on the proven Keysight ESD-Hub architecture
- Supported through ongoing maintenance releases and compatibility updates

Typical Applications

- Battery cell development: automated test campaigns and data collection.
- Module and pack validation: lab automation and validation frameworks.
- HIL and simulation environments: synchronize with vehicle, charger, grid, or digital-twin simulations.
- Manufacturing and end-of-line testing: MES-connected execution and reporting.
- Research laboratories: custom application development for advanced battery characterization.

Customer Value

- Integrates battery test assets into customer automation frameworks.
- Enables repeatable workflows across engineering and production environments.
- Supports digitalization initiatives by connecting test execution, status, and data access.
- Creates a clear commercial and support boundary for API access and future enhancements.

System Architecture

Built on the Keysight ESD-Hub platform, the ESD Automation Interface provides an efficient integration layer between external applications and Keysight battery testing systems. It enables command execution, status monitoring, measurement retrieval, and report access through standardized interfaces.

Technical Overview

Feature	Description
Interface type	REST API
Deployment	ESD-Hub on supported Keysight battery test systems
Primary functions	Test control, status monitoring, reporting access
Integration targets	MES, SCADA, analytics platforms, digital twins, custom software
Documentation	Reference manual, quick-start guide, examples
Support and subscription model	Annual subscription

Supported Functions

Area	API Enabled Operations
Test system monitoring	Monitor system, channel, and test status. Receive live measurement updates, access logs, reports, and diagnostics.
Test execution management	Start, stop, suspend, resume, and restart tests remotely; modify test parameters during execution.
Reporting and data access	Effectively integrate measurement data and reports into enterprise workflows through support for multiple standard export formats.
Status and measurement streaming	Enable real-time monitoring of test execution with live measurements and status notifications.

License and Options

Subscription Deliverables

- ESD Automation Interface software license
- API reference manual
- Software updates for supported releases
- Release notes
- Quick-start guide
- Example integration workflows
- Technical support for API-related issues ¹

Optional Extended Services

Based on the individual requirements of the intended software environment, the following services could be added:

- Integration consulting
- API training workshops
- Custom software development
- On-site commissioning support
- Application engineering services

¹ Note: Keysight reserves the right to review the level of support needed and might offer a consulting package to cover the requested support.

Advantages of the Keysight Ecosystem

- Purpose-built for battery testing workflows: Deep integration with the Keysight ESD ecosystem
- Open integration strategy: Supports customer-specific automation and data architecture
- Accelerated digitalization: Enables connected battery development and manufacturing workflows
- Single supplier solution: Combines cyclers, instruments, software, reporting tools, automation interfaces, and global support

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