

# KS8700A PathWave Test Environment

## Keysight Test Automation Product Summary

The Keysight KS8700A PathWave Test Environment provides a contemporary desktop Hub to launch all of the proven tools of the KS8400A Test Automation on PathWave (TAP) software, enabling you to seamlessly integrate existing TAP test plans and plugins into the PathWave Test environment. KS8700A PathWave Test Environment builds on TAP to provide powerful, flexible and extensible test sequence and test plan creation with added capabilities, optimizing your test software development and overall performance. Keysight TAP is a modern Microsoft .NET-based application that can be used stand-alone or in combination with higher-level test executive software environments. Leveraging C# and the power of Microsoft Visual Studio, TAP is not another programming language. It's a platform upon which you can build your test solutions, maximizing your team's productivity by using your existing software development tools and infrastructure.

### Fast execution and test flow analysis

TAP's core engine is designed for speed-optimized execution. Additional tools provide visualization, analysis and insights to maximize your overall test flow performance.

### Microsoft .NET test step development

TAP makes it easy to implement new test steps and plugins leveraging Microsoft Visual Studio and .NET.

## User interfaces

TAP provides a graphical user interface (GUI) so that both beginning and experienced programmers can quickly construct test plans consisting of multiple test steps. Flow operations are supported, along with parallel testing. Complex hardware setups and switching are implemented using the Connection Manager. A command line interface (CLI) is also provided for integration with other manufacturing applications, as is a full Application Programming Interface (API) to efficiently integrate, add-on and customize with unlimited possibilities.

## Modular “plugin” software architecture

Test steps, instrument/DUT (device under test) interfaces, and result storage are architected as plugins. You can build unique test solutions quickly using the provided plugins. Or, for additional flexibility, adapt and modify the provided plugins for your applications. You can also create new plugins to optimize your application.

## Key applications

Design Validation Testing (DVT) and functional testing of:

- Wireless communication devices and components
- Automotive electronics
- Power electronics
- Digital and photonics devices
- Aerospace and defense systems

## Key benefits

Keysight TAP is designed to make your test software development simpler, faster and scalable as your needs evolve.

### Simplicity

Why develop your own test sequencer when TAP’s core engine and user interface make it easy for beginning and experienced programmers to quickly develop customized test sequences? Experienced programmers will appreciate TAP’s command line interface and easy integration with a variety of programming languages. Regardless of your programming skill level, you’ll find TAP keeps things simple.

**Scalability**

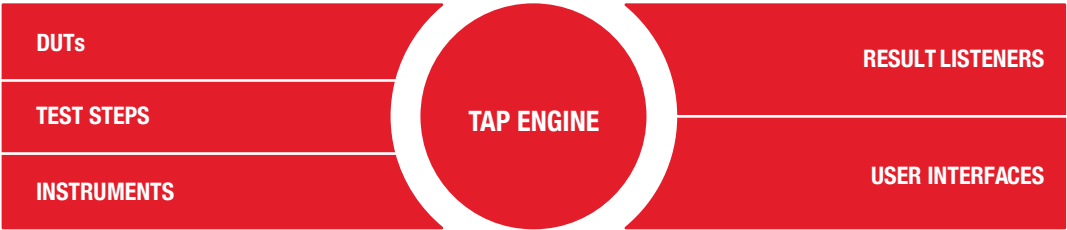
TAP’s modular plug-in architecture is centered around a lightweight core sequencing engine. Additional tools and plug-ins are provided to help scale your test software to meet your specific requirements – Timing Analyzer, Result Viewer, GUI. Documentation is also provided to help you develop your own plug-ins that further extend TAP’s capabilities, including interfacing with a wide variety of device handlers, measurement and signal generation hardware.

**Speed**

“Speed” can be measured a few different ways — fast test software development, fast test execution and fast test optimization. TAP is designed to speed all three. It’s simple to get up-and-running, and included tools like TAP’s Timing Analyzer help you speed up test plan execution.

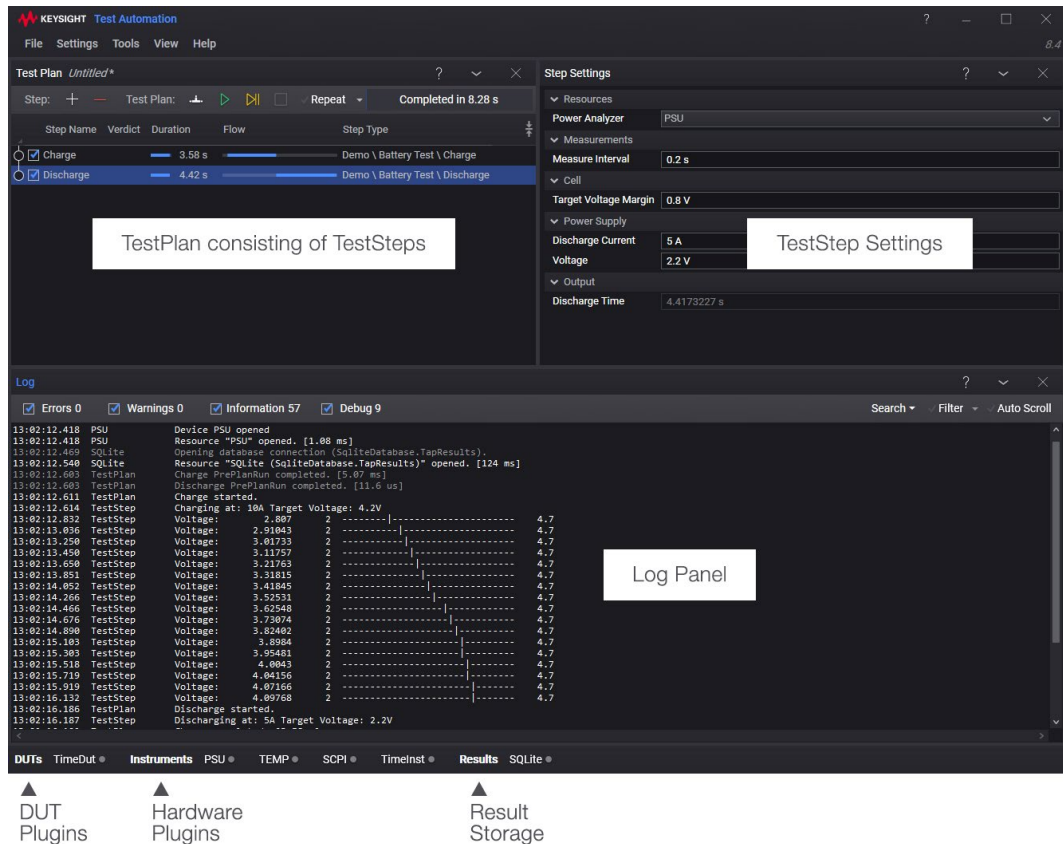
**Key features**

Included with Keysight TAP is the core sequencing engine, tools and plugins to minimize your test system development time and test execution speed.



# Core Sequencing Engine

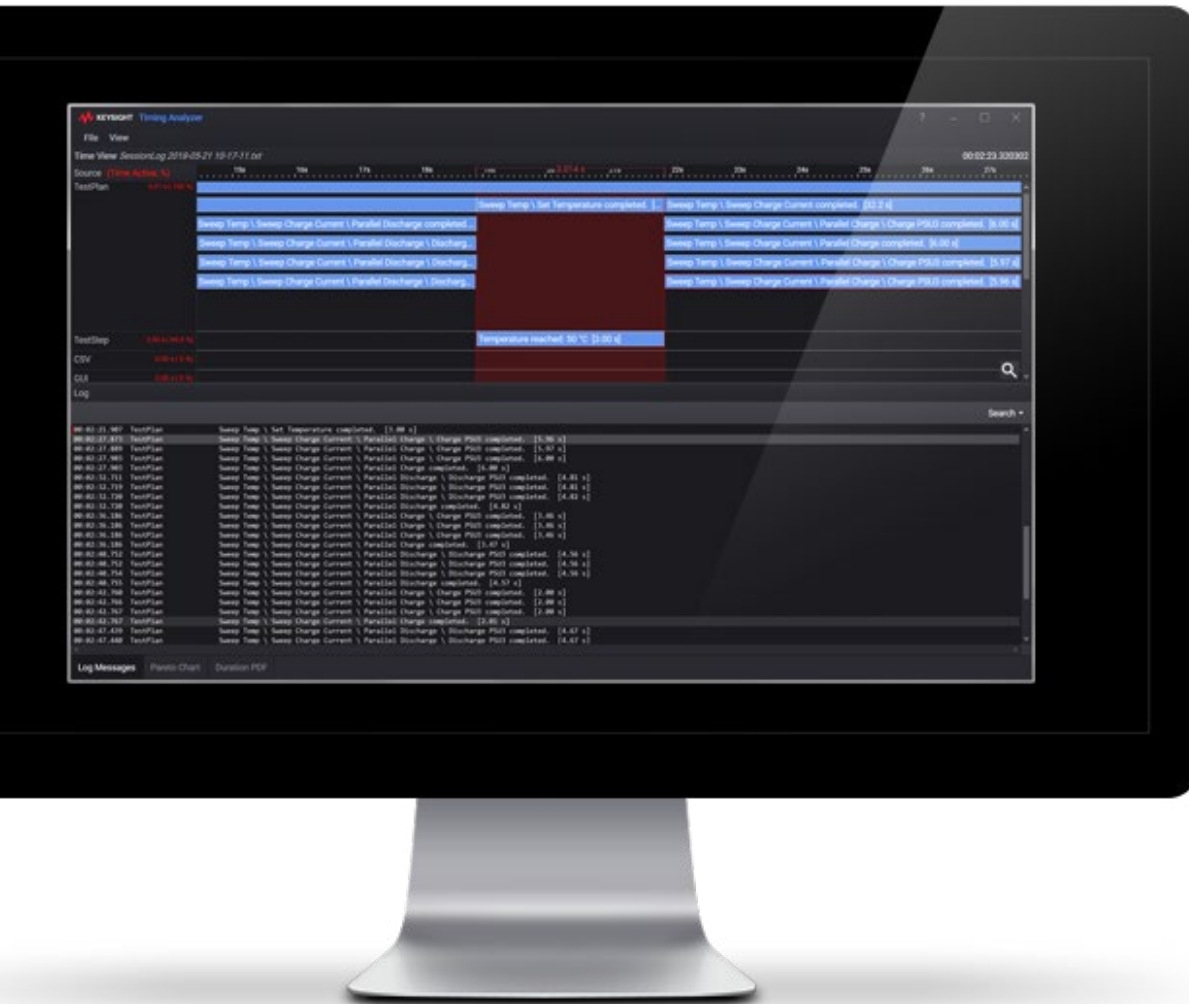
The Core Sequencing Engine is the “heart” of TAP, designed from its inception for speed-optimized test step execution. Test plans can include simple flow operations such as IF and LOOP. Complex hardware setups and parallel test are also supported.



The TAP Engine (TAP.Engine.dll) is the core component in the software. It includes a plugin manager that finds and handles plugins (test steps, DUT and Instrument plugins, etc.). It also controls test plan execution (list of test steps) and provides access to functionality offered by the plugins. This covers logging functionality, result storage, instrument communication (user-developed hardware plugins, for example). TAP Engine also includes an API for controlling TAP from an external application, such as a 3rd party program, the TAP GUI, or the TAP Command Line Interface (CLI).

# Timing Analyzer

TAP's Timing Analyzer Tool provides powerful insights into optimizing your overall test plan execution speed. You can visualize the overall plan execution time in depth to see how much time each test step contributes. A Pareto chart makes it easy to see where to focus your optimization efforts. Side-by-side viewing provides easy A/B testing to compare various test plans. You can also review multiple test plans together for additional statistics.



## Results Viewer

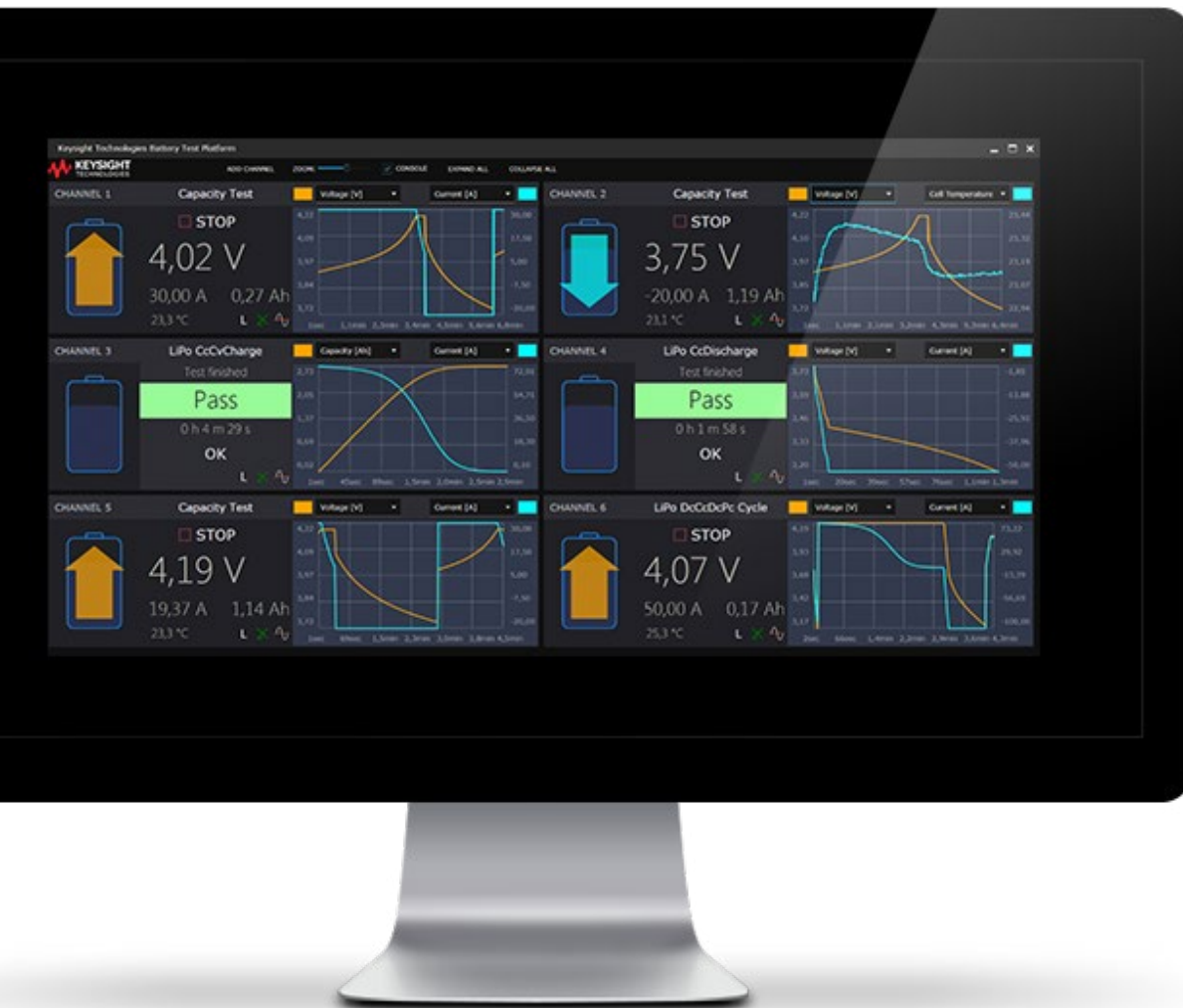
TAP's Results Viewer brings the power of relational databases to result visualization, empowering your test plan development with a consistent way of viewing data across multiple stages of your engineering process. Each time a test plan is executed the results are stored in a database which can be graphed and visualized using the Results Viewer. Multiple data sets can be viewed to quickly compare results across different test runs. Also provided is the test plan Run Explorer to help manage test plan data, recall old test plans, merge and compare test log timings, compare test plan settings, search for specific test results, and plot them using the Results Viewer.



## Graphical User Interface Plug-in and API

Shown below, TAP's included GUI is an application that runs on top of the TAP Engine, facilitating test plan development, configuration and execution. It is designed to exercise the features of TAP with a well-structured and simple interface, offering access to step, instrument and DUT configuration, as well as logging information during test plan execution.

TAP also provides an API to help you create your own simple user interfaces for test operators to quickly assess go/no-go, pass/fail, and key test result values.



## Optional KS8700A Plugins

Expand PathWave Test Environment capabilities with additional plugins. Learn more at [www.keysight.com/find/pathwavetest](http://www.keysight.com/find/pathwavetest)

- **Python SDK (KS8101A)** - Seamless integration of TAP with Python; you can write everything in Python and use your favorite IDE.
- **Command Expert (KS8103A)** - Control instruments and import as TAP test steps with no coding needed.
- **HTML5 Result Listener (KS8104A)** - Publish your results as HTML format, including interactive plotting.
- **Switch Manager (KS8105A)** - Configure and control complex switch matrices reflecting your test system connections.
- **REST API (KS8106A)** - Modernize and go web-based, controlling TAP over a network connection using the REST interface. Example code for an HTML GUI is provided.
- **Spreadsheet Plugin (KS8107A)** - Publish test results from TAP to a spreadsheet.
- **DMM Instrument Plugin (KS8150A)** - Control Keysight Digital Multimeters. Includes free and open API for you to add custom DMM's and control steps.



# Ordering Information

## KS8700A software licensing

Keysight KS8700A PathWave Test Environment software is licensed based on the options purchased. Licenses are sold as fixed node-locked to a single PC, transportable and network floating in either perpetual or annual durations.

	Fixed, node-locked (single PC)	Transportable	Network floating (multiple PCs)
Perpetual license	KS8700A-1FP	KS8700A-1TP	KS8700A-1NP
One-year license	KS8700A-1FY	KS8700A-1TY	KS8700A-1NY



### Try the Software Today!

Experience TAP's powerful and flexible test sequence and creation capabilities and optimize your test software development today.

Download the 30-day trial.  
[www.keysight.com/find/pathwavetest](http://www.keysight.com/find/pathwavetest)

## System and Installation Requirements

### Recommended minimum PC configuration

- Microsoft Windows 7 Service Pack 1: Starter, Home Basic, Home Premium, Professional, Ultimate or Enterprise (32- or 64-bit)
- Microsoft Windows 8 or 8.1: Base, Professional or Enterprise (32- or 64-bit)
- Microsoft Windows 10: Home, Professional, Enterprise or Education (32- or 64-bit)
- At least 1 GB free disk space
- Minimum 1024x768 video monitor

### Prerequisite drivers and software

- Keysight IO Libraries Suite Version 15.0 or above
- For software development: Microsoft Visual Studio 2015 or 2017 Professional or Enterprise editions recommended
- Microsoft .NET v3.5 and 4.6.2 or later

## Related Software

Keysight Command Expert

[www.keysight.com/find/commandexpert](http://www.keysight.com/find/commandexpert)

Keysight I/O Libraries

[www.keysight.com/find/iosuite](http://www.keysight.com/find/iosuite)

## Premium Support and Consulting Services

Software support subscriptions include access to updates and call center experts during the subscription period. Perpetual licenses must order a one-year support subscription which can be optionally renewed every year. Annual licenses include a support subscription.

Keysight also offers a variety of optional start-up assistance and project consulting services to help you maximize your test development productivity. Contact your Keysight sales specialist or application engineer for more details.

[www.keysight.com/find/services](http://www.keysight.com/find/services)

## More Information

For additional details regarding Keysight's KS8700A PathWave Test Environment, visit [www.keysight.com/find/pathwavetest](http://www.keysight.com/find/pathwavetest)

For additional details regarding Keysight's PathWave design and test software platform, visit [www.keysight.com/find/PathWave](http://www.keysight.com/find/PathWave)

Learn more at: [www.keysight.com](http://www.keysight.com)

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: [www.keysight.com/find/contactus](http://www.keysight.com/find/contactus)

