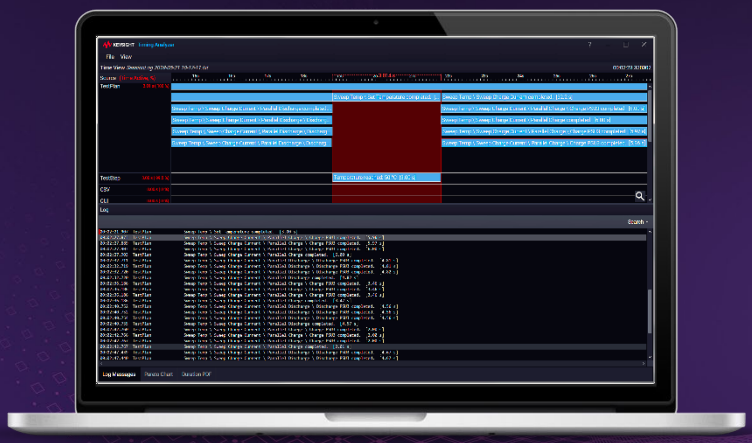


TECHNICAL OVERVIEW

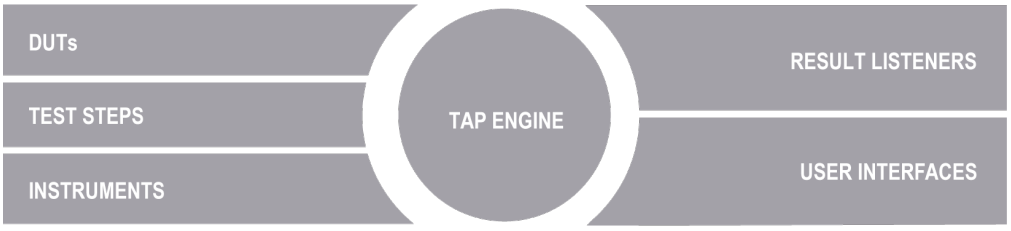
KS8400A
Test Automation on PathWave

PATHWAVE

The Keysight Test Automation on PathWave (TAP) software provides powerful, flexible and extensible test sequence and test plan creation with additional capabilities that optimize 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 just 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.

Features

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



KEYSIGHT TECHNOLOGIES

Product Summary

- 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.

- 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 Programing 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.

- Microsoft .NET test step development

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

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 plugin architecture is centered around a lightweight core sequencing engine. Additional tools and plugins 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 plugins 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.

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.

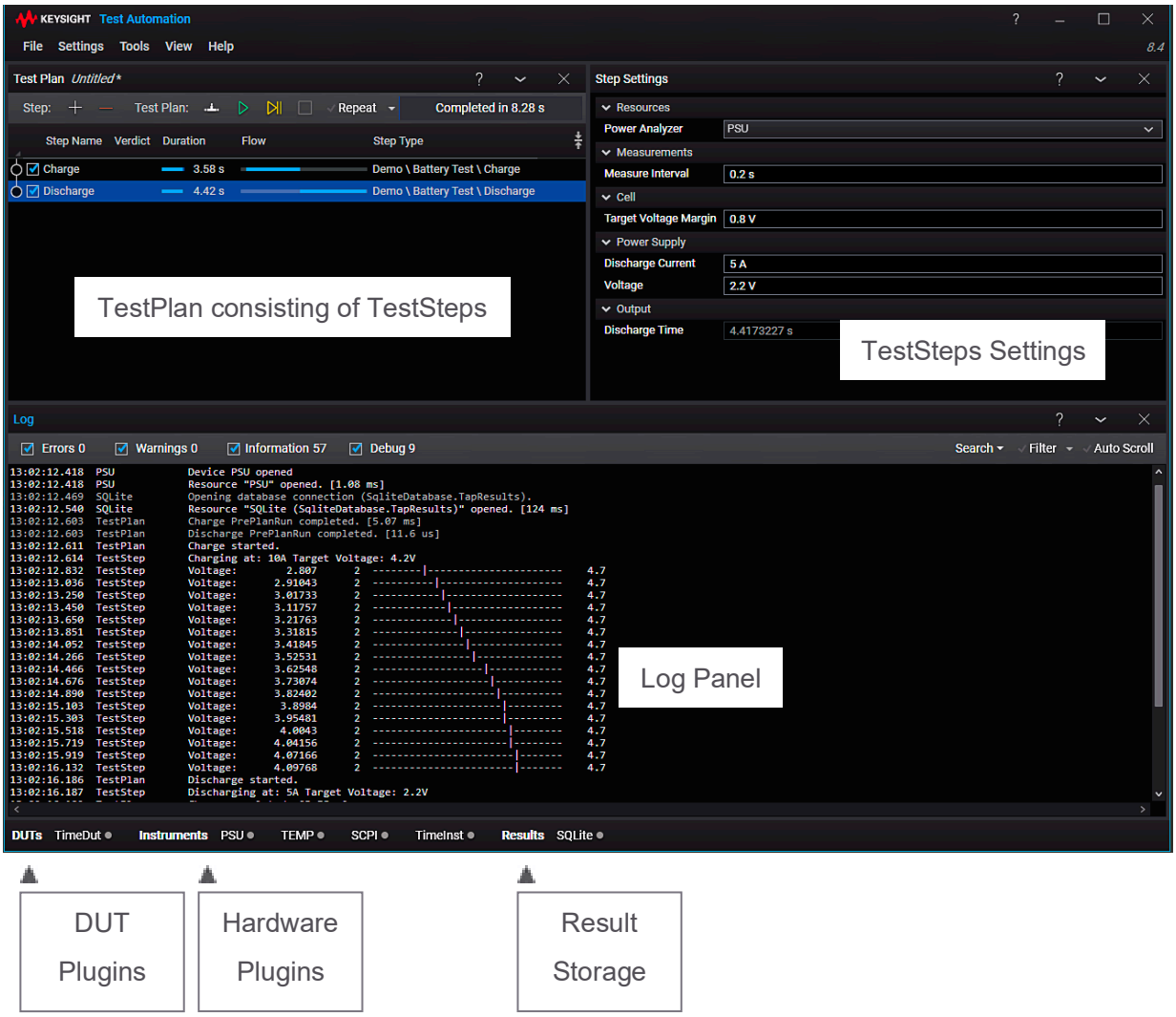


Figure 2. TAP’s Core Sequencing Engine and GUI showing a test plan consisting of multiple test steps, settings for each test step, and a log panel with helpful status information to aid troubleshooting, hardware interfaces, databases and test plan optimization.

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 test 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.

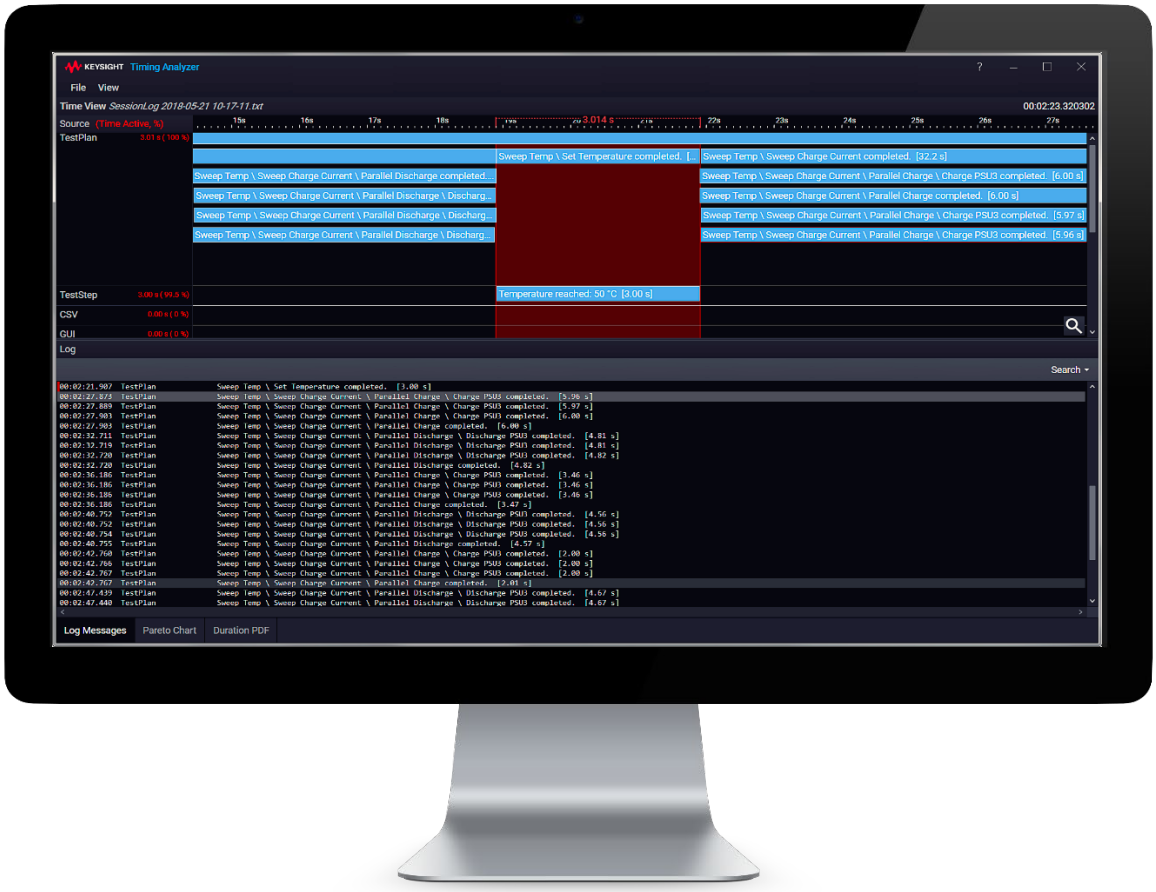


Figure 3. TAP's Timing Analyzer provides detailed information about each test step's execution speed and find opportunities to speed test times by rearranging test steps and running steps in parallel.

Figure 4. TAP Result Viewer provides quick and flexible test run data visualization.

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 Plugin and API

Shown in Figure 2, 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.

Figure 5. TAP's API enables user-developed GUIs that help operators easily visualize test results.

Ordering Information

KS8400A software licensing

Keysight KS8400A Test Automation on PathWave 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	KS8400A-1FP	KS8400A-1TP	KS8400A-1NP
One-year license	KS8400A-1FY	KS8400A-1TY	KS8400A-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

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

Keysight I/O Libraries 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

More Information

For additional details regarding Keysight's KS8400A Test Automation on PathWave (TAP), visit www.keysight.com/find/pathwavetest

Learn more at: 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

KEYSIGHT TECHNOLOGIES