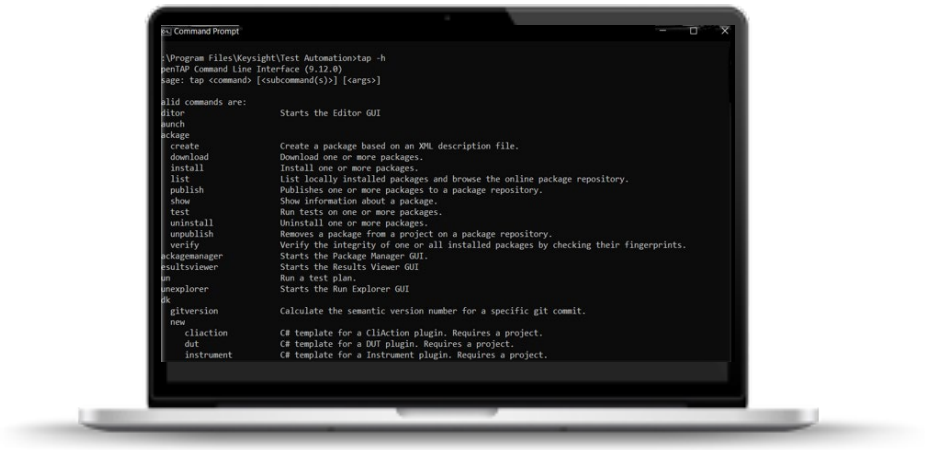
KS8000B PathWave Test Automation Built on OpenTAP®

Deployment system

The KS8000B PathWave Test Automation Deployment System provides a base set of test sequencing capabilities to deploy with your manufacturing test solutions, to embedded in shipping products or to integrate into higher level test executives. PathWave Test Automation is built on OpenTAP®, a modern, Microsoft .NET platform that can be employed stand-alone or in combination with higher-level test executive software environments through native C#, Python, or RESTful APIs.

PathWave Test Automation leverages C# and the power of visual IDEs such as Microsoft Visual Studio, Code, or JetBrains Rider, but is not another programming language. Rather, it's a platform for building rich test solutions and maximizing productivity with existing software development tools and infrastructure.

KS8000B provides a subset of the KS8400B PathWave Test Automation Developers System capabilities, optimized for the deployment phase of product lifecycles. It supports core test automation functionality through .NET, Python, or REST APIs without the graphical user interface (GUI), Results Viewer, or Timing Analyzer features present in the KS8400B system.



KEYSIGHT

PATHWAVE

Highlights

- **Fast Execution**
  The OpenTAP core engine is designed for speed-optimized execution

- **Execution interfaces**
  A command line interface (CLI) is provided for integration with other manufacturing applications, as is a full Application Programing Interface (API) in .NET, Python, and REST 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. See Figure 1.

- **Microsoft .NET and Python test step development**
  OpenTAP makes it easy to implement new test steps and plugins leveraging Microsoft Visual Studio and .NET or Python.

- **Multiple deployment environments**
  The KS8000B supports deployment on Windows and Linux systems.

Key Applications

Test automation for:

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

Key Benefits

PathWave Test Automation is designed to make your test software development simpler, faster and scalable as your needs evolve.

- **Simplicity**

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

- **Scalability**

  The OpenTAP modular plugin architecture is centered around a lightweight core sequencing engine. Additional tools and plugins are provided with the KS8400B PathWave Test Automation Developer's System 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 OpenTAP 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. OpenTAP is designed to speed all three. It's simple to get up-and-running, and tools like the OpenTAP Timing Analyzer (provided with the KS8700B and KS800B) help you speed up test plan execution.

Architecture

The KS8000B Deployment System provides a subset of the KS8400B Developer Systems, optimized for fast execution speed.

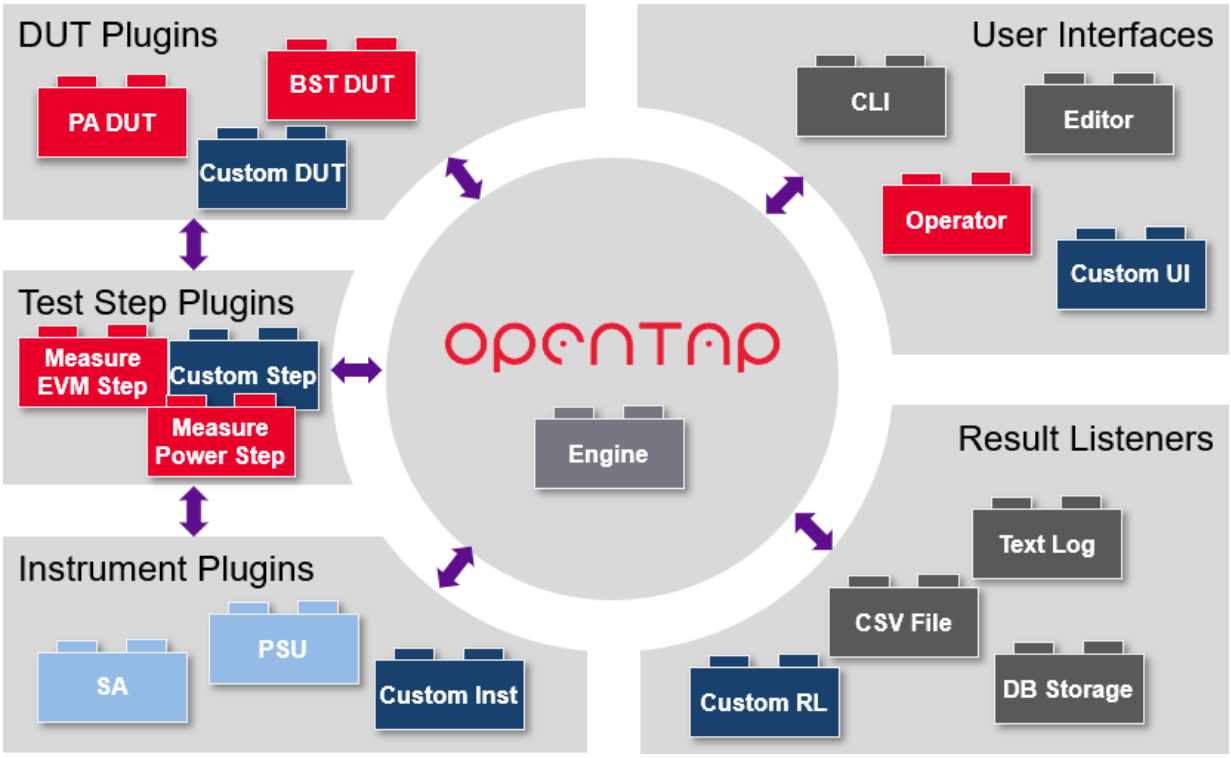


Figure 1. The OpenTAP architecture also includes Application Programming Interfaces (APIs), GUIs, logging and database interfaces. Examples of user-developed plugins include hardware and custom user interfaces.

Core Sequencing Engine

The Core Sequencing Engine is the “heart” of OpenTAP, 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 OpenTAP Engine (OpenTAP.dll) is the core component in the software. It includes

a plugin manager that finds and handles plugins (test steps, DUT and Instrument interfaces, 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 handling (database), instrument communication (user-developed hardware drivers, for example).

The OpenTAP Engine also includes an API for controlling OpenTAP from an external application, such as a 3rd party program, the OpenTAP GUI, or the OpenTAP Command Line Interface (CLI).

Command Line Interface

A command line interface (CLI) is provided for integration with other manufacturing applications and workflows, facilitating precise control of the test automation workflow and enabling command-based integration with other test automation software.

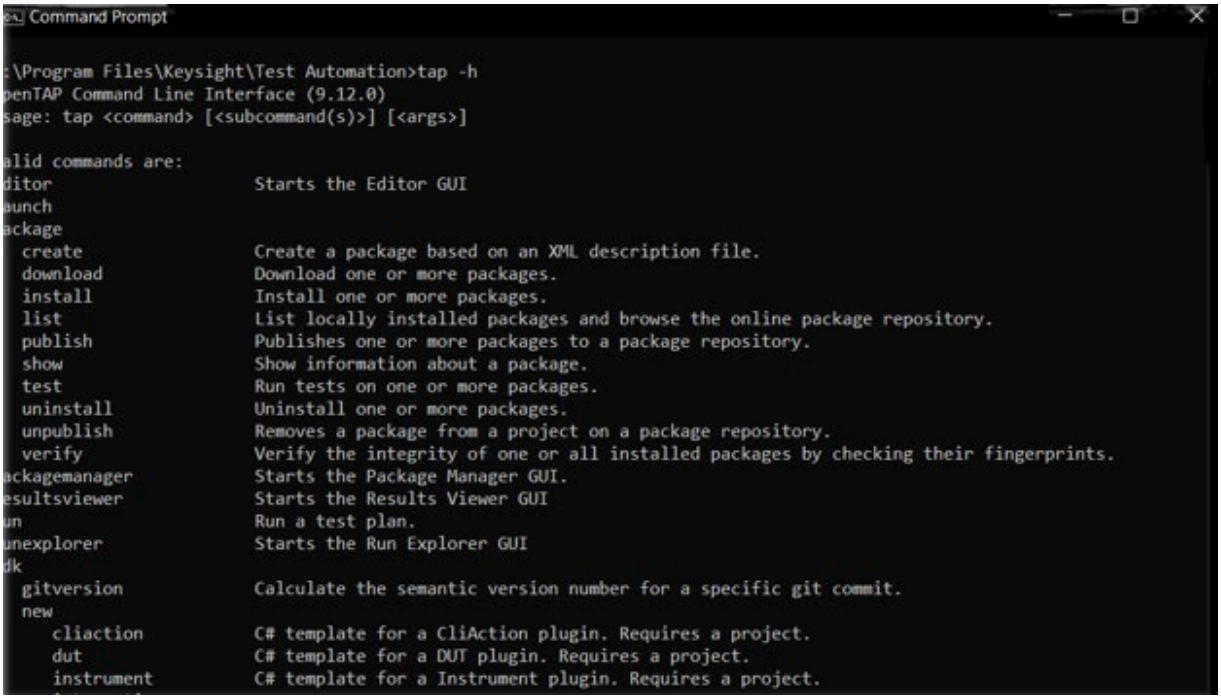


Figure 2. The PathWave Command-Line Interface (CLI)

The CLI supports installation and deployment on both Windows and Linux platforms.

OpenTAP APIs

PathWave Test Automation Deployment Software includes access to the full OpenTAP Application Programing Interface (API) to ease integration with existing software and to create custom solutions using the C# programming language.

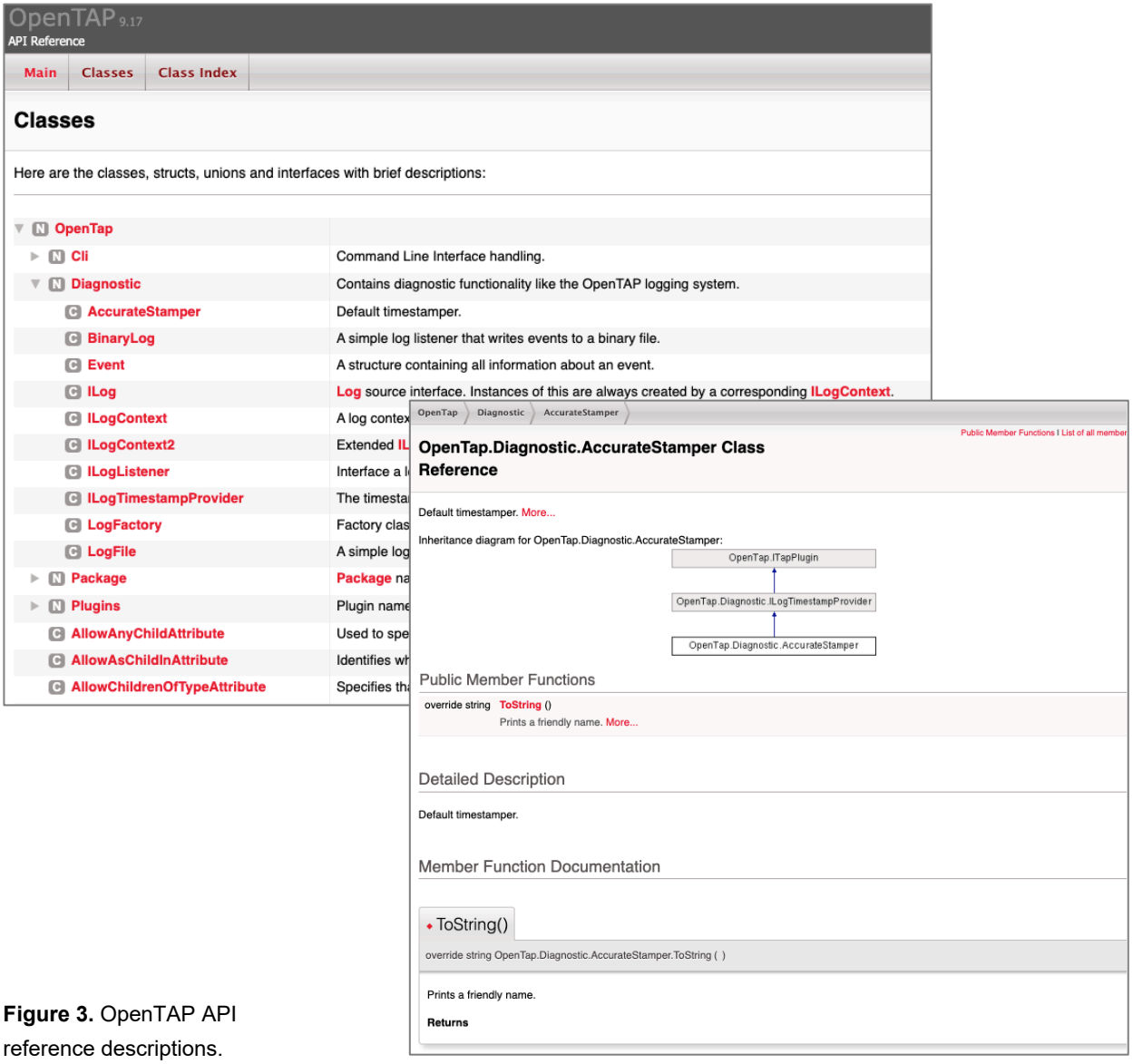


Figure 3. OpenTAP API reference descriptions.

PathWave Test Automation and Open Source

PathWave Test Automation is built on OpenTAP, a community-based open source test automation platform. OpenTAP today encompasses a worldwide ecosystem.

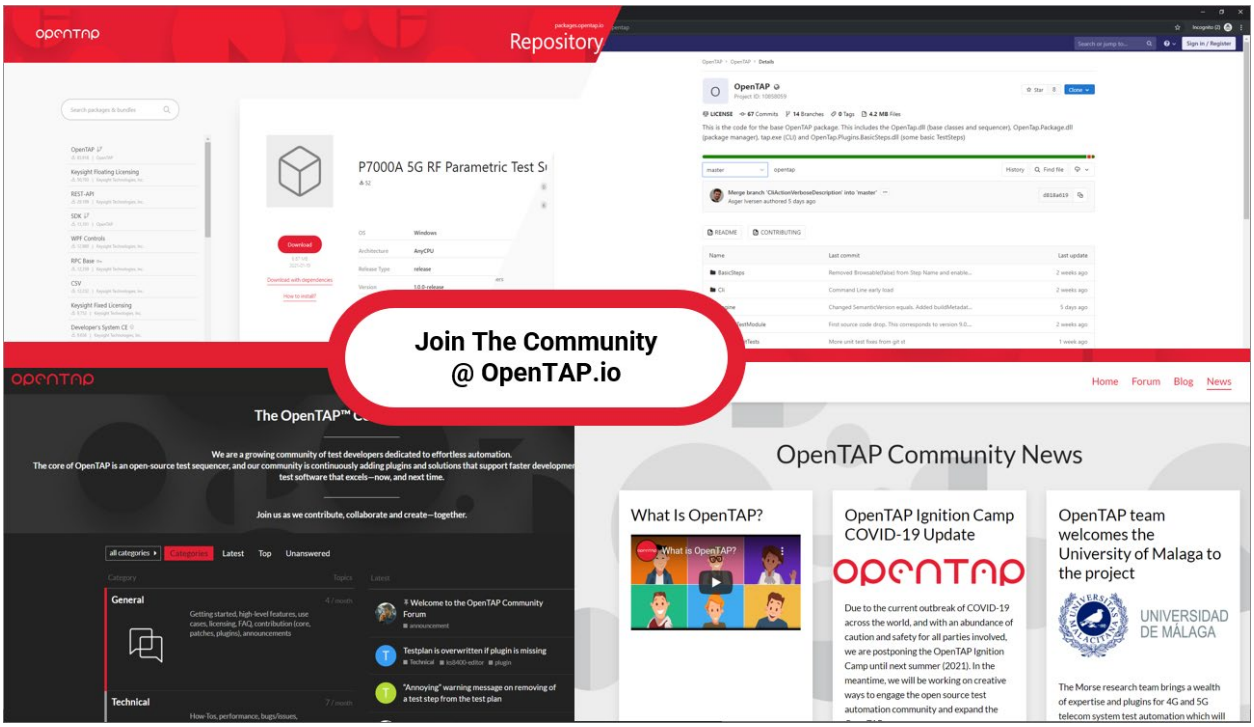


Figure 4. The OpenTAP open source project

Visit OpenTAP.io to learn more!

Ordering Information

KS8000B software licensing

KS8000B PathWave Test Automation Deployment System 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 various subscription options.

	Fixed, node-locked (single PC)	Transportable	Network floating (multiple PCs)
One-year subscription	KS8000B-1FY	KS8000B-1TY	KS8000B-1NY

System and Installation Requirements

Recommended minimum PC configuration

- Microsoft Windows 10: Home, Professional, Enterprise or Education (32- or 64-bit), or Ubuntu 20.04 LTS or high
- At least 1 GB free disk space
- Minimum 1 GB available memory
- Minimum 1024x768 video monitor

Prerequisite drivers and other software

- Keysight IO Libraries Suite Version 16.0 or above
- For software development: Microsoft Visual Studio 2022 or above, Professional or Enterprise editions recommended
- Microsoft .NET 6 or Python 2.7, 3.6, or 3.7

Related Software

Keysight Command Expert www.keysight.com/find/commandexpert

Keysight I/O Libraries www.keysight.com/find/iosuite

OpenTAP Project www.opentap.io and github.com/OpenTAP

Try the software today!

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

Download the 30-day trial.

https://ksm.software.keysight.com/ASM/External/TrialLicense.aspx?ProdNum=KS8000b-TRL

Premium Support and Consulting Services

Software support subscriptions include access to updates and call center experts during the subscription period. Perpetual licenses must accompany 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.

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More Information

For additional details regarding KS8000B PathWave Test Automation, visit http://www.keysight.com/find/tap