

Keysight Technologies  
TestExec SL 8.1

Data Sheet



Unlocking Measurement Insights

# Introduction

Keysight Technologies, Inc. TestExec SL is a test executive designed for high-volume, high throughput functional test applications across multiple industries. This robust software empowers test developers with built-in functions that will ultimately reduce development time and improve throughput.

These powerful functions encompass:

- a fully customize operator user interface (OpUI)
- an open architecture for multiple instrument integration
- a flexible test sequencing
- a set of easy-to-learn debugging tools and provisions for line integration in most manufacturing test environments.

TestExec SL boosts productivity, offers unique advantages for test automation and is unbeaten for ease of use. With its modular architecture, you can use the high-level tools and powerful features to accelerate program development and test integration with TestExec.

## Powerful Features Lead to Software Flexibility and Versatility

<b>Interactive System Development Environment</b>	<b>Versatility and Superior Performance</b>	<b>Flexible Runtime Deployment</b>
Rapid test plan construction	Fast test execution	Adapts to line automation
Rapid sequencing	Multithreading execution	Interfaces to database
Rapid test system configuration	Multi-level security	Interfaces to SQL
Framework for reuse	Measurement execution	Adaptable operator user interface
Excellent debug tools	Automatic limit checking	Supports self-test
Good test tuning tools	Error handling/reporting	
Graphical developer user interface	Remote execution-ready	
Online help	Parallel mode	
	Asynchronous mode	
	Able to utilize all cores in multi-cores processor	

Table 1. Features of TestExec SL

## An Integrated Test Development Environment

TestExec SL contains four inter-related tools in a single environment – all ready for you to kick-start your task.

### Testplan Editor

The testplan editor allows you to examine and modify the contents of a testplan. In addition to developing tests and assembling them into testplans, this editor provides features for running and debugging testplans.

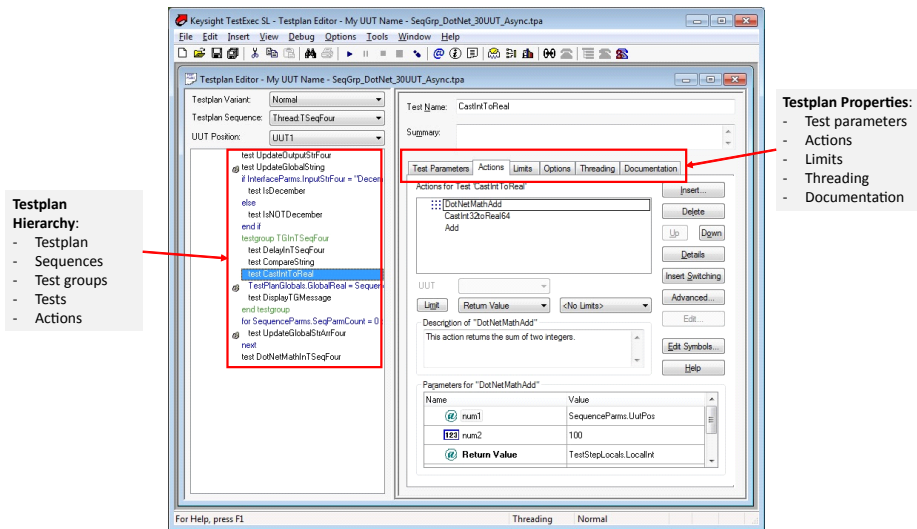


Figure 1. Testplan Editor

### User Defined Sequence

With the sequence library editor, you can create and edit sequence libraries of your choice – local sequences or sequences libraries executed by a 'Call' statement. These user-defined sequences promote code reusability, allow better structuring and viewing of testplans and are especially useful when dealing with large size of testplans and/or multiple test developers.

### Action Definition Editor

This is the main tool used for developing actions, the fundamental building blocks for creating tests. You have the choice of using the library of actions that comes with TestExec SL or you can program your own action code by using a variety of supported languages – C/C++, Keysight VEE and NI LabView.

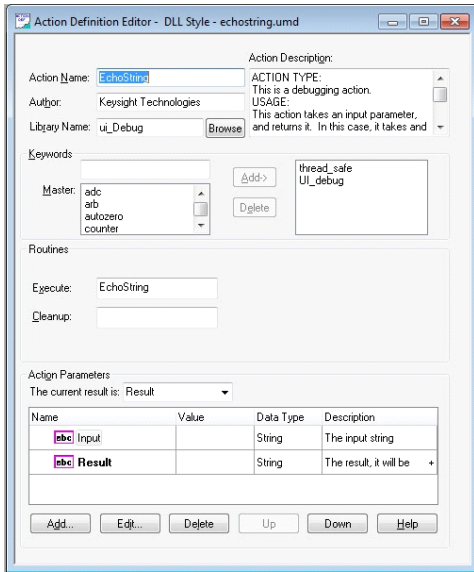


Figure 2. Action Definition Editor

## Topology Editor

The topology editor is used to define switchable connections and wirings located in a fixture used with TestExec SL. This makes TestExec SL aware of the hardware modules available as resources during testing.

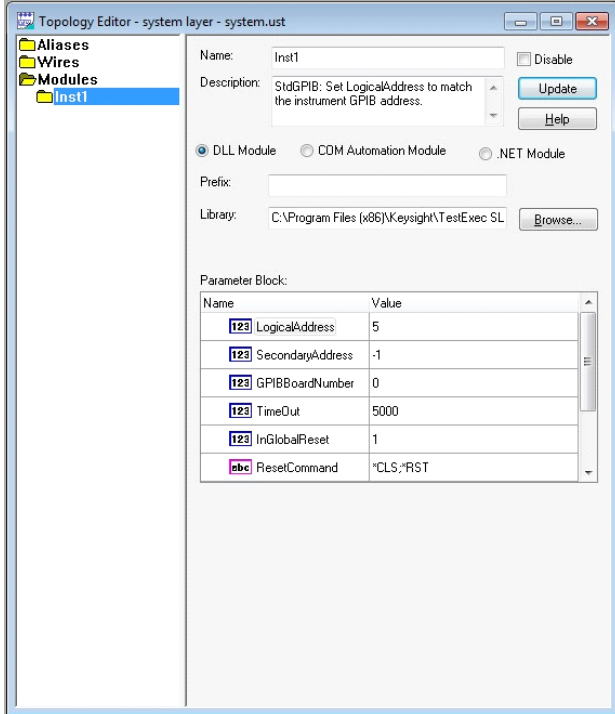


Figure 3. Topology Editor

## Intelligent Architecture

TestExec SL links to other test systems and supports multiple applications to create a cohesive, efficient environment for global manufacturing.

- Supports Microsoft Visual Studio .NET (C# and VB.NET), Microsoft Visual Studio (C/C++), Keysight VEE Pro, NI LabView and LabWindows/CVI.
- Share test data with other Keysight test systems across all manufacturing environments.
- Exports data in spreadsheet, XML, or Keysight 3070 formats.
- Makes critical test information available to analysis package, allowing you to optimize the manufacturing process using actual data from test floor.
- Provides a standard framework for interfacing with software applications used in other parts of your enterprise as well as those used by contractors, suppliers and vendors.

## Library Reuse

TestExec SL's architecture provides standard platform for creating, modifying and enhancing measurement routines for future reuse. Unlike traditional test routines, which may be incorporated into a single, large program. TestExec SL uses a modular approach that is easy to modify and maintain.

Another benefit of TestExec SL is that it provides tools for administering the measurement routines library. You can easily define, search and modify the characteristics of measurement routines in the registration library, where those routines are accessible by other users as well. This reusability of measurements and libraries based on TestExec SL.

## Switch Manager

Connections between various instruments and the unit under test (UUT) are not permanently “hard wired” but are controlled programmatically via “switching” to effectively utilize the resources. TestExec SL simplifies the switching programming through powerful Switch Manager features.

- Topology Editor defines switchable connections and the wiring inside a fixture with a logical node name that is easy to use and remember.
- Switching Path Editor specifies the switching actions that tell TestExec SL how to control programmable paths during testing.

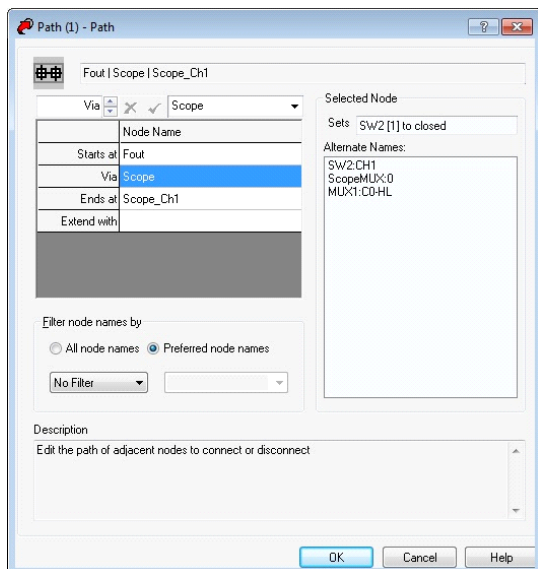


Figure 4. Switch Manager

## Test Profiler

TestExec SL includes a profiler which illustrates the duration that each action or test group in a testplan takes to execute. You can then optimize your testplans using these data and monitor any improvements you make.

- Monitors and tracks tests, and uses debugging and optimization tools to evaluate individual test performance.
- Displays key parameters in a pareto chart or a spreadsheet program for further understanding and analysis.
- Provides key insight to optimize the performance throughput of tests.

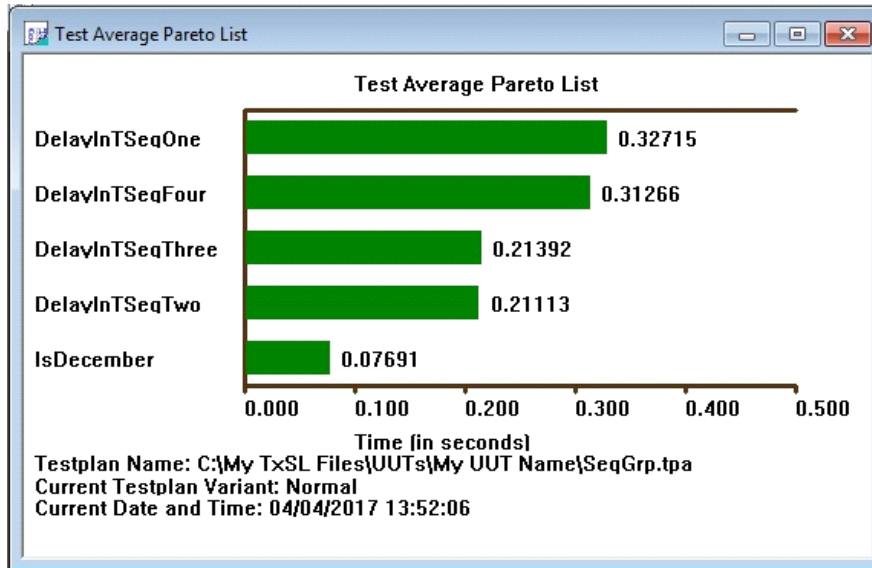


Figure 5. Test Profiler

## Throughput Multiplier

With TestExec SL, you can increase the throughput of your test system by using the Keysight Throughput Multiplier feature to test simultaneously multiple UUTs with a single set of hardware resources and a single testplan.

A common form of multiple testing is to have two UUT fixture positions and test one position while loading/unloading the other to minimize handling time. This presents an opportunity to save test time, reduce cost of testing per UUT and reduce the amount of floor space that might otherwise be occupied by multiple test systems.

## System Requirements for Keysight TestExec SL 8.1

- Microsoft Windows 7 Service Pack 1 or Windows 10 operating system
- Intel Core 2 Duo, Core i5 PC or better with 4 GB of RAM is recommended
- CD-ROM drive
- Ethernet adapter
- 1024 x 768 graphics resolution or better
- At least 250 MB of free disk space (for TestExec SL program, data and sample files)
- Additional 850 MB of hard disk space is required if .NET framework version 4.5.2 has yet to be installed on the target PC

## What's new in TestExec SL 8.1?

Multithreading and Throughput Multiplier has been introduced to Sequence level in the form of Threaded Sequence. Some of the benefits include:

### 1. Parallel Mode

Threaded sequence feature working together with throughput multiplier enables multiple units under test (UUTs) to run simultaneously.

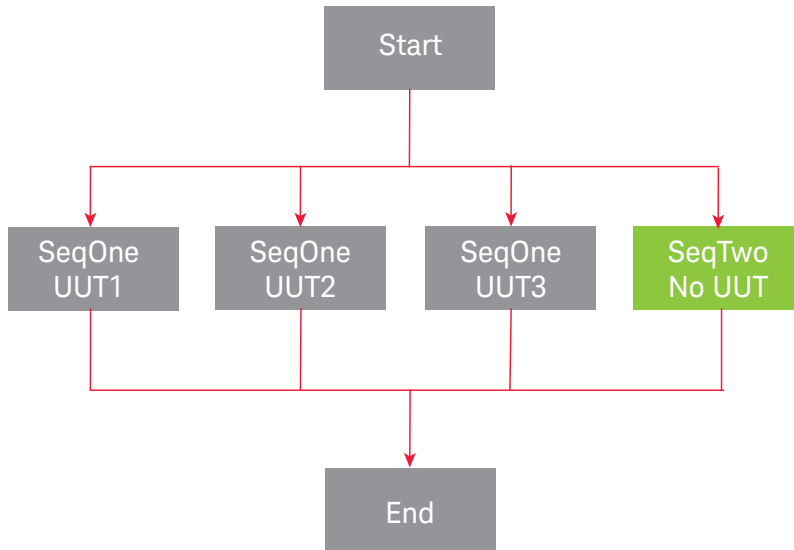


Figure 6. Parallel Mode

### 2. Asynchronous Mode

User can choose when to run a threaded sequence. Threaded sequences can start and stop independently from each other or they can run simultaneously in different threads.

### 3. Test time reduction

Enable test sequences to run concurrently to speed-up single UUT test

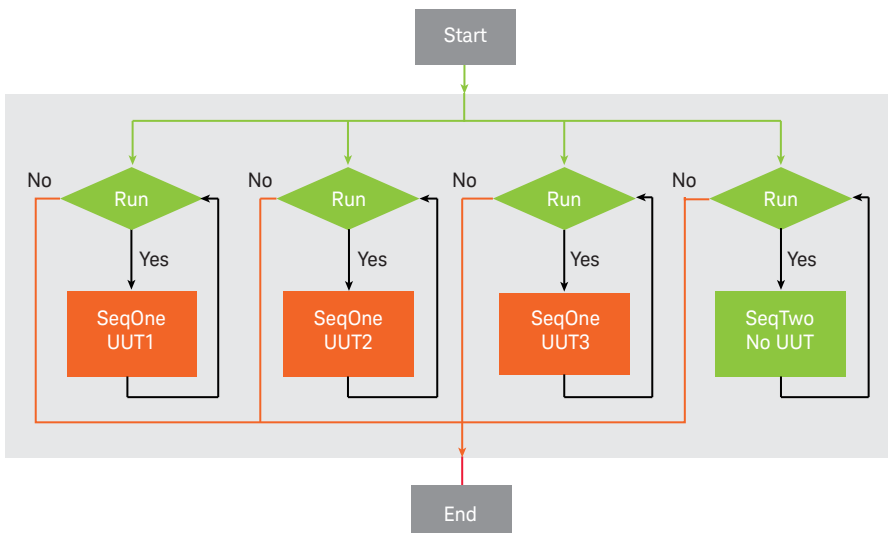


Figure 7. Asynchronous Mode

## Enhancements

### 1. Instruments sharing

In Parallel and Asynchronous mode, instruments can be shared among different Threaded Sequences. The "Lock Instrument Handlers" feature can be used to lock a shared instrument so that only a Threaded Sequence can access the shared instrument at a time.

### 2. Same UUT Symbol Value

User can set same symbol value for different UUTs in a Threaded Sequence that turned-on Throughput Multiplier.

### 3. Reporting

User can filter report results and messages by Sequence Name and UUT position. The number of passed tests and failed tests for a threaded sequence in Asynchronous mode will be displayed once the threaded sequence finish execution.

### 4. Data logging

Data logging has been enhanced to support Sequential, Parallel or Asynchronous mode in Threaded Sequences execution.

### 5. TestExec SL Control

New Methods and Events are added to support Threaded Sequences and Asynchronous mode.

### 6. Testplan Validation

Ensure Global shared variables are locked and all Threaded Sequences in the same Sequence Group are called only once, to avoid crash in Parallel and Asynchronous mode execution.

### 7. Save As Previous Version

This feature allows user to save current testplan as a previous version, such as TestExec SL 8.0 or TestExec SL 7.1. However, features available in TestExec SL 8.1 will not be recover after the conversion.



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