Keysight Technologies
TestExec SL 7.1

Data Sheet

KEYSIGHT
TECHNOLOGIES

Introduction

Introducing Keysight TestExec SL 7.1 – High Throughput Capability Improves Production Efficiency

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 customizable 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 SL.

Powerful Features Lead to Software Flexibility and Versatility

**Interactive
System Development Environment**

– Rapid test plan construction

– Flexible sequencing

– Rapid test system configuration

– Framework for reuse

– Multi-language support

– Excellent debug tools

– Good test tuning tools

– Graphical developer user interface

– Online help

**Versatility and
Superior Performance**

– Fast test execution

– Multithreading execution

– Multi-level security

– Measurement execution

– Automatic limit checking

– Error handling/reporting

– Adaptable data logging

– Remote execution-ready

Flexible Runtime Deployment

– Adapts to line automation

– Interfaces to database

– Interfaces to SQL

– Adaptable operator user interface

– Supports self-test

1. 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.

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
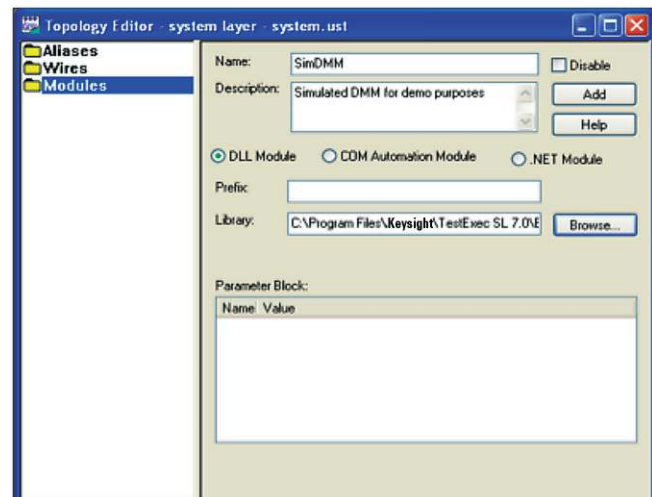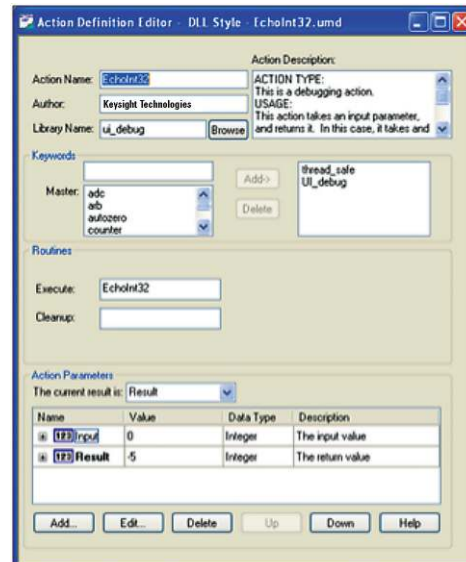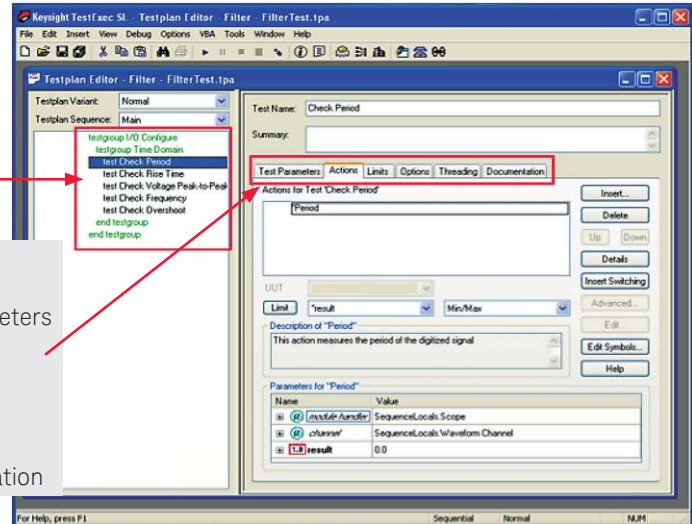– C/C++, Keysight VEE and NI LabView.

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.

Testplan
Hierarchy:
– Testplan
– Sequences
– Test groups
– Tests
– Actions

Testplan
Properties:
– Test parameters
– Actions
– Limits
– Options
– Threading
– Documentation

2. 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 of your 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 the 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.
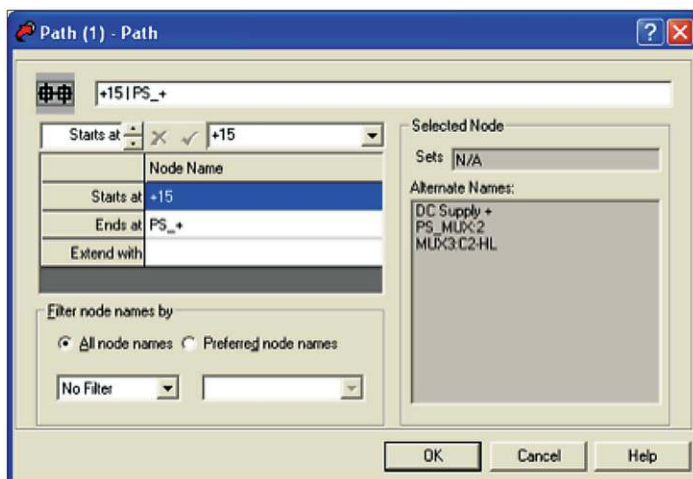
3. Library Reuse

TestExec SL's architecture provides standard platform for creating, modifying and enhancing measurement routines for future reuse. Unlike traditional test routines, which may all 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 of measurements can be especially beneficial to organizations that have several test systems based on TestExec SL.

4. 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.
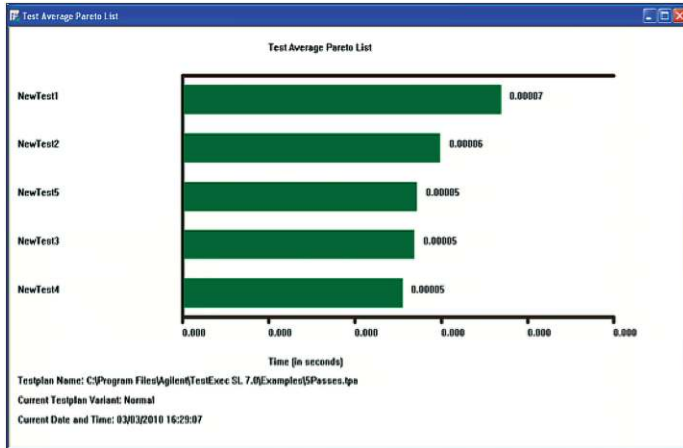
– Topology Editor defines switchable connections and the wiring inside a fixture with a logical node name that is easy to use and remember.
– Switching Path Editor specifies the switching actions that tell TestExec SL how to control programmable paths during testing.

5. 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 insights to optimize the performance throughput of tests.

6. 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 7.1

– IBM-compatible PC (A Pentium 600 MHz (or equivalent) with 256 MB of RAM is the minimum, and a 1GHz or greater Pentium (or equivalent) with 1GB of RAM is recommended)
– CD-ROM drive
– Ethernet adapter
– 1024 x 768 graphics resolution or higher
– At least 180 MB of free disk space (for the TestExec SL program, data and sample files), an additional 280 MB of hard disk space is required if the .NET framework version 2.0 has yet to be installed on the target PC
– Operating System: Microsoft Windows XP Service Pack 3 or Windows 7

What's New in Keysight TestExec SL 7.1?

Key Features

#1 Multithreading

The multithreading capability allows you to begin executing multiple test statements simultaneously without having to wait for a statement that is executing to complete its operation. The new feature helps to increase execution throughput by reducing unnecessary idle time.

#2 State-based Switching

This feature enables you to send a channel list to switch one instrument. You can now switch a collection of switches to a given set of positions. In instruments that support sending multiple commands in a single transaction, this has the potential to significantly speed up switching time by reducing the total number of transactions required to switch.

#3 IVI-COM Action

The IVI-COM action feature enables you to create actions by using the IVI-COM assembly "hwhIVI.dll".

With this capability, the user does not need to write any programming codes and the action can be created with a few mouse clicks.

Enhancements

Undo Delete

– This feature allows you to undo a deletion that has been made. You can either click on the button or select ctrl-z to undo one level of deletion in statement, action or parameter block.

Testplan Variants

– A testplan variant combo box is added at the main testplan window above the testplan sequence combo box. You can now select the variant from the combo list and testplan view will be updated immediately.

Pre-selection of Symbols in Symbol Editor

– You can type the first character of the parameter name in any parameter table to locate the desired symbol. This is particularly useful for symbol searching in a large parameter table.

Action Step

– In tests, single-stepping can be set where you can select which action steps to go through. However, single-stepping is not permitted for threaded tests

Change Indicator

– You will now find an '*' appearing on the document title indicating that a testplan has been created or modified but has yet to be saved.

Save as Previous Version

– This flexibility allows you to save a testplan in its previous version. However, the features associated with a newer version will be removed after the conversion.

Ignore Test Group

– You may ignore test group. This feature is useful especially when working with variants whereby different variants have different test groups that needs to be working.

Parameter and Limit Settings in Throughput Multiplier

– This flexibility allows you to set same parameter and/or same limit settings for throughput multiplier in Testplan options.

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