



EASY, AFFORDABLE, POWERFUL

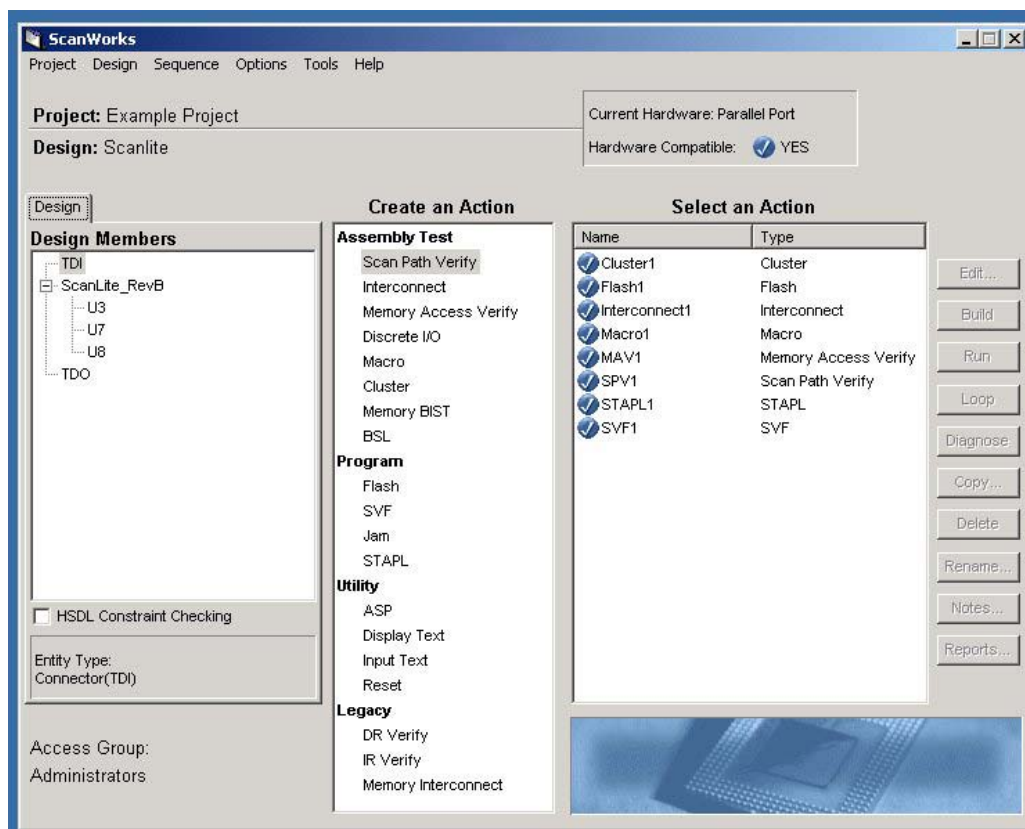
ASSET INTERTECH

SCANWORKS® PROGRAMMING STATION

The ScanWorks Programming Stations come in three flavors, PLD Programming Station, Flash Programming Station, or PLD/Flash Programming Station. The ScanWorks Programming Stations has been designed to take advantage of JTAG or boundary-scan access to load programs or configuration data into memories or programmable logic devices (PLDs) after they have been bonded to a printed circuit board (PCB). In-system programming (ISP) or in-system configuration (ISC) operations are optimized on ScanWorks because of the high-speeds the station is capable of (up to 50 MHz) and the station's multi-port capabilities, which allow it to program as many as eight PCBs in parallel.

On-board programming has many benefits during the manufacturing process, but the ScanWorks Programming Station is very valuable during design as well. Some of the benefits of ISP and ISC, including the following:

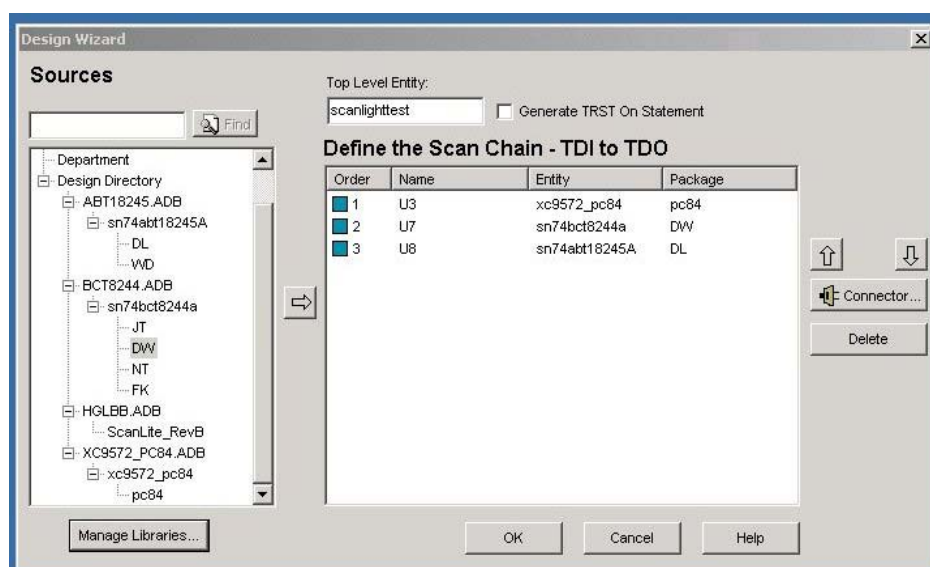
- More efficient manufacturing -- programming is accomplished as an integrated part of the overall manufacturing process.
- Reduced device handling -- Devices are soldered once, and programmed or re-programmed on-board
- Less risk of device damage -- No need to de-solder devices for re-programming
- Easier inventory control -- Fewer devices in inventory because only non-programmed devices are in inventory
- Simpler field upgrades -- Software/firmware can be upgraded in the field.



DESIGN MANAGEMENT

PRODUCT OVERVIEW

ScanWorks design management provides features needed to get started using ScanWorks for boundary-scan testing or in-system configuration. The design management software is included with the Test Development Station, Interconnect Development Station, Diagnostics & Repair Station, Interconnect Repair Station, and the Programming Station. The design management software features allow you to:



- Import the design data from your CAE/CAD environment on which interconnect tests, scan path verification tests, memory interconnect tests, flash programming and graphical views are based
- Create the boundary-scan description of your design on which all test and programming activities are based
- Create and apply tests to verify the boundary-scan design description is correct and works properly
- Organize and manage your design, test, and programming data
- Create and apply simple test programs using the macro language
- Use a simple test executive to create manufacturing test and programming applications
- Integrate ScanWorks tests into custom test executives or with other test applications using APIs
- Export tests to manufacturing as one compressed file
- Automate the process of creating and managing projects, designs, and actions using any language that supports Microsoft COM, including Perl and Tcl with ScanWorks scripting feature.

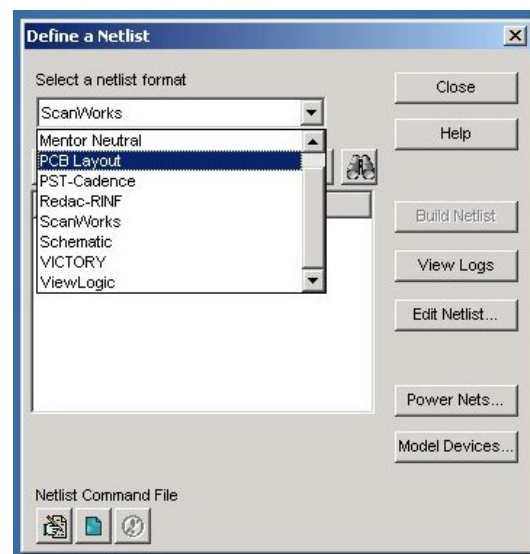
BOUNDARY-SCAN DESIGN DESCRIPTION

The boundary-scan design description used in ScanWorks is based on the IEEE 1149.1 standard Boundary-Scan Description Language (BSDL) files provided by the device vendors. The design management software imports these descriptions and creates a description of your design that includes all of the information needed to perform scan operations on the design. It is also possible to create descriptions at the multi-chip module and system levels. Once the design is described, tests to verify the design description against your actual board and tests to verify the scan path is actually working are automatically created. Scan path verification tests include options to specify alternate Device IDCODES or USERCODES.

CAE/CAD DESIGN DATA IMPORT AND USE

ScanWorks uses data imported from the design tools as a netlist for interconnect testing and as schematic and layout data for graphical views of the design. Netlists are extracted from the data used for graphical displays or from traditional netlists provided by design tools. All popular formats are supported for both types of data. Netlist data is used for verifying connections between boundary-scan devices, non-boundary-scan devices (such as memory devices) as well as for determining access to flash memories for on-board programming and creating scan path verification tests.

CAE/CAD data provides access to design information at all stages of the product development cycle. With the intelligent design browser provided with the design management software, design engineers, test engineers, and repair technicians can view the design data in either schematic or layout views. Faults detected by interconnect tests are highlighted on the layout view, enabling repair technicians to easily locate the fault on the board.



ORGANIZING AND MANAGING YOUR DESIGN AND TEST DATA

The design management software enables you to keep all the design and test data associated with a design together. Similar designs can be kept together in project folders. Projects and/or designs can be easily exported to another ScanWorks Test Development station, to a ScanWorks Manufacturing station, or to an Agilent ScanWorks for the 3070 installation as a single compressed file. This eases the process of transferring to manufacturing and ensures that all files needed are available.

All test or programming operations are implemented as *actions*. An *action* encapsulates all the information needed to run a test and diagnose the results. Actions can be executed individually or organized into *sequences*. A sequence can be executed in a batch mode. The design management software includes a simple test executive that enables you to run sequences. All actions and sequences can be exported as part of the design or project when moving to manufacturing.

USER ACCESS CONTROL

In ScanWorks, system administrators and supervisors can control who has access to specific ScanWorks features by specifying groups of users and setting the access rights of the groups. The ability to edit, delete, run, and save tests can be limited to the engineers responsible for the tests.

MACRO PROGRAMMING LANGUAGE

The ScanWorks macro programming language is a powerful, high-level language that provides access to your design at any level, from individual scan cells to entire test registers or subsets of test registers. With specialized functions and procedures you can control or observe a specific pin or create a complete test for a cluster of non-boundary-scan logic. With a macro program you can establish “safe” conditions before entering the boundary-scan test mode or maintain a safe state throughout testing.



SCANWORKS APPLICATION PROGRAMMING INTERFACE (API)

As part of the design management software, you have access to three APIs designed for creating custom user interfaces for manufacturing operators and to automate the test generation and application process. All three APIs support LabVIEW, LabWindows, Agilent (HP)-VEE, Visual Basic, C++, Test Stand, and other tools for creating test executives and one supports common scripting languages such as Test Control Language (Tcl) or Perl. With ScanWorks APIs, you can integrate ScanWorks tests and programming into a UI with the same look and feel your operators are accustomed to using with other test tools. ScanPort provides functions to apply ScanWorks actions and control the action parameters from your UI. ScanWorksAPI provides functions to apply actions as they were created in a Test Development Station, making test program creation easier. ScanWorks process automation scripting allows you to use a script to create ScanWorks projects, designs, and actions, and then integrate application of the actions into test flows along with any other test types that can be run with a script program. Using scripts for repetitive test generation processes can save enormous amounts of test development time.

Highlights

- Provides a common base for all ScanWorks stations
- Organizes and manages design and test data
- Creates and applies tests to verify design descriptions and scan path integrity
- Provides a simple test executive and easy to use APIs for application of created tests
- Enables easy transition to manufacturing with either a ScanWorks Manufacturing Station or an Agilent Medalist 3070 or i5000 in-circuit tester