New Features & Changes in ScanExpress Software Version 9.0

Featured Enhancements

Memory Model Format & GUI Enhancements

Our memory model format has been overhauled to support command sequencing, additional metadata, and improved differential pin handling. These new features allow for more descriptive memory models while at the same time significantly reducing file size and simplifying the process of creating and modifying models for complex memory devices like DDR4 SDRAM. Existing memory models will continue to be supported.

Additionally, a new graphical user interface streamlines the process of creating and updating memory models. A step-by-step wizard assists in package definition, metadata, command definitions, and command sequencing, creating a complete model with minimal data entry required.

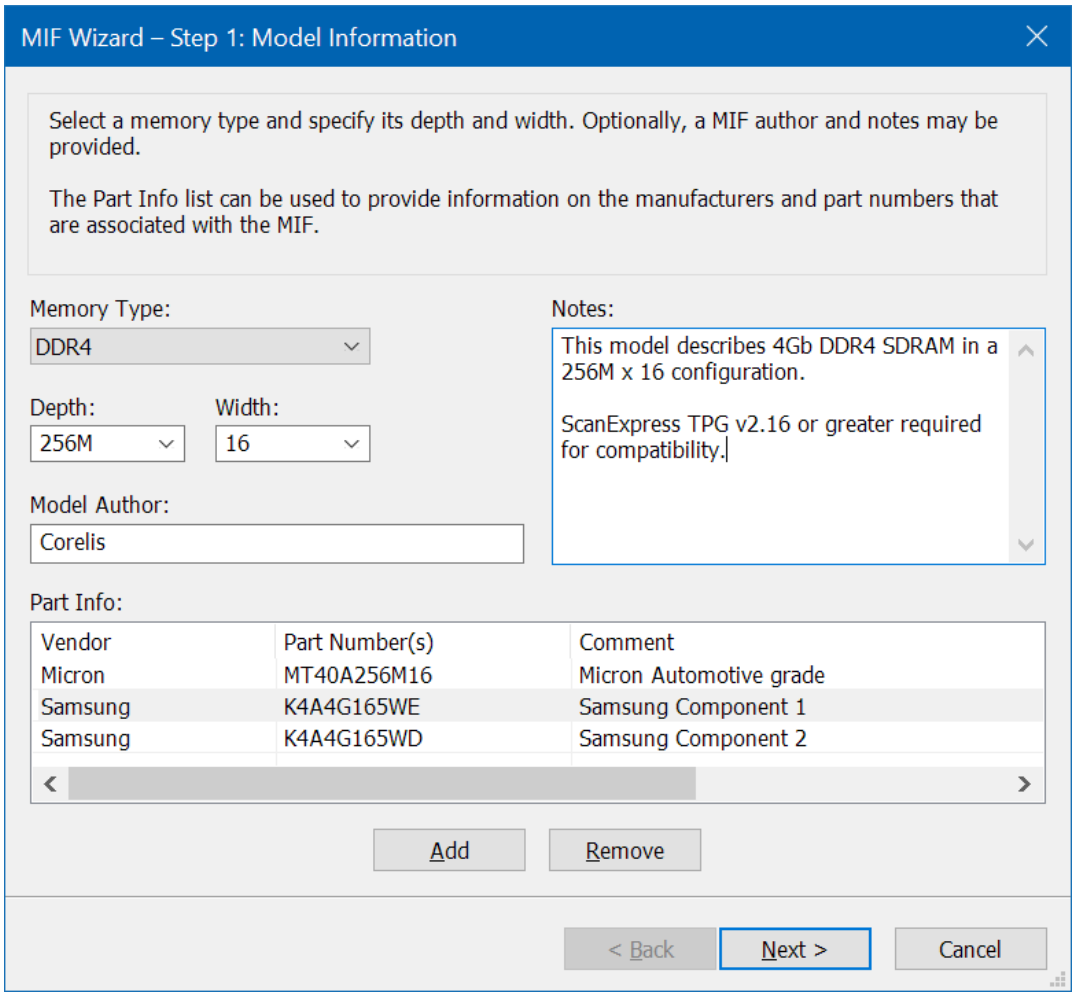

Figure 1. ScanExpress TPG MIF Wizard model information screen.

ScanExpress Viewer Test Coverage Display

ScanExpress Viewer can now overlay test coverage data on top of CAD and/or photographs for visual analysis of boundary-scan test coverage. Coverage reports created by ScanExpress DFT Analyzer can be imported into ScanExpress Viewer to color-code pins based on “Complete”, “Partial”, “None”, and “Undefined” coverage classifications. Color-coding is customizable and this feature can be used with or without a board photograph.

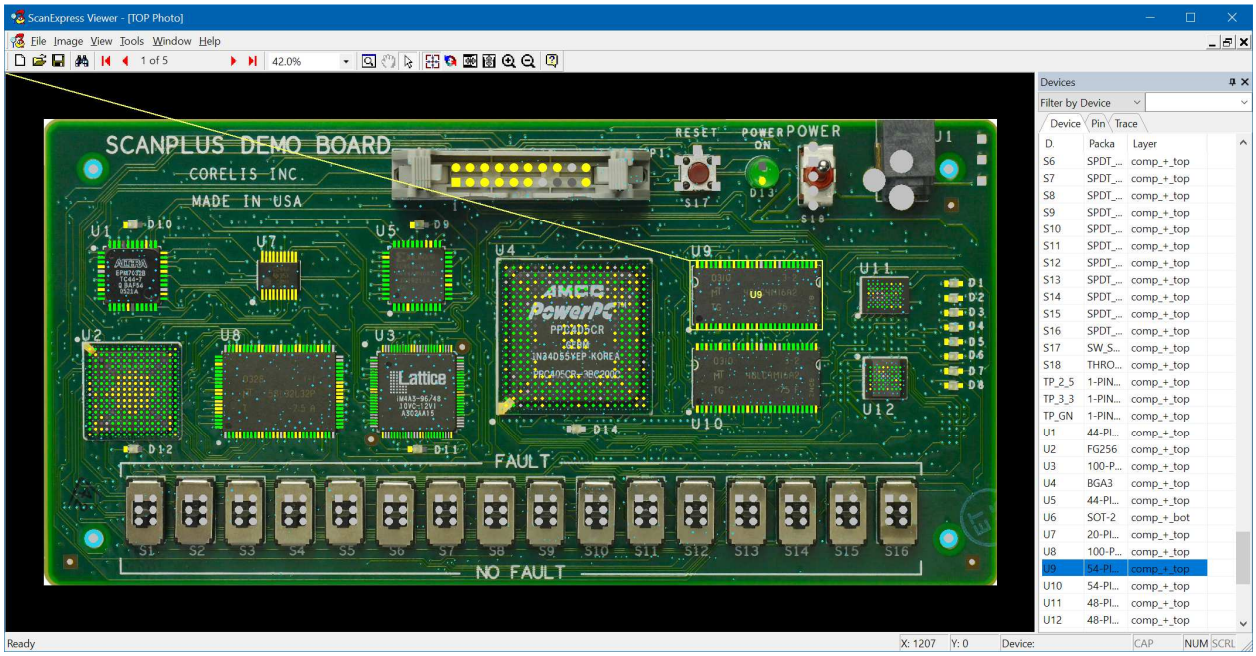

Figure 2. Test coverage data displayed the ScanPlus Demo Board platform.

IEEE-1149.1-2013 PDL Support

ScanExpress TPG scripts can now call IEEE-1149.1-2013-compliant procedure description language (PDL) files, allowing procedures to be executed from a ScanExpress Runner test plan. Two new script functions, *load_pdl()* and *tcl_eval()*, can be used to load and execute PDL or standard TCL scripts. For example scripts and PDL files, browse to *C:\Corelis Examples\ScanExpressTPG\PDL* after installing ScanExpress TPG.

ScanExpress JET Zynq NAND Flash Programming

ScanExpress JET and ScanExpress Programmer (Target Assisted Programmer module) now support NAND flash programming with Xilinx Zynq 7000 series All Programmable SoCs. NAND flash support supplements the existing Xilinx Zynq SPI NOR flash programming and basic JET CPU support.

64-bit ScanExpress Runner API

ScanExpress Runner now includes both 32-bit and 64-bit DLLs for integration with a wider variety of third-party systems. This means 64-bit versions of popular suites like LabVIEW and MATLAB can call the ScanExpress Runner DLL natively as well as integrate with customer 64-bit applications.

All Enhancements & Resolved Issues

All ScanExpress software products have been updated with the latest improvements and fixes. The tables below include a complete list of enhancements made and issues resolved with the ScanExpress version 9.0 software release grouped by the most relevant application.

> **Note:** Because ScanExpress applications are tightly integrated, some features may require updates to multiple applications to be used. For example, changes to ScanExpress Flash Generator often introduce new flash programming capabilities that require an update to ScanExpress Runner and/or ScanExpress Programmer.

If you were provided a reference number by the technical support group but do not see it listed below, please feel free to contact us and inquire about status.

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ScanExpress Installation & Licensing

Ref #	Description
3597	Resolved an issue where USB dongle may not be displayed in the License Manager.
3711	Resolved an issue when handling special characters in license request files.
3760	Updated warning message when installing on legacy operating systems.

ScanExpress DFT Analyzer

Ref #	Description
3147	Added report search capability. The search interface can be launched by pressing CTRL+F or from the right-click context menu.
1252	ScanExpress DFT Analyzer can now automatically open a schematic PDF file and search for a selected net or reference designator.
3520	Added new "Unassigned JTAG Pins Report" to identify testable pins that are not associated with a net.
3386	Fabmaster report generation is now enabled and disabled from the main screen exclusively.

ScanExpress Flash Generator & Programmer

Ref #	Description
3613	ScanExpress Programmer – TAF now supports custom flash device models.
3612	Added native device model for N25QXX components to ScanExpress Programmer – TAF.
3611	Resolved an error when attempting to run a connection test prior to saving the project in ScanExpress Programmer – TAF.
3475	Added a new option to set RAM size in ScanExpress Programmer – TAF.
3702	Resolve an issue when using the read window with a USB-1149.1/4E controller in ScanExpress Programmer – SPI/I2C.

ScanExpress Debugger

Ref #	Description
3589	Custom cell definition files will now be copied alongside the referencing BSDL file.
3632	Resolved an issue when modifying group names on the main grid.
3645	Added C100 support to GPIO Programmable Mode.
2341	Passing infrastructure tests will now report more details.
3662	Infrastructure test results will now highlight mismatches between expected and actual values.
3667	Resolved an issue where two error messages were displayed when attempting to open a missing file.
3696	Improved handling of fixed output groups.
3654	Net column and I/O column inside the Pin Browser will now remain aligned when moved.
3562	MCD definitions will now be retained when using the “Editing UUT Info” dialog.
-	Resolved an issue when saving controller configuration settings.

ScanExpress Runner

Ref #	Description
3592	Improved run time when using the “loop on test step” option with a custom TCK rate.
3594	ScanExpress Runner and ScanExpress Programmer will now treat files with the .srec extension as s-record files.
3629	Resolved an error when using the scan_reset() script command.
3633	Resolved an issue when verifying SPI flash devices at a 1 MHz clock rate.
3621	The ScanExpress Runner DLL will no longer prompt to select data file formats if the format has already been specified in the test plan file.
3682	Diagnostic details view settings are now retained when the dialog is closed and re-opened.
2510	Added a new 64-bit DLL for the ScanExpress Runner API. This DLL can be used with 64-bit applications and third-party test executives such as LabVIEW 2018 (64-bit).
3673	Resolved an issue where SVF file execution would take a very long time.
1137	BLANKCHECK is now a recognized ACTION keyword in STAPL files to support Altera devices.
3705	Added a new test step option to specify delay compensation, allowing test steps with custom TCK rates to be better optimized.
3755	JTAG controllers plugged in during the connection progress dialog will now be discovered immediately.
3690	Controller settings NetUSB-1149.1 controllers using the LAN interface can now be changed without restarting ScanExpress Runner.
588, 1075	JET, TPG script, infrastructure test, and flash output will now be written to the log file regardless of the Advanced Diagnostics selection.

ScanExpress TPG

Ref #	Description
3570	Resolved an issue when a topology file includes a device that can't be found.
3526	Resolved an issue when using an MCD device with BSDLs that define linkage bits that overlap with boundary-scan pins of other BSDLs.
3735	Resolved erroneous "The custom device file has changed" message during flash step generation.
2231	All constrained nets will now be included in the "Most Relevant" filter when adding and replacing constraints.
2269	The archive wizard now includes a button to open the containing directory.
3167	The generation status window now includes padding the left edge to improve readability.
3596	Improved the user's manual descriptions of the global coverage level.
3608	Updated the get_date_time() script function example to use a valid month code.
3607	Resolved an issue where DESIGN_WARNING block for IEEE-1149.6-compliant device may not be displayed.
3605	The F1 key will now bring up the help file when the cluster wizard is open.
3610	Script function names in the user's manual are now hyperlinks to their description page.
3258	Added a new filter for "not installed" devices.
3628	Direct I^2C ACK conditions will now be checked on USB-1149.1/1E and USB-1149.1/4E controllers. If an ACK is not detected, the test will fail.
3064	Added new move up and move down functions to the Scan Chain and MCD screens.
3661	Resolved an issue when importing Accel-EDA format netlists.
2019	The initial infrastructure test in the Script Debugger can now be disabled.
3077	The system-defined color will now be used for description text. This allows custom and high-contrast color modes to be used with ScanExpress TPG.
3601, 3675	Resolved issues when converting IPC-D-356A netlist formats.
3647	Net names will now be analyzed to arrange flash banks in order of LSB to MSB.
3680	Resolved an issue where flash devices would be removed from a bank when replacing the BOM.
3245	The scan chain order will now be maintained when changing BSDL files.
2109	Multiple lines can now be selected in the MCD interface.
2110	Improved drag and drop functionality in the MCD wizard.
3685	Resolved issue where generated test steps may not be added to the default test plan.
3660	Script functions can now return arrays.
3086	Resolved an issue when using differential port groups in a script.
2877	Consolidated test step and flash step dialogs. The "Add New" and "Add Existing" functions will now apply to all test steps.
3706	Nets classified as both "POWER" and "NON-DIGITAL" will now automatically be treated as power nets.
1705	Resolved an issue when generating interconnect test that includes single-node nets.
3741	Resolved an issue when pad bits were added to a topology file.
-	Updated and improved memory device model format with condensed command definitions, additional metadata, better differential pin handling, and more.
-	Added a new interface for the creation of memory device models.
-	IEEE-1149.1-2013-compliant PDL can now be executed from ScanExpress TPG scripts.

ScanExpress JET

Ref #	Description
1786	Improved PMIC support for OMAP3730.
1655	JET test step options will now be copied from the JET project when updating the ScanExpress Runner test plan.
3062	The register initialization utility will now set the controller GPIO signals.
3377	Added string_hex_to_integer() script function for converting strings to integers.
3137	If available, netlists in ScanExpress TPG will be used by ScanExpress JET to generate test coverage reports.
1954	The printf() function will now properly handle escaped percent sign characters. To escape '%' in the output string, use "%%".
3609	Updated manufacturer and device ID for the Micron N25Q064 model.
3622	Added a table of available functions to the user's manual. Each function name is a hyperlink to that function's description.
3631	The device auto detection feature for Zynq7000 can now use a specified base address to look for flash devices.
3636	Canceling the Open Project dialog will no longer clear the open test step list.
3615	Resolved an issue where the find dialog "Up" direction selection was not working properly.
3606	Updated PPC440 definition to remove PCI configuration registers for PPC440GX.
3568	Updated S29GL512N-BYTE model.
3686	Added L2 cache support for MIPS32.
3679	Improved support for Atmel AT91FR40162.
3677	Resolved an issue when programming NOR flash with Altera Excalibur EPXA4.
3692	Resolved an issue where the temporary backup directory may not have been deleted after closing the project.
3691	Resolved an issue where MIPS32 large memory read operations could report incorrect data.
2430	Script functions can now return arrays.
1516	The IDCODE value will now always be displayed in the IDCODE Detect Status dialog, even if a device match is found.
3697	Resolved an issue where target-assisted download could fail on MIPS CPUs.
3688	The get_file_size() and preload_datafile() script functions can now force the file type.
3693	Resolved an issue where MIPS RAM tests could fail on some CPUs.
3725	Controller TCK rate and voltage settings will now be set immediately when a JET project is loaded.
3713	Updated jtag_scan() function example.
3712	Added option to set endianness for ARM9 CPUs.
3769	Resolved an issue when setting a variable to an element of a string array.
-	Added support for NAND flash programming with Zynq7000 CPUs.

ScanExpress Viewer

Ref #	Description
3577	Resolved an issue where device filters would reset after changing tabs.
2920	Added a new test coverage display option. Report data from ScanExpress DFT Analyzer can now be graphically overlaid on CAD and photograph images to visualize boundary-scan test coverage for a given board.