

DOLPHIN INTEGRATION

**SMASH 7.2.2, SCROOGE 4.2.2 &
SHAKER 7.2.2**

New Features

October 15, 2018

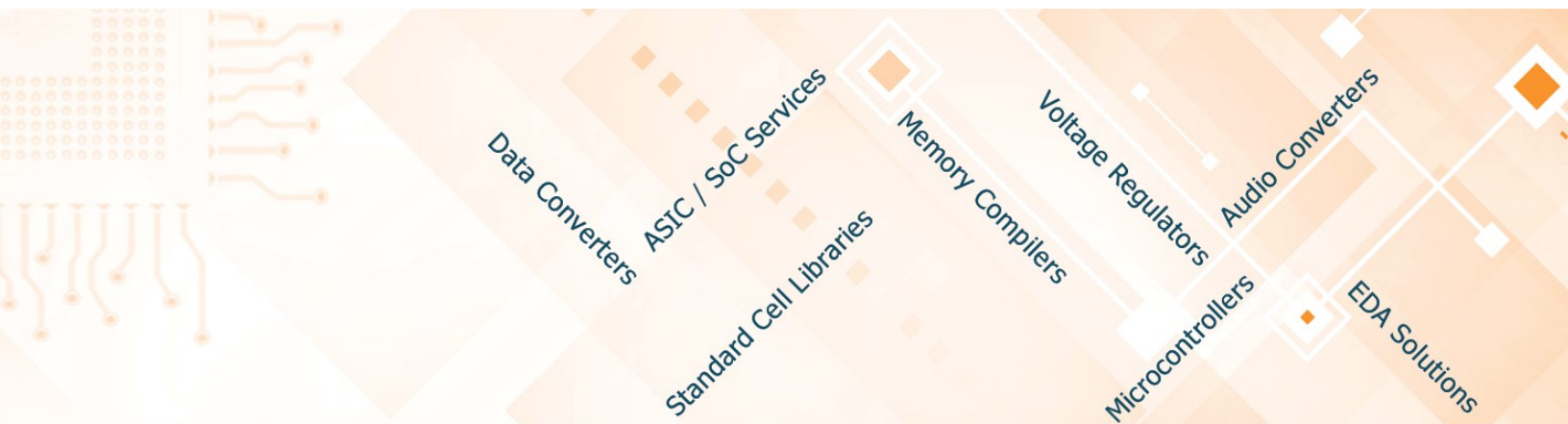
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Not just a supplier of Technology, but provider of the Dolphin Integration **know-how!**

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Preamble

As always for new releases, we would like to thank those customers who take the time to report problems and/or to suggest improvements (please remember that the best way to do so is by sending an email to support@dolphin-integration.com with an accurate description of your problem or suggestion, together with the relevant files if any). As you will see in the new features, we do our best to take remarks into account. And even if your suggestion does not appear this time, don't think it was lost or disregarded. Simply, it means that its implementation could not fit into the development plan for this particular release, but be assured that we will try to take it into account in a future release.

Web Site

Our web site <http://www.dolphin-integration.com> is a source of information on our EDA solutions. Aside from evaluation kits for our products, a number of application notes, courses or upgrades are available for download.

Supported Platforms

Microsoft Windows

SMASH is designed to run on Microsoft Windows Vista / 7 / 8 / 10 on x86_64 platforms.

Linux on Intel x64 platform

SMASH is designed to run under X-Window on RedHat Enterprise Linux 6 (RHEL6) and supports compatible Linux distributions on x86_64 platforms.

Credits & Copyrights

wxWidgets: A free C++ framework for cross-platform programming

<http://www.wxwidgets.org>

wxWindows Library License, Version 3

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3. All advertising materials mentioning features or use of this software must display the following acknowledgment: "This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)" The word 'cryptographic' can be left out if the routines from the library being used are not cryptographic related :-).
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Trio: portable and extendable printf and string functions

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Gear-Brayton Integration Method

The new formulation of the Gear-Brayton integration method included in SMASH was perfected and implemented at Supélec - Service des Mesures.

EKV3 Compact MOSFET Model Documentation

A. Bazigos, M. Bucher, F. Krummenacher, J.-M. Sallese, A.-S. Roy, C. Enz, "*EKV3 Compact MOSFET Model Documentation, Model Version 301.01*", Technical Report, Technical University of Crete, November 23, 2007.

VDA / FAT Open Source Library

The open source library of VHDL-AMS components created by the VDA / FAT working group is delivered with SMASH.

The VDA / FAT Working Group AK 30 "Simulation of Mixed Systems with VHDL-AMS" is organized within the Association for Research in Automobile Technology (FAT - Forschungsvereinigung Automobiltechnik) of the German Association of the Automotive Industry (VDA - Verband der Automobilindustrie). It promotes the relationship between car manufactures and their suppliers concerning simulation of mixed systems and model exchange.

The working group promotes the development of VHDL-AMS models that are integrated in different libraries.

FUNDAMENTALS_VDA

Public library with general VHDL-AMS models like time sources, converters between different domains, table-lookup models, relays, switches...

SPICE2VHD

VHDL-AMS models with nearly the same terminal behavior like Spice models of basic electrical elements like resistor, capacitor, inductor, and level1 models of semiconductor devices.

AUTOMOTIVE_VDA

Library under development with special parameterized models like wires, fuses, bulbs, EMC test signals...

New Features

SMASH - Installer

Bug fixing

- Corrected Windows installer 'How to Install' shortcut location (DDIsa13177 - SMASH 7.2.0)

SMASH - Kernel

Enhancements

- Implemented API functions to browse circuit connections (DDIsa13125 - SMASH 7.2.0)

Bug fixing

- Corrected logic transient simulation rendering when using superspose logic without previous results (DDIsa12588 - SMASH 7.2.0)
- Corrected changed parameters from analysis dialog which are not applied in multi-runs analysis (DDIsa12593 - SMASH 7.2.0)
- Corrected simulation of .CLK signal when transient analysis continue after initial end (DDIsa13149 - SMASH 7.2.0)
- Corrected SystemC tutorial execution problem when there is a 32-bit libwinpthread-1.dll in user environment PATH (DDIsa13193 - SMASH 7.2.0)
- Corrected the creation of circuit archives when circuit file names use environment variables (DDIsa13297 - SMASH 7.2.1)
- Corrected slowdown of operating point analyses with the power-up method and .IC directives, .NODESET directives or HZ nets (DDIsa13326 - SMASH 7.2.2)
- Corrected OP and transient analyses convergence for analog circuits using GF 22nm models (DDIsa13337 - SMASH 7.2.2)

SMASH - Models

Enhancements

- Improved clarity of messages and output files by hiding SPICE resistor internal nodes (DDIsa13112 - SMASH 7.2.0)
- Added documentation of the EKV v2.6 MOS transistor model (DDIsa13182 - SMASH 7.2.0)
- Implemented UTSOI v2.2 SPICE MOS model (DDIsa13291 - SMASH 7.2.1)
- Implemented R3_CMC SPICE resistor model (DDIsa13303 - SMASH 7.2.1)

Bug fixing

- Corrected noise contribution of HICUM model in nze file (DDIsa13130 - SMASH 7.2.0)
- Corrected convergence problem during noise and transient noise analyses of BSIM-BULK v106.2 model (DDIsa13225 - SMASH 7.2.1)
- Corrected convergence problem during transient analysis of DIODE level=1 model when IKF parameter is given (DDIsa13279 - SMASH 7.2.1)
- Corrected slow-down of transient simulations for some circuits that contain low value resistors (DDIsa13294 - SMASH 7.2.1)
- Corrected the Vth computation of UTSOI 2.1 SPICE model (DDIsa13333 - SMASH 7.2.2)
- Corrected the R3CMC SPICE model for AC analysis (DDIsa13338 - SMASH 7.2.2)

SMASH - SPICE**Enhancements**

- Implemented support of TSMC TMI interface (DDIsa12672 - SMASH 7.2.1)

Bug fixing

- Corrected computation of formula trace that could be wrong in DC parameter analysis (DDIsa13117 - SMASH 7.2.1)
- Corrected memory over-consumption in .OP homotopy algorithm for resistors lower than 10u Ohms (DDIsa13302 - SMASH 7.2.1)

SMASH - SystemVerilog**Enhancements**

- Implemented support for SystemVerilog packages (DDIsa05867 - SMASH 7.2.0)
- Added basic support for always_ff, always_comb and always_latch SystemVerilog processes (DDIsa13089 - SMASH 7.2.0)

SMASH - VHDL**Bug fixing**

- Corrected VHDL shared variables to start the simulation at their end of elaboration value rather than their initial value (DDIsa10727 - SMASH 7.2.0)
- Corrected the protection of encrypted hierarchical names printed out by report/assert statement. (DDIsa11872 - SMASH 7.2.0)
- Corrected possible wrong detection of internal conflicts when registering VHDL types (DDIsa13181 - SMASH 7.2.0)

SMASH - Verilog

Enhancements

- Provided support of \$test\$plusargs and \$value\$plusargs Verilog system functions (DDIsa03266 - SMASH 7.2.0)
- Added support for data declarations inside Verilog generate blocks (DDIsa08311 - SMASH 7.2.0)
- Added support for Verilog task declarations in generate constructs (DDIsa10177 - SMASH 7.2.0)
- Provided support of real array initializations (DDIsa13023 - SMASH 7.2.0)

Bug fixing

- Improved performance of large Verilog concatenations (DDIsa07447 - SMASH 7.2.0)
- Corrected a compilation error when a Verilog generate construct contains named sequential blocks (DDIsa11321 - SMASH 7.2.0)

SMASH - Verilog-AMS

Enhancements

- Implemented support for access functions on net array elements (DDIsa02817 - SMASH 7.2.0)
- Implemented support for using genvar loop (for) variable in Verilog-Ams analog block (DDIsa10802 - SMASH 7.2.0)
- Provided support of real versions of the Probabilistic distribution system functions (DDIsa12825 - SMASH 7.2.0)
- Provided support of value range specification for string parameters (DDIsa12885 - SMASH 7.2.0)

Bug fixing

- Corrected Verilog-AMS code generation of variable bit-select assignments (DDIsa13062 - SMASH 7.2.0)
- Corrected Verilog-AMS behavior when mathematical functions are used inside loops (DDIsa13097 - SMASH 7.2.0)
- Corrected availability of Verilog-A output variables in the advanced parameters panel for noise analysis (DDIsa13144 - SMASH 7.2.0)
- Corrected a crash that happened in montecarlo analysis using a default device (DDIsa13270 - SMASH 7.2.1)
- Corrected noise contribution of Verilog-AMS instances in nze file and made units more explicit in nze file (DDIsa13273 - SMASH 7.2.1)

SMASH - Viewer

Enhancements

- Implemented the ability to change the font size of the waveform viewers (DDIsa12384 - SMASH 7.2.0)
- Implemented an interface to send user feedback and support requests (DDIsa13158 - SMASH 7.2.0)

Bug fixing

- Corrected the SMASH socket interface to allow semicolon character in API function arguments (DDIsa09953 - SMASH 7.2.0)
- Corrected the files filters list to be simpler (DDIsa12073 - SMASH 7.2.0)
- Removed keyboard shortcuts to show/hide toolbars (DDIsa12078 - SMASH 7.2.0)
- Corrected the addition of traces to the simulation viewer with drag and drop for multi-run analyses (DDIsa12196, DDIsa10763 - SMASH 7.2.0)
- Corrected a crash that could happen when changing the zoom in the domain coloring view (DDIsa12716 - SMASH 7.2.0)
- Corrected the help button of several dialog boxes to open the User Manual (DDIsa12807 - SMASH 7.2.0)
- Corrected the verification of the hierarchy separator value in the preferences dialog to reject SMASH reserved characters (DDIsa13000 - SMASH 7.2.0)
- Corrected the state of the Find toolbar button after closing the Find dialog (DDIsa13001 - SMASH 7.2.0)
- Corrected the reset of user defined values to default for the 'Expert mode' Preferences (DDIsa13012 - SMASH 7.2.0)
- Corrected calculation of axis values (DDIsa13065 - SMASH 7.2.0)
- Improved the management of circuit alterations in the IDE (DDIsa13080 - SMASH 7.2.0)
- Corrected the behaviour of the 'update control file' option in the sweep parameters dialog (DDIsa13093 - SMASH 7.2.0)
- Corrected a crash of multi-parameters SWEEP analysis after a list edition (DDIsa13168 - SMASH 7.2.0)
- Corrected the rendering of the Profile Choice dialog (DDIsa13198 - SMASH 7.2.0)
- Corrected system lock on the font files in the installation directory that remained after exiting the program (DDIsa13186 - SMASH 7.2.1)