CableExpert 2020.01

Release Notes

XPEEDIC
ACCELERATE YOUR IC DESIGN

1. OVERVIEW

Cable is commonly seen in high-speed systems. Accurate modeling and simulation are necessary for signal integrity purpose. It is a challenge to build accurate model and simulate it in an efficient way. CableExpert offers a quick way to build 3D model with its built-in templates to handle various drain types including center drain and dual drain, various twine shielding including longitudinal and wrapping, auto port generation to simplify EM setup, and parametric sweep for easy what-if analysis. The tool offers both 2D and 3D simulation for different application usage, 2D FEM solver to generate RLGC model and 3D FEM solver to generate S-parameter model. Both solvers adopt distributed processing and multi-core parallelization which adds another level of speedup. The tool has a built-in algorithm treating a long cable as simulating it as a whole is impossible. It offers users a quick way to export a script for use in HFSS.

The Release Notes cover the following releases:

CableExpert 2020.01

Release Date: May 20, 2020

CableExpert 2020.01.h1

Release Date: Aug 28, 2020

CableExpert 2020.01.h2

Release Date: Feb 07, 2021

The Release Notes present the latest information about CableExpert Version 2020.01 in the following sections:

2. Supported Operating Systems

CableExpert 2020.01 is available on 64-bit Windows. The supported platforms for this release include:

- Windows 7 SP1
- Windows 8.1 KB2999226 or above
- Windows 10

3. New Features and Enhancements in CableExpert 2020.01

CableExpert 2020.01 provides new features and enhancements as described in the following sections.

3.1 Usability Improvements

- Support pop up warning message when wrong HFSS exe set.
- Support abort simulation progress.
- Support show 3d view in different OS.
- Show detailed message from HFSS in CableExpert.
- Start simulation by enabling HPC Feature in HFSS.
- 'Solve Inside' option is disabled by default.

4. New Features and Enhancements in CableExpert 2020.01.h1

CableExpert 2020.01.h1 provides new features and enhancements as described in the following sections.

4.1 Usability Improvements

- Add an option to use drain as signal or not, and support switch it between "true" and "false" to enable drain as single or not.
- Support Shorten the distance between the two copper cores in template: “No Drain-Wrapping”, “No Drain-Longitudinal 1” and “No Drain-Longitudinal 2”.
- Simplify AWG to a single solid strand.
- Update the pictures about template: LVDS, IEEE-1394 and Differential Cable.

5. NEW FEATURES AND ENHANCEMENTS IN CABLEEXPERT 2020.01.H2

CableExpert 2020.01.h2 provides new features and enhancements as described in the following sections.

5.1 Usability Improvements

- Material Library

  (1)Support save added material to material library.

  (2)Support modify material in “Impedance Estimate” window and “properties” window.
- Display color of cable when creating coaxial cables.

6. LEGAL NOTICE

The source code used in CableExpert comprises of both Open Source and proprietary software components.

The Open Source components used in CableExpert are:

- Qt 5.13.2

This software uses the Qt library, a multiplatform C++ GUI toolkit from Trolltech. See http://www.trolltechcom/qt/ for more information.

- Clipper 6.1.3

  Freeware for both open source and commercial applications (Boost Software License).

  Copyright © 2010-2014 Angus Johnson

- QtXlsx 0.3

  This software uses the Qt library, a multiplatform C++ GUI toolkit from Trolltech. See http://www.trolltechcom/qt/ for more information.

- GCC 4.8.2

  cpp (GCC): Copyright (C) 2003 Free Software Foundation, Inc.

- MPFR 2.4.2

  MPFR is free. It is distributed under the GNU Lesser General Public License (GNU Lesser GPL), version 3 or later (2.1 or later for MPFR versions until 2.4.x). The library has been registered in France by the Agence de Protection des Programmes under the number IDDN FR 001 120020 00 R P 2000 000 10800, on 15 March 2000. This license guarantees your freedom to share and change MPFR, to make sure MPFR is free for all its users. Unlike the ordinary General Public License, the Lesser GPL enables developers of non-free programs to use MPFR in their programs.

- MPC 0.8.1

  The library is built upon and follows the same principles as GNU MPFR. It is written by Andreas Enge, Mickaël Gastineau, Philippe Théveny and Paul Zimmermann and is distributed under the GNU Lesser General Public License, either version 3 of the licence, or (at your option) any later version (LGPLv3+). The GNU MPC library has been registered

in France by the Agence pour la Protection des Programmes on 2003-02-05 under the number IDDN FR 001 060029 000 R P 2003 000 10000.

- GMP 4.3.2

  The GMP Announcements mailing list is a read-only list for announcements regarding the GNU Multiple Precision Library (GMP).

- Boost 1.72

  Boost C++ Libraries http://www.boost.org is licensed under the `Boost Software License V1`http://www.boost.org/users/license.html

- CGAL 4.9

  CGAL is licensed under GNU LESSER GENERAL PUBLIC LICENSE (LGPL) Version 3.0. See GNU LESSER GENERAL PUBLIC LICENSE (LGPL) for a complete listing of the GNU LESSER GENERAL PUBLIC LICENSE.

  Virtually any software may use Eigen. For example, closed-source software may use Eigen without having to disclose its own source code. Many proprietary and closed-source software projects are using Eigen right now, as well as many BSD-licensed projects.

- Python 3.7.6

  Python is owned by the Python Software Foundation, Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 Python Software Foundation; All Rights Reserved License Agreement: PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

  1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.

  2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test,

perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.

4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

- Inno Setup 6.0.4

Except where otherwise noted, all of the documentation and software included in the Inno Setup

package is copyrighted by Jordan Russell.

Copyright (C) 1997-2019 Jordan Russell. All rights reserved.

Portions Copyright (C) 2000-2019 Martijn Laan. All rights reserved.

This software is provided "as-is," without any express or implied warranty. In no event shall the author be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial

applications, and to alter and redistribute it, provided that the following conditions are met:

1. All redistributions of source code files must retain all copyright notices that are currently in place, and this list of conditions without modification.

2. All redistributions in binary form must retain all occurrences of the above copyright notice and web site addresses that are currently in place (for example, in the About boxes).

3. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software to distribute a product, an acknowledgment in the product documentation would be appreciated but is not required.

4. Modified versions in source or binary form must be plainly marked as such, and must not be misrepresented as being the original software.

- Sklearn 0.21

  Open source, commercially usable - BSD license.