Simcenter Flotherm Release Highlights

Software Version 2410
October 2024

SIEMENS

About Siemens Digital Industries Software

Siemens Digital Industries Software is a global leader in the growing field of product lifecycle management (PLM), manufacturing operations management (MOM), and electronic design automation (EDA) software, hardware, and services. Siemens works with more than 100,000 customers, leading the digitalization of their planning and manufacturing processes. At Siemens Digital Industries Software, we blur the boundaries between industry domains by integrating the virtual and physical, hardware and software, design and manufacturing worlds. With the rapid pace of innovation, digitalization is no longer tomorrow’s idea. We take what the future promises tomorrow and make it real for our customers today. Where today meets tomorrow. Our culture encourages creativity, welcomes fresh thinking and focuses on growth, so our people, our business, and our customers can achieve their full potential.

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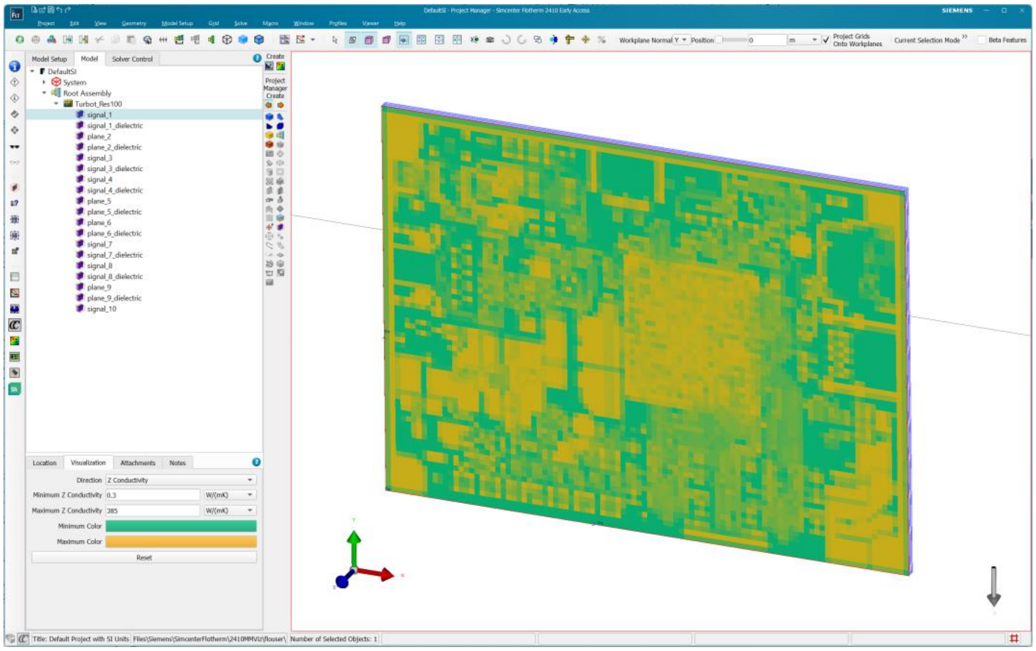
Introduction

This document provides a high-level summary of this release of Simcenter™ Flotherm™ software. It includes a summary of the new features in this release, any authorization code changes required, any major installation changes, and any transitioning issues you should be aware of before installing.

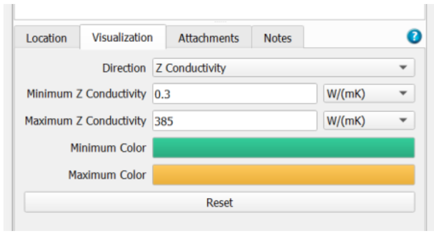
New Features

The following new features are available in this release:

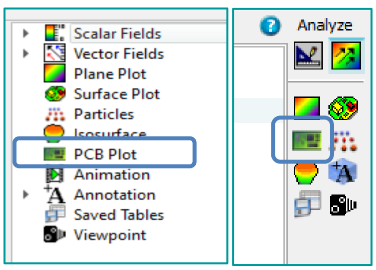
- **Model the Complexity – Visualization of Material Map Data.**
    - Introduced in Simcenter Flotherm 2404, the Material Map SmartPart is a lightweight method to model high-fidelity representations of the material variations inside printed circuit boards, package substrates, and dies. Created by importing a text file to describe the material variation.
    - Can visualize the conductivity in the drawing board by:
        - selecting one or more regions or entire material.
        - changing viewing mode to solid
    - Plot shows direct data from the input file to the resolution of the material map not the overlaid solver grid.



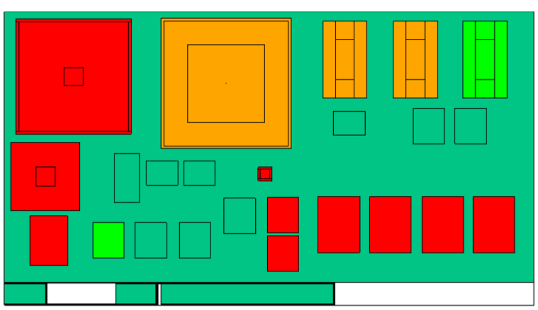
- New property sheet tab used to:
  - select x, y or z-conductivity.
  - change range.
  - change color.



- **Go Faster – New Smart Plot for PCB Components.**
  - Added new plot type to visualization window to allow quick inspection of PCB component parameters.



  - Applicable to any PCB transferred from Simcenter Flotherm EDA Bridge.
  - Supports the EDA PCB and Component Tables with visual feedback.



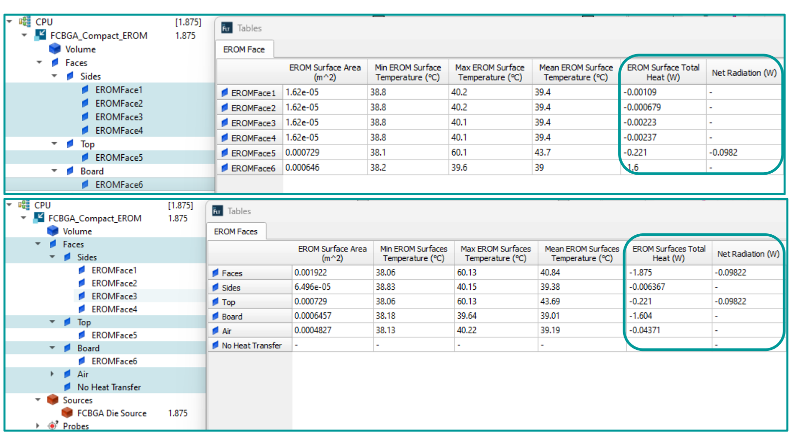
Tables

EDA Components | Solid Conductors Summary | EDA Boards

	Reference Designator	Grade	Thermal Margin (°C)	Junction Temperature (°C)	Case Temperature (°C)	Tj Max (°C)	Tc Max (°C)
U33 [TSOP_Conv_Delphi]	U33	Marginal	2.34	118	105	120	110
U1 [FC_CBGA_Detailed]	U1	Marginal	2.04	98	95.1	100	95
U31 [TSOP_Conv_Delphi]	U31	Marginal	0.605	119	107	120	110
U23 [SOL28, 11-44000-03]	U23	Fail	-1.3	91.3	87.9	90	75
U24 [WB_PBGA_Delphi_CC]	U24	Fail	-2.24	92.2	92.2	90	75
U22 [cbga1]	U22	Fail	-4.65	100	100	95.5	95
U12 [32PSOIC, 20-30010-09]	U12	Fail	-8.66	98.7	97.7	90	75
U11 [20PSOIC, 18-40000-43]	U11	Fail	-11.3	101	95.7	90	75
U15 [32PSOIC, 20-30010-09]	U15	Fail	-13.7	104	103	90	75
U13 [32PSOIC, 20-30010-09]	U13	Fail	-17	107	106	90	75
U10 [20PSOIC, 18-40000-43]	U10	Fail	-17.3	107	102	90	75
U14 [32PSOIC, 20-30010-09]	U14	Fail	-18.3	108	107	90	75
U25 [QFN_Delphi_NA]	U25	Fail	-42	132	131	90	75
U8 [20PSOIC, 18-40000-49]	U8	Pass	7.99	97	91.9	105	100
U34 [TSOP_Conv_Delphi]	U34	Pass	5.73	114	102	120	110
U7 [20PSOIC, 18-40000-29]	U7	-	-	-	-	-	-
U6 [20PSOIC, 18-40000-29]	U6	-	-	-	-	-	-

- The following items can be displayed
  - Component Power – colors components by *dissipated power*. Distinction between dissipated power and property sheet definition particularly apparent to transient analysis with varying power specified.
  - Component Power Density – colors components by their *dissipated power per area over which the power is applied.*
  - Case Temperature / Junction Temperature – Not applicable for simple, single block components.
  - Mean Temperature – applicable for all component types.
  - T_c – $T_{c\ Max}$ / T_j – $T_{j\ Max}$ – difference between actual case / junction temperature and defined maximum allowed temperature.
  - T_c-$T_{c\ Max}$ Marginal / T_j-$T_{j\ Max}$ Marginal – plotted for components with operating temperatures (case or junction respectively) lying within the marginal range either side of the maximum allowed temperature. Marginal temperature range defined in Analyze Mode User Preferences.
  - T_c-$T_{c\ Max}$ Fail / T_j-$T_{j\ Max}$ Fail – plotted only for failing components. The operating temperature of these components (case or junction respectively) is higher than the maximum junction temperature specified plus the marginal temperature range defined in Analyze Mode User Preferences.
  - Grade – colors components depending on pass (green) / marginal (amber) / fail (red) criteria. The criteria are based on the defined maximum temperatures and the marginal range.

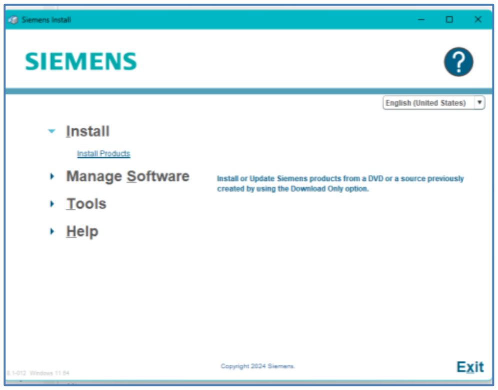
- **Go Faster – Heat Flux Reporting for Embeddable BCI-ROMs**
  - Added columns to Smart Table for Embeddable BCI-ROMs to report
    - Total surface heat flux
    - Contribution from radiation



	EROM Surface Area (m^2)	Min EROM Surface Temperature (°C)	Max EROM Surface Temperature (°C)	Mean EROM Surface Temperature (°C)	EROM Surface Total Heat (W)	Net Radiation (W)
EROMFace1	1.62e-05	38.8	40.2	39.4	-0.00109	-
EROMFace2	1.62e-05	38.8	40.2	39.4	-0.000679	-
EROMFace3	1.62e-05	38.8	40.1	39.4	-0.00223	-
EROMFace4	1.62e-05	38.8	40.1	39.4	-0.00237	-
EROMFace5	0.000729	38.1	60.1	43.7	-0.221	-0.0982
EROMFace6	0.000646	38.2	39.6	39	1.6	-

	EROM Surface Area (m^2)	Min EROM Surfaces Temperature (°C)	Max EROM Surfaces Temperature (°C)	Mean EROM Surfaces Temperature (°C)	EROM Surfaces Total Heat (W)	Net Radiation (W)
Faces	0.001922	38.06	60.13	40.84	-1.875	-0.09822
Sides	6.496e-05	38.83	40.15	39.38	-0.006367	-
Top	0.000729	38.06	60.13	43.69	-0.221	-0.09822
Board	0.0006457	38.18	39.64	39.01	-1.604	-
Air	0.0004827	38.13	40.22	39.19	-0.04371	-
No Heat Transfer	-	-	-	-		-

- **Siemens Install Program.**
    - Software installation and management now using the Siemens Install Program.



    - Aligns Simcenter Flotherm with other Siemens software products to provide a unified and easy to use interface to install and manage any Siemens software.
    - Unattended/Batch install available.

Licensing

This release uses Mentor Standard Licensing (MSL) for the Siemens Advanced Licensing Technology (SALT) 2.4.0, mgcld/saltd vendor daemon and licenses.

SALT is a new Siemens licensing solution based on FlexNet licensing technology. SALT 2.4.0 requires FLEXnet license server running at version 11.19.0.1 or higher. If you use server-based licenses, you will need to update the license server accordingly. Download the latest Siemens License Server Installer and licensing documentation from Support Center:

`https://support.sw.siemens.com/en-US/product/1586485382`

If you are currently using the environment variable MGLS_LICENSE_FILE then you need to set a new environment variable SALT_LICENSE_SERVER with the same value. MGLS_LICENSE_FILE can remain set to support older versions.

For more information on SALT and Siemens License Server refer to Knowledge Base article MG612613 “Getting Started with Siemens Advanced Licensing Technology (SALT) and the Siemens License Server (SLS)”, Knowledge Base article MG612618 “Siemens Advanced Licensing Technology (SALT) Migration Guide for Mentor Products” on Support Center and new licensing documentation: *Siemens Digital Industries Software License Server Installation Instructions* and *Siemens Digital Industries Software Licensing Manual for Siemens EDA Products*.

Authorization Codes

No changes to authorization codes are required for this release.

You can download your existing authorization codes from Support Center -> Account Center -> Licenses:

account.sw.siemens.com/licenses

For additional information on licensing, refer to the *Siemens Digital Industries Software Licensing Manual for Siemens EDA Products*.

Product Installation

Simcenter Flotherm 2410 now utilizes the Siemens Install Program to install all parts of the software. This provides a unified and easy to use interface to install and manage any Siemens software.

Product Transition

Starting with Release 2404 there is a new set of license bundles offering access to a combination of software:

297640 Electronics Cooling Flexx 3 – NX
 Gives access to Simcenter Flotherm, Simcenter Flotherm XT and Simcenter FLOEFD (NX) with Electronics Module.
297638 Electronics Cooling Flexx 3 – Creo
 Gives access to Simcenter Flotherm, Simcenter Flotherm XT and Simcenter FLOEFD (CREO) with Electronics Module.

For further information, please contact your sales representative.

New Cloud-Based Documentation Access Since Simcenter Flotherm 2310 Release

Since the Simcenter Flotherm 2310 release an improved method to access your Siemens Digital Industries Software product documentation has been provided. The default option serves your product documentation from Support Center, giving you immediate access to the latest release-specific documentation, enhanced search of HTML and PDF files, and (if you use translated documentation) full multi-language search. This new method also eliminates the requirement to install product documentation as part of the local software installation.

For easy access, we offer an option to view Support Center documentation using a documentation proxy on your network. This documentation proxy removes the need for your users to have a Support Center account or to log into Support Center to view documentation.

We understand that some customers use our products on restricted networks without internet access. You have the option to download the documentation and set up a Siemens Documentation Server to view the documentation package on your local network.

See “Configuring Documentation Access” in the *Simcenter Flotherm 2410 Installation Instructions* for instructions to set up the documentation proxy or the documentation server.

Supported Platforms

Supported Operating Systems (Full Software)

- Microsoft Windows 10 Version 22H2 (64 Bit Pro and Enterprise).
- Microsoft Windows 11 Versions 22H2 and 23H2 (64 Bit Pro and Enterprise).
- Microsoft Windows Server 2019 Version 1809, (64 Bit Standard Edition).
- Microsoft Windows Server 2022 (64 Bit Standard Edition)

Supported Operating Systems (Solver Only)

- Linux RHEL 8.10 x64
- Linux RHEL 9.4 x64
- Linux SUSE SLES 15.5 x64

Note that supported operating systems may change. For most up to date information please refer to Support Center documentation.

Localized Languages

- Japanese

- Simplified Chinese

Hardware Requirements

The following minimum hardware is required to run Simcenter Flotherm 2410:

- 64-bit capable AMD processor or an Intel processor with EM64T.
- 2 GB system memory (RAM) minimum, 8 GB recommended.
- Graphics card supporting hardware accelerated OpenGL version 2.0 or later.

Compatible releases

The following releases are compatible with Simcenter Flotherm 2410:

Link to HEEDS.

- HEEDS 2404

Note: To support a particular version of Simcenter Flotherm the portal setting in HEEDS needs to be adjusted to use the appropriate Simcenter Flotherm files.

- In HEEDS go to File \ Options \ Analysis Portals.
- Select Simcenter Flotherm.
- Set “Solver Install” to correct location.
    - For Simcenter Flotherm 2410 the default location following installation is: “C:\Program Files\Siemens\SimcenterFlotherm\2410\WinXP\bin\flotherm.bat”

Power Map Import.

- HyperLynx PI V8.2.1 through VX2.11.
    - **Note that VX2.12, VX2.13, VX2.14 and 2409 are not supported.**

File Imports and Exports

Supported ECAD Files (Import only via EDA Bridge)		
ODB++ Directory		Versions 7 and 8
ODB++ Archive	*.tar.gz, *.tgz, *.tar	Version 7 and 8
IDF	Board definition *.emn, *.bdf, *.brd, Component definition *.emp, *.idf, *.lib, *.pro	Version 2.0 and 3.0

Xpedition (1)	*.floeda	Xpedition Enterprise EEVX 1.1 or later
Allegro (2)	*.floeda	PCB Designer 17.2 or later
APD (2)	*.floeda	Allegro Package Designer 17.2 or later
Boardstation (2)	*.floeda	Boardstation PCB 2005BST and 2006BSXE or later
CR5000 (2)	*.floeda	CR-5000 Board Designer 9.0 or later

(1) Plugins for EDA software to create *.floeda files available within the installation directory .\SimcenterFlothermPCB\2410\eda_interfaces.

(2) Plugins for these products have been removed from the installation and will no longer be updated. Import of existing files and operation of existing plugins will continue to function.

Supported CAD Files (Via MCAD Bridge)		
Importing CAD Files		
Siemens NX	*.ptr	Up to version 2406
Siemens Solid Edge	*.prt, *.asm	Up to version 2310
Parasolid	*.x_t, *.x_b, *.xmt_txt, *.xmt_bin	Up to version 36.1
JT	*.jt	Version 10.9
PLMXML	*.plmxml	Schema version 6
XTXML	*.xtxmla	Exported from Simcenter Flotherm XT 2310 Exported from Simcenter Flotherm Package Creator up to version 2310
IGES	*.iges	Up to version 5.3
STEP	*.stp	AP203, AP214, AP242
PTC Creo	*.prt.*, *.asm.*	Pro/E 2000i to Creo Parametric 10.0
CATIA V4	*.model, *.exp	Version 4.1.5 to 4.2.4
CATIA V5	*.CATPart, *.CATProduct	Up to V5-6R2023 SP3
SolidWorks	*.sldprt, *.sldasm	Versions 1999 to 2024
ACIS	*.sat, *.sab	Up to version 2023.1.0
Exporting CAD Files		
Parasolid	*.x_t, *.x_b, *.xmt_txt, *.xmt_bin	Version 36.1
JT	*.jt	Version 9.5
PLMXML	*.plmxml	Schema version 6
IGES	*.iges	Version 5.3
STEP	*.stp	AP242
CATIA V4	*.model, *.exp	Version 4.1.9

Support Information

A support contract with Siemens is a valuable investment in your organization’s success. With a support contract, you have 24/7 access to the comprehensive and personalized Support Center portal.

Support Center features an extensive knowledge base to quickly troubleshoot issues by product and version. You can also download the latest releases, access the most up-to-date documentation, and submit a support case through a streamlined process.

support.sw.siemens.com/

If your site is under a current support contract but you do not have a Support Center login, register here:

support.sw.siemens.com/register

Simcenter Community

Join Simcenter community of experts to ask questions, solve issues, help others, and submit product ideas.

Simcenter Flotherm (siemens.com)