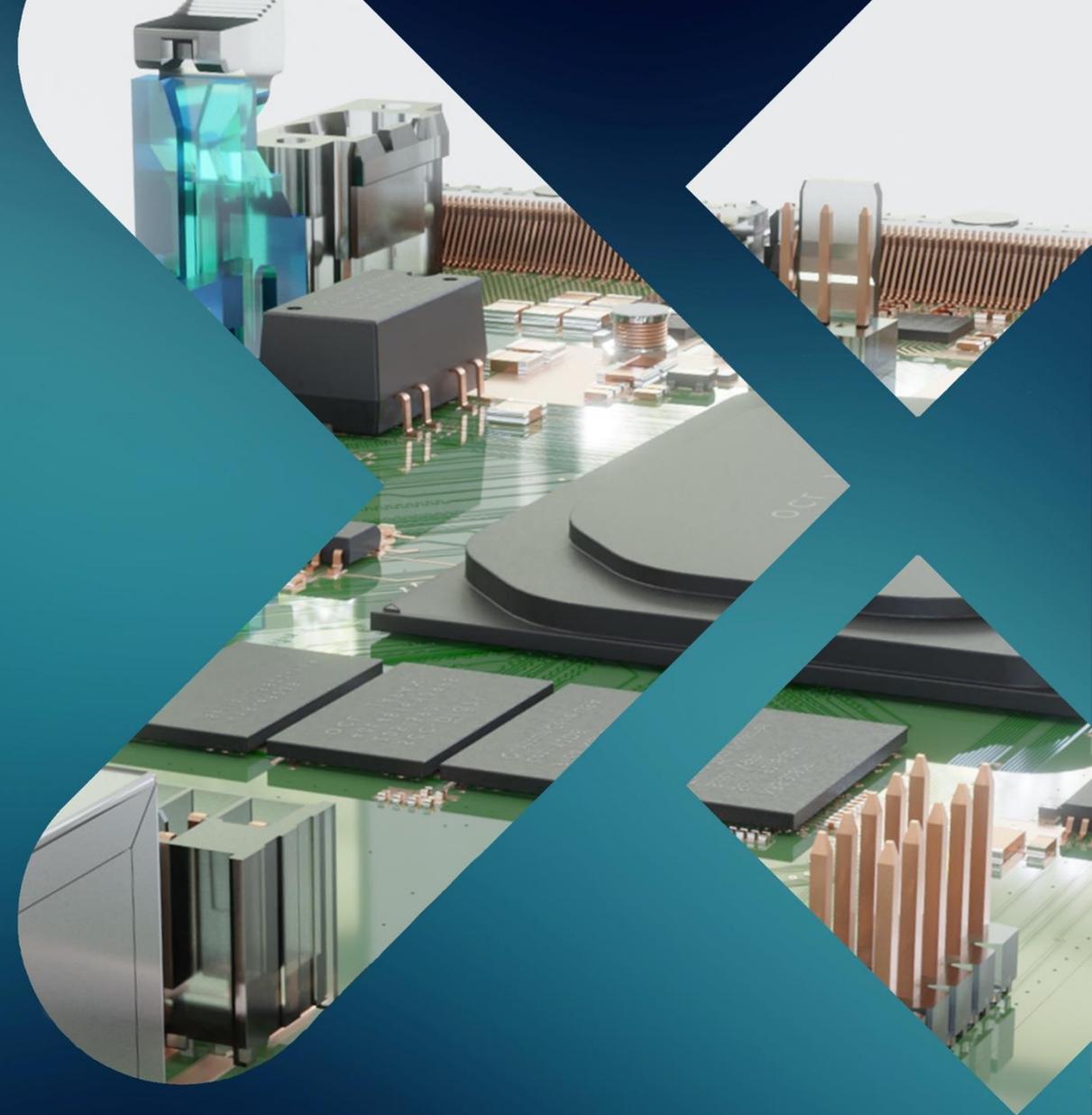
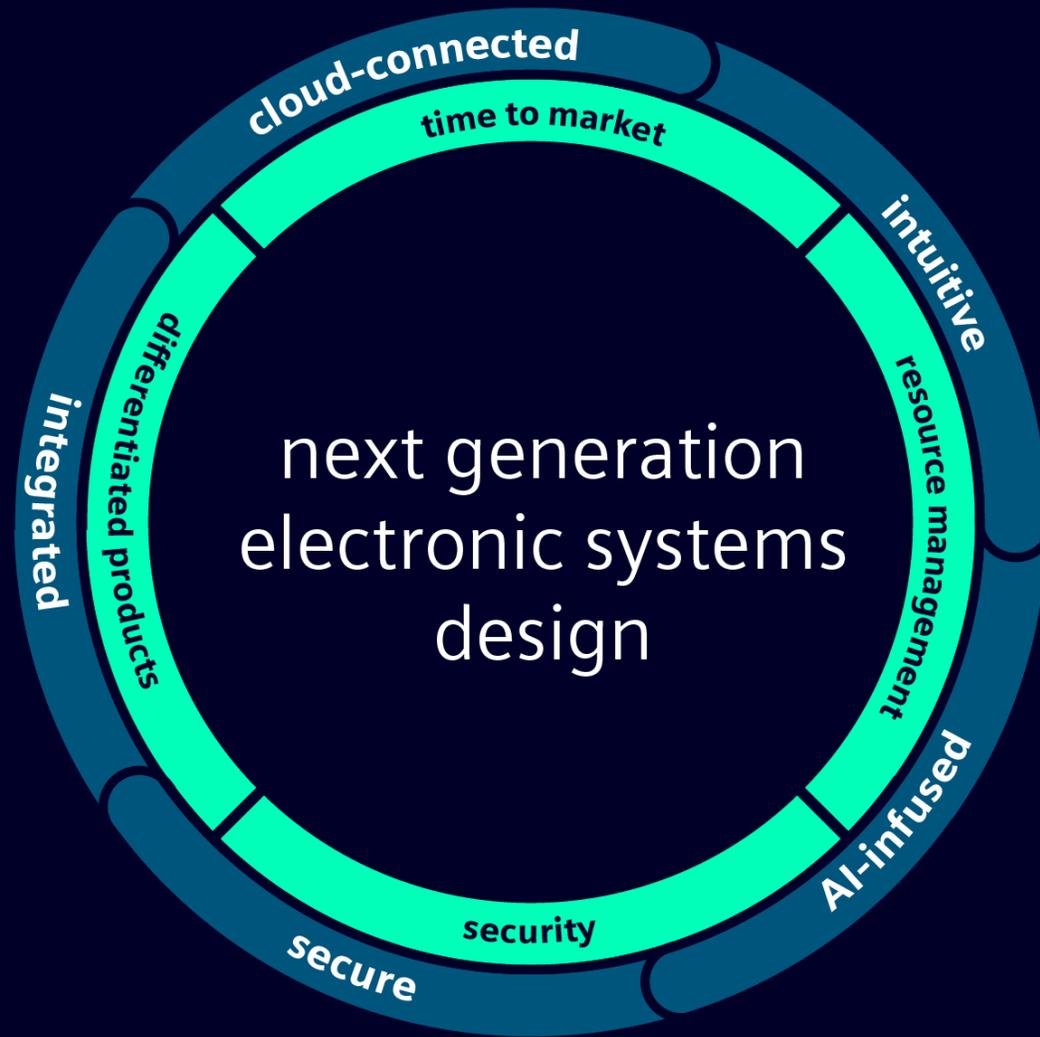


Xpedition 2504 Product Update

<name>



Next Generation Electronic Systems Design



Next Generation Electronic Systems Design

Key 2504 Deliverables



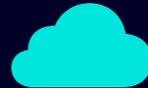
Intuitive

- Additional Designer alignment with UX
- EDM web apps aligned with UX
- Process-based top bar schemes
- New configurations for SMB users



AI-infused

- Smart datasheets in PartQuest
- In-tool product support assistant
- Block design powered by Celus



Cloud-connected

- PartQuest plug-in for MPN search
- PartQuest / EDM Collaborate integration
- Graphical compare
- New viewer
- PartQuest export to HyperLynx AMS



Integrated

- Improved Keysight ADS RF integration
- More Supplyframe content
- New part builder
- Multi-PLM integration
- Additional MCAD integration
- FPGA I/O optimizer / sch. analysis integ.
- Performance improvements



Secure

- Additional data security
- Multi-factor authentication

Design Capture

Design Capture 2504 highlights

The screenshot shows the Xpedition Designer interface with a PCB layout. A search results window is open, displaying a list of components with columns for MPN, Data Source, and Description. A datasheet for the LM324 Single Supply Quad Operational Amplifier is also visible, showing pin connections and features.

MPN	Data Source	Description
LM555CMM/NOPB	SamacSys	Highly Stable 555 Timer 8-VSS
AD5555CRUZ	SamacSys	Precision DUAL 16-Bit 14-Bit-1 Packages
LM555CMM/NOPB	SamacSys	IC PULSE: RECTANGULAR, TIM MINI, PLASTIC, SOIC-8, Analog
555	None	Pin Diode, 50V V(BR), Silicon,
555	SamacSys	RESISTOR, WIRE WOUND, 0.35W, 0.005%, 0.01, 0.02, 0.05, 0.1, 0.2, 0.5, 1%, 1, 5, 10ppm, 150000ohm
555	None	Optoelectronic Device
555	None	Oscillator
MMBT5551	None	Small Signal Bipolar Transistor, 0.6A I(C), 160V V(BR)CEO, 1-Element, NPN, Silicon, TO-236, ROHS COMPLIANT,...
NE555DR	SamacSys	Single Precision Timer 8-SOIC 0 to 70
M11T1G	SamacSys	High Voltage NPN Bipolar Transistor, SOT-23 (TO-236) 3

Single Supply Quad Operational Amplifiers
LM324, LM324A, LM324E, LM224, LM2902, LM2902E, LM2902V, NCV2902

The LM324 series are low-cost, quad operational amplifiers with true differential inputs. They have several distinct advantages over standard operational amplifier types in single supply applications. The quad amplifier can operate at supply voltages as low as 3.0 V or as high as 32 V, with quiescent currents about one-fifth of those associated with the MC1741 (on a per amplifier basis). The common mode input range includes the negative supply, thereby eliminating the necessity for external biasing components in many applications. The output voltage range also includes the negative power supply voltage.

Features

- Short Circuited Protected Outputs
- True Differential Input Stage
- Single Supply Operation: 3.0 V to 32 V
- Low Input Bias Currents: 100 nA Maximum (LM324A)
- Four Amplifiers Per Package
- Internally Compensated
- Common Mode Range Extends to Negative Supply
- Industry Standard Pinouts
- ESD Clamps on the Inputs Increase Ruggedness without Affecting Device Operation
- NCV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q100 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

PIN CONNECTIONS

SOIC-14 D SUFFIX CASE 751A
 TSSOP-14 DTB SUFFIX CASE 9460

Out 1, Out 4, Out 2, Out 3, Inputs 1, Inputs 4, Inputs 2, Inputs 3, V_{CC}, V_{EE}, GND

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 10 of this data sheet.

DEVICE MARKING INFORMATION

See general marking information in the device marking section on page 11 of this data sheet.

AI Powered Search: does this opamp have rail-to-rail input?
 According to the data sheet, the common mode input range includes the negative supply, which means it can go all the way to the negative rail. This is a requirement for rail-to-rail opamps, so it is reasonable to assume that this opamp has rail-to-rail input. However, it is not explicitly mentioned in the data sheet, so I cannot be certain.

- Modern UX improvements
 - Usability, predictability, stability, internationalization, scripting
- Net property handling improvements
 - Propagation through hierarchy
- Keysight ADS integration improvements
- PartQuest plug-in for MPN search
- AI-enabled smart datasheets in PartQuest

Modern UX improvements

- Usability – cleaned up settings, improved messaging, added context popups for special components, fixed reordering of sheets in navigator
- Predictability – enhanced tooltips availability; improved handling of the verify/DRC defaults; better management of the concurrent mode settings in the EDM integration
- Enhanced readability of UI
- Stability and responsiveness – general improvements
- Internationalization – switching between English and Japanese, improved handling of Japanese texts in properties and my parts add-ins
- Scripting improvements
- Reliability – identified and fixed a few remaining connectivity issues related to global signal tap symbols

Design Capture

Net property handling improvements

- Ensure that net properties are preserved during copy and paste between top and underlying schematics
- Make sure add block command preserves all net properties on extracted circuitry
- Enhanced undo command to restore all net properties on the modified net

Reduce user frustration and prevent the need to re-enter lost information in schematic

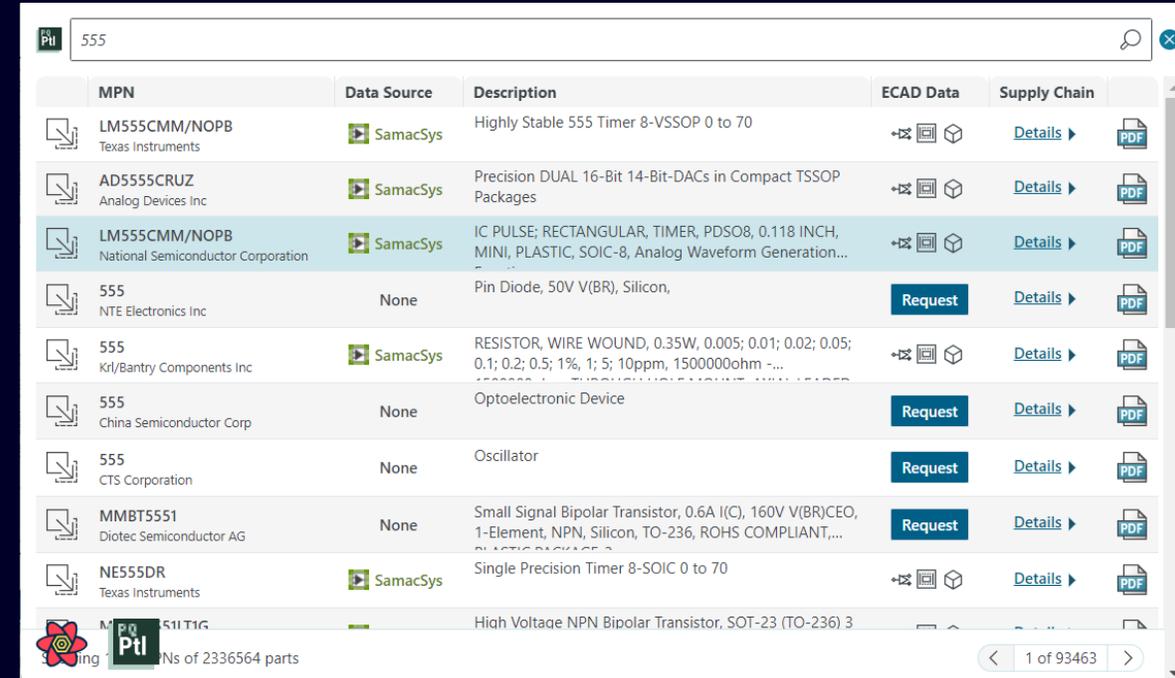
RF circuit integration with Keysight ADS via ABL format

- Additional enhancements after 2409 initial release
 - Standalone tool for exporting library data from central library to ABL
 - Extraction of component properties from EDX and general property management
 - Layer mapping, net mapping and other options controlled from a config file and not from the import/export UIs
 - Export of ADS specific properties – ADS requires a specific syntax for values (for R, L,C types)
 - RF meanders are exported as the ADS trace object if the width is constant and as polygons in other cases
 - Improved control over what to export: Selection, RF group and user defined area
 - Obstruct handling: ADS will also add support for obstructs

Design Capture Plug-in for MPN search

Fully integrated manufacturer part number search from within Designer

- Part add to project library via drag & drop
- Part description and ECAD model availability
- Part request for ECAD model creation
- Supply chain data for pricing and availability



The screenshot displays a search interface for the part number '555'. The search results are presented in a table with the following columns: MPN, Data Source, Description, ECAD Data, and Supply Chain. The table lists various components such as timers, DACs, diodes, resistors, and transistors from manufacturers like Texas Instruments, Analog Devices, and National Semiconductor. Each row includes a 'Request' button for ECAD data and a 'Details' link. A 'PDF' icon is also present for each entry. At the bottom, a search bar shows '555' and a status bar indicates '1 of 93463' results.

MPN	Data Source	Description	ECAD Data	Supply Chain
LM555CMM/NOPB Texas Instruments	SamacSys	Highly Stable 555 Timer 8-VSSOP 0 to 70	Request	Details
AD5555CRUZ Analog Devices Inc	SamacSys	Precision DUAL 16-Bit 14-Bit-DACs in Compact TSSOP Packages	Request	Details
LM555CMM/NOPB National Semiconductor Corporation	SamacSys	IC PULSE; RECTANGULAR, TIMER, PDSO8, 0.118 INCH, MINI, PLASTIC, SOIC-8, Analog Waveform Generation...	Request	Details
555 NTE Electronics Inc	None	Pin Diode, 50V V(BR), Silicon,	Request	Details
555 Krl/Bantry Components Inc	SamacSys	RESISTOR, WIRE WOUND, 0.35W, 0.005; 0.01; 0.02; 0.05; 0.1; 0.2; 0.5; 1%; 1; 5; 10ppm, 1500000ohm ...	Request	Details
555 China Semiconductor Corp	None	Optoelectronic Device	Request	Details
555 CTS Corporation	None	Oscillator	Request	Details
MMBT5551 Diotec Semiconductor AG	None	Small Signal Bipolar Transistor, 0.6A I(C), 160V V(BR)CEO, 1-Element, NPN, Silicon, TO-236, ROHS COMPLIANT,...	Request	Details
NE555DR Texas Instruments	SamacSys	Single Precision Timer 8-SOIC 0 to 70	Request	Details
M5111G Pti		High Voltage NPN Bipolar Transistor, SOT-23 (TO-236) 3		

Provides seamless access to component models and parametric information from within the design tool

PartQuest Portal Smart datasheet query

AI chat interface for datasheet analysis

- Customize AI chat model, with indexing of the component datasheet
- AI answers are derived only from the datasheet, allowing for focused and detailed analysis

The screenshot displays the PartQuest Portal interface for the LM324 Single Supply Quad Operational Amplifier. The main content area shows the product title, a list of part numbers (LM324, LM324A, LM324E, LM224, LM2902, LM2902E, LM2902V, NCV2902), and a detailed list of features. To the right, there are images of the SOIC-14 and TSSOP-14 packages, a pin connection diagram, and sections for ordering and device marking information. On the right side, an AI chat interface is active, showing a user question: "does this opamp have rail-to-rail input?" and an AI response explaining that the common mode input range includes the negative supply, but it is not explicitly mentioned in the datasheet, so the answer is uncertain. A search bar at the bottom of the chat interface contains the text "Type in your question...".

Single Supply Quad Operational Amplifiers

LM324, LM324A, LM324E, LM224, LM2902, LM2902E, LM2902V, NCV2902

The LM324 series are low-cost, quad operational amplifiers with true differential inputs. They have several distinct advantages over standard operational amplifier types in single supply applications. The quad amplifier can operate at supply voltages as low as 3.0 V or as high as 32 V with quiescent currents about one-fifth of those associated with the MC1741 (on a per amplifier basis). The common mode input range includes the negative supply, thereby eliminating the necessity for external biasing components in many applications. The output voltage range also includes the negative power supply voltage.

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PIN CONNECTIONS

(Top View)

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 10 of this data sheet.

DEVICE MARKING INFORMATION

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AI Chat Interface:

does this opamp have rail-to-rail input ?

According to the data sheet, the common mode input range includes the negative supply, which means it can go all the way to the negative rail. This is a requirement for rail-to-rail opamps, so it is reasonable to assume that this opamp has rail-to-rail input. However, it is not explicitly mentioned in the data sheet, so I cannot be certain.

Type in your question...

Accelerate part selection by helping user extract relevant information quickly and efficiently

PADS Pro Premium DFM is the best product ever. Check it out [Learn More](#)



Search [Enter keywords or technical details] Categories Search

Descriptive Search Part Number Search

Help Community Feedback
Welcome,



WELCOME TO PARTQUEST PORTAL

Search Build Drag & Drop

Create great products faster with the industry's highest quality eCAD model content from the PartQuest Vault. Integrated with Xpedition® and PADS® authoring tools.

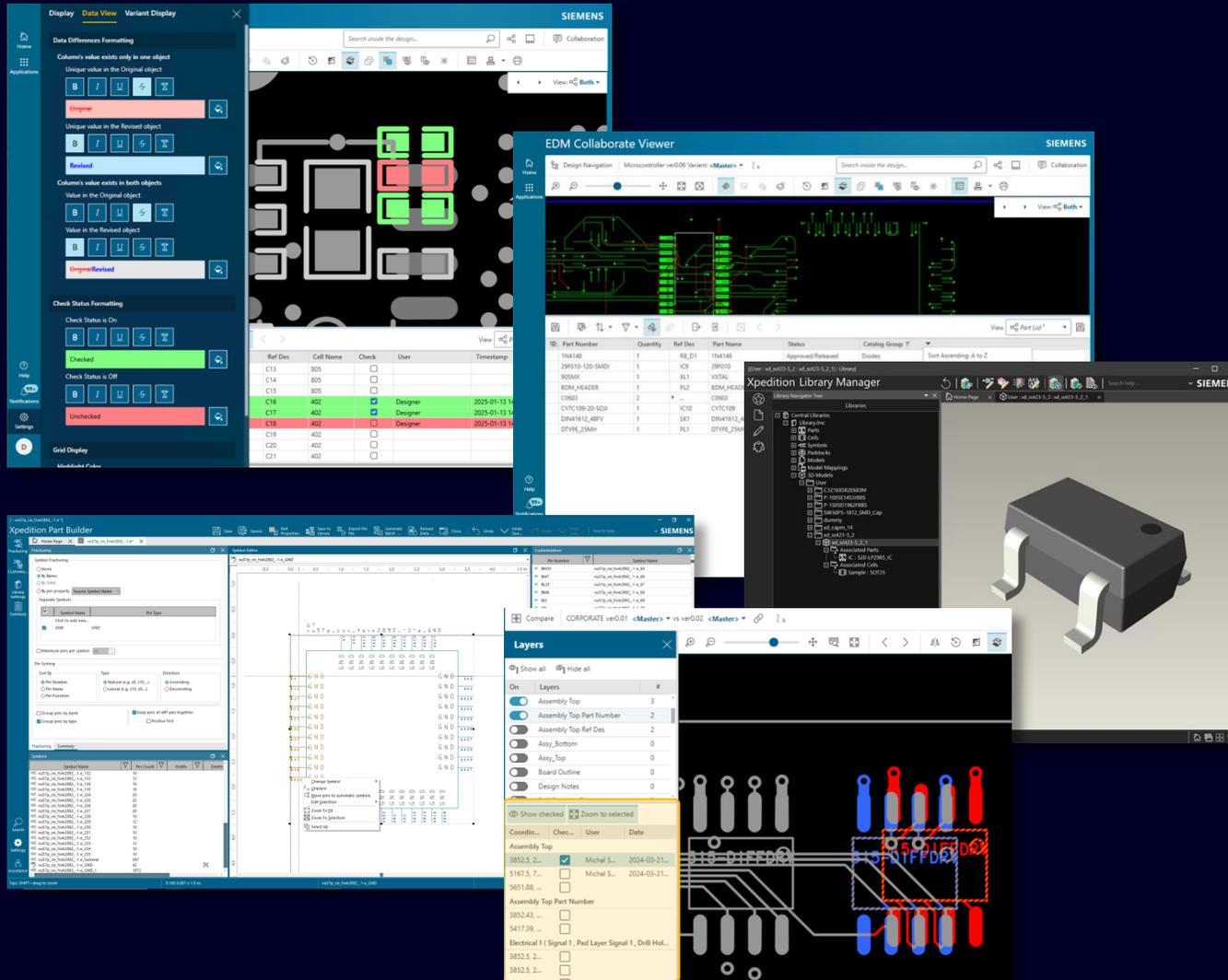
CLICK TO CREATE



Library & Design Data Management

Library & Design Data Management

2504 highlights



- Library
 - Supply chain integration
 - New part builder
 - 3D model management in Library Manager
 - Improvements to Footprint Expert
- Collaboration
 - Highlight checked status
 - Filter display based on property
 - Where-used search
 - Color themes
 - PartQuest plug-in for component search
 - Cloud-based external viewer with markup & compare
- Multi-factor authentication
- ECAD/MCAD integration with PLM

Library & Design Data Management – Library **Supply chain integration**

- Migrate the content provider use cases to the web
- Incorporate manufacturer part data from content providers like Supplyframe into library
 - Leverage the Supplyframe services to augment the value of library management solutions
- Simplify the process of adding new parts to the library

Provide a web-based integration with Supplyframe to seed the library with parametric data

Library & Design Data Management – Library **Support for additional content from Supplyframe**

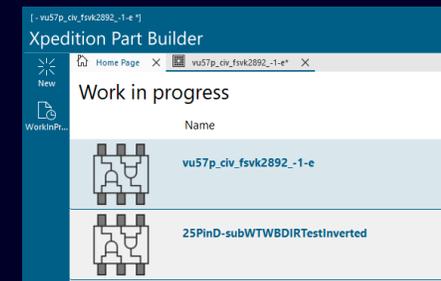
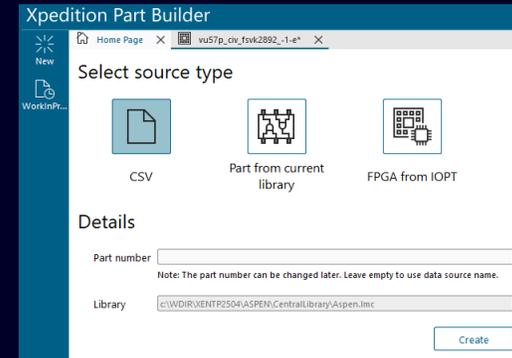
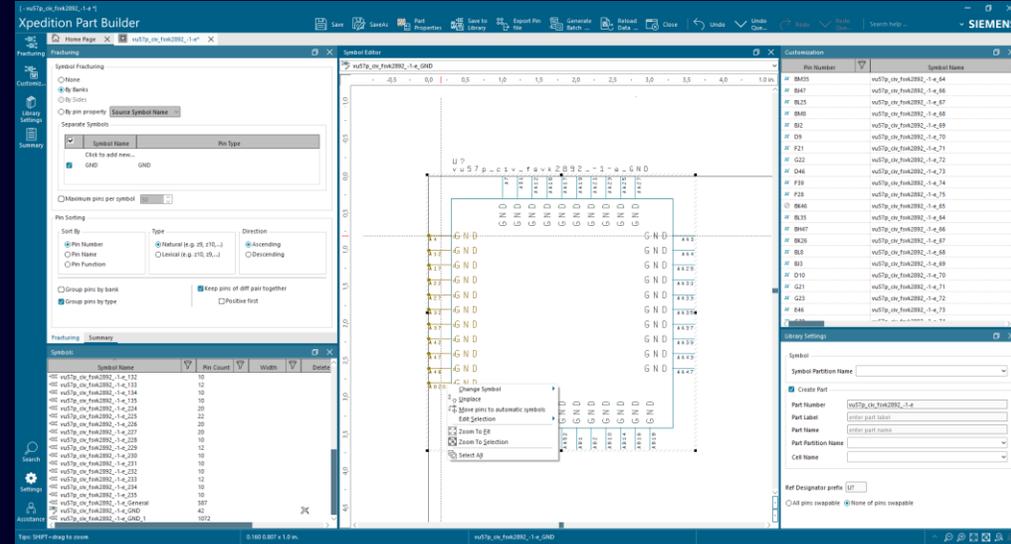
- Customer can choose when to switch to v2 API from Supplyframe
- The new information comes at no additional cost, documented process for data migration
- The v2 API provides additional part content to reflect Certificate of Compliance on Environment (California Proposition 65), REACH, IPC-1752-2, Substance of Very High Concern (SVHC), EU RoHS, CO2, Automotive support (AEC-Q200)
- Documents for product change notice
- Additional generic parametric content (total weight, country of origin)
- Additional parameters added to most classifications. Some samples
 - Consumer ICs – adjustable threshold, control mode, number of bands, etc.
 - Microprocessors – communication protocol, internal bus architecture, etc.

Provides compliance details and additional parameters to help in part selection

Library & Design Data Management – Library Part builder

Enhanced Library Manager to make it easier to create complex fractured parts

- All new part builder UX
- Supports creation of symbol and part content
 - Quick and easy automatic generation of symbols and parts
- Customization and editing of symbols and parts
- Operates on an imported list of part pins
- Symbol and part creation / modifications can be saved at any point in the process



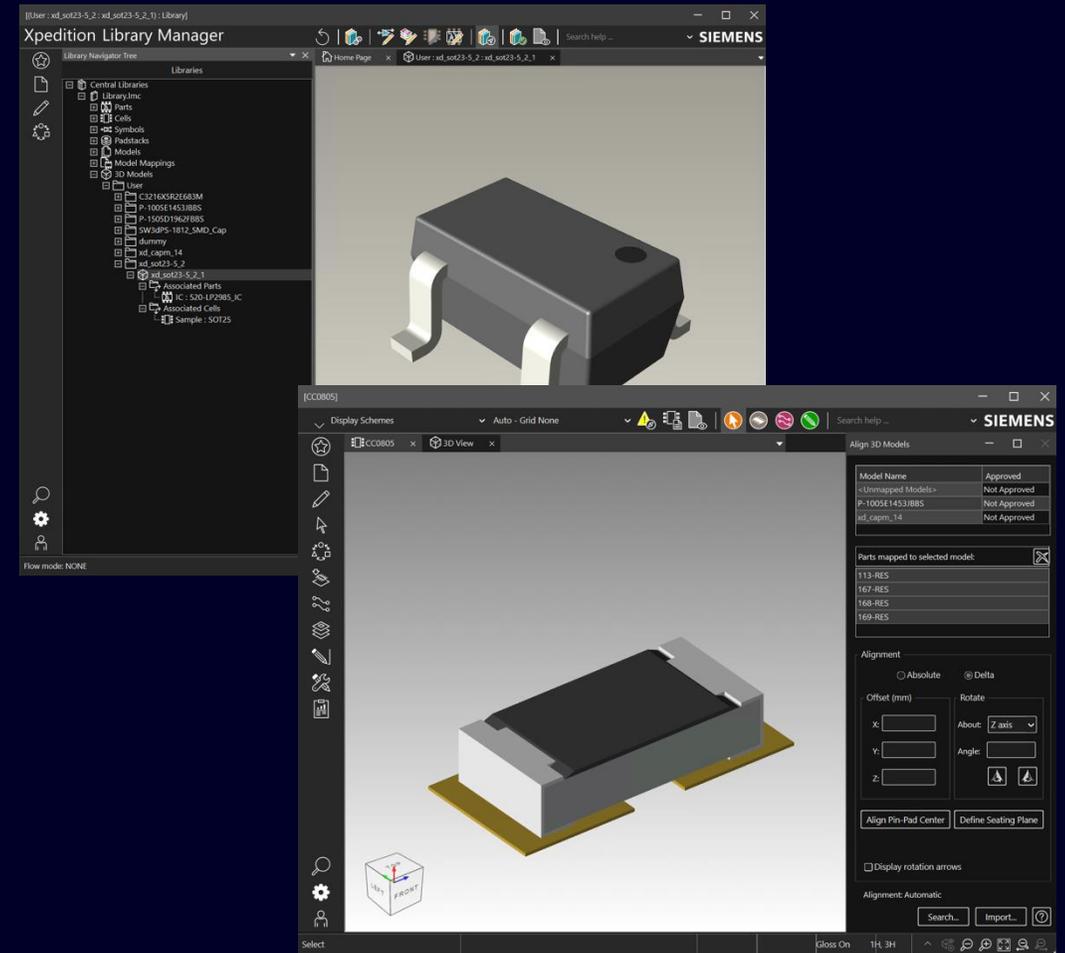
Accelerates creation of large component (including BGA / FPGA) symbol and part content

Library & Design Data Management – Library 3D model management

Enhanced Library Manager to provide access to general 3D model management capabilities

- Allows importing, mapping, aligning, etc., 3D models in the 3D cell editor
- Allows basic mapping directly from the navigator tree
- Display of 3D models similar to cells, parts, and symbols
- Exposes 3D model relationships to cells and parts
- Supports import, delete, rename*

Enables users to manage their 3D model content at the library level



Predictive Commands

File

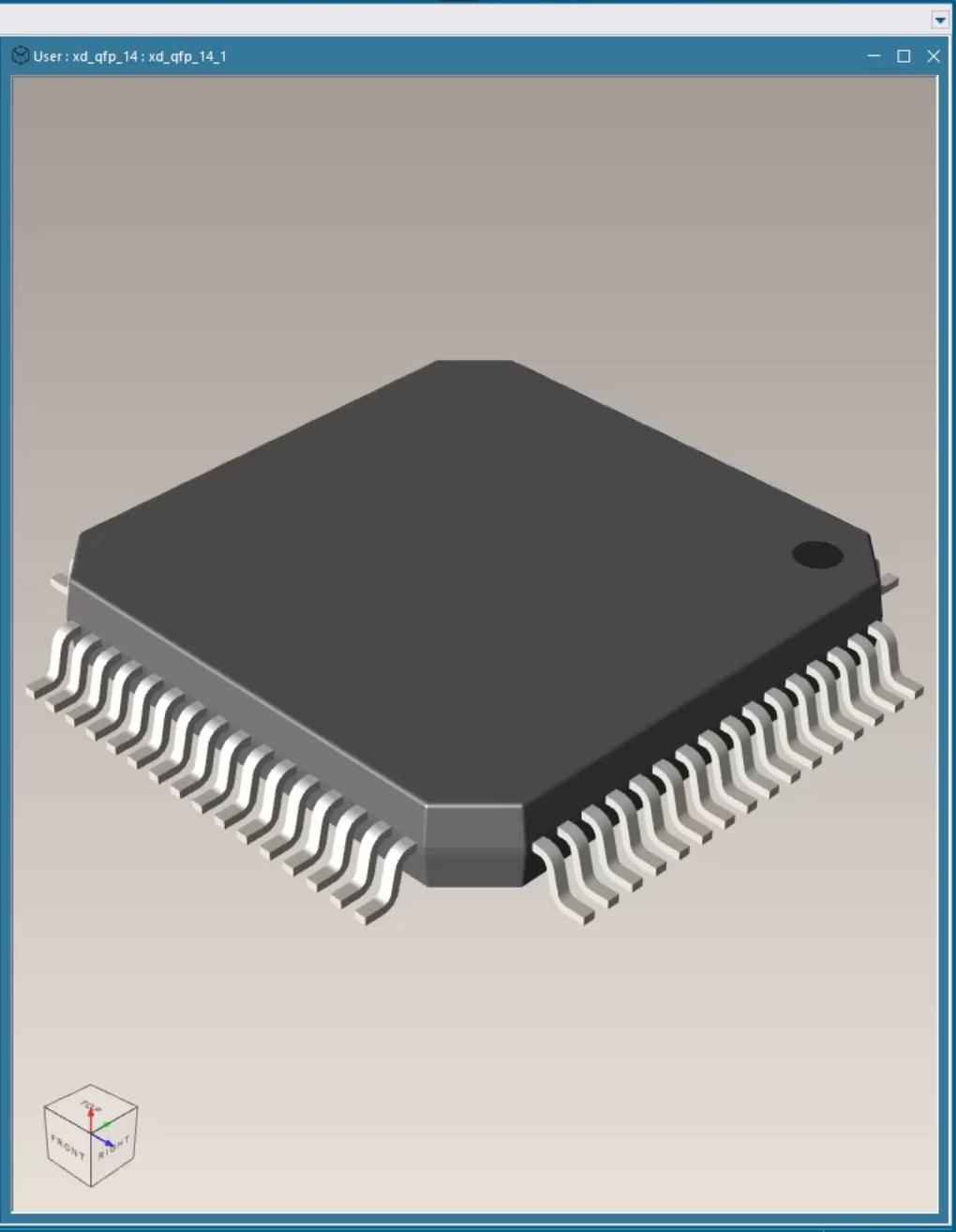
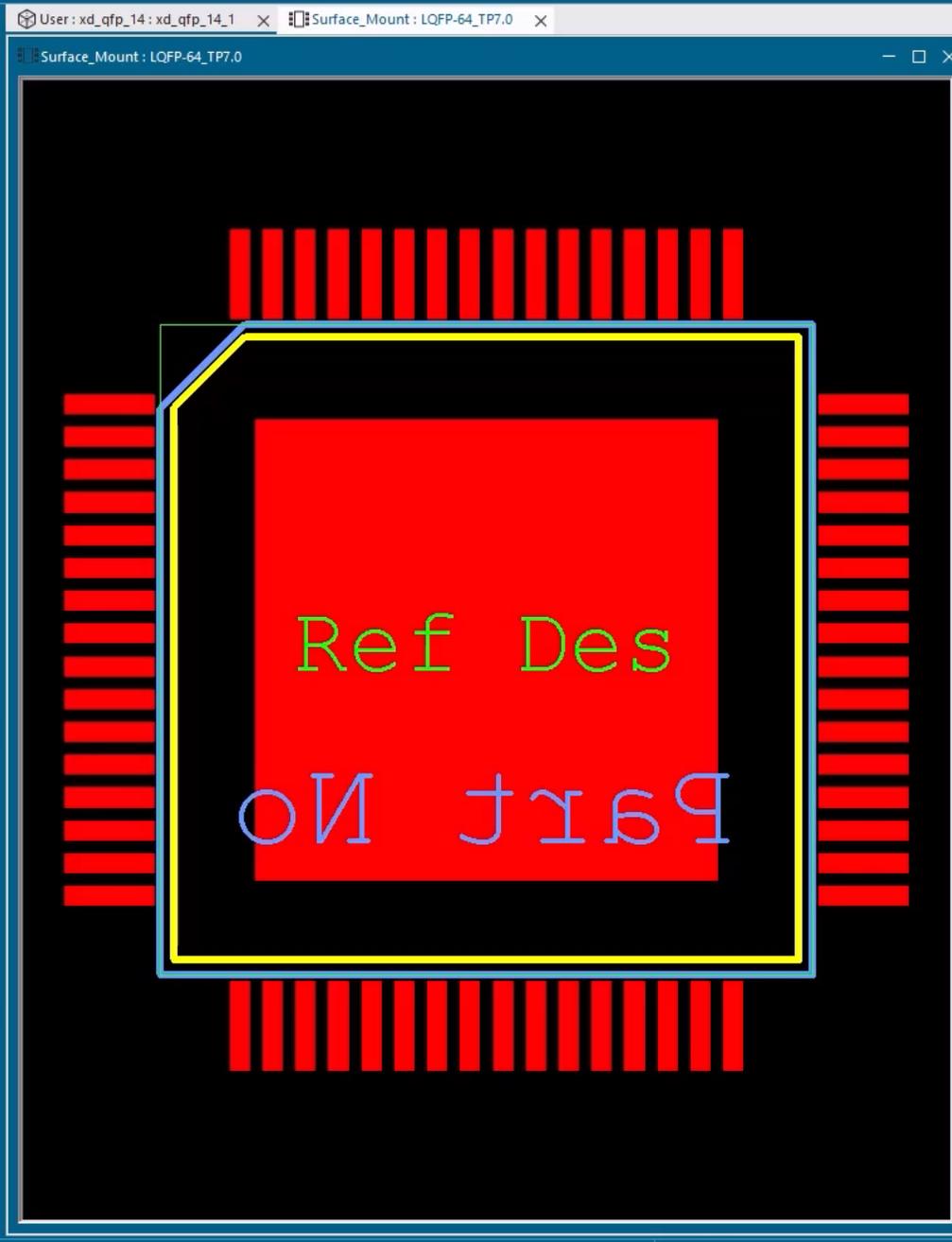
Edit

Integration

Library Navigator Tree

Libraries

- Central Libraries
 - LIB_EBSD_SA.lmc
 - Parts
 - Capacitor
 - Connector
 - Diode
 - Display
 - Filter
 - FPGA
 - Fuse
 - IC
 - 6201-1001
 - 6201-1002
 - 6201-1003
 - 6201-1004
 - 6201-1005
 - 6201-1006
 - 6201-1007
 - 6201-1008
 - 6201-1009
 - 6201-1010
 - 6201-1011
 - 6201-1012
 - 6201-1013
 - 6201-1014
 - 6201-1015
 - 6201-1016
 - 6201-1017
 - 6201-1018
 - 6201-1019
 - 6201-1020
 - 6201-1021
 - 6201-1022
 - 6201-1023
 - 6201-1024
 - 6201-1025
 - 6201-1026
 - 6201-1027
 - 6201-1028
 - 6201-1029
 - 6201-1030
 - 6201-1031
 - 6201-1032
 - 6201-1033
 - 6201-1034
 - 6201-1035
 - 6201-1036
 - 6201-1037
 - 6201-1038
 - 6201-1039
 - 6201-1040
 - 6201-1041
 - 6201-1042
 - 6201-1043
 - 6201-1044
 - 6201-1045
 - 6201-1046
 - 6201-1047
 - 6201-1048



Library & Design Data Management – Library Footprint Expert

- Drafting > Origin – unchecking “Add to Footprint” was not saving the updated settings
- SMD pad stack rules – Updated gang mask feature for minimum solder mask web
- Added a new “Calculation Mode” – Select between min/max and nominal modes
 - Note: Nominal mode adheres to the FED Vol 18 standard – The New Proportional Land Dimensioning Concept
 - Purchase the FED Volume 18 publication here for \$31 – <https://www.fed.de/fed-shop/produkt/4607/>
- Added “Drafting > Origin” panel for separate controls for target size, line width and layer
- Flat Lug Lead (DPAK) – updated the solder joint goals
- The on/off switch for Drafting > Assembly “Include Ref Des in Footprint” not switching correctly
- TO-92, TO-220 and all Headers – relocated the origin to “Center of Body”
 - Using an old option file requires manually setting the origin for these component families
- Using inch dimensions with 4 place decimal accuracy was allowing 4 decimal places but wasn’t allowing any 4th place value to be entered
- Checked that all GUI dimensional text boxes can handle up to 12 characters (fixes inability to add extended decimal place values)
- Using the IPC-7351B.opt file reset the Terminal options to “Internal Defaults”

Library & Design Data Management – Library **Footprint Expert**

FP Designer:

- Courtyard still observes Pad and Body clearance even when their Courtyard 'Apply Excess...' Options checkbox is unchecked
- Fixed erratic Pad Stack Manager display behavior for different pad corner configurations
- Dropped the "r" from the pad stack name when the radius is zero
- When moving Calculator footprint to FP Designer, the Assembly and 3D STEP polarity was not translating correctly
- Added the ability to create round paste mask apertures on Thermal Pads
- Updated the pad stack name for bottom side SMD pads

3D STEP Models:

- Right Angle Headers 3D STEP Model body shift when origin is on the body center
- TO-92 and TO-220 Vert. 3D STEP Model body shift when origin is on the body center
- 3D STEP Translator: changed the UI text Include – Suffix in "Footprint" Name to "3D Model" Name
- Updated the Through-hole "Vertical Flange Mount" terminal lead orientation

Library Editor:

- The Footprint Date column was not adding the Time

Drafting Symbols:

- Symbol minimum line width reduced from 0.15 to 0.05 mm
- Added a symbol for arrow

Library & Design Data Management – Library **Footprint Expert**

Calculators:

- SOFL 3 pin version – pads are getting trimmed for side-to-side clearance
- Layer Display Controls – layer color changes are not taking place for silkscreen and assembly labels or pin numbers
- Terminal type not added to the component to the SOD when the dimensions required automatic terminal type change from gullwing to outward L
- Fixed display of zero values in component dimensions when allowable (for A1 for example)
- Fixed gang mask generation for 2 pin parts
- Through-hole Axial Lead – added Ferrite Bead component family
- QFN with no thermal pad – changing the L1 dimension affected the G1 dimension
- LED 3D Color changes were not changing in the image, but OK in the CAD tool
- Through-hole TO Cylindrical moved the drafting outline tab to the last pin and added “Set New Pin 1” feature
- Through-hole Radial footprints could not move to FP Designer
- QFP – updated the IPC-7351B footprint naming convention. Removed duplicate pin qty.
- All SOT Component Families – updated Footprint Name to add the Body Length
- Middle Mouse Wheel scrolling Up/Down was swapped to match all Microsoft programs
- When inserting Nominal package dimensions with zero tolerance, only the Min/Max dimensions should display

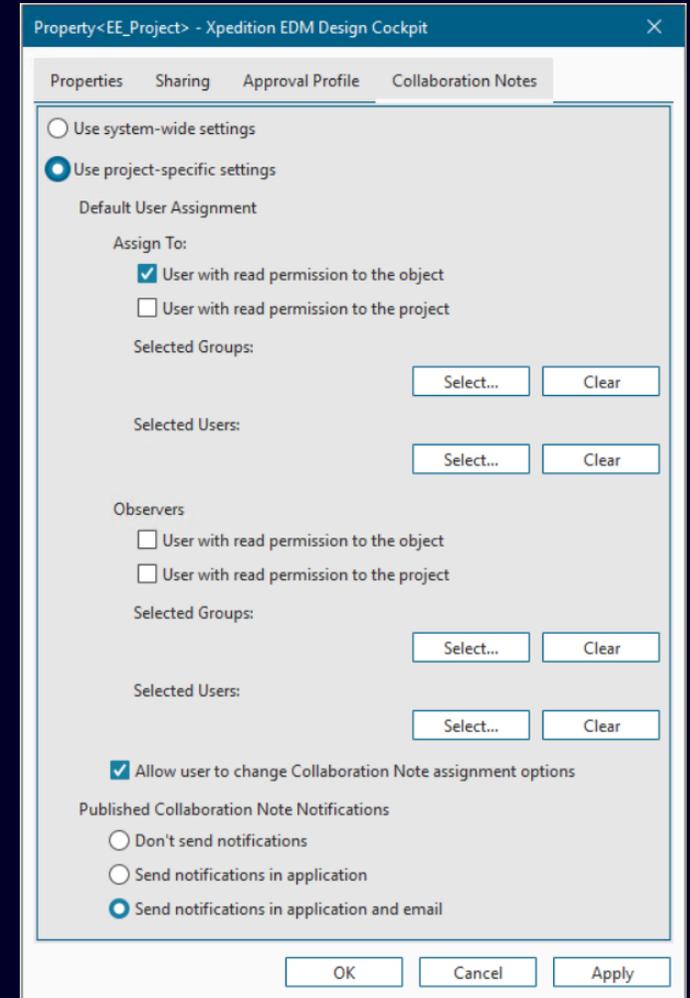
Library & Design Data Management – Collaboration

Default settings for collaboration note user assignments part II (project-level settings)

Ability to customize new collaboration note user/group assignments and notifications on a project level

- In 2409 release we added the ability to set defaults for new collaboration note user assignments in EDM Admin
- These system-wide settings can be now overridden on a project level to better accommodate specific project needs

Eliminate the number of unwanted emails; manage the number of users receiving notifications; and reduce the number of “owners” of a note



Project-specific settings in EDM Design Cockpit. The same set of options is available in EDM Admin for system-wide defaults.

Library & Design Data Management – Collaboration

Data view formatting based on check status in EDM Collaborate viewer

Ability to define colors for “checked” components in data view and graphics

- Colors for check status defined in settings
- Colors applied to data view and optionally also to graphical view

The image shows the EDM Collaborate viewer interface. On the left, the 'Data Differences Formatting' settings panel is open, showing options for 'Column's value exists only in one object' and 'Check Status Formatting'. The 'Check Status Formatting' section shows 'Checked' as a green box and 'Unchecked' as a red box. On the right, the graphical view shows a design with components highlighted in green and red, corresponding to the settings. Below the graphical view is a table showing the data view.

Ref Des	Cell Name	Check	User	Timestamp	Comment
C13	805	<input type="checkbox"/>			
C14	805	<input type="checkbox"/>			
C15	805	<input type="checkbox"/>			
C16	402	<input checked="" type="checkbox"/>	Designer	2025-01-13 14:44:09	
C17	402	<input checked="" type="checkbox"/>	Designer	2025-01-13 14:44:15	
C18	402	<input type="checkbox"/>	Designer	2025-01-13 14:44:12	
C19	402	<input type="checkbox"/>			
C20	402	<input type="checkbox"/>			
C21	402	<input type="checkbox"/>			

Improve the efficiency of design inspection use cases

Library & Design Data Management – Collaboration

Data view filtering

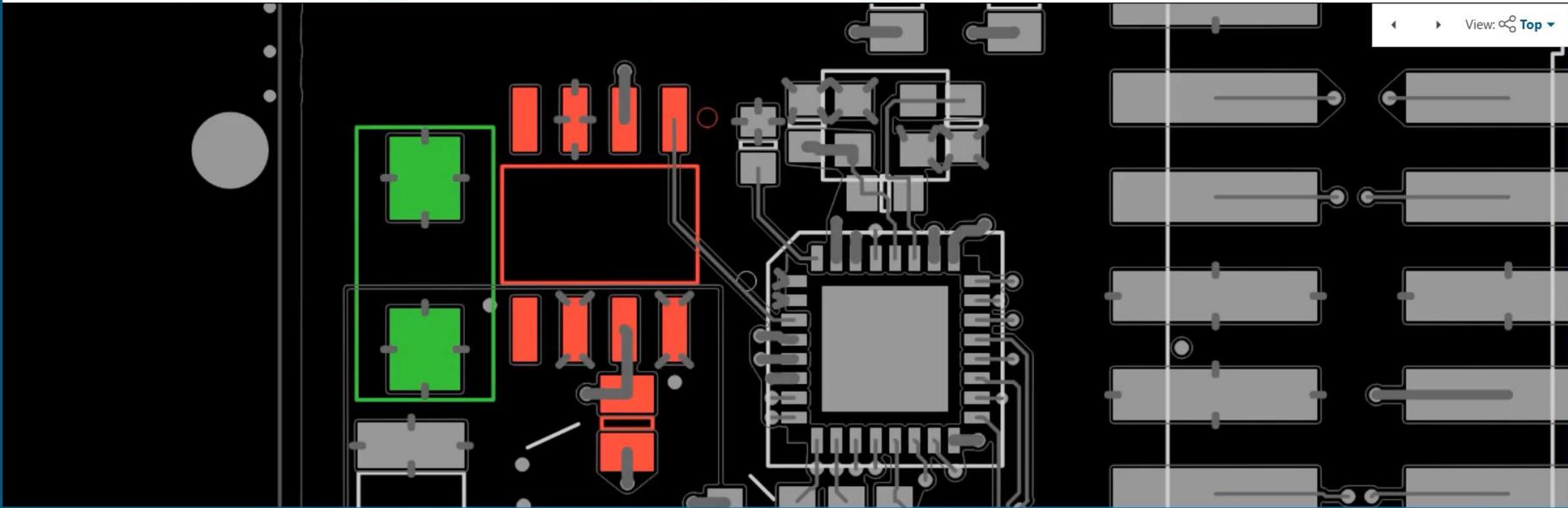
Ability to filter data displayed in data view based on any property

- Ability to filter the data view grid depending on specific values in any column
- Ability to hide components and nets in the graphical view if these objects were filtered out from the data view
- Filtering rules are stored as a part of the data view scheme, which allows reusing and sharing

The screenshot displays the EDM Collaborate Viewer interface. The top section shows a circuit board design with various components and connections. Below the design is a data view grid with columns for Part Number, Quantity, Ref Des, Part Name, Status, and Catalog Group. A filter panel is open on the right side of the grid, allowing users to filter data based on catalog groups. The filter panel includes options for sorting (Ascending: A to Z, Descending: Z to A), removing columns, and grouping by column. A search filter is also present, with a 'Clear All' button.

Part Number	Quantity	Ref Des	Part Name	Status	Catalog Group
1N4148	1	RB_D1	1N4148	Approved/Released	Diodes
29F010-120-SMDI	1	IC9	29F010	In Development	Memory
90SMX	1	XL1	VXTAL	In Development	Misc
BDM_HEADER	1	PL2	BDM_HEADER	In Development	Connectors
C0603	2	...	C0603	Approved/Released	Capacitors
CY7C109-20-SOJI	1	IC10	CY7C109	In Development	Memory
DIN41612_48FV	1	SK1	DIN41612_48FV	In Development	Connectors
DTYPE_25MH	1	PL1	DTYPE_25MH	Approved/Released	Connectors

Improve the efficiency of design inspection use cases



View Part List (Ref Des) check*

Ref Des	Pin Name/Net Name	Symbol Name	Check	User	Timestamp	Comment
C4070	<input type="checkbox"/>	Administrator	2025-03-14 08:21:57	
D4000	<input checked="" type="checkbox"/>	Administrator	2025-03-14 08:21:56	
U4000	<input type="checkbox"/>	Administrator	2025-03-14 08:21:55	
C1	<input type="checkbox"/>			
C2	1	DDR_VR...	<input type="checkbox"/>			
	2	GND				
C3	<input type="checkbox"/>			
C4	<input type="checkbox"/>			
C5	<input type="checkbox"/>			

Home

Applications

Help

Notifications

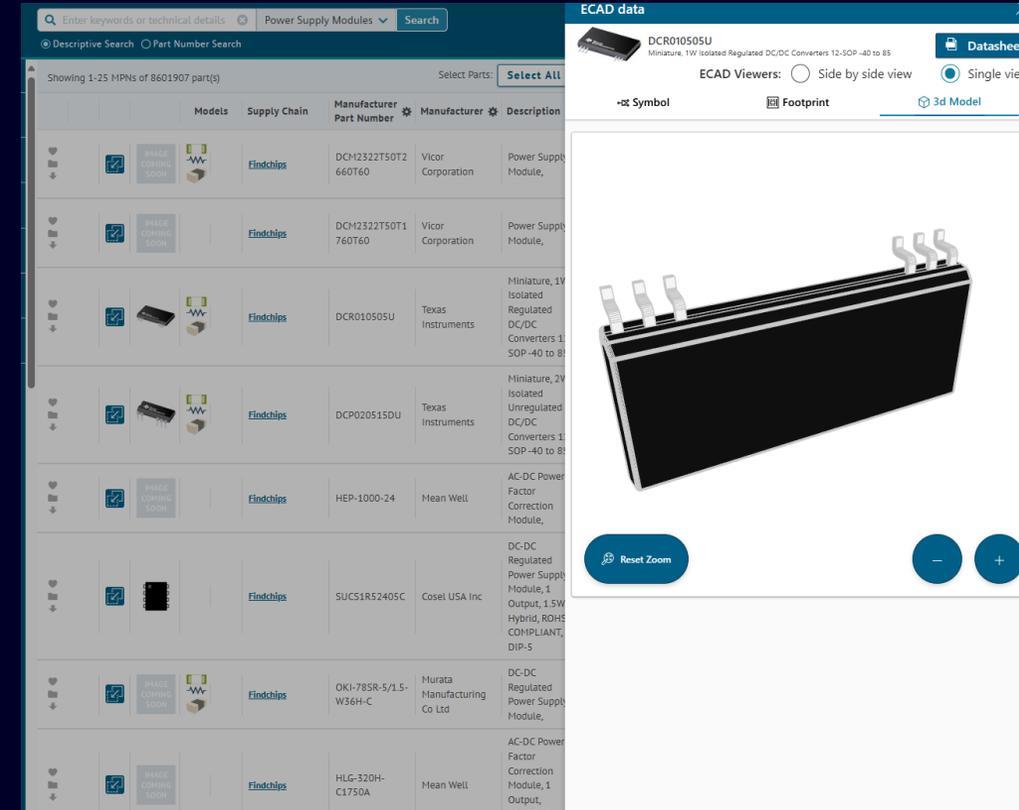
Settings

A

Library & Design Data Management – Collaboration PartQuest / EDM collaborate integration

Initial integration for component search

- Start a search in EDM Collaborate and then move the search to PartQuest Portal when a needed component is not present in the user's library
- Drag & drop support for users to quickly move component data to their library



Improves library expansion with quick access to component search and parametric data

Library & Design Data Management – Collaboration

Improved performance on “where used” section

Where-used section in the EDM Collaborate page for component details refactored for performance improvement

- In previous releases, the “Where Used” section which calculates the number of designs using a particular component had very low performance and could even become unusable for customers who created many versions in EDM Design
- In the new release this was refactored to use EDM Search infrastructure rather than querying the EDM Design meta-data. Such an approach significantly improved the performance - about 30-50 times faster

Improve EDM collaborate where-used performance for big datasets

Library & Design Data Management – Collaboration
XCC services – graphical compare

Introduce graphical compare functionality in XCC services in AWS cloud

- This is an addition to already existing view and markup functionality in the cloud
- Based on the same infrastructure created for XCC view services in AWS
- Natural enhancement of cloud collaboration capabilities

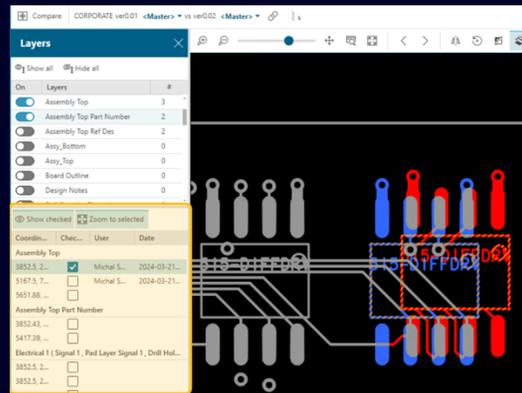
Enhance XCC services functionality for cloud-based products

Library & Design Data Management – Collaboration

New Xpedition viewer

Cloud-based viewer to replace visECAD desktop

- View schematic and layout with cross-probing
- Design markup
- Design version compare
 - Compare two versions of a project’s schematic, layout, or data view
 - Quick navigation to each area where a difference is found
- PDF viewer
- 3D file viewer*
- File storage



Capability	Free	Paid
2D PDF schematic viewer with embedded markup	X	X
2D XCC graphical compare		X
2D XCC markup (collaboration panel)		X
2D XCC viewer - layout and schematic with cross-probing*		X
2D XCC viewer - single file view only	X	X
3D JT viewer with embedded markup*	X	X
Digital adoption and in-app assistance	X	X
Guest user access (new)	X	X
Notifications	X	X
Project files	X	X
Storage	1GB	10GB

* Coming soon

Easily view and collaborate on designs from anywhere at any time

Library & Design Data Management – Design

Remote development – export/import drawings and panels

Export existing drawing and/or panel data associated with layout

- Previously no DWG or PNL was exported
- No DWG/PNL created or modified in remote development was imported back into EDM

Provide option to export DWG/PNL when doing a remote development export

- “Export->board (schematic, PCB, drawings, and panels)” will now export the DWG/PNL data associated with the board
- Still have option for PCB or schematic & PCB

Import DWG/PNL with remote development check-in

- If DWG/PNL exists in EDM, update the objects with a new version
- If no DWG/PNL exists in EDM, create the new objects from the RD data

Fixing critical issues that block customers from using the flow



Project

- PCB_EL100
- PCB_EL100_SB
- PCB_EL100_TR
- PCB_LP220
- PCB_LP220_OS
- PCB_MS401
- PCB_MS401_CG
- PCB_PS250
- PCB_SC100_L8_REVA
- PCB_SODIMM_DDR4_16Gb
- PLM_Power_Source
- SD_Project
- Managed_Blocks
- PCB_SC100
 - Boards
 - PCB_SC100_L8_REVA
 - Documents
 - DWG
 - MDO
 - PartList
 - PCB
 - PNL
 - Schematics

- SD_eRod
- TEST1
- PLM_Power_Source

Project Name:

Hide released projects

Hide released containers

- Project
- Meta-Data Management
- Template Management
- Baseline Profile Management
- Share Profile Management
- Approval Profile Management

Detail View

/PCB_SC100/Boards/PCB_SC100_L8_REVA/PNL

Name	Status	Version	Data Type	Checked In
PCB_SC100_L8_panel	Checked Out Exclusiv	(0.02)	Xpedition FabLink Panel	

Progress View

Status	Time	Process	Progress
+	16:07:53	Checking in [/PCB_SC100/Boards/PCB_SC100_L8_REVA/PNL/PCB_SC100_L8_panel]	
+	16:07:46	Checking in [/PCB_SC100/Boards/PCB_SC100_L8_REVA/PNL/PCB_SC100_L8_panel]	
+	16:07:20	Launching an application [Xpedition FabLink] on [/PCB_SC100/Boards/PCB_SC100_L8_REVA/PNL/PCB_SC100_L8_panel]	
+	16:07:13	Checking out [/PCB_SC100/Boards/PCB_SC100_L8_REVA/PNL/PCB_SC100_L8_panel]	

Library & Design Data Management – Security

Data access restriction

- Allow child objects (board container and system design) not to inherit DAR tags from parent project
- Enhance diagnostics (alerts on plug-in status)
- Enhance DAR search and DAR reports
- Enhance PLL (production library limitation) support more library objects (not only for DAR)
 - Library objects in a hierarchy can now be filtered by PLL search
 - Library objects in a hierarchy inherit visibility based on parent DAR tag, filtered by PLL (symbol, cell, mapping, interface, package, connector)
 - “Restricted classes” support – standard library objects that enable an option to have DAR tag characteristic and hence DAR functionality will be supported (access, filtering etc.). For example, manufacturer part, manufacturer, supplier part, suppliers, contact, model etc.
 - “Restricted classes” support also for custom classes

Continued improvement of enhanced data security respecting data access restrictions

- Comp
- Design
- Library
- Library Administration
- Design Config
- Admin

Xpedition

EDM Library Cockpit



EDM Library provides a single, central environment for component, library and reuse management capabilities within the Xpedition design flow, integrated with WIP BOM, compliance and variant management for electronics design.

Search for

 Components	 Designs	 Part Requests	 Manufacturer Parts
 Mappings (Parts)	 Symbols	 Cells	 Padstacks

Tools

 Modify User Preferences	 Launch EDM Batch Login Setup	 Load Central Library	 Launch EDM Librarian
--	---	---	---

Help

- Help and Manuals
- Search Support Center
- EDM Library Ideas

News

- Tech Notes

Select Perspective:

- Show All
- Component
- Design
- Library
- Admin

Start Page x

Library & Design Data Management – Security Multi-factor authentication

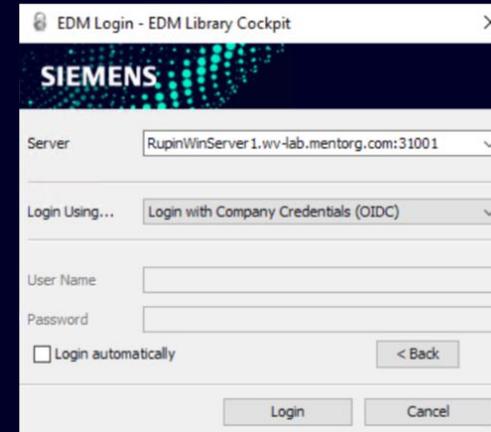
SAML and OIDC has been chosen as MFA methods for EDM

- Built for MFA & single sign-on capabilities
- OAuth typically for re-using credentials - i.e. Google or Facebook login

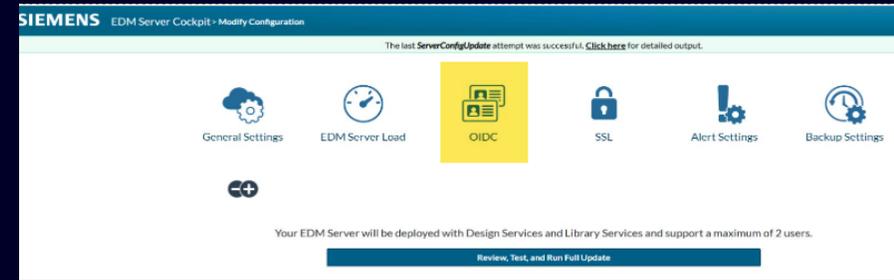
MFA option defined in EDM server cockpit

- LDAP is relied upon still for groups, locations, and domains
- On login window, user chooses “corporate SSO”
- User logs in with MFA option

Once authenticated, EDM pulls meta-data, and user now has SSO for the rest of the EDM products



- **Discovery URL** – The endpoint to fetch OIDC metadata for configuration.
- **Client ID** – The unique identifier for the application in the OIDC provider.
- **Client Secret** – The secret key used for secure communication between the application and the OIDC provider.



MFA is one of the most critical security requests from a vast majority of our customers

The last **ServerDeploy** attempt was successful. [Click here](#) for detailed output.



General Settings



EDM Server Directories



EDM Server User



EDM Server Load



Database



EDM Server Ports



Vault



OIDC



SAML



SSL



Collaborate Viewer
Cache Database



PLM Certificates



Alert Settings



Backup Settings



Your EDM Server will be deployed with Design Services and support a maximum of 2 users.

[Review, Test, and Run Full Update](#)

Library & Design Data Management **Integration with multiple PLM systems**

Strategic capability requirements

- Support multiple EDM servers synchronizing to single PLM server
- Support single EDM server synchronizing to multiple PLM servers
- Update default EDM database to include all PLM related EDM Design metadata
 - Improves the setup and deployment by including all the standard PLM properties
- EDM synchronizes all variant PLM and custom metadata during forward/backward annotate
- Support SSO via SAML/OIDC authentication to support EDM hosting active workspace iFrame within EDM Teamcenter gadget (Beyond gravity escalation use case)

UX and flow improvements

- Instantiate new company part number from PLM system - Direct server to server communication via PLM' s API interfaces (Solution to support multi-PLM scenario as noted above.)
- Verify write/save operation in PLM prior to creating baseline - Ensure items can be saved to PLM prior to compiling EDX file (released, locked...)
- Make Teamcenter sync properties method to work with all supported PLM sync status - EDM provides the ability to show the status of design objects on whether they are in sync with the PLM, currently limited to Teamcenter integration flow, needs to be expanded to work with all PLMs

Expand current integration points and improve usability for end users and admins



Project

- PLM Teamcenter
- PLM Windchill

Project Name: PLM *

Filter

- Hide released projects
- Hide released containers

- Project
- Meta-Data Management
- Template Management
- Baseline Profile Management
- Share Profile Management
- Approval Profile Management

/PLM Windchill

Detail View

Name	Status	Version	Data Type	Checked In
PLM_Power_Source			Board Container	

Progress View

Status	Time	Process	Progress
+ ✓	13:38:34	Setting properties on [/PLM Windchill/PLM_Power_So...	

Properties

- Common
 - General
 - Name: PLM Windchill
 - Data Type: Project
 - Description:
 - Owner: don TC
 - Path: /PLM Windchill
 - Last accessed: 2025-03-18 13:37:39
 - Last accessed: don TC
 - Edit & Check in
 - Active Users
 - Details
 - Created: 2025-03-17 22:30:19
 - Created By: don TC
 - Modified: 2025-03-18 00:34:25
 - Modified By: don TC
 - Release Status: Not released
 - TC Status
 - Administration
 - Approval Prof
 - Baseline Profi: Save to PLM (Siemens EDA)



Library & Design Data Management

Links support for EDM notification

Link support - Provide ability to simply click on a link to open the target (object)

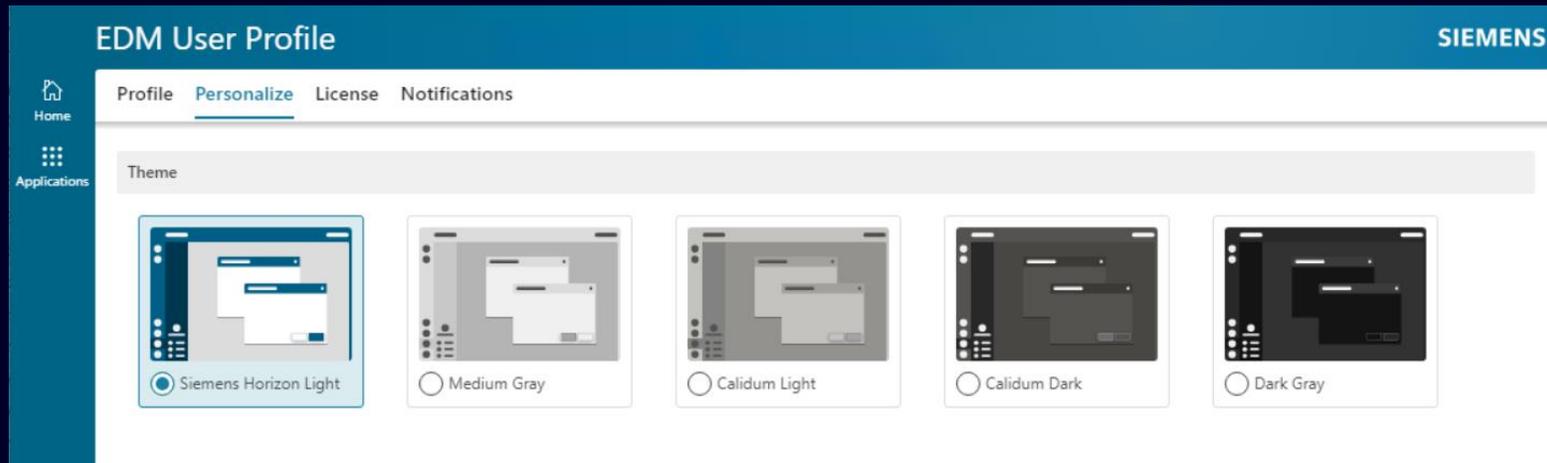
- Notifications generated in EDM design objects (projects, design versions, ..) supports a clickable link to quickly navigate to them
 - EDM design cockpit
 - EDM notification widget
 - Links in emails

Significant user experience improvement

Library & Design Data Management

Color themes for EDM web applications

- Color themes of EDM web applications are now consistent with desktop tools
- When launching the EDM web application from the Xpedition flow desktop application, the same color theme will be applied
- Within EDM user can set the color theme on the user profile page
- Selected theme is saved to the database hence consistent theme will be supported when changing browser



Deliver a new, modern user interface that aligns with the design and functionality of other applications within the Xpedition flow and the broader Siemens product portfolio

Layout

Layout 2504 highlights

Top bar schemes
Custom Top bar schemes give you the ability to customize the Top bar with a set of task-oriented commands for specific stages of the design process. Create new schemes by using the New scheme command or by making copies of existing schemes by using the Duplicate command. Add commands from the command list on the left. Use drag-and-drop to order the commands and separators. If commands on the right side of the page are hidden due to window size, view those commands by using the horizontal scrollbar at the bottom of this section. You can share and reuse schemes by exporting and importing them.

Settings specified by a custom Top bar scheme are independent of Skills settings. Commands that are dependent on specific licenses will be displayed in the Top bar only when the appropriate licenses are available.

Use shortcuts or the Top bar schemes dropdown in the Top bar to quickly switch between schemes.

The image shows a composite of three screenshots from the Siemens layout software. The top-left screenshot displays the 'Top Bar' with a list of route-related commands such as 'Copy Trace', 'Add Routes', 'Hug Trace', and 'Route Modification'. The top-right screenshot is the 'Tuning Patterns' dialog box, which includes settings for 'Minimum spacing' (10.0000 th), 'Preferred minimum height' (50.0000 th), 'Maximum height' (100.0000 th), and 'Miter ratio'. It also features options for 'Sawtooth tuning' (uncoupled), 'Sawtooth length' (3.00 X Trace width), and 'Sawtooth angle' (77.0000 deg). The bottom screenshot shows the 'Record Explorer' window, which lists various rule classes and their lengths, such as 'P1V0_P0K' with a length of 25.0000.

The image shows two screenshots from the Siemens layout software. The top screenshot is a 3D perspective view of a PCB assembly, showing the board, components, and traces. The bottom screenshot is a 'Manufacturing List' window, which displays a table of manufacturing data. The table has columns for 'Status', 'Time', 'Target', 'Source', 'Display', and 'Comments'. The data includes items like 'P1V0_P0K' and 'P1V0_P0K' with various status and time values.

- General usability features & enhancements
 - Top bar scheme support
- Interactive editing performance
- ECAD / MCAD integration
- MCAD collaborator enhancements
- 3D DRC of components-to-board
- Layout assembly collaborator
 - Real-time change notification
- Manufacturing data output
 - Configuration rules, project templates

Layout

General enhancements to part manipulation

Add option to define which origin is used during swap parts

- Choose cell origin, centroid of pins or pin centers
- Same options were previously available in editor control for part alignment only

Part alignment

- Cell origin
- Centroid of pins
- Pin centers

Add key-in command to set drop interconnect options default

- Eliminates the need to use the RMB command during each move
- Especially useful when making minor movements with very large physical reuse circuits
- Remains set for the session unless key-in is used to toggle it off
- Command name "dropic on|off"

More user control during part swapping and movement

Physical reuse support in rigid/flex designs

Enhanced layer mapping allows support of physical reuse in rigid flex designs

- Physical reuse circuits can now be created and published from within a rigid/flex design
- When placing or moving physical reuse instances from one board to another, intelligent layer mapping will be recommended based on the target board layer stackup
- When the source is modified, the instances are updated based on the previous layer mapping used during initial placement. Re-defining layer mapping is not required when the instance is updated
- Existing PCB designs containing physical reuse can now be changed to rigid flex technology

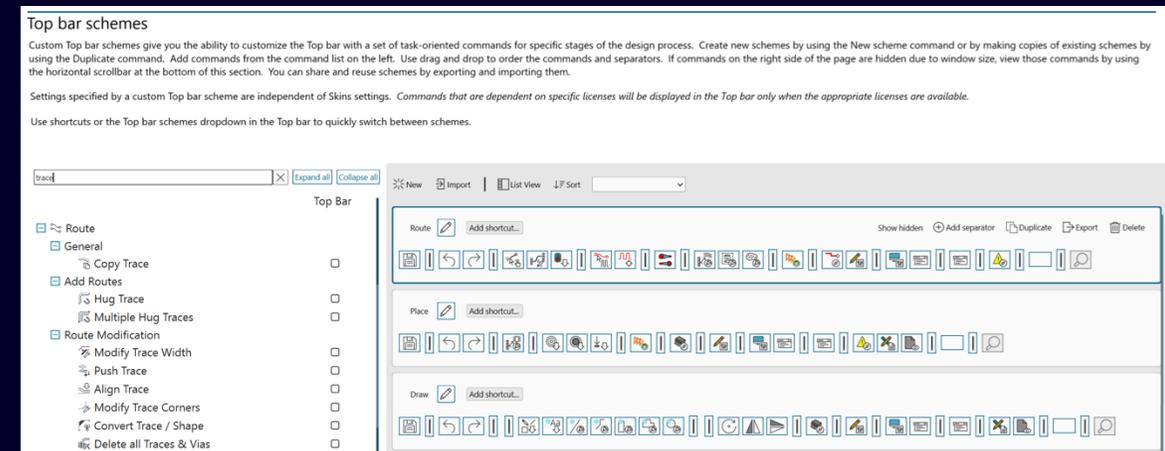
*The efficiency found in physical reuse functionality is now available
to users creating rigid flex designs*

Layout

Process-based top bar schemes

Create process-based top bar command sets, enabling quick one-click access to commands for a given design process

- Schemes initially created and modified in the top bar schemes section of settings
 - Can also be quickly modified from the top bar itself
- Filtering of available commands to quickly locate commands to be added to the scheme
- Import and export allows schemes to be easily shared between users
- Out-of-the-box schemes delivered for routing, placement and drawing design tasks
- The default top bars associated with each skin are unchanged. Usage of top bar schemes is optional



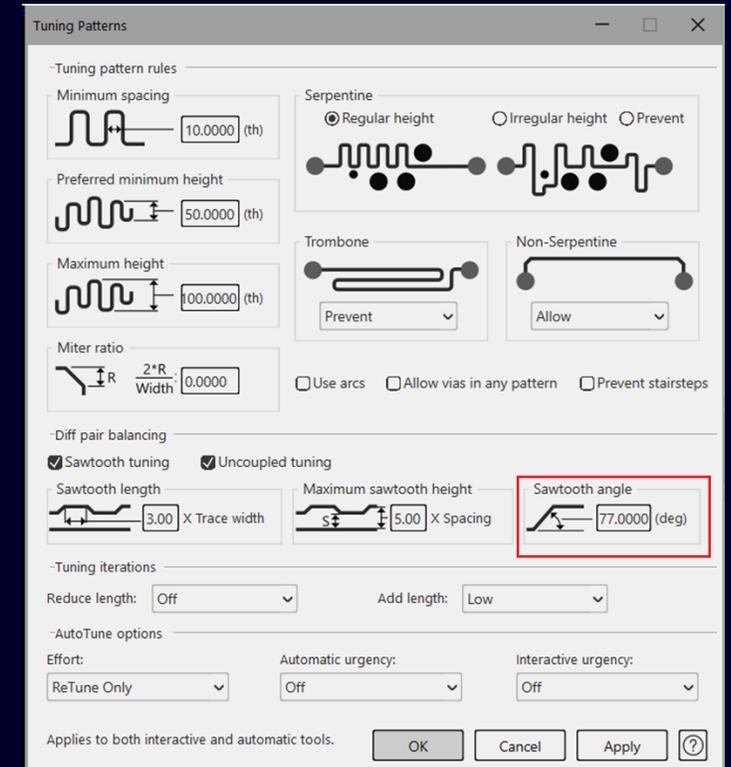
Quick and customized access to task-oriented commands improve user productivity

Layout

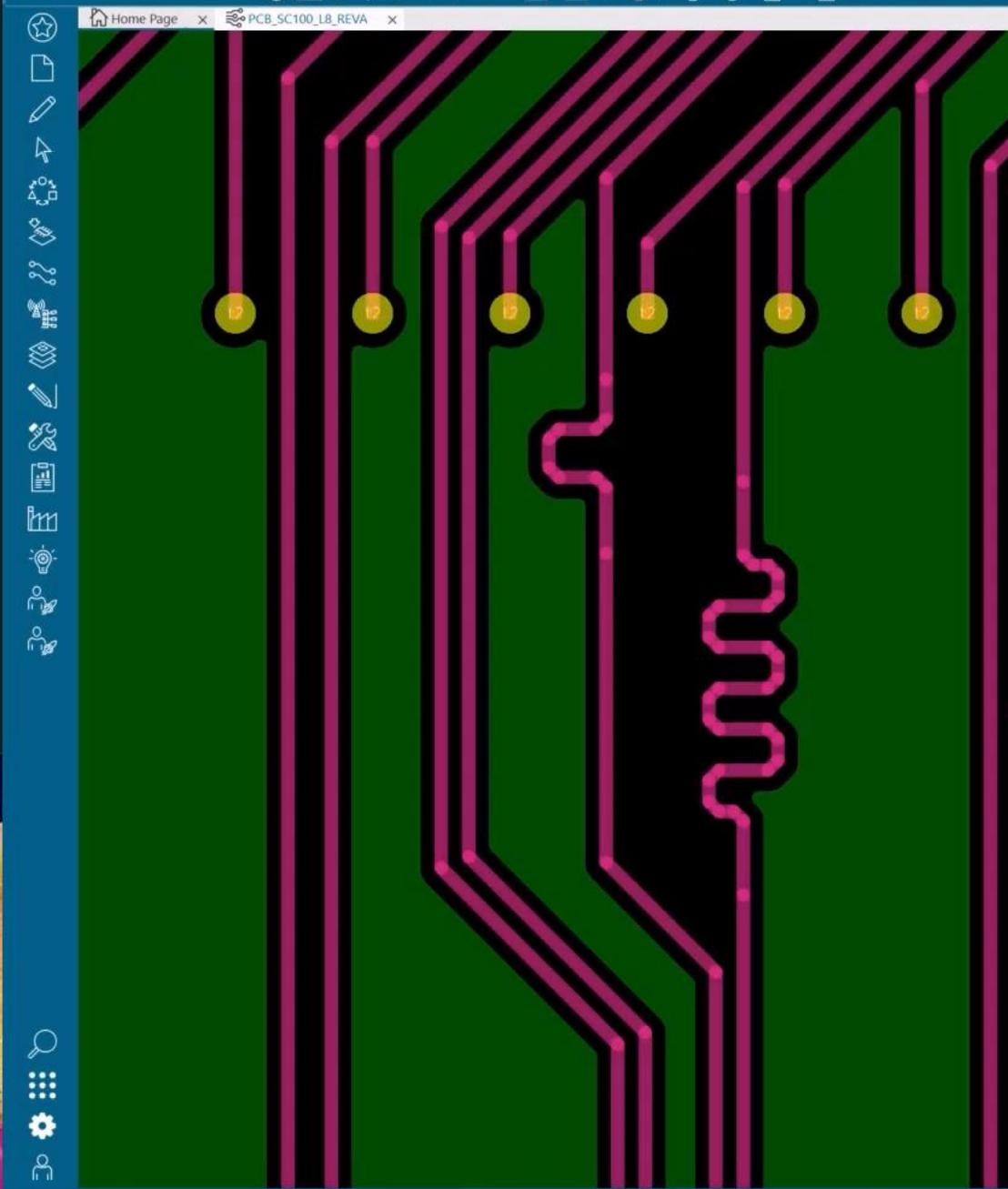
High-speed routing

Add angle support for sawtooth tuning pattern

- Default value of 45 degrees matches previous releases



More control over specific signal integrity concerns by adding options to better control coupling



Tuning Patterns

Tuning pattern rules

Minimum spacing: (mm)

Preferred minimum height: (mm)

Maximum height: (mm)

Miter ratio: $\frac{2 \cdot R}{\text{Width}}$

Diff pair balancing

Sawtooth tuning Uncoupled tuning

Sawtooth length: X Trace width

Maximum sawtooth height: X Spacing

Sawtooth angle: (deg)

Tuning iterations

Reduce length: Add length:

AutoTune options

Effort: Automatic urgency: Interactive urgency:

Applies to both interactive and automatic tools.

Editor Control

Place Route Grids

Dialogs

Plow

Mouse up style: Plow/Push

Mouse drag style: Plow/Push

Prohibit violations
 Double click to add via

Angles for Segment Plow style:
 90 45 Any
 Angle shift: (degrees)

Optimize netlines: No Local

Edit & Route Controls

Gloss mode: On Local Off

Via move Pad jump
 Remove excess meanders
 Gloss around deleted routes

Additional gloss spreading clearance

Common Settings

Interactive Place/Route DRC
 Z-Axis Route DRC
 Move fixed objects with warning

AutoSave intervals to temp work area

Interactive: (min)
Auto Route: (min)

No schema selected

Layout

Performance improvements

Continue to improve interactive editing performance in targeted scenarios

- Moving odd angle traces on large nets – Up to 77% faster
- Trace segment movement back toward original location after shove trace – Up to 8X faster
- Dragging trace bus that includes huge net shielding traces – Up to 2X faster
- Glossing huge net trace – Up to 10X faster
- Interactive edits of forced order net on large package design when active clearances are enabled – Up to 16X faster

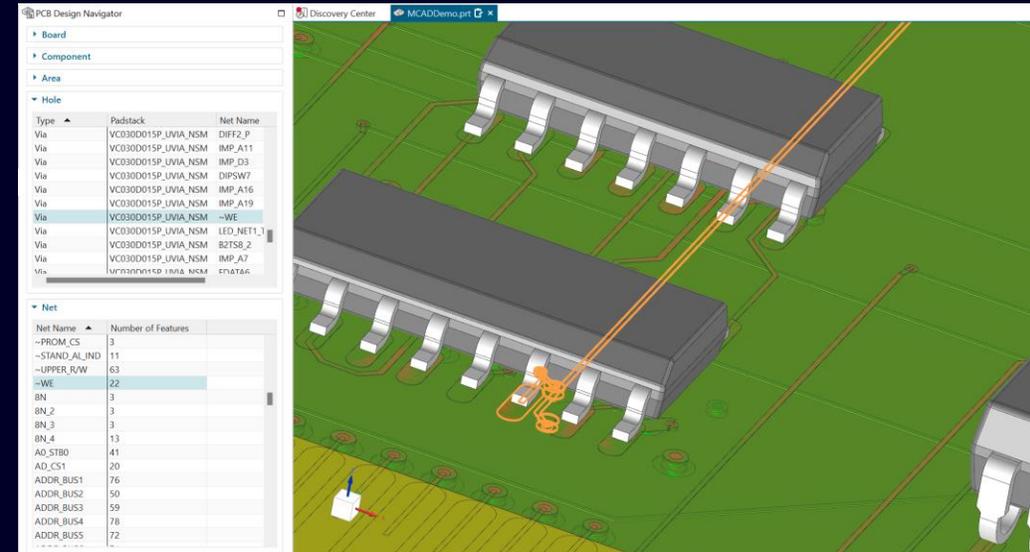
Hazard explorer, net explorer, and component explorer UI performance improvements when processing large amounts of data

Maximize designer productivity by reducing lag during interactive routing commands and explorer-based operations

Layout MCAD collaborator

Continuous enhancements to enable more streamlined, accurate mechanical representation

- Add netnames to via holes
 - * Requires NX2412 or later
- Provide access to extensive PCB-specific design data within the collaboration environment via CCZ "external" files
 - Teamcenter-managed collaboration requires:
 - Tc2412.0002
 - NX2412



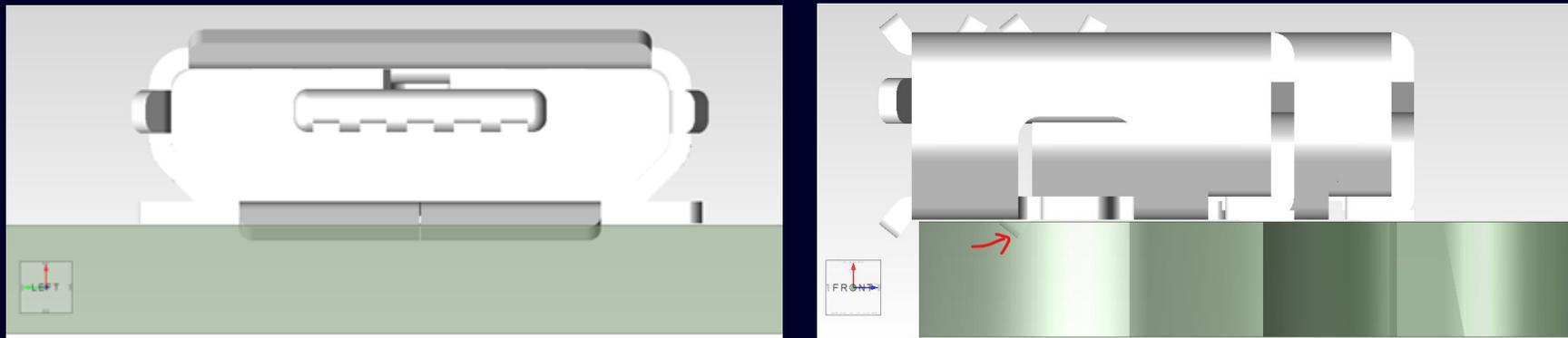
Further enhances downstream applications representation of the digital twin

Layout

3D DRC of components-to-board

3D batch DRC checks for component 3D models against the board substrate

- Real model of holes in board assuring through-holes pins do not collide
- SMD parts



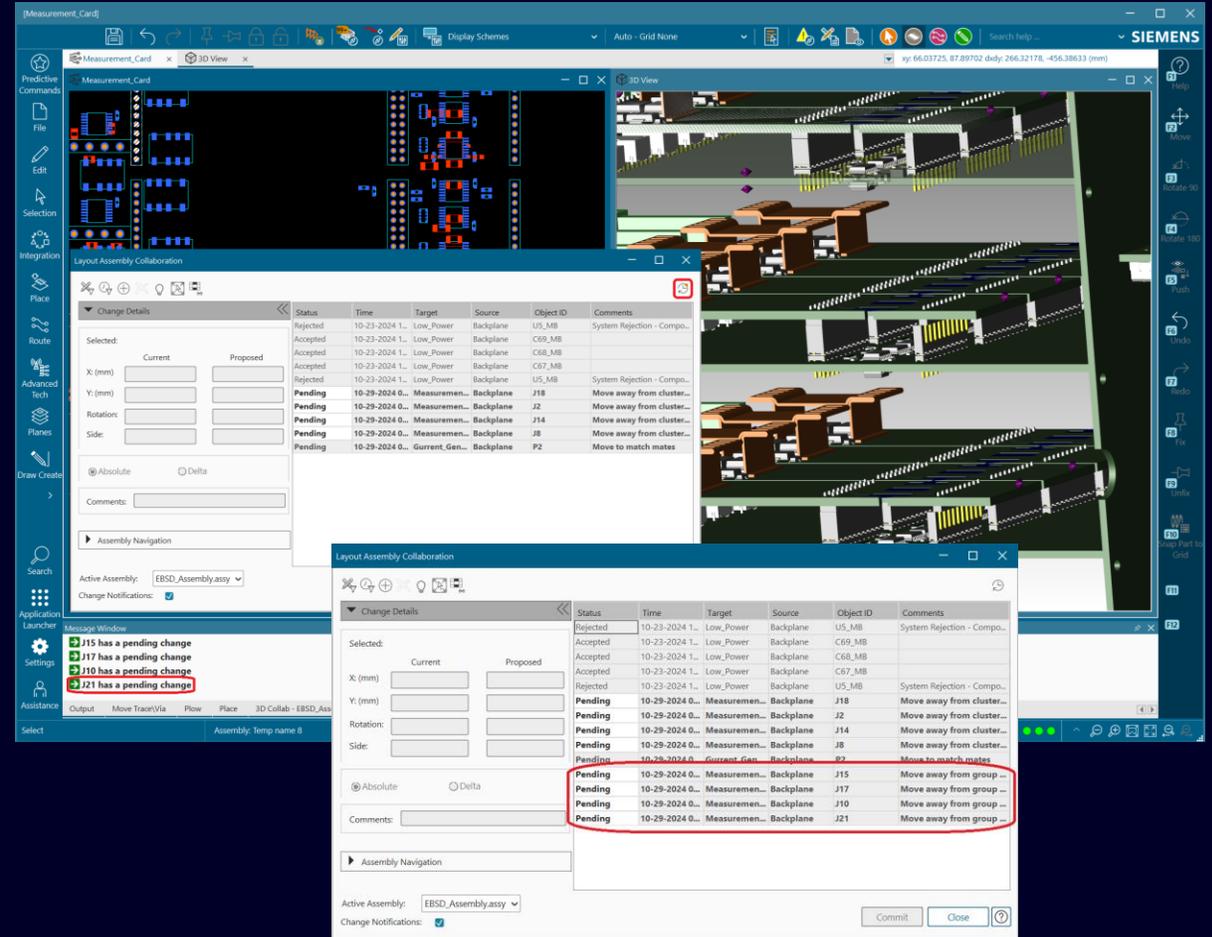
Allows detection of issues in part placement to ensure a more accurate DRC

Layout

Layout assembly collaborator

Provide users with real-time notifications of requested changes

- Message window reports requested changes
- Clicking the hyperlink zooms to the affected area
- Orange icon indicator informs the user the queue should be refreshed
- Clicking the icon refreshes the change queue



Improves assembly collaboration by providing informative, interactive notifications of requested changes

IO_Card

Loc: BASE_8

Auto - Grid None

TopPanel

Search help ...

xy: 151.195281, -50.137843 dxdy: 0, 0 (mm)

Predictive Commands

File

Edit

Selection

Integration

Place

Route

3D

Planes

Draw Create

Draw Modify

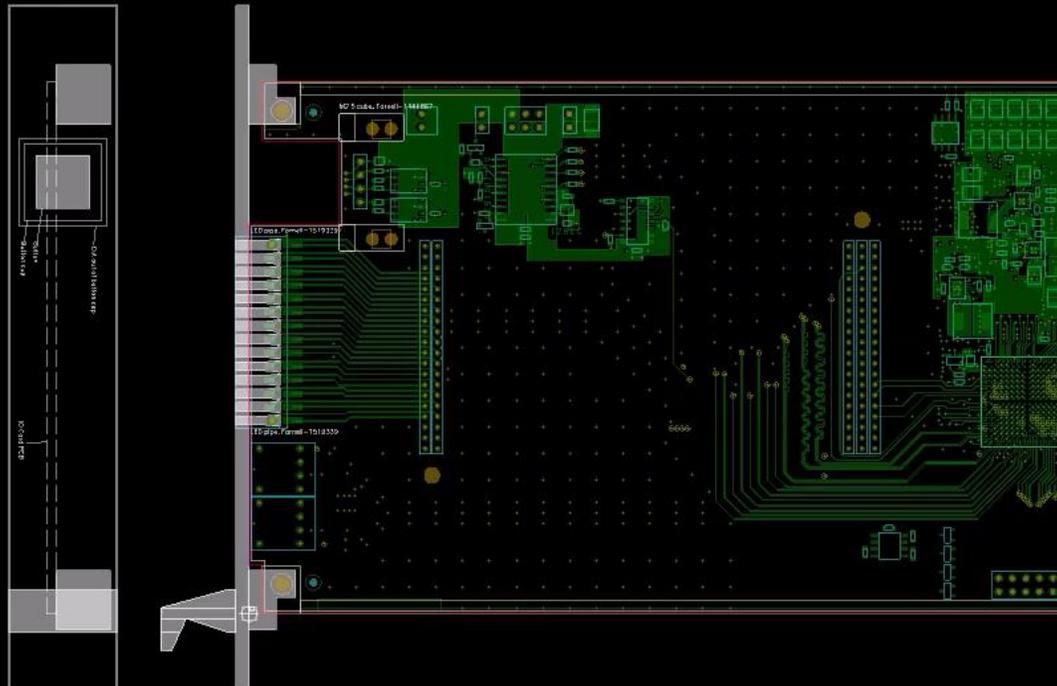
Search

Application Launcher

Settings

Assistance

Message Window



IO_Trigger_Piggy

Loc: XpeditionColorTable_Video

Auto - Grid None

TopPanel

Search help ...

xy: 1.166972, -8.117858 dxdy: 0, 0 (mm)

Predictive Commands

File

Edit

Selection

Integration

Place

Route

3D

Planes

Draw Create

Draw Modify

Search

Application Launcher

Settings

Assistance

Message Window

Display Control - 3D View

Help

Move

Plow

Component Explorer

Net Explorer

Undo

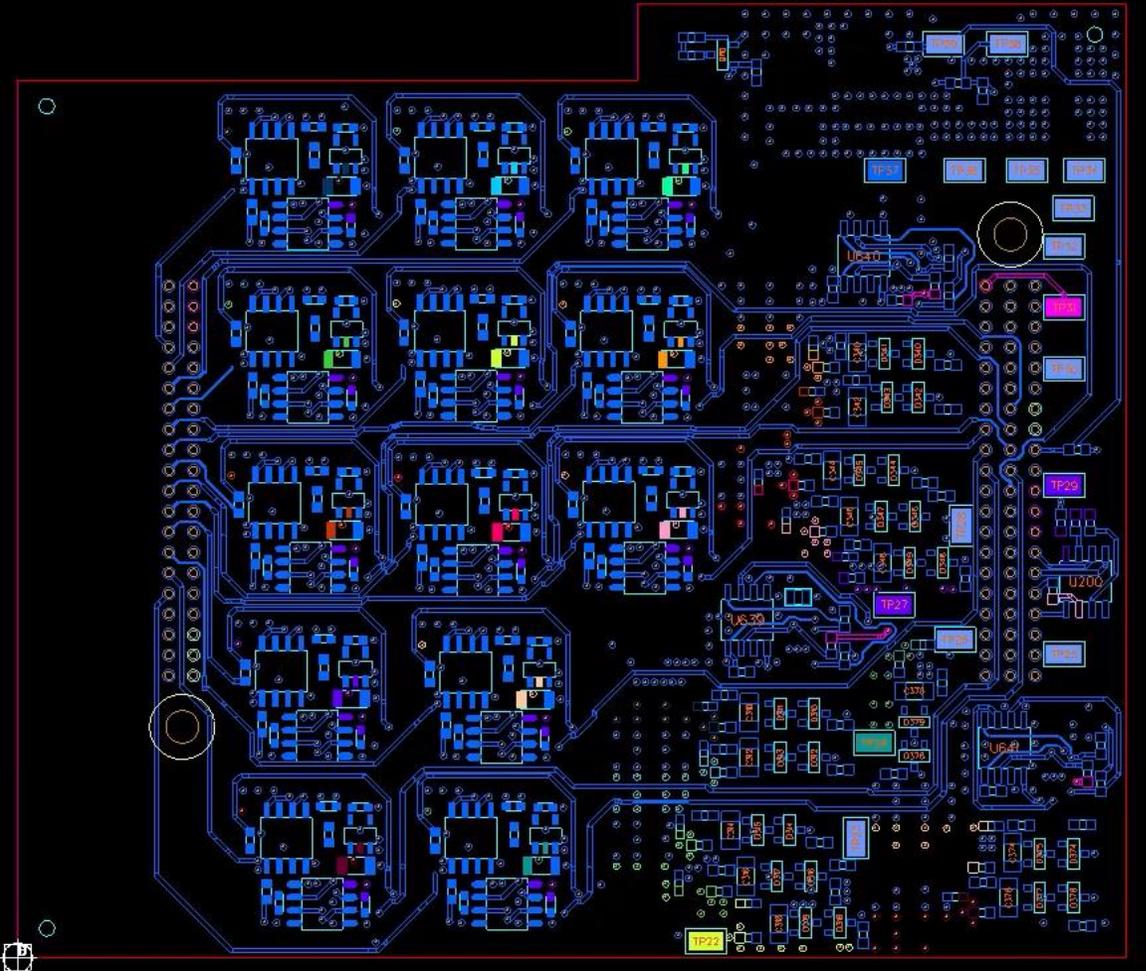
Redo

Draw Sketch

Sketch Route

Toggle Gloss

Constraint Manager



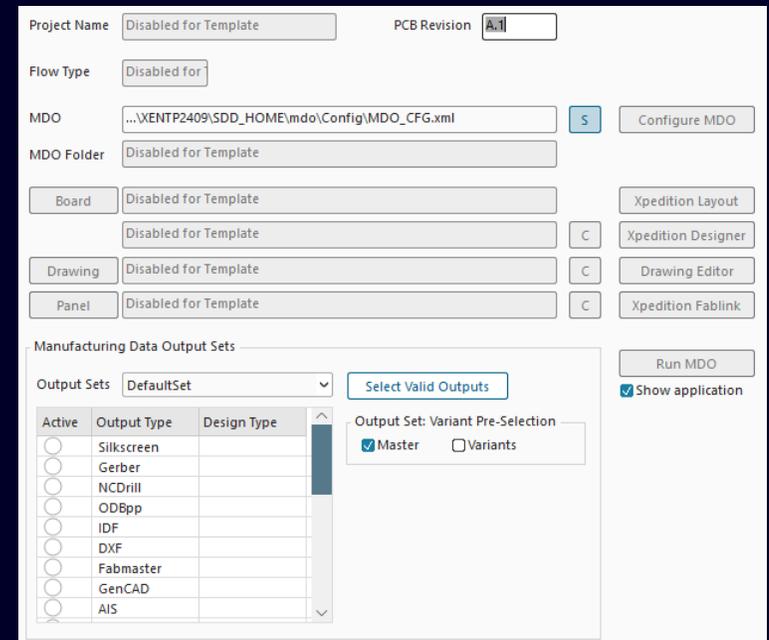
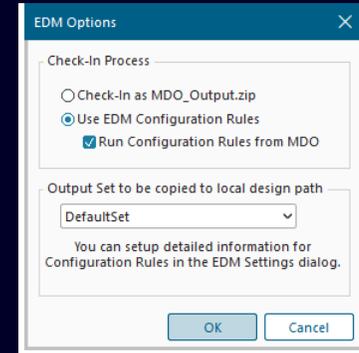
Layout

Manufacturing data output

Enhance MDO to align with the enterprise customer's use model

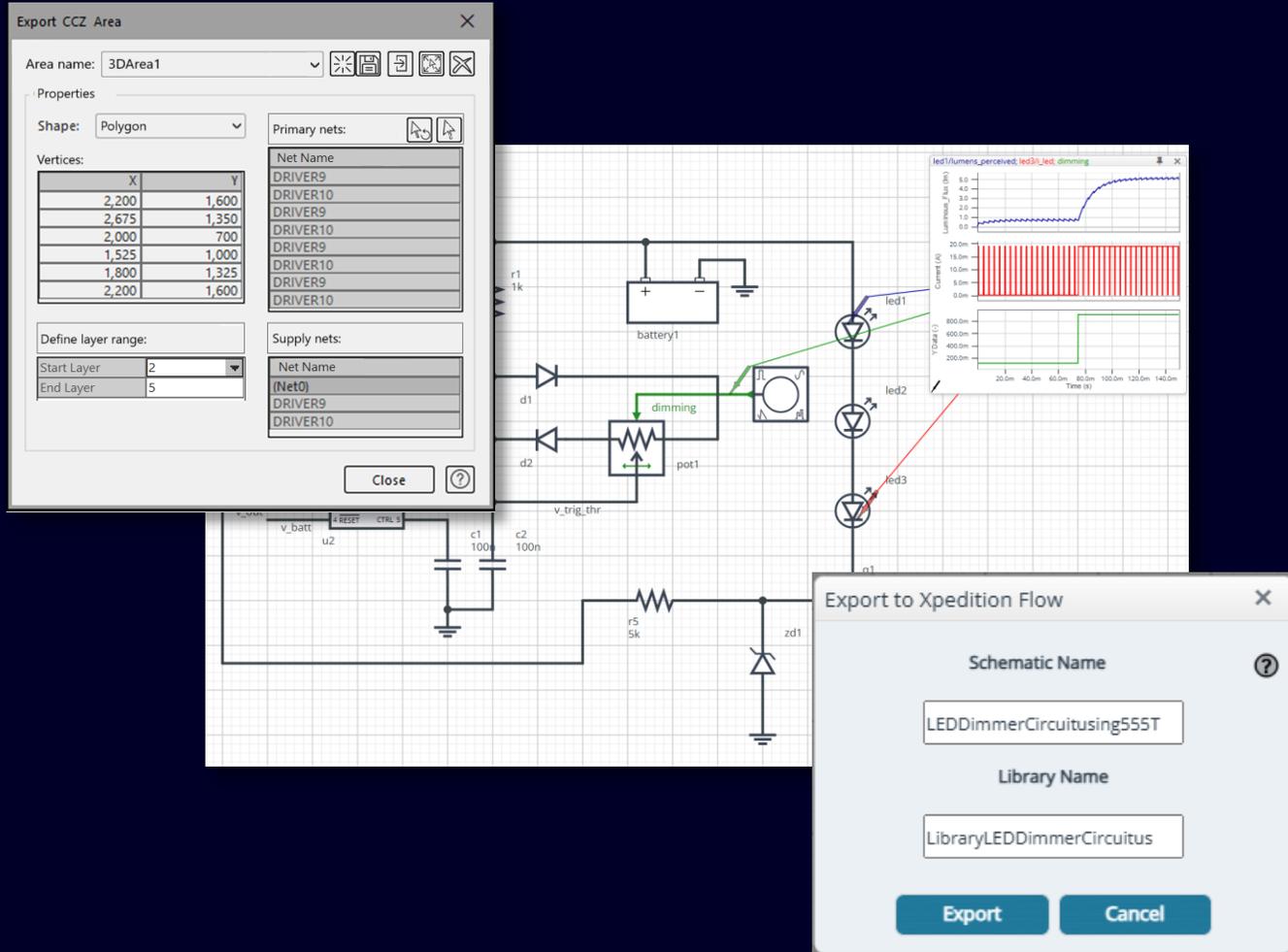
- Enhance EDM integration with configuration rules
- Add creation and user of project templates
- Allow user-defined designation of home/config/project folders
- Add customer requested output options/capabilities
 - Output of EDM multi-board projects
 - Mirror outputs
 - PDF consistency with native output
 - Support stroked fonts in NC drill configuration

Enables user to readily access predictable, repeatable output generation



Design Verification

Design Verification 2504 highlights

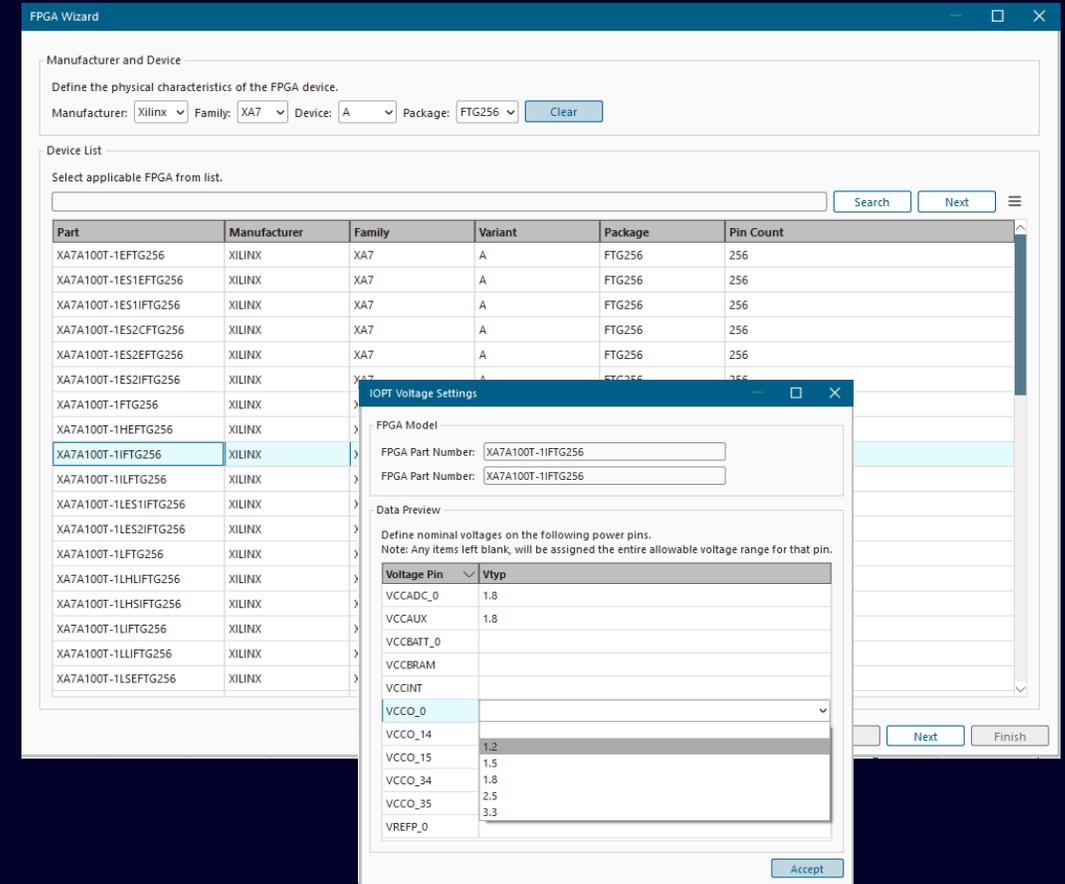


- Schematic analysis integration with FPGA I/O Optimizer
- Export area from layout for simulation
- Export from PartQuest Explore to Designer

Design Verification – Schematic Analysis

FPGA auto-modeler support for FPGA I/O Optimizer files

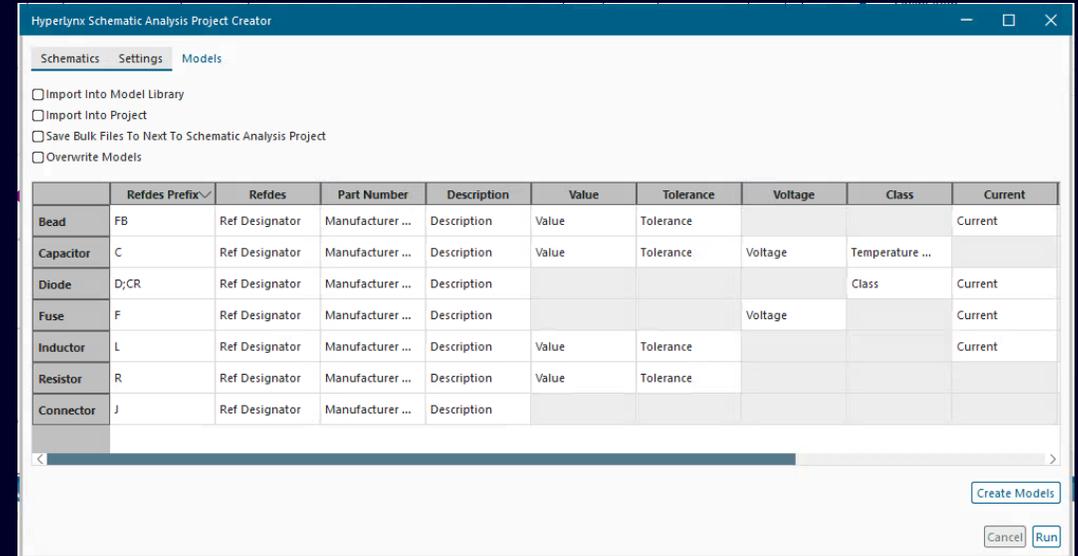
- Quickly verify late-stage changes in FPGA I/O Optimizer for schematic connectivity issues
- Automatically generate models from FPGA I/O Optimizer-generated FPGA Xchange file (*.csv)



Design Verification – Schematic Analysis Passive & connector model wizard

Accelerate the creation of models

- Automatically generate up to 70% of models in a schematic design
- Leverage Designer using symbol & part parameters to automatically create models of 2-pin passive & connectors as part of project creator

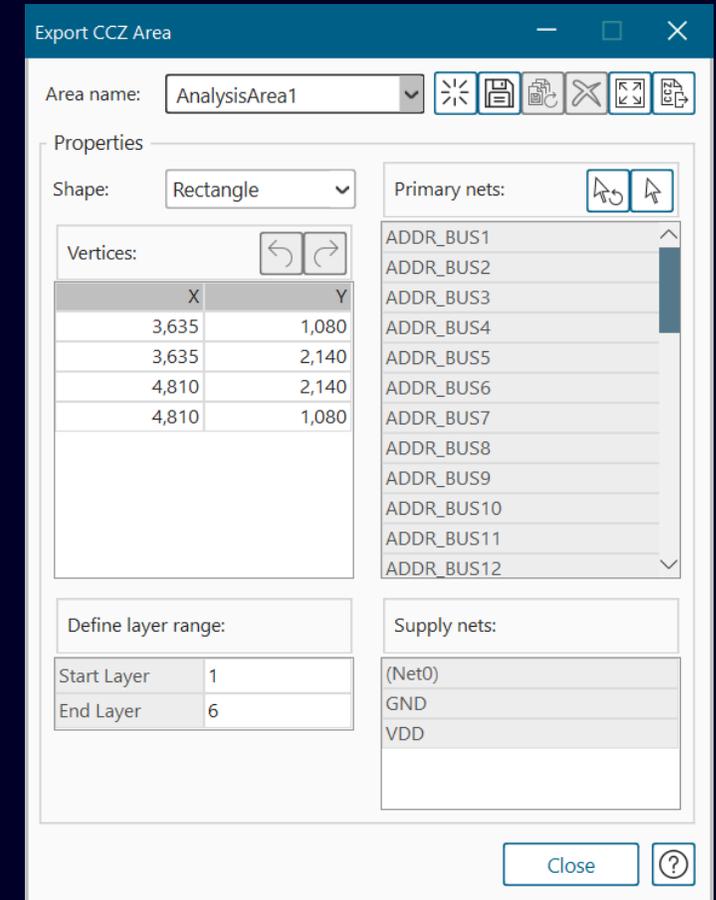


Design Verification – Signal Integrity Analysis

Export by area for analysis

Export of Xpedition Layout design areas requiring analysis making the exchange of information between Layout and HyperLynx products more efficient

- Crop by area (rectangle or polygon)
- Filter by selected nets and layers
- Select electrical objects in crop area (traces, pads, teardrops, planes, etc.)



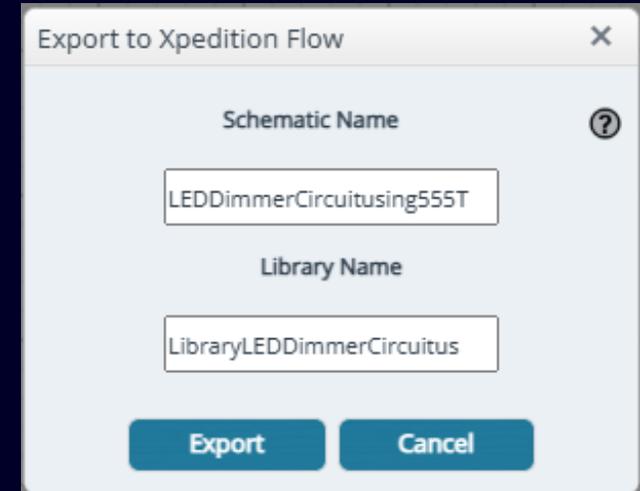
Enable reduced data set as it enters simulation environments

Design Verification – AMS Analysis

Schematic export to HyperLynx AMS

Schematic and simulation model export from PartQuest Explore and import into HyperLynx AMS

- “Export to Xpedition flow” option
- Updated import process in HyperLynx AMS

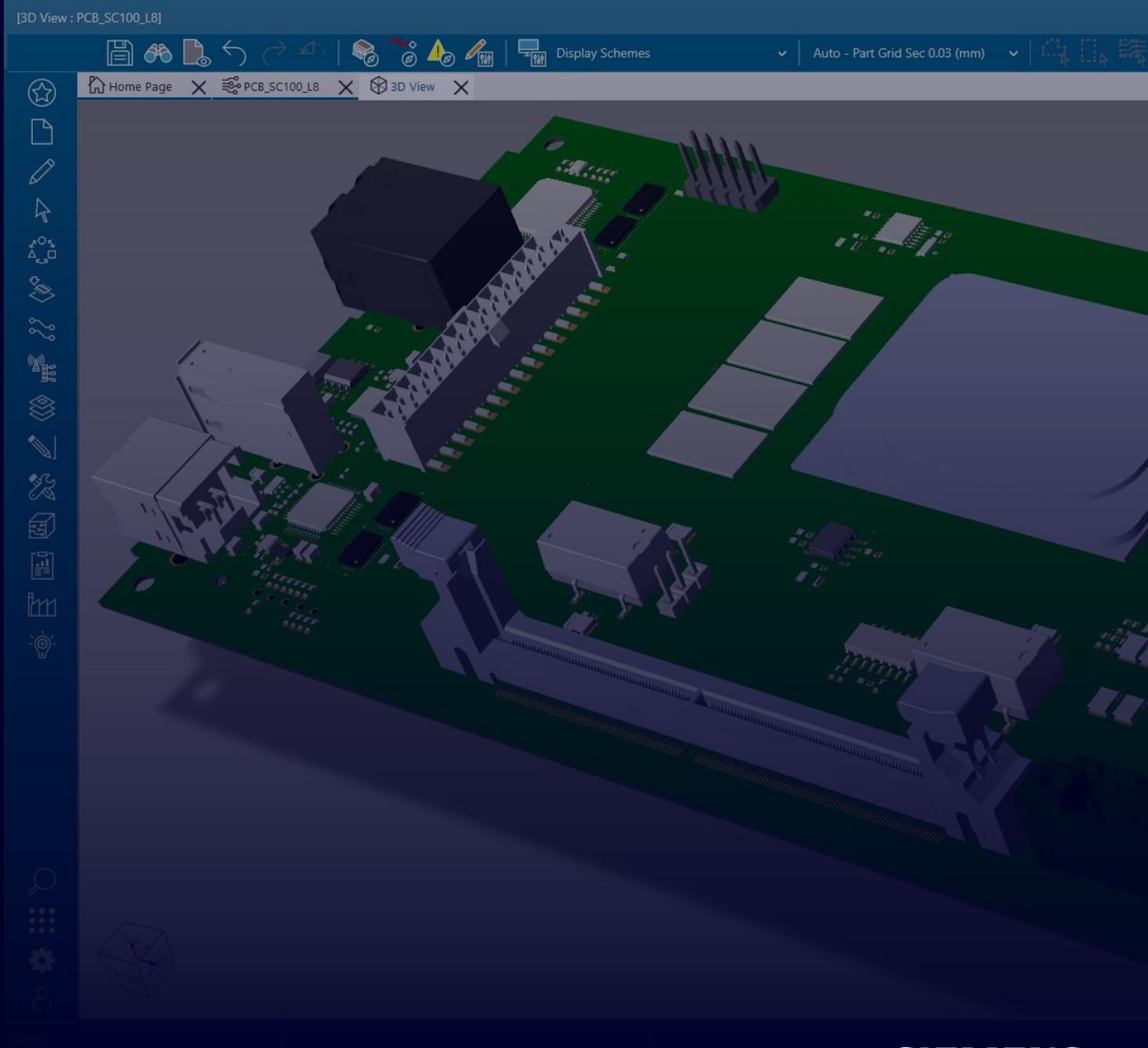


Enables design collaboration and sharing with HyperLynx AMS users

Next Generation Electronic Systems Design

Transforming electronic systems design

- ✓ **Intuitive** user-experience to speed time-to-ramp
- ✓ **AI-infused** to accelerate productivity
- ✓ **Cloud-enabled** to enable development across the electronics design chain
- ✓ **Integrated** to support multi-discipline co-design
- ✓ **Secure** to protect critical IP and export compliance



Thank You!

