



personal automated design solutions®

Welcome to our PADS world tour!
Beograd, 13.10.2016.

Steve Gascoigne



- Mentor Graphics initiative to present PADS major new release
- This could not happen without our partners
- Around 35 locations in EMEA / 15 distribution partners
- 4 in the CAD/CAM territory (Zagreb, Ljubljana, Budapest, Beograd)
- Why do we need resellers?
 - Support in your Language
 - Close to customers
 - Each market has a different expectation, design complexities or specialisation
 - CAD/CAM has a reputation on the market and the bandwidth to support you closely



- Thanks for attending today in Beograd!
- You automatically get a chance to

Win a Fitbit Blaze!

Must be present to win!

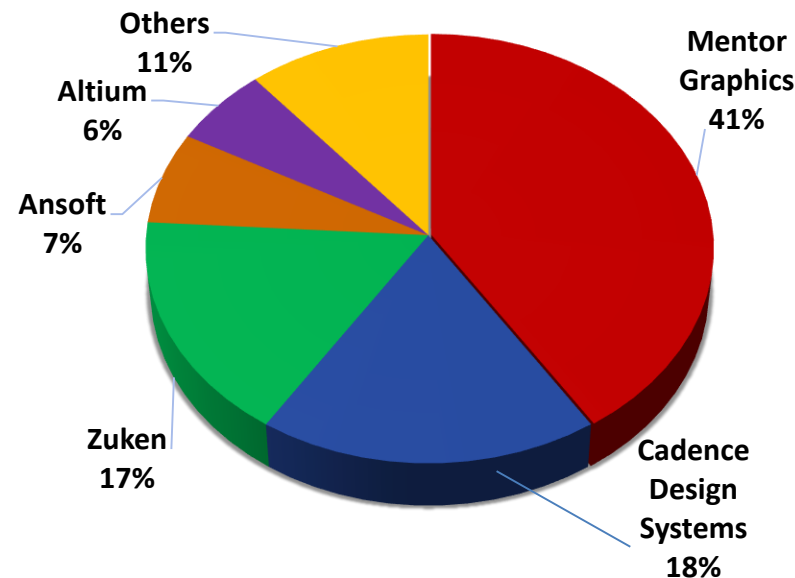


**Mentor
Graphics**

Mentor Graphics Corporation

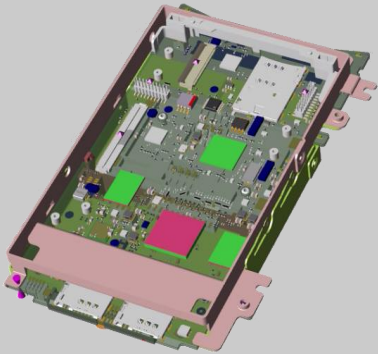
PCB Market Share, Worldwide

- Founded in 1981
- Enabling PCB design since 1984
- Headquarter in Wilsonville, Oregon
- FY2015 revenues \$1.2B
- 5500 employees
- PCB market leader
- R&D investment leader
- Award-winning support

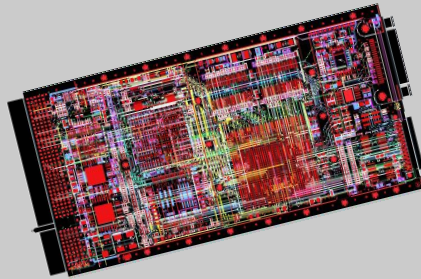


*Source: Gary Smith EDA, 2014

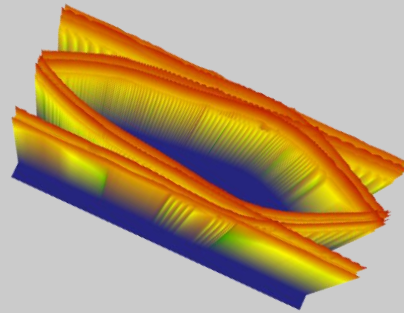
Delivering Scalable Solutions for PCB Systems Design



Xpedition
Enterprise PCB Design



PADS
Project-based PCB Design



HyperLynx
PCB Analysis & Verification

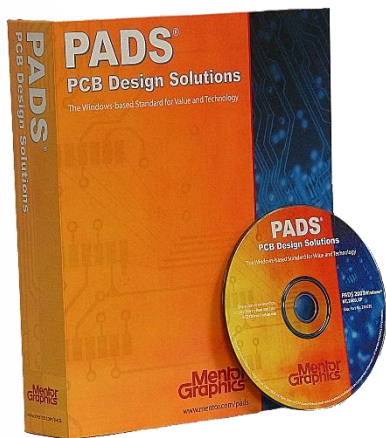


Valor
PCB Assembly, Test, &
Manufacturing Execution

The PADS Evolution From Desktop PCB to Electronics Product Creation

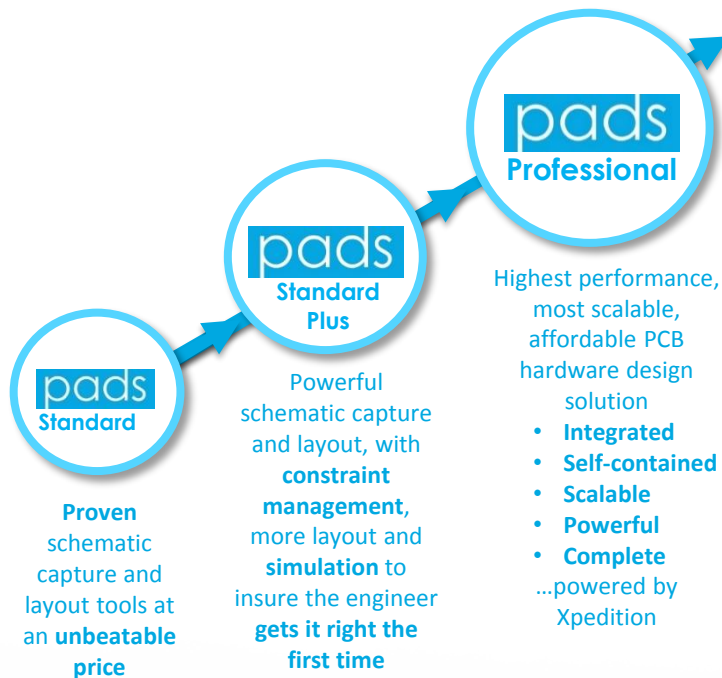
< 2014

“Desktop PCB Design”



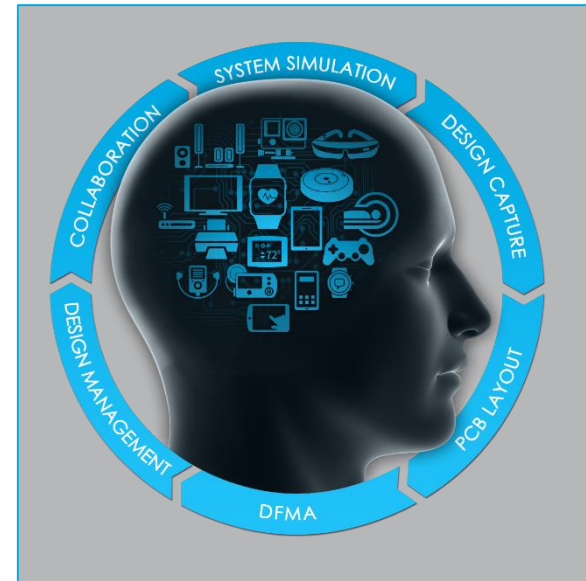
2015

“PADS Solutions”

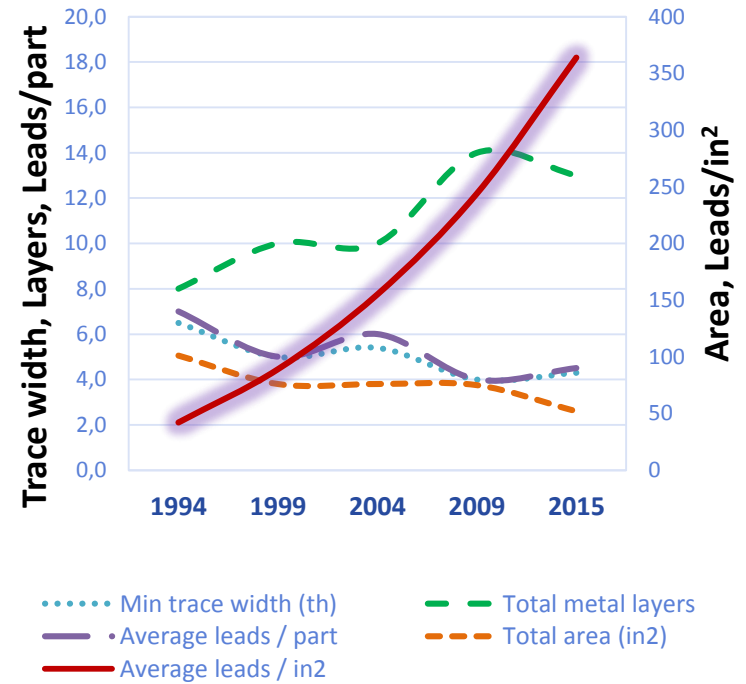
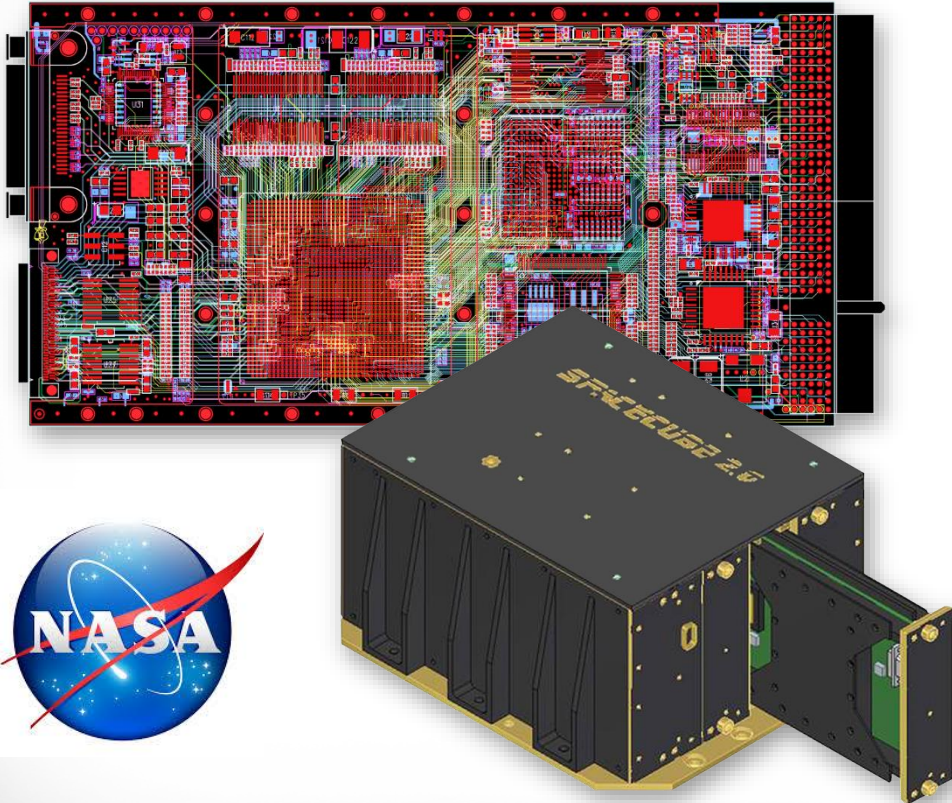


2016

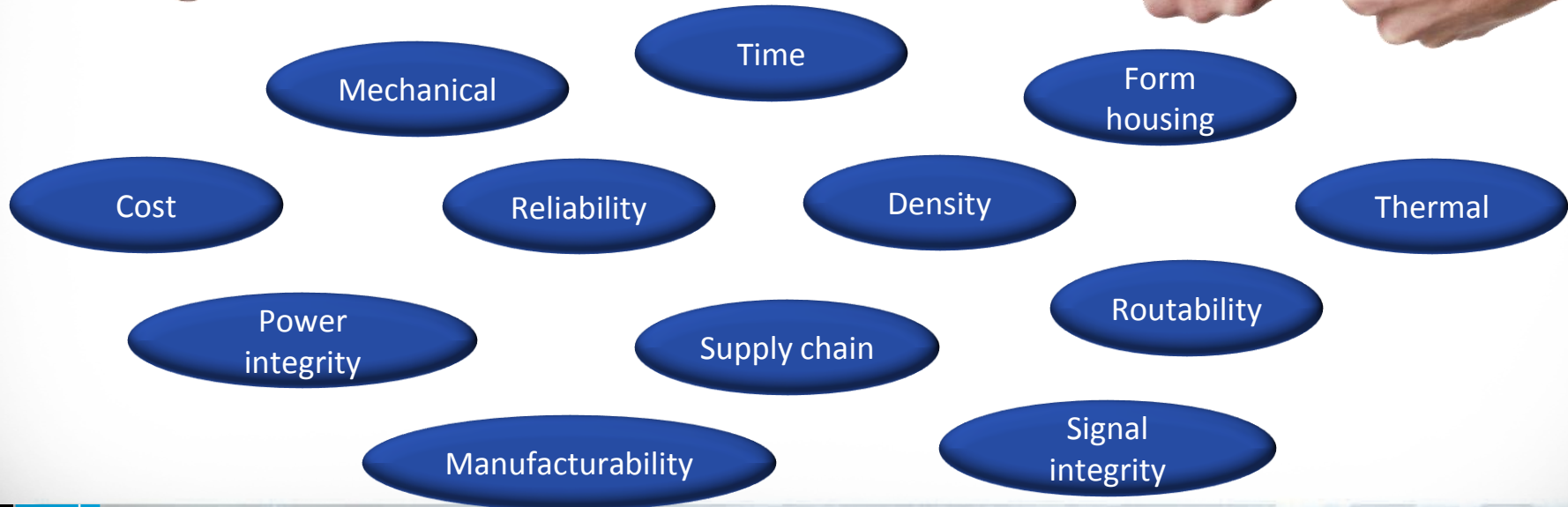
“Product creation platform”



PCB Systems Complexity is Exponentially Increasing

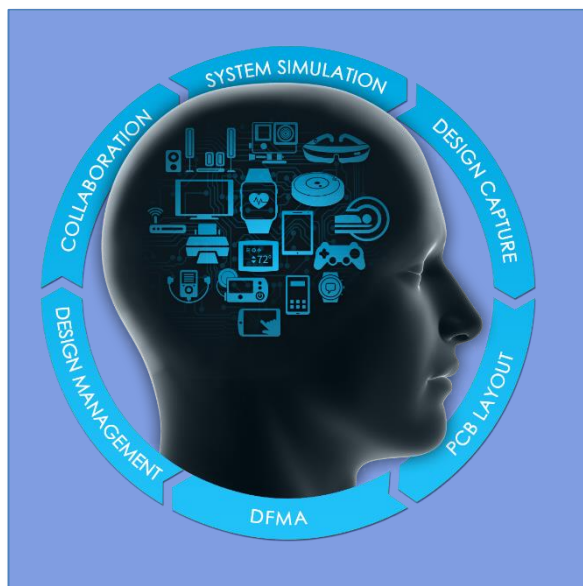


Design Complexity Requires Multi-domain Trade-offs





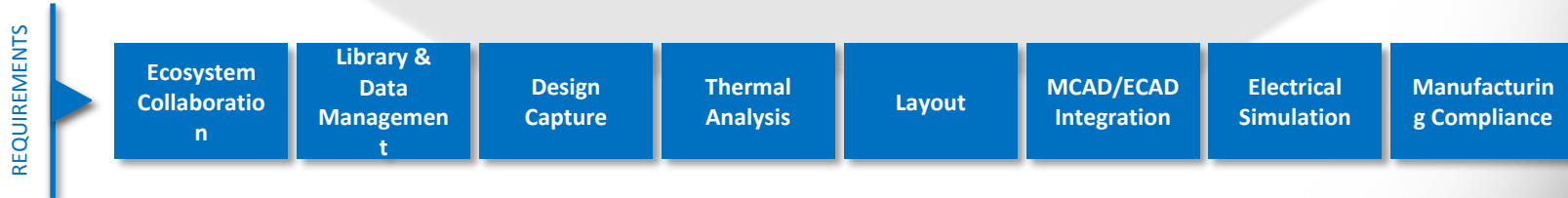
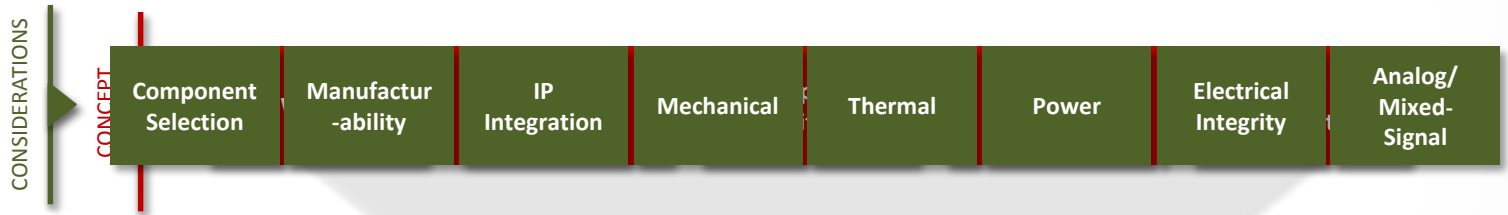
personal automated design solutions



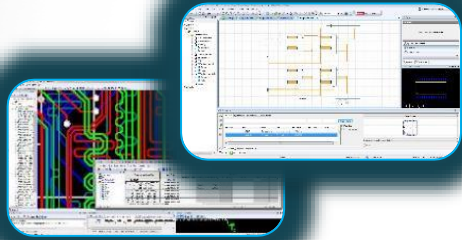
“Product Creation Platform”

Product Creation Challenges

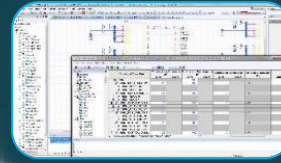
From Concept-to-Delivery



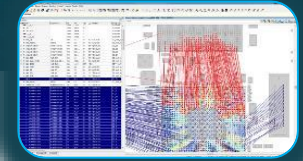
PADS Delivers Product Creation



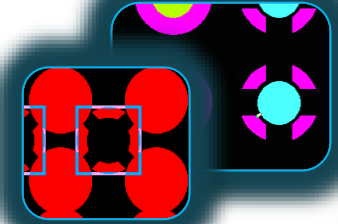
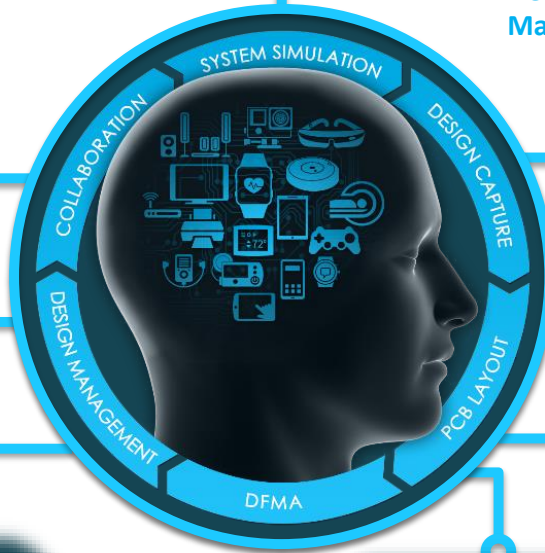
Schematic Capture and PCB Place and Route
PADS DXDesigner, PADS Layout, and PADS Router



Constraint Management



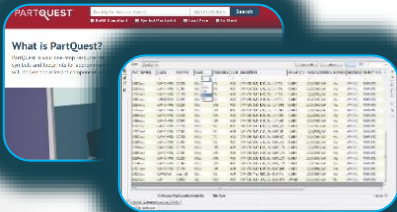
FPGA/PCB Optimization
PADS I/O Optimizer



Design-for-Manufacturing
PADS DFMA

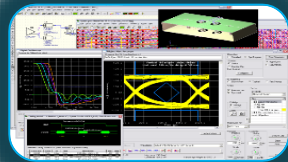


ECAD-MCAD Collaboration
PADS Collaborator

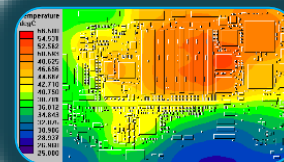


Component Data Management

PartQuest, PADS DXDataBook



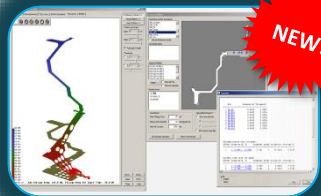
Topology Exploration and Signal Integrity
HyperLynx LineSim and BoardSim



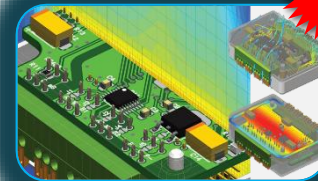
Thermal Analysis
HyperLynx Thermal

PADS Extends

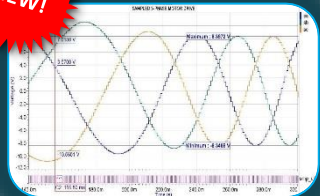
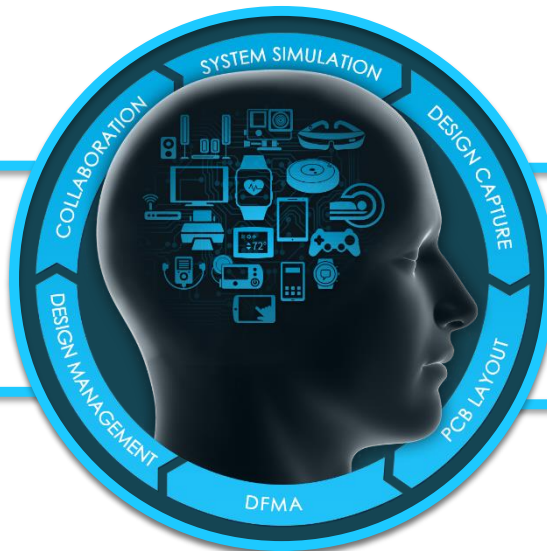
AMS and High-speed Analysis for Product Creation



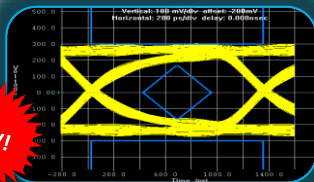
Voltage Drop
PADS HyperLynx DC Drop



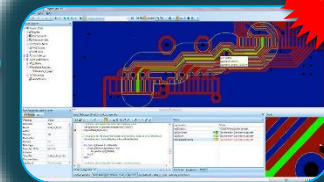
Electronics Cooling
PADS FloTHERM XT



Analog Mixed-Signal
PADS AMS Design
Suite



DDRx Analysis
PADS HyperLynx DDR



Electrical Design-Rule-
Check
PADS HyperLynx DRC

Driving Competitive Advantage

Mentor
Graphics

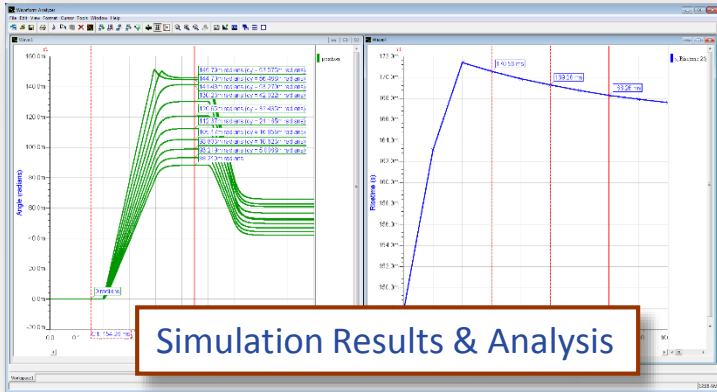
pads

start smarter

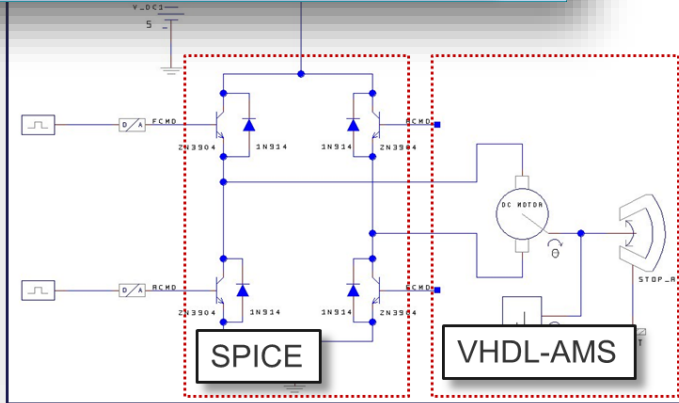
personal automated design system

PADS AMS Design Suite

NEW!



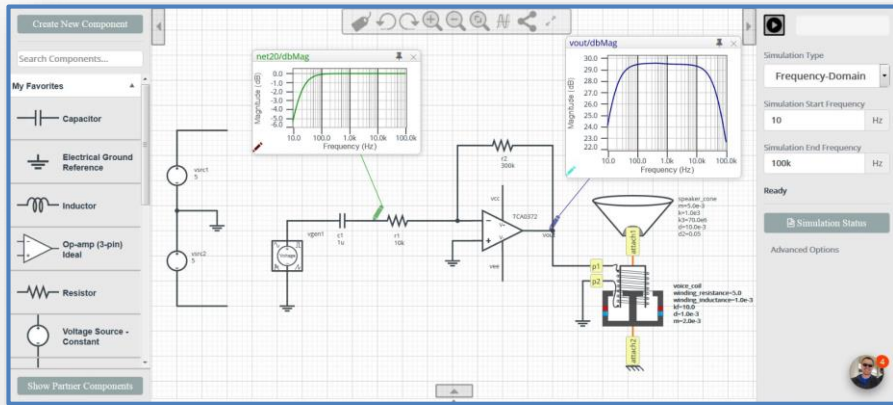
Simulation Results & Analysis



- ✓ Ensure intent, performance, and reliability of analog / mixed-signal (AMS) circuits
 - Produce electronic product designs faster and easier with single environment and flow
- ✓ Seamless and accurate representation of both electronic and electromechanical circuit elements
 - Power and flexibility of VHDL-AMS, an IEEE standard, and comprehensive SPICE capabilities
- ✓ Complete solution for schematic design, circuit simulation, and high-speed topology exploration
- ✓ Advanced analysis included for behavioral verification, scenario exploration, and optimization
- ✓ Unmatched price / performance

PADS AMS Cloud

NEW!

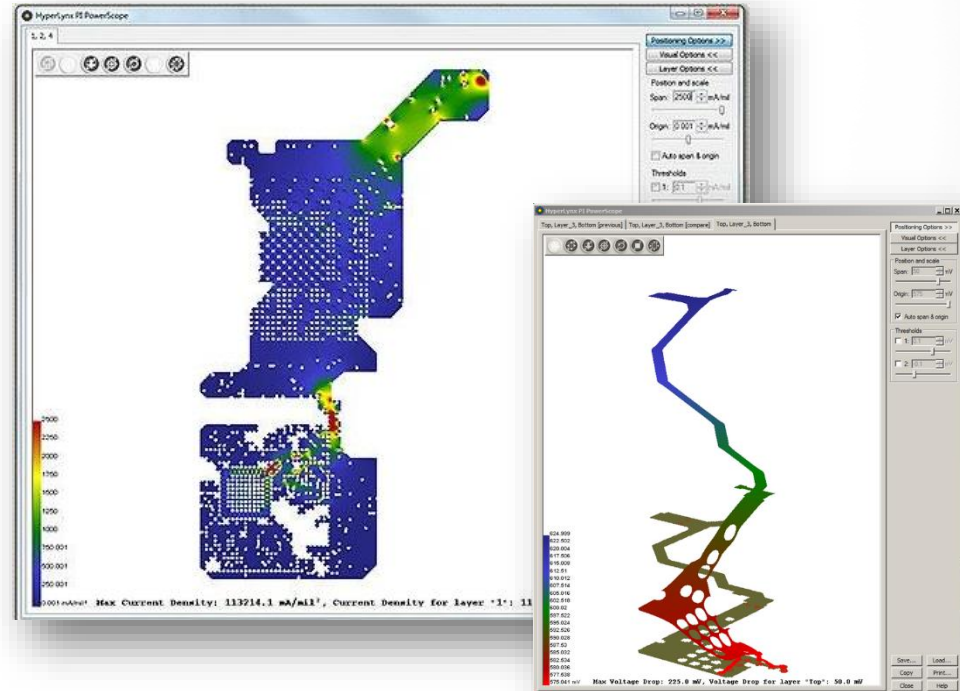


- ✓ Explore and analyze circuit concepts and designs
 - Electronics and mechatronics
- ✓ FREE, cloud-based circuit exploration / simulation environment and community for PADS users
- ✓ Advanced simulation and modeling
 - Analog, digital, mixed signal and electromechanical systems
- ✓ Circuit transfer from Cloud to Desktop environment
 - Eliminate need to redraw circuit

PADS HyperLynx DC Drop

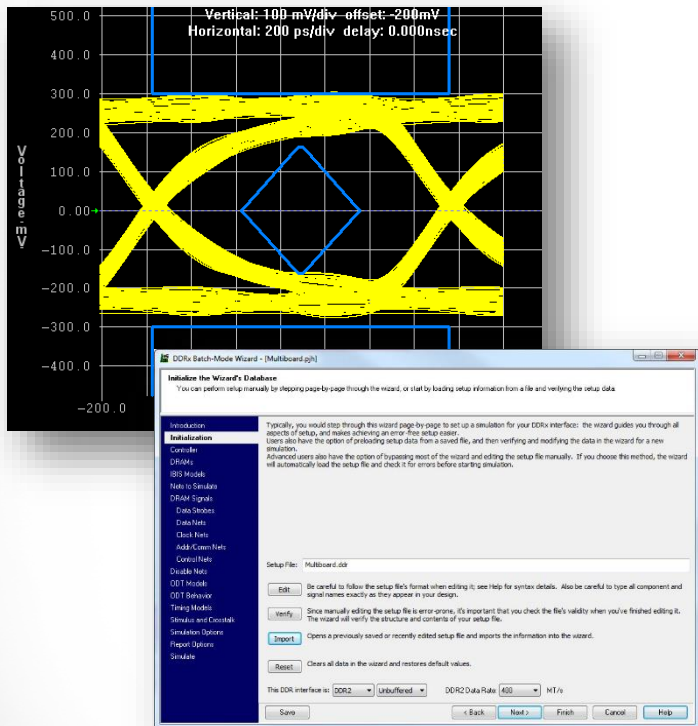
NEW!

- ✓ Avoid unexpected circuit behavior by identifying power-delivery issues early
- ✓ Validate power supply impedance to optimize power distribution networks (PDNs)
- ✓ Assess voltage drop by quickly and accurately identifying areas of excessive current density
- ✓ Fast, accurate results, tightly integrated with PADS



PADS HyperLynx DDRx

NEW!



- ✓ Identify and solve Signal Integrity and timing challenges specific to DDRx designs
- ✓ Resolve typical SI impairments
 - Overshoot/undershoot
 - Ringing
- ✓ Identify DDRx timing issues
 - Setup/hold
 - Derating
 - Skew
 - Data bus margins
- ✓ Unparalleled technology for mainstream PCB design

PADS HyperLynx DRC

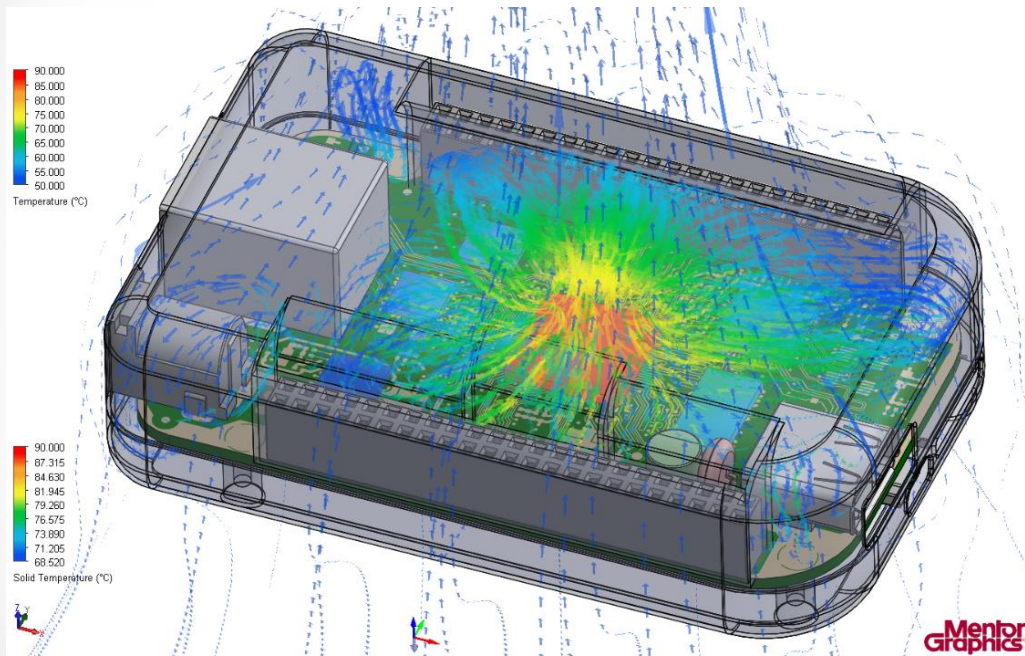
NEW!

- ✓ Rules-based approach vs traditional simulation to identify non-CAD constraints
 - Fast time-to-results
 - Simple setup for complex challenges
- ✓ Out-of-the-box checks for
 - EMI
 - Signal integrity
 - Power integrity
- ✓ Visual results, easy identification of violations integrated with PADS PCB

The screenshot displays the PADS HyperLynx DRC interface. On the left, a tree view titled 'Rules and Results' shows a hierarchy of rules. The 'EMI' folder is expanded, showing rules like 'Edge Rate To Period', 'Edge Shield', 'Exposed Length', 'Filter Placement', 'ICs Over Split', 'IO Coupling', 'Metal Island', 'Net Crossing Gaps', 'Net Near Plane Edge', 'Vertical Reference Plane Change', and 'Via Stub Length'. The 'SI' folder is also expanded, showing rules like 'Crosstalk Coupling', 'Diff Impedance', 'Diff Pair', 'Edge Rate', 'Guard Trace', 'Impedance', 'Long Nets', 'Long Stub', 'Many Vias', and 'Termination Check'. On the right, a 'Details' window is open, showing the following information for a violation: 'Net: /SMB3_DATA', 'Signal layer: SIGNAL_1', 'Reference layer: POWER_1', 'Gap width: 411.6 mil', 'Gap length: 1.78 in', and 'Gap square size: 0.05656 in2'. Below this information, there are 'Actions' listed: 'Zoom to Violation', 'Highlight Net and Zoom In', 'Highlight Net and Zoom Out', and 'Clear Drawing'.

PADS FloTHERM XT

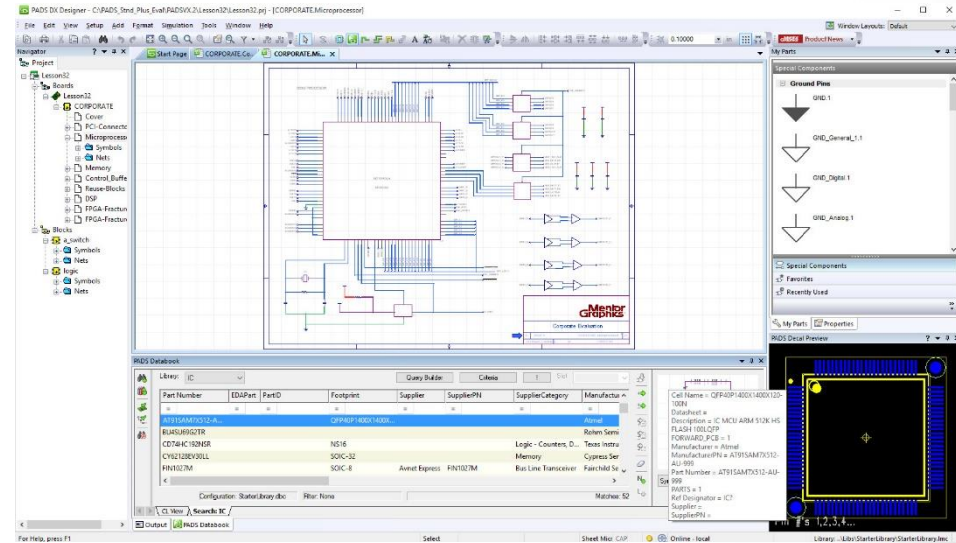
NEW!



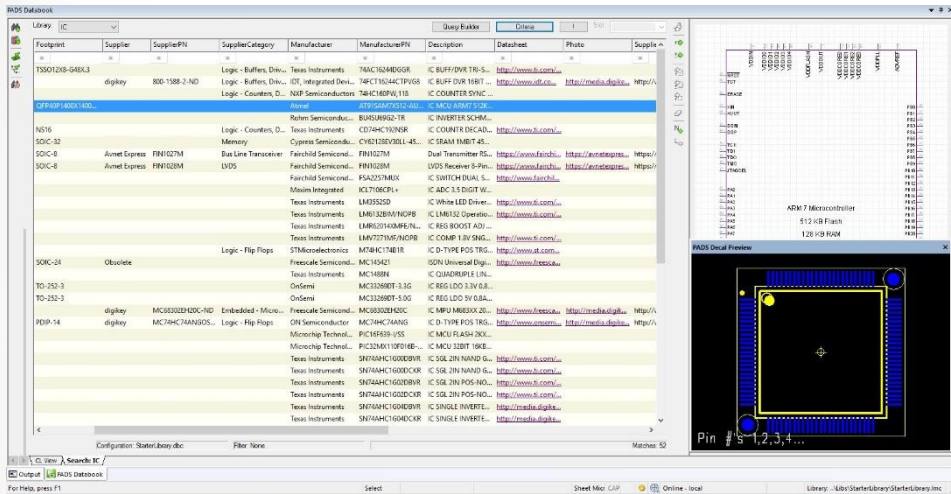
- ✓ Allows hardware engineers to perform thermal analysis
- ✓ 3D computational fluid dynamics (CFD) solution supports steady state and transient analysis
- ✓ Easily import mechanical objects such as product enclosure & heat sinks
- ✓ Perform thermal analysis with enclosure earlier in the design cycle

Schematic Capture

- ✓ Quickly and intuitively capture design intent
 - Place, connect, and integrate
- ✓ Powerful features and capabilities for design capture from simple to complex
 - Hierarchy
 - Constraint definition
 - Component management
 - Variant management
- ✓ Advanced interconnect capabilities and integration with simulation



Component Management



- ✓ Enables intelligent part selection
 - Eliminate inconsistencies and errors
- ✓ Allows multiple design teams to manage their component data from a centralized database
- ✓ Quickly search for and easily locate needed parts based on parametric device data
- ✓ Verify parametric data integrity of all components in the entire design
- ✓ Integrated within the PADS DX Designer environment

Constraint Management

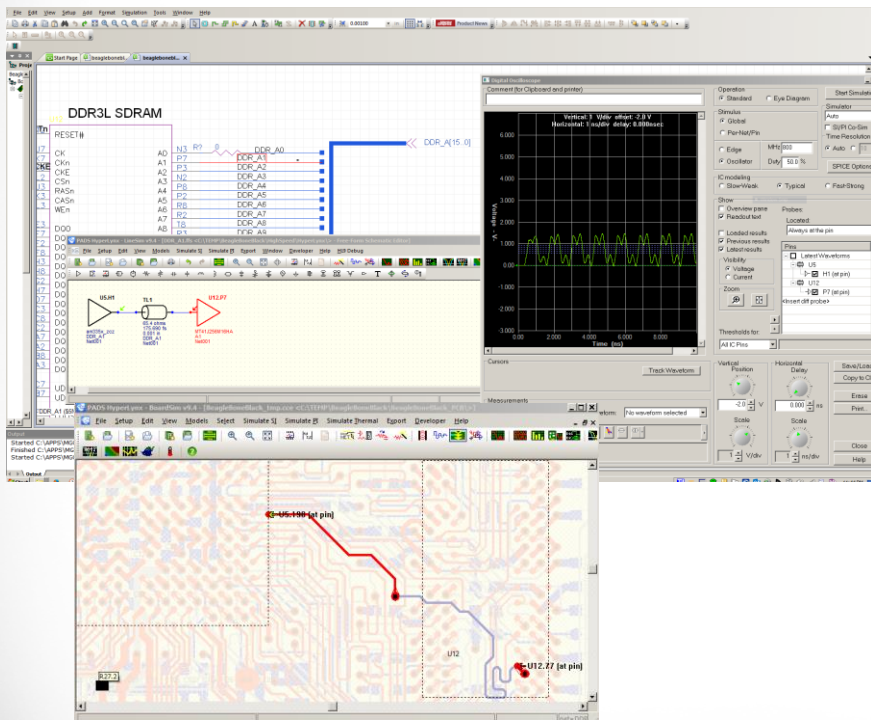
- ✓ Powerful and easy-to-use constraint system in a common, integrated environment
 - Create, manage, and verify
- ✓ Common constraint management system across schematic entry, layout, and routing
- ✓ Multi-level design rules for electrical and manufacturing requirements
 - Core fabrication to high-speed
- ✓ Validate layout against design intent

The screenshot displays the PADS 9.5 Designer interface. The main window shows a PCB layout with various components and traces. The left pane shows a project tree with a list of symbols and their locations. The right pane shows a properties window for a selected component. Below the layout, there are several data tables and tool windows.

SchematicNet Class/Layer	Index	Type	Via Assignments	Route	Trace Width (M)	Typical Impedance (Ohm)	Offset	Spacing (M)
PLANE_1	1	Signal	0	0	5	5	49.852	97.11
PLANE_2	2	Plane	0	0	4.5	4.5	45	9.103
PLANE_3	3	Signal	0	0	4.5	4.5	45	9.103
PLANE_4	4	Plane	0	0	4.5	4.5	45	9.103
PLANE_5	5	Signal	0	0	4.5	4.5	45	9.103
PLANE_6	6	Plane	0	0	4.5	4.5	45	9.103
PLANE_7	7	Signal	0	0	4.5	4.5	45	9.103
PLANE_8	8	Plane	0	0	4.5	4.5	45	9.103
PLANE_9	9	Signal	0	0	4.5	4.5	45	9.103
PLANE_10	10	Plane	0	0	4.5	4.5	45	9.103
PLANE_11	11	Signal	0	0	4.5	4.5	45	9.103
PLANE_12	12	Signal	0	0	5	5	49.852	97.11

Material	Color	Flux Dev. Size	Layer Name	Type	User	Thickness	Dr. Holes	Dr. Size
DESIGN_1	Blue	0.125	DESIGN_1	Material	System	1.6	0.125	0.125
DESIGN_2	Green	0.125	DESIGN_2	Material	System	1.6	0.125	0.125
DESIGN_3	Red	0.125	DESIGN_3	Material	System	1.6	0.125	0.125
DESIGN_4	Yellow	0.125	DESIGN_4	Material	System	1.6	0.125	0.125
DESIGN_5	Cyan	0.125	DESIGN_5	Material	System	1.6	0.125	0.125
DESIGN_6	Magenta	0.125	DESIGN_6	Material	System	1.6	0.125	0.125
DESIGN_7	Black	0.125	DESIGN_7	Material	System	1.6	0.125	0.125
DESIGN_8	White	0.125	DESIGN_8	Material	System	1.6	0.125	0.125
DESIGN_9	Grey	0.125	DESIGN_9	Material	System	1.6	0.125	0.125
DESIGN_10	Light Blue	0.125	DESIGN_10	Material	System	1.6	0.125	0.125
DESIGN_11	Light Green	0.125	DESIGN_11	Material	System	1.6	0.125	0.125
DESIGN_12	Light Red	0.125	DESIGN_12	Material	System	1.6	0.125	0.125
DESIGN_13	Light Yellow	0.125	DESIGN_13	Material	System	1.6	0.125	0.125
DESIGN_14	Light Cyan	0.125	DESIGN_14	Material	System	1.6	0.125	0.125
DESIGN_15	Light Magenta	0.125	DESIGN_15	Material	System	1.6	0.125	0.125
DESIGN_16	Light Black	0.125	DESIGN_16	Material	System	1.6	0.125	0.125
DESIGN_17	Light White	0.125	DESIGN_17	Material	System	1.6	0.125	0.125
DESIGN_18	Light Grey	0.125	DESIGN_18	Material	System	1.6	0.125	0.125
DESIGN_19	Light Light Blue	0.125	DESIGN_19	Material	System	1.6	0.125	0.125
DESIGN_20	Light Light Green	0.125	DESIGN_20	Material	System	1.6	0.125	0.125
DESIGN_21	Light Light Red	0.125	DESIGN_21	Material	System	1.6	0.125	0.125
DESIGN_22	Light Light Yellow	0.125	DESIGN_22	Material	System	1.6	0.125	0.125
DESIGN_23	Light Light Cyan	0.125	DESIGN_23	Material	System	1.6	0.125	0.125
DESIGN_24	Light Light Magenta	0.125	DESIGN_24	Material	System	1.6	0.125	0.125
DESIGN_25	Light Light Black	0.125	DESIGN_25	Material	System	1.6	0.125	0.125
DESIGN_26	Light Light White	0.125	DESIGN_26	Material	System	1.6	0.125	0.125
DESIGN_27	Light Light Grey	0.125	DESIGN_27	Material	System	1.6	0.125	0.125
DESIGN_28	Light Light Light Blue	0.125	DESIGN_28	Material	System	1.6	0.125	0.125
DESIGN_29	Light Light Light Green	0.125	DESIGN_29	Material	System	1.6	0.125	0.125
DESIGN_30	Light Light Light Red	0.125	DESIGN_30	Material	System	1.6	0.125	0.125
DESIGN_31	Light Light Light Yellow	0.125	DESIGN_31	Material	System	1.6	0.125	0.125
DESIGN_32	Light Light Light Cyan	0.125	DESIGN_32	Material	System	1.6	0.125	0.125
DESIGN_33	Light Light Light Magenta	0.125	DESIGN_33	Material	System	1.6	0.125	0.125
DESIGN_34	Light Light Light Black	0.125	DESIGN_34	Material	System	1.6	0.125	0.125
DESIGN_35	Light Light Light White	0.125	DESIGN_35	Material	System	1.6	0.125	0.125
DESIGN_36	Light Light Light Grey	0.125	DESIGN_36	Material	System	1.6	0.125	0.125
DESIGN_37	Light Light Light Light Blue	0.125	DESIGN_37	Material	System	1.6	0.125	0.125
DESIGN_38	Light Light Light Light Green	0.125	DESIGN_38	Material	System	1.6	0.125	0.125
DESIGN_39	Light Light Light Light Red	0.125	DESIGN_39	Material	System	1.6	0.125	0.125
DESIGN_40	Light Light Light Light Yellow	0.125	DESIGN_40	Material	System	1.6	0.125	0.125
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DESIGN_42	Light Light Light Light Magenta	0.125	DESIGN_42	Material	System	1.6	0.125	0.125
DESIGN_43	Light Light Light Light Black	0.125	DESIGN_43	Material	System	1.6	0.125	0.125
DESIGN_44	Light Light Light Light White	0.125	DESIGN_44	Material	System	1.6	0.125	0.125
DESIGN_45	Light Light Light Light Grey	0.125	DESIGN_45	Material	System	1.6	0.125	0.125
DESIGN_46	Light Light Light Light Light Blue	0.125	DESIGN_46	Material	System	1.6	0.125	0.125
DESIGN_47	Light Light Light Light Light Green	0.125	DESIGN_47	Material	System	1.6	0.125	0.125
DESIGN_48	Light Light Light Light Light Red	0.125	DESIGN_48	Material	System	1.6	0.125	0.125
DESIGN_49	Light Light Light Light Light Yellow	0.125	DESIGN_49	Material	System	1.6	0.125	0.125
DESIGN_50	Light Light Light Light Light Cyan	0.125	DESIGN_50	Material	System	1.6	0.125	0.125
DESIGN_51	Light Light Light Light Light Magenta	0.125	DESIGN_51	Material	System	1.6	0.125	0.125
DESIGN_52	Light Light Light Light Light Black	0.125	DESIGN_52	Material	System	1.6	0.125	0.125
DESIGN_53	Light Light Light Light Light White	0.125	DESIGN_53	Material	System	1.6	0.125	0.125
DESIGN_54	Light Light Light Light Light Grey	0.125	DESIGN_54	Material	System	1.6	0.125	0.125
DESIGN_55	Light Light Light Light Light Light Blue	0.125	DESIGN_55	Material	System	1.6	0.125	0.125
DESIGN_56	Light Light Light Light Light Light Green	0.125	DESIGN_56	Material	System	1.6	0.125	0.125
DESIGN_57	Light Light Light Light Light Light Red	0.125	DESIGN_57	Material	System	1.6	0.125	0.125
DESIGN_58	Light Light Light Light Light Light Yellow	0.125	DESIGN_58	Material	System	1.6	0.125	0.125
DESIGN_59	Light Light Light Light Light Light Cyan	0.125	DESIGN_59	Material	System	1.6	0.125	0.125
DESIGN_60	Light Light Light Light Light Light Magenta	0.125	DESIGN_60	Material	System	1.6	0.125	0.125
DESIGN_61	Light Light Light Light Light Light Black	0.125	DESIGN_61	Material	System	1.6	0.125	0.125
DESIGN_62	Light Light Light Light Light Light White	0.125	DESIGN_62	Material	System	1.6	0.125	0.125
DESIGN_63	Light Light Light Light Light Light Grey	0.125	DESIGN_63	Material	System	1.6	0.125	0.125
DESIGN_64	Light Light Light Light Light Light Light Blue	0.125	DESIGN_64	Material	System	1.6	0.125	0.125
DESIGN_65	Light Light Light Light Light Light Light Green	0.125	DESIGN_65	Material	System	1.6	0.125	0.125
DESIGN_66	Light Light Light Light Light Light Light Red	0.125	DESIGN_66	Material	System	1.6	0.125	0.125
DESIGN_67	Light Light Light Light Light Light Light Yellow	0.125	DESIGN_67	Material	System	1.6	0.125	0.125
DESIGN_68	Light Light Light Light Light Light Light Cyan	0.125	DESIGN_68	Material	System	1.6	0.125	0.125
DESIGN_69	Light Light Light Light Light Light Light Magenta	0.125	DESIGN_69	Material	System	1.6	0.125	0.125
DESIGN_70	Light Light Light Light Light Light Light Black	0.125	DESIGN_70	Material	System	1.6	0.125	0.125
DESIGN_71	Light Light Light Light Light Light Light White	0.125	DESIGN_71	Material	System	1.6	0.125	0.125
DESIGN_72	Light Light Light Light Light Light Light Grey	0.125	DESIGN_72	Material	System	1.6	0.125	0.125
DESIGN_73	Light Light Light Light Light Light Light Light Blue	0.125	DESIGN_73	Material	System	1.6	0.125	0.125
DESIGN_74	Light Light Light Light Light Light Light Light Green	0.125	DESIGN_74	Material	System	1.6	0.125	0.125
DESIGN_75	Light Light Light Light Light Light Light Light Red	0.125	DESIGN_75	Material	System	1.6	0.125	0.125
DESIGN_76	Light Light Light Light Light Light Light Light Yellow	0.125	DESIGN_76	Material	System	1.6	0.125	0.125
DESIGN_77	Light Light Light Light Light Light Light Light Cyan	0.125	DESIGN_77	Material	System	1.6	0.125	0.125
DESIGN_78	Light Light Light Light Light Light Light Light Magenta	0.125	DESIGN_78	Material	System	1.6	0.125	0.125
DESIGN_79	Light Light Light Light Light Light Light Light Black	0.125	DESIGN_79	Material	System	1.6	0.125	0.125
DESIGN_80	Light Light Light Light Light Light Light Light White	0.125	DESIGN_80	Material	System	1.6	0.125	0.125
DESIGN_81	Light Light Light Light Light Light Light Light Grey	0.125	DESIGN_81	Material	System	1.6	0.125	0.125
DESIGN_82	Light Light Light Light Light Light Light Light Light Blue	0.125	DESIGN_82	Material	System	1.6	0.125	0.125
DESIGN_83	Light Light Light Light Light Light Light Light Light Green	0.125	DESIGN_83	Material	System	1.6	0.125	0.125
DESIGN_84	Light Light Light Light Light Light Light Light Light Red	0.125	DESIGN_84	Material	System	1.6	0.125	0.125
DESIGN_85	Light Light Light Light Light Light Light Light Light Yellow	0.125	DESIGN_85	Material	System	1.6	0.125	0.125
DESIGN_86	Light Light Light Light Light Light Light Light Light Cyan	0.125	DESIGN_86	Material	System	1.6	0.125	0.125
DESIGN_87	Light Light Light Light Light Light Light Light Light Magenta	0.125	DESIGN_87	Material	System	1.6	0.125	0.125
DESIGN_88	Light Light Light Light Light Light Light Light Light Black	0.125	DESIGN_88	Material	System	1.6	0.125	0.125
DESIGN_89	Light Light Light Light Light Light Light Light Light White	0.125	DESIGN_89	Material	System	1.6	0.125	0.125
DESIGN_90	Light Light Light Light Light Light Light Light Light Grey	0.125	DESIGN_90	Material	System	1.6	0.125	0.125
DESIGN_91	Light Light Light Light Light Light Light Light Light Light Blue	0.125	DESIGN_91	Material	System	1.6	0.125	0.125
DESIGN_92	Light Light Light Light Light Light Light Light Light Light Green	0.125	DESIGN_92	Material	System	1.6	0.125	0.125
DESIGN_93	Light Light Light Light Light Light Light Light Light Light Red	0.125	DESIGN_93	Material	System	1.6	0.125	0.125
DESIGN_94	Light Light Light Light Light Light Light Light Light Light Yellow	0.125	DESIGN_94	Material	System	1.6	0.125	0.125
DESIGN_95	Light Light Light Light Light Light Light Light Light Light Cyan	0.125	DESIGN_95	Material	System	1.6	0.125	0.125
DESIGN_96	Light Light Light Light Light Light Light Light Light Light Magenta	0.125	DESIGN_96	Material	System	1.6	0.125	0.125
DESIGN_97	Light Light Light Light Light Light Light Light Light Light Black	0.125	DESIGN_97	Material	System	1.6	0.125	0.125
DESIGN_98	Light Light Light Light Light Light Light Light Light Light White	0.125	DESIGN_98	Material	System	1.6	0.125	0.125
DESIGN_99	Light Light Light Light Light Light Light Light Light Light Grey	0.125	DESIGN_99	Material	System	1.6	0.125	0.125
DESIGN_100	Light Light Light Light Light Light Light Light Light Light Light Blue	0.125	DESIGN_100	Material	System	1.6	0.125	0.125

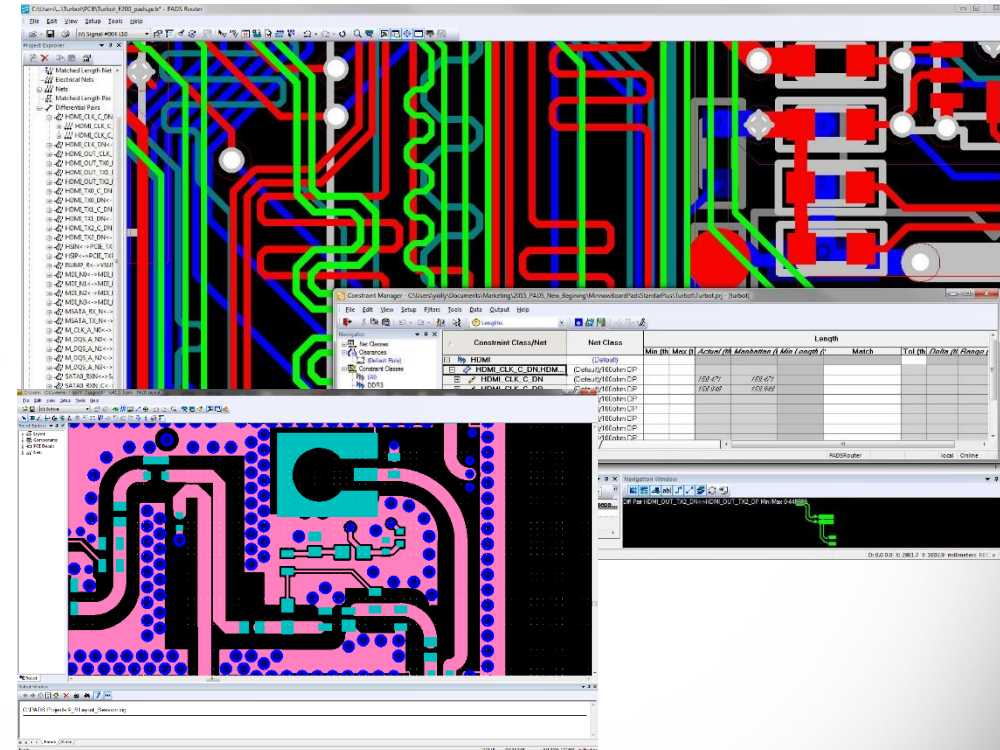
Pre & Post Layout Signal Integrity



- ✓ Simulation environment to analyze, solve, and verify signal integrity
 - Pre-layout topology exploration
 - Post-layout place & route validation
- ✓ Explore & analyze
 - Trace width and lengths
 - Board stack-up and materials
 - Optimize component selection
 - Transmission lines and layer changes
 - Termination strategy
- ✓ Identify signal quality
 - Ringing, overshoot, undershoot
- ✓ Design proven technology, affordable, and integrated

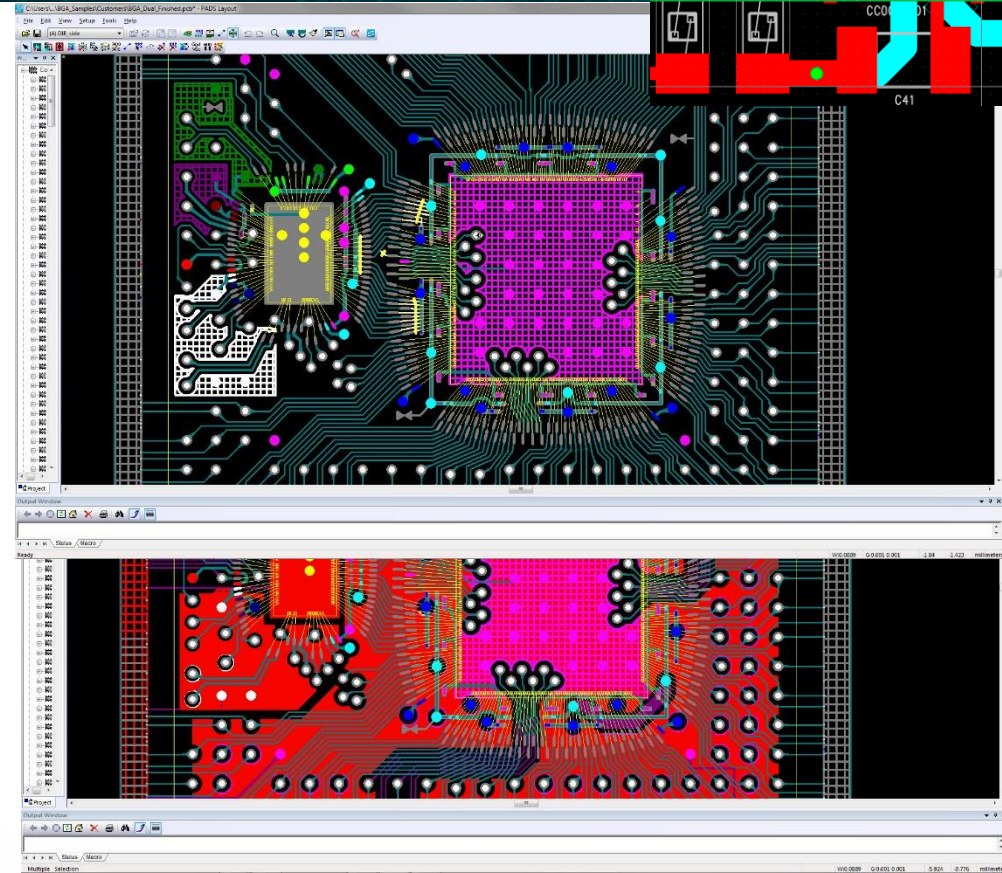
PCB Layout

- ✓ Production proven layout for any design
 - Digital, analog, mixed, RF, COB
- ✓ Easy to learn, use, and deploy
- ✓ Multi-level design rules
- ✓ Constraint driven interactive and auto-routing
- ✓ 3D design and visualization
- ✓ Scalable PCB design, advanced capabilities, and highly integrated flows
 - Schematic, constraints, simulation & analysis, 3D design



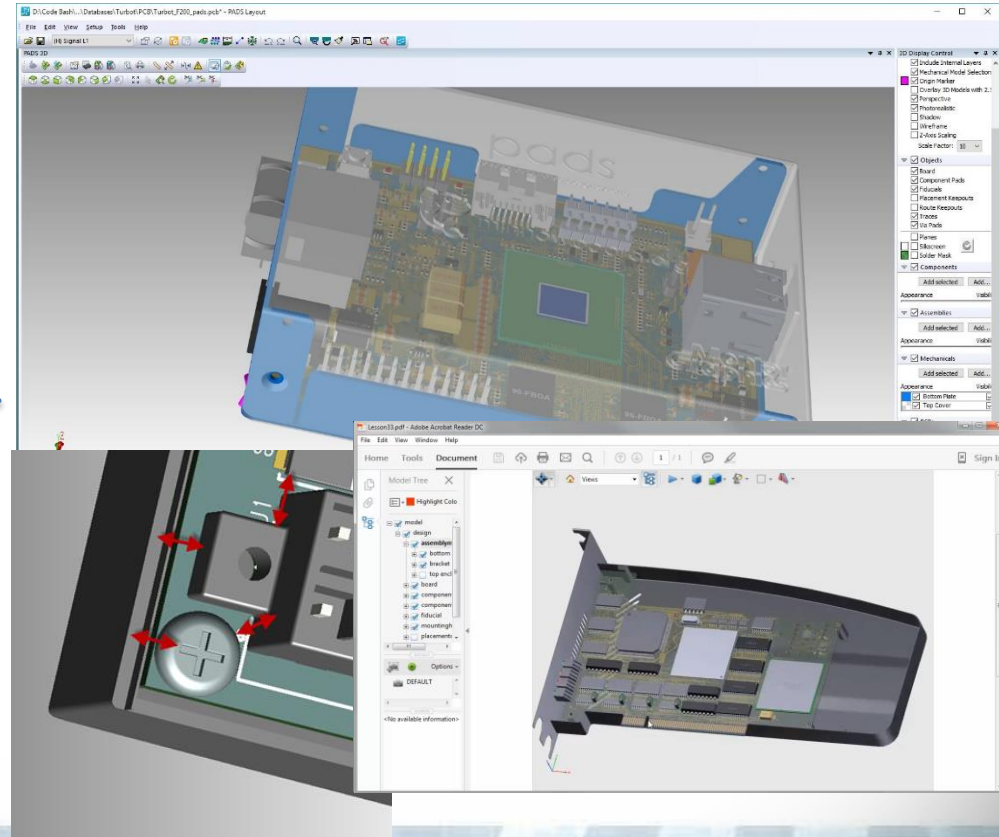
Chip on Board (COB)

- ✓ Advanced capabilities for the design of Chip-on-Board and other bare die designs
- ✓ GDSII import for the creation of die components
- ✓ Quickly create and modify wirebonds and substrate bond pads
- ✓ Base die design capabilities for the mainstream engineer

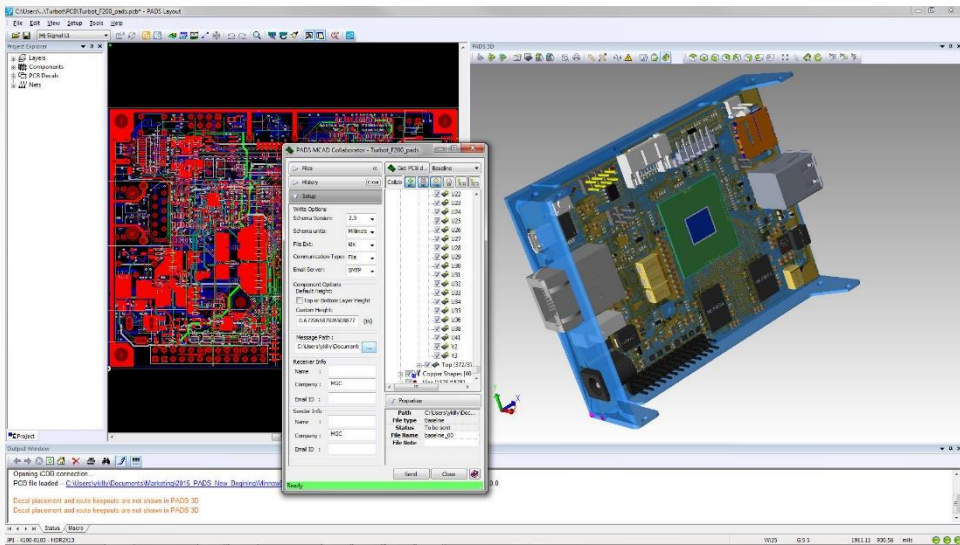


3D Design and Visualization

- ✓ Photo 3D visualization with placement with conflict detection
- ✓ STEP Import/Export, PDF
- ✓ Concurrent 2D – 3D Placement
- ✓ 3D Clearance checking
 - Board and mechanical objects
 - Dynamic graphical feedback
 - Batch DRC for entire design
- ✓ Designers can now visualize their PCB from a real-world perspective



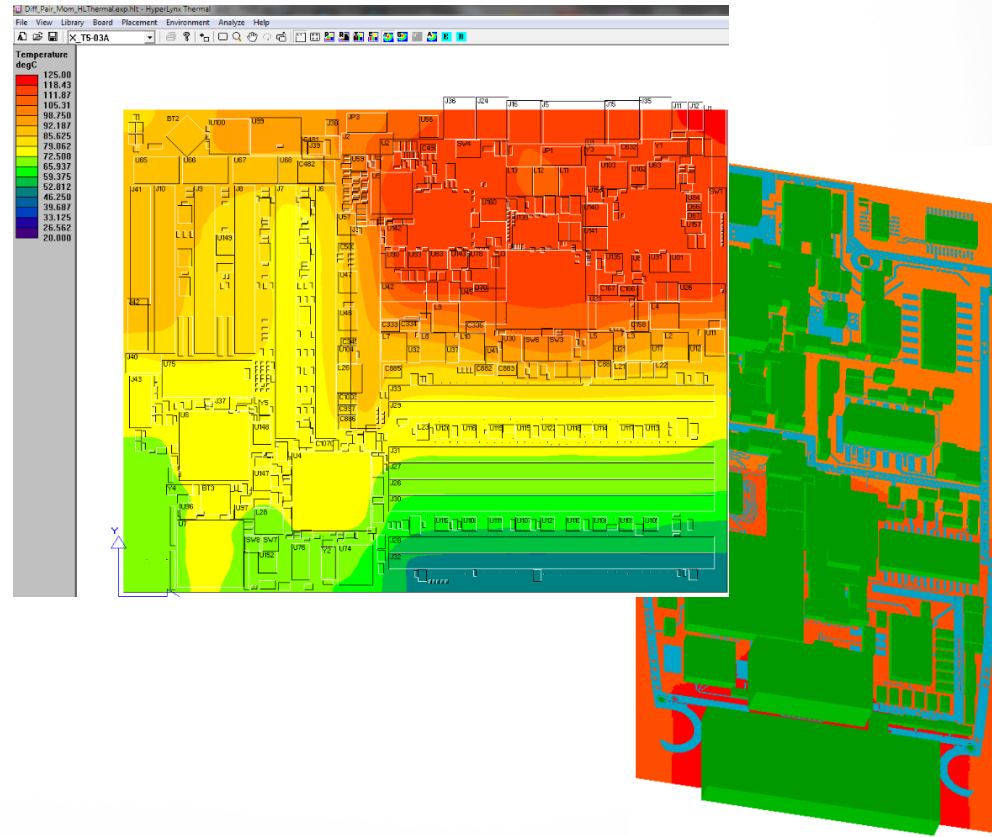
MCAD Collaboration



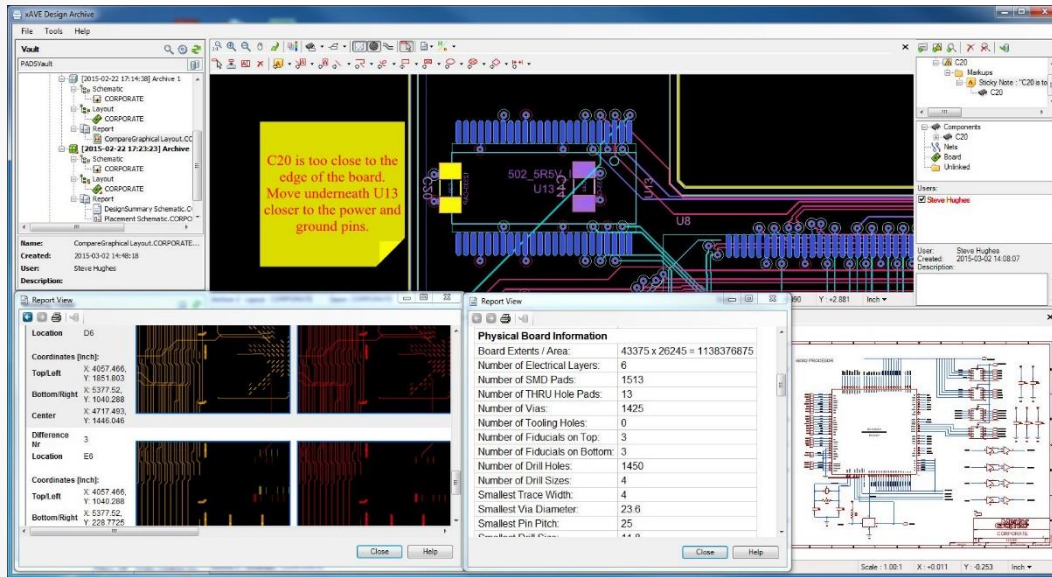
- ✓ Real-time collaboration between electrical and mechanical teams
 - Fast and dynamic collaboration on “what-if” scenarios and changes
- ✓ Instantly see the impact of a proposed change
 - Approve or Reject the modification
- ✓ Based on ProSTEP iVIP standard
 - Support for popular mechanical tools
- ✓ Reduce design time and avoid re-spins of both PCB and mechanical designs

Thermal Analysis

- ✓ Easy to use thermal analysis to identify board level temperature issues
- ✓ Supports conductive, convective, and radiation cooling
- ✓ Placement controls to separate high-power components
- ✓ Tightly integrated with PADS, allows PCB designers to detect thermal issues early



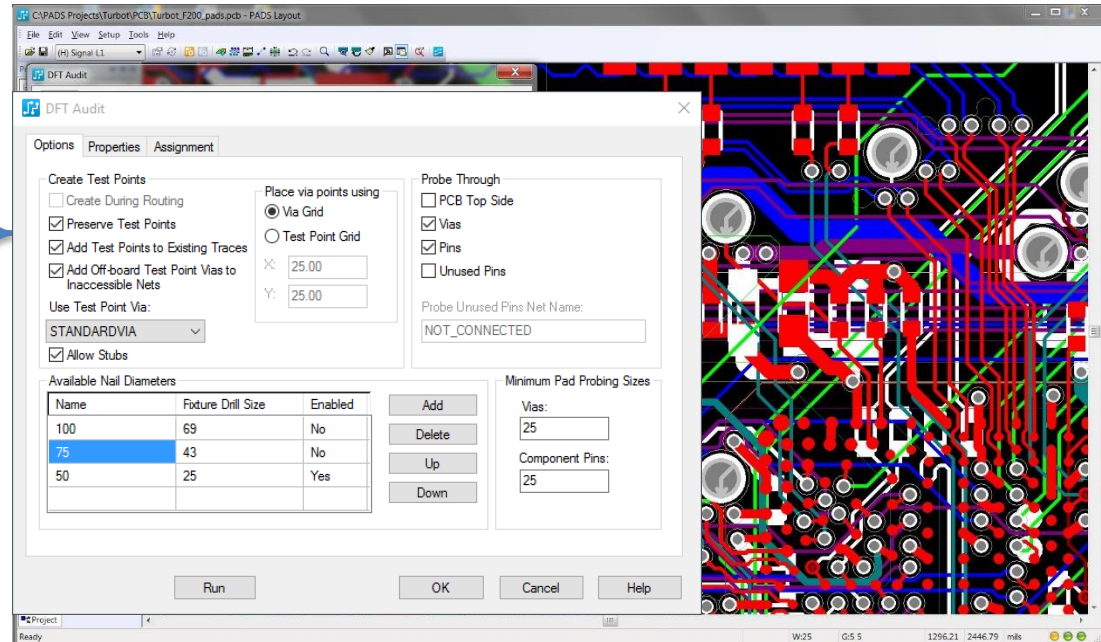
Design Archive



- ✓ Environment to archive, compare versions, generate reports, and collaborate
 - Store design data in a secure vault on PC or network
- ✓ View archived schematic and layout in a powerful design review environment
 - Comprehensive redline and markup capabilities
- ✓ Full graphical and data comparisons
 - Create differences report between two archives (versions)
 - HTML-based reports for easy distribution to others
- ✓ Streamline the design process by protecting managing design data

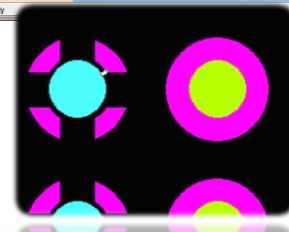
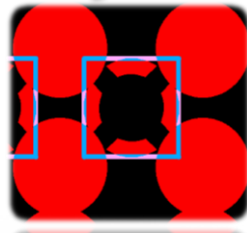
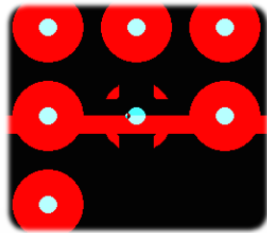
Design for Test

- ✓ Ensure testability is “designed in”
- ✓ User definable Test Point rules
 - Via size definition
 - Probe size and spacing rules
 - Board side
 - Component and/or via pads
 - Test Point grid
 - Number of Test Points per net
- ✓ Allows reuse of fixtures after ECO's
- ✓ Optimize product quality by ensuring 100% testability for all nets



DFMA

- ✓ Fabrication and assembly analysis built into PCB design environment
- ✓ 100 most common fabrication and assembly checks
- ✓ Correct identified issues in PCB layout prior to sending to manufacturing
- ✓ Reduce design cycle time by minimizing iterations between design and manufacturing



The screenshot shows a PCB layout in a software window titled "C:\PADS_ES_Evaluation\Lesson34\Lesson34 - PADS Layout". Overlaid on this is the "DFMA Constraints Editor" window, which displays a list of constraints and their values. The constraints are categorized by type, and the values are listed in millimeters (mils).

Analysis Type -> Constraint	Value
• Silk Screen	
SMD Spacing	4 mils
VIA Spacing	4 mils
PTH Spacing	4 mils
NPTH Spacing	4 mils
Line Width	3 mils
• Solder Mask	
SMD Pad AR	5 mils
SM Feature Spacing	3.5 mils
PTH Gasket Size	2 mils
Gasket Size	3 mils
Hole Pad AR	2.5 mils
Plated Hole	4 mils
• Signal	
Feature Spacing	4 mils
Hole to Feature Spacing	8 mils
Plated Hole AR	4 mils
Hole Registration	1 mils
Via Spacing	4 mils
• Power/Ground	
Plated Hole Spacing	8 mils
Non-plated Hole Spacing	9 mils
Hole Registration	1 mils
Plated Hole AR	5 mils
Hole Clearance	5 mils
Copper Spacing	5 mils
• Drills	
PTH Size	10 mils
NPTH Size	10 mils
VIA Size	8 mils
Tooling Hole Size	25 mils
Mounting Hole Size	25 mils
• Tolerances	
Exposed Copper Spacing	20 mils

Imperial units

Customer Success with PADS

“5 out of 5 Stars”

for integrated HyperLynx in PADS
flow



Efficient Design-for-
Manufacturing



60% faster time-to-
results



Accurate Thermal
Analysis



Produce products of
higher complexity

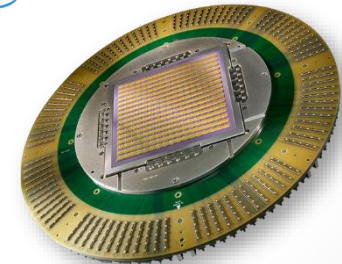


Tackles complex
design challenges



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STANDS BETWEEN BEST
IDEAS
AND THE FINISHED
PRODUCT.



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