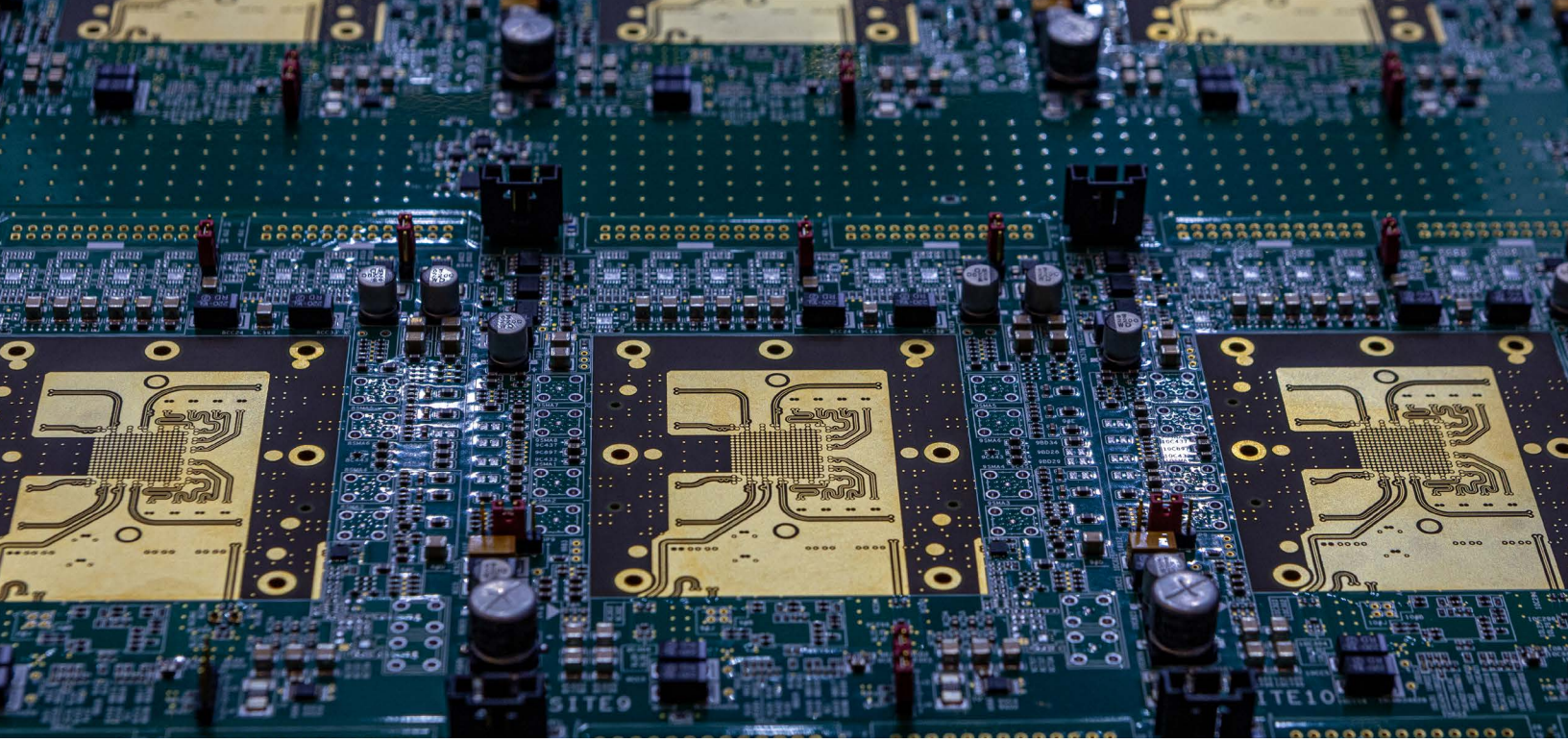


DIGITAL INDUSTRIES SOFTWARE

Xpedition Advanced

Built for advanced engineering. Designed for team productivity

Benefits

- Accelerates PCB development with integrated schematic-to-layout-to-manufacturing workflow and more advanced engineering capability
- Improves engineer productivity with AI-assisted functional design capture, command prediction, and Product Support Copilot
- Reduces manual iteration and design risk with high-speed electrical constraints, advanced automated routing, and earlier validation
- Enables concurrent schematic development so teams can increase schematic capacity and reduce bottlenecks

Summary

Xpedition Advanced is a advanced PCB design solution for hardware engineers and teams that need greater productivity, more powerful engineering capability and connected collaboration across the full design process. Built on proven Xpedition technology, it brings concurrent schematic design, PCB layout, component intelligence, collaboration, manufacturing preparation, and performance analysis together in an integrated environment.

Xpedition Advanced helps engineers work more efficiently across a wide range of PCB designs, from straightforward boards to highly complex, high-speed, high-density designs with demanding stackups. As design complexity increases, it puts more advanced capabilities at engineers' fingertips — including advanced electrical constraints, more capable routing automation, signal integrity simulation, design reuse, and enhanced BluePrint documentation capabilities.

The solution is designed around engineer productivity. Named-user licensing gives each user dedicated access and supports online and offline work, helping engineers stay productive without waiting for a shared license. Concurrent schematic design enables multiple users to work on the same schematic,

Benefits *continued*

- Helps teams achieve design closure faster on high-speed and complex PCB designs with advanced electrical constraints
- Strengthens component and supply chain decisions with integrated research, Smart Datasheets, and BOM-level sourcing visibility
- Simplifies electronics and mechanical collaboration with ECAD-MCAD co-design support
- Improves manufacturing readiness with enhanced BluePrint documentation, Valor-powered DFM analysis, and panelization support

Features

- Advanced schematic capture and PCB layout with concurrent multi-user schematic design
- Named-user licensing with dedicated access and support for online and offline design
- Extended constraint definition and management across schematic and layout for high-speed and complex PCB design
- Advanced routing automation support for faster design closure
- PCB Connect cloud collaboration with browser-based viewing, markup, review, version compare, and BOM visibility
- Integrated analog/mixed-signal and signal integrity simulation
- Automated manufacturing preparation with Valor-powered DFM checks, panelization, test probe support, and enhanced BluePrint assembly and fabrication documentation

helping teams increase schematic capacity and reduce bottlenecks. Xpedition Advanced and Xpedition Standard are interoperable. This helps preserve design continuity while giving Xpedition Standard users a clear path to more advanced engineering capability.

Key Capabilities of Xpedition Advanced

Xpedition Advanced combines advanced PCB design capabilities with AI assistance, concurrent schematic development, high-speed engineering, design reuse, manufacturing preparation, and workflow automation. It helps engineers and growing teams move from design intent to production-ready output with greater speed, consistency, and confidence.

General AI Productivity

Xpedition Advanced helps engineers complete everyday design tasks more efficiently with AI-powered command prediction and AI-enabled Product Support Copilot assist. Users can access relevant product guidance more quickly, reduce friction in the design flow, and stay focused on engineering work.

AI-assisted functional design capture, enabled through Siemens' collaboration with CELUS, helps accelerate schematic creation. AI-assisted Smart Datasheets also help engineers research component information more efficiently during design.

Component and Supply Chain Management

Integrated component intelligence supports better part decisions earlier in the design process. Engineers can research more than 625 million manufacturer part numbers, access high-quality ECAD models, use Smart Datasheets, and evaluate sourcing insights during schematic capture and at the BOM level.

These capabilities help teams improve component selection, respond more effectively to supply chain considerations, and reduce downstream sourcing risk

Schematic Design

Xpedition Advanced provides comprehensive schematic design capabilities for individual engineers and growing teams. Hierarchical block design, ICT schematic design, integrated component search, ECAD model download, variant management, and schematic/layout co-design help teams capture and develop designs in a connected environment.

Concurrent multi-user schematic design enables multiple engineers to work on the same schematic. This allows organizations to add schematic-focused capacity as teams grow. Xpedition Advanced DS is available as a schematic-only solution for organizations that need additional licenses to support concurrent schematic design.

Capability overview

Functional Category	Feature	Xpedition Standard	Xpedition Advanced	Xpedition Advanced DS
General AI productivity	AI-powered command prediction	•	•	•
	AI-enabled product support co-pilot	•	•	•
	AI-assisted datasheet query with Smart Datasheet	•	•	•
	AI-assisted functional design capture (powered by CELUS)	•	•	•
Component and supply chain management	Component research – 625M+ MPNs	•	•	•
	Access to high-quality ECAD models	•	•	•
	Component sourcing insights at design capture	•	•	•
	Component sourcing insights at BOM-level	•	•	•
Schematic design	Design constraints in the schematic environment	core	extended	extended
	Hiearchical block design	•	•	•
	Integrated component search, ECAD model download	•	•	•
	Schematic/layout co-design	•	•	•
	Variant management	•	•	•
	Multi-user concurrent team design		•	•
Layout design	Design contraints in the layout environment	core	extended	
	3D design	•	•	
	Circuit reuse within a design	•	•	
	Automated routing	core	extended	
	Rigid-flex design	token-based add-on	•	
Design and library data management	Library creation and editing	•	•	
	Library management	•	•	
	Design version management and editing	•	•	
	Design review, compare, and markup	•	•	•
	PLM integration	option	option	
Multi-domain collaboration	ECAD-MCAD co-design	•	•	
	Advanced ECAD-MCAD co-design functionality supporting most-advanced MCAD tools	token-based add-on	•	
Manufacturing verification & documentation (powered by Valor)	Manufacturing output automation	•	•	
	DFM checks (DFF, DFA)	•	•	
	Manufacturing drawing creation for PCB assembly/fab packages enabled by BluePrint	•	•	
	Panelization		•	
Performance analysis & verification (powered by HyperLynx)	Analog / mixed-signal simulation (enabled by PartQuest Explore)	•	•	
	Signal integrity simulation (token-based add-on)	token-based add-on	•	
	DDRx Wizard	option	option	
	Integrated multi-discipline verification	option	option	
	Intelligent design optimization	option	option	
	Power integrity simulation	option	option	
	Electrical rule checks	option	option	
	Schematic analysis	option	option	
Workflow automation	Workflow automation Streamlined out-of-the-box workflow	•	•	
	Script-driven design flow customization	•	•	

Layout Design
Enhanced layout capabilities help engineers address demanding PCB designs across a wide range of speeds, densities, stackups, and form factors. Extended electrical constraints support delay, parallelism, crosstalk, and all topologies. The advanced auto-router supports differential pairs, HDI vias, tuning, and other high-speed layout requirements.

Sketch routing and sketch planning help engineers define and communicate routing intent before completing detailed implementation. Circuit reuse, 3D design, and rigid-flex design help teams accelerate layout development while maintaining design consistency across projects.

Design and Library Data Management
Xpedition Advanced supports the creation, management, review, comparison, and reuse of design and library data. Engineers can create and manage libraries, maintain design versions, compare designs, and use markup to support design reviews.

Designs can be seamlessly exchanged between Xpedition Standard and Xpedition Advanced, although Advanced-specific capabilities may be read-only or unavailable when opened in Standard. This helps preserve design continuity while giving Xpedition Standard users a practical path to more advanced engineering capability. PLM integration is available as an option for organizations that require integration with enterprise product lifecycle processes.

Multi-Domain Collaboration
ECAD-MCAD co-design helps electronics and mechanical design teams collaborate throughout development. Xpedition Advanced supports leading MCAD environments, including NX and other leading-edge mechanical design tools, enabling teams to coordinate electrical and mechanical design intent more effectively. This helps identify placement, fit, enclosure, and interference issues earlier, while reducing rework during integration.

Manufacturing Verification and Documentation
Xpedition Advanced helps teams prepare designs for fabrication and assembly with manufacturing-ready outputs, documentation, and verification capabilities that support a smoother transition to production. Valor-powered DFM analysis and Manufacturing Output Automation help identify manufacturability issues earlier and improve output consistency. Built-in BluePrint capabilities support the creation of clear PCB assembly and fabrication documentation, while Xpedition Advanced extends that value with capabilities such as pack and release and assembly panel design. Together, these capabilities help improve manufacturing handoff and reduce manual preparation effort before production.

Performance Analysis and Verification
Xpedition Advanced includes analog/mixed-signal simulation and signal integrity simulation to help engineers validate electrical performance earlier in the design process. For specialized analysis requirements, additional options include DDRx Wizard, integrated multi-discipline verification, intelligent design optimization, power integrity simulation, electrical rule checks, and schematic analysis. This gives teams a path to extend verification depth as design requirements evolve.

Workflow Automation

Xpedition Advanced supports streamlined out-of-the-box workflows as well as script-driven design flow customization. Engineers and teams can automate repetitive tasks, standardize processes, reuse proven methods, and tailor the environment to their development practices.

Advanced automation — including routing, sketch planning, manufacturing documentation, and other repetitive design activities — helps reduce manual effort and improve consistency across projects.

Xpedition Advanced DS

Xpedition Advanced DS is a schematic-only solution for organizations that need to expand concurrent schematic design capacity. It provides the schematic design capabilities of Xpedition Advanced, including multi-user concurrent schematic design, allowing additional engineers to contribute to the same schematic while layout and downstream PCB development continue in Xpedition Advanced.

Advanced DS licenses can be added as team requirements evolve, enabling organizations to support larger schematic design teams without assigning a full Xpedition Advanced license to every user. This provides a practical way to increase engineering capacity while maintaining a connected Xpedition workflow and design continuity.

Xpedition Advanced Compared with Xpedition Standard

Xpedition Standard and Xpedition Advanced are both professional PCB design solutions that support PCB design across a broad range of applications, and their libraries and designs are fully interoperable. Xpedition Standard provides strong professional capabilities for independent engineers and small teams. Xpedition Advanced adds more powerful capabilities where individual engineers and growing teams need them most, particularly for designs with demanding performance, density, and stackup requirements.

With Xpedition Advanced, engineers gain greater design automation and engineering depth without changing the underlying design environment. While both Xpedition Standard and Xpedition Advanced support flow concurrency (two users operating within the same project: one on the schematic, one on the layout), Xpedition Advanced further adds multi-user schematic concurrency, allowing two hardware engineers to simultaneously edit a single schematic project dynamically, including concurrent constraints. Xpedition Advanced also adds support for extended high-speed electrical constraints, advanced routing automation, sketch planning, integrated signal integrity simulation, rigid-flex design, extended BluePrint manufacturing drawing creation, including panelization, and broader ECAD-MCAD co-design support out of the box. These capabilities help individual engineers and engineering teams achieve design closure faster, reduce rework on high-speed interfaces, and complete complex PCB projects faster.”

Xpedition Advanced and Xpedition Enterprise

Xpedition Advanced and Xpedition Enterprise are both built on proven Xpedition technology and both provide advanced PCB design capability for serious engineering teams. Xpedition Advanced is designed for individual engineers and small-to-medium sized engineering teams that need strong design automation, schematic collaboration, and efficient execution in a connected design environment. Xpedition Enterprise builds on those same design capabilities with broader organizational infrastructure for larger or more distributed environments, including managed design and library data, release and process governance, layout concurrency, and deeper enterprise integration. For organizations already relying on those broader enterprise capabilities, Xpedition Enterprise remains the appropriate solution.

Customer Outcomes

Teams using Xpedition Advanced can achieve a faster path to design closure through more advanced design automation, fewer manual iterations, and earlier electrical and manufacturing validation. Concurrent schematic design helps growing teams increase engineering capacity, while advanced automated routing, high-speed constraints, design reuse, signal integrity simulation, and automated documentation help engineers execute complex designs more efficiently.

Because Xpedition Advanced and Xpedition Standard are fully interoperable, teams can expand their capabilities without changing tools, disrupting established workflows, or migrating libraries and designs. Xpedition Advanced helps teams increase productivity and collaboration as their engineering requirements evolve, providing advanced capabilities at a team-friendly price point, while preserving continuity across projects and providing a clear upward progression toward Xpedition Enterprise when broader enterprise capabilities are required.

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