

InterComm™ Expert Suite

Accelerating Interactive Electronic Design Collaboration

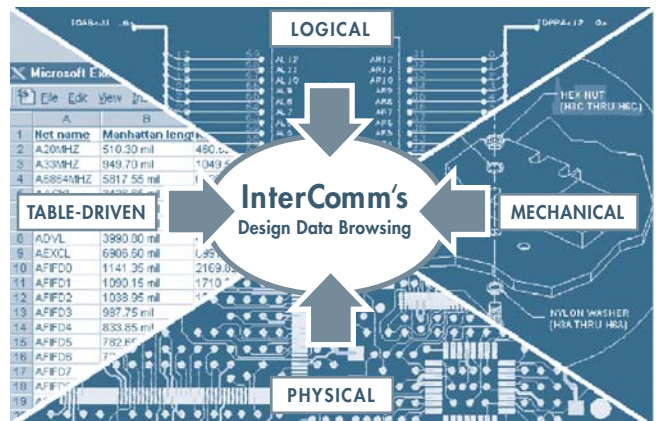
The InterComm Expert Suite is a complete set of production-proven solutions that, together, deliver everything you need to build highly effective product development teams. In a single, fully integrated package, you get enterprise-wide visualization, design verification, and ECAD-MCAD collaboration on complex electronic design data.

The InterComm Expert Suite includes these powerful solutions, described further, below:

- InterComm Expert
- InterComm API Toolkit
- InterComm EDAconduit
- InterComm EDAcompare

InterComm Expert

InterComm Expert is a powerful, yet easy-to-use solution for enterprise-wide sharing, reviewing, annotating, and verifying of electronic design intent. InterComm Expert gives engineers, manufacturers, test technicians, and suppliers controlled access to design data created in leading ECAD tools. Much more than just a basic viewer, InterComm Expert enables non-ECAD users to interactively debug and verify the design intent of schematic and PCB designs – directly from their desktops, without requiring an expensive and hard to use native ECAD license.



ECAD Design Intelligence the Way You Need It

InterComm provides a better understanding of design intent by enabling engineers to easily access various design data abstractions.

InterComm Expert – Capabilities

- Browse information in the schematic CAE or PCB CAD databases for library, schematic, PCB, manufacturing and bill-of materials data
- Query intelligent ECAD design data and verify design intent
- Follow nets across the schematic by pin function, tracing receivers back to drivers to identify the source of a bad signal
- Query, measure, highlight, and isolate detailed net and component data
- Communicate changes, ideas, or redline markups back to other ECAD users using the bookmarked views of your markups
- Enable MCAD designers to have easy access to the PCB CAD data
- Cross-highlight between the schematic, layout, and bill-of-materials
- Use the API to create custom applications that improve the internal process
- Read-in manufacturing formats as overlays to the PCB data

InterComm Expert – Customer Benefits

- Increase design team communication time by 55%
- Eliminate one design spin per board, resulting in a savings of weeks or even months
- Reduce overall design cycle time by 30–35%
- Reduce tooling costs by 25%
- Improve design and manufacturing team capacity by 22%
- Improve internal and supply chain communication with extended engineering, test and manufacturing teams
- Realize a 65% productivity gain in board-test alone
- Improve design integrity (“right the first time”) with fewer design spins
- Test and repair anomalies found early in-process rather than later in the process
- Reduce design review time from days to hours

PLM (Product Lifecycle Management) Integration

InterComm Expert is integrated with many of the most popular commercial PLM systems. Notably, its most robust integration is with PTC’s Windchill solutions. By integrating InterComm Expert with PLM environments, companies can manage ECAD design data and work concurrently with the entire design chain across the extended enterprise. Potential improvements in both the time and cost of electronic design can be achieved for processes such as work-in-process design review, cross-discipline collaborative product development, and controlled change management.

API Toolkit

Data Mining without Native ECAD tools

The InterComm Expert API Toolkit lets you data-mine both the parametric and graphical design data captured in the InterComm Expert database without using the native ECAD tools. Our customers use the API toolkit to customize reports, extract data for use in other tools, and support the verification and documentation of ECAD designs. Other applications of the Toolkit include:

- Run custom signal integrity and EMI checks
- Graphically display net or component information from an outside process
- Compare a design BOM with an external BOM report
- Generate a custom Net Length report
- Create user-definable design rule checks
- Add user-defined properties
- Highlight all #1 pins on components
- Generate custom Net List report
- Generate a testability report
- Find components by Ref Des

API Toolkit – Capabilities

- Unrestricted data mining for all conductive objects, including their attributes and properties
- Standardized API calls regardless of the native ECAD tools
- Accessible through MFC-based programming languages such as C++ and Visual Basic
- Applicable from within InterComm Expert for custom interactive commands and reports and/or for programming links to other processes
- Used standalone with graphics as a slave process, as well as standalone without graphics for pure data mining
- Fully documented with an interactive debugging tool

API Toolkit – Customer Benefits

- Extract data from EDA files instead of pre-processing data from the native ECAD tools
- Optimize programming resources in custom-developed data mining
- Minimize enterprise-wide dependency on a specific ECAD tool set
- Minimize use of ECAD tool licenses outside of the design departments
- Improve user efficiency by adapting the InterComm Expert UI to specific tasks

EDA File

Normalized Representation of ECAD Design Data

The InterComm native EDA file is a powerful and enabling alternative to a multiplicity of incompatible ECAD file formats and data representations. An EDA file is a single binary file that replaces the directory and file complexity of native ECAD design data containers, thus enabling enterprise-wide distribution outside the ECAD tool environment.

EDA File – Capabilities

- Significantly smaller file size (5 to 10x) than the original ECAD design data container
- Extremely fast load into InterComm products
- Password protection against unauthorized use
- Date expiration for planned obsolescence
- Source and owner information for traceability
- Interactive disclaimer dialog box for enforcement and clarification of the intended use

EDA File – Customer Benefits

- Normalize data distribution format for all ECAD design databases
- Minimize storage requirements during collaboration
- Prevent unauthorized use of data
- Optimize file-processing time

InterComm EDAconduit

Connecting ECAD Authors with the Extended Product Team

InterComm EDAconduit eliminates the manual steps of creating an EDA file by using a fully automated, bi-directional link between native ECAD systems and the InterComm Expert Suite. InterComm EDAconduit enables the exchange of InterComm Expert redline markups back into the authoring ECAD layout and schematic tools (back annotation). InterComm EDAconduit also enables direct cross-highlighting of equivalent design data between InterComm Expert and the native schematic capture and PCB layout authoring tools.

InterComm EDAconduit improves collaboration by allowing PCB designers to use their native ECAD tools in conjunction with InterComm Expert, and by allowing hardware engineers to access the PCB design information in InterComm Expert relative to their CAE authoring tools.

InterComm EDAconduit eliminates the errors introduced through manual file extraction thus ensuring that accurate information is shared quickly and seamlessly upstream and downstream from the EDA author.

InterComm EDAconduit – Capabilities

- Interactive (menu) and batch (command line) generation of EDA file(s) out of ECAD tools (schematic capture and PCB layout)
- Back-annotation of InterComm Expert markups (bookmark files) to the native ECAD tools
- Cross-highlight of equivalent design data between InterComm Expert and native ECAD tools
- Consistent look-and-feel across all ECAD tools

InterComm EDAconduit – Customer Benefits

- Automates enterprise-wide deployment of ECAD design data
- Enables PCB designers to use their ECAD tools to collaborate with InterComm Expert users
- Enables hardware engineers to access PCB CAD information relative to their ECAD tool
- Improves the flow of ECAD design data between ECAD authors and non-authors

InterComm EDACompare

InterComm EDACompare is a truly unique technology engineered specifically for the PCB design industry. It lets you compare two PCB design revisions in any combination of the three basic forms: schematic, layout, and manufacturing. It analyzes and reports parametric and geometric differences and codifies the results into XML structures.

InterComm EDACompare is packaged with Validation Manager, which lets you view and analyze comparison results through a simple, Web-based interface. InterComm EDACompare is also tightly coupled with InterComm Expert for visually analyzing the results, resulting in a comprehensive review of the changes found.

InterComm EDACompare is an invaluable tool for ECAD design organizations because it greatly simplifies and accelerates the identification of changes between any two versions of the PCB schematic, layout, or manufacturing artwork.

InterComm EDACompare – Capabilities

- Analyzes and reports parametric and geometric differences:
 - Design (design, layer, sublayer, sheet)
 - Component (component, property)
 - Net Basic (net, property)
 - Net Advanced (test point, via)
 - Pin (pin, test point, property)
 - Geometry
- Creates XML difference reports that can be shared with multiple users
- Integrates with PTC Windchill tools for managing results, profiles, and design data
- Links to InterComm Expert for easy design interrogation and comparison highlighting
- Allows for MCAD-ECAD cross-discipline design review

InterComm EDAconduit – Customer Benefits

- Dramatically reduce time spent identifying differences between PCB designs
- Increase productivity of electrical engineers in validating layout changes
- Improve accuracy of design comparisons
- Optimize communication of design changes between organizations
- Improve understanding of modifications made by external manufacturing
- Increase ease-of-use by working with a single solution for all design comparisons
- Designers working in both MCAD and ECAD teams are able to view what the other discipline is changing

Sample InterComm Customers

Computer

- Dell
- Intel
- EMC2
- Unisys
- HP
- IBM
- Maxtor

Network Electronics

- Cisco Systems
- Nortel Networks
- Ciena
- Sonus Networks

Telecom

- Lucent
- Nokia
- Ericsson

Automotive

- Visteon
- Motorola ACES

Cell Phone Makers

- Siemens
- Ericsson
- Panasonic
- Samsung

Consumer Electronics

- Bose
- Canon
- Thomson Multimedia
- Xerox

Aerospace/Defense

- Lockheed Martin
- Northrop Grumman
- Loral Space
- Harris Corporation
- Rockwell
- BAE Systems
- Raytheon
- General Dynamics
- Harris Semiconductor

InterComm Expert, available on both Windows and UNIX platforms, is successfully deployed as the preferred method for design verification and troubleshooting at hundreds of small, medium, and Fortune 500 companies around the world.

PTC Partners:



For More Information

Visit the InterComm Expert Product Website and find links to video demonstrations, PTC sales contact information, and other product information:

<http://www.ptc.com/go/intercomm>

©2006, Parametric Technology Corporation (PTC). All rights reserved. Information described herein is furnished for informational use only, is subject to change without notice, and should not be construed as a guarantee, commitment, condition or offer by PTC. PTC, the PTC Logo, Pro/ENGINEER, and all PTC product names and logos are trademarks or registered trademarks of PTC and/or its subsidiaries in the United States and in other countries. All other product or company names are property of their respective owners.