

Delivering electronics that delight consumers requires more than just linking the ECAD and MCAD worlds. It requires physics-based analysis at the speed of design and collaboration across disciplines throughout development. Pollex™ brings Altair's® simulation-driven design philosophy to the electronics industry, inspiring innovation while ensuring timing, performance, reliability, and compliance targets are met.

Product Highlights:

- Easy-to-use collaborative application to quickly visualize and review PCB designs
- Unsurpassed connectivity to major ECAD systems
- Powerful rule-based checking tools (DFM, DFA and DFE) to detect faults early in design
- Easy solution for SI and thermal analysis of PCBs using the integrated parts and material libraries

Pollex™ is not just a printed circuit board (PCB) verification tool, it is solution that accelerates the development of today's smart, connected, and tightly packaged electronic products. It is used by global industry leaders to improve efficiency, increase performance, enable teamwork, and enhance collaboration. Altair offers tools for full system analysis that integrate mechanical, thermal, electromagnetic, and embedded code design flow with PCB design.

Unified Part Library

All design processes are supported by a common Unified Part Library that enables engineers from different disciplines to efficiently collaborate on projects, sharing physical, logical, thermal, electrical, and assembly attribute data, centralized in one place.

Schematic Design Review

Pollex™ can import designs from all major ECAD vendors, including Cadence, Mentor Graphics, Zuken and Altium in addition to the industries neutral formats. Its modeling features support design reviews, including comparison

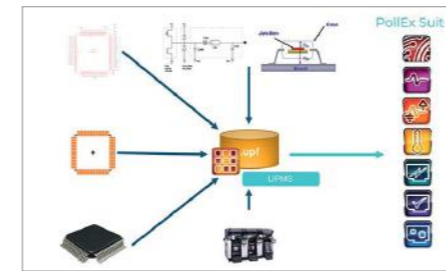
between schematics and PCB data, so faults can be detected and solved early in the process without the need for expensive ECAD licenses.

PCB Review, Inspection and Verification

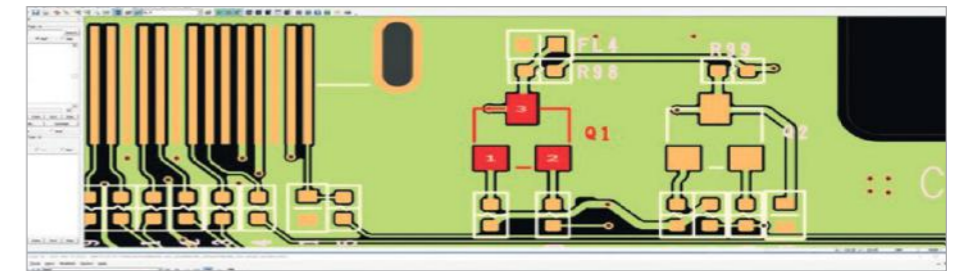
Pollex™ unsurpassed capabilities to reads major ECAD file formats and easy-to-use application foster collaboration of expert teams working on schematic and PCB design. Improve board layouts, and drive designs with simulation tools for signal integrity, power integrity, EMI vulnerability and ESD protection. Track and inform multidisciplinary team members of design changes and revisions at the BOM, logical and PCB level, export smart documented reports of verification results, and easily share designs update documentation to consistently maintains the highest design quality.

Easy, Fast and Accurate Analysis

Pollex™ PCB Solvers resolve electrical and thermal problems at early design stages. Using an easy link to the components' library, a board setup based on a built-in materials library and combining 2D and 3D parasitic model extraction



Database product development with physical, logical, thermal, electrical, and assembly attribute data maintained in one place



Altair Pollex for PCB design review (PCB Modeler) and verification (PCB Verification). Paying special attention to the supported design rules for manufacturing (DFM) and design for electrical engineering (DFE)

analysis, the solvers provide fast and accurate results. In addition, Pollex™ DFE+ offers a new unique solution by combining analysis with verification, which enables engineers to incorporate knowhow generated in the current analysis into the next PCB design.

Detect Design Faults in Early Design

Stages Various problems occurring post-design are difficult and costly to solve. Pollex™ PCB Verification enables significant cost-savings by detecting manufacturing, assembly and electrical defects and faults early in the designs. Validating designs based on rules from accumulated customers' knowhow consistently maintains the highest design quality.

Analysis – Signal Integrity, Thermal

Capabilities ECAD Design Review

- Schematic design review from all major EDA vendors
- Gerber (274D, 274X) data review
- PCB design review from all major EDA ECAD vendors
- Comparison between PCB-to-PCB and schematic-to-schematic designs
- Comparison among PCB, schematic and BOM
- Artwork/physical/composition layer view, query, search, and measure for PCB objects
- Part, net, pad stack and via library
- Save arbitrary design shapes under a different name with a reduced file size, with a password
- Red-Mark (+) feature for comments
- Net 2D/3D display, net topology display and automatic composite net generation

Verification – DFM, DFE and DFA

- Checking items for DFM (500+), DFE (300+), DFA (50+) and DFE+ (50+)
- DFM covers the manufacturing areas of board, component, drill, FPCB, package, pad, pattern, placement, and tooling.
- DFE covers the electrical areas of high-speed signals, differential pairs, common nets, power, filters, components, and boards.
- DFA covers the manufacturing assembly areas of collision, lead, placement, component and board.
- DFE+ provides verification linked to solvers for signal integrity and thermal analysis.
- Export customized and formatted Microsoft® Excel® reports of verification results.

Analysis – Signal Integrity, Thermal

- Built-in material library
- Signal integrity:
 - Transmission line analysis – TML analysis and trace optimization
 - Network analysis – Waveform analysis, eye diagram analysis, and network parameters (RLCG)
 - Crosstalk analysis
 - Net topology analysis, including topology editing function
- Thermal:
 - Built-in package-dependent thermal resistance values for components
 - 3D finite element steady-state analysis results for thermal board contour, board top/bottom, and component junction temperature

PCB Analysis and Optimization

In addition to built-in analysis features,

Pollex™ can export to other Altair® and third-party physics simulation tools. You can take advantage of Altair® Units to employ our solvers to confidently identify and correct design issues earlier in development. Use Altair® SimLab® to to automate structural stress, vibration, and drop test performance with robust and repeatable workflows for fast, accurate and consistent results. Use Altair® Feko® for detailed EMI/EMC analysis.

Benefits

Savings in ECAD licenses Maximize work efficiency through improved communication among engineers from different disciplines making the same product. Pollex™ PCB Modeler aids better quality products by sharing schematics, PCBs and Gerber files without the need for expensive ECAD licenses.

Why Pollex™?

Complete PCB Verification Environment

Design complex electronics right the first time with tools for PCB design review, analysis, verification and manufacturing assessment.

Better Collaboration, Shorter Design Times

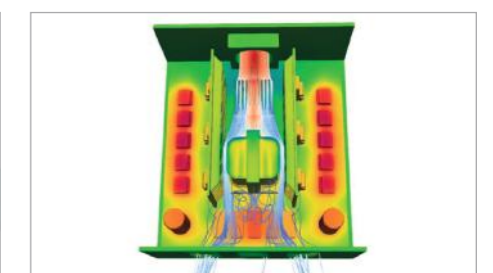
Common data management across disciplines from concept to manufacturing eliminates design bottlenecks and errors.

Integrates with Existing Tool Chains

Unsurpassed connectivity to all the major ECAD systems with export to Altair and third-party physics simulation tools.



Altair® Pollex™ PCB layout



Therma/CFD analysis with Pollex and third-party physics simulation tools.