

Optimal Corporation Fact Sheet

Mission

Optimal's mission is to deliver the best 3D power, signal and thermal integrity analysis solutions to enable design teams to ensure their products work and get to market on time. We aim to provide our customers the best support possible, including providing direct access to our engineers.

About Optimal

Optimal Corporation was founded in 1995 by our CTO, Dr. An-Yu Kuo. Optimal is the leader in 3D power, signal and thermal integrity analysis for IC Package, System-in-Package (SiP), and PCB design. Our innovative solutions enable design teams to concurrently analyze and optimize the IC together with the Package and the Packaged IC on the PCB.

Market

Electronic products are becoming more complex as ICs move to 90nm and below and PCB systems operate in the multi-gigabit range. Power, signal and thermal integrity analysis tools have become essential to handle today's complex designs.

In addition, the IC package has become a critical and integral part of both the IC design and the PCB system design. This has become more pronounced with the move to SiP.

Optimal delivers the leading 3D power, signal and thermal integrity analysis solutions. We have a special focus on leading in analysis of the IC Package or SiP, and its interaction with both the IC and PCB design.

Customers & Partners

Optimal has over 50 customers around the globe, including many of the world's leading semiconductor, IC packaging and systems companies. Optimal is a TSMC Technology Alliance Partner, a member of the Cadence Connections Emerging Solutions Program, and a member of the Mentor Graphics OpenDoor Program. Optimal's technology is embedded in the Cadence Allegro Platform and certified in the TSMC's Reference Flow 5.0 and 6.0.

Products

Optimal's **PakSi-E** is a quasi-static extraction and analysis solution that allows engineers to perform 3D signal integrity analysis, power integrity analysis and simultaneous switching noise (SSN) analysis. Uniquely, PakSi-E has the ability to quickly and accurately analyze the entire package, SiP or mini-PCB.

Optimal's **O-Wave** is a full-wave 3D EM analysis solution that allows engineers to perform extremely accurate signal integrity analysis with extremely high performance, capacity and accuracy. This allows engineers to analyze larger structures with fast turnaround time. O-Wave is typically 2-3X faster than competitive solutions. O-Wave has the ability to create fully-coupled ground bounce and SSN models.

Optimal's **PowerGrid** is a fast and accurate power integrity solution that is able to perform DC and AC analysis in a single tool. It allows engineers to perform IR drop and ground bounce analysis and is ideal for rapid design iterations on the layouts of signal traces and power distribution networks. PowerGrid's unique 2.5D model-based, finite element method (FEM) algorithm provides performance that is typically 100X faster than traditional 3D full-wave methods and accuracy that is comparable. PowerGrid's capacity advantage allows for analysis of large packages, SiPs and PCBs that other analysis tools can't handle.

Optimal's **PakSi-TM** is a thermal-mechanical analysis solution that allows engineers to perform thermal modeling and analysis of effects such as thermal resistance and thermally induced stress. In addition it provides analysis of solder joint fatigue, package warpage, and other mechanical stresses.

Optimal's gigahertz signal and power integrity solution, **GH SPI Suite** combines the full capabilities of *PakSi-E* with the advanced DC and AC analysis capabilities of *PowerGrid*. PowerGrid adds advanced DC analysis capabilities such as voltage contour mapping, hotspot highlighting and comprehensive AC analysis capabilities. Optimal's common user interface, integrations and utilities make it extremely easy to use the tools together in a seamless design flow.

Optimal's multi-gigahertz hertz signal integrity solution, **MGH SI Suite** includes both *PakSi-E* and *O-Wave*. This suite allows engineer's to use PakSi-E for fast, quasi-static extraction and analysis of the entire structure and O-Wave for deeper analysis of higher frequency signals. Optimal's common user interface, integrations and utilities make it extremely easy to use the tools together in a seamless design flow.

Optimal's multi-gigahertz signal, power and SSN analysis solution, **MGH SPI** includes *PakSi-E* for SSN analysis of designs up to 3 GHz, and integration of *O-Wave* and *PowerGrid* to deliver SSN analysis for high frequency signals.

The Optimal Difference

By providing the **highest performance, best ease-of-use** and **pinpoint accuracy**, our solutions help engineers create designs optimized for power, signal and thermal integrity in the shortest possible time.

Through the **best integration** with all of the major CAD flows, Optimal solutions help customers achieve the shortest and most efficient overall design cycle time.

By being **highly responsive** and providing customers **direct access** to our engineering team, we ensure their success.

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