



Carl Zeiss Company Profile



Carl Zeiss Corporate
Headquarters in Oberkochen



Carl Zeiss in Jena, where the
company was founded in 1846

Founded as a workshop for precision mechanics and optics in the German city of Jena in 1846, Carl Zeiss is today a global leader in the optical and opto-electronic industries. There are currently approx. 13,000 employees in the Group. Carl Zeiss has offices in over 30 countries and is represented in more than 100 countries, with production centers in Europe, North America, Central America and Asia. The company's headquarters are located in Oberkochen, Germany, in northeastern Baden-Württemberg. Another important German location is Jena, where the company was founded.

Our most important task, as we see it, is to enable science and technology to go beyond what man can see. "We make it visible" – our corporate slogan, and our promise to our customers to open doors that were previously sealed. We are market leaders in the majority of our fields and offer an extraordinary spectrum of leading-edge solutions and products.



Carl Zeiss Business activities

Carl Zeiss offers a wide range of products and solutions in its primary markets of *Medical and Research Solutions*, *Industrial Solutions* and *Lifestyle Products*.

Microscopy, Ophthalmology, Neurosurgery, Ear, Nose and Throat surgery business units are responsible for *Medical and Research Solutions*.

Lithographic Systems and Process Control Systems, Industrial Metrology and Optronics deal with *Industrial Solutions*.

Camera Lenses, Sport Optics, Planetariums and Ophthalmic Optics are the makers of *Lifestyle Products*.

Types of PCB designs at Carl Zeiss

The company's enormous product range covers all types of designs and requires a wide range of equipment from small simple sensor boards to high-speed designs with 18 layer boards. High-density designs incorporate blind and buried vias. Special technologies and materials for thermal management are used, if necessary. Many boards feature impedance control. In summary, most of the available advanced technologies are used at Carl Zeiss.

Previous EDA software

Carl Zeiss was a long-time customer of Zuken's Visula tool. When the Visula schematic tool was discontinued in the mid-1990s, ViewDraw / DxDesigner (now a Mentor Graphics product) was implemented as the new user interface. Using tools from different vendors with different user interfaces is always problematic and communication between the tools is very limited. Even if Visula was a powerful package, its graphic interface was not easy to use. Changing technology values in a design was difficult. SPICE simulation with the DxDesigner / DxAnalog tool was not up to date.

New EDA software package

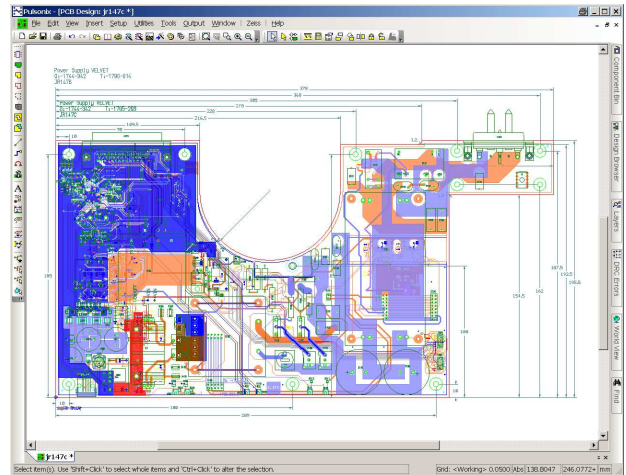
Visula was discontinued in 2008. However, there had been no major updates to it before this. We began looking for a replacement in 2006. We had five main requirements: import of existing designs and libraries, easy-to-use interface, similar features, improved simulation and cost effectiveness. Additionally, we wanted to have more input on the development of features and receive better and faster support. In the end, there was only one tool which met all these conditions: Pulsonix. Some engineers in the company had already been using the Pulsonix SPICE simulator and knew the German distributor Peschges Variometer GmbH, who gave inhouse demonstrations, training and support for the software. Pulsonix is a state-of-the-art tool and has an excellent price-performance ratio.



LSM 780 Laser Scanning Microscope with improved detection performance

Pulsonix

The next stage was an intense evaluation of the tool and its import capabilities. The DxDesigner schematics import option was added for our company. The import of Visula designs was enhanced. New features were added such as construction lines, intelligent PDF output, composite plots, PDC tab search, part representations, automatic insertion of testpoints, environment variables in paths and license loan. Close cooperation with the development department at WestDev Ltd. enabled efficient and fast feedback.



Power supply for a digital video projector for planetarium applications

All requirements were met with the release of Pulsonix 5.1. The company's parts library was successfully imported. About 85 users received schematic or PCB layout training in spring 2009.

Experience since installation

Due to the extensive preparations, there were no insoluble problems during the implementation of Pulsonix at Carl Zeiss. Because of the small number of issues, we had amazingly few internal hotline calls after releasing the new EDA tool. We received positive feedback from the engineers about the easy-to-use state-of-the-art software package. Choosing Pulsonix was the right decision, even if we still see some room for improvement. Compared to the previous tools, we have achieved a significant reduction of maintenance costs. At the same time we received a fast support and quick bug fixes from WestDev Ltd. and our distributor Peschges Variometer GmbH. By using our own automated update distribution system, we have low administration costs. We have created Zeiss-specific menus and interfaces, e.g. for BOM generation and for our 3D interface. Version 6.0 brought some interesting new features (Multi-Screen, Embedded Views, Spacings/Styles By Area, Net Styles), which further improve the usage of Pulsonix.