ZUKEN®

CR-8000™

Circuit Engineering
Design Gateway

- Support for multi-board design and extraction of multiple PCB netlists within one schematic for integrated system level design

- Multiple hierarchical design methodologies support the creation of traditional and multi-board system design

- Design reuse enables proven circuit elements to be reused, saving design time and improving quality

- Electrical and physical constraints are managed in one environment

- Advanced electrical rule checks and embedded simulation enable you to design right the first time

- Embedded support for conducting "what-if" studies to determine best termination and topology of critical signals

- Interface with best-in-class simulation tools for analog/mixed signal, RF, and system-level analysis for a complete engineering environment

- Parallel use of black box symbols and parts within a circuit design to initiate layout early in the design process

- Attach or embed design instructions or guidelines to enhance the communication and documentation of the design

Introduction

Design Gateway is Zuken's platform for logical circuit design and verification of single and multi-board system-level electronic designs. Developed with the latest architecture to support graphical and textual design entry methods, it also includes advanced methodologies in hierarchical design to support design reuse and duplicate circuits. Design Gateway's embedded constraint management system complements tightly linked integrations for synthesis, simulation, timing analysis and verification. This complete solution for the design and verification process has been developed to reduce design time and optimize product cost, size, and performance.

True multi-board design

Traditional schematic entry tools offer the ability to create a single logical design to drive a single PCB layout. Design Gateway allows you to design a true system-level circuit design by creating a board-level block or connector symbol for each individual circuit, and connecting them together to define a complete system. Engineers can avoid maintaining spreadsheets of system interconnects, and manage them with intelligent graphical design. With the power of the multi-board design technology in Design Gateway, you have the option of selecting each board symbol and generating a netlist for each PCB, or create a full system-level netlist to support the complete analysis of a product.
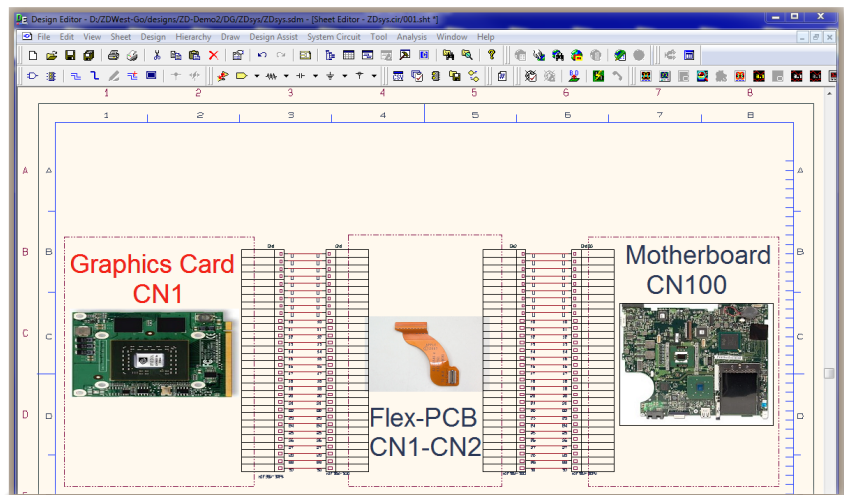
Board Symbol on multi-board design links to connector in single PCB circuit design

Constraint management – more than just attributes and rules

Whether you are challenged with the complex requirements of DDR2/3/4 or faced with incorporating the latest high-speed interfaces, the Constraint Browser within Design Gateway enables you to define constraints for any combination of nets, extended nets, differential pairs, and busses using a spreadsheet approach. In the same instance, a user can continue adding layout rules for nets and manage complex spacing rules within net groups and between net groups.

The Component Browser provides the option to enter constraints and attribute values using a spreadsheet approach. Engineers can use the Component Browser to generate custom parts lists and BOM's, and also use it to cross-probe to schematic and view circuit reuse information. With full support of variant design in Design Gateway, you can also manage all your part assignments and placement status for multiple assemblies all in one utility.

Harnessing the power of design reuse

The benefits of design reuse are well-known, but implementing a methodology that is flexible, easy to use, and can take advantage of data management was not fully realized until Design Gateway. Traditional systems offer a single approach to hierarchical design, where Design Gateway introduces several approaches that allow you to design with certified golden circuits, use a circuit from an existing design as a template for a new design, or creating a multi-PCB design –using either a top-down or bottom-up approach. Design reuse consists of more than just copying circuits from one design to another. Block circuits can be saved in a library for you to catalog and search and add to a design. Revision control can be used to govern any changes to a circuit – all part of Design Gateway's robust approach to block circuit management.

## Co-Design with simulation and analysis

Design Gateway is a true engineering environment. With embedded simulation and verification, and flexibility to interface with best-in-class tools, it reduces errors and improves your design cycle time by utilizing the same schematic for both PCB layout and simulation. Whether you require analog or digital simulation, verifying polarized capacitors are connected correctly, or insuring that the simulated signal voltage doesn't exceed power ratings of a component, you can accomplish all this in a co-design flow using Design Gateway.
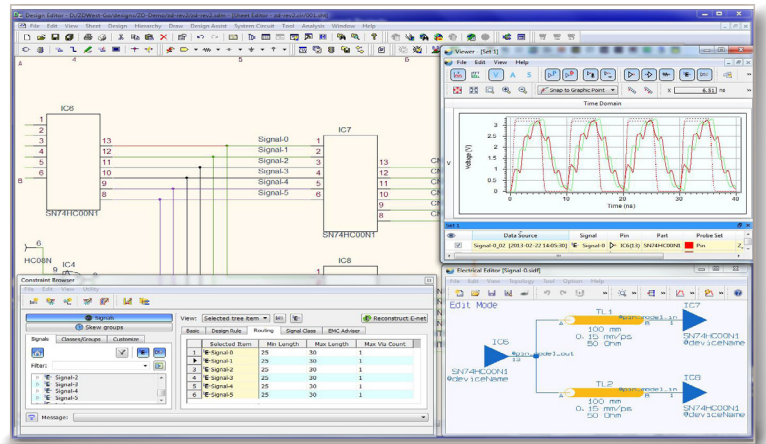
Concurrent constraint management, simulation and topology planning during circuit design

Additional features of Design Gateway

- Direct integration with System Planner to exchange block diagrams and circuit data

- Complete support of design variants, including the substitution of different packages and part families

- Collaborate with Zuken Graphical Pin Manager for I/O management of FPGA, ASIC, multi-gated, and other high-pin-count devices

- Conduct advanced electrical rule checks with Circuit Adviser

- Text searchable PDF output with bookmarks

- Create engineering guideline checklists with Circuit DR Navi

- Built-in configurable library search engine or direct integration to Zuken's DS-2 library and data management system
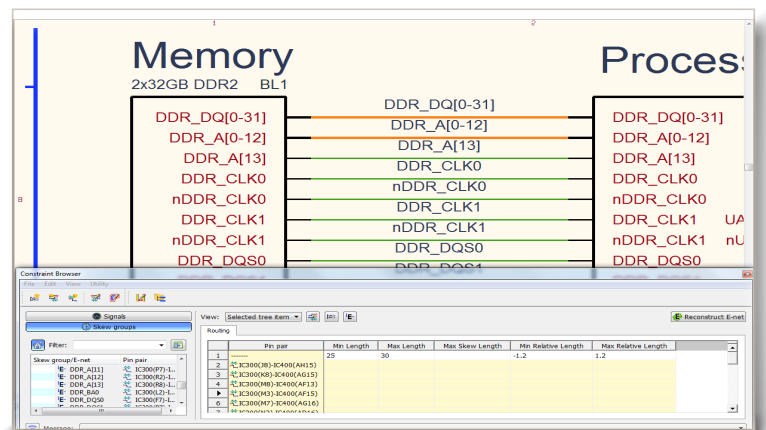
Embedded Constraint Browser offers utilities to automate creation of differential pairs and eases entry of constraints for high-speed signals

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