

# IC WorkBench Edit/View Plus

## High Speed Layout Visualization

**IC WorkBench Edit/View Plus (ICWBEV+) is a powerful, hierarchical layout visualization and analysis tool**

### Overview

IC WorkBench Edit/View Plus allows viewing and editing GDSII, OASIS®, and LEF/DEF layouts from small IP blocks to full chip databases. ICWBEV+:

- Quickly opens large GDSII, OASIS, and LEF/DEF files with low memory overhead, and cache files drastically decrease the time for subsequent sessions
- Opens Optimized OASIS files instantly
- Provides easy debugging of the hierarchy and placement of cells and shapes
- Shows fast, interactive shape connectivity
- Supports the IC Validator (VUE) application to review and correct DRC and LVS errors
- Provides various modes for merging layouts of mixed formats and DBUs
- Compares layouts, cells, and generates difference reports/layouts
- Defines TCAD simulation domains in hierarchical layouts for Sentaurus

### High Speed, High Capacity View and Editing

ICWBEV+ loads gigabytes of data in minutes and has unlimited file size capacity on 64-bit platforms. Fast zooming and panning ease exploration and analysis of the largest layout patterns. In addition, ICWBEV+ can overlay two or more layouts in a single view without merging the underlying layout files.

Hierarchical selection and editing allow ICWBEV+ to select and edit shapes deep in the hierarchy without requiring the sub-cell to be opened as shown in Figure 1. Edit operations have undo and redo support.

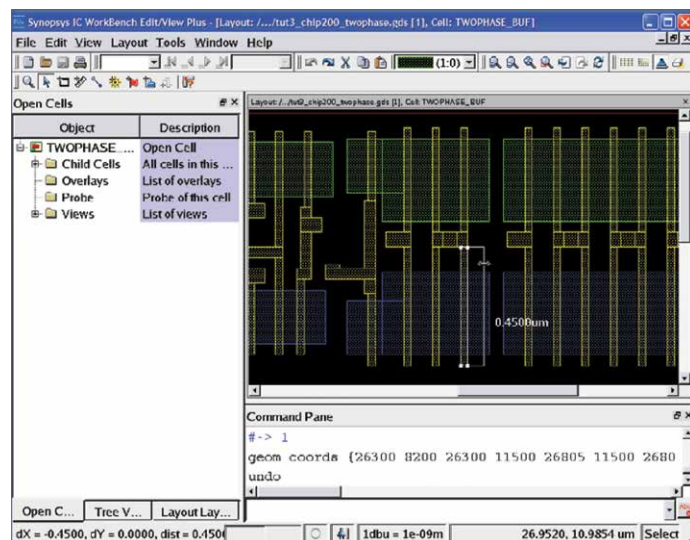


Figure 1: Hierarchical selection and editing in ICWBEV+

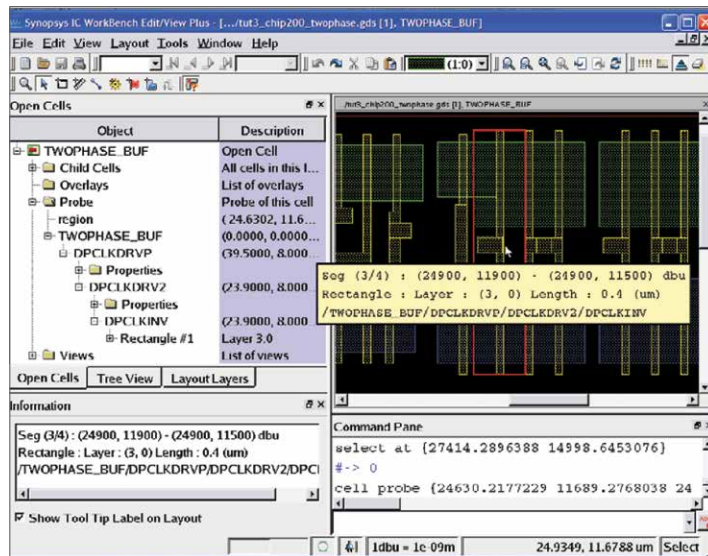


Figure 2: Shape information tool tip and probe showing the hierarchy of layout shapes

## Hierarchy Debug

Debugging layouts and their hierarchy is critical for the final design of large chips and ICWBEV+ provides a number of tools to do this as shown in Figure 2.

- Control of the levels of hierarchy shown: ICWBEV+ can be configured to show any level(s) of the hierarchy, allowing better determination of the source of shapes
- Shape information tool tip: ICWBEV+ includes a shape information tool tip to allow quick determination of the hierarchy of shapes and cells
- Probe: ICWBEV+ allows more detailed information of the hierarchy in a location including the cell placement information

## Advanced Features

ICWBEV+ implements the latest in user interface technology, and is architected to make the powerful ICWBEV+ capabilities easy and intuitive to use.

Key features include:

- Net tracing—ICWBEV+ can trace touching shapes based on a user- defined connectivity list. This allows a quick check of opens/ shorts in a layout
- Support for user and site level customization
- Hierarchical folder representation of all objects including layouts, rulers, and other markups, such as SEM images
- Browser-like forward and back view history
- User customizable hot keys for menus and commands
- User customizable window and toolbar positions
- User customizable menus and context-menus
- Custom buttons to run user-created macros

## Common Platform and User Modes

ICWBEV+ is built on the same code base as the IC WorkBench Plus product, but without the lithographic simulation. All lithography markup types are available for review in ICWBEV+.

ICWBEV+ has user modes for different users including:

- IC Validator: default set up and connections to IC Validator VUE through a single toolbar button
- Sentaurus: Additional markups to support TCAD simulations, including stretch, and toolbar buttons to generate simulation domain information for Sentaurus

## Interfaces

Inputs and Outputs:

- GDSII
  - GDSII.GZ
  - LEF/DEF
- OASIS
  - OASIS.GZ
  - Optimized OASIS

## User Interfaces

- GUI-based user interface
  - TCL-based user interface with TK widgets available
  - Socket communication
- Supported platforms
  - AMD64, Win64, Suse 64, Linux on PowerPC