SIEMENS EDA

Getting Started with Calibre® Video Series

Software Version 2021.2

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Chapter 1
Physical Verification

The following topics provide an introduction to the Calibre® physical verification tools.

Calibre 3DSTACK

Introduces you to the Calibre® 3DSTACK flow and explains the rule file.

Video

This video covers the following topics:

- Functional overview
- Command flow
- Verification checks
- GUI usage

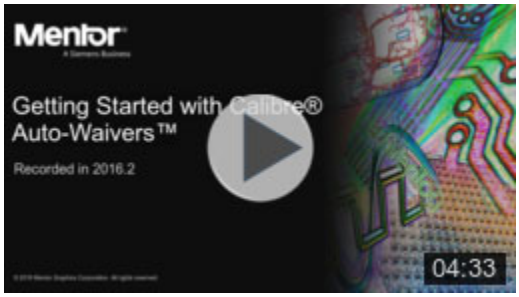
Calibre Auto-Waivers

Provides an overview of the Calibre® Auto-Waivers™ flow and usage.

Video

This video covers the following topics:

- Usage scenarios
- Waiver generation
- Applying waivers in a DRC run



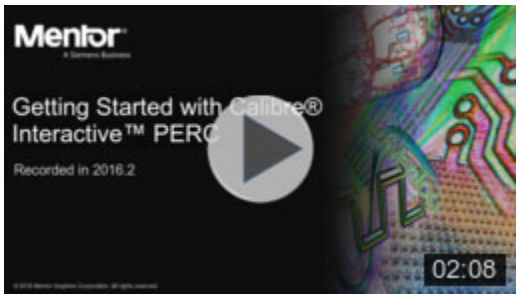
Calibre Interactive PERC

You can easily start a Calibre® PERC™ run from Calibre® Interactive™. You specify the run type, the rule file, input and output, and many other options. Any settings you change in the GUI override the rule file settings—this lets you quickly change options without editing the rule file. When Calibre Interactive is started from a design tool, the open design is used as the input for the Calibre run.

Video

This video covers the following topics:

- Invoking Calibre Interactive PERC from a design tool
- Setting options and starting a run
- Viewing results in Calibre RVE



Calibre nmDRC

Introduces the Calibre® nmDRC™ tool, including the required inputs, the tool outputs, a typical DRC flow, the rule rile, and reviewing the results of a DRC run.

Video

This video covers the following topics:

- Inputs required for running the tool
- Outputs from running the tool
- Typical Calibre DRC flow
- Calibre DRC rule file
- Calibre DRC results

Calibre Query Server

Discusses basic usage of standard Calibre® Query Server commands in interactive and batch modes, as well as directing outputs to STDIN or to a response file.

Video

Calibre RVE for DRC

Calibre® RVE™ for DRC displays results from a Calibre nmDRC run. This getting started video covers basic usage, including highlighting, waiving results, and viewing properties.

Video

This video covers the following topics:

- Opening a results database
- Setting basic Calibre RVE options
- Highlighting a result
- Marking results as fixed or waived
- Opening a side (auxiliary) RDB
- Viewing properties
- Creating a histogram

Calibre YieldServer

Discusses fundamentals of using Calibre® YieldServer interactive and batch script modes. Also discusses running a batch script from a rule file in a calibre -dfm run.

Video

Chapter 2
Design for Manufacturing

The following topics provide an introduction to the Calibre® DFM tools.

Calibre LFD

This video demonstrates how to get started with running Calibre® LFD™ from Calibre Interactive and then viewing the results in Calibre RVE and Calibre® DESIGNrev™.

Video

This video covers the following topics:

- Run Calibre LFD from Calibre Interactive
- Use Calibre RVE to access Calibre LFD results data
- View PV-band data and check results in Calibre DESIGNrev

Chapter 3
Parasitic Extraction

The following topics provide an introduction to the Calibre® extraction tools.

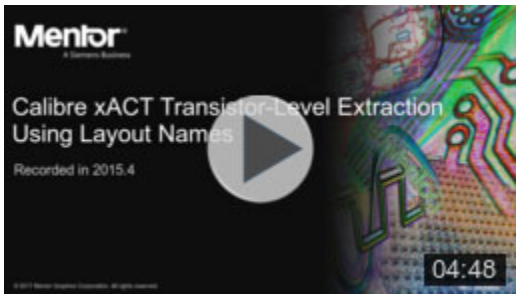
Calibre xACT Transistor-Level Extraction Using Layout Names

Introduces the layout names extraction flow and reviews the necessary inputs, rule file contents, and results.

Video

This video covers the following topics:

- Introduce the Calibre® xACT™ tool
- Review the Calibre xACT direct netlisting flow using layout names
- Review the extraction rule file contents
- Demonstrate tool execution
- Review results



Calibre xACT Transistor-Level Extraction Using Source Names

Introduces the source names extraction flow and reviews the necessary inputs, rule file contents, and results.

Video

This video covers the following topics:

- Introduce the Calibre xACT tool
- Review the Calibre xACT direct netlisting flow using source names
- Review the extraction rule file contents
- Demonstrate tool execution
- Review results

Chapter 4
Resolution Enhancement Technology (RET)

The following topics provide an introduction to the Calibre® RET tools.

Calibre Multi-Patterning

Achieving robust design fidelity depends on the mutual accuracy of the simulation and pattern coloring tools. Calibre® Multi-Patterning and Calibre® nmOPC™ partner for a powerful solution.

Video

This video covers the following topics:

- Run multi-patterning on a typical design
- Run Calibre nmOPC on both masks
- Perform analysis of pattern fidelity failure
- Remedy target design by stitching
- Run Calibre nmOPC on corrected design

- Survey fidelity success

Calibre nmModelflow: Calibration Stages

Calibration stages are a core component of modeling in Calibre® nmModelflow™. A *stage* holds the calibration settings for a model type; you must create stages in order to calibrate them. This video shows how to create a stage in the Calibre nmModelflow Flow Stage Wizard.

Video

This video covers the following topics:

- How to open the Flow Stage Wizard and choose a stage
- How to set up configurations
- How to set calibration objectives
- How to view final Stage commands

Calibre nmModelflow: Database

Calibre nmModelflow manages files and data objects in a central database. This video is a brief tour of the Calibre nmModelflow database.

Video

This video covers the following topics:

- Learn the components of the Calibre nmModelflow database
- Understand the difference between stages and calibration jobs

Calibre nmModelflow: Litho Models

This video explains the difference between litho models and Global Litho Models (GLM) using Calibre nmModelflow as a way to view their contents.

Video

This video covers the following topics:

- Contents of a litho model
- Contents of a Global Litho Model

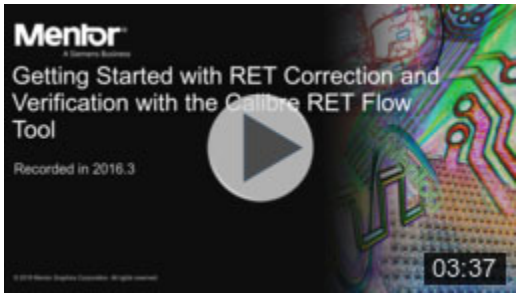
Calibre RET Flow Tool: Calibre nmOPC and Calibre OPCverify

Use the RET Flow Tool (RFT) with an OPC setup file to show the results of each round of adjustment. This can be useful for tuning your OPC settings.

Video

This video covers the following topics:

- A review of the litho setup file structure
- Extracting litho setup files from an SVRF rule file
- Using the RET Flow Tool to run Calibre nmOPC for RET correction and Calibre® OPCverify™ to check results



Calibre RET Flow Tool: Calibre OPCpro Fragmentation

Use the RET Flow Tool with a Calibre® OPCpro™ setup file to show the results of each round of adjustment. This can be useful for tuning your OPC settings.

Video

This video covers the following topics:

- Opening the RET Flow Tool
- Loading an existing setup file
- Mapping layers and choosing which layers to output
- Viewing fragmentation information
- Stepping through OPC iterations

Calibre RET Flow Tool: Calibre nmSRAF

Demonstrates how to run Calibre nmOPC and Calibre® nmSRAF™ from Calibre® WORKbench™ using the RET Flow Tool to simultaneously generate SRAFs for both masks.

Video

This video covers the following topics:

- Open the RET Flow Tool
- Run Calibre nmOPC on both masks
- Run Calibre cnSRAF on both masks
- Run Calibre mbSRAF on both masks

Calibre RET Flow Tool: Simulation Flow

In this video, we run the RET Flow Tool (RFT) and create a Basic Simulation Flow. We highlight the differences between Standard and Litho models, and run Print Image simulations with each.

Video

This video covers the following topics:

- Familiarize Yourself With the RET Flow Tool
- Run a Basic Simulation Flow
- Learn About Standard Mode
- Learn About Litho Model Mode

- Correct Print Image Issues

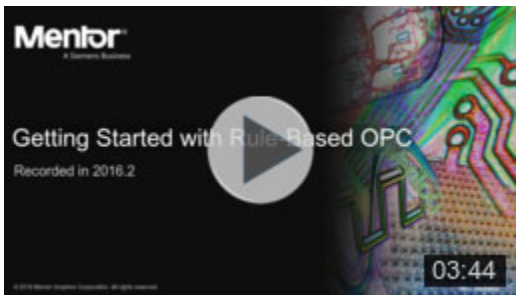
Calibre Rule-Based OPC

Getting Started with Rule-Based OPC provides an introduction to the basics of Calibre® nmBIAS™ file structure, run file execution, and review of biasing results.

Video

This video covers the following topics:

- Examine Calibre nmBIAS file structure
- Run Calibre nmBIAS
- Examine biasing output as generated by Calibre nmBIAS



Calibre SMO RET

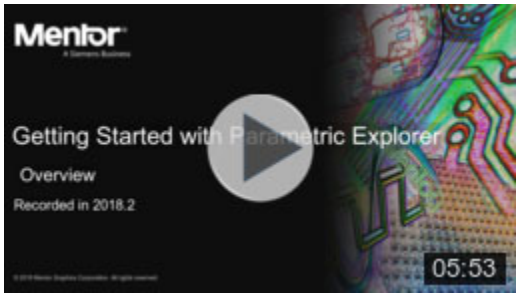
In this video, we introduce you to the Calibre® SMO RET Parametric Explorer tool. We provide an overview of the main functionality and key workflow steps for the Parametric Explorer.

Video

This video covers the following topics:

- Overview of the main Parametric Explorer functionality.

- Key workflow steps of the Parametric Explorer.



Calibre WORKbench Pattern Generator: Overview

This video describes the main functionality and key workflow steps of the Calibre Pattern Generator.

Video

This video covers the following topics:

- What is Calibre Pattern Generator (CPG)?
- What is the CPG workflow?
- CPG demonstrations

Calibre WORKbench Pattern Generator: Creating a New Pattern and Pattern Library

Demonstrates creation of a new pattern and pattern library using the Pattern Creator.

Video

This video covers the following topics:

- Invoking Calibre Pattern Generator
- Selecting Pattern Creator (PC)
- Adding a new library
- Saving the pattern library

Calibre WORKbench Pattern Generator: Creating a New Layout and Layout Configuration

Demonstrates creation of a new layout and layout configuration file using the Layout Generator.

Video

This video covers the following topics:

- Invoking Calibre Pattern Generator
- Selecting Layout Generator (LG)
- Adding a new configuration
- Setting up properties, DRC check, and markers
- Placing and configuring patterns in grid cells
- Saving the configuration file
- Running DRC check

- Generating layout and gauge files

Chapter 5
Mask Data Preparation

The following topics provide an introduction to the Calibre® MDP tools.

Calibre DefectReview

This video is a quick getting started with the Calibre® DefectReview™ tool, used to perform analysis, classification, and trend analysis of defects identified by mask inspection tools.

Video

This video covers the following topics:

- Set Up and Invoke Calibre DefectReview
- Load an Inspection File
- Learn About the Calibre DefectReview Interface

Calibre FRACTURE and Calibre MDPverify

This video takes you through a basic flow of using Calibre MDP Fracture and Calibre® MDPverify™ to fracture a layout into a proprietary format and verify the results. This is performed using the MDP Fracture GUI in the Calibre® MDPview™ layout viewer.

Video

This video covers the following topics:

- Overview of Calibre Mask Data Preparation

- Set Up a Fracture Run in the Calibre Fracture GUI
- Set Up a Calibre MDPverify Run in the Calibre Fracture GUI.
- Overlay the Output Results

Third-Party Information

Details on open source and third-party software that may be included with this product are available in the *<your_software_installation_location>/legal* directory.