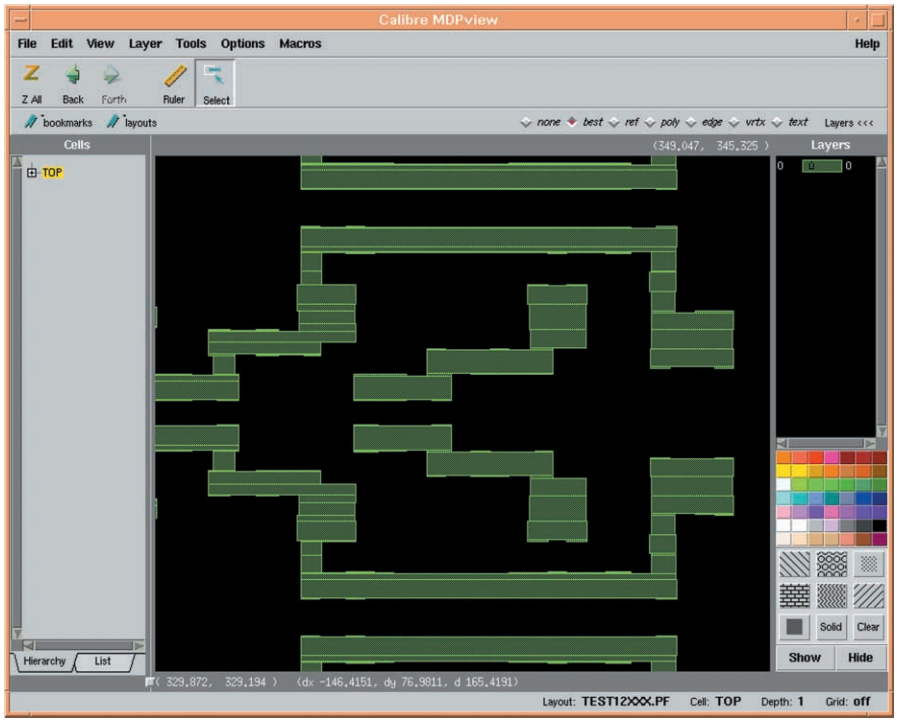
Calibre FRACTUREm
MEBES Formatted Mask Data Export

Manufacturability

D A T A S H E E T



Calibre FRACTUREm enables data export in MEBES format out of the Calibre database. It is part of Calibre's MDP tool suite offered by Mentor Graphics. The illustration shows a section of a MEBES formatted file in the viewing tool.

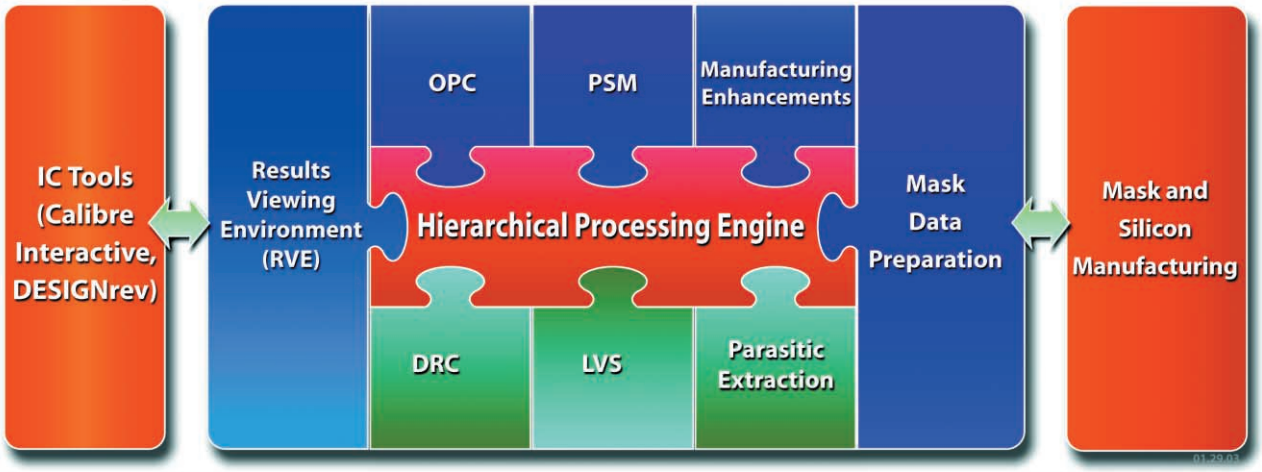
Mask Data Preparation for the MEBES Format

Calibre® FRACTUREm™ expands the Calibre product line from physical verification (DRC/LVS) and resolution enhancement techniques (RET) into mask data preparation (MDP). After conducting complex optical proximity corrections such as rules-based or model-based OPC, or general sizing and Boolean operations, data can now be exported directly into the MEBES mask writing format without changing tools or creating large intermediate files. Data processing is conducted utilizing Calibre's powerful hierarchical engine. This enables fast processing speeds in addition to an optimization of the output for most efficient mask writing. File size is kept to a minimum by applying data compaction, up to 64 stripes.

Calibre FRACTUREm is complemented by a dedicated verification command, MDPverify, which allows for independent verification of the fracturing results against the original GDS file or a previous version of the MEBES-output.

Key Product Benefits:

- Build on hierarchical geometry processing inside the Calibre database for Boolean and sizing operation
- Hierarchical fracturing for fast processing speed
- 32/64 bit on HP, Sun and Linux platforms
- Multi-threading with significant scaling performance
- Dynamic memory allocation
- Up to 64 stripe data compaction
- Optimized for mask writer performance
- Easy to integrate in an OPC and verification flow
- Combined with a verification command for MEBES-MEBES and MEBES-GDS comparison
- No intermediate files



The Calibre tool suite offers a complete design-to-silicon solution to ensure a confident design for manufacturing.

Calibre Offers a Complete Design-to-Silicon Solution

A powerful hierarchical engine is at the heart of the Calibre tool suite, which offers a complete IC and SoC design-to-manufacturing solution. Each tool is an excellent point tool on its own, but the combination of Calibre DRC™, Calibre LVS™ and Calibre RVE™ (results viewing environment) with Calibre xRC™, Calibre RET and Calibre MDP, simplifies and strengthens the design flow.

Calibre xRC parasitic extraction tool accurately models the parasitic effects of passive interconnects that can cause design failure in deep submicron IC designs. Automated interfacing of Calibre LVS to Calibre xRC provides simplicity (one rule file, one invocation) and automated back annotation for accurate parasitic extraction results, and ensures accurate and intentional device extraction with parameter calculation and parasitic device extraction for accurate simulation.

Calibre Interactive™ complements the Calibre physical verification tool suite by enabling designers to perform verification from within Cadence Virtuoso® and Mentor Graphics IC Station™ and Calibre DESIGNrev™. Together with Calibre RVE, Calibre Interactive provides a seamless, push-button interface, enabling designers to use a single platform for cell/block and full-chip physical verification.

The Calibre RET tool suite for Optical and Process Correction (OPC), Phase Shift Mask (PSM), Scatter Bars (SB) and Off-Axis Illumination (OAI) deliver silicon accuracy, fastest turn-around-time and excellent yield.

Calibre MDP allows for seamless continuation of the data manipulations required for RET techniques to the mask data format conversion in one batch run, keeping data hierarchically represented as long as possible.

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Corporate Headquarters
Mentor Graphics Corporation
8005 SW Boeckman Road
Wilsonville, OR 97070-7777
Phone: 503.685.7000
Fax: 503.685.1204

Sales and Product Information
Phone: 800.547.3000

Silicon Valley
Mentor Graphics Corporation
1001 Ridder Park Drive
San Jose, California 95131 USA
Phone: 408.436.1500
Fax: 408.436.1501

North American Support Center
Phone: 800.547.4303

Europe Headquarters
Mentor Graphics Corporation
Arnulfstrasse 201
80634 Munchen
Germany
Phone: 49 (0) 89 57096-0
Fax: 49 (0) 89 57096-400

Europe
Mentor Graphics Deutschland GmbH
Elsenheimer Strasse 41-43
D-80687 Munchen
Germany
Phone: +49.89.57096.0
Fax: +49.89.57096.4000

Pacific Rim
Mentor Graphics (Taiwan)
Room 1603, 16F
International Trade Building
No. 333, Section 1, Keelung Road
Taipei, Taiwan, ROC
Phone: 886.2.87252000
Fax: 886.2.27576027

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