Introduction

We are pleased to announce the release of Integr8tor version 8.3

Integr8tor v8.3 offers significant improvements, better quality and a number of bug fixes, as well as expanded functionality, as explained in these release notes.

We recommend that you install version 8.3 as soon as possible.
# Release history

## Commitment to regular updates

<table>
<thead>
<tr>
<th>Version</th>
<th>Release date</th>
<th>Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>July 2010</td>
<td>• Multiple job submit via email.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• CAM input report.</td>
</tr>
<tr>
<td>5.2</td>
<td>November 2010</td>
<td>• Copper clearances by type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Scoring calculation.</td>
</tr>
<tr>
<td>6.1</td>
<td>March 2011</td>
<td>• Perspectives in Cockpit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Improved performance.</td>
</tr>
<tr>
<td>6.2</td>
<td>November 2011</td>
<td>• Multiple QED reports.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Exposed copper calculation.</td>
</tr>
<tr>
<td>7.1</td>
<td>June 2012</td>
<td>• Localized interface.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Line width on planes.</td>
</tr>
<tr>
<td>7.1.3 maintenance release</td>
<td>July 2012</td>
<td>• Bug fix release for 'recovered job'.</td>
</tr>
<tr>
<td>8.1</td>
<td>May 2013</td>
<td>• Support for ODB++ v7.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Compatible with Windows server 2012 and windows 8.</td>
</tr>
<tr>
<td>8.2</td>
<td>November 2013</td>
<td>• Detection and flagging of duplicate archives.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Edge connector recognition.</td>
</tr>
<tr>
<td>8.3</td>
<td>June 2014</td>
<td>• See release notes</td>
</tr>
</tbody>
</table>
Overview

New Functionality and Enhancements

Input & Workflow

- During Gerber import, invalid (zero-sized) apertures are flagged.
- Support for Enlarged character set (UTF-8 stack).
- Introduction of new standard parameters.
- Add multiple jobs via the submit menu.
- Determination of drilling method (laser vs mechanical).
- Improved automatic stackup recognition.
- Improved registration after stackup changes.
- Improved edge connector recognition.
- Improved detection of outline, and a warning if functional copper is cut or excluded.
- Improved process management regarding job queue handling.
- Handles more tool and aperture files.
- Several bug fixes.
Overview

New Functionality and Enhancements

QED

- Additional report sections for calculations based on tool diameters as well as final hole diameters.
- Reports on design characteristics for carbon, peel-off masks and legend.
- Reports on copper rings for non-plated holes.
- Analyze and report soldermask covering via holes.
- All QED report sections now have bookmarks.
New input enhancements

Invalid apertures are flagged as Gerber files are imported.

Whenever a Gerber file contains invalid (zero-sized) apertures a warning message is given.

This information is stored in the Cockpit's “Input remark” section and in the QED report.

Support for an Enlarged character set (full UTF-8 stack).

Where an archive contains non-Latin (e.g. Asian) characters in the filename, the archive is taken in correctly and the original characters are displayed.
Introduction of new standard parameters

It is now possible to add the PCB Thickness, SolderMask color and Legend color via the various inputs, these three parameters have become standard parameters.

- Via the submit menu in the Cockpit.
- Via E-mail with a code in the subject.
- Via Web Integration.

These parameters are also available in the ‘Modify Job’ and the ‘Resubmit Job’ menu.

It is now also possible to add multiple jobs via the submit menu, an option which was in the previous versions only available in the E-mail input.
Determination of laser/mechanical drilling

Features
- Customizable configuration.
- Determines the use of laser or mechanical drilling based on hole diameter, pad size and/or the restring of the affected pad

Benefits
- More accurate Cost calculations.
Report all results in both tool and final diameters

Features

- When using a tool table drill analysis results are reported in separate sections within the QED report.
- The user can determine which sections should be shown in the QED report.

Benefits

- Information can be shown as required, by tool diameter and/or final hole diameter.
- QED report can be configured to individual needs.

<table>
<thead>
<tr>
<th>Layer Type</th>
<th>Min. Line Width</th>
<th>Min. Ring</th>
<th>Min. Cir. to Copper</th>
<th>Min. Cir. to Plated Hole</th>
<th>Min. Cir. to NPTh</th>
<th>Min. Cir. to Outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer</td>
<td>0.8001</td>
<td>0.1585</td>
<td>0.2921</td>
<td>0.6171</td>
<td>0.5214</td>
<td>0.7350</td>
</tr>
<tr>
<td>Inner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reports on design characteristics for carbon layers

Features

- Design analysis for carbon layers.
  - Minimum feature size.
  - Minimum clearance carbon to carbon.
  - Minimum clearance to plated holes.
  - Minimum clearance to outline.
  - Amount of carbon used, by dm² and percentage.

Benefits

- Potential design issues on extra layers are detected early.

<table>
<thead>
<tr>
<th>Carbon Masks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>File</strong></td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Carbon-B</td>
</tr>
</tbody>
</table>
Reports on design characteristics for peel-off masks

Features

- Design analysis for **peel-off** masks.
  - Minimum feature size.
  - Minimum clearance peelable to peelable.
  - Minimum clearance to plated holes.
  - Minimum clearance to outline.
  - Amount of peel-off mask used, by dm² and percentage.

Benefits

- Potential design issues on extra layers are detected early.

<table>
<thead>
<tr>
<th>Peeloff Masks</th>
<th>File</th>
<th>Position</th>
<th>Min. Line Width</th>
<th>Min. Clr. to Peelable</th>
<th>Min. Clr. to PTH</th>
<th>Min. Clr. to Outline</th>
<th>Layer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Peeloff B</td>
<td>bottom</td>
<td>&gt; 0.8000</td>
<td>0.0000</td>
<td>&gt; 1.6000</td>
<td>0.0930</td>
<td>7%</td>
</tr>
</tbody>
</table>
Reports on design characteristics for legends

Features

- Design analysis for **legend** layers.
  - Minimum used line width.
  - Minimum clearance legend to legend.
  - Amount of ink used, by dm² and percentage.

Benefits

- Potential design issues on extra layers are detected early.

<table>
<thead>
<tr>
<th>Legend Layers</th>
<th>File</th>
<th>Position</th>
<th>Min. Line Width</th>
<th>Min. Cir. Legend to Legend</th>
<th>Layer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>mm</td>
<td>mm</td>
<td>dm² %</td>
</tr>
<tr>
<td>Legend-T</td>
<td>top</td>
<td>0.6000</td>
<td>0.1310</td>
<td>0.1211</td>
<td>74</td>
</tr>
<tr>
<td>Legend-B</td>
<td>bottom</td>
<td>0.1000</td>
<td><strong>0.0700</strong></td>
<td>0.0948</td>
<td>58</td>
</tr>
</tbody>
</table>
# Reports on copper ring for non-plated holes

## Features
- Analyzes and reports on copper rings for non-plated holes.

## Benefits
- Easy validation using minimum specified values.

### Drill Tools

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>drill</td>
<td>1</td>
<td>1-1</td>
<td>PTH</td>
<td>mechanical</td>
<td>0.8000</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>&gt; 0.8000</td>
<td></td>
<td>&gt; 2.4000</td>
</tr>
<tr>
<td>drill</td>
<td>2</td>
<td>1-1</td>
<td>NPTH</td>
<td>mechanical</td>
<td>1.0000</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.5862</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Sequences

<table>
<thead>
<tr>
<th>Span</th>
<th>Type</th>
<th>Tools</th>
<th>Min. End Dia.</th>
<th>Max. End Dia.</th>
<th>Holes</th>
<th>Min. Ring on Outer</th>
<th>Min. Ring on Inner</th>
<th>Min. Ring on Outer</th>
<th>Min. Ring on Inner</th>
<th>Min. Cir. Hole to Copper</th>
<th>Min. Cir. Hole to Hole, Within Sequence</th>
<th>Min. Cir. Hole to Hole, Between Sequences</th>
<th>Min. Cir. Hole to Outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>PTH</td>
<td>1</td>
<td>0.8000</td>
<td>0.8000</td>
<td>2</td>
<td>&gt; 0.8000</td>
<td></td>
<td></td>
<td></td>
<td>&gt; 0.8000</td>
<td>&gt; 1.0000</td>
<td></td>
<td>2.4747</td>
</tr>
<tr>
<td>All</td>
<td>Plated</td>
<td>1</td>
<td>0.8000</td>
<td>0.8000</td>
<td>2</td>
<td>&gt; 0.8000</td>
<td></td>
<td></td>
<td></td>
<td>&gt; 1.0000</td>
<td>&gt; 1.0000</td>
<td></td>
<td>2.4747</td>
</tr>
<tr>
<td>1-1</td>
<td>NPTH</td>
<td>1</td>
<td>1.0000</td>
<td>1.0000</td>
<td>8</td>
<td></td>
<td>0.5862</td>
<td></td>
<td></td>
<td>1.5067</td>
<td>&gt; 1.0000</td>
<td>&gt; 0.8000</td>
<td>5.1417</td>
</tr>
<tr>
<td>All</td>
<td>All</td>
<td>2</td>
<td>0.8000</td>
<td>1.0000</td>
<td>10</td>
<td>&gt; 0.8000</td>
<td>0.5862</td>
<td></td>
<td></td>
<td>1.5067</td>
<td>&gt; 1.0000</td>
<td>&gt; 0.8000</td>
<td>2.4747</td>
</tr>
</tbody>
</table>
Analyze and report soldermask covering via holes

Features

- Analyze and report soldermask covering via holes. Integr8tor reports if the via hole is covered and on which side of the pcb it is covered (Top, Bottom, Both).

Benefits

- The user knows immediate if extra work/costs are involved because the soldermask is covering the via holes.

  The tasks are:
  - Soldermask needs to be modified.
  - Viapugging on the affected outer layers is required.
Bookmarks in all sections of the QED report

Features

- Every section in the QED report now has bookmarks.

Benefits

- Easy navigation through the report.
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