

Integr8tor v8.3

Ucamco
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Integr8tor

Version 8.3



64Bit

Multi
Core

Introduction



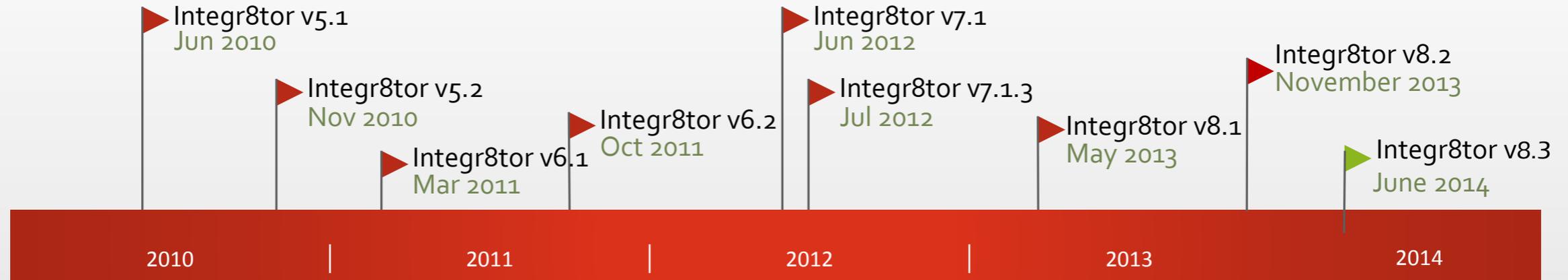
We are pleased to announce the release of Integr8tor version 8.3

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



Version	Release date	Highlights
5.1	July 2010	<ul style="list-style-type: none"> Multiple job submit via email. CAM input report.
5.2	November 2010	<ul style="list-style-type: none"> Copper clearances by type. Scoring calculation.
6.1	March 2011	<ul style="list-style-type: none"> Perspectives in Cockpit. Improved performance.
6.2	November 2011	<ul style="list-style-type: none"> Multiple QED reports. Exposed copper calculation.
7.1	June 2012	<ul style="list-style-type: none"> Localized interface. Line width on planes.
7.1.3 maintenance release	July 2012	<ul style="list-style-type: none"> Bug fix release for 'recovered job'.
8.1	May 2013	<ul style="list-style-type: none"> Support for ODB++ v7. Compatible with Windows server 2012 and windows 8.
8.2	November 2013	<ul style="list-style-type: none"> Detection and flagging of duplicate archives. Edge connector recognition.
8.3	June 2014	<ul style="list-style-type: none"> See release notes

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.

	MODIFY JOB	RESUBMIT JOB	MOVE JOB	ABORT JOB	DELETE
DUPLICATES	ORIGINAL DATA			BOARD ID	
	通用调制板 最终发板pcb.rar				
	测试菲林.rar				
	jta_21(삼화_C2A_1).zip				
656, 1095	H505_MAIN_PCB_V1.1_加工文件_201...				
	7162_2012_V10加工文档.rar				
	gh00884.zip				
1091, 1092	AC032008.zip				
1091, 1092	AC032008.zip				

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.

The screenshot shows a web form titled "Submit New Job" with two main sections: "Standard Parameters" and "Custom Parameters".

Standard Parameters:

- Data file(s): [Text input] [Browse button]
- Multiple Jobs:
- Priority: [3 (Normal) dropdown]
- Tool Table: [none dropdown]
- Polar Job:
- Pref. Import Format: [Empty dropdown]
- Password: [Text input]
- PCB Thickness: [Text input]
- SolderMask Color: [Empty dropdown]
- Legend Color: [Empty dropdown]

Custom Parameters:

- Customer: [Text input]
- Board Id: [Text input]
- Article Id: [Text input]
- Quote Id: [Text input]
- Input Comment: [Text input]
- Year: [2014 text input]
- Demo Job: [No dropdown]
- Impedance Controlled: [Yes dropdown]
- User Name: [Ron text input]

Buttons: [Add] [Cancel]

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.

INITIAL	NR	METHOD	PLATING	E
d_int4_bottom.dpf	1	laser	plated	
d_top_int1.dpf	1	laser	plated	
d_gnd2_int4.dpf	1	Laser	plated	
d_int1_gnd1.dpf	1	laser	plated	
d_gnd1_int2.dpf	1	laser	plated	
d_int2_power1.dpf	1	laser	plated	
d_power1_power4.dpf	1	mechanical	plated	
d_power4_int3.dpf	1	laser	plated	
d_int3_gnd2.dpf	1	laser	plated	
drill.dpf	1	mechanical	plated	
rout.dpf	1	mechanical	non-plated	
rout.dpf	2	mechanical	non-plated	

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.

Summary - Copper Layers						
Layer Type	Min. Line Width	Min. Ring	Min. Clr. to Copper	Min. Clr. to Plated Hole	Min. Clr. to NPTH	Min. Clr. to Outline
	mm	mm	mm	mm	mm	mm
Outer	⁹¹ 0.8001 ⁹²	0.2335 ⁹³	0.2921 ⁹⁴	0.6421 ⁹⁵	0.5464 ⁹⁶	0.7350
Inner						

Summary - Copper Layers - Using Tool Diameters						
Layer Type	Min. Line Width	Min. Ring	Min. Clr. to Copper	Min. Clr. to Plated Hole	Min. Clr. to NPTH	Min. Clr. to Outline
	mm	mm	mm	mm	mm	mm
Outer	⁹⁷ 0.8001 ⁹⁸	0.1585 ⁹⁹	0.2921 ¹⁰	0.6171 ¹⁰	0.5214 ¹⁰	0.7350
Inner						

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.

Carbon Masks							
File	Position	Min. Line Width	Min. Clr. Carbon to Carbon	Min. Clr. to PTH	Min. Clr. to Outline	Layer Area	
		mm	mm	mm	mm	dm ²	%
Carbon-B	bottom	0.5000	0.4988		> 1.6000	0.0339	6

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.

Peeloff Masks							
File	Position	Min. Line Width	Min. Clr. Peelable to Peelable	Min. Clr. to PTH	Min. Clr. to Outline	Layer Area	
		mm	mm	mm	mm	dm ²	%
Peeloff-B	bottom		> 0.8000	0.0000	> 1.6000	0.0930	7

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.

Legend Layers						
File	Position	Min. Line Width	Min. Clr. Legend to Legend	Layer Area		
		mm	mm	dm ²	%	
Legend-T	top	0.6000	0.1310	0.1211	74	
Legend-B	bottom	0.1000	0.0700	0.0948	58	

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												
File	Tool Nr.	Span	Type	Method	End Dia.	Holes (in PCB)	Moves (in PCB)	Double Hits (in File)	Predrill Hits (in File)	Min. Ring on Outer	Min. Ring on Inner	Min. Pad Size
					mm					mm	mm	mm
drill	1	1-1	PTH	mechanical	0.8000	2	0	0	0	> 0.8000		> 2.4000
drill	2	1-1	NPTH	mechanical	1.0000	8	0	0	0	0.5862		

Sequences													
Span	Type	Tools	Min. End Dia.	Max. End Dia.	Holes	Min. Ring on Outer	Min. Ring on Inner	Min. Ring on Outer NPTH	Min. Ring on Inner NPTH	Min. Clr. Hole to Copper	Min. Clr. Hole to Hole, Within Sequence	Min. Clr. Hole to Hole, Between Sequences	Min. Clr. Hole to Outline
			mm	mm		mm	mm	mm	mm	mm	mm	mm	mm
1-1	PTH	1	0.8000	0.8000	2	> 0.8000				> 0.8000	> 1.6000		2.4747
All	Plated	1	0.8000	0.8000	2	> 0.8000				> 1.6000	> 1.6000		2.4747
1-1	NPTH	1	1.0000	1.0000	8			0.5862		1.5067	> 1.6000	> 0.8000	5.1417
All	All	2	0.8000	1.0000	10	> 0.8000		0.5862		1.5067	> 1.6000	> 0.8000	2.4747

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.

or

- Viaplugging on the affected outer layers is required.

Paste	None
Peeloff Mask	None
Carbon Mask	None
Electrical Test	Single Sided
Max. Aspect Ratio on PTH	4.4
Solder Mask Covered Vias	Both

Bookmarks in all sections of the QED report



Features

- Every section in the QED report now has bookmarks.

Benefits

- Easy navigation through the report.

The screenshot shows the QED report software interface. On the left, a 'Bookmarks' sidebar lists various report sections, including 'Single PCB View', 'Stackup', 'Summary - General', 'Summary - Copper Layers', 'Summary - Sequences', 'Summary - Rout', 'Files', 'PCB (Single)', 'Copper Layers', 'Copper Layers - Using Tool Diameters', 'Thickness', 'Copper Areas', 'Solder Mask', 'SMD', 'Drill Tools', 'Sequences', 'Rout Tools', 'Routed Holes', 'Drill Tools - Using Tool Diameters', 'Sequences - Using Tool Diameters', 'Sequences Analysis', 'Sequences Analysis - Using Tool Diameters', 'Scoring - Minimum Clearance', 'Scoring - Routing', 'Bare Board Test', and 'Capabilities'. The main window displays the 'QED Report' title and a table of 'Drill Tools'.

File	Tool Nr.	Span	Type	Method
Pth	1	1-2	PTH	mechanical
Pth	2	1-2	PTH	mechanical
Pth	3	1-2	PTH	mechanical
Pth	4	1-2	PTH	mechanical
Pth	5	1-2	PTH	mechanical
Pth	6	1-2	PTH	mechanical
Pth	7	1-2	PTH	mechanical
Pth	8	1-2	PTH	mechanical
Pth	9	1-2	PTH	mechanical
Pth	10	1-2	PTH	mechanical

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