

## **Release Highlights for CAM350 Product Version 8.0**

Major Release, June, 2003

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### **Introduction to CAM350 Version 8.0**

Version 8.0 is a major CAM350 release, following the update Version 7.6. CAM350 Version 8.0 delivers significant usability and performance updates for the mainstream CAM marketplace. The updates include a new Graphical User Interface (GUI) with many customizable features, enhanced error verification and identification, negative plane verification updates, and performance improvements.

***New Graphical User Interface*** – Version 8.0 incorporates a robust graphical interface with all the tools you would expect from a modern software tool: Customizable and dockable toolbars, standard and user created icons, enhanced mouse support – these are just a few of the new GUI features. Users can create toolbars made of their most-used commands, and dock them to any part of the screen. Pop up messages no longer are used for feedback, a dedicated area that users can scroll through, save, or not view at all has been created for feedback from the software. A shortcut bar is also provided to allow the user to jump back and forth between the various editors with one mouse click. Zooming is now controlled by the scroll button on the mouse, eliminating the need for the user to learn special commands to pan around the screen. All of these new features have a common theme, ease of use. With ease of use, also comes speed - not just for the existing user, but also in education time for new users.

***Graphical Netlist Comparison*** - As Netlist comparison has become the key verification process in the handoff from Design to Fabrication, Version 8.0 enhances the comparison process to allow the user to view errors graphically. When a difference is detected between the incoming netlist and the existing one, a toolbar is available that will zoom into the error on the screen so that the user can identify the problem. This reduces error verification time tremendously by not requiring the user to wade through multiple pages of text printouts, trying to find the areas in the graphical display.

***Enhanced error verification*** - No longer does the user have to struggle through a long list of errors looking for the valid errors or weed through known errors just to find the one unknown error. CAM350 Release 8 creates a sortable report that is linked to the graphical display. Users can view multiple errors, sort errors by feature type, features size, error size, and many other fields. This allows the user to quickly verify the results of any DRC or Analysis function in CAM350 Release 8.

***Performance enhancements*** - Analysis autofixes, Barco import, Polygon pour, and the Graphical Display all have been revamped and their speed increased tremendously. DFF errors are now quickly identified and automatically repaired without user intervention. Barco import, and Polygon pour, processes that are historically slow in all CAM tools have been improved up to 5 to 10x. Enhancements to commands such as zooming and panning now allow the user to quickly move to a specific area of the board.

***New negative plane analyses*** - Potential connectivity errors such as isolated thermals can now be caught even if the area is not isolated in the design. Most tools can catch an isolated thermal when it is completely cleared from the copper, but how about the case where an isolation may happen in the manufacturer's etching process? Now CAM350 catches this by simulating the etch process, along with using intelligent netlisting, to find isolations that other CAM software misses.

#### **Other Enhancements:**

***Improved Support for IPC-D-365A*** - The standard netlist format for Design Verification and Electrical Test, now fully supported in CAM350 Release 8.

***Panel Editor Macro Capabilities*** - Enhanced support of the panelization process with macros available for all panelization functions. Sample panelization scripts are available for anyone new to scripting in CAM350, and transition documents available to anyone scripting in older version of CAM350 to help preserve previous investment in the tool.

***Report Sorting*** – Sort any report for print output or import into Assembly equipment, and MRP systems.

***Draw To Flash Improvements*** – Draw to Flash has been enhanced to support any angle. Draw to Flash now has soldermask control as well, allowing the user to only change drawn features cleared of soldermask, greatly reducing the chance of error.

***Measure Net to Net*** – Measure the distance between any two nets, highlight two nets and view at the same time. Users can now troubleshoot problems such crosstalk, impedance failures, or actual board failures using the CAM tool they are familiar with, CAM350. An often-requested feature, now available in Release 8.

## ***Customer Reported Software Corrections***

Some of the customer reported issues were addressed in CAM350 8.0 include:

### **IMPORT**

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- 10192,10356,10380,10449,10627 – For certain Fire 9xxx photo plot files with composites or voids, the import results in incorrect data..
- 11595 – For certain Gerber photo plot files with small arcs, the Gerber import results in incorrect data.
- 11339,11668,11627,11578,12314 – For certain Gerber photo plot files with voids, the Gerber import results in incorrect data.
- 11833 – For certain files, import of Mill data with not complete.
- 11841 – Auto import assumes metric units for RS274D Gerber files.
- 11969 – File import will fail for certain Barco DPF format files.
- 12120 – For stepped Gerber photo plot files, polygons may not be panelized.
- 12264 – For certain raster polygons, Barco import results in erroneous outlines.
- 12034,12234 – For certain Gerber photo plot files with complex polygons, the Gerber import results in incorrect data.
- 12467 – For CAM350 050 bundle, the purchased GENCAD export option is not accessible.

### **EXPORT**

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- 10861 – Layers for components in ODB++ will not properly import into Valor VUV Viewer.
- 10820 – For certain polygon definitions, Barco export will use the wrong d-code for the polygon fill..
- 11854 – For sorted drill files, the tool select is repeated unnecessarily.
- 11878 – Layer names that are similar in ODB++ format will not import properly into the Valor VUV viewer.
- 12058 – For certain designs with long custom macro names, creation of unique 32 character custom aperture names fails.
- 10946 – For certain step and repeat patterns with rotated images, exporting drill data files in incorrect data.
- 10737 – For certain design files with polygons on solder mask layers that open access to pads, the pads are not detected as accessible for end point and mid point output for netlist and tester file outputs.

### **UNDO**

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- 11017 – For certain symbol operations, the undo function will cause improper results.

### **ADD**

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- 10863,10873 – For certain designs, Add polygon for polygon pouring fails.
- 11880 – Add polygons is possible for very small polygons of size 0.05 mm.

### **UTILITIES**

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- 10192,10356,10380,10449,10627,10804,10814,10856,10872,10884,10885,11163,11203,11350,11352 – For certain designs, Netlist Extract fails for complex polygons.
- 11005 – For certain raster polygons, the raster to vector polygon results in lost void data.
- 11013 – For certain polygons with arcs, the Gerber to Mill command does not follow the Gerber data path.
- 11025,11335 – For certain designs, traces are dropped on Convert Composite command operation.
- 12001 – Draws to Flash does not handle rotated patterns.
- 11943 – For certain designs, voids are dropped on Composite to Layer command operation.
- 12092,12238 - The Clear Silkscreen command will result in poor repair for certain data configurations.

## ANALYSIS

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11868 – DRC pass information for generic layers is not saved in DRC pass files.

11971,11983 – DRC analysis fails to catch some violations for certain data configurations.

12051 – For certain designs with large copper areas, the area calculation will result in erroneous negative output.

## MACRO

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11843 – The QuickPattern coordinate units are multiplied by one thousand.

11826 – For certain macro files with ODB++ playback, macro playback will fail.

## GRAPHICS

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11970,12017 – At certain high zoom levels, flash information is dropped from the redrawn screen.

## CAP EDITOR

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11942 – For certain data, voids are dropped during the Convert to Polygon operation in the CAP Editor.

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