

A Robust CAM350 with Basic CAM Engineering Features

CAM350-480 was designed for the individual who wishes to address some CAM Engineering deliverables on their own. Packed with robust analysis functionality and features, with just a few additional tools to help you deliver your designs successfully to fabrication and through PCB Post Processing.

Features and Functionality

The base CAM350 comes equipped with the functionality necessary to import, export, optimize, and modify your design files. Then to make the system more robust, we add Design Rule Checking, NC Editor functionality, Fast Array capabilities, ODB++ Import, IPC-2581 Import, the Release Package Navigator, DXF, Crossprobing, Streams Rule Checking, DFF, Macro Debugger, ODB++ Export, IPC-2581 Export and the all new Design Analyzer... Plus, with CAM350-480 you also receive the Panel Editor and the Advanced NC Editor.

CAM350-480

The CAM350-480 configuration allows you to:

- Translate Gerber, NC, and HPGL files with confidence
- Measure and View data in a user friendly environment
- Create optimized Solder Masks, Solder Pastes, and Stencils
- Analyze data for design and output errors
- Edit and generate legacy Gerber data
- Easily work with NC data for creating optimized manufacturing outputs
- Buried and Blind via support for Analysis and manufacturing outputs
- Fast generation of subpanels for assembly
- Import intelligent data using ODB++ or IPC-2581
- Work on the same data seamlessly with Blueprint-PCB
- Read and Write to Blueprint Release packages
- Work concurrently with CAD for intelligent analysis and viewing
- Translate to and from AutoCAD
- Complete checklist based Analysis environment
- Discover manufacturing defects as well as design problems
- Compare original vs. manufactured designs for differences
- Insure the ECOs are reflected in the Gerber data
- Macro debug tools for creating custom automation
- Generate intelligent manufacturing outputs via ODB++ or IPC-2581
- Automate the creation of Fabrication panels
- Manipulate NC Mill and Drill data
- Analyze the contents and complexity of a design to create a design report for fabrication quoting and design qualification

With this configuration, CAM350 supplies you with all the necessary functionality to build successful PCBs in less time, with more accuracy and confidence, all while producing one single comprehensive electronic file viewable by anyone... anywhere... anytime.

Core Features and Functionality

Import, Export, Modify, Optimize

CAM350 offers a wide range of import /export options, including Direct-CAD, ODB++ and IPC-2581, in order to view, query, report and measure the PCB design data. Once imported into CAM350 you have options to optimize the design data using draw-to-custom, draw-to-flash, draw-to-raster polygon conversion, netlist extraction, silkscreen clipping, redundant pad and data removal, and teardropping.

Netlist Compare

Verifying that the CAD Netlist matches the one extracted from the Gerber file is crucial to ensuring that the original design intent is maintained. The Netlist Compare functionality in CAM350 minimizes the risk of translation errors by automatically validating the Gerber files match the original CAD data.

Rule Checking

Design rules must be verified to ensure the original design intent has been met. Just as crucial is defining and setting up manufacturing rules and requirements, prior to packaging the design up for fabrication. Rule Checking will perform spacing checks, annular ring checks, spacing histogram, copper area calculations, layer compare, net checks, and more.

Layer Compare

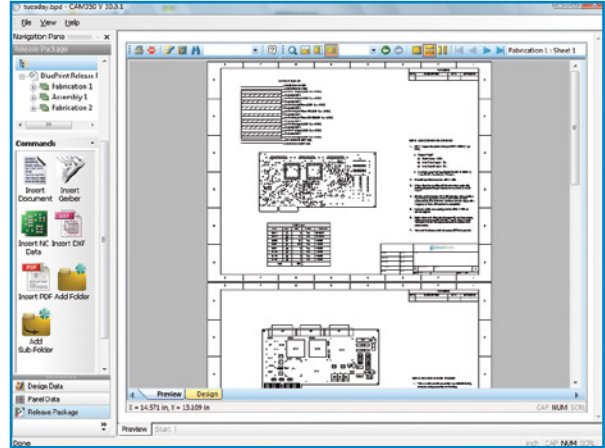
The Layer Compare functionality in CAM350 allows you to graphically compare two layers for differences. You can compare Rev A to Rev B of a particular design, or compare the original artwork to the tooled artwork from the fabricator. This way you can find problems introduced into the design by changes made by the fabricator.

Fast Array

The purpose of this tool is to quickly array a PCB or group of PCBs on a panel to feed fabrication and assembly processes. This is used to define PCB positions on a panel, with minimum setup and definition, to optimize downstream processes.

Basic NC Editor

CAM350 comes with a NC Editor for NC Mill and Drill capabilities. You have the ability to import, export, and create mills and drill. Some editing tools are also included to change drill tool definitions, add basic mill paths to assembly panels and change break tabs. NC Editing capabilities are expanded with the Advanced NC Editor, found in CAM350-480 and 815.

Advanced Features**The Release Package Navigator**

The Release Package Navigator option allows you to work from one single electronic file to store and distribute all the deliverables for manufacturing. For example, this one file can contain your Blueprint documents, Gerber, NC Drill/Mill, Panel Arrays, ODB++, PDF, IPC-2581, DXF, PCB CAD, MS Office and virtually any file located on your computer and/or network.

If you also have Blueprint-PCB, then you can access these files directly from the Release Package within Blueprint as well, and add them to your documentation. The Release Package Navigator also supports the importation of Gerber, and Drill and Mill data from other CAM systems.

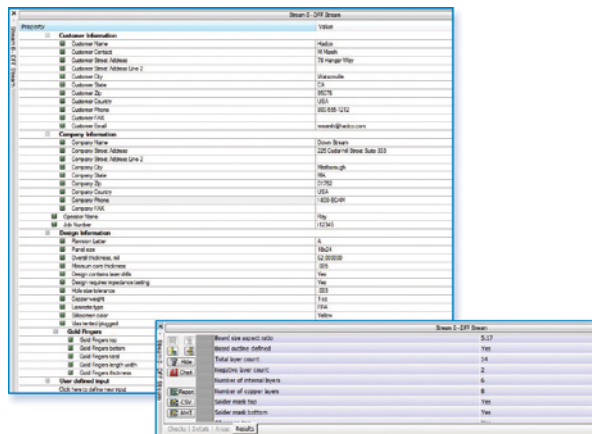
Using the Release Package Navigator you can store, distribute, and view all the necessary data required to fabricate and assemble a PCB anywhere, anytime. Manufacturers simply receive your release package, download the free Blueprint viewer, and extract the necessary information they need to build your boards.

Comprehensive Analysis

Design Analyzer

The reason for analyzing a design goes beyond verifying that it meets certain design rules. You may want to analyze the overall complexity of the design for quoting purposes or for deciding which fabricator is qualified to manufacture it. Many times changing a few rules in the design may allow it to be manufactured more quickly and accurately.

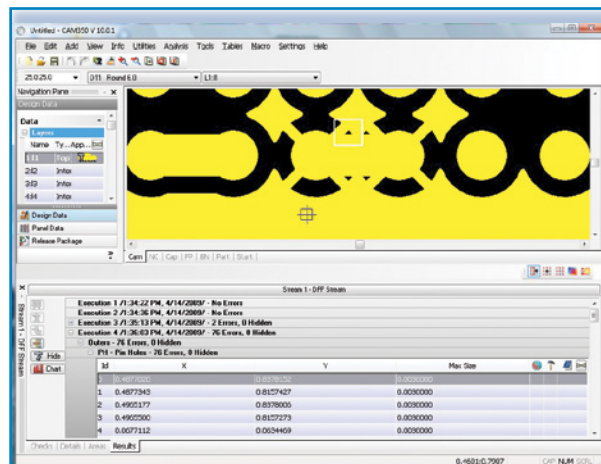
An example would be a design that the clearances on a plane layer were defaulted to "x"/size over the drill size. Board shop "A" may add a premium to boards of this design. Board shop "B" may not even be able to manufacture boards of this technology. You may have used this value as a default, even though the layout allowed them to use a larger value. Redefining your design to the larger value may result in a less expensive board, or a more accurate result from the Fabricator. A Fabricator will use the Design Analyzer for generating quotes on incoming designs. The flexible output choices of the Design Analyzer allow the Fabricator to use the information generated in their existing quoting system.

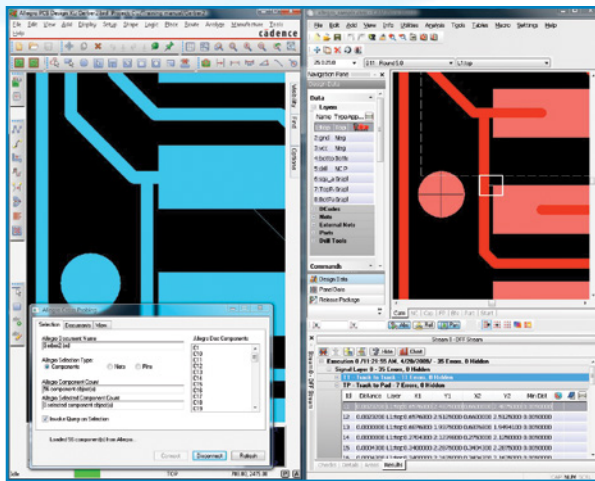


DFM/DFF Analysis

DFM/DFF performs over 80 essential bare-board analysis checks, including fabrication, silk screen, power and ground, signal layers, drill, soldermask, and many more.

Locate, identify and instantly amend all violations before submitting your design for fabrication. DFF automatically checks for acid traps, soldermask slivers, copper slivers, starved thermals, soldermask coverage, and more. Making sure the Soldermask data is generated using proper clearances, ensuring that there are no potential Solder Bridge conditions, and fixing potential Acid Traps will eliminate bottlenecks in the CAM department of any fabrication shop.

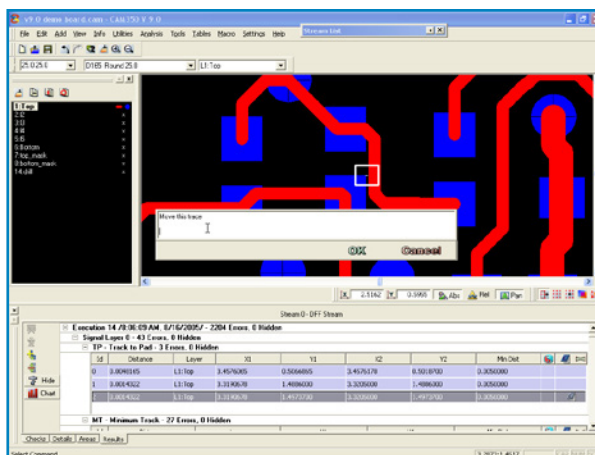




Crossprobing

When using DFF with Crossprobing you are given the ability to ensure your CAD database is kept up to date and accurate as well. CAM350 can locate design errors (with DRC, DFF, and Streams) and quickly pinpoint the exact location of those errors in your CAD software. This feature helps you maintain the original CAD database, ensuring it is always an accurate, current source of information.

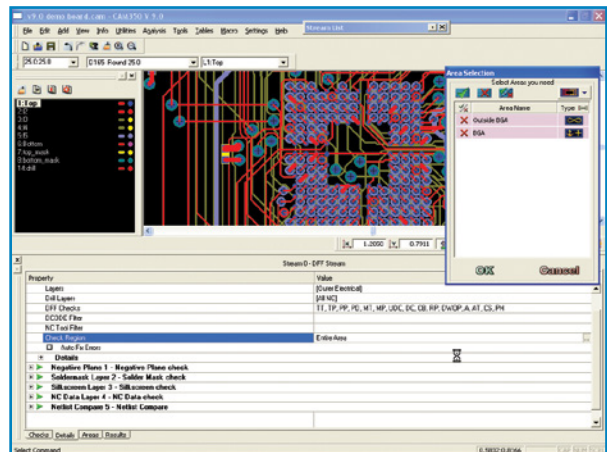
With Crossprobing, CAM350 can also be used to view intelligent data in the CAD software (components, pins, nets) while at the same time, viewing the corresponding locations as Gerber data in CAM350.



Streams Rule Checking

Streams Rule Checking is designed to streamline the setup, execution, and verification of Design Analysis in CAM350. Run Design Rule (DRC), Design for Manufacturing (DFF, DFM) and Netlist Comparison together in one checklist using StreamsRC. Create, save, and recall multiple “Streams” based on design technology, and/or manufacturing capabilities. Run differing analysis on High Technology areas such as BGA or Wire Bond, and run standard analysis on the rest of the design, all from one “Stream”.

You can define as many analysis areas as desired. Errors can be quickly verified by charting the results. You are no longer required to view each individual error. Charting of results allow you to quickly determine what, if any, changes need to be made to the design database.



Basic CAM Engineering Tools

Panel Editor

Automates the panelization process. Allows for creation of panel templates, intelligent coupons, pinning holes, fiducials, and title blocks. Populate panels in either an automatic stepping mode or use a spreadsheet for total control. Venting and thieving are fully automated as well, processing multiple layers in either a positive or negative polarity with user-defined patterns.

Advanced NC Editor

The Advanced NC Editor gives you powerful capabilities to manipulate NC drill and mill data in your designs. You can add drill hits and mill paths, as well as advanced canned NC routines such as Drill Text, Mill Circles, Operator Messages, Pilot Holes and more. Allows checking and optimization of NC data in preparation.

