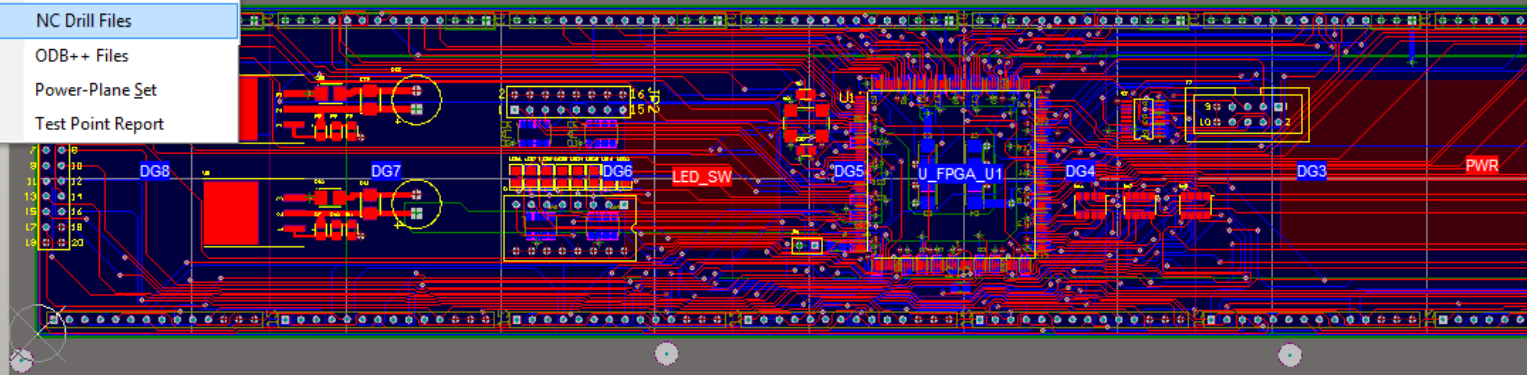
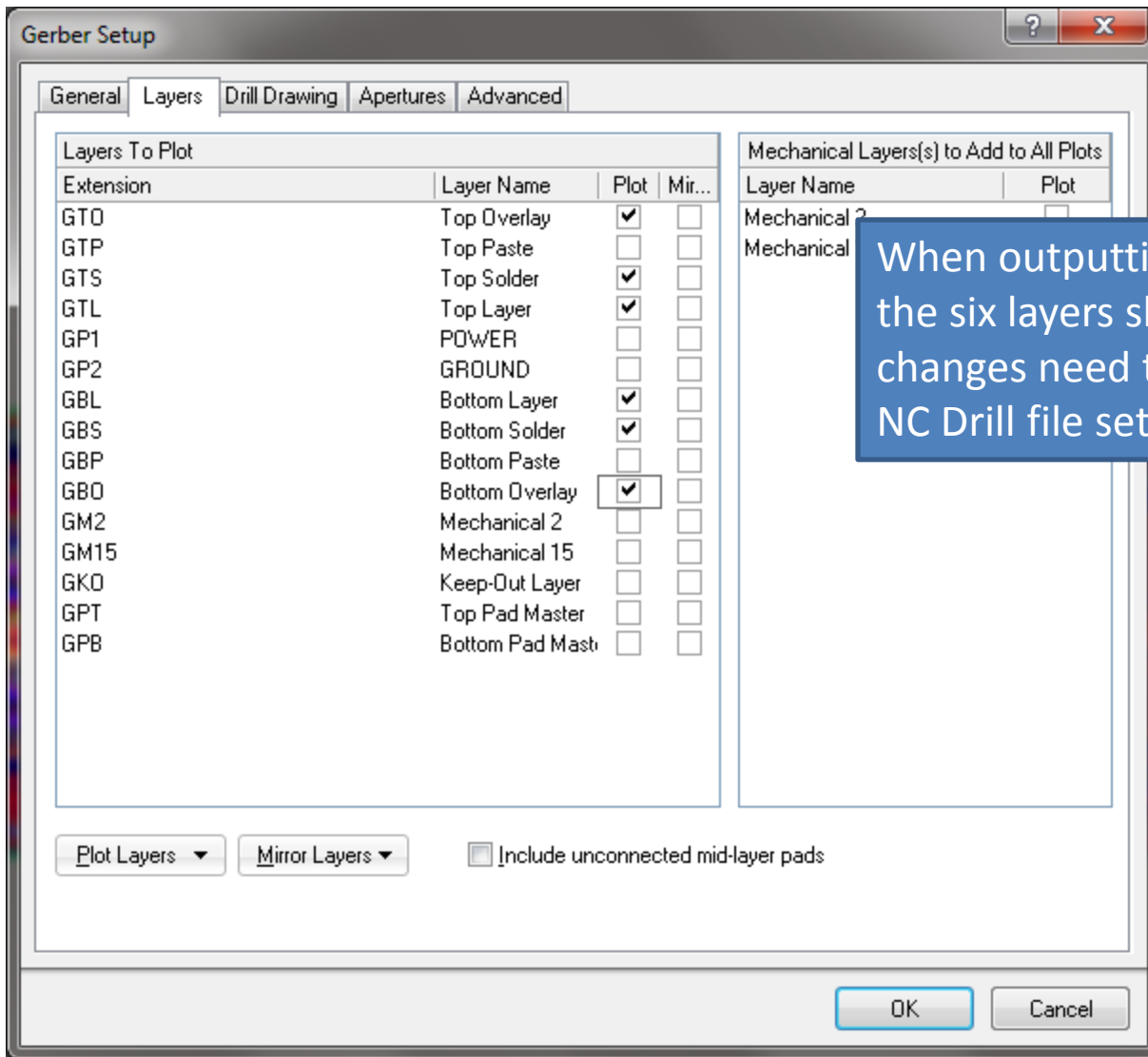


- New
- Open... Ctrl+O
- Import...
- Close Ctrl+F4
- Open Project...
- Open Design Workspace...
- Save Ctrl+S
- Save As...
- Save Copy As...
- Save All
- Save Project As...
- Save Design Workspace As...
- Fabrication Outputs**
- Assembly Outputs
- Page Setup...
- Print Preview...
- Print... Ctrl+P
- Default Prints...
- Smart PDF...
- Import Wizard
- Recent Documents
- Recent Projects
- Recent Design Workspaces
- Exit Alt+F4

- Composite Drill Guide
- Drill Drawings
- Final
- Gerber Files
- Mask Set
- NC Drill Files
- ODB++ Files
- Power-Plane Set
- Test Point Report

When your Layout is completed output both gerber files and NC Drill files





When outputting Gerber files, make sure the six layers shown here are selected. No changes need to be made to the default NC Drill file settings

Both the gerber and NC drill file outputs will generate a CAMtastic file in Altium. These are not used and do not need to be saved.

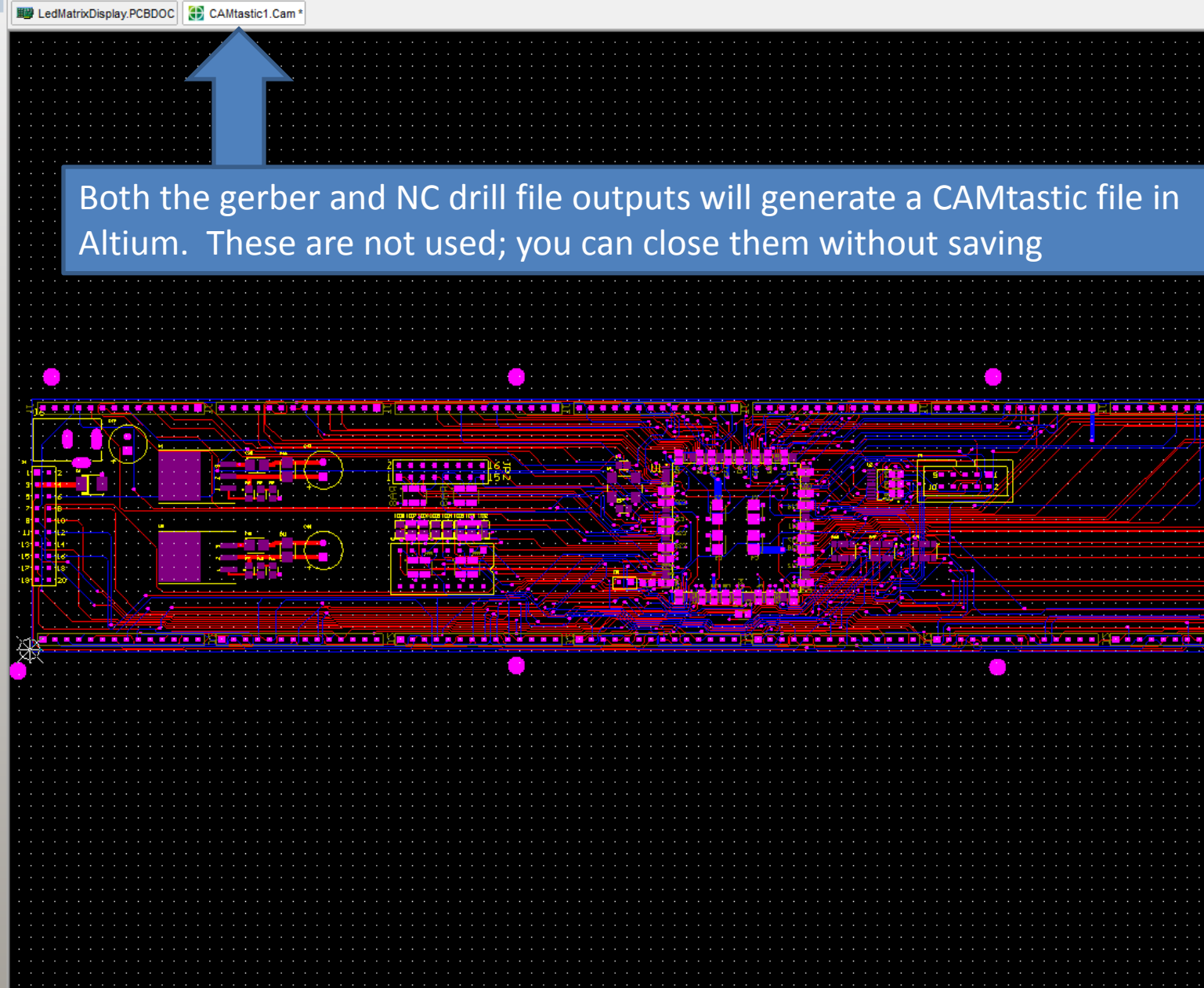
Projects

Workspace1.DsnWrk Workspace

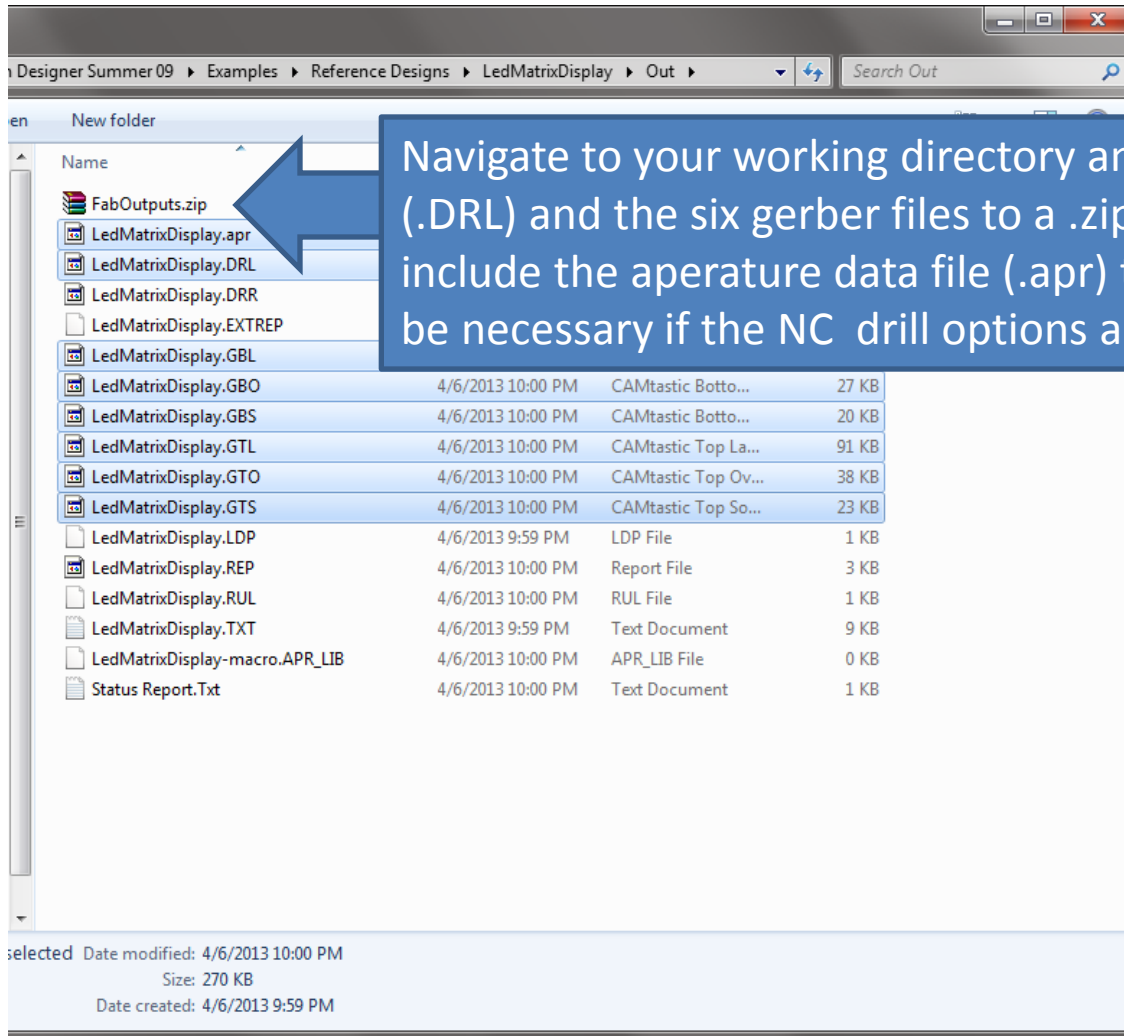
Project

File View Structure Editor

- LedMatrixDisplay.PrjPCB \*
  - Source Documents
    - LedMatrixDisplay.SCHDOC
      - Eight\_5x7.SCHDOC
        - DigitHolder.SCHDOC
        - Power.SchDoc
      - FPGA\_U1\_Manual.SchDoc
        - FPGA\_U1\_Auto.SchDoc
        - LED\_DIPSWITCH.SchDoc
      - LedMatrixDisplay.PCBDOC
      - CAMtastic1.Cam \***
    - Libraries
    - Generated
    - LedMatrix.PrjFpg



Both the gerber and NC drill file outputs will generate a CAMtastic file in Altium. These are not used; you can close them without saving



Navigate to your working directory and add the NC drill file (.DRL) and the six gerber files to a .zip archive. You may also include the aperture data file (.apr) though this should not be necessary if the NC drill options aren't changed.



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With Facilities Located in  
Aurora, CO, Tempe, AZ,  
& Maple Grove, MN



## FreeDFM

**If you haven't already, we invite you to use our exclusive FreeDFM file check service which sends you a FREE REPORT of your files within minutes...and WE'LL EVEN PAY YOU TO USE IT! Get up to \$100 OFF when you place your order using a FreeDFM quote.**

[What FreeDFM Checks](#)

FreeDFM worked great!  
-Stanley Mann,  
Mann Electronic Solutions

[Click here](#) to view Company Brochure, and FreeDFM benefits.

[Naming Conventions](#)

Display a table of software package extensions and naming conventions.

### Upload PCB Design Files Now - And Get Your Free DFM Report!

Your Email

Confirm Email

FabOutputs.zip

(for your results) (Zipped, Up to 28-Layers (2/4-X). person at 1-800-979-4722

Go to <http://www.freedfm.com> and upload the .zip file with the fabrication outputs and NC drill files. Enter your e-mail address in the appropriate boxes.

### Why Use FreeDFM?

- Get Free PCB design file check for manufacturability. We check to make sure we have the files and data necessary to build your job
- Results mailed to you in minutes
- You get a graphical report, delivered in minutes, showing any potential issues with detail as to their nature and location
- Reduces possibility of CAM Hold issues after order placement
- Enables **48%** faster total thru-put from order placement to shipment
- Also provides a price quote with your choice of turntimes

**View sample FreeDFM report below.**



## FreeDFM Quote Specifications

### File Identification And General Information

It is very important that you identify your files accurately. The primary reason for delayed or undelivered results would be that our automated systems can not readily identify the contents of your zip file or that a key piece of fabrication or design information is missing.

[Click Here](#) to see a table of **package extensions and naming conventions**.

### Design File Information

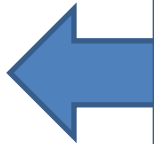
**\* Please take a few moments to help us identify your files.**

#### File Name:

LedMatrixDisplay.apr  
LedMatrixDisplay.DRL  
LedMatrixDisplay.GBL  
LedMatrixDisplay.GBO  
LedMatrixDisplay.GBS  
LedMatrixDisplay.GTL  
LedMatrixDisplay.GTO  
LedMatrixDisplay.GTS

#### File Content:

Drawing/Other	▼
NC Drill	▼
Bottom Copper	▼
Bottom Silkscreen	▼
Bottom Soldermask	▼
Top Copper	▼
Top Silkscreen	▼
Top Soldermask	▼



Make sure all files are identified correctly. In most cases, all files except the NC drill file are identified automatically. You may need to select the appropriate designation for each file from the pulldown menus – the correct designations are shown here

*In an effort to streamline the submission process for our FreeDFM service we have attempted to pre-identify the uploaded files using their file names. This is based on the standard naming conventions of most EDA software packages and may not always be correct. In addition to identifying any files that display "Select File Type" please confirm the proper identification of those files already identified by our system. Having all files correctly identified is critical to the proper processing thru FreeDFM and production; this will insure that you receive accurate FreeDFM results and that your board order will be fabricated correctly. As we are always striving for continuous improvement we would appreciate your feedback regarding files that were incorrectly identified or not identified (freedfm@4pcb.com).*

**Please enter your contact information below:**

Company Name:	Utah State University	Phone:	1234567890
First Name:	Your	Last Name:	Name
Email 1:	youremailhere@usu.edu		

Please enter your quote specs and attributes below:

Part #	Test1	Revision #	2	Layer Count	2
X Dimension	Xdim	Y Dimension	Ydim	Array	<input type="checkbox"/>
Array X Dim		Array Y Dim		Array Up	
Tab-Rout?	<input type="checkbox"/>	Scoring?	<input type="checkbox"/>		

Material Type	FR4
Finish Thickness	0.062"
Soldermask Sides	Both Sides
Silkscreen Sides	Both Sides
Certifications & Qualifications:	IPC Class 2
Vias:	Blind/Buried Vias? None
Microvias?	None
Additional Attributes:	<input type="checkbox"/> Controlled Dielectric? <input type="checkbox"/> Controlled Impedance? <input type="checkbox"/> Plated Slots? <input type="checkbox"/> Plated Edges? (Pricing) <input type="checkbox"/> Counterbores? # Plated <input type="checkbox"/> Countersinks? # Plated # Non-Plated <input type="checkbox"/> Castellated Holes? Min. Castellated Hole Size

Fill out the information for your board at the bottom of the page. The fields in the blue dashed boxes here are the only ones that need to be edited.

- Enter your personal contact info in the top.
- Part# and Revision# can be whatever you like
- Layer Count should be 2
- Enter the X and Y dimensions of the PCB (in inches)
- Soldermask and Silkscreen should be "Both Sides"
- Select "No" for ITAR

Afterwards, click submit and wait for the results to be e-mailed to the address you specified

Quantities:	5	10	50	150	ITAR	<input type="radio"/> Yes	<input checked="" type="radio"/> No
-------------	---	----	----	-----	------	---------------------------	-------------------------------------

This page confirms your submission. Results take approximately 30 minutes, but may take longer if issues are encountered that the system cannot solve automatically

[Contact Us](#)

[AC Terms and Conditions](#)

Thanks for uploading your files to FreeDFM.com  
pcb file results to be emailed to you from

If you do not get an email from us with your FreeDFM results, please feel free to email us at [freedfm@4pcb.com](mailto:freedfm@4pcb.com) or call us at **1-800-979-4722 ext. 1666**. We are here to take your call Monday-Friday 7:00 AM - 7:00 PM MT. You may upload your files to FreeDFM.com 24 Hours a Day, 7 Days a Week.

### FreeDFM Quote Info:

Your FreeDFM Quote # is: **3508975**  
Your FreeDFM Part # is: **Test1**

Upload Date and Time: **4/6/2013 10:13:33 PM**

**Note:** Please retain the above information for your records and tracking purposes.

### FreeDFM Board Specifications:

Material Type:	FR4	Layer Count:	2
Finish Plating:	Lead Free Solder	Material Thickness:	0.062"
X Dimension:	1"	Y Dimension:	2"
Outer Copper Wt:	1 oz	Inner Copper Wt:	None
Castellated Holes:	No	Min. Castellated Hole Size:	0
Solder Mask Sides:	Both Sides	Solder Mask Color:	Green
Silkscreen Sides:	Both Sides	Silkscreen Color:	White
Tab Route:	No	Scoring:	No
Plated Slots:	No	Plated Edges:	No
Controlled Impedance:	No	Controlled Dielectric:	No
Gold Fingers:	None	ITAR:	No
CounterSink:	No	CounterBore:	No
# Plated CounterSinks:	0	# Plated CounterBores:	0
# Non-Plated CounterSinks:	0	# Non-Plated CounterBores:	0
Certification:	IPC Class 2	AS9100:	No
Via-In-Pad:	None	Blind/Buried Vias:	None
Microvias:	None	Soldermask Plugged Vias:	No



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DFM50

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Click to view PLOTS for design Assemblyzip: <https://www.freedfm.com/freedfm/0019771103507424/results/plots.htm>

Click to view DFM results for design Assemblyzip: <https://www.freedfm.com/freedfm/0019771103507424/results/summary2.htm>

Click here for a callback from our CAM department: <https://www.freedfm.com/callback.htm>

We need your feedback to improve. Click here for a quick survey:  
<https://www.freedfm.com/feedback.htm>

Interactive html page for design Assemblyzip: <https://www.freedfm.com/freedfm/0019771103507424/FreeDFM-v2.0/freeDFM.html>

Multilayer pdf output results for design Assemblyzip: <https://www.freedfm.com/freedfm/0019771103507424/FreeDFM-v2.0/freeDFM.pdf>

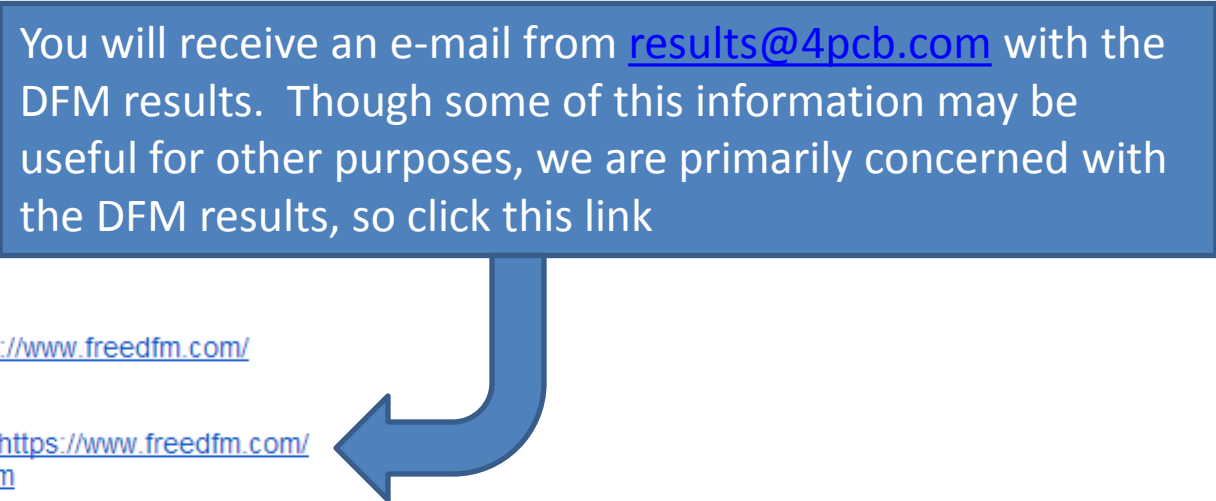
Advanced Circuits FreeDFM

[1-800-979-4722](tel:1-800-979-4722) Ext 1666

Mon - Fri 7am to 7pm MT

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You will receive an e-mail from [results@4pcb.com](mailto:results@4pcb.com) with the DFM results. Though some of this information may be useful for other purposes, we are primarily concerned with the DFM results, so click this link



To be manufactured, your board *must* have no “Show Stoppers”. If these errors are present, you can click on the links to view examples of where they found the violations – you will need to correct these, then resubmit your updated files.



## What FreeDFM found on your design

### Show Stoppers

We Found None!

### Problems Automatically Fixed

[Insufficient Soldermask Clearance \(680 violations\)](#)

[1](#) [2](#) [3](#) [4](#) [5](#)

[Insufficient SMT Soldermask Clearance \(336 violations\)](#)

[1](#) [2](#) [3](#) [4](#) [5](#)

Automatically fixed problems won't keep your board from being manufactured, but you may want to modify them in any case.