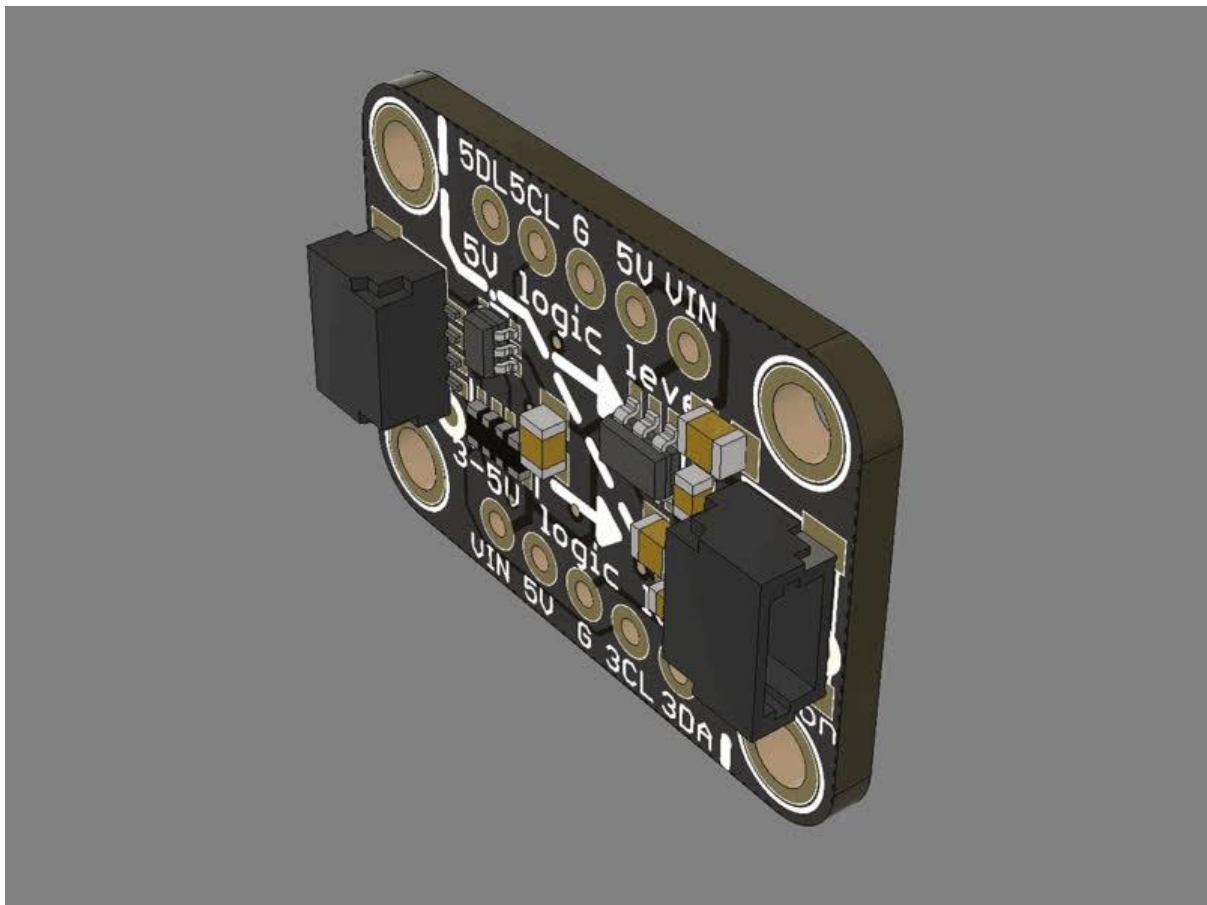




How to convert Eagle PCBs to 3D Models in Fusion 360

Created by Ruiz Brothers



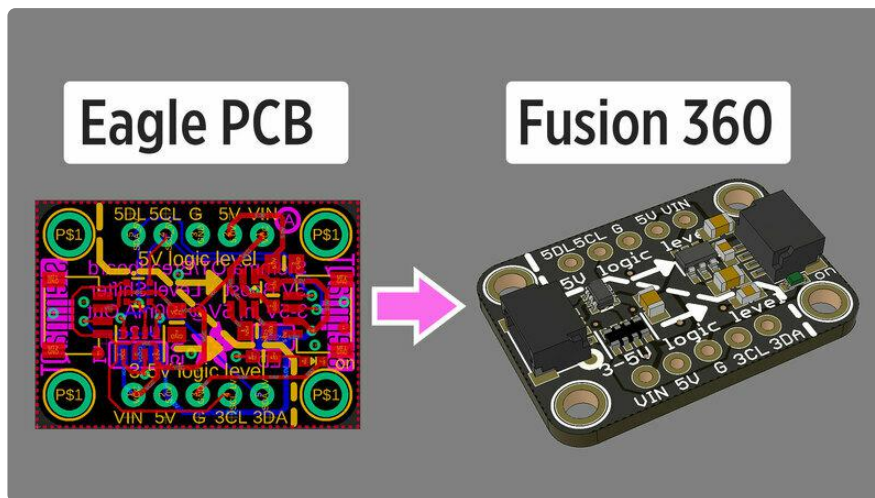
<https://learn.adafruit.com/how-to-convert-eagle-pcbs-to-3d-models-in-fusion-360>

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Overview



Learn how to generate 3D models of Autodesk Eagle PCBs into 3D models with Autodesk Fusion 360.

Create an Account with Autodesk

You will need to register with Autodesk to create an account. It's free to create account with a valid email address.

[Create Account with Autodesk](#)

Download Autodesk Software

Use the links below to download Autodesk Eagle 9.3.0 and Autodesk Fusion 360.

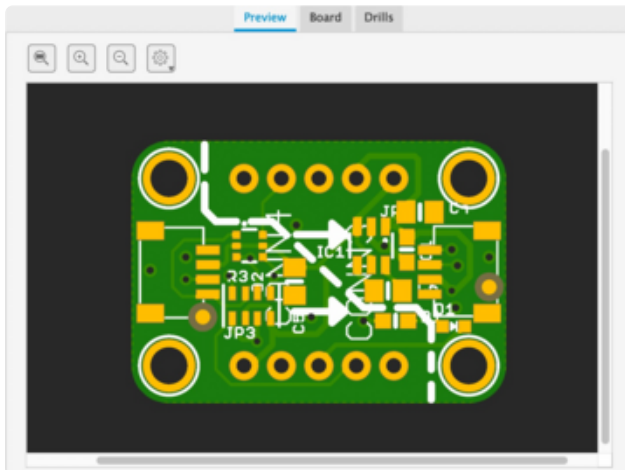
[Download Autodesk Eagle 9.3.0](#)

[Download Fusion 360 for Personal Use](#)

Preparing Eagle PCBs

Open PCB File in Eagle

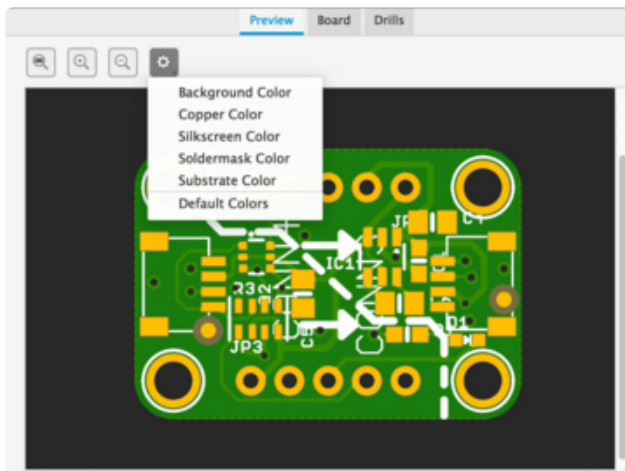
Start by opening your desired PCB file in Autodesk Eagle 9.3. Open the .brd file to go into the board editor.



PCB Preview

In Eagle, click on the Manufacturing tab on the right of the board editor interface to preview the PCB.

Use the dropdown menu on the bottom left of the PCB Preview pop up window to toggle between the top and bottom of the PCB.



Customize PCB

Click on the gear icon in the top left of the PCB Preview pop up window to show a menu for customizing the PCB.

In the list you can set colors for the PCB's background, copper, silkscreen, solder mask, and substrate.



Top & Bottom Labels

Click on the Layer Settings icon in the toolbar on the left to open the Visible Layers panel.

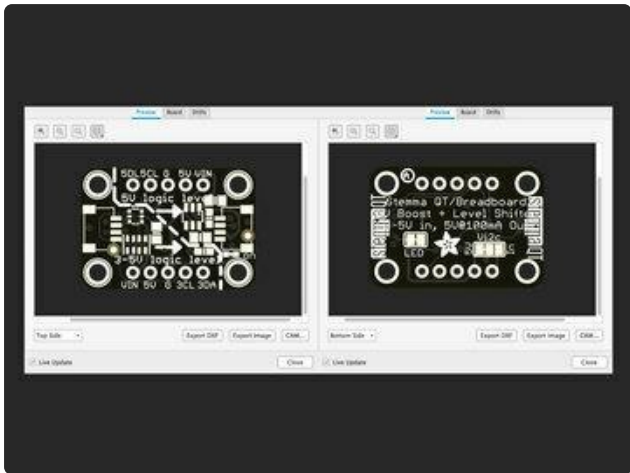
Layers 25-28 contain values that will appear on the top and bottom of the PCB. If you'd like to remove them, you can use the delete tool to delete the labels from the top and bottom of the PCB.



tPlace & bPlace Layers

In the Visible Layers panel, show layers 21 (Top) and 22 (Bottom).

Elements on these layers are commonly displayed on the top and bottom silkscreen of the PCB.



Customized PCB

Once you've customized the elements and colors, click on the Manufacturing tab to see the updated PCB Preview.

Take a moment to inspect the top and bottom of the PCB and make adjustments as you see fit.

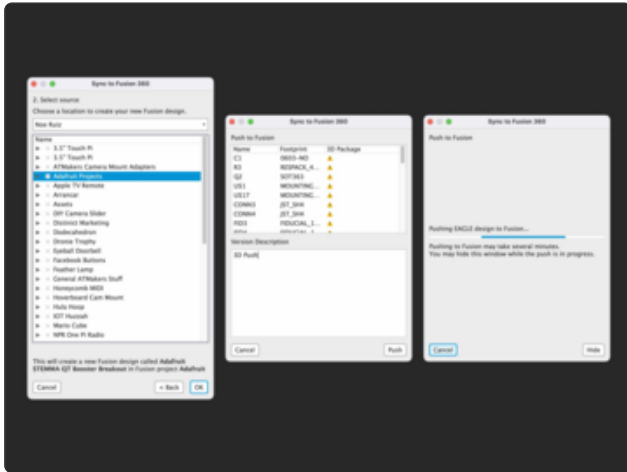
Convert Eagle PCB to F360



Sync To Fusion 360

Click on the Fusion 360 tab on the right side of the board editor interface.

Select the Create new Fusion 360 design option.

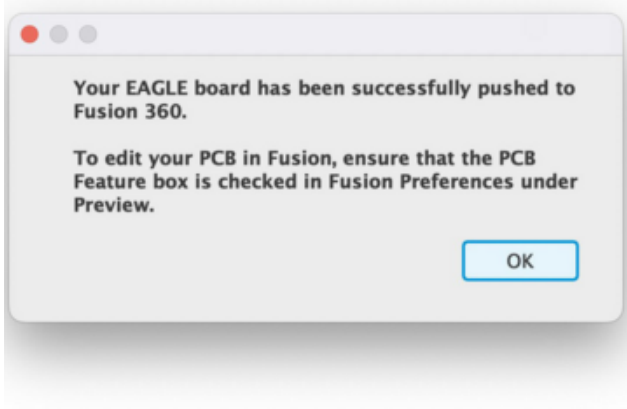


Save PCB

Select a location from your Fusion 360 account to save your PCB, then click OK.

In the next step, enter a description if you'd like. Then click the Push button.

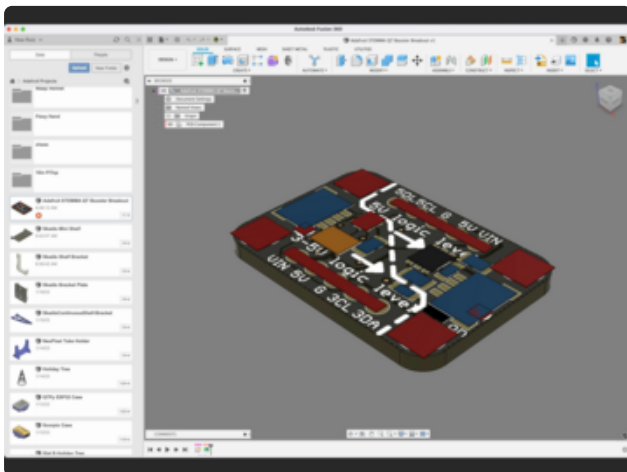
The last step shows a status bar. Pushing the PCB to Fusion 360 may take a few minutes. You have the option to hide the window while waiting.



Successful Fusion 360 Sync

A dialog box will appear once the push has been successfully completed. Click OK to close the dialog box.

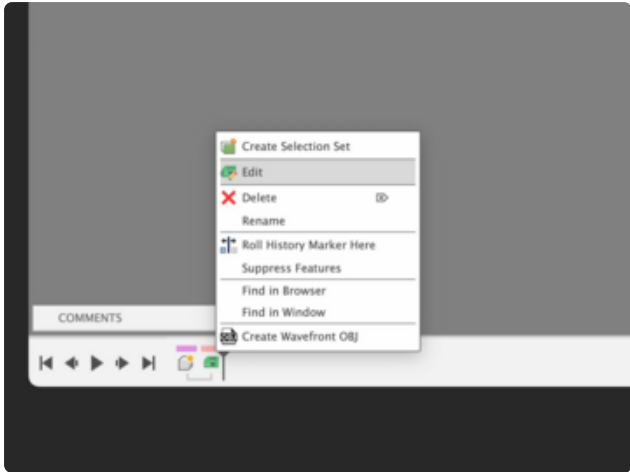
F360 Design



Open PCB in Fusion 360

In Fusion 360, locate your converted PCB in the data panel on the left side of the interface.

Double click on the PCB to open the design.



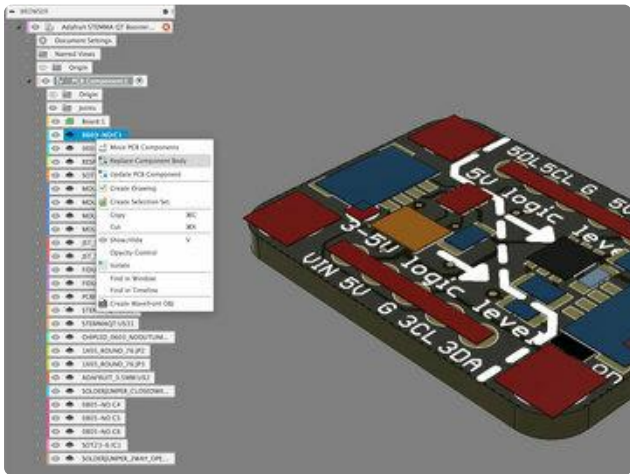
Edit PCB

The PCB will need to be edited in order to populate the board with components.

In the bottom of the interface, right-click on the PCB icon and select Edit.

Add Components to PCB

In the Browser panel, click on the dropdown icon next to the PCB Component folder.



The PCB component folder contains all of the objects in the PCB from Eagle. This includes library objects and components such as capacitors, resistors and connectors.

Choose a desired component you'd like to add and right-click on it. Select Replace Component Body from the contextual menu.



Find Components

There several websites to download free 3D models of components. The 3D models will need to be in the STEP file format.

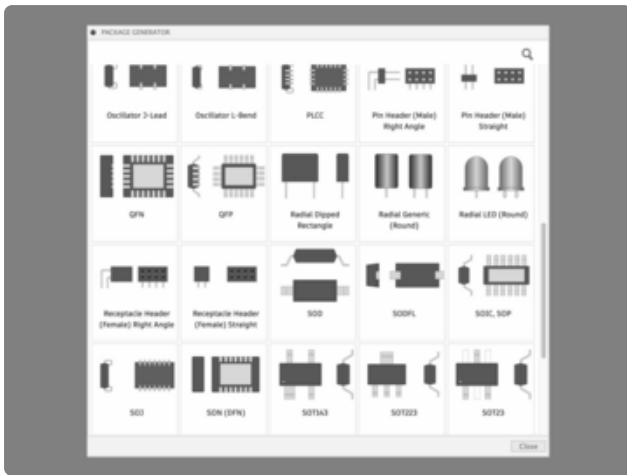
Here are a few places to get 3D models of components

[GrabCAD \(\)](#)

[Digikey \(\)](#)

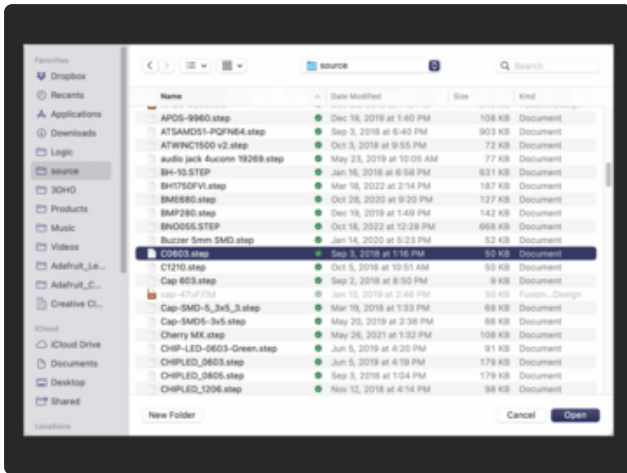
[Library IO \(\)](#)

[SnapEDA \(\)](#)



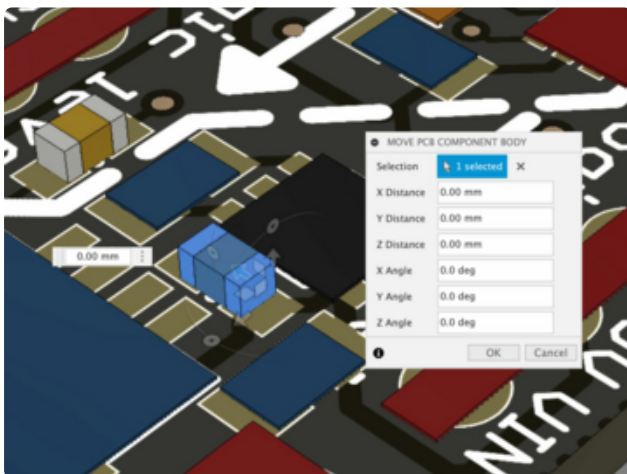
Fusion 360 Component Generator

Optionally generate 3D models of components using Fusion 360 Package Generator. The video tutorial will walk you through create custom header pins for a PCB.



Select Components

Locate the component you would like to add to the PCB. Click the Open button to select the component.

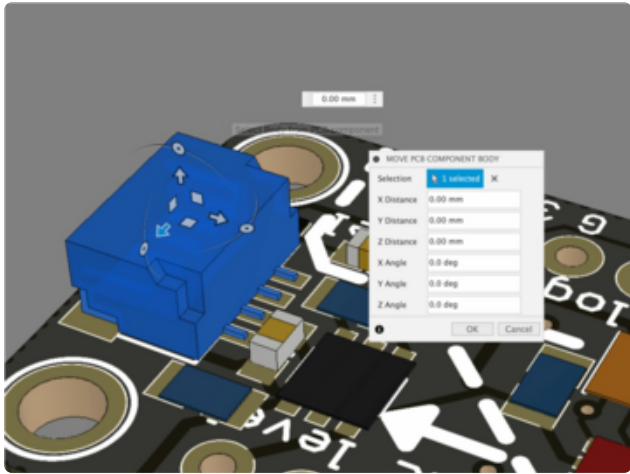


Move Component

Use the manipulator handles to move and orient the component in it's desired location.

Optionally enter values into the Move PCB Component Body dialog.

Depending on the component, you may need to flip the part to be in the correct orientation.

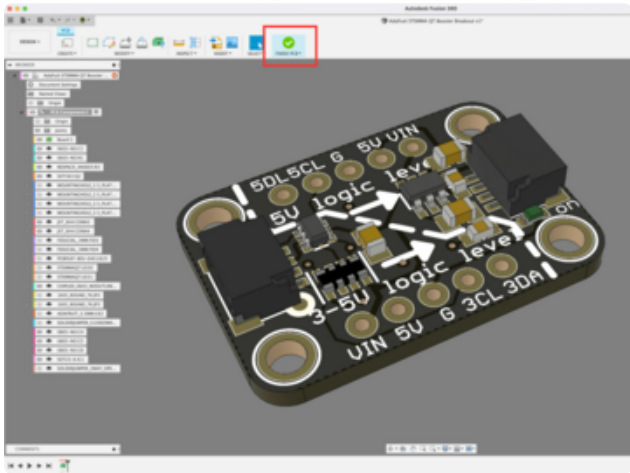


Adding Components

Use the orbit tool to move around the component to inspect its location. The goal is to place the component as close to the footprint as possible.



Click OK to append the component to the PCB. Proceed to add components using the Replace Component Body feature.



Finished PCB

Click on the Finish PCB button at the top of the tool bar menu when you are satisfied with your PCB and ready to exit the Edit PCB workspace.