

# Solving a Supply Chain Crisis

Use Case: Circuit Board Bracket

## Challenge

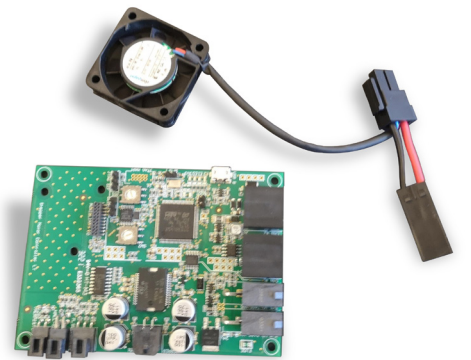
When the H350™ 3D printers were first being produced, supply chain setbacks were a pressing issue for manufacturers worldwide. This directly affected the H350 since a PCB Stepper Controller Board was originally ordered from a supply chain vendor. Unfortunately, this specific board was discontinued due to delays brought on by COVID-19. The H350 Production Team needed to strategize internally and decided to utilize a new electronics board which could be sourced easily. The only caveat was that this new board required air cooling. In order to implement the cooling function, a fan must be mounted on the board.

## Solution

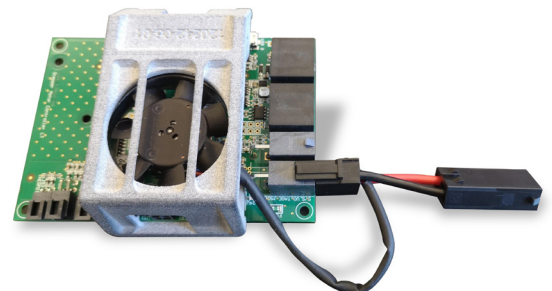
To properly secure the fan to the electronics board, the H350 Production Team turned to a machine they already knew extremely well: the H350 3D printer. They designed and printed a circuit board bracket which could easily secure the fan to the electronics board. The board could then be safely mounted within the H350 printer. This bracket occupies a minimum amount of space and doesn't require any screws or tools. To achieve a proper fit, the bracket was stiffened, and tolerances were tightened so it could be accurately clamped on the board.

## Impact

As shown here, 132 brackets can be nested within the same build which leads to a high yield of end-use parts as well as greater cost-efficiencies, totaling only \$4.15 USD per part. Based on the H350's ability to produce consistent and accurate parts on-demand in every build, the circuit board bracket solved a crucial element of the printer's production. Additionally, this bracket occupies a minimum amount of space and doesn't require any screws or tools, simplifying product assembly. Based on these advantages, the circuit board bracket is implemented into every H350 3D printer.



The electronics board and fan.



The circuit board bracket attaches the fan to the electronics board.

