

## High Volume Thru-hole Conversion

[Dinosaur Electronics](#) is a manufacturer of aftermarket refrigeration and heating control boards for the RV industry. They offer OEM replacement circuit boards that exceed the quality and features of the original manufacturer. Dinosaur sells their products through over 1600 RV dealers and service centers in the US and Canada.

The goal of this project was to convert a high volume thru-hole circuit board to surface mount components. This conversion would facilitate more efficient assembly and allow for a smaller final product. The customer had already taken a significant number of orders for these boards, so the challenge was to complete the redesign and a production run in time to fulfill these orders.

The first step was to produce a schematic of the existing board. From this, a new layout was created incorporating surface mount components. All components were chosen based upon cost-effectiveness, availability and programming flexibility. An Atmel AVR microcontroller was chosen that had more memory and less cost than the old IC. A prototype run of 20 units were constructed within 2 weeks of final customer schematic approval. After approving the prototypes, the customer's new PCB was complete and ready for volume fabrication.

The result was a new circuit board that was significantly smaller, and offered the flexibility to re-program additional functionality later without a costly redesign. As the thru-hole parts had been replaced with surface mount components, the redesigned boards could be assembled at Laritech using high speed automated placement machines to fulfill the existing orders. Additionally, production time and labor costs for future production runs decreased significantly.

The customer was very pleased with the level of service they received at Laritech during this project, and have returned with the next in a long list of projects we will be doing together.

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