Moving PCB Assembly to America from Offshore

Overcoming the sales hurdle of the low cost of offshore manufacturing starts with understanding how EDM has previously helped customers move manufacturing to the United States. For example, we assisted a consumer product manufacturer with a transition from manufacturing offshore by implementing several unique ideas to cut labor and material costs. First, the team at EDM listened to the customer's pain points, including both vendor responsiveness and circuit board quality. Then, EDM uncovered two solutions that not only created a solid vendor-customer relationship, but also, kept the project price-competitive.

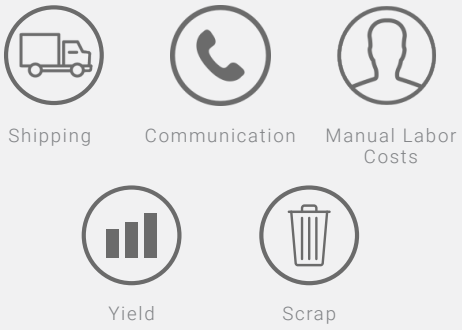
THE SITUATION

As a printed circuit board (PCB) contract manufacturer with a dedicated engineering staff, EDM was uniquely positioned to support the overall quality of this product. Originally, all of the circuit boards for this product were manufactured offshore and shipped overseas. Initially, this seemed like the most cost-effective option. However, with time, it became apparent that manufacturing this product offshore may not be the best fit.

"Our engineering involvement was critical in making this happen, and we actually beat China's price on the first assembly quoted."

Dave McAden
Chief Technical Officer at EDM

CONSIDERATIONS



ASSUMPTION

Offshore Superior at:

EDM Superior at:

REALITY

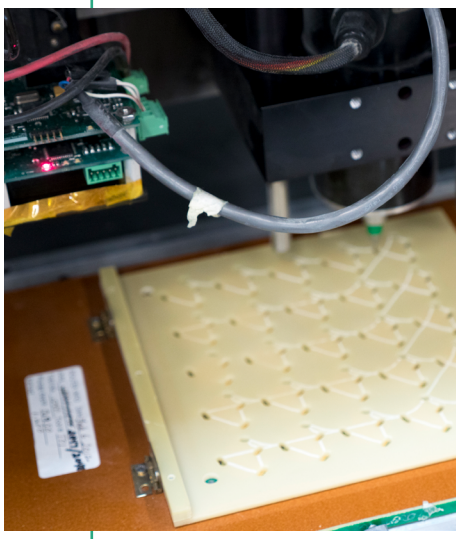
EDM SUPERIOR AT ALL

THE PAIN POINT

One issue with working overseas was the communication barrier with the different time zones. At times, the customer would want to make a firmware change to adjust their product. Any time requirements changed, the offshore manufacturer struggled to accomodate their needs. Also, offshore manufacturing limits the buyer's order flexibility because of the overseas shipping cost and timeline. To summarize, the lag in communicating with the offshore manufacturer lowered this flexibility. With a desire to better serve the customer's need for a responsive manufacturing partner, EDM tackled the question of labor and material cost through two unique solutions.

INNOVATION #1

Create a test head to do automated programming & functional testing inside a router machine

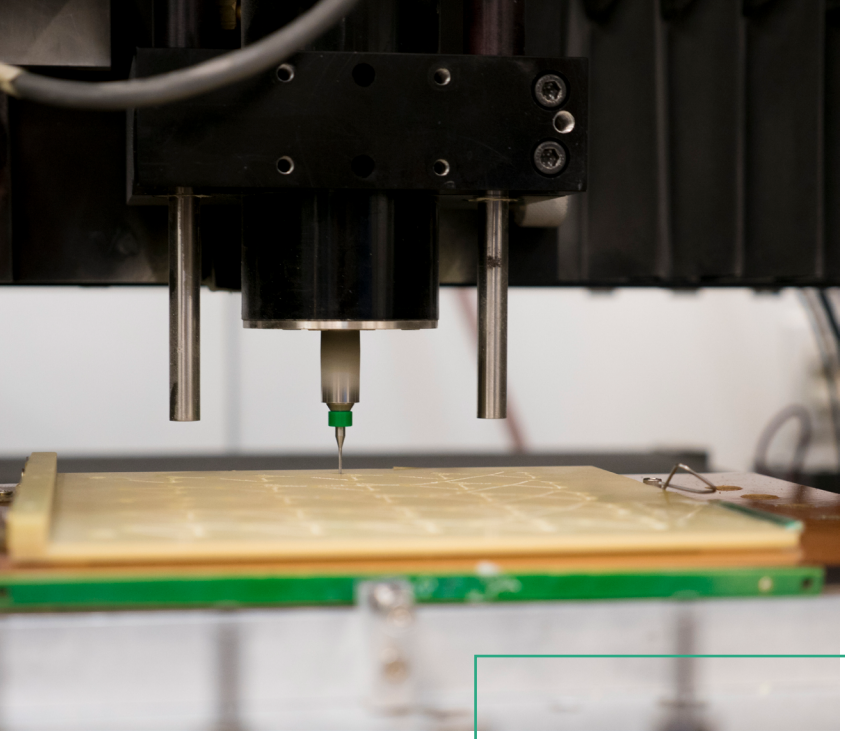


The engineering team at EDM invented an adaptation for their router machine that lowered manual labor costs in several ways. First, they reworked the router machine to not only cut out the boards but also to perform the automated programing and complete functional testing. All this occurs while an array is loaded, instead of moving it to a different cell. This allowed EDM to efficiently program, test, and cut 25 boards at a time. Second, the router machine was programed to only route the boards off the array that passed the test. If a board fails, those tabs are not cut off. So, an operator does not have to watch the machine while it is running, again saving on labor costs. This makes it easy to control the quality of the boards and ensure that only the boards that pass the complete functional testing make it through.

INNOVATION #2

Design custom anti-static trays to eliminate costs associated with bagging

Additionally, the engineering team at EDM noticed that material costs could be lowered by placing these circuit boards into an anti-static tray, instead of an anti-static bag. This becomes significant because the volume on these orders are high, around 100,000 per year. Not only did the trays efficiently hold the boards, they also were stackable. This added to the overall convenience for the customer upon receipt of an order. So, saving on the cost of the bags and the cost of labor for bagging the boards became significant.



CONCLUSION

Overall, the customer benefited from partnering with EDM as a vendor for their circuit boards. Both the customer and EDM brought their experience with programming and testing to create a cost-effective test head. Also, the engineering team at EDM looked for ways to cut labor throughout the process, including during packing for shipment. With time, one project has grown into a larger relationship with EDM supplying boards for many different products.

EDM
ELECTRONIC DESIGN & MANUFACTURING