

CASE STUDY

Record delivery of printed circuit board assemblies

On behalf of a leading cloud infrastructure provider, our team in Penang, Malaysia builds printed circuit board assemblies (PCBA) that enable cloud computing. These assemblies serve as a gateway to the cloud for servers and other computing devices. One in eight online interactions routes through a PCBA we built!

The Challenges

We experienced significant COVID-19 resource and manufacturing challenges over a sustained period.

At the pandemic's outset our customer saw a demand surge for these assemblies – on top of an already strong demand. Online traffic spiked as people worked, shopped, socialized and streamed entertainment from their connected devices.

During this period, China went into lockdown and raw materials became scarce. Our Penang production site receives many of the customer's raw parts from China. We had to carefully manage the material shortages to ensure demand could be met.

At the same time, the Malaysian government ordered a "partial lockdown" to curb the spread of COVID-19.

In July 2020, demand spiked again. our customer had a critical need to manufacture and deliver 50% more product than they had previously forecast within four weeks. To meet this demand, we needed to scale to unprecedented levels.

The Solution

March - June, 2020

Three days after the mandated lockdown, our Penang team secured government approval to gradually restart production of these goods - they were recognized as essential, and we successfully demonstrated our plan to keep our employees safe. Initially, operations resumed at 15% of capacity; by May, we had permission to increase capacity to 50%. A month later, we were able to return to 100% capacity - all while maintaining a safe environment for our employees.

As production resumed, we changed our manufacturing approach. Instead of relying on the existing "one-piece flow" operations, which was optimal pre-COVID-19, we reconfigured our manufacturing process. We dispersed the product families as "islands" which provided the space required to keep our teams safely distanced.

The “island” concept created seamless product flow, generating a 25% efficiency improvement. This improvement coincided with the easing of the raw material shortages and our frontline teams quickly made up lost time and fulfilled the demand surge.

July - September, 2020

To ensure we delivered on the customer’s unprecedented volume requirements, our Penang team tapped our staff in Zhuhai, China to qualify a second factory location and augment current production capacities.

The Penang team jumped into action, coaching our Zhuhai peers to a successful on-ramp. This involved a “virtual qualification” where we utilized video conferencing to demonstrate our achievement of every quality indicator to the customer. Consequently, the customer did not need to conduct an in-person audit, saving valuable time and compressing the factory qualification process.

Although the Zhuhai team had experience in manufacturing complex assemblies, our Penang team accelerated their learning curve by providing:

- Thorough training and knowledge transfers
- Deep support for product qualification
- Constant progress reviews over multiple shifts; this oversight enabled the Zhuhai team to produce near perfect builds.

Success Factors:

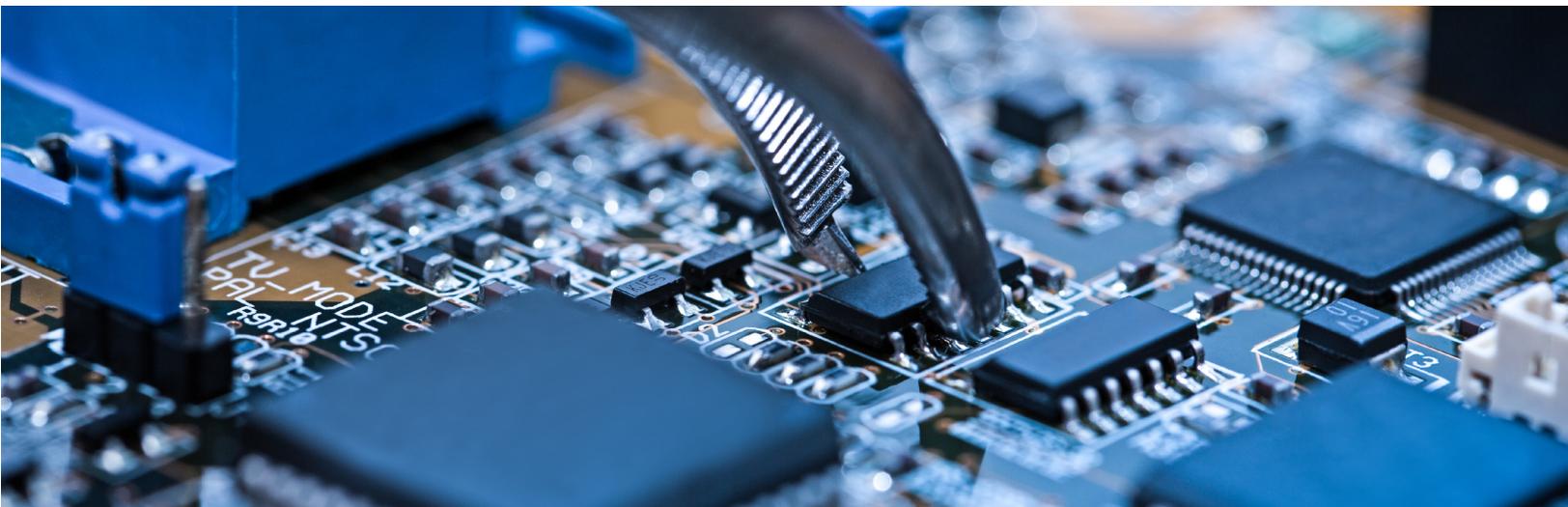
- The Penang team assisted their Zhuhai colleagues in enabling rapid qualification of tooling and processes. They also advised the Zhuhai team on how to quickly set up lines for optimal efficiency.
- Our Penang team also localized and adapted the customer’s product profiles to Zhuhai’s manufacturing set up and standards, accelerating the onramp. It was our Penang group’s product knowledge, developed over many years, that enabled the Zhuhai team to ramp up so quickly.
- The handoff was not only a matter of knowledge transfers using the Penang team’s parameters. It was also the application of deep knowledge, expertise, and collaborative execution.

The Results

Our Zhuhai location qualified their first assembly in just four weeks – a record time and an incredible accomplishment. The teamwork and shared value in “doing whatever it takes” enabled the flawless execution for our customer.

We shipped a record quarterly volume to our customer between June and September – and did so under constrained conditions.

Amid a lockdown and reduced capacity, our Penang and Zhuhai teams continued to deliver extraordinary service with ingenuity, dedication and forward thinking.



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