

How to Produce the Best Circuit Boards – Fast!

Professionally assembling circuit boards used to be slow. Many circuit board manufacturers still take up to two weeks or longer to produce circuit boards according to customer design specifications.

Modern processes and efficiency-oriented procurement can shorten that time to three to five days on average. A reputable PCB prototyping firm needs to excel at quickly delivering reliable, high quality circuit boards to clients. Investing in the efficiency and speed of the assembly floor and continually improving processes produces better, more dependable results faster.

Factory Floor Optimization Generates Product Innovation

Manufacturing and assembly floor plans for PCB prototyping can run anywhere from 5,000 to 15,000 square feet, depending on expected production volume. However, a larger manufacturing space doesn't always mean faster or better results. A PCB manufacturing space needs to be optimized for the quick production of printed circuit boards, flexible circuit boards, and rigid-flex circuits. The only way for a PCB manufacturer to do this is by investing in state-of-the-art technology on each level of the manufacturing and assembly process. The goal is creating prototype circuits according to client specifications *without cutting corners*.

This focus – on a fully efficient manufacturing floor – is one of the most important ways to produce value when dealing with a product as omnipresent as the printed circuit board. This is a highly engineered item. Nearly every type of product efficiency that can be integrated into a circuit board technology is already present in the client-provided spec sheet.

In order to increase the efficiency an already highly-engineered product can offer, PCB firms must look at the manufacturing process and eliminate waste during assembly and manufacturing.

PCB manufacturing firms that organize their assembly processes in this way are able to deliver world-class assembly solutions to clients in a fraction of the time it takes competitors to do the same.

On a highly organized factory floor, technicians keep orders on the move continuously. Every project follows a strict and highly organized schedule, from the moment specialists begin consulting with a client, to the day the final deliverable arrives. An efficiency-oriented team of printed circuit board veterans will make this possible through personal flexibility and a wide-ranging breadth of knowledge in the circuit board industry.

How to Achieve a Single-Day Turnaround

Efficient PCB prototype firms are able to efficiently prioritize jobs for clients who are in a rush. Only a few are capable of combining a commitment to only assembling the highest

quality circuit boards with an extensive range of specialty equipment for the purpose, maximizing efficiency.

Choose a manufacturer who has performed single-day turnarounds for clients in the past. A company with a good track record for quick turnarounds will remain well-positioned to put a new client's needs first when the occasion calls for it. From automated cable assembly to hand assembly for small-volume projects, find the service provider uniquely positioned to solve client problems with speed and professionalism throughout the entirety of your project.

Modular Planning Eliminates Corner-Cutting

The biggest problems that circuit board manufacturers often face are caused by [generalized assembly processes](#). The typical assembly floor will feature a small variety of computerized workstations designed to specifically *couple systems*. These systems are connected by a feeder carrier – essentially a specialized conveyor belt that takes assembly products from one system to the next.

This is an ideal system to manufacture similar items in a highly automated manner, but it breaks down when creating customized solutions for clients who need fast, reliable prototypes made.

A better, more flexible system must be modular in nature. Such a system can shift and prioritize production workstations according to their greatest utility in order to maximize efficiency across the board. Even traditionally coupled systems can be improved in this manner. As product *x* goes from workstation *A* to *B* to *C*, additional production routes can be implemented at each stage.

In this way, individual workstations can be arranged as needed for a specific project and then rearranged for different projects without losing time. This is what allows PCB assembly experts to create many different types of printed circuit boards while remaining on time and within budget for each project.

[Power Design Services](#) is a San Jose-based assembler of printed circuit boards for innovative technology products. We offer fast turnaround times on all of our projects – contact us for a quote on your prototype!

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