

CC Electronics



"One Source ... No Limits"



David Maitland,
managing director

CC Electronics started to manufacture Printed Circuit Boards (PCBs) in 1988. Over the years, they have progressed and developed into a leading UK manufacturer of high technology PCBs for the aerospace, medical, industrial, military and contract manufacturing sectors. The key fundamentals of their service are quality, speed and flexibility. On a daily basis, they manufacture complex, multilayer PCBs in 24 hours. Below is a more thorough exposition by their managing director, David Maitland.

As a company, we continually invest in our manufacturing equipment, data-handling capability and people. Servicing the prototype market is a key part of our business model, and we can process 100 new jobs a week. Generally, 50 per cent of the jobs on the shop floor are new designs.

However, the magnitude and sophistication of our manufacturing facility in Winsford, Cheshire means we can also manufacture medium and large batches of PCBs on longer lead times. The success and progress of the organisation is best gauged against the backdrop of that; over the last 30 years, the number of UK PCB manufacturers has reduced by 70-plus per cent. This reduction can be attributed mostly to offshore competition.

China, however, is an opportunity and a threat. In an attempt to offer a complete supply option for our customers, we've developed strong working relationships with several offshore partners. All offshore partners have been audited for their capability and their approvals have been verified. We check the specific job data, test the incoming product and therefore manage the risk for our customers. Offshore can offer considerable benefits to a supply chain. However, if things go wrong, it can quickly turn into an expensive problem.

FACTS ABOUT CC ELECTRONICS

- » Managing director: David Maitland
- » Established in 1988
- » Based in Winsford, Cheshire
- » Services: Manufacturer of high tech PCBs
- » No. of employees: 75
- » 36,000 sq ft facility
- » Multilayers manufactured in 24 hours
- » Manage import of PCBs from offshore
- » www.ccee.co.uk

“2017-18 has been our strongest and most successful year, to date”

2017-18 has been our strongest and most successful year to date. We realised a 20 per cent increase in sales and introduced 80-plus new customers. This success can be attributed to our strategic planning, keeping abreast of new technologies, defined investment and developing our people to consistently produce a high quality product, first time.

UK manufacturing

Our active customers range from large blue chip organisations to single designers. We export our products to Europe, South Africa, US and the Middle and Far East. Contract electronic manufacturers represent over 20 per cent of our customer base, but we also supply to many original equipment manufacturers (OEMs).

We have customers who are key players in the aerospace, medical, industrial, military and security sectors. Generally, we get involved with the initial R&D design, offering expert advice on design for manufacture. We're likely to make the prototypes on a quick turnaround, and manufacture subsequent medium volumes. As we're involved at the forefront of a design, it's crucial that we keep abreast of the latest chip designs and the implications that these technologies have on the key manufacturing parameters of the PCB.

We support any rigid laminate e.g. FR4, high temperature FR4, polyimide, PTFE, IMS, among others. We're capable of manufacturing PCBs with blind and buried vias, copper and resin filled vias, 0.12mm smallest hole and 75µm track and gap – all, moreover, on short lead times. We have a large data handling capability, so we can tool 20 new jobs per day. We also have the ability to tool many designs on the same manufacturing panel. This allows us to be more efficient, thereby generating very competitive prototype pricing.

To successfully make these complex PCBs, it's vital that we invest in the latest manufacturing equipment. Last year, we were the first UK manufacturer to install and commission a Schmolz micromirror direct imaging system. The system uses a chip with two million 10µm mirrors, which generates the image of the tracking onto a dry film which is laminated onto the copper substrate. This exposing technology removes the need for artworks and therefore improves the quality of the image, reduces waste and enhances the product flow through many departments.

However, our biggest asset is our people. Most of the management team and senior manufacturing personnel have over 20 years in making PCBs. This level of expertise and experience is quite unusual. Their knowledge of

Manufacturing areas



the processes, combined with their attention to detail, means we are able to successfully supply these complex products on short lead times. We advocate flexibility and commitment on day one and promote these disciplines as essential attributes to the culture within CC Electronics.

We manufacture PCBs to the industry standards of UL 94 V0 as well as IPC 610 class 2 and class 3. Additionally, our quality management system has recently been approved to the new standard ISO 9001 2015.

Offshore supply

In 2005, we were asked by several existing customers to manage the process of bringing boards in from offshore. This part of the business has continued to grow year-on-year and supports the needs of our customers. The level of integration and control has increased over the years. Generally speaking, we manufacture the boards in our own facility, and when the quantities get larger, we organise shipments from offshore with the agreement of the customer. In order to assure the quality of the imported boards, we have set up a robust process:

- » Offshore suppliers are audited for their level of control and capability. This ensures offshore orders are only sent to suppliers which are capable of manufacturing the product.
- » Other new potential offshore suppliers are benchmarked quarterly, and their approvals validated.
- » The board data is checked before being passed offshore.
- » There are at least two offshore partners in each technology category.
- » Offshore boards are delivered to the UK factory for microsectional and XRF analysis to check the condition of the through hole copper and the metal thicknesses of the solderable finish.



Experienced management team

- » An offshore board is electrically tested against the customer's files.
- » Boards are inspected in the UK.
- » Shortfalls can be covered by the UK facility.

Most of our offshore partners are Chinese. However, it is critical that the process and partners are well controlled and managed.

The future

Last year, we realised 20 per cent growth across the organisation, and we are presently working on strategies to repeat that growth again this year. The vision for the UK manufacturing site is to continue making more complex boards on ever quicker timescales.

Time to market is a critical parameter for a significant number of our customers. Obtaining quality PCBs delivered on time and in full allows our customers to be more successful. Bringing boards from offshore will continue to be an important part of the business as it supports British manufacturing and satisfies our customer's needs for larger volumes of product. There's a constant drive to further optimise and improve the service for our customers.

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