

April 2024

The printed circuit board (PCB) is the building block for electronics systems providing electrical connection and physical structure to electronic systems with additional optical interconnect and thermal management.

The PCB is ubiquitous and an integral part of nearly all electronic products. The world market for PCBs in 2023 was estimated at US\$ 87Bn¹, with over 90% being produced in Asia.

PCB production has been steadily migrating from Europe and North America to Asia since the dot-com crash in the early 2000s. Europe's domestic PCB production represented 16% of the world total in the year 2000, this declined to 2.3% in 2022². At the same time the number of European PCB manufacturers decreased from 555 to under 180³, with the top 20 European manufacturers accounting for 60% of the production value.³

The reduction in European PCB production has had a significant effect on the base materials supply chain with the number of full-scale PCB base material manufacturers reducing from over 20 in the 1980s to only 2 currently. The supply chain for base material manufacturing has also been critically affected with the loss of the entire electronics glass fabric manufacturing sector, the reduction in copper foil manufacturing plants to a single remaining site, and the loss of all volume epoxy resin manufacturing capacity. The supply chain for all these major raw materials, which are essential for PCB manufacturing, now starts in Asia.

The European PCB manufacturing industry is uniquely disadvantaged relative to its Asian and North American competitors with high energy costs. PCB producers are fearful of the implications of continued high energy prices and believe that without internationally competitive energy costs there is a real risk of further decline in the number of European PCB producers.

European PCB production supplies many end markets, the largest of which is industrial electronics accounting for around 45% of the total, followed by automotive in second place with around 15%. High reliability medical electronics is also strongly represented. Aerospace and defence together account for around 12% of European PCB production with a value of around €200 million per annum, however, it should be emphasised that this provides a vital function in underpinning the strategically important European aerospace and defence industry supporting a total turnover valued at €578 bn and total employment of 3.57 m, including direct, indirect, and induced.^{3,4}

¹Precedence Research; ²Custer Consulting; ³Data4PCB, ⁴Aerospace, Security and Defence Industries Association of Europe (ASD) 2021

There are initiatives underway to support the European silicon chip industry, mainly through the European Chips Act and the UK National Semiconductor Strategy, which are both very welcome. However, silicon chips require interconnection with other components via PCBs which are mostly built outside of Europe. The interconnection technology represented by the PCB is a necessary and fundamental element in delivering a resilient and robust European microelectronics ecosystem able to support European critical needs. In addition, European PCB technical capabilities need investment to supply the increasing demands of new technologies for electronics or we risk being unable to supply new European projects with the required complex high density interconnection systems.

Further decline in the European PCB manufacturing base would put critical strategic defence sourcing within Europe at risk. This would mean a greater reliance on imported PCB and the very real prospect of being unable to meet defence and aerospace needs from domestic production. Forced reliance on sourcing from outside of Europe additionally exposes the risk of defence procurement departments having to share sensitive design data and intellectual property (IP) with producers located outside of Europe.

We believe that urgent action is required by our European Governments to support our domestic PCB production and mitigate the real risk of it shrinking below critical mass and becoming unviable.

What can you do?

1. Join us by signing this letter of urgency to our government leaders calling for explicit assistance to the European PCB industry, including but not limited to direct financial aid, access to internationally competitive energy pricing, facilitating bank guarantees in support of capital expenditure, favourable loans, and tax breaks.
2. Advocate to local government raising awareness of the vital role played by PCBs in supplying the European defence and aerospace sectors.
3. Request local procurement of PCBs to Original Equipment Manufacturers (OEMs), especially in high-end and high reliability applications and emphasise that PCB functionality and reliability requires close interaction between designer and manufacturer.
4. Join the EIPC conference 4th June 2024 at the European Space Agency in Noordwijk, Netherlands to contribute to our efforts in supporting European PCB manufacturing.
5. Lobby the EU to remove punitive tariffs on imported raw material that disadvantage domestic production and encourage the importation of higher value PCBs from outside of the EU.
6. Establish a holistic roadmap with associated R&D funds for improved capability and capacity, focussing on the European electronics manufacturing ecosystem. This includes opportunities for strengthening high-end technologies required to support the requirements of new technologies utilising complex high density interconnection systems.