

OPINION This piece expresses the views of its author(s), separate from those of this publication.

Opinion: U.S. must invest in advanced electronics manufacturing

Todd Brassard and Travis Kelly The Detroit News

Published 8:15 p.m. ET Dec. 26, 2023 | Updated 8:15 p.m. ET Dec. 26, 2023

The country stands at a pivotal moment in history where technological prowess directly affects our national and economic security.

The U.S. has lost its position as a global leader in electronics manufacturing because we sent the work overseas, along with the know-how. As a result, we put our national and economic security at risk and now need rapid investment and innovation to regain our capability to manufacture cutting-edge technologies within our own borders. One critical technology in which the U.S. has fallen dangerously behind is the production of printed circuit boards (PCBs). PCBs are the backbone of all modern electronics and more importantly, national defense systems.

In 2018, the Department of Commerce declared that the U.S. PCB manufacturing industry was “dying on the vine.” This happened over the past two to three decades when American original equipment manufacturers turned to offshore manufacturing to save costs.

While U.S. PCB manufacturing dwindled, the rest of the world surged ahead, producing stunningly complex circuit boards to keep pace with the advancement of semiconductor technologies. Then came the COVID-19 pandemic, which shed a harsh light on just how dependent the U.S. is on offshore PCB manufacturers. Currently, we are most dependent upon and vulnerable to supply chains in Asia, where 90% of the world’s PCBs are made. In contrast, the U.S. world market share is only 4%. But there are efforts to bring these essential technologies to the U.S.

In Michigan’s Upper Peninsula, for example, Calumet Electronics is building the first substrate factory in the U.S. with a 60,000 square foot facility on its campus. The project, which will create job growth, upskill existing employees, build a new facility and purchase capital equipment, is expected to generate a total capital investment of up to \$51 million. Even with this initiative, there must be a much larger, widespread commitment and investment. To scale up and bring manufacturing back to the U.S., this industry needs similar public/private investments that semiconductors received via the federal CHIPS and Science Act. It is time to heed the alarms raised by PCB manufacturers and IPC, the global association that helps electronics industry suppliers build electronics better and has advocated for a resilient domestic PCB industry for many years. More recently, the Printed Circuit Board Association of America was formed to articulate issues clearly and seek timely solutions.

Initiatives like the CHIPS and Science Act and the Defense Production Act Title III presidential determination for Printed Circuit Boards and Advanced Packaging Production Capability program are promising but fall short of the level of support needed to restart the U.S. PCB industry.

Title III funding will bolster select PCB manufacturers who are bringing online advanced technologies needed by the Department of Defense and the CHIPS Act will help develop substrate manufacturing in the U.S. However, even with these efforts, a large gap will remain. For domestic PCB manufacturers to catch up to their state-funded offshore counterparts, with respect to capability if not capacity, the U.S. federal government must also provide a cash infusion to modernize PCB manufacturers and provide incentives for original equipment manufacturers in the U.S. to buy American.

The Protecting Circuit Boards and Substrates Act, a bipartisan effort introduced by Reps. Anna Eshoo, D-California, and Blake Moore, R-Utah, would strengthen what the CHIPS Act and Title III started. As with the historic CHIPS and Science Act, the investment is significant. However, what the U.S. stands to lose is much more costly. Passage of this legislation is vital to maintaining our national and economic security. It will reduce our risky reliance on foreign competitors, help maintain our position as a global economic leader and restore America’s relevance in advanced electronics manufacturing. *Todd Brassard is COO at Calumet Electronics in Michigan. Travis Kelly is chairman of the Printed Circuit Board Association of America and CEO of the Isola Group.*