



The European Institute for the PCB Community

EIPC SPEeDNEWS

The Weekly On-Line Newsletter

Issue 13 – June 2024

NEWS FROM CANADA

Bittele Electronics improves its PCB facility with better inventory management and production capacity

Bittele Electronics Inc., a Toronto-based PCB manufacturer specializing in prototype and low-to-mid volume printed circuit board assembly, on May 31st announced that it has completed the expansion and improvements of its Markham, Ontario, PCB manufacturing facility.

These improvements have improved lead times, inventory management and production capacity, while maintaining a commitment to quality and responsiveness.

“The improvements we’ve made to our Markham facility have achieved better inventory accuracy, expanded our storage capacity, and increased our production capacity with the new Soltec wave soldering machine we’ve installed,” said Ben Yang, CEO of Bittele Electronics. “These improvements demonstrate Bittele’s commitment to offering high quality services that guarantee customer satisfaction.”

The improvements of the Markham PCB facility can benefit a customer in three important ways:

- **Inventory Accuracy:** We can now store consigned parts for ongoing and upcoming orders. Upon request, we can also purchase and stock critical items in a customer’s Bill of Materials (BoM).
- **Storage Capacity:** By expanding the Markham facility, we are positioned to serve a customer’s needs in a prompt and accurate manner.

- **Production Capacity:** We have invested in a new Soltec wave soldering machine for larger-volume, through-hole assembly orders. This means we can meet a customer's delivery deadlines more effectively.

In addition to the improvements of Bittele's Markham facility, it has improved its online ordering process as well. By utilizing Bittele's state-of-the-art online ordering engine, a customer can place a turnkey PCB fabrication and assembly order in less than 20 minutes while also obtaining exclusive discounts.

About Bittele Electronics

In business since 2003, and based in Toronto, Canada, Bittele Electronics has established itself as a one-stop PCB manufacturing and assembly company, offering reliable, full turn-key PCB services for prototype as well as small-volume to mid-volume production runs. The Markham facility is compliant with the ISO 9001:2015 and the ISO 13485:2016 quality standard certifications.



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NEWS FROM EVERTIQ

65% of all imported PCBs in Europe come from China

Dennis Dahlgren, Editor, evertiq

In passing the Chips Act, the EU made a strategic, but narrowly crafted commitment to the electronics industry. But what about PCBs?

The Chips Act aims to strengthen the region's position within the global semiconductor landscape. However, the EU is not alone in looking to boost its level of innovation and manufacturing of semiconductors.

The industry's dependence on overseas semiconductor production has been a particular worry for the US government. Similar to this, the European Union identified semiconductors as something necessary for its own "technological sovereignty". But it's not only the US and EU that are looking to boost their domestic semiconductor industry, China, South Korea and Japan are also investing capital to secure and build up their capabilities.

The pandemic, geopolitical events and the subsequent semiconductor shortage have made governments throughout the world more aware of the importance of local production, and semiconductors have emerged as a strategic resource. And while important - semiconductors alone cannot make up a system.

While chips are undoubtedly essential components of electronics, the near singular focus on the semiconductors industry has - as the IPC puts it - obscured the critically important segments of the broader electronics ecosystem, including PCB fabrication and electronic assembly (EMS).

As previously reported by Evertiq, the European PCB industry has over the past 20 years experienced a notable decline in its capacities, capabilities, and global market share, despite its importance. Meanwhile, the European EMS sector offers tremendous, but unrealised, growth potential.

“The EU only accounts for 2.3% of global PCB production and 11.5% of electronic assembly. Revitalizing and growing these segments is essential to building a robust European electronics manufacturing ecosystem to ensure industrial resiliency, advance the twin transitions, and promote European innovation,” the IPC writes in a recent report on EU industrial policy.

Two-thirds of the PCBs imported to Europe originate from China

IPC estimates that yearly PCB production in the EU is valued at roughly USD 2 billion, or around 2% of global production. This is a stark contrast to the 1990s when the EU commanded about 20-30% of global production. Today, there are less than 180 PCB manufacturing facilities in the EU and the region’s dependence on China has only increased over time. According to IPC’s research, China now accounts for some 65% of total EU PCB requirements.

European PCB manufacturers have, as a result of the outsourcing, become rather specialised manufacturers. This specialisation focuses on products with very high added value, often very complex, have high delivery speed requirements, or have high reliability and quality requirements. This has in turn resulted in a high mix of products - that are often supplied in low volume.

© IPC

The semiconductor shortage highlighted just how vulnerable both the US and Europe are without sufficient domestic production capacity, as well as how dependent the regions are on Asian capacity. The US later realise

Boards and Substrates Act of 2023 - aiming to finish the job the Chips Act started by incentivising investment in the domestic PCB industry.

The bill will bring forth USD 3 billion to fund factory construction, workforce development and R&D, as well as a 25% tax credit for purchasers of American-made PCBs and substrates. There is currently no equivalent to this bill in Europe.

It's been said before but it bears repeating; if the EU truly wants to have "technological sovereignty" as a whole, PCBs need to be viewed for what they are, a fundamental element in electronic systems - and the industry needs support.

Given the current trajectory of the European PCB industry, Evertiq has invited Alun Morgan, President of EIPC, to participate as a keynote speaker at the Evertiq Expo in Berlin, Germany on June 20, 2024, to talk about the dire situation that the industry faces.

In his presentation, he will review macroeconomics highlighting current and upcoming global risk factors before focusing on the European PCB market and trends. European Purchasing Managers' Indices will be discussed along with technology and market trends before concluding with global and European business outlook.



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NEWS FROM GERMANY

Burkle to equip TTM's Malaysian PCB facility with 28 presses

Recently, the new PCB factory (TTM Technologies Malaysia Sdn Bhd) of TTM Technologies, Inc. (NASDAQ: TTMI), in Penang, Malaysia, has commenced operations.

This is TTM Technologies' first production facility in Southeast Asia and sets new standards in the industry.

In the Smart Factory, Burkle will produce state-of-the-art multilayer PCBs on 20 heating presses and 8 cold presses in three production lines.



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NEWS FROM SPAIN

Lab Circuits starts its expansion in Barcelona

Earlier in May, Lab Circuits started the excavation works to kick-start the construction of the expansion of its facilities in Barcelona, Spain.

The expansion will consist of four phases, spread out over the course of three years. Once all four phases are completed, Lab Circuits' available surface area will have doubled and many of the older facilities will have been modernised.

The company states that the first phase alone will allow for a considerable expansion of the warehouse, as well as three production departments.

“This project, ambitious in size and scope, will allow us to lay a very solid foundation for the technological and capacity growth that will be demanded in the near future. At Lab Circuits we believe that the printed circuit board and high-tech electronic components sector can play an important role in Europe, and we do not want this capability to disappear completely and compromise our technological self-sufficiency. We are convinced that we can be an active part of this commitment, together with our customers, suppliers and employees”. Xavier and Albert Angel, managing directors, comment.

As previously reported by HNPCA, PCB production has been steadily migrating from Europe and North America to Asia since the early 2000s.

Back in 2000, Europe's domestic PCB manufacturing accounted for 16% of the global total; by 2022, this figure had dropped to 2.3%. At the same time, the number of European PCB

manufacturers fell from 555 to around 180, as pointed out by the European Institute for the PCB Community (EIPC).

About Lab Circuits

Founded in 1972, Lab Circuits is an independent company whose facilities' surface measures 4,000 m². It is currently made up of a team of 95 highly specialised professionals who are committed to the philosophy of offering the best possible service to the clients.

They manufacture printed circuits with two to 30 layers with the most advanced digital technology, which allows them to offer PTH, HDI printed circuit boards, laser-drilled microvias, buried vias, Rigiflex, impedance certification, and special materials, all of the highest quality.

The Dynamic Services package provides a solution to the entire productive process demand, from initial design development through Proto Express or Proto Standard services, with Serie Urgent or Serie Quick for first pre-series units, and finishing with Serie Standard or Serie Long-term production services. It is possible to change one series service for another during the production process. Production is carried out at the plant in Santa María de Palautordera in compliance with ISO 9001:2008, ISO 14001, UNE-EN 9100:2010, UL, RoHS, and REACH certifications and below IPC A600 class 2, and 3 or 3A on demand.



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NEWS FROM SWEDEN

TYRI Starts In-House Production of Circuit Boards in Sweden - The Factory Has a Capacity to Produce 3 Million Units p.a.

TYRI, a world leader in lighting for work machines, is starting in-house production of circuit boards in Sweden. The 1,800 square-metre factory in Kungsbacka will make the company self-sufficient in this area. By doing this, TYRI will achieve increased control, higher quality, and more reliable deliveries.

“We see many advantages in producing the circuit boards we need ourselves. Increased quality and delivery reliability are two of the most important reasons. We will produce for our production facility in Gothenburg and also for our production units in the UK and the USA,” says Jimmy Nordén, factory manager at TYRI Sweden.

All circuit boards that TYRI needs for its lighting units will be produced in the new factory in Kungsbacka, south of Gothenburg. By 2025, the company will be self-sufficient in circuit boards for all the lamps produced in the group’s three factories. This will reduce the impact of global uncertainties and ensure more secure deliveries to customers. TYRI’s choice to establish itself in Kungsbacka is due to the region’s strong presence in technical production.

“We have many colleagues the producing industry who have their circuit board production in southwest Sweden. A cluster of knowledge and experience has been built up here, and we want to contribute with our knowledge to make the region even stronger in this area,” says Per-Johan Edgren, who joined TYRI in January this year to contribute his extensive knowledge in circuit board manufacturing and digitalization within the manufacturing industry.

TYRI sees circuit board production as a part of its development. The factory will also have a section focusing on the manufacture of customized lighting where cleanliness requirements are particularly high, a business area TYRI sees growing strongly in the coming years. With this investment, TYRI's largest ever number of new employees will also be recruited.

"In the coming year, we will recruit 10-20 people for production and other functions related to our continued development in Kungsbacka. The process has begun, and we look forward to finding new stars for our company. This is one of the most important investments we have made at TYRI since its inception," says Martin Karlberg, CEO and founder of TYRI.

As TYRI opens a brand new circuit board production facility, it does so with the future in mind. Digitalization is the focus, and the 30 meter-long line is prepared from the start for future continued digitalization.

"To achieve profitability in in-house circuit board production, a high degree of digitalization is required. We have done our homework; we are using the technology available today, and have prepared ourselves for future continued digitalization. Much of it is about improving productivity with high quality. That was the condition for making this investment, and it seems we have succeeded," concludes Per-Johan, production manager for TYRI's new circuit board production in Kungsbacka. To learn more, visit www.tyrilights.com.



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NEWS FROM THE UK

Merlin Flex: Embracing innovation and enhancing efficiency with Shenzhen TianHua's state-of-the-art solder mask developer

Merlin Flex, a key player within Merlin PCB Group based in the UK, has achieved a significant milestone with the successful installation and operational commissioning of a new Techwin Solder Mask Developer. This cutting-edge machine was exclusively crafted by the leading PCB equipment manufacturer-Shenzhen TianHua Machine Equipment Co., Ltd, based in China.

This new addition accelerates the pace and precision of the solder mask process, marking a hallmark in efficiency. This strategic investment underlines their unwavering dedication towards forging a more streamlined, cleaner, and efficient workstation for employees, thereby promising a path of continuous advancement.

About Merlin PCB Group

With 35 years of experience in PCB production, Merlin PCB Group, operating from UK-based manufacturing and offshore supply facilities, offers a range of PCB technologies, from single-sided boards to complex high-technology multilayers, as well as flex and flex-rigid products. Merlin PCB Group currently owns two subsidiaries, namely Merlin Flex and Merlin Circuit Technology.

Merlin Flex, established in 1987 and acquired by Merlin PCB Group in 2022, is the UK's largest dedicated Flexible Circuit Manufacturer with extensive expertise in the design, manufacture, and assembly of flexible and flex-rigid printed circuit boards.

Merlin Circuit Technology, founded in 1992, specialises in the production of rigid printed circuit boards. Located in Deeside, North Wales, Merlin provides various services for the small to medium volume, high-technology manufacturing of 2 to 32 layers PCBs with quick turn or standard service



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NEWS FROM THE TPCA

Global output value of Taiwanese printed circuit boards (PCBs) in the first quarter of 2024 was NT\$181.4 billion, an annual decline of 0.2%

The Taiwan Circuit Board Association (TPCA) stated that the global output value of Taiwanese printed circuit boards (PCBs) in the first quarter of 2024 was NT\$181.4 billion, an annual decline of 0.2%. Although it has declined for five consecutive quarters, global demand is no longer significantly declining. It will show a trend of growing quarter by quarter from the trough. The output value in the second quarter is estimated to be 194.7 billion yuan, with an annual growth rate of 15%.

TPCA stated that the global and Taiwanese circuit board markets experienced a rare recession in 2023 and did not return to positive growth significantly in the first quarter of 2024, but it was still better than expected, and the demand for AI artificial intelligence hardware and low-orbit satellites continued to ferment, and the overall market Unfavorable factors in the general environment have not continued to increase, showing an atmosphere of slow growth.

According to TPCA statistics, the global output value of Taiwanese circuit boards in the first quarter of 2024 was US\$5.725 billion, a slight decrease of 4.3% from the same period last year. Benefiting from the appreciation of the US dollar, it was 181.4 billion yuan in New Taiwan dollars, a decrease of only 0.2 compared with the same period last year. %.

TPCA pointed out that although the global circuit board output value of Taiwanese companies has shown double-digit decline for five consecutive quarters, global demand has no longer dropped significantly, reflecting that the recession is coming to an end. Looking forward to the future, a gradual recovery will be the main factor, because at the end of the recession, During this period or the early stage of recovery, consumer and business

spending is still conservative, and sales are mostly reflected in specific products. For example, AI servers have better growth momentum than general-purpose servers, and affordable smartphones are better than high-priced models. In other words, PCB manufacturers are also Due to the differences in the product markets that we enter, we feel completely different temperatures.

Looking forward to the second quarter of 2024, TPCA pointed out that although it is the traditional off-season, as many economic indicators have improved, the mentality of businesses and consumers has turned neutral to optimistic, and purchases and expenditures will be more active, which is expected to drive mobile phones, computers and The sales of personal consumer goods have rebounded, and the impact of AI on products has begun to emerge in the first quarter, and the demand for related products has increased quarter by quarter.

TPCA estimates that the global output value of Taiwanese circuit boards will reach US\$6.018 billion in the second quarter, an increase of 5.1% from the first quarter, and an annual growth rate of 9.2%. If calculated in New Taiwan dollars, it will be approximately 194.7 billion yuan. The quarterly and annual growth rates are respectively are 7.3% and 15%.

Looking forward to the second half of 2024, TPCA believes that if there are no major unexpected negative factors in the world, the electronics industry will continue to recover. With the arrival of the peak season and the growth of Edge AI (edge ??artificial intelligence), such as AI PCs or AI mobile phones, Taiwanese companies The output value of circuit boards is expected to increase quarter by quarter. The annual output value in US dollars and New Taiwan dollars is estimated to be US\$25.933 billion and NT\$824.5 billion respectively, with annual growth rates of 5.2% and 7.1% respectively, and is back on the track of positive growth.

Taiwan PCB makers gear up for AI PC era, replacement demand to emerge in 2H24

With 2024 widely regarded as the inaugural year for the AI PC era, Taiwanese PCB manufacturers are revving up to meet the upcoming replacement demand for AI PCs and notebooks, expected to emerge from the second half of this year into 2025, according to industry sources.

The sources highlighted that on May 20, US notebook vendor Dell launched a new series of notebooks optimized for AI use, asserting that AI capabilities will become standard in PCs by 2025. However, what exactly defines an AI PC?

According to definitions provided by Intel and Microsoft, an AI PC must meet three main criteria - capable of running Microsoft Copilot, equipped with an NPU (Neural Processing Unit) to enhance AI computing power, and featuring a dedicated Copilot button.

These criteria have already influenced most PC brands in the current Wintel-dominated PC ecosystem, and the vast majority of their future models are expected to follow the definitions. However, the recent "AI PC" trend is more accurately categorized as edge AI, indicating that AI computations are primarily performed locally on the device.

The Taiwan Printed Circuit Board Association (TPCA) emphasized that for PCB manufacturers, the NPU is a key factor in current AI PC definitions. Based on IDC's classification, AI PCs can be categorized by their TOPS (Tera Operations Per Second) computing power as follows: hardware-enabled (60 TOPS).

Mainstream AI PC processor chips currently delivered from Qualcomm, Apple, AMD, and Intel fall into the first category, and will still comprise more than half of the market by 2026. Accordingly, PCB products will face these system specifications as the design standard for the next 2-3 years, according to TPCA.

Beyond the x86 camp, vendors such as HP, Dell, Lenovo, Samsung Electronics, Acer, and ASUS are all set to launch new AI PCs equipped with Qualcomm chips starting in June. Taiwan's PCB manufacturers collaborating with AI PC brands include Unimicron Technology (a leading ABF substrate maker closely working with Intel), Gold Circuit Electronics (GCE), Tripod Technology, HannStar Board, and Compeq Manufacturing. Even Dynamic Electronics, primarily focusing on automotive PCBs, has recently made small shipments for AI PC applications.

Among them, GCE is set to start small-scale shipments of AI PC-related products in the third quarter. Supply chain sources revealed that Chinese PCB maker Victory Giant Technology has recently recorded significant shipments of AI PC boards, signaling promising prospects for future deliveries.

Industry insiders disclosed that HannStar Board's ratio of notebook end-use application revenue has remained at 40%, but the ratio will have a chance to advance further amid the increasing penetration of AI PCs.

During a recent investor conference, Taiwan PCB Techvest (TPT) remarked that prices for AI PCs are relatively high and their sales still need to be observed. Nevertheless, the company anticipated that the penetration rate of AI PCs will have the potential to surpass 50% by 2028.



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International Diary

2024

SMT Nuremberg

11-13 June

Nuremberg, Germany

EIPC Technical Snapshot Webinar

Registrations via www.eipc.org

September

EIPC @ FED Conference

20 & 21 September

Ulm, Germany

EIPC Technical Snapshot Webinar

Registrations via www.eipc.org

October

EIPC @ Electronica

12-15 November

Munich, Germany