



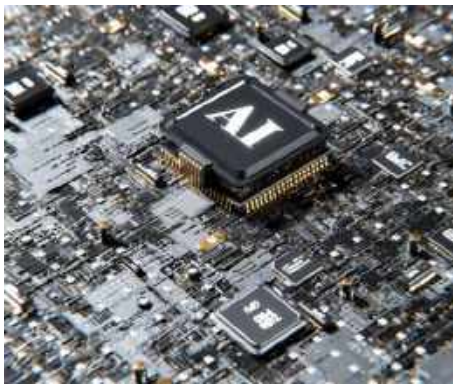
The European Institute for the PCB Community

EIPC SPEeDNEWS

The Weekly On-Line Newsletter
Issue 7 – March 2024

AI NEWS

PCB Makers Need to Ramp up as AI Spurs Demand



Increased interest in artificial intelligence (AI) has resulted in the need for more PCBs and other hardware. Manufacturers must be prepared to respond to this increased demand.

In early 2024, Foxconn Chairman Liu Young-way expected the company's business to be slightly better in 2024 but to include challenges stemming from a shortage of chips for AI servers. He also anticipated that global uncertainty due to geopolitical problems could dampen consumers' AI demand.

This forecast is important because AI servers contain PCBs. A May 2023 market analysis suggests a 12 percent compound annual growth rate for these PCBs between 2023 and 2029. North America has a healthy market share for these boards, partly due to the continent's position as a global leader in AI research and development, according to the report.

AI server PCBs support inference and training tasks and help AI algorithms become more efficient. As decision-makers continue rapidly exploring the most appropriate ways to use artificial intelligence, it's increasingly likely they'll rely on AI servers that use these PCBs.

In June 2023, analysts elsewhere suggested one Taiwanese PCB maker could soon see AI server components comprising up to 38 percent of its revenue when such parts previously accounted for less than 3 percent. The

main reason is the sevenfold increase in PCBs for AI servers versus general-purpose ones.

Another market research report about the general state of PCBs expected a 5.05 percent compound annual growth rate from 2022 to 2027, representing a value of \$19.05 billion. That coverage mentioned artificial intelligence as one of the primary demand drivers of the components.

Manufacturers must plan for the increased demand now. One strategy is to look for shortcomings in current processes and pursue continuous improvements. For example, 3D printing and X-ray inspections have made PCB production more efficient.

South Korean PCB maker's shares soar

The year 2023 was excellent for South Korean PCB manufacturer Isu Petasys Co. The company's share price rose by 487 percent during the year, making it one of the biggest success stories of South Korea's benchmark stock index. While commenting on this news, Baik Gil-hyun — an analyst at Yuanta Securities Korea Co. — attributed the current AI boom as one reason for the company's success. It also helps that the business directly supplies Google and Nvidia.

Although there was a time when the company primarily had telecommunications companies as clients, it has more recently diversified by adding more technology-focused clients to the roster. That decision came at an ideal time for Isu Petasys to capitalize on the increasing interest in artificial intelligence.

However, company leaders must ensure they can cope with the increased demand. Designing PCBs to use components with wider tolerances — such as 1 percent versus .01percent — opens more possibilities for working with a broader selection of materials. That approach could help this company and others take the larger quantity of customer orders in stride.

AI helps PCB manufacturers adapt

Even as artificial intelligence results in PCB manufacturers having bigger orders and heavier workloads, it can help them cope with the demanding conditions. For example, one company has an AI-powered PCB routing and placement tool. It can make turnaround periods up to 10 times shorter by automating previously manual tasks.

Some AI solutions also accelerate quality control and detect issues at the nanoscale level. They can help companies maintain their reputations by reducing the chances of unsatisfied customers.

Manufacturing leaders will get the best results if they determine their biggest challenges and investigate how AI could overcome them. The technology still needs human supervision, but integrating it into factory

processes could reduce people's workloads and allow them more time for other tasks.

One company began using collaborative robots for PCB assembly after leaders noticed too many handling errors. That switch increased assembly line speed by 25 percent while minimizing risks. These machines were also safe enough for humans to work around, and they relieved people of monotonous work.

This approach of seeing a challenge and finding an AI solution to overcome it works well for many industrial leaders. It ensures they study the issues thoroughly and think carefully about how AI could make those obstacles more manageable. Deploying the technology with a clear reason, results in efficient use of time and money.

An exciting time for the PCB industry

AI has a bright future, especially as industries experiment with how to use the technology and learn its benefits. PCB manufacturers must stay aware of the changing landscape and prepare to react to larger, more frequent orders from new and existing clients. Improving processes with advanced technologies and addressing persistent weaknesses can enable PCB makers to thrive despite higher demands.

These manufacturers must also remain forward-thinking. How can they reduce the impact of shortages with strategic planning? What training should workers receive to competently use new assembly line tools and platforms? Considering these factors will position PCB company leaders to reduce potentially negative impacts and continue meeting demands.

Author: [Emily Newton](#)

[Emily Newton](#) is a technical writer and the Editor-in-Chief of [Revolutionized](#). She enjoys researching and writing about how technology is changing the industrial sector.



The European Institute for the PCB Community

EIPC SPEeDNEWS

The Weekly On-Line Newsletter
Issue 7 – March 2024

NEWS FROM FINLAND

Aspocomp's Financial Statement Release 2023: Net sales decreased by 17% in 2023, operating profit turned negative

FOURTH QUARTER 2023 HIGHLIGHTS

- Net sales EUR 5.9 (10.1) million, decrease of 42%
- Operating result EUR -1.8 (0.7) million, -30.1% (7.3%) of net sales
- Earnings per share EUR -0.22 (-0.02)
- Operative cash flow EUR 3.5 (0.2) million
- Orders received EUR 2.3 (4.8) million, decrease of 53%
- Equity ratio 71.7% (69.4%)

JANUARY-DECEMBER 2023 HIGHLIGHTS

- Net sales EUR 32.3 (39.1) million, decrease of 17%
- Operating result EUR -1.7 (4.5) million, -5.4% (11.5%) of net sales
- Earnings per share EUR -0.24 (0.52)
- Operative cash flow EUR 5.1 (3.6) million
- Orders received EUR 21.4 (27.4) million, decrease of 22%
- Order book at the end of the review period EUR 10.5 (14.3) million, decrease of 27%
- Equity ratio 71.7% (69.4%)

OUTLOOK FOR 2024

Inflation and interest rates, weak economic development, the uncertainties posed by Russia's war of aggression, and global trade policy tensions will affect the operating environment of Aspocomp and its customers in the 2024 fiscal year. The company estimates that the demand in the Semiconductor segment will gradually recover starting from the first half of 2024, while at the same time unloading high inventory levels in various

parts of the value chain. In order for investments to pick up in several of Aspocomp's customer segments, consumer demand must improve, and interest rates decline, among other factors. Demand for Aspocomp's products is expected to recover gradually during 2024.

Aspocomp estimates that its net sales for 2024 will increase from 2023 and its operating result will improve from 2023. In 2023, net sales amounted to EUR 32.3 million and the operating result was a loss of EUR 1.7 million.

CEO'S REVIEW

"2023 was a challenging year for Aspocomp. Full-year net sales decreased by 17 percent to EUR 32.3 million. In the last quarter of the year, net sales decreased by 42 percent. The development of net sales was affected by sluggish demand in several of Aspocomp's customer segments, weakened product mix and, in the last quarter, a temporary process disruption in the company's production.

The weak demand situation was particularly reflected in the Semiconductor Industry, Telecommunication, and Industrial Electronics customer segments. In the Automotive customer segment, full-year net sales increased when the industry's component shortage eased and customers could be provided with the order book deliveries they had been waiting for.

In the Security, Defence and Aerospace customer segment, net sales decreased from the comparison period, but active demand in the segment was reflected at Aspocomp as an increase in the number of requests for quotations and orders. Order cycles are typically long in the Security, Defence and Aerospace customer segment

Aspocomp's loss-making operating result for the last quarter, EUR 1.8 million, pushed the full-year 2023 operating result to a loss of EUR 1.7 million. The decrease in the operating result was caused by a decline in net sales due to muted demand, the weakened product mix, the recognition of EUR 0.5 million in design costs not included in the usual business in the third quarter, and a significant rise in material costs. Material costs were increased by a temporary process disruption in production in the last quarter. Material use is estimated to normalize during the first quarter of 2024. Aspocomp carried out temporary personnel layoffs in the third and fourth quarters in order to adjust costs.

As the financial year's result remains loss-making, Aspocomp's Board of Directors will propose to the Annual General Meeting that no dividend will

be paid for the financial year 2023 (EUR 0.21 per share for the financial year 2022).

There are already visible signs that the semiconductor market cycle is turning to growth, but the release of high inventory levels in different parts of the value chain is happening in stages. Therefore, the demand for the company's products is also expected to recover gradually during 2024. In the longer term, the semiconductor industry's growth prospects are still strong as digitization progresses, for example with the spread of artificial intelligence applications.

Inflation and interest rates, the economic recession, the uncertainties posed by Russia's war of aggression, and global trade policy tensions will affect the operating environment of Aspocomp and its customers in the 2024 fiscal year. Demand for Aspocomp's products is expected to recover gradually during 2024. We estimate that Aspocomp's net sales will increase from 2023 and its operating results improve from 2023. In 2023, net sales amounted to EUR 32.3 and the operating result was a loss of EUR 1.7 million.

I would like to express my warm thanks to the company's personnel for their valuable contribution and especially for the flexibility and perseverance they have shown in the challenging year of 2023."



The European Institute for the PCB Community

EIPC SPEeDNEWS

The Weekly On-Line Newsletter

Issue 7 – March 2024

NEWS FROM ITALY

Seica Is Accelerating Innovation with Automated Test Solutions at the 2024 IPC APEX EXPO

Seica Inc. may be found on Booth 3514 at the 2024 IPC APEX EXPO, taking place April 9-11, 2024 at the Anaheim Convention Centre in California. V

They will be exhibiting its state-of-the-art test platforms and automation solutions. With a commitment to accelerating innovation, Seica's booth will feature an array of cutting-edge test solutions designed to meet the evolving needs of the electronics industry. Among the highlights will be the revolutionary **PILOT VX NEXT>** test platform, setting a new standard in flying probe speed and performance. Equipped with advanced measurement hardware and software tools, the PILOT VX boasts unparalleled test performance, reduced test times, and enhanced capabilities for prototype validation and production testing. The Pilot VX has many automation configurations from inline integration to independent manufacturing workcell strategies. The Pilot VX is the best method to deploy for prototype runs to even high-volume production runs when the cost of fixtures and time-to-market are business concerns.

Visitors to Seica's booth will also have the opportunity to explore the fully automated **COMPACT SL NEXT>**, a versatile test solution that maximizes configurability and customization while delivering exceptional throughput and reliability. With features such as onboard programming (OBP) and LED test capability, the COMPACT SL NEXT> offers a comprehensive solution for incircuit and functional testing requirements.

Additionally, Seica will discuss its **MINI Line**, a cost-effective platform for developing customised test solutions tailored to specific manufacturing needs. With integrated instruments, switching matrices, and user power

supplies, the MINI Line provides flexibility and scalability for various test applications, supported by Seica's VIVA Integrated Platform (VIP™) for seamless integration and programming.

Innovative optical inspection solutions will also be on display, including the desktop version of the **DRAGONFLY Next>** series for THT component inspection and conformal coating inspection, and with unique features to measure conformal coat thickness and validate the presence of process application of conformal coat masking. These advanced systems redefine performance in terms of flexibility, throughput, reliability and process traceability, offering unmatched capabilities for manufacturing quality and efficiency.

The **COMPACT LR Next>** is Seica's newest answer to legacy replacement systems, boasting a state-of-the-art-bed of nails in-circuit and functional test system with various receiver interfaces, allowing customers the ability to migrate old fixtures to a new Seica platform. This year the company will exhibit the Compact LR with its Teradyne interface.

Seica has also deployed other LR options for both the GenRad and Aeroflex/Marconi systems. The **FIREFLY Next>** is a technologically advanced automated selective soldering solution, with its perfect integration on a single axis of a high-efficiency LASER source, fully-programmable donut spot, vision system and temperature sensor.

The Firefly redefines the levels of performance achievable in the selective soldering process in terms of flexibility, throughput, reliability, applicability and process traceability. Stop by our booth for a discussion with our team on how the Firefly can help in your selective soldering process.

All of Seica's solutions showcased at IPC APEX EXPO will feature the company's **VIVA NEXT** software platform, enabling intelligent integration with manufacturing processes, data collection, traceability, and interaction with MES systems. Additionally, Seica's Next> series systems are equipped with Canavisia's Industrial Monitoring solution for remote monitoring and predictive maintenance, ensuring compatibility with Industry 4.0 standards.

Come visit us at Booth 3514 to see how our innovation can help accelerate yours! To learn more, please visit www.seica.com



The European Institute for the PCB Community

EIPC SPEeDNEWS

The Weekly On-Line Newsletter
Issue 7 – March 2024

NEWS FROM SPAIN

DirectPCB Europe opens in Barcelona

DirectPCB, a printed circuit board supplier with offices in Largo, Florida and Shenzhen, China, has opened DirectPCB Europe in Barcelona, Spain.

Co-founders Greg Papandrew and Clement Yuen welcome Juan-Paul Udina as managing director of the new division. Udina says he looks forward to using his experience in the electronics industry to support DirectPCB's existing European customers and to onboard new ones. "In these days of supplier consolidation," Yuen points out, "it is best to offer customers more of a choice when it comes to getting quality PCBs at competitive pricing from Asia."

According to Papandrew, "Our business continues to grow and already includes customers that have operations in both the U.S. and Europe. It makes sense to offer local support and to expand our reach in Europe as well." DirectPCB supplies quality PCBs to numerous OEM and EMS companies worldwide. It also manages a wide range of assembly projects.

Visit directpcb.com to learn more.



The European Institute for the PCB Community

EIPC SPEeDNEWS

The Weekly On-Line Newsletter

Issue 7 - March 2024

NEWS FROM THE USA

Ex-DoD Official Says Chinese-Made PCBs Plague U.S. Systems

By Alan Patterson EE TIMES

Chinese-made printed circuit boards (PCBs) in U.S. military systems and infrastructure like power grids probably gives China kill switches and other backdoors that the nation could use in the event of war, a former Department of Defence (DoD) official says.

“You can’t put together a power grid without relying on Chinese circuit boards or non-domestic circuit boards,” Al Shaffer, former deputy undersecretary of defense, told EE Times. “If you rely on non-domestic circuit boards, and there’s a remotely triggered kill switch, in essence, the potential adversary could control your power grid.”

PCBs are among the easiest places to hide a Trojan horse, kill switch or modified code, Shaffer added.

“You’re talking about something with over a hundred layers of substrate,” he said. “Each of those layers has the potential for having something embedded. I have almost no doubt that we have pretty extensive vulnerabilities to systems being modified or shut down. The other thing that can happen: if you modify the data stream, which you can do by injecting code in a weapons platform, and the data that you’re seeing is false? You lose.”

The U.S. PCB industry languishes even as the U.S. government rolls out \$52 billion in CHIPS Act subsidies during 2024 to chipmakers like Intel and Micron to rebuild part of the shrinking American electronics ecosystem. None of that money will go to the few remaining U.S. PCB makers. The U.S. board industry, with more than 2,000 companies and 30% of global

production in 2000, has fewer than 150 companies with only 4% of the market today, according to the PCB Association of America (PCBAA). Asia produces more than 90% of the world's PCBs, with China accounting for more than 55%.

U.S. PCB makers have lost the ability to make state-of-the-art boards, Shaffer said.

"I look at the recently passed [CHIPS Act](#), and I think they made a real fundamental mistake. The government is putting \$50 billion into the production of semiconductors. Semiconductors don't make anything work. You need to have them mounted into a system. We're spending \$50 billion to increase domestic capacity, and then we're going to go mount these things on primarily Chinese- or Taiwanese-, Korean-made PCBs. A lot of those will be Chinese, because the Chinese have the largest share of state-of-the-art [boards]. We also know China uses microelectronics systems for espionage."

Shaffer notes comments from [FBI director Christopher Wray](#) in January that China's hackers are targeting American critical infrastructure, including the power grid, to "wreak havoc" in the U.S.

Shaffer said the only situation where China would try a widespread shutdown of U.S. systems would be in a "shooting war."

In the past decade, China has eliminated some U.S. made electronics from government systems, also on concerns of vulnerability to hacking.

Shaffer advocates a shift to secure electronics, not just for the military, but for critical parts of the U.S. infrastructure. Such a switch would help revive electronics manufacturing in the U.S., he says.

"The DoD only has about 2% of the market. It's not going to drive the market. If you add in healthcare, financial systems, electric grid, your distribution system, air traffic control network—all of a sudden, you talk about a market that will allow market forces to work."

PCB Act

The PCBAA supports passage of [H.R. 3249](#), which is currently before the U.S. House of Representatives. Also known as the PCB Act, the measure would provide about \$3 billion in subsidies to the U.S. board industry.

U.S. PCB makers could apply for grants against the \$3 billion in the same way that the CHIPS Act is administered. The PCB Act would create a 25% tax credit on the purchase of U.S.-made PCBs and IC substrates.

“The tax credit brings us into a cost-competitive position,” PCBAA executive director David Schild told EE Times. “That does two things. It creates a demand signal that makes this sustainable. It’s not simply a band-aid in the form of a grant that floats the industry for a few years. It creates a relationship between customers and suppliers. The second thing is it pushes private money off the sidelines. One of the most remarkable things about the CHIPS Act is that the \$52 billion that the federal government has awarded has been matched, at least in terms of commitments, to the tune of about \$450 billion in private money.”

Schild and Shaffer share the view that rebuilding commercial demand for U.S.-made PCBs is critical to making the industry sustainable.

“Imagine an EV-charging network dependent on foreign microelectronics,” Schild said. “Imagine a power grid, imagine banks, Wall Street, IT infrastructure, medical devices, hospital servers dependent on foreign microelectronics. I don’t think that makes anyone sleep soundly at night, right?”

It’s not clear how extensive the foreign-PCB infiltration is even in military systems, according to Shaffer.

“We don’t know exactly,” he said. “The DoD does not buy many semiconductors or PCBs. They buy radar systems, they buy comm systems. We cracked open a couple of systems. I can’t say which ones, but we had as much as 30% to 40% semiconductors and other microelectronic parts that were not domestically sourced. It’s too hard to go back in retrospect and open up all of our systems, and it would be too costly. We did it for a couple just to make sure there was a problem.”

The U.S. move to offshore electronics production decades ago was too focused on cutting cost, and now, new priorities have emerged, according to Shaffer.

“We have not put in place policies to require or use secure chips and PCBs, even in those industries where you can amortize the cost,” he said. “Would you pay five extra dollars a month to an electric company for having a secure electric grid? I would, but we haven’t incentivized that type of behavior. So, industry—including defense, industrial primes and sub-tiers—

go to the lowest cost. Capitalism is wonderful until you start thinking about where the potential shortcomings are.”

U.S. Commerce Secretary Gina Raimondo has called for a part two to the CHIPS Act, dubbed [CHIPS 2.0](#).

“If there is a follow-on CHIPS Act, the government has to extend that down into PCBs,” Shaffer said. “The initial CHIPS Act stops at semiconductor packaging and test. We established a situation where we’re paying a lot of money to make new chips. We’re not doing anything to ensure that they’re mounted into a system in a secure way.”

New ‘papertronics’ offer biodegradable alternative to traditional circuits - Binghamton University

As the Internet of Things connects more devices into a collective network—even single-use sensors like food packaging, agriculture or “smart bandages”—the need for biodegradable electronics grows increasingly urgent.

Binghamton University Professor Seokheun “Sean” Choi sought to investigate his ideas about integrated papertronics. A new research paper published in *Advanced Sustainable Systems* reports his latest findings—and they could revolutionize how we monitor the world around us. “The biggest problem with paper for electronics is that the paper is highly porous and rough,” said Choi, a faculty member in the Thomas J. Watson College of Engineering and Applied Science’s Department of Electrical and Computer Engineering. “These properties are very helpful for paperfluidics, because those devices require high surface area and roughness—but for electronics, they pose a critical challenge.”²⁹ To mitigate some of those issues, most previous papertronics have used laminated paper with electronic components affixed to them. That method maintains the flexibility that paper has but does not fully utilize what the material offers.

Choi worked with Ph.D. students Zahra Rafiee and Anwar Elhadad as part of the Bioelectronics and Microsystems Laboratory to develop a solution that takes advantage of paper’s attributes, combining functional inks, the capillary action that distributes the inks within the paper, and hydrophobic wax patterns that form the boundaries for the circuits.

The fully integrated tunable resistors, capacitors and transistors become part of the paper substrates, enabling the fabrication of complete paper circuits. The foldability and stackability allows for multilayered printed circuit boards, and all of it is biodegradable. Choi said this new manufacturing method is a major improvement over the last iteration of printed paper circuit boards in 2022: “We integrated all these components into a single sheet of paper. It was flexible and disposable, but the problem is that all three components are not widely tunable. We couldn’t have specific resistance values or capacitor values. We also had to use some non-biodegradable material.”

While Choi and his team have made a lot of progress, they already are thinking about the next steps for making their papertronics ready for wider use. “We need to think of some packaging techniques to encapsulate our device for long-term operation,” he said. “We also are creating other types of electronic components like inductors, diodes or displays. We need to improve the density and performance, too.”

More information: Zahra Rafiee et al, Revolutionizing Papertronics: Advanced Green, Tunable, and Flexible Components and Circuits, *Advanced Sustainable Systems* (2024). DOI: 10.1002/adsu.202400049

Citation: New ‘papertronics’ offer biodegradable alternative to traditional circuits (2024, March 13) retrieved 13 March 2024 from <https://techxplore.com/news/2024-03-papertronics-biodegradablealternative-traditional-circuits.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.



Issue 7 - March 2024

NEWS FROM THE TPCA

Taiwan's PCB industry set to capitalize on LEO satellite boom

In the midst of the global Low Earth Orbit (LEO) satellite fervour, Taiwan's PCB industry is emerging as a pivotal player, mirroring the supply chains seen in the mobile phone and laptop sectors. As international satellite operators drive demand, Taiwan's leading component manufacturers are leveraging their expertise to enter the supply chain for satellite-to-ground services.

Compeq Manufacturing, for instance, stands as a key supplier in the Starlink ecosystem, providing exclusive HDI products for Starlink satellite bus, including specialized configurations for Direct-to-Cell connectivity. Similarly, Auden Techno's focus on C-band and L-band phased array antennas underscores Taiwan's pursuit of niche applications within satellite communications.

Looking ahead to 2024, Compeq anticipates significant growth, propelled by the expansion of satellite-to-cellular functionalities among major American clients and the successful launch of Amazon's Kuiper network prototype satellites. With demand surging and the exploration of new applications underway, the forecast for the LEO broadband network's value surpasses tens of billions of US dollars within the decade.

In parallel, Taiwanese manufacturers are collaborating closely with satellite operators to subject critical components to rigorous testing, ensuring compliance with the demanding conditions of space environments. This proactive approach positions them favorably to secure substantial orders from leading satellite operators.

The PCB supply chain, exemplified by companies like Compeq and Unitech, is experiencing a transformative shift into the LEO satellite market. Forecasts predict substantial shipment growth in 2023, with revenue share

projected to double by 2024, underscoring Taiwan's ascension in this critical domain.

For Taiwan's PCB industry, LEO satellites represent a new frontier, one where their competitive advantage in ultra-high-frequency applications shines. As market visibility increases and R&D efforts intensify, Taiwanese manufacturers are poised to accelerate their contribution to this burgeoning sector, fortifying their position and driving a positive cycle of supply and demand.

Market analyses echo this sentiment, projecting exponential growth in the US satellite-to-ground service market from US\$430 million in 2023 to US\$6.5 billion by 2027. With satellite subscriptions on the rise, telecom companies are diversifying their offerings, expanding beyond traditional mobile communications to embrace the satellite revolution.

NEWS FROM THE jPCA

japan's PCB output fell 16.7% to 670,000 square meters in January 2024, shrinking for the 24th consecutive month; output dropped sharply by 19.6% to 39.422 billion yen, shrinking for the 15th consecutive month

Statistics released by the Japan Electronics Packaging Circuits Association (JPCA) on March 19 pointed out that Japan's printed circuit board (PCB; hard board + flexible board + module substrate) production in January 2024 dropped significantly compared with the same month last year. 16.7% to 670,000 square meters, shrinking for the 24th consecutive month; output dropped sharply by 19.6% to 39.422 billion yen, shrinking for the 15th consecutive month, and the decline reached double digits (10%) for the 11th consecutive month Above) level, monthly output hit a new low in the past three and a half years (since August 2020, 35.458 billion yen).

In terms of type, Japan's Rigid PCB output fell 20.3% to 542,000 square meters in January from the same month last year, shrinking for the 23rd consecutive month; output fell 16.6% to 24.436 billion yen, the 17th consecutive month The month has shrunk.

Flexible PCB output fell 1.8% to 88,000 square meters, shrinking for the eighth consecutive month; output increased 5.5% to 2.184 billion yen, showing growth for the first time in seven months.

Module substrate (Module Substrates) output increased by 13.7% to 40,000 square meters, showing growth for the fourth consecutive month; output fell sharply by 27.5% to 12.802 billion yen, shrinking for the 10th consecutive month.

Japan's PCB output in 2023 will drop by 17.9% to 569.047 billion yen, shrinking for the first time in 4 years, the largest decline in 14 years (since 2009, a sharp decrease of 30.1%), and the annual output will hit the highest level in 3 years (since 2020, 486.867 billion yen) a new low.

Japan's major PCB suppliers include Ibiden, CMK, NOK's Nippon Mektron, Fujikura, Meiko Electronics, etc.



The European Institute for the PCB Community

International Diary

2024

EIPC @ ECWC16 WECC

April 8-11

Anaheim, USA

EIPC Technical Snapshot Webinar

Registrations via www.eipc.org

May

EIPC Summer Conference

Conference & Visit @ ESA/ESTEC

Tuesday 4 & Wednesday 5 June

Noordwijk, The Netherlands

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