



The European Institute for the PCB Community

# EIPC SPEeDNEWS

*The Weekly On-Line Newsletter*  
*Issue 32 – November 2023*

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## NEWS FROM THE EIPC

### **Announcement** **EIPC Winter Conference Germany** **January 30 & 31, 2024**

Reliability.

In a world where the organic version is less certain, and in an industry where this quality is essential, it is reassuring to know that another EIPC WINTER CONFERENCE is set to take place on 30th & 31st January next year. Past attendees to these will know of their comprehensive coverage of the matters pertinent to this industry, and their value in being fully informed commercially, economically and technically.

In sending out this CALL FOR PAPERS we trust that we may rely upon you for a contribution, within the many subject matters shown in the topics for discussion. That way we may arrange yet another Conference that our members habitually rely upon.

The conference will be held at the IHK Schwarzwald-Baar-Heuberg in Villing-Schwenningen. The headquarters hotel is the Holiday Inn Villingen-Schwenningen. We will visit Schweizer Electronic AG in Schramberg on January 30th in the afternoon.

We look forward to receiving your abstract before November 30<sup>th</sup>.  
More details are available on [www.eipc.org](http://www.eipc.org)  
Online conference registration is also available on [www.eipc.org](http://www.eipc.org)





## The European Institute for the PCB Community

### Call for papers

EIPC Winter Conference Germany 2024

January 30 & 31, 2024



### Bonus Programme: Visit to Schweizer Electronic AG, Schramberg, DE

Presentations on the following topics can be included in the conference programme:

#### **Keynote / Trends**

- Business Outlook: Global and Regional Electronics Industry
- Business update and trends for 5G, Antenna and filter applications, and High Rel application
- Automotive, E-mobility, Energy, IoT, Medical Industrial Electronics, Aerospace, Avionics-G5
- Disruptive supply chain: Supply chain risk management
- Chips act

#### **Environmental responsibility**

- Sustainability development -Circular economy solutions through the whole supply chain- carbon footprint
- Green manufacturing; materials, processes

#### **Roadmapping for 2024 and beyond**

- Roadmap by market segments
- Technology Guidance through market needs
- Adapting processes, materials, chemistry, equipment to future technology needs
- Strategic Partnership and Planning for success through Networking

#### **New Technologies: Success through Evolution- or Disruptive Technologies?**

- Process and material technology development in Additive and Build-up Technologies
- Photonics: optical solutions in component and board level
- Packaging technologies, Chips Act
- Embedded technology: Passives, actives, RFID tags
- Nanotechnology and Printed electronics: 3D Electronics /conductive pattern/dielectric layers
- Material Technology- Laminate technologies - Coating technologies for
- New surface finishes
- New technology, Innovations and Invention

#### **Equipment and process evolution to meet Technology and Quality and Reliability targets**

- Equipment and process capabilities supporting controlled conductor design features for high frequencies
- Etching technology for improved conductor control and copper thickness tolerances
- Industry 4.0, Automation and AI in PCB manufacturing
- Imaging and Printing Technology
- Laser, Mechanical drilling
- ML-Pressing for high frequency product, improving variation
- Embedding components and Metal Core PCBs

#### **Materials, Qualification, Reliability and Traceability requirements by Application**

- Responsibility and Standards for Product Reliability and Safety
- In-house process control and Testing
- Material and finished product Testing and Safety

#### **Test and Measurement methodology**

- Copper: thickness and roughness -How to measure and verify copper roughness against new requirements
- Standardization and methodology
- Measurement automation – in production controls
- High frequency measurement and automaton
- Tools for Testing and ensuring product safety and reliability



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### ARTIFICIALARTIFICIAL INTELLIGENCE NEWS

#### United Kingdom Investing \$273 Million in AI Supercomputing

The UK government plans to invest at least £225 million (about \$273 million) in AI supercomputing with the aim of bringing Great Britain into closer parity with AI leaders the U.S. and China. Among the new machines coming online is Dawn, which was built by the University of Cambridge Research Computing Services, Intel and Dell and is being hosted by the Cambridge Open Zettascale Lab. “Dawn Phase 1 represents a huge step forward in AI and simulation capability for the UK, deployed and ready to use now,” said Dr. Paul Calleja, director of Research Computing at Cambridge.

Announced Wednesday in a University of Cambridge news release, Dawn is among a fleet of new UK supercomputers being touted this week for the launch of the global AI Safety Summit at Bletchley Park, where representatives from 28 nations met to discuss cooperative risk mitigation related to AI.

Two more supercomputers are also coming to Great Britain. Isambard-AI, named in honour of 19<sup>th</sup> century British engineer Isambard Brunel, is being built for installation in Bristol. Isambard is expected to be operational in 2024 and will be connected to Dawn, providing an estimated 30-fold capacity increase above current UK AI standards.

Researchers will be able to use the machines “to analyze advanced AI models to test safety features and drive breakthroughs in drug discovery and clean energy,” the UK Department for Science, Innovation and Technology explained in a news release. The pair is part of the UK’s AI

Research Resource, helping researchers make the most advanced models of safe AI and drive other breakthroughs.

“The investment into the AI Research Resource has been tripled to £300 million, up from £100 million announced in March 2023, in a bid to further boost UK AI capabilities,” the UK government said, detailing that Dawn is being “delivered through a partnership with Dell and UK SME StackHPC,” and “will be powered by over 1000 Intel chips that use water-cooling to reduce power consumption.”

It is scheduled to be up and running within the next two months and will target breakthroughs in fusion energy, healthcare and climate modelling. Isambard “will be ‘10 times faster than the UK’s current quickest machine’” thanks to “5,448 GH200 Grace Hopper Superchips, powerful AI chips made by U.S. semiconductor giant Nvidia,” writes CNBC.

Built by Hewlett Packard Enterprise (HPE), Isambard was previously announced, along with details of Scotland being selected as the site for the UK’s first exascale supercomputer, which will be hosted at the University of Edinburgh.

## Parsing the Mindboggling Cost of Ownership of Generative AI

*OPINION EE TIMES*

*By Lauro Rizzatt 11.02.2023 0*

The latest algorithms, such as GPT-4, pose a challenge to the current state-of-the-art processing hardware, and GenAI accelerators aren’t keeping up. In fact, no hardware on the market today can run the full GPT-4.

Current [large language model \(LLM\) development](#) focuses on creating smaller but more specialized LLMs that can run on existing hardware is a diversion. The GenAI industry needs semiconductor innovations in computing methods and architectures capable of delivering performance of multiple petaFLOPS with efficiency greater than 50%, reducing latency to less than two second per query, constraining energy consumption and shrinking cost to 0.2 cent per query.

Once this is in place—and it is only matter of time—[the promise of transformers](#) when deployed on edge devices will be fully exploited.

Advancements in software algorithms driven by transformers, however, haven't been met with similar progress in the computing hardware tasked to execute them. For example, GPT-4's LLM is huge, exceeding one-trillion parameters. The volume of these parameters poses a challenge to storage and performance requirements. Memory storage is already reaching hundreds of gigabytes. Processing throughput needs multiple petaops (1,000,000,000,000,000 of operations per second) to deliver query responses in an acceptable timeframe, typically less than a couple of seconds.

While model training and inference share performance requirements, they differ on four other characteristics: memory, latency, power consumption and cost. See table 1.

Attributes	Training	Influence
Memory	FP32 or FP64	FP8
High throughput	Critical	Critical
Low latency	Important	Critical
Constrained Power Consumption	Important	Critical
Affordable Cost	Important	Critical

*Table 1: Algorithm training and inference share some but not all critical attributes. (Source: Vsora)*

The model training and inference scenario today is carried out on extensive computing farms. The job runs for a long time, consumes a sizable amount of electric power that produces copious heat at mindboggling costs. Nonetheless, the farms deliver what's expected from them.

To size the task, training a [GPT-4](#) model on fp32 or fp64 arithmetic may require more than one-trillion bits stored on the fastest versions of high-bandwidth memory (HBM) DRAM. The performance necessary to train such a massive model calls for tens of petaops running for weeks—an annoyance but not a roadblock. To accomplish the job, the computing farms consume megawatts with total cost of ownership in the hundreds of billions of dollars. No, not a perfect scenario, but a working solution.

Via-a-vis model training—model inference—usually performed on fp8 arithmetic that still produces large amounts of data in hundreds of billions of bits must deliver a query response with a latency of no more than a couple of seconds to keep the user's attention and acceptance. Further, considering that a vast potential market for inference encompasses mobile

applications at the edge, a viable solution must provide high throughput of more than one petaops with implementation efficiency exceeding 50%.

Additionally, mandatory for mobility, the solution must minimize energy consumption, possibly less than 50 watts per petaops, at an acquisition/deployment cost in the ballpark of few hundred dollars.

These are lofty specifications for feasible inference scenarios running on edge devices.

The crux of the matter centers on the memory bottleneck, known as the memory wall, that increases latency with a deleterious impact on implementation efficiency, expands energy consumption and magnifies cost.

### **Impact of memory wall on generative AI**

Moving terabytes of data at high speed between memory and computing elements requires data transfer bandwidths of terabytes/sec, hardly practicable. If the processor doesn't receive data on time, it sits idle, impacting its efficiency. As recently reported, the efficiency of running GPT-4 on leading-edge hardware deep dives to 3% or less. A GenAI accelerator with one petaops nominal performance, but actual 3% efficiency, delivers a meager 30 teraops. Basically, a very costly processor designed to run these algorithms remains inactive 97% of the time.

To compensate for the low efficiency in processing model training and inference in data centers, cloud providers add more hardware to perform the same task. The approach escalates the cost and multiplies power consumption. Obviously, such a method isn't applicable for [inference at the edge](#).

### **Estimated cost analysis of GenAI in datacenters processing ChatGPT-4**

McKinsey estimated that in 2022, Google search processed 3.3 trillion queries (~100,000 queries/sec) at a cost of €0.2 per query, considered to be the benchmark. The total annual cost amounted to \$6.6 billion. Google isn't charging fees for the search service. Instead, it covers the cost via advertising revenues. For now.

The same McKinsey analysis stated that the ChatGPT-3 cost per query hovers around €3 per query—15× larger than the benchmark. On an annual basis of 100,000 queries/sec, the total cost would exceed \$100 billion.

Let's evaluate the implication of the benchmarks on the cost-of-ownership of a data center supporting ChatGPT-4 based on a best-in-class GenAI accelerator, including purchasing, operating and system maintenance expenses.

The cost per query comprises two contributors: acquisition cost and energy consumption cost.

### **Estimated hardware acquisition costs**

Assumptions:

- Hardware refresh: three years
- Purchasing cost of leading-edge GenAI accelerator, containing eight accelerator chips, delivering a gross compute power of 16 petaops at fp8 processing ChatGPT-4 with a 3% efficiency: ~\$500,000 per system
- Theoretical throughput of one leading-edge GenAI system processing ChatGPT-4: ~0.055 queries/sec
- Number of systems needed to meet a processing capability of 100,000 queries/sec: ~1,800,000 (100,000 / 0.055)
- Total acquisition cost: ~\$900,000,000,000 (1,800,000 \* 500,000), approaching \$1 trillion.

The daily depreciation amounts to about ~\$820 million (900,000,000,000 / 1,095).

### **Estimated energy costs to execute the hardware**

Assumptions:

- Average power consumption per chip: 25 W, based on nominal power, efficiency, memory bandwidth
- Throughput per chip: ~0.007 queries/sec (0.055/ 8)
- Energy consumption per query: 3,637 J (25 W / 0.007 queries per second)
- Total energy cost: \$0.11 per kWh
- Energy cost per query: \$1.2e-4
- Total power consumption for 100,000 queries/second: ~ 363.7 MW

The energy cost amounts to about \$1.0 million/day (power consumption for the chips \* 24 hours \* 0.11).

Clearly, the cost is dominated by hardware acquisition.

**The best-guess total daily cost is the ballpark of \$820 million.**





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### NEWS FROM AUSTRIA

#### **AT&S's recovery continues**

Revenue in the second quarter of 2023/24 at €452million, up 25% on the preceding quarter, but still down 20% on the prior-year quarter (Q2 2022/23: €567million; Q1 2023/24: €362million)

Adjusted EBITDA margin of 30.6% only slightly below previous year

Guidance for FY 2023/24 and 2026/27 confirmed

AT&S maintained a solid performance in a continuously volatile market environment in the first half of the financial year 2023/24. "Although the economic environment has changed fundamentally compared to last year and we have been confronted with many challenges, we have been able to continue the recovery shown at the beginning of the financial year," says AT&S CEO Andreas Gerstenmayer and explains, "We introduced efficiency and cost optimisation programmes in a timely manner. Not only are these measures taking effect faster than planned, they have also significantly improved the earnings situation."

Gerstenmayer sees positive trends for the future: "Even though we expect market volatility to continue for the time being, the major trends regarding digitalisation and electrification remain intact and offer AT&S clear growth opportunities."

In comparison with the strong prior-year period, consolidated revenue declined by 24% to € 814 million in the first half of 2023/24 (PY: € 1,070 million). Adjusted for currency effects, consolidated revenue fell by 21%. This development was primarily driven by the fundamental changes in the economic environment. However, within the first half of the financial year, a significant increase was recorded in both segments: compared with the

first quarter, revenue in the second quarter rose by 30% in the Electronics Solutions segment and by 18% in the Microelectronics segment.

EBITDA decreased by 31% from € 315 million to € 217 million in the first half of the year. The reduction in earnings is primarily attributable to the decline in consolidated revenue. In order to counter effects such as price pressure and inflation, which result from the currently difficult market situation, AT&S already initiated comprehensive cost optimisation and efficiency programmes in the past financial year. These programmes already made a higher contribution in the first half of the financial year 2023/24 than originally planned. As was the case with revenue, both segments also significantly improved EBITDA within the first half of the financial year. EBITDA in the Electronics Solutions segment increased by 119% to € 89 million in the second quarter (Q1 2023/24: € 41 million) due to higher revenue and a better product mix. In the Microelectronics segment, EBITDA was up 43% on the first quarter from € 35 million to € 50 million for similar reasons.

Currency fluctuations had a positive influence of € 15 million on earnings. Adjusted for start-up costs in Kulim, Malaysia, and Leoben, Austria, EBITDA amounted to € 249 million (PY: € 335 million), which corresponds to a decrease by 26%.

The EBITDA margin amounted to 26.6% (EBITDA margin adjusted for start-up costs: 30.6%), thus falling short of the prior-year level of 29.5% (EBITDA margin adjusted for start-up costs: 31.3%). The margin was supported by the cost optimisation and efficiency programmes and once again by the positive development in the Medical segment – a sector for which AT&S is currently assessing strategic options. Depreciation and amortisation increased by € 0.9 million to € 135 million (16.6% of revenue) due to additions to assets and technology upgrades. EBIT fell from € 181 million to € 82 million. Finance costs – net declined from € 66 million in the previous year to € -18 million primarily due to a change in currency effects on cash and cash equivalents. Profit for the period declined from € 224 million to € 49 million, leading to a decline in earnings per share by € 4.50 from € 5.52 to € 1.02.

The financial position as of September 30, 2023 is still characterised by investing activities and the associated financing activities. Total assets increased to € 4,317 million due to additions to assets, up 4% compared to the balance sheet date March 31, 2023. Despite the positive profit for the period, the equity ratio decreased by 2.1 percentage points to 25.7% as a

result of the high investment volume and due to negative foreign exchange effects in other comprehensive income (OCI).

Cash and cash equivalents declined to € 712 million (March 31, 2023: € 792 million). In addition, AT&S has unused credit lines of € 623 million to secure the financing of the future investment programme and short-term repayments.

#### Key figures

in € million	Q2 2023/24	Q2 2022/23	Change in %	H1 2023/24	H1 2022/23	Change in %
Revenue	452	567	-20%	814	1,070	-24%
EBITDA	142	178	-20%	217	315	-31%
EBITDA adjusted*	157	190	-18%	249	335	-26%
EBITDA margin (in %)	31.3	31.4	–	26.6	29.5	–
EBITDA margin adjusted (in %)*	34.7	33.6	–	30.6	31.3	–
EBIT	73	108	-32%	82	181	-55%
EBIT adjusted*	89	121	-26%	116	202	-65%
EBIT margin (in %)	16.2	19.1	–	10.0	16.9	–
EBIT margin adjusted (in %)*	19.7	21.4	–	14.2	18.9	–
Profit for the period	51	128	-60%	49	224	-78%
ROCE (in %)*	n.a.	n.a.	–	6.4	19.5	–
Net CAPEX	245	213	-15%	517	490	6%
Cash flow from operating activities	112	160	-30%	341	366	-7%
Earnings per share (in €)	1.20	3.17	-62%	1.02	5.52	-81%
Number of employees**	13,854	15,727	-12%	13,982	15,309	-9%

\* Adjusted for start-up costs

\*\* Incl. leased personnel, average. As at September 30, 2023: 13,741

#### Outlook 2023/24

Depending on the market development, AT&S will continue to push ahead the investment projects in Kulim and the expansion of the site in Leoben and implement technology upgrades at other locations in the financial year 2023/24. In view of the highly volatile environment, the ongoing investment projects will be reviewed at frequent intervals and adapted to the respective current situation if required.

The expectations for AT&S's segments are currently as follows: In the markets for IC substrates, demand for notebooks in 2023 is expected to be lower than in 2022. Servers saw a slump at the beginning of the year caused by the economic situation, with a recovery expected in the short term so that the prior-year level should be exceeded as early as the second half of 2024.

In the area of mobile devices, where overall market conditions are weak, the module printed circuit board business will remain a positive driver for AT&S. While the Automotive segment is subject to a growth trend as the electronic content per vehicle is increasing, the PCB market is under price pressure. In the Industrial segment, the market is expected to decline this year.

The management is planning investments totalling up to € 1.1 billion for the financial year 2023/24 depending on the market environment and progress of projects.

AT&S expects the market environment to remain challenging with continued price pressure in the second half of 2023/24, and persisting high volatility and low visibility. High inflation rates, rising interest rates, recession risks as well as geopolitical developments continue to represent additional elements of uncertainty for the end markets.

In this challenging environment, AT&S expects annual revenue between € 1.7 and 1.9 billion. Not including effects from the start-up of the new production capacities in Kulim and Leoben totalling approximately € 100 million, the adjusted EBITDA margin is expected to range between 25 and 29%.

#### Guidance 2026/27

The progress of the production capacity expansion in Kulim and the expansion of the site in Leoben is still positive despite the challenging

global economic situation. Therefore, AT&S assumes that revenue of approximately € 3.5 billion will be generated in the financial year 2026/27 and expects an EBITDA margin in the range from 27 to 32%. The management monitors the currently tense geopolitical situation very carefully in order to be able to respond to developments at any time and to make strategic adaptations.

AT & S Austria Technologie & Systemtechnik Aktiengesellschaft – Advanced Technologies & Solutions

AT&S is a globally leading manufacturer of high-end IC substrates and printed circuit boards. AT&S industrialises

leading-edge technologies for its core business segments IC Substrates, Mobile Devices, Automotive & Aerospace, Industrial and Medical. AT&S has a global presence with production sites in Austria (Leoben, Fehring) and plants in India (Nanjangud), China (Shanghai, Chongqing) and Korea (Ansan near Seoul). A new high-end production site for IC substrates is currently being established in Kulim, Malaysia. In Leoben, a European competence centre including series production is being built.

The company employs roughly 14,000 people. For further information please visit [www.ats.net](http://www.ats.net)

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## **AT&S CEO Andreas Gerstenmayer welcomes the Austrian government's clear commitment to microelectronics**

Microelectronics is the basis for digitalization, for the green energy transition and for sustainable growth

AT&S CEO Andreas Gerstenmayer welcomes the Austrian government's clear commitment to microelectronics. Austria must continue to make bold investments, he said.

Leoben, October 26, 2023 - The Styria-based microelectronics manufacturer AT&S welcomes the announcement of the Austrian Federal Government to endow investments in the country's microelectronics industry with three billion euros up until 2031. These funds are an important step towards Europe's technological independence and lay the

foundation for sustainable growth in economic sectors that will be crucial in the future. The current draft budget provides for funding the Austrian microelectronics industry with a total of three billion euros in the next seven years. The new budget, which will be definitively adopted in November, also includes additional funds from the Federal Ministry of Labour and Economy amounting to 50 million euros, which will increase the funds available in Austria for the European funding project IPCEI ME/CT (II) (Important Projects of Common European Interest) to 255 million euros.

“Austria is a leading location for microchips in Europe. As a result, the number of future-oriented jobs will expand in the long term, generating prosperity. With nearly three billion euros to be invested in the coming years, we can support research and new investments of semiconductor companies along the entire value chain in Austria,” Economics Minister Martin Kocher said last week.

AT&S has long been engaged in efforts to create internationally competitive framework conditions for the microelectronics industry in Austria. “We are pleased with the government’s clear commitment to an industrial policy focus on microelectronics. Without microelectronics, there will be no digitalization, no green energy transition and no sustainable growth. If Europe and Austria want to prevail in global competition, we must create the right conditions. Such bold investments in Austria, combined with the European funding programmes, provide a good foundation. Now we have to keep working to build know-how and capacities along the entire value chain,” says AT&S CEO Andreas Gerstenmayer.

#### Styrian heart for Europe’s microelectronics

The additional funds complement the investments made by AT&S as part of the European IPCEI programs and in the future also as part of the Chips Act. The first IPCEI for microelectronics, which AT&S recently completed, resulted, among other things, in the development of power-saving energy supply for electric cars and a new copper recycling plant, which is already successfully used at the AT&S plant in Leoben.

The second IPCEI for microelectronics ME/CT (II) is currently running and now provides Austrian companies with a total of 225 million euros for research, development and building industrial capacities. As part of IPCEI ME/CT (II), AT&S is investing more than half a billion euros in building a research and production centre for IC substrates and packaging technologies in Leoben, which is unique in Europe.

## AT & S Austria Technologie & Systemtechnik Aktiengesellschaft - Advanced Technologies & Solutions

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### NEWS FROM GERMANY

#### Schweizer Electronic AG: Current figures underline growth and stability

- Significant increase in new orders and orders on hand
- Sales increase despite share sale of Chinese subsidiary
- Positive development of operating result
- Forecast 2023 substantiated – further growth expected for 2024

Schramberg, November 3, 2023 – SCHWEIZER confirms its very positive business development in the third quarter.

**Order intake** in the first three quarters of 2023 amounts to 154.6 million euros. Order intake in the third quarter increased significantly by 25.8 percent compared to the same quarter of the previous year. At the end of the third quarter of 2023, the **order backlog** was 254.4 million euro (31.12.2022: 234.4 million euro).

Although the majority in the Chinese subsidiary was sold, sales for the first three quarters of 2023 reached 102.1 million euros, an increase of 2.4 percent year-on-year. In particular, the 22.6 per cent increase in sales of products through the Asian partner network to 35.2 million euros contributed to this development. However, due to the majority disposal of the Chinese subsidiary, the share of products from own production decreased to 65.6 percent (9M 2022: 71.2 percent). While the business activities in America and Europe showed positive results - America recorded a sales growth of 73.7 percent - there was a sales decline of 34.5 percent in Asia, which is mainly due to the disposal of the Chinese subsidiary.

**Earnings before interest, taxes, depreciation and amortisation (EBITDA)** amounted to 49.1 million euros or 48.1 percent (9M 2022: -6.9 million



euros). Adjusted for the deconsolidation income and for the losses of the Chinese subsidiary, which are fully consolidated until April 2023, EBITDA amounted to 8.2 million euros (9M 2022: +4.7 million euros). This corresponds to an operational increase in EBITDA of 3.5 million euro compared to the same period of the previous year. In the third quarter alone, EBITDA of 2.5 million euro was generated.

Group **equity** amounted to 30.9 million euros as of the reporting date 30 September 2023, which corresponds to an equity ratio of 28.5 percent (31 December 2022: -8.8 million euros).

### **Forecast / Outlook**

Despite a wide range of negative factors influencing the overall economic development, the Executive Board continues to expect a dynamic development of the business volume in 2023. "SCHWEIZER's strategic positioning in the booming markets of sensor technology and power electronics, which enable the electrification of mobility and autonomous driving, among other things, is paying off," says Marc Bunz (CFO) of SCHWEIZER. "Furthermore, we expect positive impulses from our customers' measures to strengthen their supply chain resilience in the coming years."

For 2023, the Executive Board concretises its expectation for revenue growth to 2 to 3 percent (previous forecast 0 to 5 percent) for the full year. This means that the high increases in the core business are likely to more than compensate for the loss of turnover from the Chinese subsidiary.

Furthermore, the Executive Board expects an adjusted\* EBITDA ratio of 7 to 9 percent (previously: 6 to 9 percent). The unadjusted EBITDA ratio is expected to be in a range of 37 to 40 percent (previously: 35 to 40 percent).

The liquidity and balance sheet ratios are also confirmed.

For 2024, the Executive Board expects sales growth of 10 to 20 percent despite global uncertainties. This assessment is supported by important product series launches in the field of electrified driving and a well-filled order book.

Further information on the business performance and forecast is available at <https://schweizer.ag/investoren-und-medien/finanzberichte/downloads-berichte>.

*\*adjusted for the Chinese subsidiary and deconsolidation effects*



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### NEWS FROM IBERIA

#### **NCAB acquires Electronic Advanced Circuits S.L. in Spain and opens a new company in Portugal**

NCAB Group has signed an agreement to acquire 100 per cent of the shares in Electronic Advanced Circuits S.L. based in Madrid, Spain. The transaction is estimated to close in November 2023.

Electronic Advanced Circuits S.L. expects to reach net sales of 19 MSEK in 2023 with an estimated EBITA margin of about 15 %. The company has 2 employees. The majority of sales is concentrated to the telecom and industrial sectors and sourcing is being made from manufacturing partners in China. The purchase price is 14 MSEK with a potential earn-out capped at a maximum amount of 4 MSEK.

NCAB Spain had before this 13 employees and a turnover of 75 MSEK in 2022. The acquisition is expected to be earnings accretive for NCAB Group in 2024. Synergies are expected in the areas of suppliers, payment terms and logistics.

NCAB Group is in addition establishing a new entity in Portugal, NCAB Group Portugal and two new employees are recruited, both with extensive experience from the PCB industry.

Benjamin Klingenberg, VP NCAB Europe:

“With these two strategic actions, we gain highly skilled and experienced personnel, who will complement our existing capabilities and play a pivotal role in unlocking new growth opportunities and expanding our networks. We are taking steps forward in our expansion plans in Spain and Portugal. The Iberian Peninsula is of growing interest for the electronics market in Europe.”

For more information, please contact:  
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### NEWS FROM ITALY

#### Seica SpA, Productronica 2023 Preview

This year's theme: The latest, leading-edge, completely automated test solutions on display in Booth A1-445 and A3.335

Accelerating innovation has always been a touchstone of Seica's approach to providing solutions to the electronics industry, so visitors to Seica's booth at Productronica 2023 will see full alignment with this year's theme in the latest, leading-edge, completely automated test solutions on display in Booth A1-445 as well as the fully automated selective soldering and optical inspection solutions on show at the Seica Automation Booth A3-335.

**The PILOT VX test platform**, on display in Booth A1-445, is the new gold standard in terms of flying probe speed and performance. New, state-of-the-art mechanical architecture and motion controllers enable a reduction of up to 50% in test time, 12 multi-function test heads provide the capability for double-side probing of up to 44 points simultaneously and technologically advanced measurement hardware and a new microwave-based measurement technique provide unrivalled test performance. Optimized VIVA software management saves even more time by enabling the parallelization of different types of tests, and smart analysis capabilities together, with algorithms based on the principles of artificial intelligence can automatically optimize the test flow in run-time, while maintaining test coverage targets.

The FlyPod option extends testing capability even more by specialising a single mobile probe to carry up to 14 channels, enabling access to boundary scan circuits and adding onboard programming capability

without any external fixed cables and the Pilot VX platform includes options for testing flex circuits and the electrical and optical test of LEDs. In addition, the Pilot VX can also generate pressure/force topology maps of the device under test using the innovative FlyStrain™ option. Once a necessity for traditional fixture-based solutions, Seica has migrated these new tools to the flying probe where testing of ceramic wafers and avionics and satellite boards requires delicate probing and traceability.

The Pilot VX is a tremendously powerful asset, deployable in every phase of today's accelerated product lifecycle, from concept, to design, to prototype, to production: the intrinsic capability of the Pilot VX flying probe to give immediate, extremely precise access to all of the points on a first prototype board, coupled with an extensive suite of measurement hardware and software tools, including the PR boost feature with the capability to power the board (up to 2A per probe) with all of the 8 standard electrical probes enables the test and validation of prototypes quickly and with minimum effort without requiring deep specific training on the tester or generating a test program. Once the design has been validated, the automatic generation of a complete test program starting from the board CAD is a fast, streamlined process using SEICA's VIVA software platform, minimizing the setup time for pre-series and/or full production test. In fact, the dramatic improvements in speed and performance achieved in the Pilot VX platform, has now made flying probe test a key solution in many high-volume production environments with a high level of automation.

Visitors to Seica's booth will also see the fully automated **COMPACT SL 4J**. Designed to maximize configurability and customization, the Compact SL satisfies the full range of test requirements: from in-circuit, to functional, to combinational, as well as performing other tasks such as onboard programming (OBP) and has the speed and flexibility to meet today's demanding throughput targets. As part of Seica's COMPACT line of test solutions, the COMPACT SL allows the user to choose the most suitable configuration for today's need, while ensuring scalability for future requirements. The test solution on display includes the new ATE BOOSTER module, the latest addition to the vast suite of performances available, designed to maximize LED test capability and OBP performances, while reducing costs by means of innovative optimization of the hardware resources required.

**Seica's MINI** Line, also on display, a very useful and cost-effective platform to develop your customized test benchmark, providing a wide range of

integrated instruments, switching matrices and user power supplies and, unlike most self-manufactured “rack and stack” test beds, Seica’s MINI test solution has the standard “core” VIVA Integrated Platform (VIP™) with complete user documentation and a self-diagnostic program, guaranteeing sustainability and maintainability over time, even in the case of resource turnover. The user has broad discretion in the choice of configuration and programming languages: Seica’s VIVA Integrated Platform (VIP™) allows easy integration of off-the shelf instrumentation, and test sequences can be developed using the VIVA Test Studio environment as well as a wide range of third-party software including LabView©, TestStand©, C, and Python. Moreover, the programs developed on the MINI are completely transportable to other SEICA systems which make for fast and easy setup of the manufacturing test process.

In Hall A3 visitors to Seica Automation’s booth A3-335 will be able to view Seica’s innovative solutions for board manufacturers together with the other automation solutions on display.

**The DRAGONFLY** provides optical inspection of THT components: the combination of multi-coloured LED lighting and colour scan camera enables detailed inspection of the solder joint meniscus and shorts detection, while the full scan acquisition of the PCB surface and not only of the components allows the detection of solder balls. The DRAGONFLY Next > series also includes the configuration for conformal coating inspection of finished products, as well as for process control and setup. Configurable for single and double sided inspection of the board, its intuitive and streamlined management software environment enables the user to develop and deploy an application program in a few hours.

**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. The Firefly will be demonstrated in-line, using Seica Automation board handling modules and visitors will have the opportunity to see live demos of the soldering process directly at the booth.

All of the solutions on display include Seica’s **VIVA NEXT** software platform, which is able to provide intelligent integration with all aspects of the customer’s manufacturing processes - data collection, traceability,

interaction with MES, repair operations - and all of the Next> series systems have Canavisia's Industrial Monitoring solution on board, for remote monitoring of current and voltage consumption, mains supply, temperature, light indicators and other parameters useful to indicate correct operation, provide information for predictive maintenance and, in general, to render the systems compatible with today's Industry 4.0 standards

Come visit us at Booth A1-445 and Booth A3-335 to see how our innovation can help accelerate yours!

To learn more, visit [www.seica.com](http://www.seica.com).



The European Institute for the PCB Community

## **EIPC SPEeDNEWS**

*The Weekly On-Line Newsletter*  
*Issue 32 – November 2023*

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### NEWS FROM THE UK

#### **Ventec Giga Solutions Appointed as Distributor for Sunus Printing Machines.**

**November 6 2023 - Ventec Giga Solutions, the equipment division of Ventec International Group announces its appointment by Sunus Precision Machinery as sales agent and distributor of Vacuum Filling Holes Solutions and Screen Printing Equipment. The agreement covers all regions globally outside of Asia.**

Sunus Precision Machinery is a market leading supplier of vacuum filling machines designed for filling holes in printed circuit boards with conductive or non-conductive paste. Through-holes and blind via-holes are fillable and





blind via-holes can be plugged double-sided in one cycle.

The range of PCB printing equipment includes chip carriers, high level HDI, high layer PCBs, FPC solder proof text semi-automatic and CCD automatic printing machines, and peripheral supporting equipment.

“Sunus is a well-known quality equipment manufacturer with excellent high technology PCB fabricator references, and we are thrilled to add them to our Ventec Giga Solutions offering. We carefully select the partners we work with, and Sunus complement the other brands we represent. We aim to offer our customers the best PCB manufacturing equipment on the market and look forward to highlighting our new partnership at Productronica 2023 on our booth B3/242,” said Ramesh Dhokia, Business Unit Director, Ventec Giga Solutions.

“The agreement with Sunus represents a further step in our strategy to expand our market presence across the industry,” added Mark Goodwin, COO of Ventec International Group. “We will continue to expand our PCB equipment portfolio offered by the Ventec Giga Solutions division to complement our Ventec range of high-performance substrate laminates and prepregs and range of market leading distribution products.”

Ventec Giga Solutions handles factory design, equipment selection, sales, installation, commissioning and training on behalf of customers. The division’s competencies and connections with numerous leading equipment suppliers, combined with the Ventec portfolio of high-performance substrate laminates and prepregs, presents a one-stop-shop for PCB manufacturers, OEMs, and manufacturing services companies to quickly establish and rapidly expand their facilities.

Further information about Ventec’s solutions and the company’s wide variety of products is available at [www.venteclaminates.com](http://www.venteclaminates.com).



## Issue 32 - November 2023

### NEWS FROM THE TPCA

#### **PCB output value is estimated to grow by 8% next year**

##### TPCA

As customer inventory is gradually reduced, new products and new applications are successively taken over, and the PCB industry begins to leave the operating bottom. Since PCB is the mother of industry, new applications and new platforms are expected to drive industry operations upward. PCB industry players are unanimously optimistic about next year's operations. AI, automotive and other fields will be the main growth drivers in the future.

##### PCB output value is estimated to grow by 8% next year

Li Changming, chairman of the Circuit Board Association, pointed out that under the pressure of inflation and inventory adjustment, the PCB industry will be extremely challenging this year. It is estimated that Taiwan's PCB output value will decrease by 16.8% this year. With the inventory adjustment, it is expected that Coming to the end, PCB output value is expected to grow by 8% annually next year.

PCB leader Zhending announced that its operations have ended in the first half of the year. As Zhending actively deploys new technologies and new markets, it has been deploying in the fields of servers and automotive boards for a long time. High-end automotive boards have entered mass production since last year, and AI servers The core motherboard has also passed customer certification. As customer demand increases in the future, we are optimistic about the future growth of related products; in addition, high-speed computing needs such as 5G, AI servers, and automotive electronics will drive the future growth of ABF carrier boards, which can be expected in the next three years. It is expected that the contribution to Zhiding's revenue and profit will be significantly increased.

AI has become a highlight of the technology industry this year. PCB plays an important role in AI servers. Foreign investment is optimistic about AI servers, driving up the high-end copper foil substrate industry's average annual compound growth rate (CAGR) from 2023 to 2025, rising from 15% to 21%. , Tai Optoelectronics and Taiyao are favoured by foreign legal entities, and Jinxiang Electronics is also favoured by many foreign investors.

(News source: Free Finance)



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## International Diary

### 2023

#### **EIPC @ Productronica 2023**

Stand B3-529

14-17 November

München, Germany

#### **23<sup>rd</sup> EIPC Technical Snapshot Webinar**

Registrations via [www.eipc.org](http://www.eipc.org)

December

### 2024

#### **EIPC Winter Conference**

##### **Visit Schweizer Electronic AG**

Schramberg/Villingen-Schwenningen, Germany

Tuesday 30 & Wednesday 31 January

#### **EIPC Summer Conference**

##### **Visit ESTEC**

Noordwijk, The Netherlands

Tuesday 4 & Wednesday 5 June