



The European Institute for the PCB Community

EIPC SPEeDNEWS

The Weekly On-Line Newsletter

Issue 4 – February 2023

CLIMATE CHANGE NEWS

A few pieces of good news on climate change (and a reality check)

Emissions of the greenhouse gases that cause climate change reached a new peak in 2022, according to [early estimates](#). And climate disasters seem to be hitting at a breakneck pace. In 2022, the world experienced [record heat waves](#) in China and Europe, and [devastating floods in Pakistan](#) killed over 1,000 people and displaced millions.

But a close look at energy and emissions data around the world shows that there are a few bright spots of good news, and a lot of potential progress ahead.

For example, renewable sources make up a growing fraction of the energy supply, and they're getting cheaper every year. Countries are setting new targets for emissions reductions, and unprecedented public investments could unlock more technological advances.

Read on to find out why there are at least a few reasons to be hopeful.

While emissions reached new heights in 2022, the peak is in sight.

Emissions from fossil-fuel sources were higher than ever in 2022, according to data from the [Global Carbon Project](#). Global growth year over year was just over 1%, continuing a rebound from a 2020 low caused by the covid-19 pandemic. Overall, emissions have doubled in about the last 40 years.

But while emissions grew globally, many countries have already seen their own plateau or begin to decrease. US emissions peaked in 2005 and have declined by just over 10% since then. Russia, Japan, and the European Union have also seen emissions plateau.

Global emissions are expected to reach their peak in about 2025, according to the [International Energy Agency](#). Reaching maximum annual emissions is a significant milestone, the first step in turning the metaphorical ship around for greenhouse gases.

But emissions are still growing in some countries, including China (the world's current leading emitter) and India, both of which have growing populations and economies. China's increase has been especially sharp, with emissions roughly doubling over the past 15 years.

China's government has [pledged](#) that the country will reach its emissions peak by 2030 and achieve net-zero emissions before 2060. The peak could come even sooner, in 2025 or before, [according to analysis by CarbonBrief](#). The nation is deploying renewables at record speed, roughly quadrupling installations over the past decade.

India's emissions increase is more moderate than China's, but the country will likely see growth continue until 2040 or 2050. For now, though, its total emissions are far less than those of China and the US, and it is behind most other countries in [per capita emissions](#).

Economic growth is becoming less dependent on fossil fuels

Emissions have tended to increase with economic growth, but in the future, progress on emissions won't necessarily require sacrificing economic gains. As renewable energy is more widely deployed and technical improvements drive efficiency, economic growth may be possible without a proportional rise in climate pollution.

Getting to the bottom of which countries have contributed most to climate change is complicated, but a few pieces of data can help.

Some nations have already begun to cut emissions while maintaining economic growth. Helping developing nations to do the same will be vital.

Globally, the carbon intensity of economic growth is dropping over time, meaning the carbon emissions associated with the same level of economic activity have decreased. This is true globally, as well as for large economies like the US and EU. The trend is most obvious in China, where the carbon intensity of the economy has dropped by about 40% since 2000.

But China's carbon intensity is still higher than that of most other large nations. And progress has slowed, largely because of the high proportion of coal in the country's energy mix today—[about 60%, as of 2021](#).

SHARE OF EMISSIONS	1750 - 2021	2021
USA	24%	14%
EU	17%	8%
CHINA	14%	31%
RUSSIA	7%	
INDIA		7%
R.O.W.	30%	33%

The reality check: climate progress needs to happen even faster

While emissions are leveling off or dropping in some parts of the world, even the countries that are making progress largely aren't doing so fast enough to reach international climate goals.

The Paris Agreement, an international climate treaty adopted in 2015, set a target to keep warming at less than 2 °C over preindustrial levels, or ideally less than 1.5 °C.

From climate models, researchers have estimated the limits to total greenhouse-gas emissions needed to hit these targets. The concept is called the global carbon budget, and we've nearly spent it all.

If we had started emissions cuts sooner, our carbon budget might have stretched farther into the future, allowing for more gradual cuts. But now, in order to keep warming under 1.5 °C globally given historical emissions, the world's emissions need to reach net zero by 2050; by 2030 they'd need to be cut roughly in half. And even that might not be enough.

Keeping warming under 1.5 °C is possible, though the goal is [slipping out of reach](#). Given that global surface temperatures have [increased by about 1.1 °C](#) since before 1900, we're already dangerously close to global targets. How much more temperatures rise in the future will be a function of emissions, and the sooner significant cuts happen, the more likely we are to keep warming close to the 1.5 °C target.

It's clear that building renewable energy and finding other ways to cut emissions can slow climate change. Whether you see it as good news or bad news, the future will be dictated by the world's actions today and in the near future.



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ELECTRONICS INDUSTRY NEWS

PCB and IC substrate suppliers see sales hit bottom in 1Q23

Janet Kang, Taipei; Steve Shen, DIGITIMES Asia

PCB and IC substrate suppliers expect sales for 2023 to bottom in the first quarter, with customers' order pull-in momentum to start picking up in the second quarter, according to industry sources.

They also expect sales prospects to improve in the year's second half, thanks to the launch of new products by end-market brand vendors that will help jack up shipments from related PCB and substrate makers.

Unimicron chairman TJ Tseng recently remarked that the company is optimistic about the outlook for ABF substrates, aligning on the medium- to long-term growth prospects of the 5G, AI and high computing performance (HCP) sectors.

PCB maker Zhen Ding Technology has committed to gearing up for the IC substrate business, making it a focus of its operations in the next 10 years. According to industry sources, the company plans to set aside a capex budget of NT\$15 billion (US\$495 million) annually through 2027 to support its IC substrate capacity expansions.

Having completed a BT substrate expansion project at its plant in Qinhuangdao, China, in August 2022, Zhen Ding will kickstart ABF substrate volume production at a new plant in Shenzhen in 2023.

Additionally, the new facilities for high-end HDI boards and substrate-like PCBs at the third production site of its manufacturing complex in Huaian, China, will also come online in the second quarter of 2023.

Eternal Materials, which supplies resins, dry film photoresists and other upstream PCB materials, expect the ongoing inventory adjustments at the related supply chains to accelerate shortly, which will help spur demand for its products, particularly dry film photoresists.

Since China is the primary market for its synthetic resins and other special PCB materials, Eternal Materials expects demand for these products to recover following the easing of COVID restrictive measures. While seeing its 2022 revenues stay at roughly the same level as the previous year, Eternal Materials experienced a 20% decline in pre-tax profits in the year due mainly to price hikes of upstream materials and the impacts of an industry-wide inventory correction.

Meanwhile, Eternal Materials has been actively deploying production bases in Southeast Asia. Its synthetic resin factory in Malaysia has steadily increased its shipments. According to company sources, in line with the increasing supply chain relocation to Southeast Asia from China amid geopolitical tensions, the company has purchased a land lot adjacent to its existing factory in Malaysia in preparation for future expansions.

Discovering New Enhancements in Light-based Wireless Charging

By Maurizio Di Paolo Emilio

DESIGNLINES

POWER MANAGEMENT DESIGNLINE

[Wireless charging](#) is a technology spreading in many electronic applications, such as consumer electronics, automotive and the [Internet of Things \(IoT\)](#). For low-power devices, wireless over-the-air (OTA) power transfer offers significant benefits, including the absence of cumbersome connecting cables and the reduction or elimination of batteries, which require maintenance to their replacement. Wi-Charge has made an important announcement about improving its technology to grow the industry and provide wireless charging for more devices and programs.

Wireless charging solution

Among the companies that offer solutions of this type, [Wi-Charge](#) stands out. Based in Rehovot, Israel, the company has developed a wireless charging technology based on infrared rays, thus differentiating from the classic inductive power transfer and RF charging.

Wi-Charge has developed AirCord, a wireless power solution consisting of a transmitter and receiver that use a beam of light to charge different types of devices. According to Wi-Charge, unlike other technologies, where power decreases as the square of distance, with this technology the power is independent of distance.

Furthermore, power is supplied only to targeted devices, without spreading unwanted radiation into the surrounding environment.

Connected to the electricity grid (alternating or direct current), the wireless power transmitter (Figure 1) converts electricity into safe infrared beams, which deliver energy to the client devices.

On the other side, the wireless power receiver, which can be plugged into or embedded in a client device, converts infrared energy back to electricity. The receiver can then use this energy to charge an internal rechargeable battery or a super-capacitor.

The receiver sends back client device telemetry including battery status, usage stats, billing information and more.

A single transmitter can power multiple devices (which are automatically identified), while multiple transmitters can also be used in topologies for larger deployments, such as supermarkets, production floors, shopping centers, and restaurants.



Figure 1: AirCord wireless power transmitter (Source: Wi-Charge)

The Gen2 receiver



Figure 1 Ori Mor, co-founder and chief business officer, Wi-Charge.

Recently, Wi-Charge announced a significant upgrade to its technology in an effort to advance the market and provide wireless charging to more gadgets and applications. Wi-Charge is advancing the realization of its goal of a wire-free world with the introduction of its Gen2 Receiver. The Wi-Charge Gen2 Receiver is a significant advancement for the sector that offers device manufacturers direct access and

sets new norms in power, simplicity of integration, and form factor.

According to Wi-Charge, the new improvements increase power while decreasing footprint to enhance the wireless charging capabilities and range of devices. With a footprint that is 30% smaller and delivers 40% more power than the previous version, the Wi-Charge receiver is now compatible with an even greater variety of devices and use cases.

According to Wi-Charge, the receiver has been improved with the following:

- Complete charging solution: the Gen2 receiver now comes with a battery charger, a control interface, and an output voltage that can be customized. It can also send customer warnings and telemetry from the receiver to the transmitter, which can then send it to the Wi-Charge cloud
- Increase in Power: the Wi-Charge transmitter can now power more devices with a single transmitter, as well as devices that need more power to run their features or have more power-hungry features overall
- A reduced total bill of materials (BOM) for the client device. This is the result of simpler electronic integration, improved aesthetics, and easier mechanical integration into the original system (using less R&D funds).

“With the first-generation receiver these new enhancements did not exist, and everything was done by the customer. Our second-generation receiver includes all those capabilities inside one package which is much appreciated by our customers as it makes integration trivial and at a lower cost”, said Ori

Mor, co-founder and chief business officer of Wi-Charge in an interview with EE Times.

The working parameters of the Gen2 receiver, such as, for instance, the voltage level used to recharge the battery, can now be configured via software. That means the customer can simplify the design of the solution, saving time and reducing cost. With the previous generation receiver, Wi-Charge had to design the battery pack, and then integrate it with the customer's PCBA which included the battery charger, the voltage converter, and the processor that would communicate over I2C how much battery was available inside the battery.



Figure 2 Eli Zlatkin, vice president, R&D, Wi-Charge.

“With our second-generation technology, all those features are already inside the receiver. All you have to do is to wire it to the battery and configure it with the relevant parameters. That's it, you just have to do the wiring and the mechanical packaging”, said Eli Zlatkin, vice president, R&D, Wi-Charge.

The new receiver achieves a substantial improvement in power, size and cost. As Zlatkin pointed out, it is not that the power has been increased, but the efficiency.

“The power our Gen2 receiver gets from the transmitter is the same as before, but the efficiency is significantly improved. Previously, our lower power devices were providing 60 mW, whereas now they're at 100 mW. And the higher power devices went from 250 to 330 mW, and all that was achieved using the same transmitted power level”, said Zlatkin.

These improvements have been achieved by using better and more efficient components, redefining the layout of the circuit, and better understanding how to use the controller. The module has not been designed for external integration, or as a plug-and-play device for consumer applications. It's only for internal integration inside the device, by means of a small cheap connector that was not available with the previous generation.

Additionally, a network with multiple transmitters and receivers (see Figure 2) can be built, allowing the customer to prioritize a particular device over other types of devices. It can be thought of as a sort of quality of service (QoS)

feature, where a certain customer might pay more for a higher priority in charging.

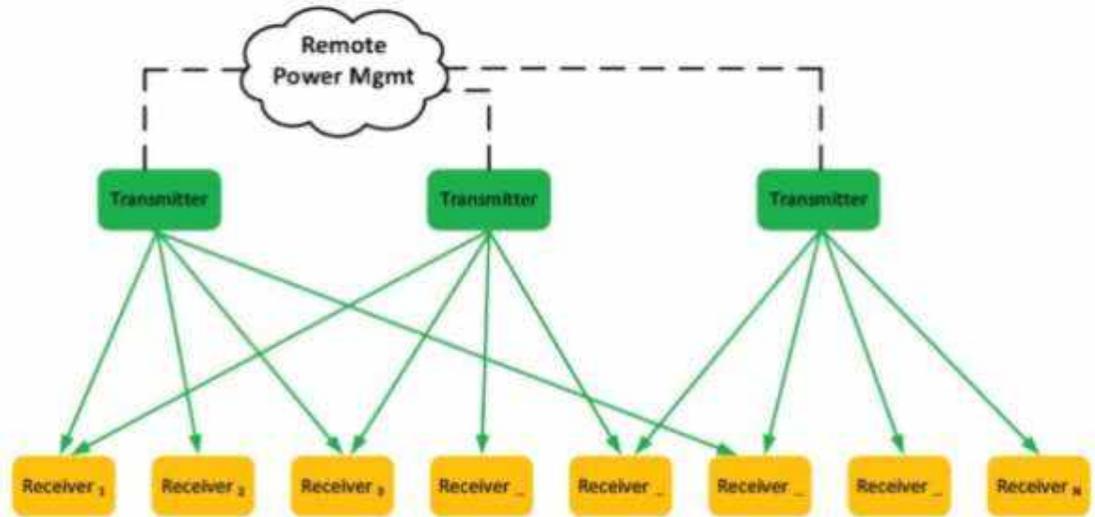


Figure 2: Wi-Charge network with multiple transmitters and receivers (Source: Wi-Charge)

For instance, if in the same network there are a smart lock and a toothbrush, it might be more important for the lock to have a full battery. Therefore, according to Wi-Charge, we could define a policy where the lock gets higher priority in charging than the toothbrush.

“For the next year, our focus will be based on wireless power advertising displays, smart locks, and other smart devices for access control in small buildings. We are already working on a commercial charging pad that you can place in meeting rooms or restaurants and a toothbrush charger. Additionally, we might also enter the electric shades, electric blinds, and industrial markets, as well. What we do with OEMs on the consumer side unfortunately can’t be disclosed. But it’s exciting,” Mor concluded.

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Maurizio Di Paolo Emilio

Maurizio Di Paolo Emilio is Editor in Chief of Power Electronics News and EEWeb, and an EE Times correspondent. He holds a Ph.D in physics and is a telecommunications engineer. He has worked on projects concerning gravitational waves research, designing a thermal compensation system (TCS) and data acquisition and control systems, and on others about x-ray microbeams in collaboration with Columbia University. TCS was applied to the Virgo and LIGO experiments, which detected gravitational waves for the first time and earned the Nobel Prize in 2017. He previously edited Firmware and Elettronica Open Source. He joined AspenCore in 2019.



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NEWS FROM SWEDEN

CONFIDEE, new member of Defence and Security association

CONFIDEE announces their entrance as new member to The Swedish Security and Defense Industry Association, SOFF. "We believe that communication and transparency in regard to supply chain security is the best practise to ensure compliance in this heavily regulated industry", says CONFIDEE CEO Vidar Olsen.

"We are thrilled to welcome CONFIDEE as a new member of SOFF in Sweden. As a supplier of printed circuits to the defence industry, their expertise and experience will be a valuable addition to our network. Knowing the commitment from the people behind CONFIDEE, when it comes to data security, export compliance and supply chain protection, we are confident that their presence positively will contribute to our association and to other members. We look forward to harnessing their insights and expertise to further strengthen our commitment to supporting the industry", says Robert Limmergård Secretary General at SOFF.

Aiming for surgical traceability

The team at CONFIDEE is looking forward to prosperous meetings, sharing of information and knowledge and further collaborations with fellow industry partners, in a joint pursuit for further improving the defence supply chain, down to the PCB level.

"We are honoured to be approved as a member of SOFF. We believe in transparency and communication between all parties involved in the supply chain and are delighted to see that more and more companies are shifting towards a desire for surgical traceability in their supply chain. Information is key, the question is who holds the key, and is it passed on to the ones in need of it, and protected from the ones that don't", says Olsen.

About SOFF

SOFF is an organisation with a main goal to provide a platform and promote the common interest of the security and defence industry, in order to achieve the best possible preconditions for future business.

About CONFIDEE

CONFIDEE is a printed circuit partner, delivering PCB to the world's most advanced technologies. We are a Regulatory Technology company, securing the customers and manufacturing partners PCB data by monitoring and reporting on compliance in the supply chains, through our proprietary IT platform. Our headquarters are in Oslo with local offices globally.



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NEWS FROM THE UK

Southern Manufacturing & Electronics show will be held from 7-9 February 2023

The annual Southern Manufacturing & Electronics show is a firm favourite on the calendar. Aerospace Manufacturing takes a closer look at what visitors can expect to see at the Farnborough Exhibition Centre from 7-9 February 2023.

The worlds of mechanical engineering and electronics converge every year at Southern Manufacturing & Electronics. Visitors can move freely between the different engineering disciplines and, as a result, often discover things that were not on their original shopping list.

The 2023 show will be held from 7-9 February at its usual venue, the Farnborough International Exhibition and Conference Centre. There will be a specialist theme throughout called AutoAero, devoted to automotive and aerospace engineering.

Exhibitors will highlight a vast array of mechanical, electrical, electronic, optoelectronic, electromechanical, hydraulic, and pneumatic components and assemblies, PCBs, cables, connectors, and sensors, as well as drives, encoders, controls, displays, HMIs, fasteners, pressings, wireforms, springs, plastic, and rubber mouldings, and more.

Suppliers of machine tools will be there, along with robot and cobot machine tending and other automation solutions, tooling, workholding, metrology equipment, test and inspection systems, finishing machines, laser cutting and marking equipment, additive manufacturing machines and consumables, and engineering and business software.

PCB related companies include the following:-

AdoptSMT Europe GmbH
Advanced Rework Technology Ltd.
Altus Group Ltd
Ambic Equipment Ltd.,
Ask Technology Ltd.,
ASMPT SMT Solutions
D.J.Assembly
Electronic Manufacturing Solutions Ltd.,
European Circuits Ltd.,
Eurotech Group PLC
G & B Electronic Designs Ltd.,
Quality Precision Electronics
Shenzhen X-Mulong Circuit Co. Ltd.,
SMT XTRA Ltd.,
Starstream Global
Ventec International Group.

There will be a free technical seminar programme every day. The regular bus service between Farnborough's railway stations and the show, parking and admission to the show are all free as well.



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NEWS FROM THE USA

Defence Companies Secure Record Orders

Lockheed Martin, Raytheon say supply-chain challenges remain to deliver on deals buoyed by Ukraine conflict

By [Doug Cameron](#)
WSJ

The two largest U.S. defence contractors said ongoing supply chain challenges are hampering efforts to deliver on record weapons orders, driven by the conflict in Ukraine and tackling China's military expansion.

Lockheed Martin Corp. said worker shortages have hampered production, while the Pentagon has sped up purchases of weapons headed to Ukraine. Raytheon Technologies Corp. said it would be the end of the year or beyond before production of some materials returns to pre-pandemic levels.

The two companies have been the biggest beneficiaries of the \$27 billion in military equipment committed by the U.S. to Ukraine, in terms of contracts awarded, though so far only \$6.6 billion is under contract to industry.

Executives have cited shortages of labour and components such as chips and rocket motors, as well as the need for more certainty that orders will follow if companies invest more to boost capacity.

Defence sales at both companies fell last year compared with 2021, according to quarterly results released Tuesday.

"We've got the orders, we've got the capacity," Raytheon Chief Executive Greg Hayes said on an investor call. "We just need to bring the materials in."

Jay Malave, Lockheed Martin's chief financial officer, said contracts are being awarded at a faster clip. "The DOD has accelerated their speed to get them where they want to be," he said.

Lockheed Martin, which also makes F-35 combat jets, has said it would take two years to double production of Javelin antitank missiles, co-produced with Raytheon, and Himars rocket launchers, both being widely used by Ukraine in its conflict with Russia.

Mr. Malave said suppliers stepped up to a faster production pace in the final quarter of last year, helping boost Lockheed Martin's quarterly sales to \$19 billion, about 3% above the company's internal planning.

"The whole value chain has been able to operate at a higher level," he said, though metrics such as on-time deliveries didn't improve much in the fourth quarter and labour shortages continue to pinch production.

Lockheed Martin reported a net profit of \$1.91 billion for the quarter ended Dec. 31, compared with \$2.05 billion a year earlier. Per-share profit slipped to \$7.40 from \$7.47, just short of the consensus forecast of analysts polled by FactSet. Its order backlog topped \$150 billion in 2022.

Lockheed Martin left its existing guidance for flat sales in 2023 largely unchanged, forecasting a return to growth in 2024 when the supply chain improves.

Raytheon reported profit of \$1.4 billion for the quarter ended Dec. 31, compared with \$685 million a year earlier. Per-share profit rose to 96 cents from 46 cents, and sales climbed almost 6% in the quarter to \$18.1 billion, lifted by commercial aerospace engines and parts.

Why Things Are Looking Up for the Global Economy

Pictet's Luca Paolini argues pessimists have been wrong about inflation and recession risk. He says now's the time to invest in emerging markets, bonds and gold.

[By Sommer Saadi and Merryn Somerset Webb](#)
[Bloomberg](#)

Pictet Chief Strategist Luca Paolini says that while there's a lot to be negative about these days, things aren't as bad as they seem—even in the UK. Indeed, Paolini contends most investors have become bullish about Great Britain.

When it comes to the outlook for inflation, the consensus just a few months ago was that prices would fall very slowly. Now inflation is in "significant decline" around the world, he says, with natural gas prices lower than they were in early 2022. There was also widespread belief that massive recessions

would hit everywhere. But that isn't happening either: Paolini points out that economies have proven more resilient, and will now benefit from China's abrupt reopening.

There's also a chance there could be more happy surprises in 2023. According to Paolini, a ceasefire in Russia's war on Ukraine would be a massive positive economically—one that could see commodity prices and interest rates fall, as well as a European boom.

And when it comes to other investments, Paolini says avoid crypto but move some money into bonds. As for stocks, he advises think emerging markets—and don't forget gold.

Rogers Appoints Larry Schmid as Senior Vice President of Global Operations and Supply Chain

Rogers Corporation (NYSE:ROG) ("Rogers") has announced the appointment of Larry Schmid as Senior Vice President, Global Operations and Supply Chain. In this role, Mr. Schmid will direct the operational and supply chain organizations across Rogers' global operations, including in the U.S, China, Belgium, Germany, England, South Korea and Hungary. He will also implement Rogers' ongoing operational excellence initiatives to improve financial performance.

"We are pleased to welcome Larry to Rogers and benefit from his more than 20 years of experience in global manufacturing operations and supply chain management," said Colin Gouveia, President and Chief Executive Officer of Rogers. "Operational excellence is a key pillar of our strategic plan, and Larry will play a leading role in sharpening our operational focus across the organization to systematically lower costs and improve profitability."

"I am thrilled to join Rogers, a proven industry leader, at an exciting time in its transformation and with so much opportunity ahead," said Mr. Schmid. "I look forward to working with Colin and the rest of Rogers' senior leadership team to optimize our manufacturing, drive operational performance and improve supply chain efficiency."

About Larry Schmid

Mr. Schmid has more than 20 years of senior executive leadership in global manufacturing operations and supply chain management. He joins Rogers from Pilko & Associates, LP, a leading operations consultancy advising senior leaders in chemical, energy and related industries, where he most recently

served as President. Previously, he held various international operations roles at Dow, including serving as a member of the Senior Operations Leadership Team and managing five Dow businesses that generated a total of \$10 billion in revenue. Prior to Dow, Mr. Schmid held senior operational positions at Rohm and Haas. He holds a B.S. in Chemical Engineering from the University of South Florida.

About Rogers Corporation

Rogers Corporation (NYSE:ROG) is a global leader in engineered materials to power, protect and connect our world. Rogers delivers innovative solutions to help our customers solve their toughest material challenges. Rogers' advanced electronic and elastomeric materials are used in applications for EV/HEV, automotive safety and radar systems, mobile devices, renewable energy, wireless infrastructure, energy-efficient motor drives, industrial equipment and more. Headquartered in Chandler, Arizona, Rogers operates manufacturing facilities in the United States, Asia and Europe, with sales offices worldwide.

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NEWS FROM THE IPC

North American PCB Industry Sales Down 1.7 Percent in December

IPC releases PCB industry results for December 2022

BANNOCKBURN, Ill., USA, January 26, 2023 — [IPC](#) announced today the December 2022 findings from its North American Printed Circuit Board (PCB) Statistical Program. The book-to-bill ratio stands at 0.87.

Total North American PCB shipments in December 2022 were up down 1.7 percent compared to the same month last year. Compared to the preceding month, December shipments dropped 5.1 percent.

PCB year-to-date bookings in December were down 26.5 percent compared to last year. December bookings were up 8.1 percent compared to the same month last year.

“Some of the weakness in this month's book-to-bill reflects uneven shipments figures in recent months,” said Shawn DuBravac, IPC's chief economist. “December results showed a second consecutive month of improvement. For the year, order were down 6.5 percent while shipments were up 10.1 percent.”

Detailed Data Available

Companies that participate in IPC's North American PCB Statistical Program have access to detailed findings on rigid PCB and flexible circuit sales and orders, including separate rigid and flex book-to-bill ratios, growth trends by product types and company size tiers, demand for prototypes, sales growth to military and medical markets, and other timely data.

Interpreting the Data

The book-to-bill ratios are calculated by dividing the value of orders booked over the past three months by the value of sales billed during the same period from companies in IPC's survey sample. A ratio of more than 1.00 suggests that current demand is ahead of supply, which is a positive indicator for sales growth over the next three to twelve months. A ratio of less than 1.00 indicates the reverse.

Year-on-year and year-to-date growth rates provide the most meaningful view of industry growth. Month-to-month comparisons should be made with caution as they reflect seasonal effects and short-term volatility. Because bookings tend to be more volatile than shipments, changes in the book-to-bill ratios from month to month might not be significant unless a trend of more than three consecutive months is apparent. It is also important to consider changes in both bookings and shipments to understand what is driving changes in the book-to-bill ratio.

IPC's monthly PCB industry statistics are based on data provided by a representative sample of both rigid PCB and flexible circuit manufacturers selling in the USA and Canada. IPC publishes the PCB book-to-bill ratio by the end of each month.

North American EMS Industry Down 2.7 Percent in December

IPC releases EMS industry results for December 2022

BANNOCKBURN, Ill., USA, January 26, 2023 — [IPC](#) announced today the December 2022 findings from its North American Electronics Manufacturing Services (EMS) Statistical Program. The book-to-bill ratio stands at 1.36.

Total North American EMS shipments in December 2022 were down 2.7 percent compared to the same month last year. Compared to the preceding month, December shipments increased 5.8 percent.

EMS bookings in December decreased 22.7 percent year-over-year and decreased 2.9 percent from the previous month.

"The December results provide us with the final 2022 figures — for the year, shipments were up 4.5 percent while orders were down 3.7 percent," said Shawn DuBravac, IPC's chief economist. "Looking forward, the

economic climate is set to deteriorate in the first half of 2023. Despite this, overall industry demand appears to be holding up and backlogs appear health.”

Detailed Data Available

Companies that participate in IPC’s North American EMS Statistical Program have access to detailed findings on EMS sales growth by type of production and company size tier, order growth and backlogs by company size tier, vertical market growth, the EMS book-to-bill ratio, 3-month and 12-month sales outlooks, and other timely data.

Interpreting the Data

The book-to-bill ratios are calculated by dividing the value of orders booked over the past three months by the value of sales billed during the same period from companies in IPC’s survey sample. A ratio of more than 1.00 suggests that current demand is ahead of supply, which is a positive indicator for sales growth over the next three to twelve months. A ratio of less than 1.00 indicates the reverse.

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IPC’s monthly EMS industry statistics are based on data provided by a representative sample of assembly equipment manufacturers selling in the USA and Canada. IPC publishes the EMS book-to-bill ratio by the end of each month.

IPC Honours Zentech Manufacturing, Inc. and AT&S with Corporate Recognition Awards

BANNOCKBURN, Ill., USA, January 25, 2023 — IPC presented its highest corporate honours to two IPC member companies, Zentech Manufacturing,

Inc. and AT&S during the IPC Annual Meeting/Awards Ceremony at IPC APEX EXPO 2023. The Peter Armenian Corporate Recognition Award was presented to AT&S. and the Stan Plaza Corporate Recognition Award was presented to Zentech Manufacturing Inc.

The Peter Samarian Corporate Recognition award, named for a former IPC Board Chairman, recognizes an IPC-member company in the printed board industry (PCB) that has supported IPC through participation in technical and management programs while providing leadership for the industry.

Members since 1990, AT&S staff have supported IPC events in Europe, including keynote addresses at the Embedded Conference in 2013 and the Automotive Electronics Workshop in 2016. The company is highly engaged with IPC's Government Relations efforts in Europe, including our recent efforts in supporting the advanced packaging initiative and advocacy for the European Chips Act. AT&S staff recently shared their expertise and knowledge on advanced packaging as program panellists in IPC's first Advanced Packaging Symposium.

Named for former IPC Board Chairman and founding member of the IPC Electronics Manufacturing Services Industry Management Council, the IPC Stan Plaza Corporate Recognition Award honours an IPC-member company in the electronics assembly industry (EMS) that actively contributes to the industry while supporting IPC technical and/or management programs.

IPC members since 2010, Zentech Manufacturing, Inc. contributes to IPC through the Government Relations Committee, Electronics Program Management Certification with Zentech staff being instrumental in its development and launch, and the EMS Management Council. Two of their three facilities were the first two of nine total companies certified under the EMS QML program. A staunch advocate for IPC, Zentech staff testified before Congress several years ago urging common-sense changes to the U.S. Securities and Exchange Commission (SEC) proposed rule on conflict minerals.

Zentech is a consistent contributor to IPC's industry intelligence program participating in studies such as the EMS Monthly Statistical Program,

EMS Annual Study, Assembly Quality Benchmark Study, EMS Monthly, North American Labour Pool Study, and the Lead-Free Study.

More than 151 Zentech staff members are either Certified IPC Application Specialists or Certified IPC Trainers to such standards as IPC J-STD-001, IPC-A-600, IPC-A-610, IPC/WHMA-A-620 and IPC-7711/21.

“IPC benefits tremendously from Zenith’s and AT&S’s leadership, knowledge and expertise,” said John W. Mitchell, IPC president and CEO. “For many years, both organizations have consistently provided staff resources to standards development and other IPC programs and initiatives. IPC is privileged to have them in our membership; their involvement in IPC has directly contributed to IPC’s global growth in the electronics industry.”

IPC’s Highest Honour, the Raymond E. Pritchard Hall of Fame Award Presented to Industry Leaders Garry McGuire and Teresa Rowe

In recognition of their extraordinary contributions to IPC and the electronics manufacturing industry, **Garry McGuire, NASA** and **Teresa Rowe, IPC**, were both inducted into the IPC Raymond E. Pritchard Hall of Fame at IPC APEX EXPO 2023. IPC’s most prestigious honour, the Hall of Fame Award is given to individuals who have provided exceptional service and advancement to IPC and the electronics industry.

Garry McGuire began his relationship with IPC in August of 1996, participating on the 5-22f IPC-HDBK-001 Task Group, a standards development committee on which he still serves. In addition to this task group, McGuire is currently active on additional 30 standards development committees.

A past recipient of the IPC President’s Award, McGuire’s contributions to IPC standards have been extraordinary. Said IPC President and CEO John Mitchell of McGuire’s accomplishments, “Those who work closely with Garry tell me that he doesn’t need to be the loudest voice in the room, but makes his expertise known with an unassuming quiet strength, offering his knowledge

and experience to get the job done. He is respected as a subject matter expert, always ready to move the industry forward as a strong advocate for the development and use of IPC standards and their space addendums.”

The second Hall of Fame Inductee, Teresa Rowe, spent decades participating in standards development activities before coming on board as an IPC staff member.

Prior to joining IPC, Rowe participated on approximately 25 IPC committees and served as chair of the 5-22 Soldering Subcommittee, co-chair of the 5-22a J-STD-001 Task Group, chair of 5-22bt J-STD-001 Technical Training Committee and chair of the 7-34t IPC-7711/7721 Technical Training Committee. She is certified as an IPC Master Trainer (MIT) for IPC J-STD-001, IPC-A-610, IPC-A-620 and IPC 7711/7721 standards.

“Committee members, IPC staffers and anyone who meets Teresa will tell you that she exemplifies the spirit of IPC – integrity, performance and collaboration,” said Mitchell. “Fellow IPC volunteers describe her as energetic and passionate about getting young engineers involved in the industry, that she welcomes all those interested in standards development, and that her leadership skills are exemplary.

“Both Garry and Teresa are true leaders and innovators in the global electronics industry and has made immense and long-lasting contributions to IPC and to electronics manufacturing,” Mitchell added. “We are thrilled to welcome them both as the newest inductees in the IPC Hall of Fame.”

IPC Announces New Board Members at IPC APEX EXPO 2023

BANNOCKBURN, Ill., USA, January 24, 2023 — at the 66th IPC Annual Meeting on January 24, held in conjunction with IPC APEX EXPO 2023, the IPC Board of Directors announced new and second-term members. Board members serve a four-year term, and the student board member serves a one-year term.

The newly elected Board Members are:

- First-time Board Member: Paul Baldassari, Executive Vice President, Worldwide Operations, Flex

- First-time Board Member: Meredith LaBeau, Chief Technology Officer, Calumet Electronics
- Second-term Board Member: Foo-Ming Fu, Chairman and CEO, HaiNa Cognitive Connections (HCC)
- Second-term Board Member: Carsten Salewski, Executive Board Member, Sales, Marketing and International Business, Viscom AG
- Student Board Member: Henry Crandall, University of Utah

"IPC is privileged to add these outstanding industry professionals to our current slate of Board members," said John W. Mitchell, IPC president and CEO. "We look forward to working with them as we work to advance the global electronics manufacturing industry to build electronics better."

In addition to Board election announcements, IPC honoured three outgoing Board Members:

- Nilesh Naik, Eagle Circuits
- Peter Cleveland, Taiwan Semiconductor Manufacturing Co.
- Hannah Nelson, Valparaiso University

Added Mitchell, "IPC expresses its sincere gratitude to Nilesh, Peter and Hannah for their dedicated service to the IPC Board. All three shared their expertise with IPC and industry – we thank them for imparting their knowledge and helping guide IPC to best serve our members and the global electronics community."

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IPC Debuts First Issue of IPC Community at IPC APEX EXPO 2023

Magazine celebrates member success

IPC, in partnership with IPC Publishing Group, has launched an industry-specific quarterly publication (digital and print), "[IPC Community](#)." The publication celebrates member success while sharing the important work being done within the association to better serve its members and the global electronics manufacturing community.

With news and information to help readers be more competitive and profitable, the debut issue provides information on manufacturing and management best practices and solutions, emerging technologies, IPC standards, government relations issues, industry intelligence, advanced packaging, sustainability regional office updates, and more.

“The name ‘Community’ refers to all of us – the global team of electronics manufacturers throughout the vast supply chain,” said IPC President and CEO John Mitchell. “‘IPC Community’ is our way of honouring and serving that connection, that community of individuals who share the same goal and who work together to build electronics better,” Mitchell added. “We’re excited about the possibilities of this quarterly magazine taking our ability to disseminate important information to the next level, all while making sure member stories and voices are reflected and commemorated.”

“Articles within ‘IPC Community’ are written to appeal to our members, to provide them with must-read, relevant and timely content,” said Brian Knier, IPC chief marketing officer. The editorial team is committed to providing news items that are of high value, but we encourage reader feedback. We want readers to share their success stories with us – to suggest any editorial content, please reach out to Managing Editor Michelle Te, at MichelleTe@ipc.org.”

“Developing this publication has been such a joy,” said Michelle Te. “It has been the members and readers that propelled our efforts forward in developing it and seeing it through. Their hard work and dedication to the electronics manufacturing industry are what have made the collaboration so special. I’m excited to share this first issue and look forward to the many more stories we will be able to tell in future issues.”

The second quarter issue of IPC Community will be distributed on April 15, 2023. To subscribe to “IPC Community,” visit www.ipccommunity.org. For inquiries regarding advertising opportunities within the magazine, contact Barb Hockaday, ad sales manager, at BarbHockaday@ipc.org or view [media kit](#).



The European Institute for the PCB Community

EIPC SPEeDNEWS

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International Diary

2023

EIPC Winter Conference

Visit Bugey Nuclear Power Plant

9 & 10 February

Lyon, France

21st EIPC Technical Snapshot Webinar

Registrations via www.eipc.org

April

EIPC @ SMTconnect

9-11 May

Nuremberg, Germany

EIPC Summer Conference

15 & 16 June

22nd EIPC Technical Snapshot Webinar

Registrations via www.eipc.org

September

23rd EIPC Technical Snapshot Webinar

Registrations via www.eipc.org

October

EIPC @ Productronica 2023

14-17 November

München, Germany

24th EIPC Technical Snapshot Webinar

Registrations via www.eipc.org

December