



The European Institute for the PCB Community

EIPC SPEeDNEWS

Issue 4 — February 2020

NEWS FROM NORTH AMERICA

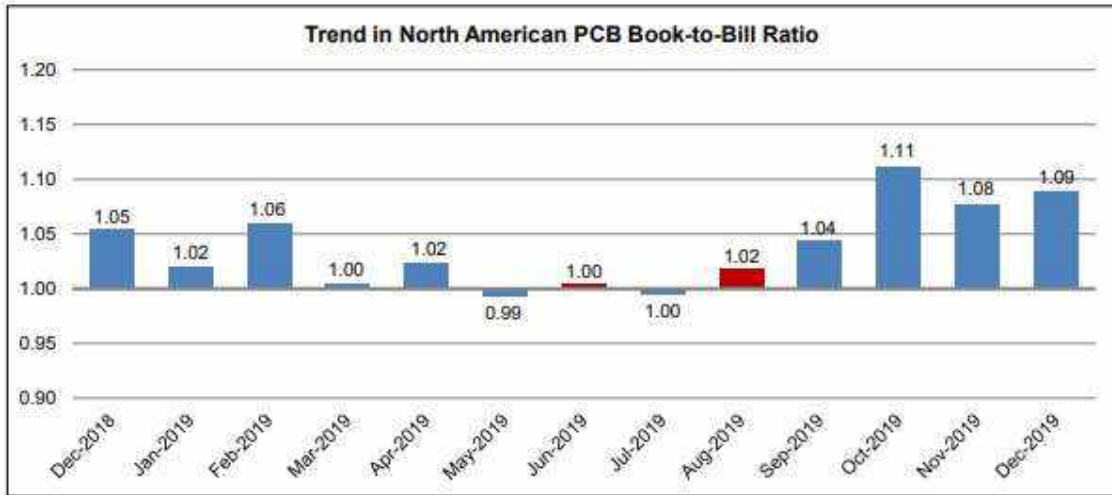
North American PCB Industry Sales Growth Ends 2019 Up 7.8 Percent *IPC Releases PCB Industry Results for December 2019*

IPC have announced the December 2019 findings from its North American Printed Circuit Board (PCB) Statistical Program. The book-to-bill ratio stands at 1.09.

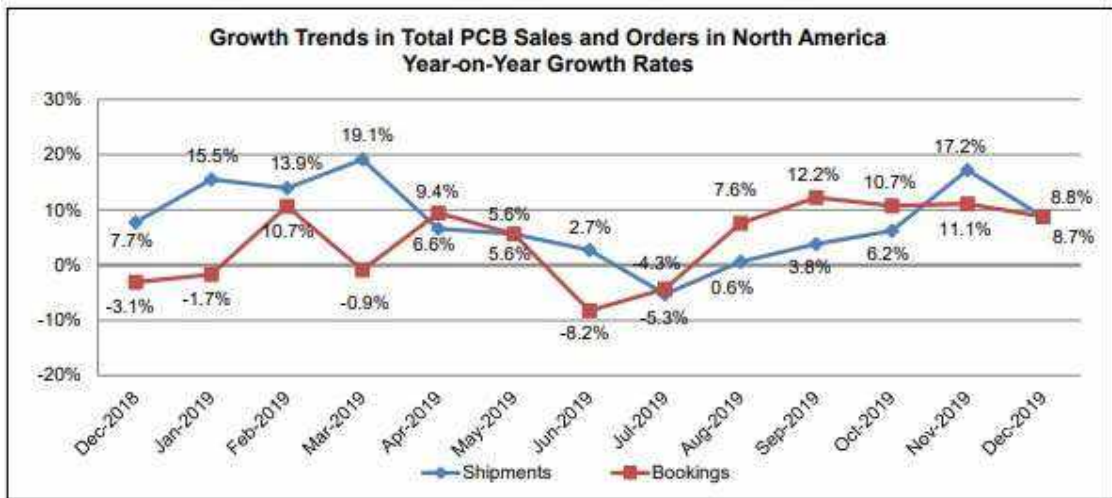
Total North American PCB shipments in December 2019 were up 8.7 percent compared to the same month last year. Shipment growth ended the year at 7.8 percent. Compared to the preceding month, December shipments increased 5.2 percent.

PCB bookings in December increased 8.8 percent year-over-year. Year-to-date bookings growth ended the year at 4.8 percent. Bookings in December increased 11.5 percent from the previous month.

"While trade tensions created a volatile environment, the North American PCB industry closed 2019 on solid footing," said Shawn DuBravac, IPC's chief economist. "PCB shipments were strong through the final five months of the year. Moreover, orders at the end of the year suggest shipment strength should carry into the first quarter of 2020."



Note: The January 2019 ratio has been revised since its original publication due to updated data from statistical program participants.



Note: The January, June, and October 2019 growth rates have been revised since their original publication due to updated data from statistical program participants.

[View Chart in PDF](#)

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.



The European Institute for the PCB Community

EIPC SPEeDNEWS

Issue 4 – February 2020

NEWS FROM THE ICT



Institute of Circuit Technology

ICT Evening Seminar and Fab Group Meeting Tuesday 25th February 2020

The Meetings of the FAB Group will commence at 2.00pm, the AGM will be held at 4.30pm, and the Seminar will begin at 5.30pm.

The Seminar presentations will include:-

1. 'The use of Ink Jet for soldermask' - *Chris Wall, Electra*
2. 'Re-Use and Recycling Opportunities for EV Batteries' - *Professor Martin Goosey*
3. 'Opportunities in Urban Mining from IT and Telecommunications equipment'
Presented by Mahsa Baniasadi and Daniel Ray of Coventry University.
4. 'Update on the Recollect Project' - *Jonathan Swanston/Jack Herring of Jiva Materials*

Other events planned for the year ahead include

ANNUAL FOUNDATION COURSE - Chester University - 6th / 9th April 2020

ANNUAL SYMPOSIUM - British Motor Museum, Gaydon - 2nd June 2020

Enquiries to: - Bill Wilkie, ICT Major Domo and Outstanding Events Organiser
bill.wilkie@instct.org

Venue: The elegant Manor Hotel, Meriden, Coventry, Warwickshire. Hotel, with whom we have negotiated a rate of £109 for a single room, en-suite.

<https://www.bestwestern.co.uk/hotels/best-western-plus-manor-nec-birmingham>



The European Institute for the PCB Community

EIPC SPEeDNEWS

*The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 4 – February 2020*

NEWS FROM THE UK



Only 8 Days until the next iMAPS-UK Workshop:

Testing vs Simulation:

**What is the Best Way to Achieve World Class Reliability for
Electronic Products?**

**Join us at the RelQual 2020 Workshop
Quality and Reliability for Electronic Assembly**

Thursday 6 February 2020 at TWI, Abington, Cambridge

Come and learn about:

New Product Introduction for Micro-Electronics by Allan Proudfoot of ALP Consulting

Practical Look at Design for Manufacture by Bob Willis

Reliability Tests Explained by Dave Phillips of TT Electronics

Holistic Approach to Achieving World Class Reliability by Martin Shaw of Reliability Solutions

De-risking New Product Introduction by Simulation by Borja Lazaro Toralles of MTC/Comsol

Component Technology: Profitable Lifecycles by Ian Stothers of Ultra Electronics

Participate in a Workshop Session, *where attendees will have the opportunity to highlight current quality issues and ask the opinion of the panel of experts on the most significant problems.*

[Register for RelQual 2020](#)

This Event is Sponsored





The European Institute for the PCB Community

EIPC SPEeDNEWS

*The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 4 – February 2020*

NEWS FROM THE USA



Garner Osborn Focuses on 3D PCB Quality

Due to the critical functions Garner Osborne's PCBs perform, quality checks are performed throughout all stages of manufacture and assembly. In addition to these intermediate checks, 100% final inspection is carried-out to ensure that every PCB meets customers' requirements.



As electronic components are getting ever smaller and PCB assemblies are becoming more complex, a search was recently

made for an advanced vision system that could cope with these challenges.

Read about how Garner Osborn is using the new DRV-Z1, 3D stereo digital system for PCB assembly and inspection to reduce scrap and improve quality.

Working distance – a simple explanation

In the world of stereo microscopy there is more than one definition of the term 'working distance'. Some say it is the distance from the bottom of your microscope to the subject. There are others that will argue that it is the distance from the lowest surface of your lowest optic, or some other similarly identified point. Whichever specific point you choose it essentially comes back to the space between your microscope and the in-focus point on a subject.

[Learn about working distance, why it is relevant and the factors that affect working distance in microscope use.](#)



Going to Apex?

Visit Vision Engineering at Booth 628 to demo the new DRV-Z1 and the latest innovations in PCB inspection and assembly systems

8 ways exit pupil diameter affects operator performance and productivity

Reaching optimum viewing using a traditional stereo microscope takes a lot of manoeuvring; an operator's entire body needs to properly adjust to align the exit pupils. From top to bottom—eyes, head, neck, back, shoulders, arms, seat, legs and feet must all be properly positioned and then—stay there. Why? It all comes down to the exit pupils.

[Discover the role of the exit pupil in microscopy and how does its size affect quality and productivity?](#)



Understanding the basics when choosing a bench magnifier

Why is the magnification in bench magnifiers measured in diopters? How is the diopter calculated? What is the working distance? What is the field of view?

Understand the basic terms used when talking about bench magnifiers.

Bench magnifier diopter, magnification, working distance and field of view calculated and explained.



Capture bench magnifier images with BenchKam

Need to report on and document inspections carried out under a bench magnifier? Capture high resolution images with a Vision Luxo bench magnifier equipped with a BenchKam!



Copyright © Vision Engineering Inc.
570 Danbury Road, New Milford, Connecticut 06776 USA
Tel: +1 (860) 355 3776 | Email: info@visioneng.us | visioneng.us



The European Institute for the PCB Community

EIPC SPEeDNEWS

*The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 4 – February 2020*

NEWS FROM THE EIPC

The Needs for the Next-Generation Electronic Devices and changes in fabrication solutions for PCBs, PCBAs, Materials and Technologies.

Attending an EIPC Conference in the middle of winter is becoming a tradition. It joins many other traditions, nay even ancient customs, such as Beating the Bounds. This is still observed in some English and Welsh parishes. Under the name of the Gangdays, the custom of going a-ganging was kept before the Norman Conquest. A group of old and young members of the community would walk the boundaries of the parish, to ensure that no farming was encroaching upon the 'common' land upon which livestock could be grazed. They were usually led by the parish priest and church officials, to share the knowledge of where they lay.

It's the words 'gang' and 'old and young' which resonated, along with the sharing of knowledge. For 'parish priest' you might think of Alun Morgan, our Chairman, and for 'officials' you could really only think of Kirsten, who is the only official we have. True, we have Directors, but they are invariably busy tending their own flocks.

So it would be really good if you could cut along to Rotterdam and join members of the PCB community and walk the boundaries of knowledge for a couple of days!

During the EIPC Winter Conference 2020, participants will learn how to meet and adapt to the changing needs of Europe and the global electronics market. Industry experts will explain the changes in the world-wide PCB supply chain for technology, materials and surface coating of printed circuit boards.

Bonus Programme:

Visit to the Hutchison Ports ECT Rotterdam and Network dinner The Castle, Sparta Stadium
First come, first serve!

We look forward to welcoming you in Rotterdam February 13 & 14!

[Registration form EIPC Winter Conference Rotterdam](#)

Conference hotel:

Van der Valk Hotel Rotterdam-Blijdorp
Energieweg 2
3041 JC Rotterdam
www.hotel-rotterdam-blijdorp.nl
info@rotterdam-blijdorp.valk.nl

For your hotel room reservation for the period: 12.02.2020-14.02.2020 please note the following conditions:

Booking code: BLI-GF17014 EIPC

Double room for single use including breakfast for 110.00 EUR/per night excl Tourist Tax

Double room including breakfast for 129.50/per night excl Tourist Tax

Please contact the hotel to make your hotel reservation via

info@rotterdam-blijdorp.valk.nl or call +31-102988777

| Conference Programme Day 1, Thursday February 13 | | |
|---|--|--|
| The Needs for the Next-Generation Electronic Devices and changes in fabrication solutions for PCBs, PCBAs, Materials and Technologies | | |
| 08:00-08:30 | Conference Registration and Table Top & Poster Exhibition build up | Table Top & Poster Display Area |
| 08:30-09:00 | Welcome by the EIPC President | Alun Morgan, EIPC, UK |
| Keynote Session 1: New Business & Market Outlook | | Moderator: Alun Morgan, EIPC, UK |
| 09:00-09:30 | Business Outlook: Global Electronics Industry | Walt Custer, Custer Consulting, USA |
| 09:30-10:00 | TBC | Dr. Hayao Nakahara, NT Information Ltd. |
| 10:00-10:30 | 5G - mmWave Technology Challenges for PCB Manufacturing | Johal Kuldip, Atotech Deutschland, DE |
| 10:30-10:40 | Panel discussion | |
| Session 2: Inkjet Technologies/Coating Technologies | | Moderator: Emma Hudson, Emma Hudson Technical Consultancy, UK |
| 10:40-11:00 | Printed Electronics - Pushing the Limits | Dr. Andreas Albrecht, Cicor Group, CH |
| 11:00-11:20 | Development and processing of an ink jettable solder mask and the benefits of its use in PCB manufacture | Chris Wall, Electra Polymers, UK |
| 11:20-11:50 | 30 minutes Coffee break | Table Top & Poster Display Area |
| 11:50-12:10 | Update on Inkjet Soldermask | Don Monn, Taiyo America, USA |
| 12:10-12:30 | New manufacturing technologies | Uwe Altmann, Orbotech, BE |
| 12:30-12:40 | Panel discussion | |
| 12:40-13:40 | Network Lunch | Hotel restaurant |
| Round table: Roadmapping and Standardization | | Moderator: Tarja Rapala-Virtanen, EIPC, FI |
| 13:40-14:40 | Industry Roadmap | iNEMI, Grace O'Malley, UK |
| | Reliability and Standardization | Elmatica, Jan Pedersen, NO |
| | Standardization updates | Emma Hudson, Emma Hudson Technical Consultancy, UK |

| | | |
|--|---|--|
| Session 3: Material technology - Reliability - Environmental Technology | | Moderator: John Fix, Taiyo America, USA |
| 14:40-15:00 | High Frequency Dk & Df Test Methods Comparison | Martin Cotton, HDP User Group, UK |
| 15:00-15:20 | TBC | Alun Morgan, Ventec Group, UK |
| 15:20-15:40 | Reliable, high temperature stable materials are becoming increasingly more important | Volker Klafki, Technolam, DE |
| 15:40-16:00 | Quo vaditis Flame Retardants? How can we meet ever more stringent performance and sustainability demands? | Adrian Beard, Clariant Germany, DE |
| 16:00-16:20 | Analytical determinations of unreacted TBBPA flame retardant in printed wiring boards | Dr. Sergei Levchik, ICL-IP, USA |
| 16:30-19:00 | Departure & Visit Factory Hutchison Ports Rotterdam | |
| 19:30 | Network Dinner Sparta Stadium "The Castle" | |
| 22:30 | Return Valk Hotel Blijgaarde | |

Conference Programme Day 2, Friday February 14

| | | |
|---|--|---|
| The Needs for the Next-Generation Electronic Devices and changes in fabrication solutions for PCBs, PCBAs, Materials and Technologies | | |
| Session 4: New technologies / Design | | Moderator: Martyn Gaudion, Polar Instruments, UK |
| 09:00-09:20 | Recent development on Design & Manufacturing of Lab on PCB Devices | Dr. Despina Mochou, University of Bath, UK |
| 09:20-09:40 | Direct Imaging | J-P Birraux, First EIE, CH |
| 09:40-10:00 | New innovation for PCB registration improvement | Hans Fritz Inpeko/ SAT Electronic GmbH |
| 10:00-10:10 | Panel discussion | |
| 10:10-10:40 | 30 minutes Coffee break | Table Top & Poster Display Area |
| Session 5: Manufacturing Technologies and New Processes | | Moderator: Oldrich Simek, Pragoboard, CZ |
| 10:40-11:00 | Vecs; How to increase efficiency | Joan Tourné, Nextgin Technology, NL |
| 11:00-11:20 | InPulse 3 - A New Horizontal Cu Plating System for mSAP/amSAP Technology | Mustafa Özkök, Atotech, DE |
| 11:20-11:40 | Thermal Management Solutions using PCBs | Mike Tucker, Shenzhen Kinwong Electronic, CN |
| 11:40-12:00 | Green Fab | Laurent Nicolet, SCHMID Group, CN |
| 12:00-12:15 | Panel discussion | |
| 12:15-12:25 | President closing remarks - End of Conference Day 2 | |
| 12:25-13:30 | Network Lunch | Hotel restaurant |



The European Institute for the PCB Community

EIPC SPEeDNEWS

*The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 4 – February 2020*

SOUTHERN MANUFACTURING & ELECTRONICS

Running from 11th – 13th February 2020 at Farnborough International Exhibition Centre, Hampshire, England, this major annual event showcases all that is the best of British manufacturing and electronics, in all its diversity, with a focus on the aeronautical and automotive sectors.

Many will recall the halcyon days of British aviation where Farnborough was the venue for the annual display of the latest aircraft including the De Havilland Comet, the Bristol Britannia, the Vickers Viscount, the Hawker Hunter, the Short Skyvan, the Miles Magister, the Supermarine Swift, the English Electric Lightning, the Blackburn Buccaneer, and myriad experimental types testing wing and engine design. Many manufacturing companies, many variations in product.

Much the same applies to the show this year, with 69 Seminars, over 400 exhibitors, and an anticipated 50,000 visitors, but instead of craning their necks skywards in all weathers they will be able to peruse in the astonishing range of companies and their products and services in the ambient comfort of this world-class event.

www.industrysouth.co.uk

www.linkedin.com/groups/2500035

For those travelling by motor car, the SATNAV code is GU146TQ. There are railway trains to Farnborough Station and comfy coaches provide a shuttle from the station to the show. It is all totally up-to-date. And so will you be after a day or two in Farnborough.



The European Institute for the PCB Community

EIPC SPEeDNEWS

*The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 4 – February 2020*

INTERNATIONAL DIARY

2020

EIPC Winter Conference Rotterdam, NL

Visit Terminals ECT Port Rotterdam

13 & 14 February
Rotterdam, NL

CPCA Exhibition

16-18 March

KPCA Exhibition

22-24 April

EIPC @ SMT Hybrid Packaging

5-7 May 2020
Nurnberg, DE

JPCA Exhibition

June

EIPC Summer Conference Örebro, SE

Visit Ericsson 5G Test Centre

16 & 17 June
Örebro, SE

FED Conference

17-18 September

IPCA Expo 2019

23-25 September

TPCA Exhibition

21-23 October

EIPC @ Electronica 2020

10-13 November

ECWC15, WECC World Electronics Circuits Council

30 November-2 December

Shenzhen, CN

HKPCA Exhibition

2-4 December



Issue 4 – February 2020

NEWS FROM THE IPC

Matt Kelly Joins IPC as Chief Technologist

BANNOCKBURN, Ill., USA, January 29, 2020 — [IPC](#) announces the addition of Matt Kelly as the association’s chief technologist.

In this new leadership role, Kelly will help IPC’s members to engage in latest technology trends and supply chain transformation that continues to evolve across the electronics industry. He will work to define the scope of what future products and services the association should develop in the areas of standards, education and advocacy. Kelly’s primary areas of focus will be leading the following initiatives: “factory of the future” standards and technical research; industry intelligence funding; and creation and launch of an Industry CTO Council.

Kelly comes to IPC following a 14-year career at IBM Corporation, holding several senior technology and engineering leadership positions within IBM Systems Division. His technical contributions include 25 patents, 80 publications, and numerous industry awards from NAM, ASM, SMTA, IPC, and IBM.

Very familiar with IPC’s standards development process, Kelly has served on seven technical committees and currently serves as vice chair of the 5-21H Bottom Termination Components Task Group and co-chair of the 2-17 Connected Factory Initiative Subcommittee.

“Matt is widely recognized in the global electronics industry as a premier thought leader and an innovator, and his work will play a pivotal role in helping us know our members and the industry – with greater depth and breadth,” said Sanjay Huprikar, vice president, Solutions. “We are thrilled to welcome Matt to the IPC team, and we look forward to the new contributions he will make to the electronics industry.”

Based in Toronto, Kelly can be reached at MattKelly@ipc.org.