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NETgain

THE LATEST THE INTERNET HAS TO OFFER



Web Sites Worth Mentioning

www.cadtransformers.com This site provides online collaboration for the electronics industry. The completely Web-based service provides a printed circuit board and schematic viewer with markup tools that helps engineers, designers and manufacturing professionals with tools for exchanging feedback based on design data.

www.designchainassociates.com The Design Chain Associates consulting firm recently updated its site. Features include a list of resources related to counterfeit parts, the lead-free mandate, wafer fab capacity utilization and allocation, original equipment manufacturer's tools and systems, business processes and component engineering.

www.BareBonePCB.com Advanced Circuits has a new prototype printed circuit board service designed to cut project time and costs. Offered via the Web, a basic two-layer board is manufactured and shipped the next day. The board replaces the "bread-board" or other hand-wired versions used to test new circuit designs.

www.howstuffworks.com/question279.htm Although you probably will not get this in time to impress revelers this year, take a look at the meaning, history and lyrics of the song that nobody seems to know, "Auld Lang Syne." You'll be able to sing the full version of the old Scottish song next New Year's Eve.



Industry Resources

www.pcdandm.com/pcdman/resource/pcb_basics.shtml The fourth edition of *Printed Circuit Board Basics* is now available. From design and manufacturing to purchasing to considerations for managing the business, concepts are explained in simple terms. This edition contains an updated primer on single-, double-sided and multilayer PCB manufacturing processes; a review of new technologies such as embedded components and microvias (HDI); updated PCB specifications; a history of the industry; and an updated glossary of terms and definitions.



Surveys and Guides

www.circuitsassembly.com/resource/dems.html Are you an EMS provider wanting to attract more OEM customers? Then, don't miss the opportunity for your free listing in the original Directory of Electronics Manufacturing Services Providers (DEMS).

CIRCUITS
ASSEMBLY
ONLINE

www.circuitsassembly.com

- 2004 Buyer's Guide
- Focus on Business:
Latin American Electronics Update
Lisa Hamburg, Editor-in-Chief
- 2003 Editorial Index
Robin Norvell, Assistant Editor
- Process Defect Clinic
Bob Willis, EPS

Would you like to contribute to NET gain?

Contact Robin Norvell at rnorvell@upmediagroup.com

Cookson Electronics Launches CE Analytics

Responding to the electronics and surface finishing industries' growing need for qualified analytical resources to help solve specific and complex application problems, Cookson Electronics (Foxborough, MA, www.cooksonelectronics.com) has launched CE Analytics (Jersey City, NJ), a \$5 million technology facility staffed with scientists and application engineers.

CE Analytics is an analytical and diagnostic center with the capability to perform interpretative analysis for the development of future technology requirements and to provide solutions to current application challenges. The facility is equipped with advanced instrumentation and industry expertise to analyze a range of devices, components and materials, including circuit assemblies, connectors, leadframes, printed wiring boards, semiconductor packages, decorative accessories and functional items.

Ticona, LPKF Sign License Agreement

LPKF Laser & Electronics (Wilsonville, OR, www.lpkfusa.com) has entered a know-how and license agreement with Ticona (Kelsterbach, Germany) for the material Vectra liquid crystal polymer (LCP). The agreement enables Ticona to modify its LCP material for the LPKF laser direct structuring (LDS) process to produce 3-D molded interconnect device (MID) circuits.

With the combination of the LDS process and the new polymer material, conductive paths can be deposited directly on molded plastic structures, combining the electrical and mechanical functions in one component to form an injection-molded circuit carrier. The electronics housing substitutes for the conventional circuit board, encouraging miniaturization.

The laser-based process is realized with few manufacturing steps. The structure is molded in a standard mold, the desired interconnect pattern is directly written on the resulting molded part utilizing a laser system and the conductive paths are plated. The plating adheres only where the laser has activated the plastic. Due to the high temperature resistance, the circuit structures on the LCP material are solderable. The technology is ideal for mobile communication devices, hearing aids and sensory technology for automobile electronics.

Feinfocus Partners with BIR

Feinfocus (Stamford, CT, www.feinfocus.com) has announced a partnership with Bio-Imaging Research Inc. (BIR, Lincolnshire, IL, www.bio-imaging.com), a manufacturer of computed tomography (CT)/ digital radiography (DR) systems. BIR will supply Feinfocus with advanced computed tomography imaging systems (ACTIS) for volume CT scanning on the Feinfocus μ CT FOX x-ray inspection system.

The industrial x-ray inspection system includes functional 2-D and 3-D modalities in one system. The system visualizes the most inner components and precise structural modeling of a device. Cracks, voids, delamination and other crucial anomalies can now be depicted in their actual 3-D position, providing insight into the design and manufacturing processes of these devices. This ability makes the new system suited for sensor, microelectromechanical systems (MEMS), medical device and complex electro-mechanical component inspection applications.

Juki, Universal Sign Business Alliance

Juki Corp. (Tokyo, Japan, www.jas-smt.com), a manufacturer of mid-range surface-mount equipment, and Universal Instruments Corp. (Binghamton, NY, www.universalinstruments.com), a manufacturer of surface-mount equipment, have signed a comprehensive business alliance agreement. Development and manufacturing of subassembly parts and optional units are stipulated as the first collaboration in the agreement. Both companies will soon begin technical discussions for the initial collaboration efforts.

To cope with the market situation, Universal and Juki discussed how they might collaborate with each other by analyzing where the advantages of products and strengths of each company stand. As a result of the analysis, the companies reached an agreement to sign this comprehensive business alliance agreement.

The agreement provides an opportunity to expand the relationship in the future, which could include research and development, manufacturing, sales, marketing and service support.

In Brief

FlexLink Systems (Bethlehem, PA) has promoted **Paul Jarossy** to marketing manager for the Americas. Jarossy has held various product and segment management positions since he joined the company five years ago.



ASAT Holdings Ltd. (Hong Kong, China) and ASAT Inc. (Pleasanton, CA) have appointed **Jay Carlos Nunez** as vice president of North American sales. During his career, Nunez has held numerous senior level management positions at semiconductor companies including National Semiconductor Corp. and Motorola Semiconductor Products Sector.

SMTC Corp. (Toronto, Ontario, Canada) recently appointed **John Caldwell** as interim president and chief executive officer (CEO), replacing Paul Walker, founding partner and CEO. Caldwell is a member of SMTC's board of directors and previously served as president and CEO of Geac Computer Corp, an ERP software vendor.

GE Global Electronic Solutions (San Diego, CA) has appointed **Roger Innes**, a founder of Equipment Lifecycle Management for the semiconductor industry, as Managing Director-Capital Markets and Business Expansion. Innes was co-founder and president of Comdisco Electronics, whose portfolio was acquired by GES in April 2002.



DEK (San Jose, CA) has named **Raj Lakhotia** to the position of financial controller for U.S. operations. Lakhotia has over a decade of financial management experience and has spent the last seven years of his career in the semiconductor industry.



Wolf Electronix (Orem, UT) has promoted **Dennis Gleason** to senior vice president and **Wallace Harkness** to director of marketing and sales. Gleason will manage current and future customers' needs, and Harkness will enhance his current responsibilities to include customer relations and Utah-area sales.

Elcoteq, Siemens Enter Manufacturing Agreement

Elcoteq Network Corp. (Irving, TX, www.elcoteq.com), a provider of electronics manufacturing services (EMS), and the Networks Division of Siemens Information and Communication Mobile Group (Munich, Germany, www.siemens-mobile.com) have signed an agreement under which Elcoteq will provide services for products that are part of Siemens' GSM base stations. Production ramp-up started in November 2003 at Elcoteq's plant in Pécs, Hungary. In addition to the manufacturing agreement, Siemens Mobile granted Elcoteq an approved EMS supplier status.

Siemens Mobile offers a range of mobile solutions including mobile devices, infrastructure and applications.

SMTA Announces Pan Pacific Symposium Program, Keynotes

The ninth annual Pan Pacific Microelectronics Symposium and Exhibit will take place on Feb. 10-12, 2004, at the Turtle Bay Resort, Kahuku, Oahu, HI. The event promotes international technical interchange and provides a forum for networking among microelectronics professionals and business leaders throughout the Pacific Basin.

Sponsored by the Surface Mount Technology Association (SMTA, Minneapolis, MN, www.smta.org), the symposium focuses on the critical business markets and technologies of microelectronic packaging, interconnection, microsystems, assembly, global markets and related business issues.

The 2004 event technical program will consist of 15 sessions with 53 papers on topics including flip chip, 3-D packaging, novel chip connection, embedded components, design and modeling, reliability, printed wiring board (PWB) materials and processes, surface-mount assembly optimization, packaging materials, inspection and test, industry and research standards, lead-free, power device packaging, optics and microelectromechanical systems (MEMS) and nanotechnologies in high reliability applications.

Also featured are three keynote addresses: "Flip Chip Packaging—Current Trends and Roadmap," presented by Maniam Alagaratnam, LSI Logic; "A Key Role of PCB in Recent Packaging Solutions," by Yutaka Tsukada, Kyocera SLC Technologies; and "Technical Challenges in Memory Packaging," by Se Yong Oh, Samsung.

Productronica 2003: The Numbers Are In

Messe München GmbH, the organizers of Productronica (www.productronica.de), the electronics manufacturing tradeshow that occurred Nov. 11-14, 2003, in Munich, Germany, recently released exhibitor and attendance numbers for the show.

According to Messe München, 1,486 exhibitors and 67 additionally represented companies came from 29 countries to Productronica. The show also garnered 38,000 attendees from 87 countries; show organizers stated that more international visitors came to this year's event than the previous show in 2001.

According to Messe München, exhibitors were pleased with the results of Productronica and with the recovery the electronics manufacturing market is making in general. A show survey revealed that 62% of exhibitors and 61% of visitors expect the market to recover soon.

Michael Brianda, general manager of DEK Printing Machines, stated: "In Europe I've been seeing a positive trend for the past three or four months; by next summer the entire industry should be reaping the benefits."

The next Productronica will occur Nov. 15-18, 2005, at the New Munich Trade Fair Centre.



Productronica



Powell-Mucha Consulting to Present EMS Tutorial at APEX

Why aren't there only three large electronics manufacturing services (EMS) providers dictating pricing to original equipment manufacturer (OEM) customers as has been predicted for nearly five years? How can EMS providers differentiate their services to customers, given that these services are essentially the same? How can productivity be increased in the EMS sales process? These questions will be addressed in Powell-Mucha Consulting Inc.'s (El Paso, TX, www.pmcitraining.com) tutorial, "Creating Competitive Advantage in Today's EMS Market." The tutorial will be presented on Feb. 23, during the IPC Printed Circuits EXPO/IPC SMEMA Council APEX conference.

"The EMS market has some unique characteristics that don't get taken into account in strategic planning activities," said Susan Mucha, president of Powell-Mucha Consulting. "Most notably, industry consolidation assumptions are derived from business school models developed for industries with much different supply chain, customer base and manufacturing infrastructure characteristics. In this tutorial, we look at those models and discuss their relevance to EMS. We also dissect the entire EMS value proposition and look at business models appropriate in various industry tiers."

The tutorial covers five key areas: sources of competitive advantage in EMS services, brand definition/promotion, lead qualification/mindshare maintenance, packaging EMS services and account acquisition and growth strategy.

IPC Announces APEX/Printed Circuits Expo 2004 Keynotes

IPC (Northbrook, IL, www.ipc.org) has announced the three keynote speakers for its APEX/Printed Circuits Expo/Designers Summit exhibition and conference, taking place Feb. 22-26 at the Anaheim Convention Center, Anaheim, CA.

Michael Cannon, Solectron Corp.'s president, chief executive officer and board member, will kick-off the first day of the exhibition. In his address, Cannon will share the direction of Solectron and the current environment for the electronics manufacturing services (EMS) industry. Cannon has more than 25 years of manufacturing and technology experience. Prior to joining Solectron, Cannon was president, chief executive officer and a director of Maxtor Corp., a provider of hard-disk drives and storage systems.

On Wednesday, electronics industry forecaster Walt Custer, Custer Consulting Group, will present "Business Outlook: Global Electronics Industry." Custer will discuss industry data that points to an industry recovery, analyze the impact of low cost offshore production and examine the outlook for the printed circuit board and EMS industries. Winner of the Raymond E. Pritchard IPC Hall of Fame Award in 2001, Custer is a member of the IPC Suppliers Council and the Technology Market Research Council (TMRC) steering committee.

On Thursday, Bill Nye-The Science Guy will discuss the value and importance of science. A scientist, comedian, teacher and author, Nye states that his mission is to teach children the wonders of science. He earned a bachelor's degree in mechanical engineering from Cornell University and later worked as an engineer at The Boeing Co.

Kulicke & Soffa, Nidec Tosok Form Alliance

Kulicke & Soffa Industries Inc. (K&S, Willow Grove, PA, www.kns.com) and Nidec Tosok Corp. (Tosok, Zama City, Japan, www.tosok.co.jp) have agreed to combine products and technologies to provide integrated solutions for high-speed, reel-to-reel packaging of discrete devices.

A supplier of wire bonding equipment, materials and test interconnects, K&S delivers wire bond solutions over a range of applications. Nidec Tosok Corp. is a supplier of die bonding equipment for the processing of discrete devices, with particular expertise in very high-speed, reel-to-reel processing of these components.

K&S has expanded its market to include low I/O packages in strip and lead-frame format. The new alliance with Tosok further extends market potential by adding a configuration for reel-to-reel discrete packages.

The two companies first established a relationship in 1965 with a technical agreement and have continued to partner on various projects throughout the years. K&S has now agreed to manufacture a configuration of its NuTek wire bonder specifically adapted for reel-to-reel discrete devices exclusively for Tosok. Tosok will mate the Nutek configuration with its own die bonder in various custom configurations to meet customers' specific needs. Tosok will sell, market, and service the die attach-wire bonding integrated systems under this alliance.

DALSA selects EV Group to Supply MEMS Wafer Bonding Equipment

EV Group (EVG, Schärding, Austria, www.evgroup.com), a manufacturer of microelectromechanical systems (MEMS), nano and semiconductor wafer processing equipment has been selected by DALSA Semiconductor (Waterloo, ON, Canada, www.dalsa.com), a supplier of specialized and custom wafer foundry services, as the strategic supplier for MEMS wafer bonding and thick polymer lithography semiconductor production equipment.

Initially, EVG will provide DALSA with the GEMINI Wafer Bonder Cluster tool and the HERCULES Thick Polymer Lithography tool customized to DALSA's specifications. The systems will be the key to move MEMS into the high-volume manufacturing (HVM) spotlight.

Later, the two parties intend to cooperate to enhance the capabilities of the equipment sub-modules to handle new materials and processes. DALSA expects preliminary equipment operation in four to six months. The two high-volume production systems from EVG will enhance DALSA's MEMS production capabilities—especially in the areas of intelligent MEMS and low temperature process.

RFID in the Supply Chain: The Wal-Mart Factor

Venture Development Corp. (VDC, Natick, MA, www.vdc-corp.com) attended the Wal-Mart radio frequency identification (RFID) meeting in Springdale, AR, in November 2003. Wal-Mart announced in June of last year that it will require their suppliers to place EPC transponders on pallets and cases beginning in January 2005.

Wal-Mart has tapped RFID as the technology that will help them limit out-of-stocks, allow supply chain visibility in real or near-real time and reduce costs and labor. The benefit for Wal-Mart is clear: high costs and poor inventory control in the supply chain do not help anyone. Selling over \$245 billion worth of goods in 2003, a 1% improvement in the out-of-stock issue could generate nearly \$2.5 billion in very profitable sales.

What is the incentive for suppliers? A primary benefit conveyed to Wal-Mart's supply chain partners is the additional sales revenue that suppliers can generate due to improved out-of-stock levels. Next, lower operating costs can be realized through labor reduction and improved business processes. Wal-Mart directly asked their suppliers to look for a return on investment within their own operations.

Some of Wal-Mart's suppliers are wary of committing to RFID due to the lack of RFID education and the complexity and costs associated with RFID systems. Challenges and questions surrounding system performance, data synchronization, consumer privacy, integration with legacy systems and non-compliance repercussions remain at the forefront of supply partner minds.

The majority of Wal-Mart's suppliers appear ready to embrace RFID and begin working toward compliance. Given the size and influence of some of the suppliers who are ready to commit to RFID, this speaks significant volumes about the potential impact the mandate may have on the RFID industry in terms of revenue, transponder and reader shipments, and overall market development.

Undeniably, Wal-Mart's edict may be the single most important milestones for RFID to date. However, the timing begs the question: Is RFID technology prepared for Wal-Mart and vice-versa?

Whether or not the 2005/2006 deadlines are achieved remains in question. Wal-Mart, supplier and technology vendor actions over the next six months will solidify this perspective. Regardless, Wal-Mart's suppliers now have their marching orders and things have been officially set in motion.

—Michael J. Liard, VDC,
Senior AIDC/RFID Analyst

ECA Cautious Despite Continued Growth in Components

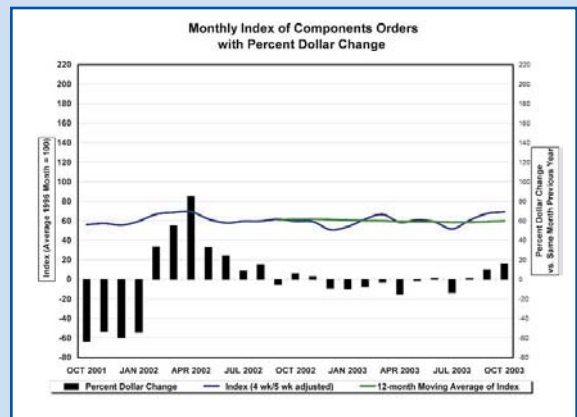
Electronic component orders continued their upward movement in October 2003, according to the Electronic Components, Assemblies & Materials Association (ECA, Arlington, VA, www.ec-central.org). October marked the third consecutive month of gains following 20 months of little or no movement.

Manufacturers at ECA's recent executive committee meeting in Chicago, IL, reported modest business increases over the past two to three months. Increases in Asia are being driven by the personal computer and wireless markets, while specialty items account for growth in North America. Despite the relative prosperity, the watchword is still caution, according to Bob Willis, ECA president

Willis said that, despite the growth potential in Asia, particularly China, manufacturers continue

to question whether capacity estimates in the area are accurate and what effect this will have on pricing. "There's little incentive to compete in the commodity markets with pricing at rock-bottom levels. Unless demand catches up with capacity, it will be difficult to stabilize prices, much less increase them."

ECA represents manufacturers and producers of passive and active components, component arrays and assemblies, and materials and support services. It is a sector of the Electronic Industries Alliance.

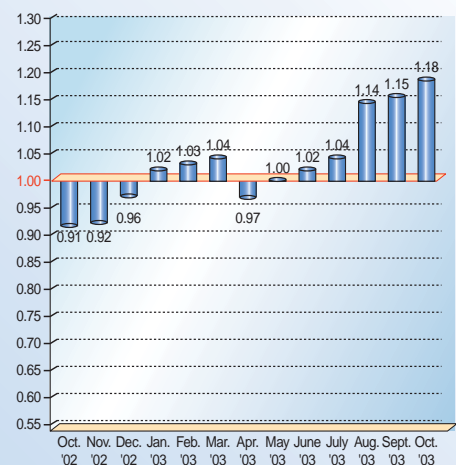


October 2003 Book-to-Bill

Climbing for the sixth consecutive month, the North American IMS/PCB Industry Book-to-Bill Ratio for October 2003 was 1.18. The ratio is calculated by averaging the index numbers for orders booked over the past three months and dividing by the average index numbers for sales billed during the same period. A ratio of more than 1.00 suggests that current demand is ahead of supply, which indicates probable near-term growth.

Industry sales billed (shipments) in October 2003 decreased 6.6% from October 2002, and orders booked increased 20.4% from October 2002.

Compared to 2002, shipments of PCBs are down 20.8% year-to-date, while bookings of PCBs are down 10.2% year-to-date.



Li Appointed President of Data I/O China

Data I/O Corp. (Redmond, WA) has announced the appointment of Robert C. M. Li, Ph.D., as president of Data I/O China.

Dr. Li grew up in China and is fluent in Mandarin Chinese as well as English. After spending several years in academia teaching at Brooklyn Polytechnic and working at the Massachusetts Institute of Technology (MIT)'s Lincoln Laboratory, Dr. Li joined Tektronix Inc. and later became chief operating officer of Precision Interconnect. Since 1993, Dr. Li has been principal of Virtus Consulting, providing general management and mentoring in high-tech companies.

Data I/O China has offices in Hong Kong, Shenzhen and Shanghai.

Is China Alpha or Omega for the Rest of the World?

A new, free white paper from In-Stat/MDR (Scottsdale, AZ, www.instat.com) addresses a number of questions with regard to China and its continuing and significant impacts on the rest of the world.

As the U.S. continues to lose dominance in the semiconductor and electronics industries, how does China continue to draw foreign investment and activity? Can China be wholly blamed for the misfortunes of other geographic markets? What are the economic/financial issues with regard to China and the rest of the world? What do the capital spending numbers look like? How many wireless subscribers are there in China? How many landlines?

To download the paper, visit: www.instat.com/catalog/downloads/china.htm.

Nam Tai Subsidiary J.I.C. Expands

Nam Tai Electronics Inc. (Vancouver, British Columbia, Canada, www.namtai.com), an electronics manufacturing and design services provider, has announced that its Hong Kong subsidiary, J.I.C. Technology Co. Ltd., an LCD panel manufacturer, has entered into a lease agreement for new factory premises. The company plans to replace its existing factory and expand its manufacturing facilities to cope with future development. Located in Baoan County, Shenzhen, China, the new factory area, including dormitories, is about 600,000 sq. ft., twice the size of the existing factory.

International Rectifier Breaks Ground in Xi'an

International Rectifier Corp. (IR, El Segundo, CA, www.irf.com) broke ground in October 2003 on a new manufacturing site in Xi'an, China.

The new assembly and test facility, which will manufacture key power management components needed to support the world's growing requirement for power supplies, motion control, personal computers and other consumer electronic products, is expected to become operational in early 2005.

Sun Qing Yun, the mayor of Xi'an, said, "We're honored that International Rectifier has chosen to build its new site here. IR's new facility will be the largest international semiconductor assembly and test factory in the area."

The new site will be located in the Chang'an Technology Park in Xi'an's High Technology Industrial Development Zone. In addition to the new manufacturing facility, the company maintains design and applications centers in Xi'an, a trading company in Shanghai and has multiple sales offices throughout China. IR operates facilities in 19 other countries throughout North America, Europe and Asia.



Walf Lifsy, executive vice president of IR's worldwide operations and chairman of Xi'an IR Microelectronics Co. Ltd. (left), and Li Zhang Shu, deputy secretary of the Shaanxi Provincial Party Committee and secretary of the Xi'an Municipal Party Committee, inaugurate IR's new manufacturing site in Xi'an China.

"In addition to providing additional working space, the increased manufacturing space will also provide room for future expansion, such as setting up of its own chip on glass production line and also adding more production lines for LCD panels," said Tadao Murakami, chairman of Nam Tai.

Upon the completion of construction and installation of equipment, J.I.C. expects to move into the new factory premises within the second quarter of 2004.

Cadence Inaugurates Beijing IC System Design Institute

Cadence Design Systems Inc. (San Jose, CA, www.cadence.com), Beijing Zhongguancun Software Education Investment Co. Ltd. (Beijing, China)—a consortium of investment companies, and the Beijing government have opened the \$30 million Zhongguancun Cadence Institute of Software Technology (ZCIST, Beijing, www.zcist.com).

Designed to help transform China from an electronics manufacturing base into a world-class

center for integrated circuit (IC) and system design, the 120,000 sq. meter ZCIST is the first of its kind in the Asia Pacific region. Unlike other training institutes for IC design software tools, ZCIST will provide engineers with IC and system design methodologies, skills and knowledge to increase their design capabilities.

ZCIST is a two-phase development—the first of which will serve 500 students. It has been designed to provide training for up to 1,000 residential students per year with courses ranging from three to 12 months.

The institute will offer six bilingual courses covering practical and advanced training on system-level design, logic design and verification, synthesis and place and route, analog/mixed-signal design, custom IC layout design and high-speed board design.

Would you like to contribute to **Asia WATCH**?
Contact Robin Norvell at norvell@upmediagroup.com.