

LA/OC SMTA CHAPTER NEWS

MAY 2003 EDITION

DATE

May 15th, 2003

AGENDA

6:00PM, Social Hour
7:00PM, Dinner/Presentation

MEETING FEES

\$20, Members
\$25, Nonmembers

MENU

Broiled Teriyaki Steak

LOCATION

Embassy Suites
3100 East Frontera
Anaheim, CA



"The Surface Mount Technology Association membership is a network of professionals who build skills by sharing practical experiences and developing solutions in electronic assembly technologies and related business operations."

LA/OC SMTA CHAPTER IS PROUD TO PRESENT...

MAY 2003 Dinner / Presentation Chapter Meeting

Featuring:

Using DFM to Combat the Movement to China

Presented By:

James C. Blankenhorn

President & Founder, SMT Plus, Inc., San Jose, CA.



RESERVATIONS

Call: MaskTek
(714) 557-3383

NO SHOWS WILL BE INVOICED

If you can not attend, please cancel your reservation by 12 Noon on Wednesday, prior to the meeting. See you there!

UP COMING EVENT LA/OC SMTA is proud to Present...

JUNE 2003 Dinner & Plant Tour Meeting

AT....

**Viking/InterWorks
A Sanmina—SCI Company**
You won't miss this event!
So mark your calendar now!
Dinner/Presentation will be followed by a tour of Viking/InterWorks Manufacturing Line.

Date: June 19th, 2003

Time: 5:30pm

Location: Viking/InterWorks,
30200 Ave. De Las Banderas,
RSM, Ca. 92688

Presentation Abstract

Our industry has seen significant changes happen over the past few years forcing many within our industry to either adapt or die. DFM has been around for a long time, but it has gained a new level of importance in securing and keeping business.

DFM reaches into almost every aspect of a product starting from design and its impact upon PCB fabrication, assembly and test. If any one of these key elements are not optimal then increased costs occur jeopardizing the chances of securing or retaining the business locally. Chances become high the work will be performed in lower cost manufacturing areas where some of the deficiencies can be compensated for.

New products sectors are starting to emerge that are creating new opportunities. A couple of these are in home appliances, home security, and military high technology. Expanding use of electronics is everywhere including future automobiles. Some of these are markets where DFM coupled with well run factories can be competitive.

Losing manufacturing jobs to overseas is not advantageous for our industry. We have seen nearly 500,000 jobs in the USA lost with many not ever returning. But yet we have many companies whose products are much more suitable for assembly within the USA. Examples could be low to mid volume, those with minimal labor, critical national defense products, and those where product confidentiality is of major concern.

Speaker Profile

Jim Blankenhorn has now been in SMT for 20 years. He was a cofounder of the SMTA in 1984 and has been involved in setting up and managing multiple design and manufacturing centers for AWI, SMT Plus and Jabil Circuit.

Jim founded SMT Plus in 1985 in San Jose, CA. The company was noted in its early history as a major design and prototype assembly company specializing in SMT. SMT Plus also provides CAD designer training.

In 1988 the design and assembly portions of the company were sold to Jabil Circuit Inc., one of the largest subcontract design and assembly firms in the U.S. During the period 1988-1991 Mr. Blankenhorn was an employee of Jabil Circuit Inc. while still conducting some training courses. In 1991 Mr. Blankenhorn returned to work full-time at SMT Plus. Since that time the course offerings have expanded from three to over thirty, the instructors up to sixteen, and the number of publications count about two hundred that are offered directly through SMT Plus.

It is the intent of SMT Plus to be able to provide users of SMT, or in related technologies, reference materials and courses that will enhance their success. In the future you can expect a range of multimedia products to be offered by SMT Plus to meet the needs of clients and take full advantage of advancements in technology.

Jim has authored nearly thirty books on topics from design thru manufacturing, lectured at conferences around the world, and lectures often at companies on a wide range of topics. His latest publication is 'Extreme Density design & DFM'. His company is noted for its technical publications, land pattern libraries, onsite and new online training courses. For information go to www.smtplus.com or call (831) 438-6116.

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PRESIDENT'S MESSAGE

By: Scott Penin

Welcome to the May newsletter. To recount April, it was a great month to expand our wisdom. We started out with our monthly presentation featuring Ray Prasad and his knowledge of components and soldering methodologies. It was our largest participation yet this year. Then Vitronics-Soltec offered a free seminar in Garden Grove to OEM's and CM's talking about the latest advancements in no-lead materials and machine do's and don'ts. April was also the month our chapter participated in the Charles Hutchins Educational Grant. His encouraging attitude, expertise and friendly face was a welcome site to everyone in our field.

In May, Jim Blakenhorn has agreed to speak on the subject on Design for Manufacturing, which is always interesting (both the speaker and the subject). For June we have a plant tour scheduled at Viking/Interworks in Rancho Santa Margarita. July we will take our Summer vacation (unfortunately I think most of us will still be working, there just won't be a meeting). We then return in August to drive, putt, throw (whatever works) and to expand our knowledge of GOLF, at our 4th Annual Golf "Get Together" & Tournament. Hope to see everyone at the course. Our website has all the latest news and events.

Until next month (as far as the newsletter is concerned, or in two weeks if you want to expand that ever increasing wisdom) we are here for you. Call, e-mail, FAX, any communication method you see fit to tell us what direction(s) peak your interest, please let us know.

APRIL 2003 MEETING REVIEW

The LA/OC SMTA meeting for the month of April 2003 was held at the Embassy Suites located in Anaheim. Ray Prasad from Beamworks conducted the presentation. The topic was one of the industry's hottest one - **BGA Promises and Problems including Rework**. Ray started by giving industry background. He noted that there are two key noteworthy points to keep in mind when dealing with SMT assembly issues. They are:

1. SMT is the predominant technology for assembly of today's electronics products, but until recently there has not been equipment available that can selectively add solder paste and place SMT components on a pre-assembled board automatically and solder the components.
2. Even though SMT has been in high volume production since mid 80's when IBM came out with its first serious personal computer 286 AT, there are less than 10% of companies that have first pass yield of over 90%. In other words, 90% of companies are doing too much rework.

Ray went on in the presentation with an overview of BGA types and assembly processes and concluded with discussion of BGA rework using traditional hot air systems and compared them to newer technology of laser rework being used by Spark 400 – an all inclusive SMT assembly/rework station. This assembly station, manufactured by Beamworks, addresses automated selective assembly issues of the industry. One good example of the need for automated selective assembly is assembly of missing components, planned or unplanned. There has been no equipment to address the issue of missing components, a common occurrence in electronics industry. Manual soldering has been the only option, until now.

Electronics products are getting smaller and lighter every day. One of the ways this is being accomplished is by packing components on a board closer and closer together, so much so that it is almost impossible to rework these boards. Cell phones, PDAs, laptops and even desktops are good examples of tightly packed assemblies. Using diode lasers, rework in tight spacing is one of the key competitive advantages of this assembly/rework station.

The traditional SMT assembly is usually done using a high-speed assembly line. If done correctly, it produces assemblies at a very high speed. But there are times, when something goes wrong, and something does go wrong and will go wrong as long as humans are involved, the same SMT line will produce scrap at the same high speed. When this happens, one needs a high volume automated rework system. He pointed out that Spark 400 is an ideal system for automated high volume rework. Its' ability to solder moisture sensitive components without baking provides faster cycle time, a key concern in a production environment.

This station also addresses some issue in emerging technologies such as assembly of optoelectronics components where the component cannot be subjected to reflow temperatures. Optoelectronics is an emerging technology and its use is expected to grow rapidly in the near future.

Lead free soldering is another emerging technology on the horizon. Even though there is not a complete unanimity on the right lead free composition as is the case with eutectic tin lead solder, all the lead free solders have about 40°C higher melting point than that of tin lead (179 or 183°C). What this means is that to implement lead free solder we need to use higher temperature board and component package materials that will be more expensive than the current materials being used. We may also need new equipment to accommodate high temperature lead free solders. Spark 400 will address these issues without the need for high temperature circuit board material or need for any modification.

One emerging trend in electronics industry is that most of the high volume manufacturing is moving to low cost countries such as China. The assembly rework station comes in handy for quick turn prototype and engineering builds. It can be placed in any engineering lab where the engineers can refine and debug their product before shipping it to offshore for high volume manufacturing. Another key technical advantages of this station is that it can monitor and control body and lead temperatures of components and provide not only unique profile for each component but even unique profile for each lead.

He showed video clips of high pin count BGAs, fine pitch and BGA sockets being reworked by laser. After the discussion of BGA assembly and rework processes, he briefly noted that through hole is not going to go away for a long time to come even though its usage is a very small portion of total number of components on a board. So, the need for selective soldering of through hole components is going to be increasing as the industry tries to get away from hand and wave soldering to achieve consistent quality. Most of the selective soldering solutions available today are bulky and expensive or both. For this, a relatively inexpensive, dedicated through hole rework system from Beamworks system is designed to fulfill the task and it also provides an in-line capability. When evaluating the competing equipment it is important to consider the features such as capability, technology, footprint and cost. There are other factors such as localized heating that can prevent damage to adjacent components or solder mask, closed loop temperature monitoring, CAD input for solder fillet requirements and ability to selectively solder fine pitch through hole components without bridging.

TECHNICAL EXCHANGE

The Fate Of APEX

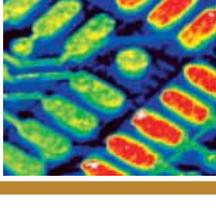
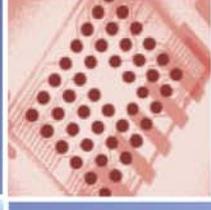
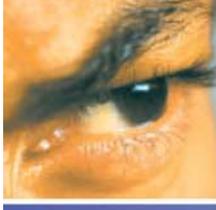
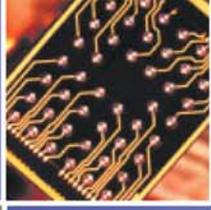
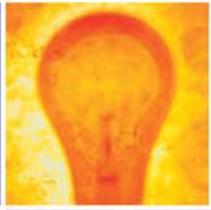
Written by: Deon Nungaray

Editors Note: On the February's Newsletter we were exploring the Implementation of Lean Manufacturing. We plan to continue exploring this topic, however, we will re-schedule continuation of Lean Implementation topic for the near future.

By now, it is pretty obvious to see that the rules and standards of the traditional electronic assembly exhibition trade show have changed yet again. From the heydays of the International NEPCON, to the confusing days of NEPCON/APEX in San Diego, and now the sole player APEX in Anaheim. Have we reached a point of stability in the trade show industry? Well that all depends on what your stability timeframe is. The last 10 years have been a wild ride when it comes to this industry. BUST-BOOM-BUST would suffice to be an adequate description.

The fact is that recent electronic assembly trade shows have been a mere expression of presence in the industry more so than innovation. With the exception of recent 0201 component miniaturization technologies (being pushed by pick and place and re-work equipment manufacturers) not much else is happening. The days of "Ground-Breaking Innovations" have been somewhat scarce. It seems like we have reached a point of stabilization. This is not necessarily a bad thing; assembly technology, pushed by the semi-conductor industry, seems to have finally reached a technology plateau. Granted, there are new technologies in the pipeline, which will once again push the limitations of pick and place technologies in the near future. For now, however, it is a quick breather.

APEX, held from March 31st to April 2nd at the Anaheim convention center, was over-all pretty non-eventful; although, I actually enjoyed the show tranquility. Attendance was low, exhibitors were conservative and the ambiance was at the very least it seemed, pretty laid back. Large exhibitors had their equipment laid out thinly and scarcely throughout their large booths, and a few of the large industry players were altogether absent. Not all was bad though. For me the show brought back memories of the old yearly SMI show held in San Jose. The SMI was basically a local show for local industry professionals. The strength of the SMI was however, the excellent technical conferences. These conferences consisted of superb international speakers from all corners of the globe with concise and substantial technical content. As for APEX, it will be interesting to see what happens in the next two or three years. Will it survive or will it merge with other regional shows? MDM/APEX 2005 Combo? Although this is only a scenario, it would be a possibility since both Medical Device-Manufacturing (MDM) and APEX shows are catered towards high-end manufacturing. The benefits would be a one-stop show for all of you high-end manufacturing needs. A show like this would truly couple the vendor-supplier-consumer supply chain. The advantages for such an event would be to kill 3 birds with one stone. An opportunity to consolidate OEM's, CM's and end buyers under one roof. Just what the doctor ordered to revive an ailing industry.



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Contact

Scott Penin

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