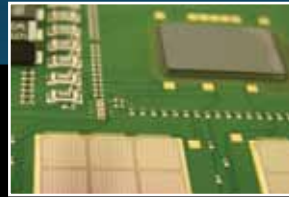
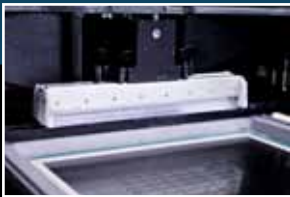


NEWS

Volume 12 • Issue 4 • January, 2014



Leading the way in electronics



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STI

DAVE'S WORLD

By: Dave Raby

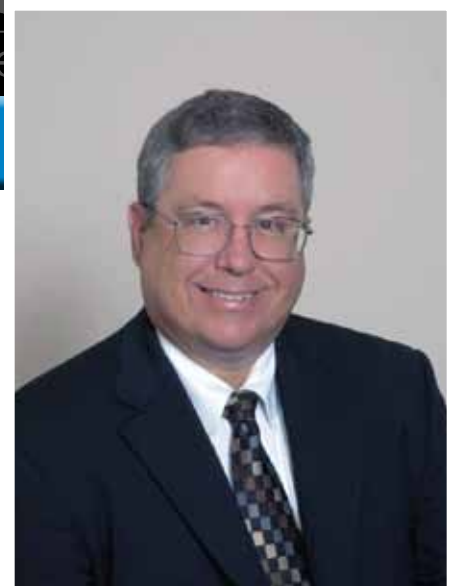
January 2014

I hope your new year is off to a good start. At STI, we've all had some time off to catch our breath and reenergize and come back excited about 2014. Good things are happening now and many more are on the horizon. We already have the best customers imaginable but new ones seem to be coming in faster than usual and we are ramping up to make sure all are happy. We are putting the finishing touches on our new Houston Training Center and should be conducting classes very shortly. We set a record last week for number of orders received via internet. We have our new video for the new Inspection Kit I told you about last month. <http://www.youtube.com/watch?v=A3xXJC9KcRo> And we have many other things in the works that I'll be telling you about in the coming months. It's good to be back and moving forward.

Personally, my January is spent mostly in the office with end of year and beginning of year tasks along with using that new energy to do some longer term planning. Travel season starts next month and some of my best thinking time comes in an airplane seat so I look forward to that. I'm surrounded/

supported/protected by a great team of good smart people and one of my big goals is to do a better job of giving them what they need to do their jobs and to do my best to stay out of their way and let them accomplish those jobs. I haven't always been great at either of those but I am trying and hopefully getting better. I will continue to have crazy ideas and hopefully you'll only hear about the good ones. (I apologize to everyone inside STI that has to hear the other 98%.) I'm looking forward to a great year for STI and personally as well.

I mentioned a few months ago that we like to celebrate at STI. This month we celebrated Julia Adamczyk's 10th Anniversary. Julia came to STI as a part time data entry person and then became a Customer Service Representative and still serves in that function although her primary duty now is purchasing for our Distribution business. Her job is really fairly simple. All she has to do is know what each of our 700+ customers want before they do so we can have everything on the shelf when they order. Of course she has to make sure we don't have too much of any of the 1,000's of items and definitely don't have any before a customer decides to switch to a different item. We use several different matrixes on how she does this and the short version is she does a great job and is much



Contact Information:

Dave Raby

President/CEO

draby@stielectronicsinc.com

appreciated. Thank you Julia!
We have 2 more 10th's and a 15th coming up in 2014.

As always, if there is anything we can do to serve you better, please let us know. You can contact me or anyone else listed anywhere in this newsletter.

Please follow us on twitter (@daveraby) or facebook (STI Electronics) for more up to date STI information.



ELECTRONIC ASSEMBLY

VALUE ADDED SERVICES

In addition to a complete line of electronic assembly and solder supplies, STI offers a complete array of inventory management tools. Vendor managed systems help reduce overall purchasing costs as well as insure product availability at the point of use. Inventory Management Systems can be as elaborate as vending type machines configured specifically for the customer's needs and product mix to a simple scanner system.

- Consumption Reduction (Typically 20-40%)
- Productivity Savings
- Visibility to Consumption Allocation at the Point of Use
 - Distribute inventory based on actual demand rather than pushing based on outdated and selective user input
 - Monitor consumption by user, machine, job number & work order
- Optimize inventory
 - Eliminate obsolescence based on hard data
 - Standardize on parts & SKU's
 - Define minimum and maximum levels on actual demand
- Automate the Restock Notification, Ordering & Reporting Functions
 - Alerts can be sent based on various criteria - I.e. minimum level reached



PRODUCTS

3M
3M ESD
ACL STATICIDE
AIM
AKRO-MILS
APEX
ARLINK/LISTA
ASG-DIVISION
AVEN
BEAUTECH
BIO-FIT
BONKOTE
BOTRON
BRADY
CHEMTRONICS
DANTONA
DEK
EASY BRAID
EDSYN
EREM
EXCELTA

EXTECH
FANCORT
HAKKO
IDEAL
IDENTCO
JANPAK
JBC
KAHNETICS
KESTER
KOLVER
LEWIS BINS
LINDSTROM
LUFKIN
METCAL
MICRO-CARE
NICHOLSON
O.C. WHITE
PACE
PANAVISE
PURITAN

QRP
R&R LOTION
SIMCO
STEINEL
UTICA
WELLER
WIHA
WISS
XCELITE

E-STORE

For the convenience of our customers, all products available at STI can be purchased from our E-Store accessible at

www.stielectronicsinc.com



Join us on our Metcal 2014 Tour

Attend our next workshop
and get the keys to unlock
the Challenges of Rework:

When:

Thursday, February 20, 2014

Where:

STI Electronics
261 Palmer Road
Madison, AL 35758

9:00 am to 12:00 pm

LIMITED SPACE
AVAILABLE

Registration fee is
\$49 per person.
(First 20 registrants admitted FREE)

Register today: www.metcal.com/workshop

The workshop will include a 30-minute multi-media presentation,
two hours of hands-on demonstrations and instruction, and a
Question and Answer session to conclude.

Applications and topics include will include rework approaches for:
PoP / QFN / QFP / 0201 / 0402/ LED / PTH

The afternoon is open for additional rework application questions.
You are welcome to bring your own boards.

We hope to see you there!

Contact Jerry Simmons at jsimmons@okininternational.com if you have any questions.



KEYS TO REWORK

Who Should Attend

- Manufacturing Engineers
- Production Managers
- Production Supervisors
- SMT Process Engineers
- Quality Assurance Managers
- Production Engineers
- Repair Managers and Technicians
- R&D Managers



METCAL

www.metcal.com/workshop

ProZoom® 4.5 Microscopes

The ProZoom® 4.5 family of microscopes combine durability, performance, and low cost in a way that can only truly be appreciated when used... and used hard! This workhorse of a microscope has all of the magnification performance of much more expensive microscopes, with the rugged dependability that we have hung our hat on for over 130 years.

Standard throughout all O.C. White® microscope packages is our heavy duty, double ball bearing arm base assembly. This rugged piece provides effortless motion across the work surface, while maintaining pinpoint accuracy once locked. It also comes standard with a grounding provision on the rear of the base.

The ProZoom® 4.5 series from O.C. White® has a standard magnification range of 7-45x, ESD safety, and a robust build that rivals much more expensive microscopes. With optional lenses and eyepieces, this microscope series can reach up to 225x. With incredible reliability, many optional lenses available, and numerous configurations, you are tough pressed to find a configuration that won't fit your needs.



TKSZ-LV2

ProZoom® 4.5 Binocular Package on
Ball Bearing Base & LV2000-B LED Ring Light

- Standard magnification range 7x - 45x
- Superb large 22mm 10x eyepieces
- .5x objective lens included standard
- Excellent resolution
- 90-250mm working distance depending on objective used
- ±5 Diopter adjustments on eyepiece tubes for ultimate clarity
- Eye tube inclination of 45°, and main body can be rotated 360° in holder
- Rugged all metal construction for **ESD safety**
- Heavy duty ball bearing arm base assembly standard
- With optional accessories, can achieve up to 225x
- 5 Year Mechanical Warranty



TKSZ-L-LV2

ProZoom® 4.5 Binocular Package
on Laboratory Style Base &
LV2000-B LED Ring Light



Smart Phone Enabled

Do You Know Your PCB Vendor Processing Capability?

STI's Engineering and Analytical lab has been challenged by its contract manufacturers and OEM customers as well as printed circuit board manufacturers to develop a non-biased third party test vehicle that can quantify and grade printed circuit board process capabilities between vendors. This independent test vehicle is designed to capture process capability at the printed circuit board master panel level. The test vehicle is designed to capture the process elements that most affect and impact the assembly process. The test objective is to capture process capability of different printed circuit board elements that impact the contract assembly process or the outer layer integrity of the PCB board itself. This study and test vehicle does not address interlayer connections or interlayer stack up capability. The following test vehicle process capability matrix outlines the objectives and design features that most impact the contract assembler and the boards' component interconnection. Once the boards are

evaluated on PCB process capability then the contract assembler can process the boards for testing their ability to place components on these fine pad configurations and assess their processing capability as it relates to the finished PCB test vehicle. This multi functional test board will have further design uses and validation and assessment capabilities. Phase 1 is the PCB processing capability but since it is a multi faceted team of companies wanting process capability data one can easily see the opportunity to grow this design and test vehicle into MULTI VARIABLE PROCESSING TOOL AND TEST VEHICLE to aid and assess the supply chain for high yielding printed circuit board assemblies. A PHASE 2 version of this will come out later this year addressing internal interconnection of PCB processing capability such buried and stacked vias and interlayer interconnection. A PHASE 3 will be designed to include assembly challenges and process capabilities. The ability to morph

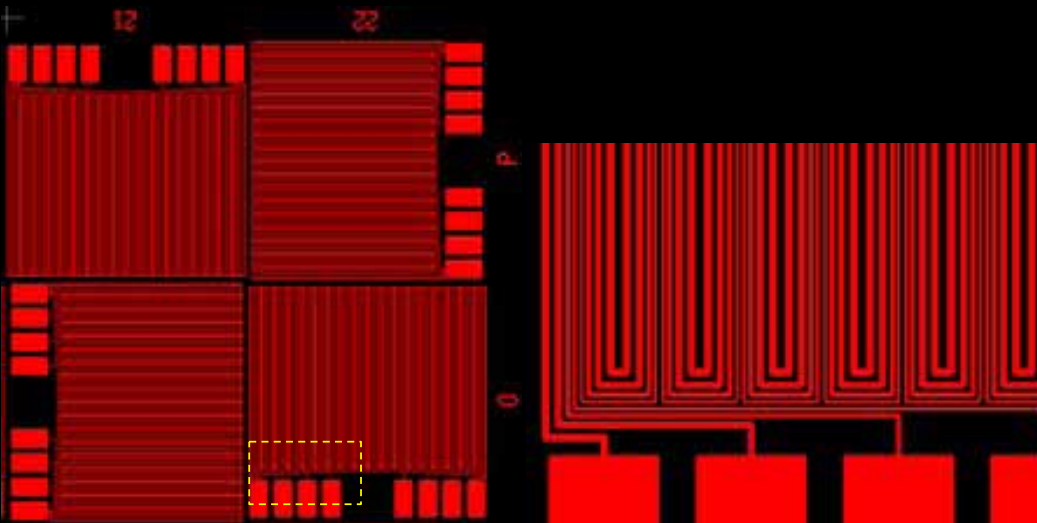
these design and process capability issues into a test vehicle that allows the manufacturer to test his ability to improve their process capability and to have benchmarks that measure growth is essential to continuous improvement and long term growth. Stay tuned to the follow up and progress of the STI PROCESS CAPABILITY TEST VEHICLE.

STI's PWB Process Capability (PPC) Test Vehicle (TV)

- Board size: 4.5" x 7.0" Board = This is then laid up inside the master panel of choice by the PCB vendor
- Fabrication spec: 2-layer, 1/2oz copper, OSP Finish, Solder Mask, Silkscreen
- Add silkscreen legend to note the leading edge of the board for consistent fabrication processing.

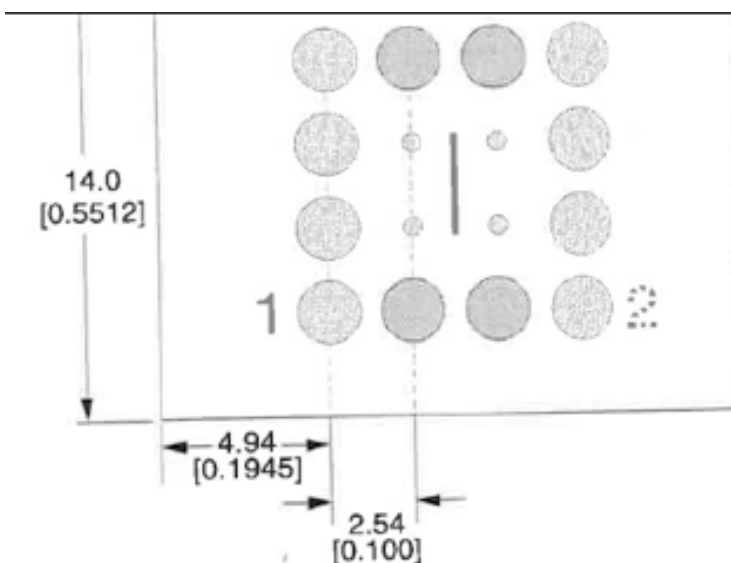
Conductor Etching Capability

- Test Lines
 - OBJECTIVE: This test pattern is a process capability panel designed to provide specific information about manufacturing capability and quality. Conductor and space yields and conductor width and height uniformity are obtained.
- LINE WIDTH & SPACING: 6/6, 5/5, 4/4, 3.75/3.75, 3.5/3.5, 3.25/3.25, 3/3 mil
- Test parameters: The detection of opens and shorts as well as the cross sectional shape and consistency of the trace itself.



PTH Drill Accuracy

- **OBJECTIVE:** PTHs with varying annular capture pad diameters to evaluate drill accuracy due to a manufacturer's drill tolerance. This also measure the accuracy across the master panel and the variability after drill wear and drilling machine movement across the master panel.
- **PTH HOLE DIAMETER:** 0.20, 0.25, 0.30, 0.31, 0.325, 0.35, 0.40, 0.45, 0.50 mm
- **CAPTURE PAD DIAMETER (Hole Dia +):** 1, 2, 3, 4, 5, 6, 8, 10 mil
- **Test Parameters:** This test is looking for drill walk from one side to the other as well as the accuracy of hitting dead center the annular pads – various size capture pads. As drill wear occurs then drill walk and drill accuracy will change as well as the overall accuracy of the x and y coordinates of the drilling head itself. Drill indexing across a master panel is also checked and validated.



Solder Mask Registration & Webbing Capability

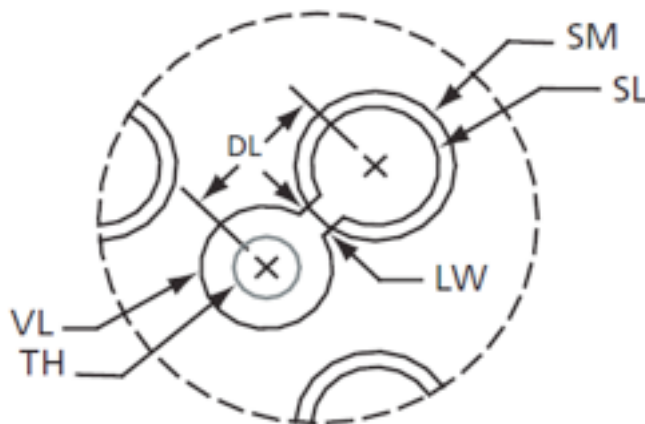
- **OBJECTIVE:** Determine the accuracy through which the solder mask is placed relative to the copper artwork feature and determine narrowest webbing that can be placed consistently from lands to non-solderable features.

- **SOLDER MASK GAPS (per side of land):**
- 4mil gap
- 3mil gap
- 2mil gap
- 1mil gap
- **Test Parameters:** This test looks at the ability to hold tight registration of the soldermask to copper features as well as the ability to hold it across the whole master panel.

BGA & QFN Routing Capability

- **OBJECTIVE:** Place land pattern for various BGA packages with signal escape using interweaved routing and/or dogbone via connections. Capture pad designs follow IPC7351B recommendations and are Non-Solder Mask Defined (NSMD) pads at approximately 15% reduction of the BGA pad size.
- **STANDARD uBGA BALL PITCHES:**
- 0.5mm (JEDEC MO-211 & JEDEC MO-195)
- 12mm sq, 22x22 array, 0.3mm diameter ball, Available Sn/Pb & Pb-free versions
- Top Line P/N LBGA484T.5-DC229A (full array)
- Practical Components P/N A-CTBGA228-.5mm-12mm-DC-LF-305 (perimeter array)
- Dummy components are similar to Xilinx CP132 BGA (8mm sq, 0.5mm pitch) and Actel CS201 BGA (8mm sq, 0.5mm pitch)
- **IPC-7351B Land Pattern:**
- 0.65mm (JEDEC MO-225)
- 15mm sq, 20x20 array, 0.35mm diameter ball, Available Sn/Pb & Pb-free versions
- Top Line P/N BGA400T.65-DC209 (full array)
- Top Line P/N BGA336T.65-DC203 (perimeter array)
- **IPC-7351B Land Pattern:**
- 0.75mm (JEDEC MO-235)
- 6x7mm, 6x8 array, 0.35mm diameter ball, Available Sn/Pb & Pb-free versions
- Top Line P/N BGA46T.75-DC24 (full array)
- Dummy components are similar to Cypress BV36A BGA (6x8mm sq, 0.75mm pitch)
- **IPC-7351B Land Pattern:**

- STANDARD BGA BALL PITCHES:
 - 0.8mm (JEDEC MO-205 & JEDEC MO-216 & JEDEC MO-219)
 - 16mm sq, 19x19 array, 0.45mm diameter ball, Available Sn/Pb & Pb-free versions
 - Top Line P/N BGA361T.8-DC199 (full array)
 - Dummy components are similar to Xilinx CS484 BGA (19mm sq, 0.8mm pitch) or Actel CS180 (13mm sq, 0.8mm pitch)
 - IPC-7351B Land Pattern:
 - 1.0mm (JEDEC MO-192 & JEDEC MS-034)
 - 27mm sq, 26x26 array, 0.63mm diameter ball, Available Sn/Pb & Pb-free versions
 - Top Line P/N BGA676T1.0-DC269 (full array)
 - Practical Components P/NA-PBGA676-1.0mm-27mm-DC-LF-305 (full array)
 - Dummy components are similar to Xilinx FF676 (27mm sq, 1.0mm pitch) and Analog Devices B-676 and Actel FG676 (27mm sq, 1.0mm pitch)
 - IPC-7351B Land Pattern:
 - 1.27mm (JEDEC MS-034 & JEDEC MO-151)
 - 27mm sq, 20x20 array, 0.75mm diameter ball, Available Sn/Pb & Pb-free versions
 - Top Line P/N BGA256T1.27-DC200 (perimeter array)
 - Practical Components P/N
 - Dummy components are similar to Xilinx BG256 BGA (27mm sq, 1.27mm pitch) and Intel PBGA256 and Analog Devices B-400 and Actel BG329 (31mm sq, 1.27mm pitch)
 - IPC-7351B Land Pattern:
 - 1.5mm (JEDEC MO-151)
 - 27mm sq, 15x15 array, 0.75mm diameter ball, Available Sn/Pb & Pb-free versions
 - Top Line P/N BGA225T1.5-DC15 (full array)
 - IPC-7351B Land Pattern:
- BGA Signal Escape Capability
 - Test Pads
 - 50mil sq Square Test Pads; 1 set per device interconnecting internal daisy-chain
 - Interweaved Routing
 - Dogbone Vias

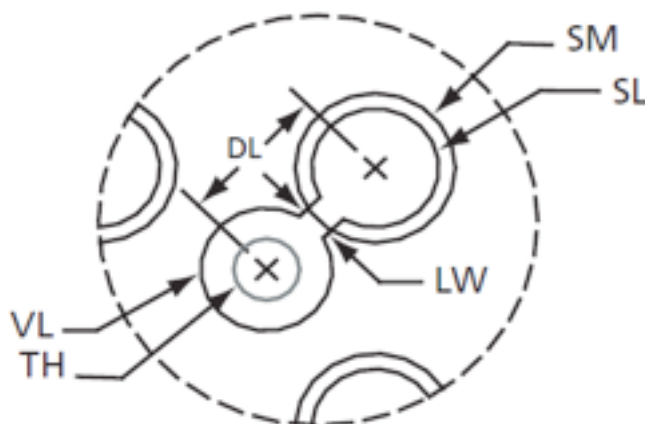


PPC Test Vehicle PWB Design Guidelines (METRIC, MM)

Description	0.5mm BGA	0.65mm BGA	0.75mm BGA	0.8mm BGA	1.0mm BGA	1.27mm BGA	1.5mm BGA
BGA Package Body Size	12mm	15mm	6x7mm	16mm	27mm	27mm	27mm
BGA Ball Diameter	0.3mm	0.35mm	0.35mm	0.45mm	0.63mm	0.75mm	0.75mm
BGA Ball Pitch	0.5mm	0.65mm	0.75mm	0.8mm	1.0mm	1.27mm	1.5mm
Solder Land Diameter (SL)*	0.25mm	0.25mm	0.35mm	0.40mm	0.5mm	0.6mm	0.6mm
Solder Mask Opening Diameter (SM)*	0.35mm	0.4mm	0.5mm	0.55mm	0.65mm	0.75mm	0.75mm
Line Width Between Via and Solder Land (LW)**	0.13mm			0.13mm		0.203mm	0.203mm
Distance Between Via and Solder Land (DL)**	0.353mm			0.56mm		0.9mm	0.9mm
Via Land Diameter (VL)**	0.27mm			0.51mm	0.605mm	0.65mm	0.65mm
Through Hole Diameter (TH)**	0.15mm			0.25mm	0.305mm	0.356mm	0.356mm
Line Width (L)	0.075mm						
Line Space (S)	0.085mm						

*per IPC 7351B recommendations

** per Xilinx UG112 recommended PCB design rules



PPC Test Vehicle PWB Design Guidelines (ENGLISH, MILS)

Description	0.5mm BGA	0.65mm BGA	0.75mm BGA	0.8mm BGA	1.0mm BGA	1.27mm BGA	1.5mm BGA
BGA Package Body Size	12mm	15mm	6x7mm	16mm	27mm	27mm	27mm
BGA Ball Diameter	11.8mil	13.8 mil	13.8 mil	17.7 mil	24.8 mil	29.5 mil	29.5 mil
BGA Ball Pitch	19.7 mil	25.6 mil	29.5 mil	31.5 mil	39.4 mil	50.0 mil	59.1 mil
Solder Land Diameter (SL)*	9.8 mil	9.8 mil	13.8 mil	15.7 mil	19.7 mil	23.6 mil	23.6 mil
Solder Mask Opening Diameter (SM)*	13.8 mil	15.7 mil	19.7 mil	21.7 mil	25.6 mil	29.5 mil	29.5 mil
Line Width Between Via and Solder Land (LW)**	5.1 mil			5.1 mil		8.0 mil	8.0 mil
Distance Between Via and Solder Land (DL)**	13.9 mil			22.0 mil		35.4 mil	35.4 mil
Via Land Diameter (VL)**	10.6 mil			20.1 mil	23.8 mil	25.6 mil	25.6 mil
Through Hole Diameter (TH)**	5.9 mil			9.8 mil	12.0 mil	14.0 mil	14.0 mil
Line Width (L)	3.0 mil						
Line Space (S)	3.3 mil						

*per IPC 7351B recommendations

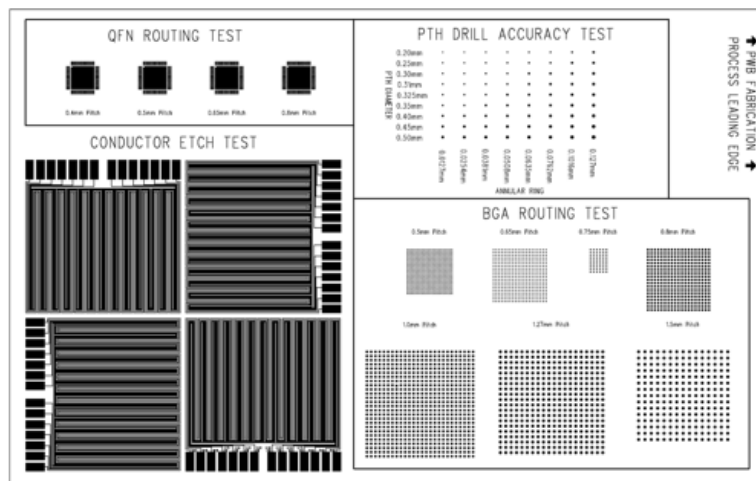
** per Xilinx UG112 recommended PCB design rules

• STANDARD QFN LEAD PITCHES:

- 0.4mm
 - 7mm sq, 56 lead, 0.2x0.4mm lead, 5.5mm sq thermal tab, Available Sn or NiPdAu finishes
 - Top Line P/N QFN56T.4-T
 - Dummy components are similar to Actel QN68 (8mm sq pkg) and Maxim 48L QFN (6mm sq pkg) and OnSemi QFN60 (7mm sq pkg)
- 0.5mm (JEDEC MO-220)
 - 5mm sq, 32 lead, 0.25x0.4mm lead, 3.7mm sq thermal tab, Available Sn or NiPdAu finishes
 - Top Line P/N QFN32M.5
 - Dummy components are similar to Linear UH 32-lead QFN package
- 0.65mm
 - 7mm sq, 32 lead, 0.3x0.55mm lead, 5.3mm sq thermal tab, Available Sn or NiPdAu finishes
 - Top Line P/N QFN32M.65
 - Dummy components are similar to OnSemi QFN32 Case 485J-02 (7mm sq pkg)
- 0.8mm
 - 5mm sq, 16 lead, 0.33x0.55mm lead,
 - Top Line P/N QFN16M.8
 - Dummy components are similar to Maxim 16L QFN

The above guidance on BGA and QFN style packages allows STI to verify and quantify the latest pad layouts from various component packages and the processing capability of these fine PITCH attachment features by pcb vendor. The final objective is to see how well the pcb vendor can hold these design features across the master panel.

The following is a screen capture of the test vehicle before it is laid up inside a master panel.



Please call or email

Mark McMeen

if you would like more information on this
STI's PWB PROCESS CAPABILITY (PPC)

TEST VEHICLE (TV) at

mmcmeen@stielectronicsinc.com

or 256-705-5515

TRAINING MATERIALS



Assembly & Solder Kits

STI Electronics, Inc. is one of the largest distributors of Electronic Assembly and Solder Kits including BGA, Fine Pitch, Through-Hole and Mixed Technology to mention a few. STI's staff designs the boards and kits based on current industry needs. All kits can be customized to fit a customer's particular need and are available in various tin/lead free finishes.

Assembly & Solder Aids

STI's goal is to offer solutions to the challenges our customers face on a daily basis. As a result, STI offers a full line of assembly and solder aids that can be used for manufacturing or training purposes.

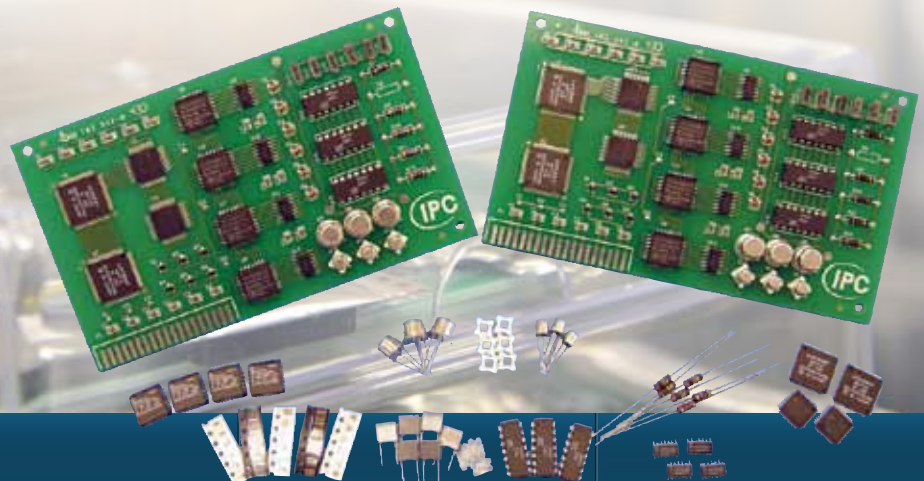


Dummy/Non-Functioning Components

STI Offers a full line of dummy/non-functioning components through our Training Materials group. Any component used in our various skill and process proofing/profiling kits can also be purchased in bulk quantities.

IPC Approved Distributor

STI is an approved Distributor for IPC which includes Video, Standards, Desk Reference Manuals and a variety of other products that can be used for training as well as manufacturing aids.



MANUFACTURING ANALYSIS

STI's involvement in research and development programs, both in component packaging technologies and electronics assembly manufacturing, has brought about the installation of the latest and most advanced equipment and the acquisition of the top people in this field. STI is staffed to design, develop, assemble, and test a ruggedized electronics assembly in an advanced cleanroom laboratory (Class 1000/ISO Class 6 certified) to meet our customer's specifications.



Manufacturing

STI Electronics' manufacturing lab encompasses 26,000 sq ft of floor space containing two surface mount lines, automated through-hole processing, and multiple flexible work cells for final assembly, 7711/7721 certified rework and repair, box build, and test. The facility and equipment is complimented by a highly skilled and trained work force of electronic technicians and associates, all of whom are certified to the highest standard of IPC J-STD-001 ES (Space Addendum).

Material Failure Analysis

STI'S Analytical Laboratory's enhanced capabilities are the result of the recent addition of several new analytical tools and equipment. The analytical equipment includes some of the industry's newest and most advanced tools.

Microelectronics Packaging

The Microelectronics Lab was established to meet the rising need for advanced systems development and packaging to address the emerging challenges and issues facing today's electronics assemblies. Advanced design and modeling software enables STI to design and develop highly integrated hardware to meet shrinking form and fit factor requirements as well as increasing thermal loads. Emerging packaging materials are continuously evaluated to optimize electrical and thermal performance. The microelectronics lab specializes in state-of-the-art packaging design and assembly including current technologies such as Chip-On-Board (COB) and Multichip Module (MCM) as well as emerging technologies such as STI's patented packaging technology termed Imbedded Component/Die Technology (IC/DT®).

Circuit Design

STI's involvement in research and development programs, both in component packaging technologies and electronics assembly manufacturing, has brought about the acquisition of the top people in this field and the installation of the latest and most advanced equipment and design tools. STI is US-based, ITAR registered, and staffed with engineers to design, develop, and assemble a ruggedized electronics assembly in compliance with our customer's specifications. With experience in Defense, Aerospace, Space, and commercial applications, STI is adept to designing and assembling a product to satisfy our customer's requirements.



TESTING



STI Electronics Inc.'s Engineering Department serves the aerospace, military, and commercial sectors of the electronics industry offering test and evaluation services for component-level and system-level electronics hardware. STI offers customized test protocols as well as performs testing in compliance with various EIA/ JEDEC, IEC, AEC, ASTM, IPC, and MIL standards.



ENVIRONMENTAL TEST SERVICES

All electronic hardware is susceptible to the damaging effects of moisture, temperature, and contaminants. STI understands the criticality of reliability testing and test-to-failure. Improper selection of assembly materials and manufacturing processes can result in field failure returns which can lead to high warranty reserves thus affecting long-term profitability. STI's environmental testing capabilities include replicating environments such as Humidity/Moisture Resistance, Thermal Shock/Thermal Cycle, Steam Aging and Vibration/Shock testing. Coupled with the ability to perform in-situ electrical testing as well as a full range of post-test analysis of samples, these tools allow for rapid "aging" of components and prediction of operational life of hardware.

- Thermal Shock
- Temperature Cycling
- Moisture Resistance
- Humidity Cycling
- Shelf Life
- Accelerated Aging
- Vibration Testing
- Mechanical Shock Testing



ELECTRICAL TEST SERVICES

STI offers a variety of electrical test services from component-level testing/ characterization to system-level testing. Electrical testing is offered to validate values in accordance with component manufacturer's performance specifications, a customer's test specification, as well as standard test methods.

- Analog and Digital Designs
- High Frequency RF Layouts
- Controlled Impedance Designs
 - Design Attributes
 - Rules Management
- Design Library Generation
 - Part, Package, and Electrical Symbols
 - Full Forward/Back Annotation



TRAINING SERVICES



Contact Information:

Pat Scott

Director of Training Services

pscott@stielectronicinc.com

2013 has been a very busy year for STI's Training Services Department. STI is very fortunate to have an outstanding customer base. Thank you for all the support you have given us throughout the years. We appreciate your business and look forward to working with you in 2014 and beyond.

This next year will bring growth to STI's Training Services Department. STI will be opening a new IPC Approved Training Center in Houston, TX.

Location:
9920 W. Sam Houston Parkway S.,
Suite 420
Houston, TX 77099

The Training Center will have one Hands-on Classroom that will be fully equipped to conduct basic soldering courses, J-STD-001 Certification courses and Rework and Repair Courses along with two Lecture Classrooms to conduct IPC-A-610, IPC/WHMA-A-620 etc.



Our 2014 Texas Training Schedule is available in this newsletter and on our website at www.stielectronicinc.com.

STI's J-STD-001

Inspection Kit

Part No. STI-INSP-001-E1

NEW!



This training kit was designed by the Master IPC Trainers (MIT's) at STI Electronics to assist MITs and Certified IPC Trainers (CITs) with an easy way to administer the physical inspection requirements of Module 5 of the IPC-J-STD-001 training program. These materials can also be used for other training programs that reference the IPC J-STD-001 Criteria.

Kit Contents:

- DVD
 - Instructional Video
 - Board Layout Form
 - Student Terminal Inspection Worksheets
 - Student PCA Inspection Worksheet
 - Instructor Answer Keys
- Encapsulated Inspection Samples
 - (6) Printed Circuit Assembly (PCA) Samples
 - (8) Soldered Terminal Samples



Cost: \$400.00



This product will be ready to ship February 1, 2014.

To place an order contact sales at (800) 858-0604 or sales@stielectronicsinc.com.

261 Palmer Road • Madison, AL 35758 • (800) 858-0604 • Fax 888) 650-3006

www.stielectronicsinc.com

TRAINING SERVICES

Best Practices in Electronic Assembly Processes

Course Title:

Understanding and Implementing Best Practices in Electronic Assembly Processes

Course Instructor: Phil Zarrow &
Joe Belmonte

Duration: 2 Days

When: March 4 – 5, 2013

Where: STI Electronics, Inc.

Course Objectives:

You have the responsibility and resources to improve the productivity of an assembly operation....What do you do? This course drives awareness and solutions to the adverse impact that non-optimal assembly practices and processes have on the product quality and financial success of electronic assembly businesses. A comprehensive perspective on problem issues is developed for the most currently critical electronic assembly process, materials (both existing and emerging), equipment, procedures, and methods. Most importantly, practical solutions are presented. Key issues that consistently result in assembly problems and low yields are identified and resolved. This seminar is intended for anyone involved in directing, developing, managing and/or executing assembly line operations including managers, line supervisors and line engineers involved in manufacturing, design and quality engineering.

Topics Covered

- Introduction
- Optimization Objective
- Getting the most productivity from an existing line
- Definition of "Best Practices"
- Some "Deadly Sins" of SMT Assembly
- Best Practices in the Assembly Process
- Solder Paste Printing Process Best Practices
- Pick and Place Best Practices
- Re-Flow Soldering Best Practices
- Wave and Selective Soldering Best Practices
- Conformal Coating Best Practices
- Best Practices Concerning "Challenging Technologies"
- QFNs
- Ultra-Miniature Components (0201s, 0100s, ultra-fine pitch BGAs and CSPs)
- Process Optimization Best Practices
- Data Driven Process Design
- Practical Use of Design of Experiments (DOE) in Electronic Manufacturing
- Practical Use of Statistical Process Control (SPC) in Electronics Manufacturing
- Manufacturing organization best practices
- Q & A

Who Should Attend:

This course is intended for Manufacturing, Process, Design, Text and Quality Engineering personnel as well as Management who are involved in the production of surface mount or mixed technology assemblies.

Course Price: \$950.00 per person. 10% discount for multiple attendees.

Email STI Electronics, Inc. for more information or to register for the class (training@stielectronicsinc.com).

STI's Training Services

2014 Schedule



J-STD-001 "Requirements for Soldered Electrical and Electronic Assemblies"

J-STD-001 Certified IPC Trainer (CIT) Certification Course - Madison, AL

February 3-7	April 21-25
June 2-6	August 11-15
December 1-5	

J-STD-001 Certified IPC Trainer (CIT) Recertification Course - Madison, AL

January 29-30	February 26-27
March 26-27	April 30 - May 1
May 29-30	June 25-26
July 30-31	August 27-28
September 24-25	October 29-30
November 19-20	

J-STD-001 Certified IPC Trainer (CIT) Space Addendum Course - Madison, AL

January 31	February 28
March 28	April 25
May 2	June 27
July 2	August 1 & 29
September 26	August 1 & 29
November 21	October 31

J-STD-001 Certified IPC Application Specialist (CIS) Certification Course (Modules 1-6) - Madison, AL

February 3-7	June 23-27
Sept. 29 - Oct. 3	



IPC-A-610E "Acceptability of Electronic Assemblies"

IPC-A-610 Certified IPC Trainer (CIT) Certification Course - Madison, AL

February 18-21	April 15-18
June 9-12	August 18-21
December 8-11	

IPC-A-610 Certified IPC Trainer (CIT) Recertification Course - Madison, AL

January 27-28	February 24-25
March 24-25	April 28-29
May 27-28	June 23-24
July 28-29	August 25-26
September 22-23	October 27-28
November 17-18	

IPC-A-610 Certified IPC Application Specialist (CIA) Certification Course - Madison, AL

November 12-14



IPC-A-600E "Acceptability of Printed Boards"

IPC-A-600 Certified IPC Trainer (CIT) Certification/Recertification Course - Madison, AL

January 21-23	October 15-17
March 25-27	

STI's Training Services

2014 Schedule



IPC/WHMA-A-620
Training Center

IPC/WHMA-A-620 "Requirements and Acceptance for Cable and Wire Harness Assemblies"

IPC/WHMA-A-620 Certified IPC Trainer (CIT) Certification Course - Madison, AL

March 11-14
July 8-11

May 19-22
October 20-23

IPC/WHMA-A-620 Certified IPC Trainer (CIT) Recertification Course, Madison, AL

January 23-24
May 8-9
September 11-12

April 21-22
June 30-July 1
October 15-16

IPC/WHMA-A-620 B Certified IPC Trainer (CIT) Space Addendum Course - Madison, AL *Prerequisite: IPC/WHMA-A-620B CIT Certification or Recertification Course.*

March 24-28
July 14-18

May 12-16
September 15-19



IPC-7711/7721
Training Center

IPC-7711/7721 "7721B Rework, Modification and Repair of Electronic Assemblies"

IPC-7711/7721 Certified IPC Trainer (CIT) Certification Course - Madison, AL

March 3-7
October 6-10

July 21-25



IPC-7711/7721
Training Center

IPC-7711/7721 "7721B Rework, Modification and Repair of Electronic Assemblies"

IPC-7711/7721 Certified IPC Trainer (CIT) Recertification Course - Madison, AL

January 22-23
July 28-29
November 13-14

April 23-24
September 4-5

IPC-7711/7721 Certified IPC Application Specialist (CIS) Certification Course - Madison, AL

August 11-19 December 8-16

IPC-7711/7721 Certified IPC Application Specialist (CIA) Recertification Course - Madison, AL

December 17-18

Basic Soldering - Madison, AL Available upon request.

January 6-10

MSFC/NASA-STD-8739.4 Cable Harness Certification Operator/Inspector

January 13-17 April 14-18

MSFC/NASA-STD-8739.1 Staking and Conformal Coating Operator/Inspector

February 18-21 November 3-6

To register for a class visit our website at
www.stielectronicsinc.com.

STI's Training Services

2014 Houston, Texas Schedule



J-STD-001 "Requirements for Soldered Electrical and Electronic Assemblies"



IPC-A-610E "Acceptability of Electronic Assemblies"

J-STD-001 Certified IPC Trainer (CIT) Certification Course

May 5-9
July 7-11

November 3-7
December 1-5

IPC-A-610 Certified IPC Trainer (CIT) Certification Course

February 10-13

March 10-13

J-STD-001 Certified IPC Trainer (CIT) Recertification Course

May 14-15

November 19-20

IPC-A-610 Certified IPC Trainer (CIT) Recertification Course

February 6-7

April 17-18

May 12-13

August 14-15

November 10-11

December 8-10

J-STD-001 Certified IPC Trainer (CIT) Space Addendum Course

February 14
March 14

May 16
November 14

IPC-A-610 Certified IPC Application Specialist (CIS) Certification Course

January 21-23
April 14-16
August 11-13

February 3-5
June 11-13

J-STD-001 Certified IPC Application Specialist (CIS) Certification Course (Modules 1-6)

January 27-31
April 7-11

August 4-8

J-STD-001 Certified IPC Application Specialist (CIS) Recertification Course (Modules 1-5)

October 13-14

November 17-18

All classes will be conducted at
9920 W. Sam Houston Pkwy., Ste 420
Houston, TX 77099