

# NEWS

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## Leading the way in electronics



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# DAVE'S WORLD

By: Dave Raby

## September, 2015

Happy Fall to you! This is the best time of the year for many of us in the South because we've survived most of the summer and we are now into the college football season.

As I have said many times before, we like to celebrate at STI. We have celebrated 4 more "major" anniversaries since our last newsletter. Mark McMeen, Mel Parrish, and Angela Harbin all joined us within a few weeks of each other in 2000. Mark is now our Vice President of Engineering and has been responsible for the tremendous growth of that side of our business during his tenure. He is the face of STI to many people and STI wouldn't look anything like what we do now without him. He works way too many hours but I do try to sneak him out whenever we need to win a golf event. Mel Parrish is our Director of Training Materials in addition to being our Facility Security Officer. Mel is responsible for the Training Kits and supplies that we sell in all 50 states and 40+ countries. He does a great job of making sure we are following all of the latest ITAR and security procedures which is an extremely important position. Many people know STI because of the way Mel represents us at IPC functions as a long time member of their TAEC committee as well as in other capacities. He has a vertical space in our Kit Room that has so many IPC plaques that I'm not sure if there is an actual wall behind it. Angela is now responsible for Logistics and Planning, as well as Customer Service on the Manufacturing side of STI. We can't build anything unless Angela schedules it and directs the procurement of all of the parts. She also keeps customers posted on status as she monitors the progress of each job. I mentioned earlier that to many people Mark is the face of STI so it is

reasonable to say Angela is the voice. We also celebrated Marietta Lemeux's 10th Anniversary. Marietta is our Analytical Lab Manager and does a great job working with customers, many of which are in emergency situations, from all over the world. She is also, in many cases, the only person at STI some customers ever talk to and they seem fine with that. Marietta is also our resident martial arts expert so I wouldn't advise getting on her bad side. All four of these folks have made tremendous contributions to STI and I look forward to working with all of them in the future.

On a personal note, I'm feeling a little different right now as my daughter is now a freshman in college. Many of you have watched her grow up in this newsletter and our Christmas cards and you should all join me in feeling considerably older right now. She's on the path to have a chance to do far more important things than I've ever done and as a parent that is a great thing to watch. Earlier this summer we celebrated (there's that word again) her 18th birthday and I was unexpectedly reminded of some friends who are no longer with us but will always be remembered. My wife pulled out some things she had saved from 18 years earlier which included newspapers (Mike Tyson biting off Evander Holyfield's ear) and printed copies of emails and other items of that type. Two that made me smile were from the SMTA. The first was the National newsletter which had a note congratulating us on her birth but the main article was by JoAnn Stromberg talking about the passing of Dr. Charles Hutchins who was a friend to me and a key person in the early days of the SMTA. The second was the Tennessee Valley Chapter newsletter which also congratulated us and its feature was an announcement that Peter Biocca would be speaking at the next chapter meeting. (I was his host for the visit.) Peter was a good friend who also left us way too soon. It was great to be reminded of them and see that random link on a happy occasion.



### Contact Information:

**Dave Raby**

President/CEO

[draby@stielectronicsinc.com](mailto:draby@stielectronicsinc.com)

If you are going to be in Rosemont (Chicago) for SMTAI at the end of the month, please stop by booth 609 and say hello.

Thank you for your support and please let us know if there is anything we can do to serve you better.



***STI would like to extend condolences to Megan Wendling and family on the recent passing of her husband, Allen Jergens. Allen has been a part of our electronics family since 2013 and will be missed by all.***



# TRAINING MATERIALS

It's that time of year...back to school and back to work!

## The Advantage of Certification Kits

Using other sources for materials used in the hands-on portion of training programs like IPC J-STD-001, may appear to be a cost savings, when in reality, it is costing you time as you try to match it to the requirements for the training program. The actual training projects created by the course developers are important for the overall success of the program. As developers and trainers for many of the IPC Certification programs, our experience has allowed the training kits to be created in concert with the desired learning objective for a seamless implementation of the learning experience. "Get the kits that were designed for the training programs."

STI has Certification Training Project Kits for the new J-STD-001F training, which is the most widely used solder training project. Getting your certification materials and references from a Training Provider and Designer provides you with consistent, thorough and effective training projects. In addition, STI is heavily involved in the industry standards as well as

the curriculum design. You can call on us when you need a trainer's perspective for the intent and insight of the technical background of the documents or even training and certification details.

Our featured kit for this Newsletter is the very popular Solder Training Certification Training Kit for IPC, J-STD-001F. It is available with either Tin/Lead or Lead-Free materials. Custom surface finishes and Bill of Materials (BOM) are available.



Contact Information:

**Mel Parrish**

Director, Training Materials

[mparrish@stielectronicsinc.com](mailto:mparrish@stielectronicsinc.com)

## IPC J-STD-001F Certification Kit with Lead-Free Option



Part List

Part	Quantity
J-STD-001F Board	2
1/4 Watt Res Axial	4
T05/39 Transistor	4
Diode Axial	4
CK06 Cap	4
Cap Standoff	4
16 Pin DIP	4
0402 Resistor	4
0805 Resistor	4
1206 Resistor	4
1206 Cap	4
1206 MELF Diode	4
SOIC 14	2
QFP 100 T20	4
PLCC 20	2
DPAK	4

Soldering workmanship kits are required for the IPC J-STD-001F Certification and Training Program for both CIT (Trainers) and CIS (Operators). This revised J-STD-001 Kit provides additional QFP100 components that are 20 mil pitch as well as smaller 0402 chips and DPAKs. The revised components are representative of those commonly experienced in today's industry and the kits are packaged with enough components to populate the two boards. The kits are available in both Lead-Free as well as Tin Lead versions. This kit provides one board for skill development and one board for final assessment. Individual parts and boards are available as well as the kit form.



Prices

Quantity	405-2873 Lead Free Kit	405-2872 Tin lead Kit	405-0115 Lead Free Board	405-0114 Tin Lead Board
1 to 49	\$35.25	\$30.00	\$6.25	\$6.25
50 to 99	\$31.75	\$27.00	\$6.25	\$6.25
100 to 249	\$28.25	\$25.40	\$5.95	\$5.95
250+	\$27.05	\$23.00	\$5.95	\$5.95

Mention this article and receive a discount of 10%. As always, kits ship the same day for orders with quantities less than 100. Larger orders are often shipped the next day.

# Moisture Detection and Electronic Hardware

Within the last couple of months, STI's analytical lab has encountered several investigations related to the effect of moisture on the Printed Circuit Boards. As we all know, it is of utmost importance to keep electronic hardware isolated from humidity/moisture, as the presence of moisture may cause internal delamination and surface solderability issues on PCBs and moisture-sensitive components.

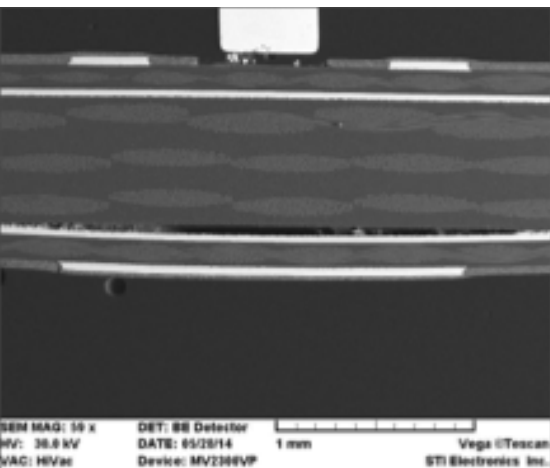


Figure 1: Inner core PCB delamination

A humidity indicator card (HIC) is an inexpensive way to quantify relative humidity levels inside sealed packaging. Such an HIC is shown in Figure 2. An HIC is a card on which a moisture-sensitive chemical is impregnated so that it will change color when the indicated relative humidity is exceeded. This is usually blotting paper impregnated with a base chemical. The most common HICs change color from blue (less than indicated RH level) to pink (greater than indicated RH level). HICs are packed inside a moisture-sensitive bag, along with a desiccant, to aid in determining the level of moisture to which the moisture-sensitive devices have been subjected.

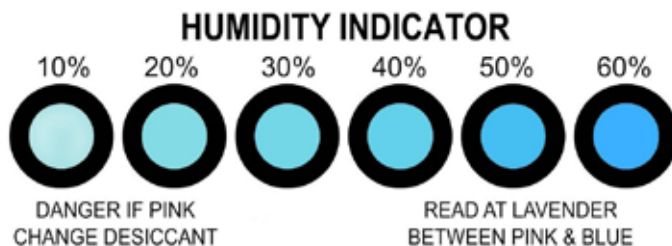


Figure 2: "GOOD" Humidity Indicator card

Early detection of the presence of moisture can prevent catastrophic effects on the functioning and reliability of your electronic hardware. The evaluation methodology can include a thorough evaluation of shipping packages, inspection of ESD or moisture barrier bags, and the inspection of the HICs.

Not only should the "as-received" state of the materials be checked, but the authenticity should also be verified. We have encountered several instances over the last year where the HICs never actually change color or display a low sensitivity level, and thus appear fake or highly suspicious. A quick test if you are suspicious of a HIC card would be to expose it to humid air and see if it will change in color. One can reheat or dry the HICs out in an oven and reuse, so verification of accuracy should not be an issue. Most offices and buildings, manufacturing production floors, and engineering offices are kept at 40 to 60% relative humidity so a quick test is as easy as placing a card in your office or work station and observe if the HIC card changes colors. The colors will change place over a couple of hours due to the

absorption rate of the chemically impregnated HIC indicator dots. Should you have further questions or would like to discuss this topic more, please contact Mark McMeen or Marietta Lemieux.

[mlemieux@stielectronicsinc.com](mailto:mlemieux@stielectronicsinc.com)  
256-705-5531  
or  
[mmcmeen@stielectronicsinc.com](mailto:mmcmeen@stielectronicsinc.com)  
256-705-5515



**261 Palmer Road  
Madison, AL 35758**

**Phone: 800-858-0604  
Fax: 888-650-3006**

[www.stielectronicsinc.com](http://www.stielectronicsinc.com)





# STI'S FLORIDA TRAINING CENTER



Contact Information:

**Pat Scott**

Director of Training Services

pscott@stielectronicsinc.com

STI has expanded its operations to include Florida beginning in February of this year. This expansion has given us the opportunity to provide our services closer to home for our customers in the southeast.

To help with this

expansion, STI has added

Patti Gander to our Training Services team. The addition of Patti to our team has provided us the opportunity to grow our course offerings in Florida and elsewhere. Patti brings with her a portfolio of training programs developed specifically to address many of the skills gaps we all have encountered or will likely encounter sometime in the future. Patti has spent most of her career in leadership roles in a variety of manufacturing sectors; commercial, aerospace and defense-related. These courses are a

culmination of her many years of working with manufacturers, listening to their needs, and developing cost-effective solutions for addressing those needs. Specifically designed to address training gaps, the courses follow the competency model published by the US Department of Labor and adopted by the National Association of Manufacturers (NAM). Many of the courses are directly tied to national certification programs that require students to pass an exam at course completion. Students not only obtain a certificate of completion from STI but also receive a nationally recognized certificate demonstrating an understanding of the materials. The certification organizations were selected from the NAM's list of recognized professional organizations. Successfully obtaining a nationally-recognized certification benefits the student and also provides the instructors with feedback on the success of the class.

In addition to our new program offerings, we have partnered with Transfer Technology Services, Inc. (TTS) whose expertise is in the area of highly technical maintenance training and consulting. Our collaboration will allow us to provide programs for all aspects of the manufacturing industry.





Founded in 1994, TTS is ranked as one of the top 20 workforce development companies by TrainingIndustry.com, due to its innovation, industry impact, and ability to develop and deliver both off-the-shelf and customized training services. TTS is accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET).

TTS personnel have extensive experience designing and developing technical information for industry. Their staff of instructional technologists and training specialists have conducted job task analysis, written procedures, and developed and taught courses in numerous industries.

As a maintenance and operations optimization organization, TTS has the expertise to offer clients turn-key solutions. Their services include equipment, process, and personnel assessments, maintenance and reliability optimization programs, performance consulting, documentation services, supply chain assessments and talent management support.

It is our belief at STI that students should be able to walk out of a course, apply what they have learned, and benefit their organization immediately. The hands-on component of our courses is an integral part of the learning process. Through the use of hands-on equipment and/or high quality simulations, the learning is more practical and useful for the students. This methodology has been long used in our solder training courses whether the course is for an IPC certification or simply to develop solder skills. Understanding our students' specific learning styles has moved us towards an "experiential" teaching method that includes at least 50% hands on in training courses either by labs or activities.

The graphic, on the next page, illustrates competencies needed for employees to advance within their organizations and the programs that are available to address those competencies. Patti's extensive background in both manufacturing and education helps ensure these programs deliver training and skills that are relevant to both employees and employers. The courses we offer (illustrated at each level in the graphic on the following page) are available for all levels of training companies may need. From entry-level skills for the new employee entering the manufacturing industry of specific industry training, to the executive level, we are experts in developing custom programs for our clients.



In addition to our customized training programs, STI and its affiliates also offer consulting services in a wide variety of areas. Our consultants will work closely with you to determine your specific project needs, and then will be available to assist you from the front end to the back end of the process. It is and always has been our goal to give you a positive return on your investment through our training programs and expanded consulting services. A few of the services offered include:

- J-STD-001 Compliance
- ESD Program
- Quality Management Systems
- Maintenance Management Systems
- Materials (Supply Chain)
- Lean/Six Sigma Continuous Improvement
- Business Processes

If you are interested in any of our training programs, need a customized training solution and/or would like to discuss our consulting services, please contact Patti Gander in Florida or Pat Scott for other locations. You can reach us at:



**Patti Gander**  
**[pgander@stielectronicsinc.com](mailto:pgander@stielectronicsinc.com)**  
**(813) 486-1207**



**Pat Scott:**  
**[pscott@stielectronicsinc.com](mailto:pscott@stielectronicsinc.com)**  
**(256) 705-5528**



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mini**



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***Western Regional Sales Manager  
VI Technology***



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<http://sti-electronics-inc1.hostedbywebstore.com>

or

<http://estore.stielectronicsinc.com>





# STI's Training Services

## 2015 Schedule

### TRAINING SCHEDULE



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

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

December 7-11



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

October 21-22  
December 16-17

November 18-19

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

October 23  
December 18

November 20

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

Available upon request

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

Available upon request



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

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

October 5-8

December 14-17

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

November 16-17

October 19-20  
December 14-15

**IPC-A-610 Certified IPC Application Specialist (CIS) Certification/Recertification Course - Madison, AL**

Available upon request

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

Available upon request

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

**Basic Soldering - Madison, AL**

Available upon request



# STI's Training Services

# 2015 Schedule

## TRAINING SCHEDULE *cont.*



**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**

December 1-4

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

November 12-13

October 26-27

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

November 16-20

**IPC/WHMA-A-620 Certified IPC Application Specialist (CIS) Certification/Recertification Course - Madison, AL**

October 28-30



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

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

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

November 2-6

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

October 28-29

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

November 9-17

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

November 2-3



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

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

Available upon request



To register for a class visit our website at [www.stielectronicsinc.com](http://www.stielectronicsinc.com)



# 2015 Schedule

## TRAINING SCHEDULE *cont.*



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

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

October 15-16

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

November 2-6

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

October 12-14



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

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

October 20-23

December 1-4

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

November 9-10

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

December 7-10



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

**IPC/WHMA-A-620 Certified IPC Trainer (CIT) Certification Course**

October 27-30

**IPC/WHMA-A-620 Certified IPC Trainer (CIT) Recertification Course**

November 12-13

**IPC/WHMA-A-620 Certified IPC Application Specialist (CIS) Certification/Recertification Course**

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



**IPC-7711/7721 Certified IPC Trainer (CIT) Certification Course**

November 16-20

**Basic Soldering**

December 14-18



**STI Electronics, Inc.**

Beltway 8 Office Center

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



261 Palmer Road • Madison, AL 35758

**[www.stielectronicsinc.com](http://www.stielectronicsinc.com)**

P: 256-461-9191 F: 256-461-9566