

# NEWS

Volume 12 • Issue 5 • February, 2014



## Leading the way in electronics



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## DAVE'S WORLD

By: Dave Raby

### February 2014

February is supposed to be the month where love is in the air but this month all the talk was of snow on the ground. We've had a cooler than usual winter (although it is about 70 as I write this) and the second week of the month featured our bi-annual 6 inch blizzard. Unfortunately, because of road conditions we had to open late two days and were completely closed one day and I apologize to you if we missed your call during that time. We were able to complete all of the classes that were scheduled that week thanks to the students' and our instructors' flexibility and some very local roads being cleared. One takeaway from this is if you are visiting us during winter months, there may be a valuable difference in a Madison hotel over one in Huntsville. As is my usual custom, I was at the Pan Pacific Conference in Hawaii instead of being snowed in and it is at least the 3rd time the events have coincided. Next year's Pan Pacific will be February 3-5 in case you want to plan your bread, milk, and egg shopping in advance.

Speaking of the Pan Pacific, this year's conference was a good one with papers presented from 16 different countries and over half of all of the papers coming from outside of the US. I was lucky to get to chair the Embedded Assemblies session and honored to be able to introduce one of our industry's legends, Dieter

Bergman. Because of the location and the conference set up, Pan Pacific is always one of the best networking venues around and this year was certainly no exception.

This month we celebrate Bobby Inman's 10th Anniversary at STI. Bobby has done many jobs in our manufacturing area. He now primarily runs our lower volume SMT line but also does several other tasks in manufacturing as needed and is a very important part of our engineering, scheduling, quality and pricing teams. A lot has changed over the past 10 years but we have always been able to count on Bobby to do a great job wherever he was needed. I also like that he is one of our biggest Auburn fans.

On a serious but all is well that ends well note, our 60 employees combined for 6 different surgeries in February. All have gone well and recoveries are at different stages but going as planned. I'm not sure what caused the outbreak but I really hope it doesn't continue spreading. (I do know of one more scheduled for early March.) I appreciate all of the STI employee's stepping up and filling in for missing colleagues with no complaints.

Coming up in March, we'll be exhibiting at the SMTA Vendor Expo in Houston (6th), the Dixie Crows Conference and Expo in Warner Robins (24th - 27th), and the Atlanta Design 2 Part Show (26th -27th) as well as attending IPC committee meetings at APEX in Las Vegas (25th



#### Contact Information:

**Dave Raby**

President/CEO

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

-27th). Also, we'll be hosting an open house at our Houston training center on April 2nd.

Send me an email  
([draby@stielectronicsinc.com](mailto:draby@stielectronicsinc.com))

if you would like to enter a bracket in our STI College Basketball Bracket Busters Pool. I will send you an invitation to fill out online. There's no cost to enter and while we haven't come up with the exact prize yet (remember, it's free to enter so that's our budget) you will be recognized in a future newsletter, admired by all, and having bragging rights to everyone for a year.

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.

## TRAINING MATERIALS



Contact Information:

**Mel Parrish**

FSO, Director Training Materials

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

Mention this article and receive

**10% off**

on Mixed Kits for your training program.



The **STI Mixed Technology Training Kit** provides a realistic training source with an excellent representation of a typical production board. It is a favorite for many of our customers for skill training for their company.

## IPC MATERIALS NEWS

**Most of the training programs we support are currently centered around IPC Standards and Training Certification programs.**

In January IPC has changed the price of all of the Standards which include those used in our most popular training programs. If you have not yet experienced the change in price structure, you will see a significant increase in the cost of most standards that we use day to day. They are grouped into a few price structures depending on the complexity of the standard and that price is common to other standards of similar complexity. Considerations are graphic content, color vs black and white text, depth of material, number of pages, number of trees sacrificed, etc. I would recommend that you consider the additional cost of IPC Materials when planning for future training projects. I've not seen a price change for Certification Materials. Cross your fingers.

STI is an authorized distributor of IPC Materials and we can provide new price quotes for the IPC Materials whether they be Standards, Handbooks, DRMs (Desk Reference Manuals), Videos, etc..

Looking to the future Revision "F" for IPC-A-610, and J-STD-001 is nearing completion and we are considering

a release mid summer this year. Changes include additional criteria for newer technologies and updates for the existing content as requested by the industry. STI Training Materials provides support for Trainers throughout the world to support realistic effective training. We exist to make our Trainers the best that they can be. We continually strive for same day shipping since we understand that the Trainer is so often put into last minute training scenarios. STI Training Materials has trainers on staff who have been through the fire with many years of classroom as well as industry production experience. Let us help you with success for your difficult training projects.

We are pleased with the renewed trend and focus on training for Cable and Harness processes. These skills have historically not been given the priority that they deserve for building electronic products. STI has expanded offerings for this segment of our industry and we are pleased to offer Training Kits for this purpose. Please contact STI Customer Service or Mel Parrish if we can be of any assistance in your Cable and Harness Training projects.



# ELECTRONIC ASSEMBLY

## PRODUCTS

|                  |                    |
|------------------|--------------------|
| 33M              | Kester             |
| 3M ESD           | Lewis Bins         |
| ACL Staticide    | Liberty Packaging  |
| AIM              | Lindstrom          |
| American Beauty  | Lista              |
| APEX             | Lufkin             |
| ASG              | Luxo Lighting      |
| Aven             | LW Scientific      |
| Beautech         | Metcal             |
| Bio-Fit          | Micro-Care         |
| Bonkote          | Nicholson          |
| Botron           | O.C.White          |
| Brady            | Pace               |
| Chemtronics      | Panavise           |
| Conductive       | Plato Products     |
| Containers, Inc. | Production Basics  |
| Creative Global  | Puritan            |
| Solutions        | QRP                |
| Dantona          | R & R Lotion       |
| DEK              | Scienscope         |
| Easy Braid       | Simco              |
| Edsyn            | Static Tech        |
| Erem             | Steinel            |
| Excelta          | Swanstrom Tools    |
| Fancort          | Tech Spray         |
| General Tools    | Tech Wear          |
| Gordon Brush     | Technibilt         |
| Hakko            | Utica              |
| Hunter Products  | Virtual Industries |
| Ideal            | Weller             |
| Identco          | WIHA               |
| Janpak           | Wire Wrap          |
| JBC              | Wiss               |
| Jensen Global    | Xcelite            |
| Kahnetics        |                    |

## 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

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





American Hakko Products, Inc.

### 30-Year Anniversary "Promo of the Month"

**MARCH 1 thru MARCH 31, 2014 ONLY!**

**BUY ONE  
FA-430 Fume Extraction Unit**



**GET TWO FREE ARM DUCT KITS  
Your Choice!**



P/N: C1571

**OR**



P/N: C1572

#### Terms & Conditions:

1. Promotion effective March 1, 2014 through March 31, 2014.
2. Promotion product is limited to the FA-430 unit only (P/N: FA430-16).
3. Promotion offer:  
Buy one FA430-16 get two free C1571 (Rectangular Nozzle Duct Kit) = P/N: **FA430-PROMO1**  
Buy one FA430-16 get two free C1572 (Round Nozzle Duct Kit) = P/N: **FA430-PROMO2**
4. Purchase Order must be received at AHP office March 1 through March 31, 2014. Any back orders will ship when they are available.
5. AHP shipping policies apply.
6. Product purchased for demonstration purposes DO NOT qualify for this promotion.
7. Any promotion order received on and after April 1, 2014 will be rejected. AHP is not responsible for lost or mis-directed orders.
8. Standard distributor discounts or incentives (as stipulated in the Distributor Agreement) are not affected by this promotion and shall apply to purchases made under the terms of this promotion.
9. Promotion product is available to customers in the United States and Canada and only from participating distributors. This promotion is void where prohibited by law.
10. POS required distributors must report with P/N: FA430-PROMO1 and FA430-PROMO2.

STI Electronics, Inc. • 261 Palmer Road, Madison, AL 35758  
Phone: 800-858-0604 • Fax: 888-650-3006 • [www.stielectronicsinc.com](http://www.stielectronicsinc.com)

# 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.

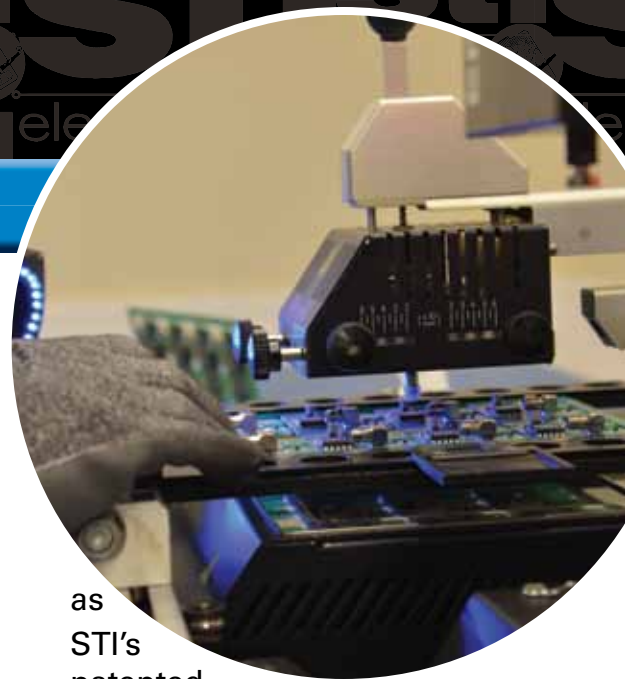
## Microelectronics Packaging

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

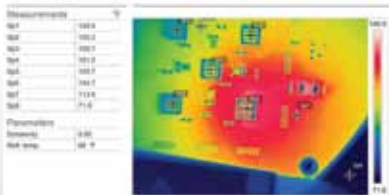
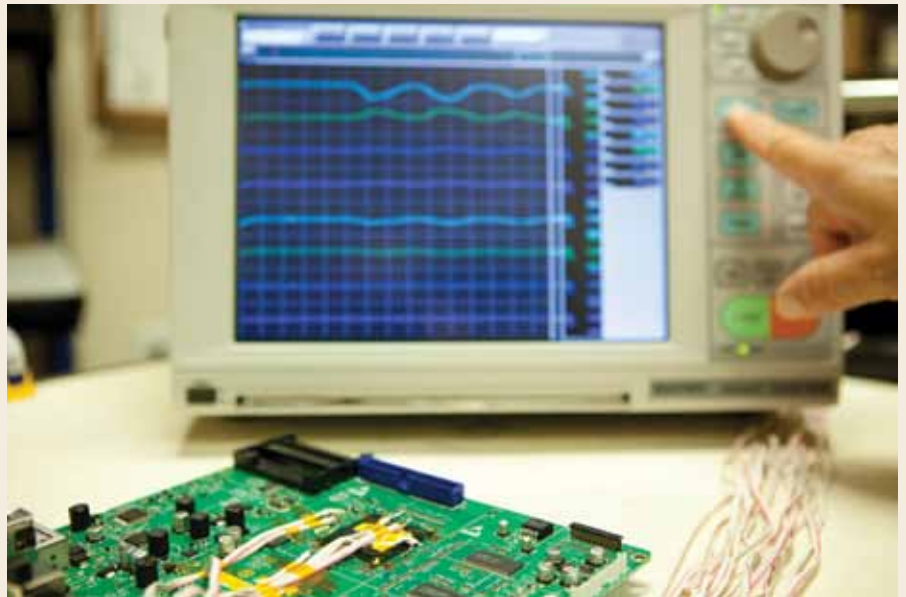
**S**TI Electronics Inc.'s Engineering Department serves the aerospace, military, and commercial sectors of the electronics industry offering test and evaluation services for component-level and system-level electronics hardware. STI offers customized test protocols as well as performs testing in compliance 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

# NEW TRAINING CENTER OPEN

*Join Us For  
Open House*



Please Plan on Joining Us at our  
New Houston Training Center

Wednesday, April 23rd  
2:00 - 6:00 p.m.

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

The Training Center has 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.



Contact Information:

**Pat Scott**

Director of Training Services  
[pscott@stielectronicsinc.com](mailto:pscott@stielectronicsinc.com)

Our 2014 Texas  
Training Schedule  
is available in this  
newsletter and  
on our website at  
[www.stielectronicsinc.com](http://www.stielectronicsinc.com)



*Training Services  
and Classes  
Available at  
STI Electronics, Inc.*





# 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



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

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

[www.stielectronicsinc.com](http://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:** May 20-21, 2014

**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@stielectronicsonline.com](mailto:training@stielectronicsonline.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

April 21-25  
June 2-6

August 11-15  
December 1-5

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

March 26-27  
May 29-30  
July 30-31  
September 24-25  
November 19-20

April 30 - May 1  
June 25-26  
August 27-28  
October 29-30

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

March 28  
May 2  
July 2  
September 26  
November 21

April 25  
June 27  
August 1 & 29  
August 1 & 29  
October 31

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

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

April 15-18  
August 18-21

June 9-12  
December 8-11

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

March 24-25  
May 27-28  
July 28-29  
September 22-23  
November 17-18

April 28-29  
June 23-24  
August 25-26  
October 27-28

#### 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

March 25-27

October 15-17



## 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**

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

May 8-9  
September 11-12

**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**

April 23-24  
September 4-5

July 28-29  
November 13-14

**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.**

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

April 14-18

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

November 3-6

**To register for a class visit our website at  
[www.stielectronicsinc.com](http://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  
November 3-7

July 7-11  
December 1-5

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

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**

April 17-18  
August 14-15  
December 8-10

May 12-13  
November 10-11

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

March 14  
November 14

May 16

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

April 14-16  
August 11-13

June 11-13

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

April 7-11

August 4-8

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

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

October 13-14

November 17-18