ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinarseries

Selecting the Right Training Programs for Employees in Electronic Manufacturing

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

Past Webinars Topics

We've discussed following:

- Knowledge base programs
- Skills based programs
- The knowledge worker
- The skilled worker and
- Do you really need all this certification stuff

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

Define The Need

- Interview the customer
- Differentiate between their needs and wants
- Define their end goal
  - What do they want to accomplish with this training?

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

Why Training?

- What is the problem to be solved?
  - Yield
    - Quality
    - Scrap
  - Capacity
    - Not enough throughput
    - Not enough resources
  - Technology changes
    - New products
    - New / different equipment/ tools

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

Why Training?

- What is the problem to be solved?
  - Knowledge of employees
    - They don't know what is required
  - Skills of employees
    - They don't have the physical skills to do the work
  - Employee morale
    - Low morale within the ranks of the employees, they don't feel empowered

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

Why Training?

- What is the problem to be solved?
  - Customer demands
    - Require the people working on their product meet some level of proficiency
  - Promotional and publicity efforts
    - Used as promotional information to attract more customers

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

Selection of Training Programs

- Instructors or Specialist
- Certification needed
  - Yes
  - No
- Proficiency needed
  - Yes
  - No

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

CIT vs CIS

- CIT – Certified IPC Instructor
  - Total program and examination
- CIS – Certified IPC Specialist
  - Base upon modules taken
  - Course can be modified by modules taken after prerequisite module

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

Certification Knowledge Base Programs

- For CIT and CIS personnel
  - IPC-A-610
    - Acceptability of Electronic Assemblies
  - IPC/WHMA-A-620
    - Requirements and Acceptance for Cable and Wire Harness Assemblies
  - IPC-A-600
    - Acceptability of Printed Boards

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

Program Offerings

Web Sites and Data Sheets

eptac webinar series

AB

Lec
Vice
Dire

eptac
TRAIN. WORK SMARTER. SUCCEED.

1-800-643-7822

Contact Us NEED HELP? CLICK HERE.

IPC Training Center

Home Page | Training | eTraining | Locations | Consulting | Webinars | About Us

I learned how to be more productive

With EPTAC's training

< 02 >

Welcome To EPTAC

Let's Get Started

Choose Your Class Subject

- Visual Inspection
- Soldering
- Aerospace Requirements
- Component Rework/Board Repair
- Cable Wire Harness Assemblies
- Bare Board Inspection
- PCB Design
- Counterfeit Components
- eTraining
- And Much More...

800.643.7822 WWW.EPTAC.COM

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinarseries

eptac
TRAIN. WORK SMARTER. SUCCEED.

800-643-7822
www.eptac.com

IPC Training Center

TRAINING
- Expert Training in the Latest Technologies
- Industry-Demanded Certifications

PCB TECHNOLOGY

Quality & Inspection
- IPC-A-610 Instructor & Operator Certification

Soldering & Assembly
- IPC J-STD-001 Instructor & Operator Certification

Bare Board Inspection
- IPC-A-600 Instructor & Operator Certification

Rework & Repair
- IPC-7711 & IPC-7721 Instructor & Operator Certification

Hand Soldering Skills
- Soldering Basics, Wires & Terminals, Through-Hole and Surface Mount Training

PCB Fundamentals
- Component Identification
- Electrostatic Discharge

CABLE & WIRE HARNESS TECHNOLOGY

Quality & Inspection
- IPC-A-620 Instructor & Operator Certification

Hands-On Labs
- Crimping & Harness Assembly Training

TECHNICAL SUPPORT
- Manufacturing Start-Up
- Process Evaluation
- Subcontractor Qualification
- Equipment Evaluation
- Lead-Free, ESD, Process and Quality Audits

IPC-A-610 CERTIFIED IPC TRAINER WITH OPTIONAL LAB

IPC-A-610 Instructor Training & Certification Program

IPC-A-610

COURSE DESCRIPTION

This 4-day, lectured course utilizes the images in the IPC-A-610 document to provide visual accept/reject criteria examples for all three classes of assembly production–for both lead and lead-free. The IPC-A-610, "The Acceptability of Electronic Assemblies", is the most widely used inspection specification for the PWB assembly industry.

The IPC-A-610 specification is the focal point of this course and will be covered in its entirety. As part of the requirements for certification, students must score at least an 80% average and no single score less than 70% on the final examinations.

Interactive PCB Inspection Lab

This is an optional, 1-day course intended for any employee who will be inspecting printed circuit assemblies or any employee who wants to improve or reinforce their observation and inspection skills of printed circuit assemblies. This course utilizes lectures, visual acuity exercises, and physical assemblies to provide the students with an experience in visually inspecting printed circuit assemblies.

WHO SHOULD BECOME CERTIFIED

This is an advanced course. Anyone responsible for the quality and reliability of electronic assemblies should become certified. This includes trainers, quality supervisors and engineering and manufacturing supervisors with assembly responsibilities.

WHAT STUDENTS RECEIVE

Everyone who successfully completes the program will receive instructional materials necessary for conducting Certified IPC Specialist Training:

- Course Visuals on CD-ROM
- The IPC-A-610 and an Instructor Guide
- IPC-T-50 Terms and Definitions
- Certified IPC Specialist Exams
- IPC Certificate of Training

PREREQUISITES

An understanding of the Electronics Manufacturing Process and an understanding of the English language, both oral and written are all that is required to benefit from EPTAC's IPC-A-610 Certified IPC Trainer Program. ESL Students are encouraged to inquire.

MATERIALS For each class, all the necessary tools and materials will be supplied. Students are welcome to bring their own documents if they wish.

LOCATION Classes are held at EPTAC's Corporate Training Center located just 35 miles from Boston and at locations throughout the US and Canada.

ON-SITE TRAINING Please call a training consultant and ask about customized course content, on-site training and training around your production schedules.

REGISTRATION For up to date pricing and more information on any of the EPTAC programs, or to enroll, please call us toll free or visit eptac.com.

Toll Free: 1-800-64-EPTAC
Fax: 603-296-2377
email: register@eptac.com
Web: www.eptac.com

CLASS SIZE

Maximum number of students is limited to ten (10) to provide greater instructor interaction. Call early to reserve your space.

COURSE OUTLINE

DAY 1
- Introduction -Establishing and Maintaining Program Integrity
- Foreword, Applicable Documents and Handling
- Hardware
- Soldering

DAY 2
- Terminal Connections
- PCBs and Assemblies
- Through-Hole Technology

DAY 3
- Surface Mount Assemblies
- Component Damage
- Discrete Wiring
- Instructor Skills and Responsibilities

DAY 4
- High Voltage
- Course Summary/Review
- Open Book Examination
- Closed Book Examination
- Instructor/Student Conference

DAY 5 - OPTIONAL INTERACTIVE PCB INSPECTION LAB

This optional, 1-day lab utilizes, lectures, visual acuity exercises, and physical assemblies to provide the students with an experience in visually inspecting printed circuit assemblies

Introduction
- Terms and definitions
- Why inspect
- How to inspect

Observation Skills Practice 1

The Needs of Visual Inspection
- Good Visual Acuity
- The ability to detect differences
- Review of Basic Manufacturing Knowledge
- Systematic approach
- Patience, Discipline, Consistency

Inspection Lab 1: Through-Hole Board
- Review results of Lab 1
- Discuss improvements

Observation Skills Practice 2

Inspection Lab 2: Surface Mount Board
- Review results of Lab 2
- Discuss improvements

Observation Skills Practice 3

Inspection Lab 3: Mixed Technology Board
- Review results of Lab 3
- Discuss improvements
- Instructor to grade results

Wrap up
- Certificate of Attendance

9

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinarseries

IPC-A-610

Acceptability of Electronic Assemblies

COURSE DESCRIPTION

This 4-day, lectured course utilizes the images in the IPC-A-610 document to provide visual accept/reject criteria examples for all three classes of assembly production–for both lead and lead-free. The IPC-A-610, "The Acceptability of Electronic Assemblies", is the most widely used inspection specification for the PWB assembly industry.

The IPC-A-610 specification is the focal point of this course and will be covered in its entirety. As part of the requirements for certification, students must score at least an 80% average and no single score less than 70% on the final examinations.

Interactive PCB Inspection Lab

This is an optional, 1-day course intended for any employee who will be inspecting printed circuit assemblies or any employee who wants to improve or reinforce their observation and inspection skills of printed circuit assemblies. This course utilizes lectures, visual acuity exercises, and physical assemblies to provide the students with an experience in visually inspecting printed circuit assemblies.

COURSE OUTLINE

DAY 1

- Introduction -Establishing and Maintaining Program Integrity
- Foreword, Applicable Documents and Handling
- Hardware
- Soldering

DAY 2

- Terminal Connections
- PCBs and Assemblies
- Through-Hole Technology

DAY 3

- Surface Mount Assemblies
- Component Damage
- Discrete Wiring
- Instructor Skills and Responsibilities

DAY 4

- High Voltage
- Course Summary/Review
- Open Book Examination
- Closed Book Examination
- Instructor/Student Conference

eptac
TRAIN. WORK SMARTER. SUCCEED.

800-643-7822
www.eptac.com

IPC Training Center

TRAINING
- Expert Training in the Latest Technologies
- Industry-Demanded Certifications

PCB TECHNOLOGY

Quality & Inspection
- IPC-A-610 Instructor & Operator Certification

Soldering & Assembly
- IPC J-STD-001 Instructor & Operator Certification

Bare Board Inspection
- IPC-A-600 Instructor & Operator Certification

Rework & Repair
- IPC-7711 & IPC-7721 Instructor & Operator Certification

Hand Soldering Skills
- Soldering Basics, Wires & Terminals, Through-Hole and Surface Mount Training

PCB Fundamentals
- Component Identification
- Electrostatic Discharge

CABLE & WIRE HARNESS TECHNOLOGY

Quality & Inspection
- IPC-A-620 Instructor & Operator Certification

Hands-On Labs
- Crimping & Harness Assembly Training

TECHNICAL SUPPORT
- Manufacturing Start-Up
- Process Evaluation
- Subcontractor Qualification
- Equipment Evaluation
- Lead-Free, ESD, Process and Quality Audits

IPC-A-620 CERTIFIED IPC TRAINER WITH OPTIONAL LABS

IPC/WHMA-A-620 Instructor Training & Certification Program

IPC/WHMA-A-620

COURSE DESCRIPTION

This 4-day, lectured course is a comprehensive, instructor-level certification that teaches inspection and assembly criteria for all three classes of cable and wire harness assembly. This course is based on the IPC/WHMA-A-620, "Requirements and Acceptance for Cable and Wire Harness Assemblies", the most widely used inspection specification for the cable and wire harness assembly industry.

OPTIONAL HANDS-ON LABS

This is an optional 1-day, hands-on lab for those who would like to practice the skills of the criteria they have learned throughout the week by following an assembly print and building a harness assembly.

WHO SHOULD BECOME CERTIFIED

This course is for anyone responsible for the quality and reliability of cable and wire harness assemblies–including trainers, engineers, quality supervisors, inspectors and manufacturing personnel responsible for quality assurance.

WHAT STUDENTS RECEIVE

Everyone who successfully completes the lecture program will receive instructional materials necessary for conducting CIS training:

- IPC/WHMA-A-620
- Instructor Guide
- Course visuals on CD-ROM
- Certified IPC Specialist Exams
- IPC Certificate of Training
- EPTAC Certificate of Training (Lab only)

PREREQUISITES

An understanding of the Cable and Wire Harness Assembly Industry and an understanding of the English language, both oral and written are all that is required to benefit from EPTAC's IPC-A-620 Certified IPC Trainer with Hands-on Labs Program.

CLASS SIZE

Maximum number of students is limited to ten (10) to provide greater instructor interaction. Call early to reserve your space.

MATERIALS For each class, all the necessary tools and materials will be supplied. Students are welcome to bring their own documents if they wish.

LOCATION Classes are held at EPTAC's Corporate Training Center located just 35 miles from Boston and at locations throughout the US and Canada.

ON-SITE TRAINING Please call a training consultant and ask about customized course content, on-site training and training around your production schedules.

REGISTRATION For up to date pricing and more information on any of the EPTAC programs, or to enroll, please call us toll free or visit eptac.com.

Toll Free: 1-800-64-EPTAC
Fax: 603-296-2377
email: register@eptac.com
Web: www.eptac.com

COURSE OUTLINE

DAY 1
- Module 1: Introduction/Policy and Procedures
- Module 2: Requirements and Acceptance for Cable and Wire Harness Assemblies and Applicable Documents
- Module 3: Wire Preparation
- Module 4: Soldered Terminations
- Module 5: Crimp Terminations

DAY 2
- Review and Review Exercise
- Module 5 (cont.): Crimp Terminations
- Module 6: Insulation Displacement (IDC)
- Module 7: Ultrasonic Welding
- Module 8: Splices
- Module 9: Connectorization

DAY 3
- Review and Review Exercise
- Module 9 (cont.): Connectorization
- Module 10: Molding / Potting
- Module 11: Cable Assemblies and Wires
- Module 12: Marking Labeling
- Module 13: Coaxial and Twinaxial Cable Assemblies
- Module 14: Wire Bundle Securing

DAY 4
- Review and Review Exercise
- Module 14 (cont.): Wire Bundle Securing
- Module 15: Shielding
- Module 16: Cable/Wire Harness Protective Coverings
- Module 17: Installation
- Module 18: Solderless Wrap
- Module 19: Testing/Review

DAY 5 - OPTIONAL HANDS-0N LABS

Module 1: Lab Overview
- Review harness assembly print, materials and tooling

Module 2: Wire Prep and Solder Termination – no soldering
- Cut and semi-stripping five wires
- Install wires onto the harness board

Module 3: Lug Crimp Terminations
- Cut, strip and crimp two styles of lug-type terminals
- Install wires onto the harness board

Module 4: Pin Crimp Terminations
- Cut, strip and crimp two styles of pin terminals
- Install wires onto the harness board

Module 5: Coaxial Terminations
- Cut, strip RG59 wire; assemble two coaxial connections
- Install wires onto the harness board

Module 6: IDC Terminations
- Cut, strip CAT5 wire; crimp two IDC connectors
- Install wires onto the harness board

Module 7: Mass Terminations
- Cut, ribbon cable; crimp two mass termination connectors

Module 8: Harness Securing
- Secure the cable using tie-wraps and lacing cord

eptac
TRAIN. WORK SMARTER. SUCCEED.

800-643-7822
www.eptac.com

IPC Training Center

TRAINING
- Expert Training in the Latest Technologies
- Industry-Demanded Certifications

PCB TECHNOLOGY

Quality & Inspection
- IPC-A-610 Instructor & Operator Certification

Soldering & Assembly
- IPC J-STD-001 Instructor & Operator Certification

Bare Board Inspection
- IPC-A-600 Instructor & Operator Certification

Rework & Repair
- IPC-7711 & IPC-7721 Instructor & Operator Certification

Hand Soldering Skills
- Soldering Basics, Wires & Terminals, Through-Hole and Surface Mount Training

PCB Fundamentals
- Component Identification
- Electrostatic Discharge

CABLE & WIRE HARNESS TECHNOLOGY

Quality & Inspection
- IPC-A-620 Instructor & Operator Certification

Hands-On Labs
- Crimping & Harness Assembly Training

TECHNICAL SUPPORT
- Manufacturing Start-Up
- Process Evaluation
- Subcontractor Qualification
- Equipment Evaluation
- Lead-Free, ESD, Process and Quality Audits

IPC-A-620 CERTIFIED IPC SPECIALIST WITH OPTIONAL LAB

IPC/WHMA-A-620 Operator and Inspector Training & Certification Program

IPC/WHMA-A-620

COURSE DESCRIPTION

This 4-day, lectured course is a comprehensive, operator-level certification that teaches inspection and assembly criteria for all three classes of cable and wire harness assembly. This course is based on the IPC/WHMA-A-620, "Requirements and Acceptance for Cable and Wire Harness Assemblies", the most widely used inspection specification for the cable and wire harness assembly industry.

OPTIONAL HANDS-ON LABS

This is an optional, 1-day, hands-on lab for those who would like to practice the skills of the criteria they have learned throughout the week by following an assembly print and building a harness assembly.

WHO SHOULD BECOME CERTIFIED

This course is for anyone responsible for the quality and reliability of cable and wire harness assemblies–including engineers, quality supervisors, inspectors and manufacturing personnel responsible for quality assurance.

WHAT STUDENTS RECEIVE

Everyone who successfully completes the program will receive:

- IPC/WHMA-A-620
- IPC Certificate of Training
- EPTAC Certificate of Training (Lab only)

PREREQUISITES

An understanding of the Cable and Wire Harness Assembly Industry and an understanding of the English language, both oral and written are all that is required to benefit from EPTAC's IPC-A-620 Certified IPC Specialist with Hands-on Labs Program.

CLASS SIZE

Maximum number of students is limited to ten (10) to provide greater instructor interaction. Call early to reserve your space.

MATERIALS For each class, all the necessary tools and materials will be supplied. Students are welcome to bring their own documents if they wish.

LOCATION Classes are held at EPTAC's Corporate Training Center located just 35 miles from Boston and at locations throughout the US and Canada.

ON-SITE TRAINING Please call a training consultant and ask about customized course content, on-site training and training around your production schedules.

REGISTRATION For up to date pricing and more information on any of the EPTAC programs, or to enroll, please call us toll free or visit eptac.com.

Toll Free: 1-800-64-EPTAC
Fax: 603-296-2377
email: register@eptac.com
Web: www.eptac.com

COURSE OUTLINE

DAY 1

Module 1:
- Introduction/Policy and Procedures
- Requirements and Acceptance for Cable and Wire Harness Assemblies and Applicable Documents
- Cable/Wire Preparation
- Measuring Cable Assemblies
- Testing Cable Assemblies
- Review and testing

Module 2:
- Crimp Terminations
- Insulation Displacement Connections
- Review and testing

DAY 2

Module 3:
- Soldered Terminations
- Review and testing

Module 4:
- Connectorization
- Molding/Potting
- Review and testing

DAY 3

Module 5:
- Splices
- Review and testing

Module 6:
- Marking and Labeling
- Wire Bundle Securing
- Shielding
- Cable/Wire Harness Protective Coverings
- Review and testing

DAY 4

Module 7:
- Coaxial and Twin axial Assemblies
- Review and testing

Module 8:
- Solderless Wire Wraps
- Review and testing

DAY 5 - OPTIONAL HANDS-0N LABS

Module 1: Lab Overview
- Review harness assembly print, materials and tooling

Module 2: Wire Prep and Solder Termination – no soldering
- Cut and semi-stripping five wires
- Install wires onto the harness board

Module 3: Lug Crimp Terminations
- Cut, strip and crimp two styles of lug-type terminals
- Install wires onto the harness board

Module 4: Pin Crimp Terminations
- Cut, strip and crimp two styles of pin terminals
- Install wires onto the harness board

Module 5: Coaxial Terminations
- Cut, strip RG59 wire; assemble two coaxial connections
- Install wires onto the harness board

Module 6: IDC Terminations
- Cut, strip CAT5 wire; crimp two IDC connectors
- Install wires onto the harness board

Module 7: Mass Terminations
- Cut, ribbon cable; crimp two mass termination connectors

Module 8: Harness Securing
- Secure the cable using tie-wraps and lacing cord

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

COURSE OUTLINE

DAY 1
- Module 1: Introduction/Policy and Procedures
- Module 2: Requirements and Acceptance for Cable and Wire Harness Assemblies and Applicable Documents
- Module 3: Wire Preparation
- Module 4: Soldered Terminations
- Module 5: Crimp Terminations

DAY 2
- Review and Review Exercise
- Module 5 (cont.): Crimp Terminations
- Module 6: Insulation Displacement (IDC)
- Module 7: Ultrasonic Welding
- Module 8: Splices
- Module 9: Connectorization

DAY 3
- Review and Review Exercise
- Module 9 (cont.): Connectorization
- Module 10: Molding / Potting
- Module 11: Cable Assemblies and Wires
- Module 12: Marking Labeling
- Module 13: Coaxial and Twinaxial Cable Assemblies
- Module 14: Wire Bundle Securing

DAY 4
- Review and Review Exercise
- Module 14 (cont.): Wire Bundle Securing
- Module 15: Shielding
- Module 16: Cable/Wire Harness Protective Coverings
- Module 17: Installation
- Module 18: Solderless Wrap
- Module 19: Testing/Review

DAY 5 - OPTIONAL HANDS-0N LABS
Module 1: Lab Overview
- Review harness assembly print, materials and tooling

Module 2: Wire Prep and Solder Termination – no soldering
- Cut and semi-stripping five wires
- Install wires onto the harness board

Module 3: Lug Crimp Terminations
- Cut, strip and crimp two styles of lug-type terminals
- Install wires onto the harness board

Module 4: Pin Crimp Terminations
- Cut, strip and crimp two styles of pin terminals
- Install wires onto the harness board

Module 5: Coaxial Terminations
- Cut, strip RG59 wire; assemble two coaxial connections
- Install wires onto the harness board

Module 6: IDC Terminations
- Cut, strip CAT5 wire; crimp two IDC connectors
- Install wires onto the harness board

Module 7: Mass Terminations
- Cut, ribbon cable; crimp two mass termination connectors

Module 8: Harness Securing
- Secure the cable using tie-wraps and lacing cord

CIT Course

COURSE OUTLINE

DAY 1
Module 1:
- Introduction/Policy and Procedures
- Requirements and Acceptance for Cable and Wire Harness Assemblies and Applicable Documents
- Cable/Wire Preparation
- Measuring Cable Assemblies
- Testing Cable Assemblies
- Review and testing

Module 2:
- Crimp Terminations
- Insulation Displacement Connections
- Review and testing

DAY 2
Module 3:
- Soldered Terminations
- Review and testing

Module 4:
- Connectorization
- Molding/Potting
- Review and testing

DAY 3
Module 5:
- Splices
- Review and testing

Module 6:
- Marking and Labeling
- Wire Bundle Securing
- Shielding
- Cable/Wire Harness Protective Coverings
- Review and testing

DAY 4
Module 7:
- Coaxial and Twin axial Assemblies
- Review and testing

Module 8:
- Solderless Wire Wraps
- Review and testing

DAY 5 - OPTIONAL HANDS-0N LABS
Module 1: Lab Overview
- Review harness assembly print, materials and tooling

Module 2: Wire Prep and Solder Termination – no soldering
- Cut and semi-stripping five wires
- Install wires onto the harness board

Module 3: Lug Crimp Terminations
- Cut, strip and crimp two styles of lug-type terminals
- Install wires onto the harness board

Module 4: Pin Crimp Terminations
- Cut, strip and crimp two styles of pin terminals
- Install wires onto the harness board

Module 5: Coaxial Terminations
- Cut, strip RG59 wire; assemble two coaxial connections
- Install wires onto the harness board

Module 6: IDC Terminations
- Cut, strip CAT5 wire; crimp two IDC connectors
- Install wires onto the harness board

Module 7: Mass Terminations
- Cut, ribbon cable; crimp two mass termination connectors

Module 8: Harness Securing
- Secure the cable using tie-wraps and lacing cord

CIS Course

eptac

TRAIN. WORK SMARTER. SUCCEED.

800-643-7822
www.eptac.com

IPC Training Center

TRAINING
- Expert Training in the Latest Technologies
- Industry-Demanded Certifications

PCB TECHNOLOGY

Quality & Inspection
- IPC-A-610 Instructor & Operator Certification

Soldering & Assembly
- IPC J-STD-001 Instructor & Operator Certification

Bare Board Inspection
- IPC-A-600 Instructor & Operator Certification

Rework & Repair
- IPC-7711 & IPC-7721 Instructor & Operator Certification

Hand Soldering Skills
- Soldering Basics, Wires & Terminals, Through-Hole and Surface Mount Training

PCB Fundamentals
- Component Identification
- Electrostatic Discharge

CABLE & WIRE HARNESS TECHNOLOGY

Quality & Inspection
- IPC-A-620 Instructor & Operator Certification

Hands-On Labs
- Crimping & Harness Assembly Training

TECHNICAL SUPPORT
- Manufacturing Start-Up
- Process Evaluation
- Subcontractor Qualification
- Equipment Evaluation
- Lead-Free, ESD, Process and Quality Audits

IPC-A-600 CERTIFIED IPC SPECIALIST

IPC-A-600 Operator / Inspector Training & Certification Program

IPC-A-600

COURSE DESCRIPTION

This 3-day, lectured course utilizes the images in the IPC-A-600 document to provide visual accept/reject criteria examples for all three classes of bare board fabrication and inspection. The IPC-A-600, "The Acceptability of Printed Boards", describes the preferred, acceptable, and nonconforming conditions that are either externally or internally observable on printed boards.

The IPC-A-600 specification is the focal point of this course and will be covered in its entirety. As part of the requirements for certification, students must score at least a 70% on each exam.

WHO SHOULD BECOME CERTIFIED

This is an advanced course. Anyone responsible for determining the quality and reliability of printed wiring board products should become certified. This includes quality supervisors, engineers, manufacturing supervisors, and users of printed wiring boards.

WHAT STUDENTS RECEIVE

Everyone who successfully completes the program will receive:
- IPC-A-600
- IPC Certificate of Training

PREREQUISITES

An understanding of electronic products and an understanding of the English language, both oral and written are all that is required to benefit from EPTAC's IPC-A-600 Certified IPC Specialist Program. ESL Students are encouraged to inquire.

CLASS SIZE

Maximum number of students is limited to ten (10) to provide greater instructor interaction. Call early to reserve your space.

COURSE OUTLINE

DAY 1

Introduction
- General Overview
- Terms and Definitions
- Acceptance Criteria

Externally Observable Characteristics
- Board Edges
- Base Material Surface and Subsurface
- Solder Coatings and Fused Tin Lead
- Holes–Plated Through and Unsupported
- Printed Contacts
- Marking
- Solder Resist
- Dimensional Characteristics

DAY 2

Internally Observable Characteristics
- Dielectric Materials
- Conductive Patterns
- Plated Through–Holes (General, Drilled, Punched)

Flex Printed Circuit & Metal Core
- Flexible Printed Circuits
- Rigid - Flex Printed Boards
- Metal Core Printed Boards
- Flush Printed Boards
- Cleanliness Testing
- Solderability Testing
- Electrical Integrity

DAY 3
- Course Summary/Review
- Open Book Examination
- Closed Book Examination
- Instructor/Student Conference
- Wrap-Up

MATERIALS For each class, all the necessary tools and materials will be supplied. Students are welcome to bring their own documents if they wish.

LOCATION Classes are held at EPTAC's Corporate Training Center located just 35 miles from Boston and at locations throughout the US and Canada.

ON-SITE TRAINING Please call a training consultant and ask about customized course content, on-site training and training around your production schedules.

REGISTRATION For up to date pricing and more information on any of the EPTAC programs, or to enroll, please call us toll free or visit eptac.com.

Toll Free: 1-800-64-EPTAC
Fax: 603-296-2377
email: register@eptac.com
Web: www.eptac.com

8

8025 South Willow Street, Building II, Unit 207 Manchester, NH 03103 USA 800.643.7822 603.296.0887 Fax: 603.296.2377 eptac@eptac.com www.eptac.com

COURSE OUTLINE

DAY 1

Introduction
- General Overview
- Terms and Definitions
- Acceptance Criteria

Externally Observable Characteristics
- Board Edges
- Base Material Surface and Subsurface
- Solder Coatings and Fused Tin Lead
- Holes–Plated Through and Unsupported
- Printed Contacts
- Marking
- Solder Resist
- Dimensional Characteristics

DAY 2

Internally Observable Characteristics
- Dielectric Materials
- Conductive Patterns
- Plated Through–Holes (General, Drilled, Punched)

Flex Printed Circuit & Metal Core
- Flexible Printed Circuits
- Rigid - Flex Printed Boards
- Metal Core Printed Boards
- Flush Printed Boards
- Cleanliness Testing
- Solderability Testing
- Electrical Integrity

DAY 3
- Course Summary/Review
- Open Book Examination
- Closed Book Examination
- Instructor/Student Conference
- Wrap-Up

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinarseries

Certification Skills Based Programs

- IPC 7711/7721
  - Rework of Electronic Assemblies
- IPC J-STD-001
  - Requirements for Soldered Electrical and Electronic Assemblies

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

eptac
TRAIN. WORK SMARTER. SUCCEED.

800-643-7822
www.eptac.com

IPC Training Center

TRAINING
- Expert Training in the Latest Technologies
- Industry-Demanded Certifications

PCB TECHNOLOGY

Quality & Inspection
- IPC-A-610 Instructor & Operator Certification

Soldering & Assembly
- IPC J-STD-001 Instructor & Operator Certification

Bare Board Inspection
- IPC-A-600 Instructor & Operator Certification

Rework & Repair
- IPC-7711 & IPC-7721 Instructor & Operator Certification

Hand Soldering Skills
- Soldering Basics, Wires & Terminals, Through-Hole and Surface Mount Training

PCB Fundamentals
- Component Identification
- Electrostatic Discharge

CABLE & WIRE HARNESS TECHNOLOGY

Quality & Inspection
- IPC-A-620 Instructor & Operator Certification

Hands-On Labs
- Crimping & Harness Assembly Training

TECHNICAL SUPPORT
- Manufacturing Start-Up
- Process Evaluation
- Subcontractor Qualification
- Equipment Evaluation
- Lead-Free, ESD, Process and Quality Audits

IPC-7711/7721 CERTIFIED IPC SPECIALIST

IPC's THT and SMT Rework and Bare Board Repair Operator Training & Certification Program

IPC-7711 AND IPC-7721

COURSE DESCRIPTION

This is a 5-day, advanced course for anyone responsible for quality and reliability of reworked or repaired electronic assemblies. It is a comprehensive hands-on training program with 80% lab work.

Attendees must be experienced solderers.

The IPC-7711 is designed for soldered assembly rework– restoring PCB assemblies to their original drawings.

The IPC-7721 is designed for board repair– restoring a board's functional capability.

WHO SHOULD BECOME CERTIFIED

Anyone involved in the rework of electronic components, or the repair of printed wiring boards should become certified.

WHAT STUDENTS RECEIVE

Everyone who successfully completes the program will receive:
- IPC-7711/7721
- IPC Certificate of Training

PREREQUISITES

IPC-7711/7721 Certified IPC Specialist is an advanced hands-on course that requires ample soldering skills. Candidates should have substantial soldering/electronics assembly experience, and should possess adequate soldering ability.

CLASS SIZE

Maximum number of students is limited to eight (8) to provide greater instructor interaction. Call early to reserve your space.

COURSE OUTLINE

DAY 1
- Introduction to IPC-7711/7721
- Policies and Procedures
- Common Procedures
- Wire Splicing (Mesh, Wrap, Hook & Lap)
- Instructor Demonstration and Skills Development Lab
- Through-Hole Rework Procedures
- Instructor Demonstration and Skills Development Lab

DAY 2
- Chip & MELF Removal/Installation and Localized Cleaning
- Instructor Demonstration and Skills Development Lab
- SOIC, SOT and Gull Wing Procedures
- Instructor Demonstration and Skills Development Lab
- J-Lead and QFP Procedures
- Instructor Demonstration and Skills Development Lab

DAY 3
- BGA Removal/Replacement Discussion
- Equipment Selection
- Conformal Coating Identification, Removal & Replacement

DAY 4
- PWB Circuit Repair
- Instructor Demonstration and Skills Development Lab
- Laminate Repair
- Instructor Demonstration and Skills Development Lab

DAY 5
- Additional Lab Time
- Comprehensive Review
- Open Book Exam

MATERIALS For each class, all the necessary tools and materials will be supplied. Students are welcome to bring their own documents if they wish.

LOCATION Classes are held at EPTAC's Corporate Training Center located just 35 miles from Boston and at locations throughout the US and Canada.

ON-SITE TRAINING Please call a training consultant and ask about customized course content, on-site training and training around your production schedules.

REGISTRATION For up to date pricing and more information on any of the EPTAC programs, or to enroll, please call us toll free or visit eptac.com.

Toll Free: 1-800-64-EPTAC
Fax: 603-296-2377
email: register@eptac.com
Web: www.eptac.com

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinarseries

IPC-7711/7721 CERTIFIED IPC TRAINER

5 Day Program

COURSE DESCRIPTION

This is a 5-day, advanced course for anyone responsible for quality and reliability of reworked or repaired electronic assemblies. It is a comprehensive hands-on training program with 80% lab work. The certification will allow you to conduct operator training at your company.

Students must be experienced solderes. Prior rework/repair skills is helpful.

The IPC-7711 is designed for soldered assembly rework– restoring PCB assemblies to their original drawings.

The IPC-7721 is designed for board repair– restoring a board's functional capability.

COURSE OUTLINE

DAY 1
- Introduction to IPC-7711/7721
- Policies and Procedures
- Common Procedures
- Wire Splicing (Mesh, Wrap, Hook & Lap)
- Instructor Demonstration and Skills Development Lab
- Through-Hole Rework Procedures
- Instructor Demonstration and Skills Development Lab

DAY 2
- Chip & MELF Removal/Installation and Localized Cleaning
- Instructor Demonstration and Skills Development Lab
- SOIC, SOT and Gull Wing Procedures
- Instructor Demonstration and Skills Development Lab
- J-Lead and QFP Procedures
- Instructor Demonstration and Skills Development Lab

DAY 3
- BGA Removal/Replacement Discussion
- Equipment Selection
- Conformal Coating Identification, Removal & Replacement

DAY 4
- PWB Circuit Repair
- Instructor Demonstration and Skills Development Lab
- Laminate Repair
- Instructor Demonstration and Skills Development Lab

DAY 5
- Additional Lab Time
- Comprehensive Review
- Roles, Rules and Responsibilities of an IPC Instructors
- Open and Closed Book Exams

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinarseries

IPC-7711/7721 CERTIFIED IPC SPECIALIST

Modular Course

COURSE DESCRIPTION

This is a 5-day, advanced course for anyone responsible for quality and reliability of reworked or repaired electronic assemblies. It is a comprehensive hands-on training program with 80% lab work.

Attendees must be experienced solderers.

The IPC-7711 is designed for soldered assembly rework– restoring PCB assemblies to their original drawings.

The IPC-7721 is designed for board repair– restoring a board's functional capability.

COURSE OUTLINE

DAY 1
- Introduction to IPC-7711/7721
- Policies and Procedures
- Common Procedures
- Wire Splicing (Mesh, Wrap, Hook & Lap)
- Instructor Demonstration and Skills Development Lab
- Through-Hole Rework Procedures
- Instructor Demonstration and Skills Development Lab

DAY 2
- Chip & MELF Removal/Installation and Localized Cleaning
- Instructor Demonstration and Skills Development Lab
- SOIC, SOT and Gull Wing Procedures
- Instructor Demonstration and Skills Development Lab
- J-Lead and QFP Procedures
- Instructor Demonstration and Skills Development Lab

DAY 3
- BGA Removal/Replacement Discussion
- Equipment Selection
- Conformal Coating Identification, Removal & Replacement

DAY 4
- PWB Circuit Repair
- Instructor Demonstration and Skills Development Lab
- Laminate Repair
- Instructor Demonstration and Skills Development Lab

DAY 5
- Additional Lab Time
- Comprehensive Review
- Open Book Exam

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

J-STD-001 CERTIFIED IPC SPECIALIST

Modular Course

COURSE DESCRIPTION

This program is for experienced solderers seeking an in depth knowledge of the J-STD-001 Document. The course reviews this document and helps students learn how to interpret the criteria. Open and closed book exams are required after each module. Hand Soldering skills need to be performed and pass inspection. Students must pass both exams and soldering in order to successfully complete this program.

This class is not designed to teach anyone how to solder. The focus in on the knowledge of the J-STD-001 criteria

The program is divided into 5 one-day modules, each covering a different area of soldered electronics assemblies. Students may be trained in any combination of modules that includes module 1. This course addresses all three classes of manufacturing in Wires and Terminals, Through-Hole and Surface Mount Technologies.

An optional Module 6 is available for anyone needing certification to the J-STD-001 Space Addendum.

COURSE OUTLINE

DAY 1 - MODULE 1 OVERVIEW OF J-STD-001

Students will learn the requirements of J-STD-001 and related standards as they apply to operators and inspectors involved in the assembly of products to the requirements of J-STD-001.

Module 1 is a prerequisite to all other modules.

- Course Overview
- Safety
- EOS/ESD
- Classes of Equipment
- Solder Theory
- Solderability
- Solder Flux and Solder Alloys
- Facilities, Tools & Equipment Training
- PTH - Assembly/Solder
- Surface Mount Technology
- Cleaning
- Module 1 Review
- Module 1 Examination

DAY 2 - MODULE 2 - WIRES & TERMINALS

Students will learn the requirements of J-STD-001, and demonstrate the skills for stripping and tinning wire and hand soldering wires of different gauges to various types of commonly used solder terminals.

- Wire Preparation
- Solder to Terminals
- Terminal Inspection
- Wire & Terminal Demonstration
- Wire & Terminal Lab
- Module 2 Review
- Module 2 Examination

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

J-STD-001 CERTIFIED IPC SPECIALIST con't

DAY 3 - MODULE 3 - THROUGH-HOLE TECHNOLOGY

Students will learn the requirements of J-STD-001, and demonstrate the skills for preparing and mounting Through-Hole components to PWBs.

- Lead Preparation
- Component Mounting
- PTH Inspection Criteria
- PTH Soldering Demonstration
- PTH Lab
- Module 3 Review
- Module 3 Examination

DAY 4 - MODULE 4 - SURFACE MOUNT TECHNOLOGY

Students will learn the requirements of J-STD-001, and demonstrate the skills for preparing and mounting Leaded and Leadless Surface Mount components to PWBs.

- SMT Criteria
- SMT Inspection Criteria
- SMT Demonstration
- SMT Lab
- Module 4 Review
- Module 4 Examination

DAY 5 - MODULE 5 - INSPECTION METHODOLOGY

Students will learn the quality and inspection requirements of J-STD-001.

- Theory of Inspection, SPC
- Defect Definition and Disposition
- Inspection Skills Demonstration
- Inspection Skills Lab
- Module 5 Review
- Module 5 Examination

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinarseries

Quick Review

- Those were the IPC programs.
  - Modifications are made by selecting the modules you want to cover.
  - Review the CIS data sheets, select the appropriate knowledge you need and the decision is made.
  - If the interest is in training your own people then the CIT programs should be your selection

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

IPC Programs

- All CIT programs cover the total specifications
- All CIS programs are modular with mandatory modules and can be taken at different times

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinarseries

Hand Soldering

5 Day Program

COURSE DESCRIPTION

Customize this course by selecting only the days/modules that meet your training requirements.

Using both lead and lead-free alloys, Hand Soldering Operator Certification introduces the basics of soldering in Wires & Terminals, Through-Hole and Surface Mount Technologies and Rework. Students will learn about electrostatic discharge, industry terminology, equipment familiarization and the accept/reject criteria for all three technologies. Hands-on efforts include the soldering and inspection of five (5) different types of terminal connections; the assembly, soldering, inspection and rework of two (2) through-hole boards with 100 inspection points; and the assembly, soldering, inspection and rework of a surface mount board with over sixty components. This program is a "hands-on" experience. With approximately 75% of the time spent doing, students experience the technology first hand.

COURSE OUTLINE

DAY 1 - REQUIRED

- Introduction to Soldering
- Specifications/Applicable Documents
- Terms and Definitions
- Tools and Material Selection and Maintenance
- Procedures in Making a Good Solder Joint
- Soldering Technology-Wires & Terminals
- Acceptability Criteria
- Wire Preparation
- Terminal Connections and Soldering
- Practical Session-Soldering Terminals

DAY 2

- Introduction to Through-Hole
- Specifications/Applicable Documents
- Electrostatic Discharge
- Through-Hole Terms and Definitions
- Tools and Material Selection and Maintenance
- Procedures in Making a Good Solder Joint
- Soldering Technology - Through-Hole
- Practical Session-Through-Hole Practice Board
- Instructor/Student Review

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

Hand Soldering con't

DAY 3

- Acceptability Criteria
- Solder Rework Techniques-Through-Hole
- Through-Hole Component Removal Methods
- Practical Session-Through-Hole Rework-Practice Board
- Instructor/Student Review
- Practical Session-Through-Hole Test Board
- Instructor Inspection/Feedback

DAY 4

- Introduction to Surface Mount
- Specifications/Applicable Documents
- Surface Mount Terms and Definitions
- Tools and Material Selection and Maintenance
- Procedures in Making a Good Solder Joint
- Soldering Technology – Surface Mount
- Practical Session-Surface Mount Practice Board
- Instructor/Student Review

DAY 5

- Acceptability Criteria
- Solder Rework Techniques-Surface Mount
- Surface Mount Component Removal Methods
- Practical Session-Surface Mount Rework-Practice Board
- Instructor/Student Review
- Practical Session-Surface Mount Test Board
- Instructor Inspection/Feedback
- Course Summary/Review

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

Overview of all Programs

- http://www.eptac.com/browse-workshops/

Visual Inspection
- IPC-A-610 Specialist
- IPC-A-610 Instructor
- Interactive Inspection Lab

Soldering
- Hand Soldering Certification
- J-STD-001 Specialist
- J-STD-001 Instructor

Aerospace Requirement
- J-STD-001 Aerospace Specialist
- J-STD-001 Aerospace Instructor
- IPC-A-620 Aerospace Specialist
- IPC-A-620 Aerospace Instructor

Component Rework
- IPC 7711/7721 Specialist
- IPC 7711/7721 Instructor

Board Repair
- IPC 7711/7721 Specialist
- IPC 7711/7721 Instructor

Cable Wire Harness Assemblies
- Hands-On Crimp Termination
- Hands-On Solder-Crimp Termination
- Hands-On Cable Wire Harness Lab
- IPC-A-620 Specialist
- IPC-A-620 Instructor

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinarseries

Overview of all Programs

Bare Board Inspection

- IPC-A-600 Specialist
- IPC-A-600 Instructor
- Microsectional Prep and Analysis

PCB Design

- IPC Designer Certification CID
- IPC Advanced Designer Certification CID+

Counterfeit Components

- Counterfeit Components Seminar
- Counterfeit Components Workshop
- IDEA-STD-1010 Essentials

Counterfeit Components

- Counterfeit Components Seminar
- Counterfeit Components Workshop
- IDEA-STD-1010 Essentials

eTraining

- IPC-A-620 Rev A to B Comparison

And Much More…

- Component Identification Certification
- Electrostatic Discharge Certification
- J-STD-002/003 Solderability Testing
- Defect Prevention and Root Cause Analysis
- Manufacturing Quantitative Skills

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

eptac webinar series

Program Modifications

- All non IPC programs can be modified to fit your exact needs.
- Look at the data sheets and talk to one of our people and we'll make it happen for you.
  - If you're doing just wires and terminals, yes
  - If your doing just surface mount, yes

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

Thank You

Questions?

ABOUT THE PRESENTER

Leo Lambert
Vice President & Technical Director, EPTAC

Further Information

The next webinar will be on how to use the IPC Instructor Guide and the how it will help maintain continuity in the class.

For questions regarding this webinar, please contact Leo Lambert at leo@eptac.com or call at 800-643-7822 ext 215

For information on any of EPTAC's or IPC's Certification Courses, please visit our website at http://www.eptac.com