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The Proper Use of The Instructor Guides in Delivering IPC Certification

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Instructor Guide, What is it?

- Provides
  - Instructions in how to prepare for conducting a class
  - Instructions on how to disseminate the information to the students
  - Provides industry traceable certifications.

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Useful Purposes

- Used as a guideline to keep instructor on track
- Provides additional information relative to difficult section to ease in the understanding of the concept

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Useful Purposes

- Maintains a consistency between various instructors, so all information is provided in similar way.
- Consistency in the process, materials and exams

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Why?

- All IPC programs are certification programs and to verify all the attendees meet the requirements of understanding the documents while certain procedures have to be followed and adhered to allow certifications to be granted

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Contents

- Each IG provides the syllabus for the particular course.
  - Daily schedule and hourly material
  - Terminal Objectives
  - Enabling Objectives

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Overview of CIS Schedule

IPC J-STD-001E Certified IPC Application Specialist (CIS) Course
Overview & Schedule

Module	Hour 1	Hour 2	Hour 3	Hour 4	Lunch	Hour 5	Hour 6	Hour 7	Hour 8
1 Introduction/ Overview of J-STD-001E	Course Overview / Safety	General Requirements of J-STD-001 & Applicable Documents	General Requirements of J-STD-001 & Applicable Documents	Materials, Components & Equipment Requirements		General Soldering & Assembly Requirements	Final Exam	Final Exam	
2 Wires & Terminals	Wire & Terminal Assembly & Soldering	Wire & Terminal Assembly & Soldering	Final Exam	Wire & Terminal Demo/Lab		Wire & Terminal Lab	Wire & Terminal Lab	Wire & Terminal Lab	Optional Make-up Lab
3 Through-Hole Technology	Through Hole Mounting & Terminations	Through Hole Mounting & Terminations	Final Exam	Component Prep/Mounting Demo/Lab		PTH Lab	PTH Lab	PTH Lab	Optional Make-up Lab
4 Surface Mount Technology	Surface Mounting of Components	Surface Mounting of Components	Final Exam	SMT Demo/Lab		SMT Lab	SMT Lab	SMT Lab	Optional Make-up Lab
5 Inspection Methodology	Product Assurance	Theory of Inspection/SPC	Final Exam	Inspection Skills Demo/Lab	Inspection Lab		Inspection Lab	Inspection Lab	Optional Make-up Lab

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Overview of CIT Schedule

IPC J-STD-001E Certified IPC Trainer (CIT) Course
Overview & Schedule

Hour	Day 1	Day 2	Day 3	Day 4	Day 5
1	S.1 Introductions/Course Overview/Policy and Procedures	S.7 Progress Check & Review 1-6	S.12 Progress Check & Review 8-11	S.16 Progress Check & Review 15	S22 Progress Check & Review 19-21 S23 Instructor Basics
2	S.1 Continued S.2 General Requirements of J-STD-001E/Applicable Documents	S.8 Wire & Terminal Assembly/Soldering Requirements	S.13 TH Demo S.14 T-H Lab	S.17 SMT Demo S.18 SMT Lab	S.24 Comprehensive Review
3 S.2	Continued	S.8 Continued S.9 Wire & Terminal Demo	S.14 Continued	S.18 Continued S.25	Testing
4	S.3 Materials, Components & Equipment Requirements	S.10 Wire/Terminal Lab	S.14 Continued	S.18 Continued	S.25 Continued
	Lunch Break	**Lunch Break**	**Lunch Break**	**Lunch Break**	**Lunch Break**
5	S.4 General Soldering & Assembly Requirements	S.10 Continued	S.14 Continued	S.18 Continued	S.25 Continued
6	S.4 Continued	S.10 Continued	S.15 Surface Mounting of Components	S.19 Coating and Encapsulation	S.25 Continued
7	S.5 PCB Requirements S.6 Cleaning Process Requirements	S.11 Through-Hole Mounting and Terminations	S.15 Continued	S.20 Rework & Repair S.21 Product Assurance	S.26 Administration of the CIS J-STD001E Program Graduation
8	Optional Study Time	Optional Make-up Lab	Optional Make-up Lab	Optional Make-up Lab	Optional Make-up Lab

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Typical Page layout

IPC J-STD-001E TRAINING AND CERTIFICATION PROGRAM
LESSON PLAN FOR TRAINING
CERTIFIED IPC SPECIALIST (CIS)

Written Exams and Workmanship Grading

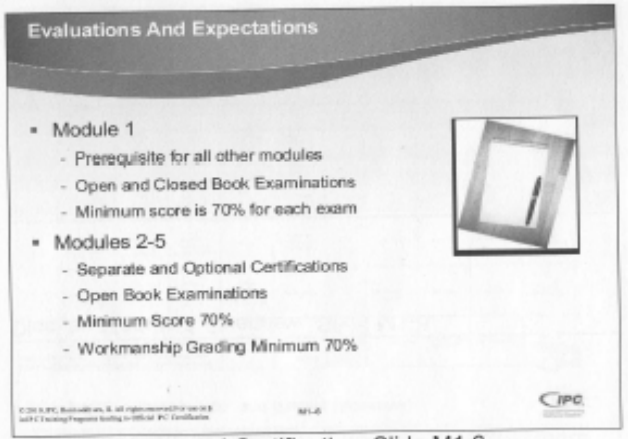
The students will be evaluated on their mastery of the J-STD-001E material through tests that include both open-book and closed-book tests for Modules 1, open-book tests for Modules 2-5 and workmanship skills demonstration for Modules 2-4 and inspection skills demonstration for Module 5.

Certification for mandatory Module 1 is granted if both test scores are 70% or above on each exam.

Certification for optional Modules 2-5 is granted if the open book test score for the module is 70% or above.

The minimum acceptable average for the workmanship tests completed is 70%. The assembly actions and soldered connections must meet the requirements of J-STD-001E, Class 3.

Module 1. 20-question closed book & 20-question open book exams
Module 2 Wires/Terminals: 20 question open book test + workmanship
Module 3 Through-Hole: 20 question open book test + workmanship
Module 4 SMT: 20 question open book test + workmanship
Module 5 Inspection Skills: 30 question open book test + inspection demonstrations



Discuss Testing and Certification, Slide M1.6.

Review testing criteria.

CHANGE OCTOBER 2007
Advise students that satisfactory completion of Module 1-4 authorizes sign-off of Module 5 without lecture or written testing, but the inspection skills measurement projects must still be completed.

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How to Read The IG

- Left column is for instructor reference information
- Right column is for instructor activity
  - It includes the slide which is being shown &
  - Statement which should be discussed with the class
- All the slides come from the appropriate text or specification

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Additional Information

- 001 soldering lab
  - Wires and terminals
  - Plated through hole technology
  - Surface mount technology
- Chapter review questions

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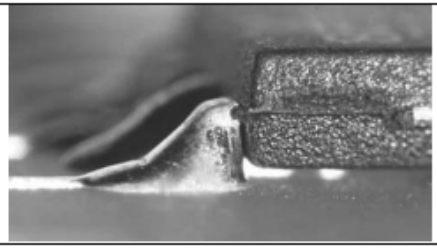
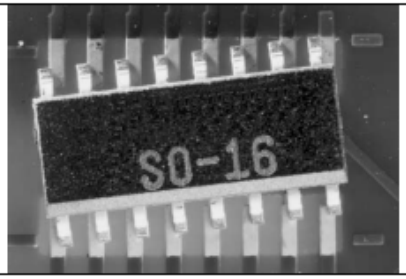
Review Questions

IPC J-STD-001E TRAINING AND CERTIFICATION PROGRAM
CERTIFIED IPC SPECIALIST (CIS)
MODULE 5: REVIEW QUESTIONS

1. The SOIC solder connection shown would be considered _____. Clause:_____Pg._____	
2. The alignment of the SOIC in this picture is considered _____. Clause:_____Pg._____	

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Workmanship Critique Form

IPC J-STD-001E TRAINING AND CERTIFICATION PROGRAM
LESSON PLAN FOR TRAINING
CERTIFIED IPC SPECIALIST (CIS)

IPC Certified IPC Specialist (CIS)
Terminal Workmanship Critique Form

Item	Qty.	Method	CIT Inspection Initials		Student Inspection Initials
			Workmanship	Inspection	
Stripping of Wires					
20 AWG. Wire	1	Mechanical Stripper	DLT	DLT	MAS
Defects: Damaged Wire Strands MAS Student identified defect. Redo stripping of wires because of bad workmanship.					
22 AWG. Wire	1	Thermal Stripper	DLT	DLT	MAS
Defects:					
Tinning of Wires					
20 AWG. Wire	1		DLT	DLT	MAS
22 AWG. Wire	1		DLT	DLT	MAS
Defects: Improper Tinning DLT Student did not identify. Redo tinning of wire because of improper inspection.					
Terminals					
Turret (22 AWG)	1		DLT	DLT	MAS
Turret (22 AWG)	1		DLT	DLT	MAS
Defects: < 75% Circumferential fillet on a 180° wrap. MAS Student incorrectly identified a defect. DLT Terminal was acceptable.					
Bifurcated (22 AWG)	1		DLT	DLT	MAS
Bifurcated (22 AWG)	1		DLT	DLT	MAS
Defects: < 100% Circumferential fillet on a 90° wrap DLT Student did not identify. Redo because of improper solder fillet					
Pierced (22 AWG)	1		DLT	DLT	MAS
Pierced (22 AWG)	1		DLT	DLT	MAS
Defects:					
Hook (22 AWG)	1		DLT	DLT	MAS
Hook (22 AWG)	1		DLT	DLT	MAS
Defects: < 75% Circumferential fillet on a 180° wrap. MAS Student incorrectly identified a defect. DLT Terminal was acceptable.					
Hollow Cup (20 AWG)	1		DLT	DLT	MAS
Hollow Cup (20 AWG)	1		DLT	DLT	MAS
Defects: < 75% Vertical fill MAS Student correctly identified a defect. DLT Redo because of insufficient solder fill.					

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PTH Lab

IPC J-STD-001E TRAINING AND CERTIFICATION PROGRAM
LESSON PLAN FOR TRAINING
CERTIFIED IPC SPECIALIST (CIS)

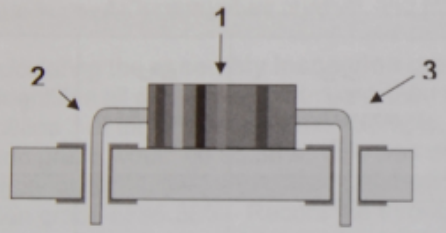
Inspection Grading

Scores are not averaged

Through Hole (70%)

Assembly = 65 Opportunities
Solder = 65 Opportunities

R1 = 3
R2 = 3
CR1 = 3
CR2 = 3
Q1 = 4
Q2 = 4
C1 = 3
C2 = 3
U1 = 17
U2 = 17
Wire 1 = 2
Wire 2 = 2
PCB = 1



Inspection Grading

Using the J-STD-001 PCB Kit the normalizing number is as shown. Note: you have both assembly and solder calculations. Each student must have 70% or greater in all areas.

The following are a few grading examples. See Next Page.

Example 1: If a student has a defect (in this case solder) and they identify the defect correctly they would receive a -1 for the defect but 0 for the inspection.

Example 2: If a student has a defect and they do not identify it then they would receive -1 for the defect and -1 for inspection.

Example 3: If a student identifies a defect (either assembly or solder) incorrectly and there is no defect then they receive a -1 on inspection.

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SMT Lab

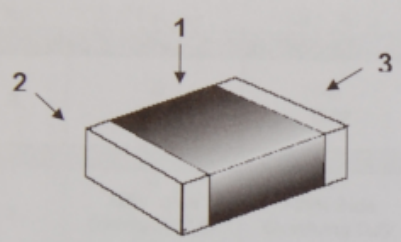
IPC J-STD-001E TRAINING AND CERTIFICATION PROGRAM
LESSON PLAN FOR TRAINING
CERTIFIED IPC SPECIALIST (CIS)

Inspection Grading

SMT(80%)

Assembly = 162
Solder = 162

R3 = 3
R4 = 3
C3 = 3
C4 = 3
CR3 = 3
CR4 = 3
R5 = 3
R6 = 3
U3 = 15
U4 = 101
U5 = 21
PCB = 1



Inspection Grading

Using the J-STD-001 PCB Kit the normalizing number is as shown. Reminder you have both assembly and solder calculations. Each student must have 80% or greater in all areas.

The following are a few grading examples. See Next Page.

Example 1: If a student has a defect (in this case solder) and they identify the defect correctly they would receive a -1 for the defect but 0 for the inspection.

Example 2: If a student has a defect and they do not identify it then they would receive -1 for the defect and -1 for inspection.

Example 3: If a student identifies a defect (either assembly or solder) incorrectly and there is no defect then they receive a -1 on inspection.

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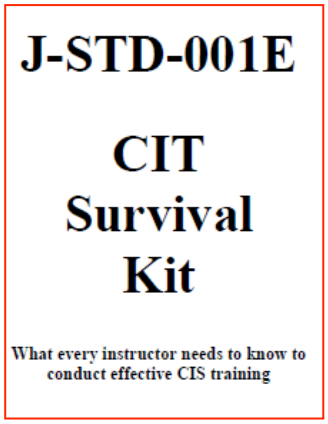
Additional Material

J-STD-001, CIT Survival Kit

"What every instructor needs to know to conduct effective CIS training"



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Content of Survival Kit

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Thank You

Questions?

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Further Information

Keep looking at our site for future topics of the webinars

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