TELEDYNE LECROY
Everywhereyoulook™

Austin Labs Testing And Training

PCIe™ Architecture & Functionality – One-Day Intensive

(TLC-PCIe_4.0_OneDay_ Architecture&Functionality_2019.07)

1 Day Course Outline

Introduction to PCIe
Components and Terminology
PCIe Architecture
PCIe Link Training and Initialization
PCIe ACK/NAK & Flow Control
PCIe Configuration and Enumeration
Analyzer Operation & Configuration

What to Expect

Never pay extra to look at trace captures
Insight into the standard based on our real world testing experience
Instruction from experts with over 20 years of experience in storage and networking

Learn the architectural and functional ins and outs of PCIe, with guided walk-throughs of example traces.

Get concrete, detailed answers to your questions:

- What are the different communication layers for PCIe?
- How does PCIe initialize a link?
- How are ACK/NAK and Flow Control implemented in PCIe?
- How does a link change speeds to 16GT/s?

Learn these things and more in Austin Labs one-day intensive PCIe protocol training. Based on the latest PCIe specifications as well as real world test findings from Austin Labs Testing Services.

Our classes are designed for engineering-minded individuals such as test engineers, design engineers, technical/product field support, and storage/system administrators who address low-level protocol issues.

Lab time included in every class
Outlines are fully customizable for private classes!

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For more information please contact:
Austin_Labs_Training@Teledyne.com

Austin Labs is a leading provider of testing and training services. We focus on server, storage, and networking interfaces and protocols. Our engineers and trainers are experts in SCSI, RAID, iSCSI, SATA, SAS, FC, FCoE, PCIe, NVMe, and networking protocols.

Our engineers helped develop some of the industry's key technologies and continue to have a vigorous passion for improving products and sharing their knowledge. This experience and enthusiasm translates into the highest quality testing and training services possible.

Introduction to PCIe

An introduction to PCIe as a protocol as well as the specifications and organization that govern it. Also deals with the marketing aspects that drive PCIe in the current product landscape by addressing the following questions:

- What is PCIe?
- Why do we need PCIe?
- What is the governing organization for PCIe?
- What are the relevant specifications for PCIe and where can they be found?

Components and Terminology

A discussion of concepts, terms, and devices that are integral to the understanding and functionality of PCIe. Students will be given a vocabulary to effectively communicate ideas throughout the learning process by exploring such concepts as:

- Differential Signaling
- Lanes vs. Links
- Scrambling and Encoding
- Switches and Bridges

PCIe Architecture

An examination of the PCIe protocol, its layering, and functionality. This section contains the framework on which the details of the other sections will rest. It covers basic layout of a PCIe system as well as such topics as:

- PCIe Architecture
- Generations & Speeds
- Connector Form Factors
- Layering & Functionality

PCIe ACK/NAK & Flow Control

This section deals with the functions of reliability and overflow prevention by discussing such subjects as:

- ACK/NAK
- TLP Sequencing
- TLP Buffers
- Scaled Flow Control

PCIe Configuration & Enumeration

A step-by-step look at the PCIe configuration and enumeration process that discusses the following items:

- PCIe Configuration Space
- PBase Address Registers (BAR)
- PBus Enumeration