TELEDYNE LECROY
Everywhere**you**look™

Austin Labs Testing And Training

Intro to USB -1.0 through 3.2
(TLC-Intro to USB_9.1.2020)

1 Day Course Outline

How it started, USB 1.0

USB 2.X Architecture and Terminology

USB 3.X Architecture and Terminology

Examine Motivation and Goals, configuration, Pipes, Transfer types and Initialization

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

Investigate the inner workings of the USB protocol, a widely available interface for expansion of storage, Display and interface devices available in the market.

Get concrete, detailed answers to your questions:

- How and why USB got started?
- How has the Topology evolved?
- USB 2.X What gen and speed is supported?
- USB 3.X What gen and speed is supported?

Learn these things and more in Austin Lab's comprehensive Intro to USB training. Based on the latest specifications as well as real world test findings from Austin Labs Testing Services, our Intro to USB training covers the USB 1.0-3.X Architecture from Enumeration to Configuration and Initialization.

Additionally, every Austin Labs protocol class includes lab time involving trace analysis of the protocol as well as a guided walk-through of best practices for analyzer configuration and installation.

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

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

1-800-909-7211
teledynelecroy.com

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, USB, 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 USB™

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

- Who created USB and why?
- How it started?
- What is the governing organization?
- What are the relevant specifications and where can they be found?

Components and Terminology

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

- UFPorts vs. DFPorts
- USB Router elements
- Scrambling and Encoding
- ACK, NAK, and Quality of Service

Basics of USB 2.x and 3.X

An examination of the background and practical information surrounding the underlying protocols on which USB functions While not intended to be an in-depth course in USB 1.X- 3.X, students will acquire a functional overview of the protocol by examining such topics as:

- Architecture and Requirements for support
- Link Initialization and Signal Training
- Flow Control and Quality of Service
- Error Detection/Handling

USB

This section deals directly with the flows, processes, and entities that make up USB communication. It is a comprehensive study that gives students the knowledge and skills to analyze and assess USB devices and interactions. Students will explore the inner workings of the protocol by discussing subjects such as:

- USB Architecture
- Pipe creation and Function
- Configuration Function and Flow
- USB 2.X – 3.X Protocol Support

Analyzer Configuration

A guided walk-through of the best practices for analyzer configuration and insertion into the test environment.

- How to setup for capture
- What to capture
- How to trigger
- How to view/manipulate and save a trace

Austin Labs Testing Services

We test customers' products quickly and thoroughly in an enterprise environment to ensure that products will survive the rigorous demands of mission-critical applications. Customers come to us for our fast turnaround, superior analysis, excellent results, competitive prices, and, of course, 100% confidentiality. We work hand-in-hand with our customers' engineers to provide solutions, not just information. We provide not only the results of our tests, but also the debug, analysis, and regression testing that is needed to ensure that the products we test perform as expected—not for our customers, but for your customers.

teledynelecroy.com/protocolanalyzer/austin-labs

TELEDYNE LECROY
Everywhere**you**look™