

USB 2.0 Architecture Part 2 Training Course Outline

Course Description:

Do you need a USB class that helps you learn USB 2.0 architecture? This USB training course builds on the concepts established in *USB 2.0 Architecture Part 1*. This USB training course gets into more detail covering low-speed, full-speed and high-speed environments. You will learn about the encoding and electrical environment including differential signaling. USB configuration will be explored in detail, including evaluating descriptors, and host requests in this online training. You will also learn about the On-The-Go protocol.

Note: To receive training specific to USB 3.0, please see *USB 3.0 Architecture Update*.

Course Objectives:

As a result of taking this USB training course, you will be able to:

- Describe USB Hubs, power management, and split transactions
- Learn USB configuration requirements
- Explore USB transaction types and device classes

Course Prerequisites:

Students should have completed *USB 2.0 Architecture Part 1*. One should have a good understanding of PC hardware and software architecture. An understanding of serial communications techniques is also highly recommended.

Modular Outline:

Module 00: Course Introduction

Module 01: USB Hub Requirements

- Architecture
- Transaction Translator
- Hub Controller
- Descriptors and Requests

Module 02: Low-Speed and High-Speed Environments

- Overview
- Device Detection
- SOP/EOP

Module 03: Low-Speed and Full-Speed Transfers

- Encoding
- Transfer Types
- Error Recovery

Module 04: High-Speed Overview

- Device Detection
- Differential Signaling
- Drivers and Receivers
- Reset and Suspend

Module 05: High Speed Transfers

- Periodic
- Non-Periodic
- Error Recovery

Module 06: Split Transactions

- Split Token Packet
- Transaction Translator
- Scheduling

Module 07: Configuration Overview

- Configuration Process
- Reading and Evaluating Descriptors
- Device Descriptors
- Device_qualifer Descriptor

Module 08: Device Descriptors and States

- Configuration, Speed, and Interface Descriptors
- Evaluating Descriptors
- Device States

Module 09: Hub Configuration

- Reading and Evaluating Descriptors
- Hub Class Descriptors
- Hub and Port Status
- Hub Power

Module 10: On-The-Go Overview

- Definitions
- Features
- Mechanical Specifications

Module 11: On-The-Go Protocols

- Electrical Specifications
- Session Request Protocol
- Host Negotiation Protocol

Module 12: Course Summary