

PCI Express 6.x / 7.0 Update

Let MindShare Bring “PCI Express” To Life For You

MindShare's PCI Express 6.x / 7.0 Update course covers all the major updates from PCIe 6.0 – PCIe 7.0. This course starts with a discussion of the introduction of PAM4 signaling and why that caused the need for Flits and forward error correction.

This MindShare course requires prior knowledge of PCIe 5.0. Only the new features of 6.x and 7.0 are covered with a light review of 5.0 features/behaviors that have changed moving into the 1b/1b Physical Layer and then on to Flit Mode.

You Will Learn:

- PAM4 signaling
- The need for Forward Error Correction
- Behavior of the Physical Layer at 64 and 128 GT/s
- Flit format
- Ack/Nak protocol at the Flit level
- Shared vs Dedicated Flow Control Buffers
- TLP Format while in Flit Mode
- The need for Segments in some TLPs
- Benefits and operation of L0p
- The motivation and behavior of Unordered IO
- The purpose and protocol for PCIe's new Management Interface (PCIe-MI)
- Updates to the popular SFI feature
- The why and how behind supporting up to 4 retimers per link
- Plus, many other updates added since the 5.0 spec release

Who Should Attend?

This course is for anyone who has a solid understanding of PCIe 5.0 and would like to quickly get up-to-speed on PCIe 6.x and 7.0.

Course Length: 4 Days

Course Outline:

- Intro to PCIe6 / PCIe7
- 1b/1b Physical Layer (64GT/s & 128GT/s)
 - Support for up to 4 Retimers per link (FRA Retimers)
- LTSSM Updates
- Flit Mode Logical Physical Layer
- Flit Mode Data Link Layer
- Flit Mode Transaction Layer
 - Flit Mode TLP Packing / Unpacking
 - Flit Mode Flow Control
 - Flit Mode TLP Format
- Flit Mode Segments
- Flit Mode L0p
- Unordered IO (UIO)
- Overview of PCIe Management Interface (PCIe-MI)
- Enhanced SFI (eSFI)
- Configuration Space Structure Updates

Required Prerequisites:

A good understanding of PCIe 5.0.

Course Material:

- 2) Downloadable PDF version of the presentation slides
- 3) Add-On PCI Express 6.x / 7.0 Update eLearning course (when released; discounted pricing applies)
- 4) Add-On [PCI Express eLearning course](#) (discounted pricing applies)