

Peripheral and Video Cables

At the end of this episode, I will be able to:

1. Identify common peripheral and video display cables and connectors.

Exam Objective: 3.1 - Explain basic cable types and their connectors, features, and purposes.

Description: In this episode, we will discuss the USB standard and connector, Thunderbolt, VGA, DVI, HDMI and DisplayPort.

- Peripheral Cables
 - **USB**
 - 120+ devices
 - 5V power
 - 2.0 = 480 Mbps)
 - 3.0 = 5 Gbps (Superspeed)
 - 3.1 Gen 1 (5 Gbps)(Superspeed)

- 3.1 Gen 2 (10 Gbps)(Superspeed+)
- 3.2 Gen 1 (5 Gbps)(Superspeed+)
- 3.2 Gen 2 (10 Gbps)(Superspeed+)
- 3.2 Gen 1x2 (10 Gbps)(Superspeed+)
- 3.2 Gen 2x2 (20 Gbps)(Superspeed+)
- 4.0
 - 40 Gbps (USB40)
 - USB-PD
- Connectors
 - USB Type A/B
 - miniUSB
 - microUSB
 - USB-C
- **Thunderbolt**
 - 1.0 - 2 channels @ 10 Gbps each
 - 2.0 - 20 Gbps (no speed increase - MacBook

Pro 2013)

- 3.0 - 40 Gbps (driving 2 4K displays)
- Video Graphics Array (**VGA**)
 - Legacy technology
 - max 640 x 480
 - DB15 connector
- Digital Video Interface (**DVI**)
 - Digital signal
 - DVI-A (Analog only)
 - DVI-D (Digital only)
 - DVI-I (Integrated = digital/analog)
- High-definition Multimedia Interface (**HDMI**)
 - 19 pin connectors
 - Digital video and audio
 - Standards
 - Standard (Category 1) (1080i or 720p)

- Standard with Ethernet
- High Speed (Category 2) (1080p @4K)
- High Speed with Ethernet
- Category 3 (4K) (18 Gbps versus 10.2 Gbps)
- Category 3 (8K)

- **DisplayPort**

- Digital video and audio
- Overseen by Video Electronics Standards Association (VESA)
- Standards
 - High Bit Rate (HBR) = (4K @ 30 Hz)
 - High Bit Rate 2 (HBR2) = (4K @ 60 Hz)
 - High Bit Rate 3 (HBR3) = (4K @ 120 Hz, 8K @60 Hz)
 - Ultra High Bit Rate (UHBR) (8K @ 60 Hz)