



UL's solutions for high-speed wired connectivity

The wire, cable, and connectivity industry constantly evolve to respond to dynamic market trends. Among these trends emerges high-speed technology as consumers, retailers, and brand owners alike require more speed, power, and mobility in the devices we use daily. As a result, connectivity product designs, such as cables, must also evolve to provide solutions to address key wired technology demands:

- Leveraging the same connectors or ports, such as USB, HDBaseT® and Ethernet, for power transmission
- Increasing data rate and power level to enable more connectivity applications in industry sectors such as automotive, medical and industrial
- Meeting increased compliance requirements around cybersecurity and electromagnetic interference/compatibility (EMI/EMC)

UL's diversified set of capabilities and knowledge helps manufacturers, retailers and brand owners uncover solutions to challenges in safety, performance and regulatory compliance in response to rapidly advancing technologies and changes in market access requirements. We help provide:

- Testing, verification and certification of power and high-speed data connectivity technologies, such as USB PD EPR, Power over Ethernet (PoE), HDMI® 2.1 and USB4®.
- Access the European market with the help of our Global Market Access program including requirements such as Construction Products Regulation (CPR) based on the CE marking and the United Kingdom Conformity Assessed (UKCA) marking.
- Certification testing to technical requirements, such as:
 - UL Safety Certification Testing for evolving active optical cables (AOC) with high-speed interfaces such as HDMI and USB
 - UL 9990, the Outline of Investigation for Information and Communication Technology (ICT) Power Cables, for higher power data sync charging cables
 - Compatibility/interoperability testing
 - EMI testing for Ultra High-Speed HDMI cables





80x 
higher
MAX DATA RATE
with USB4[®]
than USB2.0 

Did you know?

- The new USB Power Delivery Extended Power Range (EPR) specification allows for power delivery of up to 240W, which provides enough power to support larger screen sizes commonly used for televisions, gaming monitors, and other novel applications. Consequently, consider the importance of elevated risks where EPR-enabled devices could exceed the output of a class 2 power supply (PS2) or electrical energy source, class 1 (ES1), as defined in UL/IEC 62368-1 Internationally Recognized Standard for “Audio/video, Information and Communication Technology equipment - Part 1: Safety Requirements”.
- Radiation emitted by high-speed cables can be substantial to interrupt the operation of peripheral wireless devices if the cables are not properly designed and shielded.
- Active Optical Cable (AOC) assemblies are becoming popular to support greater bandwidth in various consumer electronics and networking applications. AOC assemblies may be installed in specific locations of buildings, such as in the plenum space and through-wall, where the regulatory requirements are based on the National Electrical Code (NEC[®]) and Construction Products Regulation (CPR).
- Ethernet cables employing copper-clad aluminum conductors, instead of copper, have much higher electrical resistance and can impair quality of signal transmission, therefore causing more heat loss in Power over Ethernet (PoE) applications and could pose potential fire risk.
- Maximum data rate of USB4[®] specification is 80 times higher compared to USB 2.0 specification, allowing the latest generation of USB connectivity to bear enough bandwidth to support 8K resolution video signal transmission, as well as much faster data transfer between devices.

To learn more about UL's solutions for high-speed wired connectivity, visit [UL.com/highspeed](https://www.ul.com/highspeed).



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