



Measure and Achieve USB Compliance Quickly

USB-C testing for high-speed interconnects

Introduction

USB-C is a breakthrough standard designed to meet the demand for technologies that support higher data rates and lower power in consumer electronics, IT, computing, and peripherals. To comply with the standard, users must perform a comprehensive range of transmitter, receiver, repeater, and cable tests according to the USB compliance test specification. Design and test engineers face challenges as they integrate USB-C into their products while ensuring interoperability and test compliance.

Use Case Summary

Cable and connector compliance tests are complex because of USB-C's higher data rates, greater power, and alternate mode support. Successful testing requires highly accurate multiport test instruments, software, and fixtures. Manufacturing engineers struggle to balance test cost and coverage, and they require an affordable multiport test solution to improve test efficiency.

Design validation engineers need an automated test solution to simplify setup and reduce the long characterization process. The solution needs to be USB Implementers Forum (USB-IF)-certified and cover standards such as USB4, USB 3.2, USB 3.1, and USB 2.0. For high-speed digital cable and connector manufacturers, it is important to use an automated test solution that can help improve test efficiency and test time.

Solution Overview

The Keysight USB-C testing for high-speed interconnects solution is a fully automated test solution for USB-C cables and connectors. It provides a fast and automated way to test, characterize, and debug USB-C cable assembly and connector designs to meet compliance requirements. When connected to the Keysight [L8990M Series modular switch matrices](#), the Keysight [S94USBCB Interconnects Compliance Test software](#) enables four to 20 ports of switching without manual port reconnection for full compliance automation testing with just a few simple steps. It makes measurements in minutes, decreasing test time up to 90%. It also gives the user deeper insights into device-under-test performance via test reports and analysis.

Learn more at: [Interoperability and Compliance of USB Type-C Cables and Connectors](#)

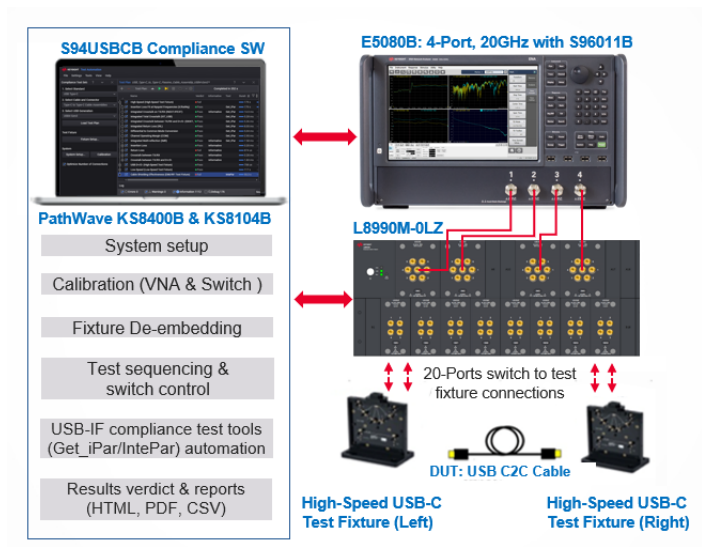


Figure 1. Overview of Keysight's USB-C testing for high-speed interconnects solution setup

Summary

- Testing USB-C cables manually is tedious and prone to human error.
- The increase in USB-C port count is driving demand for a multiport test system to avoid long setup time and cable port reconnections during testing.
- Keysight's USB-C testing for high-speed interconnects solution simplifies the time-consuming and error-prone process of manual port reconnections and setup of USB-IF standard compliance tools.

For more information: [USB-C Testing For High-Speed Interconnects](#)



USB-C testing for high-speed interconnects solution

For more information on Keysight Technologies' products, applications, or services, please visit: www.keysight.com

This information is subject to change without notice. © Keysight Technologies, 2022 - 2024, Published in USA, December 26, 2024, 7122-1063.EN