

# USB Type-C Functional Tests for Cables (CPUT)

TECHNICAL BRIEF

## Introduction

Teledyne LeCroy's USB Type-C Functional Verification option now includes new Type-C cable tests (beta) which will be used to verify proper USB-C link state behaviors. Beginning in 2021, both active and passive Type-C cables may be subject to these new tests.

## Cable Test Setup

For testing a CPUT, the test setup includes two Voyager M310P units which are connected upstream and downstream to the cable plugs. The M310P systems are used to emulate a Host (CVSh) and Device (CVSd). The CVSh and CVSd are both plugged into a control PC running the USB Compliance Suite software. The CVSh and CVSd are also connected to each other using the Micro-D Sync cable (figure 2) for timestamp synchronization. This setup is identical to the Hub LVS Compliance test setup except it is not required to enter the Voyager M310P serial numbers in the settings tab because their roles will be automatically defined at run-time.

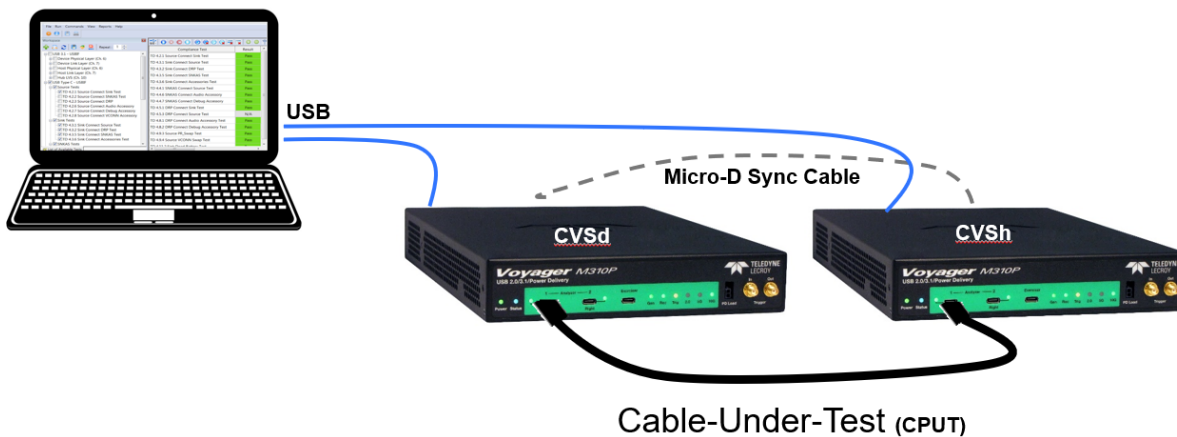


Figure 1: USB Type-C cable Test Setup

The new cable tests (TD 4.14.x, TD 4.1.3 and TD 4.13.5) require Type-C Functional Verification license (part # USB-AC20-V06-X) is installed on both M310P systems. The tests verify the following behaviors:

- Transition to Disabled
- Transition to Unattached
- Detect far-end terms removed
- LGO\_Ux handshake
- Reset sequence
- ALT-Mode Entry
- VCONN Swap



Figure 2: Micro-D Sync Cable

| Part #     | Description  | List (US) |
|------------|--|-----------|
| AC061XXA-X | Cable Kit, Micro-D Sync (QTY:1) & Micro-D to DB-9 Sync & BNC Trigger IN/OUT (QTY:1)                  | \$170     |
|            | (Micro-D Sync connects two Summit T34s, Advisor T3s, Voyager M310C/P, Eclipse X34s.                  |           |
|            | Voyager M310C/P Micro-D to DB-9 'octopus' connects legacy Teledyne analyzers; also adds BNC Trigger) |           |

For additional information, contact your Teledyne LeCroy Sales Engineer at [ProtocolSales@TeledyneLeCroy.com](mailto:ProtocolSales@TeledyneLeCroy.com)

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