USB-C-Switch Pro

USB4 EPR Switcher and Multiplexer

USB Automation Experts

ACRONAME



Acroname's USB-C-Switch Pro is an industrial **40 Gbps USB4** port selector able to connect:

- One of up to four devices to one host
- One device to one of up to four hosts.

This is not a hub — it directly connects and redrives signals from a common port to one of 4 mux channels.

USB-C-Switch Pro supports pass-through USB Power Delivery Extended Power Range (**USB PD EPR**) up to **240 W** with support for **PPS**, **AVS**, and up to **8K@120 Hz DisplayPort Alt mode video**. Connect with USB-C, Ethernet, or RS-232, and control via HubTool, web interface, or API.

Benefits

Streamline USB compliance and manufacturing test by multiplexing devices and test equipment. Automate repetitive tasks like **plug-unplug** and **cable flip** with optional **Universal Orientation Cable (UOC)**.

Interactively debug complex USB-C connections with the ability to log and decode **USB-PD** and **SBU** messages.

Applications

- USB-PD EPR validation and interoperability testing including Dual Role Data (DRD) and Dual Role Power (DRP) devices
- USB-C end-product test, firmware load, and debug
- Conference Room USB solutions
- Automotive head unit test and development: supports Apple CarPlay™ and Android Auto™
- USB-C device bringup
- PD and DisplayPort SBU debugging

Features

- Supports USB4 devices up to 40 Gbps with 240 W USB PD EPR pass-through
- Manual, programmatic port switching
- Supports DisplayPort 2.1 Alt mode UHBR20 (up to 2 x 8k@120Hz)
- USB-C cable flip emulation
- Enable Split Mode to independently route signal groups
- Log and decode USB-PD and SBU messages
- Optional Keep-Alive Charging (KAC) power on inactive ports
- Read, plot, and log voltages and currents including:

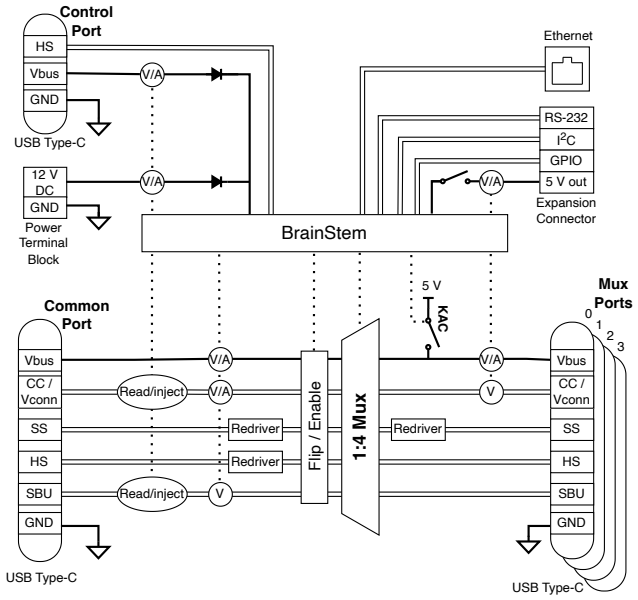
Industrial-Strength Hardware

- Active SuperSpeed redrivers on common and mux ports

Pin	Measurement	Port
Vbus	Voltage and Current	All ports
CC & Vconn	Voltage	All ports
	Current	Common port

  for loss compensation
- Certified to withstand ±15kV ESD strikes (IEC61000-4-2 level 4)
- Bus powered via Control port or directly powered via 12 V DC pluggable euro-style terminal block (included)
- DIN rail mountable with optional kit
- Screw retention on all USB-C, DC power, and external IO connectors

Block Diagram

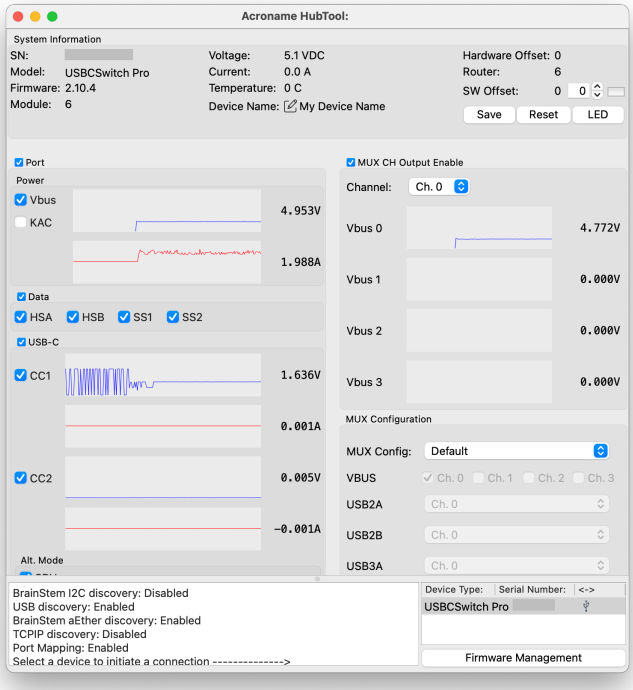


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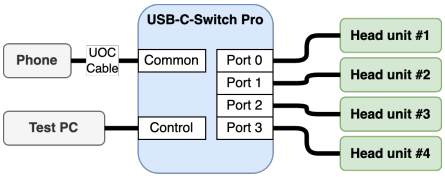
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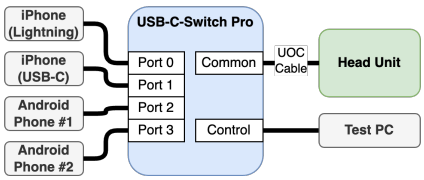
Connectivity and Software



- Control and monitor through HubTool Application, web interface, or API (C, C++, Python, LabView, .NET, RESTful)
- Connect over USB-C, Ethernet, RS-232 (Extron compatible) or I²C
- Control I²C peripherals and one 5 V switchable output

Apple CarPlay and Android Auto Testing and Development



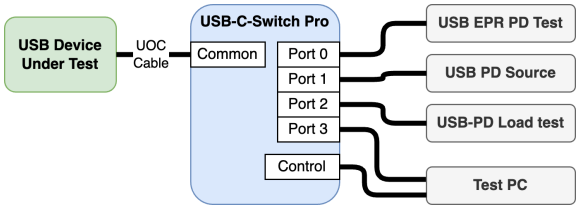


- Sequentially test a head unit against iOS and Android phones, test across **multiple head units** or **multiple devices**
- Emulate cable flip and plug-unplug cycles
- Debug USB-PD negotiation and device charging issues

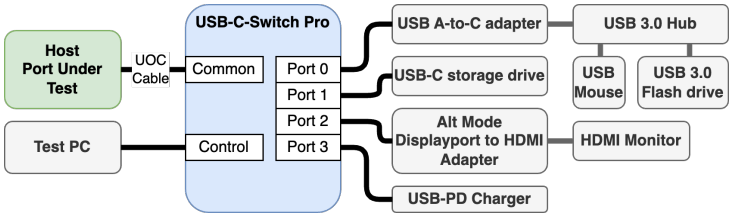
Compliance and Interoperability Testing

Streamline USB-PD compliance and interoperability testing by automating device and lab equipment connections:

- Connect multiple pieces of test equipment sequentially to one device under test



- Connect multiple ports or devices sequentially to one host or tester



- No-touch cable flip and virtual plug-unplug

Made for custom solutions

We built the USB-C-Switch Pro with maximum flexibility to help solve unique USB-C challenges across high power and data rates. Use HubTool to interactively control, monitor, and debug — or automate your solution with the BrainStem API.

The USB-C-Switch Pro is ready for the test lab, conference room, factory floor, or anywhere that requires high-performance USB-C switching and monitoring.

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