



The USBHub3c is a high-performance, managed industrial USB hub featuring six USB-C ports, supporting data rates of up to **10 Gbps** and **100 W USB Power Delivery** (USB-PD) per port.

With an optional DC power supply, it supports up to **500 W total power output**. Each port can be configured as upstream facing (UFP) to connect to a host or downstream facing (DFP) to connect to devices.

Fully software managed, USBHub3c provides extensive port monitoring and control options via the **HubTool GUI application** and **Brainstem API** for interactive and automated workflows.

Flexible Applications

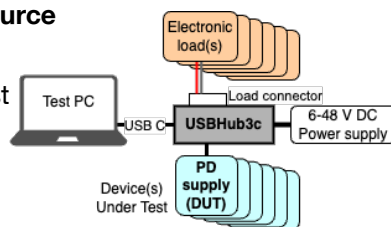
We designed USBHub3c for maximum flexibility to solve complex challenges across a variety of applications.

Comprehensive USB-C port testing for the lab or factory

- Verify and force USB link speeds, enable and disable ports to set enumeration order, independently control USB 2 and USB 3 lines. Set maximum connection speed to force specific data rates
- Virtual “cable flip” — Independently test USB functions on either side of the USB-C connector with optional Universal Orientation Cable (UOC)
- Plot V_{bus} and CC voltage and current, log and decode PD negotiation and send arbitrary VDM PD messages (*)

Emulate any PD sink or source

Test USB-powered devices against any charger, and test chargers against the full range of sink devices they might encounter.



- Full independent control of V_{bus} and advertised PDOs to emulate out-of spec devices and over/

- under-voltage conditions (*)
- Load testing for PD sources (*)

Data and battery management for mobile device labs

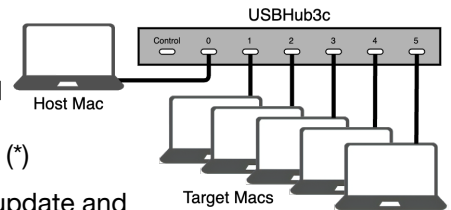
- Maintain 24/7 connectivity to your mobile devices
- Limit charging current to extend battery lifespan and mitigate battery swelling in USB-C and legacy devices

Hot-Plug stress testing

- Automate cable connect/disconnects without physical interaction. Script plug-cycle stress testing

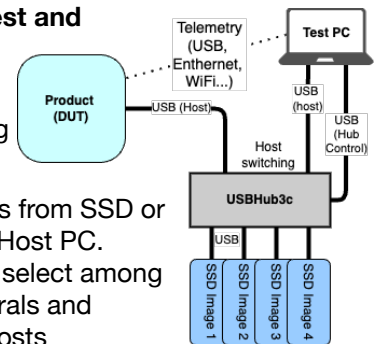
Mobile Device Management (MDM) and deployment

- Parallelize device deployment
- Send vendor-defined messages (VDMs) directly from the hub (*)
- Bulk DFU Firmware update and provisioning for Apple Devices



Manufacturing end of line test and provisioning

- Automate firmware load, testing, and battery charging
- Host switching: Boot and provision production devices from SSD or update SSD images from a Host PC. Enable and disable ports to select among boot images. Share peripherals and storage volumes between hosts



(*) Indicates optional firmware feature

USBHub3c Capabilities	Standard	Add-on Feature
Port On/Off	✓	
Measure VBUS V/I	✓	
Enable/Disable V_{bus}	✓	
Enable/Disable Data Lines (HS, SS)	✓	
BC 1.2 Mode (SDP, CDP, DCP)	✓	
USB-C Connector Flip	✓	
Read/Verify attached device PDOs	✓	
Set/Select PD mode via RDO	✓	
Enable / Disable / Edit PDOs		PD Builder
Monitor / Decode / Log PD traffic		PD Logger
Inject Vendor Defined Messages (VDMs)		PD Logger
Adjust V_{bus} Voltage / Current Limits		V_{bus} Validation
V_{bus} DC Power Supply Mode		V_{bus} Validation
Qualcomm Quick Charge® QC 2, QC 3		Quick Charge
Load testing for PD sources		External Load Test

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Key Built-in Features

- **AnyPort™ technology** — six 10 Gbps, 100 W USB-C ports, configurable as UFP or DFP. Independently control power and data
- **Stay connected** with screw-lock USB-C ports to keep cables securely attached
- **Fully software-managed** via HubTool application and Brainstem API
- **Dedicated control port** separates host USB hub functions from USBHub3c management and control functions
- **Expansion port** for PD load testing, RS-232 / I²C control
- **Flexible power input** — power the hub with 6 - 48 V DC, dedicated 100 W PD input, or via bus power through any port (up to 100 W)
- **Flexible power output** — up to 100 W per port with up to 500 W total capacity. BC1.2 (SDP, CDP), PPS, QC 4,5

Extendable Capabilities

USBHub3c's capabilities can be expanded with optional add-on software features and hardware accessories.

Software Add-on Features

PD-Builder: Customize local port Power Data Objects (PDOs) to emulate various PD source capabilities. Includes *Power Rule Editor*

V_{bus} Validation: Override V_{bus} voltage set points and current limits to test a sink's response to incorrect voltages. Enables each port to act as a **controllable DC power supply** with independent voltage and current limits (2.8 – 21 V, 0 – 5 A)

External Load Test: Configure any port as a PD sink and connect to external fixed or electronic loads via the *external load connector*

PD Logger: Log PD communications across all USBHub3c ports. Provides message decoding, including power negotiation, alternate mode negotiation, and VDM data display

Serial Control: Enable control of the USBHub3c via RS-232 serial interface

Quick Charge: Add support for legacy Qualcomm Quick Charge® QC 2 and QC 3 power modes

Hardware Accessories

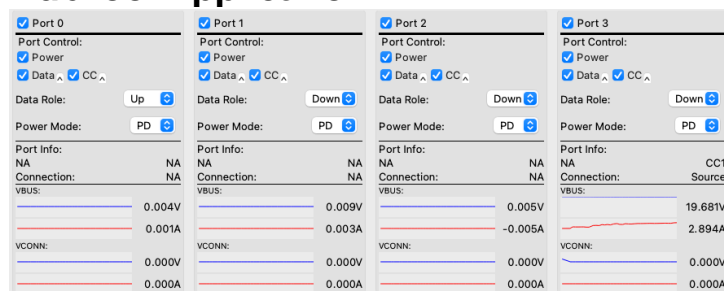
External Load Connector: Simplifies connecting external electronic loads, with screw terminals for ports 0 through 5 V_{bus} rails; included with purchase of External Load feature.

DIN rail mounting kit: Secure to DIN rail with bottom, side, and back mounting options

Optional high capacity power supplies: Maximize power capabilities. The hub ships with a 100 W USB-PD supply, but can accept up to 500 W at 6 - 48 V

Universal Orientation Cables: Allow virtual "Cable Flip" testing

HubTool Application



The HubTool interface presents a unified dashboard to interactively control and view the state of USBHub3c. Free download for Windows, MacOS and Linux distributions.

BrainStem API

Control and automate all USBHub3c functions with the BrainStem API (C, C++, Python, LabView, .NET). Integrate into your test scripts or custom applications.

What's in the box

- USBHub3c
- 100W USB-C PD AC power supply (US-spec)
- Two (2) standard USB-C-C, 70cm, 10Gbps, 5A cables with locking screws
- Phoenix-compatible screw terminal
- One (1) USB-C to USB-A cable