USB3C-104-HUB with PD 3.0
Rugged USB3.1 Gen2 5-Port C&A Hub

FEATURES

- 5-port USB 3.1 Gen 2 hub with data transfers up to 10Gbps
- USB C with Power Delivery (PD) 3.0 upstream to host PC at up to 20V @ 5A
- One downstream USB Type C with PD 3.0 at up to 20V @ 5A
- Two USB Type C downstream ports with Battery Charging v1.2 and Apple Charging standards (up to 2.8A per port), two Type A up to 1.8A
- IEC 61000-4 Lvl 4 ESD, EFT & Surge Protection on all USB data lines
- Rugged (0°C to 70°C) operation
- Locking upstream, downstream, and power connectors prevent accidental disconnects
- SuperSpeed+ (10Gbps), SuperSpeed (5Gbps), Hi-Speed (480Mbps), Full-Speed (12Mbps), and Low-Speed (1.5Mbps) transfers supported on all ports
- Requires 24V power via DC jack or a pair of screw terminals
- Compact, steel, low-profile enclosure
- RoHS compliant

FACTORY OPTIONS

- OEM (board only) option with PC/104 mounting holes and footprint for convenience in embedded applications
- Economy version equipped with standard, instead of locking USB connectors
- Tantalum capacitors for flight and space based applications
- Conformal coating

POWER DELIVERY (PD)

USB C Power Delivery: delivers power, fast! Our USB C PD design is always as fast as your device's actual charger — faster, even! Example: The iPad Pro 12.9" comes with a 60W charger, but the USB3C-104-HUB can deliver the USB C PD maximum, 100W. Charging time is cut from 3 hours to 2. Our PD solution supports all USB C PD standards for voltage and current, ensuring you always charge at your device's max rate.

FUNCTIONAL DESCRIPTION

The USB3C-104-HUB is an industrial-grade 5-port USB hub optimized for harsh and rugged environments. This hub has latching / locking connectors on upstream and downstream ports as well as power, preventing accidental disconnects - making it perfect for applications that require vibration proofing. The rugged steel enclosure, positive retention connections, and 0°C to +70°C operation makes the USB3C-104-HUB stand out compared to commercially available hubs — and it's 100% Made in the USA.

Each connection has been designed for rugged use without loose or intermittent cables disrupting your application. The input power is secured via screw terminals or a threaded DC Jack. Type C connections utilize USB-standard latching cables. The latching Type A ports' connectors provide high-retention (50N) downstream connections compatible with all industry-standard USB cables.

While USB has evolved, this card has enabled the maximum functionality of USB by providing flexibility of power options using USB PD 3.0 and USB 3.1 data transfer expansion in a single module design.

In addition to secure retention connectors signal integrity is further protected by IEC 61000-4-2 maximum-rated ESD protection diodes (15kV Contact & Air-gap).
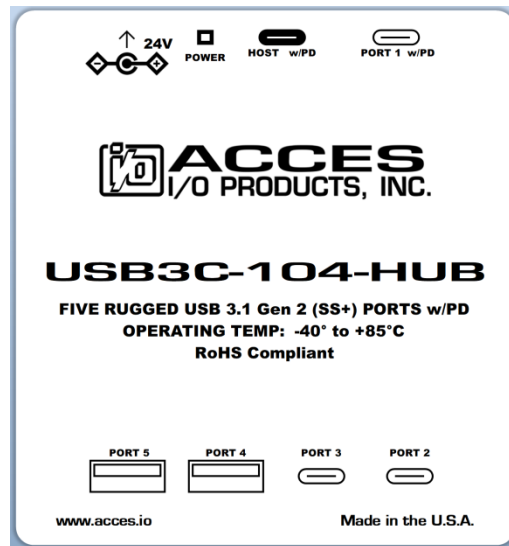
The board is designed to be used in rugged environments, but is small enough to fit nicely onto any desk or testing station. The module is PC/104 sized at 3.550" by 3.775", while the enclosure is approximately 4" x 4" x 1".
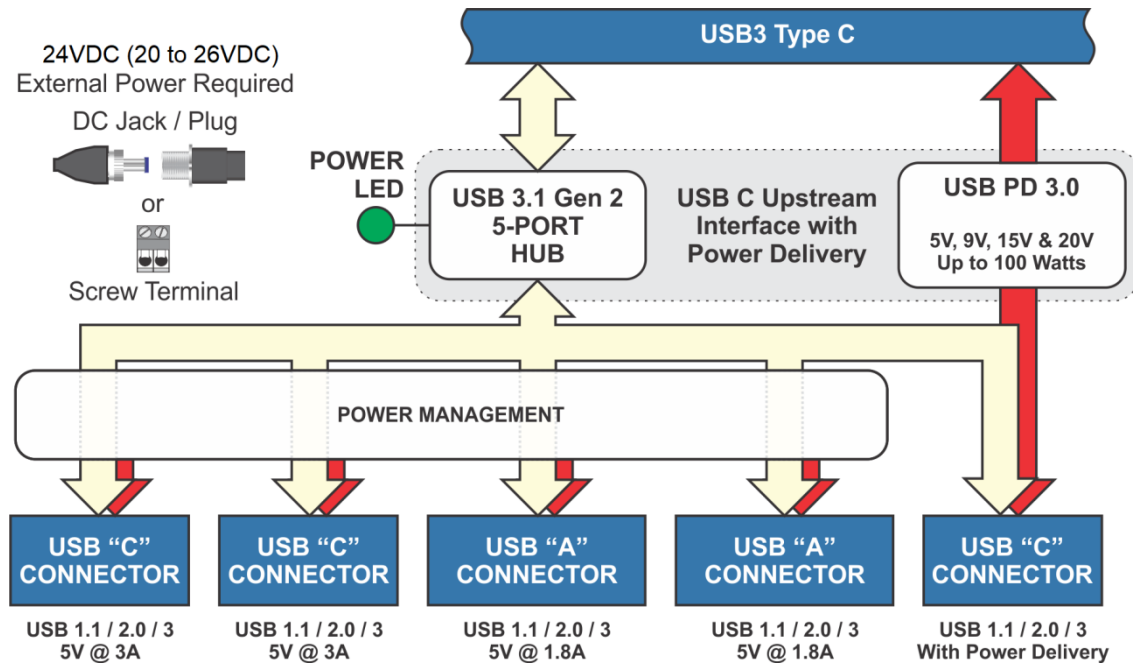
ACCESSORIES

Available accessories include the MP104-DIN for DIN rail mounting the USB3C-104-HUB and an external instrument grade power supply. Power plugs and power cables are also available if you have your own 24V power supply.

SOFTWARE

No software is provided or needed with this board. There is no need to install any drivers to use the USB3C-104-HUB. It will enumerate as a Generic Hub which uses the USB Hub Class Driver that is built into Windows OS or Linux, et al.

10623 Roselle Street, San Diego, CA 92121 • (858) 550-9559 • Fax (858) 550-7322 • contactus@accesio.com • www.accesio.com

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BLOCK DIAGRAM

24VDC (20 to 26VDC) External Power Required
DC Jack / Plug

or

Screw Terminal

POWER LED

USB3 Type C

USB 3.1 Gen 2 5-PORT HUB

USB C Upstream Interface with Power Delivery

USB PD 3.0
5V, 9V, 15V & 20V
Up to 100 Watts

POWER MANAGEMENT

USB "C" CONNECTOR	USB "C" CONNECTOR	USB "A" CONNECTOR	USB "A" CONNECTOR	USB "C" CONNECTOR
USB 1.1 / 2.0 / 3 5V @ 3A	USB 1.1 / 2.0 / 3 5V @ 3A	USB 1.1 / 2.0 / 3 5V @ 1.8A	USB 1.1 / 2.0 / 3 5V @ 1.8A	USB 1.1 / 2.0 / 3 With Power Delivery

SPECIFICATIONS

Bus Type: USB 3.1 Gen 2
SS+, SS, HS, FS, and LS supported on all ports
One upstream Type C port with PD3.0
One downstream Type C with PD3.0
Two Type C downstream
Two Type A downstream ports

Environmental
Operating: 0° to +70°C
Storage: -40° to +85°C
Humidity: 5-95% non-condensing
Board Size: 3.550" x 3.775"
Enclosure Size: 3.985" x 3.990" x 1.045"
Weight: 304 grams (with enclosure)
85 grams (-OEM version)

Cable 6' USB3 cable Type C to Type C
6' Type A to Type A option cable

Power Required external power 20 to 26VDC, via screw terminals 14-26 AWG or a locking DC jack / plug

Power Delivery One upstream and one downstream Type C port supports the full PD3.0 standards of 20V, 15V, 9V, and 5V power at up to 5A
Two downstream Type C support 3A
Two downstream Type A support USB Battery Charging v1.2 and Apple Charging standards (up to 1.8A)

Connectors

USB Type A Latching Retention up to 50 Newtons
Physical shock: Per EIA-364-27 Condition H (11ms 30G)
Vibration: Per EIA-364-28D Condition V, Test A

USB Type A Standard 8 Newtons disconnect non-locking

DC Jack (locking) Vibration: Method 201A
(MIL-STD-202G) Ins. Resistance: Method 302 Cond. B
Thermal Shock: Method 107G
Temperature: -40-105°C (-40-+221°F)

USB Type C 8 Newtons disconnect non-latching cable

Ordering Guide

USB3C-104-HUB RoHS compliant industrial USB 3.1 Gen 2 hub with locking/latching connectors in rugged enclosure (includes 6' high-quality USB 3.1 Type C latching cable)

USB3C-104-HUB-E Economy version with standard non-latching USB type A connections (includes 6' high-quality USB 3.1 Type C cable)

Model Options

-OEM Board only version (no enclosure)
-TAN Tantalum Capacitors instead of Electrolytic for high altitude usage
-CC Conformal Coating for use in high humidity and dusty environments

Optional Accessories

PWR-ACDC-24V10A-L 24VDC 10A locking AC/DC adapter
MP104-DIN DIN rail mounting provision
LF-JDC-PLUG Locking power plug connector
CAB-PWR-01 Locking DC power cable assembly
CAB-PWR-02 Locking DC pwr cable assy right angle

RoHS ✓