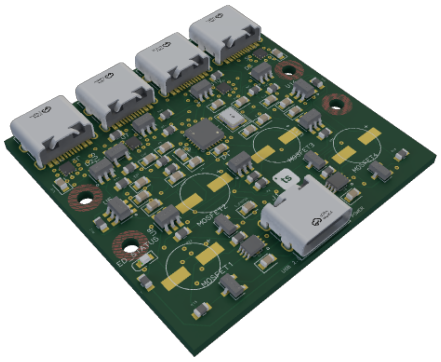
Four-Port USB-C Hub

1.1 Description

A computer-powered four-port USB 2.0 hub for connecting multiple desktop modules.



Assembly view

1.2 Device specifications

Parameter	Specification
Ports	One upstream and four downstream USB-C receptacles
Host interface	USB 2.0 hub class
Power budget	Bus powered; design allows 100 mA per downstream device
PCB dimensions	44 × 42 mm
Mounting holes	4 × Ø2.2 mm for M2 screws; 38 × 10 mm center spacing

1.3 Using the board

Connect the upstream USB-C port to a computer with a data cable, then plug the peripherals into the four downstream ports. Allow up to 100 mA per downstream module in this design. Add each supported peripheral in the console. Leave clearance in the enclosure for all five plugs.

Device guide

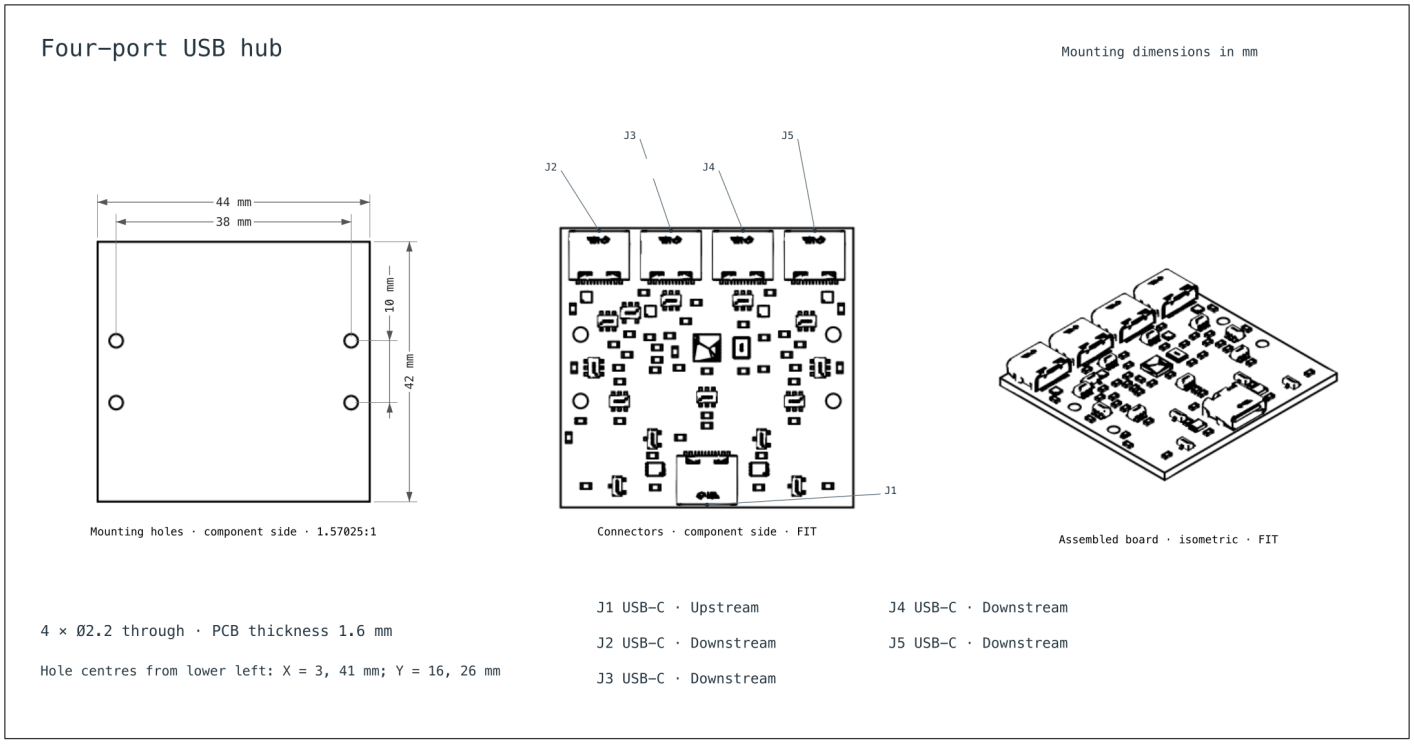
2 Protocol reference

USB 2.0 hub class. The operating system handles the hub. Each attached device enumerates with its own protocol.

Operation	Request or signal	Result
Discover the hub	`GET_DESCRIPTOR` for the hub descriptor.	Reports hub characteristics and downstream port count.
Watch for a change	Poll the interrupt IN endpoint.	Returns a bitmap of hub and port changes.
Read a port	Port `GET_STATUS`.	Returns port status and change flags.
Reset a port	Port `SET_FEATURE(PORT_RESET)`.	Starts the downstream reset used during enumeration.

3 Mechanical information

3.1 Assembly and mounting



Component-side plan and isometric assembly. Dimensions in millimeters.

3.2 Installation dimensions

The PCB measures **44 × 42 mm**, with **4 × Ø2.2 mm** clearance holes for M2 screws. The centre-to-centre spacing is **38 × 10 mm**. Orient the component side with the **J1 USB-C port at the bottom**. Measure right and up from the **lower-left corner of the PCB** in the component-side view. The hole centres are at X = 3, 41 mm and Y = 16, 26 mm.

Modeled component height: approximately 3.3 mm above the component-side PCB surface.

3.3 Design resources

Device guide · **Full-size mounting drawing** · **Drawing TSX** · **PCB source**