

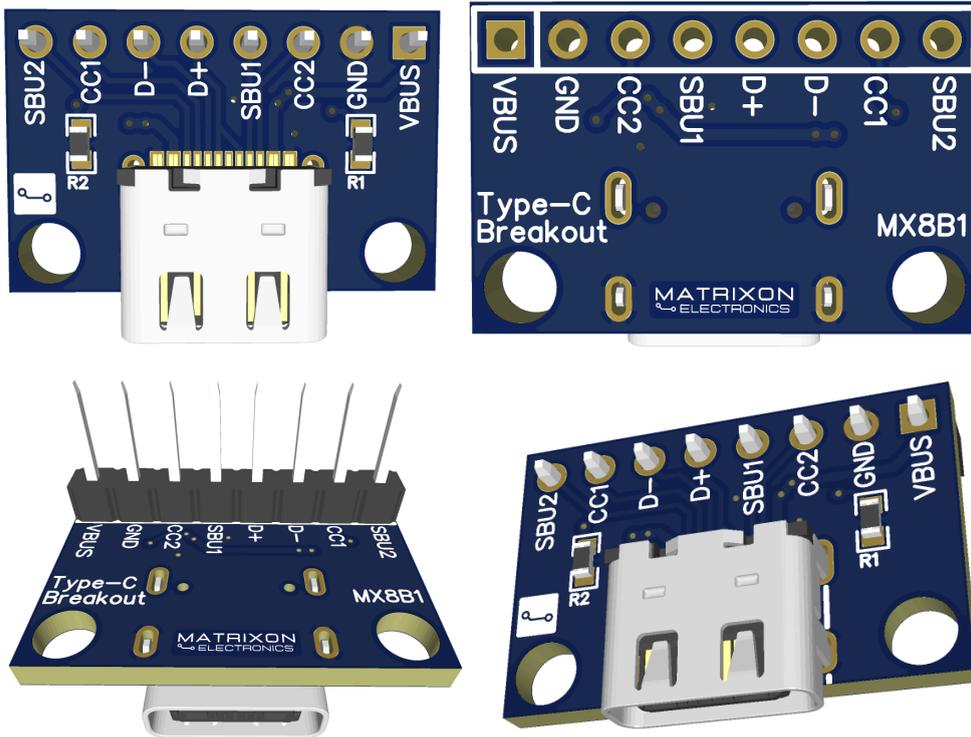
# USB Type-C Breakout Module



MX8B1

Product Datasheet

A compact USB Type-C breakout board exposing VBUS, GND, USB 2.0 data, CC, and SBU pins via standard headers for easy prototyping and evaluation.



**Version:** Rev 1.0

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## Overview

The [MX8B1 - USB Type-C Breakout Module](#) is a compact USB Type-C breakout board designed for prototyping, evaluation, and educational use.

It exposes USB power, USB 2.0 data, CC, and SBU pins via standard 2.54 mm headers, enabling easy integration with breadboards, development boards, and custom circuits. The board includes onboard CC pull-down resistors for compliant USB-C sink detection and supports reversible plug orientation.

## Key Features

- USB Type-C receptacle (USB-C 16-pin)
- Exposes VBUS, GND, USB 2.0 D+ / D-, CC1, CC2, SBU1, SBU2
- Onboard 5.1 k $\Omega$  pull-down resistors on CC1 and CC2
- USB 2.0 compatible (Full-Speed / High-Speed)
- 2.54 mm standard header spacing
- 2-layer PCB with solid ground pour
- Compact and breadboard-friendly layout

## Applications

- USB-C power breakout for prototyping
- USB 2.0 signal access for microcontroller projects
- USB-C learning and experimentation
- Interface testing and debugging
- Educational electronics projects

## Purchase Link

Download the Gerber files here: [MX8B1 - USB Type-C Breakout Module](#)

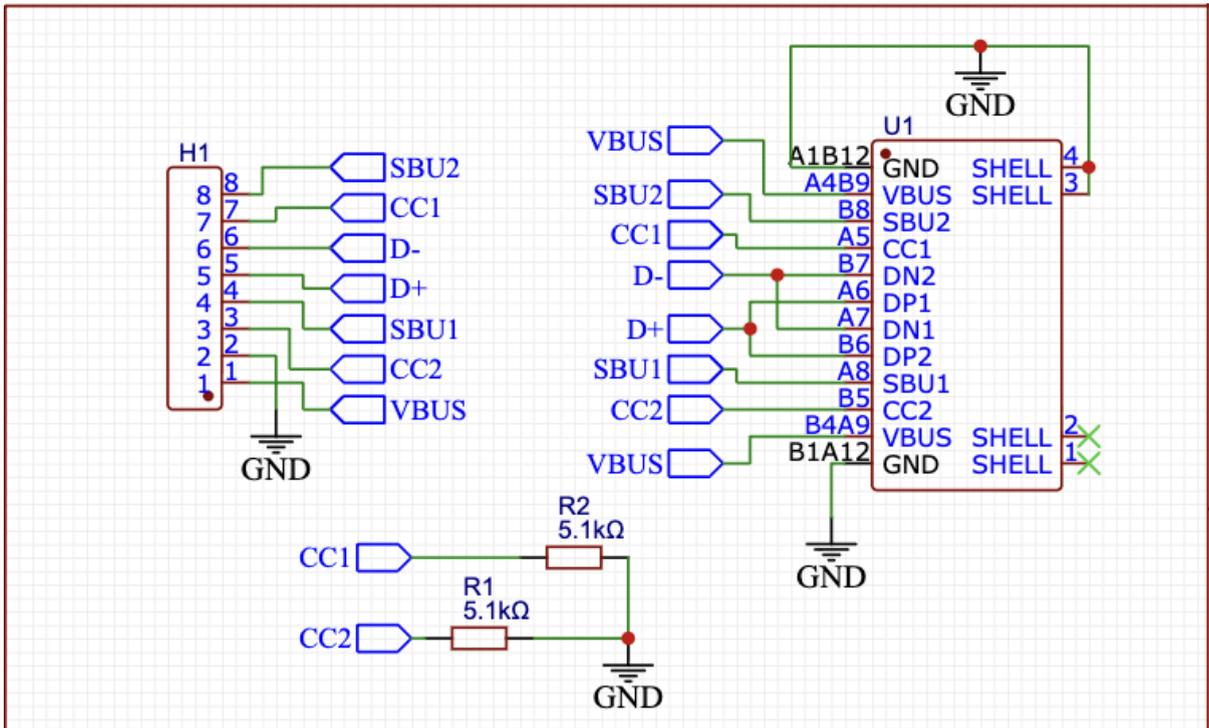
## Pinout Description

Pin	Label	Function
1	VBUS	USB 5 V power input
2	GND	Ground
3	CC2	Configuration Channel 2 (with onboard 5.1 k $\Omega$ Rd)
4	SBU1	Sideband Use 1
5	D+	USB 2.0 Data Positive
6	D-	USB 2.0 Data Negative
7	CC1	Configuration Channel 1 (with onboard 5.1 k $\Omega$ Rd)
8	SBU2	Sideband Use 2

## Design Notes

- CC1 and CC2 include onboard 5.1 kΩ pull-down resistors for default USB-C sink operation (5 V).
- SBU pins are exposed for advanced use and are not required for standard USB power or USB 2.0 data.
- SuperSpeed (USB 3.x) signals are not supported.
- Not intended for USB Power Delivery (PD) negotiation.

## Schematic Diagram



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TITLE: <b>USB Type-C Breakout</b>		REV: <b>1.0</b>
	Company: <b>Matrixon Electronics</b>	Sheet: <b>1/1</b>
	Date: <b>2025-12-31</b> Drawn By: <b>Madhesh Ram</b>	

## PCB Layout & Dimensions

Parameter	Value
Board Size	21mm x 14mm
Layers	2
Components Placement	Top layer (Single side)
Header Pitch	2.54 mm
USB Connector	USB Type-C Receptacle

## Revision History

Date	Version	Modify Content
31/01/2026	Rev 1.0	New