

# Boson Expansion Board for Calliope mini V3

## 1. Product Overview

The **Boson Expansion Board for Calliope mini V3** is a highly versatile expansion board designed to enhance the functionality of the Calliope mini V3. This board enables seamless integration of Boson modules, providing a robust platform for educational projects and prototyping applications. The board is equipped with a USB power interface, voltage regulation circuitry, and multiple connection ports, ensuring ease of use and compatibility with various sensors and actuators.

## 2. Technical Specifications

- **Board Name:** Boson Expansion Board for Calliope mini V3
- **Input Voltage:** 5V (via Type-C USB),
- **Output Voltage:** 3.3V and 5V
- **Regulator IC:** AMS1117-3.3
- **Operating Current:** 500mA
- **Connection Ports:** 6 Boson-compatible ports (P0,P1,P2,P3,C16,C17)
- **LED Indicators:** Power indicators for 3.3V and 5V
- **Protection Features:** Diode-based reverse polarity protection
- **Operating Temperature:** 0-85° C
- **Dimensions:**  $\phi$  85 mm

## 3. Interface Definitions

Boson module extended interfaces: P0,P1,P2,P3,C16,C17

Motor extended interfaces:M0,M1

Motor power supply interface:VM

Power supply interface: Type-C USB

## 4. Usage Instructions

### Powering the Board:

- Connect the board to a power source via the USB input (Type-C).
- Verify power status using the onboard LEDs (3.3V or 5V).

### Connecting Modules:

- Use ports P0,P1,P2,P3,C16,C17 to connect Boson modules. Ensure the correct orientation of the connectors.

### Configuring Voltage:

- Use switch to toggle between 3.3V and 5V modes as per the module requirements.

### Connecting Calliope mini:

- Attach the Calliope mini V3 to pin header.
- Ensure proper alignment of pins to avoid connection errors.
- Combine the Calliope mini V3 and the expansion board with 6 screws.

### Testing:

- Verify functionality by observing module responses and LED indicators.

## 5. Precautions

- Ensure that the total current drawn by connected modules does not exceed the maximum output capacity of the USB power supply.
- Avoid reversing the polarity of the power input to prevent damage.
- Use only compatible Boson modules with the appropriate voltage settings.
- Disconnect power before making any hardware changes to avoid short circuits.

For more information and technical support, visit the official DFRobot website.

**Document Revision:** 1.2.0

**Date:** 2025-1-2