CANBed - Arduino CAN-Bus RP2040 Development Board

SKU 102991596

The CANBed RP2040 version has been changed from V1.0 into V1.1. CANBed RP2040 is a CAN Bus development board equipped with an RP2040 chip with a high-performance MCP2515 CAN controller and MCP2551 CAN receiver operating at CAN2.0 protocols in 133MHz. The board contains a flexible CAN interface where it can be used 4-PIN Terminal or D89 connector. D89 connector can be directly used as OBD-II mode by default and the hardware can be configured as CAN Open mode as well. Additionally, it has a rich interface in which there is a Micro USB connector that can be programmed instead of supplying power. It also has I2C, UART, SPI, 3 analog input interfaces, and 8 digital IO with 2MB of Flash and 264KB of RAM which make it suitable for most embedded applications.

If you want to use this board to develop OBD-related applications, click to get a DB9 to OBD-II cable.

We use a flexible way for the CAN interface. You can use 4PIN Terminal or DB9 connector. DB9 connector uses OBD-II mode by default. You can also configure CAN Open mode on the hardware. The voltage input range of the CAN interface is 9-28V, which can provide a stable 3.3V/1A output.

Features

- Powerful Raspberry Pi RP2040 processor
- Implements CAN V2.0B at up to 1 Mb/s
- Industrial standard 9 pin sub-D connector or 4PIN Terminal.
- OBD-II and CAN standard pinout selectable at the sub-D connector
- 2x4Pin Connector compatible with Grove system from Seeedstudio
- SPI Interface
- Standard (11 bit) and extended (29 bit) data and remote frames
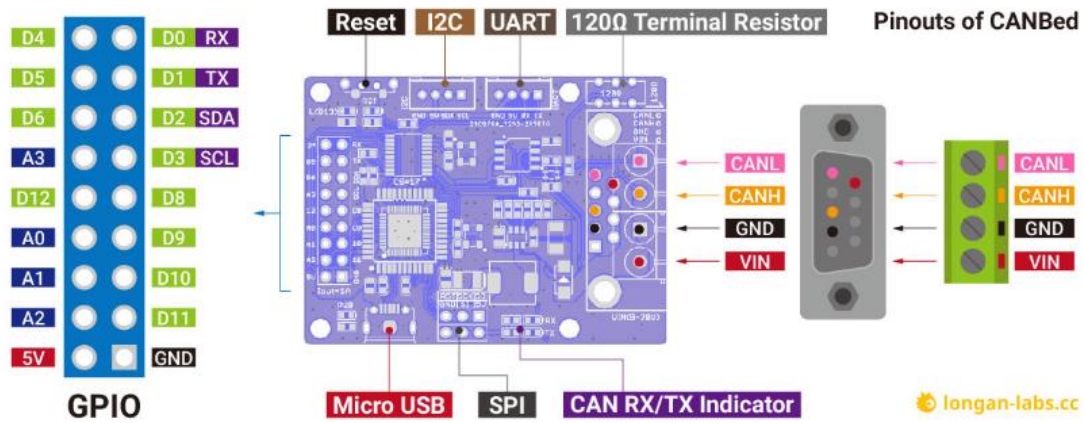- Power input from 9-28V

Specification

- MCU - RP2040
- Clock Speed - flexible clock running up to 133 MHz
- Flash Memory - 2MB
- RAM - 264KB
- Operate Voltage - 9-28V
- Output Current @ 3.3V - 1A
- Input Interface - sub-D

Application

- Hack and Upgrade Your Car
- Vehicle dynamics control system
- Attitude and orbit control system

Hardware Pinout

Pinouts of CANBed

GPIO

1. GPIO - 9x2 I/O Pin OUT:
2. Micro USB connector for programming
3. SPI Interface
4. CAN RX/TX Indicator
5. DB9 connector or Terminal for CAN Bus
6. Switch for the 120Ω terminal resistor for CAN Bus
7. Grove connector for UART
8. Grove connector for I2C (Wire1)
9. Reset

Part List

CANBed 2040 PCBA	x1
Sub-D connector	x1
4PIN Terminal	x1
4PIN HY2.0 Connector	x2
9x2 2.54 Header	x1
3x3 2.54 Header	x1
Switch for 120Ω terminal resistor	x1

FAQ

🔥 **I can't upload code to CANBed 2040**

- When the board is connected to the computer via the Micro USB cable, a new COM device will appear on the computer. If the new device does not appear on your computer, you can try a different USB cable or try another computer.

🔥 **The RX/TX led light up and never turn off**

- Check if the baudrate of CAN Bus is setting correct
- Try turning on/off the switch for the 120Ω terminal resistor
- Check if CANH and CANL is well connected, H to H and L to L

🔥 **I2C is not working**

- There are 2 I2C for RP2040, for this CANBed 2040, we use Wire1, that is, please change Wire to Wire1
- And before Wire1.begin(), plese add Wire1.setSDA(6) and Wire1.setSCL(7) to select the pin.