OBD-II CAN-BUS Development Kit

Introduction¶

This kit allows you to interface with your vehicle's OBD-II interface. The kit includes a Serial CAN Bus module as well as a OBD-II Connector, with this kit you can get data from your vehicle easily. We provide an tutorial which is based on Arduino.

OBD-II (short for On-Board Diagnostics, Second Generation) is a set of standards for implementing a computer based system to control emissions from vehicles. It was first introduced in the United States in 1994, and became a requirement on all 1996 and newer US vehicles. Other countries, including

Canada, parts of the European Union, Japan, Australia, and Brazil adopted similar legislation. A large portion of the modern vehicle fleet supports OBD-II or one of its regional flavors.

Features¶

- Up to 1Mb/s CAN Bus rate
- DIY kit
- Multi-platform avaiable (Arduino, Raspberry, Beaglebone Board, etc.)
- Serial Communication
- Tutorial for Arduino

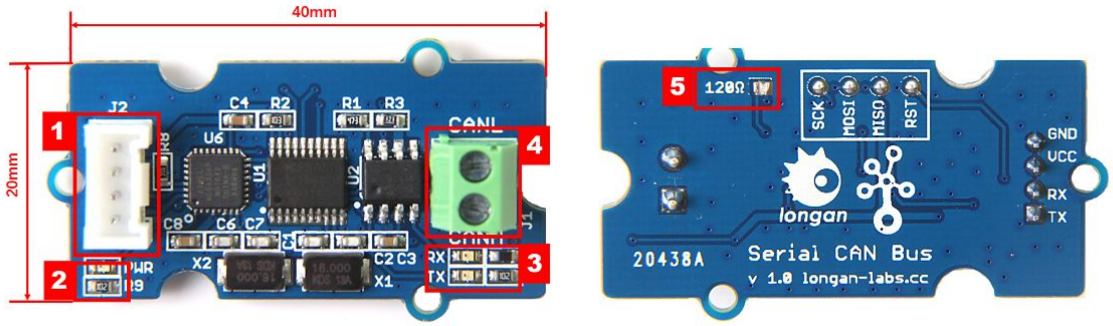
Partlist¶

1. Serial CAN Bus Module
2. OBD-II Connector
3. Screw Driver
4. Cable for CAN Bus
5. Grove Cable

Note

The kit don't include a controller board.

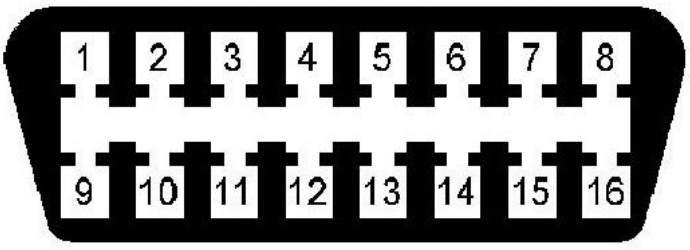
Hardware Overview of Serial CAN Bus Module¶



1. 4 pin 2.0mm Grove Connector
2. Power and status led indicator
3. Send and Recv led indicator
4. 3.5mm terminal to connect to CAN Bus (CAN_H & CAN_L)
5. 120Ω registor, default connected, if you don't need you cut this pad with a box cutter.

Hardware Connection¶

The kit includes an OBD-II connector, below is pins define of the connector.



PIN	DESCRIPTION	PIN	DESCRIPTION
1	Vendor Option	9	Vendor Option
2	J1850 Bus +	10	j1850 BUS
3	Vendor Option	11	Vendor Option
4	Chassis Ground	12	Vendor Option
5	Signal Ground	13	Vendor Option
6	CAN (J-2234) High	14	CAN (J-2234) Low
7	ISO 9141-2 K-Line	15	ISO 9141-2 Low
8	Vendor Option	16	Battery Power

OBD-II Connector and Pinout

The kit includes a cable as well, you need a soldering iron to connect the cable to the connector. As shown below.

Getting Started with Arduino¶

Here we will make a demo to read some value from a vehicle with an Arduino.

Download Arduino library of the board from:

https://github.com/Longan-Labs/Serial_CAN_Arduino

Open the example "obd_demo".

For this example, we use D2 as RX of software serial, D3 as TX. So you should connect D2 to TX of Serial can bus module, and D3 to RX.

After upload the sketch to Arduino, you can try connect OBD-II connector to your vehicle.

Open you serial monitor, try to input an OBD-PIDs, see if you can get some values from your vehicle.

Click to get more about:

https://en.wikipedia.org/wiki/OBD-II_PIDs

Reference¶

- Wiki for Serial CAN Bus module:
    - http://docs.longan-labs.cc/can_bus/
- Arduino Library:

    - https://github.com/Longan-Labs/Serial_CAN_Arduino
- Schematics of Serial CAN Bus Module in Eagle File:
    - https://docs.google.com/document/d/1f0i-njwzVAyzqK1B0QtF_wKIW3tAEc8mUgpqFC9O0LA/edit