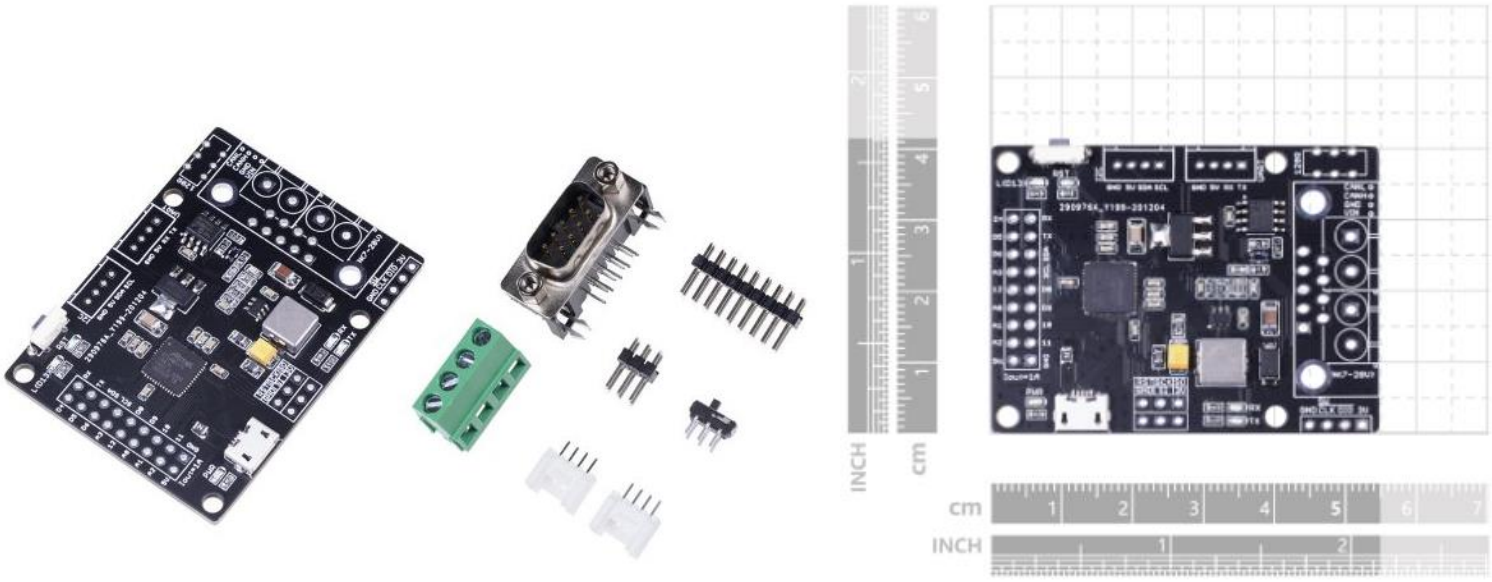


CANBed M4 Development Board with ATSAME51G19A MCU and MCP2542FD CAN Transceiver

SKU 102991495

CAN Bus is a common industrial bus because of its long travel distance, medium communication speed, and high reliability. It is commonly found on modern machine tools, such as an automotive diagnostic bus.
This CANBed M4 is the latest board of the CANBed family, with the ATSAME51G19A MCU and MCP2542FD CAN transceiver to achieve the CAN-FD capability.

What is CAN-BUS?

CAN stands for Controller Area Network, it is used to allow microcontrollers and devices to communicate with each other within a vehicle without a host computer which allows for control and data acquisition. These devices are also called Electronic Control Units (ECU) and they enable communication between all parts of a vehicle. Today, you can find up to 70 ECUs in a modern car. CAN is a serial communication bus designed for industrial and automotive applications. For example, they are found in vehicles, farming equipment, industrial environments, etc.

How does CAN-BUS work?

The fuel level, door sensors, odometer, and many more parts of a car must communicate with each other somehow, and CAN BUS is what they used to do. These CAN-compatible components, which are called “nodes” are connected with a 3-string copper wire, with no central router to govern the flow of data. Every node can hear the messages of every other node.

Every node has an ID, where the ones with the higher priority ID can have the priority to “talk” first while the others “listen.” This is to ensure that there are never two nodes talking at the same time. The biggest benefit of CAN-BUS is to be able to just connect components without having to worry about signal routing.

Features

- Supports CAN-FD and CAN2.0
- Powerful ATSAME51G19A 32bit Cortex M4 core
- Industrial standard 9-pin sub-D connector or a 4-pin terminal connector
- OBD-II and CAN standard pinout selectable at the sub-D connector
- 2x4-pin connector compatible with Grove ecosystem

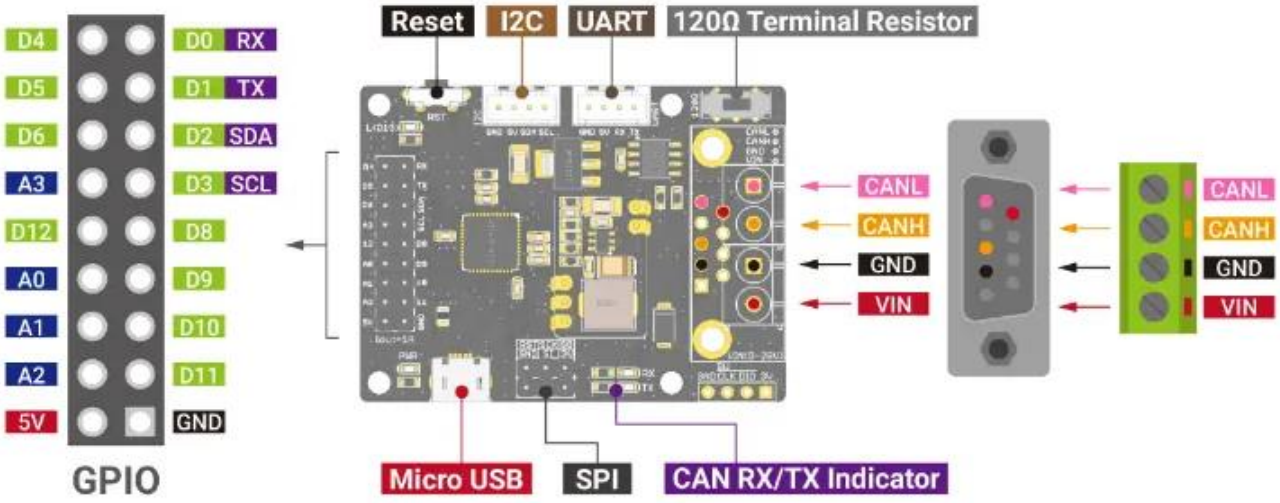
Application

- Car Hacking: easily connect the circuit board to the OBD interface, get the data such as temperature, position, stability of your vehicle
- Easy building prototype: Powerful ATSAME51G19A 32bit Cortex M4 core helps build various prototypes.

Specification

- MCU - ATSAME51 32bit Cortex M4 core
- Clock speed - 120MHz
- Flash memory - 512KB
- RAM - 192KB
- EEPROM - No EEPROM
- Input voltage - 7~28V
- Input interface - Sub-D as well as Terminal
- Size - 56x41mm

Hardware Overview



1.9x2 IO Pin OUT
2.ATSAME51G19A
2. Reset Button
3. Micro USB connector for programming
4. SPI Interface
5. CAN RX/TX Indicator
6. sub-D connector or Terminal for CAN Bus
7. Switch for the 120Ω terminal resistor for CAN Bus
8. Grove connector for UART
9. Grove connector for I2C

Part List

CANBed M4 PCBA	1
Sub-D Connector	1
4PIN Terminal	1
4PIN 2.0 Connector	2
9x2 2.54 Header	1
2x3 2.54 Header	1

FAQ

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 terminal resistor
- Cehck if CANH and CANL is connected correct