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SK Pang electronics TEENSY4.0-OBDII-SIM-EN CAN Bus ECU Simulator include Teensy User Guide

Contents

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Product Information

Specifications:

- **Product Name**: Teensy 4.0 OBDII CAN-Bus ECU Simulator with Enclosure
- **Model Number:** TEENSY4.0-OBDII-SIM-EN
- **Manufacturer:** SK Pang Electronics Ltd

Product Usage Instructions

Power Supply
The simulator is supplied with a 12v PSU with plugs for US, UK, EU, AU. Swap out the plug to suit your country. Plug the PSU into the mains and switch it on. Connect the cable to the +12v DC input of the simulator.

CAN Terminator
Ensure the CAN terminator switch is set to 1 (enabled).

Connection Setup
Connect your OBDII device to the OBDII port. Start your application to read the OBDII parameters.

Parameter Adjustment
Use the Parameter adjustment potentiometers to adjust the parameter value. The ACT indicator should flash when a request is being made.

MIL and DTC
Press the DTC switch to set the MIL indicator on. The MIL indicator can be cleared by sending a clear message in your application.

User Button
The SW1 switch can be used for your own function.

Firmware Modification:

You can modify the firmware to suit your own needs by following these steps:

1. Install Arduino IDE from: **Arduino Software**
2. Add Teensyduino add-on from: **Teensyduino Add-On**
3. Access Teensy sketch from: **Teensy Sketch Repository**
4. Refer to a list of OBDII PIDs from: **OBDII PIDs List**

Frequently Asked Questions (FAQ)

- **Can I use this simulator without connecting it to an OBDII device?**

  While the simulator is designed for testing OBDII interfaces, you can still adjust parameters using the potentiometers and observe the indicators without connecting to an OBDII device.

- **How do I know if the simulator is receiving power?**

  Check if the ACT indicator flashes when you adjust parameter values using the potentiometers. This indicates that the simulator is receiving power.
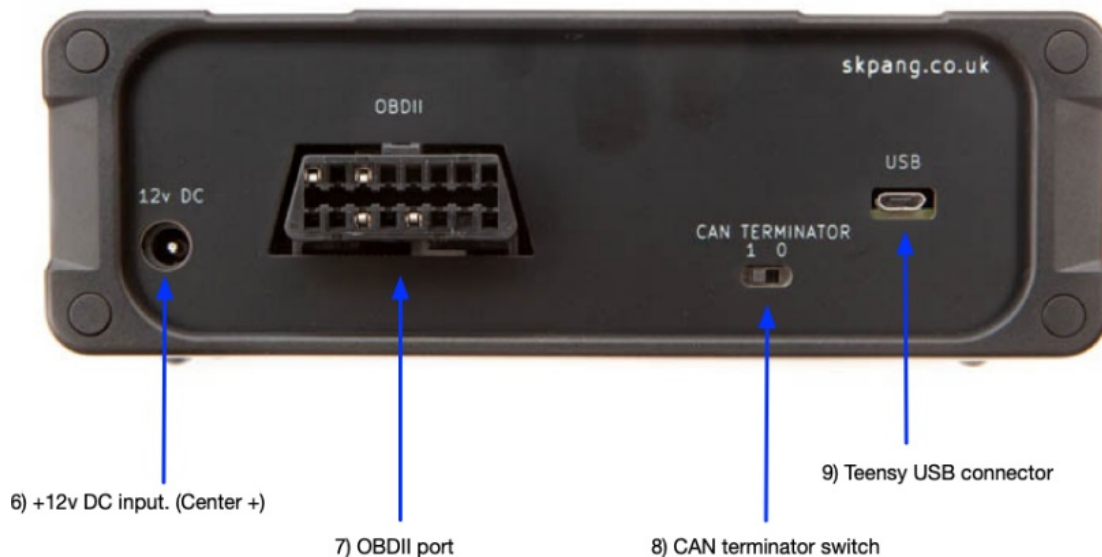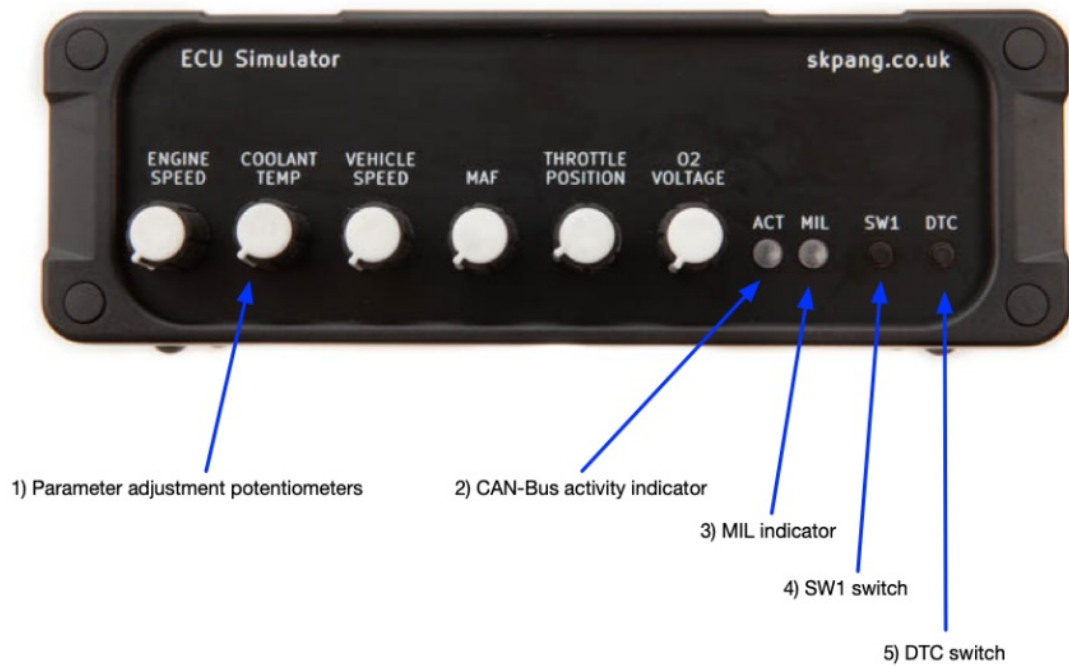
Introduction

This is a CAN-Bus OBDII ECU simulator using the Teensy 4.0 module (included). Useful for testing OBDII interface and writing diagnostic software. ECU PIDs parameters adjustable via potentiometers.

This unit requires a 12v supply. A 12v adapter is included with UK, US, EU, AU plug.

Features

- Teensy 4.0 module (installed)
- Teensy pre-programmed with OBDII ECU simulator firmware
- 500kb/s CAN speed
- Open source firmware
- Female OBDII socket with 12v supply to interface
- 6x potentiometers for PID adjustment
- 12v supply. External 12v PSU included with UK, US, EU AU plug
- **Firmware Features :**
  - SAE standard J1979. PIDs partially implemented. Mode 01, 02, 03
  - Adjustable PID parameters via potentiometers
  - Engine RPM
  - Throttle position
  - Vehicle speed
  - Coolant temperature
  - MAF airflow sensor
  - O2 sensor voltages
  - Setting and clearing Diagnostic Trouble Codes (DTC)

    Open source firmware, other PIDs can be added.

Overview

1) Parameter adjustment potentiometers
2) CAN-Bus activity indicator
3) MIL indicator
4) SW1 switch
5) DTC switch

6) +12v DC input. (Center +)
7) OBDII port
8) CAN terminator switch
9) Teensy USB connector

Usage

Power supply

- The simulator is supplied with a 12v PSU with plug for US, UK, EU, AU. Swap out plug to suit your country.
- Plug the PSU into the mains and switch on. Connect the cable to the +12v DC input (6) of the simulator.

CAN Terminator
Ensure the CAN terminator switch (8) is set to 1 (enabled).

Connect Up
Connect your OBDII device to the OBDII port (7). Start your application to read the OBDII parameters.

Parameter Adjust
Use the Parameter adjustment potentiometers (1) to adjust the parameter value. You should see the ACT indicator (2) flashes when a request is being made.

MIL and DTC

Press the DTC switch (5) this will set the MIL indictor on (3). The MIL indicator can be cleared by sending a clear message in your application.

User Button

SW1 switch (4) can be used for your own function.

Modifying the firmware

You can modify the firmware to suit your own needs. The Arduino IDE would need to be installed first: https://www.arduino.cc/en/software

- **Then the Teensyduino add-on: https://www.pjrc.com/teensy/teensyduino.html**
- **The Teensy sketch:**
  - **https://github.com/skpang/Teensy40_OBDII_simulator** A list of OBDII PIDs
  - **https://en.wikipedia.org/wiki/OBD-II_PIDs**

Documents / Resources

(document thumbnail: Teensy 4.0 OBDII CAN-Bus ECU Simulator USER GUIDE V1.0)	**SK Pang electronics TEENSY4.0-OBDII-SIM-EN CAN Bus ECU Simulator include Teensy** [pdf] User Guide TEENSY4.0-OBDII-SIM-EN CAN Bus ECU Simulator include Teensy, TEENSY4.0-OBDII-SIM-EN, CAN Bus ECU Simulator include Teensy, Simulator include Teensy, include Teensy

References

- **SK Pang Electronics Ltd - Electronic supply for engineer and hobbyist**
- **GitHub - skpang/Teensy40_OBDII_simulator**
- **Software | Arduino**
- **Teensyduino - Add-on for Arduino IDE to use Teensy USB development board**
- **User Manual**