

AutoSim Simulator III Documentation

Using the Simulator for the first time:

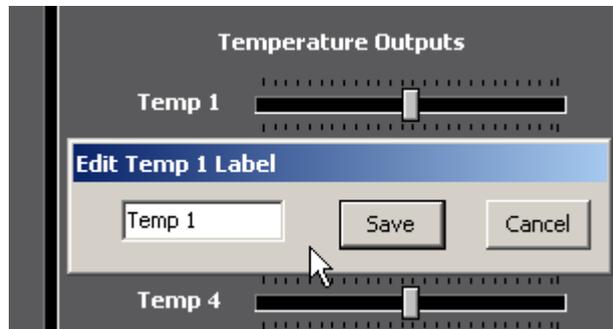
1. Connect the power supply to the rear of the adapter box.
2. Connect the USB cable to the adapter box and the PC.
3. Do not run the Simulator software. Wait until the PC has found the USB serial port and assigned a port number. You can check this has been done by looking at the Device Manager -> Ports.
4. Run the Simulator software.
5. From the "Edit" menu at the top of the screen select "USB Setup".
6. Select the USB port for the Simulator.
7. Select the "File" menu and click "Connect" You can also just press the F3 key. The software will then load the default settings from the adapter.

Using the Simulator:

Your settings can be stored into the adapter by selecting the menu "File->Store Changes" Also by pressing the F4 key. The storing can take quite a while. Around 40 seconds. Be patient and wait. You may think the software has locked up. It has not. The software will display this message while it is storing. The message will disappear when it is done.



Label names for Volt, Temperature, Switches, Camshafts, and Freq/Speed can be changed by double clicking on the labels. These changes are automatically stored in the autosim.ini file in the folder where the software is installed. The label names you create are automatically loaded every time you run the software. They are not stored in the simulator adaptor box.



Outputs:

Volt Outputs:

Send a 0 to 5 volt signal to the ECU. These are sensors like MAP, TPS, and Pressure sensors.

Temperature Outputs:

These are 5k variable resistance potentiometers. These can simulate ECT, IAT, oil and fuel temperature sensors.

Switch Outputs:

They have three positions. High (battery voltage) Off and Low (GND)

Speed Frequency:

These outputs have 5 volt 2k2 pull-up resistors. The square wave signals are adjustable from 10Hz to 3000 Hz. When the slider is in the far left position no signal is generated. These outputs can be use as wheel speed for launch control testing and traction control.

Trigger Outputs:

Non VVT Engines with crankshaft and camshaft signal.

Trigger 1 Crankshaft sensor signal.

Trigger 2 Camshaft signal.

GM LS 24 Tooth engines.

Trigger 1 Crankshaft front sensor signal

Trigger 2 Crankshaft rear sensor signal

Trigger 3 Camshaft signal.

McLaren 20-2

Trigger 1 Crankshaft front sensor signal

Trigger 2 Camshaft signal.

Trigger 3 Crankshaft rear sensor signal

Subaru 7-9.

Trigger 1 Crankshaft sensor signal.

Trigger 2 Camshaft signal.

Trigger 3 Inlet left hand bank camshaft signal.

Trigger 4 Inlet right hand bank camshaft signal.

Dual Cam VVT engines.

Trigger 1 Crankshaft sensor signal.

Trigger 2 Inlet camshaft signal.

Trigger 3 Exhaust camshaft signal.

Quad Cam VVT engines.

Trigger 1 Crankshaft sensor signal.

Trigger 2 Inlet left hand bank camshaft signal.

Trigger 3 Inlet right hand bank camshaft signal.

Trigger 4 Exhaust left hand bank camshaft signal.

Trigger 5 Exhaust right hand bank camshaft signal.

Inputs:

Five and Eight volt inputs. These will show the state of the ECU output supply voltages for sensors. They can be used to monitor any voltage from 0 to 10 volt for both the Five volt and Eight volt input.

Variable Camshafts:

Any trigger pattern for engines with variable valve timing the cams patterns can be advanced and retarded. This does not include cams that switch from one position to another.

Trigger Pattern Selection:

Patterns not in the list can be added for free if you provide the tooth count and edge locations. The AutoSim TriggerCreate software can be used to design the pattern. This software will save the pattern to a file that can be emailed to us.

If you want to just provide the pattern information we can still add the pattern. Information required is number of teeth on the crankshaft trigger wheel, and the number of missing teeth. For patterns with odd spacing the actual tooth edges in degrees of rotation need to be supplied. Camshaft information required is the number of teeth and their positions.

CAN Bus:

Before clicking the CAN Enable button, the CAN bus needs to be setup. Select "Tools->Setup CAN Bus" from the top menu bar to open the CAN Setup form. After making changes click the save button.

Bit Rate: 500 Kbit/Sec

Frame 1: Enabled, CAN ID: 1000, Transmit Rate: 10 Hz

Frame 2: Enabled, CAN ID: 0, Transmit Rate: 1 Hz

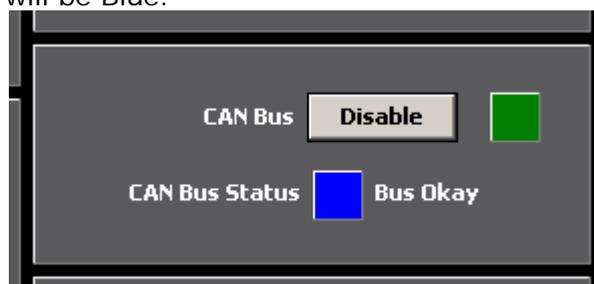
Frame 3: Enabled, CAN ID: 0, Transmit Rate: 1 Hz

Frame 4: Enabled, CAN ID: 0, Transmit Rate: 1 Hz, Frequency Signals to CAN

	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
Frame 1	50	100	80	125	5	11	72	81
Frame 2	0	0	0	0	0	0	0	0
Frame 3	0	0	0	0	0	0	0	0
Frame 4	0	0	0	0	0	0	0	0

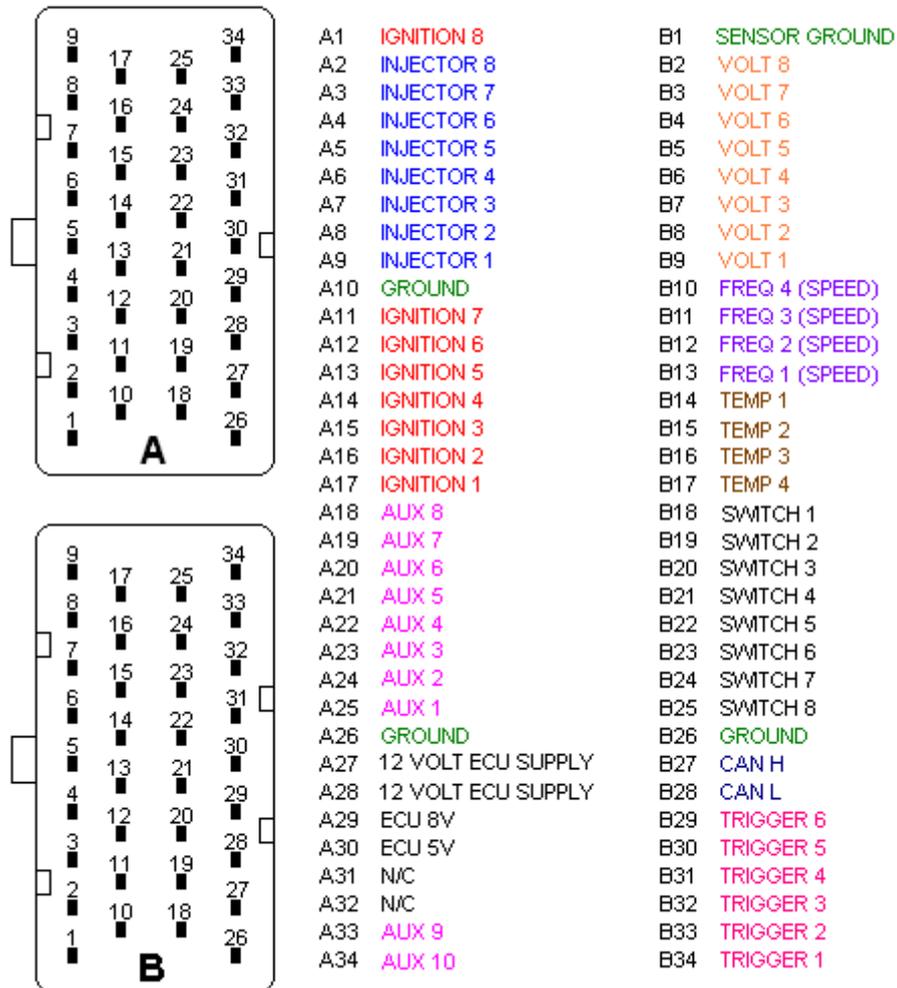
Save Cancel

Click the CAN Enable button. If everything is okay the enable LED will be green and the CAN bus status will be Blue.



If the CAN bus status is Red then there is a error. The cause of the error could be many things. Most common are, wrong Bit Rate or Incorrect wiring of the CAN high and CAN low wires.

Adapter Box Pinout



All grounds are common.