Introduction

Connecting ECM LambdaCAN hardware to ATI VISION software is simple and does not require any third-party software interface. Using the ECM Configuration Tool software to produce at .dbc database file, and the ATI VISION CANMonitor interface, any available hardware CAN interface can be used to read LambdaCAN data.

NOTE: While shown here for a single LambdaCAN module, the same procedure applies for any of ECM's CAN-based devices as well as for multiple modules simultaneously connected on the same bus.

Hardware Setup

A typical hardware configuration is shown in Figure 1. In this example, a Kvaser Leaf Light CAN-USB adapter is used. Other supported adapters have a similar procedure. Connect the DB9 CAN connector of the LambdaCAN to the PC to CAN adapter. Supply 11-28V DC (5A min. supply) to the LambdaCAN.
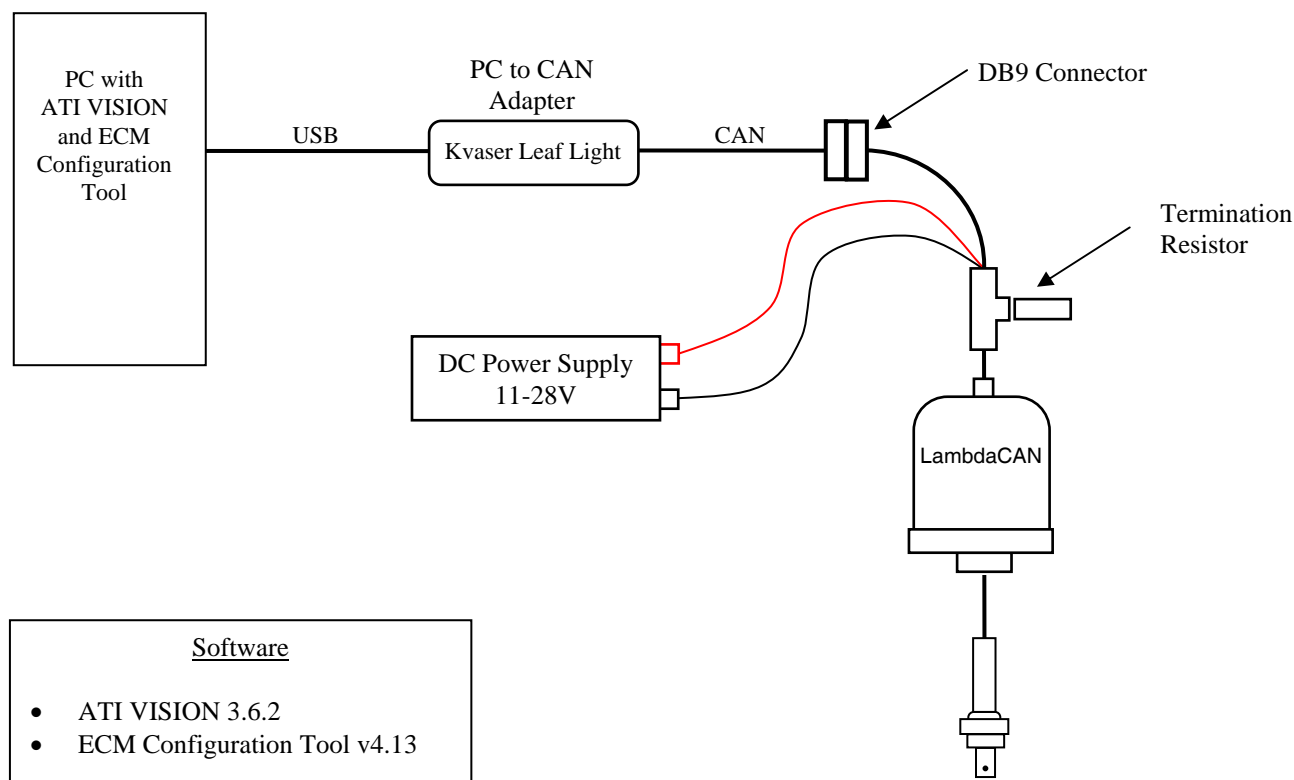

Figure 1: Equipment Schematic Layout

Creating a .dbc File

The ECM Configuration Tool is used to create a .dbc database file for describing the CAN messages broadcast from the LambdaCAN. All ECM products with a CAN interface use the CANopen protocol at 500kHz by default. To generate a .dbc file using ECM Configuration Tool:

1. Connect hardware as shown in Figure 1. Ensure LambdaCAN bi-color LED indicator near sensor connector is visible (green during normal operation, flashing red without sensor attached).
2. Run ECM Configuration Tool software, and select the Modules tab (or the Analyzers tab if connecting to 5200 series analyzers).
3. Select CAN adapter from drop down menus as shown in Figure 2, and click START.
4. After LambdaCAN module(s) have initialized, select desired parameters to transmit from the TPDO drop down menus for each module.
5. Click Generate .dbc, and save this file in a location such as the VISION Projects folder.
6. Click STOP to end CAN connection.

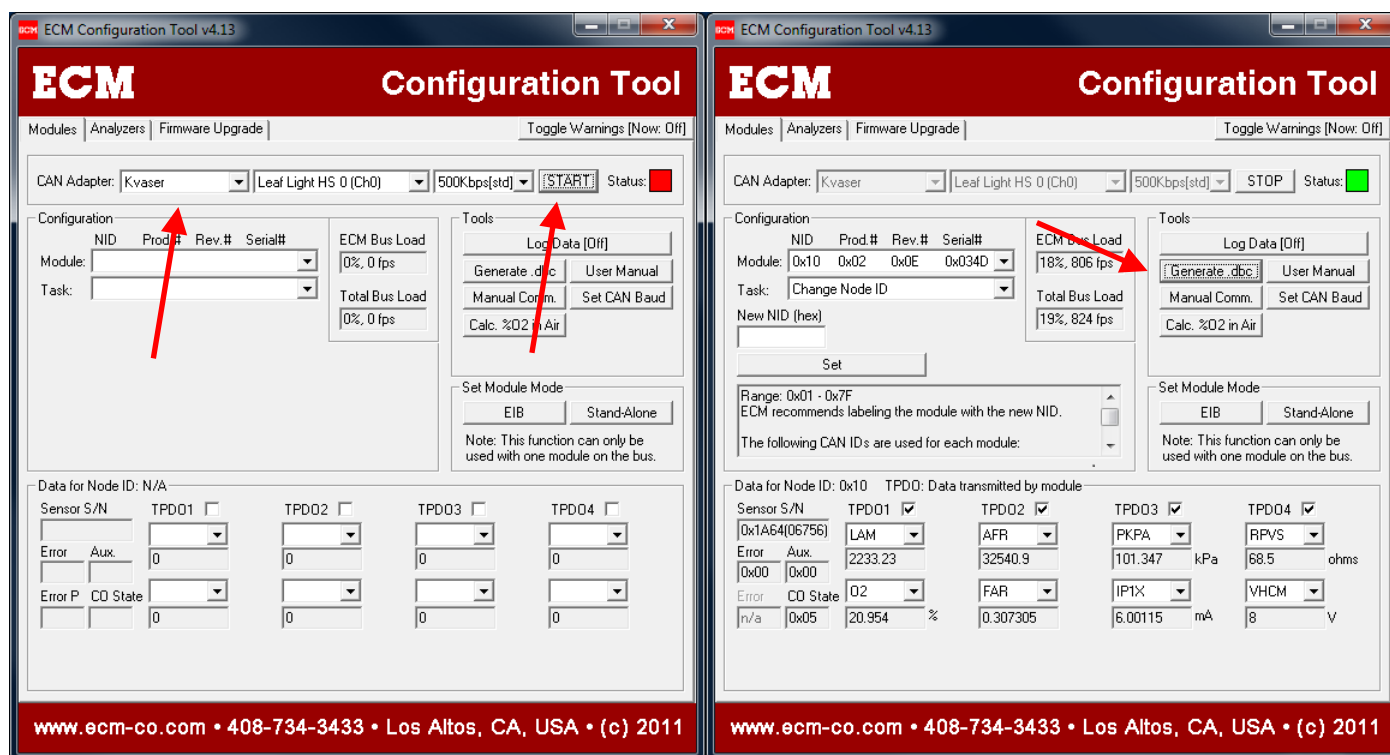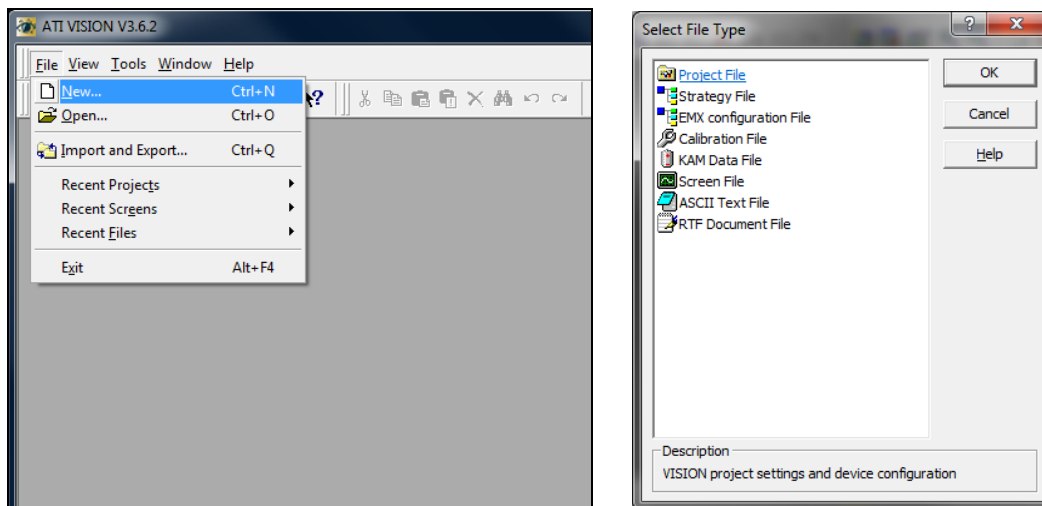   **NOTE:** Whenever TPDO's are modified, a new .dbc file must be created.

Figure 2: ECM Configuration Tool

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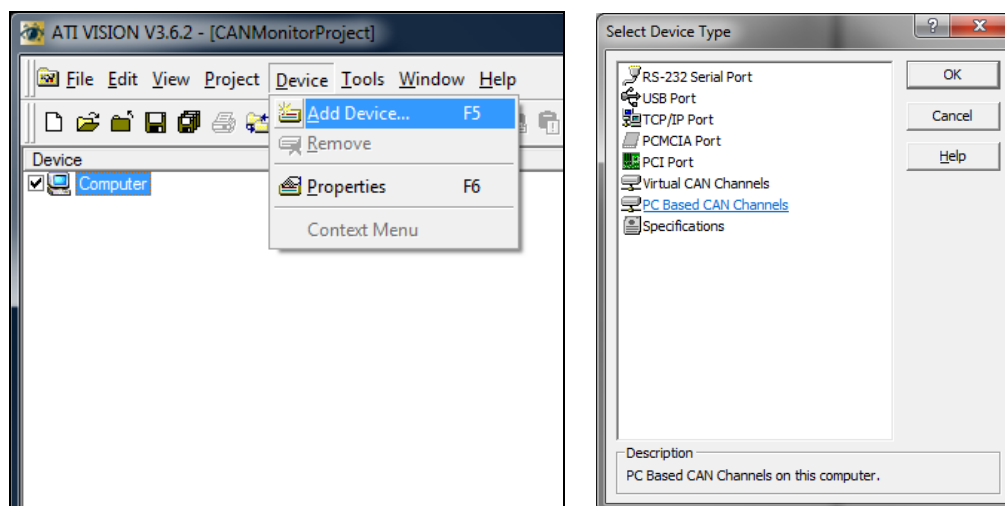ATI VISION Using CANMonitor**

Setup CANMonitor using ATI VISION

ATI VISION CANMonitor provides a method of reading general purpose information from any available CAN channel. The .dbc file generated by the ECM Configuration Tool is used to describe the format of the information available to VISION. To setup a CANMonitor in ATI VISION:
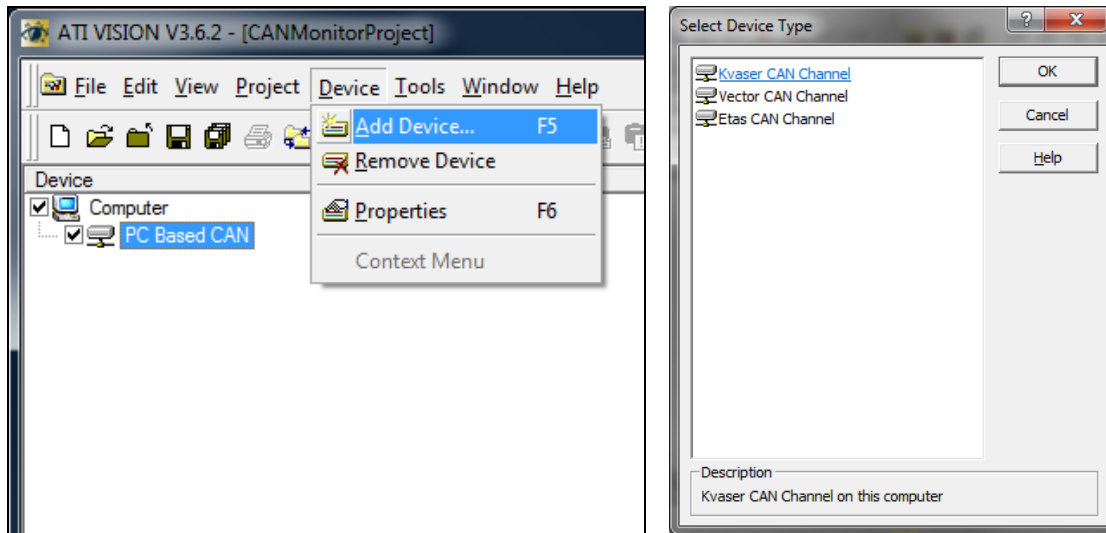
1. Run ATI VISION and open an existing Project File or create a new one by clicking File → New → Project File. In this example the Project has been named CANMonitorProject.
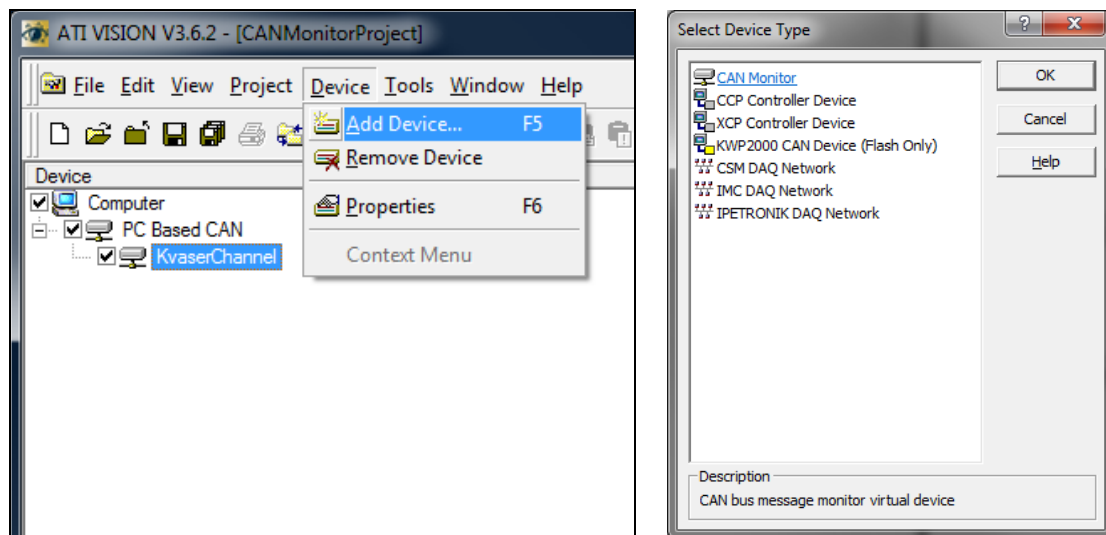
2. Add a Device by clicking Device → Add Device, select PC Based CAN Channels from the list.

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3. Add a physical hardware device by clicking Device → Add Device, and select Kvaser CAN Channel.

4. Select a CANMonitor device by again clicking Device → Add Device, and select CANMonitor.

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5. Add the .dbc file generated from the ECM Configuration Tool to CANMonitor by clicking Device → Add CAN Database and browsing to the previously created .dbc file.
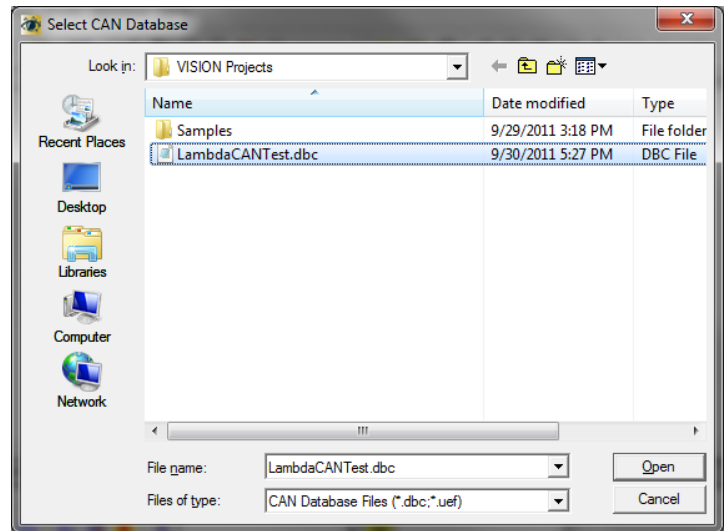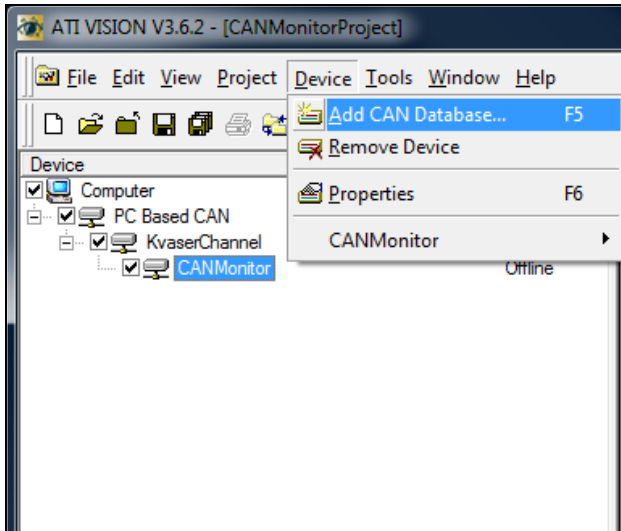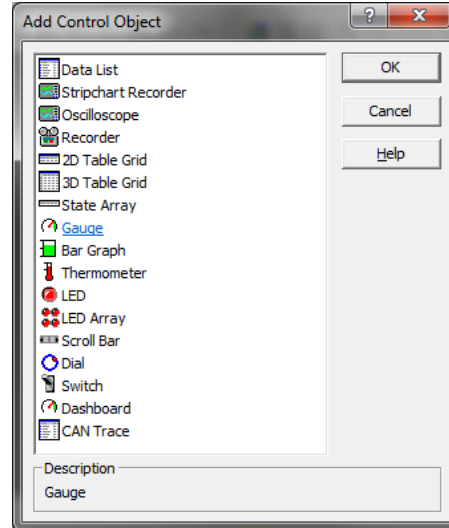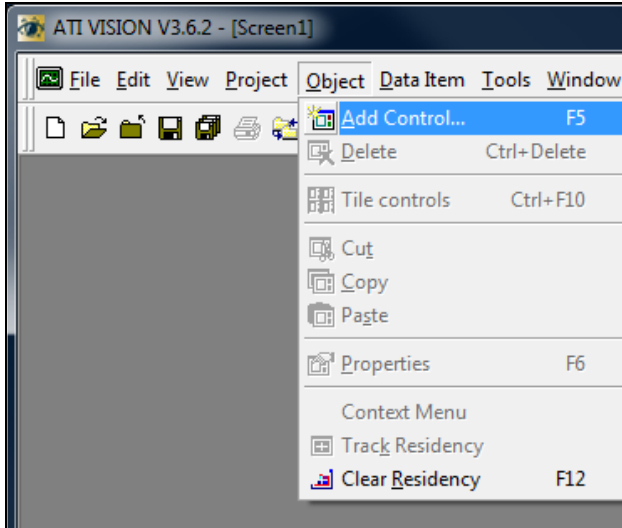

6. Enable the hardware by clicking Project → Online. The status of all of the devices should now show a Status of Online, and a value should appear in the Data Rate column of the Project window.
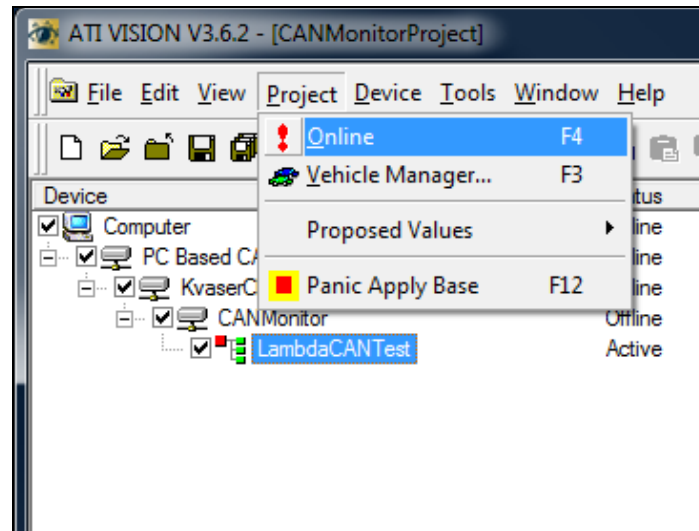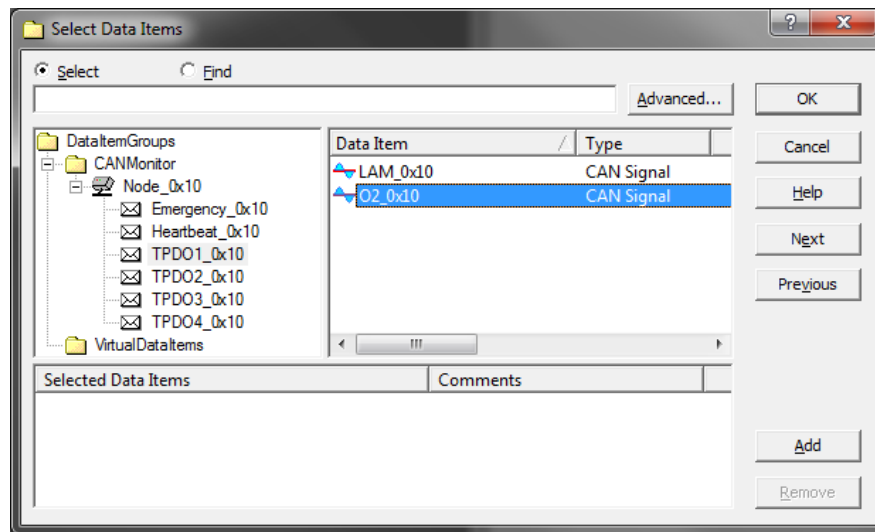
7. To view data, create a new Screen File and add a Control. Click File → New → Screen File
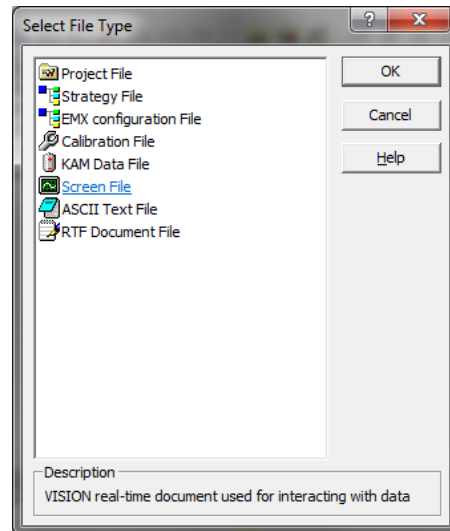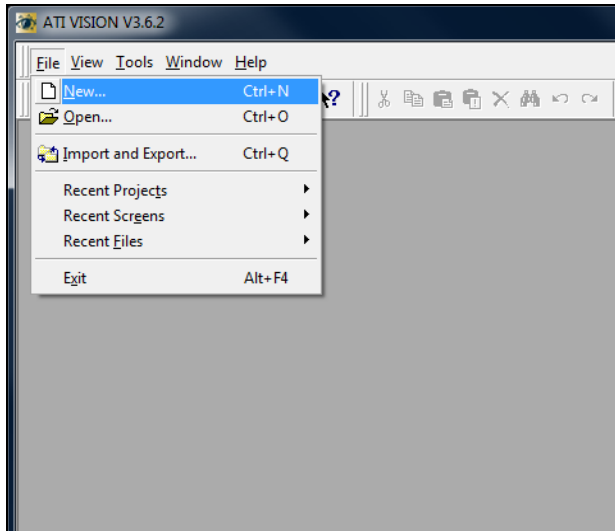
8. Select Object → Add Control → Gauge

9. In the Select Data Items window open the CANMonitor file tree to view all of the available signals. Here the O2% from Node 0x10 has been selected. Click OK to add the Data Item to the Control.

10. Data should be visible on the gauge.