
SmartWave Sensor Learn Instruction

Summary

This document contains the instructions to program vehicle sensors into the SmartWave system using the SmartWave Diagnostic Tool software.

Equipment

Hardware

- On-Vehicle J1939 Diagnostic Port
- J1939 CAN Adaptor (ie. Vansco DLA, USBLink)
- SmartWave Vehicle Harness
- J1939 Wireless Gateway (SmarTire Part # 200.0184)
- (Optional) LF Initiator (090.0006) or Maintenance Hand Tool (090.0011)

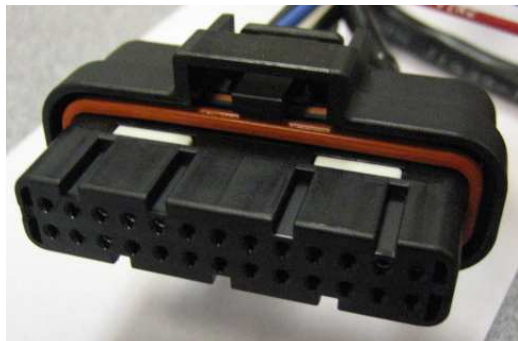
Software

- SmartWave Diagnostic Software (Version 1.0.25 or higher)
- PC with Microsoft Windows XP

Communications Setup

To setup communications over J1939:

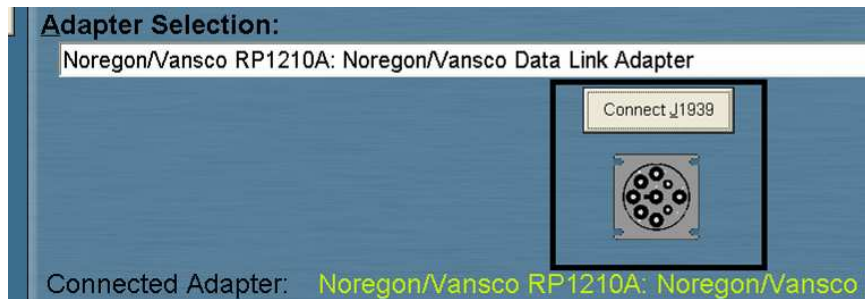
1. Connect the Gateway connector on the SmartWave harness to the vehicle's Gateway.



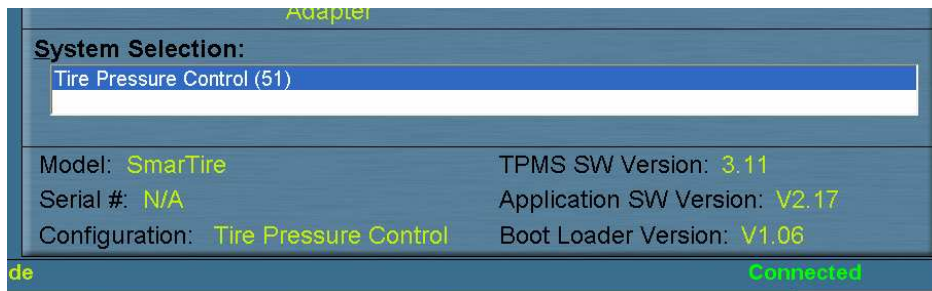
2. Connect the J1939 Diagnostic port of the harness to your PC-to-CAN adaptor (i.e. RP1210A).



3. Connect the harness' VIN1 and GND1 wires to 12-24VDC.
4. Apply power to the hardware.
5. Run SmartWave Diagnostic Tool.exe on your PC.
6. Select your J1939 Adaptor on the menu bar. If it doesn't appear in the Adaptor drop-down list, ensure you have the appropriate drivers installed on your computer.
7. Click 'Connect J1939' to start the interface communicating over J1939.



8. If the adaptor is correctly installed and identified, the TPM system details will be filled in at the bottom of the screen with information from the SmartWave Wireless Gateway.



Configuring Your Vehicle

There are two steps to having the Gateway learn your vehicle's configuration:

1. Axle/Tire configuration
2. Sensor Programming

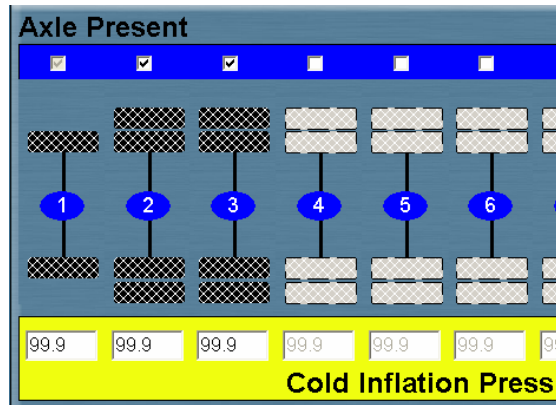
Axle/Tire Configuration

During this step, we must tell the Gateway how many tires there are in the vehicle and their locations. Also, we will program the Cold Inflation Pressures (CIP) and Alert Levels. The alert levels can be changed at anytime later without affecting the vehicle layout, but it is best to put a default value in at this time.

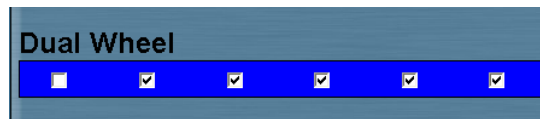
1. With the SmartWave Diagnostic Tool setup and running, click on the Setup tab (or press the F6 key).

The screenshot shows the SmartWave Diagnostic Tool interface in the Setup tab (F6). The main window is titled "Axle Present" and displays a grid of 12 columns representing axles. Each column has a checkbox at the top, all of which are checked. Below the grid, there are 12 input fields for "Cold Inflation Pressure : PSI (gauge)", each containing the value "99.9". Below the input fields, there is a "Dual Wheel" section with a row of 12 checkboxes, all of which are checked. At the bottom of the window, there are buttons for "Read Configuration", "Undo", and "Save Configuration". To the right of these buttons, it says "Configuration: Changed". The status bar at the bottom left shows "Normal Mode" and the bottom right shows "Connected".

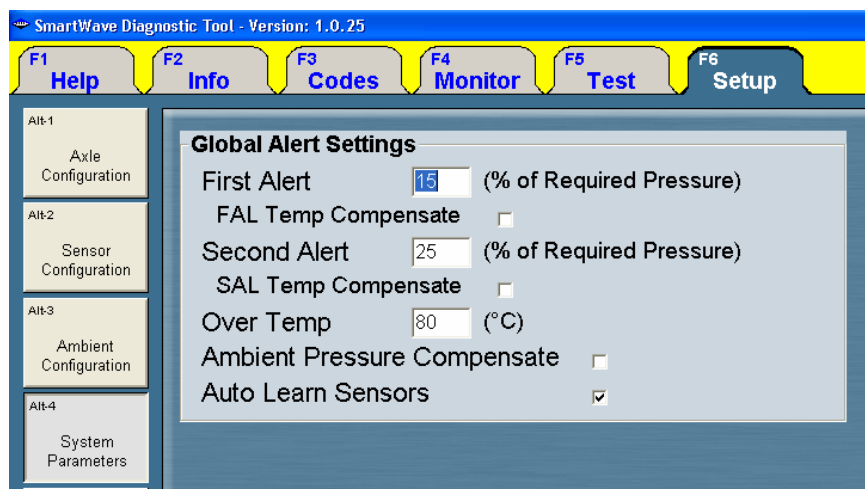
- To specify how many axles are present on the vehicle, click on the check mark after the last axle on your vehicle. Darkened axles and tires are active and can be programmed. Grayed out axles and tires are disabled.



- Next, ensure that all active axles have the correct number of tires assigned. Use the 'Dual Wheel' check box under each axle to configure this.



- When you've completed setting up the vehicle's axles, adjust the CIP values for each axle. If you would like to change the units being displayed, click the 'Unit's of Measure' button on the left side of the window (or press ALT-6).
- Now we will check the Alert levels to ensure they are the right values for your system. Click the 'System Parameters' button (or press ALT-4). SmartTire recommends that you use the default values that came programmed with the Wireless Gateway, but you can change them here if desired.



- Click the Axle Configuration button (or press ALT-1) to return to the Axle Configuration screen.

7. To save the settings you've entered to the Wireless Gateway, click 'Save Configuration' on the Axle Configuration screen.

To save the settings for use on another vehicle, click the 'Load/Save Configuration' button (or press ALT-5). On this screen, click 'Save Configuration' and choose the filename and location to save this file. Included in the saved file is:

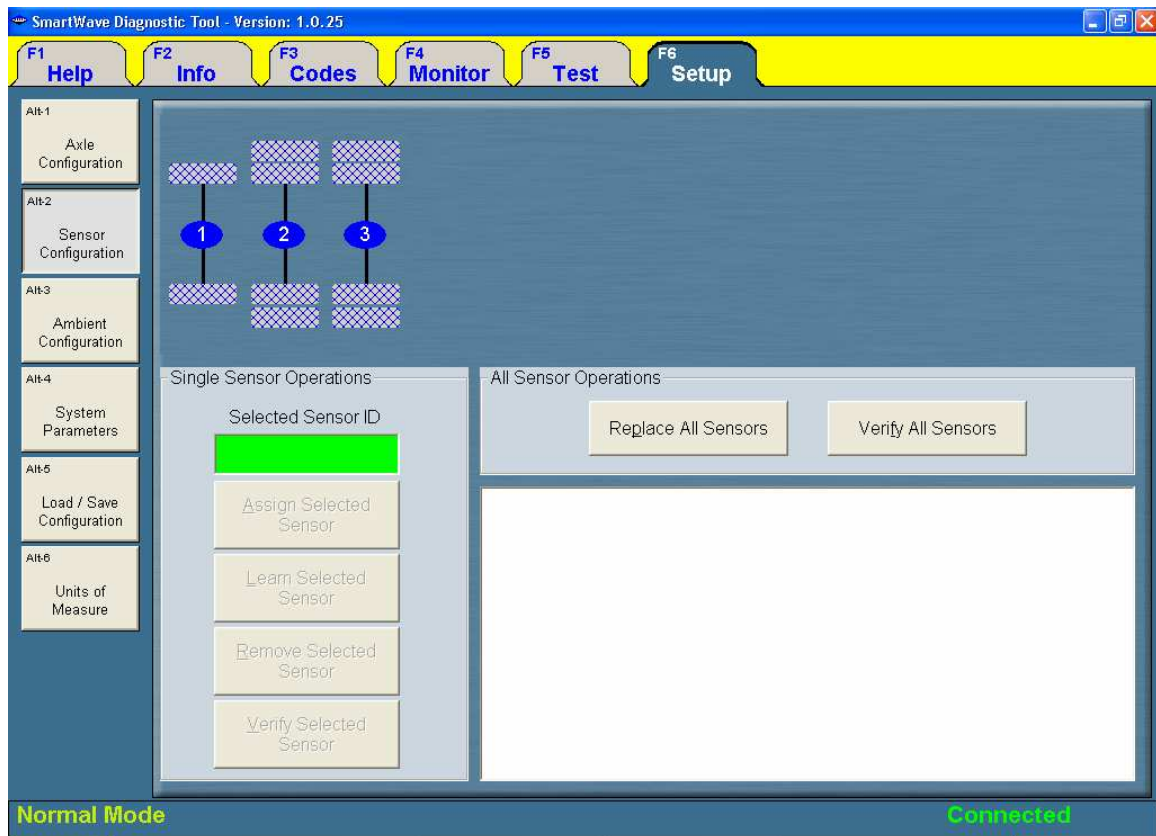
- Axle layout
- Axle CIP levels
- Alert Levels
- All Sensor IDs

Once you've saved a configuration, when you start the Diagnostic Tool the next time, you must simply go to the 'Load/Save Configuration' screen and click 'Load Configuration' to restore the complete profile you were working on previously. You can then proceed to programming the sensors into the new Gateway.

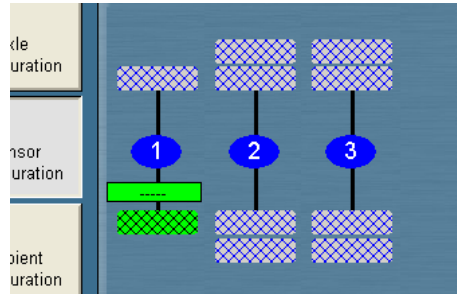
Learning Sensors

After setting up or loading a profile, you can begin programming sensors into the Gateway.

1. On the Setup tab, select the 'Sensor Configuration' button.



2. Select the tire you wish to program.



3. Each sensor has a unique ID that the Gateway uses to identify it. You can either enter this ID into the Gateway manually, or trigger the sensor to identify itself and have the Gateway automatically learn it.

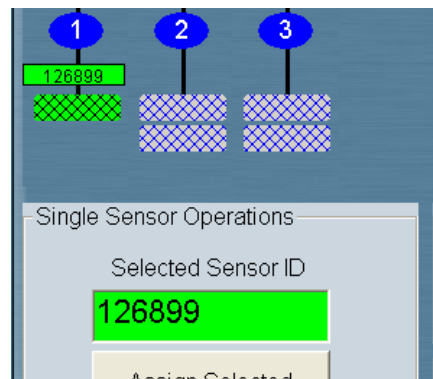
Having the Gateway identify the sensor is a slower method than manual entering the ID, but it is particularly useful if a sensor has already been installed in a tire.

Manual Sensor Learn

- a. To do a manual sensor learn enter the ID of the sensor into the green dashed text box. The ID for the sensor is the 7 digit code on the top label of the sensor (i.e. 101-1-4-#####).



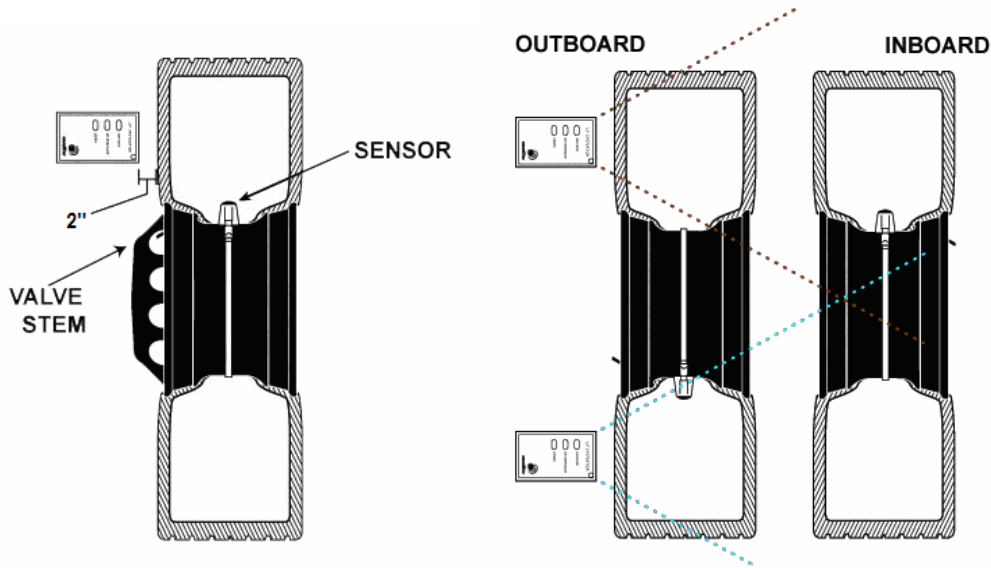
- b. Now click 'Assign Selected Sensor'. The sensor ID will then appear on the tire map.



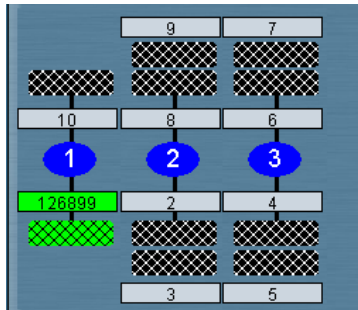
Gateway Sensor Learn

- a. To have the Gateway detect a sensor's ID, click the 'Learn Selected Sensor' button.
- b. You now need to trigger a Learn transmission from the tire within the next two minutes (or press ESC to cancel). This can be done using our LF Initiator Tool or Maintenance Hand Tool.

Press the Learn button with the device in the appropriate position shown below.



- c. Once triggered, it can take up to 30 seconds for the Gateway to receive the transmission and complete the learn process. When successful, the sensor icon in the tire map will turn green and the detected ID will be displayed.
4. Perform the above steps for each sensor on the tire map.



5. Sensor programming is now complete and the sensors are stored on the Gateway.