

(The following instructions are an excerpt from the Record CG3 User Guide)

4.5 Setting up the CG3 OBDII Interface



As of Software Version 1.18, the CG3 provides a **superior alternative** to measuring distance by sampling speed data from the On-Board Diagnostics Port, version 2 (OBDII). The speed data is then converted to distance. **This provides a faster, cleaner installation.** The advantages of using this feature are:

- No need to search for a Vehicle Speed Sensor (VSS) wire, which usually requires accessing one of the Electronic Control Modules (ECM) in the automobile.
- No need to calibrate the taximeter.
- Completely eliminates problems with accuracy caused by noise and weak VSS signals.
- Overcomes the problem where an automobile does not have a dedicated VSS available (an increasing problem with modern vehicles).
- Greatly reduces the time and cost of installation. Where traditional installations can take hours, this method reduces install to minutes. For sizeable taxi fleets, this can result in savings for labor and down-time in the range of tens of thousands of dollars per year.
- Reliable fare accuracy over the long run, eliminating the risk of lost revenue.

To use this option, your CG3 must contain software version 1.18 or higher (we make software updates freely available on our website). Also, you must have a compatible OBDII interface device that connects to the CG3 (either via Bluetooth or RS-232 cable) and will plug into the automotive OBDII port. See the following link to our website for such an adaptor:

<http://recordtechnologies.com/collections/taximeters/products/black-cat-adaptor>

NOTE: We have found with experience that older North American vehicles (pre-2007) are hit-and-miss when it comes to sampling speed from the OBDII port, and therefore we can't guarantee that this method will necessarily work in those vehicles. If you plan on using an older vehicle, call us first and we'll do our best in helping you determine if using the OBDII port for distance measuring will work or not

1.0 Setup Steps:

The CG3 must first be configured to use the OBDII option. To do so, follow the steps below:

- 1) With the automobile ignition OFF, plug the OBDII interface into the automobile OBDII port. The OBDII port is normally located on the driver's side, below the dash. **NOTE: Only plug or unplug OBDII device when vehicle ignition OFF.**
- 2) If you are using an RS-232 interface to connect the CG3 to the OBDII interface, connect the matching serial connectors.
- 3) Turn on automobile ignition.
- 4) Enter the CG3 **Configuration Menu**¹ and press  twice to **navigate** to the OBDII settings:



- 4) Press  to **select** the OBDII settings.

5) If the display shows “OBD OFF”, press  to turn on the taximeter's OBDII interface. The display will now show “Obd On”, which means that the taximeter's OBDII communication is now active.

Note: By turning on the OBDII communication, you are also turning off VSS pulse-counting in the taximeter. If you later want to switch to sampling speed pulses for measuring distance, you will have to return to this step and turn off the OBDII feature (i.e. “Obd OFF”).



Figure 17: Toggle the OBDII feature by pressing the Up button.

- 6) Press . You will now be presented with the option to set which port on the CG3 that will be used to communicate with the OBDII interface device:



- 7) You may toggle between RS232 or Bluetooth communication by pressing .
- 8) Press  to select the communication type that will be used.

The OBDII interface is now configured. **NOTE: You don't have to do this every time you start a shift. If you ever need to do a manual reboot of the interface, use the “Start” command instead (see 4.5.1 and 4.5.2 for an explanation).**

¹ See sections 4.4 and 4.4.1 of the Record CG3 User Guide for details about the Configuration Menu.

If you are using a Bluetooth interface, the CG3 will automatically search for and pair with the device.

The CG3 will now reset the OBDII interface, and commence communication with the automobile. The CG3 may briefly display “No OBD2” until communication with the OBDII begins:



You should see the LED's on the OBDII interface blink as the CG3 sends commands to it. Once the initialization procedure is complete, the CG3 will briefly flash “DONE”.

2.0 OBDII Settings Menu

Once the OBDII feature is ON, you may now access additional OBDII settings and features from either the **Main Menu**² or the **Configuration Menu**³. The options and settings are listed below in the order they can be accessed. Note: **The CG3 communication to the OBDII may only be turned ON or OFF from within the Configuration Menu.**

- 1) While in either the Main Menu or Configuration Menu, press  repeatedly until “Obd2” is displayed:



- 2) Press  to select. The CG3 will now provide access to the **OBDII Menu**, which you can now navigate in step 3).
- 3) The list of options are as follows (press  DOWN to scroll, and  to select an option).

- i) **Set Port** - Select between RS-232 (cable) or Bluetooth

- ii) **Set Units** - Select between Metric and U.S. imperial

- iii) **Start** - Manually start or reset the OBDII interface

- iv) **Test** – Test the OBDII interface.

² See section 5.0 of the Record CG3 User Guide for details about the Main Menu.

³ See sections 4.4 and 4.4.1 of the Record CG3 User Guide for details about the Configuration Menu.

3.0 Explanation of OBDII menu options

The following section provides details about each OBDII menu option.

- 1)  - **Set Port** allows the user to select the OBDII port to communicate with the OBDII interface. You may select between Bluetooth and RS-232.

- Press  to toggle between Bluetooth and RS-232 serial communication:



- Press  to select.

- 2)  - **Set Units** allows the user to select between Metric (km) or U.S. Imperial (miles) units of measurement. The OBDII interface reports speed in Metric, so using this option will automatically convert speed and distance to Imperial if required. **You will need to set the CG3 to the proper unit for your country in order to have the taximeter calculate the fare correctly.**

- Press  to toggle between Metric (Cdn = Canadian) and Imperial (US = US Imperial):



- Press  to select the required system of measurement for your locale.

- 3)  - The **Start** option allows the user to **manually reset** the OBDII interface. Normally, if the CG3 encounters a communication problem it will automatically reset the interface without requiring user intervention. However, in the event that the user accidentally disconnects the CG3 serial cable from the OBDII interface (if using RS-232 serial communication) during operation, the user can “reboot” the interface by using this step.

- Press  to select. The CG3 will now reset the OBDII interface.

4)



- You can **test** the OBDII interface by using this option.

- Press  to start a test of the OBDII interface.
- The following information will be displayed:



The value in the Fare display shows **the current vehicle speed** (in this case, 60 km/miles per hour, depending on the system of measurement selected in in step 2 above). The value in the Extra display roughly corresponds to the number of seconds since the test started, and is actually the **number of speed samples x10** that have been accumulated (the CG3 samples speed information at a rate of 10 times per second). In the example above, 140 samples have occurred since the start of the test.

Press  to exit the test.