BLUELINK
DIAGNOSTIC SOLUTIONS INC.
The Source for Automotive Diagnostics

BlueLink Diagnostic Solutions – Client
CAN Analyzer
OBD II

USER'S MANUAL

Table of Contents

A. Overview

Welcome to BlueLink Diagnostic Solutions! Thank you for choosing to purchase our product. You now own a solution that is more than just a factory tool. It is a gateway to utilizing a number of data-driven services.

The BlueLink solution represents a "new" way forward in automotive diagnostic testing. It is an end-to-end tool that delivers solutions to the technician rather than just access to third party information. Our full system (with a monthly subscription) leverages seamless integration of the Internet and access to expert technician support and streamed online diagnostics to focus on restoring maximum efficiency in the service bay.
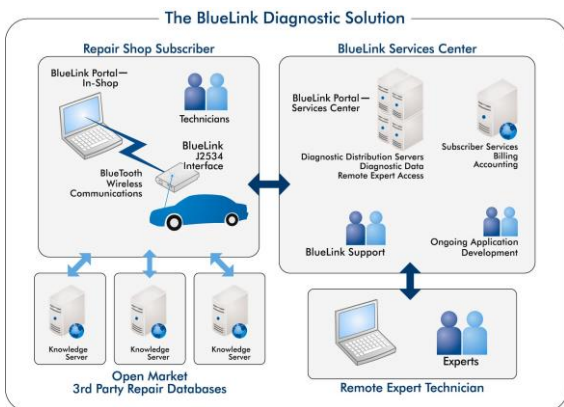
B. Support

E-mail Support:
Any customer requests or questions can be e-mailed directly to BL-Support@BlueLinkDiag.com. This will immediately be sent to all members of our BlueLink Support Team.

Telephone Support:
Telephone support is usually available during normal hours of operation, Monday through Friday 8:30am - 5:00pm Eastern Time, at: (919) 226-1377

Online Live! Support:
We can easily provide support via live desktop control for technical issues, or for first-time users with questions regarding software use. Please email or call us to request a meeting and we'll gladly schedule one! Support for installation or use of your Diagnostic Client is always free.

C. Requirements

The recommended configuration is:

- Laptop with 1GHz+ P4 processor
- Microsoft Windows XP Professional SP3, Vista or Windows 7
- 500 MB hard drive space
- 512 MB internal RAM
- 1280x800 or greater screen resolution
- CD-ROM Drive & USB 2.0
- Internet connection via IEEE-802.11b or higher wireless interface (preferred) or RJ-45 Ethernet interface
- *IEEE-802.11b or higher wireless router (preferred) or router with wired RJ-45 port. The router needs to be part of existing infrastructure within the service facility. A wireless router should be located no more than 300 feet from the service area.*

D.1 Installation – BlueLink Software
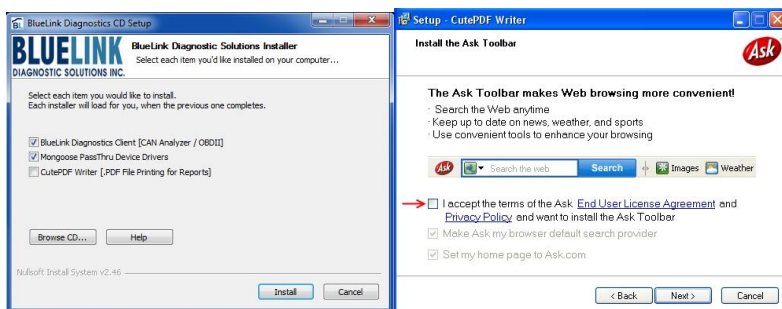
1. Insert the CD into your computer. Setup will auto start.
2. Click '*Install'* and setup will automatically start all the installers for you.

Notes:
- If installation does not auto run, go to your CD Drive and **Double-Click**: "*CD_Setup.exe"* to run this setup.
- For older machines and machines without the necessary prerequisites, initial installation can take up to **20** minutes.

3. CutePDF Writer is *optional.* Installing this will allow you to "Print" from any program (including the Diagnostics Client) straight to a .PDF file on your computer. This allows you to easily email reports to your clients.
4. If you elect to install CutePDF, **uncheck** the box to install the ASK Toolbar.
5. This will complete the installation of our BlueLink Software.

After completing the CD Installation, it is time to plug in the Mongoose:

Understanding the Mongoose Indicator Light:

If your Mongoose is solid red, 🔴 it means that it is *NOT* installed properly yet.
If your Mongoose is blinking green, 🟢 you have *successfully* installed it.

For Windows 7 or Windows Vista:

1. Connect the Mongoose cable to a USB port on your PC. Windows will detect the Mongoose automatically and install the drivers without prompting you.

For Windows XP Service Pack 3:

1. After connecting the Mongoose the Found New Hardware Wizard will pop-up automatically. Select "*No, not this time*" and click next.
2. Next, choose *"Install the software automatically."*
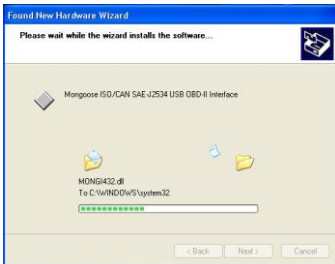
3. If a dialog box pops up indicating that Mongoose has not passed Windows Logo testing, click *"Continue Anyway."*
4. Setup will copy files and complete.
5. Click *"Finish."*

The BlueLink Launcher...

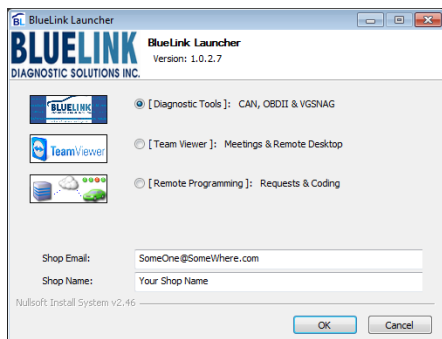The first thing to notice after installation is a new BlueLink Icon on your desktop. This "Launcher" is where all your BlueLink activities will start.

...is More than just a unified starting point!

The Launcher will automatically update itself and any of the programs you run from it if a new version is available.

This means you are always guaranteed to have the newest application data, best support experience and the safest remote coding right at your fingertips.

And it couldn't be easier...
Just select the product you'd like to use, and press *"OK."* The Launcher will let you know if updates are available and they are always free to apply.

[Diagnostic Tools]: CAN, OBDII & VGSNAG
This is the program also known as the *"CAN Analyzer"*, *"OBD II Program"*, *"VGSNAG Tool"* or the *"Diagnostic Client."* It runs locally on your machine using the data services you purchased to diagnose vehicles.

[Team Viewer]: Meetings & Remote Desktop
If you purchased an annual BDS Online subscription from us, you have access to receiving support from experts who use BlueLink as a means of providing support to their customers *(Fees for their services may apply)*. Here, they can remotely control your computer and assist with diagnostics.

[Remote Programming]: Requests & Coding
Lastly, some experts may also send control unit programming and diagnostics over the internet directly to your vehicle! Through this app you can make requests for codings by entering your VIN & Production Date. A technician will automatically call you when your position is up in the queue.

Main Navigation Buttons:
Buttons will light up automatically when they are valid for usage on the current diagnostic page. If they are dimmed out, it is not currently available.

To use a button, you can either press its hotkey or click it with the mouse:

F5: Unselect All – Unchecks all checkboxes on the current page.

F6: Select All – Checks all checkboxes on the current page.

F7: Print Report – Generates a report to print of the current page.
(If you opted to install CutePDF, when you choose print, select the
"*CutePDF Writer"* as your printer and select **OK**. Then type a file name
and provide a location to save the PDF file.)

F8: Application Settings – Press to open the dialog below:

Display Units: Some values can be
displayed in either *US* or *SI.*

Auto-Connect Device: Setting this
to *True* will connect the current
PassThru Device on Startup. *False*
will prompt before doing so.

PassThru Device: Select the device
the application will use. Changing
from one to another will reset the
application to the Introduction page.

Shop Info: Populating these fields
will automatically put them on
reports that you print.

Generate Trace: Leave as *False.* This will enable the Tracing Engine and allow
us to see scripts you run, should you require assistance.

F9: Navigate Back – Returns you to the previous page.

F10: Reset Page – Resets the current page to its initial state.

**F11:** Execute Test – Executes the test on the current page.

F12: Navigate Forward – Navigate to the next page.

Connect/Reconnect Device: Due to ignition cycling, changing vehicles, or the nature of 2534 devices, it is necessary sometimes to reset the app. Press this to close the PassThru Device and reset to the Intro Page.

Background:

In Mercedes-based vehicles there is a common bus known as "Body CAN", which several control units are connected to. A control unit that fails completely [Dead Control Unit] can be detected via normal diagnostics such as SDS.

However, due to the nature of the components within control units, some can continue to perform their intended operation while also causing a continuous current draw with the ignition off [Failure to Sleep]. The current-drawing unit is difficult to determine as SDS reports no problem, and the technician will find its controls function correctly (Ex: Seat position & headrest controls still work on a current-drawing SCM). This is known as a unit which "fails to sleep".
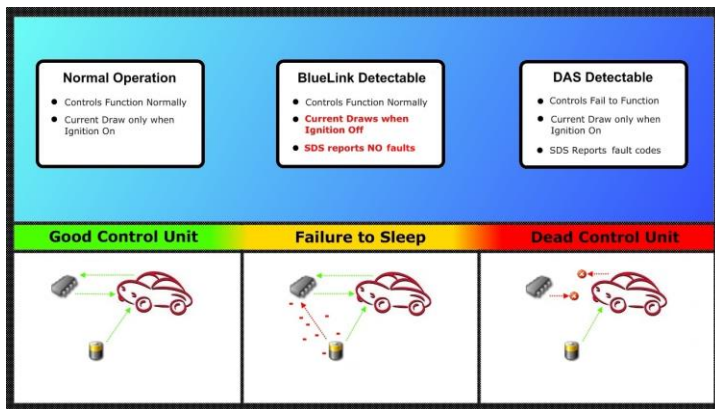
BlueLink Solution via CAN Analyzer:

Failure to sleep itself causes no immediate threats. The control unit after all, functions normally. Over time however, this rogue current draw of two amps or more will completely drain the battery. Furthermore, while in this state, the malfunction cannot be detected by SDS which makes diagnosis difficult. Any attempt to communicate via SDS will wake all bus-connected control units.

Hence, the BlueLink Diagnostics CAN Analyzer database provides a first-time solution to technicians attempting to determine which control unit is faulty. Control units which fail to sleep and keep the car awake can be detected, and therefore easily identified for replacement.

This test process is simply repeated until all faulty control units in the vehicle have been replaced, whereby eliminating all current draw when the ignition is off, ensuring proper vehicle operation.

Diagnostic Procedure (CAN Analyzer – Normal Test):
When you know a vehicle has a battery drain, the procedure for determining which
control unit(s) are waking the Body CAN Bus is as follows:

Determining that it is appropriate to use "Normal Test":
 - Customer's vehicle exhibits a battery drain (CAN stays awake)
 - Vehicle has been diagnosed with SDS or similar and no faults were found

Determining which control unit(s) are waking the CAN Bus:
 - Follow the instructions in the Connectivity / Software Guide
 - It is **IMPORTANT** to wait for the vehicle to attempt to sleep before
   executing the test. Ensure that you have not opened any doors, or
   cycled the ignition for 1 - 5 minutes to guarantee that all control
   units *should* currently be asleep

Interpreting the Results:
 - Control Units that wake the bus will show up on the screen letting you
   know the description of the control unit to replace
 - It is **IMPORTANT** to **RE-RUN** the test to check for additional control
   units after replacing or disconnecting the first one
 - Continue to re-run the test until you see the dialog indicating that
   "The Body CAN Bus is asleep"

Diagnostic Procedure (Not Ready to Sleep):
If you run the CAN Analyzer (Normal Test) and receive a message that "The Body
CAN Bus is awake (ACTIVE), but all communications appear normal", run this test
to see which control units are not ready to sleep.

Determining that it is appropriate to use "Not Ready to Sleep Test":
 - CAN is awake, yet cannot be diagnosed with the "Normal Test"

Determining which control unit(s) are failing to sleep:
 - Follow the instructions in the Connectivity / Software Guide
 - Run the "Not Ready to Sleep Test". These units are not necessarily bad,
   but could be and/or are related to why the CAN bus is unable to sleep.

Diagnostic Procedure (Overnight Infinite Wait Test):
From time to time, you may work on vehicles that exhibit a battery drain
periodically. In these cases, you can monitor the vehicle indefinitely, waiting for
any activity on the CAN Bus.

Determining that it is appropriate to use "Infinite Wait Test":
 - Customer's vehicle exhibits a drain, but CAN only wakes periodically
   (Drains overnight, pops open trunk while off, etc.)
 - Vehicle has been diagnosed with SDS or similar and no faults were found

Determining which control unit(s) are waking the CAN Bus:
 - Go to: **START->SETTINGS->CONTROL PANEL->POWER OPTIONS**
   and set your computer to NEVER sleep, hibernate, or turn off hard disks
 - Follow the instructions in the Connectivity / Software Guide

Photo Example:

Vehicle: S430
Location: Under the steering column
Connections: Green / White Cables
  Red -> Green, Black -> Orange

1. Locate the Body CAN harness in the vehicle and connect the Mercedes X30 Body CAN cable (female connector) into any of the open connectors. The pins will only orient in one direction.

    Consult Star Finder and/or Web ETM for specific directions on finding your X30 Body CAN connector.

Photo Example:

Vehicle: E320
Location: Passenger Door Sill
Connections: Brown / Red Cables
  Red -> Orange, Black -> Green

This shows the standard orientation. Your vehicle may be reversed.*

2. Connect the Mercedes X30 Body CAN cable to the BlueLink converter cable. Orientation will differ based on the vehicle you are connecting to.

    *Note: When you select the vehicle to connect to, the application will let you know if it thinks your connectors are reversed.

3. Connect the BlueLink converter cable to the Mongoose.

   **If you received our custom OBDII cable with two OBDII ends designed for use with CarDaqs or devices that require power, plug the other end into the OBDII port of the vehicle for power.

4. Ground the connection by attaching to a grounded portion of the vehicle.

   **If you received our custom OBDII cable with two OBDII ends, ground is automatically obtained from the car's OBDII port.


5. Remove the key from the ignition and close all doors.

6. Lastly, ensure the Mongoose is connected to the USB port of your computer.

1. First press **F8** to open the settings window.
2. Select the "*Mongoose ISO/CAN*" Device and press **OK**.

3. Here you can see PassThru Device Status.
4. Once connected, press **F12** or **ENTER** to go to the next screen.
5. Reset the Application and Device at any time.
    Ex: Changing Cars, Accidental Unplugging, etc.
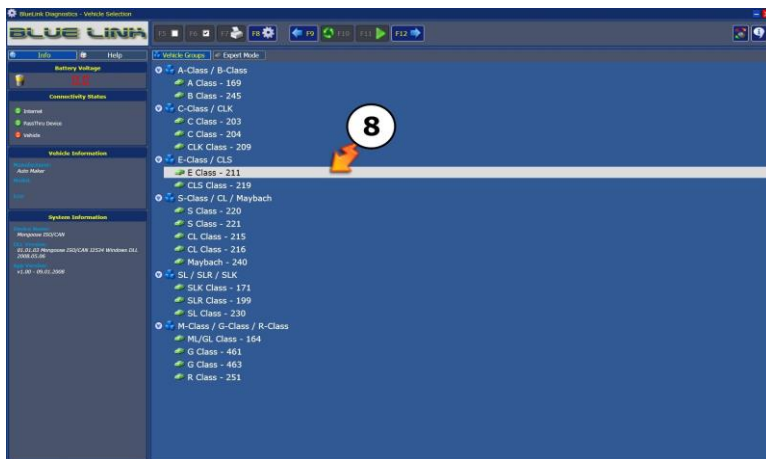
    (When using CAN Analyzer, the battery voltage will be *0.0*, since
    voltage can only be read from the OBD II port directly.)
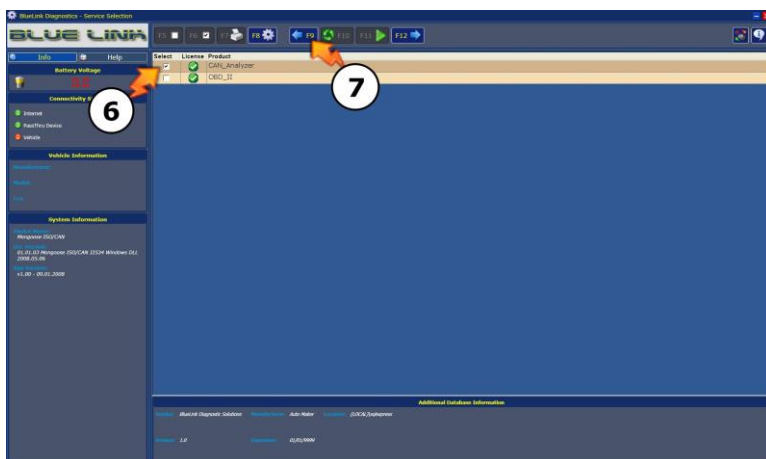
6. Select the database with which to work ("*CAN_Analyzer")*. To go to the next screen you can: **Double-click** on the row, press **F12** or **ENTER**.
7. To go to the previous screen at any time, press **F9** or **BACKSPACE**. (Just like a web browser).


8. Select the Vehicle with which to work and go to the next screen. (Here, we are choosing the "*E-Class - 211"*)
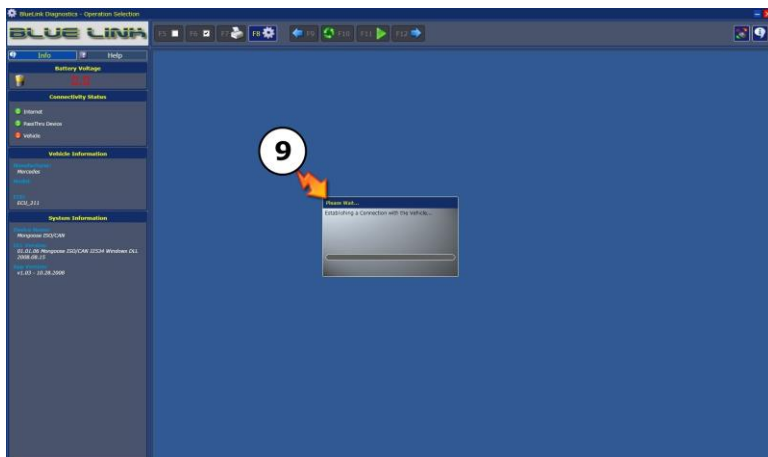
9. Wait while a connection is made with the vehicle.

It is **IMPORTANT** to wait for the vehicle to attempt to sleep after connecting before executing any tests. Ensure that you have not opened any doors, or cycled the ignition for 1 - 5 minutes to guarantee all control units *should* currently be asleep.
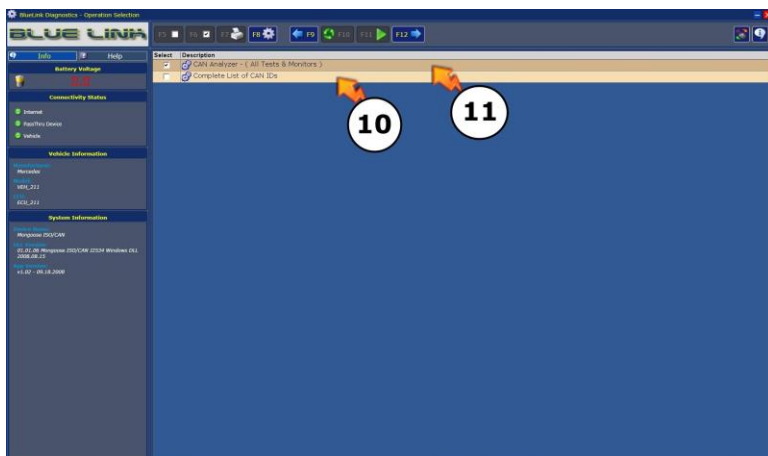
10. Select *"Complete List of CAN IDs"* for a listing of all CAN IDs on the chassis
11. Select *"All Tests & Monitors"* to test the vehicle.

12. Select the type of test to execute.
13. Start the test by pressing **F11**. Stop the test by pressing **F11** again.

If there are bad or awake control units on the vehicle, they will appear beneath the test you ran. Otherwise, an empty list and a green check mean none were found. Whenever you run a test, messages will appear guiding you to the next step in the diagnostic procedure.

Activity Test:
A simple test to tell you if the CAN Bus is awake or asleep.

CAN Analyzer (Normal Test):
A test that detects only *faulty* control unit behaviors that wake the CAN Bus. We test for documented pattern failures for control units we have received in house, from shops just like yours!

CAN Analyzer (Not Ready To Sleep):
Use when the Normal Test does not find a faulty control unit. It shows control units "Not Ready to Sleep". Units that appear after running this test are reporting, according to the Mercedes Body CAN specification, that they are still not ready to sleep. They do not immediately imply a unit defect, but are related to the problem. (Ex: A CD stuck in the CD Player will keep the "Changer" control unit in the "Not Ready to Sleep" state.)

Infinite Wait (Monitor):
Use this test for a vehicle that is *currently asleep*, but suspiciously draws the battery while you are away from the vehicle (overnight, or while out to lunch). It detects the first control unit to talk on the CAN Bus. This test monitors the bus indefinitely until a unit is found, or you press the stop button.

(See Page 7 for an overview of testing procedure)

Background
OBD II is the prevailing standardization intended for computer-based emissions testing. The OBD II specification provides for a standardized hardware interface, the female 16-pin J1962 connector (shown below). This standard applies to all vehicles that are 1996 and newer.
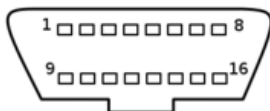
OBD II Connector

Supported Protocols
In this product release, with Drew Technologies ISO/CAN Mongoose the following vehicle protocols are supported:

> **European and Asian**
> - ISO-9141
> - ISO-14230
>
> **Various**
> - ISO-15765 CAN

With other 2534 devices we also support:

> **Ford and GM**
> - J1850 PWM
> - J1850 VPW

BlueLink Implementation of OBD II
The BlueLink OBD II database service is designed to support all of the OBD II modes. The data service dynamically filters all information presented to the user based upon the abilities of the vehicle and attached 2534 device.

The BlueLink OBD II data service offers a complete link between the technician and OBD II. With support for all OBD II modes, the technician can easily:

> - Utilize any OBD II supported mode without limitations
> - Actively monitor an Actual Value while manipulating the vehicle
> - Compare user-defined Actual Value combinations for monitoring;
>   via Graphs and Gauges
> - Conveniently obtain additional information and help regarding a fault

1. Locate the OBD II connector in the vehicle and connect the Mongoose.

This connector can be in a variety of locations, but is usually visible and accessible without having to manipulate the vehicle. Common locations are:

  - Beneath the steering column, centered
  - Above the emergency brake
  - Above the gas pedal

2. Insert the key in the ignition and turn it to the "ON" position to power the vehicle (starting the vehicle is not necessary).


3. Lastly, ensure the Mongoose is connected to the USB port of your computer.

1. First press **F8** to open the settings window.
2. Select the "*Mongoose ISO/CAN*" Device and press **OK**.

3. Here you can see PassThru Device Status, and if connected to a car, its battery voltage.
4. Once connected, press **F12** or **ENTER** to go to the next screen.
5. Reset the Application and Device at any time.
   Ex: Changing Cars, Accidental Unplugging, etc.
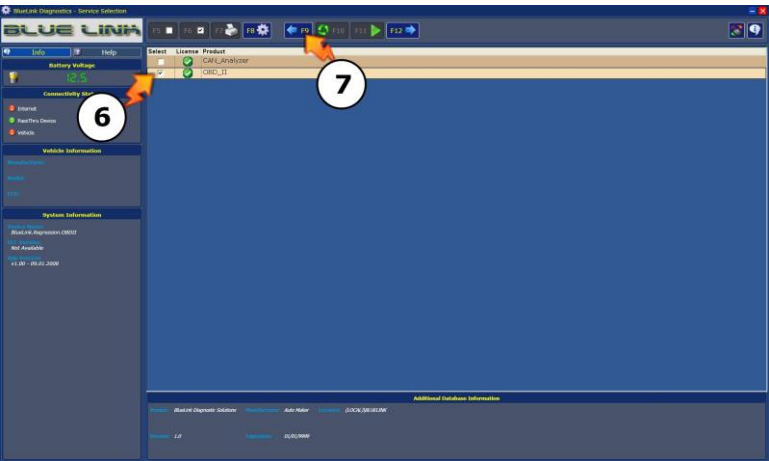
6. Select the database with which to work ("*OBD_II"*). To go to the next
   screen you can: **Double-click** on the row, press **F12** or **ENTER**.
7. Return to the previous screen at any time by pressing **F9** or **BACKSPACE**.
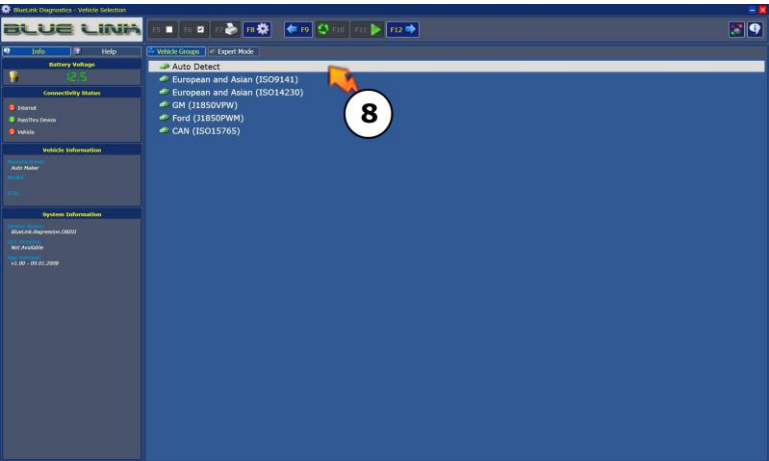
8. Here, select the protocol type of the vehicle that is being diagnosed. If you
   are unsure, let us *"Auto Detect"* it for you, as shown above.

   Through our dynamic filtering process, we only list protocols supported by
   the PassThru Device you are using.
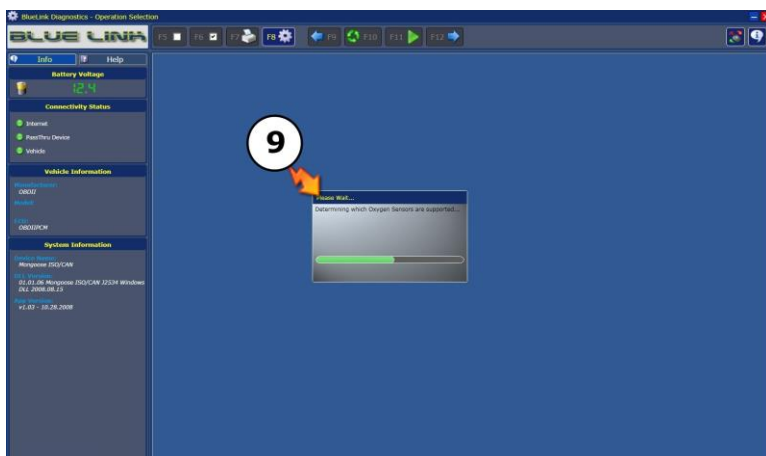
9. Wait while a connection is made with the vehicle and its supported features are detected.
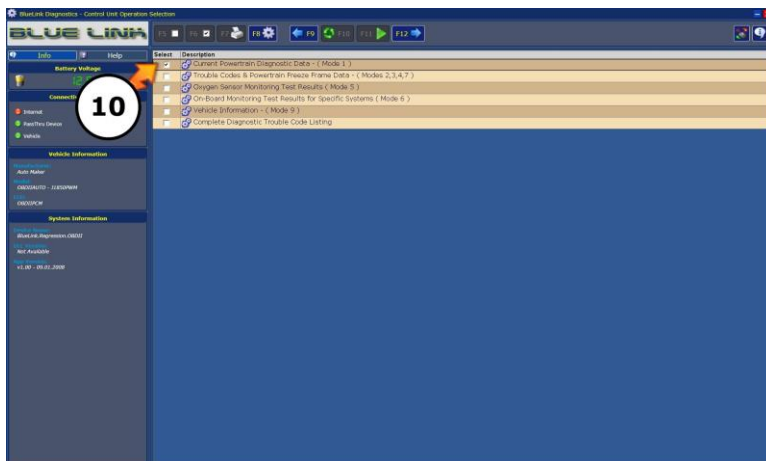
10. On the "*Operation Selection"* screen, a list of available operations specifically filtered for your particular vehicle are available for you to use.

Selecting the "*Current Powertrain Diagnostic Data"* from the *Operations* screen allows you to determine real-time actual values from your vehicle.

11. Select a single group to test (as shown), or select them all. Then press **F12** to proceed.
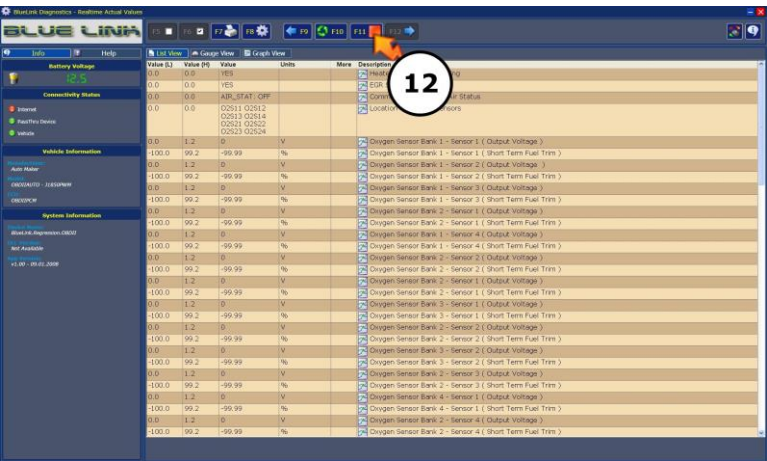
12. Pressing **F11** begins the test. The values will continually be retrieved from the vehicle until you stop the test.

Try either the *Gauge View* or *Graph View* to look at the data in a different way!
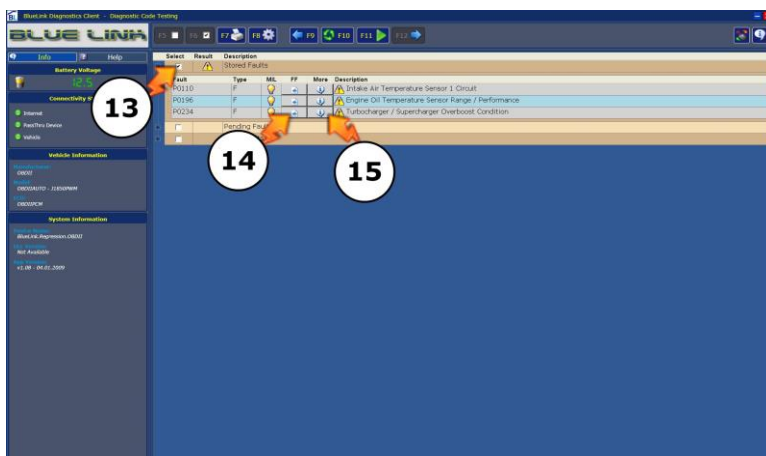
Selecting "*Trouble Codes and Powertrain Freeze Frame Data"* from the *Operations* screen brings us here.

13. Select the type of test to execute, then use **F11** to run it.
14. Click here to retrieve Freeze Frame data that occurred for this fault.
15. Click here to retrieve more information from the Search Engine.
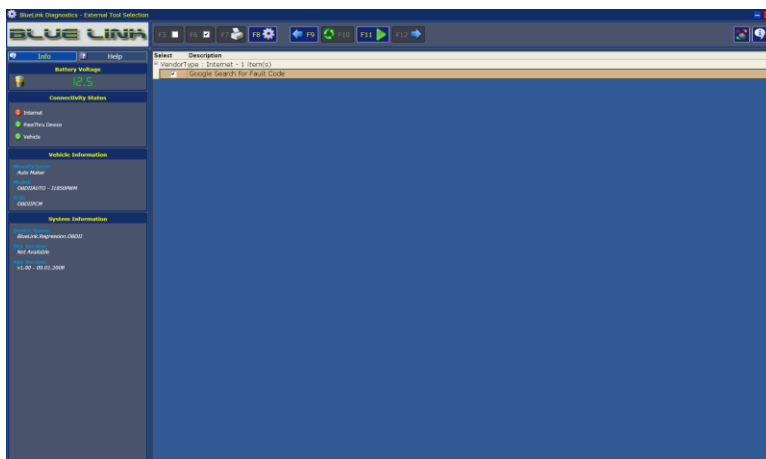
Selecting "*More"* from the "*Trouble Codes and Powertrain Freeze Frame Data"* screen displays available search options for the fault.
Examine one by **Double-clicking** on the row, or pressing **F11.**

For all remaining modes, "*Mode 5, Mode 6 and Mode 9"*, run their tests by first
pressing **F11.**

16. Then you can examine additional results via expanding the row, by
clicking on its respective "+" plus sign.

Selecting "*Complete Diagnostic Trouble Code Listing"* from the "*Operation
Selection"* screen will display a list of all possible codes OBD II supports.
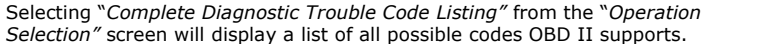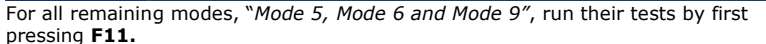
BlueLink Diagnostics Client Navigation Tree

| Introduction |

F9 ← → F12

| Service Selection |

F9 ← → F12

| Vehicle Selection |

F9 ← → F12

| Control Unit Selection / Short Test |

F9 ← → F12

| Operation Selection |

F9 / F12   F9 / F12   F9 / F12   F9 / F12

| Actual Values Selection | Oxygen Sensor Monitor Test Results Selection (Mode 5) | Diagnostic Code Testing (Mode 3,4) | Complete Diagnostic Code Listing |

F9 / F12   F9 / F12   F9 / F11 +Clk

| Actual Values (Mode 1) | On-board Monitoring Test Results (Mode 6) |

F9 / F11 +Clk   F9 / F12

| Internet Data Service Selection | Vehicle Information (Mode 9) | Freeze Frame Selection | Internet Data Service Selection |

X / F11   F9 / F12   X / F11

| Web Browser displaying Internet Search Data (popup window) | Freeze Frame Values (Mode 2) | Web Browser displaying Internet Search Data (popup window) |

F9 / F11 +Clk

| Internet Data Service Selection |

X / F11

| Web Browser displaying Internet Search Data (popup window) |

Legend:

F11 +Clk — Test must be run first with F11. Resulting values are examined by clicking

(orange) — Items are of same heirarchy

(yellow) — Accessible from parent only