

# CANLab Network Analysis Software

CANLab is a multi-bus network analysis tool that provides a complete solution for industry standard network protocols with the support of popular databases and hardware. It can be used to view network activity, send and receive signals or messages, record and replay data, manipulate and analyze data, and check statistics, all in real-time.

## Major Features

- Accommodates many CAN hardware interfaces
- Import / export to multiple database and log file formats
- Offers analysis and scripting at no extra cost
- Provides a sophisticated strip chart recorder and replay
- No need to stop for changes - start or stop recording on the fly
- Connect or disconnect hardware without stopping the software

## The Basics

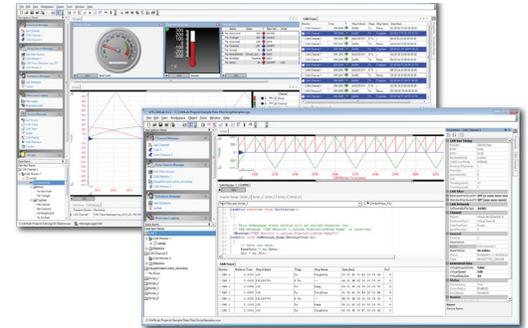
CANLab fundamentals include basic network analysis features. The difference is superior usability with online availability of all user interface configurations. Make changes while on-line without the loss of data and without the need to stop working. Immediately begin monitoring messages transmitted within a network, analyzing signal content and checking performance statistics such as bus load, error counter or message received. Display bus messages in real-time in a variety of different views, and log them for later analysis.

## Logging or Recording

Instantly start or stop logging messages or recording signals by conveniently double-clicking on tabs that appear at the bottom of the CANLab application.

## Send

Send custom singular or sequences of messages to unlock gateways, simulate controllers or debug protocols for troubleshooting and validation using CANLab. Select from defined messages, created messages or grouped messages based on customizable trigger events. Change transmission time without scripts, and change the signal values on the fly. Change the periodic rate on-the-fly without stopping transmission.



## Replay

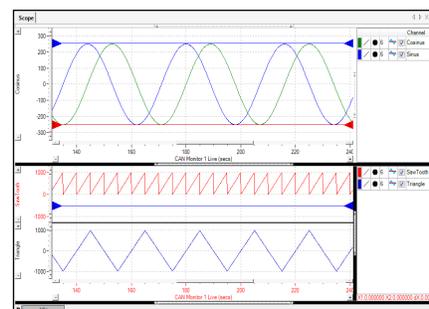
Playback of previously recorded CAN traffic is critical to network diagnostics. Simulate non-existent nodes or transmit real world data to test modules for validation using CANLab's Replay feature.

## Trace

Effectively monitor bus traffic at message or signal levels in fixed or scrolling modes with CANLab's Trace window screen. If placed in fixed mode, signal values are visible when messages are expanded.

## Graphical Displays

While CANLab features dials and gauges for viewing and analyzing signals to significantly improve the data analysis process, the stripchart recorder is a more mature feature. Recorded or 'live' signals and statistics can be graphed and analyzed simultaneously. Signal values can be time-aligned to existing recorded data for quick real-time data analysis and viewed all on the same screen (window).



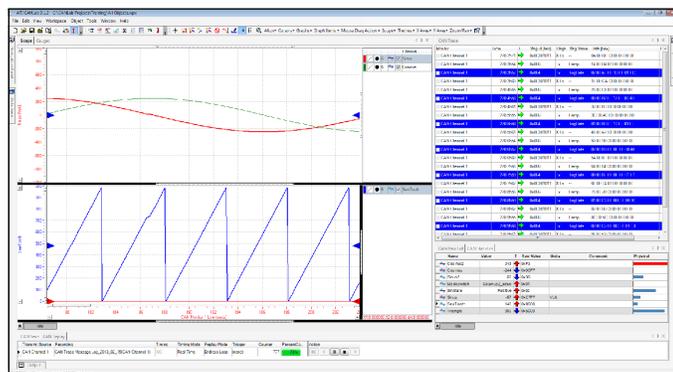


# CANLab Analysis Tool

## Post Data Analysis

Fully customize the view of the data to simplify for a specific application. CANLab displays data items using selectable columns that can include time of data, raw and converted values, comprehensive highlighting for visual aid and trend arrows. For example, highlight messages or message groups by changing the color, font type or font size of a message in the trace window. Select highlighting features based on message IDs or conditions such as Speed > 60Kph. Specifying highlights for message properties like transmitted messages or extended identifiers can also be done.

CANLab's powerful Calculated Channel feature allows creation of additional signals without writing a script. For example, take the vehicle speed signal off the bus and calculate Acceleration and Distance. While CANLab provides a vast array of built-in math functions, the functionality can be extended by referencing a DLL that contains the user's functions. All of these tools are available to all CANLab users to make analyzing data as simple as possible.



```

RampRate
ATIScripts.RampRate
initialize()
1 // Initialize variables
2
3 ScalarItem R_Count = new ScalarItem("RampCount");
4
5 public override void Initialize()...
6 // The OnStart function gets called when user Starts Measurement
7
8 public override void OnStart()
9 {
10     R_Count.Value = 0.0;
11 }
12
13 // This OnMessage event method will be called whenever the
14 // CAN Message 'CAN Monitor 1.canlab.SimulationNode.Ramp' is
15 // Message("CAN Monitor 1.canlab.SimulationNode.Ramp")
16 public void OnMessage_Ramp(MessageItem mi)
17 {
18     R_Count.Value = R_Count.Value + 1;
19 }
20
  
```

## Scripting

CANLab's scripting language, included for all CANLab users, is full-featured with syntax based on the C# language. With a user configurable editor and syntax highlighting, it is easy to learn and delivers reliable, robust solutions.

In addition, CANLab scripts can run native within the CANLab application ensuring faster, real-time functionality. Compose complex functions to respond to different types of events such as 'On Message Received', 'On Signal Received', 'On KeyPress', and 'On Timer'. Extend CANLab's functionality to not only work with messages but also analyze data. Save scripts for distribution and use by other groups who can focus on performing the test rather than test setup.

Minimum Requirements	
Minimum PC Requirements	Microsoft Windows XP SP3 (32-bit or 64-bit) 1 GHz microprocessor 1 GB of RAM

Part Number	
152-0300	CANLab Software
152-0305	J1939 Toolkit Applies J1939/21 to CANLab including PGN message decoding and Transport Protocol Support, and includes support for NMEA2000 and ISOBUS (ISO 11783) protocols.
152-0304	LIN Toolkit Includes Master / Slave support and .LDF support



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