

Introduction

The CANplusTM PC Simulator allows you to experience the CANplus display on your Windows[®] computer. The CANplus family is a platform to monitor and control diesel engines. The microprocessor-based, solid-state design uses high power semiconductors instead of outdated electromechanical relays to ensure reliable high current switching. Graphical gauge pages or a single large analog gauge are displayed on the 4.25" diagonal LCD. Virtually any SAE J1939 parameter reported by the ECU (Engine Control Unit) can be displayed including RPM, coolant temperature, oil pressure, engine hours, voltage and diagnostic codes. The trans-reflective, backlit display is clearly readable in both bright sunlight as well as total darkness and housed in a rugged IP67 rated housing.






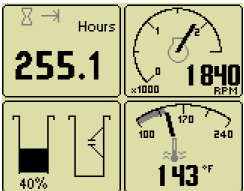
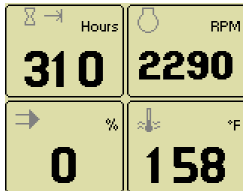
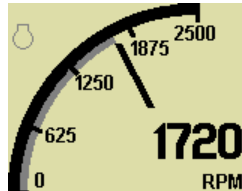
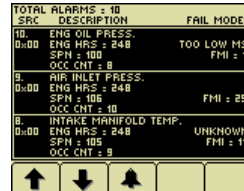
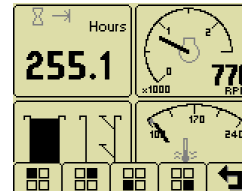


Current alarm conditions are displayed in plain language on popup messages and can be viewed in the alarm list.

Various diagnostic screens allow detailed investigation of the CANbus data stream. By accessing the **Configuration Menu**, users can customize displayed data to show metric or US units, display language and various other parameters such as the full-scale reading of gauges.



Five buttons access a context dependent **button bar** when any button from 1 to 4 is pressed. The graphical menu structure uses easily understood icons to indicate the button's current function. After 5 seconds of inactivity the button bar disappears.

Button 1 	Button 2 	Button 3 	Button 4 	Button 5 
Analog Gauge Pages Repeated presses cycle through four pages of analog gauges (16 total).	Digital Gauge Pages Repeated presses cycle through four pages of digital gauges (16 total).	Single Analog Gauge Repeated presses cycle through various available analog gauges.	Active Alarm Page Displays active alarms including a plain language description.	Gauge Adjust Configures the parameters used by gauge pages.
				

Installation

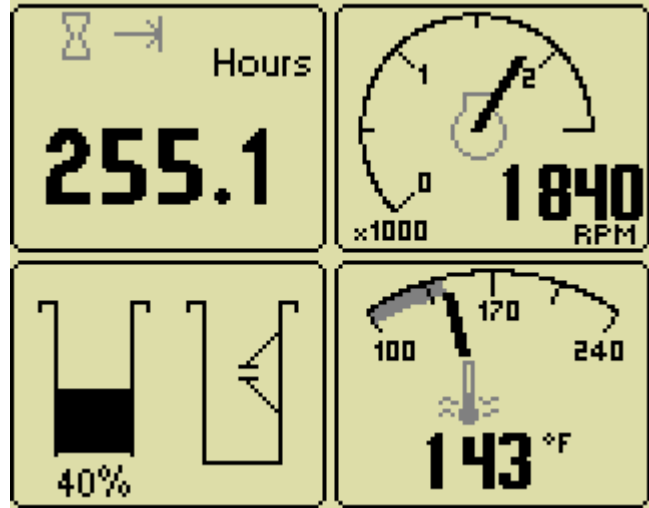
Download the installer from the LOFA website at <http://www.lofa.net/canplus>. Run the installer to create the directories and shortcuts to run the program. Both the CANplus 600 simulator and the CANplus 750 simulator can be installed on the same computer.

Operation

Load the simulator using the shortcut created in Start | CANplus. The simulator displays a start-up screen and then displays simulated data on its virtual gauges. Initially the analog gauges are displayed but the display uses the screen last displayed on subsequent startups.

CANplus Display

Soft buttons simplify the operator interface by displaying a **button bar** above the buttons when any of the first 4 buttons (buttons 1 to 4, starting from the left) are pressed. Icons on the button bar representing the current function of each button. The button bar disappears after 5 seconds if no further buttons are pressed.

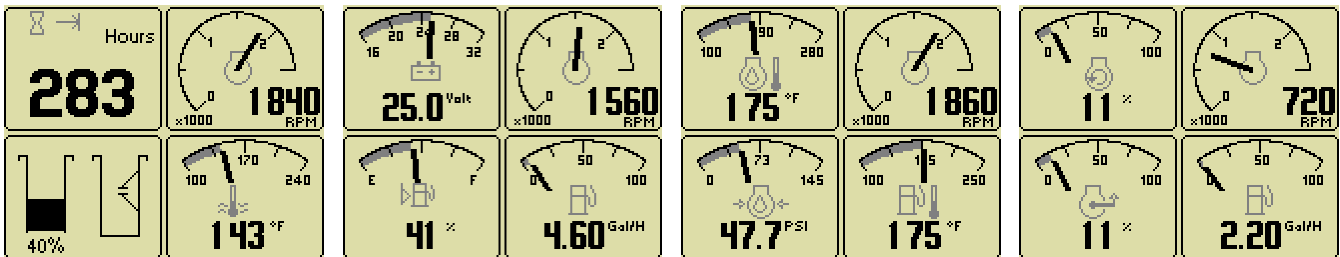


Note

Clicking the mouse on one of the buttons simulates a button press.
Clicking on the button bar is ignored.

Analog Gauge Pages






Analog Gauge Pages provide four independent pages of analog gauges. To enable Analog Gauge Pages, press any of the first 4 buttons to show the top level button bar and then press button 1 (🔍). Alternate pages are selected by repeated pressing of button 1. The four standard gauge pages are shown below.

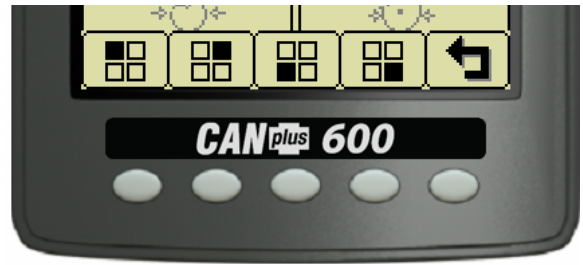


Note


Engine Hours are displayed as a digital value even on Analog Gauge Pages.

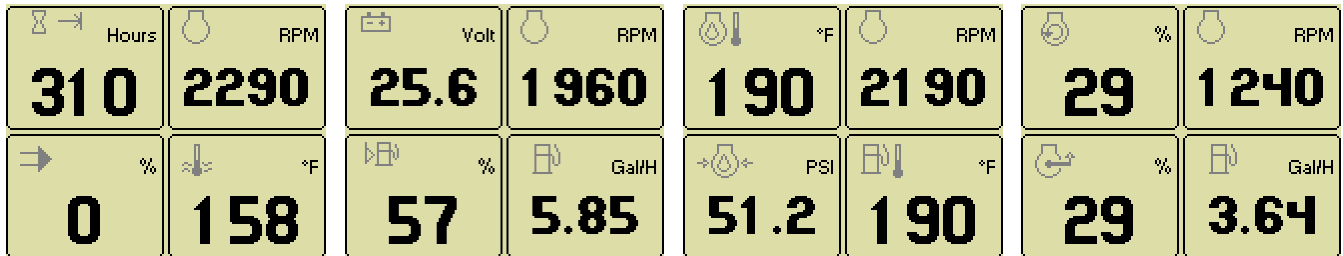
All 16 gauges may be configured by the user to create an application-specific view of CANbus data. Gauges are changed via **Adjust Mode**, accessed by pressing button 5 (➡) when the button bar is visible.

In the adjust mode a new button bar is displayed identifying the new button functions. Button 1  corresponds to the upper left gauge, button 2  to the upper right gauge, button 3  to the bottom left gauge and button 4  to the bottom right gauge. Successive presses of any of the buttons selects a different parameter to display for the corresponding gauge. Adjust Mode is exited by pressing button 5  and configuration is stored even when power is removed.



Digital Gauge Pages


Digital Gauge Pages display the same data as the Analog Gauge Pages but in digital format. To enable Digital Gauge Pages, press any of the first 4 buttons to show the top level button bar and then press button 2 . Alternate pages are selected by repeated pressing of button 2. The four standard gauge pages are shown below.

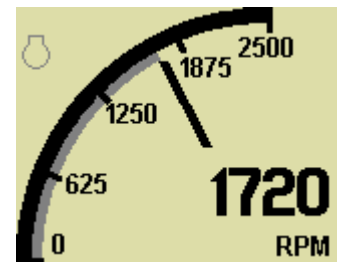


Note

The 16 gauges are the same for Analog and Digital Gauge Pages. Adjustments in either Analog Gauge Pages or Digital Gauge Pages affect the same gauge in the other mode.

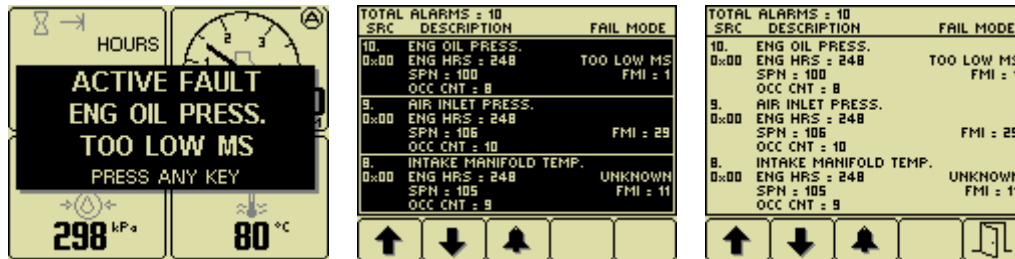
Single Analog Gauge


Single Analog Gauge uses the entire display for a single large analog gauge. This mode is enabled by pressing any of the first 4 buttons to show the top level button bar and then press button 3 . The gauge displayed is selectable by repeatedly pressing button 3 while in the Single Analog Gauge mode while the menu bar is visible.



Active Alarms

A flashing popup window is overlaid on the current screen when an active alarm is received. The popup includes a plain language description in addition to the standard SPN-FMI pair defined by the SAE J1939 standard. Additionally the beeper sounds as an audible cue.









Example alarm message, plus alarm list screens showing unacknowledged conditions and acknowledged alarms. After acknowledgement, the exit button  becomes active.

Note





Standard J1939 abbreviations are used for alarms.
MS = Most Severe, **MOD**= Moderately Severe, **LS** = Least Severe.

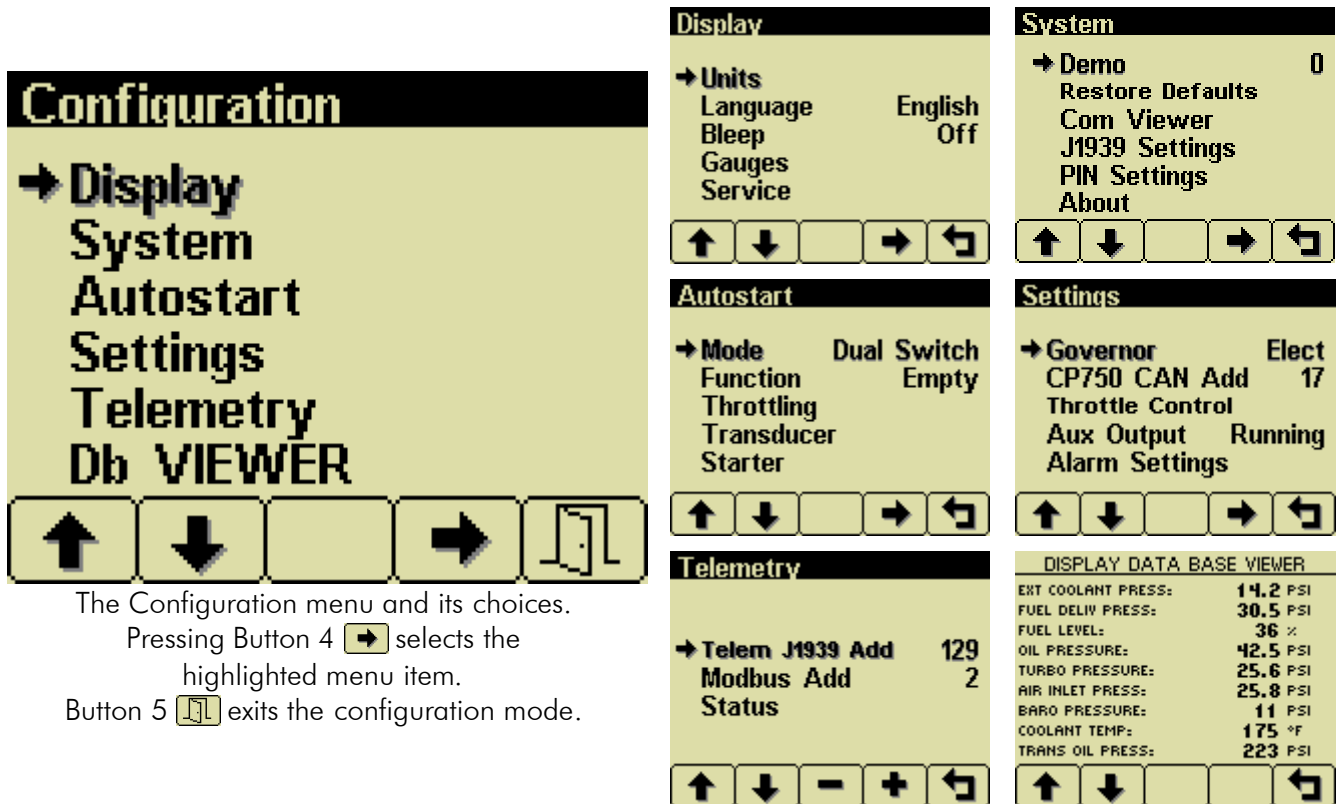
Alarm List

The Alarm List is accessed by pressing any button while an alarm popup is displayed or by pressing any of the first 4 buttons to show the button bar and then button 4 . Alarms not yet acknowledged are shown in grey on black while acknowledged alarms are shown in black on grey. The list also indicates when the alarm occurred if engine hours are available. The most recent alarm is displayed at the top of the list. The list can be scrolled using buttons 1  and 2  and alarms acknowledged by pressing button 3 . The Alarm List can be closed by pressing Button 5  once the alarms are acknowledged.


An alarm indicator  is displayed near the upper right corner of the display as long as alarms are active. The indicator and alarm messages in the list are automatically removed when the alarm is no longer received for a few seconds.


Configuration Menu

This *Configuration Menu* allows the user to set various operating parameters such as US or metric units, scale limits for tachometer and service timers. The configuration menu is entered by pressing and holding button 5 (the right hand button) in any mode for at least 3 seconds. If PIN entry is enabled the correct PIN must be entered to access the configuration menu. The top level configuration menu is displayed as shown. Buttons 1  and 2  allow you to choose from *Display*, *System*, *Autostart*, *Settings*, *Telemetry* or *Db Viewer*. Pressing button 4  selects the chosen menu indicated in bold and the arrow . Each item is described in detail on the following pages. Settings are automatically stored when exiting the current menu even when power is removed.



The Configuration menu and its choices.

Pressing Button 4  selects the highlighted menu item.

Button 5  exits the configuration mode.

Display

- Units
- Language English
- Bleep Off
- Gauges
- Service

System

- Demo 0
- Restore Defaults
- Com Viewer
- J1939 Settings
- PIN Settings
- About

Autostart

- Mode Dual Switch
- Function Empty
- Throttling
- Transducer
- Starter

Settings

- Governor Elect
- CP750 CAN Add 17
- Throttle Control
- Aux Output Running
- Alarm Settings

Telemetry

- Telem J1939 Add 129
- Modbus Add 2
- Status

DISPLAY DATA BASE VIEWER

EXT COOLANT PRESS:	14.2 PSI
FUEL DELIV PRESS:	30.5 PSI
FUEL LEVEL:	36 %
OIL PRESSURE:	42.5 PSI
TURBO PRESSURE:	25.6 PSI
AIR INLET PRESS:	25.8 PSI
BARO PRESSURE:	11 PSI
COOLANT TEMP:	175 °F
TRANS OIL PRESS:	223 PSI

Note

The menus shown are those for the CANplus 750.
Not all menus are available in the CANplus 600 simulator.

Demo Modes

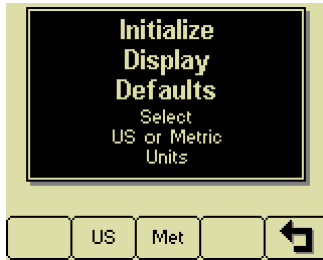
The simulator supports several demo modes to provide gauge data. Mode 1 simulates speed data and engine parameters. Mode 2 only simulates engine parameters. Mode 3 simulates speed data, engine parameters and alarms. Mode 0 disables Demo Mode.

Note

The simulator automatically starts in Demo Mode 1.
Select Demo Mode 3 to simulate alarms.
Select Demo Mode 0 will simulate the loss of data.

Restore Defaults

This allows resetting all configuration information to default US or Metric units. Additionally the display is reset to the initial configuration.

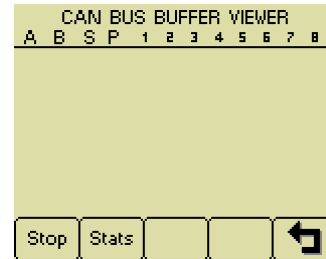


The default settings are:

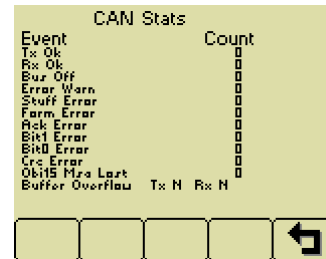
Setting	US	Metric
Language	English	
Button Beep	On	
Service Timers	Off	
Display Mode	Analog Gauges	
Gauge Pages	Defaults	
Quad Adjust	On	
Demo Mode	0 (Off)	
Source Address	0	
Display CAN Address	40	
Alarm Filter	Glb	
SPN Version	1	
Speed Source	Auto	
PIN Entry	Off	
PIN	1111	
Max Gauge RPM	2500	
Max Gauge Speed	40 MPH	60 KmH
Speed Units	MPH	KmH
Distance Units	Miles	Km
Pressure Units	PSI	kPa
Volume Units	Gal	L
Temperature Units	°F	°C

J1939 Viewer

This screen provides a hexadecimal dump of the last messages received on the CANbus. This viewer displays the raw data. To see the decoded data use the **Db Viewer**.

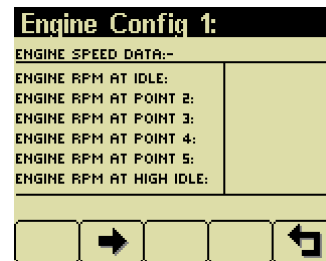


Button 1 freezes the display while button 2 shows CANbus data statistics screen.



Engine Config

This screen displays the engine configuration information received from the ECU.




Button 2 selects the next page of engine configuration while button 1 selects the previous page.

Note

The simulator does not supply data for the J1939 Viewer or the Engine Configuration.

Db Viewer

The Database Viewer displays and decodes all data monitored by the display. This diagnostic tool allows viewing data not normally displayed.

DISPLAY DATA BASE VIEWER	
EXT COOLANT PRESS:	16.4 PSI
FUEL DELIV PRESS:	30.5 PSI
FUEL LEVEL:	60 %
OIL PRESSURE:	49.2 PSI
TURBO PRESSURE:	29.0 PSI
AIR INLET PRESS:	28.0 PSI
BARO PRESSURE:	14 PSI
COOLANT TEMP:	182 °F
TRANS OIL PRESS:	234 PSI
	

The list can be scrolled using buttons 1  and 2  and closed by pressing Button 5 .

Note

The Database Viewer is always in English regardless of language selected.

Preferred Screen Store

The display automatically stores the current screen as the preferred page after a delay of approximately 15 seconds. The display will use the last stored screen on the next power-up.

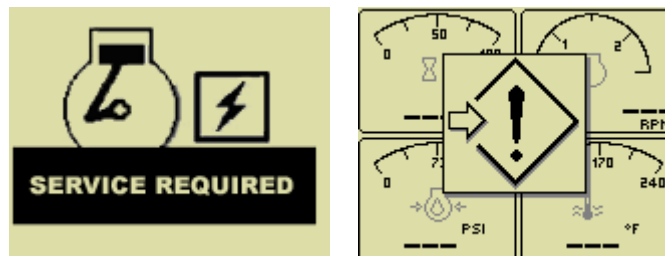
Note

Selecting *Restore Defaults* restores the Analog Gauge Pages and default gauges.

Popup Messages and Alerts


Service Required

Users can set up to sixteen service timers in hours in the Configuration menu. The SERVICE REQUIRED popup is displayed at power up when one or more service timers has expired. Pressing any button removes the popup. If no button is pressed the popup closes in approximately 5 seconds.





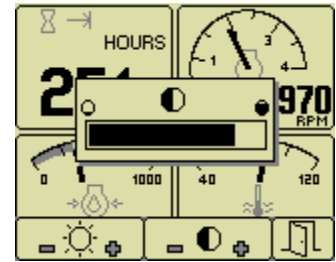
Pop-up warnings of service required and data communications failure.

Data Not Available

Gauges and the Db Viewer will display  if the desired data is not available. The display value returns to normal when parameter data is received.


Adjusting Lighting and Contrast

Pressing button 5 (the right-hand button) when there is no menu bar opens the lighting and contrast menu bar. The display has a number of back-lighting levels that allow the display to be read in the dark. The level is adjusted by pressing buttons 1 decrease or button 2 to increase  illumination. Contrast is adjusted in the same manner using buttons 3 and 4 .



Note

The display adjusts the contrast with ambient temperature.
Manual contrast adjustments are only necessary with extreme climate change.

The menu is exited by pressing button 5 . The lighting and contrast settings are retained after the unit is switched off.

Note

If the contrast has been adjusted poorly, the factory setting is restored by pressing buttons 1 thru 4 simultaneously. This action does not change other user-configured settings.

Diagnostic Trouble Codes (DTC)

CANbus Diagnostic Trouble Codes are a pair of numbers; the Suspect Parameter Number (SPN) and Failure Mode Identifier (FMI). The SPN indicates the faulting subsystem and the FMI identifies the type of failure.

Typical SPNs

Standard SPN codes are defined by SAE J1939-71. Not all standard codes are provided by ECUs. Manufacturers may add additional SPN codes beyond the codes identified in J1939-71. Refer to ECU documentation for supported SPNs.

SPN	Description
51	Throttle Position
91	Accelerator Pedal Position
94	Fuel Delivery Pressure
98	Engine Oil Level
100	Engine Oil Pressure
110	Engine Coolant Temperature
111	Coolant Level






























FMI

FMI codes are defined by SAE J1939-71. Refer to ECU documentation for correct interpretation of FMI codes for a specific SPN.

FMI	Description
0	Data valid but above normal operational range
1	Data valid but below normal operational range
2	Data erratic, intermittent or incorrect
3	Voltage above normal or shorted high
4	Voltage below normal or shorted low
5	Current below normal or open circuit
6	Current above normal or grounded circuit
7	Mechanical system not responding properly
8	Abnormal frequency, pulse width or period
9	Abnormal update rate
10	Abnormal rate of change
11	Failure mode not identifiable
12	Bad intelligent device or component
13	Out of calibration
14	Special instructions
15	Data valid but above normal operational range (least severe)
16	Data valid but above normal operational range (moderately severe)
17	Data valid but below normal operational range (least severe)
18	Data valid but below normal operational range (moderately severe)
19	Received network data in error
20	
thru	Reserved for future assignment
30	
31	Not available or condition exists

Data Parameters Monitored

This table lists the engine and transmission parameters that are monitored via the CANbus. The parameters can be displayed by the user-configurable gauge pages or the single analog gauge. DB is an abbreviation for the internal database which stores all data transmitted from the engine/transmission. The complete database can be accessed on the display via the Configuration menu.

Icon	Parameter	Gauge Pages	Single Analog	Database
Electrical (Volts or Amps)				
	Electrical Potential	●	●	●
	Battery Potential Switched	●	●	●
	Net Battery Current	●	●	●
	Alternator Potential	●	●	●
	Alternator Current	●	●	●
Fuel (L, Gal, lGal) or (L/h, Gal/h lGal/h) or (km/L, MPG or IMPG)				
	Fuel Remaining	●		●
	Fuel Rate	●	●	●
	Instantaneous Fuel Economy	●		●
	Trip Fuel Economy	●		●
	Trip Fuel	●		●
	Trip Fuel Rate	●		●
	Total Fuel Used	●	●	●
	Fuel Leakage 1			●
	Fuel Leakage 2			●
Distance (km, Miles or Nmiles)				
	Distance Remaining	●		●
	Trip Distance	●		●
	Total Vehicle Distance	●		●
Pressure (kPa, PSI or bar)				
	Fuel Delivery Pressure	●	●	●
	Barometer Pressure	●		●
	Auxiliary Pressure 1	●		●
	Boost Pressure	●	●	●
	Air Inlet Pressure	●		●
	Air Filter 1 Differential Pressure	●		●
	Injector Metering Rail 1 Pressure			●
	Injector Metering Rail 2 Pressure			●
	Coolant Pressure	●	●	●
	Engine Oil Pressure	●	●	●
	Transmission Oil Pressure	●	●	●
	Clutch Pressure			●
	Air Start Pressure			●
	Injection Control Pressure			●
Temperature (°C or °F)				
	Engine Coolant Temperature	●	●	●
	Engine Intercooler Temperature	●		●
	Engine Oil Temperature 1	●	●	●
	Transmission Oil Temperature	●	●	●
	Turbo Oil Temperature	●		●
	Fuel Temperature	●	●	●

Icon	Parameter	Gauge Pages	Single Analog	Database
	Intake Manifold 1 Temperature	●	●	●
	Air Inlet Temperature	●		●
	Exhaust Gas Temperature	●	●	●
	Auxiliary Temperature 1	●		●
	Engine ECU Temperature			●
	Exhaust Gas Port 1 Temperature			●
	Exhaust Gas Port 2 Temperature			●
	Turbo 1 Compressor Inlet Temperature			●
Percentage (%)				
	Fuel Level	●		●
	Acceleration Position	●	●	●
	Throttle Position			●
	Engine Oil Level	●		●
	Coolant Level	●		●
	Estimated Percent Fan Speed	●		●
	Drivers Demand Percent Torque	●		●
	Actual Engine Percent Torque	●	●	●
	Torque Use at RPM	●	●	●
Speed (RPM, km/h, MPH or KTS)				
	Input Shaft Speed			●
	Output Shaft Speed			●
	Engine Speed	●	●	●
	Turbo 1 Speed			●
	Engine Desired Operating Speed			●
	Navigation Wheel Based Vehicle Speed	●		●
Time (h)				
	Total Engine Hours	●		●
	Trip Engine Hours	●		●
	Service Hours			●
Miscellaneous				
	Torque Converter Lock-Up Engaged			●
	Current Gear	●		●
	Selected Gear	●		●
	CANTX Disable			●

Abbreviations

The units *MPG* and *Gal* denote US gallons. For non-US US gallons (UK, Canada, etc) the units are denoted as *IMPG* or *IGal*. *N* denotes nautical miles. *KTS* denotes knots.

Note

If a parameter is not available it will not be possible to select it.
 If a parameter becomes unavailable while in view **---** is displayed.

Glossary

CAN	Controller Area Network (also referred to as CANbus); serial communications protocol for electronic engines use
DTC	Diagnostic Trouble Code; the combination of SPN and FMI that identifies a specific error
ECU	Engine Control Unit; electronic device responsible for controlling and monitoring engine operation
FMI	Failure Mode Identifier; defines the type of failure detected in the subsystem identified by the SPN
GPS	Global Positioning System; a system of satellites and receiving devices used to compute positions on the earth, used in navigation
ISO	International Standard Organization; an international organization working with the United Nations that maintains technology standards for global industry
J1939	SAE engine data protocol using CAN 2.0B
LCD	Liquid Crystal Display; a display technology that uses electric current to align crystals in a special liquid. When current is applied the crystals change their orientation creating a darker area.
NMEA	National Marine Electronics Association, serial communications protocol for marine use
RS-232	Standard electrical interface for serial communications
RS-485	Standard differential electrical interface for serial communications
SAE	Society of Automotive Engineers; professional association of transportation industry engineers that sets most auto-industry standards for the testing, measuring, and designing of automobiles and their components
Soft buttons	Push buttons whose function changes according to use
SPN	Suspect Parameter Number; a number used to identify a particular element, component or parameter associated with an ECU

Note

The messages, icons and error codes displayed conform to J1939 standards wherever possible.

A copy of the relevant standards documents may be accessed and purchased at:
<http://www.sae.org/standardsdev/groundvehicle/j1939a.htm>

Software Revision History

0.2 Initial release, 27-Aug-2007. Based on display version 1.35.

Document Revision Information

Initial: 7-Sep-2007.

Software License Agreement

This LICENSE AGREEMENT ("Agreement") is made as of the Effective Date noted below by and between LOFA™ Industries Inc. ("LOFA"), a Georgia corporation with a principal place of business at 250 Hembree Park Drive, Suite 122, Roswell GA 30076, and Licensee as defined below.

Standard Terms and Conditions

1. **Definitions.** In this Agreement, unless the context otherwise requires, the following terms shall have the following meanings:
 - (a) **Agreement** shall mean this agreement (as such may be amended from time to time in accordance with the provisions hereof), information sheets and any exhibits, attachments or schedules referenced herein.
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 - (c) **Effective Date** shall mean the date Licensee purchases LOFA hardware and/or software.
 - (d) **Host Device** shall mean the product or device that hosts LOFA software.
 - (e) **New Releases** means material improvements or changes to the LOFA Software that may enhance operating performance. A New Release is signified by an increase in the release number to the left of the first decimal.
 - (f) **Information Sheets** shall mean the attached exhibits which contain specific license terms.
 - (g) **LOFA Software** shall mean a hardware and/or software item listed in **Exhibit B – Products/Deliverables**.
 - (h) **Licensee Device** shall mean the specific LOFA hardware created by or for Licensee combining the LOFA software with the Host Device as identified in **Exhibit A**.
 - (i) **Materials** shall mean all hardware and/or software products and special documentation listed in **Exhibit B – Products/Deliverables**, as well as any standard documentation distributed along with such products.
 - (j) **Runtime** means those portions of the Licensed Products specifically designated as 'runtime' including libraries and sample code.
 - (k) **End User** shall mean the end user of the Licensee Devices.
 - (l) **New Releases and Updates** LOFA may, in its sole discretion, develop any New Releases to LOFA Software; however, LOFA has no obligation to develop, sell, or support New Releases.

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- (c) Customization of a customer facing page does not grant ownership rights of software

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5. Compliance with Laws.

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6. Fees.

Licensee fees are referenced in the Purchase Order.

7. Limited Warranty.

LOFA warrants for a period of thirty (30) days from the first date that it delivers to Licensee the Materials that (a) the Licensed Product(s) will operate in conformity with the material specifications for such item; (b) will be free from material defects; and (c) the media, if any, on which the Licensed Product is furnished will be free from material defects in materials and faulty workmanship under normal use. LOFA's sole liability and Licensee's exclusive remedy for any failure to meet these warranties will be limited to repair or replacement of the defective Materials at LOFA's option and expense.

8. Warranty Disclaimer.

Except as provided in this Agreement, LOFA transfers the Materials to Licensee on an "as is" basis. The warranties in this Agreement, are in lieu of all other warranties or conditions, and LOFA makes no other warranty, condition or representation of any kind whether express or implied, and LOFA expressly disclaims the implied warranties or conditions of merchantability, merchantable quality, fitness for a particular purpose, infringement and those arising by statute or otherwise in law or from the course of dealing or usage of trade. LOFA does not represent or warrant that the Materials will meet any or all of Licensee's particular requirements, that the operation of the Materials will be error-free or uninterrupted, or that all programming errors in the Licensed Product can be found in order to be corrected. All warranties provided in this Agreement are solely for the benefit of, and may not be transferred by, Licensee, to any third party.

- (a) **Limits on Scope of Indemnity.** LOFA will have no liability for any infringement arising from (i) the use of the Licensed Product other than as set forth in its accompanying documentation or specifications; (ii) the modification of the Licensed Product; or (iii) the combination or use of the

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Licensed Product with other software, hardware, items or processes to the extent such infringement is not foreseeable use of the Licensed Product. This Section states LOFA's entire obligation with respect to any claim regarding the intellectual property rights of any third party.

- (b) **Licensee Indemnification Obligation.** Licensee shall indemnify, defend and hold harmless LOFA, its directors, officers, and employees from and against any claim, demand, cause of action, loss, damage, liability suit, proceeding, judgment, or cost (including attorney fees), brought against LOFA which is based on the creation, use or distribution of Licensee Devices to the extent that such suit or proceeding does not arise or result from: (i) LOFA's material breach of any agreement, obligation, representation, warranty or covenant contained in this Agreement; (ii) any wrongful, negligent action or failure to act by LOFA, its employees, agents or independent contractors; or, (iii) any liability for which LOFA is obligated to indemnify Licensee under this Section.

9. **Term and Termination.**

- (a) **Term.** Unless otherwise specified in Exhibit A, the term of this Agreement will commence on the Effective Date and will continue into perpetuity unless otherwise terminated earlier under this Agreement.
- (b) **Termination for Cause.** Any of the following shall suffice to terminate this Agreement:
- (i) If Licensee materially breaches any term or condition of this Agreement and fails to cure that breach within thirty (30) days after receiving written notice of the breach.
- (ii) This Agreement will terminate automatically without notice and without further action by LOFA in the event Licensee becomes insolvent (i.e., becomes unable to pay its debts in the ordinary course of business as they come due), makes an assignment in violation of this Agreement or makes an assignment for the benefit of creditors or if any other bankruptcy proceedings are commenced by or against Licensee.
- (c) **Consequences.** Upon the termination of this Agreement for any reason: (i) all rights granted hereunder will automatically revert to LOFA; (ii) Licensee must (A) return to LOFA (or, at LOFA's option, destroy) the originals and all copies of the Materials in Licensee's possession or control; (B) erase any and all of the foregoing from all computer memories and stored Licensee Devices within its possession or control; and (C) provide LOFA with a written statement certifying that it has complied with the foregoing obligations. End use licenses to Licensee Devices for Customers granted by Licensee to Customers prior to termination will survive any such termination.

10. **Limitation of Liability.**

- (a) LICENSEE AGREES THAT ANY LIABILITY ON THE PART OF LOFA FOR BREACH OF THE WARRANTIES CONTAINED HEREIN OR ANY OF THE OTHER PROVISIONS OF THIS AGREEMENT OR ANY OTHER BREACH GIVING RISE TO LIABILITY OR IN ANY OTHER WAY ARISING OUT OF OR RELATED TO THIS AGREEMENT FOR ANY CAUSE OF ACTION WHATSOEVER AND REGARDLESS OF THE FORM OF ACTION (INCLUDING BREACH OF CONTRACT, STRICT LIABILITY, TORT INCLUDING NEGLIGENCE OR ANY OTHER LEGAL OR EQUITABLE THEORY), WILL BE LIMITED TO LICENSEE'S DIRECT DAMAGES IN AN AMOUNT NOT TO EXCEED THE TOTAL AMOUNT PAID TO LOFA BY LICENSEE FOR THE LOFA HARDWARE.
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- (c) LICENSEE ACKNOWLEDGES THAT LOFA'S LIMITED LIABILITY EXPRESSED IN THIS AGREEMENT REPRESENTS A MATERIAL BASIS FOR SETTING THE FEES FOR LOFA HARDWARE.

11. **Use of Trademarks.**

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12. **Interpretation of This Agreement.** This Agreement is the entire Agreement to date between the parties regarding the Materials and supersedes any such prior agreement or communication. Any subsequent waiver or modification of this Agreement, or any part, shall only be effective if reduced to writing and signed by both parties. No delay or failure to enforce any right under this Agreement will be considered a waiver of a party's rights thereafter to enforce each and every right and provision of this Agreement. If any provision of this Agreement is declared by a court of competent jurisdiction to be invalid, illegal, or unenforceable, such provision will be severed from this Agreement and the other provisions will remain in full force and effect. This Agreement will be binding upon, and inure to the benefit of, the successors, heirs and assigns of the parties. Neither Licensee nor Licensee employees, consultants, contractors or agents are agents, employees or joint-venturers of LOFA, nor do they have any authority to bind LOFA by contract or otherwise to any obligation. Licensee agrees not to make any statements that state or imply that LOFA certifies or guarantees Licensee Devices or that Licensee Devices are warranted, tested or approved by LOFA. Dates and times by which either party is required to render performance will be postponed automatically to the extent and for the period of time that such party is prevented from meeting them by reason of any cause beyond its reasonable control. Unless otherwise specifically expressed in this Agreement, the specific business terms and negotiated customisations to this Agreement will be considered confidential ("Business Terms"), and neither party may disclose such information to third parties except as follows: (a) to employees, advisors, financing parties or contractors who are under an obligation of confidentiality to the extent reasonably necessary to conduct business; (b) to the extent that such Business Terms become publicly known through no fault of the parties; (c) to the extent required to comply with any valid law, regulation, statute, or order so long as the non-disclosing party receives reasonable advance notice of such potential disclosure; and (d) to the extent required to enforce, establish, or interpret any right or duty at law or equity with respect to this Agreement.

13. **General.**

- (a) All notices hereunder will be in writing and must be duly given if delivered personally or sent by registered or certified mail, return receipt requested, postage prepaid, to the respective addresses of the parties appearing in this Agreement. Any notice given will be deemed to be received: (i) on the date which it is delivered if delivered personally, (ii) or, if mailed, on the fifth business day next following the mailing thereof. Either party may change its address for notices by giving notice of such change as required in this clause.
- (b) This Agreement, the license rights granted hereunder and the Materials, or any part thereof, may not be assigned or transferred by Licensee, including by operation of law ("Transfer"), without the prior written consent of LOFA. Any such transfer without the prior written consent of LOFA will be ineffective. In any case, any such Transfer absent LOFA's written permission will immediately and automatically terminate this Agreement without further action by LOFA. A change of control of Licensee, whether by sale or issuance of shares (except in the ordinary course of raising capital by public offering), or merger, or otherwise, will be deemed to be an assignment.
- (c) The laws in force in the State of Georgia will govern this Agreement; the parties hereby consent to jurisdiction and venue in the courts of Georgia.

Software License Agreement

- (d) The provisions in Sections - Licensee's Indemnification, - Ownership, Protection, -Fees - Limited Warranty, - Warranty Disclaimer, - Indemnification, -Term and Termination, Limitation of Liability, - Interpretation of Agreement, and -General (inclusive), remain in force and effect after the termination of this Agreement.

Special License Terms

THE LICENSE GRANTED HEREUNDER IS RESTRICTED SOLELY TO THE OPERATION OF THE LOFA HARDWARE AND FOR NO OTHER PURPOSE. NO SUCH LICENSEE DEVICE INCORPORATING ANY OF THE MATERIALS MAY BE DISTRIBUTED, LICENSED, SOLD, RENTED, OR OTHERWISE PROVIDED TO THIRD PARTIES WITHOUT LOFA'S EXPRESS WRITTEN PERMISSION.

Exhibit A

Licensee Information not required

Exhibit B – PRODUCTS/DELIVERABLES

Licensed Product Information

Software codes with product numeric prefixes of 001 through 009 inclusive.

Software codes qualified under the same numeric regimen detailed above or including the verbal description of "CANplus™" products and/or the "CANplus Suite" of products.

Maintenance and Technical

Platform Requirements

.NET Framework 3.5

Windows® XP, Windows Vista (32/64-bit), Windows 7 (32/64-bit)



250 Hembree Park Drive, Suite 122, Roswell, GA 30076

TEL 770-569-9828 FAX 770-569-9829 | www.LOFA.net

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